Groundwater Monitoring 2024 Semiannual Report

for Compliance with the Michigan Part 115 CCR Solid Waste Regulations

Erickson Station

Lansing Board of Water & Light

July 30, 2024

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1.0 Introduction

The U.S. Environmental Protection Agency's (EPA) final Coal Combustion Residuals (CCR) Rule 40 CFR §257 and Michigan's Part 115 Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451 (Part 115), establishes a comprehensive set of requirements for the management and disposal of CCR (or coal ash) in surface impoundments by electric utilities. Erickson Power Station (Erickson or Site) is an electrical power generation facility located at 3725 South Canal Road in Delta Township, Eaton County, Michigan owned and operated by Lansing Board of Water & Light (BWL) (**Figure 1**). Erickson Power Station contained a single coal-fired generator that was capable of producing 165 megawatts of electricity. It ceased operations in November 2022. Erickson has three CCR impoundments: the Forebay, Retention Basin, and Clear Water Pond (CWP) (**Figure 2**). The three CCR impoundments are currently inactive.

The BWL CCR surface impoundments, Forebay, Retention Basin, and CWP, are not licensed under Part 115 because Michigan Department of Environment, Great Lakes, and Energy (EGLE) denied BWL's permit application; however, BWL continues to work with EGLE and develop compliance documentation for EGLE as if the impoundments were permitted under an operating permit. BWL implements both the federal and state groundwater monitoring programs concurrently to comply with both the federal CCR Rule and Part 115 solid waste rules. The Part 115 permitting application requirements included approval of a Hydrogeologic Monitoring Plan (HMP) (HDR, 2021a). The current HMP was approved by EGLE and describes the monitoring network, sampling and analysis plan, and data validation and statical procedures for the monitoring program to comply with Part 115 solid waste rules. BWL is currently expanding the monitoring network, therefore the current HMP has been revised and was resubmitted to EGLE in July 2024.

BWL completed numerous tasks in the first half of 2024 to close the impoundments, characterize the impact to groundwater and further the assessment of corrective measures. Between January and June 2024, BWL completed the following tasks:

- Continued the removal of CCR impoundments with dewatering, ash removal, and subsequent ash removal verification;
- Published a Groundwater Flow Direction Update and Shale/Boron Correlation Memorandum, February 12, 2024;
- Lead a community meeting for residents located downgradient of the Erickson impoundments March 21, 2024 providing a review of the status of the Erickson Groundwater Investigation;
- Updated the Background Water Quality Statistical Certification for Erickson for the glacial and bedrock aquifers, published on March 8, 2024;
- Updated the Groundwater Monitoring System Certification as a result of the efforts in 2022 and 2023 to expand the well network to delineate the contamination plume(s) originating from the CCR impoundments, published on June 18, 2024;

- Published a memorandum summarizing newly detected statistically significant levels (SSLs) observed in wells MW-14, MW-16A, and MW-16D;
- Sampling and analysis associated with semi-annual assessment monitoring as well as completed higher frequency background monitoring of wells within the MW-100 series;
- Development of the Assessment of Corrective Measures Data Collection Work Plan on February 15, 2024, to plan for remedial alternatives data collection;
- Installation of a pump test well and subsequent step drawdown testing to collect hydrogeologic data to evaluate the feasibility of groundwater extraction at the site and later support design of a groundwater extraction and treatment (GWET) system as a remediation alternative;
- Collection of Monitored Natural Attenuation (MNA) soil samples co-located with wells MW-2, MW-3, MW-5, MW-6, MW-14, and the newly installed pump test well (representing the area adjacent to MW-7 series wells), to determine if monitored natural attenuation is feasible under the site-specific conditions as a remediation alternative;
- Obtained approval for EGLE wetland WRD Permit No. WRP040227 and the floodway construction permit necessary for the installation of MW-17 and MW-18 series wells, anticipated to be installed in the second half of 2024;
- and, developed a data collection work scope to evaluate if the CCR constituents present at Erickson have migrated north offsite into groundwater underneath wetlands on the Eaton County drain located along Carrier Creek.

This Semiannual Groundwater Monitoring Report presents these activities and the sampling and analysis completed between January and June 2024. Additionally, these activities produced the aforementioned submittals to regulatory agencies in July 2024:

- Updated the Hydrogeologic Monitoring Plan (HMP) for Erickson to account for the changes to the site as a result of CCR removal activities, expansion of the certified well network, and minor alterations to sampling procedure and subsequent data processing and analysis, which was submitted to EGLE for review in July 2024;
- Development of an alternate source demonstration for the SSLs observed in MW-16A (chloride, TDS) and MW-16D (boron) submitted to EGLE for review July 2024;
- Development of an Ash and Groundwater Isotope Investigation Memo further reinforcing the differences between elevated boron concentrations occurring as a result of the Erickson Impoundments compared to elevated boron concentrations occurring as a result of naturally high concentrations in shale bedrock materials;
- Development of a No Rise Study Report demonstrating that the proposed access road for MW-17 and MW-18 well series will not impact the floodway and flood carrying capacity of Carrier Creek, submitted to EGLE July 2024;
- Development of an Offsite Shallow Groundwater Sampling Plan to assess groundwater conditions further downgradient of Erickson for the east adjoining property, north of the locations sited for MW-17 and MW-18 well series, submitted for approval by EGLE and Eaton County.

The 2024 annual report will provide details of these activities.

2.0 Facility Description

Erickson Power Station (Erickson or Site) was an electrical power generation facility located at 3725 South Canal Road in Delta Township, Eaton County, Michigan, owned and operated by the Lansing Board of Water & Light (BWL) (**Figure 1**). During active operations, a single coal-fired generator was capable of producing 165 megawatts of electricity and CCR was stored in dewatering tanks (hydro-bins). After the majority of the CCR was removed from the waste stream at the hydro-bins, flow was discharged into three CCR impoundments in sequence: the Forebay, Retention Basin, and Clear Water Pond (CWP) (**Figure 2**).

Erickson Power Station ceased coal-fired power generation operations on November 27, 2022. The plant pipelines were washed down and CCR waste disposal ceased to the CCR impoundments on December 29, 2022. The non-CCR stormwater flow to the impoundments ceased January 3, 2023. A CCR removal contractor was selected and mobilized to the site in February 2023 to begin dewatering operations for the three impoundments. The water removed from the surface impoundments was treated onsite, monitored, and discharged into nearby Lake Delta in compliance with a NPDES permit. Ash and liner material was removed and transported offsite to Granger Wood Street Landfill from all three impoundments. Ash removal verification efforts for the Forebay, Retention Basin, and CWP are expected to be completed by the end of 2024.

Figure 1. Vicinity Map for Erickson Power Station

Figure 2. Erickson Power Station Facility Layout

2.1 Impoundment Closure Status

The CCR Impoundments Closure Work Plan for removal of CCR was completed on January 6, 2023, and approved by EGLE on January 17, 2023, with the intent to later submit an amendment associated with the closure verification objectives or thresholds. Additional ash sampling and analysis was completed, and a Closure Work Plan Amendment was submitted to EGLE on August 1, 2023. The Closure Work Plan Amendment further detailed closure objectives and included the ash analytical data as well as the microscopy verification thresholds. Nine ash samples (three each from the Forebay, Retention Basin, and CWP) were collected and submitted for analysis. The microscopy verification thresholds were determined based on a ratio of CCR to native material that would reduce the expected concentration of the constituent to less than that of the established cleanup criteria.

BWL performed a site-specific background soil study as part of the development of the Closure Work Plan, approved by EGLE on January 17, 2023. Also conditional to this approval was the expansion of the Soil Background Study. BWL performed additional background soil sampling, analysis, and statistics to refine the established-site specific soil background values, and a revised Soil Background Study was submitted to EGLE on April 25, 2023. EGLE returned comments to BWL regarding the Soil Background Study and the Closure Work Plan Amendment on June 28, 2023. These comments were addressed, and a final version of the Soil Background Study and Closure Work Plan Amendment was returned to EGLE for approval on July 21, 2023.

The CCR removal contractor was selected and mobilized to the site in February 2023 to begin dewatering operations from the three impoundments. The water removed from the impoundments was treated on site, monitored, and discharged into nearby Lake Delta in compliance with an NPDES permit. Initial CCR dewatering efforts and ash and liner material removal commenced and was completed in May 2023. Subsequent precipitation dewatering took place intermittently to collect dry verification samples. Solid waste material was disposed of at Granger Wood Street Landfill. Through mid-June 2024, approximately 68,000 cubic yards of material (ash, liner, and CCR impacted riprap) have been removed and disposed of offsite from the three impoundments.

CCR removal verification was performed through visual, photographic, soil sampling, and laboratory analytical testing. Analytical sampling and laboratory testing began in July 2023 for the three impoundments and visual verification started in August 2023. Multiple samples were collected for the Forebay and Retention Basin throughout July to December 2023 as analytical results indicated exceedances above established closure criteria. Analytical verification results were statistically analyzed, and exceedances were found for arsenic and boron for the Retention Basin and molybdenum and boron for the Forebay; however, microscopy results were below 3% CCR (a 7% CCR microscopy closure criteria were established for the impoundment material type). BWL has coordinated with EGLE regarding the next steps for verification, which included further excavation and analytical sampling and laboratory testing at nodes having analytical exceedances. Ash removal verification efforts for the Forebay, Retention Basin, and CWP are expected to be finalized by the end of 2024.

HDR previously performed stability and seepage analyses at two selected cross-sections along the embankment of the Retention Basin and Clear Water Pond. The results of the previous analyses determined that the factor of safety for seepage was not adequate for the Retention Basin embankment. HDR subsequently installed two piezometers, RBPZ-1 and RBPZ-2 to further refine the seepage analysis. Data obtained indicates that at the Retention Basin, the upward gradient and heave potential at the toe of the embankment meet the minimum required factor of safety, and additional work to stabilize the embankment was not necessary. Throughout the project duration, seepage was not observed through the embankments of the Retention Basin and Clear Water Pond adjacent to Lake Delta. Monitoring of the embankments adjacent to Lake Delta will continue through the duration of the project.

2.2 Hydrogeology

The three CCR impoundments at Erickson Power Station are in areas underlain with unconsolidated clay, silt, sand, and gravel of glacial origin which rest upon approximately 10,000 feet of consolidated bedrock sediments composed of limestone, shale, siltstone, sandstone, salt, and gypsum. Depth to the uppermost aquifer under the impoundments is determined to be approximately 11 to 17 feet below surface. Given the bedrock surface between 36 and 61 feet below surface, the upper glacial aquifer thickness at the site is approximately between 25 and 44 feet thick. The groundwater flow direction is east directly under the impoundments and remains similar flow direction throughout the year (**Appendix A**). However, after the installation of MW-16 series wells, located on the east side of the wetlands, groundwater data indicates that groundwater further east of Erickson flows west, back towards the BWL property, indicating the glacial groundwater flow direction under the wetlands on the east side of Erickson is to the north, consistent with the Carrier Creek Subwatershed that shows the flow north following Carrier Creek. Additional information detailing the groundwater flow direction at Erickson Power Station may be found in the revised Groundwater Monitoring Systems Certification for Erickson Power Station published in June 2024 (HDR, 2024b).

2.3 Monitoring Well Network

For monitoring in the first half of 2024, the certified monitoring system for the ash impoundments includes the following wells (**Figure 3**):

- Glacial background (upgradient) wells: MW-1, MW-4, MW-11, and MW-12.
- Glacial waste boundary compliance wells: MW-2, MW-5, MW-6, and MW-14.

2.3.1 Additional Wells

The certified groundwater monitoring system includes additional wells installed to evaluate groundwater further downgradient of the impoundments in response to identification of concentrations of constituents at statistically significant levels (SSLs) over GPS in the impoundment compliance wells (**Figure 3**):

- Glacial wells to evaluate extent of GPS exceedances: MW-7, MW-7C, MW-8, MW-9, MW-10, MW-13, MW-15, MW-16A, MW-16B, MW-100A, MW-100B.
- Bedrock background (upgradient) wells: MW-11B, MW-12B

- Bedrock wells to evaluate extent of GPS exceedances: MW-7B, MW-16C, MW-16D, MW-100C, and MW-100D

Additional details regarding the construction of these wells can be found in the revision to the Monitoring Well Installation Report, completed by HDR on October 24, 2023 (HDR, 2023).

2.3.2 New Wells

Although not within the current monitoring well network for the site, a new pump test well (PTW) was installed central to the MW-7 series wells. This well was installed for the completion of a constant rate pump test to assess conditions within the uppermost glacial aquifer as part of data collection for the assessment of corrective measures and to assist in the selection of a remedy for the site.

No wells were repaired or abandoned in the first half of 2024.

Figure 3. CCR Units and Monitoring Wells

3.0 Monitoring

3.1 Groundwater

3.1.1 Frequency

Table 1 provides the well identification number, well location, and the dates and purpose of the samples collected. Assessment monitoring for Erickson during the first half of 2024 was conducted in January and February. The next semiannual assessment monitoring event is scheduled for August.

As new wells are added to the monitoring system, they are initially sampled on a 5-week frequency for a total of eight rounds to establish background in each well per §257.94(b). This expedited frequency develops the statistical strength recommended before using the data in the semiannual sampling events, provided the evaluation of the data for autocorrelation is acceptable. After the initial eight sampling events are completed, sampling aligns with the above sampling schedule. The January and February 2024 sampling events for the MW-100 series wells represent the seventh and eighth sample events for these wells.

Additional sampling events between January and June 2024 included the collection of a groundwater sample from the pump test well installed near the MW-7.

Table 1. Dates of Groundwater Samples Collected for each Well in 2024 and Monitoring Purpose for the Erickson Impoundments

Monitoring Well I.D.	Well Location	Aquifer Monitored	Dates Monitored	Monitoring Purpose
MW-1	Background/ Upgradient	Glacial	January 29, 2024	Assessment Monitoring
MW-2	Downgradient	Glacial	January 29, 2024	Assessment Monitoring
MW-3	Cross-Gradient	Glacial	January 29, 2024	Assessment Monitoring
MW-4	Background/ Upgradient	Glacial	January 29, 2024	Assessment Monitoring
MW-5	Downgradient	Glacial	January 29, 2024	Assessment Monitoring
MW-6	Downgradient	Glacial	January 29, 2024	Assessment Monitoring
MW-7	Downgradient	Glacial	January 30, 2024	Assessment Monitoring
MW-7B	Downgradient	Bedrock	January 30, 2024	Assessment Monitoring
MW-7C	Downgradient	Glacial	January 30, 2024	Assessment Monitoring
MW-8	Downgradient	Glacial	January 30, 2024	Assessment Monitoring
MW-9	Downgradient	Glacial	January 30, 2024	Assessment Monitoring
MW-10	Downgradient	Glacial	January 30, 2024	Assessment Monitoring
MW-11	Background/ Upgradient	Glacial	January 31, 2024	Assessment Monitoring
MW-11B	Background/ Upgradient	Bedrock	January 31, 2024	Assessment Monitoring
MW-12	Background/ Upgradient	Glacial	January 31, 2024	Assessment Monitoring
MW-12B	Background/ Upgradient	Bedrock	January 31, 2024	Assessment Monitoring
MW-13	Downgradient	Glacial	January 30, 2024	Assessment Monitoring
MW-14	Downgradient	Glacial	January 31, 2024	Assessment Monitoring
MW-15	Downgradient	Glacial	January 31, 2024	Assessment Monitoring
MW-16A	Downgradient	Glacial	February 1, 2023	Background Monitoring / Assessment Monitoring
MW-16B	Downgradient	Glacial	February 1, 2023	Background Monitoring / Assessment Monitoring
MW-16C	Downgradient	Bedrock	February 1, 2023	Background Monitoring / Assessment Monitoring
MW-16D	Downgradient	Bedrock	February 1, 2023	Background Monitoring / Assessment Monitoring
MW-100A	Downgradient	Glacial	January 3, 2024	Background Monitoring
			February 7, 2024	Background Monitoring / Assessment Monitoring

Monitoring Well I.D.	Well Location	Aquifer Monitored	Dates Monitored	Monitoring Purpose
MW-100B	Downgradient	Glacial	January 3, 2024	Background Monitoring
			February 7, 2024	Background Monitoring / Assessment Monitoring
MW-100C	Downgradient	Bedrock	January 3, 2024	Background Monitoring
			February 7, 2024	Background Monitoring / Assessment Monitoring
MW-100D	Downgradient	Bedrock	January 3, 2024	Background Monitoring
			February 7, 2024	Background Monitoring / Assessment Monitoring
PTW	Downgradient	Glacial	May 15, 2024	Pump Test

3.1.2 Water Levels and Sample Collection

Water levels were collected in each well following the Groundwater Level Monitoring Standard Operating Procedure (SOP) for Erickson Station (HDR, 2024c). Water levels were measured before purging the wells began. Wells were purged with a peristaltic pump until field parameters (pH, turbidity, conductivity, dissolved oxygen, temperature, and oxidation reduction potential) stabilized. The results of field measurements were recorded on a field data form, which is maintained as part of the field records. After field parameters stabilized, samples were collected and tested for the parameters listed in **Table** 2**2**. For quality control, one field duplicate and one equipment blank sample were collected on each sampling date for each sampling event. Samples were delivered under Chain of Custody to Merit Laboratories in East Lansing, Michigan.

3.1.3 Analytical Testing

Samples collected for background monitoring and assessment monitoring events were analyzed for the parameters listed in **Table 2**. In addition to the required list in **Table 2**, on occasion, wells were analyzed for general water quality parameters including alkalinity, magnesium, potassium, and sodium.

Table 2. Constituents of Interest

Constituents for Assessment Monitoring	
Boron	Fluoride
Calcium	Iron
Chloride	Lead
Fluoride	Lithium
pH	Mercury
Sulfate	Molybdenum
Total Dissolved Solids (TDS)	Nickel
Antimony	Selenium
Arsenic	Silver
Barium	Thallium
Beryllium	Radium 226 and 228 combined
Cadmium	Vanadium
Chromium	Zinc
Cobalt	**Additional Parameters**
Copper	Total Suspended Solids (TSS)

3.1.4 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, 2020a). Data validation was conducted to eliminate data that did not meet validation criteria and designate a data qualifier for data quality limitation discovered.

Samples and quality control (QC) were reviewed and evaluated, and no samples were rejected. Quality Control analyses were within reportable limits; however, when QC was outside limit controls, samples were reported as estimated. Field and laboratory precision and accuracy goals were nearly met for all samples analyzed. Where failures of field and laboratory precision and accuracy were outside of control limits, data was qualified as necessary. Data analyses required minimal qualifications, and data were usable, even when qualified. Laboratory reports and accompanying data validation reports for the sampling completed between January and June 2024 may be found in **Appendix C.**

4.0 Monitoring Results

4.1 Water Levels and Groundwater Flow Direction

Water levels for Erickson Power Station are provided in **Table 3** and depicted in the hydrographs in **Figures 4 and 5**. Groundwater beneath the area of the impoundments is between 853 to 876 feet amsl. Based on the potentiometric contours, the groundwater flow under the impoundments is generally east, however flow farther east of the wetlands at the BWL eastern property boundary appears to be flowing west, back towards the BWL property, and indicates that groundwater flowing under the wetlands is to the north, consistent with the Carrier Creek Subwatershed. Additional information detailing the groundwater flow direction at Erickson Power Station may be found in the revised Groundwater Monitoring Systems Certification for Erickson Power Station published in June 2024 (HDR, 2024).

Water levels in the paired and multi-level glacial and bedrock wells is inconsistent between the sets. As shown in **Table 4**, bedrock well MW-7B has historically had a slightly higher water level than glacial paired well MW-7, indicating an upward vertical gradient, however, data collected since its installation in 2022 indicate that this trend may be seasonally dependent as the gradient has been inconsistent. Glacial wells MW-11 and MW-12 have higher water levels than the paired bedrock wells MW-11B and MW-12B (approximately 9 feet and 4 feet higher, respectively), indicating a downward vertical gradient. Similarly, groundwater elevations in the MW-16 series (except the D designated wells) decrease with well depth, indicating a downward vertical gradient. Wells MW-16B and MW-16C have similar elevations, while MW-16A is three feet higher. In the MW-100 well series, groundwater elevations in MW-100B and MW-100C are similar, while MW-100A is one foot higher and MW-100D is also one foot higher.

Bedrock well MW-16D does not appear to be hydraulically connected to the other wells within its multi-level well series (MW-16A, MW-16B, and MW-16C) or to other bedrock wells installed at Erickson Power Station. As shown in **Table 3** and highlighted in **Figure 5**, MW-16D does not demonstrate seasonal fluctuations similar to those observed at other glacial and bedrock wells and has a substantially lower groundwater elevation than other wells despite being completed at a similar elevation and lithology as bedrock wells MW-11B, MW-12B, MW-7B, and MW-100D. However, shallower bedrock well MW-16C does have groundwater elevations that fluctuate similarly to the glacial well and other bedrock wells onsite. Further investigation into the hydraulic disconnection of MW-16D is detailed in **Section 4.2**.

Because the groundwater elevations differed between glacial wells and bedrock wells, two separate sets of potentiometric contour maps were developed, one for wells screened in the glacial aquifer and one for the wells screened in the shale/sandstone bedrock aquifer. Potentiometric surface maps were developed for the glacial and bedrock aquifers for the January 2024 water level measurement date. Maps displaying the groundwater elevations at the wells and the groundwater contours and are provided in **Appendix A**. Bedrock groundwater contour maps include well MW-16C (and not well MW-16D) due to the apparent MW-16D disconnection described above, whereas MW-100D is included on the map (as opposed to MW-

100C) due to the similar screened elevation as the onsite bedrock wells (MW-7B, MW-11B, and MW-12B).

The potentiometric surface maps indicate that monitoring wells MW-1, MW-4, MW-11, MW-12 are located upgradient in the glacial aquifer and wells MW-11B and MW-12B are upgradient in the bedrock aquifer relative to the Forebay, Retention Pond, and CWP and are appropriate to represent background water quality.

Table 3. Groundwater Elevations Measured between January and June 2024

Monitoring Well ID	Aquifer Monitored	TOC Elevation (ft amsl)	Groundwater Elevations (ft amsl)		
			1/3/2024	1/26/2024	2/7/2024
MW-1	Glacial	888.74	NM	875.11	NM
MW-2	Glacial	885.97	NM	867.37	NM
MW-3	Glacial	884.81	NM	871.64	NM
MW-4	Glacial	889.15	NM	872.76	NM
MW-5	Glacial	885.50	NM	868.14	NM
MW-6	Glacial	885.53	NM	866.69	NM
MW-7	Glacial	870.144	NM	866.16	NM
MW-7B	Bedrock	870.28	NM	865.02	NM
MW-7C	Glacial	871.53	NM	866.14	NM
MW-8	Glacial	873.743	NM	866.36	NM
MW-9	Glacial	872.6	NM	866.65	NM
MW-10	Glacial	875.654	NM	866.71	NM
MW-11	Glacial	885.64	NM	875.35	NM
MW-11B	Bedrock	885.58	NM	866.01	NM
MW-12	Glacial	886.19	NM	871.42	NM
MW-12B	Bedrock	886.27	NM	867.30	NM
MW-13	Glacial	871.80	NM	867.18	NM
MW-14	Glacial	884.59	NM	870.62	NM
MW-15	Glacial	880.24	NM	876.15	NM
MW-16A	Glacial	877.48	NM	872.34	NM
MW-16B	Glacial	877.49	NM	868.23	NM
MW-16C	Bedrock	877.49	NM	867.85	NM
MW-16D	Bedrock	877.53	NM	853.40	NM
MW-100A	Glacial	879.77	864.07	864.62	864.89
MW-100B	Glacial	879.74	863.33	863.90	864.30
MW-100C	Bedrock	879.72	864.10	864.66	864.87
MW-100D	Bedrock	879.70	864.66	865.19	865.44

NM – Not measured.

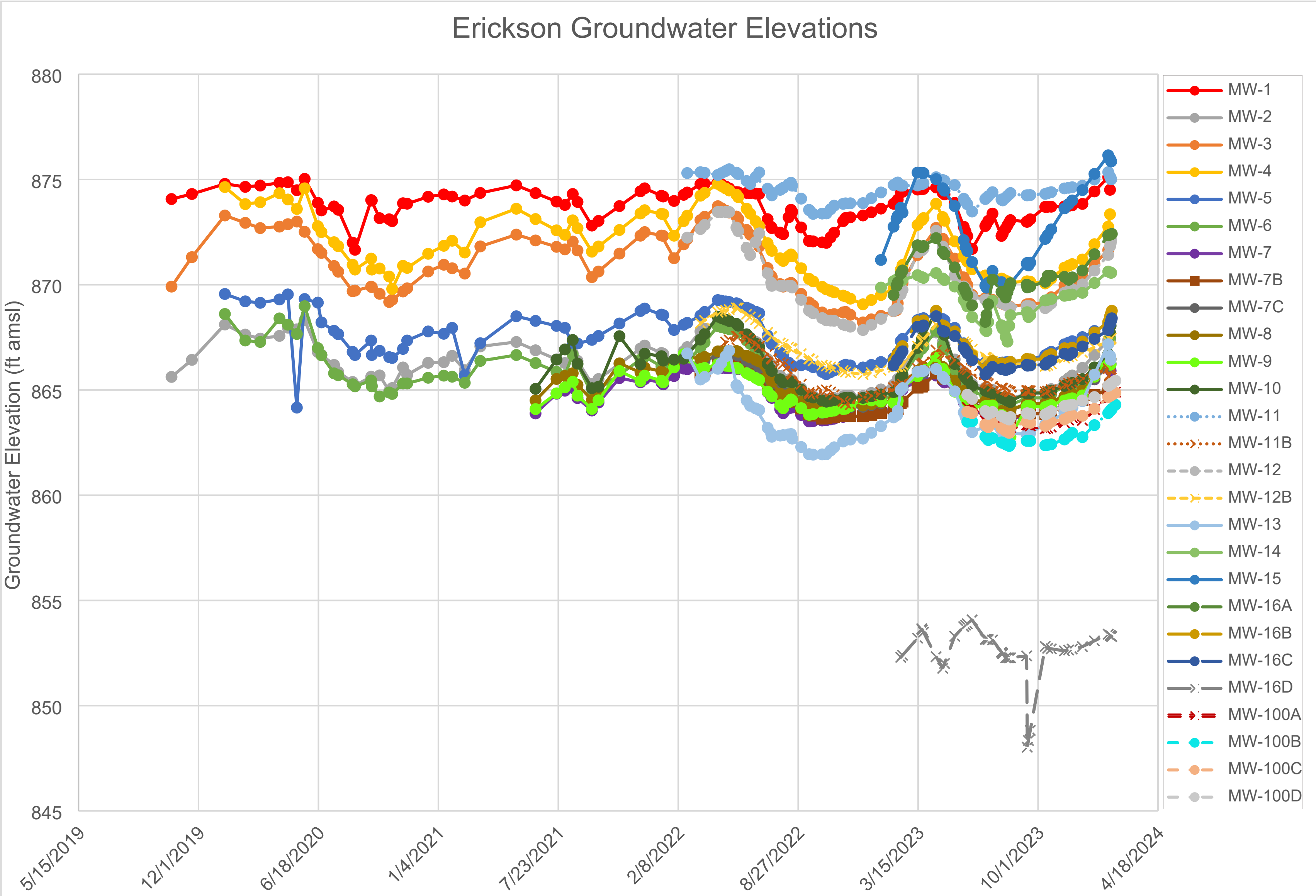


Figure 4. Erickson Power Station Groundwater Elevations

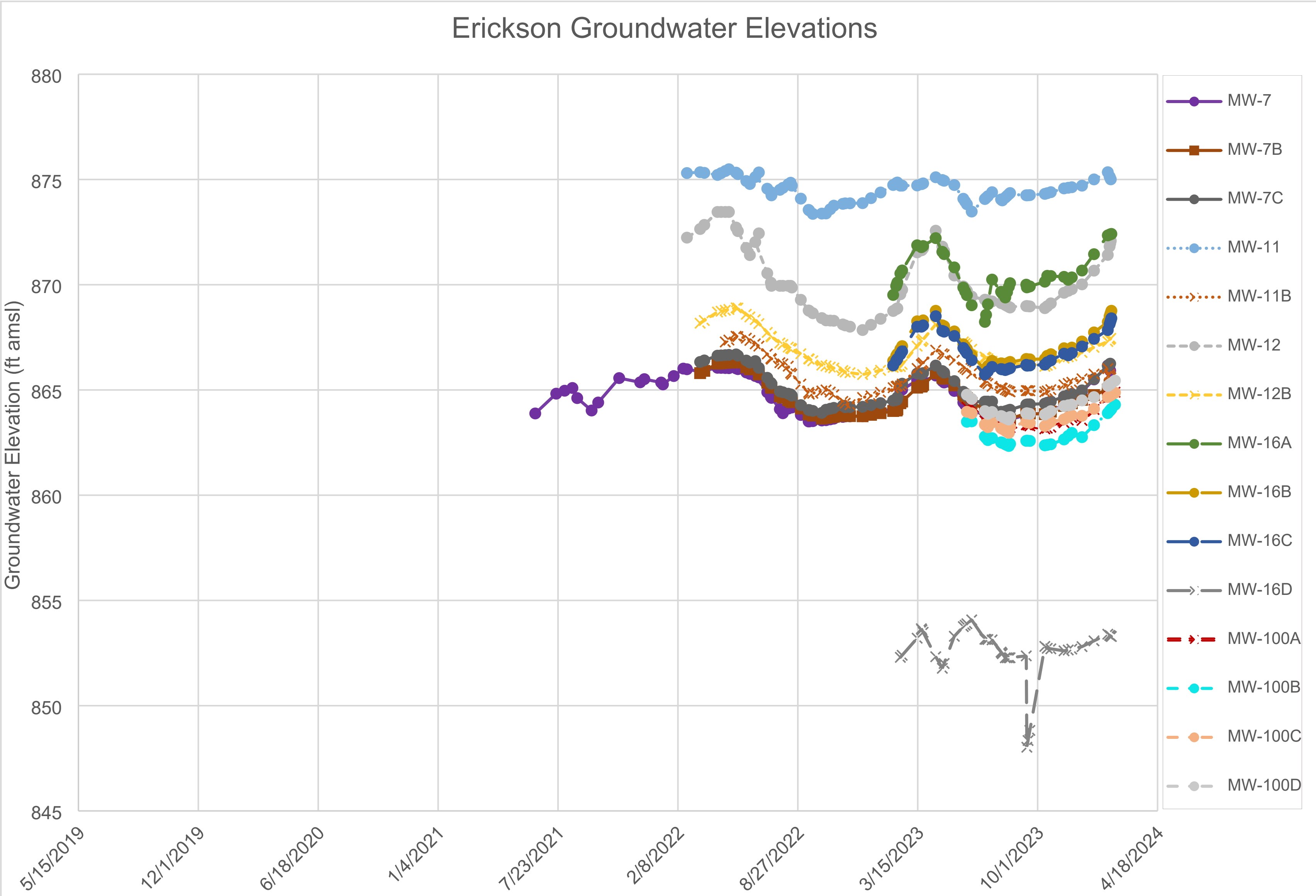


Figure 5. Erickson Power Station Paired Glacial and Bedrock Well Groundwater Elevations

4.2 Water Quality

A table summary of the analytical data is provided in **Appendix B** and laboratory reports are provided in **Appendix C**. In accordance with R 299.4441(9), Groundwater Protection Standards (GPS) were established for each detected COI.

Glacial Aquifer Background Values

Wells MW-1, MW-4, MW-11, and MW-12 represent background water quality for the glacial aquifer. Background statistics for the glacial aquifer were updated in October 2023 and were published in the Background Statistical Certification Report for the site in March 2024 (HDR, 2024a). The upper tolerance limit (UTL) values for assessment monitoring and established GPS for the glacial aquifer are provided in **Table 4**.

Table 4. Background Values and Groundwater Protection Standards for the Glacial Aquifer

Parameter		Site-Specific Glacial Background Level Upper Tolerance Limit (UTL)[1] (mg/L)	Federal Maximum Contaminant Level (mg/L)	State Non-Residential Drinking Water Cleanup Criteria for Groundwater[2] (mg/L)	Glacial Groundwater Protection Standards for Site (mg/L)
Sb, total	Antimony	0.005	0.006	0.006	0.006
As, total	Arsenic	0.021	0.01	0.01	0.021
Ba, total	Barium	0.168	2	2	2
Be, total	Beryllium	0.001	0.004	0.004	0.004
B, total	Boron	0.48	NV	0.5	0.5
Cd, total	Cadmium	0.0005	0.005	0.005	0.005
Cr, total	Chromium	0.005	0.1	0.1	0.1
Co, total	Cobalt	0.005	0.006	0.1	0.006
Cu, total	Copper	0.005	1.3	1	1
Fe, total	Iron	23.5	0.3	0.3	23.5
Pb, total	Lead	0.003	0.015	0.004	0.004
Li, total	Lithium	0.0397	0.04	0.35	0.04
Hg, total	Mercury	0.0002	0.002	0.002	0.002
Mo, total	Molybdenum	0.024	0.1	0.21	0.1
Ni, total	Nickel	0.021	NV	0.1	0.1
Se, total	Selenium	0.005	0.05	0.05	0.05
Ag, total	Silver	0.0005	0.1	0.098	0.098
Tl, total	Thallium	0.002	0.002	0.002	0.002
V, total	Vanadium	0.005	NV	0.062	0.062
Zn, total	Zinc	0.036	5	5	5
Ca	Calcium	188	NV	NV	188
F	Fluoride	1	4	2	2
Cl	Chloride	94.377	250	250	250
SO_4	Sulfate	344	250	250	344
TDS	Total Dissolved Solids	1168.639	500	500	1168.639
Ra226/228	Radium 226 and 228 combined	5.00 pCi/L	5 pCi/L	NV	5 pCi/L

[1] Calculated by pooling wells MW-1, MW-4, MW-11, and MW-12, through February 9, 2023, data. BTVs calculated in October 2023.
[2] Cleanup Criteria Requirements for Response Activity (Formerly the Part 201 Generic Cleanup Criteria and Screening Levels) found in R 299.44 Generic groundwater cleanup criteria.
NV=no value

Bedrock Aquifer Background Values

Wells MW-11B and MW-12B represent background water quality in the bedrock aquifer upgradient of the CCR impoundments and were completed in shale and sandstone at approximately 120 feet below ground surface. Background statistics for the bedrock aquifer were updated in October 2023 and were published in the Background Statistical Certification Report for the site in March 2024 (HDR, 2024a). The upper tolerance limit (UTL) values for assessment monitoring and established GPS for the bedrock aquifer are provided in **Table 5**.

Table 5. Background Values and Groundwater Protection Standards for the Bedrock Aquifer

Parameter		Site-Specific Bedrock Background Level Upper Tolerance Limit (UTL)[1] (ug/L)	Federal Maximum Contaminant Level (ug/L)	State Non-Residential Drinking Water Cleanup Criteria for Groundwater[2] (ug/L)	Bedrock Groundwater Protection Standards for Site (ug/L)
Sb, total	Antimony	0.005	0.006	0.006	0.006
As, total	Arsenic	0.009	0.01	0.01	0.01
Ba, total	Barium	0.081	2	2	2
Be, total	Beryllium	0.001	0.004	0.004	0.004
B, total	Boron	3.52	NV	0.5	3.52
Cd, total	Cadmium	0.0005	0.005	0.005	0.005
Cr, total	Chromium	0.005	0.1	0.1	0.1
Co, total	Cobalt	0.005	0.006	0.1	0.006
Cu, total	Copper	0.005	1.3	1	1
Fe, total	Iron	3.04	0.3	0.3	3.04
Pb, total	Lead	0.003	0.015	0.004	0.004
Li, total	Lithium	0.051	0.04	0.35	0.051
Hg, total	Mercury	0.0002	0.002	0.002	0.002
Mo, total	Molybdenum	0.011	0.1	0.21	0.1
Ni, total	Nickel	0.011	NV	0.1	0.1
Se, total	Selenium	0.005	0.05	0.05	0.05
Ag, total	Silver	0.0005	0.1	0.098	0.098
Tl, total	Thallium	0.002	0.002	0.002	0.002
V, total	Vanadium	0.005	NV	0.062	0.062
Zn, total	Zinc	0.042	5	5	5
Ca	Calcium	69.6	NV	NV	69.6
F	Fluoride	1	4	2	2
Cl	Chloride	5	250	250	250
SO_4	Sulfate	5	250	250	250
TDS	Total Dissolved Solids	380	500	500	500
Ra226/228	Radium 226 and 228 combined	5.5 pCi/L	5 pCi/L	NV	5.5 pCi/L

[1] Calculated by pooling wells MW-11B and MW-12B, through February 9, 2023, data. BTVs calculated in October 2023.
[2] Cleanup Criteria Requirements for Response Activity (Formerly the Part 201 Generic Cleanup Criteria and Screening Levels) found in R 299.44 Generic groundwater cleanup criteria.
NV=no value

Assessment Monitoring Event – January/February 2024

Twenty-seven (27) wells were sampled during January/February 2024 assessment monitoring event as presented in **Table 1**. The following wells had concentrations of one or more COIs that exceeded GPS: MW-2, MW-5, MW-6, MW-7, MW-7C, MW-14, MW-16A, and MW-16D. In accordance with Michigan Rule R 299.4441, downgradient well concentrations were statistically evaluated to determine if one or more constituents are detected at SSLs above the GPS. To determine if an exceedance of a GPS value was statistically significant, the 95% lower confidence limit (95LCL) was calculated for each of the downgradient wells. Statistical output files are in **Appendix D**.

Glacial Aquifer

Wells MW-2 and MW-5 had SSLs of boron, calcium, lithium, sulfate, and TDS over the GPS (**Table 6**). Well MW-6 and MW-14 had SSLs of boron and lithium over the GPS, and well MW-7 had SSLs of boron, lithium, and molybdenum, over the GPS (**Table 6**). Well MW-7C had SSLs of boron, calcium, lithium, molybdenum, sulfate, and TDS over the GPS (**Table 6**). Additionally, well MW-3 had LCL concentrations greater than GPS for boron, calcium, lithium, molybdenum, sulfate, and TDS; but it was calculated based on only seven sample events and is therefore not yet considered an official SSL due to having less than 8 sample events.

Well MW-16A was also found to have SSLs of chloride and TDS (**Table 6**) upon completing its background sampling events in November 2023 and continues to exhibit concentrations above GPS for these constituents during the January/February 2024 sampling event. An amendment to the Determination of SSLs over GPS for Erickson Power Station was subsequently published on June 14, 2024, detailing the SSLs for well MW-16A. However, the chloride and TDS are likely the result of salt applications to the road for deicing. Based on several factors, an alternate source demonstration for the SSLs observed in well MW-16A has since been prepared and was submitted to EGLE in July 2024.

Table 6. SSLs for CCR Impoundments at Erickson Power Station – Calculated through the February 2023 Assessment Monitoring Event

Monitoring Well	Constituent	Boron	Calcium	Chloride	Lithium	Molybdenum	Sulfate	TDS
	State Glacial GPS	0.50 mg/l	188 mg/l	250 mg/l	0.040 mg/l	0.10 mg/l	344 mg/l	1,169 mg/l
MW-2	95% LCL	4.6	230	-	0.054	-	410	1,200
MW-5	95% LCL	3.7	210	-	0.061	-	570	1,200
MW-6	95% LCL	0.72	-	-	0.044	-	-	-
MW-7	95% LCL	1.6	-	-	0.084	0.17	-	-
MW-7C	95% LCL	6.5	240	-	0.13	0.39	680	1,400
MW-14	95% LCL	2.1	-	-	0.11	-	-	-
MW-16A*	95% LCL	-	-	410	-	-	-	1,300

*An ASD has been prepared for the SSLs observed within this well.
"-" Denotes the LCL did not exceed GPS.

Bedrock Aquifer

Well MW-16D continued to demonstrate an SSL of boron over the GPS during the January/February 2024 assessment monitoring event (**Table 7**), first reported in the 2023 Groundwater Monitoring Annual Report for Erickson Station.

Table 7. SSLs in Bedrock Wells– Calculated through the February 2024 Assessment Monitoring Event

Monitoring Well	Constituent	Boron
	State Glacial GPS	3.52 mg/l
MW-16D*	95% LCL	4.6

*An ASD has been prepared for the SSL observed within this well.

However, as described in **Section 4.1** and demonstrated in **Figure 4** and **Figure 5**, MW-16D is hydraulically disconnected to the other wells at Erickson Station. In addition, a review of the impacted wells closer to the impoundment show a consistent set of parameters that exceed GPS, not solely boron. For example, at glacial wells with SSIs and SSLs over GPS, the parameters that exceed include lithium, sulfate, and TDS in addition to the boron. However, at MW-16D bedrock well, only boron exceeds the GPS. This is similar to the findings observed in the private wells completed in bedrock farther east and described in the Private Well Report published on April 16, 2023, and further supported in the Groundwater Flow Direction Update and Shale/Boron Correlation Memorandum published on February 12, 2024. Both documents contain further data supporting the boron in the bedrock to be naturally occurring. Based on numerous data points described in the ASD submitted to EGLE in July 2024, the alternate source of boron at MW-16D is the naturally occurring shale.

Background Monitoring Events – January, February 2024

Background sampling was completed between January and June 2024. These wells (MW-100A, MW-100B, MW-100C, and MW-100D) were sampled on a five-week frequency after installation for the first eight sample events. This section describes the January dates for the associated sampling events for MW-100 series wells can be found in **Table 1**. The February sample event was the eighth sample event; therefore, statistical evaluation was completed, and the findings of this evaluation are described below.

Glacial Aquifer

Wells MW-100A and MW-100B do not have GPS exceedances or demonstrate SSLs upon statistical analysis after completion of eight background monitoring events. The plume's extent to the southeast of the impoundments is delineated. Data from these wells compared to the GPS during the background monitoring events in 2024 may be found in **Appendix B**. Statistical output files are in **Appendix D**.

Bedrock Aquifer

Wells MW-100C and MW-100D do not have GPS exceedances or demonstrate SSLs upon statistical analysis after completion of eight background monitoring events. Data from these wells compared to the GPS during the background monitoring events in 2024 may be found in **Appendix B**. Statistical output files are in **Appendix D**.

5.0 Remedy Selection Progress Update

BWL is moving forward with source removal to close the impoundments. Groundwater measures being evaluated in the Assessment of Corrective Measures (ACM) in November 2021 assumed the impoundment would be excavated and source removed prior to implementation of groundwater remedy measures.

5.1 Impoundment Closure

A CCR removal contractor was selected and mobilized to the site in February 2023 to begin dewatering operations from the three impoundments. The water removed from the ponds was treated on site, monitored, and discharged into nearby Lake Delta in compliance with an NPDES permit. Dewatering efforts were completed in May 2023 and ash and liner material removal commenced, with the material being transported to Granger Wood Street Landfill. Through June 2024 approximately 68,000 cubic yards of material (ash, liner, and CCR impacted riprap) have been removed and disposed of offsite from the three impoundments.

Verification was completed through visual, photographic, and soil sampling and laboratory analytical testing. Visual verification was completed for all three units in August 2023. Sampling was initially completed for the CWP in July 2023 and the analytical results indicate that the pond had met the necessary statistical closure criteria. Multiple samples were collected for the Forebay and Retention Basin throughout July to December 2023 as analytical results indicated exceedances above established closure criteria. Analytical verification results were statistically analyzed, and exceedances were found for arsenic and boron for the Retention Basin and boron and molybdenum for the Forebay; however, microscopy results were below 3% CCR (microscopy closure criteria 7% CCR) for the Forebay and Retention Basin.

Efforts to close Erickson Power Station have continued in the first half of 2024. During a meeting with EGLE on February 27, 2024, EGLE instructed BWL that to achieve closure, the BWL would be required to continue with deeper excavation and closure efforts until all sampling locations returned analytical results meeting the closure criteria, regardless of EGLE's previously agreed upon statistical closure criteria, as detailed in their acceptance of the Closure Plan for the Erickson impoundments on September 5, 2023. Therefore, in accordance with the EGLE's new requirements, BWL completed additional excavation of impacted nodes and re-sampling of all three impoundment units starting in March 2024. Final clean closure samples were obtained for the Clear Water Pond and Forebay in May 2024. Final clean closure samples were obtained for the Retention Basin in June 2024. Ash removal verification efforts for the Forebay, Retention Basin, and CWP and the subsequent closure verification report are expected to be finalized by the end of 2024.

5.2 Plume Delineation

As discussed in the ACM; to select a groundwater remedy, additional data collection and analyses is ongoing to understand off-site plume transport and potential human or ecological receptors. Potential receptors were evaluated and, at this time, the risk to private wells is considered very low. BWL has been working with adjacent and nearby landowners requesting agreements to install monitoring wells. This time-consuming effort necessitated multiple points of contact and nearly all landowners would not grant easements for monitoring well installations. Meanwhile BWL has been developing “work-around” alternatives to landowner's parcels to the extent practical, including wells on narrow BWL-owned strips of land. Ten new wells were installed for assessment and characterization of the groundwater plume at Erickson to the north, east, and south of the CCR impoundments. Groundwater data from these wells currently suggest that the plume is contained within the boundaries of these newly installed wells.

The property owner east of Erickson has declined to allow for the installation of a monitoring well on their property. Therefore, BWL is proposing multi-level wells and supporting access paths in the wetland east of the Erickson property boundary. To accommodate the installation of these wells, BWL applied for a permit. The permit to construct these wells within the wetland was submitted to EGLE on April 21, 2023. Review of the permit was completed in May 2023 and comments were sent back to BWL to address prior to resubmission in July 2023. Additional concerns regarding the constructed access paths and interference with the floodplain after this submission resulted in multiple meetings with BWL, EGLE, and HDR from September 8, 2023, through the end of the year, with the last meeting occurring on December 22, 2023. During the meeting, EGLE requested additional information which BWL provided on February 7, 2024, and the permit (WRP040277v.1) was issued on February 15, 2024, by EGLE, Water Resources Division, under the provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); specifically, Part 303, Wetland Protection.

The proposed monitoring wells and a portion of the access roads are located within the effective 100-year Special Flood Hazard Area (SFHA) and floodway of Carrier Creek. BWL prepared and submitted a No Rise Study Report to Delta Township, Floodplain regulatory authority of Carrier Creek, to demonstrate that the proposed access road and the proposed monitoring wells will not increase the Corrected Effective Base Flood Elevations (BFEs) nor modify the Corrected Effective floodway widths, and therefore demonstrates the flood carrying capacity is maintained and satisfies Section 13.03 D of the Delta Township Zoning Ordinance. Data from these proposed wells will help further define the groundwater flow directions, as well as refine the understanding of vertical and horizontal plume extent at the property boundary. Currently, eight new wells have been proposed and are anticipated be installed by the end of 2024:

- MW-17A, MW-17B, MW-17C, and MW-17D to be installed to the north of the clustered wells at MW-7 to confirm groundwater flow directions and delineate the northern extents of the plume in the glacial and bedrock aquifers.
  MW-18A, MW-18B, MW-18C, and MW-18D to be installed to the east of the clustered wells at MW-7 to confirm groundwater flow directions and delineate the eastern extents of the plume in the glacial and bedrock aquifers.

Further, due to the delays surrounding the installation of the wetland wells, BWL has also proposed sampling further north of the proposed wells within a parcel of land owned by the Eaton County and operating as a county drain. The shallow groundwater sampling process proposed is also within effective 100-year Special Flood Hazard Area (SFHA) and floodway of

Carrier Creek and potential wetland but does not include site disturbance thus no permits are required. BWL intends to use this data to assess the northern extent of the plume boundary and site additional wells concurrent with the installation of MW-17 and MW-18 to expedite further plume delineation activities.

5.3 Assessment of Corrective Measures Data Collection

An Assessment of Corrective Measures Data Collection Work Plan was developed for the site to support the Assessment of Corrective Measures completed for the site in November 2021. The workplan was finalized on February 15, 2024, and focuses on data collection, site-specific feasibility, and time to achieve compliance for the monitored natural attenuation (MNA) and Groundwater Extraction and Treatment (GWET) remedial measures.

5.3.1 Groundwater Extraction and Treatment Data Collection

To assess the GWET remedial strategy, a single pump test well was installed at Erickson, screened within the sandy glacial sediments. The wells location was selected due to the proximity of the adjacent multi level well series to obtain information on both the glacial and bedrock aquifers as wells as being within in an area of the contaminant plume where contamination is most concentrated.

The pump test well (PTW) was installed central to MW-7, MW-7B, and MW-7C, with approximately 8-9 foot separations from each MW-7 series well. The pump test well was installed on May 10, 2024, and subsequently developed. To assess an accurate pump rate, a modified step drawdown test starting at 20 gallons per minute (GPM) was completed on May 13, 2024. After the well had recovered, the pumping rate was adjusted to 66.2 GPM based on the results of the step-drawdown test, and the 24-hour constant rate test began on May 14, 2024.There was 1.74 feet of drawdown within the pump test well and approximately 1 foot of drawdown in the adjacent MW-7 series glacial wells. Slight drawdown of approximately 0.1 foot was observed in the adjacent MW-7B bedrock aquifer well. Glacial wells MW-2 and MW-8 further from the PTW were observed to have drawdown of approximately 0.5 feet.

A groundwater sample from this well was collected on May 15, 2024, after development and the completion of the pump test and delivered under chain of custody to Merit Laboratories in East Lansing, Michigan to be analyzed for the analytes previously present in **Table 2**. The analysis will be completed and a Pump Test Memorandum summarizing the results will be developed in August 2024, with the findings later be incorporated into the remedy selection for the site.

5.3.2 Monitored Natural Attenuation Data Collection

To assess the MNA remedial strategy, borings co-located with Erickson wells with SSLs (MW-2, MW-3, MW-5, MW-6, MW-14, and the newly installed pump test well in the vicinity of MW-7) were installed in May 2024. Soil samples were collected from each boring, including the PTW and analyzed for the following:

- Contaminant concentrations in aquifer solids (COCs include aluminum, antimony, arsenic, boron, cadmium, calcium, chromium, iron, lead, lithium, manganese, mercury, and molybdenum) by Merit Laboratories, Inc.
- Batch attenuation testing for COCs listed above (chemical extractions to determine probable range of K_d partition values to suggest attenuation is taking place) from Resolution Partners, LLC.
- Subsurface mineralogy (clay mineralogy, Fe-Mn-Al oxides, carbonate minerals, sulfides, total organic carbon) from ACZ Laboratories, Inc.

Complete analysis of these samples is still in progress and is anticipated to be complete by the end of July 2024. For Tier I analysis of MNA, specific groundwater parameters from the targeted Erickson wells are required. These additional groundwater monitoring parameters will be collected at the next assessment monitoring event in August 2024. The Tier I MNA evaluation is anticipated to be completed in Q4 2024.

5.4 Next Steps

The following activities are proposed to be completed or initiated in the next 6-month period:

- installation of the wetland wells series at MW-17 and MW-18;
- continued semiannual groundwater assessment monitoring;
- complete analysis of the pump test data and develop Pump Test Report;
- collection of MNA groundwater samples and evaluation of the MNA remedial path; and
- completion of removal of CCR source materials and closure verification of the Erickson CCR impoundments.

Additionally, BWL will continue implementing CCR groundwater compliance schedule in conformance with §257.90 - §257.98, which includes semiannual assessment monitoring in accordance with §257.95 to monitor groundwater conditions and inform the remedy selection. The final remedy will be formally selected per §257.97 once the selected option is reviewed and commented on by EGLE and a public meeting is conducted at least 30-days prior to the final selection as required under §257.96(e).

6.0 Summary

The following observations are based on CCR Rule compliance groundwater monitoring program development between January and June 2024:

- Water levels were measured during each sampling event. Groundwater flow in the glacial aquifer is consistently east-northeast under the impoundments; however, groundwater flow further east in the vicinity of MW-16A and MW-16B is flowing east to west back towards the wetland east of Erickson Station. Groundwater elevation data collected since the installation of MW-16A and MW-16B indicate that groundwater flows east-northeast under the impoundments and then turns north and follows the wetland and Carrier Creek to the north. This is consistent with the Carrier Creek Subwatershed.
- Groundwater flow in the bedrock aquifer shows an east-northeast flow direction under the impoundments, however contours are different than the glacial aquifer. Groundwater elevation data collected after the installation of MW-16C indicate that groundwater elevations in the immediate vicinity of MW-16C are higher than at MW-7B and seem to indicate flow northward between MW-7B and MW-16C consistent with the glacial aquifer.
- New BTVs for the glacial aquifer and BTVs for the bedrock aquifer were published in the update to the Background Water Quality Statistical Certification, published on March 8, 2024.
- Assessment monitoring for the first half of 2024 was completed in January and February for twenty-seven (27) wells. Monitoring data was statistically evaluated, and SSLs above the GPS were observed at MW-2, MW-5, MW-6, MW-7, MW-7C, and MW-14 for lithium and boron. Additionally, SSLs above the GPS were observed at MW-2, MW-5, and MW-7C for calcium, sulfate, and TDS, and in MW-7 and MW-7C for molybdenum. These wells are all glacial wells.
- SSLs were also observed in glacial well MW-16A for chloride and TDS and bedrock well MW-16D for boron. Current understanding of groundwater at the site does not indicate that these SSLs are indicative of contamination from the Erickson impoundments. An ASD was prepared and submitted to EGLE review for the exceedances above GPS in these wells in July 2024.
- Monitoring at a five-week frequency at four nature and extent monitoring wells (MW-100A, MW-100B, MW-100C, and MW-100D) installed in 2023 was completed and the data statistically evaluated. No GPS exceedances were detected for any of these wells.
- Data collected this quarter at Well MW-16D continues to indicate that this well is not hydraulically connected to the currently established well network at Erickson Station, as described in the ASD. This well will continue to be monitored and sampled.
- Cleanout of the CCR impoundments at Erickson Station is complete and the physical closure verification approval is ongoing and expected to be complete by the close of 2024.
- Installation of a pump test well (PTW) in the vicinity of MW-7 series wells and collection of MNA soil samples from boring co-located with wells with existing SSLs to collect data to support the selection of a remedy for the site.

- Erickson Power Station impoundment monitoring status is assessment monitoring and assessment of corrective measures.

7.0 References

HDR, 2020. Determination of Statistically Significant Increases over Background. November 23, 2020.

HDR, 2020a. Erickson Power Station Statistical Procedures Plan. May 11, 2020.

HDR, 2021. Assessment Monitoring Plan (AMP). March 26, 2021.

HDR, 2021a. Hydrogeologic Monitoring Plan (HMP). March 26, 2021.

HDR, 2021b. Response Action Plan (RAP). March 26, 2021.

HDR, 2021c. Conceptual Site Model and Assessment of Corrective Measures. November 5, 2021

HDR, 2023. Monitoring Well Installation Report. October 24, 2024.

HDR, 2024. Assessment of Corrective Measures Data Collection Work Plan. February 15, 2024.

HDR, 2024a. Background Water Quality Statistical Certification. March 8, 2024.

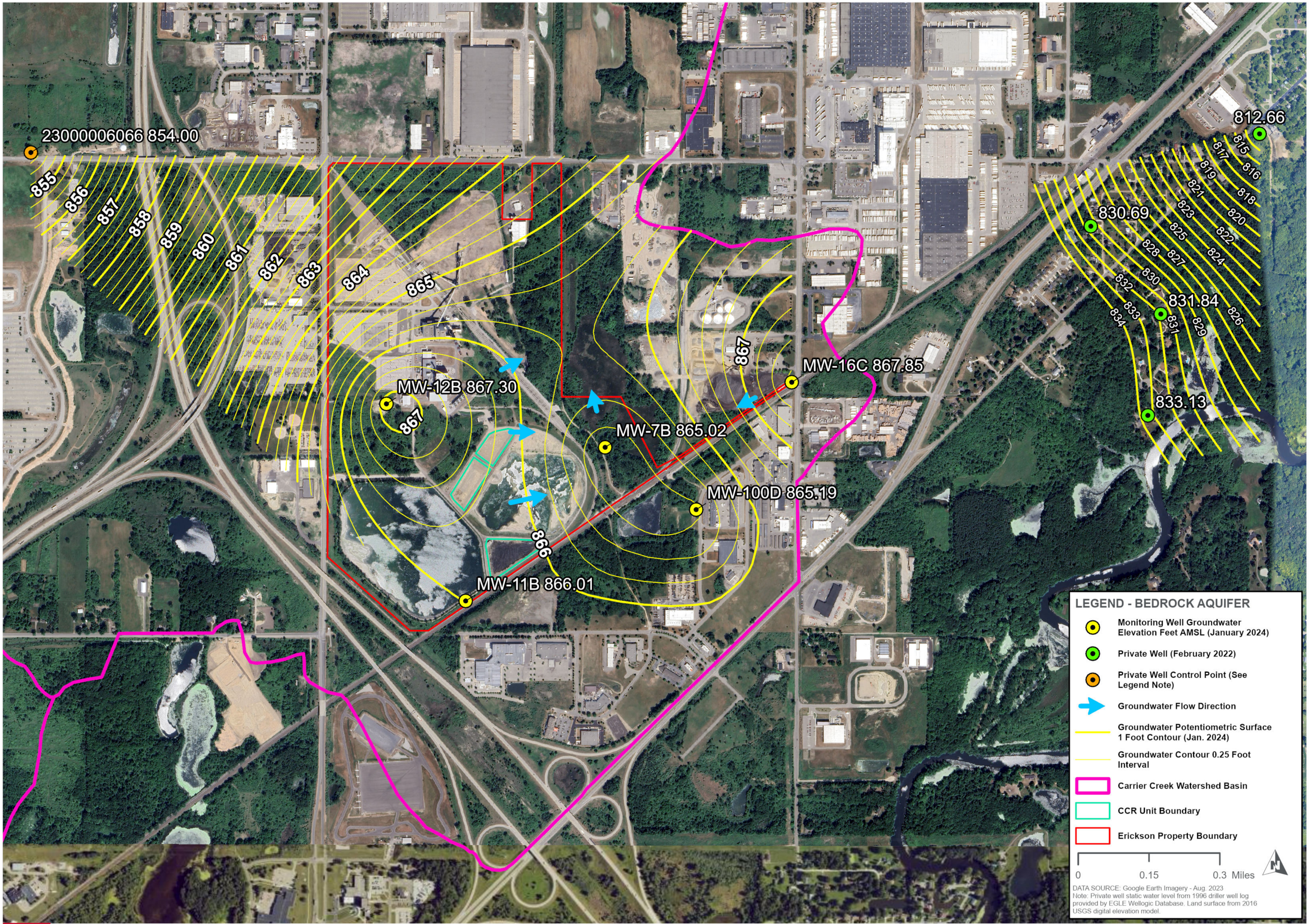
HDR, 2024b. Groundwater Monitoring System Certification, Erickson Station. June 18, 2024.

HDR, 2024c. Groundwater Level Monitoring Standard Operating Procedure (SOP). Revised July 2, 2024.

Appendix A

Potentiometric Surface Maps

ERICKSON POWER STATION
EATON COUNTY, MI



HDR

ERICKSON POWER STATION

EATON COUNTY, MI

Appendix B

Lab Reports Summary Tables

	Sample Location:		MW-1									
	Sample Type:		Upgradient									
	Sample Date:		4/28/2020	5/26/2020	6/23/2020	7/21/2020	8/18/2020	9/15/2020	9/28/2020	10/12/2020	10/19/2020	
Constituent	Unit	State Program GPS	Background Monitoring									
Field Parameters												Field Dup
pH	su	-	6.81	6.62	6.75	6.85	6.89	6.90	6.77	6.78	7.15	7.15
Conductivity	mS/cm	-	1.175	1.199	1.218	1.209	1.220	1.215	1.177	1.185	1.210	1.210
Turbidity	NTU	-	28.20	40.21	17.10	32.30	21.45	15.61	7.32	7.05	8.64	8.64
Dissolved Oxygen	mg/L	-	0.00	0.01	0.08	0.05	0.52	0.01	0.05	0.30	0.09	0.09
Temperature	°C	-	11.3	15.2	13.5	16.5	15.6	15.5	13.8	15.1	13.9	13.9
Oxidation Reduction Potential	mV	-	-43.2	-28.5	-87.2	-53.0	-34.7	-109.8	-62.7	-59.4	-79.2	-79.2
Part 115												
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	5.05	5.26	8.44	6.09	6.32	8.04	5.98	6.02	6.14^{J}	6.15^{J}
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	0.036	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	<0.005	<0.005
Appendix III												
Boron	mg/L	0.50	0.48	0.27	0.39	0.38	0.41	0.44	0.45	0.37	0.41	0.39
Calcium	mg/L	188	162	180	165	156^{J}	161	170	153	167	156^{J}	150^{J}
Chloride	mg/L	250	74	52	70	64	65	59	61	59	52	53
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	6.81	6.62	6.75	6.85	6.89	6.90	6.77	6.78	7.15	7.15
Sulfate	mg/L	344	38	69	59	75	75	77	80	81	84	85
Total Dissolved Solids	mg/L	1168	728	794	774	782	776	768	796	774	806	784
Appendix IV												
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.004	0.005	0.007	0.004	0.006	0.006	0.006	0.006	0.005	0.006
Barium	mg/L	2.0	0.149	0.15	0.168	0.128	0.152	0.148	0.145	0.129	0.136	0.135
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.036	0.023	0.032	0.033	0.034	0.039	0.041	0.037	0.036	0.036
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	1.1	0.34	0.518	0.299	0.4	0.618	-0.0627	0.717	0.812^{J+}	0.464^{J-}
Radium-228	pCi/L	-	0.518	0.457	-0.166	0.254	1.47	0.217	-0.778	0.031	0.00457^{J-}	1.14^{J+}
Radium-226/228	pCi/L	5.00	1.61	0.796	0.518	0.553	1.87	0.889	0.00	0.748	0.816^{J-}	1.61^{J+}
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other												
Total Suspended Solids	mg/L	-	31	45	43	37	48	55	19	20	31	32
Bicarbonate	mg/L	-	-	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-
Magnesium	mg/L	-	-	-	-	-	-	-	-	-	-	-
Potassium	mg/L	-	-	-	-	-	-	-	-	-	-	-
Sodium	mg/L	-	-	-	-	-	-	-	-	-	-	-

		Sample Location:	MW-1								
		Sample Type:	Upgradient								
		Sample Date:	11/6/2020	1/27/2021	5/4/2021	8/3/2021	2/1/2022	8/2/2022	2/7/2023	8/1/2023	1/29/2024
Constituent	Unit	State Program GPS	Initial A.M.	Assessment Monitoring							
Field Parameters											
pH	su	-	6.87	6.82	6.7	6.73	6.77	6.84	6.88	6.73	6.96
Conductivity	mS/cm	-	1.205	1.240	1.2	1.185	1.188	1.208	1.098	1.172	1.22
Turbidity	NTU	-	8.02	9.95	8.5	7.95	5.51	5.85	9.09	6.68	8.15
Dissolved Oxygen	mg/L	-	0.21	0.09	0.1	0.08	0.07	0.14	0.22	0.14	0.22
Temperature	°C	-	15.9	9.8	12	15.7	11.7	14.6	10.7	15.9	10.3
Oxidation Reduction Potential	mV	-	-78.8	-27.5	-20.1	-63.4	-46.6	-95.2	-67.2	-64.0	-35.6
Part 115											
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	7.12	5.45	4.84	6.61	6.92	12	9.57	7.21	2.34
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III											
Boron	mg/L	0.50	-	0.21	0.19	0.22	0.27	0.34	0.32	0.16	0.07
Calcium	mg/L	188	-	173	156	153	166	158	150	169	174
Chloride	mg/L	250	-	44	48	46	52	66	61	42	26.5
Fluoride	mg/L	2.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	6.87	6.82	6.7	6.73	6.77	6.84	6.88	6.73	6.96
Sulfate	mg/L	344	-	78	65	57	49	37	31	54	80.3
Total Dissolved Solids	mg/L	1168	-	776	760	748	746	742	546	746	764
Appendix IV											
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.007	0.005	0.005	0.005	0.007	0.007	0.007	0.007	0.005
Barium	mg/L	2.0	0.133	0.121	0.113	0.109	0.122	0.155	0.140	0.110	0.079
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.034	0.019	0.015	0.016	0.021	0.027	0.031	0.014	0.006
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.533	0.504	0.560	0.301	0.816	0.715	0.300	0.066	0.240
Radium-228	pCi/L	-	-0.0288	0.850	3.47	0.0172	1.76	0.891[J+]	1.24	0.576	-0.206
Radium-226/228	pCi/L	5.00	0.533	1.35	4.03	0.318	2.58	1.61[J+]	1.54	0.64	0.240
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other											
Total Suspended Solids	mg/L	-	19	14	14	11	13	36	32	19.4	7.0
Bicarbonate	mg/L	-	-	-	-	-	-	650	636	690	743
Carbonate	mg/L	-	-	-	-	-	-	<10	<10	<10	<10
Hardness	mg/L	-	-	-	-	-	-	588	546	638	680
Magnesium	mg/L	-	-	-	-	-	-	43.1	41.3	52.7	58.1
Potassium	mg/L	-	-	-	-	-	-	1.14	1.08	0.96	0.89
Sodium	mg/L	-	-	-	-	-	-	40.4	41.0	30.9	22.1

	Sample Location:		MW-2								
	Sample Type:		Downgradient								
	Sample Date:		4/28/2020	5/26/2020	6/23/2020	7/21/2020	8/18/2020	9/15/2020	9/28/2020	10/12/2020	10/19/2020
Constituent	Unit	State Program GPS	Background Monitoring								
Field Parameters											
pH	su	-	6.77	6.54	6.69	6.75	6.80	6.83	6.70	6.72	7.08
Conductivity	mS/cm	-	1.602	1.556	1.699	1.744	1.762	1.794	1.761	1.762	1.798
Turbidity	NTU	-	72.31	8.27	8.95	9.42	5.95	4.15	7.11	9.56	6.28
Dissolved Oxygen	mg/L	-	0.02	0.02	0.07	0.19	0.15	0.12	0.03	0.34	0.03
Temperature	°C	-	11.6	14.2	12.9	15.0	13.9	13.7	12.7	14.5	12.3
Oxidation Reduction Potential	mV	-	-42.5	36.0	-40.2	32.5	38.2	-75.8	56.1	35.3	22.1
Part 115											
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	0.91	0.67	0.48	0.44	0.62	0.51	0.51	0.67[J]	0.63[J]
Nickel	mg/L	0.1	0.018	0.019	0.022	0.024	0.026	0.027	0.027	0.028	0.027
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	0.041	<0.005	<0.005	0.007	<0.005	<0.005	<0.005	<0.005
Appendix III											
Boron	mg/L	0.50	3.56	3.38	4.05	4.61	5.19	5.97	5.94	5.97	5.97
Calcium	mg/L	188	251	256	268	271[J]	272	270	265	270	270[J]
Chloride	mg/L	250	67	68	75	81	85	88	84	88	88
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	6.77	6.54	6.69	6.75	6.80	6.83	6.70	6.72	7.08
Sulfate	mg/L	344	386	386	484	549	580	560	586	560	560
Total Dissolved Solids	mg/L	1168	1170	1180	1300	1390	1430	1390	1420	1390	1390
Appendix IV											
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	<0.002
Barium	mg/L	2.0	0.039	0.043	0.045	0.036	0.045	0.039	0.041	0.041	0.041
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.055	0.047	0.055	0.053	0.057	0.066	0.066	0.065	0.07
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.01	0.008	0.01	0.007	0.011	0.011	0.012	0.012	0.012
Radium-226	pCi/L	-	0.813	0.0551	0.754	0.329	0.171	0.183	0.263	0.151	0.405
Radium-228	pCi/L	-	1.05	0.0833	-0.139	0.0326	0.573	-0.0154	0.0604	1.3	0.0896
Radium-226/228	pCi/L	5.00	1.86	0.138	0.754	0.362	0.745	0.183	0.323	1.45	0.495
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other											
Total Suspended Solids	mg/L	-	<3	1[U]	<3	<3	14	<3	2[U]	6	3[U]
Bicarbonate	mg/L	-	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-
Magnesium	mg/L	-	-	-	-	-	-	-	-	-	-
Potassium	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium	mg/L	-	-	-	-	-	-	-	-	-	-

		Sample Location:	MW-2									
		Sample Type:	Downgradient									
		Sample Date:	11/6/2020	1/27/2021	5/4/2021	8/3/2021	2/1/2022	8/2/2022	2/7/2023	8/1/2023	1/29/2024	
Constituent	Unit	State Program GPS	Initial A.M.	Assessment Monitoring								
Field Parameters												Diss. Metals
pH	su	-	6.83	6.76	6.70	6.65	6.73	6.86	6.85	6.75	6.88	6.88
Conductivity	mS/cm	-	1.792	1.734	1.700	1.655	1.614	1.395	1.411	1.344	1.418	1.418
Turbidity	NTU	-	11.27	10.15	10.00	9.62	9.95	9.01	8.25	2.38	17.8	17.8
Dissolved Oxygen	mg/L	-	0.19	0.08	0.21	0.02	0.20	1.01	0.37	0.49	0.00	0.00
Temperature	°C	-	14.3	9.1	12.0	14.3	11.7	15.4	11.7	14.1	10.0	10.0
Oxidation Reduction Potential	mV	-	-29.0	55.9	181.8	94.5	46.6	21.0	54.2	75.4	16.5	16.5
Part 115												
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	0.54	0.49	0.55	0.66	1.93	0.93	1.30	0.79	0.52	0.15
Nickel	mg/L	0.1	0.027	0.026	0.025	0.025	0.026	0.018	0.020	0.017	0.017	0.016
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III												
Boron	mg/L	0.50	-	5.8	5.04	6.17	5.33	4.76	5.10	4.44	4.07	3.92
Calcium	mg/L	188	-	260	254	226	237	204	204	198	192	164
Chloride	mg/L	250	-	94	77	79	87	87	88	82	81.7	-
Fluoride	mg/L	2.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
pH, Field	su	-	6.83	6.76	6.70	6.65	6.73	6.86	6.85	6.75	6.88	6.88
Sulfate	mg/L	344	-	506	505	504	398	330	322	278	281	-
Total Dissolved Solids	mg/L	1168	-	1320	1250	1300	1180	1020	1050	1010	1000	-
Appendix IV												
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	<0.002	<0.002	0.004	<0.002	0.002	0.003	<0.002	<0.002
Barium	mg/L	2.0	0.042	0.041	0.041	0.039	0.048	0.043	0.037	0.034	0.036	0.037
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.063	0.067	0.061	0.058	0.058	0.051	0.050	0.049	0.041	0.037
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.012	0.01	0.009	0.012	0.011	0.013	0.015	0.014	0.010	0.009
Radium-226	pCi/L	-	0.539	0.296	0.366	0.170	0.630	0.290	0.184	0.423	-0.0321	-
Radium-228	pCi/L	-	0.874	0.713	0.150	1.02	1.49	-0.338[J+]	-0.445	0.62	-0.595	-
Radium-226/228	pCi/L	5.00	1.41	1.01	0.515	1.19	2.12	0.29[J+]	0.184	1.05	0.000	-
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other												
Total Suspended Solids	mg/L	-	10	10	12	10	12	19	22	34.1	9.4	-
Bicarbonate	mg/L	-	-	-	-	-	-	410	454	470	550	-
Carbonate	mg/L	-	-	-	-	-	-	<10	<10	<10	<10	-
Hardness	mg/L	-	-	-	-	-	-	654	708	680	714	-
Magnesium	mg/L	-	-	-	-	-	-	50.5	50.2	50.6	48.4	38.7
Potassium	mg/L	-	-	-	-	-	-	2.7	0.87	0.86	0.60	<0.50
Sodium	mg/L	-	-	-	-	-	-	61.6	68.3	64.5	50.3	42.0

		Sample Location:	MW-3						
		Sample Type:	Upgradient						
		Sample Date:	5/4/2021	8/3/2021	2/1/2022	8/2/2022	2/7/2023	8/1/2023	1/29/2024
Constituent	Unit	State Program GPS	Background Monitoring						
Field Parameters									
pH	su	-	7.20	7.15	7.23	7.27	7.28	7.18	7.38
Conductivity	mS/cm	-	1.800	1.796	1.815	1.829	1.765	1.726	1.765
Turbidity	NTU	-	2.10	8.01	4.83	5.19	4.15	4.95	0.98
Dissolved Oxygen	mg/L	-	0.10	0.03	0.16	0.17	0.35	0.12	0.08
Temperature	°C	-	12.0	14.1	10.6	14.2	12.2	14.2	9.9
Oxidation Reduction Potential	mV	-	-37.5	-65.2	-40.3	-92.1	-74.2	-64.1	-55.7
Part 115									
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	2.01	2.05	1.94	1.80	2.03	1.70	1.84
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III									
Boron	mg/L	0.50	5.41	6.16	5.62	5.89	5.63	5.67	5.68
Calcium	mg/L	188	243	223	255	241	248	253	252
Chloride	mg/L	250	89	92	94	101	102	99	99.5
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	7.20	7.15	7.23	7.27	7.28	7.18	7.38
Sulfate	mg/L	344	698	727	682	704	727	675	689
Total Dissolved Solids	mg/L	1168	1490	1500	1480	1440	1450	1440	1430
Appendix IV									
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.003	0.003	0.003	0.003	0.003	0.004	0.006
Barium	mg/L	2.0	0.021	0.021	0.020	0.019	0.019	0.019	0.017
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.077	0.086	0.086	0.091	0.082	0.079	0.080
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.162	0.153	0.164	0.162	0.182	0.166	0.176
Radium-226	pCi/L	-	0.437	0.152	0.554	0.355	0.566	0.176	0.0361
Radium-228	pCi/L	-	0.760	0.963	1.90	2.56[J+]	1.61	0.236	0.837
Radium-226/228	pCi/L	5.00	1.20	1.11	2.45	2.92[J+]	2.18	0.412	0.873
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other									
Total Suspended Solids	mg/L	-	3	1[U]	2[U]	4	<3	3.3	3.2
Bicarbonate	mg/L	-	-	-	-	210	215	210	228
Carbonate	mg/L	-	-	-	-	<10	<10	<10	<10
Hardness	mg/L	-	-	-	-	784	795	794	774
Magnesium	mg/L	-	-	-	-	45.9	46.5	49.8	50.7
Potassium	mg/L	-	-	-	-	1.67	1.67	1.73	1.81
Sodium	mg/L	-	-	-	-	111	113	121	119

		Sample Location:	MW-4											
		Sample Type:	Upgradient											
		Sample Date:	4/28/2020		5/26/2020		6/23/2020		7/21/2020		8/18/2020		9/15/2020	
Constituent	Unit	State Program GPS	Background Monitoring											
Field Parameters				Field Dup		Field Dup		Field Dup		Field Dup		Field Dup		Field Dup
pH	su	-	7.18	7.18	7.13	7.13	7.11	7.11	7.23	7.23	7.24	7.24	7.28	7.28
Conductivity	mS/cm	-	0.902	0.902	0.894	0.894	0.911	0.911	0.890	0.890	0.880	0.880	0.888	0.888
Turbidity	NTU	-	2.57	2.57	0.26	0.26	3.01	3.01	1.70	1.70	1.56	1.56	1.64	1.64
Dissolved Oxygen	mg/L	-	0.31	0.31	0.29	0.29	0.02	0.02	0.03	0.03	0.01	0.01	0.02	0.02
Temperature	°C	-	10.2	10.2	14.1	14.1	13.5	13.5	14.7	14.7	14.2	14.2	13.7	13.7
Oxidation Reduction Potential	mV	-	-76.7	-76.7	-45.2	-45.2	-174.8	-174.8	-68.4	-68.4	-75.0	-75.0	-153.2	-153.2
Part 115														
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	1.03	1.03	1.13	1.19	1.24	1.26	1.37	1.38	1.33	1.33	1.33	1.32
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	0.031	0.035	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III														
Boron	mg/L	0.50	0.05	0.05	0.06	0.06	0.06	0.05	0.06	0.05	0.06	0.06	0.07	0.07
Calcium	mg/L	188	113	111	115	114	108	108	105^{J}	102	111	107	108	110
Chloride	mg/L	250	70	70	72	72	72	73	72	72	70	71	68	70
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	7.18	7.18	7.13	7.13	7.11	7.11	7.23	7.23	7.24	7.24	7.28	7.28
Sulfate	mg/L	344	59	60	57	56	57	57	56	56	58	59	58	58
Total Dissolved Solids	mg/L	1168	548	546	566	562	558	582	540	534	582	552	572	542
Appendix IV														
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.006	0.006	0.006	0.007	0.007	0.007	0.007	0.007	0.008	0.007	0.009	0.007
Barium	mg/L	2.0	0.157	0.155	0.165	0.168	0.165	0.17	0.146	0.147	0.166	0.167	0.163	0.163
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	<0.010	<0.010	0.009	0.009	0.008	0.008	0.009	0.008	<0.010	<0.010	0.01	0.01
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	0.005	<0.005
Radium-226	pCi/L	-	0.839	0.953	0.599	0.265	0.368^{J-}	0.568^{J+}	0.339	1.06	0.527^{J+}	0.34^{J-}	0.583^{J-}	1.01^{J+}
Radium-228	pCi/L	-	1.08	1.38	-0.093	0.357	-0.141^{J-}	0.771^{J+}	0.863	-0.0421	2.46^{J+}	1.22^{J-}	0.113^{J-}	0.641^{J+}
Radium-226/228	pCi/L	5.00	1.92	2.33	0.599	0.622	0.368^{J-}	1.34^{J+}	1.2	1.06	2.99^{J+}	1.56^{J-}	0.696^{J-}	1.65^{J+}
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other														
Total Suspended Solids	mg/L	-	<3	<3	1^{U}	1^{U}	<3	<3	<3	<3	<3	<3	<3	<3
Bicarbonate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-

	Sample Location:		MW-4										
	Sample Type:		Upgradient										
	Sample Date:		9/28/2020		10/12/2020		10/19/2020	11/6/2020		1/27/2021		5/4/2021	
Constituent	Unit	State Program GPS	Background Monitoring					Initial A.M.		Assessment Monitoring			
Field Parameters				Field Dup		Field Dup			Field Dup		Field Dup		Field Dup
pH	su	-	7.14	7.14	7.13	7.13	7.87	7.22	7.22	7.14	7.14	7.10	7.10
Conductivity	mS/cm	-	0.859	0.859	0.866	0.866	0.875	0.876	0.876	0.900	0.900	0.910	0.910
Turbidity	NTU	-	1.08	1.08	1.39	1.39	1.25	1.21	1.21	1.57	1.57	2.00	2.00
Dissolved Oxygen	mg/L	-	0.02	0.02	0.35	0.35	0.04	0.18	0.18	0.13	0.13	0.19	0.19
Temperature	°C	-	13.4	13.4	14.0	14.0	12.9	14.4	14.4	9.7	9.7	13.0	13.0
Oxidation Reduction Potential	mV	-	-77.3	-77.3	-63.8	-63.8	-78.1	-119.1	-119.1	-21.9	-21.9	-22.5	-22.5
Part 115													
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	1.30	1.29	1.33	1.35	1.25^{J}	1.32	1.34	1.15	1.21	1.23	1.27
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III													
Boron	mg/L	0.50	0.07	0.07	0.06	0.05	0.06	-	-	0.05	0.05	0.05	0.05
Calcium	mg/L	188	102	105^{J}	111	110	99.7^{J}	-	-	112	109	102	107
Chloride	mg/L	250	69	70	71	71	68	-	-	70	70	72	75
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	7.14	7.14	7.13	7.13	7.87	7.22	7.22	7.14	7.14	7.10	7.10
Sulfate	mg/L	344	58	58	60	59	57	-	-	57	57	56	58
Total Dissolved Solids	mg/L	1168	538	544	538	534	554	-	-	522	514	532	526
Appendix IV													
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.008	0.009	0.009	0.009	0.009	0.009	0.009	0.007	0.007	0.006	0.007
Barium	mg/L	2.0	0.163	0.168	0.151	0.155	0.16	0.16	0.159	0.157	0.153	0.156	0.156
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.01	0.011	0.01	<0.010	0.01	0.011	0.011	0.012	0.01	<0.010	0.011
Mercury	mg/L	0.002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.797^{J+}	0.175^{J-}	0.35	0.31	0.357	0.742	0.393	0.524^{J+}	0.297^{J-}	2.12	0.626
Radium-228	pCi/L	-	0.839^{J+}	0.27^{J-}	1.65^{J+}	0.237^{J-}	0.232	0.0791	0.426	-0.957^{J-}	0.956^{J+}	2.89	-0.910
Radium-226/228	pCi/L	5.00	1.64^{J+}	0.445^{J-}	2.00^{J+}	0.547^{J-}	0.589	0.821	0.819	0.524^{J-}	1.25^{J+}	5.00^{J+}	0.626^{J-}
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other													
Total Suspended Solids	mg/L	-	2^{U}	2^{U}	<3	1^{U}	3^{U}	1^{U}	1^{U}	1^{U}	<3	1^{U}	<3
Bicarbonate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-

	Sample Location:		MW-4										
	Sample Type:		Upgradient										
	Sample Date:		8/3/2021		2/1/2022		8/2/2022		2/7/2023		8/1/2023		1/29/2024
Constituent	Unit	State Program GPS	Assessment Monitoring										
Field Parameters				Field Dup		Field Dup		Field Dup		Field Dup		Field Dup	
pH	su	-	7.03	7.03	7.13	7.13	7.19	7.19	7.19	7.19	7.06	7.06	7.26
Conductivity	mS/cm	-	0.884	0.884	0.911	0.911	0.429	0.429	0.882	0.882	0.893	0.893	0.92
Turbidity	NTU	-	1.84	1.84	2.54	2.54	0.75	0.75	3.28	3.28	1.97	1.97	1.01
Dissolved Oxygen	mg/L	-	0.03	0.03	0.37	0.37	0.12	0.12	0.44	0.44	0.08	0.08	0.31
Temperature	°C	-	14.4	14.4	10.6	10.6	13.8	13.8	11.5	11.5	14.1	14.1	10.2
Oxidation Reduction Potential	mV	-	-66.4	-66.4	-34.0	-34.0	-88.8	-88.8	-44.2	-44.2	-68.3	-68.3	-55.1
Part 115													
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	1.43	1.46	1.26	1.23	1.53	1.54	1.31	1.30	1.39	1.44	1.09
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III													
Boron	mg/L	0.50	0.08	0.07	0.07	0.06	0.06	0.07	0.06	0.06	0.08	0.06	0.07
Calcium	mg/L	188	98.4	94.6	110	110	110	109	106	106	112	114	110
Chloride	mg/L	250	68	68	72	74	75	76	74	75	77	77	73.6
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	7.03	7.03	7.13	7.13	7.19	7.19	7.19	7.19	7.06	7.06	7.26
Sulfate	mg/L	344	52	53	54	53	51	52	56	56	52	52	57.5
Total Dissolved Solids	mg/L	1168	568	570	548	540	554	574	532	530	558	572	556
Appendix IV													
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.008	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.007	0.008	0.009
Barium	mg/L	2.0	0.155	0.159	0.163	0.162	0.167	0.165	0.166	0.163	0.169	0.166	0.159
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.01	0.01	0.010	0.011	0.009	0.009	0.011	0.010	0.009	0.010	0.012
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.232^{J-}	0.532^{J+}	0.606^{J+}	0.322^{J-}	0.393	0.457	0.701	0.898	0.744	0.501	0.434
Radium-228	pCi/L	-	-0.362^{J-}	1.81^{J+}	2.17^{J+}	1.41^{J-}	-0.793^{J}	2.88^{J+}	0.692^{J+}	-0.593^{J-}	0.877^{J+}	0.0402^{J-}	-0.253
Radium-226/228	pCi/L	5.00	0.232^{J-}	2.34^{J+}	2.78^{J+}	1.74^{J-}	0.393^{J}	3.34^{J+}	1.39^{J+}	0.898^{J-}	0.744^{J+}	0.541^{J-}	0.434
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other													
Total Suspended Solids	mg/L	-	1^{U}	1^{U}	2^{U}	1^{U}	3^{J+}	$<3^{UJ}$	<3	<3	1.8	2.1	1.5
Bicarbonate	mg/L	-	-	-	-	-	400	410	406	407	420	400	416
Carbonate	mg/L	-	-	-	-	-	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	-	-	-	-	412	426	420	431	450	434	428
Magnesium	mg/L	-	-	-	-	-	39.3	38.8	38.3	38.9	39.6	40.5	38.9
Potassium	mg/L	-	-	-	-	-	1.41	1.41	1.39	1.41	1.45	1.49	1.47
Sodium	mg/L	-	-	-	-	-	28.9	28.3	28.5	28.2	31.2	31.7	33.9

	Sample Location:		MW-5								
	Sample Type:		Downgradient								
	Sample Date:		4/28/2020	5/26/2020	6/23/2020	7/21/2020	8/18/2020	9/15/2020	9/28/2020	10/12/2020	10/19/2020
Constituent	Unit	State Program GPS	Background Monitoring								
Field Parameters											
pH	su	-	7.27	7.24	7.31	7.34	7.30	7.17	6.71	7.34	7.45
Conductivity	mS/cm	-	1.576	1.882	1.970	1.869	1.750	1.893	1.945	2.493	1.425
Turbidity	NTU	-	179.57	69.71	17.91	15.10	20.25	19.02	15.75	12.35	9.58
Dissolved Oxygen	mg/L	-	0.55	0.65	2.61	3.85	2.50	0.64	1.27	3.49	4.25
Temperature	°C	-	11.6	13.9	15.2	17.5	12.7	12.3	12.5	15.5	11.6
Oxidation Reduction Potential	mV	-	-33.0	28.7	-34.8	58.4	69.5	-24.8	180.1	-31.2	130.2
Part 115											
Copper	mg/L	1.00	0.009	<0.005	<0.005	0.026	0.005	<0.005	<0.005	0.011	<0.005
Iron	mg/L	23.5	8.00	1.93	0.39	0.27	2.45	0.21	0.18	1.74	0.18[J]
Nickel	mg/L	0.1	0.019	0.016	0.013	0.011	0.013	0.011	0.016	0.018	0.014
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	0.012	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	0.023	0.033	0.026	0.007	0.011	<0.005	0.006	0.014	<0.005
Appendix III											
Boron	mg/L	0.50	4.99	5.19	4.59	4.57	4.48	5	5.09	5	5.75
Calcium	mg/L	188	245	320	289	251[J]	266	266	283	372	319[J]
Chloride	mg/L	250	68	82	75	80	76	77	78	81	83
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	7.27	7.24	7.31	7.34	7.30	7.17	6.71	7.34	7.45
Sulfate	mg/L	344	591	930	931	877	714	791	873	1,080	1,170
Total Dissolved Solids	mg/L	1168	1280	1770	1720	1640	1520	1540	1660	1960	2020
Appendix IV											
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.005	0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002
Barium	mg/L	2.0	0.064	0.056	0.049	0.041	0.056	0.043	0.043	0.048	0.042
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	0.005	<0.003	<0.003	<0.003	0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.091	0.051	0.061	0.074	0.085	0.091	0.07	0.054	0.046
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.096	0.051	0.05	0.052	0.067	0.053	0.044	0.038	0.035
Radium-226	pCi/L	-	1.1	1.08	0.223	0.811	0.30	0.773	0.759	0.709	0.600
Radium-228	pCi/L	-	0.187	0.28	0.302	0.721	0.253	-0.641	1.47	1.38	-0.262
Radium-226/228	pCi/L	5.00	1.29	1.36	0.524	1.53	0.552	0.773	2.23	2.09	0.600
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other											
Total Suspended Solids	mg/L	-	161	21	23	37	20	61	6	14	7
Bicarbonate	mg/L	-	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-
Magnesium	mg/L	-	-	-	-	-	-	-	-	-	-
Potassium	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium	mg/L	-	-	-	-	-	-	-	-	-	-

	Sample Location:		MW-5											
	Sample Type:		Downgradient											
	Sample Date:		11/6/2020	1/27/2021	5/4/2021	8/3/2021	2/1/2022	8/2/2022	2/7/2023		8/1/2023		1/29/2024	
Constituent	Unit	State Program GPS	Initial A.M.	Assessment Monitoring										
Field Parameters										Diss. Metals		Diss. Metals		Diss. Metals
pH	su	-	7.16	7.35	6.40	7.22	7.18	7.40	7.13	7.13	7.24	7.24	7.38	7.38
Conductivity	mS/cm	-	2.234	1.295	1.600	1.772	1.238	1.643	1.304	1.304	1.076	1.076	1.002	1.002
Turbidity	NTU	-	18.49	15.25	21.00	9.52	14.21	20.19	23.53	23.53	15.85	15.85	25.15	25.15
Dissolved Oxygen	mg/L	-	1.02	2.34	2.45	2.45	3.21	5.42	3.52	3.52	3.81	3.81	3.16	3.16
Temperature	°C	-	12.5	8.6	13.0	13.3	10.1	15.3	10.5	10.5	16.1	16.1	6.9	6.9
Oxidation Reduction Potential	mV	-	17.5	191.2	248.4	132.6	59.1	28.6	164.6	164.6	158	158	119.2	119.2
Part 115														
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	0.019	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	<0.02	0.63	0.9	1.12	4.69	0.75	0.53	<0.02	1.25	<0.02	0.33	<0.02
Nickel	mg/L	0.1	0.007	0.01	0.01	0.01	0.008	0.011	0.006	0.005	0.006	<0.005	0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005
Zinc	mg/L	5	<0.005	0.098	<0.005	0.005	0.048	0.009	0.005	<0.005	0.006	<0.005	<0.005	<0.005
Appendix III														
Boron	mg/L	0.50	-	4.61	3.66	4.82	0.37	4.29	3.53	3.26	2.77	2.67	2.86	2.74
Calcium	mg/L	188	-	245	221	229	70.1	223	187	176	173	162	153	126
Chloride	mg/L	250	-	66	73	66	43	66	56	-	51	-	37.2	-
Fluoride	mg/L	2.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	-	<1.0	-
pH, Field	su	-	7.16	7.35	6.40	7.22	7.18	7.40	7.13	7.13	7.24	7.24	7.38	7.38
Sulfate	mg/L	344	-	578	581	700	186	598	411	-	288	-	319	-
Total Dissolved Solids	mg/L	1168	-	1220	1230	1390	592	1210	984	-	792	-	788	-
Appendix IV														
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	0.002	<0.002	0.007	<0.002	<0.002	<0.002	<0.002	<0.002	0.004	<0.002
Barium	mg/L	2.0	0.033	0.039	0.038	0.04	0.055	0.044	0.040	0.036	0.047	0.041	0.040	0.044
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	-	<1.0	-
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	0.014	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.057	0.08	0.073	0.078	0.016	0.076	0.083	0.085	0.085	0.081	0.069	0.073
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.032	0.054	0.05	0.039	0.010	0.063	0.055	0.055	0.072	0.070	0.082	0.078
Radium-226	pCi/L	-	3.30	0.787	0.349	0.374	0.252	0.525	0.558	-	0.409	-	0.857	-
Radium-228	pCi/L	-	0.921	3.2[J]	0.726	0.271	1.54	0.33[J+]	1.22	-	1.24	-	1.88	-
Radium-226/228	pCi/L	5.00	4.22	3.99[J]	1.08	0.644	1.79	0.855[J+]	1.78	-	1.65	-	2.73	-
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other														
Total Suspended Solids	mg/L	-	4	7	8	4	63	17	21	-	8.6	-	7.7	-
Bicarbonate	mg/L	-	-	-	-	-	-	280	320	-	290	-	298	-
Carbonate	mg/L	-	-	-	-	-	-	<10	<10	-	<10	-	<10	-
Hardness	mg/L	-	-	-	-	-	-	748	629	-	530	-	502	-
Magnesium	mg/L	-	-	-	-	-	-	54.5	42.3	39.9	38.1	34.5	33.3	24.8
Potassium	mg/L	-	-	-	-	-	-	3.77	4.44	4.06	4.61	4.22	4.34	3.33
Sodium	mg/L	-	-	-	-	-	-	69.5	57.4	52.3	47.8	44.1	45.6	34.4

	Sample Location:		MW-6								
	Sample Type:		Downgradient								
	Sample Date:		4/28/2020	5/26/2020	6/23/2020	7/21/2020	8/18/2020	9/15/2020	9/28/2020	10/12/2020	10/19/2020
Constituent	Unit	State Program GPS	Background Monitoring								
Field Parameters											
pH	su	-	6.64	6.35	6.68	6.76	6.80	6.85	6.69	6.71	7.11
Conductivity	mS/cm	-	0.954	0.902	1.044	1.075	1.130	1.251	1.149	1.205	1.275
Turbidity	NTU	-	16.71	17.80	33.60	6.61	8.99	6.95	5.42	8.45	8.35
Dissolved Oxygen	mg/L	-	0.05	0.01	0.09	0.09	0.05	0.04	0.02	0.24	0.04
Temperature	°C	-	10.5	14.2	11.7	13.4	13.0	13.6	12.6	14.3	12.8
Oxidation Reduction Potential	mV	-	-26.9	102.4	-45.9	139.7	91.1	-66.5	59.5	88.9	91.2
Part 115											
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	0.08	0.20	0.07	0.05	0.03	<0.02	<0.02	<0.02	<0.02[UJ]
Nickel	mg/L	0.1	0.005	<0.005	0.007	0.007	0.008	0.007	0.008	0.007	0.007
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	0.034	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III											
Boron	mg/L	0.50	0.56	0.49	0.65	0.75	0.86	1.05	0.97	0.99	1.09
Calcium	mg/L	188	142	143	154	161[J]	170	192	175	189	173[J]
Chloride	mg/L	250	26	24	29	33	37	43	39	41	42
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	6.64	6.35	6.68	6.76	6.80	6.85	6.69	6.71	7.11
Sulfate	mg/L	344	135	123	154	183	222	264	214	242	263
Total Dissolved Solids	mg/L	1168	642	598	706	738	820	880	822	868	898
Appendix IV											
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Barium	mg/L	2.0	0.042	0.05	0.042	0.044	0.053	0.054	0.055	0.054	0.057
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.037	0.038	0.037	0.041	0.044	0.055	0.053	0.052	0.059
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.021	0.021	0.026	0.025	0.03	0.031	0.028	0.029	0.034
Radium-226	pCi/L	-	0.212	-0.0419	0.379	-0.0445	0.415	0.458	0.533	0.461	0.537
Radium-228	pCi/L	-	0.384	-0.481	-0.299	0.460	1.06	-0.00462	0.225	0.176	-0.866
Radium-226/228	pCi/L	5.00	0.596	0.00	0.379	0.460	1.48	0.458	0.758	0.637	0.537
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other											
Total Suspended Solids	mg/L	-	<3	6	<3	<3	<3	<3	<3	<3	1[U]
Bicarbonate	mg/L	-	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-
Magnesium	mg/L	-	-	-	-	-	-	-	-	-	-
Potassium	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium	mg/L	-	-	-	-	-	-	-	-	-	-

	Sample Location:		MW-6									
	Sample Type:		Downgradient									
	Sample Date:		11/6/2020	1/27/2021	5/4/2021	8/3/2021	2/1/2022	8/2/2022	2/7/2023	8/1/2023	1/29/2024	
Constituent	Unit	State Program GPS	Initial A.M.	Assessment Monitoring								
Field Parameters												Field Dup
pH	su	-	6.76	6.72	7.00	6.51	6.69	6.79	6.74	6.71	6.78	6.78
Conductivity	mS/cm	-	1.169	1.178	1.000	1.022	1.045	1.091	1.224	1.133	1.006	1.006
Turbidity	NTU	-	9.69	1.19	8.00	8.74	4.52	2.65	4.43	2.15	1.41	1.41
Dissolved Oxygen	mg/L	-	0.18	0.12	0.10	0.07	0.08	0.44	0.19	0.33	0.29	0.29
Temperature	°C	-	15.2	11.0	12.0	13.2	13.4	14.4	12.8	14.2	10.2	10.2
Oxidation Reduction Potential	mV	-	12.0	122.9	70.8	168.5	68.6	18.3	30.1	202.1	96.1	96.1
Part 115												
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	<0.02	<0.02	<0.02	0.02	0.04	0.02	<0.02	0.03	<0.02	<0.02
Nickel	mg/L	0.1	0.007	0.006	0.006	0.007	0.007	<0.005	0.006	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III												
Boron	mg/L	0.50	-	0.91	0.64	0.76	0.68	0.80	0.99	0.85	0.57	0.61
Calcium	mg/L	188	-	191	149	146	160	169	193	189	161	161
Chloride	mg/L	250	-	38	27	27	27	35	42	39	26.5	26.5
Fluoride	mg/L	2.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	6.76	6.72	7.00	6.51	6.69	6.79	6.74	6.71	6.78	6.78
Sulfate	mg/L	344	-	198	133	139	131	172	233	185	118	119
Total Dissolved Solids	mg/L	1168	-	798	658	692	688	728	866	822	660	658
Appendix IV												
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	0.003
Barium	mg/L	2.0	0.052	0.052	0.044	0.043	0.044	0.038	0.046	0.050	0.049	0.049
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.058	0.048	0.048	0.047	0.044	0.046	0.054	0.049	0.032	0.034
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.028	0.024	0.024	0.029	0.036	0.016	0.027	0.021	0.012	0.013
Radium-226	pCi/L	-	0.343	0.263	0.320	0.116	0.571	0.0773	0.961	0.462	0.435[J+]	0.190[J-]
Radium-228	pCi/L	-	1.36	1.72	1.13	1.30	2.04	0.324[J+]	-1.09	0.201	0.746[J-]	2.24[J+]
Radium-226/228	pCi/L	5.00	1.70	1.98	1.45	1.42	2.61	0.401[J+]	0.961	0.663	1.18[J-]	2.43[J+]
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other												
Total Suspended Solids	mg/L	-	<3	<3	<3	2[U]	32	<3	<3	1.4	<3	<3
Bicarbonate	mg/L	-	-	-	-	-	-	480	543	530	516	510
Carbonate	mg/L	-	-	-	-	-	-	<10	<10	<10	<10	<10
Hardness	mg/L	-	-	-	-	-	-	532	624	616	522	512
Magnesium	mg/L	-	-	-	-	-	-	32.9	39.4	40.3	29.9	30.5
Potassium	mg/L	-	-	-	-	-	-	6.4	6.85	7.02	6.77	6.72
Sodium	mg/L	-	-	-	-	-	-	38.8	43.9	34.3	32.4	32.7

		Sample Location:	MW-7												
		Sample Type:	Downgradient												
		Sample Date:	6/15/2021	7/20/2021	8/24/2021	9/28/2021	11/2/2021	12/7/2021	1/11/2022	2/17/2022	8/2/2022	2/8/2023	8/2/2023	1/30/2024	
Constituent	Unit	State Program GPS	Background Monitoring								Assessment Monitoring				
Field Parameters															Field Dup
pH	su	-	8.18	7.40	7.40	7.47	7.37	7.47	7.56	7.24	7.58	7.58	7.44	7.09	7.09
Conductivity	mS/cm	-	0.879	0.900	0.916	0.925	0.462	0.972	0.964	1.129	0.965	0.780	0.845	1.210	1.210
Turbidity	NTU	-	1.71	5.00	5.37	16.01	5.18	2.2	2.49	2.21	2.65	3.53	1.45	4.98	4.98
Dissolved Oxygen	mg/L	-	0.03	<0.1	0.01	0.02	0	0.02	0.49	0.01	0.16	0.04	0.01	0.08	0.08
Temperature	°C	-	12.9	14.0	17.0	14.3	13	11	9.1	6.2	14.6	9.9	15.9	8.2	8.2
Oxidation Reduction Potential	mV	-	-142.1	-117.2	-139.5	-128.3	-146.5	-157.1	-112.6	-36.9	-129.0	-81.3	-146.9	-100.6	-100.6
Part 115															
Copper	mg/L	1.00	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	1.34	1.25	1.31	1.37	1.49	1.50	1.52	2.81	1.19	1.00	1.04	1.91	1.89
Nickel	mg/L	0.1	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	< 0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	0.005
Zinc	mg/L	5	< 0.005	0.007	0.014	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	<0.005	<0.005
Appendix III															
Boron	mg/L	0.50	1.88	1.78	1.89	1.81	2.12	2.19	2.14	2.75	1.43	1.36	1.08	1.72	1.67
Calcium	mg/L	188	110	111	112	108	122	126	121	149	104	98.8	97.2	165	159
Chloride	mg/L	250	73	74	74	75	73	72.2	78	75	98	82	81	82.9	81.7
Fluoride	mg/L	2.0	< 1.0	<1.0	<1.0	<1.0	<1.0	0.338	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	8.18	7.40	7.40	7.47	7.37	7.47	7.56	7.24	7.58	7.58	7.44	7.09	7.09
Sulfate	mg/L	344	189	181	184	191	212	203	214	260	175	198	172	270	267
Total Dissolved Solids	mg/L	1168	586	574	592	588	622	634	624	758	590	564	548	864	866
Appendix IV															
Antimony	mg/L	0.006	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.006	0.006	0.007	0.006	0.005	0.006	0.006	0.005	0.004	0.004	0.006	0.006	0.006
Barium	mg/L	2.0	0.056	0.06	0.052	0.051	0.054	0.056	0.055	0.062	0.047	0.049	0.050	0.036	0.037
Beryllium	mg/L	0.004	< 0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	< 0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	< 1.0	<1.0	<1.0	<1.0	<1.0	0.338	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	< 0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.089	0.096	0.093	0.097	0.100	0.100	0.100	0.112	0.086	0.073	0.063	0.082	0.079
Mercury	mg/L	0.002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.259	0.26	0.292	0.276	0.276	0.293	0.296	0.284	0.146	0.173	0.156	0.184	0.186
Radium-226	pCi/L	-	0.253	1.4	0.766	0.829	0.666^{J}	2.64	0.676	0.818	0.568	1.06	0.619	0.000^{J-}	0.693^{J+}
Radium-228	pCi/L	-	1.85^{J+}	3.42	0.535	2.49	0.115	0.179	-0.650	1.51	1.27^{J+}	4.38	1.18	0.514^{J-}	0.906^{J+}
Radium-226/228	pCi/L	5.00	2.11^{J+}	4.82	1.30	3.32	0.781^{J}	2.82	0.676	2.33	1.84^{J+}	5.44	1.80	0.514^{J-}	1.60^{J+}
Selenium	mg/L	0.050	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	< 0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other															
Total Suspended Solids	mg/L	-	< 3	<3	<3	<3	<3	<3	<3	1^{U}	<3	<3	<3	2.6	3.3
Bicarbonate	mg/L	-	-	-	-	-	-	-	-	-	180	163	150	334	346
Carbonate	mg/L	-	-	-	-	-	-	-	-	-	<10	<10	<10	<10	<10
Hardness	mg/L	-	-	-	-	-	-	-	-	-	305	290	289	496	510
Magnesium	mg/L	-	-	-	-	-	-	-	-	-	12.3	12.3	12.1	20.5	20.4
Potassium	mg/L	-	-	-	-	-	-	-	-	-	9.53	8.90	9.44	5.77	5.69
Sodium	mg/L	-	-	-	-	-	-	-	-	-	71.1	66.5	68.1	83.9	83.9

	Sample Location:		MW-7B												
	Sample Type:		Downgradient												
	Sample Date:		3/9/2022		4/13/2022		5/19/2022	6/23/2022	7/28/2022	9/1/2022	10/6/2022	11/10/2022	2/8/2023	8/2/2023	1/30/2024
Constituent	Unit	State Program GPS	Background Monitoring										Assessment Monitoring		
Field Parameters				Field Dup		Field Dup									
pH	su	-	8.14	8.14	8.04	8.04	8.07	7.73	7.81	7.90	7.80	7.85	8.15	7.87	8.17
Conductivity	mS/cm	-	0.73	0.73	0.588	0.588	0.589	0.586	0.588	0.580	0.587	0.577	0.577	0.565	0.579
Turbidity	NTU	-	0.02	0.02	7.01	7.01	6.25	6.01	4.05	4.20	5.25	6.01	3.12	0.98	6.39
Dissolved Oxygen	mg/L	-	0.85	0.85	0.26	0.26	0.1	0.09	0.11	0.67	0.16	0.12	0.07	0.02	0.1
Temperature	°C	-	11.7	11.7	11.0	11.0	13.1	13.3	14.1	14.0	13.3	13.4	11.2	14.9	9.4
Oxidation Reduction Potential	mV	-	19.2	19.2	-95.1	-95.1	-135.8	-38.8	-108.9	-117.5	-98.2	-106.9	-130.1	-138.4	-153
Part 115															
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	3.04	0.06	0.06	0.03	0.03	0.03	0.05[J]	0.04	0.05	0.06	0.07	0.08	0.09	0.09
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III															
Boron	mg/L	3.52	3.07	3.09	2.90	2.88	3.02	3.04	2.98	3.17	2.91	2.94	3.00	3.06	2.92
Calcium	mg/L	69.6	10.2	10.4	9.59	9.28	8.24	9.22	9.25	9.14	8.73	9.24	8.77	9.36	8.83
Chloride	mg/L	250	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	1.9
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.3
pH, Field	su	-	8.14	8.14	8.04	8.04	8.07	7.73	7.81	7.90	7.80	7.85	8.15	7.87	8.17
Sulfate	mg/L	250	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	1.3
Total Dissolved Solids	mg/L	500	366	366	362	370	366	362	376	356	376	368	362	356	372
Appendix IV															
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.01	<0.002	<0.002	0.003	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003
Barium	mg/L	2.0	0.01	0.009	0.011	0.011	0.01	0.009	0.009	0.009	0.010	0.008	0.009	0.008	0.008
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.3
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	0.012	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.051	0.034	0.035	0.028	0.029	0.031	0.031	0.032	0.032	0.032	0.032	0.032	0.031	0.033
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.451	0.629	0.439	0.52	0.378	0.547	0.278	0.440	0.988	0.463	0.504	0.434	0.355
Radium-228	pCi/L	-	1.270	0.536	0.872	0.428	-0.123	1.88	0.136[J+]	0.286	0.103	1.30	-0.879	1.13	1.01
Radium-226/228	pCi/L	5.00	1.720	1.160	1.31	0.948	0.378	2.43	0.414[J+]	0.726	1.09	1.77	0.504	1.57	1.36
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other															
Total Suspended Solids	mg/L	-	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	1.0
Bicarbonate	mg/L	-	390	390	390	400	400	380	390	390	390	400	418	400	395
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	38	40	37	51	29	31	30	29	30	29	29	38	29.5
Magnesium	mg/L	-	2.93	3.00	2.99	2.93	2.43	2.75	2.79	2.84	2.75	2.78	2.81	2.81	2.69
Potassium	mg/L	-	5.48	5.57	5.64	5.57	4.8	5.57	5.72	5.61	5.53	5.85	5.58	5.78	5.63
Sodium	mg/L	-	132	131	136	133	116	135	138	140	138	137	142	146	87.5

		Sample Location:	MW-7C											
		Sample Type:	Downgradient											
		Sample Date:	3/10/2022	3/10/2022	4/14/2022	5/19/2022	6/23/2022	7/28/2022	9/1/2022	10/6/2022	11/10/2022	2/8/2023	8/2/2023	1/30/2024
Constituent	Unit	State Program GPS	Background Monitoring									Assessment Monitoring		
Field Parameters				Field Dup										
pH	su	-	7.32	7.32	7.51	7.49	7.28	7.24	7.30	7.23	7.35	7.41	7.24	7.44
Conductivity	mS/cm	-	2.01	2.01	1.811	1.758	1.651	1.672	1.700	1.330	1.678	1.537	1.619	1.563
Turbidity	NTU	-	0.02	0.02	5.87	3.95	2.59	1.97	2.80	4.20	4.01	7.29	0.65	5.95
Dissolved Oxygen	mg/L	-	1.77	1.77	0.23	0.07	0.08	0.09	0.61	0.12	0.09	0.09	0.06	0.07
Temperature	°C	-	12.3	12.3	11.0	13.7	13.8	14.3	16.0	13.7	13.8	11.3	16.4	9.2
Oxidation Reduction Potential	mV	-	-39	-39	-121.4	-182.8	-110.2	-151.5	-136.4	-128.8	-120.4	-111.5	-130.0	-134.4
Part 115														
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	4.15	4.11	4.34	4.28	3.77[J]	3.84	4.11	3.81	4.11	3.67	4.02	4.41
Nickel	mg/L	0.1	0.01	0.011	0.008	0.008	0.007	0.008	0.008	0.007	0.007	0.007	0.007	0.008
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	0.007	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III														
Boron	mg/L	0.50	6.54	6.55	6.44	6.74	6.46	6.7	7.24	6.29	6.62	6.46	6.68	6.62
Calcium	mg/L	188	277	272	255	183	245	241	247	234	243	246	235	238
Chloride	mg/L	250	96	95	101	93	91	90	93	93	92	94	93	90.1
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	7.32	7.32	7.51	7.49	7.28	7.24	7.30	7.23	7.35	7.41	7.24	7.44
Sulfate	mg/L	344	751	761	736	723	668	660	703	675	685	687	656	650
Total Dissolved Solids	mg/L	1168	1500	1500	1450	1420	1360	1360	1370	1360	1360	1360	1350	1330
Appendix IV														
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.007	0.007	0.006	0.007	0.006	0.006	0.006	0.006	0.005	0.006	0.007	0.010
Barium	mg/L	2.0	0.045	0.046	0.043	0.046	0.041	0.042	0.047	0.041	0.044	0.041	0.044	0.042
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	0.0008	<0.0005	0.0009	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.132	0.129	0.121	0.130	0.127	0.138	0.137	0.128	0.125	0.125	0.126	0.126
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.41	0.41	0.40	0.42	0.379	0.39	0.405	0.377	0.415	0.386	0.397	0.409
Radium-226	pCi/L	-	0.867	0.916	0.566	0.444	0.958	0.193	0.606	0.595	0.680	1.11	0.795	0.768
Radium-228	pCi/L	-	2.790	2.110	3.090	0.550	2.35	0.58[J+]	0.204	1.39	1.08	2.17	0.451	0.361
Radium-226/228	pCi/L	5.00	3.660	3.030	3.650	0.994	3.31	0.773[J+]	0.810	1.99	1.76	3.27	1.25	1.13
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other														
Total Suspended Solids	mg/L	-	27[J+]	13[J-]	10	9	8	<3	<3	<3	6	7	7.4	5.4
Bicarbonate	mg/L	-	150	160	160	170	160	160	170	150	150	172	170	167
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	840	860	812	812	777	740	764	750	754	742	779	558
Magnesium	mg/L	-	44.1	44.90	43.10	33.70	40	40	42.2	42.1	41.0	42.7	41.5	44.3
Potassium	mg/L	-	5.34	5.04	5.68	4.92	5.89	5.71	5.88	6.14	5.96	6.07	5.79	5.75
Sodium	mg/L	-	97.9	97.1	96.8	79	94.2	95.7	99.1	95.7	98.7	99.8	96.6	94.7

	Sample Location:		MW-8											
	Sample Type:		Downgradient											
	Sample Date:		6/15/2021	7/20/2021	8/24/2021	9/28/2021	11/2/2021	12/7/2021	1/11/2022	2/17/2022	8/2/2022	2/8/2023	8/2/2023	1/30/2024
Constituent	Unit	State Program GPS	Background Monitoring								Assessment Monitoring			
Field Parameters														
pH	su	-	7.78	7.00	6.99	7.24	7.03	7.12	7.26	6.99	7.18	7.18	7.06	7.14
Conductivity	mS/cm	-	0.620	0.640	0.620	0.721	0.656	0.653	0.637	0.638	0.665	0.634	0.744	0.617
Turbidity	NTU	-	2.24	7.00	7.18	6.53	5.25	2.95	5.43	2	4.31	6.17	2.75	5.15
Dissolved Oxygen	mg/L	-	2.29	1.00	1.66	0.04	7.83	1.76	2.24	1.64	0.88	2.92	0.01	5.24
Temperature	°C	-	10.7	14.0	16.4	14.3	14	11.2	9.2	5.9	14.4	9.4	14.2	7.8
Oxidation Reduction Potential	mV	-	72.1	280.5	325.9	112.7	228.5	122	234.6	365.3	100.5	249.8	114.5	116
Part 115														
Copper	mg/L	1.00	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.010
Iron	mg/L	23.5	< 0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	mg/L	0.1	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	< 0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Zinc	mg/L	5	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007
Appendix III														
Boron	mg/L	0.50	0.11	0.10	0.08	0.21	0.08	0.05	0.04	<0.04	0.08	0.08	0.14	0.05
Calcium	mg/L	188	91.2	94.6	89.8	86.5	93.0	98.5	98.6	100.0	95.3	104	86.9	97.3
Chloride	mg/L	250	11	17	10	59	8	4.45	<5	<5	15.00	24	66	10.5
Fluoride	mg/L	2.0	< 1.0	<1.0	<1.0	<1.0	<1.0	0.0587	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	7.78	7.00	6.99	7.24	7.03	7.12	7.26	6.99	7.18	7.18	7.06	7.14
Sulfate	mg/L	344	25	35	17	48	16	13.8	11	11	15	32	52	21.4
Total Dissolved Solids	mg/L	1168	392	384	362	414	368	370	372	382	382	430	460	388
Appendix IV														
Antimony	mg/L	0.006	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002
Barium	mg/L	2.0	0.028	0.021	0.022	0.026	0.021	0.021	0.018	0.017	0.019	0.022	0.026	0.021
Beryllium	mg/L	0.004	< 0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	< 0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	< 1.0	<1.0	<1.0	<1.0	<1.0	0.0587	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	< 0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	< 0.010	<0.005	<0.005	0.013	0.009	0.006	<0.005	<0.005	0.005	0.007	0.009	<0.005
Mercury	mg/L	0.002	< 0.0002	<0.0002	<0.0002	<0.0002[UJ]	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	< 0.011	0.006	<0.005	0.013	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.287	0.389	0.437	0.228	0.228[J]	1.70	1.77	0.843	0.201	0.118	0.245	0.515
Radium-228	pCi/L	-	0.396[J+]	-0.103	0.114	0.469	1.71	0.583	4.44	2.00	3.04[J+]	-0.133	4.30	1.33
Radium-226/228	pCi/L	5.00	0.683[J+]	0.389	0.551	0.697	1.93[J]	2.28	6.21	2.84	3.24[J+]	0.118	4.55	1.85
Selenium	mg/L	0.050	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	< 0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other														
Total Suspended Solids	mg/L	-	< 3	<3	<3	<3	<3	2[U]	<3	<3	<3	<3	<3	<3
Bicarbonate	mg/L	-	-	-	-	-	-	-	-	-	410	440	320	403
Carbonate	mg/L	-	-	-	-	-	-	-	-	-	<10	<10	<10	<10
Hardness	mg/L	-	-	-	-	-	-	-	-	-	347	384	326	364
Magnesium	mg/L	-	-	-	-	-	-	-	-	-	28.9	31.8	25.3	28.8
Potassium	mg/L	-	-	-	-	-	-	-	-	-	0.57	0.53	0.76	<0.50
Sodium	mg/L	-	-	-	-	-	-	-	-	-	12.7	14.2	40.9	13.9

	Sample Location:		MW-9											
	Sample Type:		Downgradient											
	Sample Date:		6/15/2021		7/20/2021		8/24/2021		9/28/2021		11/2/2021		12/7/2021	
Constituent	Unit	State Program GPS	Background Monitoring											
Field Parameters				Field Dup		Field Dup		Field Dup		Field Dup		Field Dup		Field Dup
pH	su	-	7.74	7.74	7.20	7.20	7.21	7.21	7.28	7.28	7.14	7.14	7.27	7.27
Conductivity	mS/cm	-	0.393	0.393	0.42	0.42	0.44	0.44	0.444	0.444	0.471	0.471	0.459	0.459
Turbidity	NTU	-	1.60	1.60	6.7	6.7	6.15	6.15	5.25	5.25	5.61	5.61	2.21	2.21
Dissolved Oxygen	mg/L	-	5.48	5.48	5.35	5.35	4.52	4.52	4.5	4.5	4.89	4.89	5.42	5.42
Temperature	°C	-	12.9	12.9	17	17	19	19	17.1	17.1	13.8	13.8	9.5	9.5
Oxidation Reduction Potential	mV	-	164.1	164.1	310.7	310.7	329.2	329.2	171.8	171.8	238.1	238.1	135.9	135.9
Part 115														
Copper	mg/L	1.00	< 0.005	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	< 0.02	< 0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	mg/L	0.1	< 0.005	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	< 0.005	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	< 0.005	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.009	<0.005
Appendix III														
Boron	mg/L	0.50	< 0.04	< 0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Calcium	mg/L	188	62.1	64.2	66.3	67.5	69.2	68.8	71.0	71.5	78.0	80.7	76.6	75.8
Chloride	mg/L	250	< 5	< 5	<5	<5	<5	<5	<5	<5	<5	<5	1.11	1.07
Fluoride	mg/L	2.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.033	0.033
pH, Field	su	-	7.74	7.74	7.20	7.20	7.21	7.21	7.28	7.28	7.14	7.14	7.27	7.27
Sulfate	mg/L	344	< 5	< 5	<5	<5	<5	<5	<5	<5	<5	<5	3.58	3.52
Total Dissolved Solids	mg/L	1168	232	240	242	232	242	256	246	244	252	268	244	246
Appendix IV														
Antimony	mg/L	0.006	< 0.005	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Barium	mg/L	2.0	0.015	0.015	0.013	0.014	0.015	0.014	0.014	0.015	0.015	0.016	0.014	0.015
Beryllium	mg/L	0.004	< 0.001	< 0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	< 0.0005	< 0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	< 0.005	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	< 0.005	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	< 1.0	< 1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.033	0.033
Lead	mg/L	0.004	< 0.003	< 0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	mg/L	0.002	< 0.0002	< 0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002[UJ]	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	< 0.005	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.625	0.646	0.189	0.166	0.266[J-]	0.421[J+]	0.797	0.368	0.177[J-]	0.534[J+]	1.67	1.69
Radium-228	pCi/L	-	0.218[J+]	0.171[J+]	0.286[J+]	-0.125[J-]	-0.359[J-]	1.65[J+]	0.453	0.846	-0.0915[J]	0.483[J+]	0.666	0.826
Radium-226/228	pCi/L	5.00	0.844[J+]	0.817[J+]	0.475[J+]	0.166[J-]	0.266[J-]	2.07[J+]	1.25	1.21	0.177[J]	1.02[J+]	2.34	2.51
Selenium	mg/L	0.050	< 0.005	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	< 0.002	< 0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other														
Total Suspended Solids	mg/L	-	< 3	< 3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Bicarbonate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-

	Sample Location:		MW-9							
	Sample Type:		Downgradient							
	Sample Date:		1/11/2022		2/17/2022		8/2/2022	2/8/2023	8/2/2023	1/30/2024
Constituent	Unit	State Program GPS	Background Monitoring				Assessment Monitoring			
Field Parameters				Field Dup		Field Dup				
pH	su	-	7.35	7.35	7.16	7.16	7.44	7.45	7.13	7.28
Conductivity	mS/cm	-	0.455	0.455	0.471	0.471	0.420	0.424	0.474	0.540
Turbidity	NTU	-	2.89	2.89	1.6	1.6	3.44	3.01	2.2	5.02
Dissolved Oxygen	mg/L	-	6.13	6.13	6.17	6.17	3.96	6.33	3.35	6.22
Temperature	°C	-	7	7	4.7	4.7	19.2	7.3	16.5	5.3
Oxidation Reduction Potential	mV	-	260.1	260.1	380.9	380.9	99.2	252.1	132.5	108.1
Part 115										
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III										
Boron	mg/L	0.50	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Calcium	mg/L	188	76.9	75.0	77.6	78	61.8	76.9	75.7	98.8
Chloride	mg/L	250	<5	<5	<5	<5	<5	<5	<5	5.5
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	7.35	7.35	7.16	7.16	7.44	7.45	7.13	7.28
Sulfate	mg/L	344	<5	<5	<5	<5	5.00	<5	6	11.9
Total Dissolved Solids	mg/L	1168	264	266	280	276	242	274	282	348
Appendix IV										
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003
Barium	mg/L	2.0	0.013	0.013	0.013	0.013	0.013	0.014	0.016	0.017
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.838^{J-}	1.22^{J+}	0.533	0.657	0.0527	0.372	0.305	0.000
Radium-228	pCi/L	-	1.53^{J+}	-0.724^{J-}	0.0438^{J}	0.283^{J+}	1.88^{J+}	1.60	-0.43	-0.442
Radium-226/228	pCi/L	5.00	2.37^{J+}	1.22^{J-}	0.576^{J}	0.940^{J+}	1.94^{J+}	1.97	0.31	0.000
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other										
Total Suspended Solids	mg/L	-	<3	<3	<3	<3	<3	<3	<3	<3
Bicarbonate	mg/L	-	-	-	-	-	260	336	310	378
Carbonate	mg/L	-	-	-	-	-	<10	<10	<10	<10
Hardness	mg/L	-	-	-	-	-	218	261	270	342
Magnesium	mg/L	-	-	-	-	-	15.2	19.4	19.5	23.3
Potassium	mg/L	-	-	-	-	-	1.09	0.93	1.28	0.93
Sodium	mg/L	-	-	-	-	-	2.41	2.86	3.84	4.11

		Sample Location:	MW-10							
		Sample Type:	Downgradient							
		Sample Date:	6/15/2021	7/20/2021	8/24/2021	9/28/2021	11/2/2021	12/7/2021	1/11/2022	2/17/2022
Constituent	Unit	State Program GPS	Background Monitoring							
Field Parameters										
pH	su	-	7.30	6.60	6.70	6.89	6.57	6.69	6.68	6.49
Conductivity	mS/cm	-	0.725	0.71	0.741	0.664	0.78	0.753	0.807	0.784
Turbidity	NTU	-	1.79	2.3	1.95	5.99	1.29	2.09	2.98	3.76
Dissolved Oxygen	mg/L	-	2.05	3.3	3.2	2.43	2.83	2.89	3.92	3.61
Temperature	°C	-	12.0	14	15.5	15	14.2	11.6	9.7	8.6
Oxidation Reduction Potential	mV	-	121.2	240.0	330.1	164.1	230.9	147.9	283.3	391.8
Part 115										
Copper	mg/L	1.00	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	< 0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	mg/L	0.1	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	< 0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.020	<0.005
Appendix III										
Boron	mg/L	0.50	0.05	0.05	0.06	0.05	0.07	0.05	0.06	0.05
Calcium	mg/L	188	132	128	129	113	137	128	141	142
Chloride	mg/L	250	< 5	<5	<5	<5	<5	1.03	<5	<5
Fluoride	mg/L	2.0	< 1.0	<1.0	<1.0	<1.0	<1.0	0.0660	<1.0	<1.0
pH, Field	su	-	7.30	6.60	6.70	6.89	6.57	6.69	6.68	6.49
Sulfate	mg/L	344	12	15	14	9	17	14.5	18	16
Total Dissolved Solids	mg/L	1168	446	410	432	376	436	428	474	482
Appendix IV										
Antimony	mg/L	0.006	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	< 0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Barium	mg/L	2.0	0.044	0.041	0.047	0.041	0.044	0.043	0.040	0.038
Beryllium	mg/L	0.004	< 0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	< 0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	< 1.0	<1.0	<1.0	<1.0	<1.0	0.0660	<1.0	<1.0
Lead	mg/L	0.004	< 0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	< 0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	mg/L	0.002	0.0002	<0.0002	<0.0002	<0.0002^{UJ}	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.548	0.262	0.183	0.701	0.381^{J}	1.46	1.59	0.894
Radium-228	pCi/L	-	0.123^{J+}	-0.994	0.187	-0.076	0.225	0.929	0.142	-0.916
Radium-226/228	pCi/L	5.00	0.671^{J+}	0.262	0.371	0.701	0.605^{J}	2.39	1.73	0.894
Selenium	mg/L	0.050	< 0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	< 0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other										
Total Suspended Solids	mg/L	-	< 3	<3	<3	<3	<3	<3	<3	<3
Bicarbonate	mg/L	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	-	-	-	-	-	-	-	-	-
Hardness	mg/L	-	-	-	-	-	-	-	-	-
Magnesium	mg/L	-	-	-	-	-	-	-	-	-
Potassium	mg/L	-	-	-	-	-	-	-	-	-
Sodium	mg/L	-	-	-	-	-	-	-	-	-

	Sample Location:		MW-10					
	Sample Type:		Downgradient					
	Sample Date:		8/2/2022	2/8/2023		8/2/2023		1/30/2024
Constituent	Unit	State Program GPS	Assessment Monitoring					
Field Parameters					Field Dup		Field Dup	
pH	su	-	6.85	6.73	6.73	6.52	6.52	6.81
Conductivity	mS/cm	-	0.691	0.679	0.679	0.739	0.739	0.695
Turbidity	NTU	-	3.57	1.88	1.88	2.34	2.34	4.91
Dissolved Oxygen	mg/L	-	2.82	4.03	4.03	3.15	3.15	4.29
Temperature	°C	-	15.4	9.5	9.5	14.4	14.4	8.4
Oxidation Reduction Potential	mV	-	98.9	238.0	238	163.5	163.5	100.1
Part 115								
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	0.01	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III								
Boron	mg/L	0.50	0.05	0.04	0.05	0.05	0.06	0.04
Calcium	mg/L	188	117	136	140	131	129	118
Chloride	mg/L	250	<5	<5	<5	6	6	9.3
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	6.85	6.73	6.73	6.52	6.52	6.81
Sulfate	mg/L	344	10	13	13	18	17	27.8
Total Dissolved Solids	mg/L	1168	398	494	482	452	450	452
Appendix IV								
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	<0.002	<0.002	<0.002	0.002
Barium	mg/L	2.0	0.037	0.036	0.036	0.037	0.037	0.041
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.195	0.407	0.443	0.519^{J-}	0.840^{J+}	0.366
Radium-228	pCi/L	-	0.402^{J+}	-0.255^{J-}	0.758^{J+}	-0.799^{J-}	0.502^{J+}	2.54
Radium-226/228	pCi/L	5.00	0.597^{J+}	0.407^{J-}	1.20^{J+}	0.519^{J-}	1.34^{J+}	2.91
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other								
Total Suspended Solids	mg/L	-	<3	<3	<3	<3	<3	<3
Bicarbonate	mg/L	-	440	525	522	450	450	449
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	382	461	460	433	420	396
Magnesium	mg/L	-	23.6	29.5	29.2	25.8	25.6	27.0
Potassium	mg/L	-	0.73	0.62	0.70	0.68	0.68	<0.50
Sodium	mg/L	-	2.24	2.54	2.73	4.55	4.64	19.0

	Sample Location:		MW-11												
	Sample Type:		Upgradient												
	Sample Date:		2/23/2022		3/30/2022		5/4/2022	6/8/2022		7/13/2022		8/17/2022		9/21/2022	
Constituent	Unit	State Program GPS	Background Monitoring												
Field Parameters				Field Dup		Field Dup			Field Dup		Field Dup		Field Dup		Field Dup
pH	su	-	6.84	6.84	6.64	6.64	6.78	6.76	6.76	6.73	6.73	6.88	6.88	6.91	6.91
Conductivity	mS/cm	-	1.08	1.08	1.119	1.119	1.093	1.11	1.11	1.008	1.008	1.117	1.117	1.122	1.122
Turbidity	NTU	-	9.65	9.65	8.95	8.95	9.22	6.98	6.98	3.02	3.02	4.01	4.01	5.25	5.25
Dissolved Oxygen	mg/L	-	0.01	0.01	0.07	0.07	0.06	0.56	0.56	0.08	0.08	0.21	0.21	0.18	0.18
Temperature	°C	-	9.50	9.50	9.8	9.8	12	11.3	11.3	12.8	12.8	14.4	14.4	15.7	15.7
Oxidation Reduction Potential	mV	-	-88.90	-88.90	-83.9	-83.9	-103.4	-109.6	-109.6	-97.3	-97.3	-129.8	-129.8	-122.9	-122.1
Part 115															
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	22.2	22.0	23.2	23.0	23.50	21.4	21.9	22	21.8^{J}	21.4	20.9	21.5	20.8
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	0.006
Appendix III															
Boron	mg/L	0.50	0.22	0.22	0.20	0.22	0.21	0.22	0.22	0.21	0.2	0.21	0.2	0.22	0.22
Calcium	mg/L	188	136	130	138	140	144	139	138	134	135	140	138	141	142
Chloride	mg/L	250	67	67	67	67	63	63	63	61	62	63	64	61	62
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	6.84	6.84	6.64	6.64	6.78	6.76	6.76	6.73	6.73	6.88	6.88	6.91	6.91
Sulfate	mg/L	344	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Dissolved Solids	mg/L	1168	632	532	642	636	612	644	654	666	644	368	344	652	658
Appendix IV															
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.018	0.018	0.018	0.017	0.02	0.018	0.018	0.019	0.018	0.021	0.019	0.021	0.02
Barium	mg/L	2.0	0.147	0.146	0.144	0.145	0.146	0.142	0.144	0.143	0.147	0.15	0.146	0.167	0.165
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005^{UJ}	0.005^{J+}
Radium-226	pCi/L	-	0.273^{J-}	0.472^{J+}	0.358^{J-}	0.603^{J+}	0.545	0.618^{J}	1.520^{J}	0.325^{J+}	0.942^{J+}	0.542^{J-}	0.971^{J+}	0.396	0.443
Radium-228	pCi/L	-	0.000^{J-}	0.248^{J+}	0.757^{J+}	-0.419^{J}	0.479^{J}	0.573^{J}	0.630^{J}	0.925	0.383	0.0495^{J-}	0.835^{J+}	0.0525^{J-}	0.994^{J+}
Radium-226/228	pCi/L	5.00	0.273^{J-}	0.720^{J+}	1.11^{J+}	0.603^{J-}	1.020	1.190^{J}	2.150^{J}	1.25^{J+}	1.33^{J+}	0.591^{J-}	1.81^{J+}	0.449^{J-}	1.44^{J+}
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other															
Total Suspended Solids	mg/L	-	48	41	32	32	23	32	31	29	28	20	23	23	20
Bicarbonate	mg/L	-	-	-	-	-	610	595	593	600	610	620	630	600	620
Carbonate	mg/L	-	-	-	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	-	-	-	-	506	495	490	503	512	529	502	512	508
Magnesium	mg/L	-	-	-	39.0	37.8	40.80	39.4	39.1	38.8	38.3	39.8	39	40.8	39.6
Potassium	mg/L	-	-	-	1.47	1.45	1.38	1.3	1.32	1.31	1.3	1.38	1.34	1.55	1.52
Sodium	mg/L	-	-	-	40.4	39.6	39.70	37.5	38.8	38.9	37	38.7	37.8	39.7	38.5

	Sample Location:		MW-11						
	Sample Type:		Upgradient						
	Sample Date:		10/26/2022		2/9/2023		8/3/2023	1/31/2024	
Constituent	Unit	State Program GPS	Background Monitoring		Assessment Monitoring				
Field Parameters				Field Dup		Diss. Metals			Diss. Metals
pH	su	-	6.77	6.77	7.43	7.43	6.74	6.77	6.77
Conductivity	mS/cm	-	1.075	1.075	1.082	1.082	1.095	1.084	1.084
Turbidity	NTU	-	5.78	5.78	25.29	25.29	0.98	7.22	7.22
Dissolved Oxygen	mg/L	-	0.37	0.37	0.33	0.33	0.06	0	0
Temperature	°C	-	12.2	12.2	10.9	10.9	13.8	11.1	11.1
Oxidation Reduction Potential	mV	-	-99.1	-99.1	-191.1	-191.1	-97.1	-177.2	-177.2
Part 115									
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	19.8	20.6	15.5	0.44	24.3	25.1	0.03
Nickel	mg/L	0.1	0.007[J+]	<0.005[UJ]	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	0.018[J+]	0.006[J-]	<0.005	<0.005	0.007	<0.005	<0.005
Appendix III									
Boron	mg/L	0.50	0.21	0.21	0.21	0.20	0.20	0.19	0.19
Calcium	mg/L	188	138	139	140	132	140	138	129
Chloride	mg/L	250	62	62	59	-	62	68.0	-
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	-
pH, Field	su	-	6.77	6.77	7.43	7.43	6.74	6.77	6.77
Sulfate	mg/L	344	<5	<5	<5	-	<5	<5.0	-
Total Dissolved Solids	mg/L	1168	664	664	668	-	682	660	-
Appendix IV									
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.02	0.02	0.017	0.004	0.017	0.019	0.003
Barium	mg/L	2.0	0.158	0.154	0.151	0.105	0.170	0.181	0.116
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	-
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	0.005
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	0.006	0.006	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.981	0.59	0.194	-	1.58	0.528	-
Radium-228	pCi/L	-	1.53	1.18	0.824	-	1.58	0.161	-
Radium-226/228	pCi/L	5.00	2.51	1.77	1.02	-	3.16	0.689	-
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other									
Total Suspended Solids	mg/L	-	29	32	35	-	19.8	40.6	-
Bicarbonate	mg/L	-	601	604	645	-	630	680	-
Carbonate	mg/L	-	<10	<10	<10	-	<10	<50	-
Hardness	mg/L	-	512	518	509	-	538	524	-
Magnesium	mg/L	-	39.4	39.3	40.5	37.5	41.2	37.4	37.9
Potassium	mg/L	-	1.47	1.45	11.4	10.9	3.01	2.61	2.35
Sodium	mg/L	-	39.1	38.3	37.5	36.1	37.4	35.4	33.8

	Sample Location:		MW-11B									
	Sample Type:		Upgradient									
	Sample Date:		4/28/2022		6/2/2022		7/7/2022		8/11/2022		9/15/2022	
Constituent	Unit	State Program GPS	Background Monitoring									
Field Parameters				Field Dup		Field Dup		Field Dup		Field Dup		Field Dup
pH	su	-	7.95	7.95	7.28	7.28	7.15	7.15	7.37	7.37	7.33	7.33
Conductivity	mS/cm	-	0.538	0.538	0.544	0.544	0.537	0.537	0.527	0.527	0.535	0.535
Turbidity	NTU	-	1.12	1.12	8.03	8.03	8.02	8.02	6.15	6.15	4.14	4.14
Dissolved Oxygen	mg/L	-	11.68	11.68	0.35	0.35	0.22	0.22	0.24	0.24	0.07	0.07
Temperature	°C	-	12.3	12.3	13.7	13.7	14.6	14.6	13.4	13.4	13.2	13.2
Oxidation Reduction Potential	mV	-	228	228	-74.2	-74.2	-110.4	-110.4	-158.4	-158.4	-189.3	-189.4
Part 115												
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	3.04	0.10	0.11	0.96	0.98	2.59	2.66	3.04	3	2.48	2.44
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	0.011^{J+}	$<0.005^{UJ}$	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	0.042^{J+}	$<0.005^{UJ}$	<0.005	<0.005	<0.005	<0.005
Appendix III												
Boron	mg/L	3.52	0.62	0.63	0.65	0.66	0.69	0.71	0.77	0.75	0.73	0.72
Calcium	mg/L	69.6	64.6	63.9	63.8	65	66.1	66.1	66.6	65.6	64	64.7
Chloride	mg/L	250	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<1.0	<1.0
pH, Field	su	-	7.95	7.95	7.28	7.28	7.15	7.15	7.37	7.37	7.33	7.33
Sulfate	mg/L	250	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Dissolved Solids	mg/L	500	304	294	300	308	296	306	308	288	300	300
Appendix IV												
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.01	0.003	0.003	0.004	0.004	0.007	0.008	0.009	0.009	0.009	0.009
Barium	mg/L	2.0	0.081	0.08	0.07	0.072	0.07	0.071	0.068	0.069	0.068	0.069
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.051	0.03	0.03	0.02	0.02	0.024	0.025	0.025	0.024	0.026	0.028
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	0.01	0.01	0.007	0.007	0.007	0.006	0.006	0.006
Radium-226	pCi/L	-	1.010	1.440	1.72	1.79	0.638^{J+}	0.0501^{J-}	0.702	1.06	0.518	0.509
Radium-228	pCi/L	-	1.680	2.140	0.633	1.68	0.753^{J+}	0.445^{J-}	-1.33^{J-}	1.32^{J+}	0.773^{J+}	0.0951^{J}
Radium-226/228	pCi/L	5.00	2.690	3.590	2.35	3.47	1.39^{J+}	0.495^{J-}	0.702^{J-}	2.38^{J+}	1.29^{J+}	0.604^{J}
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other												
Total Suspended Solids	mg/L	-	1.7^{U}	2.7^{U}	<3	<3	3	4	$<3^{UJ}$	4^{J+}	5	5
Bicarbonate	mg/L	-	350	350	350	350	350	360	370	370	350	360
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	265	265	260	260	260	260	261	258	261	258
Magnesium	mg/L	-	24.30	24.80	23.30	23.10	24.6	24.3	24.3	24.2	23.4	23.7
Potassium	mg/L	-	6.07	6.12	6.08	6.07	6.28	6.24	6.4	6.31	5.98	6.24
Sodium	mg/L	-	13.50	13.70	17.60	17.20	17.9	17.9	17.7	17.3	16	16.2

	Sample Location:		MW-11B										
	Sample Type:		Upgradient										
	Sample Date:		10/20/2022		11/22/2022		12/27/2022		2/9/2023		8/3/2023	1/31/2024	
Constituent	Unit	State Program GPS	Background Monitoring						Assessment Monitoring				
Field Parameters				Field Dup		Field Dup		Field Dup		Field Dup			Field Dup
pH	su	-	7.29	7.29	7.10	7.10	7.16	7.16	7.35	7.35	7.18	7.26	7.26
Conductivity	mS/cm	-	0.535	0.535	0.532	0.532	0.515	0.515	0.522	0.522	0.527	0.530	0.530
Turbidity	NTU	-	5.15	5.15	6.15	6.15	8.45	8.45	7.12	7.12	0.45	2.02	2.02
Dissolved Oxygen	mg/L	-	0.03	0.03	0.12	0.12	0.09	0.09	0.23	0.23	0.20	0.04	0.04
Temperature	°C	-	11.4	11.4	11.8	11.8	11.4	11.4	11.9	11.9	17.0	10.8	10.8
Oxidation Reduction Potential	mV	-	-138.1	-138.1	-92.6	-92.6	-94.7	-94.7	-133.1	-133.1	-95.6	-181.1	-181.1
Part 115													
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	3.04	1.82	1.83	1.32	1.3	2.3	2.25	1.23	1.24	1.10	0.84	0.83
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.012^{J+}	<0.005UJ	<0.005	<0.005	<0.005
Appendix III													
Boron	mg/L	3.52	0.72	0.71	0.73	0.73	0.83	0.83	0.80	0.82	0.85	0.76	0.79
Calcium	mg/L	69.6	60.3	59.9	66.3	66.2	69.6	67	65.7	66	65.6	62.7	62.9
Chloride	mg/L	250	<5	<5	1.7^{U}	1.7^{U}	<5	<5	<5	<5	<5	2.1	2.1
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	0.16^{U}	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	7.29	7.29	7.10	7.10	7.16	7.16	7.35	7.35	7.18	7.26	7.26
Sulfate	mg/L	250	<5	<5	2.58^{U}	2.78^{U}	<5	<5	<5	<5	<5	4.0	4.0
Total Dissolved Solids	mg/L	500	304	314	294	268	294	268	292	294	298	296	304
Appendix IV													
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.01	0.008	0.008	0.007	0.007	0.008	0.007	0.006	0.006	0.006	0.005	0.005
Barium	mg/L	2.0	0.066	0.066	0.059	0.06	0.062	0.062	0.063	0.065	0.064	0.069	0.068
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.00	<1.0	<1.0	<1.0	0.16	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.051	0.026	0.025	0.029	0.027	0.029	0.028	0.031	0.031	0.032	0.030	0.033
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.633	0.527	0.919	1.07	0.926	0.773	1.46	1.39	1.43	1.32^{J+}	0.366^{J-}
Radium-228	pCi/L	-	1.33^{J}	2.60^{J+}	2.40^{J+}	0.745^{J-}	2.63J+	0.56J	0.131	0.583	3.26	0.581^{J-}	0.791^{J+}
Radium-226/228	pCi/L	5.00	1.96^{J}	3.13^{J+}	3.32^{J+}	1.81^{J-}	3.56J+	1.33J	1.59	1.97	4.70	1.90^{J+}	1.16^{J-}
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other													
Total Suspended Solids	mg/L	-	4	3	<3	<3	54^{J+}	32^{J-}	<3	<3	2.4	1.4	1.3
Bicarbonate	mg/L	-	360	360	360	360	371	372	378	377	370	356	381
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	261	260	260	260	265	268	264	262	258	268	269
Magnesium	mg/L	-	21.3	21.2	23.9	24.1	24.4	24.5	24.4	24.7	23.9	22.1	22.2
Potassium	mg/L	-	5.81	5.82	6.28	6.41	6.93	6.61	6.43	6.46	6.37	6.38	6.49
Sodium	mg/L	-	14.5	14.3	15.8	15.9	16.2	16	16.1	16.4	16.5	14.7	14.5

	Sample Location:		MW-12										
	Sample Type:		Upgradient										
	Sample Date:		2/23/2022		3/30/2022		5/4/2022		6/8/2022		7/13/2022		8/17/2022	
Constituent	Unit	State Program GPS	Background Monitoring										
Field Parameters				Diss. Metals		Diss. Metals		Diss. Metals		Diss. Metals		Diss. Metals		Diss. Metals
pH	su	-	7.22	7.22	6.81	6.81	7.26	7.26	7.24	7.24	7.02	7.02	7.24	7.24
Conductivity	mS/cm	-	0.75	0.75	1.648	1.648	1.734	1.734	1.797	1.797	1.686	1.686	1.586	1.586
Turbidity	NTU	-	65.25	65.25	44.12	44.12	16.45	16.45	31.26	31.26	30.26	30.26	45.15	45.15
Dissolved Oxygen	mg/L	-	5.45	5.45	3.95	3.95	3.34	3.34	5.25	5.25	3.20	3.20	4.64	4.64
Temperature	°C	-	8.40	8.40	8.5	8.5	12	12	15.4	15.4	16.8	16.8	16.9	16.9
Oxidation Reduction Potential	mV	-	-113.50	-113.50	188.2	188.2	-35	-35	140.2	140.2	14.2	14.2	-17.9	-17.9
Part 115														
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	3.83	<0.02	2.24	<0.02	2.05	0.03	1	<0.02	1.82	0.05	1.37	0.03
Nickel	mg/L	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.018	0.015	0.017	0.017	0.018	0.016
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	0.008	0.009	0.006	0.005	<0.005	<0.005	<0.005	0.007	<0.005	0.006	<0.005
Appendix III														
Boron	mg/L	0.50	0.05	0.05	0.09	0.09	0.08	0.08	0.1	0.1	0.07	0.07	0.07	0.07
Calcium	mg/L	188	185	188	157	147	149	143	149	144	147	143	157	148
Chloride	mg/L	250	90	-	94	-	90	-	82	-	83	-	83	-
Fluoride	mg/L	2.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-
pH, Field	su	-	7.22	7.22	6.81	6.81	7.26	7.26	7.24	7.24	7.02	7.02	7.24	7.24
Sulfate	mg/L	344	344	-	308	-	283	-	254	-	250	-	256	-
Total Dissolved Solids	mg/L	1168	1090	-	1110	-	1140	-	1080	-	1090	-	1050	-
Appendix IV														
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	0.003	<0.002	0.004	0.002	<0.002	<0.002	0.002	<0.002	0.002	<0.002
Barium	mg/L	2.0	0.069	0.059	0.074	0.068	0.07	0.064	0.064	0.064	0.067	0.06	0.064	0.06
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.02	0.018	0.021	0.018	0.023	0.021	0.025	0.022	0.022	0.019	0.019	0.018
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.013	0.011	0.024	0.024	0.023	0.024	0.019	0.018	0.017	0.017	0.014	0.014
Radium-226	pCi/L	-	0.252	-	0.783	-	1.23	-	1.9	-	0.394^{J+}	-	0.398	-
Radium-228	pCi/L	-	0.948	-	2.33	-	0.237	-	0.721	-	1.23	-	1.8	-
Radium-226/228	pCi/L	5.00	1.200	-	3.110	-	1.46	-	2.62	-	1.63^{J+}	-	2.2	-
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other														
Total Suspended Solids	mg/L	-	24	-	39	-	22	-	17	-	50	-	23	-
Bicarbonate	mg/L	-	-	-	-	-	650	-	695	-	670	-	620	-
Carbonate	mg/L	-	-	-	-	-	<10	-	<10	-	<10	-	<10	-
Hardness	mg/L	-	-	-	-	-	572	-	565	-	566	-	609	-
Magnesium	mg/L	-	-	-	58.80	56.40	56.40	52.80	56.2	54.5	56.2	55.7	58.8	57.6
Potassium	mg/L	-	-	-	3.93	3.87	3.73	3.55	3.91	3.95	3.3	3.13	3.33	3.1
Sodium	mg/L	-	-	-	168.00	169.00	193.00	189.00	199	195	171	167	145	138

	Sample Location:		MW-12									
	Sample Type:		Upgradient									
	Sample Date:		9/21/2022		10/26/2022		2/9/2023		8/3/2023		1/31/2024	
Constituent	Unit	State Program GPS	Background Monitoring				Assessment Monitoring					
Field Parameters				Diss. Metals		Diss. Metals		Diss. Metals		Diss. Metals		Diss. Metals
pH	su	-	7.38	7.38	7.05	7.05	7.13	7.13	7.10	7.10	6.92	6.92
Conductivity	mS/cm	-	1.600	1.600	1.387	1.387	1.391	1.391	1.457	1.457	1.392	1.392
Turbidity	NTU	-	46.25	46.25	26.20	26.20	17.01	17.01	10.32	10.32	16.45	16.45
Dissolved Oxygen	mg/L	-	1.95	1.96	3.57	3.57	2.95	2.95	3.41	3.41	2.15	2.15
Temperature	°C	-	15.9	15.9	11.8	11.8	11.5	11.5	16.0	16.0	8.5	8.5
Oxidation Reduction Potential	mV	-	15.2	15.2	155.8	155.8	-27.4	-27.4	122.7	122.7	-32.4	-32.4
Part 115												
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	1.25	<0.02	0.96	0.19	0.60	<0.02	0.74	<0.02	1.19	<0.02
Nickel	mg/L	0.1	0.018	0.017	0.018	0.015	0.017	0.016	0.015	0.015	0.014	0.014
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	0.008	0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005
Appendix III												
Boron	mg/L	0.50	0.08	0.08	0.08	0.08	0.07	0.07	0.06	0.06	0.07	0.06
Calcium	mg/L	188	154	148	156	136	143	141	156	151	158	152
Chloride	mg/L	250	80	-	78	-	71	-	70	-	69.2	-
Fluoride	mg/L	2.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-
pH, Field	su	-	7.38	7.38	7.05	7.05	7.13	7.13	7.10	7.10	6.92	6.92
Sulfate	mg/L	344	255	-	252	-	207	-	184	-	177	-
Total Dissolved Solids	mg/L	1168	1020	-	1020	-	948	-	928	-	916	-
Appendix IV												
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.002	<0.002	0.002	0.002	<0.002	<0.002	0.002	<0.002	0.003	<0.002
Barium	mg/L	2.0	0.064	0.058	0.057	0.052	0.058	0.054	0.052	0.049	0.052	0.049
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.022	0.019	0.021	0.018	0.027	0.023	0.020	0.020	0.019	0.016
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.015	0.014	0.013	0.012	0.011	0.011	0.007	0.007	0.006	0.006
Radium-226	pCi/L	-	0.739	-	0.628	-	0.836	-	0.663	-	0.475	-
Radium-228	pCi/L	-	-0.692	-	2.11	-	2.60	-	0.731[J+]	-	0.866	-
Radium-226/228	pCi/L	5.00	0.739	-	2.74	-	3.43	-	1.39	-	1.34	-
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other												
Total Suspended Solids	mg/L	-	43	-	16	-	9	-	8.4	-	12.0	-
Bicarbonate	mg/L	-	610	-	631	-	689	-	700	-	703	-
Carbonate	mg/L	-	<10	-	<10	-	<10	-	<10	-	<10	-
Hardness	mg/L	-	611	-	618	-	575	-	628	-	658	-
Magnesium	mg/L	-	58.6	57.5	59.9	53	56.8	55.6	64.2	60.0	60.1	56.4
Potassium	mg/L	-	3.65	3.54	3.71	3.04	3.01	3.02	2.74	2.65	2.67	2.52
Sodium	mg/L	-	145	138	139	123	136	130	109	101	94.4	88.9

	Sample Location:		MW-12B												
	Sample Type:		Upgradient												
	Sample Date:		3/8/2022		4/14/2022	5/19/2022		6/23/2022		7/28/2022		9/1/2022		10/6/2022	
Constituent	Unit	State Program GPS	Background Monitoring												
Field Parameters				Field Dupe			Field Dupe		Field Dupe		Field Dupe		Field Dupe		Field Dupe
pH	su	-	8.00	8.00	7.68	7.86	7.86	7.51	7.51	7.50	7.50	7.60	7.60	7.50	7.50
Conductivity	mS/cm	-	0.72	0.72	0.611	0.61	0.61	0.601	0.601	0.602	0.602	0.600	0.600	0.593	0.593
Turbidity	NTU	-	10.2	10.2	9.89	9.72	9.72	6.89	6.89	8.35	8.35	6.70	6.70	7.15	7.15
Dissolved Oxygen	mg/L	-	3.58	3.58	0.31	0.05	0.05	0.2	0.2	0.22	0.22	0.74	0.74	0.24	0.24
Temperature	°C	-	10.8	10.8	10.1	12	12	12.8	12.8	14	14	13.0	13.0	12.7	12.7
Oxidation Reduction Potential	mV	-	100.9	100.9	-80.1	-97.8	-97.8	-73.2	-73.2	-141.0	-141.0	-124.1	-124.1	-117.2	-117.2
Part 115															
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005^{UJ}	0.007^{J+}	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	3.04	0.34	0.36	0.24	0.33	0.33	0.3^{J}	0.28^{J}	0.29	0.3	0.37	0.37	0.41	0.34
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005^{UJ}	0.015^{J+}	<0.005	<0.005	<0.005	<0.005
Appendix III															
Boron	mg/L	3.52	3.25^{J}	3.2	3.16	3.34	3.30	3.32	3.38	3.37	3.37	3.52	3.35	3.22	3.3
Calcium	mg/L	69.6	23.7	24	24	21.5	21.7	26.1	25.5	25.7	25.4	26.2	26.2	26.2	25.9
Chloride	mg/L	250	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	8.00	8.00	7.68	7.86	7.86	7.51	7.51	7.50	7.50	7.60	7.60	7.50	7.50
Sulfate	mg/L	250	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total Dissolved Solids	mg/L	500	380	374	376	370	372	364	372	380	374	360	370	362	374
Appendix IV															
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Barium	mg/L	2.0	0.025	0.025	0.026	0.027	0.026	0.026	0.025	0.023	0.024	0.028	0.028	0.027	0.026
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.051	0.042	0.043	0.036	0.038	0.038	0.041	0.039	0.041	0.043	0.041	0.038	0.039	0.042
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	0.011^{J+}	0.005^{J-}	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.480^{J+}	0.302^{J-}	0.264	0.611	0.657	1.00^{J-}	1.89^{J+}	0.581^{J-}	2.17^{J+}	0.398	0.519	0.370^{J-}	0.615^{J+}
Radium-228	pCi/L	-	0.275^{J-}	1.03^{J+}	0.116	0.421^{J-}	1.10^{J+}	0.209^{J-}	1.47^{J+}	-0.356^{J+}	-1.12^{J}	-0.204^{J-}	1.34^{J+}	1.26^{J+}	0.165^{J-}
Radium-226/228	pCi/L	5.00	0.755^{J-}	1.33^{J+}	0.38	1.03^{J-}	1.76^{J+}	1.21^{J-}	3.37^{J+}	0.581^{J}	2.17^{J+}	0.398^{J-}	1.86^{J+}	1.63^{J+}	0.779^{J-}
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other															
Total Suspended Solids	mg/L	-	28	31	3^{U}	7	7	5	<3	<3	<3	<3^{UJ}	3^{J+}	1^{U}	<3
Bicarbonate	mg/L	-	390	400	410	410	420	400	390	410	420	400	400	400	400
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	96	83	99	93	96	94	97	90	90	91	95	100	90
Magnesium	mg/L	-	7.5	7.36	8.12	6.63	6.68	8.31	8.14	8.22	8.02	8.33	8.65	8.39	8.33
Potassium	mg/L	-	8.99	8.61	8.26	6.93	7.07	8.27	8.15	8.28	8.07	8.18	8.36	8.32	8.14
Sodium	mg/L	-	116	117	109	90.9	92.4	111	107	107	107	113	115	112	109

	Sample Location:		MW-12B					
	Sample Type:		Upgradient					
	Sample Date:		11/10/2022		2/9/2023	8/3/2023		1/31/2024
Constituent	Unit	State Program GPS	Background Monitoring		Assessment Monitoring			
Field Parameters				Field Dupe			Field Dup	
pH	su	-	7.61	7.61	7.71	7.52	7.52	7.59
Conductivity	mS/cm	-	0.591	0.591	0.587	0.582	0.582	0.59
Turbidity	NTU	-	6.35	6.35	8.18	2.25	2.25	1.99
Dissolved Oxygen	mg/L	-	0.18	0.18	0.29	0.13	0.13	0.04
Temperature	°C	-	13.1	13.1	10.9	15.1	15.1	9.8
Oxidation Reduction Potential	mV	-	-100.3	-100.3	-107.5	-113.5	-113.5	-193.1
Part 115								
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	3.04	0.31	0.30	0.22	0.26	0.25	0.20
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III								
Boron	mg/L	3.52	3.35	3.19	3.33	3.33	3.38	3.29
Calcium	mg/L	69.6	25.7	26.2	26.3	25.8	25.9	26.3
Chloride	mg/L	250	<5	<5	<5	<5	<5	2.0
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.4
pH, Field	su	-	7.61	7.61	7.71	7.52	7.52	7.59
Sulfate	mg/L	250	<5	<5	<5	<5	<5	0.8
Total Dissolved Solids	mg/L	500	358	356	356	364	362	366
Appendix IV								
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Barium	mg/L	2.0	0.025	0.025	0.025	0.025	0.025	0.025
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.00	<1.0	<1.0	<1.0	<1.0	<1.0	0.4
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.051	0.04	0.037	0.043	0.040	0.041	0.041
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.608	0.619	0.831	1.13J-	0.880J+	0.458
Radium-228	pCi/L	-	0.638	0.282	3.31	0.848J-	2.68J+	0.845
Radium-226/228	pCi/L	5.00	1.25	0.901	4.14	1.98J-	3.56J+	1.30
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other								
Total Suspended Solids	mg/L	-	<3	<3	<3	1.1	1.2	<3
Bicarbonate	mg/L	-	390	390	417	360	390	424
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	96	96	98	92	110	653
Magnesium	mg/L	-	8.2	8.15	8.61	8.48	8.52	8.01
Potassium	mg/L	-	8.19	8.15	7.88	8.19	8.15	8.19
Sodium	mg/L	-	109	110	112	117	114	106

		Sample Location:	MW-13											
		Sample Type:	Downgradient											
		Sample Date:	2/23/2022	3/30/2022	5/4/2022	5/4/2022	6/8/2022	7/13/2022	8/17/2022	9/21/2022	10/26/2022	2/8/2023	8/2/2023	1/30/2024
Constituent	Unit	State Program GPS	Background Monitoring									Assessment Monitoring		
Field Parameters						Field Dupe								
pH	su	-	6.91	6.75	7.01	7.01	7.07	7.06	7.22	7.25	7.11	7.04	6.39	6.98
Conductivity	mS/cm	-	0.78	0.73	0.549	0.549	0.585	0.661	0.595	0.635	0.624	0.672	0.777	0.887
Turbidity	NTU	-	7.11	7.90	4.15	4.15	6.50	1.79	3.55	4.24	3.75	6.01	0.3	5.73
Dissolved Oxygen	mg/L	-	1.31	2.61	6.23	6.23	5.42	6.21	4.94	3.83	2.39	0.65	4.69	0.13
Temperature	°C	-	5.8	6.9	8.5	8.5	12.2	14.5	17.5	17.4	13.8	8.4	16.1	6.3
Oxidation Reduction Potential	mV	-	163.0	151.8	96.4	96.4	101.6	66.9	89.1	84.8	216.8	61.2	-48.6	-159.2
Part 115														
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	0.04	0.02	<0.02	0.02	0.08	0.03	0.02	0.03	0.04	0.06	0.16	1.03
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III														
Boron	mg/L	0.50	0.16	0.14	0.14	0.14	0.18	0.18	0.17	0.20	0.22	0.18	0.17	0.15
Calcium	mg/L	188	138	128.00	95.80	97.60	96.1	107	94.1	100	101	132	124	157
Chloride	mg/L	250	<5	<5	9.00	9.00	13	16	16	20	32	43	45	25.3
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	6.91	6.75	7.01	7.01	7.07	7.06	7.22	7.25	7.11	7.04	6.39	6.98
Sulfate	mg/L	344	32	45	16	16	17	55	33	30	22	37	87	122
Total Dissolved Solids	mg/L	1168	478	430	336	342	354	396	380	384	386	476	492	638
Appendix IV														
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.004	0.008
Barium	mg/L	2.0	0.030	0.03	0.02	0.02	0.023	0.027	0.029	0.027	0.028	0.028	0.034	0.038
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.300	0.755	0.322[J+]	0.149[J-]	0.657	0.291[J+]	0.402	0.286	0.392	0.000	0.070	0.937
Radium-228	pCi/L	-	-0.842	1.320	0.0544[J]	0.893[J+]	1.66	1.35	0.00710	-0.0026	0.291	0.188	-0.6698	1.05
Radium-226/228	pCi/L	5.00	0.300	2.080	0.376[J-]	1.04[J+]	2.31	1.64[J+]	0.410	0.286	0.683	0.188	0.070	1.99
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other														
Total Suspended Solids	mg/L	-	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Bicarbonate	mg/L	-	-	-	340	330	349	330	320	340	351	437	330	496
Carbonate	mg/L	-	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	-	-	309	308	310	353	312	333	358	444	428	550
Magnesium	mg/L	-	-	26.30	19.70	20.10	20.7	23.1	20.6	21.9	23.0	29.0	26.9	35.9
Potassium	mg/L	-	-	0.75	0.69	0.70	0.83	0.779	0.78	0.82	0.81	0.76	0.94	1.00
Sodium	mg/L	-	-	3.05	2.45	2.51	2.59	5.59	4.60	5.70	4.99	4.68	8.34	13.2

		Sample Location:	MW-14											
		Sample Type:	Downgradient											
		Sample Date:	1/12/2023		2/17/2023		3/24/2023		4/28/2023		6/2/2023		7/7/2023	
Constituent	Unit	State Program GPS	Background Monitoring											
Field Parameters				Field Dup		Field Dup		Field Dup		Field Dup		Field Dup		Field Dup
pH	su	-	7.04	7.04	7.11	7.11	6.98	6.98	7.13	7.13	7.00	7.00	7.06	7.06
Conductivity	mS/cm	-	1.27	1.27	1.091	1.091	1.295	1.295	1.323	1.323	1.307	1.307	1.285	1.285
Turbidity	NTU	-	6.31	6.31	5.34	5.34	3.95	3.95	4.05	4.05	5.42	5.42	3.24	3.24
Dissolved Oxygen	mg/L	-	0.45	0.45	0.39	0.39	0.07	0.07	0.09	0.09	0.21	0.21	0.06	0.06
Temperature	°C	-	10.9	10.9	10.1	10.1	10.5	10.5	10.3	10.3	13.3	13.3	13.7	13.7
Oxidation Reduction Potential	mV	-	-105.6	-105.6	-89.4	-89.4	-104.3	-104.3	-124.8	-124.8	-114.2	-114.2	-96.5	-96.5
Part 115														
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	6.58	6.78	9.46	9.35	10.2	10.4	11.2	11.2[J]	11.5	11.8	11.4	11.5[J]
Nickel	mg/L	0.1	0.006	0.007	0.005[J+]	<0.005[UJ]	<0.005UJ	0.005J+	<0.005	<0.005	<0.005	<0.005	<0.005[UJ]	0.005[J+]
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005[UJ]	0.005[J+]
Zinc	mg/L	5	<0.005[UJ]	0.007J+	<0.005	<0.005	<0.005UJ	0.013J+	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III														
Boron	mg/L	0.50	2.29	2.32	2.23	2.20	2.11	2.20	2.03	2.06	2.06	2.02	2.16	2.14
Calcium	mg/L	188	147	149	144	144	144	148	143	140[J]	141	141	148	148
Chloride	mg/L	250	108	109	111	112	114	114	115	115	114	114	113	114
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	7.04	7.04	7.11	7.11	6.98	6.98	7.13	7.13	7.00	7.00	7.06	7.06
Sulfate	mg/L	344	30	30	22	21	748	748	17	16	19	19	20	19
Total Dissolved Solids	mg/L	1168	774	768	732	716	<0.005	<0.005	796	782	792	784	784	774
Appendix IV														
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.004	0.004	0.006	0.005	0.005	0.006	0.006	0.005	0.005	0.006	0.007	0.008
Barium	mg/L	2.0	0.177	0.122	0.119	0.116	0.128	0.126	0.120	0.119	0.126	0.128	0.134	0.131
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.125	0.132	0.122	0.126	0.113	0.113	0.111	0.111	0.106	0.106	0.108	0.106
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.012	0.013	0.015	0.014	0.014	0.014	0.013	0.012	0.014	0.015	0.016	0.016
Radium-226	pCi/L	-	0.907	0.322	0.396	0.363	0.964[J+]	0.321[J-]	0.260[J-]	1.27[J+]	0.275	0.271	0.388	0.244
Radium-228	pCi/L	-	3.53	3.07	0.272[J-]	1.07[J+]	0.853	1.10	1.20[J+]	0.807[J+]	0.601[J-]	0.983[J+]	0.0761[J-]	0.915[J+]
Radium-226/228	pCi/L	5.00	4.44	3.39	0.668[J-]	1.43[J+]	1.82	1.41	1.46[J]	2.08[J+]	0.876[J-]	1.25[J+]	0.464[J-]	1.16[J+]
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.009	0.009	0.013	0.012
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other														
Total Suspended Solids	mg/L	-	16	16	4[J-]	7[J+]	22.2	22.0	23.4	24.3	26.0	26.0	24.8	26.3
Bicarbonate	mg/L	-	600	610	601	606	650	650	660	670	630	630	640	650
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	556	554	498	506	536	548	566	562	540	550	536	548
Magnesium	mg/L	-	42.3	42.2	41.3	41.2	40.3	42.1	39.7	38.5	40.0	39.5	41.9	41.0
Potassium	mg/L	-	4.79	4.76	5.82	5.81	4.72	4.82	4.55	4.43	4.65	4.72	5.03	5.08
Sodium	mg/L	-	79.2	80.4	78.3	77.9	75.8	77.3	72.5	70.9	73.7	73.9	79.0	77.0

		Sample Location:	MW-14				
		Sample Type:	Downgradient				
		Sample Date:	8/11/2023		9/15/2023		1/31/2024
Constituent	Unit	State Program GPS	Background Monitoring				Assessment Monitoring
Field Parameters				Field Dup		Field Dup	
pH	su	-	6.95	6.95	6.92	6.92	6.95
Conductivity	mS/cm	-	1.285	1.285	1.277	1.277	1.358
Turbidity	NTU	-	3.10	3.1	6.35	6.35	1.74
Dissolved Oxygen	mg/L	-	0.02	0.02	0.00	0	0.18
Temperature	°C	-	14.1	14.1	13.5	13.5	10.6
Oxidation Reduction Potential	mV	-	-116.2	-116.2	-127.9	-127.9	-175.1
Part 115							
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	12.9	12.7	11.9	11.7	14.7
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	0.024
Appendix III							
Boron	mg/L	0.50	2.14	2.10	2.17	2.13	2.22
Calcium	mg/L	188	147	149	154	155	161
Chloride	mg/L	250	118	118	111	110	119
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	6.95	6.95	6.92	6.92	6.95
Sulfate	mg/L	344	16	16	16	16	8.5
Total Dissolved Solids	mg/L	1168	804	804	808	824	818
Appendix IV							
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.007	0.007	0.008	0.007	0.008
Barium	mg/L	2.0	0.122	0.124	0.132	0.138	0.131
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.111	0.109	0.109	0.112	0.109
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.013	0.014	0.014	0.014	0.012
Radium-226	pCi/L	-	0.624	0.465	0.442[J]	1.06[J+]	0.160
Radium-228	pCi/L	-	0.326[J+]	0.147[J-]	0.497[J]	0.821[J+]	0.833
Radium-226/228	pCi/L	5.00	0.951[J+]	0.612[J-]	0.939[J]	1.88[J+]	0.994
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other							
Total Suspended Solids	mg/L	-	25.9	26.6	24.8	25.4	27.6
Bicarbonate	mg/L	-	690	680	670	660	850
Carbonate	mg/L	-	<10	<10	<10	<10	<50
Hardness	mg/L	-	588	630	574	584	610
Magnesium	mg/L	-	42.2	42.1	42.1	43.8	44.1
Potassium	mg/L	-	4.96	5.07	5.43	5.58	5.71
Sodium	mg/L	-	77.8	78.3	79.4	80.4	77.4

		Sample Location:	MW-15								
		Sample Type:	Downgradient								
		Sample Date:	1/12/2023	2/17/23	3/24/23	4/28/2023	6/2/2023	7/7/2023	8/11/2023	9/15/2023	1/31/2024
Constituent	Unit	State Program GPS	Background Monitoring								Assessment Monitoring
Field Parameters											
pH	su	-	6.86	6.98	6.90	6.99	6.84	6.83	6.70	6.69	6.70
Conductivity	mS/cm	-	1.319	0.872	0.912	0.851	0.879	0.945	1.007	1.021	0.451
Turbidity	NTU	-	2.4	5.15	4.15	4.84	6.51	5.75	3.33	5.64	7.52
Dissolved Oxygen	mg/L	-	5.41	4.81	3.72	2.48	0.89	0.38	0.87	0.67	0.22
Temperature	°C	-	7.9	7.5	7.3	8.4	13.0	13.3	14.5	14.6	8.1
Oxidation Reduction Potential	mV	-	195.6	153.9	59.8	133.9	113.8	11.3	30.8	44.2	-153.9
Part 115											
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	<0.02	0.04	0.02	0.03	0.11	0.11	0.05	0.14	0.12
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	0.021	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III											
Boron	mg/L	0.50	0.37	0.34	0.33	0.34	0.35	0.40	0.41	0.44	0.39
Calcium	mg/L	188	183	140	119	104	115	133	140	145	131
Chloride	mg/L	250	100	84	72	60	59	65	73	78	69.3
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
pH, Field	su	-	6.86	6.98	6.90	6.99	6.84	6.83	6.70	6.69	6.70
Sulfate	mg/L	344	238	135	124	109	109	117	117	109	95.0
Total Dissolved Solids	mg/L	1168	878	606	690	528	578	638	670	680	604
Appendix IV											
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002
Barium	mg/L	2.0	0.077	0.050	0.047	0.042	0.049	0.061	0.067	0.069	0.055
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.014	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.629	0.334	0.868	0.464	0.876	0.525	0.750	0.491	0.310
Radium-228	pCi/L	-	1.43	-0.367	-0.188	1.51[J+]	-0.108	-0.119	0.470	1.46	0.00555
Radium-226/228	pCi/L	5.00	2.06	0.334	0.868	1.97[J+]	0.876	0.525	1.22	1.95	0.316
Selenium	mg/L	0.050	0.01	0.026	0.034	0.021	0.011	0.009	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other											
Total Suspended Solids	mg/L	-	<3	<3	<3	<3	1.8	1.6	<3	<3	<3
Bicarbonate	mg/L	-	410	354	330	330	350	380	430	440	433
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	464	473	426	406	420	460	512	506	484
Magnesium	mg/L	-	47.2	35.1	31.1	25.7	28.9	32.2	34.2	34.2	31.6
Potassium	mg/L	-	0.61	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Sodium	mg/L	-	40.5	30.3	29.5	28.3	27.4	28.5	29.7	38.8	30.4

	Sample Location:		MW-16A											
	Sample Type:		Downgradient											
	Sample Date:		2/2/2023		3/21/2023		4/25/2023		5/30/2023		7/5/2023		8/8/2023	
Constituent	Unit	State Program GPS	Background Monitoring											
Field Parameters				Field Dup		Field Dup		Field Dup		Field Dup		Field Dup		Field Dup
pH	su	-	6.95	6.95	6.91	6.91	7.00	7.00	6.72	6.72	6.79	6.79	6.84	6.84
Conductivity	mS/cm	-	2.219	2.219	1.871	1.871	1.948	1.948	1.875	1.875	2.163	2.163	2.271	2.271
Turbidity	NTU	-	3.06	3.06	4.15	4.15	6.54	6.54	4.01	4.01	6.18	6.18	3.81	3.81
Dissolved Oxygen	mg/L	-	0.22	0.22	0.20	0.20	0.10	0.10	0.05	0.05	0.43	0.43	0.07	0.07
Temperature	°C	-	7.3	7.3	8.6	8.6	8.3	8.3	12.5	12.5	15.6	15.6	16.5	16.5
Oxidation Reduction Potential	mV	-	-51.0	-51.0	-48.6	-48.6	-65.2	-65.2	-49.9	-49.9	-102.3	-102.3	-67.3	-67.3
Part 115														
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	3.71	3.70	3.15	3.14	2.96	2.99	2.59	2.52	2.69	2.72	2.63	2.54
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III														
Boron	mg/L	0.50	0.21	0.21	0.11	0.11	0.10	0.10	0.10	0.11	0.11	0.11	0.16	0.17
Calcium	mg/L	188	179	176	147	150	145	148	172	171	173	174	172	167
Chloride	mg/L	250	383	383	405	411	391	397	401	400	436	439	423	442
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0
pH, Field	su	-	6.95	6.95	6.91	6.91	7.00	7.00	6.72	6.72	6.79	6.79	6.84	6.84
Sulfate	mg/L	344	145	146	86	85	92	92	132	132	151	154	131	130
Total Dissolved Solids	mg/L	1168	1360	1350	1180	1180	1170	1170	1260	1270	1370	1340	1390	1390
Appendix IV														
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.003	0.004	0.003	0.003	0.003	0.003	0.002	0.002	0.003	0.004	0.004	0.004
Barium	mg/L	2.0	0.160	0.156	0.118	0.119	0.108	0.111	0.126	0.121	0.136	0.138	0.132	0.135
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.005^{J+}	<0.005^{UJ}	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.385	0.325	0.510^{J-}	1.22^{J+}	0.781	0.721	0.585^{J+}	0.261^{J-}	6.13^{J+}	1.17^{J-}	0.232^{J-}	1.18^{J+}
Radium-228	pCi/L	-	0.178^{J+}	-0.723^{J-}	0.698	0.907	1.59^{J+}	-2.75^{J}	-0.313^{J-}	4.94^{J+}	1.33^{J+}	-0.181^{UJ}	0.945	1.01
Radium-226/228	pCi/L	5.00	0.562^{J}	0.325^{J}	1.21^{J-}	2.13^{J+}	2.37^{J+}	0.721^{J}	0.585^{J-}	5.20^{J+}	7.46^{J+}	1.17^{J-}	1.18^{J-}	2.19^{J+}
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other														
Total Suspended Solids	mg/L	-	7	7	<3	<3	2.0	1.6	5.7	5.2	2.5^{J}	2.0^{J}	2.1^{J+}	1.2^{J-}
Bicarbonate	mg/L	-	610	620	460	470	420	420	440	430	460	470	510	500
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	608	605	524	522	526	519	570	576	598	600	578	568
Magnesium	mg/L	-	42.4	42.3	33.9	34.1	33.2	34.4	37.2	36.6	39.9	38.5	38.5	38.7
Potassium	mg/L	-	2.12	2.06	1.58	1.58	1.34	1.45	1.16	1.04	1.24	1.23	1.25	1.21
Sodium	mg/L	-	276	281	244	247	229	243	241	240	253	258	279	262

	Sample Location:		MW-16A						
	Sample Type:		Downgradient						
	Sample Date:		9/12/2023		10/17/2023		11/21/2023		2/1/2024
Constituent	Unit	State Program GPS	Background Monitoring						Assessment Monitoring
Field Parameters				Field Dup		Field Dup		Field Dup	
pH	su	-	6.76	6.76	6.78	6.78	6.82	6.82	6.99
Conductivity	mS/cm	-	2.579	2.579	2.599	2.599	2.44	2.44	2.606
Turbidity	NTU	-	5.28	5.28	6.41	6.41	4.39	4.39	5.41
Dissolved Oxygen	mg/L	-	0.34	0.34	0.01	0.01	0.01	0.01	0.12
Temperature	°C	-	16.8	16.8	15.8	15.8	13.6	13.6	9.2
Oxidation Reduction Potential	mV	-	-59.8	-59.8	-3.1	-3.1	-43.9	-43.9	-42.4
Part 115									
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	4.13	4.11	3.78	3.81	3.08	3.04	4.38
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III									
Boron	mg/L	0.50	0.23	0.22	0.21	0.21	0.19	0.20	0.16
Calcium	mg/L	188	220	219	226	226	210	211	208
Chloride	mg/L	250	484	493	505	505	459	455	448
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
pH, Field	su	-	6.76	6.76	6.78	6.78	6.82	6.82	6.99
Sulfate	mg/L	344	239	250	257	257	264	257	341
Total Dissolved Solids	mg/L	1168	1640	1630	1720	1730	1580	1590	1590
Appendix IV									
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.003	0.004	0.004	0.004	0.004	0.003	0.005
Barium	mg/L	2.0	0.178	0.172	0.177	0.181	0.163	0.166	0.158
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.421[J-]	1.06[J+]	0.892	0.682	2.26	1.78	1.63
Radium-228	pCi/L	-	0.285[J-]	1.05[J+]	2.26	2.85	0.548[J-]	1.23[J+]	2.12
Radium-226/228	pCi/L	5.00	0.705[J-]	2.10[J+]	3.15	3.53	2.80	3.01	3.74
Selenium	mg/L	0.050	0.005[J+]	<0.005[UJ]	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other									
Total Suspended Solids	mg/L	-	3.5	3.9	4.5	4.5	1.2[J+]	<3[UJ]	6.5
Bicarbonate	mg/L	-	520	520	520	510	510	510	588
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<50
Hardness	mg/L	-	840	860	732	724	754	766	756
Magnesium	mg/L	-	52.2	52.2	51.1	51.7	52.4	52.1	46.9
Potassium	mg/L	-	1.40	1.44	1.45	1.40	1.49	1.49	1.57
Sodium	mg/L	-	307	308	324	322	312	294	277

	Sample Location:		MW-16B										
	Sample Type:		Downgradient										
	Sample Date:		2/2/2023	3/21/2023	4/25/2023	5/30/2023	7/5/2023	8/8/2023	9/12/2023	10/17/2023	11/21/2023	2/1/2024	
Constituent	Unit	State Program GPS	Background Monitoring									Assessment Monitoring	
Field Parameters													Field Dup
pH	su	-	7.49	7.45	7.50	7.25	7.34	7.42	7.32	7.46	7.47	7.56	7.56
Conductivity	mS/cm	-	0.623	0.587	0.619	0.578	0.613	0.635	0.590	0.634	0.625	0.615	0.615
Turbidity	NTU	-	7.42	5.65	6.29	3.94	4.41	4.32	0.44	1.32	6.34	6.45	6.45
Dissolved Oxygen	mg/L	-	0.18	0.12	0.11	0.09	0.37	0.05	0.00	0.01	0.00	0.08	0.08
Temperature	°C	-	9.2	12.0	11.1	14.4	15.8	15.6	14.5	13.6	13	11.8	11.8
Oxidation Reduction Potential	mV	-	-125.7	-107.0	-102.1	-104.2	-130.4	-101.2	-136.1	-63.3	-127.7	-88.2	-88.2
Part 115													
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	0.93	0.62	0.51	0.67	0.43	0.42	0.41	0.45	0.39	0.33	0.32
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III													
Boron	mg/L	0.50	0.12	0.13	0.12	0.13	0.11	0.12	0.11	0.11	0.12	0.11	0.12
Calcium	mg/L	188	74.5	76.9	78.4	79.5	80.8	81.7	80.2	85.4	83.9	81.8	79.9
Chloride	mg/L	250	<5	11	5	<5	<5	3.7	<5	<5	3.1	4.1	4.0
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.31	<1.0	<1.0	0.58	0.7	0.7
pH, Field	su	-	7.49	7.45	7.50	7.25	7.34	7.42	7.32	7.46	7.46	7.56	7.56
Sulfate	mg/L	344	18	16	16	15	17	17	18	18	17.8	17.4	17.4
Total Dissolved Solids	mg/L	1168	366	366	350	358	366	366	366	378	370	364	366
Appendix IV													
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Barium	mg/L	2.0	0.09	0.085	0.085	0.082	0.089	0.085	0.086	0.089	0.091	0.089	0.087
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.31	<1.0	<1.0	<1.0	0.7	0.7
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.023	0.023	0.022	0.022	0.019	0.022	0.021	0.020	0.021	0.020	0.021
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.008	0.006	0.006	0.005	0.006	0.006	0.006	0.007	0.006	0.006	0.006
Radium-226	pCi/L	-	0.997	0.761	0.490	0.160	3.03	0.391	1.31	1.56	0.804	1.32^{J+}	0.608^{J-}
Radium-228	pCi/L	-	0.829	1.79	1.30^{J+}	1.81	1.07	0.644	1.09	4.87	0.831	0.767^{J+}	0.495^{J-}
Radium-226/228	pCi/L	5.00	1.83	2.56	1.79^{J+}	1.97	4.09	1.04	2.40	6.43	1.63	2.09^{J+}	1.10^{J-}
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other													
Total Suspended Solids	mg/L	-	7	<3	1.4	2.4	1.0	<3	<3	<3	<3	1.0	<3
Bicarbonate	mg/L	-	390	400	400	420	410	410	400	400	400	414	422
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	322	329	335	324	334	344	380	348	355	358	377
Magnesium	mg/L	-	29.7	32.7	33.3	32.6	35.6	35.0	33.4	34.5	36.4	32.4	32.1
Potassium	mg/L	-	3.81	3.17	3.00	2.89	2.97	2.91	2.86	2.80	3.02	2.90	2.90
Sodium	mg/L	-	24.5	15.5	12.6	12.2	11.1	11.1	10.6	11.1	11.0	10.3	10.3

	Sample Location:		MW-16C									
	Sample Type:		Downgradient									
	Sample Date:		2/2/2023	3/21/2023	4/25/2023	5/30/2023	7/5/2023	8/8/2023	9/12/2023	10/17/2023	11/21/2023	2/1/2024
Constituent	Unit	State Program GPS	Background Monitoring									Assessment Monitoring
Field Parameters												
pH	su	-	7.44	7.46	7.41	7.17	7.18	7.25	7.25	7.36	7.36	7.46
Conductivity	mS/cm	-	0.601	0.575	0.585	0.529	0.580	0.590	0.562	0.592	0.586	0.565
Turbidity	NTU	-	34.25	7.24	6.41	2.58	1.81	0.45	1.02	4.01	6.01	6.15
Dissolved Oxygen	mg/L	-	0.10	0.17	0.12	0.02	0.36	0.04	0.00	0.00	0.00	0.07
Temperature	°C	-	9.9	11.9	11.0	14.2	1.1	14.8	14.3	13.7	13.2	11.6
Oxidation Reduction Potential	mV	-	-62.2	-103.8	-97.3	-89.0	-126.5	-108.1	-139.6	-92.6	-145.6	-93.4
Part 115												
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	3.04	0.76	1.10	0.64	0.61	0.51	0.48	0.48	0.47	0.45	0.46
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III												
Boron	mg/L	3.52	0.40	0.40	0.39	0.40	0.39	0.41	0.40	0.40	0.43	0.42
Calcium	mg/L	69.6	63.2	62.1	66.5	70.5	73.4	73.9	71.7	77.1	76.8	72.6
Chloride	mg/L	250	8	<5	<5	<5	<5	2.5	<5	<5	2.2	2.3
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	0.20	0.2
pH, Field	su	-	7.44	7.46	7.41	7.17	7.18	7.25	7.25	7.36	7.36	7.46
Sulfate	mg/L	250	19	8	7	7	8	7.2	8	8	7.90	7.5
Total Dissolved Solids	mg/L	500	418	370	330	344	320	322	334	332	340	328
Appendix IV												
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.01	0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003
Barium	mg/L	2.0	0.051	0.061	0.050	0.041	0.035	0.032	0.033	0.031	0.030	0.031
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.00	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	0.20	0.2
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.051	0.030	0.026	0.027	0.026	0.026	0.029	0.027	0.026	0.029	0.029
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.007	0.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.230	0.509	0.478	0.255	1.14	0.450	0.30	0.101	0.821	1.46
Radium-228	pCi/L	-	0.0142	3.09	-0.309[J+]	-0.804	1.39	1.14	0.492	2.16	0.480	0.845
Radium-226/228	pCi/L	5.00	0.244	3.60	0.478[J+]	0.225	2.52	1.59	0.796	2.26	1.30	2.30
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other												
Total Suspended Solids	mg/L	-	40	11.6	1.6	5.8	1.2	<3	1.1	1.4	<3	<3
Bicarbonate	mg/L	-	370	400	400	470	410	400	400	410	390	414
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	263	253	272	292	293	298	310	304	318	305
Magnesium	mg/L	-	24.4	25.6	27.3	27.0	29.9	31.1	29.9	30.5	31.4	27.9
Potassium	mg/L	-	3.72	3.56	3.97	4.08	4.86	4.65	4.93	4.75	5.11	4.93
Sodium	mg/L	-	39.4	41.4	28.5	25.4	17.2	15.6	15.7	15.7	15.7	15.8

	Sample Location:		MW-16D									
	Sample Type:		Downgradient									
	Sample Date:		2/2/2023	3/21/2023	4/25/2023	5/30/2023	7/5/2023	8/8/2023	9/12/2023	10/17/2023	11/21/2023	2/1/2024
Constituent	Unit	State Program GPS	Background Monitoring									Assessment Monitoring
Field Parameters												
pH	su	-	7.67	7.56	7.73	7.44	7.52	7.53	7.47	7.49	7.45	7.83
Conductivity	mS/cm	-	0.582	0.596	0.620	0.638	0.624	0.614	0.588	0.612	0.601	0.614
Turbidity	NTU	-	8.31	7.31	4.95	7.05	4.32	5.12	7.02	7.95	6.01	6.85
Dissolved Oxygen	mg/L	-	4.82	0.39	0.38	0.28	0.28	0.07	0.19	0.17	0.08	0.06
Temperature	°C	-	8.6	8.4	3.9	19.6	22.5	19.0	15.2	12.5	11.2	9.8
Oxidation Reduction Potential	mV	-	44.3	85.9	-44.2	-3.5	-106.7	-101.2	-141.5	-103.6	-122.4	-200.1
Part 115												
Copper	mg/L	1.00	0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	3.04	0.16	0.06	0.08	0.38	0.25	0.28	0.34	0.45	0.28	0.48
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	0.11	0.271	0.183	0.036	0.025	0.011	0.008	0.023	0.014	0.008
Appendix III												
Boron	mg/L	3.52	4.65	4.59	4.59	4.70	4.39	4.70	4.69	4.62	4.85	5.01
Calcium	mg/L	69.6	29.3	29.0	28.9	28.9	28.5	29.3	29.4	30.5	30.0	29.3
Chloride	mg/L	250	6	7	8	8	8	6.8	7	7	7.25	7.6
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	0.36	0.4
pH, Field	su	-	7.67	7.56	7.73	7.44	7.52	7.53	7.47	7.49	7.49	7.83
Sulfate	mg/L	250	<5	9	13	7	7	6.2	6	5	4.47	4.2
Total Dissolved Solids	mg/L	500	366	364	380	396	374	376	376	380	372	380
Appendix IV												
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.01	<0.002	<0.002	0.004	0.003	0.003	0.004	<0.002	0.004	0.003	0.004
Barium	mg/L	2.0	0.037	0.036	0.038	0.037	0.036	0.034	0.036	0.035	0.035	0.035
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.00	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	0.36	0.4
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.051	0.039	0.032	0.022	0.026	0.028	0.030	0.030	0.030	0.031	0.028
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.005	0.011	0.012	0.010	0.011	0.011	0.010	0.011	0.010	0.010
Radium-226	pCi/L	-	0.591	0.763	2.21	0.515	1.21	0.542[J+]	0.461	0.593	0.500	0.569
Radium-228	pCi/L	-	1.84	0.757	1.93[J+]	-0.743	0.128	0.276	0.773	2.25	1.34	0.243
Radium-226/228	pCi/L	5.00	2.43	1.52	4.14[J+]	0.515	1.33	0.818	1.23	2.85	1.84	0.812
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other												
Total Suspended Solids	mg/L	-	5	3.80	2.0	14.0	6.4	12.4	7.3	12.0	2.0	3.0
Bicarbonate	mg/L	-	380	390	380	430	400	380	400	390	400	394
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	96	107	103	101	97	96	100	105	118	124
Magnesium	mg/L	-	6.99	7.31	7.28	7.41	7.39	7.33	7.45	7.69	7.68	7.10
Potassium	mg/L	-	9.4	9.79	9.65	9.90	9.38	9.21	9.61	9.18	9.83	9.30
Sodium	mg/L	-	106	110	115	115	112	108	108	116	114	95.0

		Sample Location:	MW-100A							
		Sample Type:	Downgradient							
		Sample Date:	6/5/2023	7/10/2023	8/14/2023	9/18/2023	10/23/2023	11/27/2023	1/3/2024	2/7/2024
Constituent	Unit	State Program GPS	Background Monitoring							
Field Parameters										
pH	su	-	7.29	7.21	7.31	7.28	7.34	7.08	7.36	7.4
Conductivity	mS/cm	-	0.750	0.766	0.728	0.719	0.725	0.68	0.593	0.665
Turbidity	NTU	-	3.52	7.95	0.65	4.21	7.35	3.32	4.45	6.3
Dissolved Oxygen	mg/L	-	4.15	1.31	1.15	0.98	0.45	0.39	0.41	0.51
Temperature	°C	-	14.2	17.2	14.6	16.8	14.9	10.2	11.2	10.0
Oxidation Reduction Potential	mV	-	60.9	-55.8	-130.6	-98.1	-117.7	-98.9	-125.2	-74.9
Part 115										
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	0.63	1.25	3.75	3.59	3.04	2.88	2.51	2.59
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005
Appendix III										
Boron	mg/L	0.50	0.04	0.05	0.05	0.05	0.05	0.04	0.05	0.05
Calcium	mg/L	188	92.3	95.3	93.0	94.0	92.8	92.1	88.6	90.9
Chloride	mg/L	250	10	10	10	10	10	10.0	10.3	10.6
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.66	0.22	<1.0
pH, Field	su	-	7.29	7.21	7.31	7.28	7.34	7.08	7.36	7.4
Sulfate	mg/L	344	35	38	28	22	21	16.2	17.1	21.7
Total Dissolved Solids	mg/L	1168	418	434	424	414	416	402	408	410
Appendix IV										
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.009	0.010	0.015	0.017	0.016	0.014	0.015	0.018
Barium	mg/L	2.0	0.206	0.202	0.206	0.207	0.201	0.199	0.189	0.200
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.22	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.017	0.018	0.019	0.020	0.018	0.016	0.014	0.014
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.012	0.012	0.012	0.013	0.011	0.010	0.009	0.008
Radium-226	pCi/L	-	0.869	0.470	1.14[J+]	0.320[J+]	-0.164[J+]	1.09[J+]	0.0203	0.570
Radium-228	pCi/L	-	1.64	0.716	0.400	0.0819	0.527	0.0586	0.391	0.529
Radium-226/228	pCi/L	5.00	2.50	0.857	1.54	0.402	0.527	1.15	0.411	1.10
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other										
Total Suspended Solids	mg/L	-	<3	25	7.5	7.4	4.9	8.6	8.0	5.3
Bicarbonate	mg/L	-	450	430	460	440	450	410	430	431
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	390	393	396	394	398	398	368	400
Magnesium	mg/L	-	38.4	40.3	40.0	39.0	38.9	39.9	38.2	36.0
Potassium	mg/L	-	2.35	2.62	2.27	2.23	2.16	2.19	2.18	1.83
Sodium	mg/L	-	12.6	11.8	11.3	11.6	11.0	11.3	11.1	10.4

	Sample Location:		MW-100B									
	Sample Type:		Downgradient									
	Sample Date:		6/5/2023		7/10/2023		8/14/2023		9/18/2023		10/23/2023	11/27/2023
Constituent	Unit	State Program GPS	Background Monitoring									
Field Parameters				Field Dup		Field Dup		Field Dup		Field Dup		
pH	su	-	7.34	7.34	7.33	7.33	7.40	7.40	7.34	7.34	7.44	7.40
Conductivity	mS/cm	-	0.799	0.799	0.805	0.805	0.776	0.776	0.745	0.745	0.752	0.713
Turbidity	NTU	-	4.02	4.02	4.15	4.15	4.15	4.15	0.81	0.81	5.16	5.01
Dissolved Oxygen	mg/L	-	0.03	0.03	0.08	0.08	0.19	0.19	0.00	0.00	0.00	0.00
Temperature	°C	-	13.8	13.8	13.9	13.9	14.2	14.2	12.9	12.9	12.1	10.6
Oxidation Reduction Potential	mV	-	-129.9	-129.9	-145.9	-145.9	-176.8	-176.8	-149.9	-149.9	-154.8	-141.7
Part 115												
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	23.5	1.77	1.79	3.54	3.43	2.89	2.88	2.34	2.36	2.33	2.35
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III												
Boron	mg/L	0.50	0.21	0.23	0.23	0.23	0.25	0.25	0.25	0.24	0.26	0.29
Calcium	mg/L	188	108	106	102	101	98.0	99.2	97.8	100	95.9	94.5
Chloride	mg/L	250	22	22	23	23	25	25	25	25	24	24.0
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.15
pH, Field	su	-	7.34	7.34	7.33	7.33	7.40	7.40	7.34	7.34	7.44	7.40
Sulfate	mg/L	344	136	135	126	126	116	116	110	110	108	105
Total Dissolved Solids	mg/L	1168	538	534	534	526	508	510	492	496	490	482
Appendix IV												
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.021	0.009	0.008	0.010	0.010	0.011	0.010	0.011	0.012	0.010	0.010
Barium	mg/L	2.0	0.164	0.163	0.159	0.156	0.153	0.154	0.154	0.159	0.145	0.147
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.15
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.040	0.017	0.018	0.016	0.016	0.017	0.017	0.019	0.017	0.017	0.018
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.009	0.008	0.011	0.011	0.010	0.010	0.009	0.008	0.009	0.009
Radium-226	pCi/L	-	0.549^{UJ}	0.295^{UJ}	0.576^{UJ}	0.395^{UJ}	1.31^{J+}	0.200^{J-}	0.983^{J+}	0.188^{J}	0.732^{J+}	0.868J+
Radium-228	pCi/L	-	1.61^{J+}	1.50^{J-}	1.52^{J+}	1.17^{J-}	0.682	0.960	0.0316	0.832^{J+}	0.613	0.953
Radium-226/228	pCi/L	5.00	2.16^{J}	1.80^{J}	1.62^{J+}	1.23^{J-}	1.99^{J+}	1.16^{J-}	1.01	1.02	1.35	1.82
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other												
Total Suspended Solids	mg/L	-	3	2.3	7.1	6.7	3.0	3.4	3.7	4.7	4.1	2.5
Bicarbonate	mg/L	-	350	360	440	350	360	360	320	330	330	310
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	410	410	397	393	364	364	374	378	364	369
Magnesium	mg/L	-	35.7	38.0	35.0	34.9	35.8	35.5	32.7	33.5	33.2	32.5
Potassium	mg/L	-	3.34	3.35	3.50	3.54	3.46	3.54	3.51	3.61	3.69	3.76
Sodium	mg/L	-	23.2	23.0	26.9	27.1	24.8	24.9	25.9	24.8	27.4	30.3

	Sample Location:		MW-100B	
	Sample Type:		Downgradient	
	Sample Date:		1/3/2024	2/7/2024
Constituent	Unit	State Program GPS	Background Monitoring	
Field Parameters				
pH	su	-	7.58	7.62
Conductivity	mS/cm	-	0.759	0.737
Turbidity	NTU	-	0.95	4.18
Dissolved Oxygen	mg/L	-	0.00	0.02
Temperature	°C	-	11.5	11.1
Oxidation Reduction Potential	mV	-	-157.0	-132.9
Part 115				
Copper	mg/L	1.00	<0.005	<0.005
Iron	mg/L	23.5	2.43	2.40
Nickel	mg/L	0.1	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005
Appendix III				
Boron	mg/L	0.50	0.26	0.26
Calcium	mg/L	188	94.2	96.8
Chloride	mg/L	250	23.8	22.3
Fluoride	mg/L	2.0	<1.0	<1.0
pH, Field	su	-	7.58	7.62
Sulfate	mg/L	344	112	107
Total Dissolved Solids	mg/L	1168	490	496
Appendix IV				
Antimony	mg/L	0.006	<0.005	<0.005
Arsenic	mg/L	0.021	0.011	0.011
Barium	mg/L	2.0	0.142	0.147
Beryllium	mg/L	0.004	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005
Chromium	mg/L	0.1	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005
Fluoride	mg/L	2.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003
Lithium	mg/L	0.040	0.018	0.017
Mercury	mg/L	0.002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.008	0.009
Radium-226	pCi/L	-	0.201	1.03
Radium-228	pCi/L	-	0.293	0.482
Radium-226/228	pCi/L	5.00	0.494	1.51
Selenium	mg/L	0.050	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002
Other				
Total Suspended Solids	mg/L	-	4.5	4.9
Bicarbonate	mg/L	-	330	339
Carbonate	mg/L	-	<10	<10
Hardness	mg/L	-	376	367
Magnesium	mg/L	-	32.3	29.4
Potassium	mg/L	-	3.59	3.46
Sodium	mg/L	-	27.1	27.1

	Sample Location:		MW-100C									
	Sample Type:		Downgradient									
	Sample Date:		6/5/2023	7/10/2023	8/14/2023	9/18/2023	10/23/2023		11/27/2023		1/3/2024	
Constituent	Unit	State Program GPS	Background Monitoring									
Field Parameters								Field Dup		Field Dup		Field Dup
pH	su	-	7.54	7.30	7.34	7.23	7.29	7.29	7.27	7.27	7.43	7.43
Conductivity	mS/cm	-	0.544	0.539	0.537	0.525	0.538	0.538	0.523	0.523	0.533	0.533
Turbidity	NTU	-	4.68	4.02	5.89	0.81	5.15	5.15	4.15	4.15	1.44	1.44
Dissolved Oxygen	mg/L	-	0.02	0.06	0.23	0.01	0	0	0	0	0	0
Temperature	°C	-	13.5	13.7	14.0	12.8	12.3	12.3	10.2	10.2	11.3	11.3
Oxidation Reduction Potential	mV	-	-95.6	-131.4	-129.7	-113.3	-115.8	-115.8	-107.2	-107.2	-133.5	-133.5
Part 115												
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	3.04	0.31	1.00	0.97	0.76	0.66	0.66	0.64	0.66	0.63	0.61
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	0.010	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III												
Boron	mg/L	3.52	1.54	1.68	1.81	1.83	1.76	1.76	1.82	1.84	1.79	1.71
Calcium	mg/L	69.6	55.9	56.3	55.2	59.8	61.2	61.5	61.1	60.7	60.3	58.4
Chloride	mg/L	250	14	10	8	6	5	5	5.01	5.04	4.8	4.8
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.13[J+]	<1.0[UJ]	<1.0	<1.0
pH, Field	su	-	7.54	7.30	7.34	7.23	7.29	7.29	7.27	7.27	7.43	7.43
Sulfate	mg/L	250	27	14	13	8	7	6	5.59	5.66	5.4	4.9
Total Dissolved Solids	mg/L	500	310	300	314	302	302	298	306	302	282	298
Appendix IV												
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.01	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Barium	mg/L	2.0	0.067	0.082	0.082	0.092	0.082	0.083	0.081	0.085	0.073	0.074
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.13	<1.0	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.051	0.029	0.028	0.031	0.035	0.034	0.032	0.032	0.032	0.033	0.032
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	0.009	0.009	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Radium-226	pCi/L	-	0.677	0.520	1.20	0.581[J+]	0.542[J]	1.07[J+]	1.69[J+]	0.450[J]	0.327J+	0.158J-
Radium-228	pCi/L	-	-0.307	0.827	-0.958	0.276	0.836	1.02	-0.293[J-]	0.906[J+]	0.198	0.211
Radium-226/228	pCi/L	5.00	0.677	0.977	1.20	0.857	1.38	2.09	1.69	1.36	0.525	0.369
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other												
Total Suspended Solids	mg/L	-	1.8	1.4	8.9	2.8	<3	<3	1.2[J+]	<3[UJ]	1.4	1.4
Bicarbonate	mg/L	-	310	100	340	340	340	340	330	340	350	350
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	200	204	218	232	232	238	237	237	233	233
Magnesium	mg/L	-	18.1	18.1	18.5	19.1	19.5	19.2	19.3	19.7	19.8	20.2
Potassium	mg/L	-	6.40	6.59	6.49	6.67	6.83	6.90	6.56	6.68	6.98	6.99
Sodium	mg/L	-	44.1	38.2	36.4	30.5	29.2	29.1	28.3	28.2	29.5	29.0

	Sample Location:		MW-100C	
	Sample Type:		Downgradient	
	Sample Date:		2/7/2024	
Constituent	Unit	State Program GPS	Background Monitoring	
Field Parameters				Field Dup
pH	su	-	7.46	7.46
Conductivity	mS/cm	-	0.52	0.52
Turbidity	NTU	-	5.78	5.78
Dissolved Oxygen	mg/L	-	0	0
Temperature	°C	-	11.3	11.3
Oxidation Reduction Potential	mV	-	-89.9	-89.9
Part 115				
Copper	mg/L	1.00	<0.005	<0.005
Iron	mg/L	3.04	0.59	0.58
Nickel	mg/L	0.1	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005
Appendix III				
Boron	mg/L	3.52	1.87	1.81
Calcium	mg/L	69.6	58.7	59.5
Chloride	mg/L	250	4.7	4.8
Fluoride	mg/L	2.0	<1.0	<1.0
pH, Field	su	-	7.46	7.46
Sulfate	mg/L	250	5.8	5.6
Total Dissolved Solids	mg/L	500	300	298
Appendix IV				
Antimony	mg/L	0.006	<0.005	<0.005
Arsenic	mg/L	0.01	<0.002	<0.002
Barium	mg/L	2.0	0.075	0.073
Beryllium	mg/L	0.004	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005
Chromium	mg/L	0.100	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005
Fluoride	mg/L	2.00	<1.0	<1.0
Lead	mg/L	0.004	<0.003	<0.003
Lithium	mg/L	0.051	0.033	0.032
Mercury	mg/L	0.002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	<0.005
Radium-226	pCi/L	-	1.21^{J+}	0.682^{J-}
Radium-228	pCi/L	-	0.346^{J-}	2.56^{J+}
Radium-226/228	pCi/L	5.00	1.56^{J-}	3.25^{J+}
Selenium	mg/L	0.050	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002
Other				
Total Suspended Solids	mg/L	-	<3	<3
Bicarbonate	mg/L	-	350	354
Carbonate	mg/L	-	<10	<10
Hardness	mg/L	-	238	230
Magnesium	mg/L	-	17.3	17.5
Potassium	mg/L	-	6.12	6.03
Sodium	mg/L	-	25.7	26.0

	Sample Location:		MW-100D							
	Sample Type:		Downgradient							
	Sample Date:		6/5/2023	7/10/2023	8/14/2023	9/18/2023	10/23/2023	11/27/2023	1/3/2024	2/7/2024
Constituent	Unit	State Program GPS	Background Monitoring							
Field Parameters										
pH	su	-	8.04	7.82	7.90	7.58	7.59	8.01	8.22	7.74
Conductivity	mS/cm	-	0.575	0.585	0.598	0.597	0.6	0.592	0.597	0.737
Turbidity	NTU	-	8.78	8.15	7.95	5.58	5.05	4.95	3.08	6.19
Dissolved Oxygen	mg/L	-	0.01	0.05	0.15	0.02	0.01	0	0	0.02
Temperature	°C	-	13.8	14.3	14.5	13	13	9.9	11.1	11.6
Oxidation Reduction Potential	mV	-	-73.2	-90.1	-184.8	-201.5	-182.6	-163.3	-209.3	-81
Part 115										
Copper	mg/L	1.00	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	3.04	0.24	0.64	0.45	0.38	0.15	0.12	0.12	0.13
Nickel	mg/L	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/L	0.098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Vanadium	mg/L	0.062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Appendix III										
Boron	mg/L	3.52	3.45	3.23	3.39	3.35	3.22	3.37	3.19	2.84
Calcium	mg/L	69.6	7.77	7.18	6.27	6.21	5.86	5.57	5.26	20.2
Chloride	mg/L	250	<5	<5	5	<5	<5	4.20	4.2	9.1
Fluoride	mg/L	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.50	0.49	0.3
pH, Field	su	-	8.04	7.82	7.90	7.58	7.59	8.01	8.22	7.74
Sulfate	mg/L	250	<5	6	14	11	10	9.17	9.8	31.0
Total Dissolved Solids	mg/L	500	366	392	414	396	390	388	372	468
Appendix IV										
Antimony	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	mg/L	0.01	<0.002	<0.002	0.003	0.003	0.003	0.003	0.003	0.003
Barium	mg/L	2.0	0.010	0.011	0.010	0.010	0.008	0.008	0.007	0.012
Beryllium	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	mg/L	0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/L	0.100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	mg/L	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	2.00	<1.0	<1.0	<1.0	<1.0	<1.0	0.50	0.49	0.3
Lead	mg/L	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	mg/L	0.051	0.031	0.016	0.016	0.017	0.017	0.018	0.018	0.020
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	0.100	<0.005	0.010	0.012	0.010	0.009	0.008	0.008	0.007
Radium-226	pCi/L	-	0.509	0.426	1.32	0.535 J+	0.649 J+	0.893J+	0.0752	0.515
Radium-228	pCi/L	-	4.56	0.921	0.135	0.261	0.947	-0.914	0.402	0.00918
Radium-226/228	pCi/L	5.00	5.06	1.01	1.46	0.796	1.60	0.893	0.477	0.524
Selenium	mg/L	0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Thallium	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Other										
Total Suspended Solids	mg/L	-	2.7	2.7	2.2	2.0	<3	<3	<3	1.8
Bicarbonate	mg/L	-	390	390	390	380	390	370	390	443
Carbonate	mg/L	-	<10	<10	<10	<10	<10	<10	<10	<10
Hardness	mg/L	-	30	32	19	17	19	49	28	69
Magnesium	mg/L	-	2.03	1.81	1.47	1.46	1.28	1.27	1.27	3.68
Potassium	mg/L	-	4.92	4.62	4.22	4.48	4.35	4.03	4.18	4.00
Sodium	mg/L	-	147	152	151	158	148	151	134	136

Qualifiers:

U: The analyte was analyzed for, but was not detected at, a level greater than or equal to the level of the adjusted reporting limit (RL) for the sample and method.
J: The analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain QC criteria were not met, or to the concentration of the analyte being below the RL).
J+: Same as J, and the reported concentration is potentially biased high.
J-: Same as J, and the reported concentration is potentially biased low.
UJ: The analyte was not detected at a level greater than or equal to the adjusted method detection limit (MDL). However, the reported adjusted MDL is approximate and might be inaccurate or imprecise.
R: The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte might or might not be present in the sample.

Appendix C

Lab Reports and Data Validation Reports

Analytical Laboratory Report

Report ID: S57346.01(02)
Generated on 01/31/2024
Replaces report S57346.01(01) generated on 01/08/2024

Report to

Attention: Jennifer Caporale
Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S57346.01-S57346.06
Project: Erickson Well Project 100A-100D
Collected Date(s): 01/03/2024
Submitted Date/Time: 01/04/2024 09:27
Sampled by: Marc Wahrer
P.O. #:

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Starred (*) analytes are not NY NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.
All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.
For a specific list of accredited analytes, please feel free to contact the laboratory or visit https://www.meritlabs.com/certifications.

Report Narrative

All analyses completed

Laboratory Accreditations (For Reference Only)

Authority	Accreditation ID
Michigan DEQ	#9956
DOD ELAP & ISO/IEC 17025:2017	#69699 PJLA Testing
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
E245.1	EPA Method 245.1 Revision 3.0
E300.0	EPA Method 300.0 Revision 2.1 (1993)
SM2320B	Standard Method 2320 B 2011
SM2340C	Standard Method 2340 C 2011
SM2540C	Standard Method 2540 C 2015
SM2540D	Standard Method 2540 D 2015
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (6 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S57346.01	MW-100A L401137-01	Groundwater	01/03/24 15:08
S57346.02	MW-100B L401137-02	Groundwater	01/03/24 11:30
S57346.03	MW-100C L401137-03	Groundwater	01/03/24 12:50
S57346.04	MW-100D L401137-04	Groundwater	01/03/24 14:34
S57346.05	MWT-100C L401137-05	Groundwater	01/03/24 12:50
S57346.06	Field Blank L401137-06	Water	01/03/24 09:25

Lab Sample ID: S57346.01
Sample Tag: MW-100A L401137-01
Collected Date/Time: 01/03/2024 15:08
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.3	IR
2	1L Plastic	None	Yes	2.3	IR
1	125mL Plastic	HNO3	Yes	2.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	01/05/24 10:24	CTV	
Metal Digestion	Completed	SW3015A	01/05/24 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 01/05/24 11:49, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	10.3	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	0.22	1.0	0.130	mg/L	5	16984-48-8	b
Sulfate	17.1	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 01/04/24 13:24, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	430	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/04/24 14:08, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	368	20	4.76	mg/L	20		

Method: SM2540C, Run Date: 01/04/24 14:47, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	408	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/05/24 15:00, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	8.0	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 01/05/24 11:43, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.015	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.189	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	0.05	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S57346.01 (continued)

Sample Tag: MW-100A L401137-01

Method: E200.8, Run Date: 01/05/24 11:43, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	2.51	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.014	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	0.009	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	
Zinc	0.006	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 01/05/24 13:53, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	88.6	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	38.2	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	2.18	0.50	0.119	mg/L	5	7440-09-7	
Sodium	11.1	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 01/05/24 13:36, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 01/30/24 15:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S57346.02
Sample Tag: MW-100B L401137-02
Collected Date/Time: 01/03/2024 11:30
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.3	IR
2	1L Plastic	None	Yes	2.3	IR
1	125mL Plastic	HNO3	Yes	2.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	01/05/24 10:24	CTV	
Metal Digestion	Completed	SW3015A	01/05/24 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 01/05/24 12:02, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	23.8	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	112	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 01/04/24 13:26, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	330	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/04/24 14:12, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	376	20	4.76	mg/L	20		

Method: SM2540C, Run Date: 01/04/24 14:47, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	490	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/05/24 15:00, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	4.5	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 01/05/24 11:48, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.011	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.142	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	0.26	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	2.43	0.02	0.0142	mg/L	5	7439-89-6	

Lab Sample ID: S57346.02 (continued)

Sample Tag: MW-100B L401137-02

Method: E200.8, Run Date: 01/05/24 11:48, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.018	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	0.008	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 01/05/24 13:55, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	94.2	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	32.3	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	3.59	0.50	0.119	mg/L	5	7440-09-7	
Sodium	27.1	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 01/05/24 13:39, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 01/30/24 15:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S57346.03
Sample Tag: MW-100C L401137-03
Collected Date/Time: 01/03/2024 12:50
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.3	IR
2	1L Plastic	None	Yes	2.3	IR
1	125mL Plastic	HNO3	Yes	2.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	01/05/24 10:24	CTV	
Metal Digestion	Completed	SW3015A	01/05/24 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 01/05/24 12:15, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	4.8	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	5.4	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 01/04/24 13:28, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	350	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/04/24 14:18, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	233	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 01/04/24 14:47, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	282	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/05/24 15:00, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	1.4	3	1	mg/L	1		b

Metals

Method: E200.8, Run Date: 01/05/24 11:53, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.073	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	1.79	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S57346.03 (continued)
Sample Tag: MW-100C L401137-03

Method: E200.8, Run Date: 01/05/24 11:53, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.63	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.033	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 01/05/24 13:57, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	60.3	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	19.8	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	6.98	0.50	0.119	mg/L	5	7440-09-7	
Sodium	29.5	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 01/05/24 13:49, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 01/30/24 15:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S57346.04

Sample Tag: MW-100D L401137-04
Collected Date/Time: 01/03/2024 14:34
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.3	IR
2	1L Plastic	None	Yes	2.3	IR
1	125mL Plastic	HNO3	Yes	2.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	01/05/24 10:24	CTV	
Metal Digestion	Completed	SW3015A	01/05/24 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 01/05/24 12:28, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	4.2	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	0.49	1.0	0.130	mg/L	5	16984-48-8	b
Sulfate	9.8	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 01/04/24 13:30, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	390	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/04/24 14:20, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	28	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 01/04/24 14:47, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	372	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/05/24 15:00, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 01/05/24 11:57, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.003	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.007	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	3.19	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S57346.04 (continued)
Sample Tag: MW-100D L401137-04

Method: E200.8, Run Date: 01/05/24 11:57, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.12	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.018	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	0.008	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 01/05/24 13:58, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	5.26	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	1.27	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	4.18	0.50	0.119	mg/L	5	7440-09-7	
Sodium	134	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 01/05/24 13:52, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 01/30/24 15:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S57346.05
Sample Tag: MWT-100C L401137-05
Collected Date/Time: 01/03/2024 12:50
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.3	IR
2	1L Plastic	None	Yes	2.3	IR
1	125mL Plastic	HNO3	Yes	2.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	01/05/24 10:24	CTV	
Metal Digestion	Completed	SW3015A	01/05/24 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 01/05/24 12:40, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	4.8	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	4.9	5.0	0.295	mg/L	5	14808-79-8	b

Method: SM2320B, Run Date: 01/04/24 13:32, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	350	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/04/24 14:22, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	233	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 01/04/24 14:47, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	298	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/05/24 15:00, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	1.4	3	1	mg/L	1		b

Metals

Method: E200.8, Run Date: 01/05/24 12:00, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.074	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	1.71	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S57346.05 (continued)
Sample Tag: MWT-100C L401137-05

Method: E200.8, Run Date: 01/05/24 12:00, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.61	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.032	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 01/05/24 14:00, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	58.4	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	20.2	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	6.99	0.50	0.119	mg/L	5	7440-09-7	
Sodium	29.0	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 01/05/24 13:56, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 01/30/24 15:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S57346.06

Sample Tag: Field Blank L401137-06

Collected Date/Time: 01/03/2024 09:25

Matrix: Water

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.3	IR
2	1L Plastic	None	Yes	2.3	IR
1	125mL Plastic	HNO3	Yes	2.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	01/05/24 10:24	CTV	
Metal Digestion	Completed	SW3015A	01/05/24 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 01/05/24 12:53, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	Not detected	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 01/04/24 13:34, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	Not detected	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/04/24 14:24, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	Not detected	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 01/04/24 14:47, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	Not detected	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/05/24 15:00, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 01/05/24 11:39, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.000900	mg/L	2	7440-36-0	
Arsenic	Not detected	0.002	0.000580	mg/L	2	7440-38-2	
Barium	Not detected	0.005	0.000360	mg/L	2	7440-39-3	
Beryllium	Not detected	0.001	0.0000800	mg/L	2	7440-41-7	
Boron	Not detected	0.04	0.00636	mg/L	2	7440-42-8	
Cadmium	Not detected	0.0005	0.000140	mg/L	2	7440-43-9	
Chromium	Not detected	0.005	0.000300	mg/L	2	7440-47-3	
Cobalt	Not detected	0.005	0.000180	mg/L	2	7440-48-4	
Copper	Not detected	0.005	0.000320	mg/L	2	7440-50-8	
Iron	Not detected	0.02	0.00568	mg/L	2	7439-89-6	

Lab Sample ID: S57346.06 (continued)

Sample Tag: Field Blank L401137-06

Method: E200.8, Run Date: 01/05/24 11:39, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000180	mg/L	2	7439-92-1	
Lithium*	Not detected	0.005	0.000540	mg/L	2	7439-93-2	
Molybdenum	Not detected	0.005	0.00168	mg/L	2	7439-98-7	
Nickel	Not detected	0.005	0.000460	mg/L	2	7440-02-0	
Selenium	Not detected	0.005	0.00174	mg/L	2	7782-49-2	
Silver	Not detected	0.0005	0.000100	mg/L	2	7440-22-4	
Thallium	Not detected	0.002	0.000140	mg/L	2	7440-28-0	
Vanadium	Not detected	0.005	0.000820	mg/L	2	7440-62-2	
Zinc	Not detected	0.005	0.00130	mg/L	2	7440-66-6	

Method: E200.8, Run Date: 01/05/24 13:52, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	Not detected	0.50	0.0874	mg/L	2	7440-70-2	
Magnesium	Not detected	0.50	0.0231	mg/L	2	7439-95-4	
Potassium	Not detected	0.50	0.0479	mg/L	2	7440-09-7	
Sodium	Not detected	0.50	0.0436	mg/L	2	7440-23-5	

Method: E245.1, Run Date: 01/05/24 13:59, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 01/30/24 15:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories Login Checklist

Lab Set ID: S57346
Client: BWL01 (Board of Water & Light)
Project: Erickson Well Project 100A-100D
Submitted: 01/04/2024 09:27 Login User: MMC

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 2.3
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[X] Yes	[ ] No	[ ] N/A	Subcontracting needed? Subcontacted to:	GEL
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: ______________________ Date:__________

Merit Laboratories Bottle Preservation Check

Lab Set ID: S57346 Submitted: 01/04/2024 09:27

Client: BWL01 (Board of Water & Light)

Project: Erickson Well Project 100A-100D

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Initial Preservation Check: 01/04/2024 11:03 MMC
Preservation Recheck (E200.8): N/A

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S57346.01	125mL Plastic HNO3	<2			
S57346.01	1L Plastic HNO3	<2			
S57346.01	1L Plastic HNO3	<2			
S57346.02	125mL Plastic HNO3	<2			
S57346.02	1L Plastic HNO3	<2			
S57346.02	1L Plastic HNO3	<2			
S57346.03	125mL Plastic HNO3	<2			
S57346.03	1L Plastic HNO3	<2			
S57346.03	1L Plastic HNO3	<2			
S57346.04	125mL Plastic HNO3	<2			
S57346.04	1L Plastic HNO3	<2			
S57346.04	1L Plastic HNO3	<2			
S57346.05	125mL Plastic HNO3	<2			
S57346.05	1L Plastic HNO3	<2			
S57346.05	1L Plastic HNO3	<2			
S57346.06	125mL Plastic HNO3	<2			
S57346.06	1L Plastic HNO3	<2			
S57346.06	1L Plastic HNO3	<2			

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME	Jennifer Caporale
COMPANY	Lansing Board of Water and Light
ADDRESS	PO Box 13007 48901-3007
CITY	Lansing
STATE	Mi
ZIP CODE	48901
PHONE NO.	517-702-6372
FAX NO.	
P.O. NO.	
E-MAIL ADDRESS	Environmental_Laboratory@lbwl.com
QUOTE NO.	

INVOICE TO

CONTACT NAME	Beth Zimpfer
☒ SAME	
COMPANY	
ADDRESS	
CITY	
STATE	
ZIP CODE	
PHONE NO.	
E-MAIL ADDRESS	Beth.Zimpfer@lbwl.com

PROJECT NO./NAME Erickson Well Project 100A-100D

SAMPLER(S) - PLEASE PRINT/SIGN NAME Marc Wahrer

TURNAROUND TIME REQUIRED ☐ 1 DAY ☒ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☒ OTHER ASAP

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☒ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

7 JSC 12/29/23

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	F- undisstiled, Cl-, SO4, TDS	Radium 226	Radium 228	TSS	HCO3, CO3, Hardness					Special Instructions
5734601	1.3.24	1508	MW-100A L401136-01	GW	5	2		3					✓	✓	✓	✓	✓	✓					Metals to analyse:Na, Mg, K
.02		1130	MW-100B -02	GW	5	2		3					✓	✓	✓	✓	✓	✓					B, Ca, Sb, As, Ba, Be, Cd, Cr,
.03		1250	MW-100C -03	GW	5	2		3					✓	✓	✓	✓	✓	✓					Co, Li, Hg, Mo,Pb,Se, Tl,
.04		1434	MW-100D -04	GW	5	2		3					✓	✓	✓	✓	✓	✓					Fe, Cu, Ni, Ag, V, Zn
.05		1250	MWT-100C -05	GW	5	2		3					✓	✓	✓	✓	✓	✓					Please send a preliminary report
06		0925	Field Blank -06	DI	5	2		3					✓	✓	✓	✓	✓	✓					

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☒ NPDES

Project Locations: ☐ Detroit ☐ New York ☐ Other

RELINQUISHED BY: SIGNATURE/ORGANIZATION [signature] ☒ Sampler	DATE 1-4-24	TIME 0927	
RECEIVED BY: SIGNATURE/ORGANIZATION M. Chilcote	DATE 1/4/24	TIME 0927	
RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME	
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME	
RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME	
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME	

SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL 2.3
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Reporting Limits to go to Merit with COC

Sb, total	Antimony	250 mL plastic	mg/L	Nitric Acid	200.7	6 mos	0.005
As, total	Arsenic	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
Ba, total		250 mL plastic	mg/L	Nitric Acid	200.8	6mos	0.150
Be, total	Beryllium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.001
B, total	Boron	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.04
Cd, total	Cadmium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
Ca	Calcium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	2.5
Cl	Chloride	250 mL plastic	mg/L	Chill	300.0	28 d	10
Cr, total	Chromium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Co, total	Cobalt	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Cu, total	Copper	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
F	Fluoride	250 mL plastic	mg/L	None	9056	28 d	1.0
Fe, total	Iron	250 mL plastic	mg/L	Nitric Acid	300.0	6 mos	0.02
Pb, total	Lead	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.003
Li, total	Lithium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Hg, total	Mercury	250 mL plastic	mg/L	HNO3	245.1	28 d	0.0002
Mo, total	Molybdenum	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ni, total	Nickel	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
RA226/228	Radium 226 and 228 combined	(2) 1 L plastic	pCi/L	HNO3	SM 7500	6 mos	2.0 combined
Se, total	Selenium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ag, total	Silver	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
SO4	Sulfate	250 mL plastic	mg/L	Chill	300.0	28 d	10
Tl, total	Thallium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
TDS	Total Dissolved Solids	1 L plastic	mg/L	None	SM 2540C	NA	20
TSS	Total Suspended Solids	1 L plastic	mg/L	None	SM 2540D	NA	3
V, total	Vanadium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Zn, total	Zinc	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005

GEL Laboratories LLC
a member of The GEL Group INC

2040 Savage Road | Charleston, SC 29407
843.556.8171

gel.com

January 30, 2024

John Laverty
Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan 48823

Re: Routine Analysis
Work Order: 651135
SDG: S57346

Dear John Laverty:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on January 09, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1614.

Sincerely,

Delaney Stonesmith

Delaney Stonesmith
Project Manager

Purchase Order: GELP20-0018
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Merit Laboratories, Inc.
SDG: S57346
Work Order: 651135

January 30, 2024

Laboratory Identification:

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

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on January 09, 2024 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
651135001	S57346.01
651135002	S57346.02
651135003	S57346.03
651135004	S57346.04
651135005	S57346.05
651135006	S57346.06 Field Blank

Case Narrative:

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

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

Delaney Stonesmith

Delaney Stonesmith
Project Manager

Chain of Custody and Supporting Documentation

651135

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO		INVOICE TO	
CONTACT NAME	Project Management Team	CONTACT NAME	Julie Teague ☒ SAME
COMPANY	Merit Laboratories	COMPANY	Merit Laboratories
ADDRESS	2680 East Lansing Drive	ADDRESS	2680 East Lansing Drive
CITY / STATE / ZIP CODE	East Lansing / MI / 48823	CITY / STATE / ZIP CODE	East Lansing / MI / 48823
PHONE NO. / FAX NO. / P.O. NO.	517-332-0167 / /	PHONE NO. / E-MAIL ADDRESS	517-332-0167 / juliet@meritlabs.com
E-MAIL ADDRESS / QUOTE NO.	results@meritlabs.com /		

PROJECT NO./NAME S57346 — SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☒ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Radium 226*	Radium 228**
	1/3/24	1508	S57346.01	GW	2			2					✓	✓
	1/3/24	1130	S57346.02	GW	2			2					✓	✓
	1/3/24	1250	S57346.03	GW	2			2					✓	✓
	1/3/24	1434	S57346.04	GW	2			2					✓	✓
	1/3/24	1250	S57346.05	GW	2			2					✓	✓
	1/3/24	0925	S57346.06 Field Blank	DI	2			2					✓	✓

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions
* E903.1 Mod.
** E904.0/SW 9320 Mod.

Please use calculation product & provide Radium 226/228 combined results on the report

(No Ice needed)
** Subcontracted to
GEL Laboratories, Inc.
2040 Savage Road
Charleston, SC 29407

	DATE	TIME		DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION ☐ Sampler			RELINQUISHED BY: SIGNATURE/ORGANIZATION		
RECEIVED BY: SIGNATURE/ORGANIZATION [signature]	1/9/24	1000	RECEIVED BY: SIGNATURE/ORGANIZATION		
RELINQUISHED BY: SIGNATURE/ORGANIZATION			SEAL NO. / SEAL INTACT YES☐ NO☐ / INITIALS		
RECEIVED BY: SIGNATURE/ORGANIZATION			SEAL NO. / SEAL INTACT YES☐ NO☐ / INITIALS		

NOTES: TEMP. ON ARRIVAL

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.15.12

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: MERI	SDG/AR/COC/Work Order: 651135
Received By: STACY L BOONE	Date Received: ~~JAN-10, 2024~~ JAN 09, 2024 AM 01/10/24
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 1Z 466 477 03 6297 3570

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): ___ CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		✓		Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 16°C
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR3-23 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			✓	
13	COC form is properly signed in relinquished/received sections?	~~✓~~		✓	Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed): AM 01/10/24

PM (or PMA) review: Initials AM Date 01/10/24 Page 1 of 1

Laboratory Certifications

List of current GEL Certifications as of 30 January 2024

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-23-21
Utah NELAP	SC000122023-38
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
Merit Laboratories, Inc.
SDG #: S57346
Work Order #: 651135

Product: **EPA 904.0 Radium-228 in Drinking Water**
Analytical Method: EPA 904.0/ EPA 9320
Analytical Procedure: GL-RAD-A-030 REV# 21
Analytical Batch: 2551408

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

GEL Sample ID#	Client Sample Identification
651135001	S57346.01
651135002	S57346.02
651135003	S57346.03
651135004	S57346.04
651135005	S57346.05
651135006	S57346.06 Field Blank
1205620194	Method Blank (MB)
1205620195	651308001(NonSDG) Sample Duplicate (DUP)
1205620196	651308001(NonSDG) Matrix Spike (MS)
1205620197	Laboratory Control Sample (LCS)

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

Data Summary:

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

Product: **Radium-226 in Drinking Water EPA 903.1 (De-emanation)**
Analytical Method: EPA 903.1
Analytical Procedure: GL-RAD-A-028 REV# 20
Analytical Batch: 2551043

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

GEL Sample ID#	Client Sample Identification
651135001	S57346.01
651135002	S57346.02
651135003	S57346.03
651135004	S57346.04
651135005	S57346.05
651135006	S57346.06 Field Blank
1205619666	Method Blank (MB)
1205619667	651205001(NonSDG) Sample Duplicate (DUP)
1205619668	651205001(NonSDG) Matrix Spike (MS)
1205619669	Laboratory Control Sample (LCS)

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

Data Summary:

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

Certification Statement

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

GEL LABORATORIES LLC

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

Qualifier Definition Report
for

MERI001 Merit Laboratories, Inc.

Client SDG: S57346 GEL Work Order: 651135

The Qualifiers in this report are defined as follows:

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

Review/Validation

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

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

Signature: Kenshalla Oston **Name:** **Kenshalla Oston**

Date: **31 JAN 2024** **Title:** **Analyst I**

Sample Data Summary

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

Certificate of Analysis

Report Date: January 31, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S57346.01	Project:	MERI00120
Sample ID:	651135001	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	03-JAN-24 15:08		
Receive Date:	09-JAN-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
EPA 904.0 Radium-228 in Drinking Water "As Received"													
Radium-228	U	0.391	+/-0.302	0.477	1.00	pCi/L			JE1	01/24/24	0957	2551408	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.411	+/-0.344			pCi/L			NXL1	01/30/24	1512	2551488	2
Rad Radium-226													
Radium-226 in Drinking Water EPA 903.1 (De-emanation) "As Received"													
Radium-226	U	0.0203	+/-0.164	0.381	1.00	pCi/L			LXP1	01/29/24	0824	2551043	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/ EPA 9320	
2	Calculation	
3	EPA 903.1	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Yttrium Carrier	EPA 904.0 Radium-228 in Drinking Water "As Received"			69.4	(25%-125%)
Barium Carrier	EPA 904.0 Radium-228 in Drinking Water "As Received"			108	(25%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: January 31, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S57346.02	Project:	MERI00120
Sample ID:	651135002	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	03-JAN-24 11:30		
Receive Date:	09-JAN-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
EPA 904.0 Radium-228 in Drinking Water "As Received"													
Radium-228	U	0.293	+/-0.296	0.482	1.00	pCi/L			JE1	01/24/24	0957	2551408	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.494	+/-0.357			pCi/L			NXL1	01/30/24	1512	2551488	2
Rad Radium-226													
Radium-226 in Drinking Water EPA 903.1 (De-emanation) "As Received"													
Radium-226	U	0.201	+/-0.200	0.290	1.00	pCi/L			LXP1	01/29/24	0859	2551043	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/ EPA 9320	
2	Calculation	
3	EPA 903.1	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Yttrium Carrier	EPA 904.0 Radium-228 in Drinking Water "As Received"			50.7	(25%-125%)
Barium Carrier	EPA 904.0 Radium-228 in Drinking Water "As Received"			108	(25%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: January 31, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S57346.03	Project:	MERI00120
Sample ID:	651135003	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	03-JAN-24 12:50		
Receive Date:	09-JAN-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
EPA 904.0 Radium-228 in Drinking Water "As Received"													
Radium-228	U	0.198	+/-0.448	0.807	1.00	pCi/L			JE1	01/24/24	0957	2551408	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.525	+/-0.519			pCi/L			NXL1	01/30/24	1512	2551488	2
Rad Radium-226													
Radium-226 in Drinking Water EPA 903.1 (De-emanation) "As Received"													
Radium-226	U	0.327	+/-0.262	0.363	1.00	pCi/L			LXP1	01/29/24	0859	2551043	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/ EPA 9320	
2	Calculation	
3	EPA 903.1	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Yttrium Carrier	EPA 904.0 Radium-228 in Drinking Water "As Received"			40.2	(25%-125%)
Barium Carrier	EPA 904.0 Radium-228 in Drinking Water "As Received"			109	(25%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: January 31, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S57346.04	Project:	MERI00120
Sample ID:	651135004	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	03-JAN-24 14:34		
Receive Date:	09-JAN-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
EPA 904.0 Radium-228 in Drinking Water "As Received"													
Radium-228	U	0.402	+/-0.441	0.733	1.00	pCi/L			JE1	01/24/24	0958	2551408	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.477	+/-0.462			pCi/L			NXL1	01/30/24	1512	2551488	2
Rad Radium-226													
Radium-226 in Drinking Water EPA 903.1 (De-emanation) "As Received"													
Radium-226	U	0.0752	+/-0.138	0.264	1.00	pCi/L			LXP1	01/29/24	0859	2551043	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/ EPA 9320	
2	Calculation	
3	EPA 903.1	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Yttrium Carrier	EPA 904.0 Radium-228 in Drinking Water "As Received"			40.5	(25%-125%)
Barium Carrier	EPA 904.0 Radium-228 in Drinking Water "As Received"			105	(25%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: January 31, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S57346.05	Project:	MERI00120
Sample ID:	651135005	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	03-JAN-24 12:50		
Receive Date:	09-JAN-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
EPA 904.0 Radium-228 in Drinking Water "As Received"													
Radium-228	U	0.211	+/-0.409	0.724	1.00	pCi/L			JE1	01/24/24	0958	2551408	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.369	+/-0.454			pCi/L			NXL1	01/30/24	1512	2551488	2
Rad Radium-226													
Radium-226 in Drinking Water EPA 903.1 (De-emanation) "As Received"													
Radium-226	U	0.158	+/-0.197	0.328	1.00	pCi/L			LXP1	01/29/24	0859	2551043	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/ EPA 9320	
2	Calculation	
3	EPA 903.1	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Yttrium Carrier	EPA 904.0 Radium-228 in Drinking Water "As Received"			48.4	(25%-125%)
Barium Carrier	EPA 904.0 Radium-228 in Drinking Water "As Received"			109	(25%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: January 31, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S57346.06 Field Blank	Project:	MERI00120
Sample ID:	651135006	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	03-JAN-24 09:25		
Receive Date:	09-JAN-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
EPA 904.0 Radium-228 in Drinking Water "As Received"													
Radium-228	U	-0.335	+/-0.314	0.642	1.00	pCi/L			JE1	01/24/24	0958	2551408	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.0989	+/-0.363			pCi/L			NXL1	01/30/24	1512	2551488	2
Rad Radium-226													
Radium-226 in Drinking Water EPA 903.1 (De-emanation) "As Received"													
Radium-226	U	0.0989	+/-0.181	0.348	1.00	pCi/L			LXP1	01/29/24	0859	2551043	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/ EPA 9320	
2	Calculation	
3	EPA 903.1	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Yttrium Carrier	EPA 904.0 Radium-228 in Drinking Water "As Received"			72.4	(25%-125%)
Barium Carrier	EPA 904.0 Radium-228 in Drinking Water "As Received"			114	(25%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Quality Control Data

GEL LABORATORIES LLC

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

QC Summary

Report Date: January 31, 2024

Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan

Contact: **John Laverty**

Workorder: **651135**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2551408										
QC1205620195 651308001 DUP										
Radium-228	U	0.501	U	0.0281	pCi/L	N/A		N/A	JE1	01/24/24 09:56
	Uncertainty	+/-0.385		+/-0.285						
QC1205620197 LCS										
Radium-228	3.45			2.87	pCi/L		83.3	(80%-120%)		01/24/24 09:57
	Uncertainty			+/-0.673						
QC1205620194 MB										
Radium-228			U	-0.266	pCi/L					01/24/24 09:57
	Uncertainty			+/-0.258						
QC1205620196 651308001 MS										
Radium-228	17.3 U	0.501		13.6	pCi/L		78.6	(70%-130%)		01/24/24 09:57
	Uncertainty	+/-0.385		+/-1.24						
Rad Ra-226										
Batch 2551043										
QC1205619667 651205001 DUP										
Radium-226	U	-0.0273	U	0.143	pCi/L	N/A		N/A	LXP1	01/29/24 09:35
	Uncertainty	+/-0.0755		+/-0.185						
QC1205619669 LCS										
Radium-226	14.9			13.8	pCi/L		92.9	(90%-110%)		01/29/24 09:35
	Uncertainty			+/-1.39						
QC1205619666 MB										
Radium-226			U	-0.0156	pCi/L					01/29/24 09:35
	Uncertainty			+/-0.0812						
QC1205619668 651205001 MS										
Radium-226	14.9 U	-0.0273		12.2	pCi/L		81.8	(80%-120%)		01/29/24 09:35
	Uncertainty	+/-0.0755		+/-1.25						

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

QC Summary

Workorder: 651135

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

H	Analytical holding time was exceeded
<	Result is less than value reported
>	Result is greater than value reported
UI	Gamma Spectroscopy--Uncertain identification
BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
**	Analyte is a Tracer compound
M	REMP Result > MDC/CL and < RDL
J	See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Gas Flow Raw Data

Batch 2551408 Check-list

This check-list was completed on 24-JAN-24 by Rhonda Birch

This batch was reviewed by Kenshalla Oston on 24-JAN-24 and Rhonda Birch on 24-JAN-24.

Batch ID: 2551408 **Product:** GFC28RAD **Description:** Gas Flow Radium 228 GL-RAD-A-030

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous		No	
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were all tracer/carrier recoveries within the required acceptance limits?	Yes		
10	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
11	Were the matrix spike (MS/MSD) recoveries within the acceptance limits?	Yes		
12	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
13	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
14	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-228 in Drinking Water

Batch ID: **2551408**
Analyst: Jacqueline Winston (JE1)
Method: EPA 904.0/ EPA 9320
Lab SOP: GL-RAD-A-030 REV# 21
Instrument: SP-C018367602
Low Background Proportional Counter

Due Dates for Lab: 03-FEB-2024 **Package: 05-FEB-2024** **SDG: 06-FEB-2024**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1205620197	Radium-228 DW SPIKE	2051-C	.1	mL
MS	1205620196	Radium-228 DW SPIKE	2051-C	.5	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Decay (date)	Y Initial Weight (g)	Y Final Weight (g)	Y Net Weight (mg)	Ba Initial Weight (g)	Ba Final Weight (g)	Barium Carrier Yield (percent)	Yttrium Carrier Yield (percent)	Ba Net Weight (mg)
1	651104009	19-JAN-2024	1	1002.7	1002.7	01/22/24 10:45	01/24/24 06:46	0.0737	0.0887	15	7.6531	7.7144	111	56	61.3
2	651104010	19-JAN-2024	1	1001.3	1001.3	01/22/24 10:45	01/24/24 06:46	0.073	0.0836	10.6	7.6768	7.7365	108	40	59.7
3	651104011	19-JAN-2024	1	1000.4	1000.4	01/22/24 10:45	01/24/24 06:46	0.0732	0.0909	17.7	7.6811	7.7287	86	66	47.6
4	651104012	19-JAN-2024	1	1002.8	1002.8	01/22/24 10:45	01/24/24 06:46	0.0742	0.0863	12.1	7.5498	7.6005	91	45	50.7
5	651135001	19-JAN-2024	1	1007.4	1007.4	01/22/24 10:45	01/24/24 06:46	0.0742	0.0927	18.5	7.6618	7.7219	108	69	60.1
6	651135002	19-JAN-2024	1	1007.6	1007.6	01/22/24 10:45	01/24/24 06:46	0.075	0.0885	13.5	7.6726	7.7322	108	51	59.6
7	651135003	19-JAN-2024	1	1004.7	1004.7	01/22/24 10:45	01/24/24 06:46	0.0742	0.0849	10.7	7.6767	7.7369	109	40	60.2
8	651135004	19-JAN-2024	1	1003.3	1003.3	01/22/24 10:45	01/24/24 06:46	0.0743	0.0851	10.8	7.6744	7.7325	105	41	58.1
9	651135005	19-JAN-2024	1	1005.3	1005.3	01/22/24 10:45	01/24/24 06:46	0.0734	0.0863	12.9	7.6773	7.7378	109	48	60.5
10	651135006	19-JAN-2024	1	1006.9	1006.9	01/22/24 10:45	01/24/24 06:46	0.0741	0.0934	19.3	7.6849	7.7481	114	72	63.2
12	1205620194 MB	19-JAN-2024	1		1007.6	01/22/24 10:45	01/24/24 06:46	0.0727	0.0864	13.7	7.682	7.7425	109	51	60.5
13	651308001 TW	19-JAN-2024	1		1007.6	01/22/24 10:45	01/24/24 06:46	0.0742	0.0886	14.4	7.6607	7.7221	111	54	61.4
14	1205620195 DUP (651308001)	19-JAN-2024	1		1007.6	01/22/24 10:45	01/24/24 06:46	0.0737	0.0866	12.9	7.6598	7.7238	115	48	64
15	1205620196 MS (651308001)	19-JAN-2024	1		1007.6	01/22/24 10:45	01/24/24 06:46	0.0737	0.0863	12.6	7.5604	7.6254	117	47	65
16	1205620197 LCS	19-JAN-2024	1		1007.6	01/22/24 10:45	01/24/24 06:46	0.0736	0.085	11.4	7.6681	7.7328	117	43	64.7

Reagent/Solvent Lot ID	Description	Amount
CARR 4067332	Barium Carrier Ra228 DW 2mL=55.43	2 mL
CARR 4080480	Y Carrier 1mL=26.65mg	1 mL
REGNT 4070105	RGF-0.25M EDTA	85 mL
REGNT 3979611	RGF-0.9M Sr/Y Carrier	2 mL
REGNT 4065518	RGF-1.5 mg/mL Lead Nitrate	1 mL
REGNT 4211192	RGF-1.5M Ammonium Sulfate	10 mL
REGNT 4068806	RGF-10N Sodium Hydroxide	3 mL
REGNT 4067893	10mg/mL Strontium Nitrate	2 mL
REGNT 4071859	RGF-15mg/mL Lead Nitrate	10 mL
REGNT 4082191	18N Sodium Hydroxide	5 mL

Comments:
Pipet Id: RAD-GFC-1795419
Pipet Id: RAD-GFC-15505391
Pipet Id: RAD-GFC-G31467I
Data Entry Date2: 19-JAN-2024 11:04 GFC-C045440487 Jacqueline Winston
Data Entry Date3: 19-JAN-2024 00:00

Prep Logbook

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Decay (date)	Y Initial Weight (g)	Y Final Weight (g)	Y Net Weight (mg)	Ba Initial Weight (g)	Ba Final Weight (g)	Barium Carrier Yield (percent)	Yttrium Carrier Yield (percent)	Ba Net Weight (mg)

Reagent/Solvent Lot ID	Description	Amount
REGNT 4210700	RGF-1M Citric Acid	5 mL
REGNT 3285181	RGF-2% Ammonium Sulfide	.3 mL
REGNT 3971900	RGF-5% Ammonium Oxalate	5 mL
REGNT 4051303	RGF-6M Nitric Acid	2 mL
REGNT 4047703.5	Acetic Acid Glacial ACS Poly Coated Bottle	10 mL
REGNT 3854053.5	Bromocresol Green Indicator	1 mL
REGNT 3484616.1	Methyl Orange Indicator	1 mL
REGNT 4211094	PES Filter	1 filter
REGNT 3460248.2	Thymol Blue Indicator0.0.04%	.5 mL
REGNT 3961865	RGF-1:1 Sulfuric Acid	5 mL
REGNT 4212019	RGF-1M Nitric Acid	1.5 mL
REGNT 4210267.11	RGF-Ammonium Hydroxide	10 mL
REGNT 4077688.52	Nitric Acid	24 mL
REGNT 4080472	Yttrium Carrier 18mg/mL	1 mL

Comments:

Radium-228 Drinking Water Liquid

Filename : RA228DW.XLS
File type : Excel
Version # : 1.4.2

Batch : 2551408
Analyst : JAC02417
Prep Date : 1/19/2024
Ra-228 Method Uncertainty : 0.0809

Geometry: Yttrium Oxalate on 47mm filter

Ba Carrier S/N : 4067332
Carrier Exp Date : 12/1/2024
Carrier Volume Added: 2.0
Carrier Weight (mg/ml): 27.71
Carrier Weight StDev.: 0.26

Y Carrier S/N : 4080480
Carrier Exp Date : 1/2/2025
Carrier Volume Added: 1.00
Carrier Weight (mg/ml): 26.65
Carrier Weight StDev.: 0.21

Procedure Code : GFC28RAD
Parmname : Radium-228
Required MDA : 1 pCi/L
Ra-228 Abundance : 1.00
Halflife of Ra-228 : 5.75 years
Halflife of Ac-228 : 6.15 hours

Sample Characteristics					**Carrier Calculations**							
		Sample	Sample Aliquot		Net Weight (mg)		Net Weight StDev. (mg)		Carrier Aliquot (mL)		Carrier Aliquot StDev. (mL)	
Pos.	Sample ID	Aliquot L	StDev. L	Sample Date/Time	Ba	Y	Ba	Y	Ba	Y	Ba	Y
1	651104009.1	1.0027	2.0399E-05	1/4/2024 8:14	61.3	15.0	0.270797	0.071800	2.0	1.0	0.002000	0.002000
2	651104010.1	1.0013	2.0399E-05	1/4/2024 7:42	59.7	10.6	0.263921	0.052889	2.0	1.0	0.002000	0.002000
3	651104011.1	1.0004	2.0399E-05	1/4/2024 7:27	47.6	17.7	0.211915	0.083405	2.0	1.0	0.002000	0.002000
4	651104012.1	1.0028	2.0399E-05	1/4/2024 7:13	50.7	12.1	0.225239	0.059336	2.0	1.0	0.002000	0.002000
5	651135001.1	1.0074	2.0399E-05	1/3/2024 15:08	60.1	18.5	0.265640	0.086843	2.0	1.0	0.002000	0.002000
6	651135002.1	1.0076	2.0399E-05	1/3/2024 11:30	59.6	13.5	0.263491	0.065353	2.0	1.0	0.002000	0.002000
7	651135003.1	1.0047	2.0399E-05	1/3/2024 12:50	60.2	10.7	0.266070	0.053319	2.0	1.0	0.002000	0.002000
8	651135004.1	1.0033	2.0399E-05	1/3/2024 14:34	58.1	10.8	0.257044	0.053748	2.0	1.0	0.002000	0.002000
9	651135005.1	1.0053	2.0399E-05	1/3/2024 12:50	60.5	12.9	0.267359	0.062774	2.0	1.0	0.002000	0.002000
10	651135006.1	1.0069	2.0399E-05	1/3/2024 9:25	63.2	19.3	0.278964	0.090281	2.0	1.0	0.002000	0.002000
11	1205620194.1	1.0076	2.0399E-05	1/19/2024 0:00	60.5	13.7	0.267359	0.066213	2.0	1.0	0.002000	0.002000
12	651308001.1	1.0076	2.0399E-05	1/19/2024 0:00	61.4	14.4	0.271227	0.069221	2.0	1.0	0.002000	0.002000
13	1205620195.1	1.0076	2.0399E-05	1/19/2024 0:00	64.0	12.9	0.282402	0.062774	2.0	1.0	0.002000	0.002000
14	1205620196.1	1.0076	2.0399E-05	1/19/2024 0:00	65.0	12.6	0.286700	0.061485	2.0	1.0	0.002000	0.002000
15	1205620197.1	1.0076	2.0399E-05	1/19/2024 0:00	64.7	11.4	0.285411	0.056327	2.0	1.0	0.002000	0.002000

Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1 ml Stdev : +/- 0.002000 ml

Analytical SOP: GL-RAD-A-030
Instrument SOP: GL-RAD-I-016

Count Raw Data							**Calibration Data**							
Pos.	Detector ID	Counting Time (min.)	Gross Counts Alpha	Gross Counts Beta	Beta cpm	Count Start Date/Time	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Weekly Bkg cpm	Weekly Bkg Count Start Date/Time	Weekly Bkg Count Time (min.)
1	1A	60	7	96	1.600	1/24/2024 9:57	PIC	6/1/2023	5/31/2024	0.8025	0.00738	0.738	1/19/2024 18:15	500
2	1C	60	7	75	1.250	1/24/2024 9:57	PIC	6/1/2023	5/31/2024	0.8243	0.00847	0.852	1/19/2024 18:15	500
3	1D	60	6	57	0.950	1/24/2024 9:57	PIC	6/1/2023	5/31/2024	0.7984	0.00692	0.774	1/19/2024 18:15	500
4	2A	60	8	57	0.950	1/24/2024 9:57	PIC	6/1/2023	5/31/2024	0.8040	0.01914	0.770	1/19/2024 18:15	500
5	2B	60	2	60	1.000	1/24/2024 9:57	PIC	6/1/2023	5/31/2024	0.7942	0.02111	0.660	1/19/2024 18:15	500
6	2C	60	12	30	0.500	1/24/2024 9:57	PIC	6/1/2023	5/31/2024	0.7923	0.01274	0.316	1/19/2024 18:15	500
7	3B	60	1	38	0.633	1/24/2024 9:57	PIC	6/1/2023	5/31/2024	0.7452	0.01614	0.540	1/19/2024 18:15	500
8	3C	60	3	34	0.567	1/24/2024 9:58	PIC	6/1/2023	5/31/2024	0.7305	0.00988	0.386	1/19/2024 18:15	500
9	4A	60	2	47	0.783	1/24/2024 9:58	PIC	6/1/2023	5/31/2024	0.7488	0.01123	0.662	1/19/2024 18:15	500
10	4D	60	15	66	1.100	1/24/2024 9:58	PIC	6/1/2023	5/31/2024	0.7563	0.00773	1.404	1/19/2024 18:16	500
11	5C	60	5	22	0.367	1/24/2024 9:57	PIC	6/1/2023	5/31/2024	0.7829	0.00657	0.538	1/19/2024 18:16	500
12	5D	60	6	58	0.967	1/24/2024 9:58	PIC	6/1/2023	5/31/2024	0.7678	0.00925	0.630	1/19/2024 18:16	500
13	7A	60	0	26	0.433	1/24/2024 9:56	PIC	6/1/2023	5/31/2024	0.7532	0.00594	0.416	1/19/2024 18:10	500
14	7B	60	42	514	8.567	1/24/2024 9:57	PIC	6/1/2023	5/31/2024	0.7354	0.00627	0.470	1/19/2024 18:10	500
15	7D	60	14	121	2.017	1/24/2024 9:57	PIC	6/1/2023	5/31/2024	0.7398	0.01113	0.462	1/19/2024 18:10	500

Decay, Ingrowth & Yield Calculations

Pos.	Ac-228 Ingrowth Date/Time	Ac-228 Decay Date/Time	Ra-228 Decay	Ac-228 Decay	Ac-228 Ingrowth	Ac-228 Count Correction	Calculated Sample Recovery % Ba	Y	Total	Sample Recovery Error Ba	Y	Total
1	1/22/2024 10:45	1/24/2024 6:46	0.993	0.698	0.993	1.057	111%	56.3%	62.3%	1.13%	1.06%	1.55%
2	1/22/2024 10:45	1/24/2024 6:46	0.993	0.698	0.993	1.057	108%	39.8%	42.8%	1.13%	1.08%	1.56%
3	1/22/2024 10:45	1/24/2024 6:46	0.993	0.698	0.993	1.057	85.9%	66.4%	57.0%	1.13%	1.05%	1.55%
4	1/22/2024 10:45	1/24/2024 6:46	0.993	0.698	0.993	1.057	91.5%	45.4%	41.5%	1.13%	1.07%	1.56%
5	1/22/2024 10:45	1/24/2024 6:46	0.993	0.697	0.993	1.057	108%	69.4%	75.3%	1.13%	1.05%	1.54%
6	1/22/2024 10:45	1/24/2024 6:46	0.993	0.697	0.993	1.057	108%	50.7%	54.5%	1.13%	1.06%	1.55%
7	1/22/2024 10:45	1/24/2024 6:46	0.993	0.697	0.993	1.057	109%	40.2%	43.6%	1.13%	1.08%	1.56%
8	1/22/2024 10:45	1/24/2024 6:46	0.993	0.697	0.993	1.057	105%	40.5%	42.5%	1.13%	1.08%	1.56%
9	1/22/2024 10:45	1/24/2024 6:46	0.993	0.697	0.993	1.057	109%	48.4%	52.8%	1.13%	1.07%	1.55%
10	1/22/2024 10:45	1/24/2024 6:46	0.993	0.697	0.993	1.057	114%	72.4%	82.6%	1.13%	1.05%	1.54%
11	1/22/2024 10:45	1/24/2024 6:46	0.998	0.698	0.993	1.057	109%	51.4%	56.1%	1.13%	1.06%	1.55%
12	1/22/2024 10:45	1/24/2024 6:46	0.998	0.697	0.993	1.057	111%	54.0%	59.9%	1.13%	1.06%	1.55%
13	1/22/2024 10:45	1/24/2024 6:46	0.998	0.699	0.993	1.057	115%	48.4%	55.9%	1.13%	1.07%	1.55%
14	1/22/2024 10:45	1/24/2024 6:46	0.998	0.698	0.993	1.057	117%	47.3%	55.5%	1.13%	1.07%	1.55%
15	1/22/2024 10:45	1/24/2024 6:46	0.998	0.698	0.993	1.057	117%	42.8%	49.9%	1.13%	1.07%	1.56%

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N :	2051-C
Spike Exp Date :	4/27/2024
Spike Activity (dpm/ml):	77.18
Spike Volume Added:	0.50
LCS S/N :	2051-C
LCS Exp Date :	4/27/2024
LCS Activity (dpm/ml):	77.18
LCS Volume Added:	0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L
1	0.3777	0.2667	1	0.6024	**1.1907**	19.54%	0.8620	0.1678	0.4542	0.4935		SAMPLE			
2	0.5750	0.4060	1	0.9098	**0.7789**	37.76%	0.3980	0.1501	0.5758	0.5896		SAMPLE			
3	0.4254	0.3004	1	0.6767	**0.2674**	74.93%	0.1760	0.1318	0.3925	0.3949		SAMPLE			
4	0.5774	0.4077	1	0.9187	**0.3721**	73.27%	0.1800	0.1318	0.5340	0.5376		SAMPLE			
5	0.2973	0.2099	1	0.4773	**0.3909**	39.53%	0.3400	0.1341	0.3022	0.3091		SAMPLE			
6	0.2850	0.2012	1	0.4820	**0.2930**	51.50%	0.1840	0.0947	0.2955	0.2994		SAMPLE			
7	0.4962	0.3503	1	0.8068	**0.1980**	115.59%	0.0933	0.1079	0.4485	0.4497		SAMPLE			
8	0.4400	0.3107	1	0.7326	**0.4019**	55.98%	0.1807	0.1011	0.4408	0.4456		SAMPLE			
9	0.4511	0.3185	1	0.7241	**0.2113**	98.85%	0.1213	0.1199	0.4094	0.4108		SAMPLE			
10	0.4156	0.2934	1	0.6419	**-0.3349**	47.86%	-0.3040	0.1454	0.3140	0.3140		SAMPLE			
11	0.3631	0.2564	1	0.5905	**-0.2665**	49.51%	-0.1713	0.0848	0.2584	0.2585		MB			
12	0.3762	0.2656	1	0.6057	**0.5013**	39.19%	0.3367	0.1318	0.3846	0.3931		TW			
13	0.3329	0.2350	1	0.5511	**0.0281**	517.76%	0.0173	0.0897	0.2852	0.2852	651308001.1	DUP	* 0.0%		
14	0.3654	0.2580	1	0.5996	**13.5557**	4.97%	8.0967	0.3791	1.2440	2.5231	651308001.1	MS			17.2527
15	0.4000	0.2824	1	0.6572	**2.8737**	12.11%	1.5547	0.1858	0.6733	0.8201		LCS			3.4505

Recovery
78.6%
83.3%

SampleID	Instr	Time (min.)	Alpha Counts	Beta Counts	Count Start Time	Count End Time	Machine	Batch ID
651104009	1A	60	7	96	1/24/2024 9:57	1/24/2024 10:57	PIC	2551408
651104010	1C	60	7	75	1/24/2024 9:57	1/24/2024 10:57	PIC	2551408
651104011	1D	60	6	57	1/24/2024 9:57	1/24/2024 10:57	PIC	2551408
651104012	2A	60	8	57	1/24/2024 9:57	1/24/2024 10:57	PIC	2551408
651135001	2B	60	2	60	1/24/2024 9:57	1/24/2024 10:57	PIC	2551408
651135002	2C	60	12	30	1/24/2024 9:57	1/24/2024 10:57	PIC	2551408
651135003	3B	60	1	38	1/24/2024 9:57	1/24/2024 10:57	PIC	2551408
651135004	3C	60	3	34	1/24/2024 9:58	1/24/2024 10:58	PIC	2551408
651135005	4A	60	2	47	1/24/2024 9:58	1/24/2024 10:58	PIC	2551408
651135006	4D	60	15	66	1/24/2024 9:58	1/24/2024 10:58	PIC	2551408
651308001	5D	60	6	58	1/24/2024 9:58	1/24/2024 10:58	PIC	2551408
1205620194	5C	60	5	22	1/24/2024 9:57	1/24/2024 10:57	PIC	2551408
1205620195	7A	60	0	26	1/24/2024 9:56	1/24/2024 10:56	PIC	2551408
1205620196	7B	60	42	514	1/24/2024 9:57	1/24/2024 10:57	PIC	2551408
1205620197	7D	60	14	121	1/24/2024 9:57	1/24/2024 10:57	PIC	2551408

Continuing Calibration Data

Gas Flow Proportional Counter Checks for 24-Jan-2024

Detectors LB4100 E1 through H4 and PIC 1A through 14D and G5400W 1W through 1Z and LB4200 GA1 through OD4

Short Name	Status	Parmname	Run Time	Count Time	CPM or dec	Low Limit	High Limit	Stdev
LB4100G2	Below	Alpha eff	24-Jan 05:40	5	11737	12110	13740	-4.37
LB4100G2	Above	Alpha XTalk	24-Jan 05:40	5	0.216	0.179	0.214	+3.46
LB4100G3	Below	Alpha eff	24-Jan 05:40	5	8035	8123	10070	-3.27
LB4100G3	Above	Beta bkg	24-Jan 04:36	60	2.767	0.716	2.721	+3.14
LB4100H1	Above	Alpha bkg	24-Jan 04:36	60	0.483	-8.08E-2	0.225	+8.06
LB4100H1	Above	Alpha eff	24-Jan 05:40	5	12093	7523	11160	+4.54
LB4100H1	Above	Beta bkg	24-Jan 04:36	60	3.567	-5.15E-1	3.743	+2.75
LB4100H2	Above	Alpha bkg	24-Jan 04:36	60	0.400	0.057	0.420	+2.67
LB4100H3	Below	Alpha XTalk	24-Jan 05:40	5	0.289	0.292	0.367	-3.25
LB4200GB2	need 2nd	Alpha eff	24-Jan 05:54	5	9472	9443	9898	-2.61
LB4200GB2	Above	Beta bkg	24-Jan 06:33	60	65.833	0.129	1.304	+332.37
LB4200OB1	need 2nd	Alpha bkg	24-Jan 04:41	60	0.067	-1.05E-1	0.362	-0.79
LB4200OB1	Above	Beta bkg	24-Jan 04:41	60	4.833	-2.59E-1	2.044	+10.27
PIC4C	Above	Alpha bkg	24-Jan 05:09	60	0.400	-6.39E-2	0.394	+3.08
PIC4C	Above	Alpha eff	24-Jan 04:54	5	23854	19080	21320	+9.79
PIC4C	Below	Alpha XTalk	24-Jan 04:54	5	0.087	0.210	0.310	-10.42
PIC4C	Below	Beta eff	24-Jan 05:02	5	19972	23400	26740	-9.16
PIC4C	Above	Beta XTalk	24-Jan 05:02	5	0.290	-3.23E-2	0.066	+16.68
PIC8D	Above	Alpha bkg	24-Jan 07:28	60	0.333	-4.64E-2	0.372	+2.45
PIC9A	Above	Beta bkg	24-Jan 06:36	60	2.050	0.060	1.587	+4.82
PIC14D	Above	Beta bkg	24-Jan 05:42	60	2.267	-2.45E-1	2.368	+2.77

INSTRUMENTS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

The following detectors may not have properly transferred to the LIMS system

PIC1B	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
PIC5B	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
PIC10B	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk

Reviewed by Jasmine Conley

Date 1/24/24

Runlogs

Instrument Run Log

Instrument Type: GFPC **Batch ID: 2551408**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1205620195	DUP	JE1	PIC7A	JAN-24-24 09:56:57	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
1205620196	MS	JE1	PIC7B	JAN-24-24 09:57:02	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
1205620197	LCS	JE1	PIC7D	JAN-24-24 09:57:07	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
1205620194	MB	JE1	PIC5C	JAN-24-24 09:57:26	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
651104009	SAMPLE	JE1	PIC1A	JAN-24-24 09:57:33	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
651104010	SAMPLE	JE1	PIC1C	JAN-24-24 09:57:39	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
651104011	SAMPLE	JE1	PIC1D	JAN-24-24 09:57:42	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
651104012	SAMPLE	JE1	PIC2A	JAN-24-24 09:57:46	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
651135001	SAMPLE	JE1	PIC2B	JAN-24-24 09:57:49	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
651135002	SAMPLE	JE1	PIC2C	JAN-24-24 09:57:52	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
651135003	SAMPLE	JE1	PIC3B	JAN-24-24 09:57:56	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
651135004	SAMPLE	JE1	PIC3C	JAN-24-24 09:58:00	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
651135005	SAMPLE	JE1	PIC4A	JAN-24-24 09:58:06	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
651135006	SAMPLE	JE1	PIC4D	JAN-24-24 09:58:09	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00
651308001	TW	JE1	PIC5D	JAN-24-24 09:58:15	DONE	Yttrium Oxalate on 47mm filter	01-JUN-23 00:00

Lucas Cell Raw Data

Batch 2551043 Check-list

This check-list was completed on 29-JAN-24 by Lyndsey Pace

This batch was reviewed by Lyndsey Pace on 29-JAN-24 and Kate Gellatly on 30-JAN-24.

Batch ID:	**Product:**	**Description:** Lucas Cell Radium-226
2551043	LUC26RAD	GL-RAD-A-028

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous		No	
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the matrix spike (MS/MSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-226 in Drinking Water by EPA 903.1

Batch ID: **2551043**
Analyst: Lyndsey Pace (LXP1)
Method: EPA 903.1
Lab SOP: GL-RAD-A-028 REV# 20
Instrument: LUCAS-C202389980
Ludlum Alpha Scintillation Detector

Due Dates for Lab: 03-FEB-2024 **Package: 05-FEB-2024** **SDG: 06-FEB-2024**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
MS	1205619668	Ra-226 emanation spike	1715-I	.1	mL
LCS	1205619669	Ra-226 emanation spike	1715-I	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	End Degas (date)	CELL #	End Transfer (date)	Start Count Time (date)	Background Counts	Total Counts
1	651104009	23-JAN-2024	1	917.68	917.68	01/25/24 10:10	207D	01/29/24 04:14	01/29/24 08:24	5	3
2	651104010	23-JAN-2024	1	907.83	907.83	01/25/24 10:10	402D	01/29/24 04:14	01/29/24 08:24	1	4
3	651104011	23-JAN-2024	1	899.19	899.19	01/25/24 10:10	503D	01/29/24 04:14	01/29/24 08:24	1	4
4	651104012	23-JAN-2024	1	922.27	922.27	01/25/24 10:10	603D	01/29/24 04:14	01/29/24 08:24	5	6
5	651135001	23-JAN-2024	1	845.92	845.92	01/25/24 10:10	704D	01/29/24 04:14	01/29/24 08:24	5	3
6	651135002	23-JAN-2024	1	896.81	896.81	01/25/24 10:10	201D	01/29/24 04:22	01/29/24 08:59	3	7
7	651135003	23-JAN-2024	1	873.27	873.27	01/25/24 10:10	401D	01/29/24 04:22	01/29/24 08:59	6	12
8	651135004	23-JAN-2024	1	856.67	856.67	01/25/24 10:10	502D	01/29/24 04:22	01/29/24 08:59	2	3
9	651135005	23-JAN-2024	1	869.32	869.32	01/25/24 10:10	602D	01/29/24 04:22	01/29/24 08:59	5	7
10	651135006	23-JAN-2024	1	888.37	888.37	01/25/24 10:10	705D	01/29/24 04:22	01/29/24 08:59	2	3
12	1205619666 MB	23-JAN-2024	1		922.27	01/25/24 10:10	205D	01/29/24 04:28	01/29/24 09:35	3	1
13	651205001 TW	23-JAN-2024	1		922.27	01/25/24 10:10	405D	01/29/24 04:28	01/29/24 09:35	4	1
14	1205619667 DUP (651205001)	23-JAN-2024	1		922.27	01/25/24 10:10	501D	01/29/24 04:28	01/29/24 09:35	4	6
15	1205619668 MS (651205001)	23-JAN-2024	1		922.27	01/25/24 10:10	604D	01/29/24 04:28	01/29/24 09:35	8	372
16	1205619669 LCS	23-JAN-2024	1		922.27	01/25/24 10:10	706D	01/29/24 04:28	01/29/24 09:35	2	381

Reagent/Solvent Lot ID	Description	Amount

Comments:
Data Entry Date2: 23-JAN-2024 00:00

Radium-226 Liquid

Filename : RA226.XLS
File type : Excel
Version # : 1.3.2

Batch : 2551043
Analyst : LIN01615
Prep Date : 1/23/2024
Ra-226 Method Uncertainty : 0.0689

Procedure Code : LUC26RAD
Parmname : Radium-226
Required MDA : 1 pCi/L
Halflife of Ra-226 : 1600 years
Ra-226 Abundance : 1.00
Halflife of Rn-222: 3.8235 days

Batch counted on : LUCAS CELL DETECTOR
BKG Count time : 30 min

Sample Characteristics					**Count Raw Data**							
Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	Cell Number	Counting Time (min.)	Gross Counts	Gross CPM	Background Counts	Background CPM	Background Count Time (min.)	Cell Efficiency (cpm/dpm)
1	651104009.1	0.9177	2.0725E-05	1/4/2024 8:14	207D	15	3	0.200	5	0.167	30	2.2190
2	651104010.1	0.9078	2.0750E-05	1/4/2024 7:42	402D	15	4	0.267	1	0.033	30	2.2970
3	651104011.1	0.8992	2.0769E-05	1/4/2024 7:27	503D	15	4	0.267	1	0.033	30	2.0270
4	651104012.1	0.9223	2.0712E-05	1/4/2024 7:13	603D	15	6	0.400	5	0.167	30	2.2600
5	651135001.1	0.8459	2.0846E-05	1/3/2024 15:08	704D	15	3	0.200	5	0.167	30	1.8270
6	651135002.1	0.8968	2.0774E-05	1/3/2024 11:30	201D	15	7	0.467	3	0.100	30	1.9190
7	651135003.1	0.8733	2.0816E-05	1/3/2024 12:50	401D	15	12	0.800	6	0.200	30	1.9860
8	651135004.1	0.8567	2.0837E-05	1/3/2024 14:34	502D	15	3	0.200	2	0.067	30	1.9570
9	651135005.1	0.8693	2.0821E-05	1/3/2024 12:50	602D	15	7	0.467	5	0.167	30	2.0700
10	651135006.1	0.8884	2.0791E-05	1/3/2024 9:25	705D	15	3	0.200	2	0.067	30	1.4340
11	1205619666.1	0.9223	2.0712E-05	1/23/2024 0:00	205D	15	1	0.067	3	0.100	30	2.1890
12	651205001.1	0.9223	2.0712E-05	1/23/2024 0:00	405D	15	1	0.067	4	0.133	30	2.5140
13	1205619667.1	0.9223	2.0712E-05	1/23/2024 0:00	501D	15	6	0.400	4	0.133	30	1.9200
14	1205619668.1	0.9223	2.0712E-05	1/23/2024 0:00	604D	15	372	24.800	8	0.267	30	2.0740
15	1205619669.1	0.9223	2.0712E-05	1/23/2024 0:00	706D	15	381	25.400	2	0.067	30	1.8860

Pipet, 0.1 ml Stdev : +/-	0.000200	ml
Pipet, 0.5 ml Stdev : +/-	0.001000	ml
Pipet, 1 ml Stdev : +/-	0.002000	ml

Analytical SOP: GL-RAD-A-028
Instrument SOP: GL-RAD-I-007

Cell Efficiency Error (%)	Cell Calibration Date	Cell Calibration Due Date	De-Gas Date/Time	Rn-222 Ingrow End Date/Time	Count Start Date/Time	Rn-222 Corrections De-Gas to Ingrowth	Rn-222 Corrections Ingrowth to Count	Rn-222 Corrections During Count	Ra-226 Decay
4.000%	3/20/2023	3/31/2024	1/25/2024 10:10	1/29/2024 4:14	1/29/2024 8:24	0.494	0.969	1.001	1.000
6.300%	2/6/2023	1/31/2024	1/25/2024 10:10	1/29/2024 4:14	1/29/2024 8:24	0.494	0.969	1.001	1.000
7.300%	6/1/2023	5/31/2024	1/25/2024 10:10	1/29/2024 4:14	1/29/2024 8:24	0.494	0.969	1.001	1.000
5.400%	4/11/2023	3/31/2024	1/25/2024 10:10	1/29/2024 4:14	1/29/2024 8:24	0.494	0.969	1.001	1.000
5.200%	12/11/2023	11/30/2024	1/25/2024 10:10	1/29/2024 4:14	1/29/2024 8:24	0.494	0.969	1.001	1.000
6.500%	3/20/2023	3/31/2024	1/25/2024 10:10	1/29/2024 4:22	1/29/2024 8:59	0.494	0.966	1.001	1.000
7.100%	2/6/2023	1/31/2024	1/25/2024 10:10	1/29/2024 4:22	1/29/2024 8:59	0.494	0.966	1.001	1.000
9.500%	6/1/2023	5/31/2024	1/25/2024 10:10	1/29/2024 4:22	1/29/2024 8:59	0.494	0.966	1.001	1.000
5.300%	4/11/2023	3/31/2024	1/25/2024 10:10	1/29/2024 4:22	1/29/2024 8:59	0.494	0.966	1.001	1.000
5.000%	12/11/2023	11/30/2024	1/25/2024 10:10	1/29/2024 4:22	1/29/2024 8:59	0.494	0.966	1.001	1.000
3.100%	3/20/2023	3/31/2024	1/25/2024 10:10	1/29/2024 4:28	1/29/2024 9:35	0.494	0.962	1.001	1.000
4.200%	2/6/2023	1/31/2024	1/25/2024 10:10	1/29/2024 4:28	1/29/2024 9:35	0.494	0.962	1.001	1.000
6.400%	6/1/2023	5/31/2024	1/25/2024 10:10	1/29/2024 4:28	1/29/2024 9:35	0.494	0.962	1.001	1.000
0.700%	4/11/2023	3/31/2024	1/25/2024 10:10	1/29/2024 4:28	1/29/2024 9:35	0.494	0.962	1.001	1.000
8.900%	12/11/2023	11/30/2024	1/25/2024 10:10	1/29/2024 4:28	1/29/2024 9:35	0.494	0.962	1.001	1.000

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N :	1715-I
Spike Exp Date :	8/29/2024
Spike Activity (dpm/ml):	304.16
Spike Volume Added:	0.10
LCS S/N :	1715-I
LCS Exp Date :	8/29/2024
LCS Activity (dpm/ml):	304.16
LCS Volume Added:	0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type		RPD	RER	Nominal pCi/L	Recovery
1	0.1393	0.0983	1	0.2892	**0.0154**	412.33%	0.0333	0.1374	0.1247	0.1247		SAMPLE					
2	0.0608	0.0429	1	0.1763	**0.1055**	59.24%	0.2333	0.1374	0.1218	0.1233		SAMPLE					
3	0.0696	0.0491	1	0.2017	**0.1207**	59.35%	0.2333	0.1374	0.1393	0.1413		SAMPLE					
4	0.1361	0.0961	1	0.2826	**0.1055**	77.12%	0.2333	0.1795	0.1591	0.1602		SAMPLE					
5	0.1835	0.1295	1	0.3811	**0.0203**	412.34%	0.0333	0.1374	0.1643	0.1644		SAMPLE					
6	0.1279	0.0903	1	0.2905	**0.2013**	51.03%	0.3667	0.1856	0.1997	0.2032		SAMPLE					
7	0.1795	0.1268	1	0.3625	**0.3269**	41.44%	0.6000	0.2449	0.2616	0.2692		SAMPLE					
8	0.1072	0.0757	1	0.2642	**0.0752**	94.02%	0.1333	0.1247	0.1378	0.1389		SAMPLE					
9	0.1580	0.1115	1	0.3281	**0.1575**	64.05%	0.3000	0.1915	0.1971	0.1989		SAMPLE					
10	0.1411	0.0996	1	0.3476	**0.0989**	93.67%	0.1333	0.1247	0.1813	0.1821		SAMPLE					
11	0.1094	0.0772	1	0.2484	**-0.0156**	264.59%	-0.0333	0.0882	0.0812	0.0812		MB					
12	0.1100	0.0777	1	0.2371	**-0.0273**	141.48%	-0.0667	0.0943	0.0755	0.0756		TW					
13	0.1440	0.1017	1	0.3104	**0.1427**	66.45%	0.2667	0.1764	0.1850	0.1869	651205001.1	DUP	*	0.0%			
14	0.1885	0.1331	1	0.3653	**12.1568**	5.30%	24.5333	1.2893	1.2522	2.0715	651205001.1	MS				14.8555	81.8%
15	0.1037	0.0732	1	0.2554	**13.8046**	10.28%	25.3333	1.3021	1.3907	3.3479		LCS				14.8555	92.9%

Continuing Calibration Data

Ludlum Alpha Scintillation Counter Checks for 29-JAN-2024

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LUCAS1	EFF	05:29	1	1.12E+05	112440	0.32		
LUCAS2	EFF	05:27	1	1.28E+05	127807	-1.61		
LUCAS3	EFF	05:23	1	94524	94524	2.23		
LUCAS4	EFF	05:21	1	1.25E+05	125386	0.1		
LUCAS5	EFF	05:18	1	1.27E+05	127313	-1.87		
LUCAS6	EFF	05:15	1	1.29E+05	129236	1.75		
LUCAS7	EFF	05:13	1	1.30E+05	130367	-0.69		
LUCAS8	EFF	05:08	1	1.07E+05	106799	-2.11		

Reviewed by: Lyndsey Pace **Date:** 29-JAN-24

Lyndsey Pace

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: LUCAS CELL DETECTOR **Batch ID: 2551043**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
651104009	SAMPLE	LXP1	LUCAS2	JAN-29-24 08:24:00	DONE	Lucas Cell	20-MAR-23 00:00
651104010	SAMPLE	LXP1	LUCAS4	JAN-29-24 08:24:00	DONE	Lucas Cell	06-FEB-23 00:00
651104011	SAMPLE	LXP1	LUCAS5	JAN-29-24 08:24:00	DONE	Lucas Cell	01-JUN-23 12:00
651104012	SAMPLE	LXP1	LUCAS6	JAN-29-24 08:24:00	DONE	Lucas Cell	11-APR-23 00:00
651135001	SAMPLE	LXP1	LUCAS7	JAN-29-24 08:24:00	DONE	Lucas Cell	11-DEC-23 00:00
651135002	SAMPLE	LXP1	LUCAS2	JAN-29-24 08:59:00	DONE	Lucas Cell	20-MAR-23 00:00
651135003	SAMPLE	LXP1	LUCAS4	JAN-29-24 08:59:00	DONE	Lucas Cell	06-FEB-23 00:00
651135004	SAMPLE	LXP1	LUCAS5	JAN-29-24 08:59:00	DONE	Lucas Cell	01-JUN-23 12:00
651135005	SAMPLE	LXP1	LUCAS6	JAN-29-24 08:59:00	DONE	Lucas Cell	11-APR-23 00:00
651135006	SAMPLE	LXP1	LUCAS7	JAN-29-24 08:59:00	DONE	Lucas Cell	11-DEC-23 00:00
651205001	TW	LXP1	LUCAS4	JAN-29-24 09:35:00	DONE	Lucas Cell	06-FEB-23 00:00
1205619666	MB	LXP1	LUCAS2	JAN-29-24 09:35:00	DONE	Lucas Cell	20-MAR-23 00:00
1205619667	DUP	LXP1	LUCAS5	JAN-29-24 09:35:00	DONE	Lucas Cell	01-JUN-23 12:00
1205619668	MS	LXP1	LUCAS6	JAN-29-24 09:35:00	DONE	Lucas Cell	11-APR-23 00:00
1205619669	LCS	LXP1	LUCAS7	JAN-29-24 09:35:00	DONE	Lucas Cell	11-DEC-23 00:00

Analytical Laboratory Report

Final Report

Report ID: S58527.01(02)
Generated on 03/08/2024
Replaces report S58527.01(01) generated on 02/12/2024

Report to

Attention: Jennifer Caporale
Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S58527.01-S58527.06
Project: Erickson Well Project 100A-100D
Collected Date(s): 02/07/2024
Submitted Date/Time: 02/08/2024 09:42
Sampled by: Marc Wahrer
P.O. #:

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Starred (*) analytes are not NY NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.
All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.
For a specific list of accredited analytes, please feel free to contact the laboratory or visit https://www.meritlabs.com/certifications.

Report Narrative

All analyses completed

Laboratory Accreditations (For Reference Only)

Authority	Accreditation ID
Michigan DEQ	#9956
DOD ELAP & ISO/IEC 17025:2017	#69699 PJLA Testing
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
E245.1	EPA Method 245.1 Revision 3.0
E300.0	EPA Method 300.0 Revision 2.1 (1993)
SM2320B	Standard Method 2320 B 2011
SM2340C	Standard Method 2340 C 2011
SM2540C	Standard Method 2540 C 2015
SM2540D	Standard Method 2540 D 2015
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (6 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S58527.01	MW-100A L402146-01	Groundwater	02/07/24 15:20
S58527.02	MW-100B L402146-02	Groundwater	02/07/24 11:14
S58527.03	MW-100C L402146-03	Groundwater	02/07/24 12:43
S58527.04	MW-100D L402146-04	Groundwater	02/07/24 14:18
S58527.05	MWT-100C L402146-05	Groundwater	02/07/24 12:43
S58527.06	Field Blank L402146-06	Water	02/07/24 09:18

Lab Sample ID: S58527.01
Sample Tag: MW-100A L402146-01
Collected Date/Time: 02/07/2024 15:20
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/12/24 10:59	CTV	
Metal Digestion	Completed	SW3015A	02/12/24 11:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/24 13:38, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	10.6	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	21.7	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 20:41, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	431	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/12/24 15:32, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	400	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/08/24 23:53, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	410	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/13/24 12:44, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	5.3	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/12/24 12:06, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	0.018	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.200	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	0.05	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	
Iron	2.59	0.02	0.014	mg/L	5	7439-89-6	

Lab Sample ID: S58527.01 (continued)
Sample Tag: MW-100A L402146-01

Method: E200.8, Run Date: 02/12/24 12:06, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.014	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	0.008	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/12/24 15:22, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	90.9	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	36.0	0.50	0.058	mg/L	5	7439-95-4	
Potassium	1.83	0.50	0.12	mg/L	5	7440-09-7	
Sodium	10.4	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/12/24 14:51, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/04/24 08:36, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58527.02
Sample Tag: MW-100B L402146-02
Collected Date/Time: 02/07/2024 11:14
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/12/24 10:59	CTV	
Metal Digestion	Completed	SW3015A	02/12/24 11:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/24 13:50, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	22.3	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	107	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 21:25, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	339	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/12/24 15:38, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	367	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/08/24 23:53, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	496	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/13/24 12:44, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	4.9	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/12/24 12:10, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	0.011	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.147	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	0.26	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	
Iron	2.40	0.02	0.014	mg/L	5	7439-89-6	

Lab Sample ID: S58527.02 (continued)
Sample Tag: MW-100B L402146-02

Method: E200.8, Run Date: 02/12/24 12:10, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.017	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	0.009	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/12/24 15:24, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	96.8	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	29.4	0.50	0.058	mg/L	5	7439-95-4	
Potassium	3.46	0.50	0.12	mg/L	5	7440-09-7	
Sodium	27.1	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/12/24 14:54, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/04/24 09:10, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58527.03
Sample Tag: MW-100C L402146-03
Collected Date/Time: 02/07/2024 12:43
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/12/24 10:59	CTV	
Metal Digestion	Completed	SW3015A	02/12/24 11:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/24 14:03, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	4.7	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	5.8	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 21:30, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	350	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/12/24 15:43, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	238	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/08/24 23:53, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	300	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/13/24 12:44, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/12/24 12:13, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.075	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	1.87	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58527.03 (continued)

Sample Tag: MW-100C L402146-03

Method: E200.8, Run Date: 02/12/24 12:13, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.59	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.033	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/12/24 15:25, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	58.7	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	17.3	0.50	0.058	mg/L	5	7439-95-4	
Potassium	6.12	0.50	0.12	mg/L	5	7440-09-7	
Sodium	25.7	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/12/24 14:57, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/04/24 09:10, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58527.04
Sample Tag: MW-100D L402146-04
Collected Date/Time: 02/07/2024 14:18
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/12/24 10:59	CTV	
Metal Digestion	Completed	SW3015A	02/12/24 11:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/24 14:16, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	9.1	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	0.3	1.0	0.130	mg/L	5	16984-48-8	b
Sulfate	31.0	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 21:36, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	443	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/12/24 15:47, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	69	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/08/24 23:53, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	468	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/13/24 12:44, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	1.8	3	1	mg/L	1		b

Metals

Method: E200.8, Run Date: 02/12/24 12:17, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	0.003	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.012	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	2.84	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58527.04 (continued)
Sample Tag: MW-100D L402146-04

Method: E200.8, Run Date: 02/12/24 12:17, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.13	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.020	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	0.007	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/12/24 15:27, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	20.2	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	3.68	0.50	0.058	mg/L	5	7439-95-4	
Potassium	4.00	0.50	0.12	mg/L	5	7440-09-7	
Sodium	136	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/12/24 15:00, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/04/24 09:10, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58527.05

Sample Tag: MWT-100C L402146-05

Collected Date/Time: 02/07/2024 12:43

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/12/24 10:59	CTV	
Metal Digestion	Completed	SW3015A	02/12/24 11:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/24 14:29, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	4.8	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	5.6	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 22:03, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	354	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/12/24 16:15, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	230	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/08/24 23:53, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	298	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/13/24 12:44, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/12/24 12:20, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.073	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	1.81	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58527.05 (continued)

Sample Tag: MWT-100C L402146-05

Method: E200.8, Run Date: 02/12/24 12:20, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.58	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.032	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/12/24 15:30, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	59.5	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	17.5	0.50	0.058	mg/L	5	7439-95-4	
Potassium	6.03	0.50	0.12	mg/L	5	7440-09-7	
Sodium	26.0	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/12/24 15:04, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/04/24 09:10, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58527.06

Sample Tag: Field Blank L402146-06

Collected Date/Time: 02/07/2024 09:18

Matrix: Water

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/12/24 10:59	CTV	
Metal Digestion	Completed	SW3015A	02/12/24 11:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/24 14:42, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	1.3	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	Not detected	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 22:08, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	1.2	10	0.504	mg/L	1	71-52-3	b
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/12/24 16:19, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	Not detected	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/08/24 23:53, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	Not detected	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/13/24 12:44, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/12/24 12:02, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00090	mg/L	2	7440-36-0	
Arsenic	Not detected	0.002	0.00058	mg/L	2	7440-38-2	
Barium	Not detected	0.005	0.00036	mg/L	2	7440-39-3	
Beryllium	Not detected	0.001	0.000080	mg/L	2	7440-41-7	
Boron	Not detected	0.04	0.0064	mg/L	2	7440-42-8	
Cadmium	Not detected	0.0005	0.00014	mg/L	2	7440-43-9	
Chromium	Not detected	0.005	0.00030	mg/L	2	7440-47-3	
Cobalt	Not detected	0.005	0.00018	mg/L	2	7440-48-4	
Copper	Not detected	0.005	0.00032	mg/L	2	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58527.06 (continued)
Sample Tag: Field Blank L402146-06

Method: E200.8, Run Date: 02/12/24 12:02, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	Not detected	0.02	0.0057	mg/L	2	7439-89-6	
Lead	Not detected	0.003	0.00018	mg/L	2	7439-92-1	
Lithium*	Not detected	0.005	0.00054	mg/L	2	7439-93-2	
Molybdenum	Not detected	0.005	0.0017	mg/L	2	7439-98-7	
Nickel	Not detected	0.005	0.00046	mg/L	2	7440-02-0	
Selenium	Not detected	0.005	0.0017	mg/L	2	7782-49-2	
Silver	Not detected	0.0005	0.00010	mg/L	2	7440-22-4	
Thallium	Not detected	0.002	0.00014	mg/L	2	7440-28-0	
Vanadium	Not detected	0.005	0.00082	mg/L	2	7440-62-2	
Zinc	Not detected	0.005	0.0013	mg/L	2	7440-66-6	

Method: E200.8, Run Date: 02/12/24 15:20, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	Not detected	0.50	0.087	mg/L	2	7440-70-2	
Magnesium	Not detected	0.50	0.023	mg/L	2	7439-95-4	
Potassium	Not detected	0.50	0.048	mg/L	2	7440-09-7	
Sodium	Not detected	0.50	0.044	mg/L	2	7440-23-5	

Method: E245.1, Run Date: 02/12/24 15:07, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/04/24 09:10, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories Login Checklist

Lab Set ID: S58527

Client: BWL01 (Board of Water & Light)

Project: Erickson Well Project 100A-100D

Submitted: 02/08/2024 09:42 Login User: MMC

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Selection				Description	Note
Sample Receiving					
01.	☐ Yes	☒ No	☐ N/A	Samples are received at 4C +/- 2C Thermometer #	IR 1.9
02.	☒ Yes	☐ No	☐ N/A	Received on ice/ cooling process begun	
03.	☐ Yes	☒ No	☐ N/A	Samples shipped	
04.	☐ Yes	☒ No	☐ N/A	Samples left in 24 hr. drop box	
05.	☐ Yes	☐ No	☒ N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	☒ Yes	☐ No	☐ N/A	COC adequately filled out	
07.	☒ Yes	☐ No	☐ N/A	COC signed and relinquished to the lab	
08.	☒ Yes	☐ No	☐ N/A	Sample tag on bottles match COC	
09.	☒ Yes	☐ No	☐ N/A	Subcontracting needed? Subcontacted to:	GEL
Preservation					
10.	☒ Yes	☐ No	☐ N/A	Do sample have correct chemical preservation	
11.	☒ Yes	☐ No	☐ N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	☐ Yes	☒ No	☐ N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	☒ Yes	☐ No	☐ N/A	All bottles intact	
14.	☒ Yes	☐ No	☐ N/A	Appropriate analytical bottles are used	
15.	☒ Yes	☐ No	☐ N/A	Merit bottles used	
16.	☒ Yes	☐ No	☐ N/A	Sufficient sample volume received	
17.	☐ Yes	☒ No	☐ N/A	Samples require laboratory filtration	
18.	☒ Yes	☐ No	☐ N/A	Samples submitted within holding time	
19.	☐ Yes	☐ No	☒ N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: ______________________________ Date:______________

Merit Laboratories Bottle Preservation Check

Lab Set ID: S58527 Submitted: 02/08/2024 09:42

Client: BWL01 (Board of Water & Light)

Project: Erickson Well Project 100A-100D

Initial Preservation Check: 02/08/2024 10:17 MMC

Preservation Recheck (E200.8): N/A

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S58527.01	125mL Plastic HNO3	<2			
S58527.01	1L Plastic HNO3	<2			
S58527.01	1L Plastic HNO3	<2			
S58527.02	125mL Plastic HNO3	<2			
S58527.02	1L Plastic HNO3	<2			
S58527.02	1L Plastic HNO3	<2			
S58527.03	125mL Plastic HNO3	<2			
S58527.03	1L Plastic HNO3	<2			
S58527.03	1L Plastic HNO3	<2			
S58527.04	125mL Plastic HNO3	<2			
S58527.04	1L Plastic HNO3	<2			
S58527.04	1L Plastic HNO3	<2			
S58527.05	125mL Plastic HNO3	<2			
S58527.05	1L Plastic HNO3	<2			
S58527.05	1L Plastic HNO3	<2			
S58527.06	125mL Plastic HNO3	<2			
S58527.06	1L Plastic HNO3	<2			
S58527.06	1L Plastic HNO3	<2			

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO		INVOICE TO	
CONTACT NAME	Jennifer Caporale	CONTACT NAME	Beth Zimpfer ☒ SAME
COMPANY	Lansing Board of Water and Light	COMPANY	
ADDRESS	PO Box 13007 48901-3007	ADDRESS	
CITY / STATE / ZIP CODE	Lansing / Mi / 48901	CITY / STATE / ZIP CODE	
PHONE NO. / FAX NO. / P.O. NO.	517-702-6372 / /	PHONE NO. / E-MAIL ADDRESS	/ Beth.Zimpfer@lbwl.com
E-MAIL ADDRESS / QUOTE NO.	Environmental_Laboratory@lbwl.com /		

PROJECT NO./NAME: Erickson Well Project 100A-100D

SAMPLER(S) - PLEASE PRINT/SIGN NAME: Marc Wahrer

TURNAROUND TIME REQUIRED: ☐ 1 DAY ☒ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☒ OTHER ASAP

DELIVERABLES REQUIRED: ☐ STD ☐ LEVEL II ☒ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	F- undisstiled, Cl-, SO4, TDS	Radium 226	Radium 228	TSS	HCO3, CO3, Hardness					Special Instructions
58527.01	02/07/24	1520	MW-100A L402146-01	GW	5	2		3					✓	✓	✓	✓	✓	✓					Metals to analyse:Na, Mg, K
.02	02/07/24	1114	MW-100B L402146-02	GW	5	2		3					✓	✓	✓	✓	✓	✓					B, Ca, Sb, As, Ba, Be, Cd, Cr,
.03	02/07/24	1243	MW-100C L402146-03	GW	5	2		3					✓	✓	✓	✓	✓	✓					Co, Li, Hg, Mo,Pb,Se, Tl,
.04	02/07/24	1418	MW-100D L402146-04	GW	5	2		3					✓	✓	✓	✓	✓	✓					Fe, Cu, Ni, Ag, V, Zn
.05	02/07/24	1243	MWT- 100C L402146-05	GW	5	2		3					✓	✓	✓	✓	✓	✓					Please send a preliminary report
.06	02/07/24	0918	Field Blank L402146-06	DI	5	2		3					✓	✓	✓	✓	✓	✓					

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☒ NPDES

Project Locations: ☐ Detroit ☐ New York ☐ Other

	SIGNATURE/ORGANIZATION	DATE	TIME
RELINQUISHED BY:	[signature] ☒ Sampler	2-8-24	0942
RECEIVED BY:	M Chilcott	2/8/24	0942
RELINQUISHED BY:			
RECEIVED BY:			
RELINQUISHED BY:			
RECEIVED BY:			

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 1.9

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Reporting Limits to go to Merit with COC

Sb, total	Antimony	250 mL plastic	mg/L	Nitric Acid	200.7	6 mos	0.005
As, total	Arsenic	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
Ba, total		250 mL plastic	mg/L	Nitric Acid	200.8	6mos	0.150
Be, total	Beryllium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.001
B, total	Boron	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.04
Cd, total	Cadmium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
Ca	Calcium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	2.5
Cl	Chloride	250 mL plastic	mg/L	Chill	300.0	28 d	10
Cr, total	Chromium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Co, total	Cobalt	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Cu, total	Copper	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
F	Fluoride	250 mL plastic	mg/L	None	9056	28 d	1.0
Fe, total	Iron	250 mL plastic	mg/L	Nitric Acid	300.0	6 mos	0.02
Pb, total	Lead	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.003
Li, total	Lithium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Hg, total	Mercury	250 mL plastic	mg/L	HNO3	245.1	28 d	0.0002
Mo, total	Molybdenum	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ni, total	Nickel	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
RA226/228	Radium 226 and 228 combined	(2) 1 L plastic	pCi/L	HNO3	SM 7500	6 mos	2.0 combined
Se, total	Selenium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ag, total	Silver	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
SO4	Sulfate	250 mL plastic	mg/L	Chill	300.0	28 d	10
Tl, total	Thallium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
TDS	Total Dissolved Solids	1 L plastic	mg/L	None	SM 2540C	NA	20
TSS	Total Suspended Solids	1 L plastic	mg/L	None	SM 2540D	NA	3
V, total	Vanadium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Zn, total	Zinc	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005

GEL Laboratories LLC
a member of The GEL Group INC

2040 Savage Road | Charleston, SC 29407
843.556.8171

gel.com

March 07, 2024

John Laverty
Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan 48823

Re: Routine Analysis
Work Order: 655017
SDG: S58527

Dear John Laverty:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 12, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1614.

Sincerely,

Delaney Stonesmith

Delaney Stonesmith
Project Manager

Purchase Order: GELP20-0018
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Merit Laboratories, Inc.
SDG: S58527
Work Order: 655017

March 07, 2024

Laboratory Identification:

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

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 12, 2024 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
655017001	S58527.01
655017002	S58527.02
655017003	S58527.03
655017004	S58527.04
655017005	S58527.05
655017006	S58527.06 Field Blank

Case Narrative:

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

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

Delaney Stonesmith

Delaney Stonesmith
Project Manager

Chain of Custody and Supporting Documentation

655017

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME Project Management Team
COMPANY Merit Laboratories
ADDRESS 2680 East Lansing Drive
CITY East Lansing STATE MI ZIP CODE 48823
PHONE NO. 517-332-0167 FAX NO. P.O. NO.
E-MAIL ADDRESS results@meritlabs.com QUOTE NO.

INVOICE TO

CONTACT NAME Julie Teague ☒ SAME
COMPANY Merit Laboratories
ADDRESS 2680 East Lansing Drive
CITY East Lansing STATE MI ZIP CODE 48823
PHONE NO. 517-332-0167 E-MAIL ADDRESS juliet@meritlabs.com

PROJECT NO./NAME S58527
SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☒ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Radium 226*	Radium 228**
	2/7/24	1520	S58527.01	GW	2			2					✓	✓
	2/7/24	1114	S58527.02	GW	2			2					✓	✓
	2/7/24	1243	S58527.03	GW	2			2					✓	✓
	2/7/24	1418	S58527.04	GW	2			2					✓	✓
	2/7/24	1243	S58527.05	GW	2			2					✓	✓
	2/7/24	0918	S58527.06 Field Blank	GW	2			2					✓	✓

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions
* E903.1 Mod.
** E904.0/SW 9320 Mod.

Please use calculation product &
provide Radium 226/228 combined
results on the report

(No Ice needed)
** Subcontracted to
GEL Laboratories, Inc.
2040 Savage Road
Charleston, SC 29407

RELINQUISHED BY: SIGNATURE/ORGANIZATION	Pat Wh ☐ Sampler	DATE 2/8/24	TIME 1700
RECEIVED BY: SIGNATURE/ORGANIZATION	UPS	DATE 2/8/24	TIME 1700
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION	Stacy Boone	DATE 2/12/24	TIME 0940

SEAL NO. SEAL INTACT YES☐ NO☐ INITIALS
SEAL NO. SEAL INTACT YES☐ NO☐ INITIALS
NOTES: TEMP. ON ARRIVAL

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

GEL | Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: MERT		SDG/AR/COC/Work Order: 655017	
Received By: SB		Date Received: 2/12/24	
Carrier and Tracking Number		Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 1Z 466 477 03 6286 9184	

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A) Shipped as a DOT Hazardous?		/	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		/	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		/	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): ___ CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		/	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		/	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	/			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		/		Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 19°
4	Daily check performed and passed on IR temperature gun?	/			Temperature Device Serial #: IR3-23 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	/			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			/	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	/			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	/			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	/			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	/			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			/	
13	COC form is properly signed in relinquished/received sections?	/			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials AM Date 02/15/24 Page 1 of 1

GL-CHL-SR-001 Rev 7

Laboratory Certifications

List of current GEL Certifications as of 07 March 2024

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-23-21
Utah NELAP	SC000122023-38
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
Merit Laboratories, Inc.
SDG #: S58527
Work Order #: 655017

Product: **GFPC Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2570188

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

GEL Sample ID#	Client Sample Identification
655017001	S58527.01
655017002	S58527.02
655017003	S58527.03
655017004	S58527.04
655017005	S58527.05
655017006	S58527.06 Field Blank
1205653413	Method Blank (MB)
1205653414	654532001(S58248.01) Sample Duplicate (DUP)
1205653415	Laboratory Control Sample (LCS)

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

Data Summary:

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

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2570168

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

GEL Sample ID#	Client Sample Identification
655017001	S58527.01
655017002	S58527.02
655017003	S58527.03
655017004	S58527.04
655017005	S58527.05
655017006	S58527.06 Field Blank
1205653347	Method Blank (MB)
1205653348	654458007(NonSDG) Sample Duplicate (DUP)
1205653349	654458007(NonSDG) Matrix Spike (MS)
1205653350	Laboratory Control Sample (LCS)

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

Data Summary:

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

Miscellaneous Information

Additional Comments
The matrix spike, 1205653349 (Non SDG 654458007MS), aliquot was reduced to conserve sample volume.

Certification Statement

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

GEL LABORATORIES LLC

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

Qualifier Definition Report
for

MERI001 Merit Laboratories, Inc.

Client SDG: S58527 GEL Work Order: 655017

The Qualifiers in this report are defined as follows:

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

Review/Validation

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

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

Signature: **Name:** **Kenshalla Oston**

Date: **08 MAR 2024** **Title:** **Analyst I**

Sample Data Summary

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 8, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58527.01	Project:	MERI00120
Sample ID:	655017001	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-24 15:20		
Receive Date:	12-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.529	+/-1.11	1.96	3.00	pCi/L			JE1	02/29/24	1207	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.10	+/-1.26			pCi/L			NXL1	03/07/24	1155	2572520	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.570	+/-0.604	0.948	1.00	pCi/L			LXP1	03/04/24	0836	2570168	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			81.6	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 8, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58527.02	Project:	MERI00120
Sample ID:	655017002	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-24 11:14		
Receive Date:	12-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.482	+/-0.879	1.55	3.00	pCi/L			JE1	02/29/24	1207	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.51	+/-1.07			pCi/L			NXL1	03/07/24	1155	2572520	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.03	+/-0.615	0.524	1.00	pCi/L			LXP1	03/04/24	0910	2570168	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			84.3	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 8, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58527.03	Project:	MERI00120
Sample ID:	655017003	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-24 12:43		
Receive Date:	12-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.346	+/-0.748	1.35	3.00	pCi/L			JE1	02/29/24	1207	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.56	+/-1.07			pCi/L			NXL1	03/07/24	1155	2572520	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.21	+/-0.765	0.835	1.00	pCi/L			LXP1	03/04/24	0910	2570168	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			83.4	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Certificate of Analysis

Report Date: March 8, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58527.04	Project:	MERI00120
Sample ID:	655017004	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-24 14:18		
Receive Date:	12-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.00918	+/-1.20	2.24	3.00	pCi/L			JE1	02/29/24	1207	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.524	+/-1.30			pCi/L			NXL1	03/07/24	1155	2572520	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.515	+/-0.515	0.724	1.00	pCi/L			LXP1	03/04/24	0910	2570168	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			76.1	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: March 8, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58527.05	Project:	MERI00120
Sample ID:	655017005	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-24 12:43		
Receive Date:	12-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228		2.56	+/-1.23	1.74	3.00	pCi/L			JE1	02/29/24	1207	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		3.25	+/-1.33			pCi/L			NXL1	03/07/24	1155	2572520	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.682	+/-0.515	0.659	1.00	pCi/L			LXP1	03/04/24	0910	2570168	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			82.9	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: March 8, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58527.06 Field Blank	Project:	MERI00120
Sample ID:	655017006	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-24 09:18		
Receive Date:	12-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.17	+/-1.23	2.06	3.00	pCi/L			JE1	02/29/24	1207	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.58	+/-1.30			pCi/L			NXL1	03/07/24	1155	2572520	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.409	+/-0.409	0.532	1.00	pCi/L			LXP1	03/04/24	0910	2570168	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			78	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Quality Control Data

GEL LABORATORIES LLC
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QC Summary

Report Date: March 8, 2024

Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan

Contact: **John Laverty**

Workorder: **655017**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2570188										
QC1205653414 654532001 DUP										
Radium-228	U	0.161	U	0.346	pCi/L	N/A		N/A	JE1	02/29/24 12:06
	Uncertainty	+/-1.06		+/-0.655						
QC1205653415 LCS										
Radium-228	72.1			60.4	pCi/L		83.8	(75%-125%)		02/29/24 12:06
	Uncertainty			+/-4.09						
QC1205653413 MB										
Radium-228			U	-0.0339	pCi/L					02/29/24 12:06
	Uncertainty			+/-1.17						
Rad Ra-226										
Batch 2570168										
QC1205653348 654458007 DUP										
Radium-226		1.29		1.33	pCi/L	3.55		(0% - 100%)	LXP1	03/04/24 09:46
	Uncertainty	+/-0.961		+/-0.766						
QC1205653350 LCS										
Radium-226	26.4			23.3	pCi/L		88.1	(75%-125%)		03/04/24 09:46
	Uncertainty			+/-2.59						
QC1205653347 MB										
Radium-226			U	0.249	pCi/L					03/04/24 09:46
	Uncertainty			+/-0.352						
QC1205653349 654458007 MS										
Radium-226	136	1.29		121	pCi/L		87.6	(75%-125%)		03/04/24 09:46
	Uncertainty	+/-0.961		+/-14.1						

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported

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QC Summary

Workorder: **655017**

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

UI	Gamma Spectroscopy--Uncertain identification
BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
**	Analyte is a Tracer compound
M	REMP Result > MDC/CL and < RDL
J	See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Gas Flow Raw Data

Batch 2570188 Check-list

This check-list was completed on 29-FEB-24 by Nat Long

This batch was reviewed by Kenshalla Oston on 29-FEB-24 and Nat Long on 29-FEB-24.

Batch ID: 2570188 **Product:** GFC28RAL **Description:** Gas Flow Radium 228 GL-RAD-A-063

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were all tracer/carrier recoveries within the required acceptance limits?	Yes		
10	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-228 in Liquid

Batch ID: **2570188**
Analyst: Jacqueline Winston (JE1)
Method: EPA 904.0/SW846 9320 Modified
Lab SOP: GL-RAD-A-063 REV# 5
Instrument: SP-C018367602

Due Dates for Lab: 03-MAR-2024 **Package: 05-MAR-2024** **SDG: 06-MAR-2024**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1205653415	Radium 228	2051-D	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Separation (date)
1	654532001	26-FEB-2024	3	306.63	306.63	02/27/24 12:56	02/29/24 09:18
2	654532002	26-FEB-2024	3	302.23	302.23	02/27/24 12:56	02/29/24 09:18
3	654532003	26-FEB-2024	3	305.13	305.13	02/27/24 12:56	02/29/24 09:18
4	654532004	26-FEB-2024	3	303.93	303.93	02/27/24 12:56	02/29/24 09:18
5	654532005	26-FEB-2024	3	303.93	303.93	02/27/24 12:56	02/29/24 09:18
6	654532006	26-FEB-2024	3	314.53	314.53	02/27/24 12:56	02/29/24 09:18
7	654532007	26-FEB-2024	3	301.53	301.53	02/27/24 12:56	02/29/24 09:18
8	654532008	26-FEB-2024	3	304.33	304.33	02/27/24 12:56	02/29/24 09:18
9	654534001	26-FEB-2024	3	310.23	310.23	02/27/24 12:56	02/29/24 09:18
10	654534002	26-FEB-2024	3	300.53	300.53	02/27/24 12:56	02/29/24 09:18
11	654534003	26-FEB-2024	3	300.83	300.83	02/27/24 12:56	02/29/24 09:18
12	654534004	26-FEB-2024	3	300.33	300.33	02/27/24 12:56	02/29/24 09:18
13	654534005	26-FEB-2024	3	300.23	300.23	02/27/24 12:56	02/29/24 09:18
14	654534006	26-FEB-2024	3	304.33	304.33	02/27/24 12:56	02/29/24 09:18
15	655017001	26-FEB-2024	3	308.13	308.13	02/27/24 12:56	02/29/24 09:18
16	655017002	26-FEB-2024	3	301.63	301.63	02/27/24 12:56	02/29/24 09:18
17	655017003	26-FEB-2024	3	302.03	302.03	02/27/24 12:56	02/29/24 09:18
18	655017004	26-FEB-2024	3	303.63	303.63	02/27/24 12:56	02/29/24 09:18
19	655017005	26-FEB-2024	3	300.33	300.33	02/27/24 12:56	02/29/24 09:18
20	655017006	26-FEB-2024	3	307.53	307.53	02/27/24 12:56	02/29/24 09:18
21	1205653413 MB	26-FEB-2024	3		314.53	02/27/24 12:56	02/29/24 09:18
22	1205653414 DUP (654532001)	26-FEB-2024	3	302.23	302.23	02/27/24 12:56	02/29/24 09:18
23	1205653415 LCS	26-FEB-2024	3		314.53	02/27/24 12:56	02/29/24 09:18

Reagent/Solvent Lot ID	Description	Amount
WORK 2097-B	Ba-133 Tracer	.1 mL
REGNT 4214820	Barium Carrier Ra228 REG	1 mL
REGNT 4223988	RGF-1M Citric Acid	5 mL
REGNT 4226396	2M HCl	20 mL
REGNT 4221876	RGF-50% Potassium Carbonate	2 mL
REGNT 3867033.5	RGF-Hydrofluoric Acid	4 mL
REGNT 4209237	500 mg/mL Neodymium Carrier	.2 mL
REGNT 4216641	RGF-Neodymium Subtrate	5 mL
REGNT 4229023	RGF-1.5M Ammonium Sulfate	10 mL
REGNT 4221872	RGF-7M Nitric Acid	25 mL
REGNT 4072674	Acetic Acid Glacial ACS Poly Coated Bottle	10 mL
REGNT DGA12292023	2561518	2 g
REGNT 4208393.51	Nitric Acid	5 mL

Comments:
Pipet Id: RAD-GFC-1795419
Data Entry Date2: 26-FEB-2024 00:00

Prep Logbook

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Separation (date)

Reagent/Solvent Lot ID	Description	Amount

Comments:

Radium-228 Liquid

Filename : RA228.XLS
File type : Excel
Version # : 1.4.3

Tracer S/N : 2097-B
Tracer Exp Date : 7/12/2024
Tracer Volume Added: 0.10

Batch : 2570188
Analyst : JAC02417
Prep Date : 2/26/2024
Ra-228 Method Uncertainty : 0.1268

Geometry: 25mm Filter

Procedure Code : GFC28RAL
Parmname : Radium-228
Required MDA : 3 pCi/L
Ra-228 Abundance : 1.00
Halflife of Ra-228 : 5.75 years
Halflife of Ac-228 : 6.15 hours

Sample Characteristics Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	**Tracer Calculations** Tracer Ref. Activity (CPM)	Tracer Ref. Count Uncertainty (%)	Tracer Samp. Activity (CPM)	Tracer Samp. Count Uncertainty (%)	Tracer Aliquot (mL)	Tracer Aliquot StDev. (mL)
1	654532001.1	0.3066	1.8569E-05	1/31/2024 11:54	771.7	2.08%	624.6	2.31%	0.1	0.000200
2	654532002.1	0.3022	1.8497E-05	1/31/2024 13:13	771.7	2.08%	630.0	2.30%	0.1	0.000200
3	654532003.1	0.3051	1.8545E-05	1/31/2024 17:34	771.7	2.08%	599.9	2.36%	0.1	0.000200
4	654532004.1	0.3039	1.8525E-05	1/31/2024 10:06	771.7	2.08%	607.7	2.34%	0.1	0.000200
5	654532005.1	0.3039	1.8525E-05	1/31/2024 15:22	771.7	2.08%	685.7	2.20%	0.1	0.000200
6	654532006.1	0.3145	1.8694E-05	1/31/2024 16:56	771.7	2.08%	625.8	2.31%	0.1	0.000200
7	654532007.1	0.3015	1.8485E-05	1/31/2024 13:13	771.7	2.08%	595.8	2.37%	0.1	0.000200
8	654532008.1	0.3043	1.8532E-05	1/31/2024 7:55	771.7	2.08%	601.5	2.35%	0.1	0.000200
9	654534001.1	0.3102	1.8627E-05	2/1/2024 11:36	771.7	2.08%	690.7	2.20%	0.1	0.000200
10	654534002.1	0.3005	1.8468E-05	2/1/2024 13:02	771.7	2.08%	675.4	2.22%	0.1	0.000200
11	654534003.1	0.3008	1.8473E-05	2/1/2024 14:43	771.7	2.08%	613.2	2.33%	0.1	0.000200
12	654534004.1	0.3003	1.8465E-05	2/1/2024 12:40	771.7	2.08%	643.5	2.28%	0.1	0.000200
13	654534005.1	0.3002	1.8463E-05	2/1/2024 13:02	771.7	2.08%	648.7	2.27%	0.1	0.000200
14	654534006.1	0.3043	1.8532E-05	2/1/2024 9:40	771.7	2.08%	640.1	2.28%	0.1	0.000200
15	655017001.1	0.3081	1.8594E-05	2/7/2024 15:20	771.7	2.08%	629.9	2.30%	0.1	0.000200
16	655017002.1	0.3016	1.8487E-05	2/7/2024 11:14	771.7	2.08%	650.3	2.26%	0.1	0.000200
17	655017003.1	0.3020	1.8493E-05	2/7/2024 12:43	771.7	2.08%	643.4	2.28%	0.1	0.000200
18	655017004.1	0.3036	1.8520E-05	2/7/2024 14:18	771.7	2.08%	587.3	2.38%	0.1	0.000200
19	655017005.1	0.3003	1.8465E-05	2/7/2024 12:43	771.7	2.08%	639.8	2.28%	0.1	0.000200
20	655017006.1	0.3075	1.8584E-05	2/7/2024 9:18	771.7	2.08%	601.8	2.35%	0.1	0.000200
21	1205653413.1	0.3145	1.8694E-05	2/26/2024 0:00	771.7	2.08%	630.8	2.30%	0.1	0.000200
22	1205653414.1	0.3022	1.8497E-05	1/31/2024 11:54	771.7	2.08%	633.3	2.29%	0.1	0.000200
23	1205653415.1	0.3145	1.8694E-05	2/26/2024 0:00	771.7	2.08%	622.0	2.32%	0.1	0.000200

Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1 ml Stdev : +/- 0.002000 ml

Analytical SOP: GL-RAD-A-063
Instrument SOP: GL-RAD-I-016

Count raw Data

Pos.	Detector ID	Counting Time (min.)	Gross Counts Alpha	Gross Counts Beta	Beta cpm	Count Start Date/Time	Ac-228 Ingrowth Date/Time	Ac-228 Decay Date/Time	Ra-228 Decay	Ac-228 Decay	Ac-228 Ingrowth	Ac-228 Count Correction	Calculated Sample Recovery %	Sample Recovery Error %
1	1D	60	9	49	0.817	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.990	0.730	0.993	1.057	80.9%	3.12%
2	3B	60	7	44	0.733	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.990	0.730	0.993	1.057	81.6%	3.11%
3	5D	60	2	41	0.683	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.991	0.730	0.993	1.057	77.7%	3.16%
4	6B	70	6	84	1.200	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.990	0.730	0.993	1.067	78.7%	3.14%
5	7A	60	5	35	0.583	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.991	0.730	0.993	1.057	88.9%	3.04%
6	7D	60	7	26	0.433	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.991	0.730	0.993	1.057	81.1%	3.12%
7	8D	70	17	87	1.243	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.990	0.729	0.993	1.067	77.2%	3.17%
8	9A	60	11	64	1.067	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.990	0.729	0.993	1.057	77.9%	3.15%
9	9B	60	12	86	1.433	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.729	0.993	1.057	89.5%	3.04%
10	9D	60	12	53	0.883	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.729	0.993	1.057	87.5%	3.06%
11	11A	80	16	130	1.625	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.728	0.993	1.077	79.5%	3.14%
12	11C	60	12	55	0.917	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.728	0.993	1.057	83.4%	3.10%
13	11D	60	11	36	0.600	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.728	0.993	1.057	84.1%	3.09%
14	12A	80	5	141	1.763	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.728	0.993	1.077	82.9%	3.10%
15	12B	60	6	63	1.050	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	81.6%	3.11%
16	12C	60	17	40	0.667	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	84.3%	3.08%
17	12D	60	5	29	0.483	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	83.4%	3.10%
18	13A	60	10	57	0.950	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	76.1%	3.17%
19	13B	60	9	77	1.283	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	82.9%	3.10%
20	13D	60	16	69	1.150	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.727	0.993	1.057	78.0%	3.15%
21	14A	110	12	207	1.882	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.999	0.729	0.993	1.107	81.7%	3.11%
22	14B	60	6	22	0.367	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.990	0.729	0.993	1.057	82.1%	3.11%
23	14C	60	6	920	15.333	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.999	0.729	0.993	1.057	80.6%	3.13%

Pos.	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Bkg cpm	Weekly Bkg Count Start Date/Time	Bkg Count Time (min.)
Calibration Data								
1	PIC	6/1/2023	5/31/2024	0.6071	0.00692	0.780	2/23/2024 17:51	500
2	PIC	6/1/2023	5/31/2024	0.6266	0.01614	0.598	2/23/2024 17:51	500
3	PIC	6/1/2023	5/31/2024	0.6566	0.00925	0.480	2/23/2024 17:52	500
4	PIC	6/1/2023	5/31/2024	0.5957	0.00851	1.020	2/23/2024 17:49	500
5	PIC	6/1/2023	5/31/2024	0.6229	0.00594	0.372	2/23/2024 17:49	500
6	PIC	6/1/2023	5/31/2024	0.6247	0.01113	0.432	2/23/2024 17:50	500
7	PIC	6/1/2023	5/31/2024	0.6073	0.00609	1.076	2/23/2024 17:50	500
8	PIC	6/1/2023	5/31/2024	0.6343	0.00758	0.710	2/23/2024 17:50	500
9	PIC	6/1/2023	5/31/2024	0.6496	0.00754	0.858	2/23/2024 17:50	500
10	PIC	6/1/2023	5/31/2024	0.6292	0.02610	0.692	2/23/2024 17:50	500
11	PIC	6/1/2023	5/31/2024	0.6466	0.01317	1.432	2/23/2024 17:48	500
12	PIC	6/1/2023	5/31/2024	0.6409	0.01278	0.858	2/23/2024 17:49	500
13	PIC	6/1/2023	5/31/2024	0.6379	0.01068	0.480	2/23/2024 17:49	500
14	PIC	6/1/2023	5/31/2024	0.6537	0.01964	1.436	2/23/2024 17:49	500
15	PIC	6/1/2023	5/31/2024	0.6488	0.01114	0.920	2/23/2024 17:49	500
16	PIC	6/1/2023	5/31/2024	0.6434	0.01666	0.548	2/23/2024 17:49	500
17	PIC	6/1/2023	5/31/2024	0.6498	0.01845	0.398	2/23/2024 17:49	500
18	PIC	6/1/2023	5/31/2024	0.6259	0.00714	0.948	2/23/2024 17:49	500
19	PIC	6/1/2023	5/31/2024	0.6399	0.00967	0.668	2/23/2024 17:49	500
20	PIC	6/1/2023	5/31/2024	0.6360	0.01144	0.882	2/23/2024 17:49	500
21	PIC	6/1/2023	5/31/2024	0.6482	0.02119	1.890	2/24/2024 11:03	500
22	PIC	6/1/2023	5/31/2024	0.6549	0.01028	0.282	2/23/2024 17:53	500
23	PIC	6/1/2023	5/31/2024	0.6309	0.01828	0.668	2/23/2024 17:53	500

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N :	N/A
Spike Exp Date :	N/A
Spike Activity (dpm/ml):	N/A
Spike Volume Added:	N/A
LCS S/N :	2051-D
LCS Exp Date :	7/12/2024
LCS Activity (dpm/ml):	503.35
LCS Volume Added:	0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	1.2378	0.8739	3	1.9679	**0.1614**	335.94%	0.0367	0.1232	1.0629	1.0637		SAMPLE				
2	1.0563	0.7457	3	1.7060	**0.5807**	85.67%	0.1353	0.1158	0.9742	0.9856		SAMPLE				
3	0.9395	0.6633	3	1.5396	**0.8662**	54.75%	0.2033	0.1111	0.9278	0.9541		SAMPLE				
4	1.4102	0.9956	3	2.1925	**0.8453**	77.01%	0.1800	0.1385	1.2748	1.2931		SAMPLE				
5	0.7657	0.5406	3	1.2784	**0.8335**	48.51%	0.2113	0.1023	0.7908	0.8191		SAMPLE				
6	0.8712	0.6151	3	1.4384	**5.552E-03**	6744.26%	0.0013	0.0899	0.7339	0.7341		SAMPLE				
7	1.4615	1.0318	3	2.2667	**0.7906**	84.62%	0.1669	0.1411	1.3103	1.3259		SAMPLE				
8	1.1835	0.8356	3	1.8918	**1.5737**	38.98%	0.3567	0.1386	1.1982	1.2644		SAMPLE				
9	1.0850	0.7660	3	1.7161	**2.1170**	27.99%	0.5753	0.1600	1.1541	1.2750		SAMPLE				
10	1.0622	0.7499	3	1.7003	**0.7674**	66.45%	0.1913	0.1269	0.9977	1.0176		SAMPLE				
11	1.4702	1.0379	3	2.2401	**0.8451**	78.95%	0.1930	0.1522	1.3066	1.3245		SAMPLE				
12	1.2209	0.8620	3	1.9310	**0.2429**	222.23%	0.0587	0.1304	1.0579	1.0597		SAMPLE				
13	0.9105	0.6428	3	1.4920	**0.4954**	87.30%	0.1200	0.1047	0.8471	0.8566		SAMPLE				
14	1.3795	0.9740	3	2.1018	**1.3397**	48.47%	0.3265	0.1578	1.2691	1.3156		SAMPLE				
15	1.2414	0.8765	3	1.9562	**0.5285**	107.03%	0.1300	0.1391	1.1082	1.1165		SAMPLE				
16	0.9563	0.6751	3	1.5531	**0.4815**	93.17%	0.1187	0.1105	0.8787	0.8875		SAMPLE				
17	0.8145	0.5751	3	1.3529	**0.3461**	110.31%	0.0853	0.0941	0.7479	0.7532		SAMPLE				
18	1.4225	1.0043	3	2.2381	**9.179E-03**	6657.58%	0.0020	0.1332	1.1978	1.1979		SAMPLE				
19	1.0840	0.7653	3	1.7390	**2.5637**	24.71%	0.6153	0.1507	1.2310	1.3957		SAMPLE				
20	1.3015	0.9189	3	2.0554	**1.1667**	54.09%	0.2680	0.1447	1.2345	1.2704		SAMPLE				
21	1.3961	0.9856	3	2.0841	**-0.0339**	1766.42%	-0.0082	0.1445	1.1723	1.1723		MB				
22	0.6915	0.4882	3	1.1809	**0.3463**	96.55%	0.0847	0.0817	0.6550	0.6610	654532001.1	DUP	* 0.0%			
23	1.0720	0.7569	3	1.7198	**60.4261**	5.01%	14.6653	0.5068	4.0932	16.1462		LCS			72.0872	83.8%

SampleID	Instr	Time (min.)	Alpha Counts	Beta Counts	Count Start Time	Count End Time	Machine	Batch ID
654532001	1D	60	9	49	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532002	3B	60	7	44	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532003	5D	60	2	41	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532004	6B	70	6	84	2/29/2024 12:05	2/29/2024 13:15	PIC	2570188
654532005	7A	60	5	35	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532006	7D	60	7	26	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532007	8D	70	17	87	2/29/2024 12:05	2/29/2024 13:15	PIC	2570188
654532008	9A	60	11	64	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534001	9B	60	12	86	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534002	9D	60	12	53	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534003	11A	80	16	130	2/29/2024 12:06	2/29/2024 13:26	PIC	2570188
654534004	11C	60	12	55	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534005	11D	60	11	36	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534006	12A	80	5	141	2/29/2024 12:06	2/29/2024 13:26	PIC	2570188
655017001	12B	60	6	63	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017002	12C	60	17	40	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017003	12D	60	5	29	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017004	13A	60	10	57	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017005	13B	60	9	77	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017006	13D	60	16	69	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
1205653413	14A	110	12	207	2/29/2024 12:06	2/29/2024 13:56	PIC	2570188
1205653414	14B	60	6	22	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
1205653415	14C	60	6	920	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188

ASSAY	29-Feb-24	11:54:29		
Wizard 1480 s/n 4800440				
Protocol	id	9	228_REC2	
Time	limit	180		
Count	limit	50000		
Isotope	Ba-133			
Protocol	date	26-Sep-13	15:01:58	
Run	id.	45		

Samp_ID	POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR	% RECOVERY	COUNT TIME
REF	1	87	1	180	2315	771.7	2.08		11:54:36
654532001	2	87	2	180	1873	624.6	2.31	80.94	11:57:48
654532002	3	87	3	180	1890	630	2.3	81.64	12:00:59
654532003	4	87	4	180	1799	599.9	2.36	77.74	12:04:11
654532004	5	87	5	180	1823	607.7	2.34	78.75	12:07:22
654532005	6	99	6	180	2057	685.7	2.2	88.86	12:10:47
654532006	7	99	7	180	1877	625.8	2.31	81.09	12:13:58
654532007	8	99	8	180	1787	595.8	2.37	77.21	12:17:09
654532008	9	99	9	180	1804	601.5	2.35	77.94	12:20:21
654534001	10	99	10	180	2072	690.7	2.2	89.50	12:23:32
654534002	11	37	11	180	2026	675.4	2.22	87.52	12:26:57
654534003	12	37	12	180	1839	613.2	2.33	79.46	12:30:08
654534004	13	37	13	180	1930	643.5	2.28	83.39	12:33:20
654534005	14	37	14	180	1946	648.7	2.27	84.06	12:36:31
654534006	15	37	15	180	1920	640.1	2.28	82.95	12:39:42
655017001	16	81	16	180	1890	629.9	2.3	81.62	12:43:06
655017002	17	81	17	180	1951	650.3	2.26	84.27	12:46:18
655017003	18	81	18	180	1930	643.4	2.28	83.37	12:49:29
655017004	19	81	19	180	1762	587.3	2.38	76.10	12:52:40
655017005	20	81	20	180	1919	639.8	2.28	82.91	12:55:52
655017006	21	84	21	180	1805	601.8	2.35	77.98	12:59:29
1205653413	22	84	22	180	1892	630.8	2.3	81.74	13:02:40
1205653414	23	84	23	180	1900	633.3	2.29	82.07	13:05:52
1205653415	24	84	24	180	1866	622	2.32	80.60	13:09:03

END OF ASSAY

Continuing Calibration Data

Gas Flow Proportional Counter Checks for 29-Feb-2024

Detectors LB4100 E1 through H4 and PIC 1A through 14D and G5400W 1W through 1Z and LB4200 GA1 through OD4

Short Name	Status	Parmname	Run Time	Count Time	CPM or dec	Low Limit	High Limit	Stdev
LB4100F4	Below	Alpha eff	29-Feb 08:14	5	16766	16940	18140	-3.87
LB4100F4	Above	Alpha XTalk	29-Feb 08:14	5	0.199	0.170	0.193	+4.84
LB4100H1	Above	Alpha bkg	29-Feb 04:47	60	0.517	-8.08E-2	0.225	+8.71
LB4100H1	Above	Alpha eff	29-Feb 05:54	5	12028	7523	11160	+4.43
LB4100H1	Above	Beta bkg	29-Feb 04:47	60	3.433	-5.15E-1	3.743	+2.56
LB4100H2	Above	Alpha bkg	29-Feb 04:47	60	0.333	0.057	0.420	+1.57
LB4200GB2	Below	Alpha eff	29-Feb 06:08	5	9343	9443	9898	-4.32
LB4200GB2	Above	Beta bkg	29-Feb 15:44	60	12.117	0.129	1.304	+58.19
LB4200GD3	Above	Alpha bkg	29-Feb 15:44	60	0.917	-1.04E-1	0.321	+11.41
LB4200OB1	Above	Alpha bkg	29-Feb 11:54	60	0.767	-1.05E-1	0.362	+8.20
LB4200OC2	need 2nd	Alpha bkg	29-Feb 11:54	60	0.100	-1.37E-1	0.428	-0.49
LB4200OC2	need 2nd	Beta bkg	29-Feb 11:54	60	1.383	-6.67E-2	2.499	+0.39
PIC2D	Above	Beta bkg	29-Feb 10:06	60	2.000	0.417	1.868	+3.55
PIC4C	Above	Alpha bkg	29-Feb 06:36	60	0.400	-2.25E-1	1.312	-0.56

INSTRUMENTS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

The following detectors may not have properly transferred to the LIMS system

Reviewed by Jc Poparad

Date 3/4/24

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: GFPC **Batch ID: 2570188**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
654532001	SAMPLE	JE1	PIC1D	FEB-29-24 12:05:37	DONE	25mm Filter	01-JUN-23 00:00
654532002	SAMPLE	JE1	PIC3B	FEB-29-24 12:05:40	DONE	25mm Filter	01-JUN-23 00:00
654532004	SAMPLE	JE1	PIC6B	FEB-29-24 12:05:41	DONE	25mm Filter	01-JUN-23 00:00
654532003	SAMPLE	JE1	PIC5D	FEB-29-24 12:05:45	DONE	25mm Filter	01-JUN-23 00:00
654532005	SAMPLE	JE1	PIC7A	FEB-29-24 12:05:45	DONE	25mm Filter	01-JUN-23 00:00
654532006	SAMPLE	JE1	PIC7D	FEB-29-24 12:05:48	DONE	25mm Filter	01-JUN-23 00:00
654532007	SAMPLE	JE1	PIC8D	FEB-29-24 12:05:59	DONE	25mm Filter	01-JUN-23 00:00
654532008	SAMPLE	JE1	PIC9A	FEB-29-24 12:06:03	DONE	25mm Filter	01-JUN-23 00:00
654534001	SAMPLE	JE1	PIC9B	FEB-29-24 12:06:07	DONE	25mm Filter	01-JUN-23 00:00
654534002	SAMPLE	JE1	PIC9D	FEB-29-24 12:06:10	DONE	25mm Filter	01-JUN-23 00:00
1205653413	MB	JE1	PIC14A	FEB-29-24 12:06:30	DONE	25mm Filter	01-JUN-23 00:00
1205653414	DUP	JE1	PIC14B	FEB-29-24 12:06:32	DONE	25mm Filter	01-JUN-23 00:00
1205653415	LCS	JE1	PIC14C	FEB-29-24 12:06:36	DONE	25mm Filter	01-JUN-23 00:00
654534003	SAMPLE	JE1	PIC11A	FEB-29-24 12:06:43	DONE	25mm Filter	01-JUN-23 00:00
654534004	SAMPLE	JE1	PIC11C	FEB-29-24 12:06:48	DONE	25mm Filter	01-JUN-23 00:00
654534005	SAMPLE	JE1	PIC11D	FEB-29-24 12:06:51	DONE	25mm Filter	01-JUN-23 00:00
654534006	SAMPLE	JE1	PIC12A	FEB-29-24 12:06:57	DONE	25mm Filter	01-JUN-23 00:00
655017001	SAMPLE	JE1	PIC12B	FEB-29-24 12:07:00	DONE	25mm Filter	01-JUN-23 00:00
655017002	SAMPLE	JE1	PIC12C	FEB-29-24 12:07:04	DONE	25mm Filter	01-JUN-23 00:00
655017003	SAMPLE	JE1	PIC12D	FEB-29-24 12:07:08	DONE	25mm Filter	01-JUN-23 00:00
655017004	SAMPLE	JE1	PIC13A	FEB-29-24 12:07:13	DONE	25mm Filter	01-JUN-23 00:00
655017005	SAMPLE	JE1	PIC13B	FEB-29-24 12:07:18	DONE	25mm Filter	01-JUN-23 00:00
655017006	SAMPLE	JE1	PIC13D	FEB-29-24 12:07:22	DONE	25mm Filter	01-JUN-23 00:00

Lucas Cell Raw Data

Batch 2570168 Check-list

This check-list was completed on 05-MAR-24 by Lyndsey Pace

This batch was reviewed by Elizabeth Krouse on 05-MAR-24 and Lyndsey Pace on 05-MAR-24.

Batch ID:	Product:	Description: Lucas Cell Radium 226
2570168	LUC26RAL	GL-RAD-A-008

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the matrix spike (MS/MSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-226 in Liquid

Batch ID: **2570168**
Analyst: Lyndsey Pace (LXP1)
Prep: Charles Hall (CH7)
Method: EPA 903.1 Modified
Lab SOP: GL-RAD-A-008 REV# 15
Instrument: SP-C018367602

Due Dates for Lab: 03-MAR-2024 **Package: 05-MAR-2024** **SDG: 05-MAR-2024**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
MS	1205653349	Ra-226 emanation spike	1715-I	.1	mL
LCS	1205653350	Ra-226 emanation spike	1715-I	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	End Degas (date)	CELL #	End Transfer (date)	Start Count Time (date)	Background Counts	Total Counts
1	654458007	01-MAR-2024	1	402.23	402.23	03/01/24 13:00	105	03/04/24 05:44	03/04/24 08:36	6	13
2	654458008	01-MAR-2024	1	502.53	502.53	03/01/24 13:00	204	03/04/24 05:44	03/04/24 08:36	6	6
3	654458009	01-MAR-2024	1	509.33	509.33	03/01/24 13:00	309	03/04/24 05:44	03/04/24 08:36	1	20
4	654458010	01-MAR-2024	1	500.93	500.93	03/01/24 13:00	401	03/04/24 05:44	03/04/24 08:36	1	13
5	654469001	01-MAR-2024	1	500.73	500.73	03/01/24 13:00	502	03/04/24 05:44	03/04/24 08:36	1	19
6	654472001	01-MAR-2024	1	518.53	518.53	03/01/24 13:00	604	03/04/24 05:44	03/04/24 08:36	5	86
7	654869001	01-MAR-2024	1	502.43	502.43	03/01/24 13:00	708	03/04/24 05:44	03/04/24 08:36	2	6
8	655017001	01-MAR-2024	1	504.63	504.63	03/01/24 13:00	806	03/04/24 05:44	03/04/24 08:36	6	9
9	655017002	01-MAR-2024	1	502.83	502.83	03/01/24 13:00	108	03/04/24 06:08	03/04/24 09:10	1	12
10	655017003	01-MAR-2024	1	502.03	502.03	03/01/24 13:00	202	03/04/24 06:08	03/04/24 09:10	3	13
11	655017004	01-MAR-2024	1	504.93	504.93	03/01/24 13:00	301	03/04/24 06:08	03/04/24 09:10	2	6
12	655017005	01-MAR-2024	1	511.83	511.83	03/01/24 13:00	406	03/04/24 06:08	03/04/24 09:10	4	11
13	655017006	01-MAR-2024	1	506.93	506.93	03/01/24 13:00	501	03/04/24 06:08	03/04/24 09:10	1	5
14	655127001	01-MAR-2024	1	500.43	500.43	03/01/24 13:00	608	03/04/24 06:08	03/04/24 09:10	2	7
15	655690001	01-MAR-2024	1	502.63	502.63	03/01/24 13:00	707	03/04/24 06:08	03/04/24 09:10	3	5
16	655697001	01-MAR-2024	1	512.33	512.33	03/01/24 13:00	801	03/04/24 06:08	03/04/24 09:10	1	1
17	655697002	01-MAR-2024	1	505.53	505.53	03/01/24 13:00	101	03/04/24 06:33	03/04/24 09:46	1	7
18	655697003	01-MAR-2024	1	504.73	504.73	03/01/24 13:00	207	03/04/24 06:33	03/04/24 09:46	1	4
19	1205653347 MB	01-MAR-2024	1		518.53	03/01/24 13:00	305	03/04/24 06:33	03/04/24 09:46	1	3
20	1205653348 DUP (654458007)	01-MAR-2024	1	403.93	403.93	03/01/24 13:00	409	03/04/24 06:33	03/04/24 09:46	2	14
21	1205653349 MS (654458007)	01-MAR-2024	1	100.43	100.43	03/01/24 13:00	506	03/04/24 06:33	03/04/24 09:46	8	293
22	1205653350 LCS	01-MAR-2024	1		518.53	03/01/24 13:00	605	03/04/24 06:33	03/04/24 09:46	1	311

Reagent/Solvent Lot ID	Description	Amount

Comments:
Data Entry Date2: 01-MAR-2024 00:00

Radium-226 Liquid

Filename : RA226.XLS
File type : Excel
Version # : 1.3.2

Batch : 2570168
Analyst : LXP1
Prep Date : 3/1/2024
Ra-226 Method Uncertainty : 0.073648

Procedure Code : LUC26RAL
Parmname : Radium-226
Required MDA : 1 pCi/L
Halflife of Ra-226 : 1600 years
Ra-226 Abundance : 1.00
Halflife of Rn-222: 3.8235 days

Batch counted on : LUCAS CELL DETECTOR
BKG Count time : 30 min

Sample Characteristics					**Count Raw Data**							
Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	Cell Number	Counting Time (min.)	Gross Counts	Gross CPM	Background Counts	Background CPM	Background Count Time (min.)	Cell Efficiency (cpm/dpm)
1	654458007.1	0.4022	1.9687E-05	2/6/2024 10:00	105	15	13	0.867	6	0.200	30	1.5340
2	654458008.1	0.5025	2.0266E-05	2/6/2024 10:30	204	15	6	0.400	6	0.200	30	1.5970
3	654458009.1	0.5093	2.0293E-05	2/6/2024 7:50	309	15	20	1.333	1	0.033	30	1.5690
4	654458010.1	0.5009	2.0260E-05	2/6/2024 8:40	401	15	13	0.867	1	0.033	30	1.9410
5	654469001.1	0.5007	2.0259E-05	2/6/2024 11:00	502	15	19	1.267	1	0.033	30	1.8590
6	654472001.1	0.5185	2.0328E-05	2/6/2024 7:50	604	15	86	5.733	5	0.167	30	1.7290
7	654869001.1	0.5024	2.0266E-05	2/7/2024 16:46	708	15	6	0.400	2	0.067	30	1.5430
8	655017001.1	0.5046	2.0275E-05	2/7/2024 15:20	806	15	9	0.600	6	0.200	30	1.6560
9	655017002.1	0.5028	2.0267E-05	2/7/2024 11:14	108	15	12	0.800	1	0.033	30	1.7570
10	655017003.1	0.5020	2.0264E-05	2/7/2024 12:43	202	15	13	0.867	3	0.100	30	1.4980
11	655017004.1	0.5049	2.0276E-05	2/7/2024 14:18	301	15	6	0.400	2	0.067	30	1.5220
12	655017005.1	0.5118	2.0303E-05	2/7/2024 12:43	406	15	11	0.733	4	0.133	30	2.0400
13	655017006.1	0.5069	2.0284E-05	2/7/2024 9:18	501	15	5	0.333	1	0.033	30	1.7160
14	655127001.1	0.5004	2.0258E-05	2/8/2024 9:46	608	15	7	0.467	2	0.067	30	1.8960
15	655690001.1	0.5026	2.0267E-05	2/12/2024 17:45	707	15	5	0.333	3	0.100	30	1.5500
16	655697001.1	0.5123	2.0305E-05	2/13/2024 14:25	801	15	1	0.067	1	0.033	30	1.4200
17	655697002.1	0.5055	2.0278E-05	2/13/2024 15:41	101	15	7	0.467	1	0.033	30	1.8120
18	655697003.1	0.5047	2.0275E-05	2/13/2024 15:15	207	15	4	0.267	1	0.033	30	1.8080
19	1205653347.1	0.5185	2.0328E-05	3/1/2024 0:00	305	15	3	0.200	1	0.033	30	1.5280
20	1205653348.1	0.4039	1.9701E-05	2/6/2024 10:00	409	15	14	0.933	2	0.067	30	1.9030
21	1205653349.1	0.1004	1.1397E-05	2/6/2024 10:00	506	15	293	19.533	8	0.267	30	1.8780
22	1205653350.1	0.5185	2.0328E-05	3/1/2024 0:00	605	15	311	20.733	1	0.033	30	2.0280

Pipet, 0.1 ml Stdev : +/-	0.000200	ml
Pipet, 0.5 ml Stdev : +/-	0.001000	ml
Pipet, 1 ml Stdev : +/-	0.002000	ml

Analytical SOP: GL-RAD-A-008
Instrument SOP: GL-RAD-I-007

Cell Efficiency Error (%)	Cell Calibration Date	Cell Calibration Due Date	De-Gas Date/Time	Rn-222 Ingrow End Date/Time	Count Start Date/Time	Rn-222 Corrections De-Gas to Ingrowth	Rn-222 Corrections Ingrowth to Count	Rn-222 Corrections During Count	Ra-226 Decay
7.900%	5/1/2023	4/30/2024	3/1/2024 13:00	3/4/2024 5:44	3/4/2024 8:36	0.387	0.979	1.001	1.000
2.600%	8/1/2023	7/31/2024	3/1/2024 13:00	3/4/2024 5:44	3/4/2024 8:36	0.387	0.979	1.001	1.000
9.100%	11/1/2023	10/31/2024	3/1/2024 13:00	3/4/2024 5:44	3/4/2024 8:36	0.387	0.979	1.001	1.000
7.800%	2/1/2024	1/31/2025	3/1/2024 13:00	3/4/2024 5:44	3/4/2024 8:36	0.387	0.979	1.001	1.000
7.700%	6/1/2023	5/31/2024	3/1/2024 13:00	3/4/2024 5:44	3/4/2024 8:36	0.387	0.979	1.001	1.000
2.300%	7/1/2023	6/30/2024	3/1/2024 13:00	3/4/2024 5:44	3/4/2024 8:36	0.387	0.979	1.001	1.000
5.200%	11/1/2023	10/31/2024	3/1/2024 13:00	3/4/2024 5:44	3/4/2024 8:36	0.387	0.979	1.001	1.000
1.900%	4/8/2023	3/31/2024	3/1/2024 13:00	3/4/2024 5:44	3/4/2024 8:36	0.387	0.979	1.001	1.000
4.600%	10/10/2023	4/30/2024	3/1/2024 13:00	3/4/2024 6:08	3/4/2024 9:10	0.389	0.977	1.001	1.000
1.400%	8/1/2023	7/31/2024	3/1/2024 13:00	3/4/2024 6:08	3/4/2024 9:10	0.389	0.977	1.001	1.000
5.700%	11/1/2023	10/31/2024	3/1/2024 13:00	3/4/2024 6:08	3/4/2024 9:10	0.389	0.977	1.001	1.000
8.700%	2/1/2024	1/31/2025	3/1/2024 13:00	3/4/2024 6:08	3/4/2024 9:10	0.389	0.977	1.001	1.000
5.500%	6/1/2023	5/31/2024	3/1/2024 13:00	3/4/2024 6:08	3/4/2024 9:10	0.389	0.977	1.001	1.000
7.800%	7/1/2023	6/30/2024	3/1/2024 13:00	3/4/2024 6:08	3/4/2024 9:10	0.389	0.977	1.001	1.000
5.800%	11/1/2023	10/31/2024	3/1/2024 13:00	3/4/2024 6:08	3/4/2024 9:10	0.389	0.977	1.001	1.000
3.200%	4/8/2023	3/31/2024	3/1/2024 13:00	3/4/2024 6:08	3/4/2024 9:10	0.389	0.977	1.001	1.000
4.500%	5/1/2023	4/30/2024	3/1/2024 13:00	3/4/2024 6:33	3/4/2024 9:46	0.391	0.976	1.001	1.000
4.000%	10/10/2023	7/31/2024	3/1/2024 13:00	3/4/2024 6:33	3/4/2024 9:46	0.391	0.976	1.001	1.000
7.000%	11/1/2023	10/31/2024	3/1/2024 13:00	3/4/2024 6:33	3/4/2024 9:46	0.391	0.976	1.001	1.000
4.900%	2/1/2024	1/31/2025	3/1/2024 13:00	3/4/2024 6:33	3/4/2024 9:46	0.391	0.976	1.001	1.000
1.400%	6/1/2023	5/31/2024	3/1/2024 13:00	3/4/2024 6:33	3/4/2024 9:46	0.391	0.976	1.001	1.000
2.300%	10/10/2023	6/30/2024	3/1/2024 13:00	3/4/2024 6:33	3/4/2024 9:46	0.391	0.976	1.001	1.000

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

Spike S/N : 1715-I
Spike Exp Date : 8/29/2024
Spike Activity (dpm/ml): 304.14
Spike Volume Added: 0.10

LCS S/N : 1715-I
LCS Exp Date : 8/29/2024
LCS Activity (dpm/ml): 304.14
LCS Volume Added: 0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	0.6362	0.4492	1	1.2846	**1.2872**	38.89%	0.6667	0.2539	0.9607	0.9986		SAMPLE				
2	0.4892	0.3454	1	0.9876	**0.2969**	91.32%	0.2000	0.1826	0.5312	0.5332		SAMPLE				
3	0.2006	0.1416	1	0.5813	**1.9381**	24.81%	1.3000	0.3000	0.8766	0.9830		SAMPLE				
4	0.1648	0.1164	1	0.4778	**1.0211**	30.15%	0.8333	0.2427	0.5828	0.6211		SAMPLE				
5	0.1722	0.1216	1	0.4991	**1.5785**	24.93%	1.2333	0.2925	0.7338	0.8044		SAMPLE				
6	0.3997	0.2822	1	0.8302	**7.3974**	11.42%	5.5667	0.6227	1.6219	1.9703		SAMPLE				
7	0.2924	0.2064	1	0.7202	**0.5123**	51.25%	0.3333	0.1700	0.5120	0.5199		SAMPLE				
8	0.4698	0.3317	1	0.9485	**0.5703**	54.04%	0.4000	0.2160	0.6036	0.6096		SAMPLE				
9	0.1808	0.1276	1	0.5240	**1.0302**	30.78%	0.7667	0.2333	0.6146	0.6391		SAMPLE				
10	0.3678	0.2597	1	0.8351	**1.2103**	32.27%	0.7667	0.2472	0.7649	0.7853		SAMPLE				
11	0.2939	0.2075	1	0.7239	**0.5149**	51.31%	0.3333	0.1700	0.5146	0.5232		SAMPLE				
12	0.3059	0.2160	1	0.6594	**0.6822**	39.46%	0.6000	0.2309	0.5147	0.5368		SAMPLE				
13	0.1836	0.1296	1	0.5322	**0.4094**	51.21%	0.3000	0.1528	0.4086	0.4152		SAMPLE				
14	0.2380	0.1681	1	0.5864	**0.5005**	46.31%	0.4000	0.1826	0.4478	0.4600		SAMPLE				
15	0.3551	0.2507	1	0.8061	**0.3556**	68.76%	0.2333	0.1599	0.4775	0.4819		SAMPLE				
16	0.2195	0.1550	1	0.6363	**0.0544**	223.63%	0.0333	0.0745	0.2384	0.2386		SAMPLE				
17	0.1737	0.1227	1	0.5036	**0.5596**	41.67%	0.4333	0.1795	0.4544	0.4641		SAMPLE				
18	0.1744	0.1231	1	0.5055	**0.3025**	59.04%	0.2333	0.1374	0.3492	0.3527		SAMPLE				
19	0.2009	0.1418	1	0.5822	**0.2488**	72.45%	0.1667	0.1202	0.3517	0.3552		MB				
20	0.2928	0.2067	1	0.7212	**1.3338**	29.70%	0.8667	0.2539	0.7658	0.7999	654458007.1	DUP	3.6%			
21	2.3865	1.6849	1	4.6243	**120.8464**	6.11%	19.2667	1.1450	14.0768	22.6595	654458007.1	MS			136.4193	87.6%
22	0.1513	0.1068	1	0.4387	**23.2864**	6.13%	20.7000	1.1762	2.5933	4.3733		LCS			26.4212	88.1%

Continuing Calibration Data

Ludlum Alpha Scintillation Counter Checks for 04-MAR-2024

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LUCAS1	EFF	05:31	1	1.12E+05	111729	-0.63		
LUCAS2	EFF	05:28	1	1.27E+05	126866	-2.56		
LUCAS3	EFF	05:26	1	93806	93806	1.68		
LUCAS4	EFF	05:23	1	1.23E+05	122866	-2.83		
LUCAS5	EFF	05:22	1	1.27E+05	127208	-1.98		
LUCAS6	EFF	05:20	1	1.28E+05	127888	-0.16		
LUCAS7	EFF	05:17	1	1.29E+05	128719	-2.84		
LUCAS8	EFF	05:10	1	1.16E+05	115504	-0.76		

Reviewed by: Lyndsey Pace **Date:** 04-MAR-24

Lyndsey Pace

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: LUCAS CELL DETECTOR **Batch ID: 2570168**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
654458007	SAMPLE	LXP1	LUCAS1	MAR-04-24 08:36:00	DONE	Lucas Cell	01-MAY-23 00:00
654458008	SAMPLE	LXP1	LUCAS2	MAR-04-24 08:36:00	DONE	Lucas Cell	01-AUG-23 00:00
654458009	SAMPLE	LXP1	LUCAS3	MAR-04-24 08:36:00	DONE	Lucas Cell	01-NOV-23 00:00
654458010	SAMPLE	LXP1	LUCAS4	MAR-04-24 08:36:00	DONE	Lucas Cell	01-FEB-24 00:00
654469001	SAMPLE	LXP1	LUCAS5	MAR-04-24 08:36:00	DONE	Lucas Cell	01-JUN-23 00:00
654472001	SAMPLE	LXP1	LUCAS6	MAR-04-24 08:36:00	DONE	Lucas Cell	01-JUL-23 00:00
654869001	SAMPLE	LXP1	LUCAS7	MAR-04-24 08:36:00	DONE	Lucas Cell	01-NOV-23 00:00
655017001	SAMPLE	LXP1	LUCAS8	MAR-04-24 08:36:00	DONE	Lucas Cell	08-APR-23 00:00
655017002	SAMPLE	LXP1	LUCAS1	MAR-04-24 09:10:00	DONE	Lucas Cell	01-MAY-23 00:00
655017003	SAMPLE	LXP1	LUCAS2	MAR-04-24 09:10:00	DONE	Lucas Cell	01-AUG-23 00:00
655017004	SAMPLE	LXP1	LUCAS3	MAR-04-24 09:10:00	DONE	Lucas Cell	01-NOV-23 00:00
655017005	SAMPLE	LXP1	LUCAS4	MAR-04-24 09:10:00	DONE	Lucas Cell	01-FEB-24 00:00
655017006	SAMPLE	LXP1	LUCAS5	MAR-04-24 09:10:00	DONE	Lucas Cell	01-JUN-23 00:00
655127001	SAMPLE	LXP1	LUCAS6	MAR-04-24 09:10:00	DONE	Lucas Cell	01-JUL-23 00:00
655690001	SAMPLE	LXP1	LUCAS7	MAR-04-24 09:10:00	DONE	Lucas Cell	01-NOV-23 00:00
655697001	SAMPLE	LXP1	LUCAS8	MAR-04-24 09:10:00	DONE	Lucas Cell	08-APR-23 00:00
655697002	SAMPLE	LXP1	LUCAS1	MAR-04-24 09:46:00	DONE	Lucas Cell	01-MAY-23 00:00
655697003	SAMPLE	LXP1	LUCAS2	MAR-04-24 09:46:00	DONE	Lucas Cell	01-AUG-23 00:00
1205653347	MB	LXP1	LUCAS3	MAR-04-24 09:46:00	DONE	Lucas Cell	01-NOV-23 00:00
1205653348	DUP	LXP1	LUCAS4	MAR-04-24 09:46:00	DONE	Lucas Cell	01-FEB-24 00:00
1205653349	MS	LXP1	LUCAS5	MAR-04-24 09:46:00	DONE	Lucas Cell	01-JUN-23 00:00
1205653350	LCS	LXP1	LUCAS6	MAR-04-24 09:46:00	DONE	Lucas Cell	01-JUL-23 00:00

Analytical Laboratory Report

Report ID: S58153.01(01)
Generated on 02/29/2024

Report to

Attention: Jennifer Caporale
Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S58153.01-S58153.08
Project: Erickson Semi Annual Wells 1-6
Collected Date(s): 01/29/2024
Submitted Date/Time: 01/30/2024 09:11
Sampled by: Marc Wahrer
P.O. #:

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Starred (*) analytes are not NY NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.
All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.
For a specific list of accredited analytes, please feel free to contact the laboratory or visit https://www.meritlabs.com/certifications.

Report Narrative

All analyses completed

Laboratory Accreditations (For Reference Only)

Authority	Accreditation ID
Michigan DEQ	#9956
DOD ELAP & ISO/IEC 17025:2017	#69699 PJLA Testing
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
E245.1	EPA Method 245.1 Revision 3.0
E300.0	EPA Method 300.0 Revision 2.1 (1993)
SM2320B	Standard Method 2320 B 2011
SM2340C	Standard Method 2340 C 2011
SM2540C	Standard Method 2540 C 2015
SM2540D	Standard Method 2540 D 2015
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (8 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S58153.01	MW-1 L401209-01	Groundwater	01/29/24 17:41
S58153.02	MW-2 L401209-02	Groundwater	01/29/24 15:40
S58153.03	MW-3 L401209-03	Groundwater	01/29/24 11:35
S58153.04	MW-4 L401209-04	Groundwater	01/29/24 13:13
S58153.05	MW-5 L401209-05	Groundwater	01/29/24 20:02
S58153.06	MW-6 L401209-06	Groundwater	01/29/24 19:08
S58153.07	MWT-6 L401209-07	Groundwater	01/29/24 19:08
S58153.08	Field Blank L401209-08	Water	01/29/24 09:18

Lab Sample ID: S58153.01

Sample Tag: MW-1 L401209-01

Collected Date/Time: 01/29/2024 17:41

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.0	IR
2	1L Plastic	None	Yes	3.0	IR
1	125mL Plastic	HNO3	Yes	3.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/01/24 11:05	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 12:45, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	26.5	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	80.3	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/05/24 15:28, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	743	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 17:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	680	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	764	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	7.0	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 17:17, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 13:41, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.005	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.079	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	0.07	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	

Lab Sample ID: S58153.01 (continued)

Sample Tag: MW-1 L401209-01

Method: E200.8, Run Date: 02/02/24 13:41, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	2.34	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.006	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:00, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	174	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	58.1	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	0.89	0.50	0.119	mg/L	5	7440-09-7	
Sodium	22.1	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/01/24 15:36, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 09:55, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58153.02
Sample Tag: MW-2 L401209-02
Collected Date/Time: 01/29/2024 15:40
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.0	IR
2	1L Plastic	None	Yes	3.0	IR
1	125mL Plastic	HNO3	Yes	3.0	IR
1	250mL Plastic	None	Yes	3.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/01/24 11:05	CTV	
Mercury Digestion	Completed	E245.1	02/01/24 11:05	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 14:29, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	281	25.0	1.475	mg/L	25	14808-79-8	

Method: E300.0, Run Date: 01/31/24 12:58, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	81.7	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	

Method: SM2320B, Run Date: 02/05/24 15:42, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	550	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 18:25, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	714	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	1,000	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	9.4	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 17:19, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium, Dissolved	Not detected	0.005	0.00205	mg/L	5	7440-62-2	f

f-Filtered and preserved in lab

Lab Sample ID: S58153.02 (continued)
Sample Tag: MW-2 L401209-02

Method: E200.8, Run Date: 02/02/24 17:18, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 13:44, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.036	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	4.07	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	0.52	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.041	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	0.010	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	0.017	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 13:48, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony, Dissolved*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	f
Arsenic, Dissolved	Not detected	0.002	0.00145	mg/L	5	7440-38-2	f
Barium, Dissolved	0.037	0.005	0.000900	mg/L	5	7440-39-3	f
Beryllium, Dissolved	Not detected	0.001	0.000200	mg/L	5	7440-41-7	f
Boron, Dissolved	3.92	0.04	0.0159	mg/L	5	7440-42-8	f
Cadmium, Dissolved	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	f
Chromium, Dissolved	Not detected	0.005	0.000750	mg/L	5	7440-47-3	f
Cobalt, Dissolved	Not detected	0.005	0.000450	mg/L	5	7440-48-4	f
Copper, Dissolved	Not detected	0.005	0.000800	mg/L	5	7440-50-8	f
Iron, Dissolved	0.15	0.02	0.0142	mg/L	5	7439-89-6	f
Lead, Dissolved	Not detected	0.003	0.000450	mg/L	5	7439-92-1	f
Lithium, Dissolved*	0.037	0.005	0.00135	mg/L	5	7439-93-2	f
Molybdenum, Dissolved	0.009	0.005	0.00420	mg/L	5	7439-98-7	f
Nickel, Dissolved	0.016	0.005	0.00115	mg/L	5	7440-02-0	f
Selenium, Dissolved	Not detected	0.005	0.00435	mg/L	5	7782-49-2	f
Silver, Dissolved	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	f
Thallium, Dissolved	Not detected	0.002	0.000350	mg/L	5	7440-28-0	f
Zinc, Dissolved	Not detected	0.005	0.00325	mg/L	5	7440-66-6	f

Method: E200.8, Run Date: 02/02/24 16:02, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	192	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	48.4	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	0.60	0.50	0.119	mg/L	5	7440-09-7	

f-Filtered and preserved in lab

Lab Sample ID: S58153.02 (continued)

Sample Tag: MW-2 L401209-02

Method: E200.8, Run Date: 02/02/24 16:02, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	50.3	0.50	0.109	mg/L	5	7440-23-5	

Method: E200.8, Run Date: 02/02/24 16:04, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium, Dissolved*	164	0.50	0.218	mg/L	5	7440-70-2	f
Magnesium, Dissolved	38.7	0.50	0.0579	mg/L	5	7439-95-4	f
Potassium, Dissolved	Not detected	0.50	0.119	mg/L	5	7440-09-7	f
Sodium, Dissolved	42.0	0.50	0.109	mg/L	5	7440-23-5	f

Method: E245.1, Run Date: 02/01/24 15:43, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury, Dissolved	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	f

Method: E245.1, Run Date: 02/01/24 15:40, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 09:55, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

f-Filtered and preserved in lab

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58153.03
Sample Tag: MW-3 L401209-03
Collected Date/Time: 01/29/2024 11:35
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.0	IR
2	1L Plastic	None	Yes	3.0	IR
1	125mL Plastic	HNO3	Yes	3.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/01/24 11:05	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 13:11, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	

Method: E300.0, Run Date: 01/31/24 14:42, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	99.5	50.0	0.800	mg/L	50	16887-00-6	
Sulfate	689	50.0	2.950	mg/L	50	14808-79-8	

Method: SM2320B, Run Date: 02/05/24 15:49, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	228	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 18:30, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	774	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	1,430	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	3.2	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 16:08, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sodium	119	2.5	1.09	mg/L	50	7440-23-5	

Method: E200.8, Run Date: 02/02/24 17:19, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	

Lab Sample ID: S58153.03 (continued)
Sample Tag: MW-3 L401209-03

Method: E200.8, Run Date: 02/02/24 13:52, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.006	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.017	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	5.68	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	1.84	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.080	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	0.176	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:05, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	252	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	50.7	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	1.81	0.50	0.119	mg/L	5	7440-09-7	

Method: E245.1, Run Date: 02/01/24 15:53, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 09:55, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories, Inc.

Analytical Laboratory Report

Final Report

Lab Sample ID: S58153.04
Sample Tag: MW-4 L401209-04
Collected Date/Time: 01/29/2024 13:13
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.0	IR
2	1L Plastic	None	Yes	3.0	IR
1	125mL Plastic	HNO3	Yes	3.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/01/24 11:05	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 14:55, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	73.6	10.0	0.160	mg/L	10	16887-00-6	

Method: E300.0, Run Date: 01/31/24 13:24, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	57.5	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/05/24 16:27, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	416	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 18:35, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	428	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	556	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	1.5	3	1	mg/L	1		b

Metals

Method: E200.8, Run Date: 02/02/24 17:20, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 13:57, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.009	0.002	0.00145	mg/L	5	7440-38-2	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58153.04 (continued)
Sample Tag: MW-4 L401209-04

Method: E200.8, Run Date: 02/02/24 13:57, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Barium	0.159	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	0.07	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	1.09	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.012	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:09, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	110	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	38.9	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	1.47	0.50	0.119	mg/L	5	7440-09-7	
Sodium	33.9	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/01/24 15:56, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 09:55, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58153.05
Sample Tag: MW-5 L401209-05
Collected Date/Time: 01/29/2024 20:02
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.0	IR
2	1L Plastic	None	Yes	3.0	IR
1	125mL Plastic	HNO3	Yes	3.0	IR
1	250mL Plastic	None	Yes	3.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/01/24 11:05	CTV	
Mercury Digestion	Completed	E245.1	02/01/24 11:05	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 15:07, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	319	25.0	1.475	mg/L	25	14808-79-8	

Method: E300.0, Run Date: 01/31/24 13:37, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	37.2	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	

Method: SM2320B, Run Date: 02/05/24 16:34, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	298	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 18:37, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	502	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	788	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	7.7	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 14:01, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.004	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.040	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	

Lab Sample ID: S58153.05 (continued)
Sample Tag: MW-5 L401209-05

Method: E200.8, Run Date: 02/02/24 14:01, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Boron	2.86	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	0.33	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.069	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	0.082	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	0.005	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 14:04, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony, Dissolved*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	f
Arsenic, Dissolved	Not detected	0.002	0.00145	mg/L	5	7440-38-2	f
Barium, Dissolved	0.044	0.005	0.000900	mg/L	5	7440-39-3	f
Beryllium, Dissolved	Not detected	0.001	0.000200	mg/L	5	7440-41-7	f
Boron, Dissolved	2.74	0.04	0.0159	mg/L	5	7440-42-8	f
Cadmium, Dissolved	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	f
Chromium, Dissolved	Not detected	0.005	0.000750	mg/L	5	7440-47-3	f
Cobalt, Dissolved	Not detected	0.005	0.000450	mg/L	5	7440-48-4	f
Copper, Dissolved	Not detected	0.005	0.000800	mg/L	5	7440-50-8	f
Iron, Dissolved	Not detected	0.02	0.0142	mg/L	5	7439-89-6	f
Lead, Dissolved	Not detected	0.003	0.000450	mg/L	5	7439-92-1	f
Lithium, Dissolved*	0.073	0.005	0.00135	mg/L	5	7439-93-2	f
Molybdenum, Dissolved	0.078	0.005	0.00420	mg/L	5	7439-98-7	f
Nickel, Dissolved	Not detected	0.005	0.00115	mg/L	5	7440-02-0	f
Selenium, Dissolved	Not detected	0.005	0.00435	mg/L	5	7782-49-2	f
Silver, Dissolved	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	f
Thallium, Dissolved	Not detected	0.002	0.000350	mg/L	5	7440-28-0	f
Zinc, Dissolved	Not detected	0.005	0.00325	mg/L	5	7440-66-6	f

Method: E200.8, Run Date: 02/02/24 16:11, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	153	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	33.3	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	4.34	0.50	0.119	mg/L	5	7440-09-7	
Sodium	45.6	0.50	0.109	mg/L	5	7440-23-5	

Method: E200.8, Run Date: 02/02/24 16:12, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium, Dissolved*	126	0.50	0.218	mg/L	5	7440-70-2	f
Magnesium, Dissolved	24.8	0.50	0.0579	mg/L	5	7439-95-4	f
Potassium, Dissolved	3.33	0.50	0.119	mg/L	5	7440-09-7	f
Sodium, Dissolved	34.4	0.50	0.109	mg/L	5	7440-23-5	f

f-Filtered and preserved in lab

Lab Sample ID: S58153.05 (continued)

Sample Tag: MW-5 L401209-05

Method: E200.8, Run Date: 02/02/24 17:21, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium, Dissolved	Not detected	0.005	0.00205	mg/L	5	7440-62-2	f
Vanadium	0.005	0.005	0.00205	mg/L	5	7440-62-2	

Method: E245.1, Run Date: 02/01/24 16:03, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury, Dissolved	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	f

Method: E245.1, Run Date: 02/01/24 15:59, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 09:55, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

f-Filtered and preserved in lab

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58153.06
Sample Tag: MW-6 L401209-06
Collected Date/Time: 01/29/2024 19:08
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.0	IR
2	1L Plastic	None	Yes	3.0	IR
1	125mL Plastic	HNO3	Yes	3.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/01/24 11:05	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 14:03, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	26.5	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	118	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/05/24 16:41, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	516	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 18:39, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	522	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	660	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 17:22, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 14:08, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.003	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.049	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	0.57	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	

Lab Sample ID: S58153.06 (continued)
Sample Tag: MW-6 L401209-06

Method: E200.8, Run Date: 02/02/24 14:08, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	Not detected	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.032	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	0.012	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:14, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	161	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	29.9	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	6.77	0.50	0.119	mg/L	5	7440-09-7	
Sodium	32.4	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/01/24 16:06, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 09:55, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58153.07

Sample Tag: MWT-6 L401209-07

Collected Date/Time: 01/29/2024 19:08

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.0	IR
2	1L Plastic	None	Yes	3.0	IR
1	125mL Plastic	HNO3	Yes	3.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/01/24 11:05	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 13:51, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	26.5	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	119	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/05/24 17:04, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	510	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 18:42, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	512	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	658	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 17:25, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 14:22, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.003	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.049	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	0.61	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	

Lab Sample ID: S58153.07 (continued)
Sample Tag: MWT-6 L401209-07

Method: E200.8, Run Date: 02/02/24 14:22, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	Not detected	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.034	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	0.013	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:23, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	161	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	30.5	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	6.72	0.50	0.119	mg/L	5	7440-09-7	
Sodium	32.7	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/01/24 16:09, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 10:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58153.08
Sample Tag: Field Blank L401209-08
Collected Date/Time: 01/29/2024 09:18
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.0	IR
2	1L Plastic	None	Yes	3.0	IR
1	125mL Plastic	HNO3	Yes	3.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/01/24 11:05	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 14:16, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	Not detected	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/05/24 17:16, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	Not detected	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 19:00, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	Not detected	10	0.238	mg/L	1		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	Not detected	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 17:15, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.000820	mg/L	2	7440-62-2	

Method: E200.8, Run Date: 02/02/24 13:33, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.000900	mg/L	2	7440-36-0	
Arsenic	Not detected	0.002	0.000580	mg/L	2	7440-38-2	
Barium	Not detected	0.005	0.000360	mg/L	2	7440-39-3	
Beryllium	Not detected	0.001	0.0000800	mg/L	2	7440-41-7	
Boron	Not detected	0.04	0.00636	mg/L	2	7440-42-8	
Cadmium	Not detected	0.0005	0.000140	mg/L	2	7440-43-9	

Lab Sample ID: S58153.08 (continued)
Sample Tag: Field Blank L401209-08

Method: E200.8, Run Date: 02/02/24 13:33, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	Not detected	0.005	0.000300	mg/L	2	7440-47-3	
Cobalt	Not detected	0.005	0.000180	mg/L	2	7440-48-4	
Copper	Not detected	0.005	0.000320	mg/L	2	7440-50-8	
Iron	Not detected	0.02	0.00568	mg/L	2	7439-89-6	
Lead	Not detected	0.003	0.000180	mg/L	2	7439-92-1	
Lithium*	Not detected	0.005	0.000540	mg/L	2	7439-93-2	
Molybdenum	Not detected	0.005	0.00168	mg/L	2	7439-98-7	
Nickel	Not detected	0.005	0.000460	mg/L	2	7440-02-0	
Selenium	Not detected	0.005	0.00174	mg/L	2	7782-49-2	
Silver	Not detected	0.0005	0.000100	mg/L	2	7440-22-4	
Thallium	Not detected	0.002	0.000140	mg/L	2	7440-28-0	
Zinc	Not detected	0.005	0.00130	mg/L	2	7440-66-6	

Method: E200.8, Run Date: 02/02/24 15:58, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	Not detected	0.50	0.0874	mg/L	2	7440-70-2	
Magnesium	Not detected	0.50	0.0231	mg/L	2	7439-95-4	
Potassium	Not detected	0.50	0.0479	mg/L	2	7440-09-7	
Sodium	Not detected	0.50	0.0436	mg/L	2	7440-23-5	

Method: E245.1, Run Date: 02/01/24 16:13, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 10:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories Login Checklist

Lab Set ID: S58153
Client: BWL01 (Board of Water & Light)
Project: Erickson Semi Annual Wells 1-6
Submitted: 01/30/2024 09:11 Login User: MMC

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 3.0
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[X] Yes	[ ] No	[ ] N/A	Subcontracting needed? Subcontacted to:	GEL
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[X] Yes	[ ] No	[ ] N/A	Did any samples need to be preserved in the lab?	Diss Metals
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[X] Yes	[ ] No	[ ] N/A	Samples require laboratory filtration	Diss Metals
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: ________________________ Date: ____________

Merit Laboratories Bottle Preservation Check

Lab Set ID: S58153 Submitted: 01/30/2024 09:11

Client: BWL01 (Board of Water & Light)

Project: Erickson Semi Annual Wells 1-6

Initial Preservation Check: 01/30/2024 09:59 MMC

Preservation Recheck (E200.8): N/A

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S58153.01	125mL Plastic HNO3	<2			
S58153.01	1L Plastic HNO3	<2			
S58153.01	1L Plastic HNO3	<2			
S58153.02	125mL Plastic HNO3	<2			
S58153.02	1L Plastic HNO3	<2			
S58153.02	1L Plastic HNO3	<2			
S58153.03	125mL Plastic HNO3	<2			
S58153.03	1L Plastic HNO3	<2			
S58153.03	1L Plastic HNO3	<2			
S58153.04	125mL Plastic HNO3	<2			
S58153.04	1L Plastic HNO3	<2			
S58153.04	1L Plastic HNO3	<2			
S58153.05	125mL Plastic HNO3	<2			
S58153.05	1L Plastic HNO3	<2			
S58153.05	1L Plastic HNO3	<2			
S58153.06	125mL Plastic HNO3	<2			
S58153.06	1L Plastic HNO3	<2			
S58153.06	1L Plastic HNO3	<2			
S58153.07	125mL Plastic HNO3	<2			
S58153.07	1L Plastic HNO3	<2			
S58153.07	1L Plastic HNO3	<2			
S58153.08	125mL Plastic HNO3	<2			
S58153.08	1L Plastic HNO3	<2			
S58153.08	1L Plastic HNO3	<2			

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME	Jennifer Caporale
COMPANY	Lansing Board of Water and Light
ADDRESS	PO Box 13007 48901-3007
CITY	Lansing
STATE	Mi
ZIP CODE	48901
PHONE NO.	517-702-6372
FAX NO.	
P.O. NO.	
E-MAIL ADDRESS	Environmental_Laboratory@lbwl.com
QUOTE NO.	

INVOICE TO

CONTACT NAME	Beth Zimpfer
☒ SAME	
COMPANY	
ADDRESS	
CITY	
STATE	
ZIP CODE	
PHONE NO.	
E-MAIL ADDRESS	Beth.Zimpfer@lbwl.com

PROJECT NO./NAME: Erickson Semi Annual Wells 1-6

SAMPLER(S) - PLEASE PRINT/SIGN NAME: Marc Wahrer

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☒ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	F- undisstiled, Cl-, SO4, TDS	Radium 226	Radium 228	TSS	HCO3, CO3, Hardness	dissolved Metals			
58153.01	01/29/24	1741	MW-1 L401209-01	GW	5	2		3					✓	✓	✓	✓	✓	✓				
.02	↓	1540	MW-2 -02	GW	5	2		3					✓	✓	✓	✓	✓	✓				
.03		1135	MW-3 -03	GW	5	2		3					✓	✓	✓	✓	✓	✓				
.04		1313	MW-4 -04	GW	5	2		3					✓	✓	✓	✓	✓	✓				
.05		2002	MW-5 -05	GW	5	2		3					✓	✓	✓	✓	✓	✓	✓			
.06		1908	MW-6 -06	GW	5	2		3					✓	✓	✓	✓	✓	✓				
.07		1908	MWT-6 -07	GW	5	2		3					✓	✓	✓	✓	✓	✓				
.08	↓	0918	Field Blank -08	DI	5	2		3					✓	✓	✓	✓	✓	✓				

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☒ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions
Metals to analyse:Na, Mg, K B, Ca, Sb, As, Ba, Be, Cd, Cr, Co, Li, Hg, Mo,Pb,Se, Tl, Fe, Cu, Ni, Ag, V, Zn
Please send a preliminary report

Dissolved metals are the same as total.

RELINQUISHED BY: SIGNATURE/ORGANIZATION	Julie Maltby ☐ Sampler	DATE 1/30/24	TIME 0911
RECEIVED BY: SIGNATURE/ORGANIZATION	M Chilcott	DATE 1/30/24	TIME 0911
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 3.0

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Reporting Limits to go to Merit with COC

Sb, total	Antimony	250 mL plastic	mg/L	Nitric Acid	200.7	6 mos	0.005
As, total	Arsenic	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
Ba, total		250 mL plastic	mg/L	Nitric Acid	200.8	6mos	0.150
Be, total	Beryllium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.001
B, total	Boron	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.04
Cd, total	Cadmium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
Ca	Calcium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	2.5
Cl	Chloride	250 mL plastic	mg/L	Chill	300.0	28 d	10
Cr, total	Chromium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Co, total	Cobalt	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Cu, total	Copper	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
F	Fluoride	250 mL plastic	mg/L	None	9056	28 d	1.0
Fe, total	Iron	250 mL plastic	mg/L	Nitric Acid	300.0	6 mos	0.02
Pb, total	Lead	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.003
Li, total	Lithium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Hg, total	Mercury	250 mL plastic	mg/L	HNO3	245.1	28 d	0.0002
Mo, total	Molybdenum	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ni, total	Nickel	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
RA226/228	Radium 226 and 228 combined	(2) 1 L plastic	pCi/L	HNO3	SM 7500	6 mos	2.0 combined
Se, total	Selenium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ag, total	Silver	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
SO4	Sulfate	250 mL plastic	mg/L	Chill	300.0	28 d	10
Tl, total	Thallium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
TDS	Total Dissolved Solids	1 L plastic	mg/L	None	SM 2540C	NA	20
TSS	Total Suspended Solids	1 L plastic	mg/L	None	SM 2540D	NA	3
V, total	Vanadium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Zn, total	Zinc	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005

GEL Laboratories LLC
a member of The GEL Group INC

2040 Savage Road | Charleston, SC 29407
843.556.8171

gel.com

February 22, 2024

John Laverty
Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan 48823

Re: Routine Analysis
Work Order: 653796
SDG: S58153

Dear John Laverty:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 01, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1614.

Sincerely,

Abagail Martin for
Delaney Stonesmith
Project Manager

Purchase Order: GELP20-0018
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Merit Laboratories, Inc.
SDG: S58153
Work Order: 653796

February 22, 2024

Laboratory Identification:

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

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 01, 2024 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
653796001	S58153.01
653796002	S58153.02
653796003	S58153.03
653796004	S58153.04
653796005	S58153.05
653796006	S58153.06
653796007	S58153.07
653796008	S58153.08 Field Blank

Case Narrative:

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

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

Abagail Martin for
Delaney Stonesmith
Project Manager

Chain of Custody and Supporting Documentation

653796

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Project Management Team
COMPANY: Merit Laboratories
ADDRESS: 2680 East Lansing Drive
CITY: East Lansing STATE: MI ZIP CODE: 48823
PHONE NO.: 517-332-0167 FAX NO.: P.O. NO.:
E-MAIL ADDRESS: results@meritlabs.com QUOTE NO.:

INVOICE TO

☒ SAME
CONTACT NAME: Julie Teague
COMPANY: Merit Laboratories
ADDRESS: 2680 East Lansing Drive
CITY: East Lansing STATE: MI ZIP CODE: 48823
PHONE NO.: 517-332-0167 E-MAIL ADDRESS: juliet@meritlabs.com

PROJECT NO./NAME: S58153
SAMPLER(S) - PLEASE PRINT/SIGN NAME:

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☒ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Radium 226*	Radium 228**
	1/29/24	1741	S58153.01	GW	2			2					✓	✓
	1/29/24	1540	S58153.02	GW	2			2					✓	✓
	1/29/24	1135	S58153.03	GW	2			2					✓	✓
	1/29/24	1313	S58153.04	GW	2			2					✓	✓
	1/29/24	2002	S58153.05	GW	2			2					✓	✓
	1/29/24	1908	S58153.06	GW	2			2					✓	✓
	1/29/24	1908	S58153.07	GW	2			2					✓	✓
	1/29/24	0918	S58153.08 Field Blank	DI	2			2					✓	✓

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions
* E903.1 Mod.
** E904.0/SW 9320 Mod.

Please use calculation product & provide Radium 226/228 combined results on the report

(No Ice needed)
** Subcontracted to
GEL Laboratories, Inc.
2040 Savage Road
Charleston, SC 29407

	Signature/Organization		Date	Time
RELINQUISHED BY:	M Chilcote	☐ Sampler	1/30/24	1700
RECEIVED BY:	UPS		1/30/24	1700
RELINQUISHED BY:				
RECEIVED BY:	L. E. [illegible] GEL		2/1/24	1020

	Signature/Organization	Date	Time
RELINQUISHED BY:			
RECEIVED BY:			

SEAL NO.: SEAL INTACT YES ☐ NO ☐ INITIALS:
SEAL NO.: SEAL INTACT YES ☐ NO ☐ INITIALS:
NOTES:
TEMP. ON ARRIVAL:

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 3.18.12

GEL | Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: MERI	SDG/AR/COC/Work Order: 653796
Received By: QG	Date Received: 2/1/24
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other
	12 464 477 03 4252 3481

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		/	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		/	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		/	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		/	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		/	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	/			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		/		Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 13 °C
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR1-23 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?		/		Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			/	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	/			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	/			ID's and containers affected:
10	Date & time on COC match date & time on bottles?			/	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	/			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			/	
13	COC form is properly signed in relinquished/received sections?	/			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials AM Date 02/02/24 Page 1 of 1

Laboratory Certifications

List of current GEL Certifications as of 22 February 2024

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-23-21
Utah NELAP	SC000122023-38
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
Merit Laboratories, Inc.
SDG #: S58153
Work Order #: 653796

Product: **GFPC Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2568549

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

GEL Sample ID#	Client Sample Identification
653796001	S58153.01
653796002	S58153.02
653796003	S58153.03
653796004	S58153.04
653796005	S58153.05
653796006	S58153.06
653796007	S58153.07
653796008	S58153.08 Field Blank
1205650321	Method Blank (MB)
1205650322	653796001(S58153.01) Sample Duplicate (DUP)
1205650323	Laboratory Control Sample (LCS)

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

Data Summary:

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

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2564063

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

GEL Sample ID#	Client Sample Identification
653796001	S58153.01
653796002	S58153.02
653796003	S58153.03
653796004	S58153.04
653796005	S58153.05
653796006	S58153.06
653796007	S58153.07
653796008	S58153.08 Field Blank
1205641711	Method Blank (MB)

1205641712	653796001(S58153.01) Sample Duplicate (DUP)
1205641713	653796001(S58153.01) Matrix Spike (MS)
1205641714	Laboratory Control Sample (LCS)

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

Data Summary:

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

Miscellaneous Information

Additional Comments

The matrix spike, 1205641713 (S58153.01MS), aliquot was reduced to conserve sample volume.

Certification Statement

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

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Qualifier Definition Report
for

MERI001 Merit Laboratories, Inc.

Client SDG: S58153 GEL Work Order: 653796

The Qualifiers in this report are defined as follows:

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

Review/Validation

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

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

Signature: **Name:** **Kate Gellatly**

Date: **29 FEB 2024** **Title:** **Analyst 1 PT**

Sample Data Summary

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58153.01	Project:	MERI00120
Sample ID:	653796001	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	29-JAN-24 17:41		
Receive Date:	01-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.206	+/-1.19	2.28	3.00	pCi/L			JE1	02/26/24	0843	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.240	+/-1.24			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.240	+/-0.332	0.561	1.00	pCi/L			MJ2	02/27/24	0955	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			77.9	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58153.02	Project:	MERI00120
Sample ID:	653796002	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	29-JAN-24 15:40		
Receive Date:	01-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.595	+/-0.875	1.81	3.00	pCi/L			JE1	02/26/24	0843	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.000	+/-0.891			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	-0.0321	+/-0.167	0.510	1.00	pCi/L			MJ2	02/27/24	0955	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			77.5	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58153.03	Project:	MERI00120
Sample ID:	653796003	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	29-JAN-24 11:35		
Receive Date:	01-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.837	+/-1.10	1.87	3.00	pCi/L			JE1	02/26/24	0843	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.873	+/-1.14			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.0361	+/-0.292	0.676	1.00	pCi/L			MJ2	02/27/24	0955	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			77.4	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58153.04	Project:	MERI00120
Sample ID:	653796004	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	29-JAN-24 13:13		
Receive Date:	01-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.253	+/-0.808	1.59	3.00	pCi/L			JE1	02/26/24	0843	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.434	+/-0.895			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.434	+/-0.385	0.540	1.00	pCi/L			MJ2	02/27/24	0955	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			86.7	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58153.05	Project:	MERI00120
Sample ID:	653796005	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	29-JAN-24 20:02		
Receive Date:	01-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228		1.88	+/-1.12	1.69	3.00	pCi/L			JE1	02/26/24	0843	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.73	+/-1.26			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.857	+/-0.572	0.648	1.00	pCi/L			MJ2	02/27/24	0955	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			84.8	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58153.06	Project:	MERI00120
Sample ID:	653796006	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	29-JAN-24 19:08		
Receive Date:	01-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.746	+/-0.990	1.69	3.00	pCi/L			JE1	02/26/24	0843	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.18	+/-1.05			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.435	+/-0.355	0.437	1.00	pCi/L			MJ2	02/27/24	0955	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			84.5	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58153.07	Project:	MERI00120
Sample ID:	653796007	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	29-JAN-24 19:08		
Receive Date:	01-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228		2.24	+/-1.37	2.14	3.00	pCi/L			JE1	02/26/24	0843	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.43	+/-1.41			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.190	+/-0.325	0.603	1.00	pCi/L			MJ2	02/27/24	1012	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			81.8	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58153.08 Field Blank	Project:	MERI00120
Sample ID:	653796008	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	29-JAN-24 09:18		
Receive Date:	01-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.90	+/-1.40	2.22	3.00	pCi/L			JE1	02/26/24	0844	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.60	+/-1.51			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.701	+/-0.561	0.777	1.00	pCi/L			MJ2	02/27/24	1012	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			73.1	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Quality Control Data

GEL LABORATORIES LLC

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

QC Summary

Report Date: February 29, 2024

Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan
Contact: **John Laverty**

Workorder: **653796**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2568549										
QC1205650322 653796001 DUP										
Radium-228	U	-0.206	U	0.935	pCi/L	N/A		N/A	JE1	02/26/24 08:43
	Uncertainty	+/-1.19		+/-1.07						
QC1205650323 LCS										
Radium-228	72.6			71.9	pCi/L		99	(75%-125%)		02/26/24 08:43
	Uncertainty			+/-4.05						
QC1205650321 MB										
Radium-228			U	0.707	pCi/L					02/26/24 08:43
	Uncertainty			+/-0.981						
Rad Ra-226										
Batch 2564063										
QC1205641712 653796001 DUP										
Radium-226	U	0.240	U	0.337	pCi/L	N/A		N/A	MJ2	02/27/24 10:30
	Uncertainty	+/-0.332		+/-0.373						
QC1205641714 LCS										
Radium-226	27.0			23.8	pCi/L		88	(75%-125%)		02/27/24 10:30
	Uncertainty			+/-2.59						
QC1205641711 MB										
Radium-226			U	-0.0351	pCi/L					02/27/24 10:30
	Uncertainty			+/-0.248						
QC1205641713 653796001 MS										
Radium-226	128 U	0.240		124	pCi/L		96.9	(75%-125%)		02/27/24 10:30
	Uncertainty	+/-0.332		+/-12.3						

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported

QC Summary

Workorder: 653796

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

UI	Gamma Spectroscopy--Uncertain identification
BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
**	Analyte is a Tracer compound
M	REMP Result > MDC/CL and < RDL
J	See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Gas Flow Raw Data

Batch 2568549 Check-list

This check-list was completed on 26-FEB-24 by Nat Long

This batch was reviewed by Kenshalla Oston on 26-FEB-24 and Nat Long on 26-FEB-24.

Batch ID: 2568549 **Product:** GFC28RAL **Description:** Gas Flow Radium 228 GL-RAD-A-063

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were all tracer/carrier recoveries within the required acceptance limits?	Yes		
10	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-228 in Liquid

Batch ID: **2568549**
Analyst: Jacqueline Winston (JE1)
Method: EPA 904.0/SW846 9320 Modified
Lab SOP: GL-RAD-A-063 REV# 5
Instrument: SP-C018367602

Due Dates for Lab: 26-FEB-2024 **Package: 28-FEB-2024** **SDG: 29-FEB-2024**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1205650323	Radium 228	2051-D	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Separation (date)
1	653796001	21-FEB-2024	3	304.6	304.6	02/22/24 13:27	02/26/24 07:02
2	653796002	21-FEB-2024	3	304.9	304.9	02/22/24 13:27	02/26/24 07:02
3	653796003	21-FEB-2024	3	302.9	302.9	02/22/24 13:27	02/26/24 07:02
4	653796004	21-FEB-2024	3	302.8	302.8	02/22/24 13:27	02/26/24 07:02
5	653796005	21-FEB-2024	3	303.5	303.5	02/22/24 13:27	02/26/24 07:02
6	653796006	21-FEB-2024	3	310.6	310.6	02/22/24 13:27	02/26/24 07:02
7	653796007	21-FEB-2024	3	310.5	310.5	02/22/24 13:27	02/26/24 07:02
8	653796008	21-FEB-2024	3	303.5	303.5	02/22/24 13:27	02/26/24 07:02
9	654013001	21-FEB-2024	3	312.9	312.9	02/22/24 13:27	02/26/24 07:02
10	654013002	21-FEB-2024	3	302.1	302.1	02/22/24 13:27	02/26/24 07:02
11	654013003	21-FEB-2024	3	305.6	305.6	02/22/24 13:27	02/26/24 07:02
12	654013004	21-FEB-2024	3	304.5	304.5	02/22/24 13:27	02/26/24 07:02
13	654013005	21-FEB-2024	3	306.4	306.4	02/22/24 13:27	02/26/24 07:02
14	654013006	21-FEB-2024	3	302.8	302.8	02/22/24 13:27	02/26/24 07:02
15	654013007	21-FEB-2024	3	304.7	304.7	02/22/24 13:27	02/26/24 07:02
16	654013008	21-FEB-2024	3	311.5	311.5	02/22/24 13:27	02/26/24 07:02
17	654013009	21-FEB-2024	3	308.9	308.9	02/22/24 13:27	02/26/24 07:02
18	1205650321 MB	21-FEB-2024	3		312.9	02/22/24 13:27	02/26/24 07:02
19	1205650322 DUP (653796001)	21-FEB-2024	3	311.3	311.3	02/22/24 13:27	02/26/24 07:02
20	1205650323 LCS	21-FEB-2024	3		312.9	02/22/24 13:27	02/26/24 07:02

Reagent/Solvent Lot ID	Description	Amount
WORK 2097-B	Ba-133 Tracer	.1 mL
REGNT 4227383	RGF-1.5M Ammonium Sulfate	10 mL
REGNT 4214820	Barium Carrier Ra228 REG	1 mL
REGNT 4223988	RGF-1M Citric Acid	5 mL
REGNT 4226396	2M HCl	20 mL
REGNT 4221876	RGF-50% Potassium Carbonate	2 mL
REGNT 4077716.14	RGF-Hydrofluoric Acid	4 mL
REGNT 4209237	500 mg/mL Neodymium Carrier	.2 mL
REGNT 4216641	RGF-Neodymium Subtrate	5 mL
REGNT 4221872	RGF-7M Nitric Acid	25 mL
REGNT 4072674	Acetic Acid Glacial ACS Poly Coated Bottle	10 mL
REGNT DGA12292023	2561518	2 g
REGNT 4208393.51	Nitric Acid	5 mL

Comments:
Pipet Id: RAD-GFC-1795419
Data Entry Date2: 21-FEB-2024 00:00

Radium-228 Liquid

Filename : RA228.XLS
File type : Excel
Version # : 1.4.3

Tracer S/N : 2097-B
Tracer Exp Date : 7/12/2024
Tracer Volume Added: 0.10

Batch : 2568549
Analyst : JE1
Prep Date : 2/21/2024
Ra-228 Method Uncertainty : 0.1268

Geometry: 25mm Filter

Procedure Code : GFC28RAL
Parmname : Radium-228
Required MDA : 3 pCi/L
Ra-228 Abundance : 1.00
Halflife of Ra-228 : 5.75 years
Halflife of Ac-228 : 6.15 hours

Sample Characteristics Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	**Tracer Calculations** Tracer Ref. Activity (CPM)	Tracer Ref. Count Uncertainty (%)	Tracer Samp. Activity (CPM)	Tracer Samp. Count Uncertainty (%)	Tracer Aliquot (mL)	Tracer Aliquot StDev. (mL)
1	653796001.1	0.3046	1.8536E-05	1/29/2024 17:41	921.9	1.90%	718.3	2.15%	0.1	0.000200
2	653796002.1	0.3049	1.8541E-05	1/29/2024 15:40	921.9	1.90%	714.2	2.16%	0.1	0.000200
3	653796003.1	0.3029	1.8508E-05	1/29/2024 11:35	921.9	1.90%	713.7	2.16%	0.1	0.000200
4	653796004.1	0.3028	1.8506E-05	1/29/2024 13:13	921.9	1.90%	799.0	2.04%	0.1	0.000200
5	653796005.1	0.3035	1.8518E-05	1/29/2024 20:02	921.9	1.90%	781.5	2.07%	0.1	0.000200
6	653796006.1	0.3106	1.8633E-05	1/29/2024 19:08	921.9	1.90%	778.7	2.07%	0.1	0.000200
7	653796007.1	0.3105	1.8631E-05	1/29/2024 19:08	921.9	1.90%	754.5	2.10%	0.1	0.000200
8	653796008.1	0.3035	1.8518E-05	1/29/2024 9:18	921.9	1.90%	673.7	2.22%	0.1	0.000200
9	654013001.1	0.3129	1.8669E-05	1/30/2024 14:04	921.9	1.90%	825.4	2.01%	0.1	0.000200
10	654013002.1	0.3021	1.8495E-05	1/30/2024 12:36	921.9	1.90%	741.0	2.12%	0.1	0.000200
11	654013003.1	0.3056	1.8553E-05	1/30/2024 11:03	921.9	1.90%	733.9	2.13%	0.1	0.000200
12	654013004.1	0.3045	1.8534E-05	1/30/2024 18:21	921.9	1.90%	774.5	2.07%	0.1	0.000200
13	654013005.1	0.3064	1.8566E-05	1/30/2024 17:03	921.9	1.90%	742.7	2.12%	0.1	0.000200
14	654013006.1	0.3028	1.8506E-05	1/30/2024 15:44	921.9	1.90%	740.7	2.12%	0.1	0.000200
15	654013007.1	0.3047	1.8538E-05	1/30/2024 9:11	921.9	1.90%	752.2	2.10%	0.1	0.000200
16	654013008.1	0.3115	1.8647E-05	1/30/2024 14:04	921.9	1.90%	725.1	2.14%	0.1	0.000200
17	654013009.1	0.3089	1.8606E-05	1/30/2024 8:10	921.9	1.90%	754.4	2.10%	0.1	0.000200
18	1205650321.1	0.3129	1.8669E-05	2/21/2024 0:00	921.9	1.90%	692.4	2.19%	0.1	0.000200
19	1205650322.1	0.3113	1.8644E-05	1/29/2024 17:41	921.9	1.90%	762.2	2.09%	0.1	0.000200
20	1205650323.1	0.3129	1.8669E-05	2/21/2024 0:00	921.9	1.90%	793.4	2.05%	0.1	0.000200

Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1 ml Stdev : +/- 0.002000 ml

Analytical SOP: GL-RAD-A-063
Instrument SOP: GL-RAD-I-016

Count raw Data

Pos.	Detector ID	Counting Time (min.)	Gross Counts Alpha	Gross Counts Beta	Beta cpm	Count Start Date/Time	Ac-228 Ingrowth Date/Time	Ac-228 Decay Date/Time	Ra-228 Decay	Ac-228 Decay	Ac-228 Ingrowth	Ac-228 Count Correction	Calculated Sample Recovery %	Sample Recovery Error %
1	1A	60	13	56	0.933	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.827	1.000	1.057	77.9%	2.88%
2	1D	60	9	38	0.633	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.827	1.000	1.057	77.5%	2.89%
3	2A	60	24	62	1.033	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	77.4%	2.89%
4	2B	60	5	43	0.717	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	86.7%	2.80%
5	2C	60	7	79	1.317	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	84.8%	2.82%
6	5A	60	16	69	1.150	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	84.5%	2.82%
7	6A	60	15	128	2.133	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	81.8%	2.85%
8	6B	60	16	87	1.450	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	73.1%	2.94%
9	6C	60	13	64	1.067	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	89.5%	2.78%
10	7A	60	14	38	0.633	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	80.4%	2.86%
11	7C	60	9	27	0.450	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	79.6%	2.87%
12	8A	60	17	73	1.217	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	84.0%	2.82%
13	8C	60	8	39	0.650	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	80.6%	2.86%
14	9A	60	12	83	1.383	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	80.4%	2.86%
15	9B	60	13	69	1.150	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	81.6%	2.85%
16	9C	60	15	61	1.017	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.824	1.000	1.057	78.7%	2.88%
17	9D	60	11	45	0.750	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.824	1.000	1.057	81.8%	2.85%
18	10A	60	10	55	0.917	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.998	0.826	1.000	1.057	75.1%	2.91%
19	10C	60	9	77	1.283	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	82.7%	2.84%
20	11A	60	20	1387	23.117	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.998	0.827	1.000	1.057	86.1%	2.81%

Pos.	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Bkg cpm	Weekly Bkg Count Start Date/Time	Bkg Count Time (min.)
1	PIC	6/1/2023	5/31/2024	0.5320	0.00738	0.978	2/23/2024 17:51	500
2	PIC	6/1/2023	5/31/2024	0.6071	0.00692	0.780	2/23/2024 17:51	500
3	PIC	6/1/2023	5/31/2024	0.6083	0.01914	0.828	2/23/2024 17:51	500
4	PIC	6/1/2023	5/31/2024	0.6253	0.02111	0.788	2/23/2024 17:51	500
5	PIC	6/1/2023	5/31/2024	0.6085	0.01274	0.812	2/23/2024 17:51	500
6	PIC	6/1/2023	5/31/2024	0.6366	0.00851	0.936	2/23/2024 17:51	500
7	PIC	6/1/2023	5/31/2024	0.6444	0.02228	1.504	2/23/2024 17:49	500
8	PIC	6/1/2023	5/31/2024	0.5957	0.00851	1.020	2/23/2024 17:49	500
9	PIC	6/1/2023	5/31/2024	0.6167	0.01970	0.914	2/23/2024 17:49	500
10	PIC	6/1/2023	5/31/2024	0.6229	0.00594	0.372	2/23/2024 17:49	500
11	PIC	6/1/2023	5/31/2024	0.6369	0.00790	0.354	2/23/2024 17:50	500
12	PIC	6/1/2023	5/31/2024	0.6413	0.01579	0.842	2/23/2024 17:50	500
13	PIC	6/1/2023	5/31/2024	0.5662	0.01955	0.756	2/23/2024 17:50	500
14	PIC	6/1/2023	5/31/2024	0.6343	0.00758	0.710	2/23/2024 17:50	500
15	PIC	6/1/2023	5/31/2024	0.6496	0.00754	0.858	2/23/2024 17:50	500
16	PIC	6/1/2023	5/31/2024	0.6429	0.00584	0.772	2/23/2024 17:50	500
17	PIC	6/1/2023	5/31/2024	0.6292	0.02610	0.692	2/23/2024 17:50	500
18	PIC	6/1/2023	5/31/2024	0.6356	0.00651	0.734	2/23/2024 17:50	500
19	PIC	6/1/2023	5/31/2024	0.6368	0.00638	1.020	2/23/2024 17:50	500
20	PIC	6/1/2023	5/31/2024	0.6466	0.01317	1.432	2/23/2024 17:48	500

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N :	N/A
Spike Exp Date :	N/A
Spike Activity (dpm/ml):	N/A
Spike Volume Added:	N/A
LCS S/N :	2051-D
LCS Exp Date :	7/12/2024
LCS Activity (dpm/ml):	504.19
LCS Volume Added:	0.10

Results Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	1.4497	1.0235	3	2.2773	**-0.2057**	296.28%	-0.0447	0.1323	1.1944	1.1946		SAMPLE				
2	1.1402	0.8050	3	1.8127	**-0.5948**	75.11%	-0.1467	0.1101	0.8749	0.8751		SAMPLE				
3	1.1811	0.8338	3	1.8715	**0.8372**	67.00%	0.2053	0.1374	1.0980	1.1190		SAMPLE				
4	1.0017	0.7072	3	1.5916	**-0.2528**	163.04%	-0.0713	0.1163	0.8078	0.8080		SAMPLE				
5	1.0659	0.7525	3	1.6909	**1.8752**	30.58%	0.5047	0.1535	1.1181	1.2167		SAMPLE				
6	1.0729	0.7575	3	1.6892	**0.7455**	67.84%	0.2140	0.1450	0.9904	1.0085		SAMPLE				
7	1.3878	0.9798	3	2.1374	**2.2372**	31.41%	0.6293	0.1964	1.3682	1.4854		SAMPLE				
8	1.4170	1.0004	3	2.2212	**1.8952**	37.77%	0.4300	0.1619	1.3984	1.4800		SAMPLE				
9	1.0254	0.7240	3	1.6164	**0.5144**	91.78%	0.1527	0.1400	0.9247	0.9341		SAMPLE				
10	0.7474	0.5277	3	1.2478	**1.0060**	40.78%	0.2613	0.1063	0.8020	0.8420		SAMPLE				
11	0.7118	0.5026	3	1.1930	**0.3608**	94.42%	0.0960	0.0906	0.6674	0.6737		SAMPLE				
12	1.0369	0.7321	3	1.6416	**1.3300**	39.69%	0.3747	0.1482	1.0311	1.0860		SAMPLE				
13	1.1536	0.8144	3	1.8372	**-0.4418**	104.88%	-0.1060	0.1111	0.9076	0.9078		SAMPLE				
14	1.0127	0.7150	3	1.6188	**2.5422**	23.42%	0.6733	0.1564	1.1577	1.3271		SAMPLE				
15	1.0640	0.7512	3	1.6828	**1.0536**	49.58%	0.2920	0.1445	1.0220	1.0568		SAMPLE				
16	1.0352	0.7309	3	1.6468	**0.9055**	55.65%	0.2447	0.1360	0.9864	1.0130		SAMPLE				
17	0.9708	0.6854	3	1.5541	**0.2126**	203.19%	0.0580	0.1178	0.8467	0.8485		SAMPLE				
18	1.0549	0.7447	3	1.6829	**0.7065**	70.91%	0.1827	0.1294	0.9810	0.9974		MB				
19	1.1417	0.8061	3	1.7897	**0.9351**	58.20%	0.2633	0.1531	1.0654	1.0917	653796001.1	DUP	* 0.0%			
20	1.2625	0.8914	3	1.9484	**71.8679**	4.23%	21.6847	0.6230	4.0470	18.8282		LCS			72.5824	99.0%

SampleID	Instr	Time (min.)	Alpha Counts	Beta Counts	Count Start Time	Count End Time	Machine	Batch ID
653796001	1A	60	13	56	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796002	1D	60	9	38	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796003	2A	60	24	62	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796004	2B	60	5	43	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796005	2C	60	7	79	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796006	5A	60	16	69	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796007	6A	60	15	128	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796008	6B	60	16	87	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013001	6C	60	13	64	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013002	7A	60	14	38	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013003	7C	60	9	27	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013004	8A	60	17	73	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013005	8C	60	8	39	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013006	9A	60	12	83	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013007	9B	60	13	69	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013008	9C	60	15	61	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013009	9D	60	11	45	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
1205650321	10A	60	10	55	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
1205650322	10C	60	9	77	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
1205650323	11A	60	20	1387	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549

ASSAY 26-Feb-24 7:21:43
Wizard 2480 s/n 46190630

Protocol	id	8	Ba-133
Time	limit		
Count	limit		
Isotope	Ba-133		
Protocol	date	2/26/2024	
Run	id.	916	

Samp_ID		POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR	% RECOVERY	COUNT TIME
REF		1	93	1	180	2766	921.85	1.9		07:21:43
	653796001	2	93	2	180	2155.5	718.33	2.15	77.92	07:24:57
	653796002	3	93	3	180	2143	714.21	2.16	77.48	07:28:11
	653796003	4	93	4	180	2141.5	713.72	2.16	77.42	07:31:25
	653796004	5	93	5	180	2397.5	799.04	2.04	86.68	07:34:39
	653796005	1	94	1	180	2345	781.54	2.07	84.78	07:38:17
	653796006	2	94	2	180	2336.5	778.68	2.07	84.47	07:41:31
	653796007	3	94	3	180	2264	754.52	2.1	81.85	07:44:45
	653796008	4	94	4	180	2021.5	673.66	2.22	73.08	07:47:59
	654013001	5	94	5	180	2476.5	825.37	2.01	89.53	07:51:13
	654013002	1	2	1	180	2223.5	741.03	2.12	80.39	07:54:48
	654013003	2	2	2	180	2202	733.87	2.13	79.61	07:58:02
	654013004	3	2	3	180	2324	774.48	2.07	84.01	08:01:16
	654013005	4	2	4	180	2228.5	742.72	2.12	80.57	08:04:30
	654013006	5	2	5	180	2222.5	740.71	2.12	80.35	08:07:44
	654013007	1	18	1	180	2257	752.22	2.1	81.60	08:11:27
	654013008	2	18	2	180	2175.5	725.05	2.14	78.65	08:14:41
	654013009	3	18	3	180	2263.5	754.39	2.1	81.83	08:17:55
	1205650321	4	18	4	180	2077.5	692.39	2.19	75.11	08:21:09
	1205650322	5	18	5	180	2287	762.21	2.09	82.68	08:24:23
	1205650323	1	14	1	180	2380.5	793.38	2.05	86.06	08:28:07

END OF ASSAY

Continuing Calibration Data

Gas Flow Proportional Counter Checks for 26-Feb-2024

Detectors LB4100 E1 through H4 and PIC 1A through 14D and G5400W 1W through 1Z and LB4200 GA1 through OD4

Short Name	Status	Parmname	Run Time	Count Time	CPM or dec	Low Limit	High Limit	Stdev
LB4100G2	Below	Alpha eff	26-Feb 07:56	5	11834	12110	13740	-4.02
LB4100G2	Above	Alpha XTalk	26-Feb 07:56	5	0.216	0.179	0.214	+3.47
LB4100H1	Above	Alpha bkg	26-Feb 04:55	60	0.650	-8.08E-2	0.225	+11.32
LB4100H1	Above	Alpha eff	26-Feb 06:53	5	11984	7523	11160	+4.36
LB4100H1	Above	Beta bkg	26-Feb 04:55	60	3.167	-5.15E-1	3.743	+2.19
LB4100H2	Above	Alpha bkg	26-Feb 04:55	60	0.417	0.057	0.420	+2.95
LB4100H3	Above	Alpha bkg	26-Feb 09:42	60	0.283	-8.01E-2	0.242	+3.77
LB4200GB2	Below	Alpha eff	26-Feb 06:35	5	9359	9443	9898	-4.11
LB4200GB2	Above	Beta bkg	26-Feb 17:22	60	19.200	0.129	1.304	+94.34
LB4200GD3	Above	Alpha bkg	26-Feb 17:22	60	0.967	-1.04E-1	0.321	+12.11
LB4200OB1	Above	Alpha bkg	26-Feb 17:16	60	0.850	-1.05E-1	0.362	+9.27
LB4200OB1	Above	Beta bkg	26-Feb 17:16	60	2.650	-2.59E-1	2.044	+4.58
PIC2D	Above	Beta bkg	26-Feb 08:26	60	2.183	0.417	1.868	+4.30
PIC4C	Above	Alpha bkg	26-Feb 07:35	60	0.350	-2.25E-1	1.312	-0.75
PIC12D	Above	Alpha eff	26-Feb 06:00	5	18171	14940	17150	+5.77
PIC14A	Above	Beta bkg	26-Feb 08:48	60	2.150	-9.44E-1	2.673	+2.13
PIC14B	Above	Beta bkg	26-Feb 08:47	60	2.133	-1.14E+0	2.499	+2.40

INSTRUMENTS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

The following detectors may not have properly transferred to the LIMS system

PIC1B	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
PIC5B	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
PIC10B	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk

Reviewed by Jasmine Conley

Date 2/28/24

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: GFPC **Batch ID: 2568549**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1205650323	LCS	JE1	PIC11A	FEB-26-24 08:43:11	DONE	25mm Filter	01-JUN-23 00:00
653796001	SAMPLE	JE1	PIC1A	FEB-26-24 08:43:21	DONE	25mm Filter	01-JUN-23 00:00
653796002	SAMPLE	JE1	PIC1D	FEB-26-24 08:43:24	DONE	25mm Filter	01-JUN-23 00:00
653796003	SAMPLE	JE1	PIC2A	FEB-26-24 08:43:27	DONE	25mm Filter	01-JUN-23 00:00
653796004	SAMPLE	JE1	PIC2B	FEB-26-24 08:43:31	DONE	25mm Filter	01-JUN-23 00:00
653796005	SAMPLE	JE1	PIC2C	FEB-26-24 08:43:36	DONE	25mm Filter	01-JUN-23 00:00
653796006	SAMPLE	JE1	PIC5A	FEB-26-24 08:43:41	DONE	25mm Filter	01-JUN-23 00:00
1205650321	MB	JE1	PIC10A	FEB-26-24 08:43:48	DONE	25mm Filter	01-JUN-23 00:00
1205650322	DUP	JE1	PIC10C	FEB-26-24 08:43:50	DONE	25mm Filter	01-JUN-23 00:00
653796007	SAMPLE	JE1	PIC6A	FEB-26-24 08:43:58	DONE	25mm Filter	01-JUN-23 00:00
653796008	SAMPLE	JE1	PIC6B	FEB-26-24 08:44:02	DONE	25mm Filter	01-JUN-23 00:00
654013001	SAMPLE	JE1	PIC6C	FEB-26-24 08:44:06	DONE	25mm Filter	01-JUN-23 00:00
654013002	SAMPLE	JE1	PIC7A	FEB-26-24 08:44:13	DONE	25mm Filter	01-JUN-23 00:00
654013003	SAMPLE	JE1	PIC7C	FEB-26-24 08:44:16	DONE	25mm Filter	01-JUN-23 00:00
654013004	SAMPLE	JE1	PIC8A	FEB-26-24 08:44:20	DONE	25mm Filter	01-JUN-23 00:00
654013005	SAMPLE	JE1	PIC8C	FEB-26-24 08:44:26	DONE	25mm Filter	01-JUN-23 00:00
654013006	SAMPLE	JE1	PIC9A	FEB-26-24 08:44:35	DONE	25mm Filter	01-JUN-23 00:00
654013007	SAMPLE	JE1	PIC9B	FEB-26-24 08:44:39	DONE	25mm Filter	01-JUN-23 00:00
654013008	SAMPLE	JE1	PIC9C	FEB-26-24 08:44:49	DONE	25mm Filter	01-JUN-23 00:00
654013009	SAMPLE	JE1	PIC9D	FEB-26-24 08:44:54	DONE	25mm Filter	01-JUN-23 00:00

Lucas Cell Raw Data

Batch 2564063 Check-list

This check-list was completed on 27-FEB-24 by Lyndsey Pace

This batch was reviewed by Lyndsey Pace on 27-FEB-24 and Elizabeth Krouse on 28-FEB-24.

Batch ID:	**Product:**	**Description:** Lucas Cell Radium 226
2564063	LUC26RAL	GL-RAD-A-008

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the matrix spike (MS/MSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-226 in Liquid

Batch ID: **2564063**
Analyst: Marisa Johnson (MJ2)
Method: EPA 903.1 Modified
Lab SOP: GL-RAD-A-008 REV# 15
Instrument: LUCAS-C202389980

Due Dates for Lab: 26-FEB-2024 **Package: 28-FEB-2024** **SDG: 29-FEB-2024**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
MS	1205641713	Ra-226 emanation spike	1715-I	.1	mL
LCS	1205641714	Ra-226 emanation spike	1715-I	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	End Degas (date)	CELL #	End Transfer (date)	Start Count Time (date)	Background Counts	Total Counts
1	653796001	23-FEB-2024	1	504.04	504.04	02/23/24 13:55	309	02/27/24 06:34	02/27/24 09:55	2	4
2	653796002	23-FEB-2024	1	504.33	504.33	02/23/24 13:55	407	02/27/24 06:34	02/27/24 09:55	3	1
3	653796003	23-FEB-2024	1	500.87	500.87	02/23/24 13:55	505	02/27/24 06:34	02/27/24 09:55	5	3
4	653796004	23-FEB-2024	1	502.03	502.03	02/23/24 13:55	605	02/27/24 06:34	02/27/24 09:55	4	9
5	653796005	23-FEB-2024	1	501.25	501.25	02/23/24 13:55	708	02/27/24 06:34	02/27/24 09:55	3	12
6	653796006	23-FEB-2024	1	501.39	501.39	02/23/24 13:55	807	02/27/24 06:34	02/27/24 09:55	2	8
7	653796007	23-FEB-2024	1	504.81	504.81	02/23/24 13:55	103	02/27/24 06:58	02/27/24 10:12	3	4
8	653796008	23-FEB-2024	1	505.89	505.89	02/23/24 13:55	204	02/27/24 06:58	02/27/24 10:12	6	12
9	654013001	23-FEB-2024	1	507.57	507.57	02/23/24 13:55	303	02/27/24 06:58	02/27/24 10:12	8	4
10	654013002	23-FEB-2024	1	502.26	502.26	02/23/24 13:55	404	02/27/24 06:58	02/27/24 10:12	3	7
11	654013003	23-FEB-2024	1	507.59	507.59	02/23/24 13:55	504	02/27/24 06:58	02/27/24 10:12	3	10
12	654013004	23-FEB-2024	1	502.57	502.57	02/23/24 13:55	602	02/27/24 06:58	02/27/24 10:12	4	9
13	654013005	23-FEB-2024	1	500.7	500.7	02/23/24 13:55	701	02/27/24 06:58	02/27/24 10:12	6	3
14	654013006	23-FEB-2024	1	502.21	502.21	02/23/24 13:55	805	02/27/24 06:58	02/27/24 10:12	3	6
15	654013007	23-FEB-2024	1	502.07	502.07	02/23/24 13:55	104	02/27/24 07:23	02/27/24 10:30	1	13
16	654013008	23-FEB-2024	1	500.1	500.1	02/23/24 13:55	207	02/27/24 07:23	02/27/24 10:30	2	11
17	654013009	23-FEB-2024	1	505.72	505.72	02/23/24 13:55	304	02/27/24 07:23	02/27/24 10:30	2	14
18	1205641711 MB	23-FEB-2024	1		507.59	02/23/24 13:55	403	02/27/24 07:23	02/27/24 10:30	5	2
19	1205641712 DUP (653796001)	23-FEB-2024	1	500.37	500.37	02/23/24 13:55	502	02/27/24 07:23	02/27/24 10:30	4	7
20	1205641713 MS (653796001)	23-FEB-2024	1	106.73	106.73	02/23/24 13:55	608	02/27/24 07:23	02/27/24 10:30	8	406
21	1205641714 LCS	23-FEB-2024	1		507.59	02/23/24 13:55	702	02/27/24 07:23	02/27/24 10:30	1	324

Reagent/Solvent Lot ID	Description	Amount

Comments:
Data Entry Date2: 23-FEB-2024 00:00

Radium-226 Liquid

Filename : RA226.XLS
File type : Excel
Version # : 1.3.2

Batch : 2564063
Analyst : MAR02577
Prep Date : 2/23/2024
Ra-226 Method Uncertainty : 0.073648

Procedure Code : LUC26RAL
Parmname : Radium-226
Required MDA : 1 pCi/L
Halflife of Ra-226 : 1600 years
Ra-226 Abundance : 1.00
Halflife of Rn-222: 3.8235 days

Batch counted on : LUCAS CELL DETECTOR
BKG Count time : 30 min

Sample Characteristics					**Count Raw Data**							
Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	Cell Number	Counting Time (min.)	Gross Counts	Gross CPM	Background Counts	Background CPM	Background Count Time (min.)	Cell Efficiency (cpm/dpm)
1	653796001.1	0.5040	2.0272E-05	1/29/2024 17:41	309	15	4	0.267	2	0.067	30	1.5690
2	653796002.1	0.5043	2.0273E-05	1/29/2024 15:40	407	15	1	0.067	3	0.100	30	1.9490
3	653796003.1	0.5009	2.0259E-05	1/29/2024 11:35	505	15	3	0.200	5	0.167	30	1.7470
4	653796004.1	0.5020	2.0264E-05	1/29/2024 13:13	605	15	9	0.600	4	0.133	30	2.0280
5	653796005.1	0.5013	2.0261E-05	1/29/2024 20:02	708	15	12	0.800	3	0.100	30	1.5430
6	653796006.1	0.5014	2.0262E-05	1/29/2024 19:08	807	15	8	0.533	2	0.067	30	2.0260
7	653796007.1	0.5048	2.0275E-05	1/29/2024 19:08	103	15	4	0.267	3	0.100	30	1.6400
8	653796008.1	0.5059	2.0280E-05	1/29/2024 9:18	204	15	12	0.800	6	0.200	30	1.5970
9	654013001.1	0.5076	2.0286E-05	1/30/2024 14:04	303	15	4	0.267	8	0.267	30	1.5370
10	654013002.1	0.5023	2.0265E-05	1/30/2024 12:36	404	15	7	0.467	3	0.100	30	1.9410
11	654013003.1	0.5076	2.0286E-05	1/30/2024 11:03	504	15	10	0.667	3	0.100	30	1.3720
12	654013004.1	0.5026	2.0266E-05	1/30/2024 18:21	602	15	9	0.600	4	0.133	30	1.7010
13	654013005.1	0.5007	2.0259E-05	1/30/2024 17:03	701	15	3	0.200	6	0.200	30	1.5970
14	654013006.1	0.5022	2.0265E-05	1/30/2024 15:44	805	15	6	0.400	3	0.100	30	1.5410
15	654013007.1	0.5021	2.0264E-05	1/30/2024 9:11	104	15	13	0.867	1	0.033	30	1.6640
16	654013008.1	0.5001	2.0256E-05	1/30/2024 14:04	207	15	11	0.733	2	0.067	30	1.8080
17	654013009.1	0.5057	2.0279E-05	1/30/2024 8:10	304	15	14	0.933	2	0.067	30	1.4940
18	1205641711.1	0.5076	2.0286E-05	2/23/2024 0:00	403	15	2	0.133	5	0.167	30	1.7560
19	1205641712.1	0.5004	2.0257E-05	1/29/2024 17:41	502	15	7	0.467	4	0.133	30	1.8590
20	1205641713.1	0.1067	1.1775E-05	1/29/2024 17:41	608	15	406	27.067	8	0.267	30	1.8960
21	1205641714.1	0.5076	2.0286E-05	2/23/2024 0:00	702	15	324	21.600	1	0.033	30	1.6810

Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1 ml Stdev : +/- 0.002000 ml

Analytical SOP: GL-RAD-A-008
Instrument SOP: GL-RAD-I-007

Cell Efficiency Error (%)	Cell Calibration Date	Cell Calibration Due Date	De-Gas Date/Time	Rn-222 Ingrow End Date/Time	Count Start Date/Time	Rn-222 Corrections De-Gas to Ingrowth	Rn-222 Corrections Ingrowth to Count	Rn-222 Corrections During Count	Ra-226 Decay
9.100%	11/1/2023	10/31/2024	2/23/2024 13:55	2/27/2024 6:34	2/27/2024 9:55	0.488	0.975	1.001	1.000
7.500%	2/1/2024	1/31/2025	2/23/2024 13:55	2/27/2024 6:34	2/27/2024 9:55	0.488	0.975	1.001	1.000
8.200%	6/1/2023	5/31/2024	2/23/2024 13:55	2/27/2024 6:34	2/27/2024 9:55	0.488	0.975	1.001	1.000
2.300%	10/10/2023	6/30/2024	2/23/2024 13:55	2/27/2024 6:34	2/27/2024 9:55	0.488	0.975	1.001	1.000
5.200%	11/1/2023	10/31/2024	2/23/2024 13:55	2/27/2024 6:34	2/27/2024 9:55	0.488	0.975	1.001	1.000
9.200%	10/10/2023	3/31/2024	2/23/2024 13:55	2/27/2024 6:34	2/27/2024 9:55	0.488	0.975	1.001	1.000
9.600%	5/1/2023	4/30/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
2.600%	8/1/2023	7/31/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
6.800%	11/1/2023	10/31/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
3.700%	2/1/2024	1/31/2025	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
1.100%	10/10/2023	5/31/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
9.900%	7/1/2023	6/30/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
5.900%	11/1/2023	10/31/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
9.600%	4/8/2023	3/31/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
6.700%	5/1/2023	4/30/2024	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000
4.000%	10/10/2023	7/31/2024	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000
2.100%	11/1/2023	10/31/2024	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000
8.500%	2/1/2024	1/31/2025	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000
7.700%	6/1/2023	5/31/2024	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000
7.800%	7/1/2023	6/30/2024	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000
2.000%	11/1/2023	10/31/2024	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N : 1715-I
Spike Exp Date : 8/29/2024
Spike Activity (dpm/ml): 304.15
Spike Volume Added: 0.10

LCS S/N : 1715-I
LCS Exp Date : 8/29/2024
LCS Activity (dpm/ml): 304.15
LCS Volume Added: 0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type		RPD	RER	Nominal pCi/L	Recovery
1	0.2279	0.1609	1	0.5614	**0.2396**	71.29%	0.2000	0.1414	0.3321	0.3366		SAMPLE					
2	0.2246	0.1586	1	0.5099	**-0.0321**	264.68%	-0.0333	0.0882	0.1666	0.1667		SAMPLE					
3	0.3257	0.2299	1	0.6764	**0.0361**	412.39%	0.0333	0.1374	0.2917	0.2918		SAMPLE					
4	0.2504	0.1768	1	0.5396	**0.4343**	45.23%	0.4667	0.2108	0.3845	0.3901		SAMPLE					
5	0.2854	0.2015	1	0.6480	**0.8575**	34.40%	0.7000	0.2380	0.5715	0.5913		SAMPLE					
6	0.1774	0.1253	1	0.4371	**0.4353**	42.65%	0.4667	0.1944	0.3553	0.3693		SAMPLE					
7	0.2656	0.1875	1	0.6029	**0.1900**	87.70%	0.1667	0.1453	0.3246	0.3277		SAMPLE					
8	0.3849	0.2717	1	0.7770	**0.7008**	40.91%	0.6000	0.2449	0.5607	0.5709		SAMPLE					
9	0.4602	0.3249	1	0.8918	**0.000E+00**	0.00%	0.0000	0.1633	0.3871	0.3872		SAMPLE					
10	0.2255	0.1592	1	0.5120	**0.3549**	50.75%	0.3667	0.1856	0.3521	0.3567		SAMPLE					
11	0.3157	0.2229	1	0.7168	**0.7678**	38.59%	0.5667	0.2186	0.5805	0.5912		SAMPLE					
12	0.2970	0.2097	1	0.6401	**0.5151**	46.25%	0.4667	0.2108	0.4561	0.4728		SAMPLE					
13	0.3889	0.2745	1	0.7851	**0.000E+00**	0.00%	0.0000	0.1414	0.3271	0.3272		SAMPLE					
14	0.2841	0.2006	1	0.6450	**0.3658**	58.53%	0.3000	0.1732	0.4139	0.4229		SAMPLE					
15	0.1513	0.1068	1	0.4386	**0.9373**	29.88%	0.8333	0.2427	0.5350	0.5654		SAMPLE					
16	0.1977	0.1396	1	0.4870	**0.6929**	34.15%	0.6667	0.2261	0.4605	0.4744		SAMPLE					
17	0.2366	0.1671	1	0.5829	**1.0779**	29.37%	0.8667	0.2539	0.6188	0.6396		SAMPLE					
18	0.3171	0.2239	1	0.6586	**-0.0351**	360.66%	-0.0333	0.1202	0.2483	0.2485		MB					
19	0.2718	0.1919	1	0.5858	**0.3367**	57.09%	0.3333	0.1886	0.3734	0.3799	653796001.1	DUP	*	0.0%			
20	1.7669	1.2474	1	3.4236	**124.4524**	9.28%	26.8000	1.3466	12.2564	28.8955	653796001.1	MS				128.3679	96.9%
21	0.1481	0.1046	1	0.4294	**23.7511**	5.91%	21.5667	1.2005	2.5912	4.3972		LCS				26.9909	88.0%

Continuing Calibration Data

Ludlum Alpha Scintillation Counter Checks for 27-FEB-2024

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LUCAS1	EFF	07:40	1	1.11E+05	110723	-1.97		
LUCAS2	EFF	07:39	1	1.27E+05	127433	-1.99		
LUCAS3	EFF	07:37	1	93705	93705	1.6		
LUCAS4	EFF	07:36	1	1.23E+05	123195	-2.44		
LUCAS5	EFF	07:34	1	1.28E+05	127753	-1.38		
LUCAS6	EFF	07:31	1	1.27E+05	127311	-0.98		
LUCAS7	EFF	07:30	1	1.30E+05	130051	-1.11		
LUCAS8	EFF	07:29	1	1.13E+05	113219	-1.12		

Reviewed by: Lyndsey Pace

Lyndsey Pace

Date: 27-FEB-24

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: LUCAS CELL DETECTOR **Batch ID: 2564063**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
653796001	SAMPLE	MJ2	LUCAS3	FEB-27-24 09:55:00	DONE	Lucas Cell	01-NOV-23 00:00
653796002	SAMPLE	MJ2	LUCAS4	FEB-27-24 09:55:00	DONE	Lucas Cell	01-FEB-24 00:00
653796003	SAMPLE	MJ2	LUCAS5	FEB-27-24 09:55:00	DONE	Lucas Cell	01-JUN-23 00:00
653796004	SAMPLE	MJ2	LUCAS6	FEB-27-24 09:55:00	DONE	Lucas Cell	01-JUL-23 00:00
653796005	SAMPLE	MJ2	LUCAS7	FEB-27-24 09:55:00	DONE	Lucas Cell	01-NOV-23 00:00
653796006	SAMPLE	MJ2	LUCAS8	FEB-27-24 09:55:00	DONE	Lucas Cell	08-APR-23 00:00
653796007	SAMPLE	MJ2	LUCAS1	FEB-27-24 10:12:00	DONE	Lucas Cell	01-MAY-23 00:00
653796008	SAMPLE	MJ2	LUCAS2	FEB-27-24 10:12:00	DONE	Lucas Cell	01-AUG-23 00:00
654013001	SAMPLE	MJ2	LUCAS3	FEB-27-24 10:12:00	DONE	Lucas Cell	01-NOV-23 00:00
654013002	SAMPLE	MJ2	LUCAS4	FEB-27-24 10:12:00	DONE	Lucas Cell	01-FEB-24 00:00
654013003	SAMPLE	MJ2	LUCAS5	FEB-27-24 10:12:00	DONE	Lucas Cell	01-JUN-23 00:00
654013004	SAMPLE	MJ2	LUCAS6	FEB-27-24 10:12:00	DONE	Lucas Cell	01-JUL-23 00:00
654013005	SAMPLE	MJ2	LUCAS7	FEB-27-24 10:12:00	DONE	Lucas Cell	01-NOV-23 00:00
654013006	SAMPLE	MJ2	LUCAS8	FEB-27-24 10:12:00	DONE	Lucas Cell	08-APR-23 00:00
654013007	SAMPLE	MJ2	LUCAS1	FEB-27-24 10:30:00	DONE	Lucas Cell	01-MAY-23 00:00
654013008	SAMPLE	MJ2	LUCAS2	FEB-27-24 10:30:00	DONE	Lucas Cell	01-AUG-23 00:00
654013009	SAMPLE	MJ2	LUCAS3	FEB-27-24 10:30:00	DONE	Lucas Cell	01-NOV-23 00:00
1205641711	MB	MJ2	LUCAS4	FEB-27-24 10:30:00	DONE	Lucas Cell	01-FEB-24 00:00
1205641712	DUP	MJ2	LUCAS5	FEB-27-24 10:30:00	DONE	Lucas Cell	01-JUN-23 00:00
1205641713	MS	MJ2	LUCAS6	FEB-27-24 10:30:00	DONE	Lucas Cell	01-JUL-23 00:00
1205641714	LCS	MJ2	LUCAS7	FEB-27-24 10:30:00	DONE	Lucas Cell	01-NOV-23 00:00

Analytical Laboratory Report

Report ID: S58205.01(01)
Generated on 02/29/2024

Report to

Attention: Jennifer Caporale
Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S58205.01-S58205.09
Project: Erickson Semi Annual Wells 7-10, 13
Collected Date(s): 01/30/2024
Submitted Date/Time: 01/31/2024 08:48
Sampled by: Marc Wahrer
P.O. #:

Table of Contents

Maya Murshak
Technical Director

Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Starred (*) analytes are not NY NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.
All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.
For a specific list of accredited analytes, please feel free to contact the laboratory or visit https://www.meritlabs.com/certifications.

Report Narrative

There is no additional narrative for this analytical report

Laboratory Accreditations (For Reference Only)

Authority	Accreditation ID
Michigan DEQ	#9956
DOD ELAP & ISO/IEC 17025:2017	#69699 PJLA Testing
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
E245.1	EPA Method 245.1 Revision 3.0
E300.0	EPA Method 300.0 Revision 2.1 (1993)
SM2320B	Standard Method 2320 B 2011
SM2340C	Standard Method 2340 C 2011
SM2540C	Standard Method 2540 C 2015
SM2540D	Standard Method 2540 D 2015
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Analytical Laboratory Report

Sample Summary (9 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S58205.01	MW-7 L401210-01	Groundwater	01/30/24 14:04
S58205.02	MW-7B L401210-02	Groundwater	01/30/24 12:36
S58205.03	MW-7C L401210-03	Groundwater	01/30/24 11:03
S58205.04	MW-8 L401210-04	Groundwater	01/30/24 18:21
S58205.05	MW-9 L401210-05	Groundwater	01/30/24 17:03
S58205.06	MW-10 L401210-06	Groundwater	01/30/24 15:44
S58205.07	MW-13 L401210-07	Groundwater	01/30/24 09:11
S58205.08	MWT-7 L401210-08	Groundwater	01/30/24 14:04
S58205.09	Field Blank L401210-09	Water	01/30/24 08:10

Analytical Laboratory Report

Merit Laboratories, Inc.

Lab Sample ID: S58205.01
Sample Tag: MW-7 L401210-01
Collected Date/Time: 01/30/2024 14:04
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/02/24 10:42	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 16:13, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	

Method: E300.0, Run Date: 01/31/24 18:09, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	82.9	25.0	0.400	mg/L	25	16887-00-6	
Sulfate	270	25.0	1.475	mg/L	25	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 12:54, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	334	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 19:30, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	496	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	864	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	2.6	3	1	mg/L	1		b

Metals

Method: E200.8, Run Date: 02/02/24 17:26, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	0.006	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 14:25, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.006	0.002	0.00145	mg/L	5	7440-38-2	

b-Value detected less than reporting limit, but greater than MDL

Merit Laboratories, Inc.

Analytical Laboratory Report

Lab Sample ID: S58205.01 (continued)
Sample Tag: MW-7 L401210-01

Method: E200.8, Run Date: 02/02/24 14:25, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Barium	0.036	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	1.72	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	1.91	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.082	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	0.184	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:24, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	165	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	20.5	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	5.77	0.50	0.119	mg/L	5	7440-09-7	
Sodium	83.9	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/02/24 14:06, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 10:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Analytical Laboratory Report

Lab Sample ID: S58205.02
Sample Tag: MW-7B L401210-02
Collected Date/Time: 01/30/2024 12:36
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/02/24 10:42	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 16:26, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	1.9	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	0.3	1.0	0.130	mg/L	5	16984-48-8	b
Sulfate	1.3	5.0	0.295	mg/L	5	14808-79-8	b

Method: SM2320B, Run Date: 02/08/24 13:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	395	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 19:15, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	29.5	10	0.238	mg/L	1		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	372	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	1.0	3	1	mg/L	1		b

Metals

Method: E200.8, Run Date: 02/02/24 17:27, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 14:28, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.003	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.008	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	2.92	0.04	0.0159	mg/L	5	7440-42-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58205.02 (continued)
Sample Tag: MW-7B L401210-02

Method: E200.8, Run Date: 02/02/24 14:28, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	0.09	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.033	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:26, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	8.83	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	2.69	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	5.63	0.50	0.119	mg/L	5	7440-09-7	
Sodium	87.5	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/02/24 14:09, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 10:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58205.03
Sample Tag: MW-7C L401210-03
Collected Date/Time: 01/30/2024 11:03
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/02/24 10:42	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 16:39, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	

Method: E300.0, Run Date: 01/31/24 18:22, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	90.1	50.0	0.800	mg/L	50	16887-00-6	
Sulfate	650	50.0	2.950	mg/L	50	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 13:05, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	167	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 19:25, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	558	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	1,330	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	5.4	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 17:27, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 14:31, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.010	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.042	0.005	0.000900	mg/L	5	7440-39-3	

Lab Sample ID: S58205.03 (continued)
Sample Tag: MW-7C L401210-03

Method: E200.8, Run Date: 02/02/24 14:31, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	6.62	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	4.41	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.126	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	0.409	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	0.008	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:27, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	238	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	44.3	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	5.75	0.50	0.119	mg/L	5	7440-09-7	
Sodium	94.7	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/02/24 14:12, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 10:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Analytical Laboratory Report

Lab Sample ID: S58205.04
Sample Tag: MW-8 L401210-04
Collected Date/Time: 01/30/2024 18:21
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/02/24 10:42	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 16:52, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	10.5	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	21.4	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 13:13, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	403	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 19:34, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	364	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	388	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 17:28, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	0.005	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 14:35, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.002	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.021	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	0.05	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	

Lab Sample ID: S58205.04 (continued)
Sample Tag: MW-8 L401210-04

Method: E200.8, Run Date: 02/02/24 14:35, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	0.010	0.005	0.000800	mg/L	5	7440-50-8	
Iron	Not detected	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	0.007	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:29, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	97.3	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	28.8	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	Not detected	0.50	0.119	mg/L	5	7440-09-7	
Sodium	13.9	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/02/24 14:22, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 10:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Analytical Laboratory Report

Lab Sample ID: S58205.05
Sample Tag: MW-9 L401210-05
Collected Date/Time: 01/30/2024 17:03
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/02/24 10:42	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 17:05, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	5.5	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	11.9	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 20:09, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	378	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 19:37, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	342	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	348	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 17:29, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 14:38, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.003	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.017	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	Not detected	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	

Lab Sample ID: S58205.05 (continued)
Sample Tag: MW-9 L401210-05

Method: E200.8, Run Date: 02/02/24 14:38, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	Not detected	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:30, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	98.8	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	23.3	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	0.93	0.50	0.119	mg/L	5	7440-09-7	
Sodium	4.11	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/02/24 14:25, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 10:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories, Inc.

Analytical Laboratory Report

Lab Sample ID: S58205.06
Sample Tag: MW-10 L401210-06
Collected Date/Time: 01/30/2024 15:44
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/02/24 10:42	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 17:17, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	9.3	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	27.8	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 20:15, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	449	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 19:39, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	396	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	452	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 17:30, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 14:41, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.002	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.041	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	0.04	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	

Lab Sample ID: S58205.06 (continued)
Sample Tag: MW-10 L401210-06

Method: E200.8, Run Date: 02/02/24 14:41, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	Not detected	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:32, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	118	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	27.0	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	Not detected	0.50	0.119	mg/L	5	7440-09-7	
Sodium	19.0	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/02/24 14:29, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 10:12, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories, Inc.

Analytical Laboratory Report

Lab Sample ID: S58205.07
Sample Tag: MW-13 L401210-07
Collected Date/Time: 01/30/2024 09:11
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/02/24 10:42	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 17:30, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	25.3	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	122	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 20:23, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	496	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 19:42, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	550	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	638	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 17:30, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 14:44, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.008	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.038	0.005	0.000900	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	0.15	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	

Lab Sample ID: S58205.07 (continued)
Sample Tag: MW-13 L401210-07

Method: E200.8, Run Date: 02/02/24 14:44, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	1.03	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:33, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	157	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	35.9	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	1.00	0.50	0.119	mg/L	5	7440-09-7	
Sodium	13.2	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/02/24 14:32, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 10:30, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Analytical Laboratory Report

Lab Sample ID: S58205.08
Sample Tag: MWT-7 L401210-08
Collected Date/Time: 01/30/2024 14:04
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/02/24 10:42	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 17:43, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	

Method: E300.0, Run Date: 01/31/24 18:35, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	81.7	25.0	0.400	mg/L	25	16887-00-6	
Sulfate	267	25.0	1.475	mg/L	25	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 20:29, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	346	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 19:45, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	510	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	866	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	3.3	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 17:31, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	0.005	0.005	0.00205	mg/L	5	7440-62-2	

Method: E200.8, Run Date: 02/02/24 14:47, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00225	mg/L	5	7440-36-0	
Arsenic	0.006	0.002	0.00145	mg/L	5	7440-38-2	
Barium	0.037	0.005	0.000900	mg/L	5	7440-39-3	

Lab Sample ID: S58205.08 (continued)
Sample Tag: MWT-7 L401210-08

Method: E200.8, Run Date: 02/02/24 14:47, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Beryllium	Not detected	0.001	0.000200	mg/L	5	7440-41-7	
Boron	1.67	0.04	0.0159	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000350	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.000750	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000450	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000800	mg/L	5	7440-50-8	
Iron	1.89	0.02	0.0142	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000450	mg/L	5	7439-92-1	
Lithium*	0.079	0.005	0.00135	mg/L	5	7439-93-2	
Molybdenum	0.186	0.005	0.00420	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.00115	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00435	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.000250	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.000350	mg/L	5	7440-28-0	
Zinc	Not detected	0.005	0.00325	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/02/24 16:35, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	159	0.50	0.218	mg/L	5	7440-70-2	
Magnesium	20.4	0.50	0.0579	mg/L	5	7439-95-4	
Potassium	5.69	0.50	0.119	mg/L	5	7440-09-7	
Sodium	83.9	0.50	0.109	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/02/24 14:35, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 10:30, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58205.09
Sample Tag: Field Blank L401210-09
Collected Date/Time: 01/30/2024 08:10
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	1.9	IR
2	1L Plastic	None	Yes	1.9	IR
1	125mL Plastic	HNO3	Yes	1.9	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/02/24 10:42	CTV	
Metal Digestion	Completed	SW3015A	02/02/24 11:30	CCM	

Inorganics

Method: E300.0, Run Date: 01/31/24 17:56, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	Not detected	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/08/24 20:34, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	14.6	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 01/31/24 19:50, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	Not detected	10	0.238	mg/L	1		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	Not detected	50	6	mg/L	2		

Method: SM2540D, Run Date: 01/31/24 18:55, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/02/24 17:16, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vanadium	Not detected	0.005	0.000820	mg/L	2	7440-62-2	

Method: E200.8, Run Date: 02/02/24 13:35, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.000900	mg/L	2	7440-36-0	
Arsenic	Not detected	0.002	0.000580	mg/L	2	7440-38-2	
Barium	Not detected	0.005	0.000360	mg/L	2	7440-39-3	
Beryllium	Not detected	0.001	0.0000800	mg/L	2	7440-41-7	
Boron	Not detected	0.04	0.00636	mg/L	2	7440-42-8	
Cadmium	Not detected	0.0005	0.000140	mg/L	2	7440-43-9	

Lab Sample ID: S58205.09 (continued)
Sample Tag: Field Blank L401210-09

Method: E200.8, Run Date: 02/02/24 13:35, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	Not detected	0.005	0.000300	mg/L	2	7440-47-3	
Cobalt	Not detected	0.005	0.000180	mg/L	2	7440-48-4	
Copper	Not detected	0.005	0.000320	mg/L	2	7440-50-8	
Iron	Not detected	0.02	0.00568	mg/L	2	7439-89-6	
Lead	Not detected	0.003	0.000180	mg/L	2	7439-92-1	
Lithium*	Not detected	0.005	0.000540	mg/L	2	7439-93-2	
Molybdenum	Not detected	0.005	0.00168	mg/L	2	7439-98-7	
Nickel	Not detected	0.005	0.000460	mg/L	2	7440-02-0	
Selenium	Not detected	0.005	0.00174	mg/L	2	7782-49-2	
Silver	Not detected	0.0005	0.000100	mg/L	2	7440-22-4	
Thallium	Not detected	0.002	0.000140	mg/L	2	7440-28-0	
Zinc	Not detected	0.005	0.00130	mg/L	2	7440-66-6	

Method: E200.8, Run Date: 02/02/24 15:59, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	Not detected	0.50	0.0874	mg/L	2	7440-70-2	
Magnesium	Not detected	0.50	0.0231	mg/L	2	7439-95-4	
Potassium	Not detected	0.50	0.0479	mg/L	2	7440-09-7	
Sodium	Not detected	0.50	0.0436	mg/L	2	7440-23-5	

Method: E245.1, Run Date: 02/02/24 14:39, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/27/24 10:30, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories Login Checklist

Lab Set ID: S58205
Client: BWL01 (Board of Water & Light)
Project: Erickson Semi Annual Wells 7-10, 13
Submitted: 01/31/2024 08:48 Login User: MMC

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Selection				Description	Note
Sample Receiving					
01.	☐ Yes	☒ No	☐ N/A	Samples are received at 4C +/- 2C Thermometer #	IR 1.9
02.	☒ Yes	☐ No	☐ N/A	Received on ice/ cooling process begun	
03.	☐ Yes	☒ No	☐ N/A	Samples shipped	
04.	☐ Yes	☒ No	☐ N/A	Samples left in 24 hr. drop box	
05.	☐ Yes	☐ No	☒ N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	☒ Yes	☐ No	☐ N/A	COC adequately filled out	
07.	☒ Yes	☐ No	☐ N/A	COC signed and relinquished to the lab	
08.	☒ Yes	☐ No	☐ N/A	Sample tag on bottles match COC	
09.	☒ Yes	☐ No	☐ N/A	Subcontracting needed? Subcontacted to:	GEL
Preservation					
10.	☒ Yes	☐ No	☐ N/A	Do sample have correct chemical preservation	
11.	☒ Yes	☐ No	☐ N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	☐ Yes	☒ No	☐ N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	☒ Yes	☐ No	☐ N/A	All bottles intact	
14.	☒ Yes	☐ No	☐ N/A	Appropriate analytical bottles are used	
15.	☒ Yes	☐ No	☐ N/A	Merit bottles used	
16.	☒ Yes	☐ No	☐ N/A	Sufficient sample volume received	
17.	☐ Yes	☒ No	☐ N/A	Samples require laboratory filtration	
18.	☒ Yes	☐ No	☐ N/A	Samples submitted within holding time	
19.	☐ Yes	☐ No	☒ N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: ______________________________ Date: ______________

 Prepared by Merit Laboratories

Merit Laboratories Bottle Preservation Check

Lab Set ID: S58205 Submitted: 01/31/2024 08:48

Client: BWL01 (Board of Water & Light)

Project: Erickson Semi Annual Wells 7-10, 13

Initial Preservation Check: 01/31/2024 10:06 MMC

Preservation Recheck (E200.8): N/A

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S58205.01	125mL Plastic HNO3	<2			
S58205.01	1L Plastic HNO3	<2			
S58205.01	1L Plastic HNO3	<2			
S58205.02	125mL Plastic HNO3	<2			
S58205.02	1L Plastic HNO3	<2			
S58205.02	1L Plastic HNO3	<2			
S58205.03	125mL Plastic HNO3	<2			
S58205.03	1L Plastic HNO3	<2			
S58205.03	1L Plastic HNO3	<2			
S58205.04	125mL Plastic HNO3	<2			
S58205.04	1L Plastic HNO3	<2			
S58205.04	1L Plastic HNO3	<2			
S58205.05	125mL Plastic HNO3	<2			
S58205.05	1L Plastic HNO3	<2			
S58205.05	1L Plastic HNO3	<2			
S58205.06	125mL Plastic HNO3	<2			
S58205.06	1L Plastic HNO3	<2			
S58205.06	1L Plastic HNO3	<2			
S58205.07	125mL Plastic HNO3	<2			
S58205.07	1L Plastic HNO3	<2			
S58205.07	1L Plastic HNO3	<2			
S58205.08	125mL Plastic HNO3	<2			
S58205.08	1L Plastic HNO3	<2			
S58205.08	1L Plastic HNO3	<2			
S58205.09	125mL Plastic HNO3	<2			
S58205.09	1L Plastic HNO3	<2			
S58205.09	1L Plastic HNO3	<2			

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME Jennifer Caporale
COMPANY Lansing Board of Water and Light
ADDRESS PO Box 13007 48901-3007
CITY Lansing STATE Mi ZIP CODE 48901
PHONE NO. 517-702-6372 FAX NO. P.O. NO.
E-MAIL ADDRESS Environmental_Laboratory@lbwl.com QUOTE NO.

INVOICE TO

CONTACT NAME Beth Zimpfer ☒ SAME
COMPANY
ADDRESS
CITY STATE ZIP CODE
PHONE NO. E-MAIL ADDRESS Beth.Zimpfer@lbwl.com

PROJECT NO./NAME Erickson Semi Annual Wells 7-10, 13
SAMPLER(S) - PLEASE PRINT/SIGN NAME Marc Wahrer

TURNAROUND TIME REQUIRED ☒ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER JSC 01/25/24

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☒ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	F- undissolved, Cl-, SO4, TDS	Radium 226	Radium 228	TSS	HCO3, CO3, Hardness			
58205.01	1.30.24	1404	MW-7 L401210-01	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.02	↓	1236	MW-7B -02	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.03		1103	MW-7C -03	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.04		1821	MW-8 -04	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.05		1703	MW-9 -05	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.06		1544	MW-10 -06	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.07		0911	MW-13 -07	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.08		1404	MWT-7 -08	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.09	↓	0810	Field Blank ↓ -09	DI	5	2		3					✓	✓	✓	✓	✓	✓			

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☒ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions
Metals to analyse: Na, Mg, K B, Ca, Sb, As, Ba, Be, Cd, Cr, Co, Li, Hg, Mo, Pb, Se, Tl, Fe, Cu, Ni, Ag, V, Zn
Please send a preliminary report

RELINQUISHED BY: SIGNATURE/ORGANIZATION	Julie Maltby	☐ Sampler	DATE 1/31/24	TIME 0848
RECEIVED BY: SIGNATURE/ORGANIZATION	M Chilcote		DATE 1/31/24	TIME 0848
RELINQUISHED BY: SIGNATURE/ORGANIZATION			DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION			DATE	TIME

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL 1.9
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Reporting Limits to go to Merit with COC

Sb, total	Antimony	250 mL plastic	mg/L	Nitric Acid	200.7	6 mos	0.005
As, total	Arsenic	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
Ba, total		250 mL plastic	mg/L	Nitric Acid	200.8	6mos	0.150
Be, total	Beryllium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.001
B, total	Boron	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.04
Cd, total	Cadmium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
Ca	Calcium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	2.5
Cl	Chloride	250 mL plastic	mg/L	Chill	300.0	28 d	10
Cr, total	Chromium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Co, total	Cobalt	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Cu, total	Copper	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
F	Fluoride	250 mL plastic	mg/L	None	9056	28 d	1.0
Fe, total	Iron	250 mL plastic	mg/L	Nitric Acid	300.0	6 mos	0.02
Pb, total	Lead	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.003
Li, total	Lithium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Hg, total	Mercury	250 mL plastic	mg/L	HNO3	245.1	28 d	0.0002
Mo, total	Molybdenum	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ni, total	Nickel	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
RA226/228	Radium 226 and 228 combined	(2) 1 L plastic	pCi/L	HNO3	SM 7500	6 mos	2.0 combined
Se, total	Selenium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ag, total	Silver	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
SO4	Sulfate	250 mL plastic	mg/L	Chill	300.0	28 d	10
Tl, total	Thallium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
TDS	Total Dissolved Solids	1 L plastic	mg/L	None	SM 2540C	NA	20
TSS	Total Suspended Solids	1 L plastic	mg/L	None	SM 2540D	NA	3
V, total	Vanadium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Zn, total	Zinc	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005

GEL Laboratories LLC
a member of The GEL Group INC

2040 Savage Road | Charleston, SC 29407
843.556.8171

gel.com

February 22, 2024

John Laverty
Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan 48823

Re: Routine Analysis
Work Order: 654013
SDG: S58205

Dear John Laverty:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 02, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1614.

Sincerely,

Abagail Martin for
Delaney Stonesmith
Project Manager

Purchase Order: GELP20-0018
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Merit Laboratories, Inc.
SDG: S58205
Work Order: 654013

February 22, 2024

Laboratory Identification:

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

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 02, 2024 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
654013001	S58205.01
654013002	S58205.02
654013003	S58205.03
654013004	S58205.04
654013005	S58205.05
654013006	S58205.06
654013007	S58205.07
654013008	S58205.08
654013009	S58205.09 Field Blank

Case Narrative:

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

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

Abagail Martin for
Delaney Stonesmith
Project Manager

Chain of Custody and Supporting Documentation

654013

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Project Management Team
COMPANY: Merit Laboratories
ADDRESS: 2680 East Lansing Drive
CITY: East Lansing STATE: MI ZIP CODE: 48823
PHONE NO.: 517-332-0167 FAX NO.: P.O. NO.:
E-MAIL ADDRESS: results@meritlabs.com QUOTE NO.:

INVOICE TO

CONTACT NAME: Julie Teague ☒ SAME
COMPANY: Merit Laboratories
ADDRESS: 2680 East Lansing Drive
CITY: East Lansing STATE: MI ZIP CODE: 48823
PHONE NO.: 517-332-0167 E-MAIL ADDRESS: juliet@meritlabs.com

PROJECT NO./NAME: S58205 SAMPLER(S) - PLEASE PRINT/SIGN NAME:

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☒ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Radium 226*	Radium 228**
	1/30/24	1404	S58205.01	GW	2			2					✓	✓
	1/30/24	1236	S58205.02	GW	2			2					✓	✓
	1/30/24	1103	S58205.03	GW	2			2					✓	✓
	1/30/24	1821	S58205.04	GW	2			2					✓	✓
	1/30/24	1703	S58205.05	GW	2			2					✓	✓
	1/30/24	1544	S58205.06	GW	2			2					✓	✓
	1/30/24	0911	S58205.07	GW	2			2					✓	✓
	1/30/24	1404	S58205.08	GW	2			2					✓	✓
	1/30/24	0810	S58205.09 Field Blank	DI	2			2					✓	✓

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions
* E903.1 Mod.
** E904.0/SW 9320 Mod.

Please use calculation product & provide Radium 226/228 combined results on the report

(No Ice needed)
** Subcontracted to
GEL Laboratories, Inc.
2040 Savage Road
Charleston, SC 29407

RELINQUISHED BY: SIGNATURE/ORGANIZATION	[signature] ☐ Sampler	DATE 1/31/24	TIME 1700
RECEIVED BY: SIGNATURE/ORGANIZATION	UPS	DATE 1/31/24	TIME 1706
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION	Stacy Boom	DATE 2/2/24	TIME 1010

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
NOTES: TEMP. ON ARRIVAL

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: MERI	SDG/AR/COC/Work Order: 654013
Received By: Stacy Boone	Date Received: ~~Feb 5, 2024~~ Feb 2, 2024 AM 2/5/24
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): Ø CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		✓		Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 21°C
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR3-23 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials AM Date 02/05/24 Page 1 of 1

Laboratory Certifications

List of current GEL Certifications as of 22 February 2024

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-23-21
Utah NELAP	SC000122023-38
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
Merit Laboratories, Inc.
SDG #: S58205
Work Order #: 654013

Product: **GFPC Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2568549

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

GEL Sample ID#	Client Sample Identification
654013001	S58205.01
654013002	S58205.02
654013003	S58205.03
654013004	S58205.04
654013005	S58205.05
654013006	S58205.06
654013007	S58205.07
654013008	S58205.08
654013009	S58205.09 Field Blank
1205650321	Method Blank (MB)
1205650322	653796001(S58153.01) Sample Duplicate (DUP)
1205650323	Laboratory Control Sample (LCS)

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

Data Summary:

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

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2564063

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

GEL Sample ID#	Client Sample Identification
654013001	S58205.01
654013002	S58205.02
654013003	S58205.03
654013004	S58205.04
654013005	S58205.05
654013006	S58205.06
654013007	S58205.07
654013008	S58205.08

654013009	S58205.09 Field Blank
1205641711	Method Blank (MB)
1205641712	653796001(S58153.01) Sample Duplicate (DUP)
1205641713	653796001(S58153.01) Matrix Spike (MS)
1205641714	Laboratory Control Sample (LCS)

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

Data Summary:

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

Miscellaneous Information

Additional Comments
The matrix spike, 1205641713 (S58153.01MS), aliquot was reduced to conserve sample volume.

Certification Statement

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

GEL LABORATORIES LLC

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

Qualifier Definition Report
for

MERI001 Merit Laboratories, Inc.

Client SDG: S58205 GEL Work Order: 654013

The Qualifiers in this report are defined as follows:

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

Review/Validation

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

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

Signature: John Petrovic **Name:** **John Petrovic**

Date: **29 FEB 2024** **Title:** **Data Validator**

Sample Data Summary

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

Certificate of Analysis

Report Date: February 29, 2024

Company : Merit Laboratories Inc.
Address : 2680 East Lansing Drive

East Lansing, Michigan 48823
Contact: John Laverty
Project: Routine Analysis

Client Sample ID:	S58205.01	Project:	MERI00120
Sample ID:	654013001	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	30-JAN-24 14:04		
Receive Date:	02-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.514	+/-0.925	1.62	3.00	pCi/L			JE1	02/26/24	0844	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.514	+/-1.00			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.000	+/-0.387	0.892	1.00	pCi/L			MJ2	02/27/24	1012	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			89.5	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58205.02	Project:	MERI00120
Sample ID:	654013002	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	30-JAN-24 12:36		
Receive Date:	02-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.01	+/-0.802	1.25	3.00	pCi/L			JE1	02/26/24	0844	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.36	+/-0.876			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.355	+/-0.352	0.512	1.00	pCi/L			MJ2	02/27/24	1012	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			80.4	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58205.03	Project:	MERI00120
Sample ID:	654013003	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	30-JAN-24 11:03		
Receive Date:	02-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.361	+/-0.667	1.19	3.00	pCi/L			JE1	02/26/24	0844	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.13	+/-0.885			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.768	+/-0.580	0.717	1.00	pCi/L			MJ2	02/27/24	1012	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			79.6	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58205.04	Project:	MERI00120
Sample ID:	654013004	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	30-JAN-24 18:21		
Receive Date:	02-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.33	+/-1.03	1.64	3.00	pCi/L			JE1	02/26/24	0844	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.85	+/-1.13			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.515	+/-0.456	0.640	1.00	pCi/L			MJ2	02/27/24	1012	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			84	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration

Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58205.05	Project:	MERI00120
Sample ID:	654013005	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	30-JAN-24 17:03		
Receive Date:	02-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.442	+/-0.908	1.84	3.00	pCi/L			JE1	02/26/24	0844	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.000	+/-0.965			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.000	+/-0.327	0.785	1.00	pCi/L			MJ2	02/27/24	1012	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			80.6	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58205.06	Project:	MERI00120
Sample ID:	654013006	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	30-JAN-24 15:44		
Receive Date:	02-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228		2.54	+/-1.16	1.62	3.00	pCi/L			JE1	02/26/24	0844	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.91	+/-1.23			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.366	+/-0.414	0.645	1.00	pCi/L			MJ2	02/27/24	1012	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			80.4	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58205.07	Project:	MERI00120
Sample ID:	654013007	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	30-JAN-24 09:11		
Receive Date:	02-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.05	+/-1.02	1.68	3.00	pCi/L			JE1	02/26/24	0844	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.99	+/-1.15			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.937	+/-0.535	0.439	1.00	pCi/L			MJ2	02/27/24	1030	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			81.6	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58205.08	Project:	MERI00120
Sample ID:	654013008	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	30-JAN-24 14:04		
Receive Date:	02-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.906	+/-0.986	1.65	3.00	pCi/L			JE1	02/26/24	0844	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.60	+/-1.09			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.693	+/-0.461	0.487	1.00	pCi/L			MJ2	02/27/24	1030	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			78.7	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: February 29, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58205.09 Field Blank	Project:	MERI00120
Sample ID:	654013009	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	30-JAN-24 08:10		
Receive Date:	02-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.213	+/-0.847	1.55	3.00	pCi/L			JE1	02/26/24	0844	2568549	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.29	+/-1.05			pCi/L			NXL1	02/28/24	0842	2570136	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.08	+/-0.619	0.583	1.00	pCi/L			MJ2	02/27/24	1030	2564063	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			81.8	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Quality Control Data

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

QC Summary

Report Date: February 29, 2024

	Merit Laboratories Inc.
	2680 East Lansing Drive
	East Lansing, Michigan
Contact:	**John Laverty**
Workorder:	**654013**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow												
Batch 2568549												
QC1205650322 653796001 DUP												
Radium-228		U	-0.206	U	0.935	pCi/L	N/A		N/A	JE1	02/26/24	08:43
	Uncertainty		+/-1.19		+/-1.07							
QC1205650323 LCS												
Radium-228	72.6				71.9	pCi/L		99	(75%-125%)		02/26/24	08:43
	Uncertainty				+/-4.05							
QC1205650321 MB												
Radium-228				U	0.707	pCi/L					02/26/24	08:43
	Uncertainty				+/-0.981							
Rad Ra-226												
Batch 2564063												
QC1205641712 653796001 DUP												
Radium-226		U	0.240	U	0.337	pCi/L	N/A		N/A	MJ2	02/27/24	10:30
	Uncertainty		+/-0.332		+/-0.373							
QC1205641714 LCS												
Radium-226	27.0				23.8	pCi/L		88	(75%-125%)		02/27/24	10:30
	Uncertainty				+/-2.59							
QC1205641711 MB												
Radium-226				U	-0.0351	pCi/L					02/27/24	10:30
	Uncertainty				+/-0.248							
QC1205641713 653796001 MS												
Radium-226	128	U	0.240		124	pCi/L		96.9	(75%-125%)		02/27/24	10:30
	Uncertainty		+/-0.332		+/-12.3							

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported

QC Summary

Workorder: **654013**

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

UI	Gamma Spectroscopy--Uncertain identification
BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
**	Analyte is a Tracer compound
M	REMP Result > MDC/CL and < RDL
J	See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Gas Flow Raw Data

Batch 2568549 Check-list

This check-list was completed on 26-FEB-24 by Nat Long

This batch was reviewed by Kenshalla Oston on 26-FEB-24 and Nat Long on 26-FEB-24.

Batch ID: 2568549 **Product:** GFC28RAL **Description:** Gas Flow Radium 228 GL-RAD-A-063

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were all tracer/carrier recoveries within the required acceptance limits?	Yes		
10	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-228 in Liquid

Batch ID: **2568549**
Analyst: Jacqueline Winston (JE1)
Method: EPA 904.0/SW846 9320 Modified
Lab SOP: GL-RAD-A-063 REV# 5
Instrument: SP-C018367602

Due Dates for Lab: 26-FEB-2024 **Package: 28-FEB-2024** **SDG: 29-FEB-2024**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1205650323	Radium 228	2051-D	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Separation (date)
1	653796001	21-FEB-2024	3	304.6	304.6	02/22/24 13:27	02/26/24 07:02
2	653796002	21-FEB-2024	3	304.9	304.9	02/22/24 13:27	02/26/24 07:02
3	653796003	21-FEB-2024	3	302.9	302.9	02/22/24 13:27	02/26/24 07:02
4	653796004	21-FEB-2024	3	302.8	302.8	02/22/24 13:27	02/26/24 07:02
5	653796005	21-FEB-2024	3	303.5	303.5	02/22/24 13:27	02/26/24 07:02
6	653796006	21-FEB-2024	3	310.6	310.6	02/22/24 13:27	02/26/24 07:02
7	653796007	21-FEB-2024	3	310.5	310.5	02/22/24 13:27	02/26/24 07:02
8	653796008	21-FEB-2024	3	303.5	303.5	02/22/24 13:27	02/26/24 07:02
9	654013001	21-FEB-2024	3	312.9	312.9	02/22/24 13:27	02/26/24 07:02
10	654013002	21-FEB-2024	3	302.1	302.1	02/22/24 13:27	02/26/24 07:02
11	654013003	21-FEB-2024	3	305.6	305.6	02/22/24 13:27	02/26/24 07:02
12	654013004	21-FEB-2024	3	304.5	304.5	02/22/24 13:27	02/26/24 07:02
13	654013005	21-FEB-2024	3	306.4	306.4	02/22/24 13:27	02/26/24 07:02
14	654013006	21-FEB-2024	3	302.8	302.8	02/22/24 13:27	02/26/24 07:02
15	654013007	21-FEB-2024	3	304.7	304.7	02/22/24 13:27	02/26/24 07:02
16	654013008	21-FEB-2024	3	311.5	311.5	02/22/24 13:27	02/26/24 07:02
17	654013009	21-FEB-2024	3	308.9	308.9	02/22/24 13:27	02/26/24 07:02
18	1205650321 MB	21-FEB-2024	3		312.9	02/22/24 13:27	02/26/24 07:02
19	1205650322 DUP (653796001)	21-FEB-2024	3	311.3	311.3	02/22/24 13:27	02/26/24 07:02
20	1205650323 LCS	21-FEB-2024	3		312.9	02/22/24 13:27	02/26/24 07:02

Reagent/Solvent Lot ID	Description	Amount
WORK 2097-B	Ba-133 Tracer	.1 mL
REGNT 4227383	RGF-1.5M Ammonium Sulfate	10 mL
REGNT 4214820	Barium Carrier Ra228 REG	1 mL
REGNT 4223988	RGF-1M Citric Acid	5 mL
REGNT 4226396	2M HCl	20 mL
REGNT 4221876	RGF-50% Potassium Carbonate	2 mL
REGNT 4077716.14	RGF-Hydrofluoric Acid	4 mL
REGNT 4209237	500 mg/mL Neodymium Carrier	.2 mL
REGNT 4216641	RGF-Neodymium Subtrate	5 mL
REGNT 4221872	RGF-7M Nitric Acid	25 mL
REGNT 4072674	Acetic Acid Glacial ACS Poly Coated Bottle	10 mL
REGNT DGA12292023	2561518	2 g
REGNT 4208393.51	Nitric Acid	5 mL

Comments:
Pipet Id: RAD-GFC-1795419
Data Entry Date2: 21-FEB-2024 00:00

Radium-228 Liquid

Filename : RA228.XLS
File type : Excel
Version # : 1.4.3

Tracer S/N : 2097-B
Tracer Exp Date : 7/12/2024
Tracer Volume Added: 0.10

Batch : 2568549
Analyst : JE1
Prep Date : 2/21/2024
Ra-228 Method Uncertainty : 0.1268

Geometry: 25mm Filter

Procedure Code : GFC28RAL
Parmname : Radium-228
Required MDA : 3 pCi/L
Ra-228 Abundance : 1.00
Halflife of Ra-228 : 5.75 years
Halflife of Ac-228 : 6.15 hours

Sample Characteristics Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	**Tracer Calculations** Tracer Ref. Activity (CPM)	Tracer Ref. Count Uncertainty (%)	Tracer Samp. Activity (CPM)	Tracer Samp. Count Uncertainty (%)	Tracer Aliquot (mL)	Tracer Aliquot StDev. (mL)
1	653796001.1	0.3046	1.8536E-05	1/29/2024 17:41	921.9	1.90%	718.3	2.15%	0.1	0.000200
2	653796002.1	0.3049	1.8541E-05	1/29/2024 15:40	921.9	1.90%	714.2	2.16%	0.1	0.000200
3	653796003.1	0.3029	1.8508E-05	1/29/2024 11:35	921.9	1.90%	713.7	2.16%	0.1	0.000200
4	653796004.1	0.3028	1.8506E-05	1/29/2024 13:13	921.9	1.90%	799.0	2.04%	0.1	0.000200
5	653796005.1	0.3035	1.8518E-05	1/29/2024 20:02	921.9	1.90%	781.5	2.07%	0.1	0.000200
6	653796006.1	0.3106	1.8633E-05	1/29/2024 19:08	921.9	1.90%	778.7	2.07%	0.1	0.000200
7	653796007.1	0.3105	1.8631E-05	1/29/2024 19:08	921.9	1.90%	754.5	2.10%	0.1	0.000200
8	653796008.1	0.3035	1.8518E-05	1/29/2024 9:18	921.9	1.90%	673.7	2.22%	0.1	0.000200
9	654013001.1	0.3129	1.8669E-05	1/30/2024 14:04	921.9	1.90%	825.4	2.01%	0.1	0.000200
10	654013002.1	0.3021	1.8495E-05	1/30/2024 12:36	921.9	1.90%	741.0	2.12%	0.1	0.000200
11	654013003.1	0.3056	1.8553E-05	1/30/2024 11:03	921.9	1.90%	733.9	2.13%	0.1	0.000200
12	654013004.1	0.3045	1.8534E-05	1/30/2024 18:21	921.9	1.90%	774.5	2.07%	0.1	0.000200
13	654013005.1	0.3064	1.8566E-05	1/30/2024 17:03	921.9	1.90%	742.7	2.12%	0.1	0.000200
14	654013006.1	0.3028	1.8506E-05	1/30/2024 15:44	921.9	1.90%	740.7	2.12%	0.1	0.000200
15	654013007.1	0.3047	1.8538E-05	1/30/2024 9:11	921.9	1.90%	752.2	2.10%	0.1	0.000200
16	654013008.1	0.3115	1.8647E-05	1/30/2024 14:04	921.9	1.90%	725.1	2.14%	0.1	0.000200
17	654013009.1	0.3089	1.8606E-05	1/30/2024 8:10	921.9	1.90%	754.4	2.10%	0.1	0.000200
18	1205650321.1	0.3129	1.8669E-05	2/21/2024 0:00	921.9	1.90%	692.4	2.19%	0.1	0.000200
19	1205650322.1	0.3113	1.8644E-05	1/29/2024 17:41	921.9	1.90%	762.2	2.09%	0.1	0.000200
20	1205650323.1	0.3129	1.8669E-05	2/21/2024 0:00	921.9	1.90%	793.4	2.05%	0.1	0.000200

Pipet, 0.1 ml Stdev : +/-	0.000200	ml
Pipet, 0.5 ml Stdev : +/-	0.001000	ml
Pipet, 1 ml Stdev : +/-	0.002000	ml

Analytical SOP: GL-RAD-A-063
Instrument SOP: GL-RAD-I-016

Count raw Data

Pos.	Detector ID	Counting Time (min.)	Gross Counts Alpha	Gross Counts Beta	Beta cpm	Count Start Date/Time	Ac-228 Ingrowth Date/Time	Ac-228 Decay Date/Time	Ra-228 Decay	Ac-228 Decay	Ac-228 Ingrowth	Ac-228 Count Correction	Calculated Sample Recovery %	Sample Recovery Error %
1	1A	60	13	56	0.933	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.827	1.000	1.057	77.9%	2.88%
2	1D	60	9	38	0.633	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.827	1.000	1.057	77.5%	2.89%
3	2A	60	24	62	1.033	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	77.4%	2.89%
4	2B	60	5	43	0.717	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	86.7%	2.80%
5	2C	60	7	79	1.317	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	84.8%	2.82%
6	5A	60	16	69	1.150	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	84.5%	2.82%
7	6A	60	15	128	2.133	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	81.8%	2.85%
8	6B	60	16	87	1.450	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	73.1%	2.94%
9	6C	60	13	64	1.067	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	89.5%	2.78%
10	7A	60	14	38	0.633	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	80.4%	2.86%
11	7C	60	9	27	0.450	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	79.6%	2.87%
12	8A	60	17	73	1.217	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	84.0%	2.82%
13	8C	60	8	39	0.650	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	80.6%	2.86%
14	9A	60	12	83	1.383	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	80.4%	2.86%
15	9B	60	13	69	1.150	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.825	1.000	1.057	81.6%	2.85%
16	9C	60	15	61	1.017	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.824	1.000	1.057	78.7%	2.88%
17	9D	60	11	45	0.750	2/26/2024 8:44	2/22/2024 13:27	2/26/2024 7:02	0.991	0.824	1.000	1.057	81.8%	2.85%
18	10A	60	10	55	0.917	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.998	0.826	1.000	1.057	75.1%	2.91%
19	10C	60	9	77	1.283	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.991	0.826	1.000	1.057	82.7%	2.84%
20	11A	60	20	1387	23.117	2/26/2024 8:43	2/22/2024 13:27	2/26/2024 7:02	0.998	0.827	1.000	1.057	86.1%	2.81%

Pos.	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Bkg cpm	Weekly Bkg Count Start Date/Time	Bkg Count Time (min.)
Calibration Data								
1	PIC	6/1/2023	5/31/2024	0.5320	0.00738	0.978	2/23/2024 17:51	500
2	PIC	6/1/2023	5/31/2024	0.6071	0.00692	0.780	2/23/2024 17:51	500
3	PIC	6/1/2023	5/31/2024	0.6083	0.01914	0.828	2/23/2024 17:51	500
4	PIC	6/1/2023	5/31/2024	0.6253	0.02111	0.788	2/23/2024 17:51	500
5	PIC	6/1/2023	5/31/2024	0.6085	0.01274	0.812	2/23/2024 17:51	500
6	PIC	6/1/2023	5/31/2024	0.6366	0.00851	0.936	2/23/2024 17:51	500
7	PIC	6/1/2023	5/31/2024	0.6444	0.02228	1.504	2/23/2024 17:49	500
8	PIC	6/1/2023	5/31/2024	0.5957	0.00851	1.020	2/23/2024 17:49	500
9	PIC	6/1/2023	5/31/2024	0.6167	0.01970	0.914	2/23/2024 17:49	500
10	PIC	6/1/2023	5/31/2024	0.6229	0.00594	0.372	2/23/2024 17:49	500
11	PIC	6/1/2023	5/31/2024	0.6369	0.00790	0.354	2/23/2024 17:50	500
12	PIC	6/1/2023	5/31/2024	0.6413	0.01579	0.842	2/23/2024 17:50	500
13	PIC	6/1/2023	5/31/2024	0.5662	0.01955	0.756	2/23/2024 17:50	500
14	PIC	6/1/2023	5/31/2024	0.6343	0.00758	0.710	2/23/2024 17:50	500
15	PIC	6/1/2023	5/31/2024	0.6496	0.00754	0.858	2/23/2024 17:50	500
16	PIC	6/1/2023	5/31/2024	0.6429	0.00584	0.772	2/23/2024 17:50	500
17	PIC	6/1/2023	5/31/2024	0.6292	0.02610	0.692	2/23/2024 17:50	500
18	PIC	6/1/2023	5/31/2024	0.6356	0.00651	0.734	2/23/2024 17:50	500
19	PIC	6/1/2023	5/31/2024	0.6368	0.00638	1.020	2/23/2024 17:50	500
20	PIC	6/1/2023	5/31/2024	0.6466	0.01317	1.432	2/23/2024 17:48	500

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N :	N/A
Spike Exp Date :	N/A
Spike Activity (dpm/ml):	N/A
Spike Volume Added:	N/A
LCS S/N :	2051-D
LCS Exp Date :	7/12/2024
LCS Activity (dpm/ml):	504.19
LCS Volume Added:	0.10

Results Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	1.4497	1.0235	3	2.2773	**-0.2057**	296.28%	-0.0447	0.1323	1.1944	1.1946		SAMPLE				
2	1.1402	0.8050	3	1.8127	**-0.5948**	75.11%	-0.1467	0.1101	0.8749	0.8751		SAMPLE				
3	1.1811	0.8338	3	1.8715	**0.8372**	67.00%	0.2053	0.1374	1.0980	1.1190		SAMPLE				
4	1.0017	0.7072	3	1.5916	**-0.2528**	163.04%	-0.0713	0.1163	0.8078	0.8080		SAMPLE				
5	1.0659	0.7525	3	1.6909	**1.8752**	30.58%	0.5047	0.1535	1.1181	1.2167		SAMPLE				
6	1.0729	0.7575	3	1.6892	**0.7455**	67.84%	0.2140	0.1450	0.9904	1.0085		SAMPLE				
7	1.3878	0.9798	3	2.1374	**2.2372**	31.41%	0.6293	0.1964	1.3682	1.4854		SAMPLE				
8	1.4170	1.0004	3	2.2212	**1.8952**	37.77%	0.4300	0.1619	1.3984	1.4800		SAMPLE				
9	1.0254	0.7240	3	1.6164	**0.5144**	91.78%	0.1527	0.1400	0.9247	0.9341		SAMPLE				
10	0.7474	0.5277	3	1.2478	**1.0060**	40.78%	0.2613	0.1063	0.8020	0.8420		SAMPLE				
11	0.7118	0.5026	3	1.1930	**0.3608**	94.42%	0.0960	0.0906	0.6674	0.6737		SAMPLE				
12	1.0369	0.7321	3	1.6416	**1.3300**	39.69%	0.3747	0.1482	1.0311	1.0860		SAMPLE				
13	1.1536	0.8144	3	1.8372	**-0.4418**	104.88%	-0.1060	0.1111	0.9076	0.9078		SAMPLE				
14	1.0127	0.7150	3	1.6188	**2.5422**	23.42%	0.6733	0.1564	1.1577	1.3271		SAMPLE				
15	1.0640	0.7512	3	1.6828	**1.0536**	49.58%	0.2920	0.1445	1.0220	1.0568		SAMPLE				
16	1.0352	0.7309	3	1.6468	**0.9055**	55.65%	0.2447	0.1360	0.9864	1.0130		SAMPLE				
17	0.9708	0.6854	3	1.5541	**0.2126**	203.19%	0.0580	0.1178	0.8467	0.8485		SAMPLE				
18	1.0549	0.7447	3	1.6829	**0.7065**	70.91%	0.1827	0.1294	0.9810	0.9974		MB				
19	1.1417	0.8061	3	1.7897	**0.9351**	58.20%	0.2633	0.1531	1.0654	1.0917	653796001.1	DUP	* 0.0%			
20	1.2625	0.8914	3	1.9484	**71.8679**	4.23%	21.6847	0.6230	4.0470	18.8282		LCS			72.5824	99.0%

SampleID	Instr	Time (min.)	Alpha Counts	Beta Counts	Count Start Time	Count End Time	Machine	Batch ID
653796001	1A	60	13	56	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796002	1D	60	9	38	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796003	2A	60	24	62	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796004	2B	60	5	43	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796005	2C	60	7	79	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796006	5A	60	16	69	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796007	6A	60	15	128	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
653796008	6B	60	16	87	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013001	6C	60	13	64	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013002	7A	60	14	38	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013003	7C	60	9	27	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013004	8A	60	17	73	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013005	8C	60	8	39	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013006	9A	60	12	83	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013007	9B	60	13	69	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013008	9C	60	15	61	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
654013009	9D	60	11	45	2/26/2024 8:44	2/26/2024 9:44	PIC	2568549
1205650321	10A	60	10	55	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
1205650322	10C	60	9	77	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549
1205650323	11A	60	20	1387	2/26/2024 8:43	2/26/2024 9:43	PIC	2568549

ASSAY 26-Feb-24 7:21:43
Wizard 2480 s/n 46190630

Protocol	id	8	Ba-133
Time	limit		
Count	limit		
Isotope	Ba-133		
Protocol	date	2/26/2024	
Run	id.	916	

Samp_ID		POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR	% RECOVERY	COUNT TIME
REF		1	93	1	180	2766	921.85	1.9		07:21:43
	653796001	2	93	2	180	2155.5	718.33	2.15	77.92	07:24:57
	653796002	3	93	3	180	2143	714.21	2.16	77.48	07:28:11
	653796003	4	93	4	180	2141.5	713.72	2.16	77.42	07:31:25
	653796004	5	93	5	180	2397.5	799.04	2.04	86.68	07:34:39
	653796005	1	94	1	180	2345	781.54	2.07	84.78	07:38:17
	653796006	2	94	2	180	2336.5	778.68	2.07	84.47	07:41:31
	653796007	3	94	3	180	2264	754.52	2.1	81.85	07:44:45
	653796008	4	94	4	180	2021.5	673.66	2.22	73.08	07:47:59
	654013001	5	94	5	180	2476.5	825.37	2.01	89.53	07:51:13
	654013002	1	2	1	180	2223.5	741.03	2.12	80.39	07:54:48
	654013003	2	2	2	180	2202	733.87	2.13	79.61	07:58:02
	654013004	3	2	3	180	2324	774.48	2.07	84.01	08:01:16
	654013005	4	2	4	180	2228.5	742.72	2.12	80.57	08:04:30
	654013006	5	2	5	180	2222.5	740.71	2.12	80.35	08:07:44
	654013007	1	18	1	180	2257	752.22	2.1	81.60	08:11:27
	654013008	2	18	2	180	2175.5	725.05	2.14	78.65	08:14:41
	654013009	3	18	3	180	2263.5	754.39	2.1	81.83	08:17:55
	1205650321	4	18	4	180	2077.5	692.39	2.19	75.11	08:21:09
	1205650322	5	18	5	180	2287	762.21	2.09	82.68	08:24:23
	1205650323	1	14	1	180	2380.5	793.38	2.05	86.06	08:28:07

END OF ASSAY

Continuing Calibration Data

Gas Flow Proportional Counter Checks for 26-Feb-2024

Detectors LB4100 E1 through H4 and PIC 1A through 14D and G5400W 1W through 1Z and LB4200 GA1 through OD4

Short Name	Status	Parmname	Run Time	Count Time	CPM or dec	Low Limit	High Limit	Stdev
LB4100G2	Below	Alpha eff	26-Feb 07:56	5	11834	12110	13740	-4.02
LB4100G2	Above	Alpha XTalk	26-Feb 07:56	5	0.216	0.179	0.214	+3.47
LB4100H1	Above	Alpha bkg	26-Feb 04:55	60	0.650	-8.08E-2	0.225	+11.32
LB4100H1	Above	Alpha eff	26-Feb 06:53	5	11984	7523	11160	+4.36
LB4100H1	Above	Beta bkg	26-Feb 04:55	60	3.167	-5.15E-1	3.743	+2.19
LB4100H2	Above	Alpha bkg	26-Feb 04:55	60	0.417	0.057	0.420	+2.95
LB4100H3	Above	Alpha bkg	26-Feb 09:42	60	0.283	-8.01E-2	0.242	+3.77
LB4200GB2	Below	Alpha eff	26-Feb 06:35	5	9359	9443	9898	-4.11
LB4200GB2	Above	Beta bkg	26-Feb 17:22	60	19.200	0.129	1.304	+94.34
LB4200GD3	Above	Alpha bkg	26-Feb 17:22	60	0.967	-1.04E-1	0.321	+12.11
LB4200OB1	Above	Alpha bkg	26-Feb 17:16	60	0.850	-1.05E-1	0.362	+9.27
LB4200OB1	Above	Beta bkg	26-Feb 17:16	60	2.650	-2.59E-1	2.044	+4.58
PIC2D	Above	Beta bkg	26-Feb 08:26	60	2.183	0.417	1.868	+4.30
PIC4C	Above	Alpha bkg	26-Feb 07:35	60	0.350	-2.25E-1	1.312	-0.75
PIC12D	Above	Alpha eff	26-Feb 06:00	5	18171	14940	17150	+5.77
PIC14A	Above	Beta bkg	26-Feb 08:48	60	2.150	-9.44E-1	2.673	+2.13
PIC14B	Above	Beta bkg	26-Feb 08:47	60	2.133	-1.14E+0	2.499	+2.40

INSTRUMENTS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

The following detectors may not have properly transferred to the LIMS system

PIC1B	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
PIC5B	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
PIC10B	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk

Reviewed by Jasmine Conley

Date 2/28/24

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: GFPC **Batch ID: 2568549**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1205650323	LCS	JE1	PIC11A	FEB-26-24 08:43:11	DONE	25mm Filter	01-JUN-23 00:00
653796001	SAMPLE	JE1	PIC1A	FEB-26-24 08:43:21	DONE	25mm Filter	01-JUN-23 00:00
653796002	SAMPLE	JE1	PIC1D	FEB-26-24 08:43:24	DONE	25mm Filter	01-JUN-23 00:00
653796003	SAMPLE	JE1	PIC2A	FEB-26-24 08:43:27	DONE	25mm Filter	01-JUN-23 00:00
653796004	SAMPLE	JE1	PIC2B	FEB-26-24 08:43:31	DONE	25mm Filter	01-JUN-23 00:00
653796005	SAMPLE	JE1	PIC2C	FEB-26-24 08:43:36	DONE	25mm Filter	01-JUN-23 00:00
653796006	SAMPLE	JE1	PIC5A	FEB-26-24 08:43:41	DONE	25mm Filter	01-JUN-23 00:00
1205650321	MB	JE1	PIC10A	FEB-26-24 08:43:48	DONE	25mm Filter	01-JUN-23 00:00
1205650322	DUP	JE1	PIC10C	FEB-26-24 08:43:50	DONE	25mm Filter	01-JUN-23 00:00
653796007	SAMPLE	JE1	PIC6A	FEB-26-24 08:43:58	DONE	25mm Filter	01-JUN-23 00:00
653796008	SAMPLE	JE1	PIC6B	FEB-26-24 08:44:02	DONE	25mm Filter	01-JUN-23 00:00
654013001	SAMPLE	JE1	PIC6C	FEB-26-24 08:44:06	DONE	25mm Filter	01-JUN-23 00:00
654013002	SAMPLE	JE1	PIC7A	FEB-26-24 08:44:13	DONE	25mm Filter	01-JUN-23 00:00
654013003	SAMPLE	JE1	PIC7C	FEB-26-24 08:44:16	DONE	25mm Filter	01-JUN-23 00:00
654013004	SAMPLE	JE1	PIC8A	FEB-26-24 08:44:20	DONE	25mm Filter	01-JUN-23 00:00
654013005	SAMPLE	JE1	PIC8C	FEB-26-24 08:44:26	DONE	25mm Filter	01-JUN-23 00:00
654013006	SAMPLE	JE1	PIC9A	FEB-26-24 08:44:35	DONE	25mm Filter	01-JUN-23 00:00
654013007	SAMPLE	JE1	PIC9B	FEB-26-24 08:44:39	DONE	25mm Filter	01-JUN-23 00:00
654013008	SAMPLE	JE1	PIC9C	FEB-26-24 08:44:49	DONE	25mm Filter	01-JUN-23 00:00
654013009	SAMPLE	JE1	PIC9D	FEB-26-24 08:44:54	DONE	25mm Filter	01-JUN-23 00:00

Lucas Cell Raw Data

Batch 2564063 Check-list

This check-list was completed on 27-FEB-24 by Lyndsey Pace

This batch was reviewed by Lyndsey Pace on 27-FEB-24 and Elizabeth Krouse on 28-FEB-24.

Batch ID: 2564063

Product: LUC26RAL

Description: Lucas Cell Radium 226 GL-RAD-A-008

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the matrix spike (MS/MSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-226 in Liquid

Batch ID: **2564063**
Analyst: Marisa Johnson (MJ2)
Method: EPA 903.1 Modified
Lab SOP: GL-RAD-A-008 REV# 15
Instrument: LUCAS-C202389980

Due Dates for Lab: 26-FEB-2024 **Package: 28-FEB-2024** **SDG: 29-FEB-2024**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
MS	1205641713	Ra-226 emanation spike	1715-I	.1	mL
LCS	1205641714	Ra-226 emanation spike	1715-I	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	End Degas (date)	CELL #	End Transfer (date)	Start Count Time (date)	Background Counts	Total Counts
1	653796001	23-FEB-2024	1	504.04	504.04	02/23/24 13:55	309	02/27/24 06:34	02/27/24 09:55	2	4
2	653796002	23-FEB-2024	1	504.33	504.33	02/23/24 13:55	407	02/27/24 06:34	02/27/24 09:55	3	1
3	653796003	23-FEB-2024	1	500.87	500.87	02/23/24 13:55	505	02/27/24 06:34	02/27/24 09:55	5	3
4	653796004	23-FEB-2024	1	502.03	502.03	02/23/24 13:55	605	02/27/24 06:34	02/27/24 09:55	4	9
5	653796005	23-FEB-2024	1	501.25	501.25	02/23/24 13:55	708	02/27/24 06:34	02/27/24 09:55	3	12
6	653796006	23-FEB-2024	1	501.39	501.39	02/23/24 13:55	807	02/27/24 06:34	02/27/24 09:55	2	8
7	653796007	23-FEB-2024	1	504.81	504.81	02/23/24 13:55	103	02/27/24 06:58	02/27/24 10:12	3	4
8	653796008	23-FEB-2024	1	505.89	505.89	02/23/24 13:55	204	02/27/24 06:58	02/27/24 10:12	6	12
9	654013001	23-FEB-2024	1	507.57	507.57	02/23/24 13:55	303	02/27/24 06:58	02/27/24 10:12	8	4
10	654013002	23-FEB-2024	1	502.26	502.26	02/23/24 13:55	404	02/27/24 06:58	02/27/24 10:12	3	7
11	654013003	23-FEB-2024	1	507.59	507.59	02/23/24 13:55	504	02/27/24 06:58	02/27/24 10:12	3	10
12	654013004	23-FEB-2024	1	502.57	502.57	02/23/24 13:55	602	02/27/24 06:58	02/27/24 10:12	4	9
13	654013005	23-FEB-2024	1	500.7	500.7	02/23/24 13:55	701	02/27/24 06:58	02/27/24 10:12	6	3
14	654013006	23-FEB-2024	1	502.21	502.21	02/23/24 13:55	805	02/27/24 06:58	02/27/24 10:12	3	6
15	654013007	23-FEB-2024	1	502.07	502.07	02/23/24 13:55	104	02/27/24 07:23	02/27/24 10:30	1	13
16	654013008	23-FEB-2024	1	500.1	500.1	02/23/24 13:55	207	02/27/24 07:23	02/27/24 10:30	2	11
17	654013009	23-FEB-2024	1	505.72	505.72	02/23/24 13:55	304	02/27/24 07:23	02/27/24 10:30	2	14
18	1205641711 MB	23-FEB-2024	1		507.59	02/23/24 13:55	403	02/27/24 07:23	02/27/24 10:30	5	2
19	1205641712 DUP (653796001)	23-FEB-2024	1	500.37	500.37	02/23/24 13:55	502	02/27/24 07:23	02/27/24 10:30	4	7
20	1205641713 MS (653796001)	23-FEB-2024	1	106.73	106.73	02/23/24 13:55	608	02/27/24 07:23	02/27/24 10:30	8	406
21	1205641714 LCS	23-FEB-2024	1		507.59	02/23/24 13:55	702	02/27/24 07:23	02/27/24 10:30	1	324

Reagent/Solvent Lot ID	Description	Amount

Comments:
Data Entry Date2: 23-FEB-2024 00:00

Radium-226 Liquid

Filename : RA226.XLS
File type : Excel
Version # : 1.3.2

Batch : 2564063
Analyst : MAR02577
Prep Date : 2/23/2024
Ra-226 Method Uncertainty : 0.073648

Procedure Code : LUC26RAL
Parmname : Radium-226
Required MDA : 1 pCi/L
Halflife of Ra-226 : 1600 years
Ra-226 Abundance : 1.00
Halflife of Rn-222: 3.8235 days

Batch counted on : LUCAS CELL DETECTOR
BKG Count time : 30 min

Sample Characteristics					**Count Raw Data**							
Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	Cell Number	Counting Time (min.)	Gross Counts	Gross CPM	Background Counts	Background CPM	Background Count Time (min.)	Cell Efficiency (cpm/dpm)
1	653796001.1	0.5040	2.0272E-05	1/29/2024 17:41	309	15	4	0.267	2	0.067	30	1.5690
2	653796002.1	0.5043	2.0273E-05	1/29/2024 15:40	407	15	1	0.067	3	0.100	30	1.9490
3	653796003.1	0.5009	2.0259E-05	1/29/2024 11:35	505	15	3	0.200	5	0.167	30	1.7470
4	653796004.1	0.5020	2.0264E-05	1/29/2024 13:13	605	15	9	0.600	4	0.133	30	2.0280
5	653796005.1	0.5013	2.0261E-05	1/29/2024 20:02	708	15	12	0.800	3	0.100	30	1.5430
6	653796006.1	0.5014	2.0262E-05	1/29/2024 19:08	807	15	8	0.533	2	0.067	30	2.0260
7	653796007.1	0.5048	2.0275E-05	1/29/2024 19:08	103	15	4	0.267	3	0.100	30	1.6400
8	653796008.1	0.5059	2.0280E-05	1/29/2024 9:18	204	15	12	0.800	6	0.200	30	1.5970
9	654013001.1	0.5076	2.0286E-05	1/30/2024 14:04	303	15	4	0.267	8	0.267	30	1.5370
10	654013002.1	0.5023	2.0265E-05	1/30/2024 12:36	404	15	7	0.467	3	0.100	30	1.9410
11	654013003.1	0.5076	2.0286E-05	1/30/2024 11:03	504	15	10	0.667	3	0.100	30	1.3720
12	654013004.1	0.5026	2.0266E-05	1/30/2024 18:21	602	15	9	0.600	4	0.133	30	1.7010
13	654013005.1	0.5007	2.0259E-05	1/30/2024 17:03	701	15	3	0.200	6	0.200	30	1.5970
14	654013006.1	0.5022	2.0265E-05	1/30/2024 15:44	805	15	6	0.400	3	0.100	30	1.5410
15	654013007.1	0.5021	2.0264E-05	1/30/2024 9:11	104	15	13	0.867	1	0.033	30	1.6640
16	654013008.1	0.5001	2.0256E-05	1/30/2024 14:04	207	15	11	0.733	2	0.067	30	1.8080
17	654013009.1	0.5057	2.0279E-05	1/30/2024 8:10	304	15	14	0.933	2	0.067	30	1.4940
18	1205641711.1	0.5076	2.0286E-05	2/23/2024 0:00	403	15	2	0.133	5	0.167	30	1.7560
19	1205641712.1	0.5004	2.0257E-05	1/29/2024 17:41	502	15	7	0.467	4	0.133	30	1.8590
20	1205641713.1	0.1067	1.1775E-05	1/29/2024 17:41	608	15	406	27.067	8	0.267	30	1.8960
21	1205641714.1	0.5076	2.0286E-05	2/23/2024 0:00	702	15	324	21.600	1	0.033	30	1.6810

Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1 ml Stdev : +/- 0.002000 ml

Analytical SOP: GL-RAD-A-008
Instrument SOP: GL-RAD-I-007

Cell Efficiency Error (%)	Cell Calibration Date	Cell Calibration Due Date	De-Gas Date/Time	Rn-222 Ingrow End Date/Time	Count Start Date/Time	Rn-222 Corrections De-Gas to Ingrowth	Rn-222 Corrections Ingrowth to Count	Rn-222 Corrections During Count	Ra-226 Decay
9.100%	11/1/2023	10/31/2024	2/23/2024 13:55	2/27/2024 6:34	2/27/2024 9:55	0.488	0.975	1.001	1.000
7.500%	2/1/2024	1/31/2025	2/23/2024 13:55	2/27/2024 6:34	2/27/2024 9:55	0.488	0.975	1.001	1.000
8.200%	6/1/2023	5/31/2024	2/23/2024 13:55	2/27/2024 6:34	2/27/2024 9:55	0.488	0.975	1.001	1.000
2.300%	10/10/2023	6/30/2024	2/23/2024 13:55	2/27/2024 6:34	2/27/2024 9:55	0.488	0.975	1.001	1.000
5.200%	11/1/2023	10/31/2024	2/23/2024 13:55	2/27/2024 6:34	2/27/2024 9:55	0.488	0.975	1.001	1.000
9.200%	10/10/2023	3/31/2024	2/23/2024 13:55	2/27/2024 6:34	2/27/2024 9:55	0.488	0.975	1.001	1.000
9.600%	5/1/2023	4/30/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
2.600%	8/1/2023	7/31/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
6.800%	11/1/2023	10/31/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
3.700%	2/1/2024	1/31/2025	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
1.100%	10/10/2023	5/31/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
9.900%	7/1/2023	6/30/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
5.900%	11/1/2023	10/31/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
9.600%	4/8/2023	3/31/2024	2/23/2024 13:55	2/27/2024 6:58	2/27/2024 10:12	0.490	0.976	1.001	1.000
6.700%	5/1/2023	4/30/2024	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000
4.000%	10/10/2023	7/31/2024	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000
2.100%	11/1/2023	10/31/2024	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000
8.500%	2/1/2024	1/31/2025	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000
7.700%	6/1/2023	5/31/2024	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000
7.800%	7/1/2023	6/30/2024	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000
2.000%	11/1/2023	10/31/2024	2/23/2024 13:55	2/27/2024 7:23	2/27/2024 10:30	0.491	0.977	1.001	1.000

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N :	1715-I
Spike Exp Date :	8/29/2024
Spike Activity (dpm/ml):	304.15
Spike Volume Added:	0.10
LCS S/N :	1715-I
LCS Exp Date :	8/29/2024
LCS Activity (dpm/ml):	304.15
LCS Volume Added:	0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	0.2279	0.1609	1	0.5614	**0.2396**	71.29%	0.2000	0.1414	0.3321	0.3366		SAMPLE				
2	0.2246	0.1586	1	0.5099	**-0.0321**	264.68%	-0.0333	0.0882	0.1666	0.1667		SAMPLE				
3	0.3257	0.2299	1	0.6764	**0.0361**	412.39%	0.0333	0.1374	0.2917	0.2918		SAMPLE				
4	0.2504	0.1768	1	0.5396	**0.4343**	45.23%	0.4667	0.2108	0.3845	0.3901		SAMPLE				
5	0.2854	0.2015	1	0.6480	**0.8575**	34.40%	0.7000	0.2380	0.5715	0.5913		SAMPLE				
6	0.1774	0.1253	1	0.4371	**0.4353**	42.65%	0.4667	0.1944	0.3553	0.3693		SAMPLE				
7	0.2656	0.1875	1	0.6029	**0.1900**	87.70%	0.1667	0.1453	0.3246	0.3277		SAMPLE				
8	0.3849	0.2717	1	0.7770	**0.7008**	40.91%	0.6000	0.2449	0.5607	0.5709		SAMPLE				
9	0.4602	0.3249	1	0.8918	**0.000E+00**	0.00%	0.0000	0.1633	0.3871	0.3872		SAMPLE				
10	0.2255	0.1592	1	0.5120	**0.3549**	50.75%	0.3667	0.1856	0.3521	0.3567		SAMPLE				
11	0.3157	0.2229	1	0.7168	**0.7678**	38.59%	0.5667	0.2186	0.5805	0.5912		SAMPLE				
12	0.2970	0.2097	1	0.6401	**0.5151**	46.25%	0.4667	0.2108	0.4561	0.4728		SAMPLE				
13	0.3889	0.2745	1	0.7851	**0.000E+00**	0.00%	0.0000	0.1414	0.3271	0.3272		SAMPLE				
14	0.2841	0.2006	1	0.6450	**0.3658**	58.53%	0.3000	0.1732	0.4139	0.4229		SAMPLE				
15	0.1513	0.1068	1	0.4386	**0.9373**	29.88%	0.8333	0.2427	0.5350	0.5654		SAMPLE				
16	0.1977	0.1396	1	0.4870	**0.6929**	34.15%	0.6667	0.2261	0.4605	0.4744		SAMPLE				
17	0.2366	0.1671	1	0.5829	**1.0779**	29.37%	0.8667	0.2539	0.6188	0.6396		SAMPLE				
18	0.3171	0.2239	1	0.6586	**-0.0351**	360.66%	-0.0333	0.1202	0.2483	0.2485		MB				
19	0.2718	0.1919	1	0.5858	**0.3367**	57.09%	0.3333	0.1886	0.3734	0.3799	653796001.1	DUP	* 0.0%			
20	1.7669	1.2474	1	3.4236	**124.4524**	9.28%	26.8000	1.3466	12.2564	28.8955	653796001.1	MS			128.3679	96.9%
21	0.1481	0.1046	1	0.4294	**23.7511**	5.91%	21.5667	1.2005	2.5912	4.3972		LCS			26.9909	88.0%

Continuing Calibration Data

Ludlum Alpha Scintillation Counter Checks for 27-FEB-2024

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LUCAS1	EFF	07:40	1	1.11E+05	110723	-1.97		
LUCAS2	EFF	07:39	1	1.27E+05	127433	-1.99		
LUCAS3	EFF	07:37	1	93705	93705	1.6		
LUCAS4	EFF	07:36	1	1.23E+05	123195	-2.44		
LUCAS5	EFF	07:34	1	1.28E+05	127753	-1.38		
LUCAS6	EFF	07:31	1	1.27E+05	127311	-0.98		
LUCAS7	EFF	07:30	1	1.30E+05	130051	-1.11		
LUCAS8	EFF	07:29	1	1.13E+05	113219	-1.12		

Reviewed by: Lyndsey Pace

Lyndsey Pace

Date: 27-FEB-24

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: LUCAS CELL DETECTOR **Batch ID: 2564063**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
653796001	SAMPLE	MJ2	LUCAS3	FEB-27-24 09:55:00	DONE	Lucas Cell	01-NOV-23 00:00
653796002	SAMPLE	MJ2	LUCAS4	FEB-27-24 09:55:00	DONE	Lucas Cell	01-FEB-24 00:00
653796003	SAMPLE	MJ2	LUCAS5	FEB-27-24 09:55:00	DONE	Lucas Cell	01-JUN-23 00:00
653796004	SAMPLE	MJ2	LUCAS6	FEB-27-24 09:55:00	DONE	Lucas Cell	01-JUL-23 00:00
653796005	SAMPLE	MJ2	LUCAS7	FEB-27-24 09:55:00	DONE	Lucas Cell	01-NOV-23 00:00
653796006	SAMPLE	MJ2	LUCAS8	FEB-27-24 09:55:00	DONE	Lucas Cell	08-APR-23 00:00
653796007	SAMPLE	MJ2	LUCAS1	FEB-27-24 10:12:00	DONE	Lucas Cell	01-MAY-23 00:00
653796008	SAMPLE	MJ2	LUCAS2	FEB-27-24 10:12:00	DONE	Lucas Cell	01-AUG-23 00:00
654013001	SAMPLE	MJ2	LUCAS3	FEB-27-24 10:12:00	DONE	Lucas Cell	01-NOV-23 00:00
654013002	SAMPLE	MJ2	LUCAS4	FEB-27-24 10:12:00	DONE	Lucas Cell	01-FEB-24 00:00
654013003	SAMPLE	MJ2	LUCAS5	FEB-27-24 10:12:00	DONE	Lucas Cell	01-JUN-23 00:00
654013004	SAMPLE	MJ2	LUCAS6	FEB-27-24 10:12:00	DONE	Lucas Cell	01-JUL-23 00:00
654013005	SAMPLE	MJ2	LUCAS7	FEB-27-24 10:12:00	DONE	Lucas Cell	01-NOV-23 00:00
654013006	SAMPLE	MJ2	LUCAS8	FEB-27-24 10:12:00	DONE	Lucas Cell	08-APR-23 00:00
654013007	SAMPLE	MJ2	LUCAS1	FEB-27-24 10:30:00	DONE	Lucas Cell	01-MAY-23 00:00
654013008	SAMPLE	MJ2	LUCAS2	FEB-27-24 10:30:00	DONE	Lucas Cell	01-AUG-23 00:00
654013009	SAMPLE	MJ2	LUCAS3	FEB-27-24 10:30:00	DONE	Lucas Cell	01-NOV-23 00:00
1205641711	MB	MJ2	LUCAS4	FEB-27-24 10:30:00	DONE	Lucas Cell	01-FEB-24 00:00
1205641712	DUP	MJ2	LUCAS5	FEB-27-24 10:30:00	DONE	Lucas Cell	01-JUN-23 00:00
1205641713	MS	MJ2	LUCAS6	FEB-27-24 10:30:00	DONE	Lucas Cell	01-JUL-23 00:00
1205641714	LCS	MJ2	LUCAS7	FEB-27-24 10:30:00	DONE	Lucas Cell	01-NOV-23 00:00

Merit Laboratories, Inc.

Analytical Laboratory Report

Final Report

Report ID: S58248.01(02)
Generated on 03/05/2024
Replaces report S58248.01(01) generated on 03/05/2024

Report to
Attention: Jennifer Caporale
Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Report produced by
Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S58248.01-S58248.08
Project: Erickson Semi Annual Wells 11-12, 14, 15
Collected Date(s): 01/31/2024
Submitted Date/Time: 02/01/2024 09:17
Sampled by: Marc Wahrer
P.O. #:

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Starred (*) analytes are not NY NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.
All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.
For a specific list of accredited analytes, please feel free to contact the laboratory or visit https://www.meritlabs.com/certifications.

Report Narrative

All analyses completed

Laboratory Accreditations (For Reference Only)

Authority	Accreditation ID
Michigan DEQ	#9956
DOD ELAP & ISO/IEC 17025:2017	#69699 PJLA Testing
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
E245.1	EPA Method 245.1 Revision 3.0
E300.0	EPA Method 300.0 Revision 2.1 (1993)
SM2320B	Standard Method 2320 B 2011
SM2340C	Standard Method 2340 C 2011
SM2540C	Standard Method 2540 C 2015
SM2540D	Standard Method 2540 D 2015
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (8 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S58248.01	MW-11 L401211-01	Groundwater	01/31/24 11:54
S58248.02	MW-11B L401211-02	Groundwater	01/31/24 13:13
S58248.03	MW-12 L401211-03	Groundwater	01/31/24 17:34
S58248.04	MW-12B L401211-04	Groundwater	01/31/24 10:06
S58248.05	MW-14 L401211-05	Groundwater	01/31/24 15:22
S58248.06	MW-15 L401211-06	Groundwater	01/31/24 16:56
S58248.07	MWT-11B L401211-07	Groundwater	01/31/24 13:13
S58248.08	Field Blank L401211-08	Water	01/31/24 07:55

Lab Sample ID: S58248.01
Sample Tag: MW-11 L401211-01
Collected Date/Time: 01/31/2024 11:54
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.4	IR
2	1L Plastic	None	Yes	3.4	IR
1	125mL Plastic	HNO3	Yes	3.4	IR
1	250mL Plastic	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/08/24 11:01	CTV	
Mercury Digestion	Completed	E245.1	02/08/24 11:01	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 13:40, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	68.0	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	Not detected	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/14/24 17:47, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	680	50	2.52	mg/L	5	71-52-3	
Carbonate*	Not detected	50	2.52	mg/L	5	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 12:42, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	524	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	660	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	40.6	5	2	mg/L	2		

Metals

Method: E200.8, Run Date: 02/07/24 11:57, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	0.019	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.181	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	0.19	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	

Lab Sample ID: S58248.01 (continued)
Sample Tag: MW-11 L401211-01

Method: E200.8, Run Date: 02/07/24 11:57, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	
Iron	25.1	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/24 12:01, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony, Dissolved*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	f
Arsenic, Dissolved	0.003	0.002	0.0015	mg/L	5	7440-38-2	f
Barium, Dissolved	0.116	0.005	0.00090	mg/L	5	7440-39-3	f
Beryllium, Dissolved	Not detected	0.001	0.00020	mg/L	5	7440-41-7	f
Boron, Dissolved	0.19	0.04	0.016	mg/L	5	7440-42-8	f
Cadmium, Dissolved	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	f
Chromium, Dissolved	Not detected	0.005	0.00075	mg/L	5	7440-47-3	f
Cobalt, Dissolved	Not detected	0.005	0.00045	mg/L	5	7440-48-4	f
Copper, Dissolved	Not detected	0.005	0.00080	mg/L	5	7440-50-8	f
Iron, Dissolved	0.03	0.02	0.014	mg/L	5	7439-89-6	f
Lead, Dissolved	Not detected	0.003	0.00045	mg/L	5	7439-92-1	f
Lithium, Dissolved*	Not detected	0.005	0.0014	mg/L	5	7439-93-2	f
Molybdenum, Dissolved	Not detected	0.005	0.0042	mg/L	5	7439-98-7	f
Nickel, Dissolved	Not detected	0.005	0.0012	mg/L	5	7440-02-0	f
Selenium, Dissolved	Not detected	0.005	0.0044	mg/L	5	7782-49-2	f
Silver, Dissolved	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	f
Thallium, Dissolved	Not detected	0.002	0.00035	mg/L	5	7440-28-0	f
Vanadium, Dissolved	Not detected	0.005	0.0021	mg/L	5	7440-62-2	f
Zinc, Dissolved	Not detected	0.005	0.0033	mg/L	5	7440-66-6	f

Method: E200.8, Run Date: 02/07/24 14:15, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	138	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	37.4	0.50	0.058	mg/L	5	7439-95-4	
Potassium	2.61	0.50	0.12	mg/L	5	7440-09-7	
Sodium	35.4	0.50	0.11	mg/L	5	7440-23-5	

Method: E200.8, Run Date: 02/07/24 14:18, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium, Dissolved*	129	0.50	0.22	mg/L	5	7440-70-2	f
Magnesium, Dissolved	37.9	0.50	0.058	mg/L	5	7439-95-4	f
Potassium, Dissolved	2.35	0.50	0.12	mg/L	5	7440-09-7	f
Sodium, Dissolved	33.8	0.50	0.11	mg/L	5	7440-23-5	f

f-Filtered and preserved in lab

Lab Sample ID: S58248.01 (continued)

Sample Tag: MW-11 L401211-01

Method: E245.1, Run Date: 02/08/24 14:03, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury, Dissolved	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	f

Method: E245.1, Run Date: 02/08/24 14:00, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 09:56, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

f-Filtered and preserved in lab

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58248.02
Sample Tag: MW-11B L401211-02
Collected Date/Time: 01/31/2024 13:13
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.4	IR
2	1L Plastic	None	Yes	3.4	IR
1	125mL Plastic	HNO3	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/08/24 11:01	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 13:50, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	2.1	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	4.0	5.0	0.295	mg/L	5	14808-79-8	b

Method: SM2320B, Run Date: 02/14/24 17:57, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	356	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 12:50, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	268	100	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	296	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	1.4	3	1	mg/L	1		b

Metals

Method: E200.8, Run Date: 02/07/24 12:04, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	0.005	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.069	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	0.76	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58248.02 (continued)
Sample Tag: MW-11B L401211-02

Method: E200.8, Run Date: 02/07/24 12:04, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.84	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.030	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/24 14:19, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	62.7	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	22.1	0.50	0.058	mg/L	5	7439-95-4	
Potassium	6.38	0.50	0.12	mg/L	5	7440-09-7	
Sodium	14.7	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/08/24 14:07, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 09:56, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58248.03
Sample Tag: MW-12 L401211-03
Collected Date/Time: 01/31/2024 17:34
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.4	IR
2	1L Plastic	None	Yes	3.4	IR
1	125mL Plastic	HNO3	Yes	3.4	IR
1	250mL Plastic	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/08/24 11:01	CTV	
Mercury Digestion	Completed	E245.1	02/08/24 11:01	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 15:00, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	177	10.0	0.590	mg/L	10	14808-79-8	

Method: E300.0, Run Date: 02/02/24 14:00, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	69.2	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	

Method: SM2320B, Run Date: 02/14/24 18:03, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	703	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 12:52, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	658	100	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	916	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	12.0	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/24 12:08, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	0.003	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.052	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	

Lab Sample ID: S58248.03 (continued)
Sample Tag: MW-12 L401211-03

Method: E200.8, Run Date: 02/07/24 12:08, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Boron	0.07	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	
Iron	1.19	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.019	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	0.006	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	0.014	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/24 12:12, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony, Dissolved*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	f
Arsenic, Dissolved	Not detected	0.002	0.0015	mg/L	5	7440-38-2	f
Barium, Dissolved	0.049	0.005	0.00090	mg/L	5	7440-39-3	f
Beryllium, Dissolved	Not detected	0.001	0.00020	mg/L	5	7440-41-7	f
Boron, Dissolved	0.06	0.04	0.016	mg/L	5	7440-42-8	f
Cadmium, Dissolved	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	f
Chromium, Dissolved	Not detected	0.005	0.00075	mg/L	5	7440-47-3	f
Cobalt, Dissolved	Not detected	0.005	0.00045	mg/L	5	7440-48-4	f
Copper, Dissolved	Not detected	0.005	0.00080	mg/L	5	7440-50-8	f
Iron, Dissolved	Not detected	0.02	0.014	mg/L	5	7439-89-6	f
Lead, Dissolved	Not detected	0.003	0.00045	mg/L	5	7439-92-1	f
Lithium, Dissolved*	0.016	0.005	0.0014	mg/L	5	7439-93-2	f
Molybdenum, Dissolved	0.006	0.005	0.0042	mg/L	5	7439-98-7	f
Nickel, Dissolved	0.014	0.005	0.0012	mg/L	5	7440-02-0	f
Selenium, Dissolved	Not detected	0.005	0.0044	mg/L	5	7782-49-2	f
Silver, Dissolved	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	f
Thallium, Dissolved	Not detected	0.002	0.00035	mg/L	5	7440-28-0	f
Vanadium, Dissolved	Not detected	0.005	0.0021	mg/L	5	7440-62-2	f
Zinc, Dissolved	Not detected	0.005	0.0033	mg/L	5	7440-66-6	f

Method: E200.8, Run Date: 02/07/24 14:21, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	158	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	60.1	0.50	0.058	mg/L	5	7439-95-4	
Potassium	2.67	0.50	0.12	mg/L	5	7440-09-7	
Sodium	94.4	0.50	0.11	mg/L	5	7440-23-5	

Method: E200.8, Run Date: 02/07/24 14:22, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium, Dissolved*	152	0.50	0.22	mg/L	5	7440-70-2	f
Magnesium, Dissolved	56.4	0.50	0.058	mg/L	5	7439-95-4	f

f-Filtered and preserved in lab

Lab Sample ID: S58248.03 (continued)
Sample Tag: MW-12 L401211-03

Method: E200.8, Run Date: 02/07/24 14:22, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Potassium, Dissolved	2.52	0.50	0.12	mg/L	5	7440-09-7	f
Sodium, Dissolved	88.9	0.50	0.11	mg/L	5	7440-23-5	f

Method: E245.1, Run Date: 02/08/24 14:13, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury, Dissolved	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	f

Method: E245.1, Run Date: 02/08/24 14:10, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 09:56, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

f-Filtered and preserved in lab
O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58248.04
Sample Tag: MW-12B L401211-04
Collected Date/Time: 01/31/2024 10:06
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.4	IR
2	1L Plastic	None	Yes	3.4	IR
1	125mL Plastic	HNO3	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/08/24 11:01	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 14:10, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	2.0	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	0.4	1.0	0.130	mg/L	5	16984-48-8	b
Sulfate	0.8	5.0	0.295	mg/L	5	14808-79-8	b

Method: SM2320B, Run Date: 02/14/24 18:21, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	424	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 12:54, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	653	100	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	366	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/24 12:15, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.025	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	3.29	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58248.04 (continued)
Sample Tag: MW-12B L401211-04

Method: E200.8, Run Date: 02/07/24 12:15, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.20	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.041	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/24 14:24, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	26.3	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	8.01	0.50	0.058	mg/L	5	7439-95-4	
Potassium	8.19	0.50	0.12	mg/L	5	7440-09-7	
Sodium	106	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/08/24 14:17, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 09:56, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58248.05
Sample Tag: MW-14 L401211-05
Collected Date/Time: 01/31/2024 15:22
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.4	IR
2	1L Plastic	None	Yes	3.4	IR
1	125mL Plastic	HNO3	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/08/24 11:01	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 15:10, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	119	25.0	0.400	mg/L	25	16887-00-6	

Method: E300.0, Run Date: 02/02/24 14:20, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	8.5	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/14/24 18:35, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	850	50	2.52	mg/L	5	71-52-3	
Carbonate*	Not detected	50	2.52	mg/L	5	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 12:56, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	610	200	4.76	mg/L	20		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	818	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	27.6	5	2	mg/L	2		

Metals

Method: E200.8, Run Date: 02/07/24 12:28, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	0.008	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.131	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	2.22	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	

Lab Sample ID: S58248.05 (continued)
Sample Tag: MW-14 L401211-05

Method: E200.8, Run Date: 02/07/24 12:28, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	
Iron	14.7	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.109	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	0.012	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	0.005	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	0.024	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/24 14:35, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	161	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	44.1	0.50	0.058	mg/L	5	7439-95-4	
Potassium	5.71	0.50	0.12	mg/L	5	7440-09-7	
Sodium	77.4	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/08/24 14:20, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 09:56, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58248.06
Sample Tag: MW-15 L401211-06
Collected Date/Time: 01/31/2024 16:56
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.4	IR
2	1L Plastic	None	Yes	3.4	IR
1	125mL Plastic	HNO3	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/08/24 11:01	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 14:30, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	69.3	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	95.0	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/14/24 18:39, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	433	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 12:58, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	484	100	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	604	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/24 12:32, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	0.002	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.055	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	0.39	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	
Iron	0.12	0.02	0.014	mg/L	5	7439-89-6	

Lab Sample ID: S58248.06 (continued)

Sample Tag: MW-15 L401211-06

Method: E200.8, Run Date: 02/07/24 12:32, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/24 14:37, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	131	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	31.6	0.50	0.058	mg/L	5	7439-95-4	
Potassium	Not detected	0.50	0.12	mg/L	5	7440-09-7	
Sodium	30.4	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/08/24 14:23, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 09:56, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58248.07
Sample Tag: MWT-11B L401211-07
Collected Date/Time: 01/31/2024 13:13
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.4	IR
2	1L Plastic	None	Yes	3.4	IR
1	125mL Plastic	HNO3	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/08/24 11:01	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 14:40, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	2.1	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	4.0	5.0	0.295	mg/L	5	14808-79-8	b

Method: SM2320B, Run Date: 02/14/24 18:52, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	381	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 13:00, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	269	100	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	304	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	1.3	3	1	mg/L	1		b

Metals

Method: E200.8, Run Date: 02/07/24 12:35, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	0.005	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.068	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	0.79	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58248.07 (continued)

Sample Tag: MWT-11B L401211-07

Method: E200.8, Run Date: 02/07/24 12:35, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.83	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.033	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/24 14:38, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	62.9	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	22.2	0.50	0.058	mg/L	5	7439-95-4	
Potassium	6.49	0.50	0.12	mg/L	5	7440-09-7	
Sodium	14.5	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/08/24 14:33, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 09:56, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58248.08
Sample Tag: Field Blank L401211-08
Collected Date/Time: 01/31/2024 07:55
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.4	IR
2	1L Plastic	None	Yes	3.4	IR
1	125mL Plastic	HNO3	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/08/24 11:01	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 14:50, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	Not detected	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/14/24 18:56, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	Not detected	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 13:04, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	Not detected	100	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	Not detected	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/02/24 15:36, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/24 11:52, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00090	mg/L	2	7440-36-0	
Arsenic	Not detected	0.002	0.00058	mg/L	2	7440-38-2	
Barium	Not detected	0.005	0.00036	mg/L	2	7440-39-3	
Beryllium	Not detected	0.001	0.000080	mg/L	2	7440-41-7	
Boron	Not detected	0.04	0.0064	mg/L	2	7440-42-8	
Cadmium	Not detected	0.0005	0.00014	mg/L	2	7440-43-9	
Chromium	Not detected	0.005	0.00030	mg/L	2	7440-47-3	
Cobalt	Not detected	0.005	0.00018	mg/L	2	7440-48-4	
Copper	Not detected	0.005	0.00032	mg/L	2	7440-50-8	
Iron	Not detected	0.02	0.0057	mg/L	2	7439-89-6	

Lab Sample ID: S58248.08 (continued)

Sample Tag: Field Blank L401211-08

Method: E200.8, Run Date: 02/07/24 11:52, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.00018	mg/L	2	7439-92-1	
Lithium*	Not detected	0.005	0.00054	mg/L	2	7439-93-2	
Molybdenum	Not detected	0.005	0.0017	mg/L	2	7439-98-7	
Nickel	Not detected	0.005	0.00046	mg/L	2	7440-02-0	
Selenium	Not detected	0.005	0.0017	mg/L	2	7782-49-2	
Silver	Not detected	0.0005	0.00010	mg/L	2	7440-22-4	
Thallium	Not detected	0.002	0.00014	mg/L	2	7440-28-0	
Vanadium	Not detected	0.005	0.00082	mg/L	2	7440-62-2	
Zinc	Not detected	0.005	0.0013	mg/L	2	7440-66-6	

Method: E200.8, Run Date: 02/07/24 14:12, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	Not detected	0.50	0.087	mg/L	2	7440-70-2	
Magnesium	Not detected	0.50	0.023	mg/L	2	7439-95-4	
Potassium	Not detected	0.50	0.048	mg/L	2	7440-09-7	
Sodium	Not detected	0.50	0.044	mg/L	2	7440-23-5	

Method: E245.1, Run Date: 02/08/24 14:37, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 09:56, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories Login Checklist

Lab Set ID: S58248
Client: BWL01 (Board of Water & Light)
Project: Erickson Semi Annual Wells 11-12, 14, 15
Submitted: 02/01/2024 09:17 Login User: MMC

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 3.4
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[X] Yes	[ ] No	[ ] N/A	Subcontracting needed? Subcontacted to:	GEL
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: ________________________________ Date:_______________

Merit Laboratories Bottle Preservation Check

Lab Set ID: S58248 Submitted: 02/01/2024 09:17

Client: BWL01 (Board of Water & Light)

Project: Erickson Semi Annual Wells 11-12, 14, 15

Initial Preservation Check: 02/01/2024 09:54 MMC

Preservation Recheck (E200.8): N/A

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S58248.01	125mL Plastic HNO3	<2			
S58248.01	1L Plastic HNO3	<2			
S58248.01	1L Plastic HNO3	<2			
S58248.02	125mL Plastic HNO3	<2			
S58248.02	1L Plastic HNO3	<2			
S58248.02	1L Plastic HNO3	<2			
S58248.03	125mL Plastic HNO3	<2			
S58248.03	1L Plastic HNO3	<2			
S58248.03	1L Plastic HNO3	<2			
S58248.04	125mL Plastic HNO3	<2			
S58248.04	1L Plastic HNO3	<2			
S58248.04	1L Plastic HNO3	<2			
S58248.05	125mL Plastic HNO3	<2			
S58248.05	1L Plastic HNO3	<2			
S58248.05	1L Plastic HNO3	<2			
S58248.06	125mL Plastic HNO3	<2			
S58248.06	1L Plastic HNO3	<2			
S58248.06	1L Plastic HNO3	<2			
S58248.07	125mL Plastic HNO3	<2			
S58248.07	1L Plastic HNO3	<2			
S58248.07	1L Plastic HNO3	<2			
S58248.08	125mL Plastic HNO3	<2			
S58248.08	1L Plastic HNO3	<2			
S58248.08	1L Plastic HNO3	<2			

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME Jennifer Caporale
COMPANY Lansing Board of Water and Light
ADDRESS PO Box 13007 48901-3007
CITY Lansing STATE Mi ZIP CODE 48901
PHONE NO. 517-702-6372 FAX NO. P.O. NO.
E-MAIL ADDRESS Environmental_Laboratory@lbwl.com QUOTE NO.

INVOICE TO

CONTACT NAME Beth Zimpfer ☒ SAME
COMPANY
ADDRESS
CITY STATE ZIP CODE
PHONE NO. E-MAIL ADDRESS Beth.Zimpfer@lbwl.com

PROJECT NO./NAME Erickson Semi Annaul Wells 11-12, 14, 15
SAMPLER(S) - PLEASE PRINT/SIGN NAME Marc Wahrer

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☒ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	F- undisstiled, Cl-, SO4, TDS	Radium 226	Radium 228	TSS	Dissolved Metals	HCO3, CO3, Hardness				Special Instructions
58248.01	1.31.24	1154	MW-11 L401211-01	GW	6	3		3					✓	✓	✓	✓	✓	✓	✓				Metals to analyse:Na, Mg, K
.02	↓	1313	MW-11B -02	GW	5	2		3					✓	✓	✓	✓	✓		✓				B, Ca, Sb, As, Ba, Be, Cd, Cr,
.03		1734	MW-12 -03	GW	6	3		3					✓	✓	✓	✓	✓	✓	✓				Co, Li, Hg, Mo,Pb,Se, Tl,
.04		1006	MW-12B -04	GW	5	2		3					✓	✓	✓	✓	✓		✓				Fe, Cu, Ni, Ag, V, Zn
.05		1522	MW-14 -05	GW	5	2		3					✓	✓	✓	✓	✓		✓				Please send a preliminary report
.06		1656	MW-15 -06	GW	5	2		3					✓	✓	✓	✓	✓		✓				
.07		1313	MWT-11B -07	GW	5	2		3					✓	✓	✓	✓	✓		✓				The analytes for dissolved metals are
.08	↓	0755	Field Blank -08	DI	5	2		3					✓	✓	✓	✓	✓		✓				same metals that are analysed for total.

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☒ NPDES
Project Locations: ☐ Detroit ☐ New York ☐ Other

RELINQUISHED BY: SIGNATURE/ORGANIZATION Julie Maltby ☐ Sampler DATE 2/1/24 TIME 0917
RECEIVED BY: SIGNATURE/ORGANIZATION M Chilcote DATE 2/1/24 TIME 0917
RELINQUISHED BY: SIGNATURE/ORGANIZATION DATE TIME
RECEIVED BY: SIGNATURE/ORGANIZATION DATE TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION DATE TIME
RECEIVED BY: SIGNATURE/ORGANIZATION DATE TIME

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
NOTES: TEMP. ON ARRIVAL 3.4

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Reporting Limits to go to Merit with COC

Sb, total	Antimony	250 mL plastic	mg/L	Nitric Acid	200.7	6 mos	0.005
As, total	Arsenic	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
Ba, total		250 mL plastic	mg/L	Nitric Acid	200.8	6mos	0.150
Be, total	Beryllium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.001
B, total	Boron	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.04
Cd, total	Cadmium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
Ca	Calcium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	2.5
Cl	Chloride	250 mL plastic	mg/L	Chill	300.0	28 d	10
Cr, total	Chromium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Co, total	Cobalt	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Cu, total	Copper	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
F	Fluoride	250 mL plastic	mg/L	None	9056	28 d	1.0
Fe, total	Iron	250 mL plastic	mg/L	Nitric Acid	300.0	6 mos	0.02
Pb, total	Lead	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.003
Li, total	Lithium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Hg, total	Mercury	250 mL plastic	mg/L	HNO3	245.1	28 d	0.0002
Mo, total	Molybdenum	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ni, total	Nickel	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
RA226/228	Radium 226 and 228 combined	(2) 1 L plastic	pCi/L	HNO3	SM 7500	6 mos	2.0 combined
Se, total	Selenium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ag, total	Silver	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
SO4	Sulfate	250 mL plastic	mg/L	Chill	300.0	28 d	10
Tl, total	Thallium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
TDS	Total Dissolved Solids	1 L plastic	mg/L	None	SM 2540C	NA	20
TSS	Total Suspended Solids	1 L plastic	mg/L	None	SM 2540D	NA	3
V, total	Vanadium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Zn, total	Zinc	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005

GEL Laboratories LLC
a member of The GEL Group INC

2040 Savage Road | Charleston, SC 29407
843.556.8171

gel.com

March 04, 2024

John Laverty
Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan 48823

Re: Routine Analysis
Work Order: 654532
SDG: S58248

Dear John Laverty:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 07, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1614.

Sincerely,

Delaney Stonesmith

Delaney Stonesmith
Project Manager

Purchase Order: GELP20-0018
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Merit Laboratories, Inc.
SDG: S58248
Work Order: 654532

March 04, 2024

Laboratory Identification:

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

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 07, 2024 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
654532001	S58248.01
654532002	S58248.02
654532003	S58248.03
654532004	S58248.04
654532005	S58248.05
654532006	S58248.06
654532007	S58248.07
654532008	S58248.08 Field Blank

Case Narrative:

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

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

Delaney Stonesmith

Delaney Stonesmith
Project Manager

Chain of Custody and Supporting Documentation

654532

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME Project Management Team
COMPANY Merit Laboratories
ADDRESS 2680 East Lansing Drive
CITY East Lansing STATE MI ZIP CODE 48823
PHONE NO. 517-332-0167 FAX NO. P.O. NO.
E-MAIL ADDRESS results@meritlabs.com QUOTE NO.

INVOICE TO

CONTACT NAME Julie Teague ☒ SAME
COMPANY Merit Laboratories
ADDRESS 2680 East Lansing Drive
CITY East Lansing STATE MI ZIP CODE 48823
PHONE NO. 517-332-0167 E-MAIL ADDRESS juliet@meritlabs.com

PROJECT NO./NAME S58248
SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☒ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Radium 226*	Radium 228**	Special Instructions
	1/31/24	1154	S58248.01	GW	2			2					✓	✓	* E903.1 Mod.
	1/31/24	1313	S58248.02	GW	2			2					✓	✓	** E904.0/SW 9320 Mod.
	1/31/24	1734	S58248.03	GW	2			2					✓	✓	
	1/31/24	1006	S58248.04	GW	2			2					✓	✓	Please use calculation product &
	1/31/24	1522	S58248.05	GW	2			2					✓	✓	provide Radium 226/228 combined
	1/31/24	1656	S58248.06	GW	2			2					✓	✓	results on the report
	1/31/24	1313	S58248.07	GW	2			2					✓	✓	
	1/31/24	0755	S58248.08 Field Blank	DI	2			2					✓	✓	(No Ice needed)
															** Subcontracted to
															GEL Laboratories, Inc.
															2040 Savage Road
															Charleston, SC 29407

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES
Project Locations: ☐ Detroit ☐ New York ☐ Other

RELINQUISHED BY: SIGNATURE/ORGANIZATION	☐ Sampler	DATE 2/5/24	TIME 1700	
RECEIVED BY: SIGNATURE/ORGANIZATION	UPS	DATE 2/5/24	TIME 1700	
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME	
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 2/7/24	TIME 10[illegible]	

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	NOTES: TEMP. ON ARRIVAL
SEAL NO.	SEAL INTACT YES ☐ NO ☐	INITIALS	

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

GEL | Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: MERI	SDG/AR/COC/Work Order: 654532
Received By: STACY BOONE	Date Received: ~~FEBRUARY 8, 2024~~ FEB 7, 2024
Carrier and Tracking Number	Circle Applicable: AM 02/09/24 FedEx Express FedEx Ground UPS Field Services Courier Other 1Z 466 477 03 6104 0061 17°c

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A) Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		✓		Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP:________
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR3-23 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

1Z 466 477 03 6216 5658 20°c

PM (or PMA) review: Initials ____________ Date ____________ Page ____ of ____

GL-CHL-SR-001 Rev 7

Laboratory Certifications

List of current GEL Certifications as of 04 March 2024

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-23-21
Utah NELAP	SC000122023-38
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
Merit Laboratories, Inc.
SDG #: S58248
Work Order #: 654532

Product: **Radium-226+Radium-228 Calculation**
Analytical Method: Calculation
Analytical Procedure: GL-RAD-D-003 REV# 45
Analytical Batch: 2570945

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

GEL Sample ID#	Client Sample Identification
654532001	S58248.01
654532002	S58248.02
654532003	S58248.03
654532004	S58248.04
654532005	S58248.05
654532006	S58248.06
654532007	S58248.07
654532008	S58248.08 Field Blank

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

Data Summary:

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

Product: **GFPC Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2570188

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

GEL Sample ID#	Client Sample Identification
654532001	S58248.01
654532002	S58248.02
654532003	S58248.03
654532004	S58248.04
654532005	S58248.05
654532006	S58248.06
654532007	S58248.07
654532008	S58248.08 Field Blank
1205653413	Method Blank (MB)
1205653414	654532001(S58248.01) Sample Duplicate (DUP)
1205653415	Laboratory Control Sample (LCS)

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

Data Summary:

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

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2570163

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

GEL Sample ID#	Client Sample Identification
654532001	S58248.01
654532002	S58248.02
654532003	S58248.03
654532004	S58248.04
654532005	S58248.05
654532006	S58248.06
654532007	S58248.07
654532008	S58248.08 Field Blank
1205653334	Method Blank (MB)
1205653335	654233023(NonSDG) Sample Duplicate (DUP)
1205653336	654233023(NonSDG) Matrix Spike (MS)
1205653337	Laboratory Control Sample (LCS)

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

Data Summary:

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

Miscellaneous Information

Additional Comments
The matrix spike, 1205653336 (Non SDG 654233023MS), aliquot was reduced to conserve sample volume.

Certification Statement

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

GEL LABORATORIES LLC

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

Qualifier Definition Report
for

MERI001 Merit Laboratories, Inc.

Client SDG: S58248 GEL Work Order: 654532

The Qualifiers in this report are defined as follows:

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

Review/Validation

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

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

Signature: John Petrovic **Name:** **John Petrovic**

Date: **04 MAR 2024** **Title:** **Data Validator**

Sample Data Summary

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

Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58248.01	Project:	MERI00120
Sample ID:	654532001	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	31-JAN-24 11:54		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.161	+/-1.06	1.97	3.00	pCi/L			JE1	02/29/24	1205	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.689	+/-1.19			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.528	+/-0.527	0.853	1.00	pCi/L			MJ2	02/29/24	0956	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			80.9	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58248.02	Project:	MERI00120
Sample ID:	654532002	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	31-JAN-24 13:13		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.581	+/-0.974	1.71	3.00	pCi/L			JE1	02/29/24	1205	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.90	+/-1.11			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.32	+/-0.528	0.390	1.00	pCi/L			MJ2	02/29/24	1035	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			81.6	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58248.03	Project:	MERI00120
Sample ID:	654532003	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	31-JAN-24 17:34		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.866	+/-0.928	1.54	3.00	pCi/L			JE1	02/29/24	1205	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.34	+/-0.977			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.475	+/-0.305	0.331	1.00	pCi/L			MJ2	02/29/24	1035	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			77.7	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: March 4, 2024

Company : Merit Laboratories Inc.
Address : 2680 East Lansing Drive

East Lansing, Michigan 48823
Contact: John Laverty
Project: Routine Analysis

Client Sample ID:	S58248.04	Project:	MERI00120
Sample ID:	654532004	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	31-JAN-24 10:06		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.845	+/-1.27	2.19	3.00	pCi/L			JE1	02/29/24	1205	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.30	+/-1.34			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.458	+/-0.411	0.626	1.00	pCi/L			MJ2	02/29/24	1035	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			78.7	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58248.05	Project:	MERI00120
Sample ID:	654532005	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	31-JAN-24 15:22		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.833	+/-0.791	1.28	3.00	pCi/L			JE1	02/29/24	1205	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.994	+/-0.851			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.160	+/-0.314	0.577	1.00	pCi/L			MJ2	02/29/24	1035	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			88.9	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58248.06	Project:	MERI00120
Sample ID:	654532006	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	31-JAN-24 16:56		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.00555	+/-0.734	1.44	3.00	pCi/L			JE1	02/29/24	1205	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.316	+/-0.798			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.310	+/-0.313	0.490	1.00	pCi/L			MJ2	02/29/24	1035	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			81.1	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58248.07	Project:	MERI00120
Sample ID:	654532007	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	31-JAN-24 13:13		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.791	+/-1.31	2.27	3.00	pCi/L			JE1	02/29/24	1205	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.16	+/-1.36			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.366	+/-0.365	0.585	1.00	pCi/L			MJ2	02/29/24	1035	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			77.2	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58248.08 Field Blank	Project:	MERI00120
Sample ID:	654532008	Client ID:	MERI001
Matrix:	Waste Water		
Collect Date:	31-JAN-24 07:55		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.57	+/-1.20	1.89	3.00	pCi/L			JE1	02/29/24	1206	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		3.12	+/-1.34			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.55	+/-0.611	0.614	1.00	pCi/L			MJ2	02/29/24	1035	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			77.9	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Quality Control Data

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

QC Summary

Report Date: March 4, 2024

Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan

Contact: **John Laverty**

Workorder: **654532**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2570188										
QC1205653414 654532001 DUP										
Radium-228	U	0.161	U	0.346	pCi/L	N/A		N/A	JE1	02/29/24 12:06
	Uncertainty	+/-1.06		+/-0.655						
QC1205653415 LCS										
Radium-228	72.1			60.4	pCi/L		83.8	(75%-125%)		02/29/24 12:06
	Uncertainty			+/-4.09						
QC1205653413 MB										
Radium-228			U	-0.0339	pCi/L					02/29/24 12:06
	Uncertainty			+/-1.17						
Rad Ra-226										
Batch 2570163										
QC1205653335 654233023 DUP										
Radium-226	U	0.415		0.535	pCi/L	25.3		(0% - 100%)	MJ2	02/29/24 11:21
	Uncertainty	+/-0.352		+/-0.300						
QC1205653337 LCS										
Radium-226	53.8			43.4	pCi/L		80.6	(75%-125%)		03/01/24 04:24
	Uncertainty			+/-4.23						
QC1205653334 MB										
Radium-226			U	0.252	pCi/L					02/29/24 09:56
	Uncertainty			+/-0.431						
QC1205653336 654233023 MS										
Radium-226	117 U	0.415		88.7	pCi/L		75.7	(75%-125%)		02/29/24 11:21
	Uncertainty	+/-0.352		+/-8.62						

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported

QC Summary

Workorder: **654532**

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

UI	Gamma Spectroscopy--Uncertain identification
BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
**	Analyte is a Tracer compound
M	REMP Result > MDC/CL and < RDL
J	See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Gas Flow Raw Data

Batch 2570188 Check-list

This check-list was completed on 29-FEB-24 by Nat Long

This batch was reviewed by Kenshalla Oston on 29-FEB-24 and Nat Long on 29-FEB-24.

Batch ID: 2570188 **Product:** GFC28RAL **Description:** Gas Flow Radium 228 GL-RAD-A-063

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were all tracer/carrier recoveries within the required acceptance limits?	Yes		
10	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-228 in Liquid

Batch ID: 2570188
Analyst: Jacqueline Winston (JE1)
Method: EPA 904.0/SW846 9320 Modified
Lab SOP: GL-RAD-A-063 REV# 5
Instrument: SP-C018367602

Due Dates for Lab: 03-MAR-2024 Package: 05-MAR-2024 SDG: 06-MAR-2024

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1205653415	Radium 228	2051-D	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Separation (date)
1	654532001	26-FEB-2024	3	306.63	306.63	02/27/24 12:56	02/29/24 09:18
2	654532002	26-FEB-2024	3	302.23	302.23	02/27/24 12:56	02/29/24 09:18
3	654532003	26-FEB-2024	3	305.13	305.13	02/27/24 12:56	02/29/24 09:18
4	654532004	26-FEB-2024	3	303.93	303.93	02/27/24 12:56	02/29/24 09:18
5	654532005	26-FEB-2024	3	303.93	303.93	02/27/24 12:56	02/29/24 09:18
6	654532006	26-FEB-2024	3	314.53	314.53	02/27/24 12:56	02/29/24 09:18
7	654532007	26-FEB-2024	3	301.53	301.53	02/27/24 12:56	02/29/24 09:18
8	654532008	26-FEB-2024	3	304.33	304.33	02/27/24 12:56	02/29/24 09:18
9	654534001	26-FEB-2024	3	310.23	310.23	02/27/24 12:56	02/29/24 09:18
10	654534002	26-FEB-2024	3	300.53	300.53	02/27/24 12:56	02/29/24 09:18
11	654534003	26-FEB-2024	3	300.83	300.83	02/27/24 12:56	02/29/24 09:18
12	654534004	26-FEB-2024	3	300.33	300.33	02/27/24 12:56	02/29/24 09:18
13	654534005	26-FEB-2024	3	300.23	300.23	02/27/24 12:56	02/29/24 09:18
14	654534006	26-FEB-2024	3	304.33	304.33	02/27/24 12:56	02/29/24 09:18
15	655017001	26-FEB-2024	3	308.13	308.13	02/27/24 12:56	02/29/24 09:18
16	655017002	26-FEB-2024	3	301.63	301.63	02/27/24 12:56	02/29/24 09:18
17	655017003	26-FEB-2024	3	302.03	302.03	02/27/24 12:56	02/29/24 09:18
18	655017004	26-FEB-2024	3	303.63	303.63	02/27/24 12:56	02/29/24 09:18
19	655017005	26-FEB-2024	3	300.33	300.33	02/27/24 12:56	02/29/24 09:18
20	655017006	26-FEB-2024	3	307.53	307.53	02/27/24 12:56	02/29/24 09:18
21	1205653413 MB	26-FEB-2024	3		314.53	02/27/24 12:56	02/29/24 09:18
22	1205653414 DUP (654532001)	26-FEB-2024	3	302.23	302.23	02/27/24 12:56	02/29/24 09:18
23	1205653415 LCS	26-FEB-2024	3		314.53	02/27/24 12:56	02/29/24 09:18

Reagent/Solvent Lot ID	Description	Amount
WORK 2097-B	Ba-133 Tracer	.1 mL
REGNT 4214820	Barium Carrier Ra228 REG	1 mL
REGNT 4223988	RGF-1M Citric Acid	5 mL
REGNT 4226396	2M HCl	20 mL
REGNT 4221876	RGF-50% Potassium Carbonate	2 mL
REGNT 3867033.5	RGF-Hydrofluoric Acid	4 mL
REGNT 4209237	500 mg/mL Neodymium Carrier	.2 mL
REGNT 4216641	RGF-Neodymium Subtrate	5 mL
REGNT 4229023	RGF-1.5M Ammonium Sulfate	10 mL
REGNT 4221872	RGF-7M Nitric Acid	25 mL
REGNT 4072674	Acetic Acid Glacial ACS Poly Coated Bottle	10 mL
REGNT DGA12292023	2561518	2 g
REGNT 4208393.51	Nitric Acid	5 mL

Comments:
Pipet Id: RAD-GFC-1795419
Data Entry Date2: 26-FEB-2024 00:00

Prep Logbook

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Separation (date)

Reagent/Solvent Lot ID	Description	Amount

Comments:

Radium-228 Liquid

Filename : RA228.XLS
File type : Excel
Version # : 1.4.3

Tracer S/N : 2097-B
Tracer Exp Date : 7/12/2024
Tracer Volume Added: 0.10

Batch : 2570188
Analyst : JAC02417
Prep Date : 2/26/2024
Ra-228 Method Uncertainty : 0.1268

Geometry: 25mm Filter

Procedure Code : GFC28RAL
Parmname : Radium-228
Required MDA : 3 pCi/L
Ra-228 Abundance : 1.00
Halflife of Ra-228 : 5.75 years
Halflife of Ac-228 : 6.15 hours

Sample Characteristics Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	**Tracer Calculations** Tracer Ref. Activity (CPM)	Tracer Ref. Count Uncertainty (%)	Tracer Samp. Activity (CPM)	Tracer Samp. Count Uncertainty (%)	Tracer Aliquot (mL)	Tracer Aliquot StDev. (mL)
1	654532001.1	0.3066	1.8569E-05	1/31/2024 11:54	771.7	2.08%	624.6	2.31%	0.1	0.000200
2	654532002.1	0.3022	1.8497E-05	1/31/2024 13:13	771.7	2.08%	630.0	2.30%	0.1	0.000200
3	654532003.1	0.3051	1.8545E-05	1/31/2024 17:34	771.7	2.08%	599.9	2.36%	0.1	0.000200
4	654532004.1	0.3039	1.8525E-05	1/31/2024 10:06	771.7	2.08%	607.7	2.34%	0.1	0.000200
5	654532005.1	0.3039	1.8525E-05	1/31/2024 15:22	771.7	2.08%	685.7	2.20%	0.1	0.000200
6	654532006.1	0.3145	1.8694E-05	1/31/2024 16:56	771.7	2.08%	625.8	2.31%	0.1	0.000200
7	654532007.1	0.3015	1.8485E-05	1/31/2024 13:13	771.7	2.08%	595.8	2.37%	0.1	0.000200
8	654532008.1	0.3043	1.8532E-05	1/31/2024 7:55	771.7	2.08%	601.5	2.35%	0.1	0.000200
9	654534001.1	0.3102	1.8627E-05	2/1/2024 11:36	771.7	2.08%	690.7	2.20%	0.1	0.000200
10	654534002.1	0.3005	1.8468E-05	2/1/2024 13:02	771.7	2.08%	675.4	2.22%	0.1	0.000200
11	654534003.1	0.3008	1.8473E-05	2/1/2024 14:43	771.7	2.08%	613.2	2.33%	0.1	0.000200
12	654534004.1	0.3003	1.8465E-05	2/1/2024 12:40	771.7	2.08%	643.5	2.28%	0.1	0.000200
13	654534005.1	0.3002	1.8463E-05	2/1/2024 13:02	771.7	2.08%	648.7	2.27%	0.1	0.000200
14	654534006.1	0.3043	1.8532E-05	2/1/2024 9:40	771.7	2.08%	640.1	2.28%	0.1	0.000200
15	655017001.1	0.3081	1.8594E-05	2/7/2024 15:20	771.7	2.08%	629.9	2.30%	0.1	0.000200
16	655017002.1	0.3016	1.8487E-05	2/7/2024 11:14	771.7	2.08%	650.3	2.26%	0.1	0.000200
17	655017003.1	0.3020	1.8493E-05	2/7/2024 12:43	771.7	2.08%	643.4	2.28%	0.1	0.000200
18	655017004.1	0.3036	1.8520E-05	2/7/2024 14:18	771.7	2.08%	587.3	2.38%	0.1	0.000200
19	655017005.1	0.3003	1.8465E-05	2/7/2024 12:43	771.7	2.08%	639.8	2.28%	0.1	0.000200
20	655017006.1	0.3075	1.8584E-05	2/7/2024 9:18	771.7	2.08%	601.8	2.35%	0.1	0.000200
21	1205653413.1	0.3145	1.8694E-05	2/26/2024 0:00	771.7	2.08%	630.8	2.30%	0.1	0.000200
22	1205653414.1	0.3022	1.8497E-05	1/31/2024 11:54	771.7	2.08%	633.3	2.29%	0.1	0.000200
23	1205653415.1	0.3145	1.8694E-05	2/26/2024 0:00	771.7	2.08%	622.0	2.32%	0.1	0.000200

Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1 ml Stdev : +/- 0.002000 ml

Analytical SOP: GL-RAD-A-063
Instrument SOP: GL-RAD-I-016

Count raw Data

Pos.	Detector ID	Counting Time (min.)	Gross Counts Alpha	Gross Counts Beta	Beta cpm	Count Start Date/Time	Ac-228 Ingrowth Date/Time	Ac-228 Decay Date/Time	Ra-228 Decay	Ac-228 Decay	Ac-228 Ingrowth	Ac-228 Count Correction	Calculated Sample Recovery %	Sample Recovery Error %
1	1D	60	9	49	0.817	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.990	0.730	0.993	1.057	80.9%	3.12%
2	3B	60	7	44	0.733	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.990	0.730	0.993	1.057	81.6%	3.11%
3	5D	60	2	41	0.683	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.991	0.730	0.993	1.057	77.7%	3.16%
4	6B	70	6	84	1.200	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.990	0.730	0.993	1.067	78.7%	3.14%
5	7A	60	5	35	0.583	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.991	0.730	0.993	1.057	88.9%	3.04%
6	7D	60	7	26	0.433	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.991	0.730	0.993	1.057	81.1%	3.12%
7	8D	70	17	87	1.243	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.990	0.729	0.993	1.067	77.2%	3.17%
8	9A	60	11	64	1.067	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.990	0.729	0.993	1.057	77.9%	3.15%
9	9B	60	12	86	1.433	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.729	0.993	1.057	89.5%	3.04%
10	9D	60	12	53	0.883	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.729	0.993	1.057	87.5%	3.06%
11	11A	80	16	130	1.625	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.728	0.993	1.077	79.5%	3.14%
12	11C	60	12	55	0.917	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.728	0.993	1.057	83.4%	3.10%
13	11D	60	11	36	0.600	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.728	0.993	1.057	84.1%	3.09%
14	12A	80	5	141	1.763	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.728	0.993	1.077	82.9%	3.10%
15	12B	60	6	63	1.050	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	81.6%	3.11%
16	12C	60	17	40	0.667	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	84.3%	3.08%
17	12D	60	5	29	0.483	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	83.4%	3.10%
18	13A	60	10	57	0.950	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	76.1%	3.17%
19	13B	60	9	77	1.283	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	82.9%	3.10%
20	13D	60	16	69	1.150	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.727	0.993	1.057	78.0%	3.15%
21	14A	110	12	207	1.882	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.999	0.729	0.993	1.107	81.7%	3.11%
22	14B	60	6	22	0.367	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.990	0.729	0.993	1.057	82.1%	3.11%
23	14C	60	6	920	15.333	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.999	0.729	0.993	1.057	80.6%	3.13%

Pos.	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Bkg cpm	Weekly Bkg Count Start Date/Time	Bkg Count Time (min.)
Calibration Data								
1	PIC	6/1/2023	5/31/2024	0.6071	0.00692	0.780	2/23/2024 17:51	500
2	PIC	6/1/2023	5/31/2024	0.6266	0.01614	0.598	2/23/2024 17:51	500
3	PIC	6/1/2023	5/31/2024	0.6566	0.00925	0.480	2/23/2024 17:52	500
4	PIC	6/1/2023	5/31/2024	0.5957	0.00851	1.020	2/23/2024 17:49	500
5	PIC	6/1/2023	5/31/2024	0.6229	0.00594	0.372	2/23/2024 17:49	500
6	PIC	6/1/2023	5/31/2024	0.6247	0.01113	0.432	2/23/2024 17:50	500
7	PIC	6/1/2023	5/31/2024	0.6073	0.00609	1.076	2/23/2024 17:50	500
8	PIC	6/1/2023	5/31/2024	0.6343	0.00758	0.710	2/23/2024 17:50	500
9	PIC	6/1/2023	5/31/2024	0.6496	0.00754	0.858	2/23/2024 17:50	500
10	PIC	6/1/2023	5/31/2024	0.6292	0.02610	0.692	2/23/2024 17:50	500
11	PIC	6/1/2023	5/31/2024	0.6466	0.01317	1.432	2/23/2024 17:48	500
12	PIC	6/1/2023	5/31/2024	0.6409	0.01278	0.858	2/23/2024 17:49	500
13	PIC	6/1/2023	5/31/2024	0.6379	0.01068	0.480	2/23/2024 17:49	500
14	PIC	6/1/2023	5/31/2024	0.6537	0.01964	1.436	2/23/2024 17:49	500
15	PIC	6/1/2023	5/31/2024	0.6488	0.01114	0.920	2/23/2024 17:49	500
16	PIC	6/1/2023	5/31/2024	0.6434	0.01666	0.548	2/23/2024 17:49	500
17	PIC	6/1/2023	5/31/2024	0.6498	0.01845	0.398	2/23/2024 17:49	500
18	PIC	6/1/2023	5/31/2024	0.6259	0.00714	0.948	2/23/2024 17:49	500
19	PIC	6/1/2023	5/31/2024	0.6399	0.00967	0.668	2/23/2024 17:49	500
20	PIC	6/1/2023	5/31/2024	0.6360	0.01144	0.882	2/23/2024 17:49	500
21	PIC	6/1/2023	5/31/2024	0.6482	0.02119	1.890	2/24/2024 11:03	500
22	PIC	6/1/2023	5/31/2024	0.6549	0.01028	0.282	2/23/2024 17:53	500
23	PIC	6/1/2023	5/31/2024	0.6309	0.01828	0.668	2/23/2024 17:53	500

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N :	N/A
Spike Exp Date :	N/A
Spike Activity (dpm/ml):	N/A
Spike Volume Added:	N/A
LCS S/N :	2051-D
LCS Exp Date :	7/12/2024
LCS Activity (dpm/ml):	503.35
LCS Volume Added:	0.10

Results Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	1.2378	0.8739	3	1.9679	**0.1614**	335.94%	0.0367	0.1232	1.0629	1.0637		SAMPLE				
2	1.0563	0.7457	3	1.7060	**0.5807**	85.67%	0.1353	0.1158	0.9742	0.9856		SAMPLE				
3	0.9395	0.6633	3	1.5396	**0.8662**	54.75%	0.2033	0.1111	0.9278	0.9541		SAMPLE				
4	1.4102	0.9956	3	2.1925	**0.8453**	77.01%	0.1800	0.1385	1.2748	1.2931		SAMPLE				
5	0.7657	0.5406	3	1.2784	**0.8335**	48.51%	0.2113	0.1023	0.7908	0.8191		SAMPLE				
6	0.8712	0.6151	3	1.4384	**5.552E-03**	6744.26%	0.0013	0.0899	0.7339	0.7341		SAMPLE				
7	1.4615	1.0318	3	2.2667	**0.7906**	84.62%	0.1669	0.1411	1.3103	1.3259		SAMPLE				
8	1.1835	0.8356	3	1.8918	**1.5737**	38.98%	0.3567	0.1386	1.1982	1.2644		SAMPLE				
9	1.0850	0.7660	3	1.7161	**2.1170**	27.99%	0.5753	0.1600	1.1541	1.2750		SAMPLE				
10	1.0622	0.7499	3	1.7003	**0.7674**	66.45%	0.1913	0.1269	0.9977	1.0176		SAMPLE				
11	1.4702	1.0379	3	2.2401	**0.8451**	78.95%	0.1930	0.1522	1.3066	1.3245		SAMPLE				
12	1.2209	0.8620	3	1.9310	**0.2429**	222.23%	0.0587	0.1304	1.0579	1.0597		SAMPLE				
13	0.9105	0.6428	3	1.4920	**0.4954**	87.30%	0.1200	0.1047	0.8471	0.8566		SAMPLE				
14	1.3795	0.9740	3	2.1018	**1.3397**	48.47%	0.3265	0.1578	1.2691	1.3156		SAMPLE				
15	1.2414	0.8765	3	1.9562	**0.5285**	107.03%	0.1300	0.1391	1.1082	1.1165		SAMPLE				
16	0.9563	0.6751	3	1.5531	**0.4815**	93.17%	0.1187	0.1105	0.8787	0.8875		SAMPLE				
17	0.8145	0.5751	3	1.3529	**0.3461**	110.31%	0.0853	0.0941	0.7479	0.7532		SAMPLE				
18	1.4225	1.0043	3	2.2381	**9.179E-03**	6657.58%	0.0020	0.1332	1.1978	1.1979		SAMPLE				
19	1.0840	0.7653	3	1.7390	**2.5637**	24.71%	0.6153	0.1507	1.2310	1.3957		SAMPLE				
20	1.3015	0.9189	3	2.0554	**1.1667**	54.09%	0.2680	0.1447	1.2345	1.2704		SAMPLE				
21	1.3961	0.9856	3	2.0841	**-0.0339**	1766.42%	-0.0082	0.1445	1.1723	1.1723		MB				
22	0.6915	0.4882	3	1.1809	**0.3463**	96.55%	0.0847	0.0817	0.6550	0.6610	654532001.1	DUP	* 0.0%			
23	1.0720	0.7569	3	1.7198	**60.4261**	5.01%	14.6653	0.5068	4.0932	16.1462		LCS			72.0872	83.8%

SampleID	Instr	Time (min.)	Alpha Counts	Beta Counts	Count Start Time	Count End Time	Machine	Batch ID
654532001	1D	60	9	49	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532002	3B	60	7	44	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532003	5D	60	2	41	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532004	6B	70	6	84	2/29/2024 12:05	2/29/2024 13:15	PIC	2570188
654532005	7A	60	5	35	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532006	7D	60	7	26	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532007	8D	70	17	87	2/29/2024 12:05	2/29/2024 13:15	PIC	2570188
654532008	9A	60	11	64	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534001	9B	60	12	86	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534002	9D	60	12	53	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534003	11A	80	16	130	2/29/2024 12:06	2/29/2024 13:26	PIC	2570188
654534004	11C	60	12	55	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534005	11D	60	11	36	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534006	12A	80	5	141	2/29/2024 12:06	2/29/2024 13:26	PIC	2570188
655017001	12B	60	6	63	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017002	12C	60	17	40	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017003	12D	60	5	29	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017004	13A	60	10	57	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017005	13B	60	9	77	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017006	13D	60	16	69	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
1205653413	14A	110	12	207	2/29/2024 12:06	2/29/2024 13:56	PIC	2570188
1205653414	14B	60	6	22	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
1205653415	14C	60	6	920	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188

ASSAY	29-Feb-24	11:54:29	
Wizard 1480 s/n 4800440			
Protocol	id	9	228_REC2
Time	limit	180	
Count	limit	50000	
Isotope	Ba-133		
Protocol	date	26-Sep-13	15:01:58
Run	id.	45	

Samp_ID	POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR	% RECOVERY	COUNT TIME
REF	1	87	1	180	2315	771.7	2.08		11:54:36
654532001	2	87	2	180	1873	624.6	2.31	80.94	11:57:48
654532002	3	87	3	180	1890	630	2.3	81.64	12:00:59
654532003	4	87	4	180	1799	599.9	2.36	77.74	12:04:11
654532004	5	87	5	180	1823	607.7	2.34	78.75	12:07:22
654532005	6	99	6	180	2057	685.7	2.2	88.86	12:10:47
654532006	7	99	7	180	1877	625.8	2.31	81.09	12:13:58
654532007	8	99	8	180	1787	595.8	2.37	77.21	12:17:09
654532008	9	99	9	180	1804	601.5	2.35	77.94	12:20:21
654534001	10	99	10	180	2072	690.7	2.2	89.50	12:23:32
654534002	11	37	11	180	2026	675.4	2.22	87.52	12:26:57
654534003	12	37	12	180	1839	613.2	2.33	79.46	12:30:08
654534004	13	37	13	180	1930	643.5	2.28	83.39	12:33:20
654534005	14	37	14	180	1946	648.7	2.27	84.06	12:36:31
654534006	15	37	15	180	1920	640.1	2.28	82.95	12:39:42
655017001	16	81	16	180	1890	629.9	2.3	81.62	12:43:06
655017002	17	81	17	180	1951	650.3	2.26	84.27	12:46:18
655017003	18	81	18	180	1930	643.4	2.28	83.37	12:49:29
655017004	19	81	19	180	1762	587.3	2.38	76.10	12:52:40
655017005	20	81	20	180	1919	639.8	2.28	82.91	12:55:52
655017006	21	84	21	180	1805	601.8	2.35	77.98	12:59:29
1205653413	22	84	22	180	1892	630.8	2.3	81.74	13:02:40
1205653414	23	84	23	180	1900	633.3	2.29	82.07	13:05:52
1205653415	24	84	24	180	1866	622	2.32	80.60	13:09:03

END OF ASSAY

Continuing Calibration Data

Gas Flow Proportional Counter Checks for 29-Feb-2024

Detectors LB4100 E1 through H4 and PIC 1A through 14D and G5400W 1W through 1Z and LB4200 GA1 through OD4

Short Name	Status	Parmname	Run Time	Count Time	CPM or dec	Low Limit	High Limit	Stdev
LB4100F4	Below	Alpha eff	29-Feb 08:14	5	16766	16940	18140	-3.87
LB4100F4	Above	Alpha XTalk	29-Feb 08:14	5	0.199	0.170	0.193	+4.84
LB4100H1	Above	Alpha bkg	29-Feb 04:47	60	0.517	-8.08E-2	0.225	+8.71
LB4100H1	Above	Alpha eff	29-Feb 05:54	5	12028	7523	11160	+4.43
LB4100H1	Above	Beta bkg	29-Feb 04:47	60	3.433	-5.15E-1	3.743	+2.56
LB4100H2	Above	Alpha bkg	29-Feb 04:47	60	0.333	0.057	0.420	+1.57
LB4200GB2	Below	Alpha eff	29-Feb 06:08	5	9343	9443	9898	-4.32
LB4200GB2	Above	Beta bkg	29-Feb 15:44	60	12.117	0.129	1.304	+58.19
LB4200GD3	Above	Alpha bkg	29-Feb 15:44	60	0.917	-1.04E-1	0.321	+11.41
LB4200OB1	Above	Alpha bkg	29-Feb 11:54	60	0.767	-1.05E-1	0.362	+8.20
LB4200OC2	need 2nd	Alpha bkg	29-Feb 11:54	60	0.100	-1.37E-1	0.428	-0.49
LB4200OC2	need 2nd	Beta bkg	29-Feb 11:54	60	1.383	-6.67E-2	2.499	+0.39
PIC2D	Above	Beta bkg	29-Feb 10:06	60	2.000	0.417	1.868	+3.55
PIC4C	Above	Alpha bkg	29-Feb 06:36	60	0.400	-2.25E-1	1.312	-0.56

INSTRUMENTS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

The following detectors may not have properly transferred to the LIMS system

Reviewed by Jc Poparad

Date 3/4/24

GEL Laboratories LLC

Jasmine Conley

2/29/24

Runlogs

Instrument Run Log

Instrument Type: GFPC **Batch ID: 2570188**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
654532001	SAMPLE	JE1	PIC1D	FEB-29-24 12:05:37	DONE	25mm Filter	01-JUN-23 00:00
654532002	SAMPLE	JE1	PIC3B	FEB-29-24 12:05:40	DONE	25mm Filter	01-JUN-23 00:00
654532004	SAMPLE	JE1	PIC6B	FEB-29-24 12:05:41	DONE	25mm Filter	01-JUN-23 00:00
654532003	SAMPLE	JE1	PIC5D	FEB-29-24 12:05:45	DONE	25mm Filter	01-JUN-23 00:00
654532005	SAMPLE	JE1	PIC7A	FEB-29-24 12:05:45	DONE	25mm Filter	01-JUN-23 00:00
654532006	SAMPLE	JE1	PIC7D	FEB-29-24 12:05:48	DONE	25mm Filter	01-JUN-23 00:00
654532007	SAMPLE	JE1	PIC8D	FEB-29-24 12:05:59	DONE	25mm Filter	01-JUN-23 00:00
654532008	SAMPLE	JE1	PIC9A	FEB-29-24 12:06:03	DONE	25mm Filter	01-JUN-23 00:00
654534001	SAMPLE	JE1	PIC9B	FEB-29-24 12:06:07	DONE	25mm Filter	01-JUN-23 00:00
654534002	SAMPLE	JE1	PIC9D	FEB-29-24 12:06:10	DONE	25mm Filter	01-JUN-23 00:00
1205653413	MB	JE1	PIC14A	FEB-29-24 12:06:30	DONE	25mm Filter	01-JUN-23 00:00
1205653414	DUP	JE1	PIC14B	FEB-29-24 12:06:32	DONE	25mm Filter	01-JUN-23 00:00
1205653415	LCS	JE1	PIC14C	FEB-29-24 12:06:36	DONE	25mm Filter	01-JUN-23 00:00
654534003	SAMPLE	JE1	PIC11A	FEB-29-24 12:06:43	DONE	25mm Filter	01-JUN-23 00:00
654534004	SAMPLE	JE1	PIC11C	FEB-29-24 12:06:48	DONE	25mm Filter	01-JUN-23 00:00
654534005	SAMPLE	JE1	PIC11D	FEB-29-24 12:06:51	DONE	25mm Filter	01-JUN-23 00:00
654534006	SAMPLE	JE1	PIC12A	FEB-29-24 12:06:57	DONE	25mm Filter	01-JUN-23 00:00
655017001	SAMPLE	JE1	PIC12B	FEB-29-24 12:07:00	DONE	25mm Filter	01-JUN-23 00:00
655017002	SAMPLE	JE1	PIC12C	FEB-29-24 12:07:04	DONE	25mm Filter	01-JUN-23 00:00
655017003	SAMPLE	JE1	PIC12D	FEB-29-24 12:07:08	DONE	25mm Filter	01-JUN-23 00:00
655017004	SAMPLE	JE1	PIC13A	FEB-29-24 12:07:13	DONE	25mm Filter	01-JUN-23 00:00
655017005	SAMPLE	JE1	PIC13B	FEB-29-24 12:07:18	DONE	25mm Filter	01-JUN-23 00:00
655017006	SAMPLE	JE1	PIC13D	FEB-29-24 12:07:22	DONE	25mm Filter	01-JUN-23 00:00

Lucas Cell Raw Data

Batch 2570163 Check-list

This check-list was completed on 01-MAR-24 by Elizabeth Krouse

This batch was reviewed by Elizabeth Krouse on 01-MAR-24 and Lyndsey Pace on 03-MAR-24.

Batch ID:	Product:	Description: Lucas Cell Radium 226
2570163	LUC26RAL	GL-RAD-A-008

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?		No	
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the matrix spike (MS/MSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-226 in Liquid

Batch ID: **2570163**
Analyst: Marisa Johnson (MJ2)
Method: EPA 903.1 Modified
Lab SOP: GL-RAD-A-008 REV# 15
Instrument: LUCAS-C202389980

Due Dates for Lab: 02-MAR-2024 **Hold: 03-JAN-2024** **Package: 05-MAR-2024** **SDG: 04-M**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
MS	1205653336	Ra-226 emanation spike	1715-I	.1	mL
LCS	1205653337	Ra-226 emanation spike	1715-I	.2	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	End Degas (date)	CELL #	End Transfer (date)	Start Count Time (date)	Background Counts	Total Counts
1	654233023	26-FEB-2024	1	509.31	509.31	02/26/24 12:15	102	02/29/24 06:27	02/29/24 09:56	2	10
2	654233024	26-FEB-2024	1	507.13	507.13	02/26/24 12:15	206	02/29/24 06:27	02/29/24 09:56	3	14
3	654233025	26-FEB-2024	1	501.17	501.17	02/26/24 12:15	301	02/29/24 06:27	02/29/24 09:56	2	18
4	654233026	26-FEB-2024	1	503.26	503.26	02/26/24 12:15	405	02/29/24 06:27	02/29/24 09:56	1	3
5	654233027	26-FEB-2024	1	501.42	501.42	02/26/24 12:15	504	02/29/24 06:27	02/29/24 09:56	1	8
6	654233028	26-FEB-2024	1	504.69	504.69	02/26/24 12:15	602	02/29/24 06:27	02/29/24 09:56	1	15
7	654532001	26-FEB-2024	1	504.05	504.05	02/26/24 12:15	803	02/29/24 06:27	02/29/24 09:56	8	18
8	654532002	26-FEB-2024	1	500.49	500.49	02/26/24 12:15	105	02/29/24 06:54	02/29/24 10:35	1	27
9	654532003	26-FEB-2024	1	500.62	500.62	02/26/24 12:15	207	02/29/24 06:54	02/29/24 10:35	1	12
10	654532004	26-FEB-2024	1	503.27	503.27	02/26/24 12:15	305	02/29/24 06:54	02/29/24 10:35	4	13
11	654532005	26-FEB-2024	1	502.84	502.84	02/26/24 12:15	401	02/29/24 06:54	02/29/24 10:35	6	10
12	654532006	26-FEB-2024	1	504.97	504.97	02/26/24 12:15	505	02/29/24 06:54	02/29/24 10:35	3	10
13	654532007	26-FEB-2024	1	507.77	507.77	02/26/24 12:15	608	02/29/24 06:54	02/29/24 10:35	6	15
14	654532008	26-FEB-2024	1	505.81	505.81	02/26/24 12:15	707	02/29/24 06:54	02/29/24 10:35	4	35
15	654534001	26-FEB-2024	1	502.15	502.15	02/26/24 12:15	802	02/29/24 06:54	02/29/24 10:35	8	40
16	654534002	26-FEB-2024	1	502.84	502.84	02/26/24 12:15	106	02/29/24 07:19	02/29/24 11:21	8	34
17	654534003	26-FEB-2024	1	503.4	503.4	02/26/24 12:15	204	02/29/24 07:19	02/29/24 11:21	5	35
18	654534004	26-FEB-2024	1	504.64	504.64	02/26/24 12:15	304	02/29/24 07:19	02/29/24 11:21	1	12
19	654534005	26-FEB-2024	1	505.84	505.84	02/26/24 12:15	409	02/29/24 07:19	02/29/24 11:21	4	19
20	654534006	26-FEB-2024	1	500.84	500.84	02/26/24 12:15	501	02/29/24 07:19	02/29/24 11:21	7	13
21	1205653334 MB	26-FEB-2024	1		509.31	02/26/24 12:15	706	02/29/24 06:27	02/29/24 09:56	7	12
22	1205653335 DUP (654233023)	26-FEB-2024	1	503.42	503.42	02/26/24 12:15	605	02/29/24 07:19	02/29/24 11:21	1	15
23	1205653336 MS (654233023)	26-FEB-2024	1	116.95	116.95	02/26/24 12:15	708	02/29/24 07:19	02/29/24 11:21	2	412
24	1205653337 LCS	26-FEB-2024	1		509.31	02/26/24 11:10	701	02/29/24 07:45	03/01/24 04:25	4	408

Reagent/Solvent Lot ID	Description	Amount

Comments:
Data Entry Date2: 26-FEB-2024 00:00

Radium-226 Liquid

Filename : RA226.XLS
File type : Excel
Version # : 1.3.2

Batch : 2570163
Analyst : MAR02577
Prep Date : 2/26/2024
Ra-226 Method Uncertainty : 0.073648

Procedure Code : LUC26RAL
Parmname : Radium-226
Required MDA : 1 pCi/L
Halflife of Ra-226 : 1600 years
Ra-226 Abundance : 1.00
Halflife of Rn-222: 3.8235 days

Batch counted on : LUCAS CELL DETECTOR
BKG Count time : 30 min

Sample Characteristics					**Count Raw Data**							
Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	Cell Number	Counting Time (min.)	Gross Counts	Gross CPM	Background Counts	Background CPM	Background Count Time (min.)	Cell Efficiency (cpm/dpm)
1	654233023.1	0.5093	2.0293E-05	11/29/2023 10:35	102	30	10	0.333	2	0.067	30	1.4860
2	654233024.1	0.5071	2.0285E-05	11/29/2023 11:52	206	30	14	0.467	3	0.100	30	1.5880
3	654233025.1	0.5012	2.0261E-05	11/29/2023 12:14	301	30	18	0.600	2	0.067	30	1.5220
4	654233026.1	0.5033	2.0269E-05	11/29/2023 13:38	405	30	3	0.100	1	0.033	30	1.7990
5	654233027.1	0.5014	2.0262E-05	7/7/2023 15:05	504	30	8	0.267	1	0.033	30	1.3720
6	654233028.1	0.5047	2.0275E-05	7/7/2023 15:17	602	30	15	0.500	1	0.033	30	1.7010
7	654532001.1	0.5041	2.0272E-05	1/31/2024 11:54	803	30	18	0.600	8	0.267	30	1.4760
8	654532002.1	0.5005	2.0258E-05	1/31/2024 13:13	105	30	27	0.900	1	0.033	30	1.5340
9	654532003.1	0.5006	2.0258E-05	1/31/2024 17:34	207	30	12	0.400	1	0.033	30	1.8080
10	654532004.1	0.5033	2.0269E-05	1/31/2024 10:06	305	30	13	0.433	4	0.133	30	1.5280
11	654532005.1	0.5028	2.0267E-05	1/31/2024 15:22	401	30	10	0.333	6	0.200	30	1.9410
12	654532006.1	0.5050	2.0276E-05	1/31/2024 16:56	505	30	10	0.333	3	0.100	30	1.7470
13	654532007.1	0.5078	2.0287E-05	1/31/2024 13:13	608	30	15	0.500	6	0.200	30	1.8960
14	654532008.1	0.5058	2.0279E-05	1/31/2024 7:55	707	30	35	1.167	4	0.133	30	1.5500
15	654534001.1	0.5022	2.0265E-05	2/1/2024 11:36	802	30	40	1.333	8	0.267	30	1.5330
16	654534002.1	0.5028	2.0267E-05	2/1/2024 13:02	106	30	34	1.133	8	0.267	30	1.5250
17	654534003.1	0.5034	2.0270E-05	2/1/2024 14:43	204	30	35	1.167	5	0.167	30	1.5970
18	654534004.1	0.5046	2.0275E-05	2/1/2024 12:40	304	30	12	0.400	1	0.033	30	1.4940
19	654534005.1	0.5058	2.0280E-05	2/1/2024 13:02	409	30	19	0.633	4	0.133	30	1.9030
20	654534006.1	0.5008	2.0259E-05	2/1/2024 9:40	501	30	13	0.433	7	0.233	30	1.7160
21	1205653334.1	0.5093	2.0293E-05	2/26/2024 0:00	706	30	12	0.400	7	0.233	30	1.5280
22	1205653335.1	0.5034	2.0270E-05	11/29/2023 10:35	605	30	15	0.500	1	0.033	30	2.0280
23	1205653336.1	0.1170	1.2362E-05	11/29/2023 10:35	708	30	412	13.733	2	0.067	30	1.5430
24	1205653337.1	0.5093	2.0293E-05	2/26/2024 0:00	701	15	408	27.200	4	0.133	30	1.5970

Pipet, 0.1 ml Stdev : +/-	0.000200	ml
Pipet, 0.5 ml Stdev : +/-	0.001000	ml
Pipet, 1 ml Stdev : +/-	0.002000	ml

Analytical SOP: GL-RAD-A-008
Instrument SOP: GL-RAD-I-007

Cell Efficiency Error (%)	Cell Calibration Date	Cell Calibration Due Date	De-Gas Date/Time	Rn-222 Ingrow End Date/Time	Count Start Date/Time	Rn-222 Corrections De-Gas to Ingrowth	Rn-222 Corrections Ingrowth to Count	Rn-222 Corrections During Count	Ra-226 Decay
2.300%	5/1/2023	4/30/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
8.600%	8/1/2023	7/31/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
5.700%	11/1/2023	10/31/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
4.600%	2/1/2024	1/31/2025	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
1.100%	10/10/2023	5/31/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
9.900%	7/1/2023	6/30/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
4.700%	4/8/2023	3/31/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
7.900%	5/1/2023	4/30/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
4.000%	10/10/2023	7/31/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
7.000%	11/1/2023	10/31/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
7.800%	2/1/2024	1/31/2025	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
8.200%	6/1/2023	5/31/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
7.800%	7/1/2023	6/30/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
5.800%	11/1/2023	10/31/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
6.100%	4/8/2023	3/31/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
3.400%	5/1/2023	4/30/2024	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
2.600%	8/1/2023	7/31/2024	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
2.100%	11/1/2023	10/31/2024	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
4.900%	2/1/2024	1/31/2025	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
5.500%	6/1/2023	5/31/2024	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
5.100%	11/1/2023	10/31/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
2.300%	10/10/2023	6/30/2024	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
5.200%	11/1/2023	10/31/2024	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
5.900%	11/1/2023	10/31/2024	2/26/2024 11:10	2/29/2024 7:45	3/1/2024 4:24	0.404	0.856	1.001	1.000

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

Spike S/N :	1715-I
Spike Exp Date :	8/29/2024
Spike Activity (dpm/ml):	304.15
Spike Volume Added:	0.10
LCS S/N :	1715-I
LCS Exp Date :	8/29/2024
LCS Activity (dpm/ml):	304.15
LCS Volume Added:	0.20

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	0.2417	0.1706	1	0.4969	**0.4149**	43.36%	0.2667	0.1155	0.3521	0.3577		SAMPLE				
2	0.2782	0.1964	1	0.5390	**0.5362**	38.46%	0.3667	0.1374	0.3939	0.4115		SAMPLE				
3	0.2398	0.1693	1	0.4930	**0.8234**	28.53%	0.5333	0.1491	0.4511	0.4755		SAMPLE				
4	0.1429	0.1009	1	0.3318	**0.0867**	100.11%	0.0667	0.0667	0.1700	0.1706		SAMPLE				
5	0.1880	0.1328	1	0.4367	**0.3995**	42.87%	0.2333	0.1000	0.3356	0.3406		SAMPLE				
6	0.1507	0.1064	1	0.3500	**0.6402**	30.24%	0.4667	0.1333	0.3585	0.3905		SAMPLE				
7	0.4917	0.3471	1	0.8526	**0.5276**	51.21%	0.3333	0.1700	0.5273	0.5349		SAMPLE				
8	0.1678	0.1185	1	0.3898	**1.3243**	21.83%	0.8667	0.1764	0.5283	0.5980		SAMPLE				
9	0.1424	0.1005	1	0.3306	**0.4752**	33.02%	0.3667	0.1202	0.3053	0.3151		SAMPLE				
10	0.3351	0.2366	1	0.6258	**0.4577**	46.34%	0.3000	0.1374	0.4110	0.4209		SAMPLE				
11	0.3234	0.2283	1	0.5768	**0.1603**	100.30%	0.1333	0.1333	0.3141	0.3159		SAMPLE				
12	0.2530	0.1786	1	0.4902	**0.3103**	52.16%	0.2333	0.1202	0.3133	0.3204		SAMPLE				
13	0.3278	0.2315	1	0.5848	**0.3656**	51.51%	0.3000	0.1528	0.3648	0.3728		SAMPLE				
14	0.3287	0.2321	1	0.6138	**1.5462**	20.96%	1.0333	0.2082	0.6105	0.6734		SAMPLE				
15	0.4734	0.3343	1	0.8209	**1.6256**	22.49%	1.0667	0.2309	0.6898	0.7541		SAMPLE				
16	0.4743	0.3348	1	0.8223	**1.3230**	25.16%	0.8667	0.2160	0.6464	0.6797		SAMPLE				
17	0.3576	0.2525	1	0.6506	**1.4561**	21.24%	1.0000	0.2108	0.6017	0.6416		SAMPLE				
18	0.1705	0.1204	1	0.3961	**0.5693**	32.84%	0.3667	0.1202	0.3658	0.3756		SAMPLE				
19	0.2671	0.1886	1	0.4988	**0.6081**	32.35%	0.5000	0.1599	0.3810	0.3954		SAMPLE				
20	0.3958	0.2795	1	0.6951	**0.2724**	74.74%	0.2000	0.1491	0.3980	0.4010		SAMPLE				
21	0.4397	0.3104	1	0.7721	**0.2522**	87.33%	0.1667	0.1453	0.4309	0.4332		MB				
22	0.1260	0.0889	1	0.2925	**0.5351**	28.66%	0.4667	0.1333	0.2997	0.3104	654233023.1	DUP	25.3%			
23	1.0078	0.7115	1	2.0717	**88.6649**	7.19%	13.6667	0.6782	8.6243	17.8844	654233023.1	MS			117.1587	75.7%
24	0.4311	0.3044	1	0.9293	**43.3733**	7.72%	27.0667	1.3482	4.2346	9.0713		LCS			53.7993	80.6%

Continuing Calibration Data

Ludlum Alpha Scintillation Counter Checks for 29-FEB-2024

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LUCAS1	EFF	07:25	1	1.10E+05	110471	-2.3		
LUCAS2	EFF	07:27	1	1.28E+05	127645	-1.78		
LUCAS3	EFF	07:46	1	92517	92517	0.67		
LUCAS4	EFF	07:28	1	1.23E+05	123364	-2.25		
LUCAS5	EFF	07:36	1	1.28E+05	127851	-1.27		
LUCAS6	EFF	07:42	1	1.29E+05	129111	1.58		
LUCAS7	EFF	07:43	1	1.29E+05	129446	-1.89		
LUCAS8	EFF	07:45	1	1.27E+05	126535	0.95		

Reviewed by: Elizabeth Krouse **Date:** 29-FEB-24

GEL Laboratories LLC

Ludlum Alpha Scintillation Counter Checks for 01-MAR-2024

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LUCAS1	EFF	07:15	1	1.11E+05	111073	-1.5		
LUCAS2	EFF	07:22	1	1.28E+05	127648	-1.77		
LUCAS3	EFF	07:48	1	91011	91011	-0.5		
LUCAS4	EFF	07:58	1	1.23E+05	123220	-2.42		
LUCAS5	EFF	07:30	1	1.28E+05	127688	-1.45		
LUCAS6	EFF	07:36	1	1.27E+05	127020	-1.39		
LUCAS7	EFF	07:41	1	1.29E+05	128680	-2.89		
LUCAS8	EFF	07:45	1	1.26E+05	125869	0.85		

Reviewed by: Elizabeth Krouse **Date:** 01-MAR-24

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: LUCAS CELL DETECTOR **Batch ID: 2570163**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
654233023	SAMPLE	MJ2	LUCAS1	FEB-29-24 09:56:00	DONE	Lucas Cell	01-MAY-23 00:00
654233024	SAMPLE	MJ2	LUCAS2	FEB-29-24 09:56:00	DONE	Lucas Cell	01-AUG-23 00:00
654233025	SAMPLE	MJ2	LUCAS3	FEB-29-24 09:56:00	DONE	Lucas Cell	01-NOV-23 00:00
654233026	SAMPLE	MJ2	LUCAS4	FEB-29-24 09:56:00	DONE	Lucas Cell	01-FEB-24 00:00
654233027	SAMPLE	MJ2	LUCAS5	FEB-29-24 09:56:00	DONE	Lucas Cell	01-JUN-23 00:00
654233028	SAMPLE	MJ2	LUCAS6	FEB-29-24 09:56:00	DONE	Lucas Cell	01-JUL-23 00:00
654532001	SAMPLE	MJ2	LUCAS8	FEB-29-24 09:56:00	DONE	Lucas Cell	08-APR-23 00:00
1205653334	MB	MJ2	LUCAS7	FEB-29-24 09:56:00	DONE	Lucas Cell	01-NOV-23 00:00
654532002	SAMPLE	MJ2	LUCAS1	FEB-29-24 10:35:00	DONE	Lucas Cell	01-MAY-23 00:00
654532003	SAMPLE	MJ2	LUCAS2	FEB-29-24 10:35:00	DONE	Lucas Cell	01-AUG-23 00:00
654532004	SAMPLE	MJ2	LUCAS3	FEB-29-24 10:35:00	DONE	Lucas Cell	01-NOV-23 00:00
654532005	SAMPLE	MJ2	LUCAS4	FEB-29-24 10:35:00	DONE	Lucas Cell	01-FEB-24 00:00
654532006	SAMPLE	MJ2	LUCAS5	FEB-29-24 10:35:00	DONE	Lucas Cell	01-JUN-23 00:00
654532007	SAMPLE	MJ2	LUCAS6	FEB-29-24 10:35:00	DONE	Lucas Cell	01-JUL-23 00:00
654532008	SAMPLE	MJ2	LUCAS7	FEB-29-24 10:35:00	DONE	Lucas Cell	01-NOV-23 00:00
654534001	SAMPLE	MJ2	LUCAS8	FEB-29-24 10:35:00	DONE	Lucas Cell	08-APR-23 00:00
654534002	SAMPLE	MJ2	LUCAS1	FEB-29-24 11:21:00	DONE	Lucas Cell	01-MAY-23 00:00
654534003	SAMPLE	MJ2	LUCAS2	FEB-29-24 11:21:00	DONE	Lucas Cell	01-AUG-23 00:00
654534004	SAMPLE	MJ2	LUCAS3	FEB-29-24 11:21:00	DONE	Lucas Cell	01-NOV-23 00:00
654534005	SAMPLE	MJ2	LUCAS4	FEB-29-24 11:21:00	DONE	Lucas Cell	01-FEB-24 00:00
654534006	SAMPLE	MJ2	LUCAS5	FEB-29-24 11:21:00	DONE	Lucas Cell	01-JUN-23 00:00
1205653335	DUP	MJ2	LUCAS6	FEB-29-24 11:21:00	DONE	Lucas Cell	01-JUL-23 00:00
1205653336	MS	MJ2	LUCAS7	FEB-29-24 11:21:00	DONE	Lucas Cell	01-NOV-23 00:00
1205653337	LCS	MJ2	LUCAS7	MAR-01-24 04:24:00	DONE	Lucas Cell	01-NOV-23 00:00

Analytical Laboratory Report

Final Report

Report ID: S58313.01(01)
Generated on 03/05/2024

Report to

Attention: Jennifer Caporale
Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S58313.01-S58313.06
Project: Erickson Semi Annual 16A-16D
Collected Date(s): 02/01/2024
Submitted Date/Time: 02/02/2024 09:15
Sampled by: Marc Wahrer
P.O. #:

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Starred (*) analytes are not NY NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.
All accreditations/certifications held by this laboratory are listed on page 3. Not all accreditations/certifications are applicable to this report.
For a specific list of accredited analytes, please feel free to contact the laboratory or visit https://www.meritlabs.com/certifications.

Report Narrative

All analyses completed

Laboratory Accreditations (For Reference Only)

Authority	Accreditation ID
Michigan DEQ	#9956
DOD ELAP & ISO/IEC 17025:2017	#69699 PJLA Testing
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
E245.1	EPA Method 245.1 Revision 3.0
E300.0	EPA Method 300.0 Revision 2.1 (1993)
SM2320B	Standard Method 2320 B 2011
SM2340C	Standard Method 2340 C 2011
SM2540C	Standard Method 2540 C 2015
SM2540D	Standard Method 2540 D 2015
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (6 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S58313.01	MW-16A L401212-01	Groundwater	02/01/24 11:36
S58313.02	MW-16B L401212-02	Groundwater	02/01/24 13:02
S58313.03	MW-16C L401212-03	Groundwater	02/01/24 14:43
S58313.04	MW-16D L401212-04	Groundwater	02/01/24 12:40
S58313.05	MWT-16B L401212-05	Groundwater	02/01/24 13:02
S58313.06	Field Blank L401212-06	Water	02/01/24 09:40

Lab Sample ID: S58313.01
Sample Tag: MW-16A L401212-01
Collected Date/Time: 02/01/2024 11:36
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	125mL Plastic	HNO3	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/24 10:59	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 17:01, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	448	100	1.600	mg/L	100	16887-00-6	

Method: E300.0, Run Date: 02/02/24 17:53, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	5.0	0.650	mg/L	25	16984-48-8	
Sulfate	341	25.0	1.475	mg/L	25	14808-79-8	

Method: SM2320B, Run Date: 02/14/24 19:06, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	588	50	2.52	mg/L	5	71-52-3	
Carbonate*	Not detected	50	2.52	mg/L	5	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 13:06, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	756	100	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/08/24 23:53, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	1,590	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/07/24 22:24, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	6.5	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/24 12:38, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	0.005	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.158	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	0.16	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	

Lab Sample ID: S58313.01 (continued)
Sample Tag: MW-16A L401212-01

Method: E200.8, Run Date: 02/07/24 12:38, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	
Iron	4.38	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/24 14:40, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Magnesium	46.9	0.50	0.058	mg/L	5	7439-95-4	
Potassium	1.57	0.50	0.12	mg/L	5	7440-09-7	

Method: E200.8, Run Date: 02/07/24 14:43, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	208	5.0	2.2	mg/L	50	7440-70-2	
Sodium	277	5.0	1.1	mg/L	50	7440-23-5	

Method: E245.1, Run Date: 02/09/24 13:42, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 10:35, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58313.02
Sample Tag: MW-16B L401212-02
Collected Date/Time: 02/01/2024 13:02
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	125mL Plastic	HNO3	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/24 10:59	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 16:10, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	4.1	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	0.7	1.0	0.130	mg/L	5	16984-48-8	b
Sulfate	17.4	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/14/24 19:19, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	414	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 13:08, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	358	100	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/08/24 23:53, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	364	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/07/24 22:24, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	1.0	3	1	mg/L	1		b

Metals

Method: E200.8, Run Date: 02/07/24 12:41, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.089	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	0.11	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58313.02 (continued)
Sample Tag: MW-16B L401212-02

Method: E200.8, Run Date: 02/07/24 12:41, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.33	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.020	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	0.006	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/24 14:45, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	81.8	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	32.4	0.50	0.058	mg/L	5	7439-95-4	
Potassium	2.90	0.50	0.12	mg/L	5	7440-09-7	
Sodium	10.3	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/09/24 13:45, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 10:35, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58313.03
Sample Tag: MW-16C L401212-03
Collected Date/Time: 02/01/2024 14:43
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	125mL Plastic	HNO3	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/24 10:59	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 16:20, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	2.3	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	0.2	1.0	0.130	mg/L	5	16984-48-8	b
Sulfate	7.5	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/14/24 19:25, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	414	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 13:10, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	305	100	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/08/24 23:53, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	328	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/07/24 22:24, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/24 12:45, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	0.003	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.031	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	0.42	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58313.03 (continued)
Sample Tag: MW-16C L401212-03

Method: E200.8, Run Date: 02/07/24 12:45, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.46	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.029	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/24 14:46, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	72.6	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	27.9	0.50	0.058	mg/L	5	7439-95-4	
Potassium	4.93	0.50	0.12	mg/L	5	7440-09-7	
Sodium	15.8	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/09/24 13:48, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 10:35, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58313.04

Sample Tag: MW-16D L401212-04

Collected Date/Time: 02/01/2024 12:40

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	125mL Plastic	HNO3	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/24 10:59	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 16:31, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	7.6	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	0.4	1.0	0.130	mg/L	5	16984-48-8	b
Sulfate	4.2	5.0	0.295	mg/L	5	14808-79-8	b

Method: SM2320B, Run Date: 02/14/24 19:34, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	394	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 13:12, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	124	100	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/08/24 23:53, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	380	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/07/24 22:24, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	3.0	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/24 12:48, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	0.004	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.035	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	5.01	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58313.04 (continued)

Sample Tag: MW-16D L401212-04

Method: E200.8, Run Date: 02/07/24 12:48, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.48	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.028	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	0.010	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	0.008	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/24 14:48, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	29.3	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	7.10	0.50	0.058	mg/L	5	7439-95-4	
Potassium	9.30	0.50	0.12	mg/L	5	7440-09-7	
Sodium	95.0	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/09/24 13:52, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 10:35, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58313.05
Sample Tag: MWT-16B L401212-05
Collected Date/Time: 02/01/2024 13:02
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	125mL Plastic	HNO3	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/24 10:59	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 16:41, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	4.0	5.0	0.080	mg/L	5	16887-00-6	b
Fluoride (Undistilled)	0.7	1.0	0.130	mg/L	5	16984-48-8	b
Sulfate	17.4	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/14/24 19:42, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	422	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 13:14, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	377	100	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/08/24 23:53, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	366	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/07/24 22:24, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/24 12:51, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.0023	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.0015	mg/L	5	7440-38-2	
Barium	0.087	0.005	0.00090	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.00020	mg/L	5	7440-41-7	
Boron	0.12	0.04	0.016	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.00035	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.00075	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.00045	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.00080	mg/L	5	7440-50-8	

b-Value detected less than reporting limit, but greater than MDL

Lab Sample ID: S58313.05 (continued)
Sample Tag: MWT-16B L401212-05

Method: E200.8, Run Date: 02/07/24 12:51, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Iron	0.32	0.02	0.014	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.00045	mg/L	5	7439-92-1	
Lithium*	0.021	0.005	0.0014	mg/L	5	7439-93-2	
Molybdenum	0.006	0.005	0.0042	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.0012	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.0044	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.00025	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.00035	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.0021	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.0033	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/24 14:51, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	79.9	0.50	0.22	mg/L	5	7440-70-2	
Magnesium	32.1	0.50	0.058	mg/L	5	7439-95-4	
Potassium	2.90	0.50	0.12	mg/L	5	7440-09-7	
Sodium	10.3	0.50	0.11	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/09/24 13:55, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 10:35, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S58313.06
Sample Tag: Field Blank L401212-06
Collected Date/Time: 02/01/2024 09:40
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	125mL Plastic	HNO3	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/24 10:59	CTV	
Metal Digestion	Completed	SW3015A	02/07/24 10:15	CCM	

Inorganics

Method: E300.0, Run Date: 02/02/24 16:51, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5.0	0.080	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.130	mg/L	5	16984-48-8	
Sulfate	Not detected	5.0	0.295	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/14/24 19:46, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	Not detected	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.504	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/02/24 13:16, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	Not detected	100	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/08/24 23:53, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	Not detected	50	6	mg/L	2		

Method: SM2540D, Run Date: 02/07/24 22:24, Analyst: MDG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/24 11:54, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00090	mg/L	2	7440-36-0	
Arsenic	Not detected	0.002	0.00058	mg/L	2	7440-38-2	
Barium	Not detected	0.005	0.00036	mg/L	2	7440-39-3	
Beryllium	Not detected	0.001	0.000080	mg/L	2	7440-41-7	
Boron	Not detected	0.04	0.0064	mg/L	2	7440-42-8	
Cadmium	Not detected	0.0005	0.00014	mg/L	2	7440-43-9	
Chromium	Not detected	0.005	0.00030	mg/L	2	7440-47-3	
Cobalt	Not detected	0.005	0.00018	mg/L	2	7440-48-4	
Copper	Not detected	0.005	0.00032	mg/L	2	7440-50-8	
Iron	Not detected	0.02	0.0057	mg/L	2	7439-89-6	

Lab Sample ID: S58313.06 (continued)

Sample Tag: Field Blank L401212-06

Method: E200.8, Run Date: 02/07/24 11:54, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.00018	mg/L	2	7439-92-1	
Lithium*	Not detected	0.005	0.00054	mg/L	2	7439-93-2	
Molybdenum	Not detected	0.005	0.0017	mg/L	2	7439-98-7	
Nickel	Not detected	0.005	0.00046	mg/L	2	7440-02-0	
Selenium	Not detected	0.005	0.0017	mg/L	2	7782-49-2	
Silver	Not detected	0.0005	0.00010	mg/L	2	7440-22-4	
Thallium	Not detected	0.002	0.00014	mg/L	2	7440-28-0	
Vanadium	Not detected	0.005	0.00082	mg/L	2	7440-62-2	
Zinc	Not detected	0.005	0.0013	mg/L	2	7440-66-6	

Method: E200.8, Run Date: 02/07/24 14:13, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	Not detected	0.50	0.087	mg/L	2	7440-70-2	
Magnesium	Not detected	0.50	0.023	mg/L	2	7439-95-4	
Potassium	Not detected	0.50	0.048	mg/L	2	7440-09-7	
Sodium	Not detected	0.50	0.044	mg/L	2	7440-23-5	

Method: E245.1, Run Date: 02/09/24 13:58, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 02/29/24 10:35, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories Login Checklist

Lab Set ID: S58313
Client: BWL01 (Board of Water & Light)
Project: Erickson Semi Annual 16A-16D
Submitted: 02/02/2024 09:15   Login User: MMC

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372   FAX:
Email: Environmental_Laboratory@LBWL.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 2.1
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[X] Yes	[ ] No	[ ] N/A	Subcontracting needed? Subcontacted to:	GEL
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: ______________________________ Date: ______________

Merit Laboratories Bottle Preservation Check

Lab Set ID: S58313 Submitted: 02/02/2024 09:15

Client: BWL01 (Board of Water & Light)

Project: Erickson Semi Annual 16A-16D

Initial Preservation Check: 02/02/2024 11:05 MMC

Preservation Recheck (E200.8): N/A

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S58313.01	125mL Plastic HNO3	<2			
S58313.01	1L Plastic HNO3	<2			
S58313.01	1L Plastic HNO3	<2			
S58313.02	125mL Plastic HNO3	<2			
S58313.02	1L Plastic HNO3	<2			
S58313.02	1L Plastic HNO3	<2			
S58313.03	125mL Plastic HNO3	<2			
S58313.03	1L Plastic HNO3	<2			
S58313.03	1L Plastic HNO3	<2			
S58313.04	125mL Plastic HNO3	<2			
S58313.04	1L Plastic HNO3	<2			
S58313.04	1L Plastic HNO3	<2			
S58313.05	125mL Plastic HNO3	<2			
S58313.05	1L Plastic HNO3	<2			
S58313.05	1L Plastic HNO3	<2			
S58313.06	125mL Plastic HNO3	<2			
S58313.06	1L Plastic HNO3	<2			
S58313.06	1L Plastic HNO3	<2			

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME Jennifer Caporale
COMPANY Lansing Board of Water and Light
ADDRESS PO Box 13007 48901-3007
CITY Lansing STATE Mi ZIP CODE 48901
PHONE NO. 517-702-6372 FAX NO. P.O. NO.
E-MAIL ADDRESS Environmental_Laboratory@lbwl.com QUOTE NO.

INVOICE TO

CONTACT NAME Beth Zimpfer [X] SAME
COMPANY
ADDRESS
CITY STATE ZIP CODE
PHONE NO. E-MAIL ADDRESS Beth.Zimpfer@lbwl.com

PROJECT NO./NAME Erickson Semi Annual 16A-16D
SAMPLER(S) - PLEASE PRINT/SIGN NAME Marc Wahrer

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER ______

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☒ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER ______

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	F- undisstiled, Cl-, SO4, TDS	Radium 226	Radium 228	TSS	HCO3, CO3, Hardness					Special Instructions
58313.01	02/01/24	1136	MW-16A L401212-01	GW	5	2		3					✓	✓	✓	✓	✓	✓					Metals to analyse:Na, Mg, K
.02		1302	MW-16B -02	GW	5	2		3					✓	✓	✓	✓	✓	✓					B, Ca, Sb, As, Ba, Be, Cd, Cr,
.03		1443	MW-16C -03	GW	5	2		3					✓	✓	✓	✓	✓	✓					Co, Li, Hg, Mo,Pb,Se, Tl,
.04		1240	MW16-D -04	GW	5	2		3					✓	✓	✓	✓	✓	✓					Fe, Cu, Ni, Ag, V, Zn
.05		1302	MWT-16B -05	GW	5	2		3					✓	✓	✓	✓	✓	✓					Please send a preliminary report
.06		0940	Field Blank -06	DI	5	2		3					✓	✓	✓	✓	✓	✓					

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☒ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other ______

RELINQUISHED BY: SIGNATURE/ORGANIZATION [signature] ☒ Sampler DATE 2-2-24 TIME 0915
RECEIVED BY: SIGNATURE/ORGANIZATION M Chilcott DATE 2/2/24 TIME 0915
RELINQUISHED BY: SIGNATURE/ORGANIZATION DATE TIME
RECEIVED BY: SIGNATURE/ORGANIZATION DATE TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION DATE TIME
RECEIVED BY: SIGNATURE/ORGANIZATION DATE TIME

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 2.1

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Reporting Limits to go to Merit with COC

Sb, total	Antimony	250 mL plastic	mg/L	Nitric Acid	200.7	6 mos	0.005
As, total	Arsenic	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
Ba, total		250 mL plastic	mg/L	Nitric Acid	200.8	6mos	0.150
Be, total	Beryllium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.001
B, total	Boron	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.04
Cd, total	Cadmium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
Ca	Calcium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	2.5
Cl	Chloride	250 mL plastic	mg/L	Chill	300.0	28 d	10
Cr, total	Chromium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Co, total	Cobalt	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Cu, total	Copper	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
F	Fluoride	250 mL plastic	mg/L	None	9056	28 d	1.0
Fe, total	Iron	250 mL plastic	mg/L	Nitric Acid	300.0	6 mos	0.02
Pb, total	Lead	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.003
Li, total	Lithium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Hg, total	Mercury	250 mL plastic	mg/L	HNO3	245.1	28 d	0.0002
Mo, total	Molybdenum	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ni, total	Nickel	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
RA226/228	Radium 226 and 228 combined	(2) 1 L plastic	pCi/L	HNO3	SM 7500	6 mos	2.0 combined
Se, total	Selenium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ag, total	Silver	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
SO4	Sulfate	250 mL plastic	mg/L	Chill	300.0	28 d	10
Tl, total	Thallium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
TDS	Total Dissolved Solids	1 L plastic	mg/L	None	SM 2540C	NA	20
TSS	Total Suspended Solids	1 L plastic	mg/L	None	SM 2540D	NA	3
V, total	Vanadium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Zn, total	Zinc	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005

GEL Laboratories LLC
a member of The GEL Group INC

2040 Savage Road | Charleston, SC 29407
843.556.8171

gel.com

March 04, 2024

John Laverty
Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan 48823

Re: Routine Analysis
Work Order: 654534
SDG: S58313

Dear John Laverty:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 07, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1614.

Sincerely,

Delaney Stonesmith

Delaney Stonesmith
Project Manager

Purchase Order: GELP20-0018
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Merit Laboratories, Inc.
SDG: S58313
Work Order: 654534

March 04, 2024

Laboratory Identification:

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

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 07, 2024 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
654534001	S58313.01
654534002	S58313.02
654534003	S58313.03
654534004	S58313.04
654534005	S58313.05
654534006	S58313.06 Field Blank

Case Narrative:

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

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

Delaney Stonesmith

Delaney Stonesmith
Project Manager

Chain of Custody and Supporting Documentation

654534

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO		INVOICE TO	
CONTACT NAME	Project Management Team	CONTACT NAME	Julie Teague ☒ SAME
COMPANY	Merit Laboratories	COMPANY	Merit Laboratories
ADDRESS	2680 East Lansing Drive	ADDRESS	2680 East Lansing Drive
CITY / STATE / ZIP CODE	East Lansing / MI / 48823	CITY / STATE / ZIP CODE	East Lansing / MI / 48823
PHONE NO. / FAX NO. / P.O. NO.	517-332-0167 / /	PHONE NO.	517-332-0167
E-MAIL ADDRESS / QUOTE NO.	results@meritlabs.com /	E-MAIL ADDRESS	juliet@meritlabs.com

PROJECT NO./NAME S58313 SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☒ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Radium 226*	Radium 228**
	2/1/24	1136	S58313.01	GW	2			2					✓	✓
	2/1/24	1302	S58313.02	GW	2			2					✓	✓
	2/1/24	1443	S58313.03	GW	2			2					✓	✓
	2/1/24	1240	S58313.04	GW	2			2					✓	✓
	2/1/24	1302	S58313.05	GW	2			2					✓	✓
	2/1/24	0940	S58313.06 Field Blank	GW	2			2					✓	✓

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES

Project Locations: ☐ Detroit ☐ New York ☐ Other

Special Instructions

* E903.1 Mod.

** E904.0/SW 9320 Mod.

Please use calculation product & provide Radium 226/228 combined results on the report

(No Ice needed)

** Subcontracted to GEL Laboratories, Inc.
2040 Savage Road
Charleston, SC 29407

	SIGNATURE/ORGANIZATION	DATE	TIME
RELINQUISHED BY:	[signature] ☐ Sampler	2/5/24	1700
RECEIVED BY:	UPS	2/5/24	1700
RELINQUISHED BY:			
RECEIVED BY:	[signature]	2/7/24	1000

	SIGNATURE/ORGANIZATION	DATE	TIME
RELINQUISHED BY:			
RECEIVED BY:			

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: MERI	SDG/AR/COC/Work Order: 654534
Received By: STACY BOONE	Date Received: ~~FEBRUARY 8, 2024~~ FEB 7, 2024 AM 02/09/24
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 1Z 466 477 03 6104 0061 17°c

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A) Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		✓		Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP:_______
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR3-23 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___ (If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

1Z 466 477 03 6216 5658 20°c

PM (or PMA) review: Initials __________ Date __________ Page ____ of ____

GL-CHL-SR-001 Rev 7

Laboratory Certifications

List of current GEL Certifications as of 04 March 2024

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-23-21
Utah NELAP	SC000122023-38
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
Merit Laboratories, Inc.
SDG #: S58313
Work Order #: 654534

Product: **Radium-226+Radium-228 Calculation**
Analytical Method: Calculation
Analytical Procedure: GL-RAD-D-003 REV# 45
Analytical Batch: 2570945

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

GEL Sample ID#	Client Sample Identification
654534001	S58313.01
654534002	S58313.02
654534003	S58313.03
654534004	S58313.04
654534005	S58313.05
654534006	S58313.06 Field Blank

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

Data Summary:

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

Product: **GFPC Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2570188

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

GEL Sample ID#	Client Sample Identification
654534001	S58313.01
654534002	S58313.02
654534003	S58313.03
654534004	S58313.04
654534005	S58313.05
654534006	S58313.06 Field Blank
1205653413	Method Blank (MB)
1205653414	654532001(S58248.01) Sample Duplicate (DUP)
1205653415	Laboratory Control Sample (LCS)

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

Data Summary:

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

Product: Lucas Cell, Ra226, Liquid
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2570163

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

GEL Sample ID#	Client Sample Identification
654534001	S58313.01
654534002	S58313.02
654534003	S58313.03
654534004	S58313.04
654534005	S58313.05
654534006	S58313.06 Field Blank
1205653334	Method Blank (MB)
1205653335	654233023(NonSDG) Sample Duplicate (DUP)
1205653336	654233023(NonSDG) Matrix Spike (MS)
1205653337	Laboratory Control Sample (LCS)

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

Data Summary:

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

Miscellaneous Information

Additional Comments
The matrix spike, 1205653336 (Non SDG 654233023MS), aliquot was reduced to conserve sample volume.

Certification Statement

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

GEL LABORATORIES LLC

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

Qualifier Definition Report
for

MERI001 Merit Laboratories, Inc.

Client SDG: S58313 GEL Work Order: 654534

The Qualifiers in this report are defined as follows:

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

Review/Validation

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

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

Signature: John Petrovic **Name:** **John Petrovic**

Date: **04 MAR 2024** **Title:** **Data Validator**

Sample Data Summary

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58313.01	Project:	MERI00120
Sample ID:	654534001	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	01-FEB-24 11:36		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228		2.12	+/-1.15	1.72	3.00	pCi/L			JE1	02/29/24	1206	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		3.74	+/-1.34			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.63	+/-0.690	0.821	1.00	pCi/L			MJ2	02/29/24	1035	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			89.5	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58313.02	Project:	MERI00120
Sample ID:	654534002	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	01-FEB-24 13:02		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.767	+/-0.998	1.70	3.00	pCi/L			JE1	02/29/24	1206	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.09	+/-1.19			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.32	+/-0.646	0.822	1.00	pCi/L			MJ2	02/29/24	1121	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			87.5	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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

Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58313.03	Project:	MERI00120
Sample ID:	654534003	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	01-FEB-24 14:43		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.845	+/-1.31	2.24	3.00	pCi/L			JE1	02/29/24	1206	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.30	+/-1.44			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.46	+/-0.602	0.651	1.00	pCi/L			MJ2	02/29/24	1121	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			79.5	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58313.04	Project:	MERI00120
Sample ID:	654534004	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	01-FEB-24 12:40		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.243	+/-1.06	1.93	3.00	pCi/L			JE1	02/29/24	1206	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.812	+/-1.12			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.569	+/-0.366	0.396	1.00	pCi/L			MJ2	02/29/24	1121	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			83.4	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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

Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58313.05	Project:	MERI00120
Sample ID:	654534005	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	01-FEB-24 13:02		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.495	+/-0.847	1.49	3.00	pCi/L			JE1	02/29/24	1206	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.10	+/-0.929			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.608	+/-0.381	0.499	1.00	pCi/L			MJ2	02/29/24	1121	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			84.1	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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

Certificate of Analysis

Report Date: March 4, 2024

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S58313.06 Field Blank	Project:	MERI00120
Sample ID:	654534006	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	01-FEB-24 09:40		
Receive Date:	07-FEB-24		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.34	+/-1.27	2.10	3.00	pCi/L			JE1	02/29/24	1206	2570188	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.61	+/-1.33			pCi/L		1	TON1	03/04/24	0733	2570945	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.272	+/-0.398	0.695	1.00	pCi/L			MJ2	02/29/24	1121	2570163	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			82.9	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Quality Control Data

GEL LABORATORIES LLC

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

QC Summary

Report Date: March 4, 2024

Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan

Contact: **John Laverty**

Workorder: **654534**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2570188										
QC1205653414 654532001 DUP										
Radium-228	U	0.161	U	0.346	pCi/L	N/A		N/A	JE1	02/29/24 12:06
	Uncertainty	+/-1.06		+/-0.655						
QC1205653415 LCS										
Radium-228	72.1			60.4	pCi/L		83.8	(75%-125%)		02/29/24 12:06
	Uncertainty			+/-4.09						
QC1205653413 MB										
Radium-228			U	-0.0339	pCi/L					02/29/24 12:06
	Uncertainty			+/-1.17						
Rad Ra-226										
Batch 2570163										
QC1205653335 654233023 DUP										
Radium-226	U	0.415		0.535	pCi/L	25.3		(0% - 100%)	MJ2	02/29/24 11:21
	Uncertainty	+/-0.352		+/-0.300						
QC1205653337 LCS										
Radium-226	53.8			43.4	pCi/L		80.6	(75%-125%)		03/01/24 04:24
	Uncertainty			+/-4.23						
QC1205653334 MB										
Radium-226			U	0.252	pCi/L					02/29/24 09:56
	Uncertainty			+/-0.431						
QC1205653336 654233023 MS										
Radium-226	117 U	0.415		88.7	pCi/L		75.7	(75%-125%)		02/29/24 11:21
	Uncertainty	+/-0.352		+/-8.62						

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported

QC Summary

Workorder: **654534**

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

UI	Gamma Spectroscopy--Uncertain identification
BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
**	Analyte is a Tracer compound
M	REMP Result > MDC/CL and < RDL
J	See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Gas Flow Raw Data

Batch 2570188 Check-list

This check-list was completed on 29-FEB-24 by Nat Long

This batch was reviewed by Kenshalla Oston on 29-FEB-24 and Nat Long on 29-FEB-24.

Batch ID: 2570188 **Product:** GFC28RAL **Description:** Gas Flow Radium 228 GL-RAD-A-063

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were all tracer/carrier recoveries within the required acceptance limits?	Yes		
10	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-228 in Liquid

Batch ID: **2570188**
Analyst: Jacqueline Winston (JE1)
Method: EPA 904.0/SW846 9320 Modified
Lab SOP: GL-RAD-A-063 REV# 5
Instrument: SP-C018367602

Due Dates for Lab: 03-MAR-2024 **Package: 05-MAR-2024** **SDG: 06-MAR-2024**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1205653415	Radium 228	2051-D	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Separation (date)
1	654532001	26-FEB-2024	3	306.63	306.63	02/27/24 12:56	02/29/24 09:18
2	654532002	26-FEB-2024	3	302.23	302.23	02/27/24 12:56	02/29/24 09:18
3	654532003	26-FEB-2024	3	305.13	305.13	02/27/24 12:56	02/29/24 09:18
4	654532004	26-FEB-2024	3	303.93	303.93	02/27/24 12:56	02/29/24 09:18
5	654532005	26-FEB-2024	3	303.93	303.93	02/27/24 12:56	02/29/24 09:18
6	654532006	26-FEB-2024	3	314.53	314.53	02/27/24 12:56	02/29/24 09:18
7	654532007	26-FEB-2024	3	301.53	301.53	02/27/24 12:56	02/29/24 09:18
8	654532008	26-FEB-2024	3	304.33	304.33	02/27/24 12:56	02/29/24 09:18
9	654534001	26-FEB-2024	3	310.23	310.23	02/27/24 12:56	02/29/24 09:18
10	654534002	26-FEB-2024	3	300.53	300.53	02/27/24 12:56	02/29/24 09:18
11	654534003	26-FEB-2024	3	300.83	300.83	02/27/24 12:56	02/29/24 09:18
12	654534004	26-FEB-2024	3	300.33	300.33	02/27/24 12:56	02/29/24 09:18
13	654534005	26-FEB-2024	3	300.23	300.23	02/27/24 12:56	02/29/24 09:18
14	654534006	26-FEB-2024	3	304.33	304.33	02/27/24 12:56	02/29/24 09:18
15	655017001	26-FEB-2024	3	308.13	308.13	02/27/24 12:56	02/29/24 09:18
16	655017002	26-FEB-2024	3	301.63	301.63	02/27/24 12:56	02/29/24 09:18
17	655017003	26-FEB-2024	3	302.03	302.03	02/27/24 12:56	02/29/24 09:18
18	655017004	26-FEB-2024	3	303.63	303.63	02/27/24 12:56	02/29/24 09:18
19	655017005	26-FEB-2024	3	300.33	300.33	02/27/24 12:56	02/29/24 09:18
20	655017006	26-FEB-2024	3	307.53	307.53	02/27/24 12:56	02/29/24 09:18
21	1205653413 MB	26-FEB-2024	3		314.53	02/27/24 12:56	02/29/24 09:18
22	1205653414 DUP (654532001)	26-FEB-2024	3	302.23	302.23	02/27/24 12:56	02/29/24 09:18
23	1205653415 LCS	26-FEB-2024	3		314.53	02/27/24 12:56	02/29/24 09:18

Reagent/Solvent Lot ID	Description	Amount
WORK 2097-B	Ba-133 Tracer	.1 mL
REGNT 4214820	Barium Carrier Ra228 REG	1 mL
REGNT 4223988	RGF-1M Citric Acid	5 mL
REGNT 4226396	2M HCl	20 mL
REGNT 4221876	RGF-50% Potassium Carbonate	2 mL
REGNT 3867033.5	RGF-Hydrofluoric Acid	4 mL
REGNT 4209237	500 mg/mL Neodymium Carrier	.2 mL
REGNT 4216641	RGF-Neodymium Subtrate	5 mL
REGNT 4229023	RGF-1.5M Ammonium Sulfate	10 mL
REGNT 4221872	RGF-7M Nitric Acid	25 mL
REGNT 4072674	Acetic Acid Glacial ACS Poly Coated Bottle	10 mL
REGNT DGA12292023	2561518	2 g
REGNT 4208393.51	Nitric Acid	5 mL

Comments:
Pipet Id: RAD-GFC-1795419
Data Entry Date2: 26-FEB-2024 00:00

Prep Logbook

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Separation (date)

Reagent/Solvent Lot ID	Description	Amount

Comments:

Radium-228 Liquid

Filename : RA228.XLS
File type : Excel
Version # : 1.4.3

Tracer S/N : 2097-B
Tracer Exp Date : 7/12/2024
Tracer Volume Added: 0.10

Batch : 2570188
Analyst : JAC02417
Prep Date : 2/26/2024
Ra-228 Method Uncertainty : 0.1268

Geometry: 25mm Filter

Procedure Code : GFC28RAL
Parmname : Radium-228
Required MDA : 3 pCi/L
Ra-228 Abundance : 1.00
Halflife of Ra-228 : 5.75 years
Halflife of Ac-228 : 6.15 hours

Sample Characteristics Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	**Tracer Calculations** Tracer Ref. Activity (CPM)	Tracer Ref. Count Uncertainty (%)	Tracer Samp. Activity (CPM)	Tracer Samp. Count Uncertainty (%)	Tracer Aliquot (mL)	Tracer Aliquot StDev. (mL)
1	654532001.1	0.3066	1.8569E-05	1/31/2024 11:54	771.7	2.08%	624.6	2.31%	0.1	0.000200
2	654532002.1	0.3022	1.8497E-05	1/31/2024 13:13	771.7	2.08%	630.0	2.30%	0.1	0.000200
3	654532003.1	0.3051	1.8545E-05	1/31/2024 17:34	771.7	2.08%	599.9	2.36%	0.1	0.000200
4	654532004.1	0.3039	1.8525E-05	1/31/2024 10:06	771.7	2.08%	607.7	2.34%	0.1	0.000200
5	654532005.1	0.3039	1.8525E-05	1/31/2024 15:22	771.7	2.08%	685.7	2.20%	0.1	0.000200
6	654532006.1	0.3145	1.8694E-05	1/31/2024 16:56	771.7	2.08%	625.8	2.31%	0.1	0.000200
7	654532007.1	0.3015	1.8485E-05	1/31/2024 13:13	771.7	2.08%	595.8	2.37%	0.1	0.000200
8	654532008.1	0.3043	1.8532E-05	1/31/2024 7:55	771.7	2.08%	601.5	2.35%	0.1	0.000200
9	654534001.1	0.3102	1.8627E-05	2/1/2024 11:36	771.7	2.08%	690.7	2.20%	0.1	0.000200
10	654534002.1	0.3005	1.8468E-05	2/1/2024 13:02	771.7	2.08%	675.4	2.22%	0.1	0.000200
11	654534003.1	0.3008	1.8473E-05	2/1/2024 14:43	771.7	2.08%	613.2	2.33%	0.1	0.000200
12	654534004.1	0.3003	1.8465E-05	2/1/2024 12:40	771.7	2.08%	643.5	2.28%	0.1	0.000200
13	654534005.1	0.3002	1.8463E-05	2/1/2024 13:02	771.7	2.08%	648.7	2.27%	0.1	0.000200
14	654534006.1	0.3043	1.8532E-05	2/1/2024 9:40	771.7	2.08%	640.1	2.28%	0.1	0.000200
15	655017001.1	0.3081	1.8594E-05	2/7/2024 15:20	771.7	2.08%	629.9	2.30%	0.1	0.000200
16	655017002.1	0.3016	1.8487E-05	2/7/2024 11:14	771.7	2.08%	650.3	2.26%	0.1	0.000200
17	655017003.1	0.3020	1.8493E-05	2/7/2024 12:43	771.7	2.08%	643.4	2.28%	0.1	0.000200
18	655017004.1	0.3036	1.8520E-05	2/7/2024 14:18	771.7	2.08%	587.3	2.38%	0.1	0.000200
19	655017005.1	0.3003	1.8465E-05	2/7/2024 12:43	771.7	2.08%	639.8	2.28%	0.1	0.000200
20	655017006.1	0.3075	1.8584E-05	2/7/2024 9:18	771.7	2.08%	601.8	2.35%	0.1	0.000200
21	1205653413.1	0.3145	1.8694E-05	2/26/2024 0:00	771.7	2.08%	630.8	2.30%	0.1	0.000200
22	1205653414.1	0.3022	1.8497E-05	1/31/2024 11:54	771.7	2.08%	633.3	2.29%	0.1	0.000200
23	1205653415.1	0.3145	1.8694E-05	2/26/2024 0:00	771.7	2.08%	622.0	2.32%	0.1	0.000200

Pipet, 0.1 ml Stdev : +/-	0.000200	ml
Pipet, 0.5 ml Stdev : +/-	0.001000	ml
Pipet, 1 ml Stdev : +/-	0.002000	ml

Analytical SOP: GL-RAD-A-063
Instrument SOP: GL-RAD-I-016

Count raw Data

Pos.	Detector ID	Counting Time (min.)	Gross Counts Alpha	Gross Counts Beta	Beta cpm	Count Start Date/Time	Ac-228 Ingrowth Date/Time	Ac-228 Decay Date/Time	Ra-228 Decay	Ac-228 Decay	Ac-228 Ingrowth	Ac-228 Count Correction	Calculated Sample Recovery %	Sample Recovery Error %
1	1D	60	9	49	0.817	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.990	0.730	0.993	1.057	80.9%	3.12%
2	3B	60	7	44	0.733	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.990	0.730	0.993	1.057	81.6%	3.11%
3	5D	60	2	41	0.683	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.991	0.730	0.993	1.057	77.7%	3.16%
4	6B	70	6	84	1.200	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.990	0.730	0.993	1.067	78.7%	3.14%
5	7A	60	5	35	0.583	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.991	0.730	0.993	1.057	88.9%	3.04%
6	7D	60	7	26	0.433	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.991	0.730	0.993	1.057	81.1%	3.12%
7	8D	70	17	87	1.243	2/29/2024 12:05	2/27/2024 12:56	2/29/2024 9:18	0.990	0.729	0.993	1.067	77.2%	3.17%
8	9A	60	11	64	1.067	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.990	0.729	0.993	1.057	77.9%	3.15%
9	9B	60	12	86	1.433	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.729	0.993	1.057	89.5%	3.04%
10	9D	60	12	53	0.883	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.729	0.993	1.057	87.5%	3.06%
11	11A	80	16	130	1.625	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.728	0.993	1.077	79.5%	3.14%
12	11C	60	12	55	0.917	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.728	0.993	1.057	83.4%	3.10%
13	11D	60	11	36	0.600	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.728	0.993	1.057	84.1%	3.09%
14	12A	80	5	141	1.763	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.991	0.728	0.993	1.077	82.9%	3.10%
15	12B	60	6	63	1.050	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	81.6%	3.11%
16	12C	60	17	40	0.667	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	84.3%	3.08%
17	12D	60	5	29	0.483	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	83.4%	3.10%
18	13A	60	10	57	0.950	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	76.1%	3.17%
19	13B	60	9	77	1.283	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.728	0.993	1.057	82.9%	3.10%
20	13D	60	16	69	1.150	2/29/2024 12:07	2/27/2024 12:56	2/29/2024 9:18	0.993	0.727	0.993	1.057	78.0%	3.15%
21	14A	110	12	207	1.882	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.999	0.729	0.993	1.107	81.7%	3.11%
22	14B	60	6	22	0.367	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.990	0.729	0.993	1.057	82.1%	3.11%
23	14C	60	6	920	15.333	2/29/2024 12:06	2/27/2024 12:56	2/29/2024 9:18	0.999	0.729	0.993	1.057	80.6%	3.13%

Pos.	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Bkg cpm	Weekly Bkg Count Start Date/Time	Bkg Count Time (min.)
Calibration Data								
1	PIC	6/1/2023	5/31/2024	0.6071	0.00692	0.780	2/23/2024 17:51	500
2	PIC	6/1/2023	5/31/2024	0.6266	0.01614	0.598	2/23/2024 17:51	500
3	PIC	6/1/2023	5/31/2024	0.6566	0.00925	0.480	2/23/2024 17:52	500
4	PIC	6/1/2023	5/31/2024	0.5957	0.00851	1.020	2/23/2024 17:49	500
5	PIC	6/1/2023	5/31/2024	0.6229	0.00594	0.372	2/23/2024 17:49	500
6	PIC	6/1/2023	5/31/2024	0.6247	0.01113	0.432	2/23/2024 17:50	500
7	PIC	6/1/2023	5/31/2024	0.6073	0.00609	1.076	2/23/2024 17:50	500
8	PIC	6/1/2023	5/31/2024	0.6343	0.00758	0.710	2/23/2024 17:50	500
9	PIC	6/1/2023	5/31/2024	0.6496	0.00754	0.858	2/23/2024 17:50	500
10	PIC	6/1/2023	5/31/2024	0.6292	0.02610	0.692	2/23/2024 17:50	500
11	PIC	6/1/2023	5/31/2024	0.6466	0.01317	1.432	2/23/2024 17:48	500
12	PIC	6/1/2023	5/31/2024	0.6409	0.01278	0.858	2/23/2024 17:49	500
13	PIC	6/1/2023	5/31/2024	0.6379	0.01068	0.480	2/23/2024 17:49	500
14	PIC	6/1/2023	5/31/2024	0.6537	0.01964	1.436	2/23/2024 17:49	500
15	PIC	6/1/2023	5/31/2024	0.6488	0.01114	0.920	2/23/2024 17:49	500
16	PIC	6/1/2023	5/31/2024	0.6434	0.01666	0.548	2/23/2024 17:49	500
17	PIC	6/1/2023	5/31/2024	0.6498	0.01845	0.398	2/23/2024 17:49	500
18	PIC	6/1/2023	5/31/2024	0.6259	0.00714	0.948	2/23/2024 17:49	500
19	PIC	6/1/2023	5/31/2024	0.6399	0.00967	0.668	2/23/2024 17:49	500
20	PIC	6/1/2023	5/31/2024	0.6360	0.01144	0.882	2/23/2024 17:49	500
21	PIC	6/1/2023	5/31/2024	0.6482	0.02119	1.890	2/24/2024 11:03	500
22	PIC	6/1/2023	5/31/2024	0.6549	0.01028	0.282	2/23/2024 17:53	500
23	PIC	6/1/2023	5/31/2024	0.6309	0.01828	0.668	2/23/2024 17:53	500

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N :	N/A
Spike Exp Date :	N/A
Spike Activity (dpm/ml):	N/A
Spike Volume Added:	N/A
LCS S/N :	2051-D
LCS Exp Date :	7/12/2024
LCS Activity (dpm/ml):	503.35
LCS Volume Added:	0.10

Results Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	1.2378	0.8739	3	1.9679	**0.1614**	335.94%	0.0367	0.1232	1.0629	1.0637		SAMPLE				
2	1.0563	0.7457	3	1.7060	**0.5807**	85.67%	0.1353	0.1158	0.9742	0.9856		SAMPLE				
3	0.9395	0.6633	3	1.5396	**0.8662**	54.75%	0.2033	0.1111	0.9278	0.9541		SAMPLE				
4	1.4102	0.9956	3	2.1925	**0.8453**	77.01%	0.1800	0.1385	1.2748	1.2931		SAMPLE				
5	0.7657	0.5406	3	1.2784	**0.8335**	48.51%	0.2113	0.1023	0.7908	0.8191		SAMPLE				
6	0.8712	0.6151	3	1.4384	**5.552E-03**	6744.26%	0.0013	0.0899	0.7339	0.7341		SAMPLE				
7	1.4615	1.0318	3	2.2667	**0.7906**	84.62%	0.1669	0.1411	1.3103	1.3259		SAMPLE				
8	1.1835	0.8356	3	1.8918	**1.5737**	38.98%	0.3567	0.1386	1.1982	1.2644		SAMPLE				
9	1.0850	0.7660	3	1.7161	**2.1170**	27.99%	0.5753	0.1600	1.1541	1.2750		SAMPLE				
10	1.0622	0.7499	3	1.7003	**0.7674**	66.45%	0.1913	0.1269	0.9977	1.0176		SAMPLE				
11	1.4702	1.0379	3	2.2401	**0.8451**	78.95%	0.1930	0.1522	1.3066	1.3245		SAMPLE				
12	1.2209	0.8620	3	1.9310	**0.2429**	222.23%	0.0587	0.1304	1.0579	1.0597		SAMPLE				
13	0.9105	0.6428	3	1.4920	**0.4954**	87.30%	0.1200	0.1047	0.8471	0.8566		SAMPLE				
14	1.3795	0.9740	3	2.1018	**1.3397**	48.47%	0.3265	0.1578	1.2691	1.3156		SAMPLE				
15	1.2414	0.8765	3	1.9562	**0.5285**	107.03%	0.1300	0.1391	1.1082	1.1165		SAMPLE				
16	0.9563	0.6751	3	1.5531	**0.4815**	93.17%	0.1187	0.1105	0.8787	0.8875		SAMPLE				
17	0.8145	0.5751	3	1.3529	**0.3461**	110.31%	0.0853	0.0941	0.7479	0.7532		SAMPLE				
18	1.4225	1.0043	3	2.2381	**9.179E-03**	6657.58%	0.0020	0.1332	1.1978	1.1979		SAMPLE				
19	1.0840	0.7653	3	1.7390	**2.5637**	24.71%	0.6153	0.1507	1.2310	1.3957		SAMPLE				
20	1.3015	0.9189	3	2.0554	**1.1667**	54.09%	0.2680	0.1447	1.2345	1.2704		SAMPLE				
21	1.3961	0.9856	3	2.0841	**-0.0339**	1766.42%	-0.0082	0.1445	1.1723	1.1723		MB				
22	0.6915	0.4882	3	1.1809	**0.3463**	96.55%	0.0847	0.0817	0.6550	0.6610	654532001.1	DUP	* 0.0%			
23	1.0720	0.7569	3	1.7198	**60.4261**	5.01%	14.6653	0.5068	4.0932	16.1462		LCS			72.0872	83.8%

SampleID	Instr	Time (min.)	Alpha Counts	Beta Counts	Count Start Time	Count End Time	Machine	Batch ID
654532001	1D	60	9	49	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532002	3B	60	7	44	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532003	5D	60	2	41	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532004	6B	70	6	84	2/29/2024 12:05	2/29/2024 13:15	PIC	2570188
654532005	7A	60	5	35	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532006	7D	60	7	26	2/29/2024 12:05	2/29/2024 13:05	PIC	2570188
654532007	8D	70	17	87	2/29/2024 12:05	2/29/2024 13:15	PIC	2570188
654532008	9A	60	11	64	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534001	9B	60	12	86	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534002	9D	60	12	53	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534003	11A	80	16	130	2/29/2024 12:06	2/29/2024 13:26	PIC	2570188
654534004	11C	60	12	55	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534005	11D	60	11	36	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
654534006	12A	80	5	141	2/29/2024 12:06	2/29/2024 13:26	PIC	2570188
655017001	12B	60	6	63	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017002	12C	60	17	40	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017003	12D	60	5	29	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017004	13A	60	10	57	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017005	13B	60	9	77	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
655017006	13D	60	16	69	2/29/2024 12:07	2/29/2024 13:07	PIC	2570188
1205653413	14A	110	12	207	2/29/2024 12:06	2/29/2024 13:56	PIC	2570188
1205653414	14B	60	6	22	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188
1205653415	14C	60	6	920	2/29/2024 12:06	2/29/2024 13:06	PIC	2570188

ASSAY 29-Feb-24 11:54:29
Wizard 1480 s/n 4800440

Protocol	id	9	228_REC2
Time	limit	180	
Count	limit	50000	
Isotope	Ba-133		
Protocol	date	26-Sep-13	15:01:58
Run	id.	45	

Samp_ID	POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR	% RECOVERY	COUNT TIME
REF	1	87	1	180	2315	771.7	2.08		11:54:36
654532001	2	87	2	180	1873	624.6	2.31	80.94	11:57:48
654532002	3	87	3	180	1890	630	2.3	81.64	12:00:59
654532003	4	87	4	180	1799	599.9	2.36	77.74	12:04:11
654532004	5	87	5	180	1823	607.7	2.34	78.75	12:07:22
654532005	6	99	6	180	2057	685.7	2.2	88.86	12:10:47
654532006	7	99	7	180	1877	625.8	2.31	81.09	12:13:58
654532007	8	99	8	180	1787	595.8	2.37	77.21	12:17:09
654532008	9	99	9	180	1804	601.5	2.35	77.94	12:20:21
654534001	10	99	10	180	2072	690.7	2.2	89.50	12:23:32
654534002	11	37	11	180	2026	675.4	2.22	87.52	12:26:57
654534003	12	37	12	180	1839	613.2	2.33	79.46	12:30:08
654534004	13	37	13	180	1930	643.5	2.28	83.39	12:33:20
654534005	14	37	14	180	1946	648.7	2.27	84.06	12:36:31
654534006	15	37	15	180	1920	640.1	2.28	82.95	12:39:42
655017001	16	81	16	180	1890	629.9	2.3	81.62	12:43:06
655017002	17	81	17	180	1951	650.3	2.26	84.27	12:46:18
655017003	18	81	18	180	1930	643.4	2.28	83.37	12:49:29
655017004	19	81	19	180	1762	587.3	2.38	76.10	12:52:40
655017005	20	81	20	180	1919	639.8	2.28	82.91	12:55:52
655017006	21	84	21	180	1805	601.8	2.35	77.98	12:59:29
1205653413	22	84	22	180	1892	630.8	2.3	81.74	13:02:40
1205653414	23	84	23	180	1900	633.3	2.29	82.07	13:05:52
1205653415	24	84	24	180	1866	622	2.32	80.60	13:09:03

END OF ASSAY

Continuing Calibration Data

Gas Flow Proportional Counter Checks for 29-Feb-2024

Detectors LB4100 E1 through H4 and PIC 1A through 14D and G5400W 1W through 1Z and LB4200 GA1 through OD4

Short Name	Status	Parmname	Run Time	Count Time	CPM or dec	Low Limit	High Limit	Stdev
LB4100F4	Below	Alpha eff	29-Feb 08:14	5	16766	16940	18140	-3.87
LB4100F4	Above	Alpha XTalk	29-Feb 08:14	5	0.199	0.170	0.193	+4.84
LB4100H1	Above	Alpha bkg	29-Feb 04:47	60	0.517	-8.08E-2	0.225	+8.71
LB4100H1	Above	Alpha eff	29-Feb 05:54	5	12028	7523	11160	+4.43
LB4100H1	Above	Beta bkg	29-Feb 04:47	60	3.433	-5.15E-1	3.743	+2.56
LB4100H2	Above	Alpha bkg	29-Feb 04:47	60	0.333	0.057	0.420	+1.57
LB4200GB2	Below	Alpha eff	29-Feb 06:08	5	9343	9443	9898	-4.32
LB4200GB2	Above	Beta bkg	29-Feb 04:56	60	20.800	0.129	1.304	+102.51
LB4200GD3	Above	Alpha bkg	29-Feb 04:56	60	0.350	-1.04E-1	0.321	+3.41
LB4200OB1	need 2nd	Alpha bkg	29-Feb 04:53	60	0.083	-1.05E-1	0.362	-0.58
LB4200OB1	need 2nd	Beta bkg	29-Feb 04:53	60	1.833	-2.59E-1	2.044	+2.45
LB4200OC2	Above	Alpha bkg	29-Feb 07:34	60	1.017	-1.37E-1	0.428	+9.25
LB4200OC2	Above	Beta bkg	29-Feb 07:34	60	3.317	-6.67E-2	2.499	+4.91
PIC2D	need 2nd	Beta bkg	29-Feb 08:50	60	1.717	0.417	1.868	+2.37
PIC4C	Above	Alpha bkg	29-Feb 06:36	60	0.400	-2.25E-1	1.312	-0.56
PIC6B	need 2nd	Beta bkg	29-Feb 09:01	60	1.683	0.262	2.449	+0.90
PIC8D	need 2nd	Alpha bkg	29-Feb 08:53	60	0.200	-4.64E-2	0.372	+0.54
PIC14D	need 2nd	Beta bkg	29-Feb 08:50	60	1.983	-2.45E-1	2.368	+2.12

INSTRUMENTS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

The following detectors may not have properly transferred to the LIMS system

PIC1B	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
PIC5B	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
PIC10B	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk

Reviewed by Jasmine Conley

Date 2/29/24

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: GFPC **Batch ID: 2570188**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
654532001	SAMPLE	JE1	PIC1D	FEB-29-24 12:05:37	DONE	25mm Filter	01-JUN-23 00:00
654532002	SAMPLE	JE1	PIC3B	FEB-29-24 12:05:40	DONE	25mm Filter	01-JUN-23 00:00
654532004	SAMPLE	JE1	PIC6B	FEB-29-24 12:05:41	DONE	25mm Filter	01-JUN-23 00:00
654532003	SAMPLE	JE1	PIC5D	FEB-29-24 12:05:45	DONE	25mm Filter	01-JUN-23 00:00
654532005	SAMPLE	JE1	PIC7A	FEB-29-24 12:05:45	DONE	25mm Filter	01-JUN-23 00:00
654532006	SAMPLE	JE1	PIC7D	FEB-29-24 12:05:48	DONE	25mm Filter	01-JUN-23 00:00
654532007	SAMPLE	JE1	PIC8D	FEB-29-24 12:05:59	DONE	25mm Filter	01-JUN-23 00:00
654532008	SAMPLE	JE1	PIC9A	FEB-29-24 12:06:03	DONE	25mm Filter	01-JUN-23 00:00
654534001	SAMPLE	JE1	PIC9B	FEB-29-24 12:06:07	DONE	25mm Filter	01-JUN-23 00:00
654534002	SAMPLE	JE1	PIC9D	FEB-29-24 12:06:10	DONE	25mm Filter	01-JUN-23 00:00
1205653413	MB	JE1	PIC14A	FEB-29-24 12:06:30	DONE	25mm Filter	01-JUN-23 00:00
1205653414	DUP	JE1	PIC14B	FEB-29-24 12:06:32	DONE	25mm Filter	01-JUN-23 00:00
1205653415	LCS	JE1	PIC14C	FEB-29-24 12:06:36	DONE	25mm Filter	01-JUN-23 00:00
654534003	SAMPLE	JE1	PIC11A	FEB-29-24 12:06:43	DONE	25mm Filter	01-JUN-23 00:00
654534004	SAMPLE	JE1	PIC11C	FEB-29-24 12:06:48	DONE	25mm Filter	01-JUN-23 00:00
654534005	SAMPLE	JE1	PIC11D	FEB-29-24 12:06:51	DONE	25mm Filter	01-JUN-23 00:00
654534006	SAMPLE	JE1	PIC12A	FEB-29-24 12:06:57	DONE	25mm Filter	01-JUN-23 00:00
655017001	SAMPLE	JE1	PIC12B	FEB-29-24 12:07:00	DONE	25mm Filter	01-JUN-23 00:00
655017002	SAMPLE	JE1	PIC12C	FEB-29-24 12:07:04	DONE	25mm Filter	01-JUN-23 00:00
655017003	SAMPLE	JE1	PIC12D	FEB-29-24 12:07:08	DONE	25mm Filter	01-JUN-23 00:00
655017004	SAMPLE	JE1	PIC13A	FEB-29-24 12:07:13	DONE	25mm Filter	01-JUN-23 00:00
655017005	SAMPLE	JE1	PIC13B	FEB-29-24 12:07:18	DONE	25mm Filter	01-JUN-23 00:00
655017006	SAMPLE	JE1	PIC13D	FEB-29-24 12:07:22	DONE	25mm Filter	01-JUN-23 00:00

Lucas Cell Raw Data

Batch 2570163 Check-list

This check-list was completed on 01-MAR-24 by Elizabeth Krouse

This batch was reviewed by Elizabeth Krouse on 01-MAR-24 and Lyndsey Pace on 03-MAR-24.

Batch ID:	**Product:**	**Description:** Lucas Cell Radium 226
2570163	LUC26RAL	GL-RAD-A-008

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?		No	
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the matrix spike (MS/MSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-226 in Liquid

Batch ID: **2570163**
Analyst: Marisa Johnson (MJ2)
Method: EPA 903.1 Modified
Lab SOP: GL-RAD-A-008 REV# 15
Instrument: LUCAS-C202389980

Due Dates for Lab: 02-MAR-2024 **Hold: 03-JAN-2024** **Package: 05-MAR-2024** **SDG: 04-M**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
MS	1205653336	Ra-226 emanation spike	1715-I	.1	mL
LCS	1205653337	Ra-226 emanation spike	1715-I	.2	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	End Degas (date)	CELL #	End Transfer (date)	Start Count Time (date)	Background Counts	Total Counts
1	654233023	26-FEB-2024	1	509.31	509.31	02/26/24 12:15	102	02/29/24 06:27	02/29/24 09:56	2	10
2	654233024	26-FEB-2024	1	507.13	507.13	02/26/24 12:15	206	02/29/24 06:27	02/29/24 09:56	3	14
3	654233025	26-FEB-2024	1	501.17	501.17	02/26/24 12:15	301	02/29/24 06:27	02/29/24 09:56	2	18
4	654233026	26-FEB-2024	1	503.26	503.26	02/26/24 12:15	405	02/29/24 06:27	02/29/24 09:56	1	3
5	654233027	26-FEB-2024	1	501.42	501.42	02/26/24 12:15	504	02/29/24 06:27	02/29/24 09:56	1	8
6	654233028	26-FEB-2024	1	504.69	504.69	02/26/24 12:15	602	02/29/24 06:27	02/29/24 09:56	1	15
7	654532001	26-FEB-2024	1	504.05	504.05	02/26/24 12:15	803	02/29/24 06:27	02/29/24 09:56	8	18
8	654532002	26-FEB-2024	1	500.49	500.49	02/26/24 12:15	105	02/29/24 06:54	02/29/24 10:35	1	27
9	654532003	26-FEB-2024	1	500.62	500.62	02/26/24 12:15	207	02/29/24 06:54	02/29/24 10:35	1	12
10	654532004	26-FEB-2024	1	503.27	503.27	02/26/24 12:15	305	02/29/24 06:54	02/29/24 10:35	4	13
11	654532005	26-FEB-2024	1	502.84	502.84	02/26/24 12:15	401	02/29/24 06:54	02/29/24 10:35	6	10
12	654532006	26-FEB-2024	1	504.97	504.97	02/26/24 12:15	505	02/29/24 06:54	02/29/24 10:35	3	10
13	654532007	26-FEB-2024	1	507.77	507.77	02/26/24 12:15	608	02/29/24 06:54	02/29/24 10:35	6	15
14	654532008	26-FEB-2024	1	505.81	505.81	02/26/24 12:15	707	02/29/24 06:54	02/29/24 10:35	4	35
15	654534001	26-FEB-2024	1	502.15	502.15	02/26/24 12:15	802	02/29/24 06:54	02/29/24 10:35	8	40
16	654534002	26-FEB-2024	1	502.84	502.84	02/26/24 12:15	106	02/29/24 07:19	02/29/24 11:21	8	34
17	654534003	26-FEB-2024	1	503.4	503.4	02/26/24 12:15	204	02/29/24 07:19	02/29/24 11:21	5	35
18	654534004	26-FEB-2024	1	504.64	504.64	02/26/24 12:15	304	02/29/24 07:19	02/29/24 11:21	1	12
19	654534005	26-FEB-2024	1	505.84	505.84	02/26/24 12:15	409	02/29/24 07:19	02/29/24 11:21	4	19
20	654534006	26-FEB-2024	1	500.84	500.84	02/26/24 12:15	501	02/29/24 07:19	02/29/24 11:21	7	13
21	1205653334 MB	26-FEB-2024	1		509.31	02/26/24 12:15	706	02/29/24 06:27	02/29/24 09:56	7	12
22	1205653335 DUP (654233023)	26-FEB-2024	1	503.42	503.42	02/26/24 12:15	605	02/29/24 07:19	02/29/24 11:21	1	15
23	1205653336 MS (654233023)	26-FEB-2024	1	116.95	116.95	02/26/24 12:15	708	02/29/24 07:19	02/29/24 11:21	2	412
24	1205653337 LCS	26-FEB-2024	1		509.31	02/26/24 11:10	701	02/29/24 07:45	03/01/24 04:25	4	408

Reagent/Solvent Lot ID	Description	Amount

Comments:
Data Entry Date2: 26-FEB-2024 00:00

Radium-226 Liquid

Filename : RA226.XLS
File type : Excel
Version # : 1.3.2

Batch : 2570163
Analyst : MAR02577
Prep Date : 2/26/2024
Ra-226 Method Uncertainty : 0.073648

Procedure Code : LUC26RAL
Parmname : Radium-226
Required MDA : 1 pCi/L
Halflife of Ra-226 : 1600 years
Ra-226 Abundance : 1.00
Halflife of Rn-222: 3.8235 days

Batch counted on : LUCAS CELL DETECTOR
BKG Count time : 30 min

Sample Characteristics					**Count Raw Data**							
Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	Cell Number	Counting Time (min.)	Gross Counts	Gross CPM	Background Counts	Background CPM	Background Count Time (min.)	Cell Efficiency (cpm/dpm)
1	654233023.1	0.5093	2.0293E-05	11/29/2023 10:35	102	30	10	0.333	2	0.067	30	1.4860
2	654233024.1	0.5071	2.0285E-05	11/29/2023 11:52	206	30	14	0.467	3	0.100	30	1.5880
3	654233025.1	0.5012	2.0261E-05	11/29/2023 12:14	301	30	18	0.600	2	0.067	30	1.5220
4	654233026.1	0.5033	2.0269E-05	11/29/2023 13:38	405	30	3	0.100	1	0.033	30	1.7990
5	654233027.1	0.5014	2.0262E-05	7/7/2023 15:05	504	30	8	0.267	1	0.033	30	1.3720
6	654233028.1	0.5047	2.0275E-05	7/7/2023 15:17	602	30	15	0.500	1	0.033	30	1.7010
7	654532001.1	0.5041	2.0272E-05	1/31/2024 11:54	803	30	18	0.600	8	0.267	30	1.4760
8	654532002.1	0.5005	2.0258E-05	1/31/2024 13:13	105	30	27	0.900	1	0.033	30	1.5340
9	654532003.1	0.5006	2.0258E-05	1/31/2024 17:34	207	30	12	0.400	1	0.033	30	1.8080
10	654532004.1	0.5033	2.0269E-05	1/31/2024 10:06	305	30	13	0.433	4	0.133	30	1.5280
11	654532005.1	0.5028	2.0267E-05	1/31/2024 15:22	401	30	10	0.333	6	0.200	30	1.9410
12	654532006.1	0.5050	2.0276E-05	1/31/2024 16:56	505	30	10	0.333	3	0.100	30	1.7470
13	654532007.1	0.5078	2.0287E-05	1/31/2024 13:13	608	30	15	0.500	6	0.200	30	1.8960
14	654532008.1	0.5058	2.0279E-05	1/31/2024 7:55	707	30	35	1.167	4	0.133	30	1.5500
15	654534001.1	0.5022	2.0265E-05	2/1/2024 11:36	802	30	40	1.333	8	0.267	30	1.5330
16	654534002.1	0.5028	2.0267E-05	2/1/2024 13:02	106	30	34	1.133	8	0.267	30	1.5250
17	654534003.1	0.5034	2.0270E-05	2/1/2024 14:43	204	30	35	1.167	5	0.167	30	1.5970
18	654534004.1	0.5046	2.0275E-05	2/1/2024 12:40	304	30	12	0.400	1	0.033	30	1.4940
19	654534005.1	0.5058	2.0280E-05	2/1/2024 13:02	409	30	19	0.633	4	0.133	30	1.9030
20	654534006.1	0.5008	2.0259E-05	2/1/2024 9:40	501	30	13	0.433	7	0.233	30	1.7160
21	1205653334.1	0.5093	2.0293E-05	2/26/2024 0:00	706	30	12	0.400	7	0.233	30	1.5280
22	1205653335.1	0.5034	2.0270E-05	11/29/2023 10:35	605	30	15	0.500	1	0.033	30	2.0280
23	1205653336.1	0.1170	1.2362E-05	11/29/2023 10:35	708	30	412	13.733	2	0.067	30	1.5430
24	1205653337.1	0.5093	2.0293E-05	2/26/2024 0:00	701	15	408	27.200	4	0.133	30	1.5970

Pipet, 0.1 ml Stdev : +/-	0.000200	ml
Pipet, 0.5 ml Stdev : +/-	0.001000	ml
Pipet, 1 ml Stdev : +/-	0.002000	ml

Analytical SOP: GL-RAD-A-008
Instrument SOP: GL-RAD-I-007

Cell Efficiency Error (%)	Cell Calibration Date	Cell Calibration Due Date	De-Gas Date/Time	Rn-222 Ingrow End Date/Time	Count Start Date/Time	Rn-222 Corrections De-Gas to Ingrowth	Rn-222 Corrections Ingrowth to Count	Rn-222 Corrections During Count	Ra-226 Decay
2.300%	5/1/2023	4/30/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
8.600%	8/1/2023	7/31/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
5.700%	11/1/2023	10/31/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
4.600%	2/1/2024	1/31/2025	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
1.100%	10/10/2023	5/31/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
9.900%	7/1/2023	6/30/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
4.700%	4/8/2023	3/31/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
7.900%	5/1/2023	4/30/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
4.000%	10/10/2023	7/31/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
7.000%	11/1/2023	10/31/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
7.800%	2/1/2024	1/31/2025	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
8.200%	6/1/2023	5/31/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
7.800%	7/1/2023	6/30/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
5.800%	11/1/2023	10/31/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
6.100%	4/8/2023	3/31/2024	2/26/2024 12:15	2/29/2024 6:54	2/29/2024 10:35	0.396	0.973	1.002	1.000
3.400%	5/1/2023	4/30/2024	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
2.600%	8/1/2023	7/31/2024	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
2.100%	11/1/2023	10/31/2024	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
4.900%	2/1/2024	1/31/2025	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
5.500%	6/1/2023	5/31/2024	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
5.100%	11/1/2023	10/31/2024	2/26/2024 12:15	2/29/2024 6:27	2/29/2024 9:56	0.393	0.974	1.002	1.000
2.300%	10/10/2023	6/30/2024	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
5.200%	11/1/2023	10/31/2024	2/26/2024 12:15	2/29/2024 7:19	2/29/2024 11:21	0.397	0.970	1.002	1.000
5.900%	11/1/2023	10/31/2024	2/26/2024 11:10	2/29/2024 7:45	3/1/2024 4:24	0.404	0.856	1.001	1.000

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

Spike S/N :	1715-I
Spike Exp Date :	8/29/2024
Spike Activity (dpm/ml):	304.15
Spike Volume Added:	0.10
LCS S/N :	1715-I
LCS Exp Date :	8/29/2024
LCS Activity (dpm/ml):	304.15
LCS Volume Added:	0.20

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	0.2417	0.1706	1	0.4969	**0.4149**	43.36%	0.2667	0.1155	0.3521	0.3577		SAMPLE				
2	0.2782	0.1964	1	0.5390	**0.5362**	38.46%	0.3667	0.1374	0.3939	0.4115		SAMPLE				
3	0.2398	0.1693	1	0.4930	**0.8234**	28.53%	0.5333	0.1491	0.4511	0.4755		SAMPLE				
4	0.1429	0.1009	1	0.3318	**0.0867**	100.11%	0.0667	0.0667	0.1700	0.1706		SAMPLE				
5	0.1880	0.1328	1	0.4367	**0.3995**	42.87%	0.2333	0.1000	0.3356	0.3406		SAMPLE				
6	0.1507	0.1064	1	0.3500	**0.6402**	30.24%	0.4667	0.1333	0.3585	0.3905		SAMPLE				
7	0.4917	0.3471	1	0.8526	**0.5276**	51.21%	0.3333	0.1700	0.5273	0.5349		SAMPLE				
8	0.1678	0.1185	1	0.3898	**1.3243**	21.83%	0.8667	0.1764	0.5283	0.5980		SAMPLE				
9	0.1424	0.1005	1	0.3306	**0.4752**	33.02%	0.3667	0.1202	0.3053	0.3151		SAMPLE				
10	0.3351	0.2366	1	0.6258	**0.4577**	46.34%	0.3000	0.1374	0.4110	0.4209		SAMPLE				
11	0.3234	0.2283	1	0.5768	**0.1603**	100.30%	0.1333	0.1333	0.3141	0.3159		SAMPLE				
12	0.2530	0.1786	1	0.4902	**0.3103**	52.16%	0.2333	0.1202	0.3133	0.3204		SAMPLE				
13	0.3278	0.2315	1	0.5848	**0.3656**	51.51%	0.3000	0.1528	0.3648	0.3728		SAMPLE				
14	0.3287	0.2321	1	0.6138	**1.5462**	20.96%	1.0333	0.2082	0.6105	0.6734		SAMPLE				
15	0.4734	0.3343	1	0.8209	**1.6256**	22.49%	1.0667	0.2309	0.6898	0.7541		SAMPLE				
16	0.4743	0.3348	1	0.8223	**1.3230**	25.16%	0.8667	0.2160	0.6464	0.6797		SAMPLE				
17	0.3576	0.2525	1	0.6506	**1.4561**	21.24%	1.0000	0.2108	0.6017	0.6416		SAMPLE				
18	0.1705	0.1204	1	0.3961	**0.5693**	32.84%	0.3667	0.1202	0.3658	0.3756		SAMPLE				
19	0.2671	0.1886	1	0.4988	**0.6081**	32.35%	0.5000	0.1599	0.3810	0.3954		SAMPLE				
20	0.3958	0.2795	1	0.6951	**0.2724**	74.74%	0.2000	0.1491	0.3980	0.4010		SAMPLE				
21	0.4397	0.3104	1	0.7721	**0.2522**	87.33%	0.1667	0.1453	0.4309	0.4332		MB				
22	0.1260	0.0889	1	0.2925	**0.5351**	28.66%	0.4667	0.1333	0.2997	0.3104	654233023.1	DUP	25.3%			
23	1.0078	0.7115	1	2.0717	**88.6649**	7.19%	13.6667	0.6782	8.6243	17.8844	654233023.1	MS			117.1587	75.7%
24	0.4311	0.3044	1	0.9293	**43.3733**	7.72%	27.0667	1.3482	4.2346	9.0713		LCS			53.7993	80.6%

Continuing Calibration Data

Ludlum Alpha Scintillation Counter Checks for 29-FEB-2024

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LUCAS1	EFF	07:25	1	1.10E+05	110471	-2.3		
LUCAS2	EFF	07:27	1	1.28E+05	127645	-1.78		
LUCAS3	EFF	07:46	1	92517	92517	0.67		
LUCAS4	EFF	07:28	1	1.23E+05	123364	-2.25		
LUCAS5	EFF	07:36	1	1.28E+05	127851	-1.27		
LUCAS6	EFF	07:42	1	1.29E+05	129111	1.58		
LUCAS7	EFF	07:43	1	1.29E+05	129446	-1.89		
LUCAS8	EFF	07:45	1	1.27E+05	126535	0.95		

Reviewed by: Elizabeth Krouse **Date:** 29-FEB-24

GEL Laboratories LLC

Ludlum Alpha Scintillation Counter Checks for 01-MAR-2024

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LUCAS1	EFF	07:15	1	1.11E+05	111073	-1.5		
LUCAS2	EFF	07:22	1	1.28E+05	127648	-1.77		
LUCAS3	EFF	07:48	1	91011	91011	-0.5		
LUCAS4	EFF	07:58	1	1.23E+05	123220	-2.42		
LUCAS5	EFF	07:30	1	1.28E+05	127688	-1.45		
LUCAS6	EFF	07:36	1	1.27E+05	127020	-1.39		
LUCAS7	EFF	07:41	1	1.29E+05	128680	-2.89		
LUCAS8	EFF	07:45	1	1.26E+05	125869	0.85		

Reviewed by: Elizabeth Krouse **Date:** 01-MAR-24

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: LUCAS CELL DETECTOR **Batch ID: 2570163**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
654233023	SAMPLE	MJ2	LUCAS1	FEB-29-24 09:56:00	DONE	Lucas Cell	01-MAY-23 00:00
654233024	SAMPLE	MJ2	LUCAS2	FEB-29-24 09:56:00	DONE	Lucas Cell	01-AUG-23 00:00
654233025	SAMPLE	MJ2	LUCAS3	FEB-29-24 09:56:00	DONE	Lucas Cell	01-NOV-23 00:00
654233026	SAMPLE	MJ2	LUCAS4	FEB-29-24 09:56:00	DONE	Lucas Cell	01-FEB-24 00:00
654233027	SAMPLE	MJ2	LUCAS5	FEB-29-24 09:56:00	DONE	Lucas Cell	01-JUN-23 00:00
654233028	SAMPLE	MJ2	LUCAS6	FEB-29-24 09:56:00	DONE	Lucas Cell	01-JUL-23 00:00
654532001	SAMPLE	MJ2	LUCAS8	FEB-29-24 09:56:00	DONE	Lucas Cell	08-APR-23 00:00
1205653334	MB	MJ2	LUCAS7	FEB-29-24 09:56:00	DONE	Lucas Cell	01-NOV-23 00:00
654532002	SAMPLE	MJ2	LUCAS1	FEB-29-24 10:35:00	DONE	Lucas Cell	01-MAY-23 00:00
654532003	SAMPLE	MJ2	LUCAS2	FEB-29-24 10:35:00	DONE	Lucas Cell	01-AUG-23 00:00
654532004	SAMPLE	MJ2	LUCAS3	FEB-29-24 10:35:00	DONE	Lucas Cell	01-NOV-23 00:00
654532005	SAMPLE	MJ2	LUCAS4	FEB-29-24 10:35:00	DONE	Lucas Cell	01-FEB-24 00:00
654532006	SAMPLE	MJ2	LUCAS5	FEB-29-24 10:35:00	DONE	Lucas Cell	01-JUN-23 00:00
654532007	SAMPLE	MJ2	LUCAS6	FEB-29-24 10:35:00	DONE	Lucas Cell	01-JUL-23 00:00
654532008	SAMPLE	MJ2	LUCAS7	FEB-29-24 10:35:00	DONE	Lucas Cell	01-NOV-23 00:00
654534001	SAMPLE	MJ2	LUCAS8	FEB-29-24 10:35:00	DONE	Lucas Cell	08-APR-23 00:00
654534002	SAMPLE	MJ2	LUCAS1	FEB-29-24 11:21:00	DONE	Lucas Cell	01-MAY-23 00:00
654534003	SAMPLE	MJ2	LUCAS2	FEB-29-24 11:21:00	DONE	Lucas Cell	01-AUG-23 00:00
654534004	SAMPLE	MJ2	LUCAS3	FEB-29-24 11:21:00	DONE	Lucas Cell	01-NOV-23 00:00
654534005	SAMPLE	MJ2	LUCAS4	FEB-29-24 11:21:00	DONE	Lucas Cell	01-FEB-24 00:00
654534006	SAMPLE	MJ2	LUCAS5	FEB-29-24 11:21:00	DONE	Lucas Cell	01-JUN-23 00:00
1205653335	DUP	MJ2	LUCAS6	FEB-29-24 11:21:00	DONE	Lucas Cell	01-JUL-23 00:00
1205653336	MS	MJ2	LUCAS7	FEB-29-24 11:21:00	DONE	Lucas Cell	01-NOV-23 00:00
1205653337	LCS	MJ2	LUCAS7	MAR-01-24 04:24:00	DONE	Lucas Cell	01-NOV-23 00:00

Data Verification & Validation Report

Lansing Board of Water & Light – Erickson Power Station

Sampling Event (dates and purpose): Background Sampling

Data Package Number: S57346.01 Lab Report Date: 1/31/2024

Data Validator: Andrew Byks Data Validation Completion Date: 3/21/2024

General Overall Assessment:
_____ Data are usable without qualification.
__X__ Data are usable with qualification (as noted below).
_____ Some or all data are unusable (as noted below).

Wells planned for sampling:

Well ID	Planned for Sampling
MW-1	
MW-2	
MW-3	
MW-4	
MW-5	
MW-6	
MW-7	
MW-7B	
MW-7C	
MW-8	
MW-9	
MW-10	
MW-11	
MW-11B	
MW-12	
MW-12B	
MW-13	
MW-14	
MW-15	
MW-16A	
MW-16B	
MW-16C	
MW-16D	
MW-100A	X
MW-100B	X
MW-100C	X
MW-100D	X

Data Summary

Sample ID	Matrix	Lab ID	Date Collected	App III Metals	App IV Metals	Part 115 Metals	Anions	TDS TSS	Rad-226 Rad-228	Diss. Metals
MW-100A	GW	S57346.01	1/3/2024	X	X	X	X	X	X	
MW-100B	GW	S57346.02	1/3/2024	X	X	X	X	X	X	
MW-100C	GW	S57346.03	1/3/2024	X	X	X	X	X	X	
MW-100D	GW	S57346.04	1/3/2024	X	X	X	X	X	X	
MWT-100C	GW	S57346.05	1/3/2024	X	X	X	X	X	X	

Other analytes requested for analysis: Na, Mg, K, HCO_3, CO_3, hardness

Any planned sampling or analysis NOT completed? If yes, explain: ____

Data Verification & Validation Checklist

Review Category	Verify Complete		Validation Criteria	Criteria Met?			Description of Nonconformance and Qualification (if applicable)
	Yes	No		Yes	No	N/A	
Field Data							
Sample Collection Field Forms	X		Purging performed as required in the Groundwater Monitoring Plan	X			
Field Calibration Records	X		Field instruments calibrated daily according to manufacturer specifications	X			
Chain of Custody	X		Accurately reflect samples, collection dates/times, analyses, bottles, etc.	X			
Field decontamination documentation	X		Record of decontamination for non-dedicated sampling equipment	X			
Drilling logs	X		N/A	-	-	-	
Well construction logs	X		N/A	-	-	-	
Well development field forms	X		N/A	-	-	-	
Analytical Data Package							
Cover Sheet	X		N/A	-	-	-	
Case Narrative	X		Summarizes sample receipt and any exceptions to QC acceptance criteria	X			
Internal Laboratory Chain of Custody forms	X		Analyses as requested; accurate transcription of field COC	X			
Sample Chronology and Consistency	X		Accurate representation of dates, times of receipt, preparation, and analysis	X			
Communication Records with Lab	X		N/A	-	-	-	
EDD Format Consistency	X		EDD format and content as requested	X			
Sample Identification, Results Nomenclature, and Data Qualifier Consistency	X		All included in final report	X			
Method Detection Limit Consistency	X		MDLs consistent between samples		X		Dilution varies across samples for hardness
Instrument Calibration Records	X		Present and no nonconformance noted	X			
Laboratory Report Complete	X		Includes QC component	X			
Holding Times	X		Analyses performed within allowed holding time	X			

Review Category	Verify Complete		Validation Criteria	Criteria Met?			Description of Nonconformance and Qualification (if applicable)
	Yes	No		Yes	No	N/A	
Method	X		Method as requested	X			
Reporting Limits	X		RLs as requested		X		RLs for hardness and TDS were not met
			MDLs<RLs		X		RL=MDL for carbonate
			MDLs<MCLs	X			
			MDLs<GPS	X			
QC Validation							
Evaluate Accuracy							
Matrix Spike (Recovery)	X		See "Minimum QC Procedures for Project Parameters" table	X			
Laboratory Control Sample (Recovery)	X		See "Minimum QC Procedures for Project Parameters" table	X			
Evaluate Precision							
Matrix Spike Duplicate (RPD)	X		See "Minimum QC Procedures for Project Parameters" table	X			
Field Duplicate (RPD)	X		RPD ≤ 20%		X		Field duplicates for Rad-226 not met; see below
Evaluate Representativeness							
Equipment Blanks (if applicable)	X		Non-detect (<RL)	X			
QC Verification							
Verify Instrument Calibration & Analytical Process							
Initial Calibration Verification	X		Laboratory-determined	-	-	-	
Continuing Calibration Verification	X		Laboratory-determined	-	-	-	
Initial Calibration Blank	X		Laboratory-determined	-	-	-	
Continuing Calibration Blank	X		Laboratory-determined	-	-	-	
Serial Dilutions	X		Laboratory-determined	-	-	-	
Post-Digestion Spikes	X		Laboratory-determined	-	-	-	
Internal Standards	X		Laboratory-determined	-	-	-	
Laboratory Duplicate (RPD)	X		Laboratory-determined	-	-	-	
Method Blanks	X		Laboratory-determined	-	-	-	
Evaluate Completeness (# usable measurements/ # unusable measurements)							
Completeness	X		100%	X			

Other instances of nonconformance to QC control limits noted on case narrative:

None.

Comments:

The RPD of Rad-226 between parent sample MW-100C and field duplicate MWT-100C was 35%. Rad-226 in parent sample MW-100C required qualification as estimated with high bias (J+) and in field duplicate MWT-100C as estimated with low bias (J-).

Data Verification & Validation Report

Lansing Board of Water & Light – Erickson Power Station

Sampling Event (dates and purpose): Background Sampling

Data Package Number: S58527.01 Lab Report Date: 3/8/2024

Data Validator: Andrew Byks Data Validation Completion Date: 5/1/2024

General Overall Assessment:
_____ Data are usable without qualification.
__X__ Data are usable with qualification (as noted below).
_____ Some or all data are unusable (as noted below).

Wells planned for sampling:

Well ID	Planned for Sampling
MW-1	
MW-2	
MW-3	
MW-4	
MW-5	
MW-6	
MW-7	
MW-7B	
MW-7C	
MW-8	
MW-9	
MW-10	
MW-11	
MW-11B	
MW-12	
MW-12B	
MW-13	
MW-14	
MW-15	
MW-16A	
MW-16B	
MW-16C	
MW-16D	
MW-100A	X
MW-100B	X
MW-100C	X
MW-100D	X

Data Summary

Sample ID	Matrix	Lab ID	Date Collected	App III Metals	App IV Metals	Part 115 Metals	Anions	TDS TSS	Rad-226 Rad-228	Diss. Metals
MW-100A	GW	S57346.01	2/7/2024	X	X	X	X	X	X	
MW-100B	GW	S57346.02	2/7/2024	X	X	X	X	X	X	
MW-100C	GW	S57346.03	2/7/2024	X	X	X	X	X	X	
MW-100D	GW	S57346.04	2/7/2024	X	X	X	X	X	X	
MWT-100C	GW	S57346.05	2/7/2024	X	X	X	X	X	X	

Other analytes requested for analysis: Na, Mg, K, HCO_3, CO_3, hardness

Any planned sampling or analysis NOT completed? If yes, explain: ____

<u>**Data Verification & Validation Checklist**</u>

Review Category	Verify Complete		Validation Criteria	Criteria Met?			Description of Nonconformance and Qualification (if applicable)
	Yes	No		Yes	No	N/A	
Field Data							
Sample Collection Field Forms	X		Purging performed as required in the Groundwater Monitoring Plan	X			
Field Calibration Records	X		Field instruments calibrated daily according to manufacturer specifications	X			
Chain of Custody	X		Accurately reflect samples, collection dates/times, analyses, bottles, etc.	X			
Field decontamination documentation	X		Record of decontamination for non-dedicated sampling equipment	X			
Drilling logs	X		N/A	-	-	-	
Well construction logs	X		N/A	-	-	-	
Well development field forms	X		N/A	-	-	-	
Analytical Data Package							
Cover Sheet	X		N/A	-	-	-	
Case Narrative	X		Summarizes sample receipt and any exceptions to QC acceptance criteria	X			
Internal Laboratory Chain of Custody forms	X		Analyses as requested; accurate transcription of field COC	X			
Sample Chronology and Consistency	X		Accurate representation of dates, times of receipt, preparation, and analysis	X			
Communication Records with Lab	X		N/A	-	-	-	
EDD Format Consistency	X		EDD format and content as requested	X			
Sample Identification, Results Nomenclature, and Data Qualifier Consistency	X		All included in final report	X			
Method Detection Limit Consistency	X		MDLs consistent between samples	X			
Instrument Calibration Records	X		Present and no nonconformance noted	X			
Laboratory Report Complete	X		Includes QC component	X			
Holding Times	X		Analyses performed within allowed holding time	X			

Review Category	Verify Complete		Validation Criteria	Criteria Met?			Description of Nonconformance and Qualification (if applicable)
	Yes	No		Yes	No	N/A	
Method	X		Method as requested	X			
Reporting Limits	X		RLs as requested		X		RLs for TDS were not met
			MDLs<RLs		X		RL=MDL for carbonate
			MDLs<MCLs	X			
			MDLs<GPS	X			
QC Validation							
Evaluate Accuracy							
Matrix Spike (Recovery)	X		See "Minimum QC Procedures for Project Parameters" table	X			
Laboratory Control Sample (Recovery)	X		See "Minimum QC Procedures for Project Parameters" table	X			
Evaluate Precision							
Matrix Spike Duplicate (RPD)	X		See "Minimum QC Procedures for Project Parameters" table	X			
Field Duplicate (RPD)	X		RPD ≤ 20%		X		Field duplicates for Rad-226, Rad-228, and combined rad not met; see below
Evaluate Representativeness							
Equipment Blanks (if applicable)	X		Non-detect (<RL)	X			
QC Verification							
Verify Instrument Calibration & Analytical Process							
Initial Calibration Verification	X		Laboratory-determined	-	-	-	
Continuing Calibration Verification	X		Laboratory-determined	-	-	-	
Initial Calibration Blank	X		Laboratory-determined	-	-	-	
Continuing Calibration Blank	X		Laboratory-determined	-	-	-	
Serial Dilutions	X		Laboratory-determined	-	-	-	
Post-Digestion Spikes	X		Laboratory-determined	-	-	-	
Internal Standards	X		Laboratory-determined	-	-	-	
Laboratory Duplicate (RPD)	X		Laboratory-determined	-	-	-	
Method Blanks	X		Laboratory-determined	-	-	-	
Evaluate Completeness (# usable measurements/ # unusable measurements)							
Completeness	X		100%	X			

Other instances of nonconformance to QC control limits noted on case narrative:

None.

Comments:

The RPDs of Rad-226, Rad-228, and combined radium between parent sample MW-100C and field duplicate MWT-100C were 28%, 76%, and 35%, respectively. Rad-226 in parent sample MW-100C required qualification as estimated with high bias (J+) and in field duplicate MWT-100C as estimated with low bias (J-). Rad-228 and combined radium in parent sample MW-100C required qualification as estimated with low bias (J-) and in field duplicate MWT-100C as estimated with high bias (J+).

Data Verification & Validation Report

Lansing Board of Water & Light – Erickson Power Station

Sampling Event (dates and purpose): Background Sampling

Data Package Number:	Lab Report Date:
S58153.01	2/29/2024
S58205.01	2/29/2024
S58248.01	3/5/2024
S58313.01	3/5/2024

Data Validator: Andrew Byks

Data Validation Completion Date: 4/1/2024

General Overall Assessment:
______ Data are usable without qualification.
__X__ Data are usable with qualification (as noted below).
______ Some or all data are unusable (as noted below).

Wells planned for sampling:

Well ID	Planned for Sampling
MW-1	X
MW-2	X
MW-3	X
MW-4	X
MW-5	X
MW-6	X
MW-7	X
MW-7B	X
MW-7C	X
MW-8	X
MW-9	X
MW-10	X
MW-11	X
MW-11B	X
MW-12	X
MW-12B	X
MW-13	X
MW-14	X
MW-15	X
MW-16A	X
MW-16B	X
MW-16C	X
MW-16D	X
MW-100A	
MW-100B	
MW-100C	
MW-100D	

Data Summary

Sample ID	Matrix	Lab ID	Date Collected	App III Metals	App IV Metals	Part 115 Metals	Anions	TDS TSS	Rad-226 Rad-228	Diss. Metals
MW-1	GW	S58153.01	1/29/2024	X	X	X	X	X	X	
MW-2	GW	S58153.02	1/29/2024	X	X	X	X	X	X	X
MW-3	GW	S58153.03	1/29/2024	X	X	X	X	X	X	
MW-4	GW	S58153.04	1/29/2024	X	X	X	X	X	X	
MW-5	GW	S58153.05	1/29/2024	X	X	X	X	X	X	X
MW-6	GW	S58153.06	1/29/2024	X	X	X	X	X	X	
MWT-6	GW	S58153.07	1/29/2024	X	X	X	X	X	X	
MW-7	GW	S58205.01	1/30/2024	X	X	X	X	X	X	
MW-7B	GW	S58205.02	1/30/2024	X	X	X	X	X	X	
MW-7C	GW	S58205.03	1/30/2024	X	X	X	X	X	X	
MW-8	GW	S58205.04	1/30/2024	X	X	X	X	X	X	
MW-9	GW	S58205.05	1/30/2024	X	X	X	X	X	X	
MW-10	GW	S58205.06	1/30/2024	X	X	X	X	X	X	
MW-13	GW	S58205.07	1/30/2024	X	X	X	X	X	X	
MWT-7	GW	S58205.08	1/30/2024	X	X	X	X	X	X	
MW-11	GW	S58248.01	1/31/2024	X	X	X	X	X	X	X
MW-11B	GW	S58248.02	1/31/2024	X	X	X	X	X	X	
MW-12	GW	S58248.03	1/31/2024	X	X	X	X	X	X	X
MW-12B	GW	S58248.04	1/31/2024	X	X	X	X	X	X	
MW-14	GW	S58248.05	1/31/2024	X	X	X	X	X	X	
MW-15	GW	S58248.06	1/31/2024	X	X	X	X	X	X	
MWT-11B	GW	S58248.07	1/31/2024	X	X	X	X	X	X	
MW-16A	GW	S58313.01	2/1/2024	X	X	X	X	X	X	
MW-16B	GW	S58313.02	2/1/2024	X	X	X	X	X	X	
MW-16C	GW	S58313.03	2/1/2024	X	X	X	X	X	X	
MW-16D	GW	S58313.04	2/1/2024	X	X	X	X	X	X	
MWT-16B	GW	S58313.05	2/1/2024	X	X	X	X	X	X	

Other analytes requested for analysis: Na, Mg, K, HCO_3, CO_3, hardness

Any planned sampling or analysis NOT completed? If yes, explain: ____

Data Verification & Validation Checklist

Review Category	Verify Complete		Validation Criteria	Criteria Met?			Description of Nonconformance and Qualification (if applicable)
	Yes	No		Yes	No	N/A	
Field Data							
Sample Collection Field Forms	X		Purging performed as required in the Groundwater Monitoring Plan	X			
Field Calibration Records	X		Field instruments calibrated daily according to manufacturer specifications	X			
Chain of Custody	X		Accurately reflect samples, collection dates/times, analyses, bottles, etc.	X			
Field decontamination documentation	X		Record of decontamination for non-dedicated sampling equipment	X			
Drilling logs	X		N/A	-	-	-	
Well construction logs	X		N/A	-	-	-	
Well development field forms	X		N/A	-	-	-	
Analytical Data Package							
Cover Sheet	X		N/A	-	-	-	
Case Narrative	X		Summarizes sample receipt and any exceptions to QC acceptance criteria	X			
Internal Laboratory Chain of Custody forms	X		Analyses as requested; accurate transcription of field COC	X			
Sample Chronology and Consistency	X		Accurate representation of dates, times of receipt, preparation, and analysis	X			
Communication Records with Lab	X		N/A	-	-	-	
EDD Format Consistency	X		EDD format and content as requested	X			
Sample Identification, Results Nomenclature, and Data Qualifier Consistency	X		All included in final report	X			
Method Detection Limit Consistency	X		MDLs consistent between samples		X		Dilution varies across samples for bicarbonate, calcium, carbonate, chloride, fluoride, hardness, sodium, sulfate, TSS
Instrument Calibration Records	X		Present and no nonconformance noted	X			
Laboratory Report Complete	X		Includes QC component	X			

Review Category	Verify Complete		Validation Criteria	Criteria Met?			Description of Nonconformance and Qualification (if applicable)
	Yes	No		Yes	No	N/A	
Holding Times	X		Analyses performed within allowed holding time	X			
Method	X		Method as requested	X			
Reporting Limits	X		RLs as requested		X		RLs for bicarbonate, carbonate, chloride, fluoride hardness, sulfate, and TDS were not met
			MDLs<RLs		X		RL=MDL for carbonate
			MDLs<MCLs	X			
			MDLs<GPS	X			
QC Validation							
Evaluate Accuracy							
Matrix Spike (Recovery)	X		See "Minimum QC Procedures for Project Parameters" table	X			
Laboratory Control Sample (Recovery)	X		See "Minimum QC Procedures for Project Parameters" table	X			
Evaluate Precision							
Matrix Spike Duplicate (RPD)	X		See "Minimum QC Procedures for Project Parameters" table	X			
Field Duplicate (RPD)	X		RPD ≤ 20%		X		Field duplicates for TSS and Rad-226/228 not met; see below
Evaluate Representativeness							
Equipment Blanks (if applicable)	X		Non-detect (<RL)	X			
QC Verification							
Verify Instrument Calibration & Analytical Process							
Initial Calibration Verification	X		Laboratory-determined	-	-	-	
Continuing Calibration Verification	X		Laboratory-determined	-	-	-	
Initial Calibration Blank	X		Laboratory-determined	-	-	-	
Continuing Calibration Blank	X		Laboratory-determined	-	-	-	
Serial Dilutions	X		Laboratory-determined	-	-	-	
Post-Digestion Spikes	X		Laboratory-determined	-	-	-	
Internal Standards	X		Laboratory-determined	-	-	-	
Laboratory Duplicate (RPD)	X		Laboratory-determined	-	-	-	
Method Blanks	X		Laboratory-determined	-	-	-	
Evaluate Completeness (# usable measurements/ # unusable measurements)							
Completeness	X		100%	X			

Other instances of nonconformance to QC control limits noted on case narrative:

None.

Comments:

The RPDs of Rad-228 and combined radium between parent sample MW-6 and field duplicate MWT-6 were 120% and 82%, respectively. Rad-228 and combined radium in parent sample MW-6 required qualification as estimated with low bias (J-) and in field duplicate MWT-6 as estimated with high bias (J+).

The RPDs of Rad-226, Rad-228, and combined radium between parent sample MW-7 and field duplicate MWT-7 were 100%, 28%, and 51%, respectively. Rad-226, Rad-228, and combined radium in parent sample MW-7 required qualification as estimated with low bias (J-) and in field duplicate MWT-7 as estimated with high bias (J+).

The RPDs of Rad-226 and combined radium between parent sample MW-11B and field duplicate MWT-11B were 57% and 24%, respectively. Rad-226 and combined radium in parent sample MW-11B required qualification as estimated with high bias (J+) and in field duplicate MWT-11B as estimated with low bias (J-).

TSS was detected in parent sample MW-16B but not detected in field duplicate MWT-16B. TSS in parent sample MW-16B required qualification as estimated with high bias (J+) and in field duplicate MWT-16B as estimated but not detected (UJ).

The RPDs of Rad-226, Rad-228, and combined radium between parent sample MW-16B and field duplicate MWT-16B were 37%, 22%, and 31%, respectively. Rad-226, Rad-228, and combined radium required qualification as estimated with high bias (J+) in parent sample MW-16B and in field duplicate MWT-16B as estimated with low bias (J-).

Appendix D

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
02_1_01	MW-2	Appendix III	Boron	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	5.02	5.10	3.38	6.17	0.896	0.179	1.24	-0.415	-0.987
02_1_02	MW-2	Appendix III	Calcium	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	245	256	192	272	29.0	0.118	20.7	-0.855	-0.905
02_1_03	MW-2	Appendix III	Chloride	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	82.3	84.0	67.0	94.0	7.31	0.0887	5.93	-0.835	0.337
02_1_04	MW-2	Appendix III	Fluoride	mg/L	17	17	100%	2020-04-28 to 2024-01-29		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
02_1_05	MW-2	Appendix III	Sulfate	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	457	504	278	586	109	0.239	113	-0.458	-1.36
02_1_06	MW-2	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1246	1300	1000	1430	154	0.123	178	-0.477	-1.25
02_1_07	MW-2	Appendix III	pH, Field	su	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	6.77	6.75	6.54	7.08	0.114	0.0168	0.0889	0.742	2.69
02_2_04	MW-2	Appendix IV	Fluoride	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
02_2_08	MW-2	Appendix IV	Antimony	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
02_2_09	MW-2	Appendix IV	Arsenic	mg/L	18	14	78%	2020-04-28 to 2024-01-29		Nonparametric	0.00217	0.00200	0.00200	0.00400	0.000514	0.237	0	3.24	10.5
02_2_10	MW-2	Appendix IV	Barium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0406	0.0410	0.0340	0.0480	0.00355	0.0874	0.00296	0.0858	-0.0267
02_2_11	MW-2	Appendix IV	Beryllium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
02_2_12	MW-2	Appendix IV	Cadmium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
02_2_13	MW-2	Appendix IV	Chromium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
02_2_14	MW-2	Appendix IV	Cobalt	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
02_2_15	MW-2	Appendix IV	Lead	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
02_2_16	MW-2	Appendix IV	Lithium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0573	0.0575	0.0410	0.0700	0.00796	0.139	0.0104	-0.246	-0.626
02_2_17	MW-2	Appendix IV	Mercury	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
02_2_18	MW-2	Appendix IV	Molybdenum	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0111	0.0110	0.00700	0.0150	0.00198	0.179	0.00148	-0.0860	0.258
02_2_20	MW-2	Appendix IV	Radium-226/228	pCi/L	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	0.782	0.630	0	2.12	0.624	0.797	0.641	0.759	-0.346
02_2_22	MW-2	Appendix IV	Selenium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
02_2_23	MW-2	Appendix IV	Thallium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
02_3_24	MW-2	Field Parameters	Conductivity	mS/cm	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	1.64	1.70	1.34	1.80	0.154	0.0937	0.132	-0.852	-0.711
02_3_25	MW-2	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	0.197	0.135	0	1.01	0.245	1.25	0.156	2.39	6.85
02_3_26	MW-2	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	32.1	35.6	-75.8	182	57.8	1.80	29.2	0.491	1.88
02_3_27	MW-2	Field Parameters	Temperature	°C	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	13	13.3	9.10	15.4	1.72	0.133	1.63	-0.725	0.000223
02_3_28	MW-2	Field Parameters	Turbidity	NTU	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	12.2	9.21	2.38	72.3	15.3	1.25	1.41	3.94	16.2
02_3_29	MW-2	Field Parameters	pH	su	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	6.77	6.75	6.54	7.08	0.114	0.0168	0.0889	0.742	2.69
02_4_30	MW-2	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	471	462	410	550	58.5	0.124	44.4	0.871	1.59
02_4_31	MW-2	Other	Carbonate	mg/L	4	4	100%	2022-08-02 to 2024-01-29		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
02_4_32	MW-2	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	689	694	654	714	27.6	0.0401	25.2	-0.667	-1.92
02_4_33	MW-2	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	49.9	50.4	48.4	50.6	1.03	0.0206	0.296	-1.84	3.42
02_4_34	MW-2	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	1.26	0.865	0.600	2.70	0.970	0.771	0.200	1.90	3.70
02_4_35	MW-2	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	61.2	63.0	50.3	68.3	7.75	0.127	4.96	-1.27	1.90
02_4_36	MW-2	Other	Total Suspended Solids	mg/L	18	4	22%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	9.81	9.70	1.00	34.1	8.53	0.869	9.93	1.52	2.71
02_5_37	MW-2	Part 115	Copper	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
02_5_38	MW-2	Part 115	Iron	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	0.731	0.625	0.440	1.93	0.367	0.502	0.170	2.44	6.57
02_5_39	MW-2	Part 115	Nickel	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	0.0233	0.0250	0.0170	0.0280	0.00400	0.172	0.00296	-0.541	-1.46
02_5_40	MW-2	Part 115	Silver	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
02_5_41	MW-2	Part 115	Vanadium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
02_5_42	MW-2	Part 115	Zinc	mg/L	18	15	83%	2020-04-28 to 2024-01-29		Nonparametric	0.00722	0.00500	0.00500	0.0410	0.00845	1.17	0	4.20	17.8
03_1_01	MW-3	Appendix III	Boron	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	5.72	5.67	5.41	6.16	0.238	0.0416	0.0741	0.956	1.41

(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
03_1_02	MW-3	Appendix III	Calcium	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	245	248	223	255	11.0	0.0449	7.41	-1.55	2.60
03_1_03	MW-3	Appendix III	Chloride	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	96.6	99.0	89.0	102	4.97	0.0515	4.44	-0.554	-1.43
03_1_04	MW-3	Appendix III	Fluoride	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
03_1_05	MW-3	Appendix III	Sulfate	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	700	698	675	727	20.6	0.0294	23.7	0.385	-1.37
03_1_06	MW-3	Appendix III	Total Dissolved Solids	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	1461	1450	1430	1500	27.9	0.0191	29.6	0.373	-2.02
03_1_07	MW-3	Appendix III	pH, Field	su	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	7.24	7.23	7.15	7.38	0.0769	0.0106	0.0741	0.858	0.719
03_2_04	MW-3	Appendix IV	Fluoride	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
03_2_08	MW-3	Appendix IV	Antimony	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
03_2_09	MW-3	Appendix IV	Arsenic	mg/L	7	0	0%	2021-05-04 to 2024-01-29		Nonparametric	0.00357	0.00300	0.00300	0.00600	0.00113	0.317	0	2.16	4.58
03_2_10	MW-3	Appendix IV	Barium	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.0194	0.0190	0.0170	0.0210	0.00140	0.0719	0.00148	-0.566	0.377
03_2_11	MW-3	Appendix IV	Beryllium	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
03_2_12	MW-3	Appendix IV	Cadmium	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
03_2_13	MW-3	Appendix IV	Chromium	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
03_2_14	MW-3	Appendix IV	Cobalt	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
03_2_15	MW-3	Appendix IV	Lead	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
03_2_16	MW-3	Appendix IV	Lithium	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.0830	0.0820	0.0770	0.0910	0.00490	0.0590	0.00593	0.512	-0.626
03_2_17	MW-3	Appendix IV	Mercury	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
03_2_18	MW-3	Appendix IV	Molybdenum	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.166	0.164	0.153	0.182	0.00966	0.0580	0.00296	0.529	-0.0103
03_2_20	MW-3	Appendix IV	Radium-226/228	pCi/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	1.59	1.20	0.412	2.92	0.926	0.581	1.17	0.291	-1.55
03_2_22	MW-3	Appendix IV	Selenium	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
03_2_23	MW-3	Appendix IV	Thallium	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
03_3_24	MW-3	Field Parameters	Conductivity	mS/cm	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	1.79	1.80	1.73	1.83	0.0353	0.0198	0.0459	-0.573	-0.235
03_3_25	MW-3	Field Parameters	Dissolved Oxygen	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.144	0.120	0.0300	0.350	0.102	0.710	0.0593	1.49	3.00
03_3_26	MW-3	Field Parameters	Oxidation Reduction Potential	mV	7	0	0%	2021-05-04 to 2024-01-29	Normal	Nonparametric	-61.3	-64.1	-92.1	-37.5	19.0	-0.311	15	-0.288	-0.280
03_3_27	MW-3	Field Parameters	Temperature	°C	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	12.5	12.2	9.90	14.2	1.78	0.143	2.81	-0.339	-1.67
03_3_28	MW-3	Field Parameters	Turbidity	NTU	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	4.32	4.83	0.980	8.01	2.28	0.528	1.01	0.0687	0.403
03_3_29	MW-3	Field Parameters	pH	su	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	7.24	7.23	7.15	7.38	0.0769	0.0106	0.0741	0.858	0.719
03_4_30	MW-3	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	216	212	210	228	8.50	0.0394	3.70	1.58	2.28
03_4_31	MW-3	Other	Carbonate	mg/L	4	4	100%	2022-08-02 to 2024-01-29		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
03_4_32	MW-3	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	787	789	774	795	9.84	0.0125	8.15	-0.804	-1.48
03_4_33	MW-3	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	48.2	48.1	45.9	50.7	2.38	0.0493	2.89	0.0676	-5.00
03_4_34	MW-3	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	1.72	1.70	1.67	1.81	0.0663	0.0386	0.0444	1.10	-0.0496
03_4_35	MW-3	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	116	116	111	121	4.76	0.0410	5.93	0	-4.34
03_4_36	MW-3	Other	Total Suspended Solids	mg/L	7	1	14%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	2.79	3.00	1.00	4.00	0.984	0.353	0.444	-1.02	0.987
03_5_37	MW-3	Part 115	Copper	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
03_5_38	MW-3	Part 115	Iron	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	1.91	1.94	1.70	2.05	0.133	0.0696	0.148	-0.540	-1.20
03_5_39	MW-3	Part 115	Nickel	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
03_5_40	MW-3	Part 115	Silver	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
03_5_41	MW-3	Part 115	Vanadium	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
03_5_42	MW-3	Part 115	Zinc	mg/L	7	7	100%	2021-05-04 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
04_1_01	MW-4	Appendix III	Boron	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	0.0629	0.0600	0.0500	0.0800	0.00920	0.146	0.0148	0.422	-0.294
04_1_02	MW-4	Appendix III	Calcium	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	108	110	98.4	115	4.88	0.0453	2.96	-0.641	-0.632

(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
04_1_03	MW-4	Appendix III	Chloride	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	71.4	72.0	68.0	77.0	2.55	0.0357	2.96	0.491	-0.0664
04_1_04	MW-4	Appendix III	Fluoride	mg/L	17	17	100%	2020-04-28 to 2024-01-29		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
04_1_05	MW-4	Appendix III	Sulfate	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	56.2	57.0	51.0	60.0	2.54	0.0453	1.48	-0.872	0.0138
04_1_06	MW-4	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	551	554	522	582	16.0	0.0290	20.7	0.0872	-0.464
04_1_07	MW-4	Appendix III	pH, Field	su	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	7.20	7.16	7.03	7.87	0.180	0.0250	0.0815	3.27	12.4
04_2_04	MW-4	Appendix IV	Fluoride	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
04_2_08	MW-4	Appendix IV	Antimony	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
04_2_09	MW-4	Appendix IV	Arsenic	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.00767	0.00800	0.00600	0.00900	0.00108	0.141	0.00148	-0.173	-1.19
04_2_10	MW-4	Appendix IV	Barium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.160	0.162	0.146	0.169	0.00600	0.0374	0.00667	-0.826	0.465
04_2_11	MW-4	Appendix IV	Beryllium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
04_2_12	MW-4	Appendix IV	Cadmium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
04_2_13	MW-4	Appendix IV	Chromium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
04_2_14	MW-4	Appendix IV	Cobalt	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
04_2_15	MW-4	Appendix IV	Lead	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
04_2_16	MW-4	Appendix IV	Lithium	mg/L	18	3	17%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0100	0.0100	0.00800	0.0120	0.00103	0.103	0.000741	0.364	0.425
04_2_17	MW-4	Appendix IV	Mercury	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
04_2_18	MW-4	Appendix IV	Molybdenum	mg/L	18	16	89%	2020-04-28 to 2024-01-29		Nonparametric	0.00522	0.00500	0.00500	0.00900	0.000943	0.181	0	4.24	18.0
04_2_20	MW-4	Appendix IV	Radium-226/228	pCi/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal	Gamma	1.35	0.782	0.232	5.00	1.23	0.911	0.616	1.78	3.48
04_2_22	MW-4	Appendix IV	Selenium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
04_2_23	MW-4	Appendix IV	Thallium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
04_3_24	MW-4	Field Parameters	Conductivity	mS/cm	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	0.865	0.889	0.429	0.920	0.110	0.127	0.0193	-4.08	17.1
04_3_25	MW-4	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Gamma	0.163	0.125	0.0100	0.440	0.146	0.891	0.156	0.539	-1.22
04_3_26	MW-4	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	-74.0	-68.3	-175	-21.9	40.6	-0.548	25	-1.20	1.49
04_3_27	MW-4	Field Parameters	Temperature	°C	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	12.9	13.6	9.70	14.7	1.67	0.130	0.963	-0.951	-0.666
04_3_28	MW-4	Field Parameters	Turbidity	NTU	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1.70	1.60	0.260	3.28	0.777	0.457	0.585	0.393	0.0236
04_3_29	MW-4	Field Parameters	pH	su	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	7.20	7.16	7.03	7.87	0.180	0.0250	0.0815	3.27	12.4
04_4_30	MW-4	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	410	411	400	420	9.15	0.0223	10.4	-0.196	-3.20
04_4_31	MW-4	Other	Carbonate	mg/L	4	4	100%	2022-08-02 to 2024-01-29		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
04_4_32	MW-4	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	428	424	412	450	16.4	0.0383	11.9	1.10	1.26
04_4_33	MW-4	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	39.0	39.1	38.3	39.6	0.562	0.0144	0.519	-0.646	-0.415
04_4_34	MW-4	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	1.43	1.43	1.39	1.47	0.0365	0.0255	0.0444	0	-3.30
04_4_35	MW-4	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	30.6	30.1	28.5	33.9	2.49	0.0812	2.00	0.893	-0.908
04_4_36	MW-4	Other	Total Suspended Solids	mg/L	18	7	39%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	2.18	2.50	1.00	3.00	0.897	0.411	0.741	-0.345	-1.80
04_5_37	MW-4	Part 115	Copper	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
04_5_38	MW-4	Part 115	Iron	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1.28	1.30	1.03	1.53	0.123	0.0965	0.0963	-0.207	0.227
04_5_39	MW-4	Part 115	Nickel	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
04_5_40	MW-4	Part 115	Silver	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
04_5_41	MW-4	Part 115	Vanadium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
04_5_42	MW-4	Part 115	Zinc	mg/L	18	15	83%	2020-04-28 to 2024-01-29		Nonparametric	0.00678	0.00500	0.00500	0.0310	0.00616	0.909	0	4.01	16.4
05_1_01	MW-5	Appendix III	Boron	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	4.21	4.59	0.370	5.75	1.28	0.304	0.607	-1.87	4.25
05_1_02	MW-5	Appendix III	Calcium	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Normal	Normal	242	245	70.1	372	70.8	0.293	56.3	-0.586	1.16
05_1_03	MW-5	Appendix III	Chloride	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	68.1	73.0	37.2	83.0	13.9	0.203	10.4	-1.06	0.241

(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
05_1_04	MW-5	Appendix III	Fluoride	mg/L	17	17	100%	2020-04-28 to 2024-01-29		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
05_1_05	MW-5	Appendix III	Sulfate	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	683	700	186	1170	280	0.409	262	-0.110	-0.672
05_1_06	MW-5	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1372	1390	592	2020	416	0.303	400	-0.299	-0.691
05_1_07	MW-5	Appendix III	pH, Field	su	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	7.20	7.25	6.40	7.45	0.256	0.0356	0.126	-2.31	5.62
05_2_04	MW-5	Appendix IV	Fluoride	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
05_2_08	MW-5	Appendix IV	Antimony	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
05_2_09	MW-5	Appendix IV	Arsenic	mg/L	18	12	67%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.00261	0.00200	0.00200	0.00700	0.00138	0.528	0	2.47	5.90
05_2_10	MW-5	Appendix IV	Barium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0454	0.0430	0.0330	0.0640	0.00792	0.174	0.00593	0.856	0.306
05_2_11	MW-5	Appendix IV	Beryllium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
05_2_12	MW-5	Appendix IV	Cadmium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
05_2_13	MW-5	Appendix IV	Chromium	mg/L	18	16	89%	2020-04-28 to 2024-01-29		Nonparametric	0.00539	0.00500	0.00500	0.0100	0.00124	0.231	0	3.49	12.5
05_2_14	MW-5	Appendix IV	Cobalt	mg/L	18	17	94%	2020-04-28 to 2024-01-29		Nonparametric	0.00506	0.00500	0.00500	0.00600	0.000236	0.0466	0	4.24	18.0
05_2_15	MW-5	Appendix IV	Lead	mg/L	18	15	83%	2020-04-28 to 2024-01-29		Nonparametric	0.00372	0.00300	0.00300	0.0140	0.00261	0.701	0	4.04	16.6
05_2_16	MW-5	Appendix IV	Lithium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	0.0689	0.0735	0.0160	0.0910	0.0189	0.274	0.0170	-1.33	2.29
05_2_17	MW-5	Appendix IV	Mercury	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
05_2_18	MW-5	Appendix IV	Molybdenum	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0524	0.0515	0.0100	0.0960	0.0195	0.373	0.0178	0.221	1.09
05_2_20	MW-5	Appendix IV	Radium-226/228	pCi/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1.65	1.45	0.524	4.22	1.09	0.663	0.976	1.26	1.16
05_2_22	MW-5	Appendix IV	Selenium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
05_2_23	MW-5	Appendix IV	Thallium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
05_3_24	MW-5	Field Parameters	Conductivity	mS/cm	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1.66	1.70	1.00	2.49	0.395	0.237	0.385	0.161	-0.214
05_3_25	MW-5	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	2.62	2.56	0.550	5.42	1.38	0.525	1.64	0.0139	-0.517
05_3_26	MW-5	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	81.2	64.3	-34.8	248	87.5	1.08	117	0.204	-1.06
05_3_27	MW-5	Field Parameters	Temperature	°C	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	12.7	12.6	6.90	17.5	2.68	0.211	2.52	-0.338	0.144
05_3_28	MW-5	Field Parameters	Turbidity	NTU	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	29.0	18.2	9.52	180	39.8	1.37	4.48	3.62	13.7
05_3_29	MW-5	Field Parameters	pH	su	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	7.20	7.25	6.40	7.45	0.256	0.0356	0.126	-2.31	5.62
05_4_30	MW-5	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	297	294	280	320	17.0	0.0573	13.3	0.936	1.06
05_4_31	MW-5	Other	Carbonate	mg/L	4	4	100%	2022-08-02 to 2024-01-29		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
05_4_32	MW-5	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	602	580	502	748	111	0.185	94.1	0.835	-0.945
05_4_33	MW-5	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	42.0	40.2	33.3	54.5	9.08	0.216	6.67	1.07	1.29
05_4_34	MW-5	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	4.29	4.39	3.77	4.61	0.364	0.0849	0.200	-1.44	2.45
05_4_35	MW-5	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	55.1	52.6	45.6	69.5	10.9	0.198	8.74	0.916	-0.687
05_4_36	MW-5	Other	Total Suspended Solids	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Lognormal	Nonparametric	27.2	15.5	4.00	161	37.8	1.39	12.1	2.94	9.72
05_5_37	MW-5	Part 115	Copper	mg/L	18	13	72%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.00750	0.00500	0.00500	0.0260	0.00582	0.776	0	2.57	6.25
05_5_38	MW-5	Part 115	Iron	mg/L	18	1	6%	2020-04-28 to 2024-01-29	Gamma; Lognormal	Gamma	1.42	0.690	0.0200	8.00	2.0	1.41	0.733	2.56	6.98
05_5_39	MW-5	Part 115	Nickel	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0113	0.0110	0.00500	0.0190	0.00414	0.366	0.00444	0.275	-0.727
05_5_40	MW-5	Part 115	Silver	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
05_5_41	MW-5	Part 115	Vanadium	mg/L	18	15	83%	2020-04-28 to 2024-01-29		Nonparametric	0.00561	0.00500	0.00500	0.0120	0.00185	0.330	0	3.09	9.23
05_5_42	MW-5	Part 115	Zinc	mg/L	18	5	28%	2020-04-28 to 2024-01-29	Gamma; Lognormal	Gamma	0.0176	0.00650	0.00500	0.0980	0.0235	1.34	0.00222	2.74	8.31
06_1_01	MW-6	Appendix III	Boron	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.801	0.800	0.490	1.09	0.184	0.229	0.237	-0.0665	-1.14
06_1_02	MW-6	Appendix III	Calcium	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	168	169	142	193	18.0	0.107	29.6	0.0611	-1.37
06_1_03	MW-6	Appendix III	Chloride	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	33.9	35.0	24.0	43.0	6.74	0.199	10.4	-0.0764	-1.74
06_1_04	MW-6	Appendix III	Fluoride	mg/L	17	17	100%	2020-04-28 to 2024-01-29		Nonparametric	1.00	1.00	1.00	1.00	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
06_1_05	MW-6	Appendix III	Sulfate	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	183	183	118	264	49.9	0.273	71.1	0.286	-1.31
06_1_06	MW-6	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	758	738	598	898	94.8	0.125	121	-0.0313	-1.38
06_1_07	MW-6	Appendix III	pH, Field	su	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	6.74	6.73	6.35	7.11	0.163	0.0242	0.0741	-0.0119	2.29
06_2_04	MW-6	Appendix IV	Fluoride	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
06_2_08	MW-6	Appendix IV	Antimony	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
06_2_09	MW-6	Appendix IV	Arsenic	mg/L	18	17	94%	2020-04-28 to 2024-01-29		Nonparametric	0.00206	0.00200	0.00200	0.00300	0.000236	0.115	0	4.24	18.0
06_2_10	MW-6	Appendix IV	Barium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0483	0.0495	0.0380	0.0570	0.00551	0.114	0.00741	-0.164	-1.16
06_2_11	MW-6	Appendix IV	Beryllium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
06_2_12	MW-6	Appendix IV	Cadmium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
06_2_13	MW-6	Appendix IV	Chromium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
06_2_14	MW-6	Appendix IV	Cobalt	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
06_2_15	MW-6	Appendix IV	Lead	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
06_2_16	MW-6	Appendix IV	Lithium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0468	0.0475	0.0320	0.0590	0.00769	0.164	0.00889	-0.210	-0.714
06_2_17	MW-6	Appendix IV	Mercury	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
06_2_18	MW-6	Appendix IV	Molybdenum	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0257	0.0265	0.0120	0.0360	0.00599	0.233	0.00444	-0.540	0.473
06_2_20	MW-6	Appendix IV	Radium-226/228	pCi/L	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	0.982	0.711	0	2.61	0.673	0.685	0.475	0.897	0.421
06_2_22	MW-6	Appendix IV	Selenium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
06_2_23	MW-6	Appendix IV	Thallium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
06_3_24	MW-6	Field Parameters	Conductivity	mS/cm	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1.10	1.11	0.902	1.27	0.105	0.0951	0.116	-0.134	-0.760
06_3_25	MW-6	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal	Gamma	0.135	0.0900	0.0100	0.440	0.120	0.890	0.0741	1.29	1.03
06_3_26	MW-6	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	67.9	79.8	-66.5	202	71.5	1.05	68.7	-0.189	-0.219
06_3_27	MW-6	Field Parameters	Temperature	°C	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	12.9	13.1	10.2	15.2	1.39	0.108	1.63	-0.519	-0.352
06_3_28	MW-6	Field Parameters	Turbidity	NTU	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal	Gamma	8.65	7.47	1.19	33.6	7.71	0.892	3.83	2.21	6.06
06_3_29	MW-6	Field Parameters	pH	su	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	6.74	6.73	6.35	7.11	0.163	0.0242	0.0741	-0.0119	2.29
06_4_30	MW-6	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	517	523	480	543	27.2	0.0525	20.0	-1.08	1.13
06_4_31	MW-6	Other	Carbonate	mg/L	4	4	100%	2022-08-02 to 2024-01-29		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
06_4_32	MW-6	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	574	574	522	624	53.9	0.0941	68.1	-0.0107	-5.72
06_4_33	MW-6	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	35.6	36.1	29.9	40.3	5.04	0.142	5.48	-0.270	-4.17
06_4_34	MW-6	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	6.76	6.81	6.40	7.02	0.262	0.0387	0.185	-1.05	1.74
06_4_35	MW-6	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	37.4	36.5	32.4	43.9	5.13	0.137	4.74	0.665	-1.27
06_4_36	MW-6	Other	Total Suspended Solids	mg/L	18	13	72%	2020-04-28 to 2024-01-29	Gamma; Lognormal	Nonparametric	4.52	3.00	1.00	32.0	6.93	1.53	0	4.10	17.1
06_5_37	MW-6	Part 115	Copper	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
06_5_38	MW-6	Part 115	Iron	mg/L	18	9	50%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.0400	0.0200	0.0200	0.200	0.0439	1.10	0	3.20	11.3
06_5_39	MW-6	Part 115	Nickel	mg/L	18	4	22%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	0.00639	0.00700	0.00500	0.00800	0.00104	0.162	0.00148	-0.201	-1.20
06_5_40	MW-6	Part 115	Silver	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
06_5_41	MW-6	Part 115	Vanadium	mg/L	18	18	100%	2020-04-28 to 2024-01-29		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
06_5_42	MW-6	Part 115	Zinc	mg/L	18	17	94%	2020-04-28 to 2024-01-29		Nonparametric	0.00661	0.00500	0.00500	0.0340	0.00684	1.03	0	4.24	18.0
07_1_01	MW-7	Appendix III	Boron	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	1.85	1.84	1.08	2.75	0.439	0.238	0.422	0.243	0.751
07_1_02	MW-7	Appendix III	Calcium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	119	112	97.2	165	20.2	0.170	14.8	1.38	1.52
07_1_03	MW-7	Appendix III	Chloride	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	78.2	75.0	72.2	98.0	7.28	0.0931	3.56	2.06	4.90
07_1_04	MW-7	Appendix III	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.945	1.00	0.338	1.00	0.191	0.202	0	-3.46	12.0
07_1_05	MW-7	Appendix III	Sulfate	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	204	194	172	270	31.5	0.154	23	1.33	0.955

(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
07_1_06	MW-7	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	629	591	548	864	91.5	0.146	43	1.99	3.65
07_1_07	MW-7	Appendix III	pH, Field	su	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	7.48	7.46	7.09	8.18	0.262	0.0350	0.141	1.62	4.89
07_2_04	MW-7	Appendix IV	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.945	1.00	0.338	1.00	0.191	0.202	0	-3.46	12.0
07_2_08	MW-7	Appendix IV	Antimony	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
07_2_09	MW-7	Appendix IV	Arsenic	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	0.00558	0.00600	0.00400	0.00700	0.000900	0.161	0	-0.745	0.0530
07_2_10	MW-7	Appendix IV	Barium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0523	0.0530	0.0360	0.0620	0.00676	0.129	0.00444	-1.09	2.36
07_2_11	MW-7	Appendix IV	Beryllium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
07_2_12	MW-7	Appendix IV	Cadmium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
07_2_13	MW-7	Appendix IV	Chromium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
07_2_14	MW-7	Appendix IV	Cobalt	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
07_2_15	MW-7	Appendix IV	Lead	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
07_2_16	MW-7	Appendix IV	Lithium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0909	0.0945	0.0630	0.112	0.0134	0.147	0.00815	-0.746	0.587
07_2_17	MW-7	Appendix IV	Mercury	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
07_2_18	MW-7	Appendix IV	Molybdenum	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	0.241	0.268	0.146	0.296	0.0583	0.242	0.0363	-0.759	-1.36
07_2_20	MW-7	Appendix IV	Radium-226/228	pCi/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	2.31	1.98	0.514	5.44	1.57	0.679	1.51	0.912	0.120
07_2_22	MW-7	Appendix IV	Selenium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
07_2_23	MW-7	Appendix IV	Thallium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
07_3_24	MW-7	Field Parameters	Conductivity	mS/cm	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Normal	Normal	0.912	0.920	0.462	1.21	0.184	0.201	0.0711	-1.00	3.11
07_3_25	MW-7	Field Parameters	Dissolved Oxygen	mg/L	12	1	8%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	0.0808	0.0250	0	0.490	0.137	1.70	0.0222	2.82	8.49
07_3_26	MW-7	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	2021-06-15 to 2024-01-30	Normal	Normal	-120	-129	-157	-36.9	33.9	-0.283	25.1	1.47	2.27
07_3_27	MW-7	Field Parameters	Temperature	°C	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	12.2	12.9	6.20	17.0	3.30	0.271	3.63	-0.376	-0.776
07_3_28	MW-7	Field Parameters	Turbidity	NTU	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	4.40	3.09	1.45	16.0	3.93	0.894	2.24	2.67	8.08
07_3_29	MW-7	Field Parameters	pH	su	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	7.48	7.46	7.09	8.18	0.262	0.0350	0.141	1.62	4.89
07_4_30	MW-7	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	207	172	150	334	85.7	0.415	22.2	1.88	3.59
07_4_31	MW-7	Other	Carbonate	mg/L	4	4	100%	2022-08-02 to 2024-01-30		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
07_4_32	MW-7	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	345	298	289	496	101	0.293	11.9	1.97	3.89
07_4_33	MW-7	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	14.3	12.3	12.1	20.5	4.13	0.289	0.148	2.0	3.99
07_4_34	MW-7	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	8.41	9.17	5.77	9.53	1.78	0.212	0.467	-1.86	3.47
07_4_35	MW-7	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	72.4	69.6	66.5	83.9	7.90	0.109	3.41	1.67	2.80
07_4_36	MW-7	Other	Total Suspended Solids	mg/L	12	10	83%	2021-06-15 to 2024-01-30		Nonparametric	2.80	3.00	1.00	3.00	0.578	0.207	0	-3.25	10.8
07_5_37	MW-7	Part 115	Copper	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
07_5_38	MW-7	Part 115	Iron	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	1.48	1.35	1.00	2.81	0.484	0.328	0.230	2.13	5.40
07_5_39	MW-7	Part 115	Nickel	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
07_5_40	MW-7	Part 115	Silver	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
07_5_41	MW-7	Part 115	Vanadium	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00508	0.00500	0.00500	0.00600	0.000289	0.0568	0	3.46	12.0
07_5_42	MW-7	Part 115	Zinc	mg/L	12	9	75%	2021-06-15 to 2024-01-30		Nonparametric	0.00608	0.00500	0.00500	0.0140	0.00261	0.429	0	2.98	9.36
08_1_01	MW-8	Appendix III	Boron	mg/L	12	1	8%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0883	0.0800	0.0400	0.210	0.0486	0.550	0.0444	1.53	2.80
08_1_02	MW-8	Appendix III	Calcium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	94.6	95	86.5	104	5.38	0.0569	5.48	-0.0353	-0.709
08_1_03	MW-8	Appendix III	Chloride	mg/L	12	2	17%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	19.6	10.8	4.45	66.0	20.9	1.07	8.52	1.77	1.98
08_1_04	MW-8	Appendix III	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.922	1.00	0.0587	1.00	0.272	0.295	0	-3.46	12.0
08_1_05	MW-8	Appendix III	Sulfate	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	24.8	19.2	11.0	52.0	14.1	0.569	10.4	0.997	-0.187
08_1_06	MW-8	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	392	383	362	460	28.9	0.0737	17.8	1.44	1.67

(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
08_1_07	MW-8	Appendix III	pH, Field	su	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	7.16	7.13	6.99	7.78	0.216	0.0302	0.156	2.34	6.59
08_2_04	MW-8	Appendix IV	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.922	1.00	0.0587	1.00	0.272	0.295	0	-3.46	12.0
08_2_08	MW-8	Appendix IV	Antimony	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
08_2_09	MW-8	Appendix IV	Arsenic	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
08_2_10	MW-8	Appendix IV	Barium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0218	0.0210	0.0170	0.0280	0.00333	0.152	0.00222	0.548	-0.328
08_2_11	MW-8	Appendix IV	Beryllium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
08_2_12	MW-8	Appendix IV	Cadmium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
08_2_13	MW-8	Appendix IV	Chromium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
08_2_14	MW-8	Appendix IV	Cobalt	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
08_2_15	MW-8	Appendix IV	Lead	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
08_2_16	MW-8	Appendix IV	Lithium	mg/L	12	6	50%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Nonparametric	0.00700	0.00550	0.00500	0.0130	0.00266	0.380	0.000741	1.21	0.686
08_2_17	MW-8	Appendix IV	Mercury	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
08_2_18	MW-8	Appendix IV	Molybdenum	mg/L	12	10	83%	2021-06-15 to 2024-01-30		Nonparametric	0.00625	0.00500	0.00500	0.0130	0.00273	0.438	0	2.12	3.31
08_2_20	MW-8	Appendix IV	Radium-226/228	pCi/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Gamma	2.11	1.89	0.118	6.21	1.86	0.881	1.89	1.06	0.672
08_2_22	MW-8	Appendix IV	Selenium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
08_2_23	MW-8	Appendix IV	Thallium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
08_3_24	MW-8	Field Parameters	Conductivity	mS/cm	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.654	0.639	0.617	0.744	0.0399	0.0611	0.0267	1.53	1.64
08_3_25	MW-8	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma	Gamma	2.29	1.71	0.0100	7.83	2.23	0.974	1.14	1.63	2.80
08_3_26	MW-8	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	194	175	72.1	365	99.1	0.512	102	0.436	-1.28
08_3_27	MW-8	Field Parameters	Temperature	°C	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	11.8	12.6	5.90	16.4	3.23	0.274	2.74	-0.435	-0.898
08_3_28	MW-8	Field Parameters	Turbidity	NTU	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	4.75	5.20	2.00	7.18	1.87	0.393	2.32	-0.258	-1.46
08_3_29	MW-8	Field Parameters	pH	su	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	7.16	7.13	6.99	7.78	0.216	0.0302	0.156	2.34	6.59
08_4_30	MW-8	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	393	406	320	440	51.4	0.131	27.4	-1.40	2.57
08_4_31	MW-8	Other	Carbonate	mg/L	4	4	100%	2022-08-02 to 2024-01-30		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
08_4_32	MW-8	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	355	356	326	384	24.7	0.0695	27.4	-0.0512	-0.683
08_4_33	MW-8	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	28.7	28.9	25.3	31.8	2.66	0.0927	2.22	-0.337	1.56
08_4_34	MW-8	Other	Potassium	mg/L	4	1	25%	2022-08-02 to 2024-01-30		Nonparametric	0.590	0.550	0.500	0.760	0.117	0.198	0.0519	1.65	2.81
08_4_35	MW-8	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	20.4	14.1	12.7	40.9	13.7	0.669	1.11	1.99	3.96
08_4_36	MW-8	Other	Total Suspended Solids	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	2.92	3.00	2.00	3.00	0.289	0.0990	0	-3.46	12.0
08_5_37	MW-8	Part 115	Copper	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00542	0.00500	0.00500	0.0100	0.00144	0.266	0	3.46	12.0
08_5_38	MW-8	Part 115	Iron	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.0200	0.0200	0.0200	0.0200	0	0	0	NA	NA
08_5_39	MW-8	Part 115	Nickel	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
08_5_40	MW-8	Part 115	Silver	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
08_5_41	MW-8	Part 115	Vanadium	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
08_5_42	MW-8	Part 115	Zinc	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00517	0.00500	0.00500	0.00700	0.000577	0.112	0	3.46	12.0
09_1_01	MW-9	Appendix III	Boron	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.0400	0.0400	0.0400	0.0400	0	0	0	NA	NA
09_1_02	MW-9	Appendix III	Calcium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	74.2	76.2	61.8	98.8	9.78	0.132	5.19	1.23	3.12
09_1_03	MW-9	Appendix III	Chloride	mg/L	12	10	83%	2021-06-15 to 2024-01-30		Nonparametric	4.72	5.00	1.11	5.50	1.15	0.243	0	-3.36	11.5
09_1_04	MW-9	Appendix III	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.919	1.00	0.0330	1.00	0.279	0.304	0	-3.46	12.0
09_1_05	MW-9	Appendix III	Sulfate	mg/L	12	8	67%	2021-06-15 to 2024-01-30		Nonparametric	5.54	5.00	3.58	11.9	2.07	0.374	0	3.06	10.1
09_1_06	MW-9	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	262	249	232	348	31.7	0.121	16.3	1.98	4.67
09_1_07	MW-9	Appendix III	pH, Field	su	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	7.30	7.28	7.13	7.74	0.174	0.0238	0.141	1.54	2.74

(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
09_2_04	MW-9	Appendix IV	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.919	1.00	0.0330	1.00	0.279	0.304	0	-3.46	12.0
09_2_08	MW-9	Appendix IV	Antimony	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
09_2_09	MW-9	Appendix IV	Arsenic	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00208	0.00200	0.00200	0.00300	0.000289	0.139	0	3.46	12.0
09_2_10	MW-9	Appendix IV	Barium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0143	0.0140	0.0130	0.0170	0.00130	0.0909	0.00148	0.735	-0.118
09_2_11	MW-9	Appendix IV	Beryllium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
09_2_12	MW-9	Appendix IV	Cadmium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
09_2_13	MW-9	Appendix IV	Chromium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
09_2_14	MW-9	Appendix IV	Cobalt	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
09_2_15	MW-9	Appendix IV	Lead	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
09_2_16	MW-9	Appendix IV	Lithium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00542	0.00500	0.00500	0.0100	0.00144	0.266	0	3.46	12.0
09_2_17	MW-9	Appendix IV	Mercury	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
09_2_18	MW-9	Appendix IV	Molybdenum	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
09_2_20	MW-9	Appendix IV	Radium-226/228	pCi/L	12	0	0%	2021-06-15 to 2024-01-30	Normal	Normal	1.04	0.710	0	2.37	0.890	0.854	0.795	0.480	-1.55
09_2_22	MW-9	Appendix IV	Selenium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
09_2_23	MW-9	Appendix IV	Thallium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
09_3_24	MW-9	Field Parameters	Conductivity	mS/cm	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.451	0.450	0.393	0.540	0.0376	0.0833	0.0341	0.951	2.08
09_3_25	MW-9	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	5.19	5.38	3.35	6.33	0.967	0.186	1.20	-0.539	-0.646
09_3_26	MW-9	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	215	205	99.2	381	93.4	0.434	105	0.398	-1.09
09_3_27	MW-9	Field Parameters	Temperature	°C	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	12.4	13.3	4.70	19.2	5.44	0.437	7.04	-0.200	-1.70
09_3_28	MW-9	Field Parameters	Turbidity	NTU	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	3.81	3.23	1.60	6.70	1.84	0.483	2.41	0.294	-1.56
09_3_29	MW-9	Field Parameters	pH	su	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	7.30	7.28	7.13	7.74	0.174	0.0238	0.141	1.54	2.74
09_4_30	MW-9	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	321	323	260	378	49.4	0.154	50.4	-0.220	0.214
09_4_31	MW-9	Other	Carbonate	mg/L	4	4	100%	2022-08-02 to 2024-01-30		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
09_4_32	MW-9	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	273	266	218	342	51.4	0.189	38.5	0.815	1.73
09_4_33	MW-9	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	19.4	19.4	15.2	23.3	3.31	0.171	2.89	-0.181	1.51
09_4_34	MW-9	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	1.06	1.01	0.930	1.28	0.166	0.157	0.119	0.999	-0.544
09_4_35	MW-9	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	3.31	3.35	2.41	4.11	0.803	0.243	0.926	-0.168	-4.01
09_4_36	MW-9	Other	Total Suspended Solids	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	3.00	3.00	3.00	3.00	0	0	0	NA	NA
09_5_37	MW-9	Part 115	Copper	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
09_5_38	MW-9	Part 115	Iron	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.0200	0.0200	0.0200	0.0200	0	0	0	NA	NA
09_5_39	MW-9	Part 115	Nickel	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
09_5_40	MW-9	Part 115	Silver	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
09_5_41	MW-9	Part 115	Vanadium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
09_5_42	MW-9	Part 115	Zinc	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00533	0.00500	0.00500	0.00900	0.00115	0.217	0	3.46	12.0
100A_1_01	MW-100A	Appendix III	Boron	mg/L	8	0	0%	2023-06-05 to 2024-02-07		Nonparametric	0.0475	0.0500	0.0400	0.0500	0.00463	0.0975	0	-1.44	-0.00000000000000466
100A_1_02	MW-100A	Appendix III	Calcium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	92.4	92.5	88.6	95.3	2.01	0.0218	1.41	-0.643	1.16
100A_1_03	MW-100A	Appendix III	Chloride	mg/L	8	0	0%	2023-06-05 to 2024-02-07		Nonparametric	10.1	10.0	10.0	10.6	0.223	0.0221	0	1.95	3.20
100A_1_04	MW-100A	Appendix III	Fluoride	mg/L	8	6	75%	2023-06-05 to 2024-02-07		Nonparametric	0.860	1.00	0.220	1.00	0.285	0.331	0	-2.09	4.06
100A_1_05	MW-100A	Appendix III	Sulfate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	24.9	21.9	16.2	38.0	8.05	0.324	7.70	0.764	-0.818
100A_1_06	MW-100A	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	416	415	402	434	9.94	0.0239	8.89	0.658	0.582
100A_1_07	MW-100A	Appendix III	pH, Field	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.28	7.30	7.08	7.40	0.100	0.0137	0.0741	-1.26	1.85
100A_2_04	MW-100A	Appendix IV	Fluoride	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.902	1.00	0.220	1.00	0.276	0.306	0	-2.83	8.00

(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
100A_2_08	MW-100A	Appendix IV	Antimony	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100A_2_09	MW-100A	Appendix IV	Arsenic	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.0142	0.0150	0.00900	0.0180	0.00320	0.224	0.00222	-0.827	-0.461
100A_2_10	MW-100A	Appendix IV	Barium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.201	0.202	0.189	0.207	0.00580	0.0288	0.00519	-1.41	2.57
100A_2_11	MW-100A	Appendix IV	Beryllium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
100A_2_12	MW-100A	Appendix IV	Cadmium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
100A_2_13	MW-100A	Appendix IV	Chromium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100A_2_14	MW-100A	Appendix IV	Cobalt	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100A_2_15	MW-100A	Appendix IV	Lead	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
100A_2_16	MW-100A	Appendix IV	Lithium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.0170	0.0175	0.0140	0.0200	0.00220	0.130	0.00222	-0.320	-1.09
100A_2_17	MW-100A	Appendix IV	Mercury	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
100A_2_18	MW-100A	Appendix IV	Molybdenum	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.0109	0.0115	0.00800	0.0130	0.00173	0.159	0.00148	-0.635	-0.796
100A_2_20	MW-100A	Appendix IV	Radium-226/228	pCi/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	1.06	0.979	0.402	2.50	0.706	0.666	0.750	1.28	1.70
100A_2_22	MW-100A	Appendix IV	Selenium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100A_2_23	MW-100A	Appendix IV	Thallium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
100A_3_24	MW-100A	Field Parameters	Conductivity	mS/cm	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.703	0.722	0.593	0.766	0.0556	0.0790	0.0519	-1.14	1.25
100A_3_25	MW-100A	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal	Gamma	1.17	0.745	0.390	4.15	1.26	1.08	0.511	2.39	6.08
100A_3_26	MW-100A	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	2023-06-05 to 2024-02-07	Normal	Normal	-80.0	-98.5	-131	60.9	62.3	-0.778	37.3	1.99	4.38
100A_3_27	MW-100A	Field Parameters	Temperature	°C	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	13.6	14.4	10.0	17.2	2.84	0.208	3.85	-0.193	-1.67
100A_3_28	MW-100A	Field Parameters	Turbidity	NTU	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Normal	Normal	4.72	4.33	0.650	7.95	2.39	0.507	2.21	-0.223	-0.279
100A_3_29	MW-100A	Field Parameters	pH	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.28	7.30	7.08	7.40	0.100	0.0137	0.0741	-1.26	1.85
100A_4_30	MW-100A	Other	Bicarbonate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	438	436	410	460	15.7	0.0360	14.8	-0.354	0.0545
100A_4_31	MW-100A	Other	Carbonate	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
100A_4_32	MW-100A	Other	Hardness	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma	Gamma	392	395	368	400	10.3	0.0262	4.44	-2.31	5.78
100A_4_33	MW-100A	Other	Magnesium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	38.8	39	36.0	40.3	1.38	0.0355	1.26	-1.26	2.01
100A_4_34	MW-100A	Other	Potassium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	2.23	2.21	1.83	2.62	0.219	0.0985	0.0815	-0.0389	2.34
100A_4_35	MW-100A	Other	Sodium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	11.4	11.3	10.4	12.6	0.645	0.0566	0.444	0.580	1.40
100A_4_36	MW-100A	Other	Total Suspended Solids	mg/L	8	1	12%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	8.71	7.45	3.00	25.0	6.84	0.785	2.44	2.40	6.32
100A_5_37	MW-100A	Part 115	Copper	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100A_5_38	MW-100A	Part 115	Iron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Normal	Normal	2.53	2.73	0.630	3.75	1.09	0.429	0.859	-0.860	-0.138
100A_5_39	MW-100A	Part 115	Nickel	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100A_5_40	MW-100A	Part 115	Silver	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
100A_5_41	MW-100A	Part 115	Vanadium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100A_5_42	MW-100A	Part 115	Zinc	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.00513	0.00500	0.00500	0.00600	0.000354	0.0690	0	2.83	8.0
100B_1_01	MW-100B	Appendix III	Boron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.251	0.255	0.210	0.290	0.0236	0.0938	0.00741	-0.285	1.07
100B_1_02	MW-100B	Appendix III	Calcium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	98.4	97.3	94.2	108	4.59	0.0466	3.11	1.54	2.26
100B_1_03	MW-100B	Appendix III	Chloride	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	23.6	23.9	22.0	25.0	1.13	0.0476	1.48	-0.251	-1.17
100B_1_04	MW-100B	Appendix III	Fluoride	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.894	1.00	0.150	1.00	0.301	0.336	0	-2.83	8.00
100B_1_05	MW-100B	Appendix III	Sulfate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	115	111	105	136	10.8	0.0935	6.67	1.31	0.895
100B_1_06	MW-100B	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	504	494	482	538	21.2	0.0421	11.9	1.00	-0.628
100B_1_07	MW-100B	Appendix III	pH, Field	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.43	7.40	7.33	7.62	0.111	0.0150	0.0889	1.02	-0.419
100B_2_04	MW-100B	Appendix IV	Fluoride	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.894	1.00	0.150	1.00	0.301	0.336	0	-2.83	8.00
100B_2_08	MW-100B	Appendix IV	Antimony	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	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
100B_2_09	MW-100B	Appendix IV	Arsenic	mg/L	8	0	0%	2023-06-05 to 2024-02-07		Nonparametric	0.0104	0.0105	0.00900	0.0110	0.000744	0.0717	0.000741	-0.824	-0.152
100B_2_10	MW-100B	Appendix IV	Barium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.151	0.150	0.142	0.164	0.00750	0.0496	0.00667	0.554	-0.682
100B_2_11	MW-100B	Appendix IV	Beryllium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
100B_2_12	MW-100B	Appendix IV	Cadmium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
100B_2_13	MW-100B	Appendix IV	Chromium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100B_2_14	MW-100B	Appendix IV	Cobalt	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100B_2_15	MW-100B	Appendix IV	Lead	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
100B_2_16	MW-100B	Appendix IV	Lithium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.0174	0.0170	0.0160	0.0190	0.000916	0.0527	0.000741	0.488	0.421
100B_2_17	MW-100B	Appendix IV	Mercury	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
100B_2_18	MW-100B	Appendix IV	Molybdenum	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Lognormal; Normal	Normal	0.00925	0.00900	0.00800	0.0110	0.000886	0.0958	0	1.03	1.85
100B_2_20	MW-100B	Appendix IV	Radium-226/228	pCi/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	1.49	1.56	0.494	2.16	0.543	0.364	0.504	-0.788	0.309
100B_2_22	MW-100B	Appendix IV	Selenium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100B_2_23	MW-100B	Appendix IV	Thallium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
100B_3_24	MW-100B	Field Parameters	Conductivity	mS/cm	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.761	0.755	0.713	0.805	0.0312	0.0410	0.0289	0.121	-0.712
100B_3_25	MW-100B	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	0.0400	0.0100	0	0.190	0.0665	1.66	0.0148	2.05	4.18
100B_3_26	MW-100B	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	2023-06-05 to 2024-02-07	Normal	Normal	-149	-148	-177	-130	14.9	-0.100	11.9	-0.714	0.807
100B_3_27	MW-100B	Field Parameters	Temperature	°C	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	12.5	12.5	10.6	14.2	1.39	0.111	2.00	-0.0898	-1.82
100B_3_28	MW-100B	Field Parameters	Turbidity	NTU	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	3.55	4.15	0.810	5.16	1.70	0.480	0.733	-1.17	-0.256
100B_3_29	MW-100B	Field Parameters	pH	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.43	7.40	7.33	7.62	0.111	0.0150	0.0889	1.02	-0.419
100B_4_30	MW-100B	Other	Bicarbonate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	347	334	310	440	40.6	0.117	22.2	2.02	4.69
100B_4_31	MW-100B	Other	Carbonate	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
100B_4_32	MW-100B	Other	Hardness	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal	Gamma	378	372	364	410	16.9	0.0447	8.89	1.35	0.685
100B_4_33	MW-100B	Other	Magnesium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	33.3	33	29.4	35.8	2.14	0.0643	2.00	-0.564	0.252
100B_4_34	MW-100B	Other	Potassium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	3.54	3.50	3.34	3.76	0.136	0.0383	0.0963	0.421	-0.267
100B_4_35	MW-100B	Other	Sodium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	26.6	27.0	23.2	30.3	2.08	0.0781	1.11	0.151	1.22
100B_4_36	MW-100B	Other	Total Suspended Solids	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	4.10	3.90	2.50	7.10	1.46	0.356	1.33	1.27	1.95
100B_5_37	MW-100B	Part 115	Copper	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100B_5_38	MW-100B	Part 115	Iron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	2.51	2.38	1.77	3.54	0.515	0.206	0.0741	1.04	2.20
100B_5_39	MW-100B	Part 115	Nickel	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100B_5_40	MW-100B	Part 115	Silver	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
100B_5_41	MW-100B	Part 115	Vanadium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100B_5_42	MW-100B	Part 115	Zinc	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
10_1_01	MW-10	Appendix III	Boron	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	0.0517	0.0500	0.0400	0.0700	0.00835	0.162	0	0.771	1.15
10_1_02	MW-10	Appendix III	Calcium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	129	130	113	142	9.35	0.0723	9.63	-0.442	-0.716
10_1_03	MW-10	Appendix III	Chloride	mg/L	12	9	75%	2021-06-15 to 2024-01-30		Nonparametric	5.11	5.00	1.03	9.30	1.79	0.350	0	0.120	5.03
10_1_04	MW-10	Appendix III	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.922	1.00	0.0660	1.00	0.270	0.292	0	-3.46	12.0
10_1_05	MW-10	Appendix III	Sulfate	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	15.4	14.8	9.00	27.8	4.87	0.317	3.70	1.42	3.46
10_1_06	MW-10	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	440	441	376	494	34.6	0.0786	32.6	-0.240	-0.312
10_1_07	MW-10	Appendix III	pH, Field	su	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	6.74	6.70	6.49	7.30	0.217	0.0323	0.178	1.62	3.65
10_2_04	MW-10	Appendix IV	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.922	1.00	0.0660	1.00	0.270	0.292	0	-3.46	12.0
10_2_08	MW-10	Appendix IV	Antimony	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
10_2_09	MW-10	Appendix IV	Arsenic	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00200	0.00200	0.00200	0.00200	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
10_2_10	MW-10	Appendix IV	Barium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0408	0.0410	0.0360	0.0470	0.00336	0.0825	0.00444	0.260	-0.653
10_2_11	MW-10	Appendix IV	Beryllium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
10_2_12	MW-10	Appendix IV	Cadmium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
10_2_13	MW-10	Appendix IV	Chromium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
10_2_14	MW-10	Appendix IV	Cobalt	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
10_2_15	MW-10	Appendix IV	Lead	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
10_2_16	MW-10	Appendix IV	Lithium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00542	0.00500	0.00500	0.0100	0.00144	0.266	0	3.46	12.0
10_2_17	MW-10	Appendix IV	Mercury	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
10_2_18	MW-10	Appendix IV	Molybdenum	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
10_2_20	MW-10	Appendix IV	Radium-226/228	pCi/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	1.00	0.638	0.262	2.91	0.861	0.857	0.361	1.50	1.08
10_2_22	MW-10	Appendix IV	Selenium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
10_2_23	MW-10	Appendix IV	Thallium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
10_3_24	MW-10	Field Parameters	Conductivity	mS/cm	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.731	0.732	0.664	0.807	0.0449	0.0615	0.0578	0.215	-0.962
10_3_25	MW-10	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	3.21	3.17	2.05	4.29	0.665	0.207	0.585	0.0189	-0.551
10_3_26	MW-10	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	209	198	98.9	392	93.1	0.445	93.3	0.621	-0.407
10_3_27	MW-10	Field Parameters	Temperature	°C	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	12.4	13.0	8.40	15.5	2.73	0.221	3.26	-0.326	-1.69
10_3_28	MW-10	Field Parameters	Turbidity	NTU	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	2.90	2.32	1.29	5.99	1.41	0.486	0.881	1.16	0.687
10_3_29	MW-10	Field Parameters	pH	su	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	6.74	6.70	6.49	7.30	0.217	0.0323	0.178	1.62	3.65
10_4_30	MW-10	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	466	450	440	525	39.6	0.0850	7.41	1.92	3.76
10_4_31	MW-10	Other	Carbonate	mg/L	4	4	100%	2022-08-02 to 2024-01-30		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
10_4_32	MW-10	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	418	414	382	461	35.8	0.0857	37.8	0.370	-2.63
10_4_33	MW-10	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	26.5	26.4	23.6	29.5	2.46	0.0929	2.52	0.168	0.377
10_4_34	MW-10	Other	Potassium	mg/L	4	1	25%	2022-08-02 to 2024-01-30		Nonparametric	0.632	0.650	0.500	0.730	0.0991	0.157	0.0815	-0.886	0.441
10_4_35	MW-10	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	7.08	3.54	2.24	19.0	8.01	1.13	1.71	1.91	3.65
10_4_36	MW-10	Other	Total Suspended Solids	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	3.00	3.00	3.00	3.00	0	0	0	NA	NA
10_5_37	MW-10	Part 115	Copper	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
10_5_38	MW-10	Part 115	Iron	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.0200	0.0200	0.0200	0.0200	0	0	0	NA	NA
10_5_39	MW-10	Part 115	Nickel	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
10_5_40	MW-10	Part 115	Silver	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
10_5_41	MW-10	Part 115	Vanadium	mg/L	12	12	100%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
10_5_42	MW-10	Part 115	Zinc	mg/L	12	10	83%	2021-06-15 to 2024-01-30		Nonparametric	0.00658	0.00500	0.00500	0.0200	0.00438	0.665	0	3.10	9.90
13_1_01	MW-13	Appendix III	Boron	mg/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.169	0.170	0.140	0.220	0.0250	0.148	0.0222	0.572	-0.0448
13_1_02	MW-13	Appendix III	Calcium	mg/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	114	104	94.1	157	20.8	0.182	13.4	0.850	-0.394
13_1_03	MW-13	Appendix III	Chloride	mg/L	12	2	17%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	19.9	16.0	5.00	45.0	13.8	0.696	12.1	0.856	-0.411
13_1_04	MW-13	Appendix III	Fluoride	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
13_1_05	MW-13	Appendix III	Sulfate	mg/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	42.7	32.5	16.0	122	32.1	0.752	20.7	1.72	2.68
13_1_06	MW-13	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	424	391	336	638	85.9	0.202	65.2	1.47	2.50
13_1_07	MW-13	Appendix III	pH, Field	su	12	0	0%	2022-02-23 to 2024-01-30	Nonparametric	Nonparametric	6.98	7.03	6.39	7.25	0.228	0.0327	0.0963	-1.71	3.83
13_2_04	MW-13	Appendix IV	Fluoride	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
13_2_08	MW-13	Appendix IV	Antimony	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
13_2_09	MW-13	Appendix IV	Arsenic	mg/L	12	10	83%	2022-02-23 to 2024-01-30		Nonparametric	0.00267	0.00200	0.00200	0.00800	0.00178	0.666	0	2.95	8.88
13_2_10	MW-13	Appendix IV	Barium	mg/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0274	0.0275	0.0190	0.0380	0.00533	0.195	0.00296	0.287	0.427

(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_11	MW-13	Appendix IV	Beryllium	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
13_2_12	MW-13	Appendix IV	Cadmium	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
13_2_13	MW-13	Appendix IV	Chromium	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
13_2_14	MW-13	Appendix IV	Cobalt	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
13_2_15	MW-13	Appendix IV	Lead	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
13_2_16	MW-13	Appendix IV	Lithium	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
13_2_17	MW-13	Appendix IV	Mercury	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
13_2_18	MW-13	Appendix IV	Molybdenum	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
13_2_20	MW-13	Appendix IV	Radium-226/228	pCi/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Gamma	0.948	0.546	0.0699	2.31	0.831	0.877	0.619	0.647	-1.40
13_2_22	MW-13	Appendix IV	Selenium	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
13_2_23	MW-13	Appendix IV	Thallium	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
13_3_24	MW-13	Field Parameters	Conductivity	mS/cm	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.671	0.648	0.549	0.887	0.105	0.156	0.110	0.770	-0.0805
13_3_25	MW-13	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Gamma	3.72	4.26	0.130	6.23	2.24	0.602	2.83	-0.370	-1.39
13_3_26	MW-13	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	2022-02-23 to 2024-01-30	Normal	Normal	76.7	92.8	-159	217	98.2	1.28	42.5	-1.30	2.44
13_3_27	MW-13	Field Parameters	Temperature	°C	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	11.3	10.3	5.80	17.5	4.42	0.390	5.56	0.208	-1.70
13_3_28	MW-13	Field Parameters	Turbidity	NTU	12	0	0%	2022-02-23 to 2024-01-30	Normal	Normal	4.60	4.20	0.300	7.90	2.19	0.477	2.48	-0.421	-0.0498
13_3_29	MW-13	Field Parameters	pH	su	12	0	0%	2022-02-23 to 2024-01-30	Nonparametric	Nonparametric	6.98	7.03	6.39	7.25	0.228	0.0327	0.0963	-1.71	3.83
13_4_30	MW-13	Other	Bicarbonate	mg/L	10	0	0%	2022-05-04 to 2024-01-30	Nonparametric	Nonparametric	362	340	320	496	57.4	0.158	14.8	1.91	2.84
13_4_31	MW-13	Other	Carbonate	mg/L	10	10	100%	2022-05-04 to 2024-01-30		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
13_4_32	MW-13	Other	Hardness	mg/L	10	0	0%	2022-05-04 to 2024-01-30	Gamma; Lognormal; Normal	Normal	370	343	308	550	80	0.216	49.6	1.47	1.72
13_4_33	MW-13	Other	Magnesium	mg/L	11	0	0%	2022-03-30 to 2024-01-30	Gamma; Lognormal; Normal	Normal	24.3	23.0	19.7	35.9	4.92	0.202	4.30	1.45	2.06
13_4_34	MW-13	Other	Potassium	mg/L	11	0	0%	2022-03-30 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.805	0.780	0.690	1.00	0.0937	0.116	0.0593	1.02	0.786
13_4_35	MW-13	Other	Sodium	mg/L	11	0	0%	2022-03-30 to 2024-01-30	Gamma; Lognormal	Gamma	5.25	4.68	2.45	13.2	3.18	0.606	2.41	1.75	3.51
13_4_36	MW-13	Other	Total Suspended Solids	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	3.00	3.00	3.00	3.00	0	0	0	NA	NA
13_5_37	MW-13	Part 115	Copper	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
13_5_38	MW-13	Part 115	Iron	mg/L	12	1	8%	2022-02-23 to 2024-01-30	Lognormal	Nonparametric	0.129	0.0350	0.0200	1.03	0.286	2.22	0.0222	3.35	11.4
13_5_39	MW-13	Part 115	Nickel	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
13_5_40	MW-13	Part 115	Silver	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
13_5_41	MW-13	Part 115	Vanadium	mg/L	12	12	100%	2022-02-23 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
13_5_42	MW-13	Part 115	Zinc	mg/L	12	11	92%	2022-02-23 to 2024-01-30		Nonparametric	0.00542	0.00500	0.00500	0.0100	0.00144	0.266	0	3.46	12.0
14_1_01	MW-14	Appendix III	Boron	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	2.16	2.16	2.03	2.29	0.0831	0.0385	0.0889	-0.00579	-0.573
14_1_02	MW-14	Appendix III	Calcium	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	148	147	141	161	6.24	0.0423	4.44	1.40	1.77
14_1_03	MW-14	Appendix III	Chloride	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	114	114	108	119	3.46	0.0305	4.44	0.0593	-0.298
14_1_04	MW-14	Appendix III	Fluoride	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
14_1_05	MW-14	Appendix III	Sulfate	mg/L	8	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	18.6	18.0	8.50	30.0	6.11	0.329	2.96	0.403	1.87
14_1_06	MW-14	Appendix III	Total Dissolved Solids	mg/L	9	1	11%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Nonparametric	701	792	0.00500	818	264	0.377	23.7	-2.95	8.77
14_1_07	MW-14	Appendix III	pH, Field	su	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	7.02	7.00	6.92	7.13	0.0740	0.0105	0.0741	0.380	-1.20
14_2_04	MW-14	Appendix IV	Fluoride	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
14_2_08	MW-14	Appendix IV	Antimony	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
14_2_09	MW-14	Appendix IV	Arsenic	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.00622	0.00600	0.00400	0.00800	0.00139	0.224	0.00148	-0.146	-1.06
14_2_10	MW-14	Appendix IV	Barium	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Nonparametric	Nonparametric	0.132	0.128	0.119	0.177	0.0177	0.134	0.00889	2.48	6.79
14_2_11	MW-14	Appendix IV	Beryllium	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	0.00100	0.00100	0.00100	0.00100	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
14_2_12	MW-14	Appendix IV	Cadmium	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
14_2_13	MW-14	Appendix IV	Chromium	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
14_2_14	MW-14	Appendix IV	Cobalt	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
14_2_15	MW-14	Appendix IV	Lead	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
14_2_16	MW-14	Appendix IV	Lithium	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.113	0.111	0.106	0.125	0.00650	0.0577	0.00296	1.28	0.463
14_2_17	MW-14	Appendix IV	Mercury	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
14_2_18	MW-14	Appendix IV	Molybdenum	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.0137	0.0140	0.0120	0.0160	0.00132	0.0968	0.00148	0.370	-0.315
14_2_20	MW-14	Appendix IV	Radium-226/228	pCi/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal	Gamma	1.40	0.951	0.464	4.44	1.21	0.863	0.419	2.41	6.29
14_2_22	MW-14	Appendix IV	Selenium	mg/L	9	7	78%	2023-01-12 to 2024-01-31		Nonparametric	0.00633	0.00500	0.00500	0.0130	0.00283	0.447	0	2.12	4.00
14_2_23	MW-14	Appendix IV	Thallium	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
14_3_24	MW-14	Field Parameters	Conductivity	mS/cm	9	0	0%	2023-01-12 to 2024-01-31	Nonparametric	Nonparametric	1.28	1.28	1.09	1.36	0.0747	0.0585	0.0222	-2.21	6.08
14_3_25	MW-14	Field Parameters	Dissolved Oxygen	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Normal	Normal	0.163	0.0900	0	0.450	0.161	0.987	0.133	0.985	-0.312
14_3_26	MW-14	Field Parameters	Oxidation Reduction Potential	mV	9	0	0%	2023-01-12 to 2024-01-31	Normal	Normal	-117	-114	-175	-89.4	25.1	-0.214	15.7	-1.66	3.63
14_3_27	MW-14	Field Parameters	Temperature	°C	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal	Gamma	11.9	10.9	10.1	14.1	1.70	0.143	1.19	0.270	-2.33
14_3_28	MW-14	Field Parameters	Turbidity	NTU	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	4.39	4.05	1.74	6.35	1.57	0.359	1.91	-0.238	-0.896
14_3_29	MW-14	Field Parameters	pH	su	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	7.02	7.00	6.92	7.13	0.0740	0.0105	0.0741	0.380	-1.20
14_4_30	MW-14	Other	Bicarbonate	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	666	650	600	850	75.2	0.113	29.6	2.13	5.40
14_4_31	MW-14	Other	Carbonate	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	14.4	10.0	10.0	50.0	13.3	0.923	0	3.00	9.00
14_4_32	MW-14	Other	Hardness	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	556	556	498	610	33.1	0.0596	29.6	-0.0801	0.176
14_4_33	MW-14	Other	Magnesium	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	41.5	41.9	39.7	44.1	1.39	0.0334	0.889	0.345	0.000453
14_4_34	MW-14	Other	Potassium	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	5.07	4.96	4.55	5.82	0.469	0.0925	0.459	0.671	-1.15
14_4_35	MW-14	Other	Sodium	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	77.0	77.8	72.5	79.4	2.49	0.0324	2.07	-0.989	-0.327
14_4_36	MW-14	Other	Total Suspended Solids	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Nonparametric	Nonparametric	21.6	24.8	4.00	27.6	7.41	0.342	2.07	-2.06	4.31
14_5_37	MW-14	Part 115	Copper	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
14_5_38	MW-14	Part 115	Iron	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	11.1	11.4	6.58	14.7	2.26	0.204	1.78	-0.603	1.57
14_5_39	MW-14	Part 115	Nickel	mg/L	9	6	67%	2023-01-12 to 2024-01-31		Nonparametric	0.00511	0.00500	0.00500	0.00600	0.000333	0.0652	0	3.00	9.0
14_5_40	MW-14	Part 115	Silver	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
14_5_41	MW-14	Part 115	Vanadium	mg/L	9	9	100%	2023-01-12 to 2024-01-31		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
14_5_42	MW-14	Part 115	Zinc	mg/L	9	8	89%	2023-01-12 to 2024-01-31		Nonparametric	0.00711	0.00500	0.00500	0.0240	0.00633	0.891	0	3.00	9.00
15_1_01	MW-15	Appendix III	Boron	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.374	0.370	0.330	0.440	0.0378	0.101	0.0444	0.485	-0.941
15_1_02	MW-15	Appendix III	Calcium	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	134	133	104	183	22.6	0.168	17.8	1.07	2.23
15_1_03	MW-15	Appendix III	Chloride	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	73.4	72.0	59.0	100	12.8	0.175	10.4	1.08	1.32
15_1_04	MW-15	Appendix III	Fluoride	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
15_1_05	MW-15	Appendix III	Sulfate	mg/L	9	0	0%	23-02-17 to 2024-01-31	Lognormal	Lognormal	128	117	95.0	238	42.7	0.333	11.9	2.62	7.32
15_1_06	MW-15	Appendix III	Total Dissolved Solids	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	652	638	528	878	99.4	0.152	62.2	1.47	3.30
15_1_07	MW-15	Appendix III	pH, Field	su	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	6.83	6.84	6.69	6.99	0.116	0.0170	0.207	-0.00122	-1.39
15_2_04	MW-15	Appendix IV	Fluoride	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
15_2_08	MW-15	Appendix IV	Antimony	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
15_2_09	MW-15	Appendix IV	Arsenic	mg/L	9	8	89%	23-02-17 to 2024-01-31		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
15_2_10	MW-15	Appendix IV	Barium	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.0574	0.0550	0.0420	0.0770	0.0117	0.204	0.0119	0.407	-1.04
15_2_11	MW-15	Appendix IV	Beryllium	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
15_2_12	MW-15	Appendix IV	Cadmium	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.000500	0.000500	0.000500	0.000500	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
15_2_13	MW-15	Appendix IV	Chromium	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
15_2_14	MW-15	Appendix IV	Cobalt	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
15_2_15	MW-15	Appendix IV	Lead	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
15_2_16	MW-15	Appendix IV	Lithium	mg/L	9	8	89%	23-02-17 to 2024-01-31		Nonparametric	0.00600	0.00500	0.00500	0.0140	0.00300	0.500	0	3.00	9.00
15_2_17	MW-15	Appendix IV	Mercury	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
15_2_18	MW-15	Appendix IV	Molybdenum	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
15_2_20	MW-15	Appendix IV	Radium-226/228	pCi/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	1.12	0.876	0.316	2.06	0.711	0.633	0.803	0.321	-1.75
15_2_22	MW-15	Appendix IV	Selenium	mg/L	9	3	33%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.0140	0.0100	0.00500	0.0340	0.0105	0.752	0.00741	1.06	-0.121
15_2_23	MW-15	Appendix IV	Thallium	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
15_3_24	MW-15	Field Parameters	Conductivity	mS/cm	9	0	0%	23-02-17 to 2024-01-31	Normal	Normal	0.917	0.912	0.451	1.32	0.225	0.246	0.0904	-0.496	3.07
15_3_25	MW-15	Field Parameters	Dissolved Oxygen	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Gamma	2.16	0.890	0.220	5.41	2.02	0.933	0.993	0.709	-1.32
15_3_26	MW-15	Field Parameters	Oxidation Reduction Potential	mV	9	0	0%	23-02-17 to 2024-01-31	Normal	Normal	65.5	59.8	-154	196	103	1.57	80.0	-1.10	1.91
15_3_27	MW-15	Field Parameters	Temperature	°C	9	0	0%	23-02-17 to 2024-01-31	Nonparametric	Nonparametric	10.5	8.40	7.30	14.6	3.22	0.307	1.63	0.323	-2.29
15_3_28	MW-15	Field Parameters	Turbidity	NTU	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	5.03	5.15	2.40	7.52	1.58	0.314	1.48	-0.190	-0.227
15_3_29	MW-15	Field Parameters	pH	su	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	6.83	6.84	6.69	6.99	0.116	0.0170	0.207	-0.00122	-1.39
15_4_30	MW-15	Other	Bicarbonate	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	384	380	330	440	45.0	0.117	74.1	0.0378	-1.99
15_4_31	MW-15	Other	Carbonate	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
15_4_32	MW-15	Other	Hardness	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	461	464	406	512	37.5	0.0813	56.3	-0.146	-1.22
15_4_33	MW-15	Other	Magnesium	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	33.4	32.2	25.7	47.2	5.96	0.179	2.96	1.60	4.05
15_4_34	MW-15	Other	Potassium	mg/L	9	8	89%	23-02-17 to 2024-01-31		Nonparametric	0.512	0.500	0.500	0.610	0.0367	0.0716	0	3.00	9.0
15_4_35	MW-15	Other	Sodium	mg/L	9	0	0%	23-02-17 to 2024-01-31	Nonparametric	Nonparametric	31.5	29.7	27.4	40.5	4.75	0.151	1.78	1.47	0.676
15_4_36	MW-15	Other	Total Suspended Solids	mg/L	9	7	78%	23-02-17 to 2024-01-31		Nonparametric	2.71	3.00	1.60	3.00	0.575	0.212	0	-1.65	0.955
15_5_37	MW-15	Part 115	Copper	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
15_5_38	MW-15	Part 115	Iron	mg/L	9	1	11%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.0711	0.0500	0.0200	0.140	0.0481	0.676	0.0444	0.268	-2.04
15_5_39	MW-15	Part 115	Nickel	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
15_5_40	MW-15	Part 115	Silver	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
15_5_41	MW-15	Part 115	Vanadium	mg/L	9	9	100%	23-02-17 to 2024-01-31		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
15_5_42	MW-15	Part 115	Zinc	mg/L	9	8	89%	23-02-17 to 2024-01-31		Nonparametric	0.00678	0.00500	0.00500	0.0210	0.00533	0.787	0	3.00	9.00
16A_1_01	MW-16A	Appendix III	Boron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.158	0.160	0.100	0.230	0.0505	0.320	0.0741	0.0817	-1.80
16A_1_02	MW-16A	Appendix III	Calcium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	185	176	145	226	29.1	0.157	44.4	0.0553	-1.38
16A_1_03	MW-16A	Appendix III	Chloride	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	434	430	383	505	40.6	0.0937	43	0.517	-0.766
16A_1_04	MW-16A	Appendix III	Fluoride	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	1.50	1.00	1.00	5.00	1.27	0.846	0	2.85	8.33
16A_1_05	MW-16A	Appendix III	Sulfate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	184	148	86.0	341	85.4	0.464	87.4	0.641	-0.761
16A_1_06	MW-16A	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	1426	1380	1170	1720	196	0.137	296	0.121	-1.43
16A_1_07	MW-16A	Appendix III	pH, Field	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	6.86	6.83	6.72	7.00	0.0999	0.0146	0.111	0.307	-1.45
16A_2_04	MW-16A	Appendix IV	Fluoride	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	1.50	1.00	1.00	5.00	1.27	0.846	0	2.85	8.33
16A_2_08	MW-16A	Appendix IV	Antimony	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16A_2_09	MW-16A	Appendix IV	Arsenic	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.00340	0.00300	0.00200	0.00500	0.000843	0.248	0.000741	0.389	0.370
16A_2_10	MW-16A	Appendix IV	Barium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.146	0.147	0.108	0.178	0.0248	0.170	0.0274	-0.0908	-1.45
16A_2_11	MW-16A	Appendix IV	Beryllium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
16A_2_12	MW-16A	Appendix IV	Cadmium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
16A_2_13	MW-16A	Appendix IV	Chromium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	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
16A_2_14	MW-16A	Appendix IV	Cobalt	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16A_2_15	MW-16A	Appendix IV	Lead	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
16A_2_16	MW-16A	Appendix IV	Lithium	mg/L	10	9	90%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16A_2_17	MW-16A	Appendix IV	Mercury	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
16A_2_18	MW-16A	Appendix IV	Molybdenum	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16A_2_20	MW-16A	Appendix IV	Radium-226/228	pCi/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	2.38	1.79	0.562	7.46	2.12	0.893	1.70	1.67	3.23
16A_2_22	MW-16A	Appendix IV	Selenium	mg/L	10	9	90%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16A_2_23	MW-16A	Appendix IV	Thallium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
16A_3_24	MW-16A	Field Parameters	Conductivity	mS/cm	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	2.26	2.25	1.87	2.61	0.294	0.130	0.467	-0.120	-1.61
16A_3_25	MW-16A	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Gamma	0.155	0.110	0.0100	0.430	0.142	0.914	0.141	0.948	-0.0159
16A_3_26	MW-16A	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	-53.4	-50.5	-102	-3.10	24.8	-0.465	12.9	0.0660	2.67
16A_3_27	MW-16A	Field Parameters	Temperature	°C	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	12.4	13.1	7.30	16.8	3.76	0.302	5.33	-0.181	-1.95
16A_3_28	MW-16A	Field Parameters	Turbidity	NTU	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	4.92	4.83	3.06	6.54	1.21	0.246	1.37	0.0316	-1.39
16A_3_29	MW-16A	Field Parameters	pH	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	6.86	6.83	6.72	7.00	0.0999	0.0146	0.111	0.307	-1.45
16A_4_30	MW-16A	Other	Bicarbonate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	504	510	420	610	61.4	0.122	74.1	0.473	-0.480
16A_4_31	MW-16A	Other	Carbonate	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	14.0	10.0	10.0	50.0	12.6	0.904	0	3.16	10.0
16A_4_32	MW-16A	Other	Hardness	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	649	603	524	840	112	0.172	116	0.518	-1.27
16A_4_33	MW-16A	Other	Magnesium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	42.8	41.1	33.2	52.4	7.42	0.174	9.63	0.180	-1.64
16A_4_34	MW-16A	Other	Potassium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	1.46	1.42	1.16	2.12	0.272	0.186	0.222	1.68	3.80
16A_4_35	MW-16A	Other	Sodium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	274	276	229	324	32.5	0.119	46.7	0.189	-1.27
16A_4_36	MW-16A	Other	Total Suspended Solids	mg/L	10	1	10%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	3.80	3.25	1.20	7.00	2.03	0.533	1.85	0.478	-1.24
16A_5_37	MW-16A	Part 115	Copper	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16A_5_38	MW-16A	Part 115	Iron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	3.31	3.12	2.59	4.38	0.647	0.195	0.748	0.492	-1.24
16A_5_39	MW-16A	Part 115	Nickel	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16A_5_40	MW-16A	Part 115	Silver	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
16A_5_41	MW-16A	Part 115	Vanadium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16A_5_42	MW-16A	Part 115	Zinc	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16B_1_01	MW-16B	Appendix III	Boron	mg/L	10	0	0%	2023-02-02 to 2024-02-01		Nonparametric	0.118	0.120	0.110	0.130	0.00789	0.0668	0.0148	0.407	-1.07
16B_1_02	MW-16B	Appendix III	Calcium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	80.3	80.5	74.5	85.4	3.21	0.0400	2.52	-0.247	0.0340
16B_1_03	MW-16B	Appendix III	Chloride	mg/L	10	5	50%	2023-02-02 to 2024-02-01	Gamma; Lognormal	Nonparametric	5.19	5.00	3.10	11.0	2.15	0.415	0	2.53	7.48
16B_1_04	MW-16B	Appendix III	Fluoride	mg/L	10	7	70%	2023-02-02 to 2024-02-01		Nonparametric	0.859	1.00	0.310	1.00	0.246	0.286	0	-1.61	1.66
16B_1_05	MW-16B	Appendix III	Sulfate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	17.0	17.2	15.0	18.0	1.04	0.0613	1.19	-0.858	-0.291
16B_1_06	MW-16B	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	365	366	350	378	7.26	0.0199	1.48	-0.506	2.13
16B_1_07	MW-16B	Appendix III	pH, Field	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.42	7.46	7.25	7.56	0.0943	0.0127	0.0593	-0.641	-0.210
16B_2_04	MW-16B	Appendix IV	Fluoride	mg/L	10	8	80%	2023-02-02 to 2024-02-01		Nonparametric	0.901	1.00	0.310	1.00	0.228	0.253	0	-2.42	5.70
16B_2_08	MW-16B	Appendix IV	Antimony	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16B_2_09	MW-16B	Appendix IV	Arsenic	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
16B_2_10	MW-16B	Appendix IV	Barium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.0871	0.0875	0.0820	0.0910	0.00288	0.0331	0.00370	-0.333	-0.944
16B_2_11	MW-16B	Appendix IV	Beryllium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
16B_2_12	MW-16B	Appendix IV	Cadmium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
16B_2_13	MW-16B	Appendix IV	Chromium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16B_2_14	MW-16B	Appendix IV	Cobalt	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	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
16B_2_15	MW-16B	Appendix IV	Lead	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
16B_2_16	MW-16B	Appendix IV	Lithium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.0213	0.0215	0.0190	0.0230	0.00134	0.0628	0.00148	-0.334	-0.852
16B_2_17	MW-16B	Appendix IV	Mercury	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
16B_2_18	MW-16B	Appendix IV	Molybdenum	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	0.00620	0.00600	0.00500	0.00800	0.000789	0.127	0	1.29	2.98
16B_2_20	MW-16B	Appendix IV	Radium-226/228	pCi/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal	Gamma	2.58	2.03	1.04	6.43	1.57	0.608	0.570	1.95	3.96
16B_2_22	MW-16B	Appendix IV	Selenium	mg/L	10	9	90%	2023-02-02 to 2024-02-01		Nonparametric	0.00510	0.00500	0.00500	0.00600	0.000316	0.0620	0	3.16	10
16B_2_23	MW-16B	Appendix IV	Thallium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
16B_3_24	MW-16B	Field Parameters	Conductivity	mS/cm	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.612	0.617	0.578	0.635	0.0201	0.0328	0.0185	-0.649	-0.972
16B_3_25	MW-16B	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	0.101	0.0850	0	0.370	0.111	1.10	0.0815	1.73	3.65
16B_3_26	MW-16B	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	-109	-106	-136	-63.3	22.3	-0.205	27.8	0.738	0.429
16B_3_27	MW-16B	Field Parameters	Temperature	°C	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	13.1	13.3	9.20	15.8	2.10	0.160	2.07	-0.459	-0.378
16B_3_28	MW-16B	Field Parameters	Turbidity	NTU	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	4.66	5.03	0.440	7.42	2.28	0.490	1.90	-0.883	-0.123
16B_3_29	MW-16B	Field Parameters	pH	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.43	7.46	7.25	7.56	0.0948	0.0128	0.0593	-0.664	-0.241
16B_4_30	MW-16B	Other	Bicarbonate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	404	400	390	420	8.83	0.0218	7.41	0.326	-0.234
16B_4_31	MW-16B	Other	Carbonate	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
16B_4_32	MW-16B	Other	Hardness	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	343	340	322	380	18	0.0524	19.3	0.877	0.545
16B_4_33	MW-16B	Other	Magnesium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	33.6	33.4	29.7	36.4	1.92	0.0572	1.56	-0.498	0.680
16B_4_34	MW-16B	Other	Potassium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	3.03	2.94	2.80	3.81	0.292	0.0961	0.104	2.50	6.82
16B_4_35	MW-16B	Other	Sodium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	13.0	11.1	10.3	24.5	4.31	0.332	0.963	2.56	6.84
16B_4_36	MW-16B	Other	Total Suspended Solids	mg/L	10	5	50%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Nonparametric	2.78	3.00	1.00	7.00	1.71	0.616	0.444	1.69	4.28
16B_5_37	MW-16B	Part 115	Copper	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16B_5_38	MW-16B	Part 115	Iron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.516	0.440	0.330	0.930	0.179	0.347	0.0889	1.55	2.41
16B_5_39	MW-16B	Part 115	Nickel	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16B_5_40	MW-16B	Part 115	Silver	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
16B_5_41	MW-16B	Part 115	Vanadium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16B_5_42	MW-16B	Part 115	Zinc	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7C_1_01	MW-7C	Appendix III	Boron	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	6.61	6.58	6.29	7.24	0.236	0.0357	0.178	1.71	4.57
7C_1_02	MW-7C	Appendix III	Calcium	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	243	244	183	277	23.2	0.0957	11.1	-1.32	4.08
7C_1_03	MW-7C	Appendix III	Chloride	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	93.4	93.0	90.0	101	2.99	0.0320	2.22	1.48	3.16
7C_1_04	MW-7C	Appendix III	Fluoride	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
7C_1_05	MW-7C	Appendix III	Sulfate	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	696	686	650	761	38.2	0.0549	41.5	0.531	-1.13
7C_1_06	MW-7C	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	1393	1360	1330	1500	59.3	0.0426	14.8	1.10	-0.261
7C_1_07	MW-7C	Appendix III	pH, Field	su	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	7.34	7.32	7.23	7.51	0.0974	0.0133	0.119	0.555	-0.986
7C_2_04	MW-7C	Appendix IV	Fluoride	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	1.00	1.00	1.00	1.00	0	0	0	NA	NA
7C_2_08	MW-7C	Appendix IV	Antimony	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7C_2_09	MW-7C	Appendix IV	Arsenic	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	0.00658	0.00600	0.00500	0.0100	0.00124	0.188	0.000741	2.00	5.52
7C_2_10	MW-7C	Appendix IV	Barium	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0435	0.0435	0.0410	0.0470	0.00215	0.0495	0.00296	0.262	-1.39
7C_2_11	MW-7C	Appendix IV	Beryllium	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
7C_2_12	MW-7C	Appendix IV	Cadmium	mg/L	12	9	75%	2022-03-10 to 2024-01-30		Nonparametric	0.000575	0.000500	0.000500	0.000900	0.000142	0.247	0	1.66	1.45
7C_2_13	MW-7C	Appendix IV	Chromium	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7C_2_14	MW-7C	Appendix IV	Cobalt	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7C_2_15	MW-7C	Appendix IV	Lead	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	0.00300	0.00300	0.00300	0.00300	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
7C_2_16	MW-7C	Appendix IV	Lithium	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.129	0.128	0.121	0.138	0.00498	0.0387	0.00370	0.742	0.189
7C_2_17	MW-7C	Appendix IV	Mercury	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
7C_2_18	MW-7C	Appendix IV	Molybdenum	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.400	0.404	0.377	0.422	0.0143	0.0358	0.0133	-0.329	-0.931
7C_2_20	MW-7C	Appendix IV	Radium-226/228	pCi/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	2.14	1.88	0.773	3.66	1.17	0.546	1.61	0.186	-1.92
7C_2_22	MW-7C	Appendix IV	Selenium	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7C_2_23	MW-7C	Appendix IV	Thallium	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
7C_3_24	MW-7C	Field Parameters	Conductivity	mS/cm	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	1.69	1.68	1.33	2.01	0.191	0.113	0.144	0.142	0.566
7C_3_25	MW-7C	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	0.421	0.0900	0.0600	1.77	0.648	1.54	0.0370	1.84	1.97
7C_3_26	MW-7C	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	-117	-125	-183	-39.0	41.3	-0.353	18.4	0.949	1.09
7C_3_27	MW-7C	Field Parameters	Temperature	°C	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	13.2	13.7	9.20	16.4	2.06	0.156	2.07	-0.241	-0.00871
7C_3_28	MW-7C	Field Parameters	Turbidity	NTU	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Normal	Gamma	3.28	3.38	0.0200	7.29	2.38	0.727	2.89	0.104	-0.929
7C_3_29	MW-7C	Field Parameters	pH	su	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	7.34	7.32	7.23	7.51	0.0974	0.0133	0.119	0.555	-0.986
7C_4_30	MW-7C	Other	Bicarbonate	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	162	160	150	172	8.33	0.0515	14.8	-0.302	-1.36
7C_4_31	MW-7C	Other	Carbonate	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
7C_4_32	MW-7C	Other	Hardness	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	766	770	558	860	76.1	0.0994	43.7	-1.86	5.25
7C_4_33	MW-7C	Other	Magnesium	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	41.6	42.1	33.7	44.9	2.96	0.0711	2.30	-1.83	4.55
7C_4_34	MW-7C	Other	Potassium	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	5.68	5.77	4.92	6.14	0.387	0.0681	0.230	-1.03	0.145
7C_4_35	MW-7C	Other	Sodium	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	95.4	96.7	79.0	99.8	5.46	0.0572	2.37	-2.86	9.08
7C_4_36	MW-7C	Other	Total Suspended Solids	mg/L	12	3	25%	2022-03-10 to 2024-01-30	Gamma; Lognormal	Gamma	8.48	7.20	3.00	27.0	6.57	0.775	3.41	2.27	6.16
7C_5_37	MW-7C	Part 115	Copper	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7C_5_38	MW-7C	Part 115	Iron	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	4.05	4.11	3.67	4.41	0.236	0.0583	0.296	-0.151	-1.03
7C_5_39	MW-7C	Part 115	Nickel	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	0.00800	0.00800	0.00700	0.0110	0.00128	0.160	0.00148	1.56	1.97
7C_5_40	MW-7C	Part 115	Silver	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
7C_5_41	MW-7C	Part 115	Vanadium	mg/L	12	12	100%	2022-03-10 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7C_5_42	MW-7C	Part 115	Zinc	mg/L	12	10	83%	2022-03-10 to 2024-01-30		Nonparametric	0.00525	0.00500	0.00500	0.00700	0.000622	0.118	0	2.56	6.24

[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
02_1_01	MW-2	Appendix III	Boron	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	5.02	5.10	3.38	6.17	0.896	0.179	1.24	-0.415	-0.987
02_1_02	MW-2	Appendix III	Calcium	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	245	256	192	272	29.0	0.118	20.7	-0.855	-0.905
02_1_03	MW-2	Appendix III	Chloride	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	82.3	84.0	67.0	94.0	7.31	0.0887	5.93	-0.835	0.337
02_1_05	MW-2	Appendix III	Sulfate	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	457	504	278	586	109	0.239	113	-0.458	-1.36
02_1_06	MW-2	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1246	1300	1000	1430	154	0.123	178	-0.477	-1.25
02_1_07	MW-2	Appendix III	pH, Field	su	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	6.77	6.75	6.54	7.08	0.114	0.0168	0.0889	0.742	2.69
02_2_09	MW-2	Appendix IV	Arsenic	mg/L	18	14	78%	2020-04-28 to 2024-01-29		Nonparametric	0.00275	0.00250	0.00200	0.00400	0.000957	0.348	0.000741	0.855	-1.29
02_2_10	MW-2	Appendix IV	Barium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0406	0.0410	0.0340	0.0480	0.00355	0.0874	0.00296	0.0858	-0.0267
02_2_16	MW-2	Appendix IV	Lithium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0573	0.0575	0.0410	0.0700	0.00796	0.139	0.0104	-0.246	-0.626
02_2_18	MW-2	Appendix IV	Molybdenum	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0111	0.0110	0.00700	0.0150	0.00198	0.179	0.00148	-0.0860	0.258
02_2_20	MW-2	Appendix IV	Radium-226/228	pCi/L	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	0.782	0.630	0	2.12	0.624	0.797	0.641	0.759	-0.346
02_3_24	MW-2	Field Parameters	Conductivity	mS/cm	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	1.64	1.70	1.34	1.80	0.154	0.0937	0.132	-0.852	-0.711
02_3_25	MW-2	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	0.197	0.135	0	1.01	0.245	1.25	0.156	2.39	6.85
02_3_26	MW-2	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	32.1	35.6	-75.8	182	57.8	1.80	29.2	0.491	1.88
02_3_27	MW-2	Field Parameters	Temperature	°C	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	13	13.3	9.10	15.4	1.72	0.133	1.63	-0.725	0.000223
02_3_28	MW-2	Field Parameters	Turbidity	NTU	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	12.2	9.21	2.38	72.3	15.3	1.25	1.41	3.94	16.2
02_3_29	MW-2	Field Parameters	pH	su	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	6.77	6.75	6.54	7.08	0.114	0.0168	0.0889	0.742	2.69
02_4_30	MW-2	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	471	462	410	550	58.5	0.124	44.4	0.871	1.59
02_4_32	MW-2	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	689	694	654	714	27.6	0.0401	25.2	-0.667	-1.92
02_4_33	MW-2	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	49.9	50.4	48.4	50.6	1.03	0.0206	0.296	-1.84	3.42
02_4_34	MW-2	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	1.26	0.865	0.600	2.70	0.970	0.771	0.200	1.90	3.70
02_4_35	MW-2	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	61.2	63.0	50.3	68.3	7.75	0.127	4.96	-1.27	1.90
02_4_36	MW-2	Other	Total Suspended Solids	mg/L	18	4	22%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	11.8	10.0	1.00	34.1	8.76	0.745	5.93	1.28	2.25
02_5_38	MW-2	Part 115	Iron	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	0.731	0.625	0.440	1.93	0.367	0.502	0.170	2.44	6.57
02_5_39	MW-2	Part 115	Nickel	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	0.0233	0.0250	0.0170	0.0280	0.00400	0.172	0.00296	-0.541	-1.46
02_5_42	MW-2	Part 115	Zinc	mg/L	18	15	83%	2020-04-28 to 2024-01-29		Nonparametric	0.0183	0.00700	0.00700	0.0410	0.0196	1.07	0	1.73	NA
03_1_01	MW-3	Appendix III	Boron	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	5.72	5.67	5.41	6.16	0.238	0.0416	0.0741	0.956	1.41
03_1_02	MW-3	Appendix III	Calcium	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	245	248	223	255	11.0	0.0449	7.41	-1.55	2.60
03_1_03	MW-3	Appendix III	Chloride	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	96.6	99.0	89.0	102	4.97	0.0515	4.44	-0.554	-1.43
03_1_05	MW-3	Appendix III	Sulfate	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	700	698	675	727	20.6	0.0294	23.7	0.385	-1.37
03_1_06	MW-3	Appendix III	Total Dissolved Solids	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	1461	1450	1430	1500	27.9	0.0191	29.6	0.373	-2.02
03_1_07	MW-3	Appendix III	pH, Field	su	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	7.24	7.23	7.15	7.38	0.0769	0.0106	0.0741	0.858	0.719
03_2_09	MW-3	Appendix IV	Arsenic	mg/L	7	0	0%	2021-05-04 to 2024-01-29		Nonparametric	0.00357	0.00300	0.00300	0.00600	0.00113	0.317	0	2.16	4.58
03_2_10	MW-3	Appendix IV	Barium	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.0194	0.0190	0.0170	0.0210	0.00140	0.0719	0.00148	-0.566	0.377
03_2_16	MW-3	Appendix IV	Lithium	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.0830	0.0820	0.0770	0.0910	0.00490	0.0590	0.00593	0.512	-0.626
03_2_18	MW-3	Appendix IV	Molybdenum	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.166	0.164	0.153	0.182	0.00966	0.0580	0.00296	0.529	-0.0103
03_2_20	MW-3	Appendix IV	Radium-226/228	pCi/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	1.59	1.20	0.412	2.92	0.926	0.581	1.17	0.291	-1.55
03_3_24	MW-3	Field Parameters	Conductivity	mS/cm	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	1.79	1.80	1.73	1.83	0.0353	0.0198	0.0459	-0.573	-0.235
03_3_25	MW-3	Field Parameters	Dissolved Oxygen	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.144	0.120	0.0300	0.350	0.102	0.710	0.0593	1.49	3.00
03_3_26	MW-3	Field Parameters	Oxidation Reduction Potential	mV	7	0	0%	2021-05-04 to 2024-01-29	Normal	Nonparametric	-61.3	-64.1	-92.1	-37.5	19.0	-0.311	15	-0.288	-0.280
03_3_27	MW-3	Field Parameters	Temperature	°C	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	12.5	12.2	9.90	14.2	1.78	0.143	2.81	-0.339	-1.67
03_3_28	MW-3	Field Parameters	Turbidity	NTU	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	4.32	4.83	0.980	8.01	2.28	0.528	1.01	0.0687	0.403
03_3_29	MW-3	Field Parameters	pH	su	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	7.24	7.23	7.15	7.38	0.0769	0.0106	0.0741	0.858	0.719

(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
03_4_30	MW-3	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	216	212	210	228	8.50	0.0394	3.70	1.58	2.28
03_4_32	MW-3	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	787	789	774	795	9.84	0.0125	8.15	-0.804	-1.48
03_4_33	MW-3	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	48.2	48.1	45.9	50.7	2.38	0.0493	2.89	0.0676	-5.00
03_4_34	MW-3	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	1.72	1.70	1.67	1.81	0.0663	0.0386	0.0444	1.10	-0.0496
03_4_35	MW-3	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	116	116	111	121	4.76	0.0410	5.93	0	-4.34
03_4_36	MW-3	Other	Total Suspended Solids	mg/L	7	1	14%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	2.75	3.10	1.00	4.00	1.07	0.390	0.815	-0.864	0.235
03_5_38	MW-3	Part 115	Iron	mg/L	7	0	0%	2021-05-04 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	1.91	1.94	1.70	2.05	0.133	0.0696	0.148	-0.540	-1.20
04_1_01	MW-4	Appendix III	Boron	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	0.0629	0.0600	0.0500	0.0800	0.00920	0.146	0.0148	0.422	-0.294
04_1_02	MW-4	Appendix III	Calcium	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	108	110	98.4	115	4.88	0.0453	2.96	-0.641	-0.632
04_1_03	MW-4	Appendix III	Chloride	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	71.4	72.0	68.0	77.0	2.55	0.0357	2.96	0.491	-0.0664
04_1_05	MW-4	Appendix III	Sulfate	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	56.2	57.0	51.0	60.0	2.54	0.0453	1.48	-0.872	0.0138
04_1_06	MW-4	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	551	554	522	582	16.0	0.0290	20.7	0.0872	-0.464
04_1_07	MW-4	Appendix III	pH, Field	su	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	7.20	7.16	7.03	7.87	0.180	0.0250	0.0815	3.27	12.4
04_2_09	MW-4	Appendix IV	Arsenic	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.00767	0.00800	0.00600	0.00900	0.00108	0.141	0.00148	-0.173	-1.19
04_2_10	MW-4	Appendix IV	Barium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.160	0.162	0.146	0.169	0.00600	0.0374	0.00667	-0.826	0.465
04_2_16	MW-4	Appendix IV	Lithium	mg/L	18	3	17%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0100	0.0100	0.00800	0.0120	0.00113	0.113	0.00148	0.339	-0.179
04_2_18	MW-4	Appendix IV	Molybdenum	mg/L	18	16	89%	2020-04-28 to 2024-01-29		Nonparametric	0.00700	0.00700	0.00500	0.00900	0.00283	0.404	0.00296	NA	NA
04_2_20	MW-4	Appendix IV	Radium-226/228	pCi/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal	Gamma	1.35	0.782	0.232	5.00	1.23	0.911	0.616	1.78	3.48
04_3_24	MW-4	Field Parameters	Conductivity	mS/cm	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	0.865	0.889	0.429	0.920	0.110	0.127	0.0193	-4.08	17.1
04_3_25	MW-4	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Gamma	0.163	0.125	0.0100	0.440	0.146	0.891	0.156	0.539	-1.22
04_3_26	MW-4	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	-74.0	-68.3	-175	-21.9	40.6	-0.548	25	-1.20	1.49
04_3_27	MW-4	Field Parameters	Temperature	°C	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	12.9	13.6	9.70	14.7	1.67	0.130	0.963	-0.951	-0.666
04_3_28	MW-4	Field Parameters	Turbidity	NTU	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1.70	1.60	0.260	3.28	0.777	0.457	0.585	0.393	0.0236
04_3_29	MW-4	Field Parameters	pH	su	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	7.20	7.16	7.03	7.87	0.180	0.0250	0.0815	3.27	12.4
04_4_30	MW-4	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	410	411	400	420	9.15	0.0223	10.4	-0.196	-3.20
04_4_32	MW-4	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	428	424	412	450	16.4	0.0383	11.9	1.10	1.26
04_4_33	MW-4	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	39.0	39.1	38.3	39.6	0.562	0.0144	0.519	-0.646	-0.415
04_4_34	MW-4	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	1.43	1.43	1.39	1.47	0.0365	0.0255	0.0444	0	-3.30
04_4_35	MW-4	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	30.6	30.1	28.5	33.9	2.49	0.0812	2.00	0.893	-0.908
04_4_36	MW-4	Other	Total Suspended Solids	mg/L	18	7	39%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	1.66	1.50	1.00	3.00	0.778	0.467	0.741	0.880	-0.467
04_5_38	MW-4	Part 115	Iron	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1.28	1.30	1.03	1.53	0.123	0.0965	0.0963	-0.207	0.227
04_5_42	MW-4	Part 115	Zinc	mg/L	18	15	83%	2020-04-28 to 2024-01-29		Nonparametric	0.0157	0.0100	0.00600	0.0310	0.0134	0.857	0.00593	1.56	NA
05_1_01	MW-5	Appendix III	Boron	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	4.21	4.59	0.370	5.75	1.28	0.304	0.607	-1.87	4.25
05_1_02	MW-5	Appendix III	Calcium	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Normal	Normal	242	245	70.1	372	70.8	0.293	56.3	-0.586	1.16
05_1_03	MW-5	Appendix III	Chloride	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	68.1	73.0	37.2	83.0	13.9	0.203	10.4	-1.06	0.241
05_1_05	MW-5	Appendix III	Sulfate	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	683	700	186	1170	280	0.409	262	-0.110	-0.672
05_1_06	MW-5	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1372	1390	592	2020	416	0.303	400	-0.299	-0.691
05_1_07	MW-5	Appendix III	pH, Field	su	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	7.20	7.25	6.40	7.45	0.256	0.0356	0.126	-2.31	5.62
05_2_09	MW-5	Appendix IV	Arsenic	mg/L	18	12	67%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.00383	0.00350	0.00200	0.00700	0.00194	0.506	0.00222	0.839	-0.0587
05_2_10	MW-5	Appendix IV	Barium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0454	0.0430	0.0330	0.0640	0.00792	0.174	0.00593	0.856	0.306
05_2_13	MW-5	Appendix IV	Chromium	mg/L	18	16	89%	2020-04-28 to 2024-01-29		Nonparametric	0.00850	0.00850	0.00700	0.0100	0.00212	0.250	0.00222	NA	NA
05_2_14	MW-5	Appendix IV	Cobalt	mg/L	18	17	94%	2020-04-28 to 2024-01-29		Nonparametric	0.00600	0.00600	0.00600	0.00600	NA	NA	0	NA	NA
05_2_15	MW-5	Appendix IV	Lead	mg/L	18	15	83%	2020-04-28 to 2024-01-29		Nonparametric	0.00733	0.00500	0.00300	0.0140	0.00586	0.799	0.00296	1.51	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
05_2_16	MW-5	Appendix IV	Lithium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	0.0689	0.0735	0.0160	0.0910	0.0189	0.274	0.0170	-1.33	2.29
05_2_18	MW-5	Appendix IV	Molybdenum	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0524	0.0515	0.0100	0.0960	0.0195	0.373	0.0178	0.221	1.09
05_2_20	MW-5	Appendix IV	Radium-226/228	pCi/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1.65	1.45	0.524	4.22	1.09	0.663	0.976	1.26	1.16
05_3_24	MW-5	Field Parameters	Conductivity	mS/cm	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1.66	1.70	1.00	2.49	0.395	0.237	0.385	0.161	-0.214
05_3_25	MW-5	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	2.62	2.56	0.550	5.42	1.38	0.525	1.64	0.0139	-0.517
05_3_26	MW-5	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	81.2	64.3	-34.8	248	87.5	1.08	117	0.204	-1.06
05_3_27	MW-5	Field Parameters	Temperature	°C	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	12.7	12.6	6.90	17.5	2.68	0.211	2.52	-0.338	0.144
05_3_28	MW-5	Field Parameters	Turbidity	NTU	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	29.0	18.2	9.52	180	39.8	1.37	4.48	3.62	13.7
05_3_29	MW-5	Field Parameters	pH	su	18	0	0%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	7.20	7.25	6.40	7.45	0.256	0.0356	0.126	-2.31	5.62
05_4_30	MW-5	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	297	294	280	320	17.0	0.0573	13.3	0.936	1.06
05_4_32	MW-5	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	602	580	502	748	111	0.185	94.1	0.835	-0.945
05_4_33	MW-5	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	42.0	40.2	33.3	54.5	9.08	0.216	6.67	1.07	1.29
05_4_34	MW-5	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	4.29	4.39	3.77	4.61	0.364	0.0849	0.200	-1.44	2.45
05_4_35	MW-5	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	55.1	52.6	45.6	69.5	10.9	0.198	8.74	0.916	-0.687
05_4_36	MW-5	Other	Total Suspended Solids	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Lognormal	Nonparametric	27.2	15.5	4.00	161	37.8	1.39	12.1	2.94	9.72
05_5_37	MW-5	Part 115	Copper	mg/L	18	13	72%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.0140	0.0110	0.00500	0.0260	0.00843	0.602	0.00889	0.677	-0.901
05_5_38	MW-5	Part 115	Iron	mg/L	18	1	6%	2020-04-28 to 2024-01-29	Gamma; Lognormal	Gamma	1.50	0.750	0.180	8.00	2.03	1.35	0.741	2.50	6.63
05_5_39	MW-5	Part 115	Nickel	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0113	0.0110	0.00500	0.0190	0.00414	0.366	0.00444	0.275	-0.727
05_5_41	MW-5	Part 115	Vanadium	mg/L	18	15	83%	2020-04-28 to 2024-01-29		Nonparametric	0.00867	0.00900	0.00500	0.0120	0.00351	0.405	0.00444	-0.423	NA
05_5_42	MW-5	Part 115	Zinc	mg/L	18	5	28%	2020-04-28 to 2024-01-29	Gamma; Lognormal	Gamma	0.0224	0.0110	0.00500	0.0980	0.0262	1.17	0.00889	2.31	5.85
06_1_01	MW-6	Appendix III	Boron	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.801	0.800	0.490	1.09	0.184	0.229	0.237	-0.0665	-1.14
06_1_02	MW-6	Appendix III	Calcium	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	168	169	142	193	18.0	0.107	29.6	0.0611	-1.37
06_1_03	MW-6	Appendix III	Chloride	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	33.9	35.0	24.0	43.0	6.74	0.199	10.4	-0.0764	-1.74
06_1_05	MW-6	Appendix III	Sulfate	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	183	183	118	264	49.9	0.273	71.1	0.286	-1.31
06_1_06	MW-6	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	758	738	598	898	94.8	0.125	121	-0.0313	-1.38
06_1_07	MW-6	Appendix III	pH, Field	su	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	6.74	6.73	6.35	7.11	0.163	0.0242	0.0741	-0.0119	2.29
06_2_09	MW-6	Appendix IV	Arsenic	mg/L	18	17	94%	2020-04-28 to 2024-01-29		Nonparametric	0.00300	0.00300	0.00300	0.00300	NA	NA	0	NA	NA
06_2_10	MW-6	Appendix IV	Barium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0483	0.0495	0.0380	0.0570	0.00551	0.114	0.00741	-0.164	-1.16
06_2_16	MW-6	Appendix IV	Lithium	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0468	0.0475	0.0320	0.0590	0.00769	0.164	0.00889	-0.210	-0.714
06_2_18	MW-6	Appendix IV	Molybdenum	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	0.0257	0.0265	0.0120	0.0360	0.00599	0.233	0.00444	-0.540	0.473
06_2_20	MW-6	Appendix IV	Radium-226/228	pCi/L	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	0.982	0.711	0	2.61	0.673	0.685	0.475	0.897	0.421
06_3_24	MW-6	Field Parameters	Conductivity	mS/cm	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	1.10	1.11	0.902	1.27	0.105	0.0951	0.116	-0.134	-0.760
06_3_25	MW-6	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal	Gamma	0.135	0.0900	0.0100	0.440	0.120	0.890	0.0741	1.29	1.03
06_3_26	MW-6	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	2020-04-28 to 2024-01-29	Normal	Normal	67.9	79.8	-66.5	202	71.5	1.05	68.7	-0.189	-0.219
06_3_27	MW-6	Field Parameters	Temperature	°C	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	12.9	13.1	10.2	15.2	1.39	0.108	1.63	-0.519	-0.352
06_3_28	MW-6	Field Parameters	Turbidity	NTU	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal	Gamma	8.65	7.47	1.19	33.6	7.71	0.892	3.83	2.21	6.06
06_3_29	MW-6	Field Parameters	pH	su	18	0	0%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Normal	6.74	6.73	6.35	7.11	0.163	0.0242	0.0741	-0.0119	2.29
06_4_30	MW-6	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	517	523	480	543	27.2	0.0525	20.0	-1.08	1.13
06_4_32	MW-6	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	574	574	522	624	53.9	0.0941	68.1	-0.0107	-5.72
06_4_33	MW-6	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	35.6	36.1	29.9	40.3	5.04	0.142	5.48	-0.270	-4.17
06_4_34	MW-6	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	6.76	6.81	6.40	7.02	0.262	0.0387	0.185	-1.05	1.74
06_4_35	MW-6	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-29		Nonparametric	37.4	36.5	32.4	43.9	5.13	0.137	4.74	0.665	-1.27
06_4_36	MW-6	Other	Total Suspended Solids	mg/L	18	13	72%	2020-04-28 to 2024-01-29	Gamma; Lognormal	Nonparametric	8.48	2.00	1.00	32.0	13.3	1.57	1.48	2.12	4.53

(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
06_5_38	MW-6	Part 115	Iron	mg/L	18	9	50%	2020-04-28 to 2024-01-29	Gamma; Lognormal; Normal	Nonparametric	0.0600	0.0400	0.0200	0.200	0.0566	0.943	0.0296	2.27	5.66
06_5_39	MW-6	Part 115	Nickel	mg/L	18	4	22%	2020-04-28 to 2024-01-29	Nonparametric	Nonparametric	0.00679	0.00700	0.00500	0.00800	0.000802	0.118	0	-0.608	0.801
06_5_42	MW-6	Part 115	Zinc	mg/L	18	17	94%	2020-04-28 to 2024-01-29		Nonparametric	0.0340	0.0340	0.0340	0.0340	NA	NA	0	NA	NA
07_1_01	MW-7	Appendix III	Boron	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	1.85	1.84	1.08	2.75	0.439	0.238	0.422	0.243	0.751
07_1_02	MW-7	Appendix III	Calcium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	119	112	97.2	165	20.2	0.170	14.8	1.38	1.52
07_1_03	MW-7	Appendix III	Chloride	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	78.2	75.0	72.2	98.0	7.28	0.0931	3.56	2.06	4.90
07_1_04	MW-7	Appendix III	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.338	0.338	0.338	0.338	NA	NA	0	NA	NA
07_1_05	MW-7	Appendix III	Sulfate	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	204	194	172	270	31.5	0.154	23	1.33	0.955
07_1_06	MW-7	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	629	591	548	864	91.5	0.146	43	1.99	3.65
07_1_07	MW-7	Appendix III	pH, Field	su	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	7.48	7.46	7.09	8.18	0.262	0.0350	0.141	1.62	4.89
07_2_04	MW-7	Appendix IV	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.338	0.338	0.338	0.338	NA	NA	0	NA	NA
07_2_09	MW-7	Appendix IV	Arsenic	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	0.00558	0.00600	0.00400	0.00700	0.000900	0.161	0	-0.745	0.0530
07_2_10	MW-7	Appendix IV	Barium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0523	0.0530	0.0360	0.0620	0.00676	0.129	0.00444	-1.09	2.36
07_2_16	MW-7	Appendix IV	Lithium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0909	0.0945	0.0630	0.112	0.0134	0.147	0.00815	-0.746	0.587
07_2_17	MW-7	Appendix IV	Mercury	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.000200	0.000200	0.000200	0.000200	NA	NA	0	NA	NA
07_2_18	MW-7	Appendix IV	Molybdenum	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	0.241	0.268	0.146	0.296	0.0583	0.242	0.0363	-0.759	-1.36
07_2_20	MW-7	Appendix IV	Radium-226/228	pCi/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	2.31	1.98	0.514	5.44	1.57	0.679	1.51	0.912	0.120
07_3_24	MW-7	Field Parameters	Conductivity	mS/cm	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Normal	Normal	0.912	0.920	0.462	1.21	0.184	0.201	0.0711	-1.00	3.11
07_3_25	MW-7	Field Parameters	Dissolved Oxygen	mg/L	12	1	8%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	0.0791	0.0200	0	0.490	0.144	1.82	0.0148	2.79	8.12
07_3_26	MW-7	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	2021-06-15 to 2024-01-30	Normal	Normal	-120	-129	-157	-36.9	33.9	-0.283	25.1	1.47	2.27
07_3_27	MW-7	Field Parameters	Temperature	°C	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	12.2	12.9	6.20	17.0	3.30	0.271	3.63	-0.376	-0.776
07_3_28	MW-7	Field Parameters	Turbidity	NTU	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	4.40	3.09	1.45	16.0	3.93	0.894	2.24	2.67	8.08
07_3_29	MW-7	Field Parameters	pH	su	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	7.48	7.46	7.09	8.18	0.262	0.0350	0.141	1.62	4.89
07_4_30	MW-7	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	207	172	150	334	85.7	0.415	22.2	1.88	3.59
07_4_32	MW-7	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	345	298	289	496	101	0.293	11.9	1.97	3.89
07_4_33	MW-7	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	14.3	12.3	12.1	20.5	4.13	0.289	0.148	2.0	3.99
07_4_34	MW-7	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	8.41	9.17	5.77	9.53	1.78	0.212	0.467	-1.86	3.47
07_4_35	MW-7	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	72.4	69.6	66.5	83.9	7.90	0.109	3.41	1.67	2.80
07_4_36	MW-7	Other	Total Suspended Solids	mg/L	12	10	83%	2021-06-15 to 2024-01-30		Nonparametric	1.80	1.80	1.00	2.60	1.13	0.629	1.19	NA	NA
07_5_38	MW-7	Part 115	Iron	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	1.48	1.35	1.00	2.81	0.484	0.328	0.230	2.13	5.40
07_5_41	MW-7	Part 115	Vanadium	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00600	0.00600	0.00600	0.00600	NA	NA	0	NA	NA
07_5_42	MW-7	Part 115	Zinc	mg/L	12	9	75%	2021-06-15 to 2024-01-30		Nonparametric	0.00933	0.00700	0.00700	0.0140	0.00404	0.433	0	1.73	NA
08_1_01	MW-8	Appendix III	Boron	mg/L	12	1	8%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0927	0.0800	0.0400	0.210	0.0484	0.522	0.0444	1.52	2.81
08_1_02	MW-8	Appendix III	Calcium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	94.6	95	86.5	104	5.38	0.0569	5.48	-0.0353	-0.709
08_1_03	MW-8	Appendix III	Chloride	mg/L	12	2	17%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	22.5	13.0	4.45	66.0	21.8	0.970	6.67	1.56	1.04
08_1_04	MW-8	Appendix III	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.0587	0.0587	0.0587	0.0587	NA	NA	0	NA	NA
08_1_05	MW-8	Appendix III	Sulfate	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	24.8	19.2	11.0	52.0	14.1	0.569	10.4	0.997	-0.187
08_1_06	MW-8	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	392	383	362	460	28.9	0.0737	17.8	1.44	1.67
08_1_07	MW-8	Appendix III	pH, Field	su	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	7.16	7.13	6.99	7.78	0.216	0.0302	0.156	2.34	6.59
08_2_04	MW-8	Appendix IV	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.0587	0.0587	0.0587	0.0587	NA	NA	0	NA	NA
08_2_09	MW-8	Appendix IV	Arsenic	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00200	0.00200	0.00200	0.00200	NA	NA	0	NA	NA
08_2_10	MW-8	Appendix IV	Barium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0218	0.0210	0.0170	0.0280	0.00333	0.152	0.00222	0.548	-0.328
08_2_16	MW-8	Appendix IV	Lithium	mg/L	12	6	50%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Nonparametric	0.00817	0.00800	0.00500	0.0130	0.00286	0.350	0.00222	0.907	0.794

(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
08_2_18	MW-8	Appendix IV	Molybdenum	mg/L	12	10	83%	2021-06-15 to 2024-01-30		Nonparametric	0.00950	0.00950	0.00600	0.0130	0.00495	0.521	0.00519	NA	NA
08_2_20	MW-8	Appendix IV	Radium-226/228	pCi/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Gamma	2.11	1.89	0.118	6.21	1.86	0.881	1.89	1.06	0.672
08_3_24	MW-8	Field Parameters	Conductivity	mS/cm	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.654	0.639	0.617	0.744	0.0399	0.0611	0.0267	1.53	1.64
08_3_25	MW-8	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma	Gamma	2.29	1.71	0.0100	7.83	2.23	0.974	1.14	1.63	2.80
08_3_26	MW-8	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	194	175	72.1	365	99.1	0.512	102	0.436	-1.28
08_3_27	MW-8	Field Parameters	Temperature	°C	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	11.8	12.6	5.90	16.4	3.23	0.274	2.74	-0.435	-0.898
08_3_28	MW-8	Field Parameters	Turbidity	NTU	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	4.75	5.20	2.00	7.18	1.87	0.393	2.32	-0.258	-1.46
08_3_29	MW-8	Field Parameters	pH	su	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	7.16	7.13	6.99	7.78	0.216	0.0302	0.156	2.34	6.59
08_4_30	MW-8	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	393	406	320	440	51.4	0.131	27.4	-1.40	2.57
08_4_32	MW-8	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	355	356	326	384	24.7	0.0695	27.4	-0.0512	-0.683
08_4_33	MW-8	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	28.7	28.9	25.3	31.8	2.66	0.0927	2.22	-0.337	1.56
08_4_34	MW-8	Other	Potassium	mg/L	4	1	25%	2022-08-02 to 2024-01-30		Nonparametric	0.620	0.570	0.530	0.760	0.123	0.198	0.0593	1.53	NA
08_4_35	MW-8	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	20.4	14.1	12.7	40.9	13.7	0.669	1.11	1.99	3.96
08_4_36	MW-8	Other	Total Suspended Solids	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	2.00	2.00	2.00	2.00	NA	NA	0	NA	NA
08_5_37	MW-8	Part 115	Copper	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.0100	0.0100	0.0100	0.0100	NA	NA	0	NA	NA
08_5_38	MW-8	Part 115	Iron	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.0200	0.0200	0.0200	0.0200	NA	NA	0	NA	NA
08_5_41	MW-8	Part 115	Vanadium	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	NA	NA	0	NA	NA
08_5_42	MW-8	Part 115	Zinc	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00700	0.00700	0.00700	0.00700	NA	NA	0	NA	NA
09_1_02	MW-9	Appendix III	Calcium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	74.2	76.2	61.8	98.8	9.78	0.132	5.19	1.23	3.12
09_1_03	MW-9	Appendix III	Chloride	mg/L	12	10	83%	2021-06-15 to 2024-01-30		Nonparametric	3.31	3.31	1.11	5.50	3.10	0.939	3.25	NA	NA
09_1_04	MW-9	Appendix III	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.0330	0.0330	0.0330	0.0330	NA	NA	0	NA	NA
09_1_05	MW-9	Appendix III	Sulfate	mg/L	12	8	67%	2021-06-15 to 2024-01-30		Nonparametric	6.62	5.50	3.58	11.9	3.66	0.552	1.79	1.56	2.70
09_1_06	MW-9	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	262	249	232	348	31.7	0.121	16.3	1.98	4.67
09_1_07	MW-9	Appendix III	pH, Field	su	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	7.30	7.28	7.13	7.74	0.174	0.0238	0.141	1.54	2.74
09_2_04	MW-9	Appendix IV	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.0330	0.0330	0.0330	0.0330	NA	NA	0	NA	NA
09_2_09	MW-9	Appendix IV	Arsenic	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00300	0.00300	0.00300	0.00300	NA	NA	0	NA	NA
09_2_10	MW-9	Appendix IV	Barium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0143	0.0140	0.0130	0.0170	0.00130	0.0909	0.00148	0.735	-0.118
09_2_20	MW-9	Appendix IV	Radium-226/228	pCi/L	12	0	0%	2021-06-15 to 2024-01-30	Normal	Normal	1.04	0.710	0	2.37	0.890	0.854	0.795	0.480	-1.55
09_3_24	MW-9	Field Parameters	Conductivity	mS/cm	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.451	0.450	0.393	0.540	0.0376	0.0833	0.0341	0.951	2.08
09_3_25	MW-9	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	5.19	5.38	3.35	6.33	0.967	0.186	1.20	-0.539	-0.646
09_3_26	MW-9	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	215	205	99.2	381	93.4	0.434	105	0.398	-1.09
09_3_27	MW-9	Field Parameters	Temperature	°C	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	12.4	13.3	4.70	19.2	5.44	0.437	7.04	-0.200	-1.70
09_3_28	MW-9	Field Parameters	Turbidity	NTU	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	3.81	3.23	1.60	6.70	1.84	0.483	2.41	0.294	-1.56
09_3_29	MW-9	Field Parameters	pH	su	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	7.30	7.28	7.13	7.74	0.174	0.0238	0.141	1.54	2.74
09_4_30	MW-9	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	321	323	260	378	49.4	0.154	50.4	-0.220	0.214
09_4_32	MW-9	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	273	266	218	342	51.4	0.189	38.5	0.815	1.73
09_4_33	MW-9	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	19.4	19.4	15.2	23.3	3.31	0.171	2.89	-0.181	1.51
09_4_34	MW-9	Other	Potassium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	1.06	1.01	0.930	1.28	0.166	0.157	0.119	0.999	-0.544
09_4_35	MW-9	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	3.31	3.35	2.41	4.11	0.803	0.243	0.926	-0.168	-4.01
09_5_42	MW-9	Part 115	Zinc	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00900	0.00900	0.00900	0.00900	NA	NA	0	NA	NA
100A_1_01	MW-100A	Appendix III	Boron	mg/L	8	0	0%	2023-06-05 to 2024-02-07		Nonparametric	0.0475	0.0500	0.0400	0.0500	0.00463	0.0975	0	-1.44	-0.00000000000000466
100A_1_02	MW-100A	Appendix III	Calcium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	92.4	92.5	88.6	95.3	2.01	0.0218	1.41	-0.643	1.16
100A_1_03	MW-100A	Appendix III	Chloride	mg/L	8	0	0%	2023-06-05 to 2024-02-07		Nonparametric	10.1	10.0	10.0	10.6	0.223	0.0221	0	1.95	3.20

(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
100A_1_04	MW-100A	Appendix III	Fluoride	mg/L	8	6	75%	2023-06-05 to 2024-02-07		Nonparametric	0.440	0.440	0.220	0.660	0.311	0.707	0.326	NA	NA
100A_1_05	MW-100A	Appendix III	Sulfate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	24.9	21.9	16.2	38.0	8.05	0.324	7.70	0.764	-0.818
100A_1_06	MW-100A	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	416	415	402	434	9.94	0.0239	8.89	0.658	0.582
100A_1_07	MW-100A	Appendix III	pH, Field	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.28	7.30	7.08	7.40	0.100	0.0137	0.0741	-1.26	1.85
100A_2_04	MW-100A	Appendix IV	Fluoride	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.220	0.220	0.220	0.220	NA	NA	0	NA	NA
100A_2_09	MW-100A	Appendix IV	Arsenic	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.0142	0.0150	0.00900	0.0180	0.00320	0.224	0.00222	-0.827	-0.461
100A_2_10	MW-100A	Appendix IV	Barium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.201	0.202	0.189	0.207	0.00580	0.0288	0.00519	-1.41	2.57
100A_2_16	MW-100A	Appendix IV	Lithium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.0170	0.0175	0.0140	0.0200	0.00220	0.130	0.00222	-0.320	-1.09
100A_2_18	MW-100A	Appendix IV	Molybdenum	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.0109	0.0115	0.00800	0.0130	0.00173	0.159	0.00148	-0.635	-0.796
100A_2_20	MW-100A	Appendix IV	Radium-226/228	pCi/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	1.06	0.979	0.402	2.50	0.706	0.666	0.750	1.28	1.70
100A_3_24	MW-100A	Field Parameters	Conductivity	mS/cm	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.703	0.722	0.593	0.766	0.0556	0.0790	0.0519	-1.14	1.25
100A_3_25	MW-100A	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal	Gamma	1.17	0.745	0.390	4.15	1.26	1.08	0.511	2.39	6.08
100A_3_26	MW-100A	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	2023-06-05 to 2024-02-07	Normal	Normal	-80.0	-98.5	-131	60.9	62.3	-0.778	37.3	1.99	4.38
100A_3_27	MW-100A	Field Parameters	Temperature	°C	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	13.6	14.4	10.0	17.2	2.84	0.208	3.85	-0.193	-1.67
100A_3_28	MW-100A	Field Parameters	Turbidity	NTU	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Normal	Normal	4.72	4.33	0.650	7.95	2.39	0.507	2.21	-0.223	-0.279
100A_3_29	MW-100A	Field Parameters	pH	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.28	7.30	7.08	7.40	0.100	0.0137	0.0741	-1.26	1.85
100A_4_30	MW-100A	Other	Bicarbonate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	438	436	410	460	15.7	0.0360	14.8	-0.354	0.0545
100A_4_32	MW-100A	Other	Hardness	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma	Gamma	392	395	368	400	10.3	0.0262	4.44	-2.31	5.78
100A_4_33	MW-100A	Other	Magnesium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	38.8	39	36.0	40.3	1.38	0.0355	1.26	-1.26	2.01
100A_4_34	MW-100A	Other	Potassium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	2.23	2.21	1.83	2.62	0.219	0.0985	0.0815	-0.0389	2.34
100A_4_35	MW-100A	Other	Sodium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	11.4	11.3	10.4	12.6	0.645	0.0566	0.444	0.580	1.40
100A_4_36	MW-100A	Other	Total Suspended Solids	mg/L	8	1	12%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	9.53	7.50	4.90	25.0	6.96	0.730	1.63	2.43	6.17
100A_5_38	MW-100A	Part 115	Iron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Normal	Normal	2.53	2.73	0.630	3.75	1.09	0.429	0.859	-0.860	-0.138
100A_5_42	MW-100A	Part 115	Zinc	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.00600	0.00600	0.00600	0.00600	NA	NA	0	NA	NA
100B_1_01	MW-100B	Appendix III	Boron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.251	0.255	0.210	0.290	0.0236	0.0938	0.00741	-0.285	1.07
100B_1_02	MW-100B	Appendix III	Calcium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	98.4	97.3	94.2	108	4.59	0.0466	3.11	1.54	2.26
100B_1_03	MW-100B	Appendix III	Chloride	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	23.6	23.9	22.0	25.0	1.13	0.0476	1.48	-0.251	-1.17
100B_1_04	MW-100B	Appendix III	Fluoride	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.150	0.150	0.150	0.150	NA	NA	0	NA	NA
100B_1_05	MW-100B	Appendix III	Sulfate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	115	111	105	136	10.8	0.0935	6.67	1.31	0.895
100B_1_06	MW-100B	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	504	494	482	538	21.2	0.0421	11.9	1.00	-0.628
100B_1_07	MW-100B	Appendix III	pH, Field	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.43	7.40	7.33	7.62	0.111	0.0150	0.0889	1.02	-0.419
100B_2_04	MW-100B	Appendix IV	Fluoride	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.150	0.150	0.150	0.150	NA	NA	0	NA	NA
100B_2_09	MW-100B	Appendix IV	Arsenic	mg/L	8	0	0%	2023-06-05 to 2024-02-07		Nonparametric	0.0104	0.0105	0.00900	0.0110	0.000744	0.0717	0.000741	-0.824	-0.152
100B_2_10	MW-100B	Appendix IV	Barium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.151	0.150	0.142	0.164	0.00750	0.0496	0.00667	0.554	-0.682
100B_2_16	MW-100B	Appendix IV	Lithium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.0174	0.0170	0.0160	0.0190	0.000916	0.0527	0.000741	0.488	0.421
100B_2_18	MW-100B	Appendix IV	Molybdenum	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Lognormal; Normal	Normal	0.00925	0.00900	0.00800	0.0110	0.000886	0.0958	0	1.03	1.85
100B_2_20	MW-100B	Appendix IV	Radium-226/228	pCi/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	1.49	1.56	0.494	2.16	0.543	0.364	0.504	-0.788	0.309
100B_3_24	MW-100B	Field Parameters	Conductivity	mS/cm	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.761	0.755	0.713	0.805	0.0312	0.0410	0.0289	0.121	-0.712
100B_3_25	MW-100B	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	0.0400	0.0100	0	0.190	0.0665	1.66	0.0148	2.05	4.18
100B_3_26	MW-100B	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	2023-06-05 to 2024-02-07	Normal	Normal	-149	-148	-177	-130	14.9	-0.100	11.9	-0.714	0.807
100B_3_27	MW-100B	Field Parameters	Temperature	°C	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	12.5	12.5	10.6	14.2	1.39	0.111	2.00	-0.0898	-1.82
100B_3_28	MW-100B	Field Parameters	Turbidity	NTU	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	3.55	4.15	0.810	5.16	1.70	0.480	0.733	-1.17	-0.256
100B_3_29	MW-100B	Field Parameters	pH	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.43	7.40	7.33	7.62	0.111	0.0150	0.0889	1.02	-0.419

(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
100B_4_30	MW-100B	Other	Bicarbonate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	347	334	310	440	40.6	0.117	22.2	2.02	4.69
100B_4_32	MW-100B	Other	Hardness	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal	Gamma	378	372	364	410	16.9	0.0447	8.89	1.35	0.685
100B_4_33	MW-100B	Other	Magnesium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	33.3	33	29.4	35.8	2.14	0.0643	2.00	-0.564	0.252
100B_4_34	MW-100B	Other	Potassium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	3.54	3.50	3.34	3.76	0.136	0.0383	0.0963	0.421	-0.267
100B_4_35	MW-100B	Other	Sodium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	26.6	27.0	23.2	30.3	2.08	0.0781	1.11	0.151	1.22
100B_4_36	MW-100B	Other	Total Suspended Solids	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	4.10	3.90	2.50	7.10	1.46	0.356	1.33	1.27	1.95
100B_5_38	MW-100B	Part 115	Iron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	2.51	2.38	1.77	3.54	0.515	0.206	0.0741	1.04	2.20
10_1_01	MW-10	Appendix III	Boron	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Nonparametric	Nonparametric	0.0517	0.0500	0.0400	0.0700	0.00835	0.162	0	0.771	1.15
10_1_02	MW-10	Appendix III	Calcium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	129	130	113	142	9.35	0.0723	9.63	-0.442	-0.716
10_1_03	MW-10	Appendix III	Chloride	mg/L	12	9	75%	2021-06-15 to 2024-01-30		Nonparametric	5.44	6.00	1.03	9.30	4.16	0.765	4.89	-0.591	NA
10_1_04	MW-10	Appendix III	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.0660	0.0660	0.0660	0.0660	NA	NA	0	NA	NA
10_1_05	MW-10	Appendix III	Sulfate	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	15.4	14.8	9.00	27.8	4.87	0.317	3.70	1.42	3.46
10_1_06	MW-10	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	440	441	376	494	34.6	0.0786	32.6	-0.240	-0.312
10_1_07	MW-10	Appendix III	pH, Field	su	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	6.74	6.70	6.49	7.30	0.217	0.0323	0.178	1.62	3.65
10_2_04	MW-10	Appendix IV	Fluoride	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.0660	0.0660	0.0660	0.0660	NA	NA	0	NA	NA
10_2_09	MW-10	Appendix IV	Arsenic	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.00200	0.00200	0.00200	0.00200	NA	NA	0	NA	NA
10_2_10	MW-10	Appendix IV	Barium	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0408	0.0410	0.0360	0.0470	0.00336	0.0825	0.00444	0.260	-0.653
10_2_17	MW-10	Appendix IV	Mercury	mg/L	12	11	92%	2021-06-15 to 2024-01-30		Nonparametric	0.000200	0.000200	0.000200	0.000200	NA	NA	0	NA	NA
10_2_20	MW-10	Appendix IV	Radium-226/228	pCi/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal	Gamma	1.00	0.638	0.262	2.91	0.861	0.857	0.361	1.50	1.08
10_3_24	MW-10	Field Parameters	Conductivity	mS/cm	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.731	0.732	0.664	0.807	0.0449	0.0615	0.0578	0.215	-0.962
10_3_25	MW-10	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	3.21	3.17	2.05	4.29	0.665	0.207	0.585	0.0189	-0.551
10_3_26	MW-10	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	209	198	98.9	392	93.1	0.445	93.3	0.621	-0.407
10_3_27	MW-10	Field Parameters	Temperature	°C	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	12.4	13.0	8.40	15.5	2.73	0.221	3.26	-0.326	-1.69
10_3_28	MW-10	Field Parameters	Turbidity	NTU	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	2.90	2.32	1.29	5.99	1.41	0.486	0.881	1.16	0.687
10_3_29	MW-10	Field Parameters	pH	su	12	0	0%	2021-06-15 to 2024-01-30	Gamma; Lognormal; Normal	Normal	6.74	6.70	6.49	7.30	0.217	0.0323	0.178	1.62	3.65
10_4_30	MW-10	Other	Bicarbonate	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	466	450	440	525	39.6	0.0850	7.41	1.92	3.76
10_4_32	MW-10	Other	Hardness	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	418	414	382	461	35.8	0.0857	37.8	0.370	-2.63
10_4_33	MW-10	Other	Magnesium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	26.5	26.4	23.6	29.5	2.46	0.0929	2.52	0.168	0.377
10_4_34	MW-10	Other	Potassium	mg/L	4	1	25%	2022-08-02 to 2024-01-30		Nonparametric	0.677	0.680	0.620	0.730	0.0551	0.0814	0.0741	-0.271	NA
10_4_35	MW-10	Other	Sodium	mg/L	4	0	0%	2022-08-02 to 2024-01-30		Nonparametric	7.08	3.54	2.24	19.0	8.01	1.13	1.71	1.91	3.65
10_5_42	MW-10	Part 115	Zinc	mg/L	12	10	83%	2021-06-15 to 2024-01-30		Nonparametric	0.0145	0.0145	0.00900	0.0200	0.00778	0.536	0.00815	NA	NA
13_1_01	MW-13	Appendix III	Boron	mg/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.169	0.170	0.140	0.220	0.0250	0.148	0.0222	0.572	-0.0448
13_1_02	MW-13	Appendix III	Calcium	mg/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	114	104	94.1	157	20.8	0.182	13.4	0.850	-0.394
13_1_03	MW-13	Appendix III	Chloride	mg/L	12	2	17%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	22.8	18.0	9.00	45.0	13.2	0.578	12.1	0.784	-0.741
13_1_05	MW-13	Appendix III	Sulfate	mg/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	42.7	32.5	16.0	122	32.1	0.752	20.7	1.72	2.68
13_1_06	MW-13	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	424	391	336	638	85.9	0.202	65.2	1.47	2.50
13_1_07	MW-13	Appendix III	pH, Field	su	12	0	0%	2022-02-23 to 2024-01-30	Nonparametric	Nonparametric	6.98	7.03	6.39	7.25	0.228	0.0327	0.0963	-1.71	3.83
13_2_09	MW-13	Appendix IV	Arsenic	mg/L	12	10	83%	2022-02-23 to 2024-01-30		Nonparametric	0.00600	0.00600	0.00400	0.00800	0.00283	0.471	0.00296	NA	NA
13_2_10	MW-13	Appendix IV	Barium	mg/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0274	0.0275	0.0190	0.0380	0.00533	0.195	0.00296	0.287	0.427
13_2_20	MW-13	Appendix IV	Radium-226/228	pCi/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Gamma	0.948	0.546	0.0699	2.31	0.831	0.877	0.619	0.647	-1.40
13_3_24	MW-13	Field Parameters	Conductivity	mS/cm	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.671	0.648	0.549	0.887	0.105	0.156	0.110	0.770	-0.0805
13_3_25	MW-13	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Gamma	3.72	4.26	0.130	6.23	2.24	0.602	2.83	-0.370	-1.39
13_3_26	MW-13	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	2022-02-23 to 2024-01-30	Normal	Normal	76.7	92.8	-159	217	98.2	1.28	42.5	-1.30	2.44

(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_3_27	MW-13	Field Parameters	Temperature	°C	12	0	0%	2022-02-23 to 2024-01-30	Gamma; Lognormal; Normal	Normal	11.3	10.3	5.80	17.5	4.42	0.390	5.56	0.208	-1.70
13_3_28	MW-13	Field Parameters	Turbidity	NTU	12	0	0%	2022-02-23 to 2024-01-30	Normal	Normal	4.60	4.20	0.300	7.90	2.19	0.477	2.48	-0.421	-0.0498
13_3_29	MW-13	Field Parameters	pH	su	12	0	0%	2022-02-23 to 2024-01-30	Nonparametric	Nonparametric	6.98	7.03	6.39	7.25	0.228	0.0327	0.0963	-1.71	3.83
13_4_30	MW-13	Other	Bicarbonate	mg/L	10	0	0%	2022-05-04 to 2024-01-30	Nonparametric	Nonparametric	362	340	320	496	57.4	0.158	14.8	1.91	2.84
13_4_32	MW-13	Other	Hardness	mg/L	10	0	0%	2022-05-04 to 2024-01-30	Gamma; Lognormal; Normal	Normal	370	343	308	550	80	0.216	49.6	1.47	1.72
13_4_33	MW-13	Other	Magnesium	mg/L	11	0	0%	2022-03-30 to 2024-01-30	Gamma; Lognormal; Normal	Normal	24.3	23.0	19.7	35.9	4.92	0.202	4.30	1.45	2.06
13_4_34	MW-13	Other	Potassium	mg/L	11	0	0%	2022-03-30 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.805	0.780	0.690	1.00	0.0937	0.116	0.0593	1.02	0.786
13_4_35	MW-13	Other	Sodium	mg/L	11	0	0%	2022-03-30 to 2024-01-30	Gamma; Lognormal	Gamma	5.25	4.68	2.45	13.2	3.18	0.606	2.41	1.75	3.51
13_5_38	MW-13	Part 115	Iron	mg/L	12	1	8%	2022-02-23 to 2024-01-30	Lognormal	Nonparametric	0.139	0.0400	0.0200	1.03	0.298	2.14	0.0296	3.21	10.4
13_5_42	MW-13	Part 115	Zinc	mg/L	12	11	92%	2022-02-23 to 2024-01-30		Nonparametric	0.0100	0.0100	0.0100	0.0100	NA	NA	0	NA	NA
14_1_01	MW-14	Appendix III	Boron	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	2.16	2.16	2.03	2.29	0.0831	0.0385	0.0889	-0.00579	-0.573
14_1_02	MW-14	Appendix III	Calcium	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	148	147	141	161	6.24	0.0423	4.44	1.40	1.77
14_1_03	MW-14	Appendix III	Chloride	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	114	114	108	119	3.46	0.0305	4.44	0.0593	-0.298
14_1_05	MW-14	Appendix III	Sulfate	mg/L	8	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	18.6	18.0	8.50	30.0	6.11	0.329	2.96	0.403	1.87
14_1_06	MW-14	Appendix III	Total Dissolved Solids	mg/L	9	1	11%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Nonparametric	788	794	732	818	26.7	0.0338	17.8	-1.47	2.68
14_1_07	MW-14	Appendix III	pH, Field	su	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	7.02	7.00	6.92	7.13	0.0740	0.0105	0.0741	0.380	-1.20
14_2_09	MW-14	Appendix IV	Arsenic	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.00622	0.00600	0.00400	0.00800	0.00139	0.224	0.00148	-0.146	-1.06
14_2_10	MW-14	Appendix IV	Barium	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Nonparametric	Nonparametric	0.132	0.128	0.119	0.177	0.0177	0.134	0.00889	2.48	6.79
14_2_16	MW-14	Appendix IV	Lithium	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.113	0.111	0.106	0.125	0.00650	0.0577	0.00296	1.28	0.463
14_2_18	MW-14	Appendix IV	Molybdenum	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.0137	0.0140	0.0120	0.0160	0.00132	0.0968	0.00148	0.370	-0.315
14_2_20	MW-14	Appendix IV	Radium-226/228	pCi/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal	Gamma	1.40	0.951	0.464	4.44	1.21	0.863	0.419	2.41	6.29
14_2_22	MW-14	Appendix IV	Selenium	mg/L	9	7	78%	2023-01-12 to 2024-01-31		Nonparametric	0.0110	0.0110	0.00900	0.0130	0.00283	0.257	0.00296	NA	NA
14_3_24	MW-14	Field Parameters	Conductivity	mS/cm	9	0	0%	2023-01-12 to 2024-01-31	Nonparametric	Nonparametric	1.28	1.28	1.09	1.36	0.0747	0.0585	0.0222	-2.21	6.08
14_3_25	MW-14	Field Parameters	Dissolved Oxygen	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Normal	Normal	0.163	0.0900	0	0.450	0.161	0.987	0.133	0.985	-0.312
14_3_26	MW-14	Field Parameters	Oxidation Reduction Potential	mV	9	0	0%	2023-01-12 to 2024-01-31	Normal	Normal	-117	-114	-175	-89.4	25.1	-0.214	15.7	-1.66	3.63
14_3_27	MW-14	Field Parameters	Temperature	°C	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal	Gamma	11.9	10.9	10.1	14.1	1.70	0.143	1.19	0.270	-2.33
14_3_28	MW-14	Field Parameters	Turbidity	NTU	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	4.39	4.05	1.74	6.35	1.57	0.359	1.91	-0.238	-0.896
14_3_29	MW-14	Field Parameters	pH	su	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	7.02	7.00	6.92	7.13	0.0740	0.0105	0.0741	0.380	-1.20
14_4_30	MW-14	Other	Bicarbonate	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	666	650	600	850	75.2	0.113	29.6	2.13	5.40
14_4_32	MW-14	Other	Hardness	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	556	556	498	610	33.1	0.0596	29.6	-0.0801	0.176
14_4_33	MW-14	Other	Magnesium	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	41.5	41.9	39.7	44.1	1.39	0.0334	0.889	0.345	0.000453
14_4_34	MW-14	Other	Potassium	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	5.07	4.96	4.55	5.82	0.469	0.0925	0.459	0.671	-1.15
14_4_35	MW-14	Other	Sodium	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	77.0	77.8	72.5	79.4	2.49	0.0324	2.07	-0.989	-0.327
14_4_36	MW-14	Other	Total Suspended Solids	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Nonparametric	Nonparametric	21.6	24.8	4.00	27.6	7.41	0.342	2.07	-2.06	4.31
14_5_38	MW-14	Part 115	Iron	mg/L	9	0	0%	2023-01-12 to 2024-01-31	Gamma; Lognormal; Normal	Normal	11.1	11.4	6.58	14.7	2.26	0.204	1.78	-0.603	1.57
14_5_39	MW-14	Part 115	Nickel	mg/L	9	6	67%	2023-01-12 to 2024-01-31		Nonparametric	0.00533	0.00500	0.00500	0.00600	0.000577	0.108	0	1.73	NA
14_5_42	MW-14	Part 115	Zinc	mg/L	9	8	89%	2023-01-12 to 2024-01-31		Nonparametric	0.0240	0.0240	0.0240	0.0240	NA	NA	0	NA	NA
15_1_01	MW-15	Appendix III	Boron	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.374	0.370	0.330	0.440	0.0378	0.101	0.0444	0.485	-0.941
15_1_02	MW-15	Appendix III	Calcium	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	134	133	104	183	22.6	0.168	17.8	1.07	2.23
15_1_03	MW-15	Appendix III	Chloride	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	73.4	72.0	59.0	100	12.8	0.175	10.4	1.08	1.32
15_1_05	MW-15	Appendix III	Sulfate	mg/L	9	0	0%	23-02-17 to 2024-01-31	Lognormal	Lognormal	128	117	95.0	238	42.7	0.333	11.9	2.62	7.32
15_1_06	MW-15	Appendix III	Total Dissolved Solids	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	652	638	528	878	99.4	0.152	62.2	1.47	3.30
15_1_07	MW-15	Appendix III	pH, Field	su	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	6.83	6.84	6.69	6.99	0.116	0.0170	0.207	-0.00122	-1.39

(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
15_2_09	MW-15	Appendix IV	Arsenic	mg/L	9	8	89%	23-02-17 to 2024-01-31		Nonparametric	0.00200	0.00200	0.00200	0.00200	NA	NA	0	NA	NA
15_2_10	MW-15	Appendix IV	Barium	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.0574	0.0550	0.0420	0.0770	0.0117	0.204	0.0119	0.407	-1.04
15_2_16	MW-15	Appendix IV	Lithium	mg/L	9	8	89%	23-02-17 to 2024-01-31		Nonparametric	0.0140	0.0140	0.0140	0.0140	NA	NA	0	NA	NA
15_2_20	MW-15	Appendix IV	Radium-226/228	pCi/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	1.12	0.876	0.316	2.06	0.711	0.633	0.803	0.321	-1.75
15_2_22	MW-15	Appendix IV	Selenium	mg/L	9	3	33%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.0185	0.0160	0.00900	0.0340	0.0102	0.552	0.00963	0.639	-1.27
15_3_24	MW-15	Field Parameters	Conductivity	mS/cm	9	0	0%	23-02-17 to 2024-01-31	Normal	Normal	0.917	0.912	0.451	1.32	0.225	0.246	0.0904	-0.496	3.07
15_3_25	MW-15	Field Parameters	Dissolved Oxygen	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Gamma	2.16	0.890	0.220	5.41	2.02	0.933	0.993	0.709	-1.32
15_3_26	MW-15	Field Parameters	Oxidation Reduction Potential	mV	9	0	0%	23-02-17 to 2024-01-31	Normal	Normal	65.5	59.8	-154	196	103	1.57	80.0	-1.10	1.91
15_3_27	MW-15	Field Parameters	Temperature	°C	9	0	0%	23-02-17 to 2024-01-31	Nonparametric	Nonparametric	10.5	8.40	7.30	14.6	3.22	0.307	1.63	0.323	-2.29
15_3_28	MW-15	Field Parameters	Turbidity	NTU	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	5.03	5.15	2.40	7.52	1.58	0.314	1.48	-0.190	-0.227
15_3_29	MW-15	Field Parameters	pH	su	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	6.83	6.84	6.69	6.99	0.116	0.0170	0.207	-0.00122	-1.39
15_4_30	MW-15	Other	Bicarbonate	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	384	380	330	440	45.0	0.117	74.1	0.0378	-1.99
15_4_32	MW-15	Other	Hardness	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	461	464	406	512	37.5	0.0813	56.3	-0.146	-1.22
15_4_33	MW-15	Other	Magnesium	mg/L	9	0	0%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	33.4	32.2	25.7	47.2	5.96	0.179	2.96	1.60	4.05
15_4_34	MW-15	Other	Potassium	mg/L	9	8	89%	23-02-17 to 2024-01-31		Nonparametric	0.610	0.610	0.610	0.610	NA	NA	0	NA	NA
15_4_35	MW-15	Other	Sodium	mg/L	9	0	0%	23-02-17 to 2024-01-31	Nonparametric	Nonparametric	31.5	29.7	27.4	40.5	4.75	0.151	1.78	1.47	0.676
15_4_36	MW-15	Other	Total Suspended Solids	mg/L	9	7	78%	23-02-17 to 2024-01-31		Nonparametric	1.70	1.70	1.60	1.80	0.141	0.0832	0.148	NA	NA
15_5_38	MW-15	Part 115	Iron	mg/L	9	1	11%	23-02-17 to 2024-01-31	Gamma; Lognormal; Normal	Normal	0.0775	0.0800	0.0200	0.140	0.0471	0.608	0.0593	0.0341	-2.17
15_5_42	MW-15	Part 115	Zinc	mg/L	9	8	89%	23-02-17 to 2024-01-31		Nonparametric	0.0210	0.0210	0.0210	0.0210	NA	NA	0	NA	NA
16A_1_01	MW-16A	Appendix III	Boron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.158	0.160	0.100	0.230	0.0505	0.320	0.0741	0.0817	-1.80
16A_1_02	MW-16A	Appendix III	Calcium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	185	176	145	226	29.1	0.157	44.4	0.0553	-1.38
16A_1_03	MW-16A	Appendix III	Chloride	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	434	430	383	505	40.6	0.0937	43	0.517	-0.766
16A_1_05	MW-16A	Appendix III	Sulfate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	184	148	86.0	341	85.4	0.464	87.4	0.641	-0.761
16A_1_06	MW-16A	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	1426	1380	1170	1720	196	0.137	296	0.121	-1.43
16A_1_07	MW-16A	Appendix III	pH, Field	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	6.86	6.83	6.72	7.00	0.0999	0.0146	0.111	0.307	-1.45
16A_2_09	MW-16A	Appendix IV	Arsenic	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.00340	0.00300	0.00200	0.00500	0.000843	0.248	0.000741	0.389	0.370
16A_2_10	MW-16A	Appendix IV	Barium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.146	0.147	0.108	0.178	0.0248	0.170	0.0274	-0.0908	-1.45
16A_2_16	MW-16A	Appendix IV	Lithium	mg/L	10	9	90%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	NA	NA	0	NA	NA
16A_2_20	MW-16A	Appendix IV	Radium-226/228	pCi/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	2.38	1.79	0.562	7.46	2.12	0.893	1.70	1.67	3.23
16A_2_22	MW-16A	Appendix IV	Selenium	mg/L	10	9	90%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	NA	NA	0	NA	NA
16A_3_24	MW-16A	Field Parameters	Conductivity	mS/cm	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	2.26	2.25	1.87	2.61	0.294	0.130	0.467	-0.120	-1.61
16A_3_25	MW-16A	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Gamma	0.155	0.110	0.0100	0.430	0.142	0.914	0.141	0.948	-0.0159
16A_3_26	MW-16A	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	-53.4	-50.5	-102	-3.10	24.8	-0.465	12.9	0.0660	2.67
16A_3_27	MW-16A	Field Parameters	Temperature	°C	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	12.4	13.1	7.30	16.8	3.76	0.302	5.33	-0.181	-1.95
16A_3_28	MW-16A	Field Parameters	Turbidity	NTU	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	4.92	4.83	3.06	6.54	1.21	0.246	1.37	0.0316	-1.39
16A_3_29	MW-16A	Field Parameters	pH	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	6.86	6.83	6.72	7.00	0.0999	0.0146	0.111	0.307	-1.45
16A_4_30	MW-16A	Other	Bicarbonate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	504	510	420	610	61.4	0.122	74.1	0.473	-0.480
16A_4_32	MW-16A	Other	Hardness	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	649	603	524	840	112	0.172	116	0.518	-1.27
16A_4_33	MW-16A	Other	Magnesium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	42.8	41.1	33.2	52.4	7.42	0.174	9.63	0.180	-1.64
16A_4_34	MW-16A	Other	Potassium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	1.46	1.42	1.16	2.12	0.272	0.186	0.222	1.68	3.80
16A_4_35	MW-16A	Other	Sodium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	274	276	229	324	32.5	0.119	46.7	0.189	-1.27
16A_4_36	MW-16A	Other	Total Suspended Solids	mg/L	10	1	10%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	3.89	3.50	1.20	7.00	2.13	0.547	2.22	0.324	-1.57
16A_5_38	MW-16A	Part 115	Iron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	3.31	3.12	2.59	4.38	0.647	0.195	0.748	0.492	-1.24

(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
16B_1_01	MW-16B	Appendix III	Boron	mg/L	10	0	0%	2023-02-02 to 2024-02-01		Nonparametric	0.118	0.120	0.110	0.130	0.00789	0.0668	0.0148	0.407	-1.07
16B_1_02	MW-16B	Appendix III	Calcium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	80.3	80.5	74.5	85.4	3.21	0.0400	2.52	-0.247	0.0340
16B_1_03	MW-16B	Appendix III	Chloride	mg/L	10	5	50%	2023-02-02 to 2024-02-01	Gamma; Lognormal	Nonparametric	5.38	4.10	3.10	11.0	3.22	0.598	1.33	1.99	4.09
16B_1_04	MW-16B	Appendix III	Fluoride	mg/L	10	7	70%	2023-02-02 to 2024-02-01		Nonparametric	0.530	0.580	0.310	0.700	0.200	0.377	0.178	-1.06	NA
16B_1_05	MW-16B	Appendix III	Sulfate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	17.0	17.2	15.0	18.0	1.04	0.0613	1.19	-0.858	-0.291
16B_1_06	MW-16B	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	365	366	350	378	7.26	0.0199	1.48	-0.506	2.13
16B_1_07	MW-16B	Appendix III	pH, Field	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.42	7.46	7.25	7.56	0.0943	0.0127	0.0593	-0.641	-0.210
16B_2_04	MW-16B	Appendix IV	Fluoride	mg/L	10	8	80%	2023-02-02 to 2024-02-01		Nonparametric	0.505	0.505	0.310	0.700	0.276	0.546	0.289	NA	NA
16B_2_10	MW-16B	Appendix IV	Barium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.0871	0.0875	0.0820	0.0910	0.00288	0.0331	0.00370	-0.333	-0.944
16B_2_16	MW-16B	Appendix IV	Lithium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.0213	0.0215	0.0190	0.0230	0.00134	0.0628	0.00148	-0.334	-0.852
16B_2_18	MW-16B	Appendix IV	Molybdenum	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	0.00620	0.00600	0.00500	0.00800	0.000789	0.127	0	1.29	2.98
16B_2_20	MW-16B	Appendix IV	Radium-226/228	pCi/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal	Gamma	2.58	2.03	1.04	6.43	1.57	0.608	0.570	1.95	3.96
16B_2_22	MW-16B	Appendix IV	Selenium	mg/L	10	9	90%	2023-02-02 to 2024-02-01		Nonparametric	0.00600	0.00600	0.00600	0.00600	NA	NA	0	NA	NA
16B_3_24	MW-16B	Field Parameters	Conductivity	mS/cm	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.612	0.617	0.578	0.635	0.0201	0.0328	0.0185	-0.649	-0.972
16B_3_25	MW-16B	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	0.101	0.0850	0	0.370	0.111	1.10	0.0815	1.73	3.65
16B_3_26	MW-16B	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	-109	-106	-136	-63.3	22.3	-0.205	27.8	0.738	0.429
16B_3_27	MW-16B	Field Parameters	Temperature	°C	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	13.1	13.3	9.20	15.8	2.10	0.160	2.07	-0.459	-0.378
16B_3_28	MW-16B	Field Parameters	Turbidity	NTU	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	4.66	5.03	0.440	7.42	2.28	0.490	1.90	-0.883	-0.123
16B_3_29	MW-16B	Field Parameters	pH	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.43	7.46	7.25	7.56	0.0948	0.0128	0.0593	-0.664	-0.241
16B_4_30	MW-16B	Other	Bicarbonate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	404	400	390	420	8.83	0.0218	7.41	0.326	-0.234
16B_4_32	MW-16B	Other	Hardness	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	343	340	322	380	18	0.0524	19.3	0.877	0.545
16B_4_33	MW-16B	Other	Magnesium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	33.6	33.4	29.7	36.4	1.92	0.0572	1.56	-0.498	0.680
16B_4_34	MW-16B	Other	Potassium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	3.03	2.94	2.80	3.81	0.292	0.0961	0.104	2.50	6.82
16B_4_35	MW-16B	Other	Sodium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	13.0	11.1	10.3	24.5	4.31	0.332	0.963	2.56	6.84
16B_4_36	MW-16B	Other	Total Suspended Solids	mg/L	10	5	50%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Nonparametric	2.56	1.40	1.00	7.00	2.55	0.995	0.593	1.98	3.95
16B_5_38	MW-16B	Part 115	Iron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.516	0.440	0.330	0.930	0.179	0.347	0.0889	1.55	2.41
7C_1_01	MW-7C	Appendix III	Boron	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	6.61	6.58	6.29	7.24	0.236	0.0357	0.178	1.71	4.57
7C_1_02	MW-7C	Appendix III	Calcium	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	243	244	183	277	23.2	0.0957	11.1	-1.32	4.08
7C_1_03	MW-7C	Appendix III	Chloride	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	93.4	93.0	90.0	101	2.99	0.0320	2.22	1.48	3.16
7C_1_05	MW-7C	Appendix III	Sulfate	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	696	686	650	761	38.2	0.0549	41.5	0.531	-1.13
7C_1_06	MW-7C	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	1393	1360	1330	1500	59.3	0.0426	14.8	1.10	-0.261
7C_1_07	MW-7C	Appendix III	pH, Field	su	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	7.34	7.32	7.23	7.51	0.0974	0.0133	0.119	0.555	-0.986
7C_2_09	MW-7C	Appendix IV	Arsenic	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	0.00658	0.00600	0.00500	0.0100	0.00124	0.188	0.000741	2.00	5.52
7C_2_10	MW-7C	Appendix IV	Barium	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0435	0.0435	0.0410	0.0470	0.00215	0.0495	0.00296	0.262	-1.39
7C_2_12	MW-7C	Appendix IV	Cadmium	mg/L	12	9	75%	2022-03-10 to 2024-01-30		Nonparametric	0.000800	0.000800	0.000700	0.000900	0.000100	0.125	0.000148	-0.00000000000000485	NA
7C_2_16	MW-7C	Appendix IV	Lithium	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.129	0.128	0.121	0.138	0.00498	0.0387	0.00370	0.742	0.189
7C_2_18	MW-7C	Appendix IV	Molybdenum	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.400	0.404	0.377	0.422	0.0143	0.0358	0.0133	-0.329	-0.931
7C_2_20	MW-7C	Appendix IV	Radium-226/228	pCi/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	2.14	1.88	0.773	3.66	1.17	0.546	1.61	0.186	-1.92
7C_3_24	MW-7C	Field Parameters	Conductivity	mS/cm	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	1.69	1.68	1.33	2.01	0.191	0.113	0.144	0.142	0.566
7C_3_25	MW-7C	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	0.421	0.0900	0.0600	1.77	0.648	1.54	0.0370	1.84	1.97
7C_3_26	MW-7C	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	-117	-125	-183	-39.0	41.3	-0.353	18.4	0.949	1.09
7C_3_27	MW-7C	Field Parameters	Temperature	°C	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	13.2	13.7	9.20	16.4	2.06	0.156	2.07	-0.241	-0.00871
7C_3_28	MW-7C	Field Parameters	Turbidity	NTU	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Normal	Gamma	3.28	3.38	0.0200	7.29	2.38	0.727	2.89	0.104	-0.929

(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
7C_3_29	MW-7C	Field Parameters	pH	su	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	7.34	7.32	7.23	7.51	0.0974	0.0133	0.119	0.555	-0.986
7C_4_30	MW-7C	Other	Bicarbonate	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	162	160	150	172	8.33	0.0515	14.8	-0.302	-1.36
7C_4_32	MW-7C	Other	Hardness	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	766	770	558	860	76.1	0.0994	43.7	-1.86	5.25
7C_4_33	MW-7C	Other	Magnesium	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	41.6	42.1	33.7	44.9	2.96	0.0711	2.30	-1.83	4.55
7C_4_34	MW-7C	Other	Potassium	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	5.68	5.77	4.92	6.14	0.387	0.0681	0.230	-1.03	0.145
7C_4_35	MW-7C	Other	Sodium	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	95.4	96.7	79.0	99.8	5.46	0.0572	2.37	-2.86	9.08
7C_4_36	MW-7C	Other	Total Suspended Solids	mg/L	12	3	25%	2022-03-10 to 2024-01-30	Gamma; Lognormal	Gamma	10.3	8.00	5.40	27.0	6.66	0.646	2.96	2.39	6.14
7C_5_38	MW-7C	Part 115	Iron	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Gamma; Lognormal; Normal	Normal	4.05	4.11	3.67	4.41	0.236	0.0583	0.296	-0.151	-1.03
7C_5_39	MW-7C	Part 115	Nickel	mg/L	12	0	0%	2022-03-10 to 2024-01-30	Nonparametric	Nonparametric	0.00800	0.00800	0.00700	0.0110	0.00128	0.160	0.00148	1.56	1.97
7C_5_42	MW-7C	Part 115	Zinc	mg/L	12	10	83%	2022-03-10 to 2024-01-30		Nonparametric	0.00650	0.00650	0.00600	0.00700	0.000707	0.109	0.000741	NA	NA

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
02_1_01	MW-2	Appendix III	Boron	mg/L	17	0	0%	0.925	0.177	0.161	0.288	0.911	0.103	0.155	0.342	0.164	>= 0.10	0.518	>= 0.10	0.189	Gamma; Lognormal; Normal	Normal
02_1_02	MW-2	Appendix III	Calcium	mg/L	17	0	0%	0.816	0.003	0.227	0.020	0.804	0.002	0.244	0.008	0.243	< 0.01	1.478	< 0.01	0.125	Nonparametric	Nonparametric
02_1_03	MW-2	Appendix III	Chloride	mg/L	17	0	0%	0.916	0.128	0.160	0.292	0.895	0.057	0.164	0.258	0.162	>= 0.10	0.707	0.05 <= p < 0.10	0.092	Gamma; Lognormal; Normal	Normal
02_1_04	MW-2	Appendix III	Fluoride	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_1_05	MW-2	Appendix III	Sulfate	mg/L	17	0	0%	0.883	0.035	0.195	0.086	0.865	0.018	0.219	0.030	0.216	0.01 <= p < 0.05	0.894	0.01 <= p < 0.05	0.260	Normal	Normal
02_1_06	MW-2	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.883	0.035	0.178	0.165	0.871	0.023	0.180	0.150	0.186	>= 0.10	0.863	0.01 <= p < 0.05	0.128	Gamma; Lognormal; Normal	Normal
02_1_07	MW-2	Appendix III	pH, Field	su	18	0	0%	0.937	0.258	0.125	0.645	0.941	0.304	0.125	0.646	0.119	>= 0.10	0.409	>= 0.10	0.017	Gamma; Lognormal; Normal	Normal
02_2_04	MW-2	Appendix IV	Fluoride	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_2_08	MW-2	Appendix IV	Antimony	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_2_09	MW-2	Appendix IV	Arsenic	mg/L	18	14	78%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.338		Nonparametric
02_2_10	MW-2	Appendix IV	Barium	mg/L	18	0	0%	0.973	0.854	0.155	0.305	0.972	0.836	0.171	0.179	0.167	>= 0.10	0.308	>= 0.10	0.088	Gamma; Lognormal; Normal	Normal
02_2_11	MW-2	Appendix IV	Beryllium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_2_12	MW-2	Appendix IV	Cadmium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_2_13	MW-2	Appendix IV	Chromium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_2_14	MW-2	Appendix IV	Cobalt	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_2_15	MW-2	Appendix IV	Lead	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_2_16	MW-2	Appendix IV	Lithium	mg/L	18	0	0%	0.972	0.837	0.110	0.816	0.961	0.630	0.105	0.869	0.118	>= 0.10	0.257	>= 0.10	0.143	Gamma; Lognormal; Normal	Normal
02_2_17	MW-2	Appendix IV	Mercury	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_2_18	MW-2	Appendix IV	Molybdenum	mg/L	18	0	0%	0.971	0.811	0.150	0.348	0.951	0.444	0.160	0.256	0.145	>= 0.10	0.387	>= 0.10	0.188	Gamma; Lognormal; Normal	Normal
02_2_20	MW-2	Appendix IV	Radium-226/228	pCi/L	18	0	0%	0.922	0.140	0.166	0.212	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
02_2_22	MW-2	Appendix IV	Selenium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_2_23	MW-2	Appendix IV	Thallium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_3_24	MW-2	Field Parameters	Conductivity	mS/cm	18	0	0%	0.852	0.009	0.202	0.050	0.839	0.006	0.211	0.034	0.216	0.01 <= p < 0.05	1.208	< 0.01	0.098	Normal	Normal
02_3_25	MW-2	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	0.731	0.000	0.256	0.003	NA	NA	NA	NA	NA		NA		NA	Nonparametric	Nonparametric
02_3_26	MW-2	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	0.930	0.198	0.173	0.168	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
02_3_27	MW-2	Field Parameters	Temperature	°C	18	0	0%	0.936	0.246	0.165	0.220	0.908	0.080	0.175	0.155	0.177	>= 0.10	0.562	>= 0.10	0.141	Gamma; Lognormal; Normal	Normal
02_3_28	MW-2	Field Parameters	Turbidity	NTU	18	0	0%	0.432	0.000	0.414	0.000	0.815	0.002	0.269	0.001	0.334	< 0.01	2.177	< 0.01	0.670	Nonparametric	Nonparametric
02_3_29	MW-2	Field Parameters	pH	su	18	0	0%	0.937	0.258	0.125	0.645	0.941	0.304	0.125	0.646	0.119	>= 0.10	0.409	>= 0.10	0.017	Gamma; Lognormal; Normal	Normal
02_4_30	MW-2	Other	Bicarbonate	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.122		Nonparametric
02_4_31	MW-2	Other	Carbonate	mg/L	4	4	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_4_32	MW-2	Other	Hardness	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.040		Nonparametric
02_4_33	MW-2	Other	Magnesium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.021		Nonparametric
02_4_34	MW-2	Other	Potassium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.653		Nonparametric
02_4_35	MW-2	Other	Sodium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.133		Nonparametric
02_4_36	MW-2	Other	Total Suspended Solids	mg/L	18	4	22%	0.894	0.092	0.203	0.122	0.912	0.166	0.258	0.012	0.209	>= 0.10	0.375	>= 0.10	0.958	Gamma; Lognormal; Normal	Normal
02_5_37	MW-2	Part 115	Copper	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_5_38	MW-2	Part 115	Iron	mg/L	18	0	0%	0.701	0.000	0.288	0.000	0.853	0.009	0.227	0.015	0.254	< 0.01	1.230	< 0.01	0.382	Nonparametric	Nonparametric
02_5_39	MW-2	Part 115	Nickel	mg/L	18	0	0%	0.847	0.008	0.222	0.019	0.833	0.005	0.238	0.008	0.243	< 0.01	1.367	< 0.01	0.182	Nonparametric	Nonparametric
02_5_40	MW-2	Part 115	Silver	mg/L	18	18	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
02_5_41	MW-2	Part 115	Vanadium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
02_5_42	MW-2	Part 115	Zinc	mg/L	18	15	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.021		Nonparametric
03_1_01	MW-3	Appendix III	Boron	mg/L	7	0	0%	0.908	0.382	0.286	0.088	0.916	0.435	0.280	0.100	0.286	>= 0.10	0.438	>= 0.10	0.041	Gamma; Lognormal; Normal	Nonparametric
03_1_02	MW-3	Appendix III	Calcium	mg/L	7	0	0%	0.850	0.124	0.215	0.421	0.838	0.095	0.225	0.351	0.209	>= 0.10	0.537	>= 0.10	0.046	Gamma; Lognormal; Normal	Nonparametric
03_1_03	MW-3	Appendix III	Chloride	mg/L	7	0	0%	0.908	0.379	0.254	0.189	0.905	0.359	0.258	0.172	0.271	>= 0.10	0.417	>= 0.10	0.052	Gamma; Lognormal; Normal	Nonparametric
03_1_04	MW-3	Appendix III	Fluoride	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_1_05	MW-3	Appendix III	Sulfate	mg/L	7	0	0%	0.910	0.398	0.188	0.637	0.914	0.422	0.187	0.647	0.204	>= 0.10	0.341	>= 0.10	0.029	Gamma; Lognormal; Normal	Nonparametric
03_1_06	MW-3	Appendix III	Total Dissolved Solids	mg/L	7	0	0%	0.885	0.252	0.230	0.317	0.886	0.255	0.228	0.330	0.240	>= 0.10	0.488	>= 0.10	0.019	Gamma; Lognormal; Normal	Nonparametric
03_1_07	MW-3	Appendix III	pH, Field	su	7	0	0%	0.949	0.719	0.165	0.816	0.951	0.737	0.163	0.827	0.150	>= 0.10	0.243	>= 0.10	0.011	Gamma; Lognormal; Normal	Nonparametric
03_2_04	MW-3	Appendix IV	Fluoride	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_2_08	MW-3	Appendix IV	Antimony	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_2_09	MW-3	Appendix IV	Arsenic	mg/L	7	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.266		Nonparametric
03_2_10	MW-3	Appendix IV	Barium	mg/L	7	0	0%	0.896	0.307	0.237	0.276	0.889	0.268	0.249	0.208	0.235	>= 0.10	0.450	>= 0.10	0.073	Gamma; Lognormal; Normal	Nonparametric
03_2_11	MW-3	Appendix IV	Beryllium	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_2_12	MW-3	Appendix IV	Cadmium	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_2_13	MW-3	Appendix IV	Chromium	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_2_14	MW-3	Appendix IV	Cobalt	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_2_15	MW-3	Appendix IV	Lead	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_2_16	MW-3	Appendix IV	Lithium	mg/L	7	0	0%	0.949	0.723	0.158	0.859	0.954	0.769	0.165	0.818	0.178	>= 0.10	0.265	>= 0.10	0.059	Gamma; Lognormal; Normal	Nonparametric
03_2_17	MW-3	Appendix IV	Mercury	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_2_18	MW-3	Appendix IV	Molybdenum	mg/L	7	0	0%	0.935	0.594	0.232	0.305	0.941	0.645	0.222	0.370	0.226	>= 0.10	0.351	>= 0.10	0.058	Gamma; Lognormal; Normal	Nonparametric
03_2_20	MW-3	Appendix IV	Radium-226/228	pCi/L	7	0	0%	0.934	0.588	0.236	0.283	0.937	0.611	0.192	0.609	0.205	>= 0.10	0.277	>= 0.10	0.687	Gamma; Lognormal; Normal	Nonparametric
03_2_22	MW-3	Appendix IV	Selenium	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_2_23	MW-3	Appendix IV	Thallium	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_3_24	MW-3	Field Parameters	Conductivity	mS/cm	7	0	0%	0.952	0.744	0.192	0.604	0.949	0.723	0.195	0.584	0.204	>= 0.10	0.277	>= 0.10	0.020	Gamma; Lognormal; Normal	Nonparametric
03_3_25	MW-3	Field Parameters	Dissolved Oxygen	mg/L	7	0	0%	0.878	0.218	0.258	0.170	0.963	0.848	0.171	0.771	0.174	>= 0.10	0.219	>= 0.10	0.759	Gamma; Lognormal; Normal	Nonparametric
03_3_26	MW-3	Field Parameters	Oxidation Reduction Potential	mV	7	0	0%	0.957	0.790	0.151	0.902	NA	NA	NA	NA	NA		NA		NA	Normal	Nonparametric
03_3_27	MW-3	Field Parameters	Temperature	°C	7	0	0%	0.869	0.181	0.250	0.204	0.871	0.188	0.246	0.227	0.270	>= 0.10	0.505	>= 0.10	0.147	Gamma; Lognormal; Normal	Nonparametric
03_3_28	MW-3	Field Parameters	Turbidity	NTU	7	0	0%	0.947	0.699	0.208	0.479	0.872	0.195	0.288	0.082	0.263	>= 0.10	0.443	>= 0.10	0.703	Gamma; Lognormal; Normal	Nonparametric
03_3_29	MW-3	Field Parameters	pH	su	7	0	0%	0.949	0.719	0.165	0.816	0.951	0.737	0.163	0.827	0.150	>= 0.10	0.243	>= 0.10	0.011	Gamma; Lognormal; Normal	Nonparametric
03_4_30	MW-3	Other	Bicarbonate	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.039		Nonparametric
03_4_31	MW-3	Other	Carbonate	mg/L	4	4	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_4_32	MW-3	Other	Hardness	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.013		Nonparametric
03_4_33	MW-3	Other	Magnesium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.049		Nonparametric
03_4_34	MW-3	Other	Potassium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.038		Nonparametric
03_4_35	MW-3	Other	Sodium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.041		Nonparametric
03_4_36	MW-3	Other	Total Suspended Solids	mg/L	7	1	14%	0.928	0.568	0.259	0.236	0.840	0.131	0.303	0.091	0.304	>= 0.10	0.485	>= 0.10	0.506	Gamma; Lognormal; Normal	Nonparametric
03_5_37	MW-3	Part 115	Copper	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_5_38	MW-3	Part 115	Iron	mg/L	7	0	0%	0.917	0.447	0.203	0.519	0.913	0.420	0.202	0.521	0.223	>= 0.10	0.365	>= 0.10	0.071	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
03_5_39	MW-3	Part 115	Nickel	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_5_40	MW-3	Part 115	Silver	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_5_41	MW-3	Part 115	Vanadium	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
03_5_42	MW-3	Part 115	Zinc	mg/L	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_1_01	MW-4	Appendix III	Boron	mg/L	17	0	0%	0.876	0.027	0.273	0.002	0.881	0.033	0.250	0.006	0.260	< 0.01	0.979	0.01 <= p < 0.05	0.145	Nonparametric	Nonparametric
04_1_02	MW-4	Appendix III	Calcium	mg/L	17	0	0%	0.928	0.198	0.201	0.066	0.921	0.152	0.205	0.056	0.210	0.01 <= p < 0.05	0.619	>= 0.10	0.046	Gamma; Lognormal; Normal	Normal
04_1_03	MW-4	Appendix III	Chloride	mg/L	17	0	0%	0.942	0.343	0.170	0.214	0.945	0.379	0.163	0.266	0.163	>= 0.10	0.376	>= 0.10	0.036	Gamma; Lognormal; Normal	Normal
04_1_04	MW-4	Appendix III	Fluoride	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_1_05	MW-4	Appendix III	Sulfate	mg/L	17	0	0%	0.895	0.055	0.232	0.015	0.884	0.037	0.242	0.009	0.237	0.01 <= p < 0.05	0.927	0.01 <= p < 0.05	0.046	Normal	Normal
04_1_06	MW-4	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.982	0.976	0.106	0.880	0.983	0.978	0.110	0.841	0.111	>= 0.10	0.192	>= 0.10	0.029	Gamma; Lognormal; Normal	Normal
04_1_07	MW-4	Appendix III	pH, Field	su	18	0	0%	0.619	0.000	0.276	0.001	0.635	0.000	0.267	0.001	0.269	< 0.01	2.119	< 0.01	0.024	Nonparametric	Nonparametric
04_2_04	MW-4	Appendix IV	Fluoride	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_2_08	MW-4	Appendix IV	Antimony	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_2_09	MW-4	Appendix IV	Arsenic	mg/L	18	0	0%	0.875	0.021	0.176	0.147	0.871	0.019	0.196	0.065	0.194	0.05 <= p < 0.10	0.880	0.01 <= p < 0.05	0.145	Gamma; Lognormal; Normal	Normal
04_2_10	MW-4	Appendix IV	Barium	mg/L	18	0	0%	0.943	0.332	0.165	0.219	0.935	0.242	0.168	0.198	0.173	>= 0.10	0.412	>= 0.10	0.038	Gamma; Lognormal; Normal	Normal
04_2_11	MW-4	Appendix IV	Beryllium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_2_12	MW-4	Appendix IV	Cadmium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_2_13	MW-4	Appendix IV	Chromium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_2_14	MW-4	Appendix IV	Cobalt	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_2_15	MW-4	Appendix IV	Lead	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_2_16	MW-4	Appendix IV	Lithium	mg/L	18	3	17%	0.917	0.171	0.233	0.027	0.924	0.223	0.212	0.067	0.219	0.05 <= p < 0.10	0.624	0.05 <= p < 0.10	0.113	Gamma; Lognormal; Normal	Normal
04_2_17	MW-4	Appendix IV	Mercury	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_2_18	MW-4	Appendix IV	Molybdenum	mg/L	18	16	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.416		Nonparametric
04_2_20	MW-4	Appendix IV	Radium-226/228	pCi/L	18	0	0%	0.803	0.002	0.222	0.019	0.972	0.833	0.130	0.578	0.178	>= 0.10	0.452	>= 0.10	0.841	Gamma; Lognormal	Gamma
04_2_22	MW-4	Appendix IV	Selenium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_2_23	MW-4	Appendix IV	Thallium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_3_24	MW-4	Field Parameters	Conductivity	mS/cm	18	0	0%	0.390	0.000	0.423	0.000	0.349	0.000	0.455	0.000	0.446	< 0.01	4.784	< 0.01	0.173	Nonparametric	Nonparametric
04_3_25	MW-4	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	0.872	0.019	0.191	0.083	0.897	0.051	0.155	0.304	0.170	>= 0.10	0.689	0.05 <= p < 0.10	1.254	Gamma; Lognormal; Normal	Gamma
04_3_26	MW-4	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	0.885	0.032	0.238	0.008	NA	NA	NA	NA	NA		NA		NA	Nonparametric	Nonparametric
04_3_27	MW-4	Field Parameters	Temperature	°C	18	0	0%	0.826	0.004	0.226	0.016	0.806	0.002	0.245	0.006	0.244	< 0.01	1.614	< 0.01	0.139	Nonparametric	Nonparametric
04_3_28	MW-4	Field Parameters	Turbidity	NTU	18	0	0%	0.973	0.858	0.128	0.603	0.886	0.033	0.139	0.471	0.109	>= 0.10	0.286	>= 0.10	0.584	Gamma; Lognormal; Normal	Normal
04_3_29	MW-4	Field Parameters	pH	su	18	0	0%	0.619	0.000	0.276	0.001	0.635	0.000	0.267	0.001	0.269	< 0.01	2.119	< 0.01	0.024	Nonparametric	Nonparametric
04_4_30	MW-4	Other	Bicarbonate	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.022		Nonparametric
04_4_31	MW-4	Other	Carbonate	mg/L	4	4	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_4_32	MW-4	Other	Hardness	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.038		Nonparametric
04_4_33	MW-4	Other	Magnesium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.014		Nonparametric
04_4_34	MW-4	Other	Potassium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.026		Nonparametric
04_4_35	MW-4	Other	Sodium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.080		Nonparametric
04_4_36	MW-4	Other	Total Suspended Solids	mg/L	18	7	39%	0.807	0.011	0.258	0.039	0.823	0.019	0.280	0.016	0.285	0.01 <= p < 0.05	0.852	0.01 <= p < 0.05	0.445	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
04_5_37	MW-4	Part 115	Copper	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_5_38	MW-4	Part 115	Iron	mg/L	18	0	0%	0.974	0.873	0.124	0.659	0.964	0.687	0.141	0.452	0.137	>= 0.10	0.353	>= 0.10	0.098	Gamma; Lognormal; Normal	Normal
04_5_39	MW-4	Part 115	Nickel	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_5_40	MW-4	Part 115	Silver	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_5_41	MW-4	Part 115	Vanadium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
04_5_42	MW-4	Part 115	Zinc	mg/L	18	15	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.840		Nonparametric
05_1_01	MW-5	Appendix III	Boron	mg/L	17	0	0%	0.817	0.003	0.231	0.017	0.537	0.000	0.286	0.001	0.283	< 0.01	2.222	< 0.01	0.632	Nonparametric	Nonparametric
05_1_02	MW-5	Appendix III	Calcium	mg/L	17	0	0%	0.970	0.822	0.149	0.406	0.828	0.005	0.228	0.019	0.202	0.05 <= p < 0.10	0.616	>= 0.10	0.379	Gamma; Normal	Normal
05_1_03	MW-5	Appendix III	Chloride	mg/L	17	0	0%	0.878	0.030	0.204	0.059	0.828	0.005	0.251	0.006	0.235	0.01 <= p < 0.05	1.012	< 0.01	0.235	Normal	Normal
05_1_04	MW-5	Appendix III	Fluoride	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
05_1_05	MW-5	Appendix III	Sulfate	mg/L	17	0	0%	0.973	0.873	0.118	0.767	0.911	0.104	0.212	0.040	0.179	>= 0.10	0.418	>= 0.10	0.502	Gamma; Lognormal; Normal	Normal
05_1_06	MW-5	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.966	0.737	0.113	0.811	0.920	0.148	0.180	0.153	0.154	>= 0.10	0.412	>= 0.10	0.346	Gamma; Lognormal; Normal	Normal
05_1_07	MW-5	Appendix III	pH, Field	su	18	0	0%	0.722	0.000	0.282	0.001	0.705	0.000	0.292	0.000	0.283	< 0.01	1.924	< 0.01	0.037	Nonparametric	Nonparametric
05_2_04	MW-5	Appendix IV	Fluoride	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
05_2_08	MW-5	Appendix IV	Antimony	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
05_2_09	MW-5	Appendix IV	Arsenic	mg/L	18	12	67%	0.912	0.452	0.172	0.833	0.929	0.573	0.193	0.690	0.206	>= 0.10	0.279	>= 0.10	0.505	Gamma; Lognormal; Normal	Nonparametric
05_2_10	MW-5	Appendix IV	Barium	mg/L	18	0	0%	0.922	0.143	0.183	0.112	0.951	0.449	0.156	0.298	0.164	>= 0.10	0.515	>= 0.10	0.168	Gamma; Lognormal; Normal	Normal
05_2_11	MW-5	Appendix IV	Beryllium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
05_2_12	MW-5	Appendix IV	Cadmium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
05_2_13	MW-5	Appendix IV	Chromium	mg/L	18	16	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.252		Nonparametric
05_2_14	MW-5	Appendix IV	Cobalt	mg/L	18	17	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
05_2_15	MW-5	Appendix IV	Lead	mg/L	18	15	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.785		Nonparametric
05_2_16	MW-5	Appendix IV	Lithium	mg/L	18	0	0%	0.896	0.049	0.169	0.190	0.708	0.000	0.225	0.017	0.213	0.01 <= p < 0.05	1.137	< 0.01	0.404	Normal	Normal
05_2_17	MW-5	Appendix IV	Mercury	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
05_2_18	MW-5	Appendix IV	Molybdenum	mg/L	18	0	0%	0.968	0.760	0.169	0.190	0.830	0.004	0.200	0.054	0.177	>= 0.10	0.561	>= 0.10	0.485	Gamma; Lognormal; Normal	Normal
05_2_20	MW-5	Appendix IV	Radium-226/228	pCi/L	18	0	0%	0.862	0.013	0.171	0.177	0.955	0.512	0.098	0.921	0.110	>= 0.10	0.312	>= 0.10	0.646	Gamma; Lognormal; Normal	Normal
05_2_22	MW-5	Appendix IV	Selenium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
05_2_23	MW-5	Appendix IV	Thallium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
05_3_24	MW-5	Field Parameters	Conductivity	mS/cm	18	0	0%	0.976	0.895	0.109	0.832	0.967	0.748	0.124	0.659	0.115	>= 0.10	0.264	>= 0.10	0.246	Gamma; Lognormal; Normal	Normal
05_3_25	MW-5	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	0.949	0.403	0.141	0.448	0.861	0.013	0.265	0.002	0.228	0.01 <= p < 0.05	0.818	0.01 <= p < 0.05	0.706	Normal	Normal
05_3_26	MW-5	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	0.941	0.296	0.115	0.768	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
05_3_27	MW-5	Field Parameters	Temperature	°C	18	0	0%	0.979	0.935	0.115	0.768	0.936	0.251	0.159	0.265	0.140	>= 0.10	0.327	>= 0.10	0.230	Gamma; Lognormal; Normal	Normal
05_3_28	MW-5	Field Parameters	Turbidity	NTU	18	0	0%	0.449	0.000	0.428	0.000	0.753	0.000	0.270	0.001	0.350	< 0.01	2.624	< 0.01	0.694	Nonparametric	Nonparametric
05_3_29	MW-5	Field Parameters	pH	su	18	0	0%	0.722	0.000	0.282	0.001	0.705	0.000	0.292	0.000	0.283	< 0.01	1.924	< 0.01	0.037	Nonparametric	Nonparametric
05_4_30	MW-5	Other	Bicarbonate	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.057		Nonparametric
05_4_31	MW-5	Other	Carbonate	mg/L	4	4	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
05_4_32	MW-5	Other	Hardness	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.180		Nonparametric
05_4_33	MW-5	Other	Magnesium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.208		Nonparametric
05_4_34	MW-5	Other	Potassium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.088		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
05_4_35	MW-5	Other	Sodium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.192		Nonparametric
05_4_36	MW-5	Other	Total Suspended Solids	mg/L	18	0	0%	0.611	0.000	0.322	0.000	0.939	0.277	0.164	0.228	0.210	0.01 <= p < 0.05	0.896	0.01 <= p < 0.05	1.018	Lognormal	Nonparametric
05_5_37	MW-5	Part 115	Copper	mg/L	18	13	72%	0.944	0.692	0.239	0.455	0.978	0.922	0.163	0.931	0.193	>= 0.10	0.212	>= 0.10	0.645	Gamma; Lognormal; Normal	Nonparametric
05_5_38	MW-5	Part 115	Iron	mg/L	18	1	6%	0.668	0.000	0.257	0.004	0.959	0.614	0.093	0.961	0.133	>= 0.10	0.560	>= 0.10	1.127	Gamma; Lognormal	Gamma
05_5_39	MW-5	Part 115	Nickel	mg/L	18	0	0%	0.959	0.577	0.143	0.425	0.954	0.486	0.164	0.222	0.138	>= 0.10	0.280	>= 0.10	0.391	Gamma; Lognormal; Normal	Normal
05_5_40	MW-5	Part 115	Silver	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
05_5_41	MW-5	Part 115	Vanadium	mg/L	18	15	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.446		Nonparametric
05_5_42	MW-5	Part 115	Zinc	mg/L	18	5	28%	0.701	0.001	0.254	0.022	0.913	0.200	0.151	0.576	0.186	>= 0.10	0.665	0.05 <= p < 0.10	0.956	Gamma; Lognormal	Gamma
06_1_01	MW-6	Appendix III	Boron	mg/L	17	0	0%	0.962	0.670	0.116	0.785	0.954	0.521	0.113	0.820	0.122	>= 0.10	0.280	>= 0.10	0.240	Gamma; Lognormal; Normal	Normal
06_1_02	MW-6	Appendix III	Calcium	mg/L	17	0	0%	0.915	0.121	0.172	0.203	0.918	0.138	0.167	0.234	0.176	>= 0.10	0.487	>= 0.10	0.108	Gamma; Lognormal; Normal	Normal
06_1_03	MW-6	Appendix III	Chloride	mg/L	17	0	0%	0.884	0.037	0.198	0.074	0.880	0.032	0.197	0.078	0.205	0.05 <= p < 0.10	0.886	0.01 <= p < 0.05	0.204	Gamma; Lognormal; Normal	Normal
06_1_04	MW-6	Appendix III	Fluoride	mg/L	17	17	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_1_05	MW-6	Appendix III	Sulfate	mg/L	17	0	0%	0.921	0.154	0.163	0.266	0.927	0.191	0.160	0.294	0.169	>= 0.10	0.465	>= 0.10	0.275	Gamma; Lognormal; Normal	Normal
06_1_06	MW-6	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.936	0.271	0.156	0.335	0.937	0.284	0.164	0.259	0.169	>= 0.10	0.490	>= 0.10	0.127	Gamma; Lognormal; Normal	Normal
06_1_07	MW-6	Appendix III	pH, Field	su	18	0	0%	0.915	0.107	0.193	0.074	0.914	0.103	0.197	0.062	0.192	0.05 <= p < 0.10	0.788	0.01 <= p < 0.05	0.024	Gamma; Lognormal; Normal	Normal
06_2_04	MW-6	Appendix IV	Fluoride	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_2_08	MW-6	Appendix IV	Antimony	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_2_09	MW-6	Appendix IV	Arsenic	mg/L	18	17	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_2_10	MW-6	Appendix IV	Barium	mg/L	18	0	0%	0.945	0.353	0.170	0.182	0.940	0.294	0.161	0.251	0.173	>= 0.10	0.530	>= 0.10	0.116	Gamma; Lognormal; Normal	Normal
06_2_11	MW-6	Appendix IV	Beryllium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_2_12	MW-6	Appendix IV	Cadmium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_2_13	MW-6	Appendix IV	Chromium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_2_14	MW-6	Appendix IV	Cobalt	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_2_15	MW-6	Appendix IV	Lead	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_2_16	MW-6	Appendix IV	Lithium	mg/L	18	0	0%	0.972	0.833	0.095	0.935	0.958	0.566	0.112	0.796	0.108	>= 0.10	0.281	>= 0.10	0.171	Gamma; Lognormal; Normal	Normal
06_2_17	MW-6	Appendix IV	Mercury	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_2_18	MW-6	Appendix IV	Molybdenum	mg/L	18	0	0%	0.970	0.804	0.113	0.790	0.901	0.060	0.168	0.198	0.148	>= 0.10	0.471	>= 0.10	0.267	Gamma; Lognormal; Normal	Normal
06_2_20	MW-6	Appendix IV	Radium-226/228	pCi/L	18	0	0%	0.923	0.145	0.186	0.103	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
06_2_22	MW-6	Appendix IV	Selenium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_2_23	MW-6	Appendix IV	Thallium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_3_24	MW-6	Field Parameters	Conductivity	mS/cm	18	0	0%	0.980	0.949	0.102	0.892	0.976	0.897	0.117	0.746	0.115	>= 0.10	0.178	>= 0.10	0.096	Gamma; Lognormal; Normal	Normal
06_3_25	MW-6	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	0.856	0.011	0.226	0.016	0.974	0.874	0.096	0.929	0.128	>= 0.10	0.234	>= 0.10	0.995	Gamma; Lognormal	Gamma
06_3_26	MW-6	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	0.976	0.903	0.120	0.709	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
06_3_27	MW-6	Field Parameters	Temperature	°C	18	0	0%	0.955	0.508	0.133	0.542	0.937	0.258	0.155	0.304	0.146	>= 0.10	0.447	>= 0.10	0.112	Gamma; Lognormal; Normal	Normal
06_3_28	MW-6	Field Parameters	Turbidity	NTU	18	0	0%	0.769	0.001	0.280	0.001	0.959	0.584	0.138	0.482	0.175	>= 0.10	0.387	>= 0.10	0.863	Gamma; Lognormal	Gamma
06_3_29	MW-6	Field Parameters	pH	su	18	0	0%	0.915	0.107	0.193	0.074	0.914	0.103	0.197	0.062	0.192	0.05 <= p < 0.10	0.788	0.01 <= p < 0.05	0.024	Gamma; Lognormal; Normal	Normal
06_4_30	MW-6	Other	Bicarbonate	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.053		Nonparametric
06_4_31	MW-6	Other	Carbonate	mg/L	4	4	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_4_32	MW-6	Other	Hardness	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.094		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
06_4_33	MW-6	Other	Magnesium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.144		Nonparametric
06_4_34	MW-6	Other	Potassium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.039		Nonparametric
06_4_35	MW-6	Other	Sodium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.135		Nonparametric
06_4_36	MW-6	Other	Total Suspended Solids	mg/L	18	13	72%	0.667	0.004	0.374	0.021	0.891	0.362	0.256	0.347	0.304	>= 0.10	0.553	>= 0.10	1.406	Gamma; Lognormal	Nonparametric
06_5_37	MW-6	Part 115	Copper	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_5_38	MW-6	Part 115	Iron	mg/L	18	9	50%	0.715	0.002	0.251	0.105	0.925	0.431	0.155	0.771	0.174	>= 0.10	0.491	>= 0.10	0.743	Gamma; Lognormal; Normal	Nonparametric
06_5_39	MW-6	Part 115	Nickel	mg/L	18	4	22%	0.850	0.022	0.320	0.000	0.832	0.013	0.335	0.000	0.334	< 0.01	1.221	< 0.01	0.124	Nonparametric	Nonparametric
06_5_40	MW-6	Part 115	Silver	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_5_41	MW-6	Part 115	Vanadium	mg/L	18	18	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
06_5_42	MW-6	Part 115	Zinc	mg/L	18	17	94%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_1_01	MW-7	Appendix III	Boron	mg/L	12	0	0%	0.969	0.902	0.137	0.771	0.961	0.796	0.180	0.348	0.162	>= 0.10	0.276	>= 0.10	0.247	Gamma; Lognormal; Normal	Normal
07_1_02	MW-7	Appendix III	Calcium	mg/L	12	0	0%	0.861	0.050	0.212	0.141	0.903	0.172	0.197	0.224	0.200	>= 0.10	0.543	>= 0.10	0.159	Gamma; Lognormal; Normal	Normal
07_1_03	MW-7	Appendix III	Chloride	mg/L	12	0	0%	0.758	0.003	0.252	0.034	0.789	0.007	0.252	0.034	0.251	0.01 <= p < 0.05	0.960	0.01 <= p < 0.05	0.087	Nonparametric	Nonparametric
07_1_04	MW-7	Appendix III	Fluoride	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_1_05	MW-7	Appendix III	Sulfate	mg/L	12	0	0%	0.840	0.028	0.210	0.154	0.877	0.081	0.179	0.361	0.188	>= 0.10	0.639	0.05 <= p < 0.10	0.144	Gamma; Lognormal; Normal	Normal
07_1_06	MW-7	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.738	0.002	0.310	0.002	0.779	0.005	0.282	0.009	0.290	< 0.01	1.240	< 0.01	0.132	Nonparametric	Nonparametric
07_1_07	MW-7	Appendix III	pH, Field	su	12	0	0%	0.833	0.023	0.270	0.016	0.848	0.035	0.262	0.022	0.260	0.01 <= p < 0.05	0.787	0.01 <= p < 0.05	0.034	Nonparametric	Nonparametric
07_2_04	MW-7	Appendix IV	Fluoride	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_2_08	MW-7	Appendix IV	Antimony	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_2_09	MW-7	Appendix IV	Arsenic	mg/L	12	0	0%	0.818	0.015	0.345	0.000	0.792	0.008	0.355	0.000	0.366	< 0.01	1.383	< 0.01	0.174	Nonparametric	Nonparametric
07_2_10	MW-7	Appendix IV	Barium	mg/L	12	0	0%	0.927	0.346	0.144	0.700	0.874	0.073	0.175	0.390	0.147	>= 0.10	0.452	>= 0.10	0.141	Gamma; Lognormal; Normal	Normal
07_2_11	MW-7	Appendix IV	Beryllium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_2_12	MW-7	Appendix IV	Cadmium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_2_13	MW-7	Appendix IV	Chromium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_2_14	MW-7	Appendix IV	Cobalt	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_2_15	MW-7	Appendix IV	Lead	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_2_16	MW-7	Appendix IV	Lithium	mg/L	12	0	0%	0.944	0.545	0.165	0.487	0.909	0.210	0.167	0.465	0.169	>= 0.10	0.488	>= 0.10	0.158	Gamma; Lognormal; Normal	Normal
07_2_17	MW-7	Appendix IV	Mercury	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_2_18	MW-7	Appendix IV	Molybdenum	mg/L	12	0	0%	0.804	0.011	0.286	0.007	0.788	0.007	0.314	0.002	0.312	< 0.01	1.196	< 0.01	0.270	Nonparametric	Nonparametric
07_2_20	MW-7	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.909	0.209	0.162	0.517	0.958	0.752	0.158	0.561	0.126	>= 0.10	0.199	>= 0.10	0.750	Gamma; Lognormal; Normal	Normal
07_2_22	MW-7	Appendix IV	Selenium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_2_23	MW-7	Appendix IV	Thallium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_3_24	MW-7	Field Parameters	Conductivity	mS/cm	12	0	0%	0.892	0.126	0.206	0.173	0.795	0.008	0.244	0.046	0.222	>= 0.10	0.835	0.01 <= p < 0.05	0.238	Gamma; Normal	Normal
07_3_25	MW-7	Field Parameters	Dissolved Oxygen	mg/L	12	1	8%	0.575	0.000	0.334	0.001	NA	NA	NA	NA	NA		NA		NA	Nonparametric	Nonparametric
07_3_26	MW-7	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	0.873	0.072	0.182	0.334	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
07_3_27	MW-7	Field Parameters	Temperature	°C	12	0	0%	0.965	0.850	0.170	0.437	0.929	0.374	0.209	0.158	0.202	>= 0.10	0.336	>= 0.10	0.302	Gamma; Lognormal; Normal	Normal
07_3_28	MW-7	Field Parameters	Turbidity	NTU	12	0	0%	0.659	0.000	0.319	0.001	0.916	0.252	0.172	0.421	0.214	>= 0.10	0.682	0.05 <= p < 0.10	0.661	Gamma; Lognormal	Gamma
07_3_29	MW-7	Field Parameters	pH	su	12	0	0%	0.833	0.023	0.270	0.016	0.848	0.035	0.262	0.022	0.260	0.01 <= p < 0.05	0.787	0.01 <= p < 0.05	0.034	Nonparametric	Nonparametric
07_4_30	MW-7	Other	Bicarbonate	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.364		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
07_4_31	MW-7	Other	Carbonate	mg/L	4	4	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_4_32	MW-7	Other	Hardness	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.262		Nonparametric
07_4_33	MW-7	Other	Magnesium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.258		Nonparametric
07_4_34	MW-7	Other	Potassium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.240		Nonparametric
07_4_35	MW-7	Other	Sodium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.105		Nonparametric
07_4_36	MW-7	Other	Total Suspended Solids	mg/L	12	10	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.676		Nonparametric
07_5_37	MW-7	Part 115	Copper	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_5_38	MW-7	Part 115	Iron	mg/L	12	0	0%	0.777	0.005	0.298	0.004	0.892	0.125	0.237	0.061	0.256	0.01 <= p < 0.05	0.661	0.05 <= p < 0.10	0.277	Gamma; Lognormal	Gamma
07_5_39	MW-7	Part 115	Nickel	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_5_40	MW-7	Part 115	Silver	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_5_41	MW-7	Part 115	Vanadium	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
07_5_42	MW-7	Part 115	Zinc	mg/L	12	9	75%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.400		Nonparametric
08_1_01	MW-8	Appendix III	Boron	mg/L	12	1	8%	0.855	0.049	0.240	0.076	0.952	0.671	0.195	0.290	0.200	>= 0.10	0.394	>= 0.10	0.480	Gamma; Lognormal; Normal	Normal
08_1_02	MW-8	Appendix III	Calcium	mg/L	12	0	0%	0.970	0.912	0.106	0.969	0.968	0.885	0.112	0.945	0.118	>= 0.10	0.202	>= 0.10	0.057	Gamma; Lognormal; Normal	Normal
08_1_03	MW-8	Appendix III	Chloride	mg/L	12	2	17%	0.734	0.002	0.299	0.011	0.928	0.432	0.166	0.603	0.224	>= 0.10	0.660	0.05 <= p < 0.10	0.852	Gamma; Lognormal	Gamma
08_1_04	MW-8	Appendix III	Fluoride	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_1_05	MW-8	Appendix III	Sulfate	mg/L	12	0	0%	0.863	0.053	0.209	0.155	0.929	0.373	0.171	0.435	0.196	>= 0.10	0.434	>= 0.10	0.540	Gamma; Lognormal; Normal	Normal
08_1_06	MW-8	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.850	0.036	0.250	0.037	0.868	0.062	0.237	0.062	0.241	0.05 <= p < 0.10	0.704	0.05 <= p < 0.10	0.071	Gamma; Lognormal	Gamma
08_1_07	MW-8	Appendix III	pH, Field	su	12	0	0%	0.734	0.002	0.245	0.044	0.748	0.003	0.237	0.061	0.236	0.05 <= p < 0.10	1.030	< 0.01	0.029	Gamma; Lognormal	Gamma
08_2_04	MW-8	Appendix IV	Fluoride	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_2_08	MW-8	Appendix IV	Antimony	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_2_09	MW-8	Appendix IV	Arsenic	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_2_10	MW-8	Appendix IV	Barium	mg/L	12	0	0%	0.919	0.280	0.230	0.079	0.936	0.444	0.202	0.192	0.210	>= 0.10	0.478	>= 0.10	0.150	Gamma; Lognormal; Normal	Normal
08_2_11	MW-8	Appendix IV	Beryllium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_2_12	MW-8	Appendix IV	Cadmium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_2_13	MW-8	Appendix IV	Chromium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_2_14	MW-8	Appendix IV	Cobalt	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_2_15	MW-8	Appendix IV	Lead	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_2_16	MW-8	Appendix IV	Lithium	mg/L	12	6	50%	0.930	0.580	0.219	0.492	0.971	0.896	0.167	0.863	0.170	>= 0.10	0.241	>= 0.10	0.341	Gamma; Lognormal; Normal	Nonparametric
08_2_17	MW-8	Appendix IV	Mercury	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_2_18	MW-8	Appendix IV	Molybdenum	mg/L	12	10	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.547		Nonparametric
08_2_20	MW-8	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.896	0.139	0.193	0.249	0.945	0.562	0.200	0.202	0.172	>= 0.10	0.236	>= 0.10	1.160	Gamma; Lognormal; Normal	Gamma
08_2_22	MW-8	Appendix IV	Selenium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_2_23	MW-8	Appendix IV	Thallium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_3_24	MW-8	Field Parameters	Conductivity	mS/cm	12	0	0%	0.804	0.010	0.228	0.087	0.819	0.016	0.216	0.128	0.219	>= 0.10	0.930	0.01 <= p < 0.05	0.059	Gamma; Lognormal; Normal	Normal
08_3_25	MW-8	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	0.832	0.022	0.250	0.036	0.779	0.006	0.307	0.003	0.220	>= 0.10	0.617	>= 0.10	1.951	Gamma	Gamma
08_3_26	MW-8	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	0.893	0.129	0.265	0.020	0.907	0.195	0.232	0.074	0.255	0.01 <= p < 0.05	0.633	0.05 <= p < 0.10	0.539	Gamma; Lognormal; Normal	Normal
08_3_27	MW-8	Field Parameters	Temperature	°C	12	0	0%	0.925	0.330	0.253	0.032	0.897	0.147	0.255	0.031	0.265	0.01 <= p < 0.05	0.558	>= 0.10	0.307	Gamma; Lognormal; Normal	Normal
08_3_28	MW-8	Field Parameters	Turbidity	NTU	12	0	0%	0.916	0.252	0.169	0.451	0.884	0.099	0.227	0.089	0.216	>= 0.10	0.554	>= 0.10	0.456	Gamma; Lognormal; 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
08_3_29	MW-8	Field Parameters	pH	su	12	0	0%	0.734	0.002	0.245	0.044	0.748	0.003	0.237	0.061	0.236	0.05 <= p < 0.10	1.030	< 0.01	0.029	Gamma; Lognormal	Gamma
08_4_30	MW-8	Other	Bicarbonate	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.138		Nonparametric
08_4_31	MW-8	Other	Carbonate	mg/L	4	4	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_4_32	MW-8	Other	Hardness	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.070		Nonparametric
08_4_33	MW-8	Other	Magnesium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.094		Nonparametric
08_4_34	MW-8	Other	Potassium	mg/L	4	1	25%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.191		Nonparametric
08_4_35	MW-8	Other	Sodium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.553		Nonparametric
08_4_36	MW-8	Other	Total Suspended Solids	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_5_37	MW-8	Part 115	Copper	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_5_38	MW-8	Part 115	Iron	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_5_39	MW-8	Part 115	Nickel	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_5_40	MW-8	Part 115	Silver	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_5_41	MW-8	Part 115	Vanadium	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
08_5_42	MW-8	Part 115	Zinc	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_1_01	MW-9	Appendix III	Boron	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_1_02	MW-9	Appendix III	Calcium	mg/L	12	0	0%	0.855	0.043	0.267	0.018	0.890	0.118	0.243	0.050	0.244	0.05 <= p < 0.10	0.614	>= 0.10	0.126	Gamma; Lognormal	Gamma
09_1_03	MW-9	Appendix III	Chloride	mg/L	12	10	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.132		Nonparametric
09_1_04	MW-9	Appendix III	Fluoride	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_1_05	MW-9	Appendix III	Sulfate	mg/L	12	8	67%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.506		Nonparametric
09_1_06	MW-9	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.780	0.006	0.211	0.147	0.821	0.017	0.204	0.182	0.204	>= 0.10	0.854	0.01 <= p < 0.05	0.111	Gamma; Lognormal; Normal	Normal
09_1_07	MW-9	Appendix III	pH, Field	su	12	0	0%	0.857	0.045	0.222	0.105	0.865	0.056	0.219	0.117	0.222	>= 0.10	0.586	>= 0.10	0.023	Gamma; Lognormal; Normal	Normal
09_2_04	MW-9	Appendix IV	Fluoride	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_2_08	MW-9	Appendix IV	Antimony	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_2_09	MW-9	Appendix IV	Arsenic	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_2_10	MW-9	Appendix IV	Barium	mg/L	12	0	0%	0.886	0.105	0.184	0.314	0.892	0.124	0.188	0.286	0.192	>= 0.10	0.548	>= 0.10	0.089	Gamma; Lognormal; Normal	Normal
09_2_11	MW-9	Appendix IV	Beryllium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_2_12	MW-9	Appendix IV	Cadmium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_2_13	MW-9	Appendix IV	Chromium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_2_14	MW-9	Appendix IV	Cobalt	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_2_15	MW-9	Appendix IV	Lead	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_2_16	MW-9	Appendix IV	Lithium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_2_17	MW-9	Appendix IV	Mercury	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_2_18	MW-9	Appendix IV	Molybdenum	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_2_20	MW-9	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.871	0.068	0.200	0.205	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
09_2_22	MW-9	Appendix IV	Selenium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_2_23	MW-9	Appendix IV	Thallium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_3_24	MW-9	Field Parameters	Conductivity	mS/cm	12	0	0%	0.927	0.353	0.186	0.300	0.947	0.597	0.174	0.404	0.172	>= 0.10	0.326	>= 0.10	0.081	Gamma; Lognormal; Normal	Normal
09_3_25	MW-9	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	0.927	0.349	0.167	0.469	0.907	0.197	0.177	0.380	0.171	>= 0.10	0.418	>= 0.10	0.200	Gamma; Lognormal; Normal	Normal
09_3_26	MW-9	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	0.934	0.420	0.179	0.358	0.943	0.543	0.164	0.497	0.149	>= 0.10	0.325	>= 0.10	0.453	Gamma; Lognormal; 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
09_3_27	MW-9	Field Parameters	Temperature	°C	12	0	0%	0.897	0.143	0.189	0.278	0.879	0.086	0.194	0.241	0.204	>= 0.10	0.593	>= 0.10	0.512	Gamma; Lognormal; Normal	Normal
09_3_28	MW-9	Field Parameters	Turbidity	NTU	12	0	0%	0.905	0.183	0.168	0.463	0.914	0.243	0.193	0.249	0.195	>= 0.10	0.444	>= 0.10	0.518	Gamma; Lognormal; Normal	Normal
09_3_29	MW-9	Field Parameters	pH	su	12	0	0%	0.857	0.045	0.222	0.105	0.865	0.056	0.219	0.117	0.222	>= 0.10	0.586	>= 0.10	0.023	Gamma; Lognormal; Normal	Normal
09_4_30	MW-9	Other	Bicarbonate	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.157		Nonparametric
09_4_31	MW-9	Other	Carbonate	mg/L	4	4	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_4_32	MW-9	Other	Hardness	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.185		Nonparametric
09_4_33	MW-9	Other	Magnesium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.175		Nonparametric
09_4_34	MW-9	Other	Potassium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.153		Nonparametric
09_4_35	MW-9	Other	Sodium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.251		Nonparametric
09_4_36	MW-9	Other	Total Suspended Solids	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_5_37	MW-9	Part 115	Copper	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_5_38	MW-9	Part 115	Iron	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_5_39	MW-9	Part 115	Nickel	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_5_40	MW-9	Part 115	Silver	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_5_41	MW-9	Part 115	Vanadium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
09_5_42	MW-9	Part 115	Zinc	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_1_01	MW-100A	Appendix III	Boron	mg/L	8	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.103		Nonparametric
100A_1_02	MW-100A	Appendix III	Calcium	mg/L	8	0	0%	0.964	0.845	0.196	0.490	0.960	0.810	0.200	0.457	0.194	>= 0.10	0.250	>= 0.10	0.022	Gamma; Lognormal; Normal	Normal
100A_1_03	MW-100A	Appendix III	Chloride	mg/L	8	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.022		Nonparametric
100A_1_04	MW-100A	Appendix III	Fluoride	mg/L	8	6	75%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.777		Nonparametric
100A_1_05	MW-100A	Appendix III	Sulfate	mg/L	8	0	0%	0.890	0.235	0.265	0.102	0.924	0.461	0.225	0.271	0.247	>= 0.10	0.388	>= 0.10	0.312	Gamma; Lognormal; Normal	Normal
100A_1_06	MW-100A	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	0.973	0.919	0.160	0.788	0.976	0.944	0.156	0.819	0.152	>= 0.10	0.184	>= 0.10	0.024	Gamma; Lognormal; Normal	Normal
100A_1_07	MW-100A	Appendix III	pH, Field	su	8	0	0%	0.910	0.353	0.235	0.216	0.906	0.326	0.238	0.203	0.236	>= 0.10	0.388	>= 0.10	0.014	Gamma; Lognormal; Normal	Normal
100A_2_04	MW-100A	Appendix IV	Fluoride	mg/L	8	7	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_2_08	MW-100A	Appendix IV	Antimony	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_2_09	MW-100A	Appendix IV	Arsenic	mg/L	8	0	0%	0.897	0.273	0.219	0.312	0.855	0.107	0.262	0.108	0.249	>= 0.10	0.573	>= 0.10	0.250	Gamma; Lognormal; Normal	Normal
100A_2_10	MW-100A	Appendix IV	Barium	mg/L	8	0	0%	0.858	0.114	0.224	0.279	0.850	0.095	0.230	0.242	0.217	>= 0.10	0.531	>= 0.10	0.029	Gamma; Lognormal; Normal	Normal
100A_2_11	MW-100A	Appendix IV	Beryllium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_2_12	MW-100A	Appendix IV	Cadmium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_2_13	MW-100A	Appendix IV	Chromium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_2_14	MW-100A	Appendix IV	Cobalt	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_2_15	MW-100A	Appendix IV	Lead	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_2_16	MW-100A	Appendix IV	Lithium	mg/L	8	0	0%	0.928	0.502	0.175	0.668	0.912	0.371	0.187	0.565	0.195	>= 0.10	0.357	>= 0.10	0.133	Gamma; Lognormal; Normal	Normal
100A_2_17	MW-100A	Appendix IV	Mercury	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_2_18	MW-100A	Appendix IV	Molybdenum	mg/L	8	0	0%	0.919	0.425	0.243	0.179	0.902	0.301	0.245	0.171	0.259	>= 0.10	0.444	>= 0.10	0.168	Gamma; Lognormal; Normal	Normal
100A_2_20	MW-100A	Appendix IV	Radium-226/228	pCi/L	8	0	0%	0.876	0.173	0.200	0.455	0.940	0.613	0.160	0.794	0.177	>= 0.10	0.281	>= 0.10	0.653	Gamma; Lognormal; Normal	Normal
100A_2_22	MW-100A	Appendix IV	Selenium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_2_23	MW-100A	Appendix IV	Thallium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_3_24	MW-100A	Field Parameters	Conductivity	mS/cm	8	0	0%	0.911	0.359	0.237	0.208	0.891	0.239	0.245	0.170	0.253	>= 0.10	0.434	>= 0.10	0.082	Gamma; Lognormal; 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
100A_3_25	MW-100A	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.662	0.001	0.330	0.010	0.867	0.140	0.226	0.269	0.240	>= 0.10	0.677	0.05 <= p < 0.10	0.812	Gamma; Lognormal	Gamma
100A_3_26	MW-100A	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	0.778	0.016	0.239	0.196	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
100A_3_27	MW-100A	Field Parameters	Temperature	°C	8	0	0%	0.896	0.263	0.203	0.426	0.882	0.196	0.235	0.216	0.232	>= 0.10	0.477	>= 0.10	0.216	Gamma; Lognormal; Normal	Normal
100A_3_28	MW-100A	Field Parameters	Turbidity	NTU	8	0	0%	0.955	0.762	0.170	0.713	0.794	0.025	0.296	0.038	0.241	>= 0.10	0.481	>= 0.10	0.794	Gamma; Normal	Normal
100A_3_29	MW-100A	Field Parameters	pH	su	8	0	0%	0.910	0.353	0.235	0.216	0.906	0.326	0.238	0.203	0.236	>= 0.10	0.388	>= 0.10	0.014	Gamma; Lognormal; Normal	Normal
100A_4_30	MW-100A	Other	Bicarbonate	mg/L	8	0	0%	0.949	0.702	0.189	0.545	0.946	0.669	0.194	0.501	0.180	>= 0.10	0.317	>= 0.10	0.036	Gamma; Lognormal; Normal	Normal
100A_4_31	MW-100A	Other	Carbonate	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_4_32	MW-100A	Other	Hardness	mg/L	8	0	0%	0.710	0.003	0.293	0.042	0.702	0.002	0.299	0.034	0.290	0.05 <= p < 0.10	1.065	< 0.01	0.027	Gamma	Gamma
100A_4_33	MW-100A	Other	Magnesium	mg/L	8	0	0%	0.890	0.232	0.197	0.479	0.880	0.189	0.204	0.421	0.188	>= 0.10	0.435	>= 0.10	0.036	Gamma; Lognormal; Normal	Normal
100A_4_34	MW-100A	Other	Potassium	mg/L	8	0	0%	0.917	0.410	0.252	0.141	0.909	0.349	0.268	0.093	0.254	>= 0.10	0.476	>= 0.10	0.100	Gamma; Lognormal; Normal	Normal
100A_4_35	MW-100A	Other	Sodium	mg/L	8	0	0%	0.961	0.818	0.179	0.633	0.968	0.881	0.170	0.711	0.176	>= 0.10	0.248	>= 0.10	0.056	Gamma; Lognormal; Normal	Normal
100A_4_36	MW-100A	Other	Total Suspended Solids	mg/L	8	1	12%	0.638	0.001	0.410	0.001	0.800	0.041	0.321	0.028	0.360	0.01 <= p < 0.05	0.902	0.01 <= p < 0.05	0.535	Nonparametric	Nonparametric
100A_5_37	MW-100A	Part 115	Copper	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_5_38	MW-100A	Part 115	Iron	mg/L	8	0	0%	0.908	0.343	0.243	0.179	0.803	0.031	0.328	0.012	0.310	0.01 <= p < 0.05	0.649	0.05 <= p < 0.10	0.613	Gamma; Normal	Normal
100A_5_39	MW-100A	Part 115	Nickel	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_5_40	MW-100A	Part 115	Silver	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_5_41	MW-100A	Part 115	Vanadium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100A_5_42	MW-100A	Part 115	Zinc	mg/L	8	7	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_1_01	MW-100B	Appendix III	Boron	mg/L	8	0	0%	0.933	0.539	0.230	0.242	0.924	0.464	0.246	0.166	0.239	>= 0.10	0.436	>= 0.10	0.096	Gamma; Lognormal; Normal	Normal
100B_1_02	MW-100B	Appendix III	Calcium	mg/L	8	0	0%	0.843	0.082	0.285	0.055	0.855	0.107	0.278	0.070	0.281	0.05 <= p < 0.10	0.551	>= 0.10	0.045	Gamma; Lognormal; Normal	Normal
100B_1_03	MW-100B	Appendix III	Chloride	mg/L	8	0	0%	0.918	0.417	0.182	0.604	0.917	0.406	0.190	0.537	0.192	>= 0.10	0.358	>= 0.10	0.048	Gamma; Lognormal; Normal	Normal
100B_1_04	MW-100B	Appendix III	Fluoride	mg/L	8	7	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_1_05	MW-100B	Appendix III	Sulfate	mg/L	8	0	0%	0.853	0.101	0.235	0.217	0.870	0.150	0.225	0.272	0.232	>= 0.10	0.531	>= 0.10	0.090	Gamma; Lognormal; Normal	Normal
100B_1_06	MW-100B	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	0.830	0.059	0.267	0.096	0.836	0.069	0.264	0.104	0.273	0.05 <= p < 0.10	0.698	0.05 <= p < 0.10	0.042	Gamma; Lognormal; Normal	Normal
100B_1_07	MW-100B	Appendix III	pH, Field	su	8	0	0%	0.834	0.065	0.236	0.213	0.836	0.069	0.234	0.222	0.241	>= 0.10	0.654	0.05 <= p < 0.10	0.015	Gamma; Lognormal; Normal	Normal
100B_2_04	MW-100B	Appendix IV	Fluoride	mg/L	8	7	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_2_08	MW-100B	Appendix IV	Antimony	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_2_09	MW-100B	Appendix IV	Arsenic	mg/L	8	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.074		Nonparametric
100B_2_10	MW-100B	Appendix IV	Barium	mg/L	8	0	0%	0.946	0.672	0.220	0.304	0.951	0.717	0.217	0.321	0.230	>= 0.10	0.281	>= 0.10	0.049	Gamma; Lognormal; Normal	Normal
100B_2_11	MW-100B	Appendix IV	Beryllium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_2_12	MW-100B	Appendix IV	Cadmium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_2_13	MW-100B	Appendix IV	Chromium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_2_14	MW-100B	Appendix IV	Cobalt	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_2_15	MW-100B	Appendix IV	Lead	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_2_16	MW-100B	Appendix IV	Lithium	mg/L	8	0	0%	0.906	0.324	0.284	0.057	0.909	0.349	0.278	0.069	0.289	0.05 <= p < 0.10	0.535	>= 0.10	0.052	Gamma; Lognormal; Normal	Normal
100B_2_17	MW-100B	Appendix IV	Mercury	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_2_18	MW-100B	Appendix IV	Molybdenum	mg/L	8	0	0%	0.826	0.054	0.361	0.003	0.840	0.075	0.350	0.005	0.358	< 0.01	0.849	0.01 <= p < 0.05	0.093	Lognormal; Normal	Normal
100B_2_20	MW-100B	Appendix IV	Radium-226/228	pCi/L	8	0	0%	0.957	0.782	0.145	0.888	0.847	0.089	0.234	0.222	0.204	>= 0.10	0.423	>= 0.10	0.478	Gamma; Lognormal; Normal	Normal
100B_2_22	MW-100B	Appendix IV	Selenium	mg/L	8	8	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
100B_2_23	MW-100B	Appendix IV	Thallium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_3_24	MW-100B	Field Parameters	Conductivity	mS/cm	8	0	0%	0.964	0.844	0.147	0.876	0.966	0.862	0.140	0.915	0.153	>= 0.10	0.214	>= 0.10	0.041	Gamma; Lognormal; Normal	Normal
100B_3_25	MW-100B	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.694	0.002	0.310	0.023	NA	NA	NA	NA	NA		NA		NA	Nonparametric	Nonparametric
100B_3_26	MW-100B	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	0.953	0.741	0.162	0.776	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
100B_3_27	MW-100B	Field Parameters	Temperature	°C	8	0	0%	0.918	0.417	0.199	0.464	0.920	0.427	0.197	0.474	0.215	>= 0.10	0.362	>= 0.10	0.112	Gamma; Lognormal; Normal	Normal
100B_3_28	MW-100B	Field Parameters	Turbidity	NTU	8	0	0%	0.765	0.012	0.358	0.003	0.684	0.001	0.409	0.000	0.409	< 0.01	1.278	< 0.01	0.756	Nonparametric	Nonparametric
100B_3_29	MW-100B	Field Parameters	pH	su	8	0	0%	0.834	0.065	0.236	0.213	0.836	0.069	0.234	0.222	0.241	>= 0.10	0.654	0.05 <= p < 0.10	0.015	Gamma; Lognormal; Normal	Normal
100B_4_30	MW-100B	Other	Bicarbonate	mg/L	8	0	0%	0.786	0.020	0.253	0.137	0.825	0.053	0.227	0.258	0.227	>= 0.10	0.678	0.05 <= p < 0.10	0.109	Gamma; Lognormal; Normal	Normal
100B_4_31	MW-100B	Other	Carbonate	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_4_32	MW-100B	Other	Hardness	mg/L	8	0	0%	0.806	0.033	0.288	0.049	0.813	0.039	0.282	0.061	0.285	0.05 <= p < 0.10	0.733	0.01 <= p < 0.05	0.044	Gamma; Lognormal	Gamma
100B_4_33	MW-100B	Other	Magnesium	mg/L	8	0	0%	0.913	0.373	0.191	0.528	0.906	0.326	0.202	0.441	0.185	>= 0.10	0.399	>= 0.10	0.065	Gamma; Lognormal; Normal	Normal
100B_4_34	MW-100B	Other	Potassium	mg/L	8	0	0%	0.953	0.742	0.209	0.383	0.956	0.775	0.203	0.428	0.210	>= 0.10	0.291	>= 0.10	0.038	Gamma; Lognormal; Normal	Normal
100B_4_35	MW-100B	Other	Sodium	mg/L	8	0	0%	0.944	0.649	0.223	0.286	0.946	0.668	0.213	0.355	0.206	>= 0.10	0.357	>= 0.10	0.078	Gamma; Lognormal; Normal	Normal
100B_4_36	MW-100B	Other	Total Suspended Solids	mg/L	8	0	0%	0.901	0.297	0.167	0.736	0.966	0.862	0.160	0.790	0.174	>= 0.10	0.251	>= 0.10	0.332	Gamma; Lognormal; Normal	Normal
100B_5_37	MW-100B	Part 115	Copper	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_5_38	MW-100B	Part 115	Iron	mg/L	8	0	0%	0.863	0.130	0.309	0.024	0.892	0.244	0.277	0.071	0.291	0.05 <= p < 0.10	0.625	0.05 <= p < 0.10	0.198	Gamma; Lognormal; Normal	Normal
100B_5_39	MW-100B	Part 115	Nickel	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_5_40	MW-100B	Part 115	Silver	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_5_41	MW-100B	Part 115	Vanadium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100B_5_42	MW-100B	Part 115	Zinc	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_1_01	MW-10	Appendix III	Boron	mg/L	12	0	0%	0.843	0.030	0.329	0.001	0.855	0.043	0.304	0.003	0.315	< 0.01	1.025	< 0.01	0.158	Nonparametric	Nonparametric
10_1_02	MW-10	Appendix III	Calcium	mg/L	12	0	0%	0.938	0.470	0.193	0.247	0.930	0.376	0.207	0.166	0.200	>= 0.10	0.395	>= 0.10	0.074	Gamma; Lognormal; Normal	Normal
10_1_03	MW-10	Appendix III	Chloride	mg/L	12	9	75%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.165		Nonparametric
10_1_04	MW-10	Appendix III	Fluoride	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_1_05	MW-10	Appendix III	Sulfate	mg/L	12	0	0%	0.886	0.105	0.210	0.151	0.963	0.829	0.166	0.477	0.170	>= 0.10	0.285	>= 0.10	0.296	Gamma; Lognormal; Normal	Normal
10_1_06	MW-10	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.980	0.985	0.114	0.936	0.974	0.951	0.128	0.849	0.117	>= 0.10	0.178	>= 0.10	0.080	Gamma; Lognormal; Normal	Normal
10_1_07	MW-10	Appendix III	pH, Field	su	12	0	0%	0.864	0.055	0.177	0.372	0.877	0.080	0.172	0.424	0.174	>= 0.10	0.517	>= 0.10	0.032	Gamma; Lognormal; Normal	Normal
10_2_04	MW-10	Appendix IV	Fluoride	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_2_08	MW-10	Appendix IV	Antimony	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_2_09	MW-10	Appendix IV	Arsenic	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_2_10	MW-10	Appendix IV	Barium	mg/L	12	0	0%	0.952	0.673	0.137	0.772	0.954	0.696	0.128	0.848	0.135	>= 0.10	0.300	>= 0.10	0.082	Gamma; Lognormal; Normal	Normal
10_2_11	MW-10	Appendix IV	Beryllium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_2_12	MW-10	Appendix IV	Cadmium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_2_13	MW-10	Appendix IV	Chromium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_2_14	MW-10	Appendix IV	Cobalt	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_2_15	MW-10	Appendix IV	Lead	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_2_16	MW-10	Appendix IV	Lithium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_2_17	MW-10	Appendix IV	Mercury	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_2_18	MW-10	Appendix IV	Molybdenum	mg/L	12	12	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
10_2_20	MW-10	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.767	0.004	0.304	0.003	0.924	0.324	0.210	0.151	0.256	0.01 <= p < 0.05	0.732	0.05 <= p < 0.10	0.747	Gamma; Lognormal	Gamma
10_2_22	MW-10	Appendix IV	Selenium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_2_23	MW-10	Appendix IV	Thallium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_3_24	MW-10	Field Parameters	Conductivity	mS/cm	12	0	0%	0.968	0.888	0.120	0.906	0.970	0.913	0.118	0.916	0.128	>= 0.10	0.197	>= 0.10	0.061	Gamma; Lognormal; Normal	Normal
10_3_25	MW-10	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	0.976	0.963	0.113	0.942	0.968	0.888	0.139	0.749	0.121	>= 0.10	0.190	>= 0.10	0.215	Gamma; Lognormal; Normal	Normal
10_3_26	MW-10	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	0.933	0.418	0.186	0.303	0.951	0.649	0.163	0.506	0.157	>= 0.10	0.272	>= 0.10	0.455	Gamma; Lognormal; Normal	Normal
10_3_27	MW-10	Field Parameters	Temperature	°C	12	0	0%	0.877	0.081	0.226	0.091	0.867	0.060	0.238	0.059	0.243	0.05 <= p < 0.10	0.677	0.05 <= p < 0.10	0.234	Gamma; Lognormal; Normal	Normal
10_3_28	MW-10	Field Parameters	Turbidity	NTU	12	0	0%	0.882	0.092	0.239	0.057	0.960	0.778	0.187	0.293	0.213	>= 0.10	0.392	>= 0.10	0.452	Gamma; Lognormal; Normal	Normal
10_3_29	MW-10	Field Parameters	pH	su	12	0	0%	0.864	0.055	0.177	0.372	0.877	0.080	0.172	0.424	0.174	>= 0.10	0.517	>= 0.10	0.032	Gamma; Lognormal; Normal	Normal
10_4_30	MW-10	Other	Bicarbonate	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.082		Nonparametric
10_4_31	MW-10	Other	Carbonate	mg/L	4	4	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_4_32	MW-10	Other	Hardness	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.085		Nonparametric
10_4_33	MW-10	Other	Magnesium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.093		Nonparametric
10_4_34	MW-10	Other	Potassium	mg/L	4	1	25%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.082		Nonparametric
10_4_35	MW-10	Other	Sodium	mg/L	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.980		Nonparametric
10_4_36	MW-10	Other	Total Suspended Solids	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_5_37	MW-10	Part 115	Copper	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_5_38	MW-10	Part 115	Iron	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_5_39	MW-10	Part 115	Nickel	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_5_40	MW-10	Part 115	Silver	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_5_41	MW-10	Part 115	Vanadium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
10_5_42	MW-10	Part 115	Zinc	mg/L	12	10	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.565		Nonparametric
13_1_01	MW-13	Appendix III	Boron	mg/L	12	0	0%	0.923	0.310	0.166	0.480	0.929	0.373	0.144	0.705	0.145	>= 0.10	0.358	>= 0.10	0.145	Gamma; Lognormal; Normal	Normal
13_1_02	MW-13	Appendix III	Calcium	mg/L	12	0	0%	0.861	0.050	0.237	0.061	0.872	0.070	0.233	0.071	0.236	0.05 <= p < 0.10	0.690	0.05 <= p < 0.10	0.175	Gamma; Lognormal; Normal	Normal
13_1_03	MW-13	Appendix III	Chloride	mg/L	12	2	17%	0.883	0.140	0.198	0.327	0.935	0.501	0.136	0.863	0.170	>= 0.10	0.319	>= 0.10	0.585	Gamma; Lognormal; Normal	Normal
13_1_04	MW-13	Appendix III	Fluoride	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_1_05	MW-13	Appendix III	Sulfate	mg/L	12	0	0%	0.795	0.008	0.237	0.062	0.934	0.419	0.126	0.866	0.170	>= 0.10	0.465	>= 0.10	0.651	Gamma; Lognormal; Normal	Normal
13_1_06	MW-13	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.859	0.047	0.213	0.141	0.909	0.208	0.194	0.243	0.206	>= 0.10	0.496	>= 0.10	0.186	Gamma; Lognormal; Normal	Normal
13_1_07	MW-13	Appendix III	pH, Field	su	12	0	0%	0.840	0.028	0.244	0.047	0.826	0.019	0.250	0.036	0.248	0.01 <= p < 0.05	0.807	0.01 <= p < 0.05	0.034	Nonparametric	Nonparametric
13_2_04	MW-13	Appendix IV	Fluoride	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_08	MW-13	Appendix IV	Antimony	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_09	MW-13	Appendix IV	Arsenic	mg/L	12	10	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.490		Nonparametric
13_2_10	MW-13	Appendix IV	Barium	mg/L	12	0	0%	0.956	0.730	0.147	0.669	0.954	0.697	0.179	0.359	0.164	>= 0.10	0.325	>= 0.10	0.198	Gamma; Lognormal; Normal	Normal
13_2_11	MW-13	Appendix IV	Beryllium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_12	MW-13	Appendix IV	Cadmium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_13	MW-13	Appendix IV	Chromium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_14	MW-13	Appendix IV	Cobalt	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_15	MW-13	Appendix IV	Lead	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_16	MW-13	Appendix IV	Lithium	mg/L	12	12	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
13_2_17	MW-13	Appendix IV	Mercury	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_18	MW-13	Appendix IV	Molybdenum	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_20	MW-13	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.847	0.034	0.241	0.052	0.933	0.418	0.154	0.604	0.187	>= 0.10	0.428	>= 0.10	1.107	Gamma; Lognormal; Normal	Gamma
13_2_22	MW-13	Appendix IV	Selenium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_2_23	MW-13	Appendix IV	Thallium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_3_24	MW-13	Field Parameters	Conductivity	mS/cm	12	0	0%	0.929	0.368	0.162	0.520	0.947	0.594	0.134	0.802	0.142	>= 0.10	0.286	>= 0.10	0.151	Gamma; Lognormal; Normal	Normal
13_3_25	MW-13	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	0.904	0.178	0.167	0.465	0.779	0.005	0.226	0.090	0.214	>= 0.10	0.744	0.05 <= p < 0.10	1.172	Gamma; Lognormal; Normal	Gamma
13_3_26	MW-13	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	0.873	0.072	0.271	0.015	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
13_3_27	MW-13	Field Parameters	Temperature	°C	12	0	0%	0.890	0.119	0.239	0.057	0.901	0.164	0.199	0.209	0.223	>= 0.10	0.542	>= 0.10	0.408	Gamma; Lognormal; Normal	Normal
13_3_28	MW-13	Field Parameters	Turbidity	NTU	12	0	0%	0.962	0.819	0.149	0.647	0.722	0.001	0.315	0.002	0.266	0.01 <= p < 0.05	0.811	0.01 <= p < 0.05	0.886	Normal	Normal
13_3_29	MW-13	Field Parameters	pH	su	12	0	0%	0.840	0.028	0.244	0.047	0.826	0.019	0.250	0.036	0.248	0.01 <= p < 0.05	0.807	0.01 <= p < 0.05	0.034	Nonparametric	Nonparametric
13_4_30	MW-13	Other	Bicarbonate	mg/L	10	0	0%	0.689	0.001	0.378	0.000	0.716	0.001	0.360	0.001	0.370	< 0.01	1.427	< 0.01	0.143	Nonparametric	Nonparametric
13_4_31	MW-13	Other	Carbonate	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_4_32	MW-13	Other	Hardness	mg/L	10	0	0%	0.803	0.016	0.262	0.050	0.835	0.039	0.232	0.133	0.245	0.05 <= p < 0.10	0.761	0.01 <= p < 0.05	0.197	Gamma; Lognormal; Normal	Normal
13_4_33	MW-13	Other	Magnesium	mg/L	11	0	0%	0.850	0.042	0.232	0.100	0.892	0.148	0.208	0.202	0.221	>= 0.10	0.536	>= 0.10	0.186	Gamma; Lognormal; Normal	Normal
13_4_34	MW-13	Other	Potassium	mg/L	11	0	0%	0.907	0.222	0.214	0.169	0.930	0.413	0.192	0.306	0.196	>= 0.10	0.399	>= 0.10	0.112	Gamma; Lognormal; Normal	Normal
13_4_35	MW-13	Other	Sodium	mg/L	11	0	0%	0.809	0.012	0.261	0.034	0.922	0.335	0.157	0.627	0.187	>= 0.10	0.456	>= 0.10	0.531	Gamma; Lognormal	Gamma
13_4_36	MW-13	Other	Total Suspended Solids	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_5_37	MW-13	Part 115	Copper	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_5_38	MW-13	Part 115	Iron	mg/L	12	1	8%	0.447	0.000	0.397	0.000	0.800	0.009	0.230	0.106	0.305	0.01 <= p < 0.05	1.603	< 0.01	1.177	Lognormal	Nonparametric
13_5_39	MW-13	Part 115	Nickel	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_5_40	MW-13	Part 115	Silver	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_5_41	MW-13	Part 115	Vanadium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
13_5_42	MW-13	Part 115	Zinc	mg/L	12	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_1_01	MW-14	Appendix III	Boron	mg/L	9	0	0%	0.982	0.974	0.110	0.989	0.981	0.971	0.112	0.986	0.125	>= 0.10	0.158	>= 0.10	0.039	Gamma; Lognormal; Normal	Normal
14_1_02	MW-14	Appendix III	Calcium	mg/L	9	0	0%	0.864	0.106	0.256	0.090	0.875	0.138	0.249	0.112	0.250	>= 0.10	0.560	>= 0.10	0.041	Gamma; Lognormal; Normal	Normal
14_1_03	MW-14	Appendix III	Chloride	mg/L	9	0	0%	0.967	0.864	0.128	0.939	0.967	0.870	0.124	0.957	0.129	>= 0.10	0.228	>= 0.10	0.030	Gamma; Lognormal; Normal	Normal
14_1_04	MW-14	Appendix III	Fluoride	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_1_05	MW-14	Appendix III	Sulfate	mg/L	8	0	0%	0.944	0.653	0.213	0.356	0.913	0.374	0.269	0.090	0.241	>= 0.10	0.362	>= 0.10	0.360	Gamma; Lognormal; Normal	Normal
14_1_06	MW-14	Appendix III	Total Dissolved Solids	mg/L	9	1	11%	0.888	0.225	0.183	0.598	0.877	0.176	0.190	0.537	0.185	>= 0.10	0.450	>= 0.10	0.035	Gamma; Lognormal; Normal	Nonparametric
14_1_07	MW-14	Appendix III	pH, Field	su	9	0	0%	0.940	0.587	0.145	0.843	0.941	0.595	0.146	0.841	0.159	>= 0.10	0.291	>= 0.10	0.011	Gamma; Lognormal; Normal	Normal
14_2_04	MW-14	Appendix IV	Fluoride	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_08	MW-14	Appendix IV	Antimony	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_09	MW-14	Appendix IV	Arsenic	mg/L	9	0	0%	0.938	0.557	0.156	0.763	0.931	0.489	0.171	0.631	0.179	>= 0.10	0.316	>= 0.10	0.235	Gamma; Lognormal; Normal	Normal
14_2_10	MW-14	Appendix IV	Barium	mg/L	9	0	0%	0.678	0.001	0.346	0.003	0.724	0.003	0.319	0.009	0.325	< 0.01	1.084	< 0.01	0.120	Nonparametric	Nonparametric
14_2_11	MW-14	Appendix IV	Beryllium	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_12	MW-14	Appendix IV	Cadmium	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_13	MW-14	Appendix IV	Chromium	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_14	MW-14	Appendix IV	Cobalt	mg/L	9	9	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
14_2_15	MW-14	Appendix IV	Lead	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_16	MW-14	Appendix IV	Lithium	mg/L	9	0	0%	0.826	0.040	0.268	0.062	0.838	0.054	0.261	0.077	0.267	0.05 <= p < 0.10	0.757	0.01 <= p < 0.05	0.056	Gamma; Lognormal; Normal	Normal
14_2_17	MW-14	Appendix IV	Mercury	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_2_18	MW-14	Appendix IV	Molybdenum	mg/L	9	0	0%	0.936	0.545	0.178	0.562	0.939	0.569	0.171	0.629	0.172	>= 0.10	0.318	>= 0.10	0.096	Gamma; Lognormal; Normal	Normal
14_2_20	MW-14	Appendix IV	Radium-226/228	pCi/L	9	0	0%	0.688	0.001	0.299	0.020	0.918	0.376	0.241	0.137	0.278	0.05 <= p < 0.10	0.653	0.05 <= p < 0.10	0.650	Gamma; Lognormal	Gamma
14_2_22	MW-14	Appendix IV	Selenium	mg/L	9	7	78%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.260		Nonparametric
14_2_23	MW-14	Appendix IV	Thallium	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_3_24	MW-14	Field Parameters	Conductivity	mS/cm	9	0	0%	0.735	0.004	0.353	0.002	0.710	0.002	0.365	0.001	0.358	< 0.01	1.165	< 0.01	0.062	Nonparametric	Nonparametric
14_3_25	MW-14	Field Parameters	Dissolved Oxygen	mg/L	9	0	0%	0.869	0.119	0.231	0.180	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
14_3_26	MW-14	Field Parameters	Oxidation Reduction Potential	mV	9	0	0%	0.857	0.089	0.222	0.224	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
14_3_27	MW-14	Field Parameters	Temperature	°C	9	0	0%	0.805	0.024	0.275	0.048	0.809	0.026	0.264	0.070	0.278	0.05 <= p < 0.10	0.903	0.01 <= p < 0.05	0.142	Gamma; Lognormal	Gamma
14_3_28	MW-14	Field Parameters	Turbidity	NTU	9	0	0%	0.942	0.599	0.172	0.623	0.905	0.279	0.182	0.530	0.194	>= 0.10	0.326	>= 0.10	0.418	Gamma; Lognormal; Normal	Normal
14_3_29	MW-14	Field Parameters	pH	su	9	0	0%	0.940	0.587	0.145	0.843	0.941	0.595	0.146	0.841	0.159	>= 0.10	0.291	>= 0.10	0.011	Gamma; Lognormal; Normal	Normal
14_4_30	MW-14	Other	Bicarbonate	mg/L	9	0	0%	0.763	0.008	0.262	0.075	0.804	0.023	0.236	0.157	0.243	>= 0.10	0.758	0.01 <= p < 0.05	0.104	Gamma; Lognormal; Normal	Normal
14_4_31	MW-14	Other	Carbonate	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_4_32	MW-14	Other	Hardness	mg/L	9	0	0%	0.980	0.966	0.162	0.711	0.977	0.948	0.168	0.655	0.153	>= 0.10	0.194	>= 0.10	0.060	Gamma; Lognormal; Normal	Normal
14_4_33	MW-14	Other	Magnesium	mg/L	9	0	0%	0.934	0.524	0.182	0.532	0.936	0.542	0.178	0.568	0.168	>= 0.10	0.351	>= 0.10	0.033	Gamma; Lognormal; Normal	Normal
14_4_34	MW-14	Other	Potassium	mg/L	9	0	0%	0.893	0.215	0.203	0.349	0.903	0.272	0.188	0.475	0.194	>= 0.10	0.440	>= 0.10	0.091	Gamma; Lognormal; Normal	Normal
14_4_35	MW-14	Other	Sodium	mg/L	9	0	0%	0.868	0.116	0.229	0.191	0.863	0.104	0.233	0.169	0.236	>= 0.10	0.585	>= 0.10	0.033	Gamma; Lognormal; Normal	Normal
14_4_36	MW-14	Other	Total Suspended Solids	mg/L	9	0	0%	0.738	0.004	0.308	0.014	0.591	0.000	0.367	0.001	0.361	< 0.01	1.506	< 0.01	0.612	Nonparametric	Nonparametric
14_5_37	MW-14	Part 115	Copper	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_5_38	MW-14	Part 115	Iron	mg/L	9	0	0%	0.955	0.749	0.185	0.498	0.898	0.238	0.221	0.235	0.212	>= 0.10	0.401	>= 0.10	0.226	Gamma; Lognormal; Normal	Normal
14_5_39	MW-14	Part 115	Nickel	mg/L	9	6	67%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.105		Nonparametric
14_5_40	MW-14	Part 115	Silver	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_5_41	MW-14	Part 115	Vanadium	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
14_5_42	MW-14	Part 115	Zinc	mg/L	9	8	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_1_01	MW-15	Appendix III	Boron	mg/L	9	0	0%	0.931	0.495	0.186	0.497	0.936	0.538	0.181	0.537	0.193	>= 0.10	0.324	>= 0.10	0.100	Gamma; Lognormal; Normal	Normal
15_1_02	MW-15	Appendix III	Calcium	mg/L	9	0	0%	0.918	0.373	0.209	0.308	0.954	0.735	0.183	0.520	0.185	>= 0.10	0.300	>= 0.10	0.162	Gamma; Lognormal; Normal	Normal
15_1_03	MW-15	Appendix III	Chloride	mg/L	9	0	0%	0.922	0.406	0.178	0.564	0.953	0.725	0.148	0.823	0.157	>= 0.10	0.236	>= 0.10	0.167	Gamma; Lognormal; Normal	Normal
15_1_04	MW-15	Appendix III	Fluoride	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_1_05	MW-15	Appendix III	Sulfate	mg/L	9	0	0%	0.637	0.000	0.325	0.007	0.737	0.004	0.272	0.053	0.290	0.01 <= p < 0.05	1.203	< 0.01	0.265	Lognormal	Lognormal
15_1_06	MW-15	Appendix III	Total Dissolved Solids	mg/L	9	0	0%	0.878	0.149	0.242	0.135	0.925	0.436	0.213	0.283	0.219	>= 0.10	0.395	>= 0.10	0.143	Gamma; Lognormal; Normal	Normal
15_1_07	MW-15	Appendix III	pH, Field	su	9	0	0%	0.894	0.222	0.206	0.327	0.894	0.218	0.207	0.322	0.221	>= 0.10	0.452	>= 0.10	0.017	Gamma; Lognormal; Normal	Normal
15_2_04	MW-15	Appendix IV	Fluoride	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_2_08	MW-15	Appendix IV	Antimony	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_2_09	MW-15	Appendix IV	Arsenic	mg/L	9	8	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_2_10	MW-15	Appendix IV	Barium	mg/L	9	0	0%	0.951	0.704	0.182	0.532	0.962	0.823	0.168	0.653	0.183	>= 0.10	0.250	>= 0.10	0.203	Gamma; Lognormal; Normal	Normal
15_2_11	MW-15	Appendix IV	Beryllium	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_2_12	MW-15	Appendix IV	Cadmium	mg/L	9	9	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
15_2_13	MW-15	Appendix IV	Chromium	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_2_14	MW-15	Appendix IV	Cobalt	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_2_15	MW-15	Appendix IV	Lead	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_2_16	MW-15	Appendix IV	Lithium	mg/L	9	8	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_2_17	MW-15	Appendix IV	Mercury	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_2_18	MW-15	Appendix IV	Molybdenum	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_2_20	MW-15	Appendix IV	Radium-226/228	pCi/L	9	0	0%	0.867	0.114	0.211	0.298	0.891	0.206	0.184	0.509	0.209	>= 0.10	0.430	>= 0.10	0.738	Gamma; Lognormal; Normal	Normal
15_2_22	MW-15	Appendix IV	Selenium	mg/L	9	3	33%	0.882	0.279	0.269	0.191	0.887	0.305	0.257	0.246	0.283	>= 0.10	0.433	>= 0.10	0.560	Gamma; Lognormal; Normal	Normal
15_2_23	MW-15	Appendix IV	Thallium	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_3_24	MW-15	Field Parameters	Conductivity	mS/cm	9	0	0%	0.883	0.171	0.273	0.052	0.802	0.021	0.330	0.006	0.307	0.01 <= p < 0.05	0.772	0.01 <= p < 0.05	0.287	Normal	Normal
15_3_25	MW-15	Field Parameters	Dissolved Oxygen	mg/L	9	0	0%	0.847	0.068	0.291	0.027	0.928	0.459	0.183	0.516	0.241	>= 0.10	0.412	>= 0.10	1.155	Gamma; Lognormal; Normal	Gamma
15_3_26	MW-15	Field Parameters	Oxidation Reduction Potential	mV	9	0	0%	0.921	0.402	0.188	0.476	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
15_3_27	MW-15	Field Parameters	Temperature	°C	9	0	0%	0.790	0.016	0.299	0.020	0.798	0.019	0.281	0.039	0.300	0.01 <= p < 0.05	0.945	0.01 <= p < 0.05	0.305	Nonparametric	Nonparametric
15_3_28	MW-15	Field Parameters	Turbidity	NTU	9	0	0%	0.989	0.995	0.118	0.973	0.945	0.636	0.180	0.548	0.160	>= 0.10	0.223	>= 0.10	0.352	Gamma; Lognormal; Normal	Normal
15_3_29	MW-15	Field Parameters	pH	su	9	0	0%	0.894	0.222	0.206	0.327	0.894	0.218	0.207	0.322	0.221	>= 0.10	0.452	>= 0.10	0.017	Gamma; Lognormal; Normal	Normal
15_4_30	MW-15	Other	Bicarbonate	mg/L	9	0	0%	0.877	0.147	0.193	0.437	0.878	0.150	0.184	0.514	0.200	>= 0.10	0.518	>= 0.10	0.118	Gamma; Lognormal; Normal	Normal
15_4_31	MW-15	Other	Carbonate	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_4_32	MW-15	Other	Hardness	mg/L	9	0	0%	0.944	0.627	0.160	0.731	0.941	0.592	0.168	0.654	0.174	>= 0.10	0.295	>= 0.10	0.082	Gamma; Lognormal; Normal	Normal
15_4_33	MW-15	Other	Magnesium	mg/L	9	0	0%	0.849	0.072	0.274	0.050	0.907	0.296	0.239	0.144	0.243	>= 0.10	0.506	>= 0.10	0.166	Gamma; Lognormal; Normal	Normal
15_4_34	MW-15	Other	Potassium	mg/L	9	8	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_4_35	MW-15	Other	Sodium	mg/L	9	0	0%	0.743	0.004	0.369	0.001	0.769	0.009	0.351	0.002	0.362	< 0.01	1.109	< 0.01	0.140	Nonparametric	Nonparametric
15_4_36	MW-15	Other	Total Suspended Solids	mg/L	9	7	78%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.083		Nonparametric
15_5_37	MW-15	Part 115	Copper	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_5_38	MW-15	Part 115	Iron	mg/L	9	1	11%	0.876	0.173	0.255	0.131	0.888	0.226	0.276	0.073	0.287	0.05 <= p < 0.10	0.523	>= 0.10	0.737	Gamma; Lognormal; Normal	Normal
15_5_39	MW-15	Part 115	Nickel	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_5_40	MW-15	Part 115	Silver	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_5_41	MW-15	Part 115	Vanadium	mg/L	9	9	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
15_5_42	MW-15	Part 115	Zinc	mg/L	9	8	89%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_1_01	MW-16A	Appendix III	Boron	mg/L	10	0	0%	0.879	0.126	0.229	0.144	0.865	0.088	0.227	0.151	0.241	>= 0.10	0.613	>= 0.10	0.332	Gamma; Lognormal; Normal	Normal
16A_1_02	MW-16A	Appendix III	Calcium	mg/L	10	0	0%	0.910	0.283	0.184	0.436	0.910	0.280	0.189	0.399	0.201	>= 0.10	0.463	>= 0.10	0.159	Gamma; Lognormal; Normal	Normal
16A_1_03	MW-16A	Appendix III	Chloride	mg/L	10	0	0%	0.950	0.666	0.158	0.678	0.957	0.751	0.156	0.701	0.169	>= 0.10	0.233	>= 0.10	0.092	Gamma; Lognormal; Normal	Normal
16A_1_04	MW-16A	Appendix III	Fluoride	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_1_05	MW-16A	Appendix III	Sulfate	mg/L	10	0	0%	0.902	0.232	0.250	0.078	0.932	0.464	0.184	0.442	0.214	>= 0.10	0.420	>= 0.10	0.468	Gamma; Lognormal; Normal	Normal
16A_1_06	MW-16A	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	0.926	0.410	0.184	0.437	0.926	0.414	0.190	0.389	0.201	>= 0.10	0.375	>= 0.10	0.138	Gamma; Lognormal; Normal	Normal
16A_1_07	MW-16A	Appendix III	pH, Field	su	10	0	0%	0.925	0.401	0.164	0.629	0.926	0.411	0.161	0.652	0.165	>= 0.10	0.377	>= 0.10	0.015	Gamma; Lognormal; Normal	Normal
16A_2_04	MW-16A	Appendix IV	Fluoride	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_2_08	MW-16A	Appendix IV	Antimony	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_2_09	MW-16A	Appendix IV	Arsenic	mg/L	10	0	0%	0.890	0.172	0.282	0.023	0.887	0.158	0.251	0.073	0.269	0.01 <= p < 0.05	0.698	0.05 <= p < 0.10	0.254	Gamma; Lognormal; Normal	Normal
16A_2_10	MW-16A	Appendix IV	Barium	mg/L	10	0	0%	0.932	0.465	0.191	0.375	0.932	0.464	0.207	0.257	0.214	>= 0.10	0.368	>= 0.10	0.174	Gamma; Lognormal; 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
16A_2_11	MW-16A	Appendix IV	Beryllium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_2_12	MW-16A	Appendix IV	Cadmium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_2_13	MW-16A	Appendix IV	Chromium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_2_14	MW-16A	Appendix IV	Cobalt	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_2_15	MW-16A	Appendix IV	Lead	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_2_16	MW-16A	Appendix IV	Lithium	mg/L	10	9	90%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_2_17	MW-16A	Appendix IV	Mercury	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_2_18	MW-16A	Appendix IV	Molybdenum	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_2_20	MW-16A	Appendix IV	Radium-226/228	pCi/L	10	0	0%	0.819	0.025	0.209	0.250	0.936	0.509	0.149	0.762	0.190	>= 0.10	0.347	>= 0.10	0.878	Gamma; Lognormal; Normal	Normal
16A_2_22	MW-16A	Appendix IV	Selenium	mg/L	10	9	90%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_2_23	MW-16A	Appendix IV	Thallium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_3_24	MW-16A	Field Parameters	Conductivity	mS/cm	10	0	0%	0.889	0.167	0.163	0.631	0.887	0.156	0.157	0.690	0.174	>= 0.10	0.473	>= 0.10	0.132	Gamma; Lognormal; Normal	Normal
16A_3_25	MW-16A	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	0.898	0.207	0.198	0.327	0.900	0.221	0.149	0.761	0.139	>= 0.10	0.230	>= 0.10	1.325	Gamma; Lognormal; Normal	Gamma
16A_3_26	MW-16A	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	0.911	0.288	0.230	0.142	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
16A_3_27	MW-16A	Field Parameters	Temperature	°C	10	0	0%	0.872	0.106	0.204	0.278	0.867	0.093	0.201	0.302	0.214	>= 0.10	0.631	0.05 <= p < 0.10	0.323	Gamma; Lognormal; Normal	Normal
16A_3_28	MW-16A	Field Parameters	Turbidity	NTU	10	0	0%	0.932	0.471	0.170	0.564	0.937	0.515	0.150	0.754	0.158	>= 0.10	0.332	>= 0.10	0.255	Gamma; Lognormal; Normal	Normal
16A_3_29	MW-16A	Field Parameters	pH	su	10	0	0%	0.925	0.401	0.164	0.629	0.926	0.411	0.161	0.652	0.165	>= 0.10	0.377	>= 0.10	0.015	Gamma; Lognormal; Normal	Normal
16A_4_30	MW-16A	Other	Bicarbonate	mg/L	10	0	0%	0.934	0.487	0.196	0.340	0.944	0.604	0.175	0.517	0.176	>= 0.10	0.347	>= 0.10	0.120	Gamma; Lognormal; Normal	Normal
16A_4_31	MW-16A	Other	Carbonate	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_4_32	MW-16A	Other	Hardness	mg/L	10	0	0%	0.889	0.164	0.242	0.099	0.899	0.211	0.220	0.183	0.235	>= 0.10	0.553	>= 0.10	0.169	Gamma; Lognormal; Normal	Normal
16A_4_33	MW-16A	Other	Magnesium	mg/L	10	0	0%	0.902	0.228	0.169	0.577	0.911	0.287	0.164	0.622	0.179	>= 0.10	0.400	>= 0.10	0.174	Gamma; Lognormal; Normal	Normal
16A_4_34	MW-16A	Other	Potassium	mg/L	10	0	0%	0.851	0.060	0.229	0.143	0.913	0.299	0.193	0.361	0.196	>= 0.10	0.419	>= 0.10	0.171	Gamma; Lognormal; Normal	Normal
16A_4_35	MW-16A	Other	Sodium	mg/L	10	0	0%	0.939	0.547	0.143	0.811	0.943	0.586	0.143	0.812	0.155	>= 0.10	0.321	>= 0.10	0.119	Gamma; Lognormal; Normal	Normal
16A_4_36	MW-16A	Other	Total Suspended Solids	mg/L	10	1	10%	0.921	0.403	0.187	0.480	0.941	0.595	0.143	0.859	0.162	>= 0.10	0.293	>= 0.10	0.610	Gamma; Lognormal; Normal	Normal
16A_5_37	MW-16A	Part 115	Copper	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_5_38	MW-16A	Part 115	Iron	mg/L	10	0	0%	0.908	0.268	0.198	0.326	0.917	0.335	0.168	0.589	0.180	>= 0.10	0.387	>= 0.10	0.192	Gamma; Lognormal; Normal	Normal
16A_5_39	MW-16A	Part 115	Nickel	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_5_40	MW-16A	Part 115	Silver	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_5_41	MW-16A	Part 115	Vanadium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16A_5_42	MW-16A	Part 115	Zinc	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_1_01	MW-16B	Appendix III	Boron	mg/L	10	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.066		Nonparametric
16B_1_02	MW-16B	Appendix III	Calcium	mg/L	10	0	0%	0.988	0.993	0.121	0.945	0.985	0.986	0.117	0.960	0.109	>= 0.10	0.146	>= 0.10	0.040	Gamma; Lognormal; Normal	Normal
16B_1_03	MW-16B	Appendix III	Chloride	mg/L	10	5	50%	0.748	0.029	0.347	0.049	0.859	0.226	0.269	0.272	0.300	>= 0.10	0.559	>= 0.10	0.493	Gamma; Lognormal	Nonparametric
16B_1_04	MW-16B	Appendix III	Fluoride	mg/L	10	7	70%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.426		Nonparametric
16B_1_05	MW-16B	Appendix III	Sulfate	mg/L	10	0	0%	0.872	0.104	0.192	0.368	0.865	0.088	0.204	0.283	0.200	>= 0.10	0.603	>= 0.10	0.063	Gamma; Lognormal; Normal	Normal
16B_1_06	MW-16B	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	0.881	0.136	0.255	0.065	0.879	0.127	0.258	0.058	0.260	0.05 <= p < 0.10	0.767	0.01 <= p < 0.05	0.020	Gamma; Lognormal; Normal	Normal
16B_1_07	MW-16B	Appendix III	pH, Field	su	10	0	0%	0.942	0.570	0.205	0.277	0.940	0.549	0.206	0.265	0.211	>= 0.10	0.388	>= 0.10	0.013	Gamma; Lognormal; Normal	Normal
16B_2_04	MW-16B	Appendix IV	Fluoride	mg/L	10	8	80%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.576		Nonparametric
16B_2_08	MW-16B	Appendix IV	Antimony	mg/L	10	10	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
16B_2_09	MW-16B	Appendix IV	Arsenic	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_2_10	MW-16B	Appendix IV	Barium	mg/L	10	0	0%	0.915	0.315	0.245	0.091	0.913	0.302	0.246	0.087	0.258	0.05 <= p < 0.10	0.533	>= 0.10	0.033	Gamma; Lognormal; Normal	Normal
16B_2_11	MW-16B	Appendix IV	Beryllium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_2_12	MW-16B	Appendix IV	Cadmium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_2_13	MW-16B	Appendix IV	Chromium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_2_14	MW-16B	Appendix IV	Cobalt	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_2_15	MW-16B	Appendix IV	Lead	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_2_16	MW-16B	Appendix IV	Lithium	mg/L	10	0	0%	0.932	0.466	0.200	0.311	0.929	0.437	0.205	0.276	0.214	>= 0.10	0.379	>= 0.10	0.063	Gamma; Lognormal; Normal	Normal
16B_2_17	MW-16B	Appendix IV	Mercury	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_2_18	MW-16B	Appendix IV	Molybdenum	mg/L	10	0	0%	0.751	0.004	0.400	0.000	0.771	0.007	0.385	0.000	0.395	< 0.01	1.415	< 0.01	0.122	Nonparametric	Nonparametric
16B_2_20	MW-16B	Appendix IV	Radium-226/228	pCi/L	10	0	0%	0.772	0.007	0.306	0.009	0.928	0.430	0.207	0.259	0.241	>= 0.10	0.609	>= 0.10	0.505	Gamma; Lognormal	Gamma
16B_2_22	MW-16B	Appendix IV	Selenium	mg/L	10	9	90%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_2_23	MW-16B	Appendix IV	Thallium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_3_24	MW-16B	Field Parameters	Conductivity	mS/cm	10	0	0%	0.897	0.206	0.222	0.176	0.894	0.186	0.228	0.150	0.227	>= 0.10	0.536	>= 0.10	0.033	Gamma; Lognormal; Normal	Normal
16B_3_25	MW-16B	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	0.827	0.031	0.232	0.132	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
16B_3_26	MW-16B	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	0.925	0.399	0.179	0.488	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
16B_3_27	MW-16B	Field Parameters	Temperature	°C	10	0	0%	0.961	0.792	0.132	0.888	0.941	0.563	0.137	0.858	0.153	>= 0.10	0.261	>= 0.10	0.169	Gamma; Lognormal; Normal	Normal
16B_3_28	MW-16B	Field Parameters	Turbidity	NTU	10	0	0%	0.900	0.217	0.177	0.506	0.735	0.002	0.329	0.003	0.291	0.01 <= p < 0.05	0.961	0.01 <= p < 0.05	0.894	Normal	Normal
16B_3_29	MW-16B	Field Parameters	pH	su	10	0	0%	0.941	0.560	0.200	0.309	0.939	0.539	0.202	0.297	0.207	>= 0.10	0.386	>= 0.10	0.013	Gamma; Lognormal; Normal	Normal
16B_4_30	MW-16B	Other	Bicarbonate	mg/L	10	0	0%	0.903	0.238	0.291	0.016	0.904	0.242	0.289	0.018	0.298	0.01 <= p < 0.05	0.651	0.05 <= p < 0.10	0.022	Gamma; Lognormal; Normal	Normal
16B_4_31	MW-16B	Other	Carbonate	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_4_32	MW-16B	Other	Hardness	mg/L	10	0	0%	0.934	0.491	0.170	0.569	0.943	0.586	0.166	0.608	0.174	>= 0.10	0.265	>= 0.10	0.052	Gamma; Lognormal; Normal	Normal
16B_4_33	MW-16B	Other	Magnesium	mg/L	10	0	0%	0.957	0.754	0.173	0.541	0.948	0.643	0.181	0.465	0.166	>= 0.10	0.276	>= 0.10	0.058	Gamma; Lognormal; Normal	Normal
16B_4_34	MW-16B	Other	Potassium	mg/L	10	0	0%	0.685	0.001	0.318	0.005	0.720	0.002	0.303	0.010	0.307	0.01 <= p < 0.05	1.191	< 0.01	0.088	Nonparametric	Nonparametric
16B_4_35	MW-16B	Other	Sodium	mg/L	10	0	0%	0.627	0.000	0.337	0.002	0.705	0.001	0.292	0.015	0.311	< 0.01	1.400	< 0.01	0.263	Nonparametric	Nonparametric
16B_4_36	MW-16B	Other	Total Suspended Solids	mg/L	10	5	50%	0.721	0.016	0.325	0.091	0.847	0.186	0.241	0.442	0.280	>= 0.10	0.565	>= 0.10	0.817	Gamma; Lognormal; Normal	Nonparametric
16B_5_37	MW-16B	Part 115	Copper	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_5_38	MW-16B	Part 115	Iron	mg/L	10	0	0%	0.843	0.048	0.244	0.094	0.921	0.369	0.216	0.206	0.234	>= 0.10	0.515	>= 0.10	0.308	Gamma; Lognormal; Normal	Normal
16B_5_39	MW-16B	Part 115	Nickel	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_5_40	MW-16B	Part 115	Silver	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_5_41	MW-16B	Part 115	Vanadium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16B_5_42	MW-16B	Part 115	Zinc	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_1_01	MW-7C	Appendix III	Boron	mg/L	12	0	0%	0.849	0.035	0.210	0.153	0.865	0.056	0.202	0.195	0.199	>= 0.10	0.632	0.05 <= p < 0.10	0.035	Gamma; Lognormal; Normal	Normal
7C_1_02	MW-7C	Appendix III	Calcium	mg/L	12	0	0%	0.842	0.029	0.266	0.019	0.798	0.009	0.290	0.006	0.269	0.01 <= p < 0.05	0.903	0.01 <= p < 0.05	0.103	Nonparametric	Nonparametric
7C_1_03	MW-7C	Appendix III	Chloride	mg/L	12	0	0%	0.869	0.064	0.223	0.101	0.880	0.088	0.219	0.117	0.222	>= 0.10	0.559	>= 0.10	0.031	Gamma; Lognormal; Normal	Normal
7C_1_04	MW-7C	Appendix III	Fluoride	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_1_05	MW-7C	Appendix III	Sulfate	mg/L	12	0	0%	0.920	0.285	0.179	0.358	0.925	0.328	0.171	0.432	0.177	>= 0.10	0.395	>= 0.10	0.054	Gamma; Lognormal; Normal	Normal
7C_1_06	MW-7C	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.788	0.007	0.320	0.001	0.794	0.008	0.316	0.002	0.322	< 0.01	1.240	< 0.01	0.042	Nonparametric	Nonparametric
7C_1_07	MW-7C	Appendix III	pH, Field	su	12	0	0%	0.913	0.234	0.181	0.338	0.914	0.243	0.179	0.354	0.184	>= 0.10	0.429	>= 0.10	0.013	Gamma; Lognormal; 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
7C_2_04	MW-7C	Appendix IV	Fluoride	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_2_08	MW-7C	Appendix IV	Antimony	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_2_09	MW-7C	Appendix IV	Arsenic	mg/L	12	0	0%	0.747	0.003	0.285	0.008	0.812	0.013	0.263	0.022	0.272	0.01 <= p < 0.05	1.131	< 0.01	0.169	Nonparametric	Nonparametric
7C_2_10	MW-7C	Appendix IV	Barium	mg/L	12	0	0%	0.910	0.212	0.174	0.406	0.910	0.213	0.171	0.428	0.181	>= 0.10	0.444	>= 0.10	0.049	Gamma; Lognormal; Normal	Normal
7C_2_11	MW-7C	Appendix IV	Beryllium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_2_12	MW-7C	Appendix IV	Cadmium	mg/L	12	9	75%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.126		Nonparametric
7C_2_13	MW-7C	Appendix IV	Chromium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_2_14	MW-7C	Appendix IV	Cobalt	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_2_15	MW-7C	Appendix IV	Lead	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_2_16	MW-7C	Appendix IV	Lithium	mg/L	12	0	0%	0.925	0.331	0.147	0.669	0.932	0.406	0.147	0.672	0.139	>= 0.10	0.432	>= 0.10	0.038	Gamma; Lognormal; Normal	Normal
7C_2_17	MW-7C	Appendix IV	Mercury	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_2_18	MW-7C	Appendix IV	Molybdenum	mg/L	12	0	0%	0.947	0.593	0.152	0.624	0.944	0.546	0.154	0.604	0.163	>= 0.10	0.354	>= 0.10	0.036	Gamma; Lognormal; Normal	Normal
7C_2_20	MW-7C	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.857	0.044	0.195	0.235	0.877	0.081	0.215	0.131	0.220	>= 0.10	0.646	0.05 <= p < 0.10	0.608	Gamma; Lognormal; Normal	Normal
7C_2_22	MW-7C	Appendix IV	Selenium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_2_23	MW-7C	Appendix IV	Thallium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_3_24	MW-7C	Field Parameters	Conductivity	mS/cm	12	0	0%	0.944	0.551	0.156	0.580	0.946	0.574	0.136	0.785	0.141	>= 0.10	0.336	>= 0.10	0.113	Gamma; Lognormal; Normal	Normal
7C_3_25	MW-7C	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	0.592	0.000	0.366	0.000	0.764	0.004	0.288	0.007	0.336	< 0.01	1.677	< 0.01	1.252	Nonparametric	Nonparametric
7C_3_26	MW-7C	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	0.859	0.048	0.267	0.018	NA	NA	NA	NA	NA		NA		NA	Nonparametric	Nonparametric
7C_3_27	MW-7C	Field Parameters	Temperature	°C	12	0	0%	0.960	0.784	0.189	0.280	0.945	0.560	0.210	0.150	0.209	>= 0.10	0.333	>= 0.10	0.163	Gamma; Lognormal; Normal	Normal
7C_3_28	MW-7C	Field Parameters	Turbidity	NTU	12	0	0%	0.950	0.641	0.115	0.932	0.704	0.001	0.313	0.002	0.255	0.05 <= p < 0.10	1.059	0.01 <= p < 0.05	2.087	Gamma; Normal	Gamma
7C_3_29	MW-7C	Field Parameters	pH	su	12	0	0%	0.913	0.234	0.181	0.338	0.914	0.243	0.179	0.354	0.184	>= 0.10	0.429	>= 0.10	0.013	Gamma; Lognormal; Normal	Normal
7C_4_30	MW-7C	Other	Bicarbonate	mg/L	12	0	0%	0.860	0.050	0.177	0.373	0.857	0.044	0.184	0.315	0.187	>= 0.10	0.760	0.01 <= p < 0.05	0.052	Gamma; Lognormal; Normal	Normal
7C_4_31	MW-7C	Other	Carbonate	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_4_32	MW-7C	Other	Hardness	mg/L	12	0	0%	0.812	0.013	0.285	0.008	0.757	0.003	0.312	0.002	0.299	< 0.01	0.972	0.01 <= p < 0.05	0.110	Nonparametric	Nonparametric
7C_4_33	MW-7C	Other	Magnesium	mg/L	12	0	0%	0.835	0.024	0.207	0.165	0.799	0.009	0.227	0.089	0.212	>= 0.10	0.755	0.01 <= p < 0.05	0.076	Gamma; Lognormal; Normal	Normal
7C_4_34	MW-7C	Other	Potassium	mg/L	12	0	0%	0.883	0.097	0.249	0.038	0.868	0.062	0.262	0.023	0.258	0.01 <= p < 0.05	0.723	0.05 <= p < 0.10	0.070	Gamma; Lognormal; Normal	Normal
7C_4_35	MW-7C	Other	Sodium	mg/L	12	0	0%	0.637	0.000	0.327	0.001	0.609	0.000	0.343	0.000	0.329	< 0.01	1.753	< 0.01	0.062	Nonparametric	Nonparametric
7C_4_36	MW-7C	Other	Total Suspended Solids	mg/L	12	3	25%	0.697	0.001	0.296	0.022	0.876	0.141	0.200	0.375	0.237	>= 0.10	0.697	0.05 <= p < 0.10	0.486	Gamma; Lognormal	Gamma
7C_5_37	MW-7C	Part 115	Copper	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_5_38	MW-7C	Part 115	Iron	mg/L	12	0	0%	0.949	0.619	0.181	0.342	0.946	0.580	0.190	0.270	0.192	>= 0.10	0.357	>= 0.10	0.059	Gamma; Lognormal; Normal	Normal
7C_5_39	MW-7C	Part 115	Nickel	mg/L	12	0	0%	0.750	0.003	0.333	0.001	0.777	0.005	0.305	0.003	0.313	< 0.01	1.160	< 0.01	0.147	Nonparametric	Nonparametric
7C_5_40	MW-7C	Part 115	Silver	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_5_41	MW-7C	Part 115	Vanadium	mg/L	12	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7C_5_42	MW-7C	Part 115	Zinc	mg/L	12	10	83%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.109		Nonparametric

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.
02_1_01	MW-2	Appendix III	Boron	mg/L	17	0	0%	0.674	0.002	**
02_1_02	MW-2	Appendix III	Calcium	mg/L	17	0	0%	0.803	0.000	***
02_1_03	MW-2	Appendix III	Chloride	mg/L	17	0	0%	0.527	0.018	*
02_1_05	MW-2	Appendix III	Sulfate	mg/L	17	0	0%	0.807	0.000	***
02_1_06	MW-2	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.803	0.000	***
02_1_07	MW-2	Appendix III	pH, Field	su	18	0	0%	0.168	0.440	
02_2_09	MW-2	Appendix IV	Arsenic	mg/L	18	14	78%	-0.750	0.034	*
02_2_10	MW-2	Appendix IV	Barium	mg/L	18	0	0%	0.051	0.816	
02_2_16	MW-2	Appendix IV	Lithium	mg/L	18	0	0%	0.650	0.003	**
02_2_18	MW-2	Appendix IV	Molybdenum	mg/L	18	0	0%	0.431	0.048	*
02_2_20	MW-2	Appendix IV	Radium-226/228	pCi/L	18	0	0%	-0.188	0.386	
02_3_24	MW-2	Field Parameters	Conductivity	mS/cm	18	0	0%	0.818	0.000	***
02_3_25	MW-2	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	0.154	0.479	
02_3_26	MW-2	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	0.159	0.464	
02_3_27	MW-2	Field Parameters	Temperature	°C	18	0	0%	-0.341	0.117	
02_3_28	MW-2	Field Parameters	Turbidity	NTU	18	0	0%	-0.012	0.957	
02_3_29	MW-2	Field Parameters	pH	su	18	0	0%	0.168	0.440	
02_4_30	MW-2	Other	Bicarbonate	mg/L	4	0	0%	0.095	0.788	
02_4_32	MW-2	Other	Hardness	mg/L	4	0	0%	-0.463	0.190	
02_4_33	MW-2	Other	Magnesium	mg/L	4	0	0%	-0.215	0.543	
02_4_34	MW-2	Other	Potassium	mg/L	4	0	0%	-0.051	0.886	
02_4_35	MW-2	Other	Sodium	mg/L	4	0	0%	-0.052	0.882	
02_4_36	MW-2	Other	Total Suspended Solids	mg/L	18	4	22%	0.331	0.170	
02_5_38	MW-2	Part 115	Iron	mg/L	18	0	0%	0.268	0.218	
02_5_39	MW-2	Part 115	Nickel	mg/L	18	0	0%	0.690	0.001	**
02_5_42	MW-2	Part 115	Zinc	mg/L	18	15	83%	-0.167	0.648	
03_1_01	MW-3	Appendix III	Boron	mg/L	7	0	0%	-0.608	0.049	*
03_1_02	MW-3	Appendix III	Calcium	mg/L	7	0	0%	-0.204	0.509	
03_1_03	MW-3	Appendix III	Chloride	mg/L	7	0	0%	0.532	0.085	
03_1_05	MW-3	Appendix III	Sulfate	mg/L	7	0	0%	-0.357	0.248	
03_1_06	MW-3	Appendix III	Total Dissolved Solids	mg/L	7	0	0%	0.551	0.074	
03_1_07	MW-3	Appendix III	pH, Field	su	7	0	0%	-0.149	0.630	
03_2_09	MW-3	Appendix IV	Arsenic	mg/L	7	0	0%	0.272	0.377	
03_2_10	MW-3	Appendix IV	Barium	mg/L	7	0	0%	0.387	0.210	
03_2_16	MW-3	Appendix IV	Lithium	mg/L	7	0	0%	0.160	0.605	
03_2_18	MW-3	Appendix IV	Molybdenum	mg/L	7	0	0%	0.041	0.894	
03_2_20	MW-3	Appendix IV	Radium-226/228	pCi/L	7	0	0%	0.360	0.244	
03_3_24	MW-3	Field Parameters	Conductivity	mS/cm	7	0	0%	0.441	0.153	
03_3_25	MW-3	Field Parameters	Dissolved Oxygen	mg/L	7	0	0%	0.088	0.776	
03_3_26	MW-3	Field Parameters	Oxidation Reduction Potential	mV	7	0	0%	-0.185	0.548	
03_3_27	MW-3	Field Parameters	Temperature	°C	7	0	0%	-0.651	0.035	*
03_3_28	MW-3	Field Parameters	Turbidity	NTU	7	0	0%	-0.263	0.393	

(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.
03_3_29	MW-3	Field Parameters	pH	su	7	0	0%	-0.149	0.630	
03_4_30	MW-3	Other	Bicarbonate	mg/L	4	0	0%	-0.285	0.420	
03_4_32	MW-3	Other	Hardness	mg/L	4	0	0%	-0.190	0.591	
03_4_33	MW-3	Other	Magnesium	mg/L	4	0	0%	0.306	0.387	
03_4_34	MW-3	Other	Potassium	mg/L	4	0	0%	0.220	0.534	
03_4_35	MW-3	Other	Sodium	mg/L	4	0	0%	0.221	0.533	
03_4_36	MW-3	Other	Total Suspended Solids	mg/L	7	1	14%	0.152	0.639	
03_5_38	MW-3	Part 115	Iron	mg/L	7	0	0%	-0.083	0.788	
04_1_01	MW-4	Appendix III	Boron	mg/L	17	0	0%	0.181	0.417	
04_1_02	MW-4	Appendix III	Calcium	mg/L	17	0	0%	-0.098	0.659	
04_1_03	MW-4	Appendix III	Chloride	mg/L	17	0	0%	0.504	0.024	*
04_1_05	MW-4	Appendix III	Sulfate	mg/L	17	0	0%	0.359	0.107	
04_1_06	MW-4	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.019	0.934	
04_1_07	MW-4	Appendix III	pH, Field	su	18	0	0%	0.005	0.981	
04_2_09	MW-4	Appendix IV	Arsenic	mg/L	18	0	0%	0.411	0.059	
04_2_10	MW-4	Appendix IV	Barium	mg/L	18	0	0%	-0.040	0.854	
04_2_16	MW-4	Appendix IV	Lithium	mg/L	18	3	17%	0.111	0.635	
04_2_18	MW-4	Appendix IV	Molybdenum	mg/L	18	16	89%	-0.500	0.157	
04_2_20	MW-4	Appendix IV	Radium-226/228	pCi/L	18	0	0%	-0.391	0.072	
04_3_24	MW-4	Field Parameters	Conductivity	mS/cm	18	0	0%	-0.085	0.696	
04_3_25	MW-4	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	-0.161	0.458	
04_3_26	MW-4	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	-0.101	0.642	
04_3_27	MW-4	Field Parameters	Temperature	°C	18	0	0%	-0.290	0.181	
04_3_28	MW-4	Field Parameters	Turbidity	NTU	18	0	0%	-0.430	0.048	*
04_3_29	MW-4	Field Parameters	pH	su	18	0	0%	0.005	0.981	
04_4_30	MW-4	Other	Bicarbonate	mg/L	4	0	0%	0.226	0.523	
04_4_32	MW-4	Other	Hardness	mg/L	4	0	0%	-0.051	0.884	
04_4_33	MW-4	Other	Magnesium	mg/L	4	0	0%	-0.726	0.040	*
04_4_34	MW-4	Other	Potassium	mg/L	4	0	0%	0.200	0.572	
04_4_35	MW-4	Other	Sodium	mg/L	4	0	0%	0.233	0.509	
04_4_36	MW-4	Other	Total Suspended Solids	mg/L	18	7	39%	0.173	0.513	
04_5_38	MW-4	Part 115	Iron	mg/L	18	0	0%	0.086	0.691	
04_5_42	MW-4	Part 115	Zinc	mg/L	18	15	83%	-0.259	0.478	
05_1_01	MW-5	Appendix III	Boron	mg/L	17	0	0%	0.170	0.444	
05_1_02	MW-5	Appendix III	Calcium	mg/L	17	0	0%	0.478	0.032	*
05_1_03	MW-5	Appendix III	Chloride	mg/L	17	0	0%	0.509	0.022	*
05_1_05	MW-5	Appendix III	Sulfate	mg/L	17	0	0%	0.521	0.019	*
05_1_06	MW-5	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.549	0.014	*
05_1_07	MW-5	Appendix III	pH, Field	su	18	0	0%	-0.136	0.532	
05_2_09	MW-5	Appendix IV	Arsenic	mg/L	18	12	67%	-0.232	0.473	
05_2_10	MW-5	Appendix IV	Barium	mg/L	18	0	0%	0.255	0.240	
05_2_13	MW-5	Appendix IV	Chromium	mg/L	18	16	89%	-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.
05_2_14	MW-5	Appendix IV	Cobalt	mg/L	18	17	94%	NA	NA	
05_2_15	MW-5	Appendix IV	Lead	mg/L	18	15	83%	-0.273	0.454	
05_2_16	MW-5	Appendix IV	Lithium	mg/L	18	0	0%	0.031	0.887	
05_2_18	MW-5	Appendix IV	Molybdenum	mg/L	18	0	0%	0.222	0.307	
05_2_20	MW-5	Appendix IV	Radium-226/228	pCi/L	18	0	0%	0.154	0.477	
05_3_24	MW-5	Field Parameters	Conductivity	mS/cm	18	0	0%	0.184	0.396	
05_3_25	MW-5	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	0.335	0.124	
05_3_26	MW-5	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	0.084	0.699	
05_3_27	MW-5	Field Parameters	Temperature	°C	18	0	0%	-0.257	0.237	
05_3_28	MW-5	Field Parameters	Turbidity	NTU	18	0	0%	0.295	0.175	
05_3_29	MW-5	Field Parameters	pH	su	18	0	0%	-0.136	0.532	
05_4_30	MW-5	Other	Bicarbonate	mg/L	4	0	0%	-0.644	0.069	
05_4_32	MW-5	Other	Hardness	mg/L	4	0	0%	0.247	0.484	
05_4_33	MW-5	Other	Magnesium	mg/L	4	0	0%	0.148	0.675	
05_4_34	MW-5	Other	Potassium	mg/L	4	0	0%	-0.035	0.921	
05_4_35	MW-5	Other	Sodium	mg/L	4	0	0%	0.240	0.497	
05_4_36	MW-5	Other	Total Suspended Solids	mg/L	18	0	0%	-0.009	0.969	
05_5_37	MW-5	Part 115	Copper	mg/L	18	13	72%	-0.549	0.104	
05_5_38	MW-5	Part 115	Iron	mg/L	18	1	6%	0.029	0.895	
05_5_39	MW-5	Part 115	Nickel	mg/L	18	0	0%	0.536	0.014	*
05_5_41	MW-5	Part 115	Vanadium	mg/L	18	15	83%	-0.005	0.990	
05_5_42	MW-5	Part 115	Zinc	mg/L	18	5	28%	-0.210	0.398	
06_1_01	MW-6	Appendix III	Boron	mg/L	17	0	0%	0.544	0.014	*
06_1_02	MW-6	Appendix III	Calcium	mg/L	17	0	0%	0.427	0.055	
06_1_03	MW-6	Appendix III	Chloride	mg/L	17	0	0%	0.554	0.013	*
06_1_05	MW-6	Appendix III	Sulfate	mg/L	17	0	0%	0.546	0.014	*
06_1_06	MW-6	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	0.534	0.016	*
06_1_07	MW-6	Appendix III	pH, Field	su	18	0	0%	0.008	0.969	
06_2_09	MW-6	Appendix IV	Arsenic	mg/L	18	17	94%	NA	NA	
06_2_10	MW-6	Appendix IV	Barium	mg/L	18	0	0%	0.541	0.013	*
06_2_16	MW-6	Appendix IV	Lithium	mg/L	18	0	0%	0.498	0.022	*
06_2_18	MW-6	Appendix IV	Molybdenum	mg/L	18	0	0%	0.132	0.545	
06_2_20	MW-6	Appendix IV	Radium-226/228	pCi/L	18	0	0%	0.248	0.254	
06_3_24	MW-6	Field Parameters	Conductivity	mS/cm	18	0	0%	0.520	0.017	*
06_3_25	MW-6	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	0.250	0.249	
06_3_26	MW-6	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	-0.215	0.323	
06_3_27	MW-6	Field Parameters	Temperature	°C	18	0	0%	-0.366	0.092	
06_3_28	MW-6	Field Parameters	Turbidity	NTU	18	0	0%	0.373	0.086	
06_3_29	MW-6	Field Parameters	pH	su	18	0	0%	0.008	0.969	
06_4_30	MW-6	Other	Bicarbonate	mg/L	4	0	0%	-0.292	0.409	
06_4_32	MW-6	Other	Hardness	mg/L	4	0	0%	-0.245	0.489	
06_4_33	MW-6	Other	Magnesium	mg/L	4	0	0%	-0.254	0.472	

(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.
06_4_34	MW-6	Other	Potassium	mg/L	4	0	0%	-0.031	0.930	
06_4_35	MW-6	Other	Sodium	mg/L	4	0	0%	0.059	0.868	
06_4_36	MW-6	Other	Total Suspended Solids	mg/L	18	13	72%	-0.356	0.292	
06_5_38	MW-6	Part 115	Iron	mg/L	18	9	50%	0.328	0.248	
06_5_39	MW-6	Part 115	Nickel	mg/L	18	4	22%	0.114	0.636	
06_5_42	MW-6	Part 115	Zinc	mg/L	18	17	94%	NA	NA	
07_1_01	MW-7	Appendix III	Boron	mg/L	12	0	0%	0.349	0.172	
07_1_02	MW-7	Appendix III	Calcium	mg/L	12	0	0%	-0.101	0.692	
07_1_03	MW-7	Appendix III	Chloride	mg/L	12	0	0%	0.237	0.353	
07_1_04	MW-7	Appendix III	Fluoride	mg/L	12	11	92%	NA	NA	
07_1_05	MW-7	Appendix III	Sulfate	mg/L	12	0	0%	-0.171	0.503	
07_1_06	MW-7	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	-0.117	0.646	
07_1_07	MW-7	Appendix III	pH, Field	su	12	0	0%	-0.091	0.722	
07_2_04	MW-7	Appendix IV	Fluoride	mg/L	12	11	92%	NA	NA	
07_2_09	MW-7	Appendix IV	Arsenic	mg/L	12	0	0%	0.420	0.101	
07_2_10	MW-7	Appendix IV	Barium	mg/L	12	0	0%	0.154	0.547	
07_2_16	MW-7	Appendix IV	Lithium	mg/L	12	0	0%	0.589	0.021	*
07_2_17	MW-7	Appendix IV	Mercury	mg/L	12	11	92%	NA	NA	
07_2_18	MW-7	Appendix IV	Molybdenum	mg/L	12	0	0%	0.651	0.011	*
07_2_20	MW-7	Appendix IV	Radium-226/228	pCi/L	12	0	0%	-0.347	0.175	
07_3_24	MW-7	Field Parameters	Conductivity	mS/cm	12	0	0%	-0.066	0.795	
07_3_25	MW-7	Field Parameters	Dissolved Oxygen	mg/L	12	1	8%	-0.203	0.443	
07_3_26	MW-7	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	-0.085	0.741	
07_3_27	MW-7	Field Parameters	Temperature	°C	12	0	0%	-0.001	0.996	
07_3_28	MW-7	Field Parameters	Turbidity	NTU	12	0	0%	0.189	0.460	
07_3_29	MW-7	Field Parameters	pH	su	12	0	0%	-0.091	0.722	
07_4_30	MW-7	Other	Bicarbonate	mg/L	4	0	0%	-0.162	0.647	
07_4_32	MW-7	Other	Hardness	mg/L	4	0	0%	-0.104	0.769	
07_4_33	MW-7	Other	Magnesium	mg/L	4	0	0%	-0.102	0.773	
07_4_34	MW-7	Other	Potassium	mg/L	4	0	0%	-0.175	0.621	
07_4_35	MW-7	Other	Sodium	mg/L	4	0	0%	-0.088	0.804	
07_4_36	MW-7	Other	Total Suspended Solids	mg/L	12	10	83%	-0.500	0.157	
07_5_38	MW-7	Part 115	Iron	mg/L	12	0	0%	-0.032	0.901	
07_5_41	MW-7	Part 115	Vanadium	mg/L	12	11	92%	NA	NA	
07_5_42	MW-7	Part 115	Zinc	mg/L	12	9	75%	-0.667	0.068	
08_1_01	MW-8	Appendix III	Boron	mg/L	12	1	8%	-0.083	0.754	
08_1_02	MW-8	Appendix III	Calcium	mg/L	12	0	0%	0.000	0.999	
08_1_03	MW-8	Appendix III	Chloride	mg/L	12	2	17%	-0.216	0.431	
08_1_04	MW-8	Appendix III	Fluoride	mg/L	12	11	92%	NA	NA	
08_1_05	MW-8	Appendix III	Sulfate	mg/L	12	0	0%	0.066	0.796	
08_1_06	MW-8	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.245	0.338	
08_1_07	MW-8	Appendix III	pH, Field	su	12	0	0%	-0.219	0.392	

(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.
08_2_04	MW-8	Appendix IV	Fluoride	mg/L	12	11	92%	NA	NA	
08_2_09	MW-8	Appendix IV	Arsenic	mg/L	12	11	92%	NA	NA	
08_2_10	MW-8	Appendix IV	Barium	mg/L	12	0	0%	0.204	0.426	
08_2_16	MW-8	Appendix IV	Lithium	mg/L	12	6	50%	0.289	0.370	
08_2_18	MW-8	Appendix IV	Molybdenum	mg/L	12	10	83%	-0.500	0.157	
08_2_20	MW-8	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.114	0.657	
08_3_24	MW-8	Field Parameters	Conductivity	mS/cm	12	0	0%	-0.366	0.153	
08_3_25	MW-8	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	-0.388	0.130	
08_3_26	MW-8	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	-0.282	0.270	
08_3_27	MW-8	Field Parameters	Temperature	°C	12	0	0%	0.030	0.908	
08_3_28	MW-8	Field Parameters	Turbidity	NTU	12	0	0%	-0.052	0.838	
08_3_29	MW-8	Field Parameters	pH	su	12	0	0%	-0.219	0.392	
08_4_30	MW-8	Other	Bicarbonate	mg/L	4	0	0%	-0.423	0.231	
08_4_32	MW-8	Other	Hardness	mg/L	4	0	0%	-0.730	0.039	*
08_4_33	MW-8	Other	Magnesium	mg/L	4	0	0%	-0.484	0.171	
08_4_34	MW-8	Other	Potassium	mg/L	4	1	25%	-0.268	0.463	
08_4_35	MW-8	Other	Sodium	mg/L	4	0	0%	-0.380	0.282	
08_4_36	MW-8	Other	Total Suspended Solids	mg/L	12	11	92%	NA	NA	
08_5_37	MW-8	Part 115	Copper	mg/L	12	11	92%	NA	NA	
08_5_38	MW-8	Part 115	Iron	mg/L	12	11	92%	NA	NA	
08_5_41	MW-8	Part 115	Vanadium	mg/L	12	11	92%	NA	NA	
08_5_42	MW-8	Part 115	Zinc	mg/L	12	11	92%	NA	NA	
09_1_02	MW-9	Appendix III	Calcium	mg/L	12	0	0%	0.123	0.630	
09_1_03	MW-9	Appendix III	Chloride	mg/L	12	10	83%	-0.500	0.157	
09_1_04	MW-9	Appendix III	Fluoride	mg/L	12	11	92%	NA	NA	
09_1_05	MW-9	Appendix III	Sulfate	mg/L	12	8	67%	0.066	0.852	
09_1_06	MW-9	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.275	0.283	
09_1_07	MW-9	Appendix III	pH, Field	su	12	0	0%	-0.159	0.534	
09_2_04	MW-9	Appendix IV	Fluoride	mg/L	12	11	92%	NA	NA	
09_2_09	MW-9	Appendix IV	Arsenic	mg/L	12	11	92%	NA	NA	
09_2_10	MW-9	Appendix IV	Barium	mg/L	12	0	0%	0.315	0.218	
09_2_20	MW-9	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.079	0.757	
09_3_24	MW-9	Field Parameters	Conductivity	mS/cm	12	0	0%	0.257	0.315	
09_3_25	MW-9	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	-0.479	0.061	
09_3_26	MW-9	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	-0.162	0.526	
09_3_27	MW-9	Field Parameters	Temperature	°C	12	0	0%	-0.043	0.867	
09_3_28	MW-9	Field Parameters	Turbidity	NTU	12	0	0%	0.200	0.435	
09_3_29	MW-9	Field Parameters	pH	su	12	0	0%	-0.159	0.534	
09_4_30	MW-9	Other	Bicarbonate	mg/L	4	0	0%	-0.233	0.509	
09_4_32	MW-9	Other	Hardness	mg/L	4	0	0%	0.061	0.863	
09_4_33	MW-9	Other	Magnesium	mg/L	4	0	0%	0.012	0.973	
09_4_34	MW-9	Other	Potassium	mg/L	4	0	0%	-0.733	0.038	*

(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.
09_4_35	MW-9	Other	Sodium	mg/L	4	0	0%	0.306	0.387	
09_5_42	MW-9	Part 115	Zinc	mg/L	12	11	92%	NA	NA	
100A_1_01	MW-100A	Appendix III	Boron	mg/L	8	0	0%	-0.208	0.481	
100A_1_02	MW-100A	Appendix III	Calcium	mg/L	8	0	0%	0.347	0.241	
100A_1_03	MW-100A	Appendix III	Chloride	mg/L	8	0	0%	0.383	0.195	
100A_1_04	MW-100A	Appendix III	Fluoride	mg/L	8	6	75%	-0.500	0.157	
100A_1_05	MW-100A	Appendix III	Sulfate	mg/L	8	0	0%	0.665	0.024	*
100A_1_06	MW-100A	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	0.469	0.113	
100A_1_07	MW-100A	Appendix III	pH, Field	su	8	0	0%	-0.297	0.316	
100A_2_04	MW-100A	Appendix IV	Fluoride	mg/L	8	7	88%	NA	NA	
100A_2_09	MW-100A	Appendix IV	Arsenic	mg/L	8	0	0%	0.394	0.183	
100A_2_10	MW-100A	Appendix IV	Barium	mg/L	8	0	0%	0.325	0.273	
100A_2_16	MW-100A	Appendix IV	Lithium	mg/L	8	0	0%	0.647	0.029	*
100A_2_18	MW-100A	Appendix IV	Molybdenum	mg/L	8	0	0%	0.580	0.050	*
100A_2_20	MW-100A	Appendix IV	Radium-226/228	pCi/L	8	0	0%	-0.139	0.638	
100A_3_24	MW-100A	Field Parameters	Conductivity	mS/cm	8	0	0%	0.532	0.072	
100A_3_25	MW-100A	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.199	0.500	
100A_3_26	MW-100A	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	0.188	0.525	
100A_3_27	MW-100A	Field Parameters	Temperature	°C	8	0	0%	0.449	0.129	
100A_3_28	MW-100A	Field Parameters	Turbidity	NTU	8	0	0%	-0.499	0.092	
100A_3_29	MW-100A	Field Parameters	pH	su	8	0	0%	-0.297	0.316	
100A_4_30	MW-100A	Other	Bicarbonate	mg/L	8	0	0%	-0.152	0.608	
100A_4_32	MW-100A	Other	Hardness	mg/L	8	0	0%	-0.376	0.203	
100A_4_33	MW-100A	Other	Magnesium	mg/L	8	0	0%	0.185	0.532	
100A_4_34	MW-100A	Other	Potassium	mg/L	8	0	0%	0.260	0.380	
100A_4_35	MW-100A	Other	Sodium	mg/L	8	0	0%	0.243	0.412	
100A_4_36	MW-100A	Other	Total Suspended Solids	mg/L	8	1	12%	-0.017	0.955	
100A_5_38	MW-100A	Part 115	Iron	mg/L	8	0	0%	0.349	0.239	
100A_5_42	MW-100A	Part 115	Zinc	mg/L	8	7	88%	NA	NA	
100B_1_01	MW-100B	Appendix III	Boron	mg/L	8	0	0%	0.424	0.152	
100B_1_02	MW-100B	Appendix III	Calcium	mg/L	8	0	0%	0.460	0.120	
100B_1_03	MW-100B	Appendix III	Chloride	mg/L	8	0	0%	0.281	0.341	
100B_1_04	MW-100B	Appendix III	Fluoride	mg/L	8	7	88%	NA	NA	
100B_1_05	MW-100B	Appendix III	Sulfate	mg/L	8	0	0%	0.489	0.098	
100B_1_06	MW-100B	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	0.628	0.034	*
100B_1_07	MW-100B	Appendix III	pH, Field	su	8	0	0%	0.434	0.142	
100B_2_04	MW-100B	Appendix IV	Fluoride	mg/L	8	7	88%	NA	NA	
100B_2_09	MW-100B	Appendix IV	Arsenic	mg/L	8	0	0%	0.190	0.522	
100B_2_10	MW-100B	Appendix IV	Barium	mg/L	8	0	0%	0.523	0.077	
100B_2_16	MW-100B	Appendix IV	Lithium	mg/L	8	0	0%	-0.045	0.879	
100B_2_18	MW-100B	Appendix IV	Molybdenum	mg/L	8	0	0%	0.261	0.377	
100B_2_20	MW-100B	Appendix IV	Radium-226/228	pCi/L	8	0	0%	-0.200	0.500	

(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.
100B_3_24	MW-100B	Field Parameters	Conductivity	mS/cm	8	0	0%	0.411	0.164	
100B_3_25	MW-100B	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.168	0.571	
100B_3_26	MW-100B	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	-0.137	0.642	
100B_3_27	MW-100B	Field Parameters	Temperature	°C	8	0	0%	0.654	0.027	*
100B_3_28	MW-100B	Field Parameters	Turbidity	NTU	8	0	0%	-0.418	0.158	
100B_3_29	MW-100B	Field Parameters	pH	su	8	0	0%	0.434	0.142	
100B_4_30	MW-100B	Other	Bicarbonate	mg/L	8	0	0%	0.258	0.383	
100B_4_32	MW-100B	Other	Hardness	mg/L	8	0	0%	0.306	0.301	
100B_4_33	MW-100B	Other	Magnesium	mg/L	8	0	0%	0.362	0.221	
100B_4_34	MW-100B	Other	Potassium	mg/L	8	0	0%	0.384	0.194	
100B_4_35	MW-100B	Other	Sodium	mg/L	8	0	0%	0.140	0.636	
100B_4_36	MW-100B	Other	Total Suspended Solids	mg/L	8	0	0%	-0.434	0.143	
100B_5_38	MW-100B	Part 115	Iron	mg/L	8	0	0%	-0.189	0.523	
10_1_01	MW-10	Appendix III	Boron	mg/L	12	0	0%	-0.069	0.788	
10_1_02	MW-10	Appendix III	Calcium	mg/L	12	0	0%	-0.257	0.315	
10_1_03	MW-10	Appendix III	Chloride	mg/L	12	9	75%	-0.009	0.980	
10_1_04	MW-10	Appendix III	Fluoride	mg/L	12	11	92%	NA	NA	
10_1_05	MW-10	Appendix III	Sulfate	mg/L	12	0	0%	0.130	0.613	
10_1_06	MW-10	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	-0.102	0.689	
10_1_07	MW-10	Appendix III	pH, Field	su	12	0	0%	-0.235	0.358	
10_2_04	MW-10	Appendix IV	Fluoride	mg/L	12	11	92%	NA	NA	
10_2_09	MW-10	Appendix IV	Arsenic	mg/L	12	11	92%	NA	NA	
10_2_10	MW-10	Appendix IV	Barium	mg/L	12	0	0%	0.462	0.071	
10_2_17	MW-10	Appendix IV	Mercury	mg/L	12	11	92%	NA	NA	
10_2_20	MW-10	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.129	0.613	
10_3_24	MW-10	Field Parameters	Conductivity	mS/cm	12	0	0%	0.091	0.724	
10_3_25	MW-10	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	-0.044	0.865	
10_3_26	MW-10	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	-0.182	0.476	
10_3_27	MW-10	Field Parameters	Temperature	°C	12	0	0%	-0.069	0.786	
10_3_28	MW-10	Field Parameters	Turbidity	NTU	12	0	0%	-0.275	0.282	
10_3_29	MW-10	Field Parameters	pH	su	12	0	0%	-0.235	0.358	
10_4_30	MW-10	Other	Bicarbonate	mg/L	4	0	0%	-0.469	0.185	
10_4_32	MW-10	Other	Hardness	mg/L	4	0	0%	-0.320	0.366	
10_4_33	MW-10	Other	Magnesium	mg/L	4	0	0%	-0.611	0.084	
10_4_34	MW-10	Other	Potassium	mg/L	4	1	25%	-0.529	0.147	
10_4_35	MW-10	Other	Sodium	mg/L	4	0	0%	0.017	0.961	
10_5_42	MW-10	Part 115	Zinc	mg/L	12	10	83%	-0.500	0.157	
13_1_01	MW-13	Appendix III	Boron	mg/L	12	0	0%	0.568	0.026	*
13_1_02	MW-13	Appendix III	Calcium	mg/L	12	0	0%	0.375	0.143	
13_1_03	MW-13	Appendix III	Chloride	mg/L	12	2	17%	0.715	0.009	**
13_1_05	MW-13	Appendix III	Sulfate	mg/L	12	0	0%	0.410	0.109	
13_1_06	MW-13	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.436	0.088	

(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_1_07	MW-13	Appendix III	pH, Field	su	12	0	0%	0.194	0.449	
13_2_09	MW-13	Appendix IV	Arsenic	mg/L	12	10	83%	-0.500	0.157	
13_2_10	MW-13	Appendix IV	Barium	mg/L	12	0	0%	0.577	0.024	*
13_2_20	MW-13	Appendix IV	Radium-226/228	pCi/L	12	0	0%	-0.033	0.897	
13_3_24	MW-13	Field Parameters	Conductivity	mS/cm	12	0	0%	0.445	0.082	
13_3_25	MW-13	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	0.278	0.278	
13_3_26	MW-13	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	0.368	0.150	
13_3_27	MW-13	Field Parameters	Temperature	°C	12	0	0%	0.336	0.189	
13_3_28	MW-13	Field Parameters	Turbidity	NTU	12	0	0%	-0.146	0.570	
13_3_29	MW-13	Field Parameters	pH	su	12	0	0%	0.194	0.449	
13_4_30	MW-13	Other	Bicarbonate	mg/L	10	0	0%	-0.116	0.673	
13_4_32	MW-13	Other	Hardness	mg/L	10	0	0%	0.452	0.099	
13_4_33	MW-13	Other	Magnesium	mg/L	11	0	0%	0.340	0.199	
13_4_34	MW-13	Other	Potassium	mg/L	11	0	0%	0.405	0.125	
13_4_35	MW-13	Other	Sodium	mg/L	11	0	0%	0.420	0.112	
13_5_38	MW-13	Part 115	Iron	mg/L	12	1	8%	0.114	0.668	
13_5_42	MW-13	Part 115	Zinc	mg/L	12	11	92%	NA	NA	
14_1_01	MW-14	Appendix III	Boron	mg/L	9	0	0%	0.448	0.115	
14_1_02	MW-14	Appendix III	Calcium	mg/L	9	0	0%	0.455	0.110	
14_1_03	MW-14	Appendix III	Chloride	mg/L	9	0	0%	-0.144	0.614	
14_1_05	MW-14	Appendix III	Sulfate	mg/L	8	0	0%	0.239	0.419	
14_1_06	MW-14	Appendix III	Total Dissolved Solids	mg/L	9	1	11%	0.244	0.410	
14_1_07	MW-14	Appendix III	pH, Field	su	9	0	0%	0.046	0.871	
14_2_09	MW-14	Appendix IV	Arsenic	mg/L	9	0	0%	0.354	0.213	
14_2_10	MW-14	Appendix IV	Barium	mg/L	9	0	0%	-0.176	0.535	
14_2_16	MW-14	Appendix IV	Lithium	mg/L	9	0	0%	0.554	0.051	
14_2_18	MW-14	Appendix IV	Molybdenum	mg/L	9	0	0%	-0.270	0.342	
14_2_20	MW-14	Appendix IV	Radium-226/228	pCi/L	9	0	0%	-0.105	0.711	
14_2_22	MW-14	Appendix IV	Selenium	mg/L	9	7	78%	-0.500	0.157	
14_3_24	MW-14	Field Parameters	Conductivity	mS/cm	9	0	0%	0.010	0.972	
14_3_25	MW-14	Field Parameters	Dissolved Oxygen	mg/L	9	0	0%	0.375	0.188	
14_3_26	MW-14	Field Parameters	Oxidation Reduction Potential	mV	9	0	0%	0.248	0.384	
14_3_27	MW-14	Field Parameters	Temperature	°C	9	0	0%	0.532	0.061	
14_3_28	MW-14	Field Parameters	Turbidity	NTU	9	0	0%	-0.314	0.270	
14_3_29	MW-14	Field Parameters	pH	su	9	0	0%	0.046	0.871	
14_4_30	MW-14	Other	Bicarbonate	mg/L	9	0	0%	0.149	0.600	
14_4_32	MW-14	Other	Hardness	mg/L	9	0	0%	0.231	0.417	
14_4_33	MW-14	Other	Magnesium	mg/L	9	0	0%	0.438	0.123	
14_4_34	MW-14	Other	Potassium	mg/L	9	0	0%	0.080	0.778	
14_4_35	MW-14	Other	Sodium	mg/L	9	0	0%	0.392	0.168	
14_4_36	MW-14	Other	Total Suspended Solids	mg/L	9	0	0%	0.359	0.206	
14_5_38	MW-14	Part 115	Iron	mg/L	9	0	0%	0.337	0.236	

(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_5_39	MW-14	Part 115	Nickel	mg/L	9	6	67%	-0.167	0.648	
14_5_42	MW-14	Part 115	Zinc	mg/L	9	8	89%	NA	NA	
15_1_01	MW-15	Appendix III	Boron	mg/L	9	0	0%	0.557	0.050	
15_1_02	MW-15	Appendix III	Calcium	mg/L	9	0	0%	-0.411	0.148	
15_1_03	MW-15	Appendix III	Chloride	mg/L	9	0	0%	-0.085	0.765	
15_1_05	MW-15	Appendix III	Sulfate	mg/L	9	0	0%	-0.071	0.803	
15_1_06	MW-15	Appendix III	Total Dissolved Solids	mg/L	9	0	0%	-0.153	0.590	
15_1_07	MW-15	Appendix III	pH, Field	su	9	0	0%	0.516	0.069	
15_2_09	MW-15	Appendix IV	Arsenic	mg/L	9	8	89%	NA	NA	
15_2_10	MW-15	Appendix IV	Barium	mg/L	9	0	0%	-0.193	0.498	
15_2_16	MW-15	Appendix IV	Lithium	mg/L	9	8	89%	NA	NA	
15_2_20	MW-15	Appendix IV	Radium-226/228	pCi/L	9	0	0%	0.012	0.967	
15_2_22	MW-15	Appendix IV	Selenium	mg/L	9	3	33%	0.030	0.925	
15_3_24	MW-15	Field Parameters	Conductivity	mS/cm	9	0	0%	-0.157	0.581	
15_3_25	MW-15	Field Parameters	Dissolved Oxygen	mg/L	9	0	0%	0.590	0.038	*
15_3_26	MW-15	Field Parameters	Oxidation Reduction Potential	mV	9	0	0%	0.185	0.515	
15_3_27	MW-15	Field Parameters	Temperature	°C	9	0	0%	0.516	0.070	
15_3_28	MW-15	Field Parameters	Turbidity	NTU	9	0	0%	0.138	0.626	
15_3_29	MW-15	Field Parameters	pH	su	9	0	0%	0.516	0.069	
15_4_30	MW-15	Other	Bicarbonate	mg/L	9	0	0%	0.365	0.199	
15_4_32	MW-15	Other	Hardness	mg/L	9	0	0%	0.435	0.126	
15_4_33	MW-15	Other	Magnesium	mg/L	9	0	0%	-0.365	0.199	
15_4_34	MW-15	Other	Potassium	mg/L	9	8	89%	NA	NA	
15_4_35	MW-15	Other	Sodium	mg/L	9	0	0%	-0.193	0.498	
15_4_36	MW-15	Other	Total Suspended Solids	mg/L	9	7	78%	-0.500	0.157	
15_5_38	MW-15	Part 115	Iron	mg/L	9	1	11%	0.286	0.334	
15_5_42	MW-15	Part 115	Zinc	mg/L	9	8	89%	NA	NA	
16A_1_01	MW-16A	Appendix III	Boron	mg/L	10	0	0%	0.521	0.057	
16A_1_02	MW-16A	Appendix III	Calcium	mg/L	10	0	0%	0.677	0.013	*
16A_1_03	MW-16A	Appendix III	Chloride	mg/L	10	0	0%	0.619	0.024	*
16A_1_05	MW-16A	Appendix III	Sulfate	mg/L	10	0	0%	0.618	0.024	*
16A_1_06	MW-16A	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	0.750	0.006	**
16A_1_07	MW-16A	Appendix III	pH, Field	su	10	0	0%	0.112	0.683	
16A_2_09	MW-16A	Appendix IV	Arsenic	mg/L	10	0	0%	0.319	0.244	
16A_2_10	MW-16A	Appendix IV	Barium	mg/L	10	0	0%	0.548	0.045	*
16A_2_16	MW-16A	Appendix IV	Lithium	mg/L	10	9	90%	NA	NA	
16A_2_20	MW-16A	Appendix IV	Radium-226/228	pCi/L	10	0	0%	-0.282	0.303	
16A_2_22	MW-16A	Appendix IV	Selenium	mg/L	10	9	90%	NA	NA	
16A_3_24	MW-16A	Field Parameters	Conductivity	mS/cm	10	0	0%	0.679	0.013	*
16A_3_25	MW-16A	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	-0.346	0.207	
16A_3_26	MW-16A	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	0.139	0.611	
16A_3_27	MW-16A	Field Parameters	Temperature	°C	10	0	0%	0.639	0.020	*

(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.
16A_3_28	MW-16A	Field Parameters	Turbidity	NTU	10	0	0%	-0.360	0.188	
16A_3_29	MW-16A	Field Parameters	pH	su	10	0	0%	0.112	0.683	
16A_4_30	MW-16A	Other	Bicarbonate	mg/L	10	0	0%	0.232	0.396	
16A_4_32	MW-16A	Other	Hardness	mg/L	10	0	0%	0.536	0.050	
16A_4_33	MW-16A	Other	Magnesium	mg/L	10	0	0%	0.661	0.016	*
16A_4_34	MW-16A	Other	Potassium	mg/L	10	0	0%	0.345	0.207	
16A_4_35	MW-16A	Other	Sodium	mg/L	10	0	0%	0.755	0.006	**
16A_4_36	MW-16A	Other	Total Suspended Solids	mg/L	10	1	10%	-0.484	0.089	
16A_5_38	MW-16A	Part 115	Iron	mg/L	10	0	0%	0.156	0.570	
16B_1_01	MW-16B	Appendix III	Boron	mg/L	10	0	0%	-0.043	0.876	
16B_1_02	MW-16B	Appendix III	Calcium	mg/L	10	0	0%	0.550	0.045	*
16B_1_03	MW-16B	Appendix III	Chloride	mg/L	10	5	50%	0.127	0.707	
16B_1_04	MW-16B	Appendix III	Fluoride	mg/L	10	7	70%	-0.031	0.932	
16B_1_05	MW-16B	Appendix III	Sulfate	mg/L	10	0	0%	0.423	0.122	
16B_1_06	MW-16B	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	0.335	0.221	
16B_1_07	MW-16B	Appendix III	pH, Field	su	10	0	0%	0.106	0.699	
16B_2_04	MW-16B	Appendix IV	Fluoride	mg/L	10	8	80%	-0.500	0.157	
16B_2_10	MW-16B	Appendix IV	Barium	mg/L	10	0	0%	0.139	0.612	
16B_2_16	MW-16B	Appendix IV	Lithium	mg/L	10	0	0%	0.143	0.600	
16B_2_18	MW-16B	Appendix IV	Molybdenum	mg/L	10	0	0%	-0.007	0.979	
16B_2_20	MW-16B	Appendix IV	Radium-226/228	pCi/L	10	0	0%	-0.286	0.297	
16B_2_22	MW-16B	Appendix IV	Selenium	mg/L	10	9	90%	NA	NA	
16B_3_24	MW-16B	Field Parameters	Conductivity	mS/cm	10	0	0%	-0.376	0.169	
16B_3_25	MW-16B	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	0.095	0.728	
16B_3_26	MW-16B	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	-0.659	0.016	*
16B_3_27	MW-16B	Field Parameters	Temperature	°C	10	0	0%	0.466	0.089	
16B_3_28	MW-16B	Field Parameters	Turbidity	NTU	10	0	0%	0.348	0.203	
16B_3_29	MW-16B	Field Parameters	pH	su	10	0	0%	0.128	0.640	
16B_4_30	MW-16B	Other	Bicarbonate	mg/L	10	0	0%	0.149	0.586	
16B_4_32	MW-16B	Other	Hardness	mg/L	10	0	0%	0.407	0.137	
16B_4_33	MW-16B	Other	Magnesium	mg/L	10	0	0%	0.114	0.679	
16B_4_34	MW-16B	Other	Potassium	mg/L	10	0	0%	0.248	0.365	
16B_4_35	MW-16B	Other	Sodium	mg/L	10	0	0%	0.308	0.260	
16B_4_36	MW-16B	Other	Total Suspended Solids	mg/L	10	5	50%	-0.088	0.795	
16B_5_38	MW-16B	Part 115	Iron	mg/L	10	0	0%	0.296	0.280	
7C_1_01	MW-7C	Appendix III	Boron	mg/L	12	0	0%	-0.327	0.201	
7C_1_02	MW-7C	Appendix III	Calcium	mg/L	12	0	0%	0.078	0.761	
7C_1_03	MW-7C	Appendix III	Chloride	mg/L	12	0	0%	0.251	0.326	
7C_1_05	MW-7C	Appendix III	Sulfate	mg/L	12	0	0%	0.600	0.019	*
7C_1_06	MW-7C	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.701	0.006	**
7C_1_07	MW-7C	Appendix III	pH, Field	su	12	0	0%	0.102	0.691	
7C_2_09	MW-7C	Appendix IV	Arsenic	mg/L	12	0	0%	0.206	0.420	

(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.
7C_2_10	MW-7C	Appendix IV	Barium	mg/L	12	0	0%	-0.387	0.130	
7C_2_12	MW-7C	Appendix IV	Cadmium	mg/L	12	9	75%	0.000	1.000	
7C_2_16	MW-7C	Appendix IV	Lithium	mg/L	12	0	0%	0.277	0.279	
7C_2_18	MW-7C	Appendix IV	Molybdenum	mg/L	12	0	0%	-0.361	0.159	
7C_2_20	MW-7C	Appendix IV	Radium-226/228	pCi/L	12	0	0%	-0.029	0.909	
7C_3_24	MW-7C	Field Parameters	Conductivity	mS/cm	12	0	0%	0.426	0.096	
7C_3_25	MW-7C	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	0.475	0.063	
7C_3_26	MW-7C	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	0.342	0.182	
7C_3_27	MW-7C	Field Parameters	Temperature	°C	12	0	0%	-0.266	0.299	
7C_3_28	MW-7C	Field Parameters	Turbidity	NTU	12	0	0%	-0.151	0.555	
7C_3_29	MW-7C	Field Parameters	pH	su	12	0	0%	0.102	0.691	
7C_4_30	MW-7C	Other	Bicarbonate	mg/L	12	0	0%	0.043	0.867	
7C_4_32	MW-7C	Other	Hardness	mg/L	12	0	0%	0.176	0.492	
7C_4_33	MW-7C	Other	Magnesium	mg/L	12	0	0%	0.153	0.551	
7C_4_34	MW-7C	Other	Potassium	mg/L	12	0	0%	0.274	0.285	
7C_4_35	MW-7C	Other	Sodium	mg/L	12	0	0%	0.077	0.764	
7C_4_36	MW-7C	Other	Total Suspended Solids	mg/L	12	3	25%	0.269	0.343	
7C_5_38	MW-7C	Part 115	Iron	mg/L	12	0	0%	0.035	0.890	
7C_5_39	MW-7C	Part 115	Nickel	mg/L	12	0	0%	0.500	0.051	
7C_5_42	MW-7C	Part 115	Zinc	mg/L	12	10	83%	-0.500	0.157	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 5: Outlier Counts by Date

Date	Count
2020-04-28	4
2020-05-26	4
2020-10-19	4
2021-01-27	1
2021-05-04	2
2021-06-15	2
2021-08-24	1
2021-09-28	1
2022-01-11	1
2022-02-01	2
2022-02-17	1
2022-03-10	3
2022-05-19	1
2022-08-02	2
2022-09-01	1
2023-01-12	5
2023-02-02	3
2023-02-17	1
2023-06-05	1
2023-07-10	1
2023-08-02	1
2023-10-17	1
2024-01-03	1
2024-01-29	1
2024-01-30	8
2024-01-31	2

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	Value
02_1_07	MW-2	Appendix III	pH, Field	su	18	0	0%	18	2020-10-19	7.08
02_3_25	MW-2	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	18	2022-08-02	1.01
02_3_28	MW-2	Field Parameters	Turbidity	NTU	18	0	0%	18	2020-04-28	72.3
02_3_29	MW-2	Field Parameters	pH	su	18	0	0%	18	2020-10-19	7.08
02_5_38	MW-2	Part 115	Iron	mg/L	18	0	0%	18	2022-02-01	1.93
02_5_42	MW-2	Part 115	Zinc	mg/L	18	15	83%	3	2020-05-26	0.0410
03_2_09	MW-3	Appendix IV	Arsenic	mg/L	7	0	0%	7	2024-01-29	0.00600
04_1_07	MW-4	Appendix III	pH, Field	su	18	0	0%	18	2020-10-19	7.87
04_3_24	MW-4	Field Parameters	Conductivity	mS/cm	18	0	0%	18	2022-08-02	0.429
04_3_29	MW-4	Field Parameters	pH	su	18	0	0%	18	2020-10-19	7.87
05_1_07	MW-5	Appendix III	pH, Field	su	18	0	0%	18	2021-05-04	6.40

(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	Value
05_3_28	MW-5	Field Parameters	Turbidity	NTU	18	0	0%	18	2020-04-28	180
05_3_29	MW-5	Field Parameters	pH	su	18	0	0%	18	2021-05-04	6.40
05_4_36	MW-5	Other	Total Suspended Solids	mg/L	18	0	0%	18	2020-04-28	161
05_5_38	MW-5	Part 115	Iron	mg/L	18	1	6%	17	2020-04-28	8.00
05_5_42	MW-5	Part 115	Zinc	mg/L	18	5	28%	13	2021-01-27	0.0980
06_1_07	MW-6	Appendix III	pH, Field	su	18	0	0%	18	2020-05-26	6.35
06_3_29	MW-6	Field Parameters	pH	su	18	0	0%	18	2020-05-26	6.35
06_4_36	MW-6	Other	Total Suspended Solids	mg/L	18	13	72%	5	2022-02-01	32.0
06_5_38	MW-6	Part 115	Iron	mg/L	18	9	50%	9	2020-05-26	0.200
07_1_06	MW-7	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	12	2024-01-30	864
07_3_25	MW-7	Field Parameters	Dissolved Oxygen	mg/L	12	1	8%	11	2022-01-11	0.490
07_3_28	MW-7	Field Parameters	Turbidity	NTU	12	0	0%	12	2021-09-28	16.0
07_4_32	MW-7	Other	Hardness	mg/L	4	0	0%	4	2024-01-30	496
07_4_33	MW-7	Other	Magnesium	mg/L	4	0	0%	4	2024-01-30	20.5
07_5_38	MW-7	Part 115	Iron	mg/L	12	0	0%	12	2022-02-17	2.81
07_5_42	MW-7	Part 115	Zinc	mg/L	12	9	75%	3	2021-08-24	0.0140
08_1_07	MW-8	Appendix III	pH, Field	su	12	0	0%	12	2021-06-15	7.78
08_3_29	MW-8	Field Parameters	pH	su	12	0	0%	12	2021-06-15	7.78
08_4_35	MW-8	Other	Sodium	mg/L	4	0	0%	4	2023-08-02	40.9
100A_3_25	MW-100A	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	8	2023-06-05	4.15
100A_4_32	MW-100A	Other	Hardness	mg/L	8	0	0%	8	2024-01-03	368
100A_4_36	MW-100A	Other	Total Suspended Solids	mg/L	8	1	12%	7	2023-07-10	25.0
13_3_26	MW-13	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	12	2024-01-30	-159
13_4_35	MW-13	Other	Sodium	mg/L	11	0	0%	11	2024-01-30	13.2
13_5_38	MW-13	Part 115	Iron	mg/L	12	1	8%	11	2024-01-30	1.03
14_2_10	MW-14	Appendix IV	Barium	mg/L	9	0	0%	9	2023-01-12	0.177
14_2_20	MW-14	Appendix IV	Radium-226/228	pCi/L	9	0	0%	9	2023-01-12	4.44
14_3_24	MW-14	Field Parameters	Conductivity	mS/cm	9	0	0%	9	2023-02-17	1.09
14_4_30	MW-14	Other	Bicarbonate	mg/L	9	0	0%	9	2024-01-31	850
14_5_39	MW-14	Part 115	Nickel	mg/L	9	6	67%	3	2023-01-12	0.00600
15_1_05	MW-15	Appendix III	Sulfate	mg/L	9	0	0%	9	2023-01-12	238
15_3_24	MW-15	Field Parameters	Conductivity	mS/cm	9	0	0%	9	2024-01-31	0.451
15_4_33	MW-15	Other	Magnesium	mg/L	9	0	0%	9	2023-01-12	47.2
16A_3_26	MW-16A	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	10	2023-10-17	-3.10
16A_4_34	MW-16A	Other	Potassium	mg/L	10	0	0%	10	2023-02-02	2.12
16B_4_34	MW-16B	Other	Potassium	mg/L	10	0	0%	10	2023-02-02	3.81
16B_4_35	MW-16B	Other	Sodium	mg/L	10	0	0%	10	2023-02-02	24.5
7C_1_01	MW-7C	Appendix III	Boron	mg/L	12	0	0%	12	2022-09-01	7.24
7C_2_09	MW-7C	Appendix IV	Arsenic	mg/L	12	0	0%	12	2024-01-30	0.0100
7C_3_25	MW-7C	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	12	2022-03-10	1.77
7C_4_32	MW-7C	Other	Hardness	mg/L	12	0	0%	12	2024-01-30	558
7C_4_35	MW-7C	Other	Sodium	mg/L	12	0	0%	12	2022-05-19	79.0
7C_4_36	MW-7C	Other	Total Suspended Solids	mg/L	12	3	25%	9	2022-03-10	27.0

(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	Value
7C_5_39	MW-7C	Part 115	Nickel	mg/L	12	0	0%	12	2022-03-10	0.0110

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	
02_1_01	MW-2	Appendix III	Boron	mg/L	0%	4	3	6	4	17	0.039	*	0.016	*	0.017	*	4	3	6	4	17	0.039	*	0.016	*	0.017	*
02_1_02	MW-2	Appendix III	Calcium	mg/L	0%	4	3	6	4	17	0.148		0.137		0.143		4	3	6	4	17	0.148		0.137		0.143	
02_1_03	MW-2	Appendix III	Chloride	mg/L	0%	4	3	6	4	17	0.014	*	0.001	***	0.001	***	4	3	6	4	17	0.014	*	0.001	***	0.001	***
02_1_04	MW-2	Appendix III	Fluoride	mg/L	100%	4	3	6	4	17	NA		0.200		NA		NA	NA	NA	NA	NA	NA		NA		NA	
02_1_05	MW-2	Appendix III	Sulfate	mg/L	0%	4	3	6	4	17	0.058		0.074		0.112		4	3	6	4	17	0.058		0.074		0.112	
02_1_06	MW-2	Appendix III	Total Dissolved Solids	mg/L	0%	4	3	6	4	17	0.081		0.089		0.109		4	3	6	4	17	0.081		0.089		0.109	
02_1_07	MW-2	Appendix III	pH, Field	su	0%	4	3	6	5	18	0.322		0.230		0.225		4	3	6	5	18	0.322		0.230		0.225	
02_2_04	MW-2	Appendix IV	Fluoride	mg/L	100%	4	3	6	5	18	NA		0.169		NA		NA	NA	NA	NA	NA	NA		NA		NA	
02_2_08	MW-2	Appendix IV	Antimony	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
02_2_09	MW-2	Appendix IV	Arsenic	mg/L	78%	4	3	6	5	18	0.582		0.508		0.538		2	0	1	1	4	0.632		0.853		0.837	
02_2_10	MW-2	Appendix IV	Barium	mg/L	0%	4	3	6	5	18	0.982		0.994		0.984		4	3	6	5	18	0.982		0.994		0.984	
02_2_11	MW-2	Appendix IV	Beryllium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
02_2_12	MW-2	Appendix IV	Cadmium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
02_2_13	MW-2	Appendix IV	Chromium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
02_2_14	MW-2	Appendix IV	Cobalt	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
02_2_15	MW-2	Appendix IV	Lead	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
02_2_16	MW-2	Appendix IV	Lithium	mg/L	0%	4	3	6	5	18	0.045	*	0.023	*	0.036	*	4	3	6	5	18	0.045	*	0.023	*	0.036	*
02_2_17	MW-2	Appendix IV	Mercury	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
02_2_18	MW-2	Appendix IV	Molybdenum	mg/L	0%	4	3	6	5	18	0.146		0.257		0.238		4	3	6	5	18	0.146		0.257		0.238	
02_2_20	MW-2	Appendix IV	Radium-226/228	pCi/L	0%	4	3	6	5	18	0.987		0.995		NA		4	3	6	5	18	0.987		0.995		NA	
02_2_22	MW-2	Appendix IV	Selenium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
02_2_23	MW-2	Appendix IV	Thallium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
02_3_24	MW-2	Field Parameters	Conductivity	mS/cm	0%	4	3	6	5	18	0.023	*	0.085		0.103		4	3	6	5	18	0.023	*	0.085		0.103	
02_3_25	MW-2	Field Parameters	Dissolved Oxygen	mg/L	0%	4	3	6	5	18	0.708		0.508		NA		4	3	6	5	18	0.708		0.508		NA	
02_3_26	MW-2	Field Parameters	Oxidation Reduction Potential	mV	0%	4	3	6	5	18	0.714		0.572		NA		4	3	6	5	18	0.714		0.572		NA	
02_3_27	MW-2	Field Parameters	Temperature	°C	0%	4	3	6	5	18	0.015	*	0.001	**	0.001	***	4	3	6	5	18	0.015	*	0.001	**	0.001	***
02_3_28	MW-2	Field Parameters	Turbidity	NTU	0%	4	3	6	5	18	0.208		0.158		0.155		4	3	6	5	18	0.208		0.158		0.155	
02_3_29	MW-2	Field Parameters	pH	su	0%	4	3	6	5	18	0.322		0.230		0.225		4	3	6	5	18	0.322		0.230		0.225	
02_4_30	MW-2	Other	Bicarbonate	mg/L	0%	2	0	2	0	4	0.439		0.388		0.386		2	0	2	0	4	0.439		0.388		0.386	
02_4_31	MW-2	Other	Carbonate	mg/L	100%	2	0	2	0	4	NA		NA		0.423		NA	NA	NA	NA	NA	NA		NA		NA	
02_4_32	MW-2	Other	Hardness	mg/L	0%	2	0	2	0	4	0.121		0.081		0.085		2	0	2	0	4	0.121		0.081		0.085	
02_4_33	MW-2	Other	Magnesium	mg/L	0%	2	0	2	0	4	0.121		0.300		0.302		2	0	2	0	4	0.121		0.300		0.302	
02_4_34	MW-2	Other	Potassium	mg/L	0%	2	0	2	0	4	0.439		0.378		0.340		2	0	2	0	4	0.439		0.378		0.340	
02_4_35	MW-2	Other	Sodium	mg/L	0%	2	0	2	0	4	1.000		0.721		0.685		2	0	2	0	4	1.000		0.721		0.685	
02_4_36	MW-2	Other	Total Suspended Solids	mg/L	22%	4	3	6	5	18	0.148		0.207		0.114		4	2	4	4	14	0.088		0.090		0.061	
02_5_37	MW-2	Part 115	Copper	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
02_5_38	MW-2	Part 115	Iron	mg/L	0%	4	3	6	5	18	0.670		0.224		0.361		4	3	6	5	18	0.670		0.224		0.361	
02_5_39	MW-2	Part 115	Nickel	mg/L	0%	4	3	6	5	18	0.014	*	0.054		0.079		4	3	6	5	18	0.014	*	0.054		0.079	
02_5_40	MW-2	Part 115	Silver	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		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	
02_5_41	MW-2	Part 115	Vanadium	mg/L	100%	4	3	6	5	18	NA	0.169		0.169		NA	NA	NA	NA	NA	NA	NA		NA	
02_5_42	MW-2	Part 115	Zinc	mg/L	83%	4	3	6	5	18	0.591	0.185		0.227		1	1	1	0	3	0.368	NA		NA	
03_1_01	MW-3	Appendix III	Boron	mg/L	0%	3	1	3	0	7	0.135	0.129		0.120		3	1	3	0	7	0.135	0.129		0.120	
03_1_02	MW-3	Appendix III	Calcium	mg/L	0%	3	1	3	0	7	0.368	0.438		0.443		3	1	3	0	7	0.368	0.438		0.443	
03_1_03	MW-3	Appendix III	Chloride	mg/L	0%	3	1	3	0	7	0.276	0.278		0.263		3	1	3	0	7	0.276	0.278		0.263	
03_1_04	MW-3	Appendix III	Fluoride	mg/L	100%	3	1	3	0	7	NA	NA		NA		NA	NA	NA	NA	NA	NA	NA		NA	
03_1_05	MW-3	Appendix III	Sulfate	mg/L	0%	3	1	3	0	7	0.982	0.987		0.988		3	1	3	0	7	0.982	0.987		0.988	
03_1_06	MW-3	Appendix III	Total Dissolved Solids	mg/L	0%	3	1	3	0	7	0.559	0.612		0.612		3	1	3	0	7	0.559	0.612		0.612	
03_1_07	MW-3	Appendix III	pH, Field	su	0%	3	1	3	0	7	0.208	0.301		0.300		3	1	3	0	7	0.208	0.301		0.300	
03_2_04	MW-3	Appendix IV	Fluoride	mg/L	100%	3	1	3	0	7	NA	NA		NA		NA	NA	NA	NA	NA	NA	NA		NA	
03_2_08	MW-3	Appendix IV	Antimony	mg/L	100%	3	1	3	0	7	NA	0.000	***	NA		NA	NA	NA	NA	NA	NA	NA		NA	
03_2_09	MW-3	Appendix IV	Arsenic	mg/L	0%	3	1	3	0	7	0.801	0.747		0.778		3	1	3	0	7	0.801	0.747		0.778	
03_2_10	MW-3	Appendix IV	Barium	mg/L	0%	3	1	3	0	7	0.334	0.392		0.404		3	1	3	0	7	0.334	0.392		0.404	
03_2_11	MW-3	Appendix IV	Beryllium	mg/L	100%	3	1	3	0	7	NA	0.000	***	0.000	***	NA	NA	NA	NA	NA	NA	NA		NA	
03_2_12	MW-3	Appendix IV	Cadmium	mg/L	100%	3	1	3	0	7	NA	0.000	***	0.000	***	NA	NA	NA	NA	NA	NA	NA		NA	
03_2_13	MW-3	Appendix IV	Chromium	mg/L	100%	3	1	3	0	7	NA	0.000	***	NA		NA	NA	NA	NA	NA	NA	NA		NA	
03_2_14	MW-3	Appendix IV	Cobalt	mg/L	100%	3	1	3	0	7	NA	0.000	***	NA		NA	NA	NA	NA	NA	NA	NA		NA	
03_2_15	MW-3	Appendix IV	Lead	mg/L	100%	3	1	3	0	7	NA	0.000	***	0.000	***	NA	NA	NA	NA	NA	NA	NA		NA	
03_2_16	MW-3	Appendix IV	Lithium	mg/L	0%	3	1	3	0	7	0.296	0.402		0.390		3	1	3	0	7	0.296	0.402		0.390	
03_2_17	MW-3	Appendix IV	Mercury	mg/L	100%	3	1	3	0	7	NA	NA		NA		NA	NA	NA	NA	NA	NA	NA		NA	
03_2_18	MW-3	Appendix IV	Molybdenum	mg/L	0%	3	1	3	0	7	0.202	0.210		0.212		3	1	3	0	7	0.202	0.210		0.212	
03_2_20	MW-3	Appendix IV	Radium-226/228	pCi/L	0%	3	1	3	0	7	0.931	0.862		0.816		3	1	3	0	7	0.931	0.862		0.816	
03_2_22	MW-3	Appendix IV	Selenium	mg/L	100%	3	1	3	0	7	NA	0.000	***	NA		NA	NA	NA	NA	NA	NA	NA		NA	
03_2_23	MW-3	Appendix IV	Thallium	mg/L	100%	3	1	3	0	7	NA	0.000	***	NA		NA	NA	NA	NA	NA	NA	NA		NA	
03_3_24	MW-3	Field Parameters	Conductivity	mS/cm	0%	3	1	3	0	7	0.865	0.931		0.930		3	1	3	0	7	0.865	0.931		0.930	
03_3_25	MW-3	Field Parameters	Dissolved Oxygen	mg/L	0%	3	1	3	0	7	0.751	0.594		0.643		3	1	3	0	7	0.751	0.594		0.643	
03_3_26	MW-3	Field Parameters	Oxidation Reduction Potential	mV	0%	3	1	3	0	7	0.208	0.246		NA		3	1	3	0	7	0.208	0.246		NA	
03_3_27	MW-3	Field Parameters	Temperature	°C	0%	3	1	3	0	7	0.098	0.021	*	0.031	*	3	1	3	0	7	0.098	0.021	*	0.031	*
03_3_28	MW-3	Field Parameters	Turbidity	NTU	0%	3	1	3	0	7	0.102	0.209		0.325		3	1	3	0	7	0.102	0.209		0.325	
03_3_29	MW-3	Field Parameters	pH	su	0%	3	1	3	0	7	0.208	0.301		0.300		3	1	3	0	7	0.208	0.301		0.300	
03_4_30	MW-3	Other	Bicarbonate	mg/L	0%	2	0	2	0	4	0.102	0.219		0.213		2	0	2	0	4	0.102	0.219		0.213	
03_4_31	MW-3	Other	Carbonate	mg/L	100%	2	0	2	0	4	NA	NA		0.423		NA	NA	NA	NA	NA	NA	NA		NA	
03_4_32	MW-3	Other	Hardness	mg/L	0%	2	0	2	0	4	1.000	0.736		0.734		2	0	2	0	4	1.000	0.736		0.734	
03_4_33	MW-3	Other	Magnesium	mg/L	0%	2	0	2	0	4	0.439	0.818		0.819		2	0	2	0	4	0.439	0.818		0.819	
03_4_34	MW-3	Other	Potassium	mg/L	0%	2	0	2	0	4	0.683	0.652		0.658		2	0	2	0	4	0.683	0.652		0.658	
03_4_35	MW-3	Other	Sodium	mg/L	0%	2	0	2	0	4	1.000	1.000		0.992		2	0	2	0	4	1.000	1.000		0.992	
03_4_36	MW-3	Other	Total Suspended Solids	mg/L	14%	3	1	3	0	7	0.775	0.981		0.925		2	1	3	0	6	0.807	0.972		0.950	
03_5_37	MW-3	Part 115	Copper	mg/L	100%	3	1	3	0	7	NA	0.000	***	NA		NA	NA	NA	NA	NA	NA	NA		NA	
03_5_38	MW-3	Part 115	Iron	mg/L	0%	3	1	3	0	7	0.751	0.614		0.600		3	1	3	0	7	0.751	0.614		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	
03_5_39	MW-3	Part 115	Nickel	mg/L	100%	3	1	3	0	7	NA		0.000	***	NA		NA	NA	NA	NA	NA	NA		NA		NA	
03_5_40	MW-3	Part 115	Silver	mg/L	100%	3	1	3	0	7	NA		0.000	***	0.000	***	NA	NA	NA	NA	NA	NA		NA		NA	
03_5_41	MW-3	Part 115	Vanadium	mg/L	100%	3	1	3	0	7	NA		0.000	***	NA		NA	NA	NA	NA	NA	NA		NA		NA	
03_5_42	MW-3	Part 115	Zinc	mg/L	100%	3	1	3	0	7	NA		0.000	***	NA		NA	NA	NA	NA	NA	NA		NA		NA	
04_1_01	MW-4	Appendix III	Boron	mg/L	0%	4	3	6	4	17	0.205		0.220		0.178		4	3	6	4	17	0.205		0.220		0.178	
04_1_02	MW-4	Appendix III	Calcium	mg/L	0%	4	3	6	4	17	0.464		0.556		0.563		4	3	6	4	17	0.464		0.556		0.563	
04_1_03	MW-4	Appendix III	Chloride	mg/L	0%	4	3	6	4	17	0.131		0.172		0.166		4	3	6	4	17	0.131		0.172		0.166	
04_1_04	MW-4	Appendix III	Fluoride	mg/L	100%	4	3	6	4	17	NA		0.200		NA		NA	NA	NA	NA	NA	NA		NA		NA	
04_1_05	MW-4	Appendix III	Sulfate	mg/L	0%	4	3	6	4	17	0.102		0.075		0.076		4	3	6	4	17	0.102		0.075		0.076	
04_1_06	MW-4	Appendix III	Total Dissolved Solids	mg/L	0%	4	3	6	4	17	0.228		0.271		0.268		4	3	6	4	17	0.228		0.271		0.268	
04_1_07	MW-4	Appendix III	pH, Field	su	0%	4	3	6	5	18	0.344		0.336		0.333		4	3	6	5	18	0.344		0.336		0.333	
04_2_04	MW-4	Appendix IV	Fluoride	mg/L	100%	4	3	6	5	18	NA		0.169		NA		NA	NA	NA	NA	NA	NA		NA		NA	
04_2_08	MW-4	Appendix IV	Antimony	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_2_09	MW-4	Appendix IV	Arsenic	mg/L	0%	4	3	6	5	18	0.007	**	0.000	***	0.000	***	4	3	6	5	18	0.007	**	0.000	***	0.000	***
04_2_10	MW-4	Appendix IV	Barium	mg/L	0%	4	3	6	5	18	0.711		0.941		0.950		4	3	6	5	18	0.711		0.941		0.950	
04_2_11	MW-4	Appendix IV	Beryllium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_2_12	MW-4	Appendix IV	Cadmium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_2_13	MW-4	Appendix IV	Chromium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_2_14	MW-4	Appendix IV	Cobalt	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_2_15	MW-4	Appendix IV	Lead	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_2_16	MW-4	Appendix IV	Lithium	mg/L	17%	4	3	6	5	18	0.015	*	0.004	**	0.004	**	4	1	5	5	15	0.016	*	0.004	**	0.004	**
04_2_17	MW-4	Appendix IV	Mercury	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_2_18	MW-4	Appendix IV	Molybdenum	mg/L	89%	4	3	6	5	18	0.572		0.612		0.612		0	0	1	1	2	0.317		NA		NA	
04_2_20	MW-4	Appendix IV	Radium-226/228	pCi/L	0%	4	3	6	5	18	0.460		0.371		0.459		4	3	6	5	18	0.460		0.371		0.459	
04_2_22	MW-4	Appendix IV	Selenium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_2_23	MW-4	Appendix IV	Thallium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_3_24	MW-4	Field Parameters	Conductivity	mS/cm	0%	4	3	6	5	18	0.036	*	0.589		0.604		4	3	6	5	18	0.036	*	0.589		0.604	
04_3_25	MW-4	Field Parameters	Dissolved Oxygen	mg/L	0%	4	3	6	5	18	0.023	*	0.006	**	0.009	**	4	3	6	5	18	0.023	*	0.006	**	0.009	**
04_3_26	MW-4	Field Parameters	Oxidation Reduction Potential	mV	0%	4	3	6	5	18	0.019	*	0.054		NA		4	3	6	5	18	0.019	*	0.054		NA	
04_3_27	MW-4	Field Parameters	Temperature	°C	0%	4	3	6	5	18	0.017	*	0.000	***	0.000	***	4	3	6	5	18	0.017	*	0.000	***	0.000	***
04_3_28	MW-4	Field Parameters	Turbidity	NTU	0%	4	3	6	5	18	0.494		0.523		0.609		4	3	6	5	18	0.494		0.523		0.609	
04_3_29	MW-4	Field Parameters	pH	su	0%	4	3	6	5	18	0.344		0.336		0.333		4	3	6	5	18	0.344		0.336		0.333	
04_4_30	MW-4	Other	Bicarbonate	mg/L	0%	2	0	2	0	4	1.000		0.937		0.931		2	0	2	0	4	1.000		0.937		0.931	
04_4_31	MW-4	Other	Carbonate	mg/L	100%	2	0	2	0	4	NA		NA		0.423		NA	NA	NA	NA	NA	NA		NA		NA	
04_4_32	MW-4	Other	Hardness	mg/L	0%	2	0	2	0	4	1.000		0.753		0.765		2	0	2	0	4	1.000		0.753		0.765	
04_4_33	MW-4	Other	Magnesium	mg/L	0%	2	0	2	0	4	0.121		0.127		0.128		2	0	2	0	4	0.121		0.127		0.128	
04_4_34	MW-4	Other	Potassium	mg/L	0%	2	0	2	0	4	1.000		1.000		0.993		2	0	2	0	4	1.000		1.000		0.993	
04_4_35	MW-4	Other	Sodium	mg/L	0%	2	0	2	0	4	1.000		0.733		0.751		2	0	2	0	4	1.000		0.733		0.751	
04_4_36	MW-4	Other	Total Suspended Solids	mg/L	39%	4	3	6	5	18	0.518		0.540		0.525		3	2	3	3	11	0.462		0.540		0.522	

(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	
04_5_37	MW-4	Part 115	Copper	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_5_38	MW-4	Part 115	Iron	mg/L	0%	4	3	6	5	18	0.012	*	0.004	**	0.004	**	4	3	6	5	18	0.012	*	0.004	**	0.004	**
04_5_39	MW-4	Part 115	Nickel	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_5_40	MW-4	Part 115	Silver	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_5_41	MW-4	Part 115	Vanadium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
04_5_42	MW-4	Part 115	Zinc	mg/L	83%	4	3	6	5	18	0.651		0.209		0.276		0	1	1	1	3	0.368		NA		NA	
05_1_01	MW-5	Appendix III	Boron	mg/L	0%	4	3	6	4	17	0.022	*	0.042	*	0.147		4	3	6	4	17	0.022	*	0.042	*	0.147	
05_1_02	MW-5	Appendix III	Calcium	mg/L	0%	4	3	6	4	17	0.039	*	0.013	*	0.027	*	4	3	6	4	17	0.039	*	0.013	*	0.027	*
05_1_03	MW-5	Appendix III	Chloride	mg/L	0%	4	3	6	4	17	0.017	*	0.005	**	0.006	**	4	3	6	4	17	0.017	*	0.005	**	0.006	**
05_1_04	MW-5	Appendix III	Fluoride	mg/L	100%	4	3	6	4	17	NA		0.200		NA		NA	NA	NA	NA	NA	NA		NA		NA	
05_1_05	MW-5	Appendix III	Sulfate	mg/L	0%	4	3	6	4	17	0.027	*	0.008	**	0.014	*	4	3	6	4	17	0.027	*	0.008	**	0.014	*
05_1_06	MW-5	Appendix III	Total Dissolved Solids	mg/L	0%	4	3	6	4	17	0.022	*	0.007	**	0.010	*	4	3	6	4	17	0.022	*	0.007	**	0.010	*
05_1_07	MW-5	Appendix III	pH, Field	su	0%	4	3	6	5	18	0.572		0.318		0.312		4	3	6	5	18	0.572		0.318		0.312	
05_2_04	MW-5	Appendix IV	Fluoride	mg/L	100%	4	3	6	5	18	NA		0.169		NA		NA	NA	NA	NA	NA	NA		NA		NA	
05_2_08	MW-5	Appendix IV	Antimony	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
05_2_09	MW-5	Appendix IV	Arsenic	mg/L	67%	4	3	6	5	18	0.282		0.209		0.210		2	3	1	0	6	0.366		0.416		0.421	
05_2_10	MW-5	Appendix IV	Barium	mg/L	0%	4	3	6	5	18	0.501		0.294		0.352		4	3	6	5	18	0.501		0.294		0.352	
05_2_11	MW-5	Appendix IV	Beryllium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
05_2_12	MW-5	Appendix IV	Cadmium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
05_2_13	MW-5	Appendix IV	Chromium	mg/L	89%	4	3	6	5	18	0.315		0.241		0.260		1	1	0	0	2	0.317		NA		NA	
05_2_14	MW-5	Appendix IV	Cobalt	mg/L	94%	4	3	6	5	18	0.172		0.169		0.169		0	1	0	0	1	NA		NA		NA	
05_2_15	MW-5	Appendix IV	Lead	mg/L	83%	4	3	6	5	18	0.338		0.379		0.395		1	1	1	0	3	0.368		NA		NA	
05_2_16	MW-5	Appendix IV	Lithium	mg/L	0%	4	3	6	5	18	0.587		0.620		0.553		4	3	6	5	18	0.587		0.620		0.553	
05_2_17	MW-5	Appendix IV	Mercury	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
05_2_18	MW-5	Appendix IV	Molybdenum	mg/L	0%	4	3	6	5	18	0.209		0.317		0.439		4	3	6	5	18	0.209		0.317		0.439	
05_2_20	MW-5	Appendix IV	Radium-226/228	pCi/L	0%	4	3	6	5	18	0.065		0.092		0.072		4	3	6	5	18	0.065		0.092		0.072	
05_2_22	MW-5	Appendix IV	Selenium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
05_2_23	MW-5	Appendix IV	Thallium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
05_3_24	MW-5	Field Parameters	Conductivity	mS/cm	0%	4	3	6	5	18	0.028	*	0.013	*	0.012	*	4	3	6	5	18	0.028	*	0.013	*	0.012	*
05_3_25	MW-5	Field Parameters	Dissolved Oxygen	mg/L	0%	4	3	6	5	18	0.116		0.084		0.032	*	4	3	6	5	18	0.116		0.084		0.032	*
05_3_26	MW-5	Field Parameters	Oxidation Reduction Potential	mV	0%	4	3	6	5	18	0.515		0.608		NA		4	3	6	5	18	0.515		0.608		NA	
05_3_27	MW-5	Field Parameters	Temperature	°C	0%	4	3	6	5	18	0.008	**	0.000	***	0.000	***	4	3	6	5	18	0.008	**	0.000	***	0.000	***
05_3_28	MW-5	Field Parameters	Turbidity	NTU	0%	4	3	6	5	18	0.074		0.018	*	0.004	**	4	3	6	5	18	0.074		0.018	*	0.004	**
05_3_29	MW-5	Field Parameters	pH	su	0%	4	3	6	5	18	0.572		0.318		0.312		4	3	6	5	18	0.572		0.318		0.312	
05_4_30	MW-5	Other	Bicarbonate	mg/L	0%	2	0	2	0	4	0.121		0.185		0.180		2	0	2	0	4	0.121		0.185		0.180	
05_4_31	MW-5	Other	Carbonate	mg/L	100%	2	0	2	0	4	NA		NA		0.423		NA	NA	NA	NA	NA	NA		NA		NA	
05_4_32	MW-5	Other	Hardness	mg/L	0%	2	0	2	0	4	0.439		0.619		0.636		2	0	2	0	4	0.439		0.619		0.636	
05_4_33	MW-5	Other	Magnesium	mg/L	0%	2	0	2	0	4	0.439		0.459		0.463		2	0	2	0	4	0.439		0.459		0.463	
05_4_34	MW-5	Other	Potassium	mg/L	0%	2	0	2	0	4	1.000		0.683		0.661		2	0	2	0	4	1.000		0.683		0.661	

(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	
05_4_35	MW-5	Other	Sodium	mg/L	0%	2	0	2	0	4	0.439		0.621		0.642		2	0	2	0	4	0.439		0.621		0.642	
05_4_36	MW-5	Other	Total Suspended Solids	mg/L	0%	4	3	6	5	18	0.512		0.363		0.625		4	3	6	5	18	0.512		0.363		0.625	
05_5_37	MW-5	Part 115	Copper	mg/L	72%	4	3	6	5	18	0.986		0.902		0.965		1	1	2	1	5	0.849		0.952		0.964	
05_5_38	MW-5	Part 115	Iron	mg/L	6%	4	3	6	5	18	0.074		0.170		0.059		4	3	6	4	17	0.141		0.228		0.141	
05_5_39	MW-5	Part 115	Nickel	mg/L	0%	4	3	6	5	18	0.059		0.041	*	0.042	*	4	3	6	5	18	0.059		0.041	*	0.042	*
05_5_40	MW-5	Part 115	Silver	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
05_5_41	MW-5	Part 115	Vanadium	mg/L	83%	4	3	6	5	18	0.315		0.278		0.298		2	1	0	0	3	0.221		0.386		0.458	
05_5_42	MW-5	Part 115	Zinc	mg/L	28%	4	3	6	5	18	0.543		0.176		0.327		3	2	6	2	13	0.397		0.152		0.235	
06_1_01	MW-6	Appendix III	Boron	mg/L	0%	4	3	6	4	17	0.011	*	0.001	**	0.002	**	4	3	6	4	17	0.011	*	0.001	**	0.002	**
06_1_02	MW-6	Appendix III	Calcium	mg/L	0%	4	3	6	4	17	0.029	*	0.016	*	0.012	*	4	3	6	4	17	0.029	*	0.016	*	0.012	*
06_1_03	MW-6	Appendix III	Chloride	mg/L	0%	4	3	6	4	17	0.018	*	0.008	**	0.008	**	4	3	6	4	17	0.018	*	0.008	**	0.008	**
06_1_04	MW-6	Appendix III	Fluoride	mg/L	100%	4	3	6	4	17	NA		0.200		NA		NA	NA	NA	NA	NA	NA		NA		NA	
06_1_05	MW-6	Appendix III	Sulfate	mg/L	0%	4	3	6	4	17	0.024	*	0.004	**	0.006	**	4	3	6	4	17	0.024	*	0.004	**	0.006	**
06_1_06	MW-6	Appendix III	Total Dissolved Solids	mg/L	0%	4	3	6	4	17	0.008	**	0.002	**	0.002	**	4	3	6	4	17	0.008	**	0.002	**	0.002	**
06_1_07	MW-6	Appendix III	pH, Field	su	0%	4	3	6	5	18	0.667		0.565		0.558		4	3	6	5	18	0.667		0.565		0.558	
06_2_04	MW-6	Appendix IV	Fluoride	mg/L	100%	4	3	6	5	18	NA		0.169		NA		NA	NA	NA	NA	NA	NA		NA		NA	
06_2_08	MW-6	Appendix IV	Antimony	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
06_2_09	MW-6	Appendix IV	Arsenic	mg/L	94%	4	3	6	5	18	0.321		0.343		0.343		1	0	0	0	1	NA		NA		NA	
06_2_10	MW-6	Appendix IV	Barium	mg/L	0%	4	3	6	5	18	0.018	*	0.010	*	0.014	*	4	3	6	5	18	0.018	*	0.010	*	0.014	*
06_2_11	MW-6	Appendix IV	Beryllium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
06_2_12	MW-6	Appendix IV	Cadmium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
06_2_13	MW-6	Appendix IV	Chromium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
06_2_14	MW-6	Appendix IV	Cobalt	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
06_2_15	MW-6	Appendix IV	Lead	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
06_2_16	MW-6	Appendix IV	Lithium	mg/L	0%	4	3	6	5	18	0.024	*	0.011	*	0.023	*	4	3	6	5	18	0.024	*	0.011	*	0.023	*
06_2_17	MW-6	Appendix IV	Mercury	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
06_2_18	MW-6	Appendix IV	Molybdenum	mg/L	0%	4	3	6	5	18	0.113		0.267		0.344		4	3	6	5	18	0.113		0.267		0.344	
06_2_20	MW-6	Appendix IV	Radium-226/228	pCi/L	0%	4	3	6	5	18	0.197		0.118		NA		4	3	6	5	18	0.197		0.118		NA	
06_2_22	MW-6	Appendix IV	Selenium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
06_2_23	MW-6	Appendix IV	Thallium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
06_3_24	MW-6	Field Parameters	Conductivity	mS/cm	0%	4	3	6	5	18	0.009	**	0.001	***	0.001	***	4	3	6	5	18	0.009	**	0.001	***	0.001	***
06_3_25	MW-6	Field Parameters	Dissolved Oxygen	mg/L	0%	4	3	6	5	18	0.262		0.449		0.202		4	3	6	5	18	0.262		0.449		0.202	
06_3_26	MW-6	Field Parameters	Oxidation Reduction Potential	mV	0%	4	3	6	5	18	0.506		0.580		NA		4	3	6	5	18	0.506		0.580		NA	
06_3_27	MW-6	Field Parameters	Temperature	°C	0%	4	3	6	5	18	0.239		0.157		0.147		4	3	6	5	18	0.239		0.157		0.147	
06_3_28	MW-6	Field Parameters	Turbidity	NTU	0%	4	3	6	5	18	0.049	*	0.255		0.037	*	4	3	6	5	18	0.049	*	0.255		0.037	*
06_3_29	MW-6	Field Parameters	pH	su	0%	4	3	6	5	18	0.667		0.565		0.558		4	3	6	5	18	0.667		0.565		0.558	
06_4_30	MW-6	Other	Bicarbonate	mg/L	0%	2	0	2	0	4	0.439		0.479		0.478		2	0	2	0	4	0.439		0.479		0.478	
06_4_31	MW-6	Other	Carbonate	mg/L	100%	2	0	2	0	4	NA		NA		0.423		NA	NA	NA	NA	NA	NA		NA		NA	
06_4_32	MW-6	Other	Hardness	mg/L	0%	2	0	2	0	4	1.000		0.989		0.981		2	0	2	0	4	1.000		0.989		0.981	

(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	
06_4_33	MW-6	Other	Magnesium	mg/L	0%	2	0	2	0	4	0.439		0.777		0.763		2	0	2	0	4	0.439		0.777		0.763	
06_4_34	MW-6	Other	Potassium	mg/L	0%	2	0	2	0	4	1.000		0.779		0.766		2	0	2	0	4	1.000		0.779		0.766	
06_4_35	MW-6	Other	Sodium	mg/L	0%	2	0	2	0	4	1.000		0.820		0.858		2	0	2	0	4	1.000		0.820		0.858	
06_4_36	MW-6	Other	Total Suspended Solids	mg/L	72%	4	3	6	5	18	0.205		0.326		0.246		1	1	2	1	5	0.284		0.020	*	0.114	
06_5_37	MW-6	Part 115	Copper	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
06_5_38	MW-6	Part 115	Iron	mg/L	50%	4	3	6	5	18	0.091		0.049	*	0.048	*	1	2	6	0	9	0.109		0.045	*	0.055	
06_5_39	MW-6	Part 115	Nickel	mg/L	22%	4	3	6	5	18	0.067		0.060		0.064		3	2	4	5	14	0.034	*	0.008	**	0.006	**
06_5_40	MW-6	Part 115	Silver	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
06_5_41	MW-6	Part 115	Vanadium	mg/L	100%	4	3	6	5	18	NA		0.169		0.169		NA	NA	NA	NA	NA	NA		NA		NA	
06_5_42	MW-6	Part 115	Zinc	mg/L	94%	4	3	6	5	18	0.172		0.169		0.169		0	1	0	0	1	NA		NA		NA	
07_1_01	MW-7	Appendix III	Boron	mg/L	0%	5	0	5	2	12	0.384		0.319		0.336		5	0	5	2	12	0.384		0.319		0.336	
07_1_02	MW-7	Appendix III	Calcium	mg/L	0%	5	0	5	2	12	0.183		0.136		0.139		5	0	5	2	12	0.183		0.136		0.139	
07_1_03	MW-7	Appendix III	Chloride	mg/L	0%	5	0	5	2	12	0.647		0.658		0.660		5	0	5	2	12	0.647		0.658		0.660	
07_1_04	MW-7	Appendix III	Fluoride	mg/L	92%	5	0	5	2	12	0.497		0.542		0.542		1	0	0	0	1	NA		NA		NA	
07_1_05	MW-7	Appendix III	Sulfate	mg/L	0%	5	0	5	2	12	0.014	*	0.028	*	0.019	*	5	0	5	2	12	0.014	*	0.028	*	0.019	*
07_1_06	MW-7	Appendix III	Total Dissolved Solids	mg/L	0%	5	0	5	2	12	0.131		0.146		0.132		5	0	5	2	12	0.131		0.146		0.132	
07_1_07	MW-7	Appendix III	pH, Field	su	0%	5	0	5	2	12	0.695		0.453		0.451		5	0	5	2	12	0.695		0.453		0.451	
07_2_04	MW-7	Appendix IV	Fluoride	mg/L	92%	5	0	5	2	12	0.497		0.542		0.542		1	0	0	0	1	NA		NA		NA	
07_2_08	MW-7	Appendix IV	Antimony	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
07_2_09	MW-7	Appendix IV	Arsenic	mg/L	0%	5	0	5	2	12	0.661		0.806		0.854		5	0	5	2	12	0.661		0.806		0.854	
07_2_10	MW-7	Appendix IV	Barium	mg/L	0%	5	0	5	2	12	0.973		0.956		0.916		5	0	5	2	12	0.973		0.956		0.916	
07_2_11	MW-7	Appendix IV	Beryllium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
07_2_12	MW-7	Appendix IV	Cadmium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
07_2_13	MW-7	Appendix IV	Chromium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
07_2_14	MW-7	Appendix IV	Cobalt	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
07_2_15	MW-7	Appendix IV	Lead	mg/L	100%	5	0	5	2	12	NA		0.542		NA		NA	NA	NA	NA	NA	NA		NA		NA	
07_2_16	MW-7	Appendix IV	Lithium	mg/L	0%	5	0	5	2	12	0.259		0.477		0.497		5	0	5	2	12	0.259		0.477		0.497	
07_2_17	MW-7	Appendix IV	Mercury	mg/L	92%	5	0	5	2	12	NA		0.542		NA		0	0	1	0	1	NA		NA		NA	
07_2_18	MW-7	Appendix IV	Molybdenum	mg/L	0%	5	0	5	2	12	0.382		0.580		0.560		5	0	5	2	12	0.382		0.580		0.560	
07_2_20	MW-7	Appendix IV	Radium-226/228	pCi/L	0%	5	0	5	2	12	0.996		0.973		0.864		5	0	5	2	12	0.996		0.973		0.864	
07_2_22	MW-7	Appendix IV	Selenium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
07_2_23	MW-7	Appendix IV	Thallium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
07_3_24	MW-7	Field Parameters	Conductivity	mS/cm	0%	5	0	5	2	12	0.210		0.107		0.090		5	0	5	2	12	0.210		0.107		0.090	
07_3_25	MW-7	Field Parameters	Dissolved Oxygen	mg/L	8%	5	0	5	2	12	0.353		0.590		NA		5	0	4	2	11	0.330		0.606		NA	
07_3_26	MW-7	Field Parameters	Oxidation Reduction Potential	mV	0%	5	0	5	2	12	0.234		0.162		NA		5	0	5	2	12	0.234		0.162		NA	
07_3_27	MW-7	Field Parameters	Temperature	°C	0%	5	0	5	2	12	0.016	*	0.001	***	0.002	**	5	0	5	2	12	0.016	*	0.001	***	0.002	**
07_3_28	MW-7	Field Parameters	Turbidity	NTU	0%	5	0	5	2	12	0.152		0.030	*	0.061		5	0	5	2	12	0.152		0.030	*	0.061	
07_3_29	MW-7	Field Parameters	pH	su	0%	5	0	5	2	12	0.695		0.453		0.451		5	0	5	2	12	0.695		0.453		0.451	
07_4_30	MW-7	Other	Bicarbonate	mg/L	0%	2	0	2	0	4	0.439		0.438		0.443		2	0	2	0	4	0.439		0.438		0.443	

(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	
07_4_31	MW-7	Other	Carbonate	mg/L	100%	2	0	2	0	4	NA		NA		0.423		NA	NA	NA	NA	NA	NA		NA		NA	
07_4_32	MW-7	Other	Hardness	mg/L	0%	2	0	2	0	4	0.439		0.451		0.460		2	0	2	0	4	0.439		0.451		0.460	
07_4_33	MW-7	Other	Magnesium	mg/L	0%	2	0	2	0	4	0.221		0.413		0.411		2	0	2	0	4	0.221		0.413		0.411	
07_4_34	MW-7	Other	Potassium	mg/L	0%	2	0	2	0	4	0.121		0.303		0.325		2	0	2	0	4	0.121		0.303		0.325	
07_4_35	MW-7	Other	Sodium	mg/L	0%	2	0	2	0	4	1.000		0.591		0.610		2	0	2	0	4	1.000		0.591		0.610	
07_4_36	MW-7	Other	Total Suspended Solids	mg/L	83%	5	0	5	2	12	0.217		0.404		0.447		2	0	0	0	2	NA		NA		NA	
07_5_37	MW-7	Part 115	Copper	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
07_5_38	MW-7	Part 115	Iron	mg/L	0%	5	0	5	2	12	0.119		0.248		0.244		5	0	5	2	12	0.119		0.248		0.244	
07_5_39	MW-7	Part 115	Nickel	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
07_5_40	MW-7	Part 115	Silver	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
07_5_41	MW-7	Part 115	Vanadium	mg/L	92%	5	0	5	2	12	0.497		0.542		0.542		1	0	0	0	1	NA		NA		NA	
07_5_42	MW-7	Part 115	Zinc	mg/L	75%	5	0	5	2	12	0.080		0.253		0.172		0	0	3	0	3	NA		NA		NA	
08_1_01	MW-8	Appendix III	Boron	mg/L	8%	5	0	5	2	12	0.029	*	0.031	*	0.010	*	4	0	5	2	11	0.052		0.065		0.028	*
08_1_02	MW-8	Appendix III	Calcium	mg/L	0%	5	0	5	2	12	0.016	*	0.005	**	0.005	**	5	0	5	2	12	0.016	*	0.005	**	0.005	**
08_1_03	MW-8	Appendix III	Chloride	mg/L	17%	5	0	5	2	12	0.226		0.367		0.240		3	0	5	2	10	0.700		0.634		0.630	
08_1_04	MW-8	Appendix III	Fluoride	mg/L	92%	5	0	5	2	12	0.497		0.542		0.542		1	0	0	0	1	NA		NA		NA	
08_1_05	MW-8	Appendix III	Sulfate	mg/L	0%	5	0	5	2	12	0.232		0.376		0.338		5	0	5	2	12	0.232		0.376		0.338	
08_1_06	MW-8	Appendix III	Total Dissolved Solids	mg/L	0%	5	0	5	2	12	0.944		0.930		0.938		5	0	5	2	12	0.944		0.930		0.938	
08_1_07	MW-8	Appendix III	pH, Field	su	0%	5	0	5	2	12	0.918		0.897		0.908		5	0	5	2	12	0.918		0.897		0.908	
08_2_04	MW-8	Appendix IV	Fluoride	mg/L	92%	5	0	5	2	12	0.497		0.542		0.542		1	0	0	0	1	NA		NA		NA	
08_2_08	MW-8	Appendix IV	Antimony	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
08_2_09	MW-8	Appendix IV	Arsenic	mg/L	92%	5	0	5	2	12	NA		0.542		0.542		1	0	0	0	1	NA		NA		NA	
08_2_10	MW-8	Appendix IV	Barium	mg/L	0%	5	0	5	2	12	0.252		0.211		0.204		5	0	5	2	12	0.252		0.211		0.204	
08_2_11	MW-8	Appendix IV	Beryllium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
08_2_12	MW-8	Appendix IV	Cadmium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
08_2_13	MW-8	Appendix IV	Chromium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
08_2_14	MW-8	Appendix IV	Cobalt	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
08_2_15	MW-8	Appendix IV	Lead	mg/L	100%	5	0	5	2	12	NA		0.542		NA		NA	NA	NA	NA	NA	NA		NA		NA	
08_2_16	MW-8	Appendix IV	Lithium	mg/L	50%	5	0	5	2	12	0.130		0.031	*	0.047	*	2	0	2	2	6	0.257		0.257		0.287	
08_2_17	MW-8	Appendix IV	Mercury	mg/L	100%	5	0	5	2	12	NA		0.542		NA		NA	NA	NA	NA	NA	NA		NA		NA	
08_2_18	MW-8	Appendix IV	Molybdenum	mg/L	83%	5	0	5	2	12	0.237		0.228		0.248		0	0	1	1	2	0.317		NA		NA	
08_2_20	MW-8	Appendix IV	Radium-226/228	pCi/L	0%	5	0	5	2	12	0.851		0.688		0.931		5	0	5	2	12	0.851		0.688		0.931	
08_2_22	MW-8	Appendix IV	Selenium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
08_2_23	MW-8	Appendix IV	Thallium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
08_3_24	MW-8	Field Parameters	Conductivity	mS/cm	0%	5	0	5	2	12	0.219		0.301		0.294		5	0	5	2	12	0.219		0.301		0.294	
08_3_25	MW-8	Field Parameters	Dissolved Oxygen	mg/L	0%	5	0	5	2	12	0.281		0.302		0.428		5	0	5	2	12	0.281		0.302		0.428	
08_3_26	MW-8	Field Parameters	Oxidation Reduction Potential	mV	0%	5	0	5	2	12	0.467		0.807		0.747		5	0	5	2	12	0.467		0.807		0.747	
08_3_27	MW-8	Field Parameters	Temperature	°C	0%	5	0	5	2	12	0.027	*	0.003	**	0.006	**	5	0	5	2	12	0.027	*	0.003	**	0.006	**
08_3_28	MW-8	Field Parameters	Turbidity	NTU	0%	5	0	5	2	12	0.628		0.654		0.637		5	0	5	2	12	0.628		0.654		0.637	

(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
08_3_29	MW-8	Field Parameters	pH	su	0%	5	0	5	2	12	0.918	0.897	0.908	5	0	5	2	12	0.918	0.897	0.908
08_4_30	MW-8	Other	Bicarbonate	mg/L	0%	2	0	2	0	4	0.439	0.365	0.371	2	0	2	0	4	0.439	0.365	0.371
08_4_31	MW-8	Other	Carbonate	mg/L	100%	2	0	2	0	4	NA	NA	0.423	NA	NA	NA	NA	NA	NA	NA	NA
08_4_32	MW-8	Other	Hardness	mg/L	0%	2	0	2	0	4	0.121	0.123	0.124	2	0	2	0	4	0.121	0.123	0.124
08_4_33	MW-8	Other	Magnesium	mg/L	0%	2	0	2	0	4	0.439	0.305	0.307	2	0	2	0	4	0.439	0.305	0.307
08_4_34	MW-8	Other	Potassium	mg/L	25%	2	0	2	0	4	0.121	0.259	0.236	1	0	2	0	3	0.221	0.563	0.544
08_4_35	MW-8	Other	Sodium	mg/L	0%	2	0	2	0	4	1.000	0.461	0.495	2	0	2	0	4	1.000	0.461	0.495
08_4_36	MW-8	Other	Total Suspended Solids	mg/L	92%	5	0	5	2	12	0.497	0.542	0.542	1	0	0	0	1	NA	NA	NA
08_5_37	MW-8	Part 115	Copper	mg/L	92%	5	0	5	2	12	0.497	0.542	0.542	1	0	0	0	1	NA	NA	NA
08_5_38	MW-8	Part 115	Iron	mg/L	92%	5	0	5	2	12	NA	0.542	0.542	1	0	0	0	1	NA	NA	NA
08_5_39	MW-8	Part 115	Nickel	mg/L	100%	5	0	5	2	12	NA	0.542	0.542	NA	NA	NA	NA	NA	NA	NA	NA
08_5_40	MW-8	Part 115	Silver	mg/L	100%	5	0	5	2	12	NA	0.542	0.542	NA	NA	NA	NA	NA	NA	NA	NA
08_5_41	MW-8	Part 115	Vanadium	mg/L	92%	5	0	5	2	12	NA	0.542	0.542	1	0	0	0	1	NA	NA	NA
08_5_42	MW-8	Part 115	Zinc	mg/L	92%	5	0	5	2	12	0.497	0.542	0.542	1	0	0	0	1	NA	NA	NA
09_1_01	MW-9	Appendix III	Boron	mg/L	100%	5	0	5	2	12	NA	0.542	0.542	NA	NA	NA	NA	NA	NA	NA	NA
09_1_02	MW-9	Appendix III	Calcium	mg/L	0%	5	0	5	2	12	0.025 *	0.049 *	0.034 *	5	0	5	2	12	0.025 *	0.049 *	0.034 *
09_1_03	MW-9	Appendix III	Chloride	mg/L	83%	5	0	5	2	12	1.000	0.645	0.592	2	0	0	0	2	NA	NA	NA
09_1_04	MW-9	Appendix III	Fluoride	mg/L	92%	5	0	5	2	12	0.497	0.542	0.542	1	0	0	0	1	NA	NA	NA
09_1_05	MW-9	Appendix III	Sulfate	mg/L	67%	5	0	5	2	12	0.864	0.766	0.895	2	0	2	0	4	1.000	0.646	0.800
09_1_06	MW-9	Appendix III	Total Dissolved Solids	mg/L	0%	5	0	5	2	12	0.127	0.201	0.179	5	0	5	2	12	0.127	0.201	0.179
09_1_07	MW-9	Appendix III	pH, Field	su	0%	5	0	5	2	12	0.696	0.696	0.698	5	0	5	2	12	0.696	0.696	0.698
09_2_04	MW-9	Appendix IV	Fluoride	mg/L	92%	5	0	5	2	12	0.497	0.542	0.542	1	0	0	0	1	NA	NA	NA
09_2_08	MW-9	Appendix IV	Antimony	mg/L	100%	5	0	5	2	12	NA	0.542	0.542	NA	NA	NA	NA	NA	NA	NA	NA
09_2_09	MW-9	Appendix IV	Arsenic	mg/L	92%	5	0	5	2	12	0.497	0.542	0.542	1	0	0	0	1	NA	NA	NA
09_2_10	MW-9	Appendix IV	Barium	mg/L	0%	5	0	5	2	12	0.818	0.960	0.944	5	0	5	2	12	0.818	0.960	0.944
09_2_11	MW-9	Appendix IV	Beryllium	mg/L	100%	5	0	5	2	12	NA	0.542	0.542	NA	NA	NA	NA	NA	NA	NA	NA
09_2_12	MW-9	Appendix IV	Cadmium	mg/L	100%	5	0	5	2	12	NA	0.542	0.542	NA	NA	NA	NA	NA	NA	NA	NA
09_2_13	MW-9	Appendix IV	Chromium	mg/L	100%	5	0	5	2	12	NA	0.542	0.542	NA	NA	NA	NA	NA	NA	NA	NA
09_2_14	MW-9	Appendix IV	Cobalt	mg/L	100%	5	0	5	2	12	NA	0.542	0.542	NA	NA	NA	NA	NA	NA	NA	NA
09_2_15	MW-9	Appendix IV	Lead	mg/L	100%	5	0	5	2	12	NA	0.542	NA	NA	NA	NA	NA	NA	NA	NA	NA
09_2_16	MW-9	Appendix IV	Lithium	mg/L	100%	5	0	5	2	12	0.497	0.542	0.542	NA	NA	NA	NA	NA	NA	NA	NA
09_2_17	MW-9	Appendix IV	Mercury	mg/L	100%	5	0	5	2	12	NA	0.542	NA	NA	NA	NA	NA	NA	NA	NA	NA
09_2_18	MW-9	Appendix IV	Molybdenum	mg/L	100%	5	0	5	2	12	NA	0.542	0.542	NA	NA	NA	NA	NA	NA	NA	NA
09_2_20	MW-9	Appendix IV	Radium-226/228	pCi/L	0%	5	0	5	2	12	0.467	0.445	NA	5	0	5	2	12	0.467	0.445	NA
09_2_22	MW-9	Appendix IV	Selenium	mg/L	100%	5	0	5	2	12	NA	0.542	0.542	NA	NA	NA	NA	NA	NA	NA	NA
09_2_23	MW-9	Appendix IV	Thallium	mg/L	100%	5	0	5	2	12	NA	0.542	0.542	NA	NA	NA	NA	NA	NA	NA	NA
09_3_24	MW-9	Field Parameters	Conductivity	mS/cm	0%	5	0	5	2	12	0.230	0.243	0.228	5	0	5	2	12	0.230	0.243	0.228
09_3_25	MW-9	Field Parameters	Dissolved Oxygen	mg/L	0%	5	0	5	2	12	0.028 *	0.013 *	0.023 *	5	0	5	2	12	0.028 *	0.013 *	0.023 *
09_3_26	MW-9	Field Parameters	Oxidation Reduction Potential	mV	0%	5	0	5	2	12	0.908	0.941	0.946	5	0	5	2	12	0.908	0.941	0.946

(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	
09_3_27	MW-9	Field Parameters	Temperature	°C	0%	5	0	5	2	12	0.017	*	0.000	***	0.000	***	5	0	5	2	12	0.017	*	0.000	***	0.000	***
09_3_28	MW-9	Field Parameters	Turbidity	NTU	0%	5	0	5	2	12	0.295		0.278		0.313		5	0	5	2	12	0.295		0.278		0.313	
09_3_29	MW-9	Field Parameters	pH	su	0%	5	0	5	2	12	0.696		0.696		0.698		5	0	5	2	12	0.696		0.696		0.698	
09_4_30	MW-9	Other	Bicarbonate	mg/L	0%	2	0	2	0	4	0.121		0.158		0.165		2	0	2	0	4	0.121		0.158		0.165	
09_4_31	MW-9	Other	Carbonate	mg/L	100%	2	0	2	0	4	NA		NA		0.423		NA	NA	NA	NA	NA	NA		NA		NA	
09_4_32	MW-9	Other	Hardness	mg/L	0%	2	0	2	0	4	0.439		0.355		0.350		2	0	2	0	4	0.439		0.355		0.350	
09_4_33	MW-9	Other	Magnesium	mg/L	0%	2	0	2	0	4	0.439		0.302		0.306		2	0	2	0	4	0.439		0.302		0.306	
09_4_34	MW-9	Other	Potassium	mg/L	0%	2	0	2	0	4	0.102		0.115		0.097		2	0	2	0	4	0.102		0.115		0.097	
09_4_35	MW-9	Other	Sodium	mg/L	0%	2	0	2	0	4	0.439		0.741		0.725		2	0	2	0	4	0.439		0.741		0.725	
09_4_36	MW-9	Other	Total Suspended Solids	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
09_5_37	MW-9	Part 115	Copper	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
09_5_38	MW-9	Part 115	Iron	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
09_5_39	MW-9	Part 115	Nickel	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
09_5_40	MW-9	Part 115	Silver	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
09_5_41	MW-9	Part 115	Vanadium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
09_5_42	MW-9	Part 115	Zinc	mg/L	92%	5	0	5	2	12	0.497		0.542		0.542		1	0	0	0	1	NA		NA		NA	
100A_1_01	MW-100A	Appendix III	Boron	mg/L	0%	2	0	3	3	8	0.678		0.745		0.745		2	0	3	3	8	0.678		0.745		0.745	
100A_1_02	MW-100A	Appendix III	Calcium	mg/L	0%	2	0	3	3	8	0.119		0.064		0.062		2	0	3	3	8	0.119		0.064		0.062	
100A_1_03	MW-100A	Appendix III	Chloride	mg/L	0%	2	0	3	3	8	0.032	*	0.006	**	0.005	**	2	0	3	3	8	0.032	*	0.006	**	0.005	**
100A_1_04	MW-100A	Appendix III	Fluoride	mg/L	75%	2	0	3	3	8	0.412		0.370		0.316		1	0	0	1	2	0.317		NA		NA	
100A_1_05	MW-100A	Appendix III	Sulfate	mg/L	0%	2	0	3	3	8	0.082		0.014	*	0.017	*	2	0	3	3	8	0.082		0.014	*	0.017	*
100A_1_06	MW-100A	Appendix III	Total Dissolved Solids	mg/L	0%	2	0	3	3	8	0.077		0.077		0.077		2	0	3	3	8	0.077		0.077		0.077	
100A_1_07	MW-100A	Appendix III	pH, Field	su	0%	2	0	3	3	8	0.133		0.302		0.307		2	0	3	3	8	0.133		0.302		0.307	
100A_2_04	MW-100A	Appendix IV	Fluoride	mg/L	88%	2	0	3	3	8	0.223		0.247		0.247		1	0	0	0	1	NA		NA		NA	
100A_2_08	MW-100A	Appendix IV	Antimony	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100A_2_09	MW-100A	Appendix IV	Arsenic	mg/L	0%	2	0	3	3	8	0.182		0.112		0.112		2	0	3	3	8	0.182		0.112		0.112	
100A_2_10	MW-100A	Appendix IV	Barium	mg/L	0%	2	0	3	3	8	0.196		0.135		0.135		2	0	3	3	8	0.196		0.135		0.135	
100A_2_11	MW-100A	Appendix IV	Beryllium	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100A_2_12	MW-100A	Appendix IV	Cadmium	mg/L	100%	2	0	3	3	8	NA		NA		NA		NA	NA	NA	NA	NA	NA		NA		NA	
100A_2_13	MW-100A	Appendix IV	Chromium	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100A_2_14	MW-100A	Appendix IV	Cobalt	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100A_2_15	MW-100A	Appendix IV	Lead	mg/L	100%	2	0	3	3	8	NA		0.507		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100A_2_16	MW-100A	Appendix IV	Lithium	mg/L	0%	2	0	3	3	8	0.129		0.047	*	0.032	*	2	0	3	3	8	0.129		0.047	*	0.032	*
100A_2_17	MW-100A	Appendix IV	Mercury	mg/L	100%	2	0	3	3	8	NA		0.507		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100A_2_18	MW-100A	Appendix IV	Molybdenum	mg/L	0%	2	0	3	3	8	0.107		0.030	*	0.021	*	2	0	3	3	8	0.107		0.030	*	0.021	*
100A_2_20	MW-100A	Appendix IV	Radium-226/228	pCi/L	0%	2	0	3	3	8	0.260		0.224		0.230		2	0	3	3	8	0.260		0.224		0.230	
100A_2_22	MW-100A	Appendix IV	Selenium	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100A_2_23	MW-100A	Appendix IV	Thallium	mg/L	100%	2	0	3	3	8	NA		NA		NA		NA	NA	NA	NA	NA	NA		NA		NA	
100A_3_24	MW-100A	Field Parameters	Conductivity	mS/cm	0%	2	0	3	3	8	0.044	*	0.020	*	0.022	*	2	0	3	3	8	0.044	*	0.020	*	0.022	*

(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	
100A_3_25	MW-100A	Field Parameters	Dissolved Oxygen	mg/L	0%	2	0	3	3	8	0.082	0.208		0.062		2	0	3	3	8	0.082	0.208		0.062	
100A_3_26	MW-100A	Field Parameters	Oxidation Reduction Potential	mV	0%	2	0	3	3	8	0.757	0.473		NA		2	0	3	3	8	0.757	0.473		NA	
100A_3_27	MW-100A	Field Parameters	Temperature	°C	0%	2	0	3	3	8	0.236	0.190		0.176		2	0	3	3	8	0.236	0.190		0.176	
100A_3_28	MW-100A	Field Parameters	Turbidity	NTU	0%	2	0	3	3	8	0.790	0.856		0.626		2	0	3	3	8	0.790	0.856		0.626	
100A_3_29	MW-100A	Field Parameters	pH	su	0%	2	0	3	3	8	0.133	0.302		0.307		2	0	3	3	8	0.133	0.302		0.307	
100A_4_30	MW-100A	Other	Bicarbonate	mg/L	0%	2	0	3	3	8	0.525	0.518		0.525		2	0	3	3	8	0.525	0.518		0.525	
100A_4_31	MW-100A	Other	Carbonate	mg/L	100%	2	0	3	3	8	NA	NA		0.507		NA	NA	NA	NA	NA	NA	NA		NA	
100A_4_32	MW-100A	Other	Hardness	mg/L	0%	2	0	3	3	8	0.502	0.461		0.453		2	0	3	3	8	0.502	0.461		0.453	
100A_4_33	MW-100A	Other	Magnesium	mg/L	0%	2	0	3	3	8	0.119	0.092		0.091		2	0	3	3	8	0.119	0.092		0.091	
100A_4_34	MW-100A	Other	Potassium	mg/L	0%	2	0	3	3	8	0.062	0.094		0.093		2	0	3	3	8	0.062	0.094		0.093	
100A_4_35	MW-100A	Other	Sodium	mg/L	0%	2	0	3	3	8	0.123	0.130		0.124		2	0	3	3	8	0.123	0.130		0.124	
100A_4_36	MW-100A	Other	Total Suspended Solids	mg/L	12%	2	0	3	3	8	0.986	0.680		0.919		2	0	2	3	7	0.507	0.318		0.324	
100A_5_37	MW-100A	Part 115	Copper	mg/L	100%	2	0	3	3	8	NA	NA		0.507		NA	NA	NA	NA	NA	NA	NA		NA	
100A_5_38	MW-100A	Part 115	Iron	mg/L	0%	2	0	3	3	8	0.405	0.404		0.311		2	0	3	3	8	0.405	0.404		0.311	
100A_5_39	MW-100A	Part 115	Nickel	mg/L	100%	2	0	3	3	8	NA	NA		0.507		NA	NA	NA	NA	NA	NA	NA		NA	
100A_5_40	MW-100A	Part 115	Silver	mg/L	100%	2	0	3	3	8	NA	NA		NA		NA	NA	NA	NA	NA	NA	NA		NA	
100A_5_41	MW-100A	Part 115	Vanadium	mg/L	100%	2	0	3	3	8	NA	NA		0.507		NA	NA	NA	NA	NA	NA	NA		NA	
100A_5_42	MW-100A	Part 115	Zinc	mg/L	88%	2	0	3	3	8	0.223	0.247		0.247		1	0	0	0	1	NA	NA		NA	
100B_1_01	MW-100B	Appendix III	Boron	mg/L	0%	2	0	3	3	8	0.098	0.120		0.116		2	0	3	3	8	0.098	0.120		0.116	
100B_1_02	MW-100B	Appendix III	Calcium	mg/L	0%	2	0	3	3	8	0.077	0.104		0.099		2	0	3	3	8	0.077	0.104		0.099	
100B_1_03	MW-100B	Appendix III	Chloride	mg/L	0%	2	0	3	3	8	0.298	0.451		0.447		2	0	3	3	8	0.298	0.451		0.447	
100B_1_04	MW-100B	Appendix III	Fluoride	mg/L	88%	2	0	3	3	8	0.435	0.507		0.507		0	0	0	1	1	NA	NA		NA	
100B_1_05	MW-100B	Appendix III	Sulfate	mg/L	0%	2	0	3	3	8	0.077	0.041	*	0.035	*	2	0	3	3	8	0.077	0.041	*	0.035	*
100B_1_06	MW-100B	Appendix III	Total Dissolved Solids	mg/L	0%	2	0	3	3	8	0.068	0.016	*	0.015	*	2	0	3	3	8	0.068	0.016	*	0.015	*
100B_1_07	MW-100B	Appendix III	pH, Field	su	0%	2	0	3	3	8	0.090	0.003	**	0.003	**	2	0	3	3	8	0.090	0.003	**	0.003	**
100B_2_04	MW-100B	Appendix IV	Fluoride	mg/L	88%	2	0	3	3	8	0.435	0.507		0.507		0	0	0	1	1	NA	NA		NA	
100B_2_08	MW-100B	Appendix IV	Antimony	mg/L	100%	2	0	3	3	8	NA	NA		0.507		NA	NA	NA	NA	NA	NA	NA		NA	
100B_2_09	MW-100B	Appendix IV	Arsenic	mg/L	0%	2	0	3	3	8	0.322	0.393		0.397		2	0	3	3	8	0.322	0.393		0.397	
100B_2_10	MW-100B	Appendix IV	Barium	mg/L	0%	2	0	3	3	8	0.116	0.049	*	0.048	*	2	0	3	3	8	0.116	0.049	*	0.048	*
100B_2_11	MW-100B	Appendix IV	Beryllium	mg/L	100%	2	0	3	3	8	NA	NA		0.507		NA	NA	NA	NA	NA	NA	NA		NA	
100B_2_12	MW-100B	Appendix IV	Cadmium	mg/L	100%	2	0	3	3	8	NA	NA		NA		NA	NA	NA	NA	NA	NA	NA		NA	
100B_2_13	MW-100B	Appendix IV	Chromium	mg/L	100%	2	0	3	3	8	NA	NA		0.507		NA	NA	NA	NA	NA	NA	NA		NA	
100B_2_14	MW-100B	Appendix IV	Cobalt	mg/L	100%	2	0	3	3	8	NA	NA		0.507		NA	NA	NA	NA	NA	NA	NA		NA	
100B_2_15	MW-100B	Appendix IV	Lead	mg/L	100%	2	0	3	3	8	NA	0.507		0.507		NA	NA	NA	NA	NA	NA	NA		NA	
100B_2_16	MW-100B	Appendix IV	Lithium	mg/L	0%	2	0	3	3	8	0.190	0.213		0.210		2	0	3	3	8	0.190	0.213		0.210	
100B_2_17	MW-100B	Appendix IV	Mercury	mg/L	100%	2	0	3	3	8	NA	0.507		0.507		NA	NA	NA	NA	NA	NA	NA		NA	
100B_2_18	MW-100B	Appendix IV	Molybdenum	mg/L	0%	2	0	3	3	8	0.127	0.139		0.132		2	0	3	3	8	0.127	0.139		0.132	
100B_2_20	MW-100B	Appendix IV	Radium-226/228	pCi/L	0%	2	0	3	3	8	0.133	0.163		0.201		2	0	3	3	8	0.133	0.163		0.201	
100B_2_22	MW-100B	Appendix IV	Selenium	mg/L	100%	2	0	3	3	8	NA	NA		0.507		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	
100B_2_23	MW-100B	Appendix IV	Thallium	mg/L	100%	2	0	3	3	8	NA		NA		NA		NA	NA	NA	NA	NA	NA		NA		NA	
100B_3_24	MW-100B	Field Parameters	Conductivity	mS/cm	0%	2	0	3	3	8	0.077		0.026	*	0.028	*	2	0	3	3	8	0.077		0.026	*	0.028	*
100B_3_25	MW-100B	Field Parameters	Dissolved Oxygen	mg/L	0%	2	0	3	3	8	0.049	*	0.127		NA		2	0	3	3	8	0.049	*	0.127		NA	
100B_3_26	MW-100B	Field Parameters	Oxidation Reduction Potential	mV	0%	2	0	3	3	8	0.986		0.934		NA		2	0	3	3	8	0.986		0.934		NA	
100B_3_27	MW-100B	Field Parameters	Temperature	°C	0%	2	0	3	3	8	0.077		0.022	*	0.029	*	2	0	3	3	8	0.077		0.022	*	0.029	*
100B_3_28	MW-100B	Field Parameters	Turbidity	NTU	0%	2	0	3	3	8	0.755		0.680		0.642		2	0	3	3	8	0.755		0.680		0.642	
100B_3_29	MW-100B	Field Parameters	pH	su	0%	2	0	3	3	8	0.090		0.003	**	0.003	**	2	0	3	3	8	0.090		0.003	**	0.003	**
100B_4_30	MW-100B	Other	Bicarbonate	mg/L	0%	2	0	3	3	8	0.051		0.130		0.105		2	0	3	3	8	0.051		0.130		0.105	
100B_4_31	MW-100B	Other	Carbonate	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100B_4_32	MW-100B	Other	Hardness	mg/L	0%	2	0	3	3	8	0.603		0.289		0.295		2	0	3	3	8	0.603		0.289		0.295	
100B_4_33	MW-100B	Other	Magnesium	mg/L	0%	2	0	3	3	8	0.044	*	0.009	**	0.011	*	2	0	3	3	8	0.044	*	0.009	**	0.011	*
100B_4_34	MW-100B	Other	Potassium	mg/L	0%	2	0	3	3	8	0.110		0.123		0.123		2	0	3	3	8	0.110		0.123		0.123	
100B_4_35	MW-100B	Other	Sodium	mg/L	0%	2	0	3	3	8	0.146		0.234		0.225		2	0	3	3	8	0.146		0.234		0.225	
100B_4_36	MW-100B	Other	Total Suspended Solids	mg/L	0%	2	0	3	3	8	0.358		0.663		0.612		2	0	3	3	8	0.358		0.663		0.612	
100B_5_37	MW-100B	Part 115	Copper	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100B_5_38	MW-100B	Part 115	Iron	mg/L	0%	2	0	3	3	8	0.405		0.692		0.820		2	0	3	3	8	0.405		0.692		0.820	
100B_5_39	MW-100B	Part 115	Nickel	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100B_5_40	MW-100B	Part 115	Silver	mg/L	100%	2	0	3	3	8	NA		NA		NA		NA	NA	NA	NA	NA	NA		NA		NA	
100B_5_41	MW-100B	Part 115	Vanadium	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100B_5_42	MW-100B	Part 115	Zinc	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
10_1_01	MW-10	Appendix III	Boron	mg/L	0%	5	0	5	2	12	0.328		0.243		0.255		5	0	5	2	12	0.328		0.243		0.255	
10_1_02	MW-10	Appendix III	Calcium	mg/L	0%	5	0	5	2	12	0.523		0.538		0.546		5	0	5	2	12	0.523		0.538		0.546	
10_1_03	MW-10	Appendix III	Chloride	mg/L	75%	5	0	5	2	12	0.864		0.991		0.798		2	0	1	0	3	1.000		0.926		0.787	
10_1_04	MW-10	Appendix III	Fluoride	mg/L	92%	5	0	5	2	12	0.497		0.542		0.542		1	0	0	0	1	NA		NA		NA	
10_1_05	MW-10	Appendix III	Sulfate	mg/L	0%	5	0	5	2	12	0.423		0.347		0.316		5	0	5	2	12	0.423		0.347		0.316	
10_1_06	MW-10	Appendix III	Total Dissolved Solids	mg/L	0%	5	0	5	2	12	0.093		0.048	*	0.050	*	5	0	5	2	12	0.093		0.048	*	0.050	*
10_1_07	MW-10	Appendix III	pH, Field	su	0%	5	0	5	2	12	0.851		0.747		0.757		5	0	5	2	12	0.851		0.747		0.757	
10_2_04	MW-10	Appendix IV	Fluoride	mg/L	92%	5	0	5	2	12	0.497		0.542		0.542		1	0	0	0	1	NA		NA		NA	
10_2_08	MW-10	Appendix IV	Antimony	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_2_09	MW-10	Appendix IV	Arsenic	mg/L	92%	5	0	5	2	12	NA		0.542		0.542		1	0	0	0	1	NA		NA		NA	
10_2_10	MW-10	Appendix IV	Barium	mg/L	0%	5	0	5	2	12	0.467		0.590		0.591		5	0	5	2	12	0.467		0.590		0.591	
10_2_11	MW-10	Appendix IV	Beryllium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_2_12	MW-10	Appendix IV	Cadmium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_2_13	MW-10	Appendix IV	Chromium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_2_14	MW-10	Appendix IV	Cobalt	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_2_15	MW-10	Appendix IV	Lead	mg/L	100%	5	0	5	2	12	NA		0.542		NA		NA	NA	NA	NA	NA	NA		NA		NA	
10_2_16	MW-10	Appendix IV	Lithium	mg/L	100%	5	0	5	2	12	0.497		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_2_17	MW-10	Appendix IV	Mercury	mg/L	92%	5	0	5	2	12	NA		0.542		NA		0	0	1	0	1	NA		NA		NA	
10_2_18	MW-10	Appendix IV	Molybdenum	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		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	
10_2_20	MW-10	Appendix IV	Radium-226/228	pCi/L	0%	5	0	5	2	12	0.073		0.060		0.052		5	0	5	2	12	0.073		0.060		0.052	
10_2_22	MW-10	Appendix IV	Selenium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_2_23	MW-10	Appendix IV	Thallium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_3_24	MW-10	Field Parameters	Conductivity	mS/cm	0%	5	0	5	2	12	0.668		0.740		0.756		5	0	5	2	12	0.668		0.740		0.756	
10_3_25	MW-10	Field Parameters	Dissolved Oxygen	mg/L	0%	5	0	5	2	12	0.050		0.033	*	0.048	*	5	0	5	2	12	0.050		0.033	*	0.048	*
10_3_26	MW-10	Field Parameters	Oxidation Reduction Potential	mV	0%	5	0	5	2	12	0.828		0.800		0.840		5	0	5	2	12	0.828		0.800		0.840	
10_3_27	MW-10	Field Parameters	Temperature	°C	0%	5	0	5	2	12	0.018	*	0.000	***	0.000	***	5	0	5	2	12	0.018	*	0.000	***	0.000	***
10_3_28	MW-10	Field Parameters	Turbidity	NTU	0%	5	0	5	2	12	0.732		0.560		0.742		5	0	5	2	12	0.732		0.560		0.742	
10_3_29	MW-10	Field Parameters	pH	su	0%	5	0	5	2	12	0.851		0.747		0.757		5	0	5	2	12	0.851		0.747		0.757	
10_4_30	MW-10	Other	Bicarbonate	mg/L	0%	2	0	2	0	4	0.439		0.387		0.385		2	0	2	0	4	0.439		0.387		0.385	
10_4_31	MW-10	Other	Carbonate	mg/L	100%	2	0	2	0	4	NA		NA		0.423		NA	NA	NA	NA	NA	NA		NA		NA	
10_4_32	MW-10	Other	Hardness	mg/L	0%	2	0	2	0	4	0.439		0.662		0.666		2	0	2	0	4	0.439		0.662		0.666	
10_4_33	MW-10	Other	Magnesium	mg/L	0%	2	0	2	0	4	0.121		0.167		0.166		2	0	2	0	4	0.121		0.167		0.166	
10_4_34	MW-10	Other	Potassium	mg/L	25%	2	0	2	0	4	0.121		0.155		0.173		1	0	2	0	3	0.221		0.300		0.285	
10_4_35	MW-10	Other	Sodium	mg/L	0%	2	0	2	0	4	0.439		0.468		0.542		2	0	2	0	4	0.439		0.468		0.542	
10_4_36	MW-10	Other	Total Suspended Solids	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_5_37	MW-10	Part 115	Copper	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_5_38	MW-10	Part 115	Iron	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_5_39	MW-10	Part 115	Nickel	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_5_40	MW-10	Part 115	Silver	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_5_41	MW-10	Part 115	Vanadium	mg/L	100%	5	0	5	2	12	NA		0.542		0.542		NA	NA	NA	NA	NA	NA		NA		NA	
10_5_42	MW-10	Part 115	Zinc	mg/L	83%	5	0	5	2	12	0.797		0.668		0.735		1	0	1	0	2	0.317		NA		NA	
13_1_01	MW-13	Appendix III	Boron	mg/L	0%	3	3	4	2	12	0.025	*	0.000	***	0.000	***	3	3	4	2	12	0.025	*	0.000	***	0.000	***
13_1_02	MW-13	Appendix III	Calcium	mg/L	0%	3	3	4	2	12	0.098		0.024	*	0.031	*	3	3	4	2	12	0.098		0.024	*	0.031	*
13_1_03	MW-13	Appendix III	Chloride	mg/L	17%	3	3	4	2	12	0.210		0.405		0.247		2	2	4	2	10	0.144		0.319		0.107	
13_1_04	MW-13	Appendix III	Fluoride	mg/L	100%	3	3	4	2	12	NA		0.441		NA		NA	NA	NA	NA	NA	NA		NA		NA	
13_1_05	MW-13	Appendix III	Sulfate	mg/L	0%	3	3	4	2	12	0.304		0.482		0.411		3	3	4	2	12	0.304		0.482		0.411	
13_1_06	MW-13	Appendix III	Total Dissolved Solids	mg/L	0%	3	3	4	2	12	0.144		0.060		0.054		3	3	4	2	12	0.144		0.060		0.054	
13_1_07	MW-13	Appendix III	pH, Field	su	0%	3	3	4	2	12	0.160		0.664		0.678		3	3	4	2	12	0.160		0.664		0.678	
13_2_04	MW-13	Appendix IV	Fluoride	mg/L	100%	3	3	4	2	12	NA		0.441		NA		NA	NA	NA	NA	NA	NA		NA		NA	
13_2_08	MW-13	Appendix IV	Antimony	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_2_09	MW-13	Appendix IV	Arsenic	mg/L	83%	3	3	4	2	12	0.625		0.549		0.605		1	0	1	0	2	0.317		NA		NA	
13_2_10	MW-13	Appendix IV	Barium	mg/L	0%	3	3	4	2	12	0.081		0.097		0.072		3	3	4	2	12	0.081		0.097		0.072	
13_2_11	MW-13	Appendix IV	Beryllium	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_2_12	MW-13	Appendix IV	Cadmium	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_2_13	MW-13	Appendix IV	Chromium	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_2_14	MW-13	Appendix IV	Cobalt	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_2_15	MW-13	Appendix IV	Lead	mg/L	100%	3	3	4	2	12	NA		0.441		NA		NA	NA	NA	NA	NA	NA		NA		NA	
13_2_16	MW-13	Appendix IV	Lithium	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		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	
13_2_17	MW-13	Appendix IV	Mercury	mg/L	100%	3	3	4	2	12	NA		0.441		NA		NA	NA	NA	NA	NA	NA		NA		NA	
13_2_18	MW-13	Appendix IV	Molybdenum	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_2_20	MW-13	Appendix IV	Radium-226/228	pCi/L	0%	3	3	4	2	12	0.740		0.840		0.896		3	3	4	2	12	0.740		0.840		0.896	
13_2_22	MW-13	Appendix IV	Selenium	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_2_23	MW-13	Appendix IV	Thallium	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_3_24	MW-13	Field Parameters	Conductivity	mS/cm	0%	3	3	4	2	12	0.166		0.195		0.201		3	3	4	2	12	0.166		0.195		0.201	
13_3_25	MW-13	Field Parameters	Dissolved Oxygen	mg/L	0%	3	3	4	2	12	0.043	*	0.005	**	0.006	**	3	3	4	2	12	0.043	*	0.005	**	0.006	**
13_3_26	MW-13	Field Parameters	Oxidation Reduction Potential	mV	0%	3	3	4	2	12	0.494		0.481		NA		3	3	4	2	12	0.494		0.481		NA	
13_3_27	MW-13	Field Parameters	Temperature	°C	0%	3	3	4	2	12	0.030	*	0.001	***	0.000	***	3	3	4	2	12	0.030	*	0.001	***	0.000	***
13_3_28	MW-13	Field Parameters	Turbidity	NTU	0%	3	3	4	2	12	0.235		0.234		0.305		3	3	4	2	12	0.235		0.234		0.305	
13_3_29	MW-13	Field Parameters	pH	su	0%	3	3	4	2	12	0.160		0.664		0.678		3	3	4	2	12	0.160		0.664		0.678	
13_4_30	MW-13	Other	Bicarbonate	mg/L	0%	2	2	4	2	10	0.107		0.001	***	0.001	***	2	2	4	2	10	0.107		0.001	***	0.001	***
13_4_31	MW-13	Other	Carbonate	mg/L	100%	2	2	4	2	10	NA		0.285		NA		NA	NA	NA	NA	NA	NA		NA		NA	
13_4_32	MW-13	Other	Hardness	mg/L	0%	2	2	4	2	10	0.070		0.035	*	0.038	*	2	2	4	2	10	0.070		0.035	*	0.038	*
13_4_33	MW-13	Other	Magnesium	mg/L	0%	2	3	4	2	11	0.155		0.038	*	0.053		2	3	4	2	11	0.155		0.038	*	0.053	
13_4_34	MW-13	Other	Potassium	mg/L	0%	2	3	4	2	11	0.112		0.214		0.179		2	3	4	2	11	0.112		0.214		0.179	
13_4_35	MW-13	Other	Sodium	mg/L	0%	2	3	4	2	11	0.132		0.196		0.120		2	3	4	2	11	0.132		0.196		0.120	
13_4_36	MW-13	Other	Total Suspended Solids	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_5_37	MW-13	Part 115	Copper	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_5_38	MW-13	Part 115	Iron	mg/L	8%	3	3	4	2	12	0.102		0.433		0.241		3	2	4	2	11	0.184		0.510		0.355	
13_5_39	MW-13	Part 115	Nickel	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_5_40	MW-13	Part 115	Silver	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_5_41	MW-13	Part 115	Vanadium	mg/L	100%	3	3	4	2	12	NA		0.441		0.441		NA	NA	NA	NA	NA	NA		NA		NA	
13_5_42	MW-13	Part 115	Zinc	mg/L	92%	3	3	4	2	12	0.572		0.637		0.637		0	0	1	0	1	NA		NA		NA	
14_1_01	MW-14	Appendix III	Boron	mg/L	0%	3	2	3	1	9	0.077		0.039	*	0.041	*	3	2	3	1	9	0.077		0.039	*	0.041	*
14_1_02	MW-14	Appendix III	Calcium	mg/L	0%	3	2	3	1	9	0.376		0.459		0.452		3	2	3	1	9	0.376		0.459		0.452	
14_1_03	MW-14	Appendix III	Chloride	mg/L	0%	3	2	3	1	9	0.607		0.789		0.780		3	2	3	1	9	0.607		0.789		0.780	
14_1_04	MW-14	Appendix III	Fluoride	mg/L	100%	3	2	3	1	9	NA		NA		NA		NA	NA	NA	NA	NA	NA		NA		NA	
14_1_05	MW-14	Appendix III	Sulfate	mg/L	0%	3	1	3	1	8	0.785		0.961		0.995		3	1	3	1	8	0.785		0.961		0.995	
14_1_06	MW-14	Appendix III	Total Dissolved Solids	mg/L	11%	3	2	3	1	9	0.596		0.390		0.373		3	1	3	1	8	0.695		0.780		0.774	
14_1_07	MW-14	Appendix III	pH, Field	su	0%	3	2	3	1	9	0.412		0.566		0.564		3	2	3	1	9	0.412		0.566		0.564	
14_2_04	MW-14	Appendix IV	Fluoride	mg/L	100%	3	2	3	1	9	NA		NA		NA		NA	NA	NA	NA	NA	NA		NA		NA	
14_2_08	MW-14	Appendix IV	Antimony	mg/L	100%	3	2	3	1	9	NA		NA		0.667		NA	NA	NA	NA	NA	NA		NA		NA	
14_2_09	MW-14	Appendix IV	Arsenic	mg/L	0%	3	2	3	1	9	0.500		0.614		0.677		3	2	3	1	9	0.500		0.614		0.677	
14_2_10	MW-14	Appendix IV	Barium	mg/L	0%	3	2	3	1	9	0.758		0.739		0.753		3	2	3	1	9	0.758		0.739		0.753	
14_2_11	MW-14	Appendix IV	Beryllium	mg/L	100%	3	2	3	1	9	NA		0.667		0.667		NA	NA	NA	NA	NA	NA		NA		NA	
14_2_12	MW-14	Appendix IV	Cadmium	mg/L	100%	3	2	3	1	9	NA		0.667		0.667		NA	NA	NA	NA	NA	NA		NA		NA	
14_2_13	MW-14	Appendix IV	Chromium	mg/L	100%	3	2	3	1	9	NA		NA		0.667		NA	NA	NA	NA	NA	NA		NA		NA	
14_2_14	MW-14	Appendix IV	Cobalt	mg/L	100%	3	2	3	1	9	NA		NA		0.667		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
14_2_15	MW-14	Appendix IV	Lead	mg/L	100%	3	2	3	1	9	NA	0.667	0.667	NA	NA	NA	NA	NA	NA	NA	NA
14_2_16	MW-14	Appendix IV	Lithium	mg/L	0%	3	2	3	1	9	0.261	0.252	0.253	3	2	3	1	9	0.261	0.252	0.253
14_2_17	MW-14	Appendix IV	Mercury	mg/L	100%	3	2	3	1	9	NA	0.667	NA	NA	NA	NA	NA	NA	NA	NA	NA
14_2_18	MW-14	Appendix IV	Molybdenum	mg/L	0%	3	2	3	1	9	0.687	0.745	0.726	3	2	3	1	9	0.687	0.745	0.726
14_2_20	MW-14	Appendix IV	Radium-226/228	pCi/L	0%	3	2	3	1	9	0.311	0.691	0.566	3	2	3	1	9	0.311	0.691	0.566
14_2_22	MW-14	Appendix IV	Selenium	mg/L	78%	3	2	3	1	9	0.212	0.288	0.248	0	0	2	0	2	NA	NA	NA
14_2_23	MW-14	Appendix IV	Thallium	mg/L	100%	3	2	3	1	9	NA	0.667	0.667	NA	NA	NA	NA	NA	NA	NA	NA
14_3_24	MW-14	Field Parameters	Conductivity	mS/cm	0%	3	2	3	1	9	0.560	0.821	0.806	3	2	3	1	9	0.560	0.821	0.806
14_3_25	MW-14	Field Parameters	Dissolved Oxygen	mg/L	0%	3	2	3	1	9	0.142	0.083	NA	3	2	3	1	9	0.142	0.083	NA
14_3_26	MW-14	Field Parameters	Oxidation Reduction Potential	mV	0%	3	2	3	1	9	0.700	0.918	NA	3	2	3	1	9	0.700	0.918	NA
14_3_27	MW-14	Field Parameters	Temperature	°C	0%	3	2	3	1	9	0.104	0.000 ***	0.000 ***	3	2	3	1	9	0.104	0.000 ***	0.000 ***
14_3_28	MW-14	Field Parameters	Turbidity	NTU	0%	3	2	3	1	9	0.457	0.677	0.817	3	2	3	1	9	0.457	0.677	0.817
14_3_29	MW-14	Field Parameters	pH	su	0%	3	2	3	1	9	0.412	0.566	0.564	3	2	3	1	9	0.412	0.566	0.564
14_4_30	MW-14	Other	Bicarbonate	mg/L	0%	3	2	3	1	9	0.801	0.977	0.989	3	2	3	1	9	0.801	0.977	0.989
14_4_31	MW-14	Other	Carbonate	mg/L	100%	3	2	3	1	9	0.572	0.667	0.667	NA	NA	NA	NA	NA	NA	NA	NA
14_4_32	MW-14	Other	Hardness	mg/L	0%	3	2	3	1	9	0.873	0.970	0.968	3	2	3	1	9	0.873	0.970	0.968
14_4_33	MW-14	Other	Magnesium	mg/L	0%	3	2	3	1	9	0.243	0.238	0.231	3	2	3	1	9	0.243	0.238	0.231
14_4_34	MW-14	Other	Potassium	mg/L	0%	3	2	3	1	9	0.194	0.192	0.188	3	2	3	1	9	0.194	0.192	0.188
14_4_35	MW-14	Other	Sodium	mg/L	0%	3	2	3	1	9	0.173	0.231	0.234	3	2	3	1	9	0.173	0.231	0.234
14_4_36	MW-14	Other	Total Suspended Solids	mg/L	0%	3	2	3	1	9	0.494	0.485	0.524	3	2	3	1	9	0.494	0.485	0.524
14_5_37	MW-14	Part 115	Copper	mg/L	100%	3	2	3	1	9	NA	NA	0.667	NA	NA	NA	NA	NA	NA	NA	NA
14_5_38	MW-14	Part 115	Iron	mg/L	0%	3	2	3	1	9	0.523	0.863	0.787	3	2	3	1	9	0.523	0.863	0.787
14_5_39	MW-14	Part 115	Nickel	mg/L	67%	3	2	3	1	9	0.572	0.667	0.667	3	0	0	0	3	NA	NA	NA
14_5_40	MW-14	Part 115	Silver	mg/L	100%	3	2	3	1	9	NA	0.667	0.667	NA	NA	NA	NA	NA	NA	NA	NA
14_5_41	MW-14	Part 115	Vanadium	mg/L	100%	3	2	3	1	9	NA	NA	0.667	NA	NA	NA	NA	NA	NA	NA	NA
14_5_42	MW-14	Part 115	Zinc	mg/L	89%	3	2	3	1	9	0.572	0.667	0.667	1	0	0	0	1	NA	NA	NA
15_1_01	MW-15	Appendix III	Boron	mg/L	0%	3	2	3	1	9	0.121	0.086	0.095	3	2	3	1	9	0.121	0.086	0.095
15_1_02	MW-15	Appendix III	Calcium	mg/L	0%	3	2	3	1	9	0.200	0.271	0.220	3	2	3	1	9	0.200	0.271	0.220
15_1_03	MW-15	Appendix III	Chloride	mg/L	0%	3	2	3	1	9	0.279	0.272	0.261	3	2	3	1	9	0.279	0.272	0.261
15_1_04	MW-15	Appendix III	Fluoride	mg/L	100%	3	2	3	1	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15_1_05	MW-15	Appendix III	Sulfate	mg/L	0%	3	2	3	1	9	0.796	0.679	0.729	3	2	3	1	9	0.796	0.679	0.729
15_1_06	MW-15	Appendix III	Total Dissolved Solids	mg/L	0%	3	2	3	1	9	0.844	0.828	0.828	3	2	3	1	9	0.844	0.828	0.828
15_1_07	MW-15	Appendix III	pH, Field	su	0%	3	2	3	1	9	0.156	0.312	0.313	3	2	3	1	9	0.156	0.312	0.313
15_2_04	MW-15	Appendix IV	Fluoride	mg/L	100%	3	2	3	1	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15_2_08	MW-15	Appendix IV	Antimony	mg/L	100%	3	2	3	1	9	NA	NA	0.667	NA	NA	NA	NA	NA	NA	NA	NA
15_2_09	MW-15	Appendix IV	Arsenic	mg/L	89%	3	2	3	1	9	NA	0.667	0.667	1	0	0	0	1	NA	NA	NA
15_2_10	MW-15	Appendix IV	Barium	mg/L	0%	3	2	3	1	9	0.178	0.340	0.275	3	2	3	1	9	0.178	0.340	0.275
15_2_11	MW-15	Appendix IV	Beryllium	mg/L	100%	3	2	3	1	9	NA	0.667	0.667	NA	NA	NA	NA	NA	NA	NA	NA
15_2_12	MW-15	Appendix IV	Cadmium	mg/L	100%	3	2	3	1	9	NA	0.667	0.667	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
15_2_13	MW-15	Appendix IV	Chromium	mg/L	100%	3	2	3	1	9	NA	NA	0.667	NA	NA	NA	NA	NA	NA	NA	NA
15_2_14	MW-15	Appendix IV	Cobalt	mg/L	100%	3	2	3	1	9	NA	NA	0.667	NA	NA	NA	NA	NA	NA	NA	NA
15_2_15	MW-15	Appendix IV	Lead	mg/L	100%	3	2	3	1	9	NA	0.667	0.667	NA	NA	NA	NA	NA	NA	NA	NA
15_2_16	MW-15	Appendix IV	Lithium	mg/L	89%	3	2	3	1	9	0.572	0.667	0.667	1	0	0	0	1	NA	NA	NA
15_2_17	MW-15	Appendix IV	Mercury	mg/L	100%	3	2	3	1	9	NA	0.667	NA	NA	NA	NA	NA	NA	NA	NA	NA
15_2_18	MW-15	Appendix IV	Molybdenum	mg/L	100%	3	2	3	1	9	NA	NA	0.667	NA	NA	NA	NA	NA	NA	NA	NA
15_2_20	MW-15	Appendix IV	Radium-226/228	pCi/L	0%	3	2	3	1	9	0.742	0.594	0.555	3	2	3	1	9	0.742	0.594	0.555
15_2_22	MW-15	Appendix IV	Selenium	mg/L	33%	3	2	3	1	9	0.247	0.162	0.194	2	2	2	0	6	0.276	0.264	0.232
15_2_23	MW-15	Appendix IV	Thallium	mg/L	100%	3	2	3	1	9	NA	0.667	0.667	NA	NA	NA	NA	NA	NA	NA	NA
15_3_24	MW-15	Field Parameters	Conductivity	mS/cm	0%	3	2	3	1	9	0.541	0.966	0.914	3	2	3	1	9	0.541	0.966	0.914
15_3_25	MW-15	Field Parameters	Dissolved Oxygen	mg/L	0%	3	2	3	1	9	0.523	0.319	0.534	3	2	3	1	9	0.523	0.319	0.534
15_3_26	MW-15	Field Parameters	Oxidation Reduction Potential	mV	0%	3	2	3	1	9	0.680	0.978	NA	3	2	3	1	9	0.680	0.978	NA
15_3_27	MW-15	Field Parameters	Temperature	°C	0%	3	2	3	1	9	0.094	0.000 ***	0.000 ***	3	2	3	1	9	0.094	0.000 ***	0.000 ***
15_3_28	MW-15	Field Parameters	Turbidity	NTU	0%	3	2	3	1	9	0.823	0.962	0.963	3	2	3	1	9	0.823	0.962	0.963
15_3_29	MW-15	Field Parameters	pH	su	0%	3	2	3	1	9	0.156	0.312	0.313	3	2	3	1	9	0.156	0.312	0.313
15_4_30	MW-15	Other	Bicarbonate	mg/L	0%	3	2	3	1	9	0.119	0.179	0.163	3	2	3	1	9	0.119	0.179	0.163
15_4_31	MW-15	Other	Carbonate	mg/L	100%	3	2	3	1	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15_4_32	MW-15	Other	Hardness	mg/L	0%	3	2	3	1	9	0.261	0.189	0.178	3	2	3	1	9	0.261	0.189	0.178
15_4_33	MW-15	Other	Magnesium	mg/L	0%	3	2	3	1	9	0.218	0.388	0.342	3	2	3	1	9	0.218	0.388	0.342
15_4_34	MW-15	Other	Potassium	mg/L	89%	3	2	3	1	9	0.572	0.667	0.667	1	0	0	0	1	NA	NA	NA
15_4_35	MW-15	Other	Sodium	mg/L	0%	3	2	3	1	9	0.109	0.174	0.154	3	2	3	1	9	0.109	0.174	0.154
15_4_36	MW-15	Other	Total Suspended Solids	mg/L	78%	3	2	3	1	9	0.212	0.208	0.212	0	0	2	0	2	NA	NA	NA
15_5_37	MW-15	Part 115	Copper	mg/L	100%	3	2	3	1	9	NA	NA	0.667	NA	NA	NA	NA	NA	NA	NA	NA
15_5_38	MW-15	Part 115	Iron	mg/L	11%	3	2	3	1	9	0.193	0.211	0.204	2	2	3	1	8	0.150	0.215	0.141
15_5_39	MW-15	Part 115	Nickel	mg/L	100%	3	2	3	1	9	NA	NA	0.667	NA	NA	NA	NA	NA	NA	NA	NA
15_5_40	MW-15	Part 115	Silver	mg/L	100%	3	2	3	1	9	NA	0.667	0.667	NA	NA	NA	NA	NA	NA	NA	NA
15_5_41	MW-15	Part 115	Vanadium	mg/L	100%	3	2	3	1	9	NA	NA	0.667	NA	NA	NA	NA	NA	NA	NA	NA
15_5_42	MW-15	Part 115	Zinc	mg/L	89%	3	2	3	1	9	0.321	0.372	0.372	0	1	0	0	1	NA	NA	NA
16A_1_01	MW-16A	Appendix III	Boron	mg/L	0%	2	3	2	3	10	0.058	0.007 **	0.005 **	2	3	2	3	10	0.058	0.007 **	0.005 **
16A_1_02	MW-16A	Appendix III	Calcium	mg/L	0%	2	3	2	3	10	0.041 *	0.005 **	0.006 **	2	3	2	3	10	0.041 *	0.005 **	0.006 **
16A_1_03	MW-16A	Appendix III	Chloride	mg/L	0%	2	3	2	3	10	0.088	0.023 *	0.025 *	2	3	2	3	10	0.088	0.023 *	0.025 *
16A_1_04	MW-16A	Appendix III	Fluoride	mg/L	100%	2	3	2	3	10	0.335	0.328	0.355	NA	NA	NA	NA	NA	NA	NA	NA
16A_1_05	MW-16A	Appendix III	Sulfate	mg/L	0%	2	3	2	3	10	0.093	0.062	0.030 *	2	3	2	3	10	0.093	0.062	0.030 *
16A_1_06	MW-16A	Appendix III	Total Dissolved Solids	mg/L	0%	2	3	2	3	10	0.062	0.004 **	0.003 **	2	3	2	3	10	0.062	0.004 **	0.003 **
16A_1_07	MW-16A	Appendix III	pH, Field	su	0%	2	3	2	3	10	0.304	0.214	0.217	2	3	2	3	10	0.304	0.214	0.217
16A_2_04	MW-16A	Appendix IV	Fluoride	mg/L	100%	2	3	2	3	10	0.335	0.328	0.355	NA	NA	NA	NA	NA	NA	NA	NA
16A_2_08	MW-16A	Appendix IV	Antimony	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16A_2_09	MW-16A	Appendix IV	Arsenic	mg/L	0%	2	3	2	3	10	0.314	0.347	0.320	2	3	2	3	10	0.314	0.347	0.320
16A_2_10	MW-16A	Appendix IV	Barium	mg/L	0%	2	3	2	3	10	0.037 *	0.000 ***	0.001 ***	2	3	2	3	10	0.037 *	0.000 ***	0.001 ***

(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	
16A_2_11	MW-16A	Appendix IV	Beryllium	mg/L	100%	2	3	2	3	10	NA		0.285		0.285		NA	NA	NA	NA	NA	NA		NA		NA	
16A_2_12	MW-16A	Appendix IV	Cadmium	mg/L	100%	2	3	2	3	10	NA		0.285		0.285		NA	NA	NA	NA	NA	NA		NA		NA	
16A_2_13	MW-16A	Appendix IV	Chromium	mg/L	100%	2	3	2	3	10	NA		0.285		NA		NA	NA	NA	NA	NA	NA		NA		NA	
16A_2_14	MW-16A	Appendix IV	Cobalt	mg/L	100%	2	3	2	3	10	NA		0.285		NA		NA	NA	NA	NA	NA	NA		NA		NA	
16A_2_15	MW-16A	Appendix IV	Lead	mg/L	100%	2	3	2	3	10	NA		0.285		0.285		NA	NA	NA	NA	NA	NA		NA		NA	
16A_2_16	MW-16A	Appendix IV	Lithium	mg/L	90%	2	3	2	3	10	NA		0.285		NA		1	0	0	0	1	NA		NA		NA	
16A_2_17	MW-16A	Appendix IV	Mercury	mg/L	100%	2	3	2	3	10	NA		0.285		0.285		NA	NA	NA	NA	NA	NA		NA		NA	
16A_2_18	MW-16A	Appendix IV	Molybdenum	mg/L	100%	2	3	2	3	10	NA		0.285		NA		NA	NA	NA	NA	NA	NA		NA		NA	
16A_2_20	MW-16A	Appendix IV	Radium-226/228	pCi/L	0%	2	3	2	3	10	0.784		0.579		0.780		2	3	2	3	10	0.784		0.579		0.780	
16A_2_22	MW-16A	Appendix IV	Selenium	mg/L	90%	2	3	2	3	10	NA		0.285		NA		0	0	0	1	1	NA		NA		NA	
16A_2_23	MW-16A	Appendix IV	Thallium	mg/L	100%	2	3	2	3	10	NA		0.285		0.285		NA	NA	NA	NA	NA	NA		NA		NA	
16A_3_24	MW-16A	Field Parameters	Conductivity	mS/cm	0%	2	3	2	3	10	0.072		0.004	**	0.003	**	2	3	2	3	10	0.072		0.004	**	0.003	**
16A_3_25	MW-16A	Field Parameters	Dissolved Oxygen	mg/L	0%	2	3	2	3	10	0.613		0.794		0.515		2	3	2	3	10	0.613		0.794		0.515	
16A_3_26	MW-16A	Field Parameters	Oxidation Reduction Potential	mV	0%	2	3	2	3	10	0.165		0.168		NA		2	3	2	3	10	0.165		0.168		NA	
16A_3_27	MW-16A	Field Parameters	Temperature	°C	0%	2	3	2	3	10	0.075		0.006	**	0.009	**	2	3	2	3	10	0.075		0.006	**	0.009	**
16A_3_28	MW-16A	Field Parameters	Turbidity	NTU	0%	2	3	2	3	10	0.801		0.850		0.801		2	3	2	3	10	0.801		0.850		0.801	
16A_3_29	MW-16A	Field Parameters	pH	su	0%	2	3	2	3	10	0.304		0.214		0.217		2	3	2	3	10	0.304		0.214		0.217	
16A_4_30	MW-16A	Other	Bicarbonate	mg/L	0%	2	3	2	3	10	0.045	*	0.001	***	0.001	**	2	3	2	3	10	0.045	*	0.001	***	0.001	**
16A_4_31	MW-16A	Other	Carbonate	mg/L	100%	2	3	2	3	10	0.261		0.285		0.285		NA	NA	NA	NA	NA	NA		NA		NA	
16A_4_32	MW-16A	Other	Hardness	mg/L	0%	2	3	2	3	10	0.052		0.010	**	0.007	**	2	3	2	3	10	0.052		0.010	**	0.007	**
16A_4_33	MW-16A	Other	Magnesium	mg/L	0%	2	3	2	3	10	0.037	*	0.000	***	0.000	***	2	3	2	3	10	0.037	*	0.000	***	0.000	***
16A_4_34	MW-16A	Other	Potassium	mg/L	0%	2	3	2	3	10	0.176		0.093		0.089		2	3	2	3	10	0.176		0.093		0.089	
16A_4_35	MW-16A	Other	Sodium	mg/L	0%	2	3	2	3	10	0.046	*	0.001	***	0.001	***	2	3	2	3	10	0.046	*	0.001	***	0.001	***
16A_4_36	MW-16A	Other	Total Suspended Solids	mg/L	10%	2	3	2	3	10	0.197		0.086		0.242		2	2	2	3	9	0.228		0.130		0.315	
16A_5_37	MW-16A	Part 115	Copper	mg/L	100%	2	3	2	3	10	NA		0.285		NA		NA	NA	NA	NA	NA	NA		NA		NA	
16A_5_38	MW-16A	Part 115	Iron	mg/L	0%	2	3	2	3	10	0.106		0.033	*	0.027	*	2	3	2	3	10	0.106		0.033	*	0.027	*
16A_5_39	MW-16A	Part 115	Nickel	mg/L	100%	2	3	2	3	10	NA		0.285		NA		NA	NA	NA	NA	NA	NA		NA		NA	
16A_5_40	MW-16A	Part 115	Silver	mg/L	100%	2	3	2	3	10	NA		0.285		0.285		NA	NA	NA	NA	NA	NA		NA		NA	
16A_5_41	MW-16A	Part 115	Vanadium	mg/L	100%	2	3	2	3	10	NA		0.285		NA		NA	NA	NA	NA	NA	NA		NA		NA	
16A_5_42	MW-16A	Part 115	Zinc	mg/L	100%	2	3	2	3	10	NA		0.285		NA		NA	NA	NA	NA	NA	NA		NA		NA	
16B_1_01	MW-16B	Appendix III	Boron	mg/L	0%	2	3	2	3	10	0.178		0.131		0.140		2	3	2	3	10	0.178		0.131		0.140	
16B_1_02	MW-16B	Appendix III	Calcium	mg/L	0%	2	3	2	3	10	0.210		0.195		0.200		2	3	2	3	10	0.210		0.195		0.200	
16B_1_03	MW-16B	Appendix III	Chloride	mg/L	50%	2	3	2	3	10	0.419		0.448		0.422		1	2	1	1	5	0.284		0.774		0.679	
16B_1_04	MW-16B	Appendix III	Fluoride	mg/L	70%	2	3	2	3	10	0.582		0.578		0.501		1	0	1	1	3	0.368		NA		NA	
16B_1_05	MW-16B	Appendix III	Sulfate	mg/L	0%	2	3	2	3	10	0.046	*	0.001	**	0.002	**	2	3	2	3	10	0.046	*	0.001	**	0.002	**
16B_1_06	MW-16B	Appendix III	Total Dissolved Solids	mg/L	0%	2	3	2	3	10	0.131		0.145		0.145		2	3	2	3	10	0.131		0.145		0.145	
16B_1_07	MW-16B	Appendix III	pH, Field	su	0%	2	3	2	3	10	0.292		0.462		0.468		2	3	2	3	10	0.292		0.462		0.468	
16B_2_04	MW-16B	Appendix IV	Fluoride	mg/L	80%	2	3	2	3	10	0.335		0.356		0.337		1	0	1	0	2	0.317		NA		NA	
16B_2_08	MW-16B	Appendix IV	Antimony	mg/L	100%	2	3	2	3	10	NA		0.285		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
16B_2_09	MW-16B	Appendix IV	Arsenic	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16B_2_10	MW-16B	Appendix IV	Barium	mg/L	0%	2	3	2	3	10	0.107	0.089	0.088	2	3	2	3	10	0.107	0.089	0.088
16B_2_11	MW-16B	Appendix IV	Beryllium	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16B_2_12	MW-16B	Appendix IV	Cadmium	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16B_2_13	MW-16B	Appendix IV	Chromium	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16B_2_14	MW-16B	Appendix IV	Cobalt	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16B_2_15	MW-16B	Appendix IV	Lead	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16B_2_16	MW-16B	Appendix IV	Lithium	mg/L	0%	2	3	2	3	10	0.337	0.414	0.419	2	3	2	3	10	0.337	0.414	0.419
16B_2_17	MW-16B	Appendix IV	Mercury	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16B_2_18	MW-16B	Appendix IV	Molybdenum	mg/L	0%	2	3	2	3	10	0.332	0.341	0.344	2	3	2	3	10	0.332	0.341	0.344
16B_2_20	MW-16B	Appendix IV	Radium-226/228	pCi/L	0%	2	3	2	3	10	0.951	0.741	0.839	2	3	2	3	10	0.951	0.741	0.839
16B_2_22	MW-16B	Appendix IV	Selenium	mg/L	90%	2	3	2	3	10	0.506	0.586	0.586	0	0	0	1	1	NA	NA	NA
16B_2_23	MW-16B	Appendix IV	Thallium	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16B_3_24	MW-16B	Field Parameters	Conductivity	mS/cm	0%	2	3	2	3	10	0.386	0.394	0.391	2	3	2	3	10	0.386	0.394	0.391
16B_3_25	MW-16B	Field Parameters	Dissolved Oxygen	mg/L	0%	2	3	2	3	10	0.124	0.229	NA	2	3	2	3	10	0.124	0.229	NA
16B_3_26	MW-16B	Field Parameters	Oxidation Reduction Potential	mV	0%	2	3	2	3	10	0.901	0.971	NA	2	3	2	3	10	0.901	0.971	NA
16B_3_27	MW-16B	Field Parameters	Temperature	°C	0%	2	3	2	3	10	0.077	0.035 *	0.045 *	2	3	2	3	10	0.077	0.035 *	0.045 *
16B_3_28	MW-16B	Field Parameters	Turbidity	NTU	0%	2	3	2	3	10	0.186	0.221	0.236	2	3	2	3	10	0.186	0.221	0.236
16B_3_29	MW-16B	Field Parameters	pH	su	0%	2	3	2	3	10	0.295	0.472	0.478	2	3	2	3	10	0.295	0.472	0.478
16B_4_30	MW-16B	Other	Bicarbonate	mg/L	0%	2	3	2	3	10	0.572	0.677	0.674	2	3	2	3	10	0.572	0.677	0.674
16B_4_31	MW-16B	Other	Carbonate	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16B_4_32	MW-16B	Other	Hardness	mg/L	0%	2	3	2	3	10	0.233	0.168	0.166	2	3	2	3	10	0.233	0.168	0.166
16B_4_33	MW-16B	Other	Magnesium	mg/L	0%	2	3	2	3	10	0.052	0.036 *	0.035 *	2	3	2	3	10	0.052	0.036 *	0.035 *
16B_4_34	MW-16B	Other	Potassium	mg/L	0%	2	3	2	3	10	0.611	0.394	0.407	2	3	2	3	10	0.611	0.394	0.407
16B_4_35	MW-16B	Other	Sodium	mg/L	0%	2	3	2	3	10	0.293	0.415	0.441	2	3	2	3	10	0.293	0.415	0.441
16B_4_36	MW-16B	Other	Total Suspended Solids	mg/L	50%	2	3	2	3	10	0.680	0.707	0.828	2	2	1	0	5	0.546	0.713	0.763
16B_5_37	MW-16B	Part 115	Copper	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16B_5_38	MW-16B	Part 115	Iron	mg/L	0%	2	3	2	3	10	0.339	0.472	0.491	2	3	2	3	10	0.339	0.472	0.491
16B_5_39	MW-16B	Part 115	Nickel	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16B_5_40	MW-16B	Part 115	Silver	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16B_5_41	MW-16B	Part 115	Vanadium	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16B_5_42	MW-16B	Part 115	Zinc	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
7C_1_01	MW-7C	Appendix III	Boron	mg/L	0%	2	4	3	3	12	0.921	0.864	0.880	2	4	3	3	12	0.921	0.864	0.880
7C_1_02	MW-7C	Appendix III	Calcium	mg/L	0%	2	4	3	3	12	0.583	0.989	0.999	2	4	3	3	12	0.583	0.989	0.999
7C_1_03	MW-7C	Appendix III	Chloride	mg/L	0%	2	4	3	3	12	0.106	0.107	0.102	2	4	3	3	12	0.106	0.107	0.102
7C_1_04	MW-7C	Appendix III	Fluoride	mg/L	100%	2	4	3	3	12	NA	0.637	NA	NA	NA	NA	NA	NA	NA	NA	NA
7C_1_05	MW-7C	Appendix III	Sulfate	mg/L	0%	2	4	3	3	12	0.033 *	0.001 ***	0.001 ***	2	4	3	3	12	0.033 *	0.001 ***	0.001 ***
7C_1_06	MW-7C	Appendix III	Total Dissolved Solids	mg/L	0%	2	4	3	3	12	0.030 *	0.001 ***	0.001 ***	2	4	3	3	12	0.030 *	0.001 ***	0.001 ***
7C_1_07	MW-7C	Appendix III	pH, Field	su	0%	2	4	3	3	12	0.073	0.050	0.049 *	2	4	3	3	12	0.073	0.050	0.049 *

(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	
7C_2_04	MW-7C	Appendix IV	Fluoride	mg/L	100%	2	4	3	3	12	NA		0.637		NA		NA	NA	NA	NA	NA	NA		NA		NA	
7C_2_08	MW-7C	Appendix IV	Antimony	mg/L	100%	2	4	3	3	12	NA		0.637		0.637		NA	NA	NA	NA	NA	NA		NA		NA	
7C_2_09	MW-7C	Appendix IV	Arsenic	mg/L	0%	2	4	3	3	12	0.216		0.224		0.218		2	4	3	3	12	0.216		0.224		0.218	
7C_2_10	MW-7C	Appendix IV	Barium	mg/L	0%	2	4	3	3	12	0.209		0.193		0.191		2	4	3	3	12	0.209		0.193		0.191	
7C_2_11	MW-7C	Appendix IV	Beryllium	mg/L	100%	2	4	3	3	12	NA		0.637		0.637		NA	NA	NA	NA	NA	NA		NA		NA	
7C_2_12	MW-7C	Appendix IV	Cadmium	mg/L	75%	2	4	3	3	12	0.194		0.141		0.155		0	1	0	2	3	0.221		0.333		0.310	
7C_2_13	MW-7C	Appendix IV	Chromium	mg/L	100%	2	4	3	3	12	NA		0.637		0.637		NA	NA	NA	NA	NA	NA		NA		NA	
7C_2_14	MW-7C	Appendix IV	Cobalt	mg/L	100%	2	4	3	3	12	NA		0.637		0.637		NA	NA	NA	NA	NA	NA		NA		NA	
7C_2_15	MW-7C	Appendix IV	Lead	mg/L	100%	2	4	3	3	12	NA		0.637		NA		NA	NA	NA	NA	NA	NA		NA		NA	
7C_2_16	MW-7C	Appendix IV	Lithium	mg/L	0%	2	4	3	3	12	0.630		0.757		0.761		2	4	3	3	12	0.630		0.757		0.761	
7C_2_17	MW-7C	Appendix IV	Mercury	mg/L	100%	2	4	3	3	12	NA		0.637		NA		NA	NA	NA	NA	NA	NA		NA		NA	
7C_2_18	MW-7C	Appendix IV	Molybdenum	mg/L	0%	2	4	3	3	12	0.275		0.267		0.271		2	4	3	3	12	0.275		0.267		0.271	
7C_2_20	MW-7C	Appendix IV	Radium-226/228	pCi/L	0%	2	4	3	3	12	0.559		0.524		0.630		2	4	3	3	12	0.559		0.524		0.630	
7C_2_22	MW-7C	Appendix IV	Selenium	mg/L	100%	2	4	3	3	12	NA		0.637		0.637		NA	NA	NA	NA	NA	NA		NA		NA	
7C_2_23	MW-7C	Appendix IV	Thallium	mg/L	100%	2	4	3	3	12	NA		0.637		0.637		NA	NA	NA	NA	NA	NA		NA		NA	
7C_3_24	MW-7C	Field Parameters	Conductivity	mS/cm	0%	2	4	3	3	12	0.041	*	0.031	*	0.042	*	2	4	3	3	12	0.041	*	0.031	*	0.042	*
7C_3_25	MW-7C	Field Parameters	Dissolved Oxygen	mg/L	0%	2	4	3	3	12	0.200		0.239		0.196		2	4	3	3	12	0.200		0.239		0.196	
7C_3_26	MW-7C	Field Parameters	Oxidation Reduction Potential	mV	0%	2	4	3	3	12	0.848		0.705		NA		2	4	3	3	12	0.848		0.705		NA	
7C_3_27	MW-7C	Field Parameters	Temperature	°C	0%	2	4	3	3	12	0.032	*	0.013	*	0.011	*	2	4	3	3	12	0.032	*	0.013	*	0.011	*
7C_3_28	MW-7C	Field Parameters	Turbidity	NTU	0%	2	4	3	3	12	0.097		0.100		0.309		2	4	3	3	12	0.097		0.100		0.309	
7C_3_29	MW-7C	Field Parameters	pH	su	0%	2	4	3	3	12	0.073		0.050		0.049	*	2	4	3	3	12	0.073		0.050		0.049	*
7C_4_30	MW-7C	Other	Bicarbonate	mg/L	0%	2	4	3	3	12	0.379		0.418		0.413		2	4	3	3	12	0.379		0.418		0.413	
7C_4_31	MW-7C	Other	Carbonate	mg/L	100%	2	4	3	3	12	NA		0.637		NA		NA	NA	NA	NA	NA	NA		NA		NA	
7C_4_32	MW-7C	Other	Hardness	mg/L	0%	2	4	3	3	12	0.033	*	0.019	*	0.028	*	2	4	3	3	12	0.033	*	0.019	*	0.028	*
7C_4_33	MW-7C	Other	Magnesium	mg/L	0%	2	4	3	3	12	0.206		0.795		0.818		2	4	3	3	12	0.206		0.795		0.818	
7C_4_34	MW-7C	Other	Potassium	mg/L	0%	2	4	3	3	12	0.038	*	0.012	*	0.013	*	2	4	3	3	12	0.038	*	0.012	*	0.013	*
7C_4_35	MW-7C	Other	Sodium	mg/L	0%	2	4	3	3	12	0.501		0.678		0.679		2	4	3	3	12	0.501		0.678		0.679	
7C_4_36	MW-7C	Other	Total Suspended Solids	mg/L	25%	2	4	3	3	12	0.039	*	0.107		0.035	*	2	4	2	1	9	0.072		0.415		0.182	
7C_5_37	MW-7C	Part 115	Copper	mg/L	100%	2	4	3	3	12	NA		0.637		0.637		NA	NA	NA	NA	NA	NA		NA		NA	
7C_5_38	MW-7C	Part 115	Iron	mg/L	0%	2	4	3	3	12	0.221		0.313		0.315		2	4	3	3	12	0.221		0.313		0.315	
7C_5_39	MW-7C	Part 115	Nickel	mg/L	0%	2	4	3	3	12	0.124		0.100		0.089		2	4	3	3	12	0.124		0.100		0.089	
7C_5_40	MW-7C	Part 115	Silver	mg/L	100%	2	4	3	3	12	NA		0.637		0.637		NA	NA	NA	NA	NA	NA		NA		NA	
7C_5_41	MW-7C	Part 115	Vanadium	mg/L	100%	2	4	3	3	12	NA		0.637		0.637		NA	NA	NA	NA	NA	NA		NA		NA	
7C_5_42	MW-7C	Part 115	Zinc	mg/L	83%	2	4	3	3	12	0.666		0.741		0.742		0	1	1	0	2	0.317		NA		NA	

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 8: Trend Tests: Lognormal MLE and MK

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Type	Method	Slope	p-value	Trend
02_1_01	MW-2	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000298	0.776	↔
02_1_02	MW-2	Appendix III	Calcium	mg/L	17	0	0%	Nonparametric	MK	-0.0610	0.001	↓
02_1_03	MW-2	Appendix III	Chloride	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000592	0.231	↔
02_1_05	MW-2	Appendix III	Sulfate	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000487	0.000	↓
02_1_06	MW-2	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000244	0.000	↓
02_1_07	MW-2	Appendix III	pH, Field	su	18	0	0%	Parametric	Lognormal MLE	0.00000997	0.264	↔
02_2_10	MW-2	Appendix IV	Barium	mg/L	18	0	0%	Parametric	Lognormal MLE	-0.0000935	0.031	↔
02_2_16	MW-2	Appendix IV	Lithium	mg/L	18	0	0%	Parametric	Lognormal MLE	-0.000206	0.001	↓
02_2_18	MW-2	Appendix IV	Molybdenum	mg/L	18	0	0%	Parametric	Lognormal MLE	0.000206	0.025	↔
02_3_24	MW-2	Field Parameters	Conductivity	mS/cm	18	0	0%	Parametric	Lognormal MLE	-0.000192	0.000	↓
02_3_25	MW-2	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	Nonparametric	MK	0.000271	0.074	↔
02_3_27	MW-2	Field Parameters	Temperature	°C	18	0	0%	Parametric	Lognormal MLE	-0.0000794	0.296	↔
02_3_28	MW-2	Field Parameters	Turbidity	NTU	18	0	0%	Nonparametric	MK	0.000818	0.820	↔
02_3_29	MW-2	Field Parameters	pH	su	18	0	0%	Parametric	Lognormal MLE	0.00000997	0.264	↔
02_4_36	MW-2	Other	Total Suspended Solids	mg/L	18	4	22%	Parametric	Lognormal MLE	0.00184	0.000	↑
02_5_38	MW-2	Part 115	Iron	mg/L	18	0	0%	Nonparametric	MK	0.000183	0.172	↔
02_5_39	MW-2	Part 115	Nickel	mg/L	18	0	0%	Nonparametric	MK	-0.00000198	0.358	↔
04_1_01	MW-4	Appendix III	Boron	mg/L	17	0	0%	Nonparametric	MK	0	0.121	↔
04_1_02	MW-4	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.00000813	0.750	↔
04_1_03	MW-4	Appendix III	Chloride	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000567	0.000	↑
04_1_05	MW-4	Appendix III	Sulfate	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000562	0.010	↓
04_1_06	MW-4	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.00000430	0.790	↔
04_1_07	MW-4	Appendix III	pH, Field	su	18	0	0%	Nonparametric	MK	-0.0000317	0.676	↔
04_2_09	MW-4	Appendix IV	Arsenic	mg/L	18	0	0%	Parametric	Lognormal MLE	0.0000506	0.524	↔
04_2_10	MW-4	Appendix IV	Barium	mg/L	18	0	0%	Parametric	Lognormal MLE	0.0000297	0.134	↔
04_2_16	MW-4	Appendix IV	Lithium	mg/L	18	3	17%	Parametric	Lognormal MLE	0.0000942	0.114	↔
04_2_20	MW-4	Appendix IV	Radium-226/228	pCi/L	18	0	0%	Parametric	Lognormal MLE	-0.000380	0.405	↔
04_3_24	MW-4	Field Parameters	Conductivity	mS/cm	18	0	0%	Nonparametric	MK	0.00000221	0.970	↔
04_3_25	MW-4	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	Parametric	Lognormal MLE	0.00112	0.080	↔
04_3_26	MW-4	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	Nonparametric	MK	0.0223	0.225	↔
04_3_27	MW-4	Field Parameters	Temperature	°C	18	0	0%	Nonparametric	MK	-0.00103	0.343	↔
04_3_28	MW-4	Field Parameters	Turbidity	NTU	18	0	0%	Parametric	Lognormal MLE	0.000147	0.648	↔
04_3_29	MW-4	Field Parameters	pH	su	18	0	0%	Nonparametric	MK	-0.0000317	0.676	↔
04_4_36	MW-4	Other	Total Suspended Solids	mg/L	18	7	39%	Nonparametric	MK	0	0.231	↔
04_5_38	MW-4	Part 115	Iron	mg/L	18	0	0%	Parametric	Lognormal MLE	0.0000341	0.526	↔
05_1_01	MW-5	Appendix III	Boron	mg/L	17	0	0%	Nonparametric	MK	-0.00157	0.011	↔
05_1_02	MW-5	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000536	0.001	↓
05_1_03	MW-5	Appendix III	Chloride	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000458	0.000	↓
05_1_05	MW-5	Appendix III	Sulfate	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000868	0.000	↓
05_1_06	MW-5	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000620	0.000	↓
05_1_07	MW-5	Appendix III	pH, Field	su	18	0	0%	Nonparametric	MK	0	1.000	↔
05_2_10	MW-5	Appendix IV	Barium	mg/L	18	0	0%	Parametric	Lognormal MLE	-0.0000954	0.289	↔
05_2_16	MW-5	Appendix IV	Lithium	mg/L	18	0	0%	Parametric	Lognormal MLE	0.00000930	0.967	↔

(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
05_2_18	MW-5	Appendix IV	Molybdenum	mg/L	18	0	0%	Parametric	Lognormal MLE	0.000129	0.628	↔
05_2_20	MW-5	Appendix IV	Radium-226/228	pCi/L	18	0	0%	Parametric	Lognormal MLE	0.000368	0.289	↔
05_3_24	MW-5	Field Parameters	Conductivity	mS/cm	18	0	0%	Parametric	Lognormal MLE	-0.000439	0.000	↓
05_3_25	MW-5	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	Parametric	Lognormal MLE	0.000857	0.010	↔
05_3_27	MW-5	Field Parameters	Temperature	°C	18	0	0%	Parametric	Lognormal MLE	-0.000200	0.091	↔
05_3_28	MW-5	Field Parameters	Turbidity	NTU	18	0	0%	Nonparametric	MK	-0.00281	0.649	↔
05_3_29	MW-5	Field Parameters	pH	su	18	0	0%	Nonparametric	MK	0	1.000	↔
05_4_36	MW-5	Other	Total Suspended Solids	mg/L	18	0	0%	Nonparametric	MK	-0.0172	0.120	↔
05_5_38	MW-5	Part 115	Iron	mg/L	18	1	6%	Parametric	Lognormal MLE	0.000150	0.854	↔
05_5_39	MW-5	Part 115	Nickel	mg/L	18	0	0%	Parametric	Lognormal MLE	-0.000751	0.000	↓
05_5_42	MW-5	Part 115	Zinc	mg/L	18	5	28%	Parametric	Lognormal MLE	-0.000783	0.250	↔
06_1_01	MW-6	Appendix III	Boron	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.0000125	0.926	↔
06_1_02	MW-6	Appendix III	Calcium	mg/L	17	0	0%	Parametric	Lognormal MLE	0.0000645	0.265	↔
06_1_03	MW-6	Appendix III	Chloride	mg/L	17	0	0%	Parametric	Lognormal MLE	0.00000906	0.937	↔
06_1_05	MW-6	Appendix III	Sulfate	mg/L	17	0	0%	Parametric	Lognormal MLE	-0.000129	0.389	↔
06_1_06	MW-6	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	Parametric	Lognormal MLE	0.000000291	0.997	↔
06_1_07	MW-6	Appendix III	pH, Field	su	18	0	0%	Parametric	Lognormal MLE	0.00000468	0.726	↔
06_2_10	MW-6	Appendix IV	Barium	mg/L	18	0	0%	Parametric	Lognormal MLE	-0.0000561	0.372	↔
06_2_16	MW-6	Appendix IV	Lithium	mg/L	18	0	0%	Parametric	Lognormal MLE	-0.0000494	0.598	↔
06_2_18	MW-6	Appendix IV	Molybdenum	mg/L	18	0	0%	Parametric	Lognormal MLE	-0.000335	0.008	↓
06_3_24	MW-6	Field Parameters	Conductivity	mS/cm	18	0	0%	Parametric	Lognormal MLE	0.00000414	0.938	↔
06_3_25	MW-6	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	Parametric	Lognormal MLE	0.00157	0.000	↑
06_3_27	MW-6	Field Parameters	Temperature	°C	18	0	0%	Parametric	Lognormal MLE	-0.0000244	0.692	↔
06_3_28	MW-6	Field Parameters	Turbidity	NTU	18	0	0%	Parametric	Lognormal MLE	-0.00144	0.000	↓
06_3_29	MW-6	Field Parameters	pH	su	18	0	0%	Parametric	Lognormal MLE	0.00000468	0.726	↔
06_5_39	MW-6	Part 115	Nickel	mg/L	18	4	22%	Nonparametric	MK	0	0.124	↔
07_1_01	MW-7	Appendix III	Boron	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.000464	0.013	↔
07_1_02	MW-7	Appendix III	Calcium	mg/L	12	0	0%	Parametric	Lognormal MLE	0.0000930	0.520	↔
07_1_03	MW-7	Appendix III	Chloride	mg/L	12	0	0%	Nonparametric	MK	0.0112	0.013	↔
07_1_05	MW-7	Appendix III	Sulfate	mg/L	12	0	0%	Parametric	Lognormal MLE	0.000137	0.282	↔
07_1_06	MW-7	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	Nonparametric	MK	0.117	0.451	↔
07_1_07	MW-7	Appendix III	pH, Field	su	12	0	0%	Nonparametric	MK	-0.000130	0.679	↔
07_2_09	MW-7	Appendix IV	Arsenic	mg/L	12	0	0%	Nonparametric	MK	0	0.163	↔
07_2_10	MW-7	Appendix IV	Barium	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.000352	0.000	↓
07_2_16	MW-7	Appendix IV	Lithium	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.000362	0.000	↓
07_2_18	MW-7	Appendix IV	Molybdenum	mg/L	12	0	0%	Nonparametric	MK	-0.000110	0.492	↔
07_2_20	MW-7	Appendix IV	Radium-226/228	pCi/L	12	0	0%	Parametric	Lognormal MLE	-0.000647	0.333	↔
07_3_24	MW-7	Field Parameters	Conductivity	mS/cm	12	0	0%	Parametric	Lognormal MLE	0.000194	0.364	↔
07_3_25	MW-7	Field Parameters	Dissolved Oxygen	mg/L	12	1	8%	Nonparametric	MK	0.00000784	0.835	↔
07_3_27	MW-7	Field Parameters	Temperature	°C	12	0	0%	Parametric	Lognormal MLE	-0.000251	0.352	↔
07_3_28	MW-7	Field Parameters	Turbidity	NTU	12	0	0%	Parametric	Lognormal MLE	-0.000412	0.492	↔
07_3_29	MW-7	Field Parameters	pH	su	12	0	0%	Nonparametric	MK	-0.000130	0.679	↔
07_5_38	MW-7	Part 115	Iron	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.0000561	0.826	↔

(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
08_1_01	MW-8	Appendix III	Boron	mg/L	12	1	8%	Parametric	Lognormal MLE	-0.000195	0.695	↔
08_1_02	MW-8	Appendix III	Calcium	mg/L	12	0	0%	Parametric	Lognormal MLE	0.0000365	0.480	↔
08_1_03	MW-8	Appendix III	Chloride	mg/L	12	2	17%	Parametric	Lognormal MLE	0.000951	0.297	↔
08_1_05	MW-8	Appendix III	Sulfate	mg/L	12	0	0%	Parametric	Lognormal MLE	0.000393	0.420	↔
08_1_06	MW-8	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	Parametric	Lognormal MLE	0.000123	0.026	↔
08_1_07	MW-8	Appendix III	pH, Field	su	12	0	0%	Parametric	Lognormal MLE	-0.0000181	0.497	↔
08_2_10	MW-8	Appendix IV	Barium	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.0000117	0.933	↔
08_2_20	MW-8	Appendix IV	Radium-226/228	pCi/L	12	0	0%	Parametric	Lognormal MLE	0.000676	0.522	↔
08_3_24	MW-8	Field Parameters	Conductivity	mS/cm	12	0	0%	Parametric	Lognormal MLE	0.0000322	0.550	↔
08_3_25	MW-8	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.000969	0.587	↔
08_3_26	MW-8	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	Parametric	Lognormal MLE	-0.000378	0.437	↔
08_3_27	MW-8	Field Parameters	Temperature	°C	12	0	0%	Parametric	Lognormal MLE	-0.000296	0.275	↔
08_3_28	MW-8	Field Parameters	Turbidity	NTU	12	0	0%	Parametric	Lognormal MLE	-0.0000795	0.850	↔
08_3_29	MW-8	Field Parameters	pH	su	12	0	0%	Parametric	Lognormal MLE	-0.0000181	0.497	↔
09_1_02	MW-9	Appendix III	Calcium	mg/L	12	0	0%	Parametric	Lognormal MLE	0.000262	0.003	↑
09_1_06	MW-9	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	Parametric	Lognormal MLE	0.000305	0.000	↑
09_1_07	MW-9	Appendix III	pH, Field	su	12	0	0%	Parametric	Lognormal MLE	-0.0000101	0.637	↔
09_2_10	MW-9	Appendix IV	Barium	mg/L	12	0	0%	Parametric	Lognormal MLE	0.000153	0.028	↔
09_3_24	MW-9	Field Parameters	Conductivity	mS/cm	12	0	0%	Parametric	Lognormal MLE	0.000162	0.006	↑
09_3_25	MW-9	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.0000401	0.828	↔
09_3_26	MW-9	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	Parametric	Lognormal MLE	-0.000738	0.041	↔
09_3_27	MW-9	Field Parameters	Temperature	°C	12	0	0%	Parametric	Lognormal MLE	-0.000615	0.161	↔
09_3_28	MW-9	Field Parameters	Turbidity	NTU	12	0	0%	Parametric	Lognormal MLE	-0.000124	0.795	↔
09_3_29	MW-9	Field Parameters	pH	su	12	0	0%	Parametric	Lognormal MLE	-0.0000101	0.637	↔
100A_1_01	MW-100A	Appendix III	Boron	mg/L	8	0	0%	Nonparametric	MK	0	0.617	↔
100A_1_02	MW-100A	Appendix III	Calcium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000174	0.007	↓
100A_1_03	MW-100A	Appendix III	Chloride	mg/L	8	0	0%	Nonparametric	MK	0	0.049	↔
100A_1_05	MW-100A	Appendix III	Sulfate	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.00304	0.000	↓
100A_1_06	MW-100A	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000202	0.002	↓
100A_1_07	MW-100A	Appendix III	pH, Field	su	8	0	0%	Parametric	Lognormal MLE	0.0000412	0.451	↔
100A_2_09	MW-100A	Appendix IV	Arsenic	mg/L	8	0	0%	Parametric	Lognormal MLE	0.00223	0.001	↑
100A_2_10	MW-100A	Appendix IV	Barium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000228	0.010	↔
100A_2_16	MW-100A	Appendix IV	Lithium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.00110	0.004	↓
100A_2_18	MW-100A	Appendix IV	Molybdenum	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.00169	0.000	↓
100A_2_20	MW-100A	Appendix IV	Radium-226/228	pCi/L	8	0	0%	Parametric	Lognormal MLE	-0.00338	0.157	↔
100A_3_24	MW-100A	Field Parameters	Conductivity	mS/cm	8	0	0%	Parametric	Lognormal MLE	-0.000784	0.000	↓
100A_3_25	MW-100A	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.00825	0.000	↓
100A_3_27	MW-100A	Field Parameters	Temperature	°C	8	0	0%	Parametric	Lognormal MLE	-0.00196	0.000	↓
100A_3_28	MW-100A	Field Parameters	Turbidity	NTU	8	0	0%	Parametric	Lognormal MLE	0.00224	0.477	↔
100A_3_29	MW-100A	Field Parameters	pH	su	8	0	0%	Parametric	Lognormal MLE	0.0000412	0.451	↔
100A_4_30	MW-100A	Other	Bicarbonate	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000210	0.101	↔
100A_4_32	MW-100A	Other	Hardness	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.0000439	0.686	↔
100A_4_33	MW-100A	Other	Magnesium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000248	0.038	↔

(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
100A_4_34	MW-100A	Other	Potassium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000948	0.000	↓
100A_4_35	MW-100A	Other	Sodium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000574	0.000	↓
100A_4_36	MW-100A	Other	Total Suspended Solids	mg/L	8	1	12%	Nonparametric	MK	0.000332	1.000	↔
100A_5_38	MW-100A	Part 115	Iron	mg/L	8	0	0%	Parametric	Lognormal MLE	0.00417	0.040	↔
100B_1_01	MW-100B	Appendix III	Boron	mg/L	8	0	0%	Parametric	Lognormal MLE	0.000870	0.000	↑
100B_1_02	MW-100B	Appendix III	Calcium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000435	0.000	↓
100B_1_03	MW-100B	Appendix III	Chloride	mg/L	8	0	0%	Parametric	Lognormal MLE	0.0000324	0.868	↔
100B_1_05	MW-100B	Appendix III	Sulfate	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000868	0.000	↓
100B_1_06	MW-100B	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000390	0.000	↓
100B_1_07	MW-100B	Appendix III	pH, Field	su	8	0	0%	Parametric	Lognormal MLE	0.000150	0.000	↑
100B_2_09	MW-100B	Appendix IV	Arsenic	mg/L	8	0	0%	Nonparametric	MK	0.00000518	0.170	↔
100B_2_10	MW-100B	Appendix IV	Barium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000509	0.000	↓
100B_2_16	MW-100B	Appendix IV	Lithium	mg/L	8	0	0%	Parametric	Lognormal MLE	0.000218	0.276	↔
100B_2_18	MW-100B	Appendix IV	Molybdenum	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000645	0.035	↔
100B_2_20	MW-100B	Appendix IV	Radium-226/228	pCi/L	8	0	0%	Parametric	Lognormal MLE	-0.00285	0.088	↔
100B_3_24	MW-100B	Field Parameters	Conductivity	mS/cm	8	0	0%	Parametric	Lognormal MLE	-0.000371	0.000	↓
100B_3_25	MW-100B	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	Nonparametric	MK	-0.0000910	0.352	↔
100B_3_27	MW-100B	Field Parameters	Temperature	°C	8	0	0%	Parametric	Lognormal MLE	-0.00115	0.000	↓
100B_3_28	MW-100B	Field Parameters	Turbidity	NTU	8	0	0%	Nonparametric	MK	0.000409	0.618	↔
100B_3_29	MW-100B	Field Parameters	pH	su	8	0	0%	Parametric	Lognormal MLE	0.000150	0.000	↑
100B_4_30	MW-100B	Other	Bicarbonate	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000698	0.058	↔
100B_4_32	MW-100B	Other	Hardness	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000347	0.008	↓
100B_4_33	MW-100B	Other	Magnesium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000687	0.000	↓
100B_4_34	MW-100B	Other	Potassium	mg/L	8	0	0%	Parametric	Lognormal MLE	0.000225	0.093	↔
100B_4_35	MW-100B	Other	Sodium	mg/L	8	0	0%	Parametric	Lognormal MLE	0.000598	0.013	↔
100B_4_36	MW-100B	Other	Total Suspended Solids	mg/L	8	0	0%	Parametric	Lognormal MLE	0.000252	0.853	↔
100B_5_38	MW-100B	Part 115	Iron	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000127	0.876	↔
10_1_01	MW-10	Appendix III	Boron	mg/L	12	0	0%	Nonparametric	MK	0	0.121	↔
10_1_02	MW-10	Appendix III	Calcium	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.0000441	0.509	↔
10_1_05	MW-10	Appendix III	Sulfate	mg/L	12	0	0%	Parametric	Lognormal MLE	0.000518	0.024	↔
10_1_06	MW-10	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	Parametric	Lognormal MLE	0.0000913	0.185	↔
10_1_07	MW-10	Appendix III	pH, Field	su	12	0	0%	Parametric	Lognormal MLE	-0.0000196	0.494	↔
10_2_10	MW-10	Appendix IV	Barium	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.000152	0.015	↔
10_2_20	MW-10	Appendix IV	Radium-226/228	pCi/L	12	0	0%	Parametric	Lognormal MLE	0.000745	0.257	↔
10_3_24	MW-10	Field Parameters	Conductivity	mS/cm	12	0	0%	Parametric	Lognormal MLE	-0.0000537	0.326	↔
10_3_25	MW-10	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	Parametric	Lognormal MLE	0.000403	0.013	↔
10_3_26	MW-10	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	Parametric	Lognormal MLE	-0.000561	0.149	↔
10_3_27	MW-10	Field Parameters	Temperature	°C	12	0	0%	Parametric	Lognormal MLE	-0.000300	0.131	↔
10_3_28	MW-10	Field Parameters	Turbidity	NTU	12	0	0%	Parametric	Lognormal MLE	0.000430	0.282	↔
10_3_29	MW-10	Field Parameters	pH	su	12	0	0%	Parametric	Lognormal MLE	-0.0000196	0.494	↔
13_1_01	MW-13	Appendix III	Boron	mg/L	12	0	0%	Parametric	Lognormal MLE	0.0000960	0.624	↔
13_1_02	MW-13	Appendix III	Calcium	mg/L	12	0	0%	Parametric	Lognormal MLE	0.000439	0.029	↔
13_1_03	MW-13	Appendix III	Chloride	mg/L	12	2	17%	Parametric	Lognormal MLE	0.00296	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
13_1_05	MW-13	Appendix III	Sulfate	mg/L	12	0	0%	Parametric	Lognormal MLE	0.00230	0.000	↑
13_1_06	MW-13	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	Parametric	Lognormal MLE	0.000659	0.000	↑
13_1_07	MW-13	Appendix III	pH, Field	su	12	0	0%	Nonparametric	MK	0.000371	0.491	↔
13_2_10	MW-13	Appendix IV	Barium	mg/L	12	0	0%	Parametric	Lognormal MLE	0.000683	0.000	↑
13_2_20	MW-13	Appendix IV	Radium-226/228	pCi/L	12	0	0%	Parametric	Lognormal MLE	-0.00105	0.476	↔
13_3_24	MW-13	Field Parameters	Conductivity	mS/cm	12	0	0%	Parametric	Lognormal MLE	0.000427	0.009	↑
13_3_25	MW-13	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.00354	0.004	↓
13_3_27	MW-13	Field Parameters	Temperature	°C	12	0	0%	Parametric	Lognormal MLE	0.000122	0.826	↔
13_3_28	MW-13	Field Parameters	Turbidity	NTU	12	0	0%	Parametric	Lognormal MLE	-0.00164	0.138	↔
13_3_29	MW-13	Field Parameters	pH	su	12	0	0%	Nonparametric	MK	0.000371	0.491	↔
13_4_30	MW-13	Other	Bicarbonate	mg/L	10	0	0%	Nonparametric	MK	0.154	0.170	↔
13_4_32	MW-13	Other	Hardness	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000890	0.000	↑
13_4_33	MW-13	Other	Magnesium	mg/L	11	0	0%	Parametric	Lognormal MLE	0.000726	0.000	↑
13_4_34	MW-13	Other	Potassium	mg/L	11	0	0%	Parametric	Lognormal MLE	0.000460	0.000	↑
13_4_35	MW-13	Other	Sodium	mg/L	11	0	0%	Parametric	Lognormal MLE	0.00227	0.000	↑
13_5_38	MW-13	Part 115	Iron	mg/L	12	1	8%	Nonparametric	MK	0.000143	0.020	↔
14_1_01	MW-14	Appendix III	Boron	mg/L	9	0	0%	Parametric	Lognormal MLE	-0.00000946	0.931	↔
14_1_02	MW-14	Appendix III	Calcium	mg/L	9	0	0%	Parametric	Lognormal MLE	0.000280	0.000	↑
14_1_03	MW-14	Appendix III	Chloride	mg/L	9	0	0%	Parametric	Lognormal MLE	0.000180	0.003	↑
14_1_05	MW-14	Appendix III	Sulfate	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.00274	0.000	↓
14_1_06	MW-14	Appendix III	Total Dissolved Solids	mg/L	9	1	11%	Nonparametric	MK	0.147	0.016	↔
14_1_07	MW-14	Appendix III	pH, Field	su	9	0	0%	Parametric	Lognormal MLE	-0.0000558	0.016	↔
14_2_09	MW-14	Appendix IV	Arsenic	mg/L	9	0	0%	Parametric	Lognormal MLE	0.00165	0.000	↑
14_2_10	MW-14	Appendix IV	Barium	mg/L	9	0	0%	Nonparametric	MK	0.0000157	0.754	↔
14_2_16	MW-14	Appendix IV	Lithium	mg/L	9	0	0%	Parametric	Lognormal MLE	-0.000326	0.005	↓
14_2_18	MW-14	Appendix IV	Molybdenum	mg/L	9	0	0%	Parametric	Lognormal MLE	-0.000161	0.545	↔
14_2_20	MW-14	Appendix IV	Radium-226/228	pCi/L	9	0	0%	Parametric	Lognormal MLE	-0.00244	0.137	↔
14_3_24	MW-14	Field Parameters	Conductivity	mS/cm	9	0	0%	Nonparametric	MK	0.000149	0.402	↔
14_3_27	MW-14	Field Parameters	Temperature	°C	9	0	0%	Parametric	Lognormal MLE	0.000414	0.269	↔
14_3_28	MW-14	Field Parameters	Turbidity	NTU	9	0	0%	Parametric	Lognormal MLE	-0.00246	0.004	↓
14_3_29	MW-14	Field Parameters	pH	su	9	0	0%	Parametric	Lognormal MLE	-0.0000558	0.016	↔
14_4_30	MW-14	Other	Bicarbonate	mg/L	9	0	0%	Parametric	Lognormal MLE	0.000795	0.000	↑
14_4_32	MW-14	Other	Hardness	mg/L	9	0	0%	Parametric	Lognormal MLE	0.000376	0.001	↑
14_4_33	MW-14	Other	Magnesium	mg/L	9	0	0%	Parametric	Lognormal MLE	0.000171	0.022	↔
14_4_34	MW-14	Other	Potassium	mg/L	9	0	0%	Parametric	Lognormal MLE	0.000329	0.154	↔
14_4_35	MW-14	Other	Sodium	mg/L	9	0	0%	Parametric	Lognormal MLE	0.0000322	0.725	↔
14_4_36	MW-14	Other	Total Suspended Solids	mg/L	9	0	0%	Nonparametric	MK	0.0283	0.012	↔
14_5_38	MW-14	Part 115	Iron	mg/L	9	0	0%	Parametric	Lognormal MLE	0.00165	0.000	↑
15_1_01	MW-15	Appendix III	Boron	mg/L	9	0	0%	Parametric	Lognormal MLE	0.000000188	0.021	↔
15_1_02	MW-15	Appendix III	Calcium	mg/L	9	0	0%	Parametric	Lognormal MLE	0.0000000508	0.760	↔
15_1_03	MW-15	Appendix III	Chloride	mg/L	9	0	0%	Parametric	Lognormal MLE	-0.000000125	0.456	↔
15_1_05	MW-15	Appendix III	Sulfate	mg/L	9	0	0%	Parametric	Lognormal MLE	-0.0000000813	0.765	↔
15_1_06	MW-15	Appendix III	Total Dissolved Solids	mg/L	9	0	0%	Parametric	Lognormal MLE	-0.00000000101	0.995	↔

(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
15_1_07	MW-15	Appendix III	pH, Field	su	9	0	0%	Parametric	Lognormal MLE	-0.0000000277	0.063	↔
15_2_10	MW-15	Appendix IV	Barium	mg/L	9	0	0%	Parametric	Lognormal MLE	0.000000266	0.161	↔
15_2_20	MW-15	Appendix IV	Radium-226/228	pCi/L	9	0	0%	Parametric	Lognormal MLE	0.000000913	0.192	↔
15_2_22	MW-15	Appendix IV	Selenium	mg/L	9	3	33%	Parametric	Lognormal MLE	-0.00000199	0.005	↓
15_3_24	MW-15	Field Parameters	Conductivity	mS/cm	9	0	0%	Parametric	Lognormal MLE	-0.00000000742	0.980	↔
15_3_25	MW-15	Field Parameters	Dissolved Oxygen	mg/L	9	0	0%	Parametric	Lognormal MLE	-0.00000208	0.033	↔
15_3_27	MW-15	Field Parameters	Temperature	°C	9	0	0%	Nonparametric	MK	0.00000979	0.016	↔
15_3_28	MW-15	Field Parameters	Turbidity	NTU	9	0	0%	Parametric	Lognormal MLE	0.0000000605	0.868	↔
15_3_29	MW-15	Field Parameters	pH	su	9	0	0%	Parametric	Lognormal MLE	-0.0000000277	0.063	↔
15_4_30	MW-15	Other	Bicarbonate	mg/L	9	0	0%	Parametric	Lognormal MLE	0.000000195	0.059	↔
15_4_32	MW-15	Other	Hardness	mg/L	9	0	0%	Parametric	Lognormal MLE	0.0000000425	0.611	↔
15_4_33	MW-15	Other	Magnesium	mg/L	9	0	0%	Parametric	Lognormal MLE	-0.00000000585	0.973	↔
15_4_35	MW-15	Other	Sodium	mg/L	9	0	0%	Nonparametric	MK	0.000000753	0.754	↔
15_5_38	MW-15	Part 115	Iron	mg/L	9	1	11%	Parametric	Lognormal MLE	0.00000112	0.158	↔
16A_1_01	MW-16A	Appendix III	Boron	mg/L	10	0	0%	Parametric	Lognormal MLE	0.00116	0.166	↔
16A_1_02	MW-16A	Appendix III	Calcium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.00105	0.000	↑
16A_1_03	MW-16A	Appendix III	Chloride	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000632	0.000	↑
16A_1_05	MW-16A	Appendix III	Sulfate	mg/L	10	0	0%	Parametric	Lognormal MLE	0.00355	0.000	↑
16A_1_06	MW-16A	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000958	0.000	↑
16A_1_07	MW-16A	Appendix III	pH, Field	su	10	0	0%	Parametric	Lognormal MLE	-0.0000213	0.591	↔
16A_2_09	MW-16A	Appendix IV	Arsenic	mg/L	10	0	0%	Parametric	Lognormal MLE	0.00156	0.002	↑
16A_2_10	MW-16A	Appendix IV	Barium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000853	0.032	↔
16A_2_20	MW-16A	Appendix IV	Radium-226/228	pCi/L	10	0	0%	Parametric	Lognormal MLE	0.00380	0.072	↔
16A_3_24	MW-16A	Field Parameters	Conductivity	mS/cm	10	0	0%	Parametric	Lognormal MLE	0.000902	0.000	↑
16A_3_25	MW-16A	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	Parametric	Lognormal MLE	-0.00503	0.127	↔
16A_3_27	MW-16A	Field Parameters	Temperature	°C	10	0	0%	Parametric	Lognormal MLE	0.00137	0.078	↔
16A_3_28	MW-16A	Field Parameters	Turbidity	NTU	10	0	0%	Parametric	Lognormal MLE	0.000942	0.140	↔
16A_3_29	MW-16A	Field Parameters	pH	su	10	0	0%	Parametric	Lognormal MLE	-0.0000213	0.591	↔
16A_4_30	MW-16A	Other	Bicarbonate	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000336	0.286	↔
16A_4_32	MW-16A	Other	Hardness	mg/L	10	0	0%	Parametric	Lognormal MLE	0.00114	0.000	↑
16A_4_33	MW-16A	Other	Magnesium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.00108	0.001	↑
16A_4_34	MW-16A	Other	Potassium	mg/L	10	0	0%	Parametric	Lognormal MLE	-0.000332	0.470	↔
16A_4_35	MW-16A	Other	Sodium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000643	0.012	↔
16A_4_36	MW-16A	Other	Total Suspended Solids	mg/L	10	1	10%	Parametric	Lognormal MLE	-0.0000915	0.958	↔
16A_5_38	MW-16A	Part 115	Iron	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000663	0.174	↔
16B_1_01	MW-16B	Appendix III	Boron	mg/L	10	0	0%	Nonparametric	MK	-0.0000389	0.100	↔
16B_1_02	MW-16B	Appendix III	Calcium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000298	0.000	↑
16B_1_05	MW-16B	Appendix III	Sulfate	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000236	0.132	↔
16B_1_06	MW-16B	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	Parametric	Lognormal MLE	0.0000698	0.167	↔
16B_1_07	MW-16B	Appendix III	pH, Field	su	10	0	0%	Parametric	Lognormal MLE	0.0000204	0.555	↔
16B_2_10	MW-16B	Appendix IV	Barium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000108	0.205	↔
16B_2_16	MW-16B	Appendix IV	Lithium	mg/L	10	0	0%	Parametric	Lognormal MLE	-0.000379	0.003	↓
16B_2_18	MW-16B	Appendix IV	Molybdenum	mg/L	10	0	0%	Nonparametric	MK	0	0.911	↔

(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
16B_2_20	MW-16B	Appendix IV	Radium-226/228	pCi/L	10	0	0%	Parametric	Lognormal MLE	0.000543	0.695	↔
16B_3_24	MW-16B	Field Parameters	Conductivity	mS/cm	10	0	0%	Parametric	Lognormal MLE	0.0000799	0.363	↔
16B_3_27	MW-16B	Field Parameters	Temperature	°C	10	0	0%	Parametric	Lognormal MLE	0.000575	0.180	↔
16B_3_28	MW-16B	Field Parameters	Turbidity	NTU	10	0	0%	Parametric	Lognormal MLE	-0.00210	0.378	↔
16B_3_29	MW-16B	Field Parameters	pH	su	10	0	0%	Parametric	Lognormal MLE	0.0000218	0.530	↔
16B_4_30	MW-16B	Other	Bicarbonate	mg/L	10	0	0%	Parametric	Lognormal MLE	0.0000693	0.217	↔
16B_4_32	MW-16B	Other	Hardness	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000344	0.000	↑
16B_4_33	MW-16B	Other	Magnesium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000264	0.054	↔
16B_4_34	MW-16B	Other	Potassium	mg/L	10	0	0%	Nonparametric	MK	-0.00143	0.049	↔
16B_4_35	MW-16B	Other	Sodium	mg/L	10	0	0%	Nonparametric	MK	-0.0143	0.001	↓
16B_5_38	MW-16B	Part 115	Iron	mg/L	10	0	0%	Parametric	Lognormal MLE	-0.00237	0.000	↓
7C_1_01	MW-7C	Appendix III	Boron	mg/L	12	0	0%	Parametric	Lognormal MLE	0.0000108	0.820	↔
7C_1_02	MW-7C	Appendix III	Calcium	mg/L	12	0	0%	Nonparametric	MK	-0.0421	0.074	↔
7C_1_03	MW-7C	Appendix III	Chloride	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.0000714	0.057	↔
7C_1_05	MW-7C	Appendix III	Sulfate	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.000192	0.000	↓
7C_1_06	MW-7C	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	Nonparametric	MK	-0.246	0.000	↓
7C_1_07	MW-7C	Appendix III	pH, Field	su	12	0	0%	Parametric	Lognormal MLE	-0.000000102	0.996	↔
7C_2_09	MW-7C	Appendix IV	Arsenic	mg/L	12	0	0%	Nonparametric	MK	0	0.762	↔
7C_2_10	MW-7C	Appendix IV	Barium	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.0000793	0.209	↔
7C_2_16	MW-7C	Appendix IV	Lithium	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.0000472	0.348	↔
7C_2_18	MW-7C	Appendix IV	Molybdenum	mg/L	12	0	0%	Parametric	Lognormal MLE	-0.0000110	0.822	↔
7C_2_20	MW-7C	Appendix IV	Radium-226/228	pCi/L	12	0	0%	Parametric	Lognormal MLE	-0.00108	0.158	↔
7C_3_24	MW-7C	Field Parameters	Conductivity	mS/cm	12	0	0%	Parametric	Lognormal MLE	-0.000304	0.017	↔
7C_3_25	MW-7C	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	Nonparametric	MK	-0.000358	0.037	↔
7C_3_26	MW-7C	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	Nonparametric	MK	-0.0362	0.335	↔
7C_3_27	MW-7C	Field Parameters	Temperature	°C	12	0	0%	Parametric	Lognormal MLE	-0.000176	0.414	↔
7C_3_28	MW-7C	Field Parameters	Turbidity	NTU	12	0	0%	Parametric	Lognormal MLE	0.00402	0.122	↔
7C_3_29	MW-7C	Field Parameters	pH	su	12	0	0%	Parametric	Lognormal MLE	-0.000000102	0.996	↔
7C_4_30	MW-7C	Other	Bicarbonate	mg/L	12	0	0%	Parametric	Lognormal MLE	0.0000983	0.130	↔
7C_4_32	MW-7C	Other	Hardness	mg/L	12	0	0%	Nonparametric	MK	-0.352	0.005	↓
7C_4_33	MW-7C	Other	Magnesium	mg/L	12	0	0%	Parametric	Lognormal MLE	0.0000681	0.501	↔
7C_4_34	MW-7C	Other	Potassium	mg/L	12	0	0%	Parametric	Lognormal MLE	0.000151	0.078	↔
7C_4_35	MW-7C	Other	Sodium	mg/L	12	0	0%	Nonparametric	MK	0.000853	0.945	↔
7C_4_36	MW-7C	Other	Total Suspended Solids	mg/L	12	3	25%	Parametric	Lognormal MLE	-0.00103	0.334	↔
7C_5_38	MW-7C	Part 115	Iron	mg/L	12	0	0%	Parametric	Lognormal MLE	0.0000195	0.807	↔
7C_5_39	MW-7C	Part 115	Nickel	mg/L	12	0	0%	Nonparametric	MK	-0.00000333	0.025	↔

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
02_1_01	MW-2	Appendix III	Boron	mg/L	17	0	0%	0.0182	0.000	↑	-0.00144	0.000	↓	2020-09-28	0.895	↔
02_1_02	MW-2	Appendix III	Calcium	mg/L	17	0	0%	-0.0699	0.000	↓	-0.0337	0.443	↔	2022-12-07	0.889	↔
02_1_03	MW-2	Appendix III	Chloride	mg/L	17	0	0%	0.175	0.003	↑	-0.00293	0.335	↔	2020-08-27	0.724	↔
02_1_05	MW-2	Appendix III	Sulfate	mg/L	17	0	0%	2.10	0.000	↑	-0.267	0.000	↓	2020-08-06	0.950	↔
02_1_06	MW-2	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2.79	0.002	↑	-0.373	0.000	↓	2020-07-31	0.927	↔
02_1_07	MW-2	Appendix III	pH, Field	su	18	0	0%	0.000964	0.469	↔	0.0000224	0.774	↔	2020-09-10	0.158	↔
02_2_09	MW-2	Appendix IV	Arsenic	mg/L	18	14	78%	0.00000155	0.153	↔	-0.000000898	0.293	↔	2022-01-31	0.306	↔
02_2_10	MW-2	Appendix IV	Barium	mg/L	18	0	0%	0.00000546	0.251	↔	-0.0000139	0.078	↔	2022-02-01	0.431	↔
02_2_16	MW-2	Appendix IV	Lithium	mg/L	18	0	0%	0.0000992	0.000	↑	-0.0000198	0.000	↓	2020-10-18	0.855	↔
02_2_18	MW-2	Appendix IV	Molybdenum	mg/L	18	0	0%	0.00000424	0.006	↑	-0.0000221	0.086	↔	2023-07-03	0.508	↔
02_2_20	MW-2	Appendix IV	Radium-226/228	pCi/L	18	0	0%	0.000949	0.497	↔	-0.00163	0.155	↔	2022-01-31	0.174	↔
02_3_24	MW-2	Field Parameters	Conductivity	mS/cm	18	0	0%	0.00181	0.009	↑	-0.000384	0.000	↓	2020-08-26	0.903	↔
02_3_25	MW-2	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	0.000732	0.004	↑	-0.00105	0.187	↔	2022-09-08	0.505	↔
02_3_26	MW-2	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	0.360	0.079	↔	-0.0780	0.158	↔	2021-05-03	0.436	↔
02_3_27	MW-2	Field Parameters	Temperature	°C	18	0	0%	0.000506	0.806	↔	-0.00488	0.504	↔	2022-09-17	0.110	↔
02_3_28	MW-2	Field Parameters	Turbidity	NTU	18	0	0%	-0.0127	0.380	↔	0.0852	0.511	↔	2023-07-19	0.086	↔
02_3_29	MW-2	Field Parameters	pH	su	18	0	0%	0.000964	0.469	↔	0.0000224	0.774	↔	2020-09-10	0.158	↔
02_4_36	MW-2	Other	Total Suspended Solids	mg/L	18	4	22%	0.0266	0.154	↔	0.0105	0.212	↔	2021-05-16	0.579	↔
02_5_38	MW-2	Part 115	Iron	mg/L	18	0	0%	0.00132	0.014	↔	-0.000946	0.228	↔	2022-02-23	0.435	↔
02_5_39	MW-2	Part 115	Nickel	mg/L	18	0	0%	0.0000750	0.000	↑	-0.00000917	0.000	↓	2020-09-07	0.912	↔
02_5_42	MW-2	Part 115	Zinc	mg/L	18	15	83%	-0.000114	0.231	↔	0.0000000956	0.986	↔	2020-08-27	0.249	↔
03_1_02	MW-3	Appendix III	Calcium	mg/L	7	0	0%	0.0452	0.825	↔	0.00859	0.710	↔	2022-01-31	0.400	↔
03_1_03	MW-3	Appendix III	Chloride	mg/L	7	0	0%	0.0246	0.010	↑	-0.00697	0.312	↔	2022-10-22	0.958	↔
03_1_05	MW-3	Appendix III	Sulfate	mg/L	7	0	0%	0.00788	0.880	↔	-0.0812	0.709	↔	2023-02-07	0.246	↔
03_1_06	MW-3	Appendix III	Total Dissolved Solids	mg/L	7	0	0%	-0.109	0.051	↔	-0.0338	0.533	↔	2022-08-02	0.906	↔
03_2_10	MW-3	Appendix IV	Barium	mg/L	7	0	0%	-0.00000403	0.719	↔	-0.00000342	0.058	↔	2021-12-05	0.890	↔
03_2_16	MW-3	Appendix IV	Lithium	mg/L	7	0	0%	0.0000989	0.177	↔	-0.0000132	0.126	↔	2021-09-15	0.727	↔
03_2_18	MW-3	Appendix IV	Molybdenum	mg/L	7	0	0%	0.0000273	0.207	↔	-0.00000262	0.973	↔	2023-02-07	0.571	↔
03_2_20	MW-3	Appendix IV	Radium-226/228	pCi/L	7	0	0%	0.00498	0.199	↔	-0.00436	0.059	↔	2022-06-14	0.793	↔
03_3_24	MW-3	Field Parameters	Conductivity	mS/cm	7	0	0%	0.0000620	0.717	↔	-0.000129	0.187	↔	2022-04-30	0.624	↔
03_3_25	MW-3	Field Parameters	Dissolved Oxygen	mg/L	7	0	0%	0.000372	0.070	↔	-0.000655	0.322	↔	2023-02-07	0.760	↔
03_3_26	MW-3	Field Parameters	Oxidation Reduction Potential	mV	7	0	0%	-0.0876	0.193	↔	0.0519	0.527	↔	2022-08-23	0.537	↔
04_1_01	MW-4	Appendix III	Boron	mg/L	17	0	0%	0.000357	0.432	↔	0.00000806	0.155	↔	2020-05-27	0.271	↔
04_1_02	MW-4	Appendix III	Calcium	mg/L	17	0	0%	-0.0511	0.065	↔	0.00520	0.246	↔	2020-10-19	0.301	↔
04_1_03	MW-4	Appendix III	Chloride	mg/L	17	0	0%	-0.0163	0.292	↔	0.00542	0.001	↑	2020-09-26	0.622	↔
04_1_05	MW-4	Appendix III	Sulfate	mg/L	17	0	0%	-0.00814	0.011	↔	0.00858	0.073	↔	2022-08-01	0.601	↔
04_1_06	MW-4	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-0.0778	0.413	↔	0.0130	0.417	↔	2021-01-26	0.144	↔
04_1_07	MW-4	Appendix III	pH, Field	su	18	0	0%	0.000727	0.509	↔	-0.000122	0.462	↔	2020-10-19	0.070	↔
04_2_09	MW-4	Appendix IV	Arsenic	mg/L	18	0	0%	0.0000179	0.105	↔	-0.000000525	0.404	↔	2020-09-10	0.416	↔
04_2_10	MW-4	Appendix IV	Barium	mg/L	18	0	0%	-0.0000103	0.677	↔	0.00000807	0.245	↔	2021-02-10	0.154	↔
04_2_16	MW-4	Appendix IV	Lithium	mg/L	18	3	17%	0.00000764	0.148	↔	-0.0000000165	0.986	↔	2020-11-14	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
04_2_18	MW-4	Appendix IV	Molybdenum	mg/L	18	16	89%	0.00000386	0.062	↔	-0.00000201	0.207	↔	2021-08-03	0.296	↔
04_2_20	MW-4	Appendix IV	Radium-226/228	pCi/L	18	0	0%	0.00369	0.470	↔	-0.00189	0.189	↔	2021-05-03	0.149	↔
04_3_24	MW-4	Field Parameters	Conductivity	mS/cm	18	0	0%	-0.000281	0.021	↔	0.000484	0.225	↔	2022-08-02	0.374	↔
04_3_25	MW-4	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	-0.00475	0.175	↔	0.000169	0.059	↔	2020-06-23	0.328	↔
04_3_26	MW-4	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	0.156	0.339	↔	-0.0165	0.711	↔	2021-05-03	0.208	↔
04_3_27	MW-4	Field Parameters	Temperature	°C	18	0	0%	0.119	0.143	↔	-0.00167	0.090	↔	2020-05-27	0.325	↔
04_3_28	MW-4	Field Parameters	Turbidity	NTU	18	0	0%	0.000792	0.269	↔	-0.00530	0.408	↔	2023-05-16	0.136	↔
04_3_29	MW-4	Field Parameters	pH	su	18	0	0%	0.000727	0.509	↔	-0.000122	0.462	↔	2020-10-19	0.070	↔
04_4_36	MW-4	Other	Total Suspended Solids	mg/L	18	7	39%	0.0000338	0.968	↔	-0.00227	0.767	↔	2023-02-07	0.050	↔
04_5_38	MW-4	Part 115	Iron	mg/L	18	0	0%	0.000187	0.066	↔	-0.00166	0.070	↔	2023-06-28	0.366	↔
04_5_42	MW-4	Part 115	Zinc	mg/L	18	15	83%	-0.0000860	0.378	↔	-0.000000769	0.843	↔	2020-08-17	0.240	↔
05_1_01	MW-5	Appendix III	Boron	mg/L	17	0	0%	-0.00404	0.081	↔	0.000587	0.735	↔	2022-01-31	0.527	↔
05_1_02	MW-5	Appendix III	Calcium	mg/L	17	0	0%	-0.228	0.056	↔	0.0171	0.847	↔	2022-01-31	0.596	↔
05_1_03	MW-5	Appendix III	Chloride	mg/L	17	0	0%	0.125	0.518	↔	-0.0294	0.000	↓	2020-06-30	0.765	↔
05_1_05	MW-5	Appendix III	Sulfate	mg/L	17	0	0%	-0.754	0.027	↔	-0.169	0.732	↔	2022-02-01	0.601	↔
05_1_06	MW-5	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	-1.19	0.066	↔	-0.230	0.634	↔	2022-01-31	0.653	↔
05_1_07	MW-5	Appendix III	pH, Field	su	18	0	0%	-0.000998	0.336	↔	0.000421	0.150	↔	2021-05-03	0.198	↔
05_2_09	MW-5	Appendix IV	Arsenic	mg/L	18	12	67%	-0.0000161	0.488	↔	0.00000102	0.280	↔	2020-08-06	0.136	↔
05_2_10	MW-5	Appendix IV	Barium	mg/L	18	0	0%	-0.0000997	0.006	↓	0.00000445	0.452	↔	2020-11-06	0.515	↔
05_2_13	MW-5	Appendix IV	Chromium	mg/L	18	16	89%	-0.000000575	0.630	↔	-0.00000000000198	1.000	↔	2023-03-19	0.030	↔
05_2_14	MW-5	Appendix IV	Cobalt	mg/L	18	17	94%	-0.0000182	0.003	↓	0.0000000295	0.640	↔	2020-06-15	0.846	↔
05_2_15	MW-5	Appendix IV	Lead	mg/L	18	15	83%	0.00000772	0.057	↔	-0.00000756	0.225	↔	2022-02-01	0.297	↔
05_2_16	MW-5	Appendix IV	Lithium	mg/L	18	0	0%	-0.0000318	0.304	↔	0.0000435	0.378	↔	2022-02-01	0.139	↔
05_2_18	MW-5	Appendix IV	Molybdenum	mg/L	18	0	0%	-0.0000584	0.103	↔	0.0000841	0.007	↑	2022-01-14	0.489	↔
05_2_20	MW-5	Appendix IV	Radium-226/228	pCi/L	18	0	0%	0.00655	0.271	↔	-0.000233	0.831	↔	2020-11-06	0.120	↔
05_3_24	MW-5	Field Parameters	Conductivity	mS/cm	18	0	0%	0.0109	0.470	↔	-0.000716	0.001	↓	2020-06-01	0.552	↔
05_3_25	MW-5	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	0.00341	0.024	↔	-0.00229	0.634	↔	2022-08-02	0.391	↔
05_3_26	MW-5	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	0.623	0.053	↔	-0.0371	0.654	↔	2021-02-08	0.408	↔
05_3_27	MW-5	Field Parameters	Temperature	°C	18	0	0%	-0.00794	0.482	↔	-0.000689	0.823	↔	2021-01-27	0.122	↔
05_3_28	MW-5	Field Parameters	Turbidity	NTU	18	0	0%	-3.92	0.000	↓	0.00469	0.083	↔	2020-06-08	0.991	↔
05_3_29	MW-5	Field Parameters	pH	su	18	0	0%	-0.000998	0.336	↔	0.000421	0.150	↔	2021-05-03	0.198	↔
05_4_36	MW-5	Other	Total Suspended Solids	mg/L	18	0	0%	-0.507	0.085	↔	0.00617	0.786	↔	2020-09-27	0.406	↔
05_5_37	MW-5	Part 115	Copper	mg/L	18	13	72%	0.00000316	0.748	↔	-0.00000805	0.610	↔	2022-02-01	0.054	↔
05_5_38	MW-5	Part 115	Iron	mg/L	18	1	6%	-0.217	0.003	↓	0.000283	0.707	↔	2020-05-30	0.692	↔
05_5_39	MW-5	Part 115	Nickel	mg/L	18	0	0%	-0.0000238	0.111	↔	-0.00000481	0.088	↔	2020-12-20	0.633	↔
05_5_41	MW-5	Part 115	Vanadium	mg/L	18	15	83%	-0.000244	0.000	↓	0.000000305	0.631	↔	2020-05-26	0.746	↔
05_5_42	MW-5	Part 115	Zinc	mg/L	18	5	28%	0.0000673	0.596	↔	-0.0000249	0.303	↔	2021-01-26	0.094	↔
06_1_01	MW-6	Appendix III	Boron	mg/L	17	0	0%	0.00330	0.013	↔	-0.000204	0.057	↔	2020-09-15	0.559	↔
06_1_02	MW-6	Appendix III	Calcium	mg/L	17	0	0%	0.264	0.162	↔	-0.00275	0.804	↔	2020-09-10	0.378	↔
06_1_03	MW-6	Appendix III	Chloride	mg/L	17	0	0%	0.111	0.124	↔	-0.00498	0.247	↔	2020-09-02	0.364	↔
06_1_05	MW-6	Appendix III	Sulfate	mg/L	17	0	0%	0.836	0.109	↔	-0.0605	0.061	↔	2020-08-27	0.399	↔
06_1_06	MW-6	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	1.77	0.071	↔	-0.0787	0.176	↔	2020-08-27	0.422	↔

(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
06_1_07	MW-6	Appendix III	pH, Field	su	18	0	0%	0.00261	0.154	↔	-0.0000680	0.517	↔	2020-08-22	0.272	↔
06_2_09	MW-6	Appendix IV	Arsenic	mg/L	18	17	94%	-0.000000103	0.191	↔	0.00000341	0.000	↑	2023-04-14	0.889	↔
06_2_10	MW-6	Appendix IV	Barium	mg/L	18	0	0%	0.0000620	0.304	↔	-0.00000620	0.093	↔	2020-09-14	0.279	↔
06_2_16	MW-6	Appendix IV	Lithium	mg/L	18	0	0%	0.000115	0.003	↑	-0.0000113	0.015	↔	2020-10-18	0.617	↔
06_2_18	MW-6	Appendix IV	Molybdenum	mg/L	18	0	0%	0.0000780	0.168	↔	-0.0000103	0.006	↓	2020-09-04	0.483	↔
06_2_20	MW-6	Appendix IV	Radium-226/228	pCi/L	18	0	0%	0.00547	0.028	↔	-0.000844	0.192	↔	2021-02-10	0.424	↔
06_3_24	MW-6	Field Parameters	Conductivity	mS/cm	18	0	0%	0.00187	0.062	↔	-0.0000933	0.110	↔	2020-09-11	0.500	↔
06_3_25	MW-6	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	0.000360	0.588	↔	0.000193	0.012	↔	2020-10-11	0.528	↔
06_3_26	MW-6	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	0.762	0.685	↔	0.0373	0.425	↔	2020-07-20	0.146	↔
06_3_27	MW-6	Field Parameters	Temperature	°C	18	0	0%	0.00146	0.370	↔	-0.00739	0.201	↔	2022-12-20	0.184	↔
06_3_28	MW-6	Field Parameters	Turbidity	NTU	18	0	0%	-0.104	0.046	↔	-0.00487	0.231	↔	2020-09-18	0.568	↔
06_3_29	MW-6	Field Parameters	pH	su	18	0	0%	0.00261	0.154	↔	-0.0000680	0.517	↔	2020-08-22	0.272	↔
06_4_36	MW-6	Other	Total Suspended Solids	mg/L	18	13	72%	0.0212	0.047	↔	-0.0208	0.203	↔	2022-02-01	0.318	↔
06_5_38	MW-6	Part 115	Iron	mg/L	18	9	50%	-0.000893	0.017	↔	0.00000387	0.845	↔	2020-09-04	0.638	↔
06_5_39	MW-6	Part 115	Nickel	mg/L	18	4	22%	0.0000357	0.039	↔	-0.00000187	0.000	↓	2020-07-10	0.706	↔
06_5_42	MW-6	Part 115	Zinc	mg/L	18	17	94%	-0.000104	0.334	↔	-0.00000000000000310	1.000	↔	2020-08-17	0.259	↔
07_1_01	MW-7	Appendix III	Boron	mg/L	12	0	0%	0.00203	0.458	↔	-0.00129	0.053	↔	2022-01-02	0.450	↔
07_1_03	MW-7	Appendix III	Chloride	mg/L	12	0	0%	0.0458	0.076	↔	-0.0148	0.275	↔	2022-08-01	0.639	↔
07_1_04	MW-7	Appendix III	Fluoride	mg/L	12	11	92%	-0.00126	0.513	↔	0.000285	0.326	↔	2021-12-06	0.175	↔
07_2_04	MW-7	Appendix IV	Fluoride	mg/L	12	11	92%	-0.00126	0.513	↔	0.000285	0.326	↔	2021-12-06	0.175	↔
07_2_09	MW-7	Appendix IV	Arsenic	mg/L	12	0	0%	-0.00000535	0.015	↔	0.00000559	0.053	↔	2022-11-01	0.656	↔
07_2_16	MW-7	Appendix IV	Lithium	mg/L	12	0	0%	0.0000580	0.388	↔	-0.0000452	0.012	↔	2021-12-20	0.649	↔
07_2_18	MW-7	Appendix IV	Molybdenum	mg/L	12	0	0%	-0.000222	0.069	↔	0.0000316	0.838	↔	2023-02-07	0.696	↔
07_2_20	MW-7	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.00272	0.375	↔	-0.00908	0.490	↔	2023-02-08	0.240	↔
07_3_25	MW-7	Field Parameters	Dissolved Oxygen	mg/L	12	1	8%	0.000800	0.450	↔	-0.000182	0.434	↔	2022-01-10	0.159	↔
07_3_26	MW-7	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	0.201	0.231	↔	-0.0261	0.772	↔	2022-02-17	0.213	↔
07_3_27	MW-7	Field Parameters	Temperature	°C	12	0	0%	-0.0218	0.258	↔	0.00276	0.650	↔	2022-02-15	0.263	↔
07_3_28	MW-7	Field Parameters	Turbidity	NTU	12	0	0%	0.0940	0.601	↔	-0.00428	0.381	↔	2021-07-30	0.140	↔
07_4_36	MW-7	Other	Total Suspended Solids	mg/L	12	10	83%	-0.00345	0.322	↔	0.000838	0.457	↔	2022-02-16	0.202	↔
07_5_38	MW-7	Part 115	Iron	mg/L	12	0	0%	0.00247	0.405	↔	-0.000737	0.447	↔	2022-02-16	0.158	↔
07_5_41	MW-7	Part 115	Vanadium	mg/L	12	11	92%	-0.0000000214	0.085	↔	0.00000546	0.000	↑	2023-07-28	1.000	↔
07_5_42	MW-7	Part 115	Zinc	mg/L	12	9	75%	-0.0000122	0.546	↔	-0.000000546	0.901	↔	2021-12-26	0.135	↔
08_1_01	MW-8	Appendix III	Boron	mg/L	12	1	8%	-0.000316	0.286	↔	0.0000438	0.641	↔	2022-01-15	0.191	↔
08_1_02	MW-8	Appendix III	Calcium	mg/L	12	0	0%	0.0382	0.220	↔	-0.00638	0.516	↔	2022-02-16	0.290	↔
08_1_04	MW-8	Appendix III	Fluoride	mg/L	12	11	92%	-0.00179	0.513	↔	0.000405	0.326	↔	2021-12-06	0.175	↔
08_1_05	MW-8	Appendix III	Sulfate	mg/L	12	0	0%	-0.0871	0.282	↔	0.0323	0.228	↔	2022-01-18	0.282	↔
08_2_04	MW-8	Appendix IV	Fluoride	mg/L	12	11	92%	-0.00179	0.513	↔	0.000405	0.326	↔	2021-12-06	0.175	↔
08_2_10	MW-8	Appendix IV	Barium	mg/L	12	0	0%	-0.0000316	0.063	↔	0.00000837	0.119	↔	2022-02-14	0.515	↔
08_2_16	MW-8	Appendix IV	Lithium	mg/L	12	6	50%	-0.0000119	0.382	↔	0.00000153	0.838	↔	2022-02-17	0.121	↔
08_2_18	MW-8	Appendix IV	Molybdenum	mg/L	12	10	83%	-0.0000204	0.286	↔	-0.000000000000317	1.000	↔	2022-01-10	0.337	↔
08_2_20	MW-8	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.0182	0.074	↔	-0.00199	0.513	↔	2022-01-11	0.433	↔
08_3_26	MW-8	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	0.312	0.520	↔	-0.202	0.460	↔	2022-02-17	0.172	↔

(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
08_3_27	MW-8	Field Parameters	Temperature	°C	12	0	0%	-0.0169	0.381	↔	0.000713	0.908	↔	2022-02-16	0.204	↔
08_4_36	MW-8	Other	Total Suspended Solids	mg/L	12	11	92%	-0.00190	0.513	↔	0.000430	0.326	↔	2021-12-06	0.175	↔
08_5_42	MW-8	Part 115	Zinc	mg/L	12	11	92%	-0.0000000429	0.085	↔	0.0000109	0.000	↑	2023-07-28	1.000	↔
09_1_03	MW-9	Appendix III	Chloride	mg/L	12	10	83%	-0.00776	0.489	↔	0.00208	0.226	↔	2021-12-06	0.224	↔
09_1_04	MW-9	Appendix III	Fluoride	mg/L	12	11	92%	-0.00184	0.513	↔	0.000416	0.326	↔	2021-12-06	0.175	↔
09_1_05	MW-9	Appendix III	Sulfate	mg/L	12	8	67%	0.000115	0.897	↔	0.0326	0.000	↑	2023-06-29	0.962	↔
09_1_06	MW-9	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.0517	0.061	↔	0.365	0.008	↑	2023-07-31	0.874	↔
09_2_04	MW-9	Appendix IV	Fluoride	mg/L	12	11	92%	-0.00184	0.513	↔	0.000416	0.326	↔	2021-12-06	0.175	↔
09_2_09	MW-9	Appendix IV	Arsenic	mg/L	12	11	92%	-0.0000000214	0.085	↔	0.00000546	0.000	↑	2023-07-28	1.000	↔
09_2_10	MW-9	Appendix IV	Barium	mg/L	12	0	0%	-0.00000543	0.145	↔	0.00000771	0.004	↑	2022-06-28	0.748	↔
09_2_20	MW-9	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.00359	0.139	↔	-0.00551	0.112	↔	2022-10-19	0.445	↔
09_3_24	MW-9	Field Parameters	Conductivity	mS/cm	12	0	0%	0.00000287	0.954	↔	0.000365	0.121	↔	2023-05-03	0.627	↔
09_3_27	MW-9	Field Parameters	Temperature	°C	12	0	0%	-0.0350	0.383	↔	0.000260	0.976	↔	2022-01-10	0.243	↔
09_3_28	MW-9	Field Parameters	Turbidity	NTU	12	0	0%	-0.00344	0.349	↔	0.0156	0.329	↔	2023-07-14	0.208	↔
09_5_42	MW-9	Part 115	Zinc	mg/L	12	11	92%	0.00000760	0.392	↔	-0.00000172	0.377	↔	2021-12-07	0.175	↔
100A_1_05	MW-100A	Appendix III	Sulfate	mg/L	8	0	0%	-0.140	0.044	↔	0.00844	0.867	↔	2023-10-22	0.874	↔
100A_1_06	MW-100A	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	-0.118	0.105	↔	0.0571	0.872	↔	2023-12-07	0.607	↔
100A_1_07	MW-100A	Appendix III	pH, Field	su	8	0	0%	-0.000483	0.519	↔	0.00289	0.515	↔	2023-11-27	0.428	↔
100A_2_09	MW-100A	Appendix IV	Arsenic	mg/L	8	0	0%	0.0000857	0.075	↔	0.00000292	0.862	↔	2023-08-30	0.824	↔
100A_2_16	MW-100A	Appendix IV	Lithium	mg/L	8	0	0%	0.0000286	0.089	↔	-0.0000449	0.001	↓	2023-09-12	0.953	↔
100A_2_18	MW-100A	Appendix IV	Molybdenum	mg/L	8	0	0%	0.00000570	0.487	↔	-0.0000326	0.001	↓	2023-09-17	0.974	↔
100A_2_20	MW-100A	Appendix IV	Radium-226/228	pCi/L	8	0	0%	-0.0157	0.247	↔	0.00315	0.570	↔	2023-09-17	0.622	↔
100A_3_25	MW-100A	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	-0.0811	0.001	↓	-0.00399	0.055	↔	2023-07-12	0.982	↔
100A_3_26	MW-100A	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	-3.33	0.013	↔	0.173	0.258	↔	2023-07-30	0.944	↔
100A_3_27	MW-100A	Field Parameters	Temperature	°C	8	0	0%	0.00878	0.722	↔	-0.0478	0.101	↔	2023-09-18	0.771	↔
100A_3_28	MW-100A	Field Parameters	Turbidity	NTU	8	0	0%	-0.0251	0.846	↔	0.0129	0.558	↔	2023-08-13	0.102	↔
100A_3_29	MW-100A	Field Parameters	pH	su	8	0	0%	-0.000483	0.519	↔	0.00289	0.515	↔	2023-11-27	0.428	↔
100A_4_30	MW-100A	Other	Bicarbonate	mg/L	8	0	0%	0.0809	0.913	↔	-0.142	0.290	↔	2023-08-13	0.315	↔
100A_4_32	MW-100A	Other	Hardness	mg/L	8	0	0%	0.0857	0.761	↔	-0.0521	0.676	↔	2023-08-22	0.076	↔
100A_4_33	MW-100A	Other	Magnesium	mg/L	8	0	0%	0.00188	0.757	↔	-0.0629	0.134	↔	2023-12-11	0.793	↔
100A_4_35	MW-100A	Other	Sodium	mg/L	8	0	0%	-0.0229	0.134	↔	-0.00460	0.086	↔	2023-07-16	0.875	↔
100A_5_38	MW-100A	Part 115	Iron	mg/L	8	0	0%	0.0446	0.006	↑	-0.00710	0.127	↔	2023-08-18	0.916	↔
100A_5_42	MW-100A	Part 115	Zinc	mg/L	8	7	88%	-0.000000000000316	1.000	↔	0.00000289	0.609	↔	2023-09-19	0.204	↔
100B_1_01	MW-100B	Appendix III	Boron	mg/L	8	0	0%	0.000384	0.010	↔	-0.000353	0.125	↔	2023-11-26	0.911	↔
100B_1_02	MW-100B	Appendix III	Calcium	mg/L	8	0	0%	-0.171	0.043	↔	-0.0146	0.210	↔	2023-08-04	0.943	↔
100B_1_03	MW-100B	Appendix III	Chloride	mg/L	8	0	0%	0.0429	0.009	↑	-0.0157	0.017	↔	2023-08-25	0.909	↔
100B_1_04	MW-100B	Appendix III	Fluoride	mg/L	8	7	88%	-0.00316	0.207	↔	0.00675	0.616	↔	2023-11-27	0.402	↔
100B_1_05	MW-100B	Appendix III	Sulfate	mg/L	8	0	0%	-0.286	0.006	↓	-0.00519	0.839	↔	2023-09-08	0.964	↔
100B_1_06	MW-100B	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	-0.469	0.004	↓	0.0732	0.396	↔	2023-10-07	0.952	↔
100B_1_07	MW-100B	Appendix III	pH, Field	su	8	0	0%	0.000550	0.143	↔	0.00299	0.170	↔	2023-11-27	0.910	↔
100B_2_04	MW-100B	Appendix IV	Fluoride	mg/L	8	7	88%	-0.00316	0.207	↔	0.00675	0.616	↔	2023-11-27	0.402	↔
100B_2_09	MW-100B	Appendix IV	Arsenic	mg/L	8	0	0%	0.0000286	0.288	↔	0.0000000606	0.988	↔	2023-08-02	0.656	↔

(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
100B_2_10	MW-100B	Appendix IV	Barium	mg/L	8	0	0%	-0.000123	0.009	↓	-0.00000129	0.983	↔	2023-10-31	0.914	↔
100B_2_16	MW-100B	Appendix IV	Lithium	mg/L	8	0	0%	0.0000168	0.237	↔	-0.00000509	0.690	↔	2023-09-18	0.388	↔
100B_2_20	MW-100B	Appendix IV	Radium-226/228	pCi/L	8	0	0%	-0.00769	0.536	↔	-0.000705	0.895	↔	2023-09-17	0.387	↔
100B_3_24	MW-100B	Field Parameters	Conductivity	mS/cm	8	0	0%	-0.000463	0.047	↔	0.000304	0.440	↔	2023-11-26	0.809	↔
100B_3_25	MW-100B	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.00143	0.634	↔	-0.000680	0.217	↔	2023-07-28	0.388	↔
100B_3_26	MW-100B	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	-0.538	0.298	↔	0.166	0.092	↔	2023-08-13	0.681	↔
100B_3_27	MW-100B	Field Parameters	Temperature	°C	8	0	0%	-0.0181	0.022	↔	-0.00192	0.951	↔	2023-11-27	0.841	↔
100B_3_29	MW-100B	Field Parameters	pH	su	8	0	0%	0.000550	0.143	↔	0.00299	0.170	↔	2023-11-27	0.910	↔
100B_4_30	MW-100B	Other	Bicarbonate	mg/L	8	0	0%	-0.459	0.275	↔	0.402	0.638	↔	2023-11-26	0.442	↔
100B_4_32	MW-100B	Other	Hardness	mg/L	8	0	0%	-0.633	0.074	↔	0.00889	0.849	↔	2023-08-13	0.915	↔
100B_4_34	MW-100B	Other	Potassium	mg/L	8	0	0%	0.00221	0.005	↑	-0.00387	0.182	↔	2023-11-27	0.891	↔
100B_4_35	MW-100B	Other	Sodium	mg/L	8	0	0%	0.0297	0.048	↔	-0.0309	0.646	↔	2023-11-27	0.686	↔
100B_4_36	MW-100B	Other	Total Suspended Solids	mg/L	8	0	0%	-0.00816	0.535	↔	0.0258	0.735	↔	2023-11-27	0.171	↔
10_1_01	MW-10	Appendix III	Boron	mg/L	12	0	0%	0.0000539	0.575	↔	-0.0000221	0.038	↔	2021-11-01	0.456	↔
10_1_02	MW-10	Appendix III	Calcium	mg/L	12	0	0%	0.00530	0.778	↔	-0.0718	0.388	↔	2023-07-02	0.155	↔
10_1_03	MW-10	Appendix III	Chloride	mg/L	12	9	75%	0.000321	0.897	↔	0.0182	0.117	↔	2023-05-26	0.597	↔
10_1_04	MW-10	Appendix III	Fluoride	mg/L	12	11	92%	-0.00178	0.513	↔	0.000402	0.326	↔	2021-12-06	0.175	↔
10_1_05	MW-10	Appendix III	Sulfate	mg/L	12	0	0%	-0.00196	0.731	↔	0.0541	0.053	↔	2023-04-29	0.713	↔
10_1_06	MW-10	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.155	0.452	↔	0.00652	0.922	↔	2022-02-16	0.196	↔
10_2_04	MW-10	Appendix IV	Fluoride	mg/L	12	11	92%	-0.00178	0.513	↔	0.000402	0.326	↔	2021-12-06	0.175	↔
10_2_10	MW-10	Appendix IV	Barium	mg/L	12	0	0%	-0.0000185	0.017	↔	0.0000141	0.143	↔	2022-12-05	0.693	↔
10_3_24	MW-10	Field Parameters	Conductivity	mS/cm	12	0	0%	0.000286	0.364	↔	-0.000108	0.136	↔	2022-01-10	0.315	↔
10_3_25	MW-10	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	0.00392	0.249	↔	0.000739	0.495	↔	2022-01-11	0.438	↔
10_3_26	MW-10	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	0.372	0.480	↔	-0.240	0.182	↔	2022-02-16	0.275	↔
10_3_27	MW-10	Field Parameters	Temperature	°C	12	0	0%	-0.0133	0.415	↔	-0.000963	0.854	↔	2022-01-20	0.203	↔
10_5_42	MW-10	Part 115	Zinc	mg/L	12	10	83%	0.0000318	0.219	↔	-0.00000795	0.338	↔	2022-01-11	0.261	↔
13_1_01	MW-13	Appendix III	Boron	mg/L	12	0	0%	0.000272	0.011	↔	-0.000122	0.025	↔	2022-10-25	0.716	↔
13_1_02	MW-13	Appendix III	Calcium	mg/L	12	0	0%	-0.618	0.004	↓	0.0964	0.000	↑	2022-05-14	0.869	↔
13_1_03	MW-13	Appendix III	Chloride	mg/L	12	2	17%	0.111	0.000	↑	-0.109	0.002	↓	2023-05-28	0.963	↔
13_1_05	MW-13	Appendix III	Sulfate	mg/L	12	0	0%	-0.00498	0.935	↔	0.238	0.002	↑	2022-12-23	0.865	↔
13_1_06	MW-13	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	-2.04	0.001	↓	0.433	0.000	↑	2022-05-06	0.941	↔
13_1_07	MW-13	Appendix III	pH, Field	su	12	0	0%	0.00190	0.217	↔	-0.000904	0.111	↔	2022-08-17	0.389	↔
13_2_10	MW-13	Appendix IV	Barium	mg/L	12	0	0%	-0.000114	0.271	↔	0.0000255	0.000	↑	2022-04-30	0.854	↔
13_2_20	MW-13	Appendix IV	Radium-226/228	pCi/L	12	0	0%	-0.00286	0.274	↔	0.0106	0.121	↔	2023-07-15	0.356	↔
13_3_24	MW-13	Field Parameters	Conductivity	mS/cm	12	0	0%	-0.00343	0.000	↓	0.000477	0.000	↑	2022-05-04	0.922	↔
13_3_25	MW-13	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	0.0652	0.353	↔	-0.00795	0.015	↔	2022-05-03	0.613	↔
13_3_26	MW-13	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	0.0167	0.938	↔	-0.619	0.012	↔	2022-11-02	0.824	↔
13_3_27	MW-13	Field Parameters	Temperature	°C	12	0	0%	0.0651	0.037	↔	-0.0155	0.037	↔	2022-08-16	0.690	↔
13_3_29	MW-13	Field Parameters	pH	su	12	0	0%	0.00190	0.217	↔	-0.000904	0.111	↔	2022-08-17	0.389	↔
13_4_33	MW-13	Other	Magnesium	mg/L	11	0	0%	-0.183	0.036	↔	0.0231	0.000	↑	2022-05-05	0.882	↔
13_4_34	MW-13	Other	Potassium	mg/L	11	0	0%	0.000238	0.215	↔	0.000553	0.197	↔	2023-02-08	0.803	↔
13_4_35	MW-13	Other	Sodium	mg/L	11	0	0%	0.00920	0.043	↔	0.0269	0.014	↔	2023-06-10	0.922	↔

(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
13_5_38	MW-13	Part 115	Iron	mg/L	12	1	8%	0.0000612	0.359	↔	0.00481	0.000	↑	2023-07-11	0.996	↔
13_5_42	MW-13	Part 115	Zinc	mg/L	12	11	92%	0.0000120	0.416	↔	-0.00000307	0.382	↔	2022-07-13	0.168	↔
14_1_01	MW-14	Appendix III	Boron	mg/L	9	0	0%	-0.00253	0.014	↔	0.000648	0.009	↑	2023-04-18	0.892	↔
14_1_02	MW-14	Appendix III	Calcium	mg/L	9	0	0%	-0.0341	0.253	↔	0.0774	0.001	↑	2023-05-17	0.930	↔
14_1_03	MW-14	Appendix III	Chloride	mg/L	9	0	0%	0.0833	0.469	↔	0.0125	0.293	↔	2023-03-16	0.617	↔
14_1_06	MW-14	Appendix III	Total Dissolved Solids	mg/L	9	1	11%	-4.17	0.723	↔	1.48	0.239	↔	2023-03-23	0.281	↔
14_2_09	MW-14	Appendix IV	Arsenic	mg/L	9	0	0%	0.0000293	0.425	↔	0.00000876	0.048	↔	2023-02-23	0.763	↔
14_2_16	MW-14	Appendix IV	Lithium	mg/L	9	0	0%	-0.000144	0.002	↓	0.00000814	0.477	↔	2023-05-14	0.942	↔
14_2_18	MW-14	Appendix IV	Molybdenum	mg/L	9	0	0%	0.00000959	0.444	↔	-0.0000136	0.157	↔	2023-07-06	0.409	↔
14_2_22	MW-14	Appendix IV	Selenium	mg/L	9	7	78%	0.0000268	0.334	↔	-0.0000236	0.240	↔	2023-07-06	0.389	↔
14_3_24	MW-14	Field Parameters	Conductivity	mS/cm	9	0	0%	0.000838	0.605	↔	0.000182	0.623	↔	2023-04-27	0.348	↔
14_3_25	MW-14	Field Parameters	Dissolved Oxygen	mg/L	9	0	0%	-0.00533	0.040	↔	0.000105	0.822	↔	2023-03-30	0.771	↔
14_3_26	MW-14	Field Parameters	Oxidation Reduction Potential	mV	9	0	0%	-0.0400	0.652	↔	-0.341	0.016	↔	2023-07-24	0.850	↔
14_3_27	MW-14	Field Parameters	Temperature	°C	9	0	0%	0.0199	0.015	↔	-0.0210	0.098	↔	2023-08-18	0.779	↔
14_4_32	MW-14	Other	Hardness	mg/L	9	0	0%	0.100	0.690	↔	0.283	0.152	↔	2023-06-08	0.602	↔
14_4_33	MW-14	Other	Magnesium	mg/L	9	0	0%	-0.0282	0.045	↔	0.0155	0.001	↑	2023-04-11	0.908	↔
14_4_34	MW-14	Other	Potassium	mg/L	9	0	0%	-0.00508	0.394	↔	0.00413	0.132	↔	2023-05-05	0.475	↔
14_4_35	MW-14	Other	Sodium	mg/L	9	0	0%	-0.0478	0.362	↔	0.0163	0.195	↔	2023-04-19	0.425	↔
14_4_36	MW-14	Other	Total Suspended Solids	mg/L	9	0	0%	0.114	0.173	↔	0.00840	0.791	↔	2023-05-20	0.638	↔
14_5_38	MW-14	Part 115	Iron	mg/L	9	0	0%	0.0800	0.013	↔	0.0131	0.002	↑	2023-02-24	0.965	↔
14_5_39	MW-14	Part 115	Nickel	mg/L	9	6	67%	-0.0000163	0.041	↔	0.000000369	0.562	↔	2023-03-11	0.870	↔
15_1_01	MW-15	Appendix III	Boron	mg/L	9	0	0%	-0.000286	0.839	↔	0.000148	0.247	↔	0704-09-09	0.520	↔
15_1_02	MW-15	Appendix III	Calcium	mg/L	9	0	0%	0.0382	0.974	↔	-0.0616	0.535	↔	1258-04-21	0.096	↔
15_1_03	MW-15	Appendix III	Chloride	mg/L	9	0	0%	0.0258	0.967	↔	-0.0417	0.449	↔	1258-05-06	0.156	↔
15_1_05	MW-15	Appendix III	Sulfate	mg/L	9	0	0%	0.0000872	1.000	↔	-0.300	0.062	↔	2022-12-05	0.535	↔
15_1_06	MW-15	Appendix III	Total Dissolved Solids	mg/L	9	0	0%	2.40	0.613	↔	-0.416	0.317	↔	0318-12-11	0.235	↔
15_1_07	MW-15	Appendix III	pH, Field	su	9	0	0%	0.000404	0.916	↔	-0.000652	0.087	↔	1258-04-22	0.621	↔
15_2_10	MW-15	Appendix IV	Barium	mg/L	9	0	0%	0.0000106	0.985	↔	-0.0000171	0.719	↔	1258-04-27	0.210	↔
15_2_16	MW-15	Appendix IV	Lithium	mg/L	9	8	89%	0.00000000641	1.000	↔	-0.0000188	0.104	↔	2023-01-11	0.461	↔
15_2_20	MW-15	Appendix IV	Radium-226/228	pCi/L	9	0	0%	0.0153	0.573	↔	-0.00379	0.136	↔	0421-01-09	0.515	↔
15_2_22	MW-15	Appendix IV	Selenium	mg/L	9	3	33%	0.000229	0.321	↔	-0.0000272	0.180	↔	0235-12-11	0.851	↔
15_3_24	MW-15	Field Parameters	Conductivity	mS/cm	9	0	0%	0.00114	0.871	↔	-0.00176	0.027	↔	1234-09-14	0.661	↔
15_3_25	MW-15	Field Parameters	Dissolved Oxygen	mg/L	9	0	0%	0.00766	0.886	↔	-0.0124	0.034	↔	1258-04-20	0.757	↔
15_3_26	MW-15	Field Parameters	Oxidation Reduction Potential	mV	9	0	0%	0.551	0.799	↔	-0.881	0.004	↓	1253-09-26	0.848	↔
15_3_27	MW-15	Field Parameters	Temperature	°C	9	0	0%	-0.00571	0.968	↔	0.00482	0.690	↔	0937-04-25	0.324	↔
15_3_28	MW-15	Field Parameters	Turbidity	NTU	9	0	0%	-0.0286	0.624	↔	0.0107	0.069	↔	0567-05-01	0.538	↔
15_3_29	MW-15	Field Parameters	pH	su	9	0	0%	0.000404	0.916	↔	-0.000652	0.087	↔	1258-04-22	0.621	↔
15_4_30	MW-15	Other	Bicarbonate	mg/L	9	0	0%	-0.686	0.698	↔	0.182	0.251	↔	0442-11-05	0.475	↔
15_4_32	MW-15	Other	Hardness	mg/L	9	0	0%	-1.34	0.427	↔	0.166	0.260	↔	0243-08-14	0.342	↔
15_4_33	MW-15	Other	Magnesium	mg/L	9	0	0%	0.0142	0.961	↔	-0.0229	0.375	↔	1258-04-27	0.160	↔
15_4_34	MW-15	Other	Potassium	mg/L	9	8	89%	0.0000000784	1.000	↔	-0.000230	0.104	↔	2023-01-11	0.461	↔
15_4_35	MW-15	Other	Sodium	mg/L	9	0	0%	0.00718	0.976	↔	-0.0116	0.576	↔	1258-04-18	0.100	↔

(Table continues on next page)

Table 9: Trend Tests: Piecewise Linear-Linear *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Line 1 Slope	Line 1 p-Value	Line 1 Trend	Line 2 Slope	Line 2 p-Value	Line 2 Trend	Break 1	R-Squared	Overall Trend
15_4_36	MW-15	Other	Total Suspended Solids	mg/L	9	7	78%	-0.000000710	0.416	↔	0.00329	0.455	↔	2023-07-06	0.225	↔
15_5_38	MW-15	Part 115	Iron	mg/L	9	1	11%	-0.000571	0.722	↔	0.000282	0.078	↔	0684-09-16	0.618	↔
15_5_42	MW-15	Part 115	Zinc	mg/L	9	8	89%	0.00000000618	0.490	↔	-0.0000249	0.476	↔	2023-04-28	0.193	↔
16A_1_01	MW-16A	Appendix III	Boron	mg/L	10	0	0%	-0.00213	0.138	↔	0.000353	0.079	↔	2023-03-24	0.553	↔
16A_1_03	MW-16A	Appendix III	Chloride	mg/L	10	0	0%	0.437	0.003	↑	-0.347	0.441	↔	2023-10-17	0.814	↔
16A_1_05	MW-16A	Appendix III	Sulfate	mg/L	10	0	0%	-1.25	0.145	↔	0.887	0.000	↑	2023-04-03	0.943	↔
16A_1_07	MW-16A	Appendix III	pH, Field	su	10	0	0%	-0.000903	0.063	↔	0.00202	0.087	↔	2023-10-02	0.609	↔
16A_2_09	MW-16A	Appendix IV	Arsenic	mg/L	10	0	0%	-0.00000505	0.401	↔	0.00000956	0.015	↔	2023-05-30	0.781	↔
16A_2_10	MW-16A	Appendix IV	Barium	mg/L	10	0	0%	-0.000894	0.148	↔	0.000206	0.029	↔	2023-03-24	0.652	↔
16A_2_20	MW-16A	Appendix IV	Radium-226/228	pCi/L	10	0	0%	0.0216	0.619	↔	0.00263	0.827	↔	2023-05-05	0.151	↔
16A_3_24	MW-16A	Field Parameters	Conductivity	mS/cm	10	0	0%	-0.00740	0.158	↔	0.00275	0.004	↑	2023-03-21	0.820	↔
16A_3_25	MW-16A	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	0.000336	0.863	↔	-0.000799	0.433	↔	2023-07-04	0.132	↔
16A_3_26	MW-16A	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	-0.178	0.425	↔	0.233	0.247	↔	2023-07-05	0.338	↔
16A_3_27	MW-16A	Field Parameters	Temperature	°C	10	0	0%	0.0547	0.000	↑	-0.0552	0.003	↓	2023-09-02	0.933	↔
16A_3_28	MW-16A	Field Parameters	Turbidity	NTU	10	0	0%	0.0287	0.446	↔	-0.000769	0.876	↔	2023-04-24	0.376	↔
16A_3_29	MW-16A	Field Parameters	pH	su	10	0	0%	-0.000903	0.063	↔	0.00202	0.087	↔	2023-10-02	0.609	↔
16A_4_30	MW-16A	Other	Bicarbonate	mg/L	10	0	0%	-3.19	0.001	↓	0.542	0.000	↑	2023-04-03	0.938	↔
16A_4_32	MW-16A	Other	Hardness	mg/L	10	0	0%	-1.79	0.466	↔	0.958	0.021	↔	2023-03-24	0.688	↔
16A_4_33	MW-16A	Other	Magnesium	mg/L	10	0	0%	-0.181	0.281	↔	0.0640	0.020	↔	2023-03-22	0.689	↔
16A_4_34	MW-16A	Other	Potassium	mg/L	10	0	0%	-0.00962	0.000	↓	0.00174	0.000	↑	2023-05-11	0.982	↔
16A_4_35	MW-16A	Other	Sodium	mg/L	10	0	0%	-0.681	0.426	↔	0.264	0.048	↔	2023-03-30	0.557	↔
16A_4_36	MW-16A	Other	Total Suspended Solids	mg/L	10	1	10%	-0.0851	0.197	↔	0.00645	0.443	↔	2023-03-26	0.383	↔
16A_5_38	MW-16A	Part 115	Iron	mg/L	10	0	0%	-0.00926	0.155	↔	0.00690	0.055	↔	2023-05-31	0.612	↔
16B_1_02	MW-16B	Appendix III	Calcium	mg/L	10	0	0%	0.0345	0.001	↑	-0.0292	0.284	↔	2023-11-01	0.897	↔
16B_1_04	MW-16B	Appendix III	Fluoride	mg/L	10	7	70%	-0.000926	0.528	↔	-0.00129	0.721	↔	2023-10-16	0.219	↔
16B_1_05	MW-16B	Appendix III	Sulfate	mg/L	10	0	0%	-0.0426	0.123	↔	0.00812	0.043	↔	2023-03-26	0.619	↔
16B_1_06	MW-16B	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	-0.109	0.629	↔	0.0504	0.129	↔	2023-04-24	0.358	↔
16B_1_07	MW-16B	Appendix III	pH, Field	su	10	0	0%	-0.00167	0.089	↔	0.000992	0.056	↔	2023-06-10	0.618	↔
16B_2_10	MW-16B	Appendix IV	Barium	mg/L	10	0	0%	-0.000106	0.174	↔	0.0000223	0.052	↔	2023-04-02	0.580	↔
16B_2_16	MW-16B	Appendix IV	Lithium	mg/L	10	0	0%	-0.0000172	0.093	↔	-0.00000195	0.805	↔	2023-07-05	0.606	↔
16B_2_18	MW-16B	Appendix IV	Molybdenum	mg/L	10	0	0%	-0.0000426	0.037	↔	0.00000227	0.328	↔	2023-03-29	0.700	↔
16B_2_20	MW-16B	Appendix IV	Radium-226/228	pCi/L	10	0	0%	0.00817	0.306	↔	-0.0189	0.594	↔	2023-10-17	0.213	↔
16B_2_22	MW-16B	Appendix IV	Selenium	mg/L	10	9	90%	0.00000221	0.343	↔	-0.00000324	0.343	↔	2023-09-11	0.272	↔
16B_3_27	MW-16B	Field Parameters	Temperature	°C	10	0	0%	0.0415	0.001	↑	-0.0210	0.009	↓	2023-07-13	0.915	↔
16B_3_28	MW-16B	Field Parameters	Turbidity	NTU	10	0	0%	-0.0250	0.019	↔	0.0410	0.082	↔	2023-09-21	0.706	↔
16B_3_29	MW-16B	Field Parameters	pH	su	10	0	0%	-0.00167	0.088	↔	0.00101	0.053	↔	2023-06-10	0.623	↔
16B_4_30	MW-16B	Other	Bicarbonate	mg/L	10	0	0%	0.176	0.231	↔	-0.0278	0.482	↔	2023-05-29	0.494	↔
16B_4_32	MW-16B	Other	Hardness	mg/L	10	0	0%	0.178	0.039	↔	-0.00555	0.975	↔	2023-09-12	0.652	↔
16B_4_33	MW-16B	Other	Magnesium	mg/L	10	0	0%	0.0317	0.035	↔	-0.00803	0.463	↔	2023-07-08	0.648	↔
16B_4_34	MW-16B	Other	Potassium	mg/L	10	0	0%	-0.0101	0.001	↓	0.0000116	0.980	↔	2023-04-27	0.933	↔
16B_4_35	MW-16B	Other	Sodium	mg/L	10	0	0%	-0.191	0.000	↓	-0.00699	0.008	↓	2023-04-06	0.993	↓
16B_4_36	MW-16B	Other	Total Suspended Solids	mg/L	10	5	50%	-0.0851	0.031	↔	0.00101	0.812	↔	2023-03-31	0.771	↔

(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
16B_5_38	MW-16B	Part 115	Iron	mg/L	10	0	0%	-0.00660	0.024	↔	-0.000815	0.032	↔	2023-03-27	0.889	↔
7C_1_01	MW-7C	Appendix III	Boron	mg/L	12	0	0%	0.000994	0.647	↔	-0.000236	0.700	↔	2022-08-31	0.070	↔
7C_1_02	MW-7C	Appendix III	Calcium	mg/L	12	0	0%	-0.650	0.364	↔	0.0250	0.473	↔	2022-05-18	0.500	↔
7C_1_03	MW-7C	Appendix III	Chloride	mg/L	12	0	0%	-0.0450	0.147	↔	-0.00135	0.801	↔	2022-06-23	0.468	↔
7C_1_05	MW-7C	Appendix III	Sulfate	mg/L	12	0	0%	-0.706	0.029	↔	-0.0537	0.097	↔	2022-06-22	0.882	↔
7C_1_06	MW-7C	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	-1.26	0.000	↓	-0.0547	0.002	↓	2022-06-22	0.992	↓
7C_2_09	MW-7C	Appendix IV	Arsenic	mg/L	12	0	0%	-0.00000592	0.013	↔	0.0000114	0.000	↑	2022-12-27	0.894	↔
7C_2_12	MW-7C	Appendix IV	Cadmium	mg/L	12	9	75%	0.000000755	0.299	↔	-0.000000544	0.228	↔	2022-11-09	0.269	↔
7C_2_16	MW-7C	Appendix IV	Lithium	mg/L	12	0	0%	0.0000276	0.521	↔	-0.0000138	0.272	↔	2022-07-28	0.193	↔
7C_2_18	MW-7C	Appendix IV	Molybdenum	mg/L	12	0	0%	-0.000177	0.303	↔	0.0000214	0.492	↔	2022-06-27	0.233	↔
7C_2_20	MW-7C	Appendix IV	Radium-226/228	pCi/L	12	0	0%	-0.0237	0.539	↔	-0.000827	0.661	↔	2022-05-18	0.405	↔
7C_3_24	MW-7C	Field Parameters	Conductivity	mS/cm	12	0	0%	-0.00340	0.025	↔	-0.0000561	0.812	↔	2022-07-03	0.744	↔
7C_3_25	MW-7C	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	-0.0440	0.000	↓	-0.000190	0.540	↔	2022-04-14	0.949	↔
7C_3_26	MW-7C	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	-2.35	0.014	↔	0.0296	0.448	↔	2022-04-22	0.803	↔
7C_4_30	MW-7C	Other	Bicarbonate	mg/L	12	0	0%	0.143	0.651	↔	0.0115	0.466	↔	2022-04-17	0.207	↔
7C_4_33	MW-7C	Other	Magnesium	mg/L	12	0	0%	-0.0826	0.339	↔	0.00916	0.052	↔	2022-05-18	0.552	↔
7C_4_34	MW-7C	Other	Potassium	mg/L	12	0	0%	0.00409	0.013	↔	-0.000675	0.415	↔	2022-10-06	0.649	↔
7C_4_35	MW-7C	Other	Sodium	mg/L	12	0	0%	0.0162	0.400	↔	-0.0114	0.817	↔	2023-02-08	0.096	↔
7C_4_36	MW-7C	Other	Total Suspended Solids	mg/L	12	3	25%	-0.286	0.087	↔	0.000255	0.973	↔	2022-04-29	0.704	↔
7C_5_38	MW-7C	Part 115	Iron	mg/L	12	0	0%	-0.00130	0.051	↔	0.00215	0.182	↔	2023-03-12	0.535	↔
7C_5_42	MW-7C	Part 115	Zinc	mg/L	12	10	83%	-0.0000186	0.407	↔	-0.000000233	0.829	↔	2022-04-23	0.305	↔

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
02_1_01	MW-2	Appendix III	Boron	mg/L	17	0	0%	0.0184	0.000	↑	-0.00122	0.009	↓	-0.00231	0.404	↔	2020-09-25	2023-02-07	0.900	↔
02_1_02	MW-2	Appendix III	Calcium	mg/L	17	0	0%	0.258	0.031	↔	-0.0897	0.000	↓	-0.0295	0.094	↔	2020-07-29	2022-08-01	0.965	↔
02_1_03	MW-2	Appendix III	Chloride	mg/L	17	0	0%	0.160	0.001	↑	-0.0249	0.597	↔	0.00137	0.780	↔	2020-09-17	2021-05-03	0.754	↔
02_1_05	MW-2	Appendix III	Sulfate	mg/L	17	0	0%	2.10	0.000	↑	-0.337	0.000	↓	-0.114	0.207	↔	2020-08-11	2022-09-03	0.973	↔
02_1_06	MW-2	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	2.80	0.000	↑	-0.511	0.000	↓	-0.107	0.414	↔	2020-08-07	2022-08-02	0.971	↔
02_1_07	MW-2	Appendix III	pH, Field	su	18	0	0%	0.00120	0.070	↔	-0.000797	0.369	↔	0.000188	0.209	↔	2020-10-19	2021-05-13	0.360	↔
02_2_09	MW-2	Appendix IV	Arsenic	mg/L	18	14	78%	-0.000000724	0.696	↔	0.00000401	0.581	↔	-0.00000148	0.086	↔	2021-03-20	2022-01-31	0.448	↔
02_2_18	MW-2	Appendix IV	Molybdenum	mg/L	18	0	0%	0.0000149	0.207	↔	0.00000346	0.078	↔	-0.0000184	0.157	↔	2020-09-28	2023-06-17	0.563	↔
02_3_24	MW-2	Field Parameters	Conductivity	mS/cm	18	0	0%	0.00181	0.002	↑	-0.000469	0.000	↓	0.000409	0.210	↔	2020-09-02	2023-06-16	0.953	↔
02_3_29	MW-2	Field Parameters	pH	su	18	0	0%	0.00120	0.070	↔	-0.000797	0.369	↔	0.000188	0.209	↔	2020-10-19	2021-05-13	0.360	↔
02_5_38	MW-2	Part 115	Iron	mg/L	18	0	0%	-0.00768	0.319	↔	0.00115	0.010	↔	-0.00219	0.084	↔	2020-06-28	2022-11-17	0.552	↔
02_5_39	MW-2	Part 115	Nickel	mg/L	18	0	0%	0.0000748	0.000	↑	-0.00000787	0.103	↔	-0.0000103	0.001	↓	2020-09-05	2022-01-31	0.915	↔
02_5_42	MW-2	Part 115	Zinc	mg/L	18	15	83%	-0.000128	0.375	↔	-0.0000612	0.892	↔	0.000000103	0.987	↔	2020-07-21	2020-09-16	0.250	↔
03_2_09	MW-3	Appendix IV	Arsenic	mg/L	7	0	0%	-0.00000000000280	0.880	↔	0.00000000000862	0.758	↔	0.0000110	0.000	↑	2022-04-17	2023-05-02	1.000	↔

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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
03_2_16	MW-3	Appendix IV	Lithium	mg/L	7	0	0%	0.0000283	0.454	↔	-0.0000476	0.412	↔	0.00000552	0.907	↔	2022-07-14	2023-04-22	0.839	↔
03_2_18	MW-3	Appendix IV	Molybdenum	mg/L	7	0	0%	-0.0000769	0.770	↔	0.0000441	0.539	↔	-0.0000104	0.935	↔	2021-08-29	2023-02-07	0.695	↔
03_3_25	MW-3	Field Parameters	Dissolved Oxygen	mg/L	7	0	0%	-0.000650	0.745	↔	0.000485	0.640	↔	-0.000711	0.320	↔	2021-08-07	2023-02-06	0.846	↔
04_1_01	MW-4	Appendix III	Boron	mg/L	17	0	0%	0.000125	0.411	↔	-0.0000434	0.569	↔	0.0000139	0.192	↔	2020-08-10	2021-01-27	0.317	↔
04_1_03	MW-4	Appendix III	Chloride	mg/L	17	0	0%	0.0838	0.351	↔	-0.0374	0.403	↔	0.00563	0.001	↑	2020-06-03	2020-09-14	0.694	↔
04_1_05	MW-4	Appendix III	Sulfate	mg/L	17	0	0%	-0.00785	0.020	↔	0.00365	0.800	↔	0.0196	0.209	↔	2022-07-10	2023-07-16	0.626	↔
04_1_07	MW-4	Appendix III	pH, Field	su	18	0	0%	0.00137	0.210	↔	-0.00107	0.477	↔	0.000195	0.436	↔	2020-10-19	2021-07-23	0.258	↔
04_2_09	MW-4	Appendix IV	Arsenic	mg/L	18	0	0%	0.0000187	0.022	↔	-0.00000152	0.119	↔	0.0000105	0.131	↔	2020-09-15	2023-07-07	0.585	↔
04_2_10	MW-4	Appendix IV	Barium	mg/L	18	0	0%	-0.0000119	0.497	↔	0.0000200	0.184	↔	-0.0000552	0.249	↔	2021-06-03	2023-06-24	0.332	↔
04_2_16	MW-4	Appendix IV	Lithium	mg/L	18	3	17%	0.00000853	0.034	↔	-0.00000415	0.381	↔	0.00000381	0.111	↔	2021-01-27	2022-06-13	0.463	↔
04_2_18	MW-4	Appendix IV	Molybdenum	mg/L	18	16	89%	0.00000487	0.025	↔	-0.00000479	0.495	↔	0.00000129	0.718	↔	2021-08-03	2022-10-25	0.389	↔
04_3_25	MW-4	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	-0.00405	0.082	↔	0.00316	0.496	↔	0.000107	0.294	↔	2020-08-04	2020-10-11	0.407	↔
04_3_26	MW-4	Field Parameters	Oxidation Reduction Potential	mV	18	0	0%	-1.19	0.548	↔	0.322	0.151	↔	-0.0283	0.509	↔	2020-06-22	2021-03-10	0.378	↔
04_3_29	MW-4	Field Parameters	pH	su	18	0	0%	0.00137	0.210	↔	-0.00107	0.477	↔	0.000195	0.436	↔	2020-10-19	2021-07-23	0.258	↔
04_4_36	MW-4	Other	Total Suspended Solids	mg/L	18	7	39%	-0.00480	0.061	↔	0.00549	0.102	↔	-0.00420	0.210	↔	2021-07-08	2022-10-06	0.440	↔
04_5_38	MW-4	Part 115	Iron	mg/L	18	0	0%	0.00375	0.124	↔	0.0000892	0.323	↔	-0.00166	0.036	↔	2020-07-07	2023-07-30	0.628	↔
04_5_42	MW-4	Part 115	Zinc	mg/L	18	15	83%	-0.0000821	0.436	↔	-0.00000617	0.905	↔	0.0000000177	0.998	↔	2020-08-16	2021-02-13	0.242	↔
05_1_02	MW-5	Appendix III	Calcium	mg/L	17	0	0%	0.254	0.398	↔	-0.346	0.021	↔	0.0591	0.617	↔	2020-10-12	2022-02-01	0.703	↔
05_1_05	MW-5	Appendix III	Sulfate	mg/L	17	0	0%	1.20	0.259	↔	-1.36	0.337	↔	-0.0141	0.965	↔	2020-10-19	2021-12-24	0.716	↔
05_1_06	MW-5	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	1.54	0.340	↔	-2.00	0.112	↔	-0.0120	0.978	↔	2020-10-17	2022-01-01	0.754	↔
05_2_10	MW-5	Appendix IV	Barium	mg/L	18	0	0%	-0.000110	0.002	↓	0.0000345	0.435	↔	-0.0000126	0.226	↔	2020-12-08	2022-01-31	0.639	↔
05_2_13	MW-5	Appendix IV	Chromium	mg/L	18	16	89%	-0.000183	0.000	↓	0.00000171	0.045	↔	-0.00000151	0.190	↔	2020-05-26	2022-02-01	0.911	↔
05_2_14	MW-5	Appendix IV	Cobalt	mg/L	18	17	94%	-0.00000919	0.005	↓	0.00000172	0.621	↔	-0.0000000322	0.822	↔	2020-07-25	2020-11-03	0.648	↔
05_2_15	MW-5	Appendix IV	Lead	mg/L	18	15	83%	-0.00000682	0.439	↔	0.0000234	0.054	↔	-0.0000113	0.055	↔	2021-03-20	2022-02-01	0.522	↔
05_2_16	MW-5	Appendix IV	Lithium	mg/L	18	0	0%	-0.0000470	0.284	↔	0.000113	0.149	↔	-0.0000869	0.574	↔	2022-01-31	2023-04-08	0.267	↔
05_2_18	MW-5	Appendix IV	Molybdenum	mg/L	18	0	0%	-0.000196	0.086	↔	-0.0000243	0.664	↔	0.0000737	0.014	↔	2020-10-05	2022-01-31	0.600	↔
05_2_20	MW-5	Appendix IV	Radium-226/228	pCi/L	18	0	0%	0.00747	0.205	↔	-0.00458	0.281	↔	0.00305	0.286	↔	2021-01-17	2022-04-16	0.280	↔
05_3_25	MW-5	Field Parameters	Dissolved Oxygen	mg/L	18	0	0%	0.0320	0.309	↔	0.00272	0.102	↔	-0.00176	0.717	↔	2020-06-23	2022-08-02	0.471	↔
05_3_28	MW-5	Field Parameters	Turbidity	NTU	18	0	0%	-3.92	0.000	↓	-0.0269	0.445	↔	0.00728	0.095	↔	2020-06-08	2020-11-24	0.992	↔
05_4_36	MW-5	Other	Total Suspended Solids	mg/L	18	0	0%	-0.465	0.016	↔	0.117	0.641	↔	-0.0555	0.348	↔	2020-11-20	2022-01-31	0.472	↔
05_5_37	MW-5	Part 115	Copper	mg/L	18	13	72%	-0.0000260	0.434	↔	0.0000193	0.424	↔	-0.0000128	0.431	↔	2020-12-30	2022-02-01	0.157	↔
05_5_38	MW-5	Part 115	Iron	mg/L	18	1	6%	-0.231	0.001	↓	0.00369	0.213	↔	-0.00332	0.107	↔	2020-05-31	2022-01-31	0.787	↔
05_5_41	MW-5	Part 115	Vanadium	mg/L	18	15	83%	-0.0000214	0.047	↔	0.00000617	0.483	↔	-0.00000373	0.239	↔	2020-10-23	2022-01-31	0.384	↔
05_5_42	MW-5	Part 115	Zinc	mg/L	18	5	28%	-0.000202	0.316	↔	0.000333	0.687	↔	-0.0000436	0.064	↔	2020-09-21	2021-01-26	0.342	↔
06_1_01	MW-6	Appendix III	Boron	mg/L	17	0	0%	0.00380	0.002	↑	-0.00590	0.833	↔	-0.0000888	0.501	↔	2020-09-28	2020-11-01	0.629	↔
06_1_02	MW-6	Appendix III	Calcium	mg/L	17	0	0%	0.294	0.011	↔	-0.135	0.124	↔	0.0295	0.126	↔	2020-10-09	2021-06-04	0.611	↔
06_1_05	MW-6	Appendix III	Sulfate	mg/L	17	0	0%	0.900	0.006	↑	-2.66	0.732	↔	-0.00104	0.977	↔	2020-10-06	2020-11-10	0.612	↔
06_1_06	MW-6	Appendix III	Total Dissolved Solids	mg/L	17	0	0%	1.74	0.002	↑	-0.933	0.030	↔	0.0848	0.323	↔	2020-10-07	2021-05-04	0.702	↔
06_1_07	MW-6	Appendix III	pH, Field	su	18	0	0%	0.00274	0.154	↔	-0.000445	0.402	↔	0.0000794	0.780	↔	2020-09-02	2021-08-03	0.321	↔
06_2_10	MW-6	Appendix IV	Barium	mg/L	18	0	0%	0.0000744	0.004	↑	-0.0000455	0.007	↓	0.0000122	0.063	↔	2020-10-17	2021-09-29	0.727	↔
06_2_18	MW-6	Appendix IV	Molybdenum	mg/L	18	0	0%	0.0000786	0.164	↔	-0.00000595	0.248	↔	-0.0000497	0.200	↔	2020-08-24	2023-06-13	0.567	↔
06_3_24	MW-6	Field Parameters	Conductivity	mS/cm	18	0	0%	0.00198	0.002	↑	-0.000895	0.042	↔	0.0000716	0.440	↔	2020-10-06	2021-05-04	0.702	↔

(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
06_3_29	MW-6	Field Parameters	pH	su	18	0	0%	0.00274	0.154	↔	-0.000445	0.402	↔	0.0000794	0.780	↔	2020-09-02	2021-08-03	0.321	↔
06_4_36	MW-6	Other	Total Suspended Solids	mg/L	18	13	72%	-0.0154	0.509	↔	0.0606	0.508	↔	-0.0302	0.010	↔	2021-03-20	2022-01-31	0.520	↔
06_5_38	MW-6	Part 115	Iron	mg/L	18	9	50%	-0.000900	0.026	↔	0.0000205	0.842	↔	-0.0000109	0.844	↔	2020-09-05	2022-01-31	0.641	↔
06_5_39	MW-6	Part 115	Nickel	mg/L	18	4	22%	0.0000286	0.012	↔	-0.0000121	0.233	↔	-0.00000135	0.036	↔	2020-08-14	2020-11-28	0.760	↔
06_5_42	MW-6	Part 115	Zinc	mg/L	18	17	94%	-0.000104	0.215	↔	0.0000000000125	1.000	↔	-0.0000000000000520	1.000	↔	2020-08-18	2020-10-09	0.259	↔
07_1_01	MW-7	Appendix III	Boron	mg/L	12	0	0%	0.00265	0.061	↔	-0.00351	0.124	↔	0.00295	0.202	↔	2022-02-17	2023-04-24	0.804	↔
07_1_02	MW-7	Appendix III	Calcium	mg/L	12	0	0%	0.111	0.044	↔	-0.101	0.222	↔	0.394	0.002	↑	2022-02-17	2023-07-03	0.869	↔
07_1_03	MW-7	Appendix III	Chloride	mg/L	12	0	0%	-0.0131	0.751	↔	0.0801	0.385	↔	-0.0241	0.066	↔	2021-11-23	2022-08-01	0.805	↔
07_1_04	MW-7	Appendix III	Fluoride	mg/L	12	11	92%	-0.00216	0.175	↔	0.00323	0.696	↔	-0.000189	0.722	↔	2021-12-07	2022-04-01	0.367	↔
07_1_05	MW-7	Appendix III	Sulfate	mg/L	12	0	0%	0.222	0.116	↔	-0.161	0.119	↔	0.455	0.041	↔	2022-02-16	2023-05-29	0.723	↔
07_1_06	MW-7	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.494	0.034	↔	-0.335	0.318	↔	1.81	0.001	↑	2022-02-17	2023-07-16	0.889	↔
07_1_07	MW-7	Appendix III	pH, Field	su	12	0	0%	-0.0223	0.002	↓	0.000344	0.189	↔	-0.00193	0.065	↔	2021-07-20	2023-05-05	0.904	↔
07_2_04	MW-7	Appendix IV	Fluoride	mg/L	12	11	92%	-0.00216	0.175	↔	0.00323	0.696	↔	-0.000189	0.722	↔	2021-12-07	2022-04-01	0.367	↔
07_2_10	MW-7	Appendix IV	Barium	mg/L	12	0	0%	-0.0000603	0.552	↔	0.0000450	0.485	↔	-0.0000267	0.019	↔	2021-09-27	2022-02-16	0.732	↔
07_2_16	MW-7	Appendix IV	Lithium	mg/L	12	0	0%	0.0000667	0.009	↑	-0.000105	0.013	↔	0.0000871	0.033	↔	2022-02-17	2023-05-18	0.950	↔
07_3_25	MW-7	Field Parameters	Dissolved Oxygen	mg/L	12	1	8%	-0.000942	0.653	↔	0.00236	0.482	↔	-0.000263	0.377	↔	2021-10-03	2022-01-11	0.295	↔
07_3_26	MW-7	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	-0.212	0.656	↔	0.619	0.212	↔	-0.0599	0.518	↔	2021-10-23	2022-02-17	0.408	↔
07_3_27	MW-7	Field Parameters	Temperature	°C	12	0	0%	-0.0275	0.180	↔	0.0137	0.343	↔	-0.0199	0.477	↔	2022-02-16	2023-04-24	0.435	↔
07_3_28	MW-7	Field Parameters	Turbidity	NTU	12	0	0%	0.0972	0.044	↔	-0.0915	0.180	↔	0.00469	0.409	↔	2021-09-28	2022-01-21	0.685	↔
07_3_29	MW-7	Field Parameters	pH	su	12	0	0%	-0.0223	0.002	↓	0.000344	0.189	↔	-0.00193	0.065	↔	2021-07-20	2023-05-05	0.904	↔
07_4_36	MW-7	Other	Total Suspended Solids	mg/L	12	10	83%	-0.00432	0.176	↔	0.00249	0.621	↔	-0.00259	0.623	↔	2022-02-17	2023-04-24	0.330	↔
07_5_38	MW-7	Part 115	Iron	mg/L	12	0	0%	0.00385	0.134	↔	-0.00335	0.086	↔	0.00454	0.208	↔	2022-02-16	2023-04-19	0.606	↔
07_5_41	MW-7	Part 115	Vanadium	mg/L	12	11	92%	0.000000506	0.900	↔	-0.000000260	0.245	↔	0.00000421	0.001	↑	2021-08-22	2023-05-17	0.941	↔
07_5_42	MW-7	Part 115	Zinc	mg/L	12	9	75%	0.000103	0.039	↔	-0.0000943	0.275	↔	0.000000784	0.773	↔	2021-08-24	2021-11-05	0.697	↔
08_1_04	MW-8	Appendix III	Fluoride	mg/L	12	11	92%	-0.00298	0.190	↔	0.00411	0.729	↔	-0.000274	0.721	↔	2021-12-07	2022-04-11	0.353	↔
08_1_06	MW-8	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	-0.0512	0.528	↔	0.253	0.099	↔	-0.398	0.026	↔	2022-06-09	2023-07-11	0.803	↔
08_2_04	MW-8	Appendix IV	Fluoride	mg/L	12	11	92%	-0.00298	0.190	↔	0.00411	0.729	↔	-0.000274	0.721	↔	2021-12-07	2022-04-11	0.353	↔
08_2_20	MW-8	Appendix IV	Radium-226/228	pCi/L	12	0	0%	-0.00659	0.860	↔	0.0294	0.242	↔	-0.00266	0.429	↔	2021-09-04	2022-01-11	0.503	↔
08_3_25	MW-8	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	0.0147	0.546	↔	-0.00439	0.560	↔	0.0248	0.257	↔	2021-11-02	2023-07-18	0.297	↔
08_3_27	MW-8	Field Parameters	Temperature	°C	12	0	0%	0.0893	0.506	↔	-0.0498	0.259	↔	0.00193	0.694	↔	2021-08-20	2022-01-10	0.487	↔
08_3_28	MW-8	Field Parameters	Turbidity	NTU	12	0	0%	0.132	0.074	↔	-0.0362	0.111	↔	0.00134	0.577	↔	2021-07-31	2021-12-07	0.639	↔
08_5_42	MW-8	Part 115	Zinc	mg/L	12	11	92%	0.00000100	0.901	↔	-0.000000520	0.244	↔	0.00000841	0.001	↑	2021-08-23	2023-05-17	0.941	↔
09_1_02	MW-9	Appendix III	Calcium	mg/L	12	0	0%	0.0917	0.022	↔	-0.0799	0.032	↔	0.0604	0.013	↔	2021-12-20	2022-08-04	0.890	↔
09_1_03	MW-9	Appendix III	Chloride	mg/L	12	10	83%	-0.0139	0.135	↔	0.0257	0.589	↔	-0.0000574	0.985	↔	2021-12-07	2022-02-23	0.421	↔
09_1_05	MW-9	Appendix III	Sulfate	mg/L	12	8	67%	-0.00315	0.503	↔	0.00124	0.403	↔	0.0325	0.000	↑	2021-12-06	2023-07-11	0.969	↔
09_1_06	MW-9	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	0.135	0.194	↔	0.0157	0.730	↔	0.367	0.013	↔	2021-12-27	2023-06-25	0.901	↔
09_1_07	MW-9	Appendix III	pH, Field	su	12	0	0%	-0.0154	0.015	↔	0.000596	0.194	↔	-0.000470	0.337	↔	2021-07-21	2022-10-01	0.767	↔
09_2_09	MW-9	Appendix IV	Arsenic	mg/L	12	11	92%	0.000000518	0.897	↔	-0.000000260	0.245	↔	0.00000421	0.001	↑	2021-08-21	2023-05-17	0.941	↔
09_2_10	MW-9	Appendix IV	Barium	mg/L	12	0	0%	0.00000177	0.808	↔	-0.0000149	0.364	↔	0.00000795	0.006	↑	2021-11-02	2022-04-20	0.808	↔
09_2_16	MW-9	Appendix IV	Lithium	mg/L	12	12	100%	-0.0000990	0.004	↓	0.000000827	0.684	↔	-0.000000524	0.815	↔	2021-08-03	2022-12-31	0.924	↔
09_2_20	MW-9	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.00616	0.342	↔	0.00206	0.731	↔	-0.00501	0.199	↔	2021-12-07	2022-10-30	0.474	↔
09_3_24	MW-9	Field Parameters	Conductivity	mS/cm	12	0	0%	0.000494	0.015	↔	-0.000111	0.009	↓	0.000365	0.007	↑	2021-11-01	2023-02-20	0.949	↔

(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
09_3_28	MW-9	Field Parameters	Turbidity	NTU	12	0	0%	0.146	0.015	↔	-0.0273	0.031	↔	0.00311	0.154	↔	2021-07-23	2022-02-01	0.813	↔
09_3_29	MW-9	Field Parameters	pH	su	12	0	0%	-0.0154	0.015	↔	0.000596	0.194	↔	-0.000470	0.337	↔	2021-07-21	2022-10-01	0.767	↔
09_5_42	MW-9	Part 115	Zinc	mg/L	12	11	92%	0.00000886	0.384	↔	-0.00000340	0.473	↔	0.00000141	0.900	↔	2021-12-07	2023-03-02	0.219	↔
100A_1_01	MW-100A	Appendix III	Boron	mg/L	8	0	0%	0.000307	0.227	↔	-0.0000696	0.516	↔	0.0000998	0.368	↔	2023-07-18	2023-11-26	0.741	↔
100A_1_07	MW-100A	Appendix III	pH, Field	su	8	0	0%	0.000901	0.751	↔	-0.00189	0.740	↔	0.00364	0.270	↔	2023-09-02	2023-11-26	0.570	↔
100A_2_09	MW-100A	Appendix IV	Arsenic	mg/L	8	0	0%	0.0000829	0.031	↔	-0.0000588	0.338	↔	0.0000836	0.217	↔	2023-09-24	2023-12-11	0.962	↔
100A_2_10	MW-100A	Appendix IV	Barium	mg/L	8	0	0%	0.0000695	0.799	↔	-0.000104	0.304	↔	0.000165	0.563	↔	2023-08-02	2023-12-28	0.701	↔
100A_2_16	MW-100A	Appendix IV	Lithium	mg/L	8	0	0%	0.0000286	0.000	↑	-0.0000571	0.000	↓	0.000000000167	0.640	↔	2023-09-17	2024-01-01	1.000	↔
100A_3_29	MW-100A	Field Parameters	pH	su	8	0	0%	0.000901	0.751	↔	-0.00189	0.740	↔	0.00364	0.270	↔	2023-09-02	2023-11-26	0.570	↔
100A_4_35	MW-100A	Other	Sodium	mg/L	8	0	0%	-0.0229	0.185	↔	-0.00171	0.684	↔	-0.0200	0.224	↔	2023-07-26	2023-12-31	0.944	↔
100A_5_38	MW-100A	Part 115	Iron	mg/L	8	0	0%	0.0446	0.058	↔	-0.00996	0.468	↔	0.00251	0.921	↔	2023-08-21	2023-12-30	0.925	↔
100B_1_01	MW-100B	Appendix III	Boron	mg/L	8	0	0%	0.000545	0.393	↔	0.000335	0.171	↔	-0.000321	0.589	↔	2023-07-25	2023-11-27	0.920	↔
100B_1_02	MW-100B	Appendix III	Calcium	mg/L	8	0	0%	-0.171	0.016	↔	-0.0354	0.037	↔	0.0743	0.079	↔	2023-07-27	2023-12-26	0.996	↔
100B_1_05	MW-100B	Appendix III	Sulfate	mg/L	8	0	0%	-0.286	0.055	↔	-0.0571	0.721	↔	0.0293	0.707	↔	2023-08-31	2023-11-16	0.971	↔
100B_1_06	MW-100B	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	-0.463	0.078	↔	-0.150	0.390	↔	0.218	0.511	↔	2023-09-17	2023-12-03	0.971	↔
100B_2_09	MW-100B	Appendix IV	Arsenic	mg/L	8	0	0%	0.0000286	0.037	↔	-0.0000286	0.128	↔	0.0000140	0.126	↔	2023-08-31	2023-10-30	0.959	↔
100B_2_16	MW-100B	Appendix IV	Lithium	mg/L	8	0	0%	-0.0000107	0.863	↔	0.0000108	0.593	↔	-0.0000321	0.615	↔	2023-07-10	2023-12-23	0.385	↔
100B_3_24	MW-100B	Field Parameters	Conductivity	mS/cm	8	0	0%	-0.000138	0.902	↔	-0.000533	0.394	↔	0.000352	0.541	↔	2023-07-15	2023-11-26	0.824	↔
100B_3_26	MW-100B	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	-0.592	0.432	↔	0.267	0.472	↔	0.0843	0.802	↔	2023-08-13	2023-11-01	0.710	↔
100B_3_27	MW-100B	Field Parameters	Temperature	°C	8	0	0%	0.00487	0.615	↔	-0.0316	0.196	↔	0.00646	0.505	↔	2023-08-15	2023-11-26	0.975	↔
100B_4_32	MW-100B	Other	Hardness	mg/L	8	0	0%	-0.653	0.203	↔	0.0360	0.776	↔	-0.145	0.719	↔	2023-08-13	2023-12-31	0.925	↔
100B_4_35	MW-100B	Other	Sodium	mg/L	8	0	0%	0.0169	0.563	↔	0.0672	0.477	↔	-0.0447	0.622	↔	2023-10-07	2023-11-27	0.757	↔
10_1_01	MW-10	Appendix III	Boron	mg/L	12	0	0%	0.0000846	0.268	↔	-0.0000747	0.638	↔	-0.00000763	0.701	↔	2021-11-02	2022-05-01	0.539	↔
10_1_02	MW-10	Appendix III	Calcium	mg/L	12	0	0%	-0.117	0.397	↔	0.177	0.676	↔	-0.0221	0.189	↔	2021-09-28	2022-01-04	0.376	↔
10_1_03	MW-10	Appendix III	Chloride	mg/L	12	9	75%	-0.00867	0.510	↔	0.00322	0.435	↔	0.0174	0.154	↔	2021-12-06	2023-07-11	0.679	↔
10_1_04	MW-10	Appendix III	Fluoride	mg/L	12	11	92%	-0.00338	0.229	↔	0.00665	0.270	↔	-0.000133	0.854	↔	2021-12-06	2022-02-20	0.416	↔
10_1_05	MW-10	Appendix III	Sulfate	mg/L	12	0	0%	0.0169	0.451	↔	-0.0116	0.286	↔	0.0544	0.064	↔	2022-01-10	2023-03-22	0.783	↔
10_1_06	MW-10	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	-0.560	0.490	↔	0.397	0.441	↔	-0.0134	0.848	↔	2021-08-30	2022-02-06	0.352	↔
10_2_04	MW-10	Appendix IV	Fluoride	mg/L	12	11	92%	-0.00338	0.229	↔	0.00665	0.270	↔	-0.000133	0.854	↔	2021-12-06	2022-02-20	0.416	↔
10_2_10	MW-10	Appendix IV	Barium	mg/L	12	0	0%	-0.00000634	0.844	↔	-0.0000243	0.077	↔	0.0000143	0.187	↔	2021-11-01	2022-10-28	0.718	↔
10_2_16	MW-10	Appendix IV	Lithium	mg/L	12	12	100%	-0.0000990	0.004	↓	0.000000827	0.684	↔	-0.000000524	0.815	↔	2021-08-03	2022-12-31	0.924	↔
10_2_20	MW-10	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.00769	0.098	↔	-0.00286	0.173	↔	0.0133	0.025	↔	2021-12-07	2023-06-17	0.757	↔
10_3_24	MW-10	Field Parameters	Conductivity	mS/cm	12	0	0%	0.000379	0.138	↔	-0.000560	0.159	↔	0.0000433	0.799	↔	2022-02-06	2022-08-06	0.547	↔
10_3_27	MW-10	Field Parameters	Temperature	°C	12	0	0%	0.0500	0.415	↔	-0.0485	0.428	↔	0.000446	0.919	↔	2021-09-07	2021-12-28	0.417	↔
10_3_28	MW-10	Field Parameters	Turbidity	NTU	12	0	0%	0.00439	0.549	↔	-0.00889	0.477	↔	0.0142	0.293	↔	2022-06-27	2023-05-06	0.319	↔
10_5_42	MW-10	Part 115	Zinc	mg/L	12	10	83%	-0.0000180	0.858	↔	0.0000688	0.301	↔	-0.00001000	0.280	↔	2021-09-25	2022-01-11	0.355	↔
13_1_01	MW-13	Appendix III	Boron	mg/L	12	0	0%	-0.000571	0.347	↔	0.000358	0.016	↔	-0.000135	0.014	↔	2022-04-04	2022-10-22	0.833	↔
13_1_02	MW-13	Appendix III	Calcium	mg/L	12	0	0%	-0.610	0.011	↔	-0.000829	0.997	↔	0.104	0.005	↑	2022-05-04	2022-08-17	0.880	↔
13_1_03	MW-13	Appendix III	Chloride	mg/L	12	2	17%	0.0767	0.011	↔	0.152	0.000	↑	-0.110	0.001	↓	2022-08-16	2023-04-27	0.984	↔
13_1_05	MW-13	Appendix III	Sulfate	mg/L	12	0	0%	-0.196	0.760	↔	0.0378	0.691	↔	0.234	0.008	↑	2022-05-03	2023-01-11	0.879	↔
13_1_06	MW-13	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	-1.94	0.117	↔	0.282	0.219	↔	0.478	0.001	↑	2022-05-03	2022-10-20	0.949	↔
13_2_09	MW-13	Appendix IV	Arsenic	mg/L	12	10	83%	-0.000000000000000000465	0.872	↔	0.000000000000000000349	0.242	↔	0.0000221	0.000	↑	2022-05-02	2023-05-03	1.000	↔

(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
13_2_20	MW-13	Appendix IV	Radium-226/228	pCi/L	12	0	0%	0.0344	0.305	↔	-0.00447	0.185	↔	0.0114	0.104	↔	2022-03-30	2023-06-25	0.545	↔
13_3_24	MW-13	Field Parameters	Conductivity	mS/cm	12	0	0%	-0.00325	0.071	↔	0.000345	0.167	↔	0.000584	0.007	↑	2022-05-03	2023-01-18	0.933	↔
13_3_25	MW-13	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	0.0733	0.036	↔	-0.0241	0.142	↔	-0.00160	0.808	↔	2022-05-14	2022-11-21	0.728	↔
13_3_26	MW-13	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	-0.678	0.055	↔	1.45	0.297	↔	-0.746	0.000	↓	2022-08-04	2022-10-25	0.944	↔
13_3_28	MW-13	Field Parameters	Turbidity	NTU	12	0	0%	-0.0235	0.271	↔	-0.00475	0.782	↔	0.0191	0.297	↔	2022-07-13	2023-07-28	0.477	↔
13_5_38	MW-13	Part 115	Iron	mg/L	12	1	8%	-0.00000494	0.968	↔	0.000200	0.528	↔	0.00481	0.000	↑	2022-09-21	2023-07-18	0.997	↔
16A_1_01	MW-16A	Appendix III	Boron	mg/L	10	0	0%	-0.00139	0.020	↔	0.00126	0.011	↔	-0.000460	0.177	↔	2023-05-12	2023-09-17	0.918	↔
16A_1_02	MW-16A	Appendix III	Calcium	mg/L	10	0	0%	-0.673	0.179	↔	0.431	0.010	↔	-0.146	0.617	↔	2023-04-04	2023-10-17	0.901	↔
16A_1_04	MW-16A	Appendix III	Fluoride	mg/L	10	10	100%	0.00343	0.224	↔	-0.00799	0.620	↔	0.0554	0.002	↑	2023-08-08	2023-11-14	0.963	↔
16A_1_05	MW-16A	Appendix III	Sulfate	mg/L	10	0	0%	-1.05	0.295	↔	0.731	0.275	↔	0.995	0.010	↑	2023-04-04	2023-08-07	0.949	↔
16A_1_06	MW-16A	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	-3.83	0.122	↔	3.06	0.006	↑	-1.01	0.296	↔	2023-04-09	2023-10-14	0.951	↔
16A_1_07	MW-16A	Appendix III	pH, Field	su	10	0	0%	-0.00140	0.416	↔	-0.000474	0.701	↔	0.00186	0.184	↔	2023-05-29	2023-10-05	0.641	↔
16A_2_04	MW-16A	Appendix IV	Fluoride	mg/L	10	10	100%	0.00343	0.224	↔	-0.00799	0.620	↔	0.0554	0.002	↑	2023-08-08	2023-11-14	0.963	↔
16A_2_09	MW-16A	Appendix IV	Arsenic	mg/L	10	0	0%	-0.00000467	0.669	↔	0.00000896	0.168	↔	0.0000117	0.370	↔	2023-05-29	2023-11-19	0.783	↔
16A_2_10	MW-16A	Appendix IV	Barium	mg/L	10	0	0%	-0.000892	0.068	↔	0.000417	0.018	↔	-0.000162	0.356	↔	2023-04-09	2023-10-06	0.897	↔
16A_3_24	MW-16A	Field Parameters	Conductivity	mS/cm	10	0	0%	-0.00339	0.149	↔	0.00629	0.048	↔	0.000134	0.905	↔	2023-05-17	2023-09-11	0.937	↔
16A_3_25	MW-16A	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	-0.00244	0.685	↔	0.00247	0.757	↔	-0.00103	0.400	↔	2023-04-15	2023-06-28	0.241	↔
16A_3_26	MW-16A	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	-0.289	0.181	↔	0.696	0.181	↔	-0.243	0.593	↔	2023-07-13	2023-10-17	0.674	↔
16A_3_27	MW-16A	Field Parameters	Temperature	°C	10	0	0%	0.0213	0.474	↔	0.0781	0.002	↑	-0.0552	0.003	↓	2023-04-24	2023-08-21	0.975	↔
16A_3_29	MW-16A	Field Parameters	pH	su	10	0	0%	-0.00140	0.416	↔	-0.000474	0.701	↔	0.00186	0.184	↔	2023-05-29	2023-10-05	0.641	↔
16A_4_30	MW-16A	Other	Bicarbonate	mg/L	10	0	0%	-3.29	0.006	↓	0.734	0.146	↔	0.427	0.047	↔	2023-04-05	2023-08-07	0.951	↔
16A_4_33	MW-16A	Other	Magnesium	mg/L	10	0	0%	-0.116	0.157	↔	0.125	0.066	↔	-0.0448	0.423	↔	2023-04-29	2023-10-13	0.879	↔
16A_4_34	MW-16A	Other	Potassium	mg/L	10	0	0%	-0.00962	0.000	↓	0.00212	0.008	↑	0.00111	0.301	↔	2023-05-14	2023-10-20	0.986	↔
16A_4_35	MW-16A	Other	Sodium	mg/L	10	0	0%	-0.579	0.002	↓	0.630	0.000	↑	-0.486	0.007	↓	2023-05-05	2023-10-20	0.990	↔
16B_1_02	MW-16B	Appendix III	Calcium	mg/L	10	0	0%	0.0511	0.319	↔	0.0311	0.038	↔	-0.0292	0.376	↔	2023-04-04	2023-11-06	0.904	↔
16B_1_05	MW-16B	Appendix III	Sulfate	mg/L	10	0	0%	-0.0254	0.051	↔	0.0259	0.020	↔	-0.00560	0.465	↔	2023-05-18	2023-09-14	0.883	↔
16B_1_06	MW-16B	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	-0.174	0.316	↔	0.117	0.028	↔	-0.107	0.343	↔	2023-04-24	2023-10-18	0.783	↔
16B_1_07	MW-16B	Appendix III	pH, Field	su	10	0	0%	-0.00160	0.332	↔	0.000405	0.726	↔	0.00133	0.289	↔	2023-05-29	2023-09-15	0.646	↔
16B_2_04	MW-16B	Appendix IV	Fluoride	mg/L	10	8	80%	-0.00236	0.225	↔	0.00550	0.621	↔	-0.00401	0.468	↔	2023-08-08	2023-10-23	0.447	↔
16B_2_18	MW-16B	Appendix IV	Molybdenum	mg/L	10	0	0%	-0.0000249	0.050	↔	0.0000101	0.203	↔	-0.00000728	0.342	↔	2023-05-18	2023-10-16	0.806	↔
16B_2_22	MW-16B	Appendix IV	Selenium	mg/L	10	9	90%	-0.00000116	0.792	↔	0.00000684	0.666	↔	-0.00000468	0.237	↔	2023-06-14	2023-09-11	0.443	↔
16B_3_25	MW-16B	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	0.000722	0.469	↔	-0.00342	0.476	↔	0.000864	0.569	↔	2023-07-05	2023-09-19	0.582	↔
16B_3_26	MW-16B	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	0.470	0.627	↔	-0.260	0.683	↔	0.137	0.566	↔	2023-04-06	2023-07-05	0.210	↔
16B_3_27	MW-16B	Field Parameters	Temperature	°C	10	0	0%	0.0415	0.005	↑	-0.0314	0.431	↔	-0.0168	0.219	↔	2023-07-20	2023-10-03	0.920	↔
16B_3_29	MW-16B	Field Parameters	pH	su	10	0	0%	-0.00163	0.171	↔	0.000502	0.787	↔	0.00135	0.286	↔	2023-05-30	2023-09-25	0.644	↔
16B_4_30	MW-16B	Other	Bicarbonate	mg/L	10	0	0%	0.230	0.016	↔	-0.116	0.141	↔	0.194	0.116	↔	2023-05-30	2023-11-04	0.861	↔
16B_4_34	MW-16B	Other	Potassium	mg/L	10	0	0%	-0.0136	0.006	↓	-0.000739	0.392	↔	0.000547	0.647	↔	2023-04-02	2023-09-21	0.962	↔
16B_4_35	MW-16B	Other	Sodium	mg/L	10	0	0%	-0.191	0.000	↓	-0.0212	0.026	↔	-0.00331	0.219	↔	2023-04-02	2023-07-06	0.998	↔
16B_4_36	MW-16B	Other	Total Suspended Solids	mg/L	10	5	50%	-0.0851	0.016	↔	0.00959	0.119	↔	-0.0278	0.117	↔	2023-04-09	2023-11-08	0.924	↔
16B_5_38	MW-16B	Part 115	Iron	mg/L	10	0	0%	-0.00653	0.065	↔	-0.00128	0.498	↔	-0.000550	0.434	↔	2023-03-21	2023-08-07	0.897	↔
7C_1_06	MW-7C	Appendix III	Total Dissolved Solids	mg/L	12	0	0%	-1.29	0.000	↓	-0.0206	0.630	↔	-0.110	0.058	↔	2022-06-23	2023-05-26	0.994	↔
7C_2_12	MW-7C	Appendix IV	Cadmium	mg/L	12	9	75%	0.00000117	0.845	↔	0.000000653	0.582	↔	-0.000000528	0.450	↔	2022-05-04	2022-11-10	0.271	↔

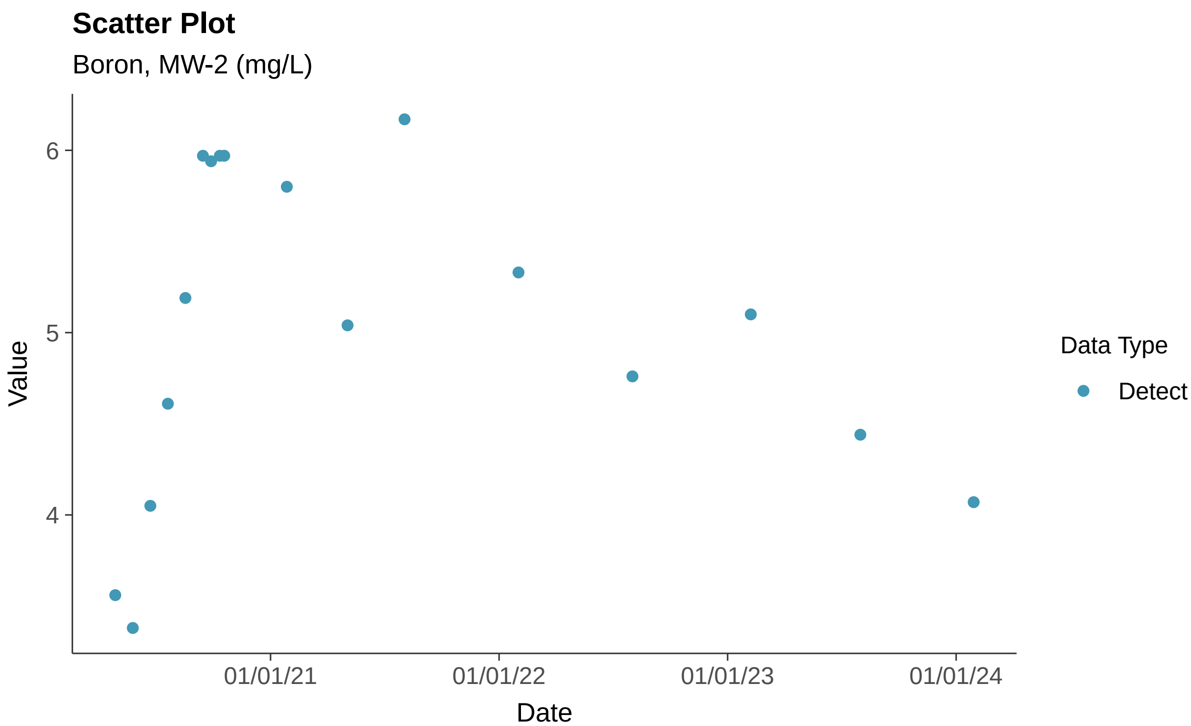
(Table continues on next page)

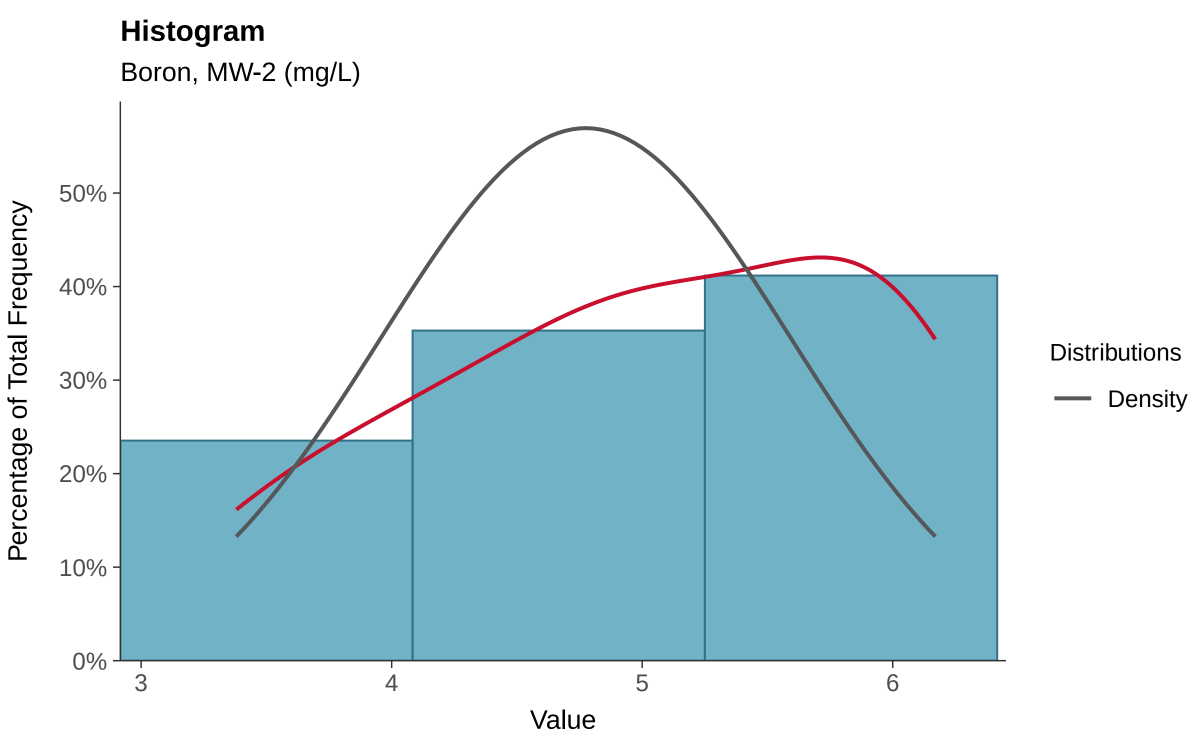
Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

								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
7C_3_25	MW-7C	Field Parameters	Dissolved Oxygen	mg/L	12	0	0%	-0.0438	0.000	↓	0.00222	0.550	↔	-0.000496	0.245	↔	2022-04-20	2022-08-31	0.961	↔
7C_3_26	MW-7C	Field Parameters	Oxidation Reduction Potential	mV	12	0	0%	-2.35	0.014	↔	0.221	0.152	↔	-0.0641	0.445	↔	2022-05-01	2022-12-17	0.875	↔
7C_4_30	MW-7C	Other	Bicarbonate	mg/L	12	0	0%	0.190	0.563	↔	-0.0710	0.409	↔	0.0298	0.293	↔	2022-05-16	2022-10-06	0.383	↔
7C_4_35	MW-7C	Other	Sodium	mg/L	12	0	0%	-0.148	0.431	↔	0.0635	0.112	↔	-0.0225	0.301	↔	2022-05-18	2023-01-03	0.543	↔
7C_5_39	MW-7C	Part 115	Nickel	mg/L	12	0	0%	-0.0000717	0.009	↓	-0.00000389	0.163	↔	0.00000374	0.408	↔	2022-04-14	2023-03-12	0.904	↔
7C_5_42	MW-7C	Part 115	Zinc	mg/L	12	10	83%	-0.0000306	0.243	↔	0.00000323	0.910	↔	-0.000000692	0.631	↔	2022-04-14	2022-07-27	0.355	↔

Appendix III: Boron, MW-2

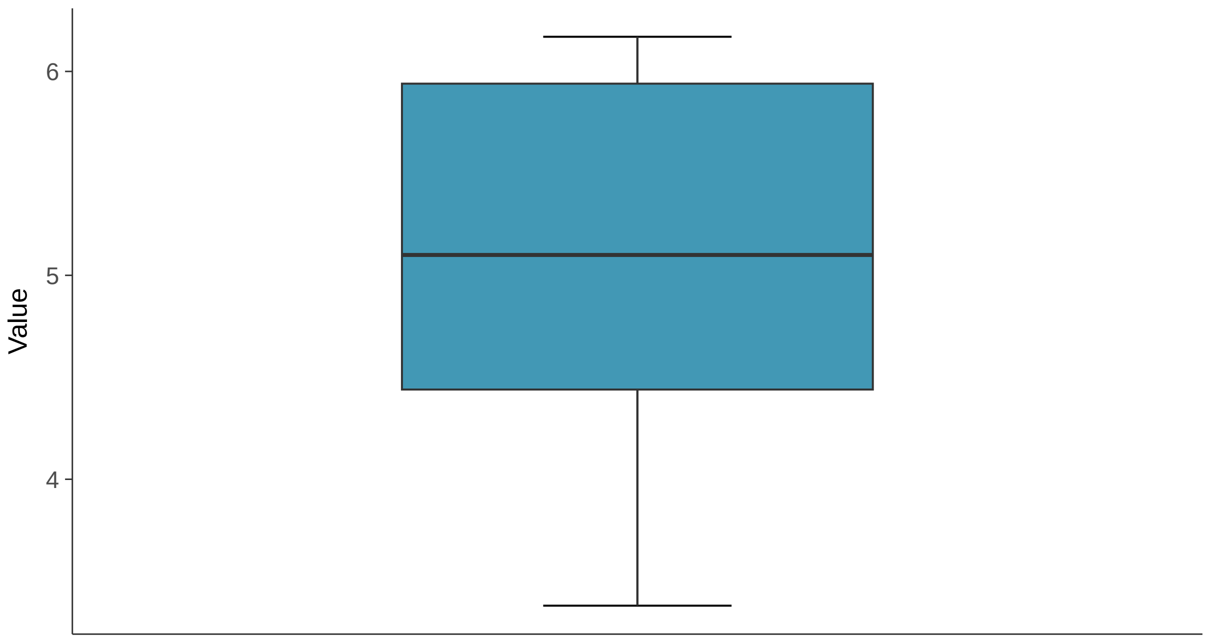
ID: 02_1_01





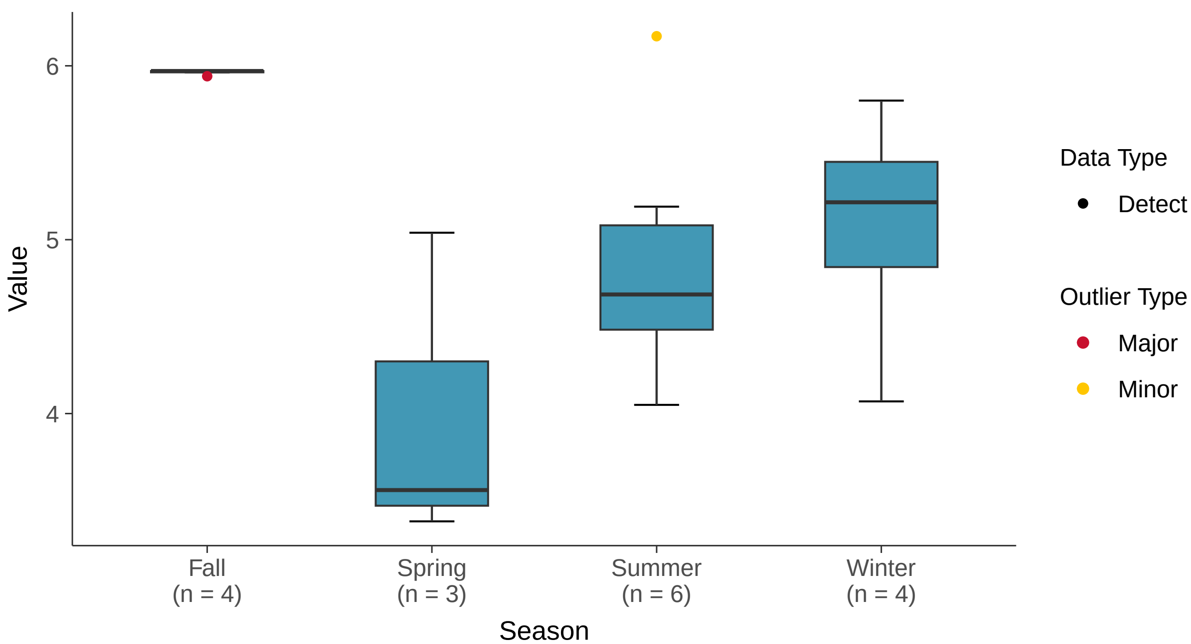
Boxplot

Boron, MW-2 (mg/L)



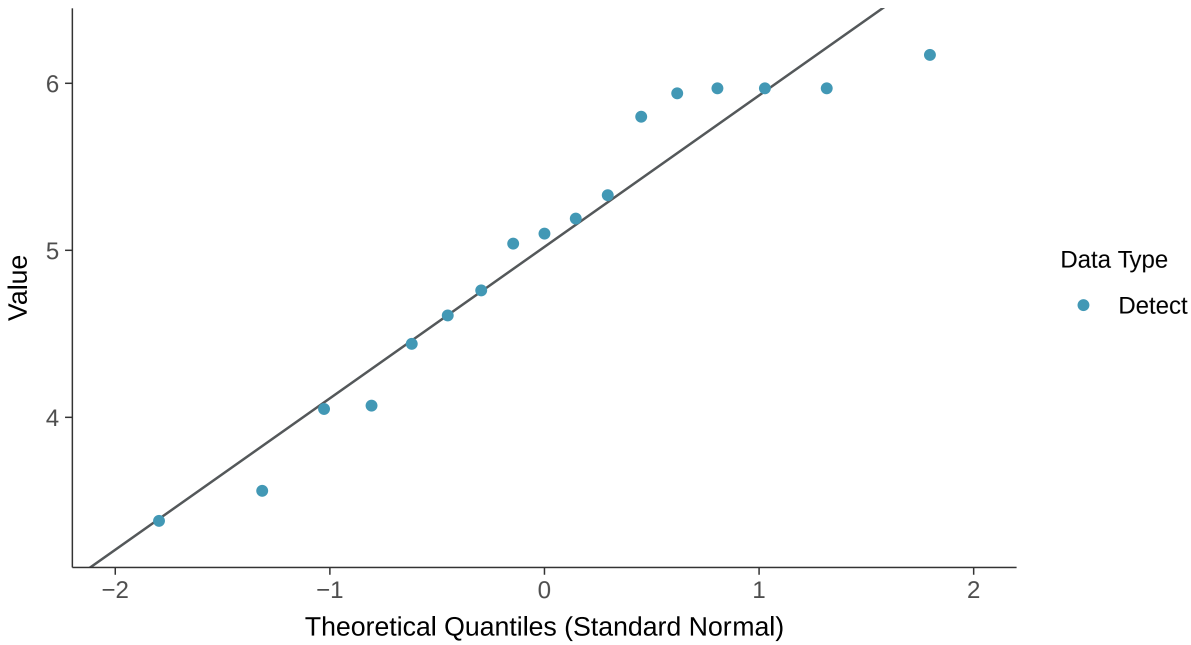
Boxplot by Season

Boron, MW-2 (mg/L)



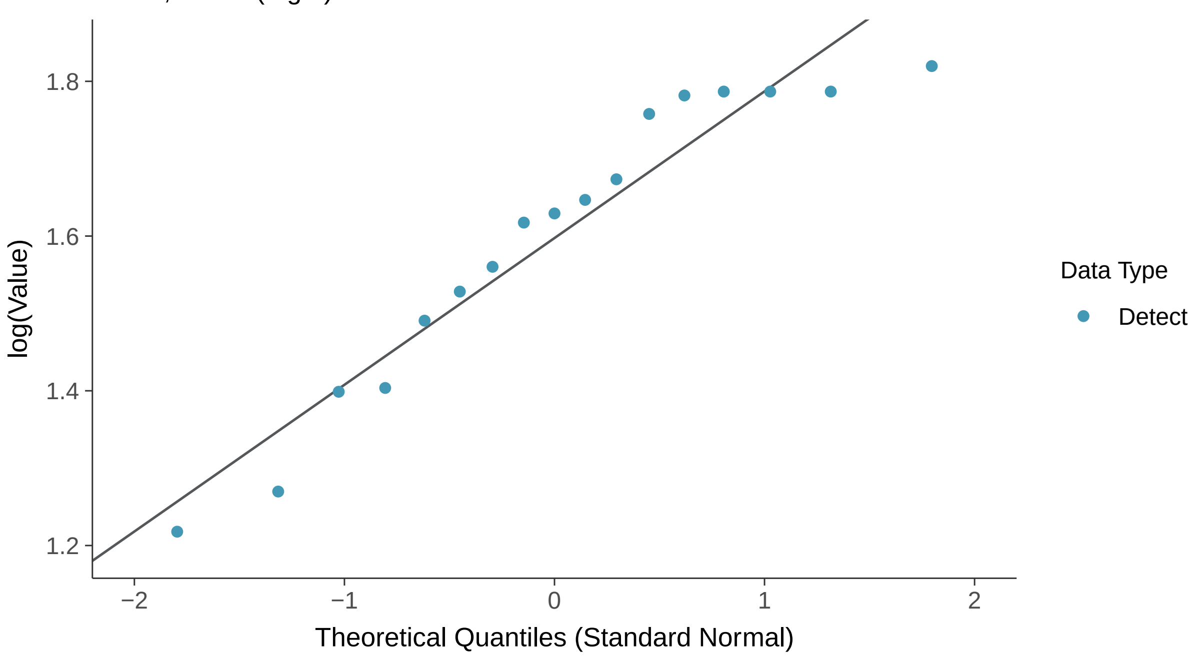
Normal Q-Q plot

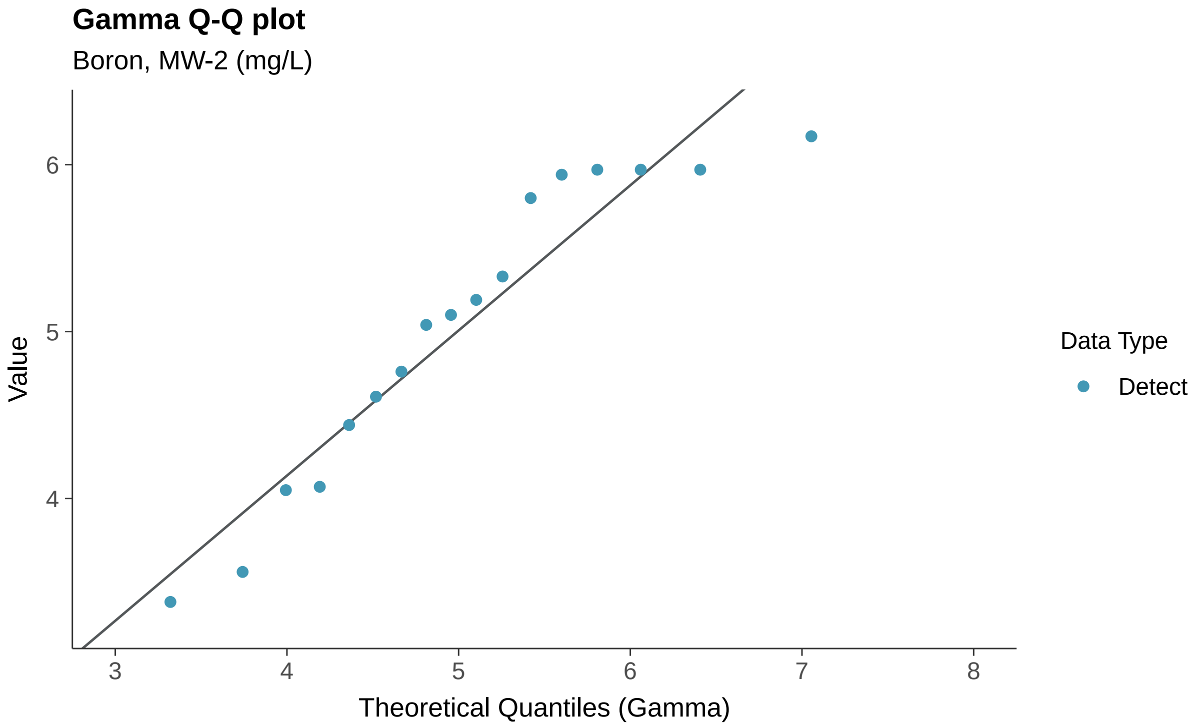
Boron, MW-2 (mg/L)

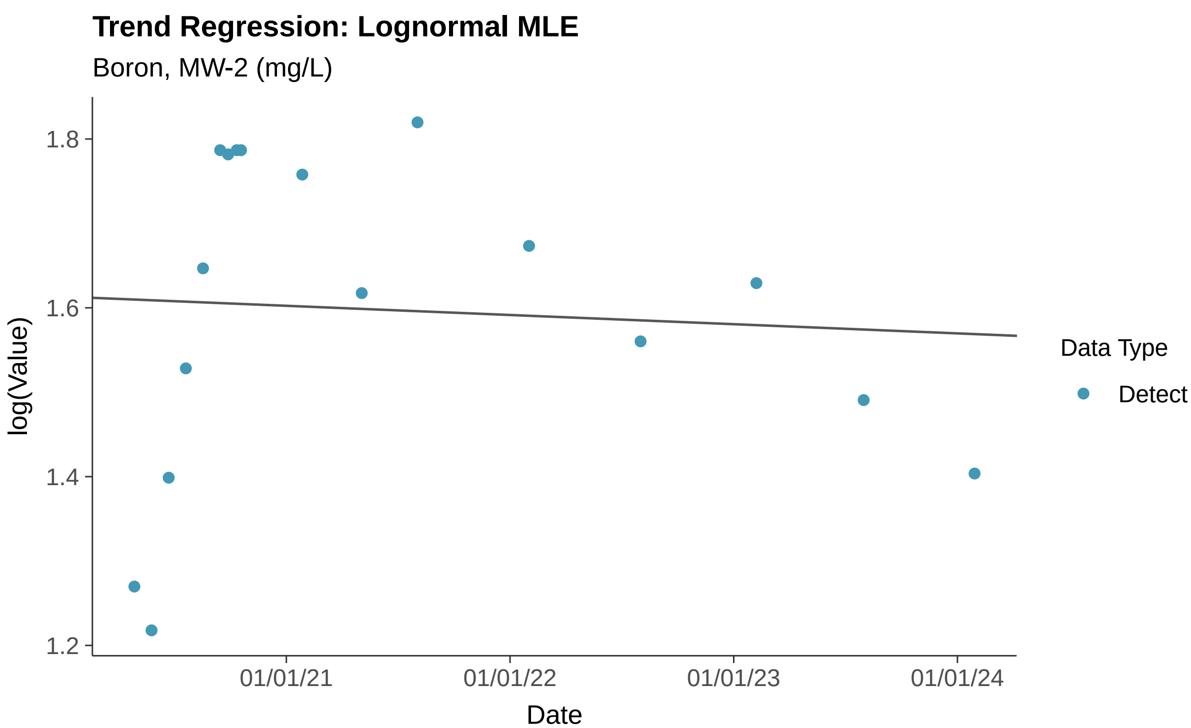


Lognormal Q-Q plot

Boron, MW-2 (mg/L)

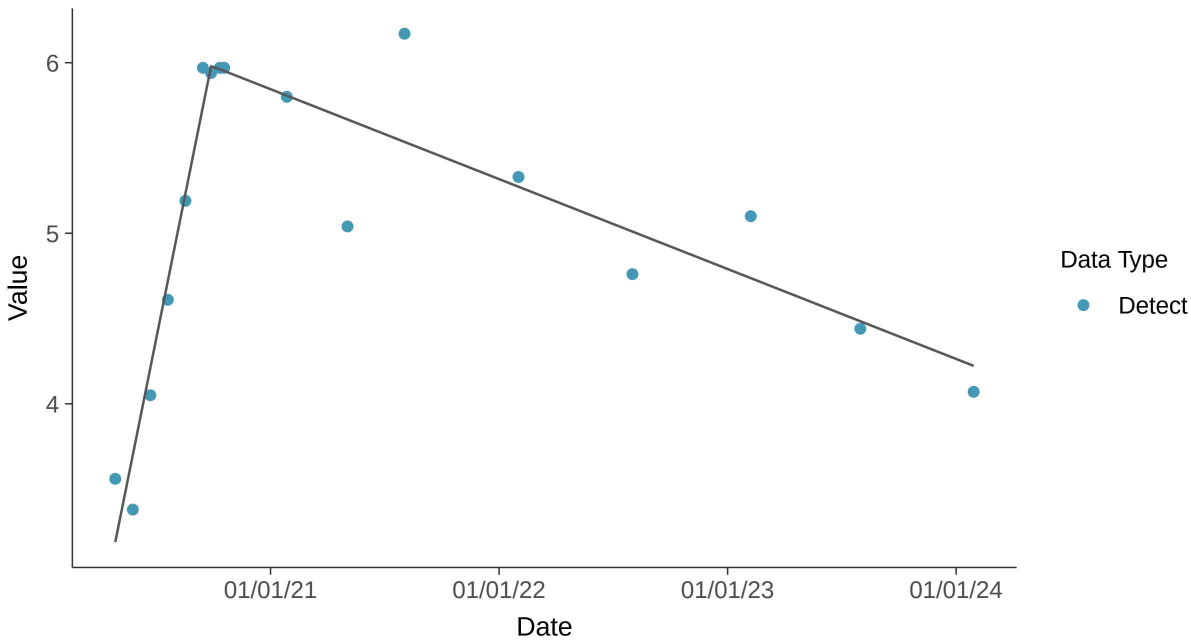



Gamma Q-Q plot
Boron, MW-2 (mg/L)
Value
6
5
4
3
4
5
6
7
8
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-2 (mg/L)
log(Value)
1.8
1.6
1.4
1.2
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

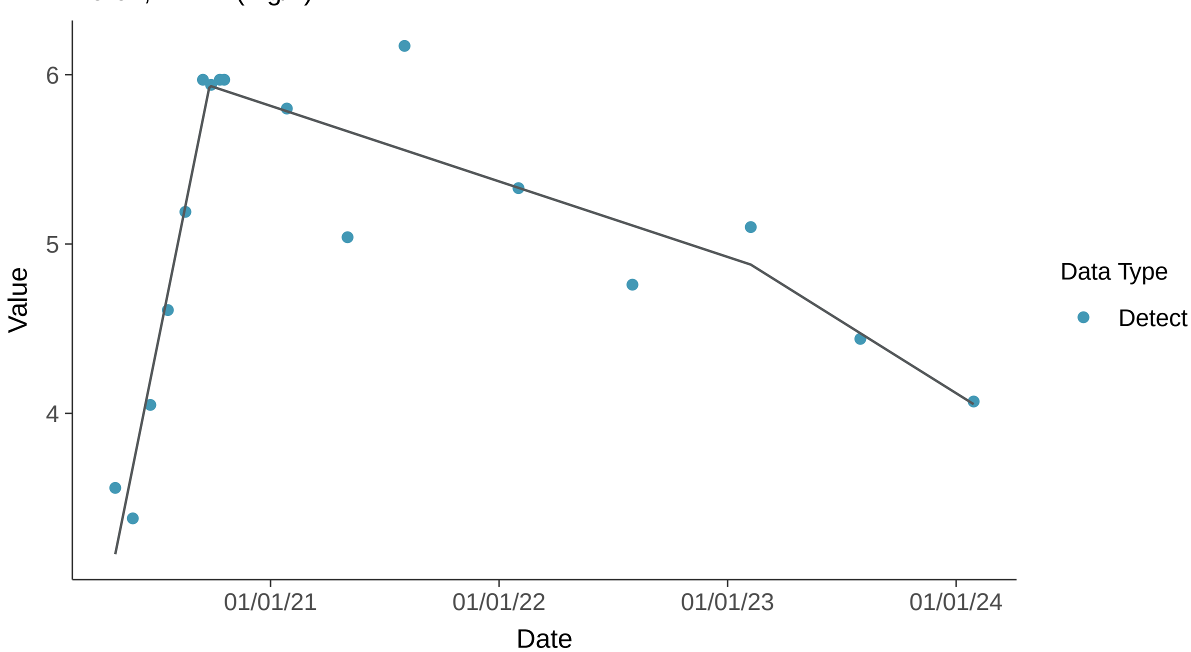
Trend Regression: Piecewise Linear-Linear

Boron, MW-2 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Boron, MW-2 (mg/L)

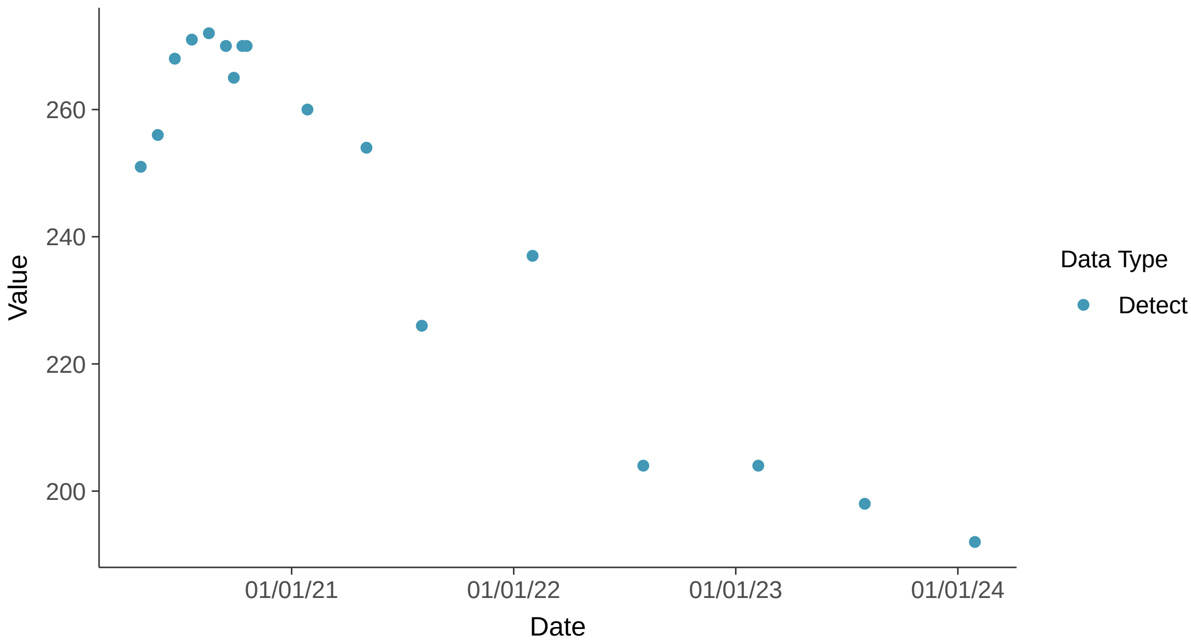


Appendix III: Calcium, MW-2

ID: 02_1_02

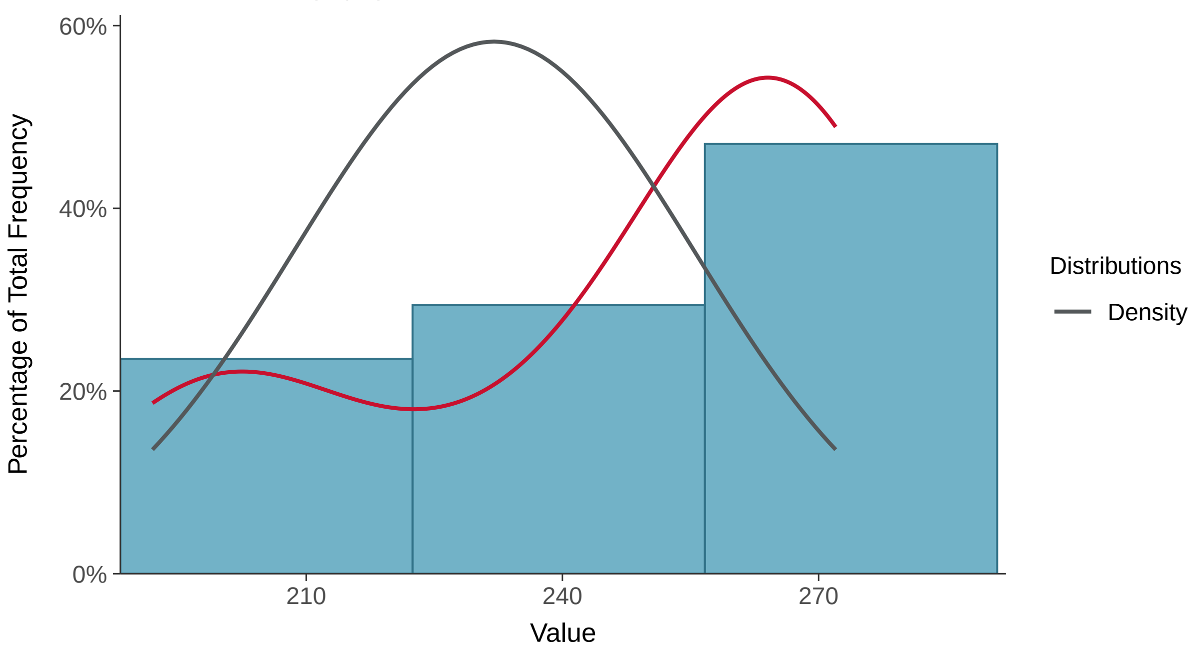
Scatter Plot

Calcium, MW-2 (mg/L)



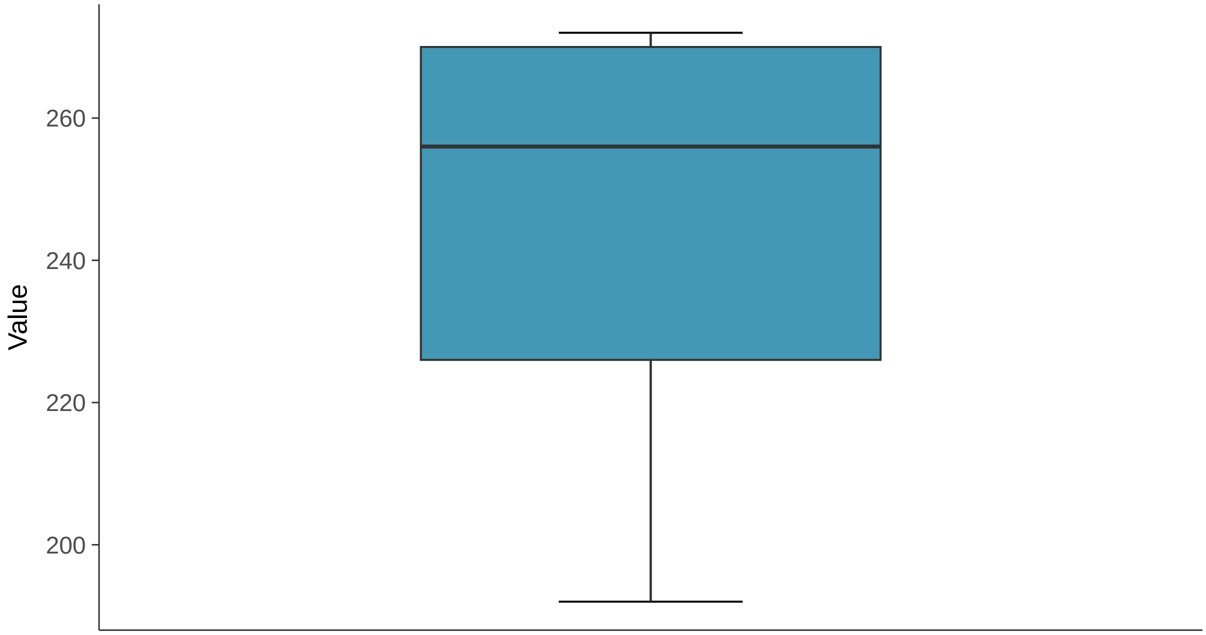
Histogram

Calcium, MW-2 (mg/L)



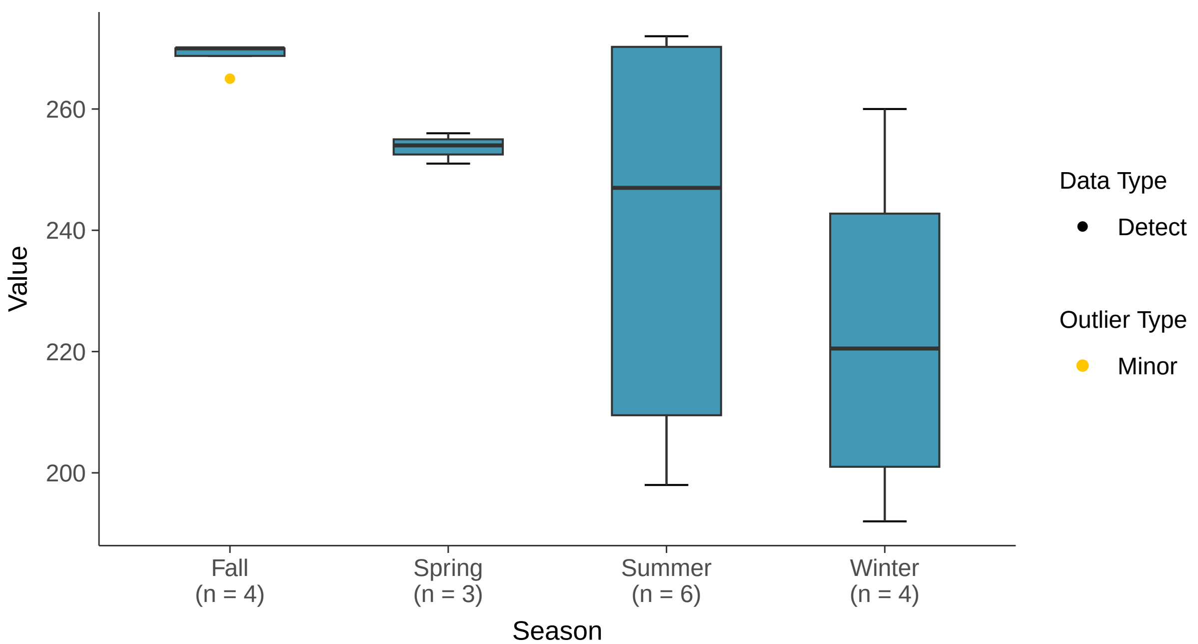
Boxplot

Calcium, MW-2 (mg/L)



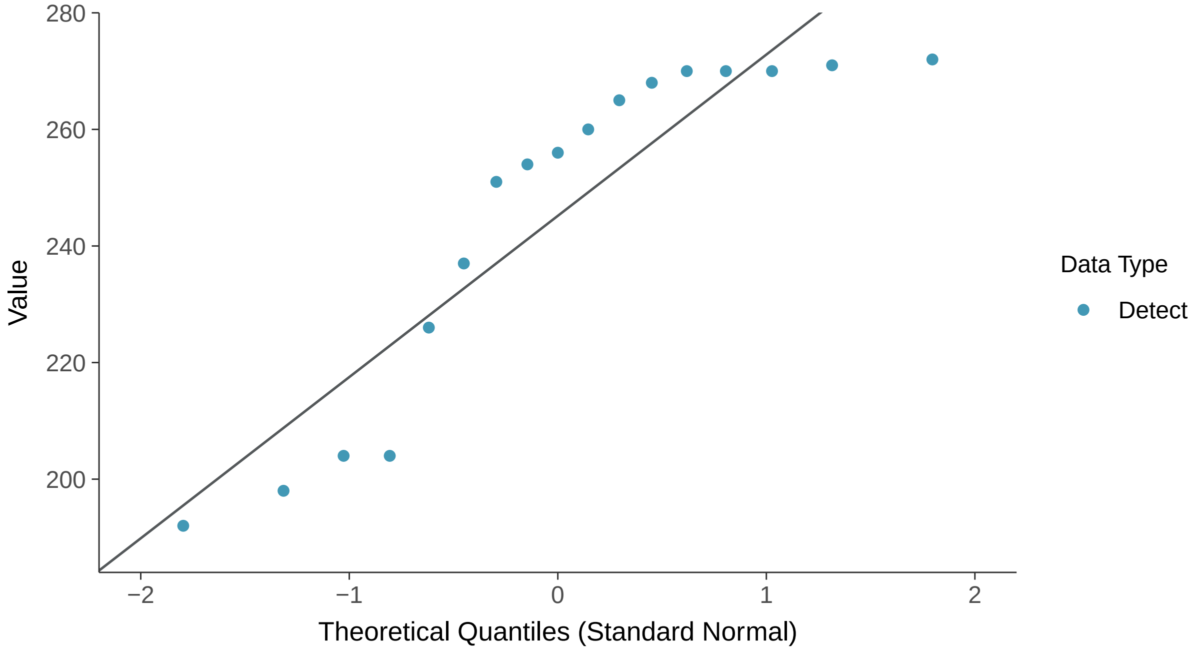
Boxplot by Season

Calcium, MW-2 (mg/L)



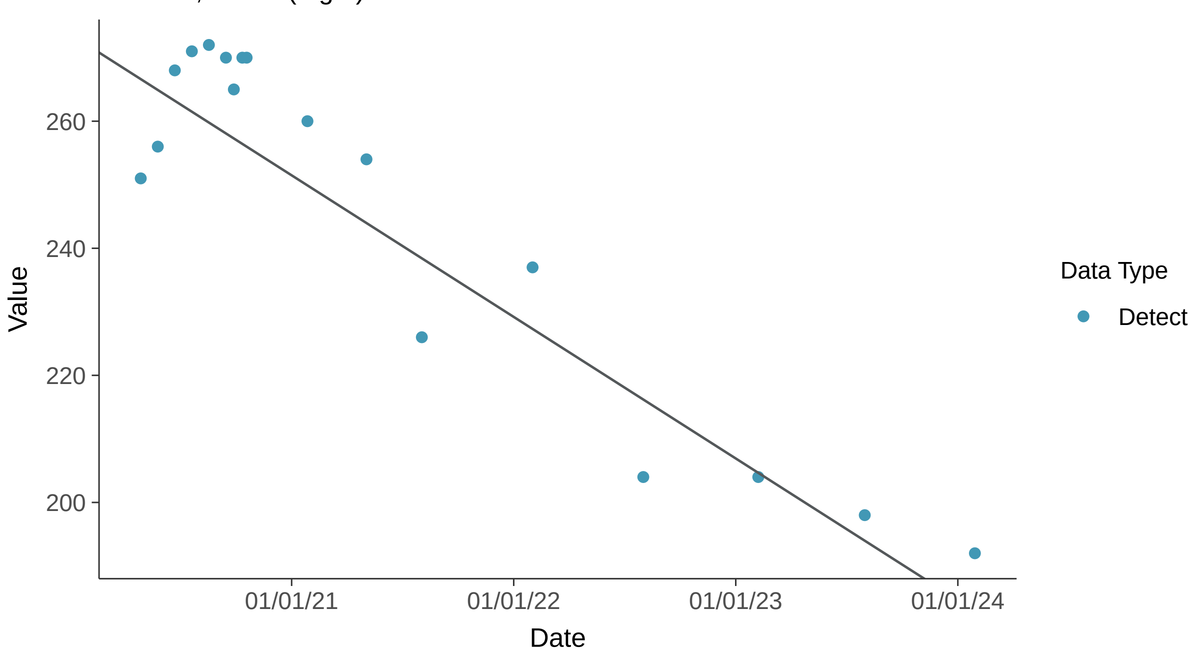
Normal Q-Q plot

Calcium, MW-2 (mg/L)



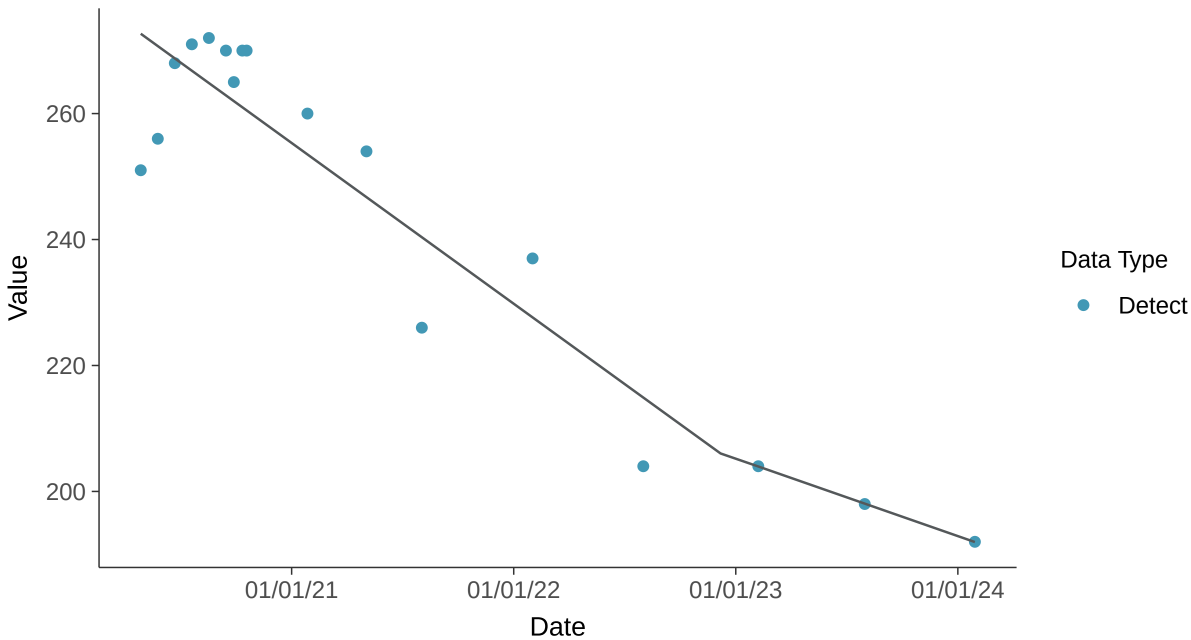
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Calcium, MW-2 (mg/L)



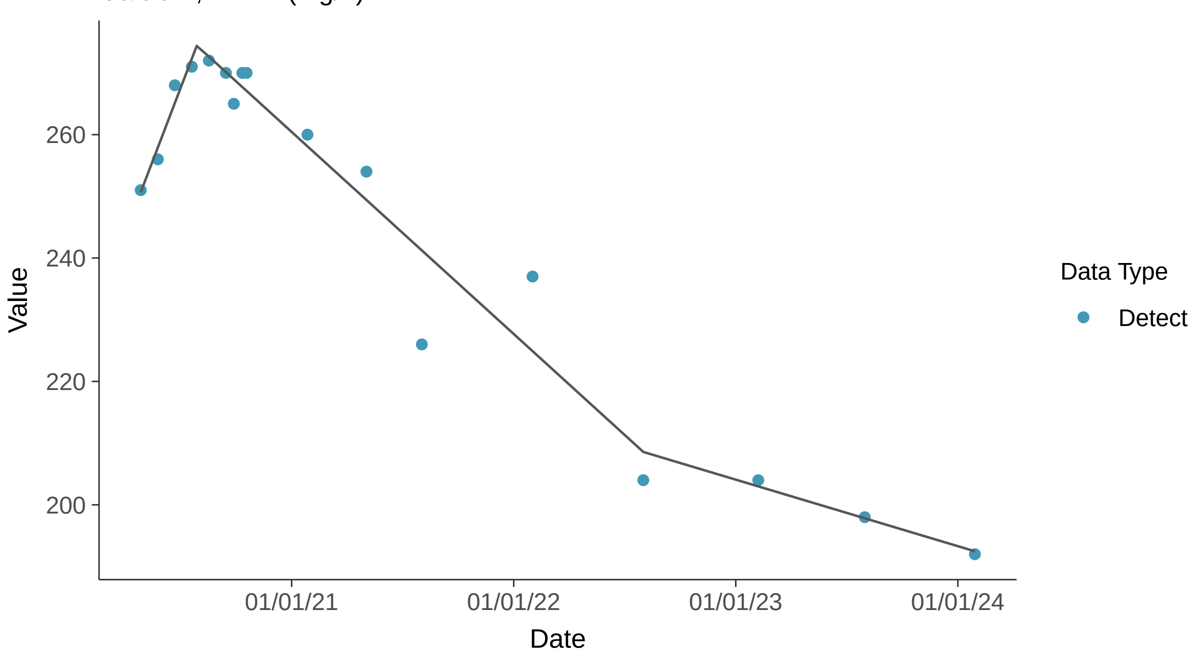
Trend Regression: Piecewise Linear-Linear

Calcium, MW-2 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Calcium, MW-2 (mg/L)

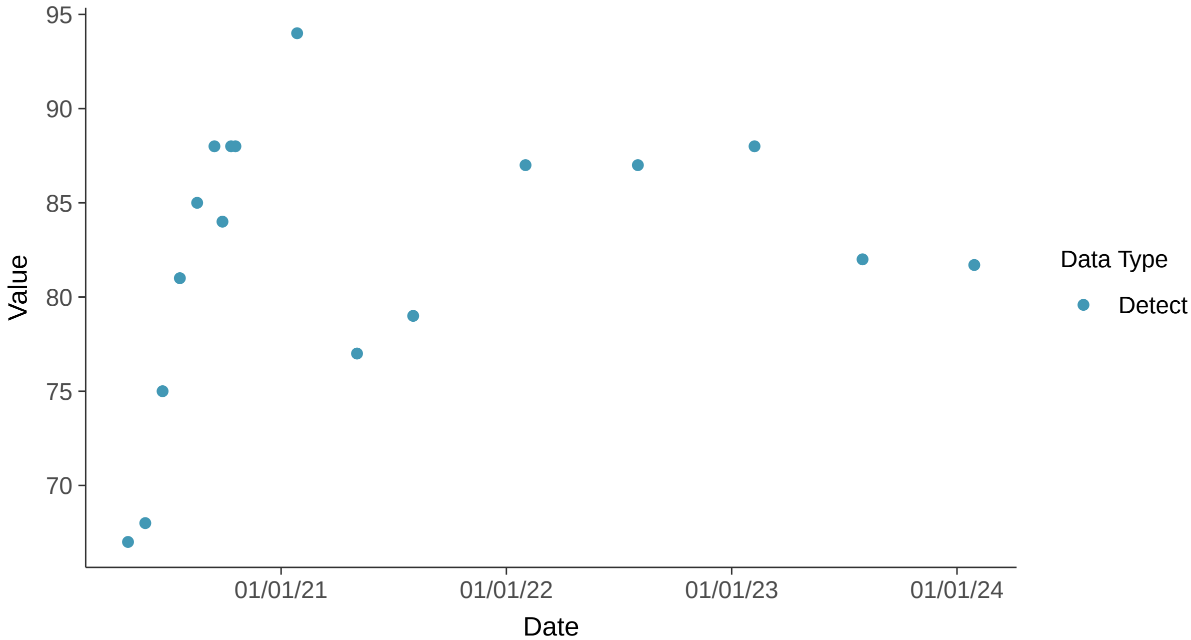


Appendix III: Chloride, MW-2

ID: 02_1_03

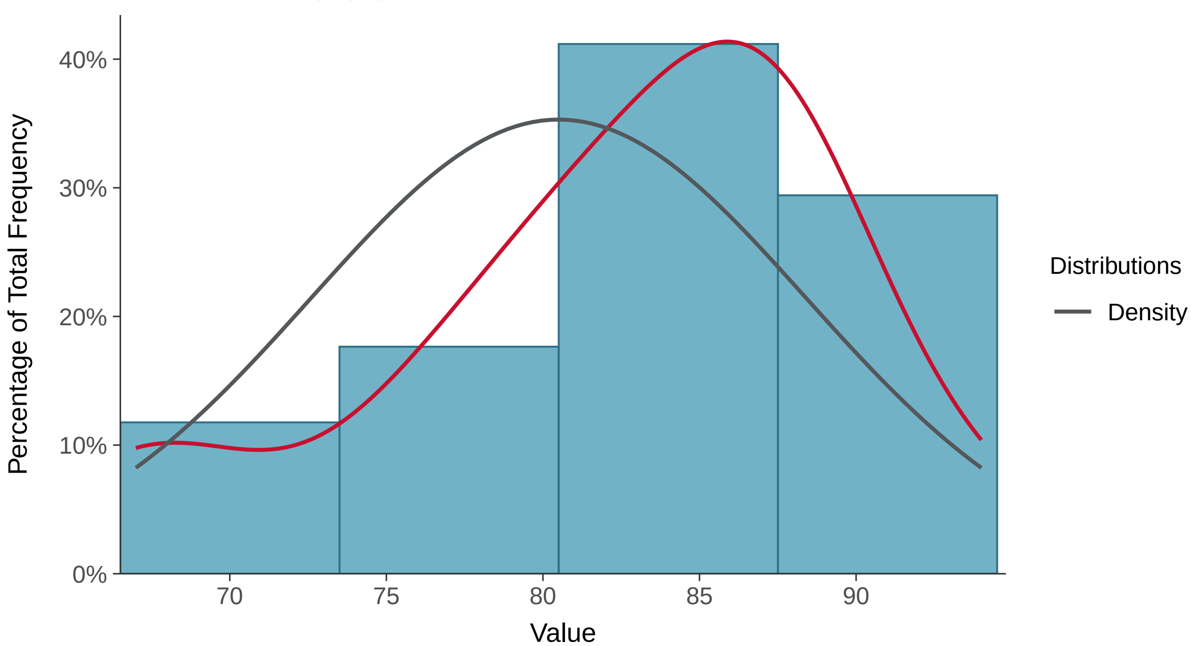
Scatter Plot

Chloride, MW-2 (mg/L)



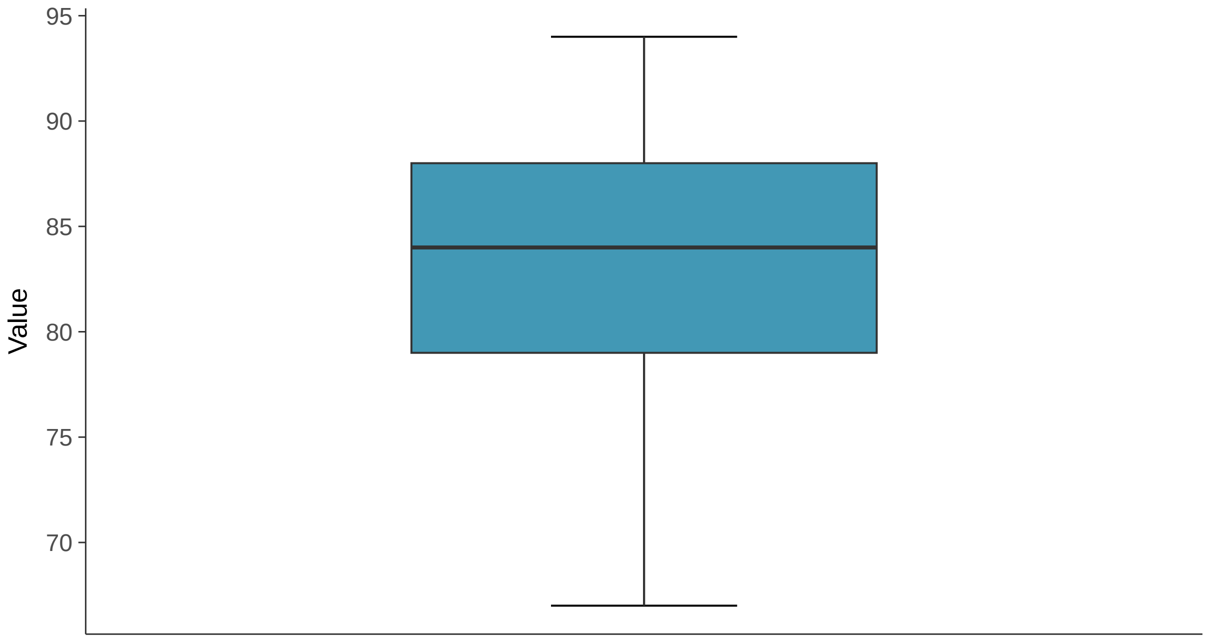
Histogram

Chloride, MW-2 (mg/L)



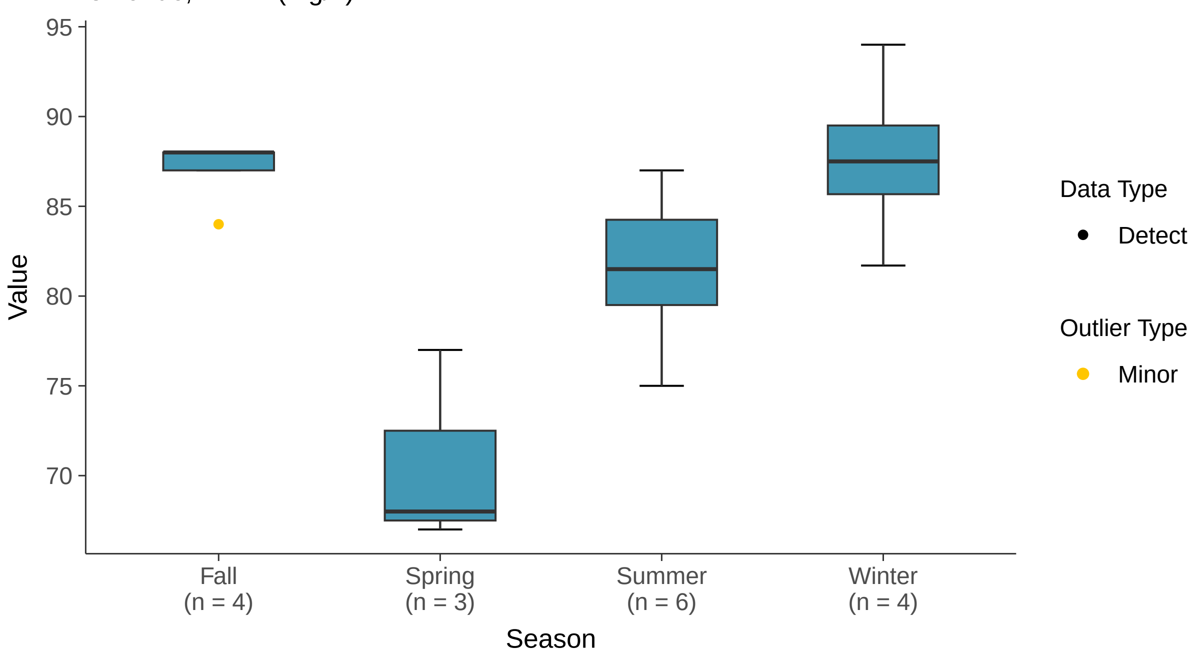
Boxplot

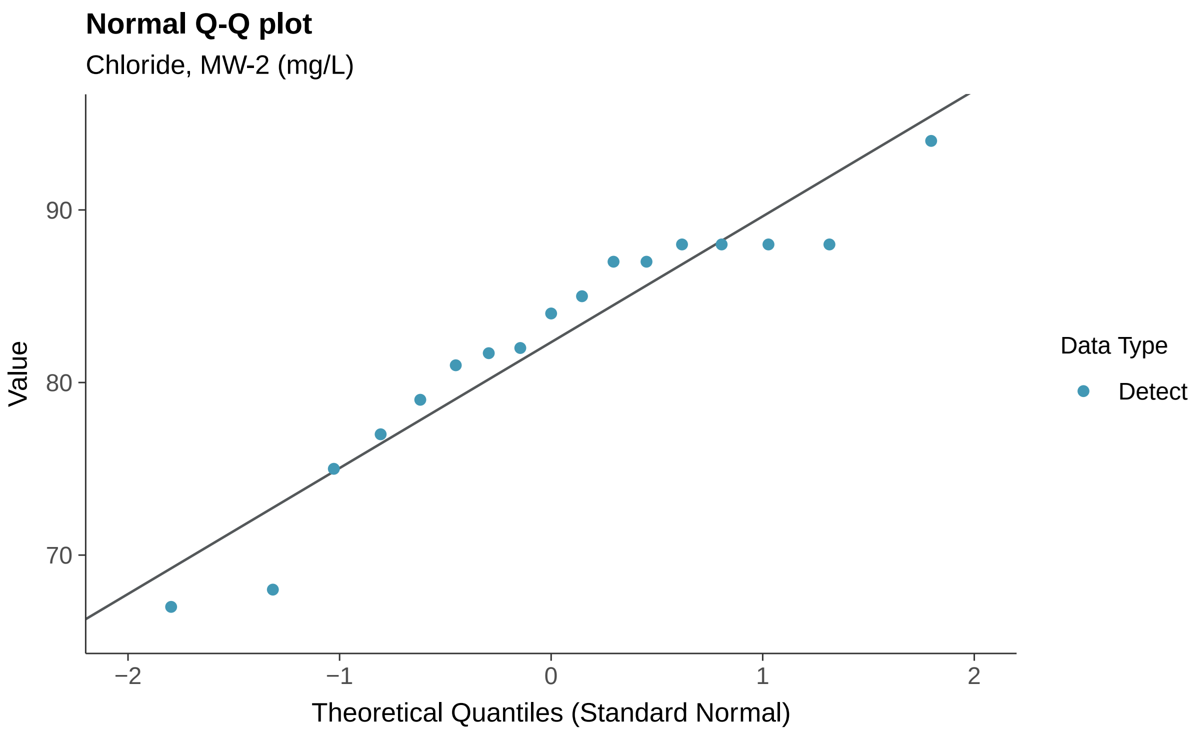
Chloride, MW-2 (mg/L)

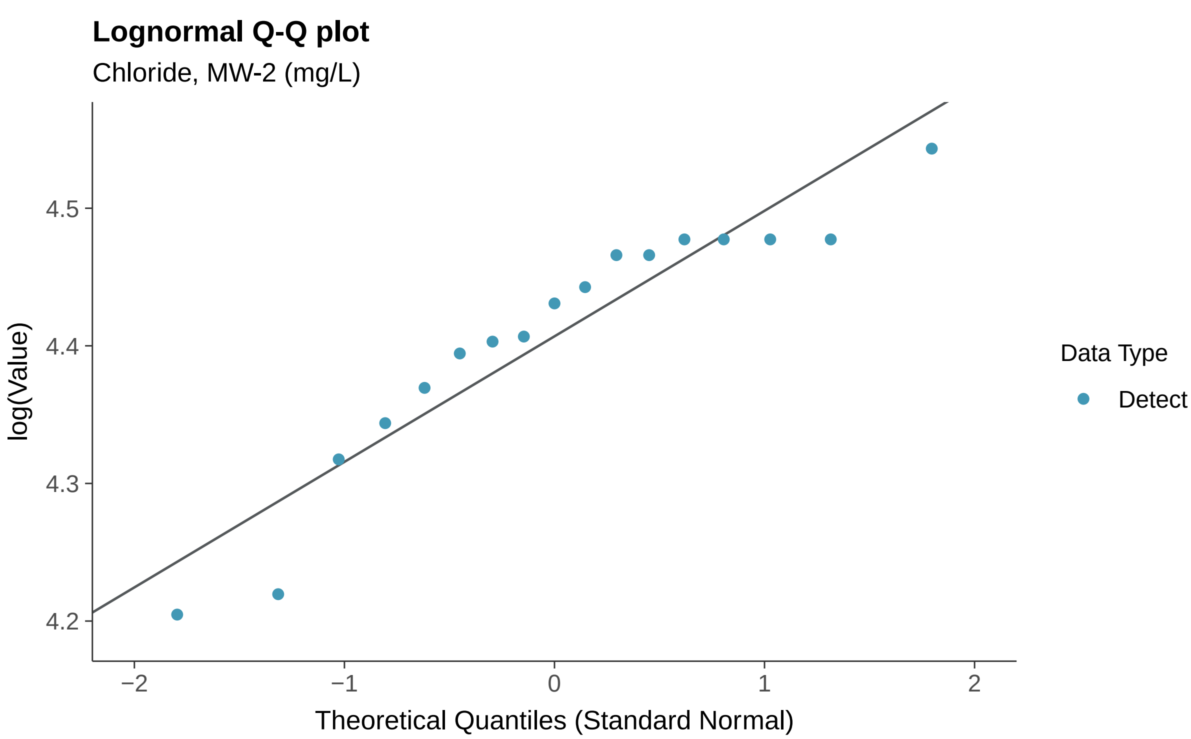


Boxplot by Season

Chloride, MW-2 (mg/L)

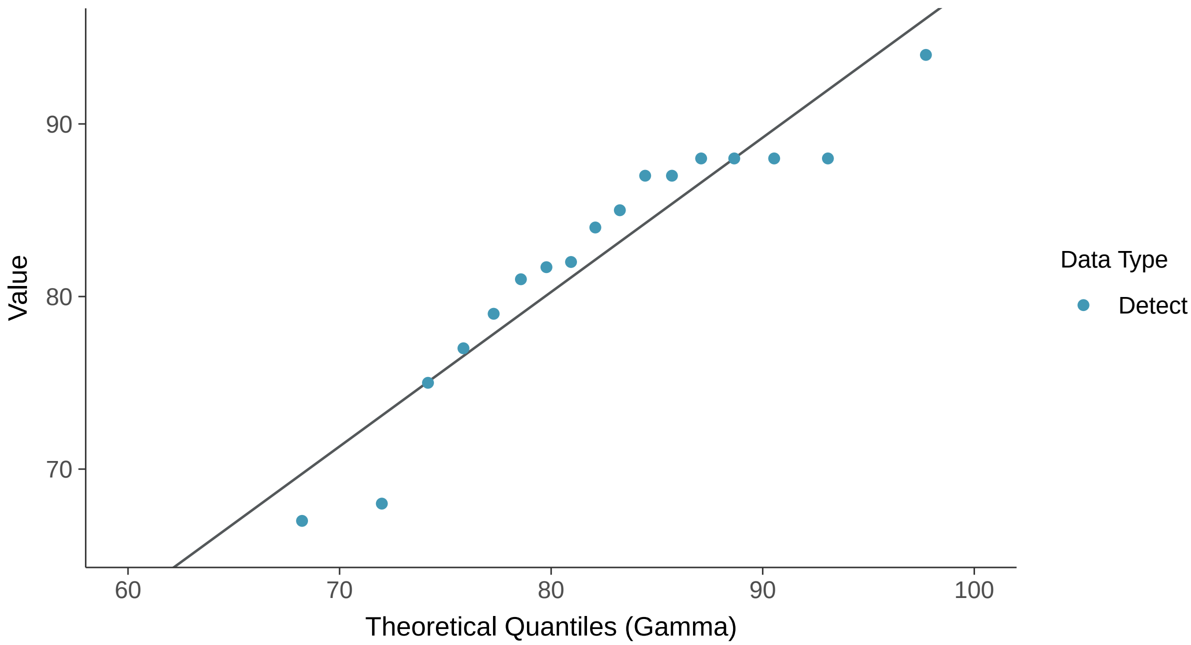



Normal Q-Q plot
Chloride, MW-2 (mg/L)
Value
90
80
70
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chloride, MW-2 (mg/L)
log(Value)
4.5
4.4
4.3
4.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

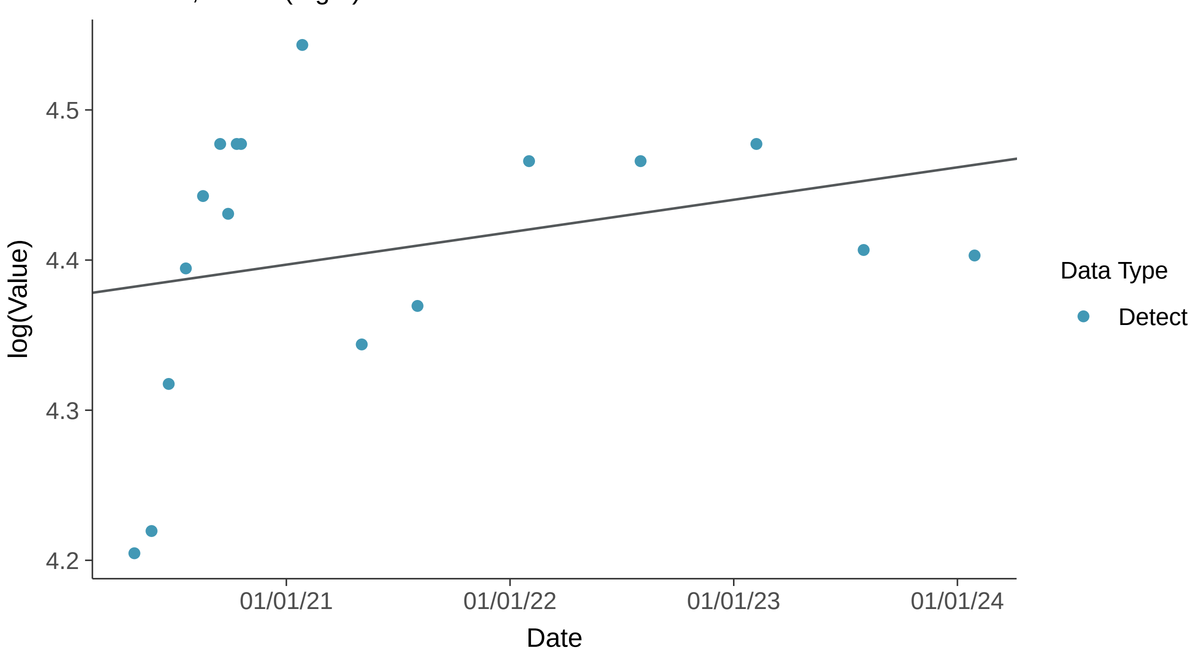
Gamma Q-Q plot

Chloride, MW-2 (mg/L)



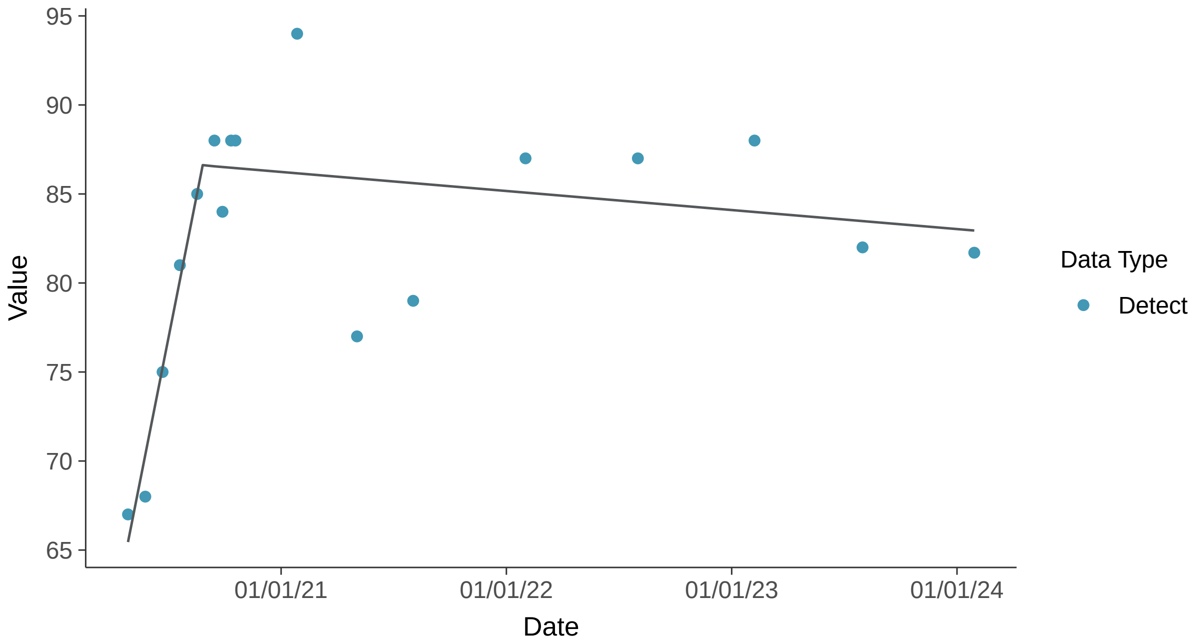
Trend Regression: Lognormal MLE

Chloride, MW-2 (mg/L)



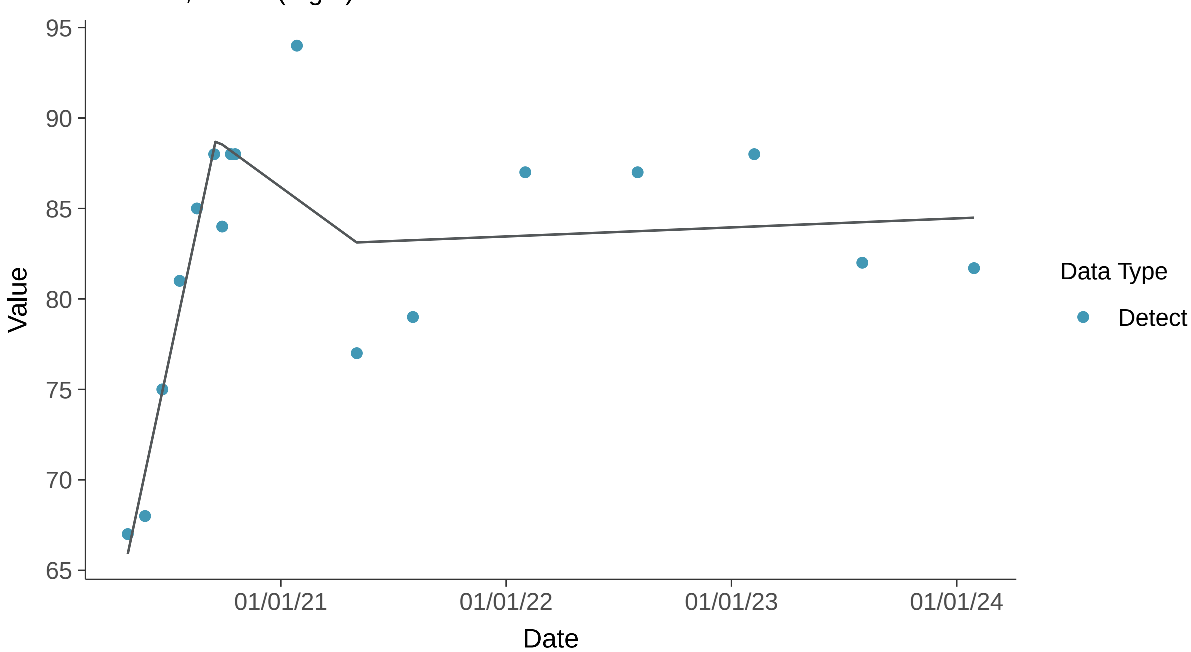
Trend Regression: Piecewise Linear-Linear

Chloride, MW-2 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Chloride, MW-2 (mg/L)

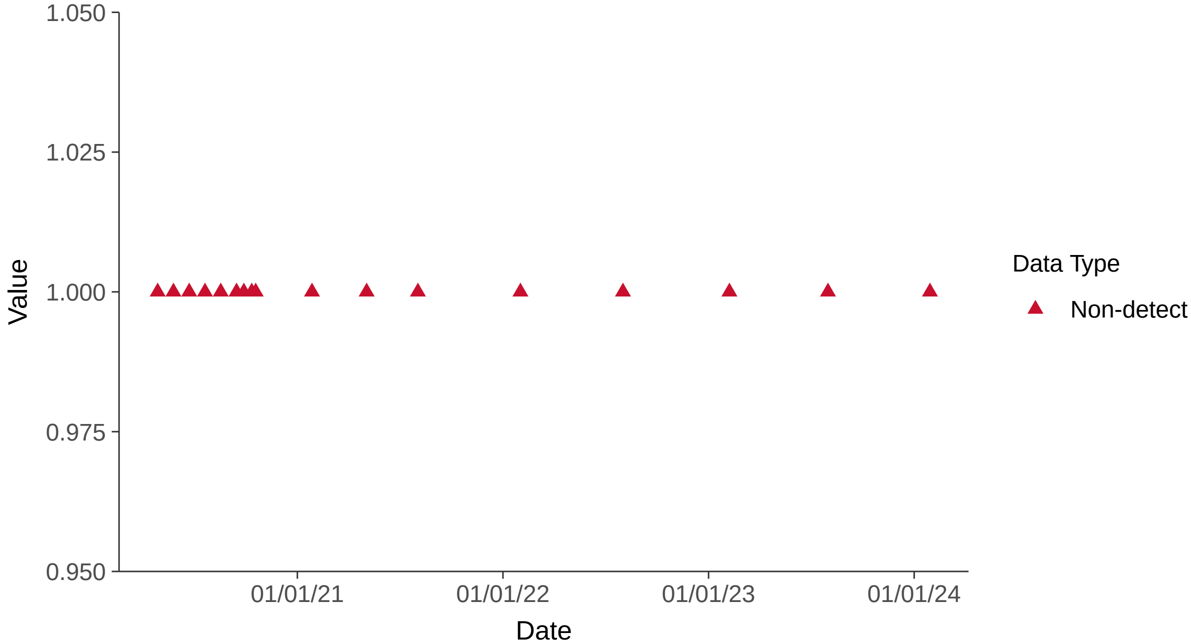


Appendix III: Fluoride, MW-2

ID: 02_1_04

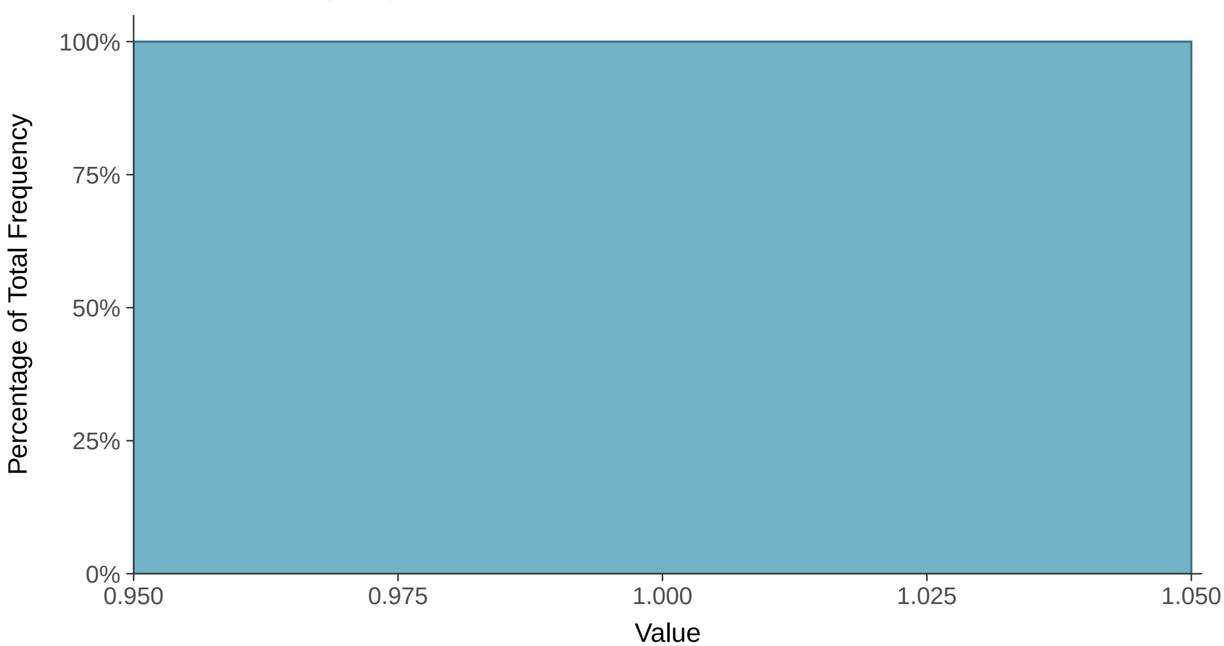
Scatter Plot

Fluoride, MW-2 (mg/L)



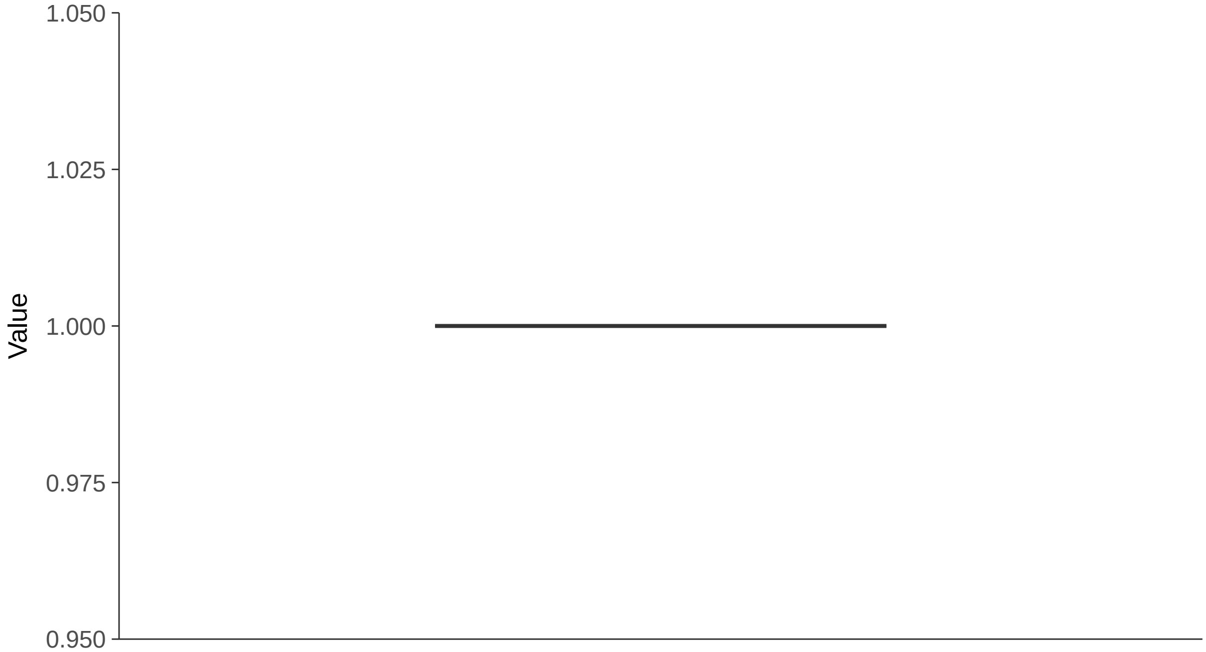
Histogram

Fluoride, MW-2 (mg/L)



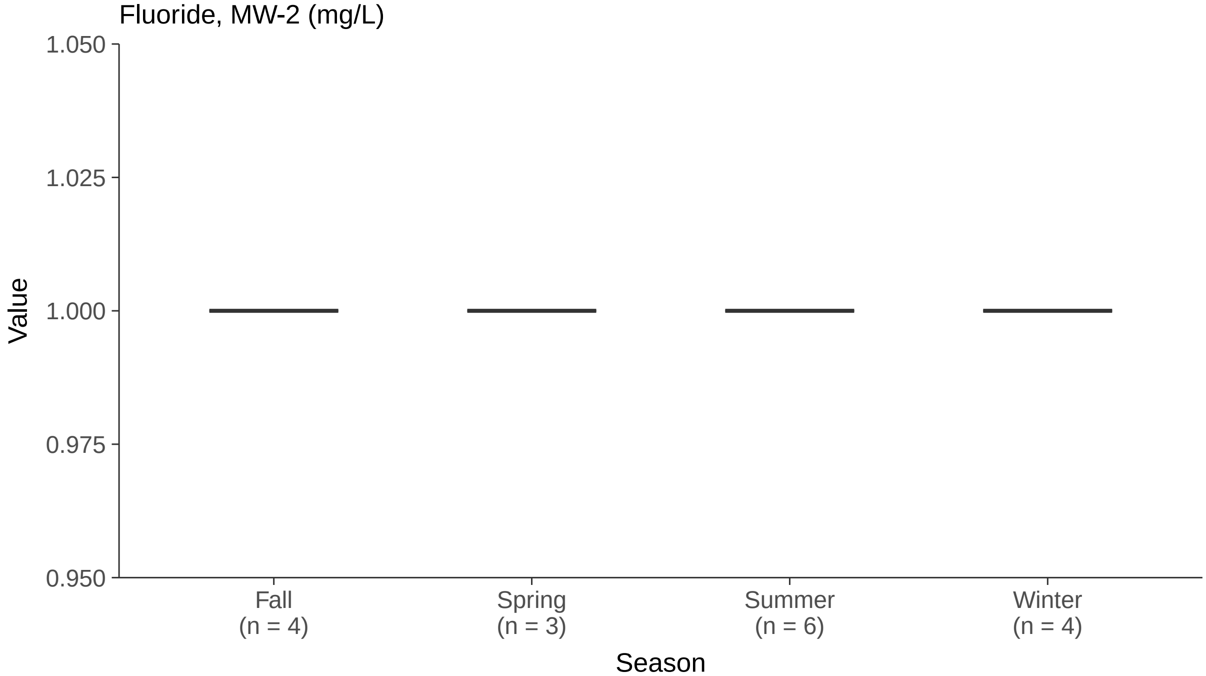
Boxplot

Fluoride, MW-2 (mg/L)



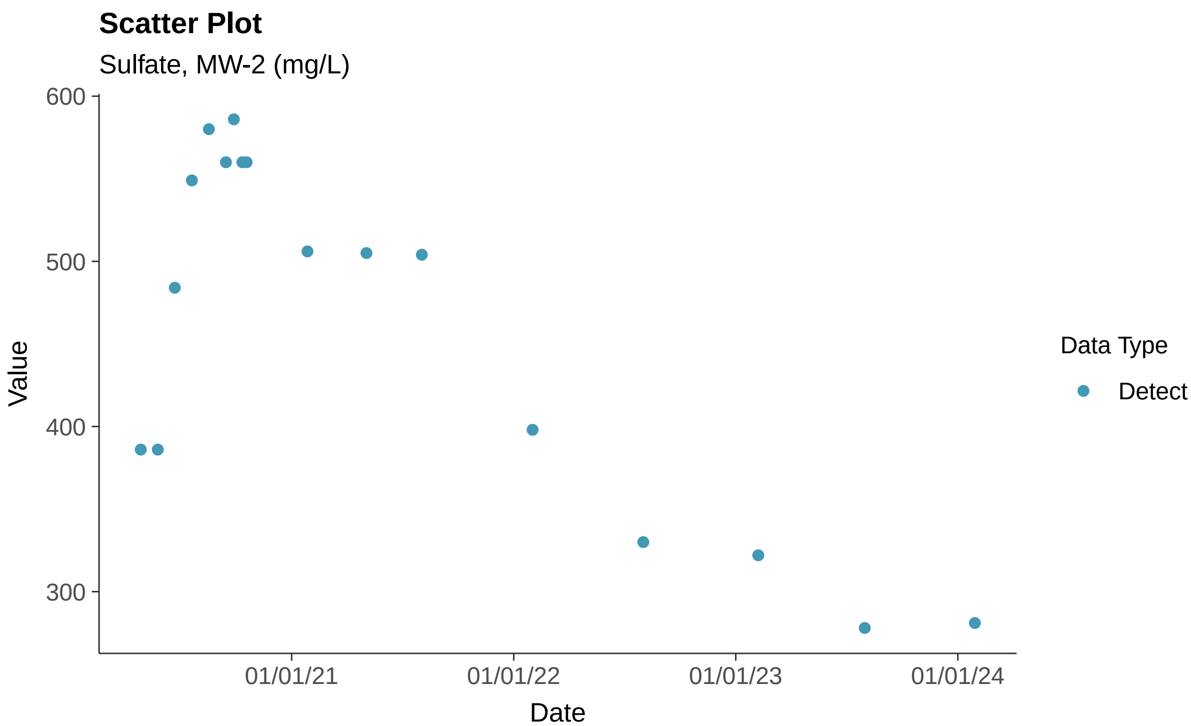
Boxplot by Season

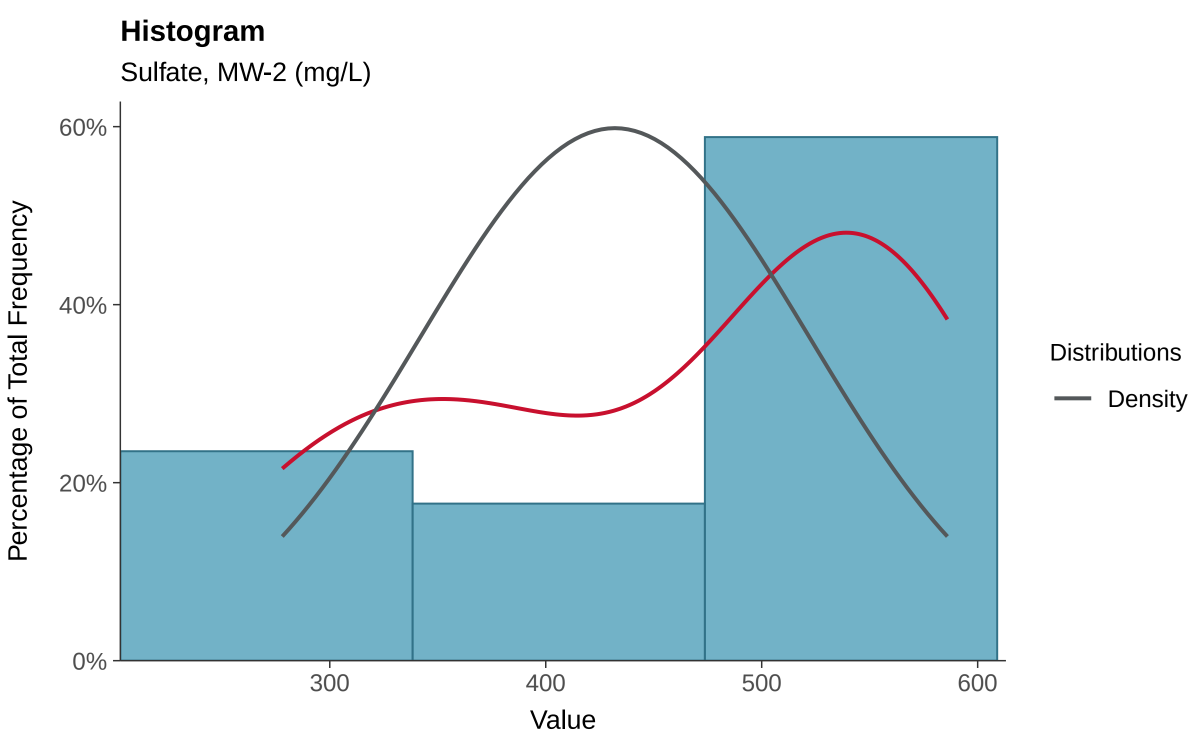
Fluoride, MW-2 (mg/L)



Appendix III: Sulfate, MW-2

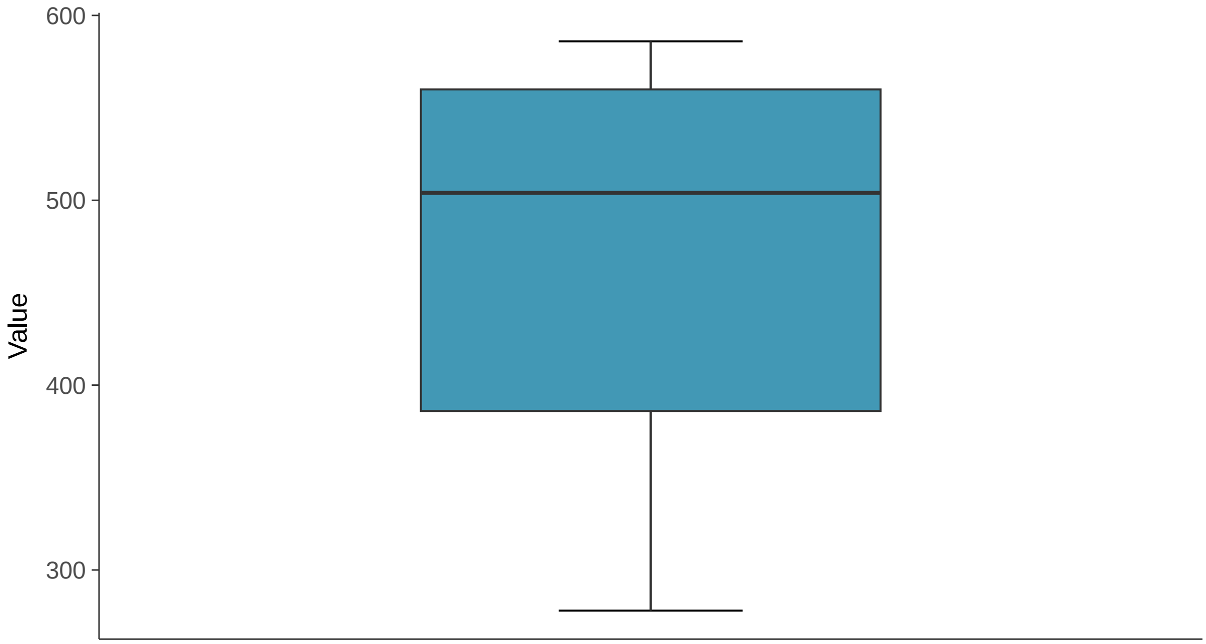
ID: 02_1_05





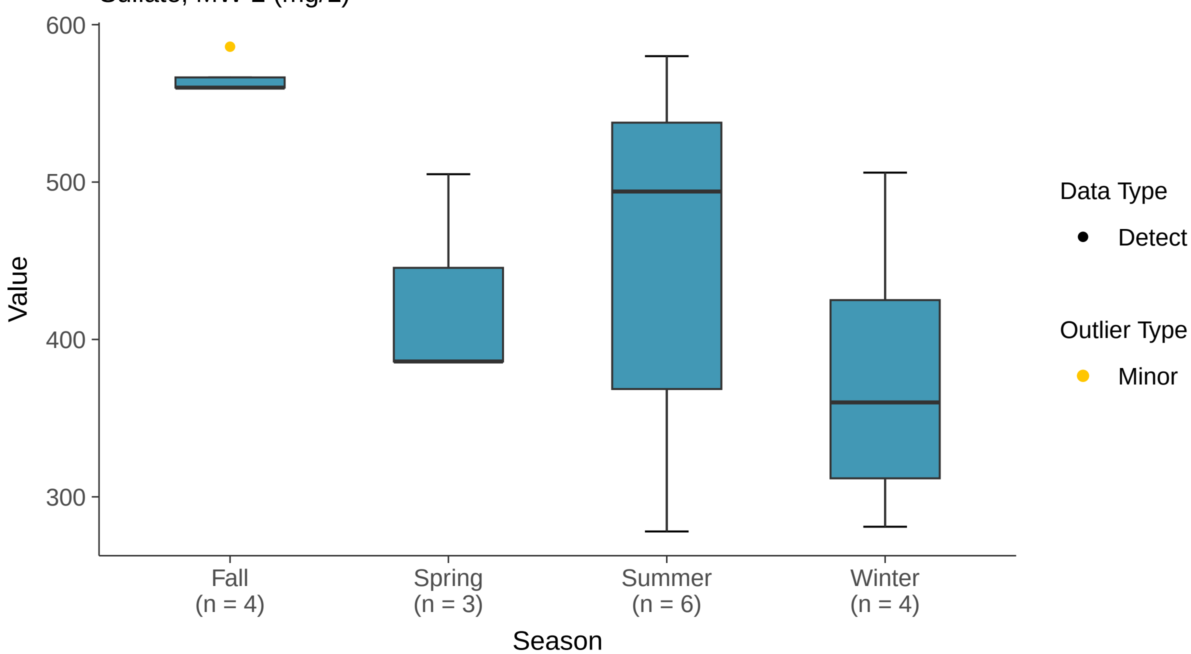
Boxplot

Sulfate, MW-2 (mg/L)



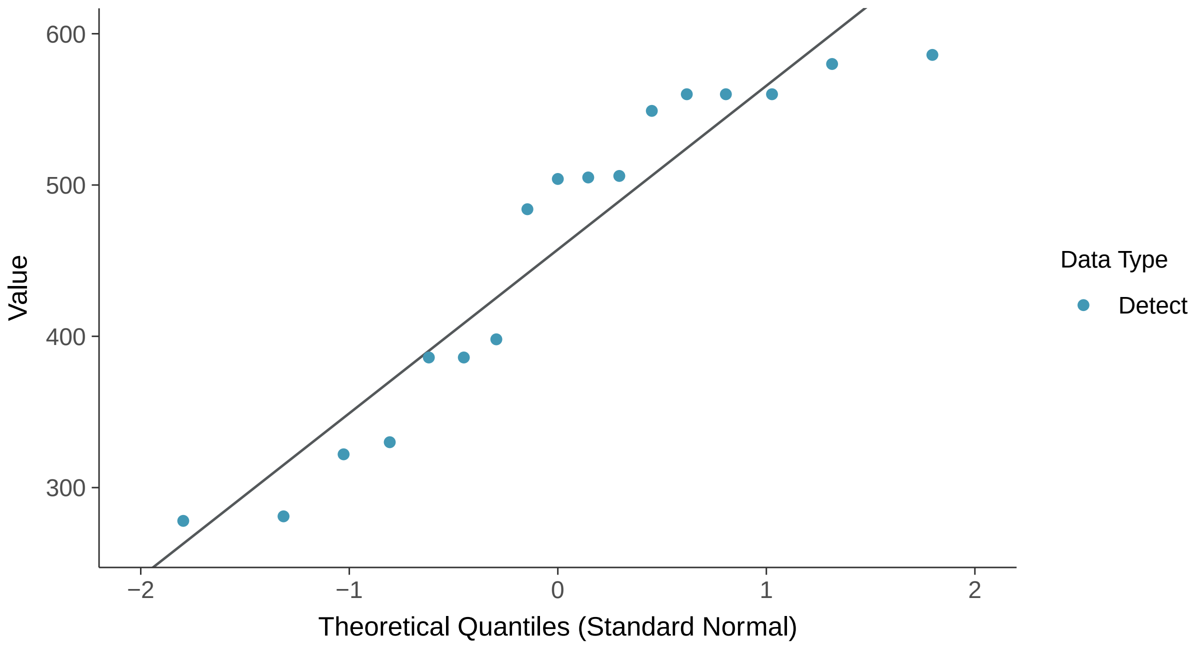
Boxplot by Season

Sulfate, MW-2 (mg/L)



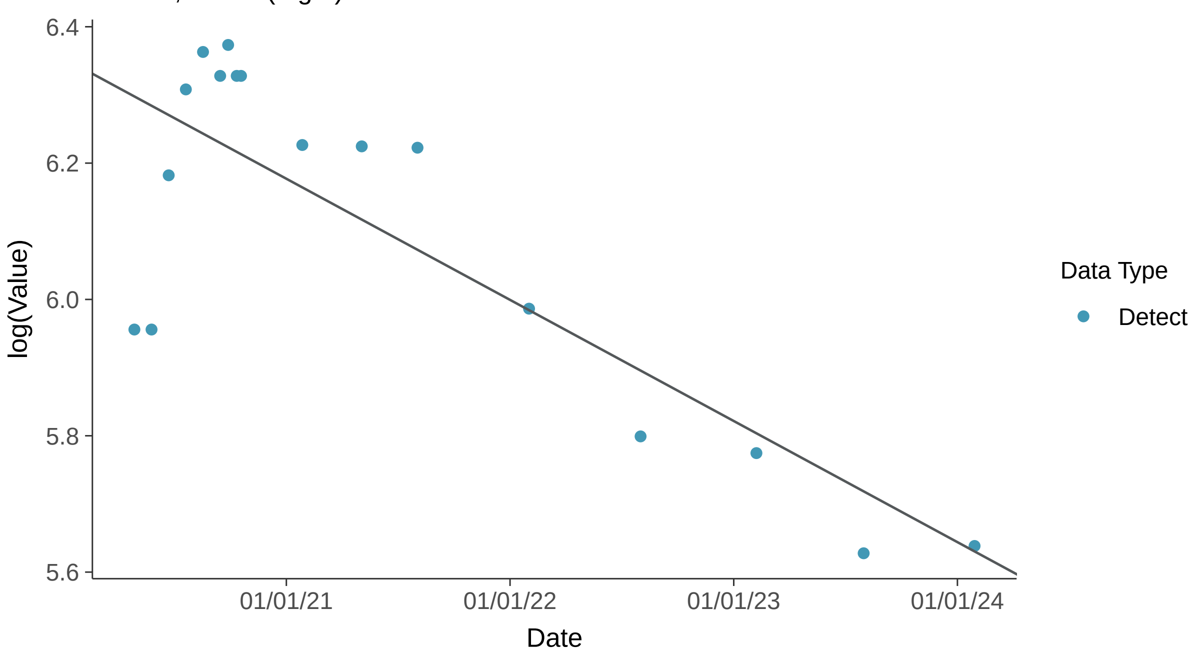
Normal Q-Q plot

Sulfate, MW-2 (mg/L)



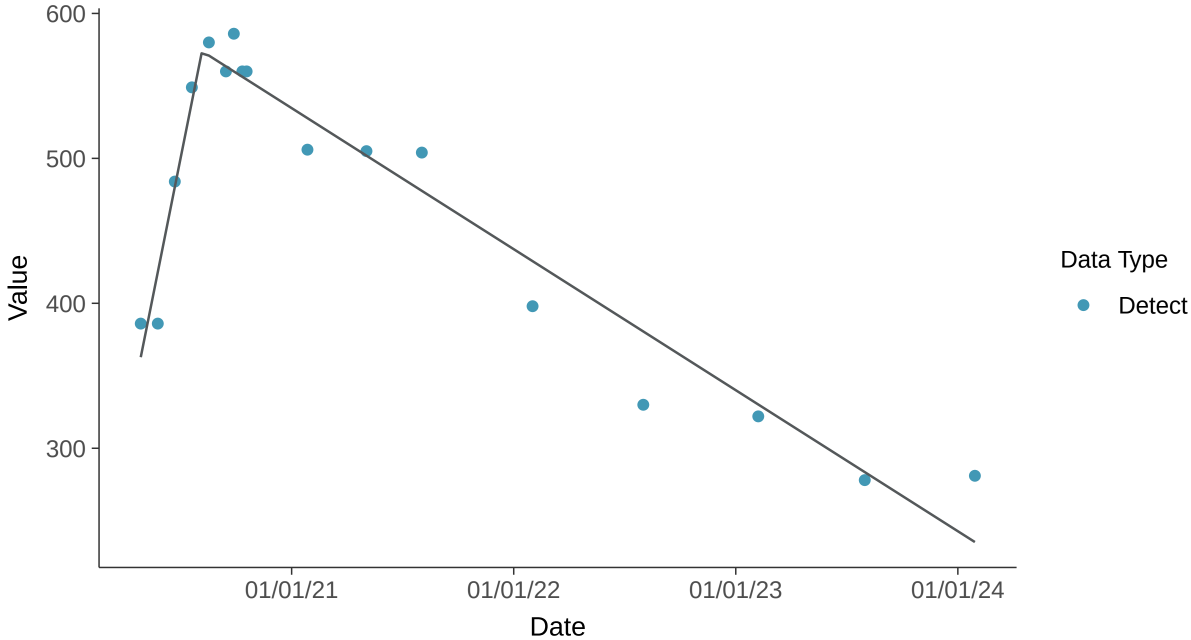
Trend Regression: Lognormal MLE

Sulfate, MW-2 (mg/L)



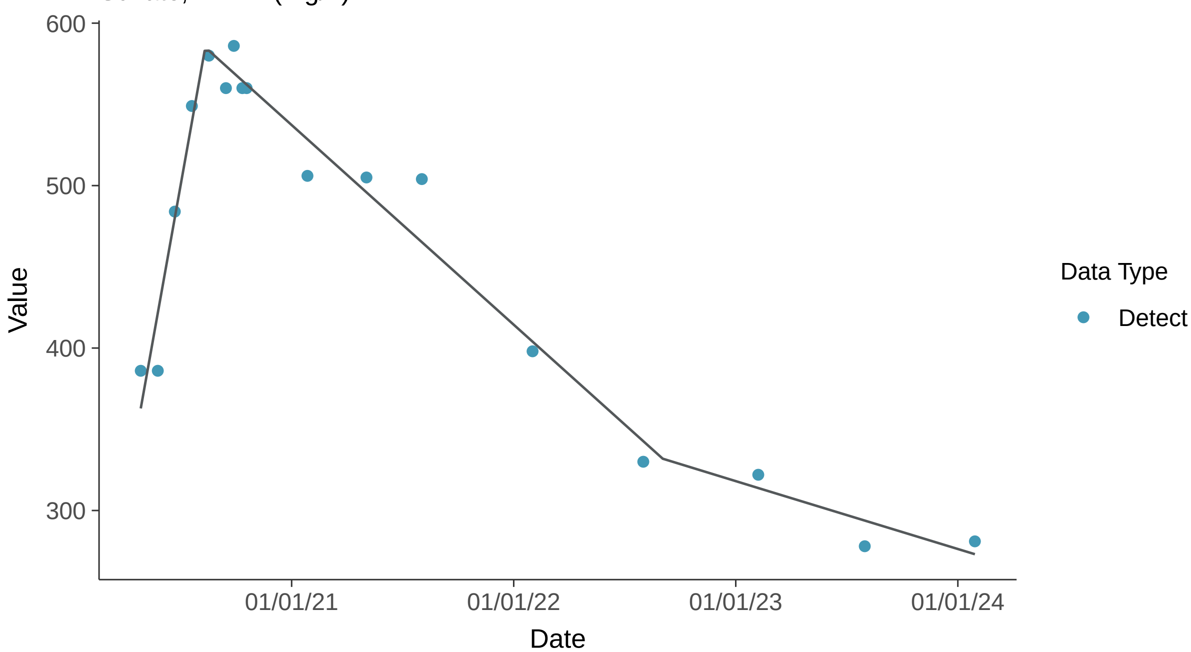
Trend Regression: Piecewise Linear-Linear

Sulfate, MW-2 (mg/L)



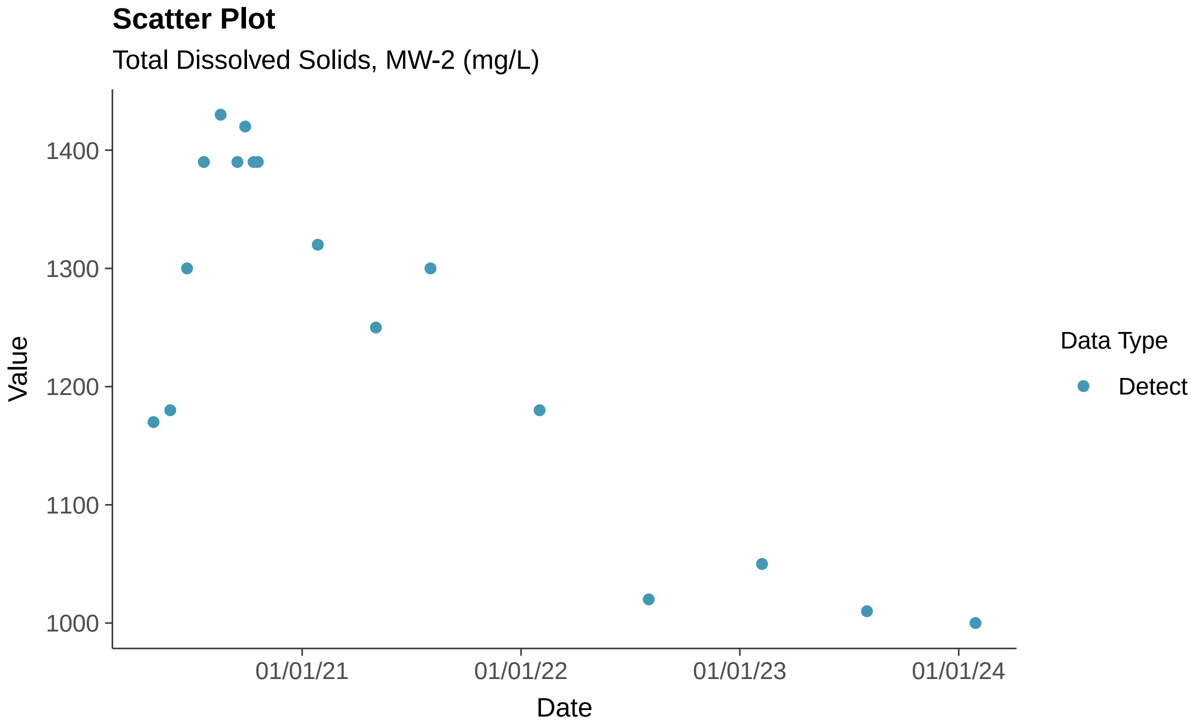
Trend Regression: Piecewise Linear-Linear-Linear

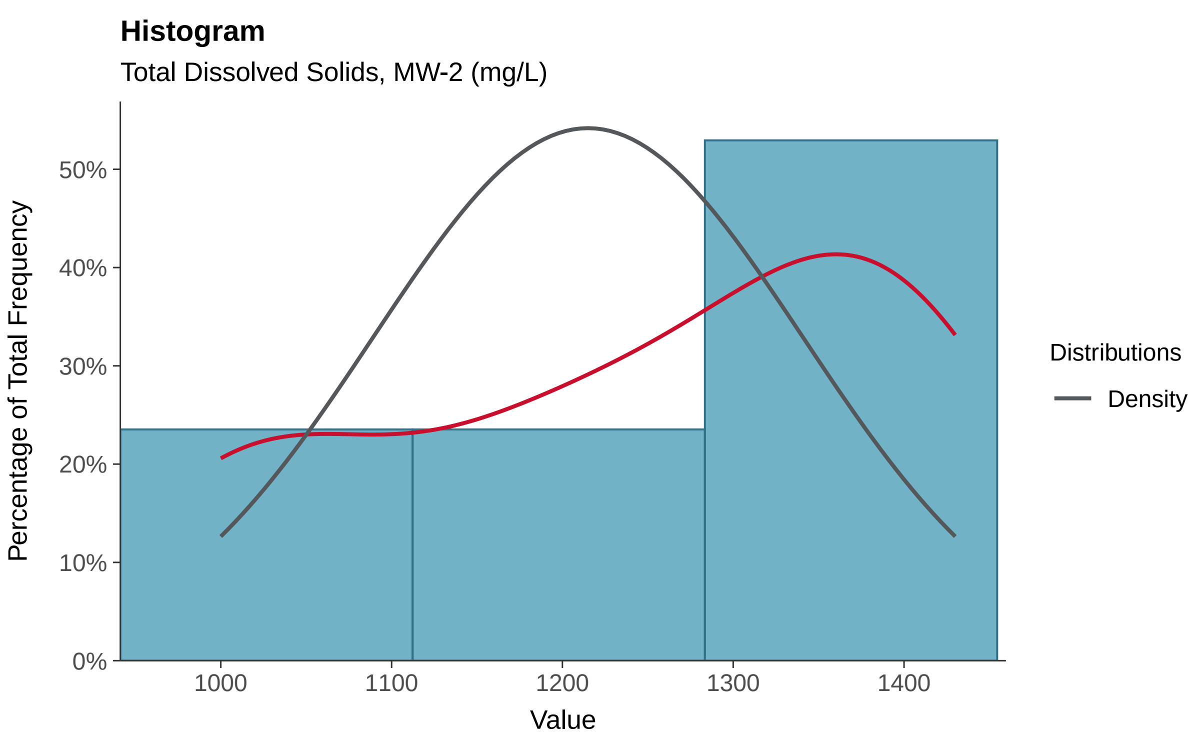
Sulfate, MW-2 (mg/L)



Appendix III: Total Dissolved Solids, MW-2

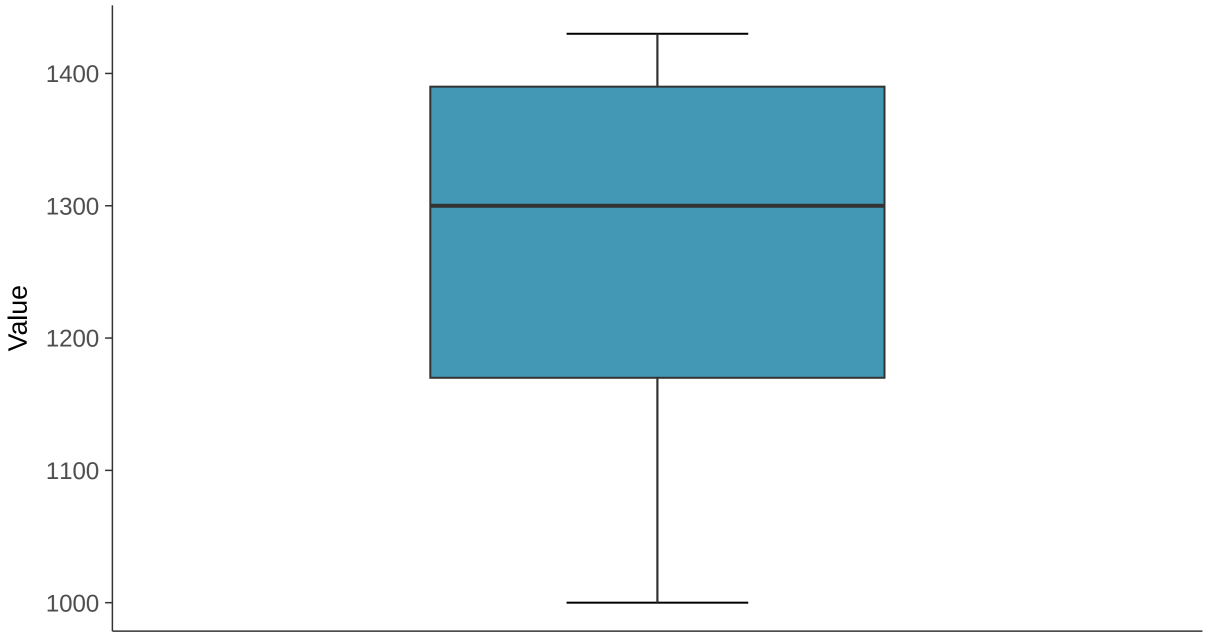
ID: 02_1_06





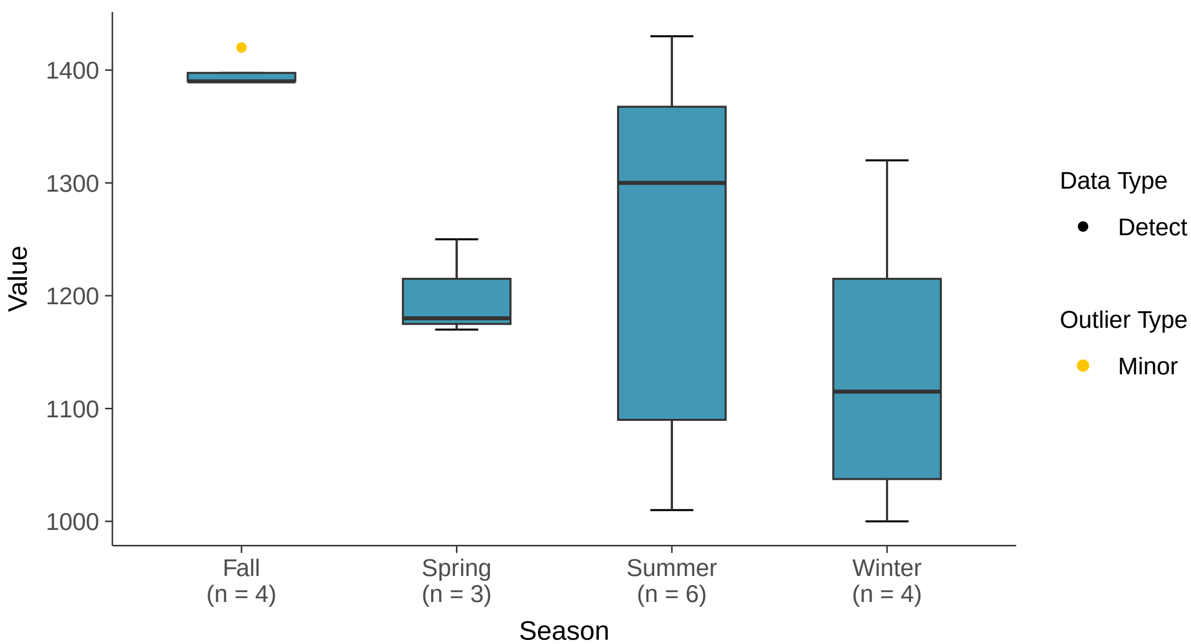
Boxplot

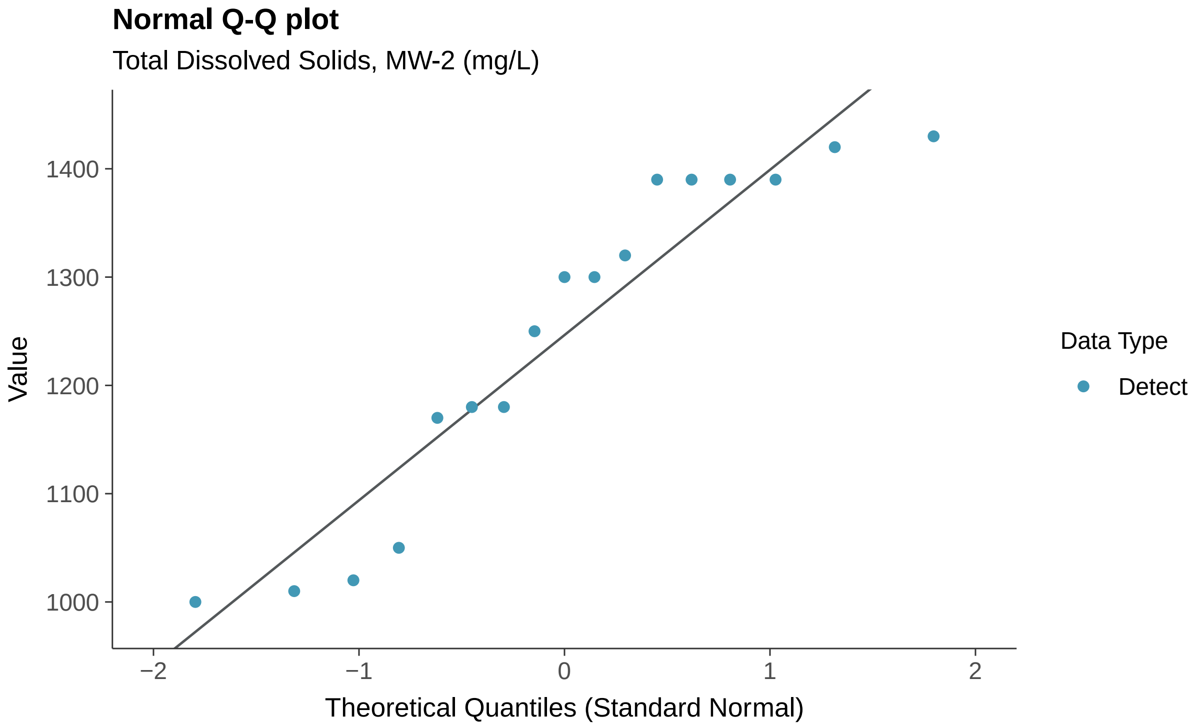
Total Dissolved Solids, MW-2 (mg/L)

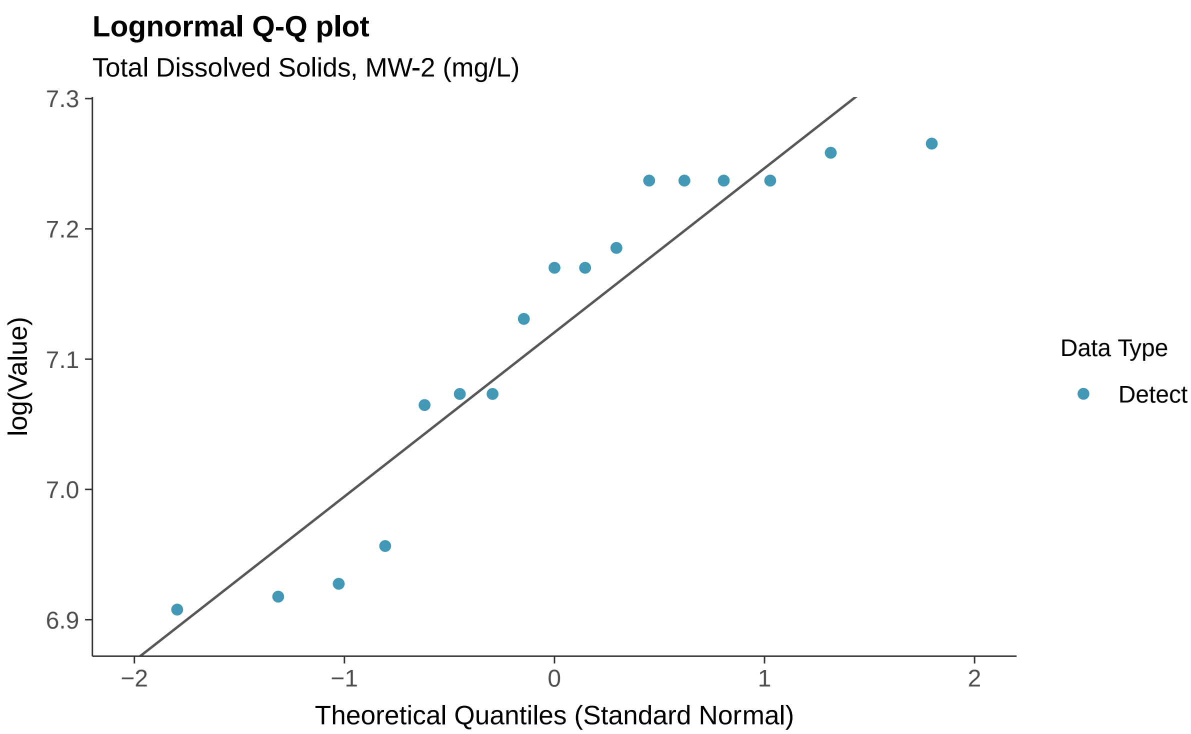


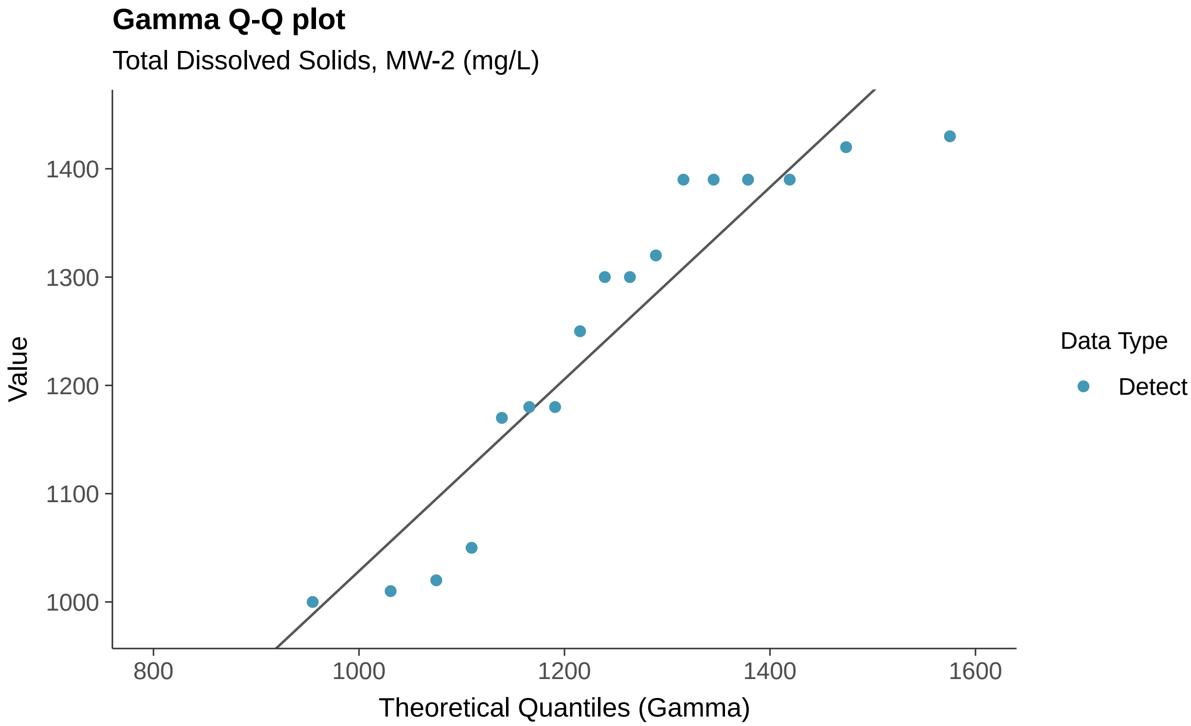
Boxplot by Season

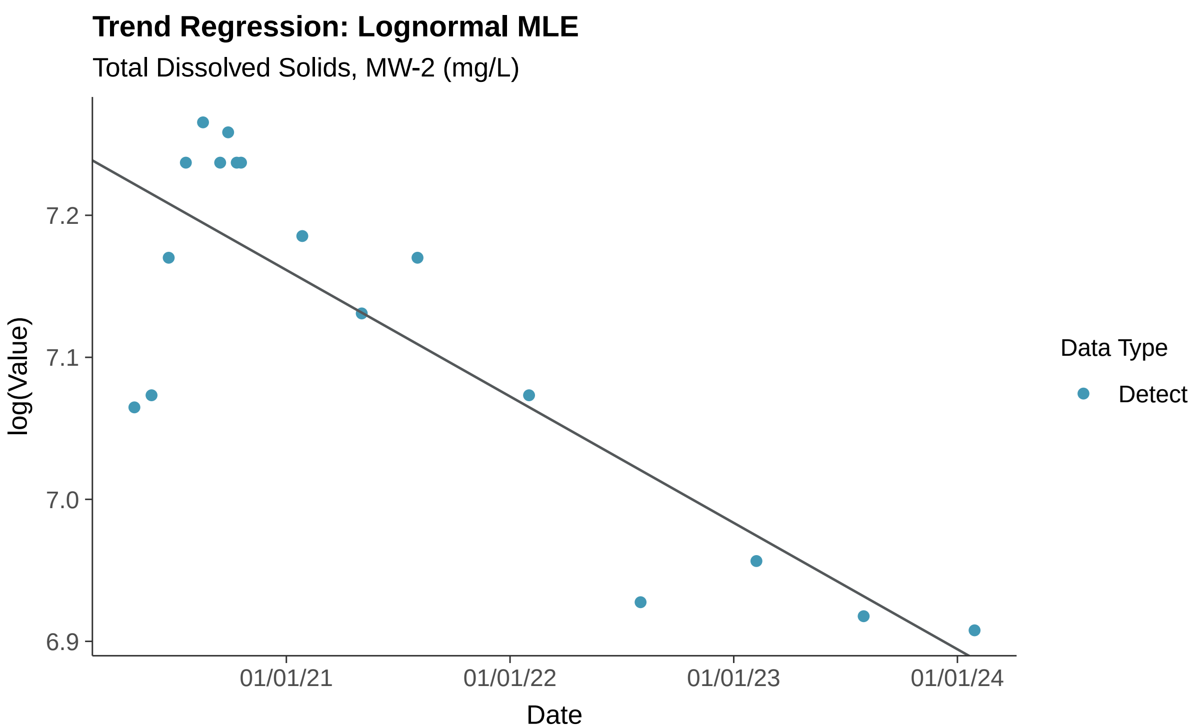
Total Dissolved Solids, MW-2 (mg/L)




Normal Q-Q plot
Total Dissolved Solids, MW-2 (mg/L)
Value
1000
1100
1200
1300
1400
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

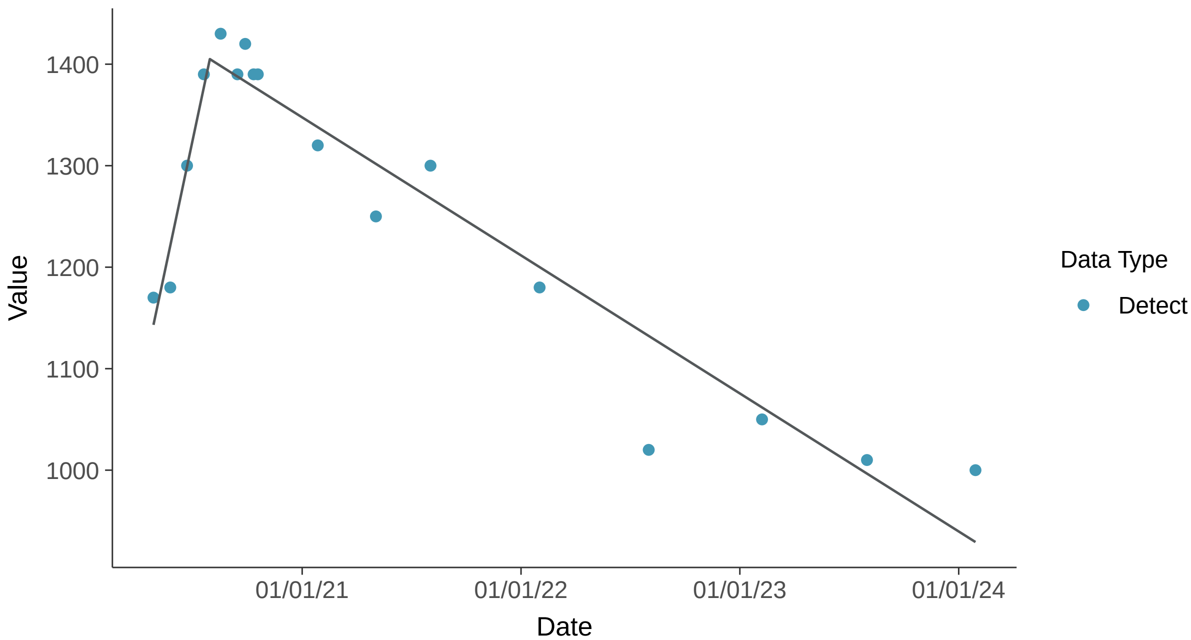

Lognormal Q-Q plot
Total Dissolved Solids, MW-2 (mg/L)
log(Value)
6.9
7.0
7.1
7.2
7.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Dissolved Solids, MW-2 (mg/L)
Value
1400
1300
1200
1100
1000
800
1000
1200
1400
1600
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-2 (mg/L)
log(Value)
7.2
7.1
7.0
6.9
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

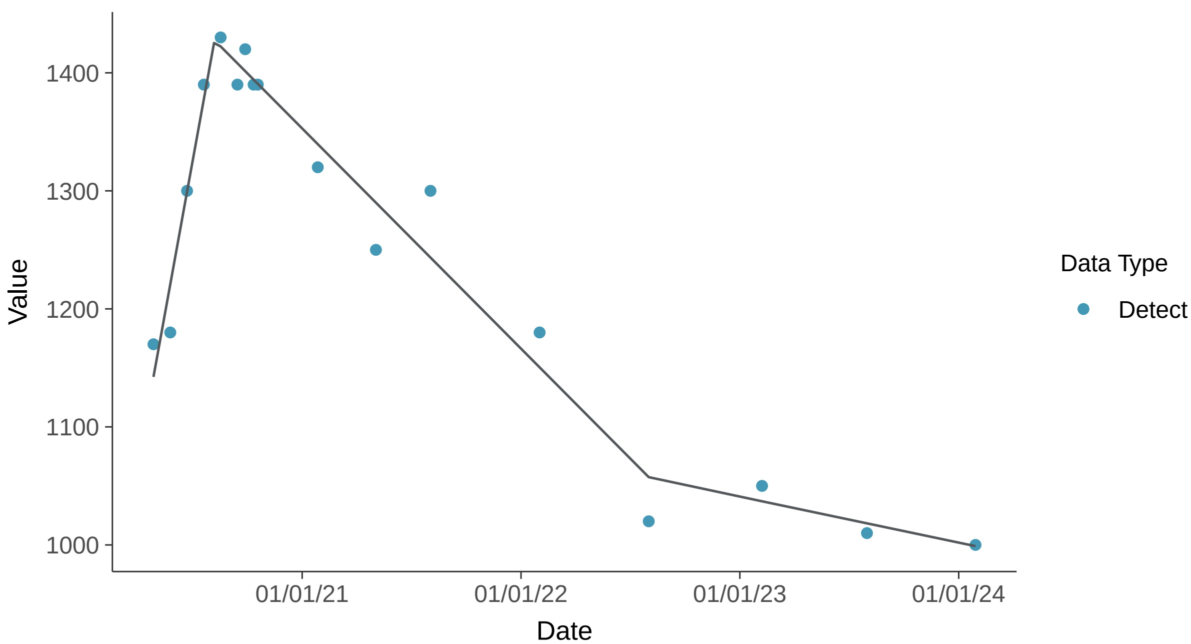
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-2 (mg/L)



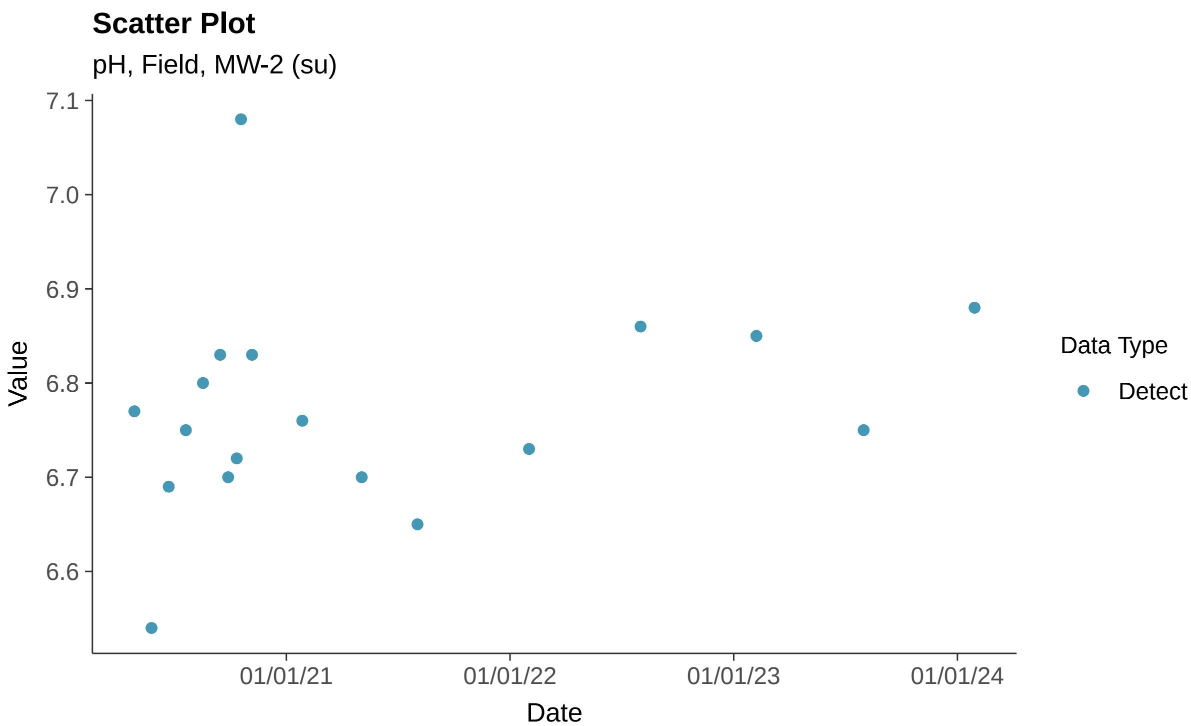
Trend Regression: Piecewise Linear-Linear-Linear

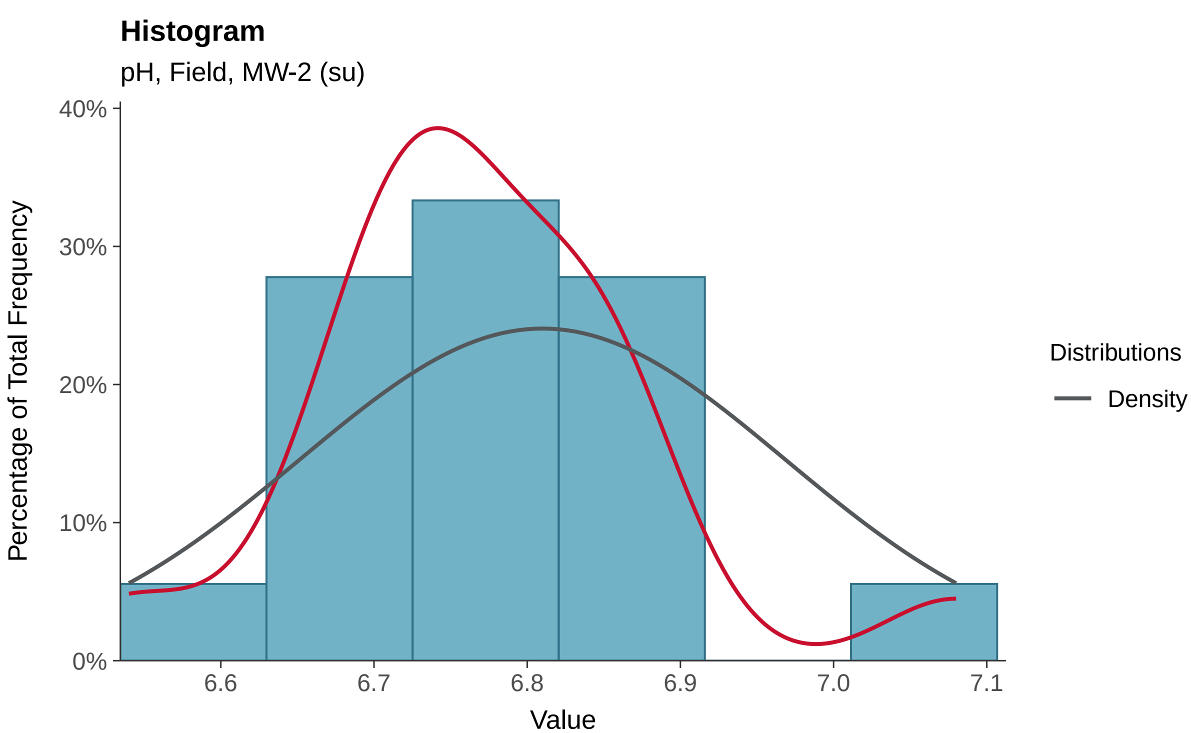
Total Dissolved Solids, MW-2 (mg/L)



Appendix III: pH, Field, MW-2

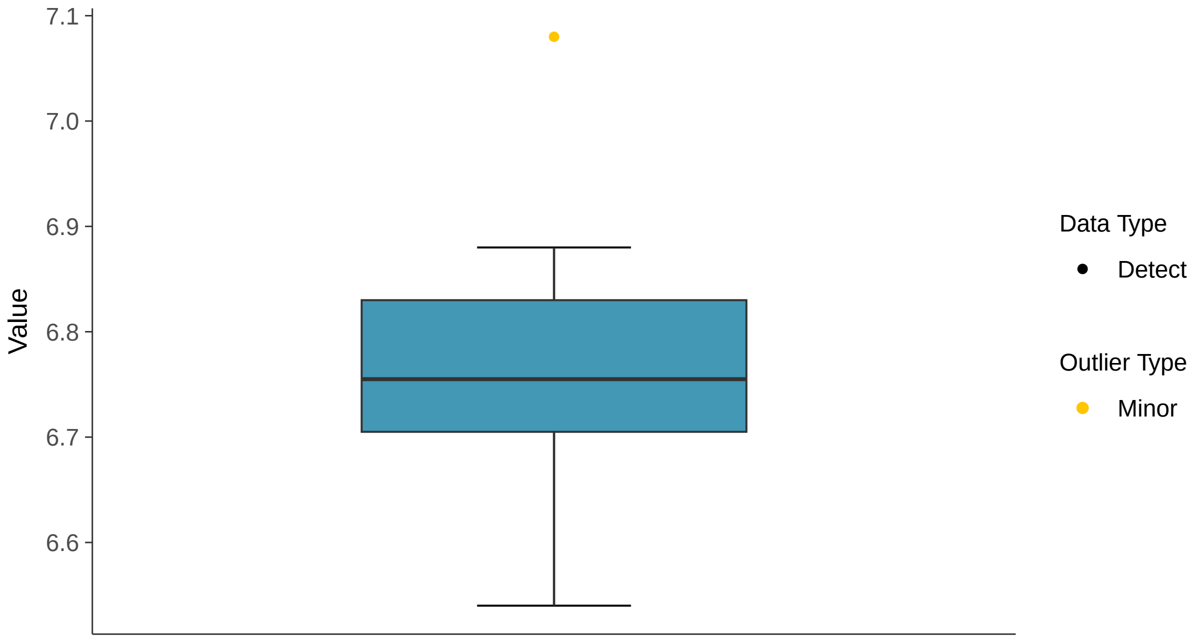
ID: 02_1_07





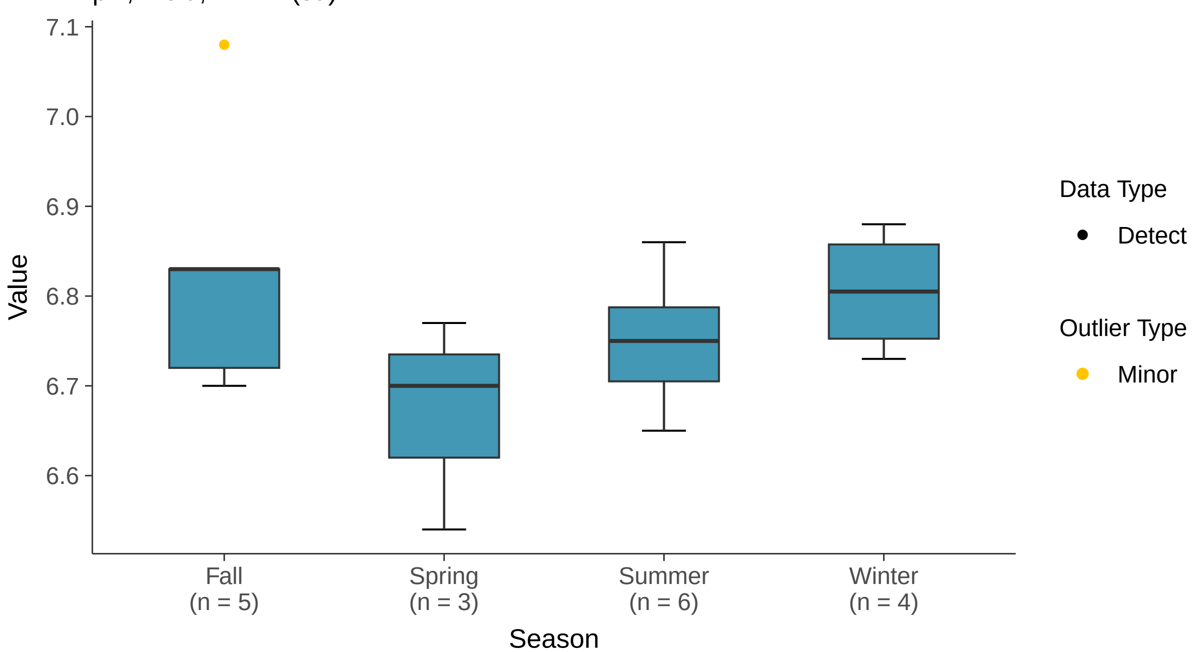
Boxplot

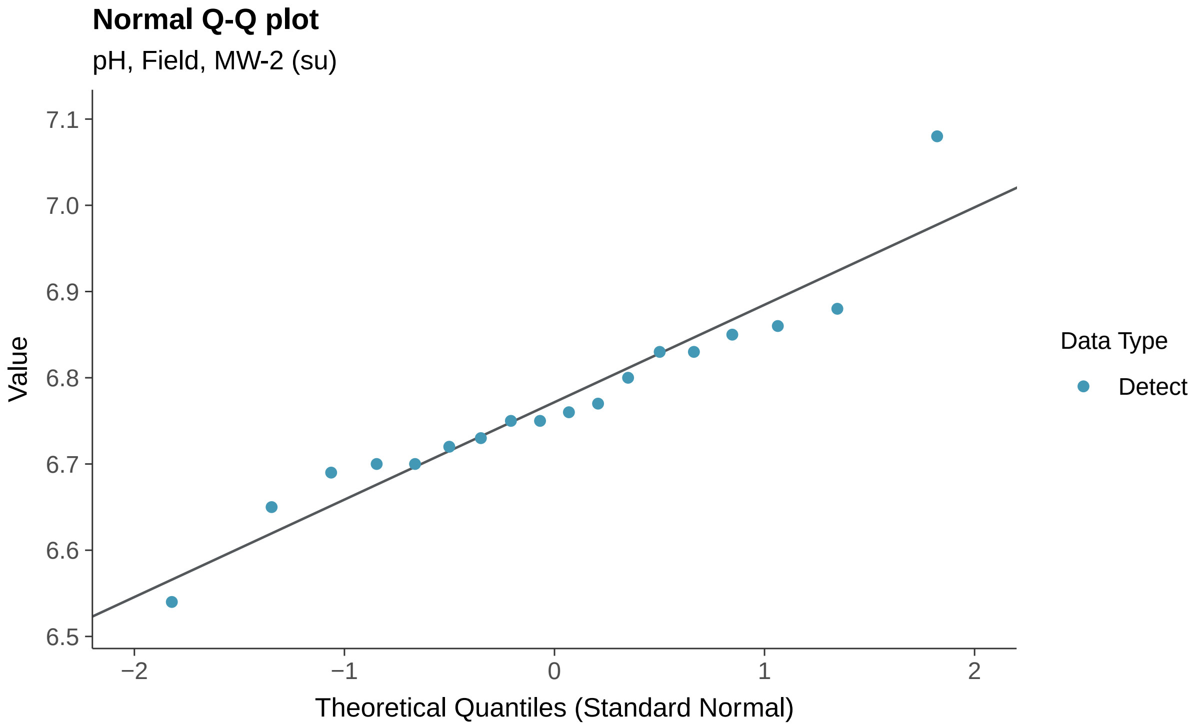
pH, Field, MW-2 (su)

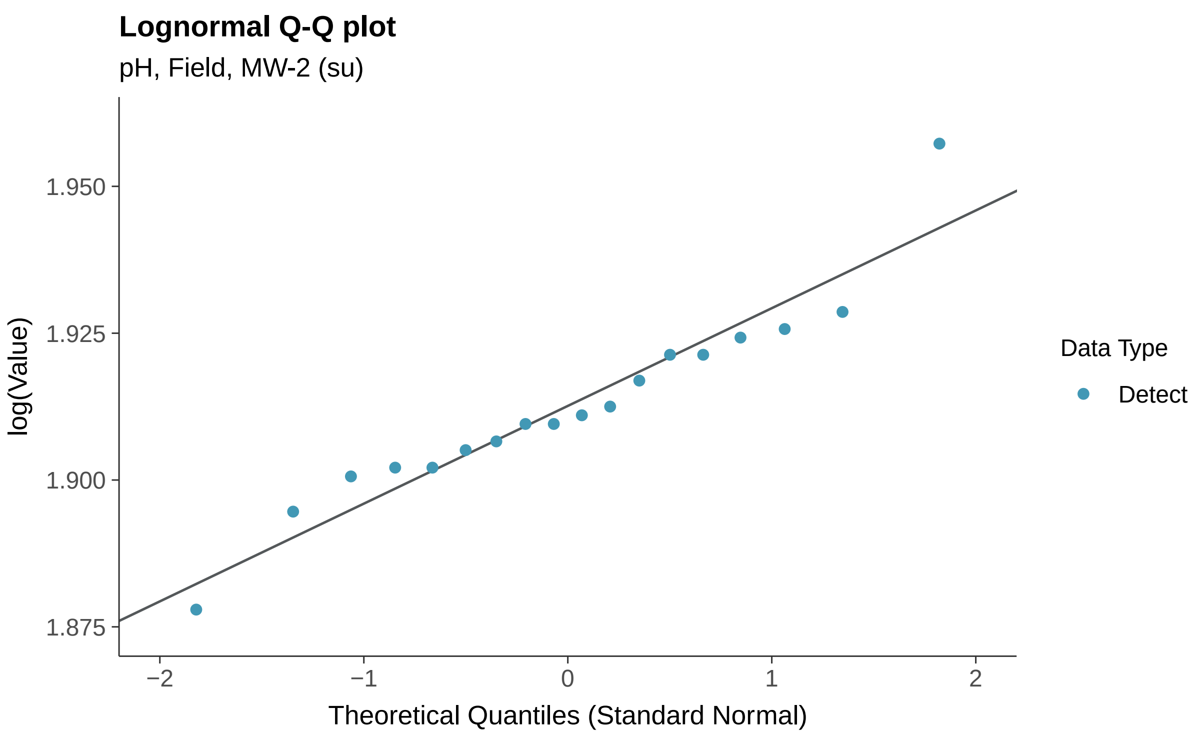


Boxplot by Season

pH, Field, MW-2 (su)

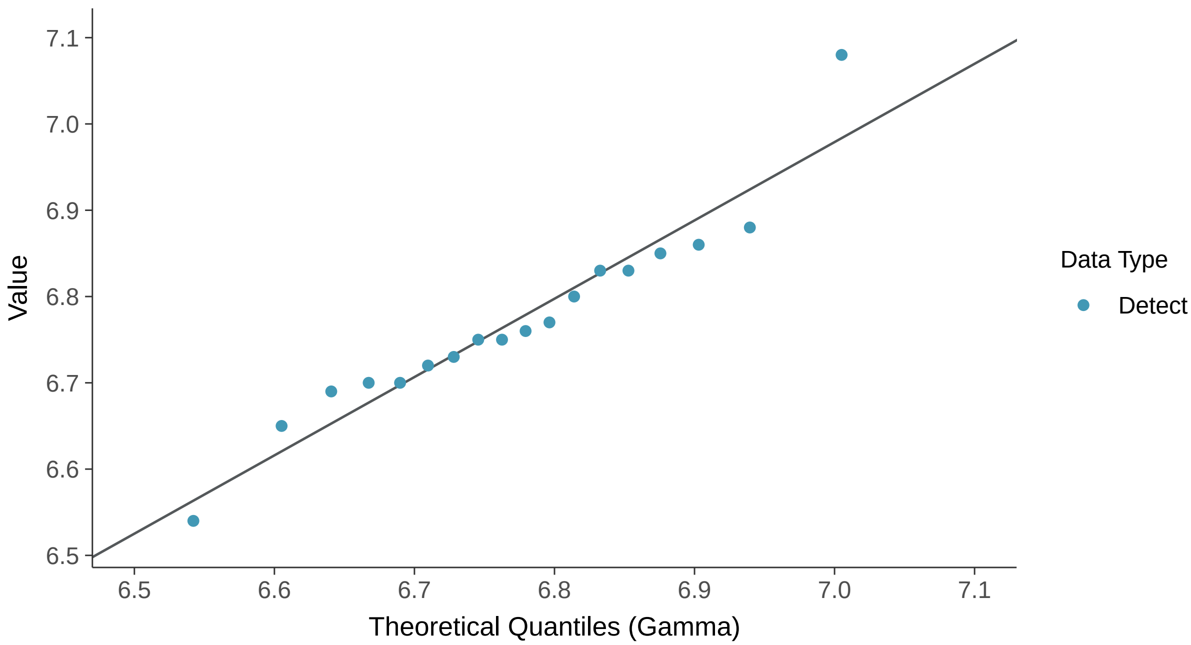



Normal Q-Q plot
pH, Field, MW-2 (su)
Value
7.1
7.0
6.9
6.8
6.7
6.6
6.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH, Field, MW-2 (su)
log(Value)
1.950
1.925
1.900
1.875
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

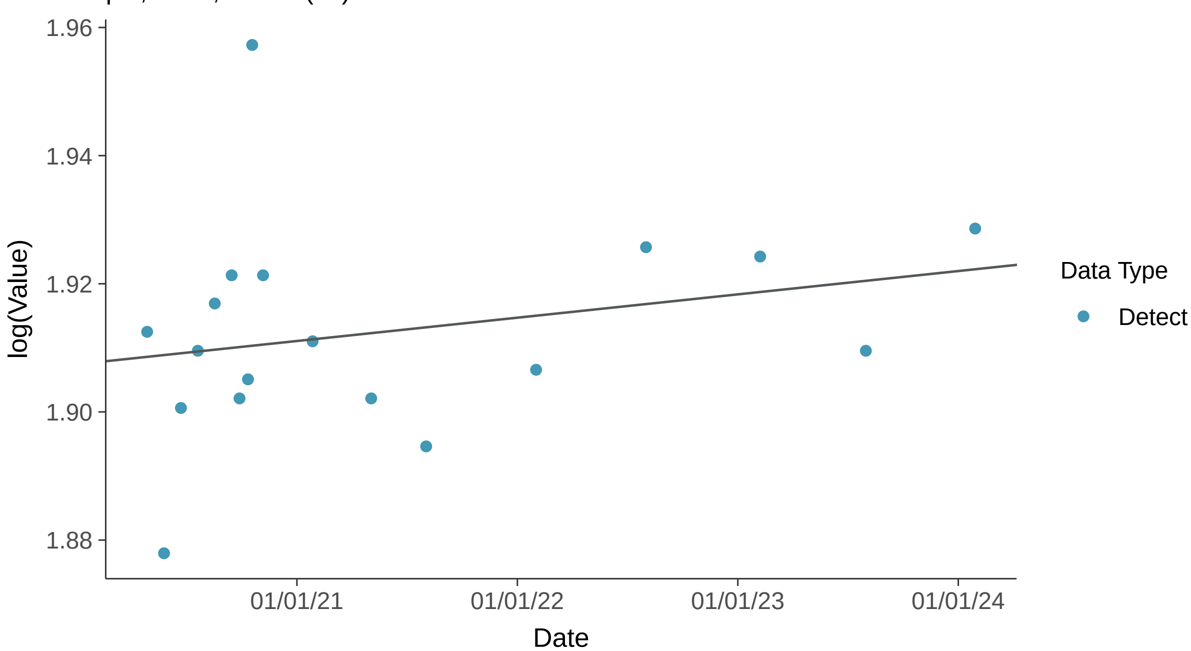
Gamma Q-Q plot

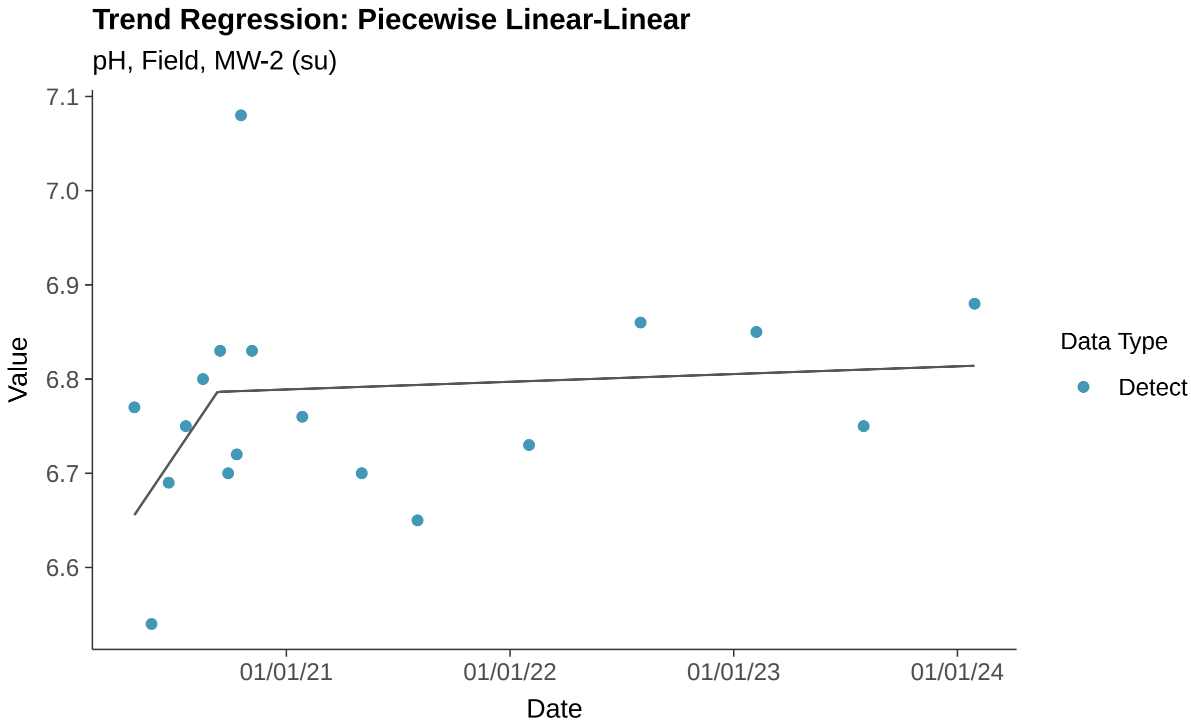
pH, Field, MW-2 (su)

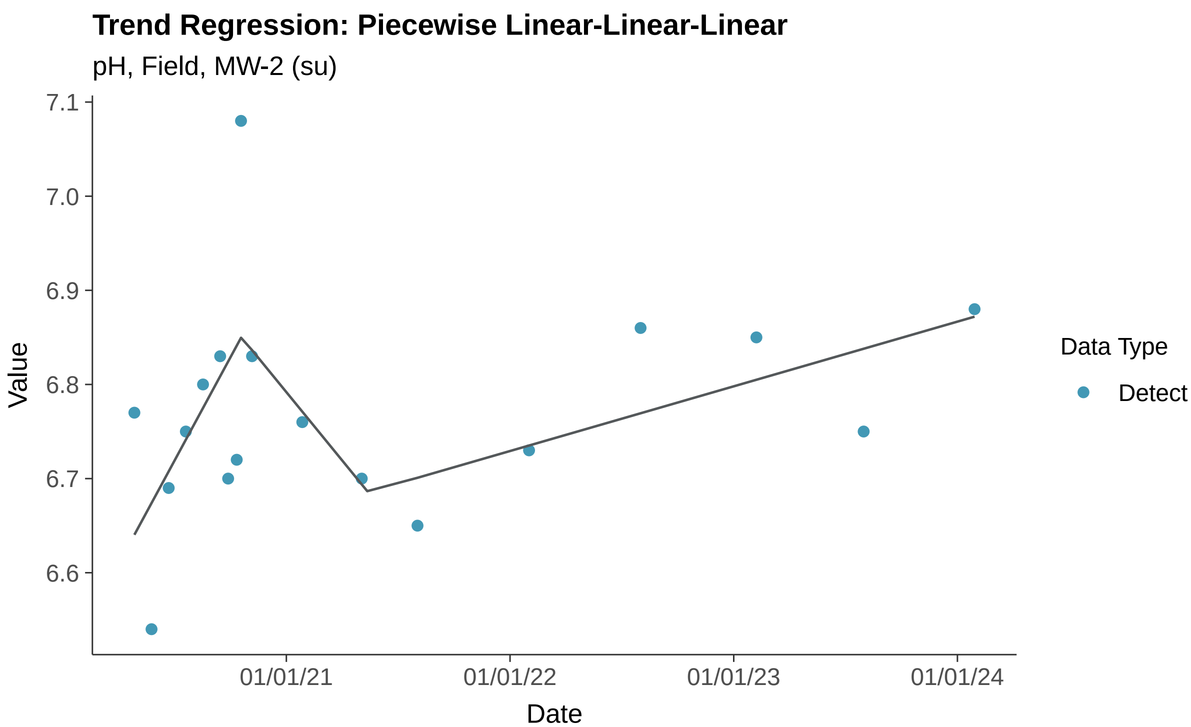


Trend Regression: Lognormal MLE

pH, Field, MW-2 (su)




Trend Regression: Piecewise Linear-Linear
pH, Field, MW-2 (su)
Value
7.1
7.0
6.9
6.8
6.7
6.6
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

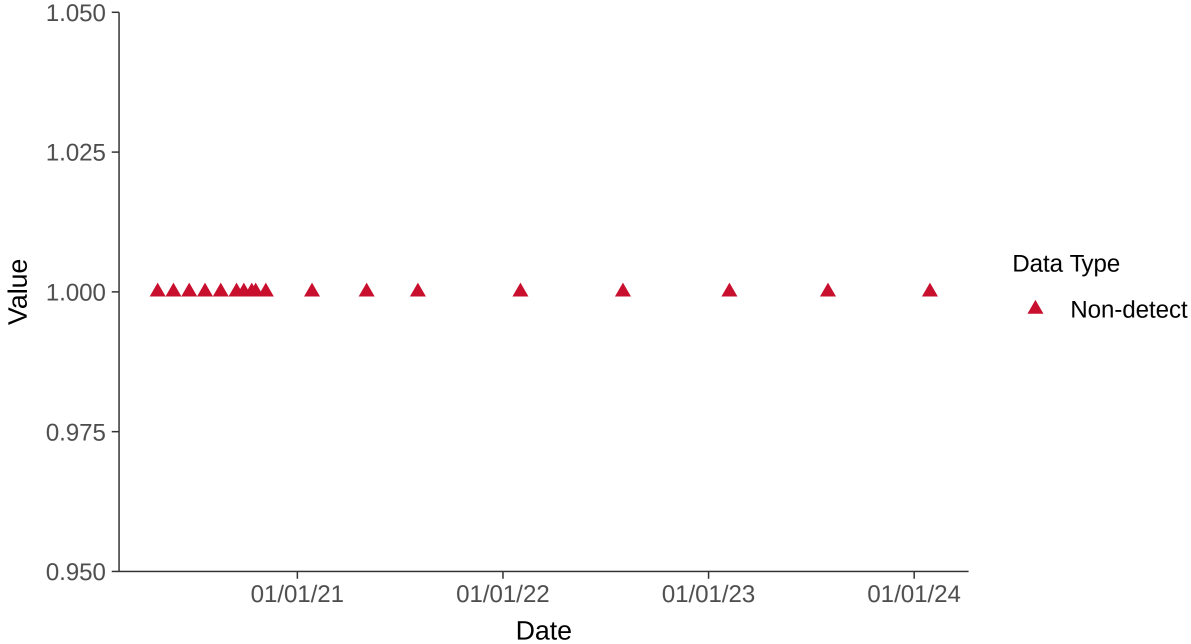

Trend Regression: Piecewise Linear-Linear-Linear
pH, Field, MW-2 (su)
Value
7.1
7.0
6.9
6.8
6.7
6.6
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Fluoride, MW-2

ID: 02_2_04

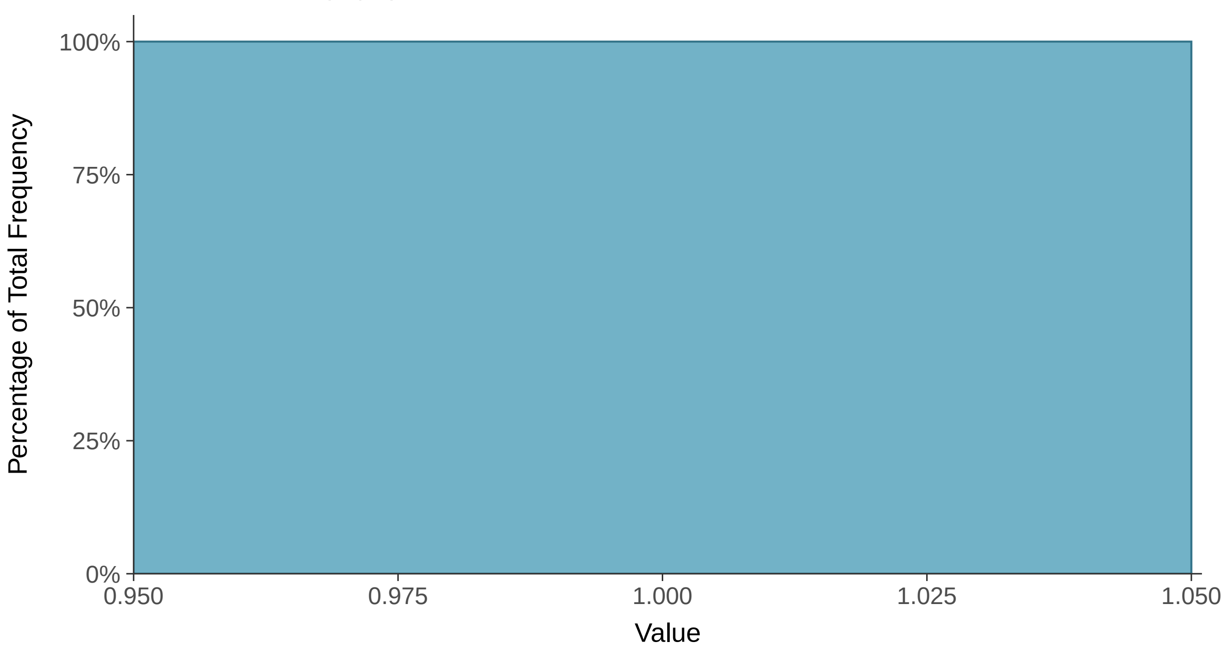
Scatter Plot

Fluoride, MW-2 (mg/L)



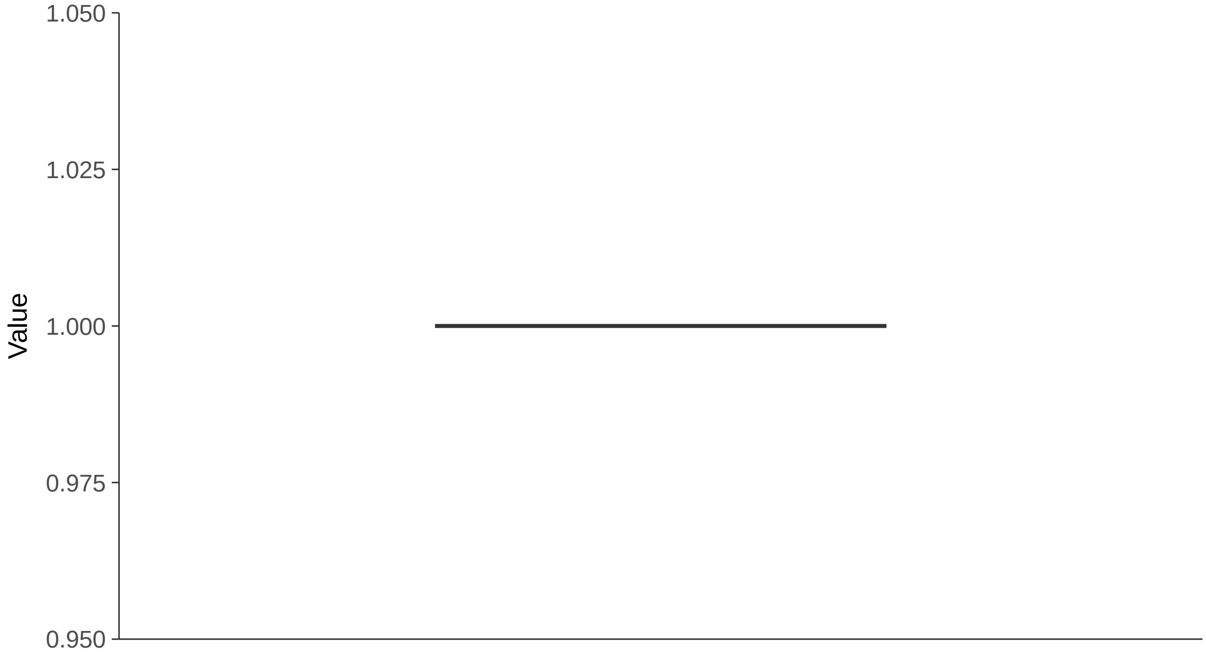
Histogram

Fluoride, MW-2 (mg/L)



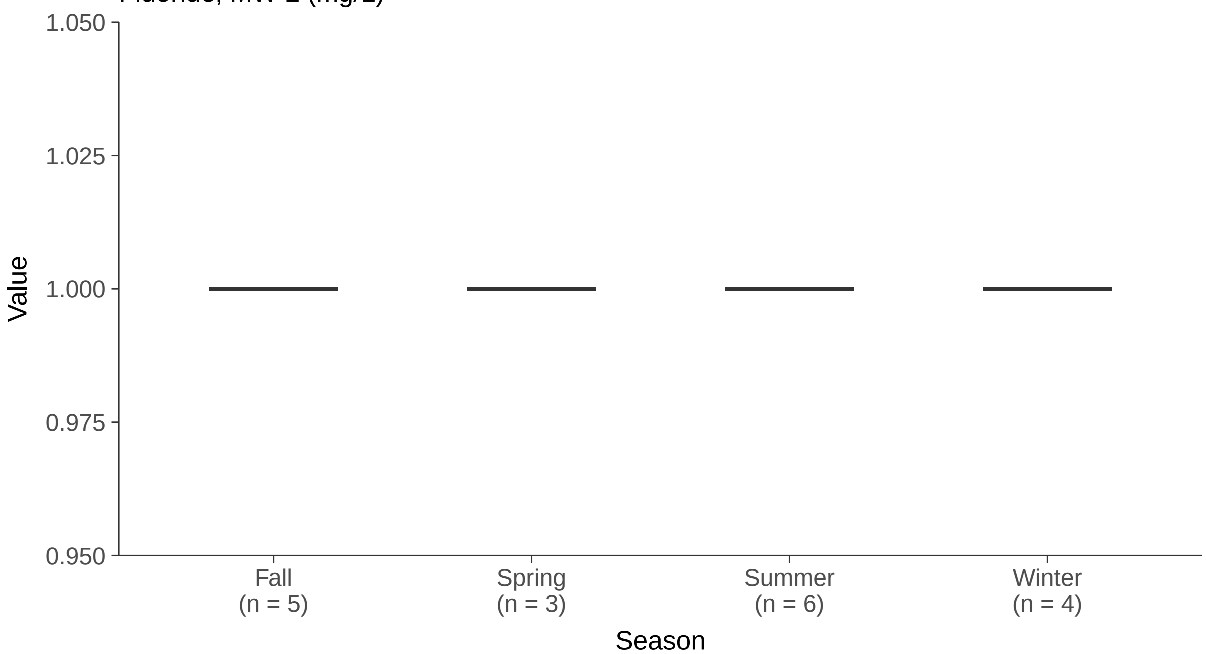
Boxplot

Fluoride, MW-2 (mg/L)



Boxplot by Season

Fluoride, MW-2 (mg/L)

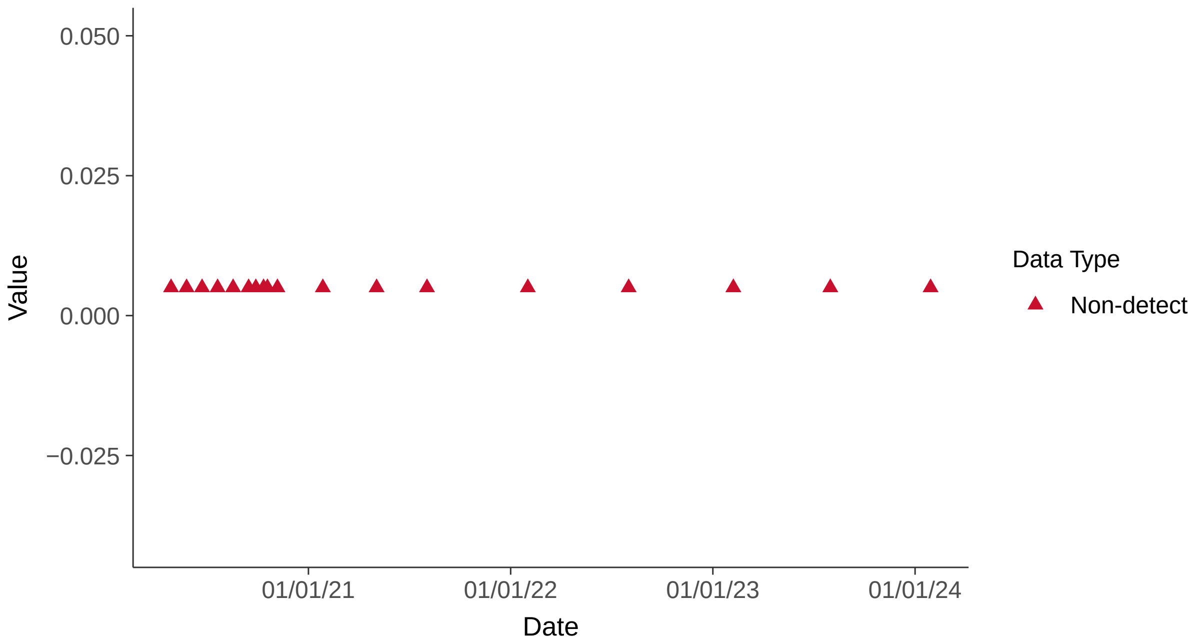


Appendix IV: Antimony, MW-2

ID: 02_2_08

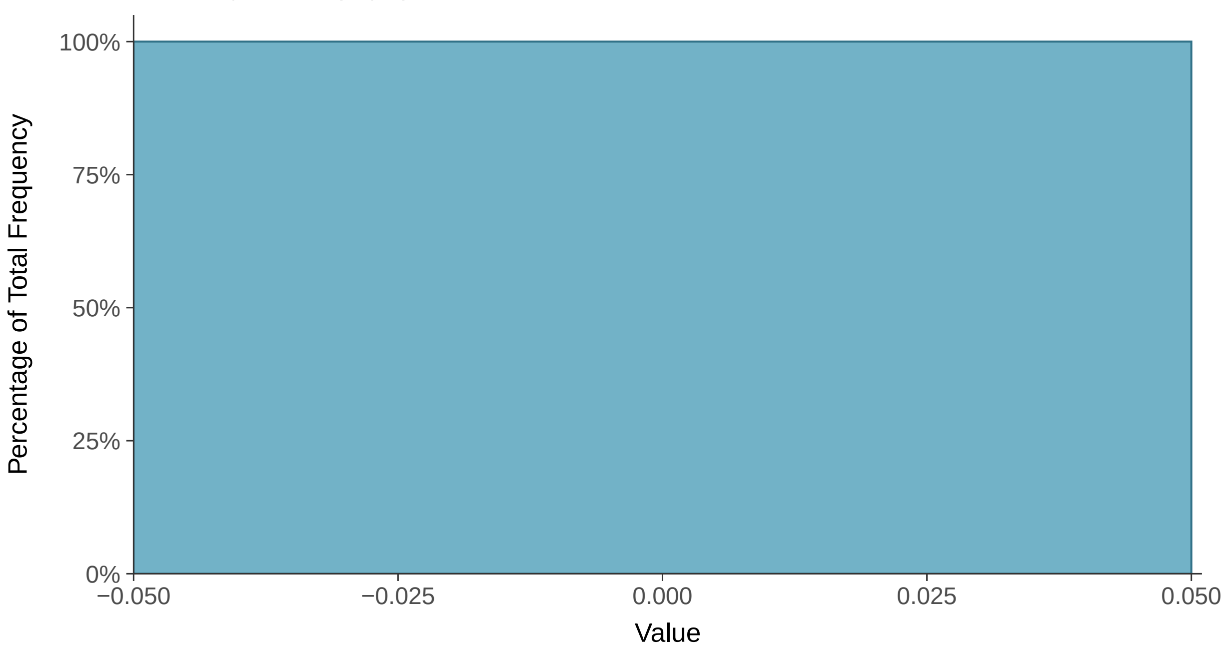
Scatter Plot

Antimony, MW-2 (mg/L)



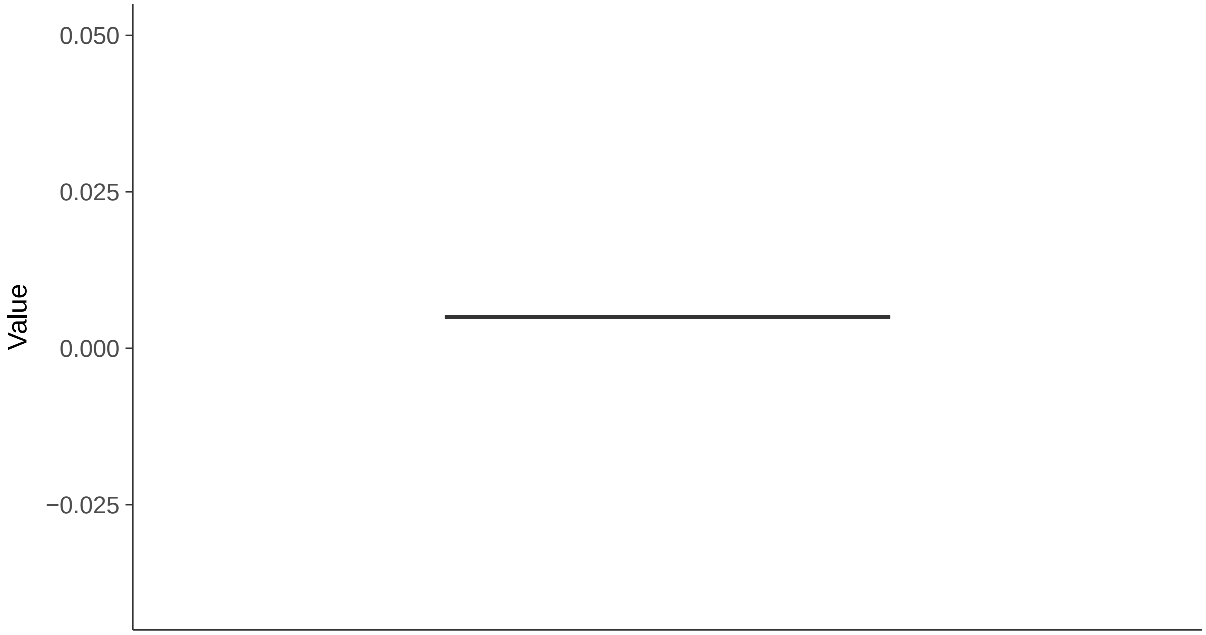
Histogram

Antimony, MW-2 (mg/L)



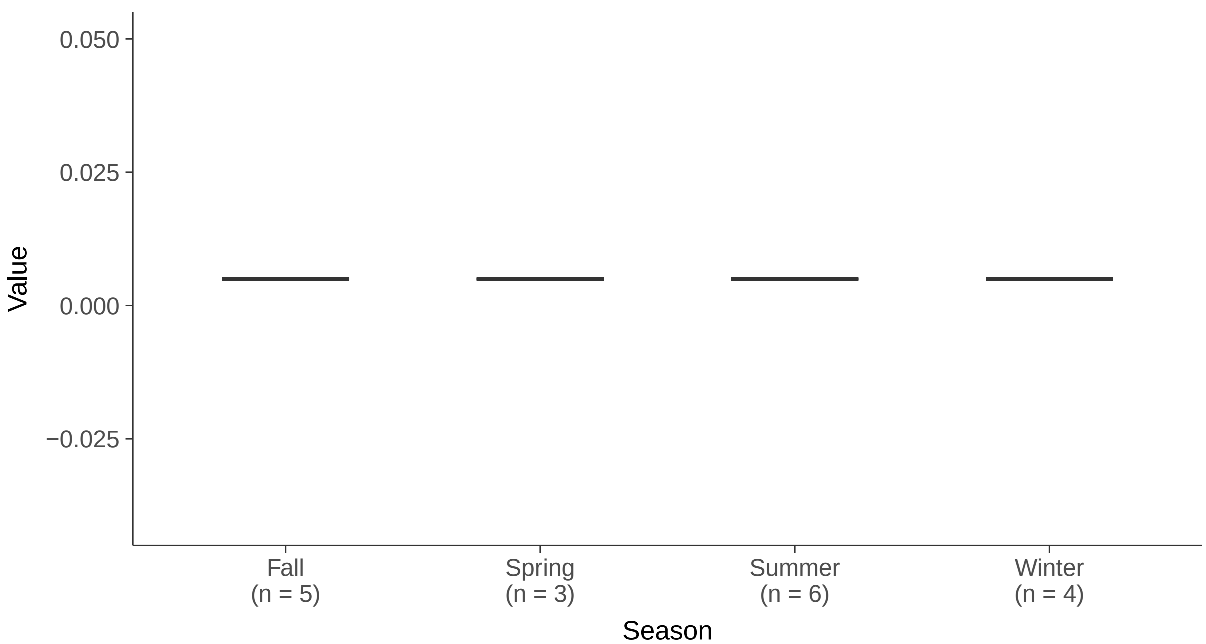
Boxplot

Antimony, MW-2 (mg/L)



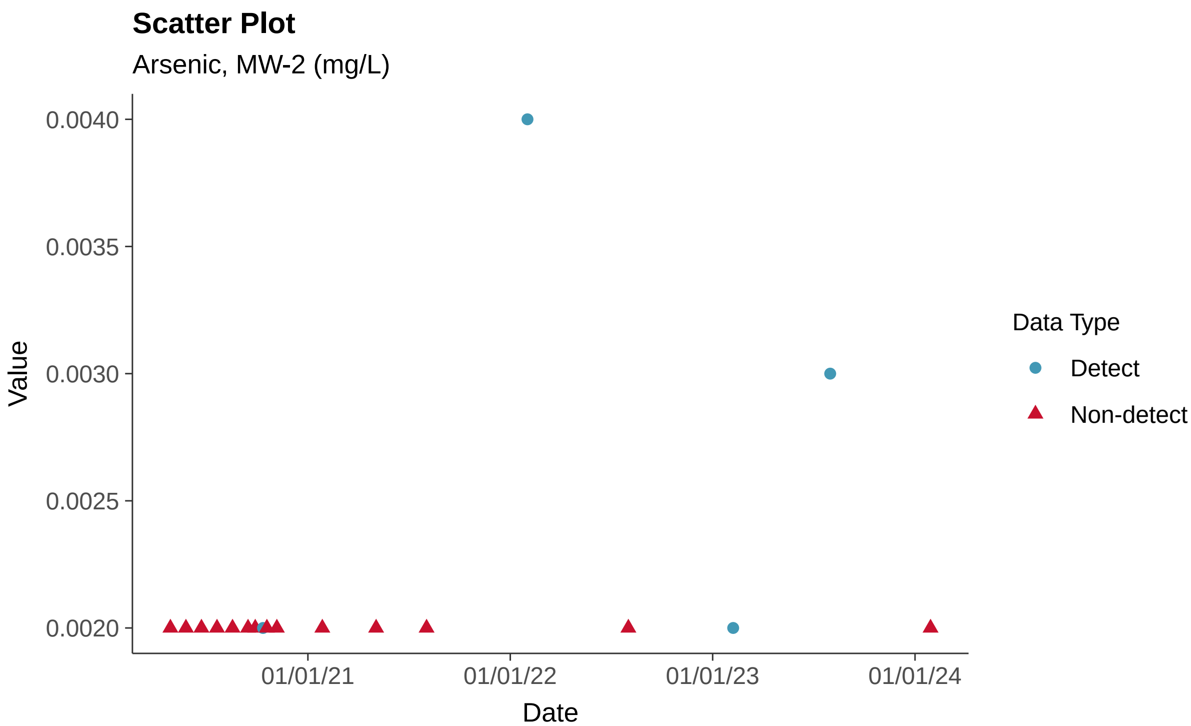
Boxplot by Season

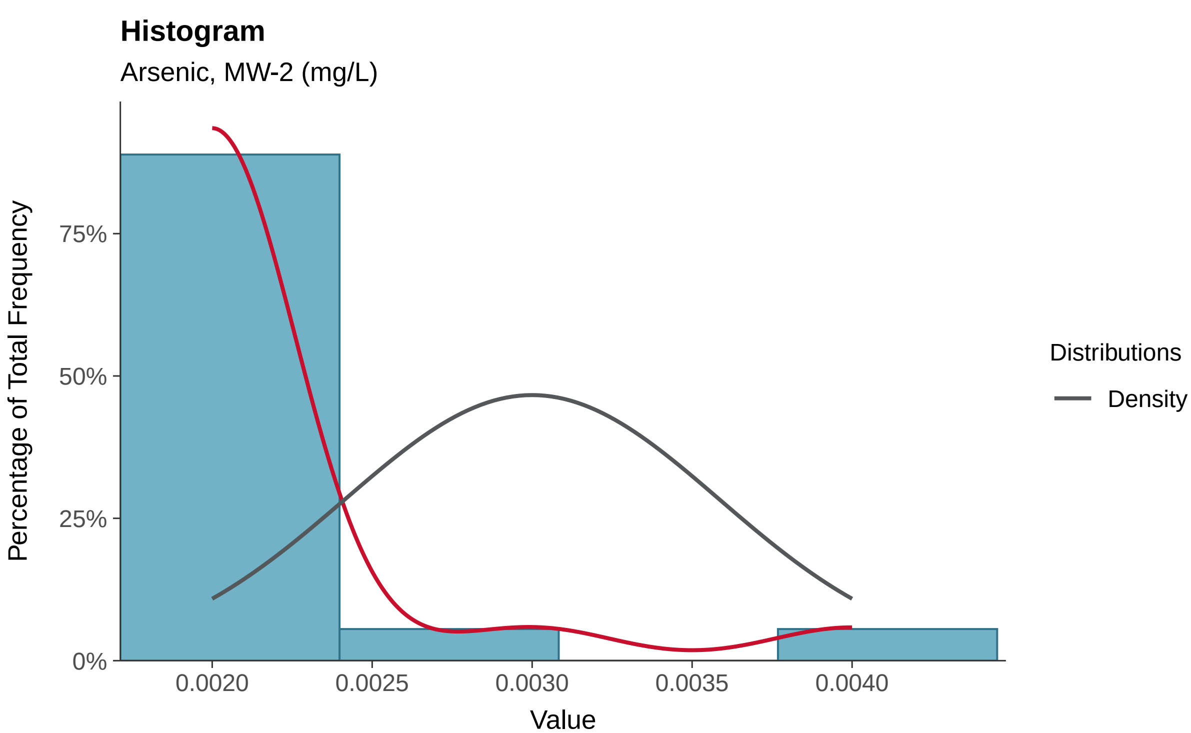
Antimony, MW-2 (mg/L)



Appendix IV: Arsenic, MW-2

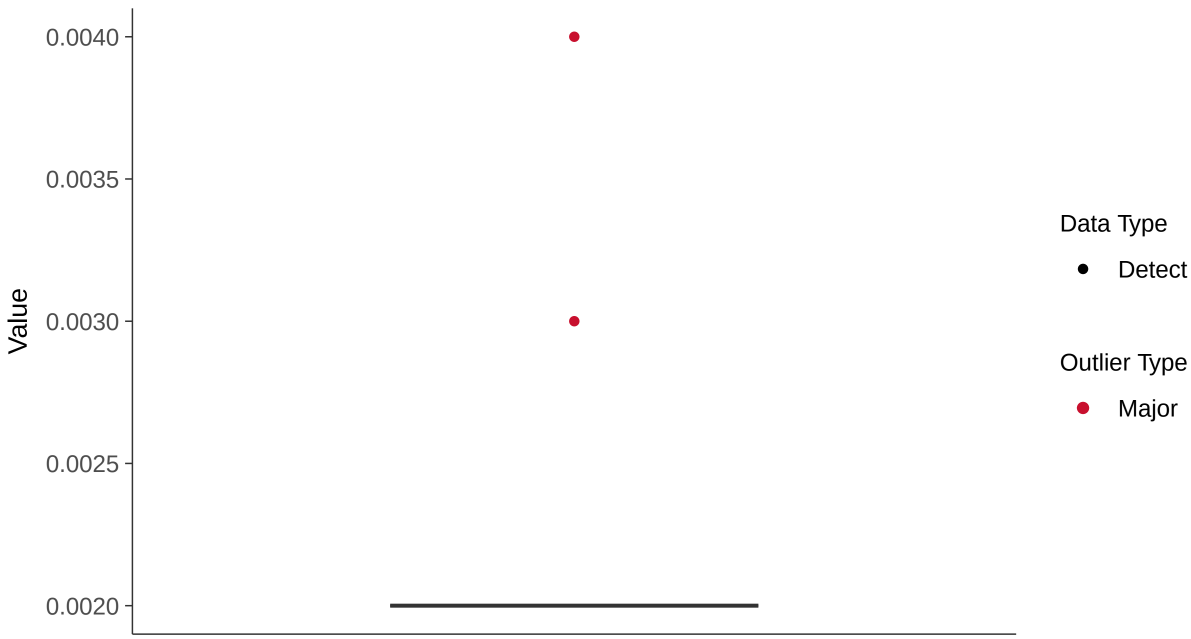
ID: 02_2_09





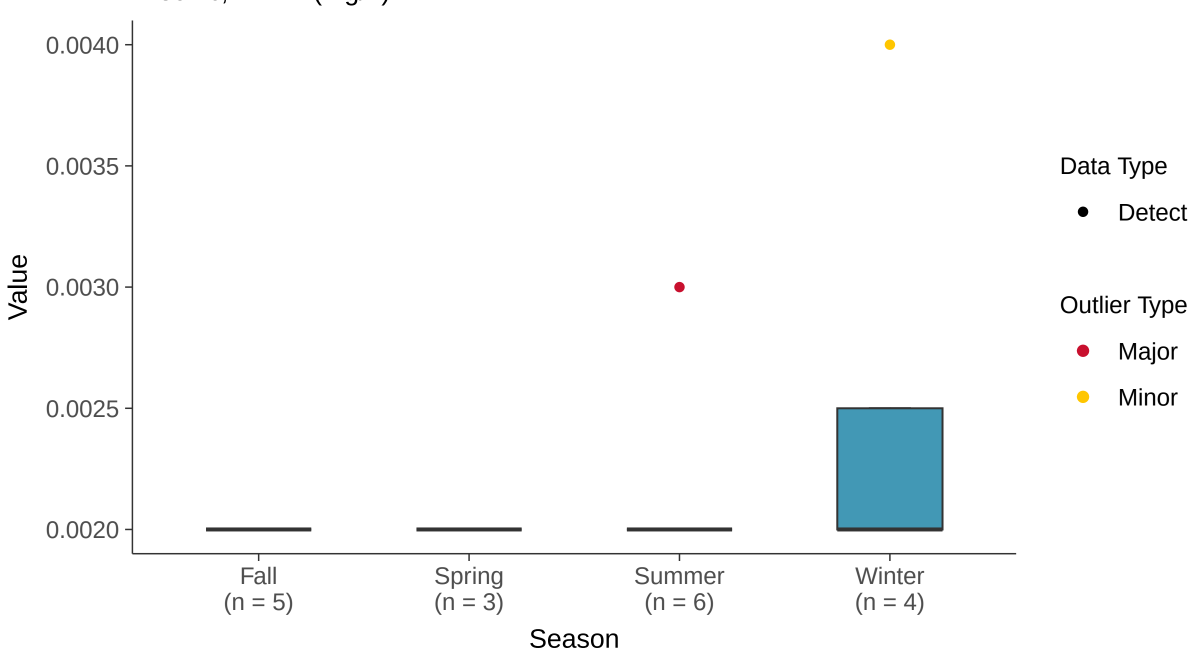
Boxplot

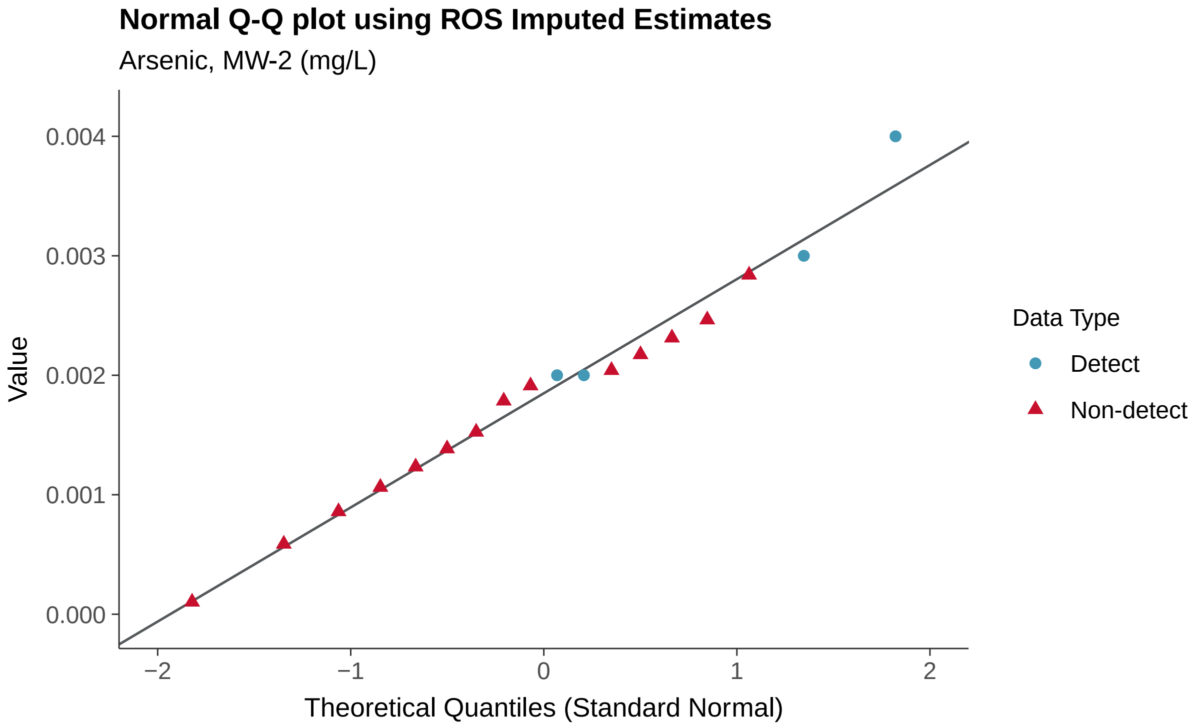
Arsenic, MW-2 (mg/L)

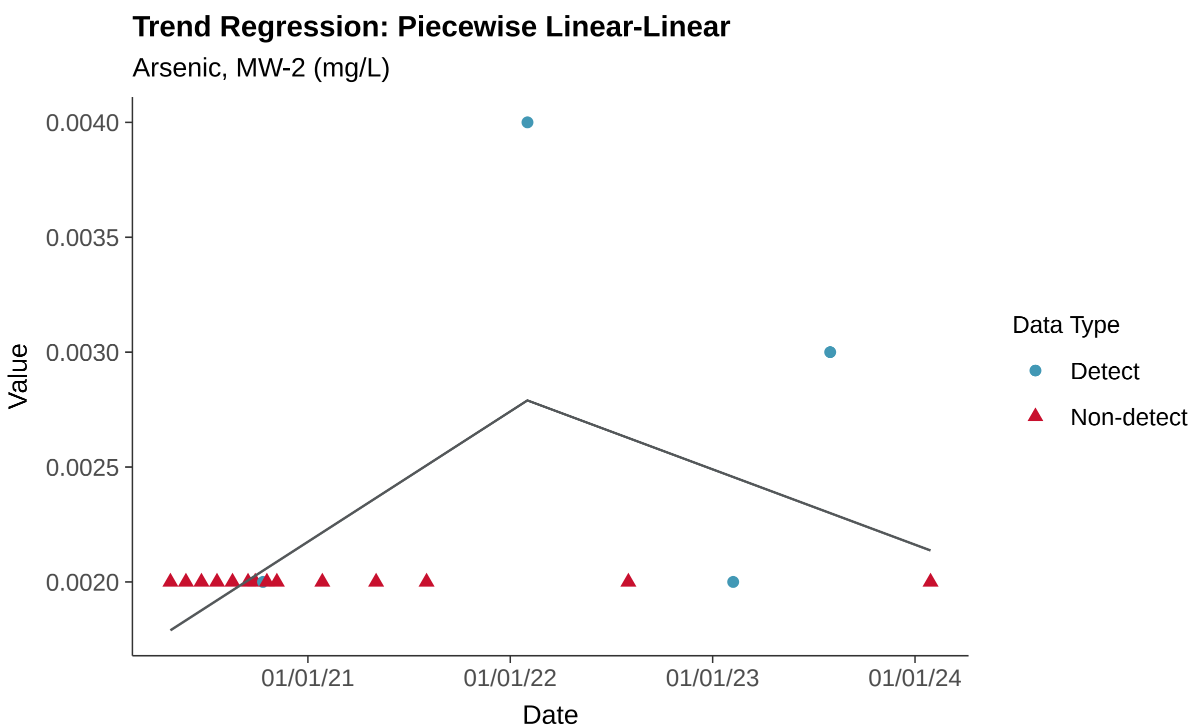


Boxplot by Season

Arsenic, MW-2 (mg/L)

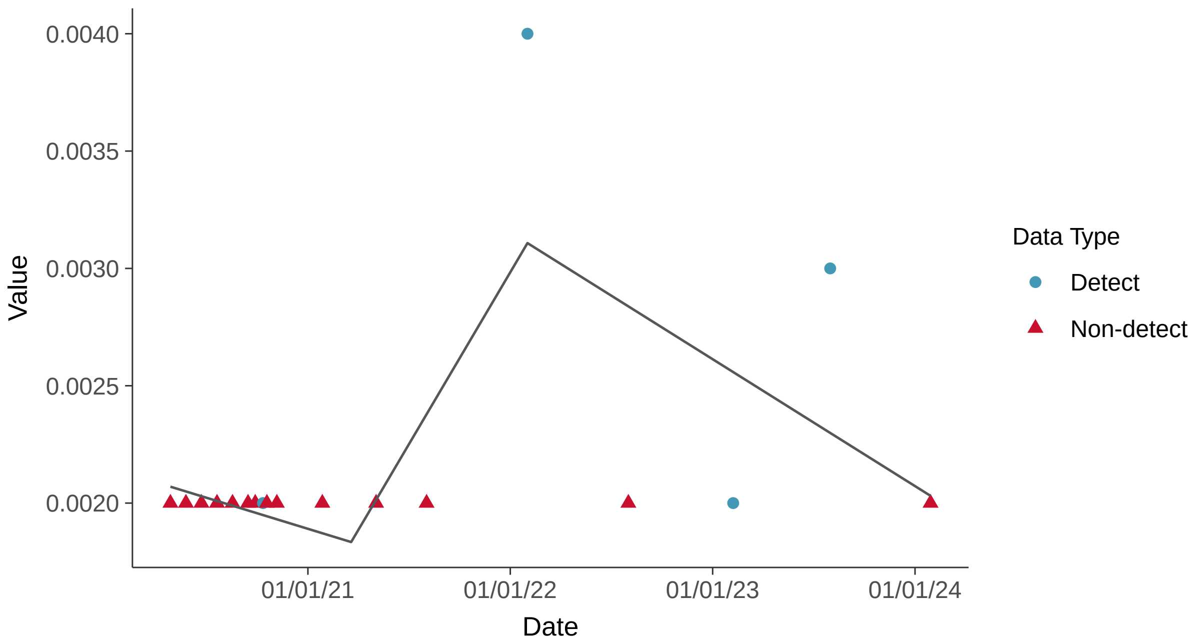



Normal Q-Q plot using ROS Imputed Estimates
Arsenic, MW-2 (mg/L)
Value
0.004
0.003
0.002
0.001
0.000
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Arsenic, MW-2 (mg/L)
Value
0.0040
0.0035
0.0030
0.0025
0.0020
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

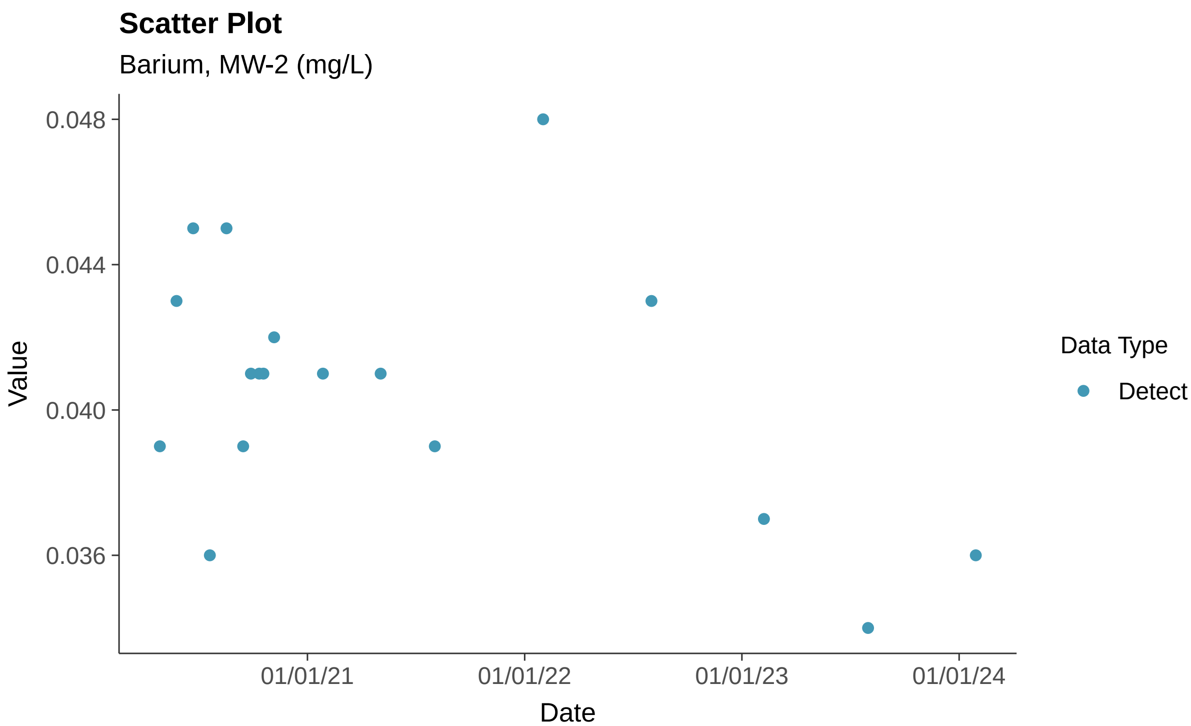
Trend Regression: Piecewise Linear-Linear-Linear

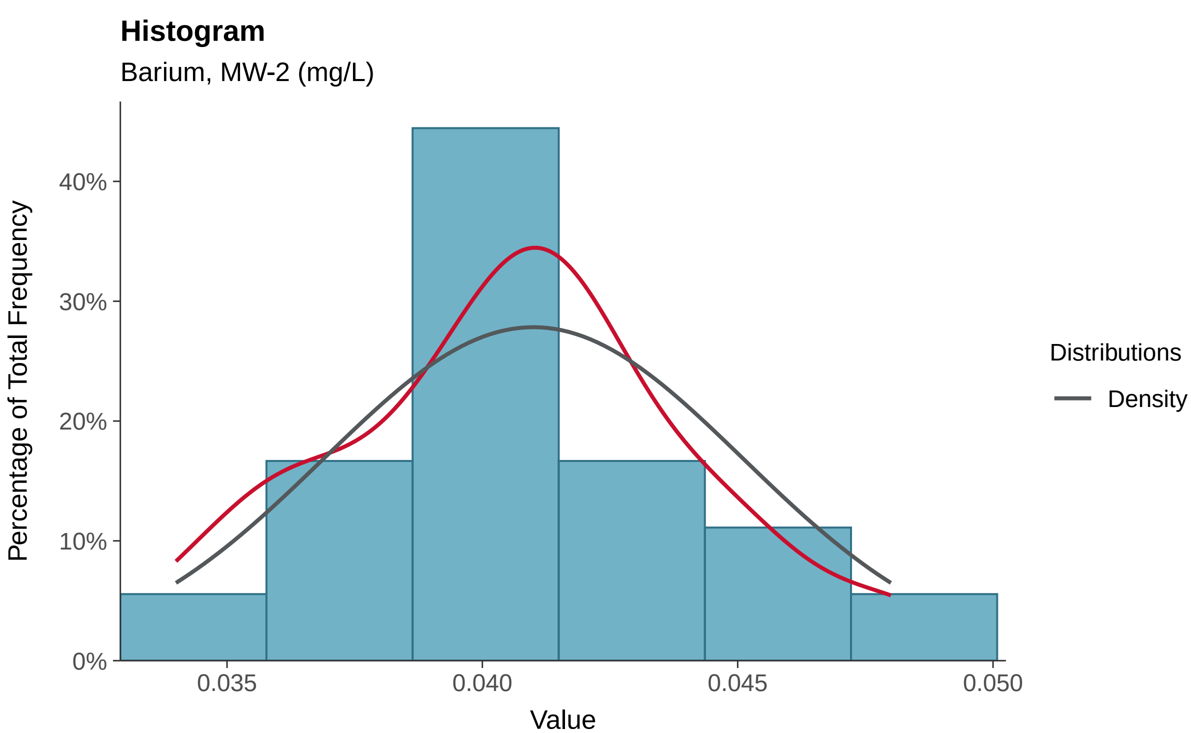
Arsenic, MW-2 (mg/L)



Appendix IV: Barium, MW-2

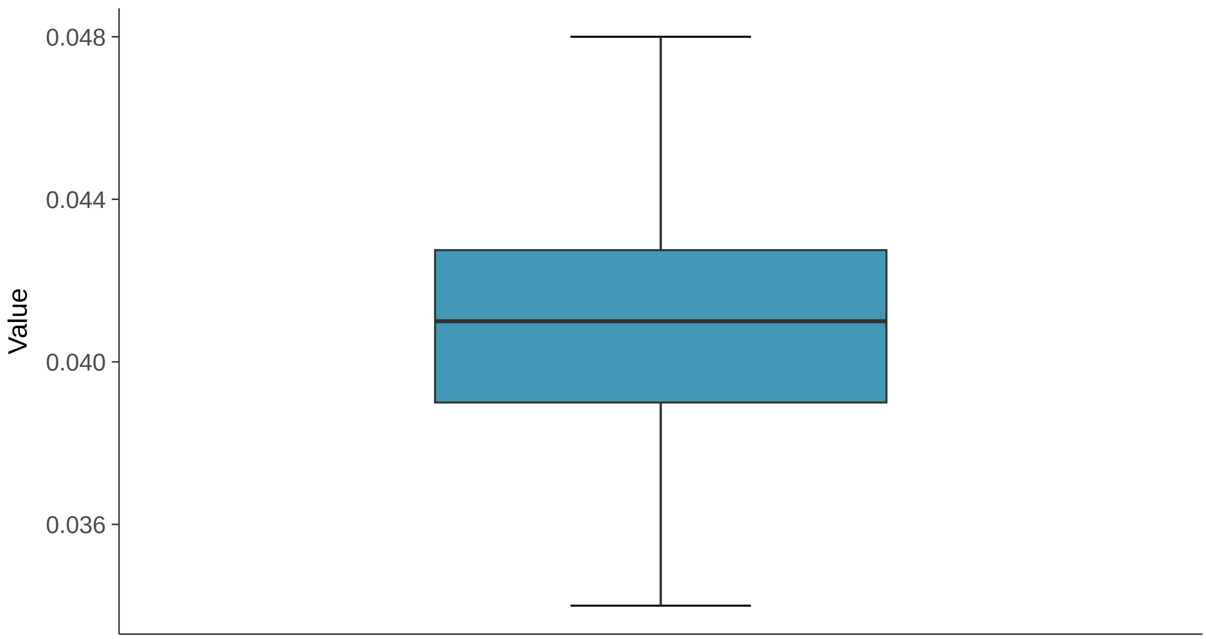
ID: 02_2_10





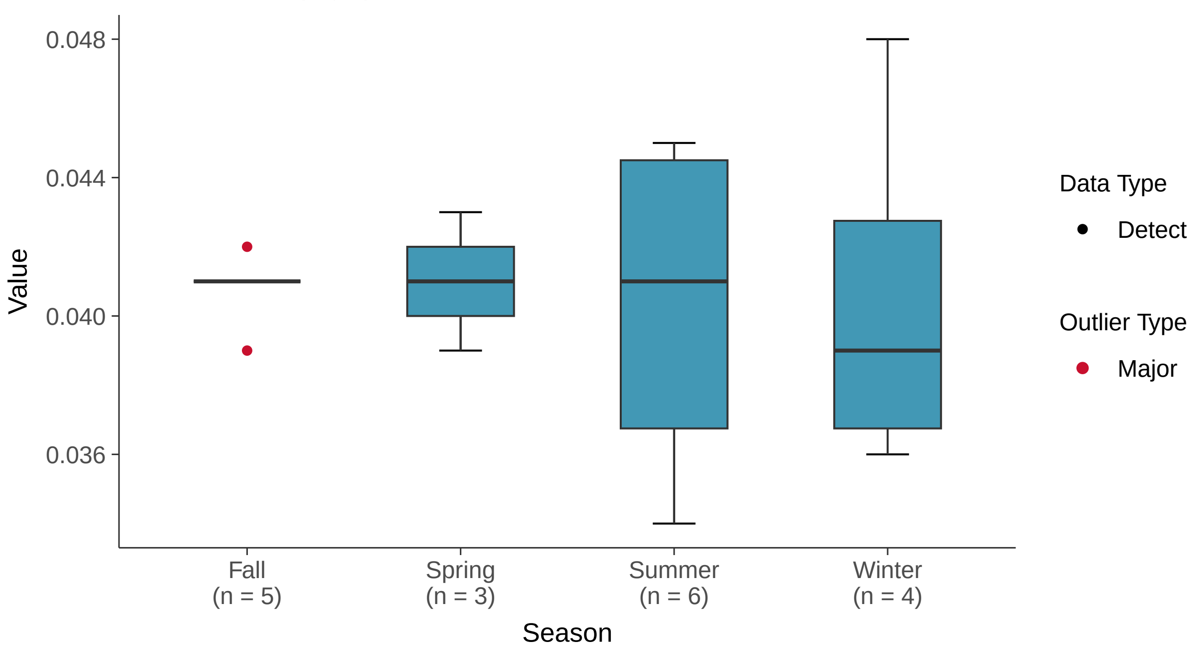
Boxplot

Barium, MW-2 (mg/L)



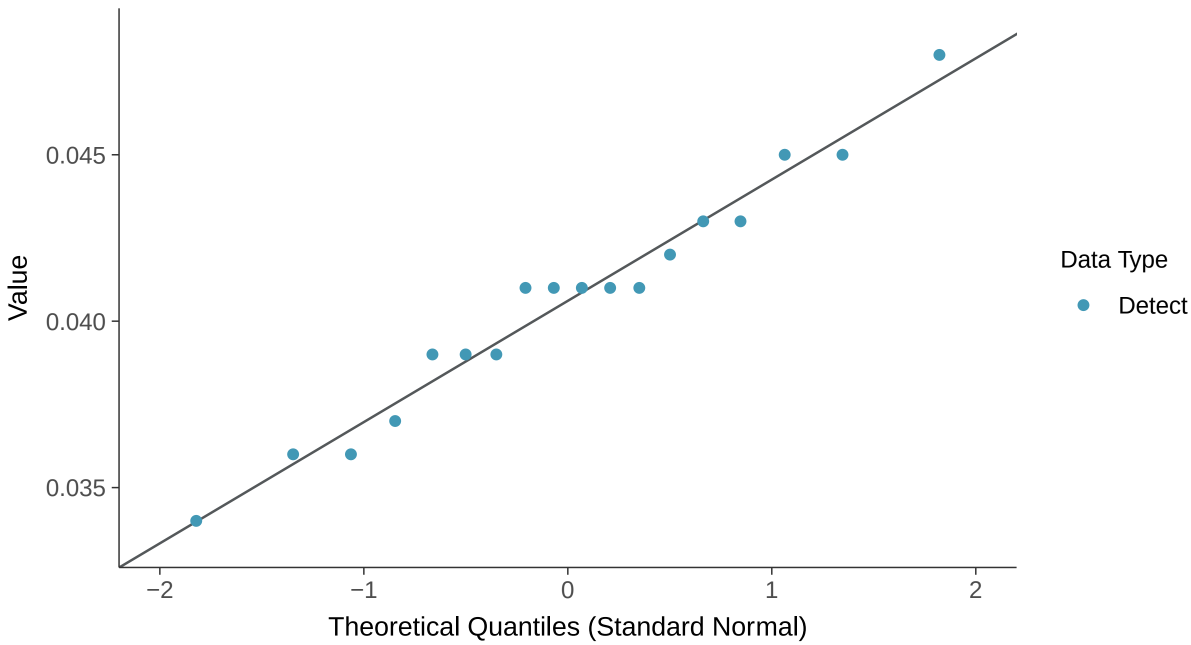
Boxplot by Season

Barium, MW-2 (mg/L)



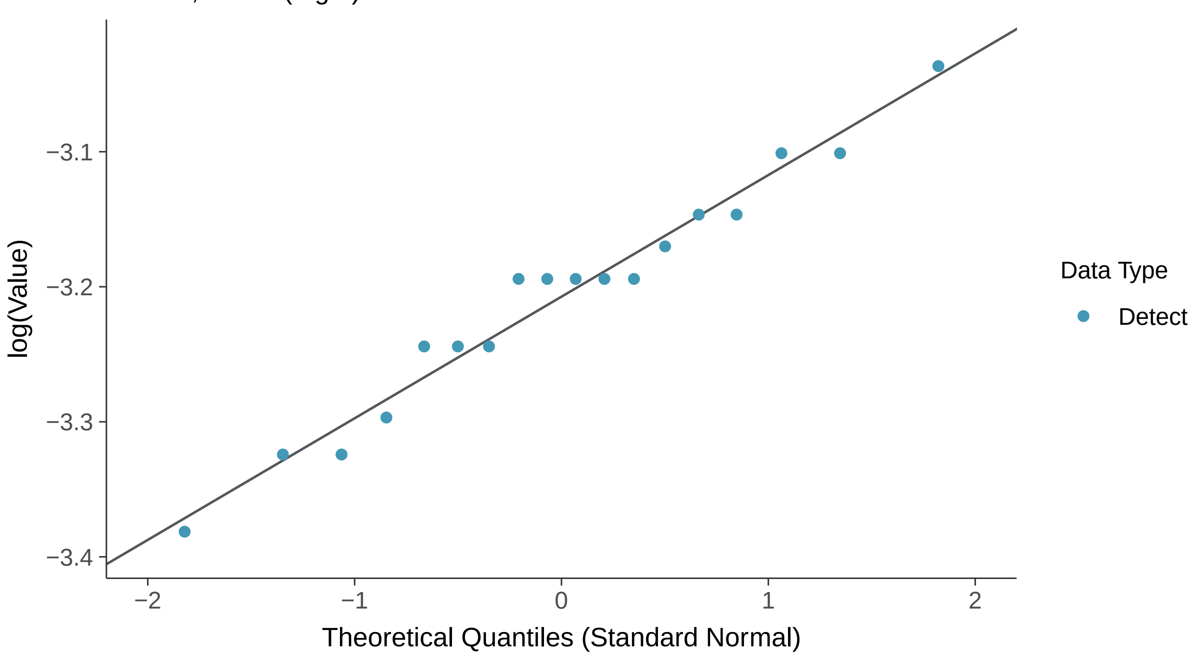
Normal Q-Q plot

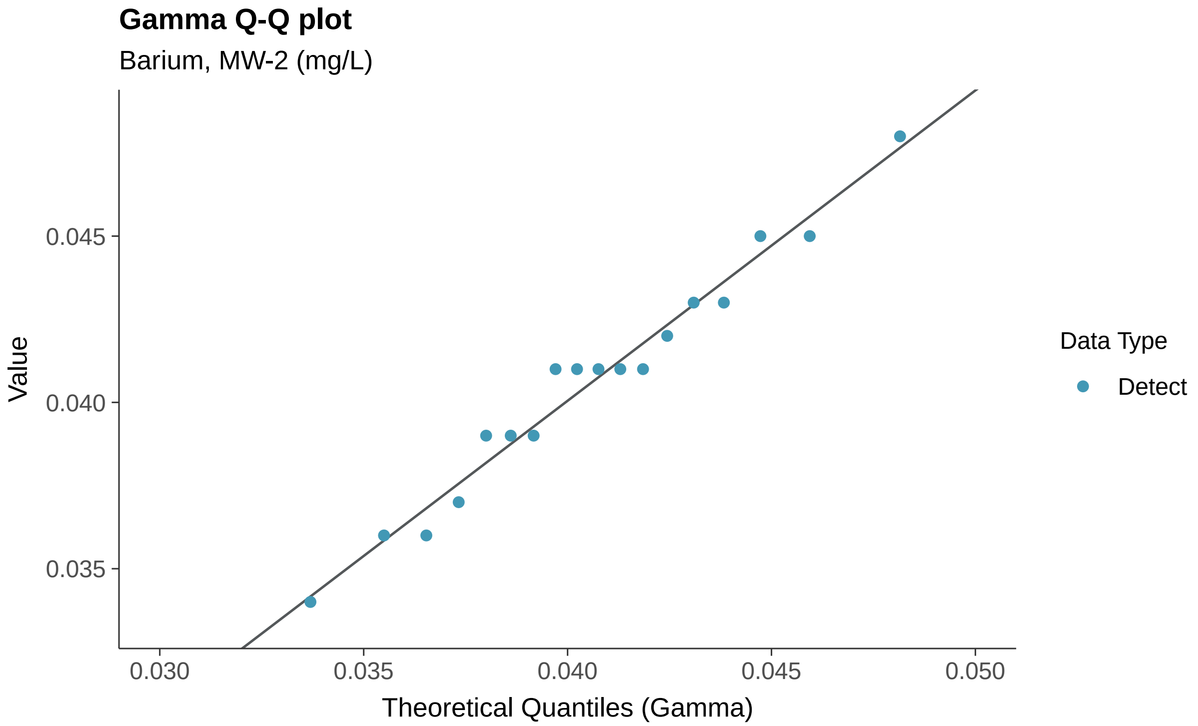
Barium, MW-2 (mg/L)

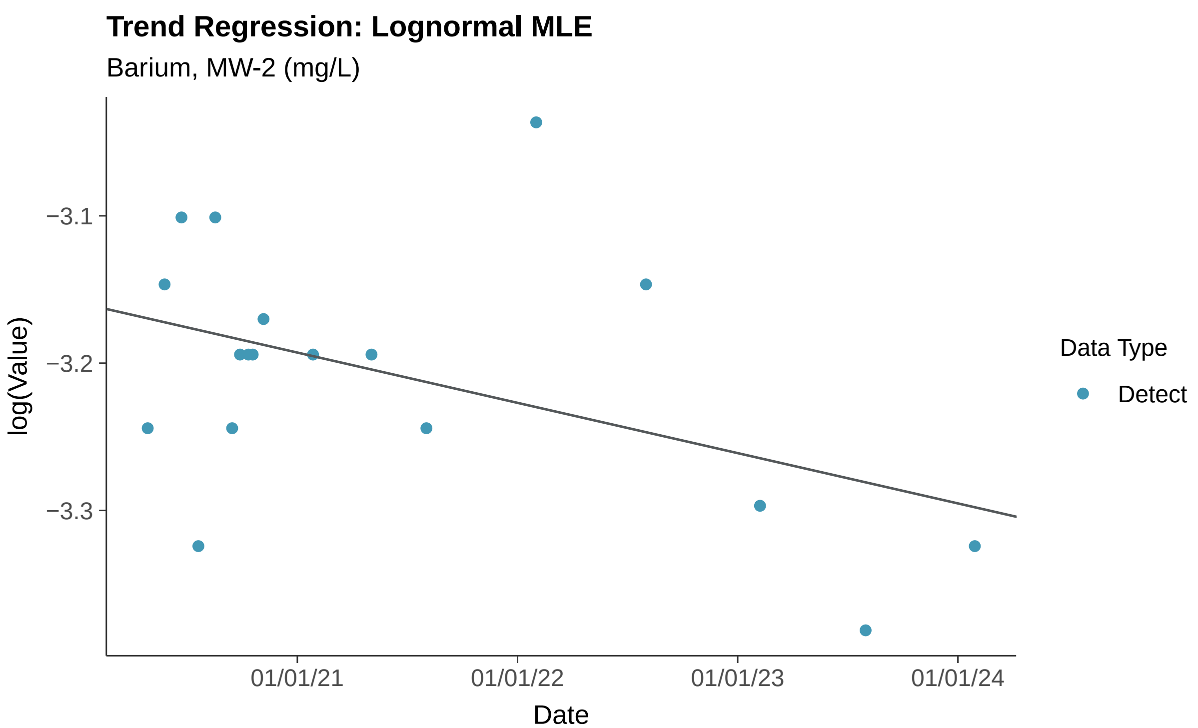


Lognormal Q-Q plot

Barium, MW-2 (mg/L)

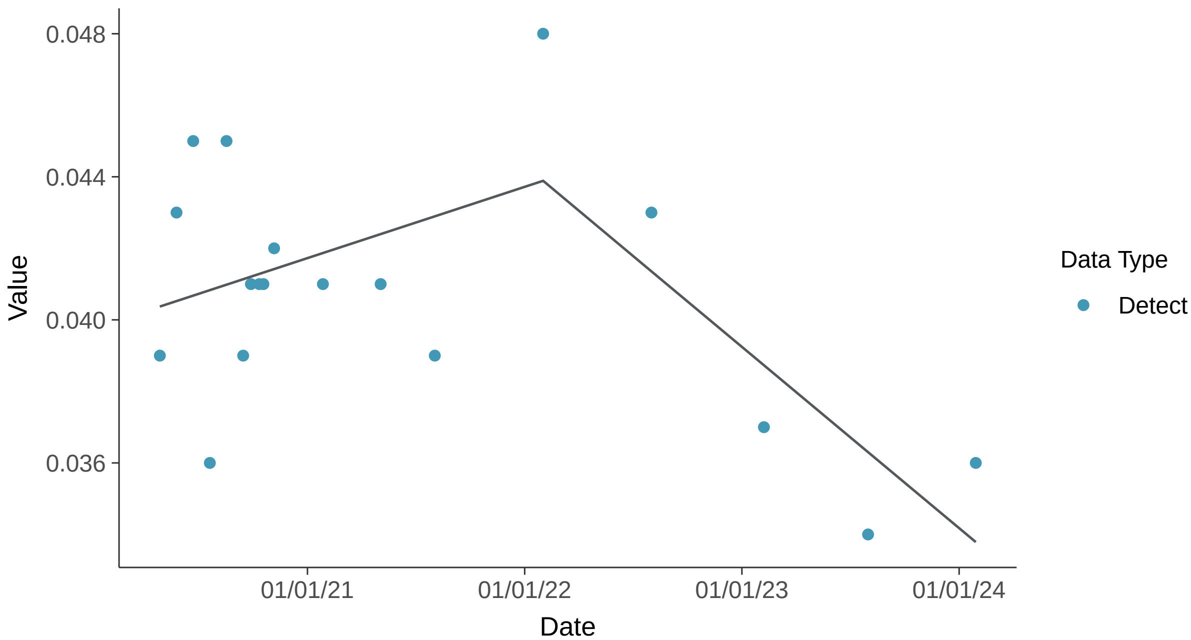



Gamma Q-Q plot
Barium, MW-2 (mg/L)
Value
0.045
0.040
0.035
0.030
0.035
0.040
0.045
0.050
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-2 (mg/L)
log(Value)
−3.1
−3.2
−3.3
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Barium, MW-2 (mg/L)

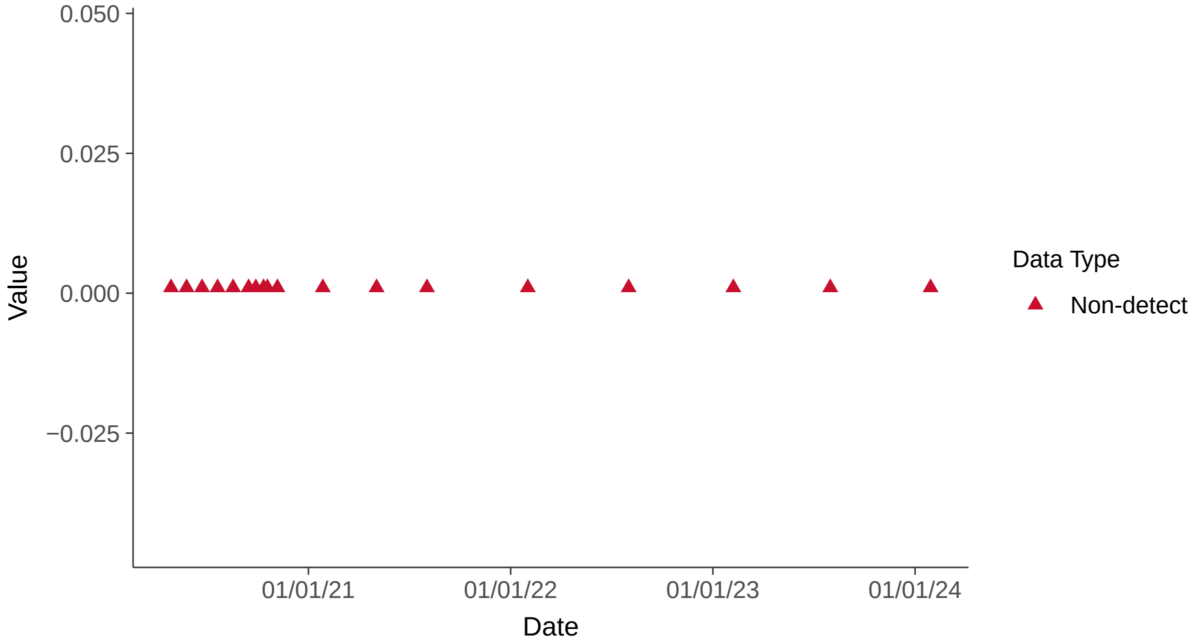


Appendix IV: Beryllium, MW-2

ID: 02_2_11

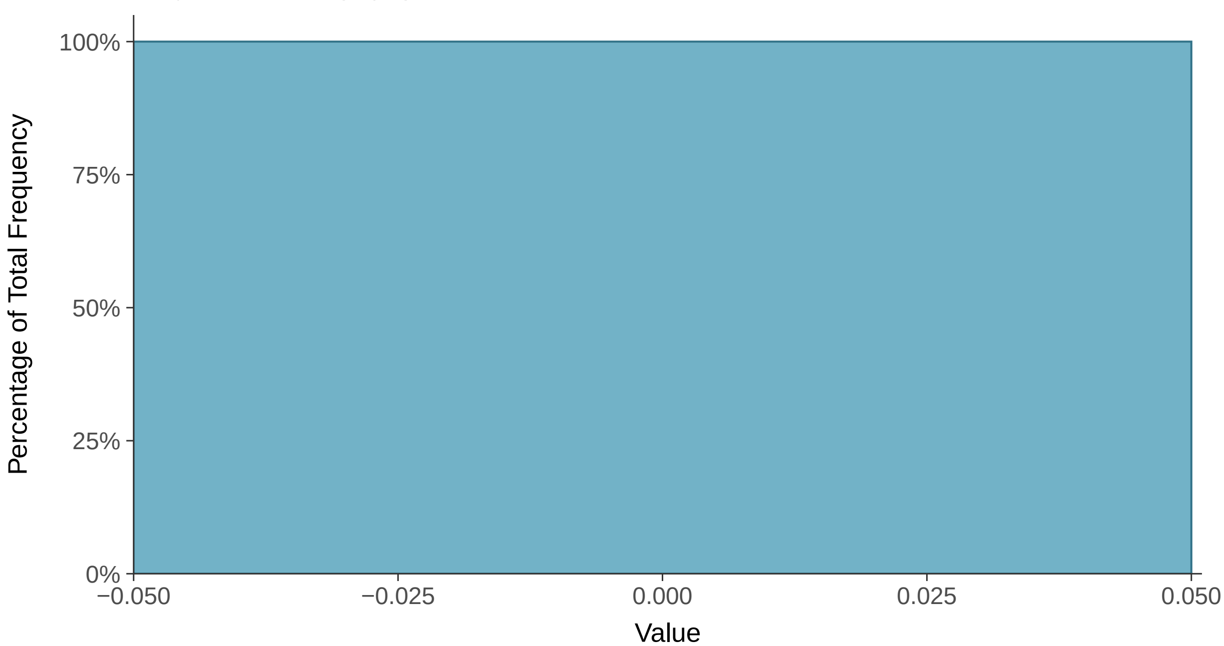
Scatter Plot

Beryllium, MW-2 (mg/L)



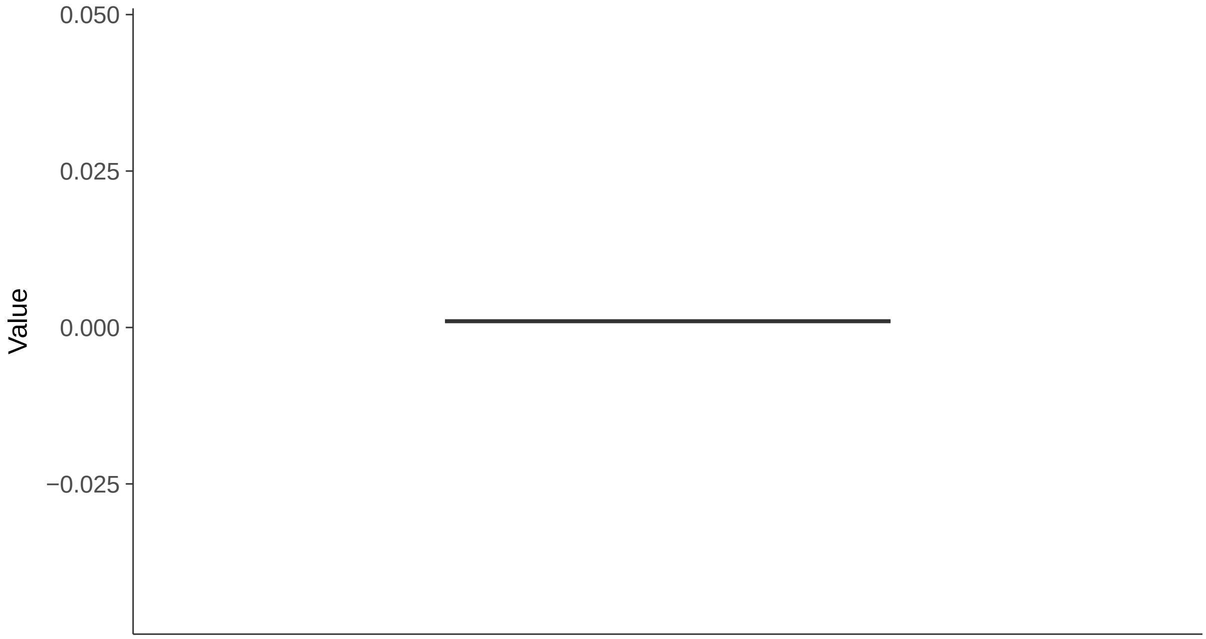
Histogram

Beryllium, MW-2 (mg/L)



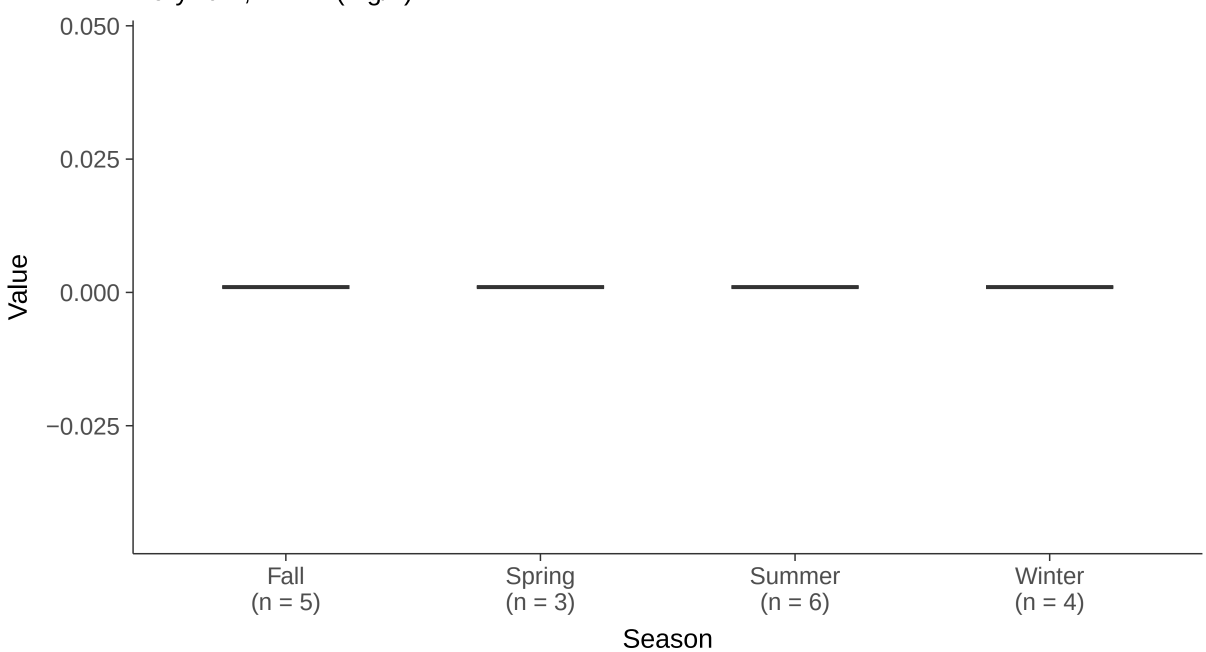
Boxplot

Beryllium, MW-2 (mg/L)



Boxplot by Season

Beryllium, MW-2 (mg/L)

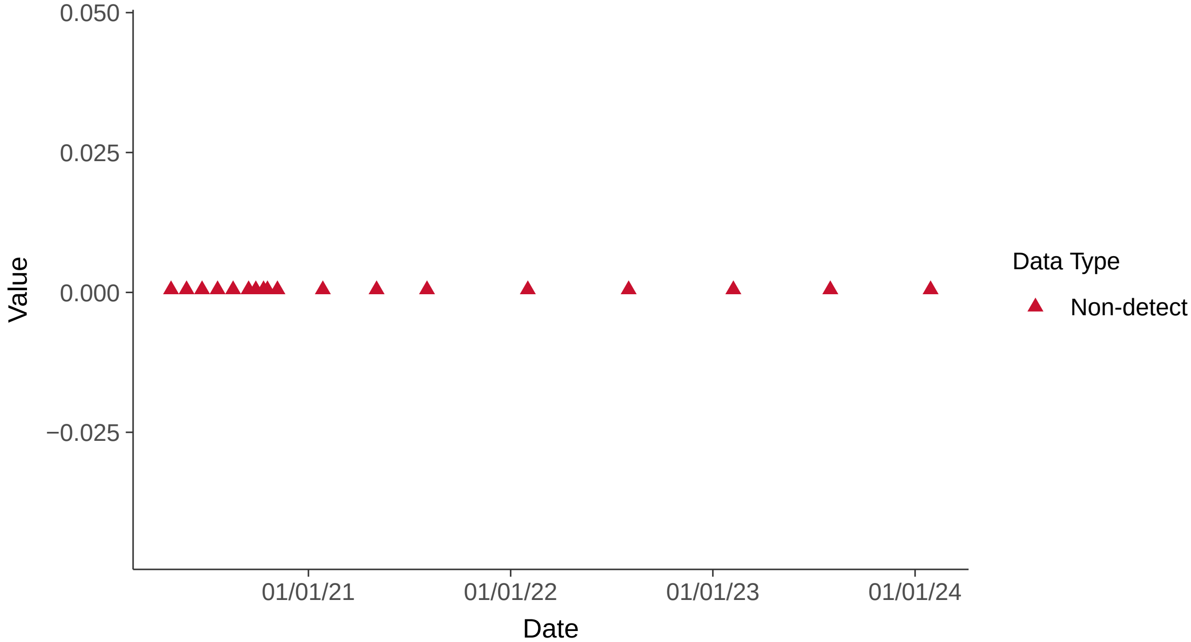


Appendix IV: Cadmium, MW-2

ID: 02_2_12

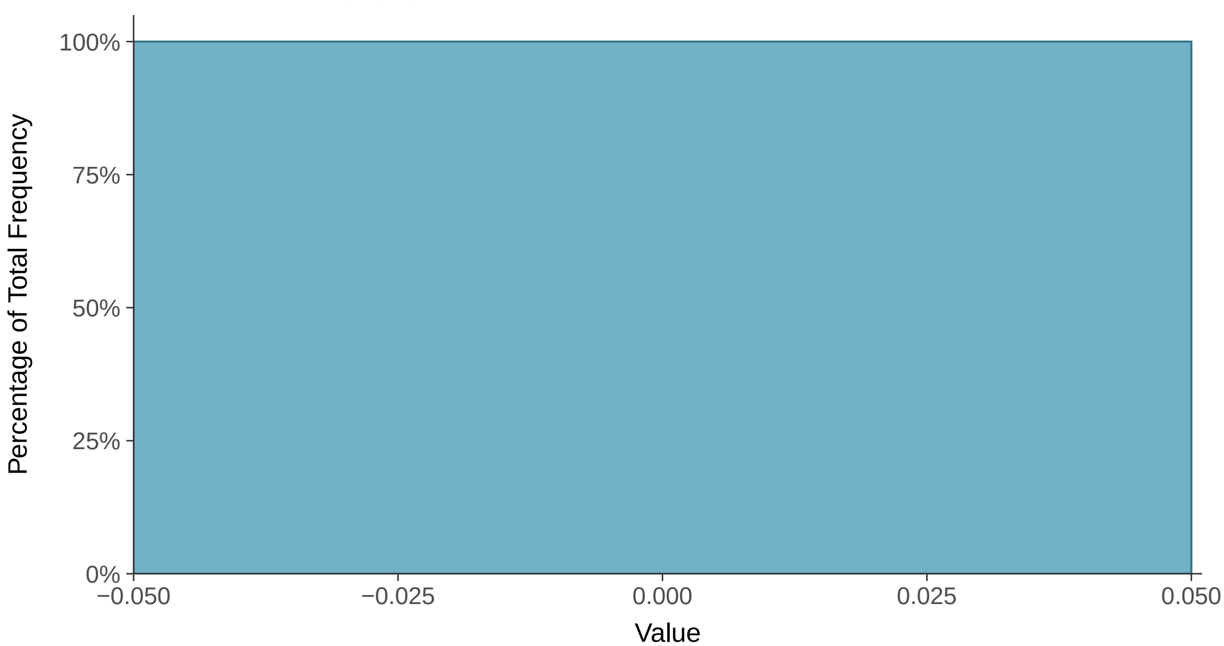
Scatter Plot

Cadmium, MW-2 (mg/L)



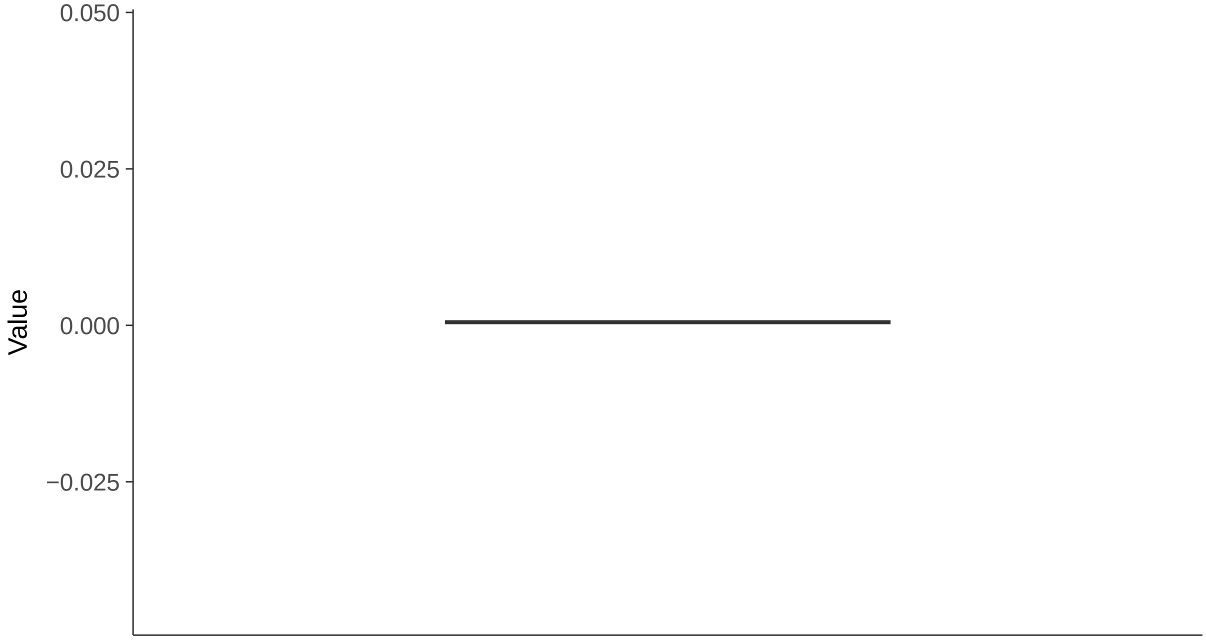
Histogram

Cadmium, MW-2 (mg/L)



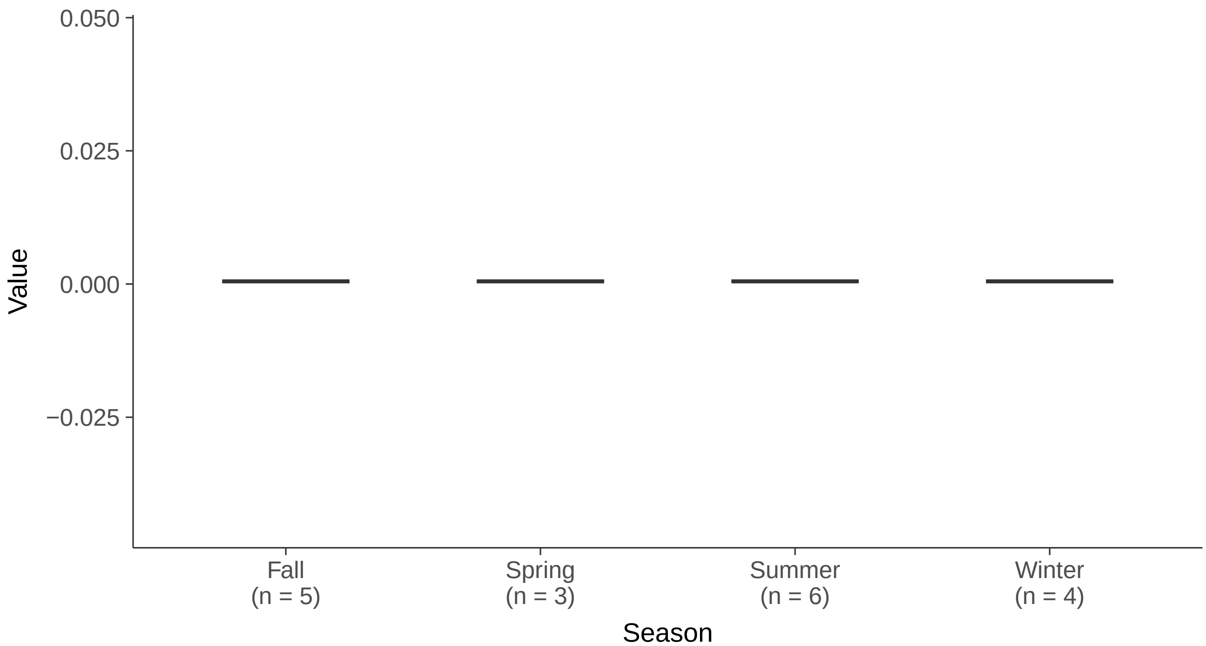
Boxplot

Cadmium, MW-2 (mg/L)



Boxplot by Season

Cadmium, MW-2 (mg/L)

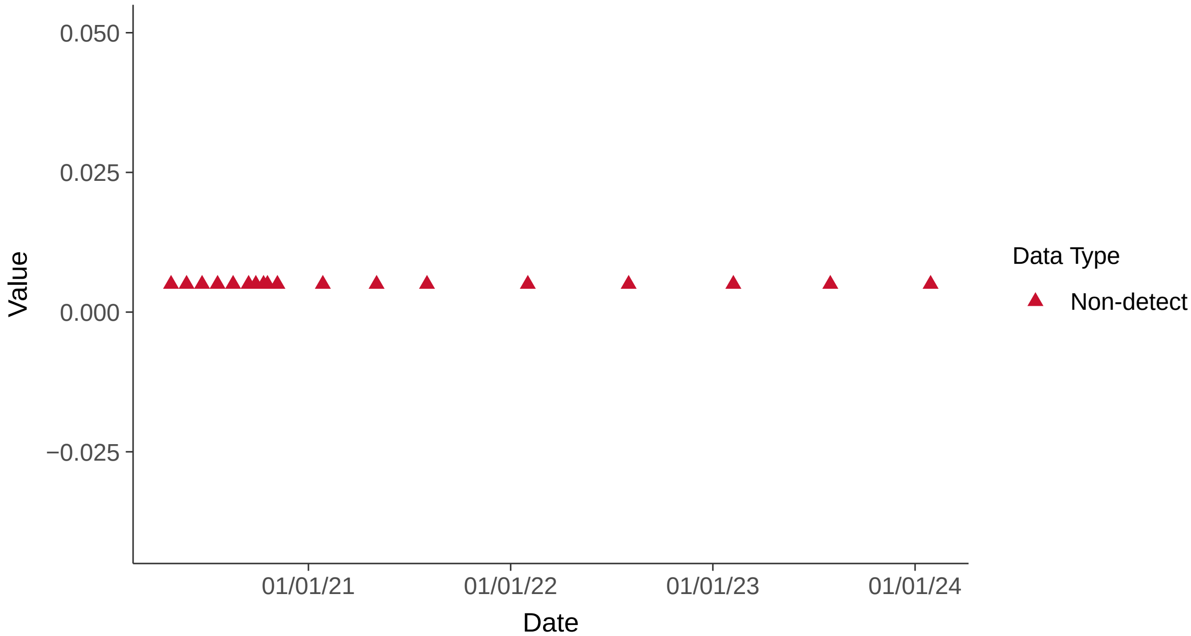


Appendix IV: Chromium, MW-2

ID: 02_2_13

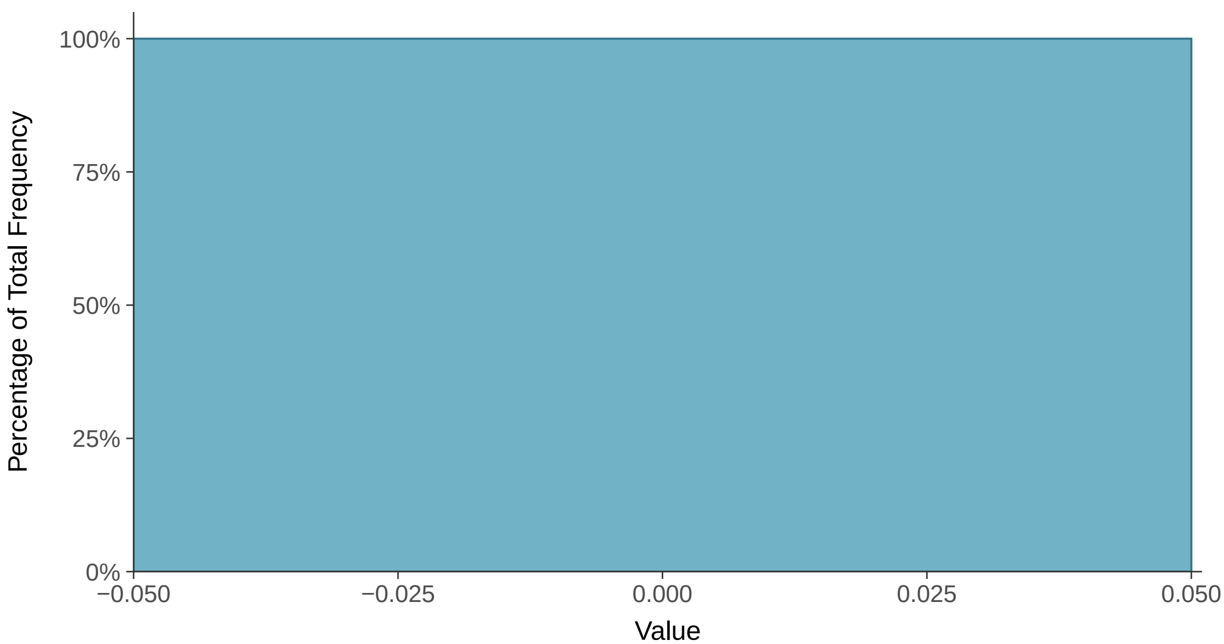
Scatter Plot

Chromium, MW-2 (mg/L)



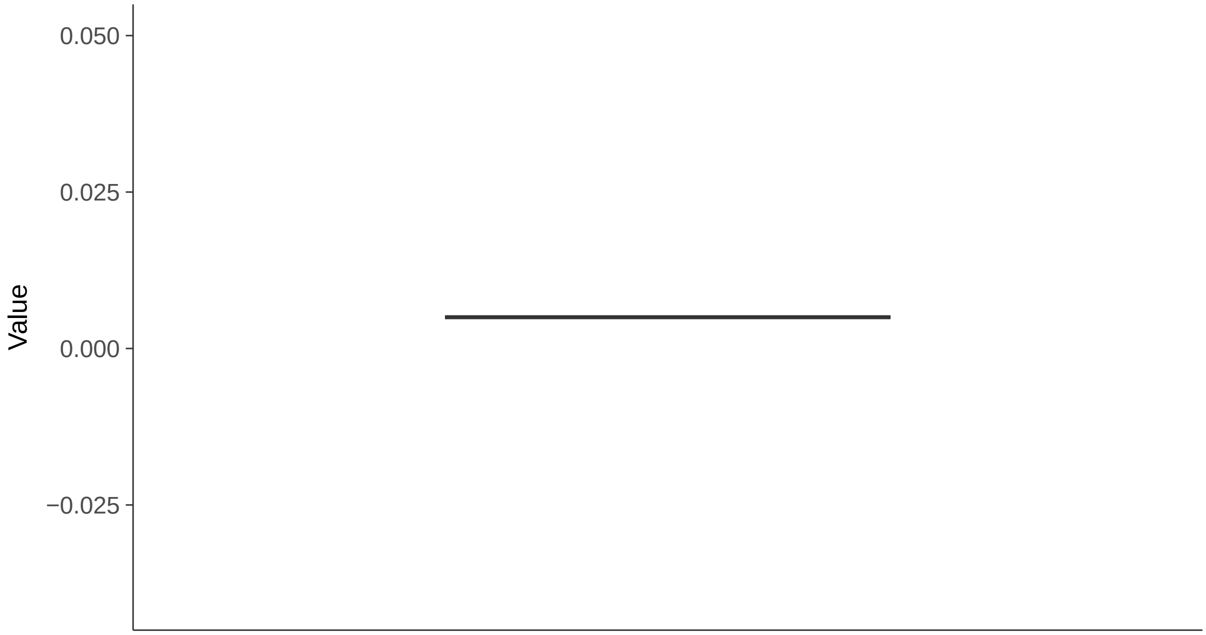
Histogram

Chromium, MW-2 (mg/L)



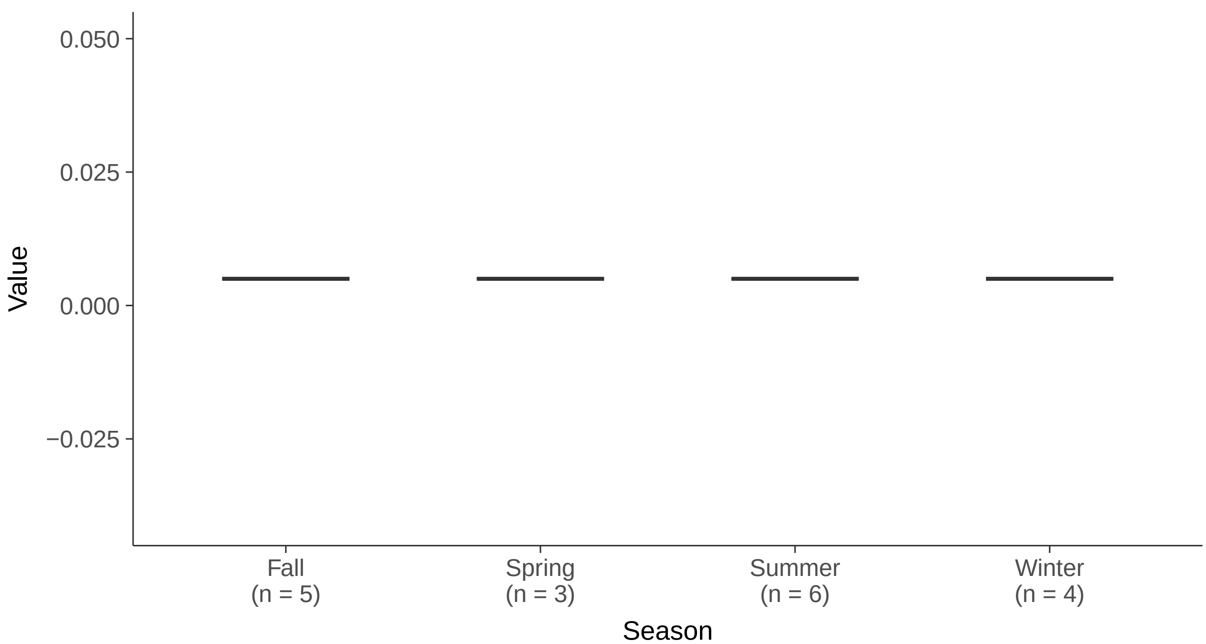
Boxplot

Chromium, MW-2 (mg/L)



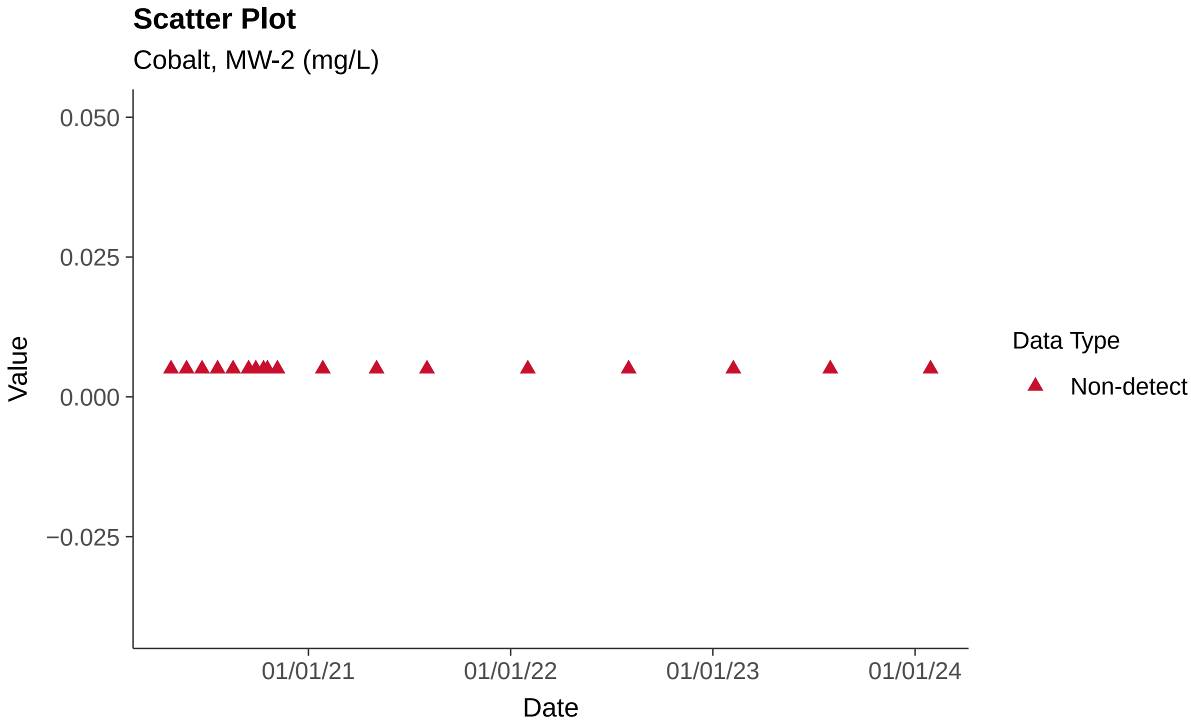
Boxplot by Season

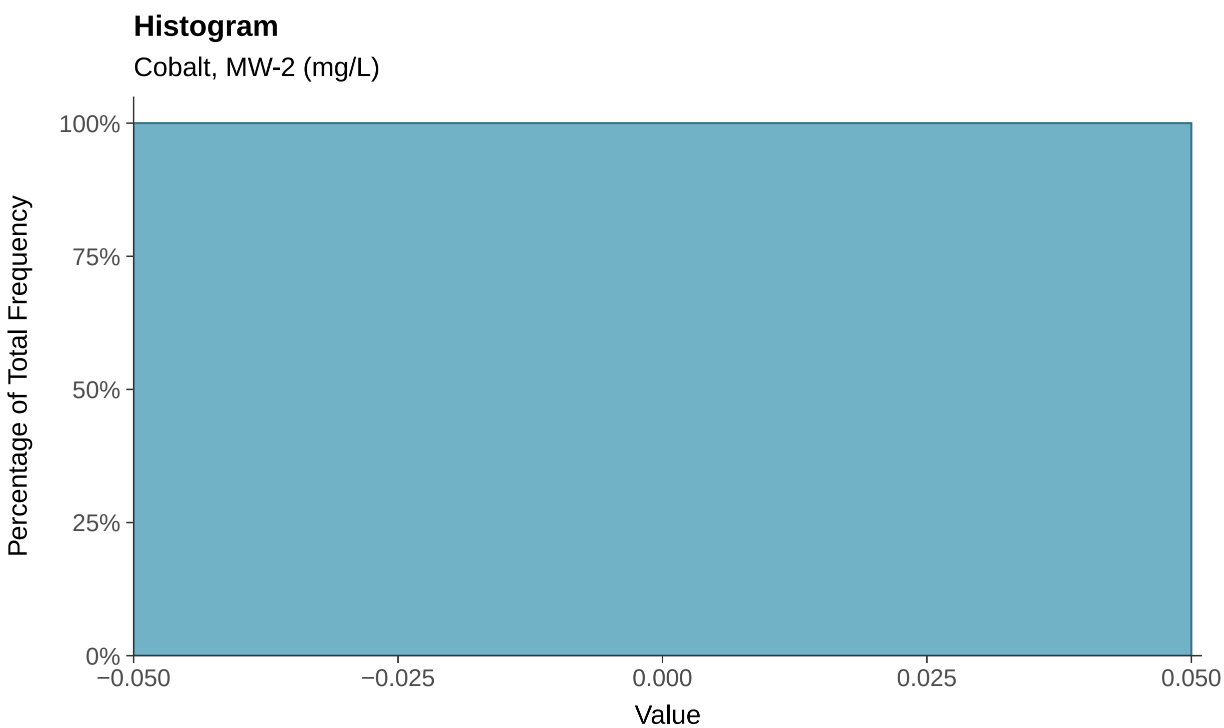
Chromium, MW-2 (mg/L)



Appendix IV: Cobalt, MW-2

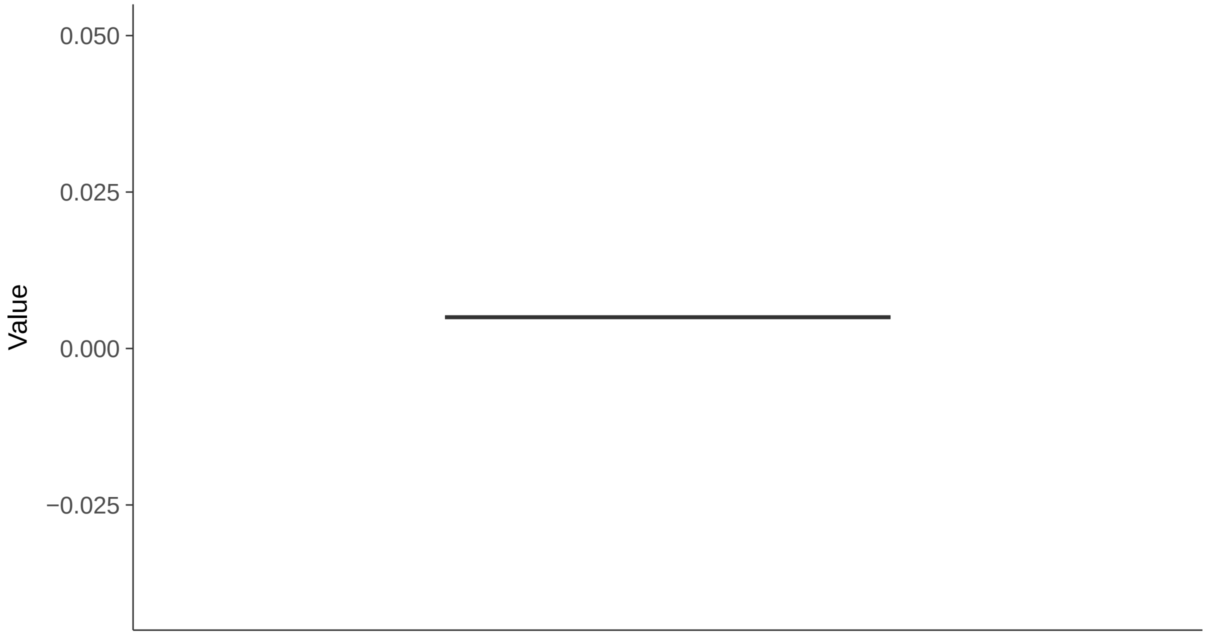
ID: 02_2_14





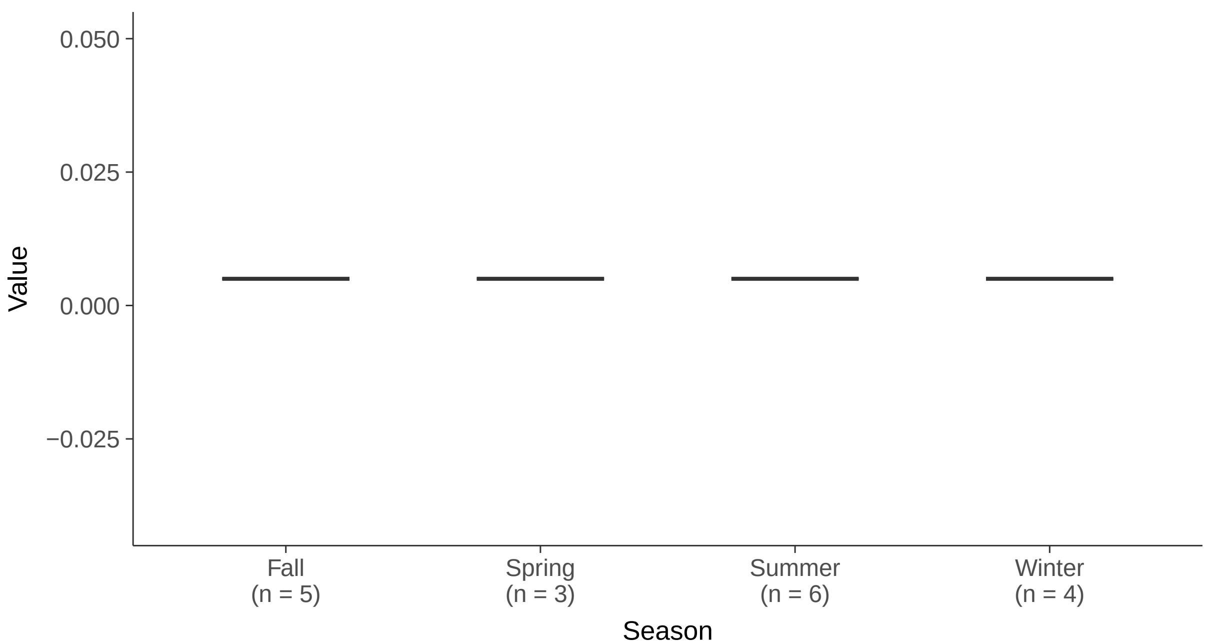
Boxplot

Cobalt, MW-2 (mg/L)



Boxplot by Season

Cobalt, MW-2 (mg/L)

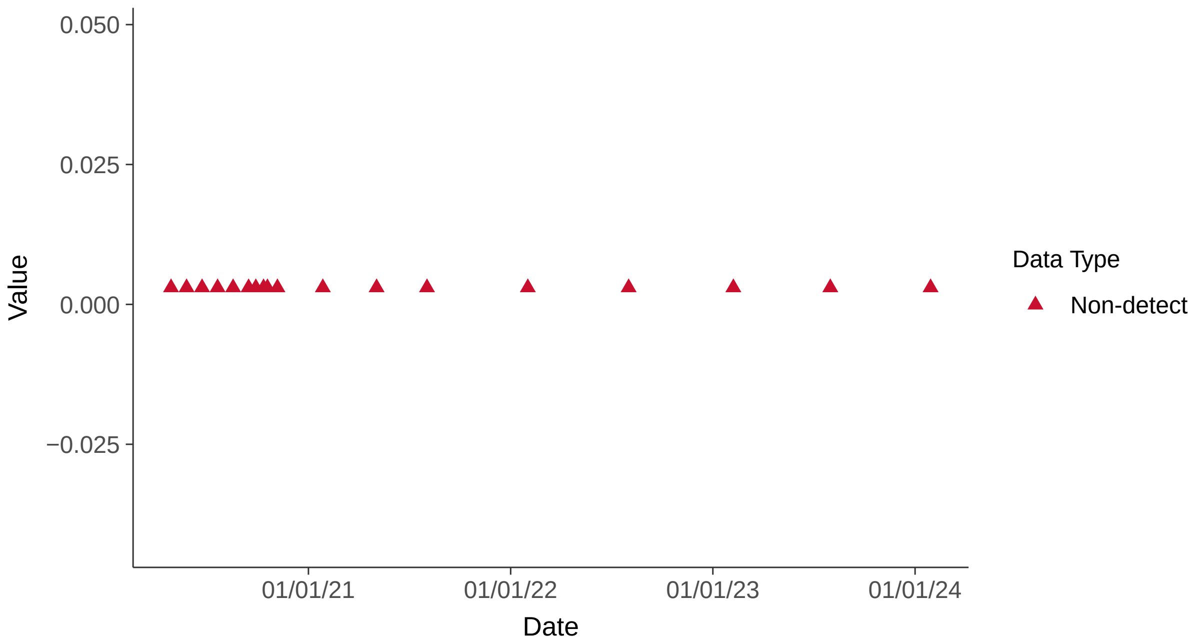


Appendix IV: Lead, MW-2

ID: 02_2_15

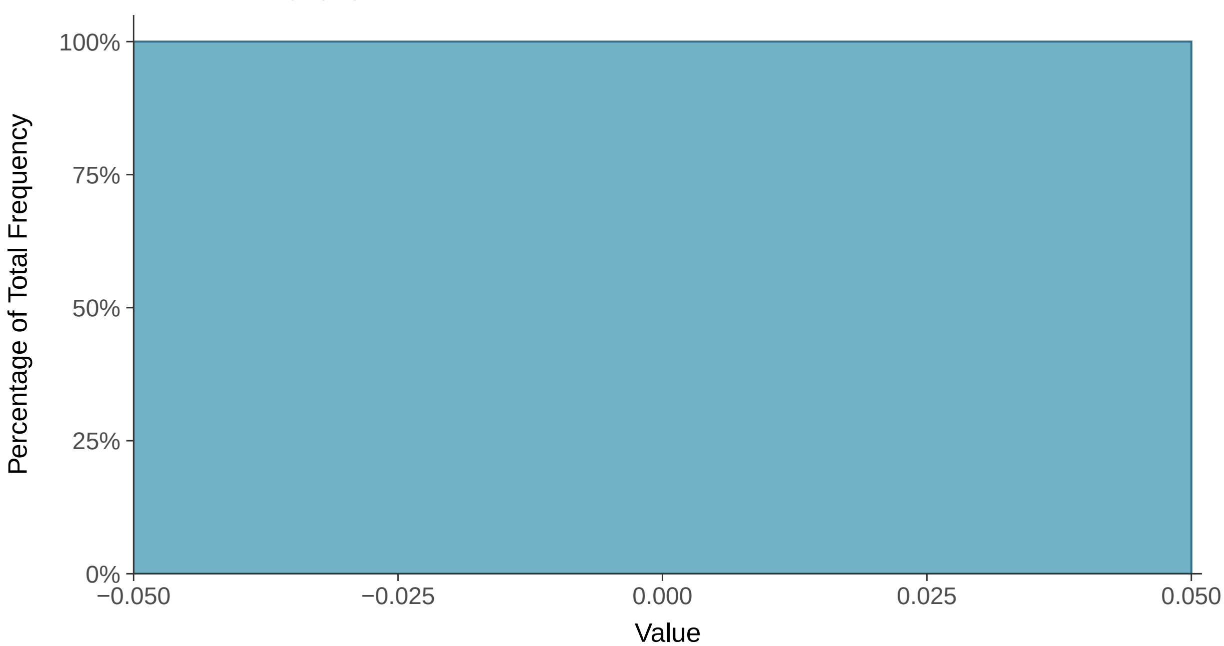
Scatter Plot

Lead, MW-2 (mg/L)



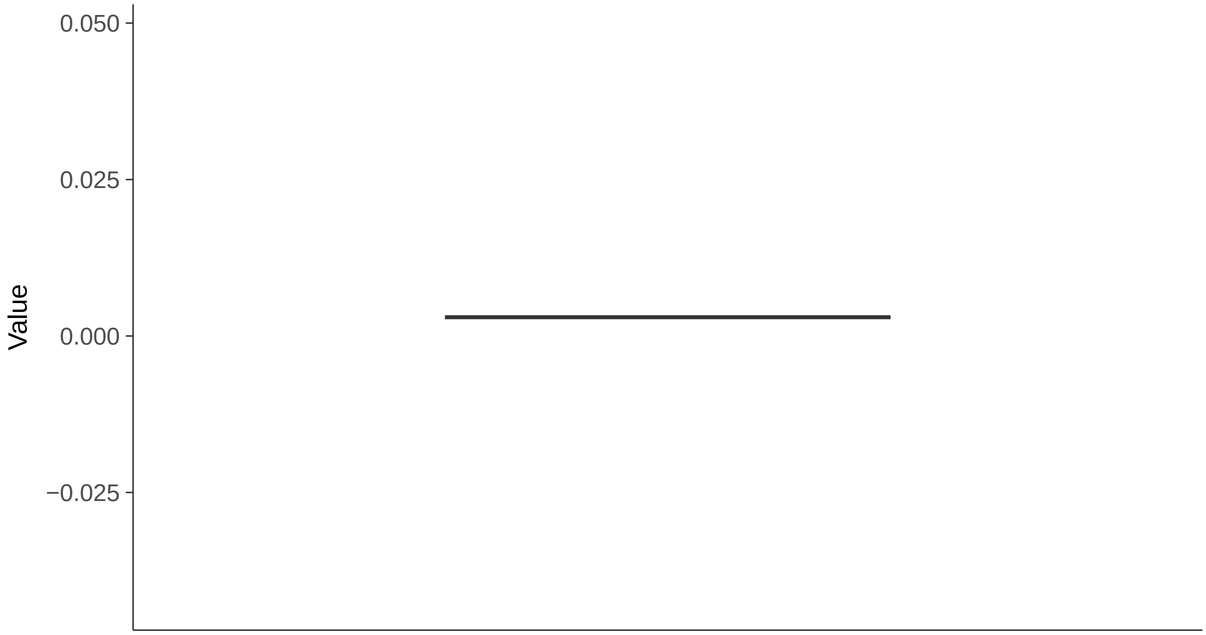
Histogram

Lead, MW-2 (mg/L)



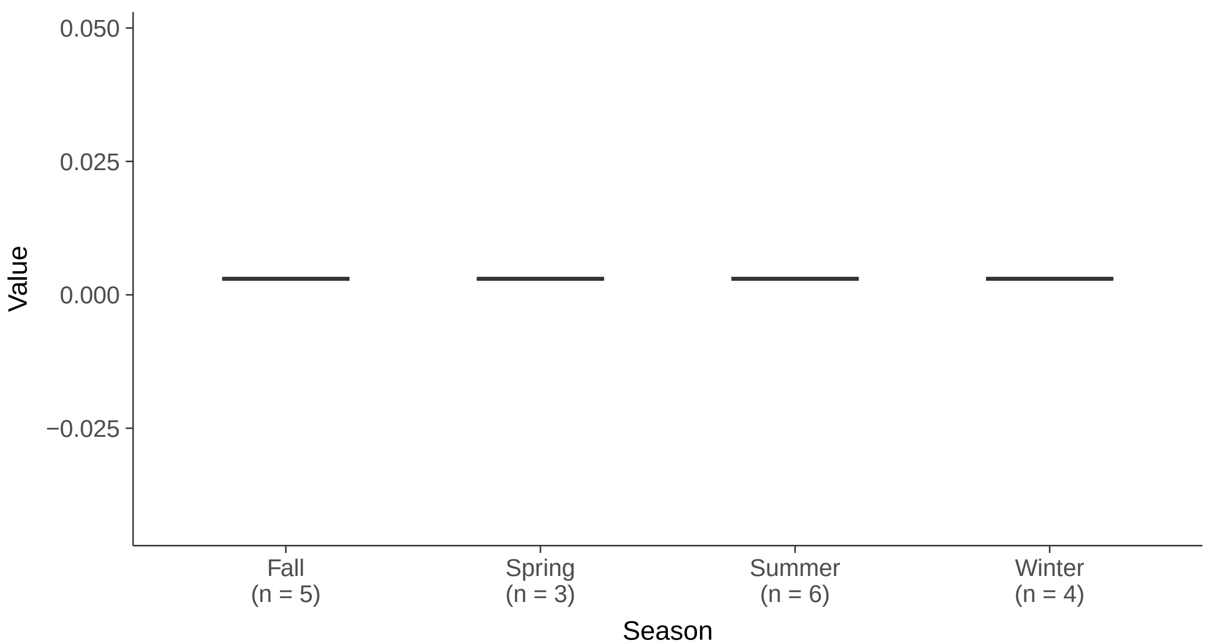
Boxplot

Lead, MW-2 (mg/L)



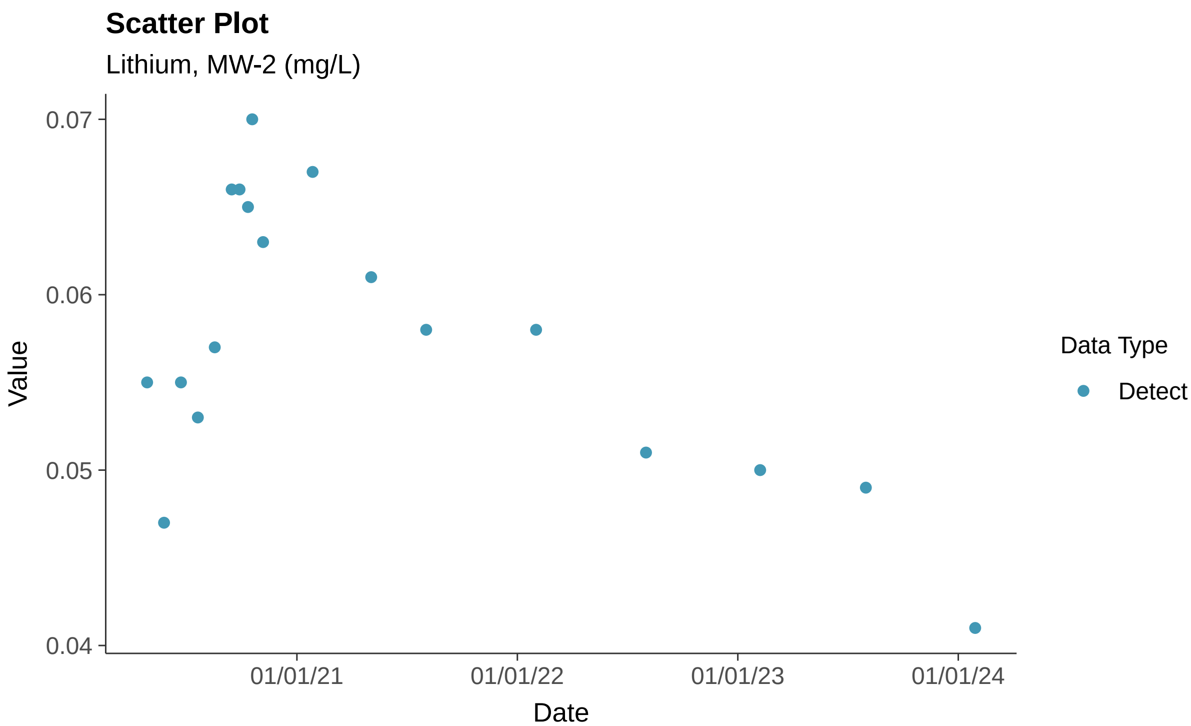
Boxplot by Season

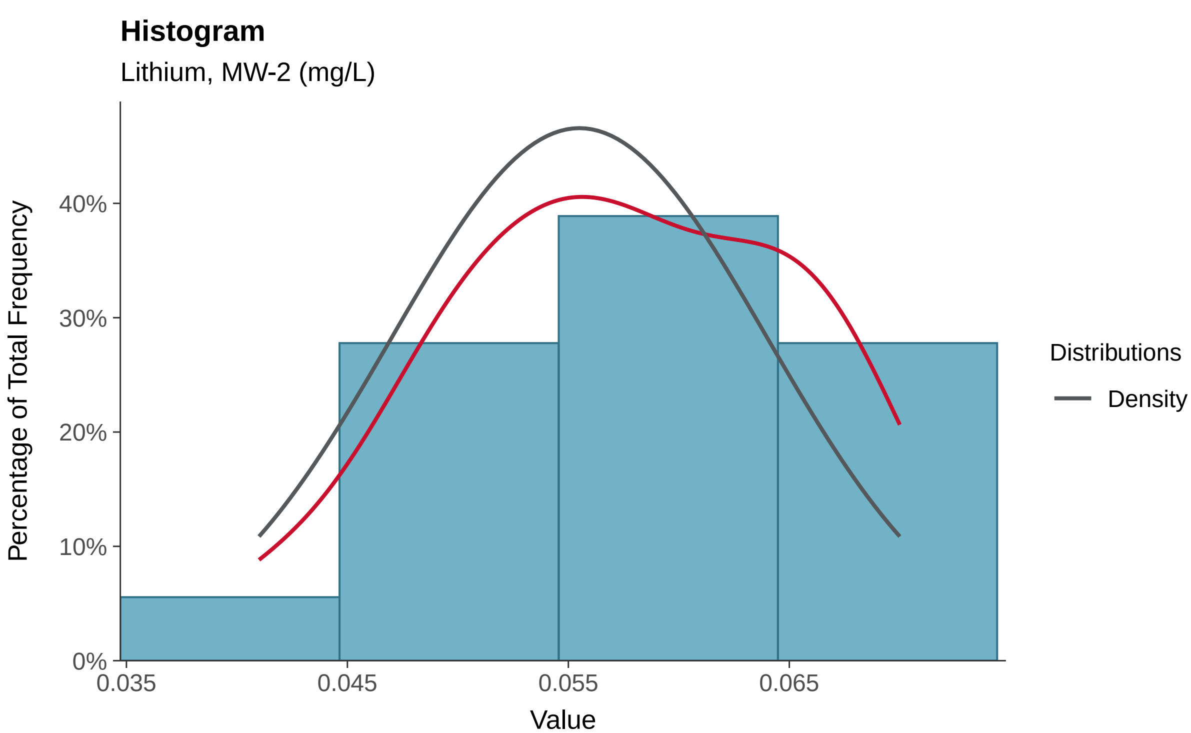
Lead, MW-2 (mg/L)



Appendix IV: Lithium, MW-2

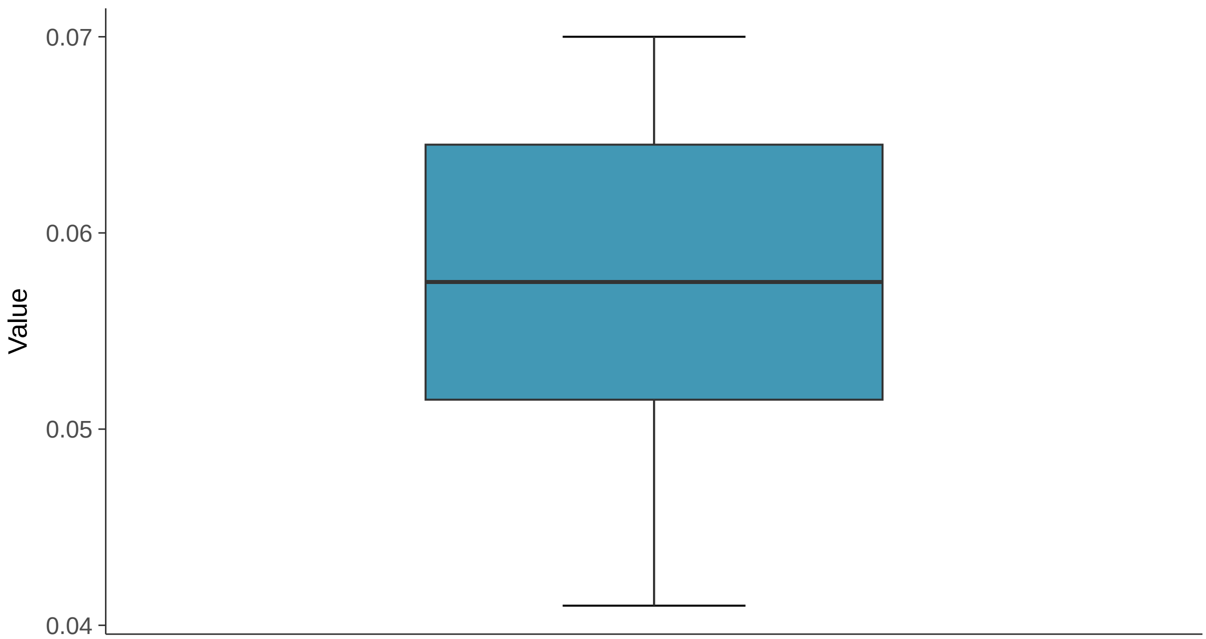
ID: 02_2_16





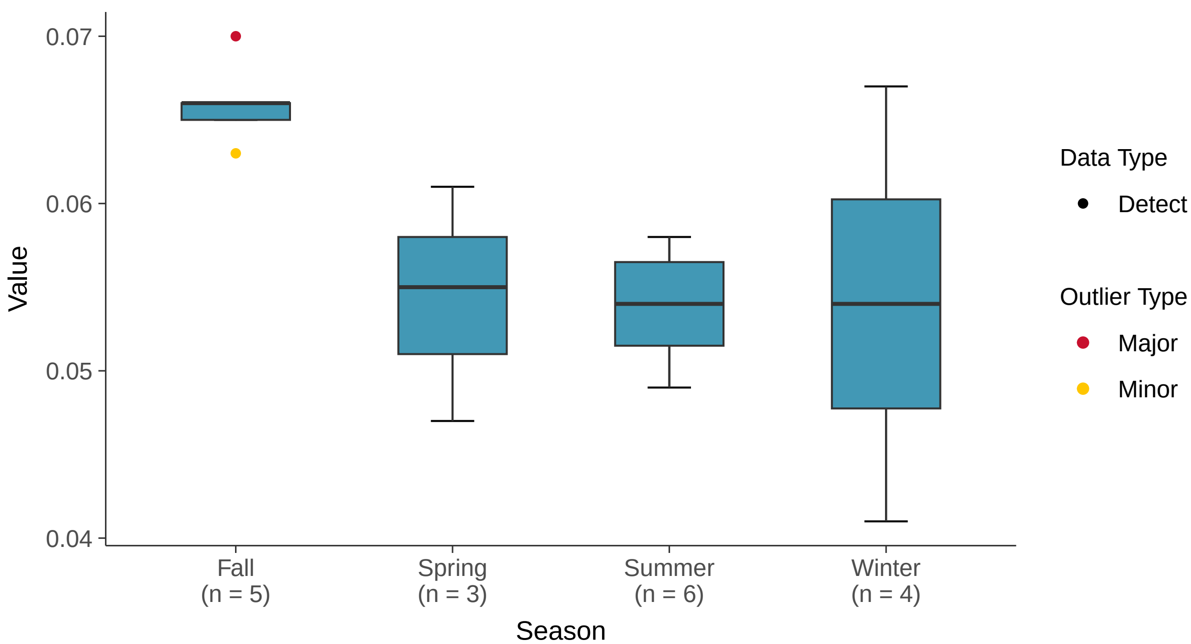
Boxplot

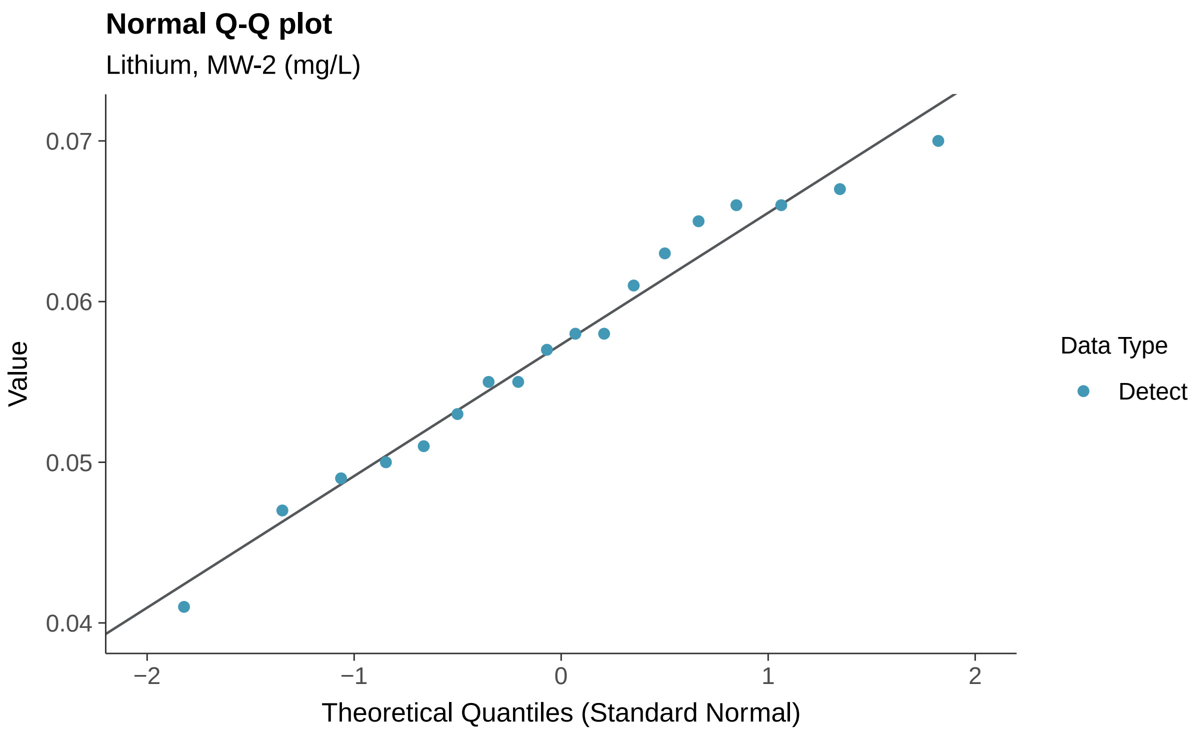
Lithium, MW-2 (mg/L)

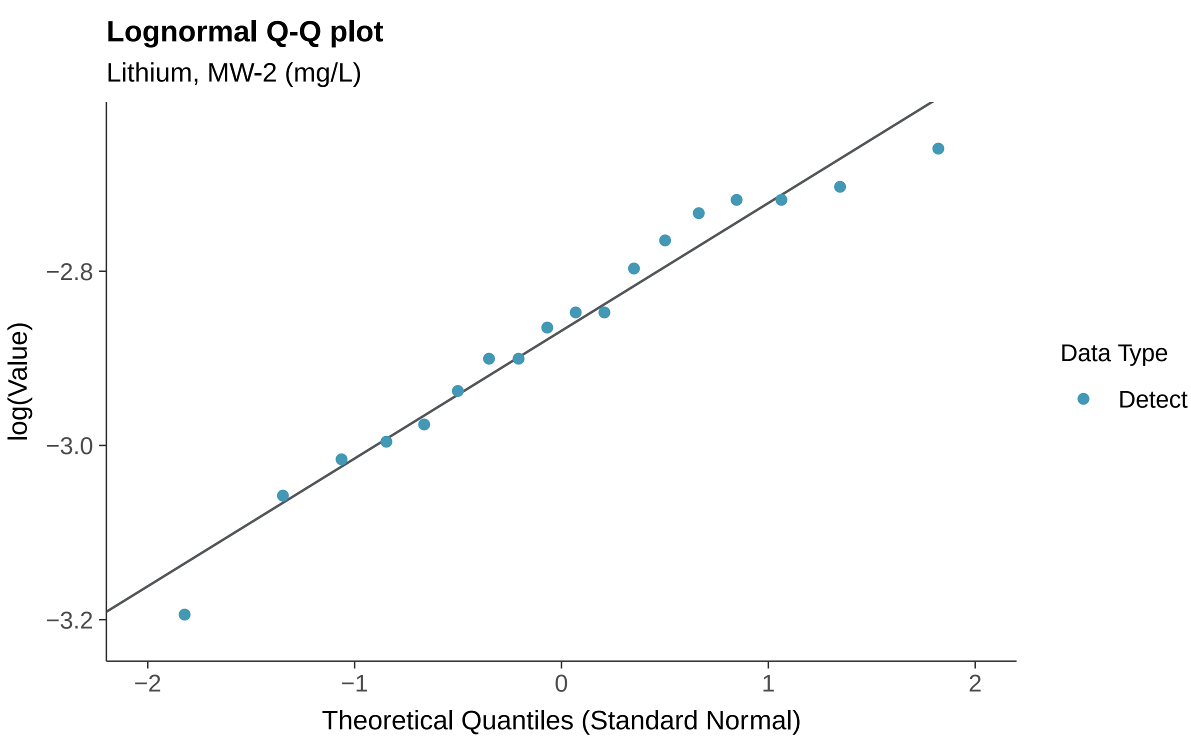


Boxplot by Season

Lithium, MW-2 (mg/L)

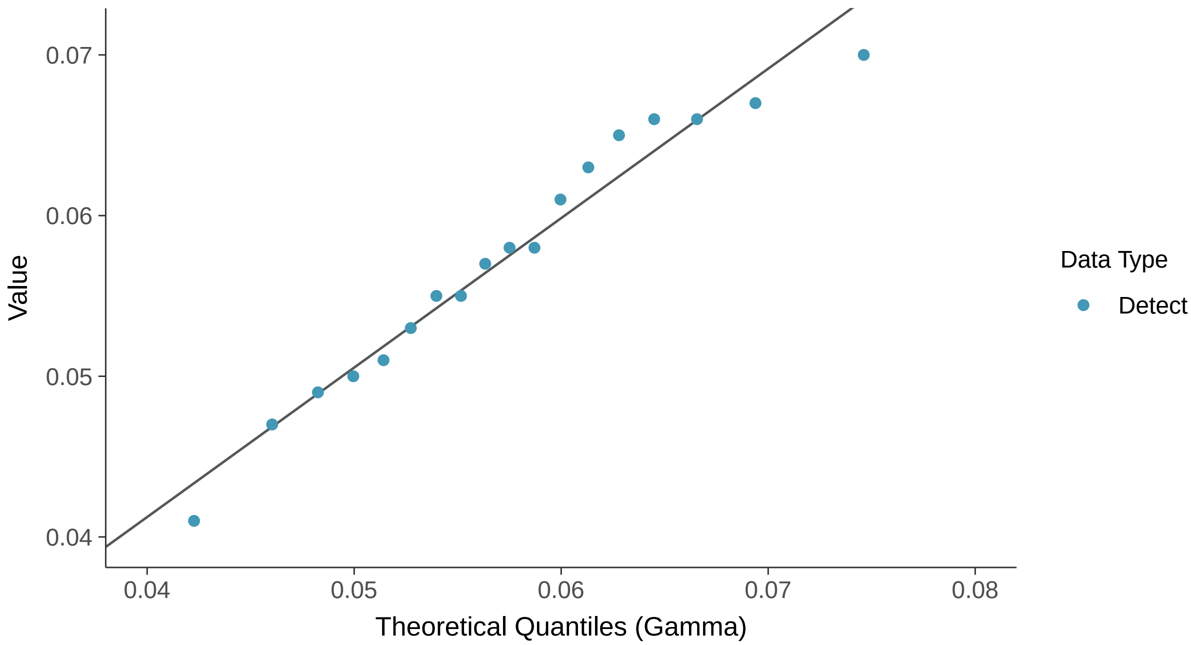



Normal Q-Q plot
Lithium, MW-2 (mg/L)
Value
0.07
0.06
0.05
0.04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-2 (mg/L)
log(Value)
−2.8
−3.0
−3.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

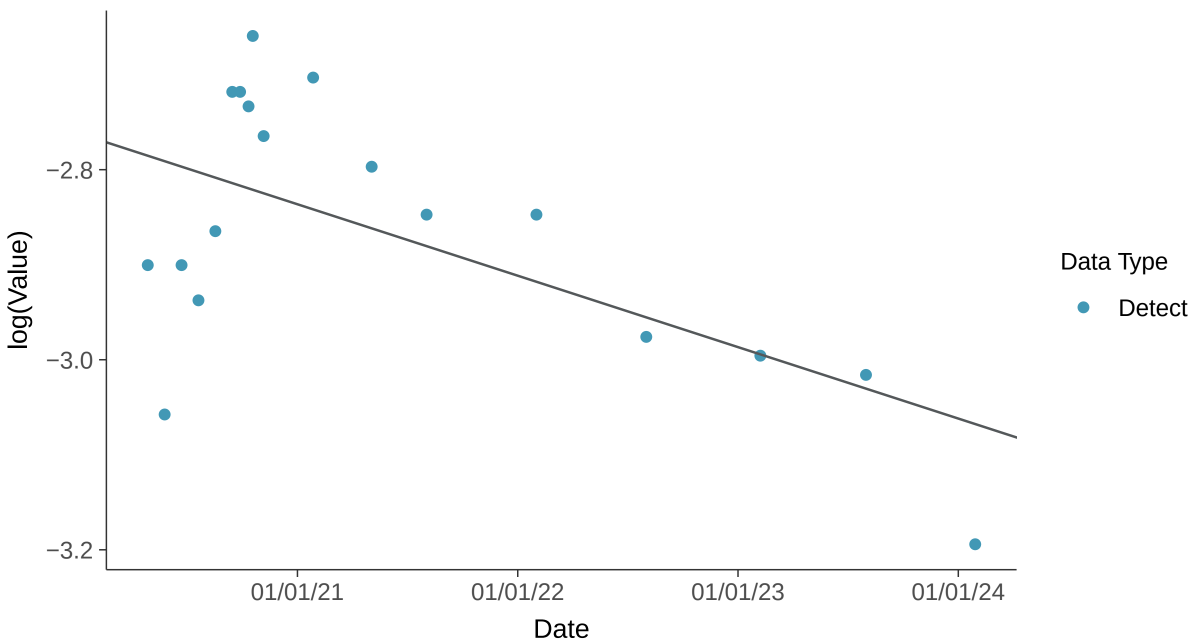
Gamma Q-Q plot

Lithium, MW-2 (mg/L)



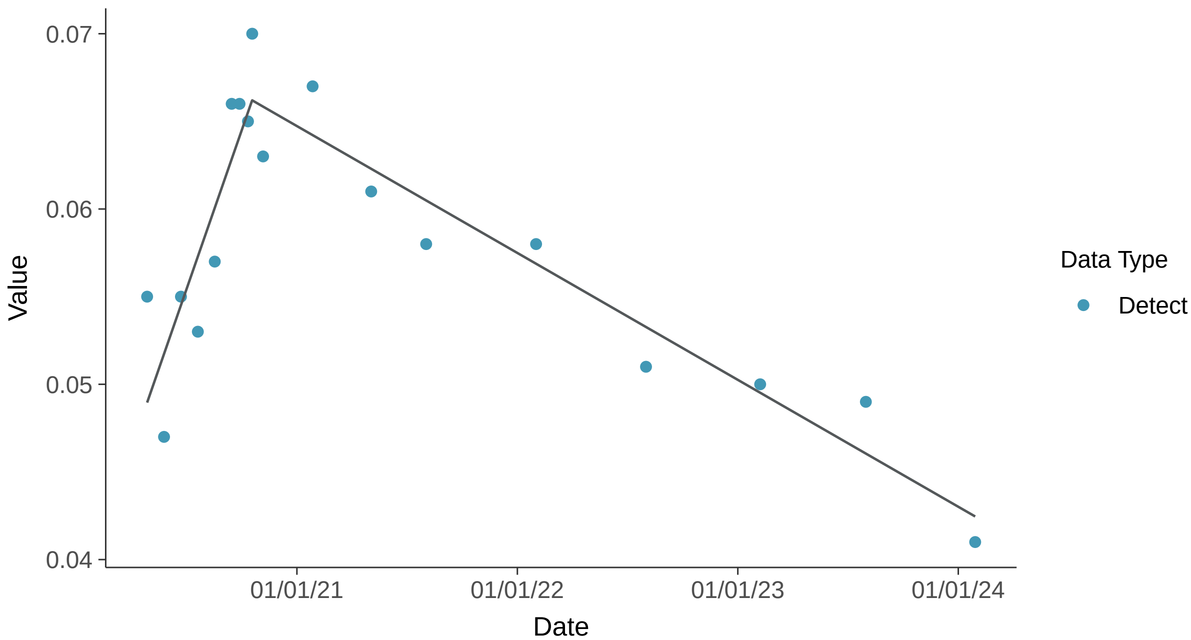
Trend Regression: Lognormal MLE

Lithium, MW-2 (mg/L)



Trend Regression: Piecewise Linear-Linear

Lithium, MW-2 (mg/L)

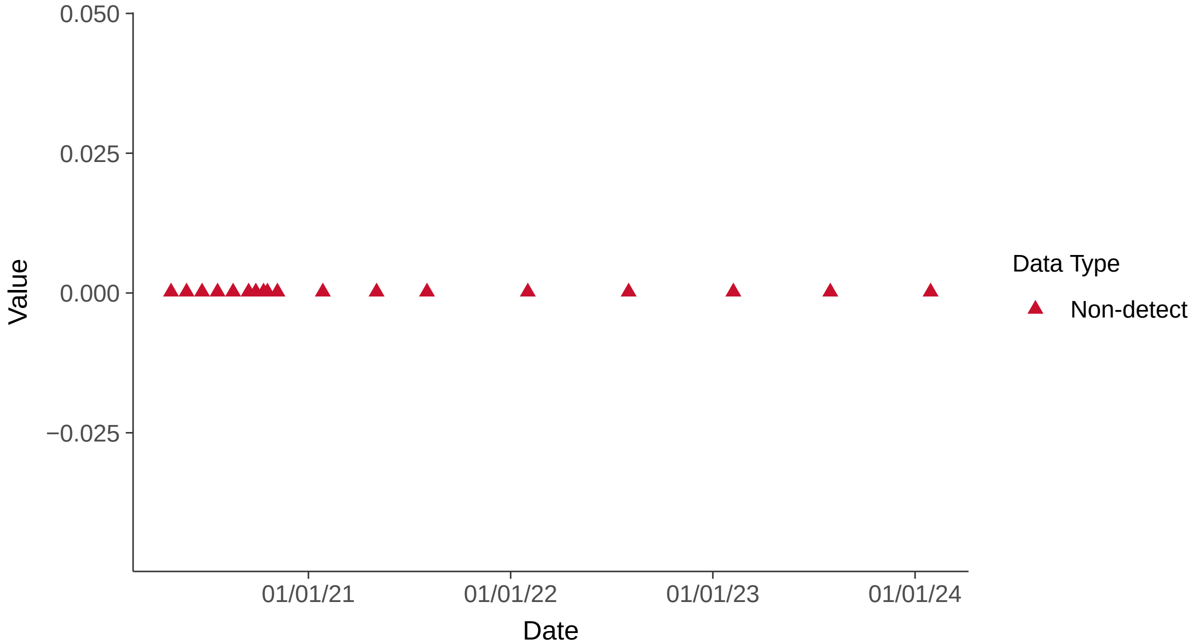


Appendix IV: Mercury, MW-2

ID: 02_2_17

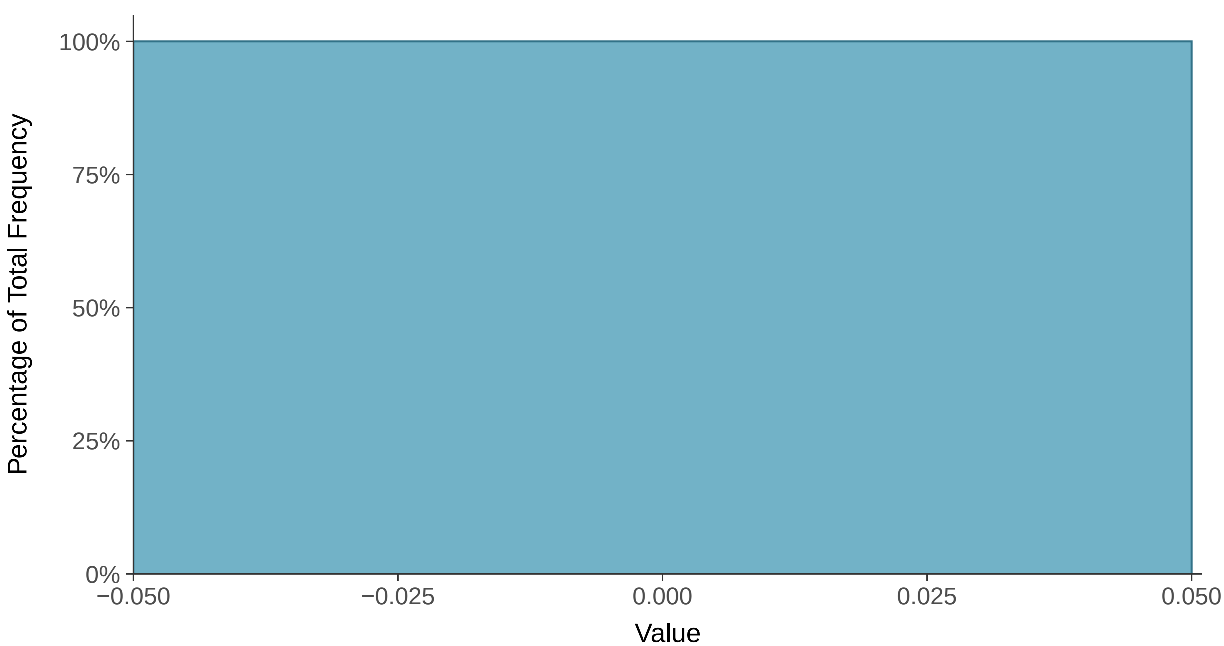
Scatter Plot

Mercury, MW-2 (mg/L)



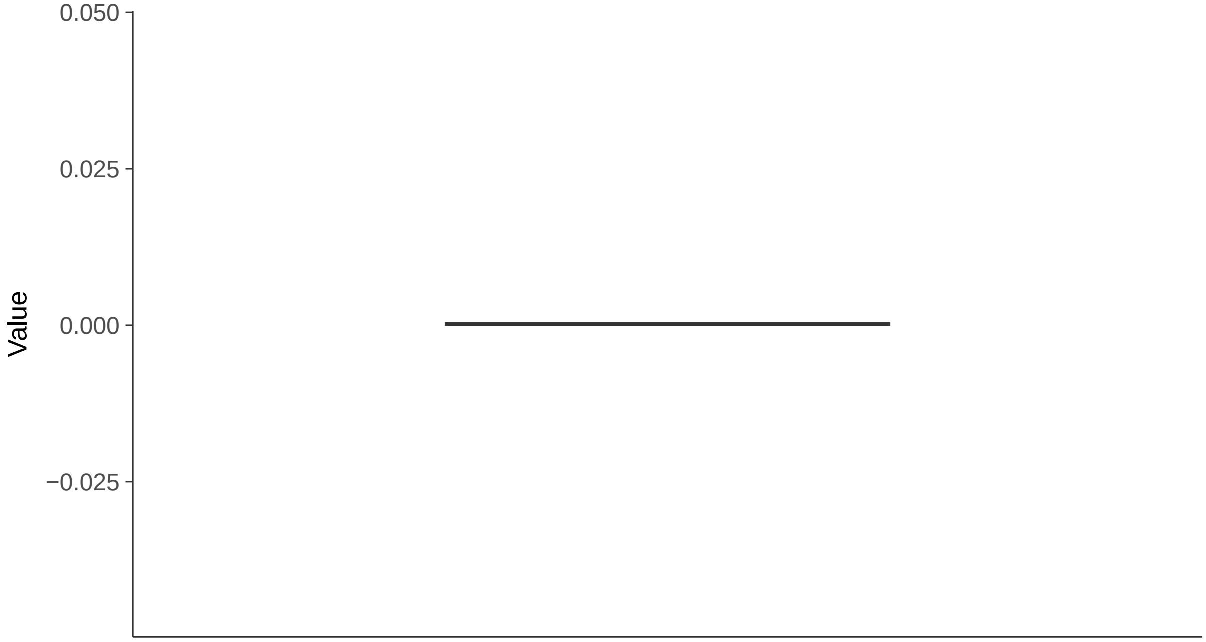
Histogram

Mercury, MW-2 (mg/L)



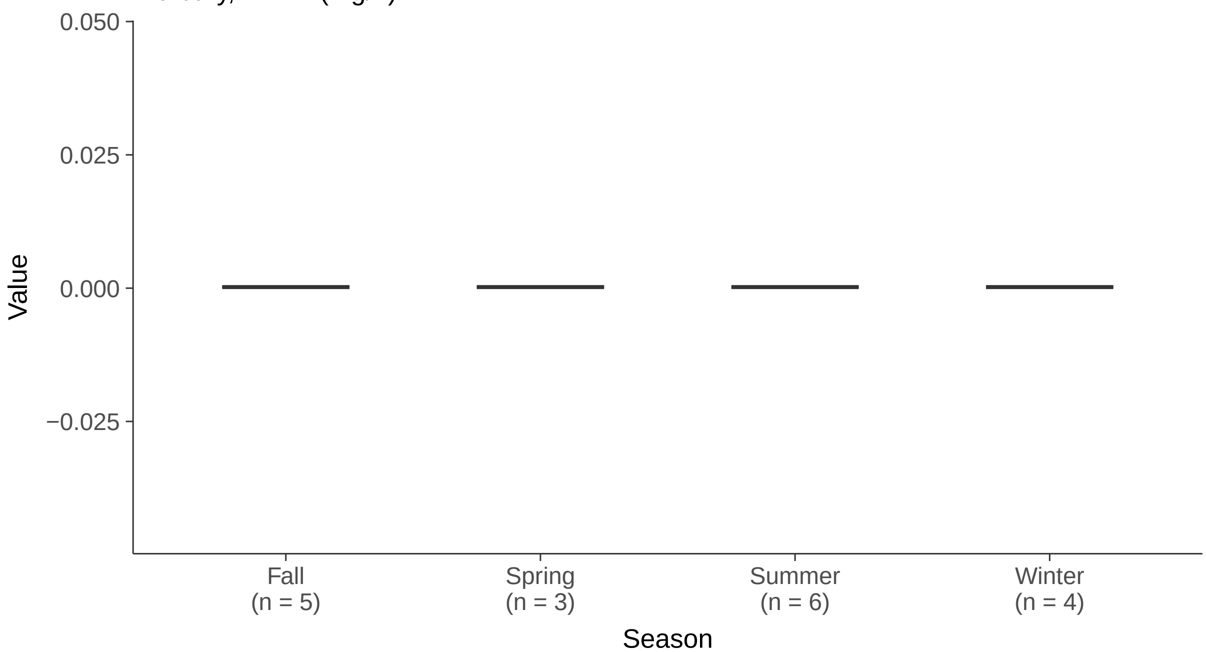
Boxplot

Mercury, MW-2 (mg/L)



Boxplot by Season

Mercury, MW-2 (mg/L)

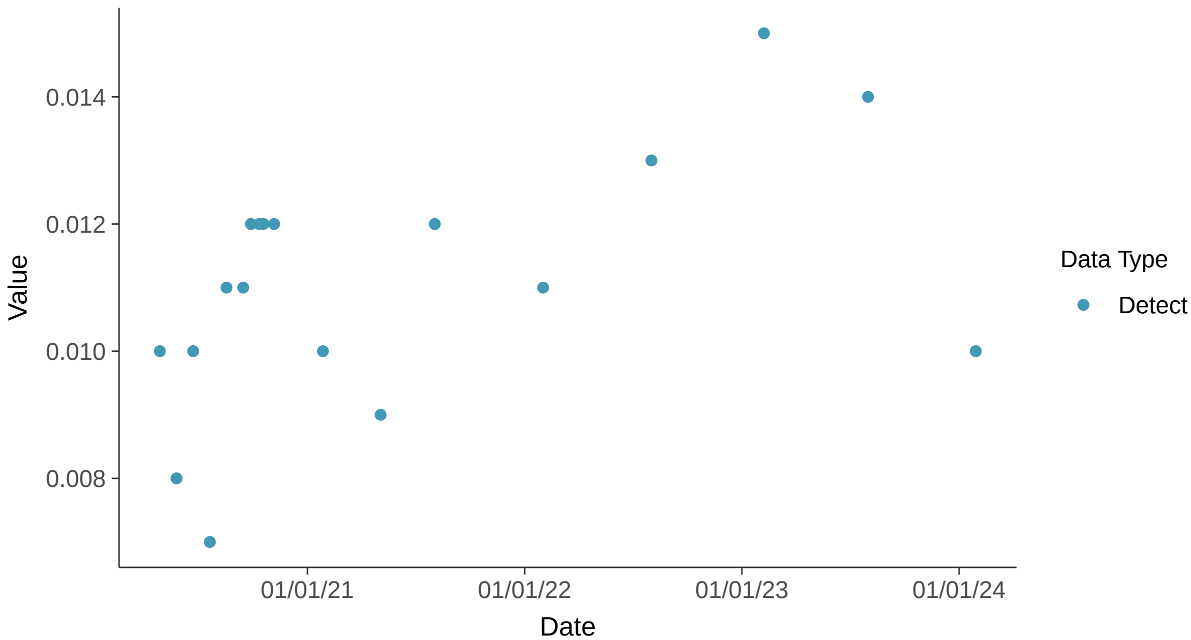


Appendix IV: Molybdenum, MW-2

ID: 02_2_18

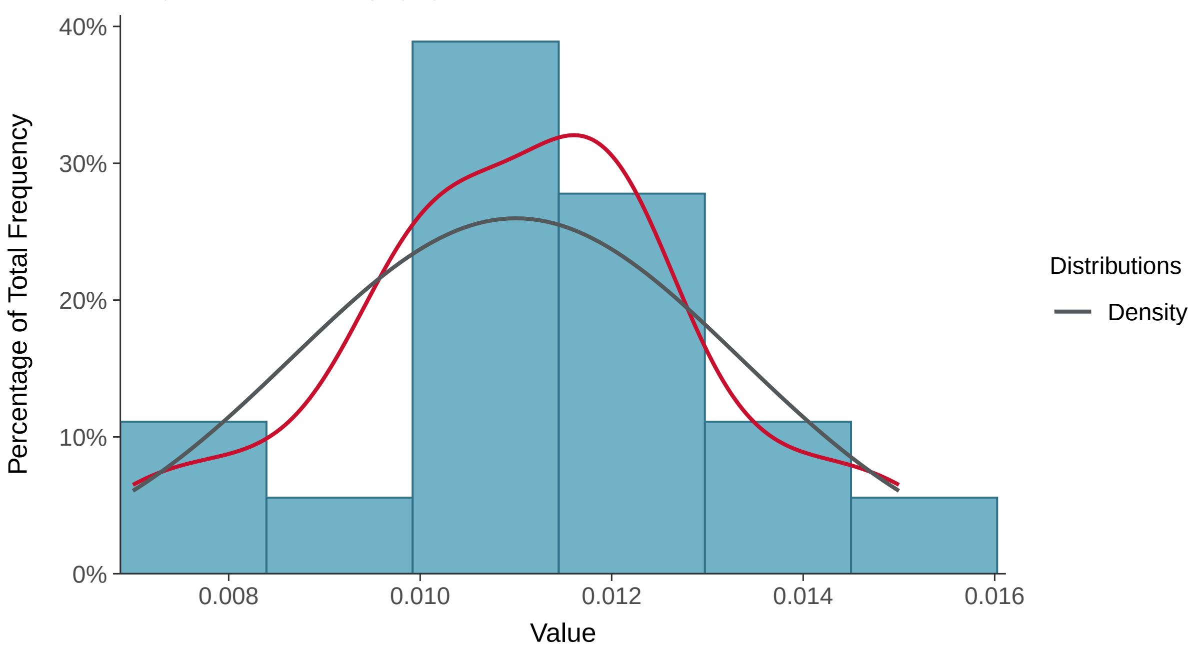
Scatter Plot

Molybdenum, MW-2 (mg/L)



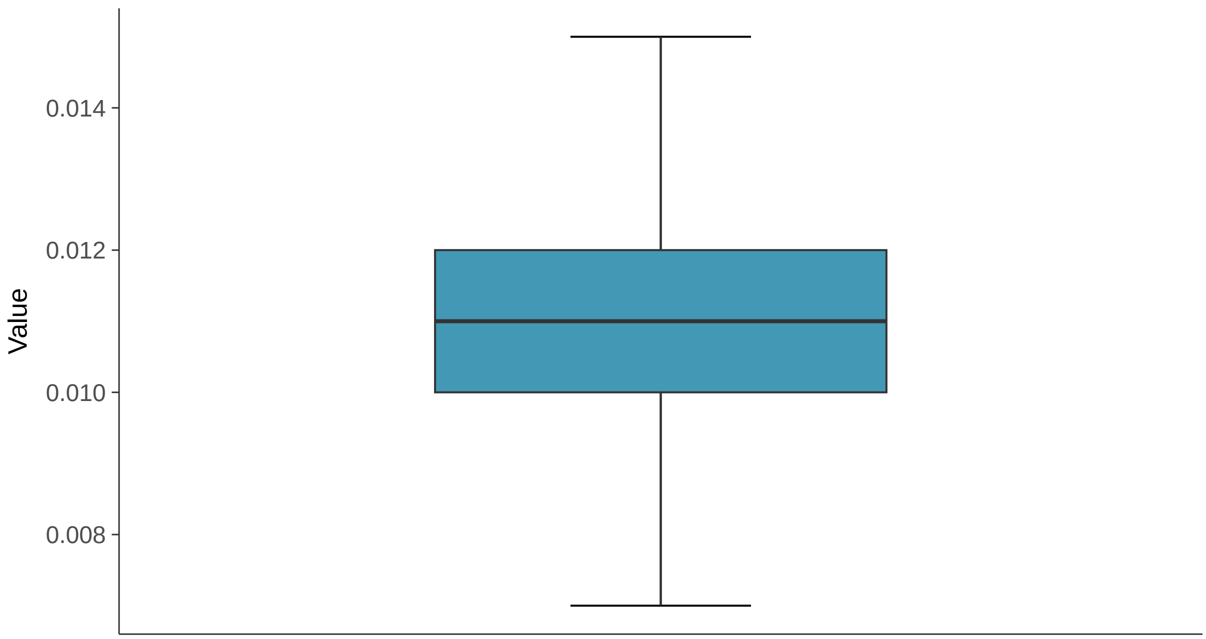
Histogram

Molybdenum, MW-2 (mg/L)



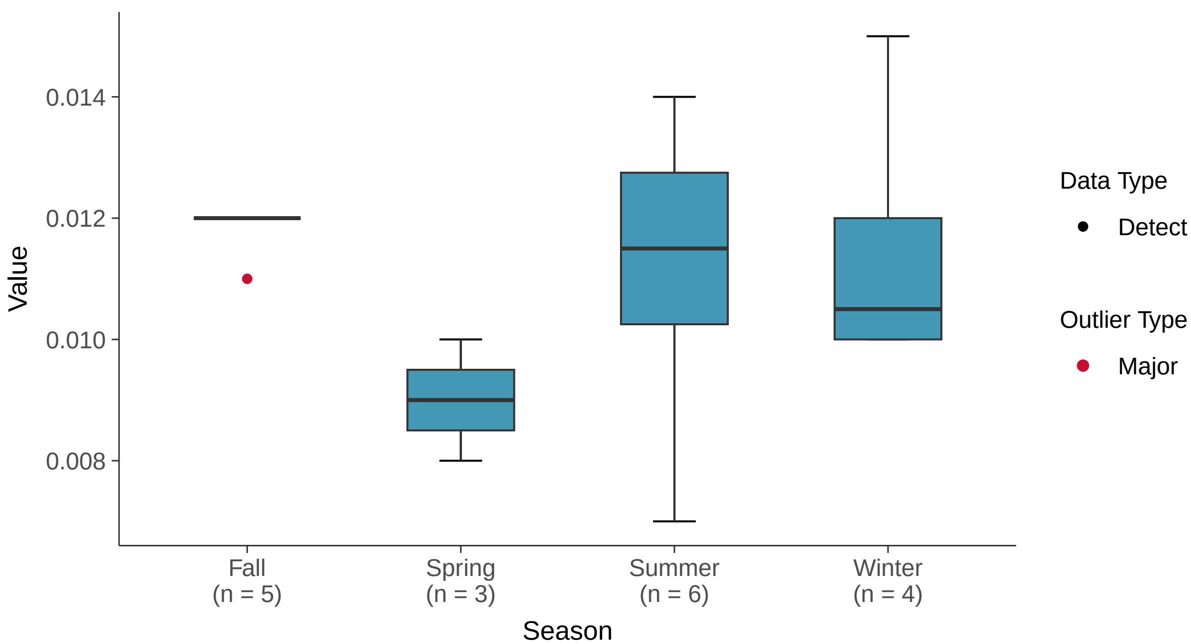
Boxplot

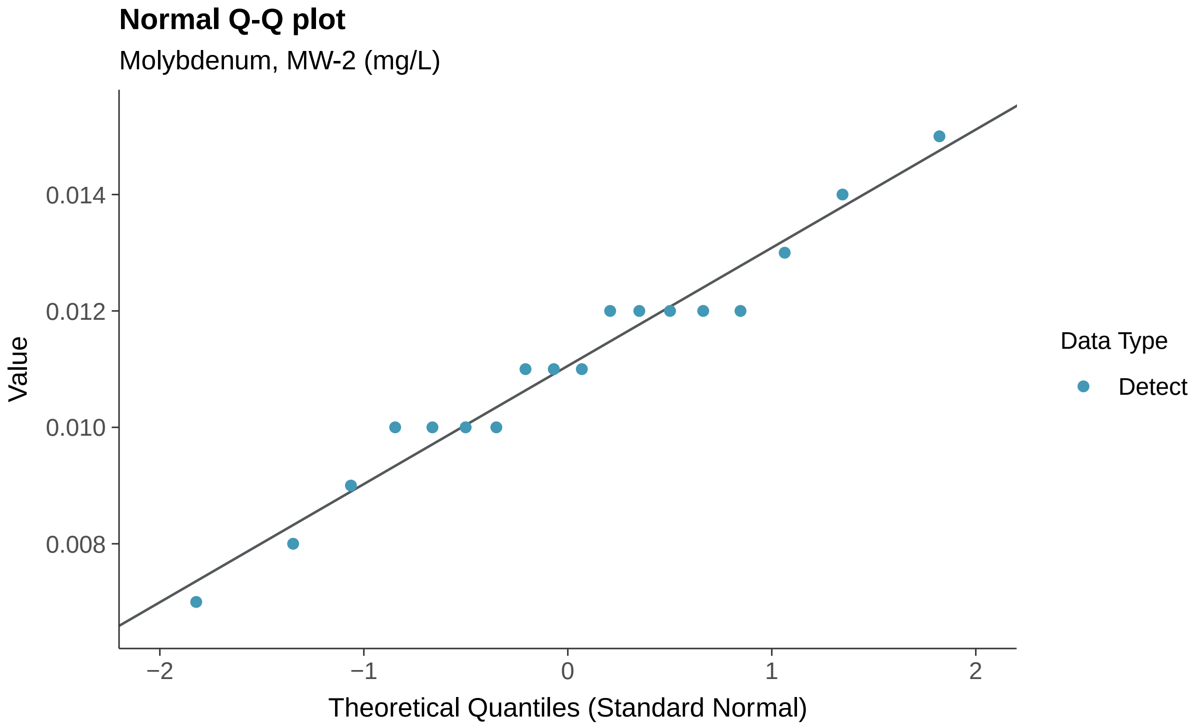
Molybdenum, MW-2 (mg/L)

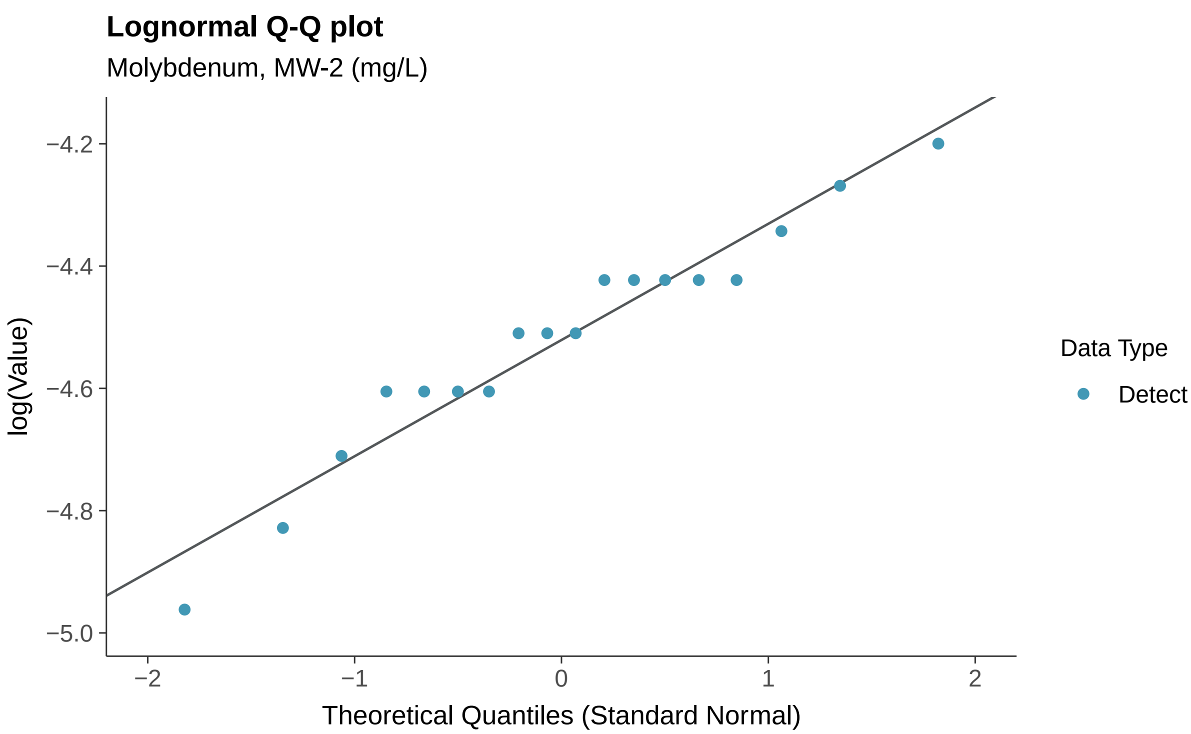


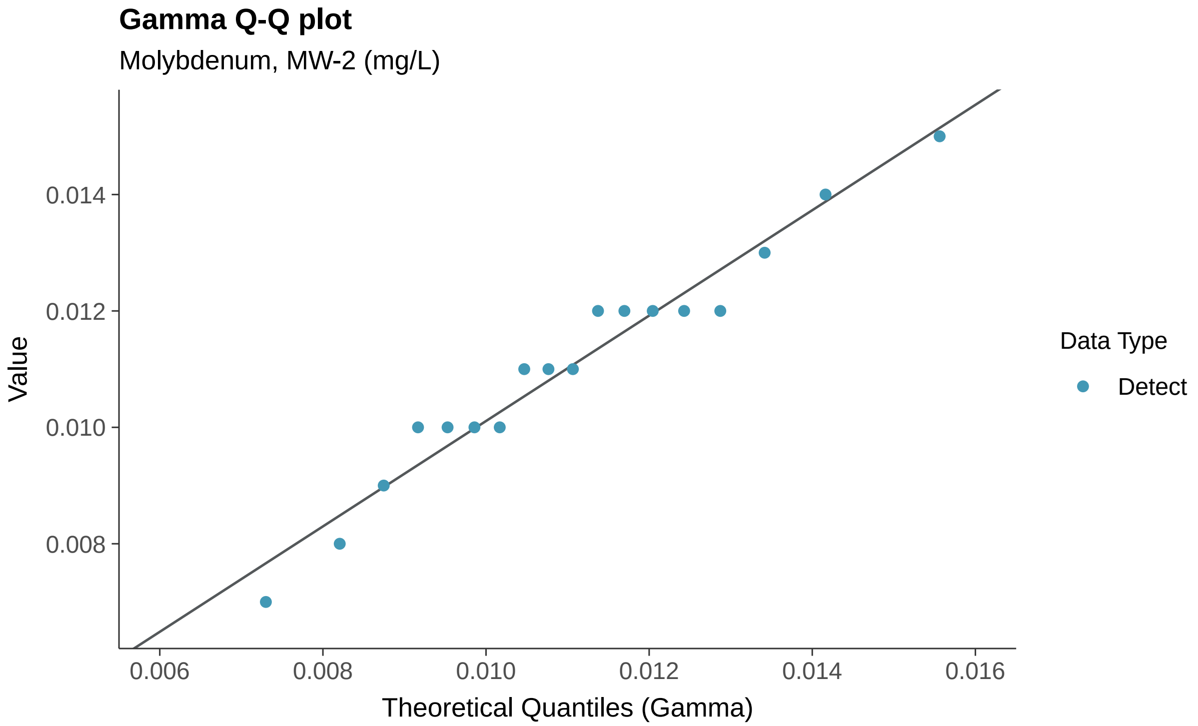
Boxplot by Season

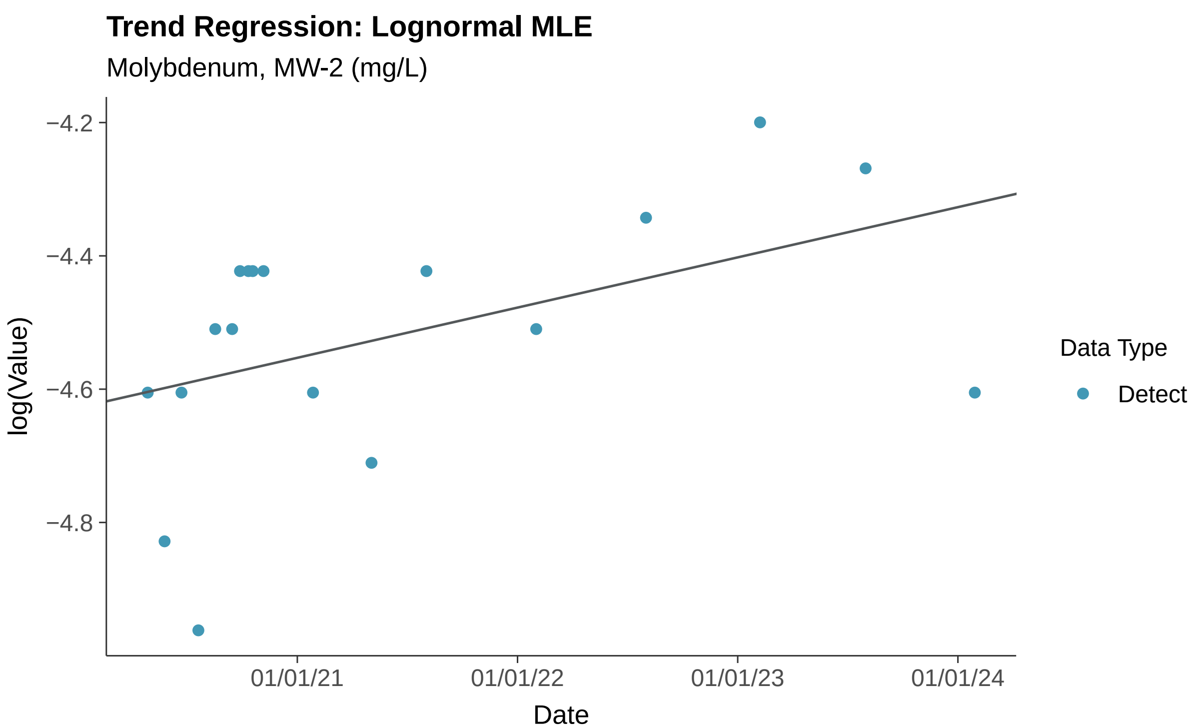
Molybdenum, MW-2 (mg/L)




Normal Q-Q plot
Molybdenum, MW-2 (mg/L)
Value
0.014
0.012
0.010
0.008
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

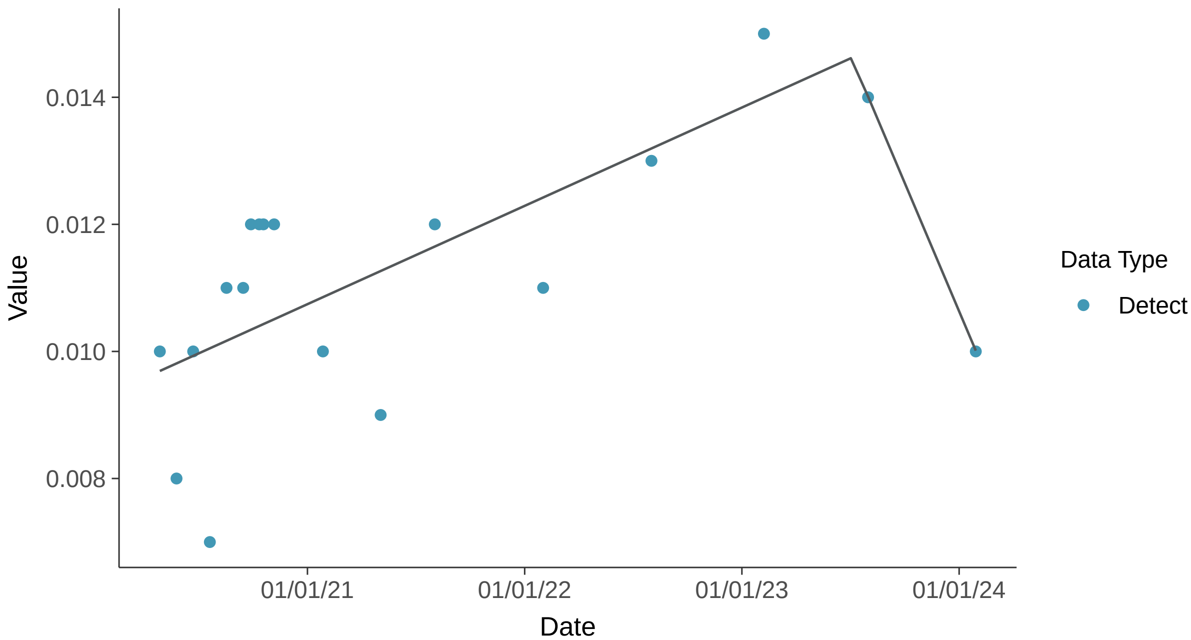

Lognormal Q-Q plot
Molybdenum, MW-2 (mg/L)
log(Value)
−4.2
−4.4
−4.6
−4.8
−5.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Molybdenum, MW-2 (mg/L)
Value
0.014
0.012
0.010
0.008
0.006
0.008
0.010
0.012
0.014
0.016
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Molybdenum, MW-2 (mg/L)
log(Value)
−4.2
−4.4
−4.6
−4.8
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

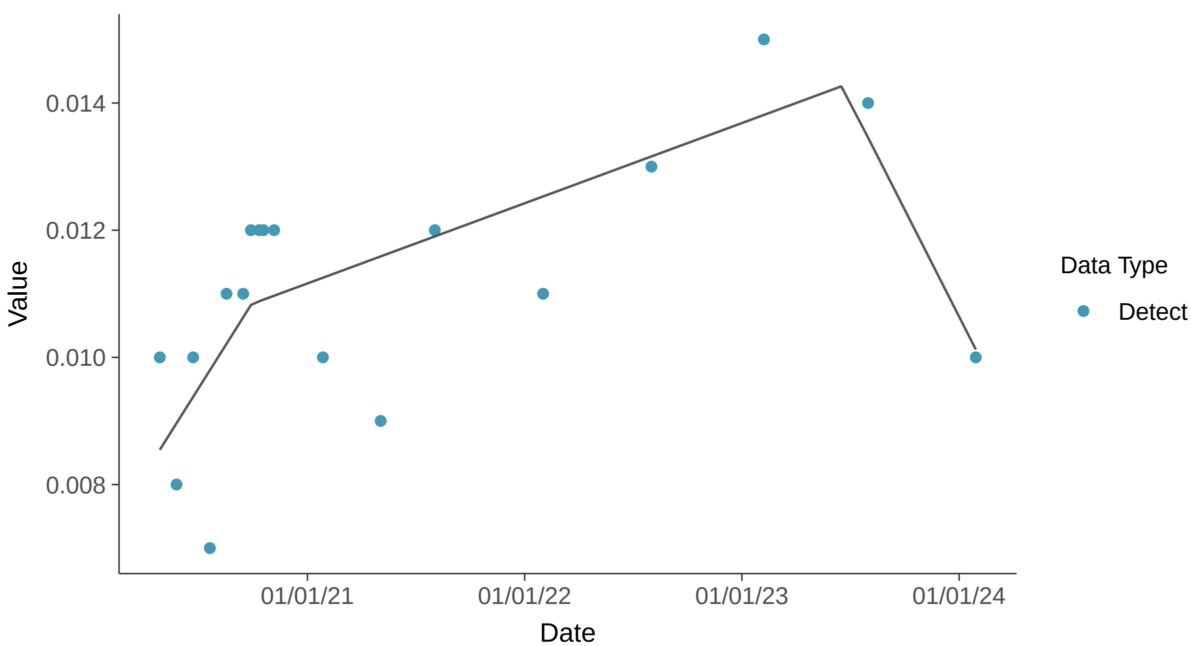
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-2 (mg/L)



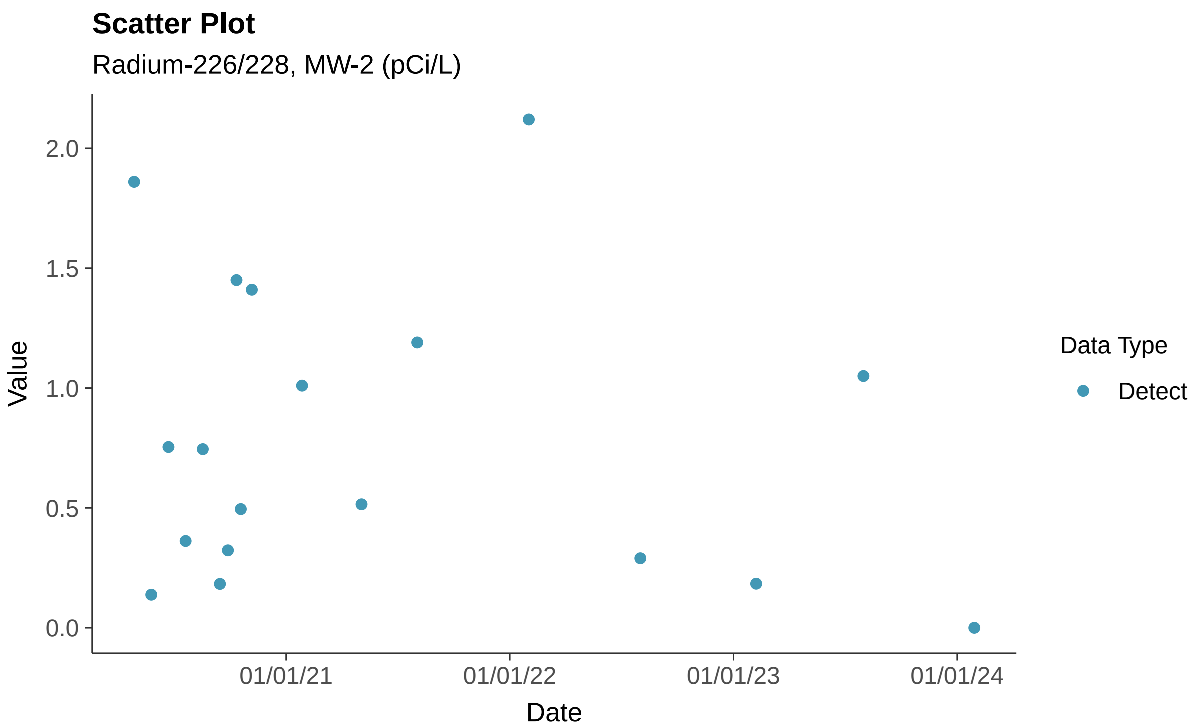
Trend Regression: Piecewise Linear-Linear-Linear

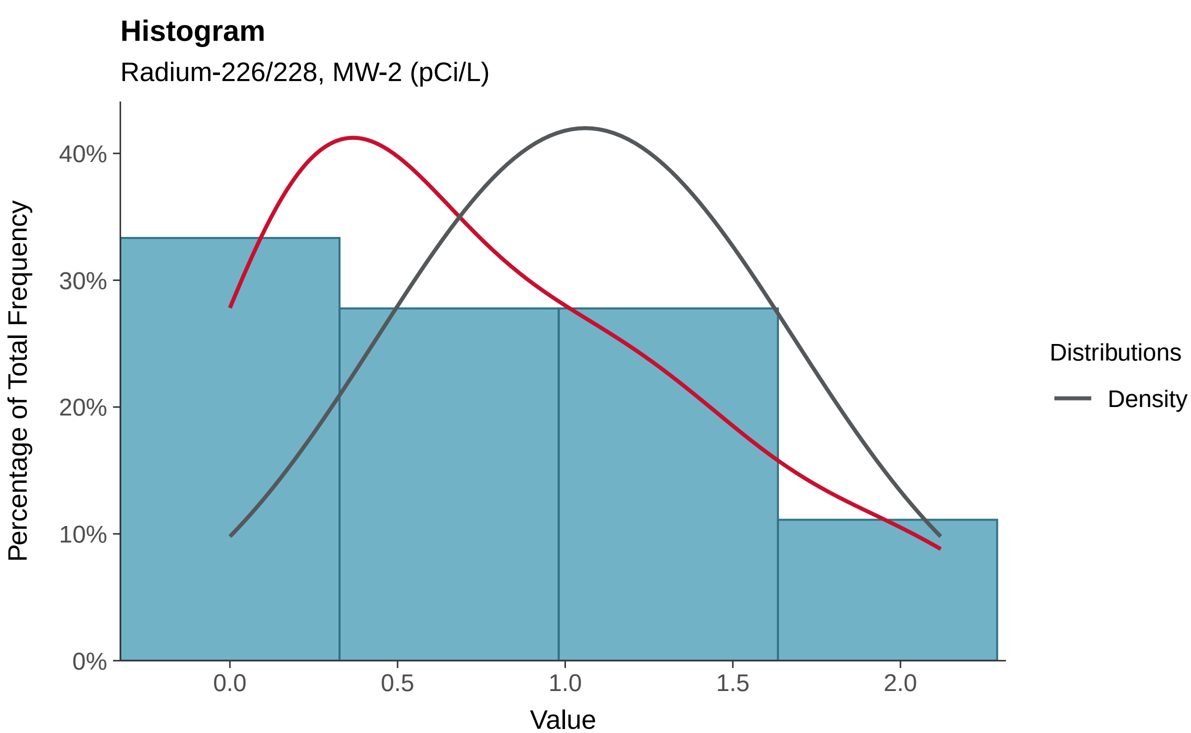
Molybdenum, MW-2 (mg/L)



Appendix IV: Radium-226/228, MW-2

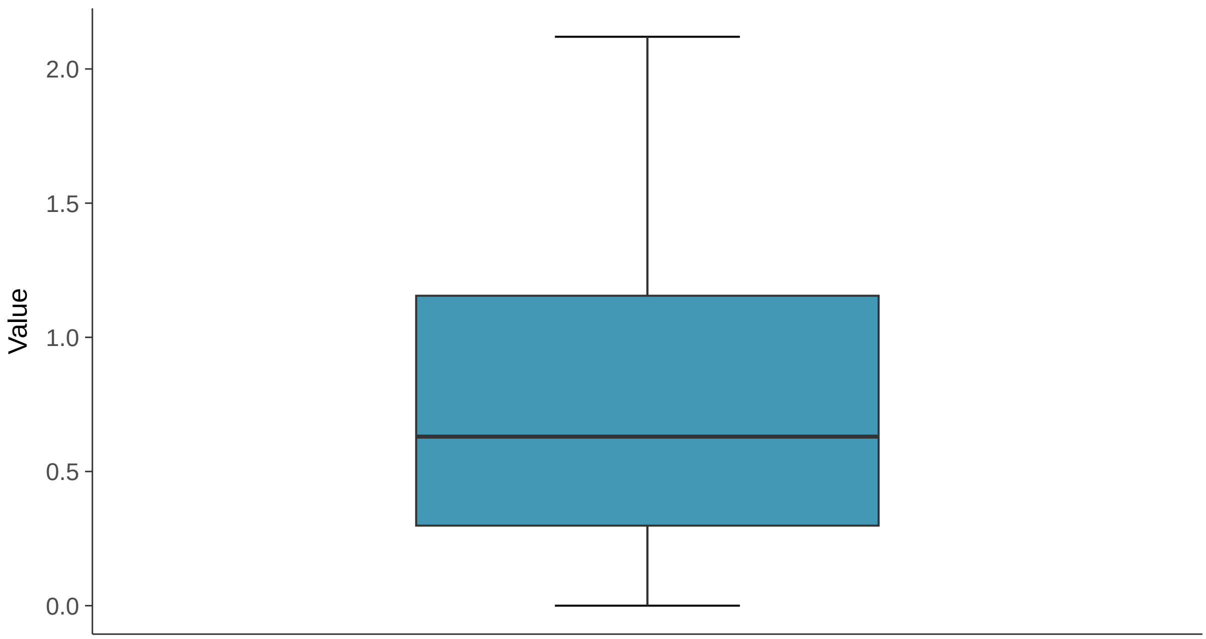
ID: 02_2_20





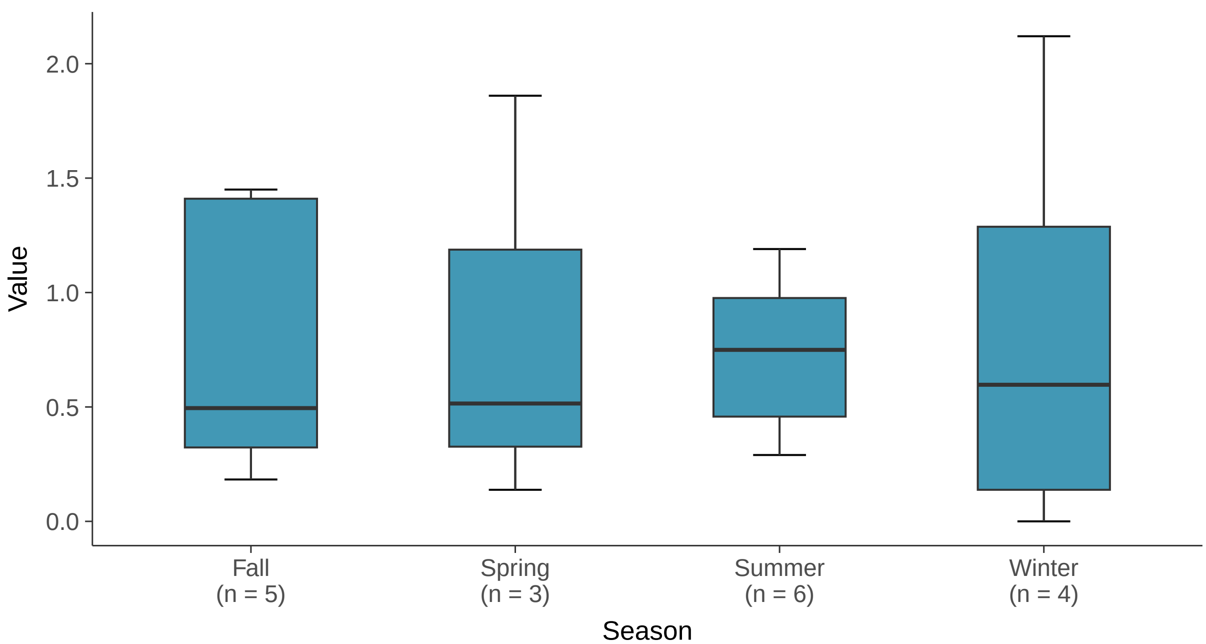
Boxplot

Radium-226/228, MW-2 (pCi/L)



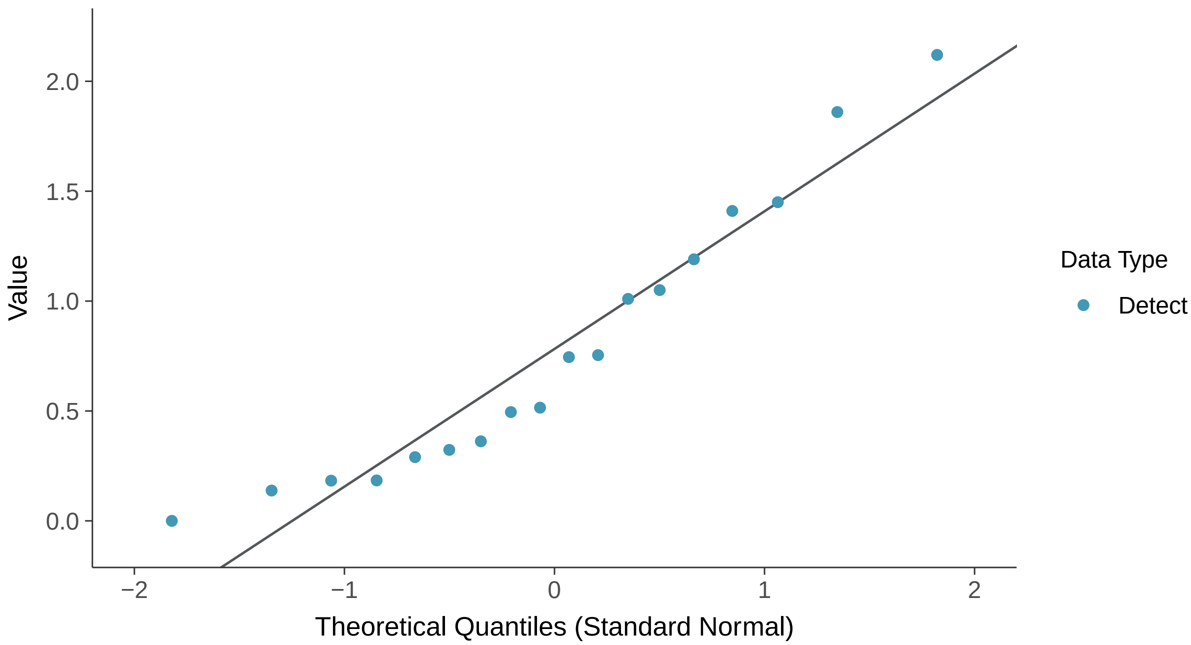
Boxplot by Season

Radium-226/228, MW-2 (pCi/L)



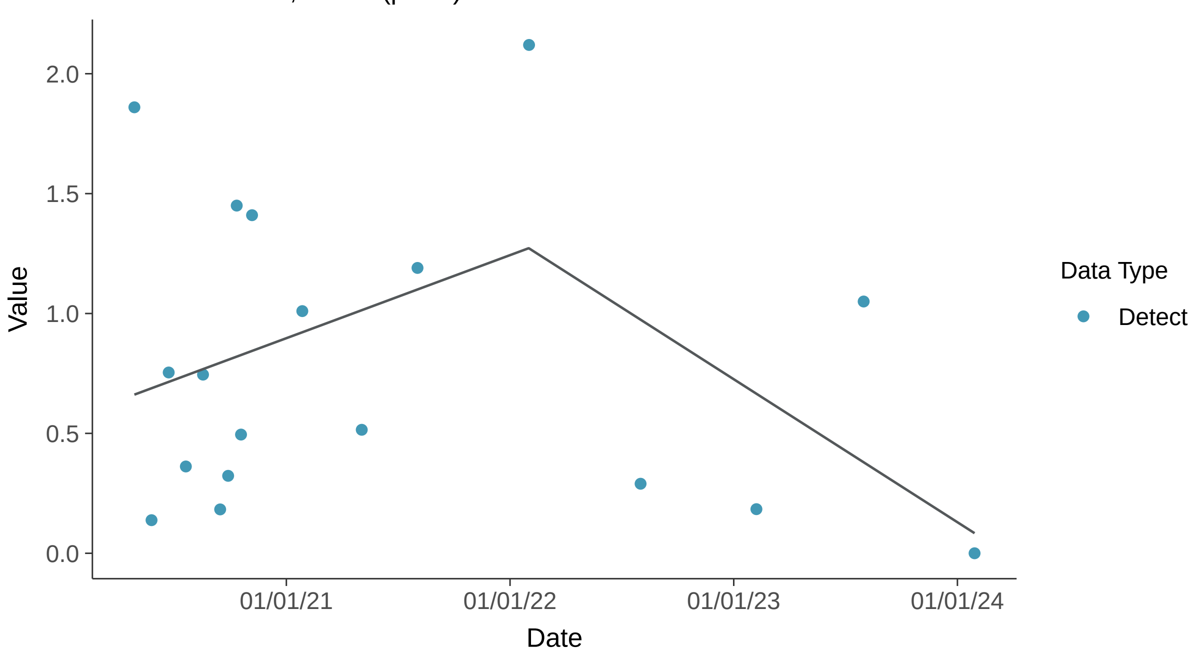
Normal Q-Q plot

Radium-226/228, MW-2 (pCi/L)



Trend Regression: Piecewise Linear-Linear

Radium-226/228, MW-2 (pCi/L)

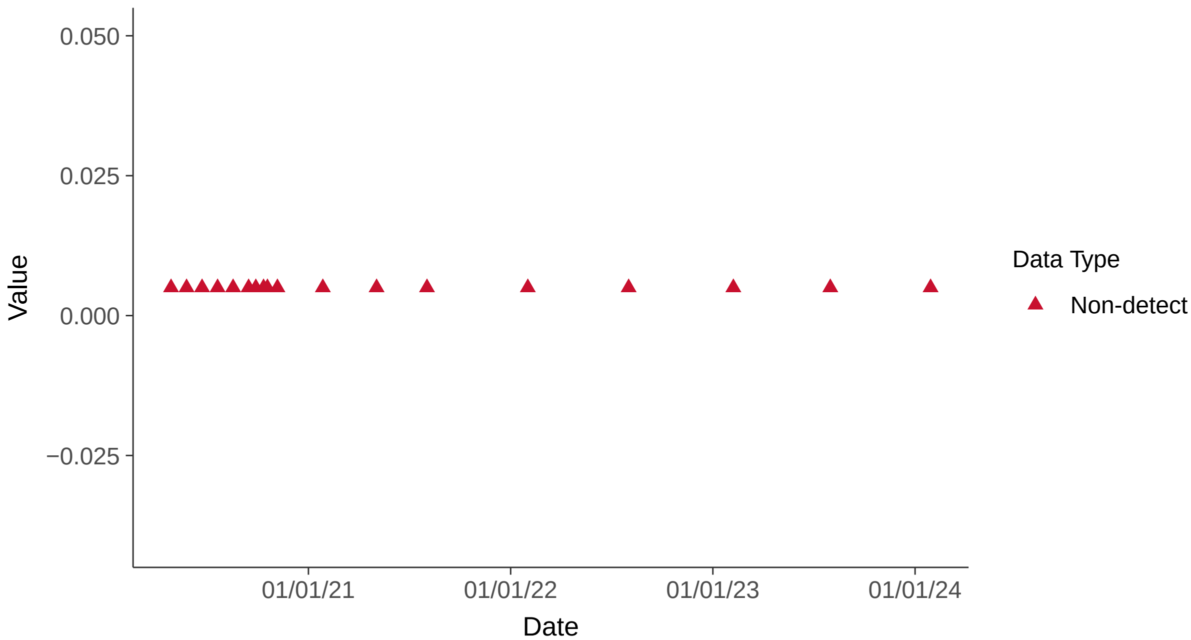


Appendix IV: Selenium, MW-2

ID: 02_2_22

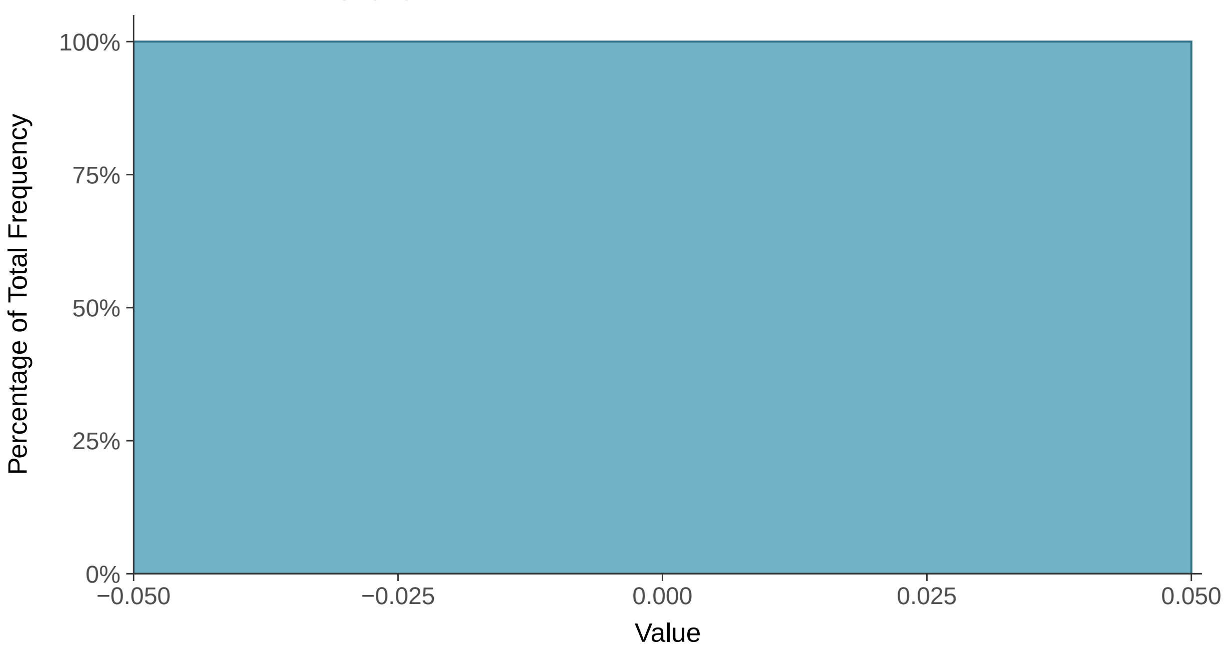
Scatter Plot

Selenium, MW-2 (mg/L)



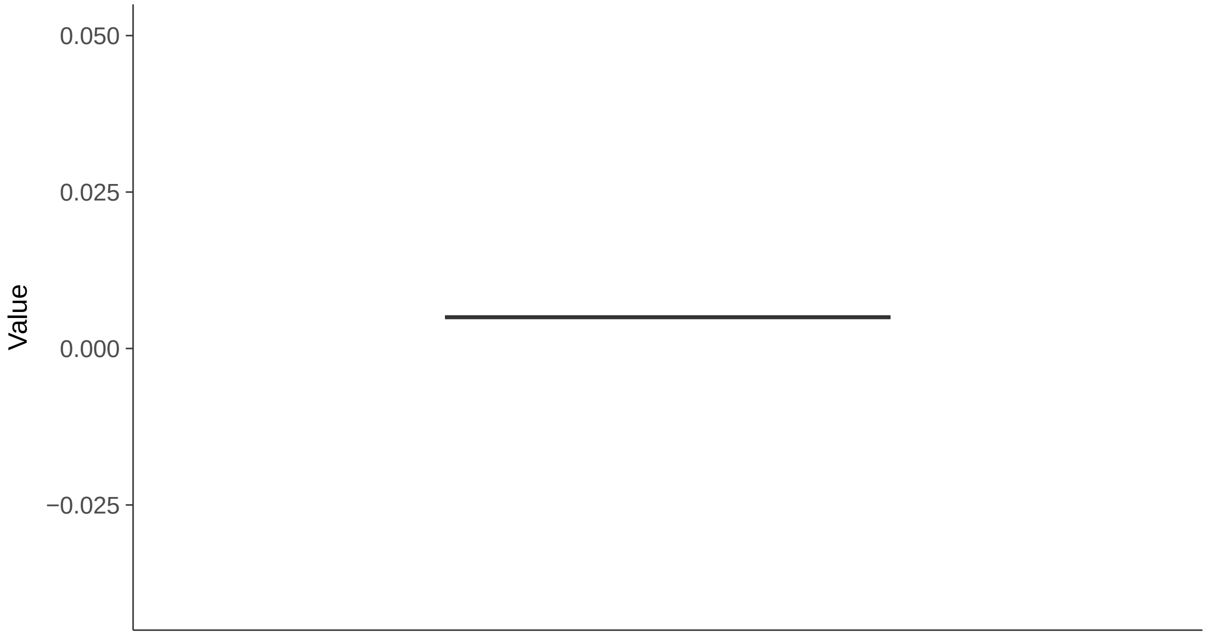
Histogram

Selenium, MW-2 (mg/L)



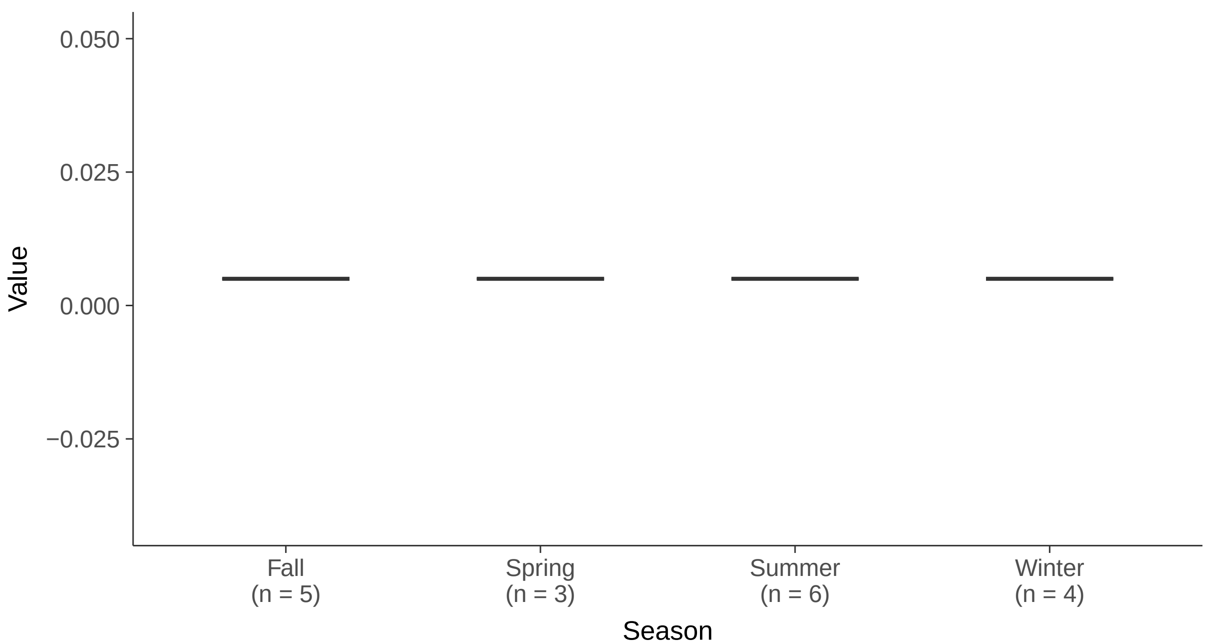
Boxplot

Selenium, MW-2 (mg/L)



Boxplot by Season

Selenium, MW-2 (mg/L)

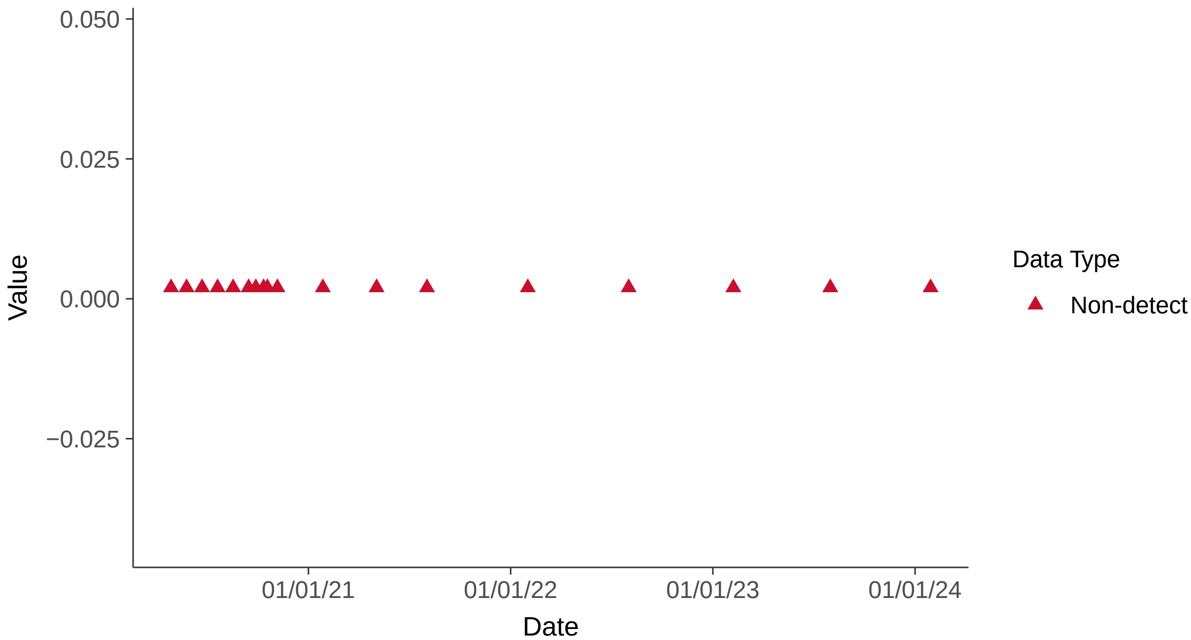


Appendix IV: Thallium, MW-2

ID: 02_2_23

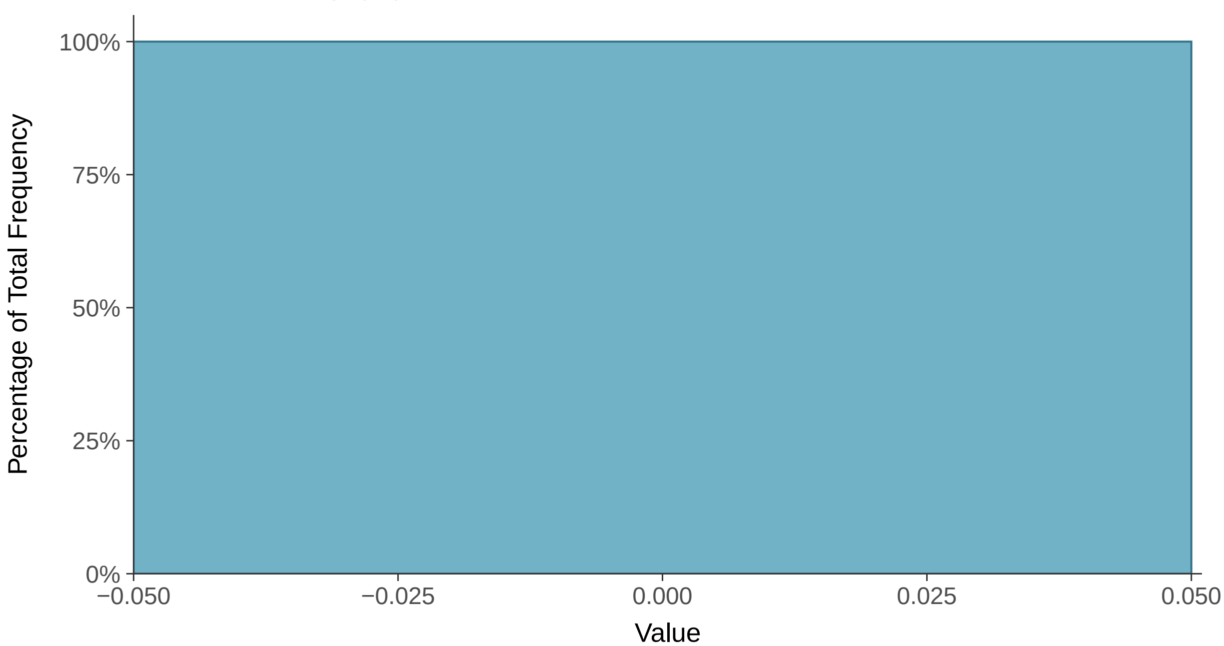
Scatter Plot

Thallium, MW-2 (mg/L)



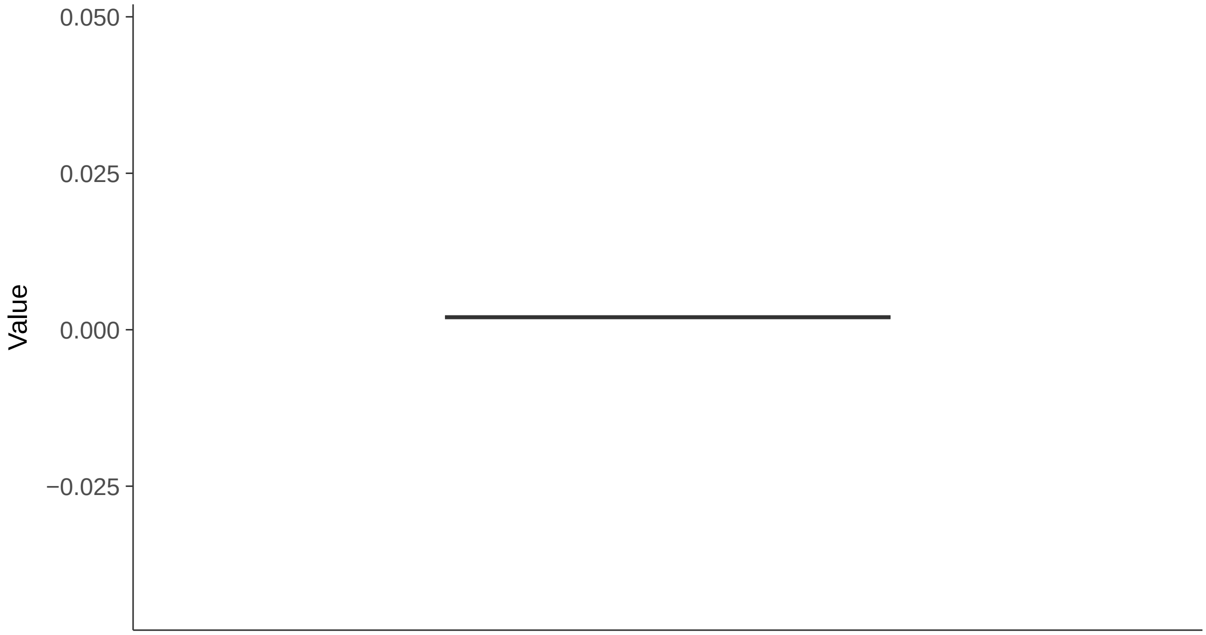
Histogram

Thallium, MW-2 (mg/L)



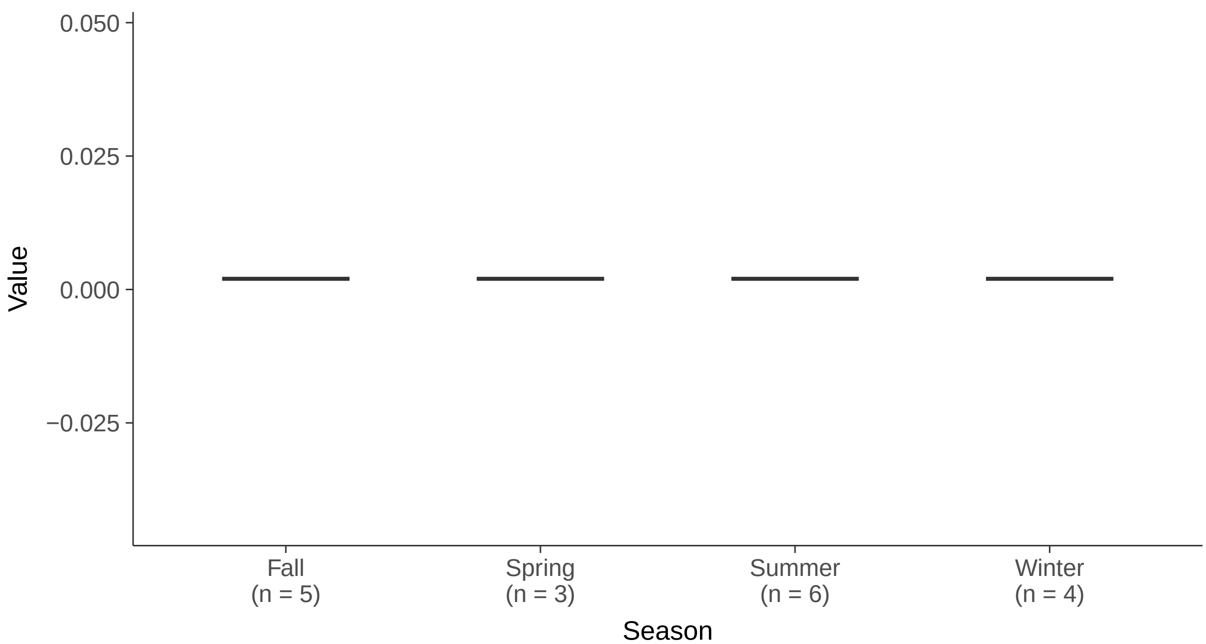
Boxplot

Thallium, MW-2 (mg/L)



Boxplot by Season

Thallium, MW-2 (mg/L)

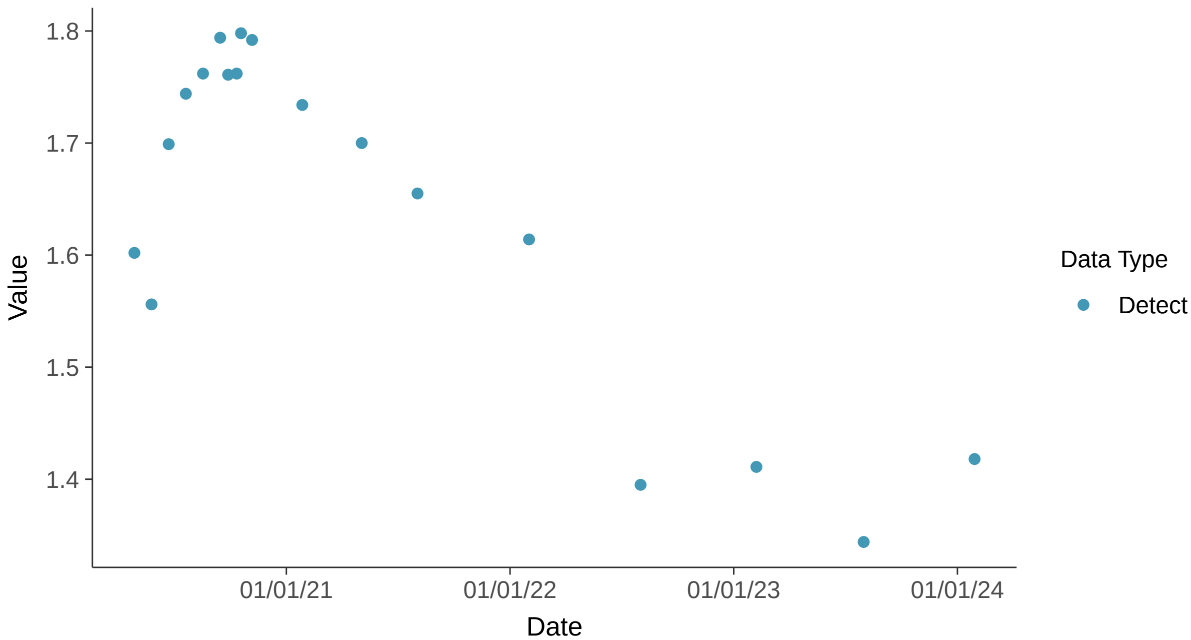


Field Parameters: Conductivity, MW-2

ID: 02_3_24

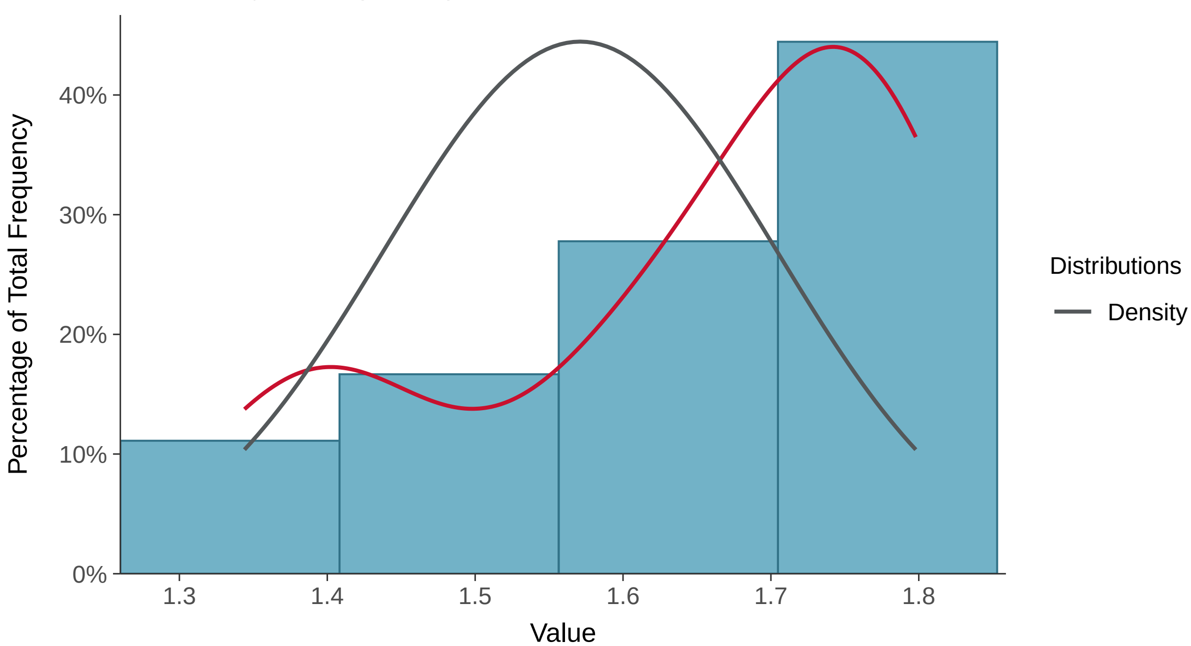
Scatter Plot

Conductivity, MW-2 (mS/cm)



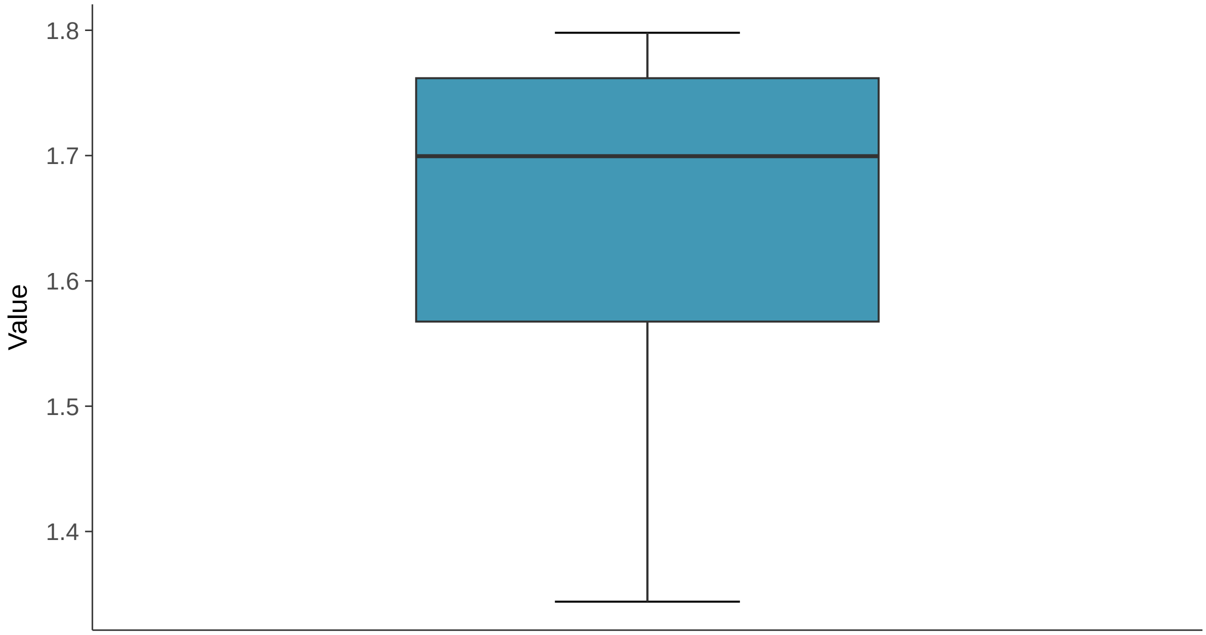
Histogram

Conductivity, MW-2 (mS/cm)



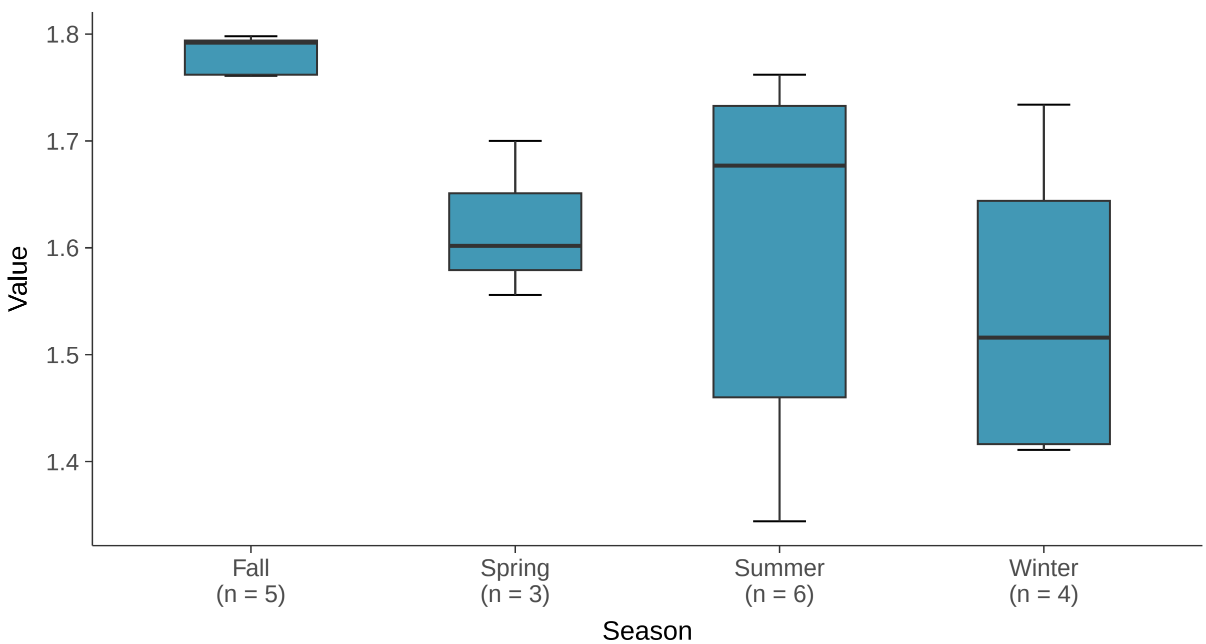
Boxplot

Conductivity, MW-2 (mS/cm)



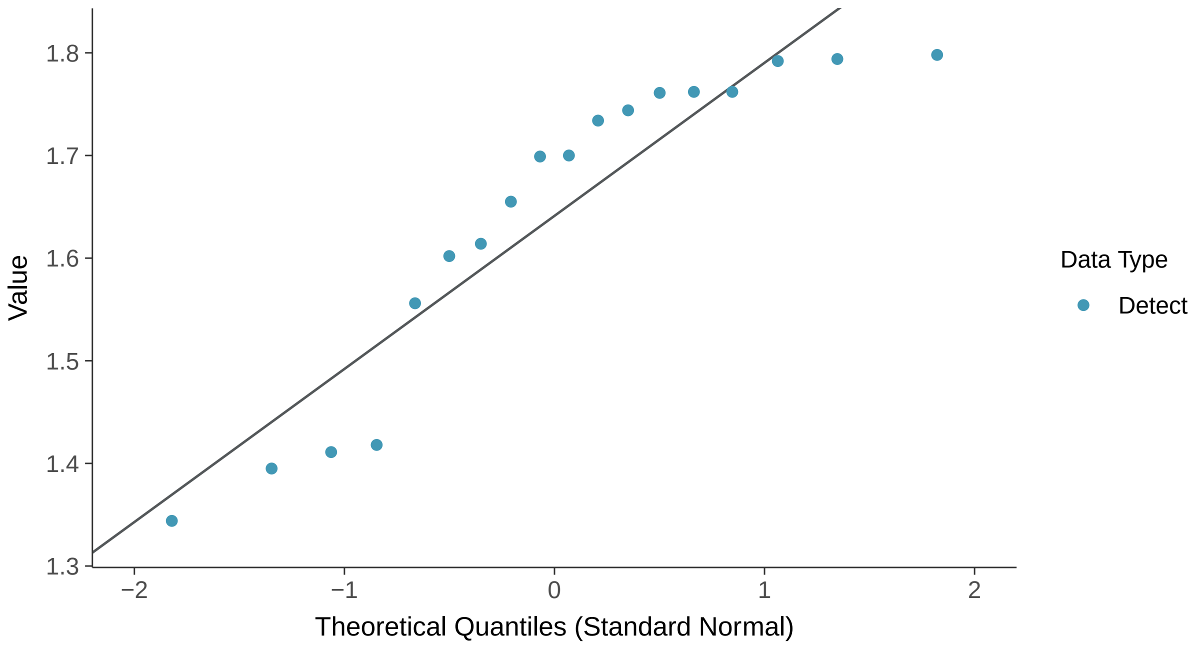
Boxplot by Season

Conductivity, MW-2 (mS/cm)



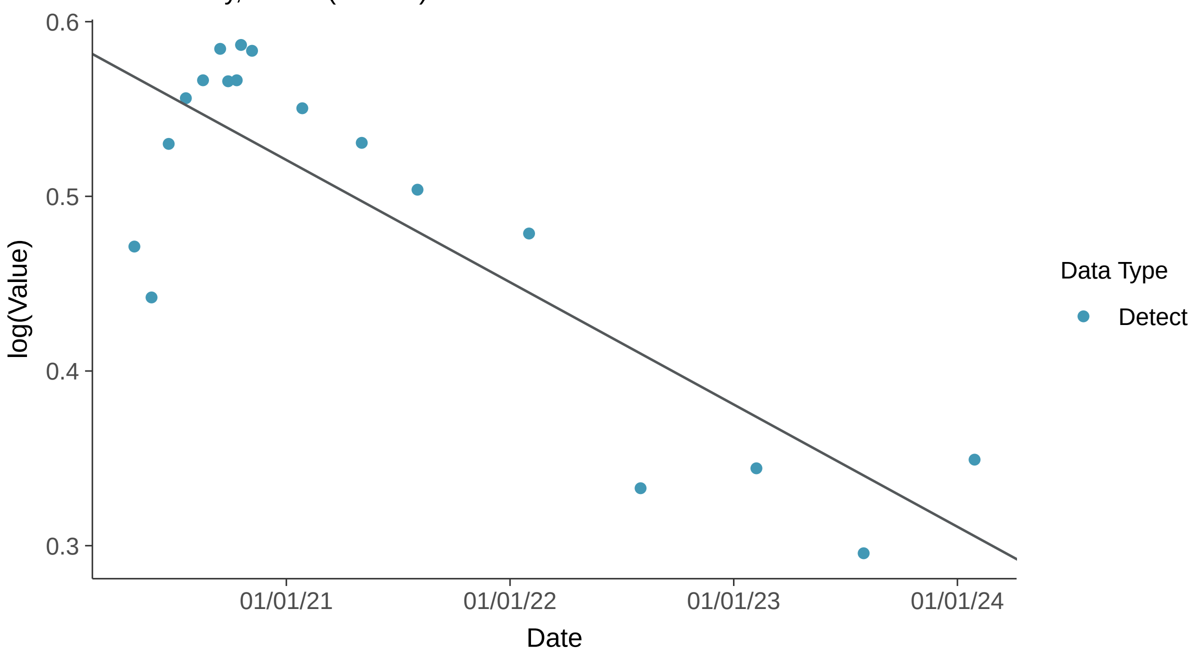
Normal Q-Q plot

Conductivity, MW-2 (mS/cm)



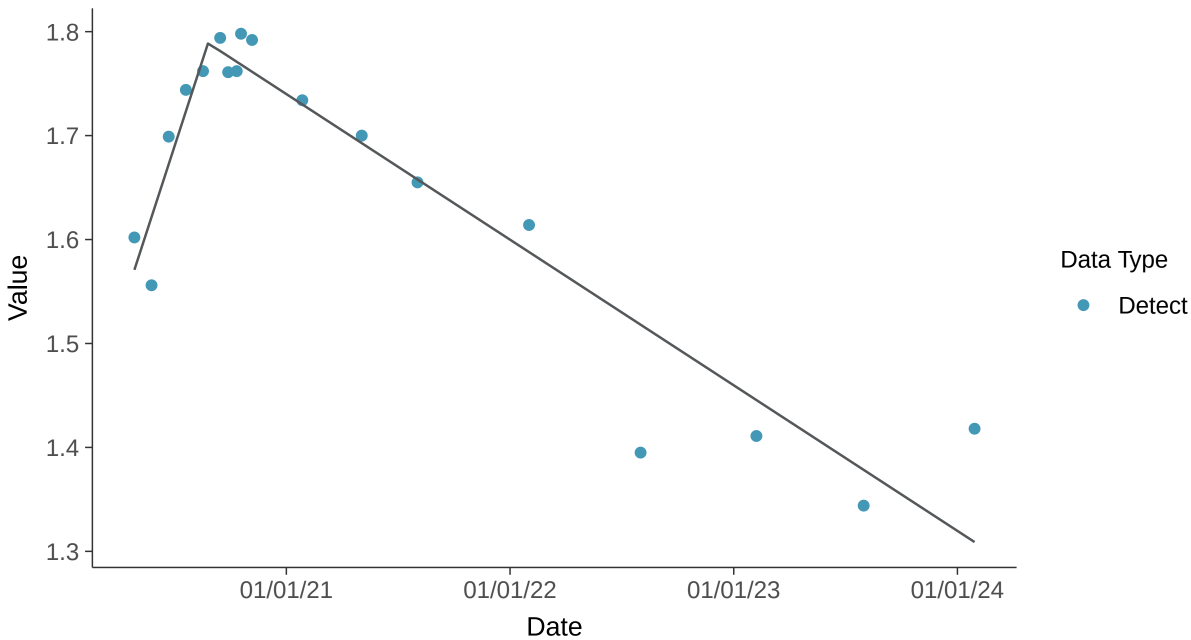
Trend Regression: Lognormal MLE

Conductivity, MW-2 (mS/cm)



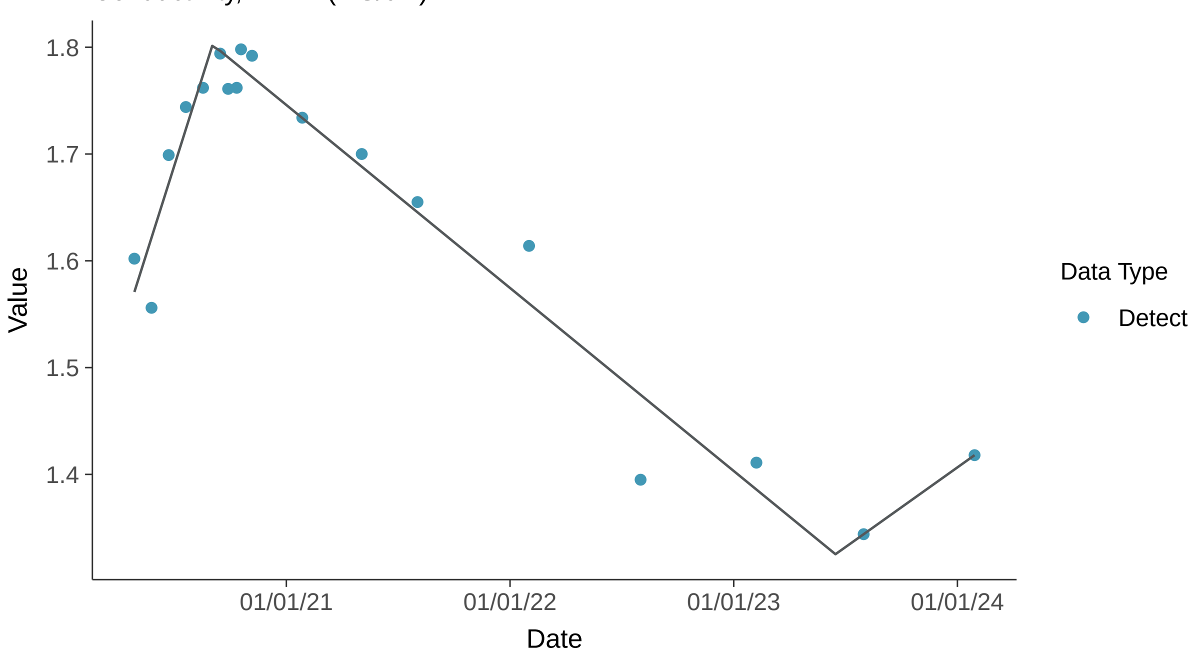
Trend Regression: Piecewise Linear-Linear

Conductivity, MW-2 (mS/cm)



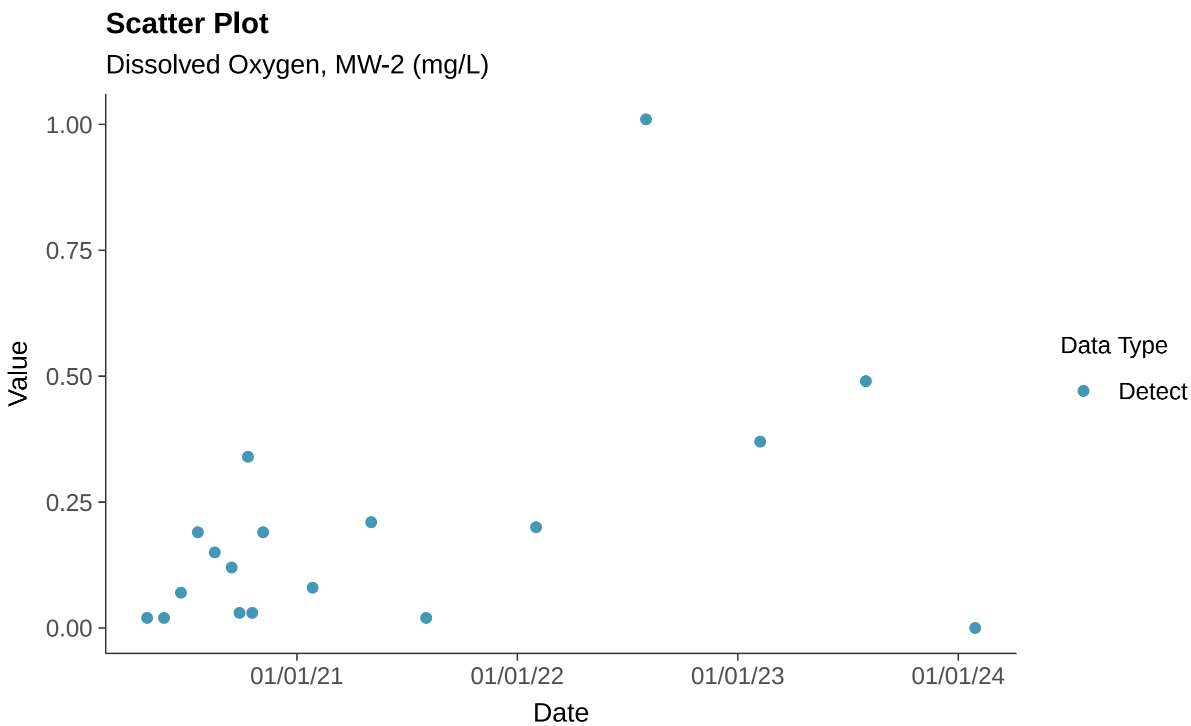
Trend Regression: Piecewise Linear-Linear-Linear

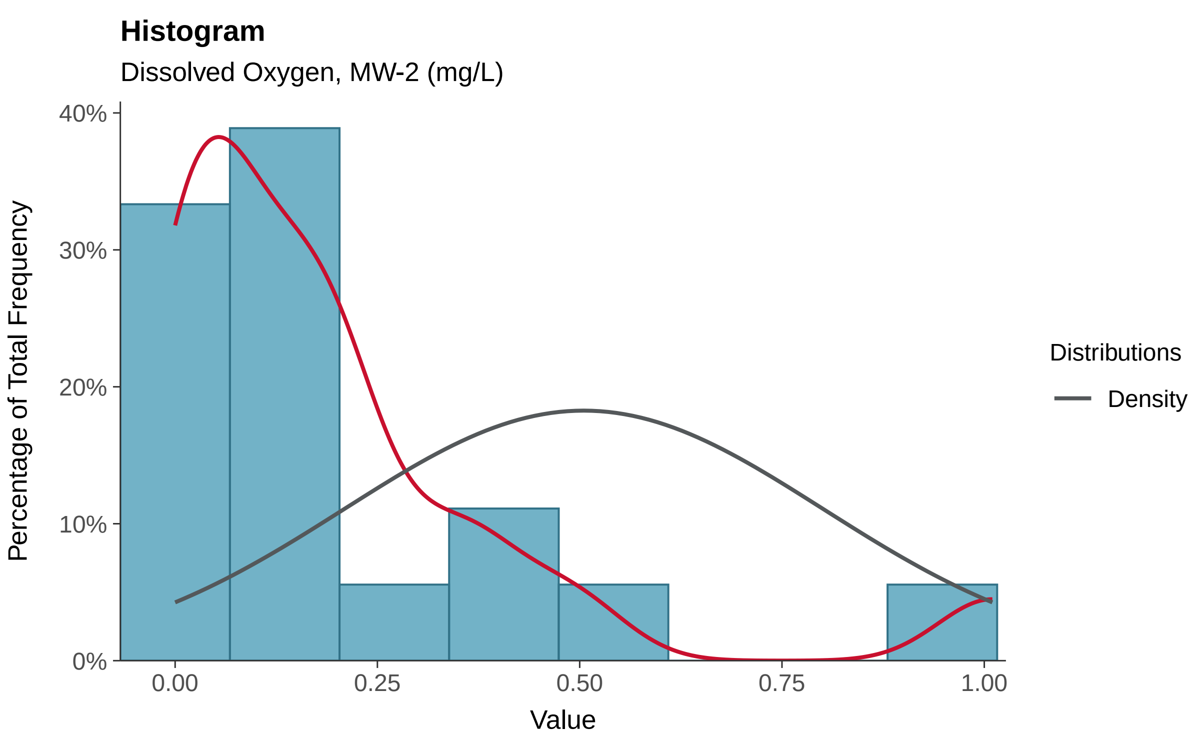
Conductivity, MW-2 (mS/cm)



Field Parameters: Dissolved Oxygen, MW-2

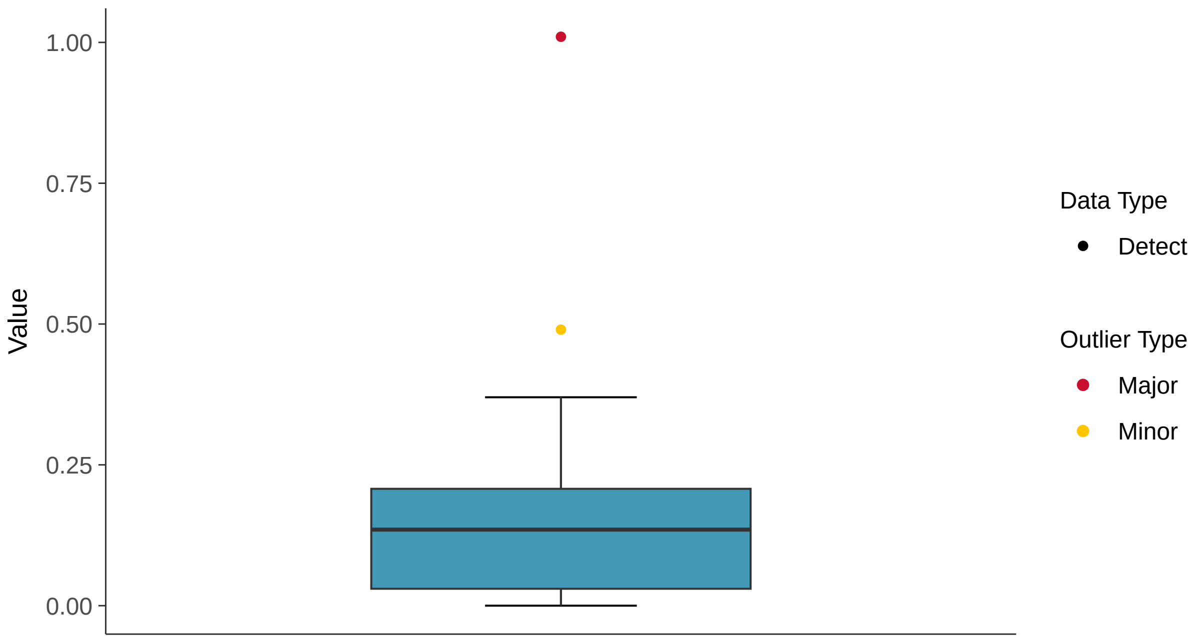
ID: 02_3_25





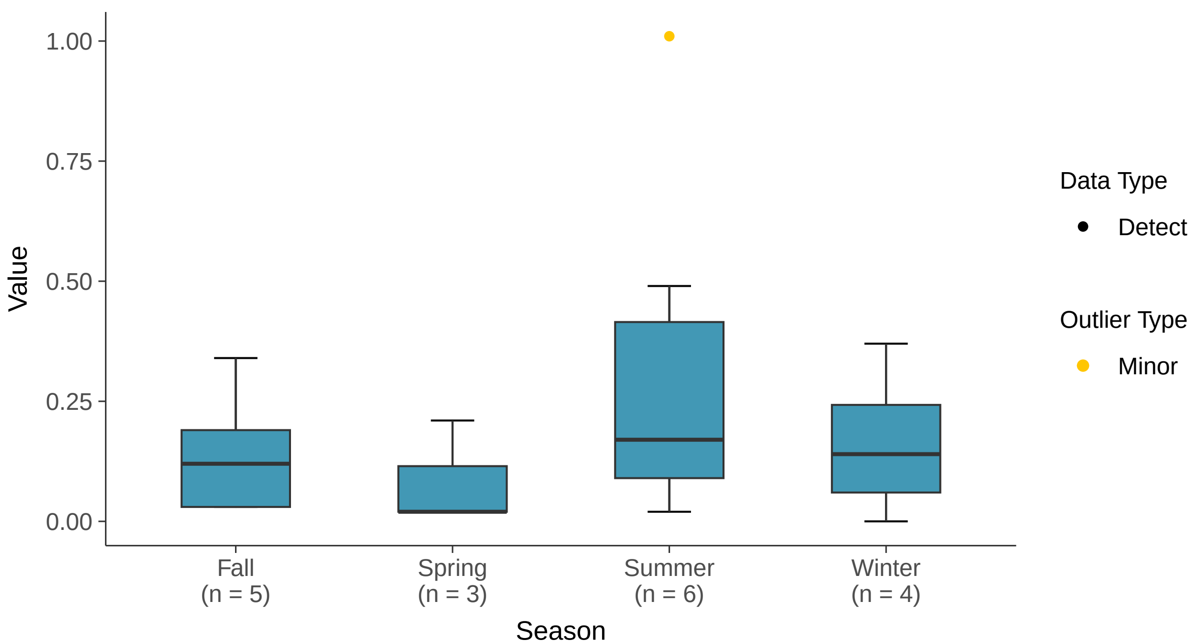
Boxplot

Dissolved Oxygen, MW-2 (mg/L)



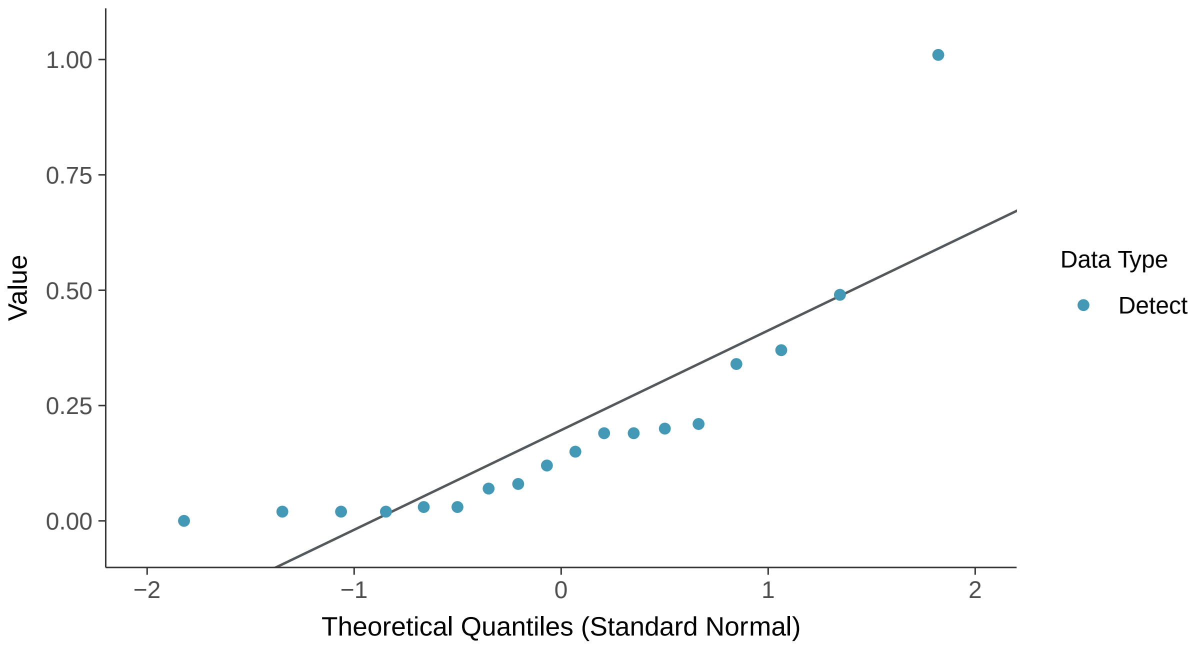
Boxplot by Season

Dissolved Oxygen, MW-2 (mg/L)



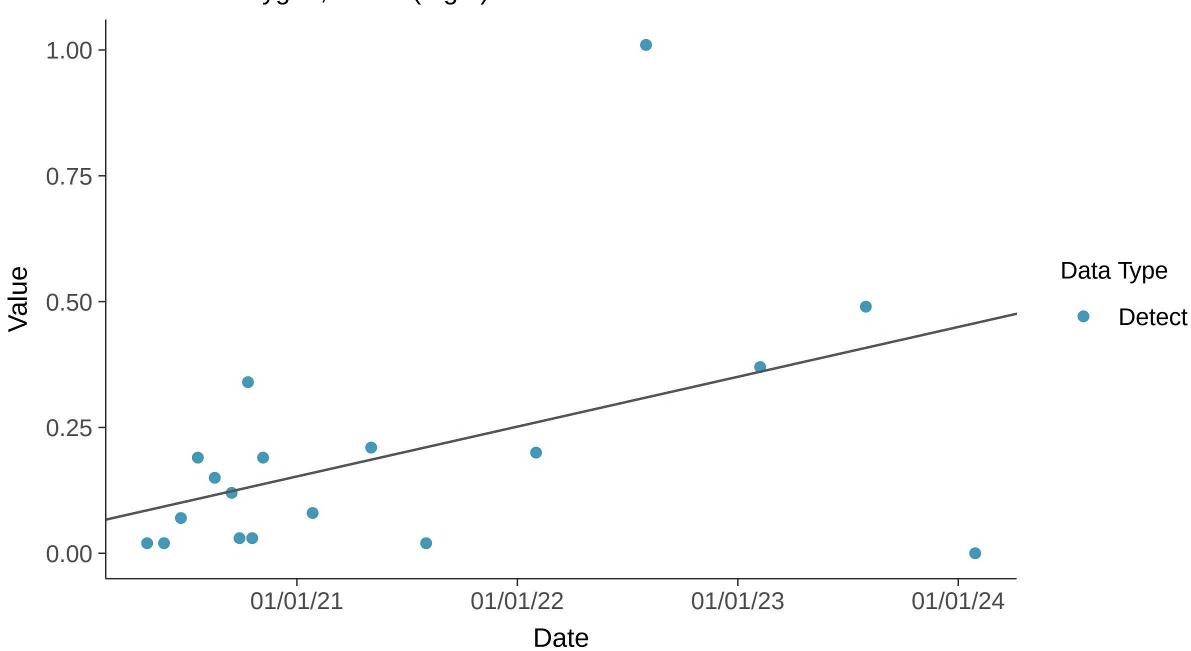
Normal Q-Q plot

Dissolved Oxygen, MW-2 (mg/L)



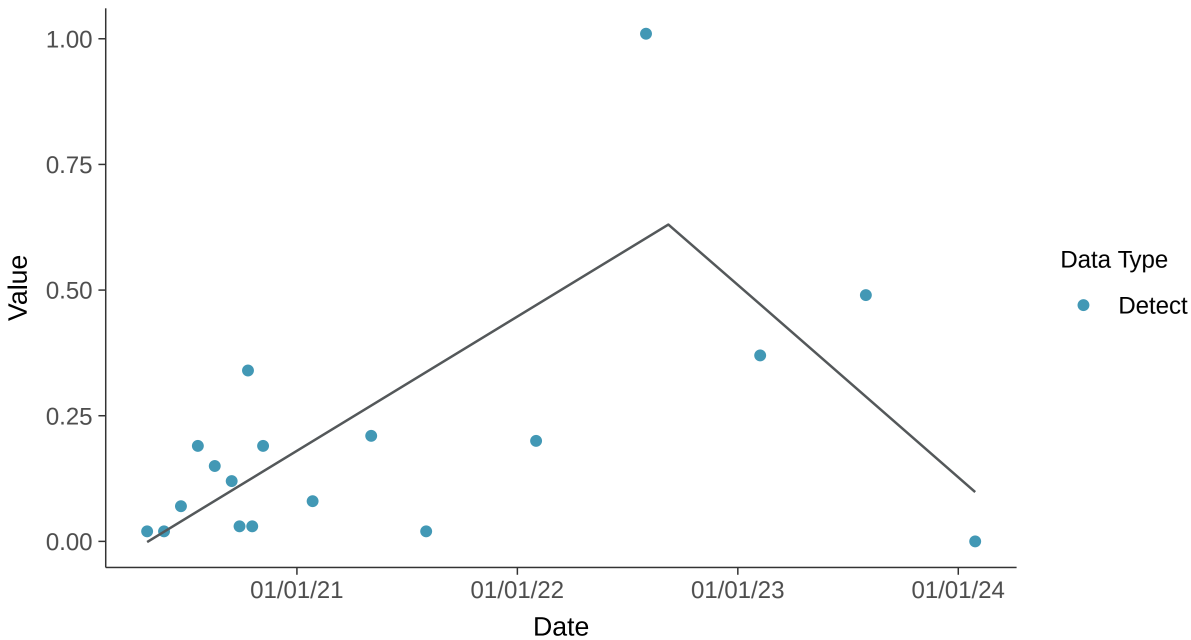
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Dissolved Oxygen, MW-2 (mg/L)



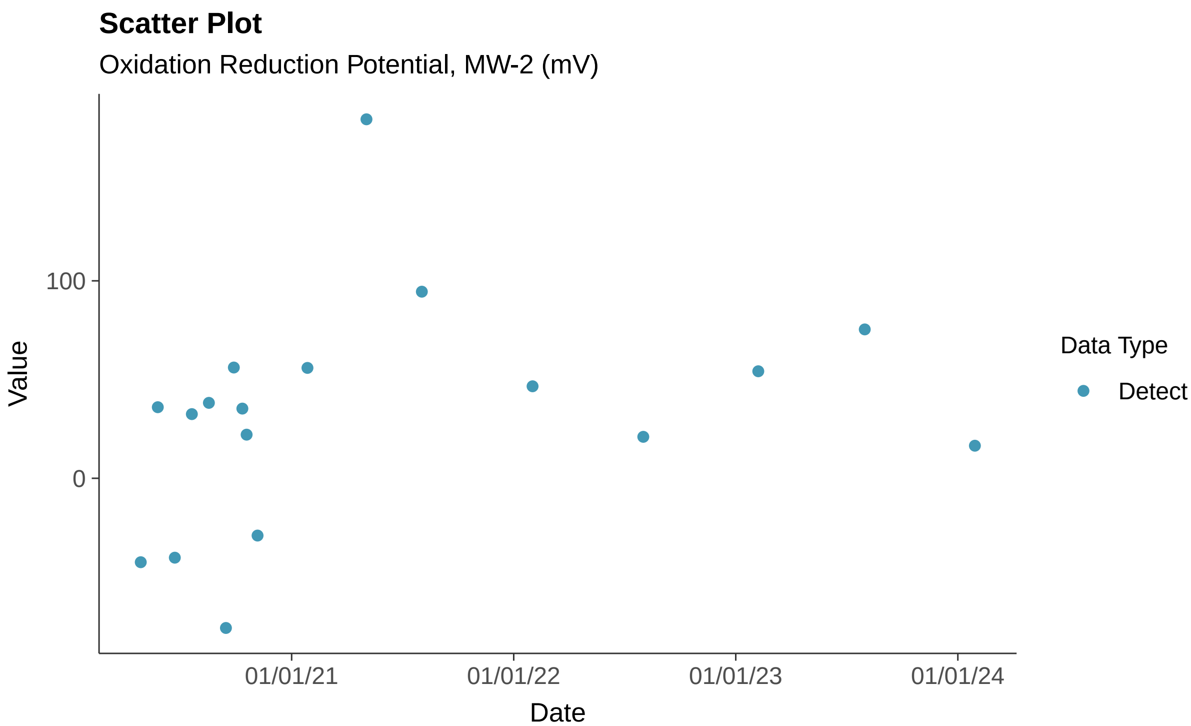
Trend Regression: Piecewise Linear-Linear

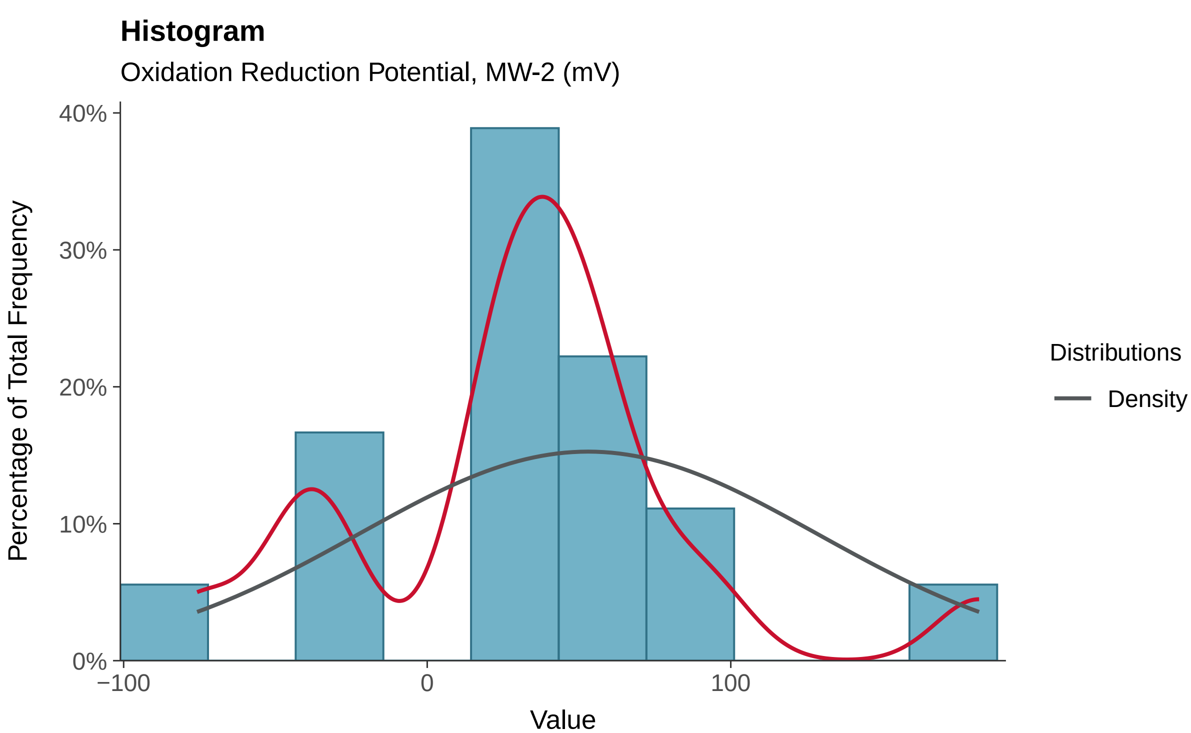
Dissolved Oxygen, MW-2 (mg/L)



Field Parameters: Oxidation Reduction Potential, MW-2

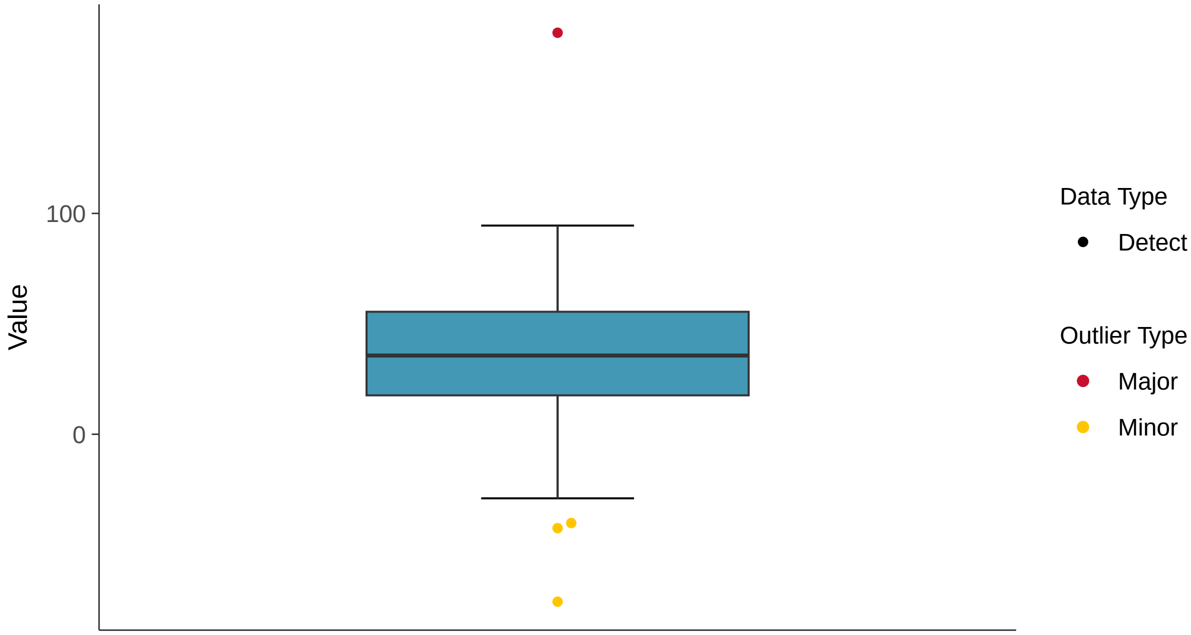
ID: 02_3_26





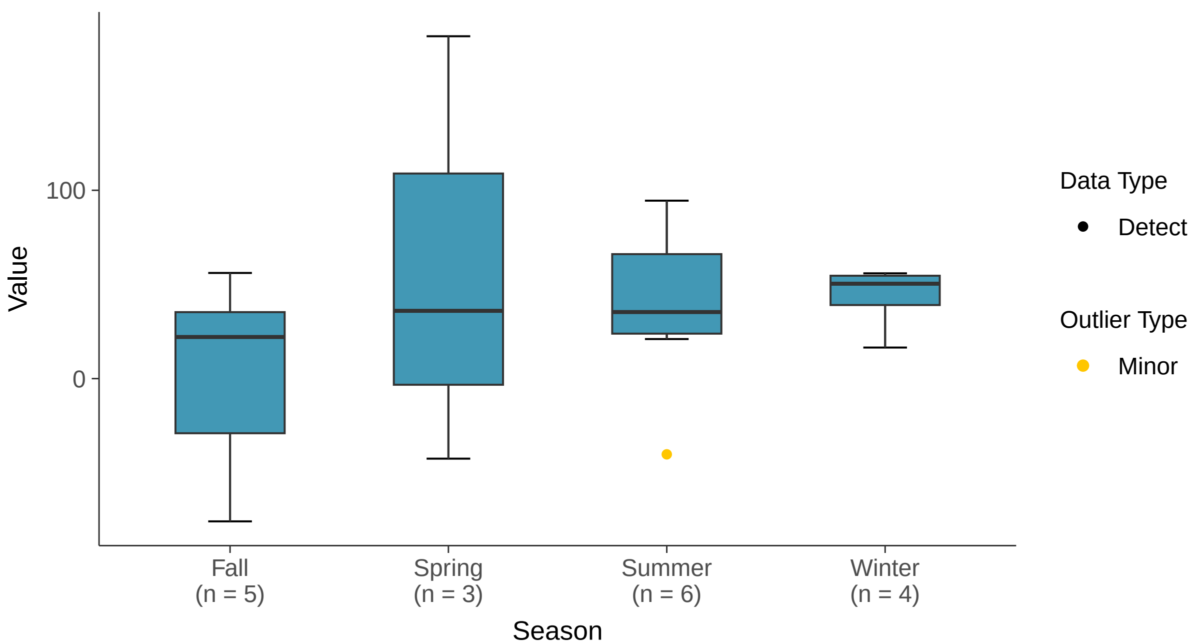
Boxplot

Oxidation Reduction Potential, MW-2 (mV)



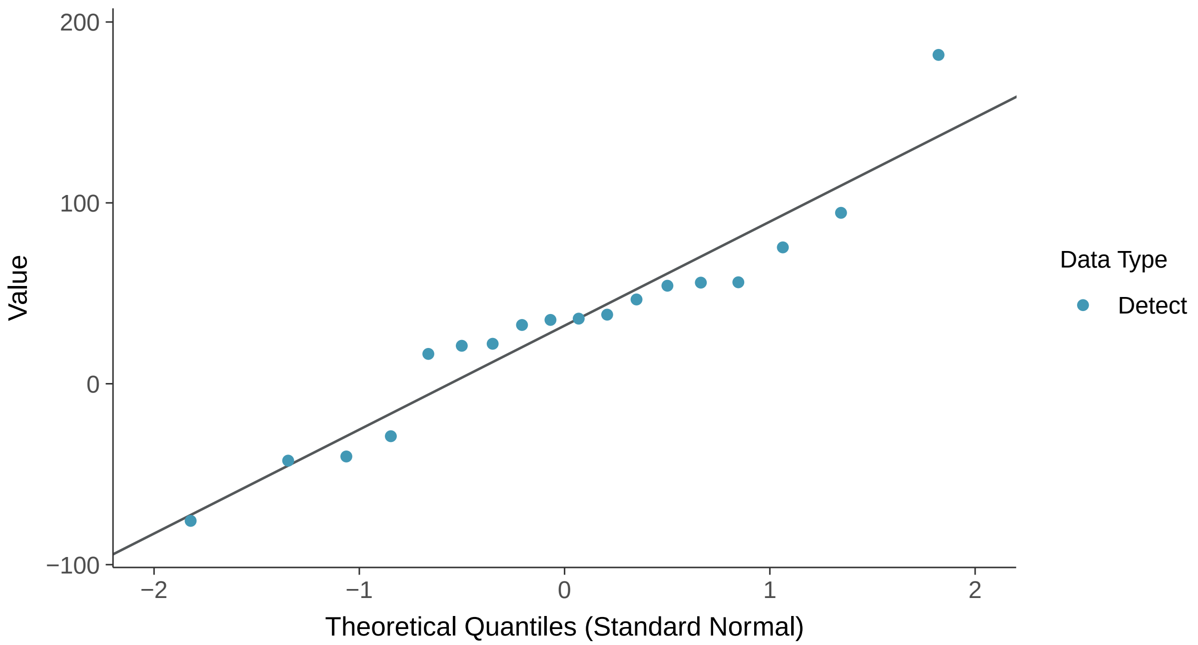
Boxplot by Season

Oxidation Reduction Potential, MW-2 (mV)



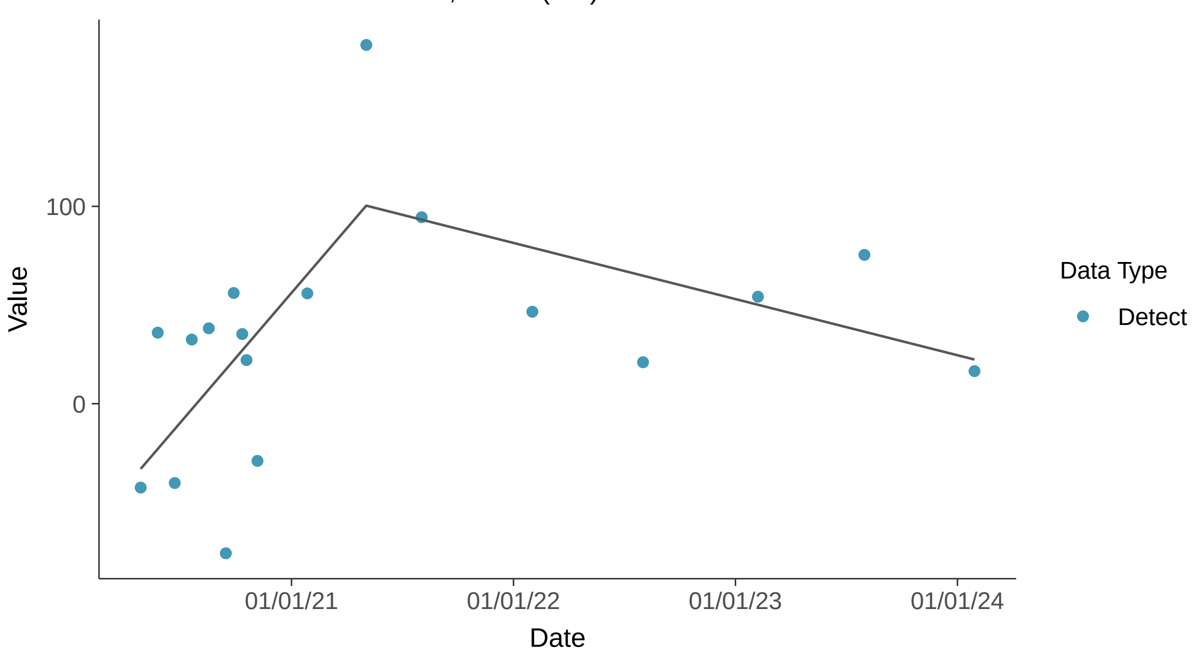
Normal Q-Q plot

Oxidation Reduction Potential, MW-2 (mV)



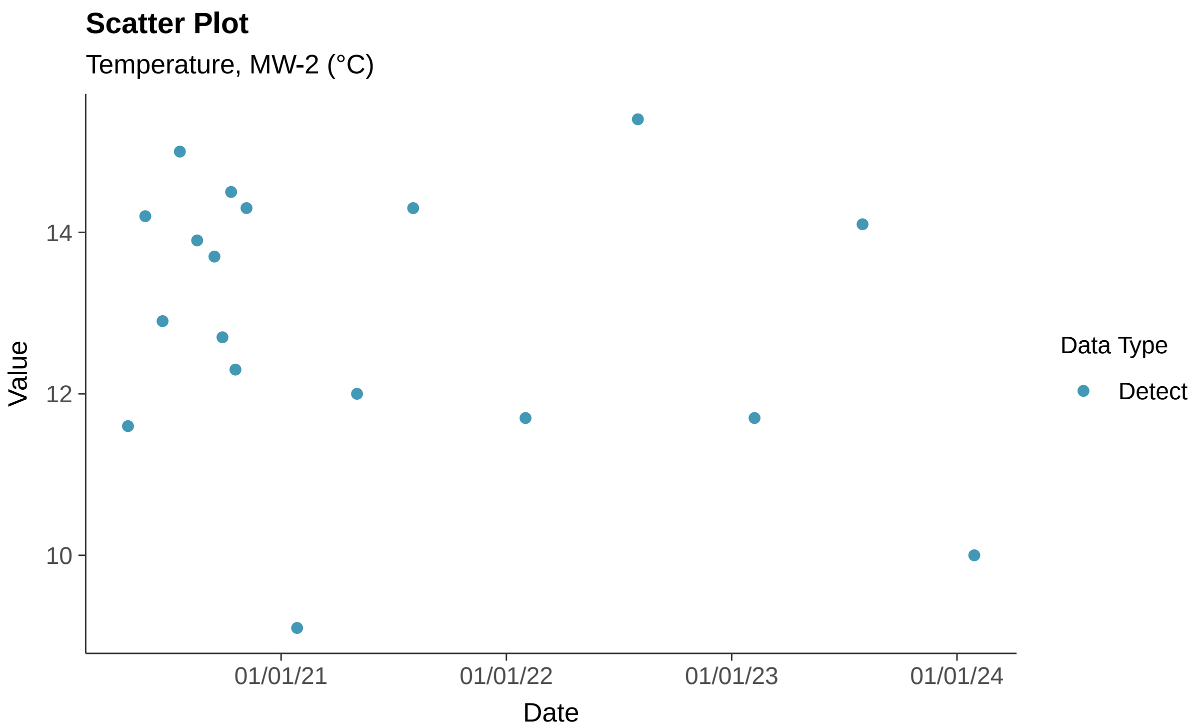
Trend Regression: Piecewise Linear-Linear

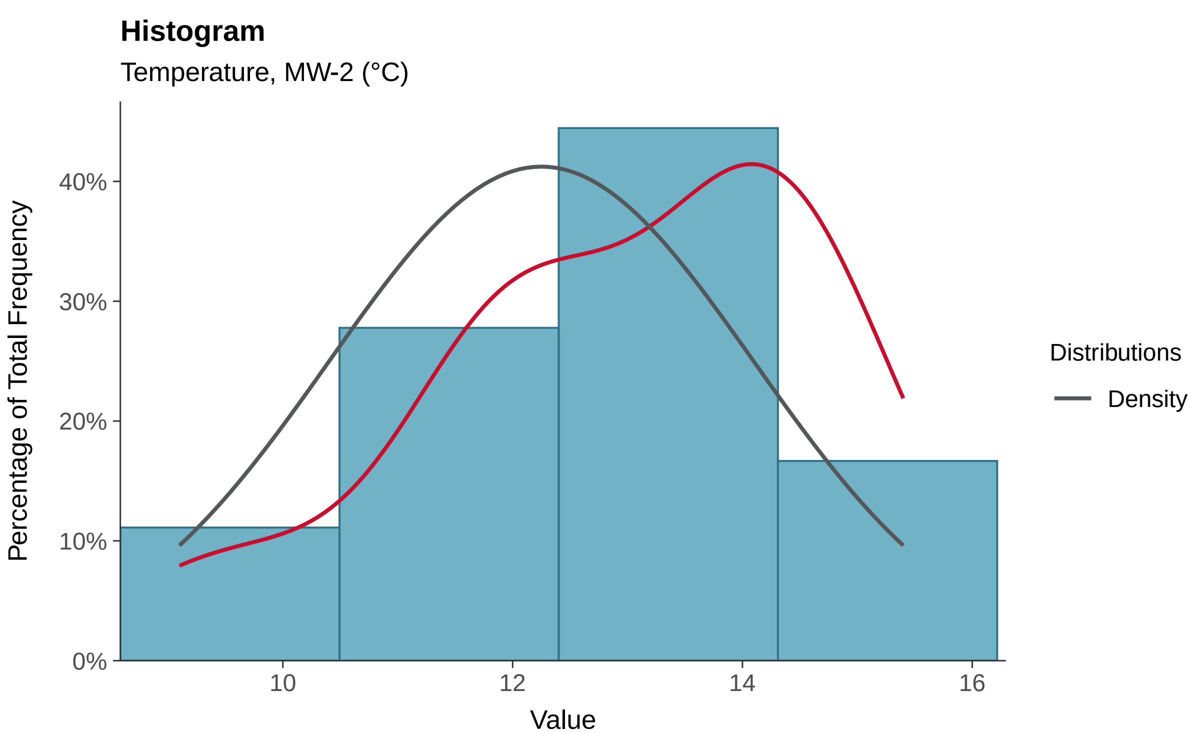
Oxidation Reduction Potential, MW-2 (mV)



Field Parameters: Temperature, MW-2

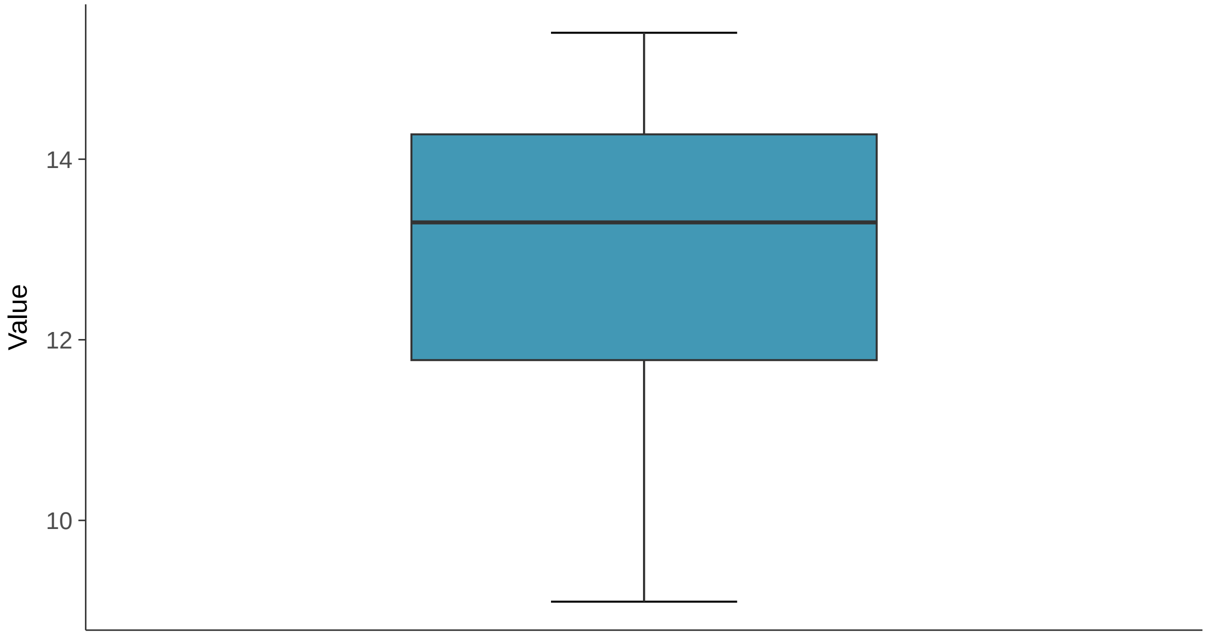
ID: 02_3_27





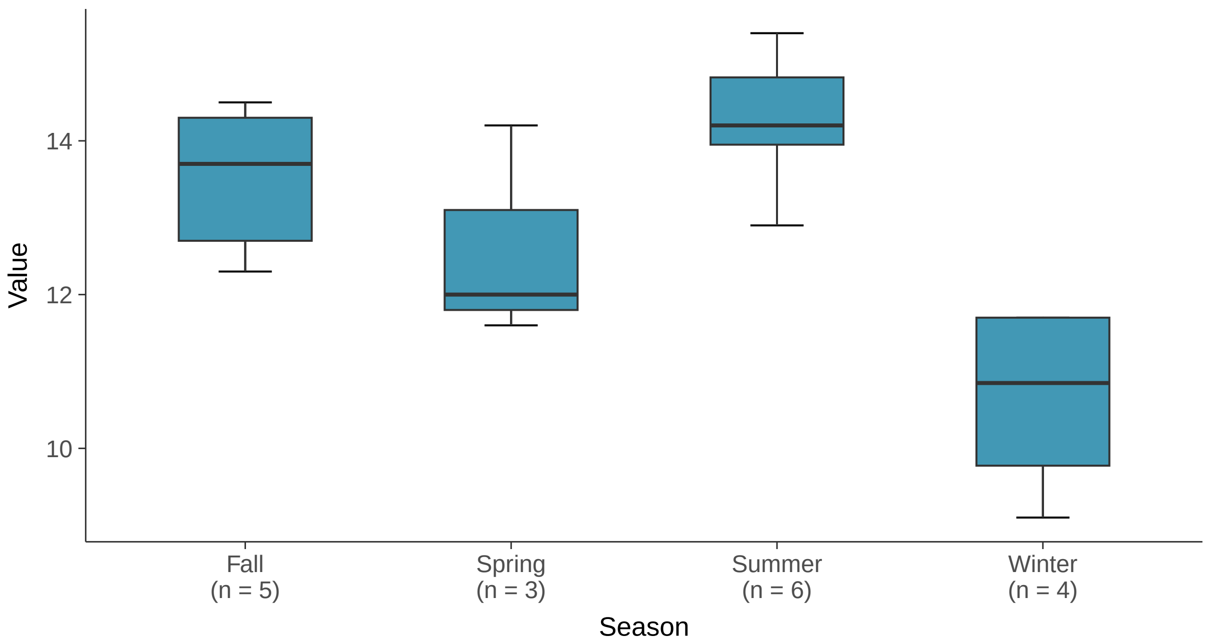
Boxplot

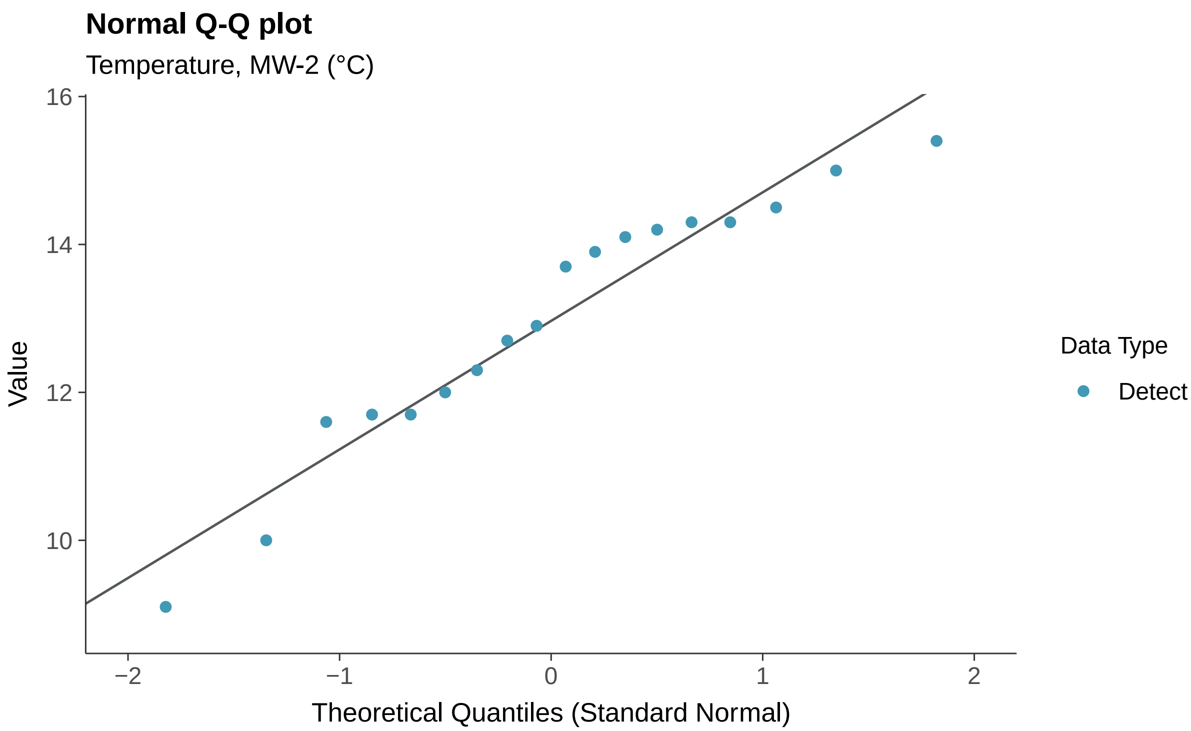
Temperature, MW-2 (°C)

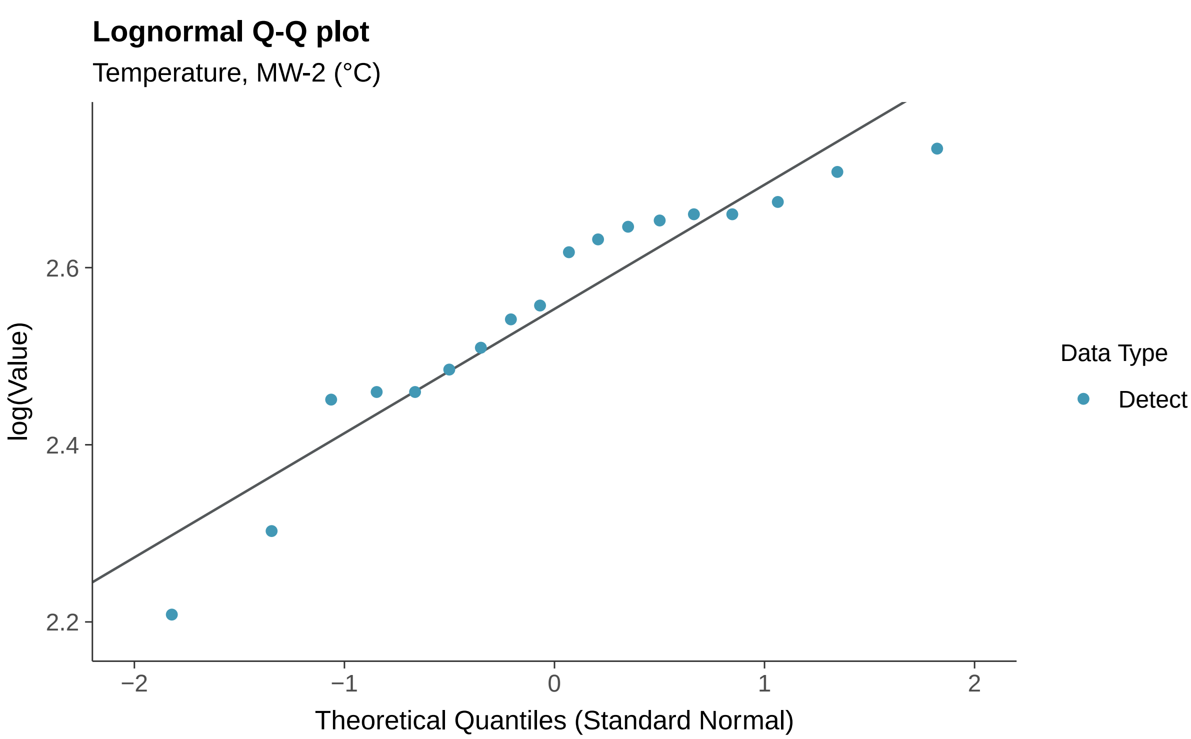


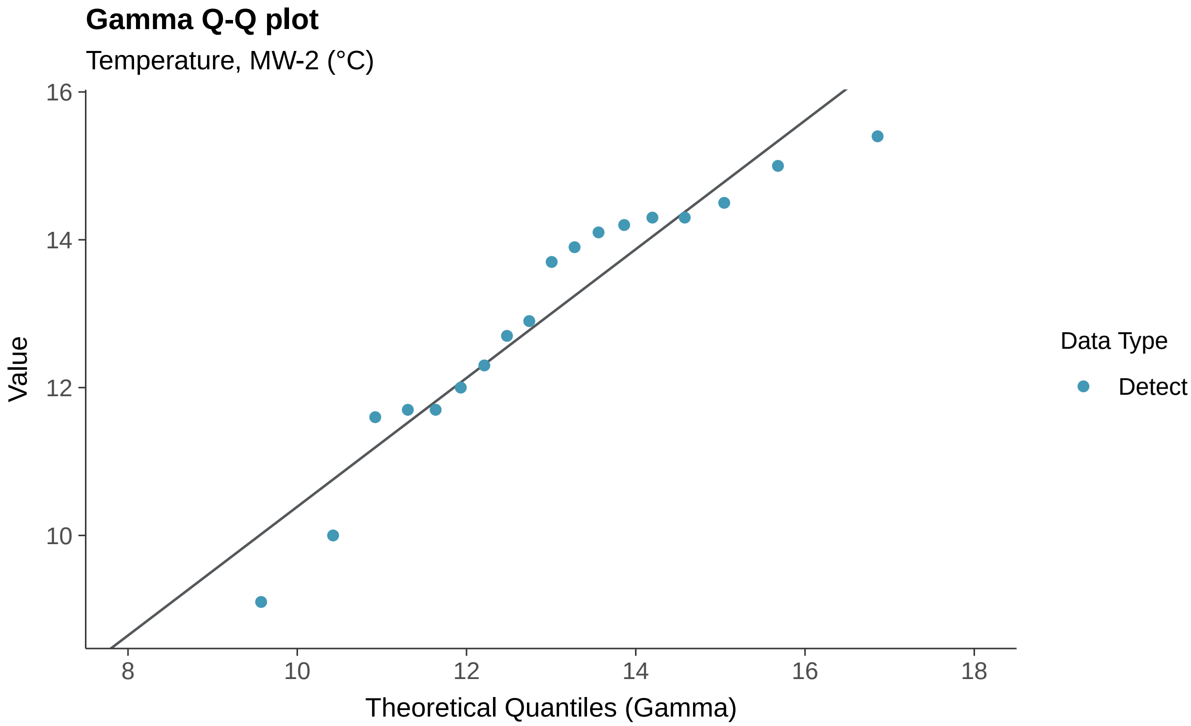
Boxplot by Season

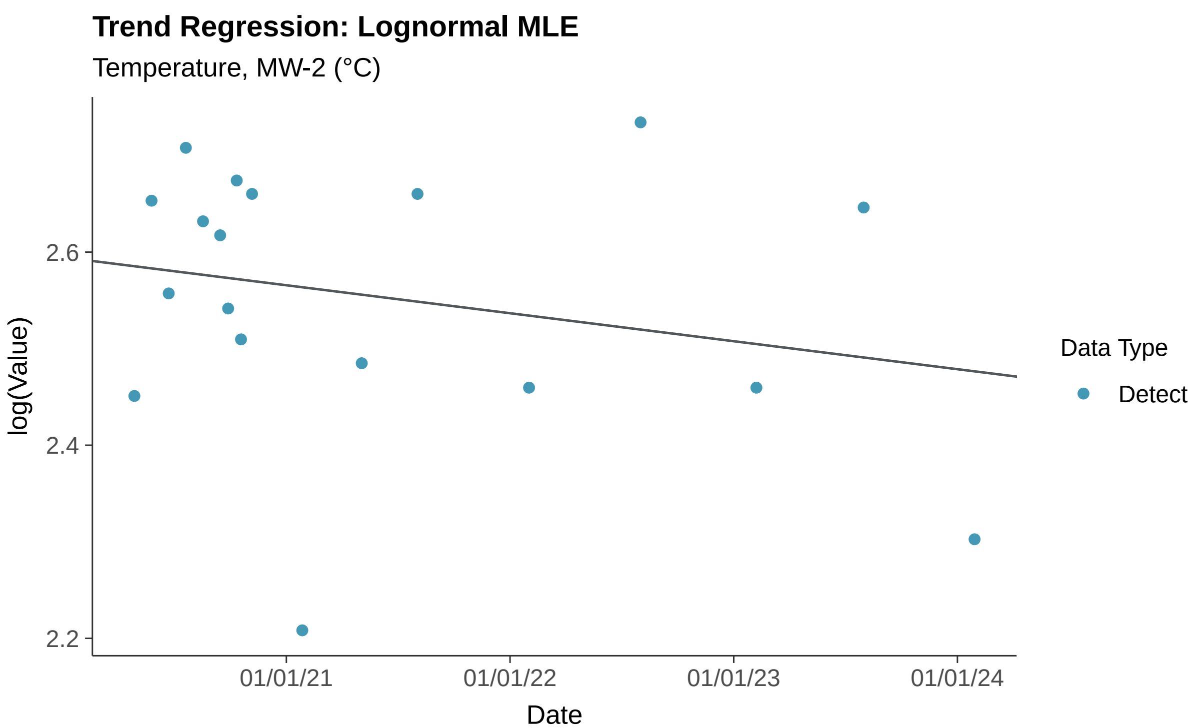
Temperature, MW-2 (°C)




Normal Q-Q plot
Temperature, MW-2 (°C)
Value
16
14
12
10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

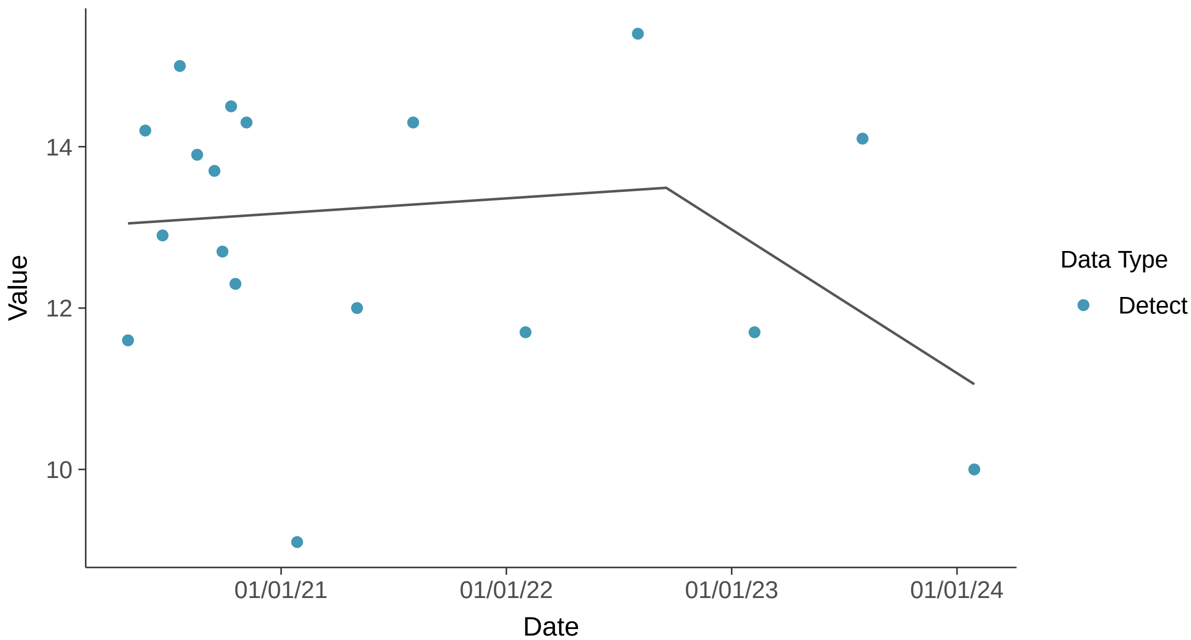

Lognormal Q-Q plot
Temperature, MW-2 (°C)
log(Value)
2.6
2.4
2.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Temperature, MW-2 (°C)
Value
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Temperature, MW-2 (°C)
log(Value)
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Temperature, MW-2 (°C)

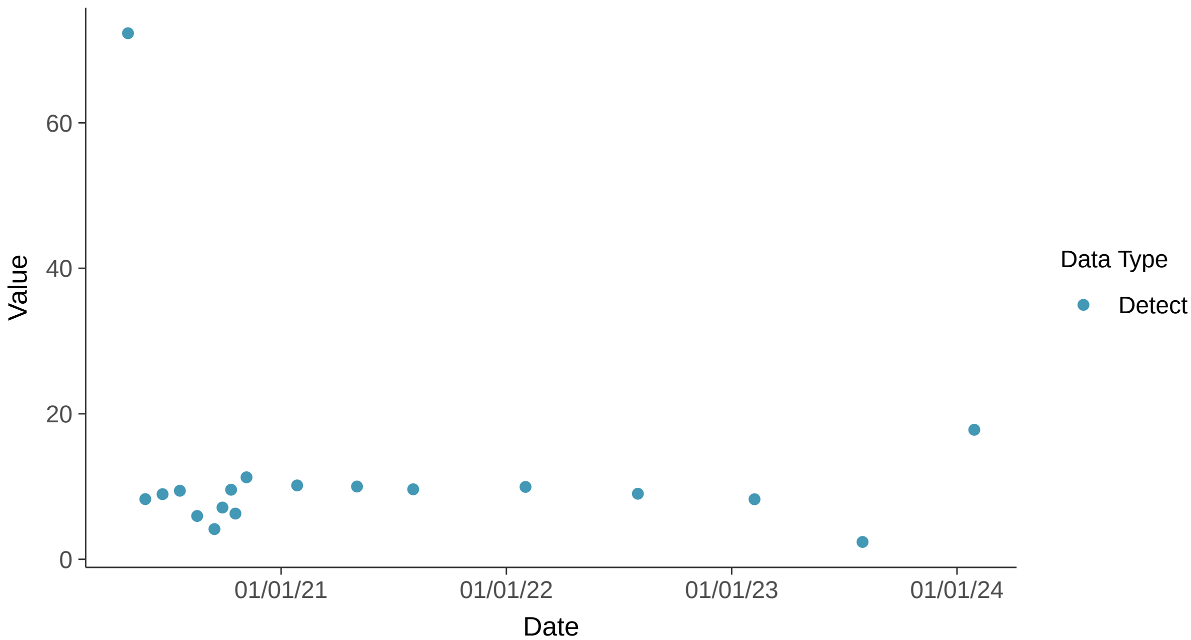


Field Parameters: Turbidity, MW-2

ID: 02_3_28

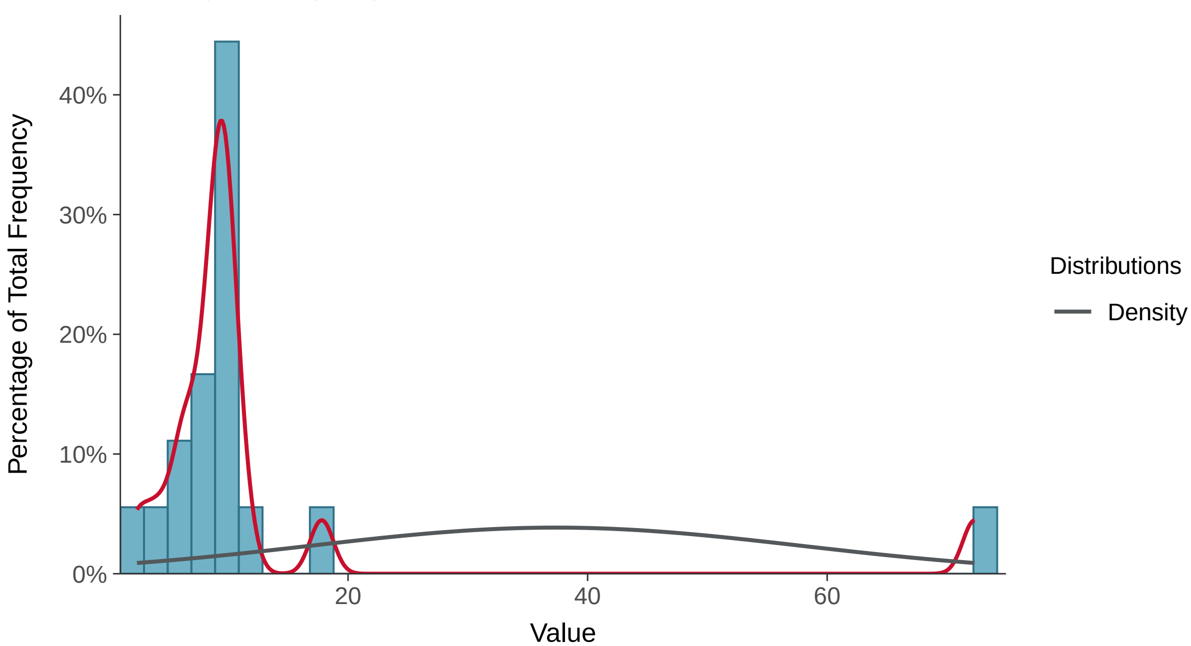
Scatter Plot

Turbidity, MW-2 (NTU)



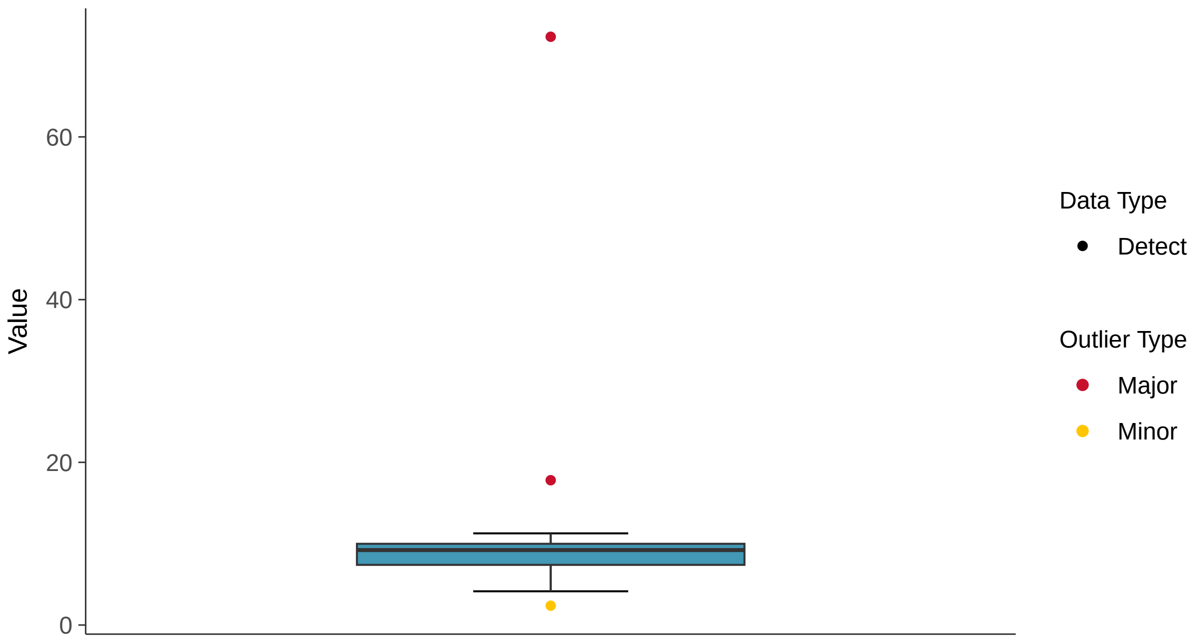
Histogram

Turbidity, MW-2 (NTU)



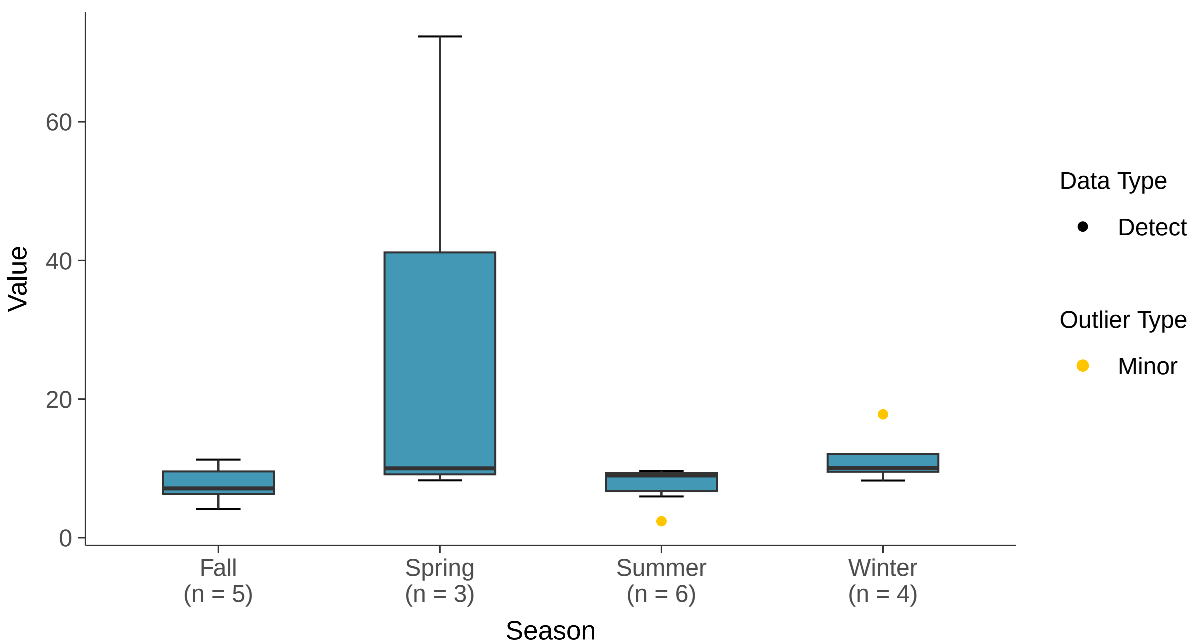
Boxplot

Turbidity, MW-2 (NTU)



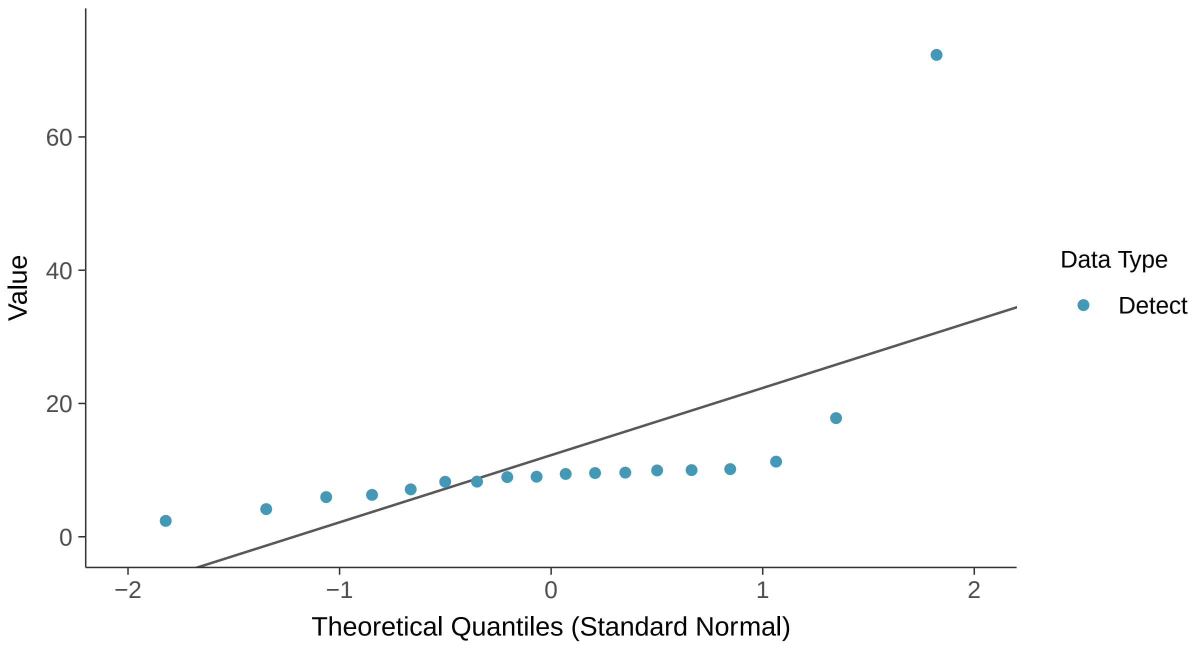
Boxplot by Season

Turbidity, MW-2 (NTU)



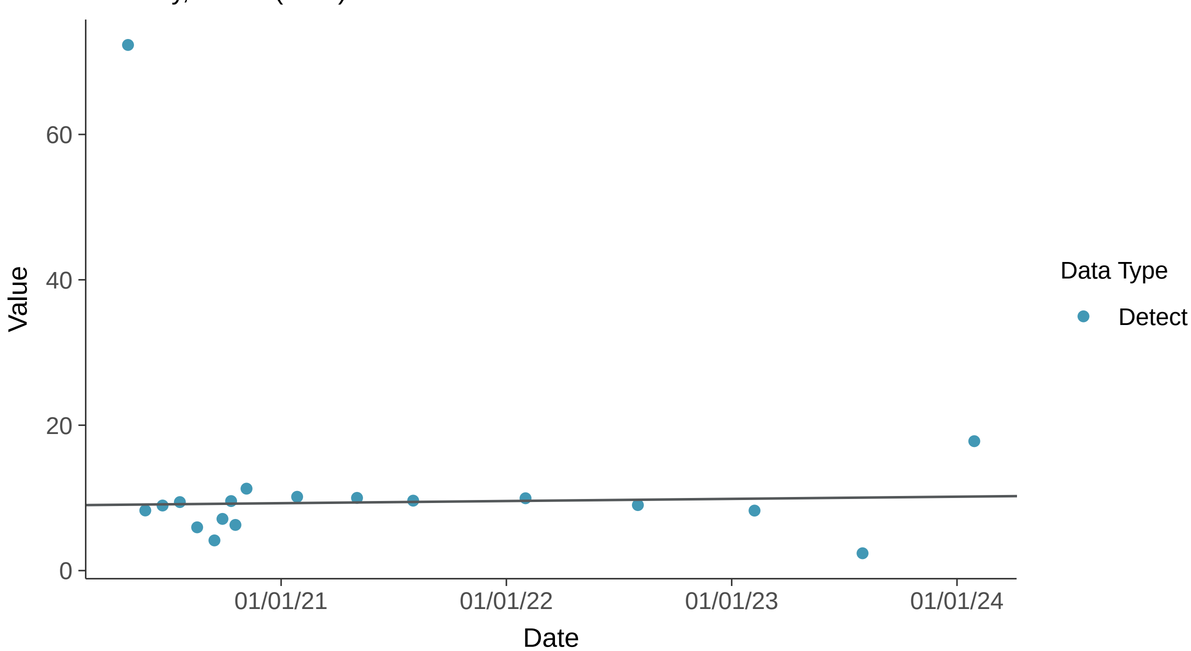
Normal Q-Q plot

Turbidity, MW-2 (NTU)



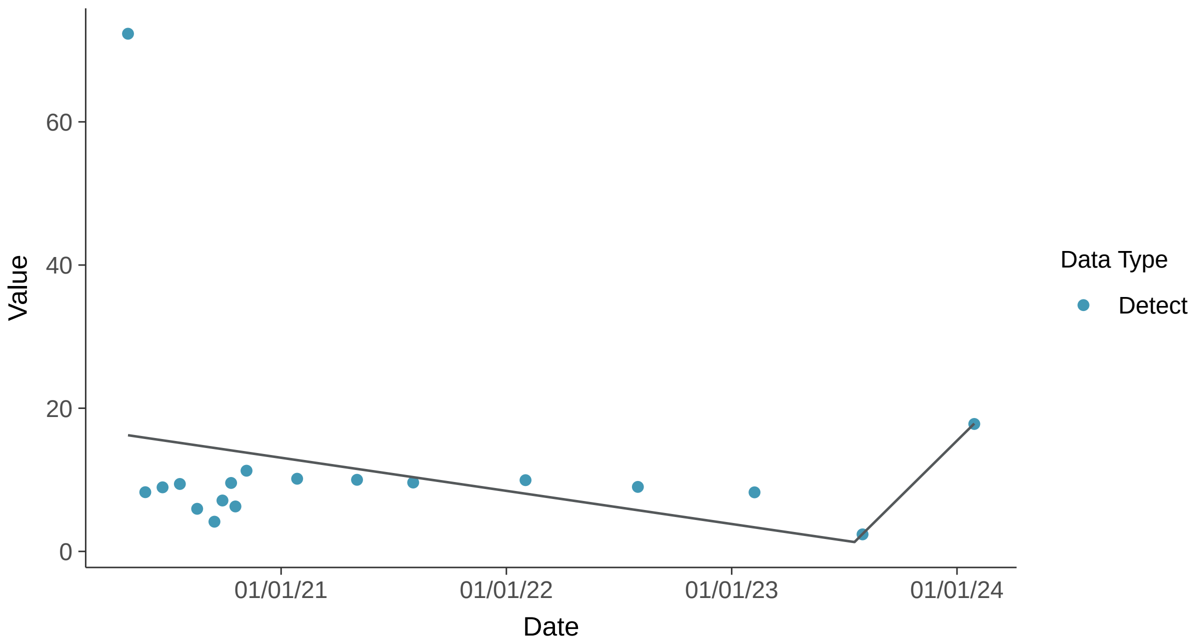
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Turbidity, MW-2 (NTU)



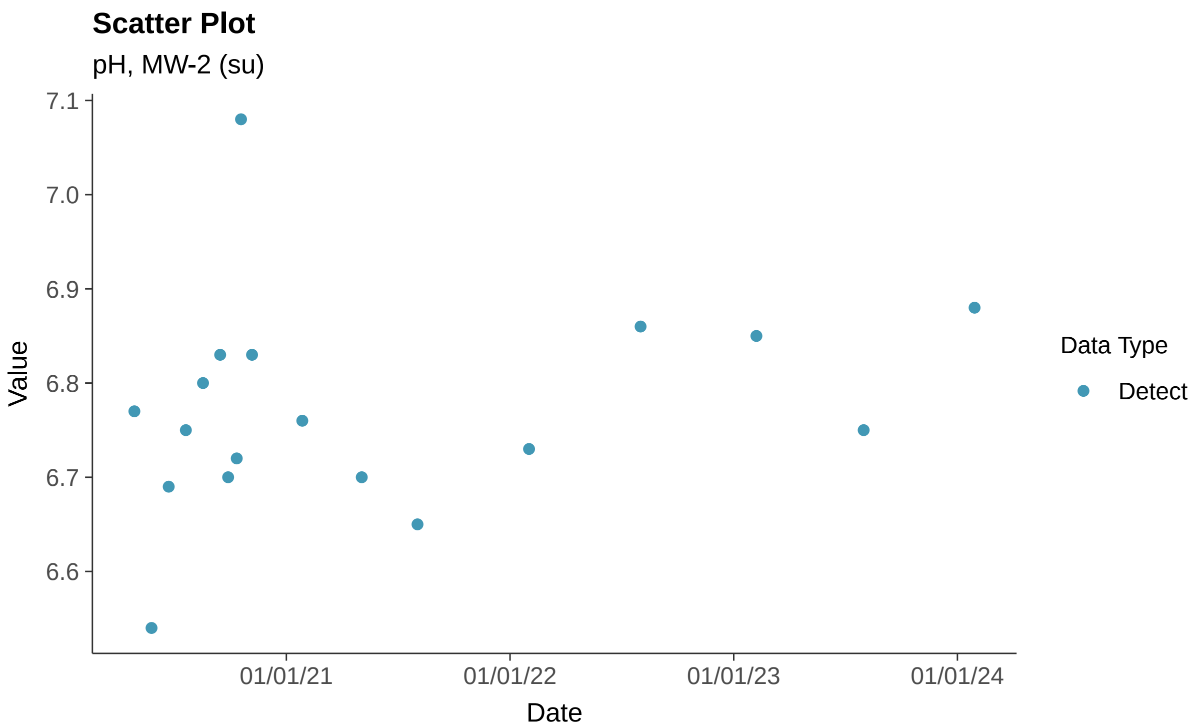
Trend Regression: Piecewise Linear-Linear

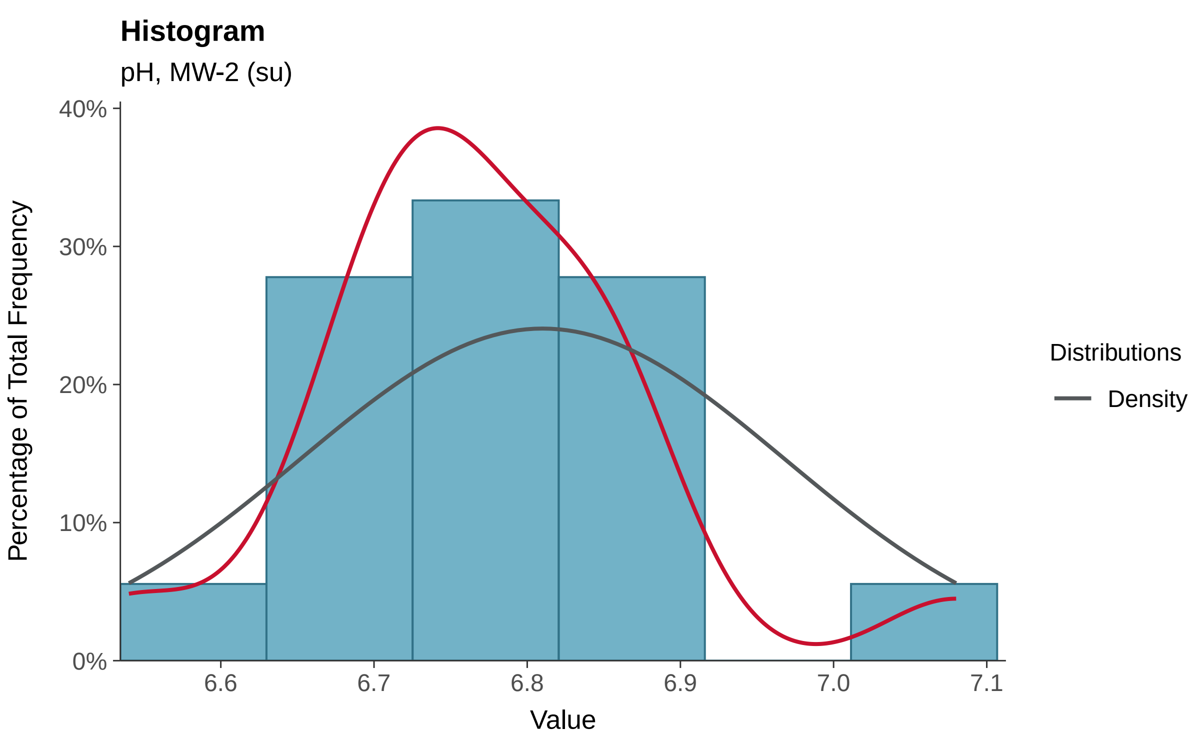
Turbidity, MW-2 (NTU)



Field Parameters: pH, MW-2

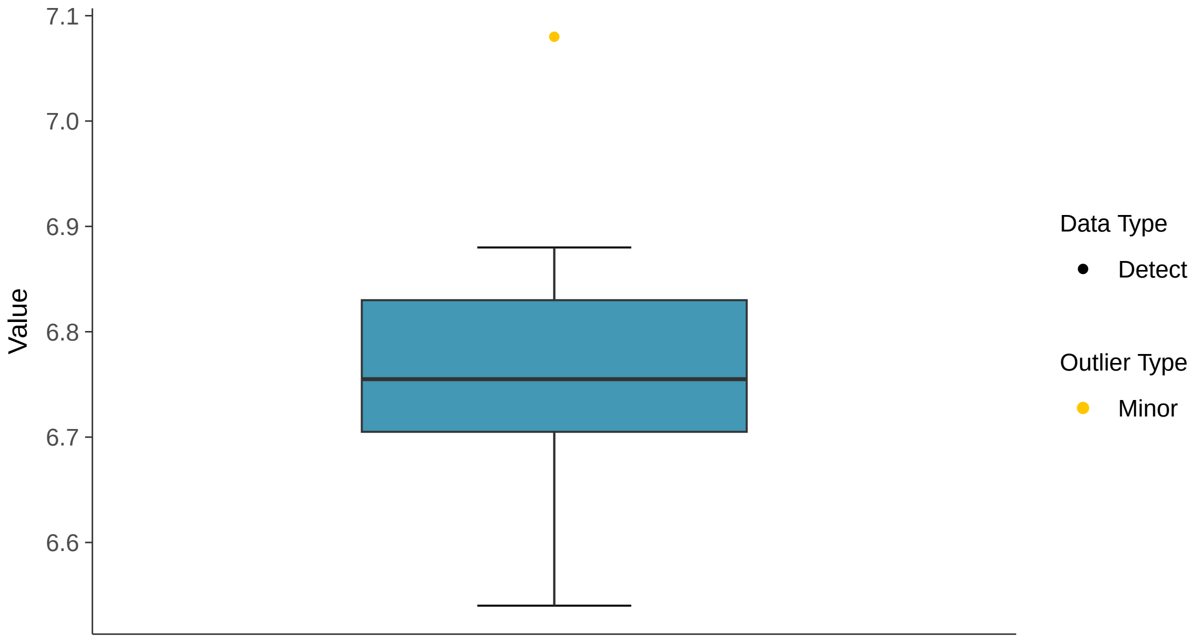
ID: 02_3_29





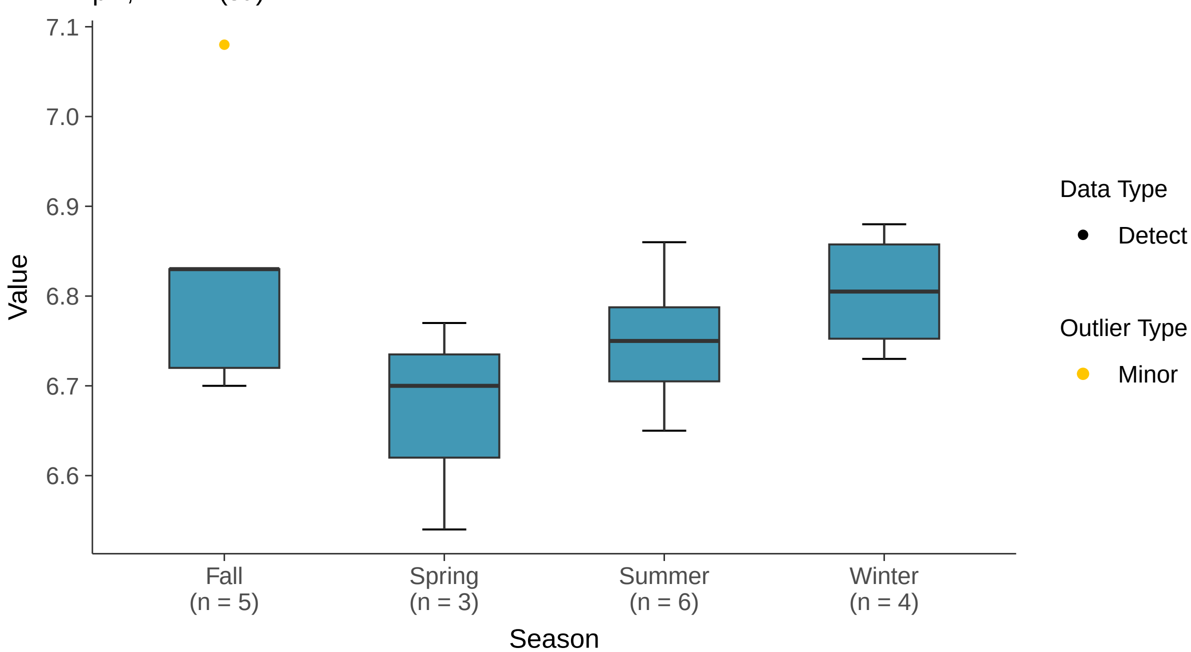
Boxplot

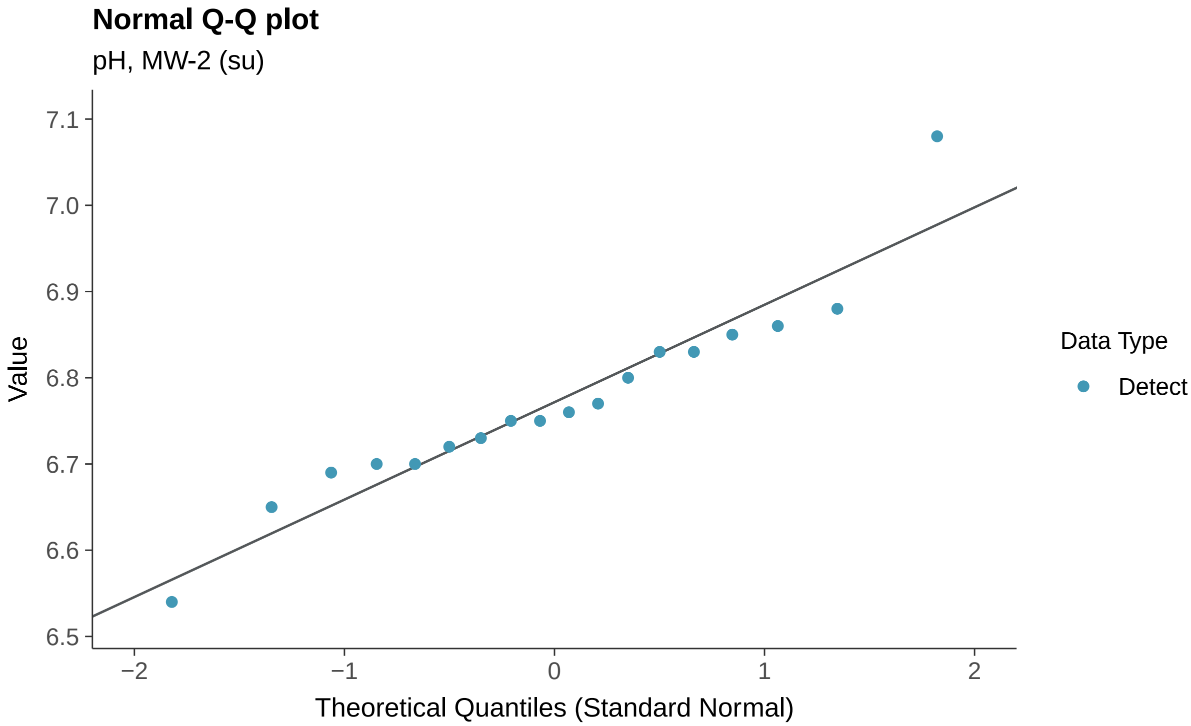
pH, MW-2 (su)

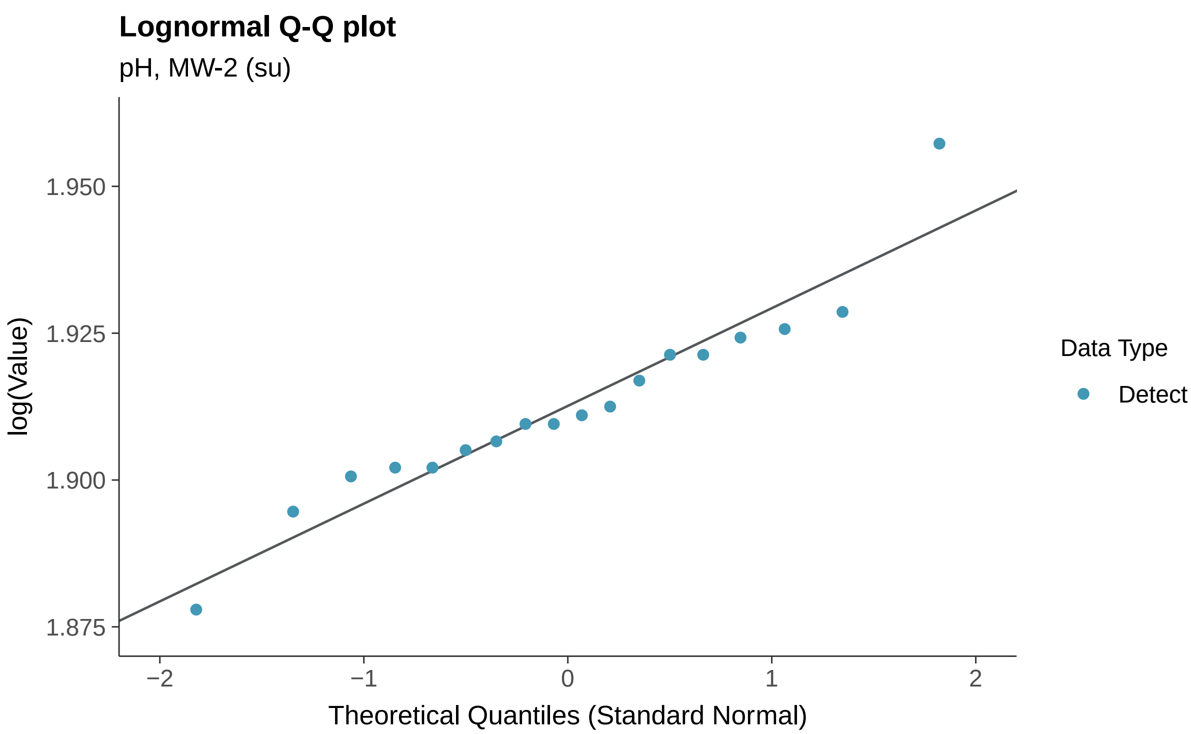


Boxplot by Season

pH, MW-2 (su)

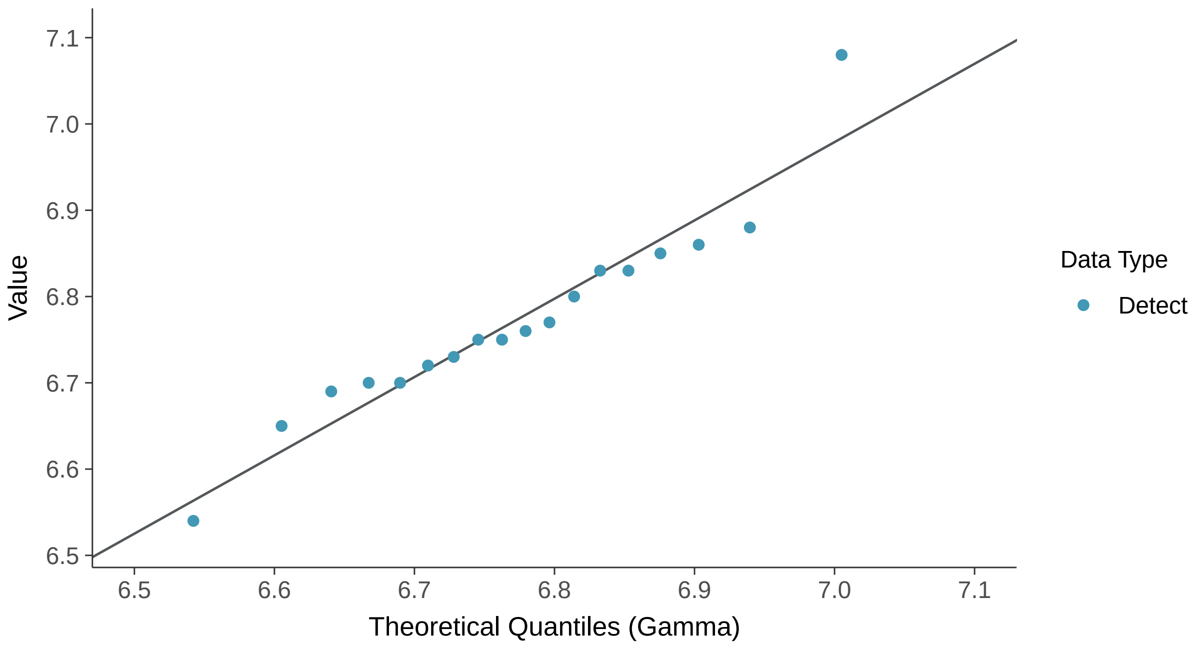



Normal Q-Q plot
pH, MW-2 (su)
Value
7.1
7.0
6.9
6.8
6.7
6.6
6.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH, MW-2 (su)
log(Value)
1.950
1.925
1.900
1.875
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

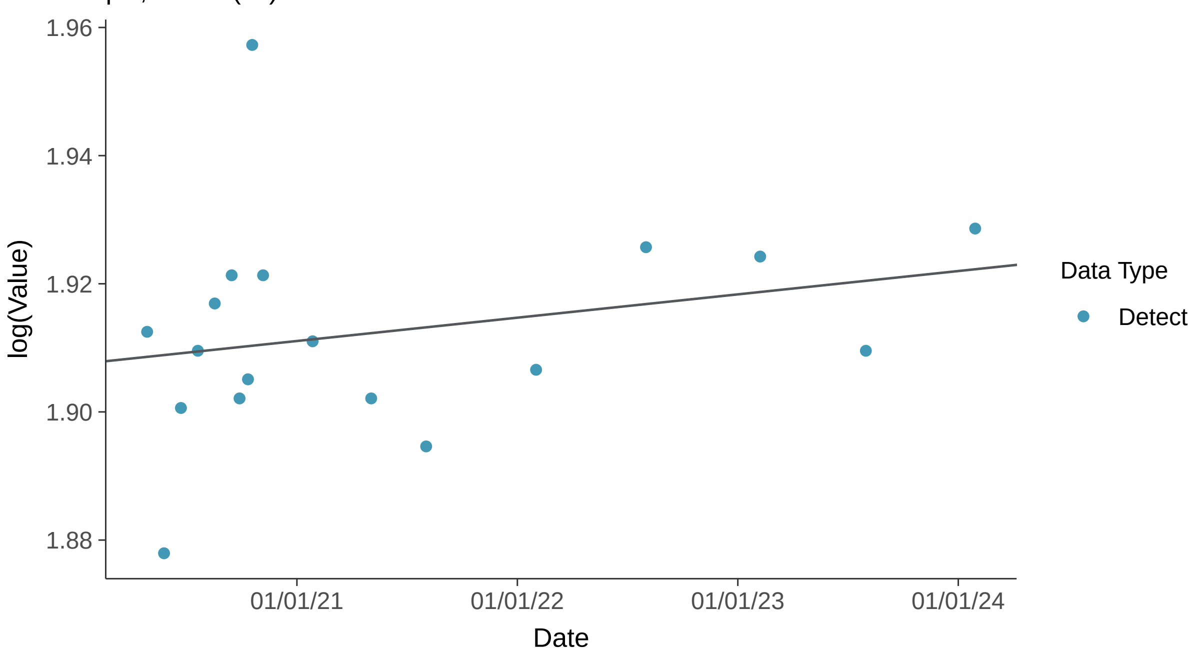
Gamma Q-Q plot

pH, MW-2 (su)



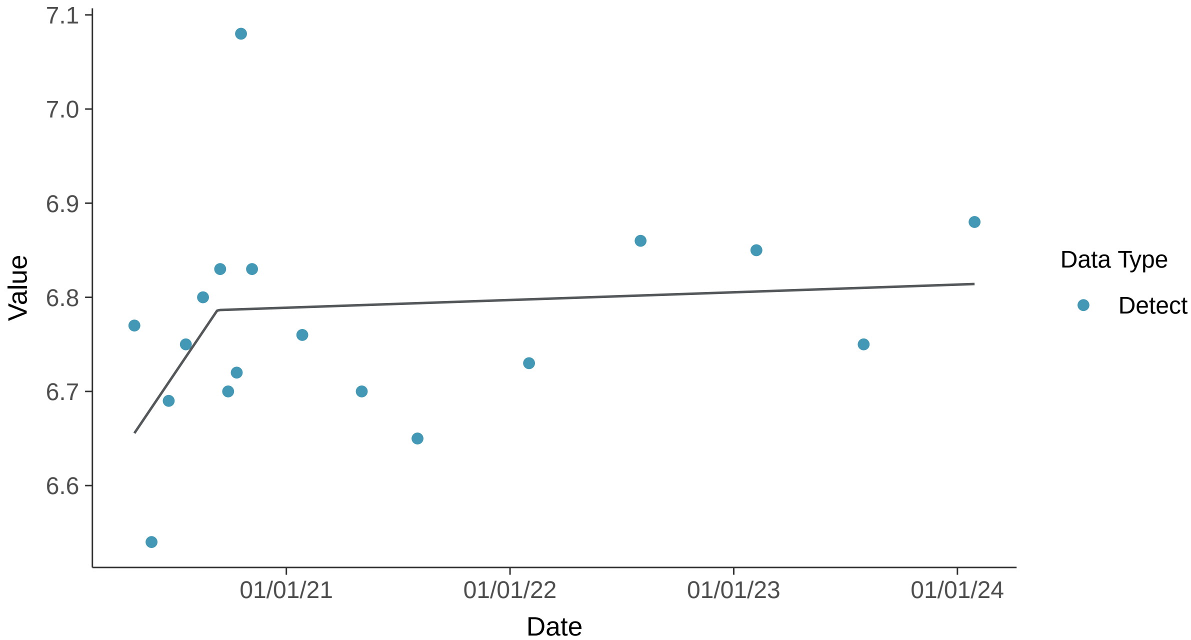
Trend Regression: Lognormal MLE

pH, MW-2 (su)



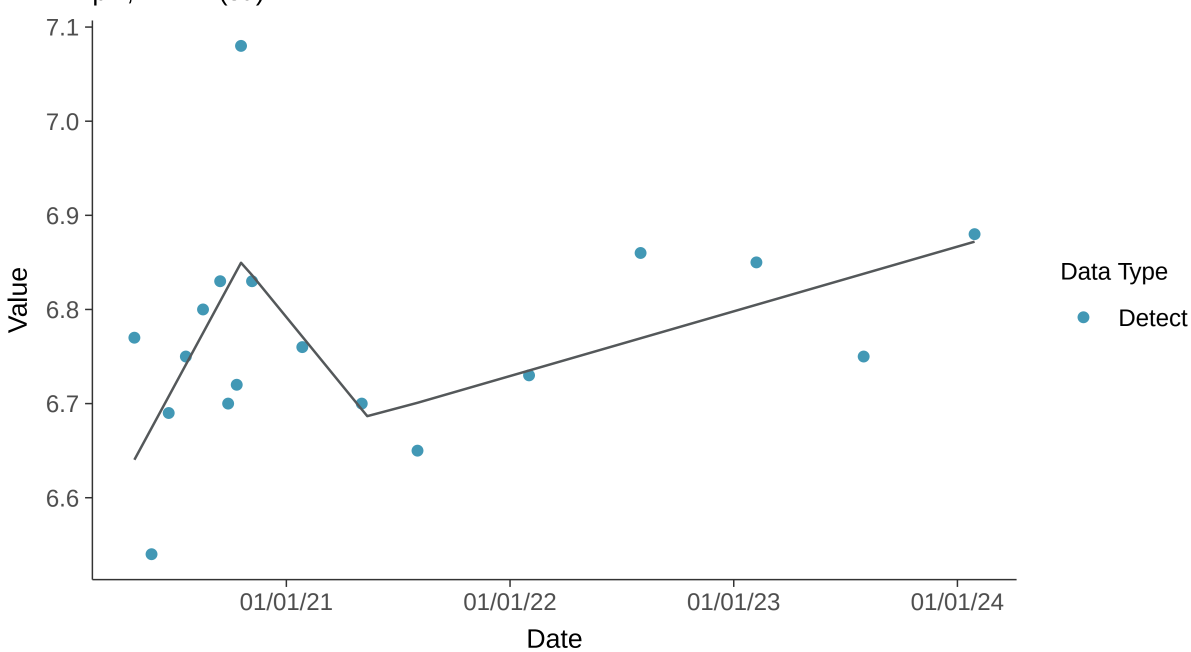
Trend Regression: Piecewise Linear-Linear

pH, MW-2 (su)



Trend Regression: Piecewise Linear-Linear-Linear

pH, MW-2 (su)

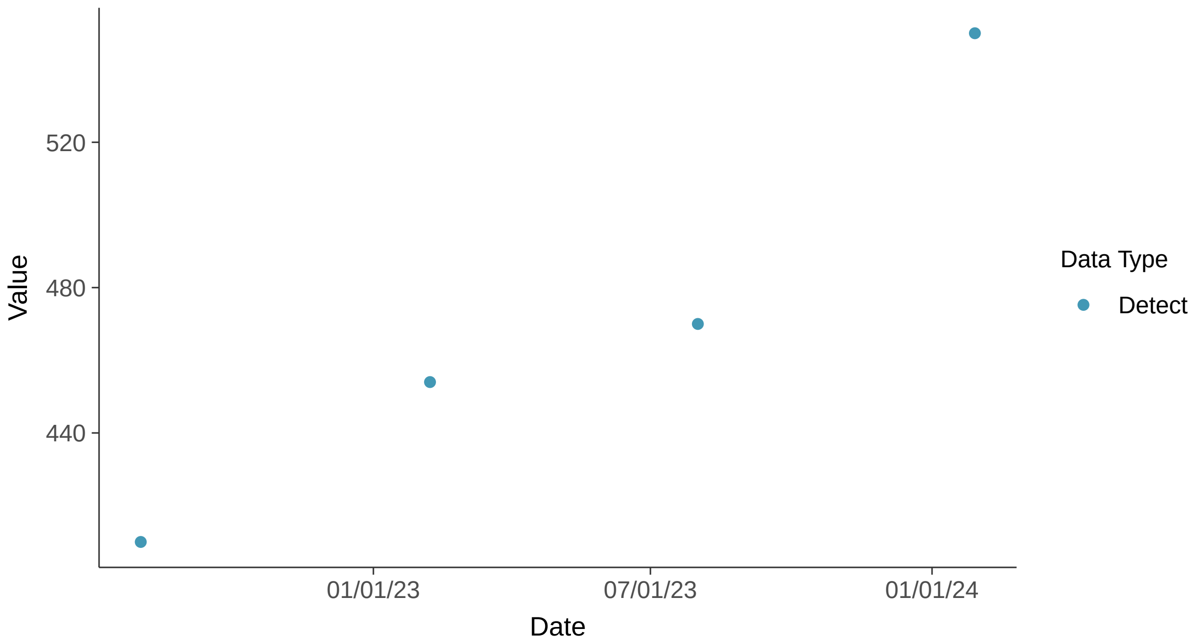


Other: Bicarbonate, MW-2

ID: 02_4_30

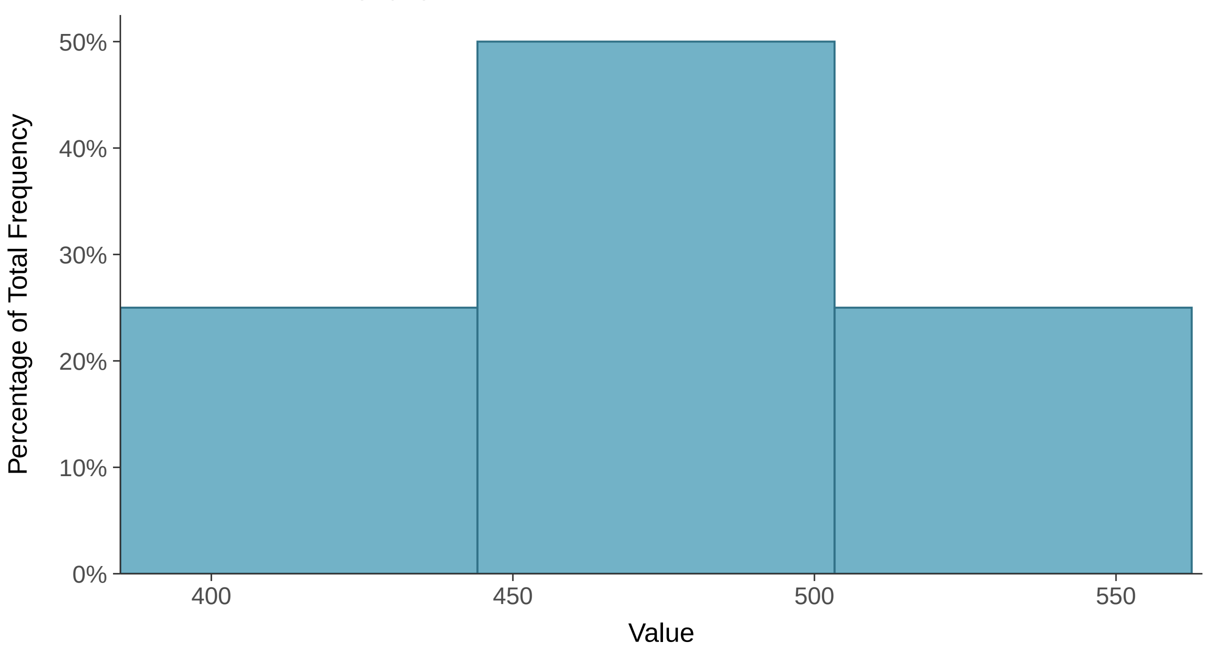
Scatter Plot

Bicarbonate, MW-2 (mg/L)



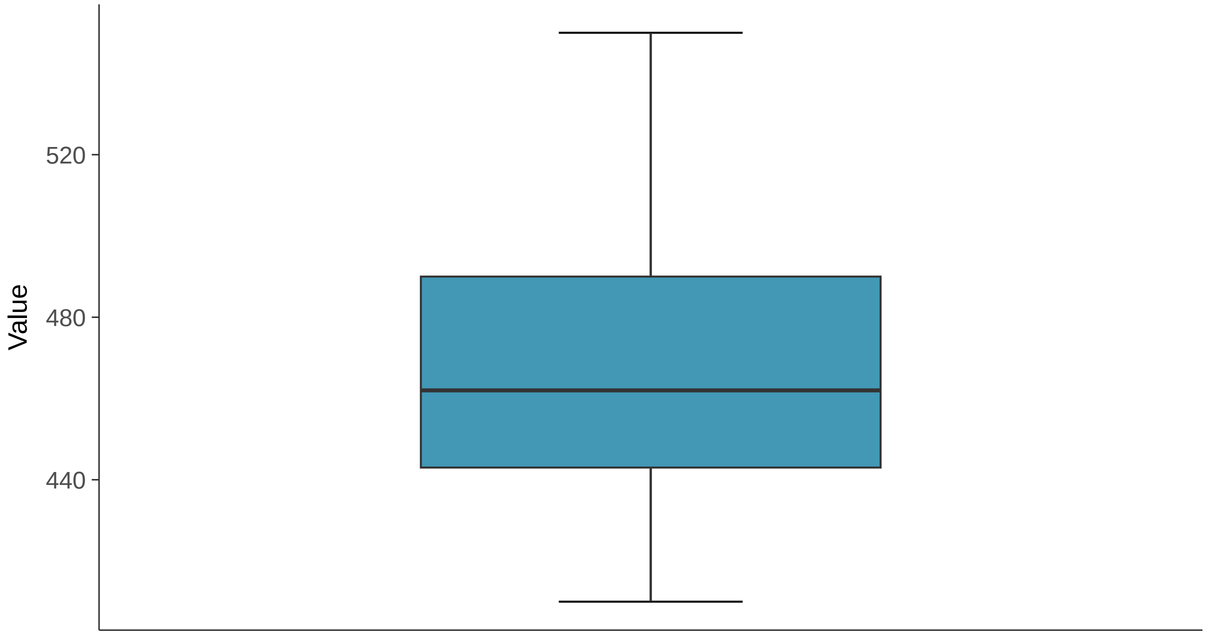
Histogram

Bicarbonate, MW-2 (mg/L)



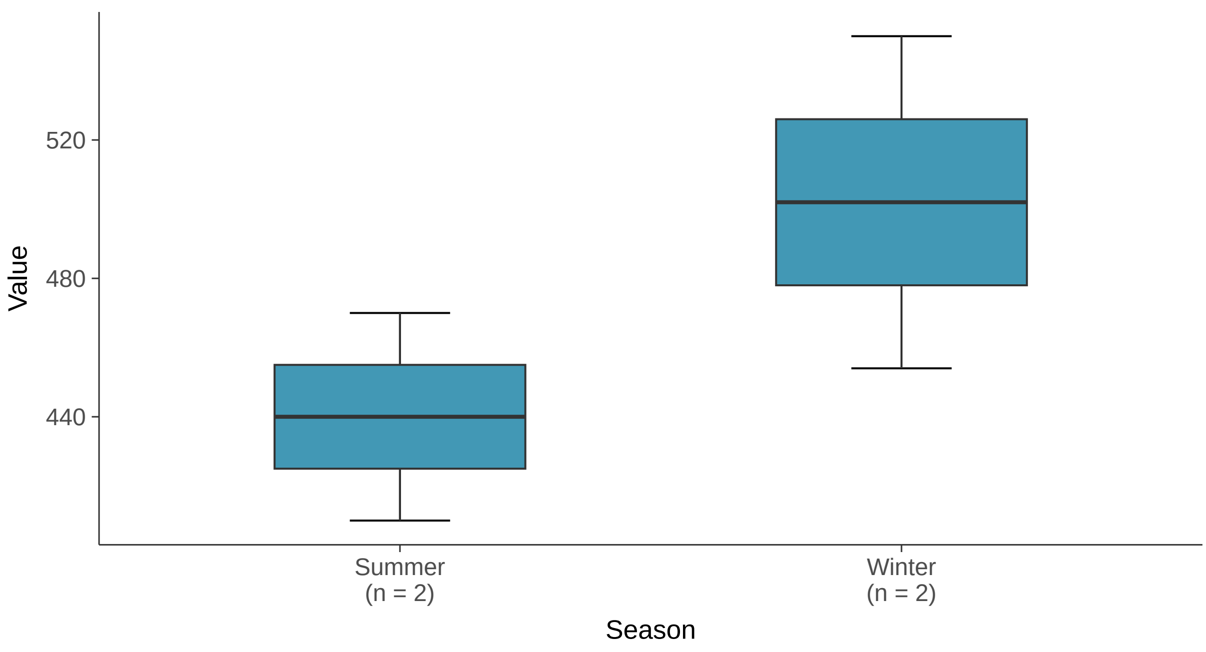
Boxplot

Bicarbonate, MW-2 (mg/L)



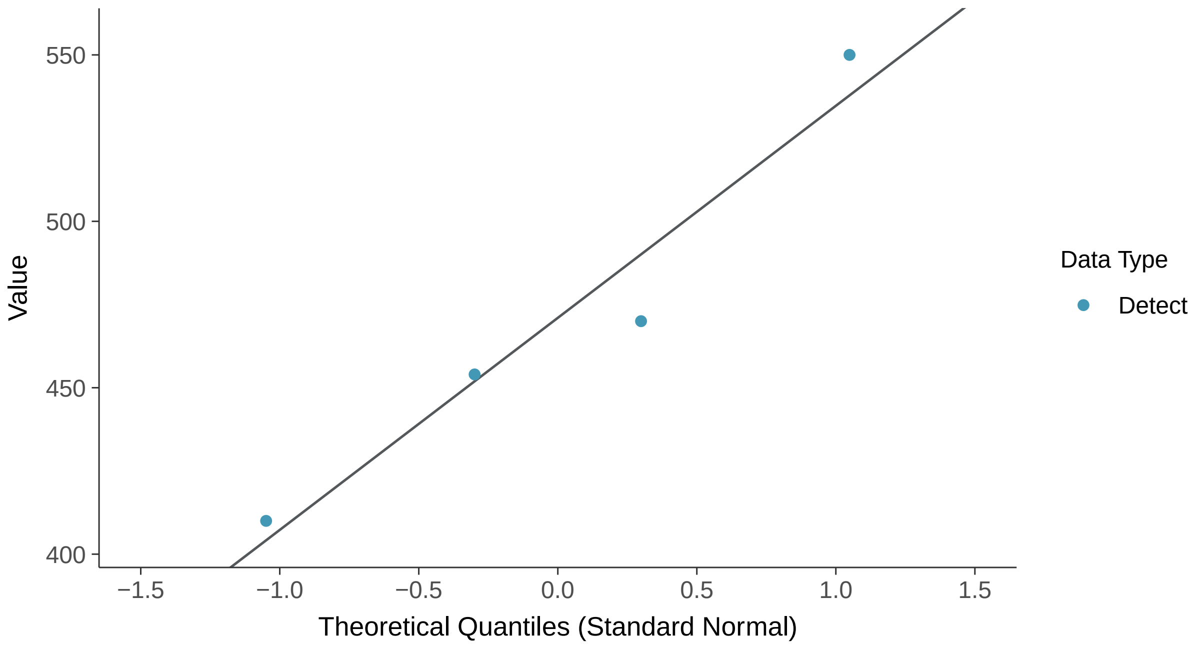
Boxplot by Season

Bicarbonate, MW-2 (mg/L)



Normal Q-Q plot

Bicarbonate, MW-2 (mg/L)

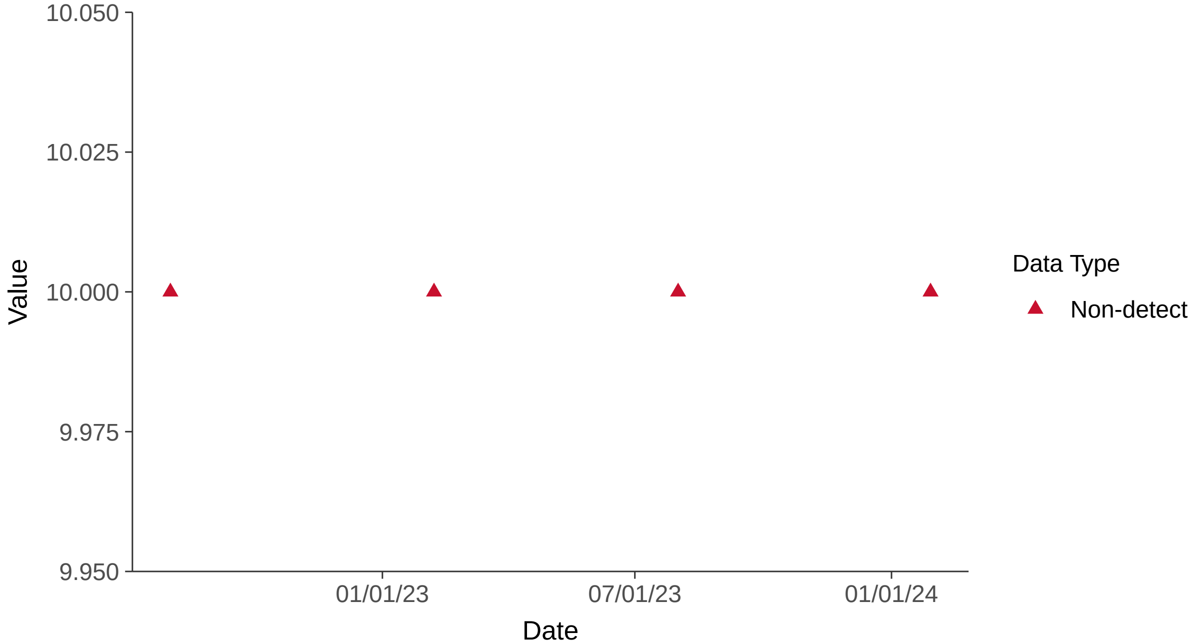


Other: Carbonate, MW-2

ID: 02_4_31

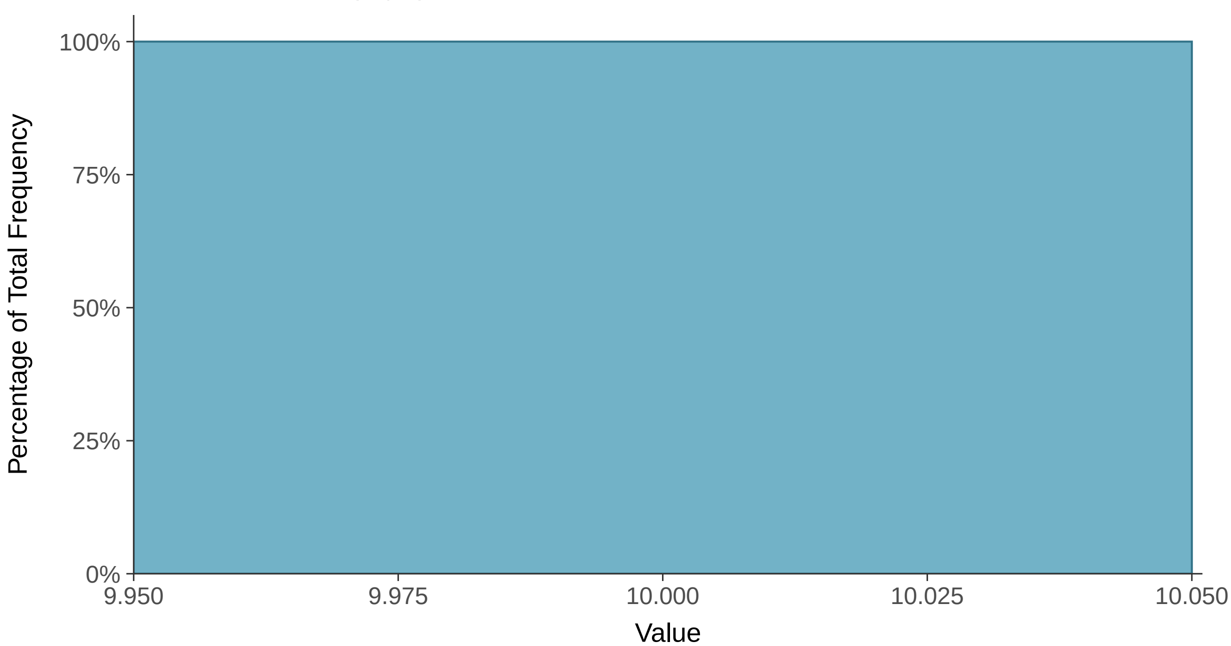
Scatter Plot

Carbonate, MW-2 (mg/L)



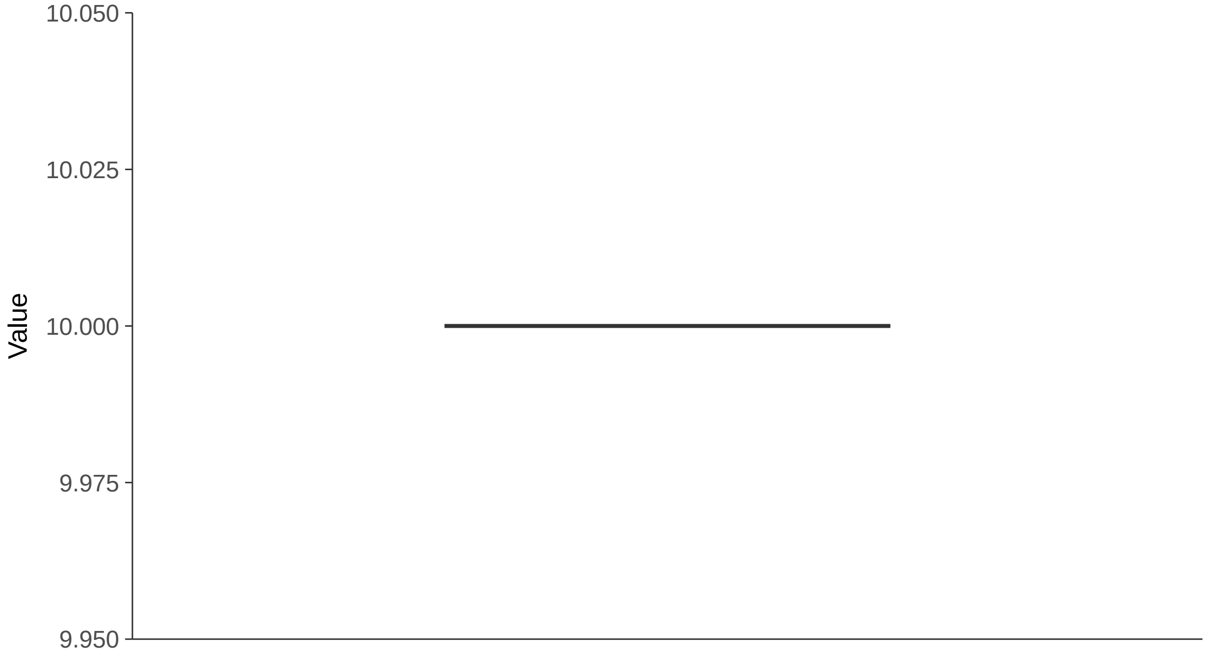
Histogram

Carbonate, MW-2 (mg/L)



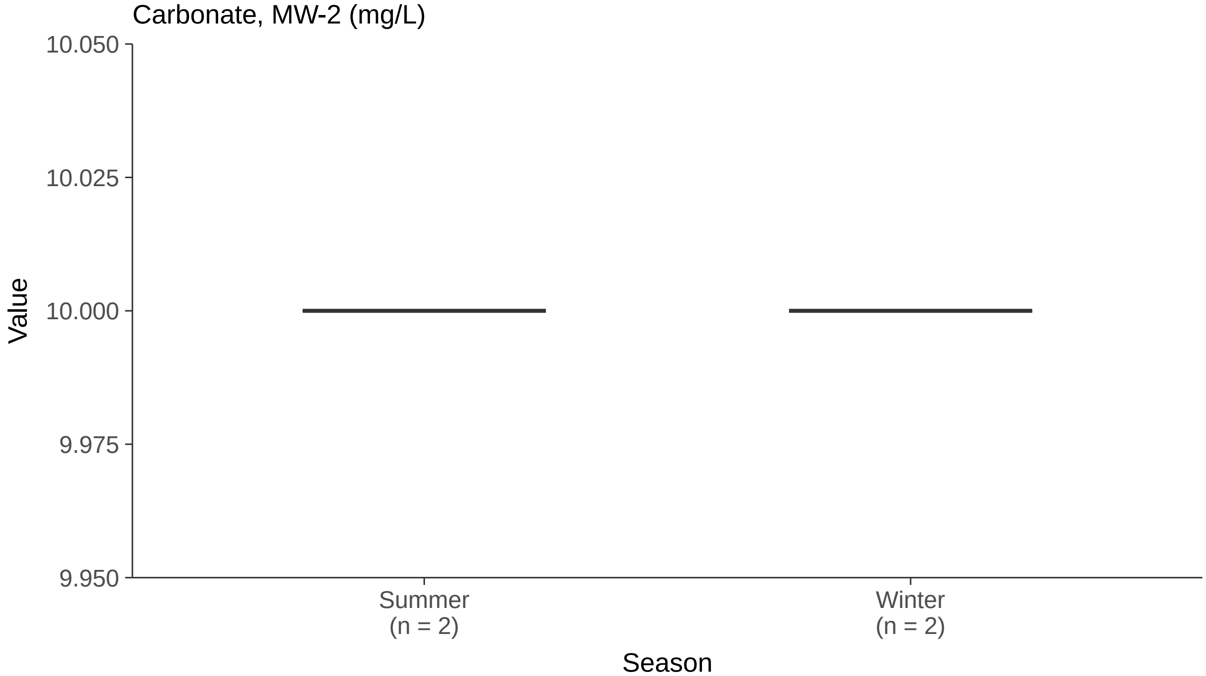
Boxplot

Carbonate, MW-2 (mg/L)



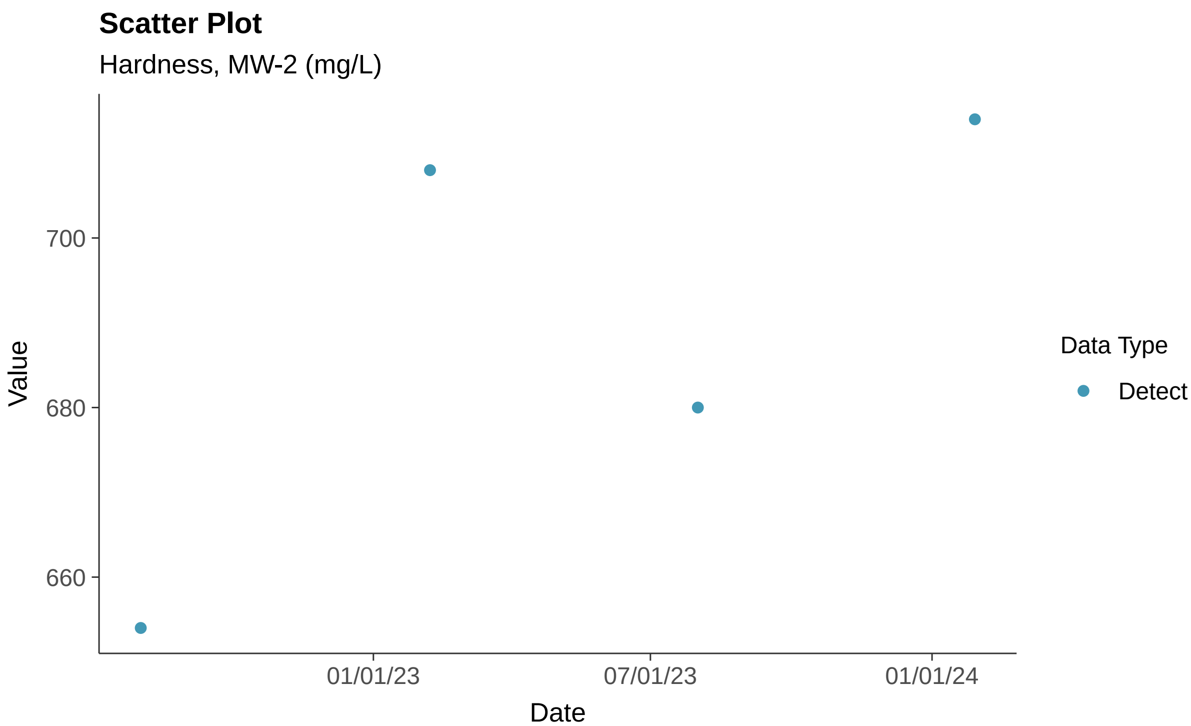
Boxplot by Season

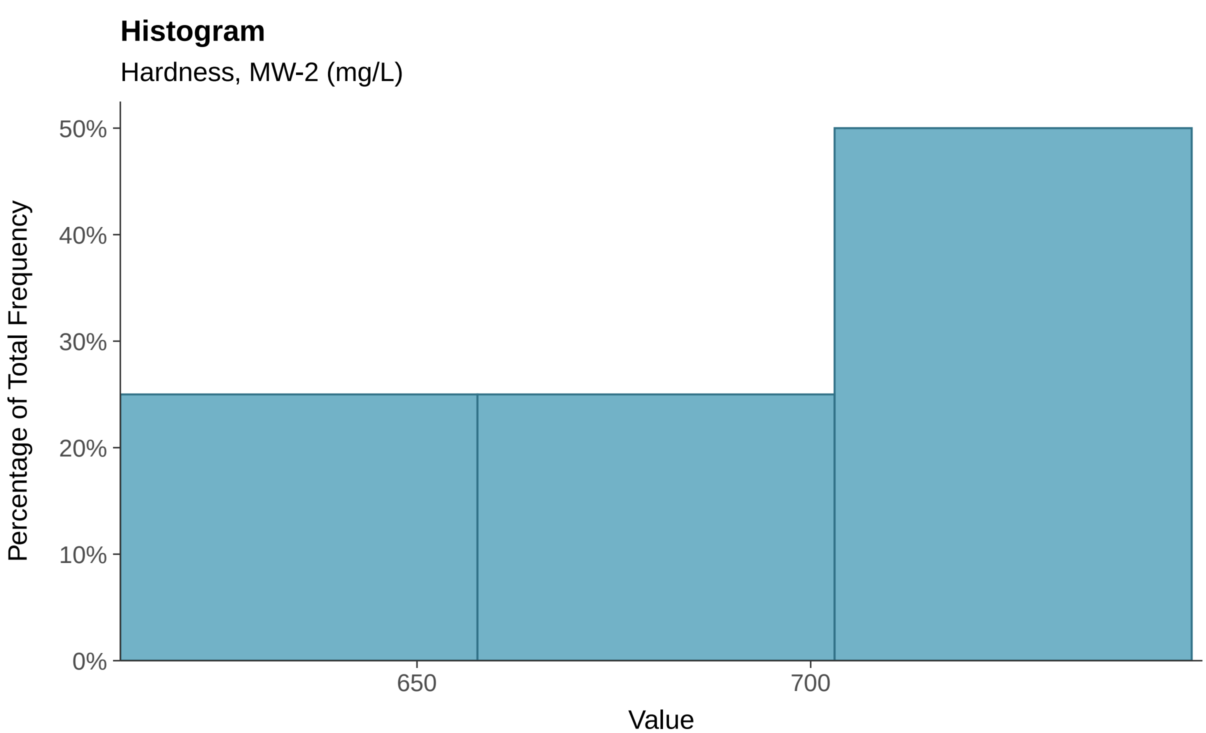
Carbonate, MW-2 (mg/L)



Other: Hardness, MW-2

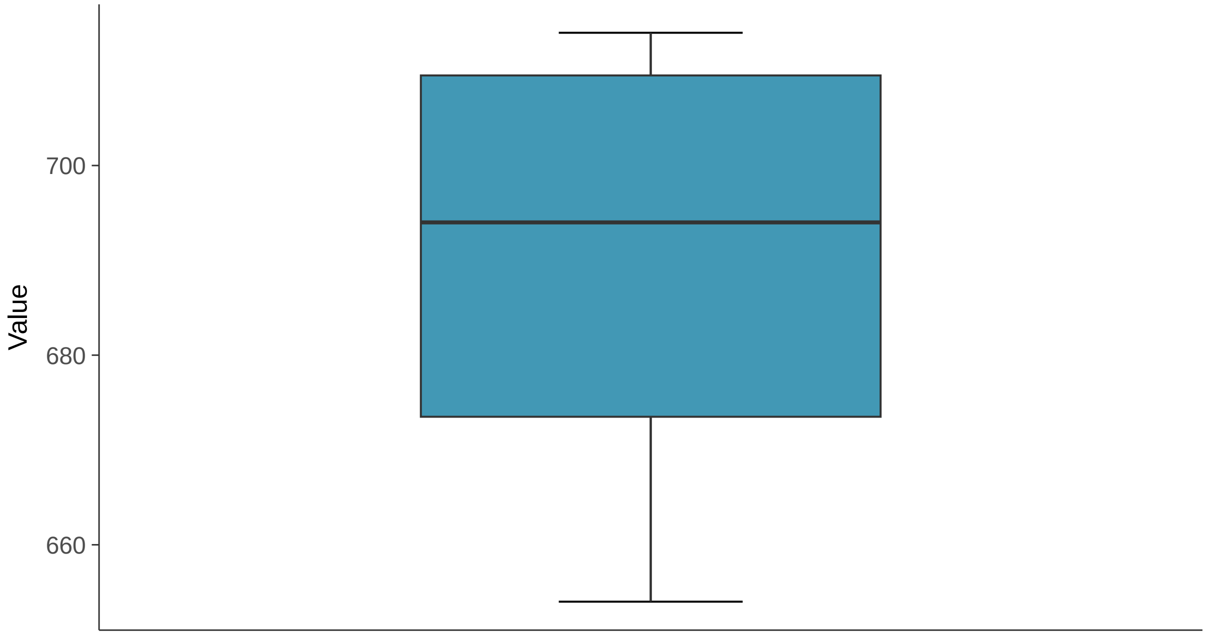
ID: 02_4_32





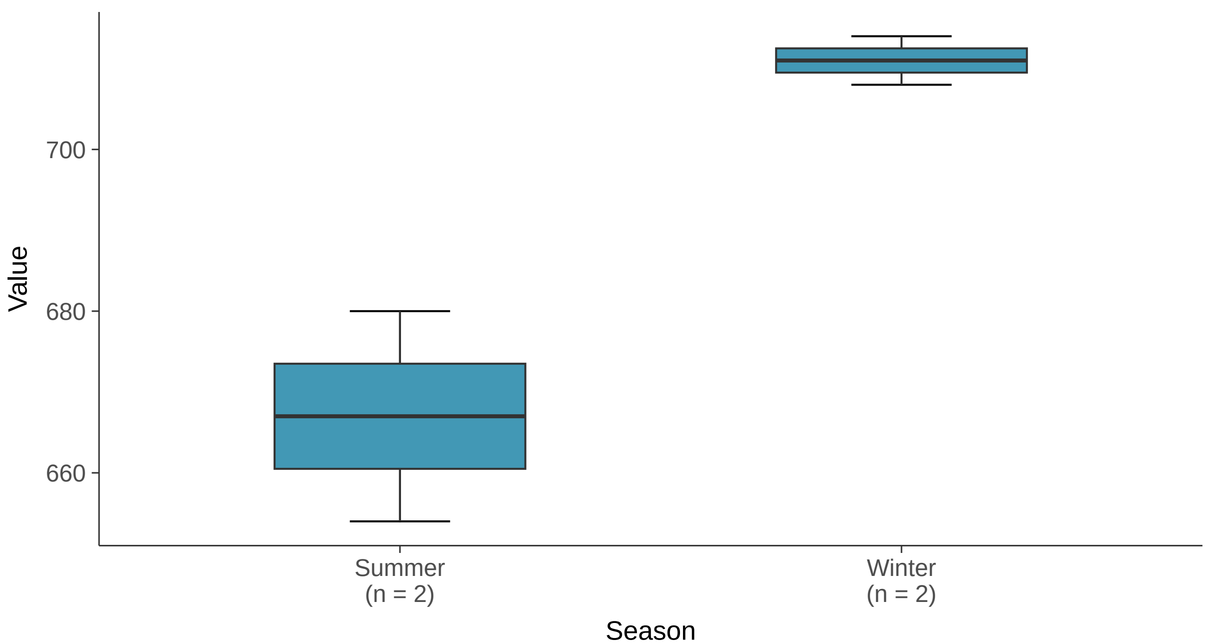
Boxplot

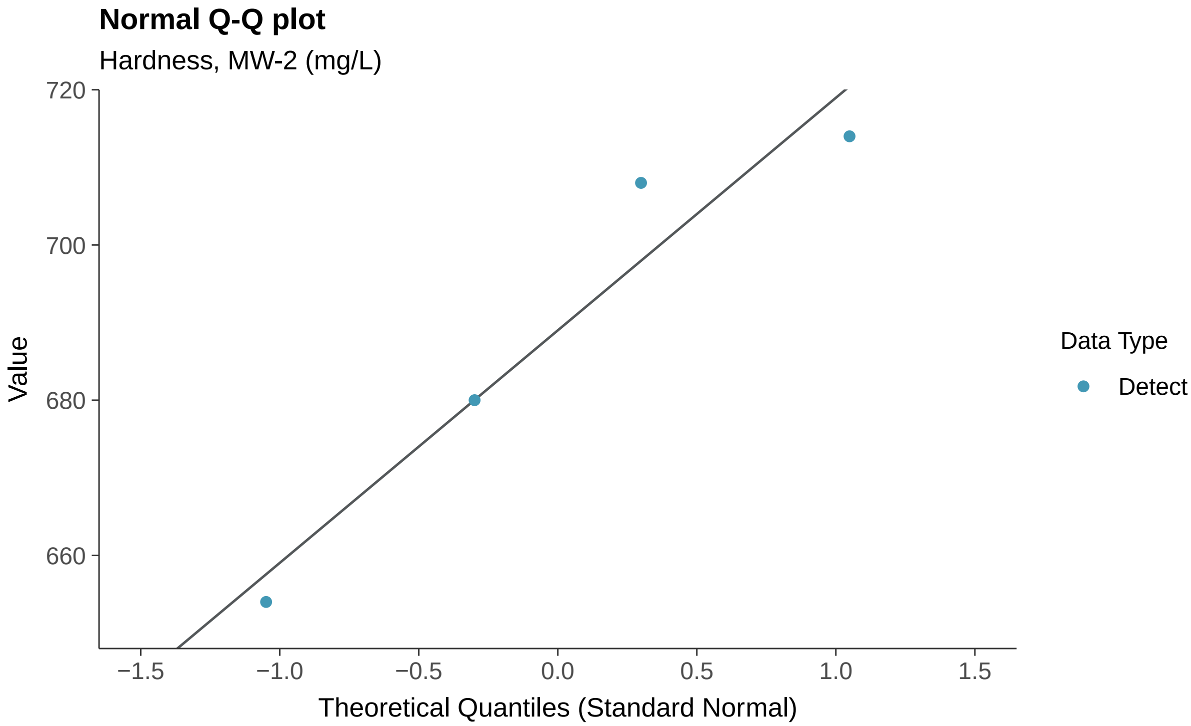
Hardness, MW-2 (mg/L)



Boxplot by Season

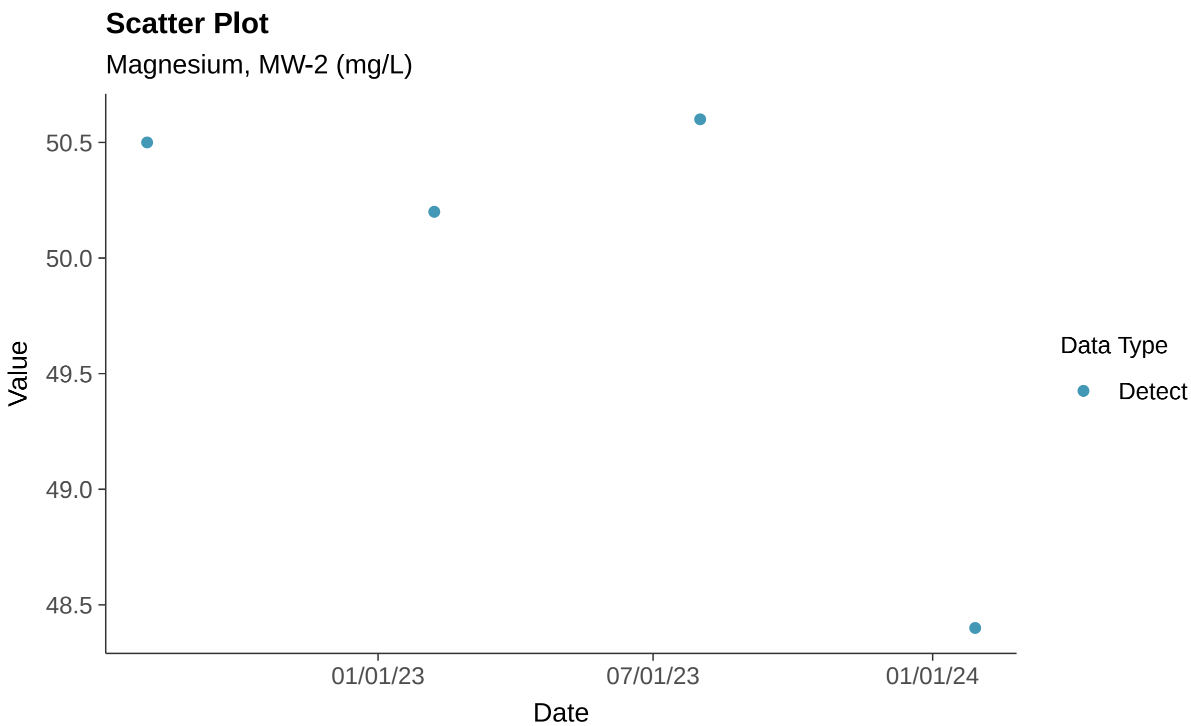
Hardness, MW-2 (mg/L)

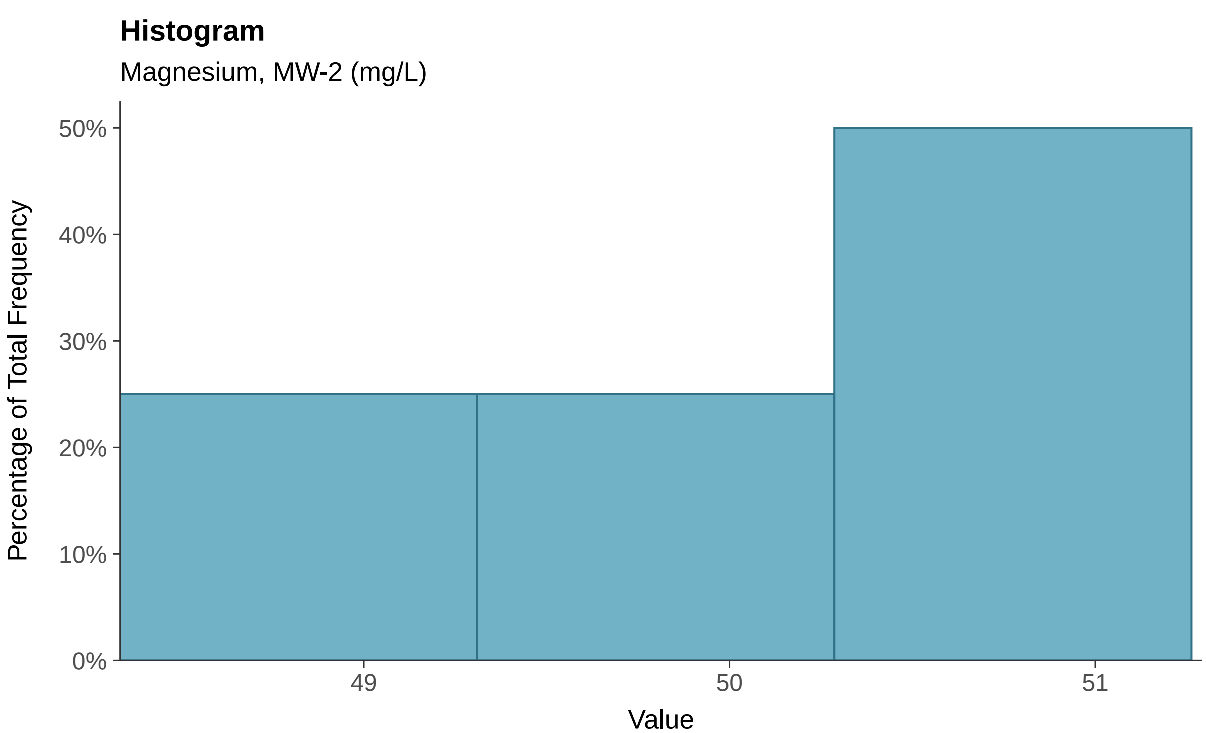



Normal Q-Q plot
Hardness, MW-2 (mg/L)
Value
720
700
680
660
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Magnesium, MW-2

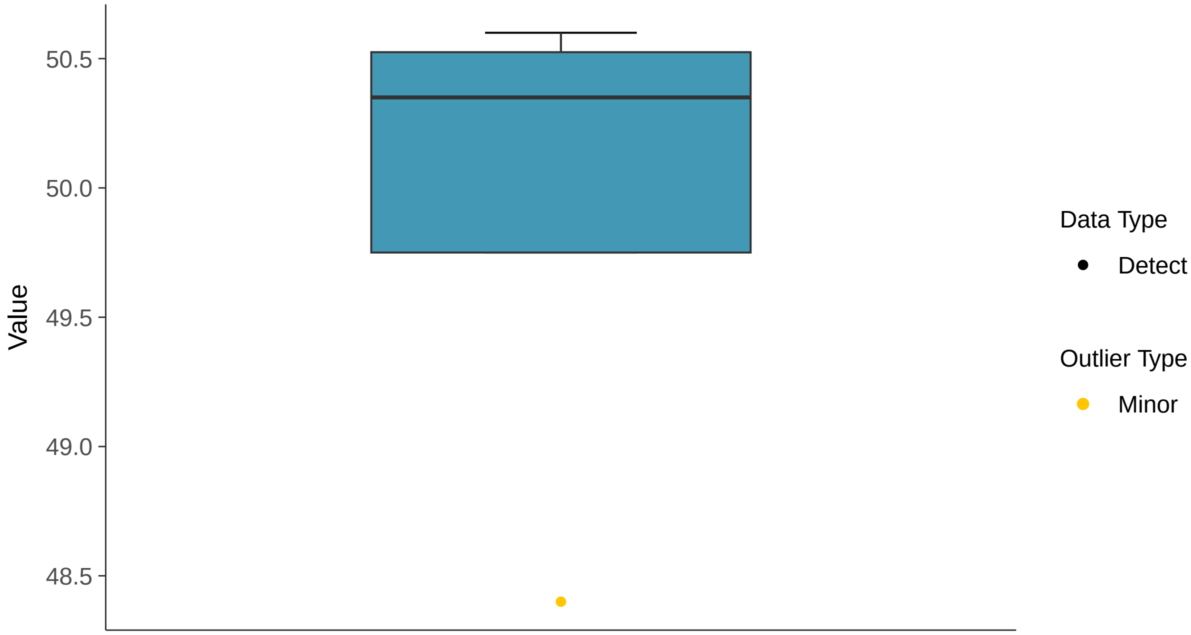
ID: 02_4_33





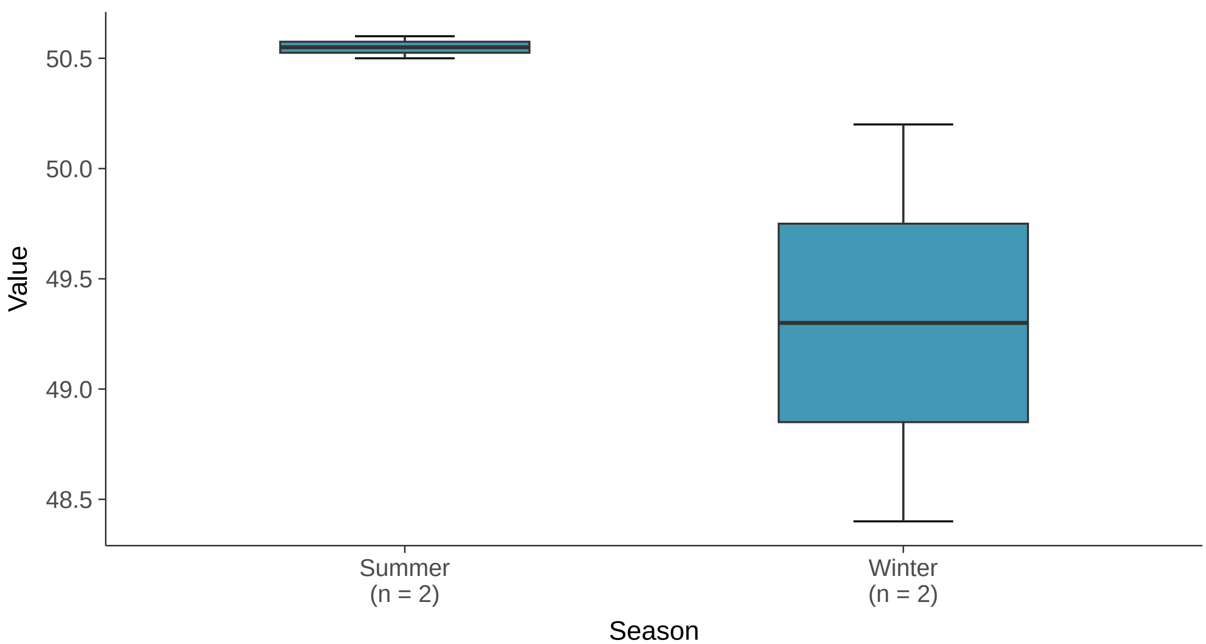
Boxplot

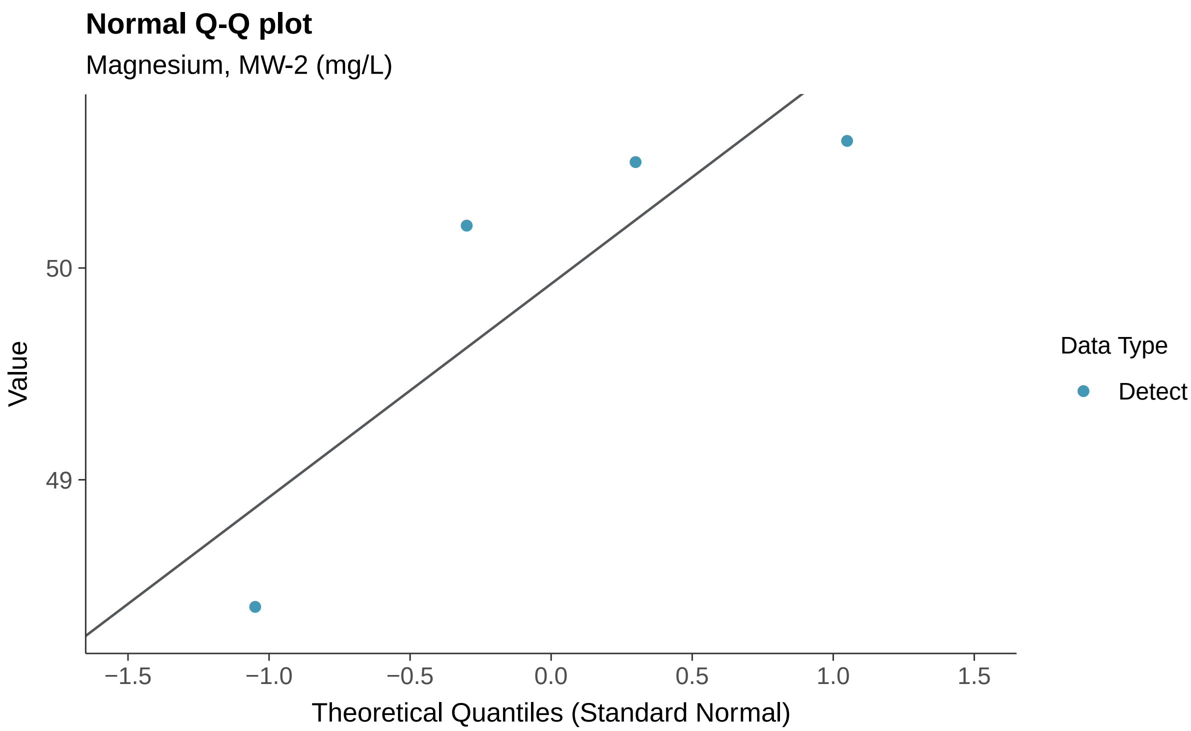
Magnesium, MW-2 (mg/L)



Boxplot by Season

Magnesium, MW-2 (mg/L)



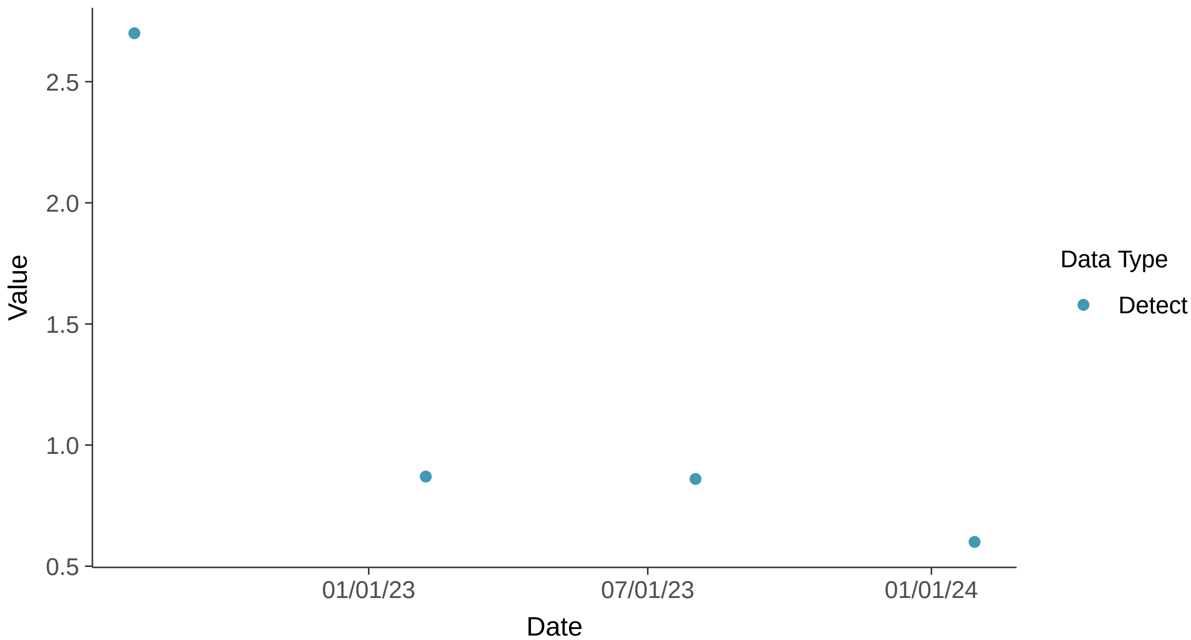

Normal Q-Q plot
Magnesium, MW-2 (mg/L)
Value
50
49
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Potassium, MW-2

ID: 02_4_34

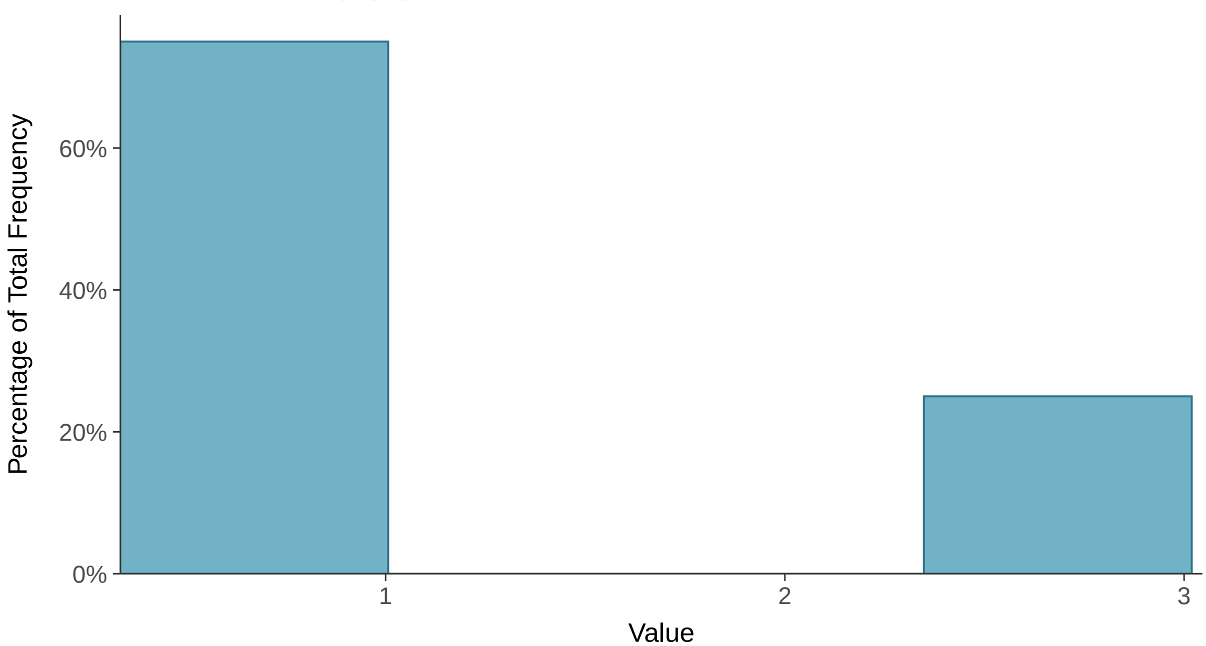
Scatter Plot

Potassium, MW-2 (mg/L)



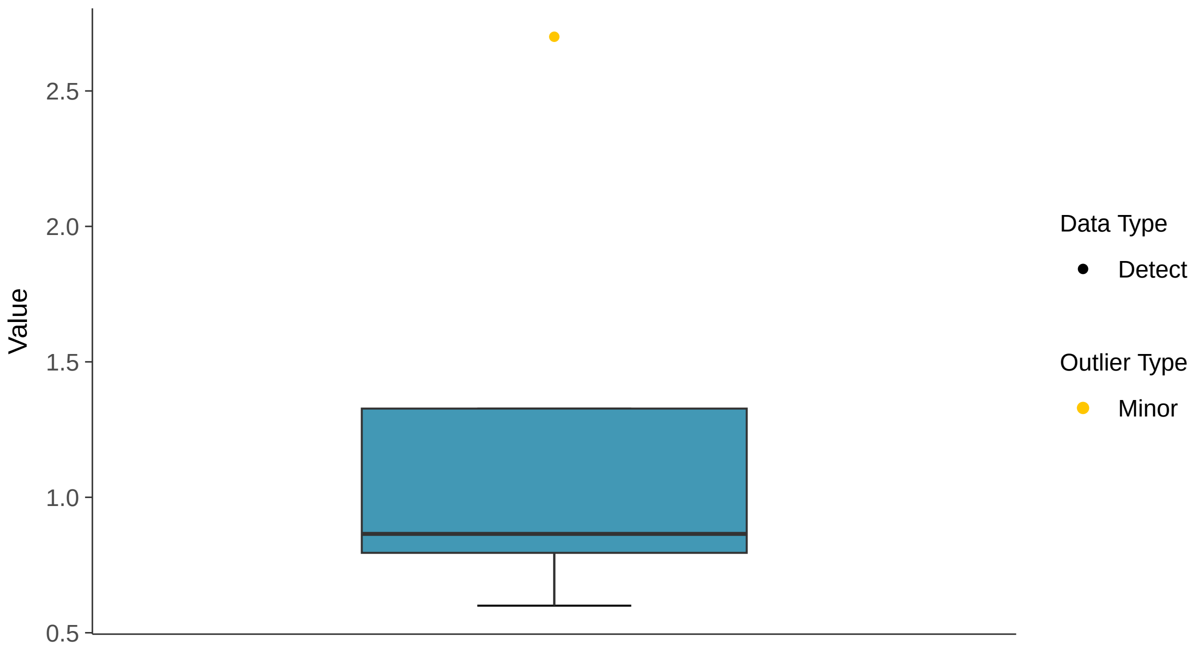
Histogram

Potassium, MW-2 (mg/L)



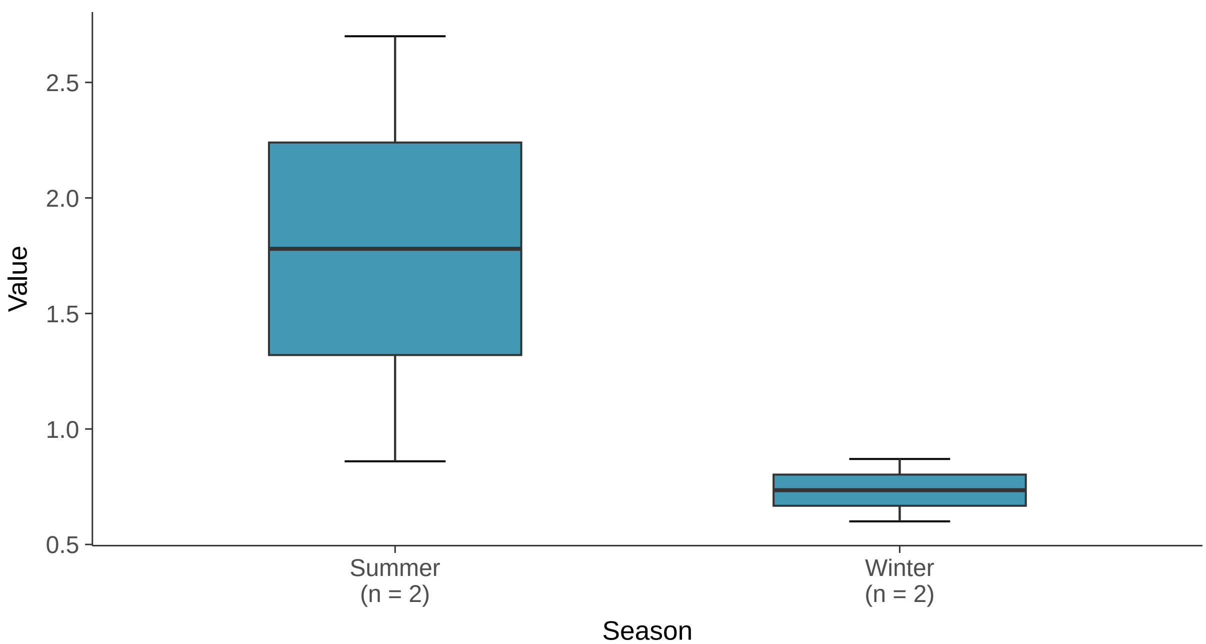
Boxplot

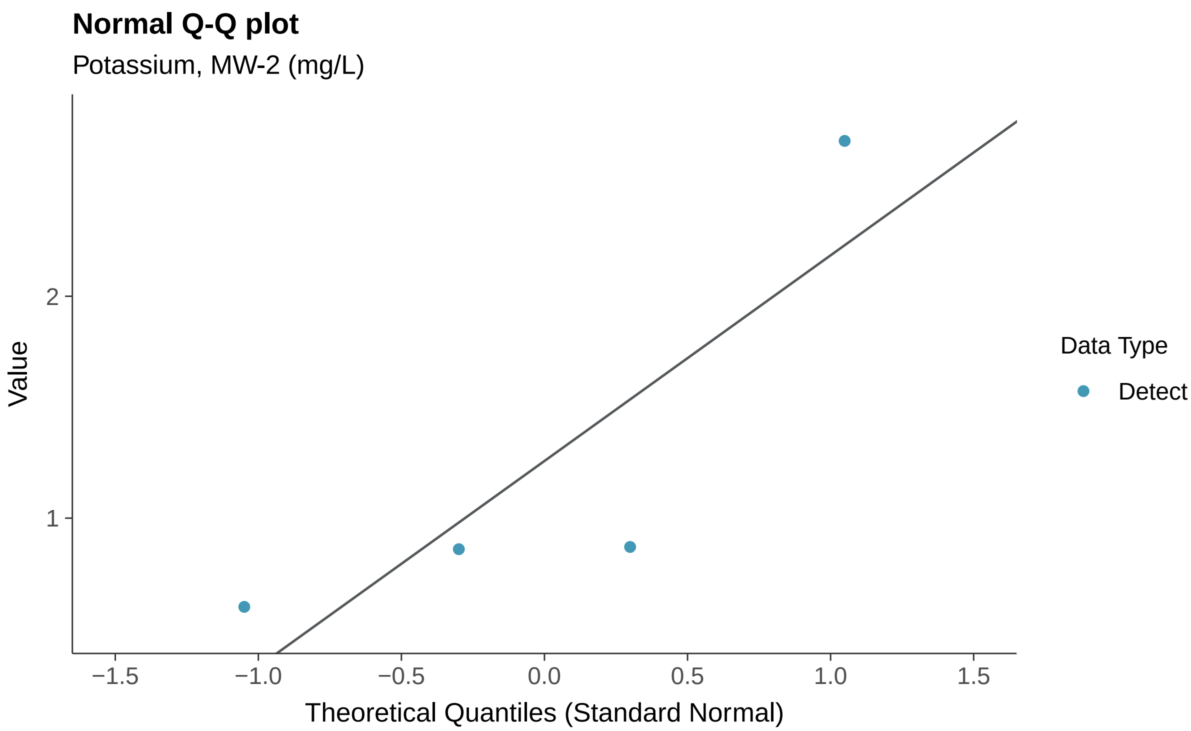
Potassium, MW-2 (mg/L)



Boxplot by Season

Potassium, MW-2 (mg/L)



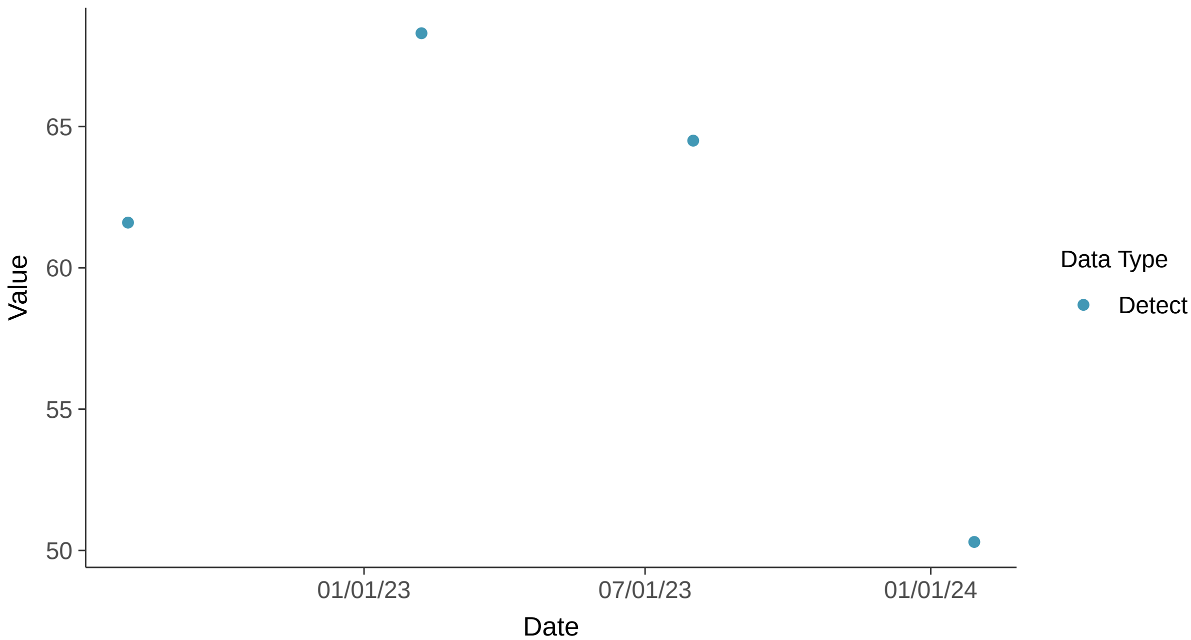

Normal Q-Q plot
Potassium, MW-2 (mg/L)
Value
2
1
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Sodium, MW-2

ID: 02_4_35

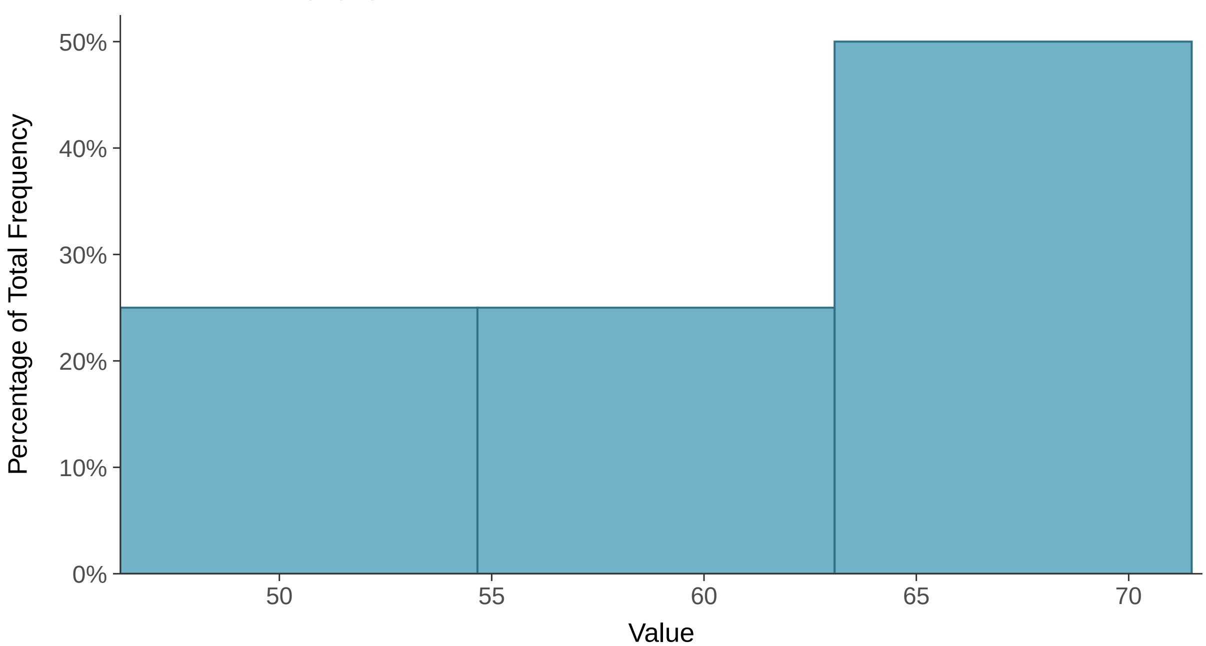
Scatter Plot

Sodium, MW-2 (mg/L)



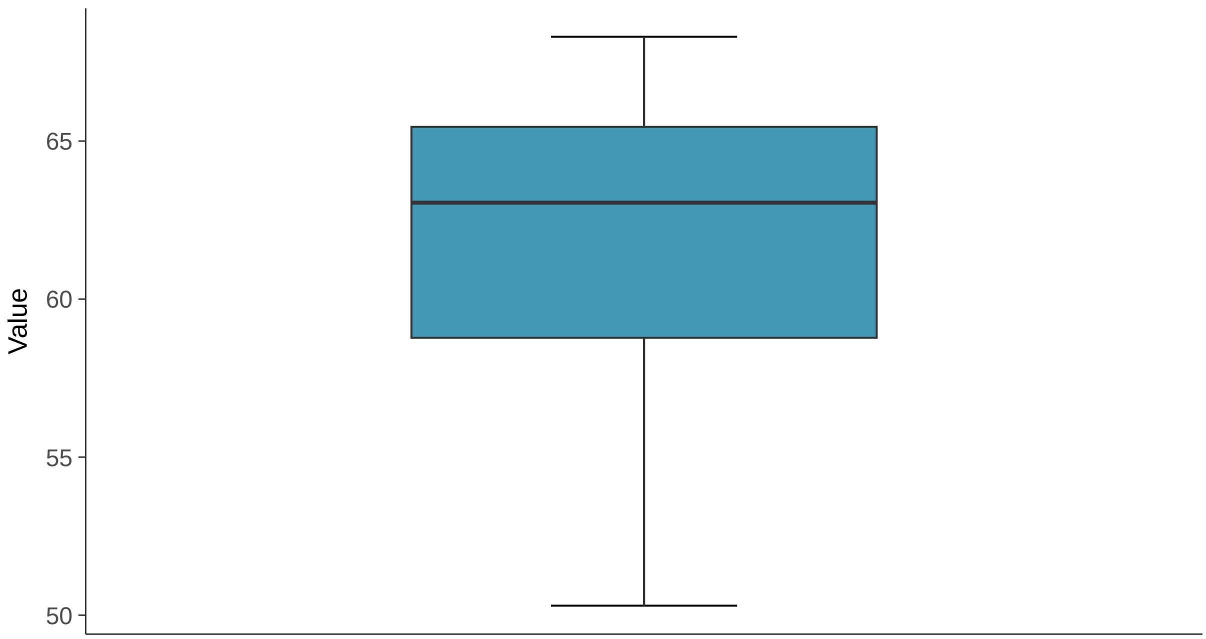
Histogram

Sodium, MW-2 (mg/L)



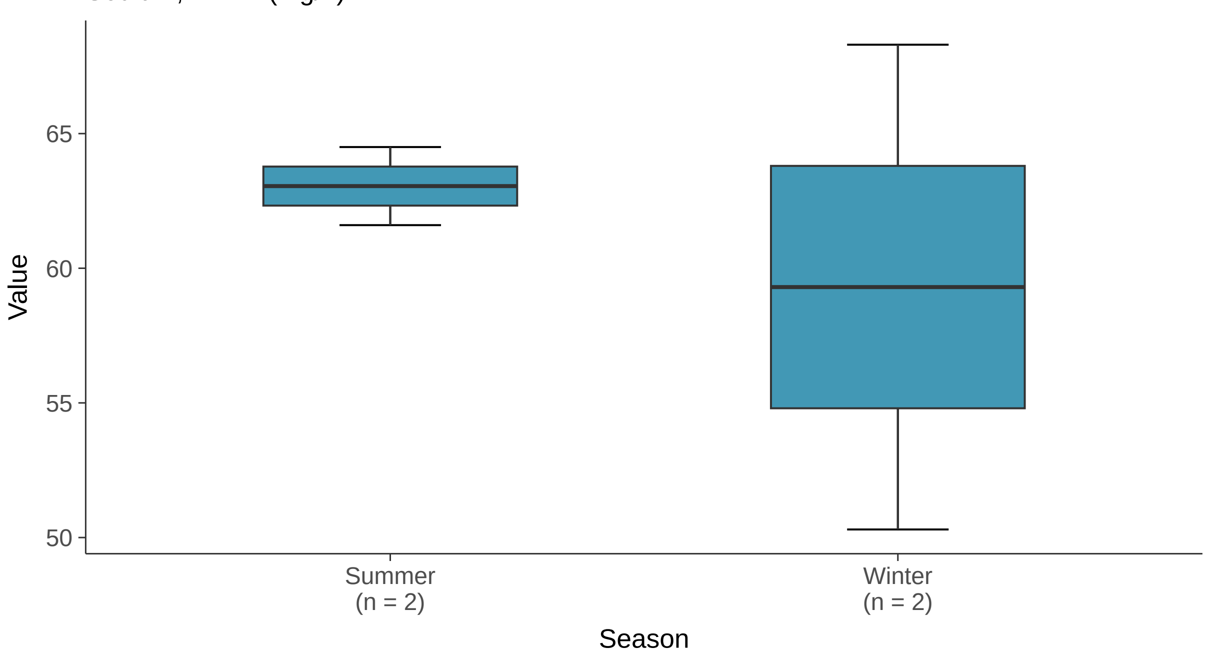
Boxplot

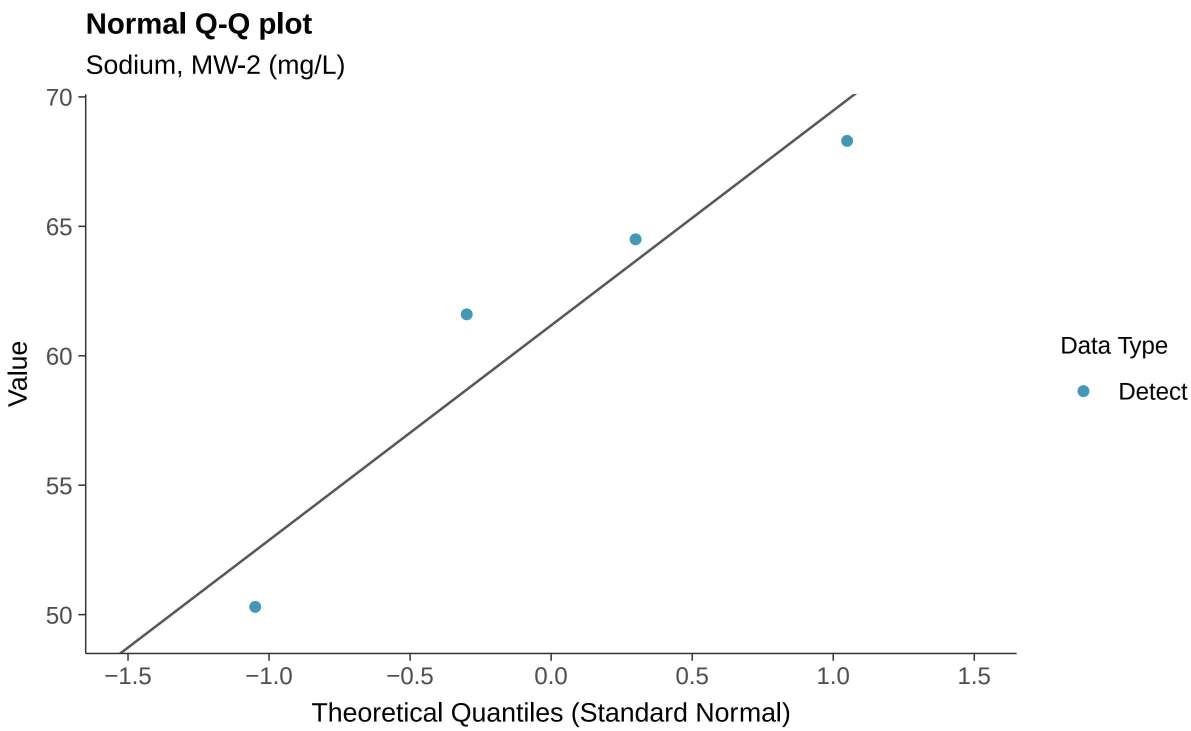
Sodium, MW-2 (mg/L)



Boxplot by Season

Sodium, MW-2 (mg/L)



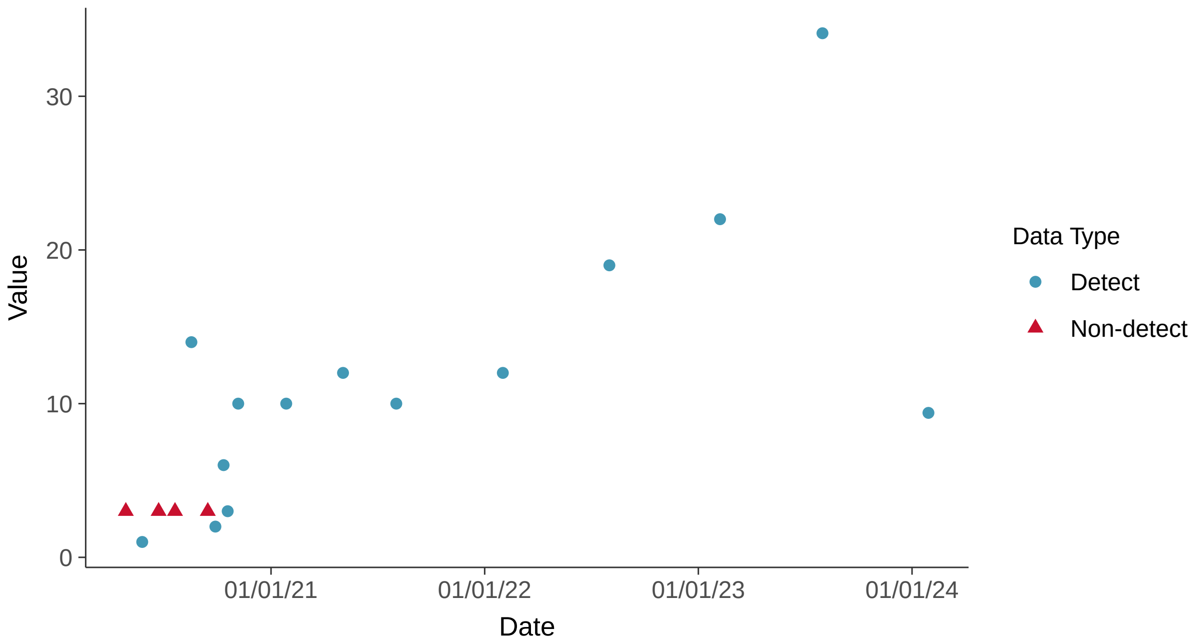

Normal Q-Q plot
Sodium, MW-2 (mg/L)
Value
70
65
60
55
50
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Total Suspended Solids, MW-2

ID: 02_4_36

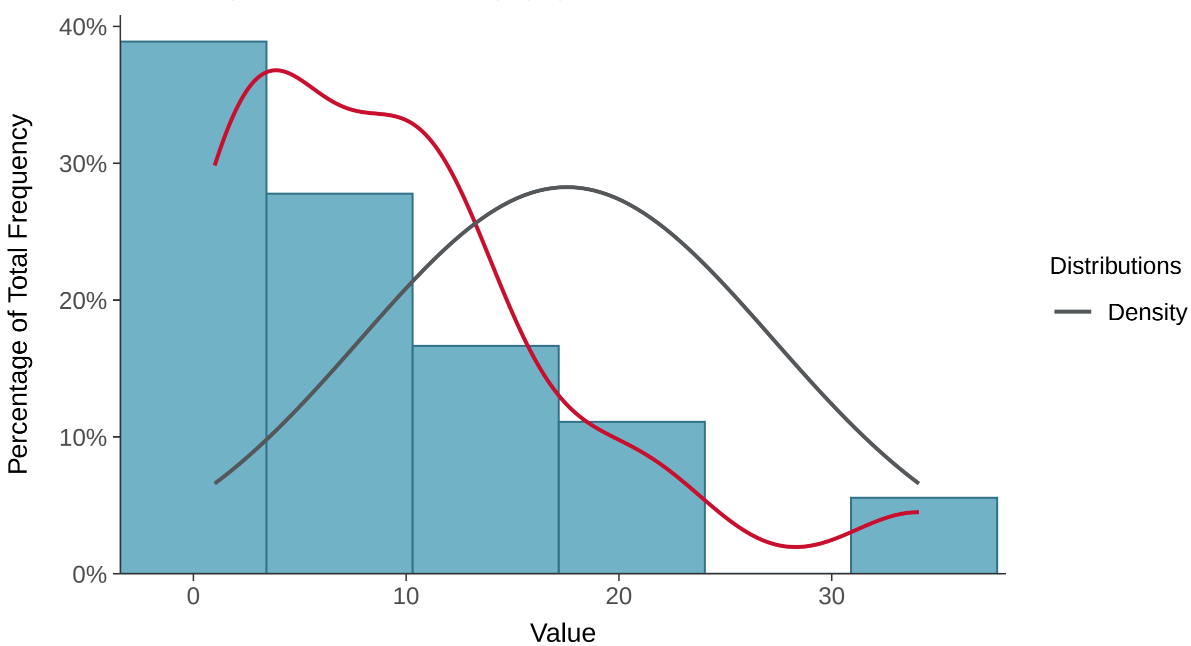
Scatter Plot

Total Suspended Solids, MW-2 (mg/L)



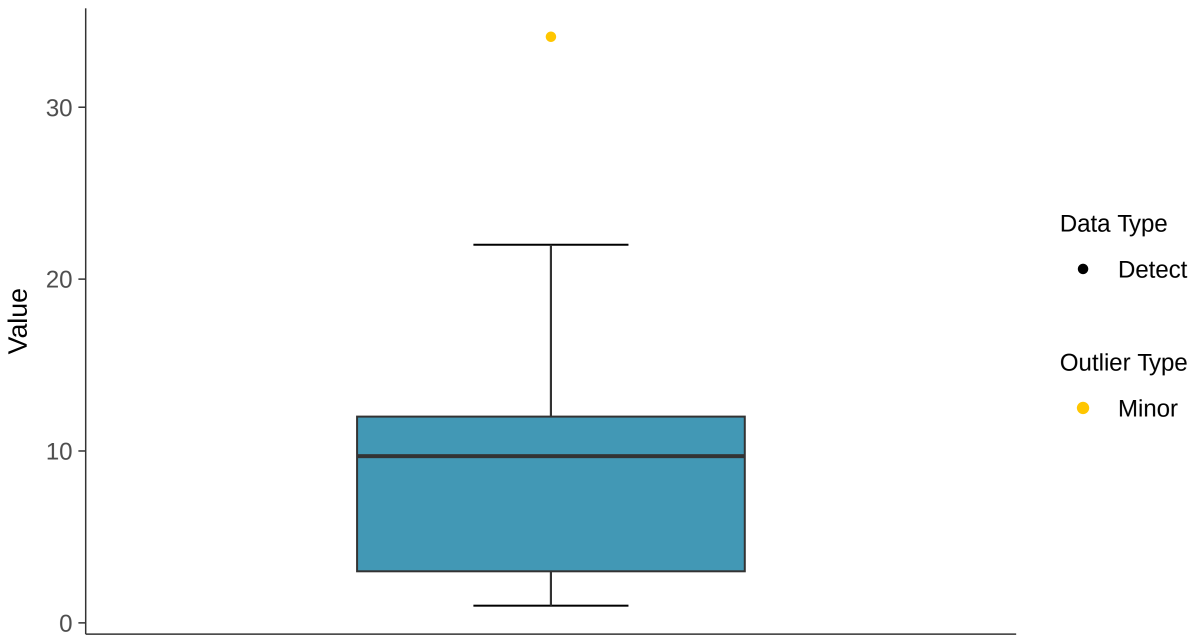
Histogram

Total Suspended Solids, MW-2 (mg/L)



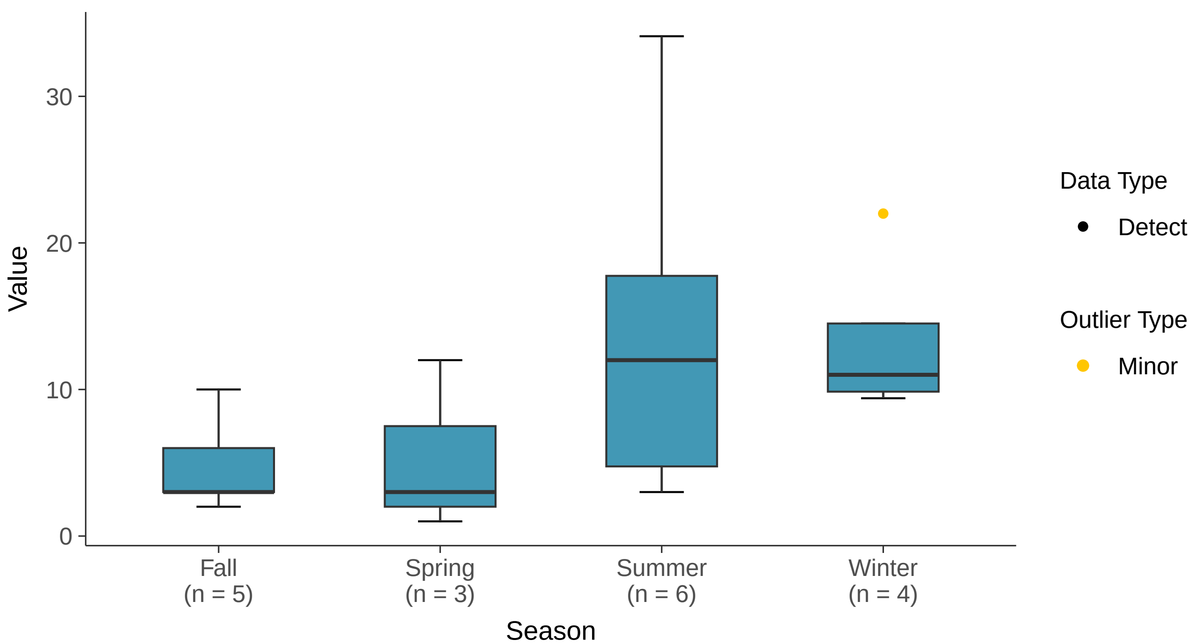
Boxplot

Total Suspended Solids, MW-2 (mg/L)



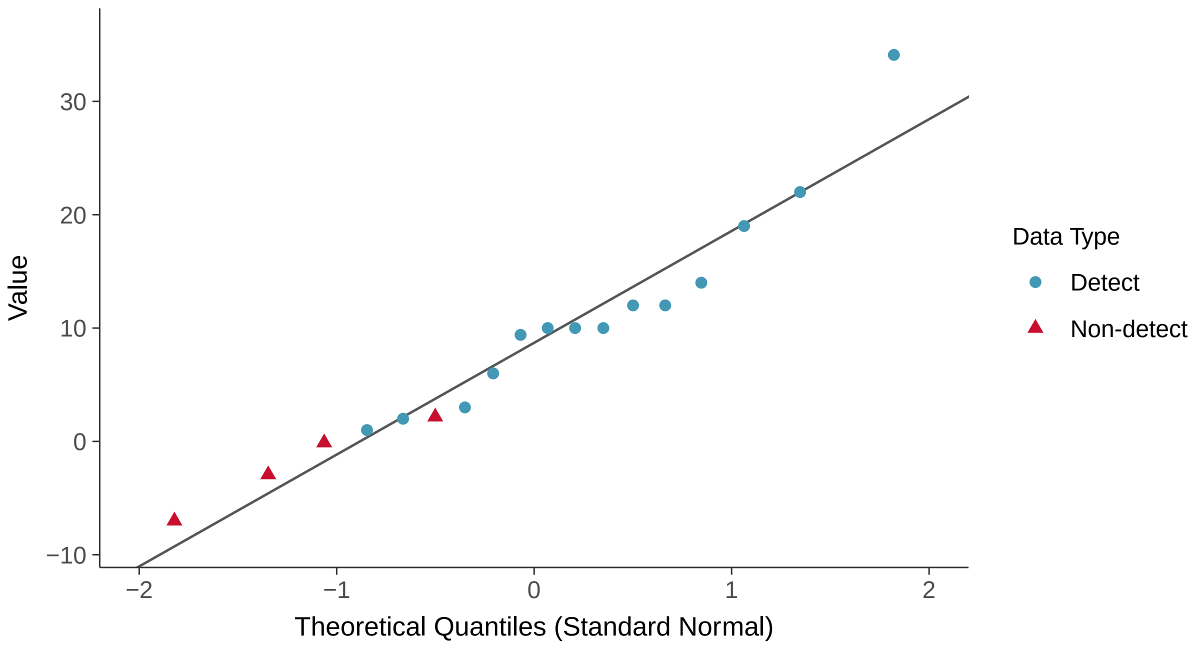
Boxplot by Season

Total Suspended Solids, MW-2 (mg/L)



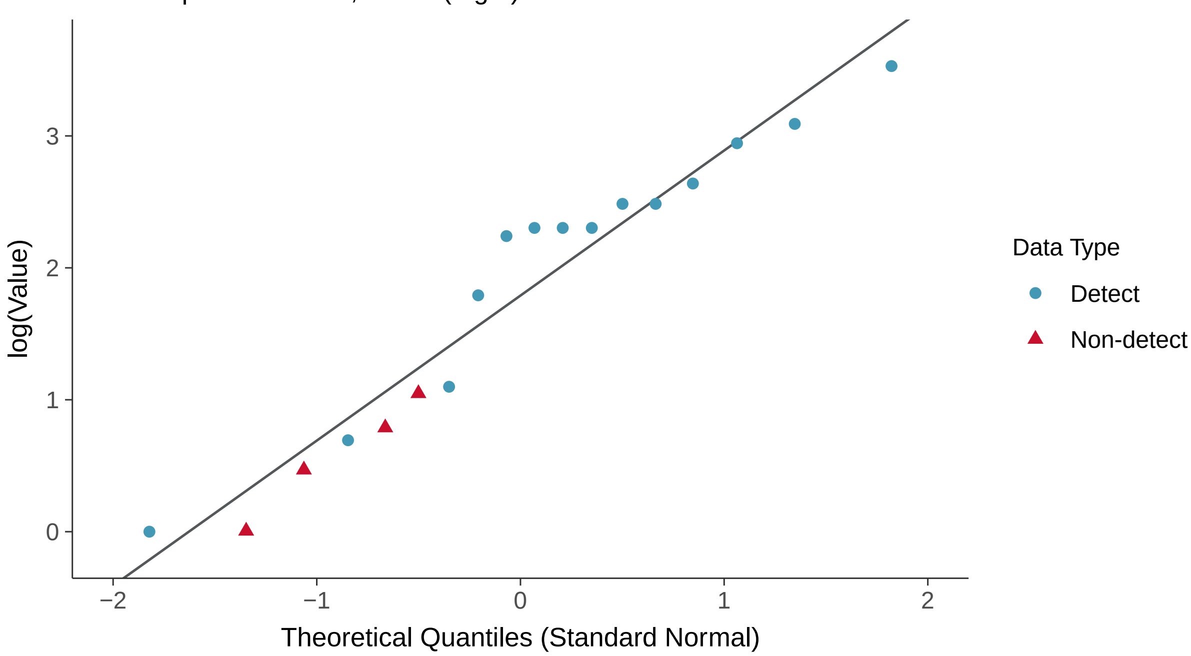
Normal Q-Q plot using ROS Imputed Estimates

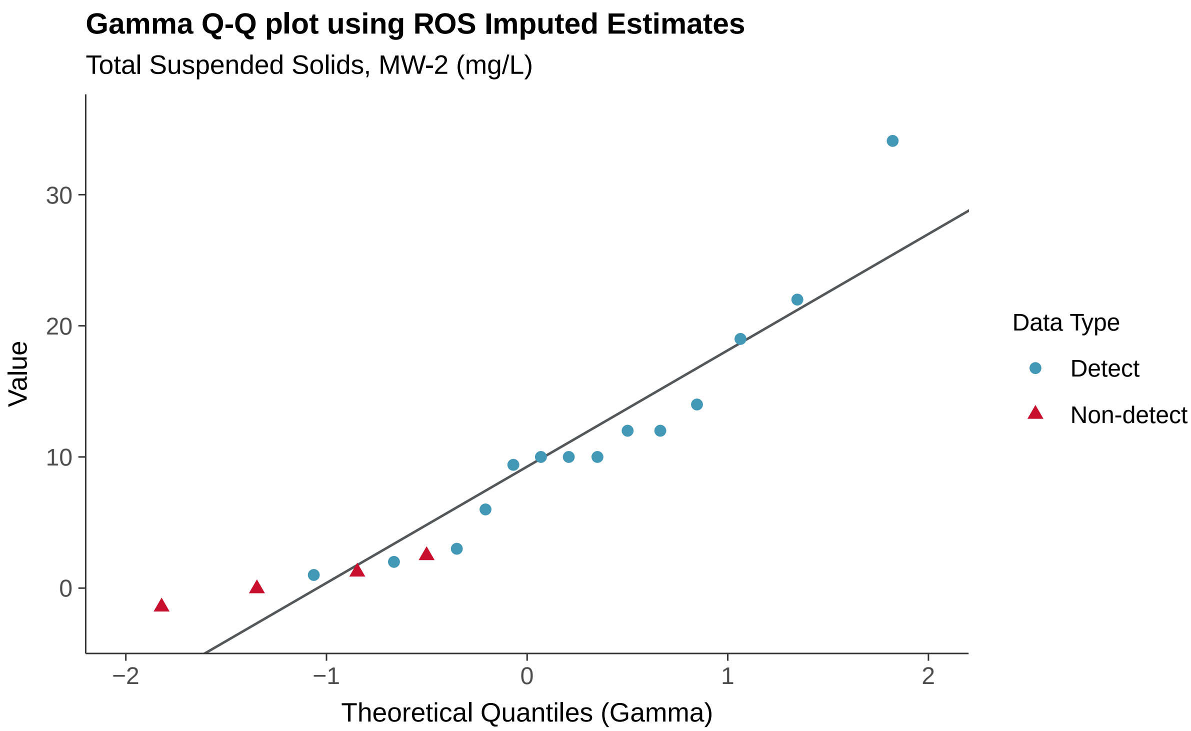
Total Suspended Solids, MW-2 (mg/L)

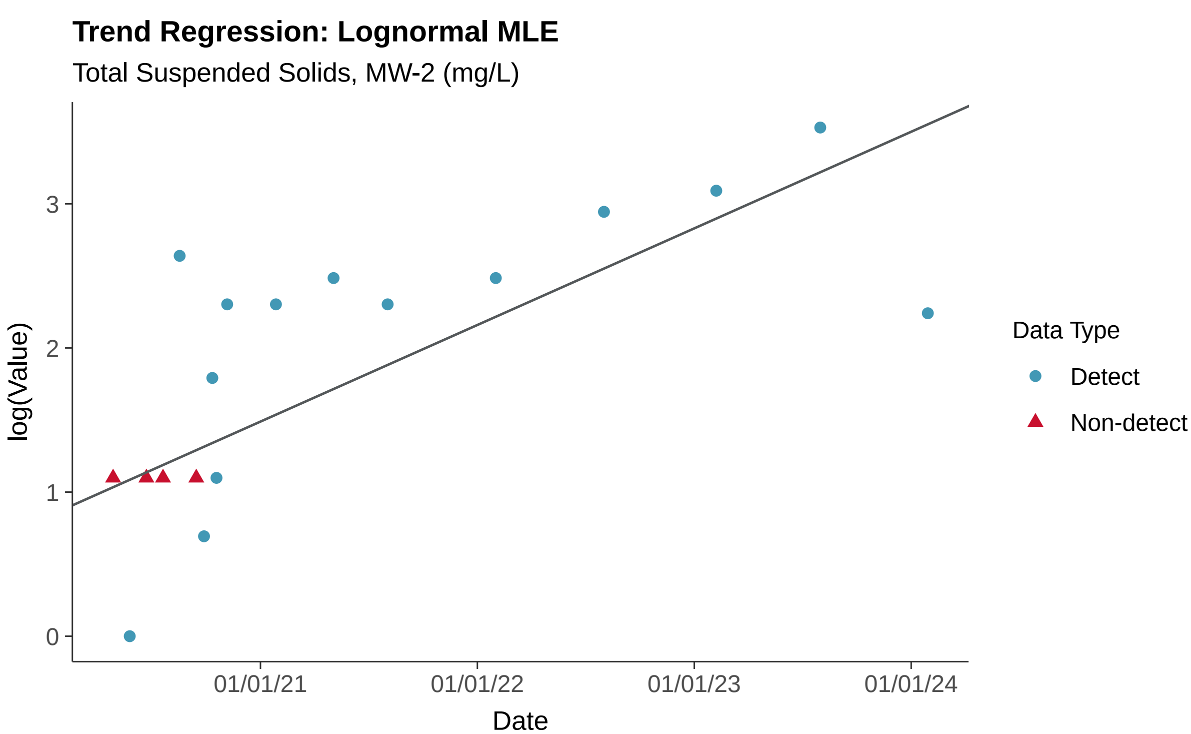


Lognormal Q-Q plot using ROS Imputed Estimates

Total Suspended Solids, MW-2 (mg/L)

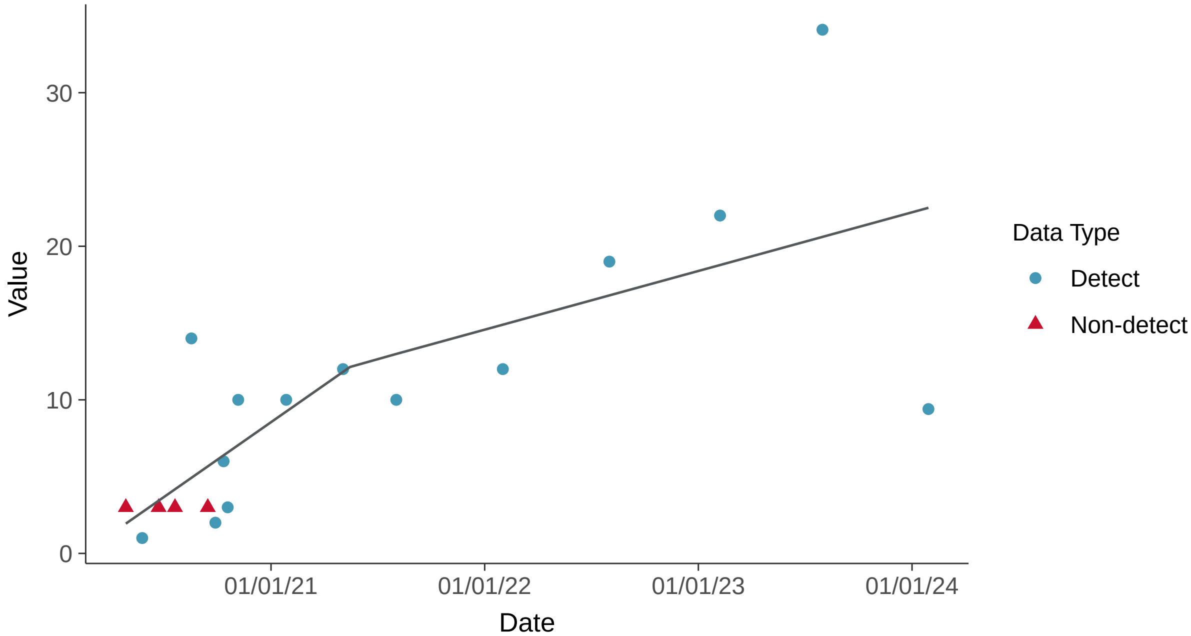



Gamma Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-2 (mg/L)
Value
30
20
10
0
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Total Suspended Solids, MW-2 (mg/L)
log(Value)
3
2
1
0
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

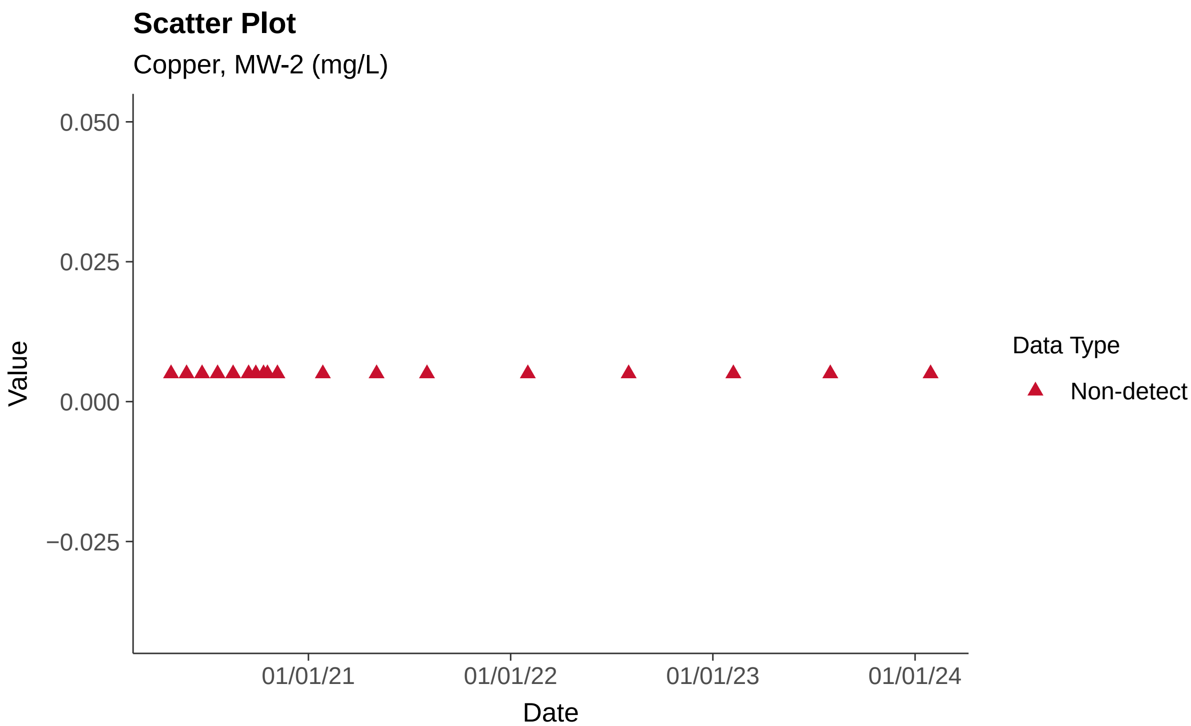
Trend Regression: Piecewise Linear-Linear

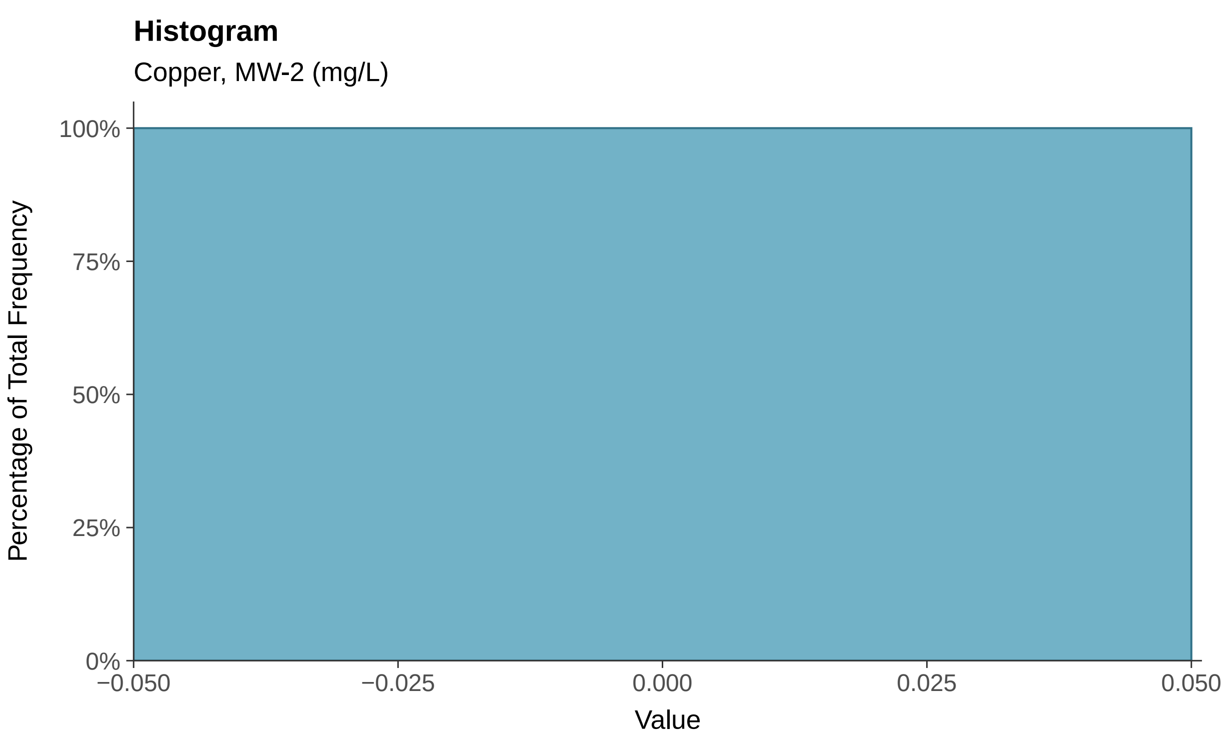
Total Suspended Solids, MW-2 (mg/L)



Part 115: Copper, MW-2

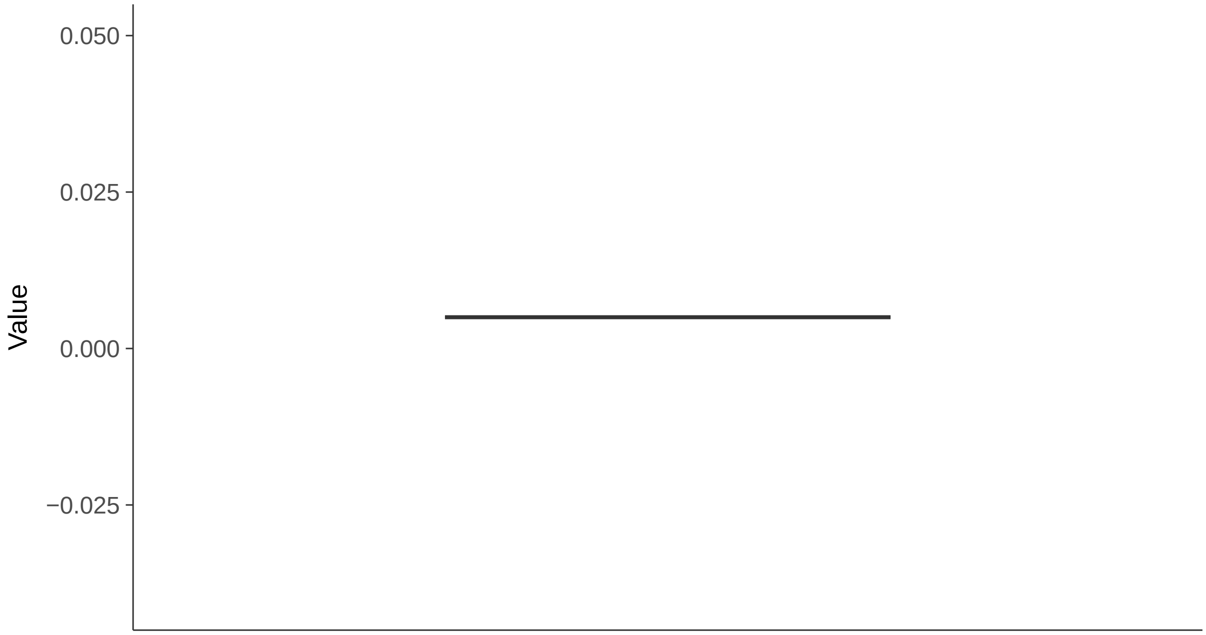
ID: 02_5_37





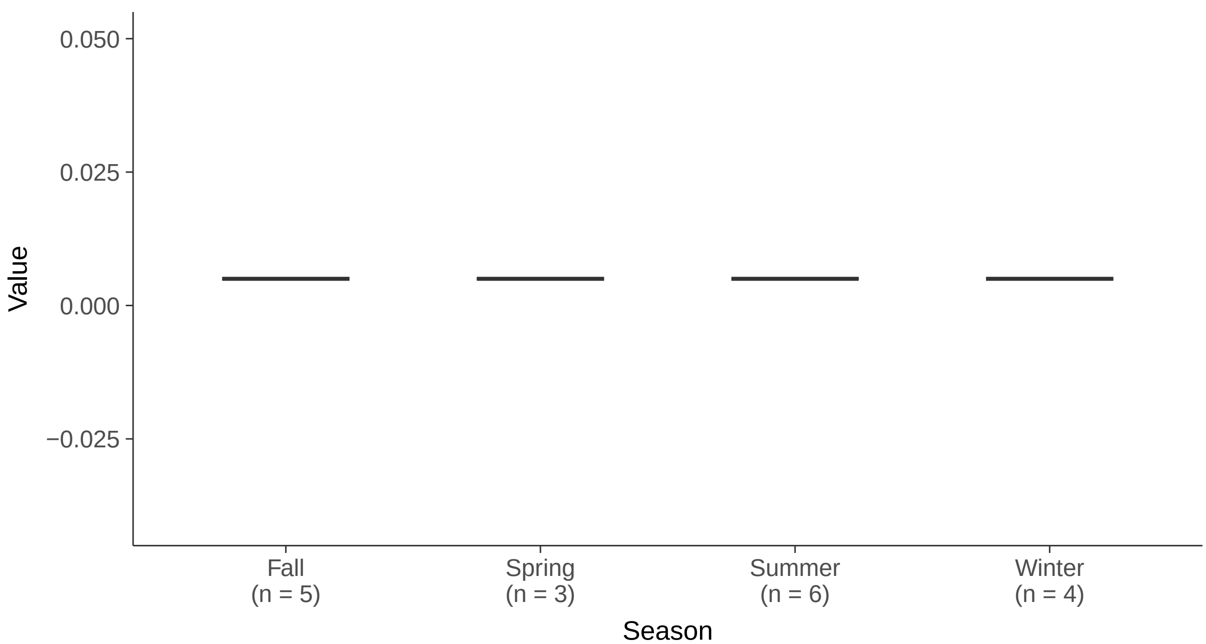
Boxplot

Copper, MW-2 (mg/L)



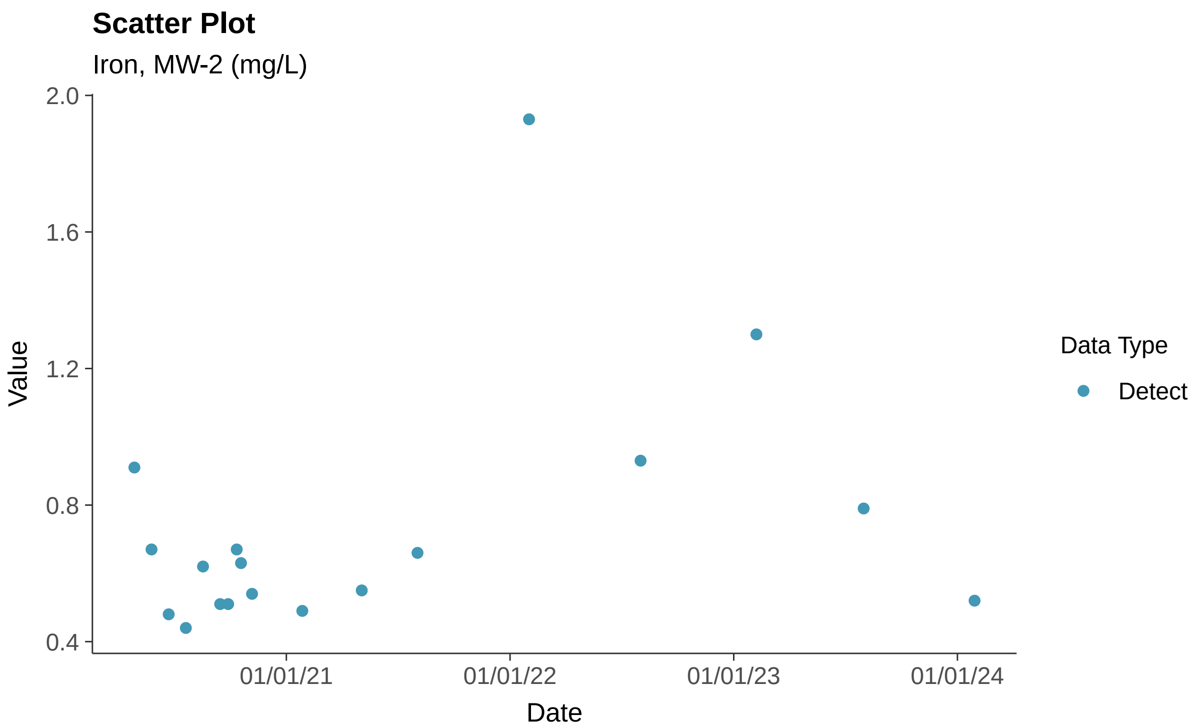
Boxplot by Season

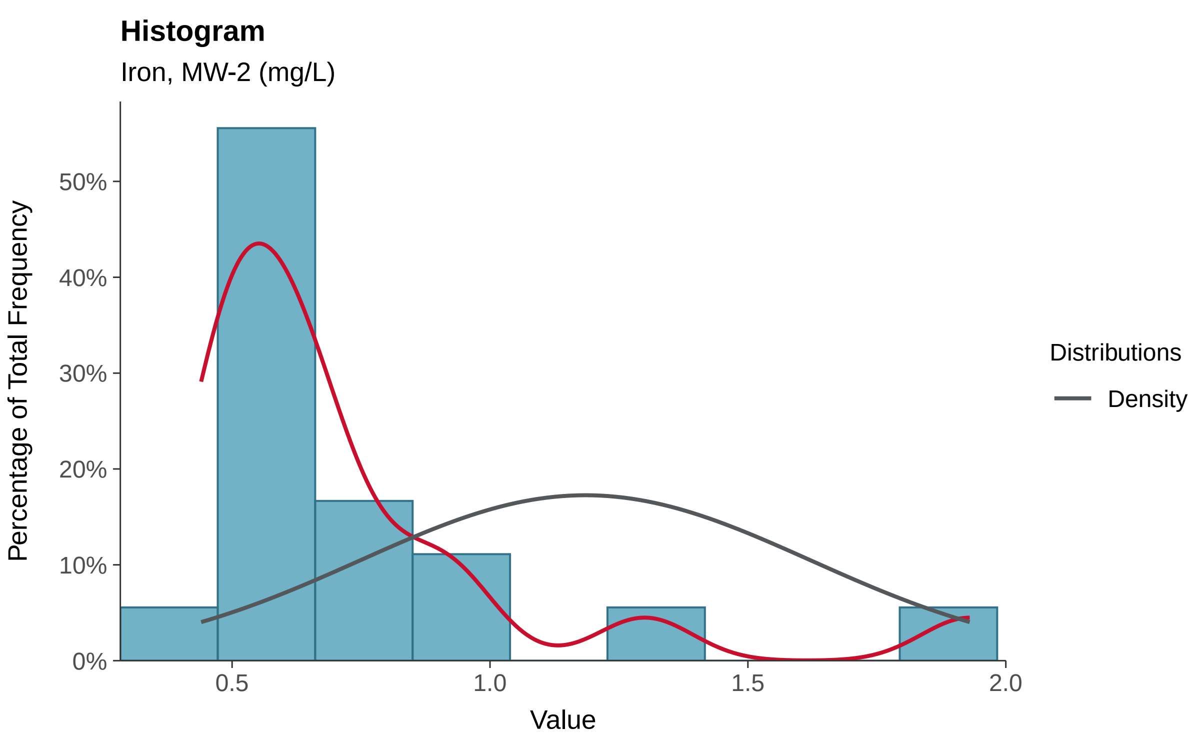
Copper, MW-2 (mg/L)



Part 115: Iron, MW-2

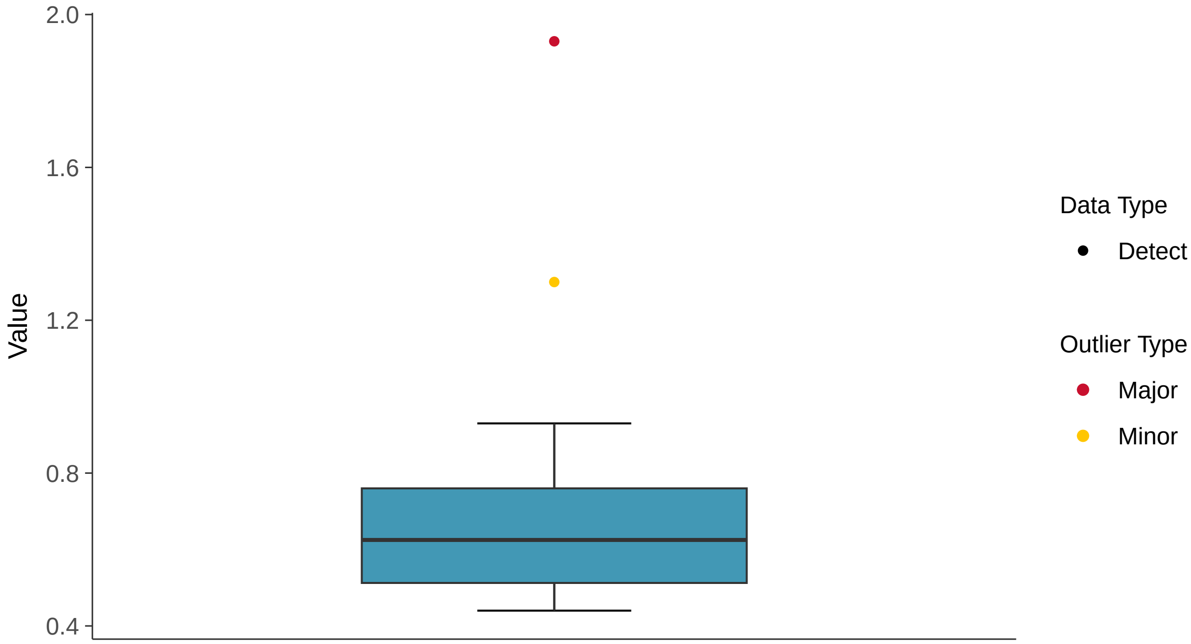
ID: 02_5_38





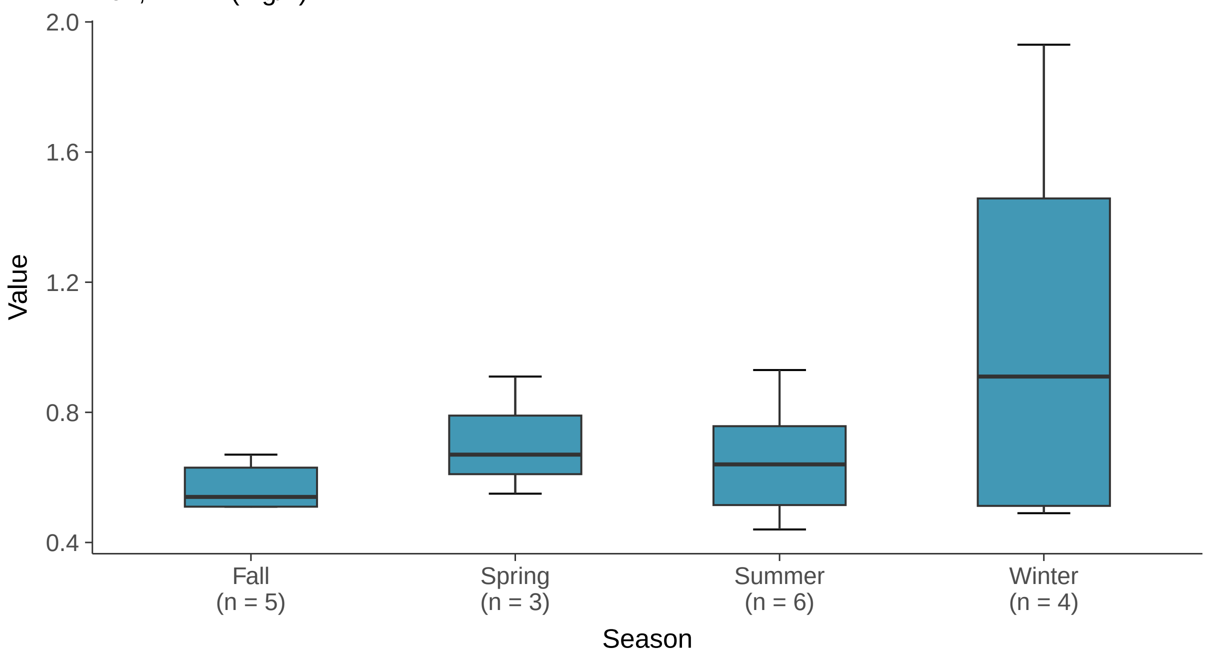
Boxplot

Iron, MW-2 (mg/L)



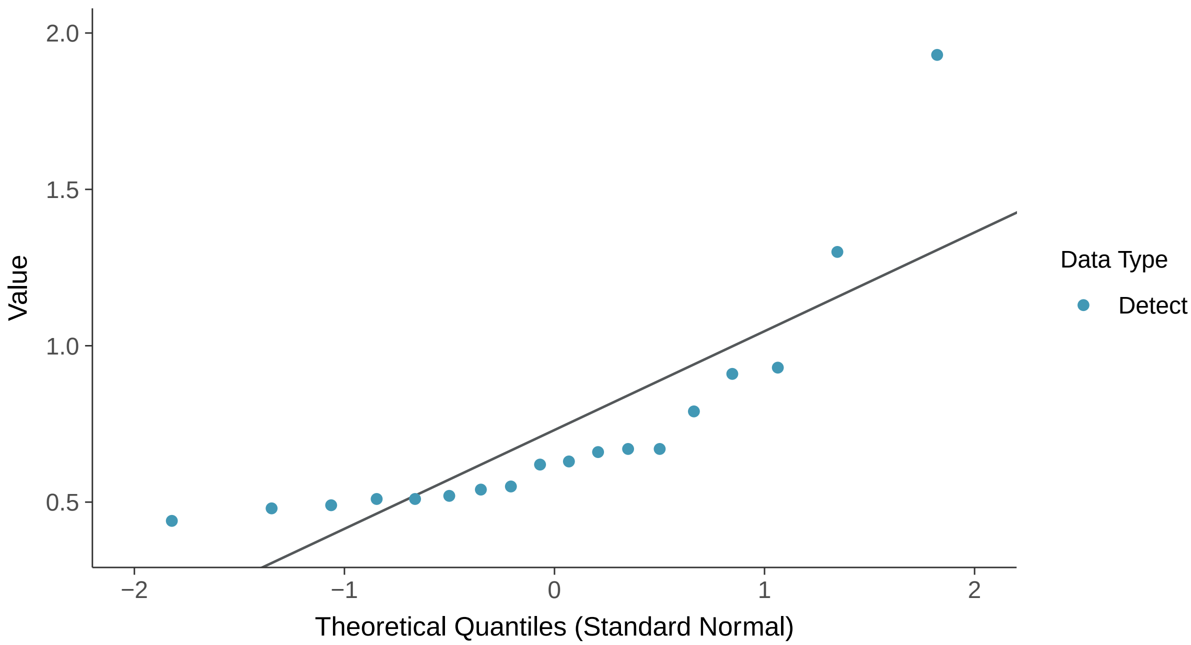
Boxplot by Season

Iron, MW-2 (mg/L)



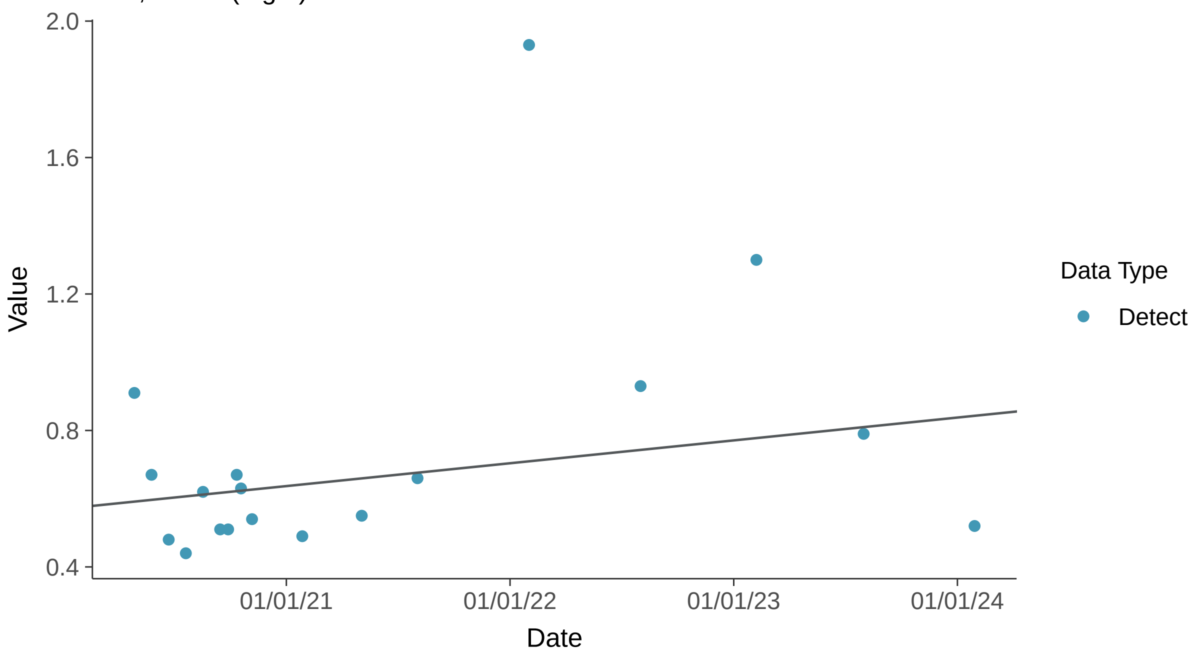
Normal Q-Q plot

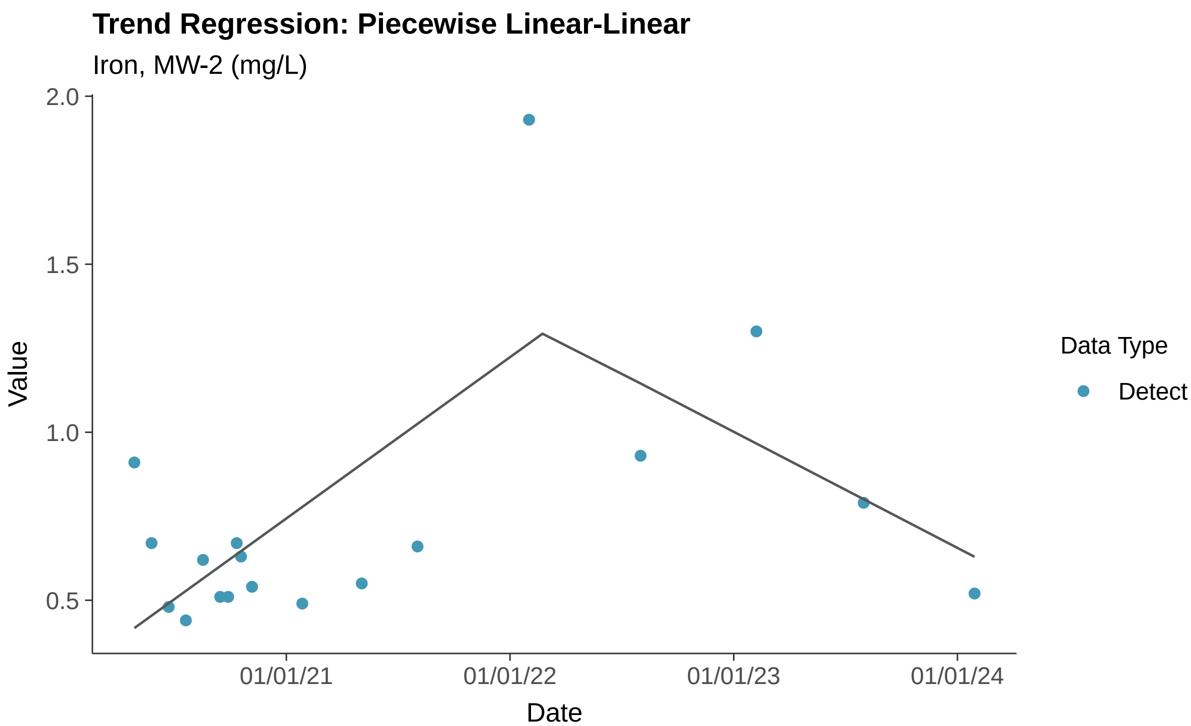
Iron, MW-2 (mg/L)

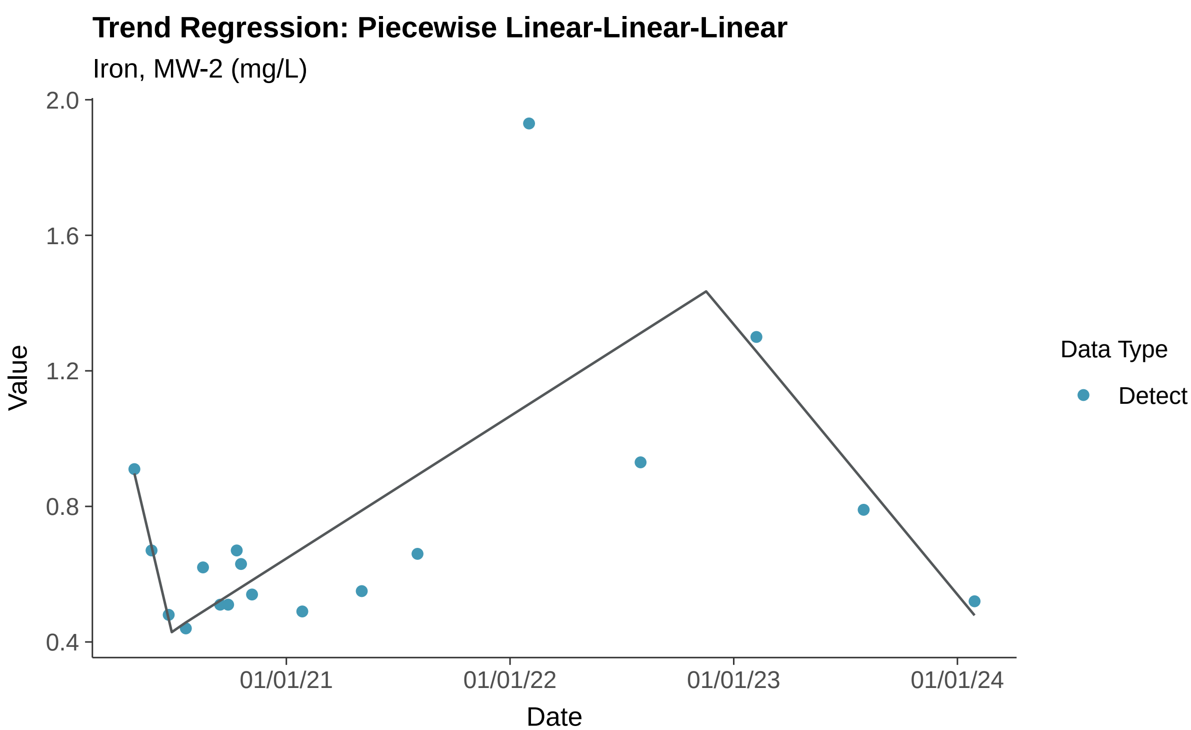


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Iron, MW-2 (mg/L)




Trend Regression: Piecewise Linear-Linear
Iron, MW-2 (mg/L)
Value
2.0
1.5
1.0
0.5
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

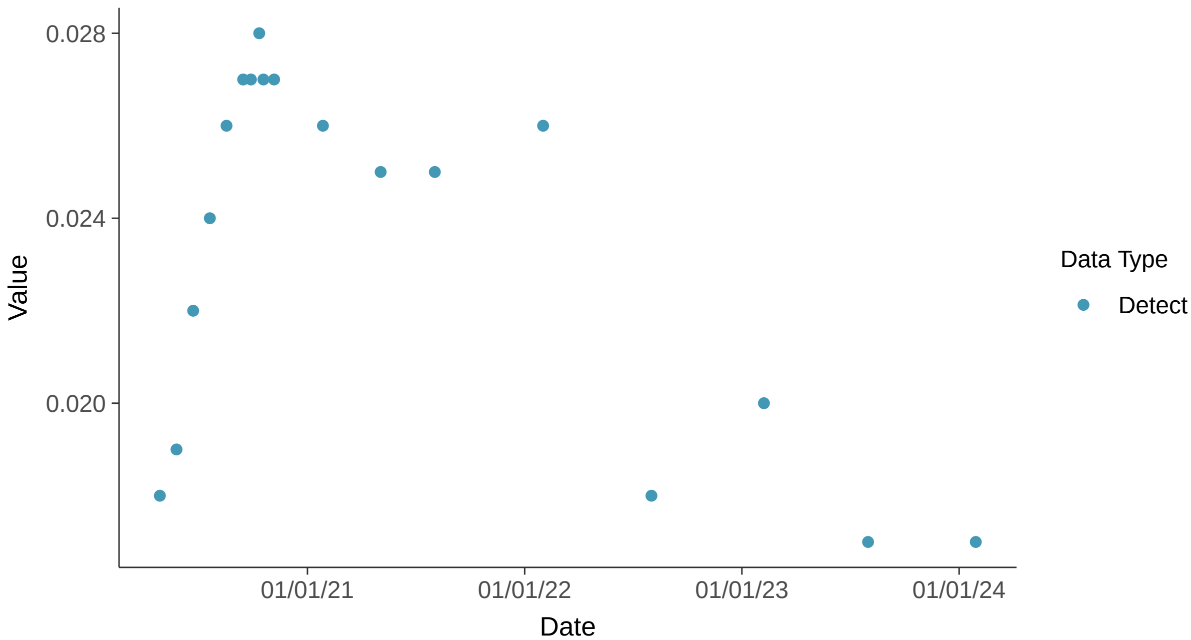

Trend Regression: Piecewise Linear-Linear-Linear
Iron, MW-2 (mg/L)
Value
2.0
1.6
1.2
0.8
0.4
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Part 115: Nickel, MW-2

ID: 02_5_39

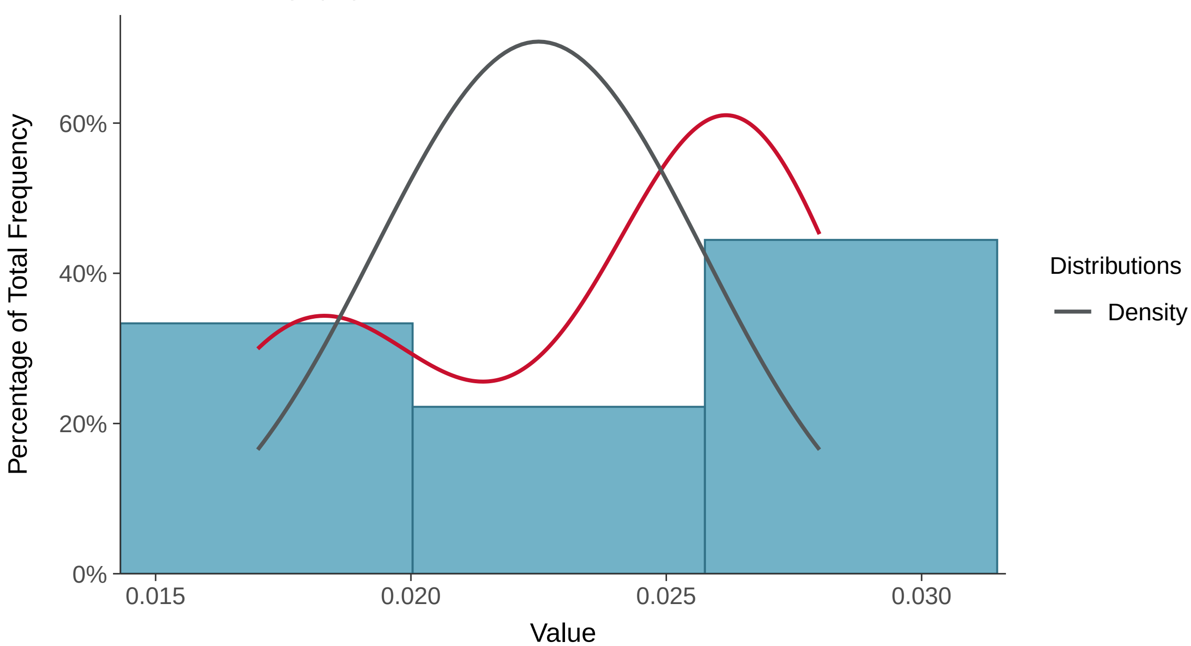
Scatter Plot

Nickel, MW-2 (mg/L)



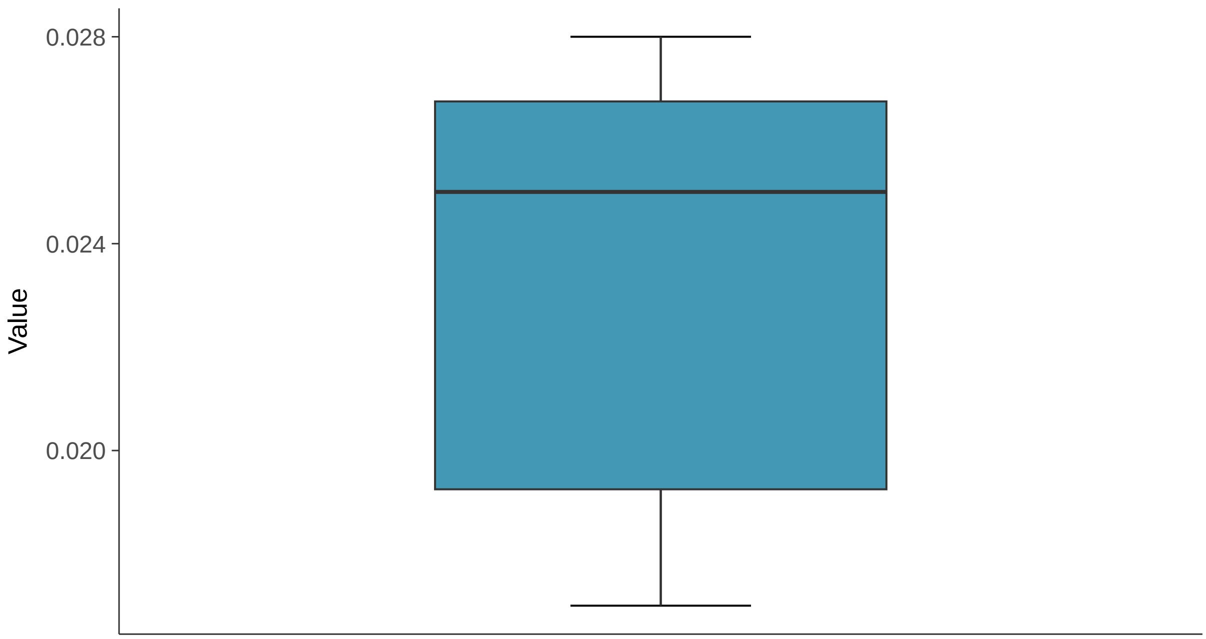
Histogram

Nickel, MW-2 (mg/L)



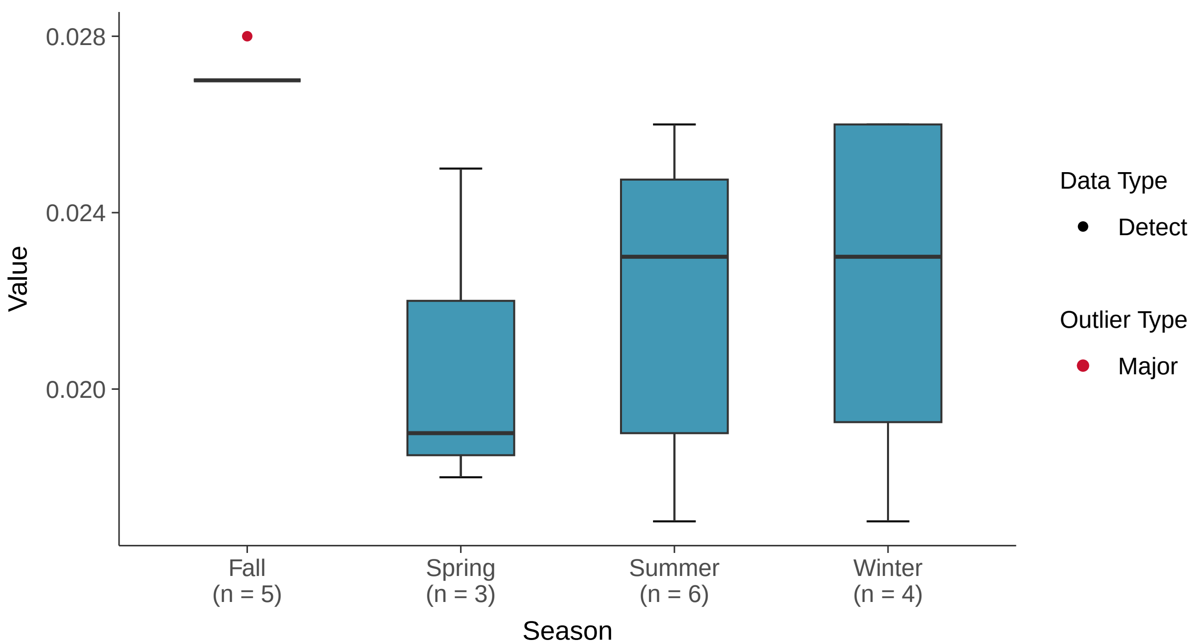
Boxplot

Nickel, MW-2 (mg/L)



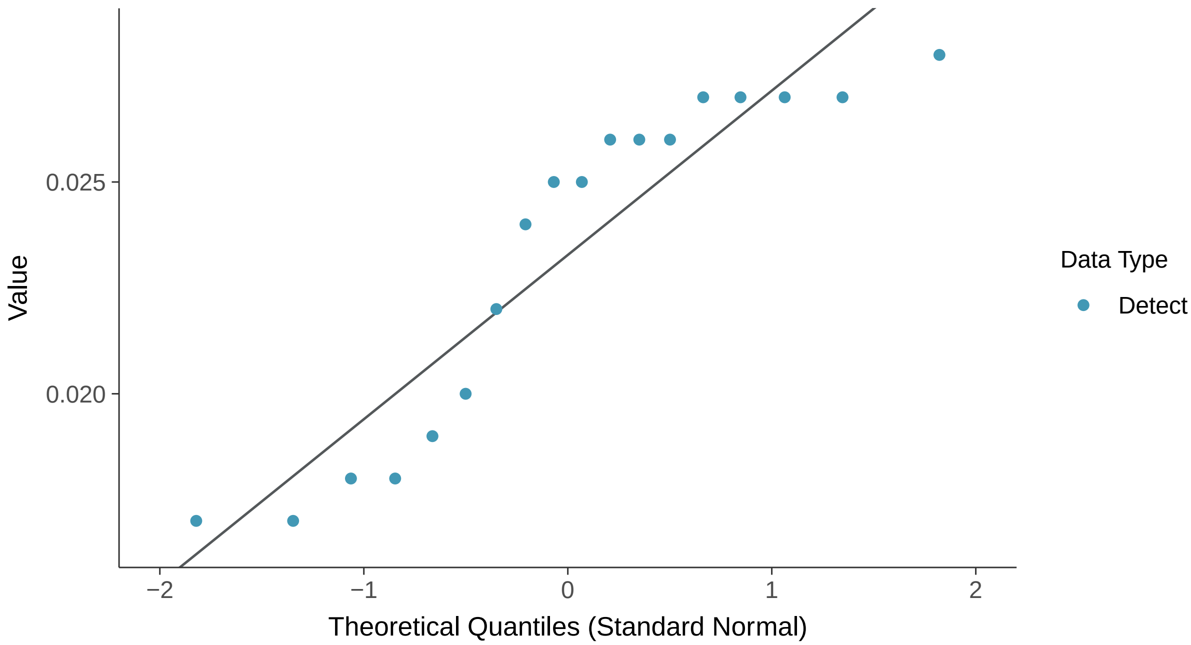
Boxplot by Season

Nickel, MW-2 (mg/L)



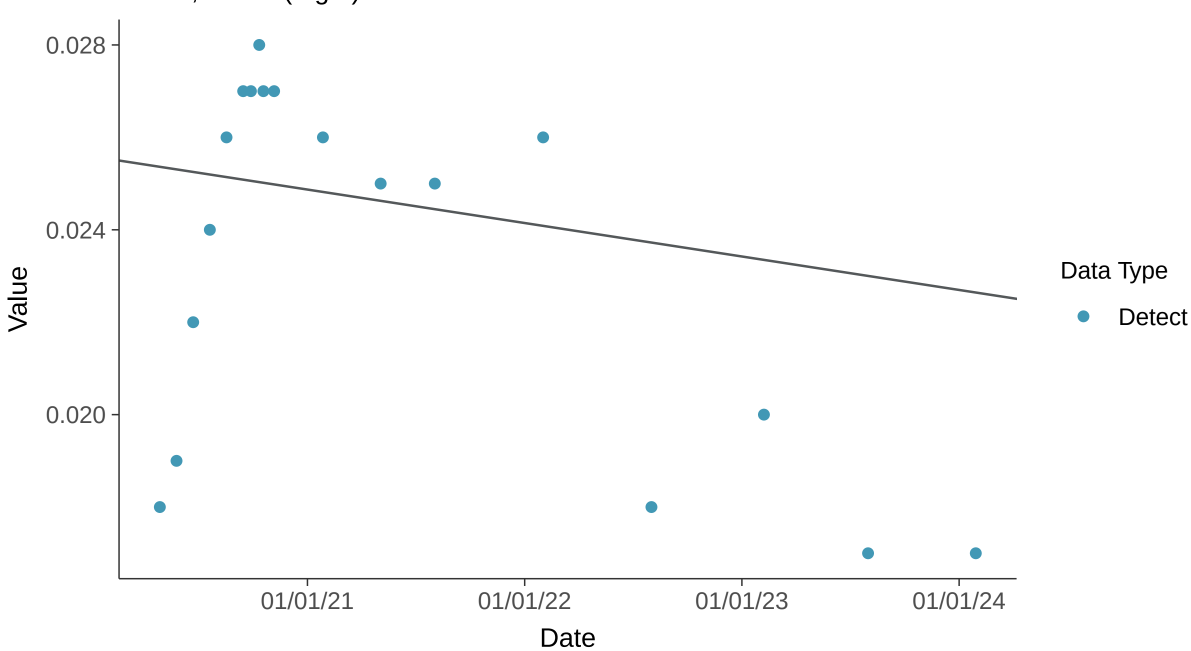
Normal Q-Q plot

Nickel, MW-2 (mg/L)



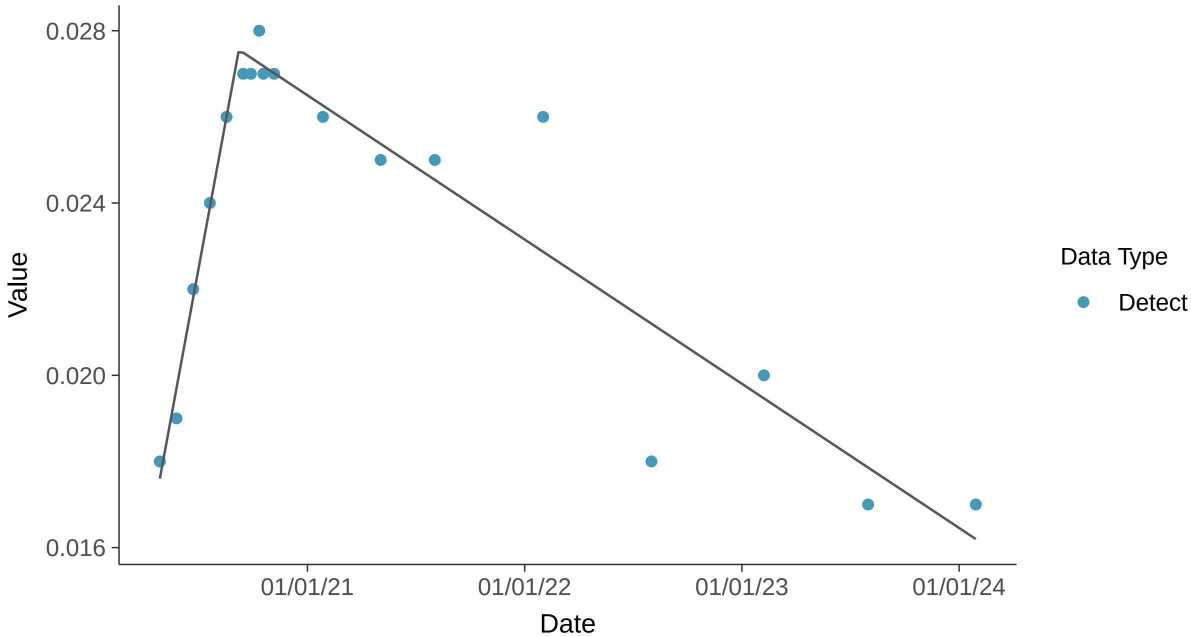
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Nickel, MW-2 (mg/L)



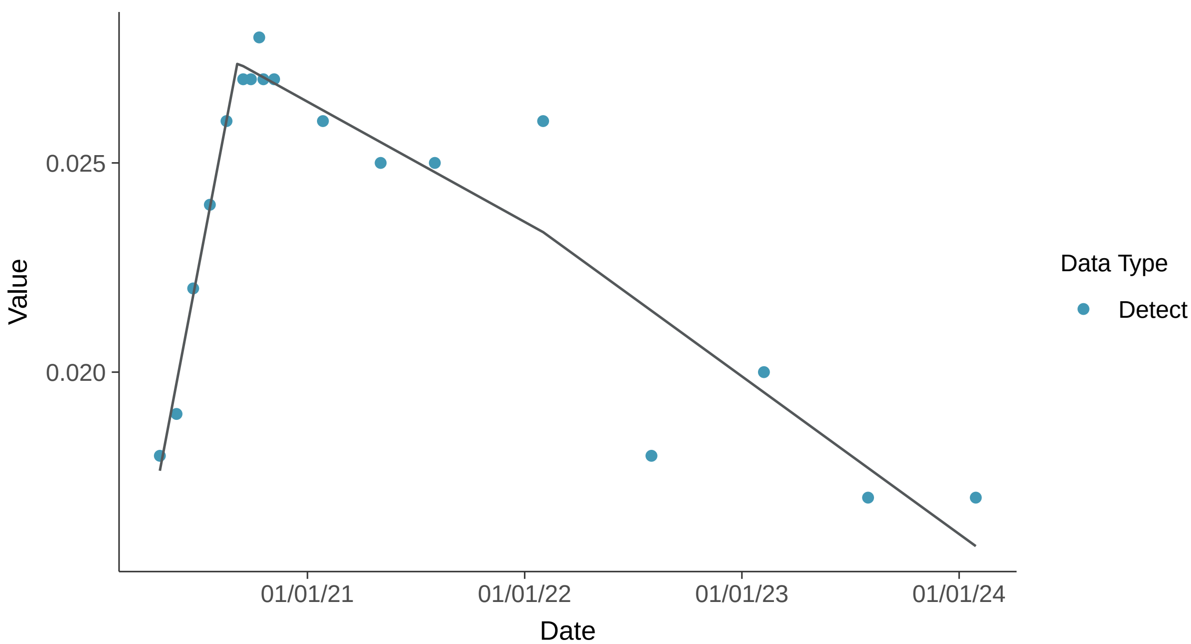
Trend Regression: Piecewise Linear-Linear

Nickel, MW-2 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Nickel, MW-2 (mg/L)

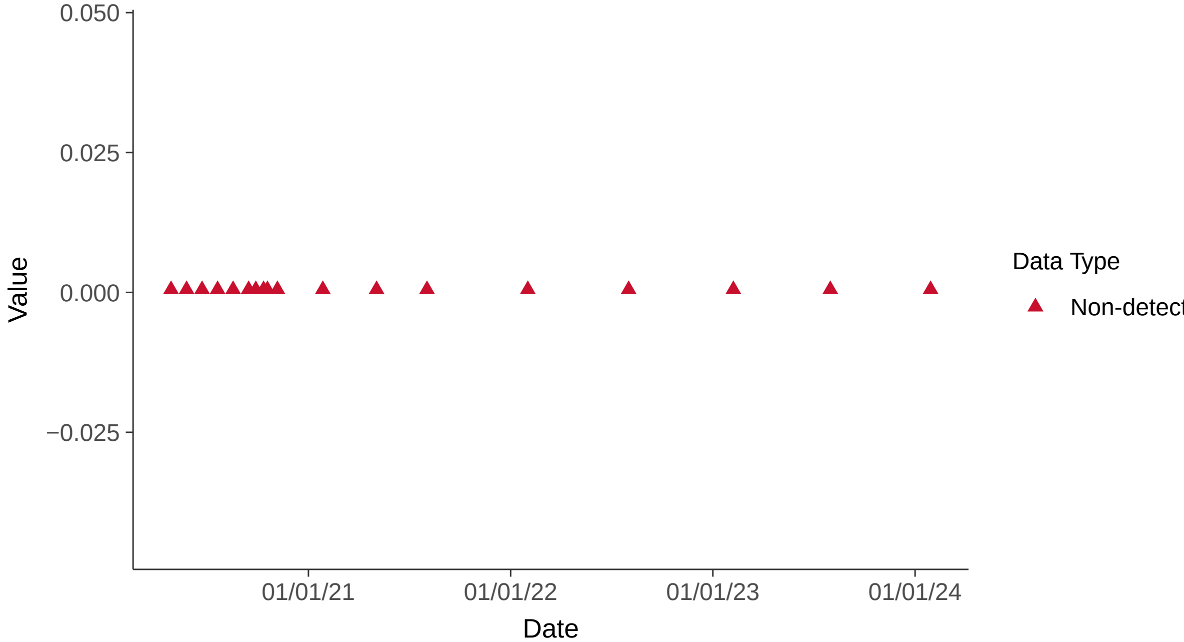


Part 115: Silver, MW-2

ID: 02_5_40

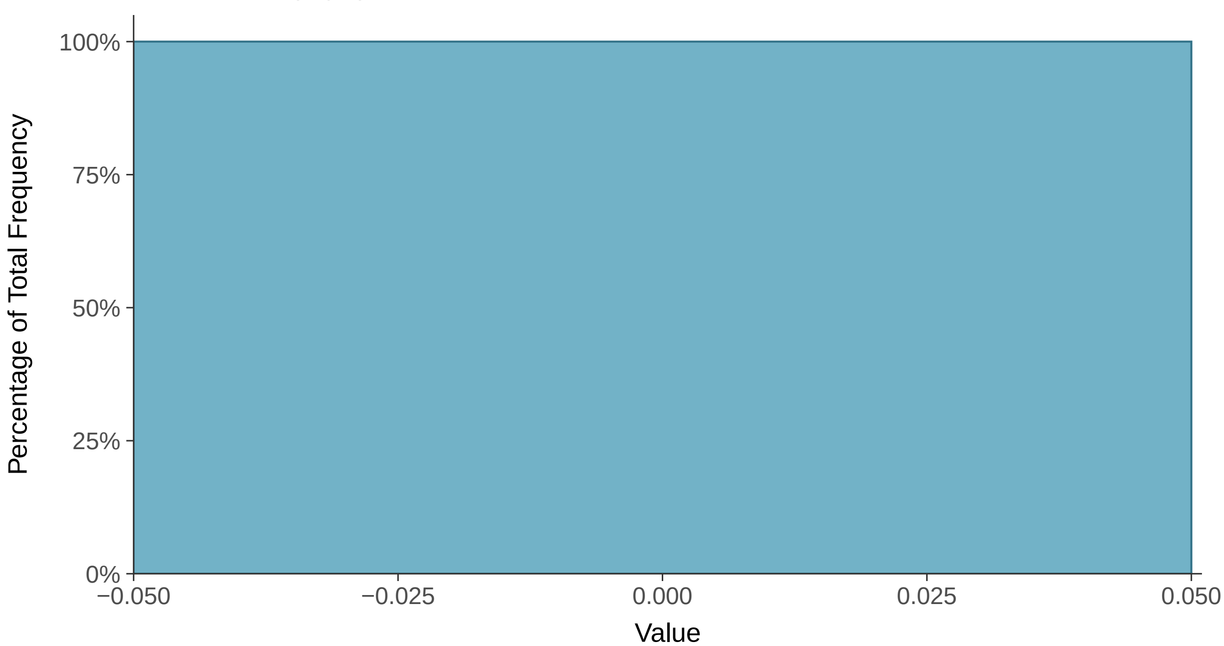
Scatter Plot

Silver, MW-2 (mg/L)



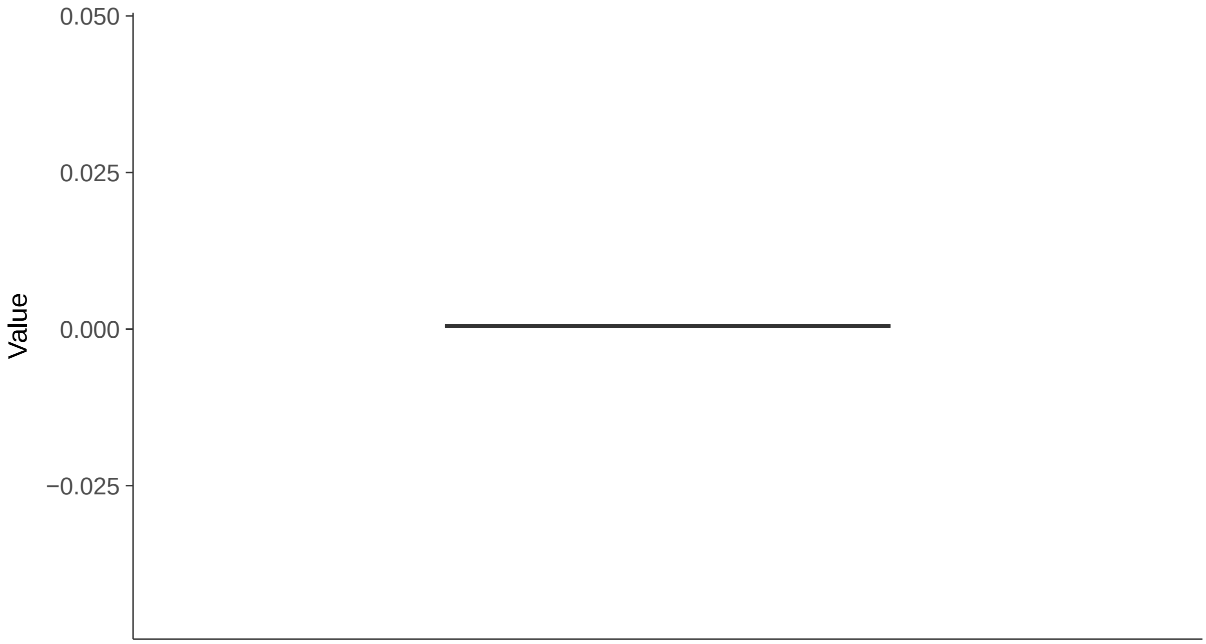
Histogram

Silver, MW-2 (mg/L)



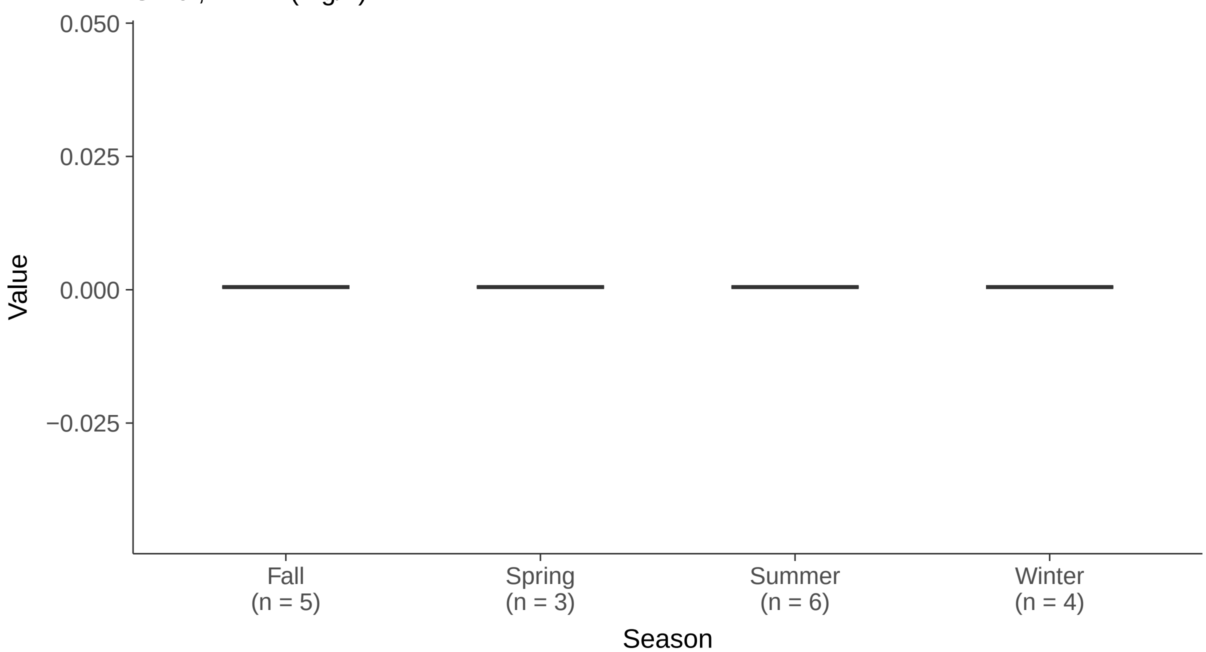
Boxplot

Silver, MW-2 (mg/L)



Boxplot by Season

Silver, MW-2 (mg/L)

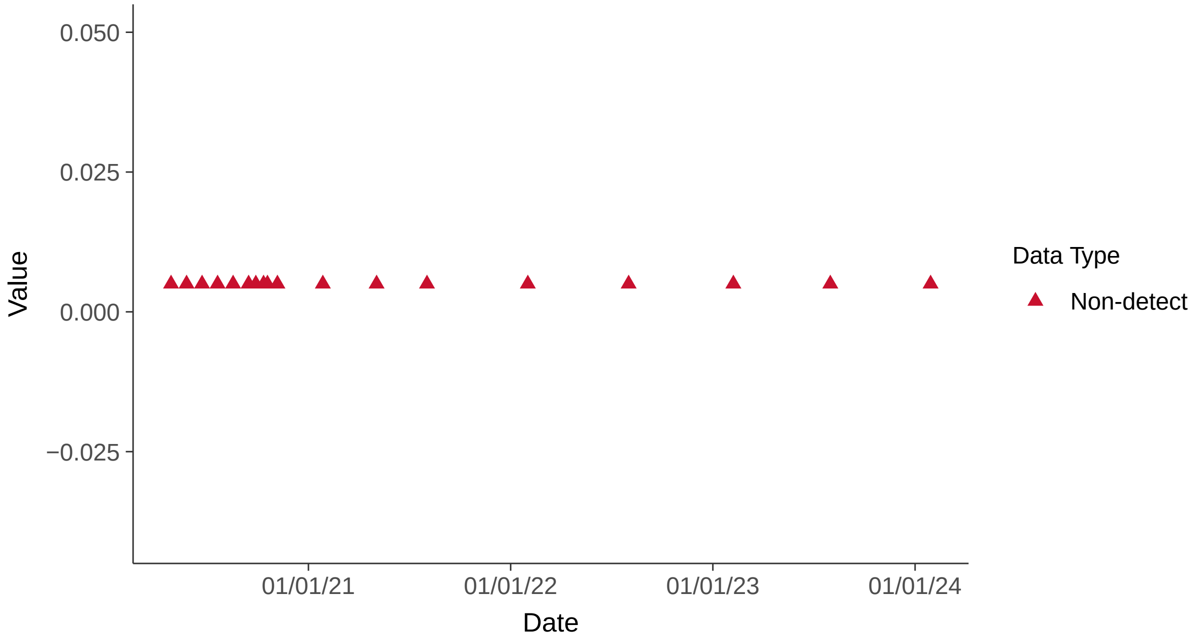


Part 115: Vanadium, MW-2

ID: 02_5_41

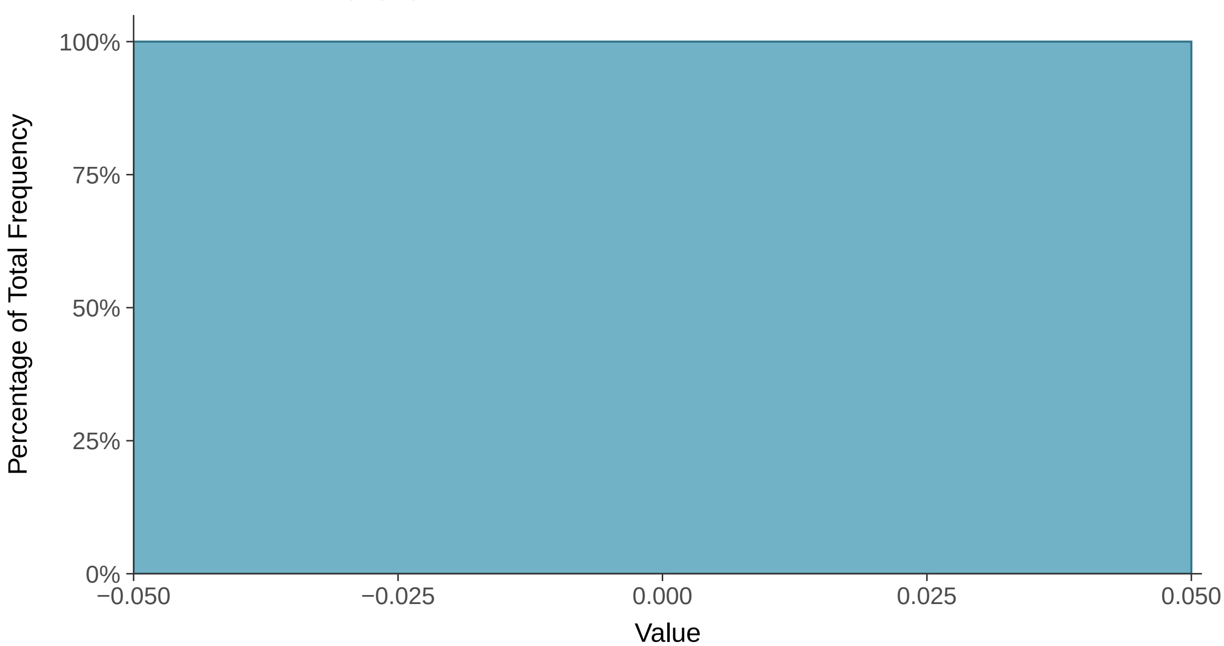
Scatter Plot

Vanadium, MW-2 (mg/L)



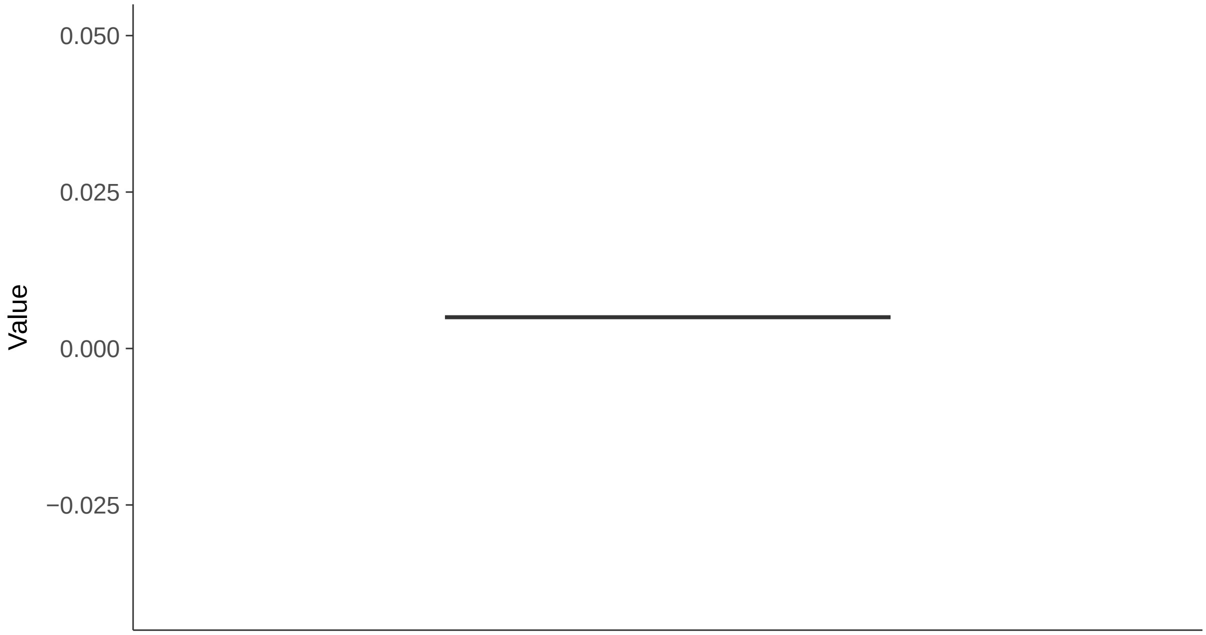
Histogram

Vanadium, MW-2 (mg/L)



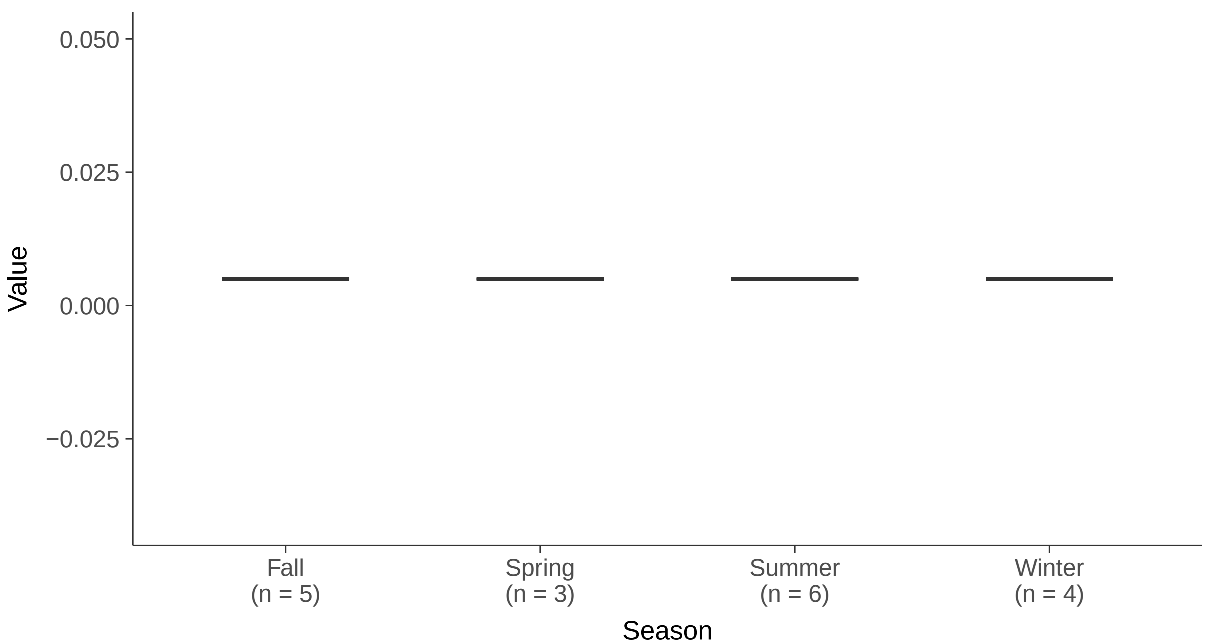
Boxplot

Vanadium, MW-2 (mg/L)



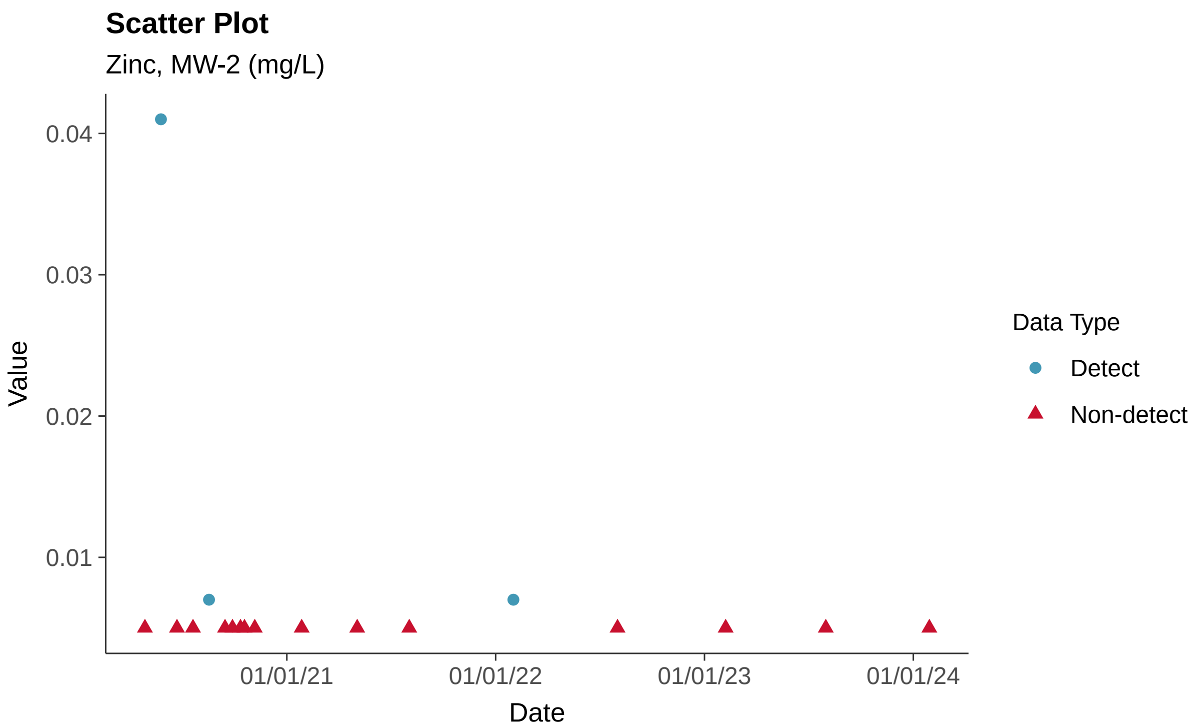
Boxplot by Season

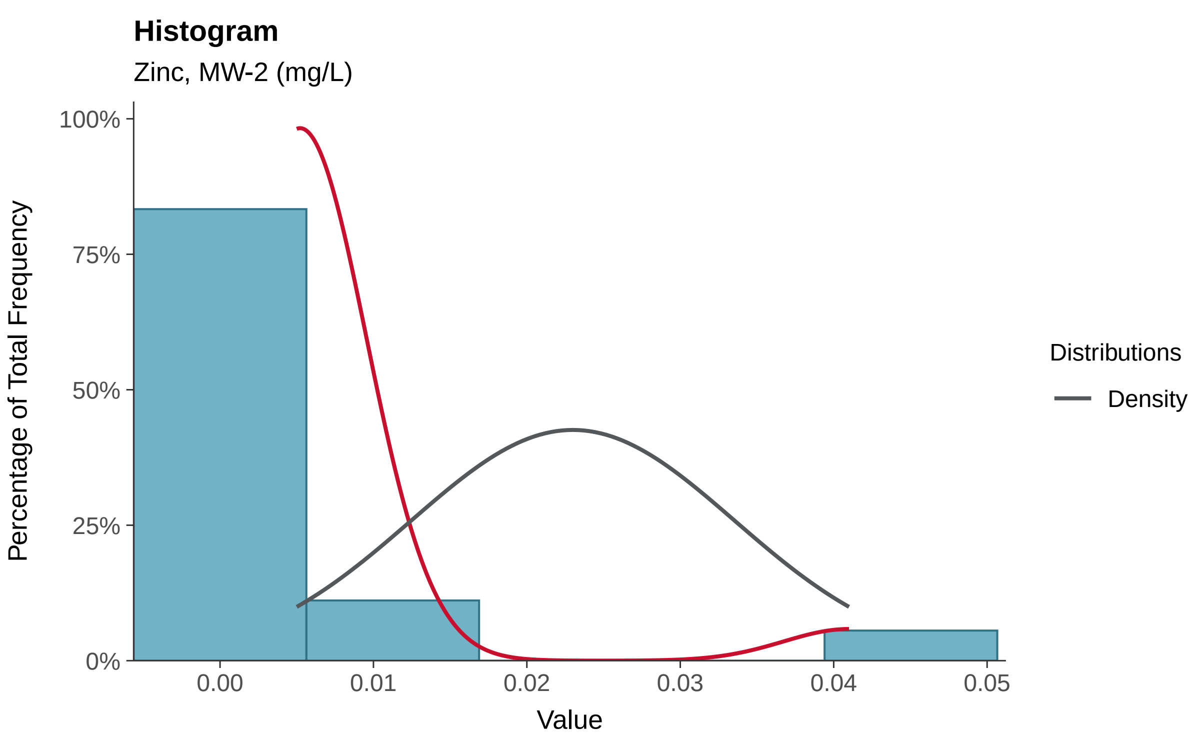
Vanadium, MW-2 (mg/L)



Part 115: Zinc, MW-2

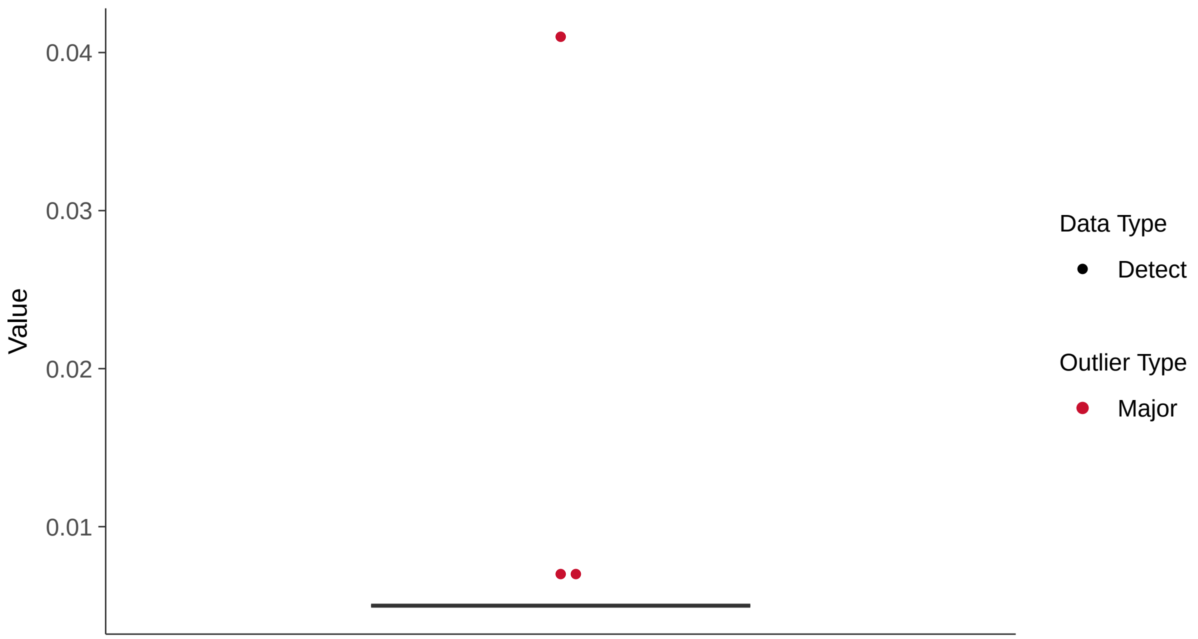
ID: 02_5_42





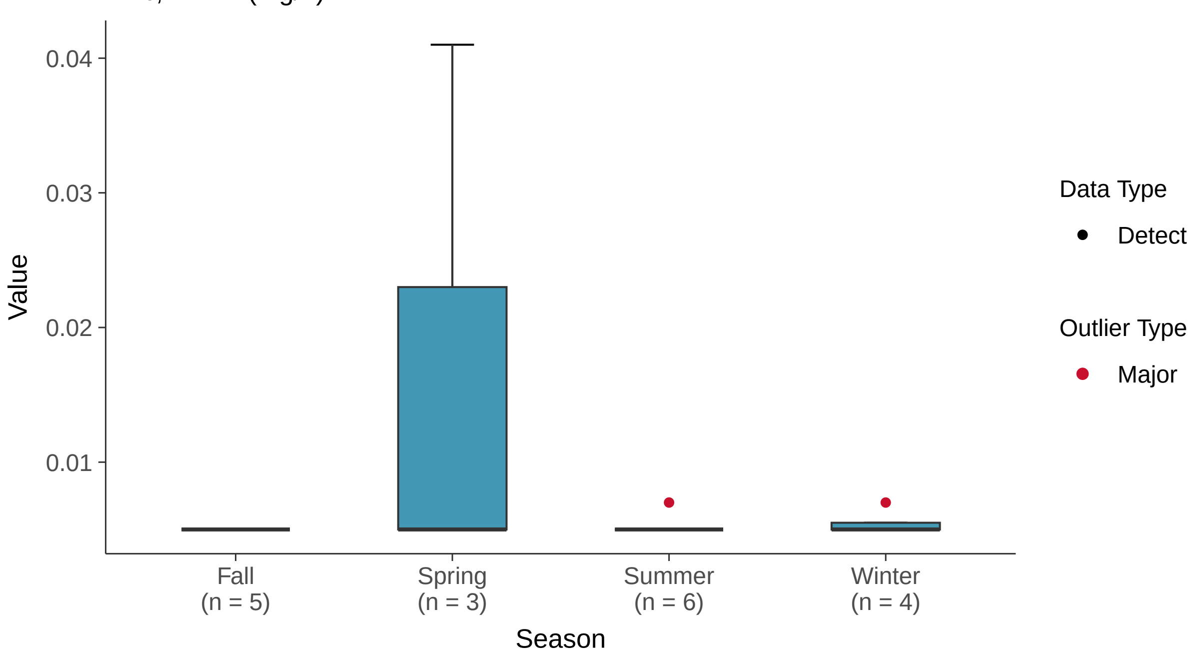
Boxplot

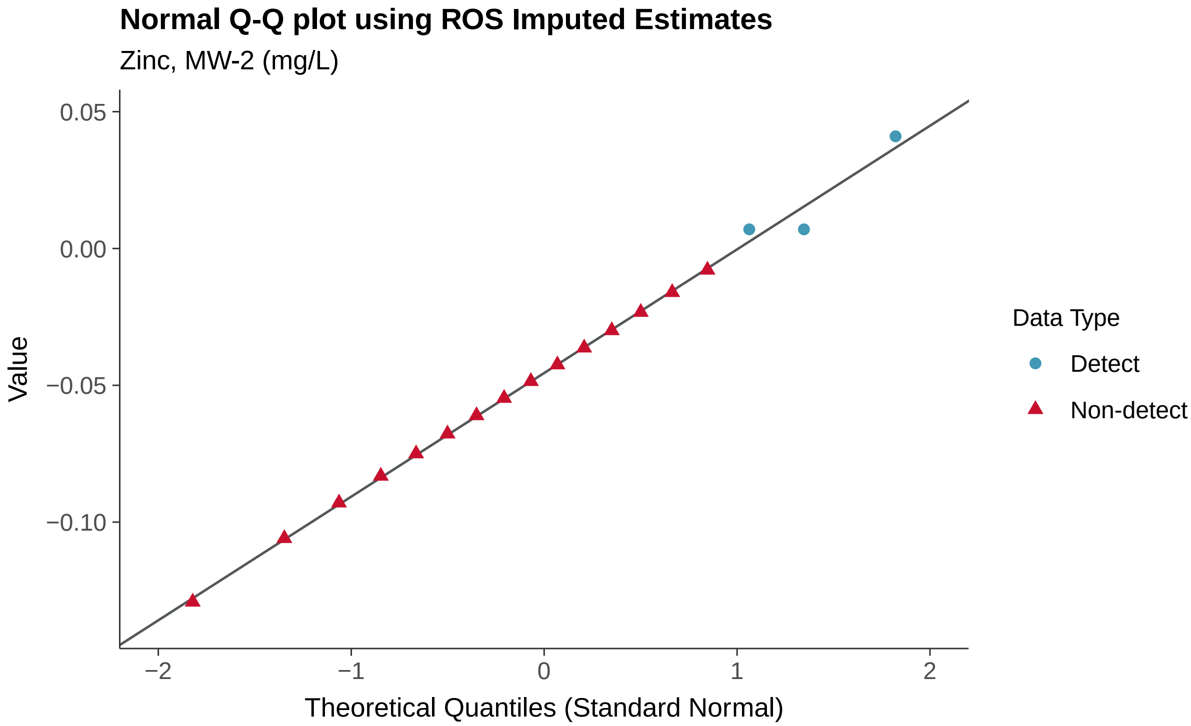
Zinc, MW-2 (mg/L)

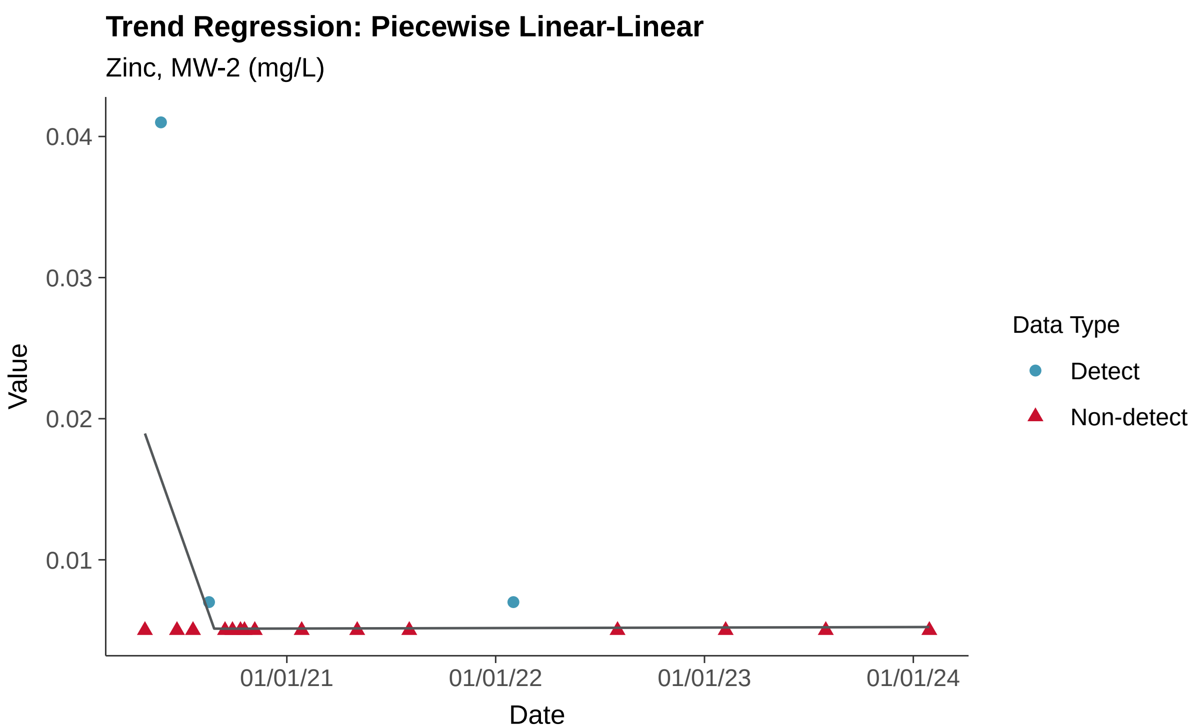


Boxplot by Season

Zinc, MW-2 (mg/L)

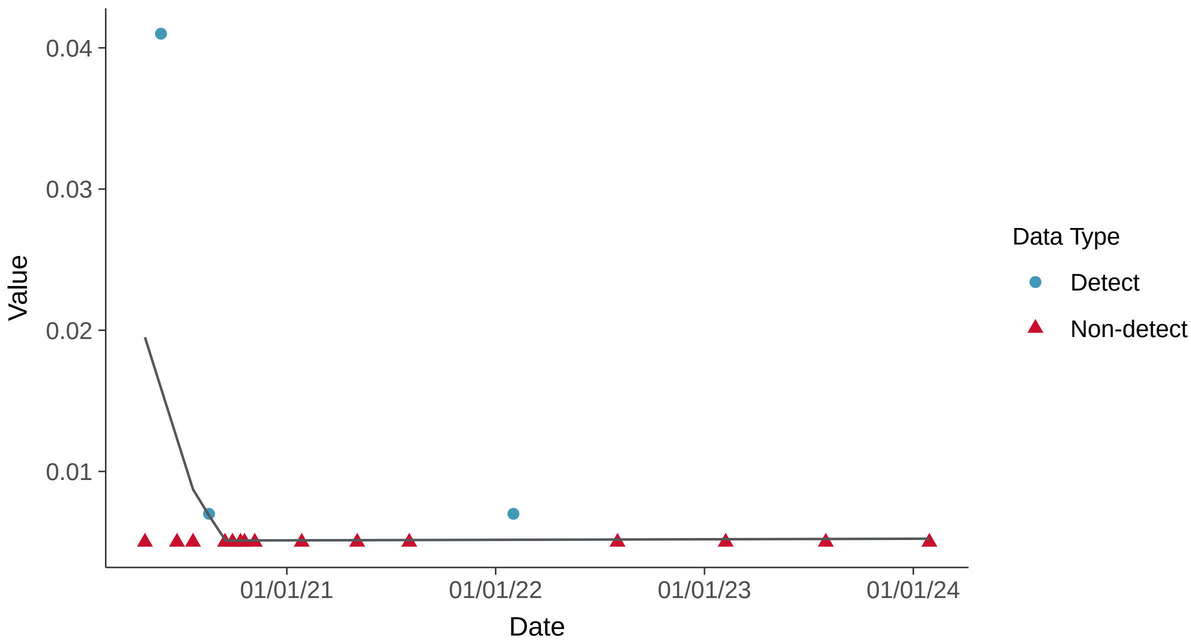



Normal Q-Q plot using ROS Imputed Estimates
Zinc, MW-2 (mg/L)
Value
0.05
0.00
−0.05
−0.10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Zinc, MW-2 (mg/L)
Value
0.04
0.03
0.02
0.01
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

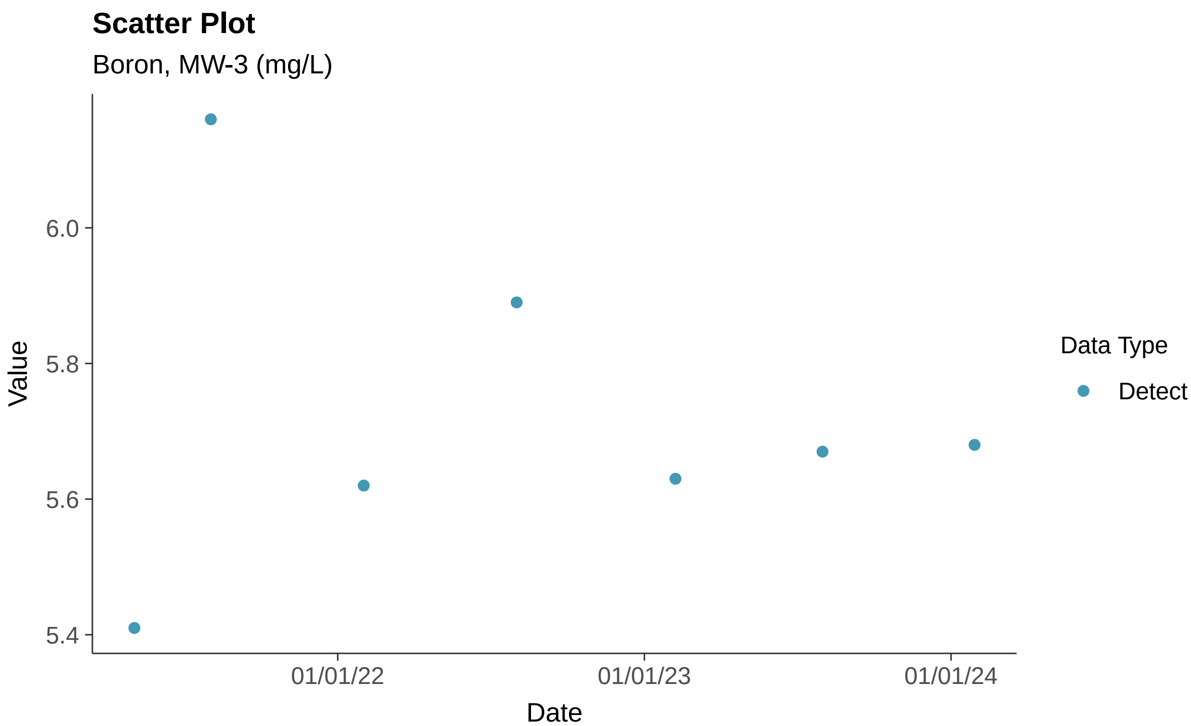
Trend Regression: Piecewise Linear-Linear-Linear

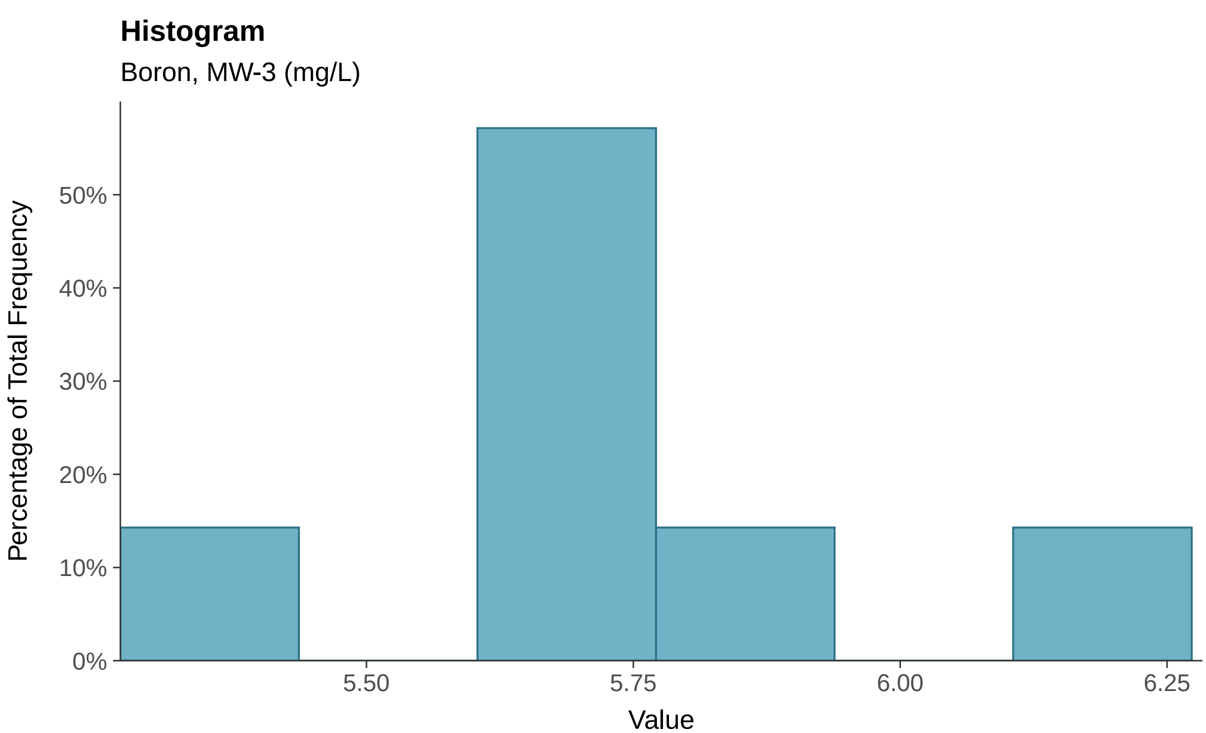
Zinc, MW-2 (mg/L)



Appendix III: Boron, MW-3

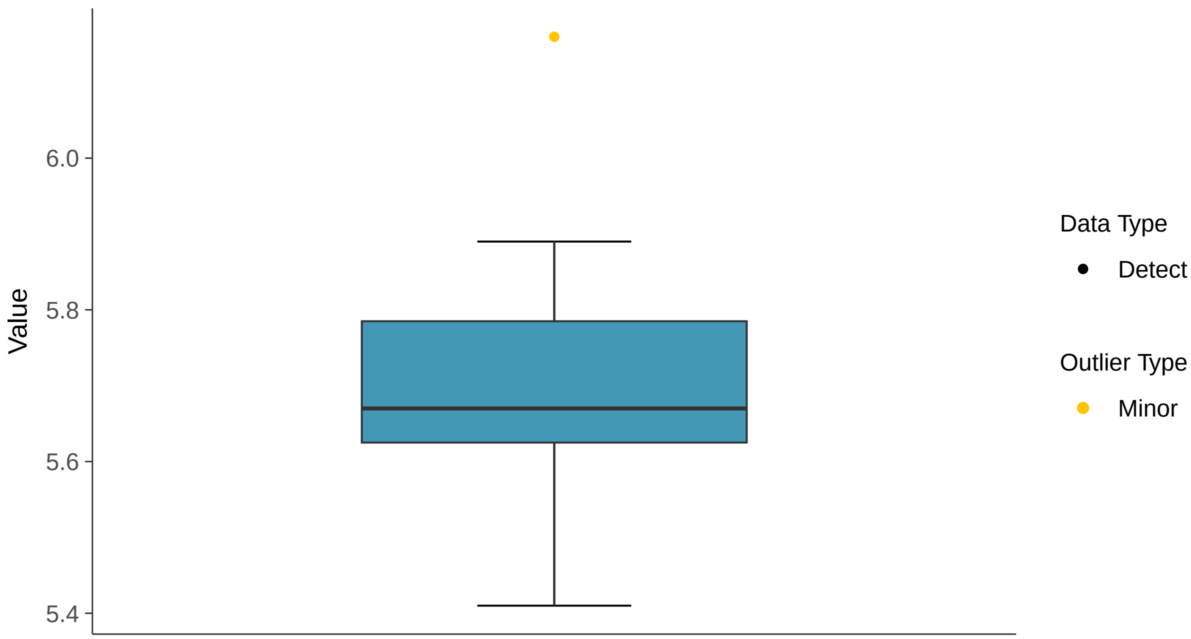
ID: 03_1_01





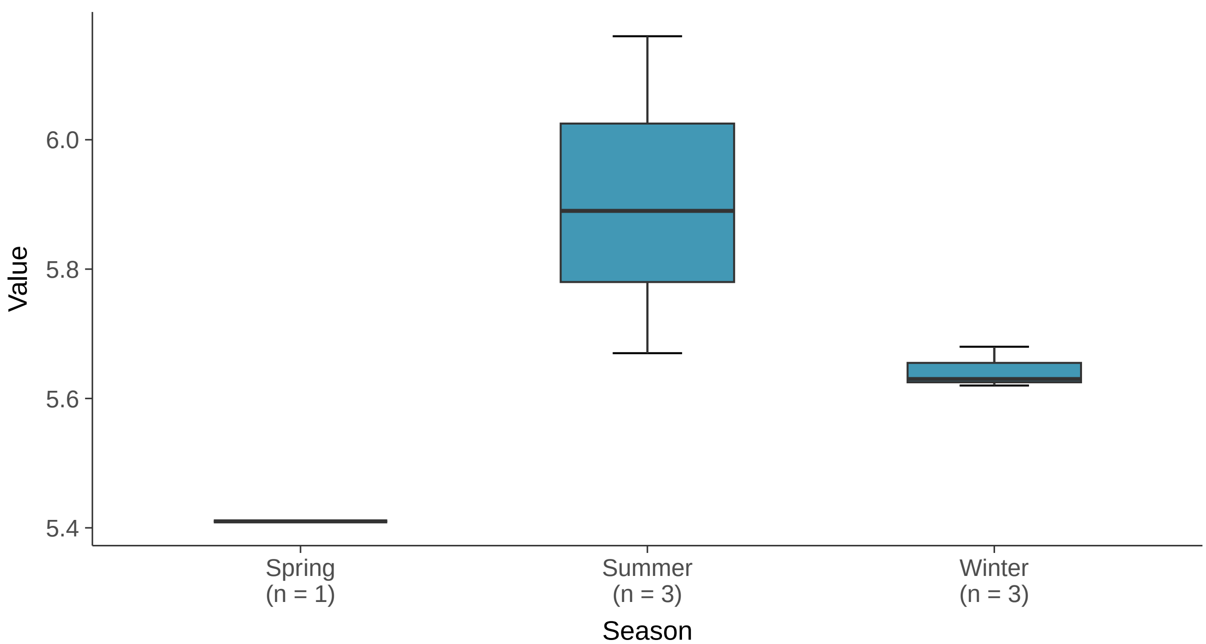
Boxplot

Boron, MW-3 (mg/L)



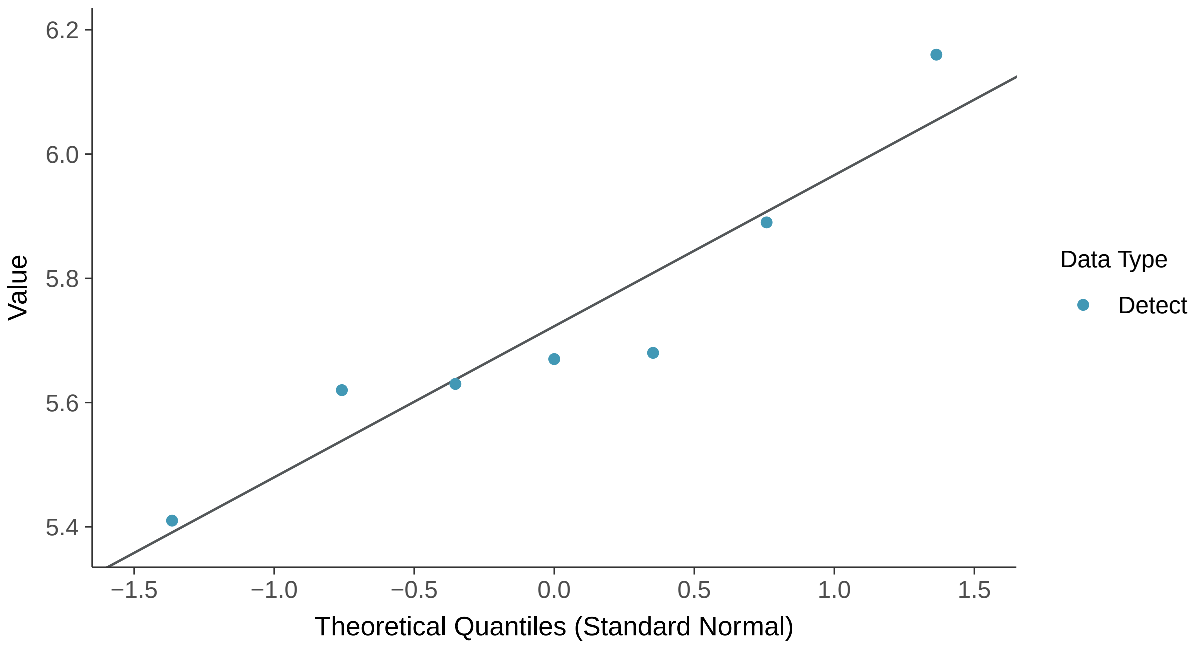
Boxplot by Season

Boron, MW-3 (mg/L)



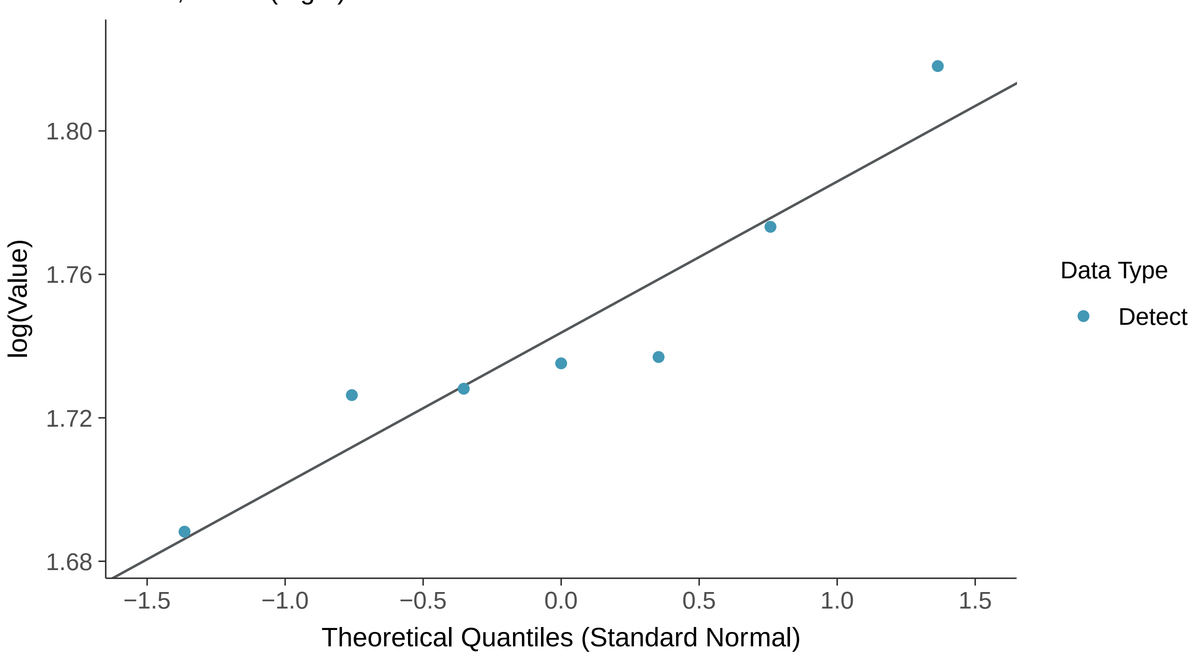
Normal Q-Q plot

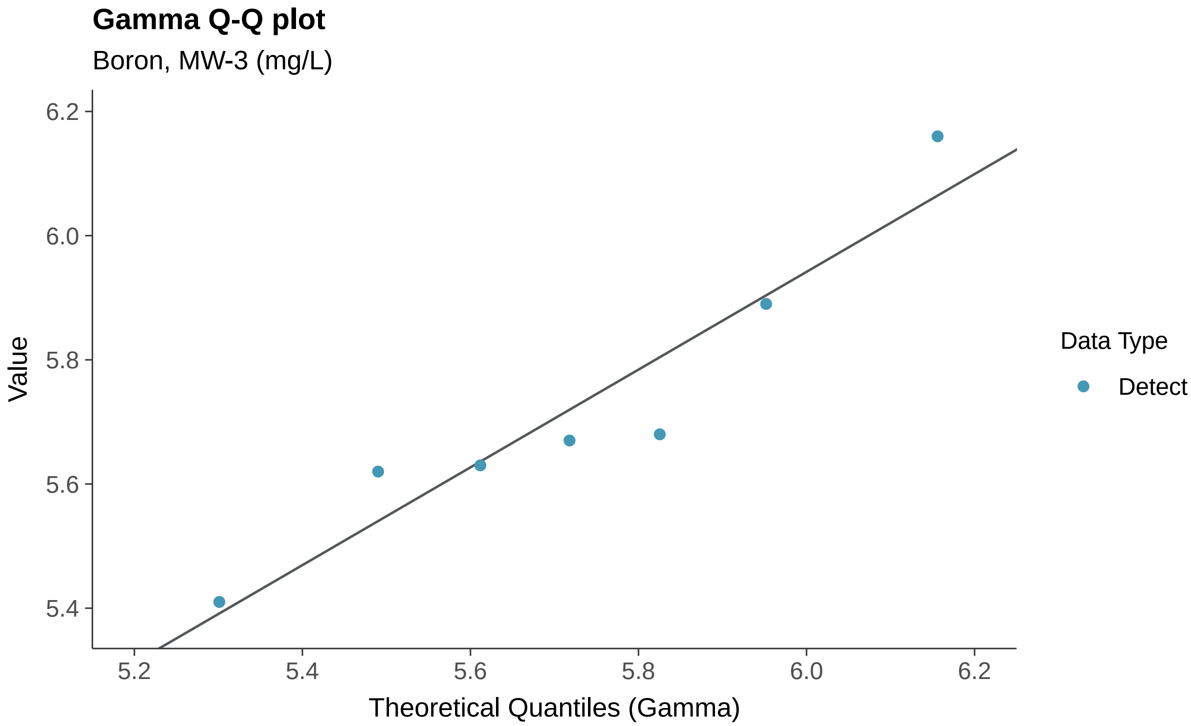
Boron, MW-3 (mg/L)



Lognormal Q-Q plot

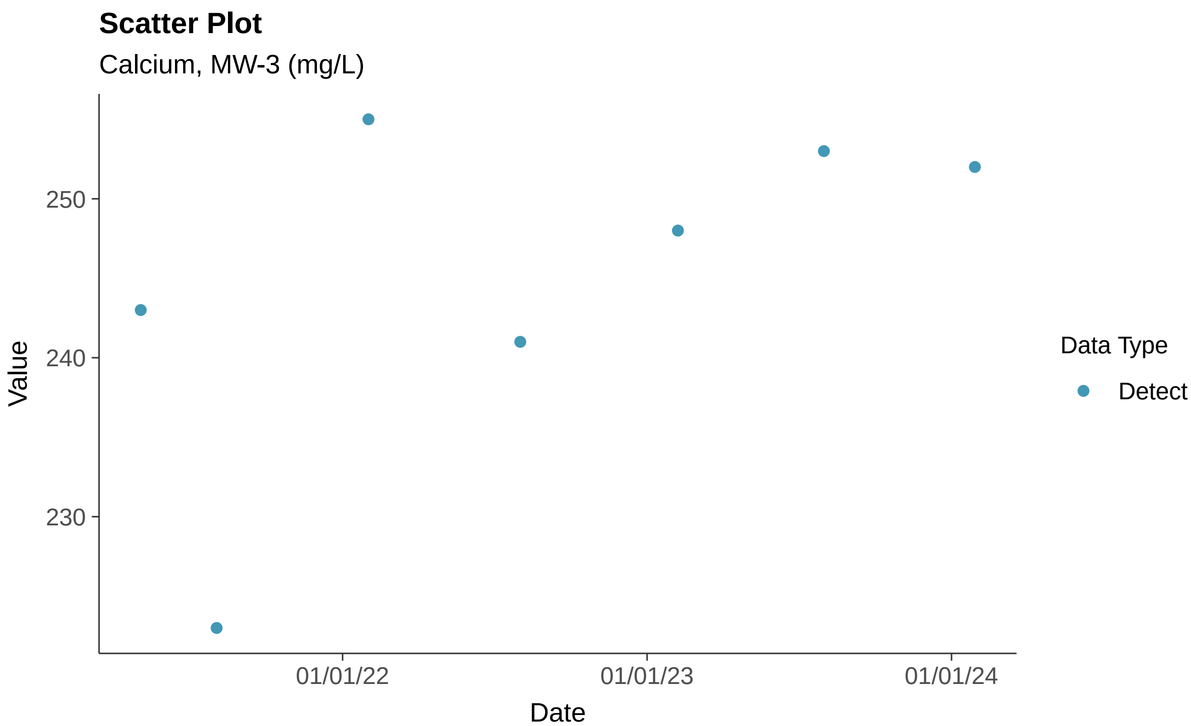
Boron, MW-3 (mg/L)

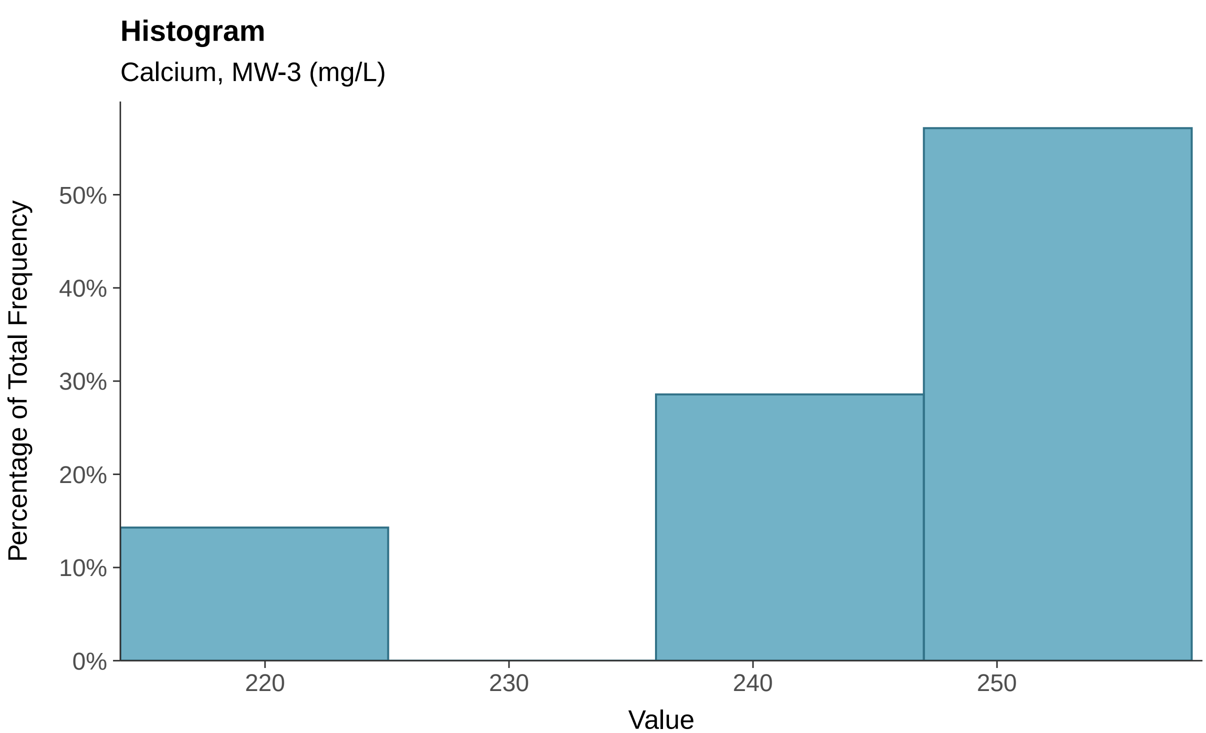



Gamma Q-Q plot
Boron, MW-3 (mg/L)
Value
6.2
6.0
5.8
5.6
5.4
5.2
5.4
5.6
5.8
6.0
6.2
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix III: Calcium, MW-3

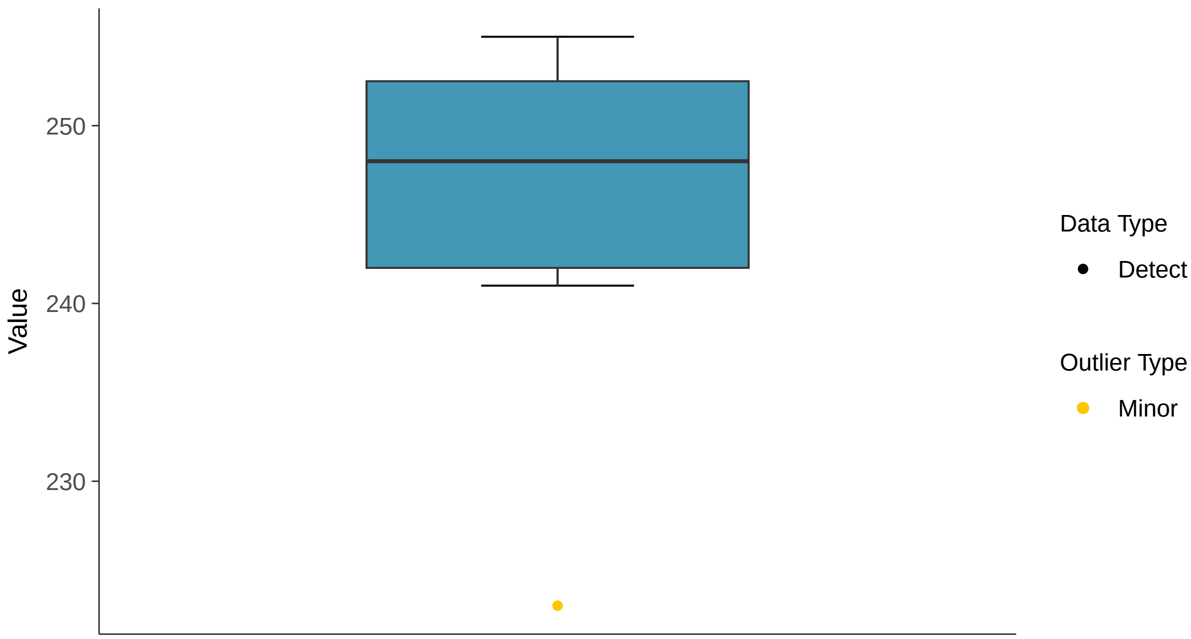
ID: 03_1_02





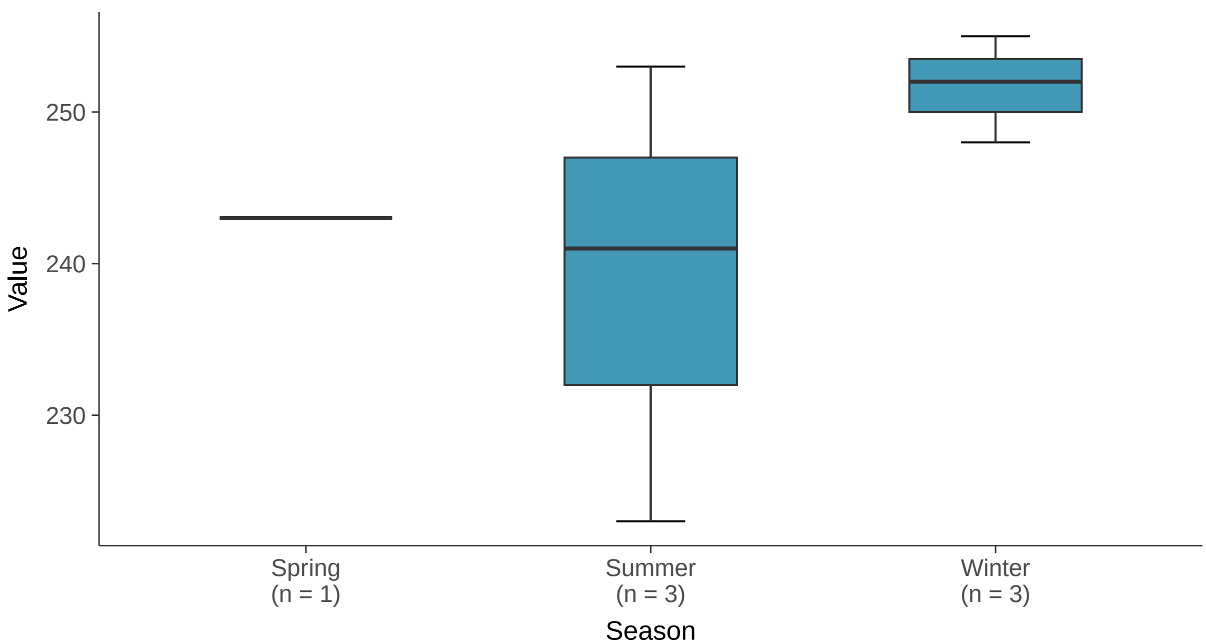
Boxplot

Calcium, MW-3 (mg/L)



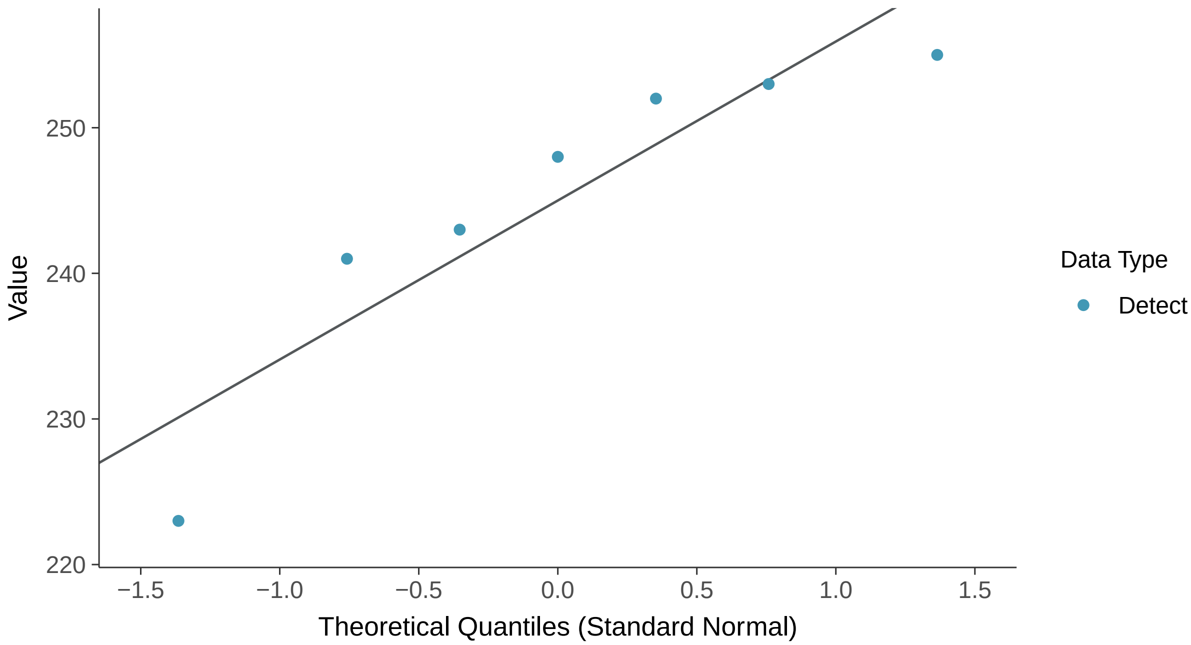
Boxplot by Season

Calcium, MW-3 (mg/L)



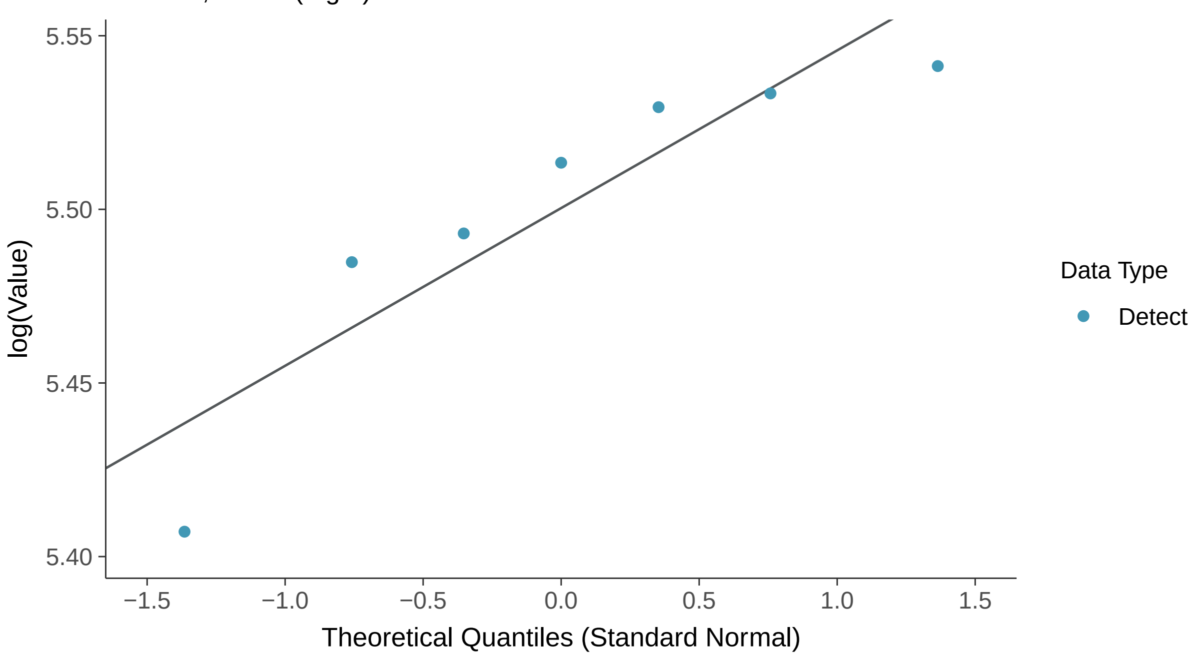
Normal Q-Q plot

Calcium, MW-3 (mg/L)



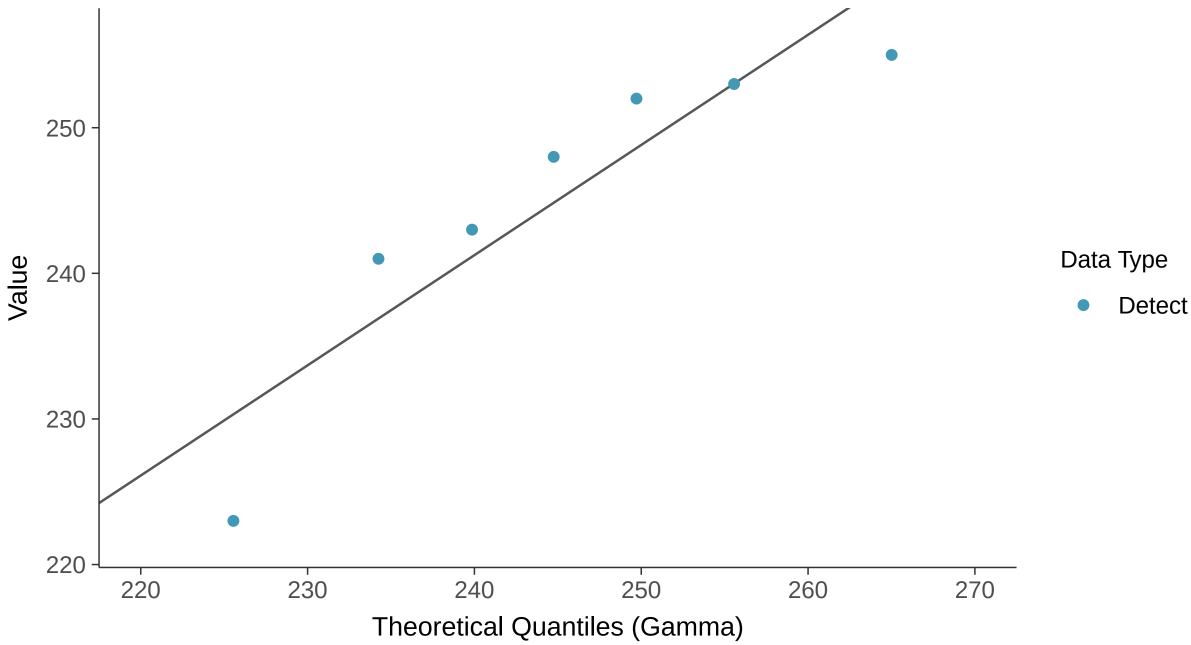
Lognormal Q-Q plot

Calcium, MW-3 (mg/L)



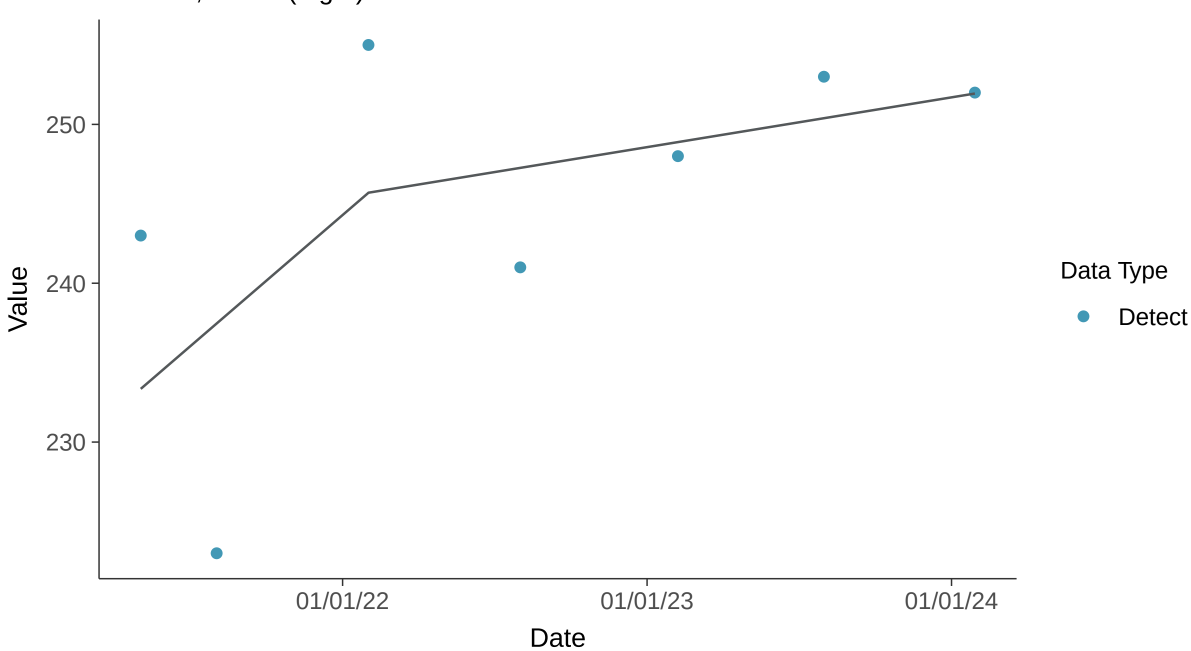
Gamma Q-Q plot

Calcium, MW-3 (mg/L)



Trend Regression: Piecewise Linear-Linear

Calcium, MW-3 (mg/L)

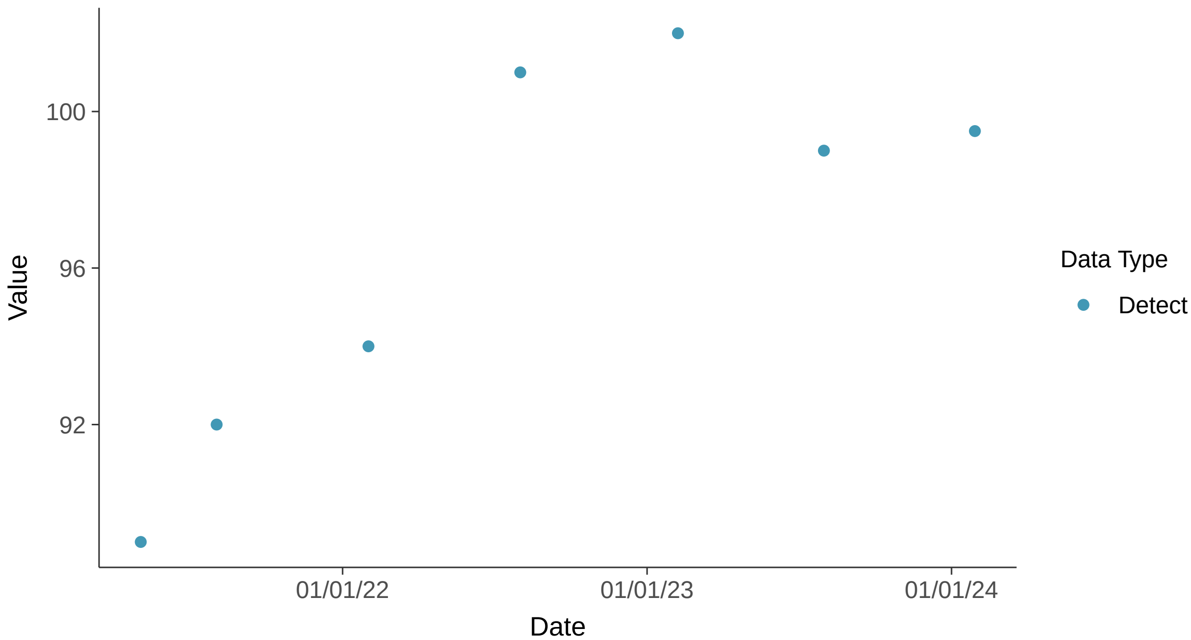


Appendix III: Chloride, MW-3

ID: 03_1_03

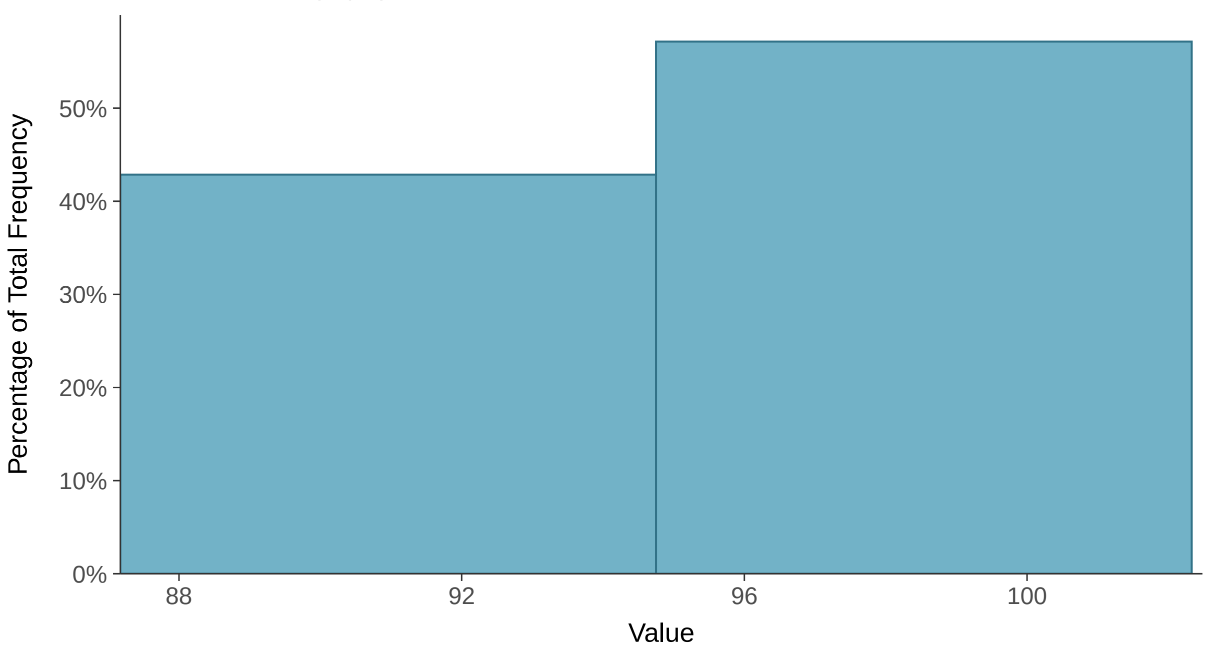
Scatter Plot

Chloride, MW-3 (mg/L)



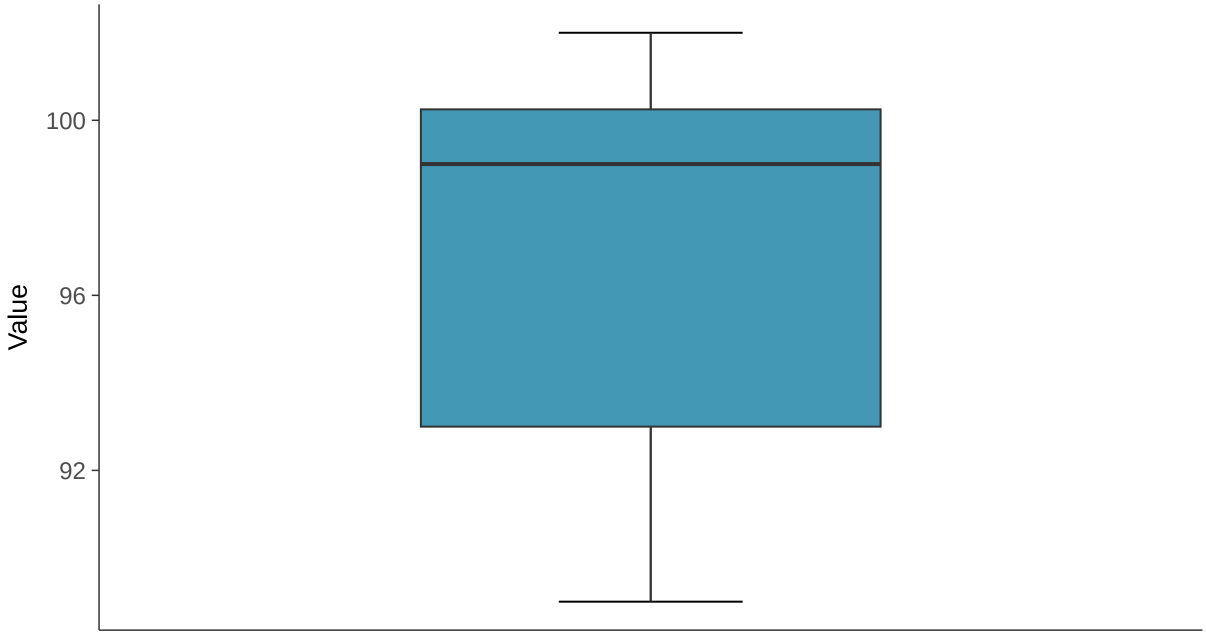
Histogram

Chloride, MW-3 (mg/L)



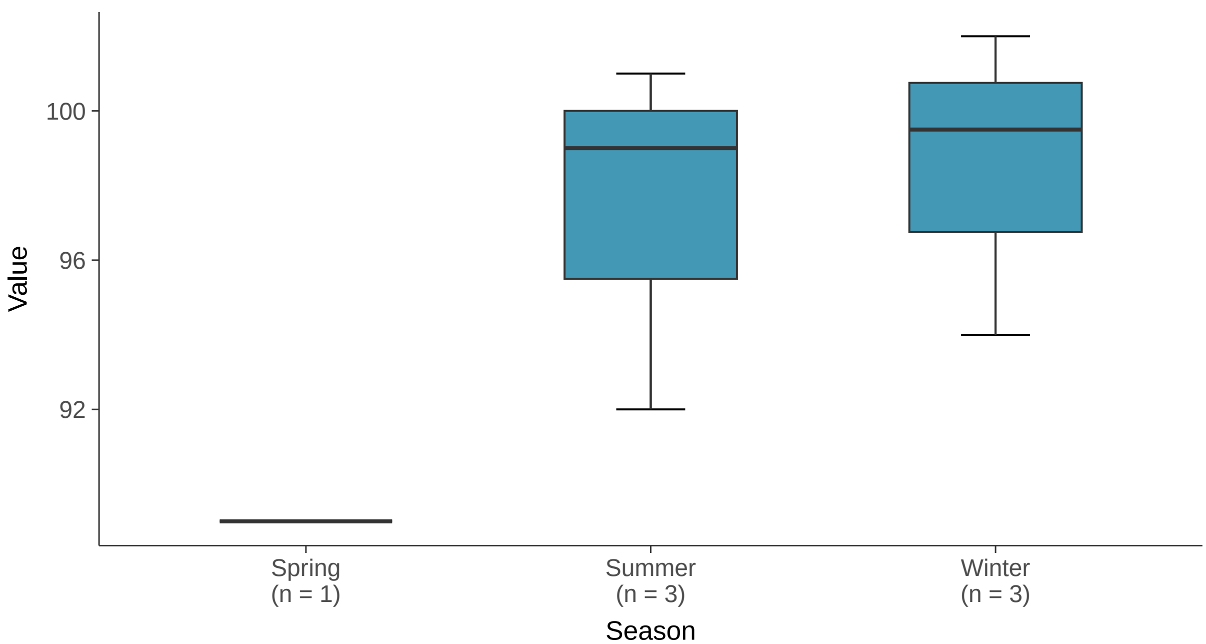
Boxplot

Chloride, MW-3 (mg/L)



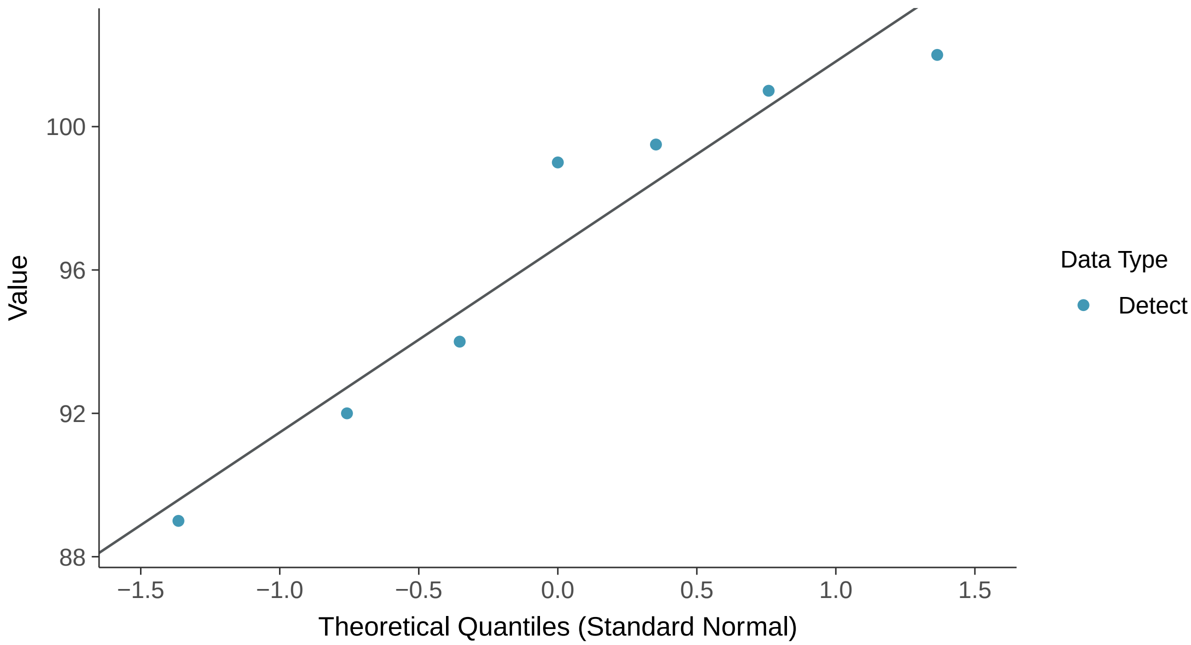
Boxplot by Season

Chloride, MW-3 (mg/L)



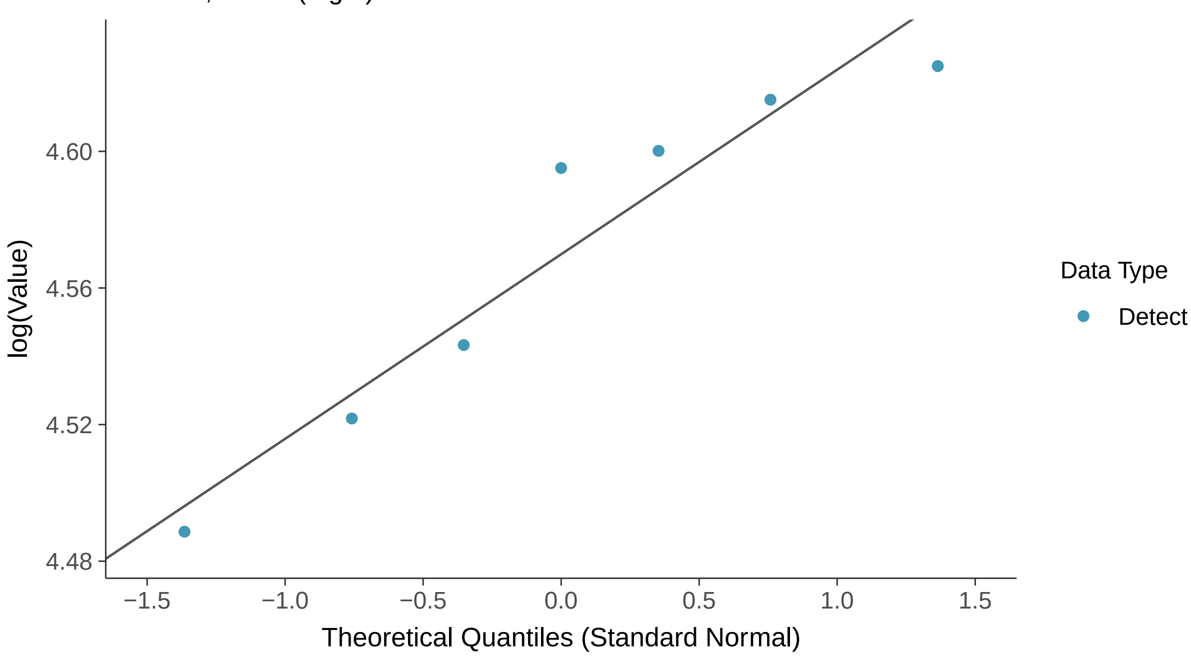
Normal Q-Q plot

Chloride, MW-3 (mg/L)



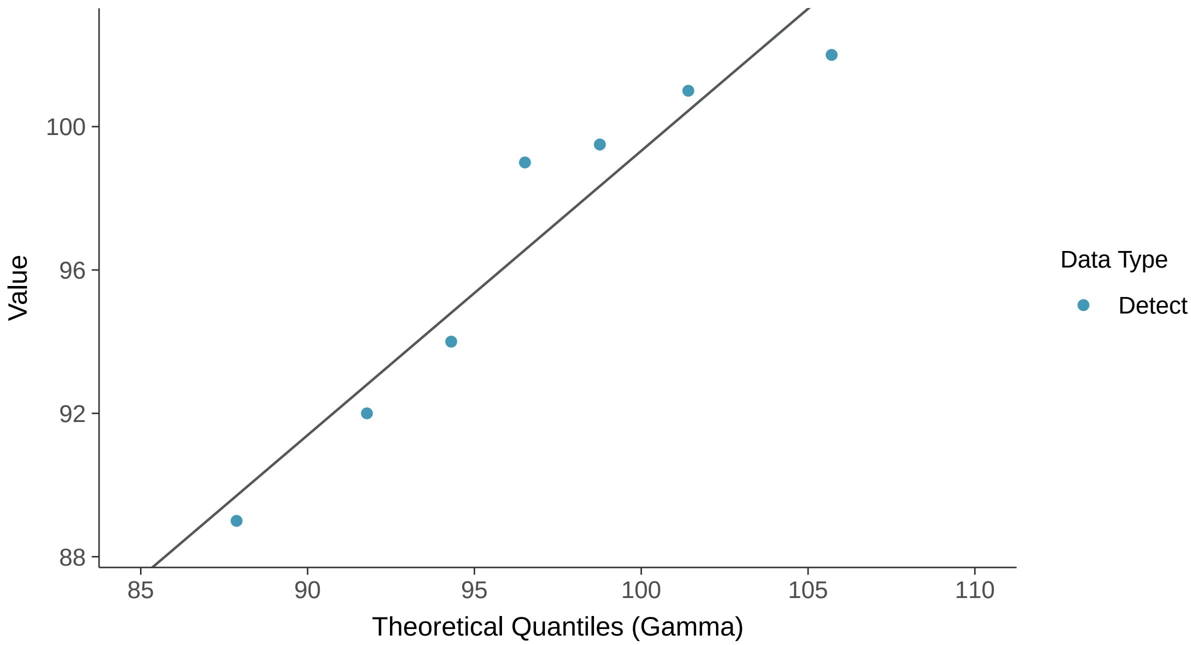
Lognormal Q-Q plot

Chloride, MW-3 (mg/L)



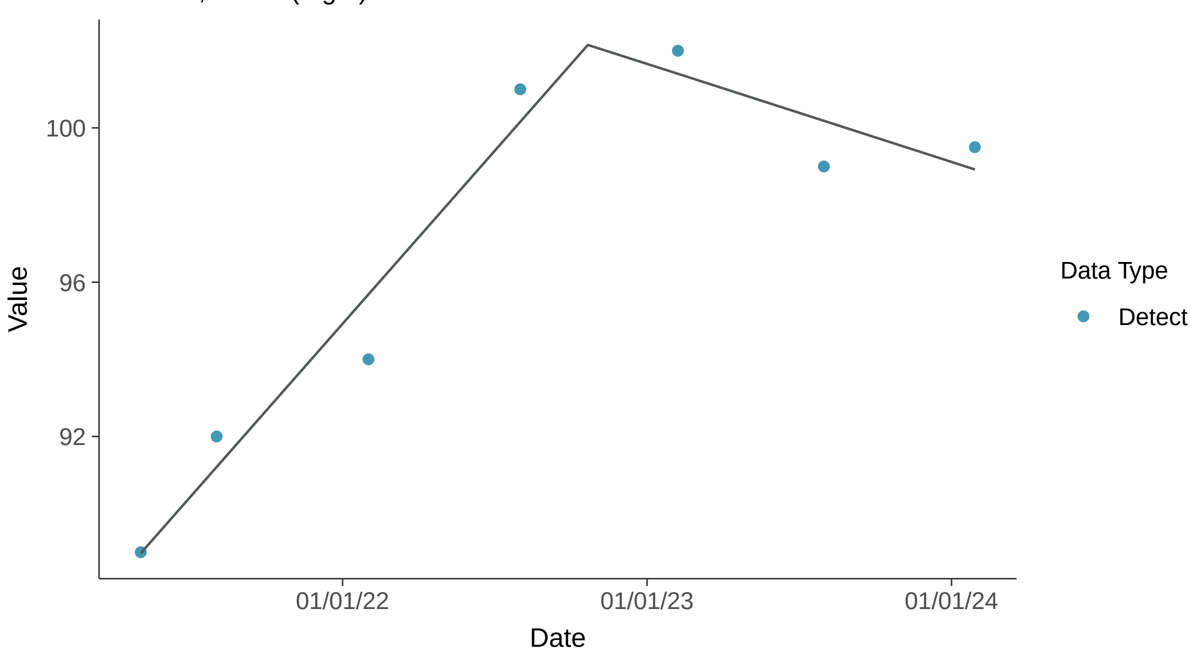
Gamma Q-Q plot

Chloride, MW-3 (mg/L)



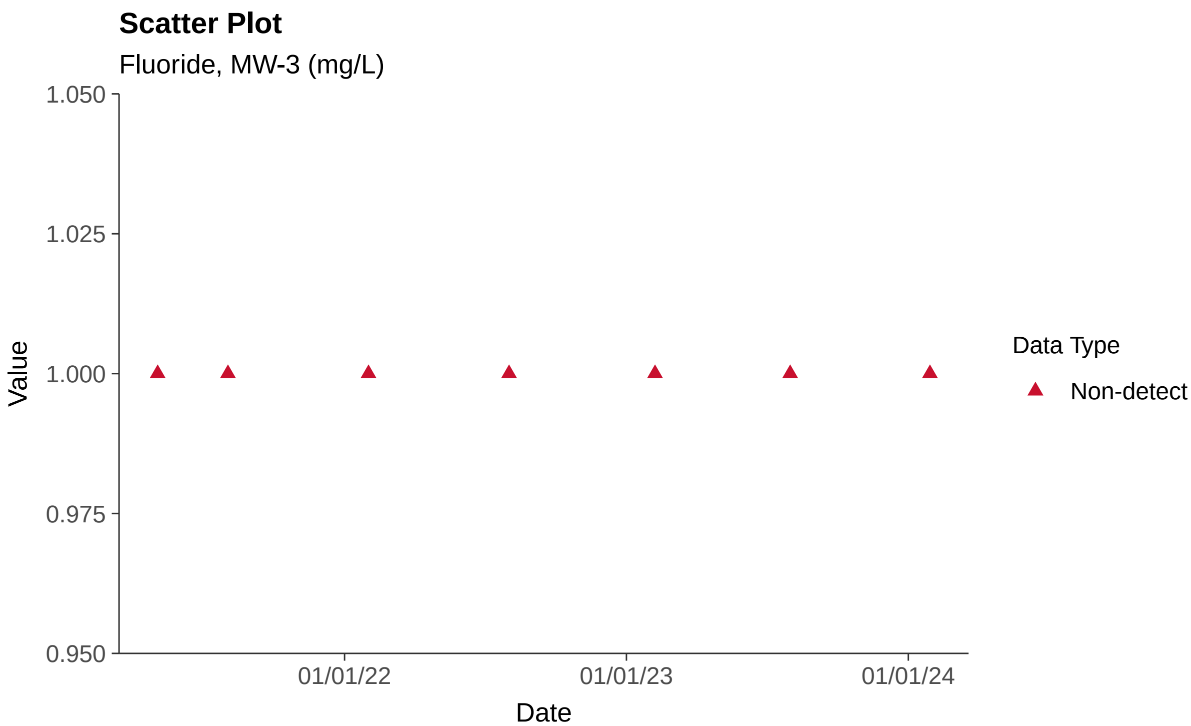
Trend Regression: Piecewise Linear-Linear

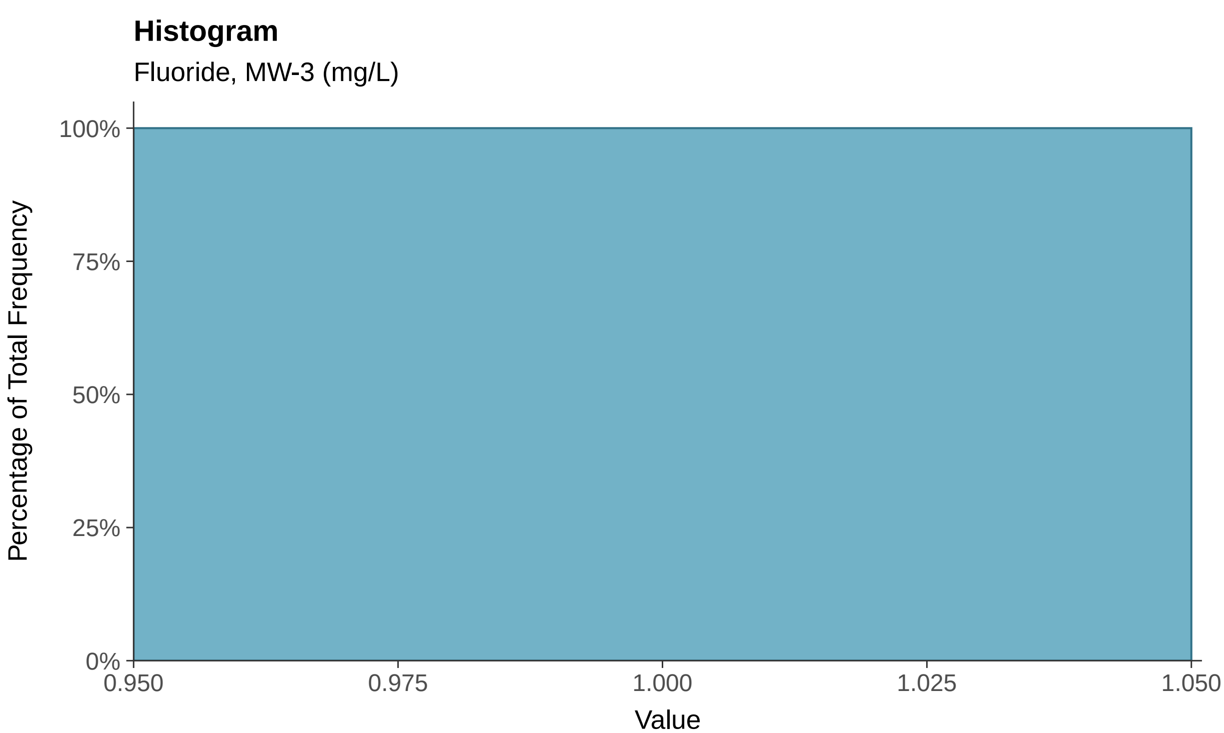
Chloride, MW-3 (mg/L)



Appendix III: Fluoride, MW-3

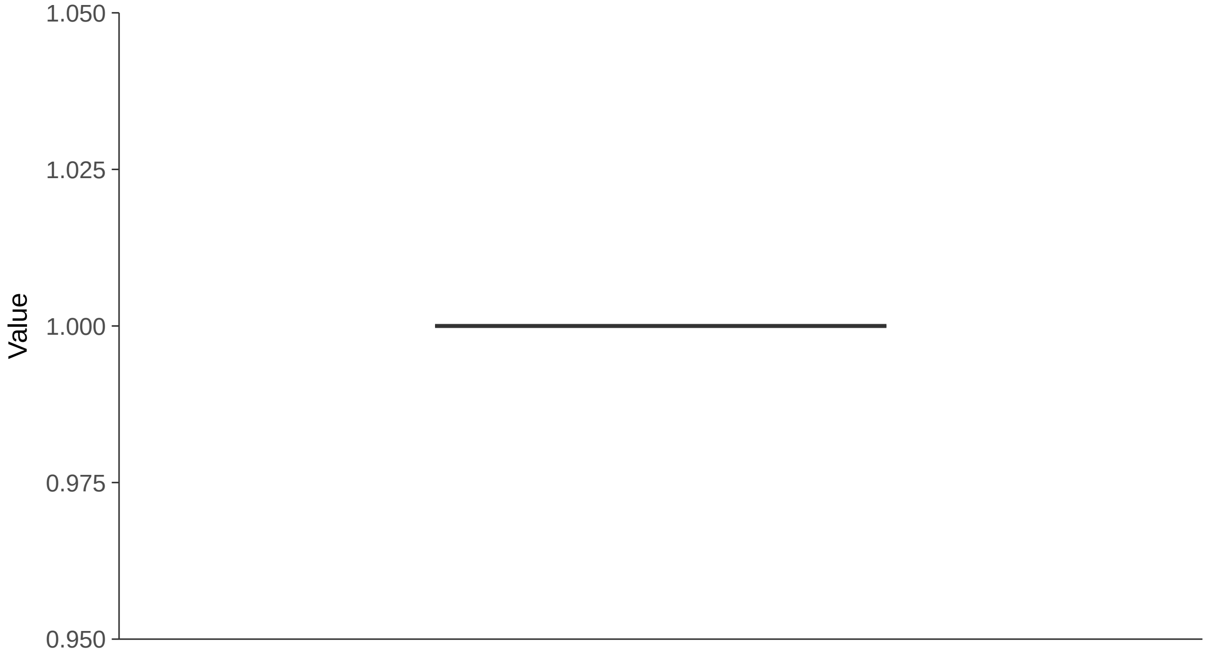
ID: 03_1_04





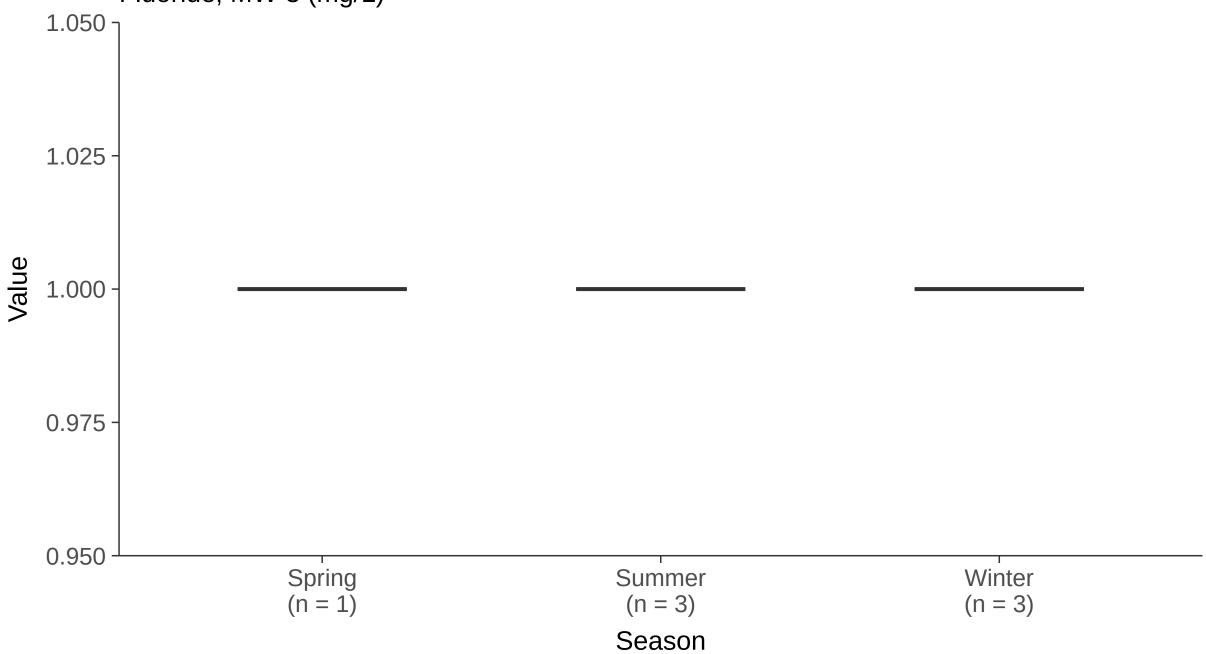
Boxplot

Fluoride, MW-3 (mg/L)



Boxplot by Season

Fluoride, MW-3 (mg/L)

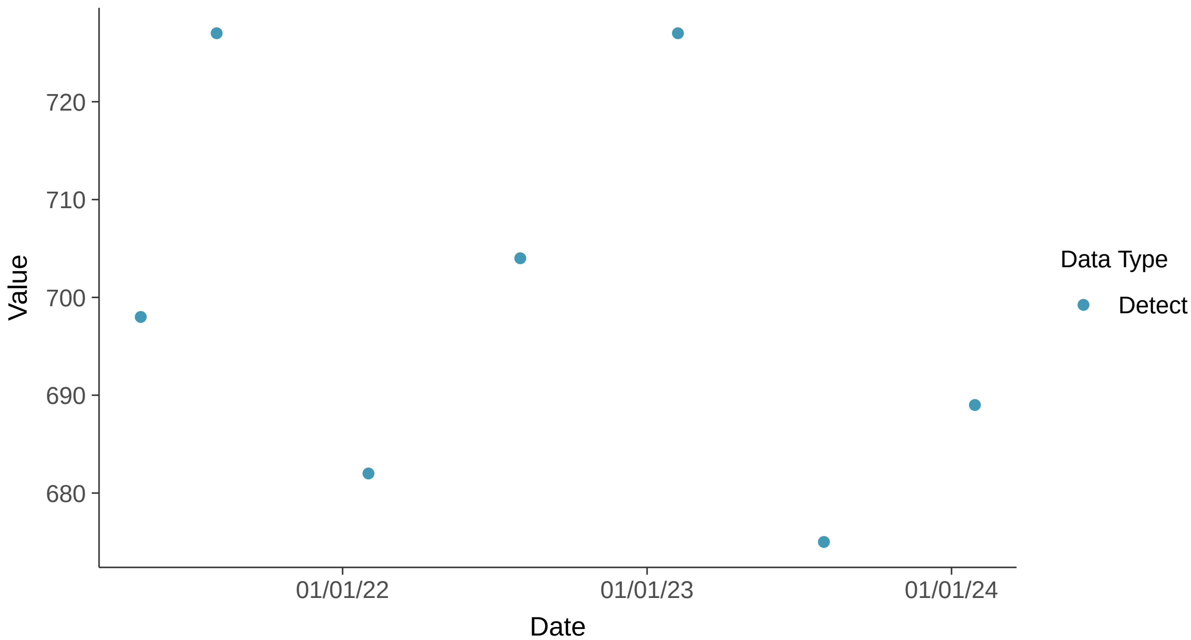


Appendix III: Sulfate, MW-3

ID: 03_1_05

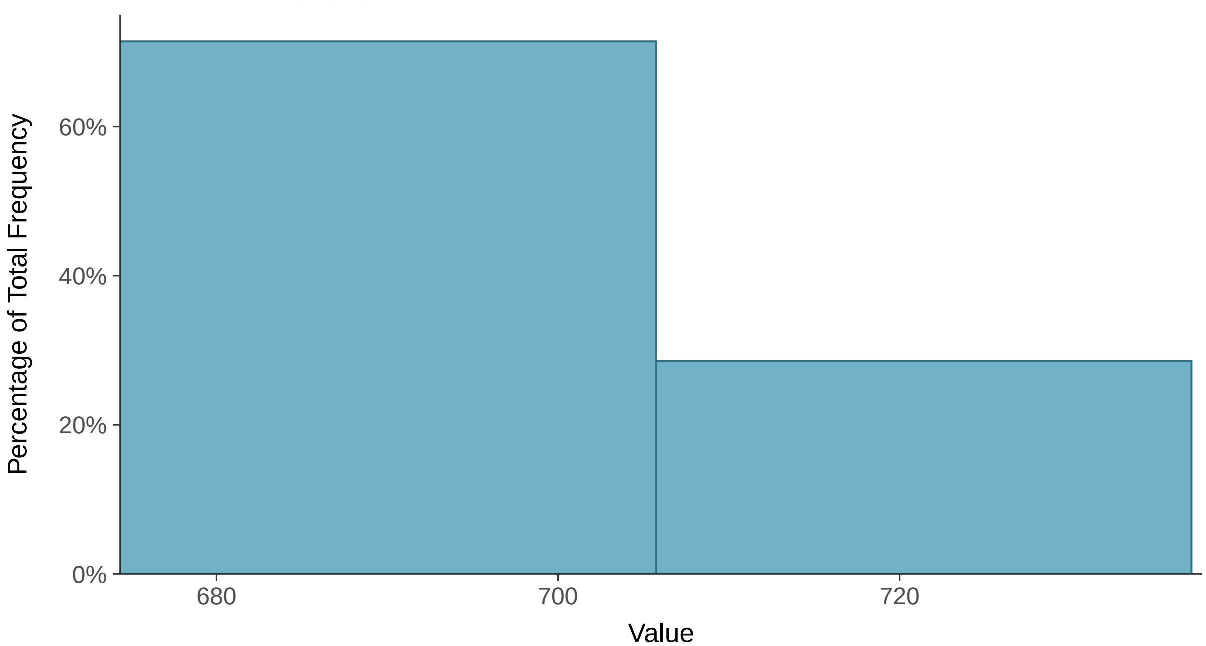
Scatter Plot

Sulfate, MW-3 (mg/L)



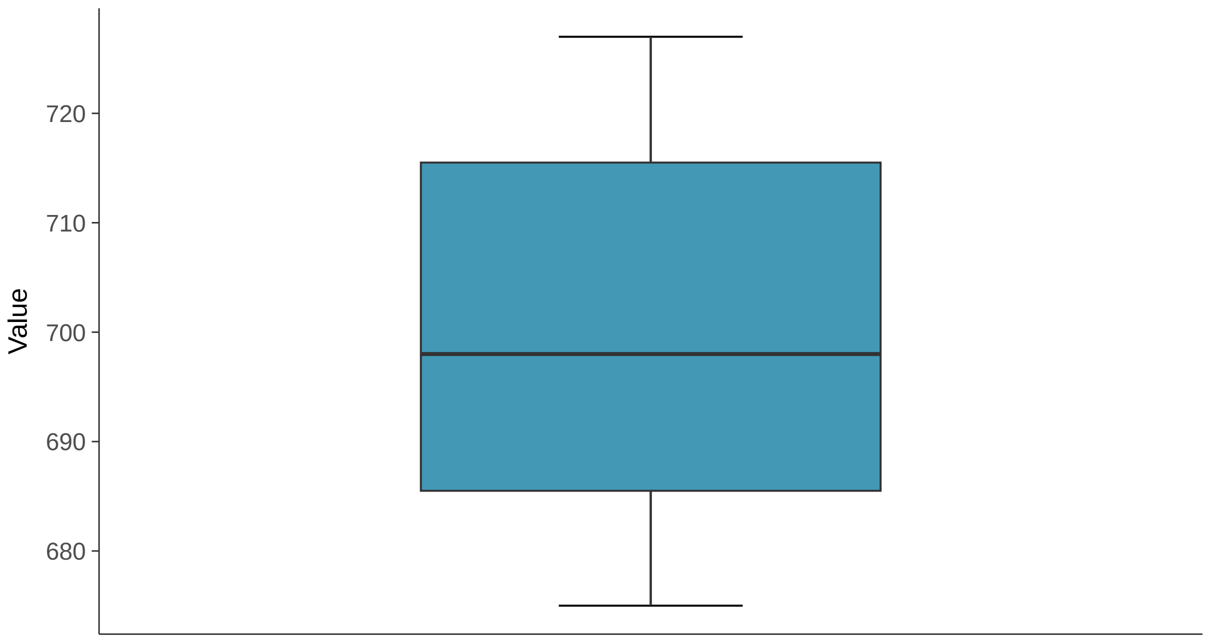
Histogram

Sulfate, MW-3 (mg/L)



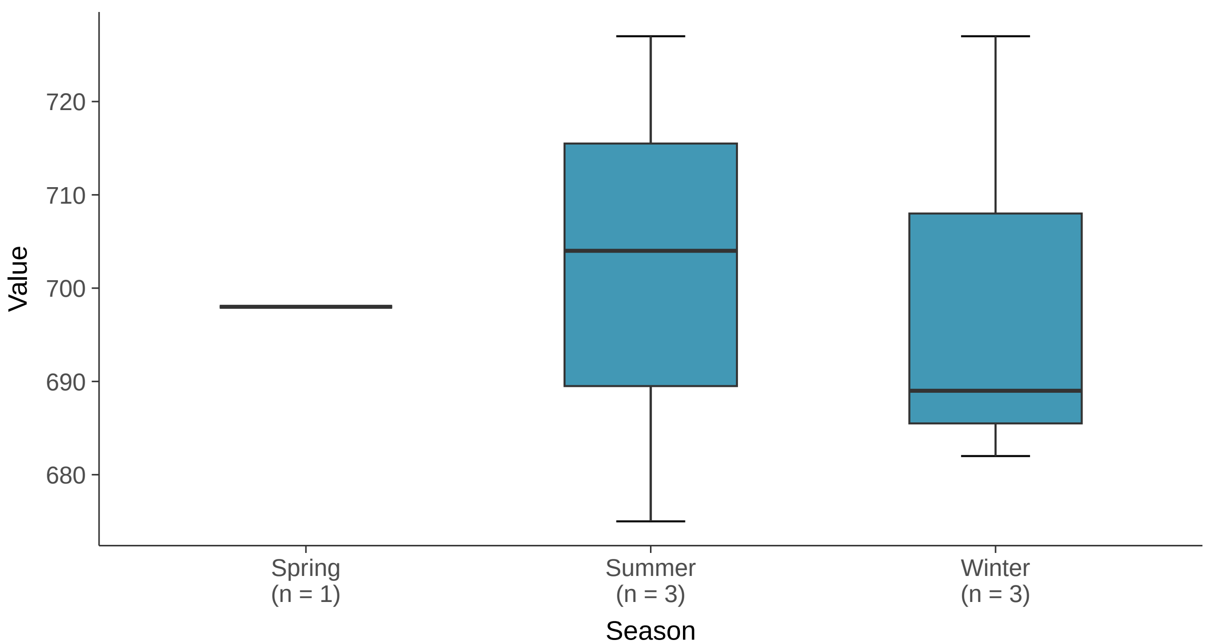
Boxplot

Sulfate, MW-3 (mg/L)



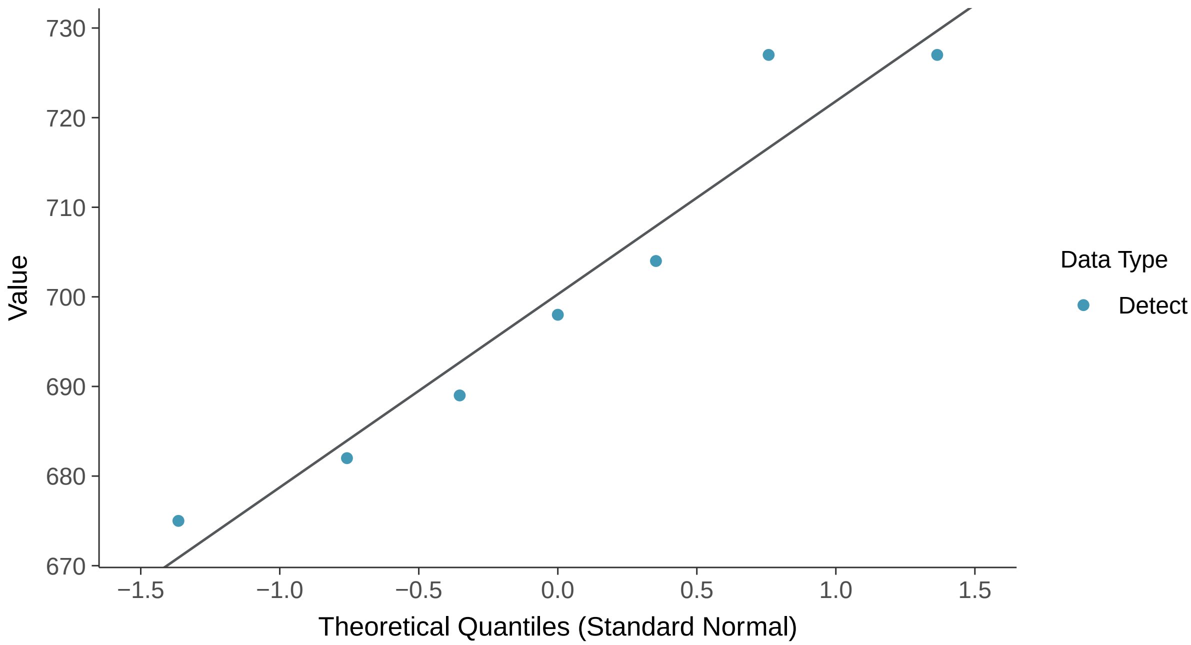
Boxplot by Season

Sulfate, MW-3 (mg/L)



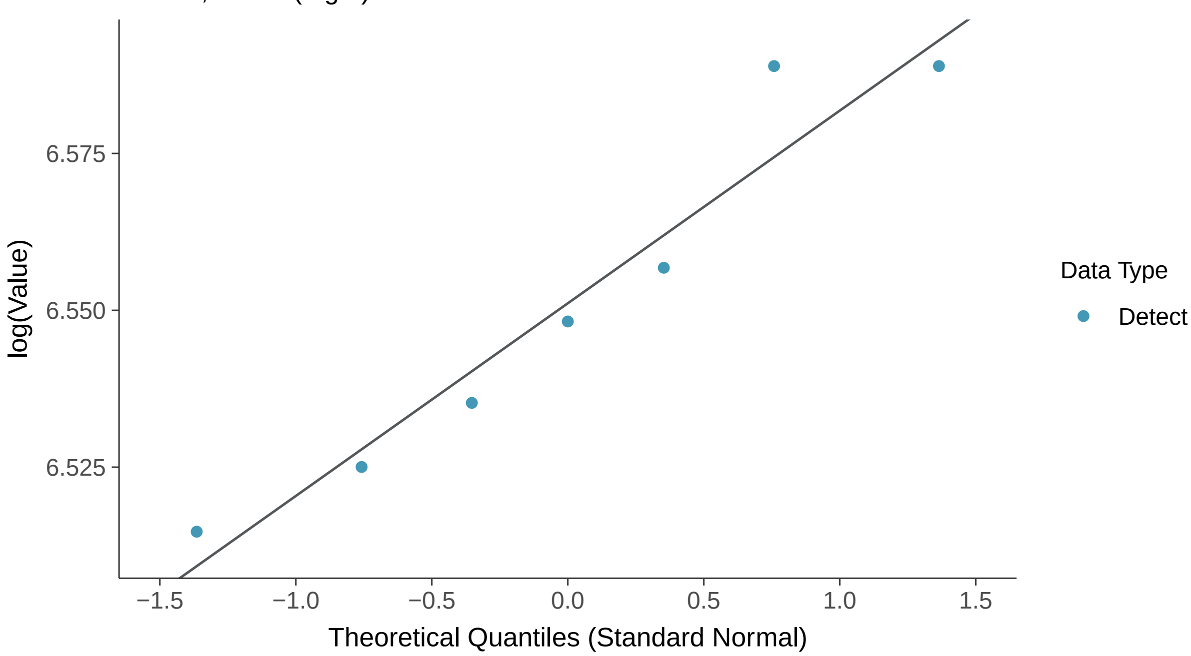
Normal Q-Q plot

Sulfate, MW-3 (mg/L)



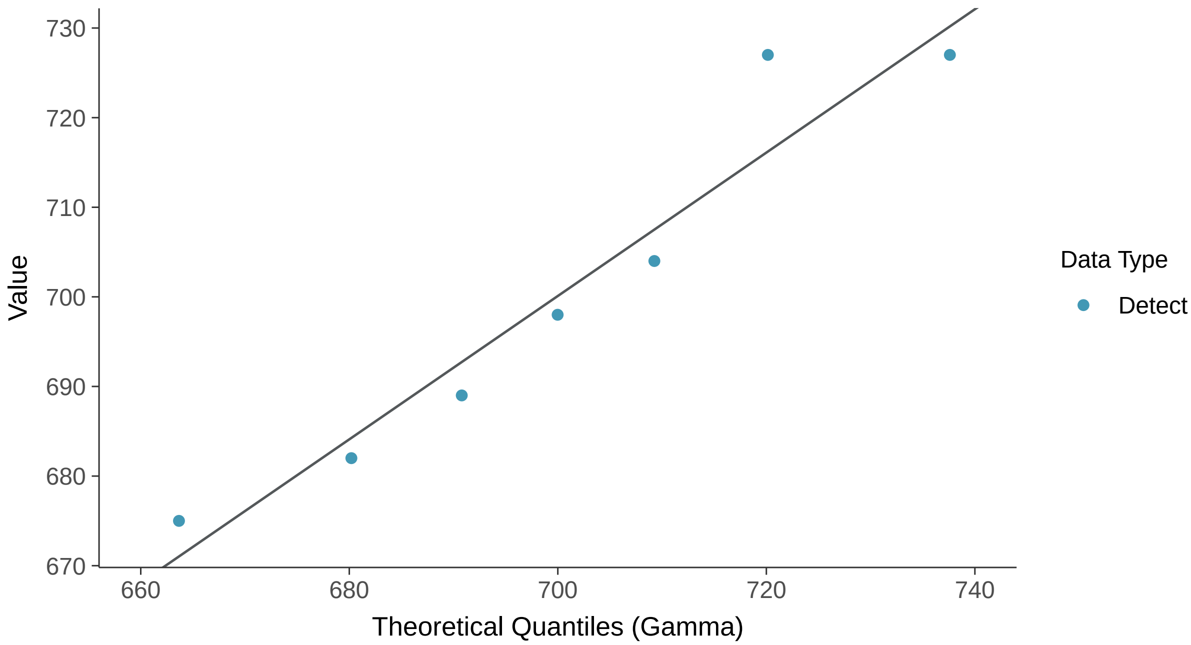
Lognormal Q-Q plot

Sulfate, MW-3 (mg/L)



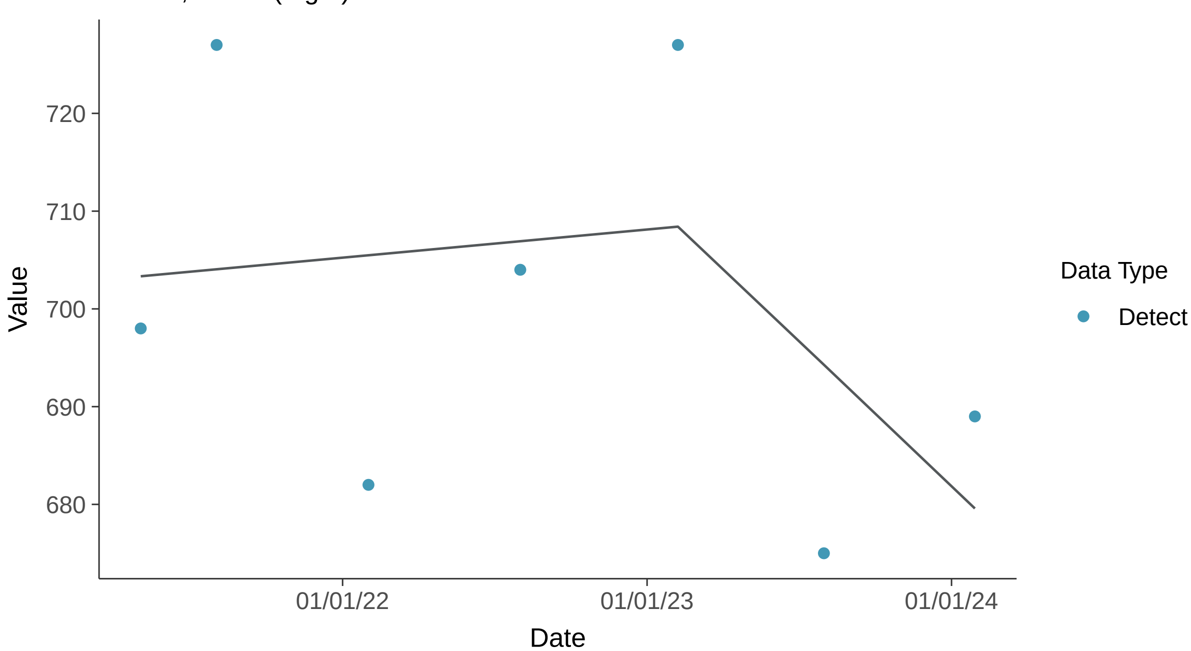
Gamma Q-Q plot

Sulfate, MW-3 (mg/L)



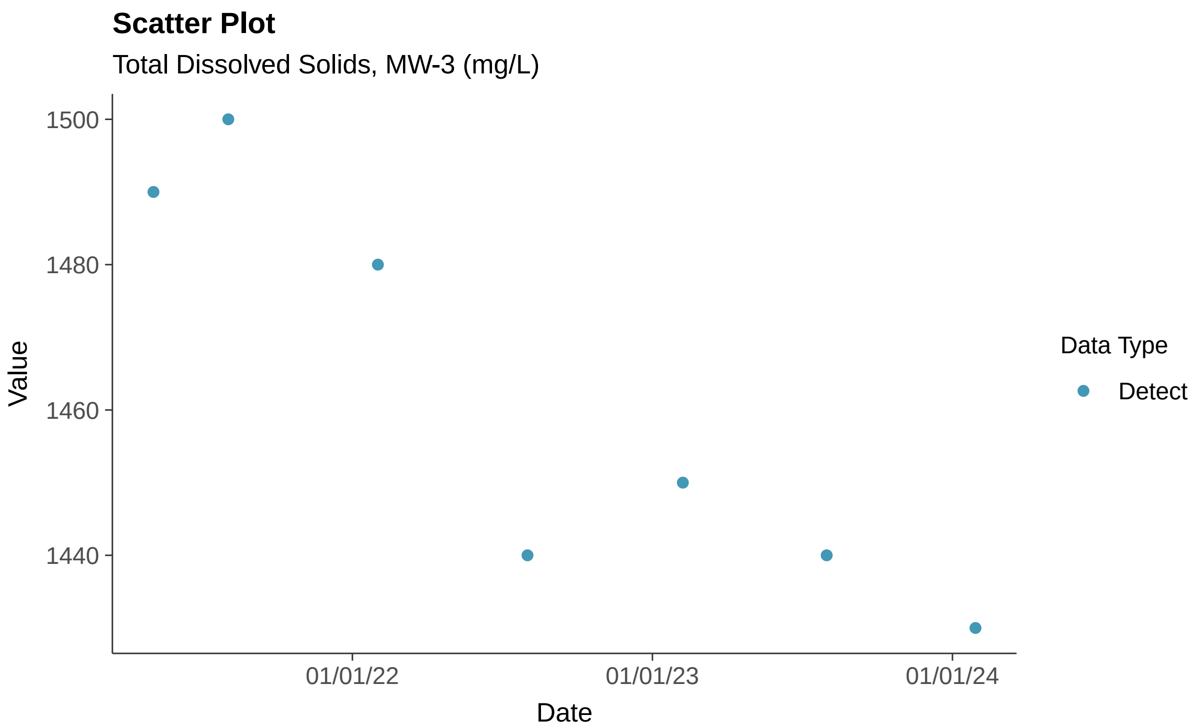
Trend Regression: Piecewise Linear-Linear

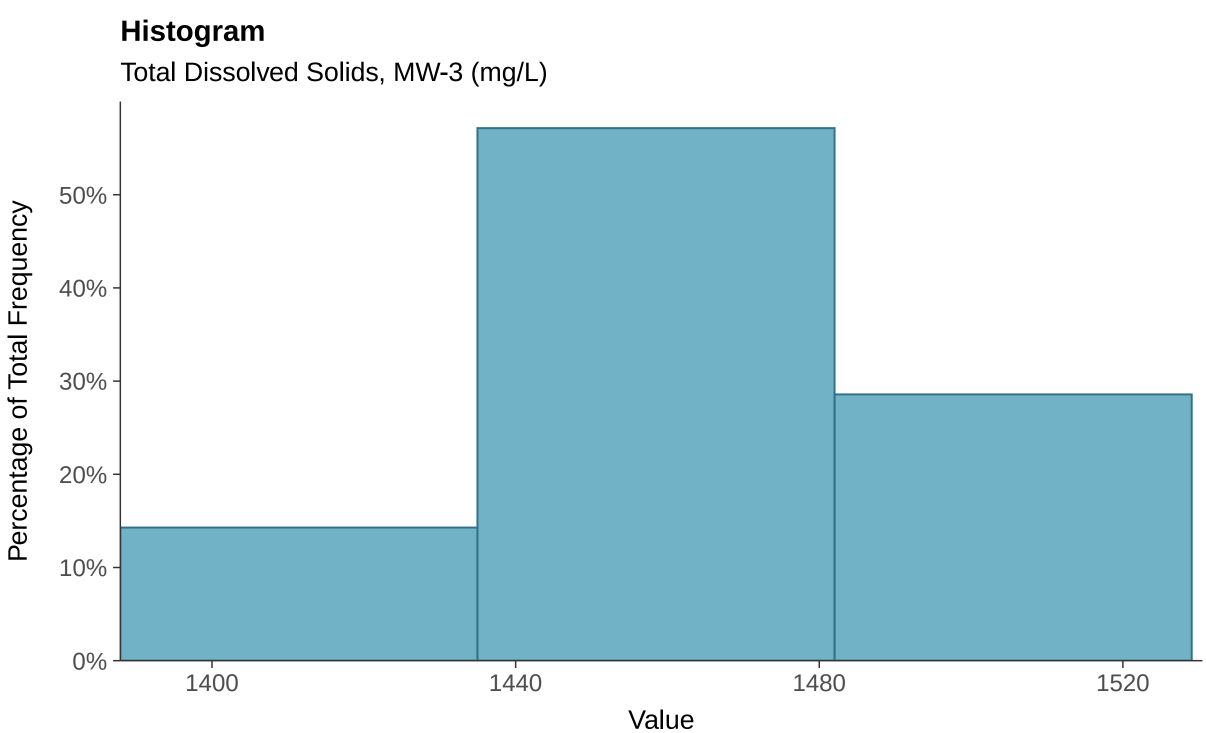
Sulfate, MW-3 (mg/L)



Appendix III: Total Dissolved Solids, MW-3

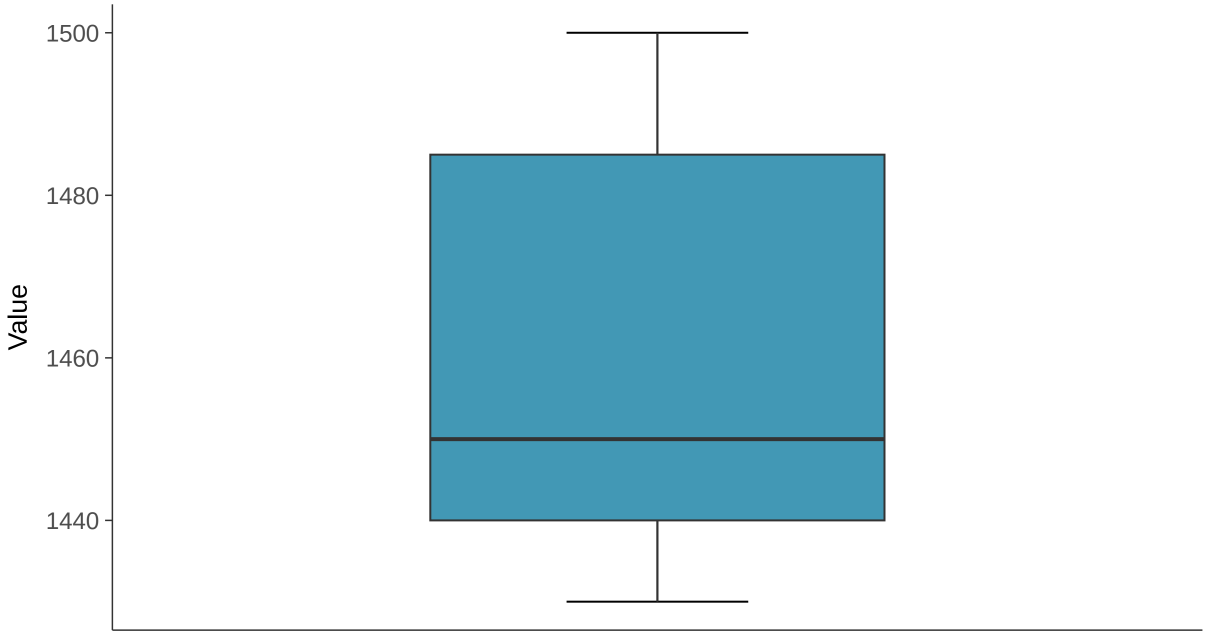
ID: 03_1_06





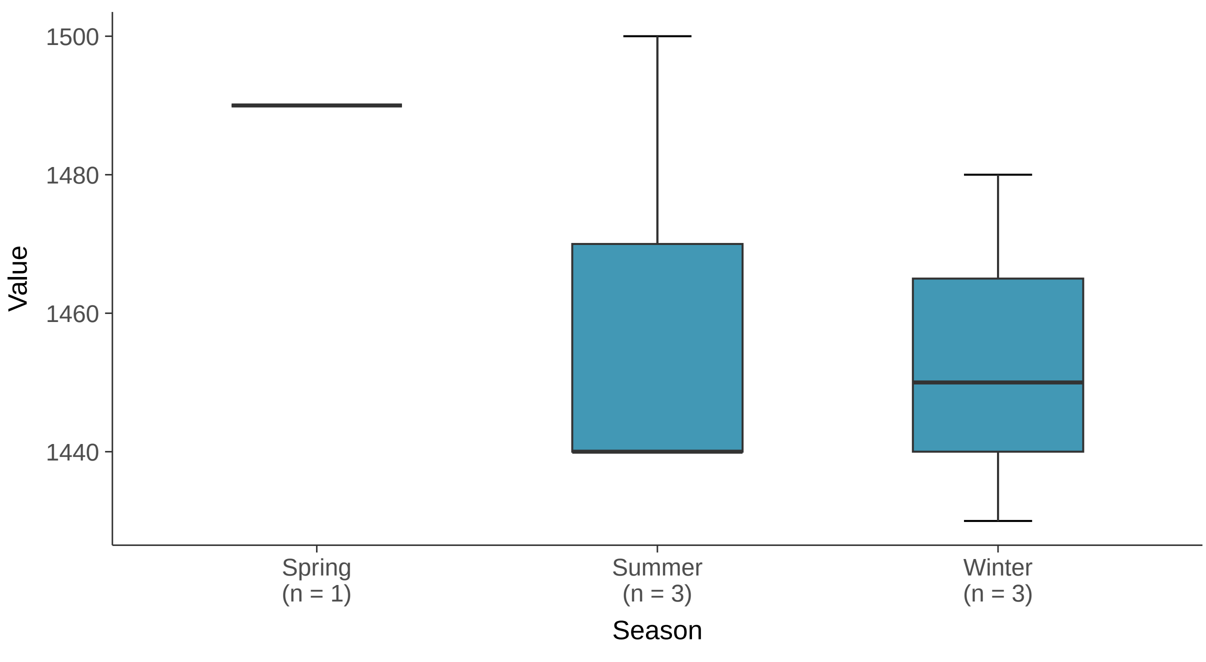
Boxplot

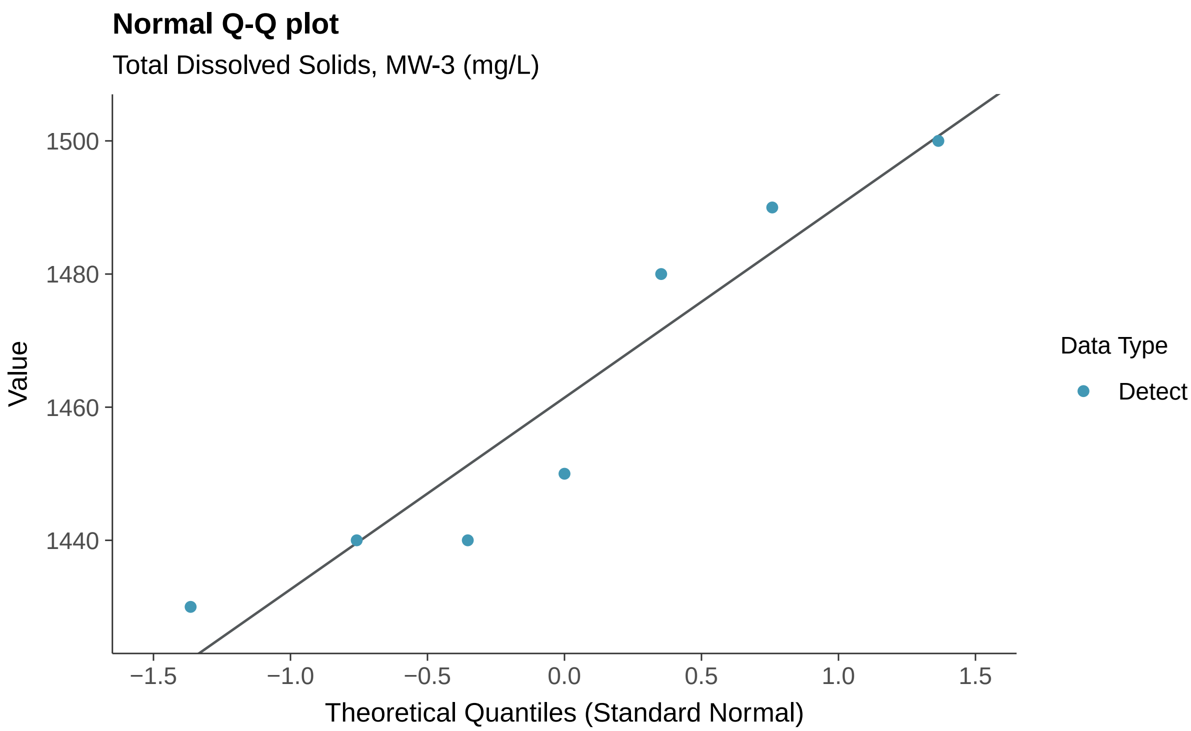
Total Dissolved Solids, MW-3 (mg/L)

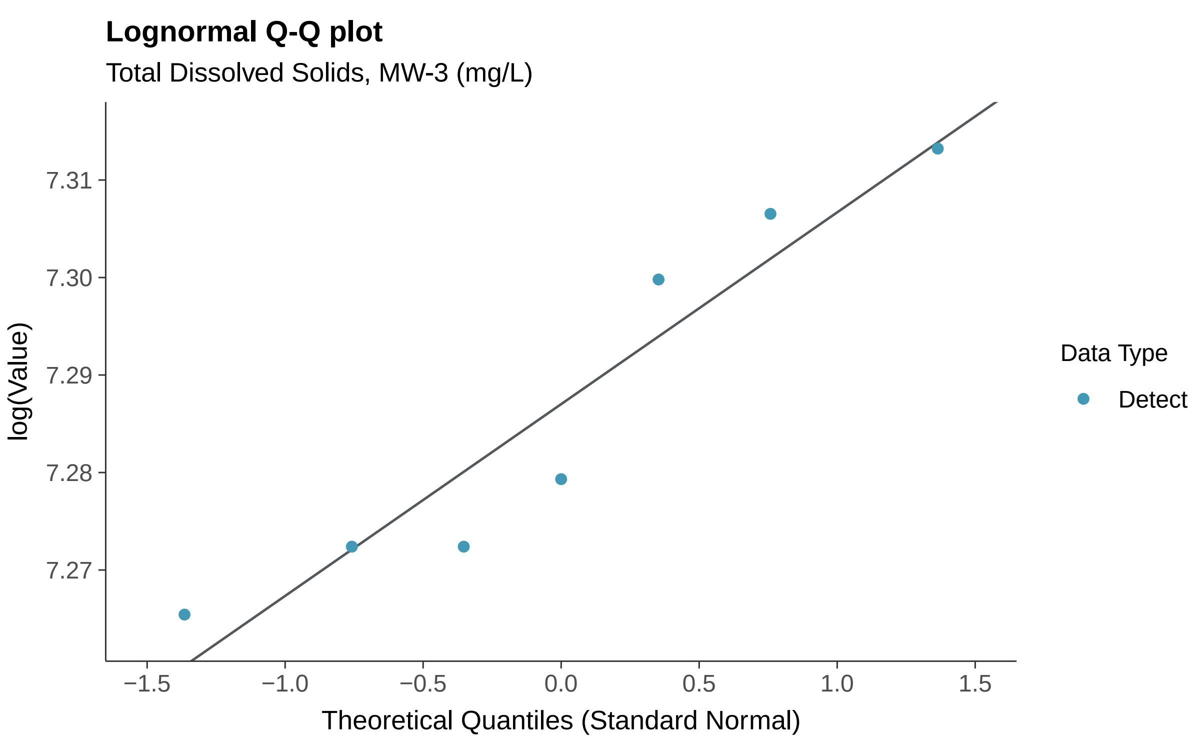


Boxplot by Season

Total Dissolved Solids, MW-3 (mg/L)

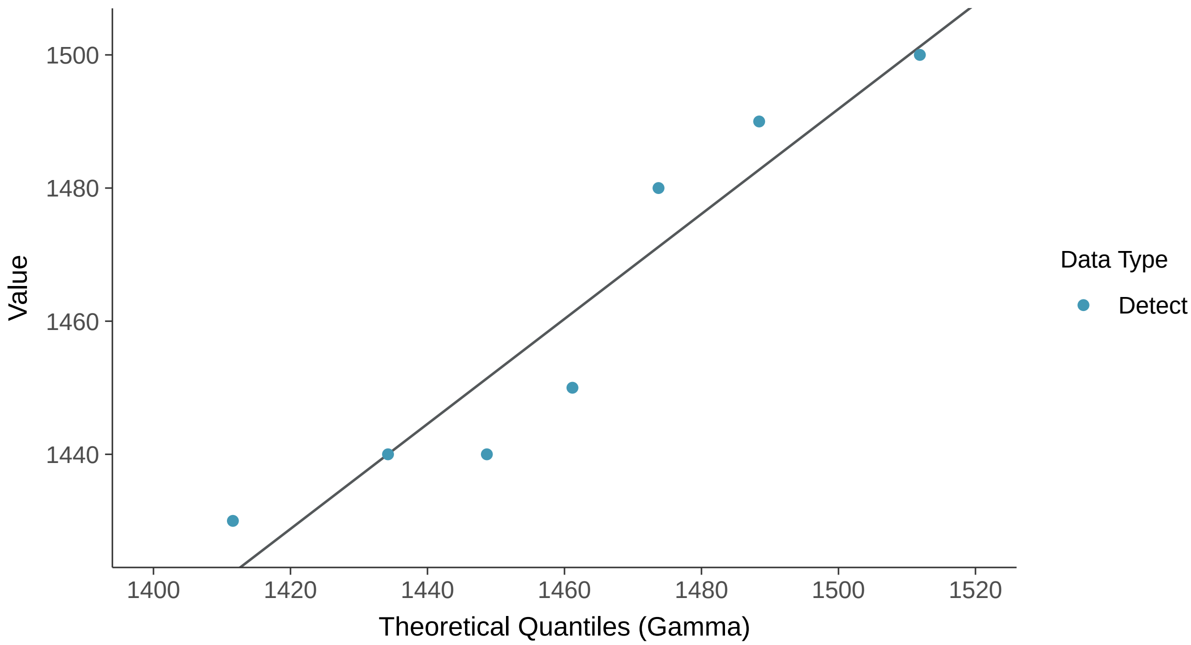



Normal Q-Q plot
Total Dissolved Solids, MW-3 (mg/L)
Value
1500
1480
1460
1440
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Total Dissolved Solids, MW-3 (mg/L)
log(Value)
7.31
7.30
7.29
7.28
7.27
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

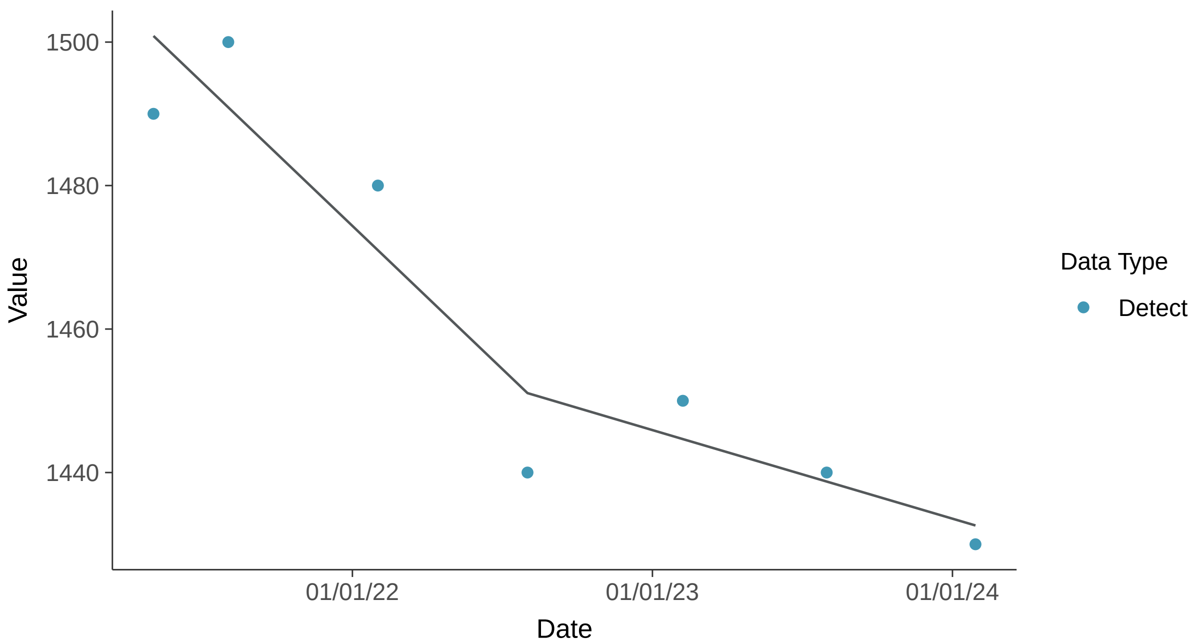
Gamma Q-Q plot

Total Dissolved Solids, MW-3 (mg/L)



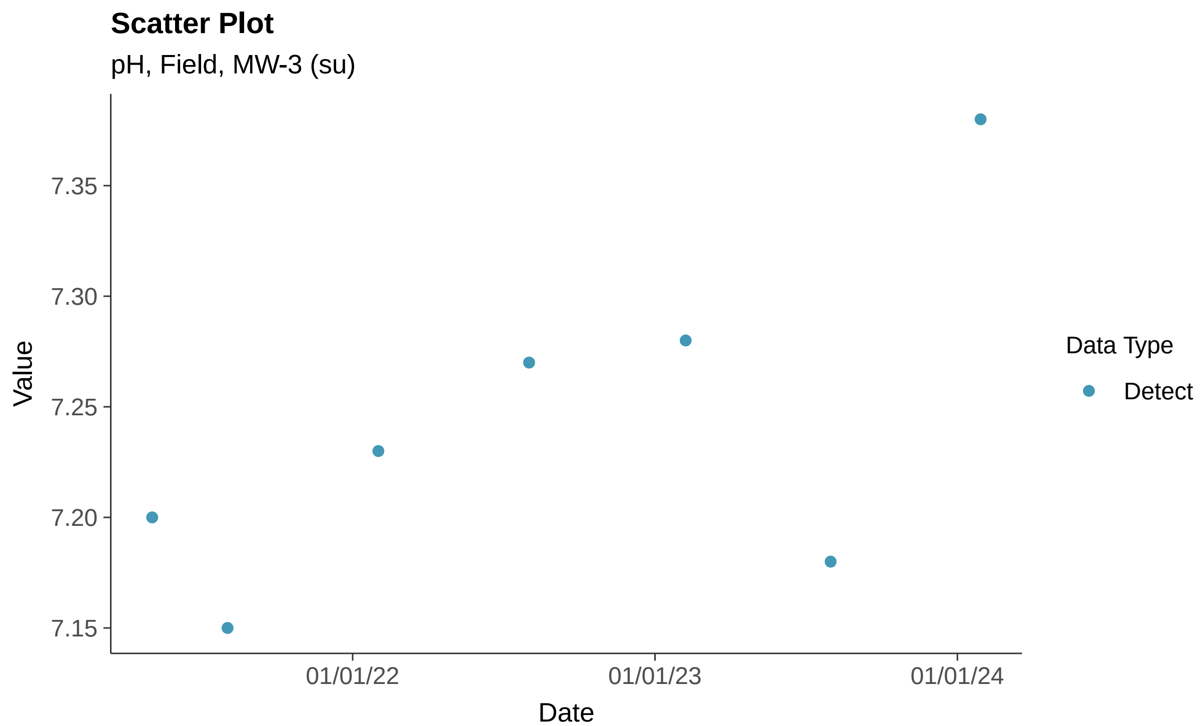
Trend Regression: Piecewise Linear-Linear

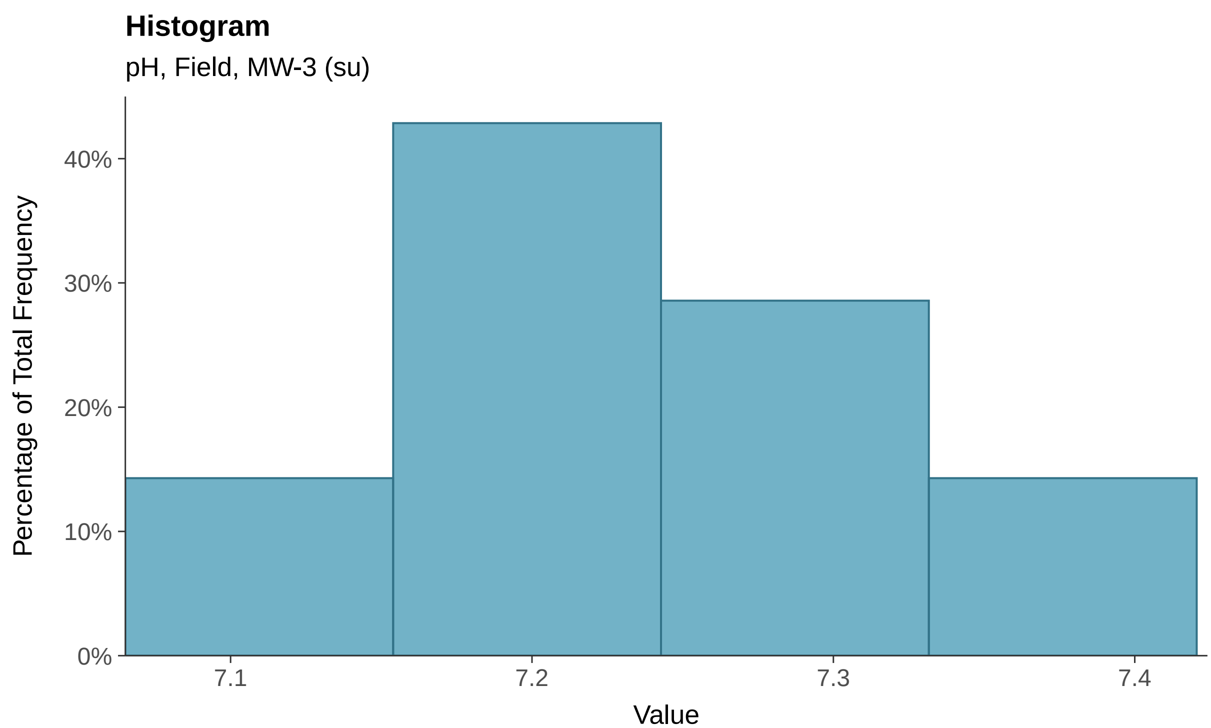
Total Dissolved Solids, MW-3 (mg/L)



Appendix III: pH, Field, MW-3

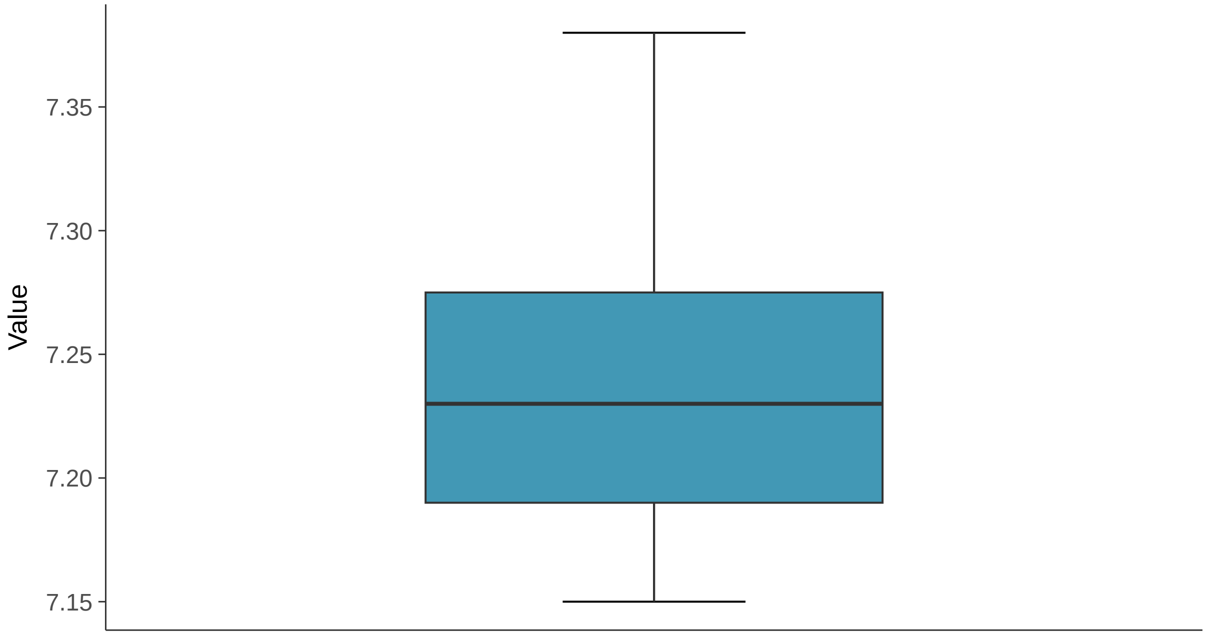
ID: 03_1_07





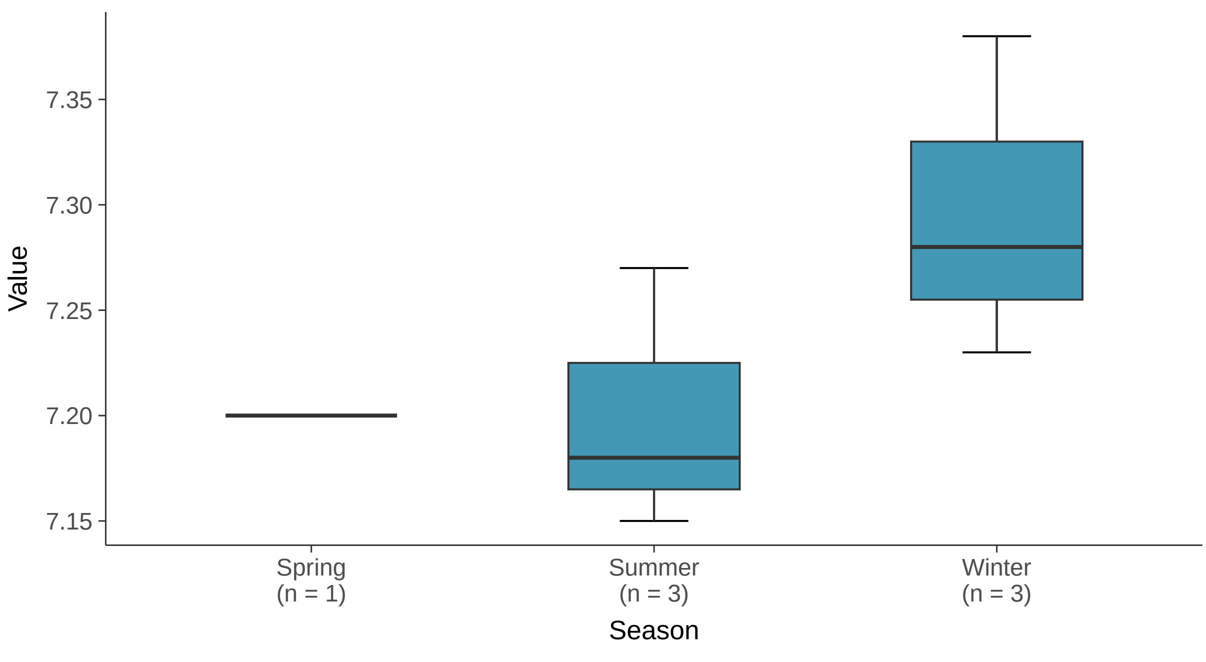
Boxplot

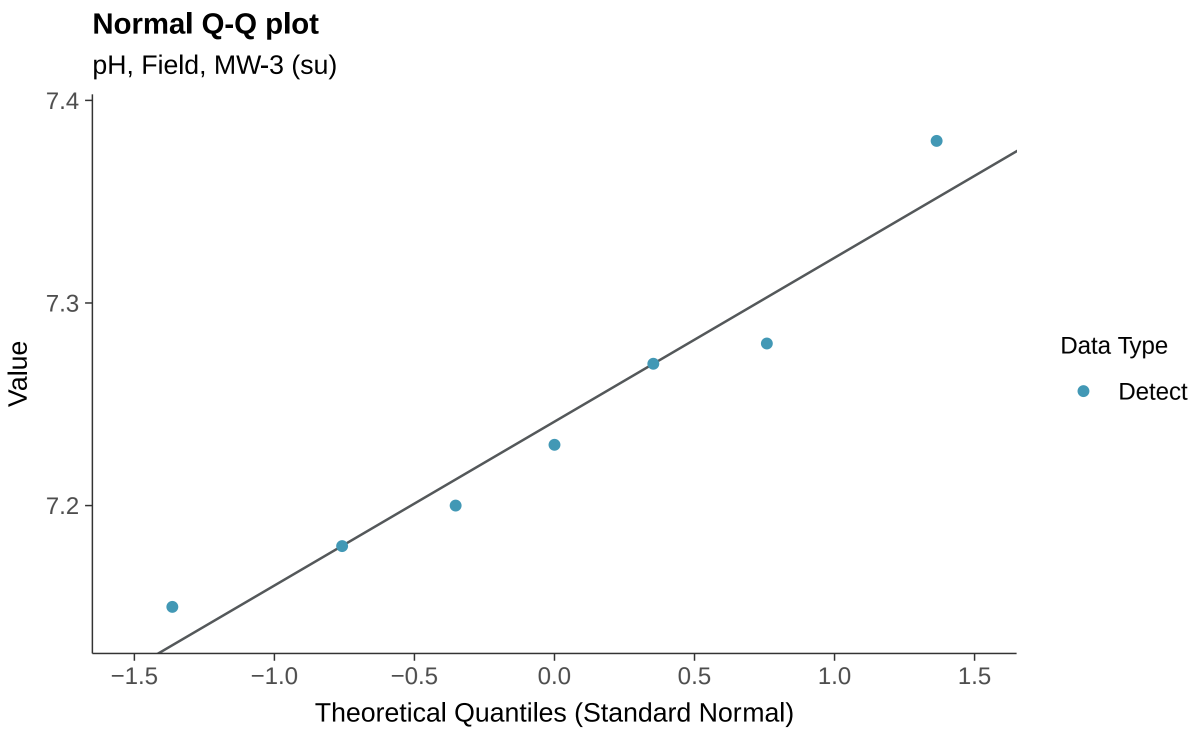
pH, Field, MW-3 (su)

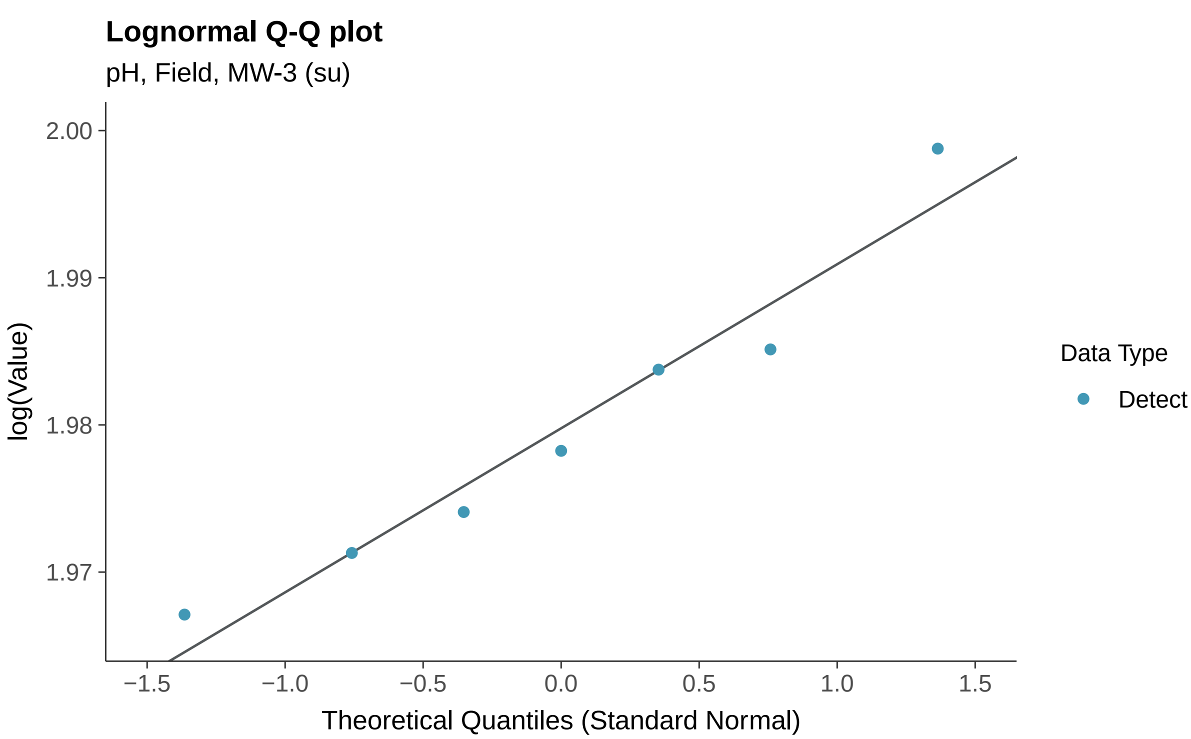


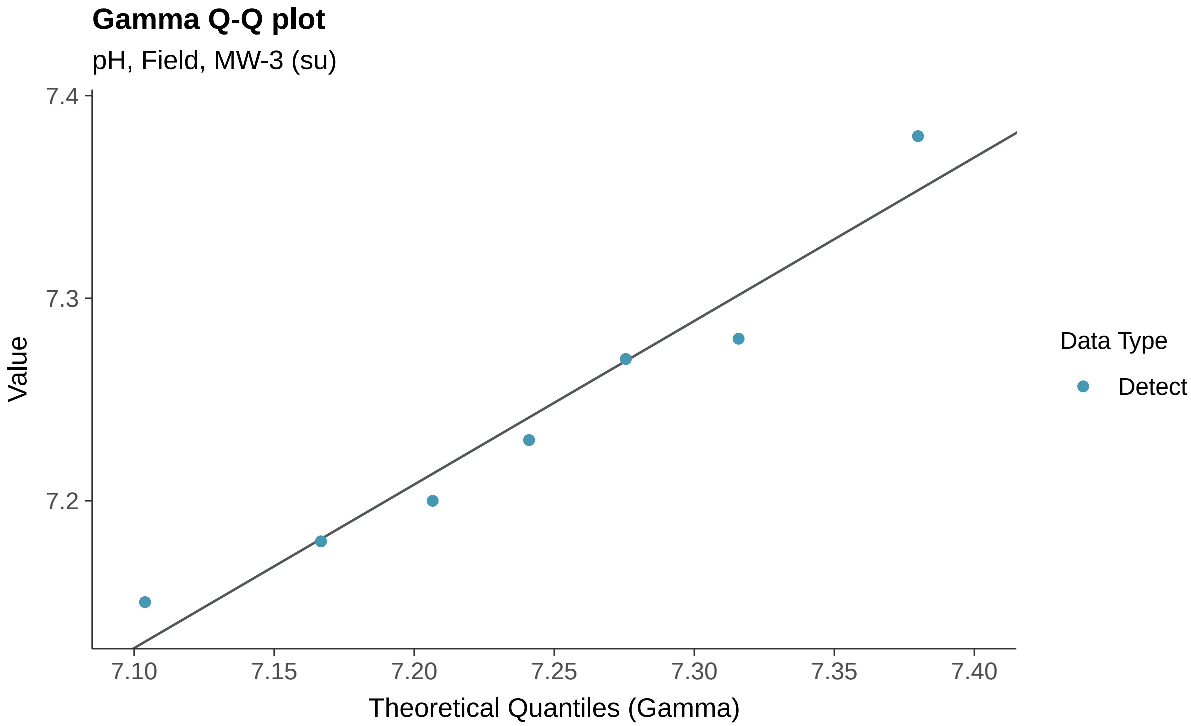
Boxplot by Season

pH, Field, MW-3 (su)




Normal Q-Q plot
pH, Field, MW-3 (su)
Value
7.4
7.3
7.2
−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
pH, Field, MW-3 (su)
log(Value)
2.00
1.99
1.98
1.97
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

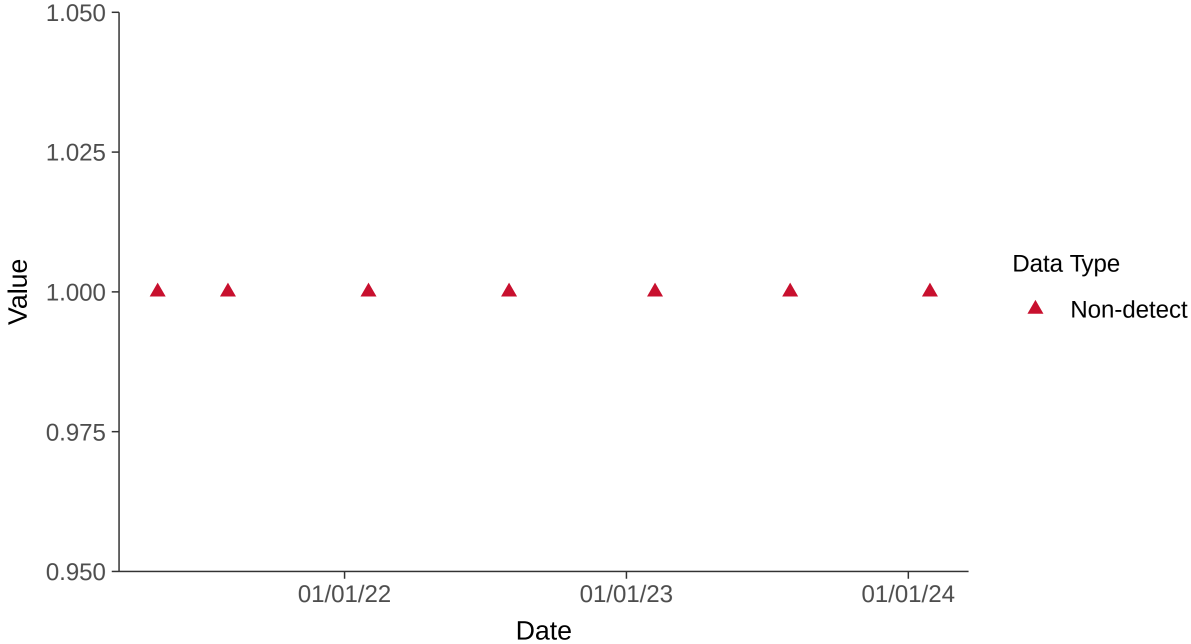

Gamma Q-Q plot
pH, Field, MW-3 (su)
7.4
7.3
7.2
Value
7.10
7.15
7.20
7.25
7.30
7.35
7.40
Theoretical Quantiles (Gamma)
Data Type
Detect

Appendix IV: Fluoride, MW-3

ID: 03_2_04

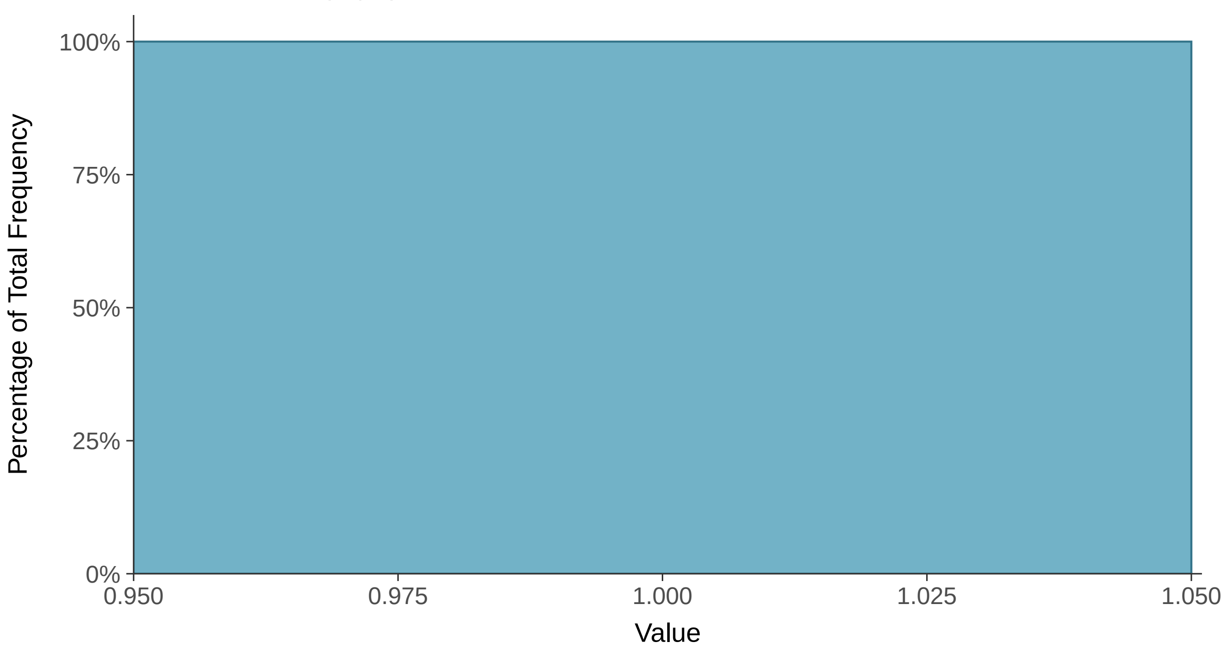
Scatter Plot

Fluoride, MW-3 (mg/L)



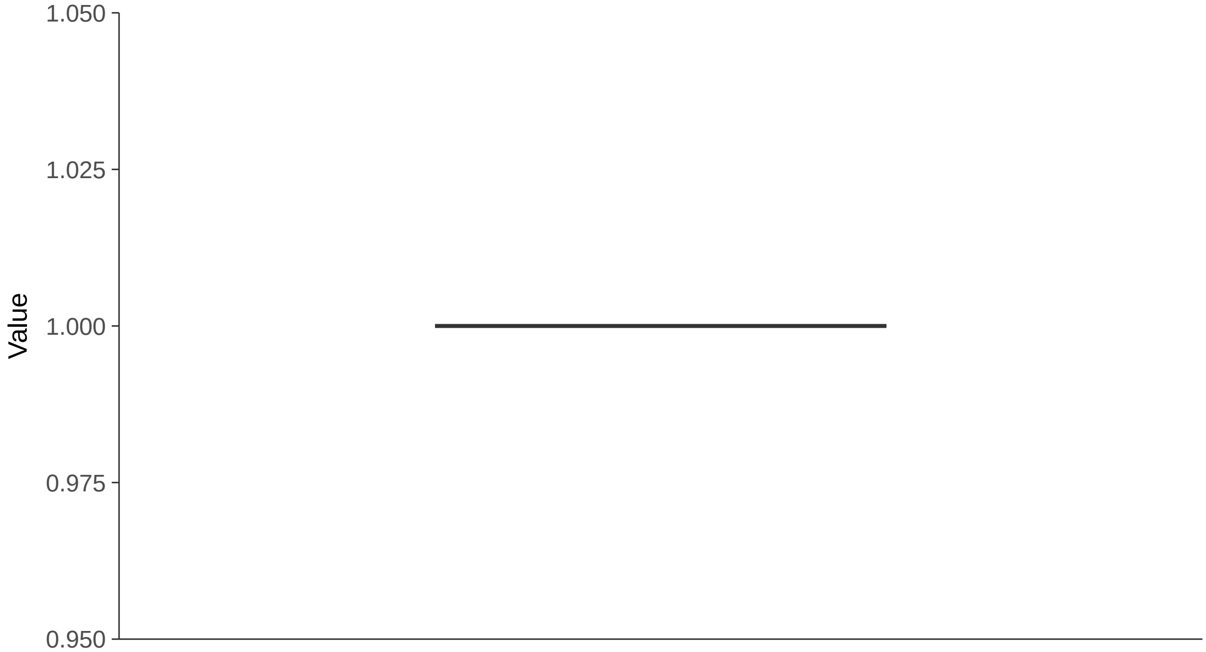
Histogram

Fluoride, MW-3 (mg/L)



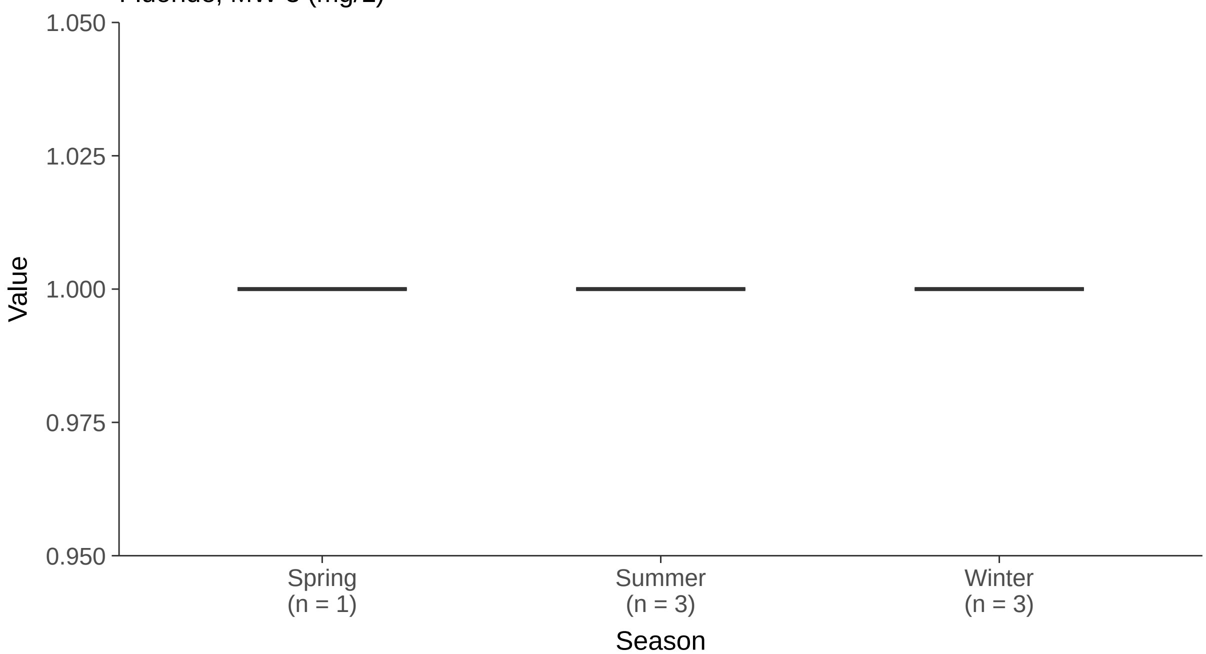
Boxplot

Fluoride, MW-3 (mg/L)



Boxplot by Season

Fluoride, MW-3 (mg/L)

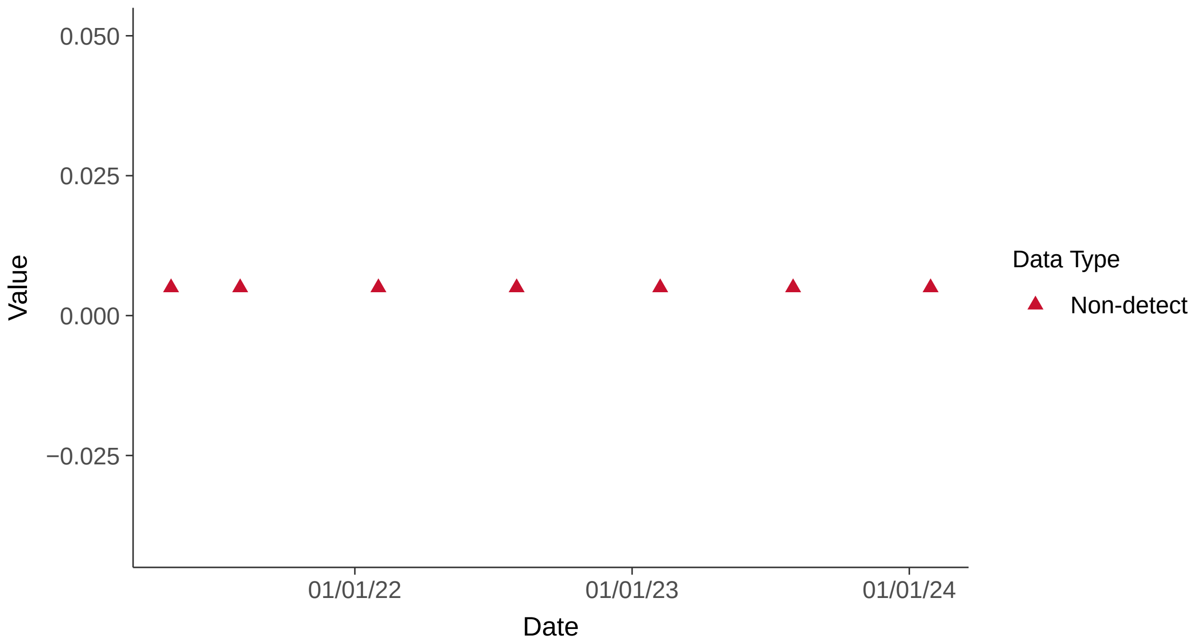


Appendix IV: Antimony, MW-3

ID: 03_2_08

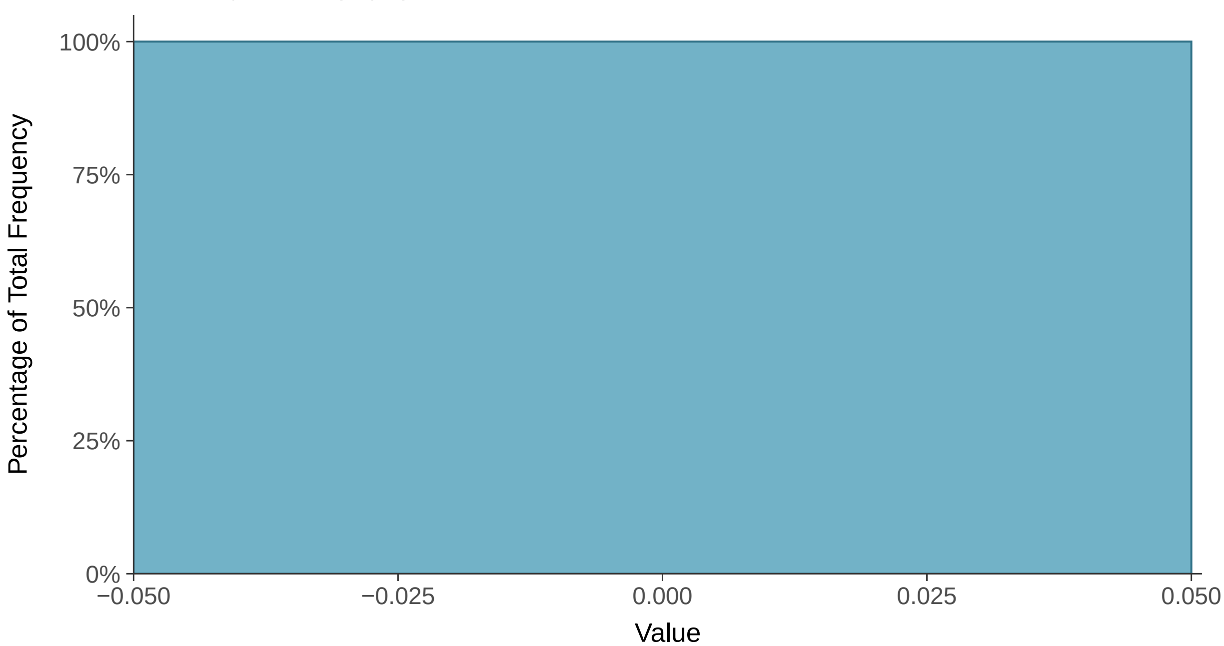
Scatter Plot

Antimony, MW-3 (mg/L)



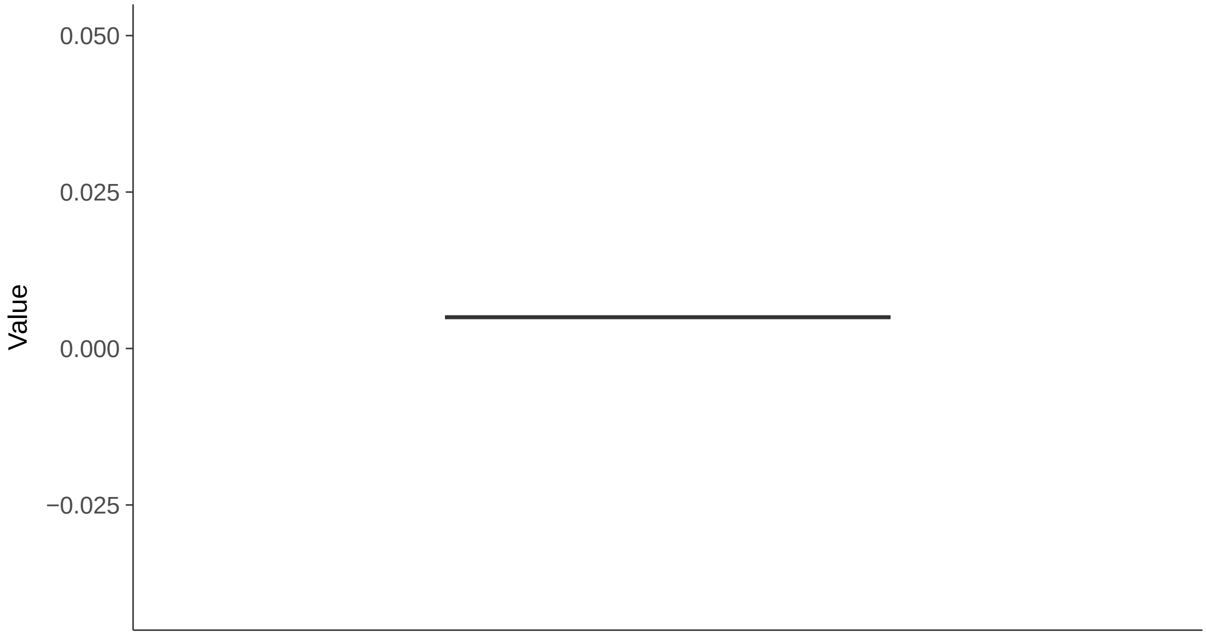
Histogram

Antimony, MW-3 (mg/L)



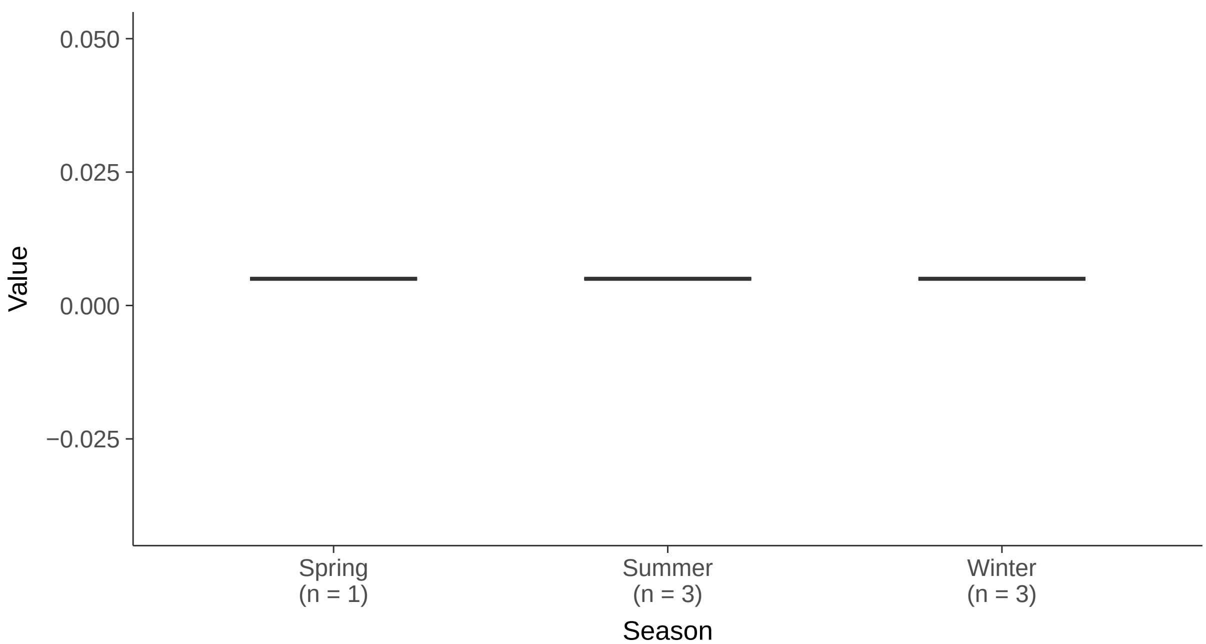
Boxplot

Antimony, MW-3 (mg/L)



Boxplot by Season

Antimony, MW-3 (mg/L)

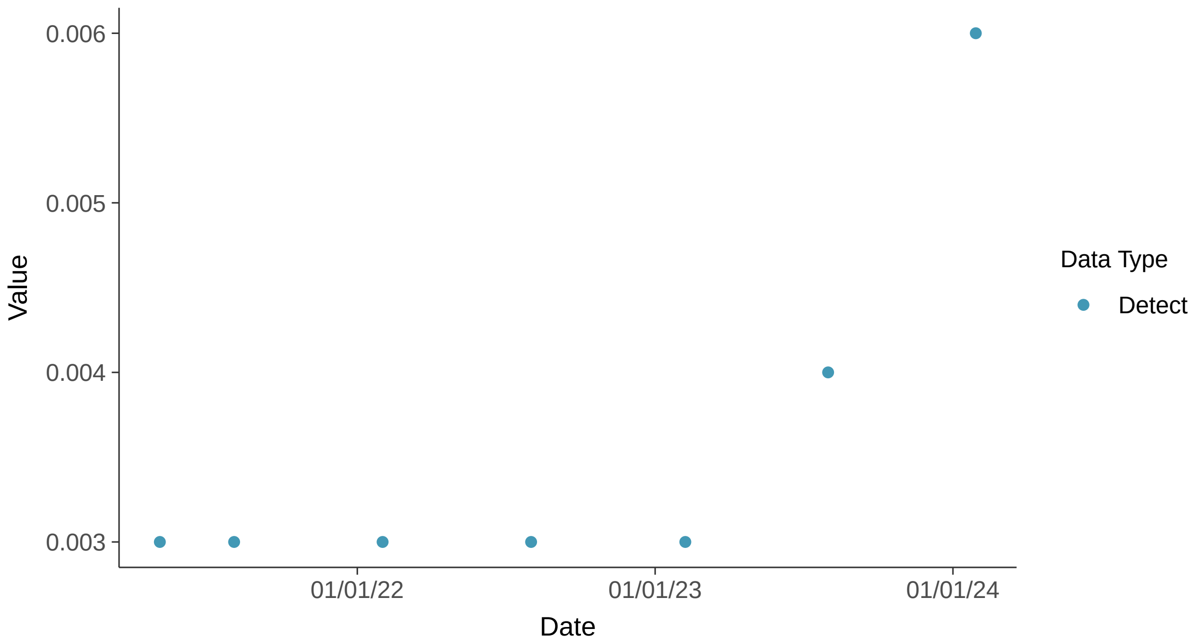


Appendix IV: Arsenic, MW-3

ID: 03_2_09

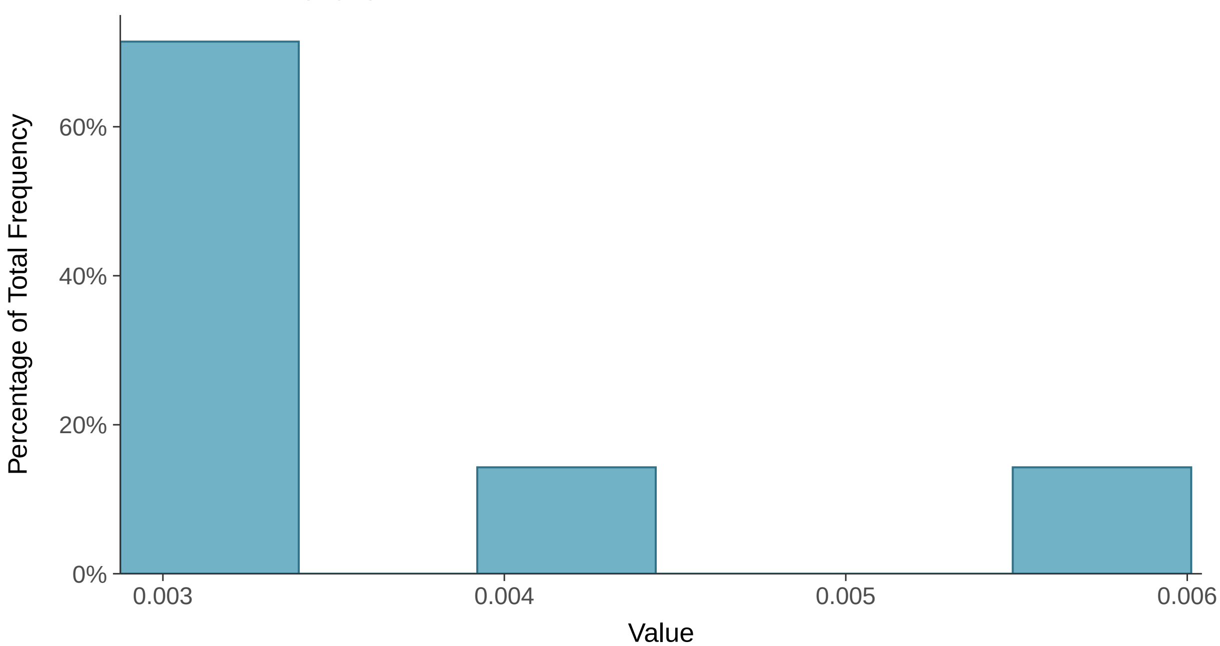
Scatter Plot

Arsenic, MW-3 (mg/L)



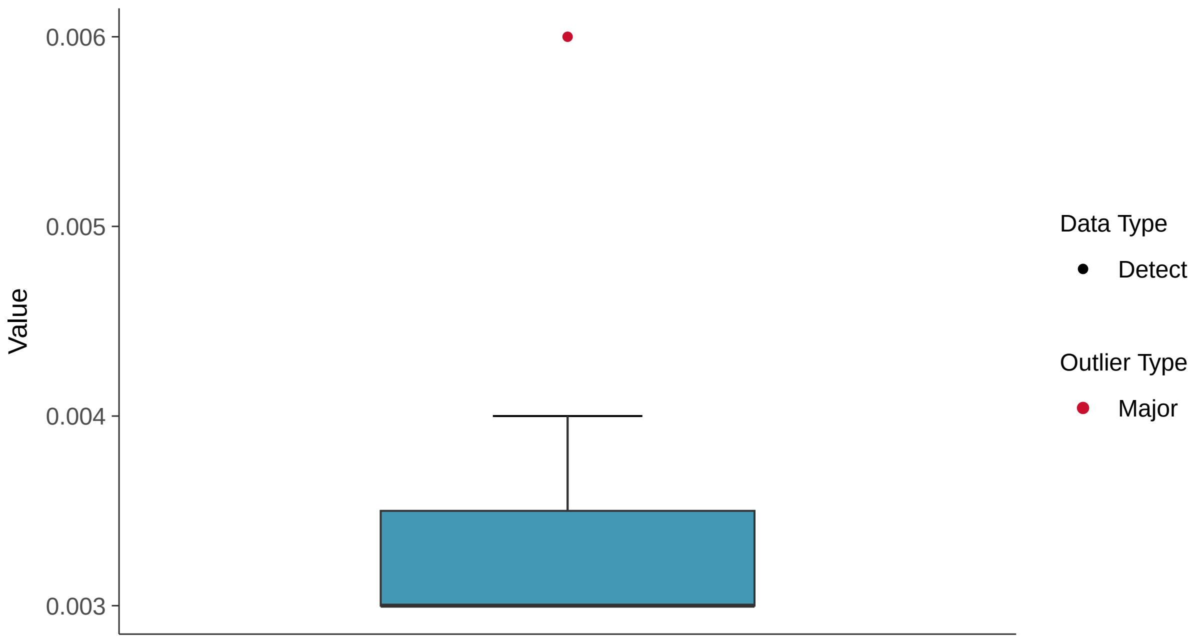
Histogram

Arsenic, MW-3 (mg/L)



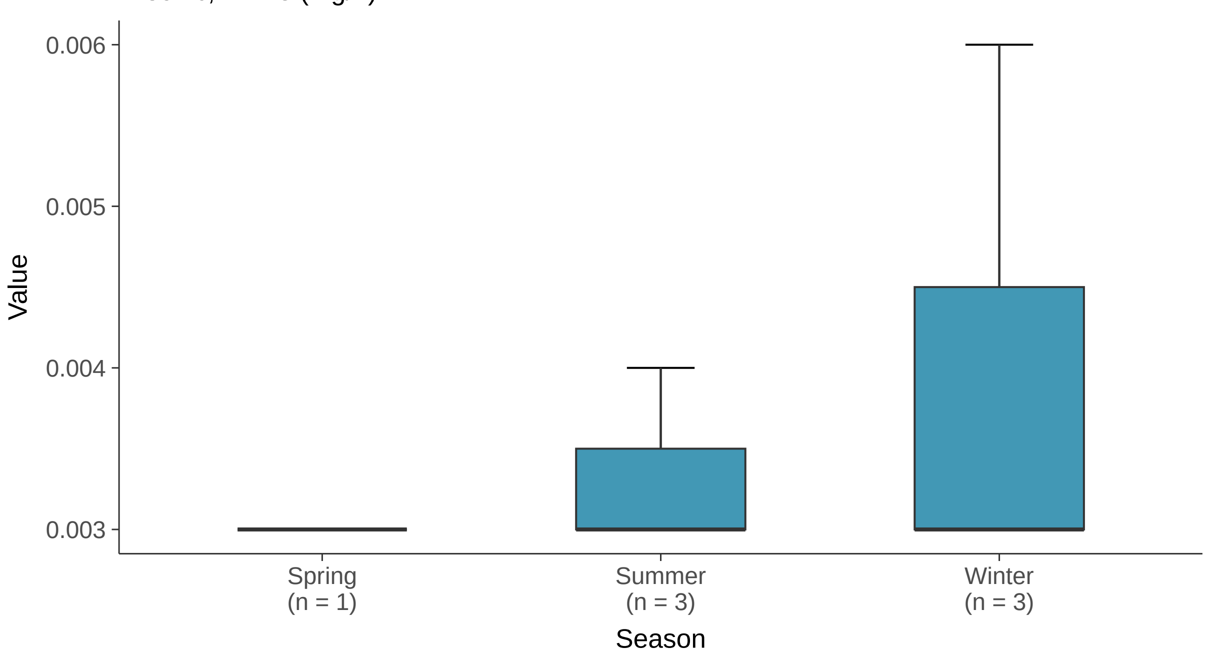
Boxplot

Arsenic, MW-3 (mg/L)



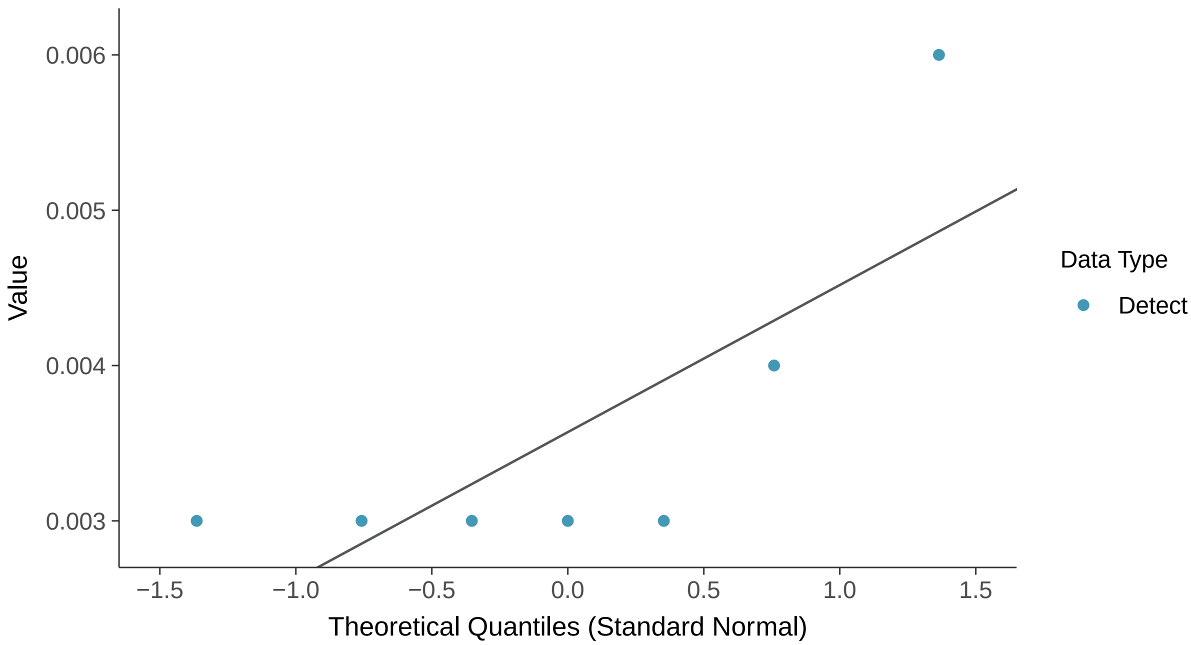
Boxplot by Season

Arsenic, MW-3 (mg/L)



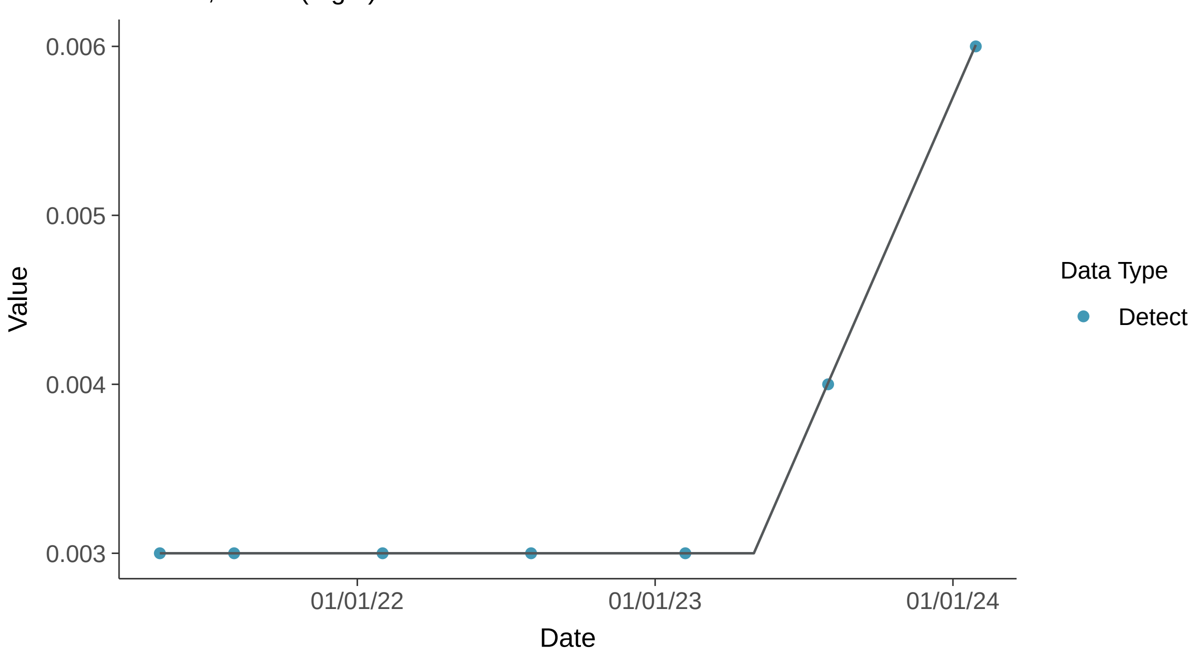
Normal Q-Q plot

Arsenic, MW-3 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-3 (mg/L)

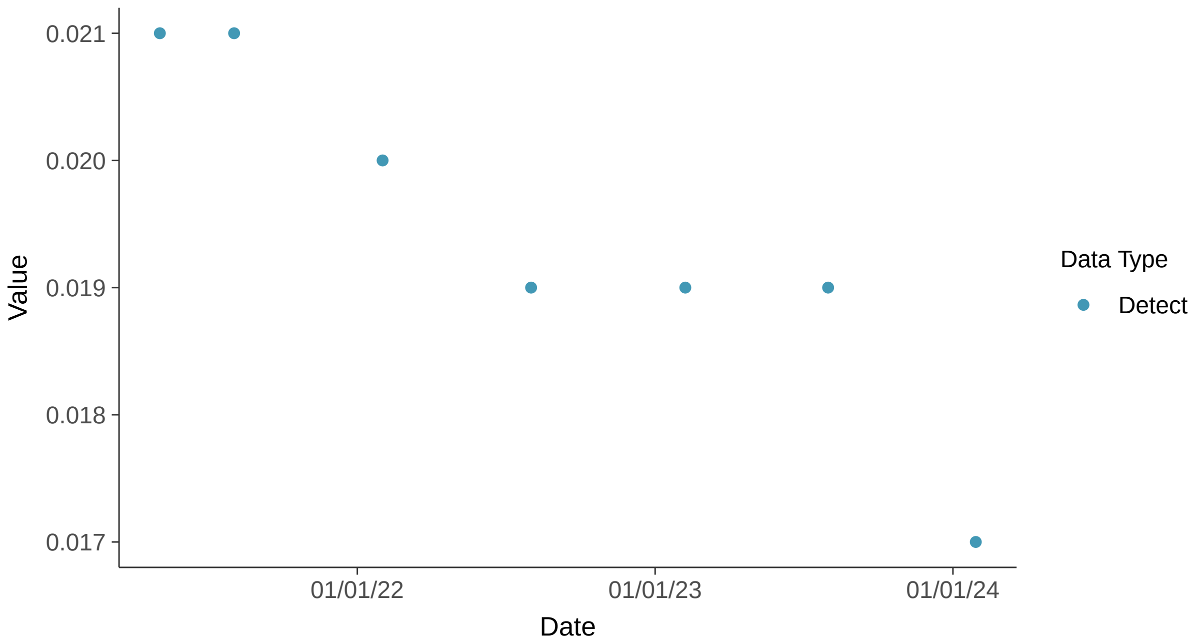


Appendix IV: Barium, MW-3

ID: 03_2_10

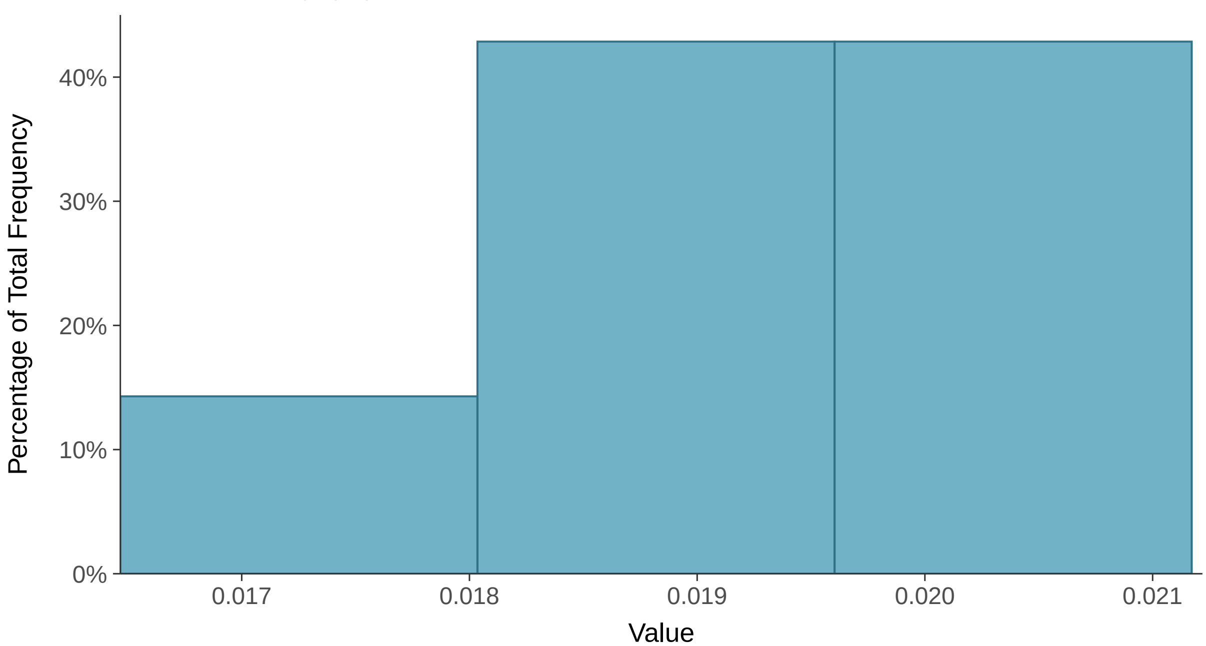
Scatter Plot

Barium, MW-3 (mg/L)



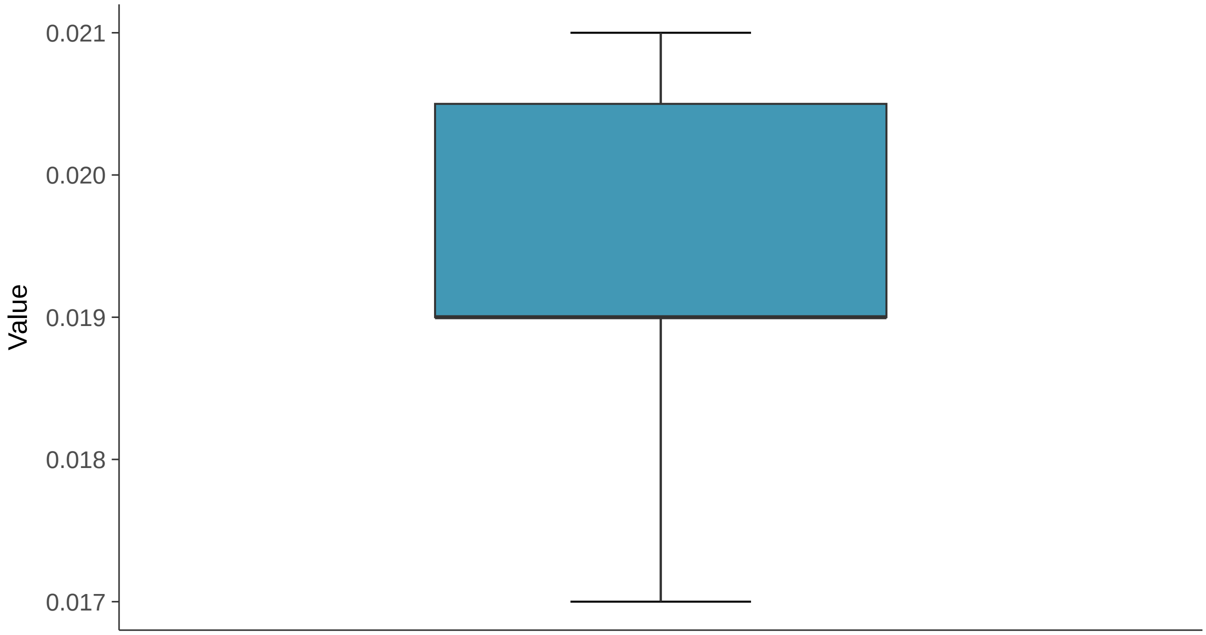
Histogram

Barium, MW-3 (mg/L)



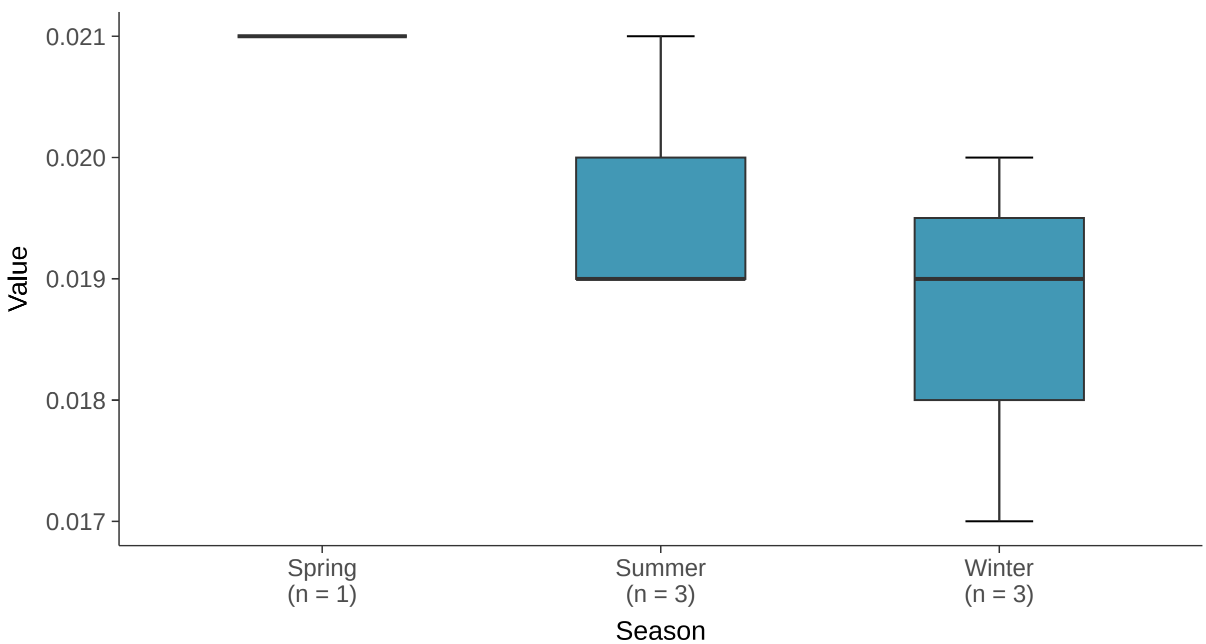
Boxplot

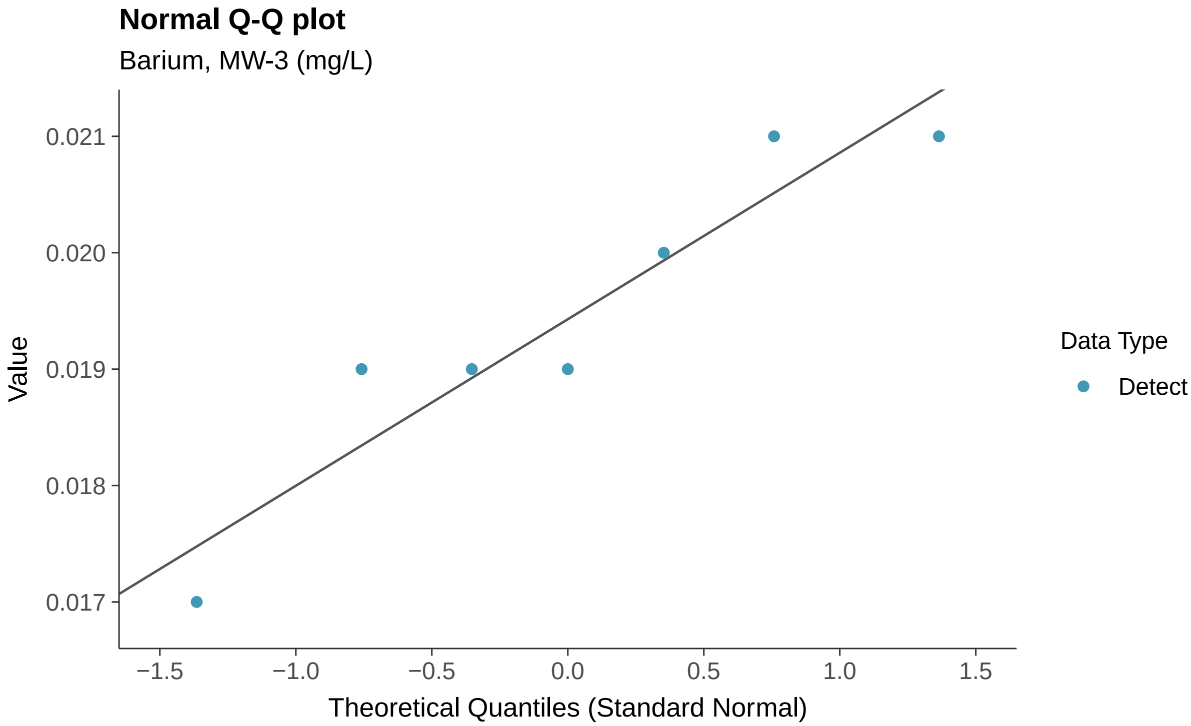
Barium, MW-3 (mg/L)

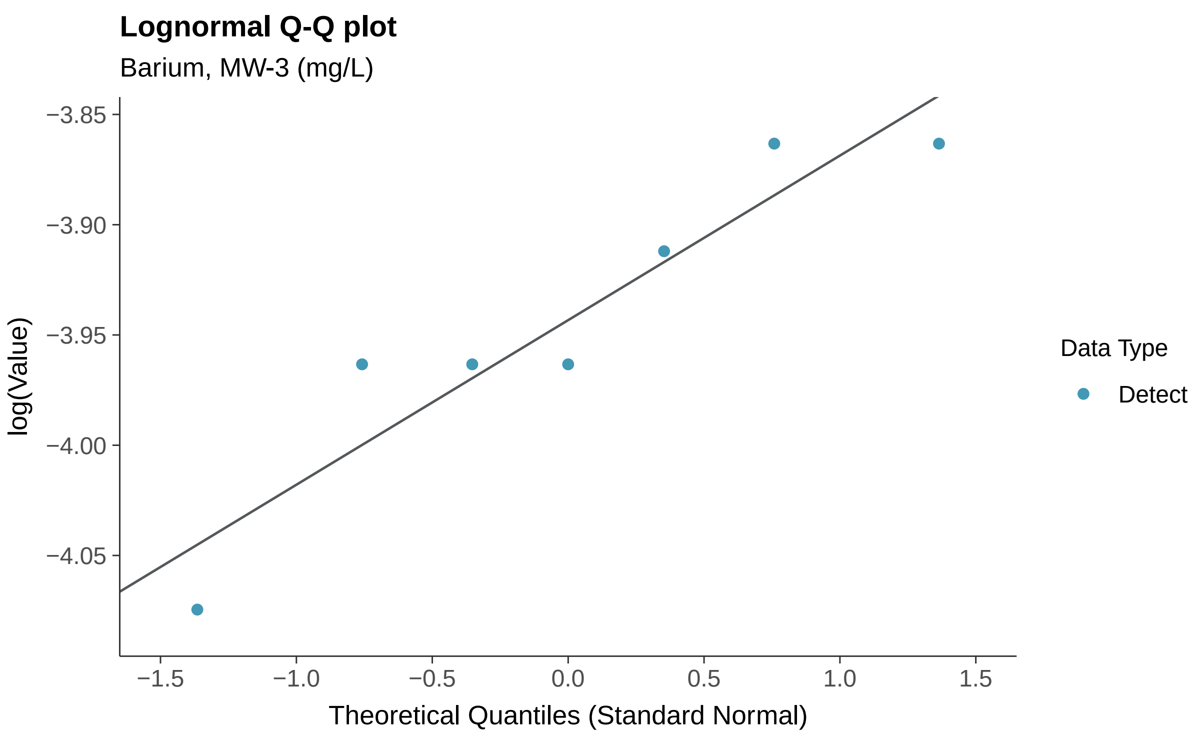


Boxplot by Season

Barium, MW-3 (mg/L)

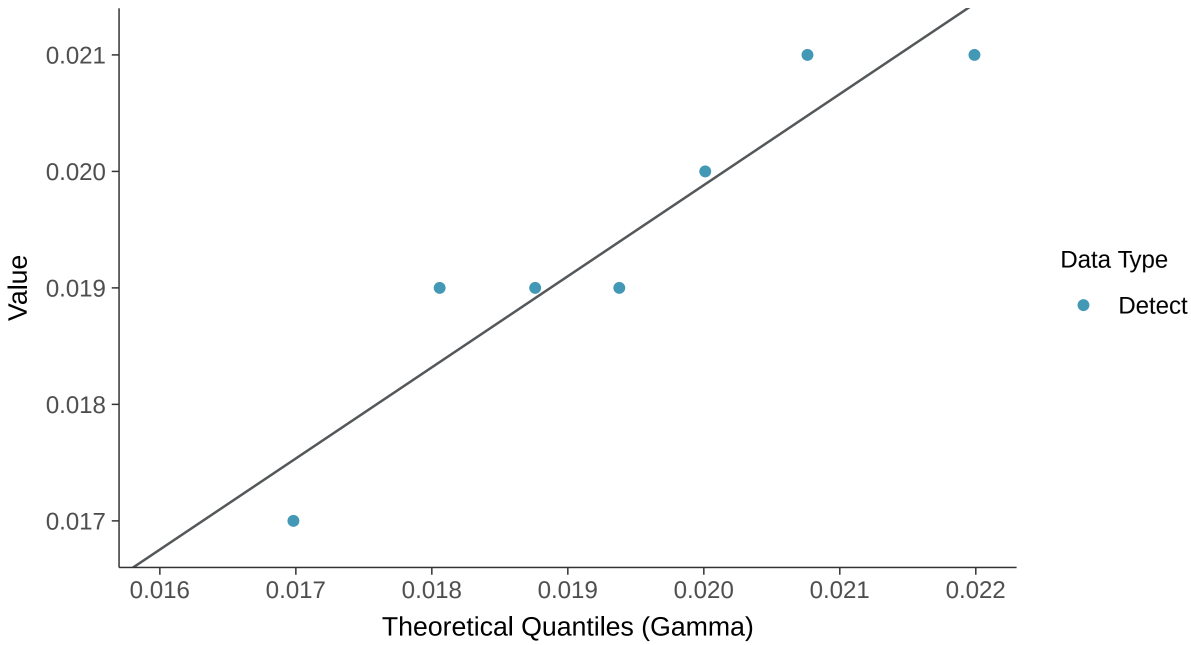



Normal Q-Q plot
Barium, MW-3 (mg/L)
Value
0.021
0.020
0.019
0.018
0.017
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-3 (mg/L)
log(Value)
−3.85
−3.90
−3.95
−4.00
−4.05
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

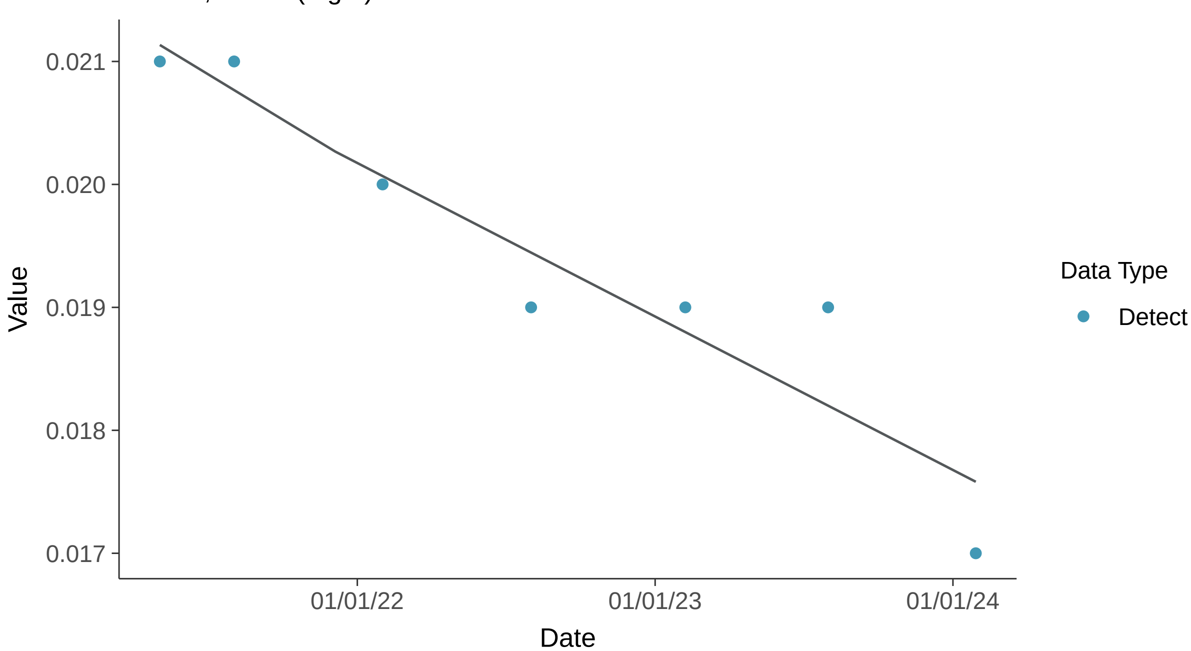
Gamma Q-Q plot

Barium, MW-3 (mg/L)



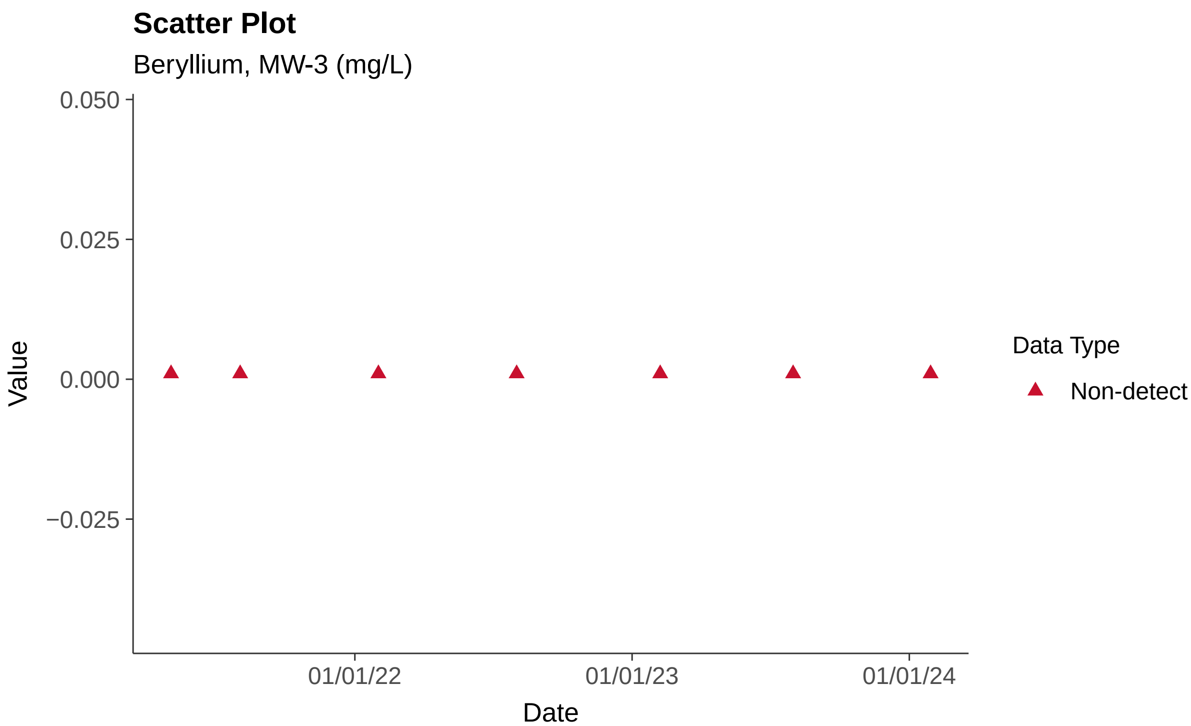
Trend Regression: Piecewise Linear-Linear

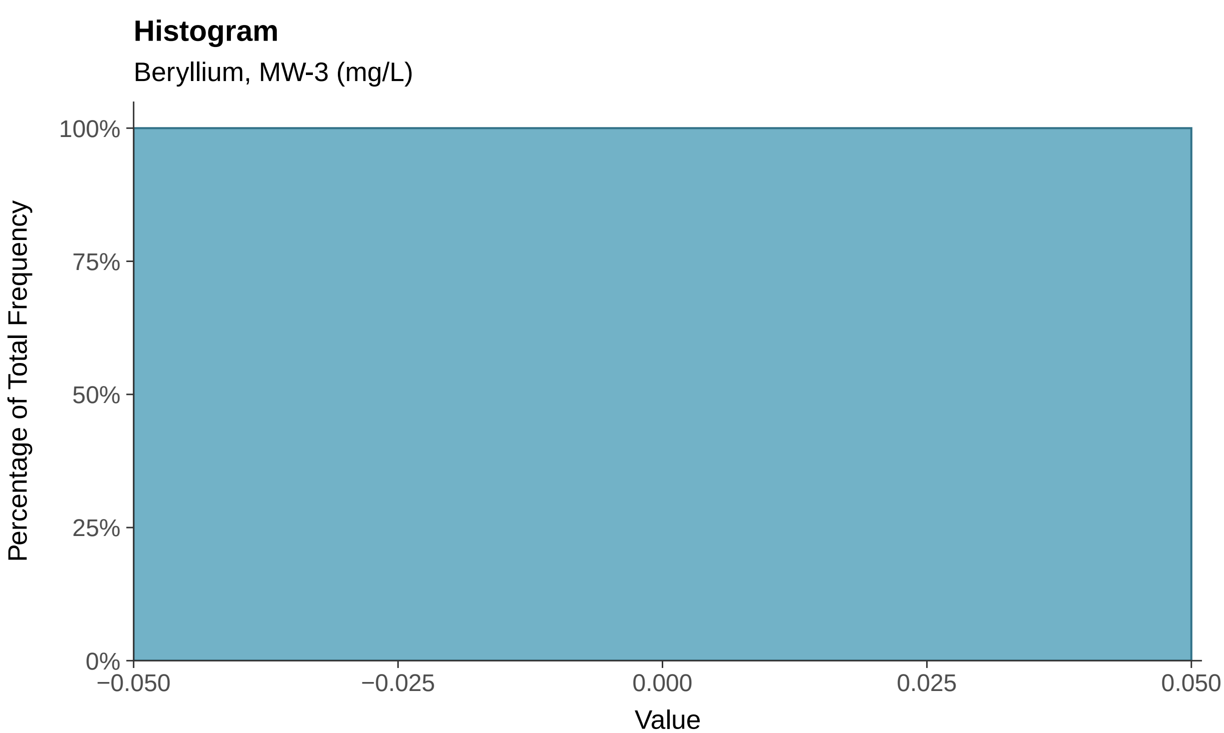
Barium, MW-3 (mg/L)



Appendix IV: Beryllium, MW-3

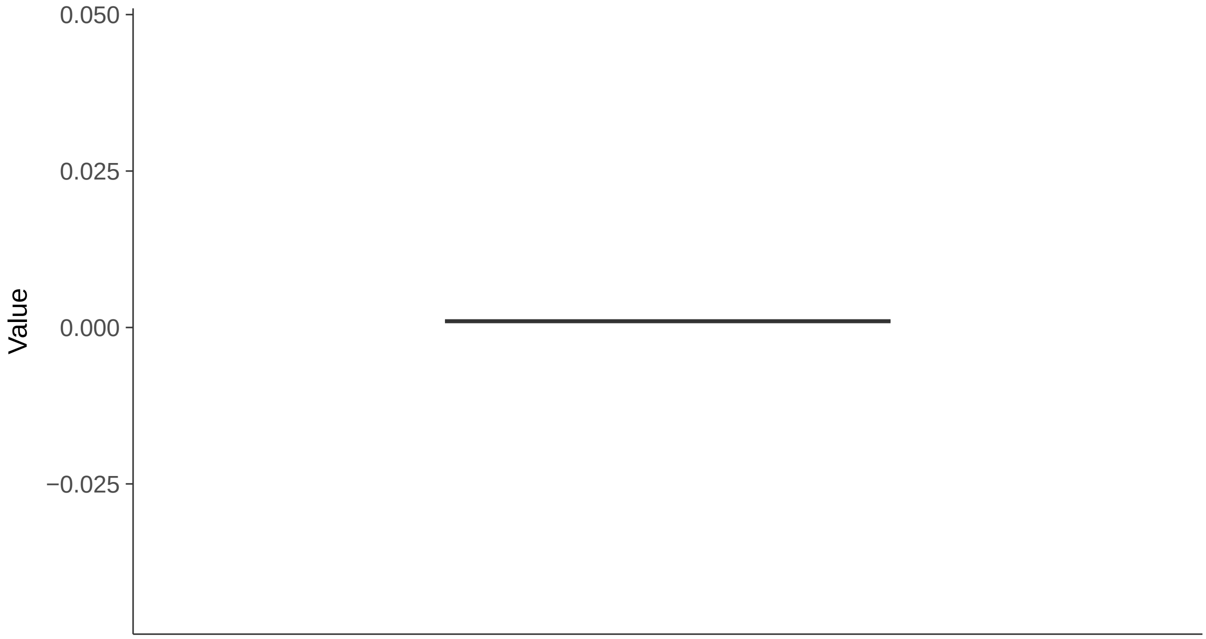
ID: 03_2_11





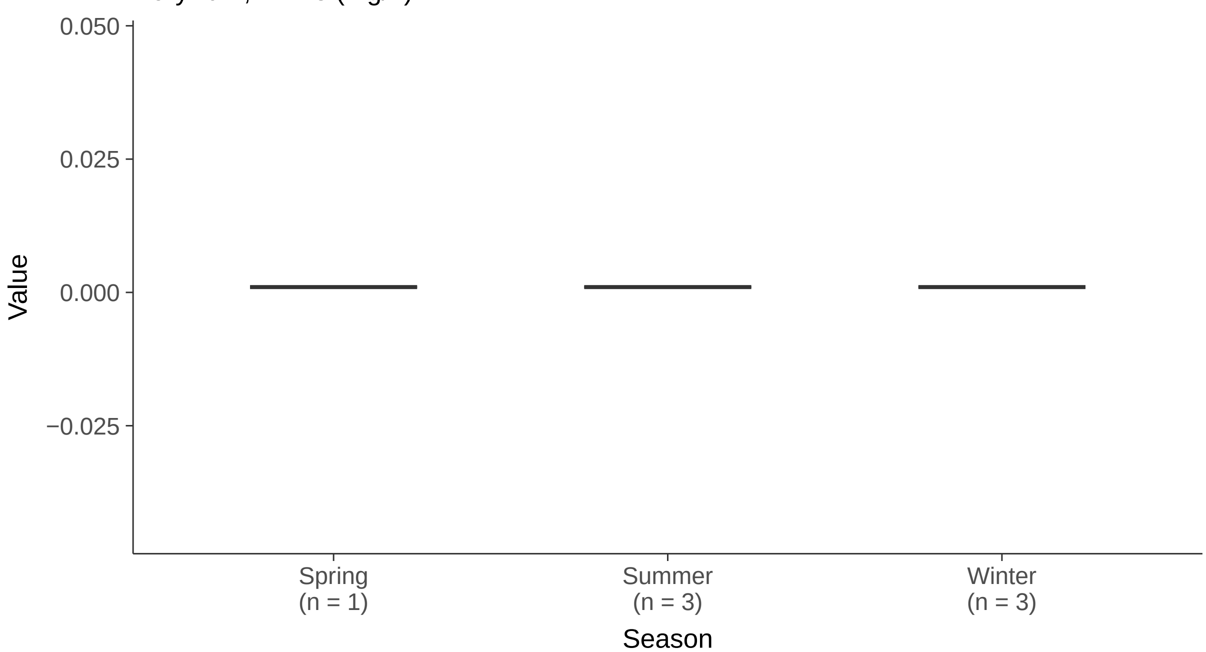
Boxplot

Beryllium, MW-3 (mg/L)



Boxplot by Season

Beryllium, MW-3 (mg/L)

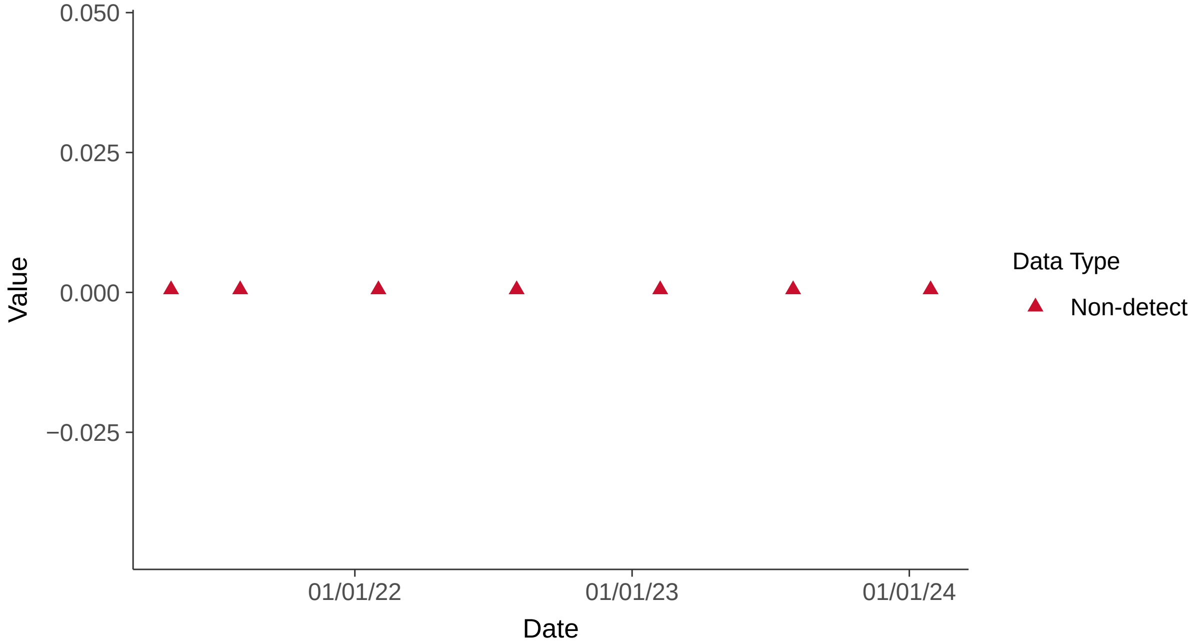


Appendix IV: Cadmium, MW-3

ID: 03_2_12

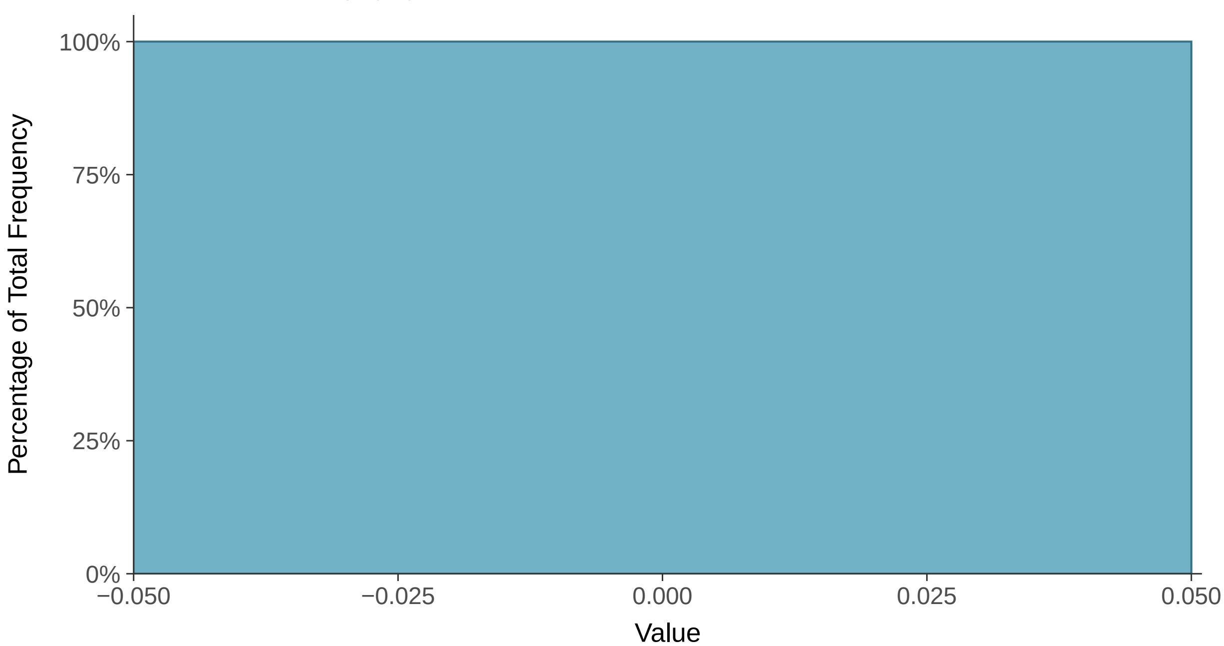
Scatter Plot

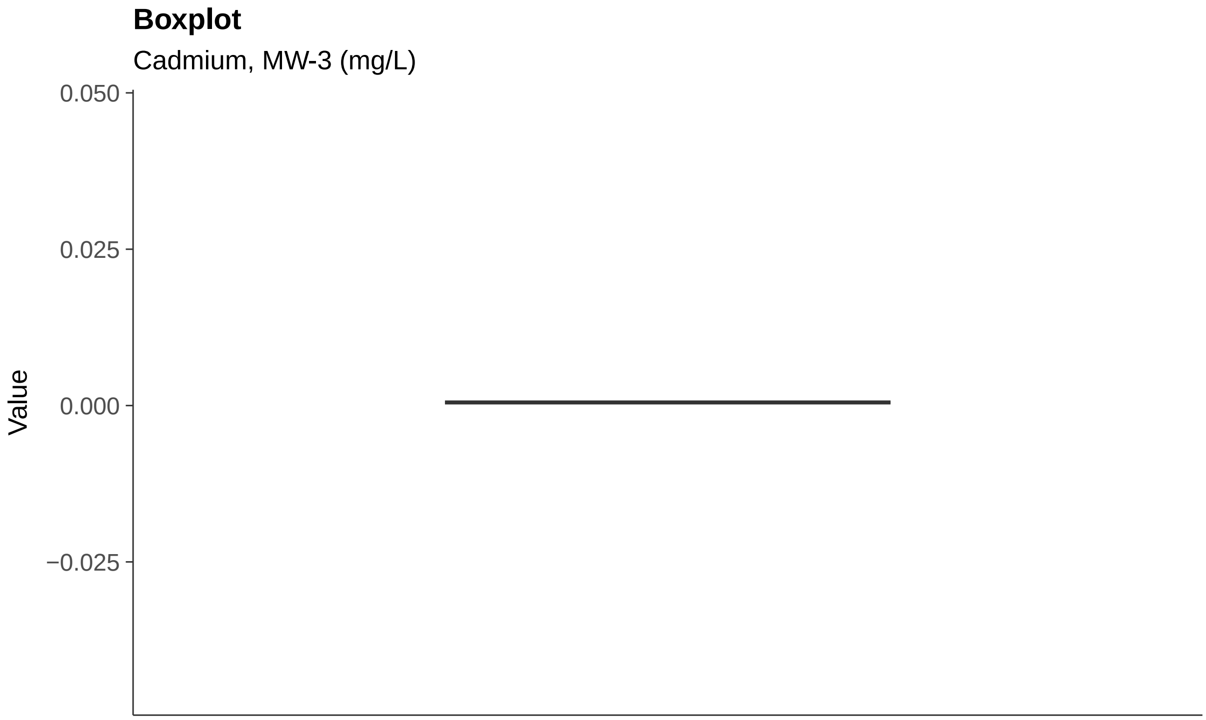
Cadmium, MW-3 (mg/L)

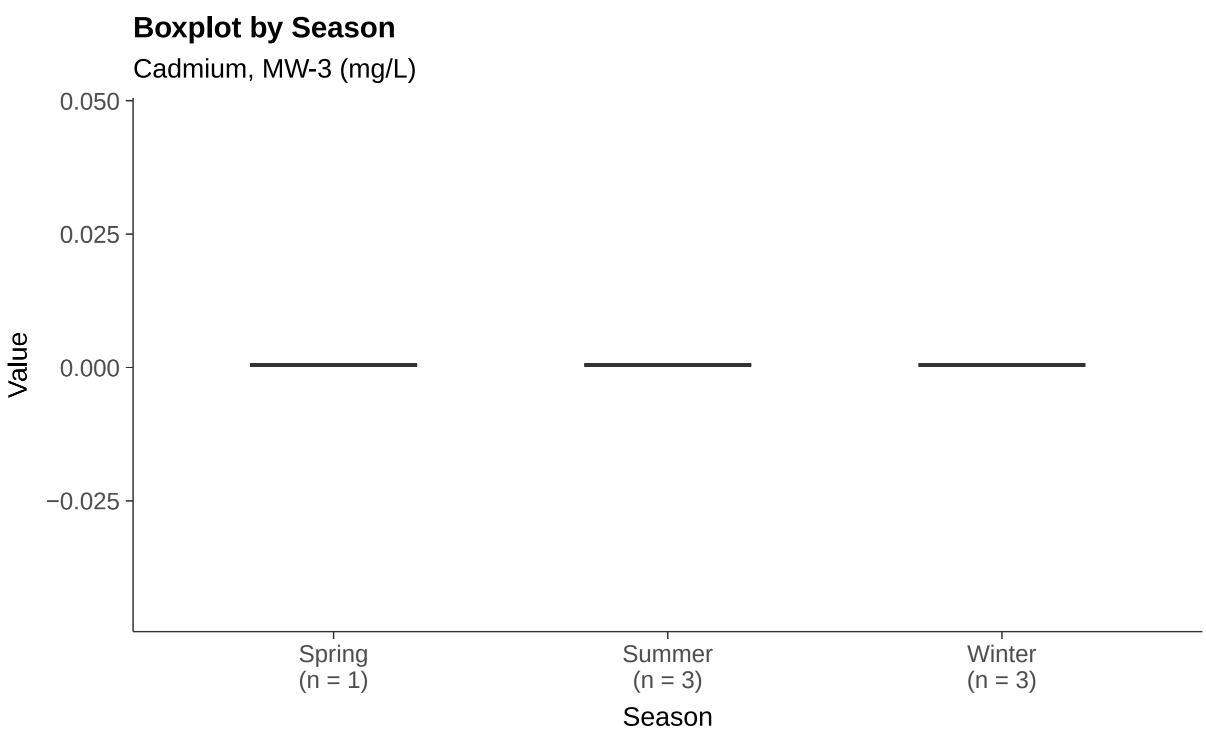


Histogram

Cadmium, MW-3 (mg/L)

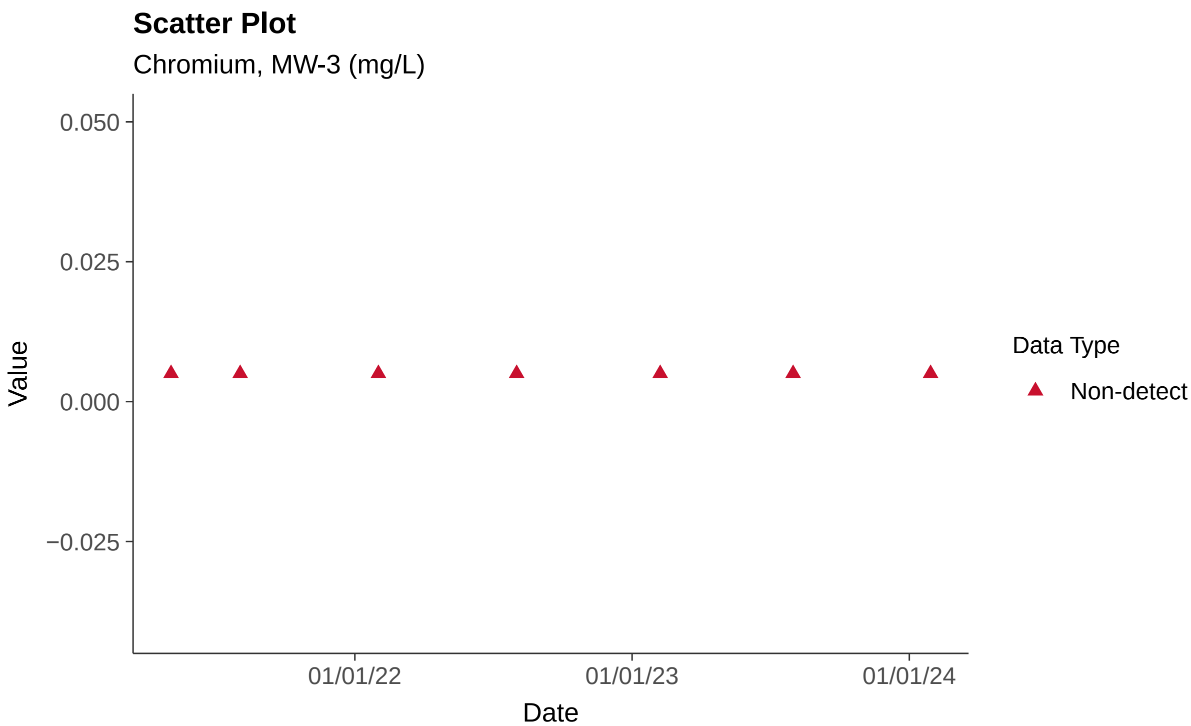


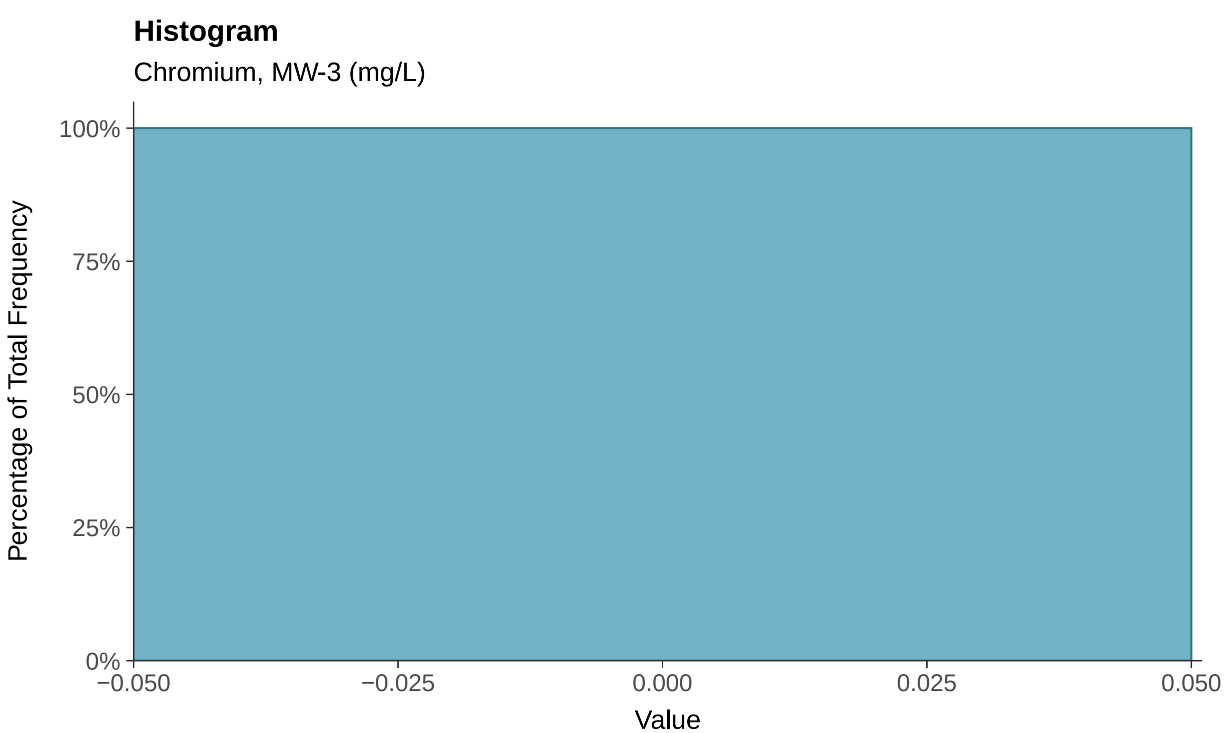

Boxplot
Cadmium, MW-3 (mg/L)
0.050
0.025
0.000
−0.025
Value


Boxplot by Season
Cadmium, MW-3 (mg/L)
0.050
0.025
0.000
−0.025
Value
Spring
(n = 1)
Summer
(n = 3)
Winter
(n = 3)
Season

Appendix IV: Chromium, MW-3

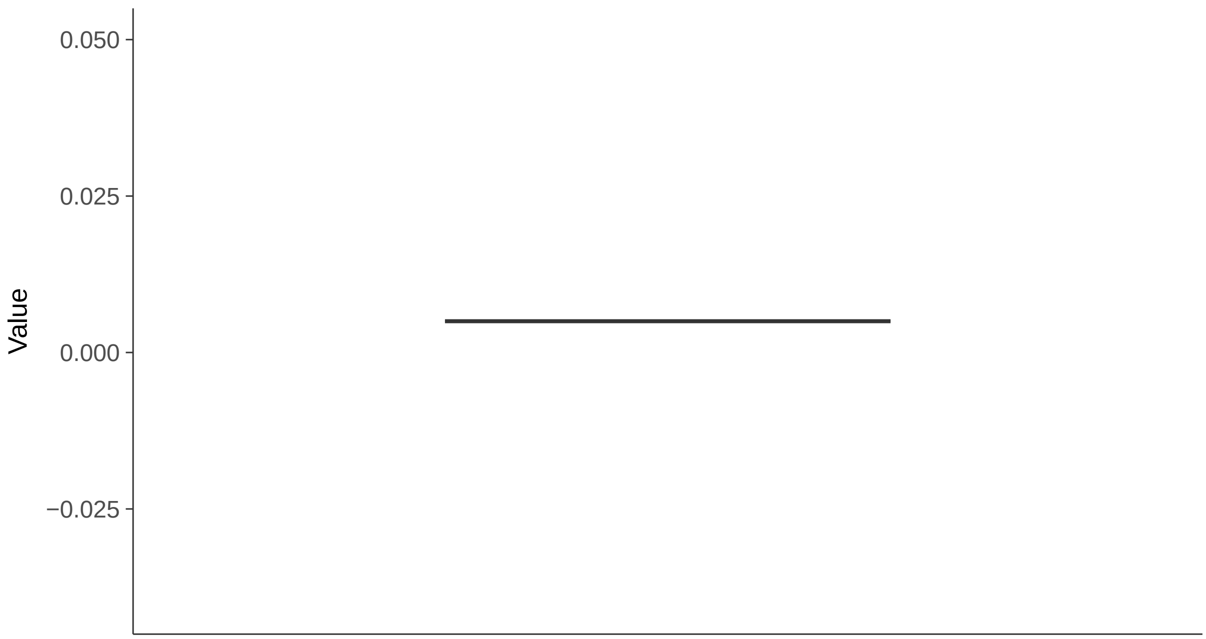
ID: 03_2_13





Boxplot

Chromium, MW-3 (mg/L)

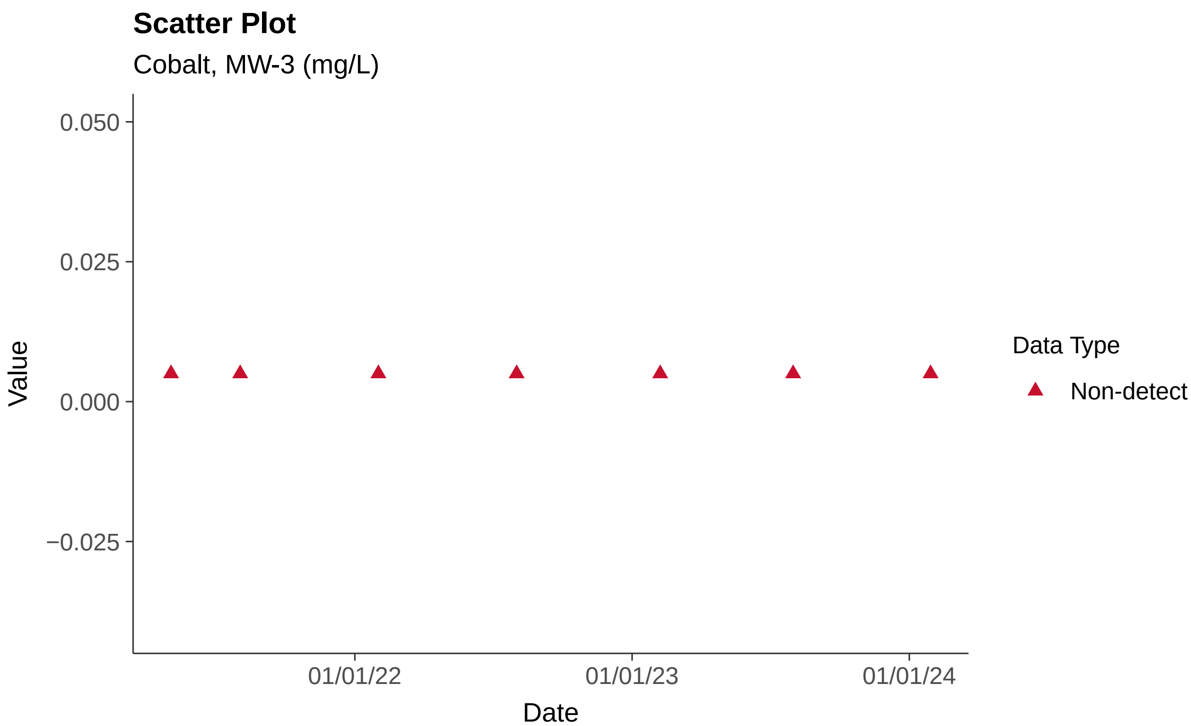


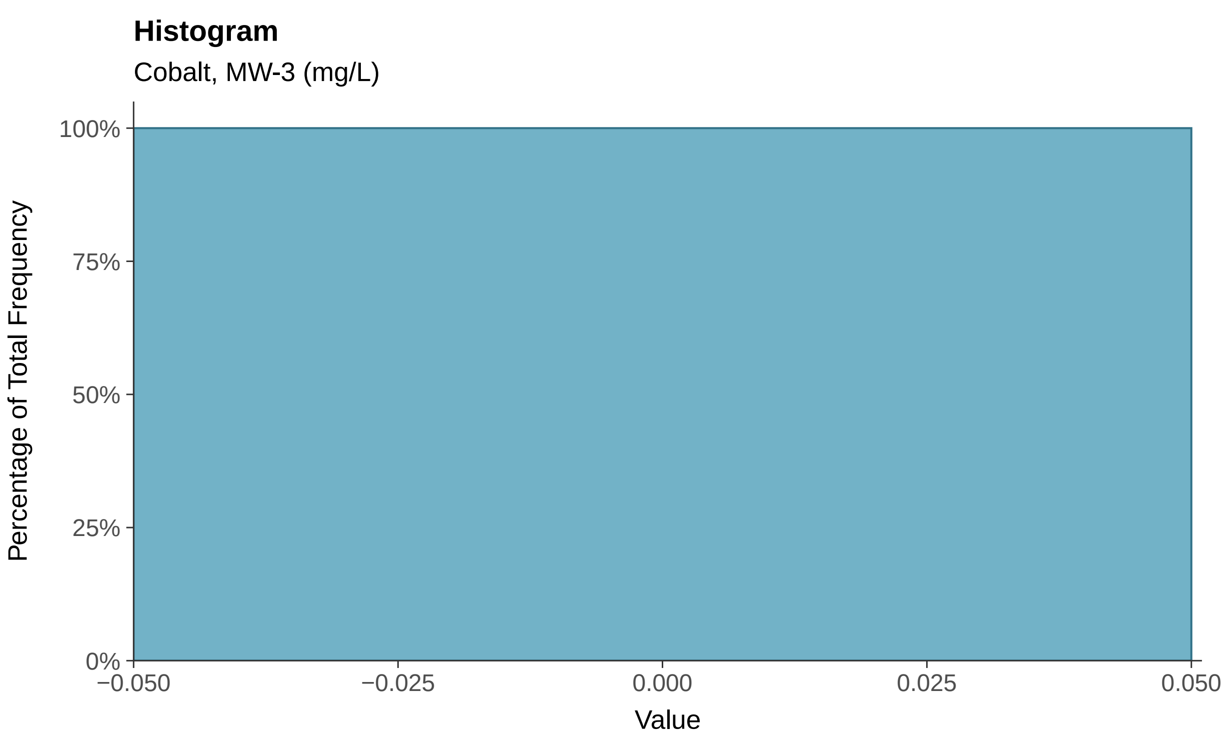
Boxplot by Season

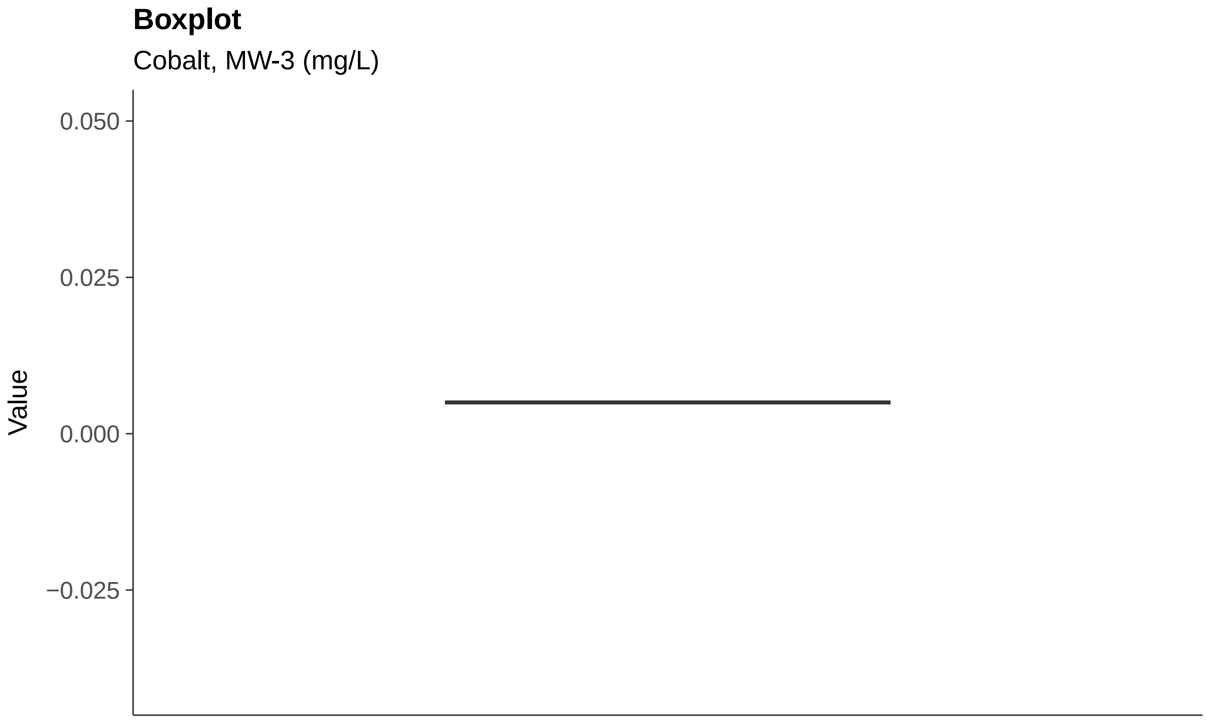
Chromium, MW-3 (mg/L)

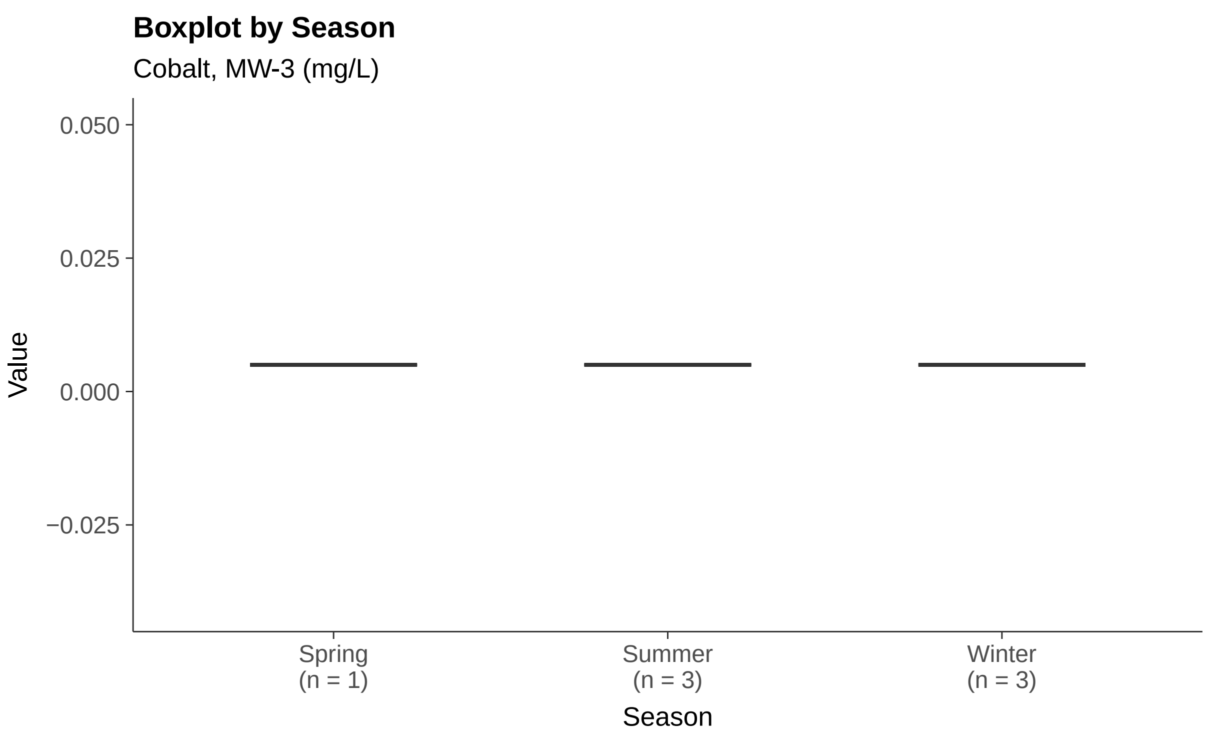
Appendix IV: Cobalt, MW-3

ID: 03_2_14






Boxplot
Cobalt, MW-3 (mg/L)
Value
0.050
0.025
0.000
−0.025

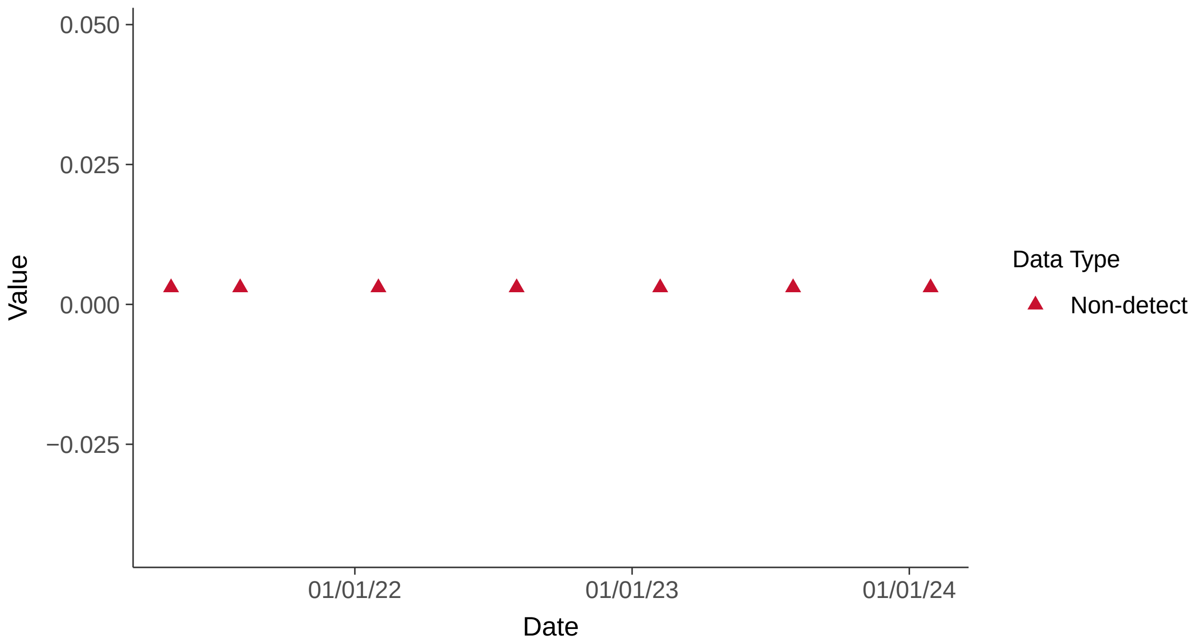

Boxplot by Season
Cobalt, MW-3 (mg/L)
Value
0.050
0.025
0.000
−0.025
Spring
(n = 1)
Summer
(n = 3)
Winter
(n = 3)
Season

Appendix IV: Lead, MW-3

ID: 03_2_15

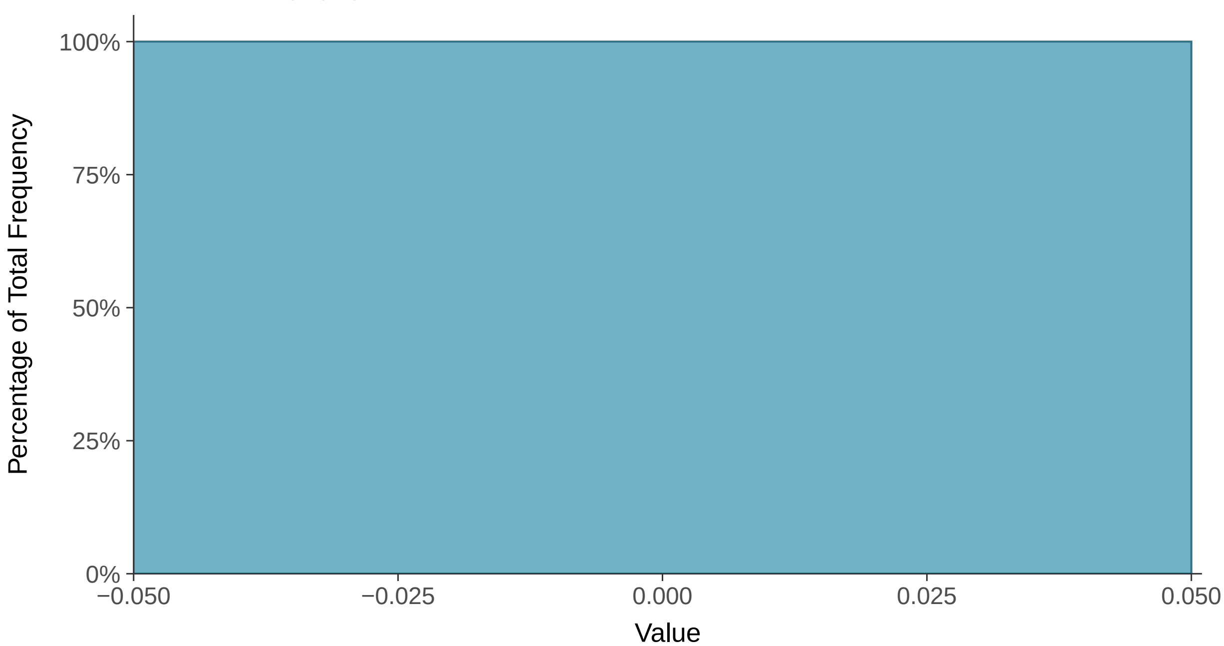
Scatter Plot

Lead, MW-3 (mg/L)



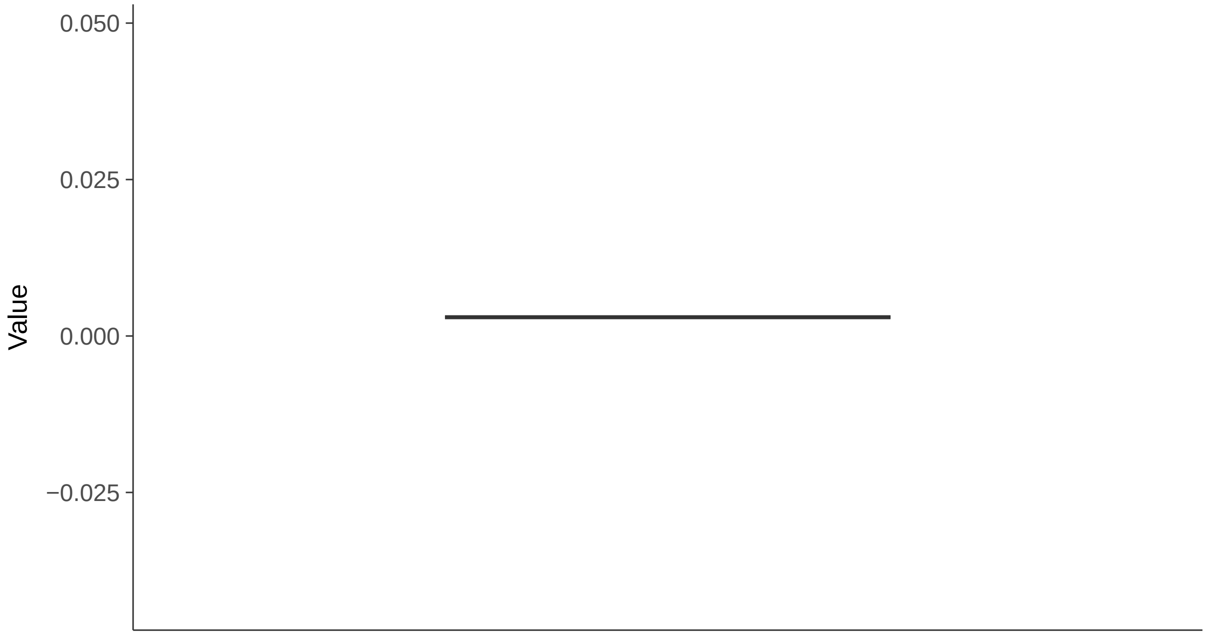
Histogram

Lead, MW-3 (mg/L)



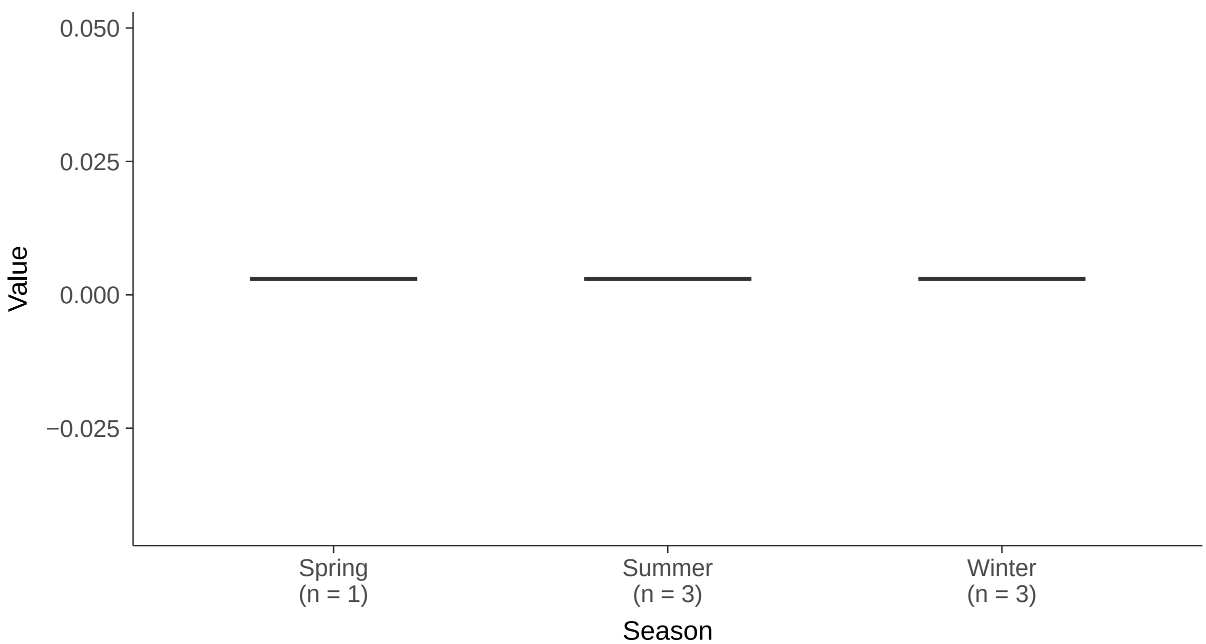
Boxplot

Lead, MW-3 (mg/L)



Boxplot by Season

Lead, MW-3 (mg/L)

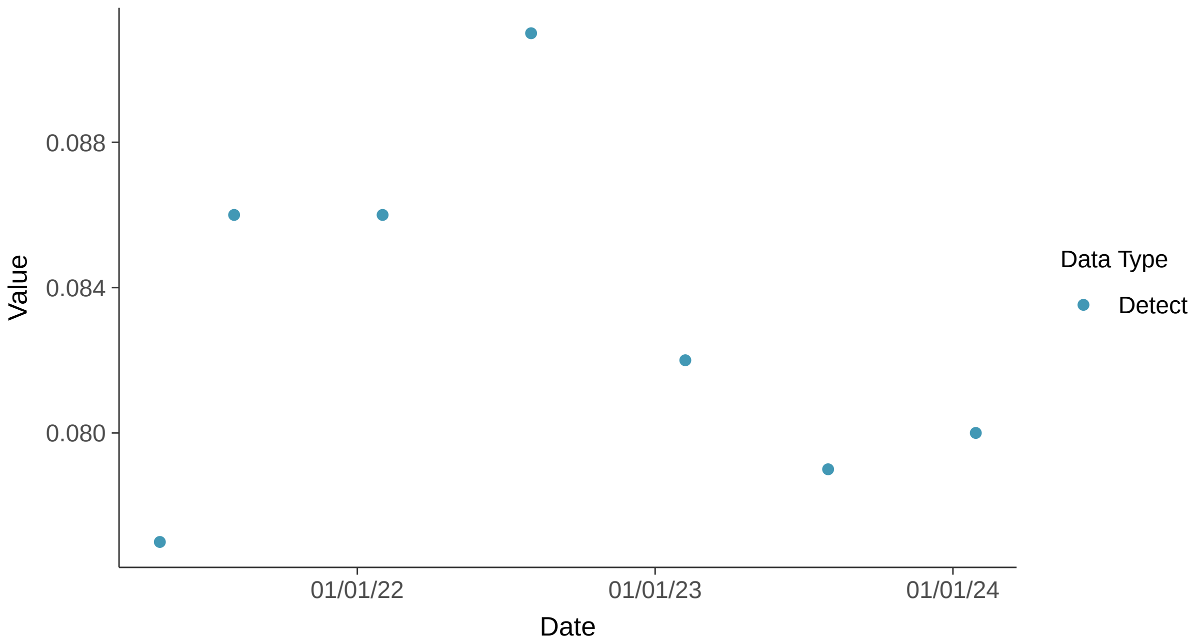


Appendix IV: Lithium, MW-3

ID: 03_2_16

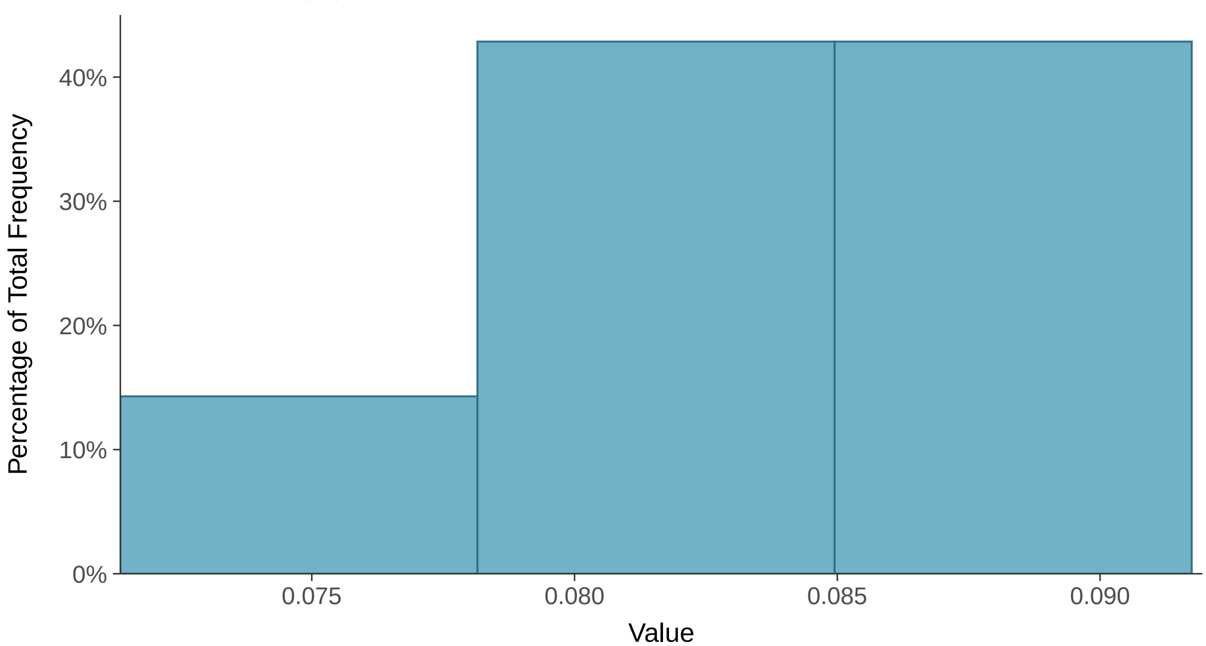
Scatter Plot

Lithium, MW-3 (mg/L)



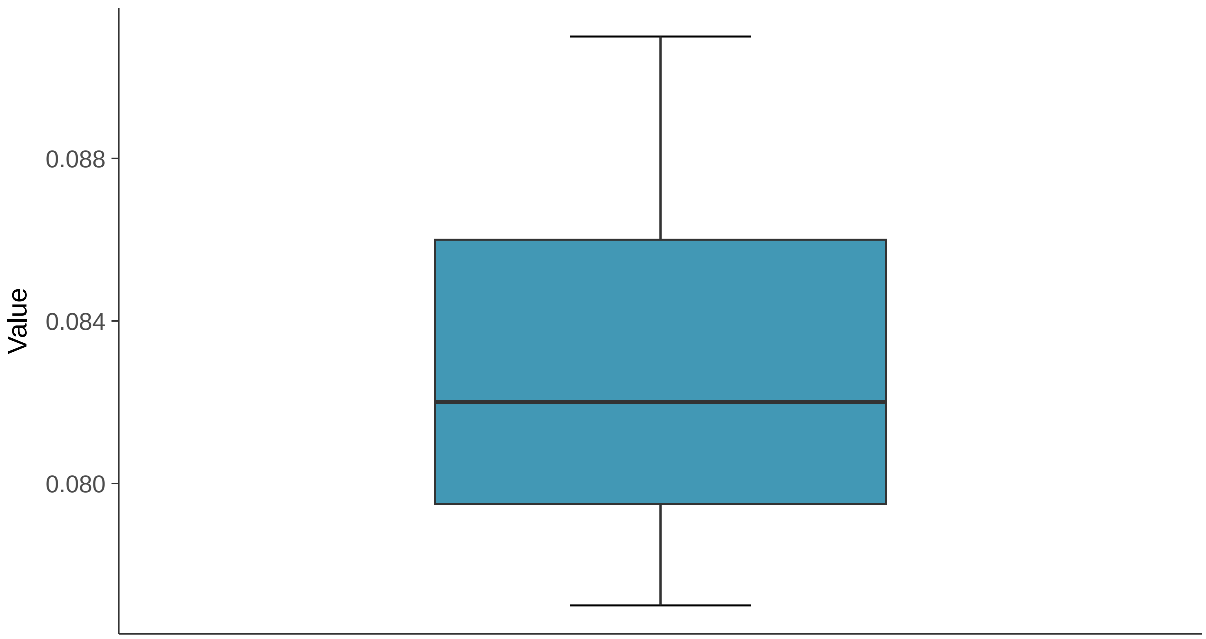
Histogram

Lithium, MW-3 (mg/L)



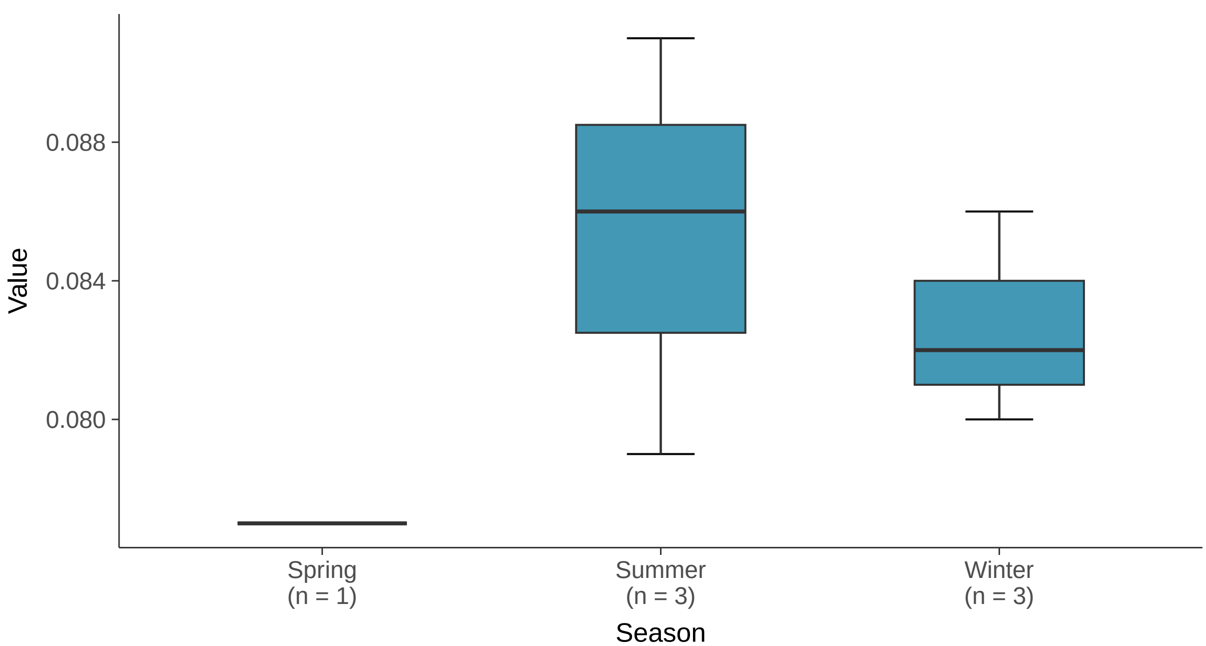
Boxplot

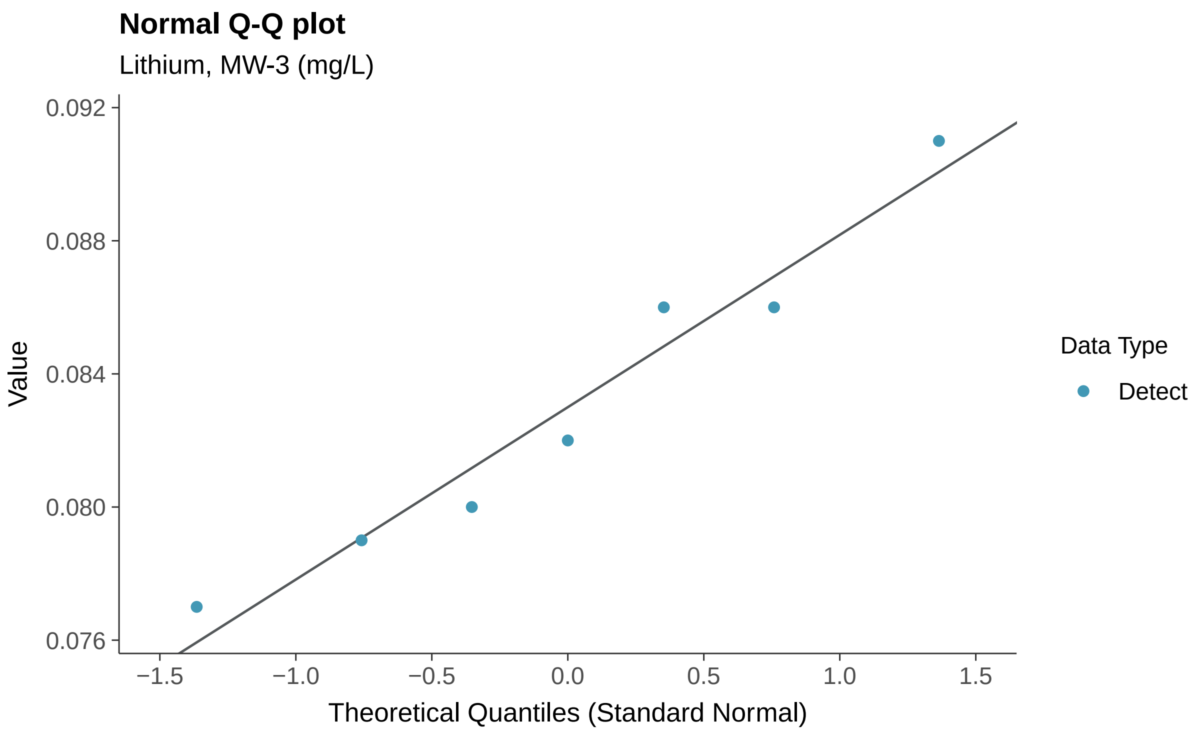
Lithium, MW-3 (mg/L)

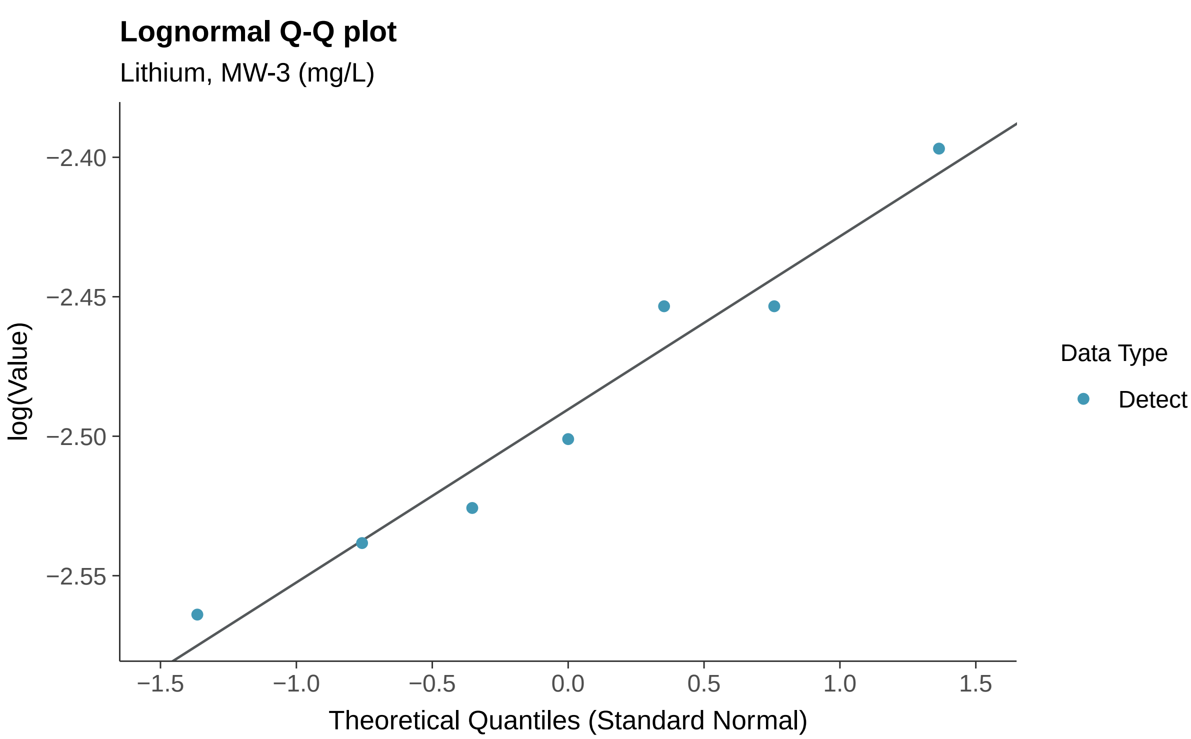


Boxplot by Season

Lithium, MW-3 (mg/L)

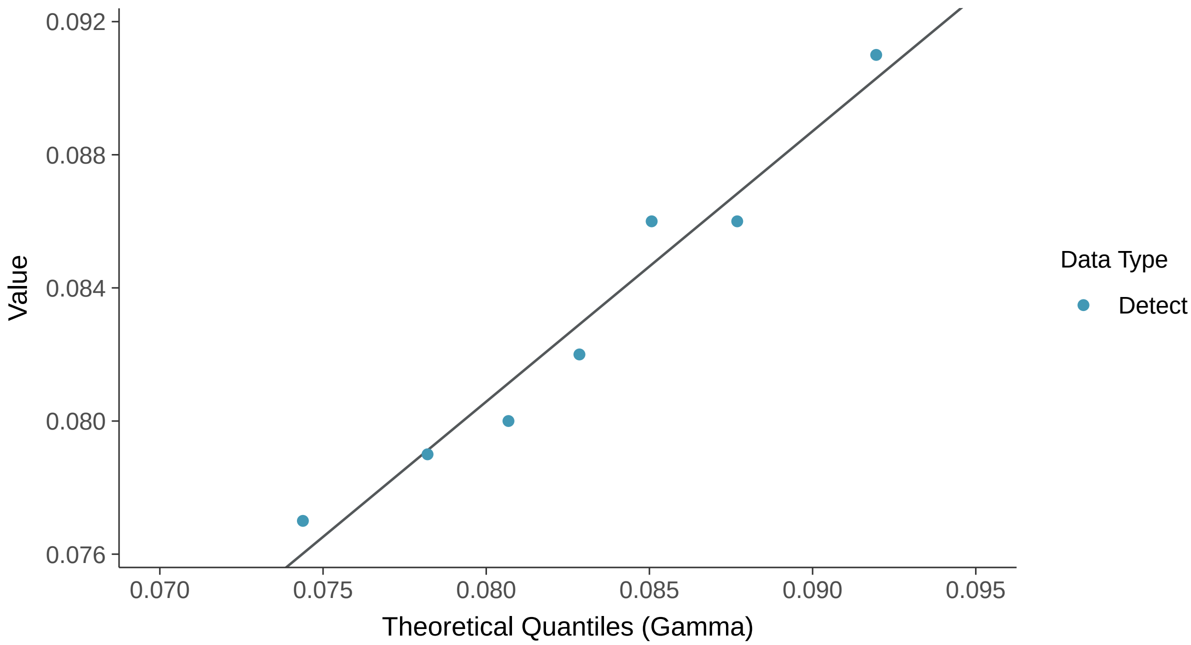



Normal Q-Q plot
Lithium, MW-3 (mg/L)
Value
0.092
0.088
0.084
0.080
0.076
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-3 (mg/L)
log(Value)
−2.40
−2.45
−2.50
−2.55
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

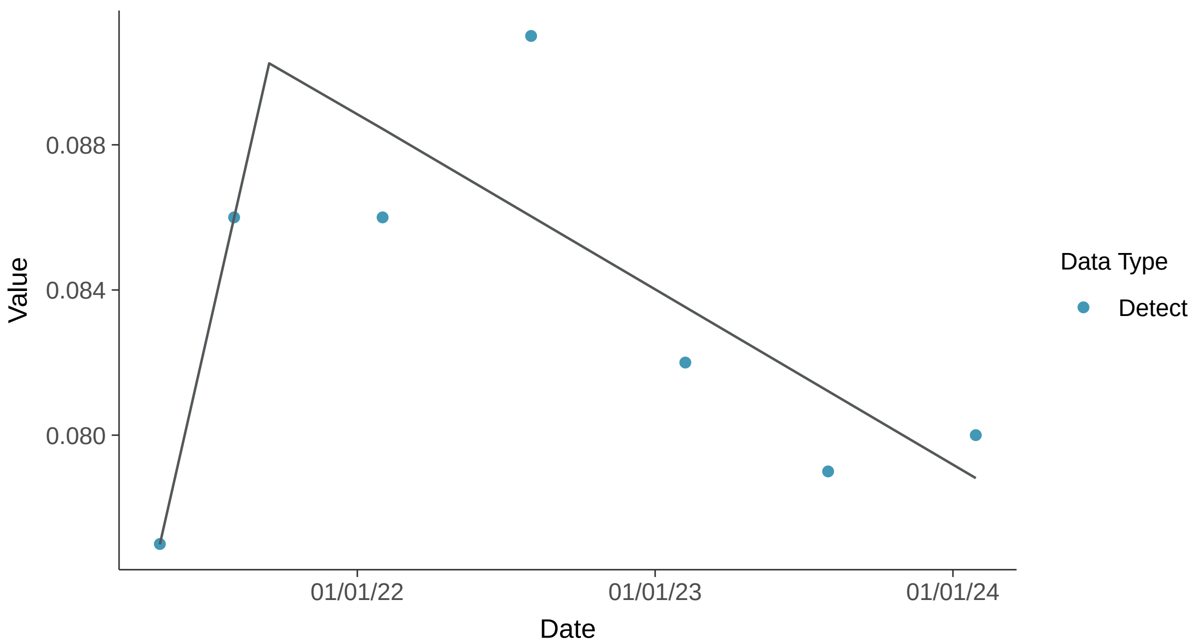
Gamma Q-Q plot

Lithium, MW-3 (mg/L)



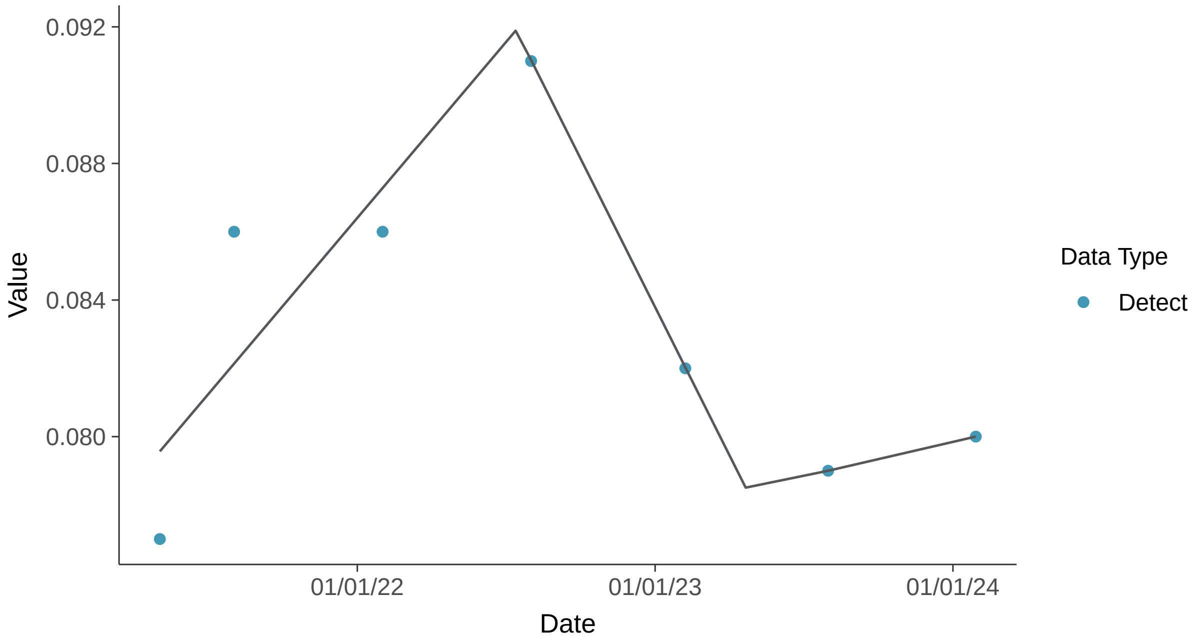
Trend Regression: Piecewise Linear-Linear

Lithium, MW-3 (mg/L)



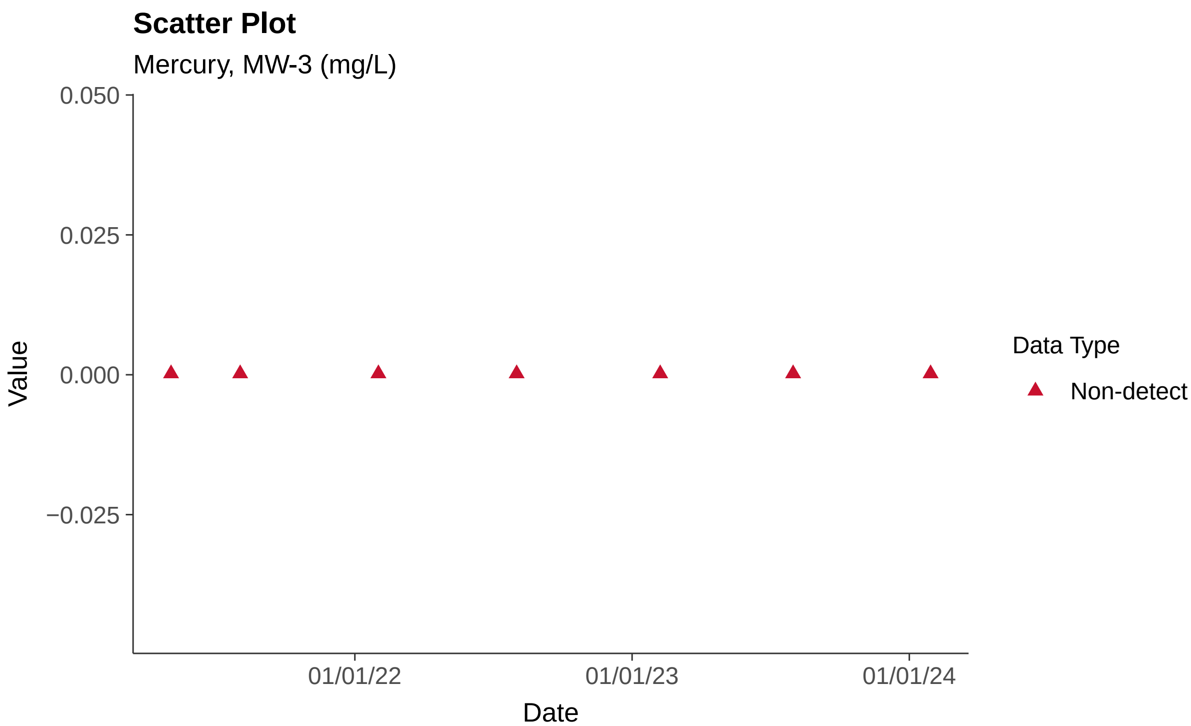
Trend Regression: Piecewise Linear-Linear-Linear

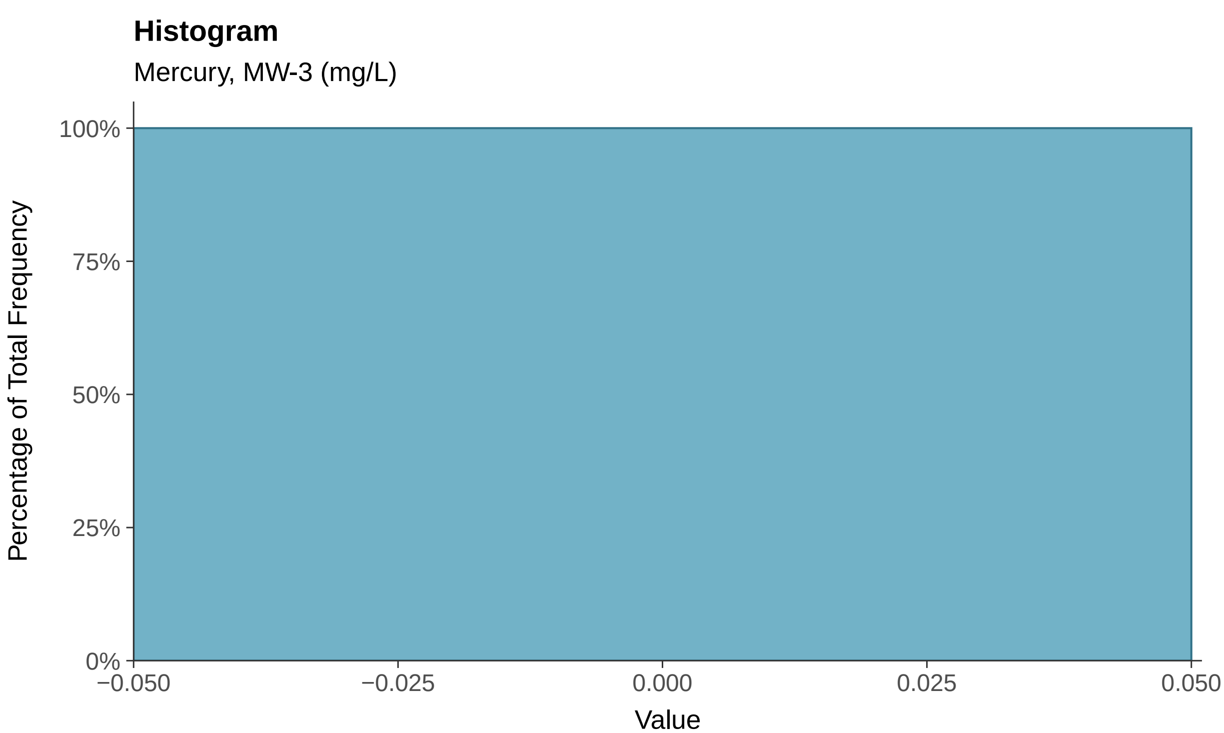
Lithium, MW-3 (mg/L)



Appendix IV: Mercury, MW-3

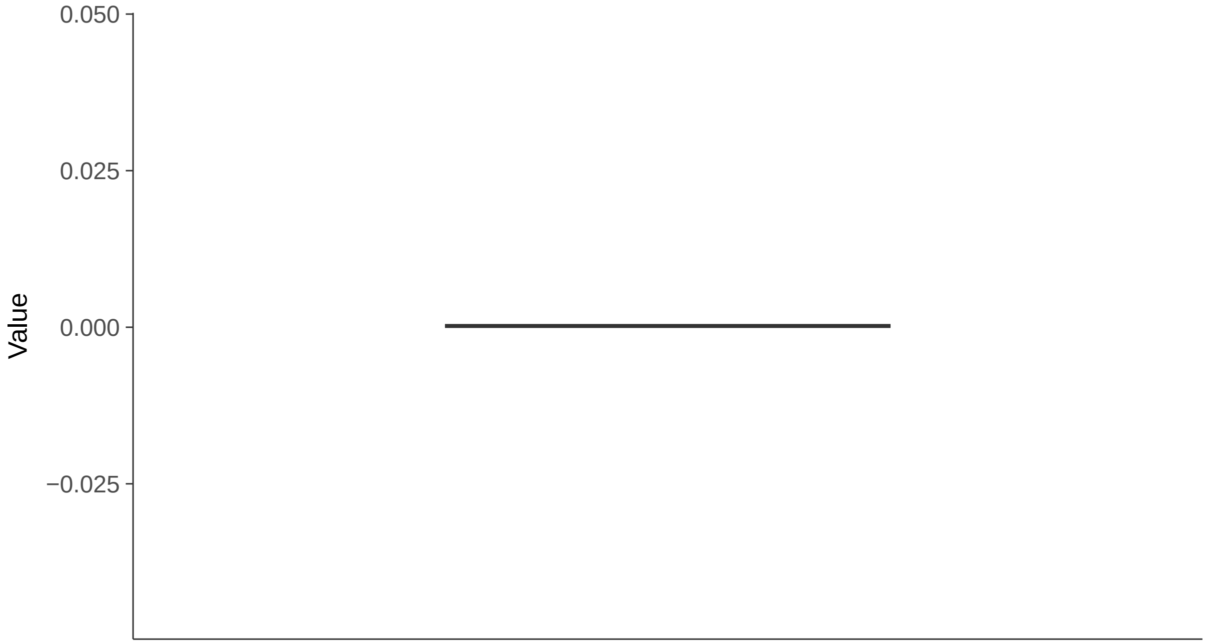
ID: 03_2_17





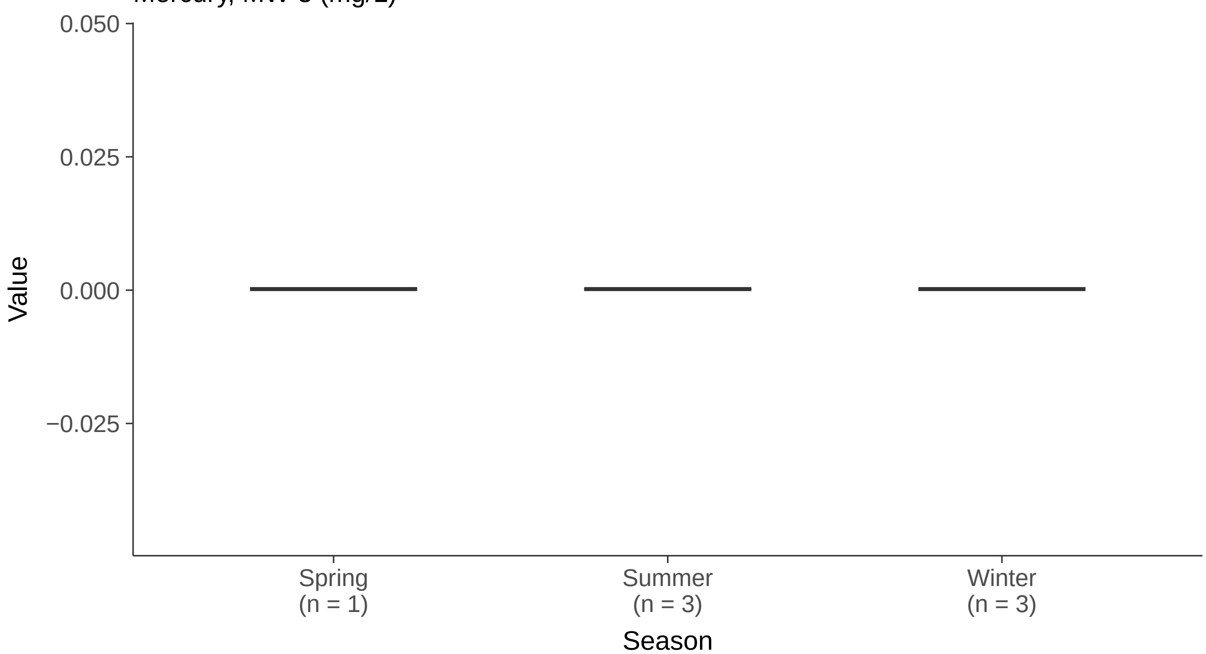
Boxplot

Mercury, MW-3 (mg/L)



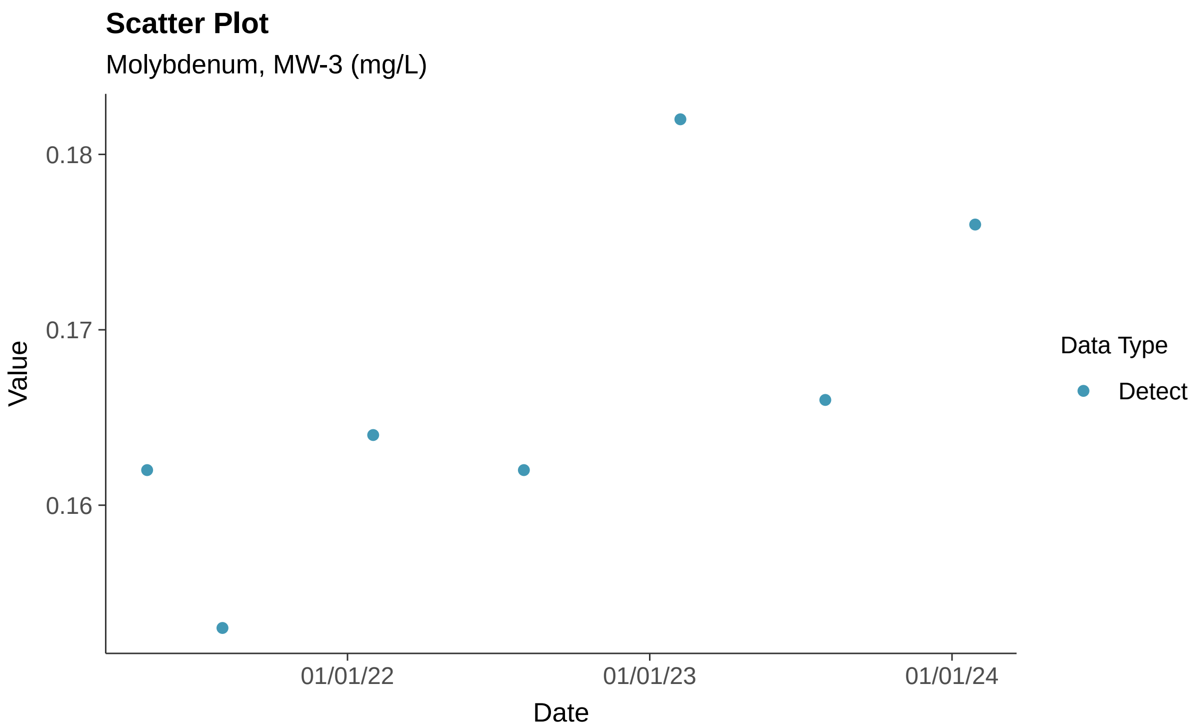
Boxplot by Season

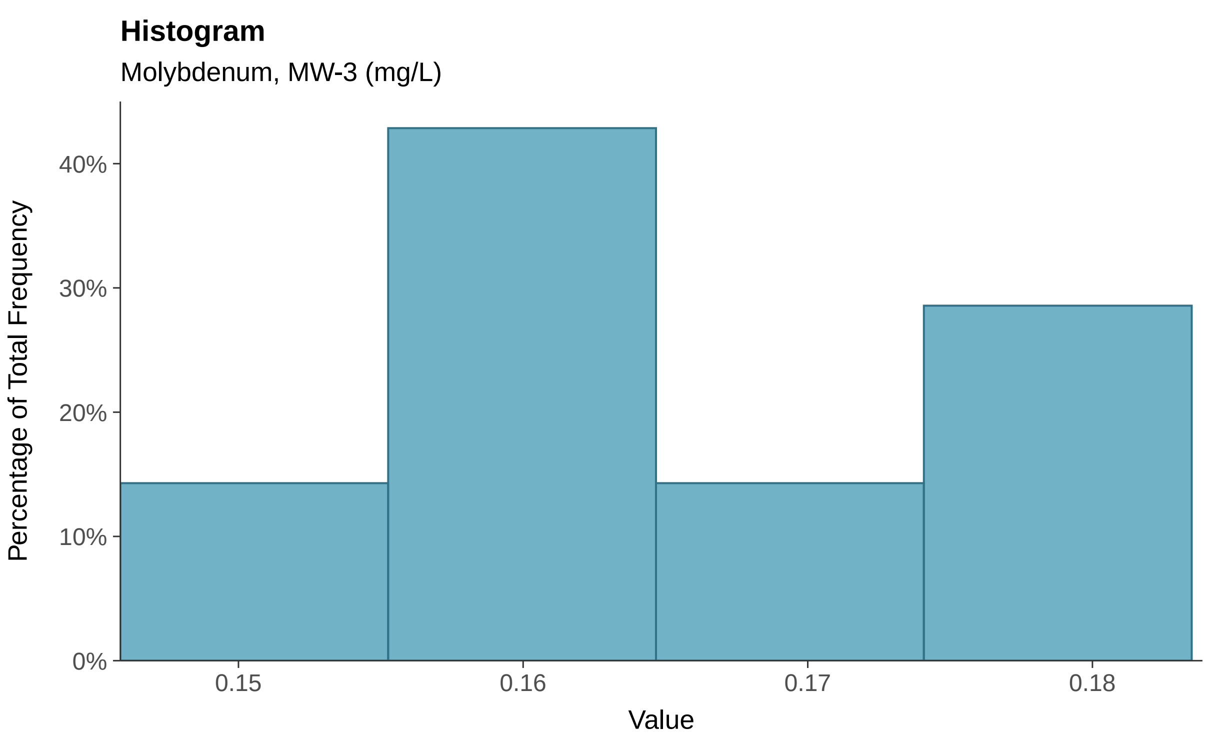
Mercury, MW-3 (mg/L)



Appendix IV: Molybdenum, MW-3

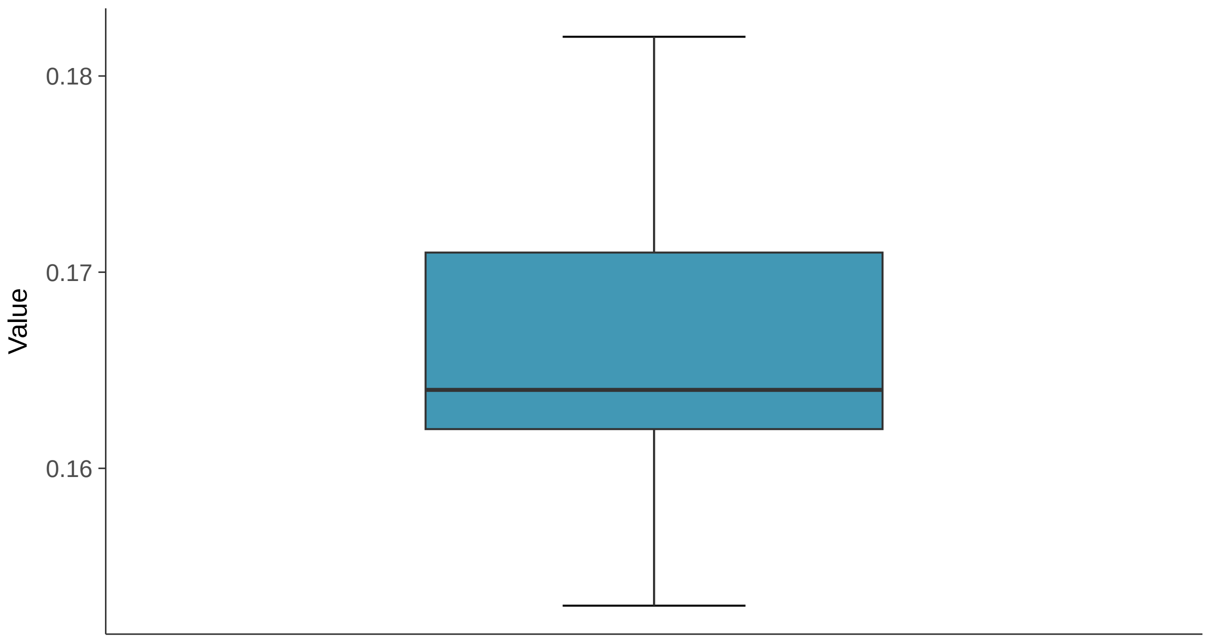
ID: 03_2_18





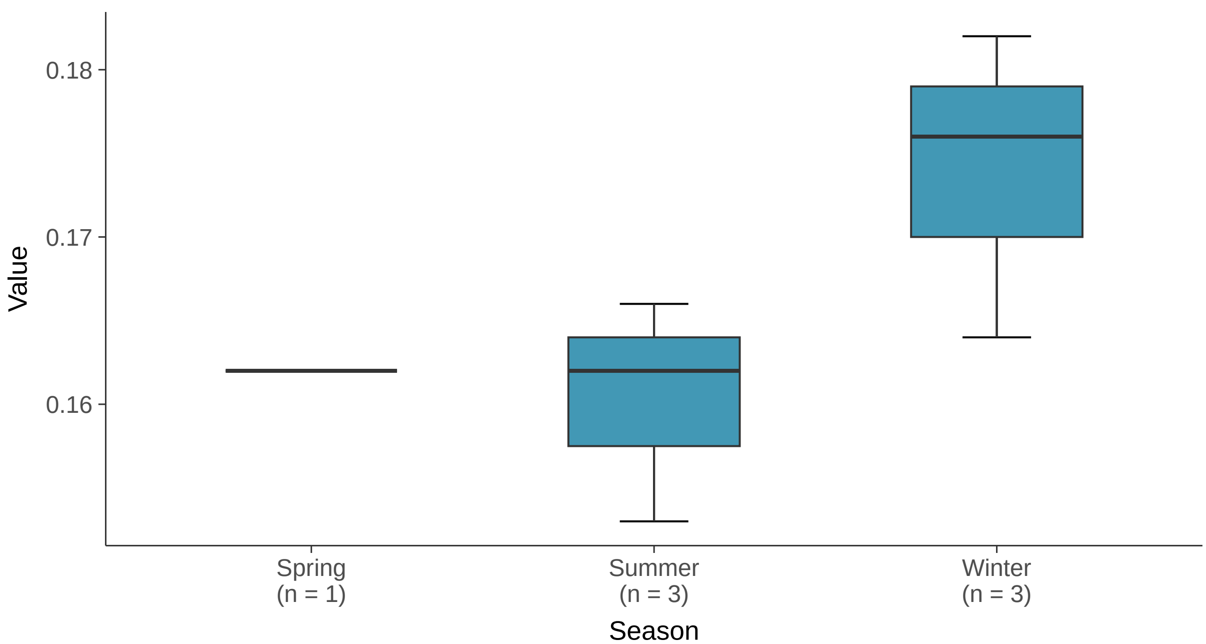
Boxplot

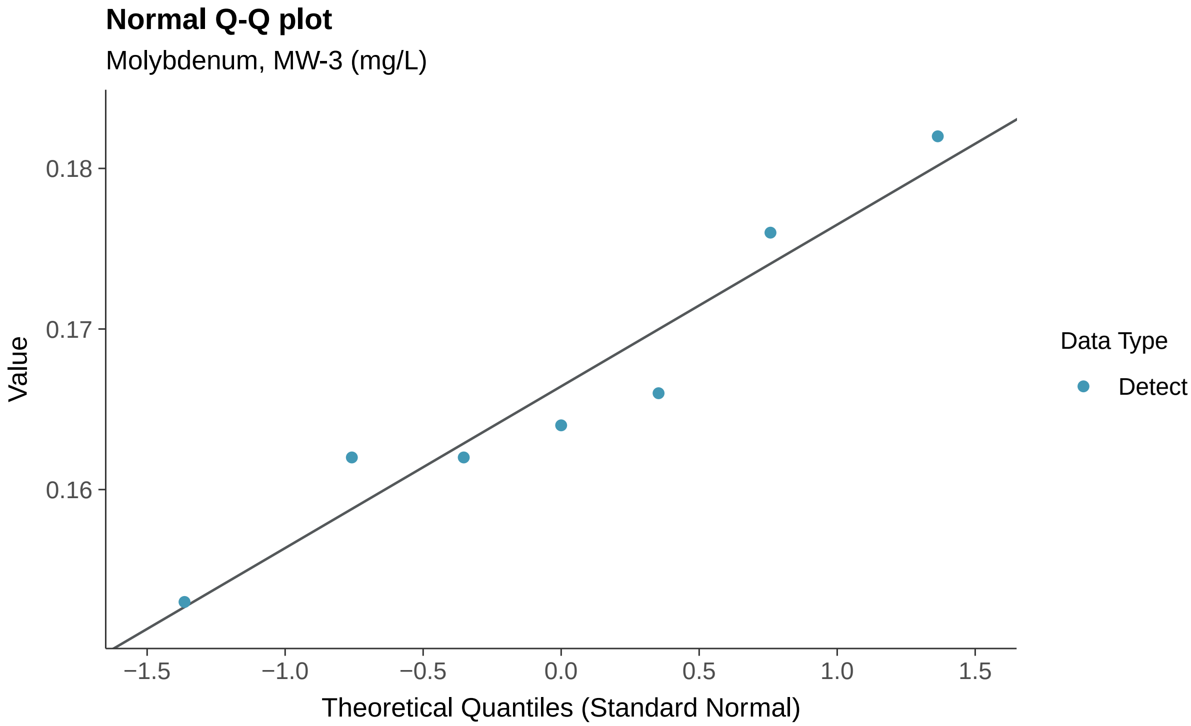
Molybdenum, MW-3 (mg/L)

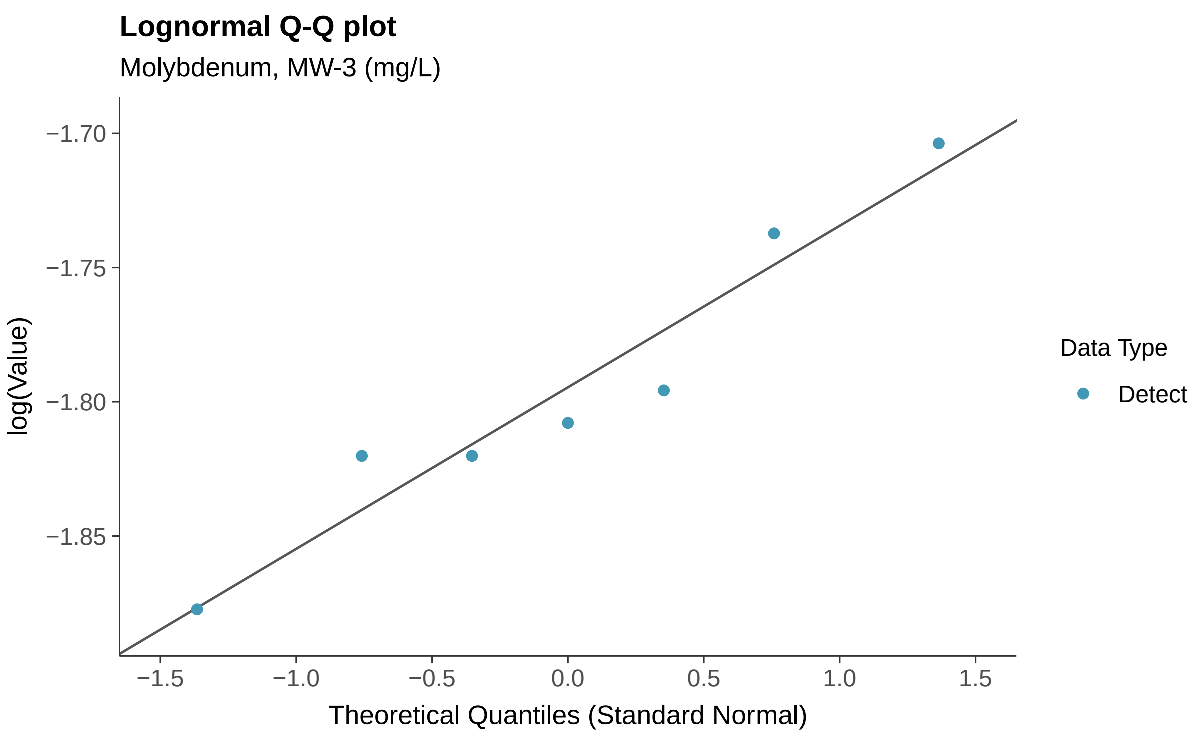


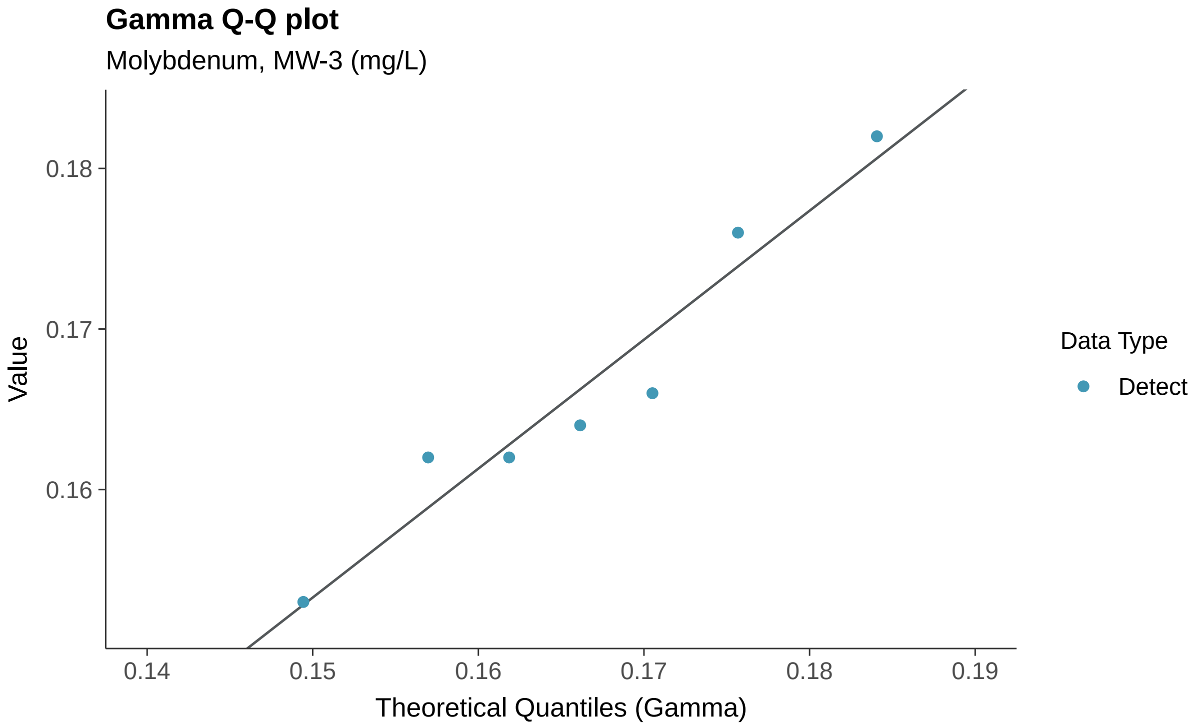
Boxplot by Season

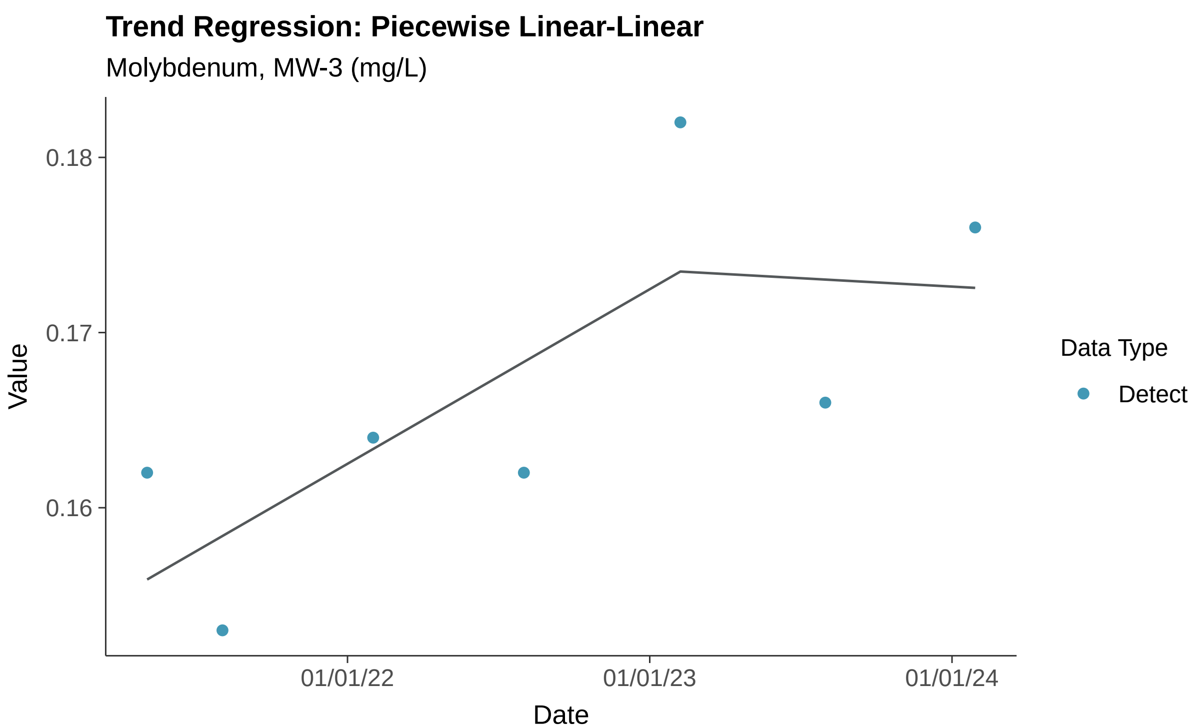
Molybdenum, MW-3 (mg/L)




Normal Q-Q plot
Molybdenum, MW-3 (mg/L)
Value
0.18
0.17
0.16
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

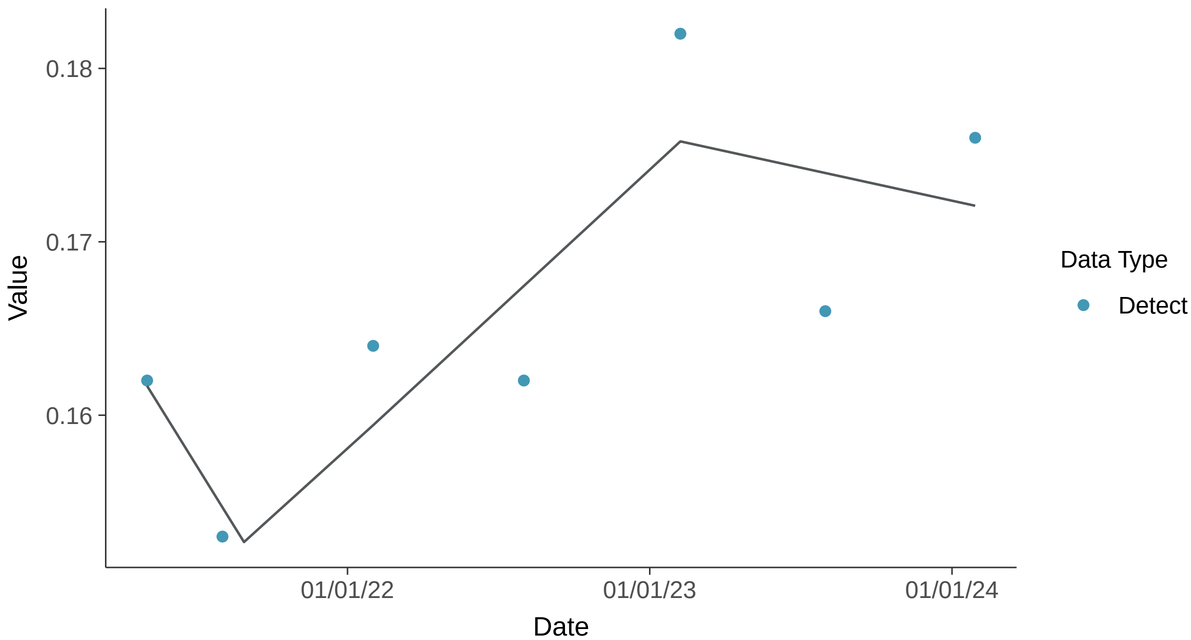

Lognormal Q-Q plot
Molybdenum, MW-3 (mg/L)
log(Value)
−1.70
−1.75
−1.80
−1.85
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Molybdenum, MW-3 (mg/L)
Value
0.18
0.17
0.16
0.14
0.15
0.16
0.17
0.18
0.19
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Molybdenum, MW-3 (mg/L)
Value
0.18
0.17
0.16
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-3 (mg/L)

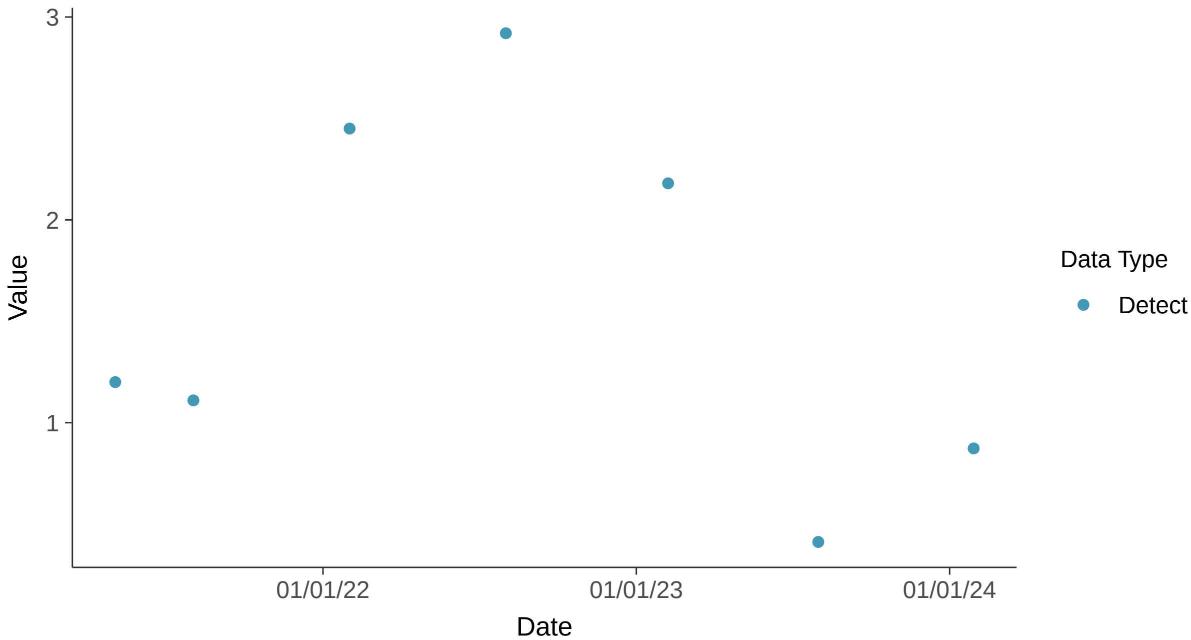


Appendix IV: Radium-226/228, MW-3

ID: 03_2_20

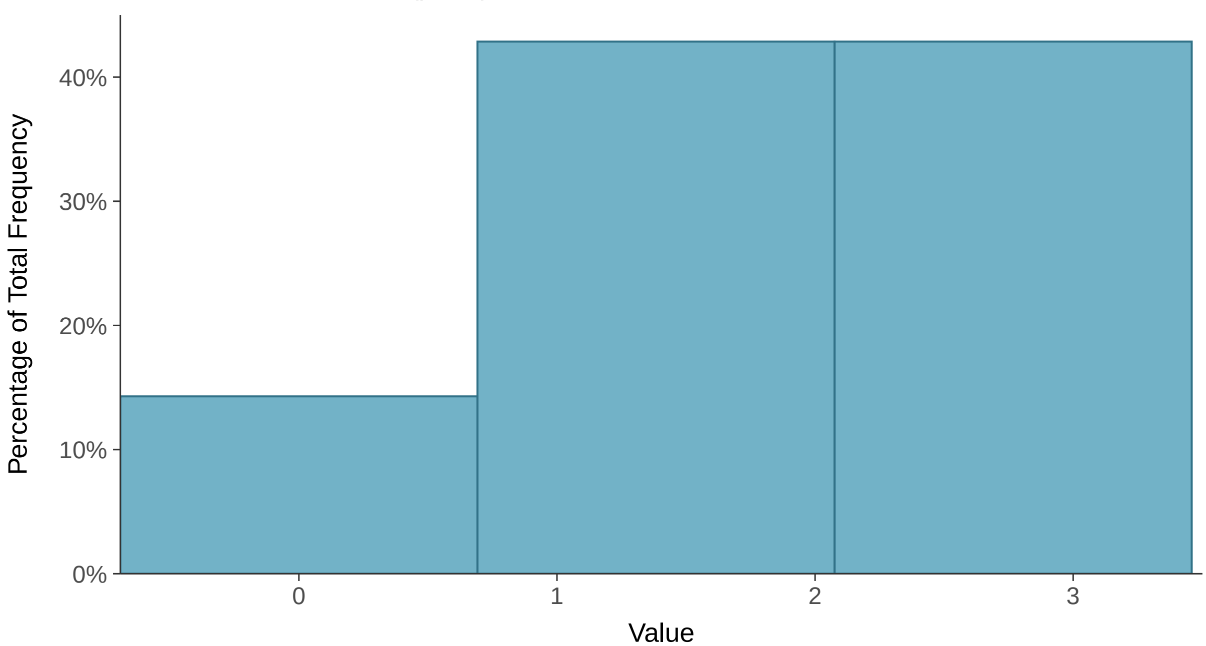
Scatter Plot

Radium-226/228, MW-3 (pCi/L)



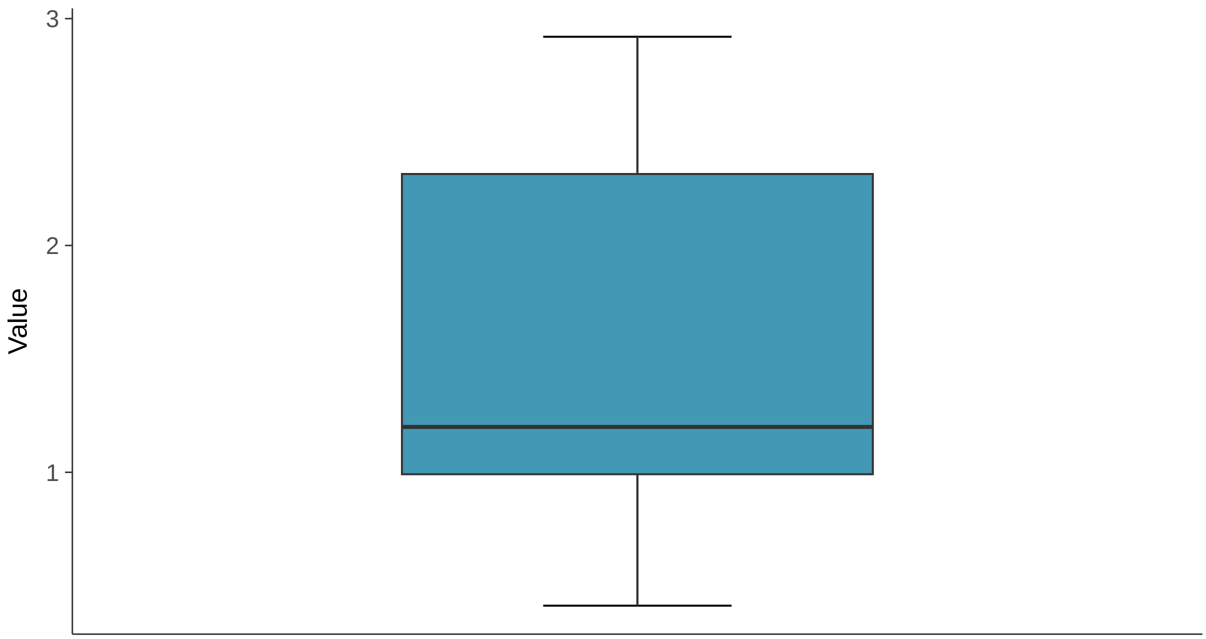
Histogram

Radium-226/228, MW-3 (pCi/L)



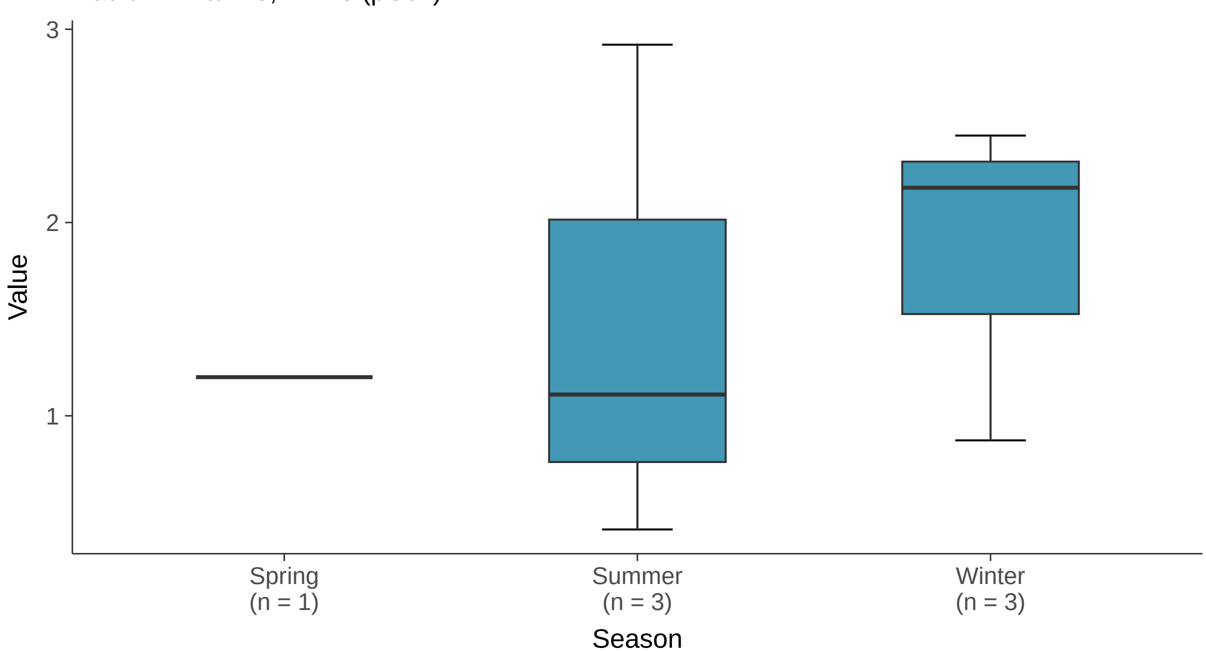
Boxplot

Radium-226/228, MW-3 (pCi/L)



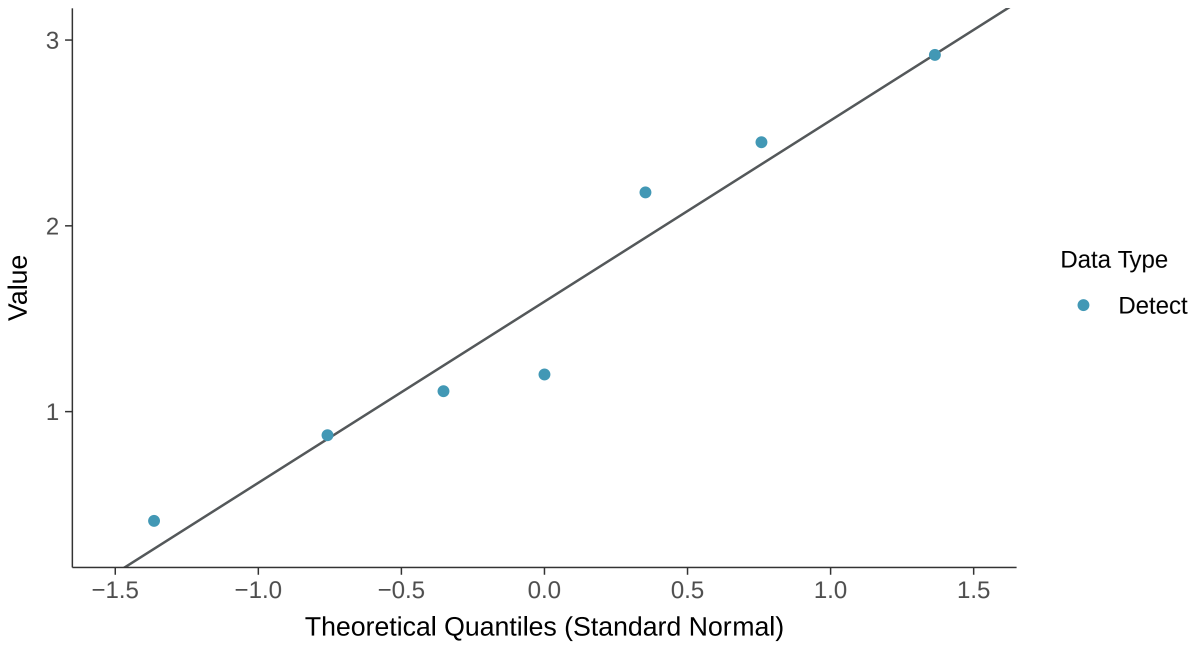
Boxplot by Season

Radium-226/228, MW-3 (pCi/L)



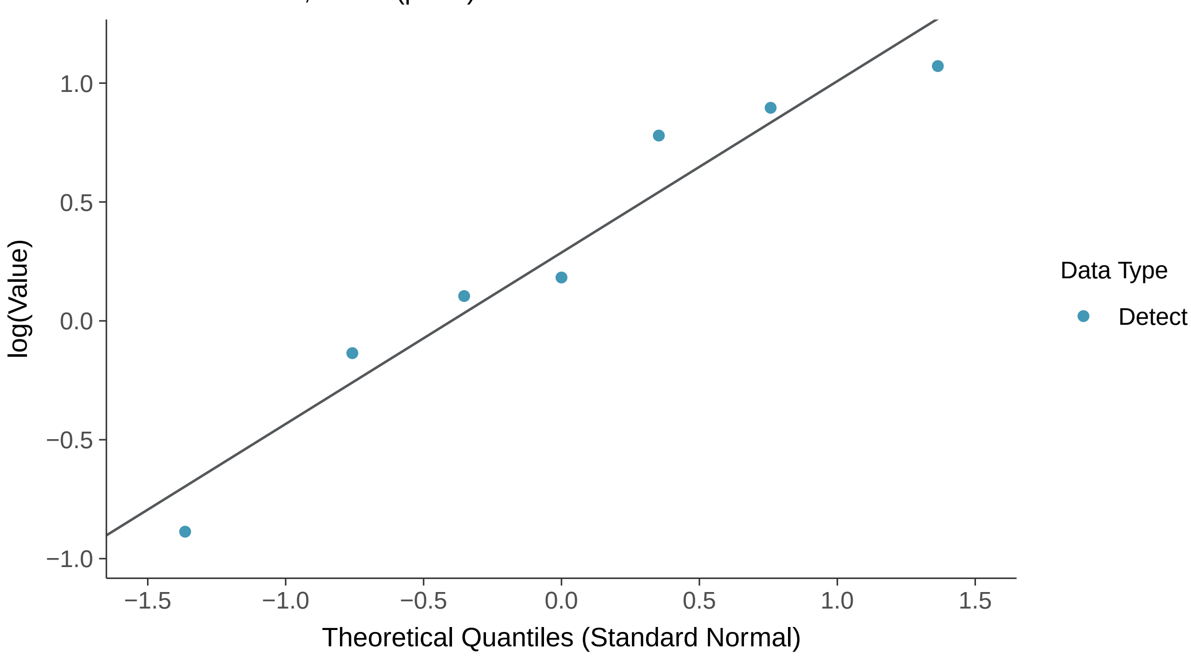
Normal Q-Q plot

Radium-226/228, MW-3 (pCi/L)



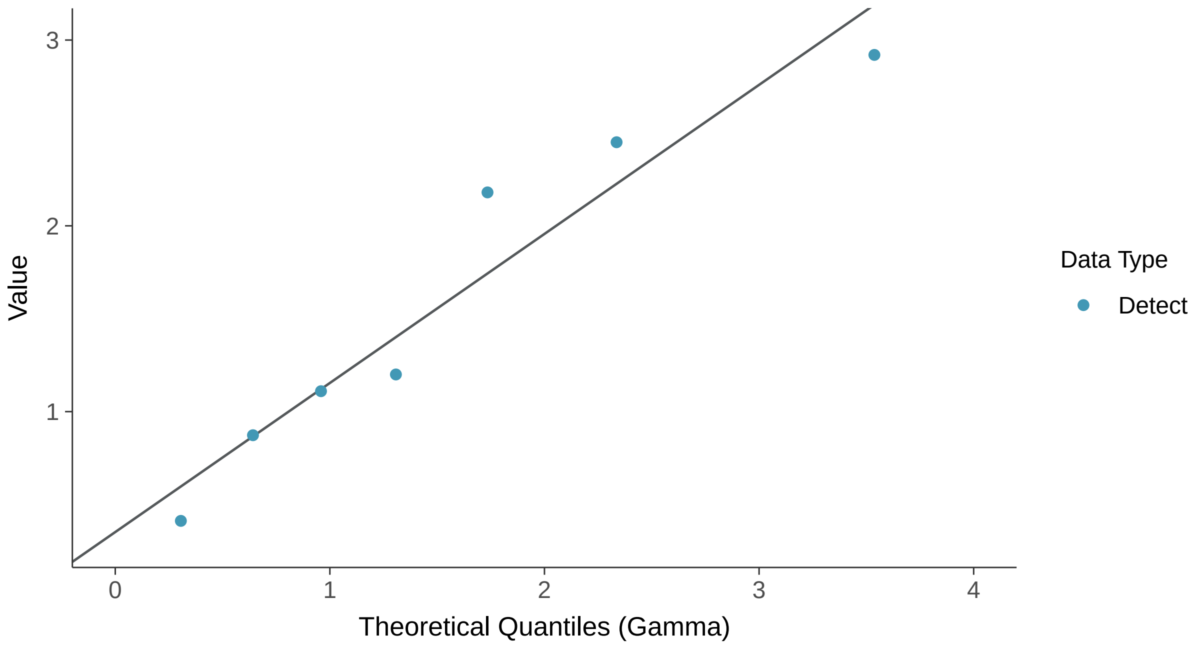
Lognormal Q-Q plot

Radium-226/228, MW-3 (pCi/L)



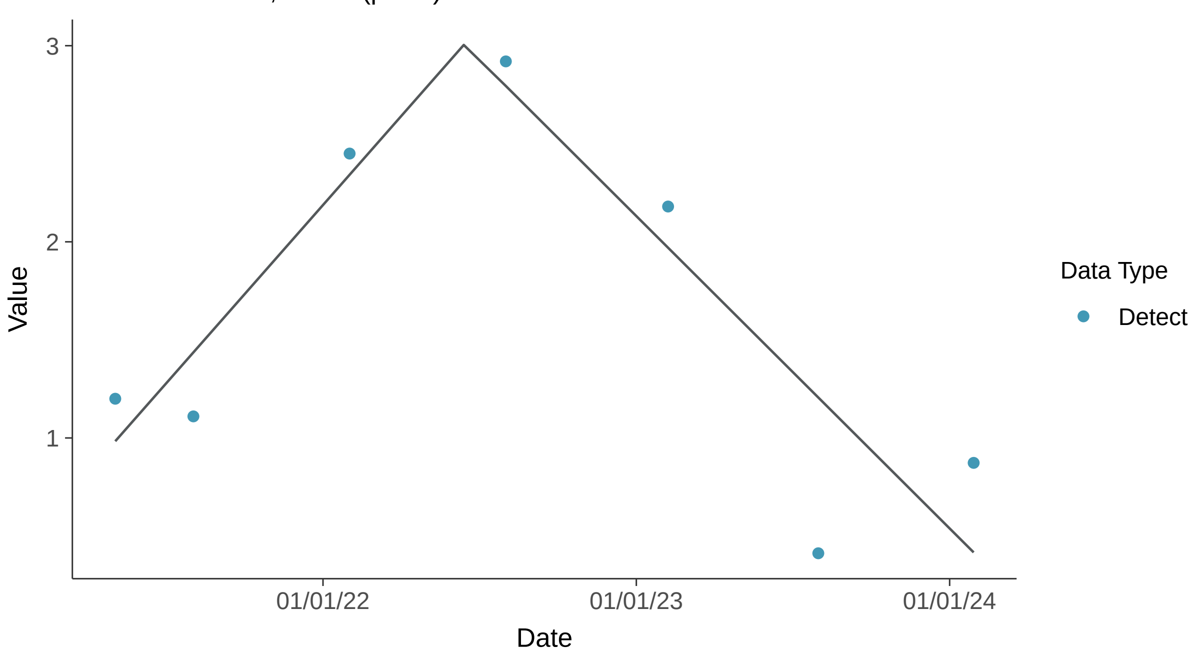
Gamma Q-Q plot

Radium-226/228, MW-3 (pCi/L)



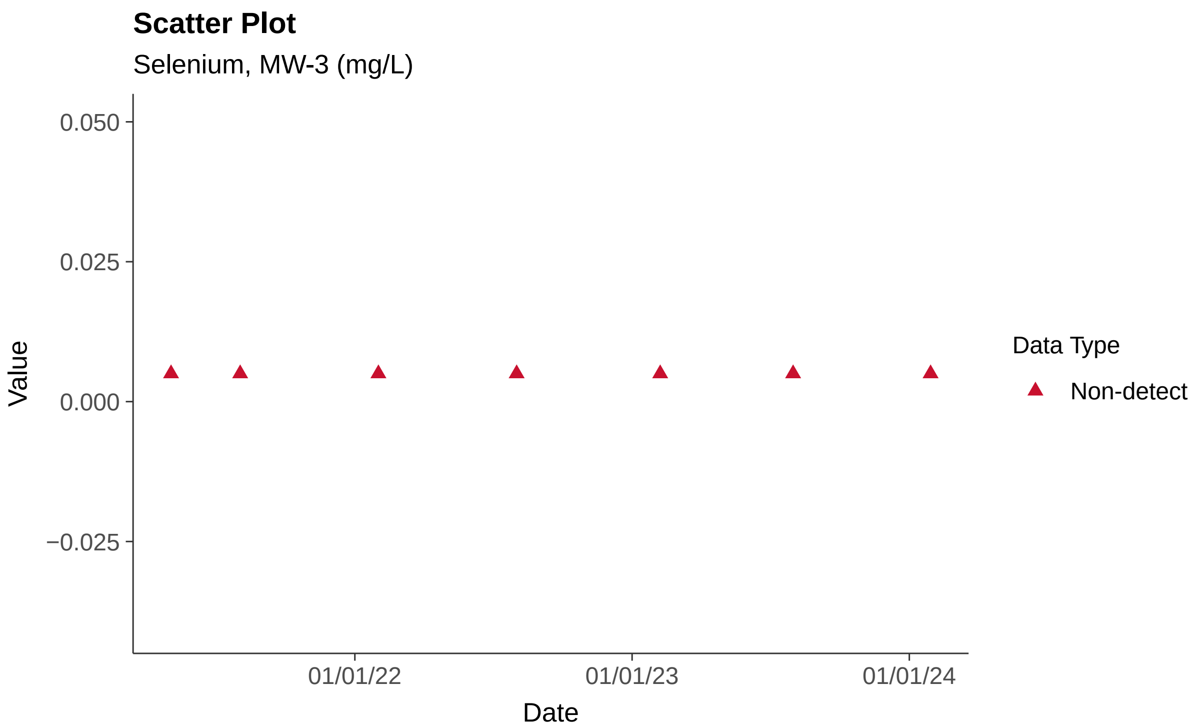
Trend Regression: Piecewise Linear-Linear

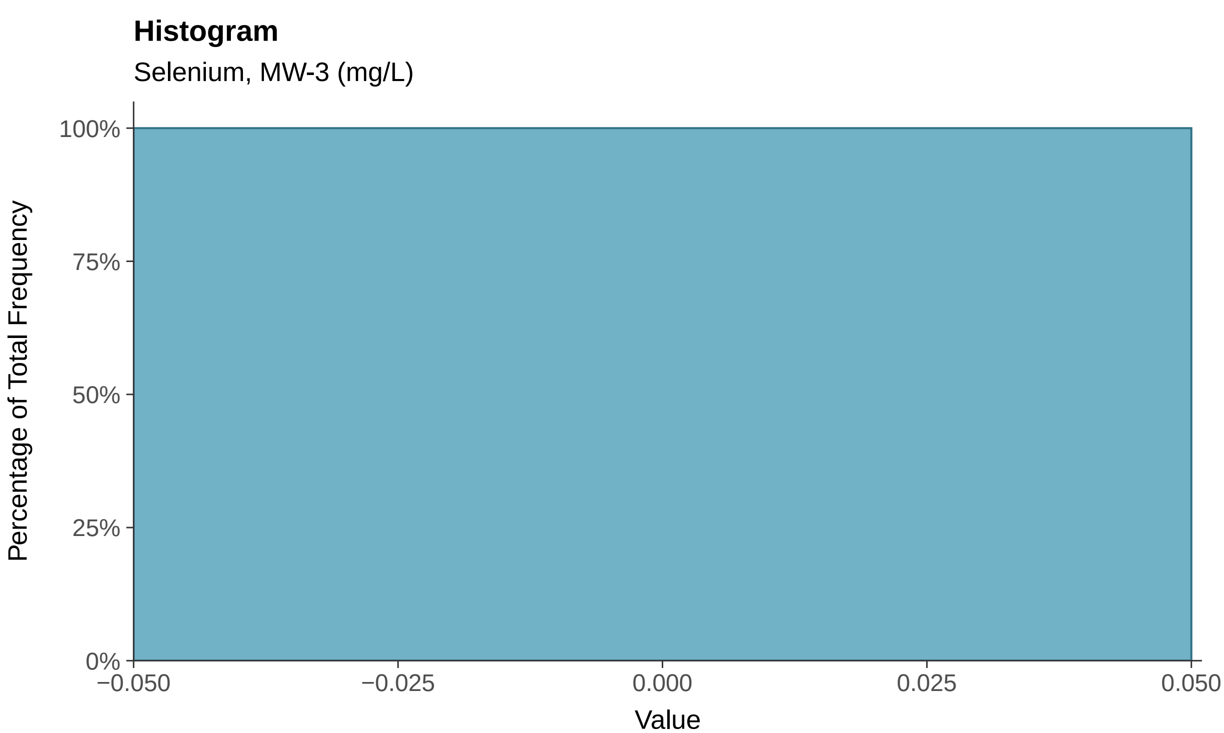
Radium-226/228, MW-3 (pCi/L)

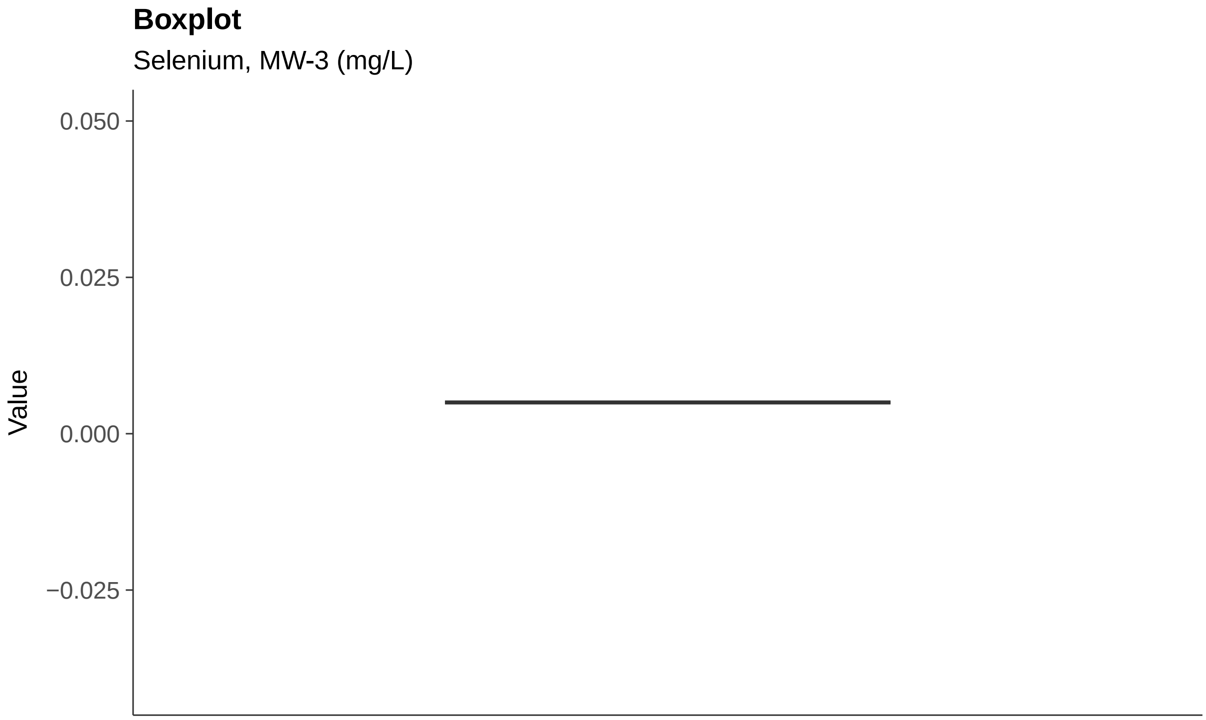


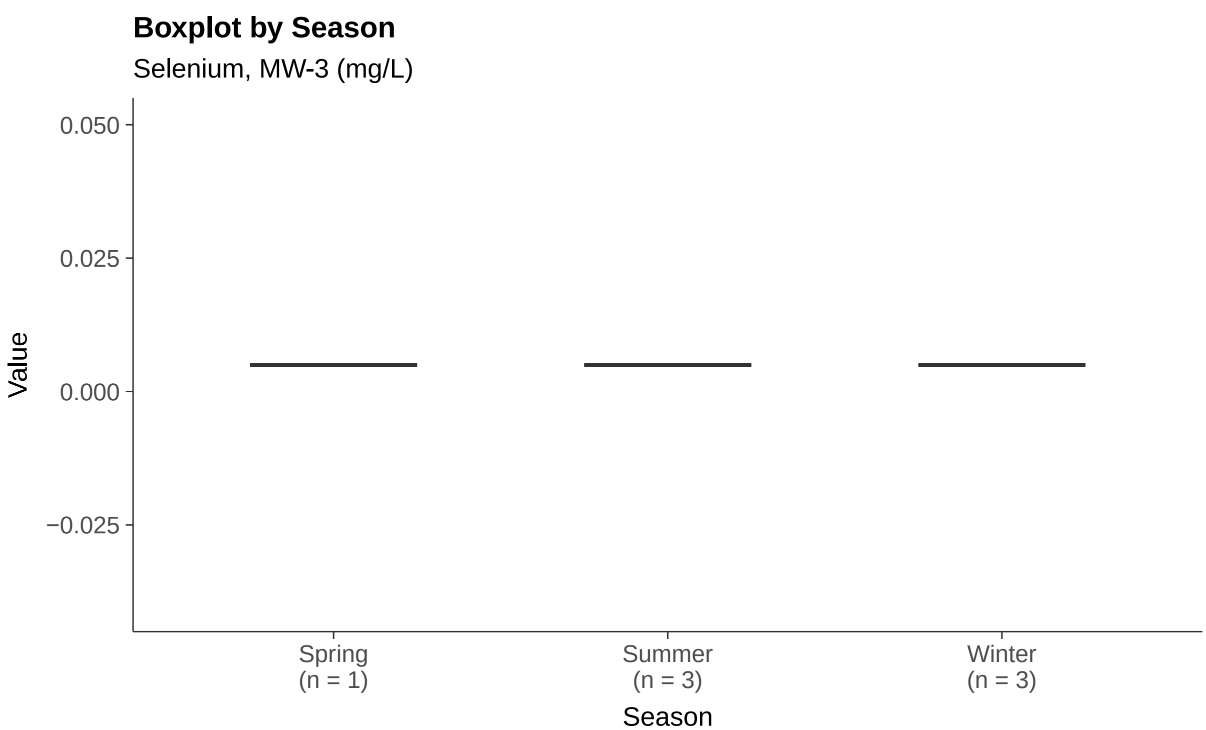
Appendix IV: Selenium, MW-3

ID: 03_2_22






Boxplot
Selenium, MW-3 (mg/L)
0.050
0.025
0.000
−0.025
Value

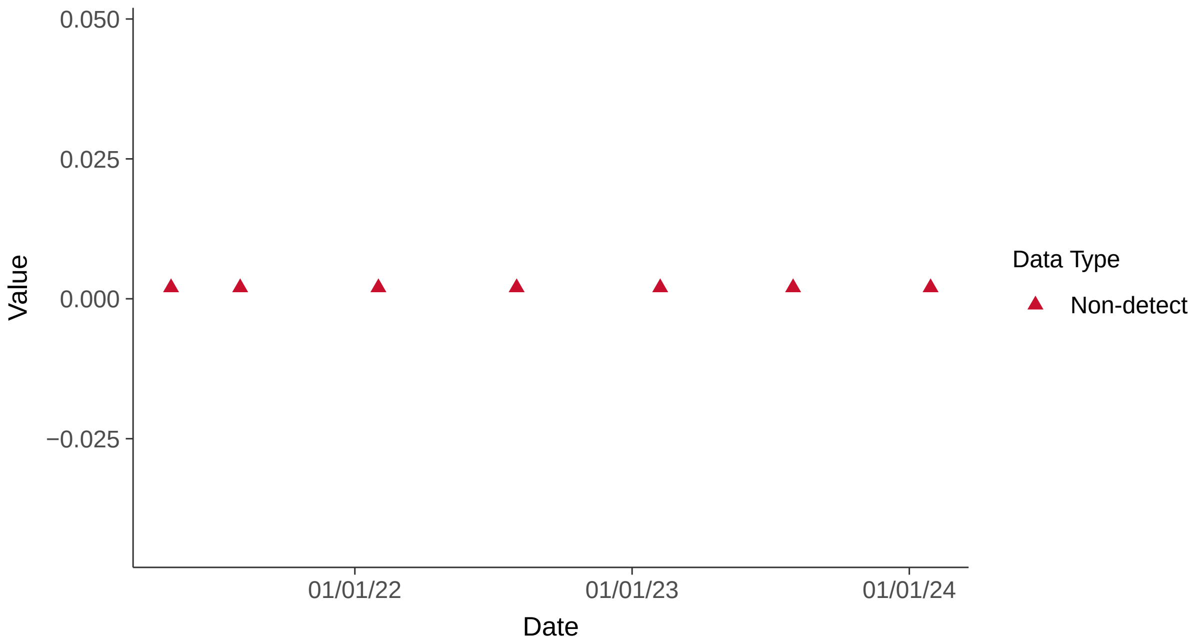

Boxplot by Season
Selenium, MW-3 (mg/L)
0.050
0.025
0.000
−0.025
Value
Spring
(n = 1)
Summer
(n = 3)
Winter
(n = 3)
Season

Appendix IV: Thallium, MW-3

ID: 03_2_23

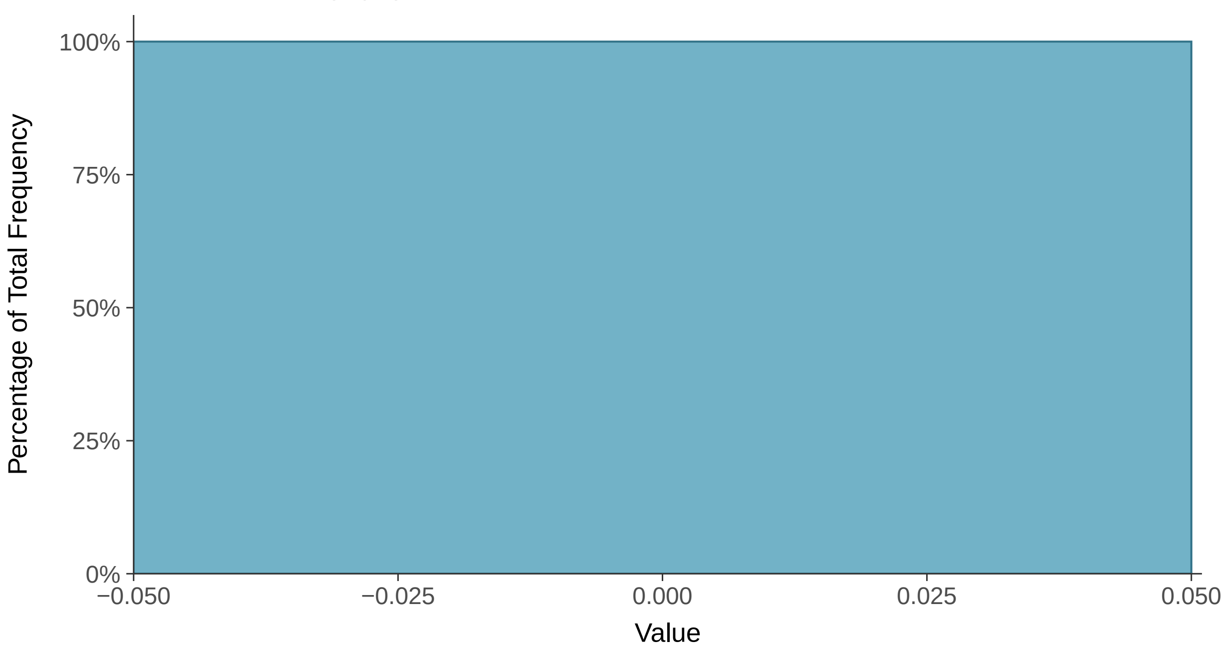
Scatter Plot

Thallium, MW-3 (mg/L)



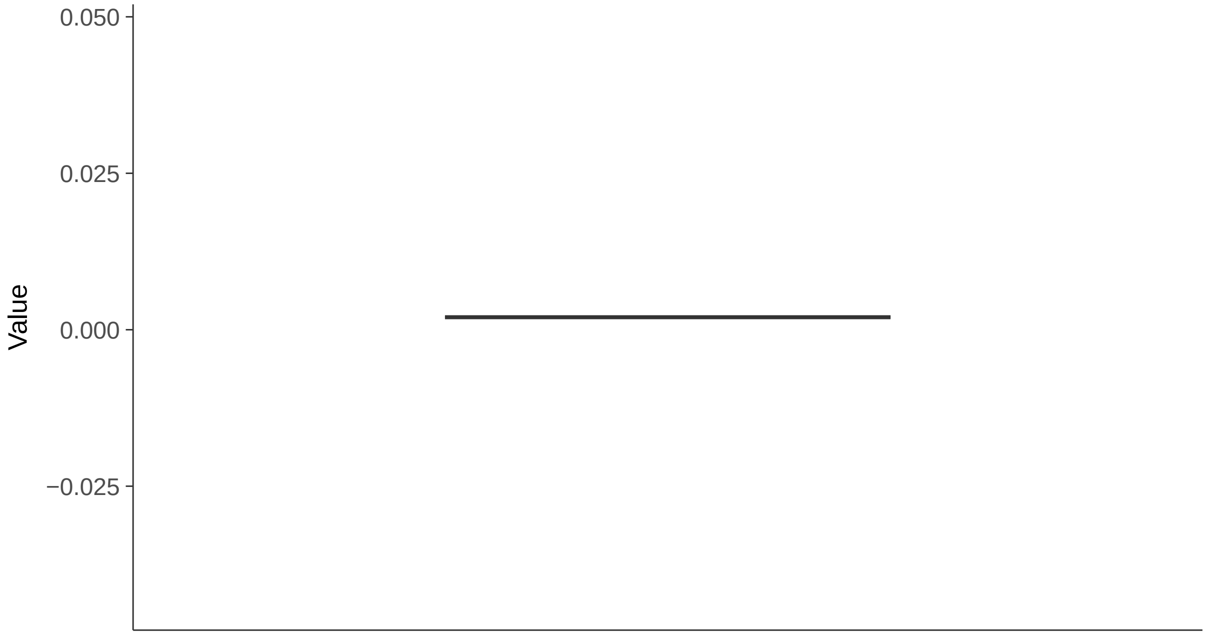
Histogram

Thallium, MW-3 (mg/L)



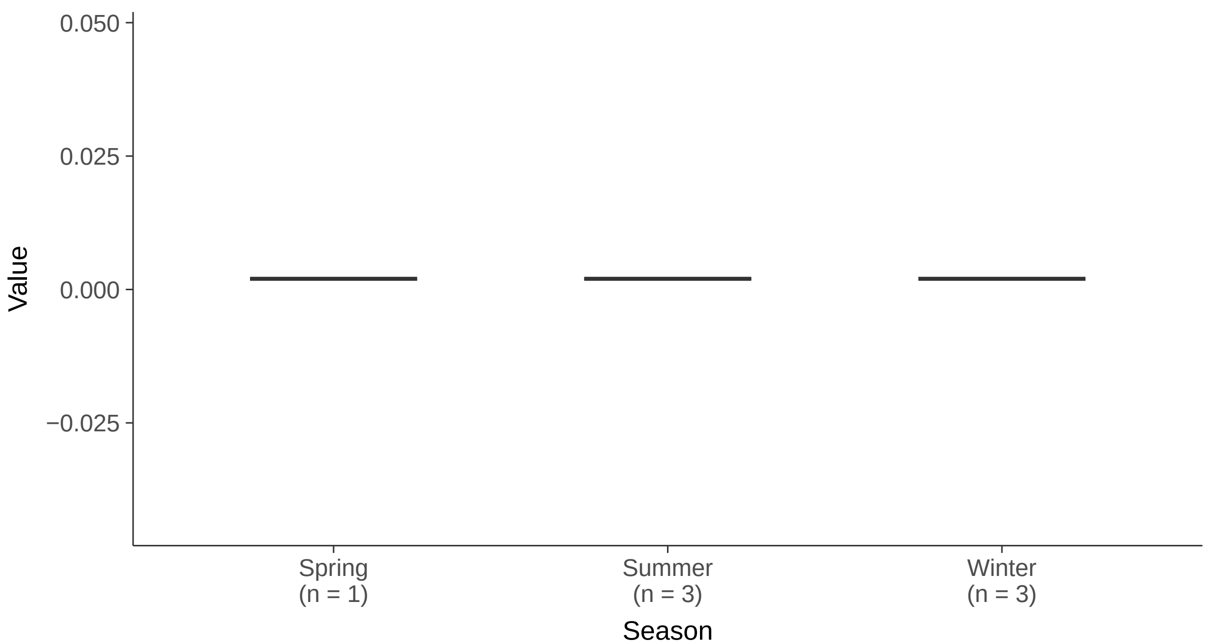
Boxplot

Thallium, MW-3 (mg/L)



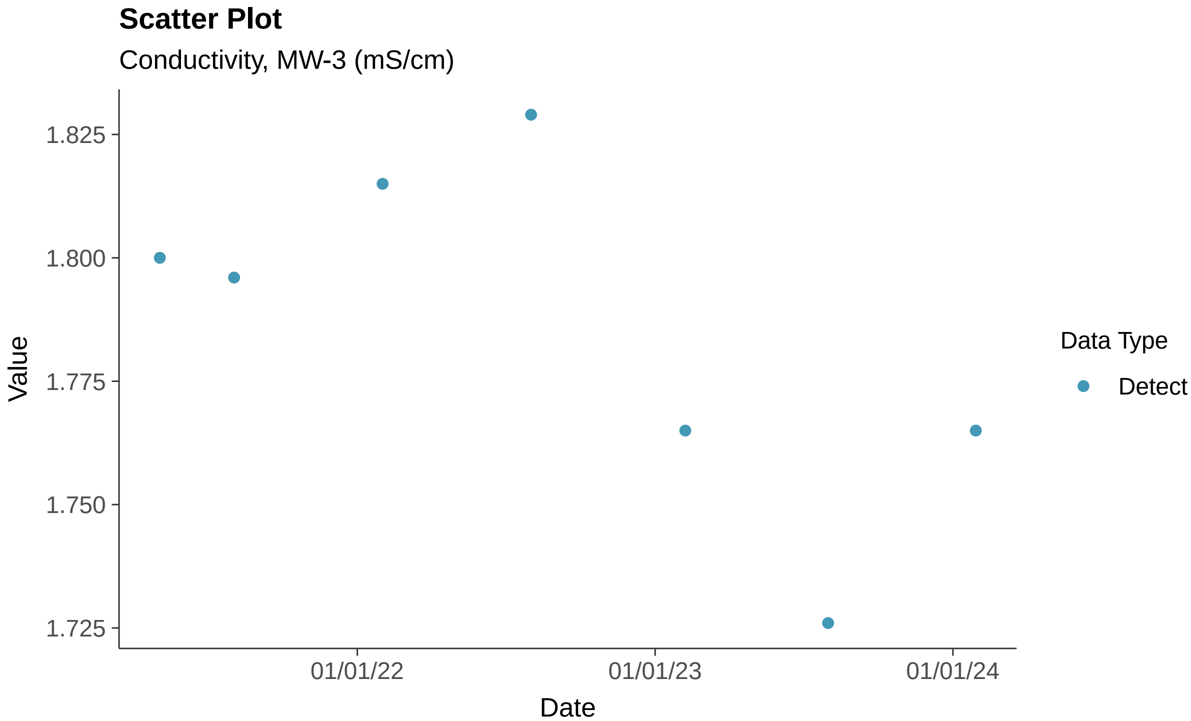
Boxplot by Season

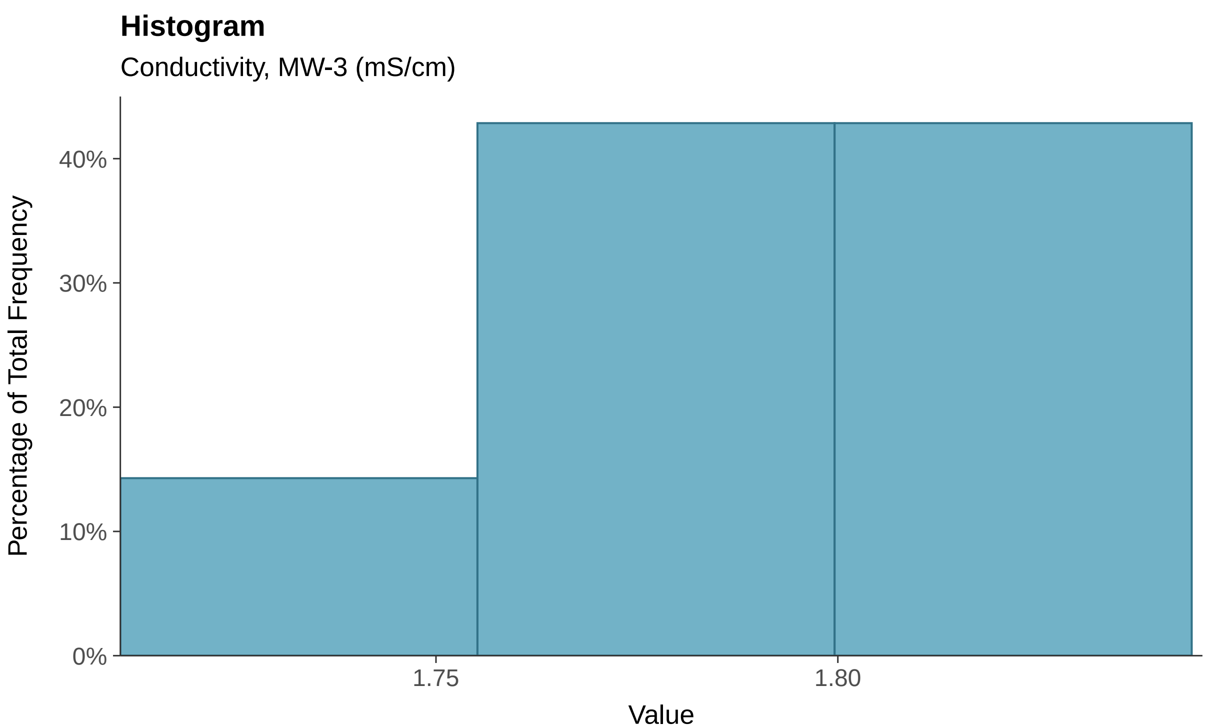
Thallium, MW-3 (mg/L)



Field Parameters: Conductivity, MW-3

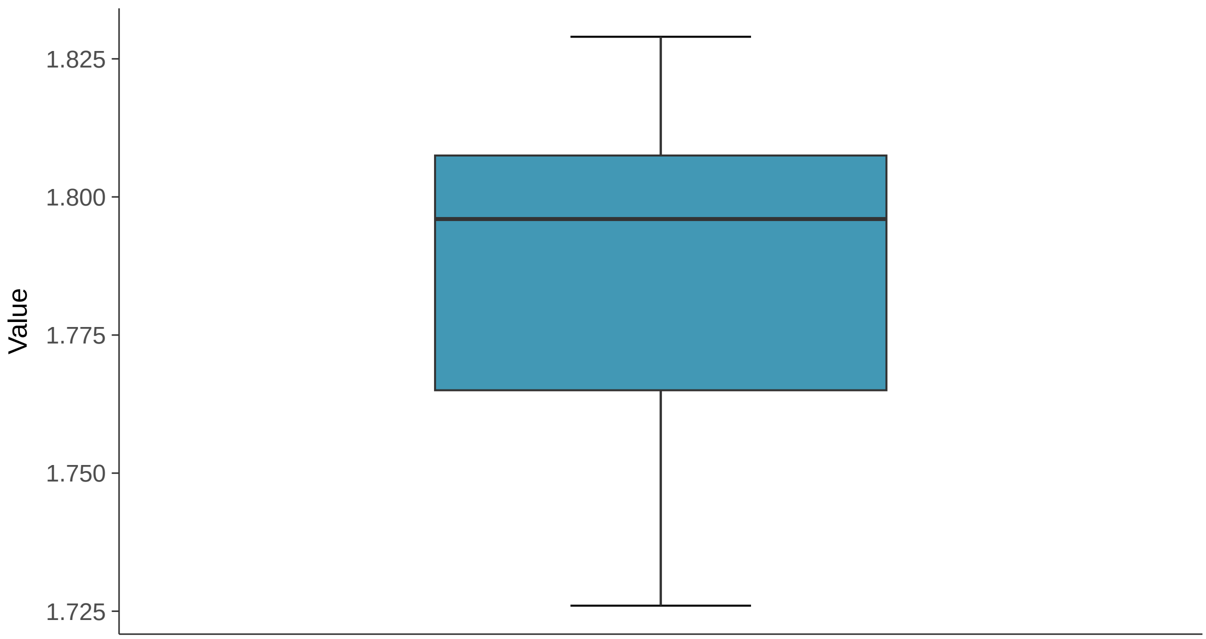
ID: 03_3_24





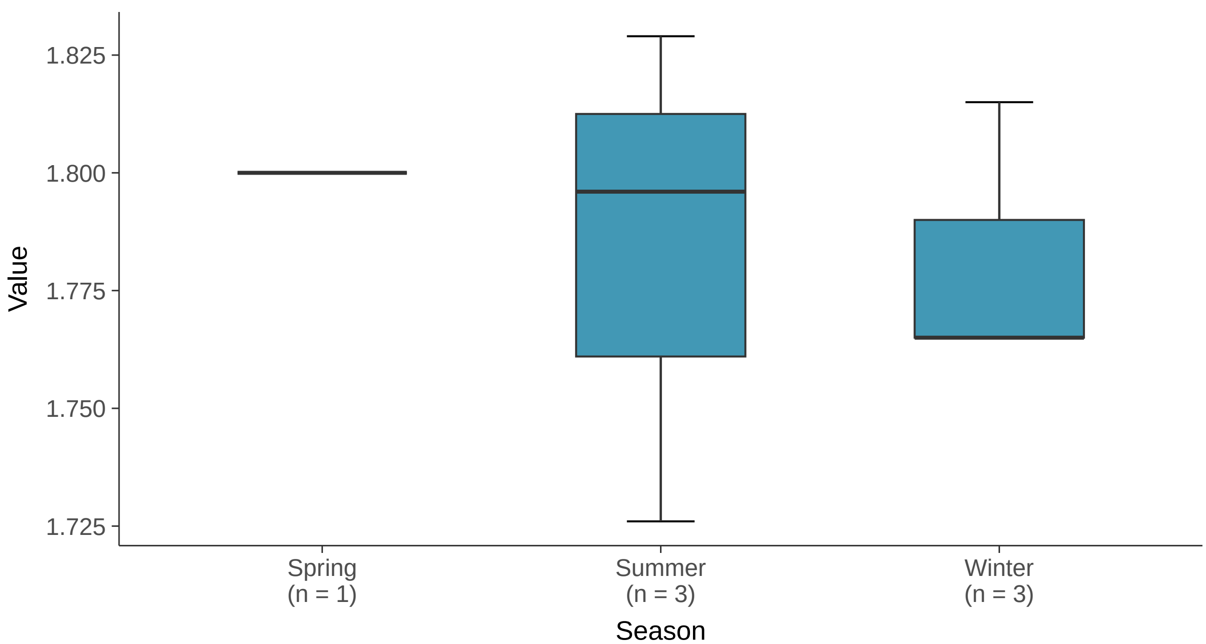
Boxplot

Conductivity, MW-3 (mS/cm)



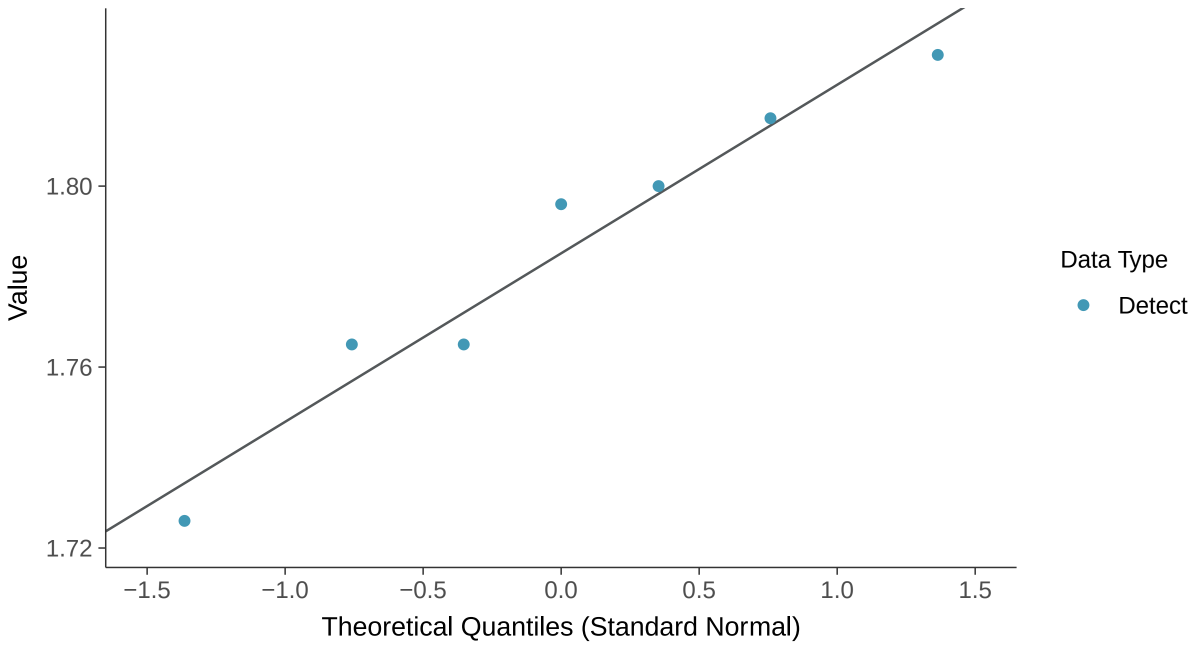
Boxplot by Season

Conductivity, MW-3 (mS/cm)



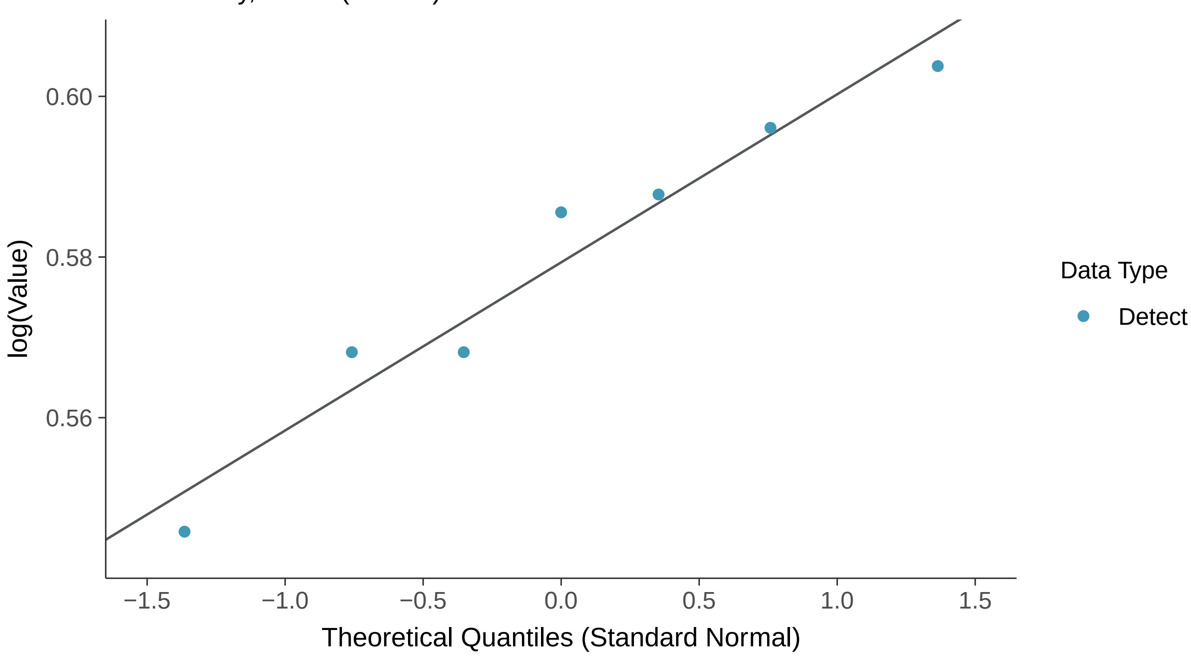
Normal Q-Q plot

Conductivity, MW-3 (mS/cm)



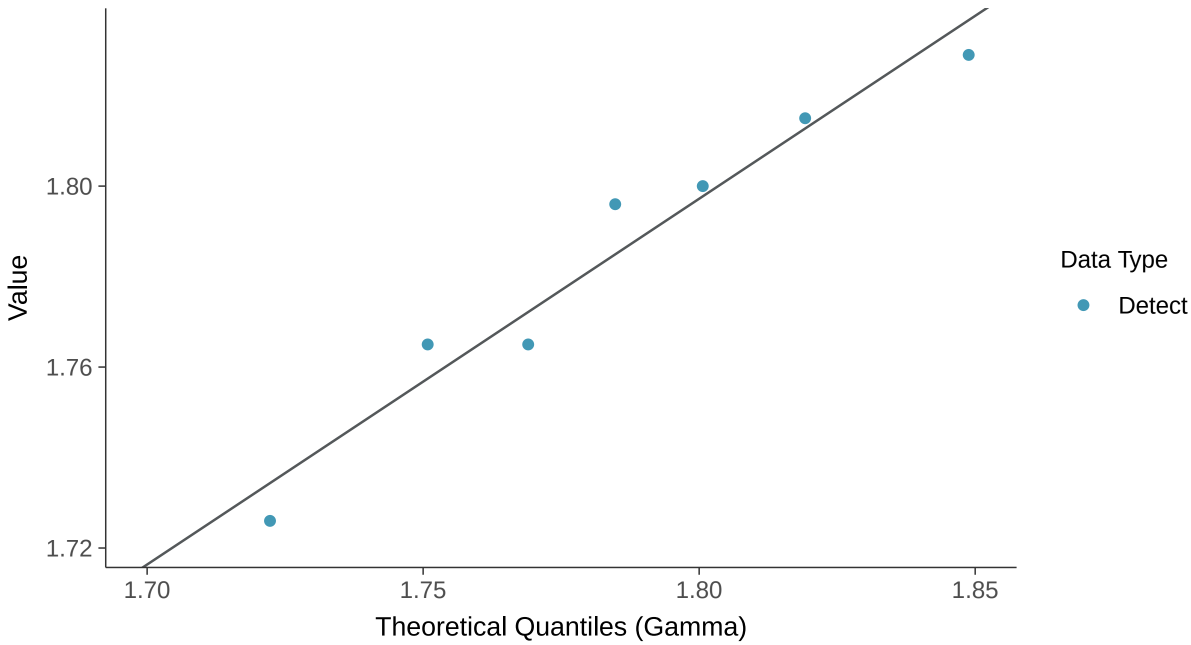
Lognormal Q-Q plot

Conductivity, MW-3 (mS/cm)



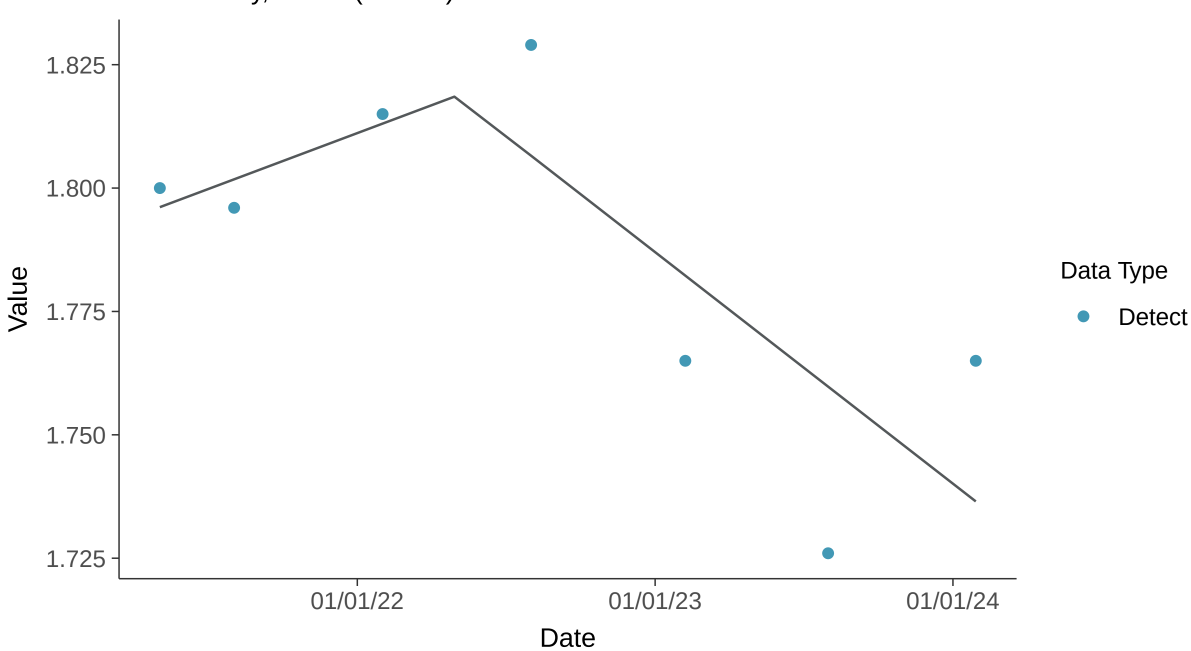
Gamma Q-Q plot

Conductivity, MW-3 (mS/cm)



Trend Regression: Piecewise Linear-Linear

Conductivity, MW-3 (mS/cm)

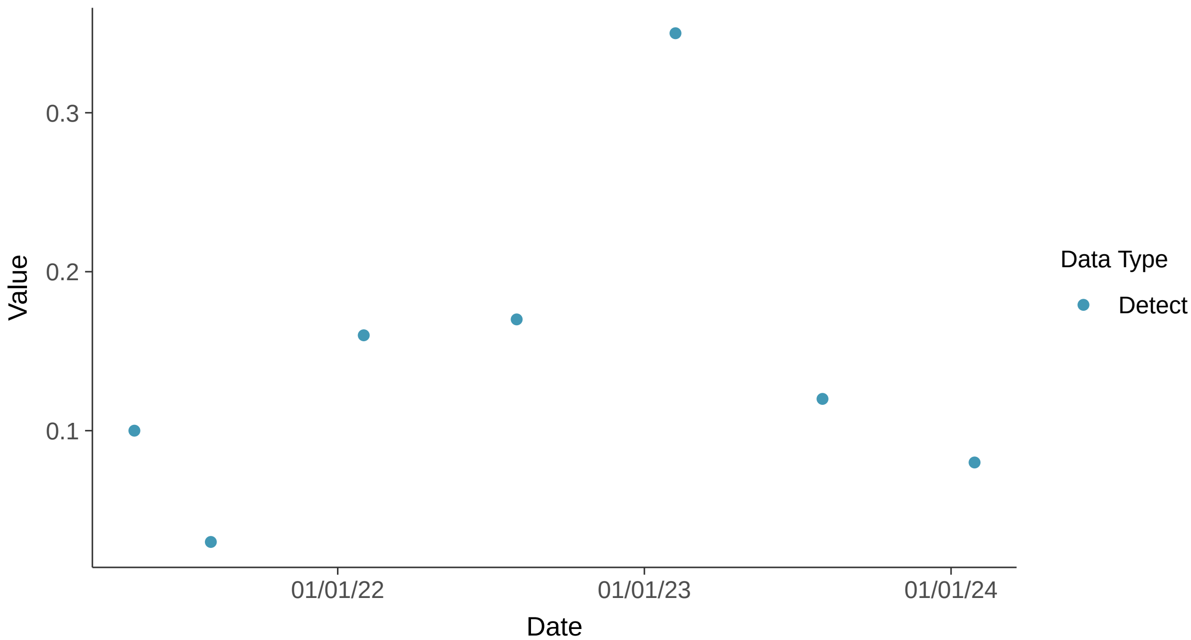


Field Parameters: Dissolved Oxygen, MW-3

ID: 03_3_25

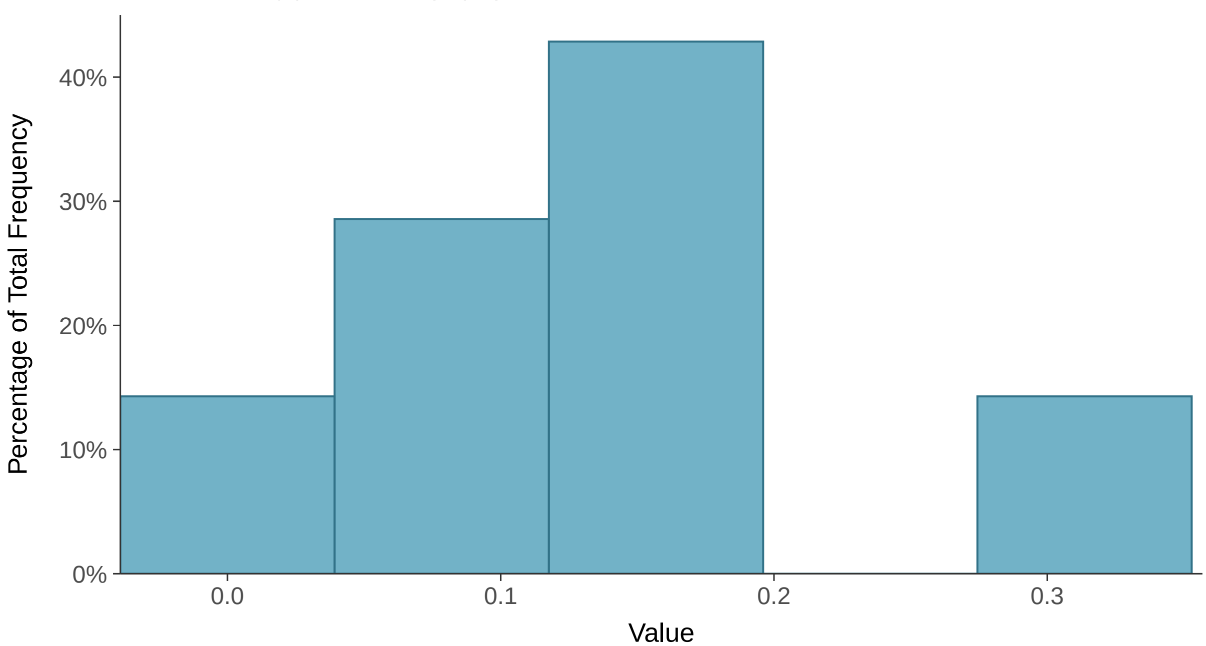
Scatter Plot

Dissolved Oxygen, MW-3 (mg/L)



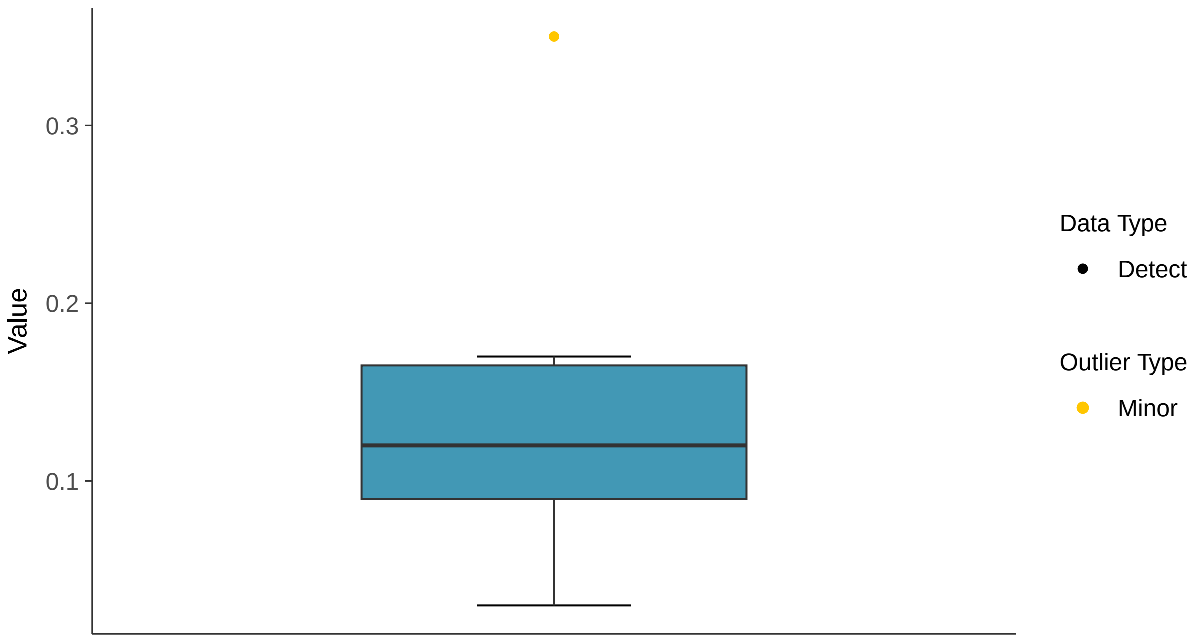
Histogram

Dissolved Oxygen, MW-3 (mg/L)



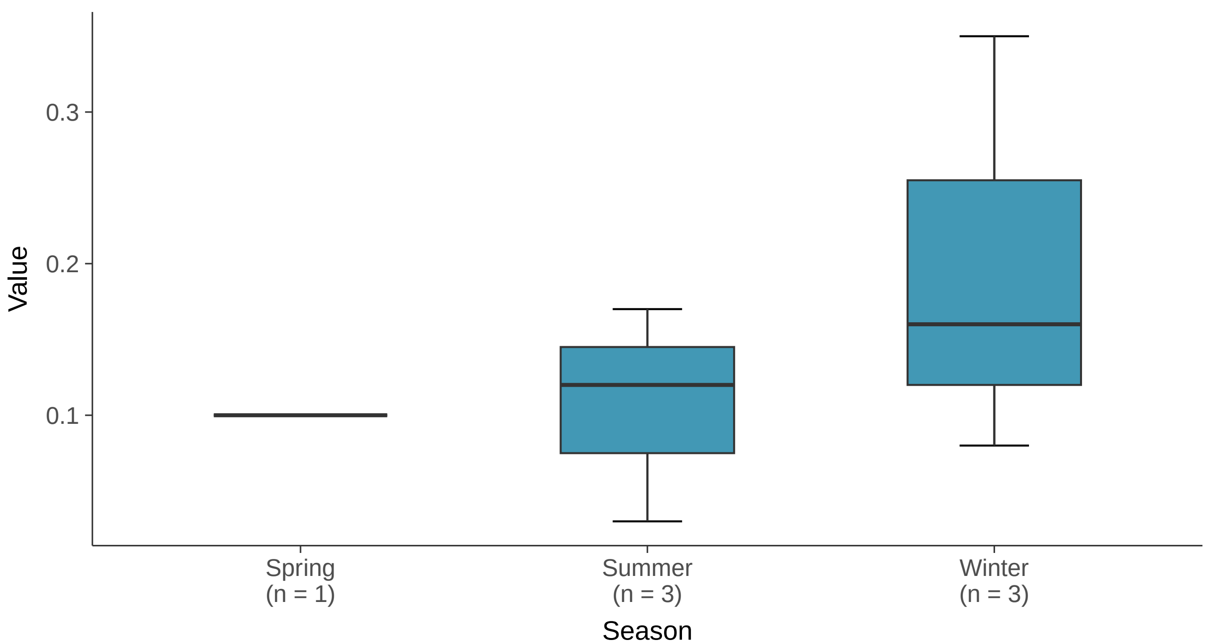
Boxplot

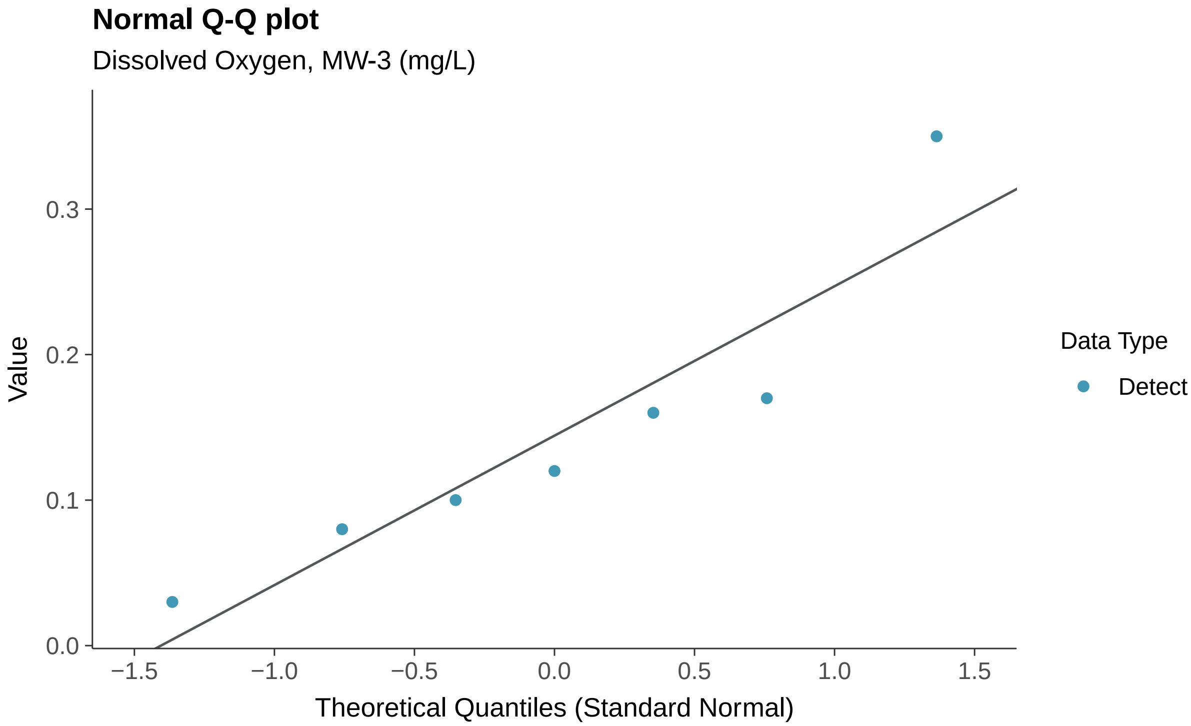
Dissolved Oxygen, MW-3 (mg/L)

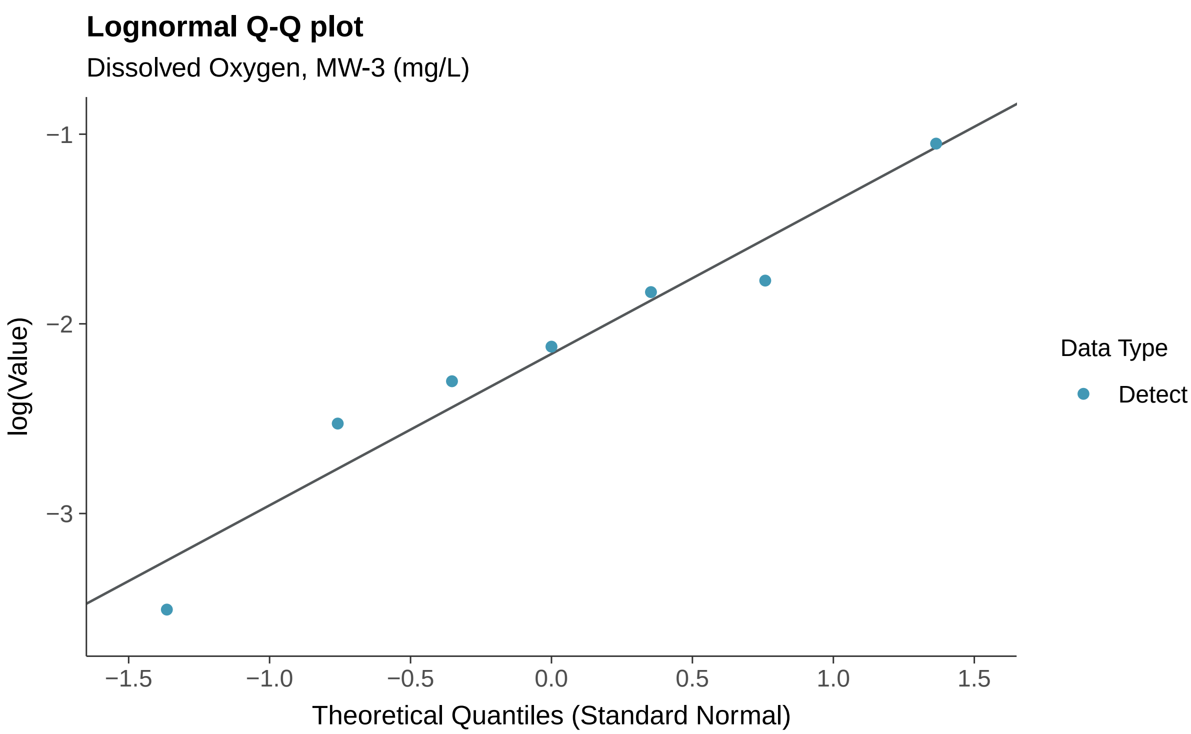


Boxplot by Season

Dissolved Oxygen, MW-3 (mg/L)

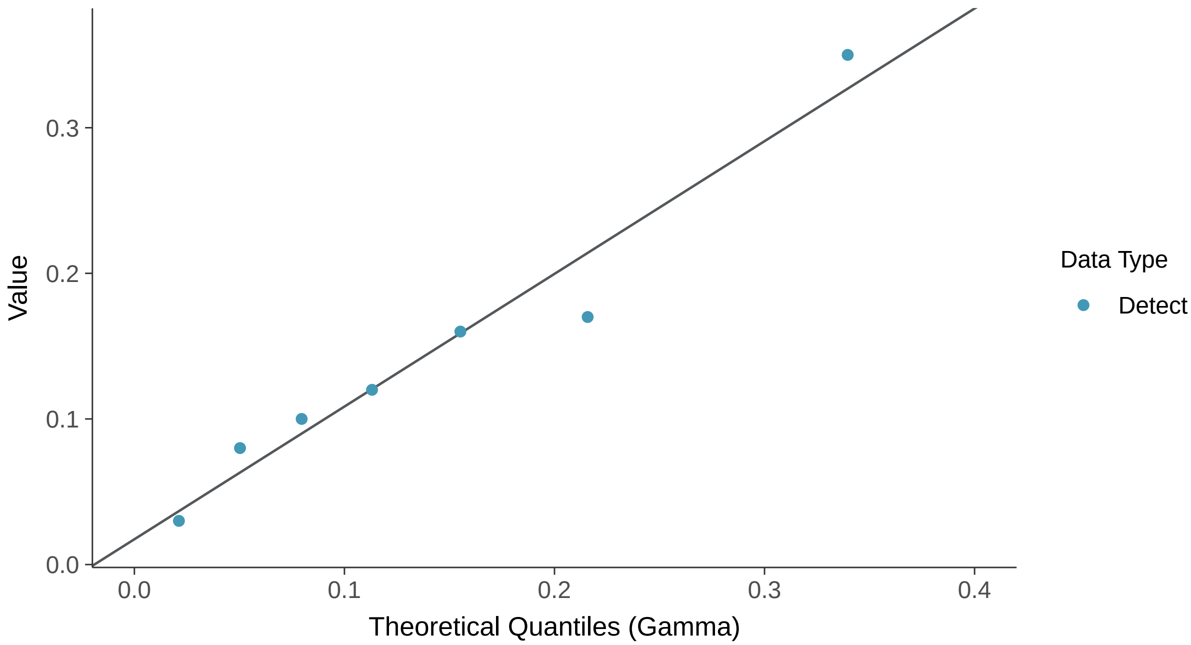



Normal Q-Q plot
Dissolved Oxygen, MW-3 (mg/L)
Value
0.0
0.1
0.2
0.3
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Dissolved Oxygen, MW-3 (mg/L)
log(Value)
−1
−2
−3
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

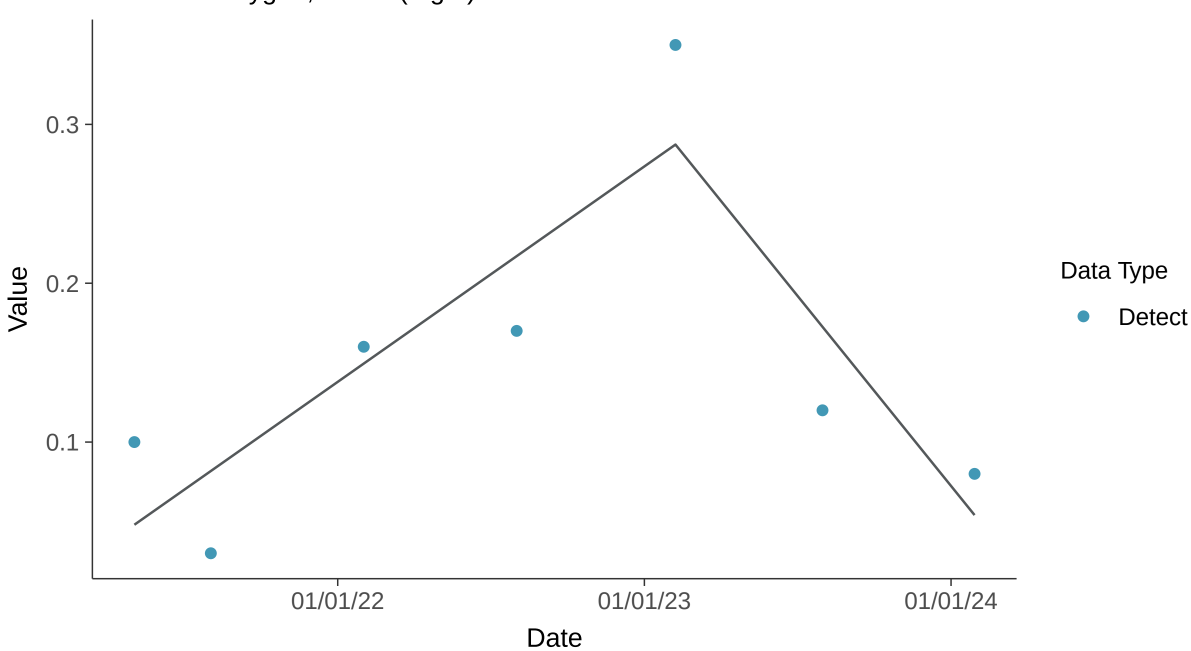
Gamma Q-Q plot

Dissolved Oxygen, MW-3 (mg/L)



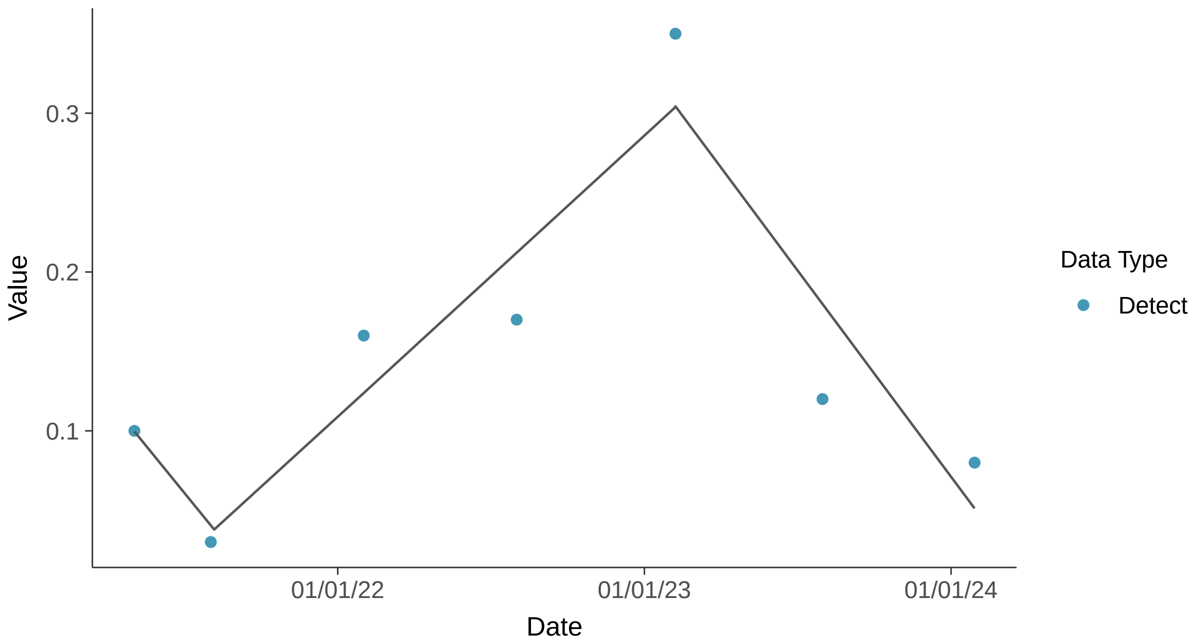
Trend Regression: Piecewise Linear-Linear

Dissolved Oxygen, MW-3 (mg/L)



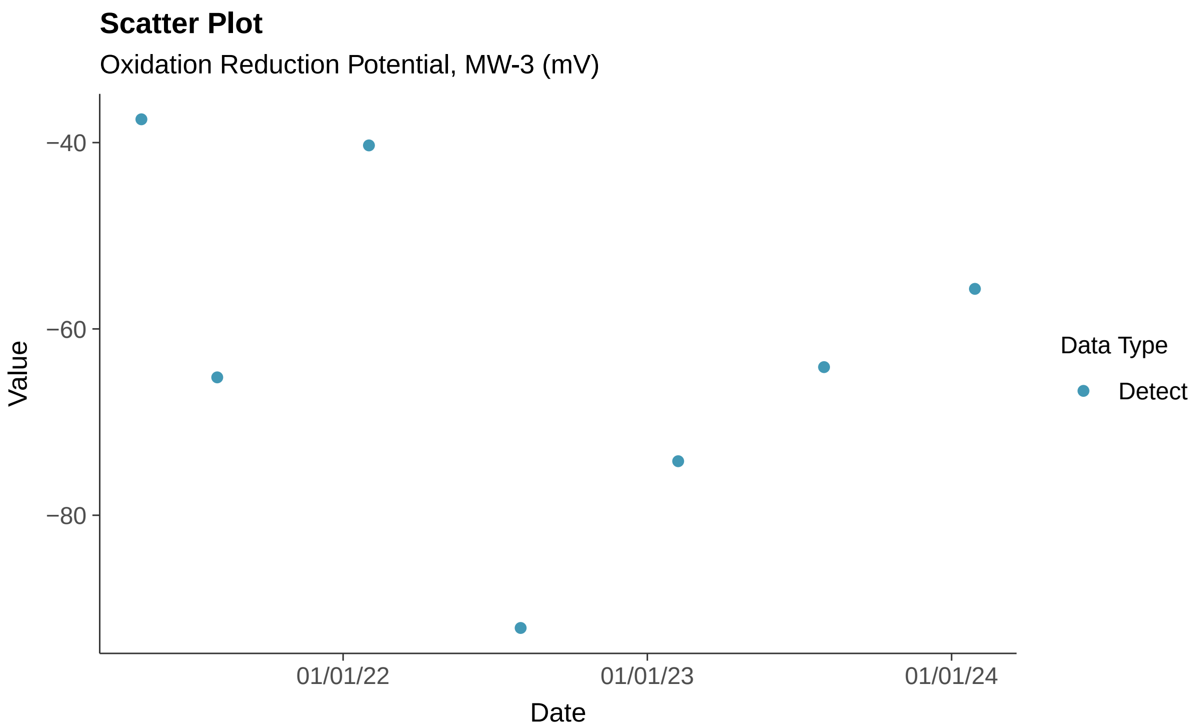
Trend Regression: Piecewise Linear-Linear-Linear

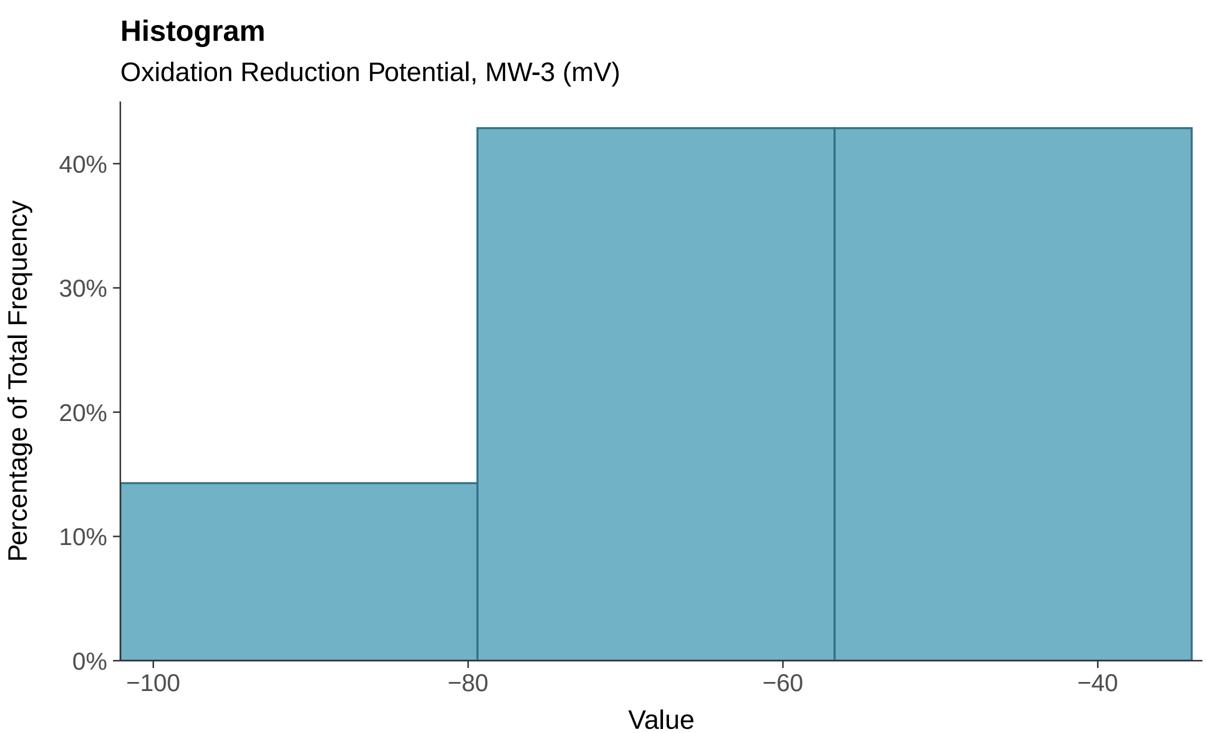
Dissolved Oxygen, MW-3 (mg/L)



Field Parameters: Oxidation Reduction Potential, MW-3

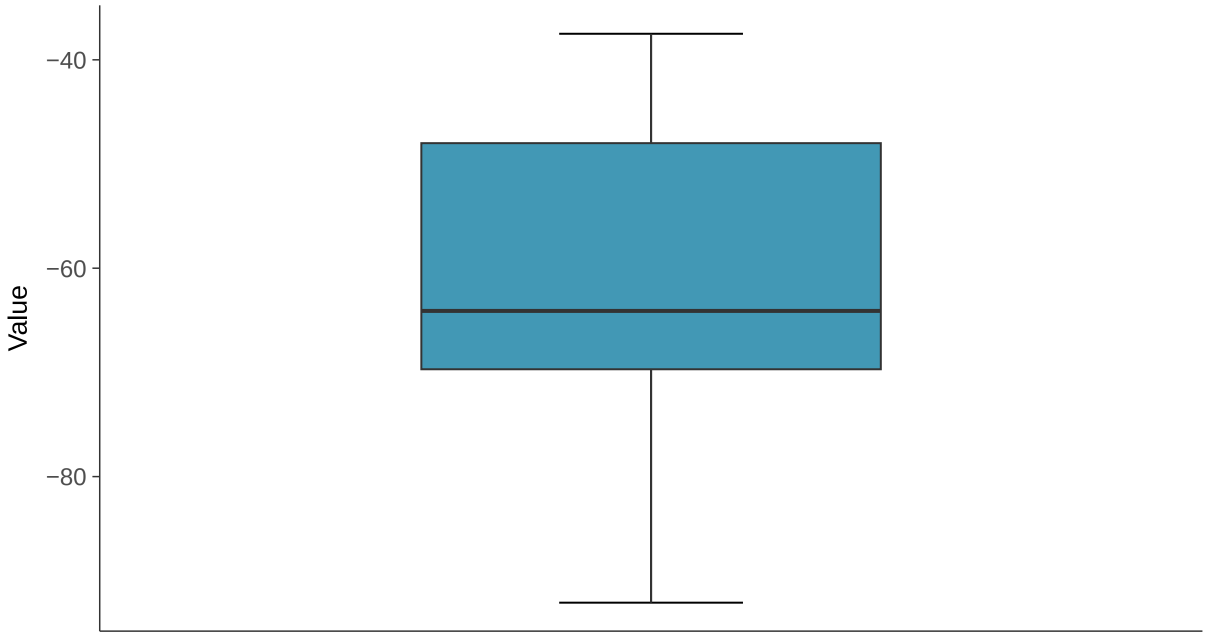
ID: 03_3_26





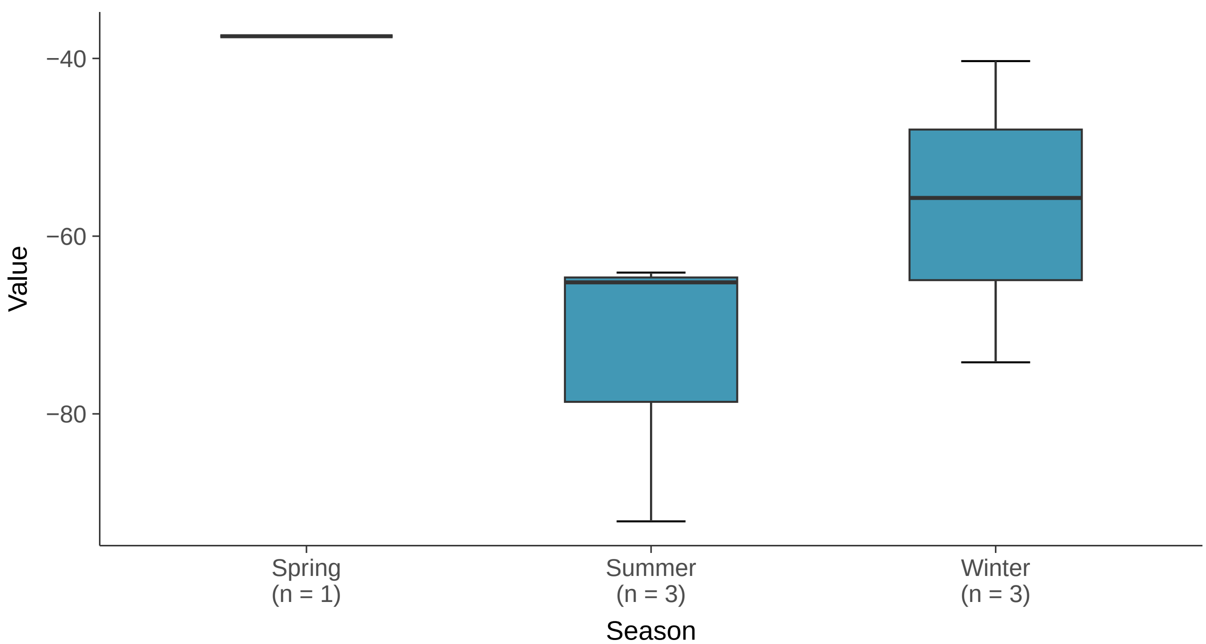
Boxplot

Oxidation Reduction Potential, MW-3 (mV)



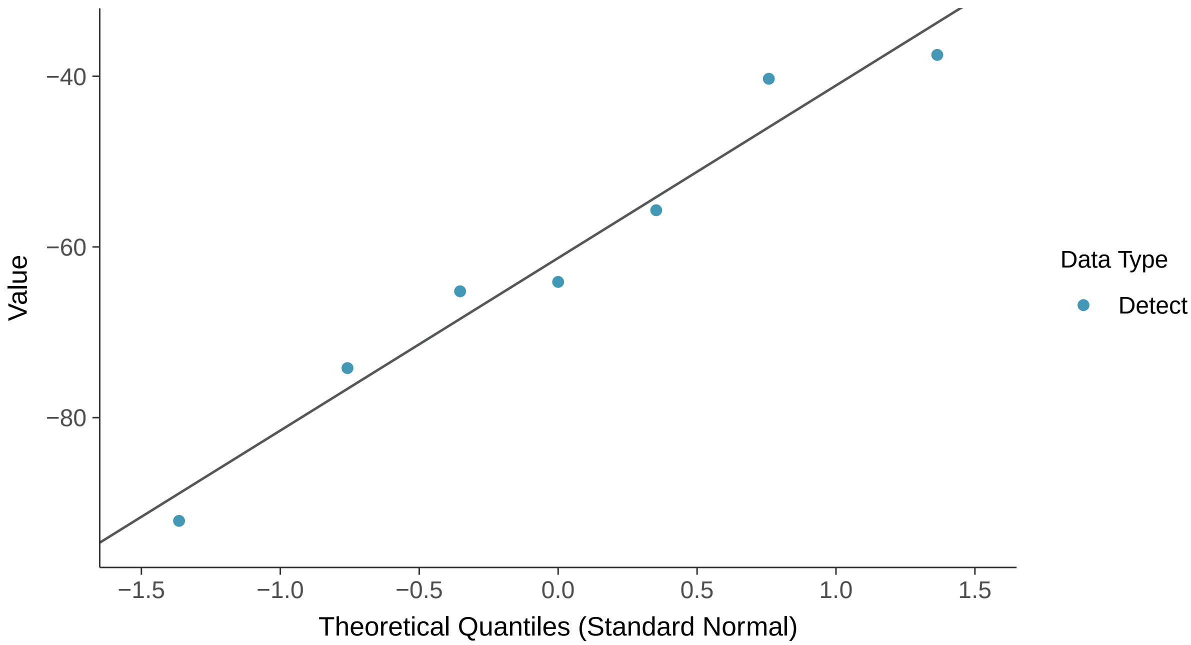
Boxplot by Season

Oxidation Reduction Potential, MW-3 (mV)



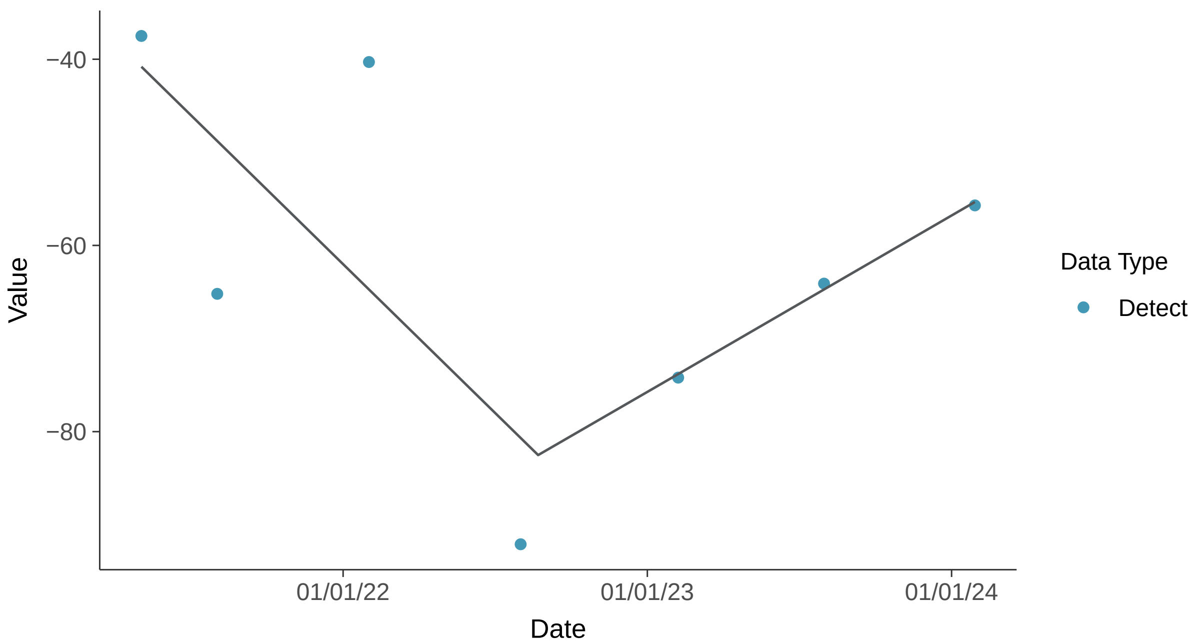
Normal Q-Q plot

Oxidation Reduction Potential, MW-3 (mV)



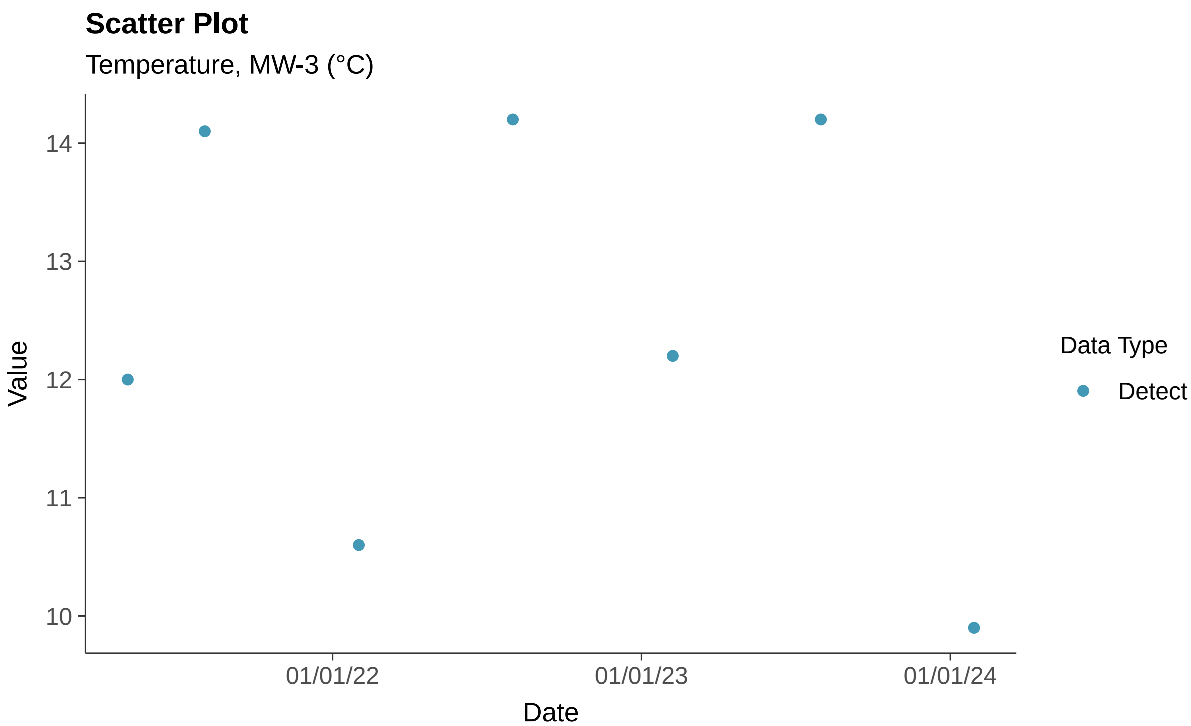
Trend Regression: Piecewise Linear-Linear

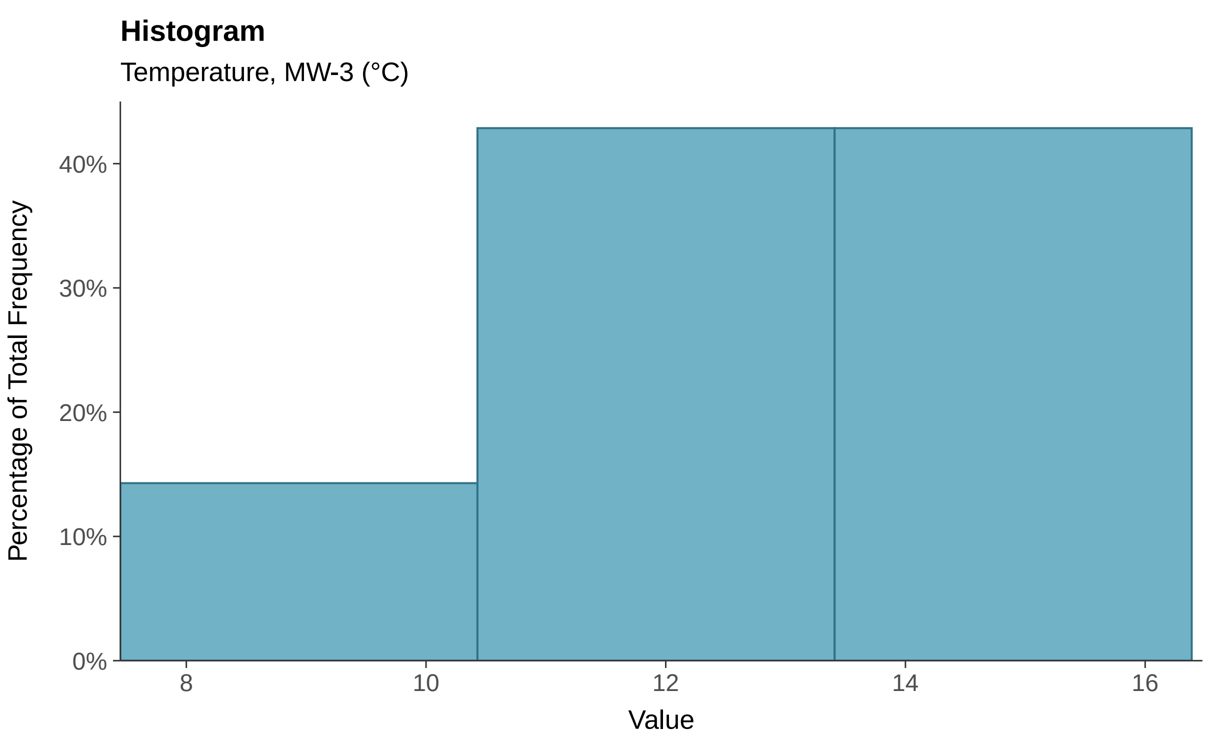
Oxidation Reduction Potential, MW-3 (mV)



Field Parameters: Temperature, MW-3

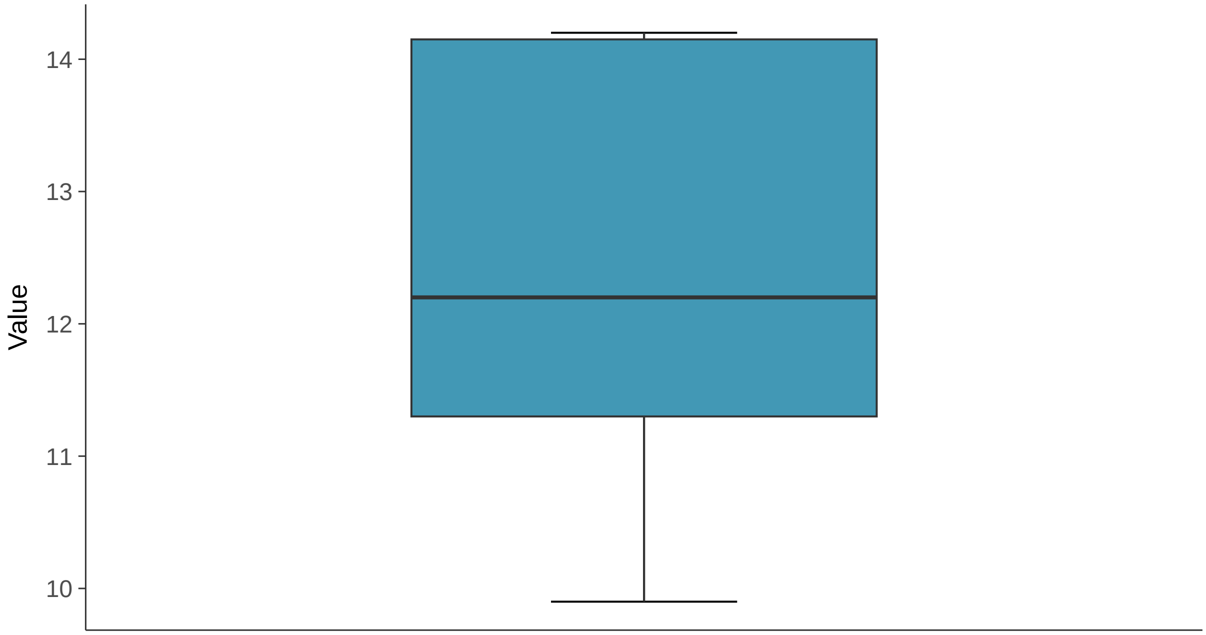
ID: 03_3_27





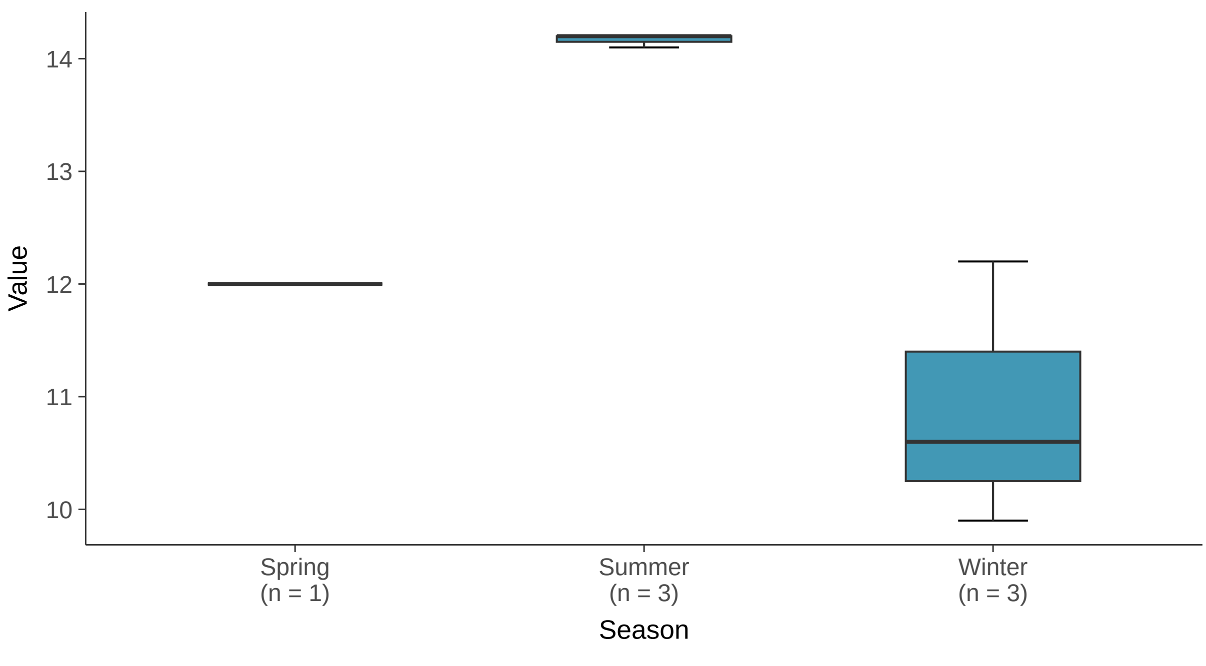
Boxplot

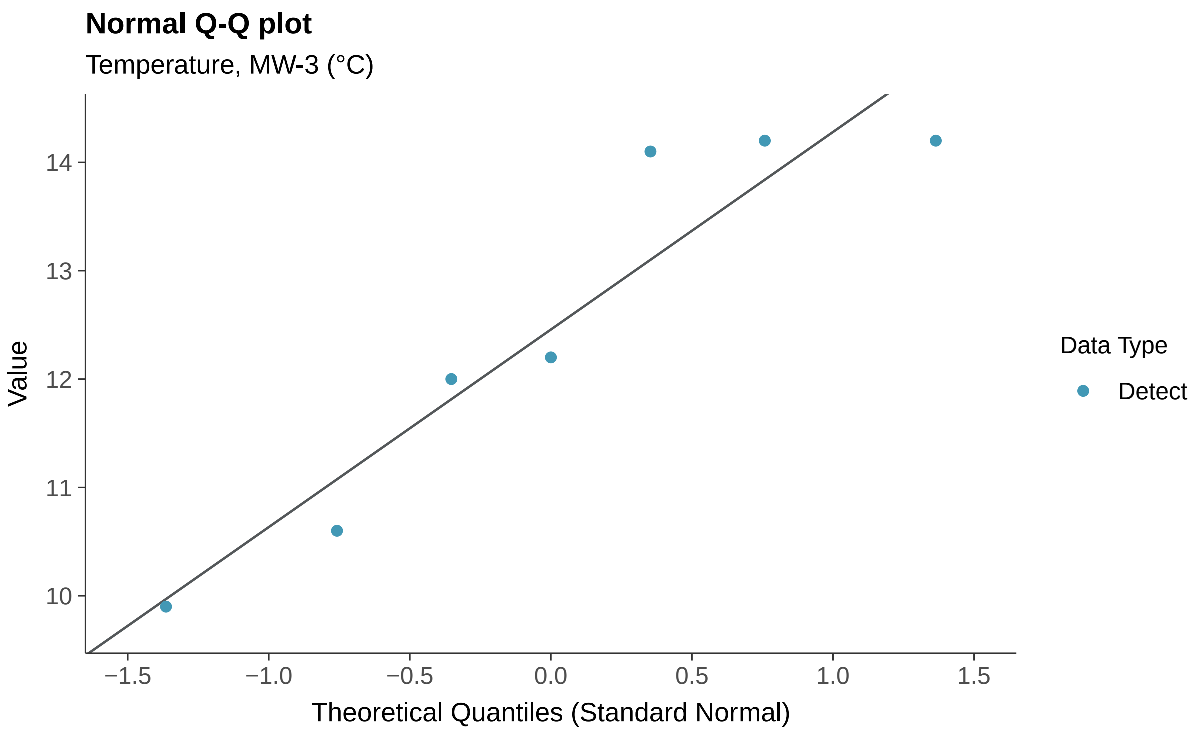
Temperature, MW-3 (°C)

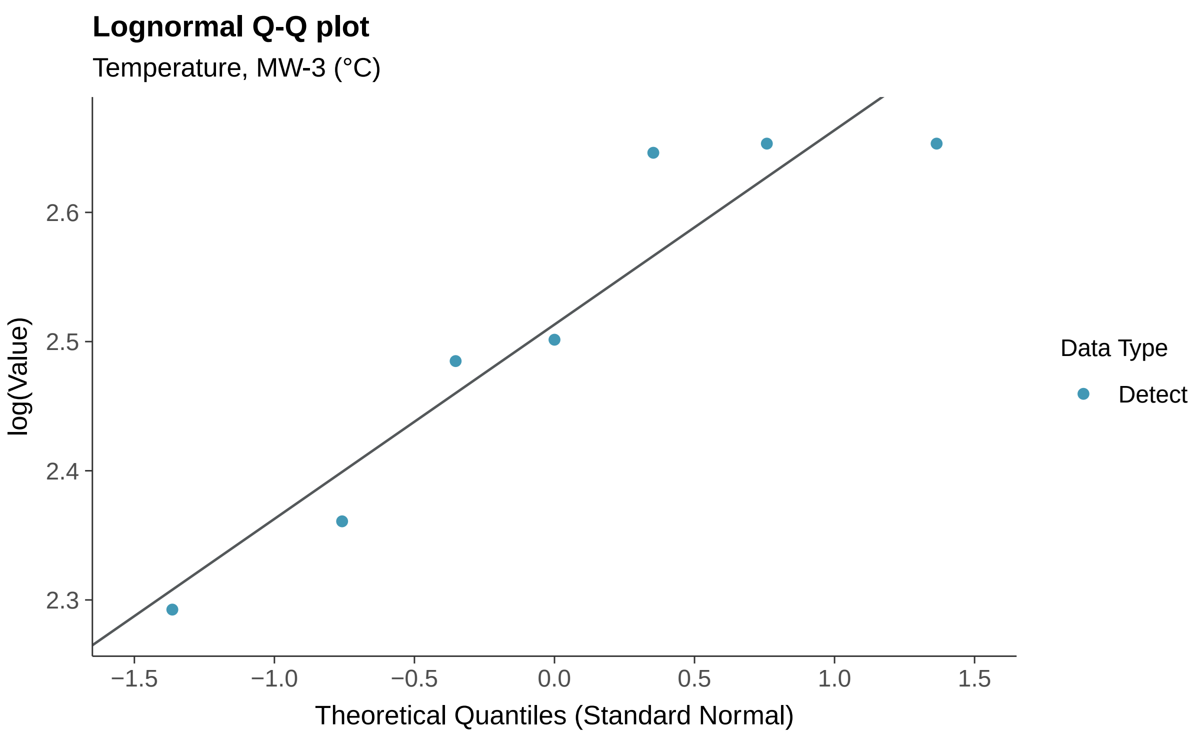


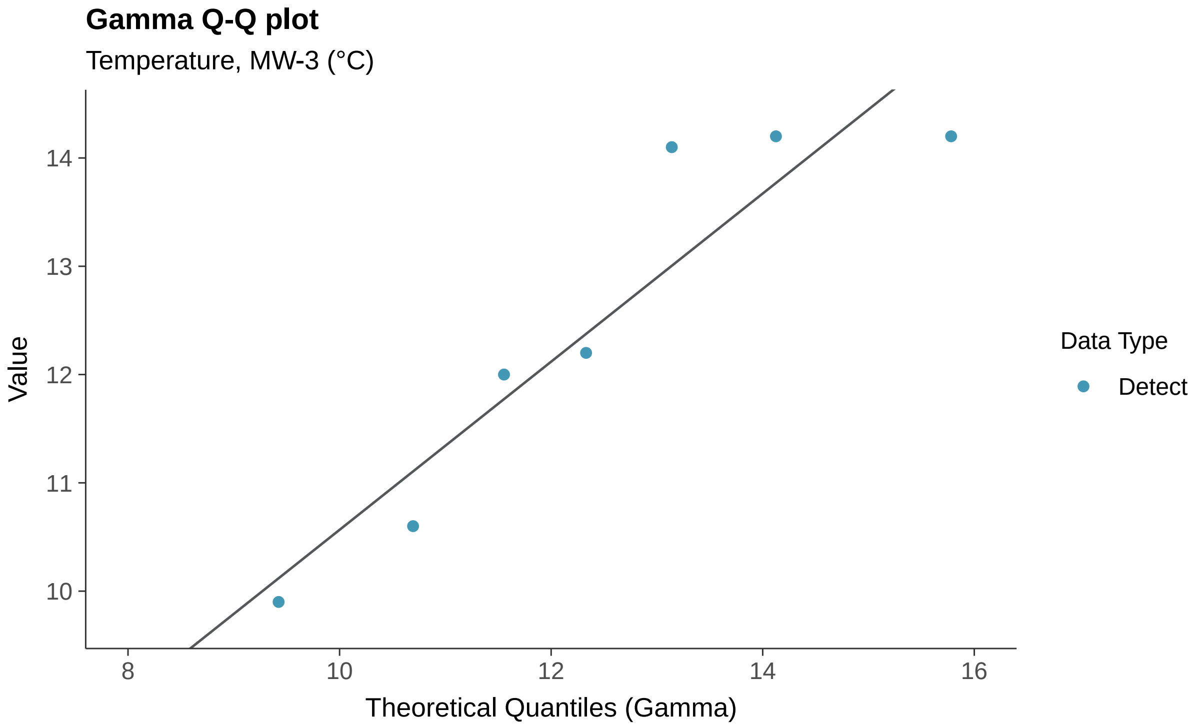
Boxplot by Season

Temperature, MW-3 (°C)




Normal Q-Q plot
Temperature, MW-3 (°C)
Value
14
13
12
11
10
−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
Temperature, MW-3 (°C)
log(Value)
2.6
2.5
2.4
2.3
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

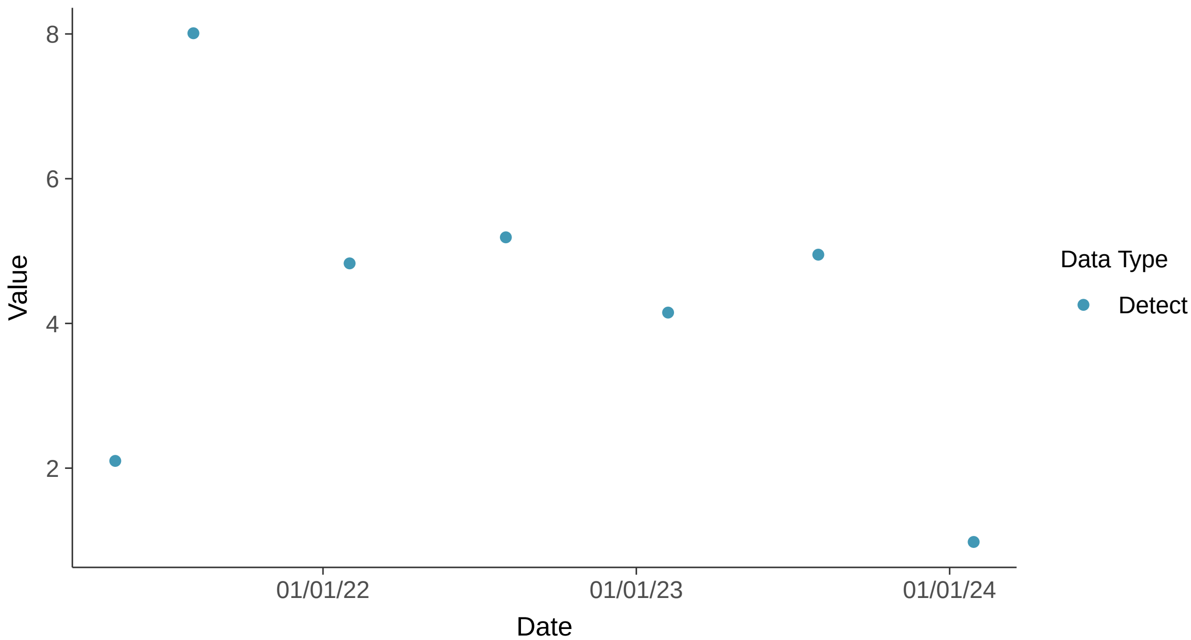

Gamma Q-Q plot
Temperature, MW-3 (°C)
Value
14
13
12
11
10
8
10
12
14
16
Theoretical Quantiles (Gamma)
Data Type
Detect

Field Parameters: Turbidity, MW-3

ID: 03_3_28

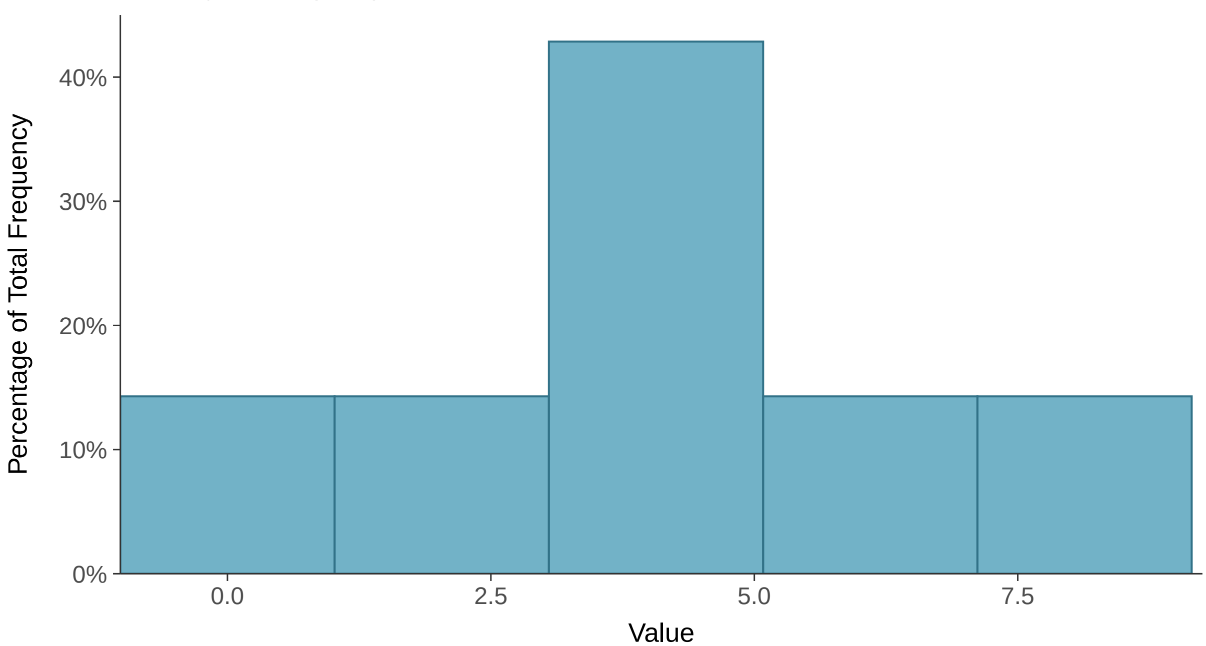
Scatter Plot

Turbidity, MW-3 (NTU)



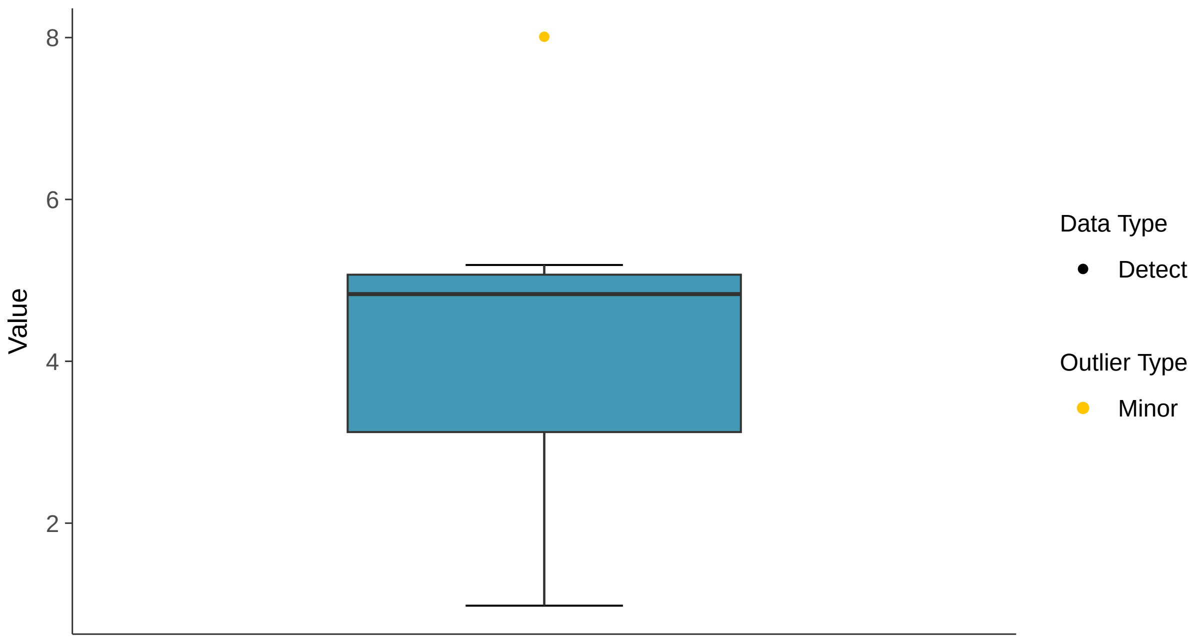
Histogram

Turbidity, MW-3 (NTU)



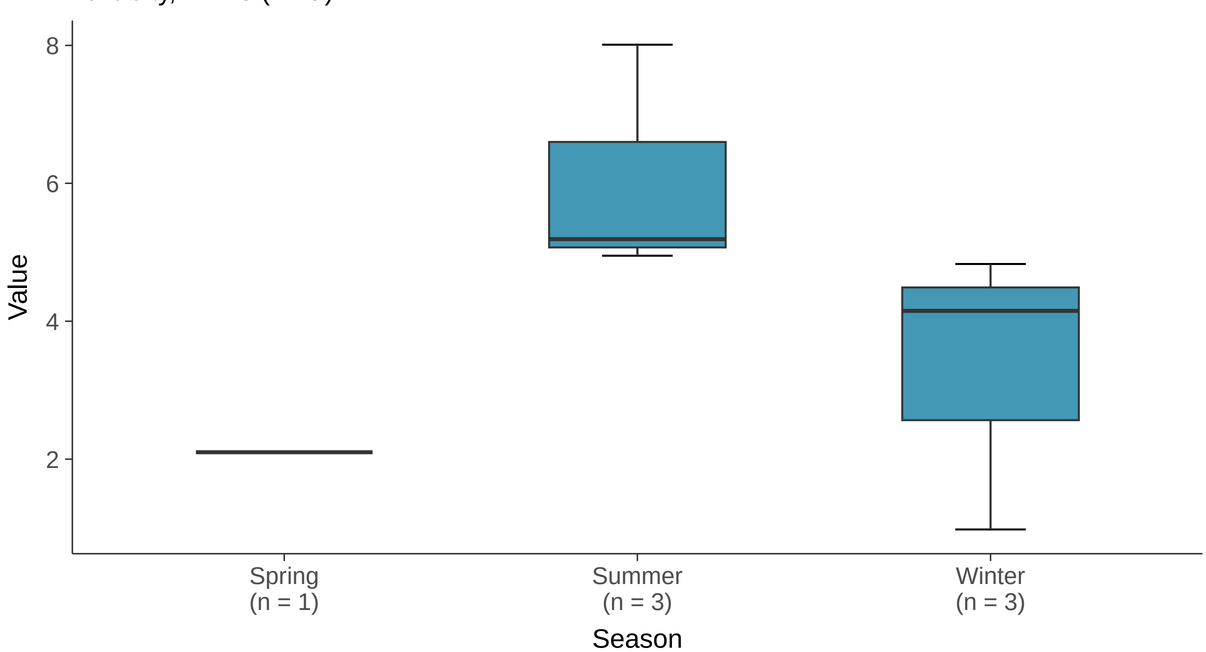
Boxplot

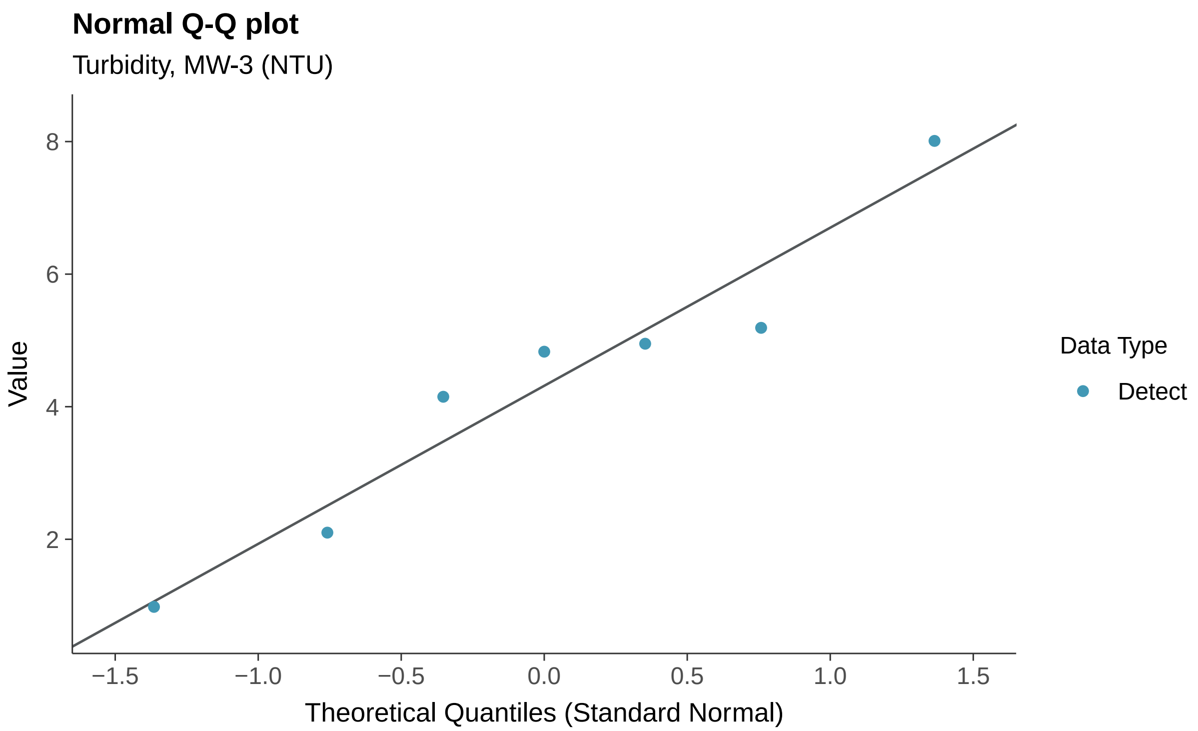
Turbidity, MW-3 (NTU)

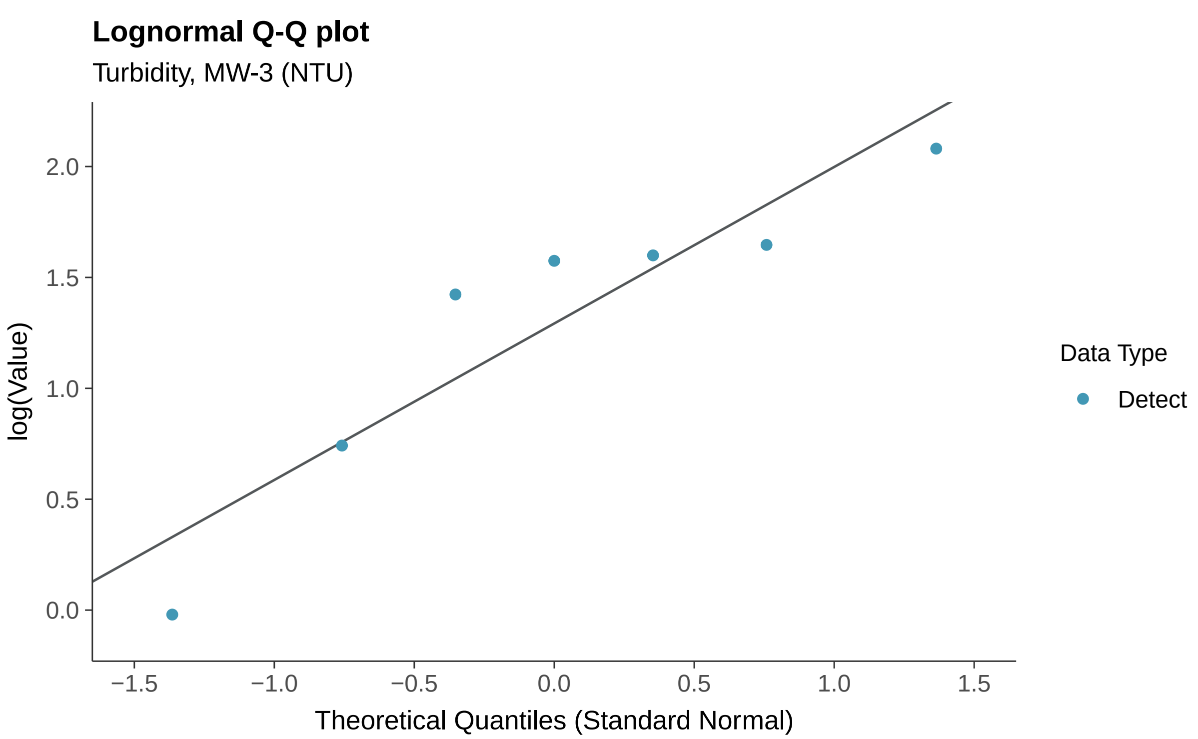


Boxplot by Season

Turbidity, MW-3 (NTU)

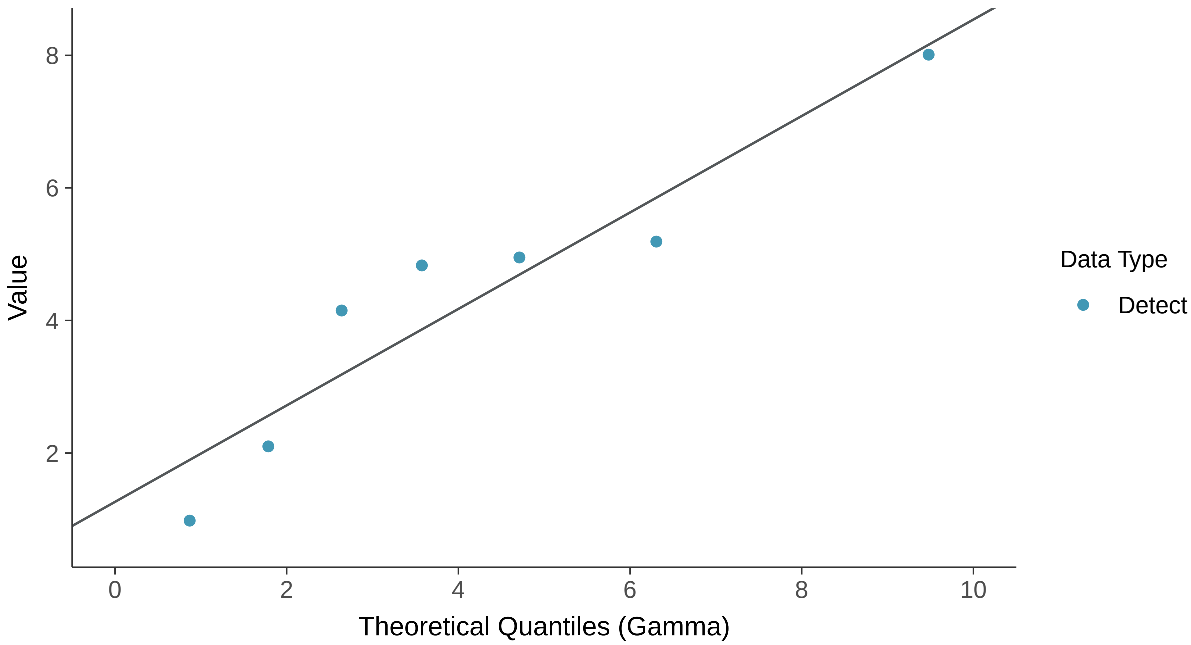



Normal Q-Q plot
Turbidity, MW-3 (NTU)
Value
8
6
4
2
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Turbidity, MW-3 (NTU)
log(Value)
2.0
1.5
1.0
0.5
0.0
−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

Turbidity, MW-3 (NTU)

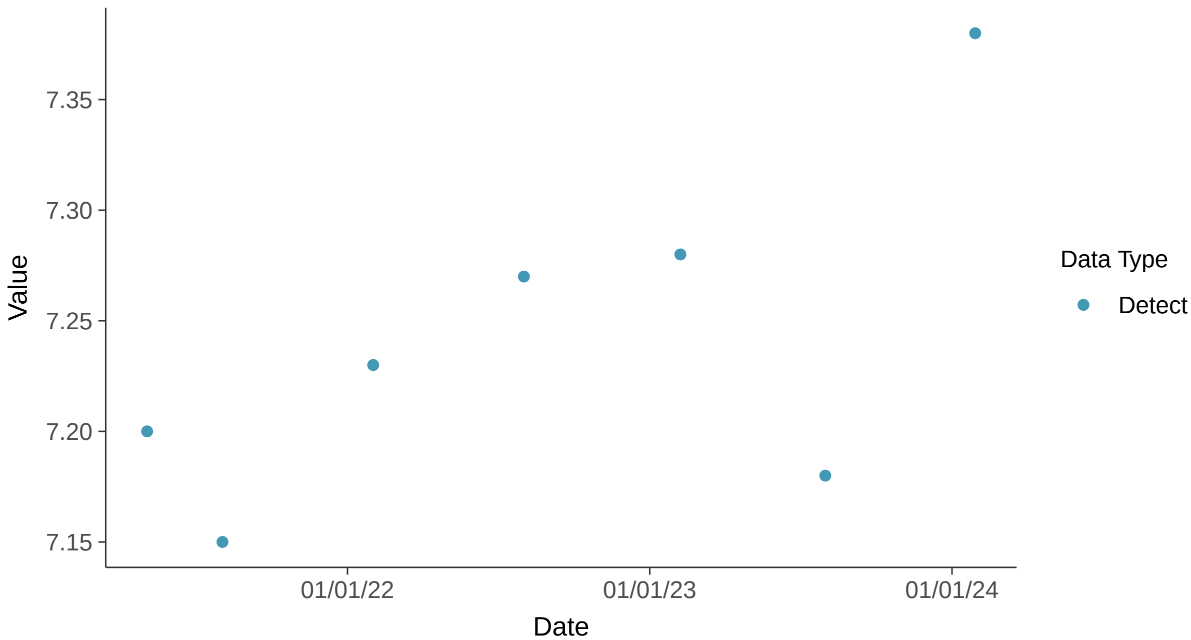


Field Parameters: pH, MW-3

ID: 03_3_29

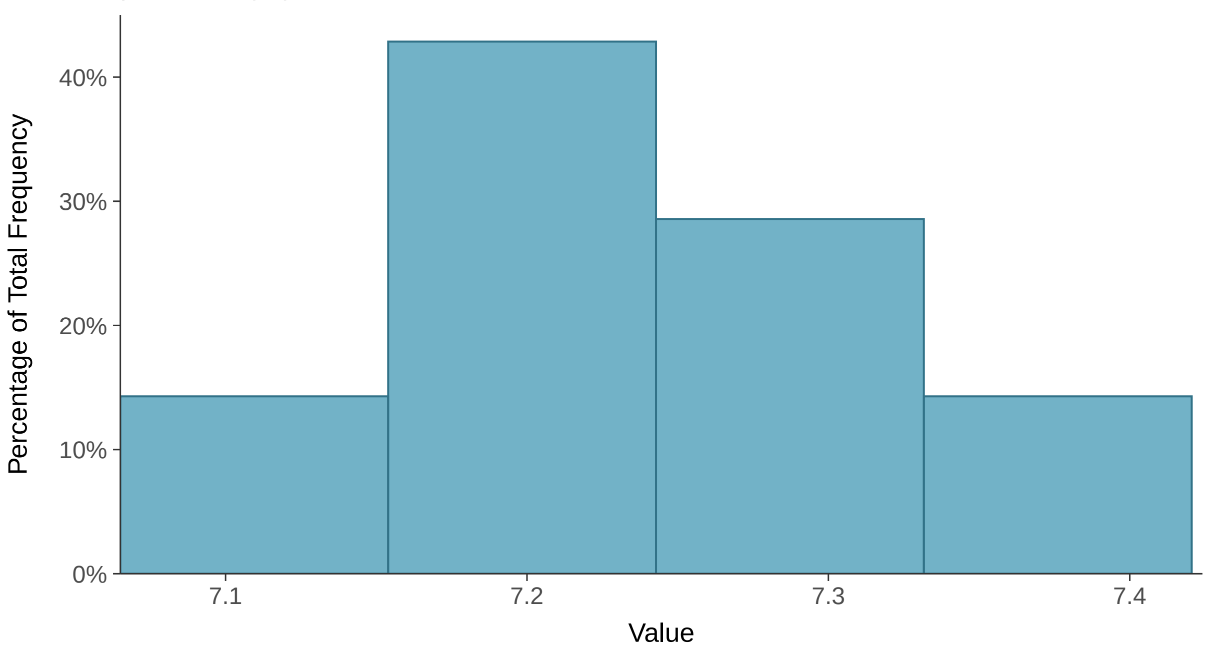
Scatter Plot

pH, MW-3 (su)



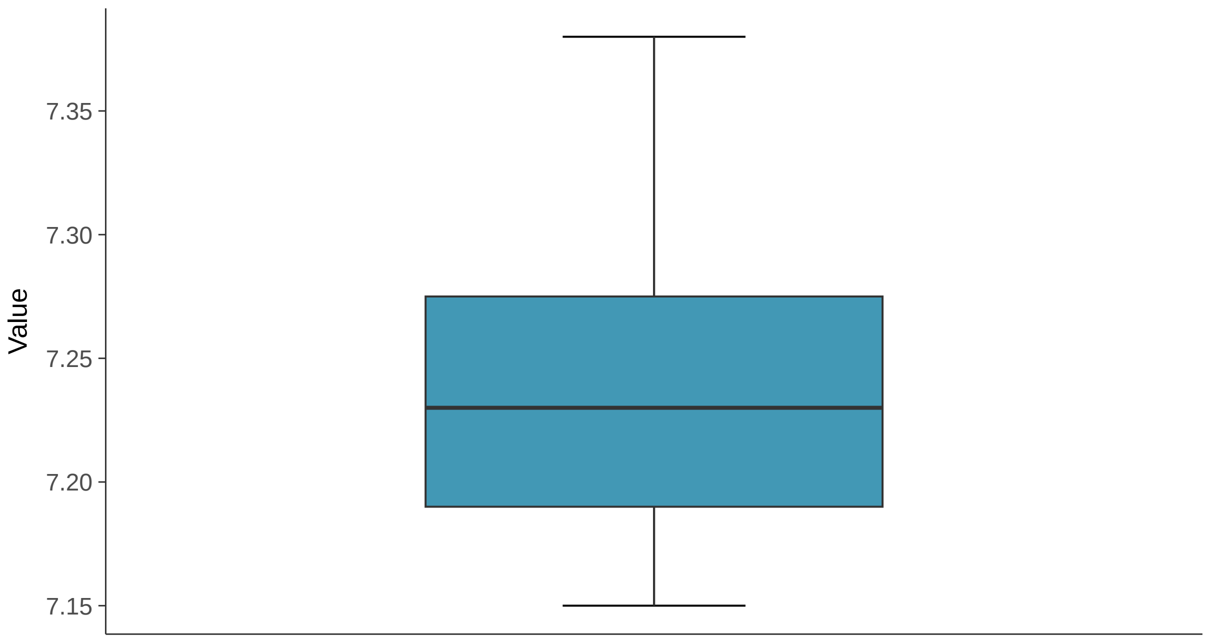
Histogram

pH, MW-3 (su)



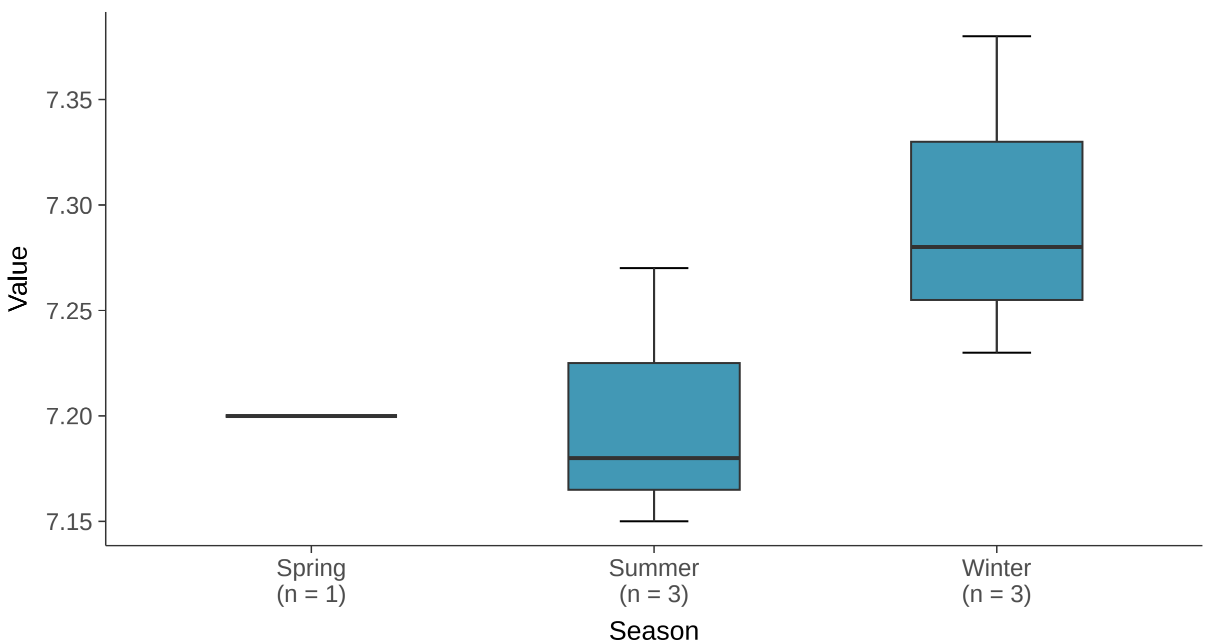
Boxplot

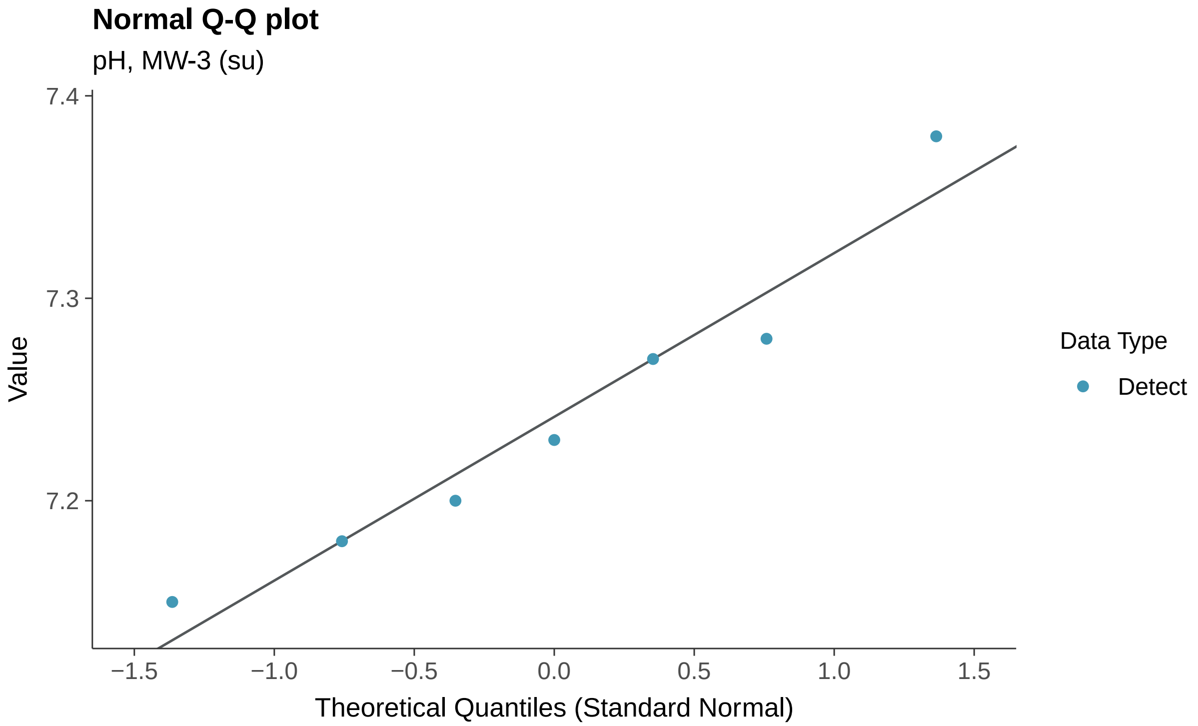
pH, MW-3 (su)

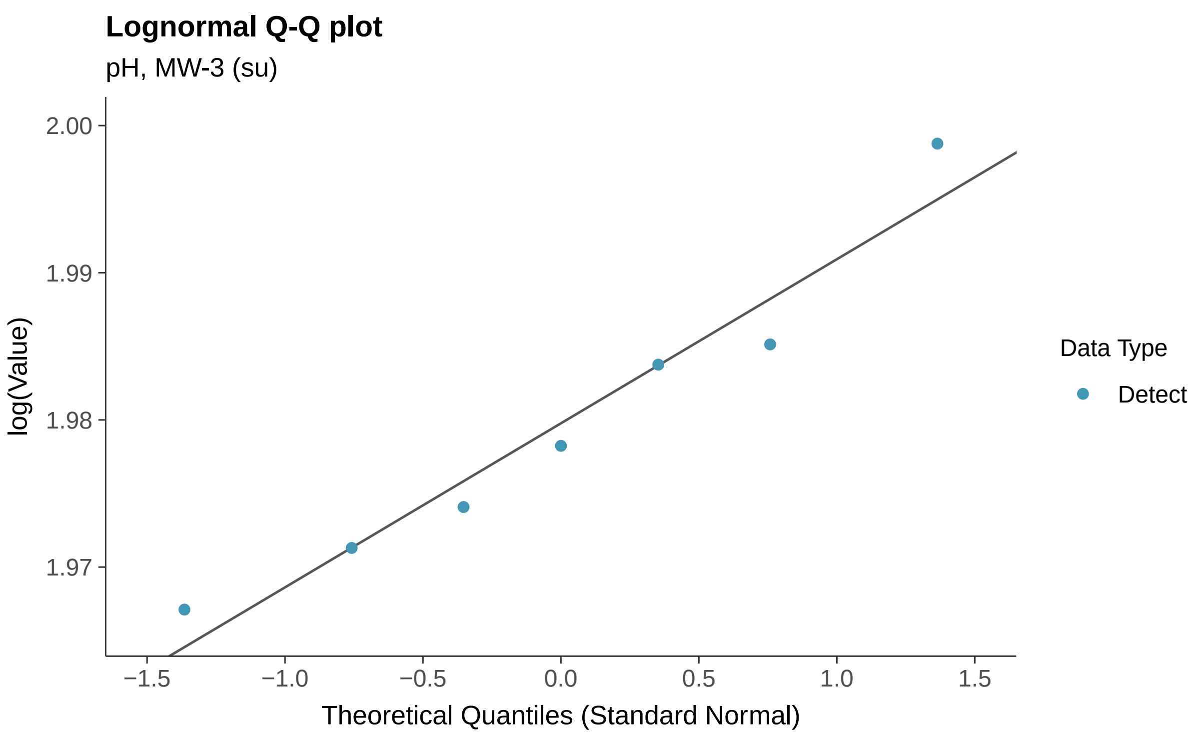


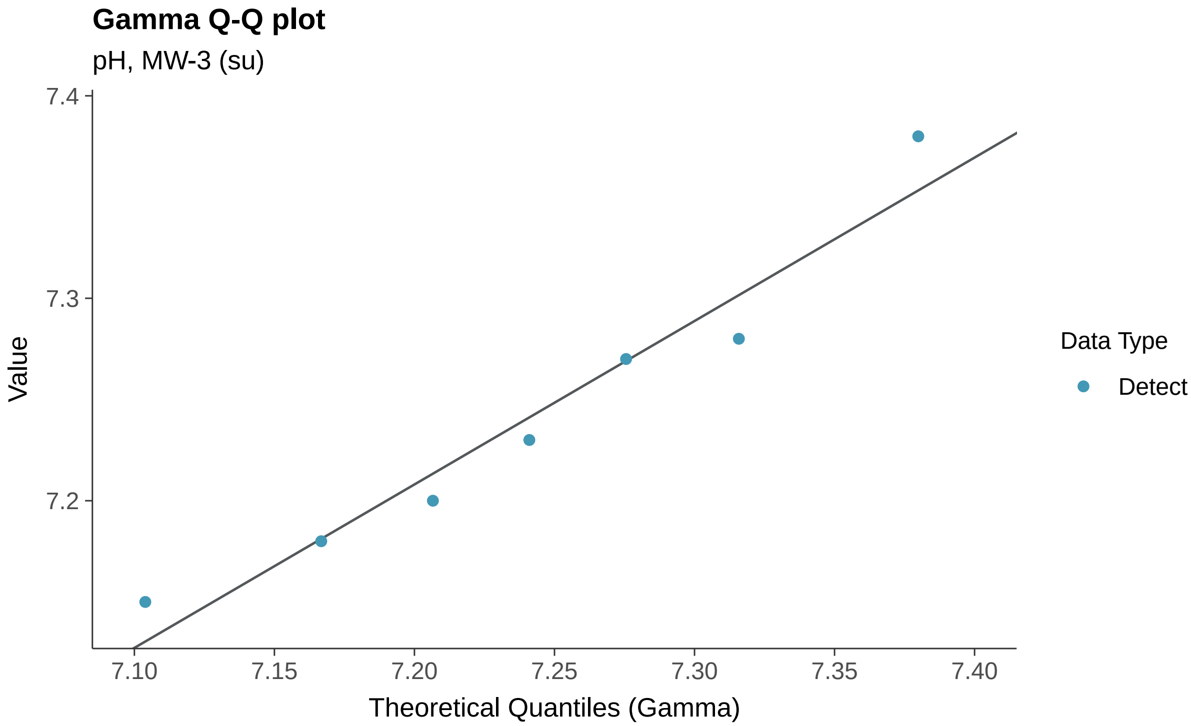
Boxplot by Season

pH, MW-3 (su)




Normal Q-Q plot
pH, MW-3 (su)
7.4
7.3
7.2
Value
−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
pH, MW-3 (su)
2.00
1.99
1.98
1.97
log(Value)
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

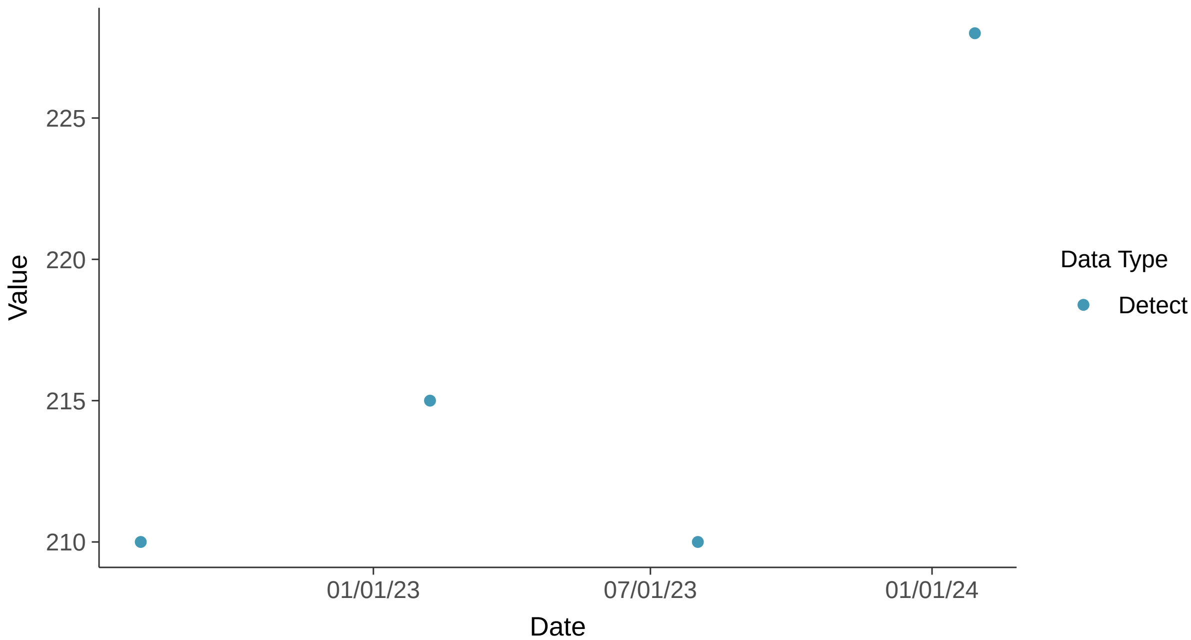

Gamma Q-Q plot
pH, MW-3 (su)
7.4
7.3
7.2
Value
7.10
7.15
7.20
7.25
7.30
7.35
7.40
Theoretical Quantiles (Gamma)
Data Type
Detect

Other: Bicarbonate, MW-3

ID: 03_4_30

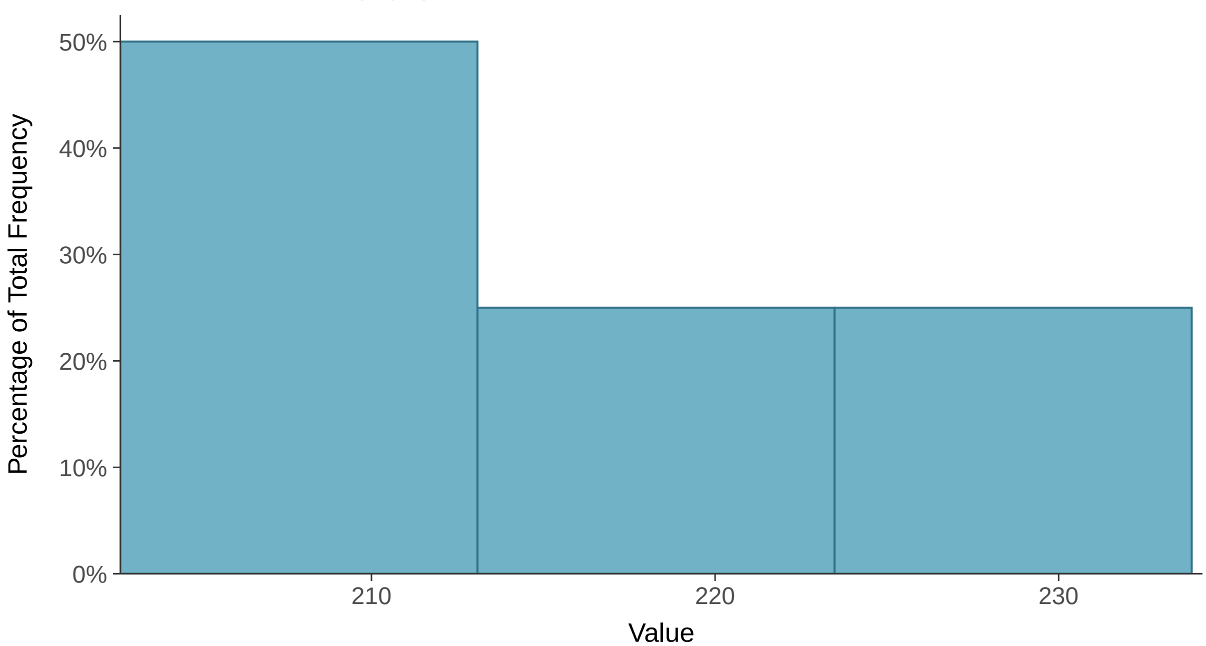
Scatter Plot

Bicarbonate, MW-3 (mg/L)



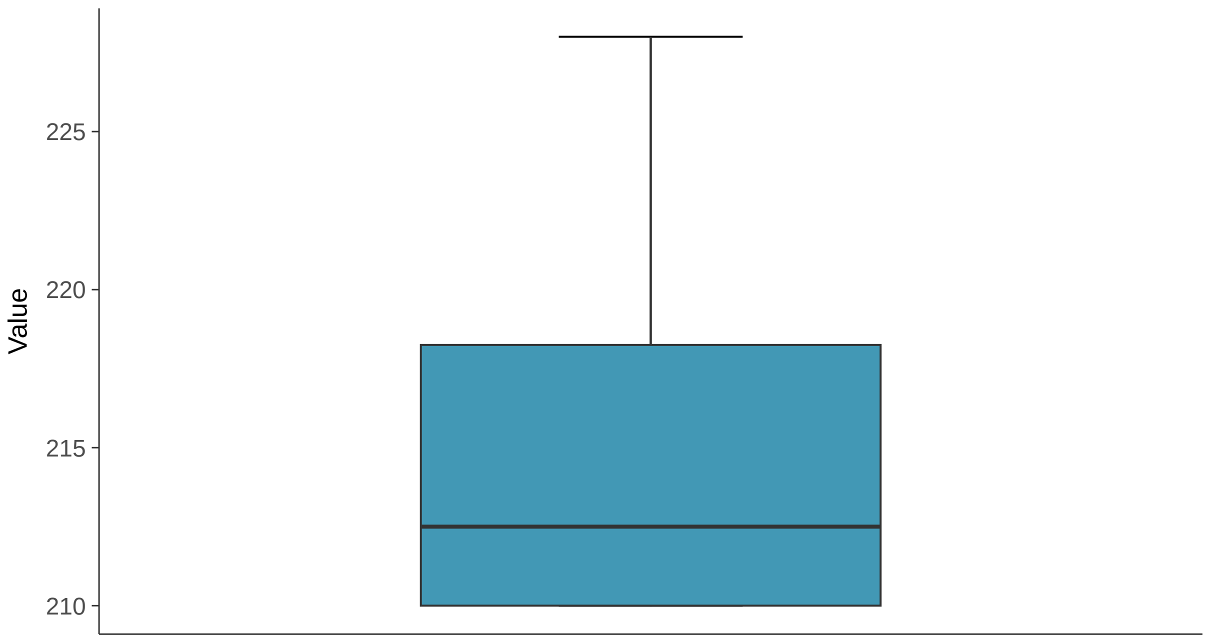
Histogram

Bicarbonate, MW-3 (mg/L)



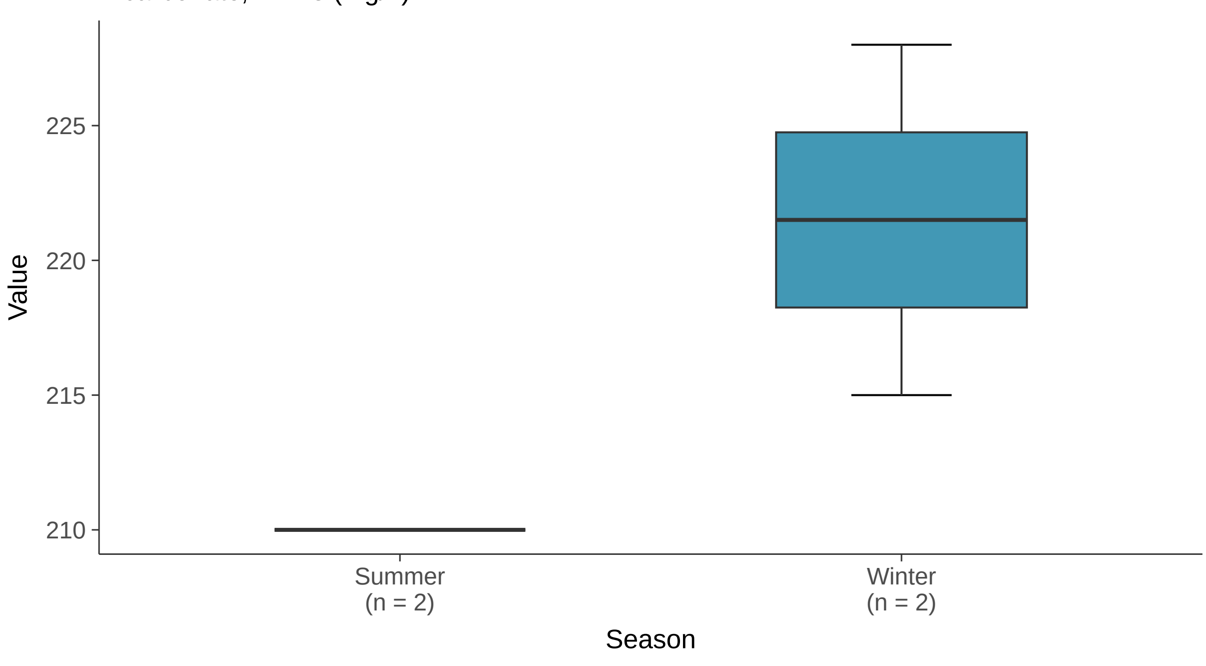
Boxplot

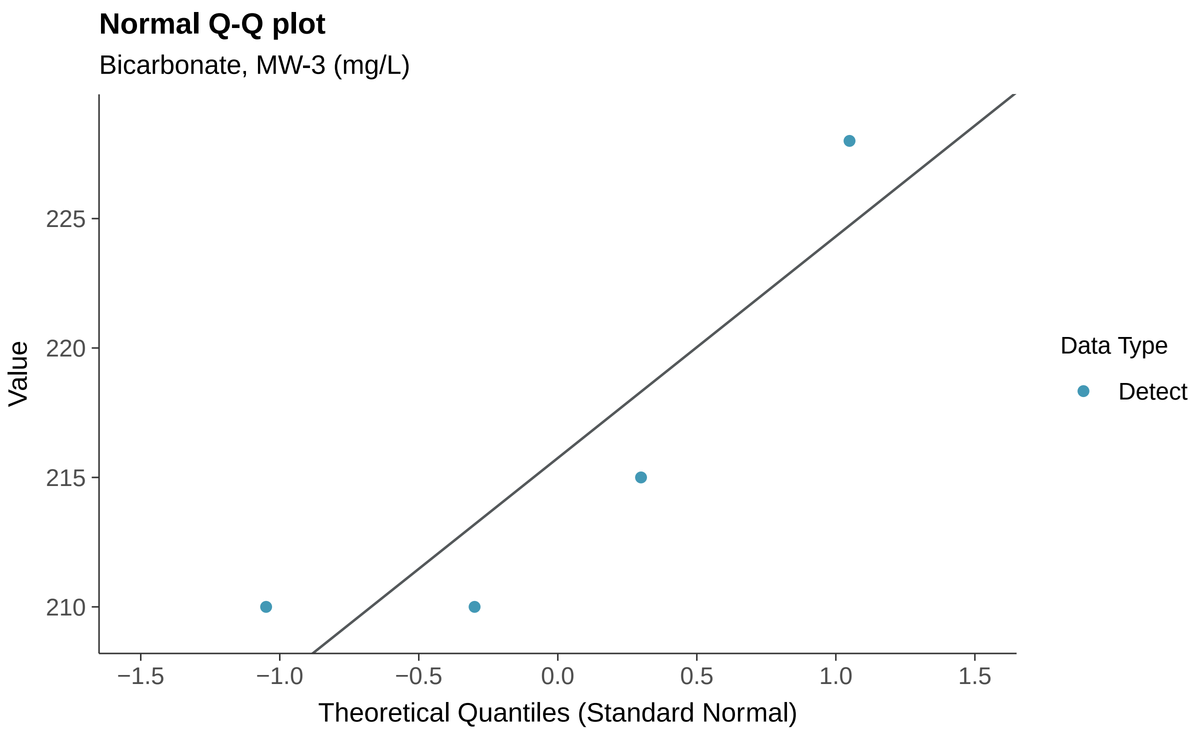
Bicarbonate, MW-3 (mg/L)



Boxplot by Season

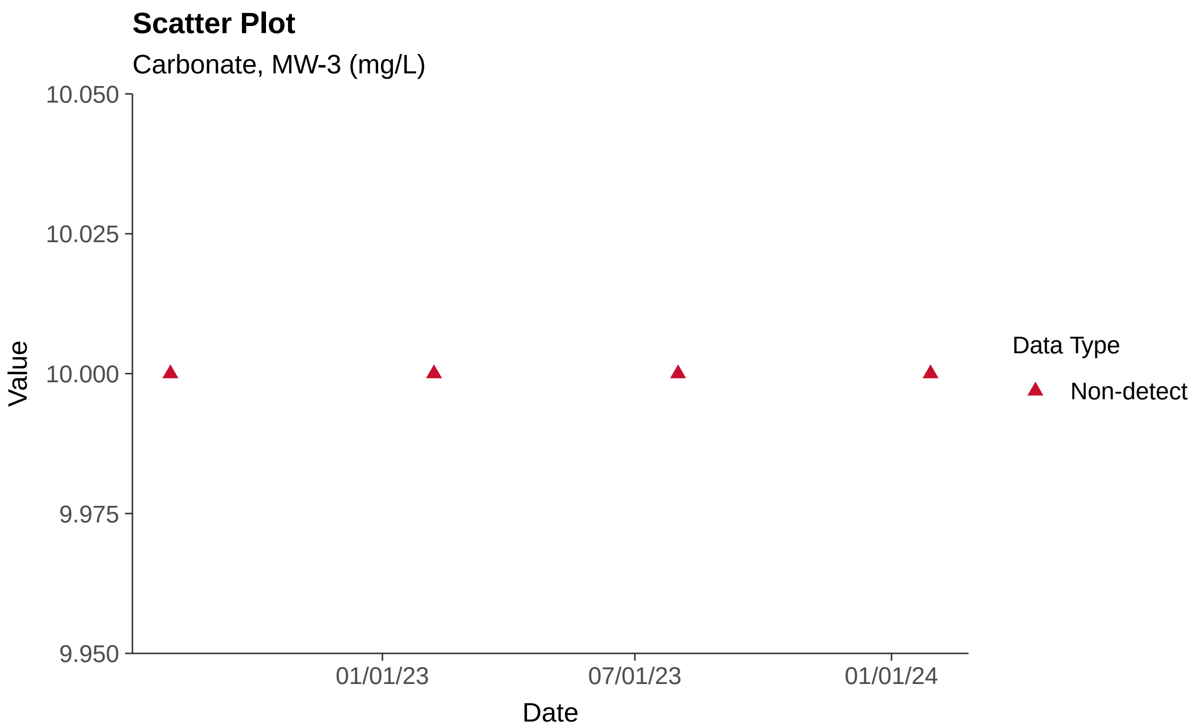
Bicarbonate, MW-3 (mg/L)

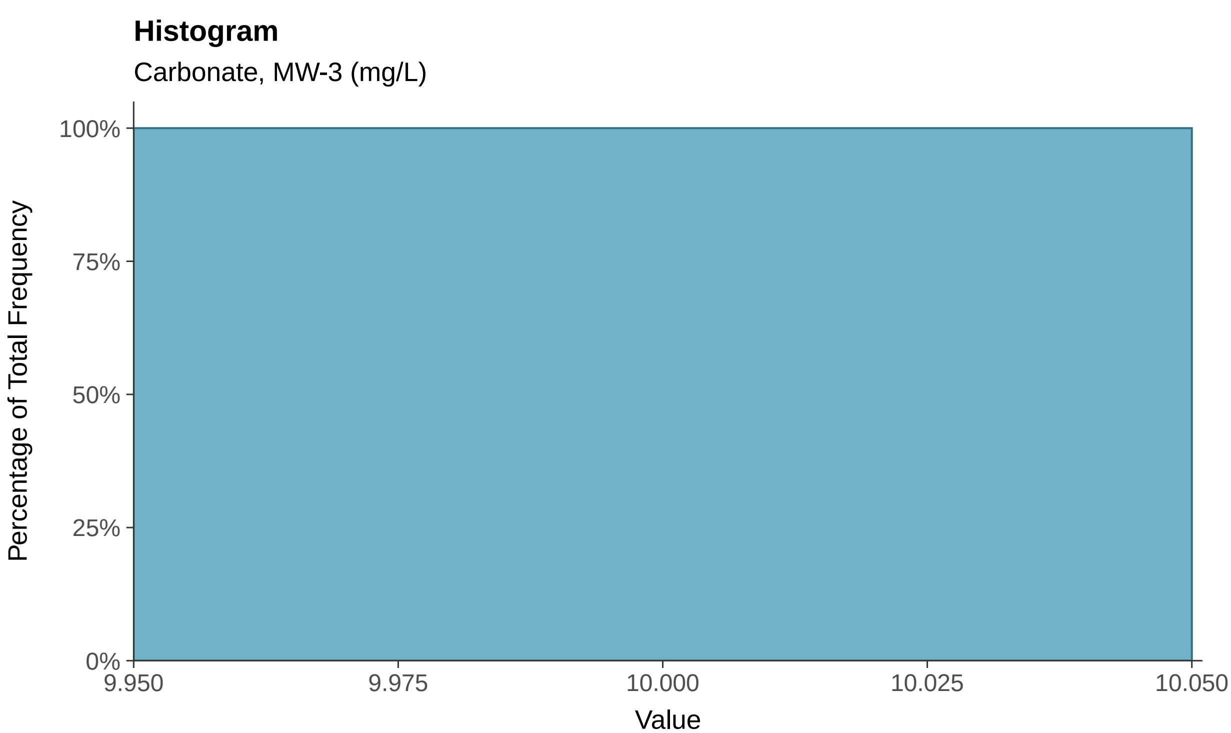



Normal Q-Q plot
Bicarbonate, MW-3 (mg/L)
Value
225
220
215
210
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Carbonate, MW-3

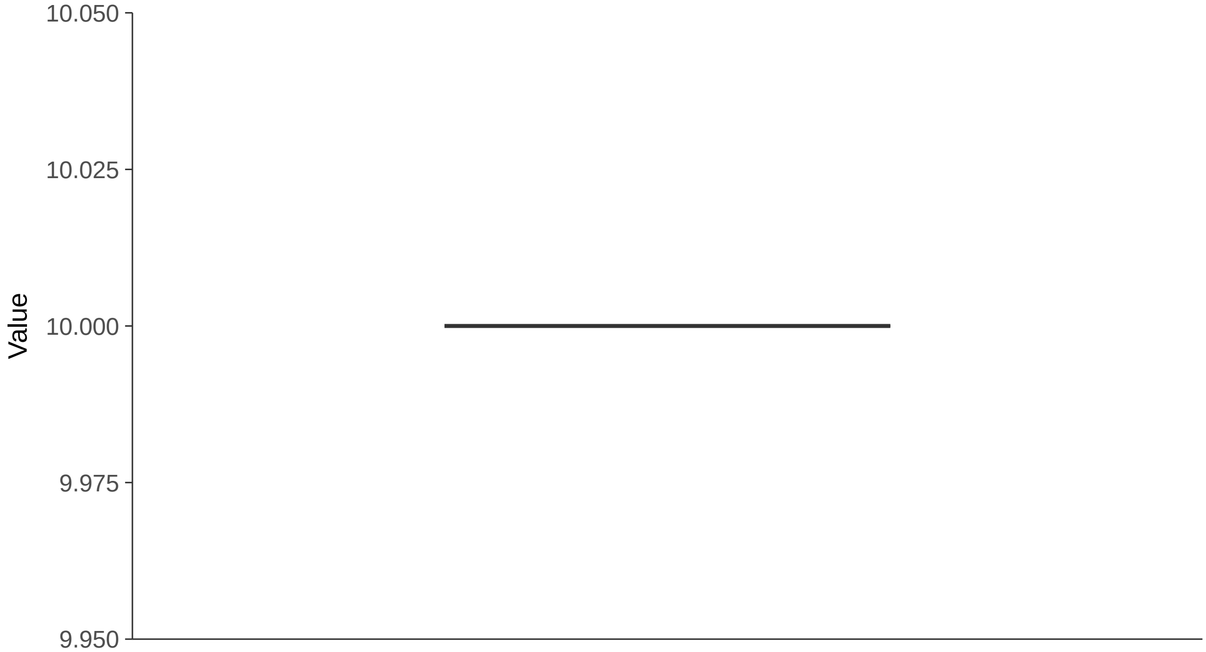
ID: 03_4_31





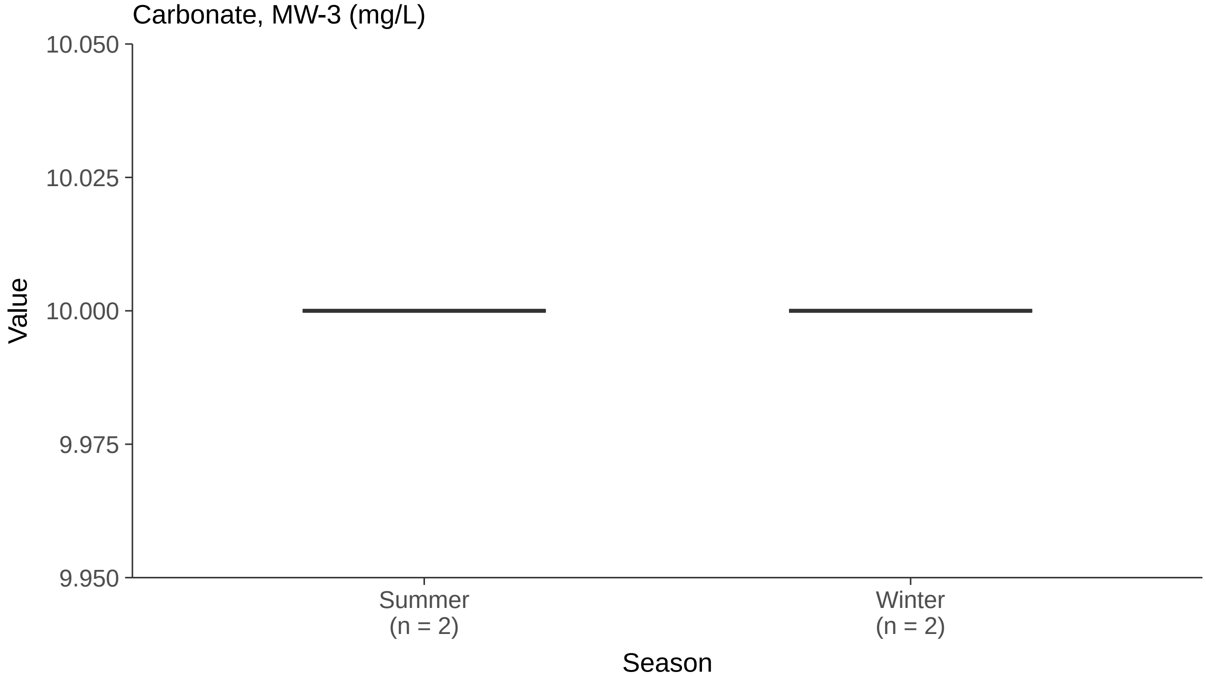
Boxplot

Carbonate, MW-3 (mg/L)



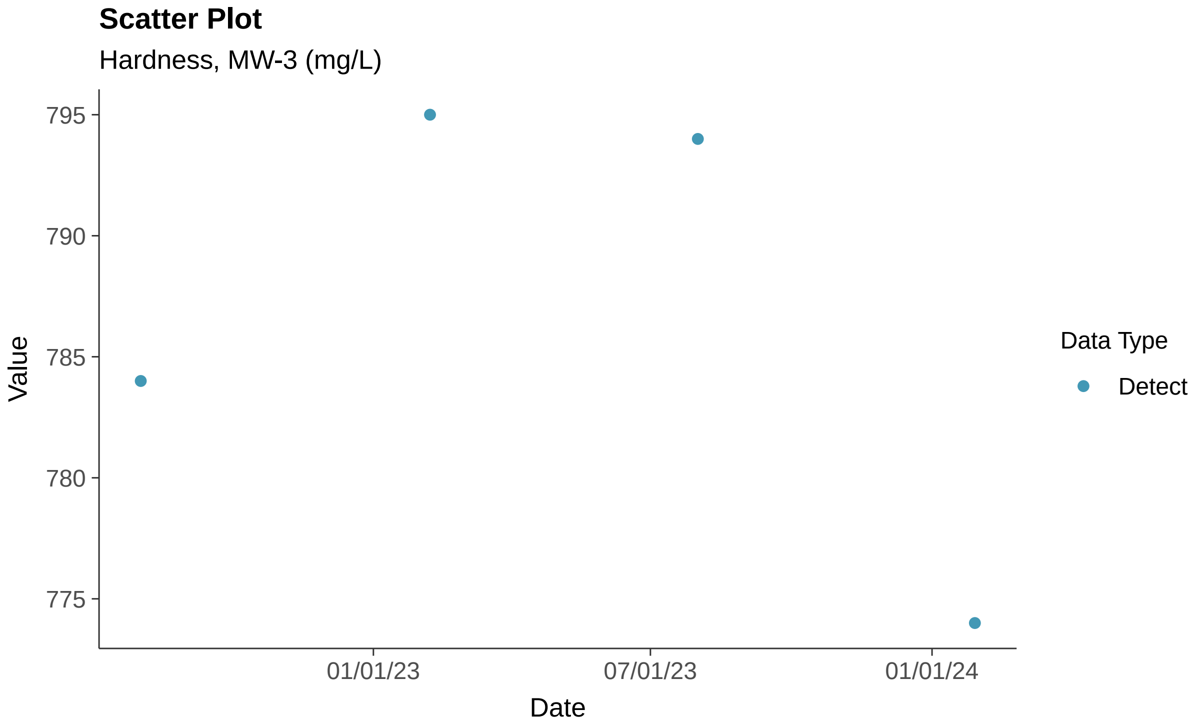
Boxplot by Season

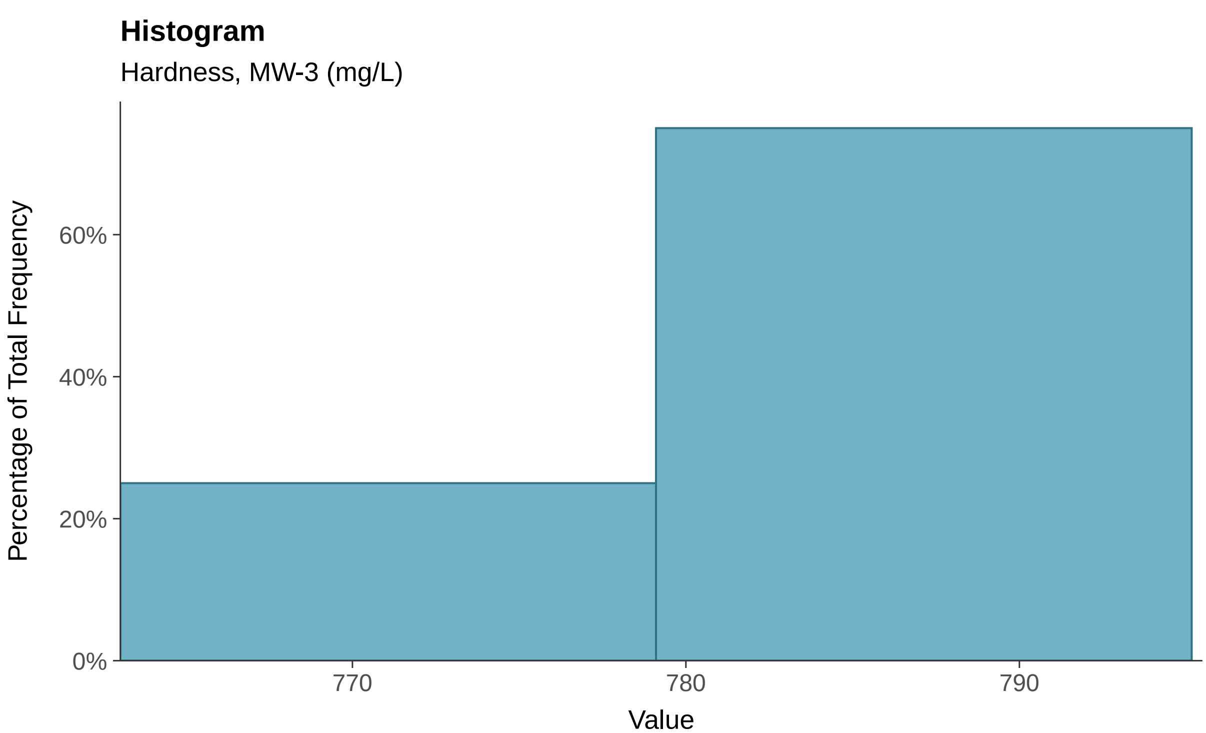
Carbonate, MW-3 (mg/L)



Other: Hardness, MW-3

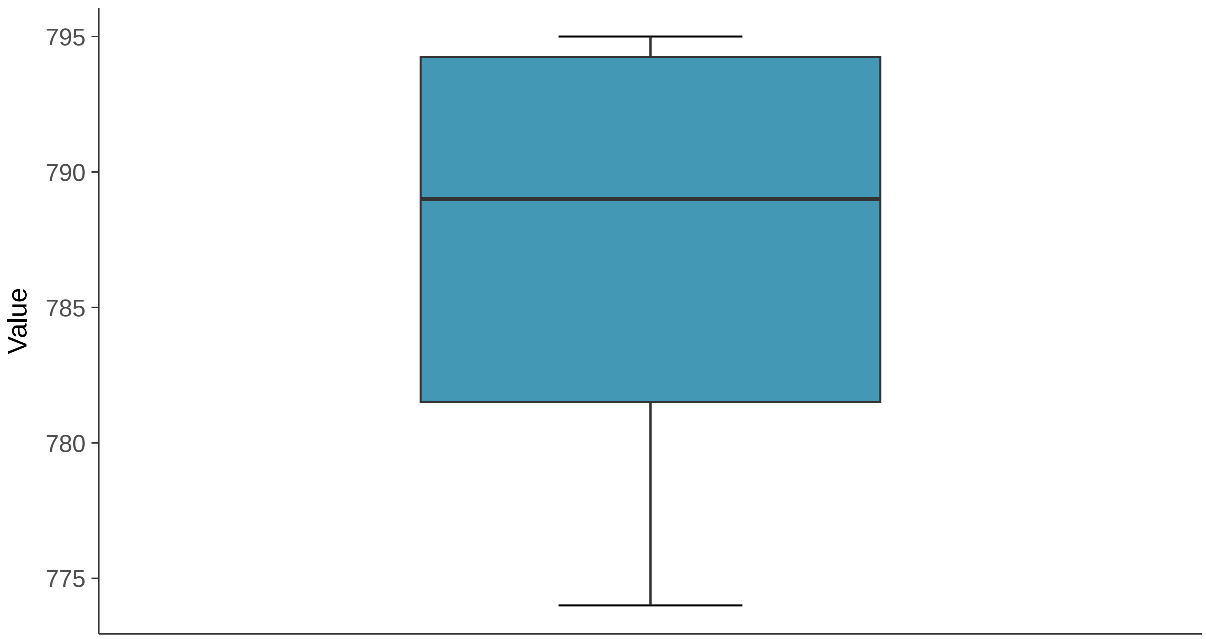
ID: 03_4_32





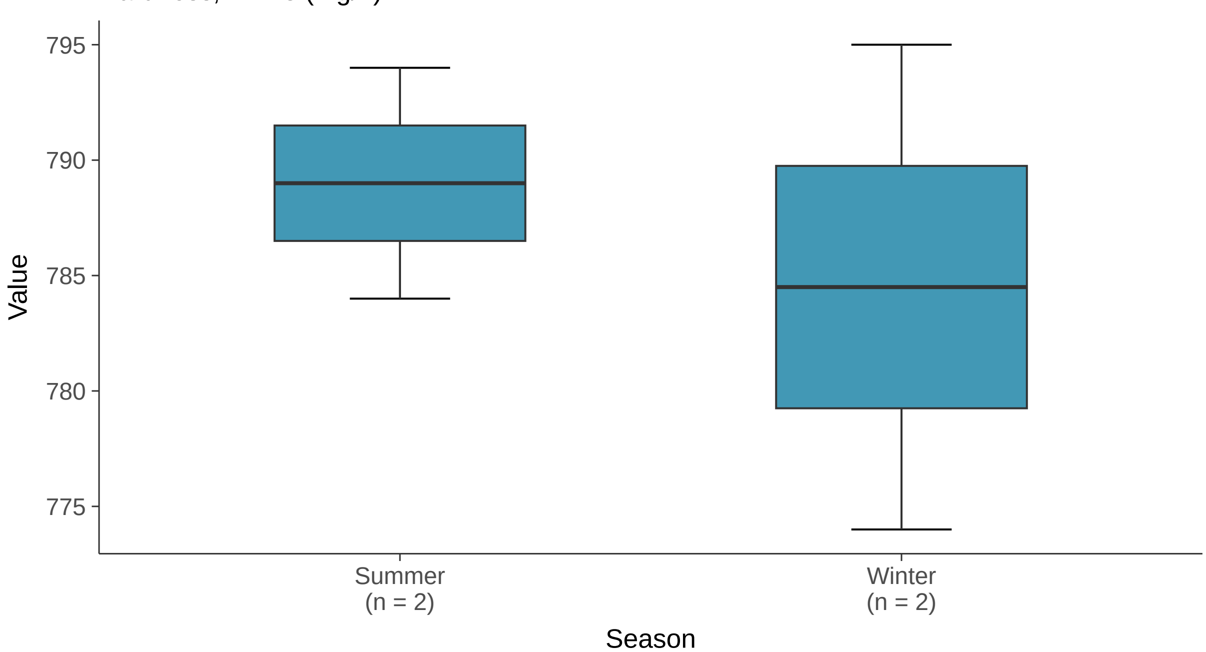
Boxplot

Hardness, MW-3 (mg/L)



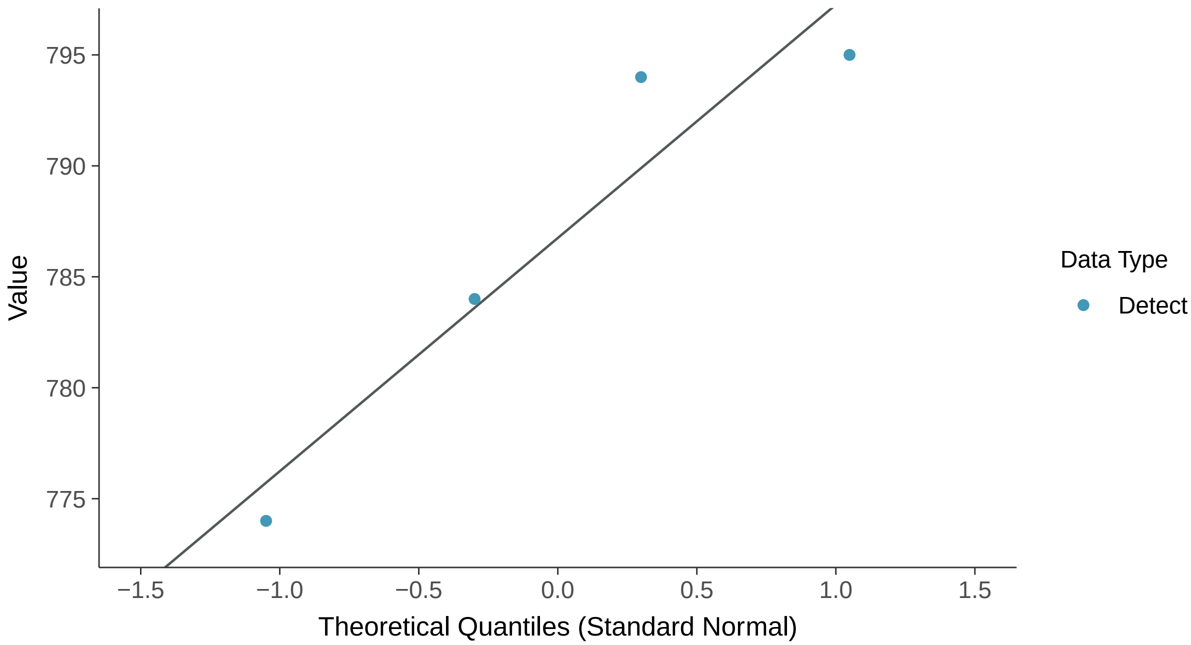
Boxplot by Season

Hardness, MW-3 (mg/L)



Normal Q-Q plot

Hardness, MW-3 (mg/L)

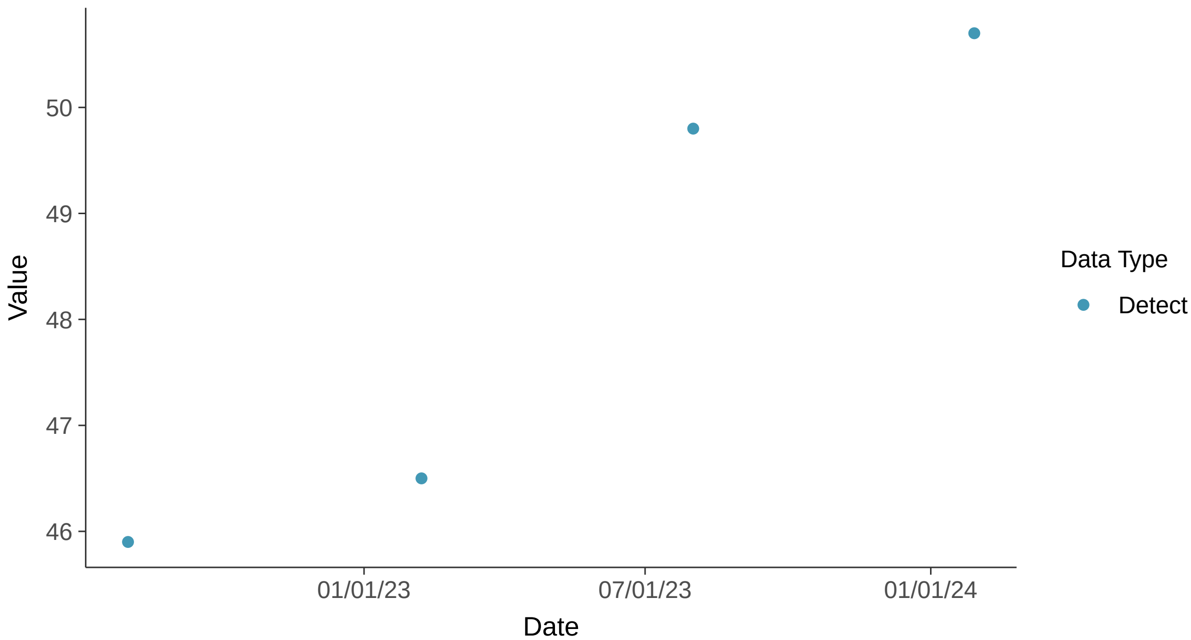


Other: Magnesium, MW-3

ID: 03_4_33

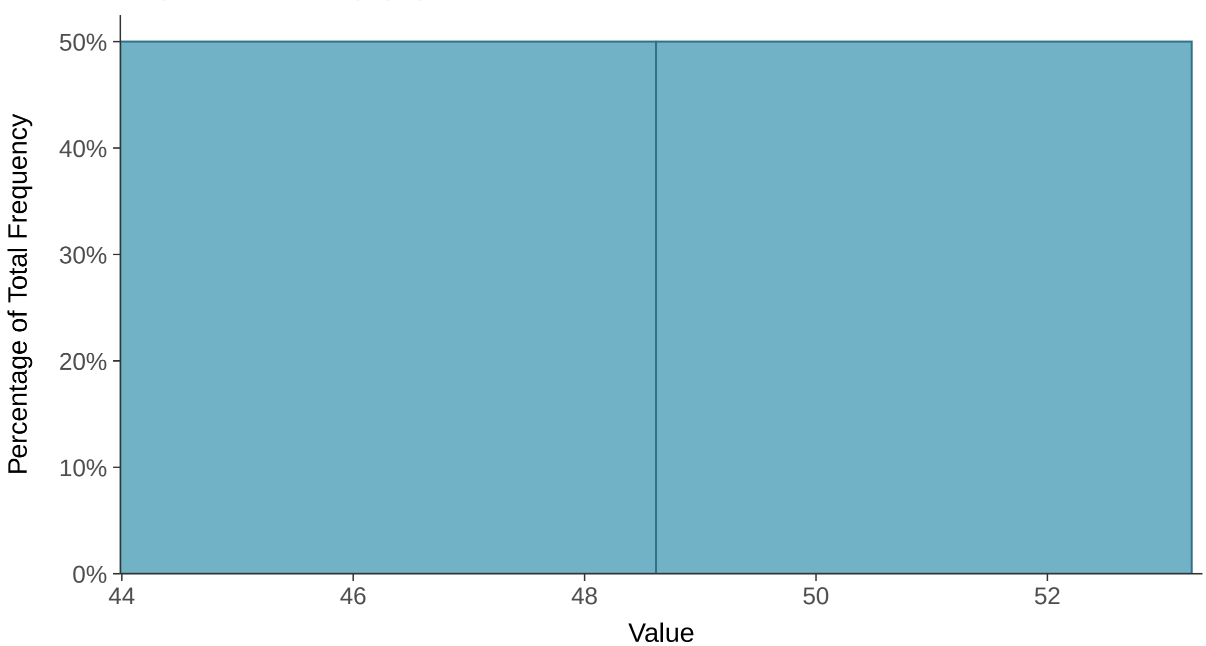
Scatter Plot

Magnesium, MW-3 (mg/L)



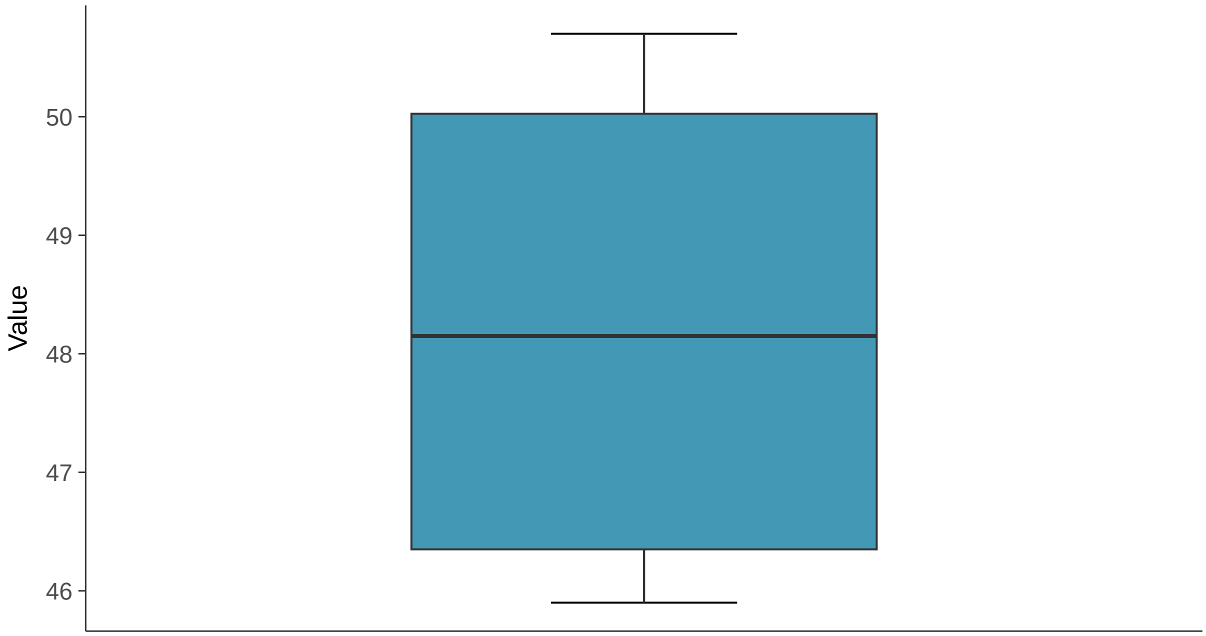
Histogram

Magnesium, MW-3 (mg/L)



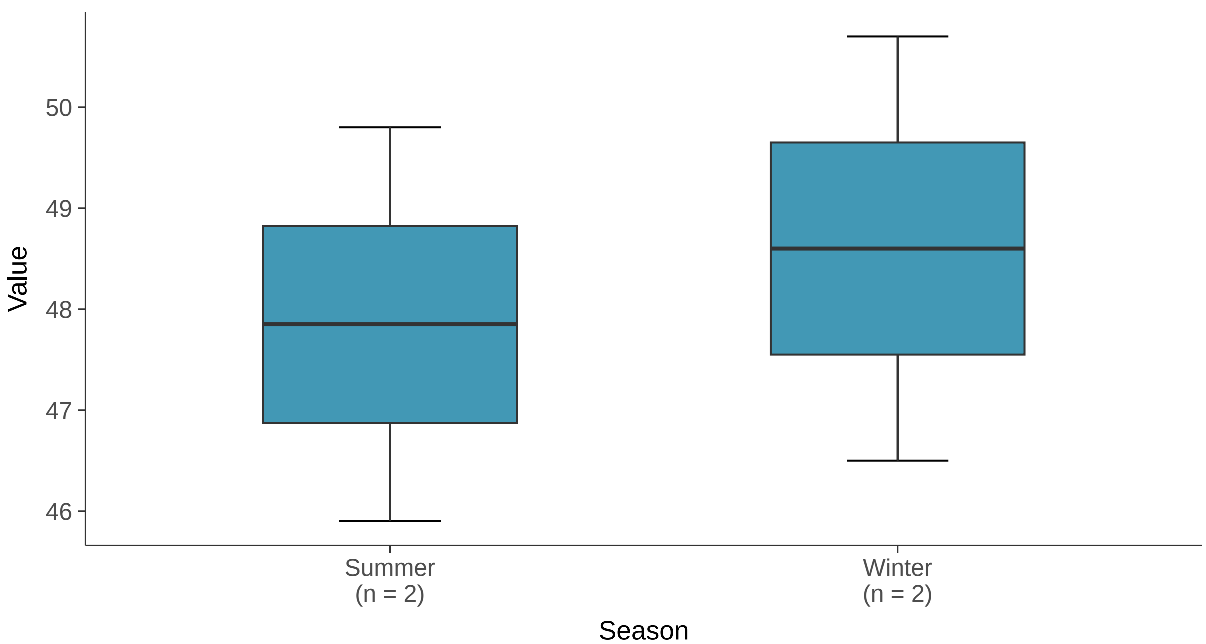
Boxplot

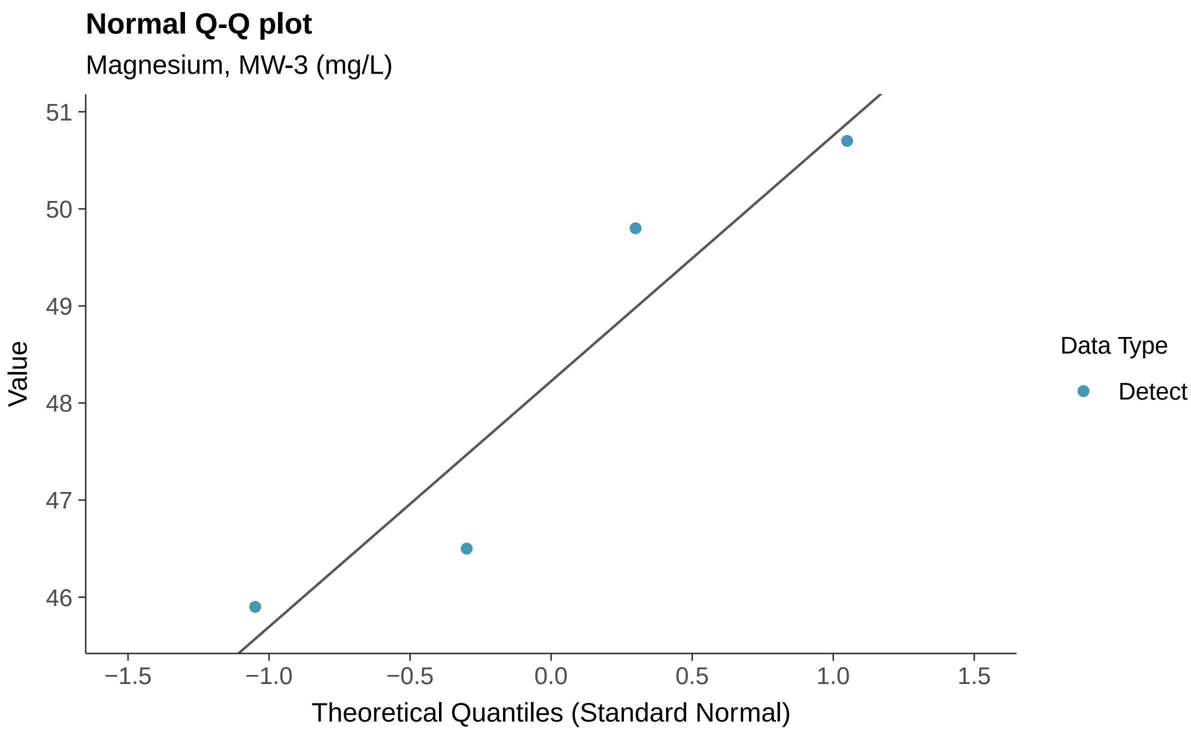
Magnesium, MW-3 (mg/L)



Boxplot by Season

Magnesium, MW-3 (mg/L)



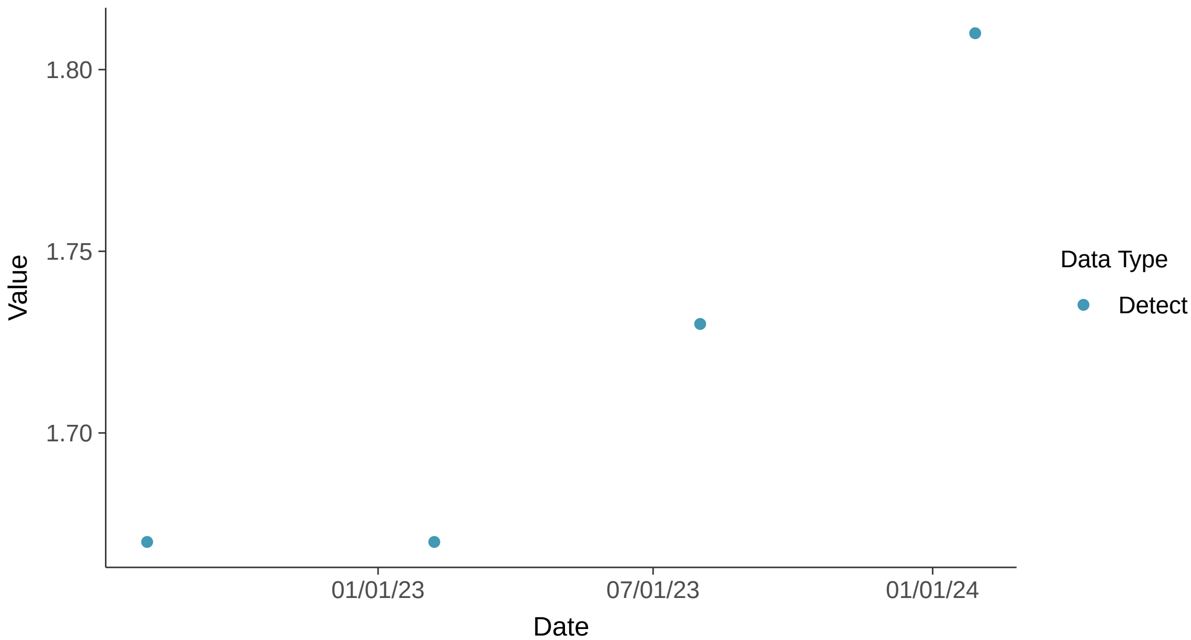

Normal Q-Q plot
Magnesium, MW-3 (mg/L)
Value
51
50
49
48
47
46
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Potassium, MW-3

ID: 03_4_34

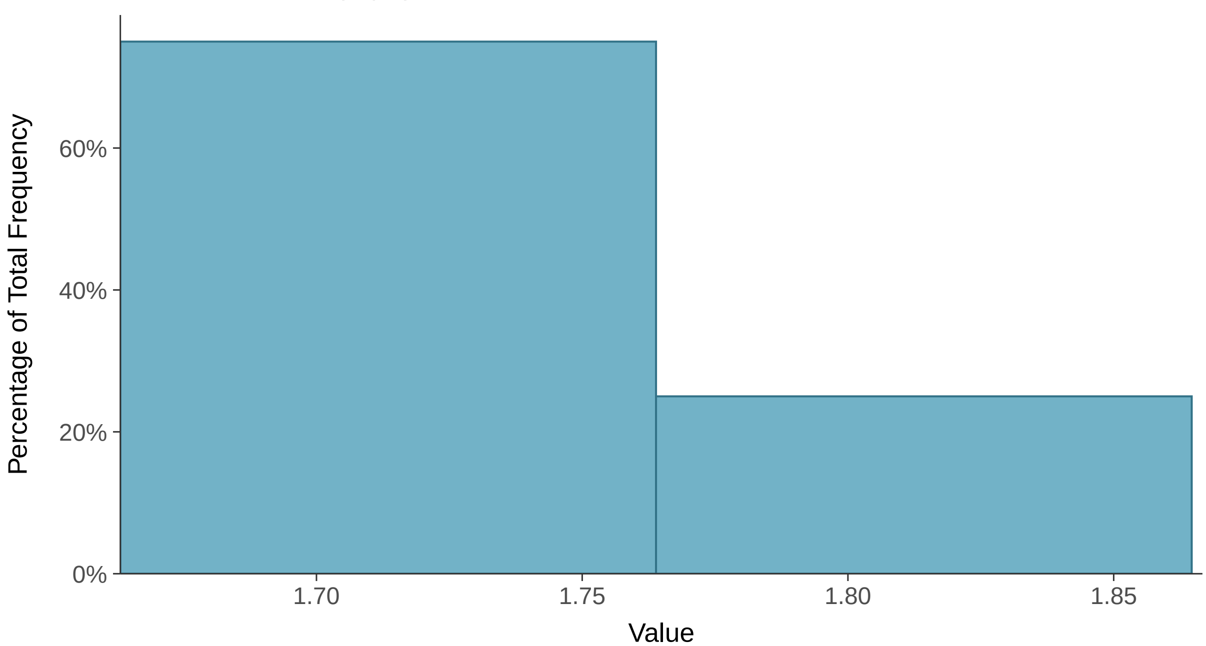
Scatter Plot

Potassium, MW-3 (mg/L)



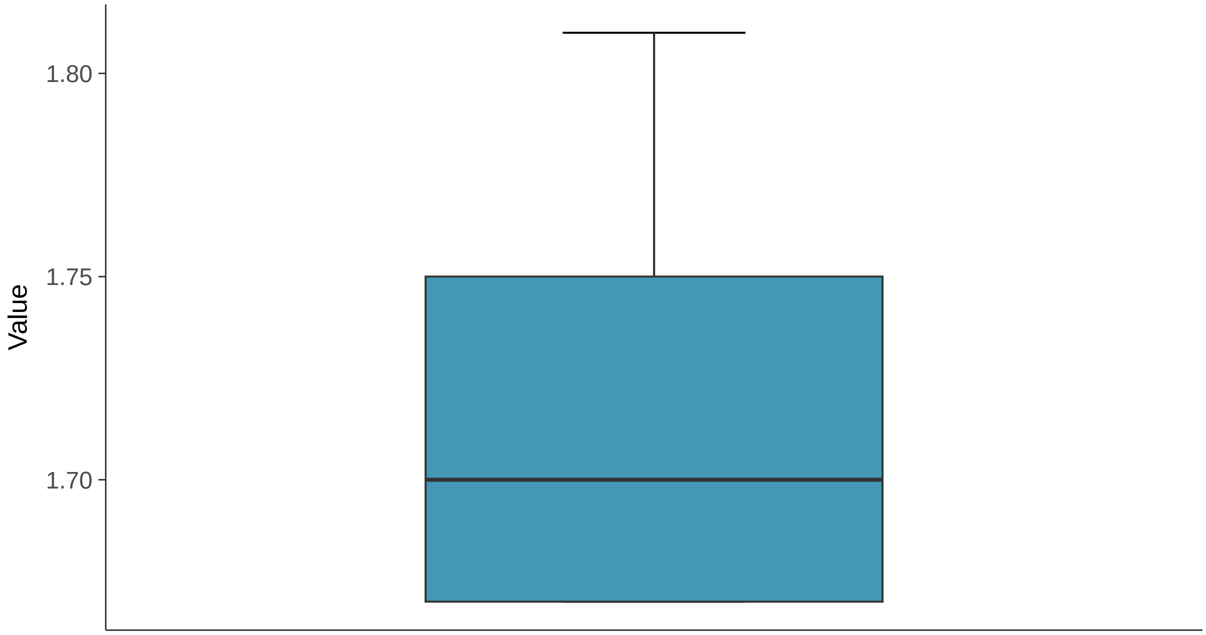
Histogram

Potassium, MW-3 (mg/L)



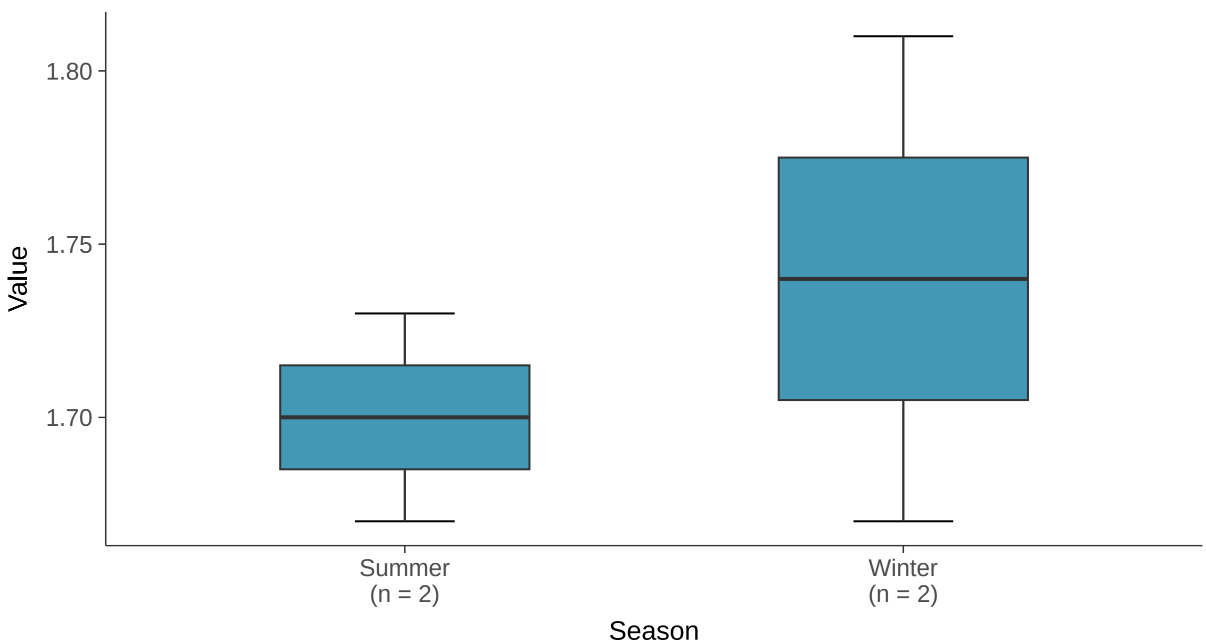
Boxplot

Potassium, MW-3 (mg/L)



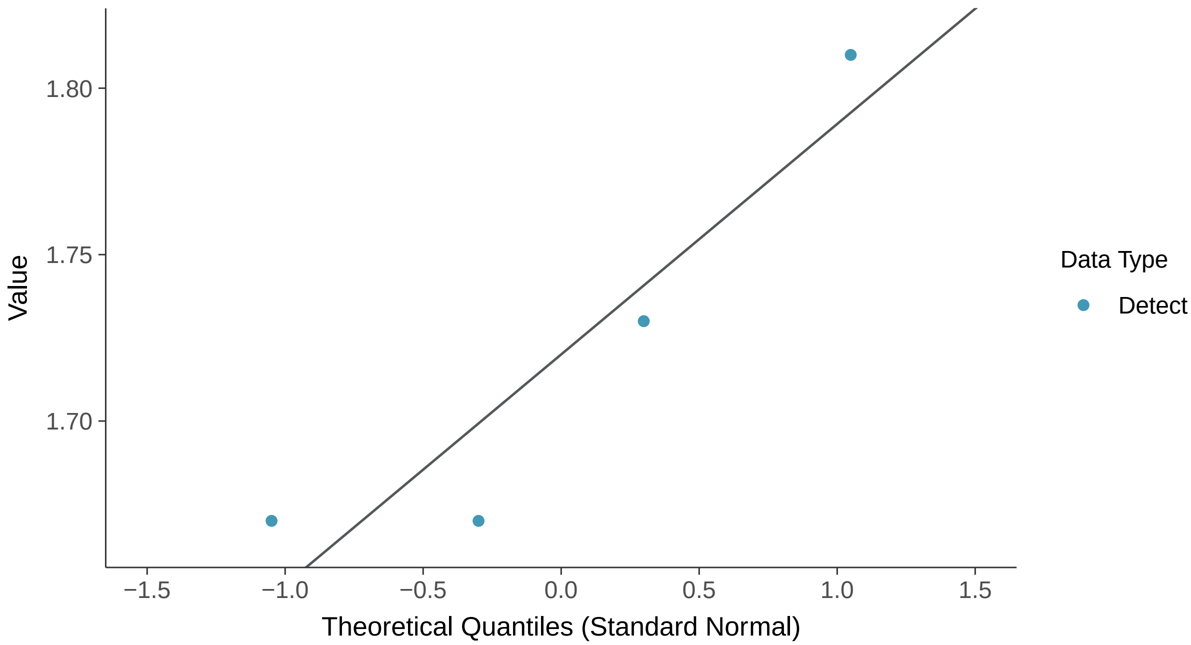
Boxplot by Season

Potassium, MW-3 (mg/L)



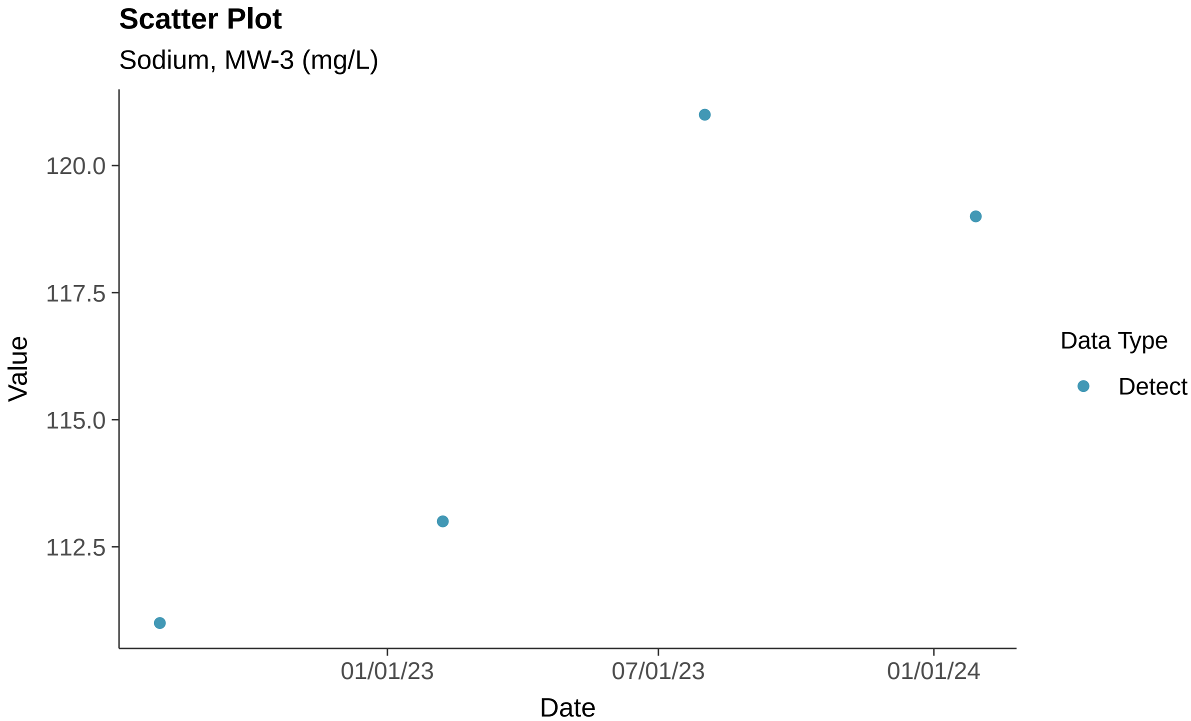
Normal Q-Q plot

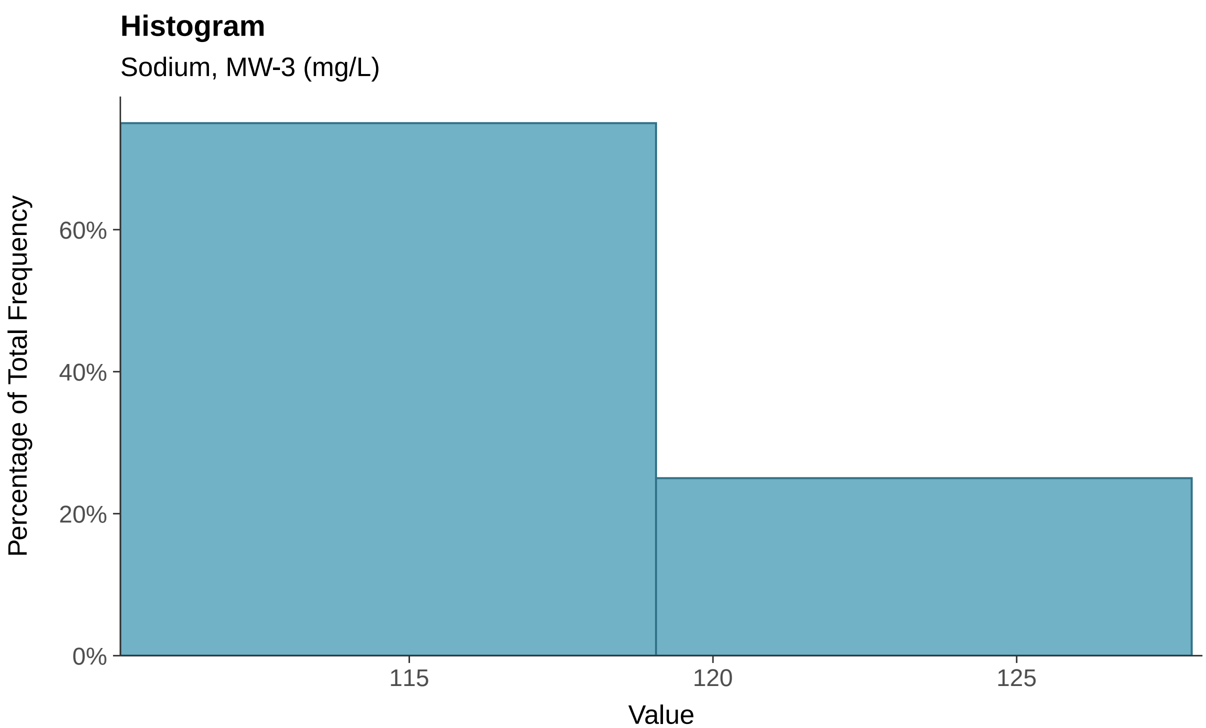
Potassium, MW-3 (mg/L)



Other: Sodium, MW-3

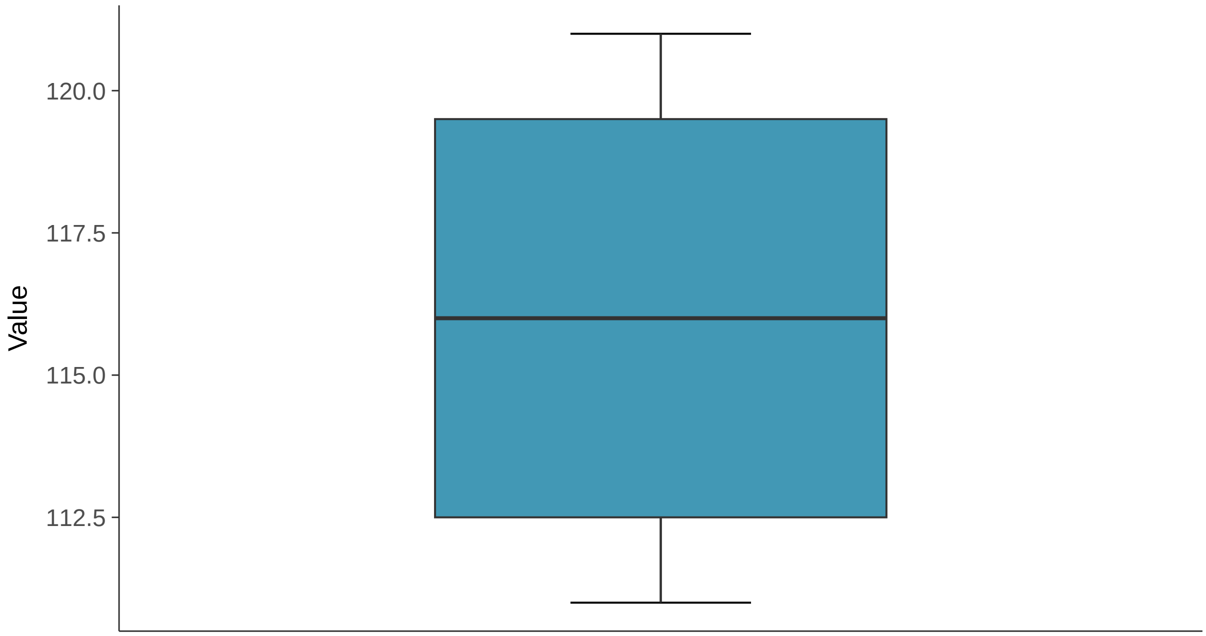
ID: 03_4_35





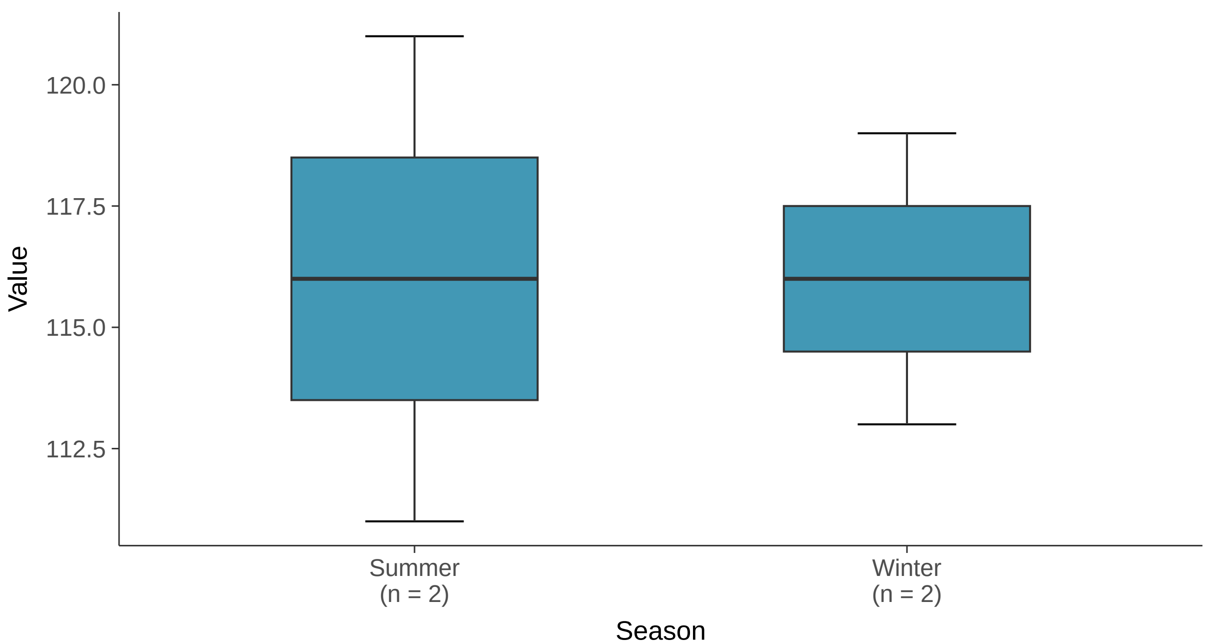
Boxplot

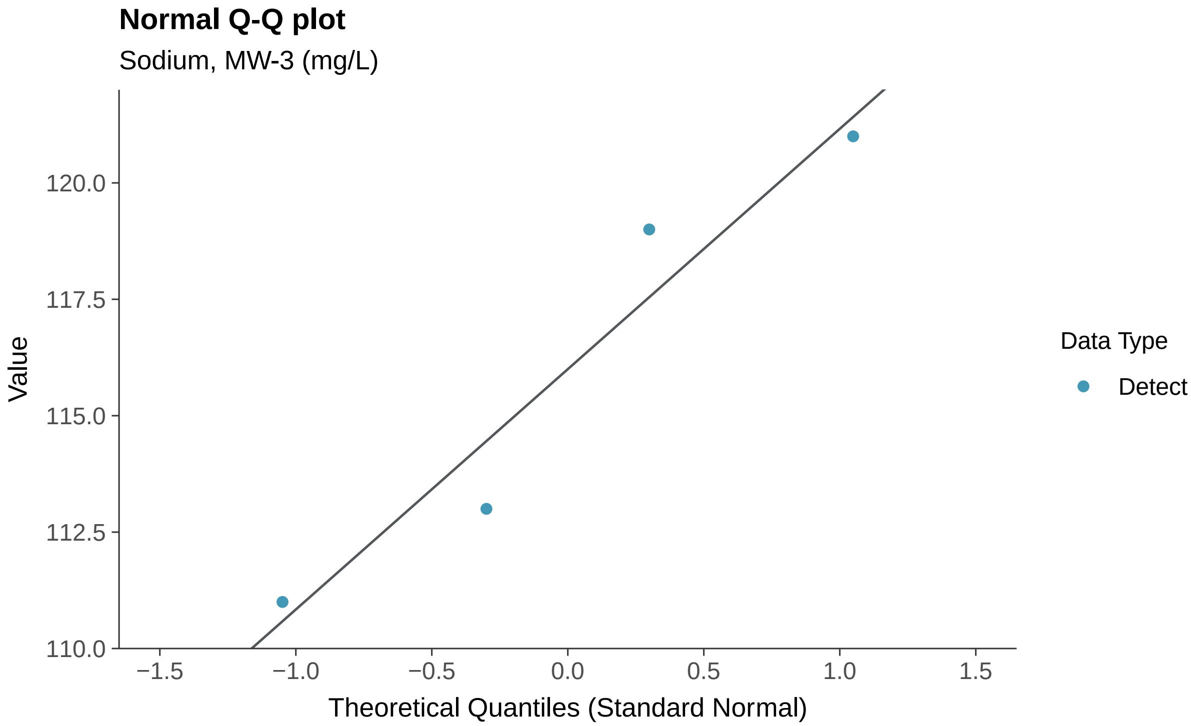
Sodium, MW-3 (mg/L)



Boxplot by Season

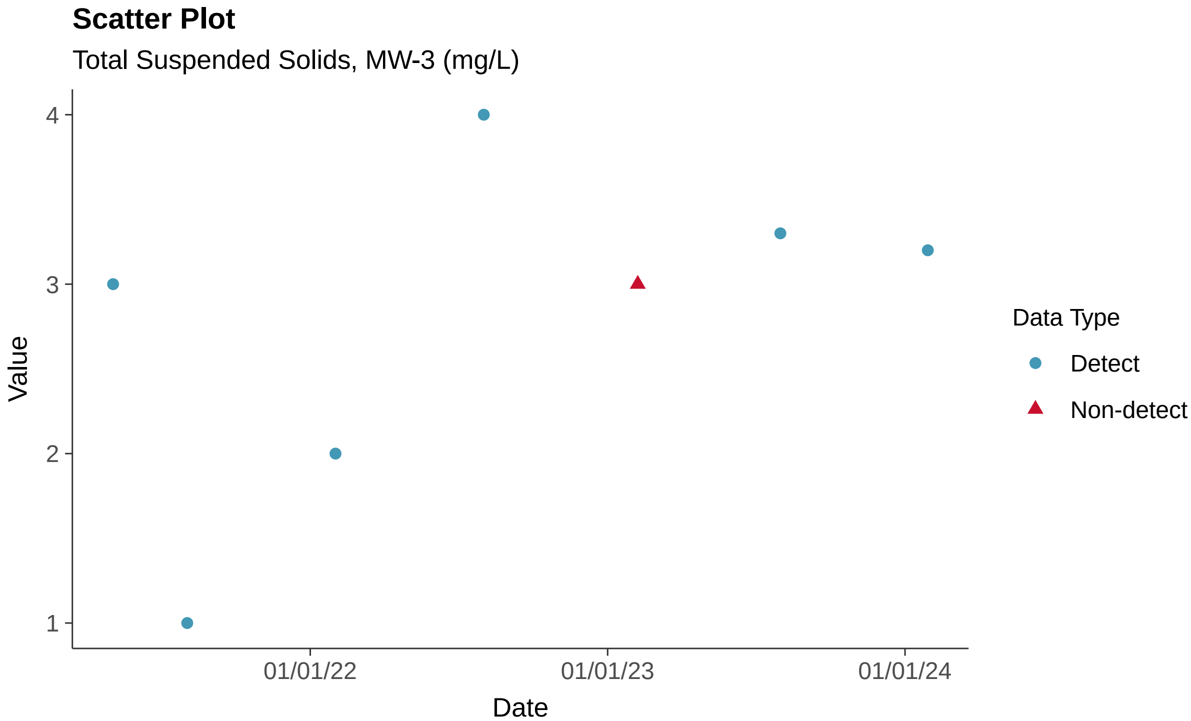
Sodium, MW-3 (mg/L)

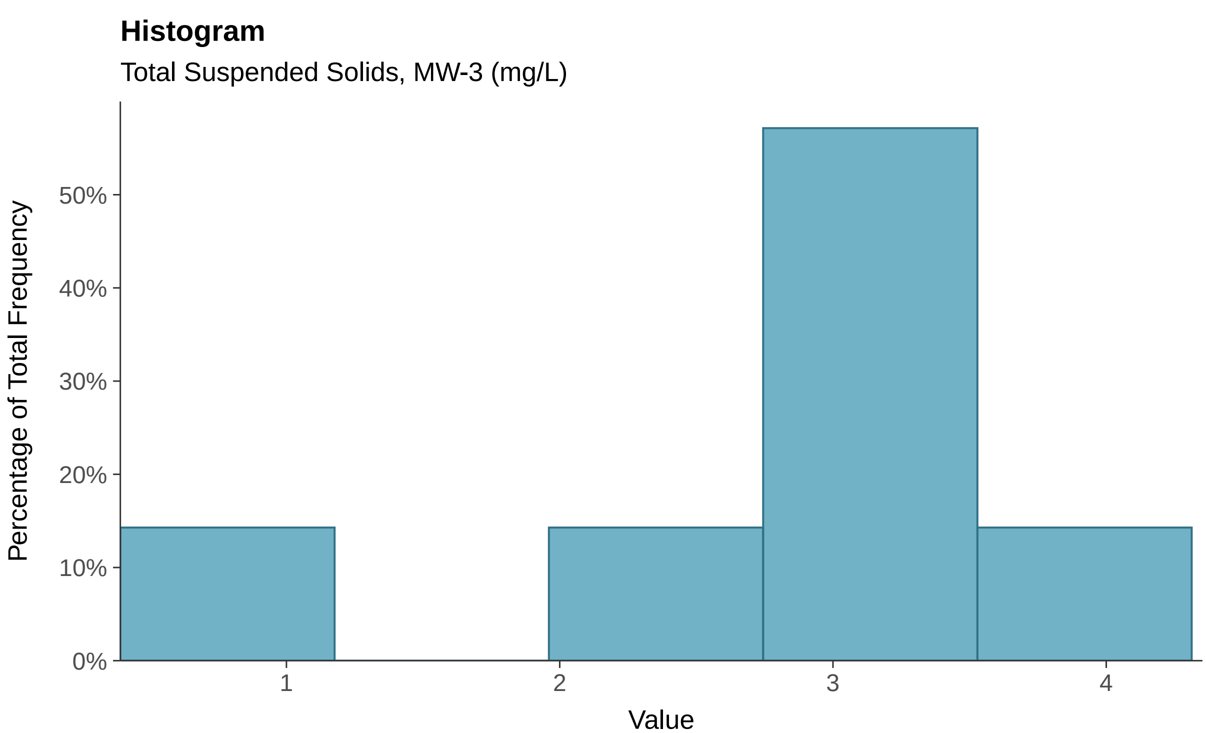



Normal Q-Q plot
Sodium, MW-3 (mg/L)
Value
120.0
117.5
115.0
112.5
110.0
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Total Suspended Solids, MW-3

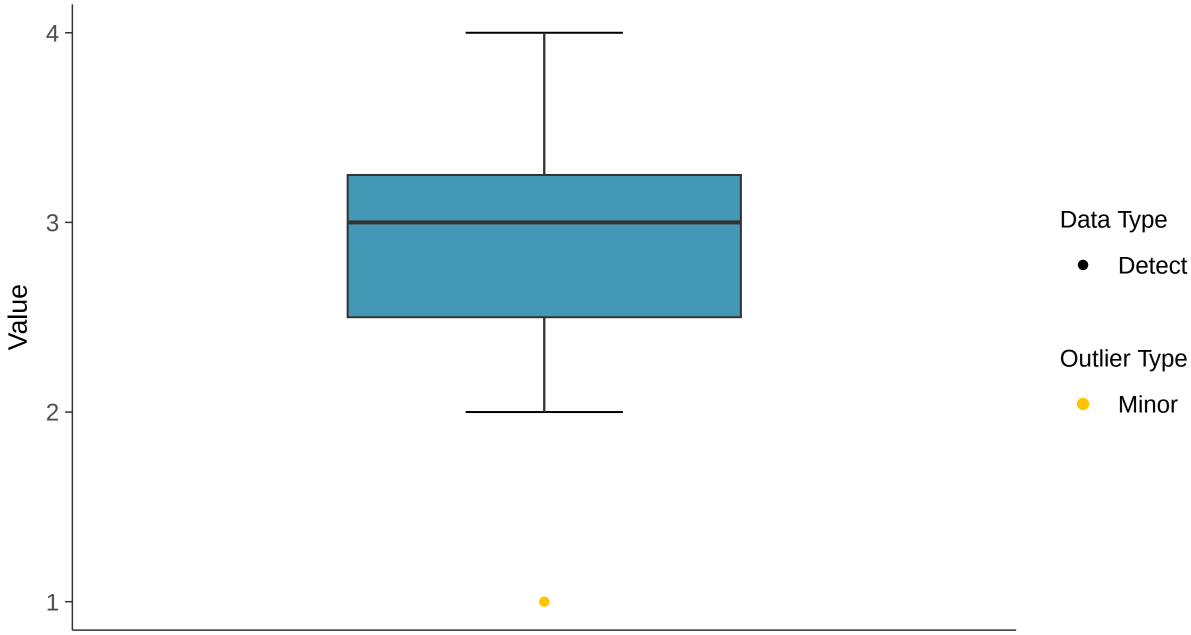
ID: 03_4_36





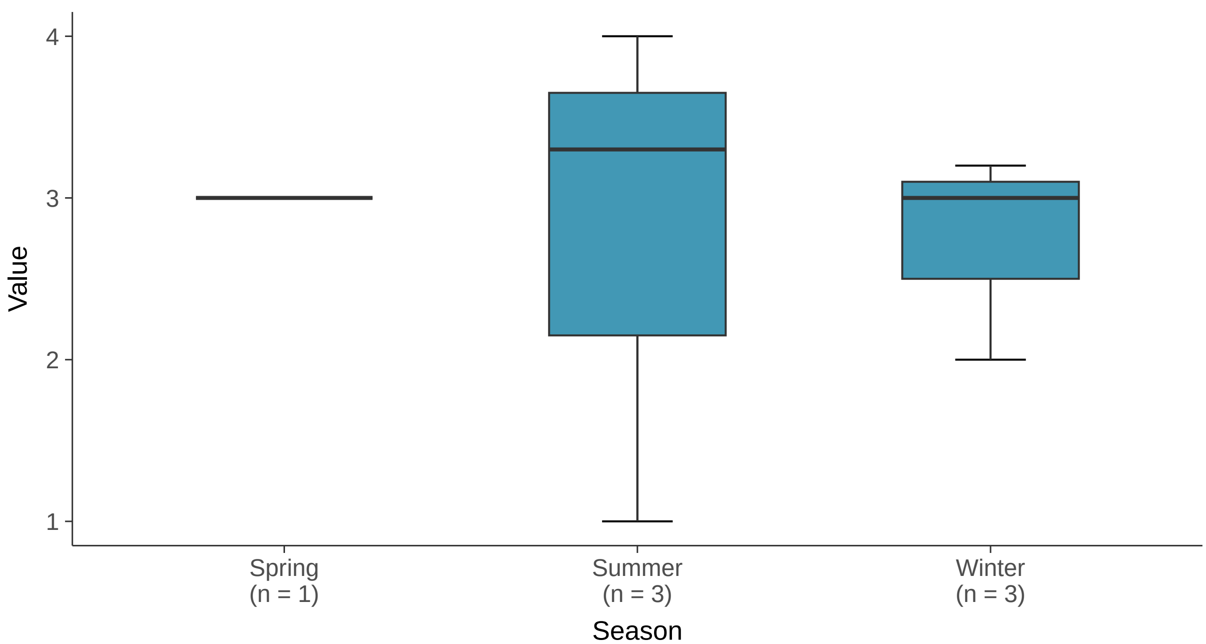
Boxplot

Total Suspended Solids, MW-3 (mg/L)



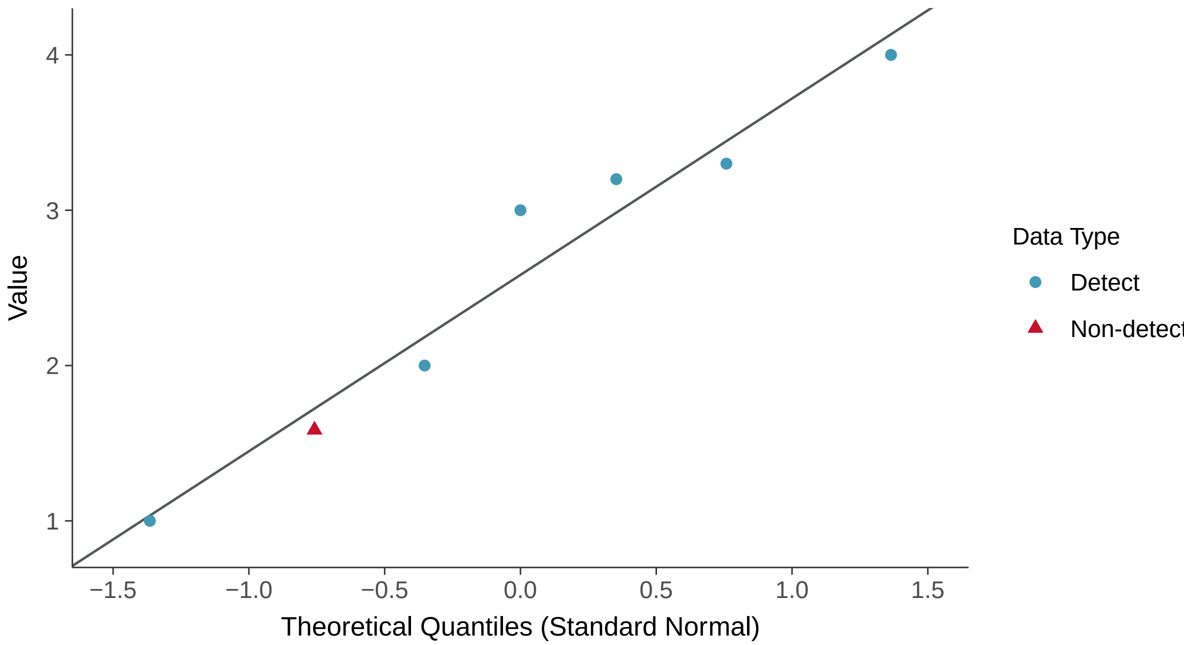
Boxplot by Season

Total Suspended Solids, MW-3 (mg/L)



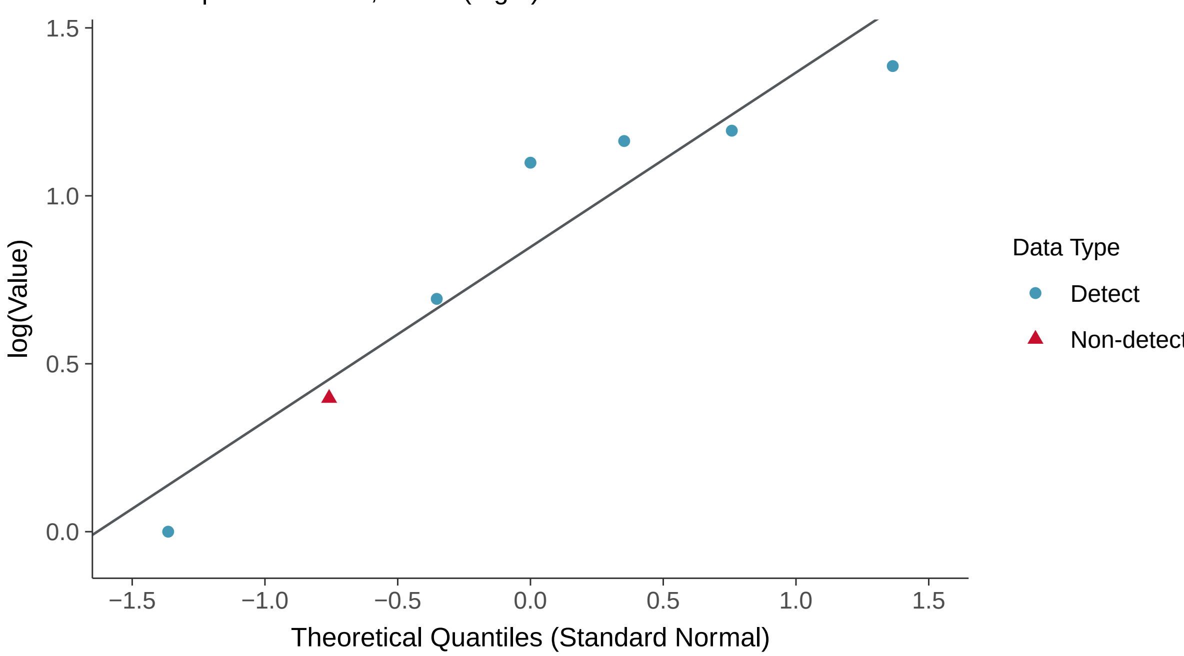
Normal Q-Q plot using ROS Imputed Estimates

Total Suspended Solids, MW-3 (mg/L)



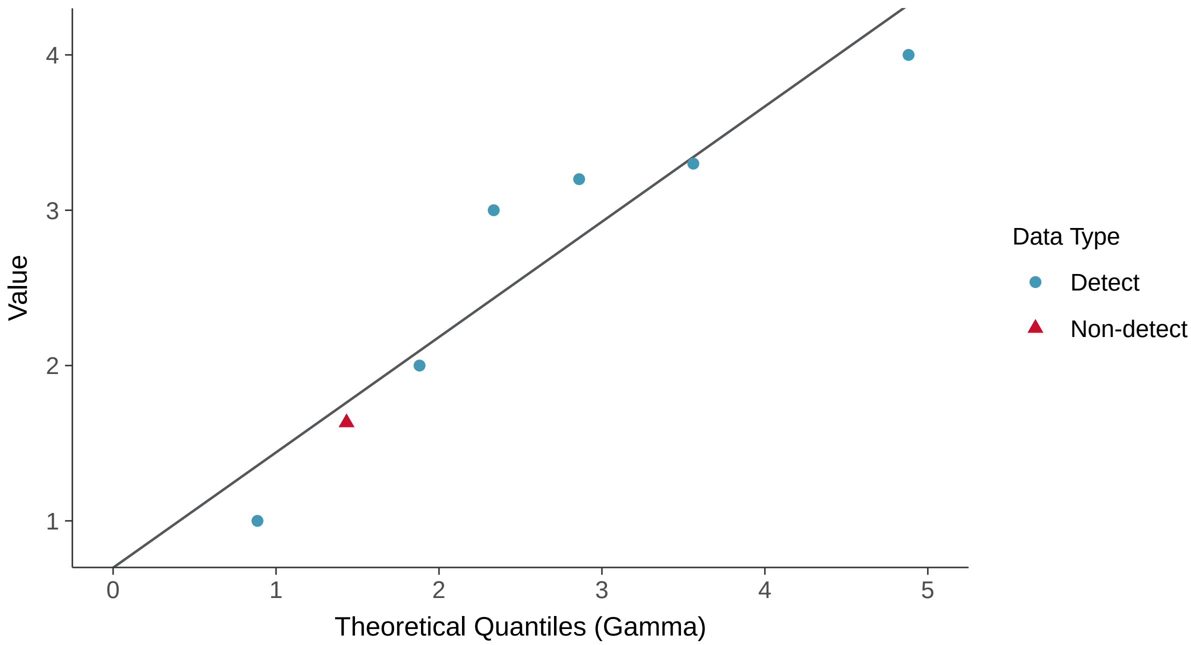
Lognormal Q-Q plot using ROS Imputed Estimates

Total Suspended Solids, MW-3 (mg/L)



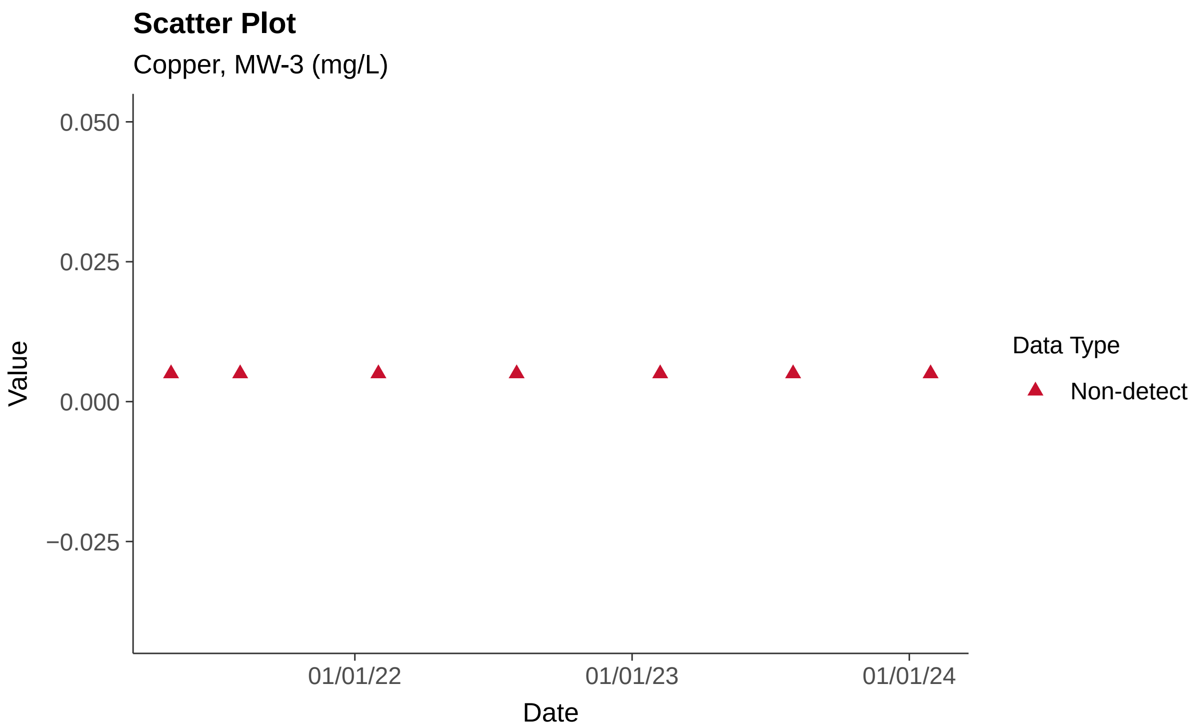
Gamma Q-Q plot using ROS Imputed Estimates

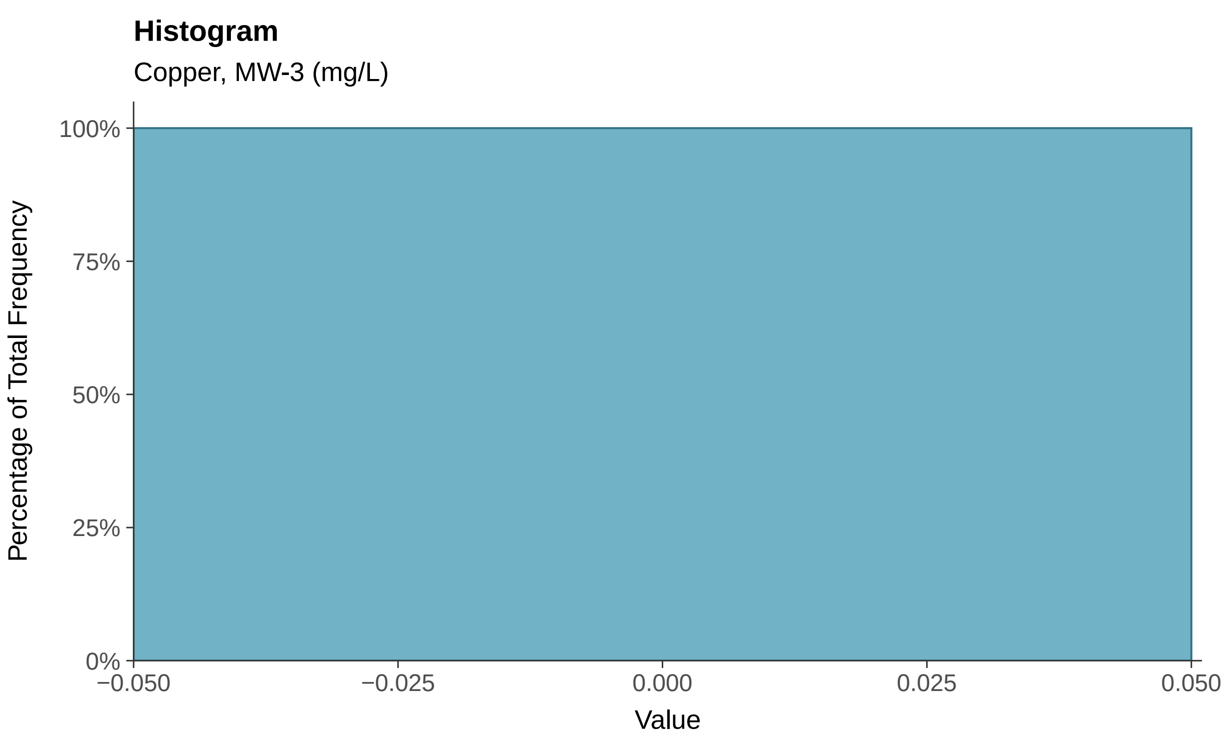
Total Suspended Solids, MW-3 (mg/L)



Part 115: Copper, MW-3

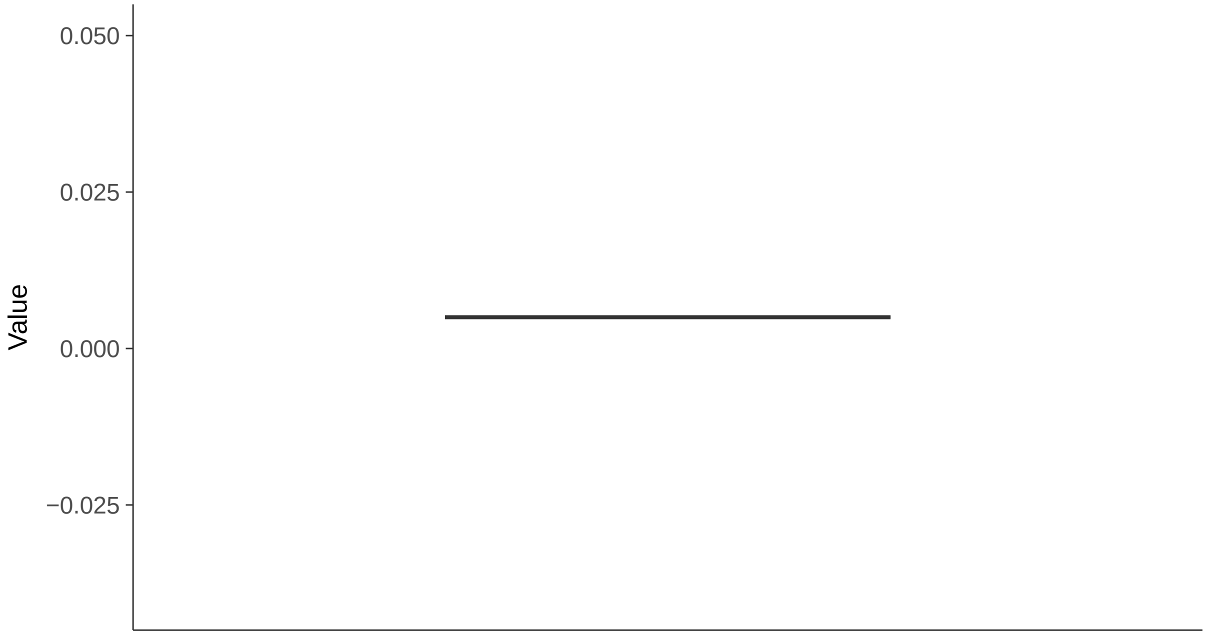
ID: 03_5_37





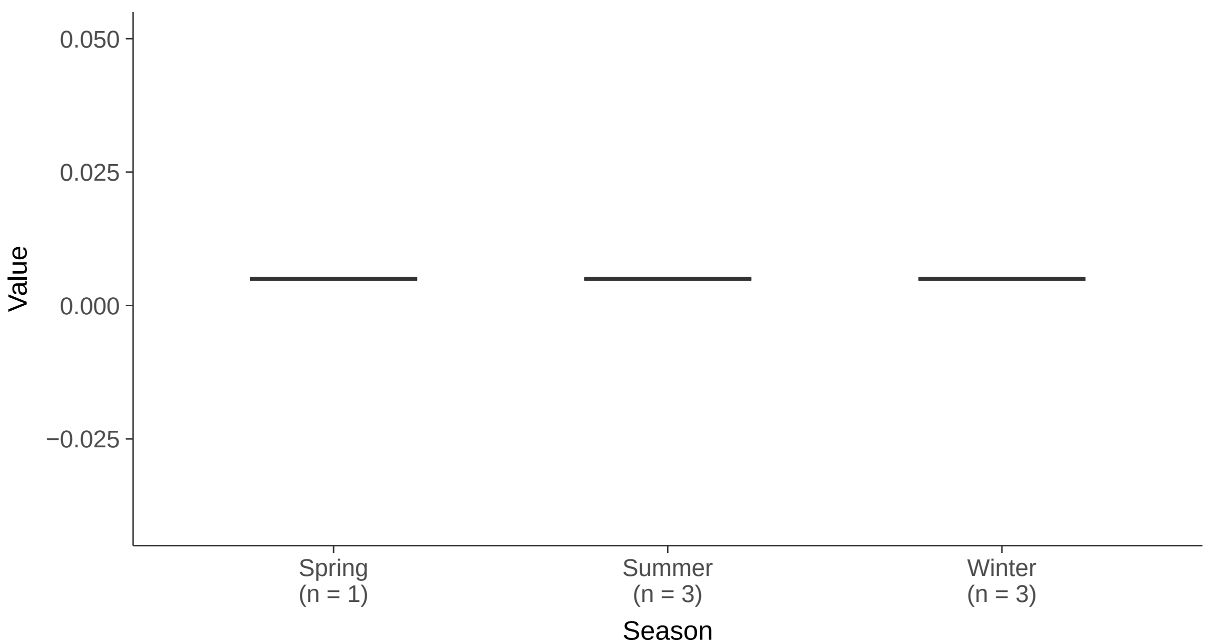
Boxplot

Copper, MW-3 (mg/L)



Boxplot by Season

Copper, MW-3 (mg/L)

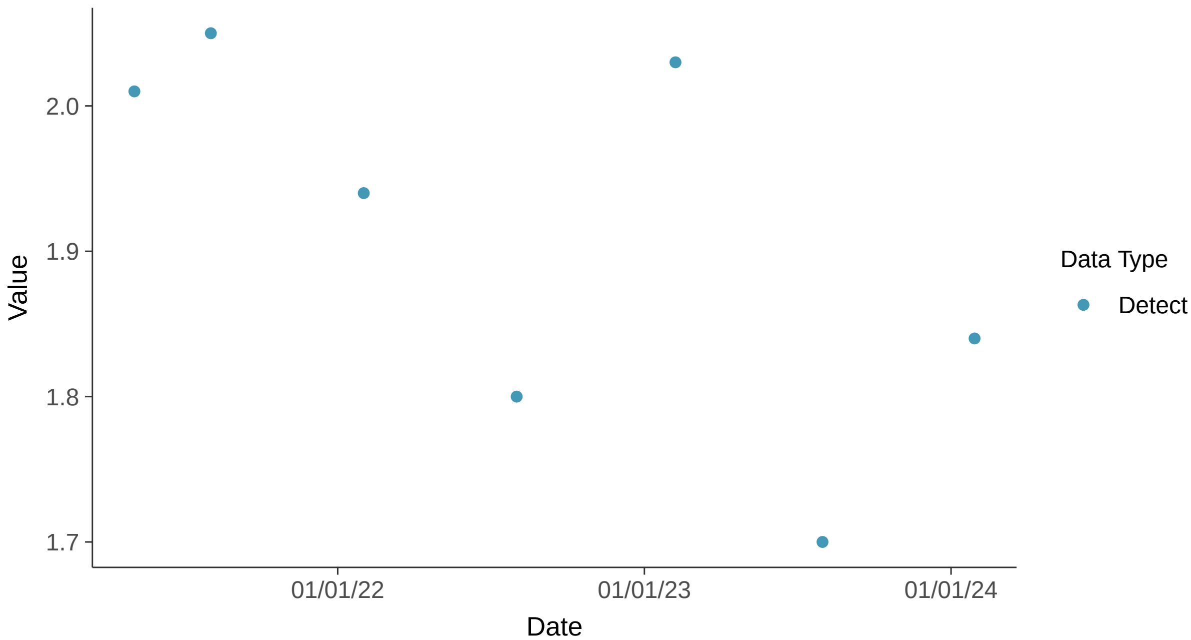


Part 115: Iron, MW-3

ID: 03_5_38

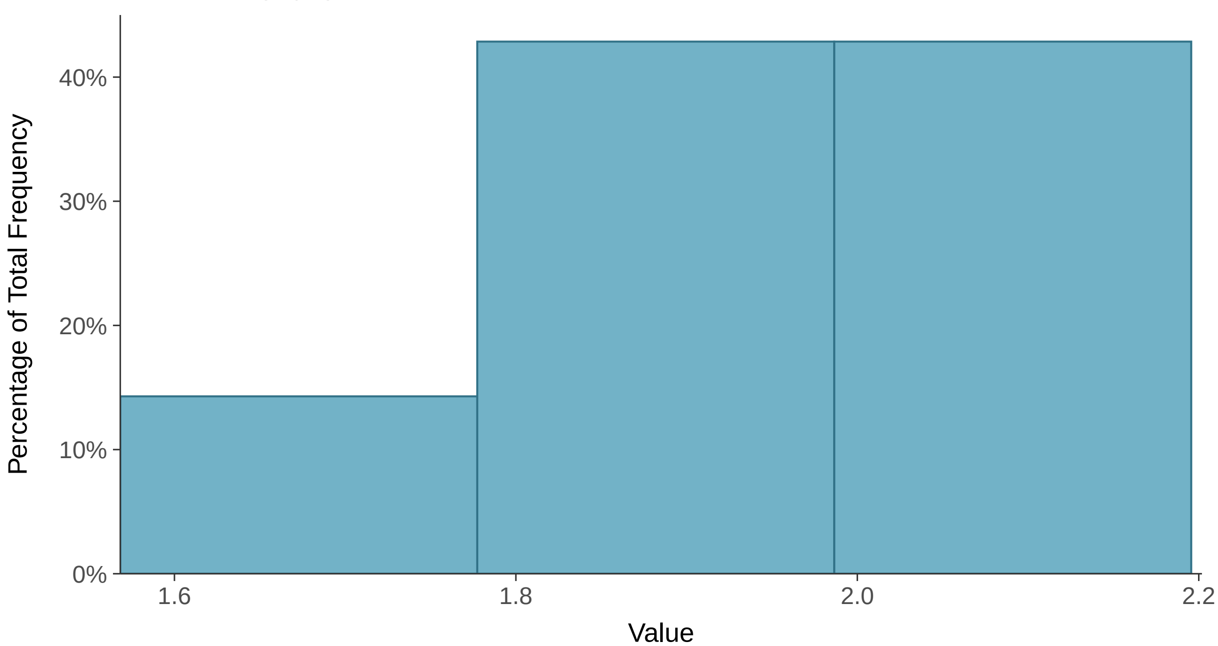
Scatter Plot

Iron, MW-3 (mg/L)



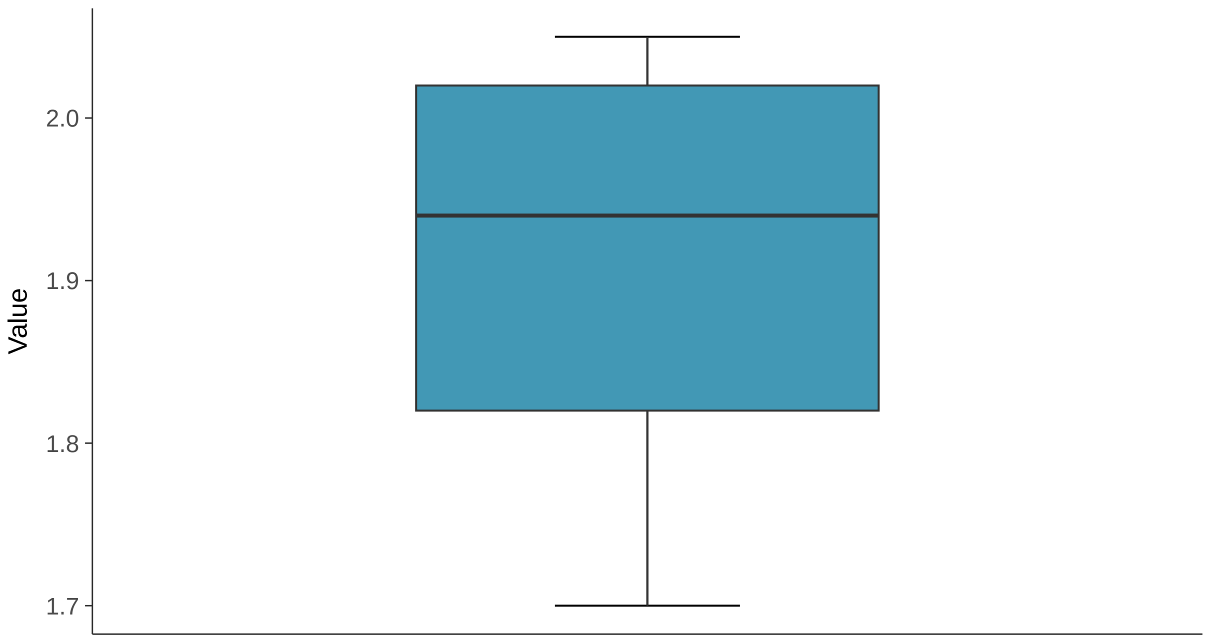
Histogram

Iron, MW-3 (mg/L)



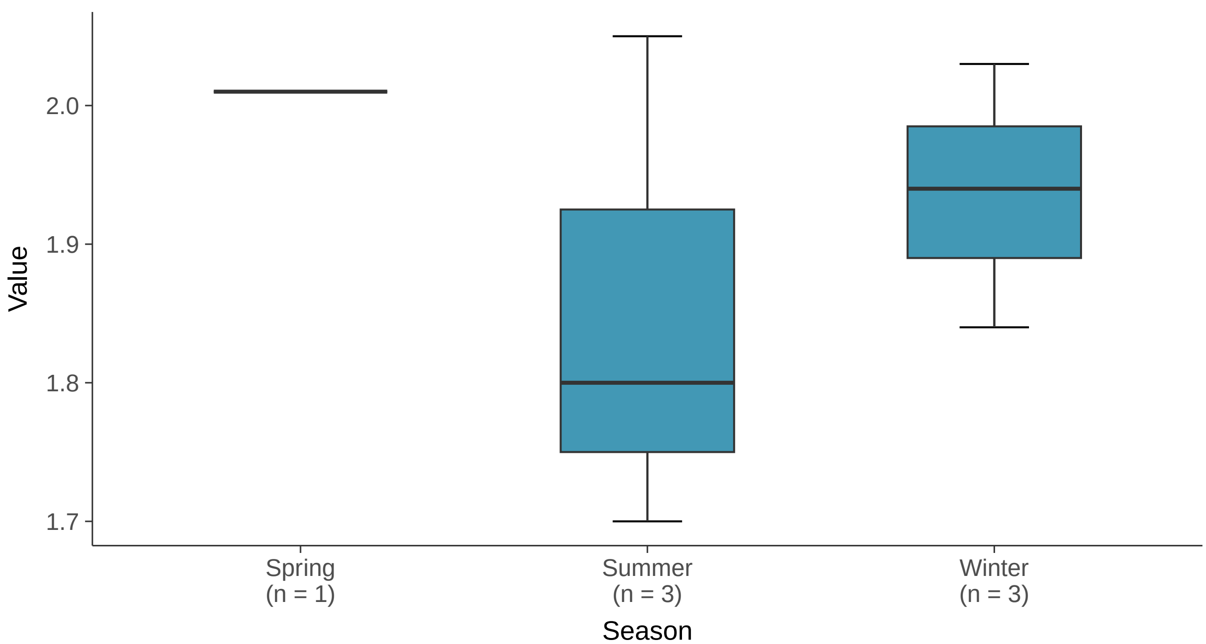
Boxplot

Iron, MW-3 (mg/L)



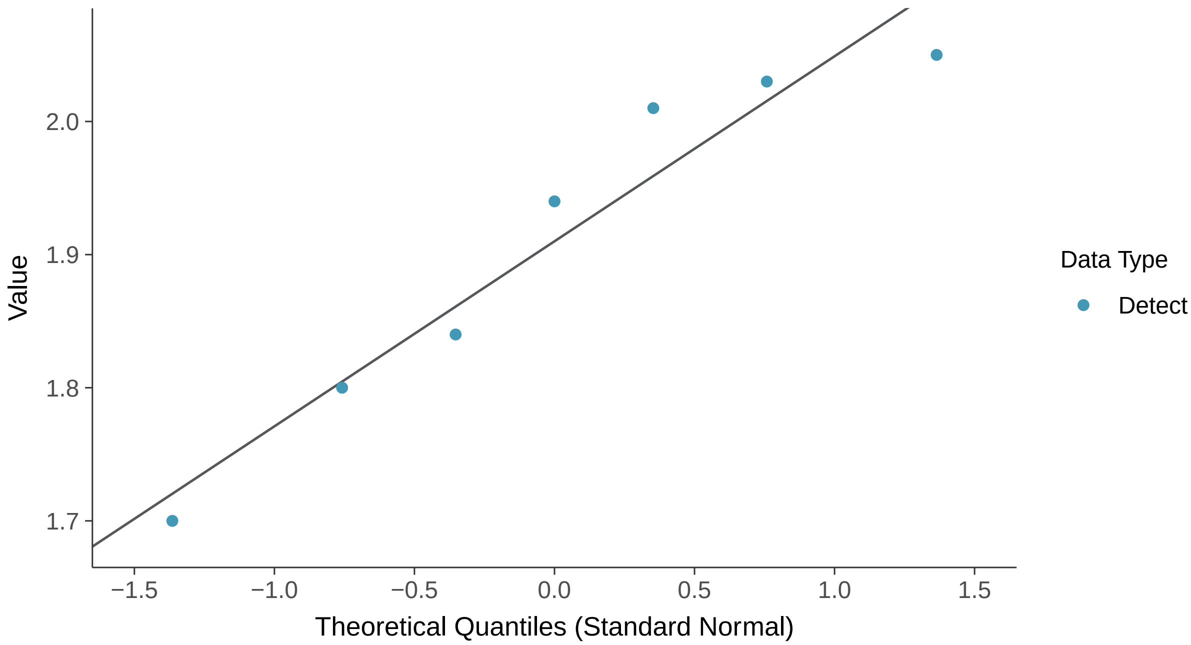
Boxplot by Season

Iron, MW-3 (mg/L)



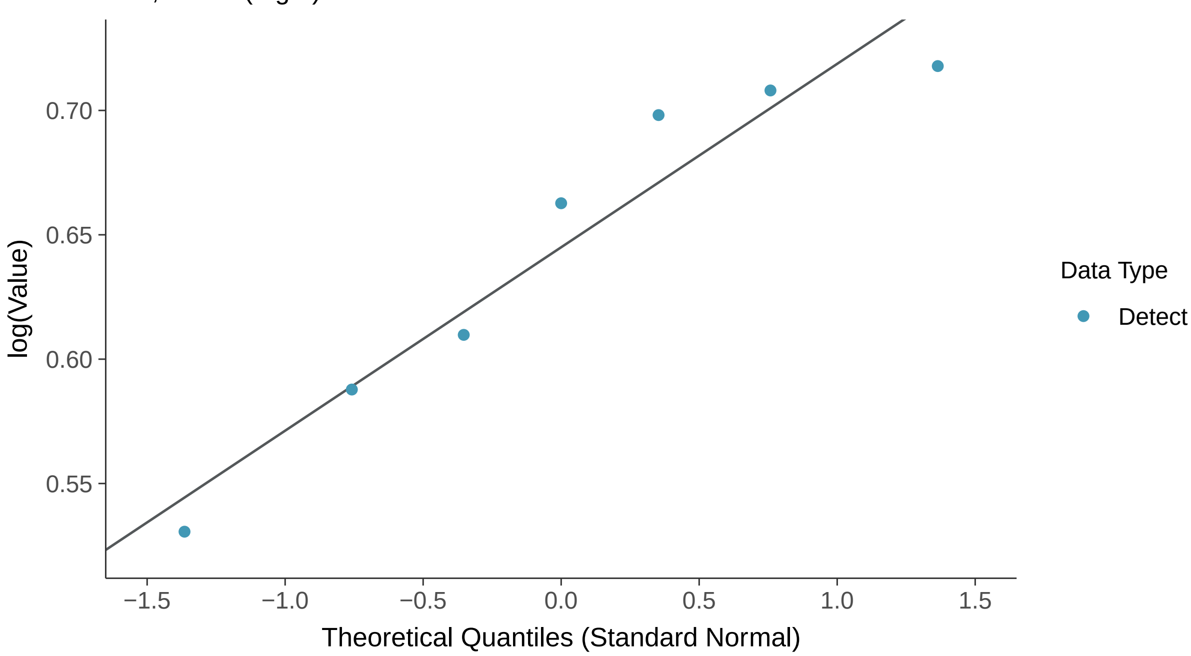
Normal Q-Q plot

Iron, MW-3 (mg/L)



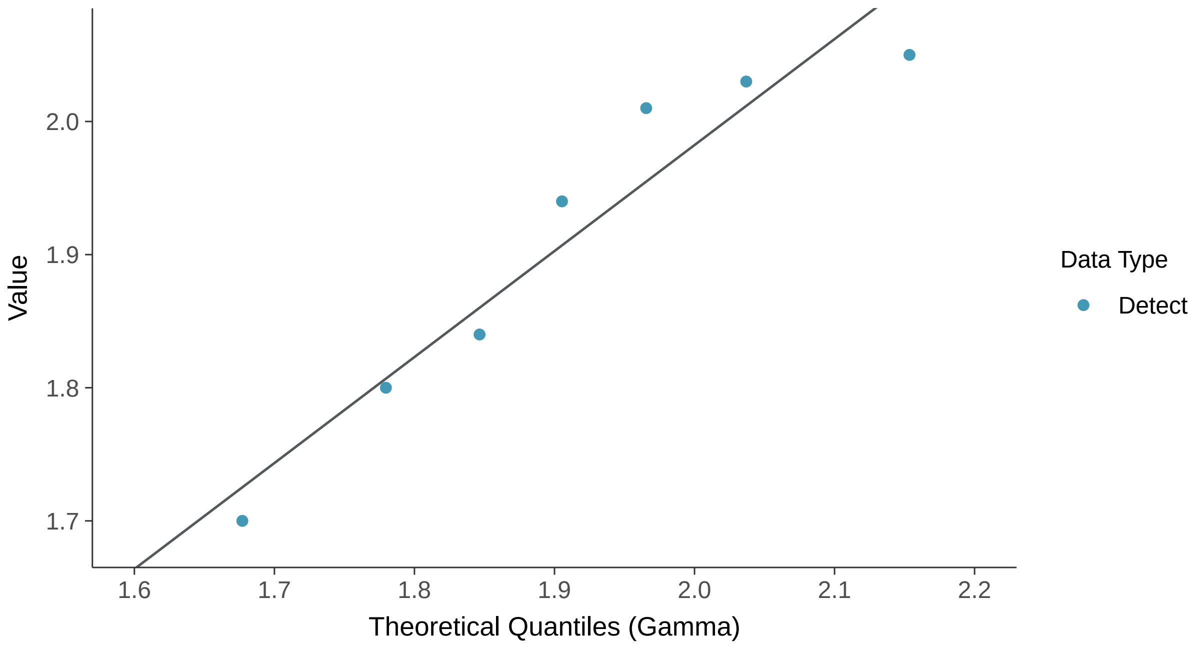
Lognormal Q-Q plot

Iron, MW-3 (mg/L)



Gamma Q-Q plot

Iron, MW-3 (mg/L)

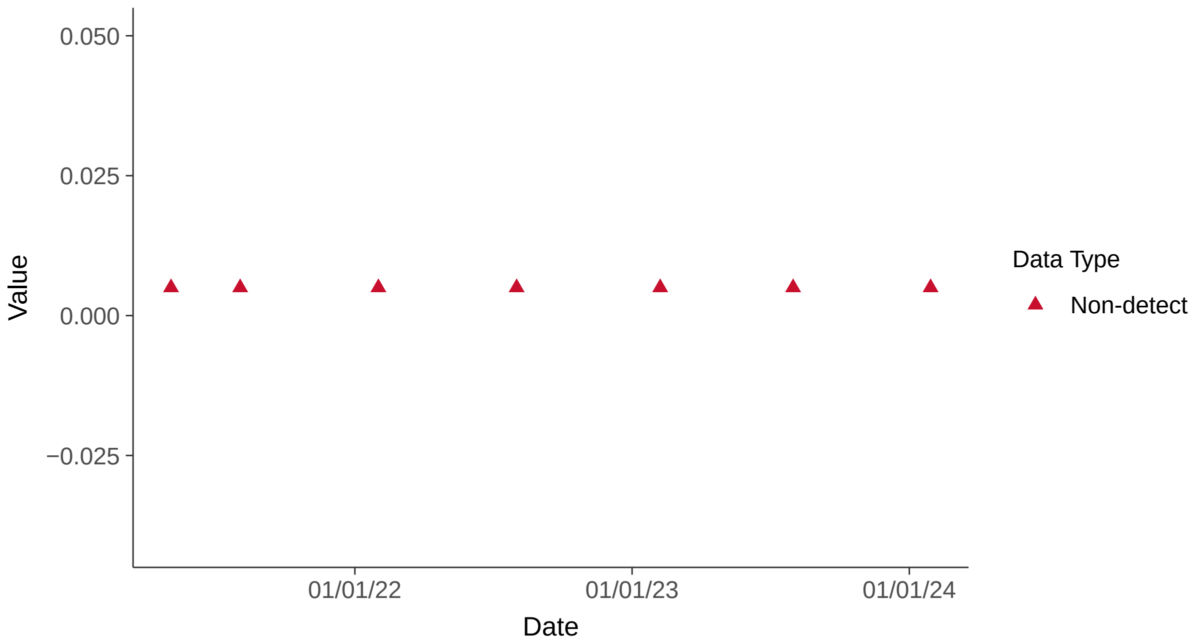


Part 115: Nickel, MW-3

ID: 03_5_39

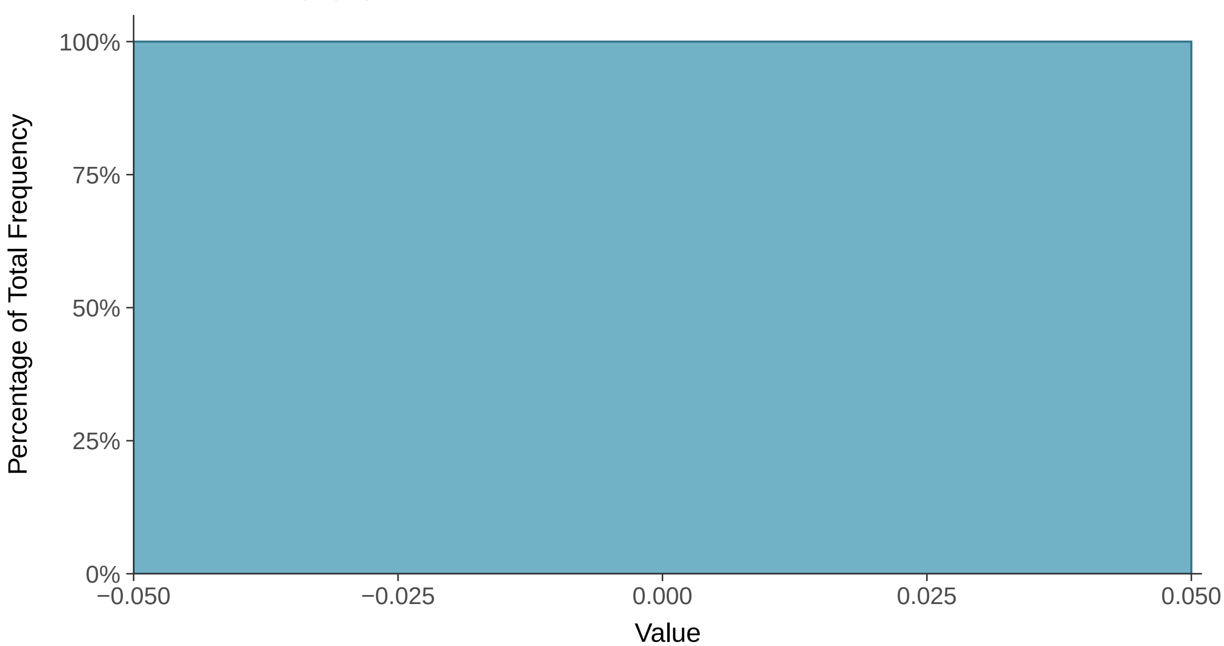
Scatter Plot

Nickel, MW-3 (mg/L)



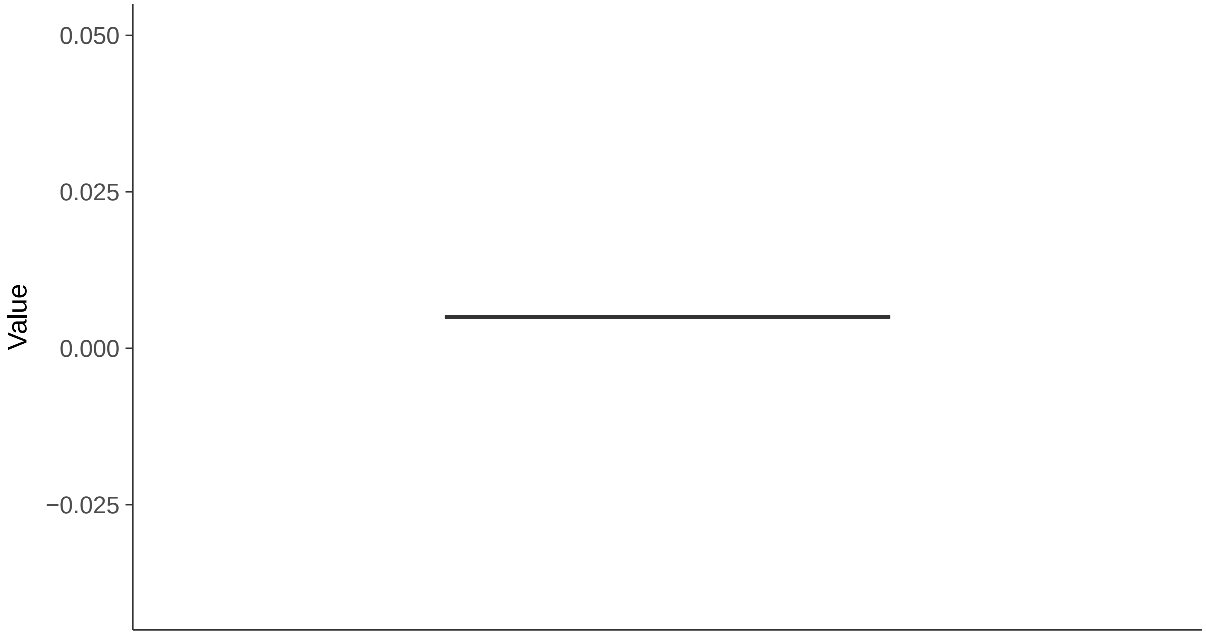
Histogram

Nickel, MW-3 (mg/L)



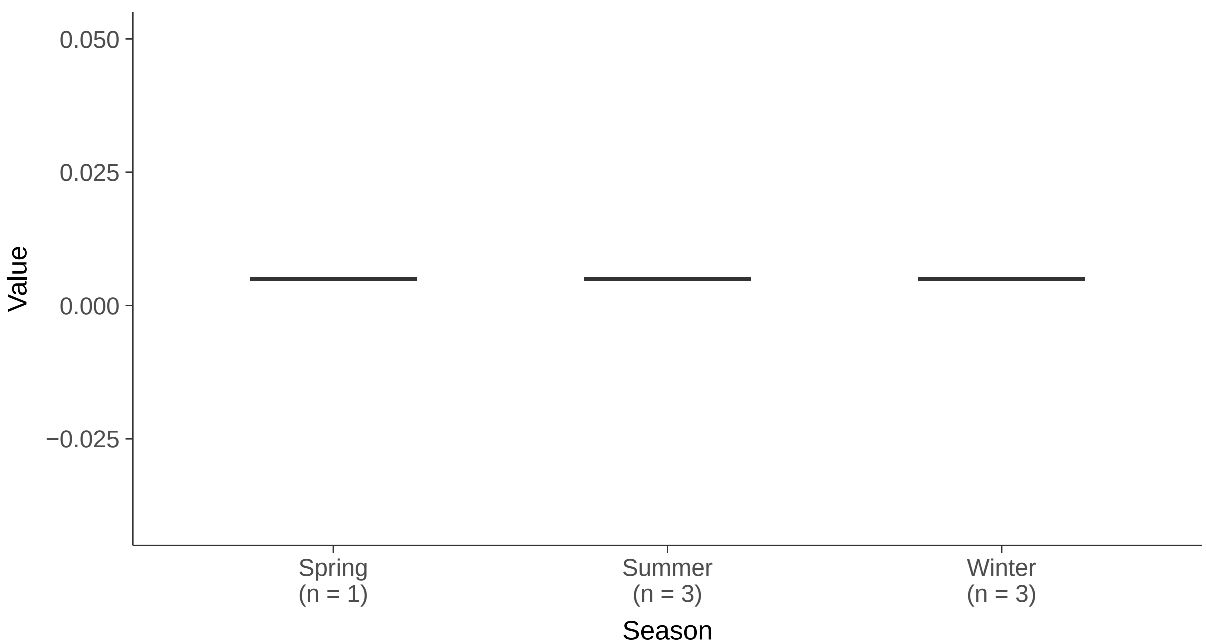
Boxplot

Nickel, MW-3 (mg/L)



Boxplot by Season

Nickel, MW-3 (mg/L)

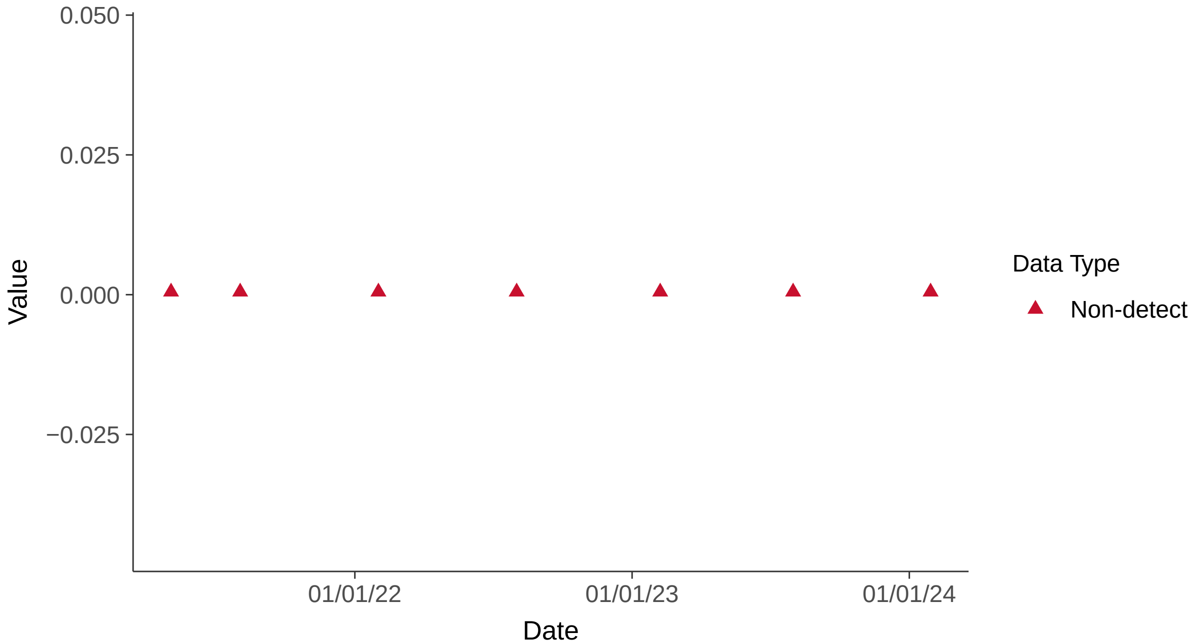


Part 115: Silver, MW-3

ID: 03_5_40

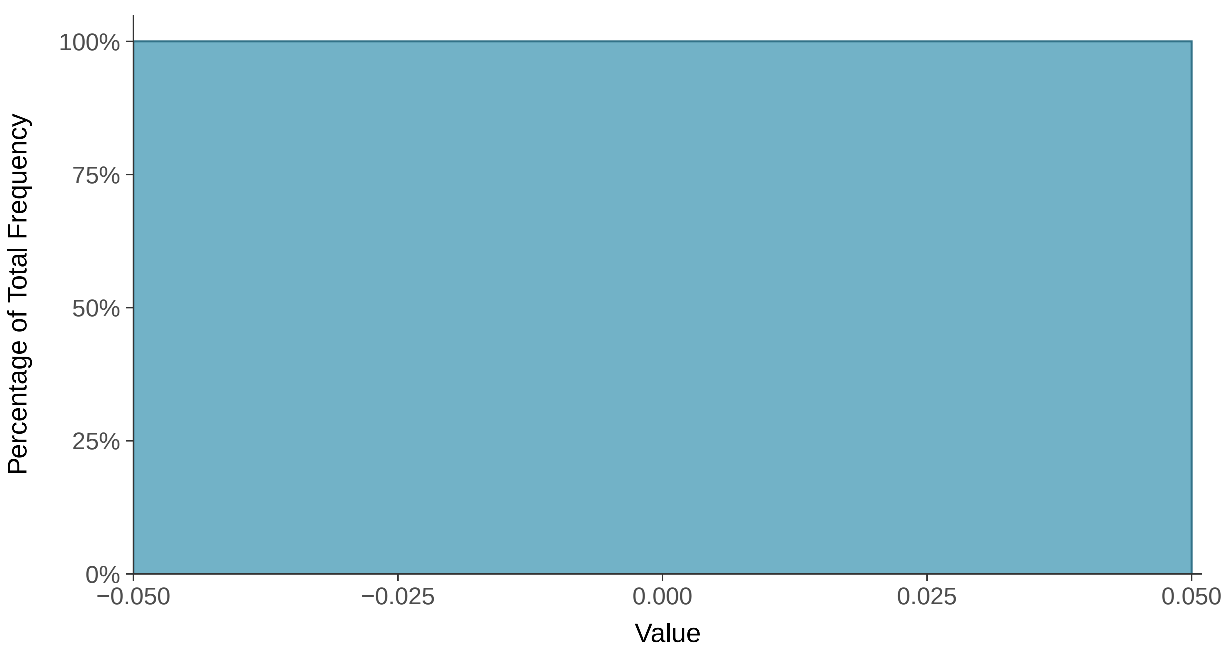
Scatter Plot

Silver, MW-3 (mg/L)



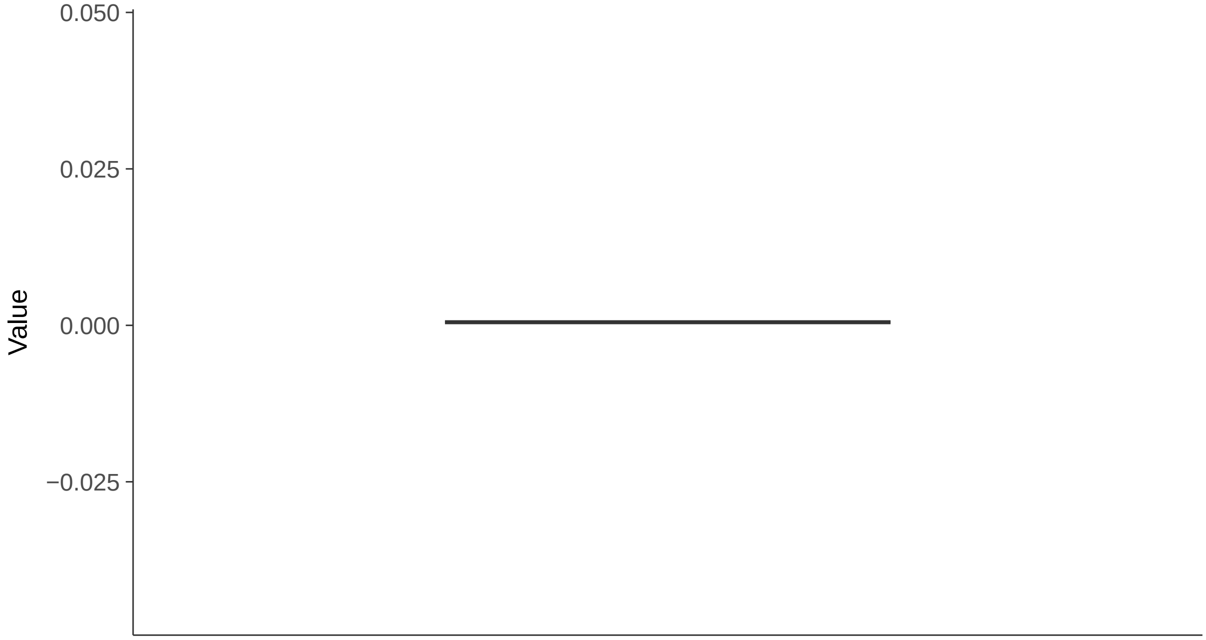
Histogram

Silver, MW-3 (mg/L)



Boxplot

Silver, MW-3 (mg/L)



Boxplot by Season

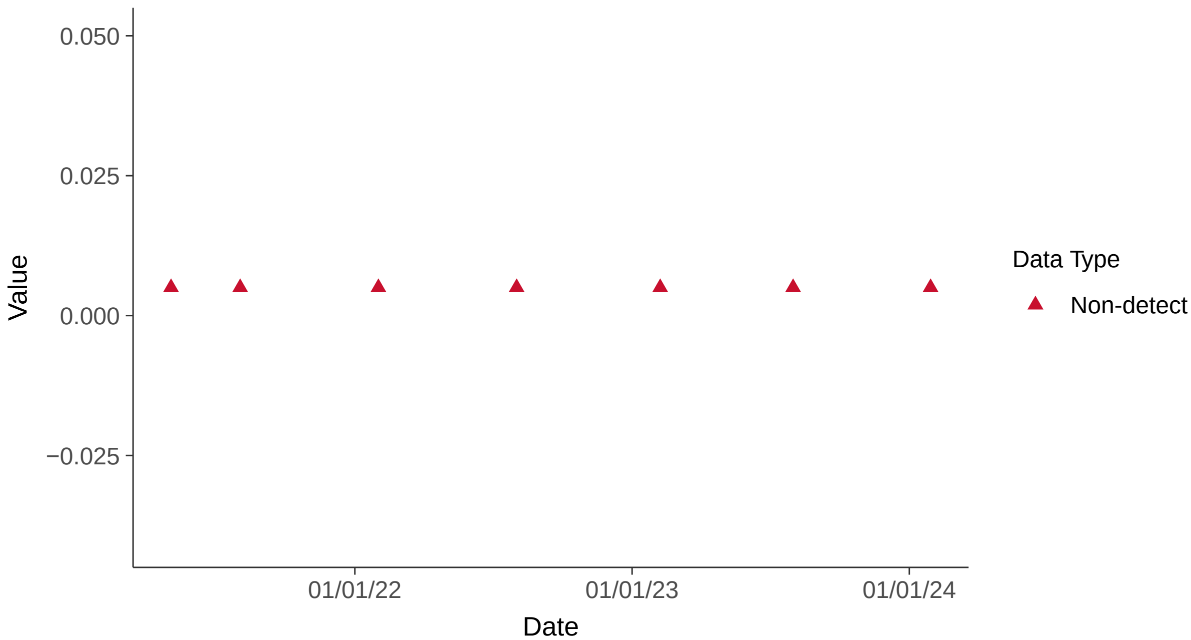
Silver, MW-3 (mg/L)

Part 115: Vanadium, MW-3

ID: 03_5_41

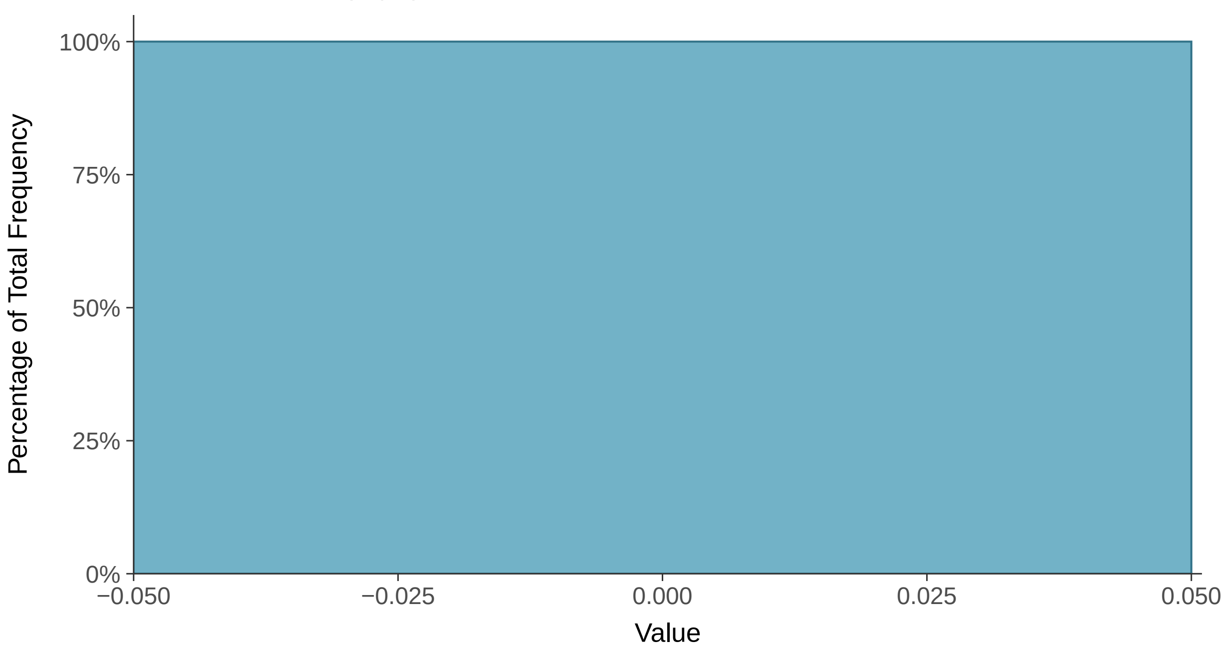
Scatter Plot

Vanadium, MW-3 (mg/L)



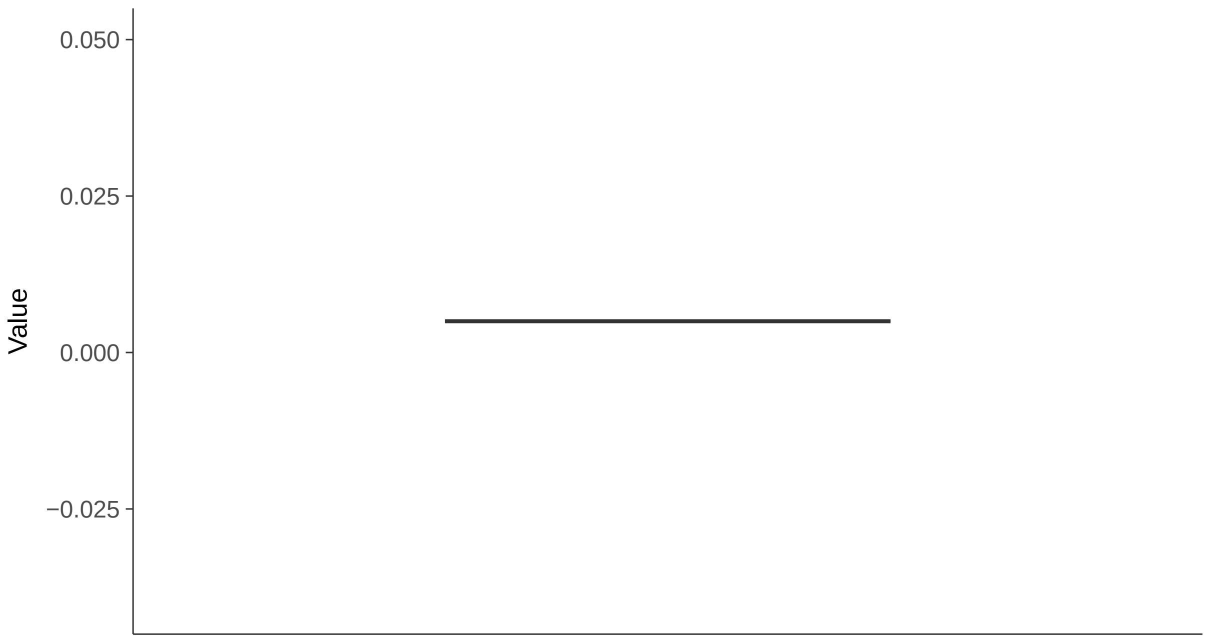
Histogram

Vanadium, MW-3 (mg/L)



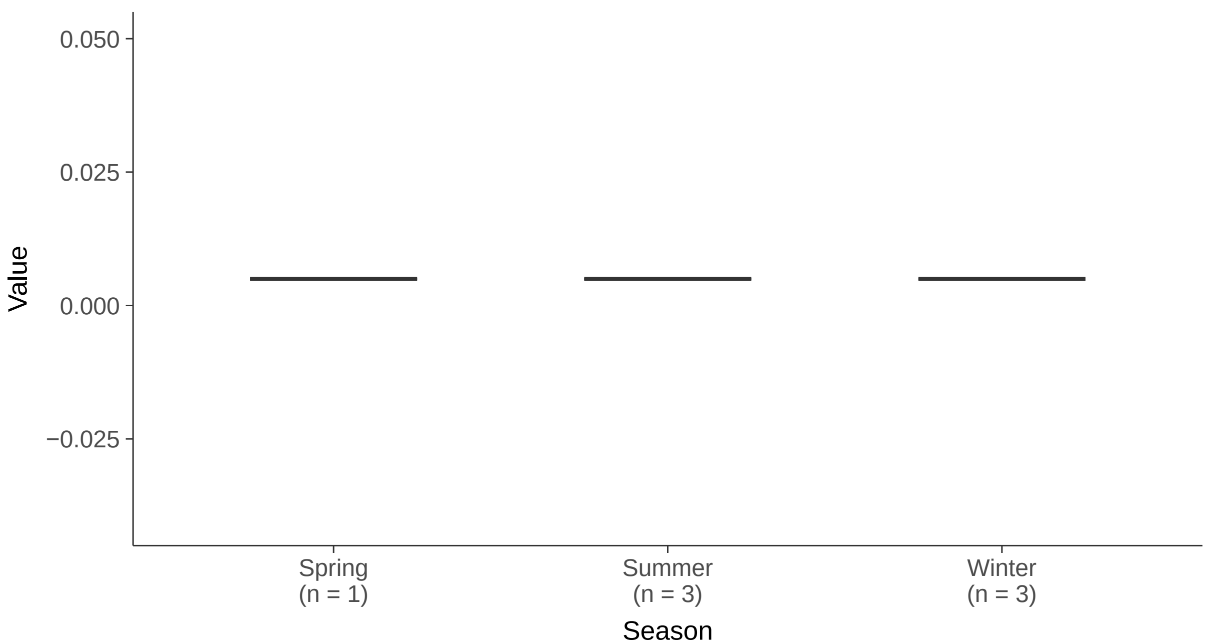
Boxplot

Vanadium, MW-3 (mg/L)



Boxplot by Season

Vanadium, MW-3 (mg/L)

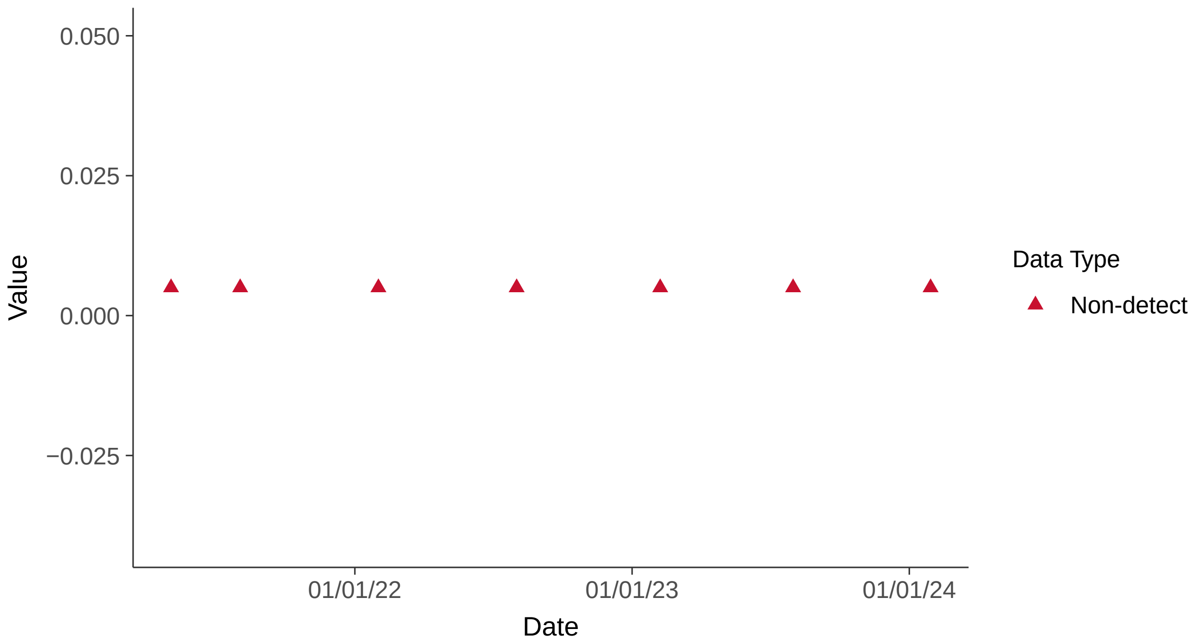


Part 115: Zinc, MW-3

ID: 03_5_42

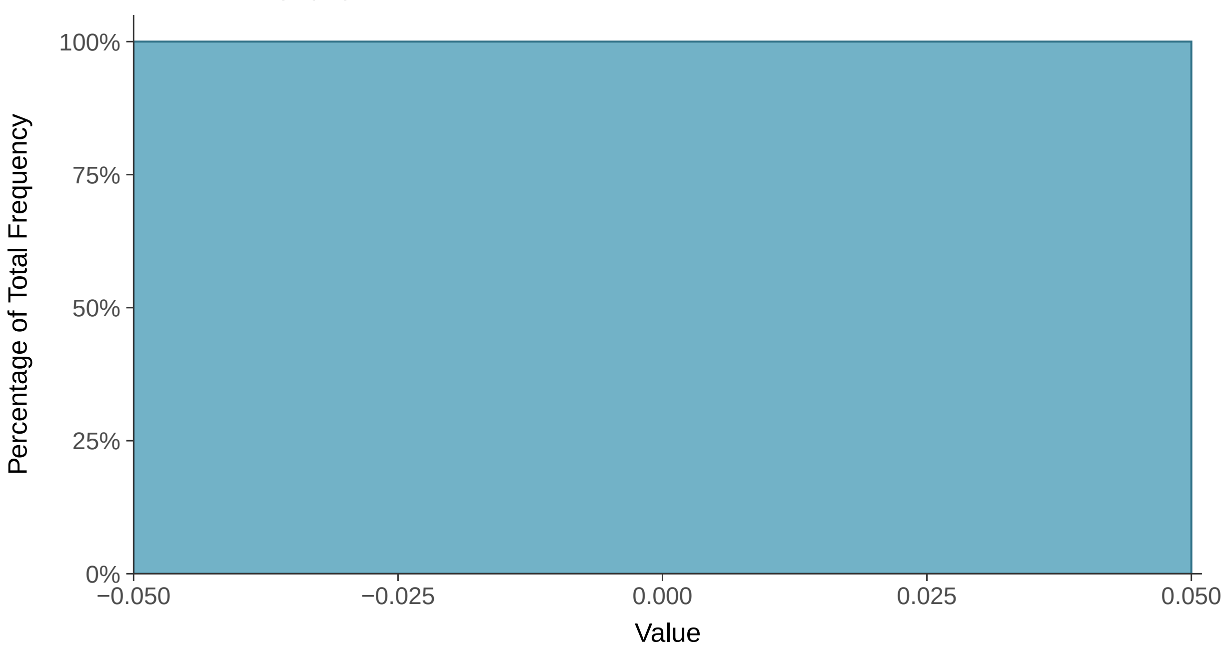
Scatter Plot

Zinc, MW-3 (mg/L)



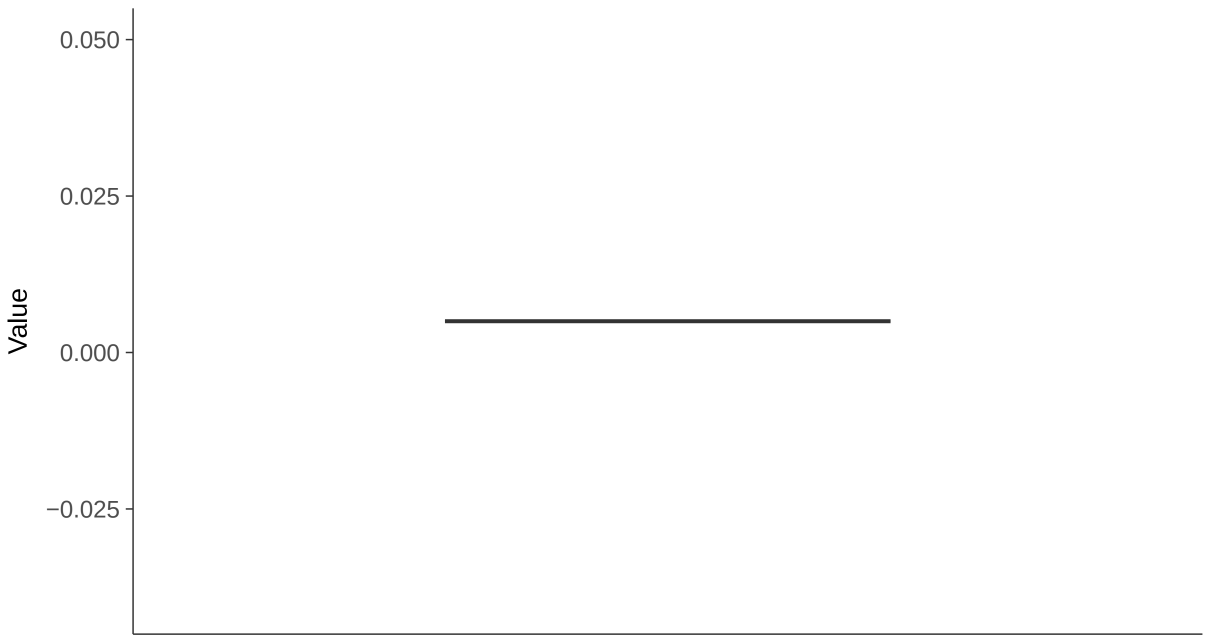
Histogram

Zinc, MW-3 (mg/L)



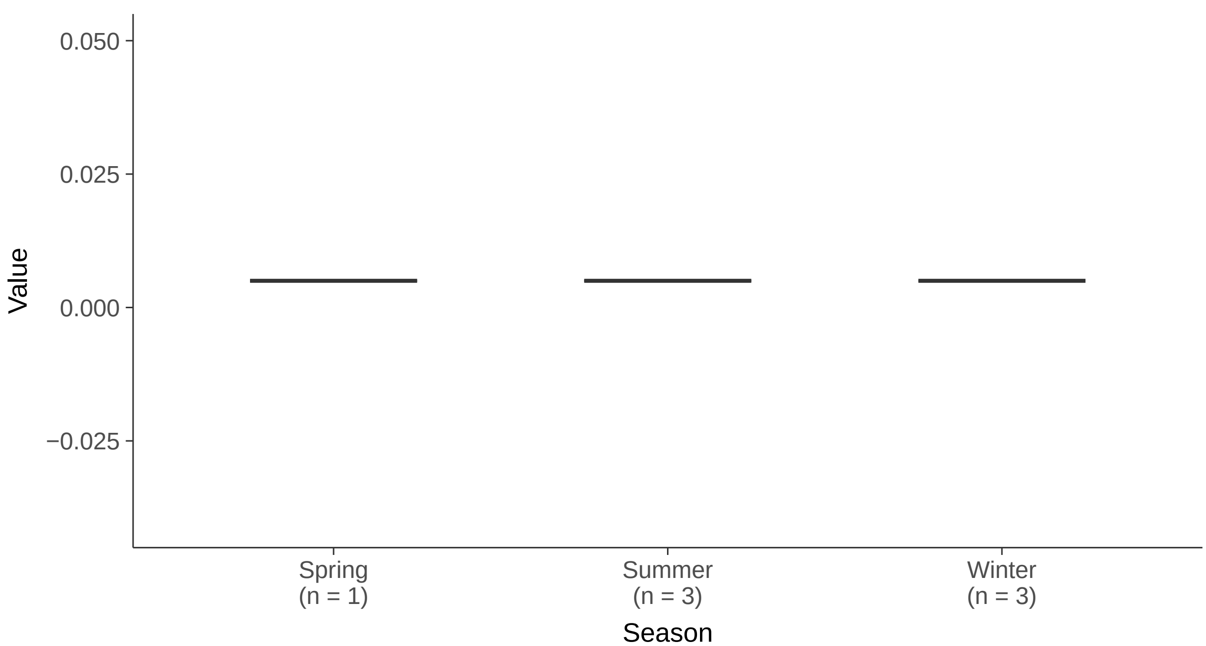
Boxplot

Zinc, MW-3 (mg/L)



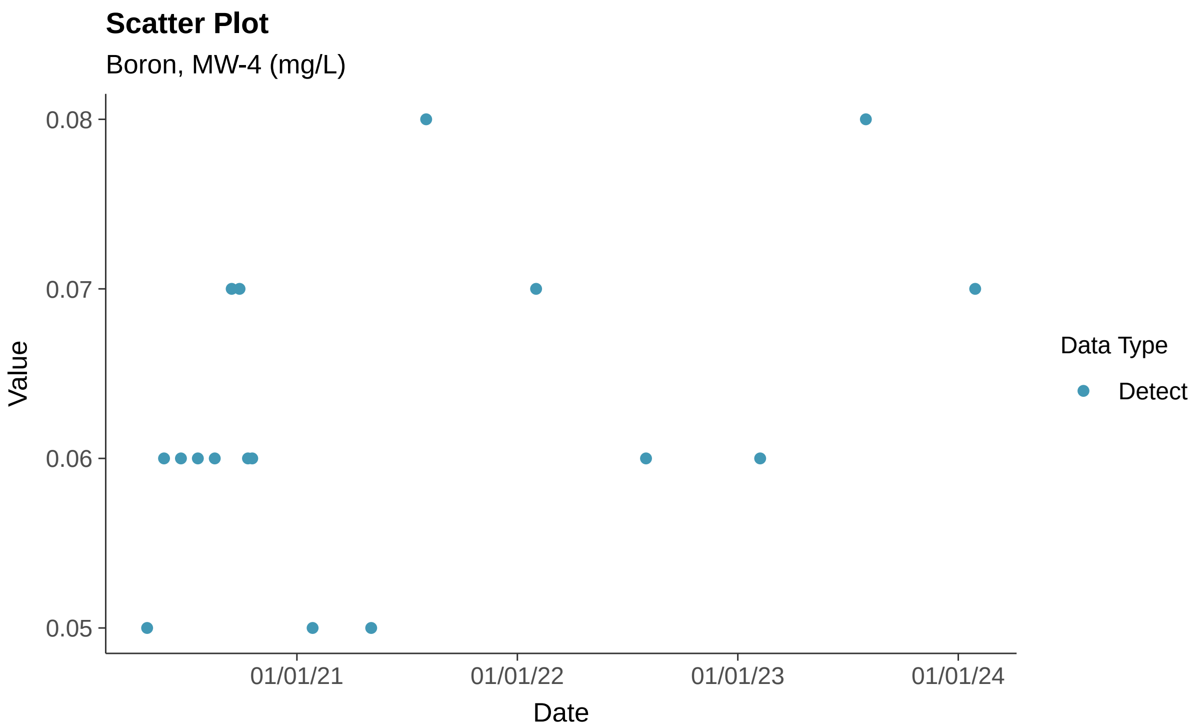
Boxplot by Season

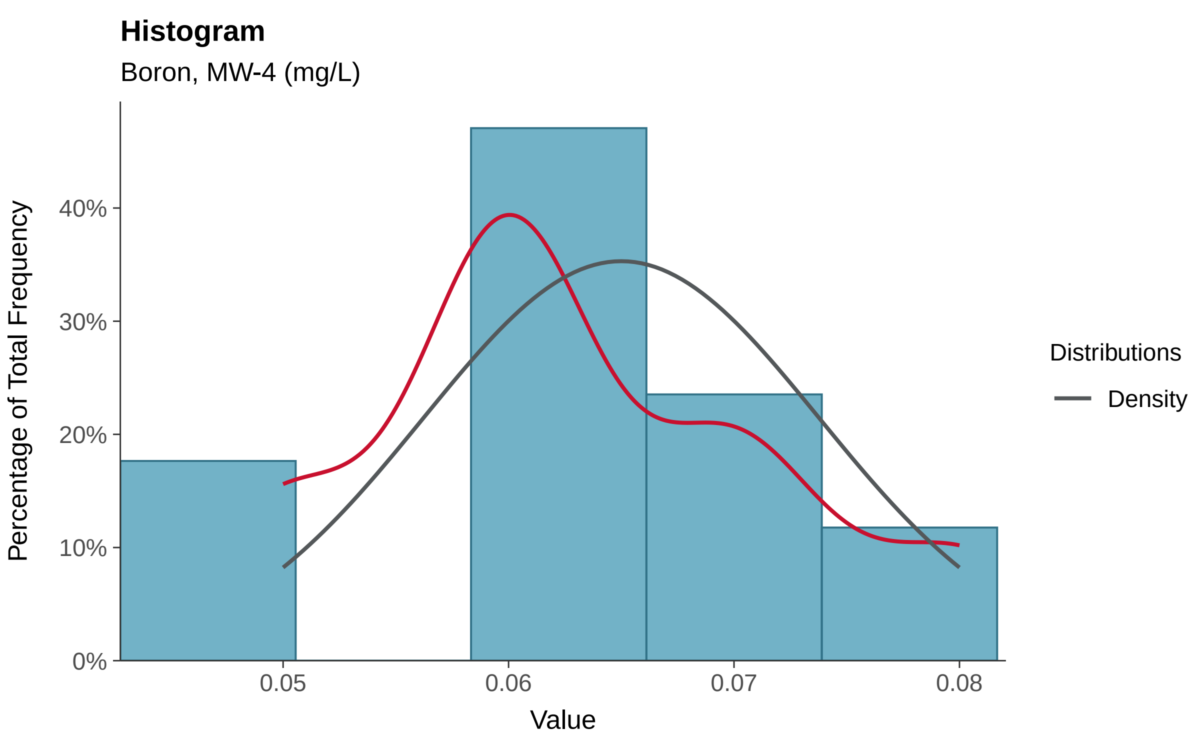
Zinc, MW-3 (mg/L)



Appendix III: Boron, MW-4

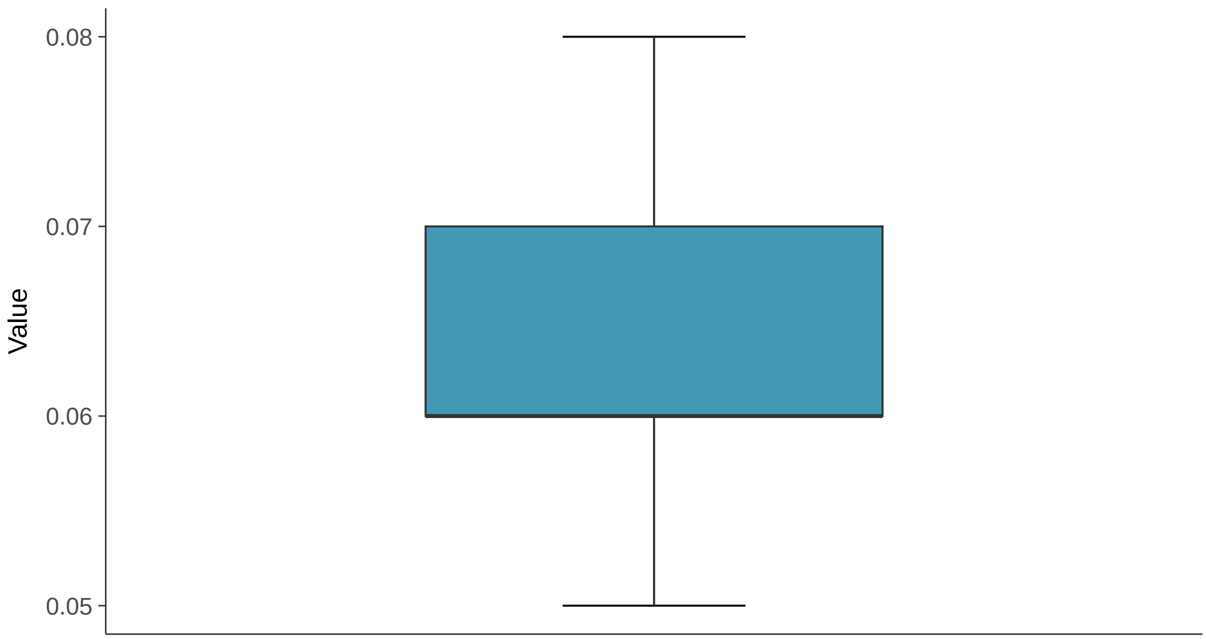
ID: 04_1_01





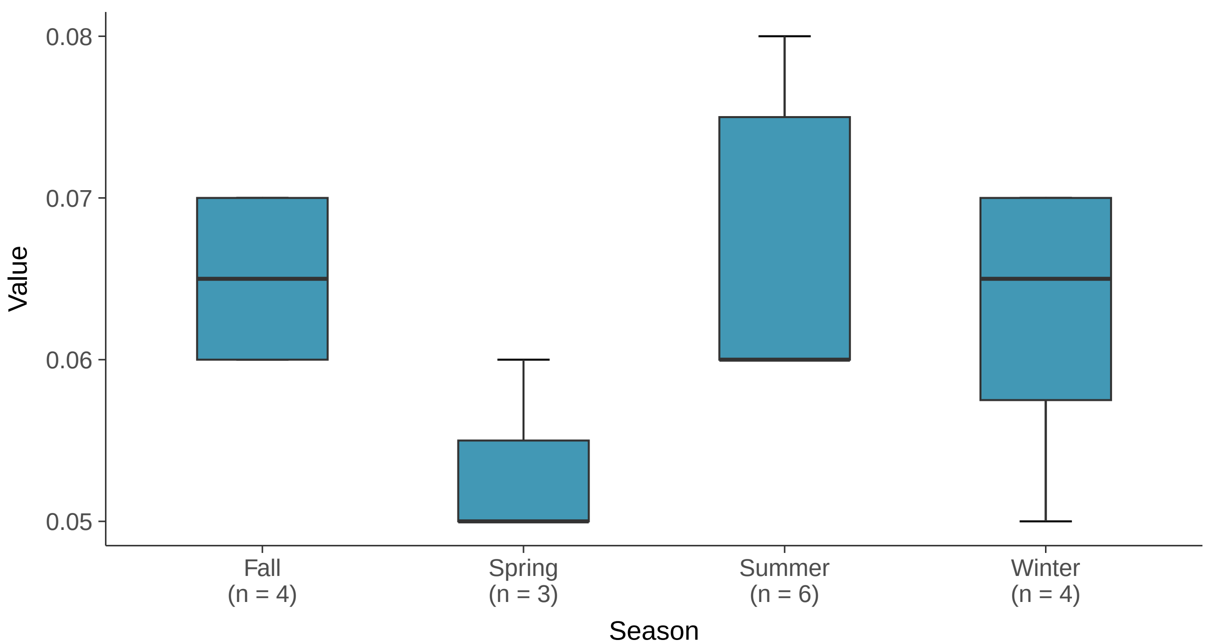
Boxplot

Boron, MW-4 (mg/L)



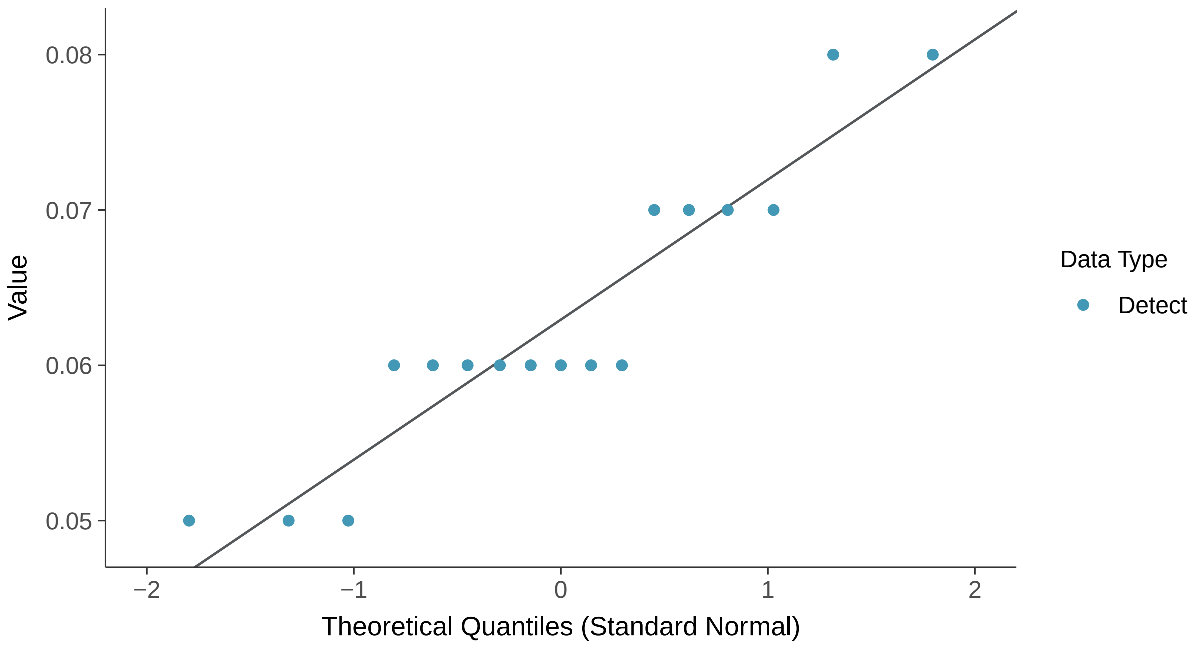
Boxplot by Season

Boron, MW-4 (mg/L)



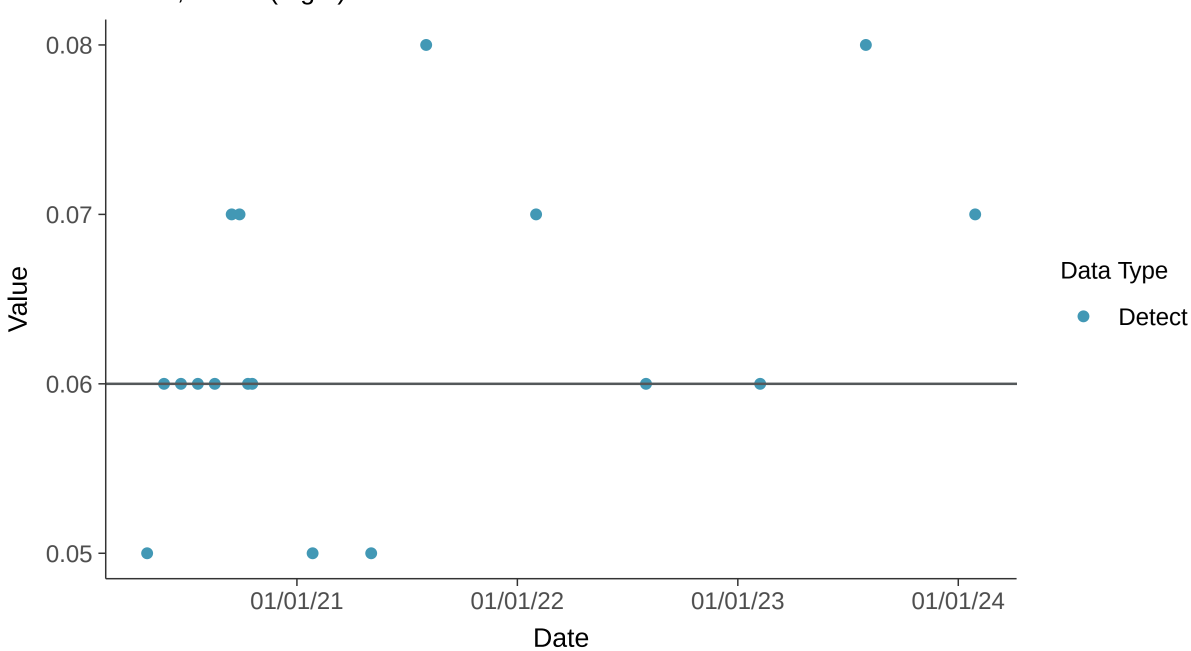
Normal Q-Q plot

Boron, MW-4 (mg/L)



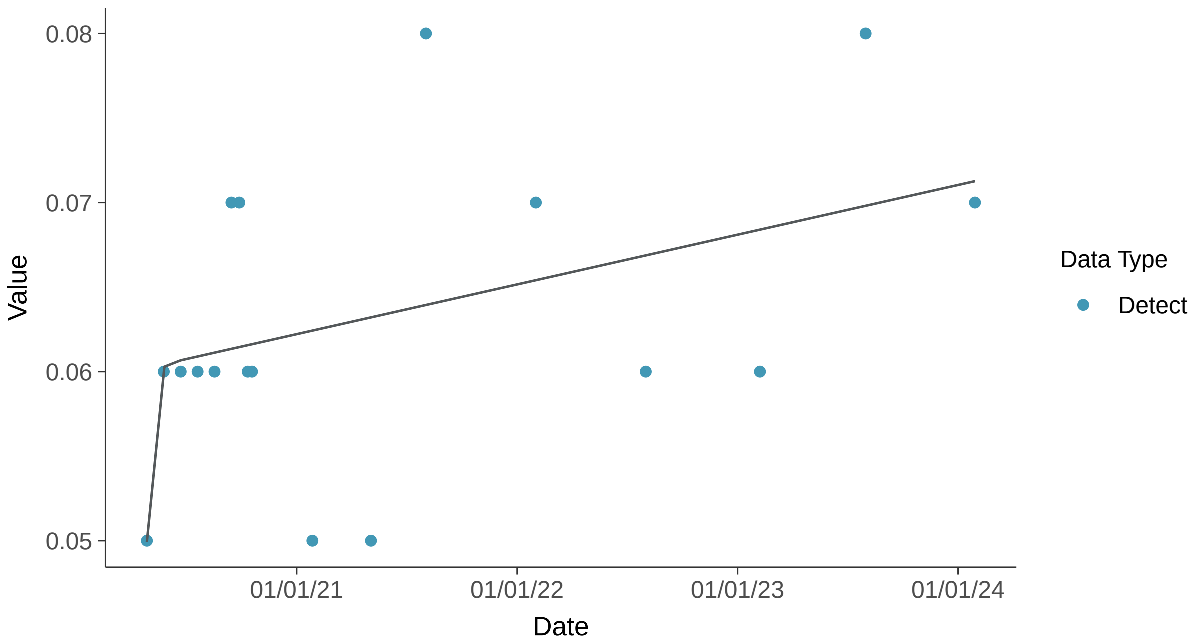
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Boron, MW-4 (mg/L)



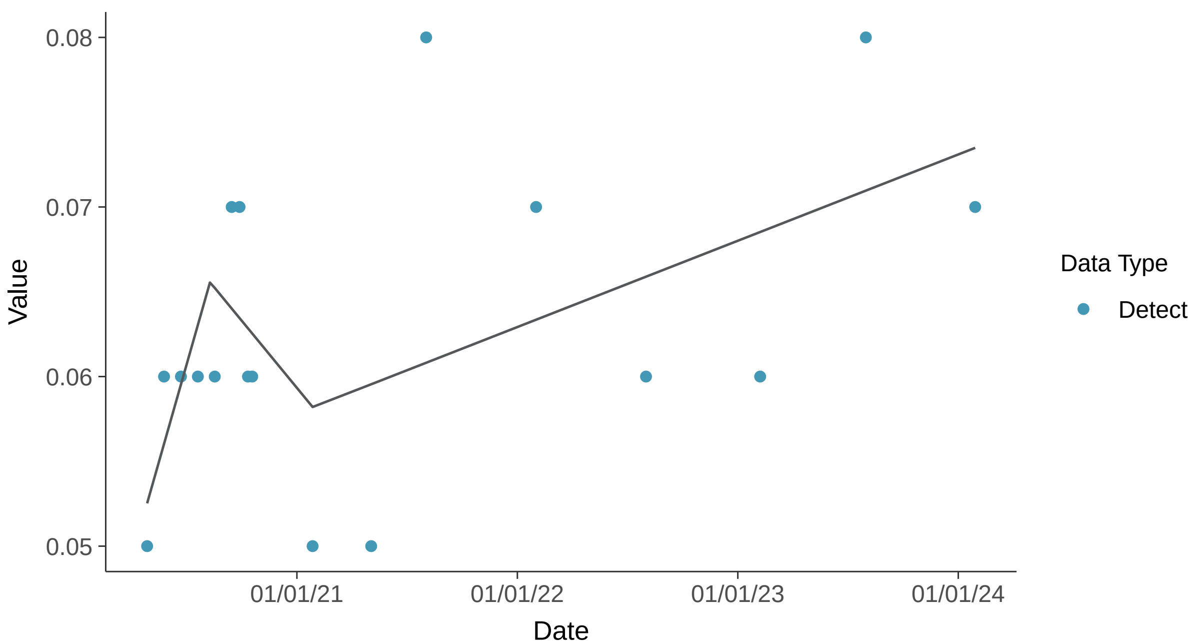
Trend Regression: Piecewise Linear-Linear

Boron, MW-4 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Boron, MW-4 (mg/L)

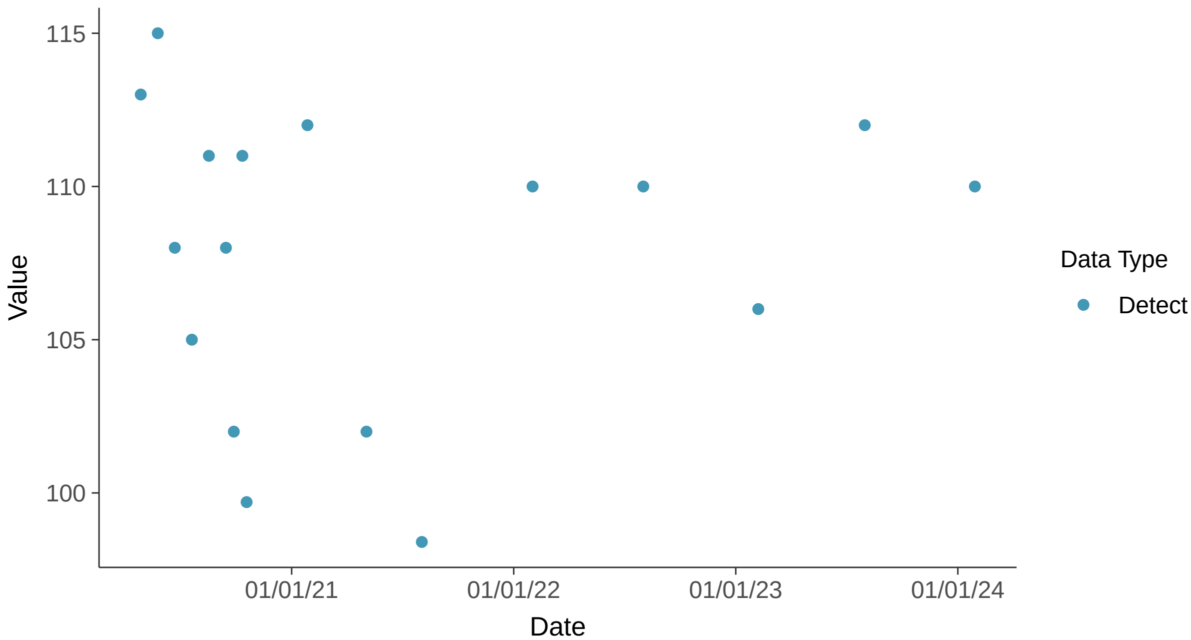


Appendix III: Calcium, MW-4

ID: 04_1_02

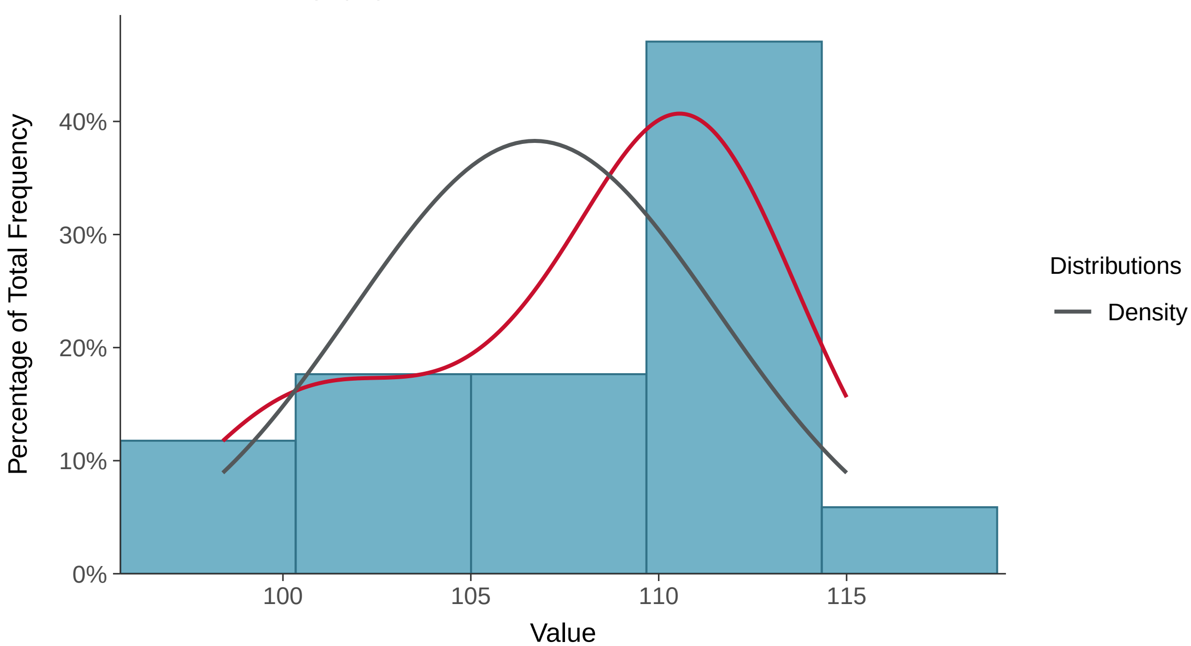
Scatter Plot

Calcium, MW-4 (mg/L)



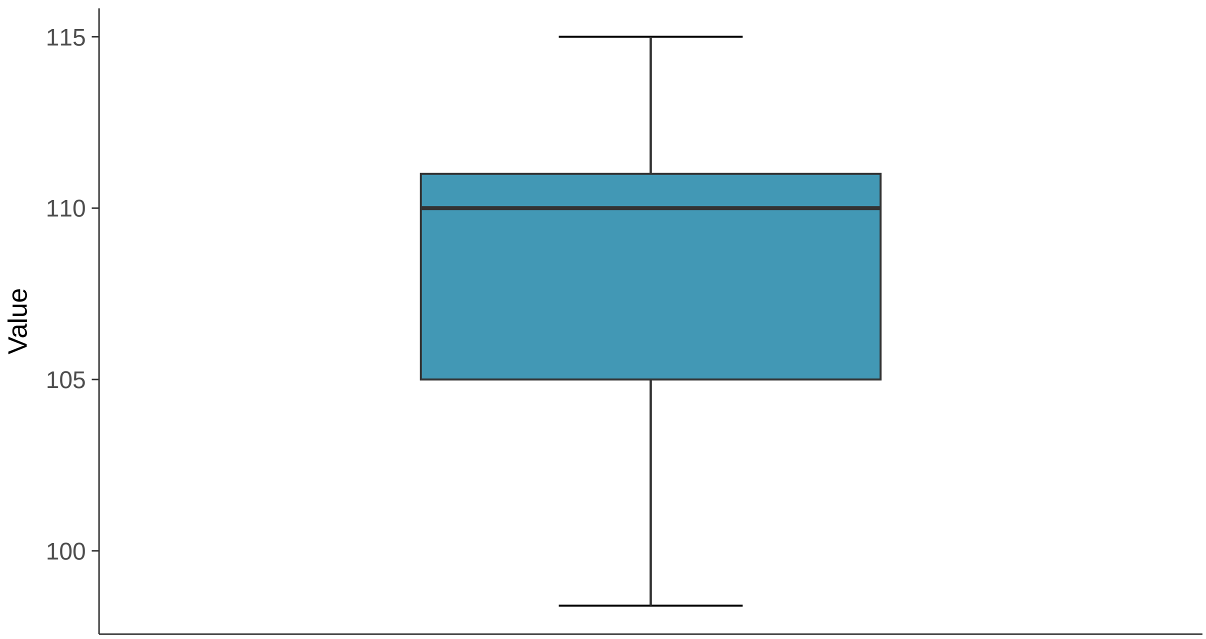
Histogram

Calcium, MW-4 (mg/L)



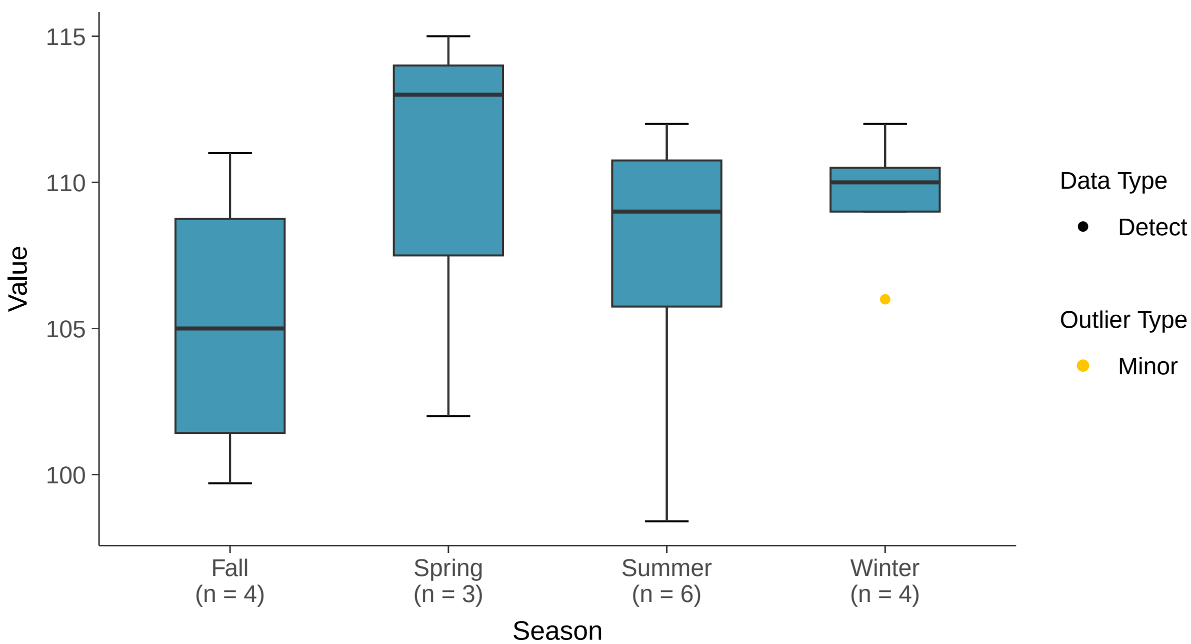
Boxplot

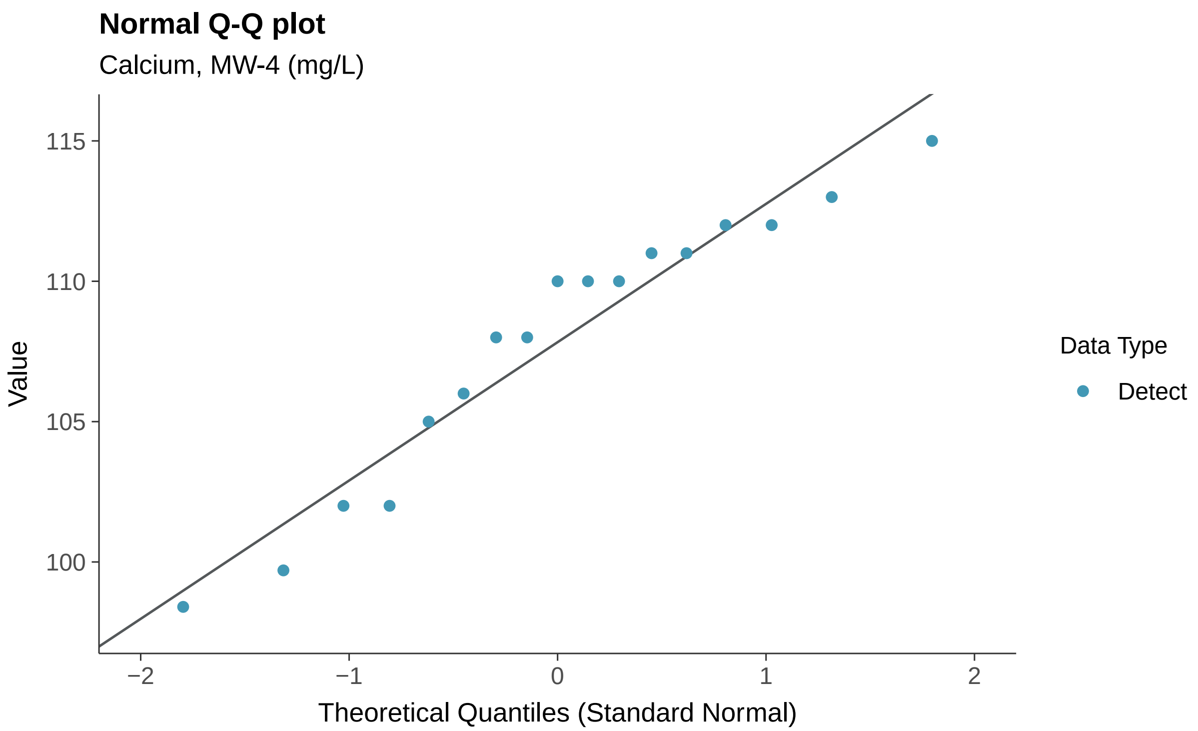
Calcium, MW-4 (mg/L)

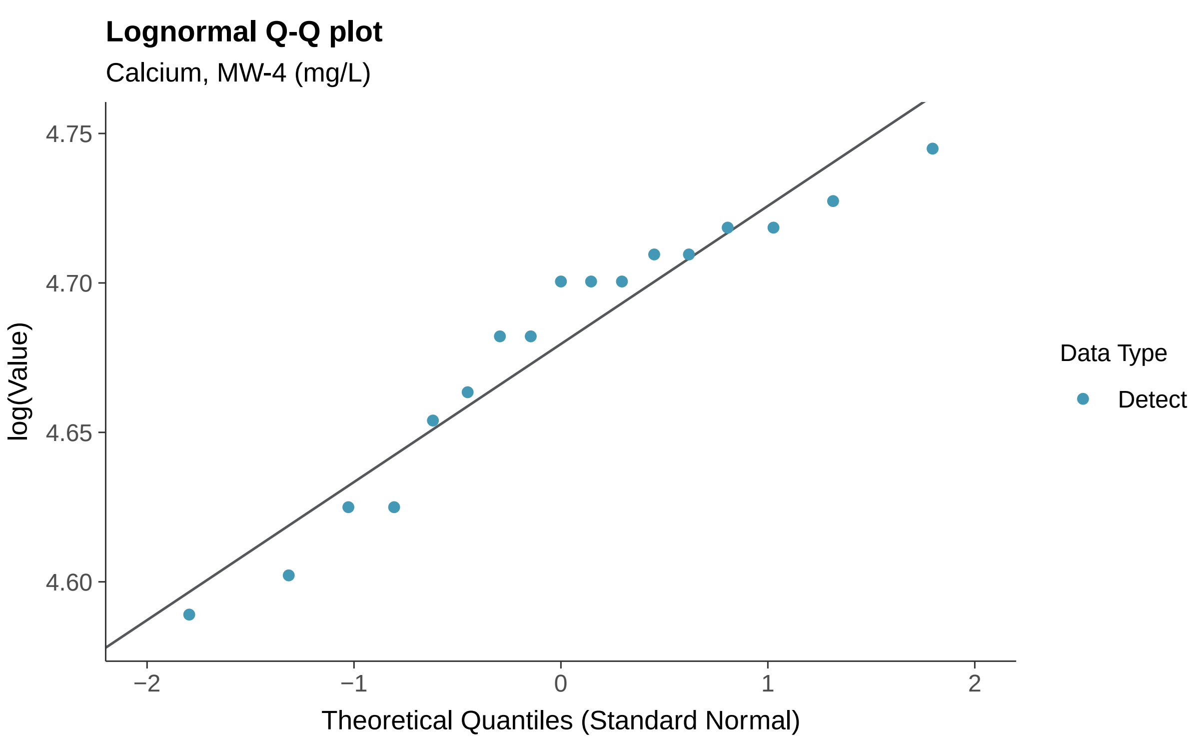


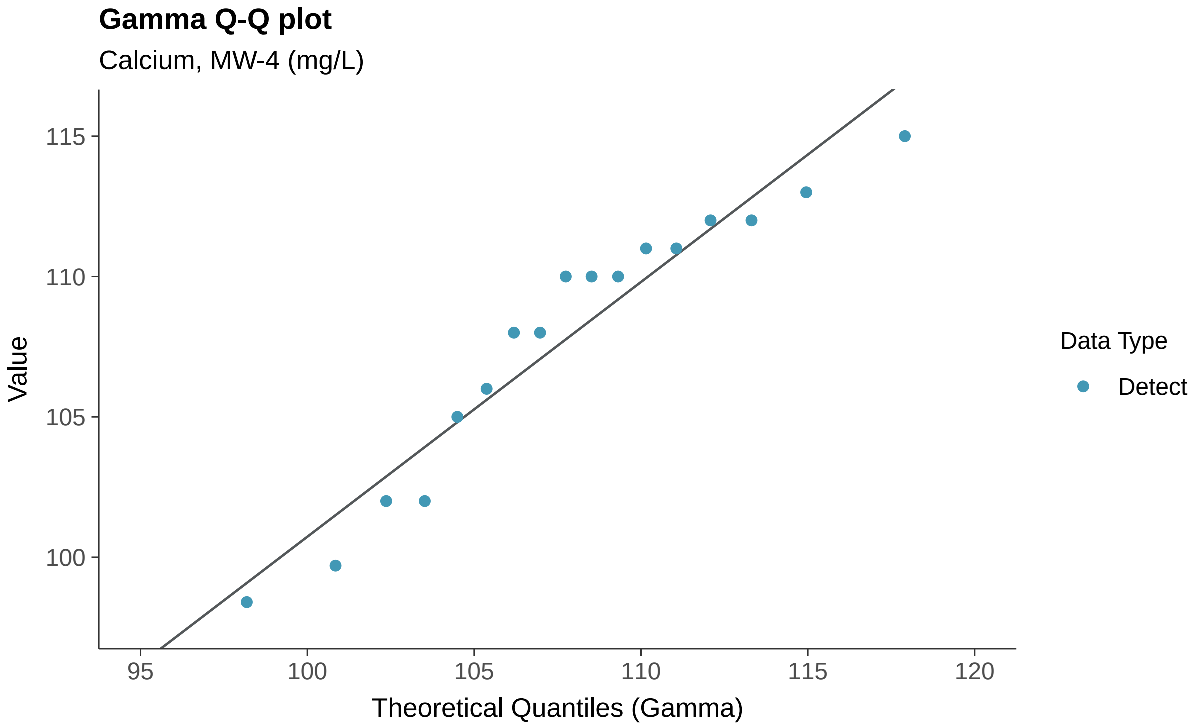
Boxplot by Season

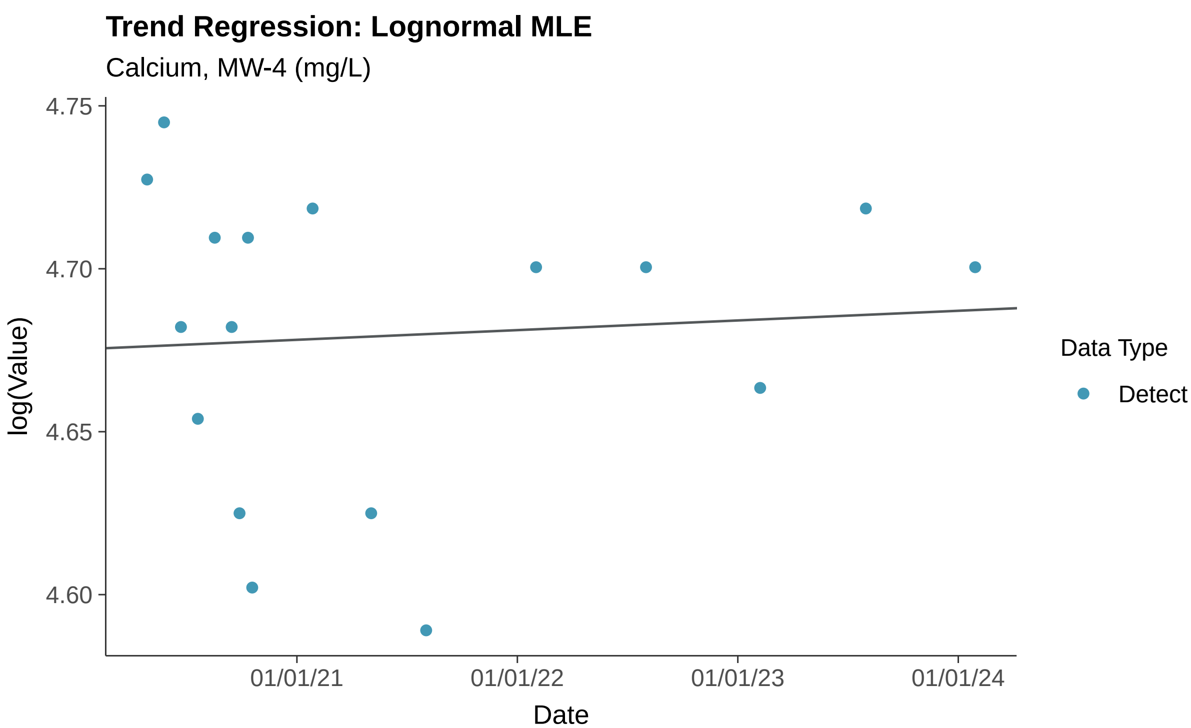
Calcium, MW-4 (mg/L)




Normal Q-Q plot
Calcium, MW-4 (mg/L)
Value
115
110
105
100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

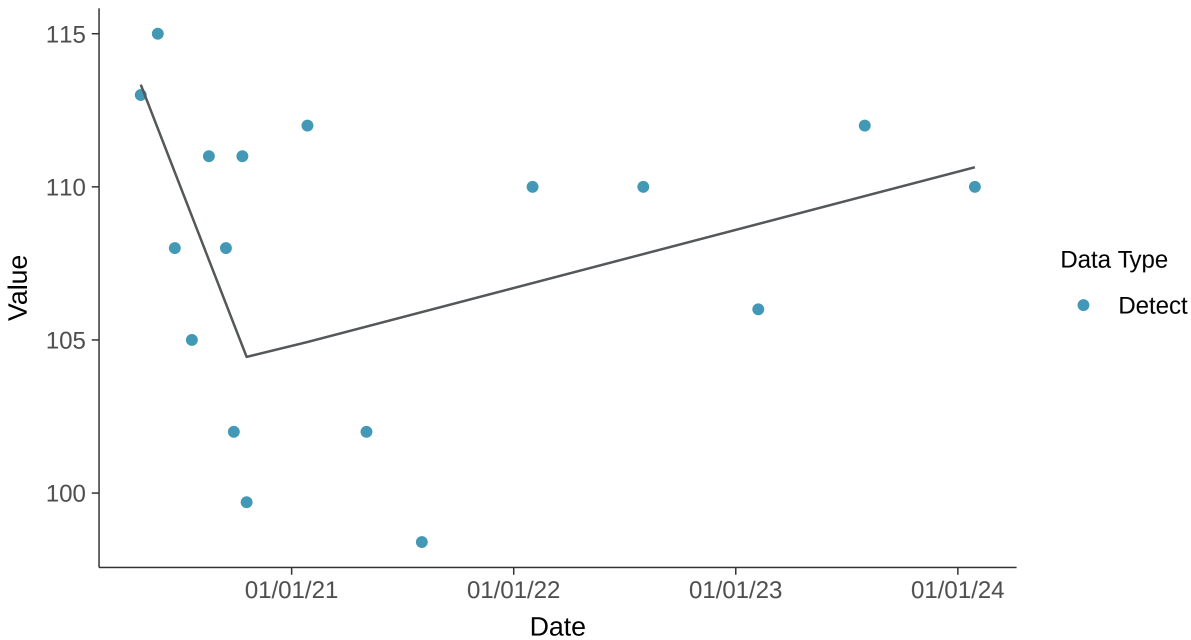

Lognormal Q-Q plot
Calcium, MW-4 (mg/L)
log(Value)
4.75
4.70
4.65
4.60
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Calcium, MW-4 (mg/L)
Value
115
110
105
100
95
100
105
110
115
120
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Calcium, MW-4 (mg/L)
log(Value)
4.75
4.70
4.65
4.60
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Calcium, MW-4 (mg/L)

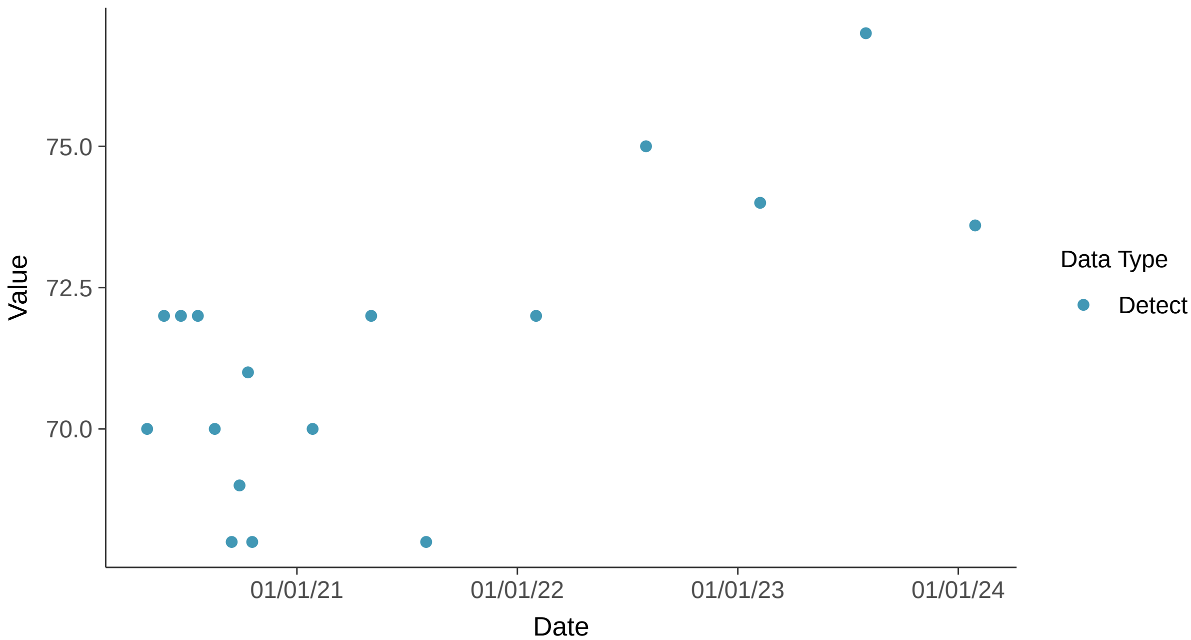


Appendix III: Chloride, MW-4

ID: 04_1_03

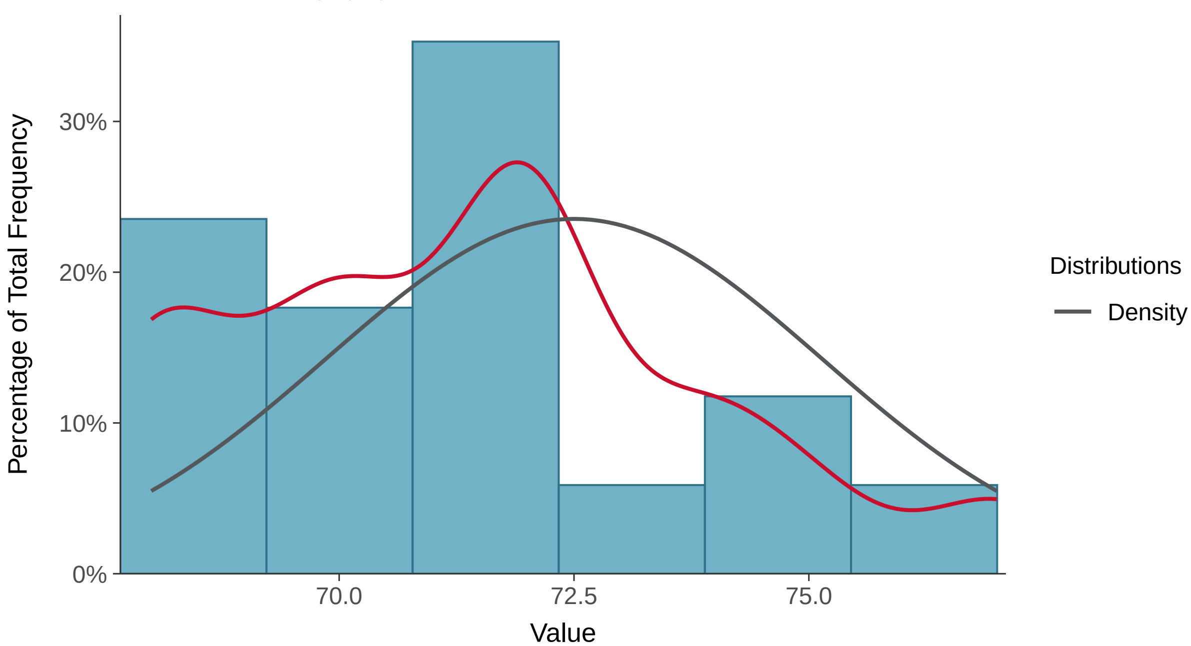
Scatter Plot

Chloride, MW-4 (mg/L)



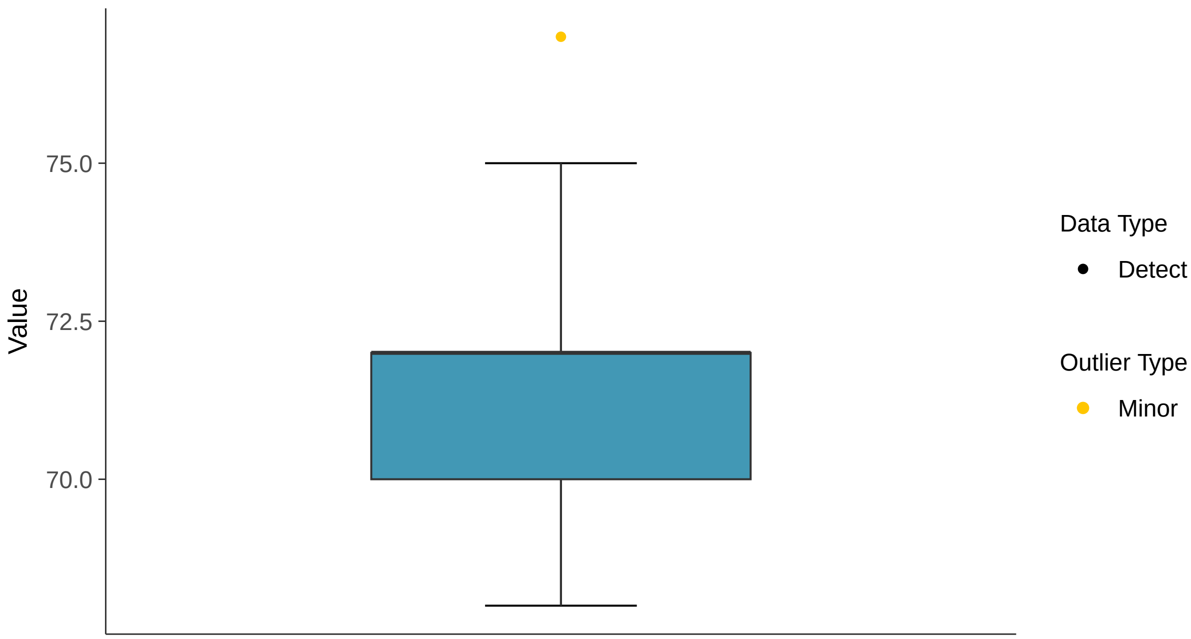
Histogram

Chloride, MW-4 (mg/L)



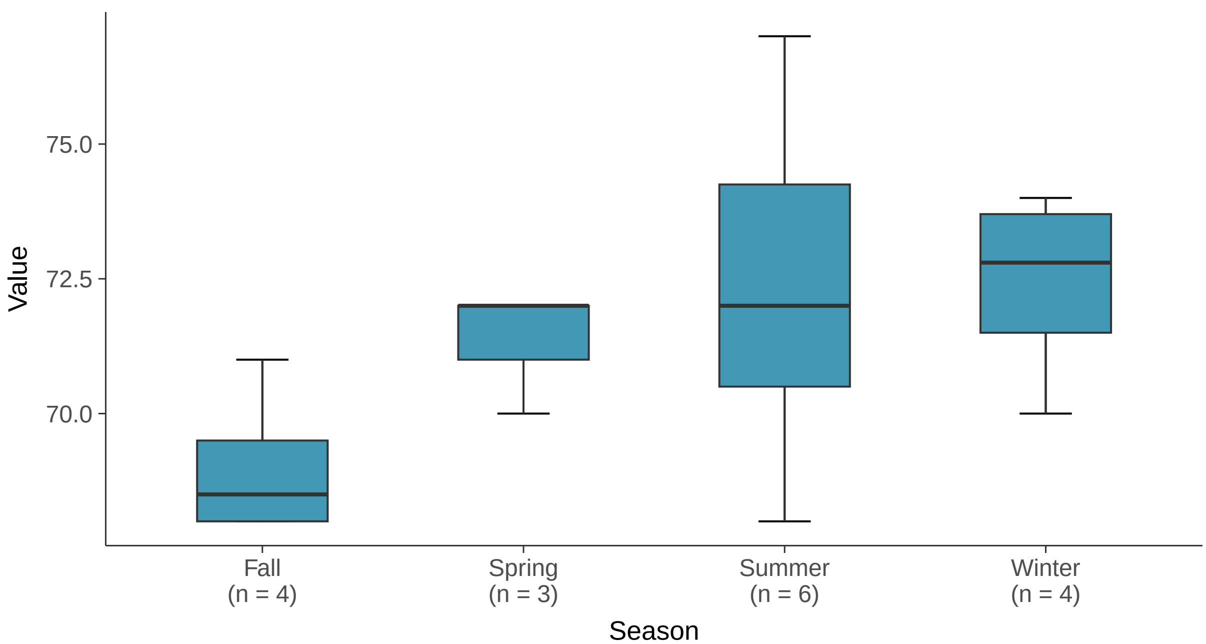
Boxplot

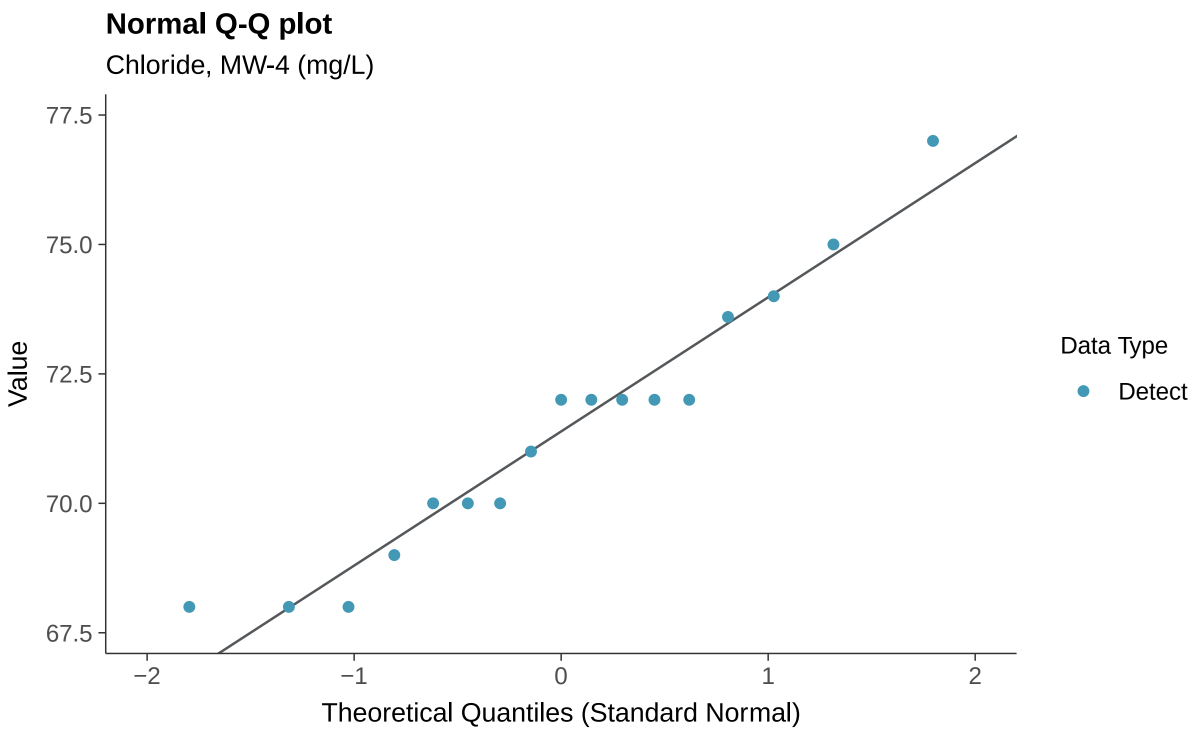
Chloride, MW-4 (mg/L)

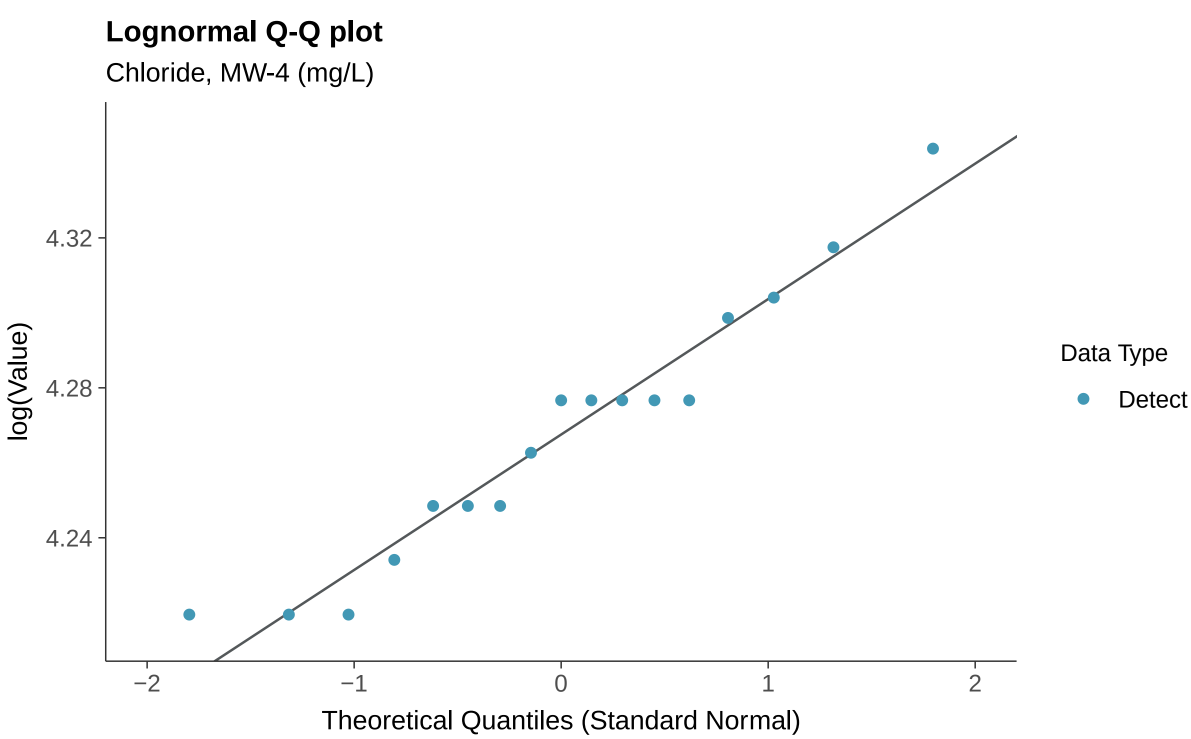


Boxplot by Season

Chloride, MW-4 (mg/L)

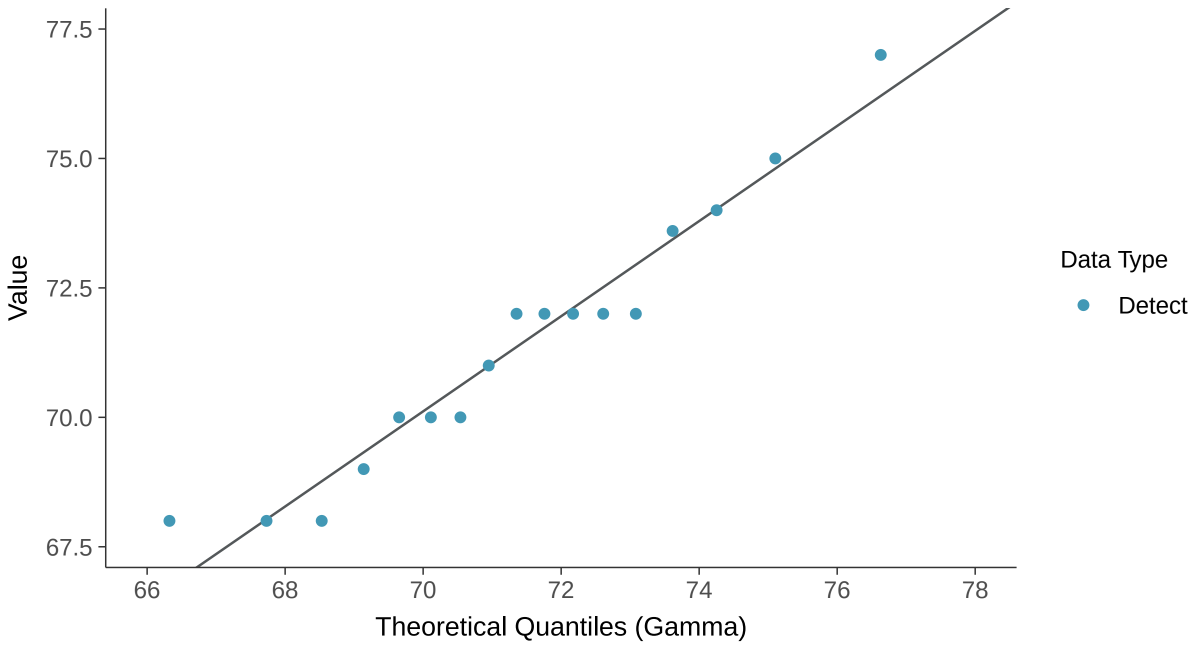



Normal Q-Q plot
Chloride, MW-4 (mg/L)
Value
77.5
75.0
72.5
70.0
67.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chloride, MW-4 (mg/L)
log(Value)
4.32
4.28
4.24
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

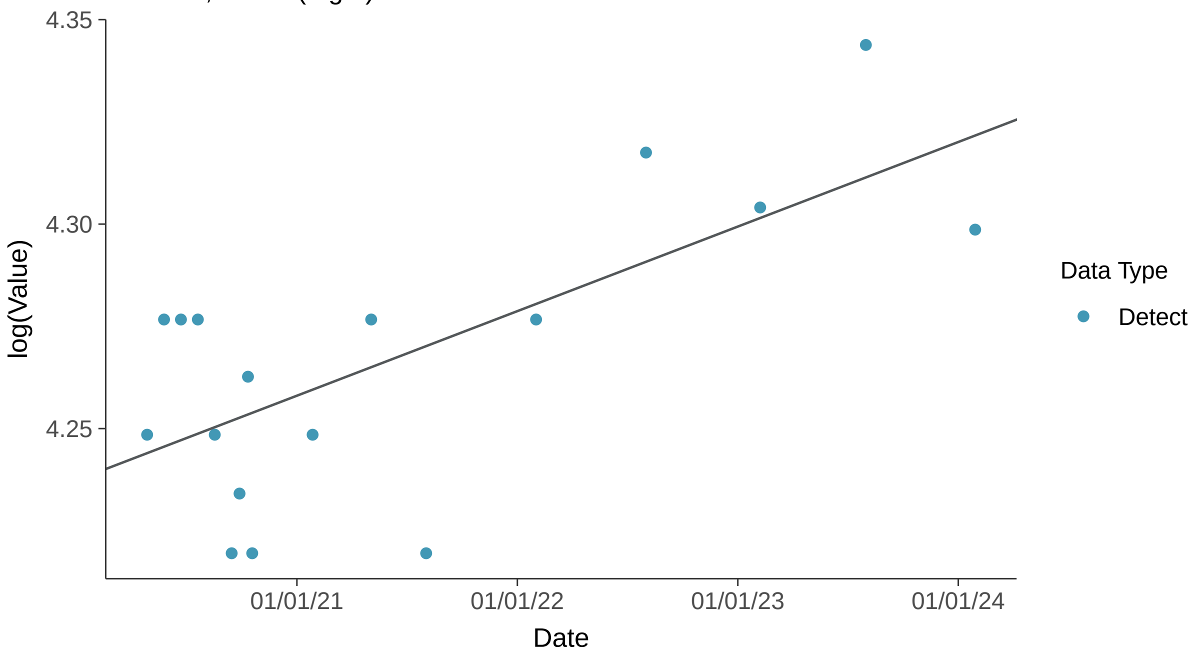
Gamma Q-Q plot

Chloride, MW-4 (mg/L)



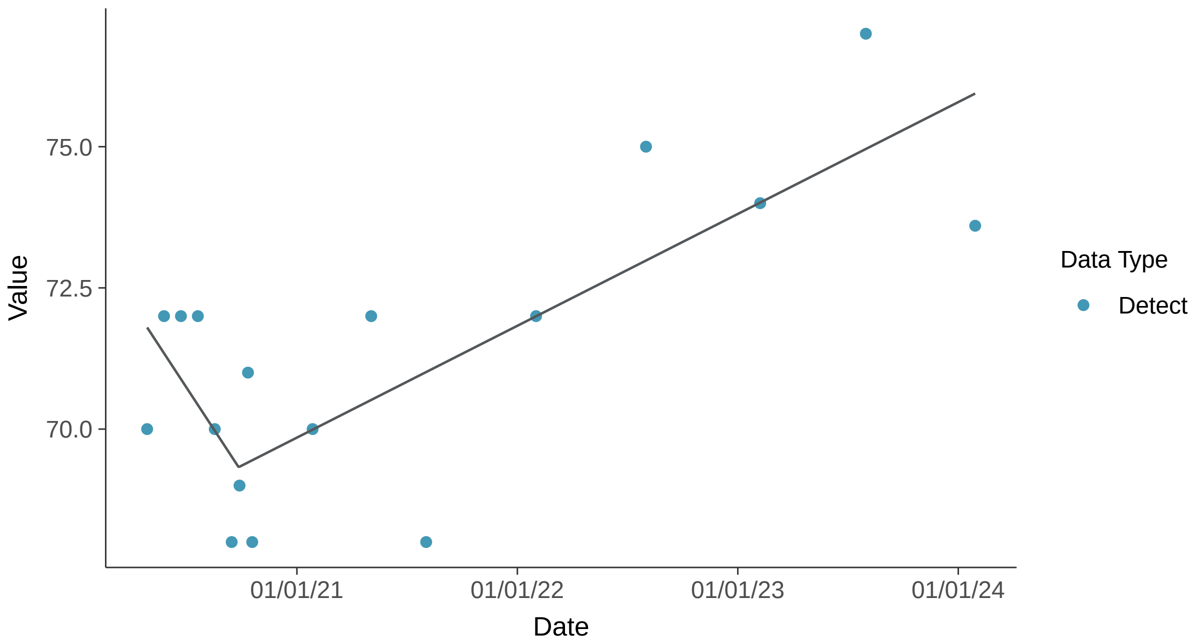
Trend Regression: Lognormal MLE

Chloride, MW-4 (mg/L)



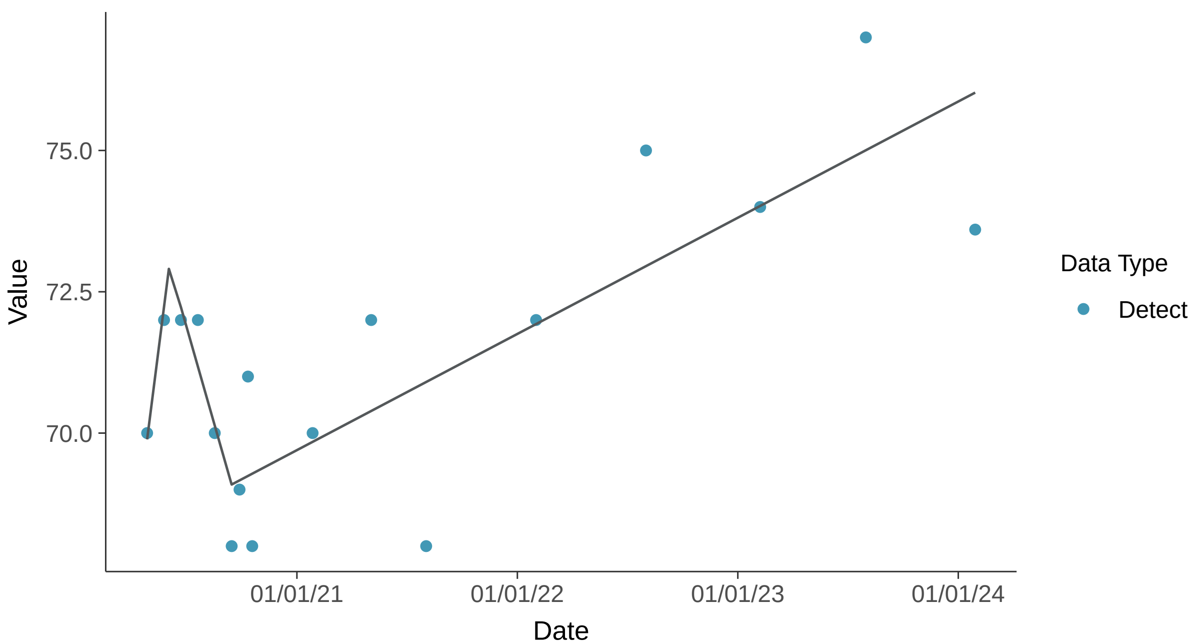
Trend Regression: Piecewise Linear-Linear

Chloride, MW-4 (mg/L)



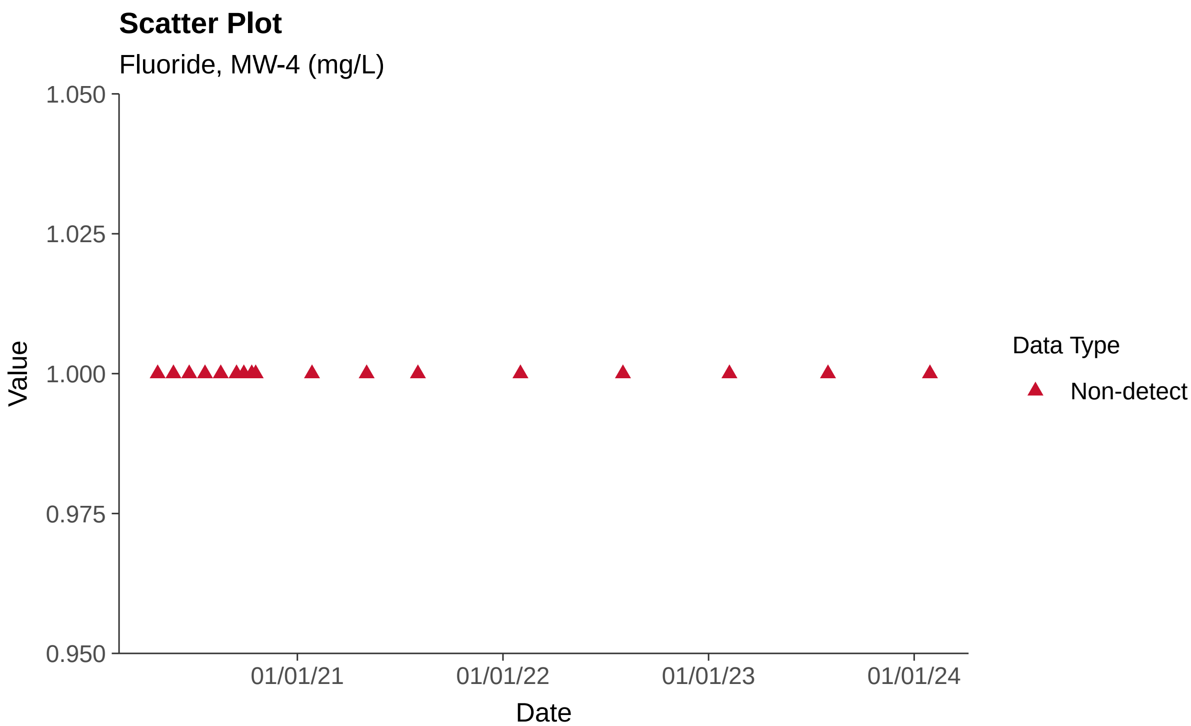
Trend Regression: Piecewise Linear-Linear-Linear

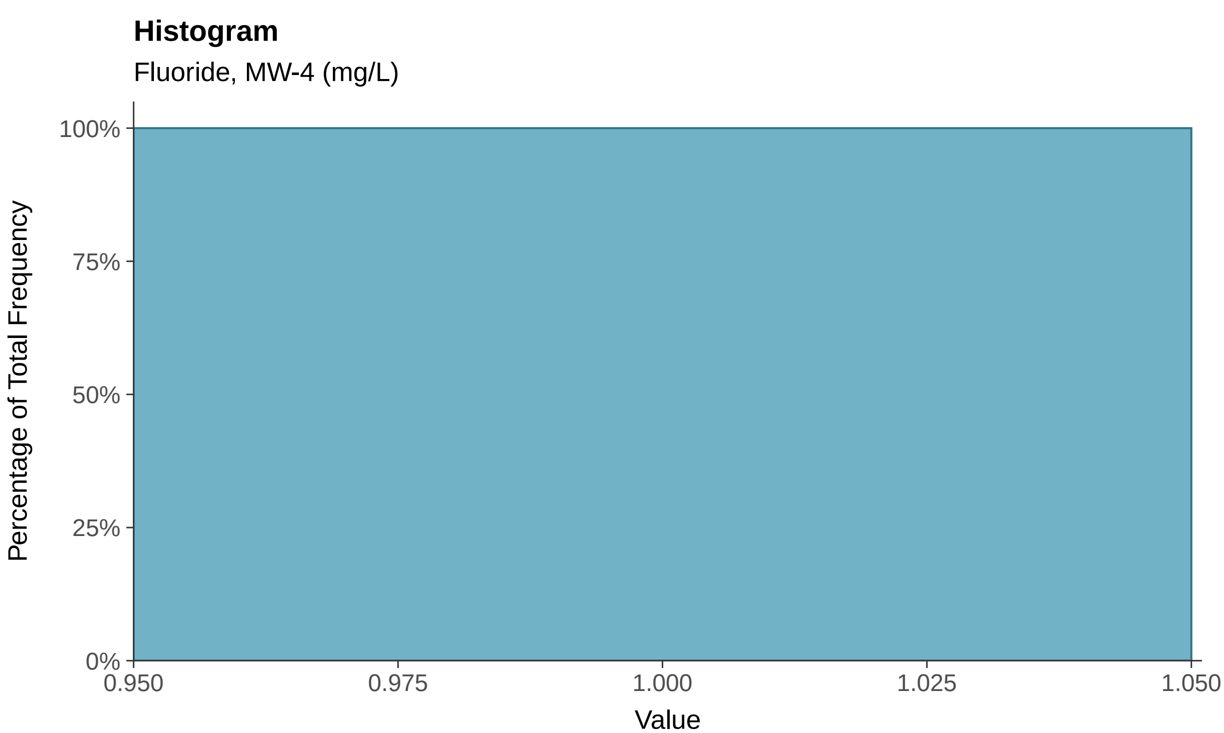
Chloride, MW-4 (mg/L)



Appendix III: Fluoride, MW-4

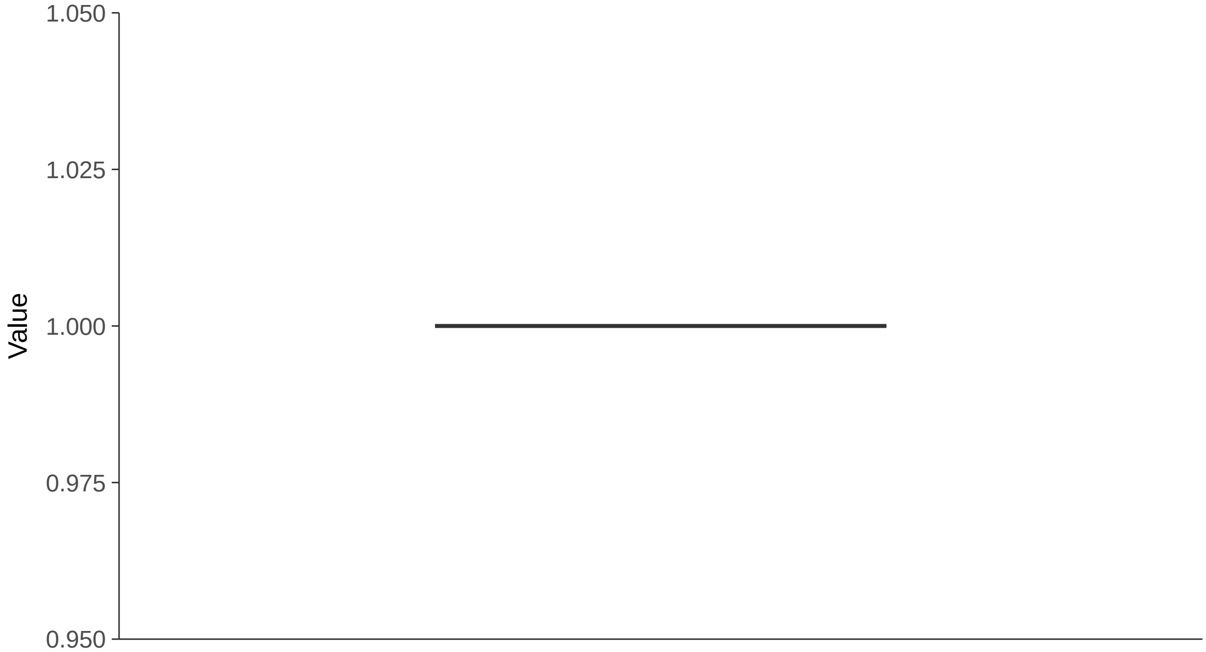
ID: 04_1_04





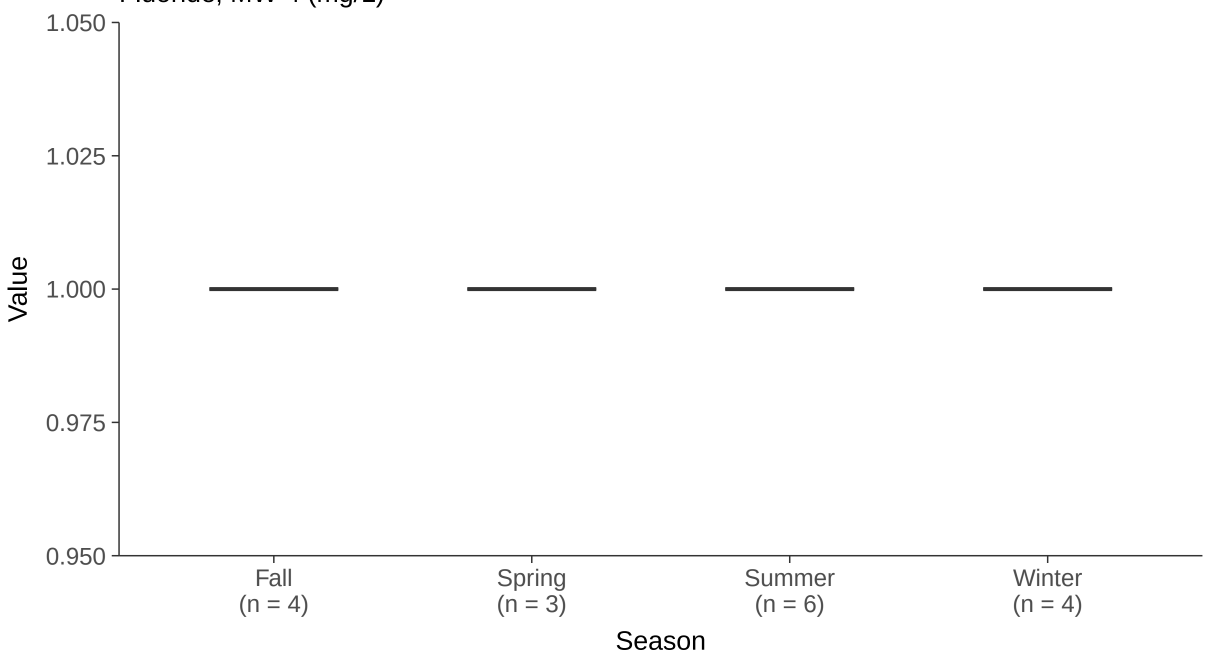
Boxplot

Fluoride, MW-4 (mg/L)



Boxplot by Season

Fluoride, MW-4 (mg/L)

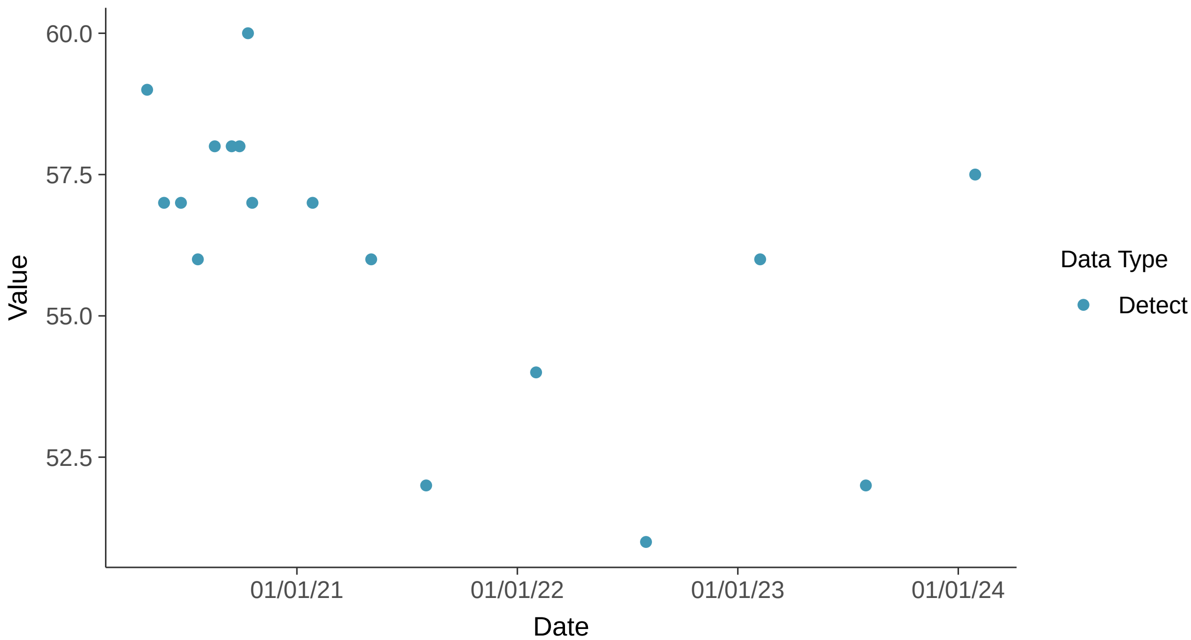


Appendix III: Sulfate, MW-4

ID: 04_1_05

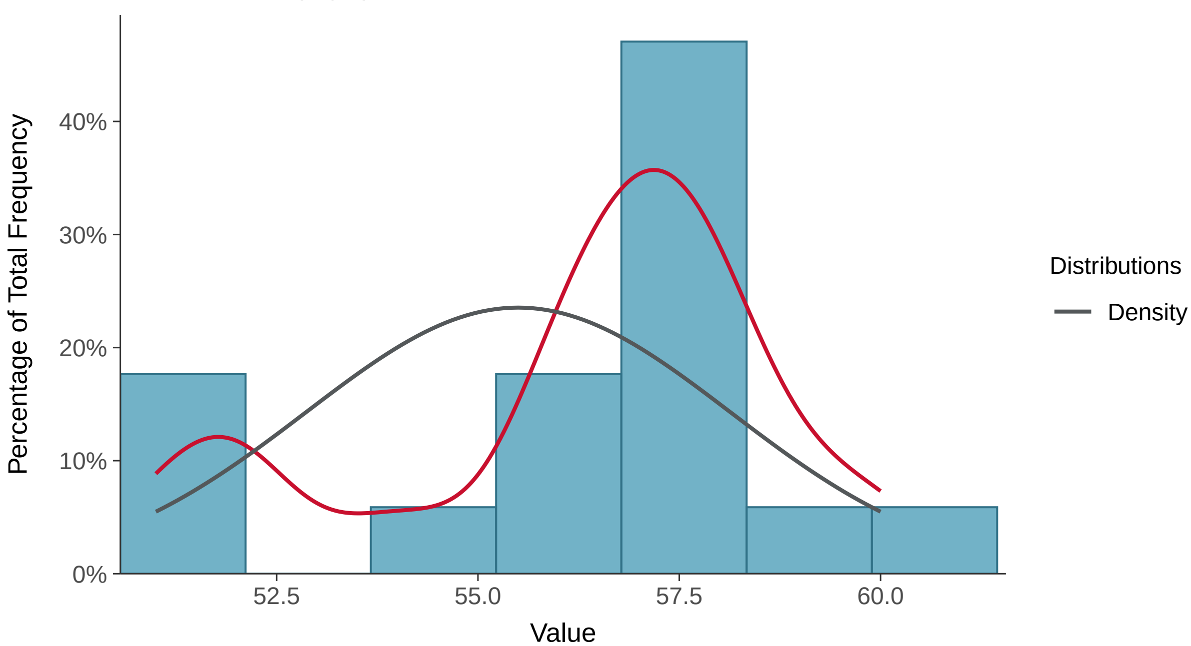
Scatter Plot

Sulfate, MW-4 (mg/L)



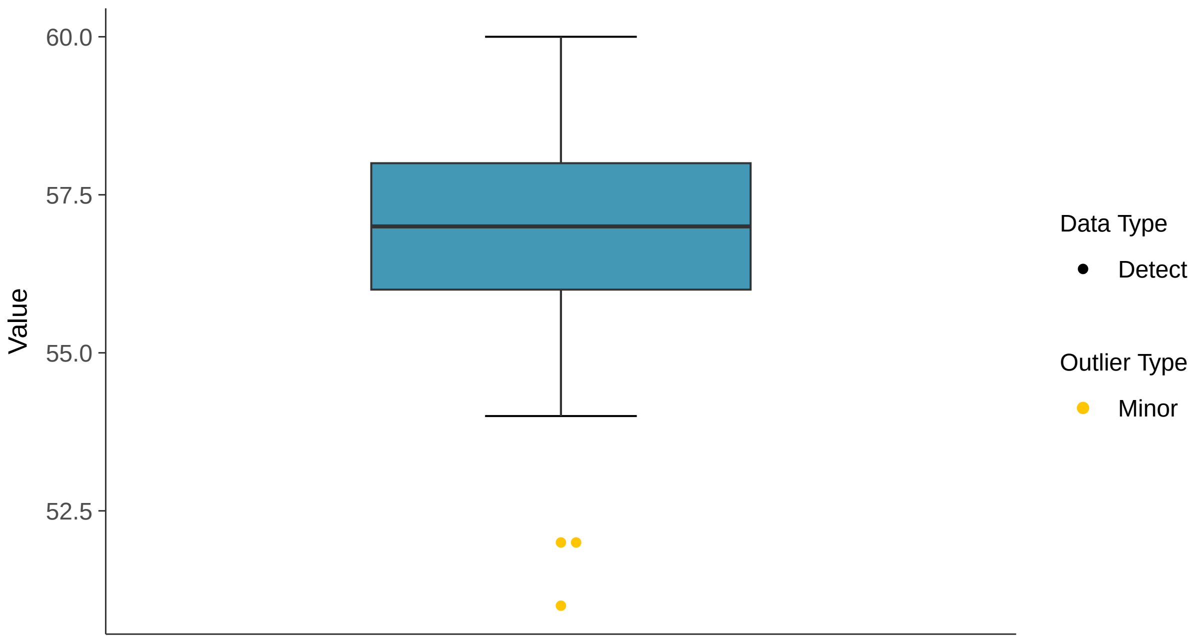
Histogram

Sulfate, MW-4 (mg/L)



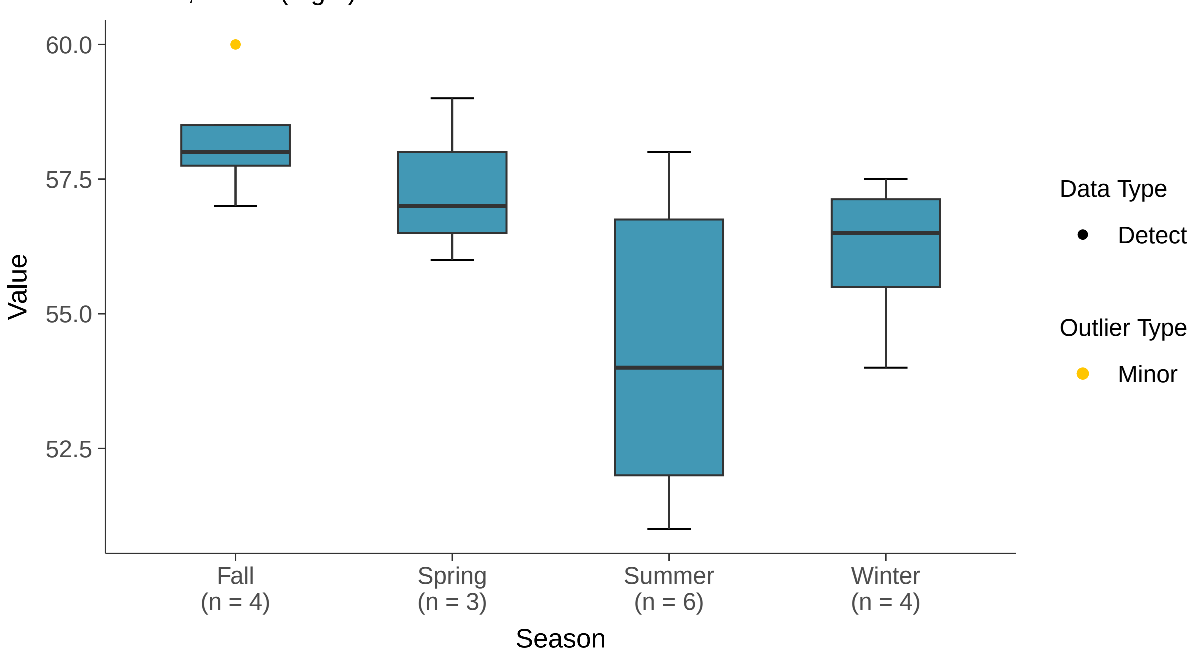
Boxplot

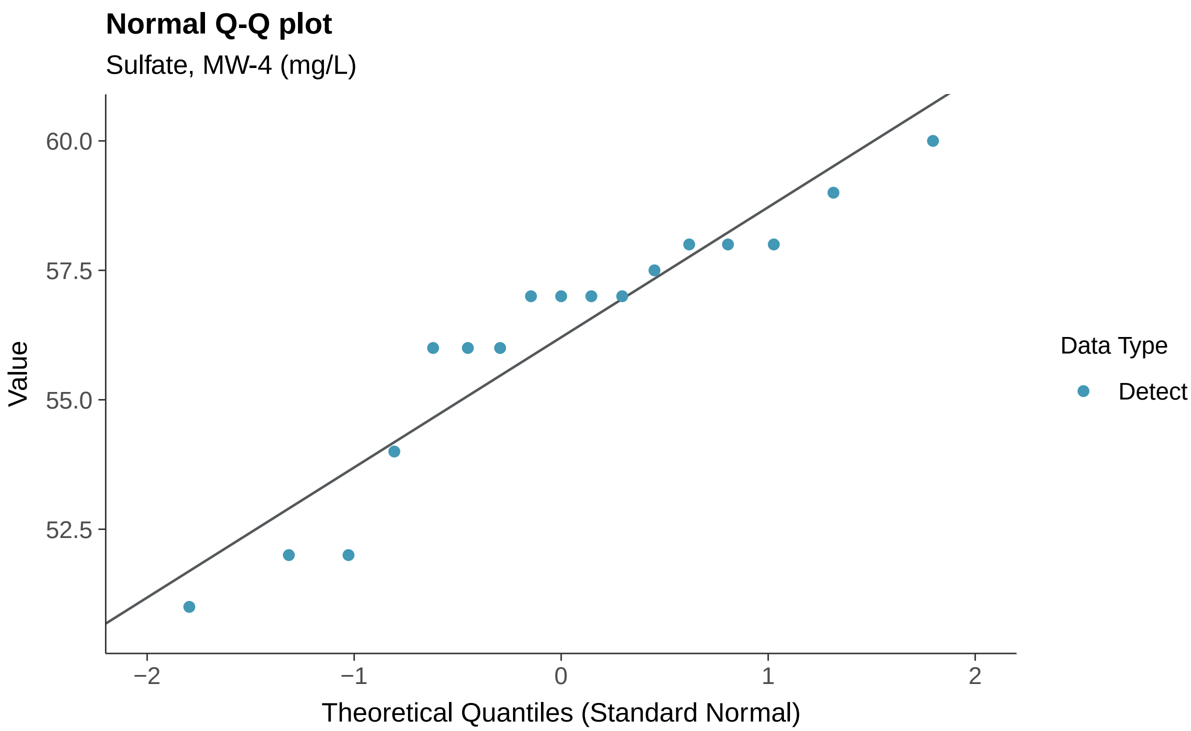
Sulfate, MW-4 (mg/L)

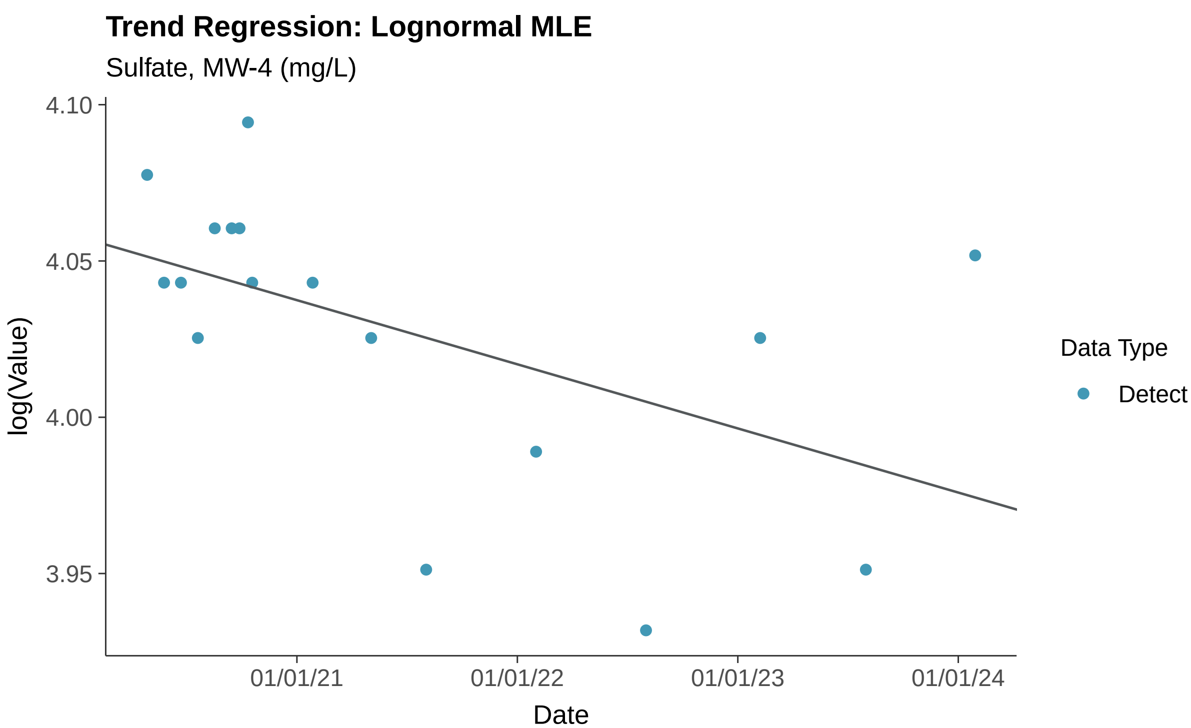


Boxplot by Season

Sulfate, MW-4 (mg/L)

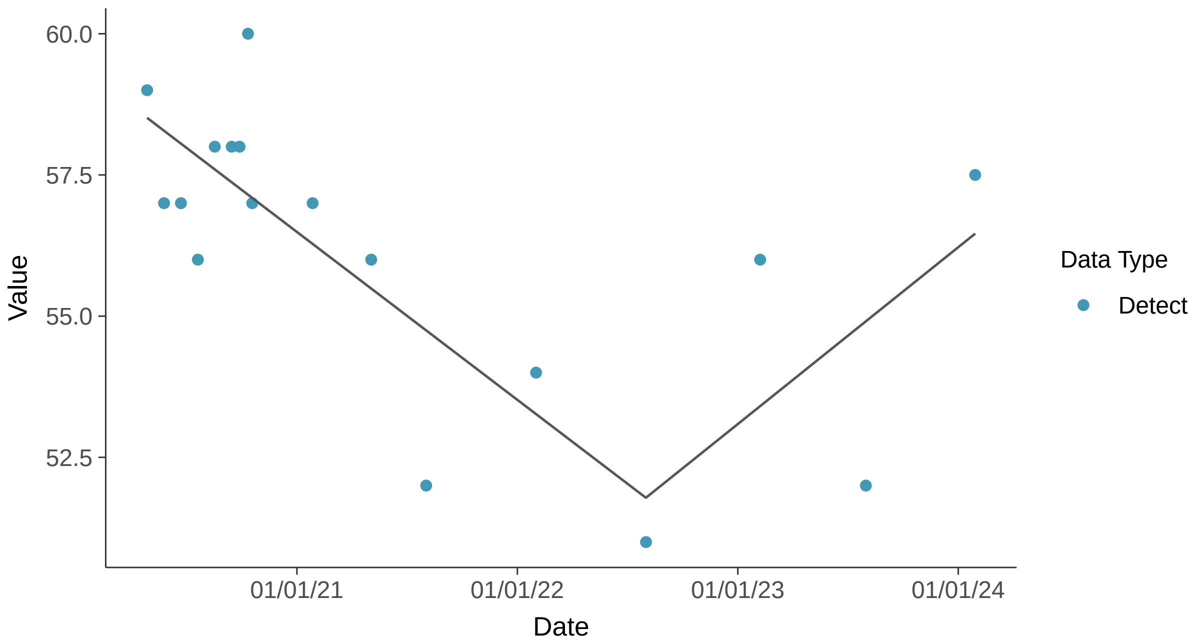



Normal Q-Q plot
Sulfate, MW-4 (mg/L)
Value
60.0
57.5
55.0
52.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Sulfate, MW-4 (mg/L)
log(Value)
4.10
4.05
4.00
3.95
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

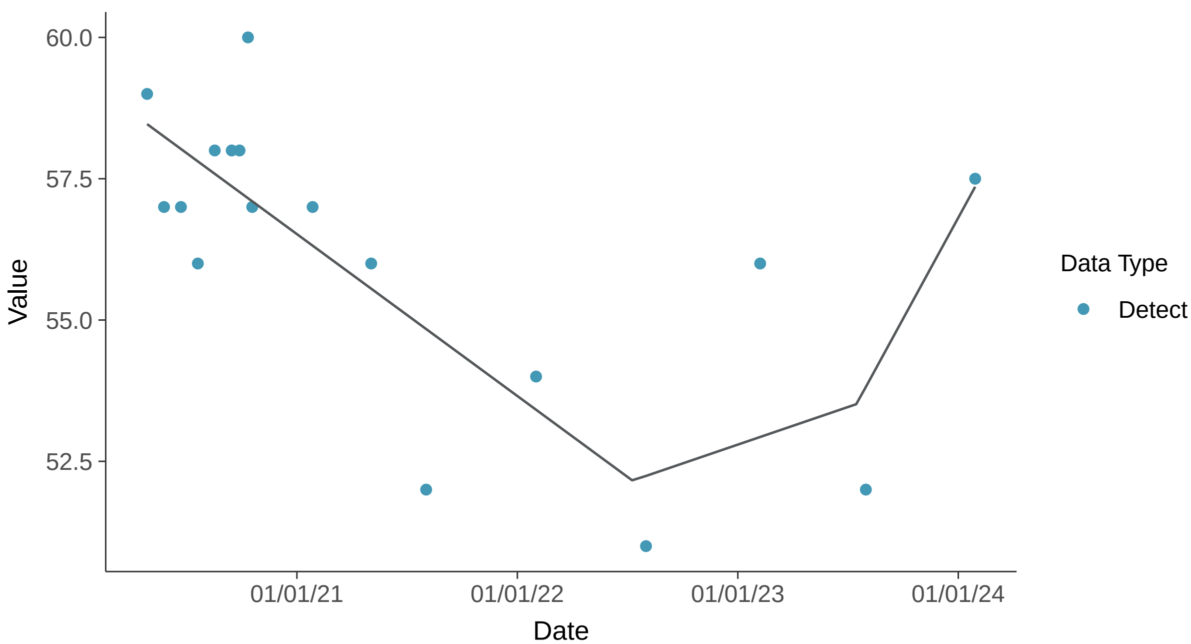
Trend Regression: Piecewise Linear-Linear

Sulfate, MW-4 (mg/L)



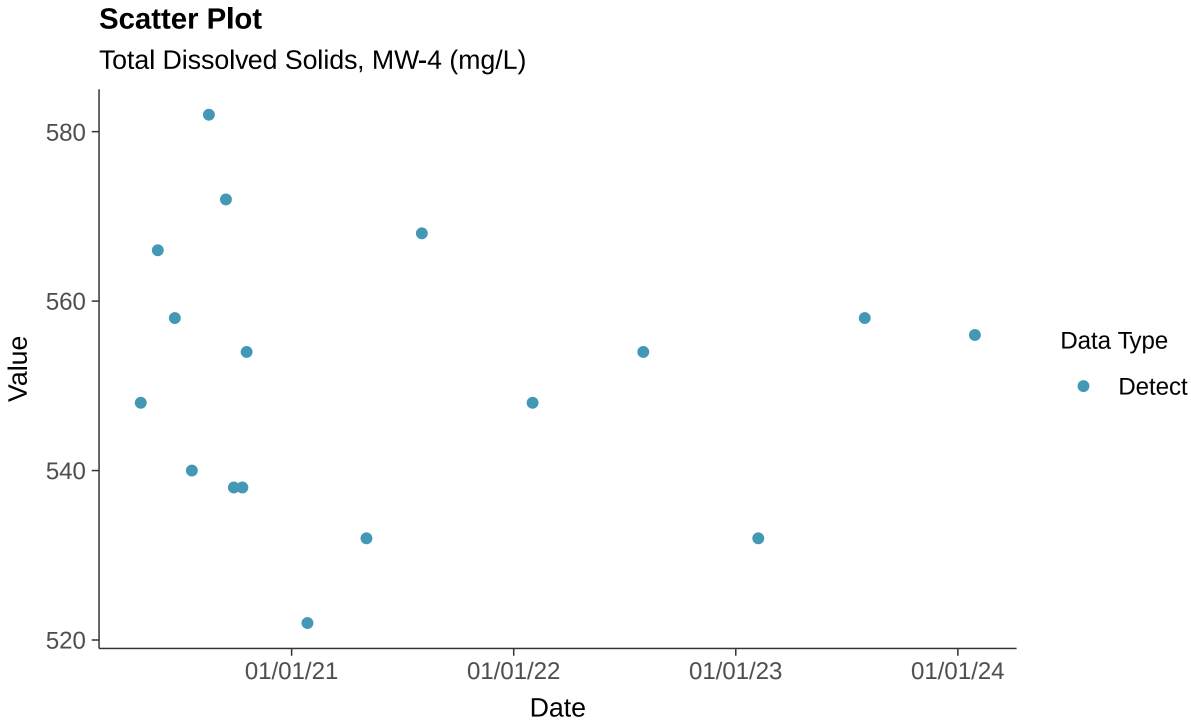
Trend Regression: Piecewise Linear-Linear-Linear

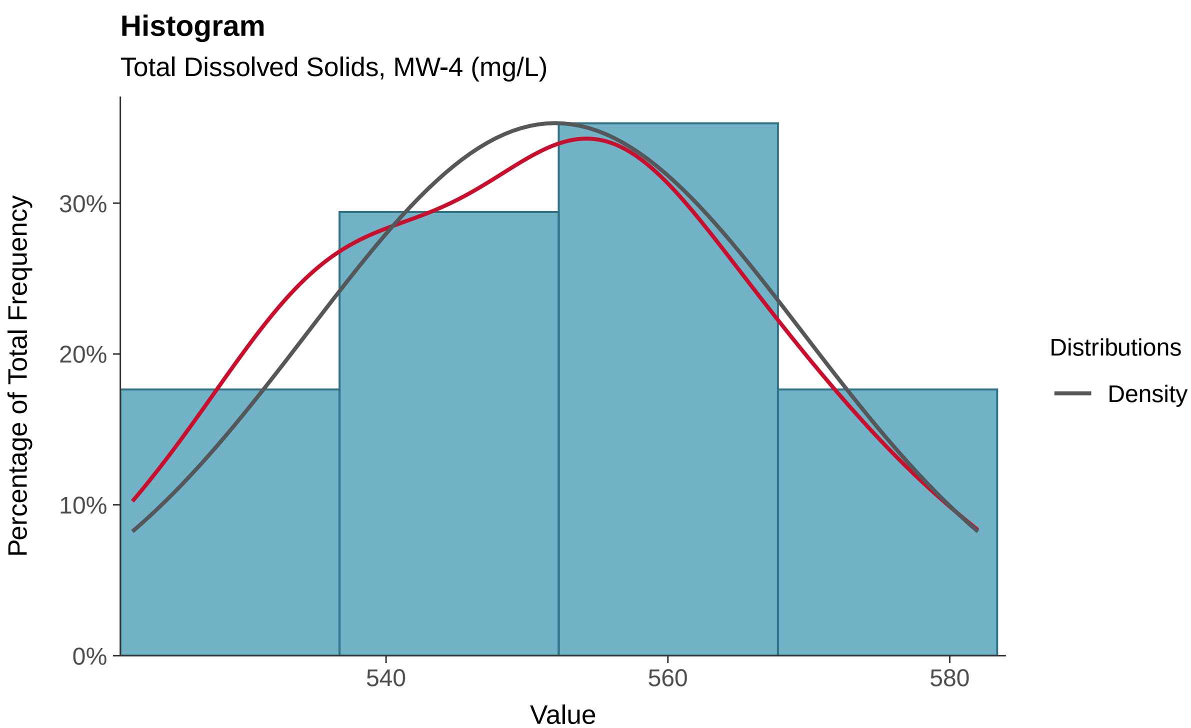
Sulfate, MW-4 (mg/L)



Appendix III: Total Dissolved Solids, MW-4

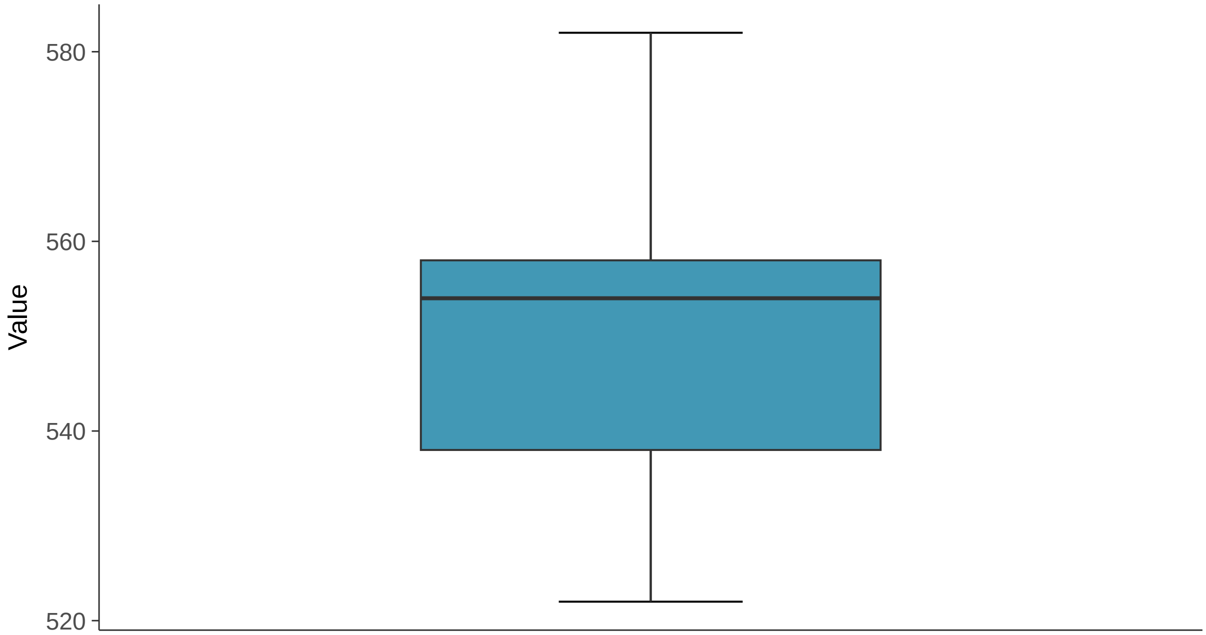
ID: 04_1_06





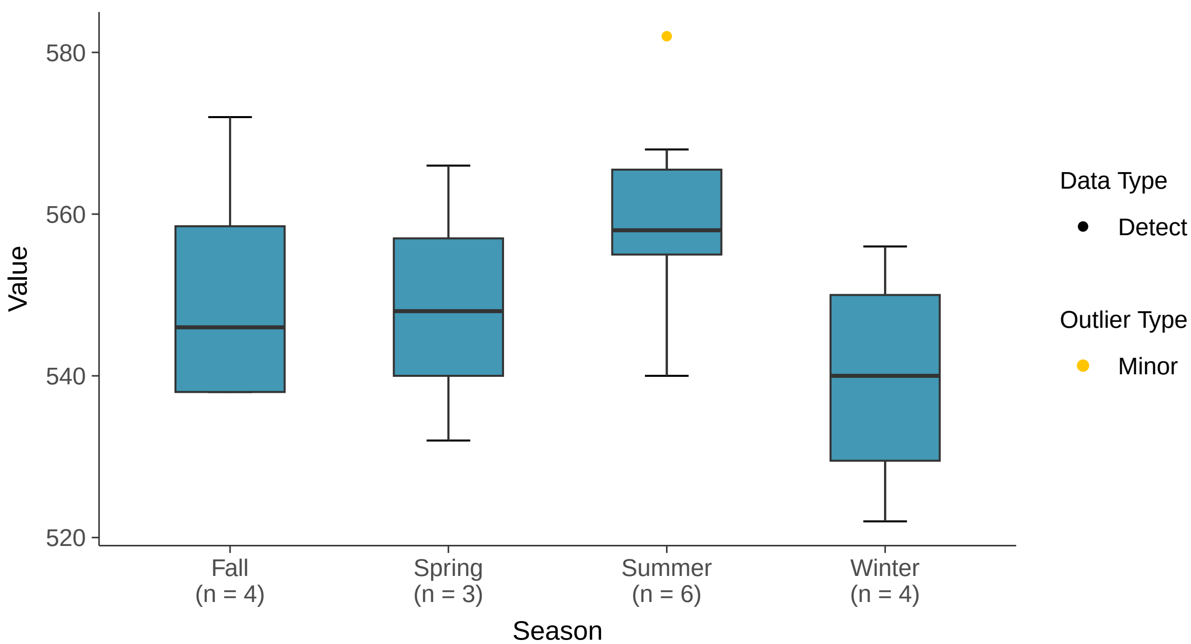
Boxplot

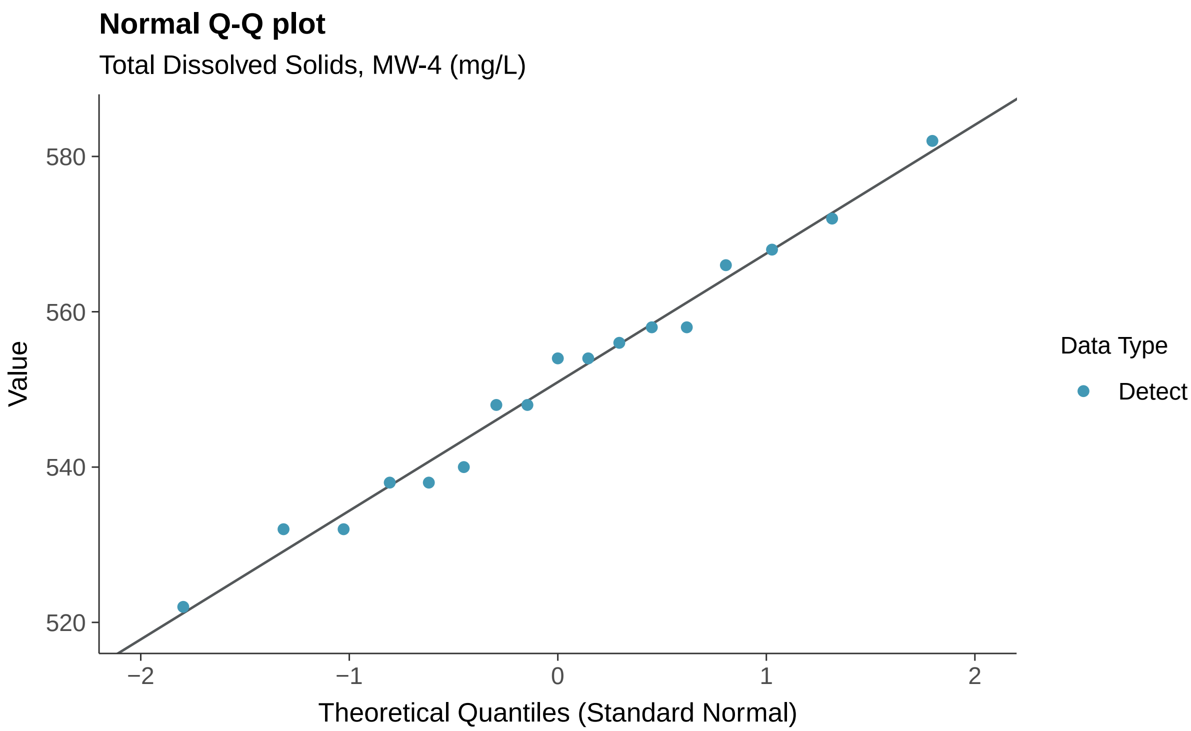
Total Dissolved Solids, MW-4 (mg/L)

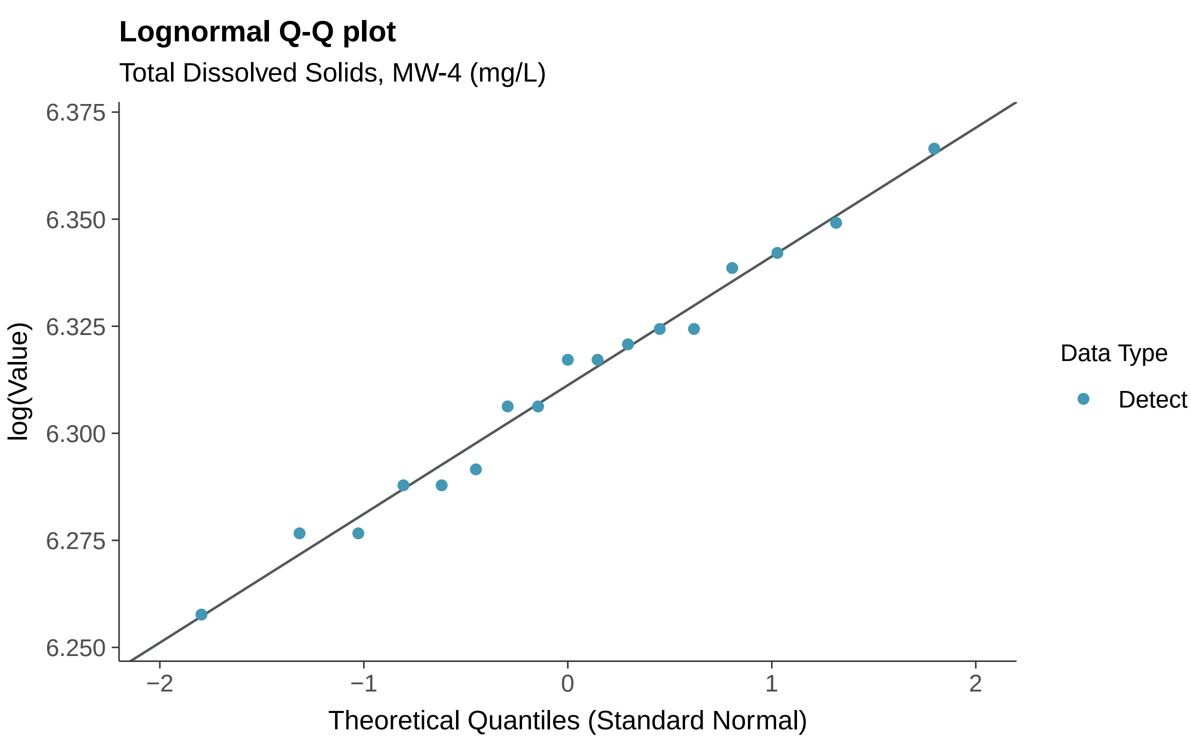


Boxplot by Season

Total Dissolved Solids, MW-4 (mg/L)

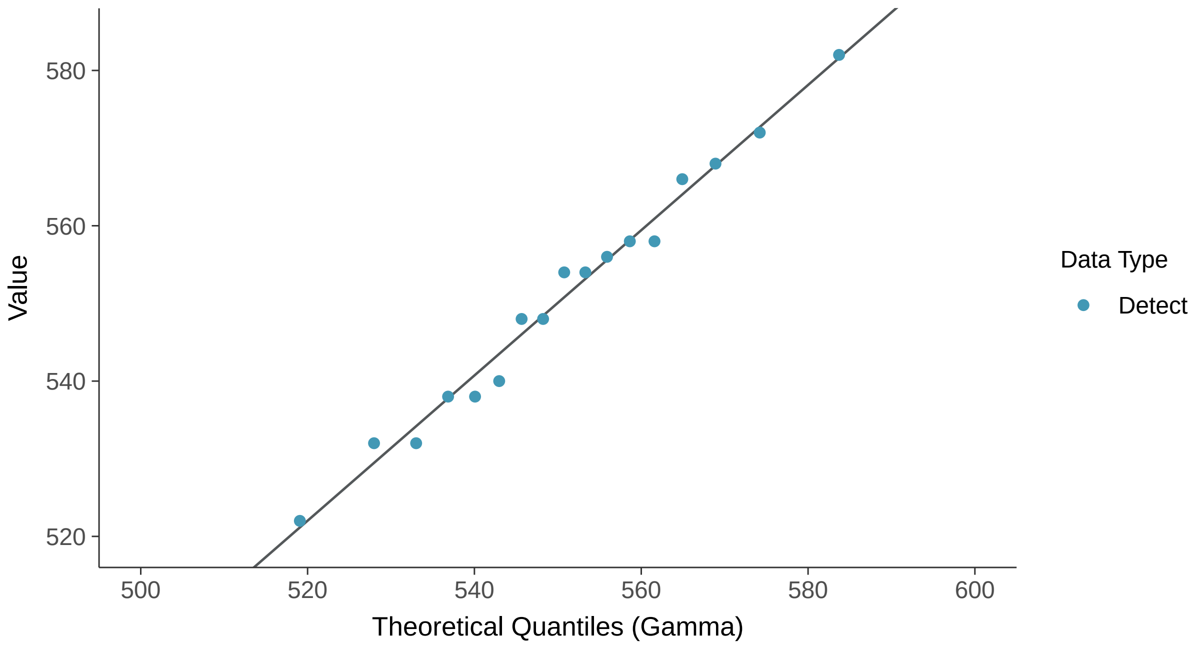



Normal Q-Q plot
Total Dissolved Solids, MW-4 (mg/L)
Value
580
560
540
520
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Total Dissolved Solids, MW-4 (mg/L)
log(Value)
6.375
6.350
6.325
6.300
6.275
6.250
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

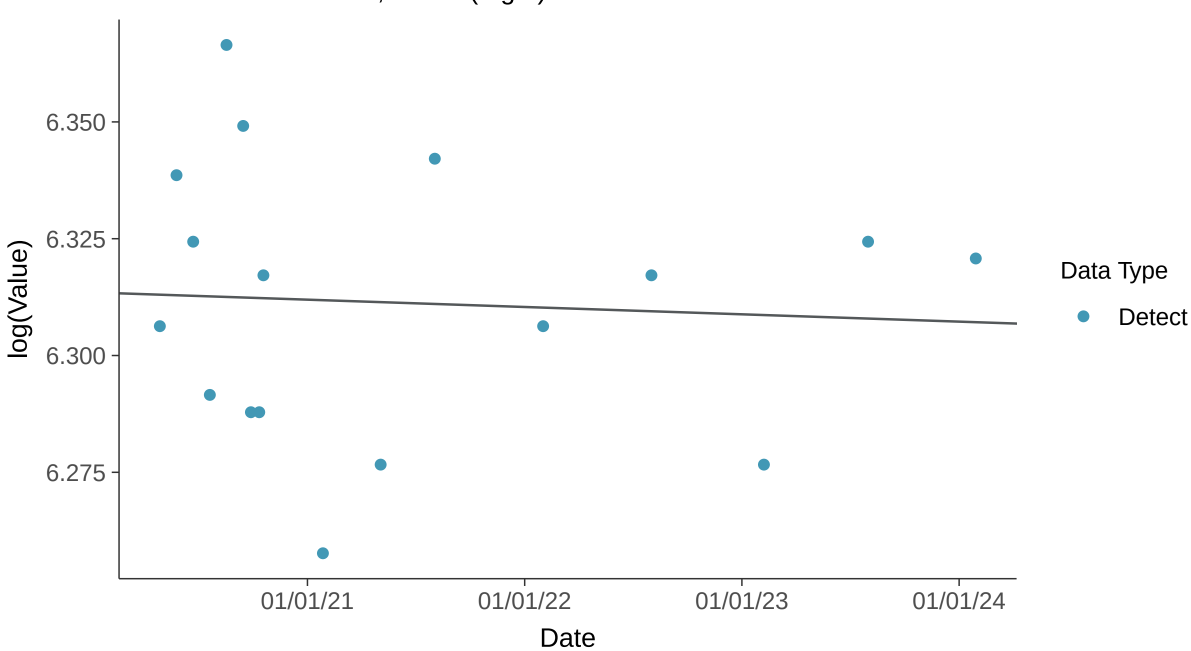
Gamma Q-Q plot

Total Dissolved Solids, MW-4 (mg/L)



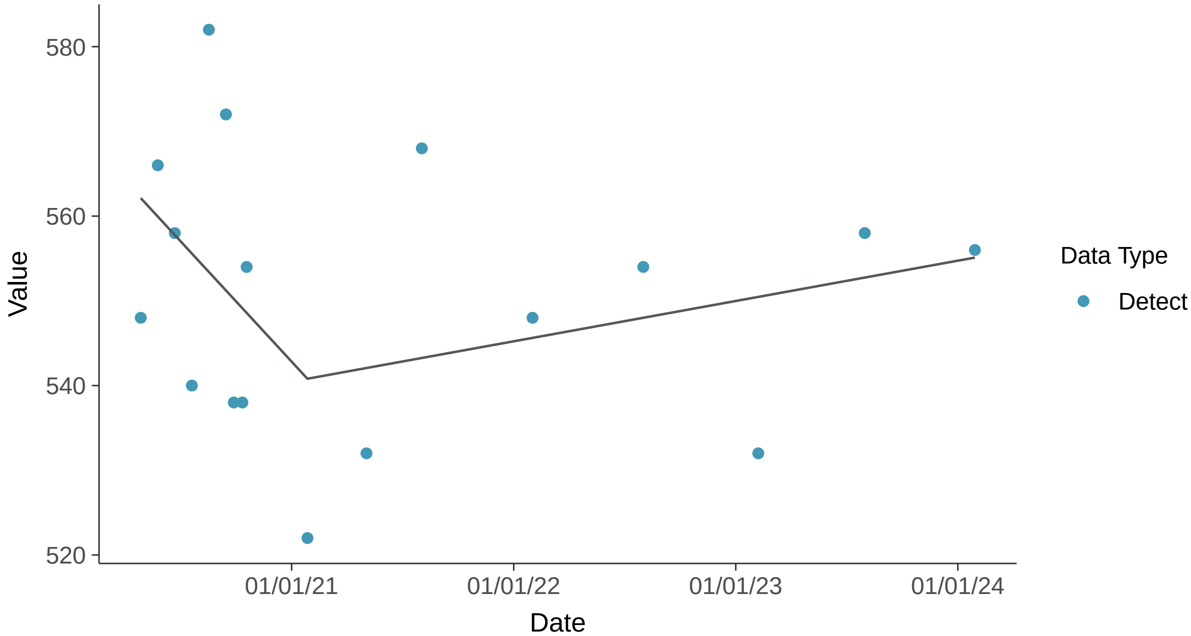
Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-4 (mg/L)



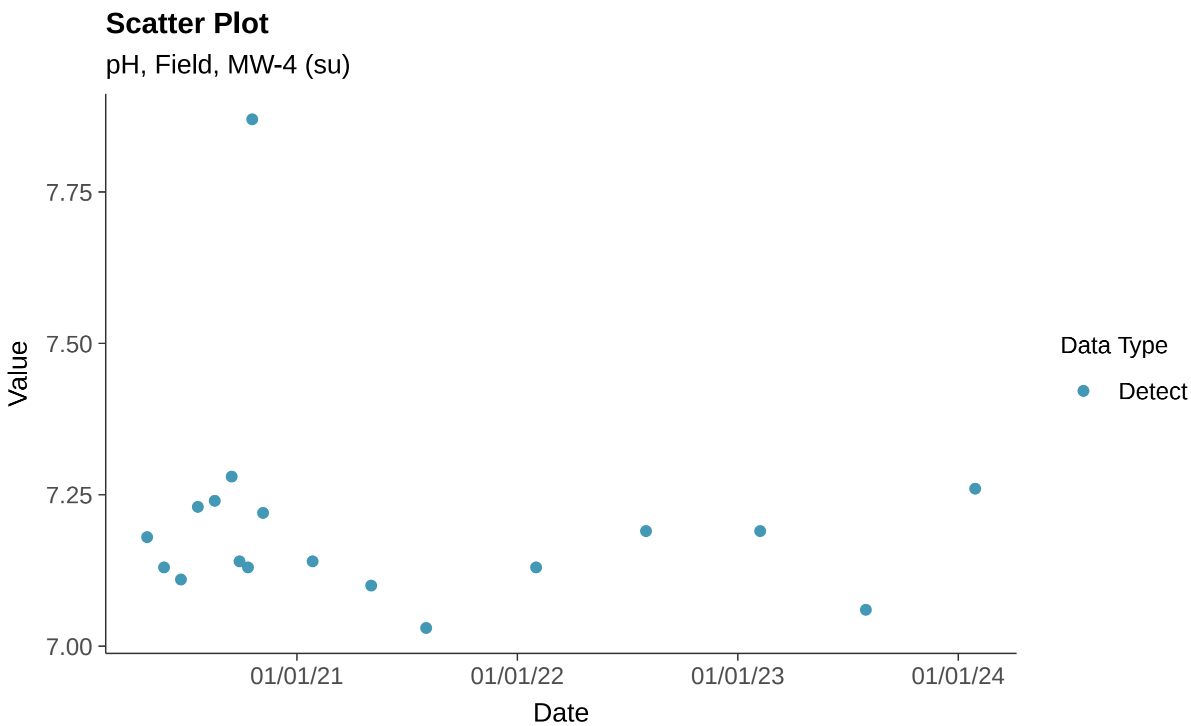
Trend Regression: Piecewise Linear-Linear

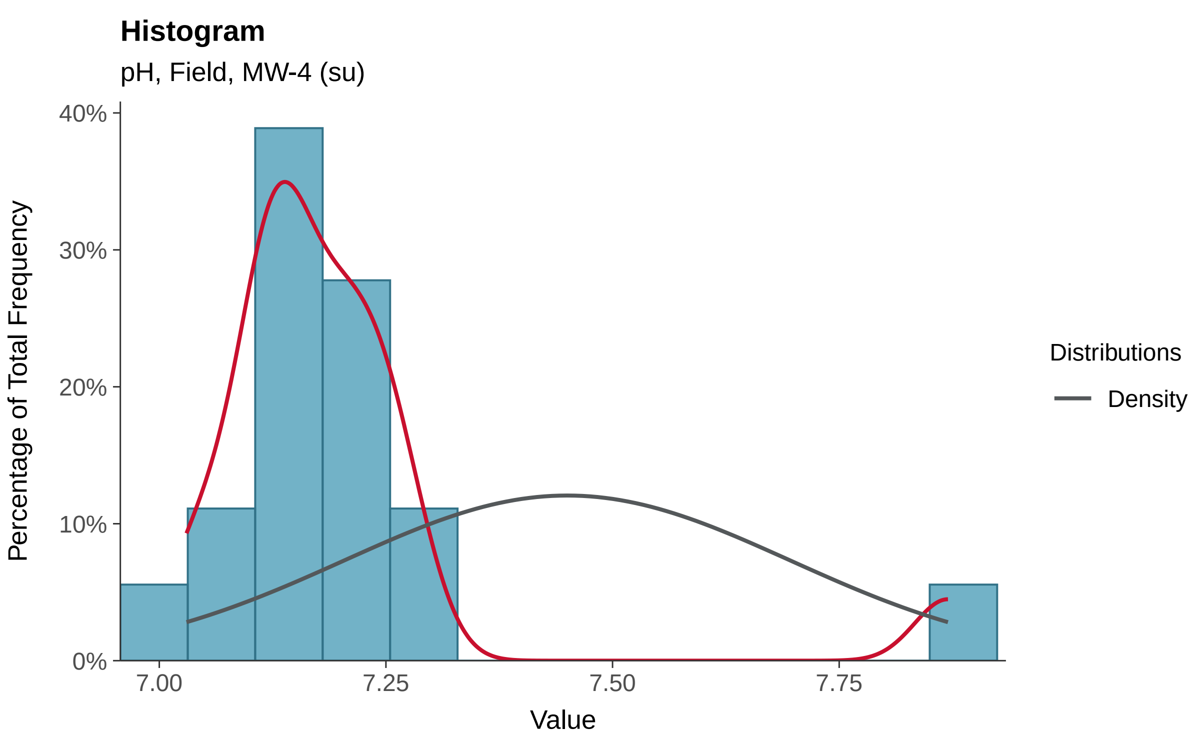
Total Dissolved Solids, MW-4 (mg/L)



Appendix III: pH, Field, MW-4

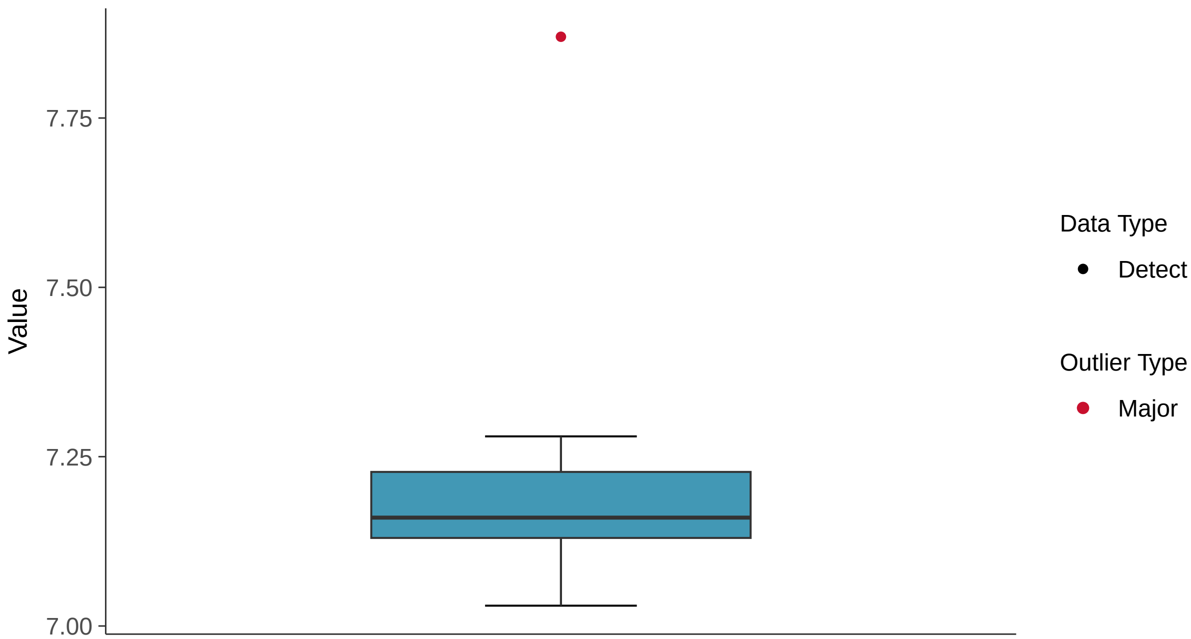
ID: 04_1_07





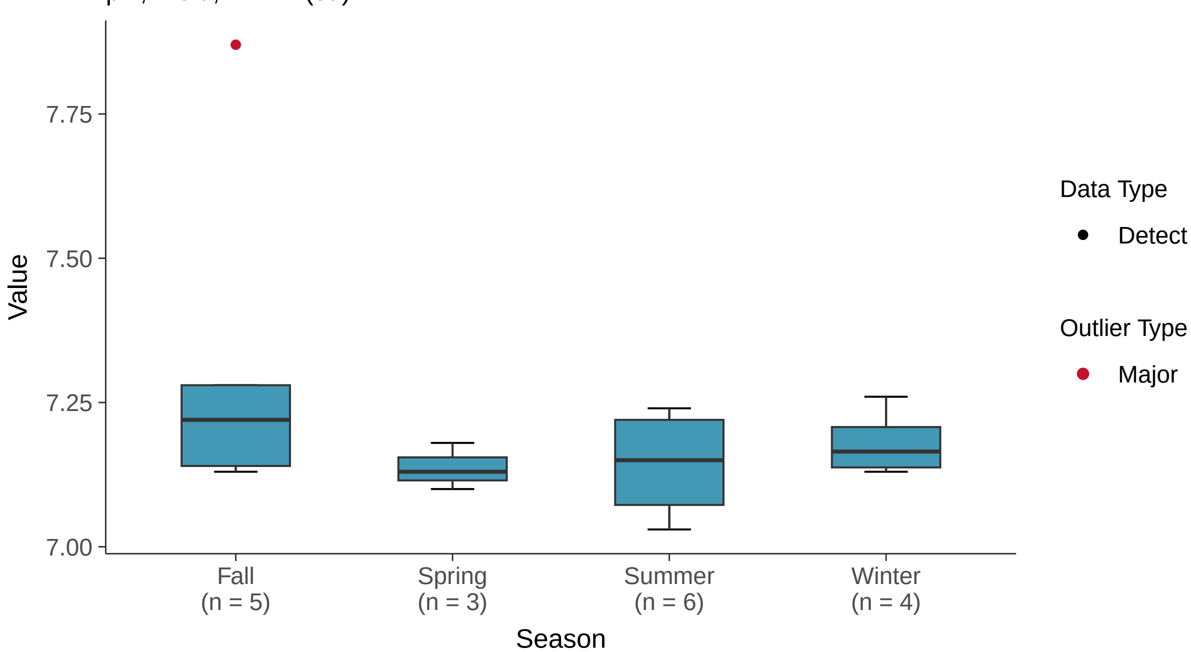
Boxplot

pH, Field, MW-4 (su)



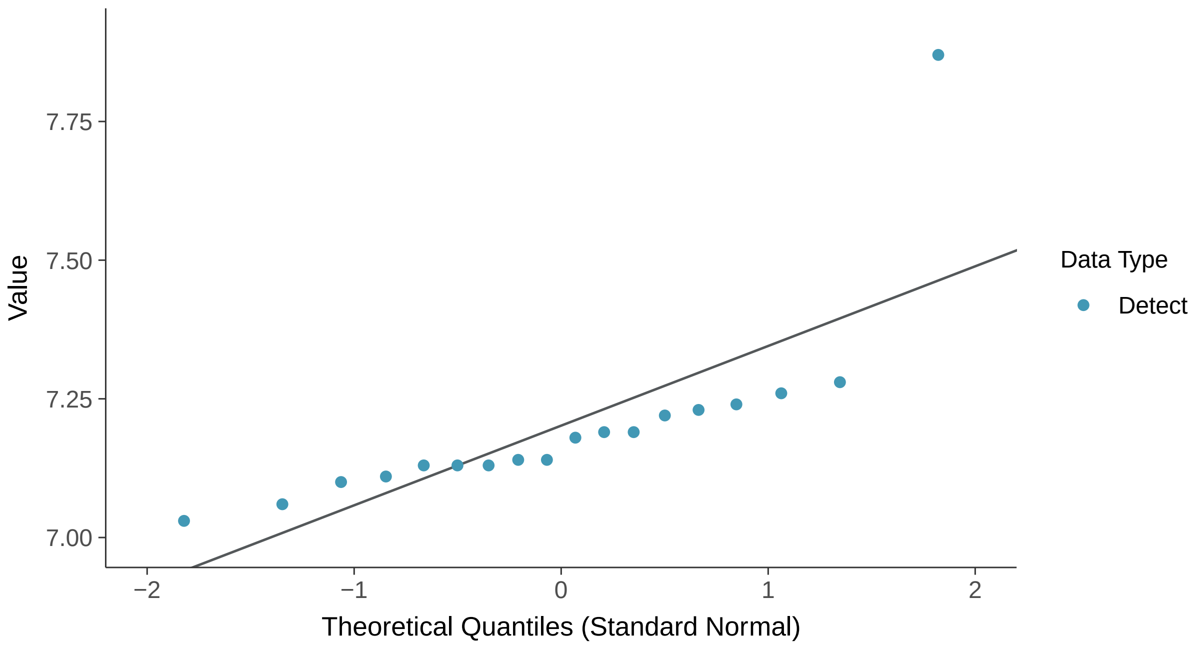
Boxplot by Season

pH, Field, MW-4 (su)



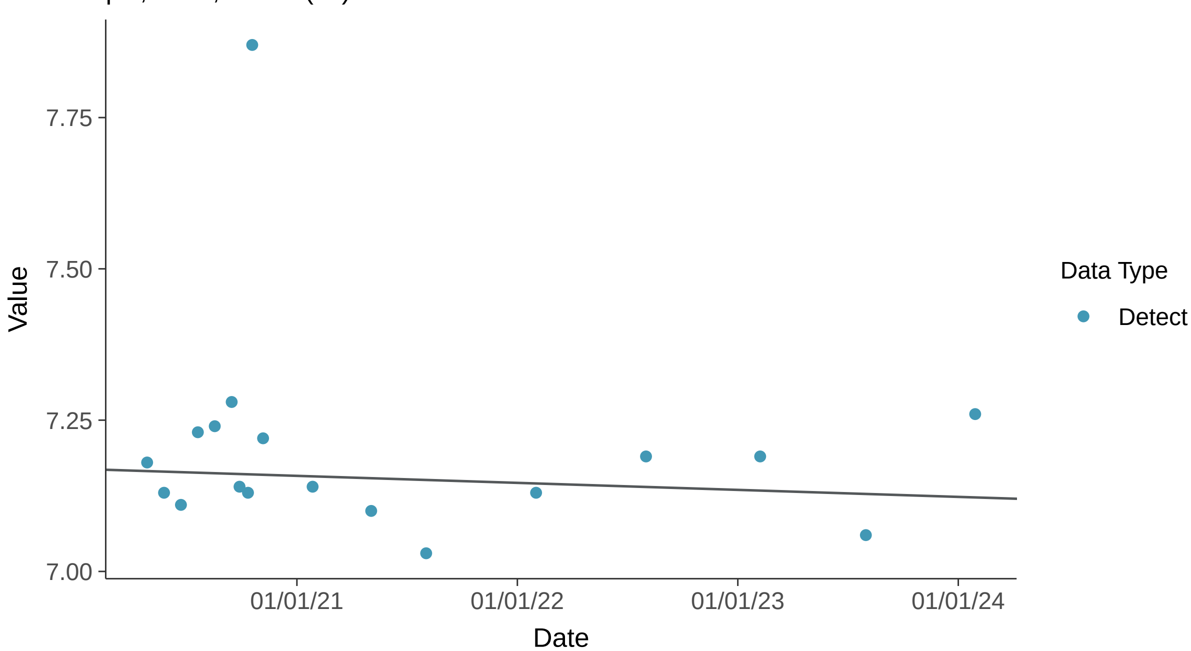
Normal Q-Q plot

pH, Field, MW-4 (su)



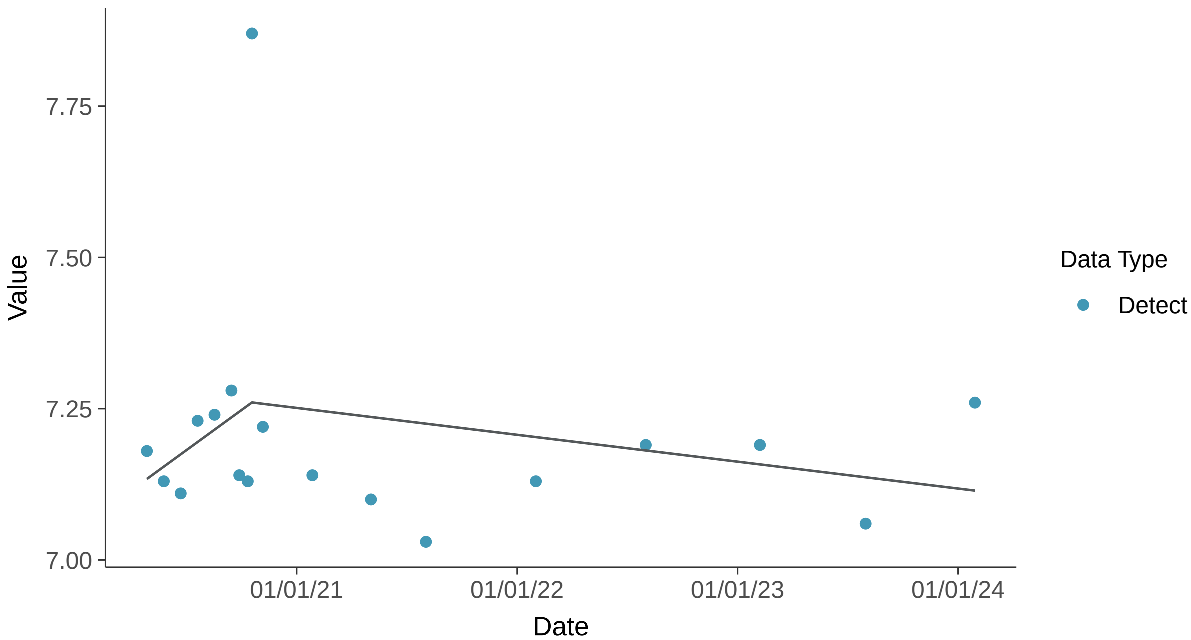
Trend Regression: Mann-Kendall/Theil-Sen Estimate

pH, Field, MW-4 (su)



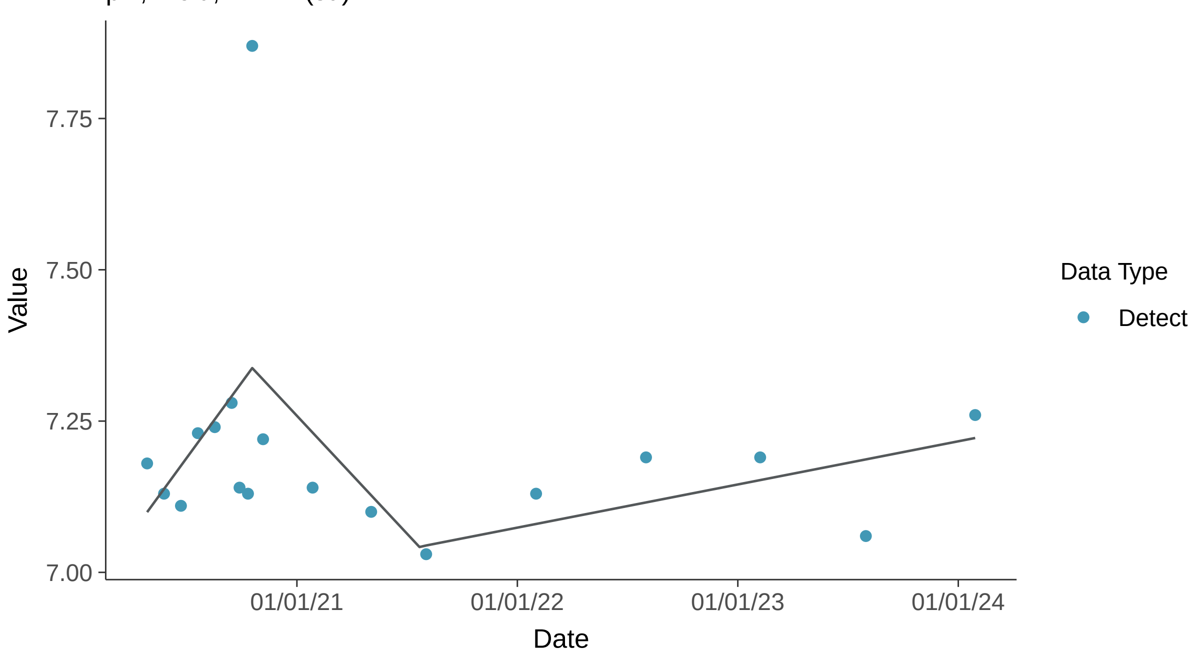
Trend Regression: Piecewise Linear-Linear

pH, Field, MW-4 (su)



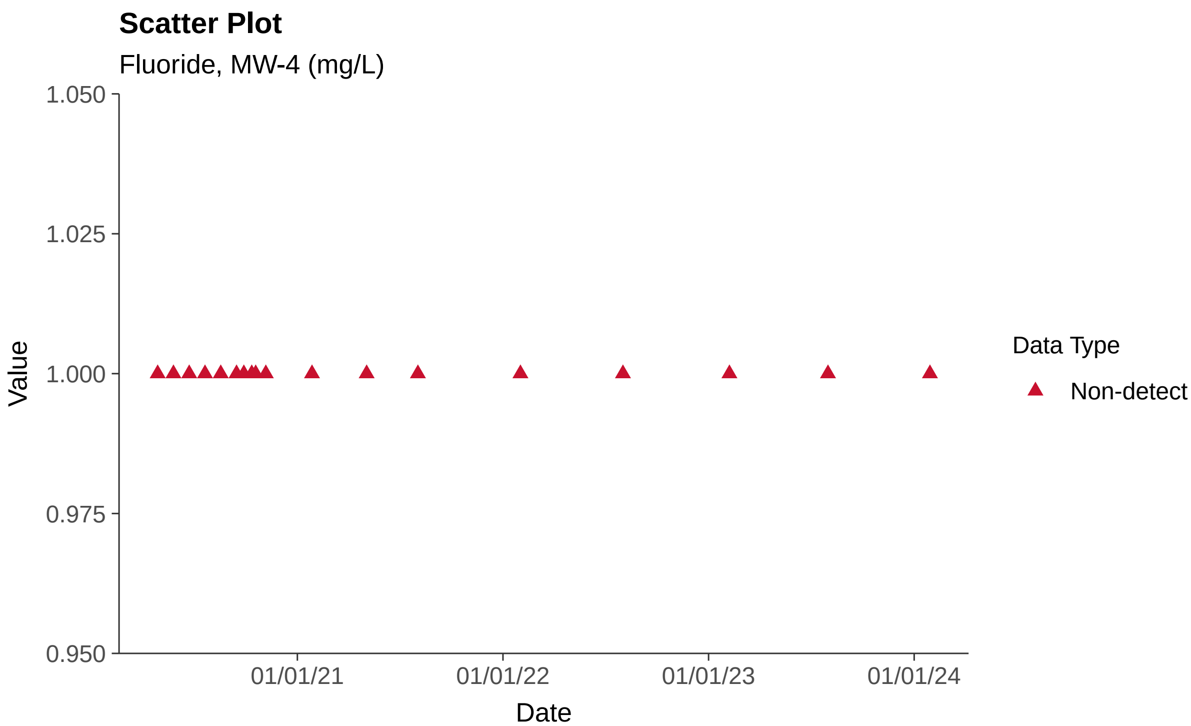
Trend Regression: Piecewise Linear-Linear-Linear

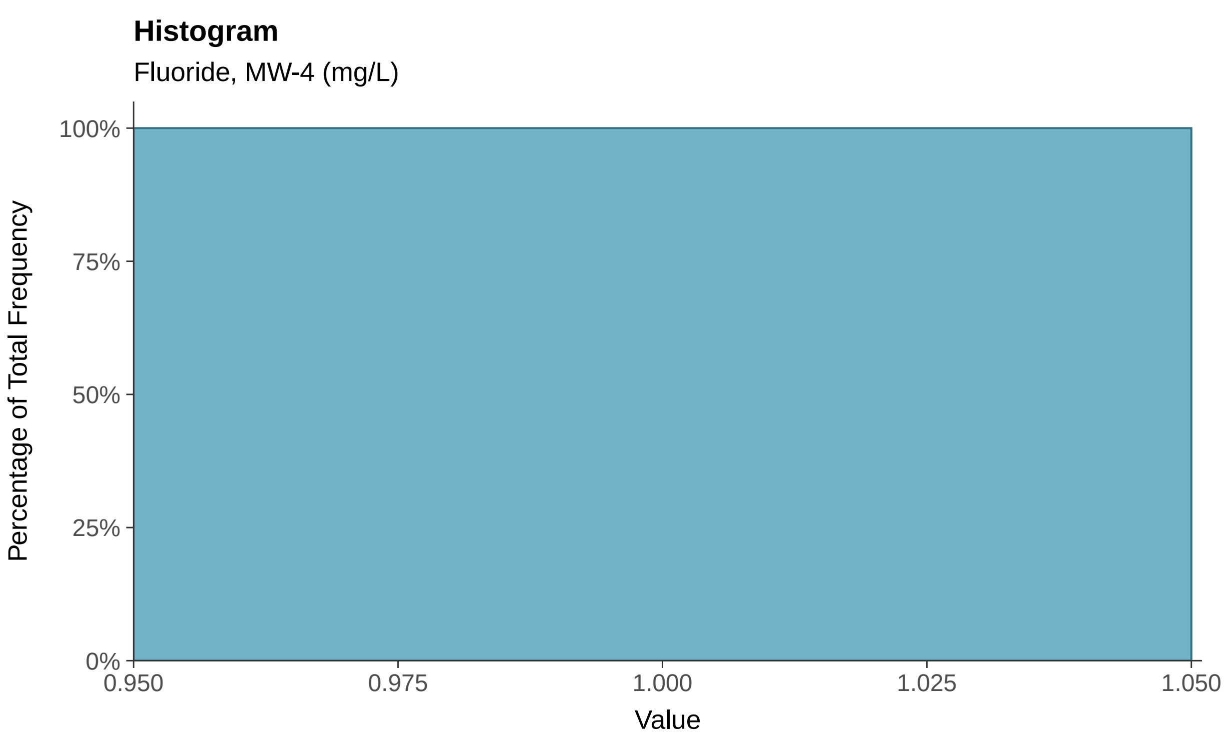
pH, Field, MW-4 (su)



Appendix IV: Fluoride, MW-4

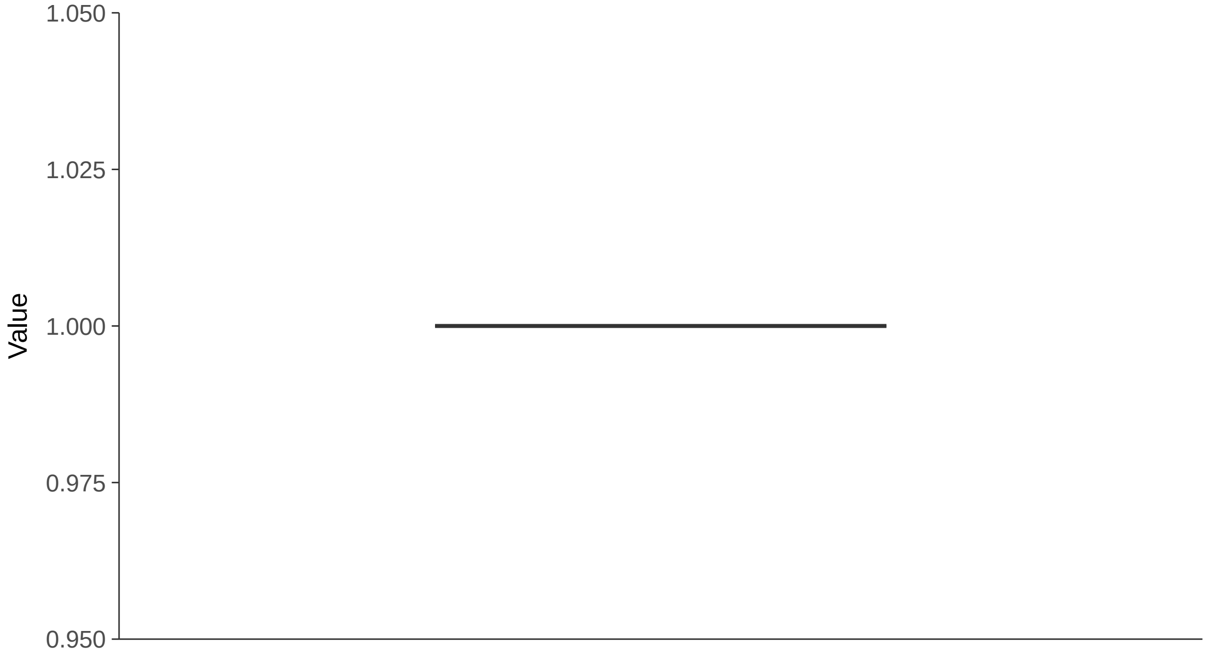
ID: 04_2_04





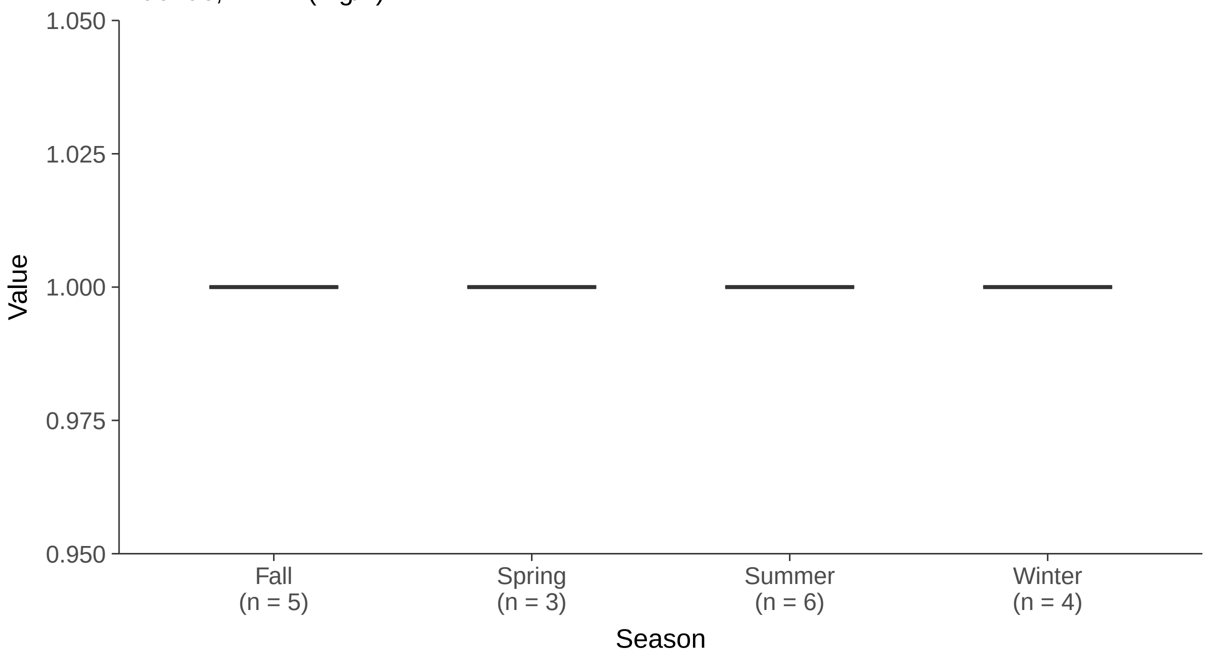
Boxplot

Fluoride, MW-4 (mg/L)



Boxplot by Season

Fluoride, MW-4 (mg/L)

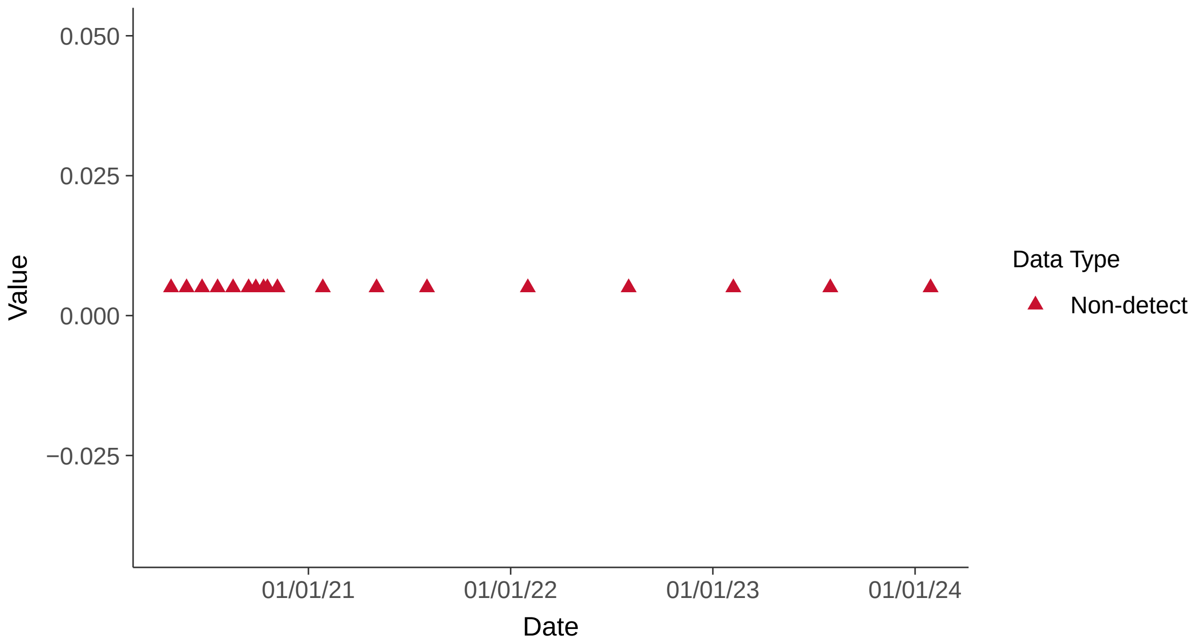


Appendix IV: Antimony, MW-4

ID: 04_2_08

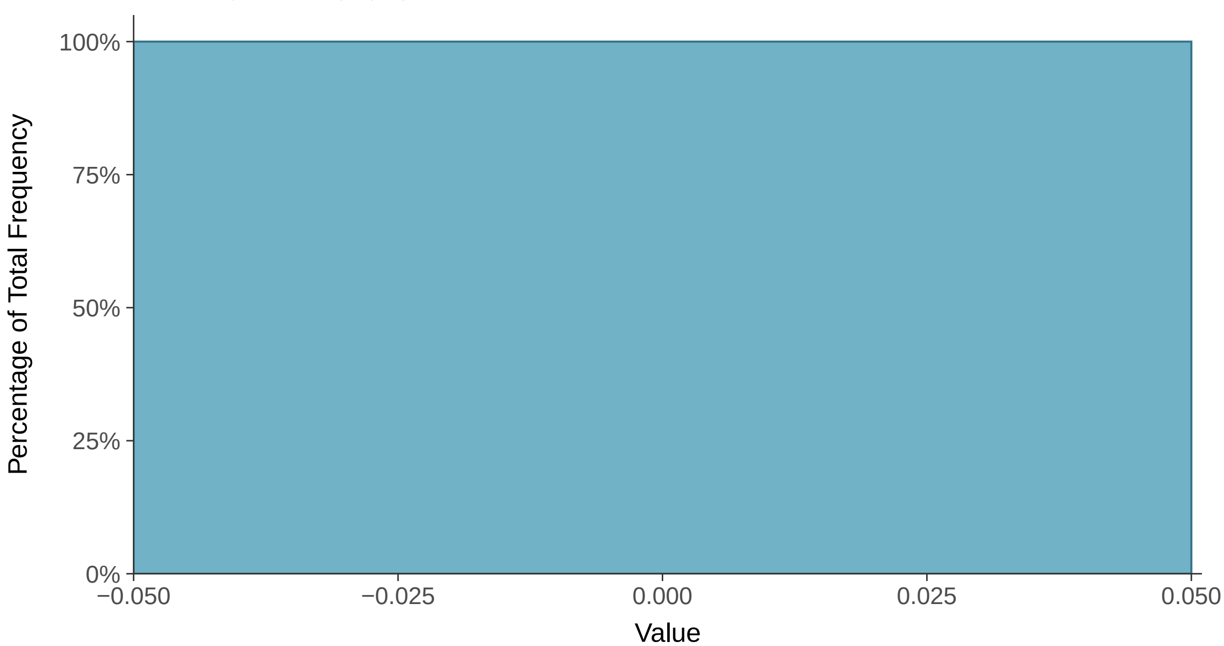
Scatter Plot

Antimony, MW-4 (mg/L)



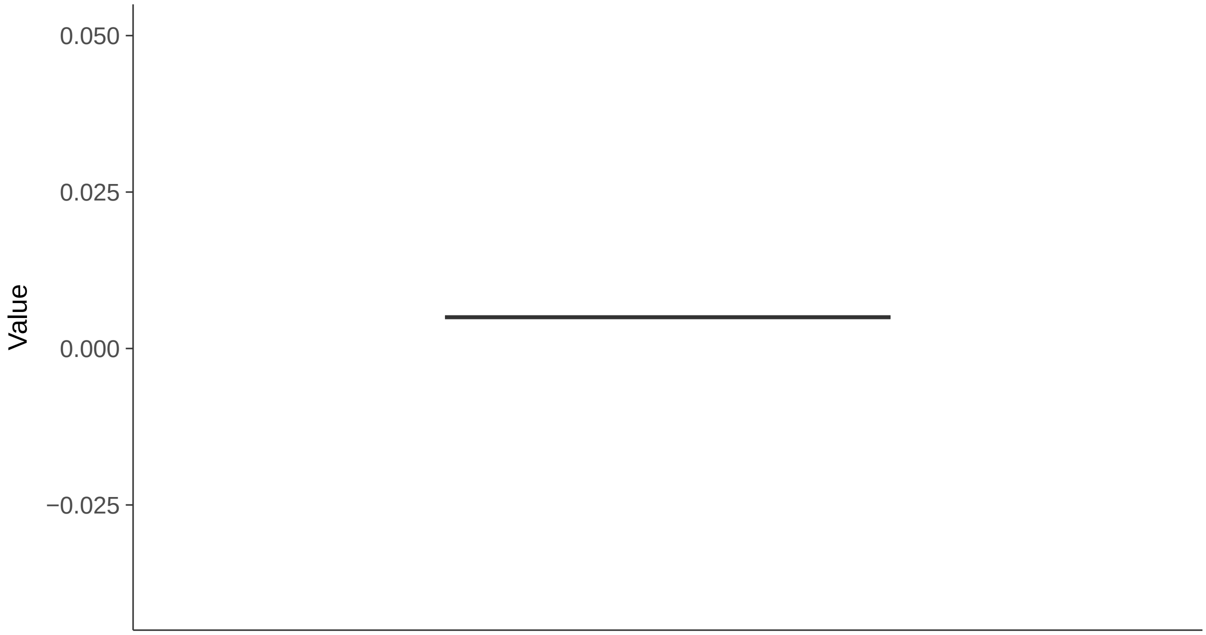
Histogram

Antimony, MW-4 (mg/L)



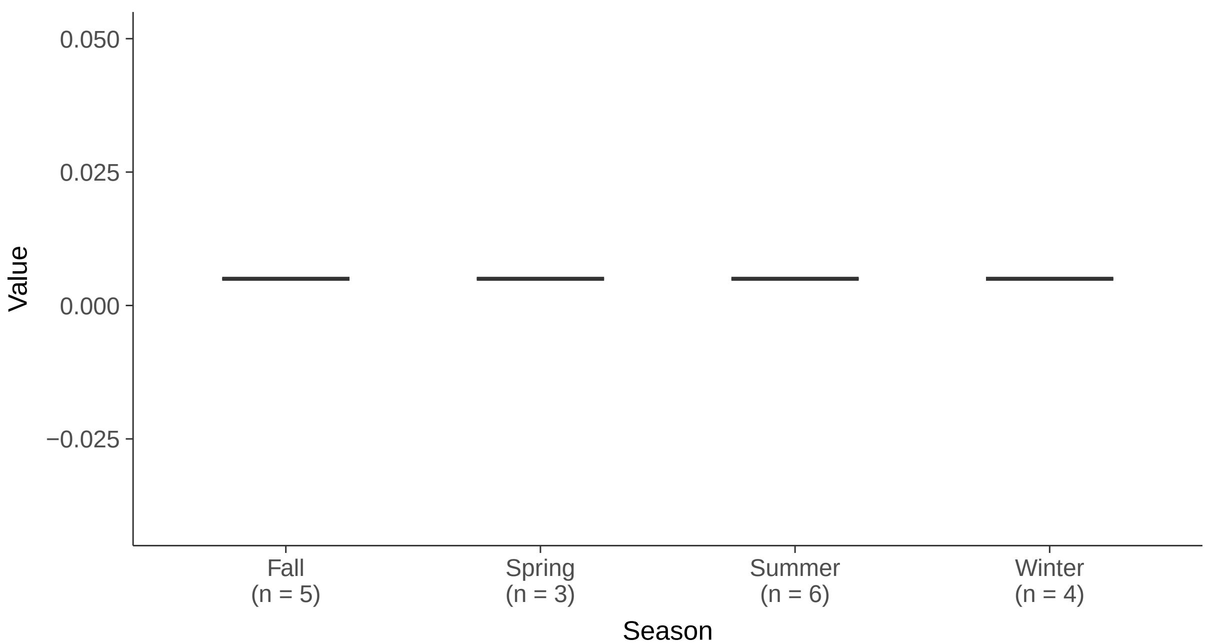
Boxplot

Antimony, MW-4 (mg/L)



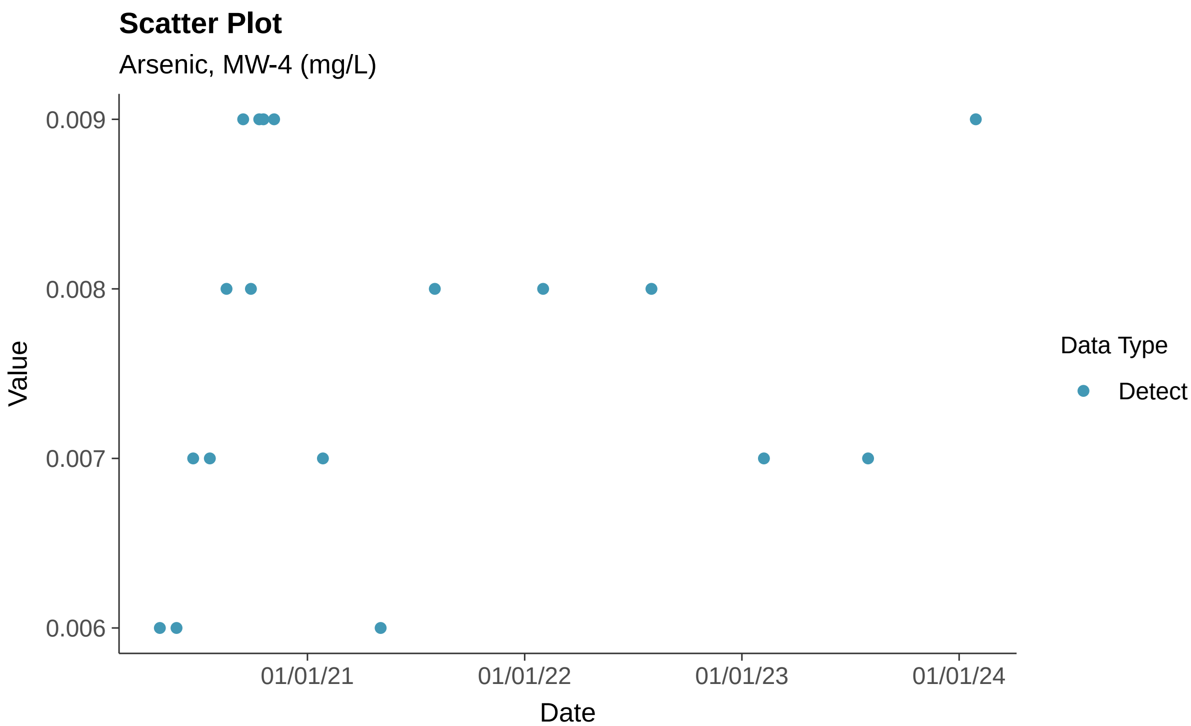
Boxplot by Season

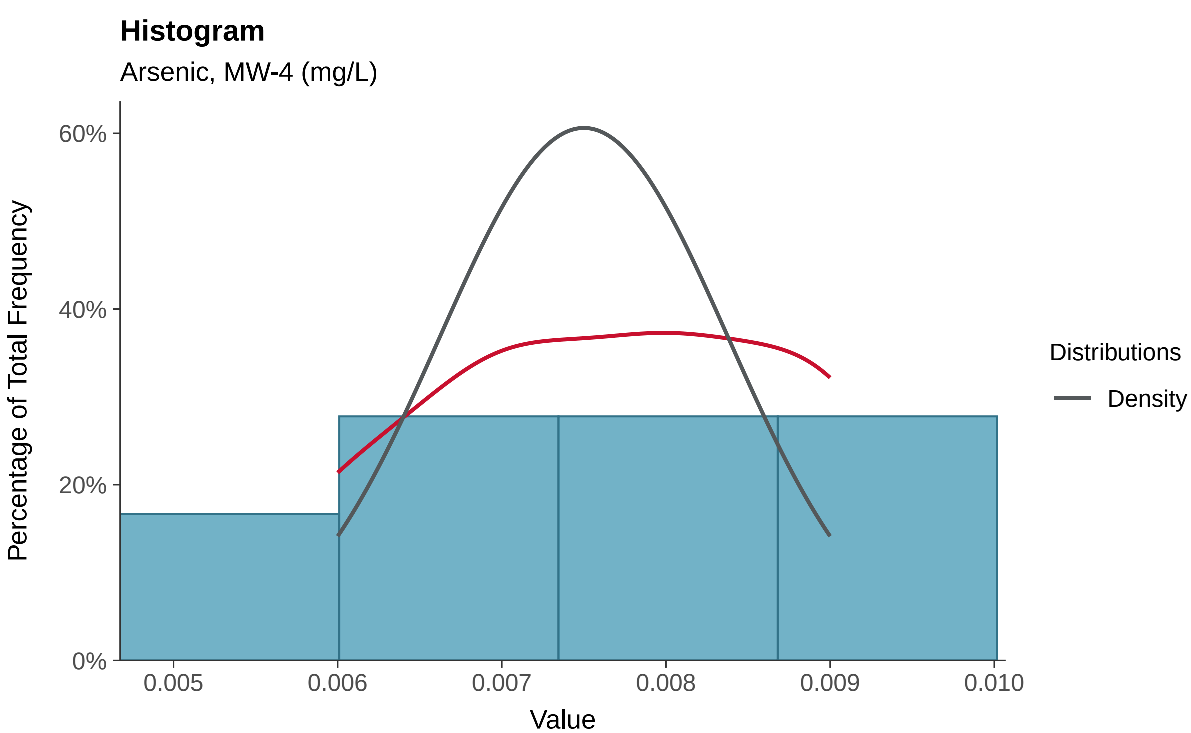
Antimony, MW-4 (mg/L)



Appendix IV: Arsenic, MW-4

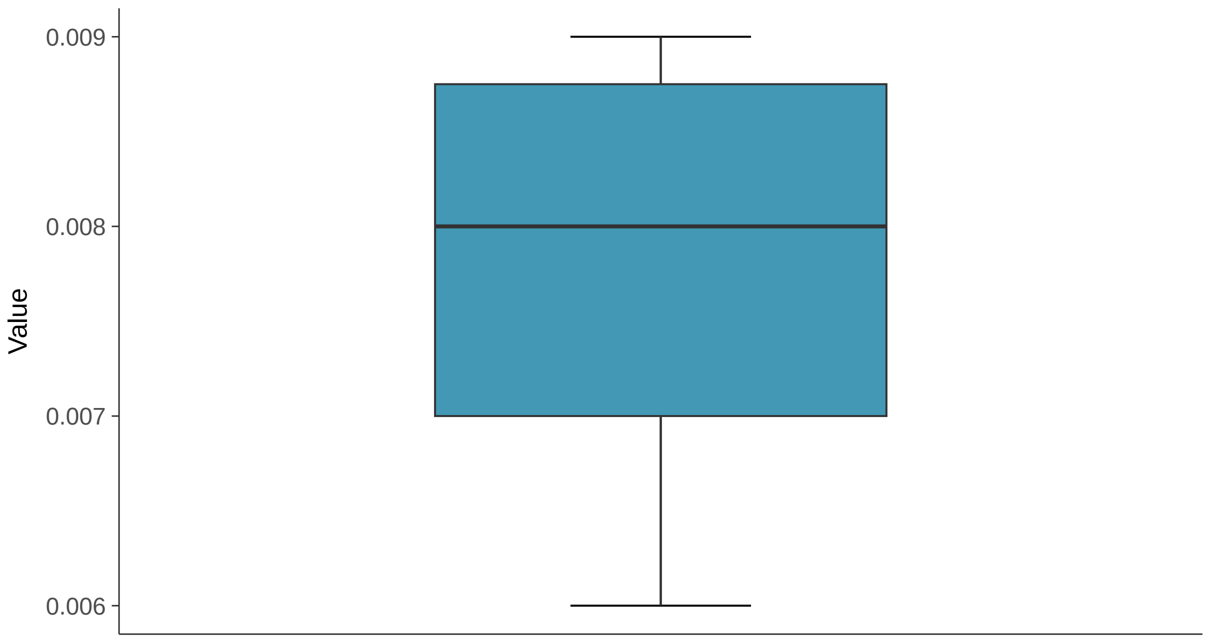
ID: 04_2_09





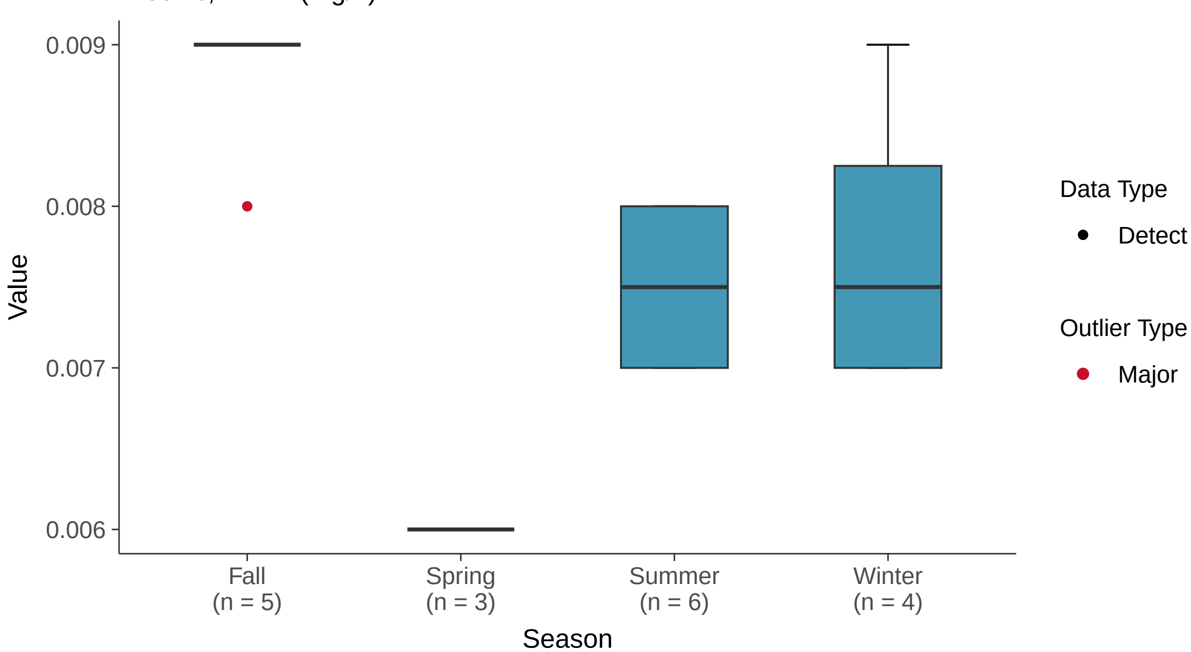
Boxplot

Arsenic, MW-4 (mg/L)



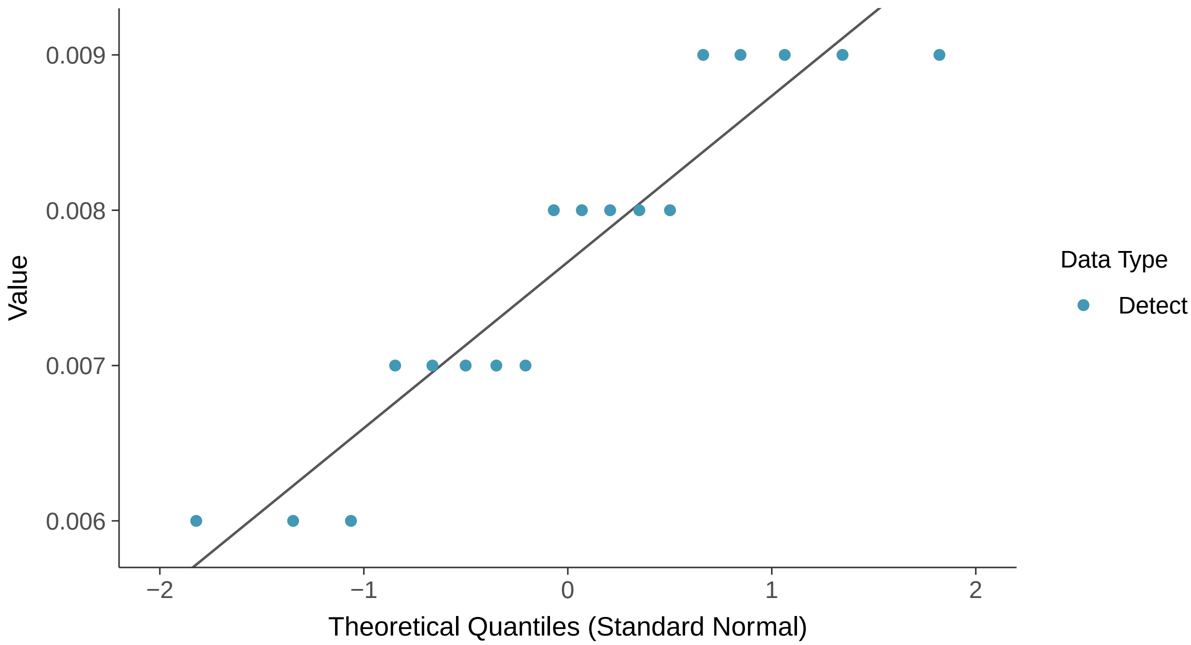
Boxplot by Season

Arsenic, MW-4 (mg/L)



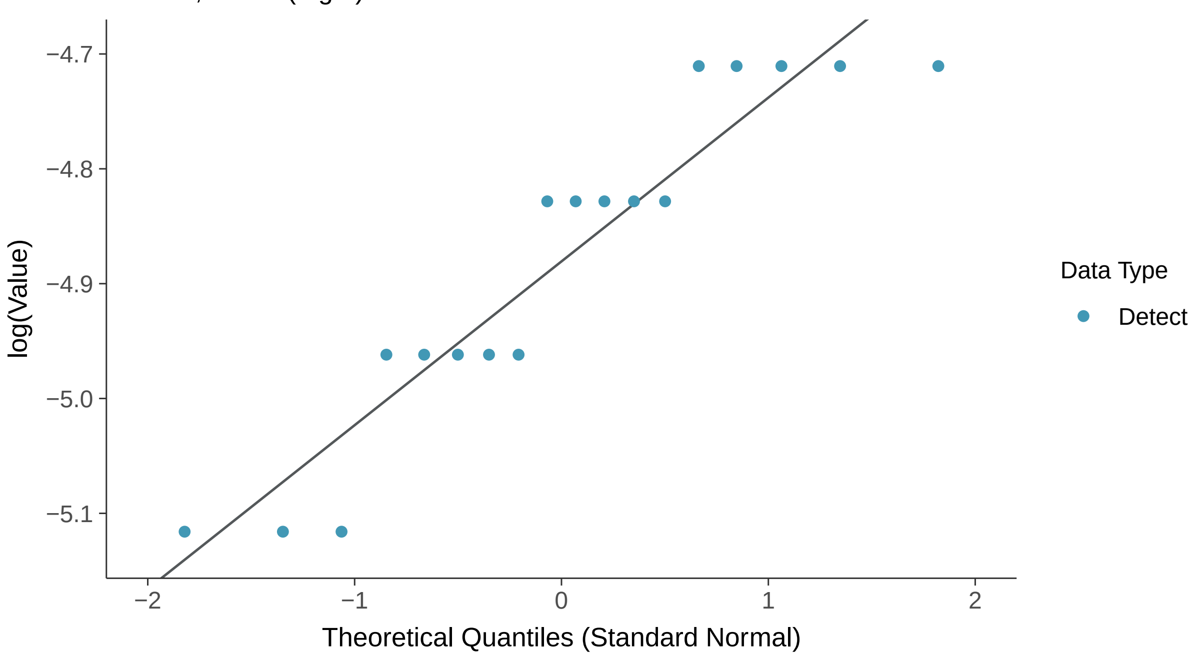
Normal Q-Q plot

Arsenic, MW-4 (mg/L)



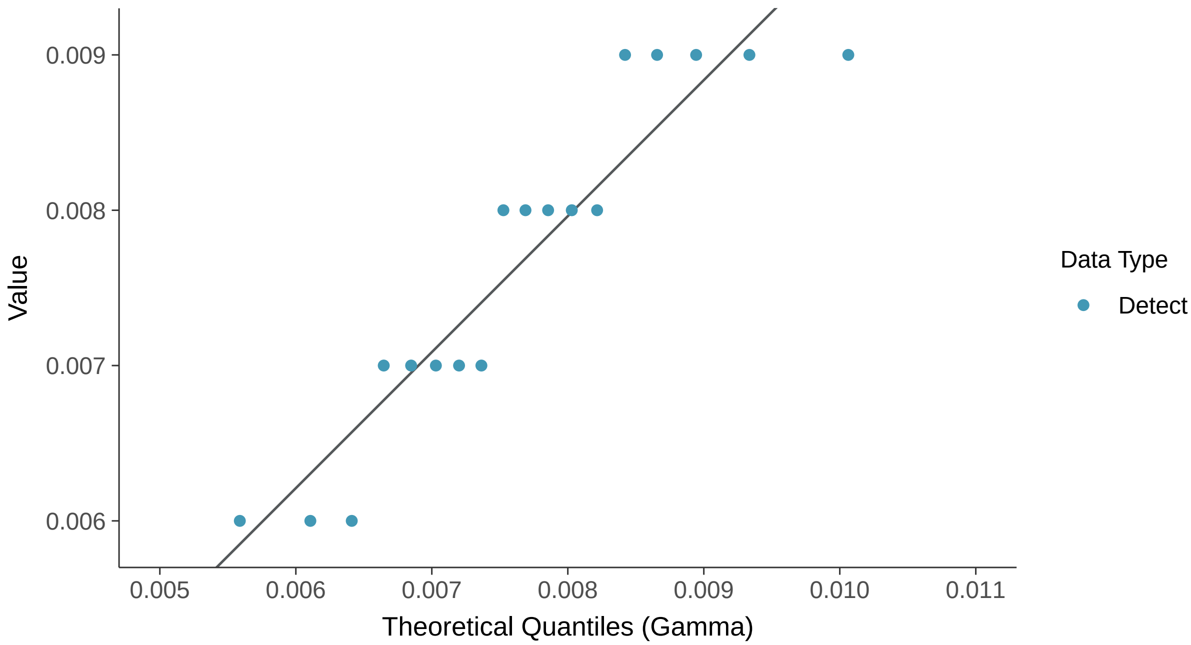
Lognormal Q-Q plot

Arsenic, MW-4 (mg/L)



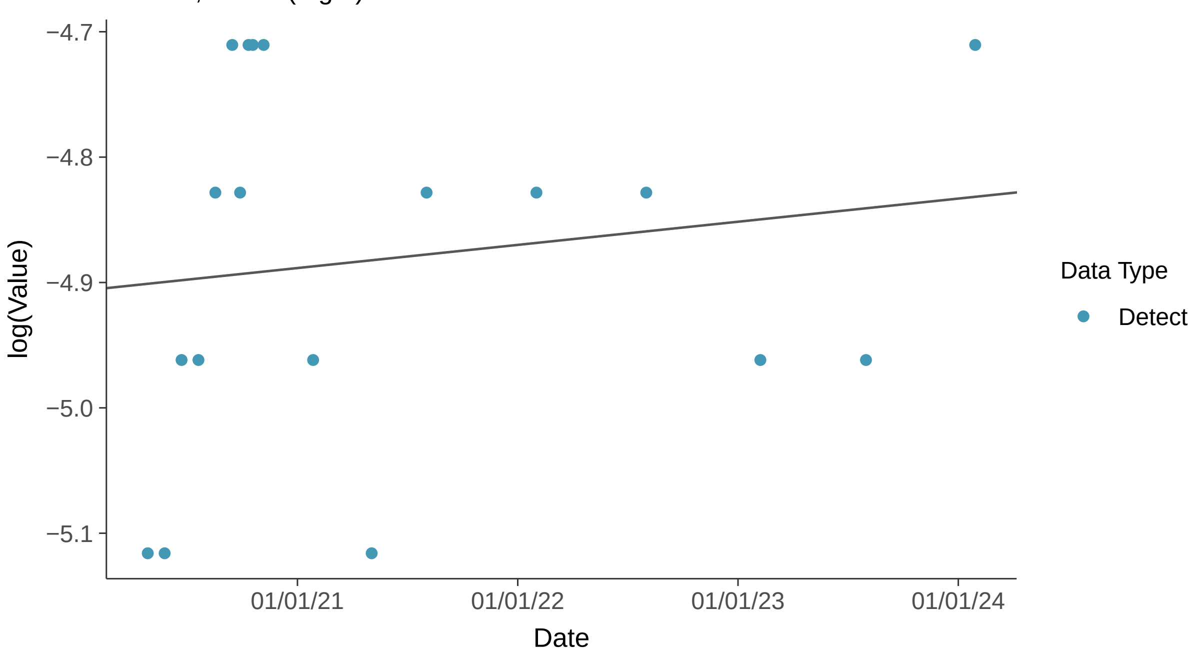
Gamma Q-Q plot

Arsenic, MW-4 (mg/L)



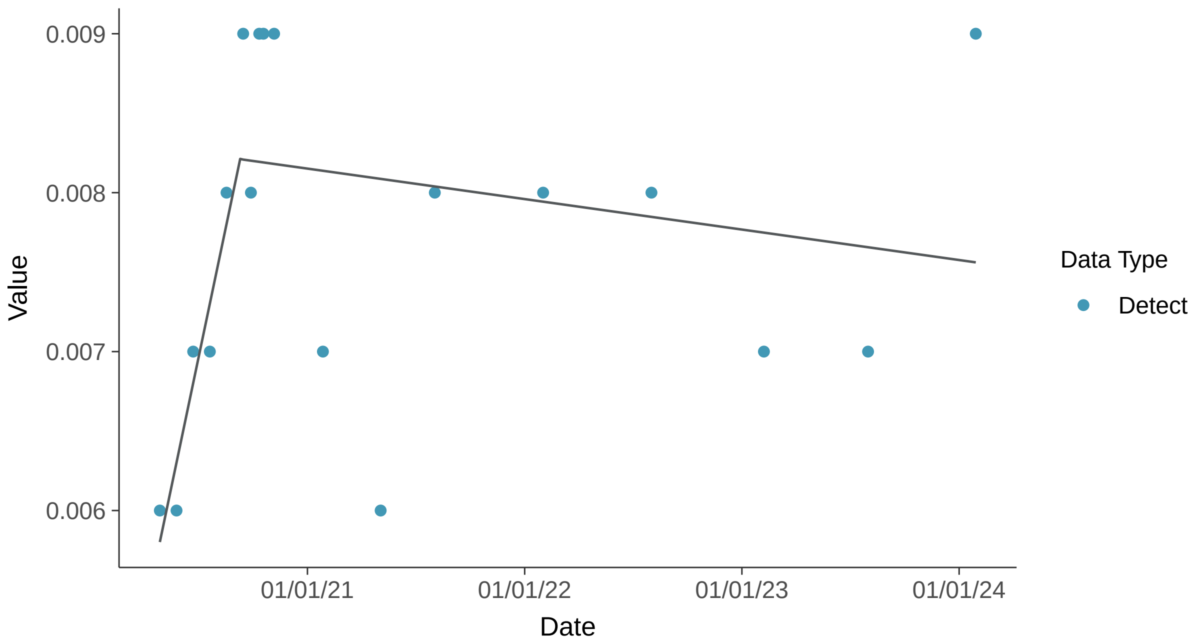
Trend Regression: Lognormal MLE

Arsenic, MW-4 (mg/L)



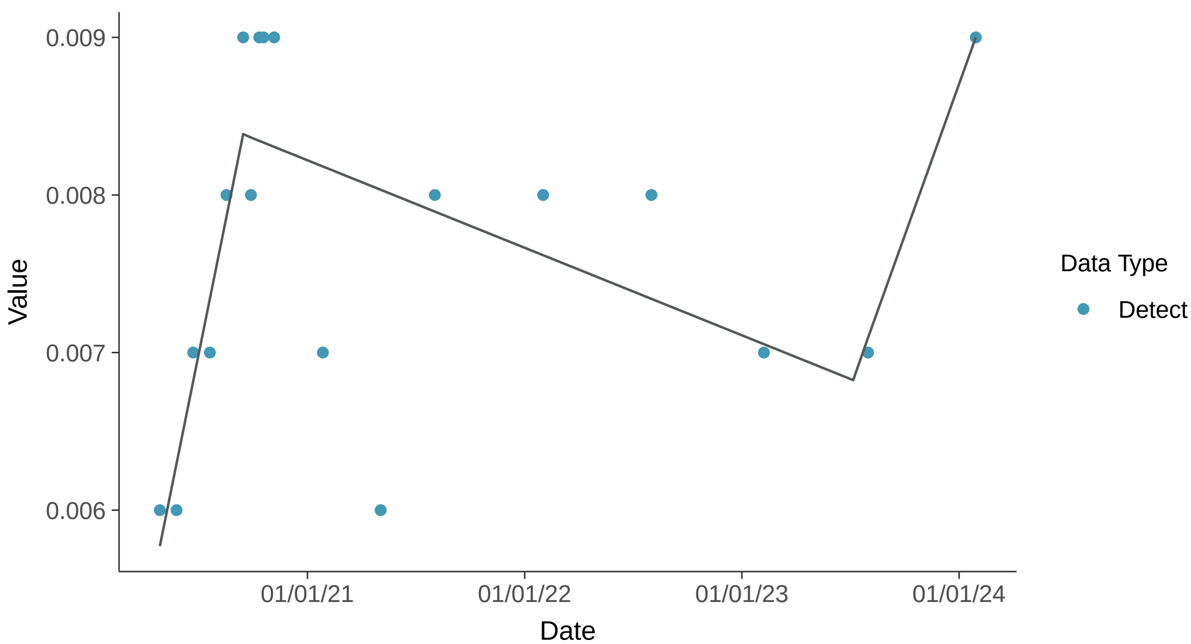
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-4 (mg/L)



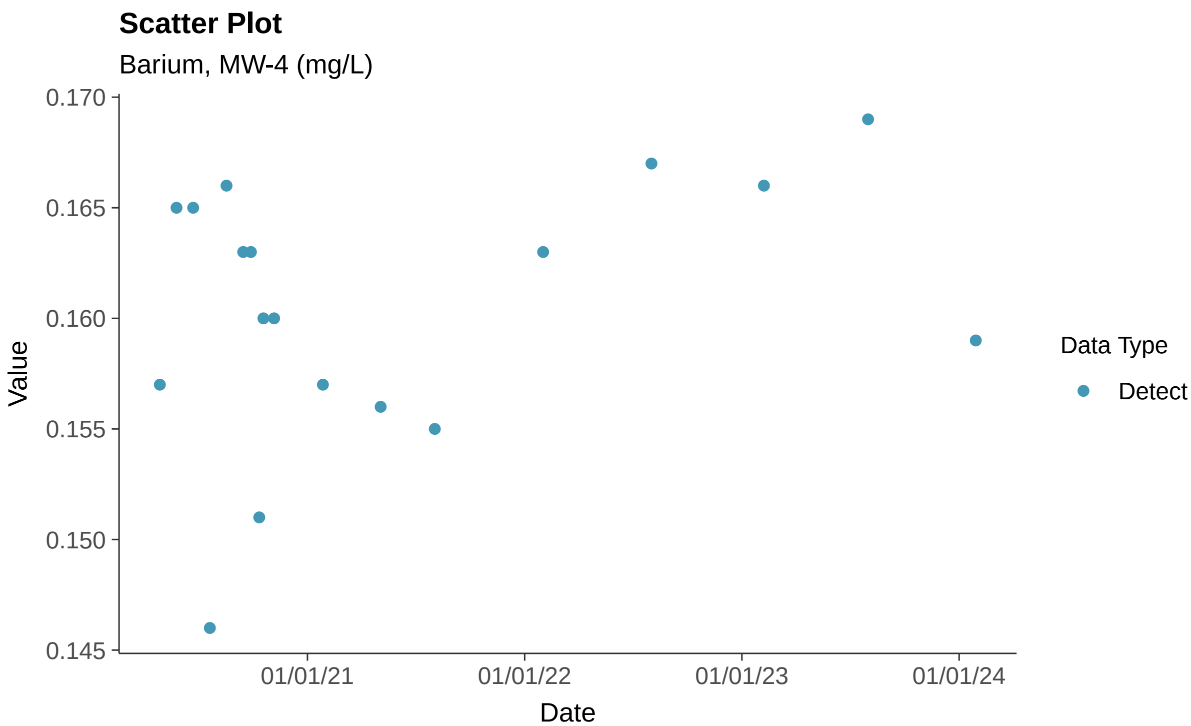
Trend Regression: Piecewise Linear-Linear-Linear

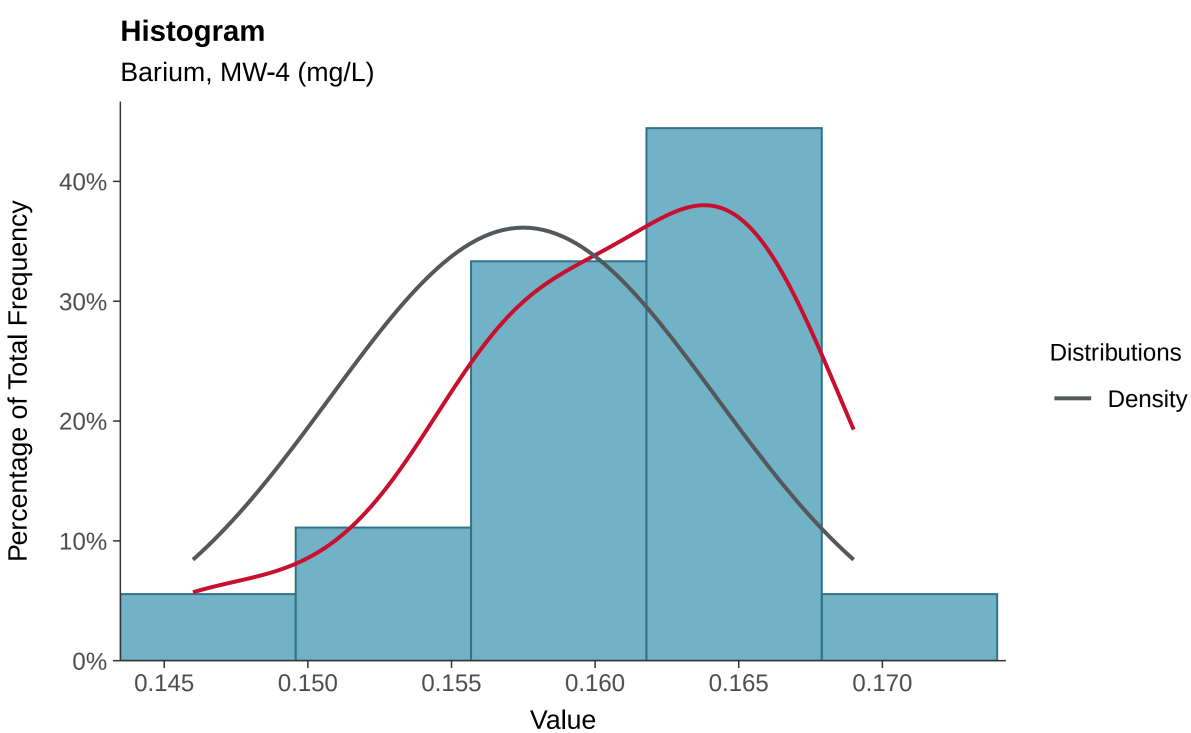
Arsenic, MW-4 (mg/L)



Appendix IV: Barium, MW-4

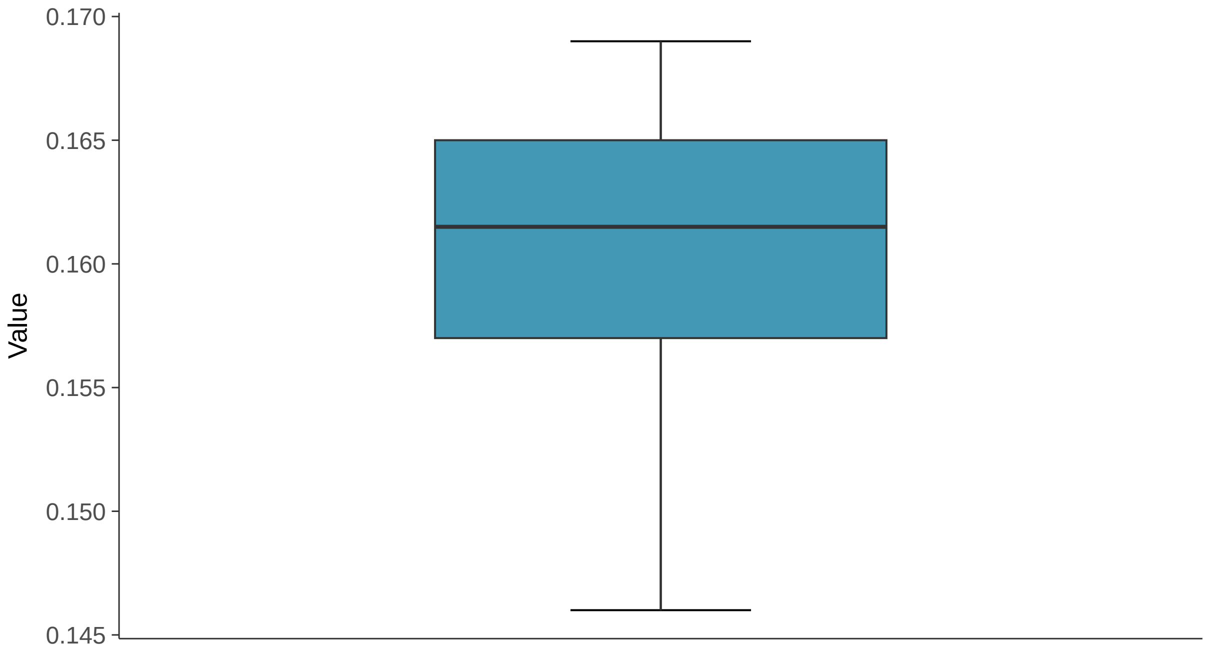
ID: 04_2_10





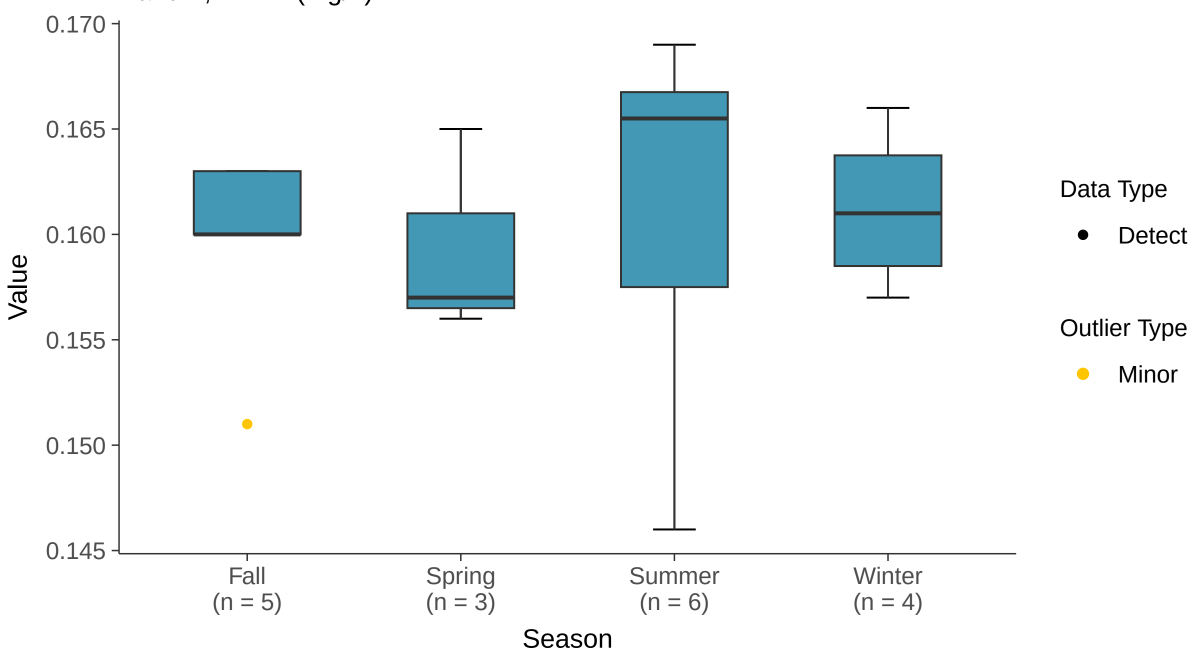
Boxplot

Barium, MW-4 (mg/L)



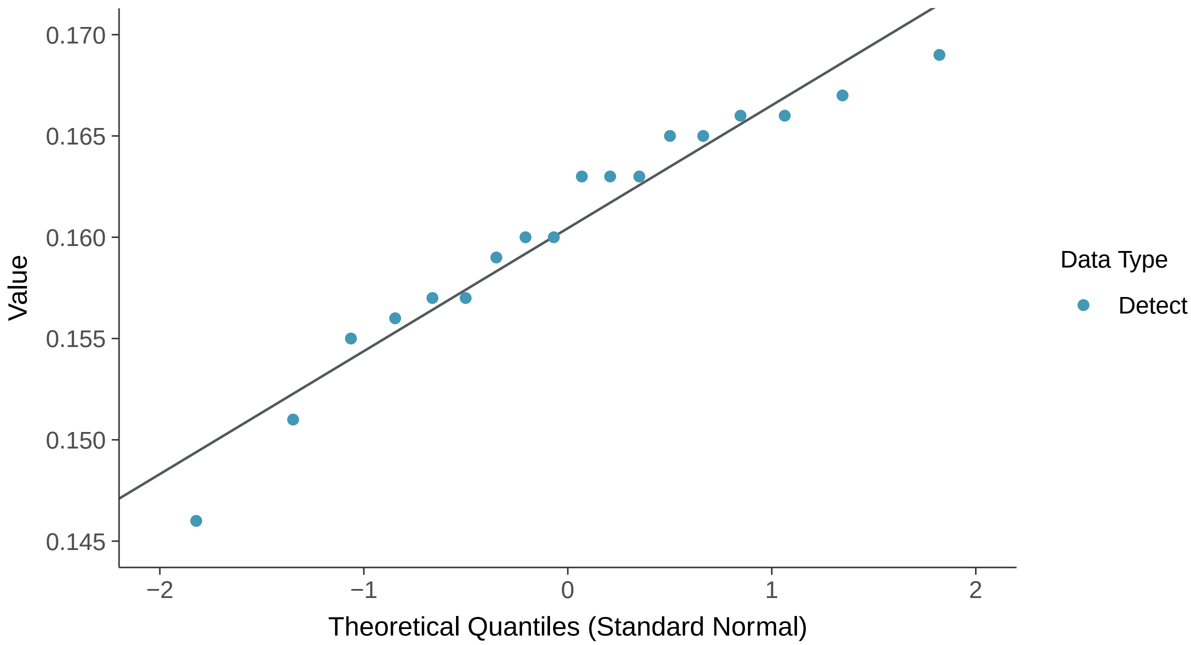
Boxplot by Season

Barium, MW-4 (mg/L)



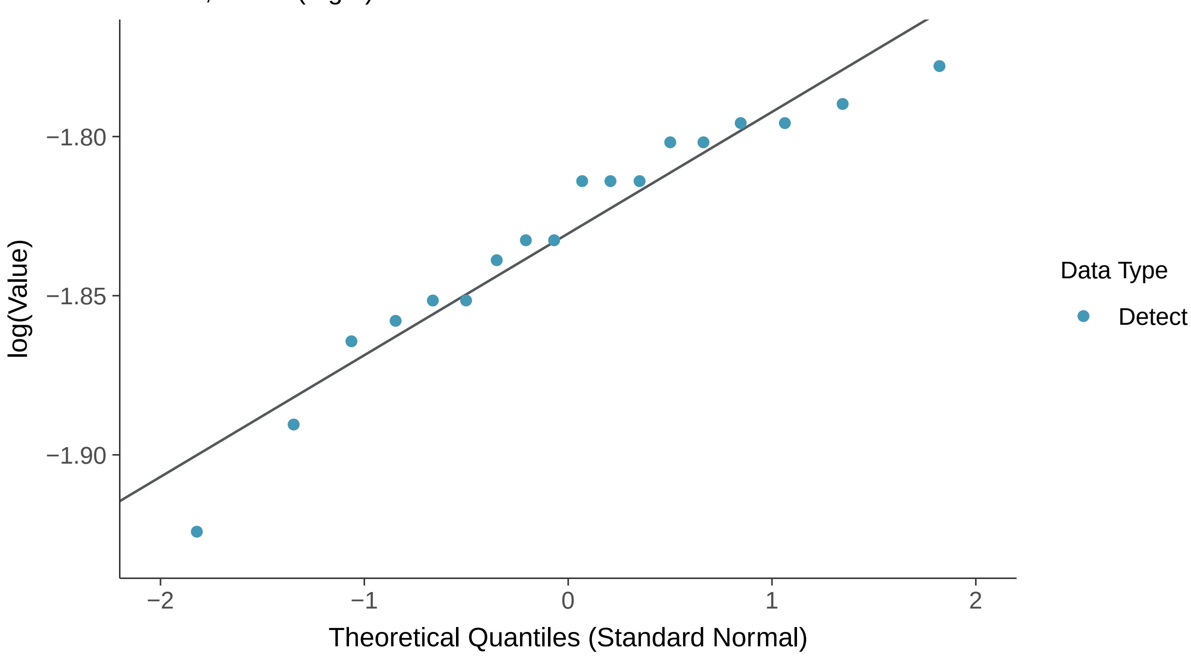
Normal Q-Q plot

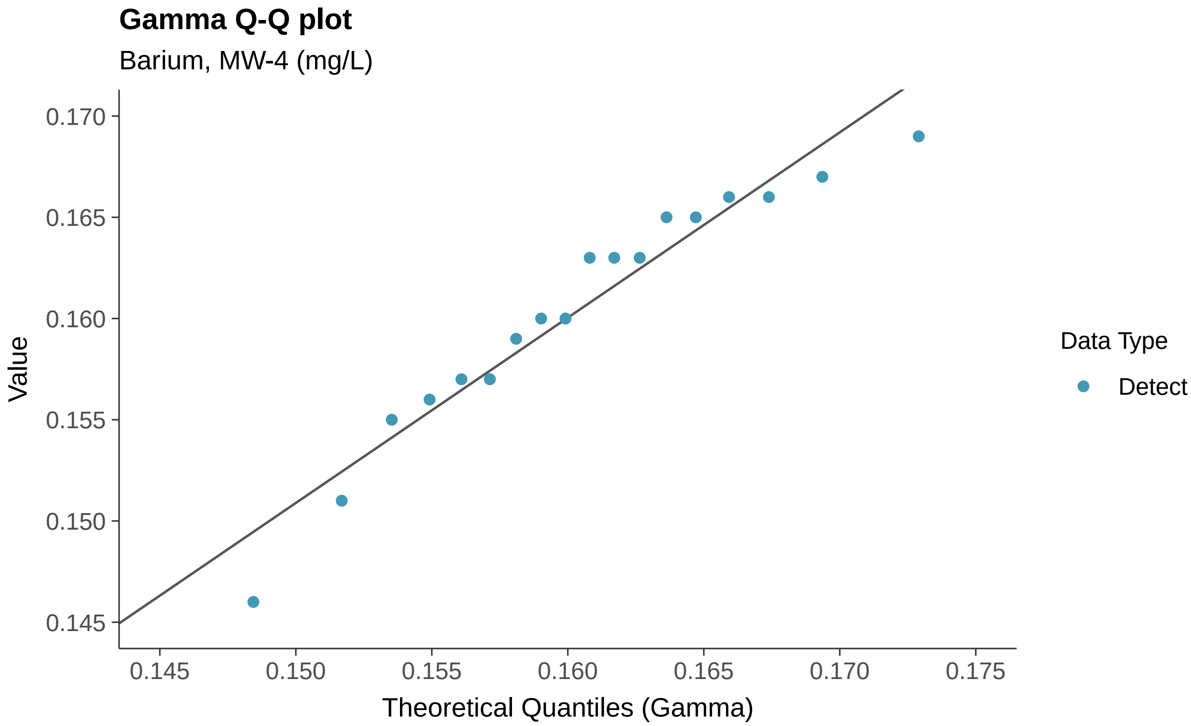
Barium, MW-4 (mg/L)

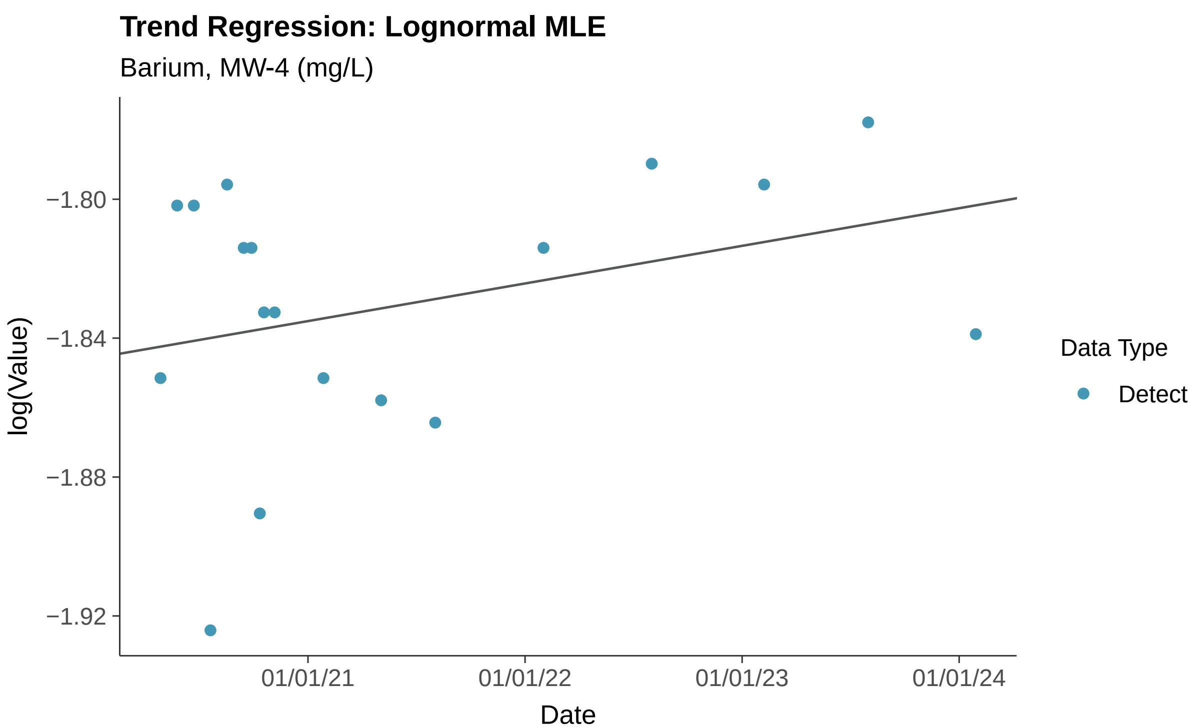


Lognormal Q-Q plot

Barium, MW-4 (mg/L)

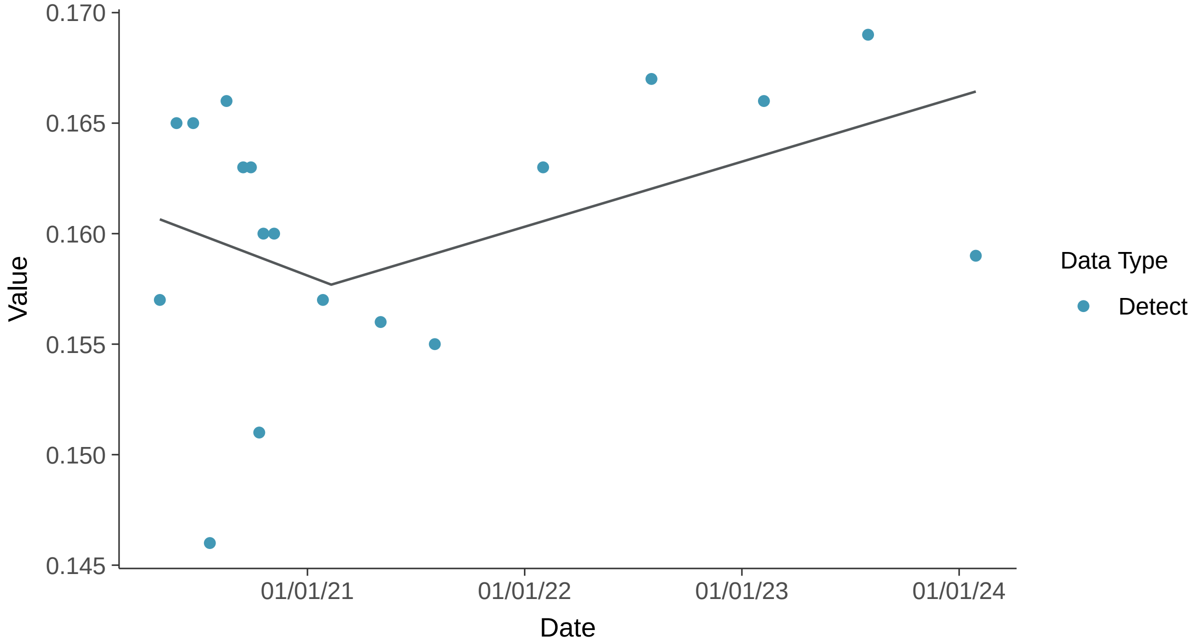



Gamma Q-Q plot
Barium, MW-4 (mg/L)
Value
0.170
0.165
0.160
0.155
0.150
0.145
0.145
0.150
0.155
0.160
0.165
0.170
0.175
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-4 (mg/L)
log(Value)
−1.80
−1.84
−1.88
−1.92
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

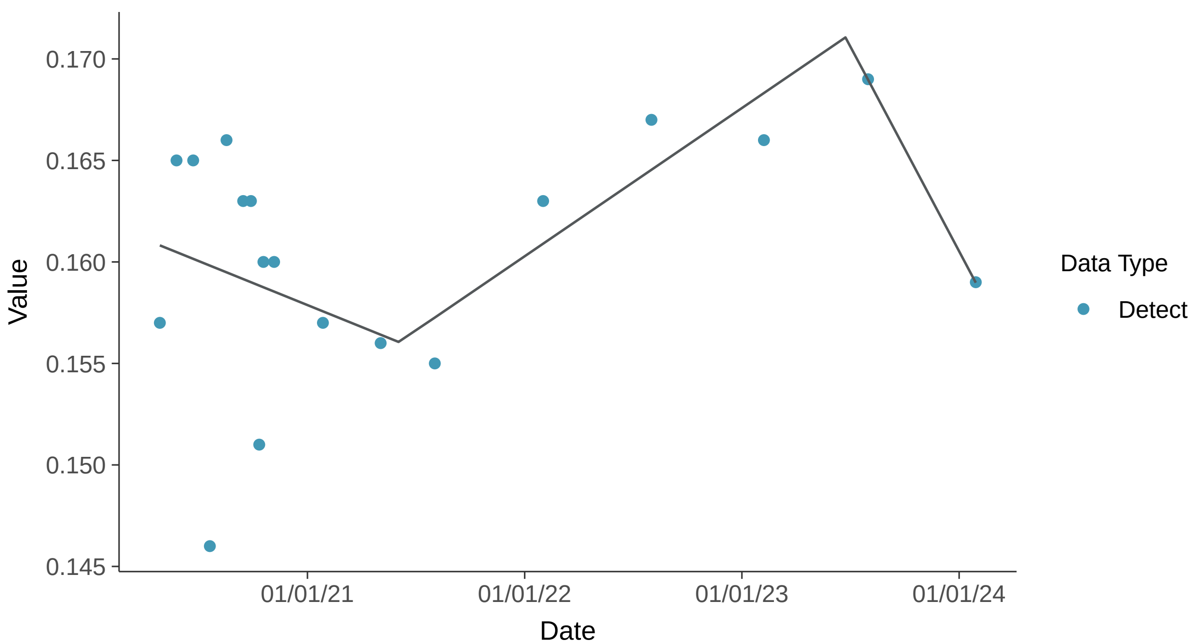
Trend Regression: Piecewise Linear-Linear

Barium, MW-4 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-4 (mg/L)

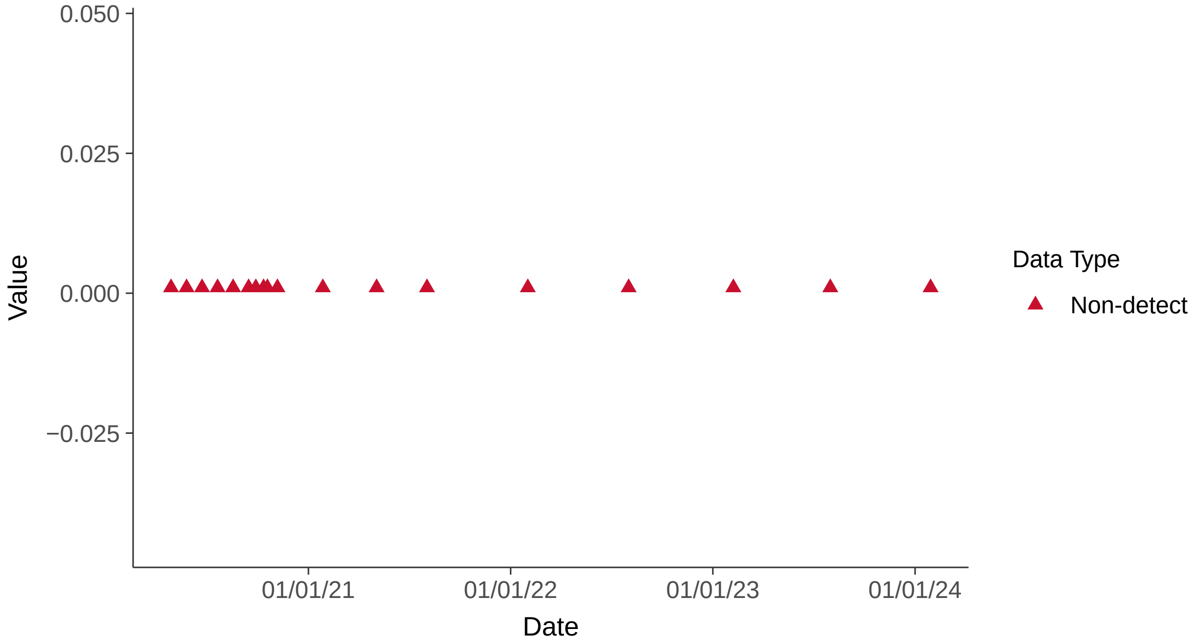


Appendix IV: Beryllium, MW-4

ID: 04_2_11

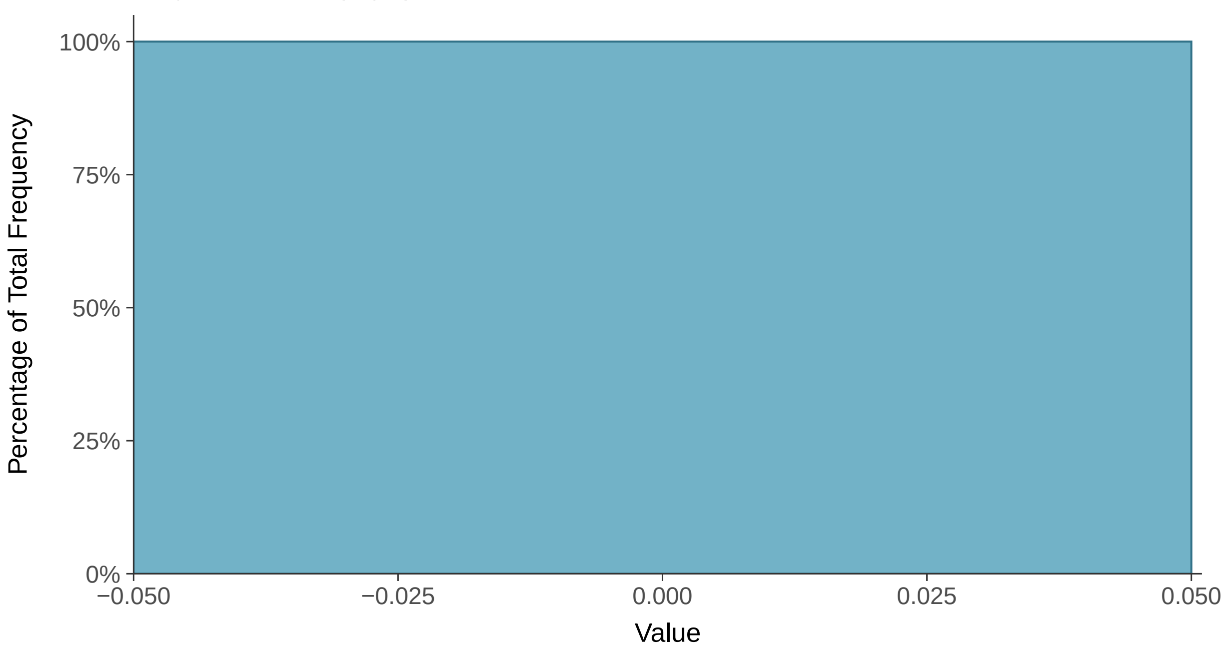
Scatter Plot

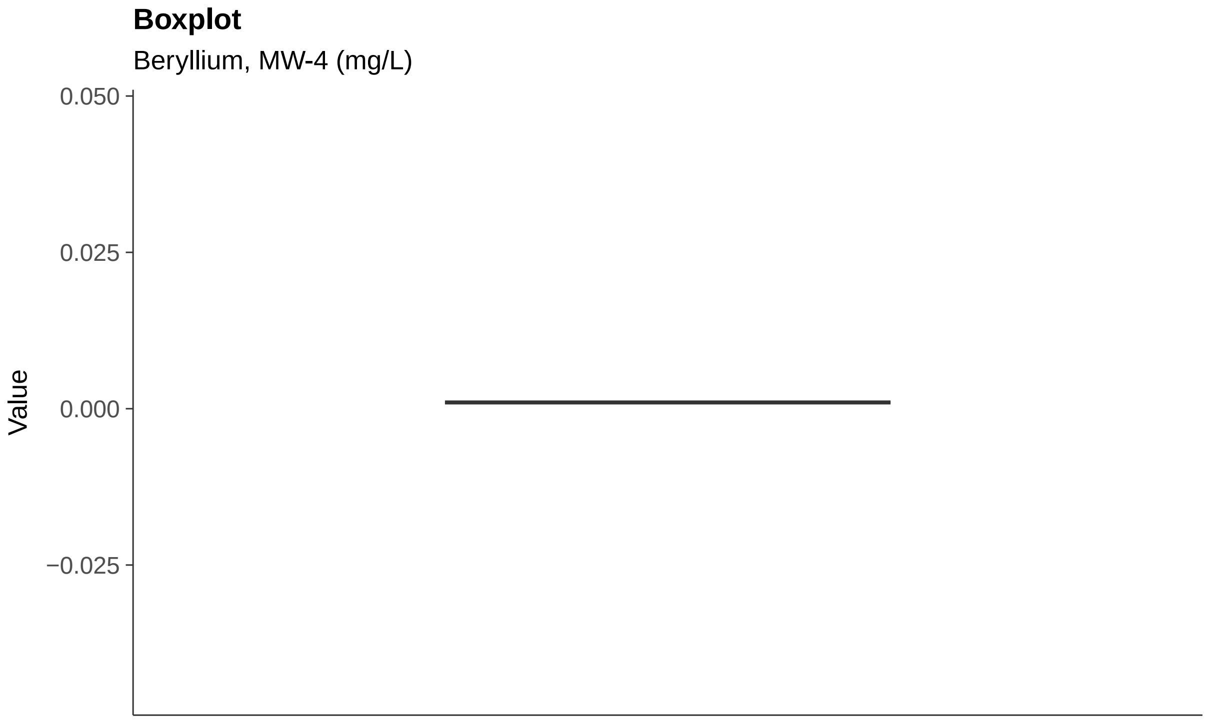
Beryllium, MW-4 (mg/L)

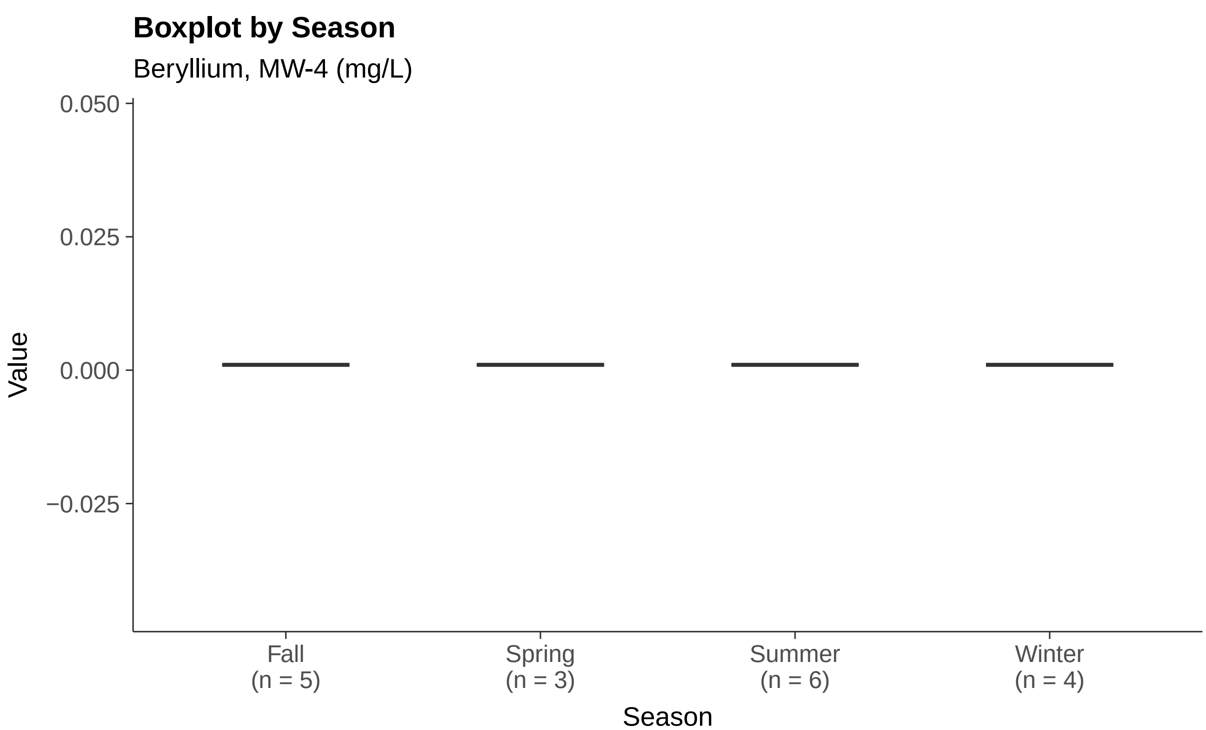


Histogram

Beryllium, MW-4 (mg/L)




Boxplot
Beryllium, MW-4 (mg/L)
0.050
0.025
0.000
−0.025
Value

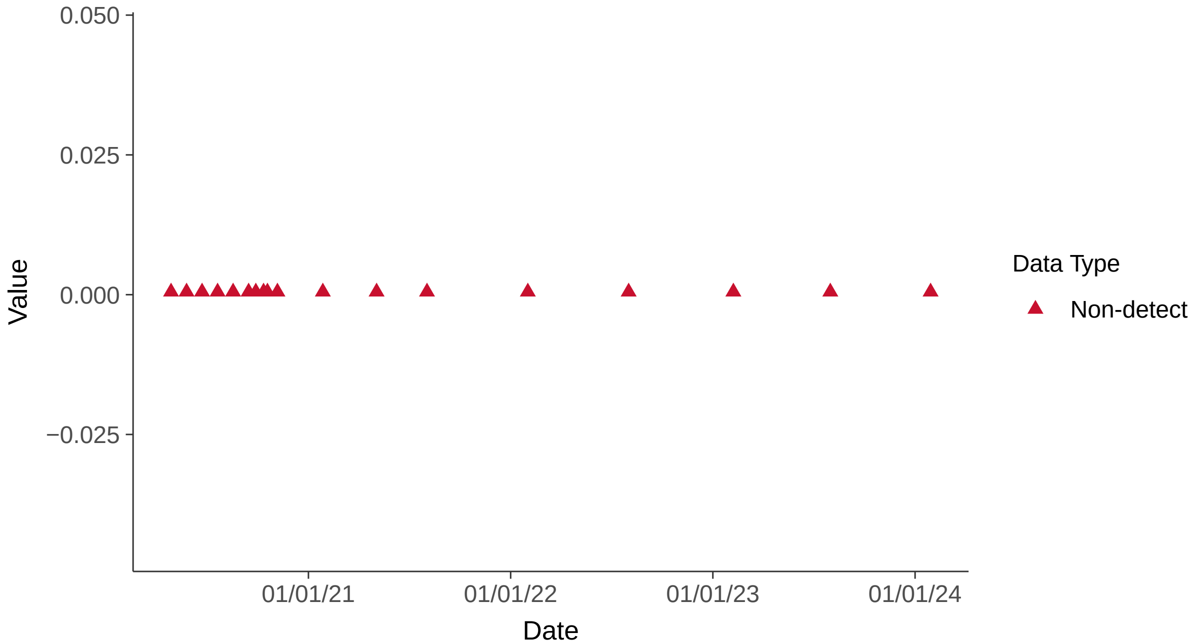

Boxplot by Season
Beryllium, MW-4 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 5)
Spring
(n = 3)
Summer
(n = 6)
Winter
(n = 4)
Season

Appendix IV: Cadmium, MW-4

ID: 04_2_12

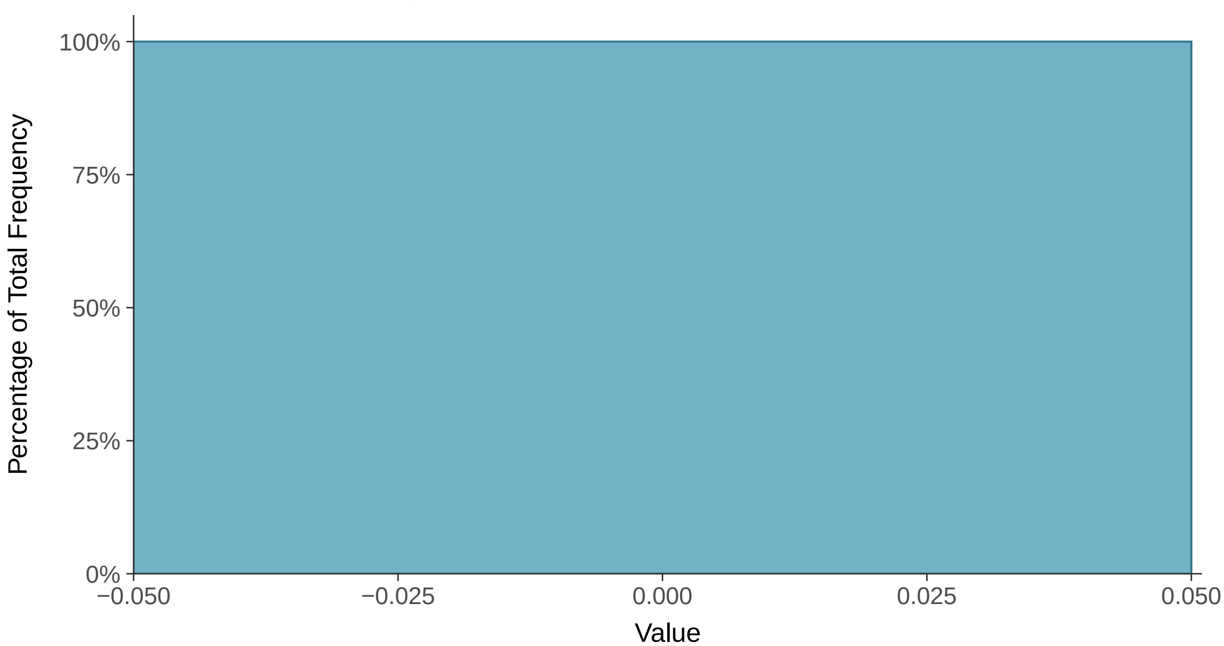
Scatter Plot

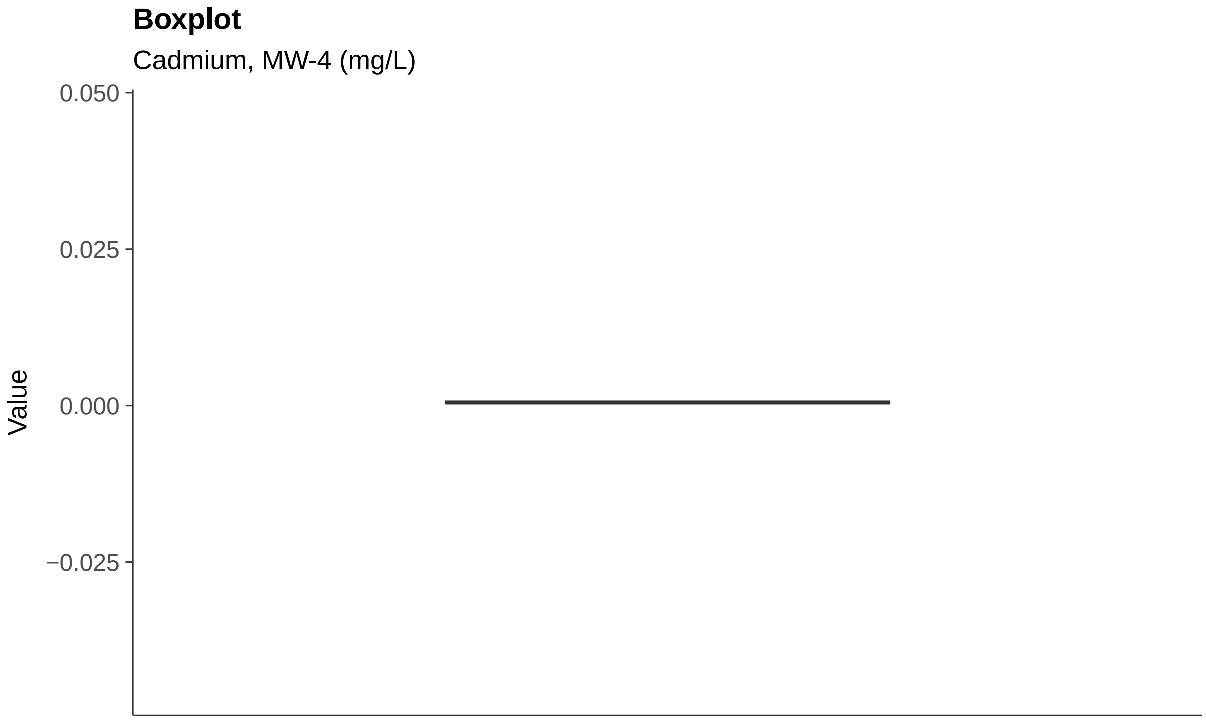
Cadmium, MW-4 (mg/L)

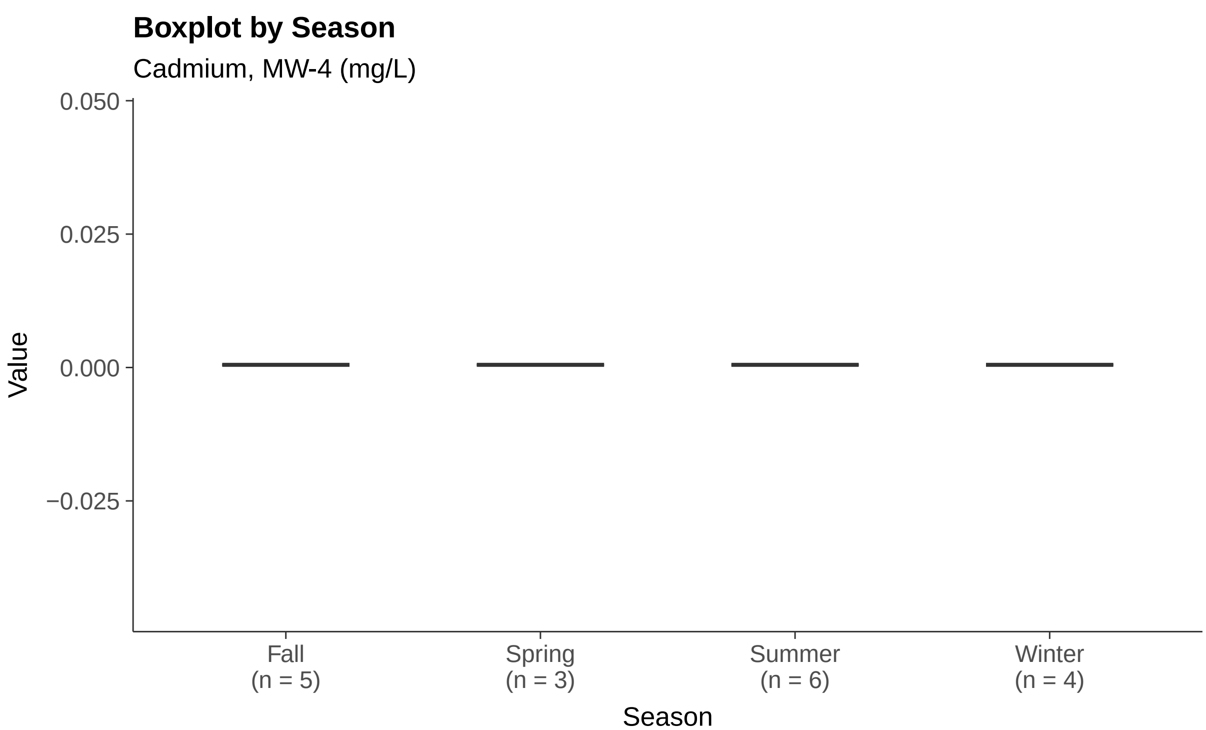


Histogram

Cadmium, MW-4 (mg/L)




Boxplot
Cadmium, MW-4 (mg/L)
0.050
0.025
0.000
−0.025
Value

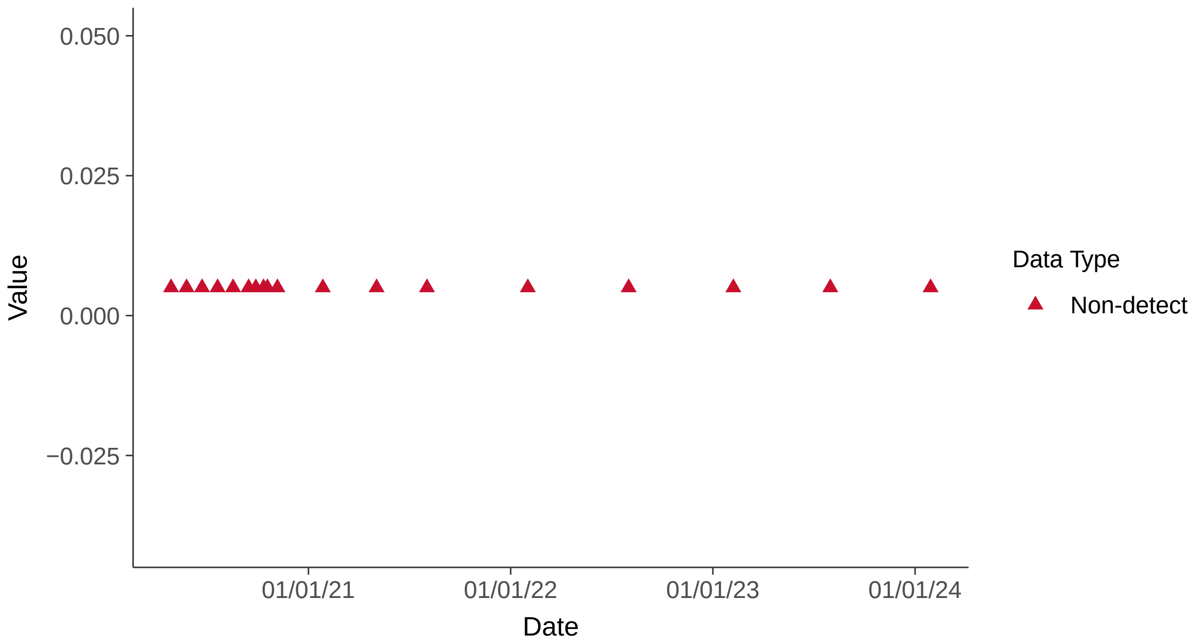

Boxplot by Season
Cadmium, MW-4 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 5)
Spring
(n = 3)
Summer
(n = 6)
Winter
(n = 4)
Season

Appendix IV: Chromium, MW-4

ID: 04_2_13

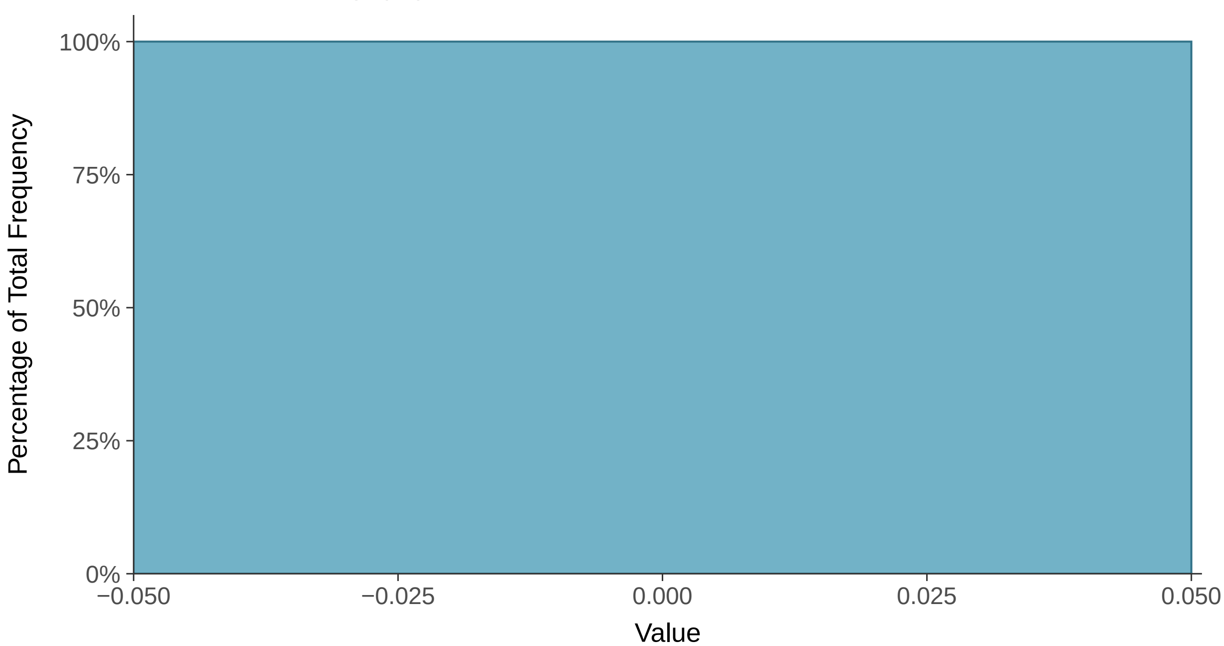
Scatter Plot

Chromium, MW-4 (mg/L)



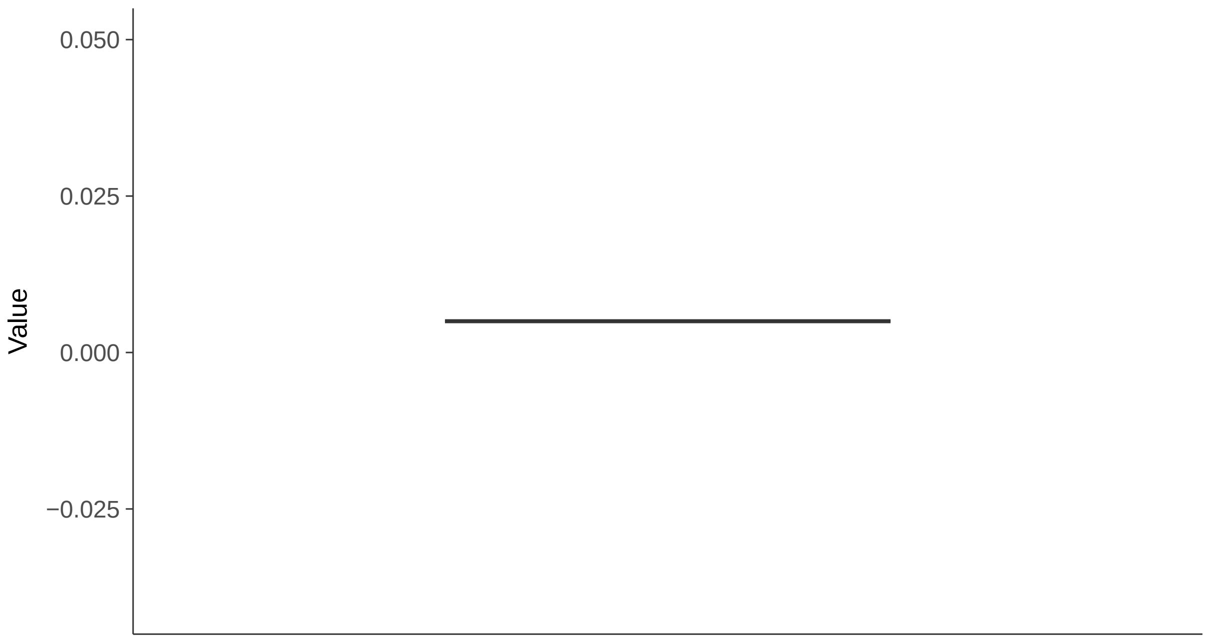
Histogram

Chromium, MW-4 (mg/L)



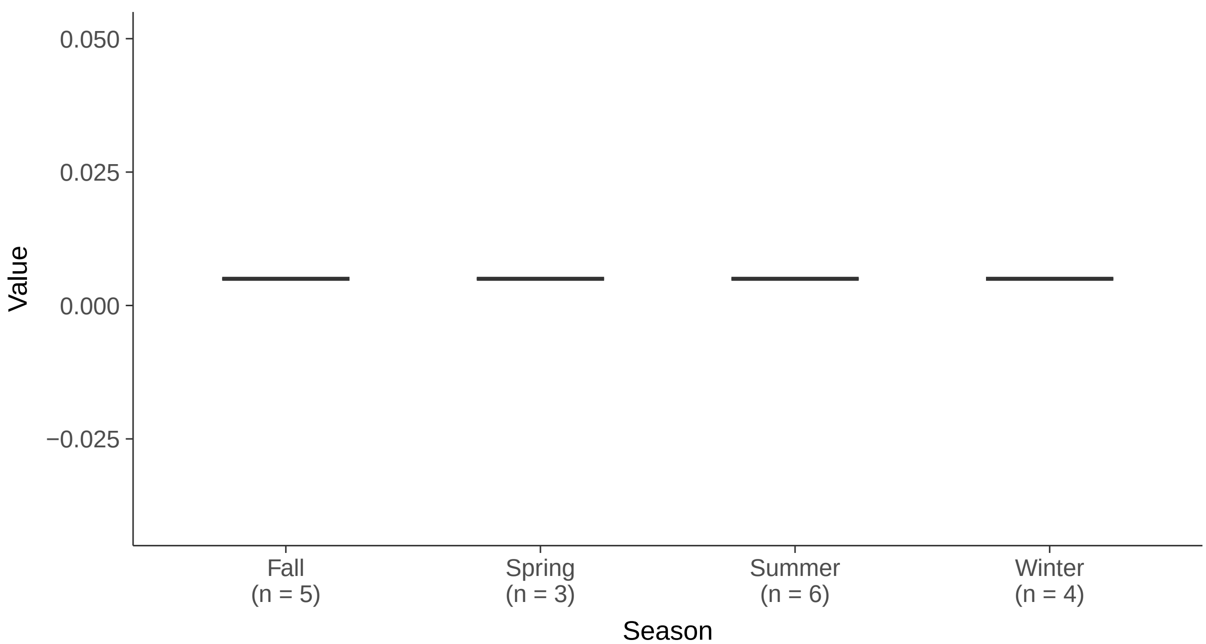
Boxplot

Chromium, MW-4 (mg/L)



Boxplot by Season

Chromium, MW-4 (mg/L)

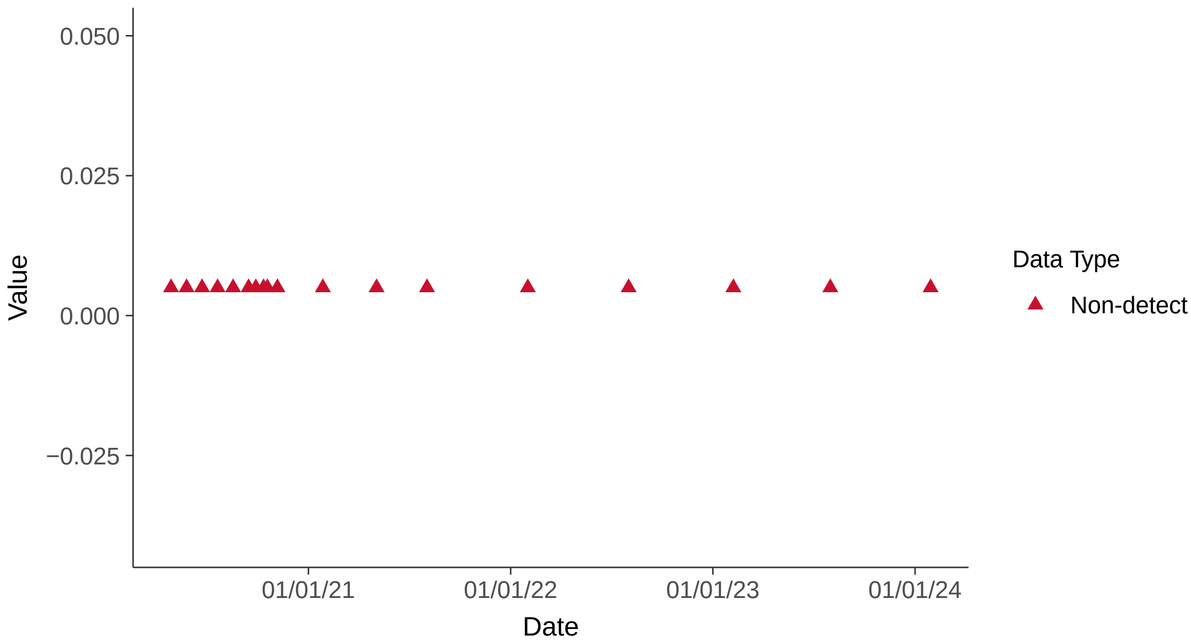


Appendix IV: Cobalt, MW-4

ID: 04_2_14

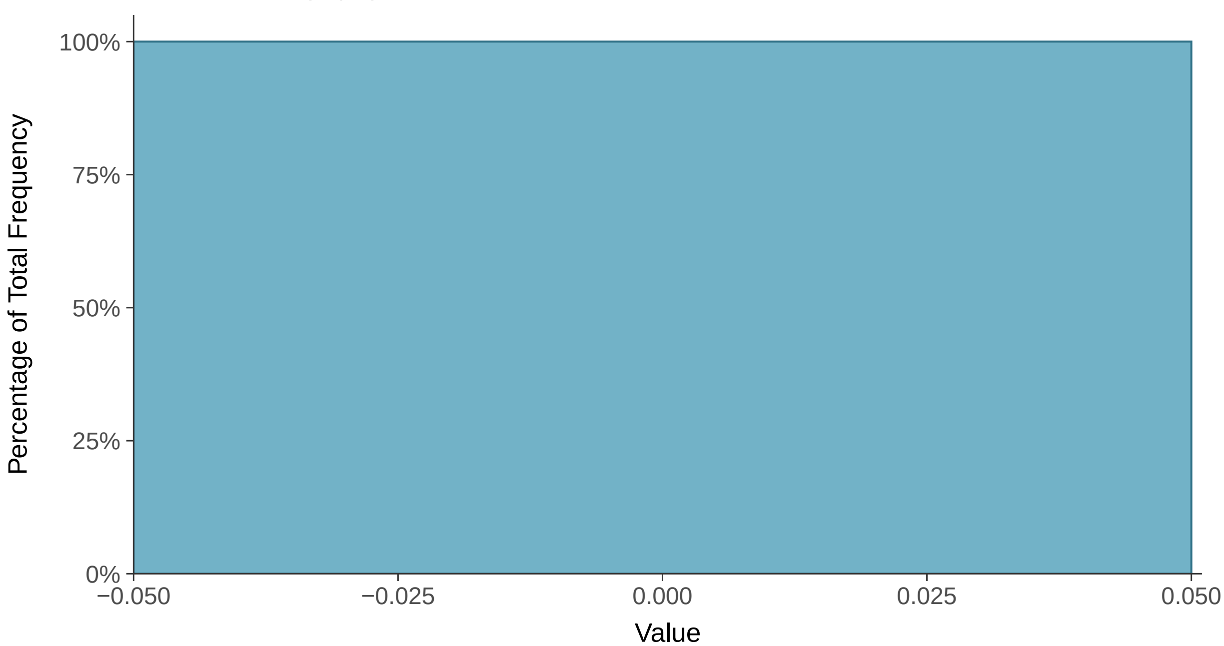
Scatter Plot

Cobalt, MW-4 (mg/L)



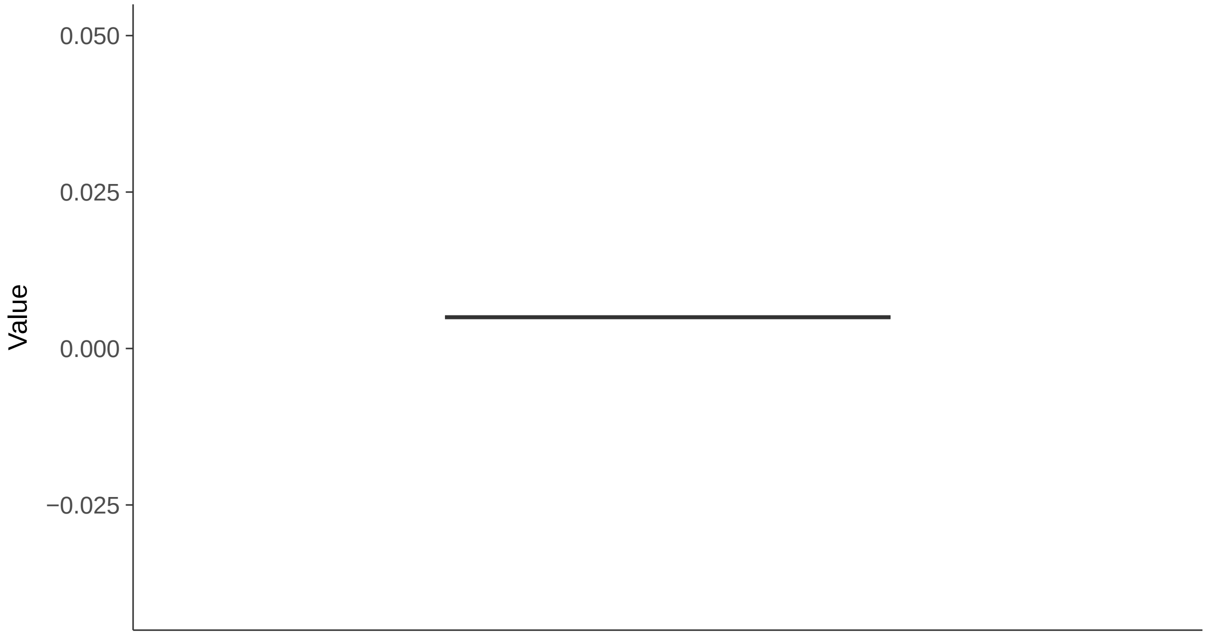
Histogram

Cobalt, MW-4 (mg/L)



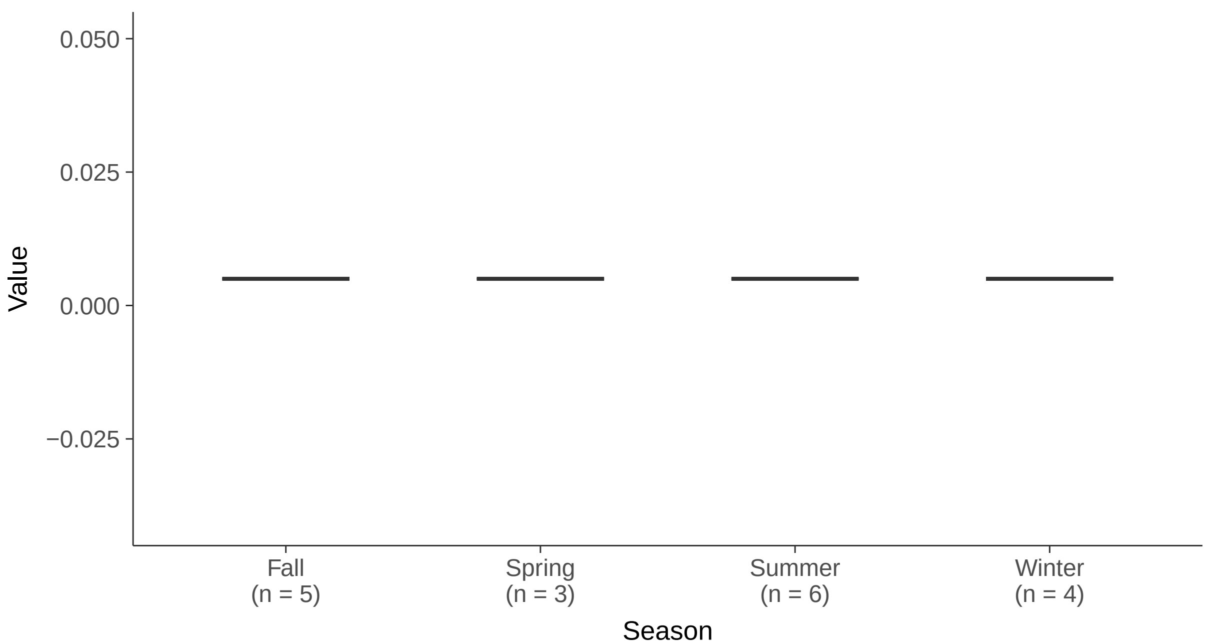
Boxplot

Cobalt, MW-4 (mg/L)



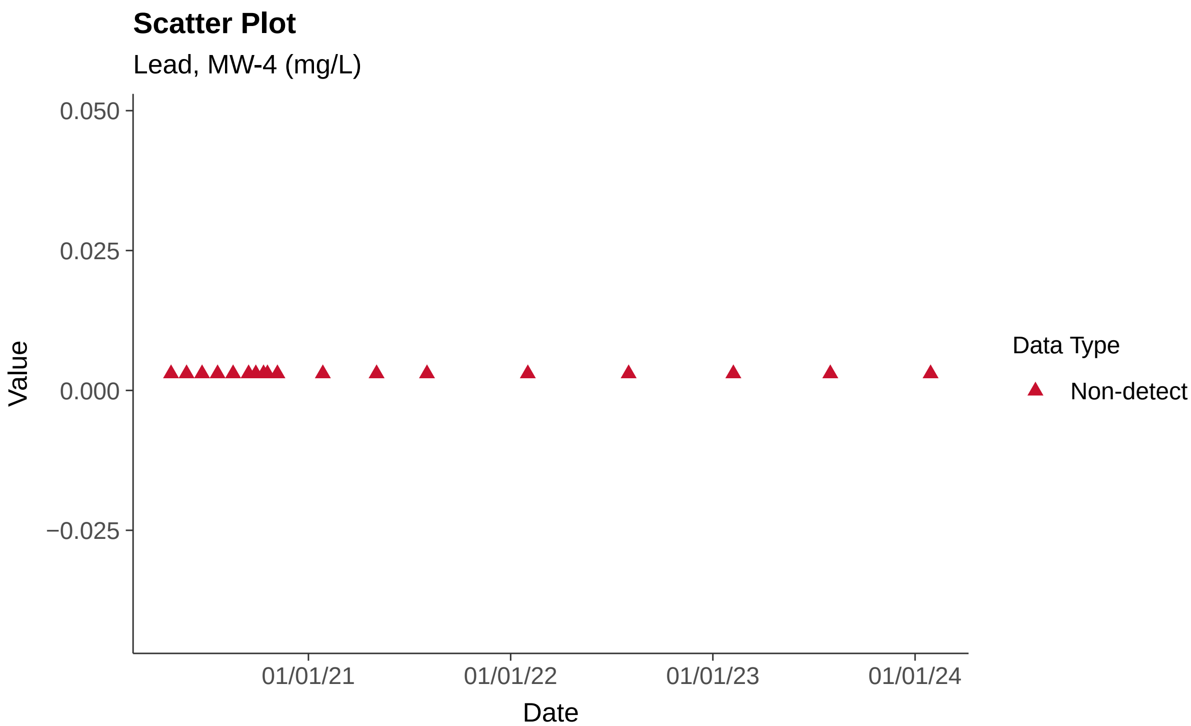
Boxplot by Season

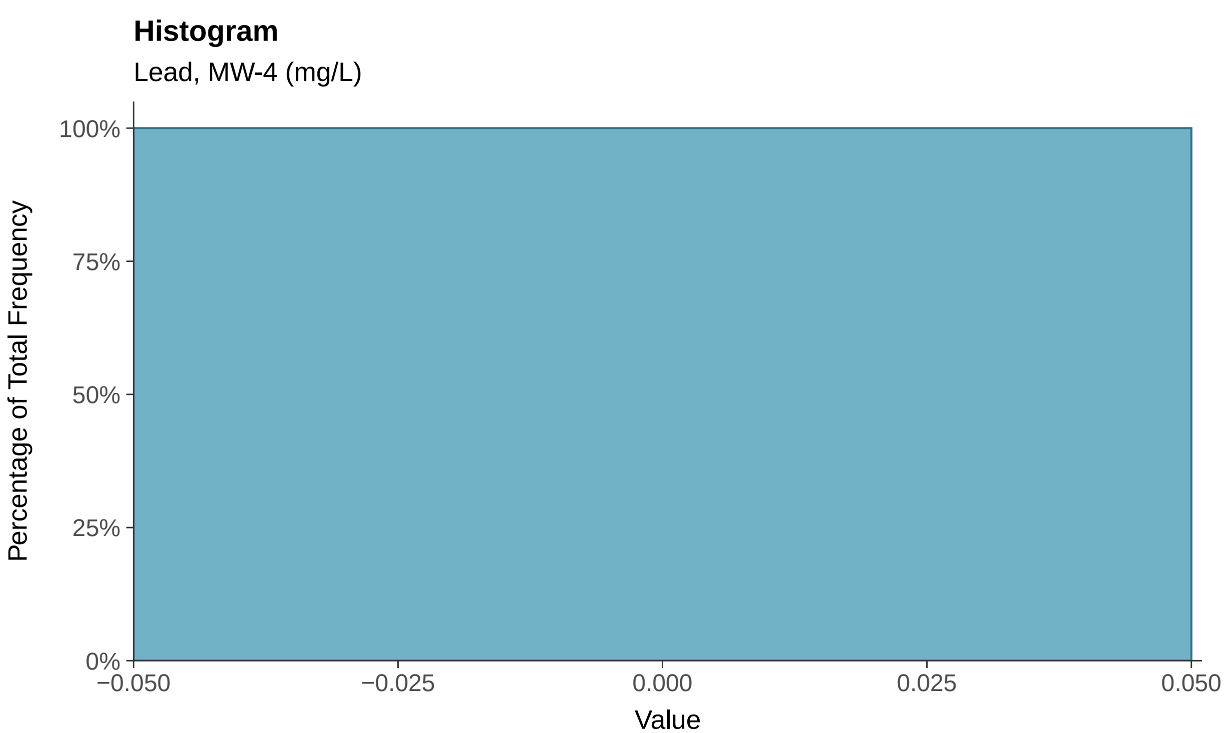
Cobalt, MW-4 (mg/L)



Appendix IV: Lead, MW-4

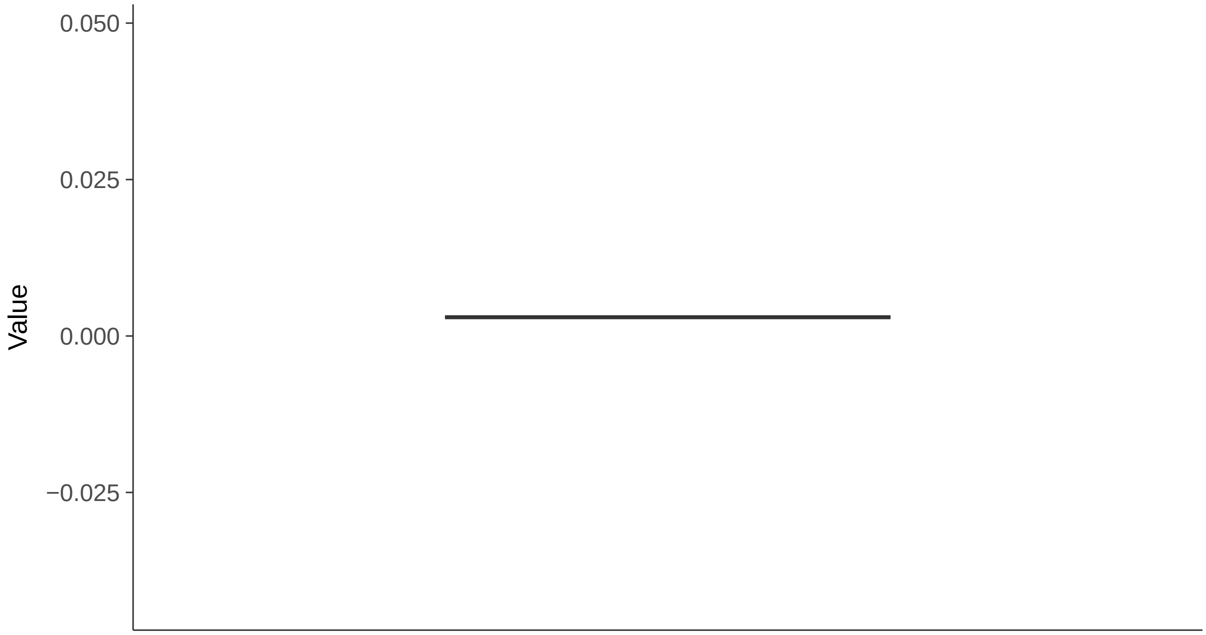
ID: 04_2_15





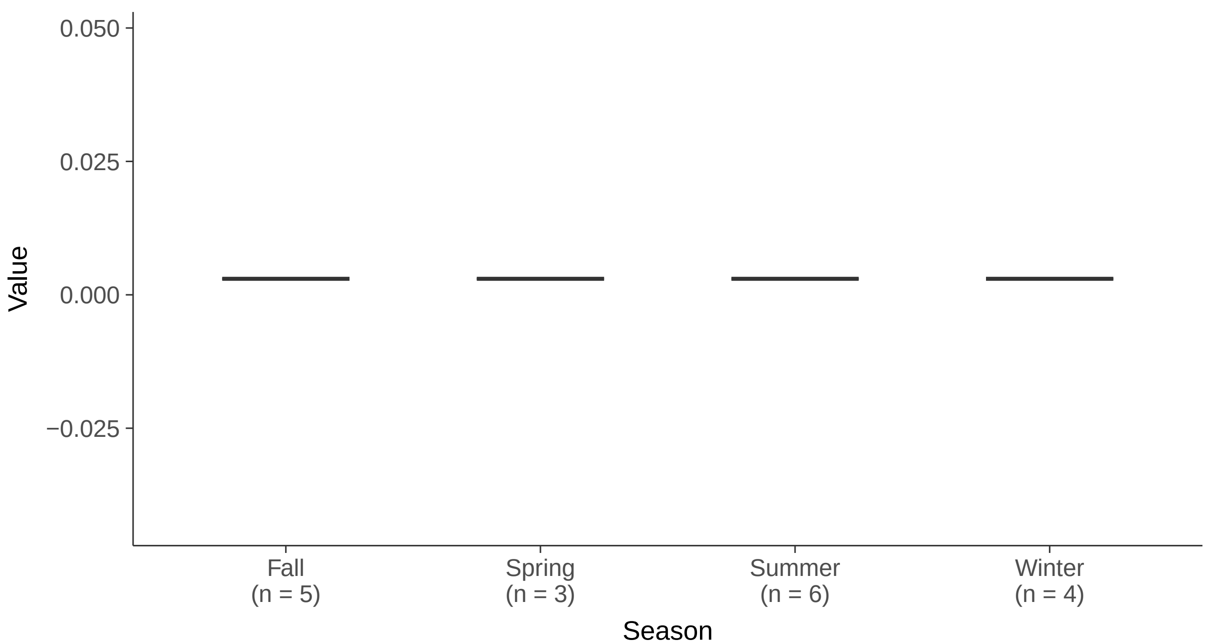
Boxplot

Lead, MW-4 (mg/L)



Boxplot by Season

Lead, MW-4 (mg/L)

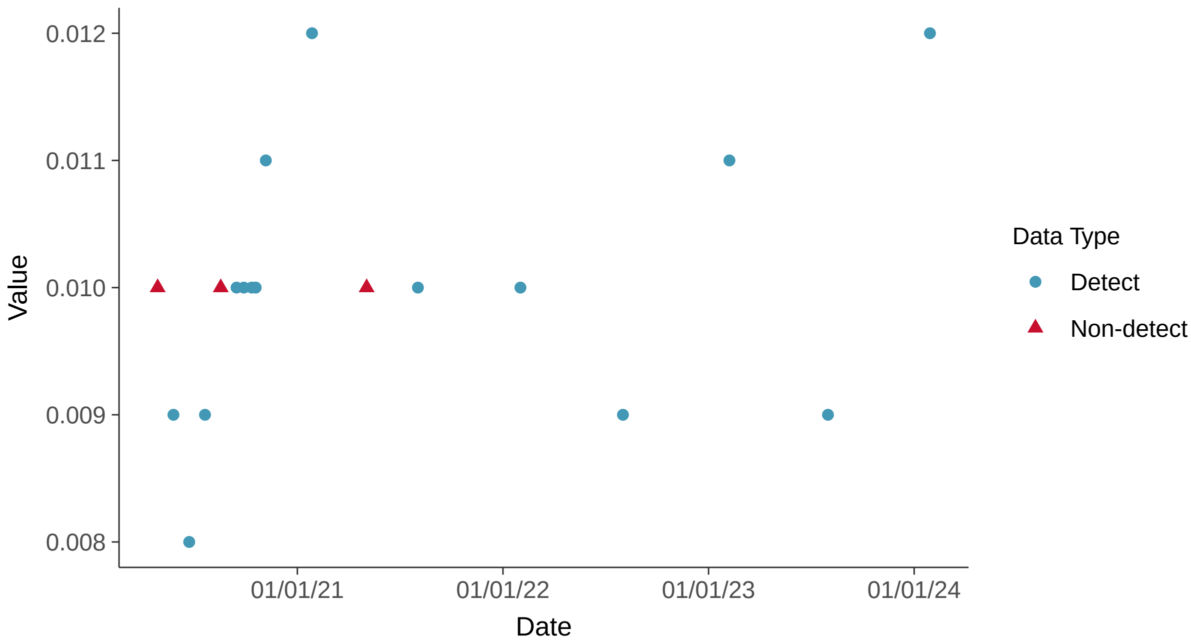


Appendix IV: Lithium, MW-4

ID: 04_2_16

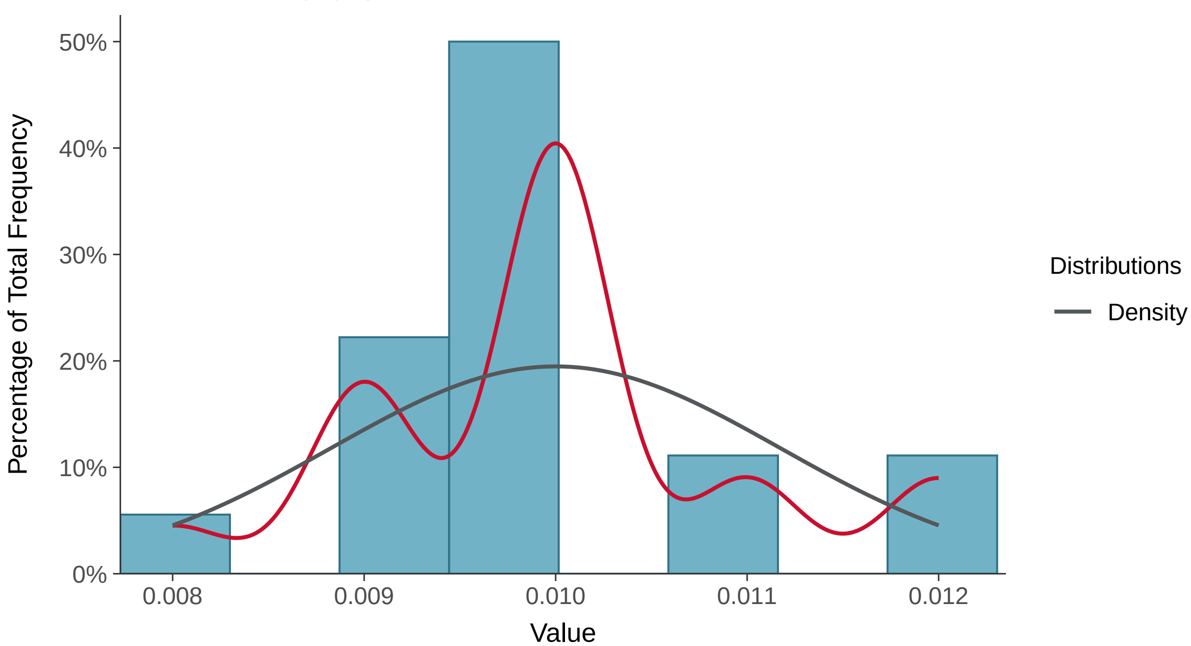
Scatter Plot

Lithium, MW-4 (mg/L)



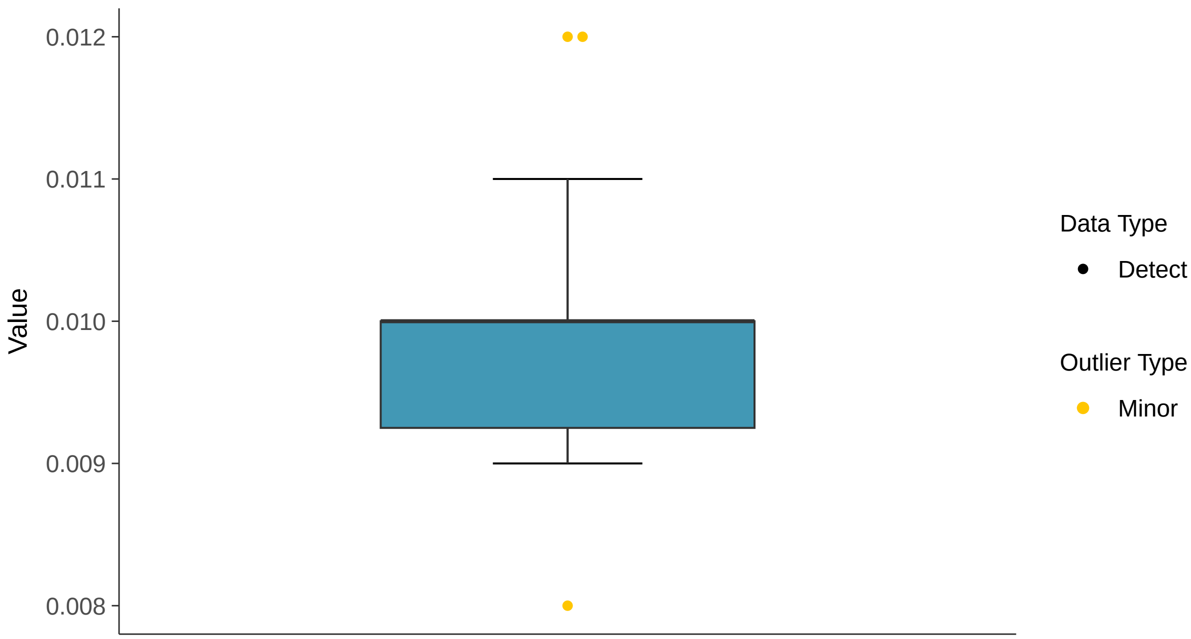
Histogram

Lithium, MW-4 (mg/L)



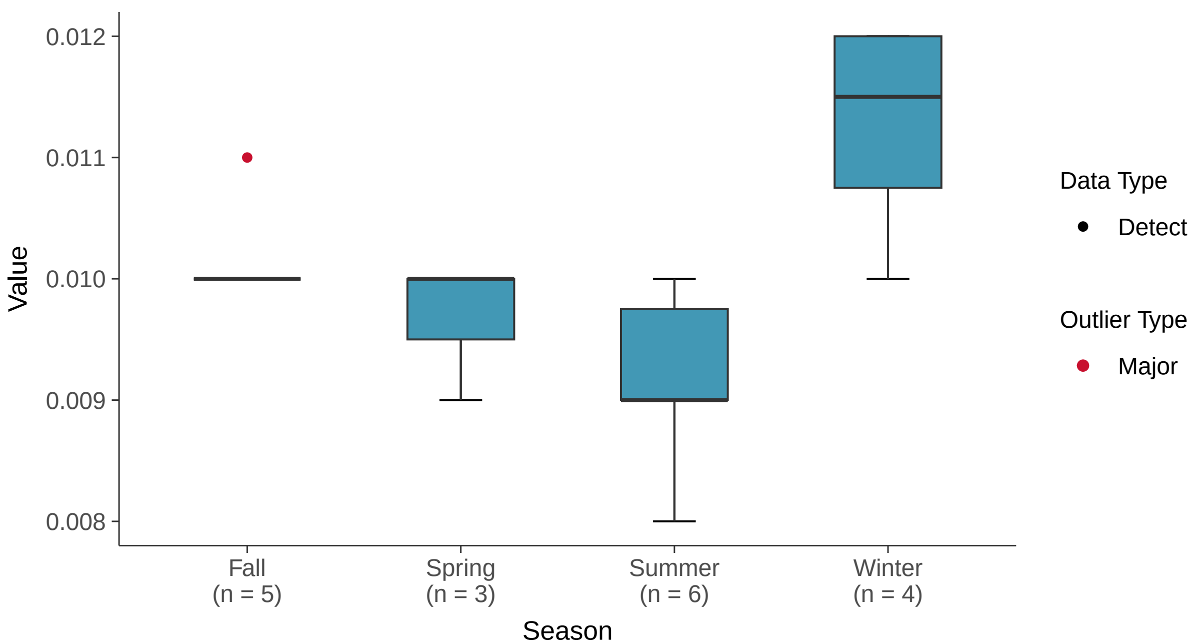
Boxplot

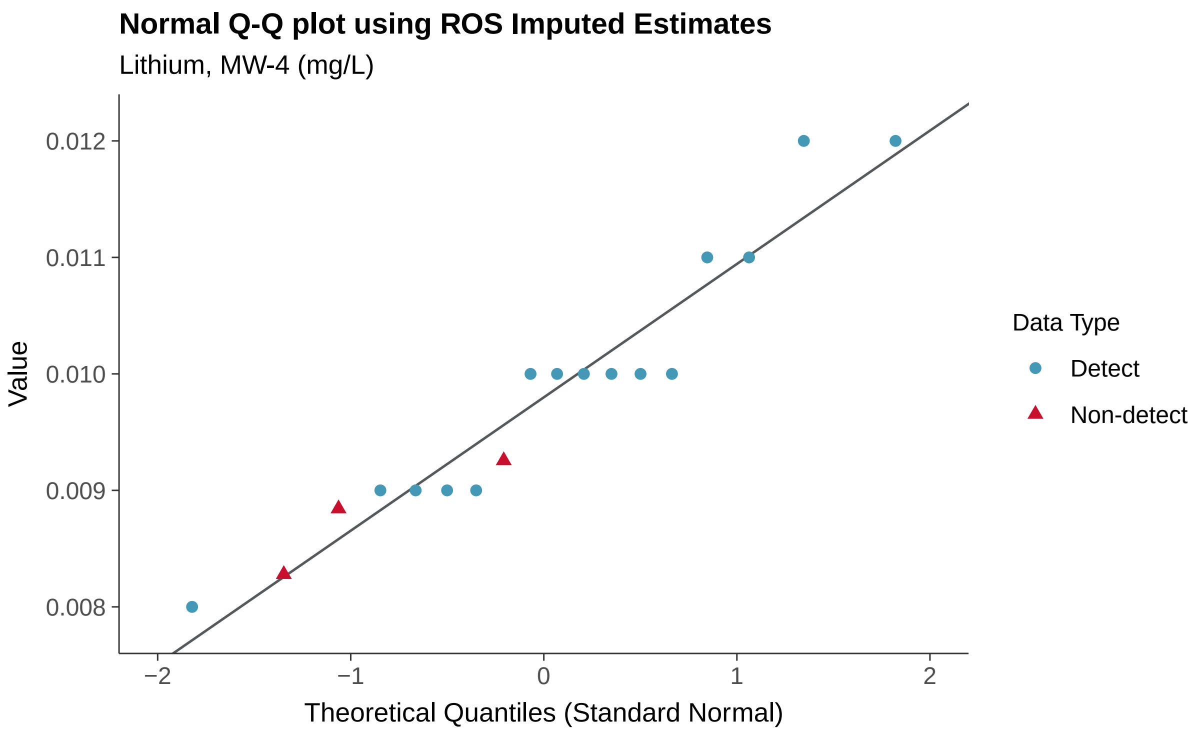
Lithium, MW-4 (mg/L)

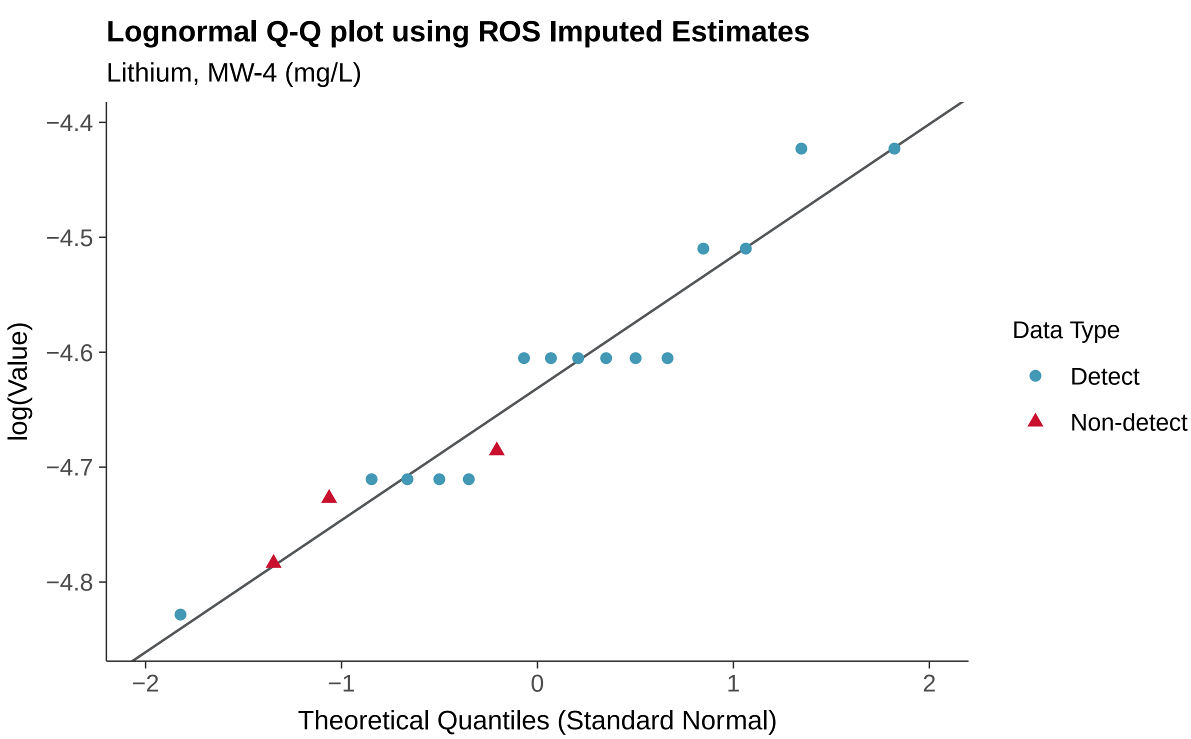


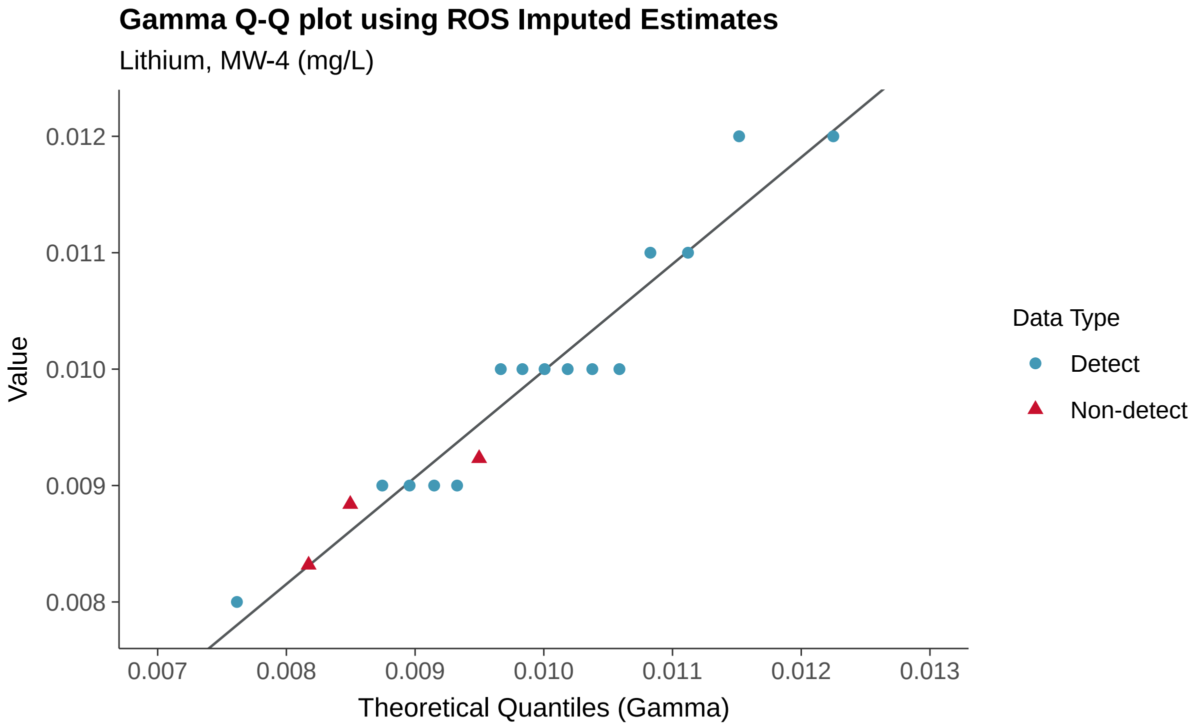
Boxplot by Season

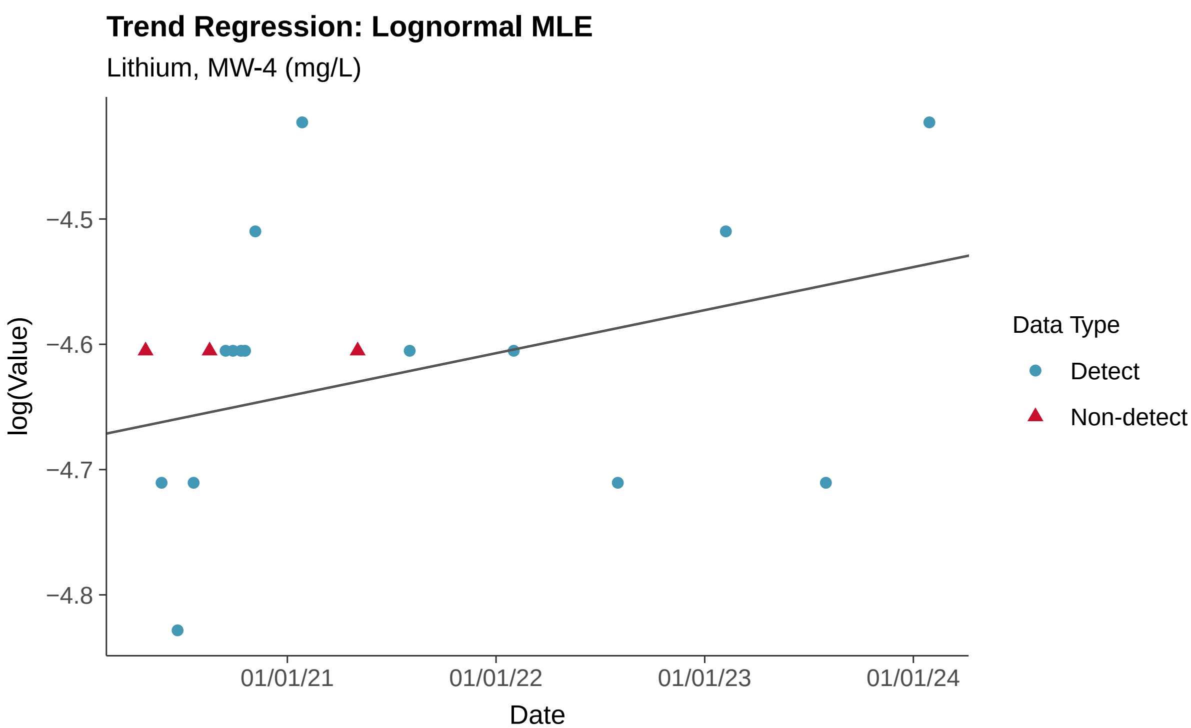
Lithium, MW-4 (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Lithium, MW-4 (mg/L)
Value
0.012
0.011
0.010
0.009
0.008
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

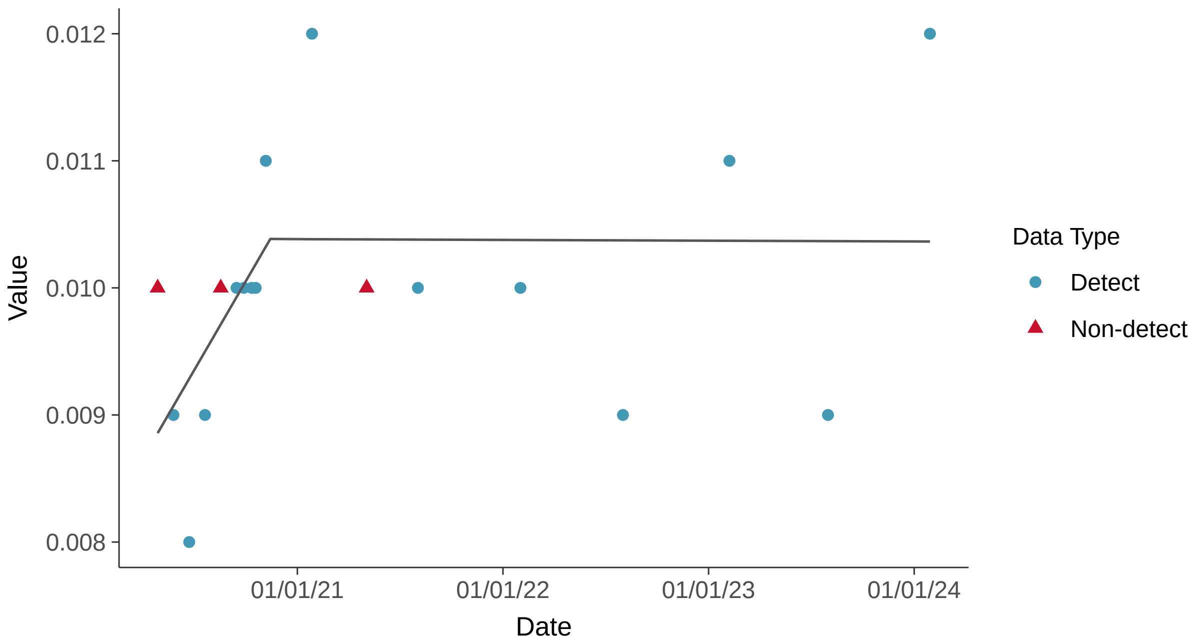

Lognormal Q-Q plot using ROS Imputed Estimates
Lithium, MW-4 (mg/L)
log(Value)
−4.4
−4.5
−4.6
−4.7
−4.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Lithium, MW-4 (mg/L)
Value
0.012
0.011
0.010
0.009
0.008
0.007
0.008
0.009
0.010
0.011
0.012
0.013
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Lithium, MW-4 (mg/L)
log(Value)
−4.5
−4.6
−4.7
−4.8
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

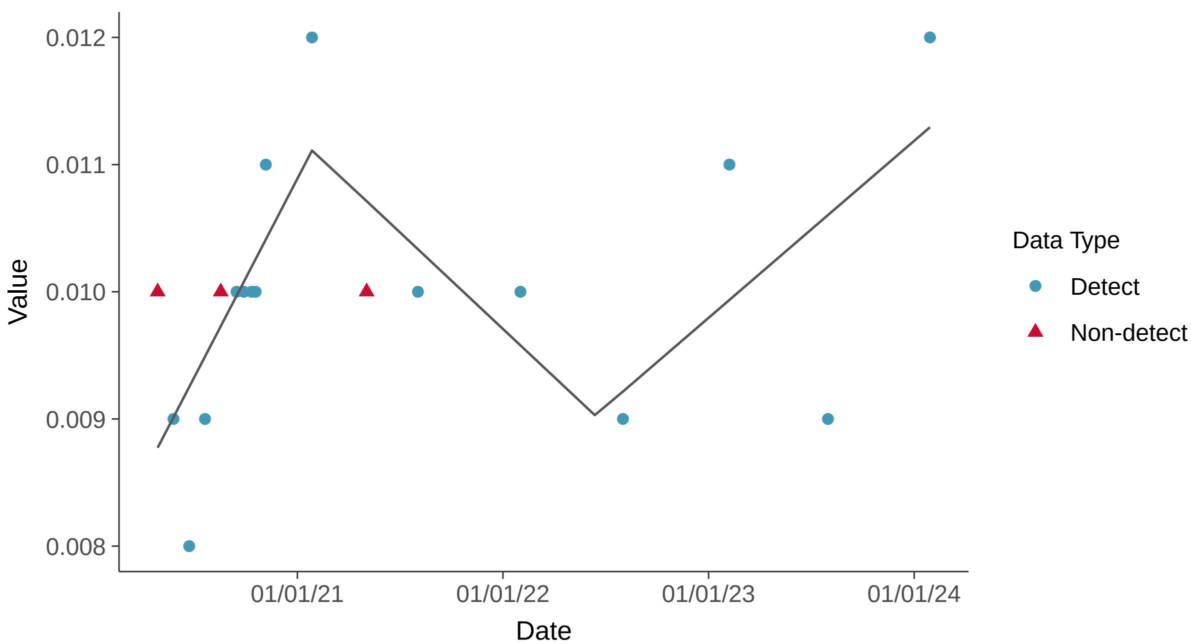
Trend Regression: Piecewise Linear-Linear

Lithium, MW-4 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lithium, MW-4 (mg/L)

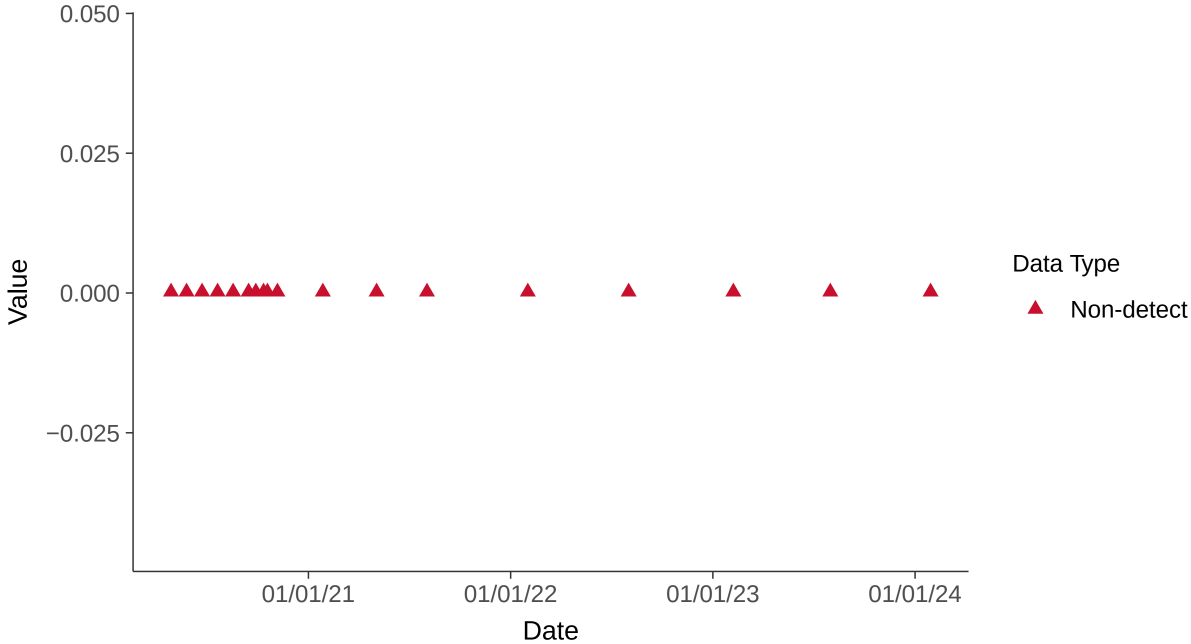


Appendix IV: Mercury, MW-4

ID: 04_2_17

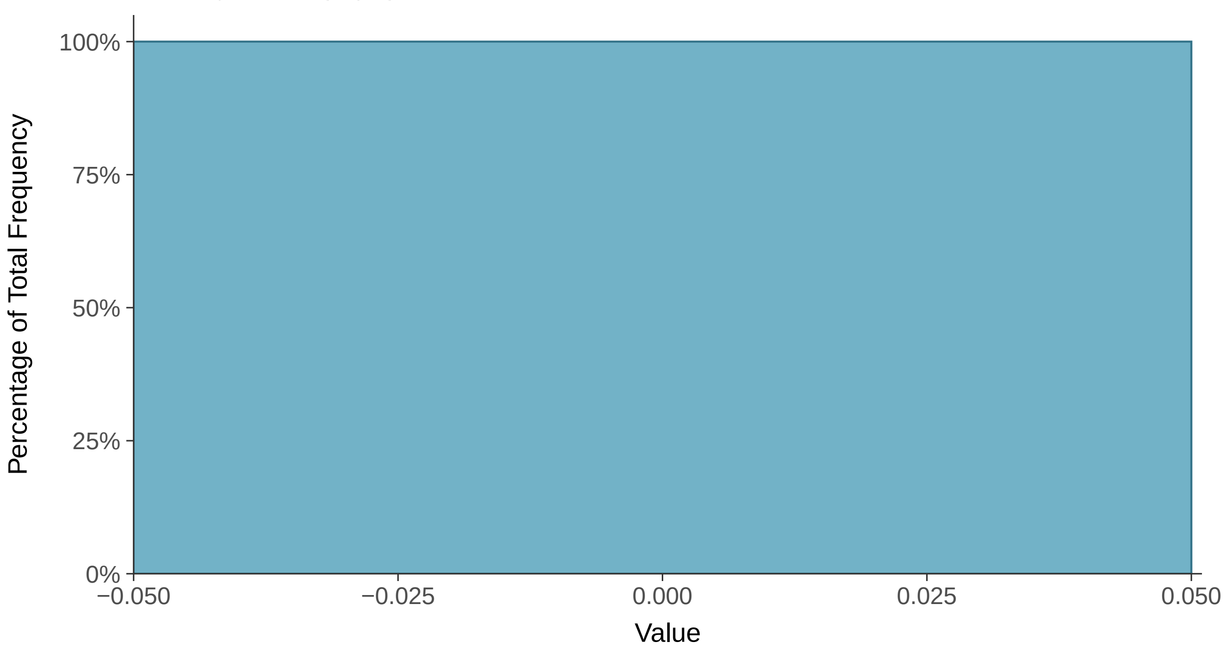
Scatter Plot

Mercury, MW-4 (mg/L)



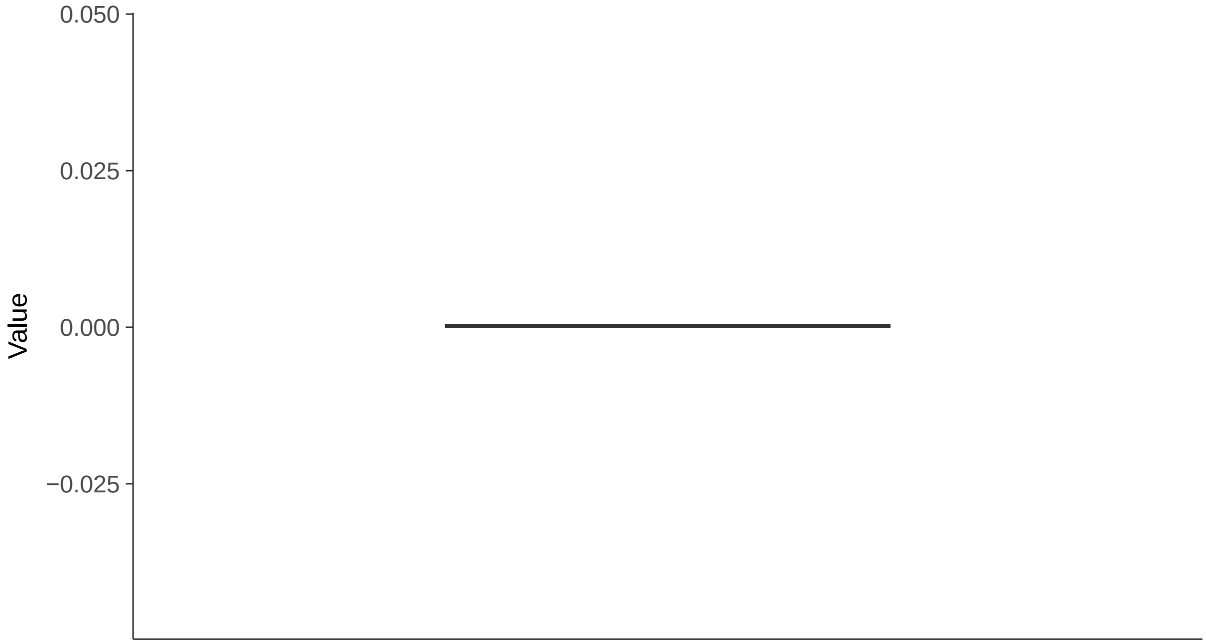
Histogram

Mercury, MW-4 (mg/L)



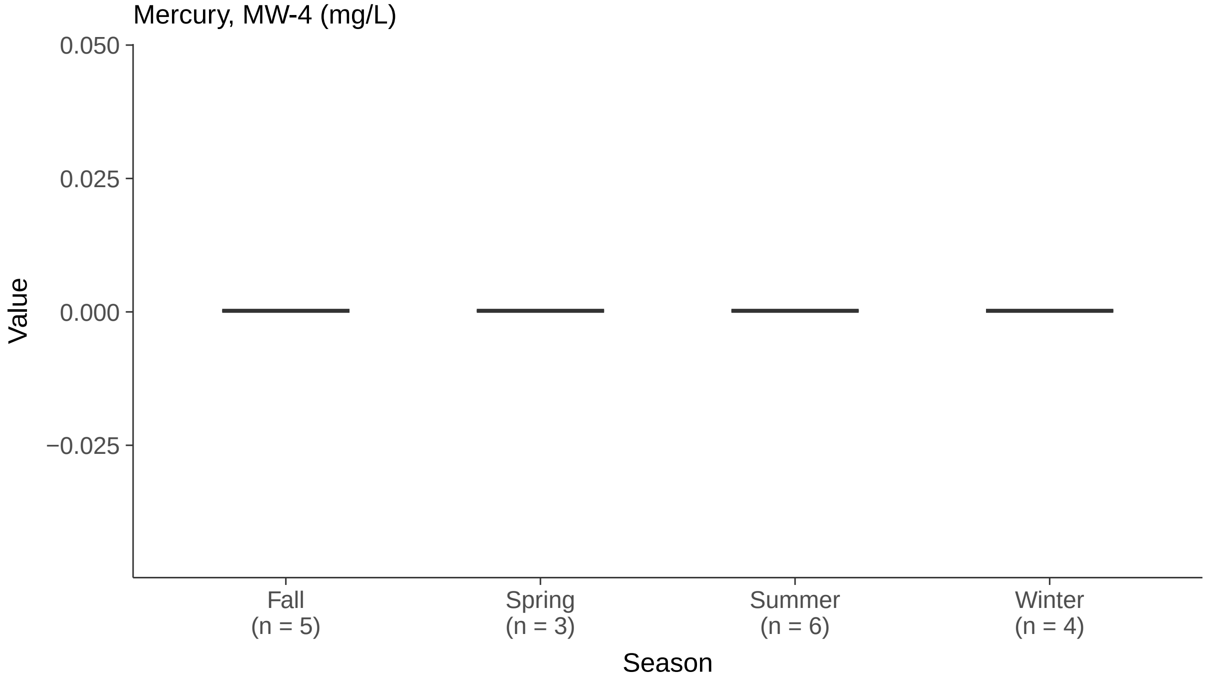
Boxplot

Mercury, MW-4 (mg/L)



Boxplot by Season

Mercury, MW-4 (mg/L)

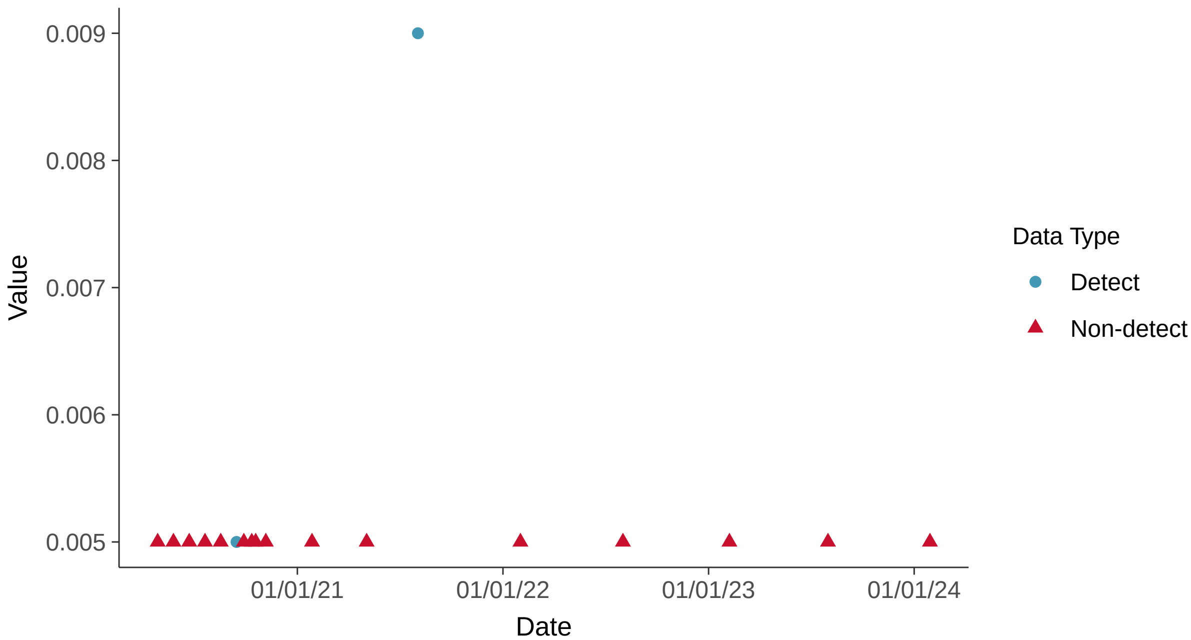


Appendix IV: Molybdenum, MW-4

ID: 04_2_18

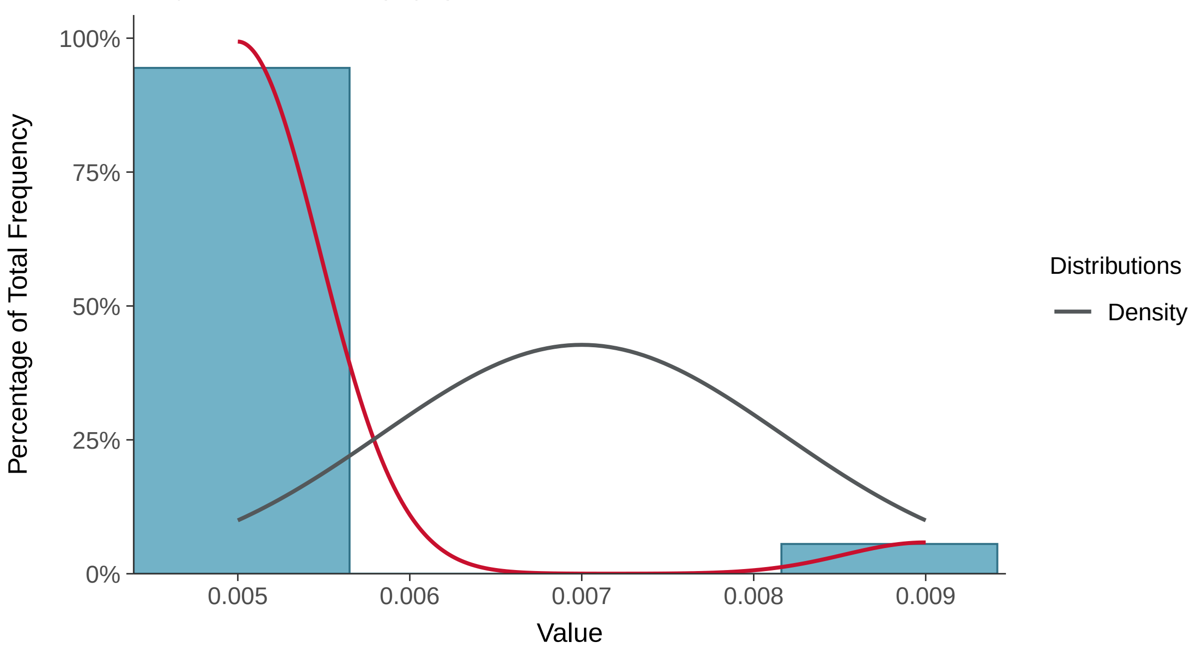
Scatter Plot

Molybdenum, MW-4 (mg/L)



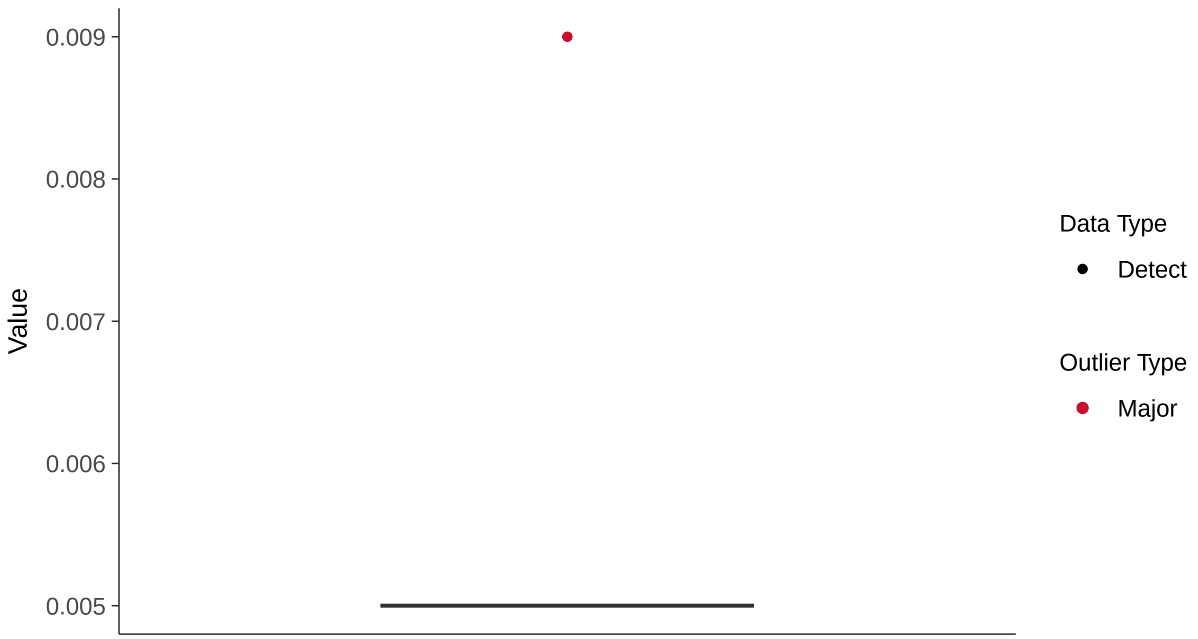
Histogram

Molybdenum, MW-4 (mg/L)



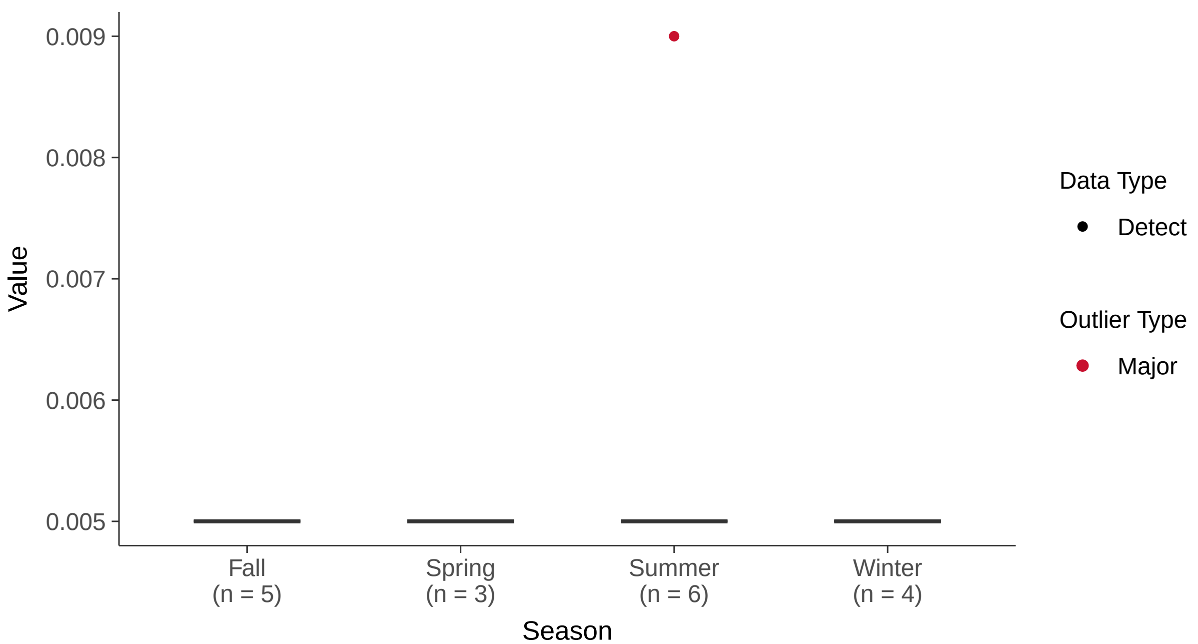
Boxplot

Molybdenum, MW-4 (mg/L)



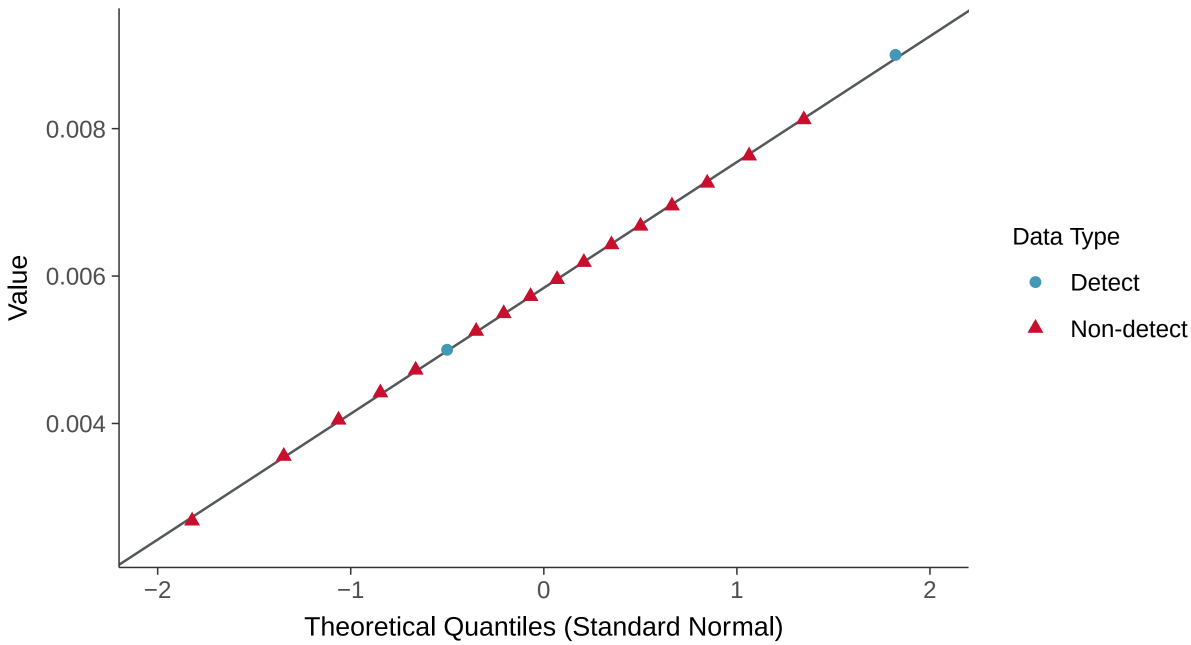
Boxplot by Season

Molybdenum, MW-4 (mg/L)



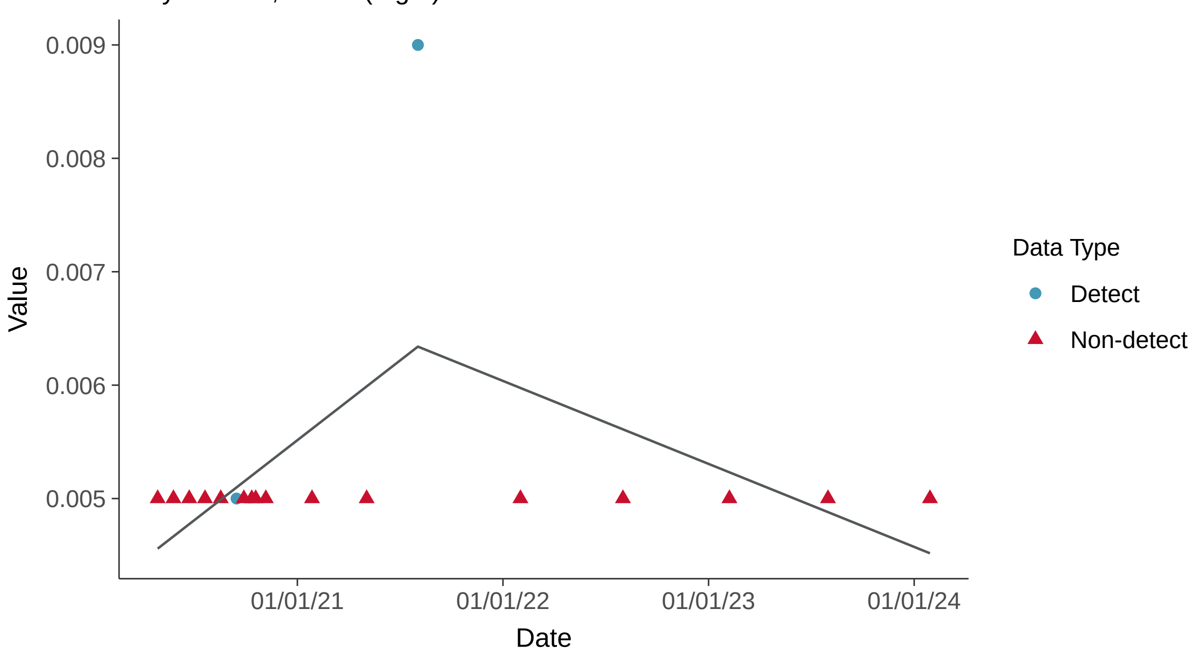
Normal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-4 (mg/L)



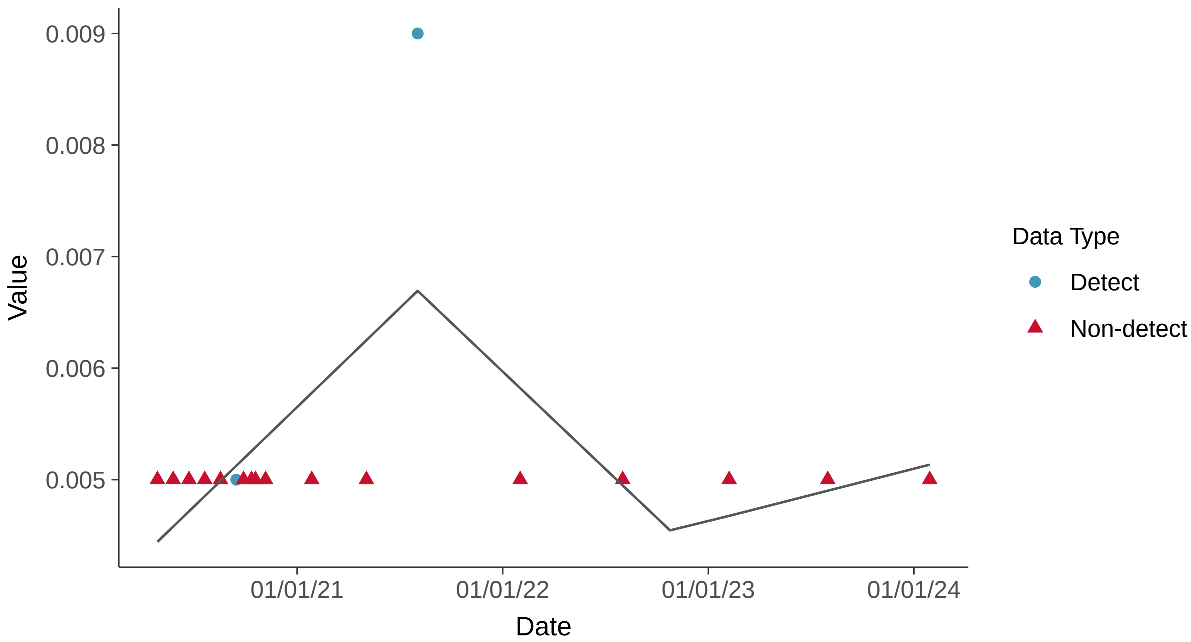
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-4 (mg/L)



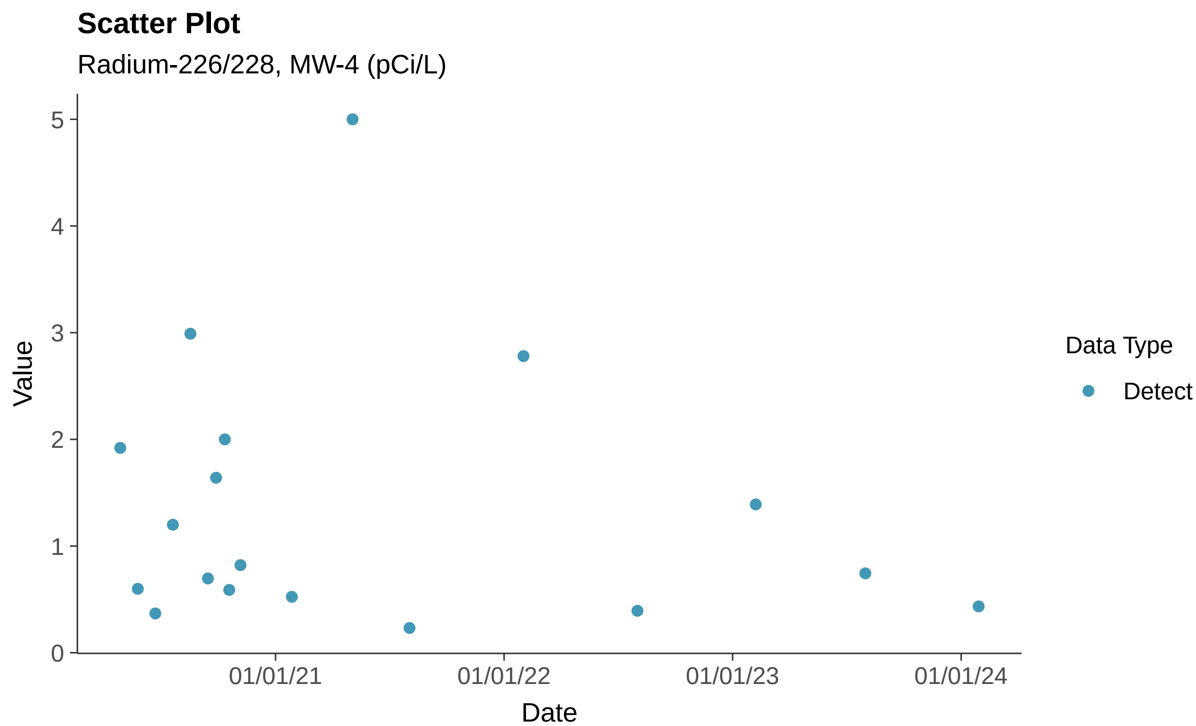
Trend Regression: Piecewise Linear-Linear-Linear

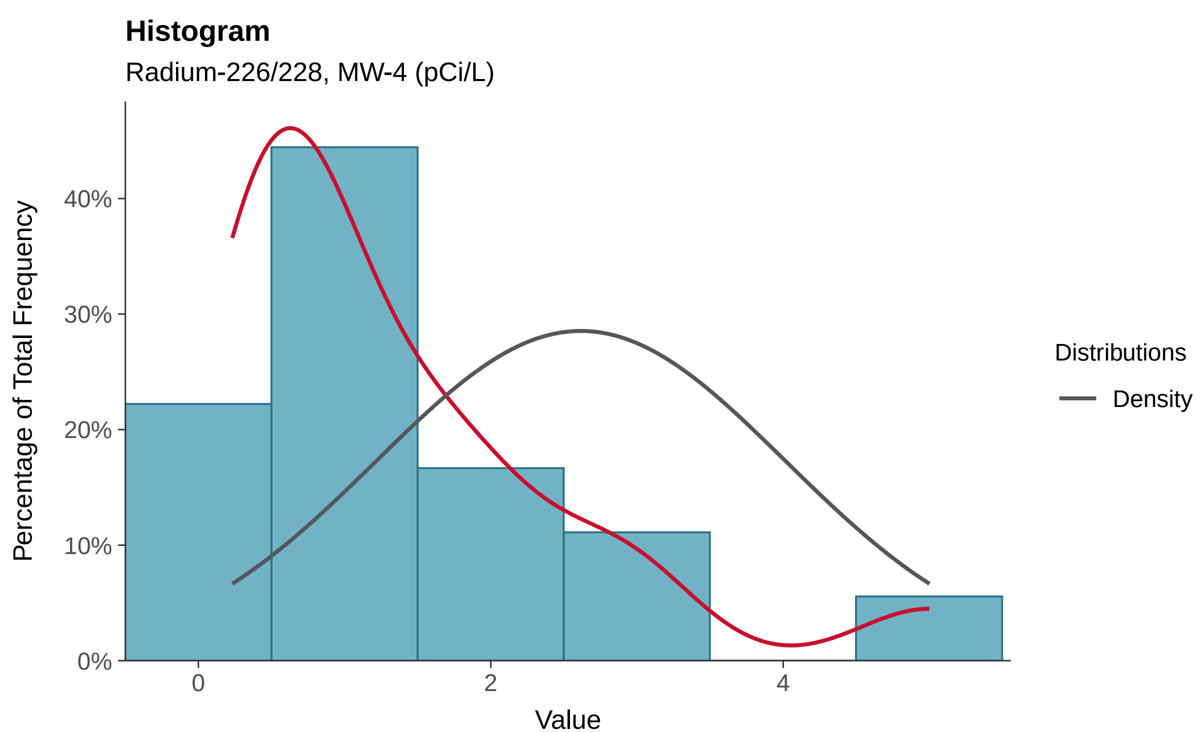
Molybdenum, MW-4 (mg/L)



Appendix IV: Radium-226/228, MW-4

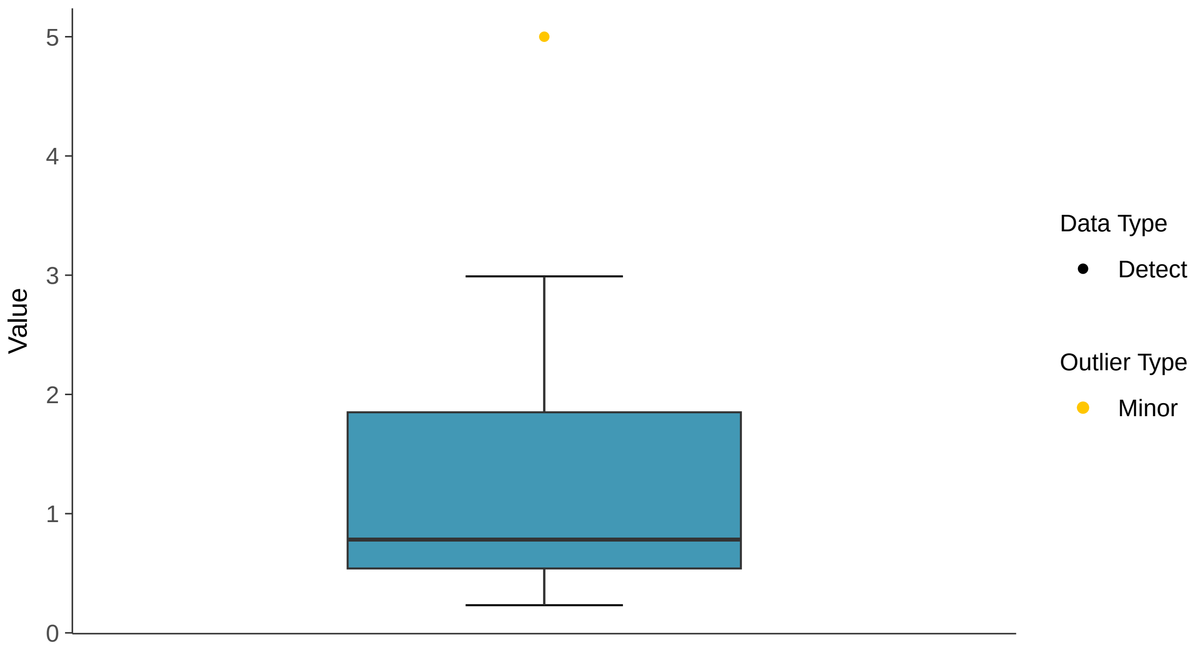
ID: 04_2_20





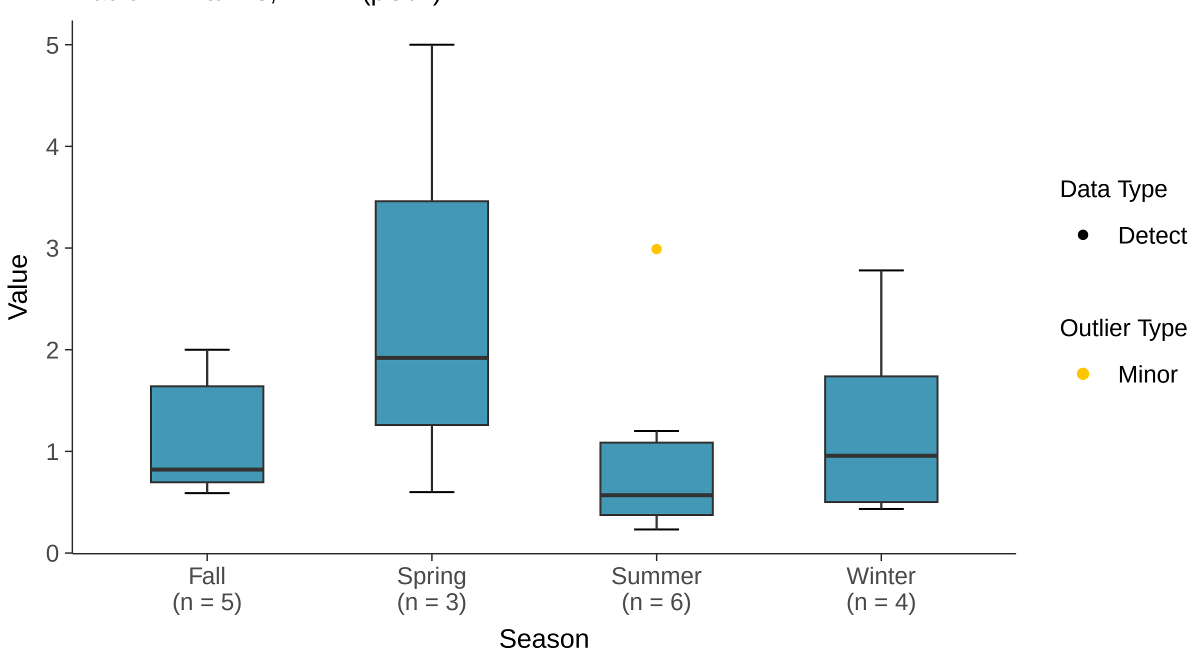
Boxplot

Radium-226/228, MW-4 (pCi/L)



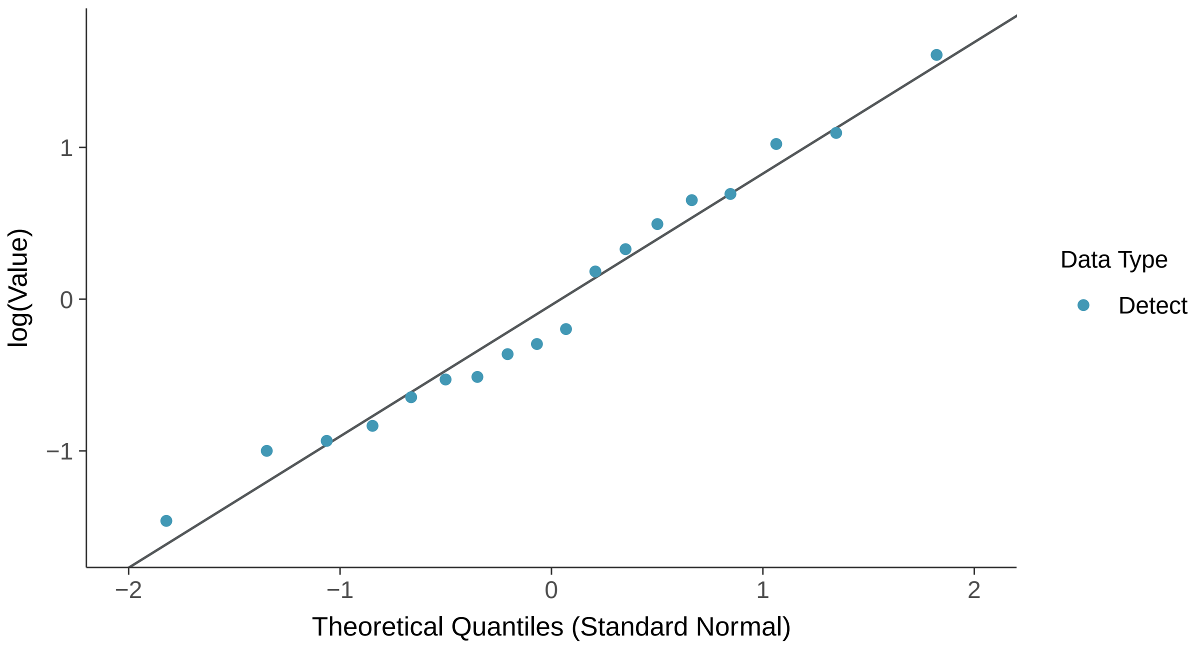
Boxplot by Season

Radium-226/228, MW-4 (pCi/L)



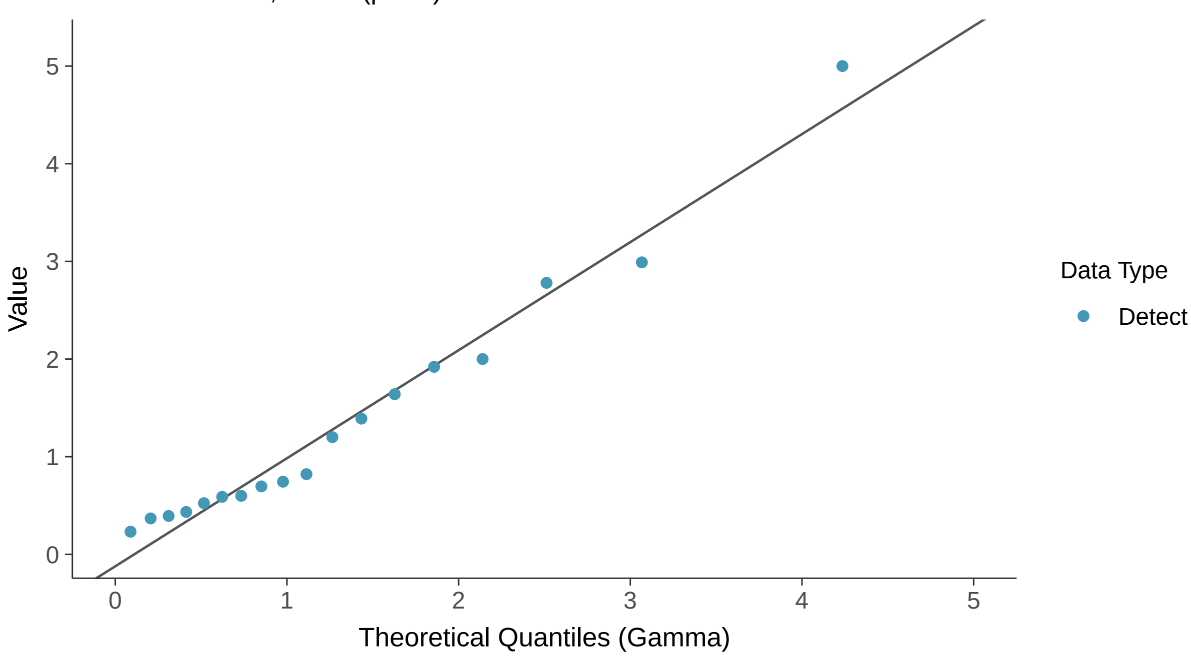
Lognormal Q-Q plot

Radium-226/228, MW-4 (pCi/L)



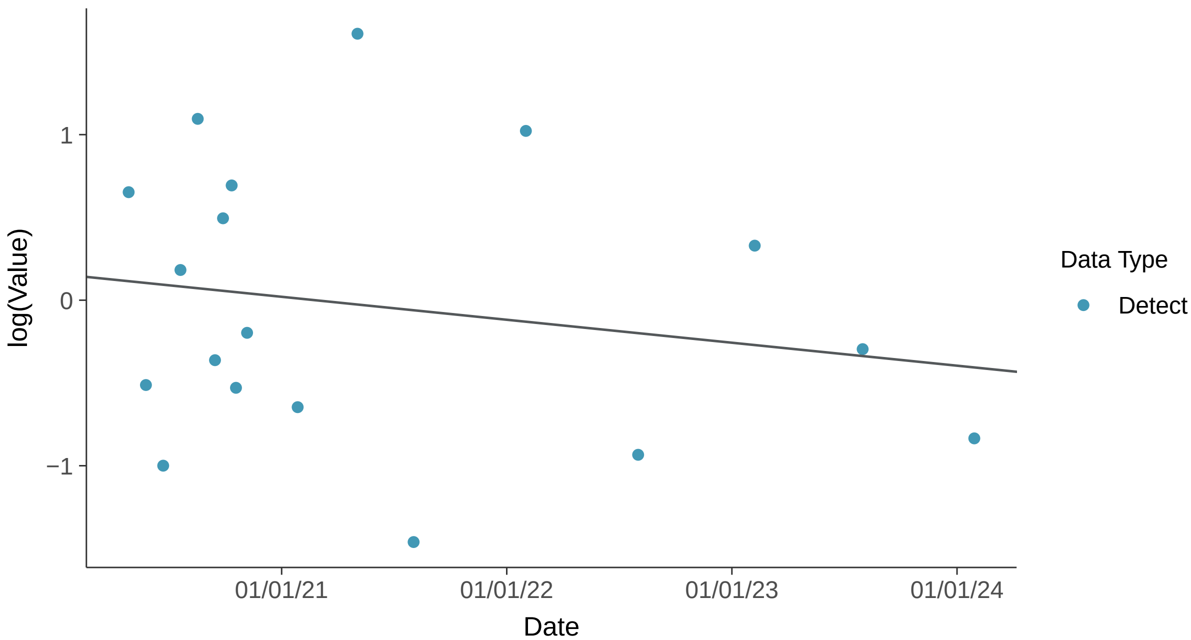
Gamma Q-Q plot

Radium-226/228, MW-4 (pCi/L)



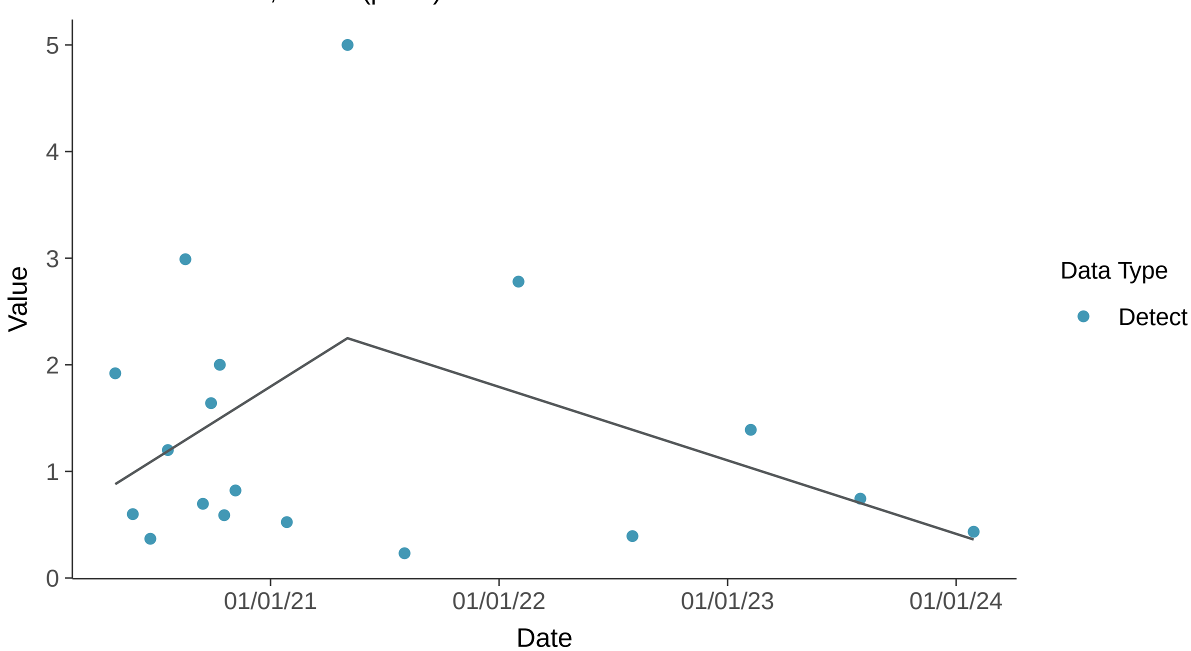
Trend Regression: Lognormal MLE

Radium-226/228, MW-4 (pCi/L)



Trend Regression: Piecewise Linear-Linear

Radium-226/228, MW-4 (pCi/L)

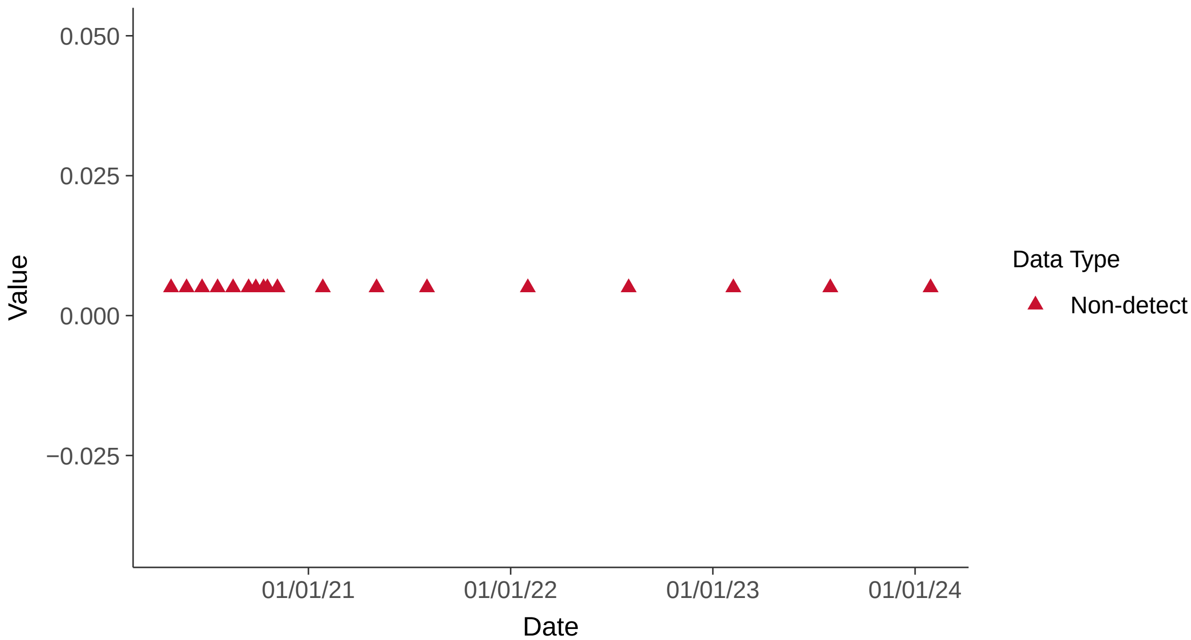


Appendix IV: Selenium, MW-4

ID: 04_2_22

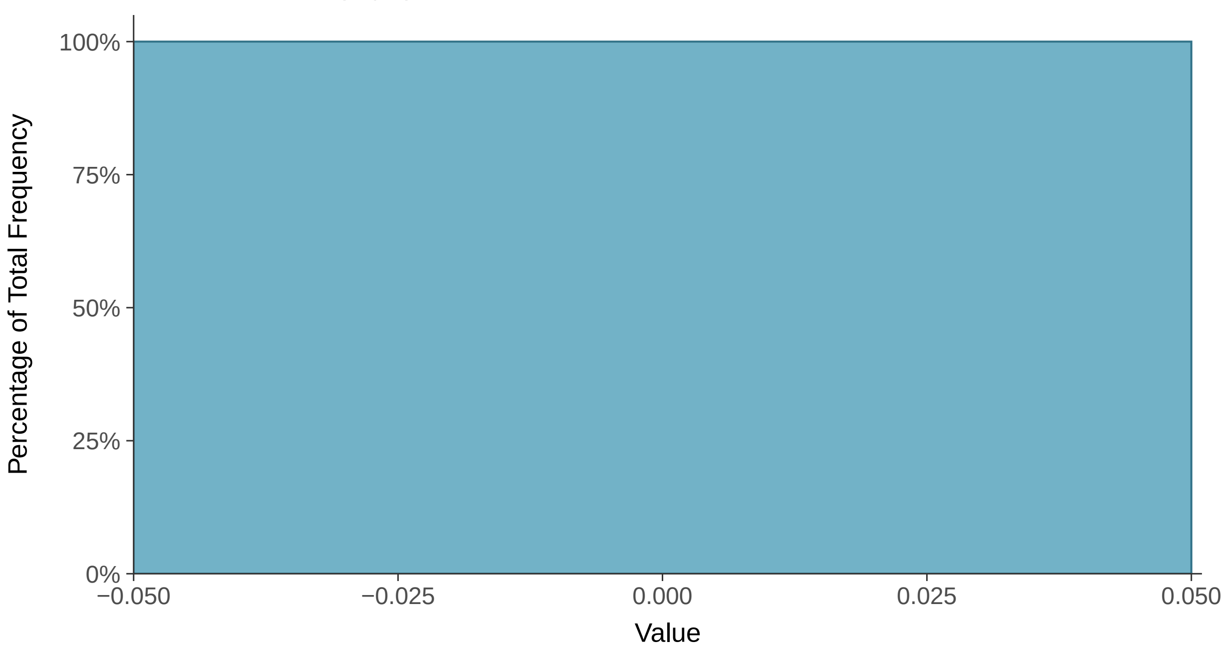
Scatter Plot

Selenium, MW-4 (mg/L)



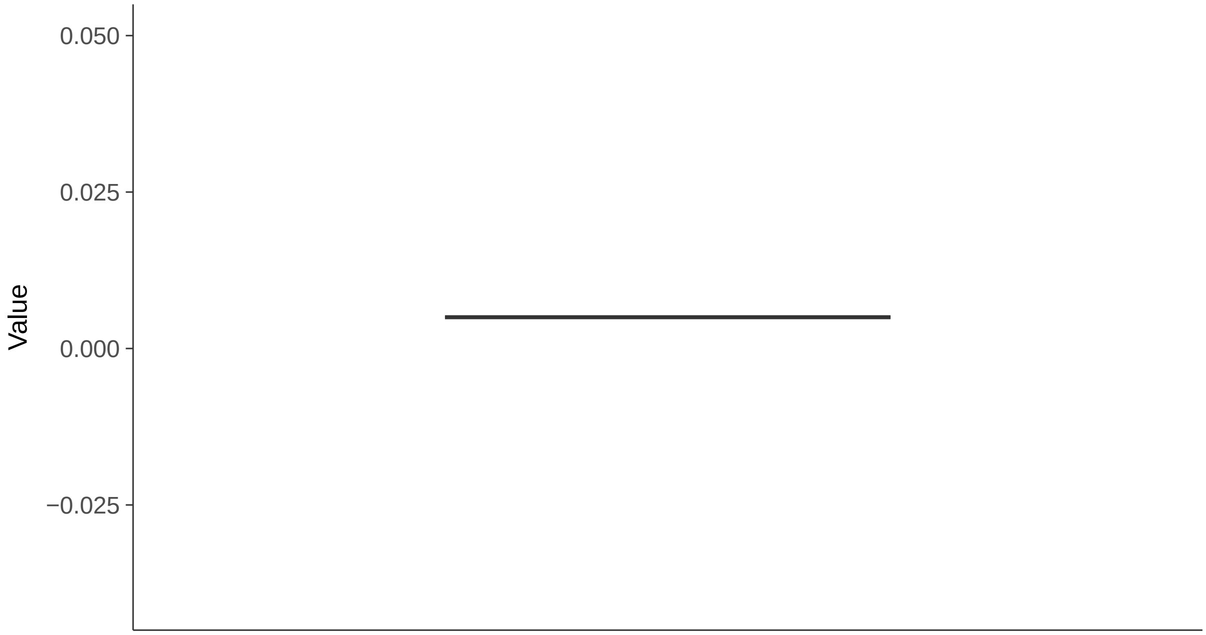
Histogram

Selenium, MW-4 (mg/L)



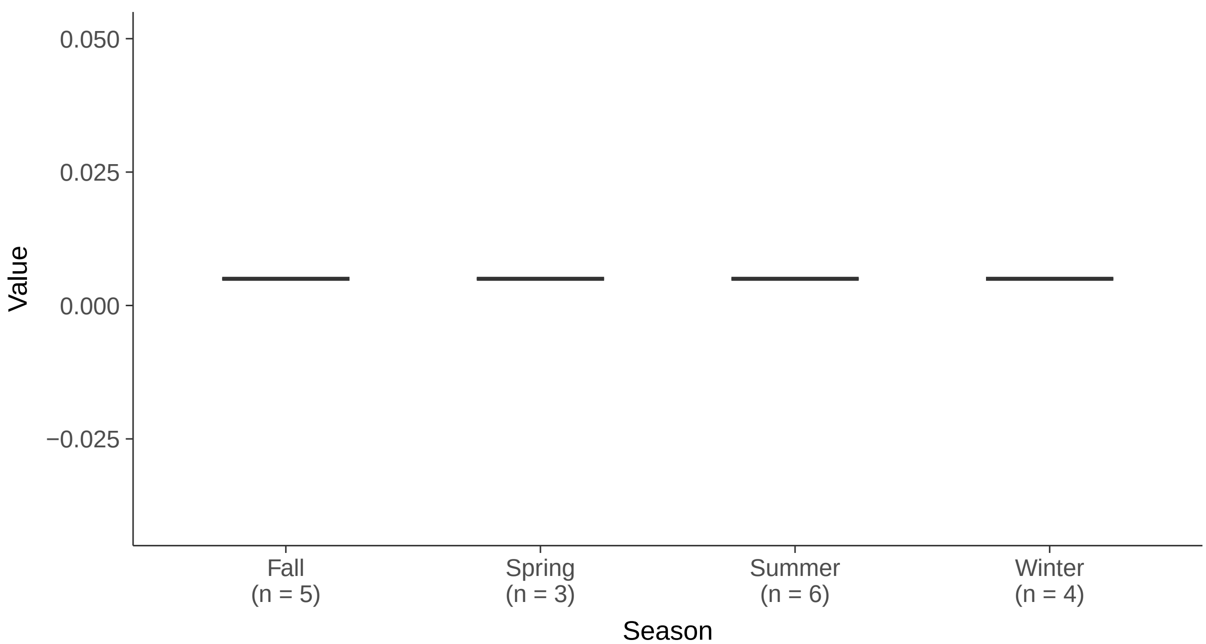
Boxplot

Selenium, MW-4 (mg/L)



Boxplot by Season

Selenium, MW-4 (mg/L)

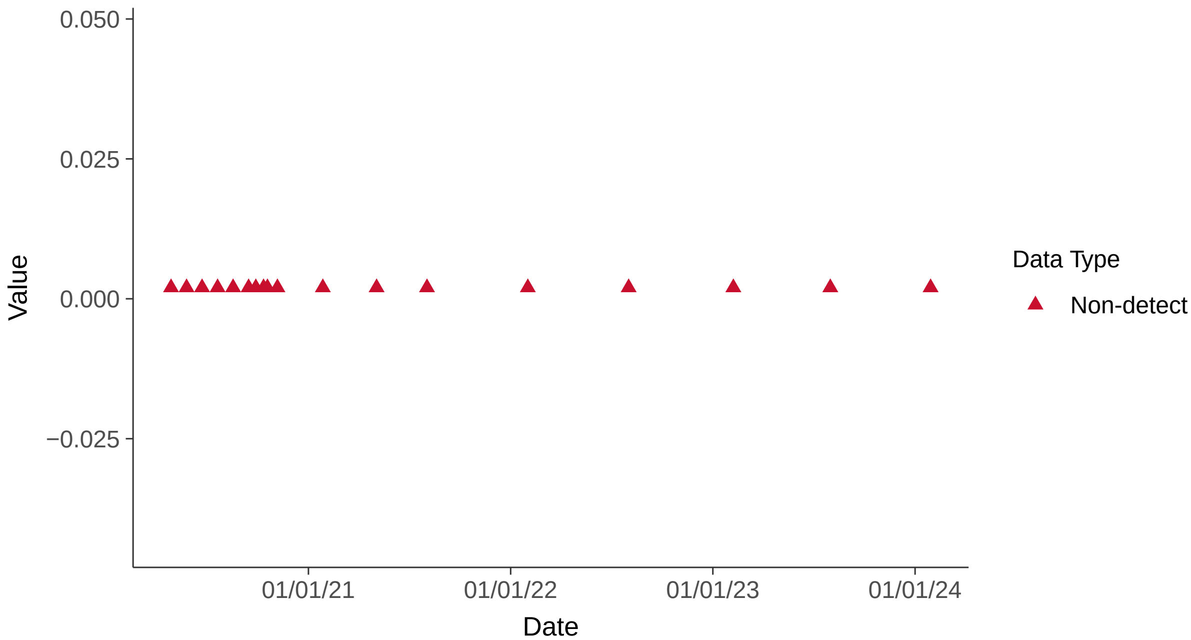


Appendix IV: Thallium, MW-4

ID: 04_2_23

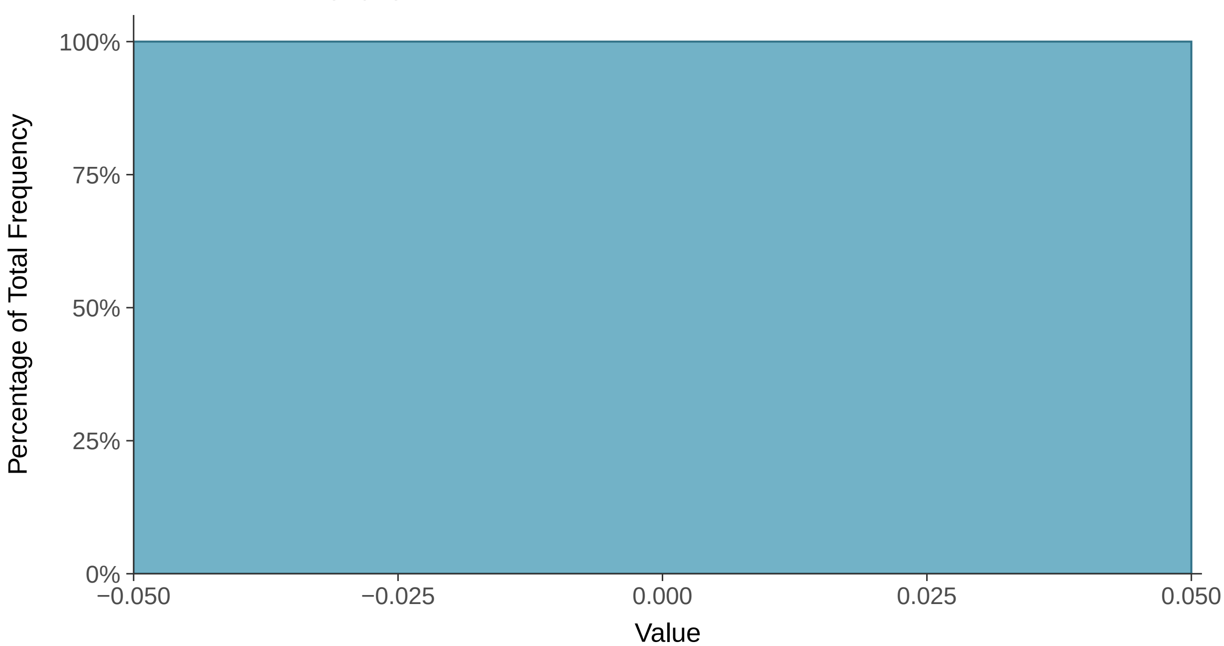
Scatter Plot

Thallium, MW-4 (mg/L)



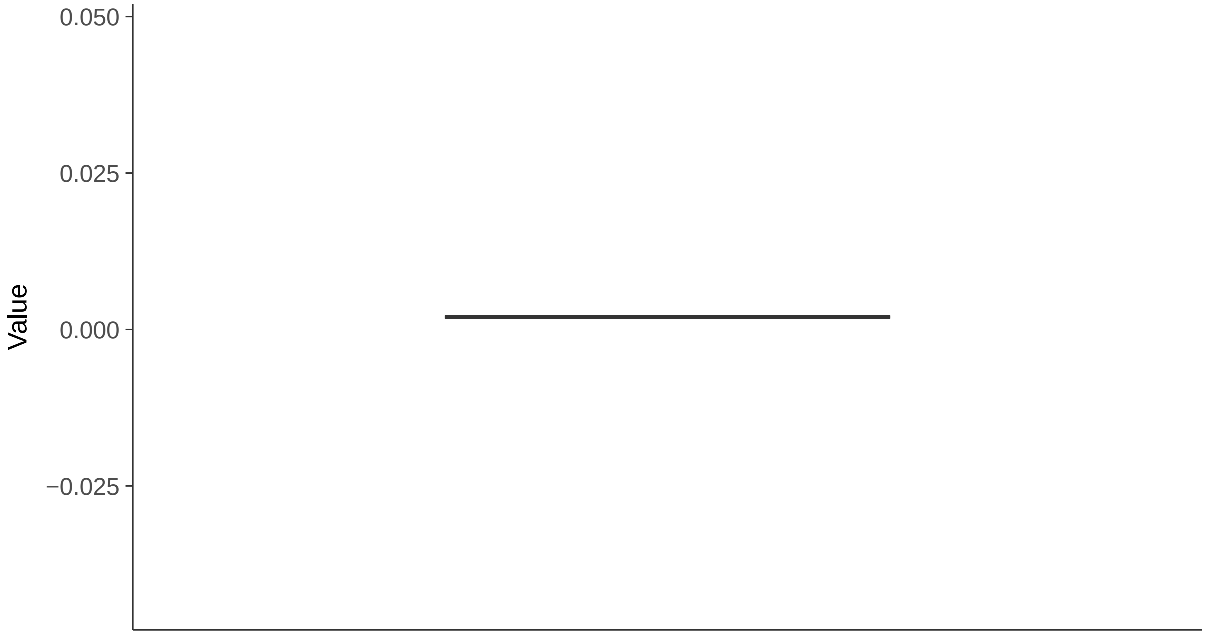
Histogram

Thallium, MW-4 (mg/L)



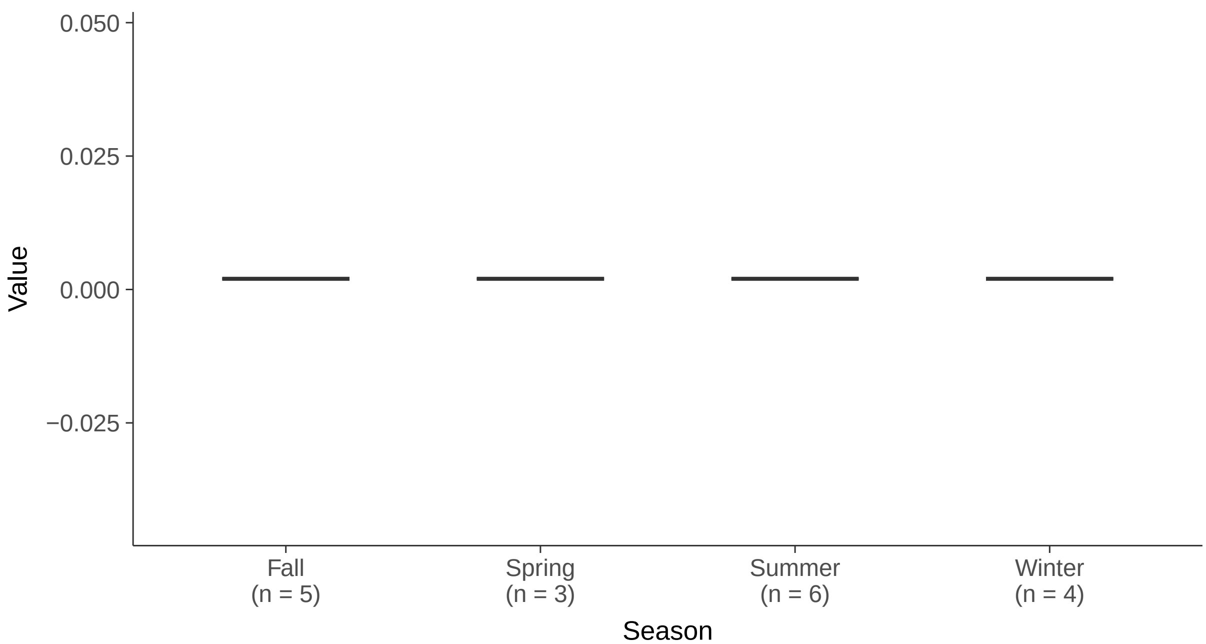
Boxplot

Thallium, MW-4 (mg/L)



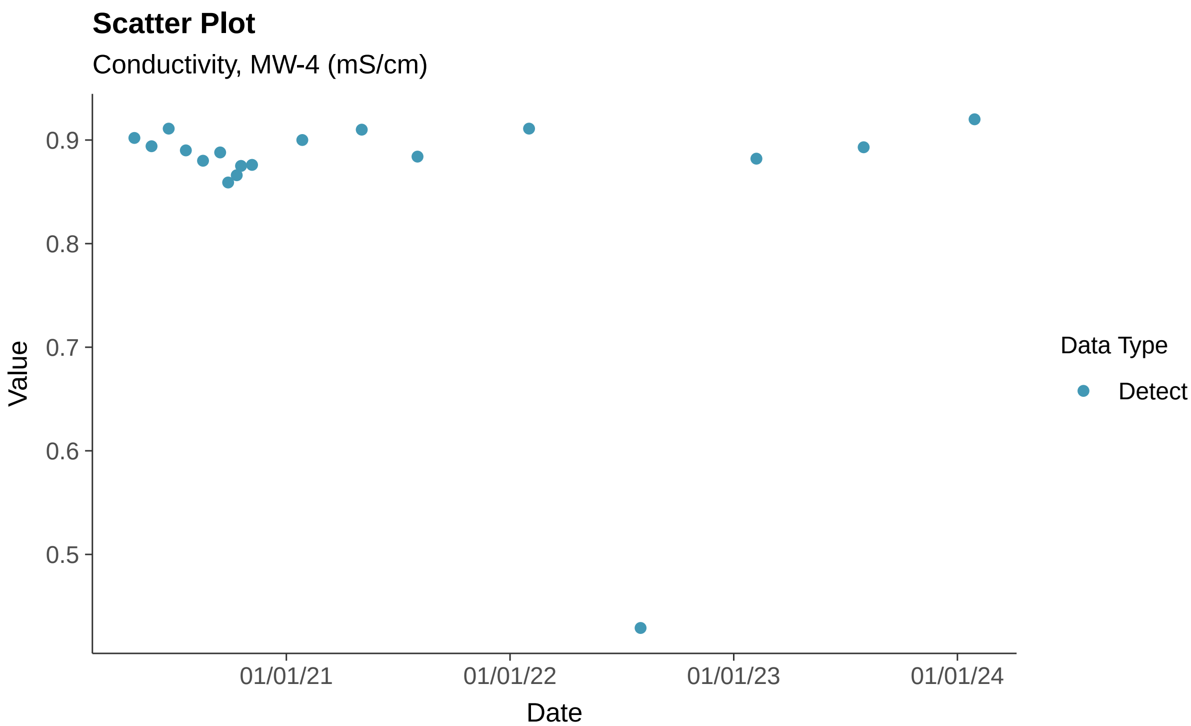
Boxplot by Season

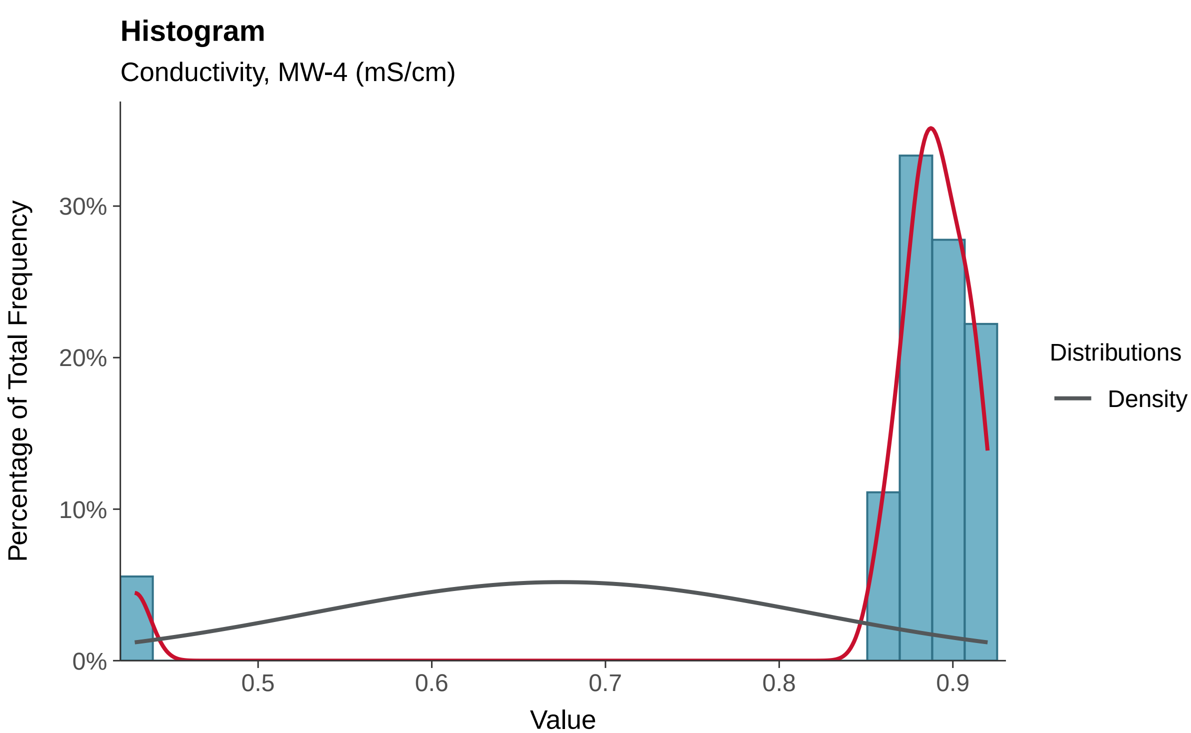
Thallium, MW-4 (mg/L)



Field Parameters: Conductivity, MW-4

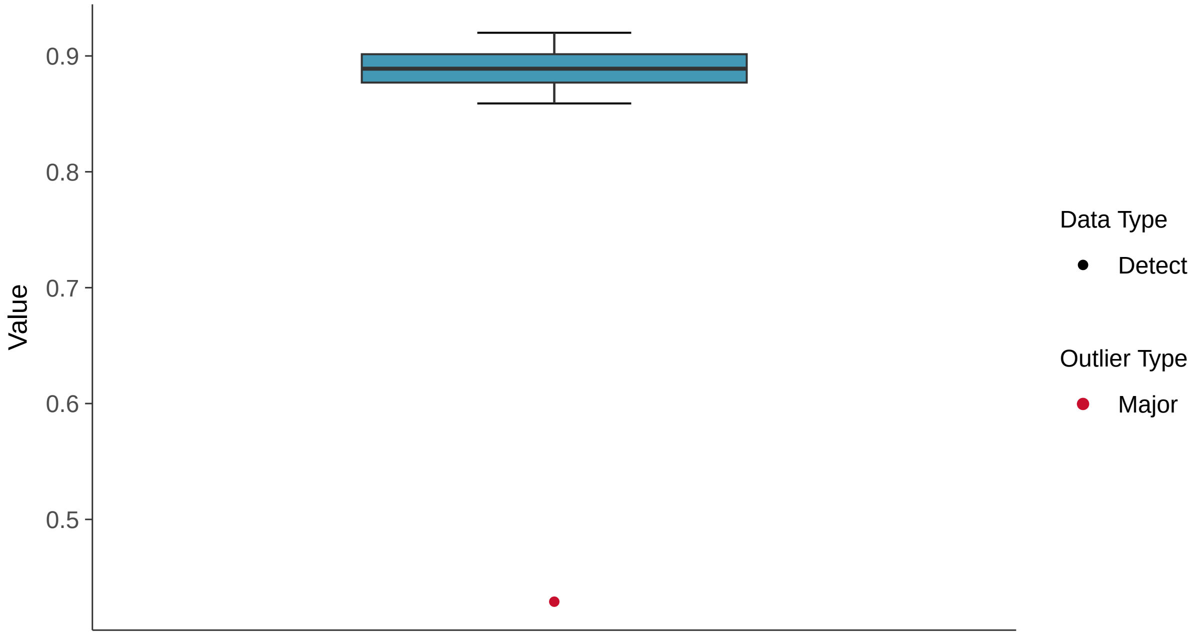
ID: 04_3_24





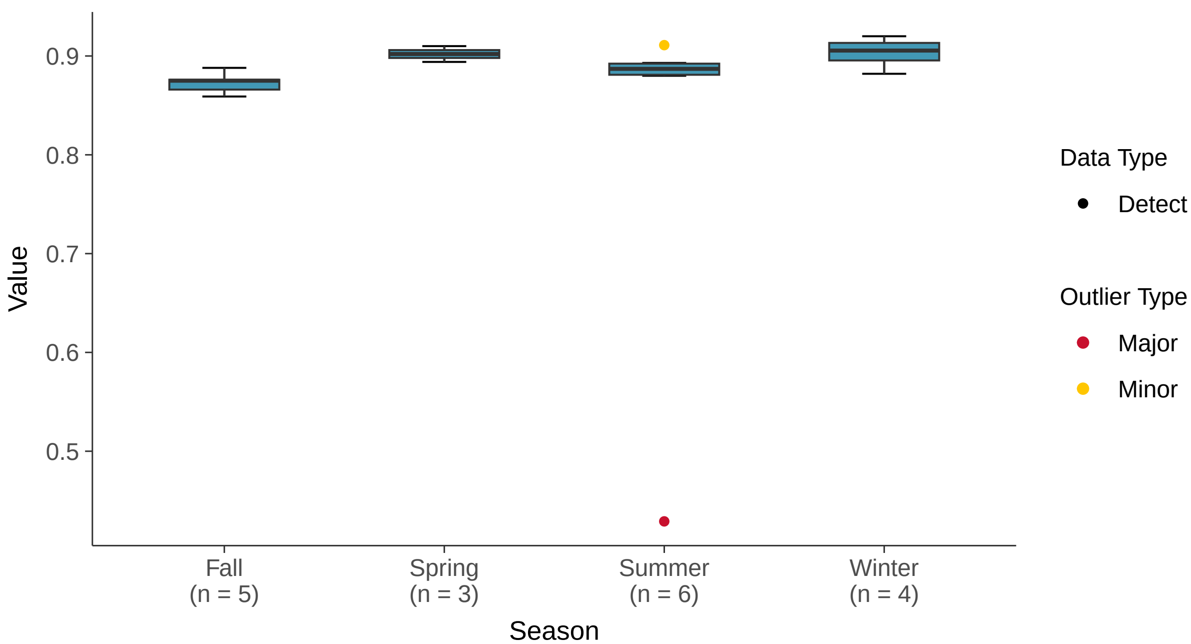
Boxplot

Conductivity, MW-4 (mS/cm)



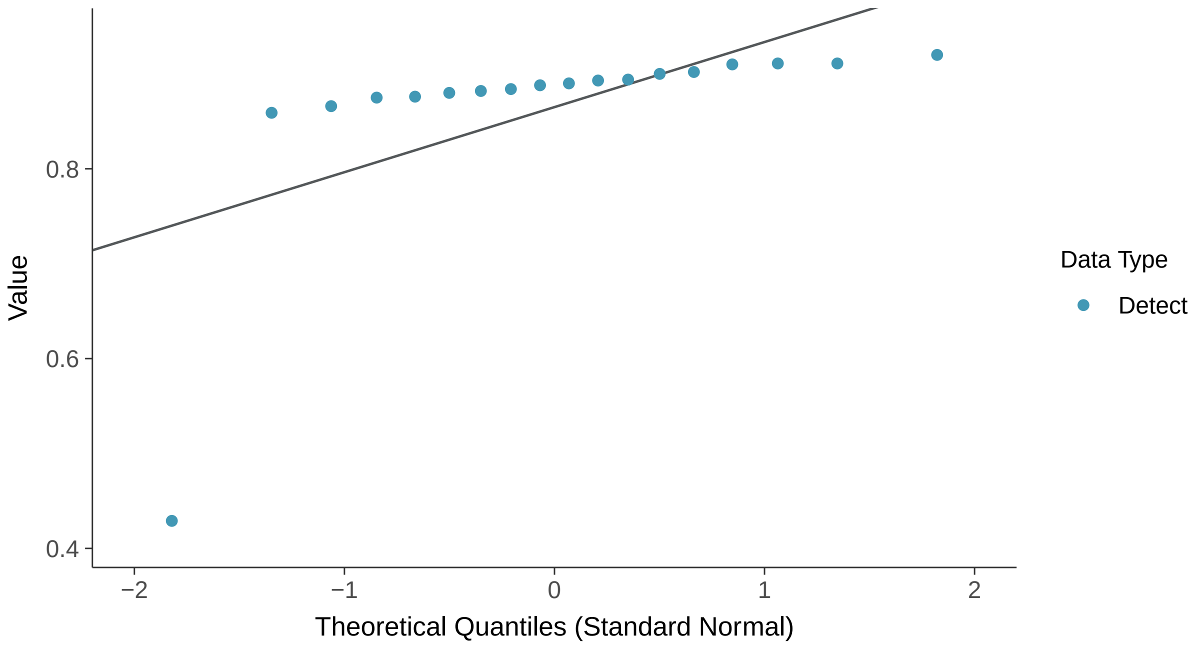
Boxplot by Season

Conductivity, MW-4 (mS/cm)



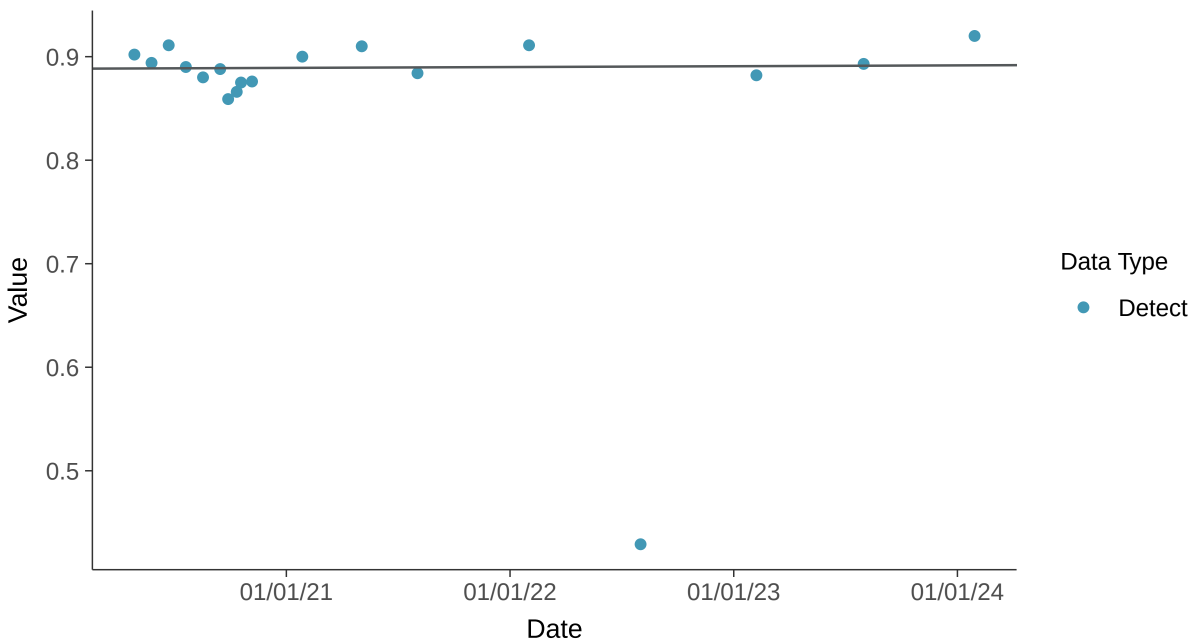
Normal Q-Q plot

Conductivity, MW-4 (mS/cm)



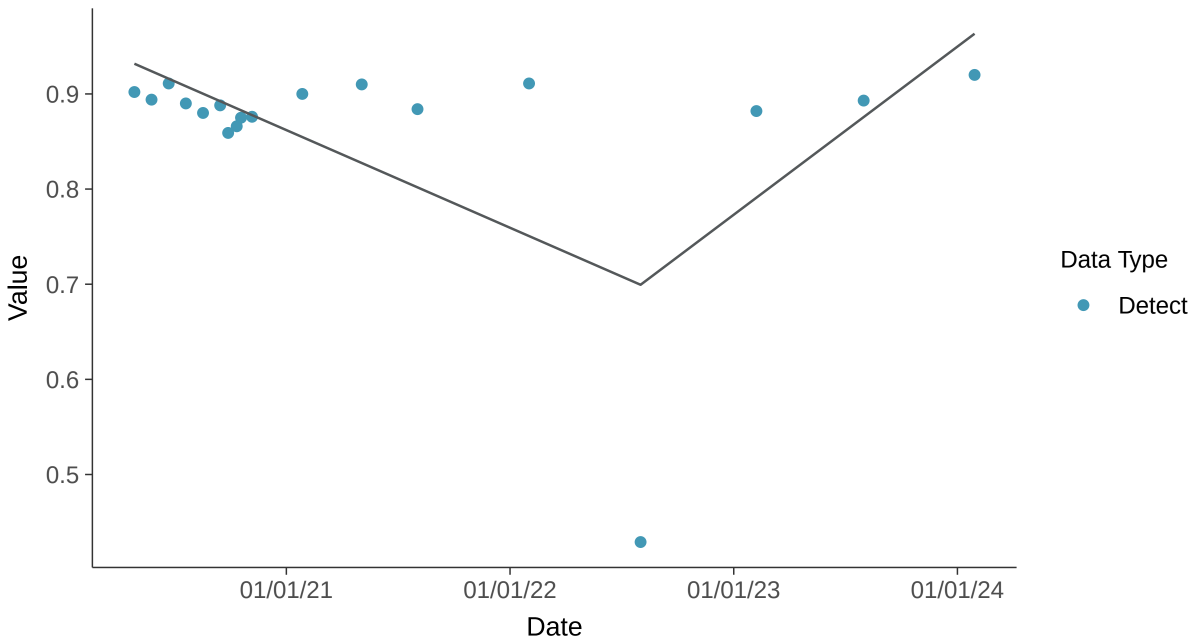
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Conductivity, MW-4 (mS/cm)



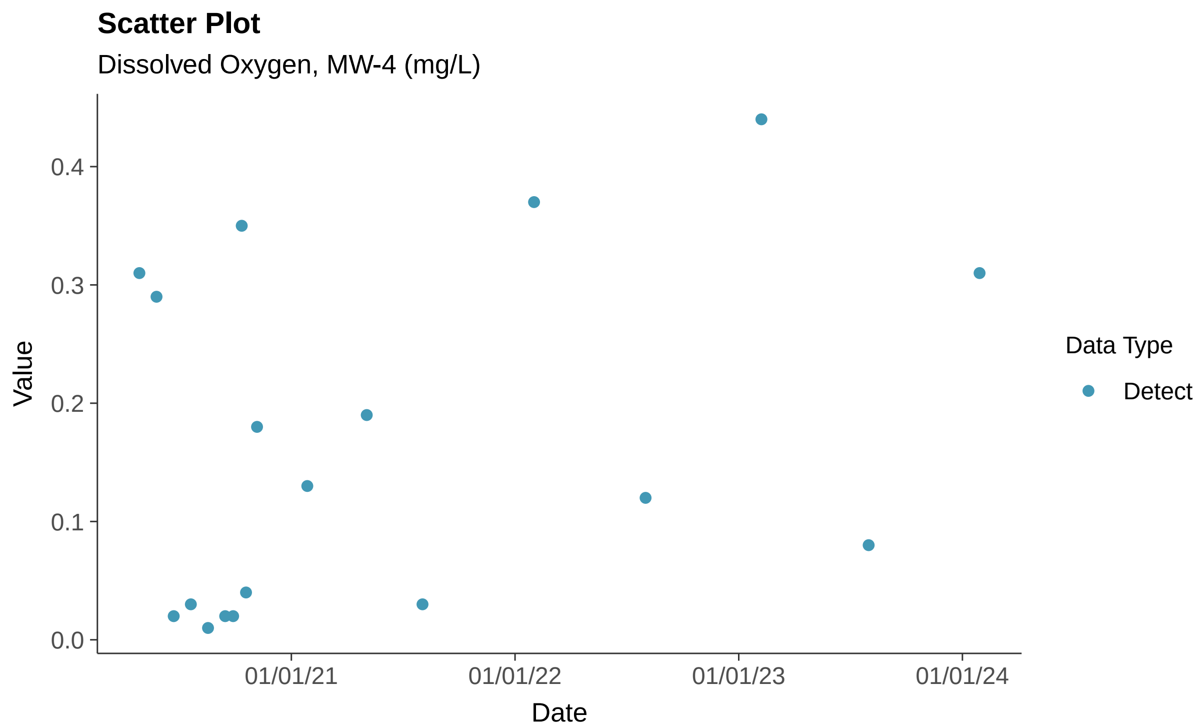
Trend Regression: Piecewise Linear-Linear

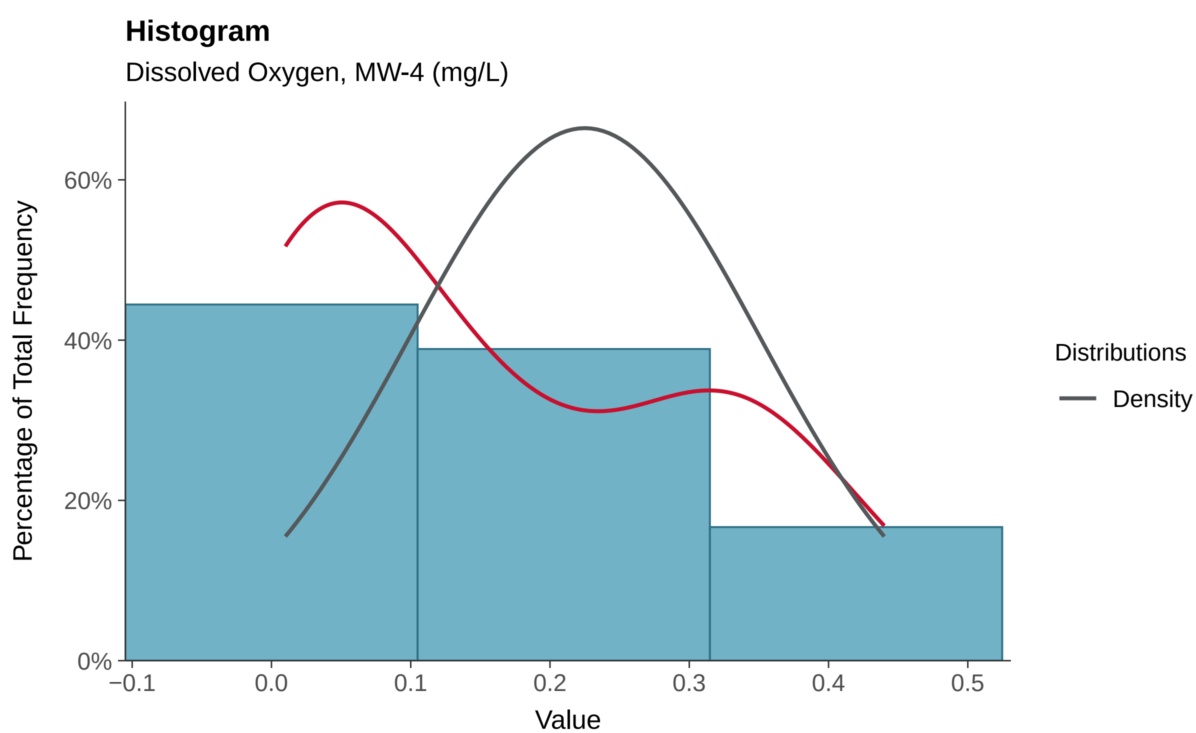
Conductivity, MW-4 (mS/cm)



Field Parameters: Dissolved Oxygen, MW-4

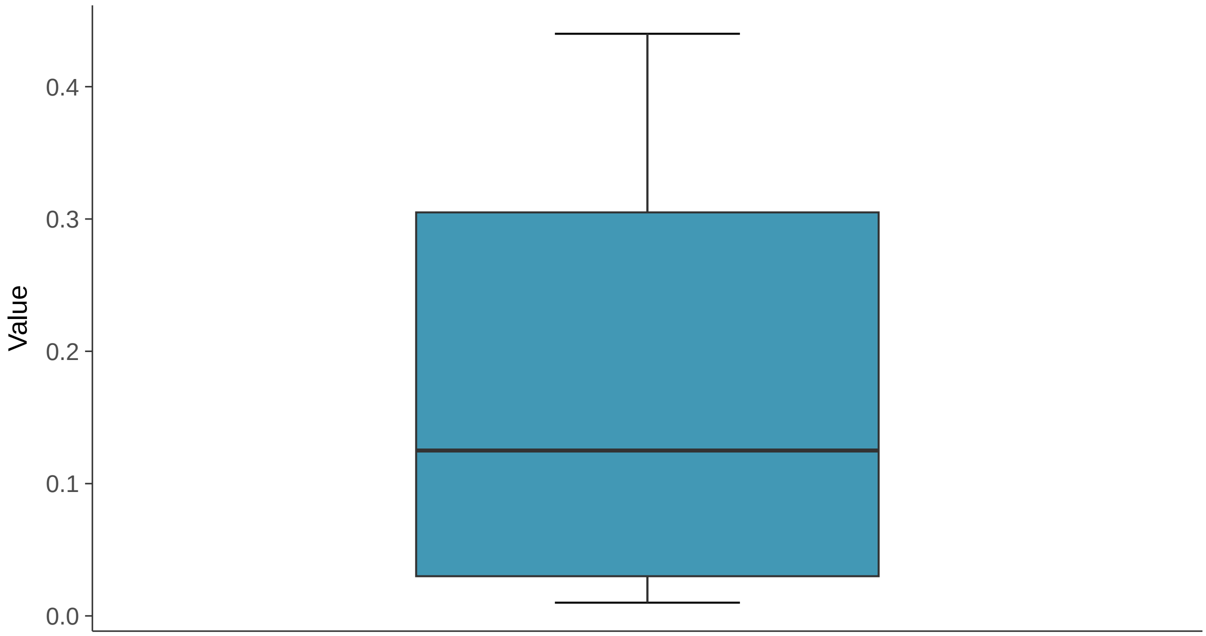
ID: 04_3_25





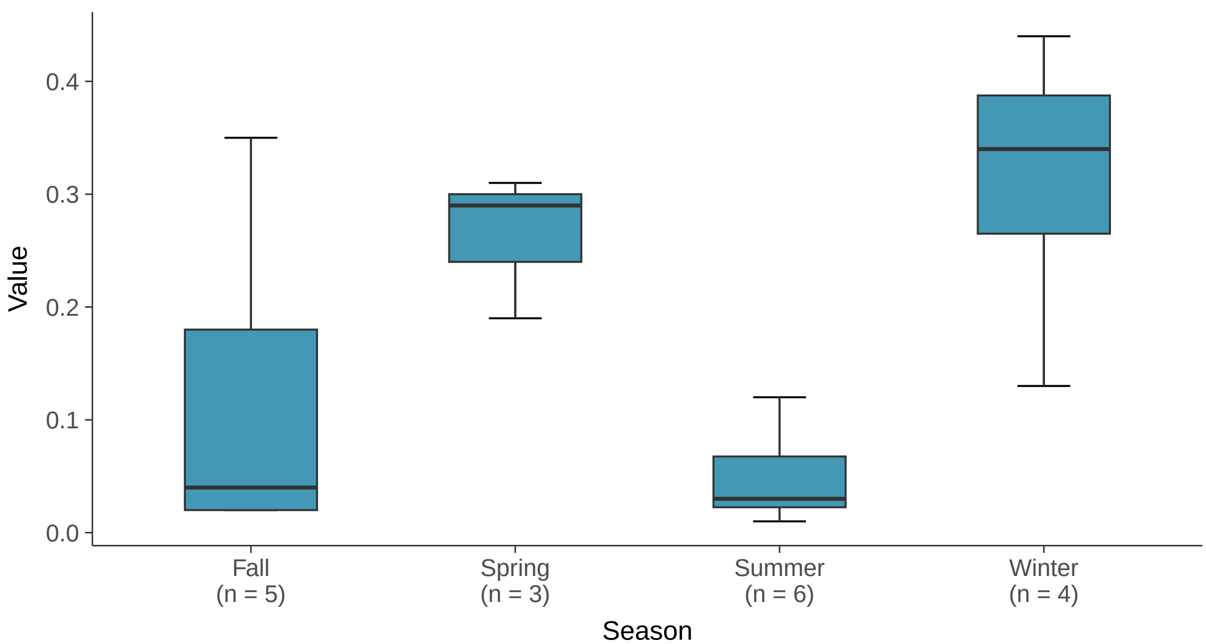
Boxplot

Dissolved Oxygen, MW-4 (mg/L)



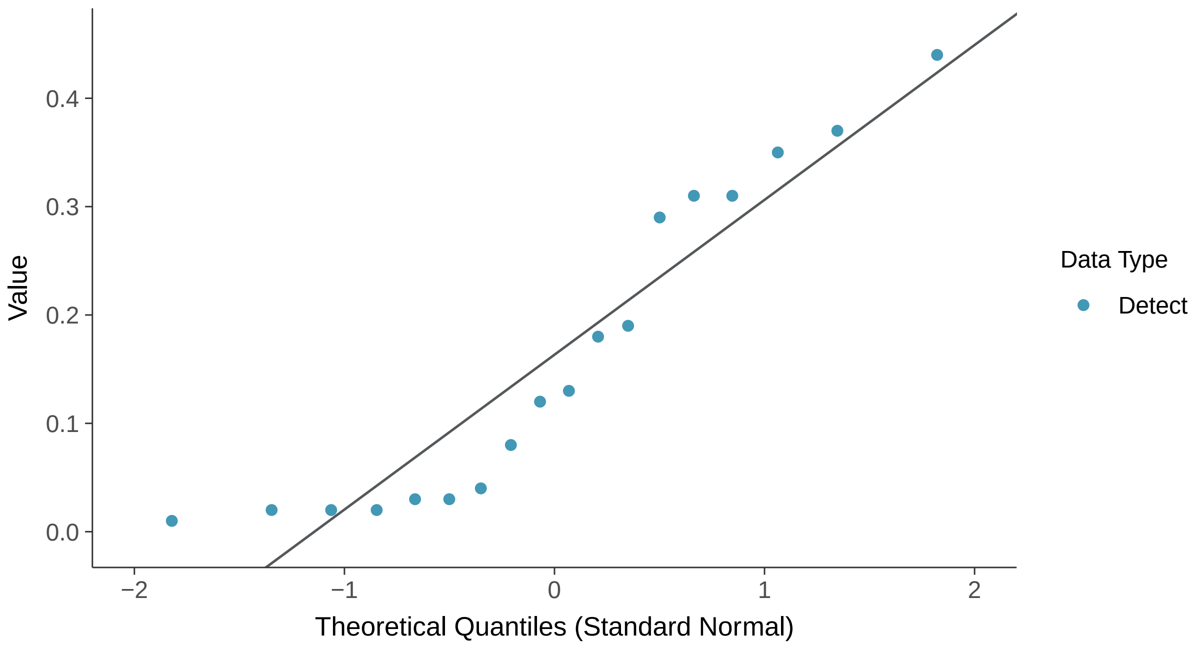
Boxplot by Season

Dissolved Oxygen, MW-4 (mg/L)



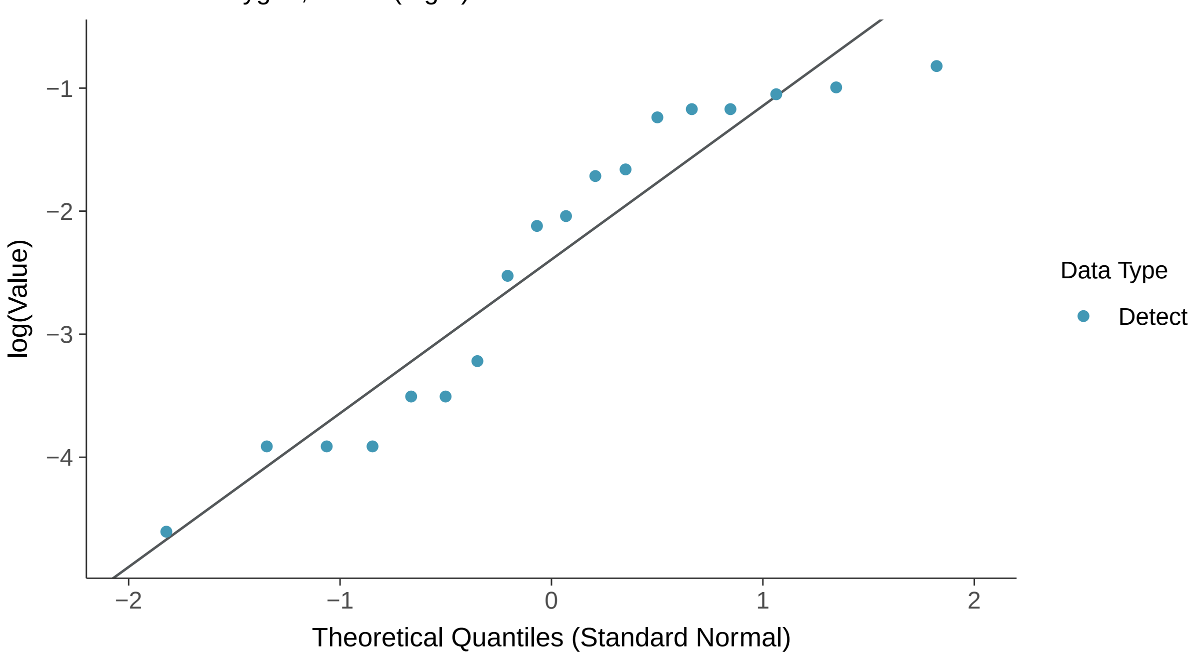
Normal Q-Q plot

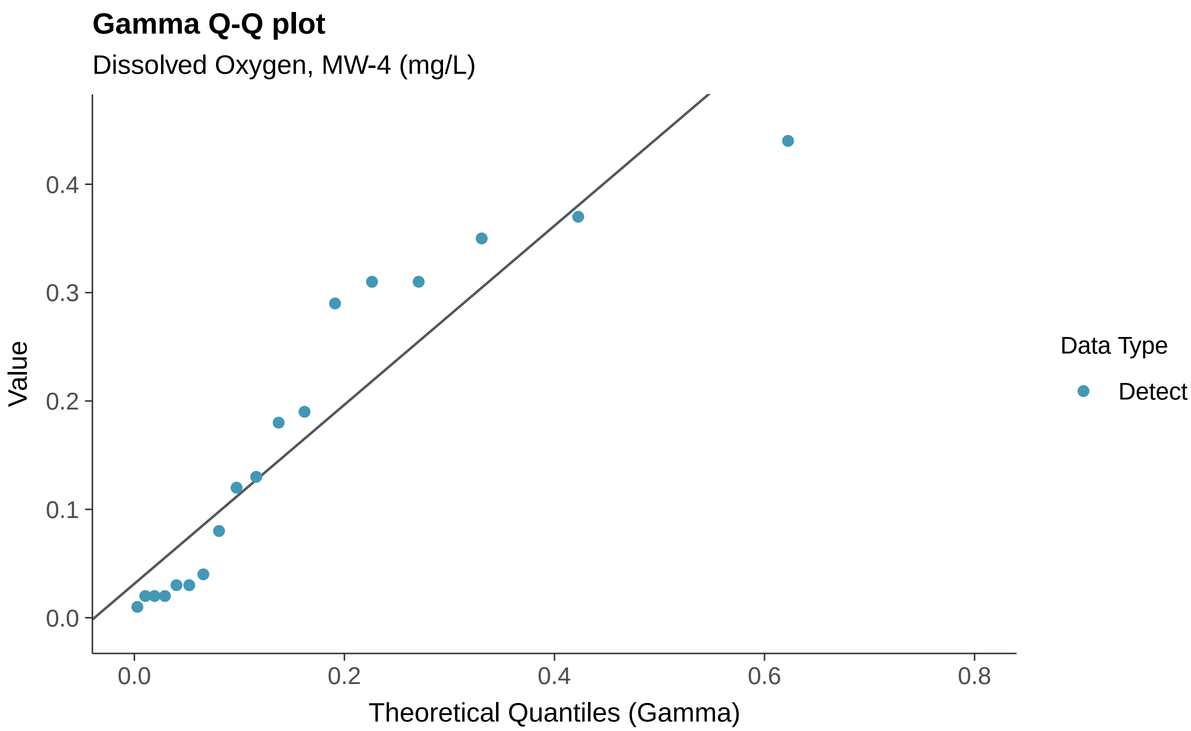
Dissolved Oxygen, MW-4 (mg/L)

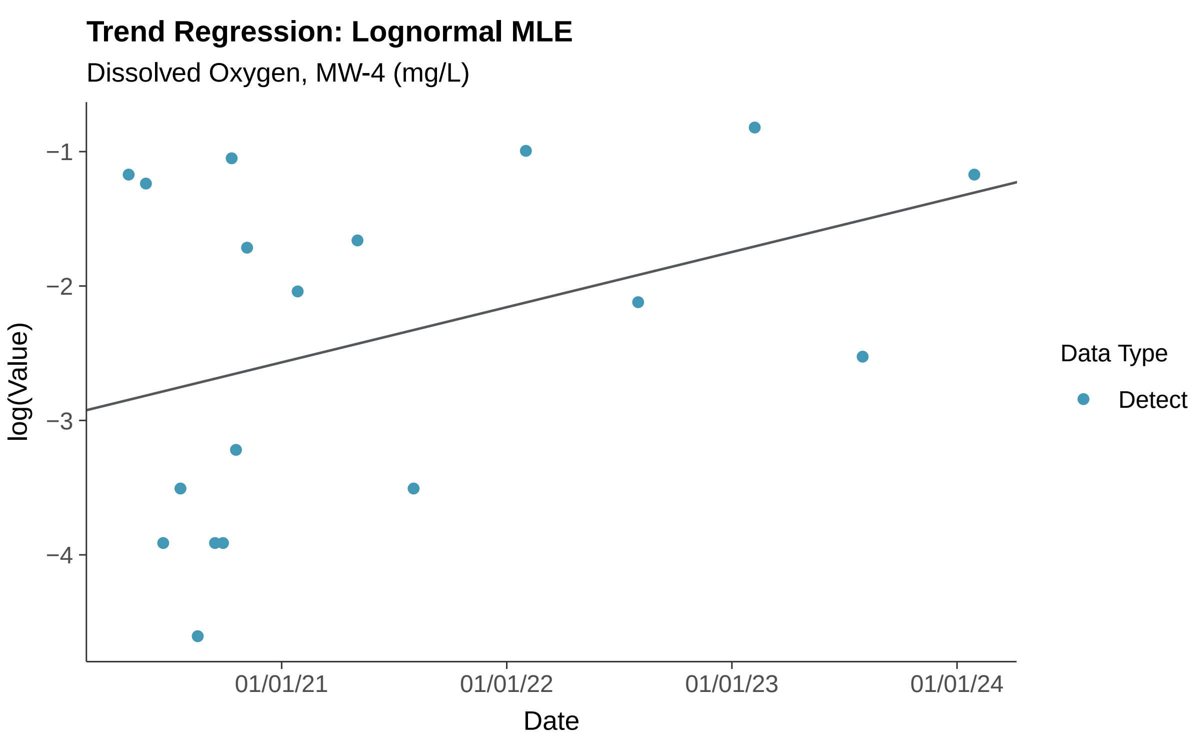


Lognormal Q-Q plot

Dissolved Oxygen, MW-4 (mg/L)

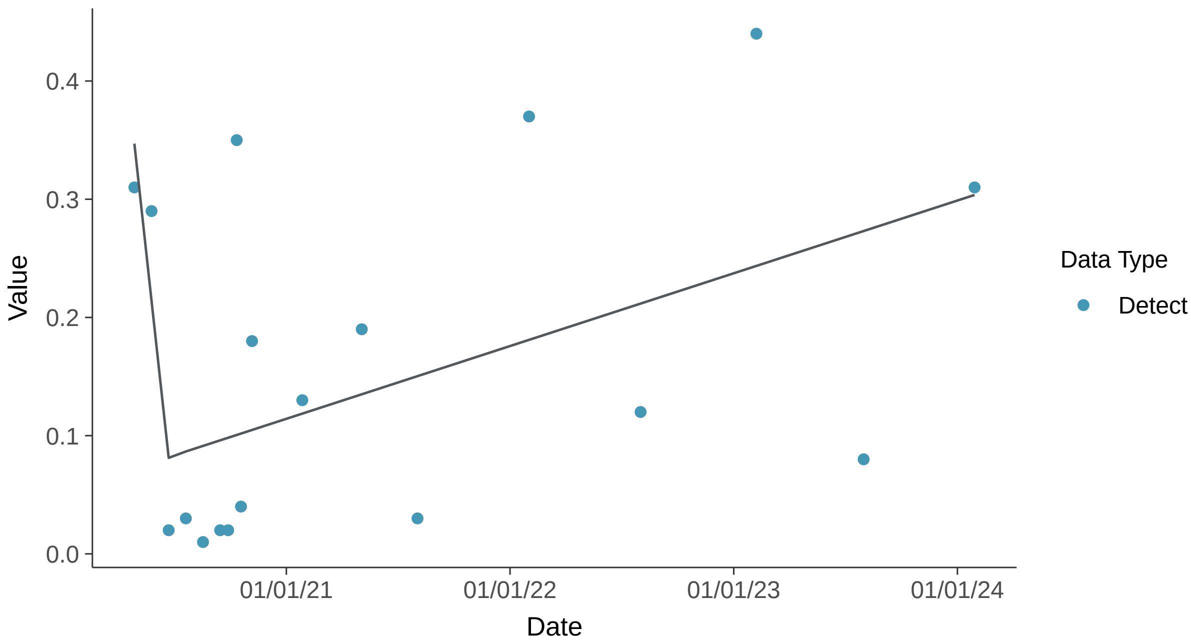



Gamma Q-Q plot
Dissolved Oxygen, MW-4 (mg/L)
Value
0.0
0.1
0.2
0.3
0.4
0.0
0.2
0.4
0.6
0.8
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Dissolved Oxygen, MW-4 (mg/L)
log(Value)
−1
−2
−3
−4
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

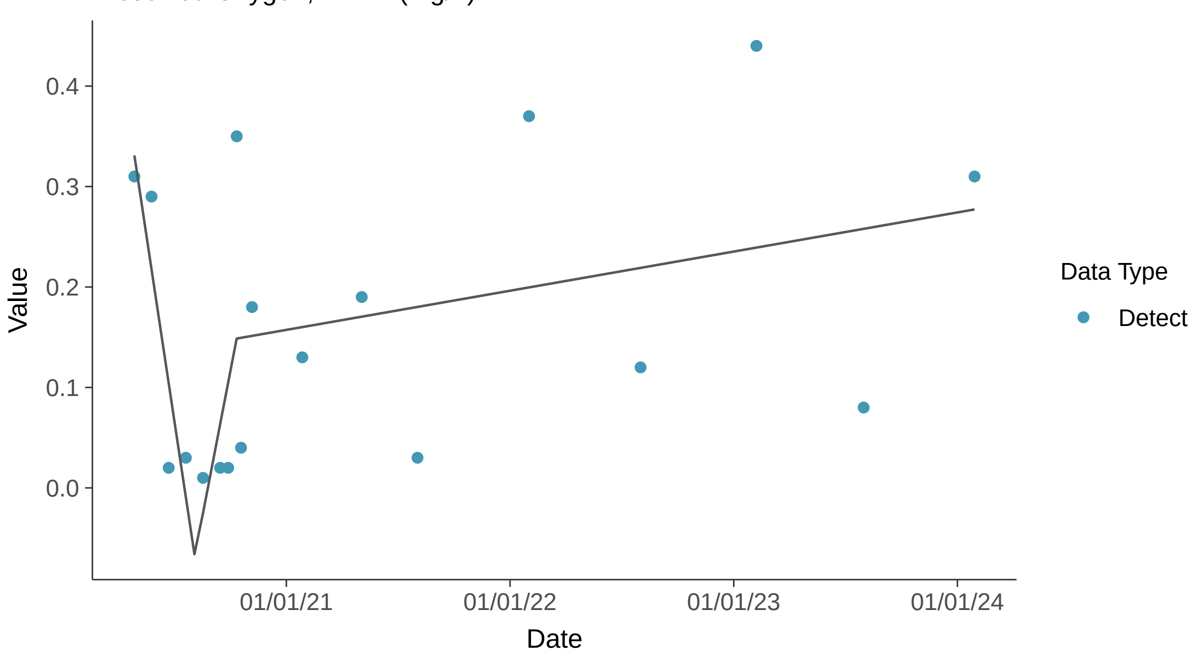
Trend Regression: Piecewise Linear-Linear

Dissolved Oxygen, MW-4 (mg/L)



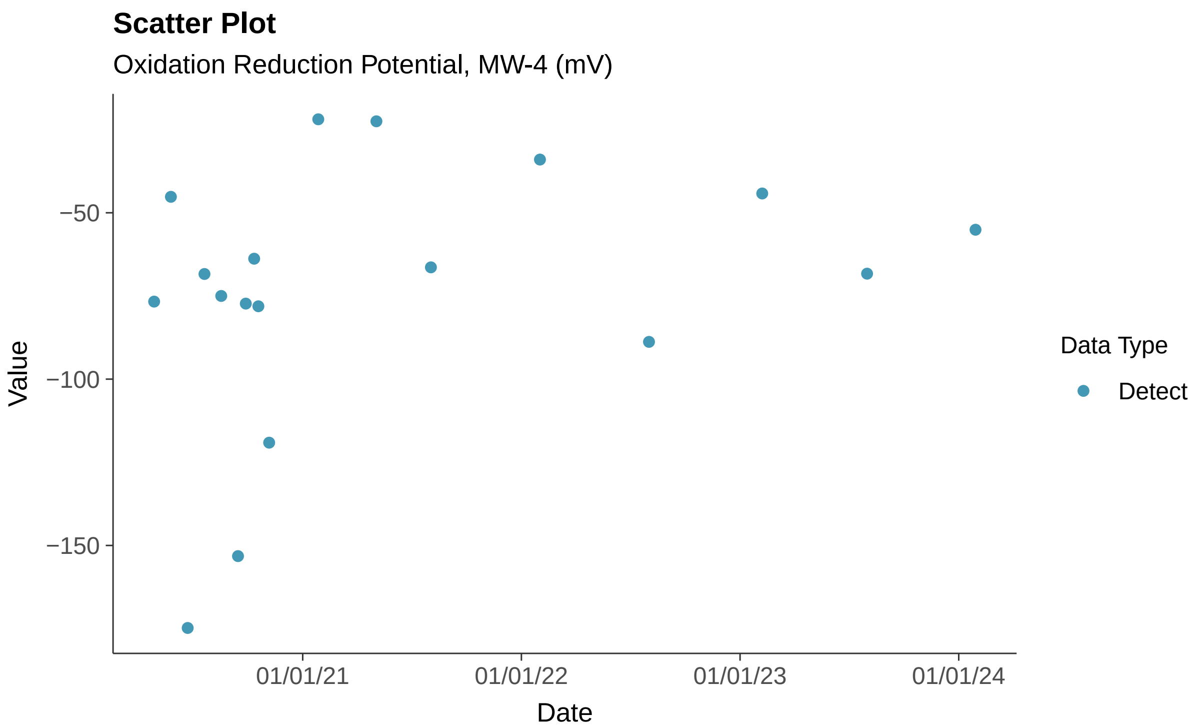
Trend Regression: Piecewise Linear-Linear-Linear

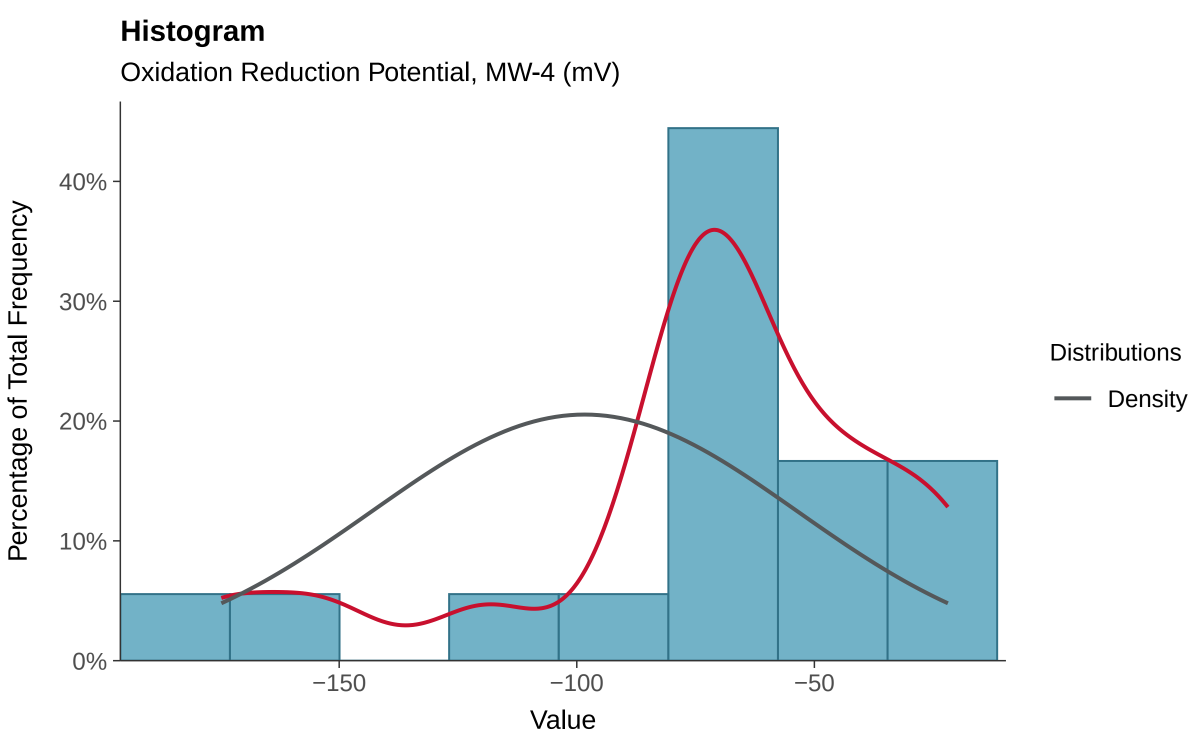
Dissolved Oxygen, MW-4 (mg/L)



Field Parameters: Oxidation Reduction Potential, MW-4

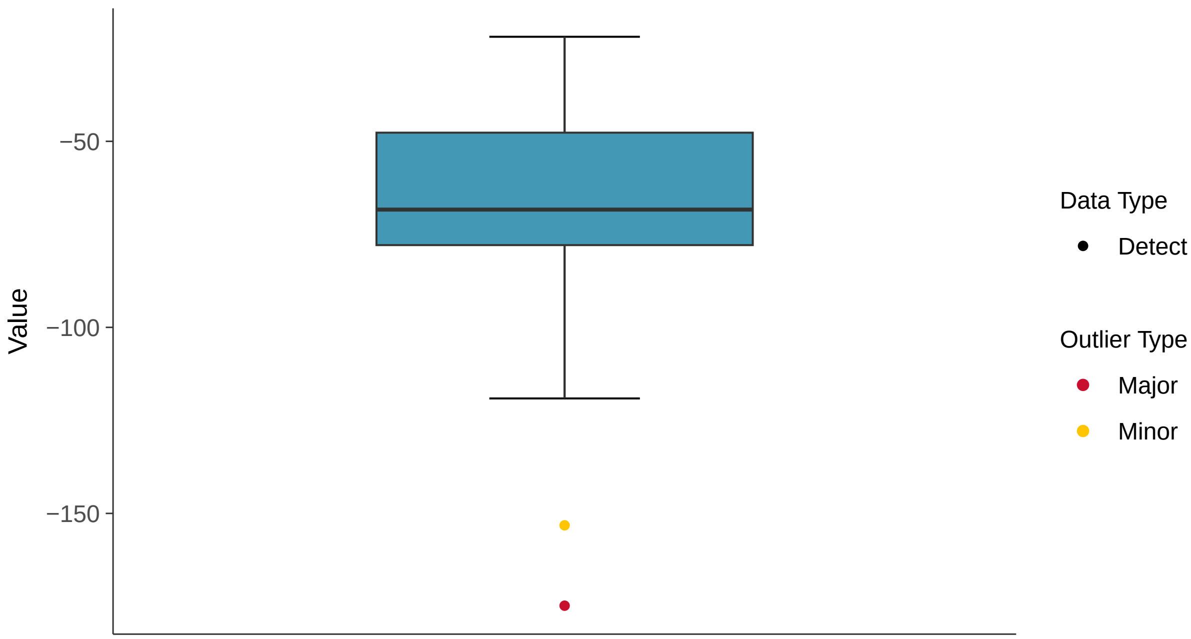
ID: 04_3_26





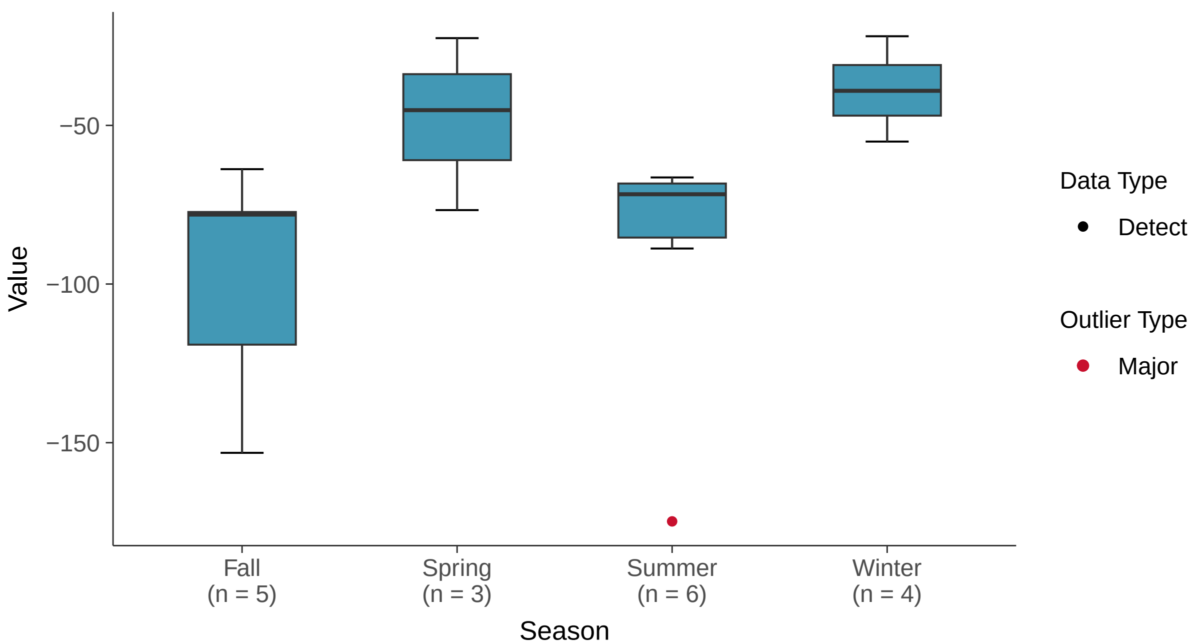
Boxplot

Oxidation Reduction Potential, MW-4 (mV)



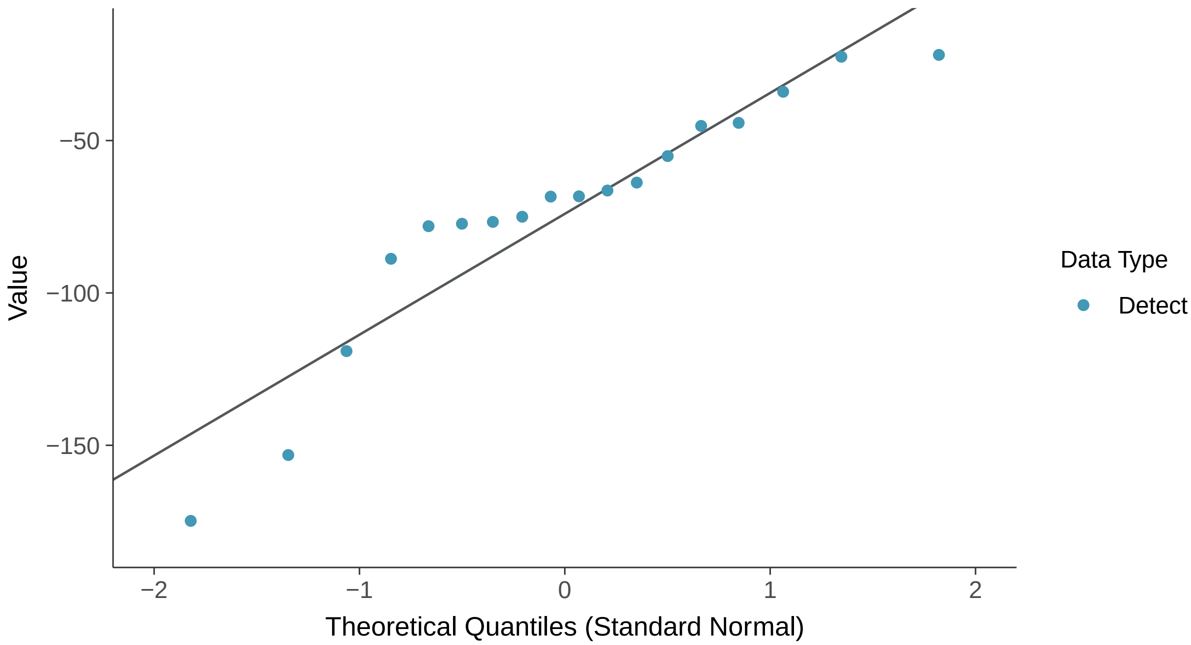
Boxplot by Season

Oxidation Reduction Potential, MW-4 (mV)



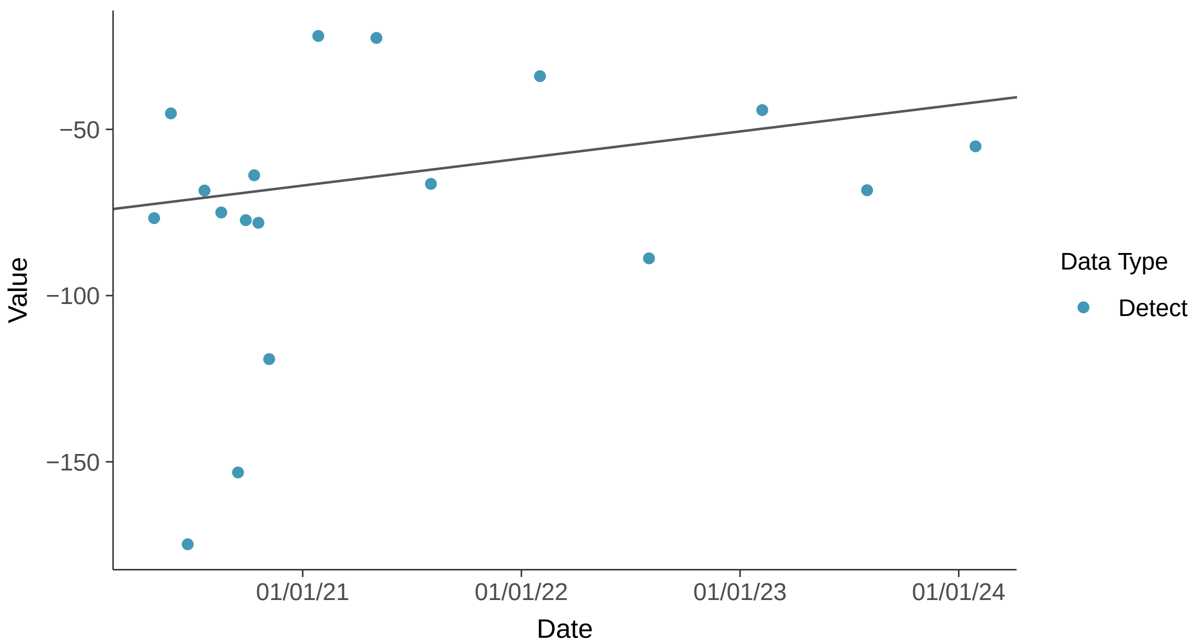
Normal Q-Q plot

Oxidation Reduction Potential, MW-4 (mV)



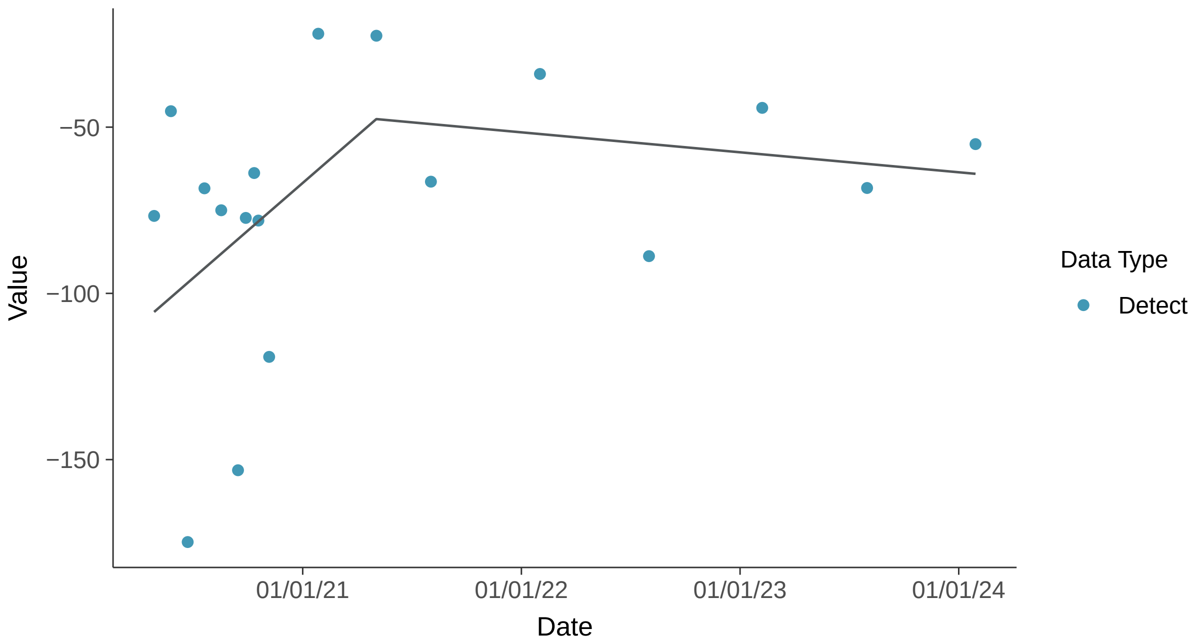
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Oxidation Reduction Potential, MW-4 (mV)



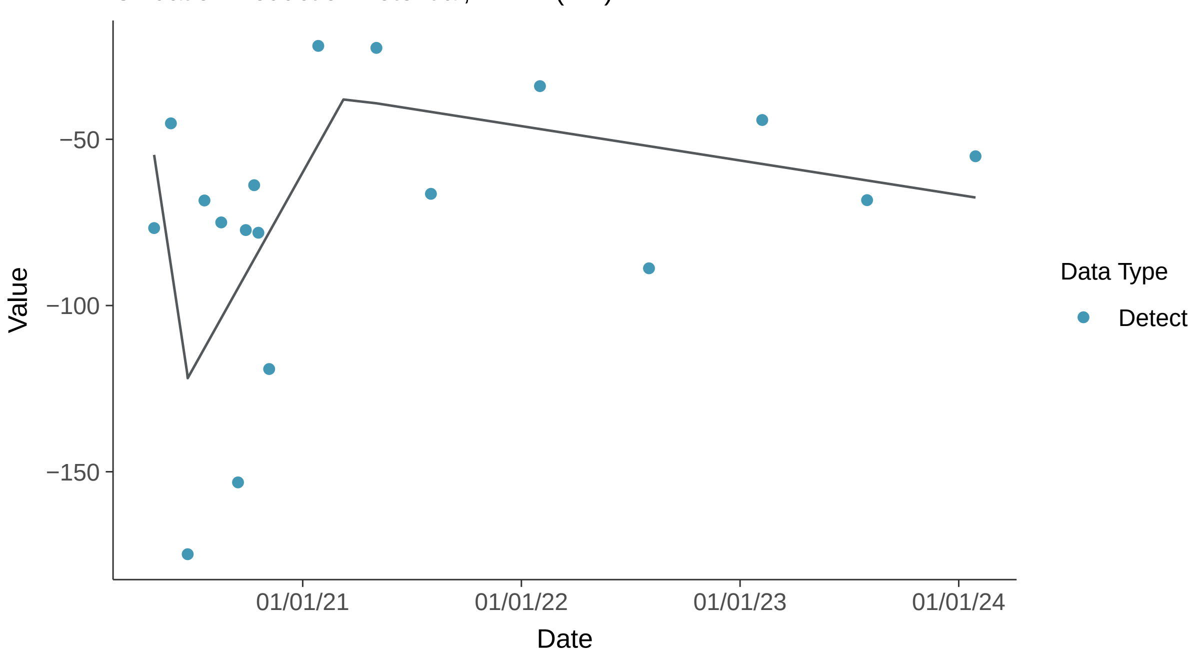
Trend Regression: Piecewise Linear-Linear

Oxidation Reduction Potential, MW-4 (mV)



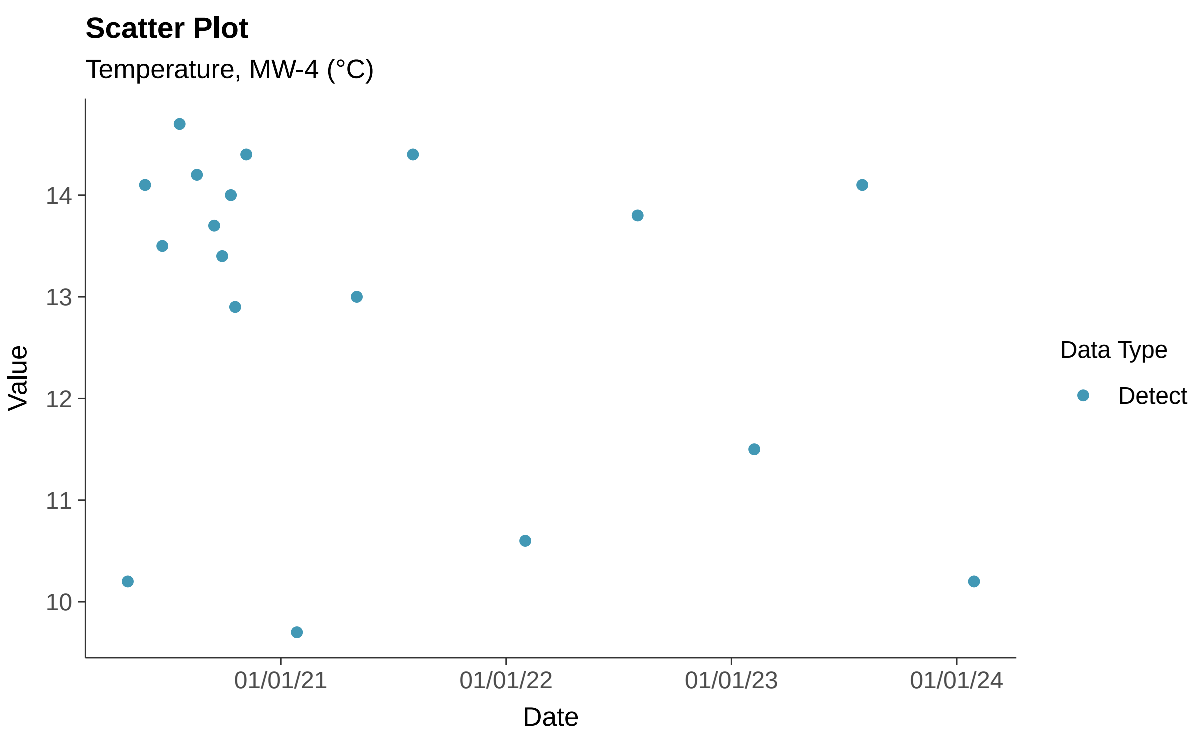
Trend Regression: Piecewise Linear-Linear-Linear

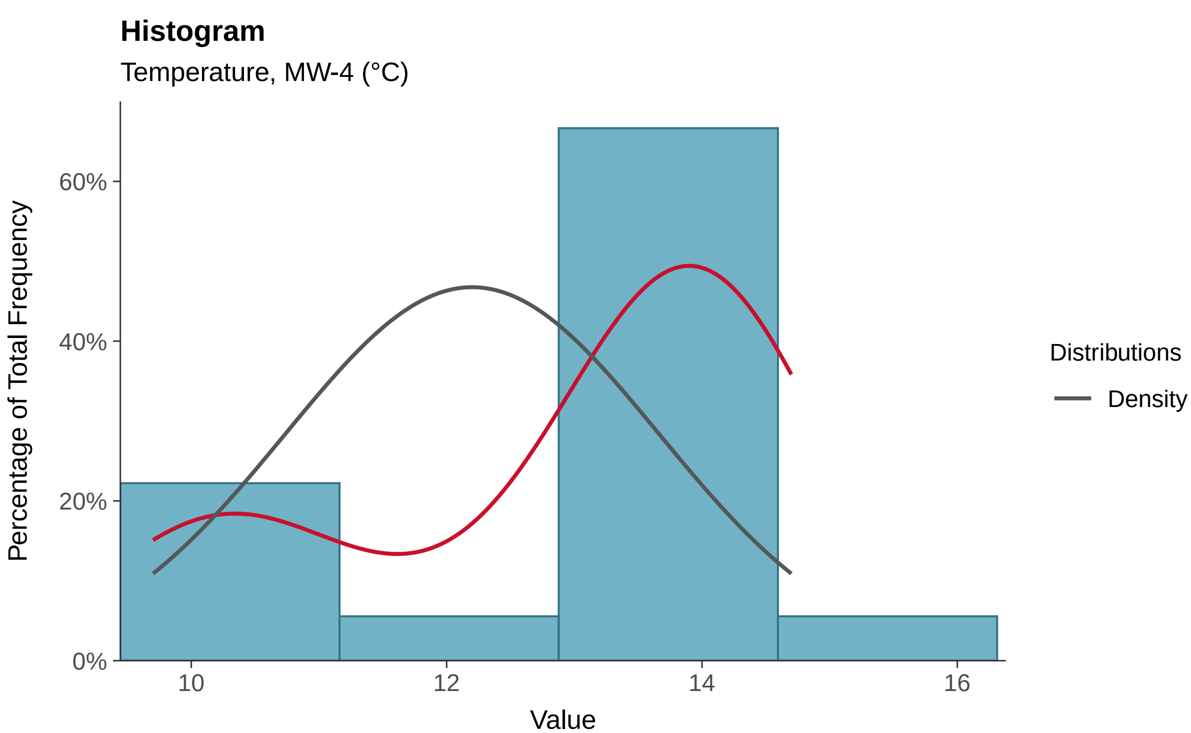
Oxidation Reduction Potential, MW-4 (mV)



Field Parameters: Temperature, MW-4

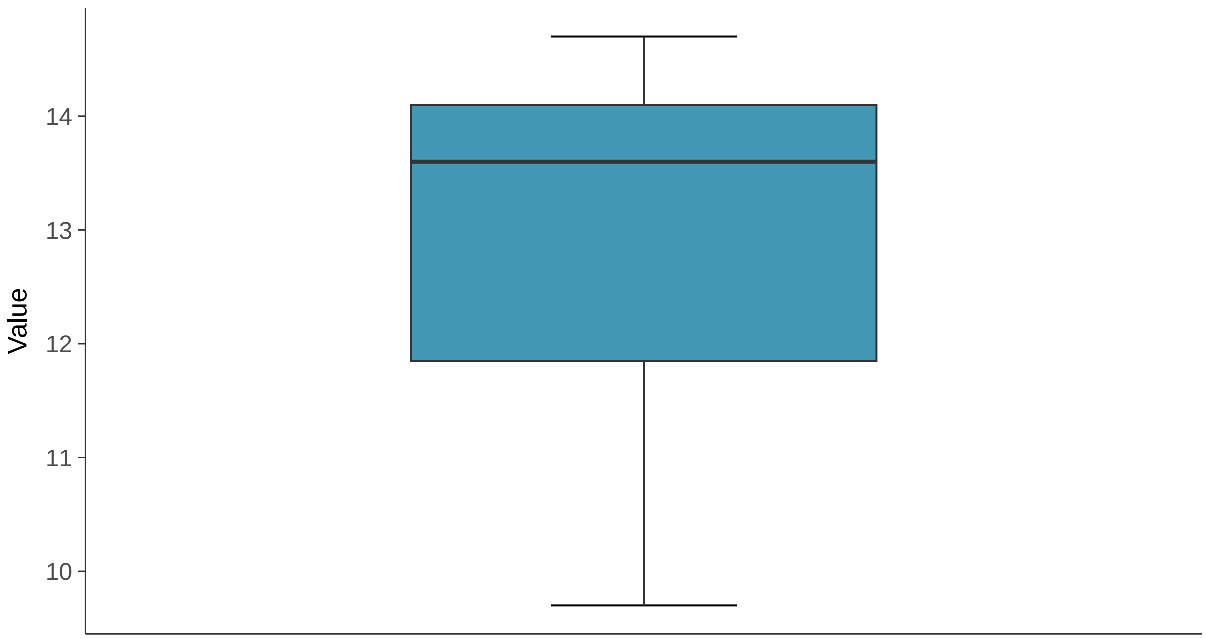
ID: 04_3_27





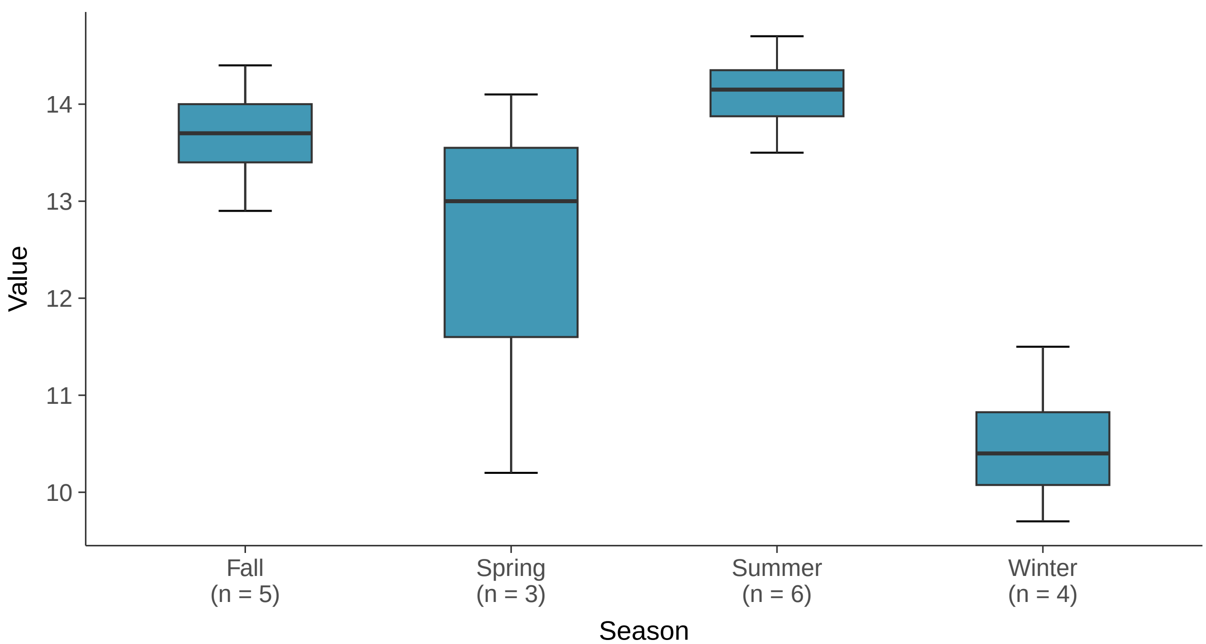
Boxplot

Temperature, MW-4 (°C)



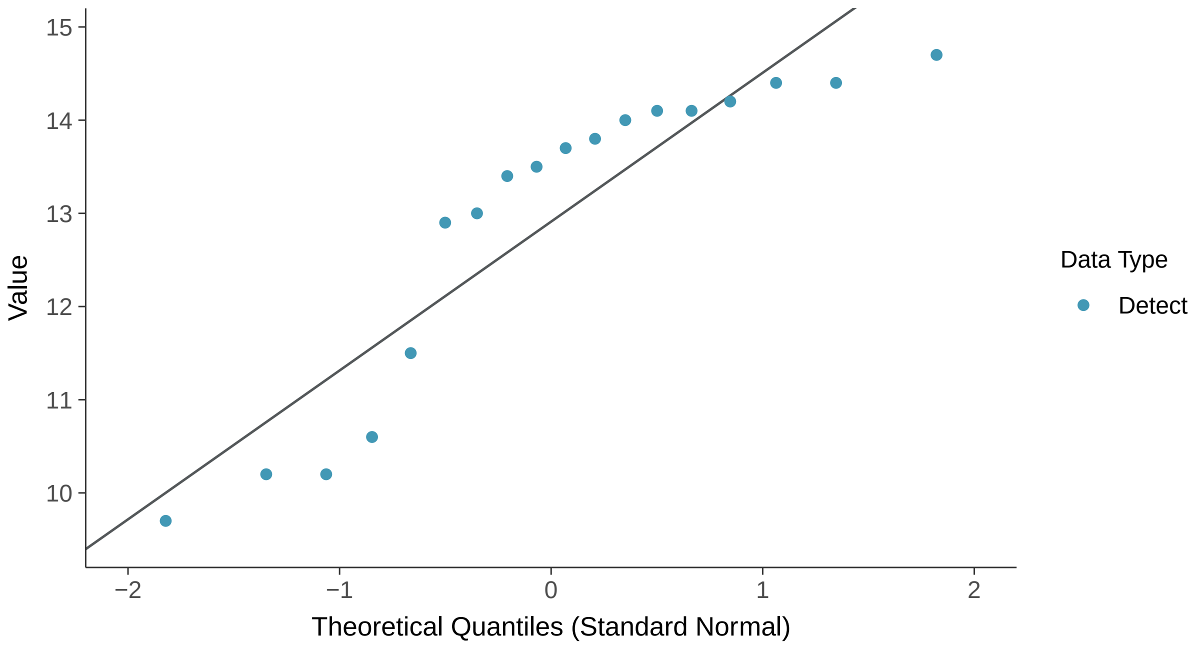
Boxplot by Season

Temperature, MW-4 (°C)



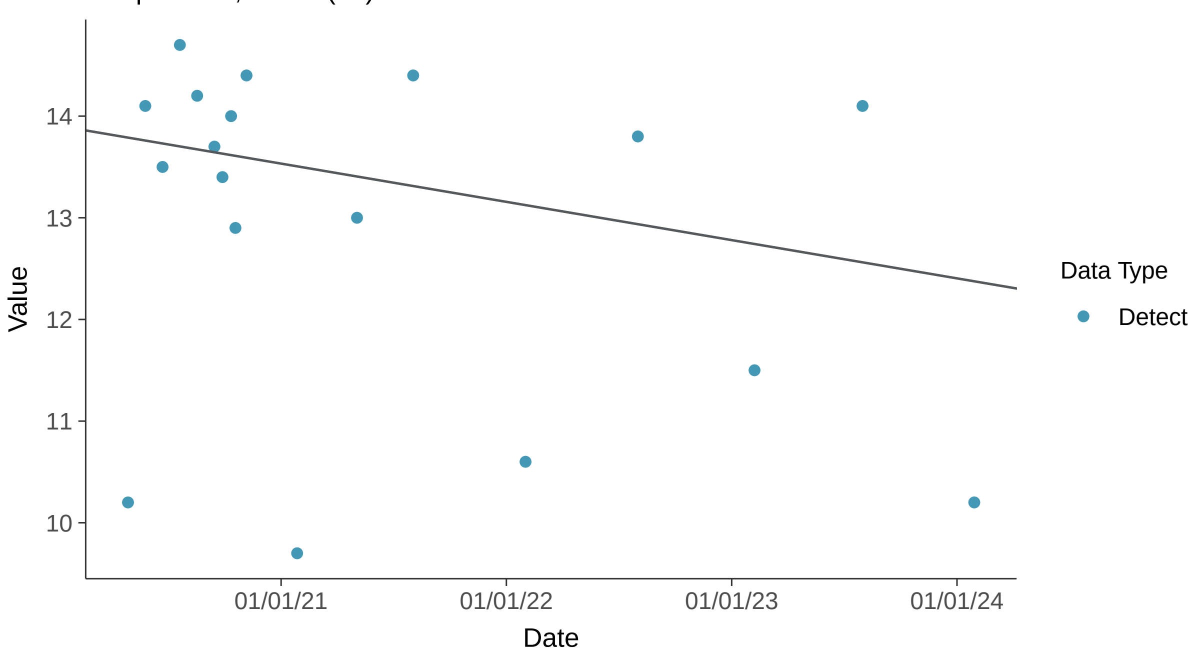
Normal Q-Q plot

Temperature, MW-4 (°C)



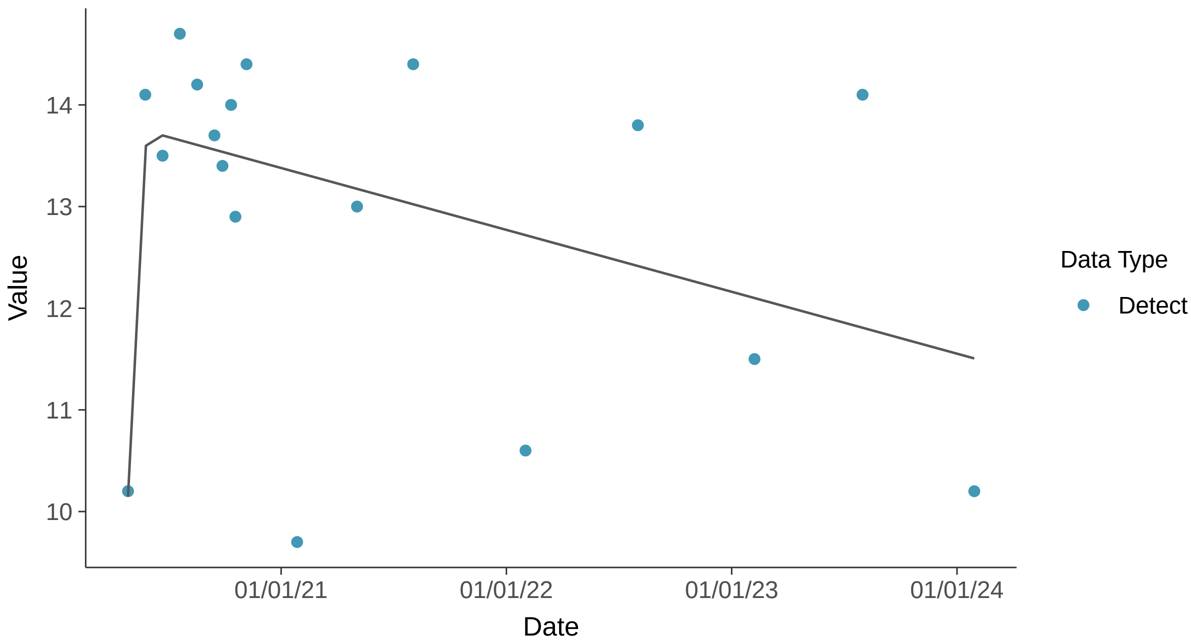
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Temperature, MW-4 (°C)



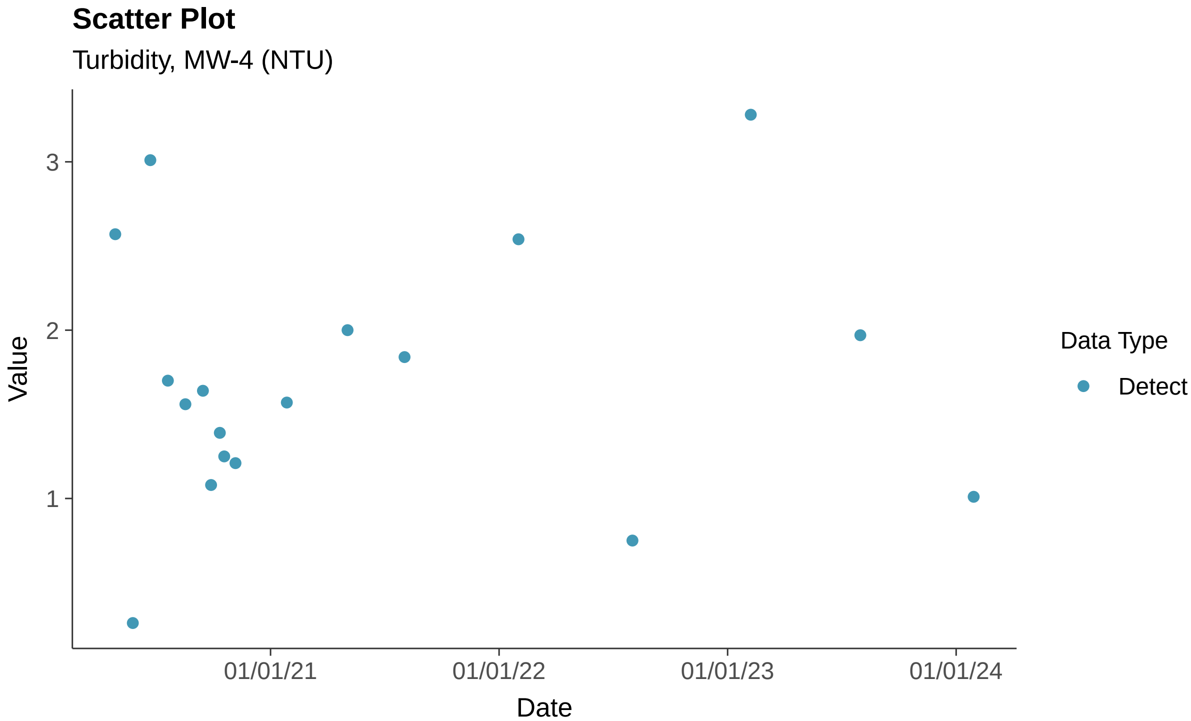
Trend Regression: Piecewise Linear-Linear

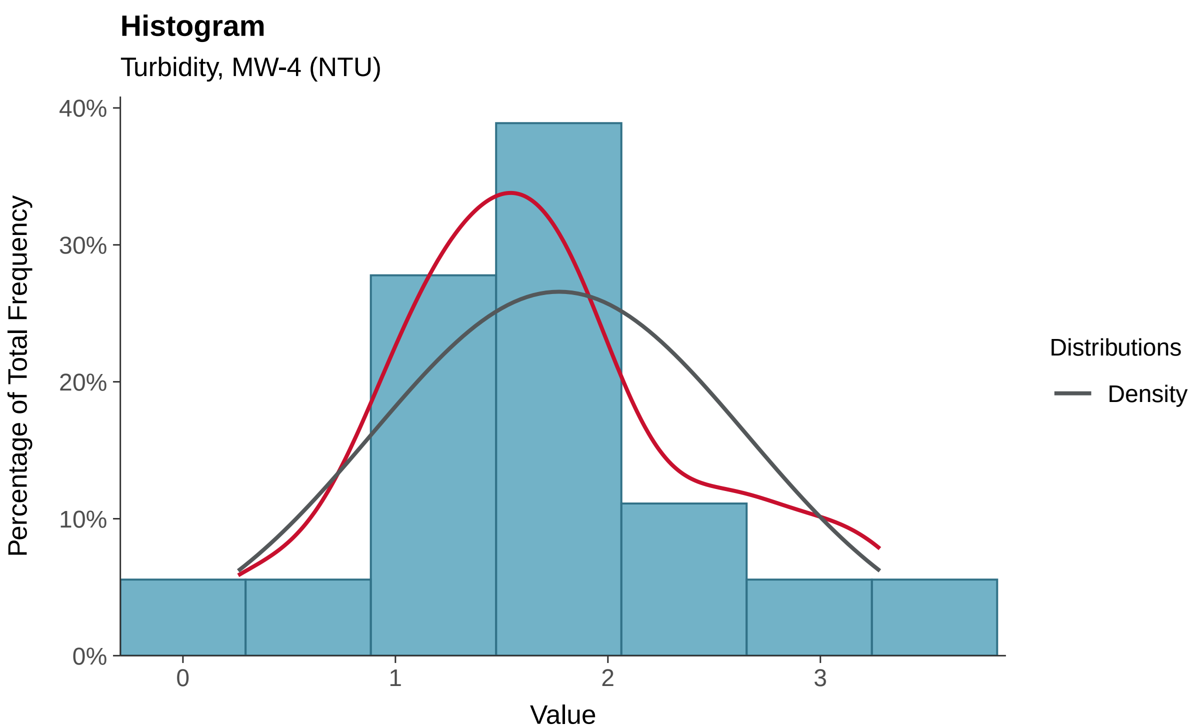
Temperature, MW-4 (°C)



Field Parameters: Turbidity, MW-4

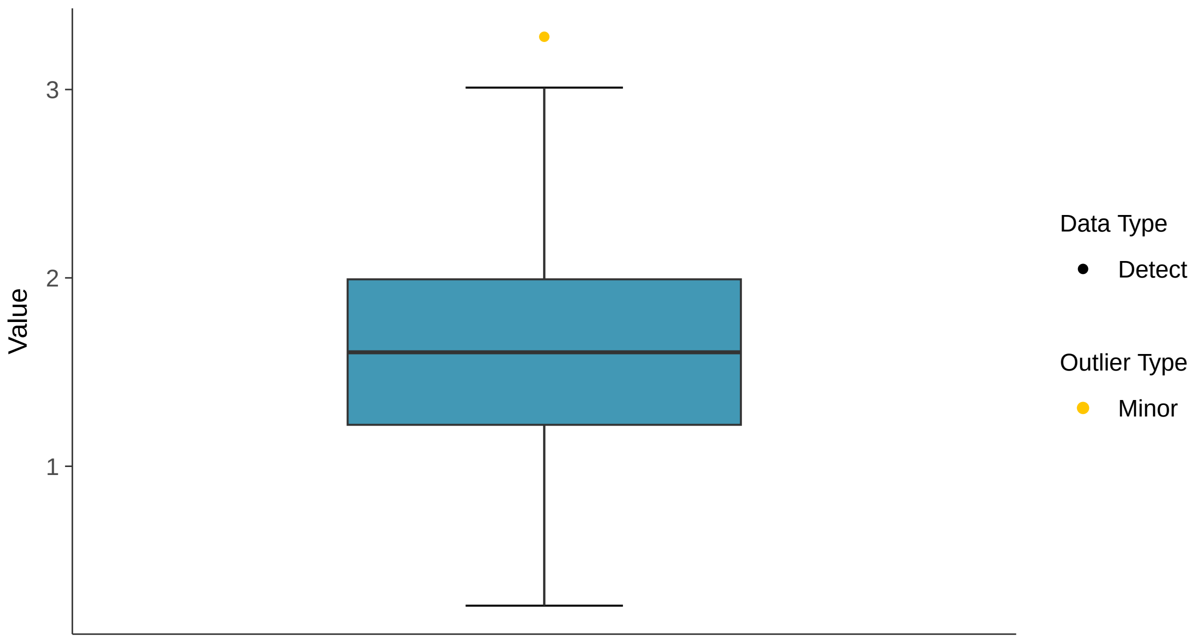
ID: 04_3_28





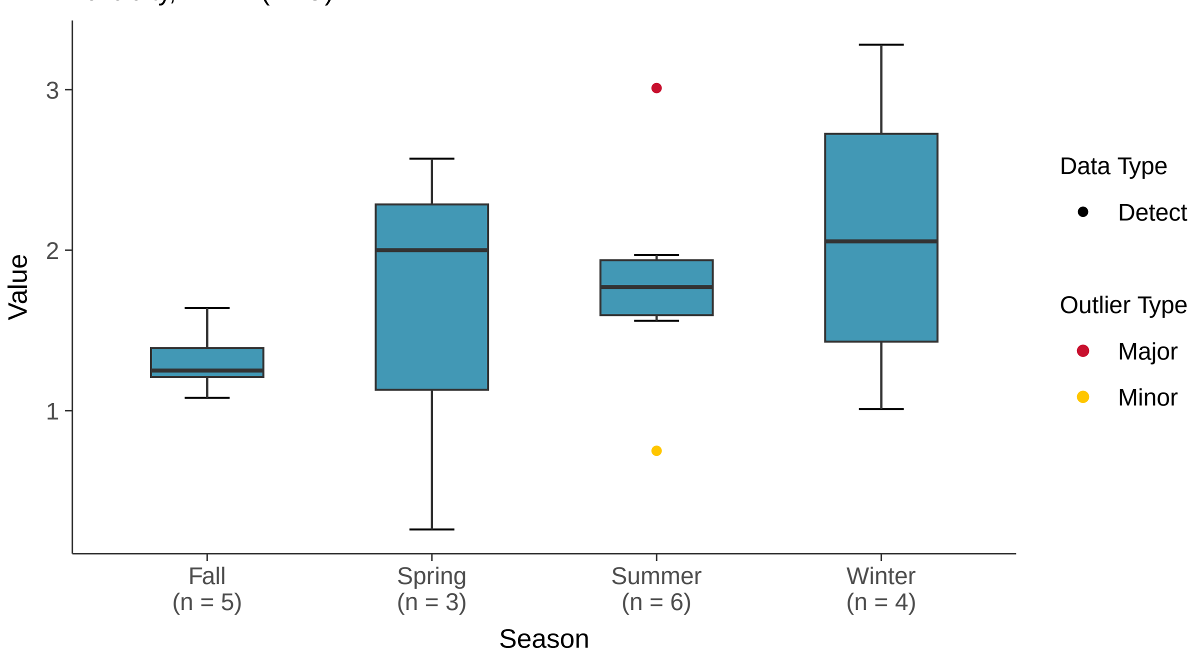
Boxplot

Turbidity, MW-4 (NTU)



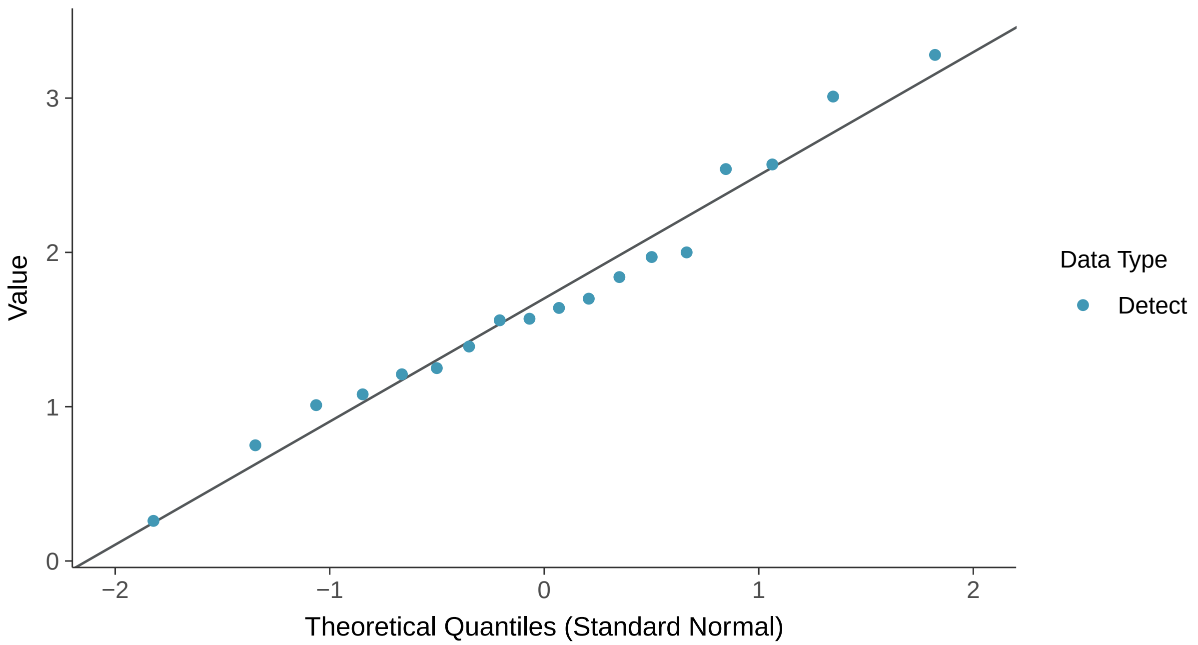
Boxplot by Season

Turbidity, MW-4 (NTU)



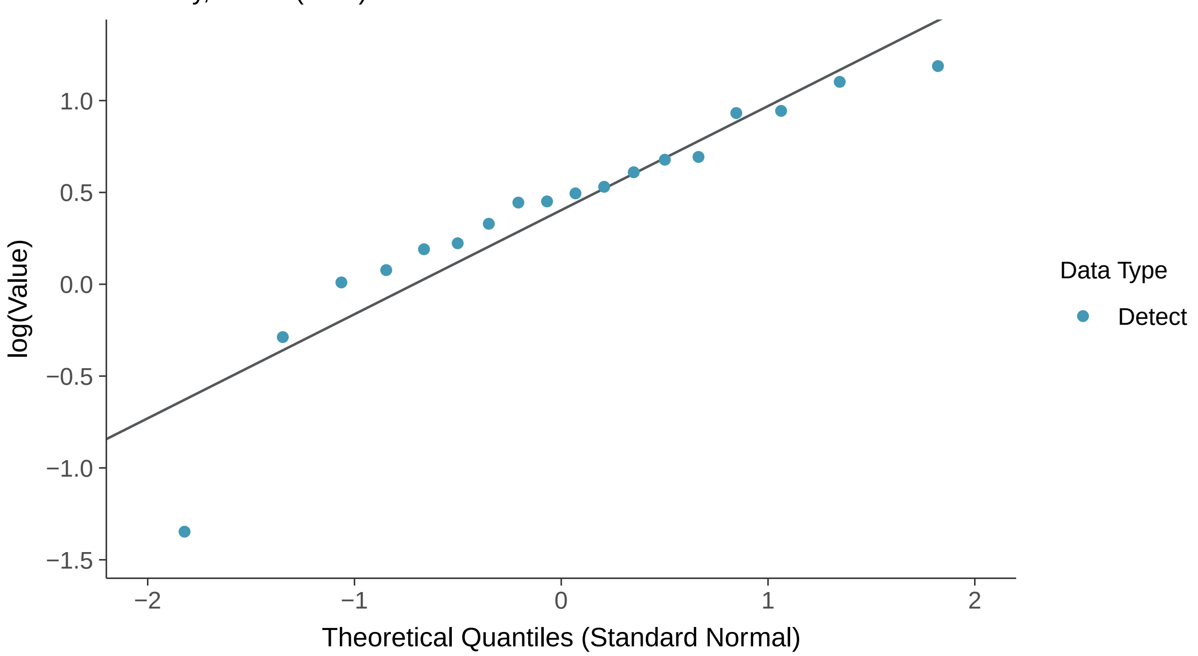
Normal Q-Q plot

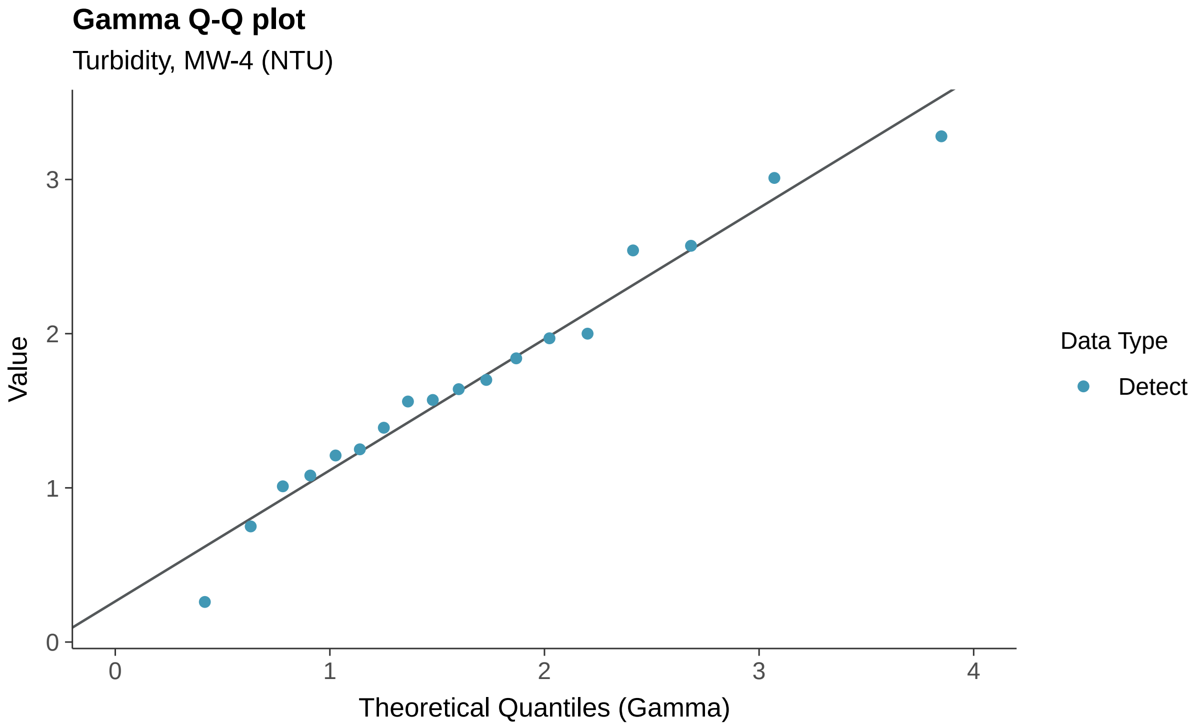
Turbidity, MW-4 (NTU)

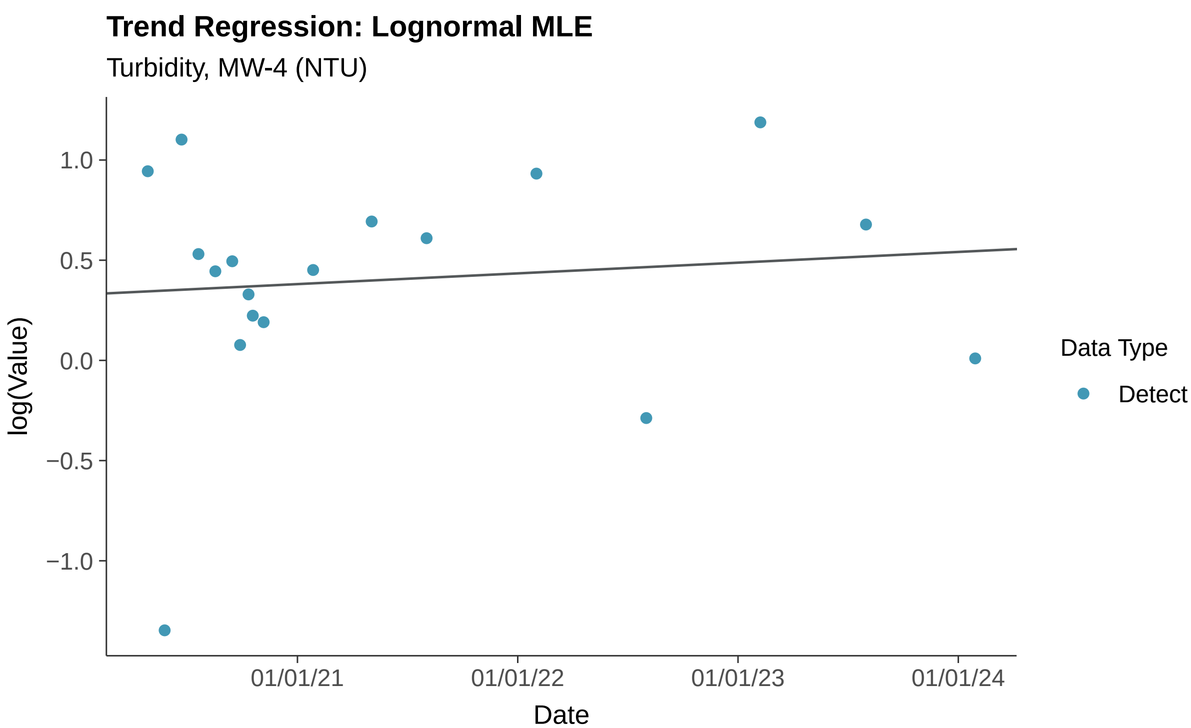


Lognormal Q-Q plot

Turbidity, MW-4 (NTU)

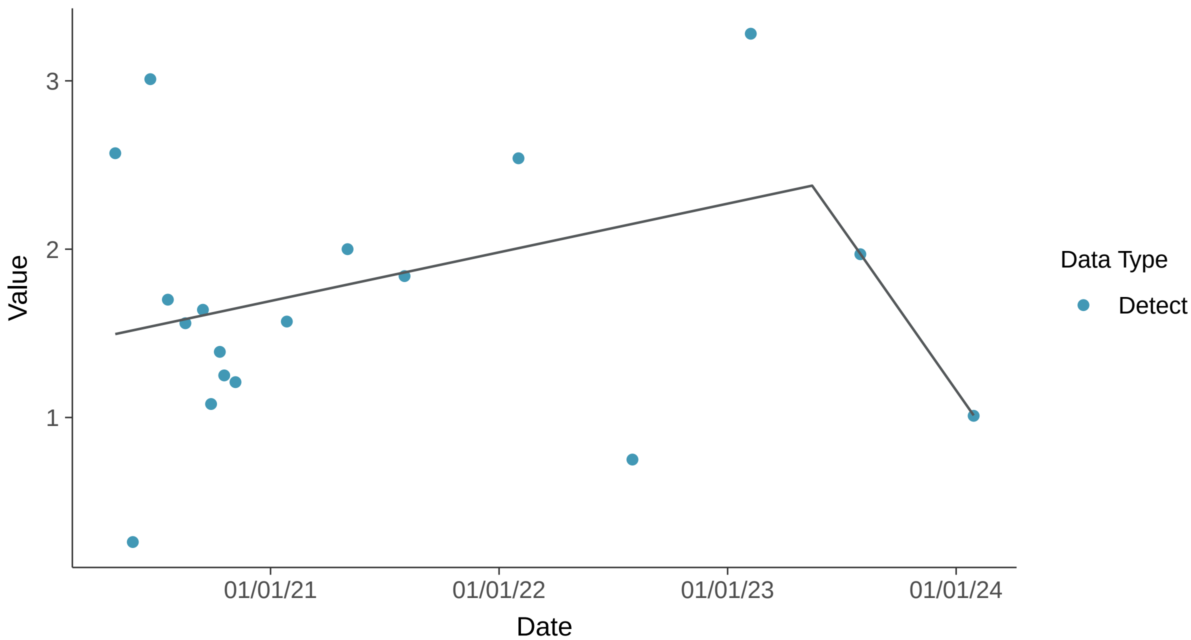



Gamma Q-Q plot
Turbidity, MW-4 (NTU)
Value
0
1
2
3
0
1
2
3
4
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Turbidity, MW-4 (NTU)
log(Value)
1.0
0.5
0.0
−0.5
−1.0
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Turbidity, MW-4 (NTU)

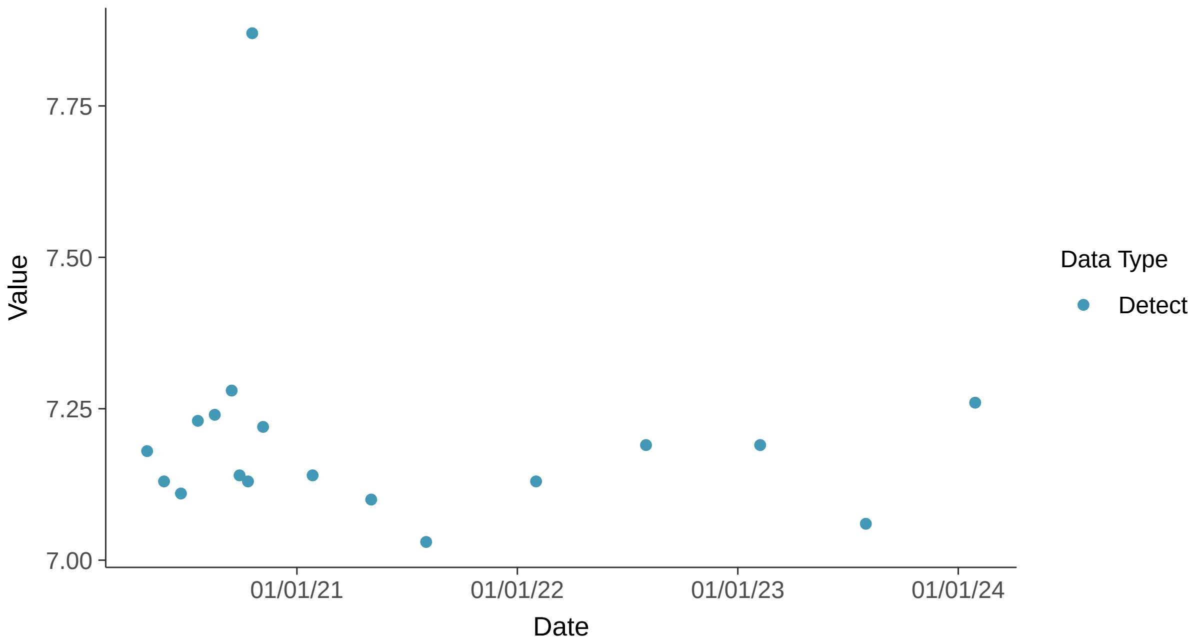


Field Parameters: pH, MW-4

ID: 04_3_29

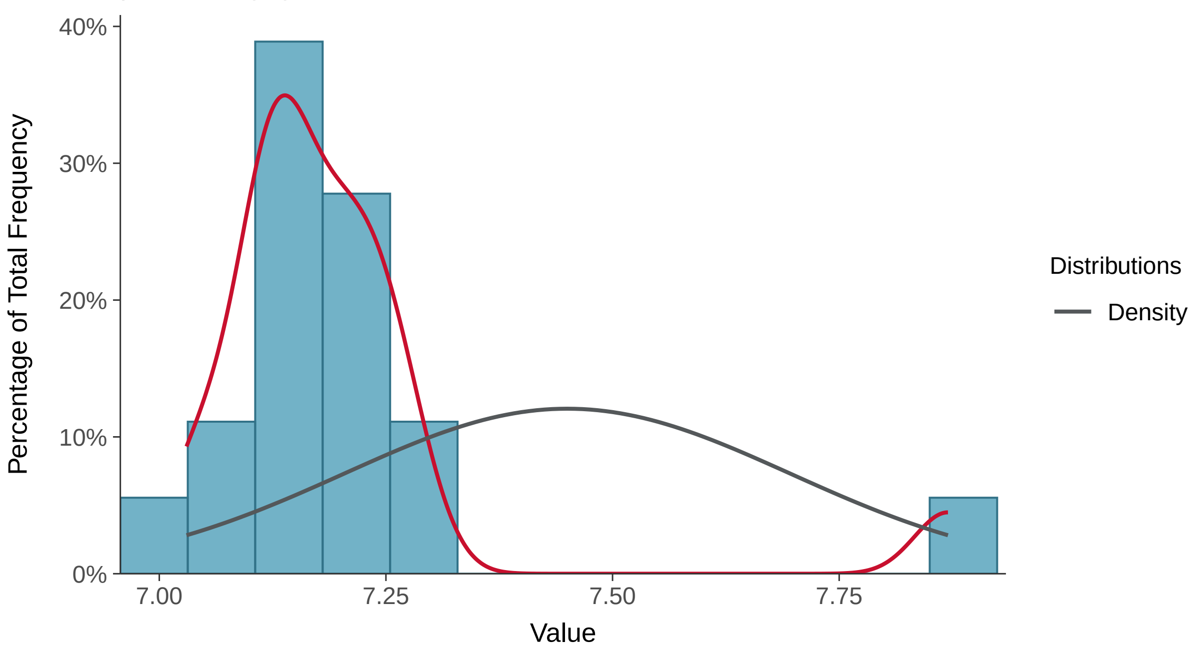
Scatter Plot

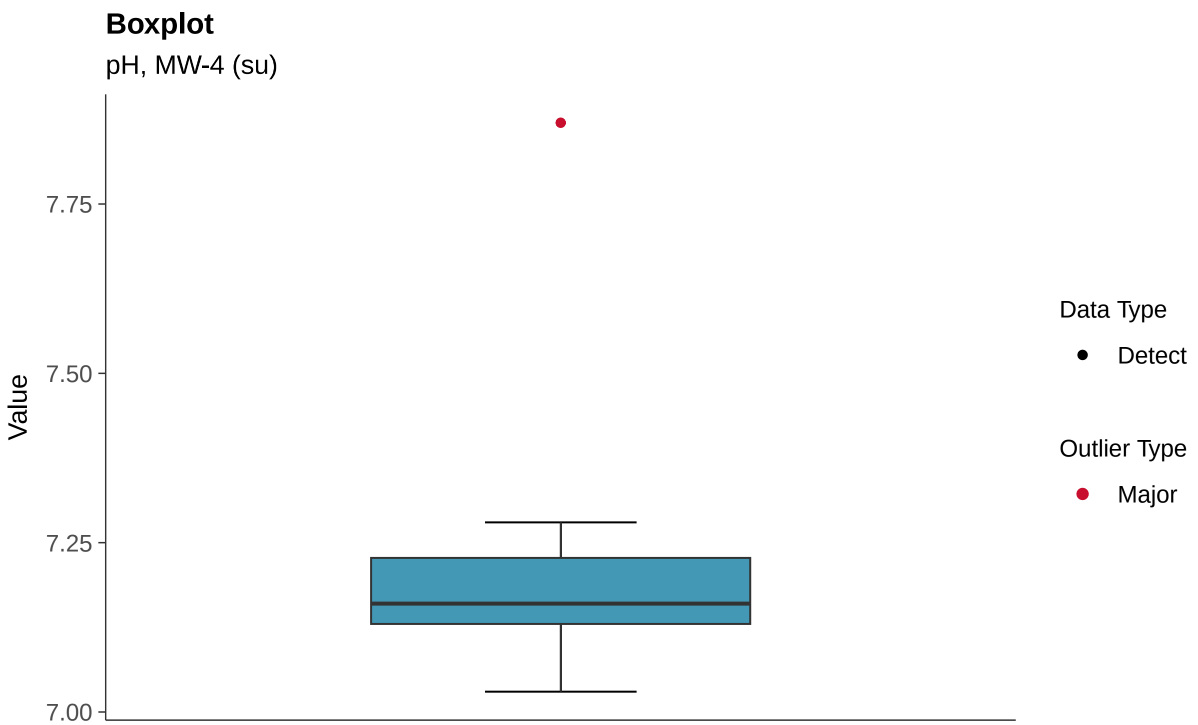
pH, MW-4 (su)

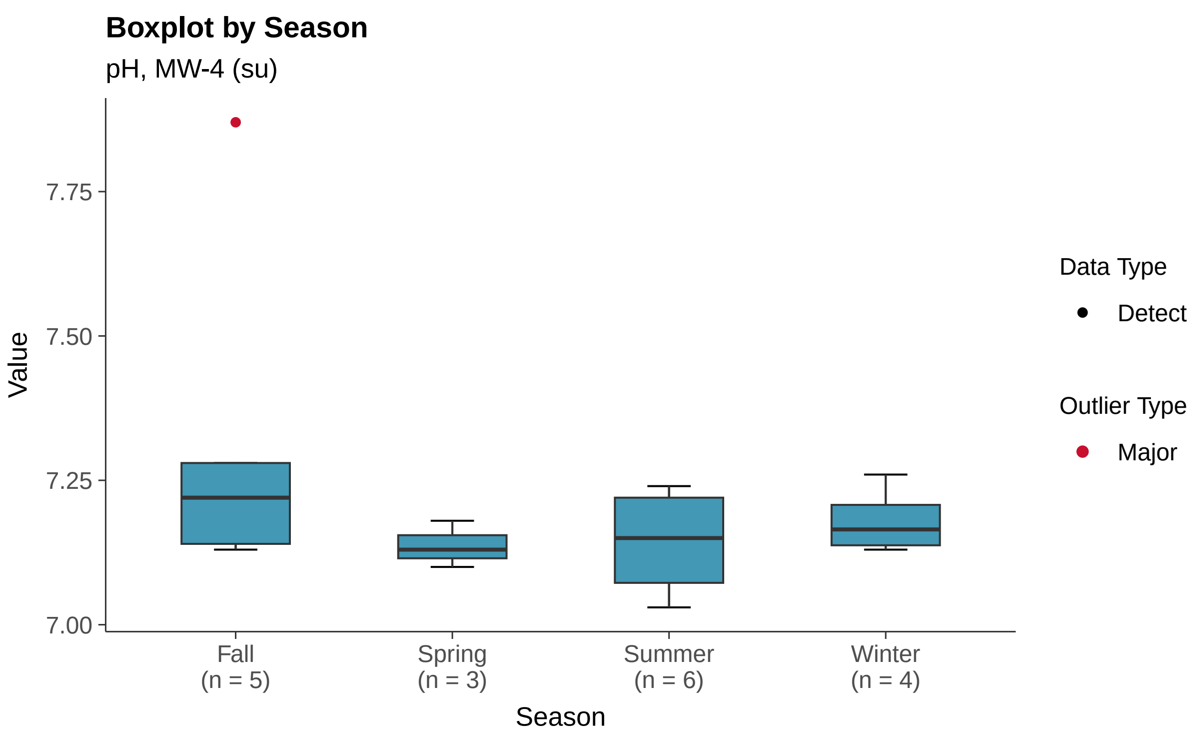


Histogram

pH, MW-4 (su)

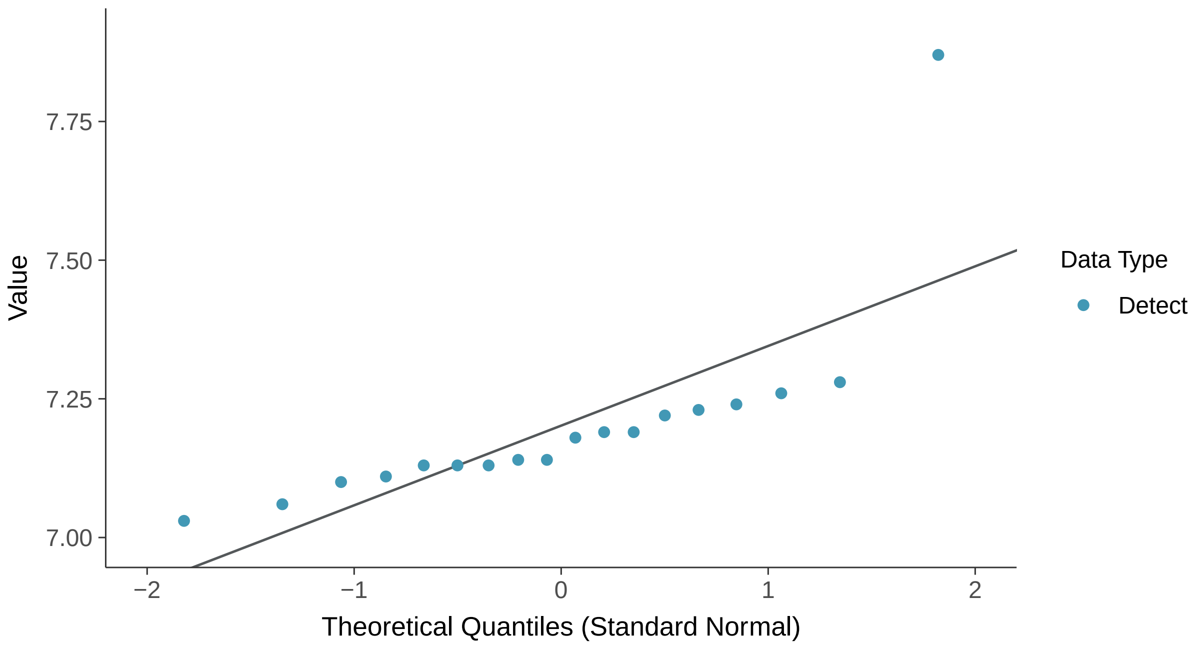



Boxplot
pH, MW-4 (su)
Value
7.75
7.50
7.25
7.00
Data Type
Detect
Outlier Type
Major


Boxplot by Season
pH, MW-4 (su)
Value
7.75
7.50
7.25
7.00
Fall
(n = 5)
Spring
(n = 3)
Summer
(n = 6)
Winter
(n = 4)
Season
Data Type
Detect
Outlier Type
Major

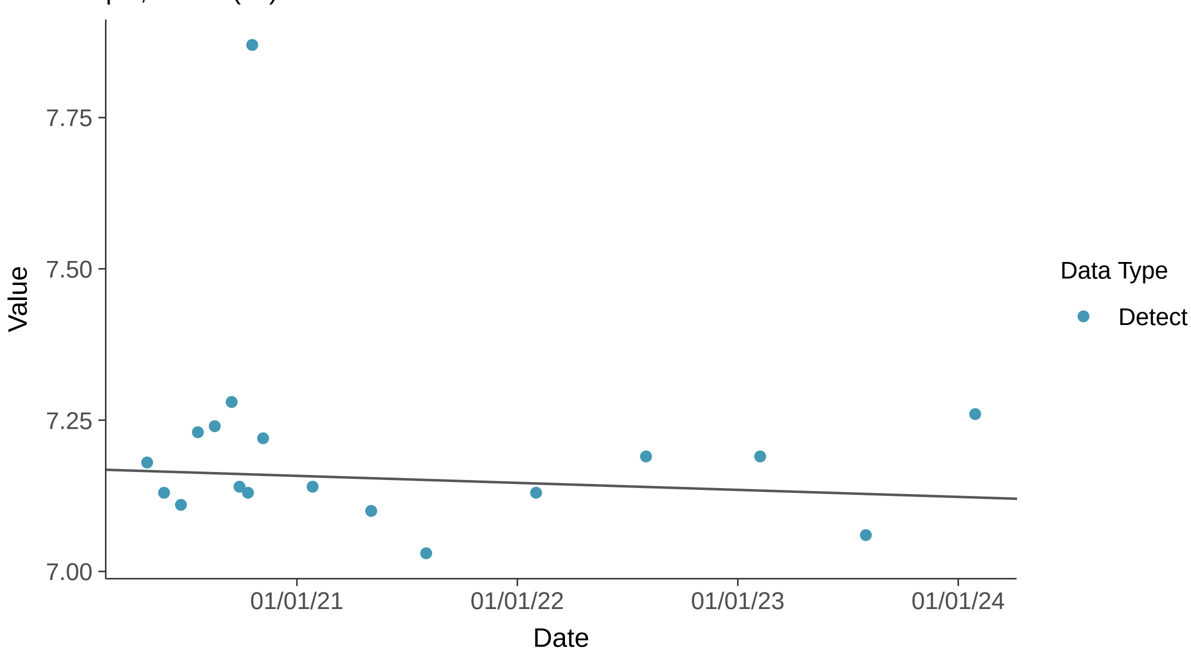
Normal Q-Q plot

pH, MW-4 (su)



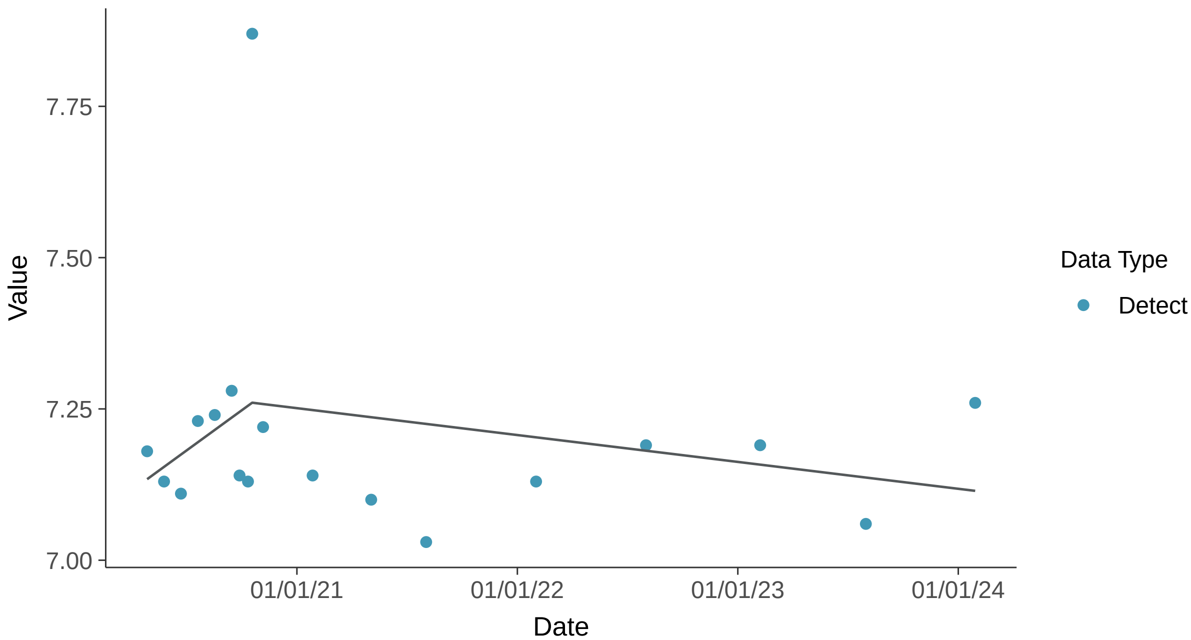
Trend Regression: Mann-Kendall/Theil-Sen Estimate

pH, MW-4 (su)



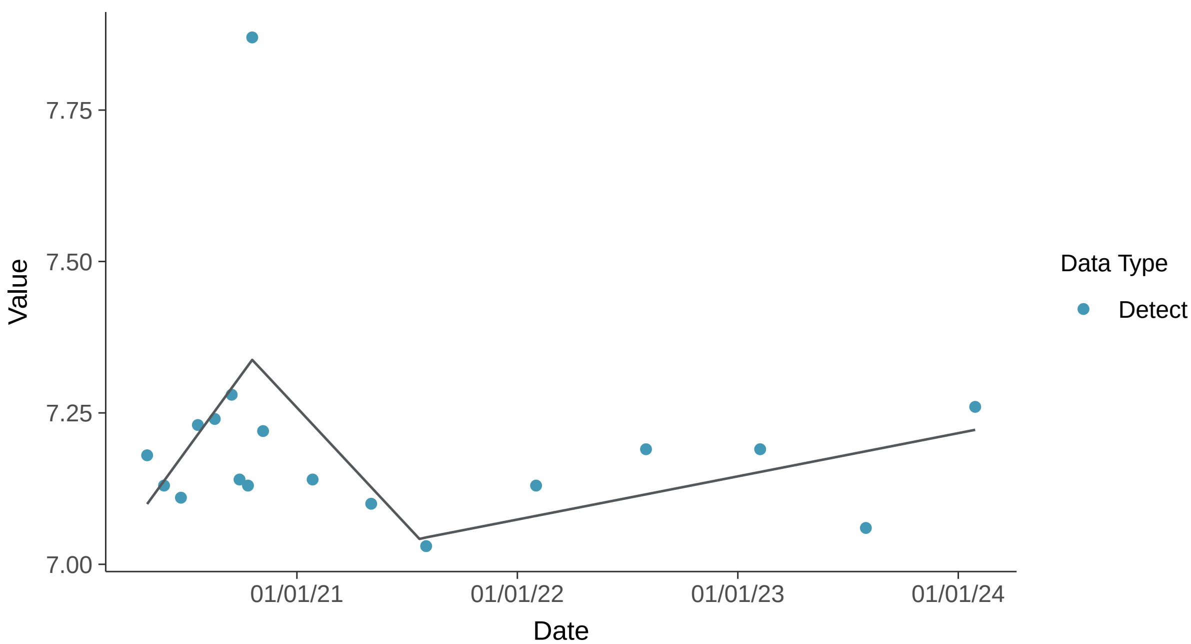
Trend Regression: Piecewise Linear-Linear

pH, MW-4 (su)



Trend Regression: Piecewise Linear-Linear-Linear

pH, MW-4 (su)

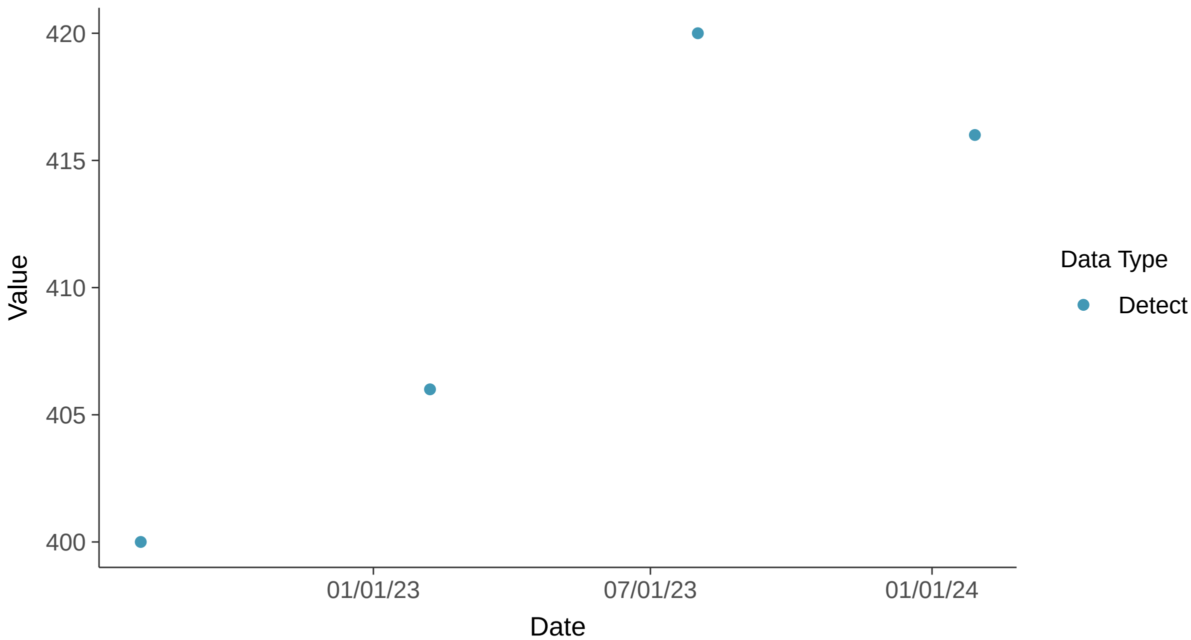


Other: Bicarbonate, MW-4

ID: 04_4_30

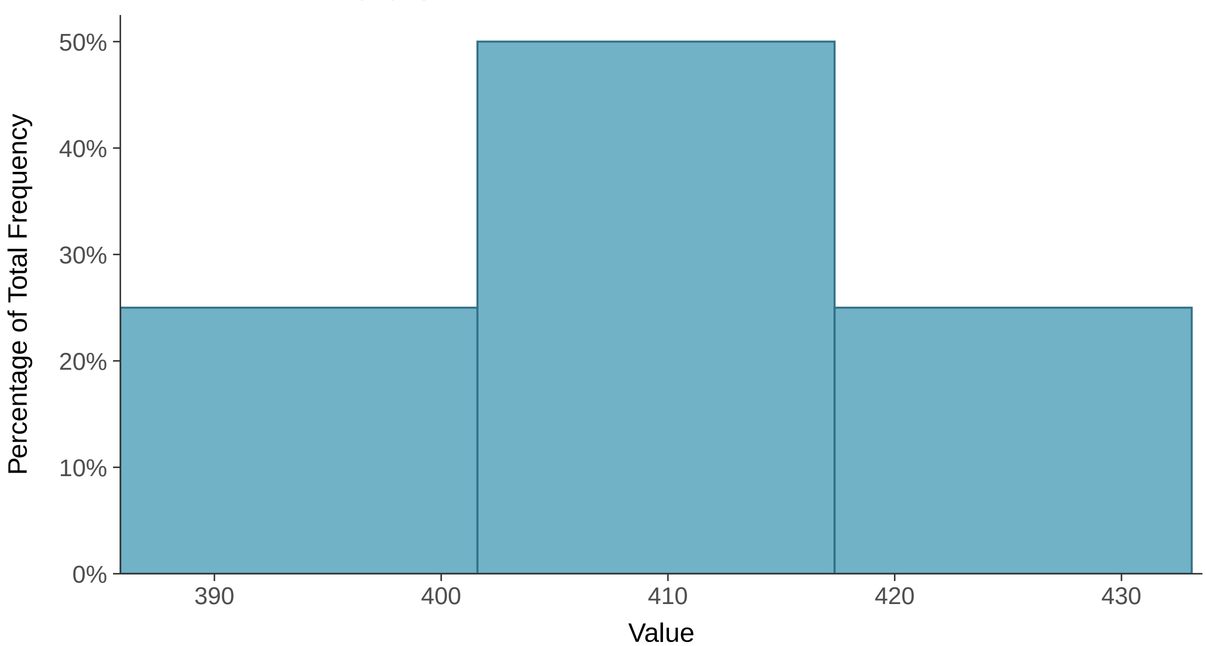
Scatter Plot

Bicarbonate, MW-4 (mg/L)



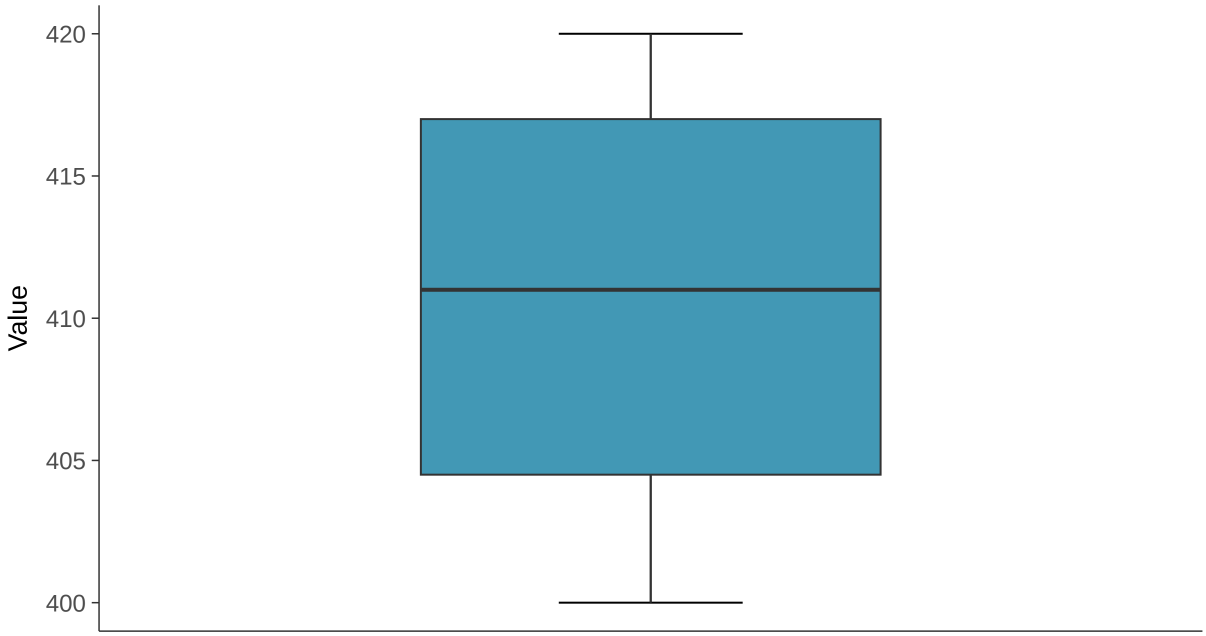
Histogram

Bicarbonate, MW-4 (mg/L)



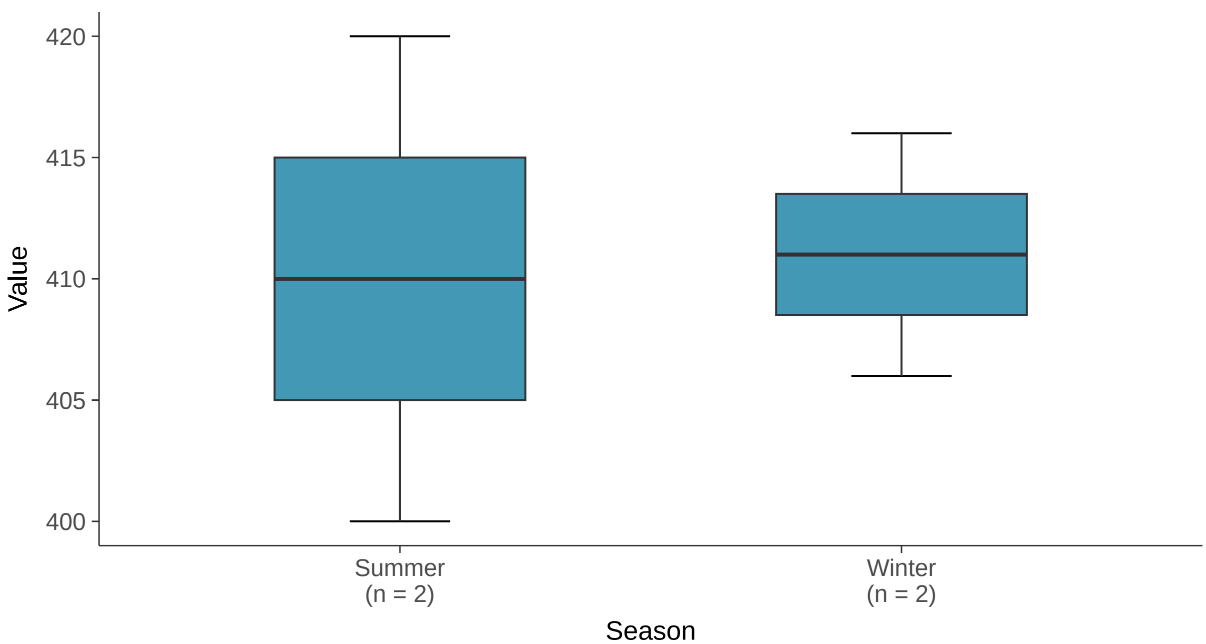
Boxplot

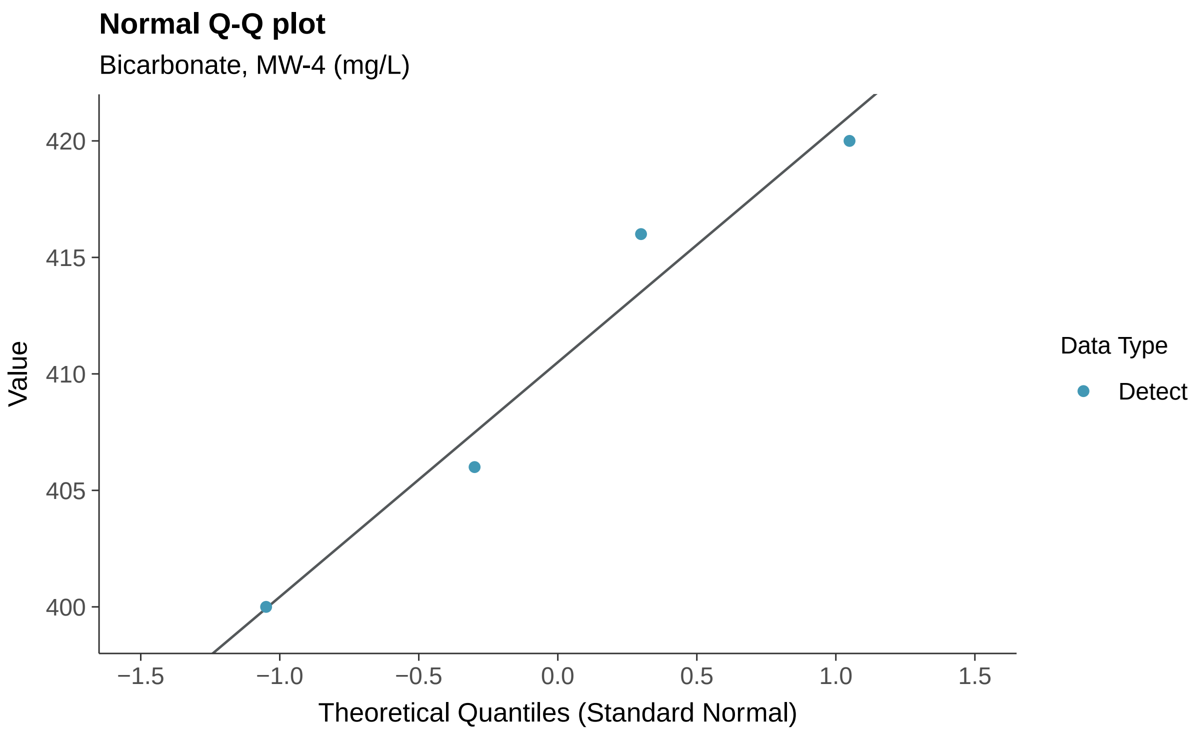
Bicarbonate, MW-4 (mg/L)



Boxplot by Season

Bicarbonate, MW-4 (mg/L)



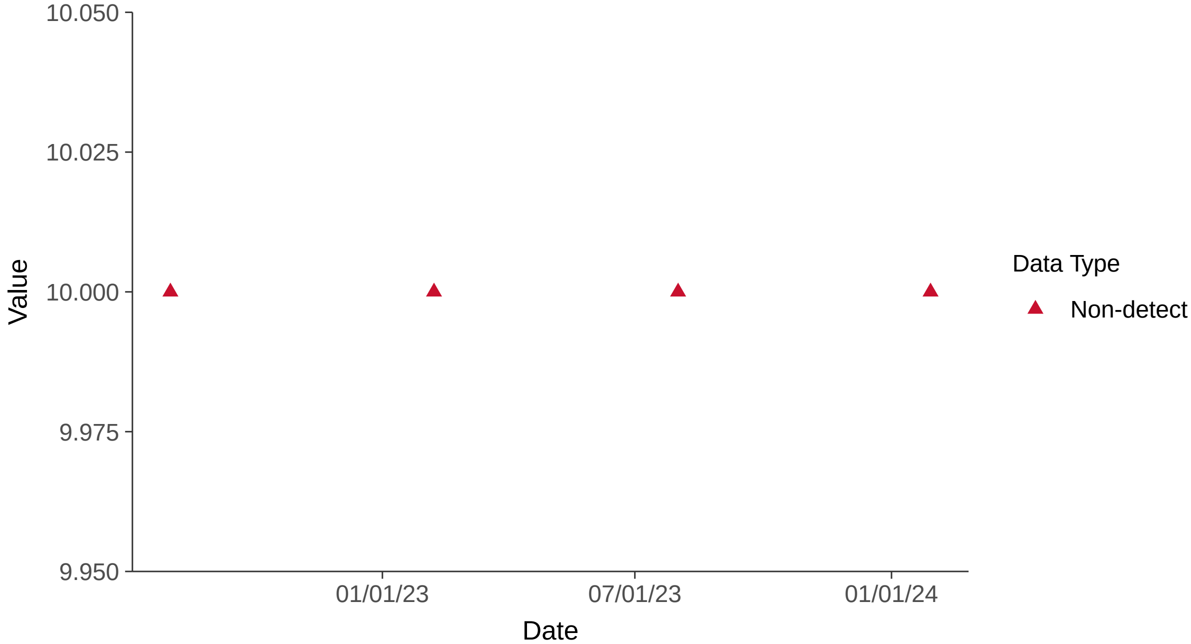

Normal Q-Q plot
Bicarbonate, MW-4 (mg/L)
Value
420
415
410
405
400
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Carbonate, MW-4

ID: 04_4_31

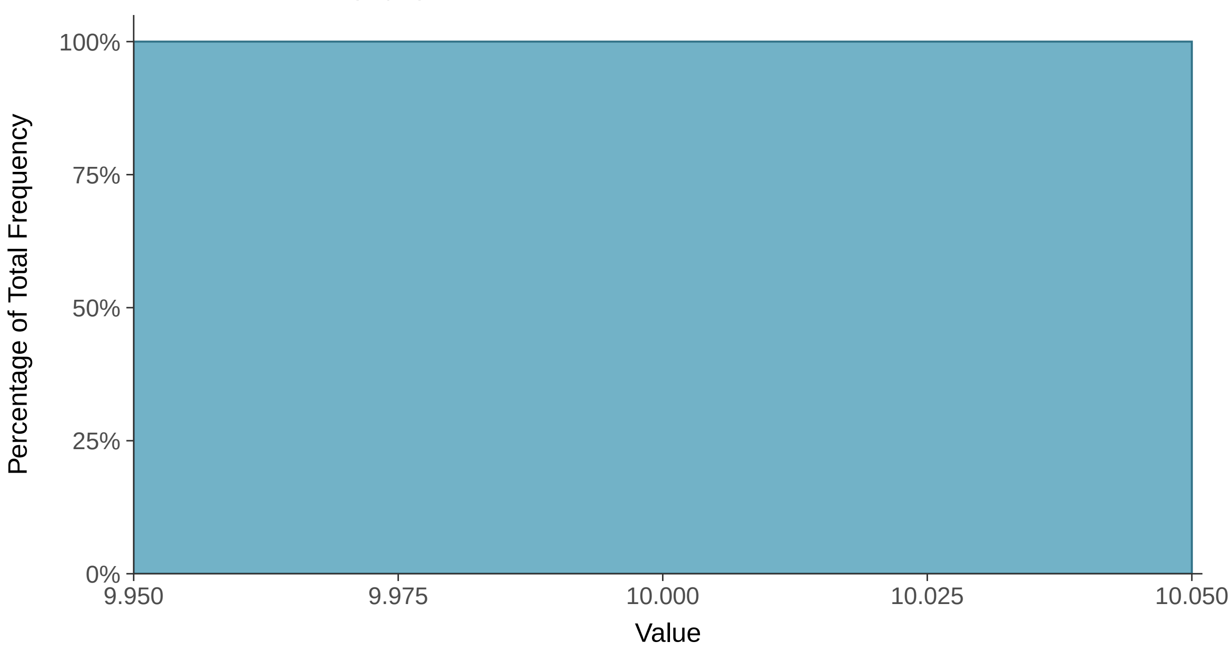
Scatter Plot

Carbonate, MW-4 (mg/L)



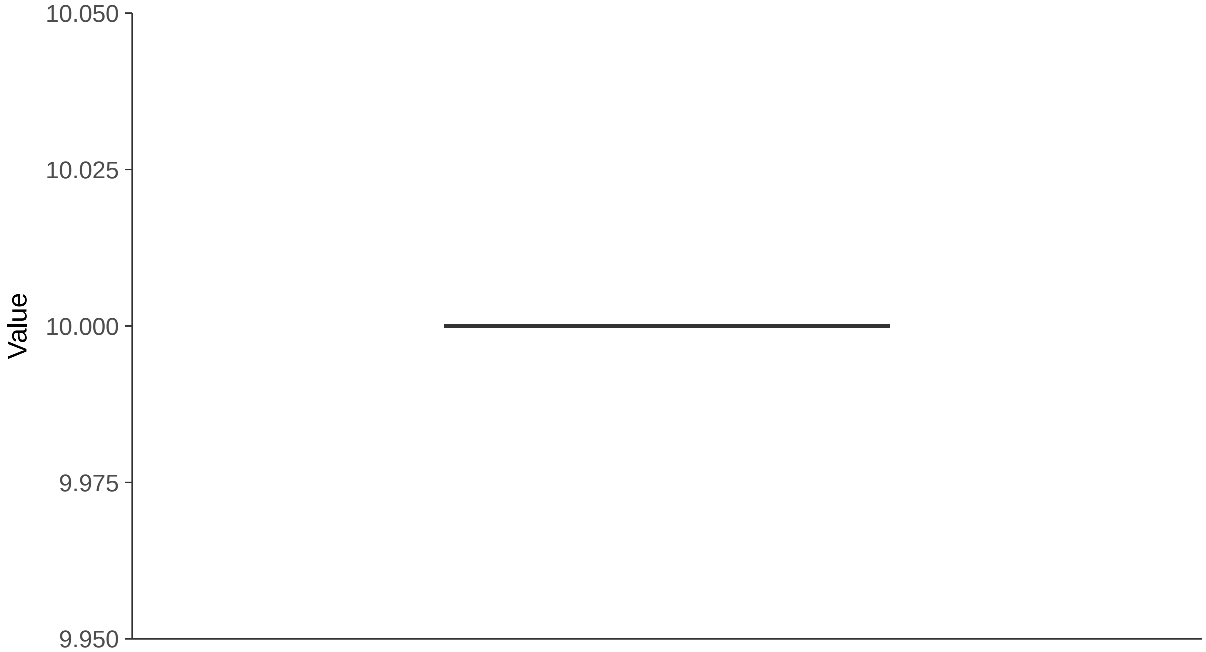
Histogram

Carbonate, MW-4 (mg/L)



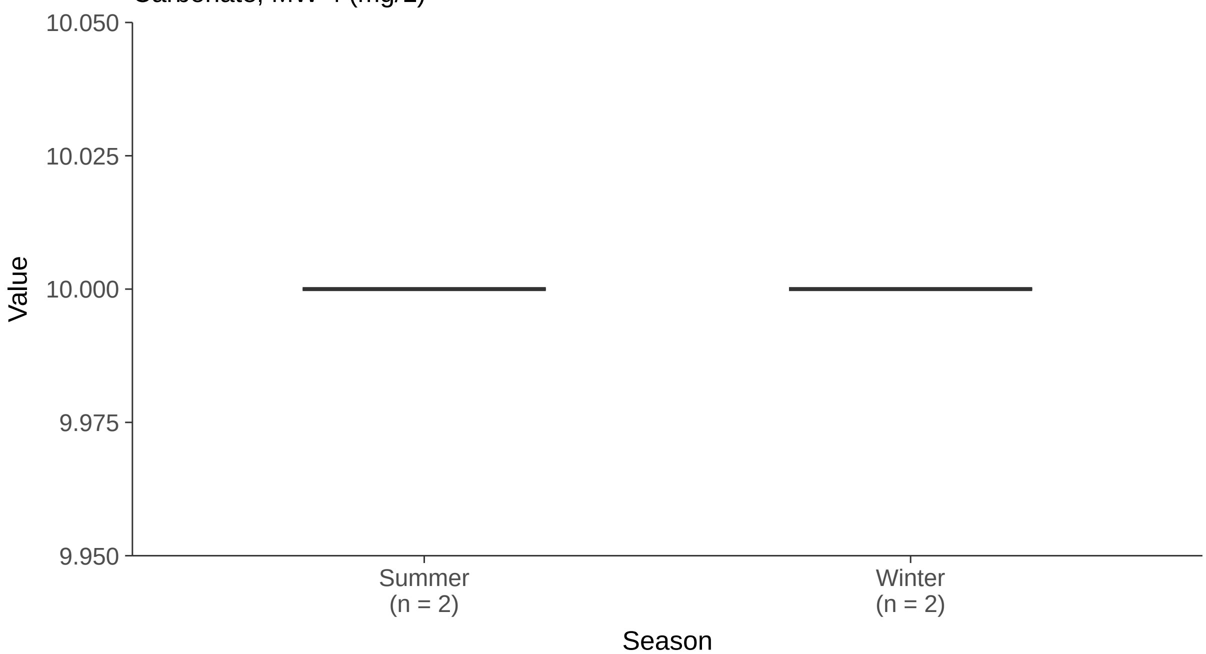
Boxplot

Carbonate, MW-4 (mg/L)



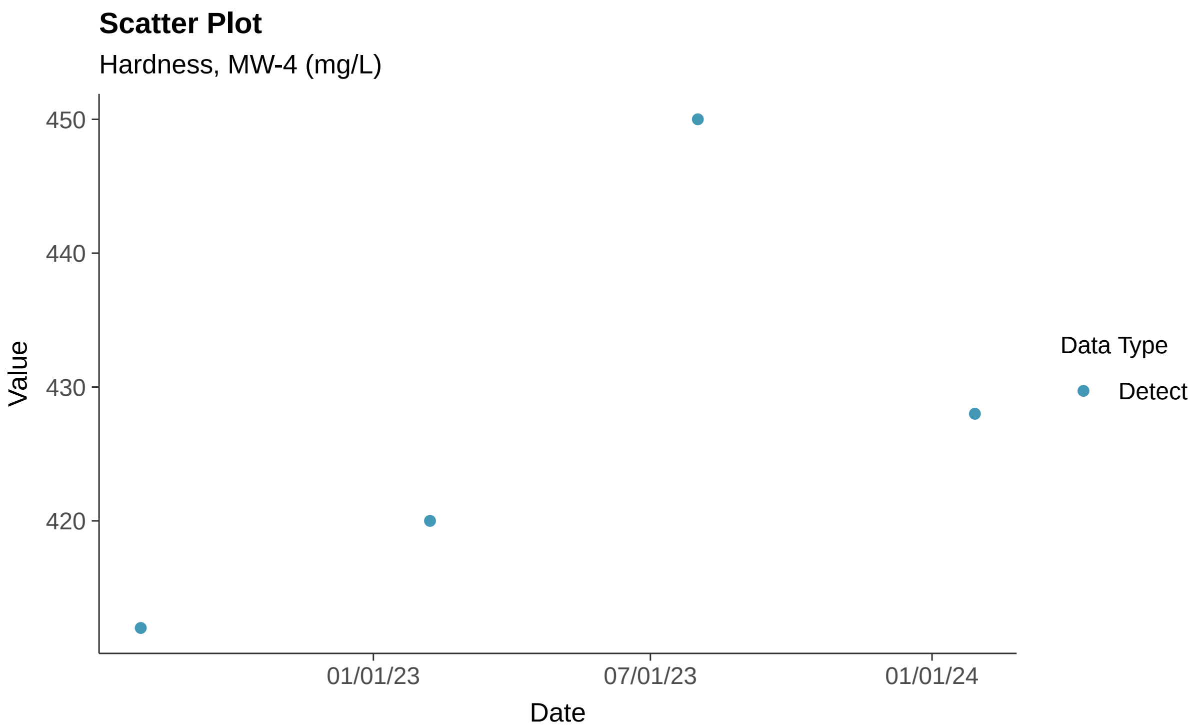
Boxplot by Season

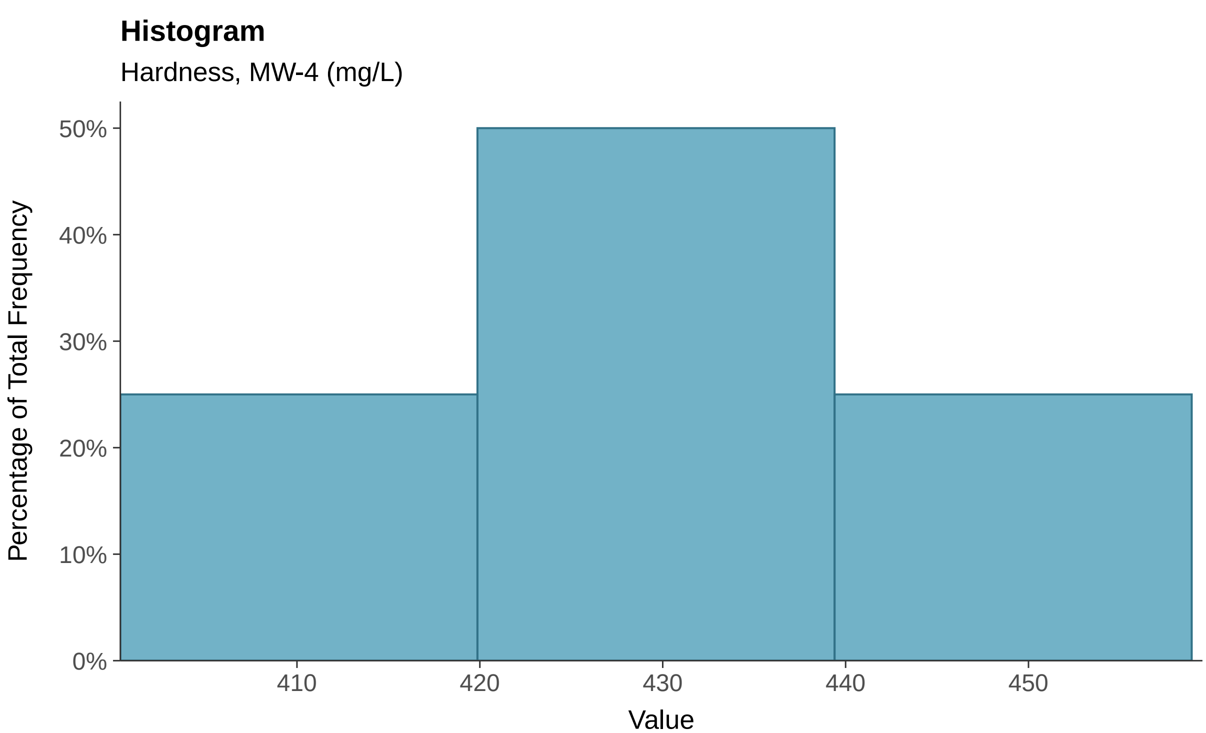
Carbonate, MW-4 (mg/L)



Other: Hardness, MW-4

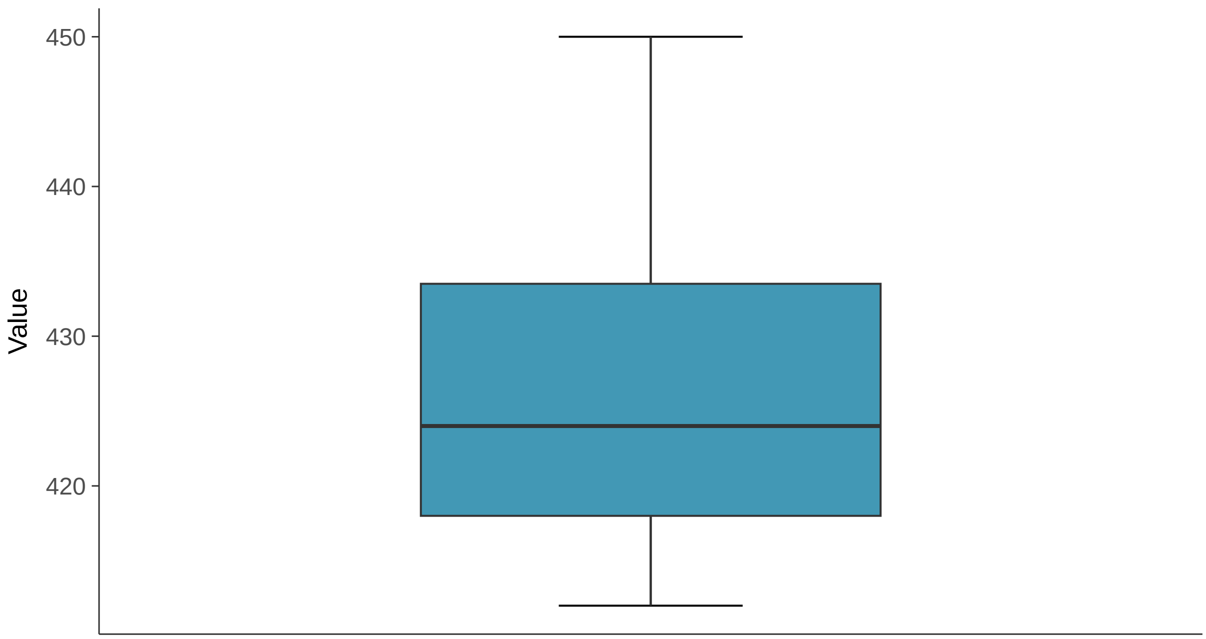
ID: 04_4_32





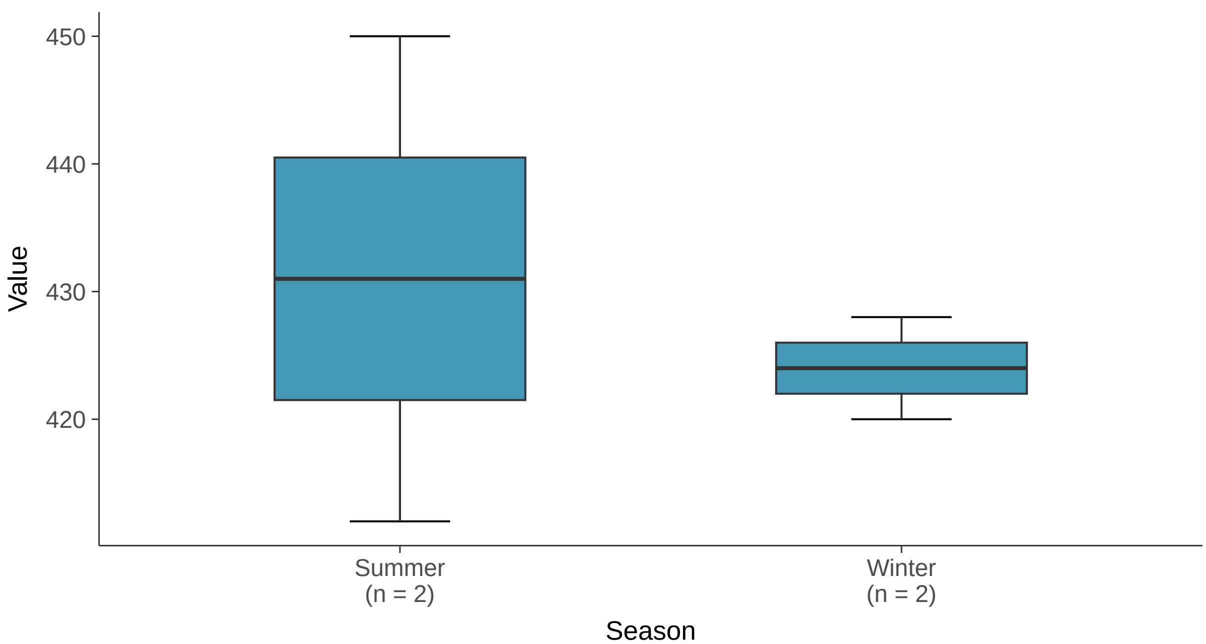
Boxplot

Hardness, MW-4 (mg/L)



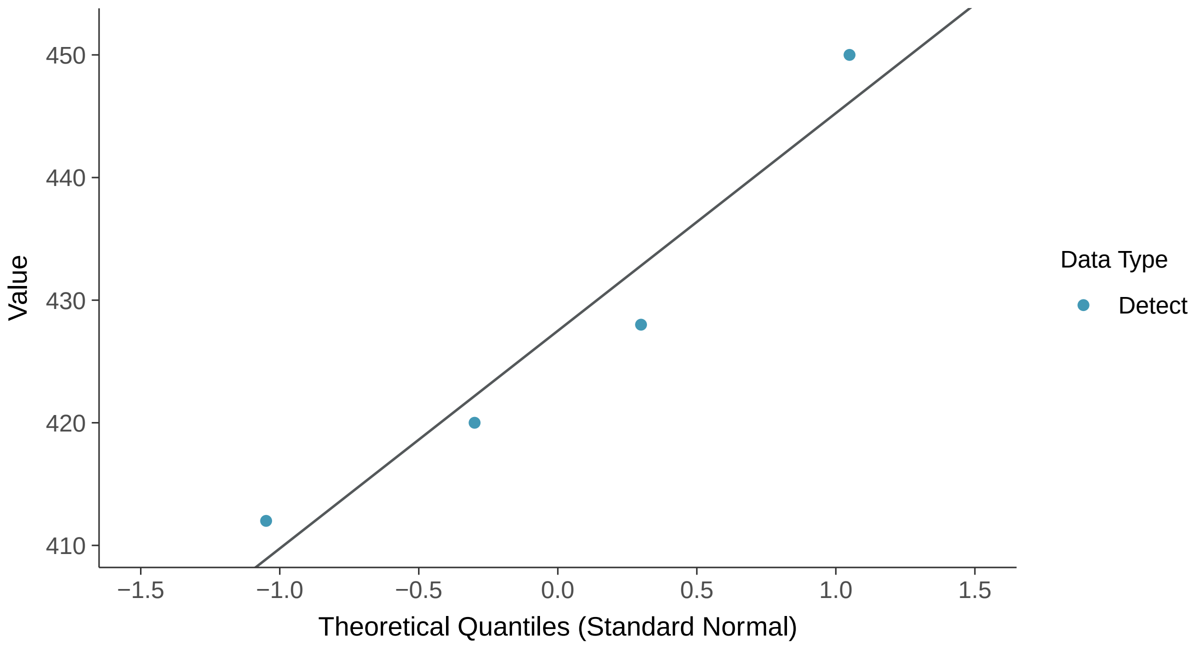
Boxplot by Season

Hardness, MW-4 (mg/L)



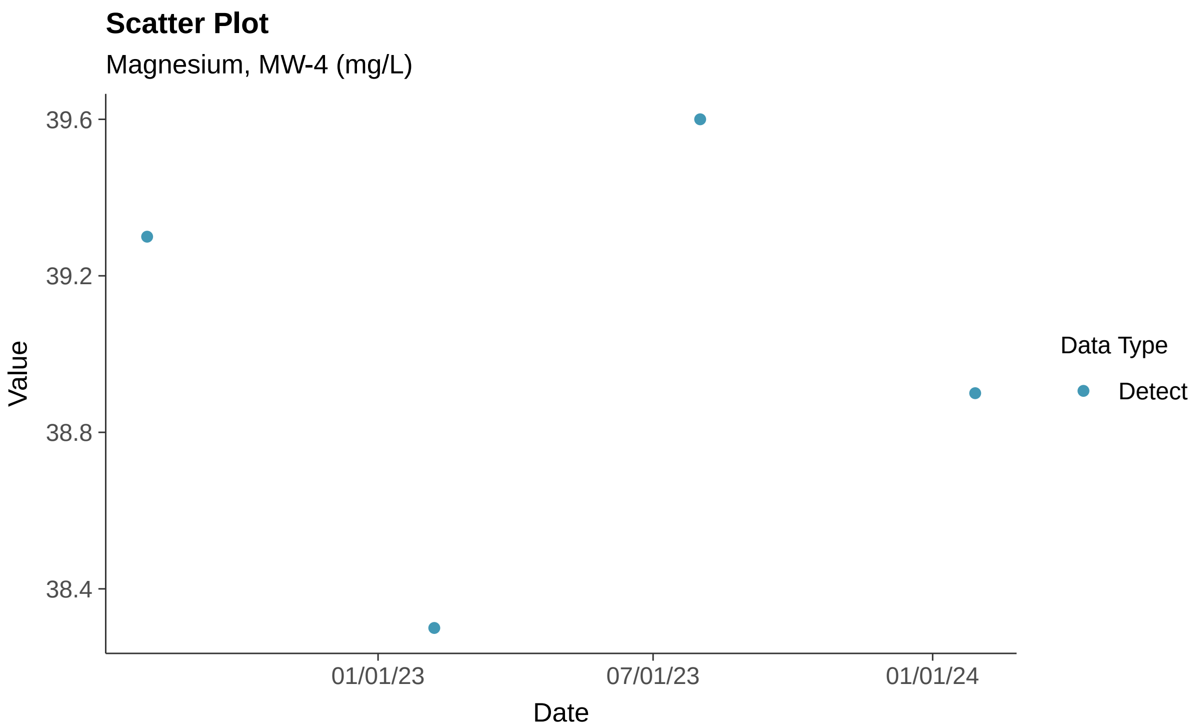
Normal Q-Q plot

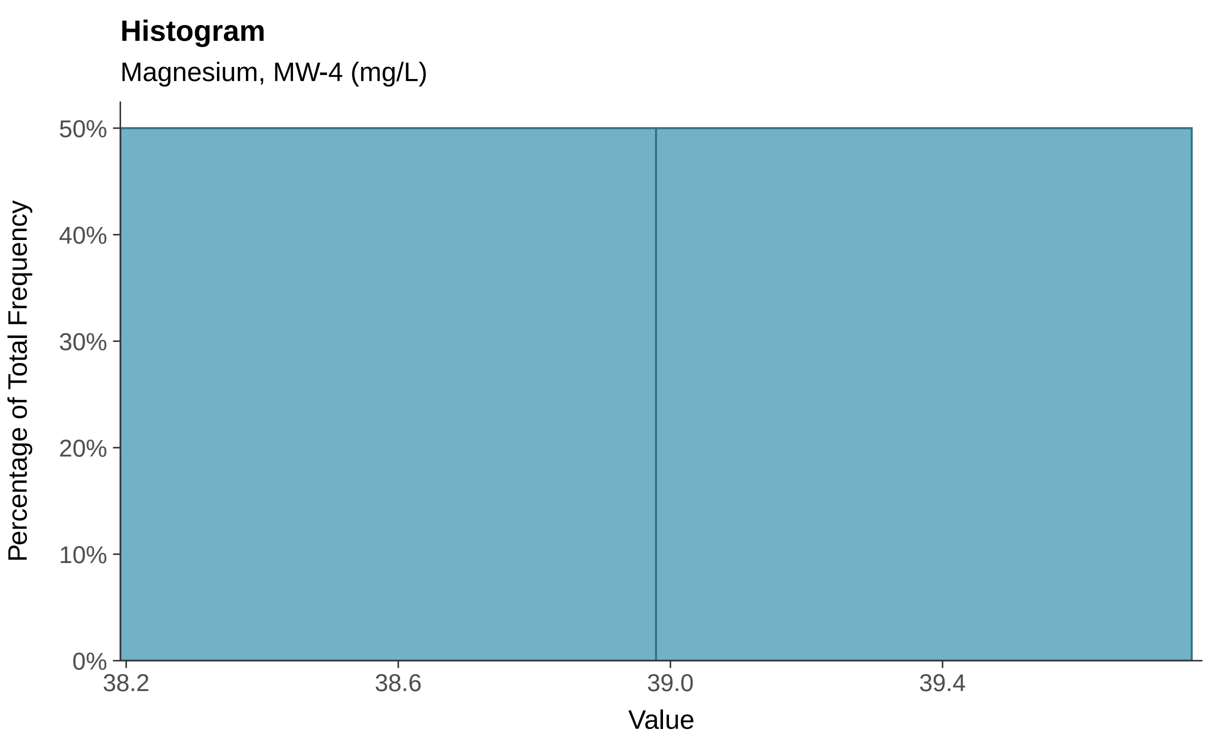
Hardness, MW-4 (mg/L)



Other: Magnesium, MW-4

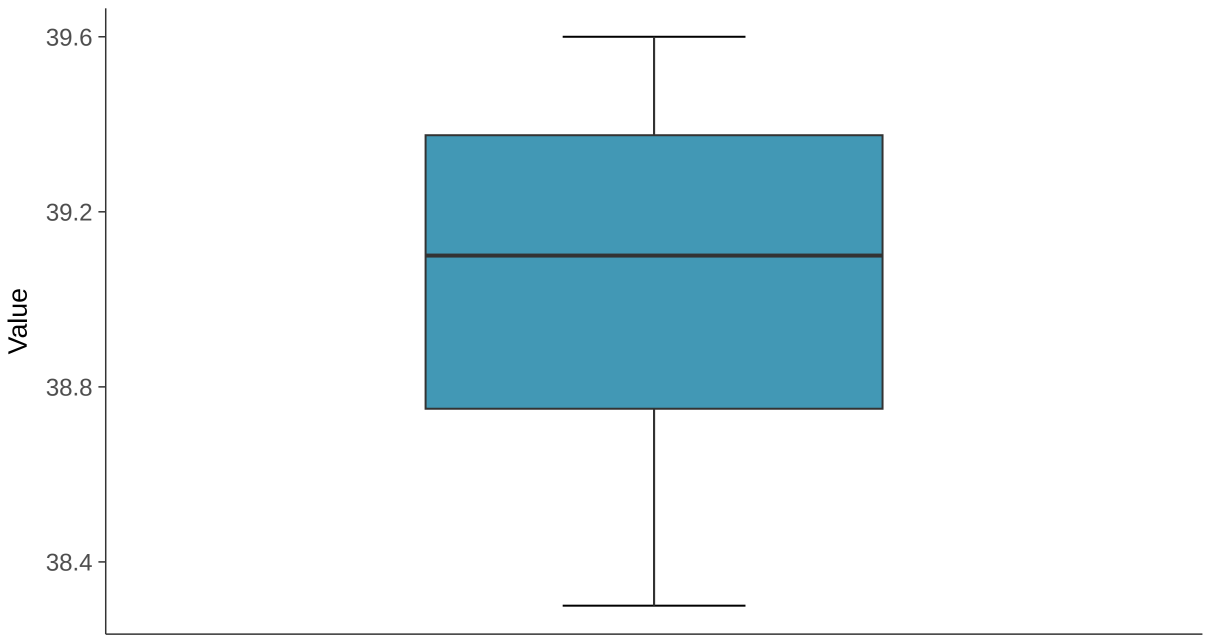
ID: 04_4_33





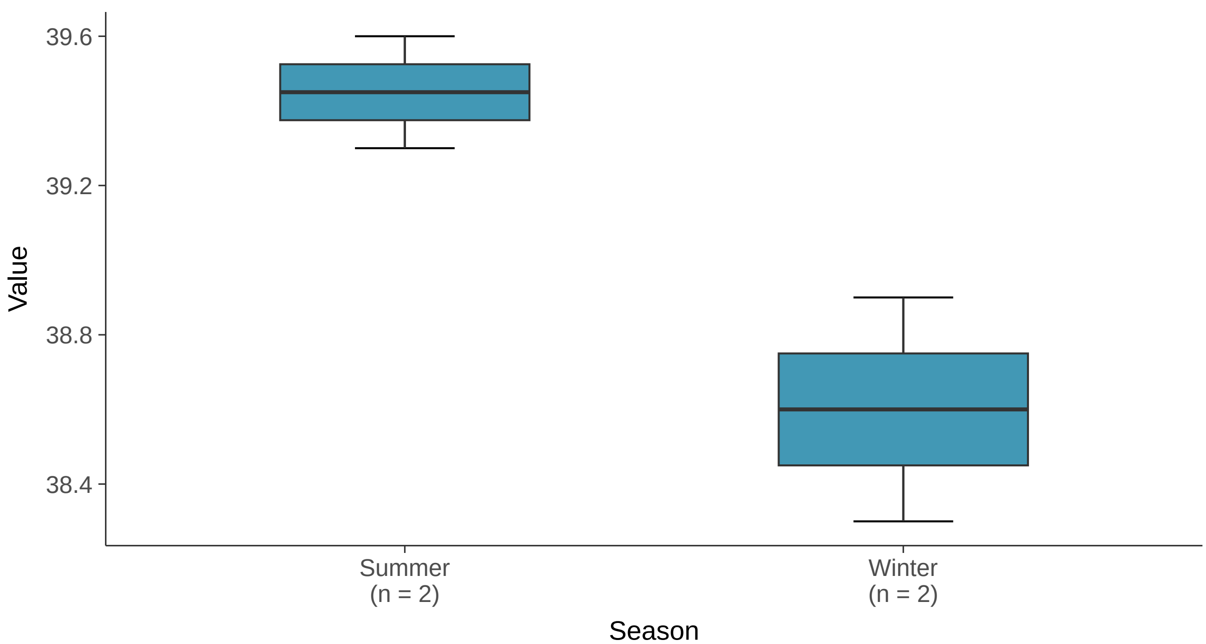
Boxplot

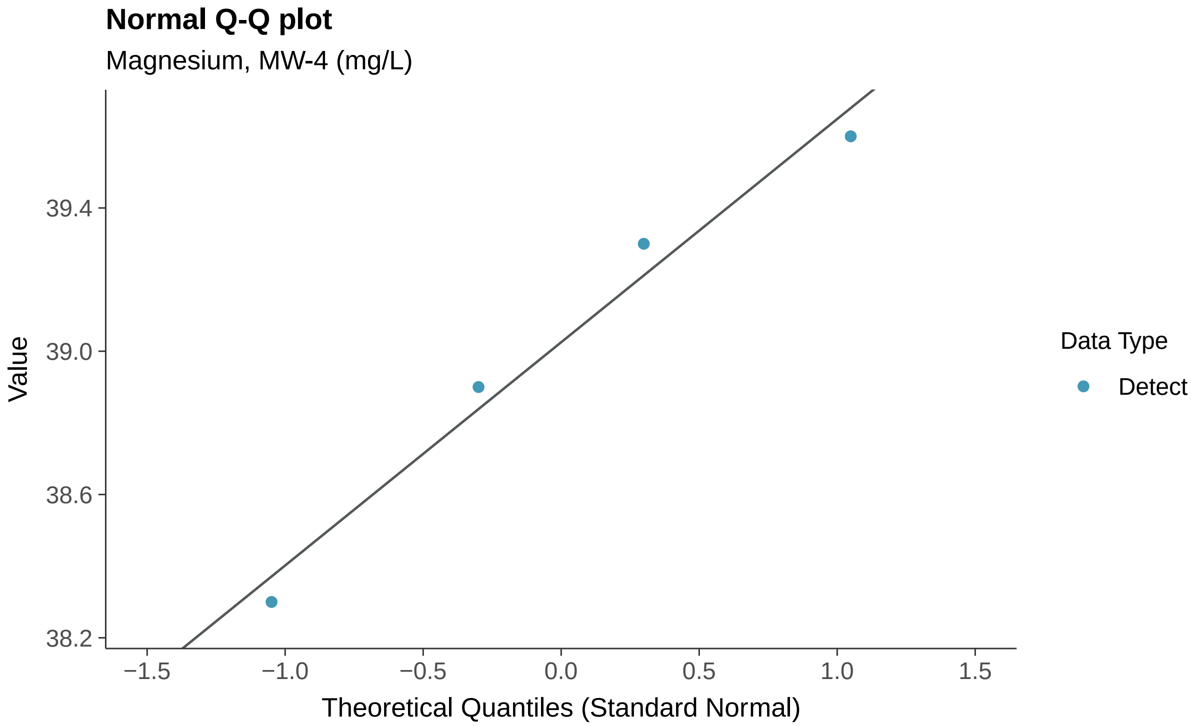
Magnesium, MW-4 (mg/L)



Boxplot by Season

Magnesium, MW-4 (mg/L)



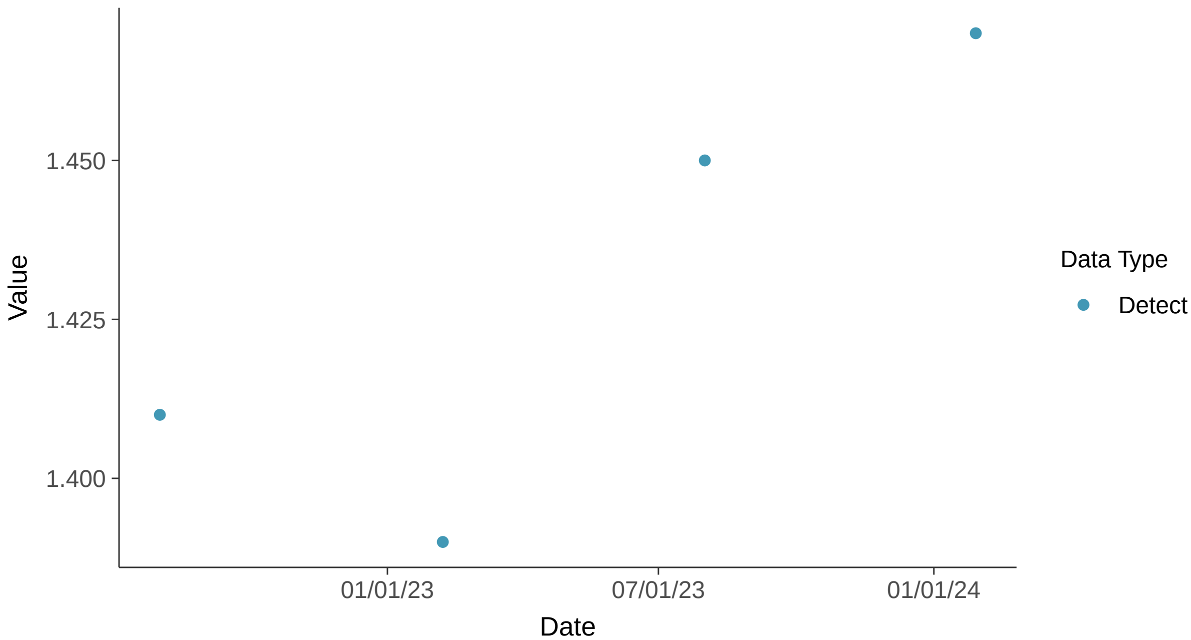

Normal Q-Q plot
Magnesium, MW-4 (mg/L)
Value
39.4
39.0
38.6
38.2
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Potassium, MW-4

ID: 04_4_34

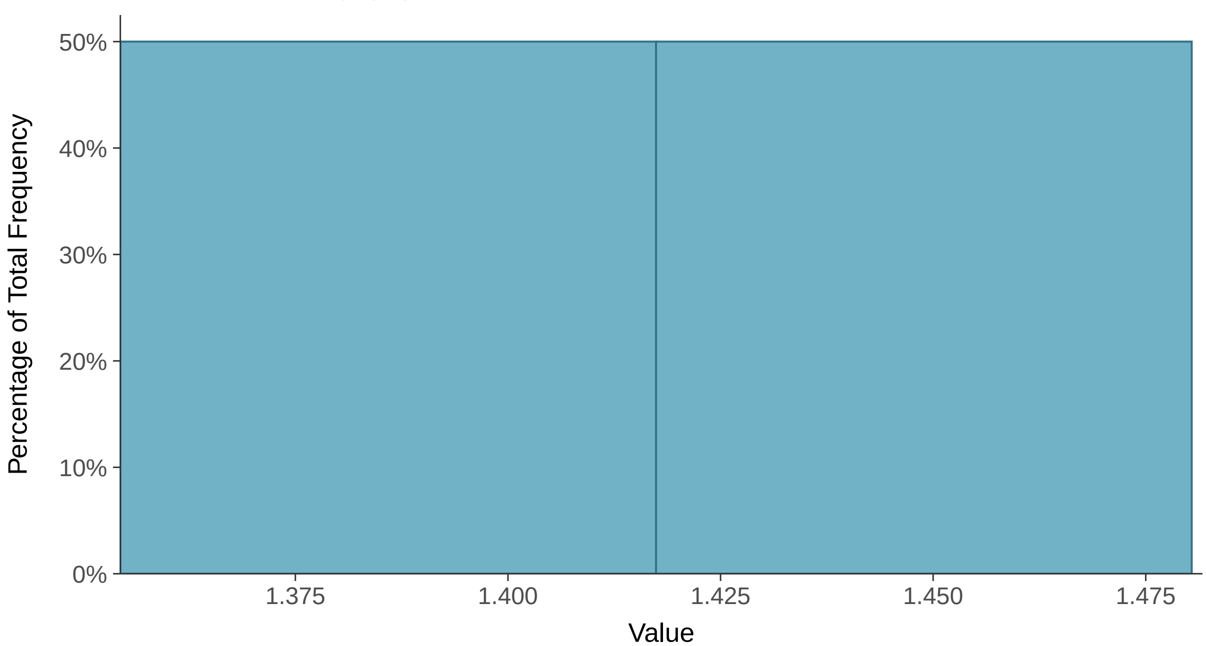
Scatter Plot

Potassium, MW-4 (mg/L)



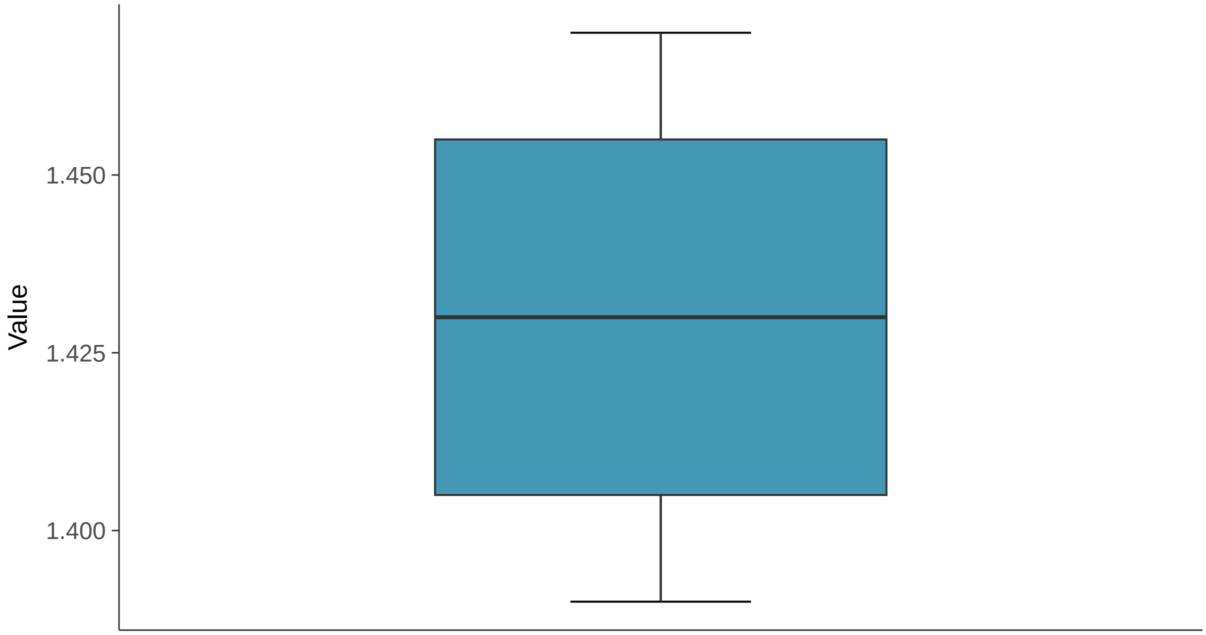
Histogram

Potassium, MW-4 (mg/L)



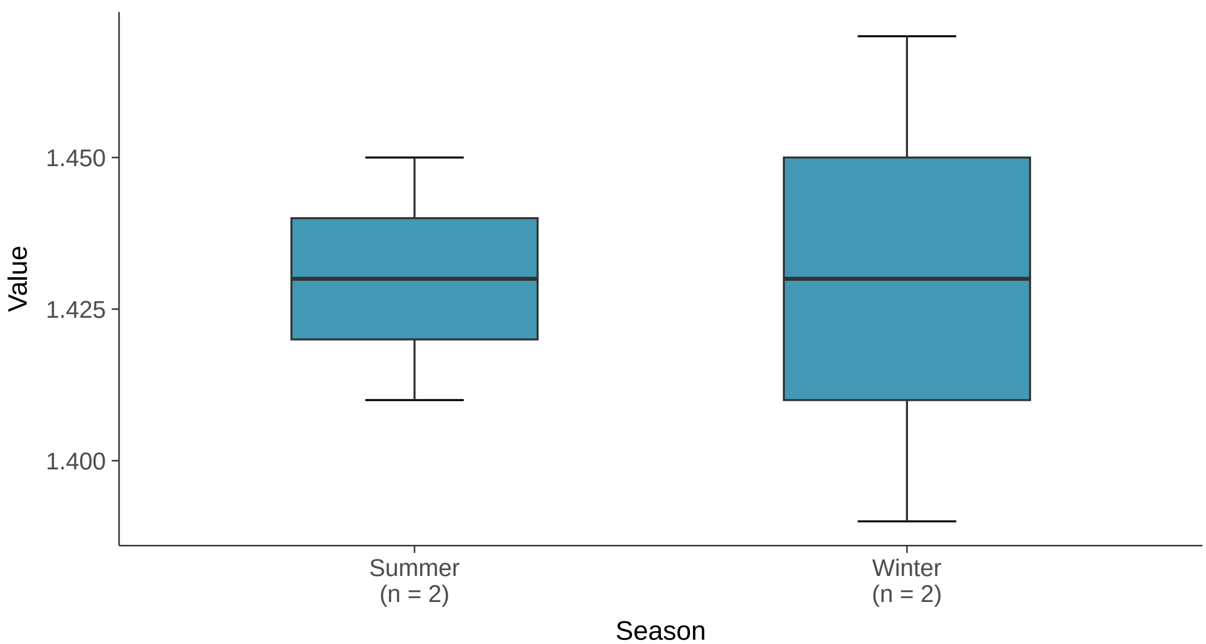
Boxplot

Potassium, MW-4 (mg/L)



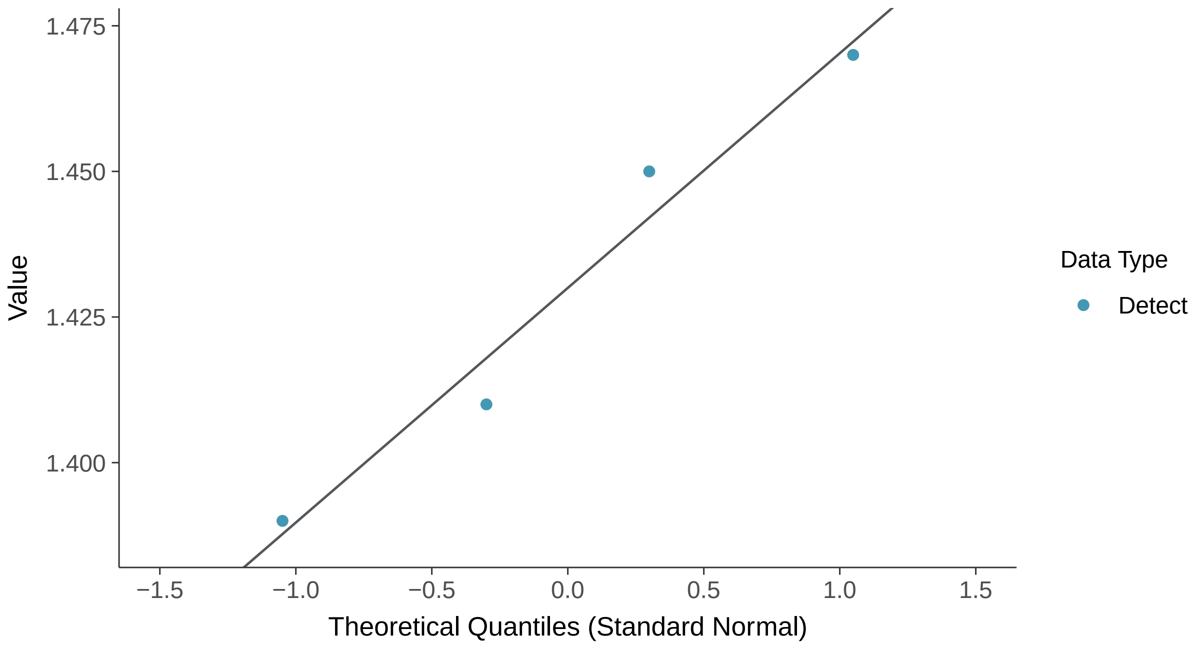
Boxplot by Season

Potassium, MW-4 (mg/L)



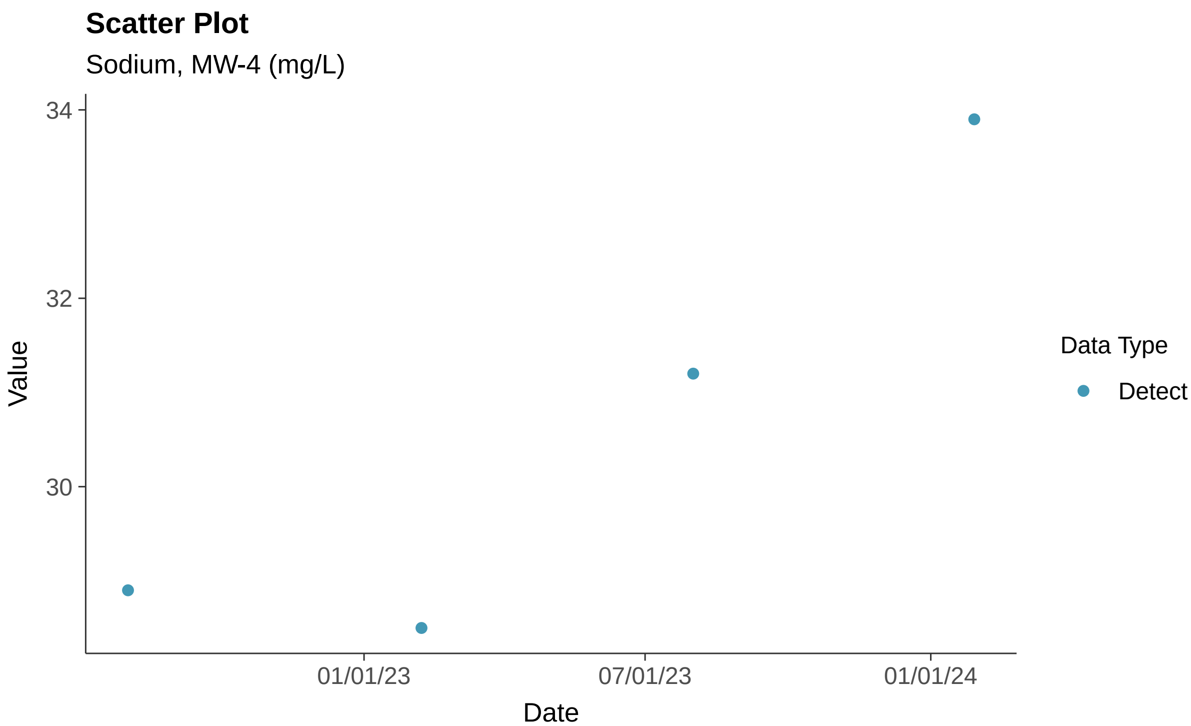
Normal Q-Q plot

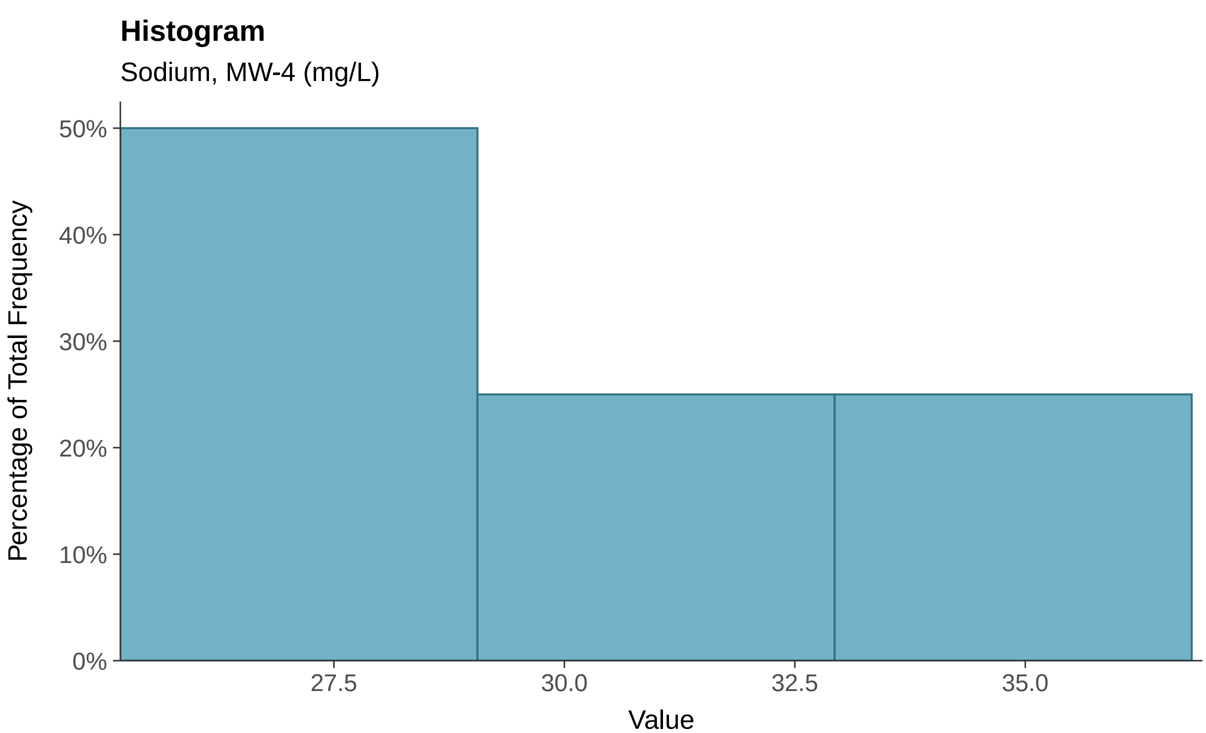
Potassium, MW-4 (mg/L)



Other: Sodium, MW-4

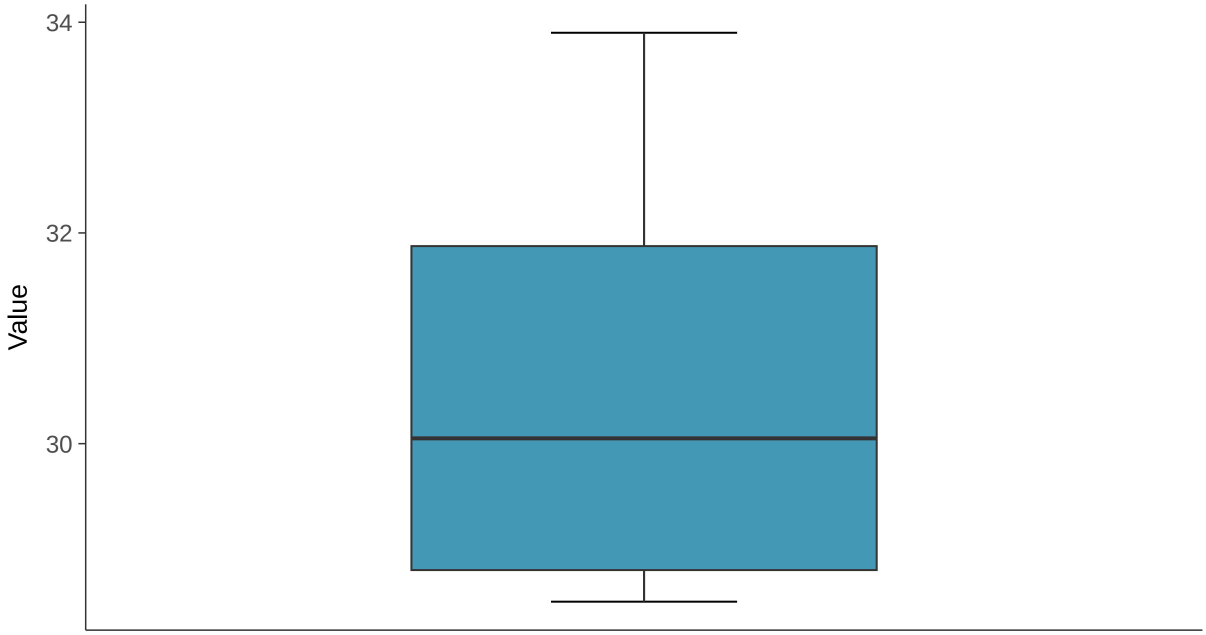
ID: 04_4_35





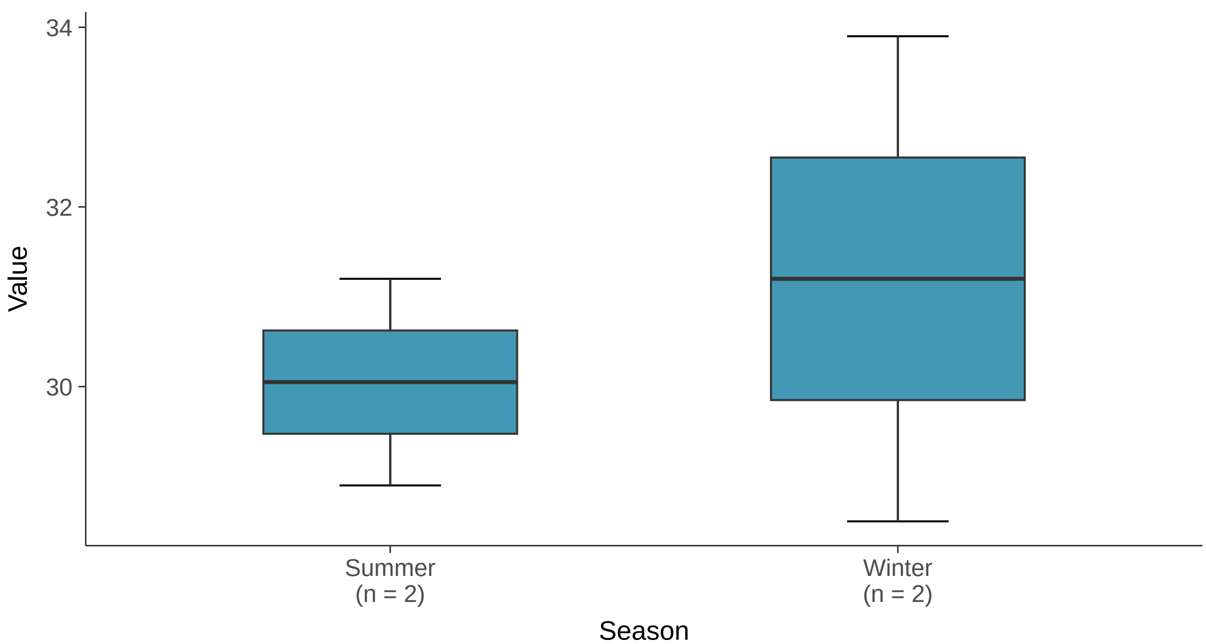
Boxplot

Sodium, MW-4 (mg/L)



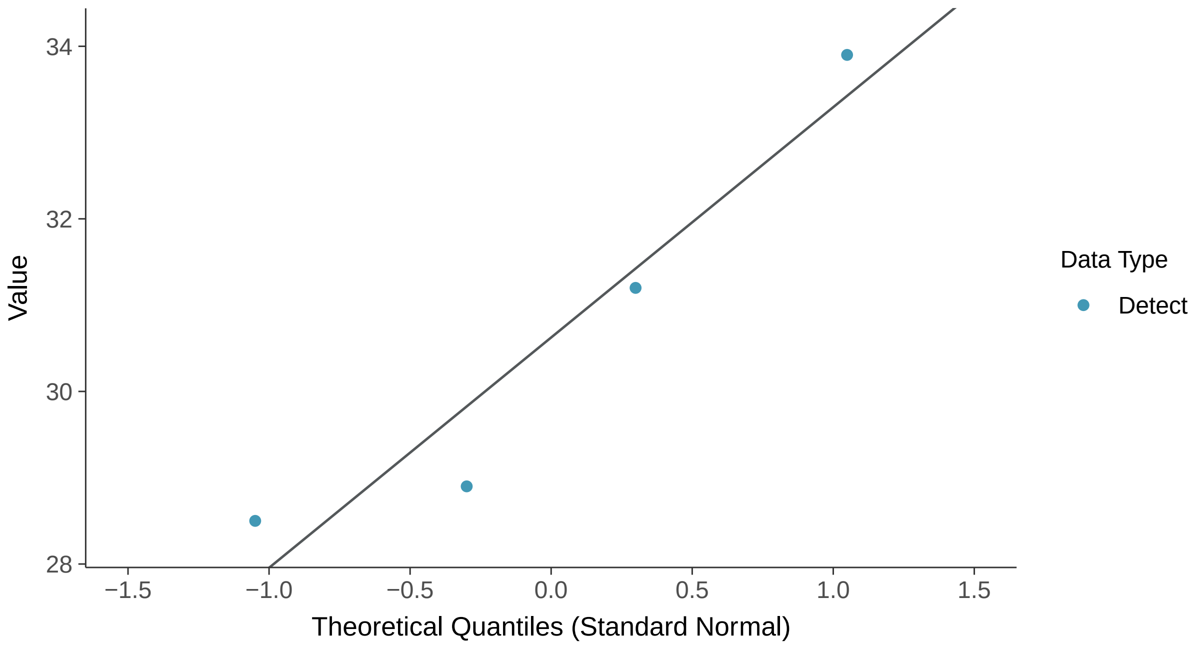
Boxplot by Season

Sodium, MW-4 (mg/L)



Normal Q-Q plot

Sodium, MW-4 (mg/L)

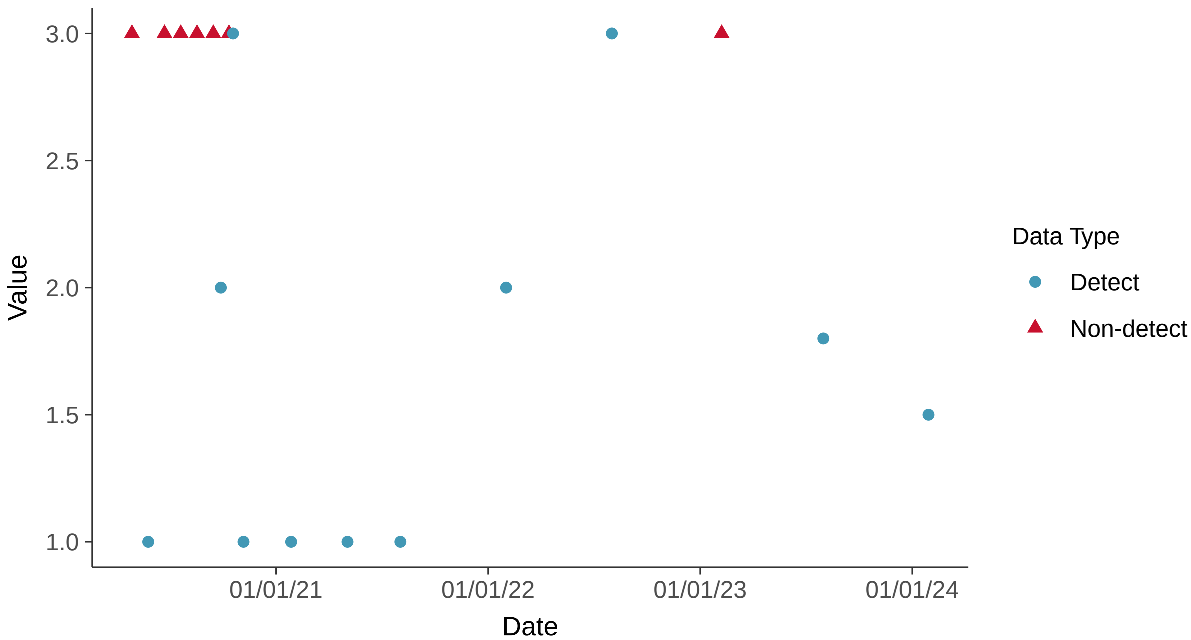


Other: Total Suspended Solids, MW-4

ID: 04_4_36

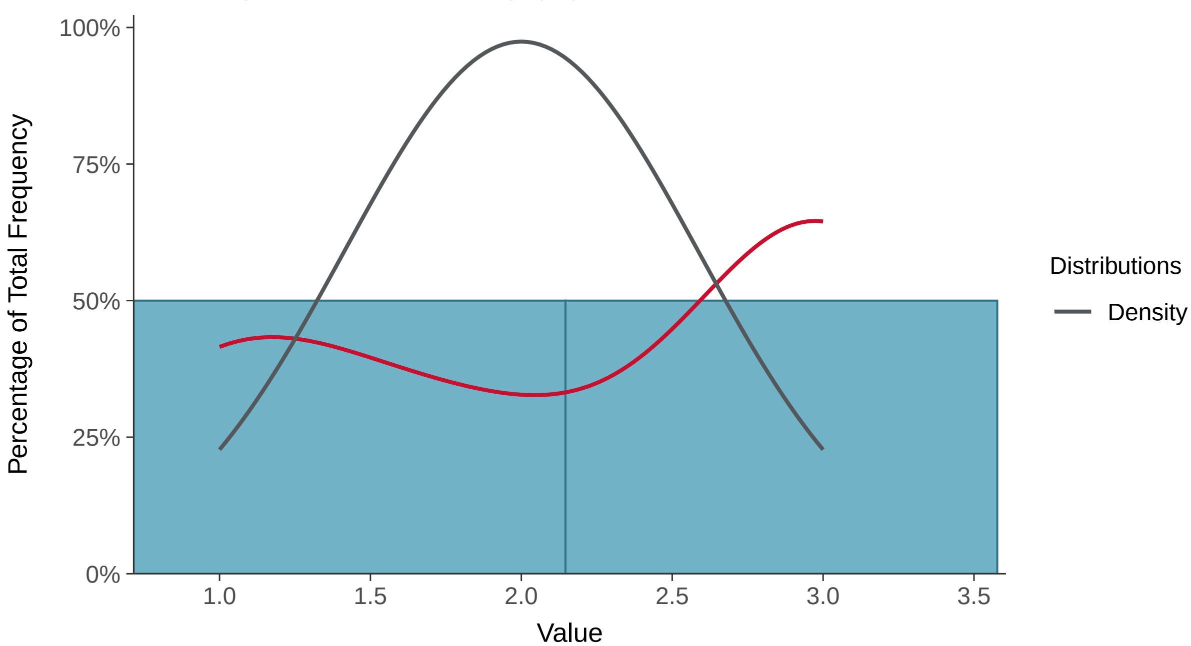
Scatter Plot

Total Suspended Solids, MW-4 (mg/L)



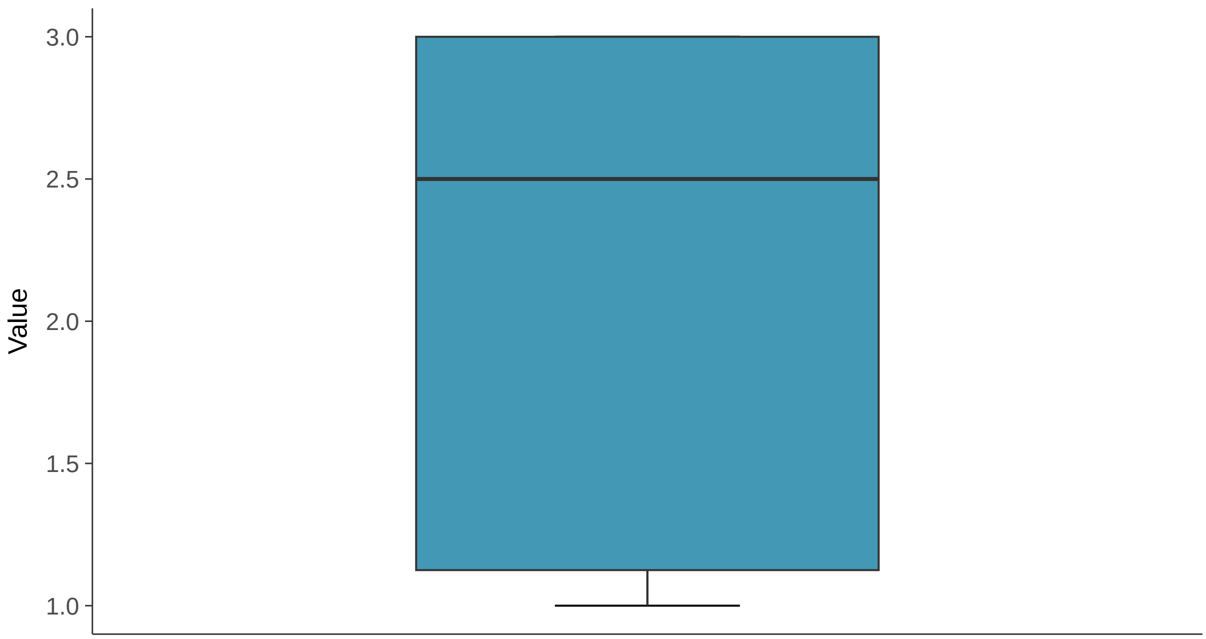
Histogram

Total Suspended Solids, MW-4 (mg/L)



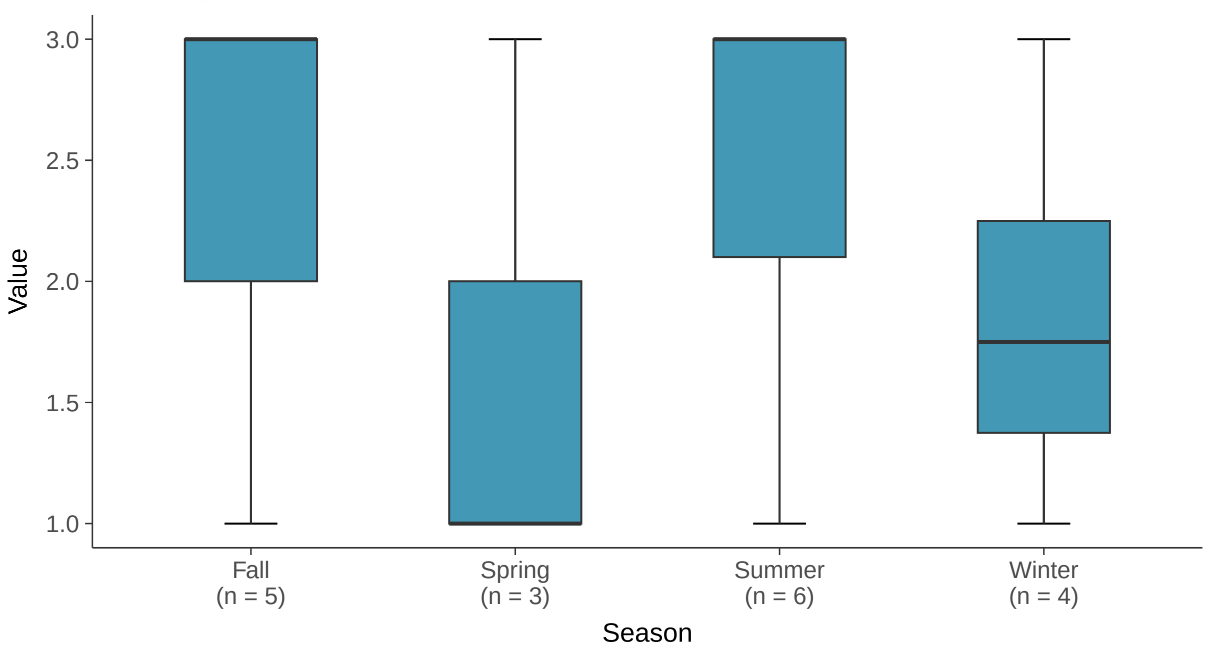
Boxplot

Total Suspended Solids, MW-4 (mg/L)



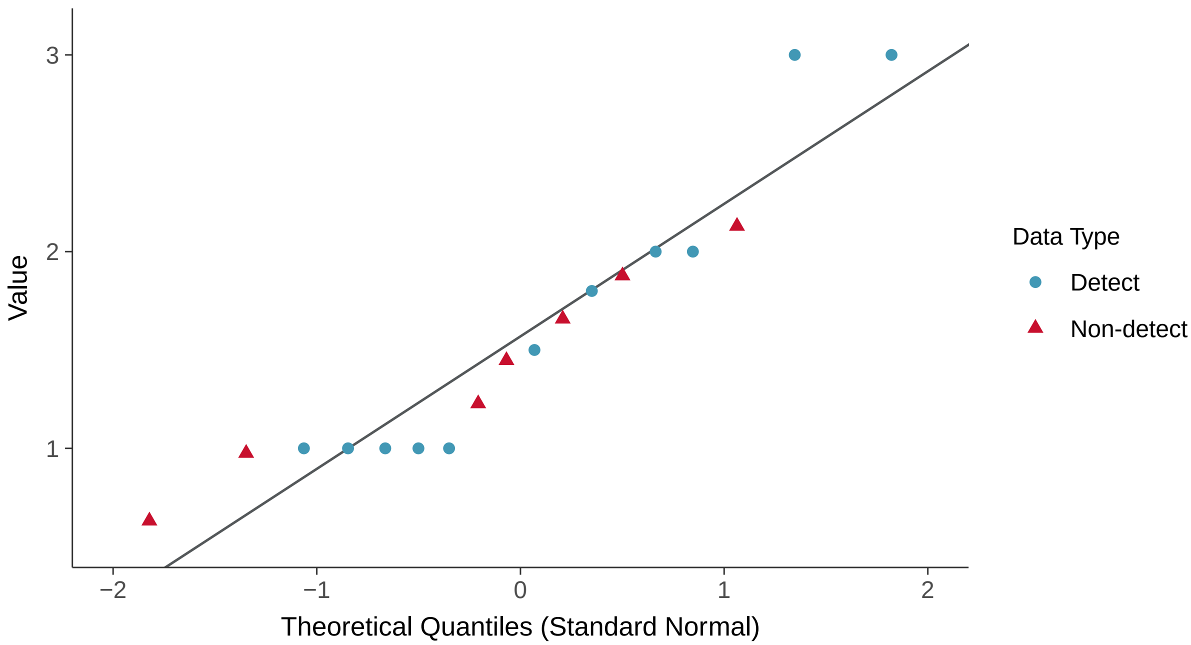
Boxplot by Season

Total Suspended Solids, MW-4 (mg/L)



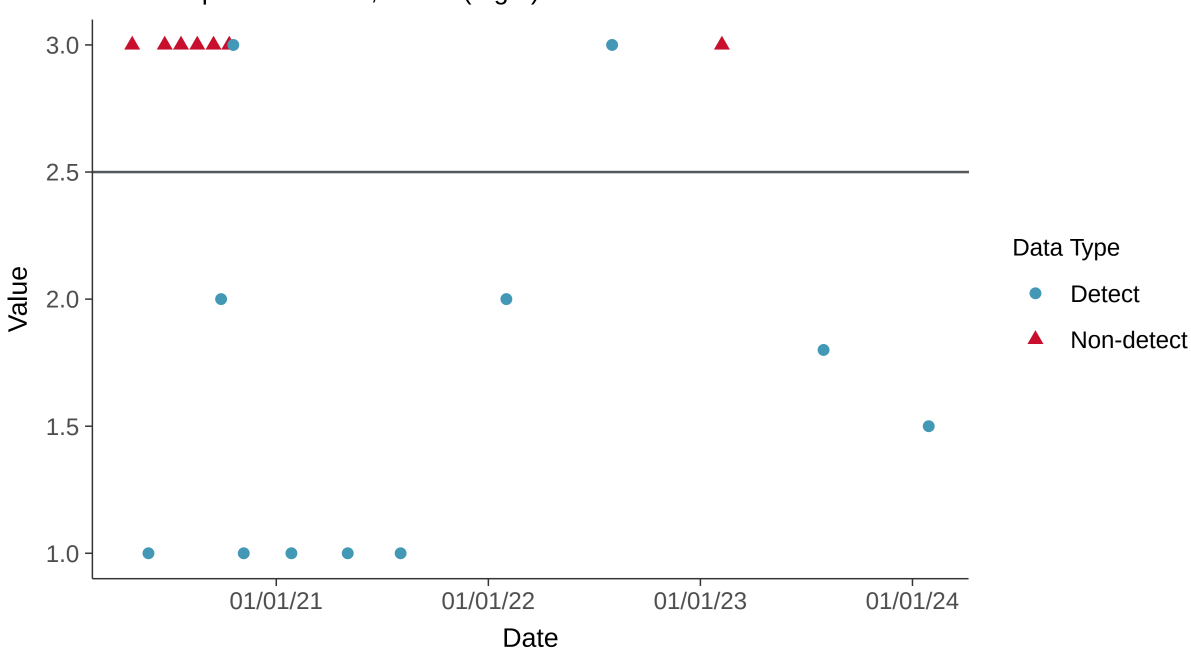
Normal Q-Q plot using ROS Imputed Estimates

Total Suspended Solids, MW-4 (mg/L)



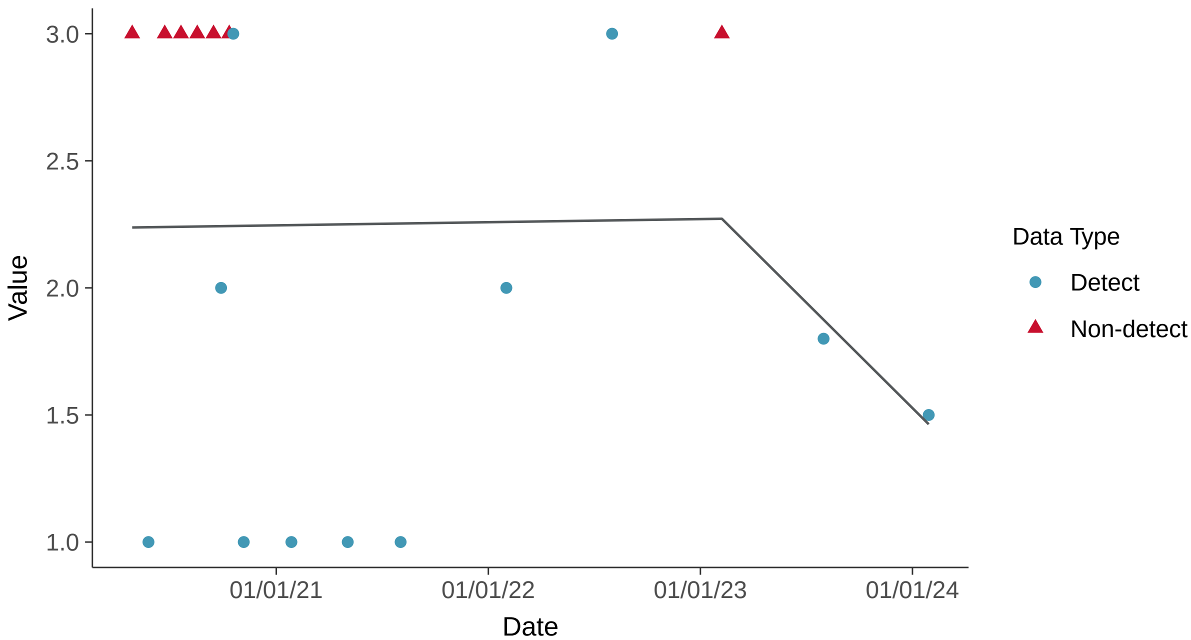
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Total Suspended Solids, MW-4 (mg/L)



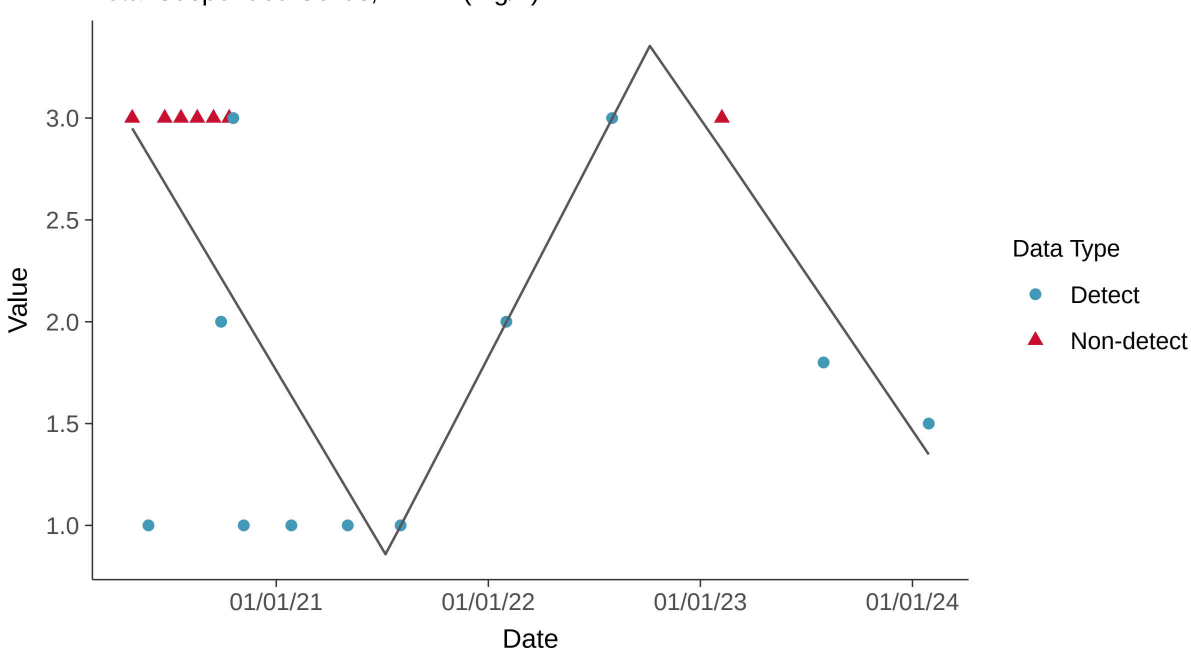
Trend Regression: Piecewise Linear-Linear

Total Suspended Solids, MW-4 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Total Suspended Solids, MW-4 (mg/L)

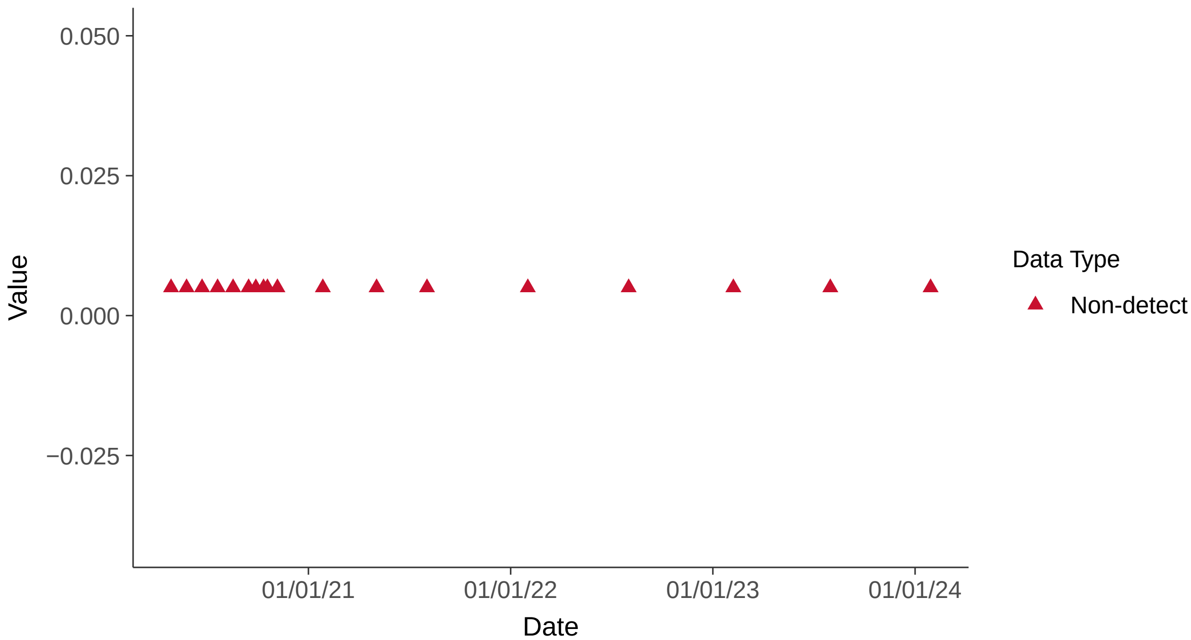


Part 115: Copper, MW-4

ID: 04_5_37

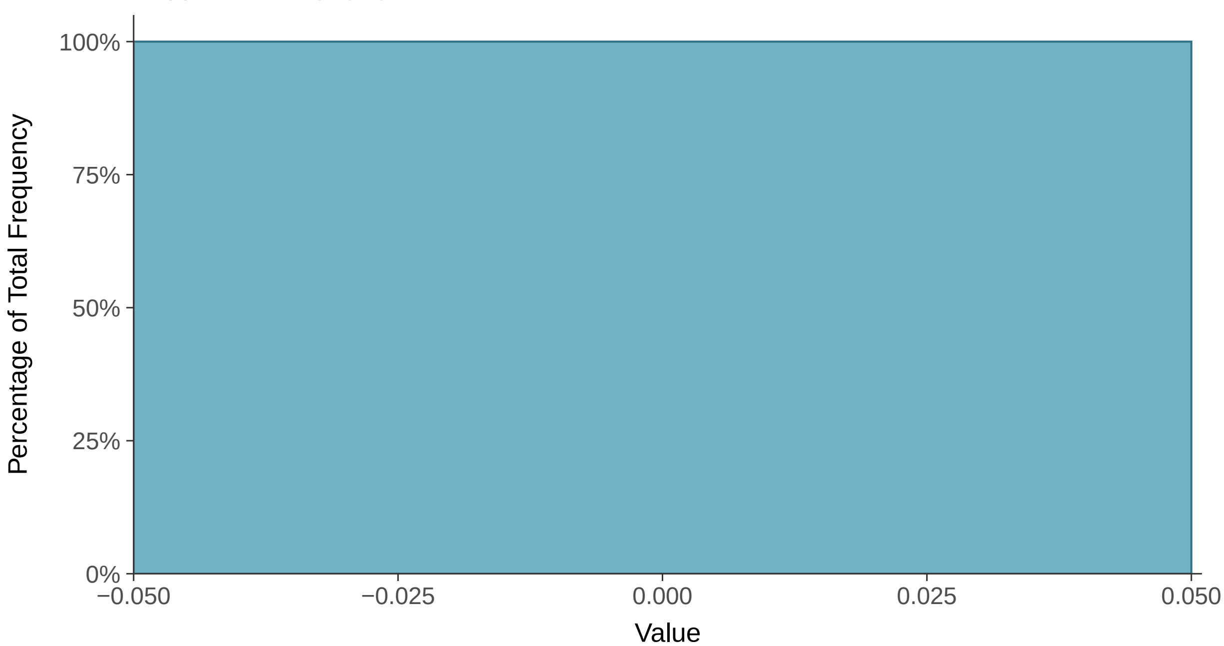
Scatter Plot

Copper, MW-4 (mg/L)



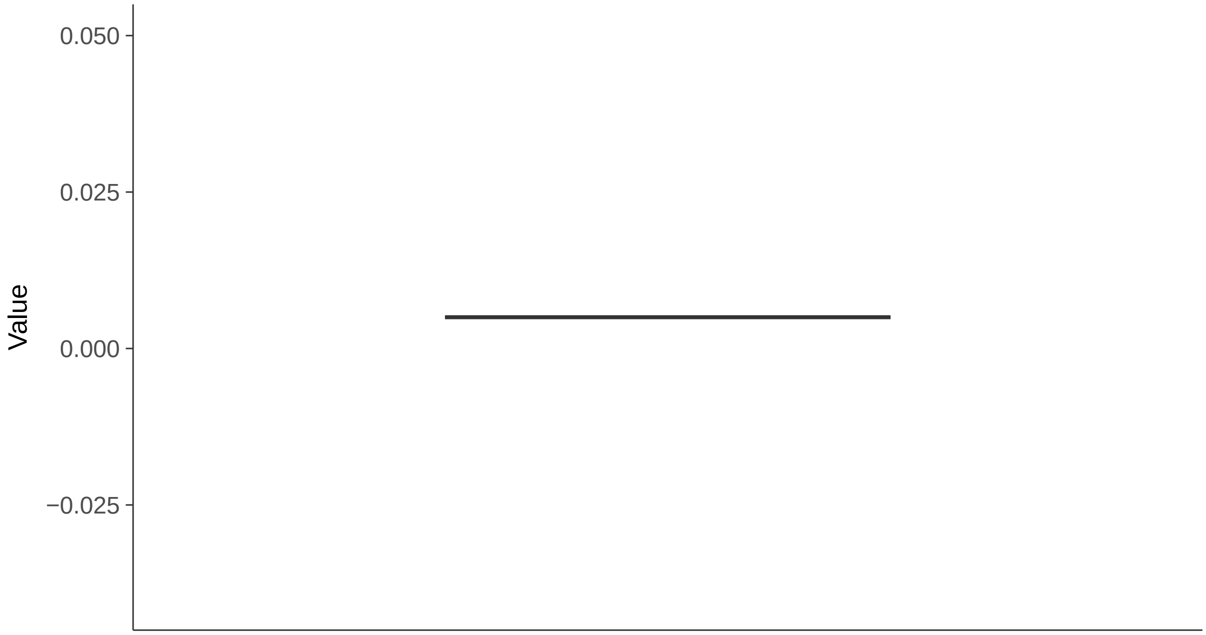
Histogram

Copper, MW-4 (mg/L)



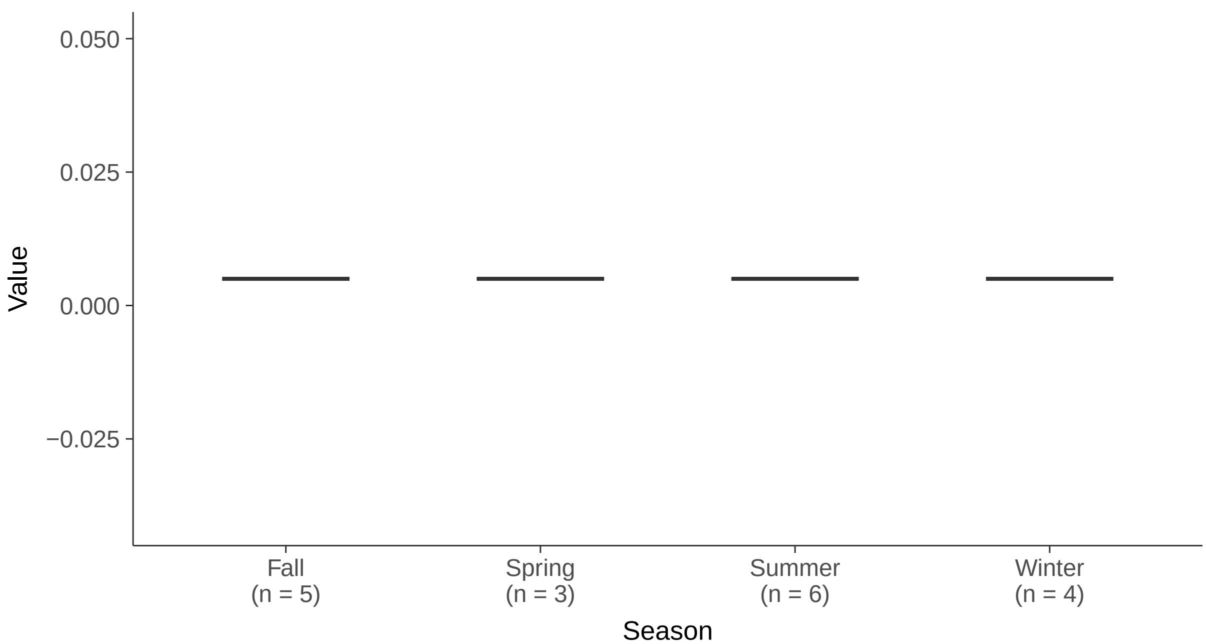
Boxplot

Copper, MW-4 (mg/L)



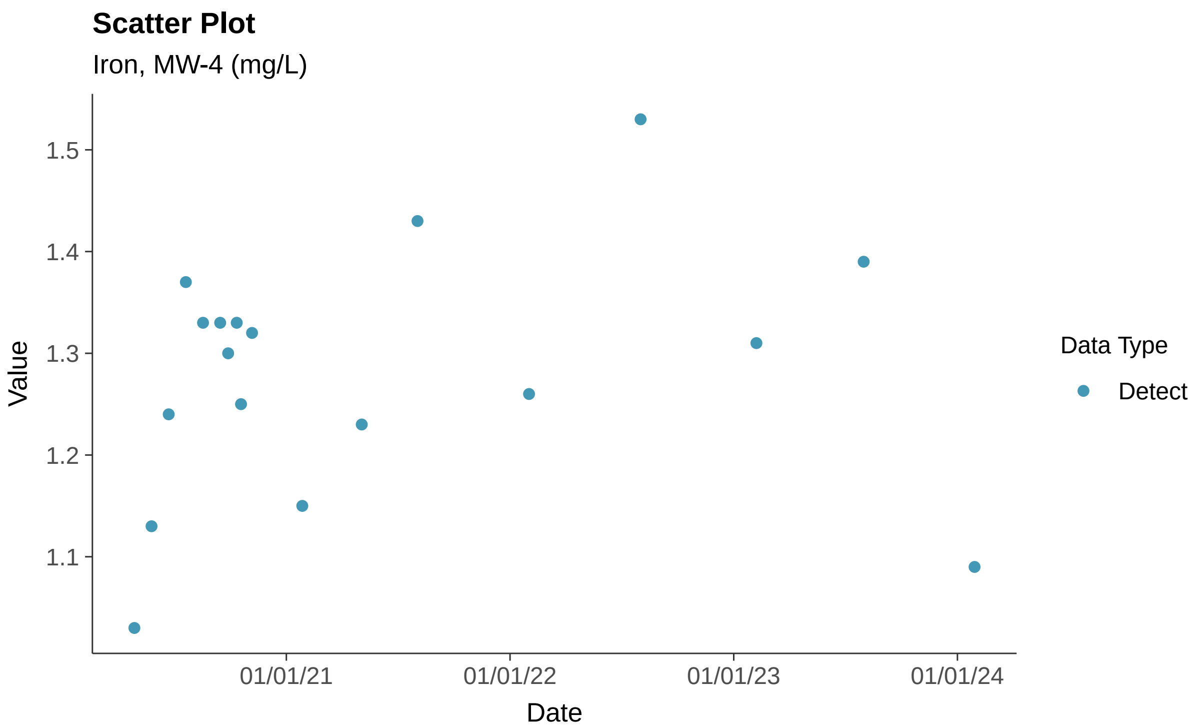
Boxplot by Season

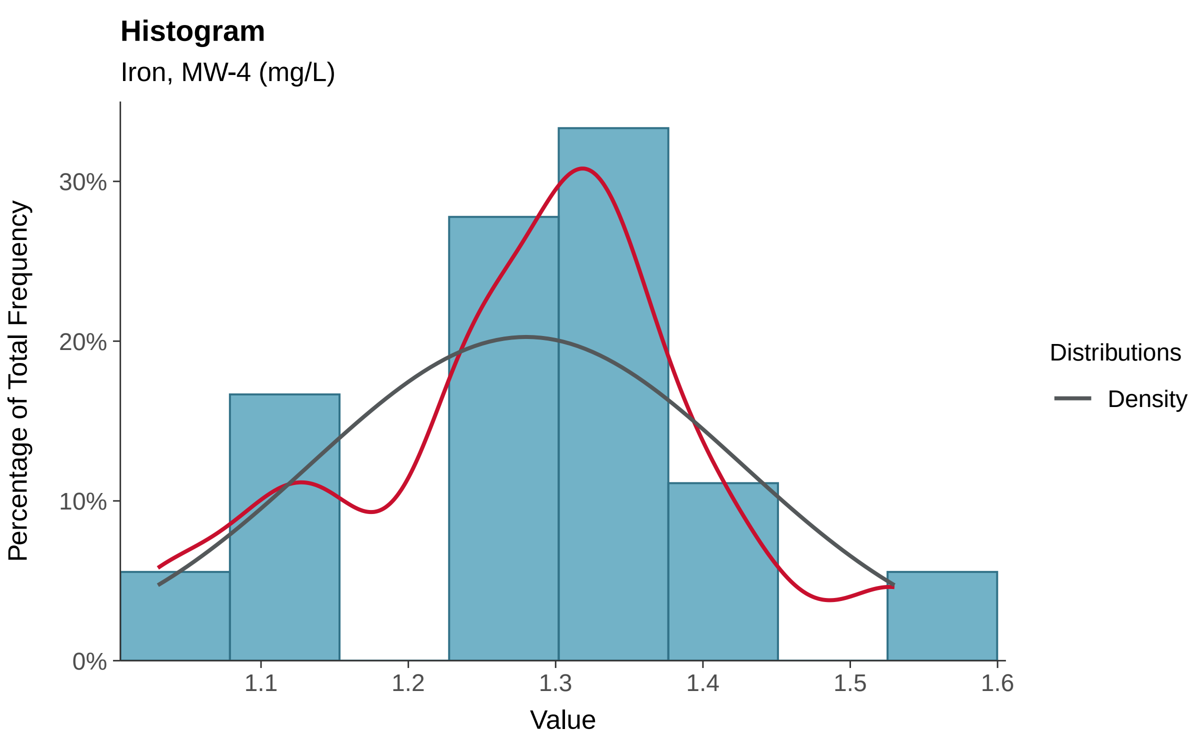
Copper, MW-4 (mg/L)



Part 115: Iron, MW-4

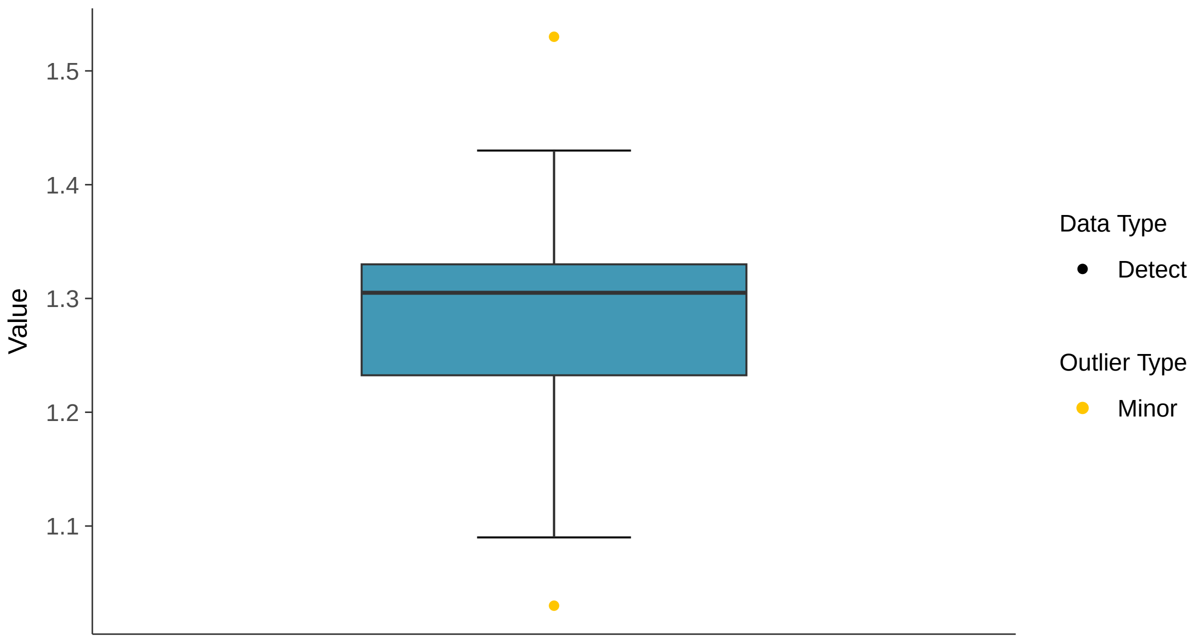
ID: 04_5_38





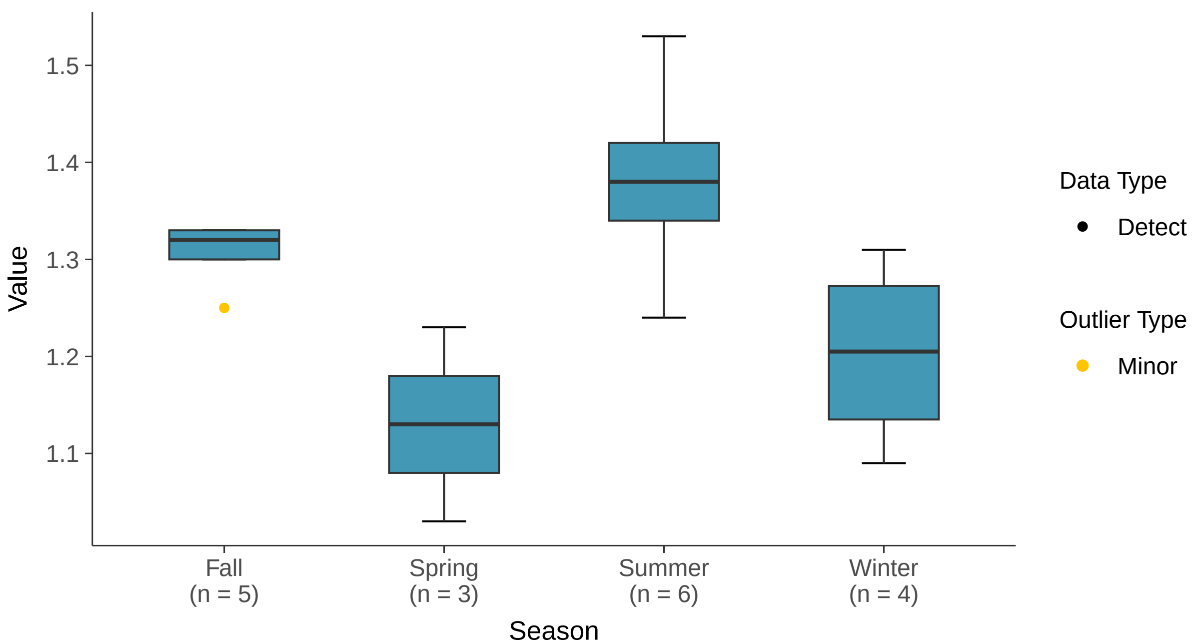
Boxplot

Iron, MW-4 (mg/L)



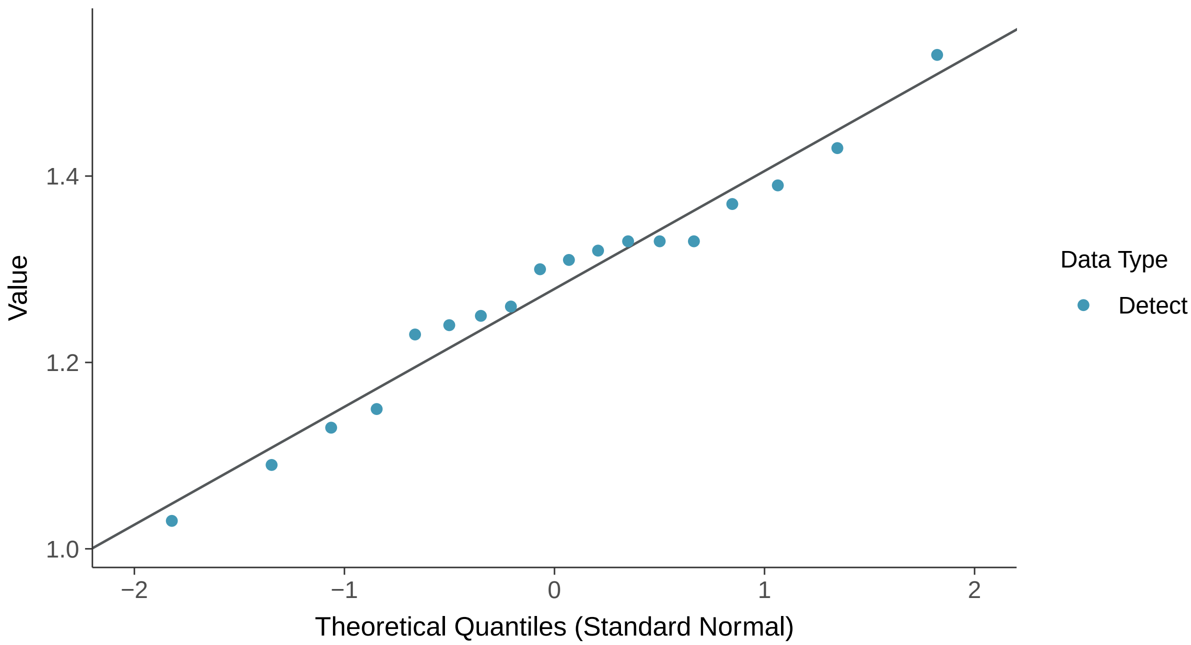
Boxplot by Season

Iron, MW-4 (mg/L)



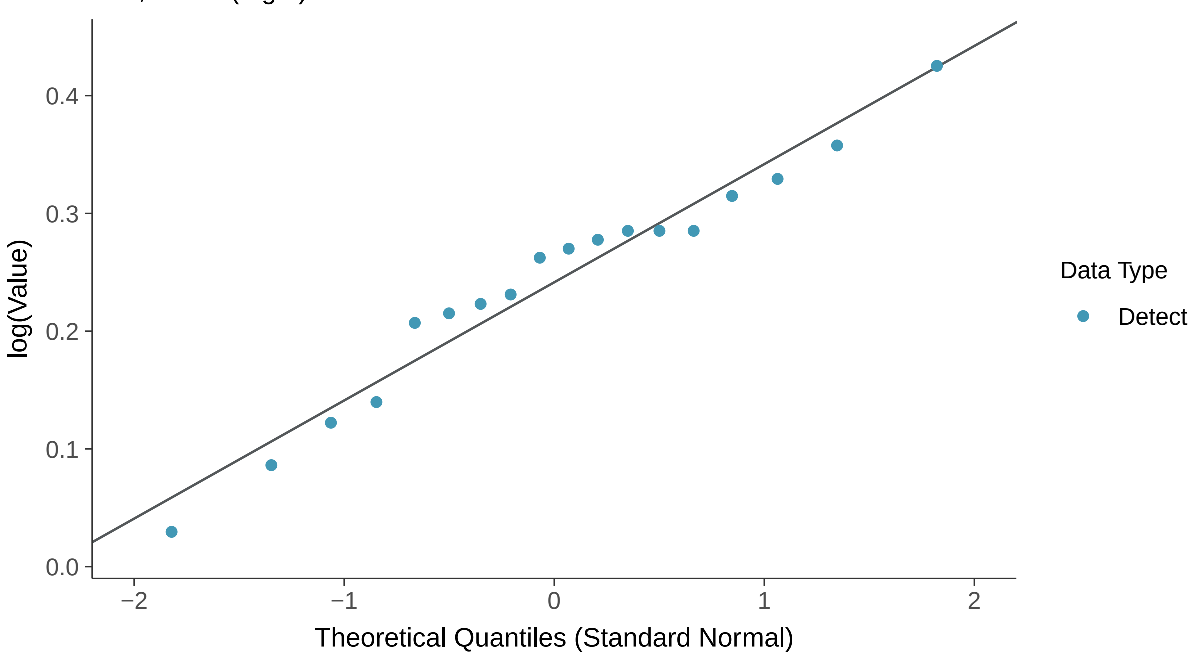
Normal Q-Q plot

Iron, MW-4 (mg/L)



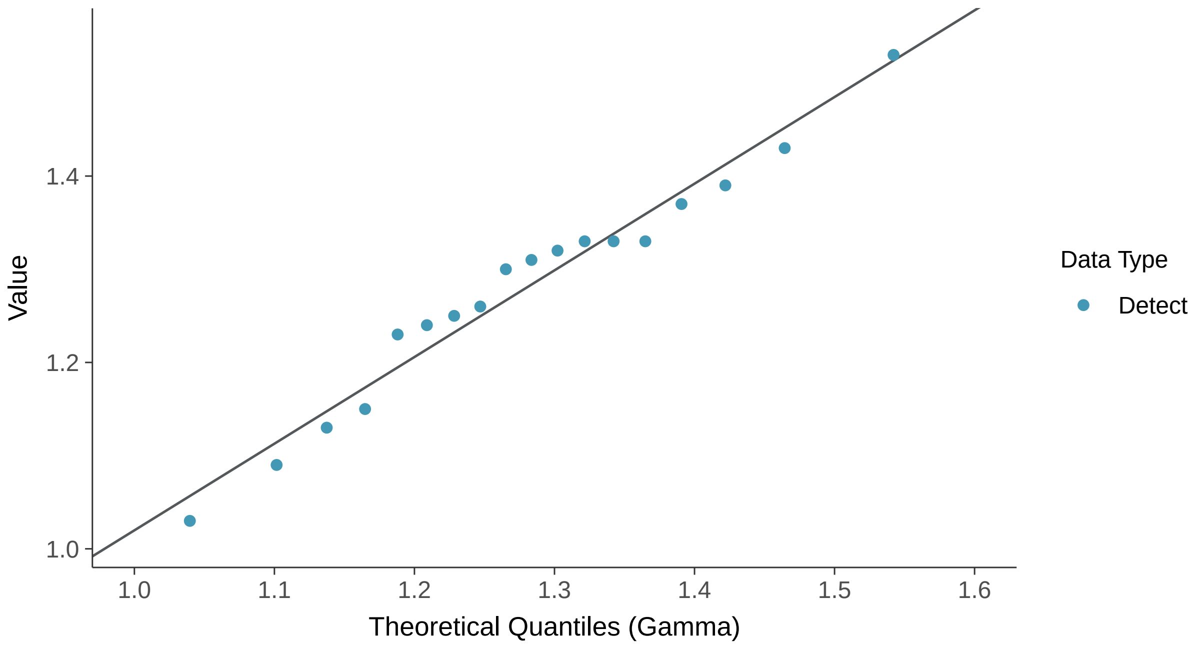
Lognormal Q-Q plot

Iron, MW-4 (mg/L)



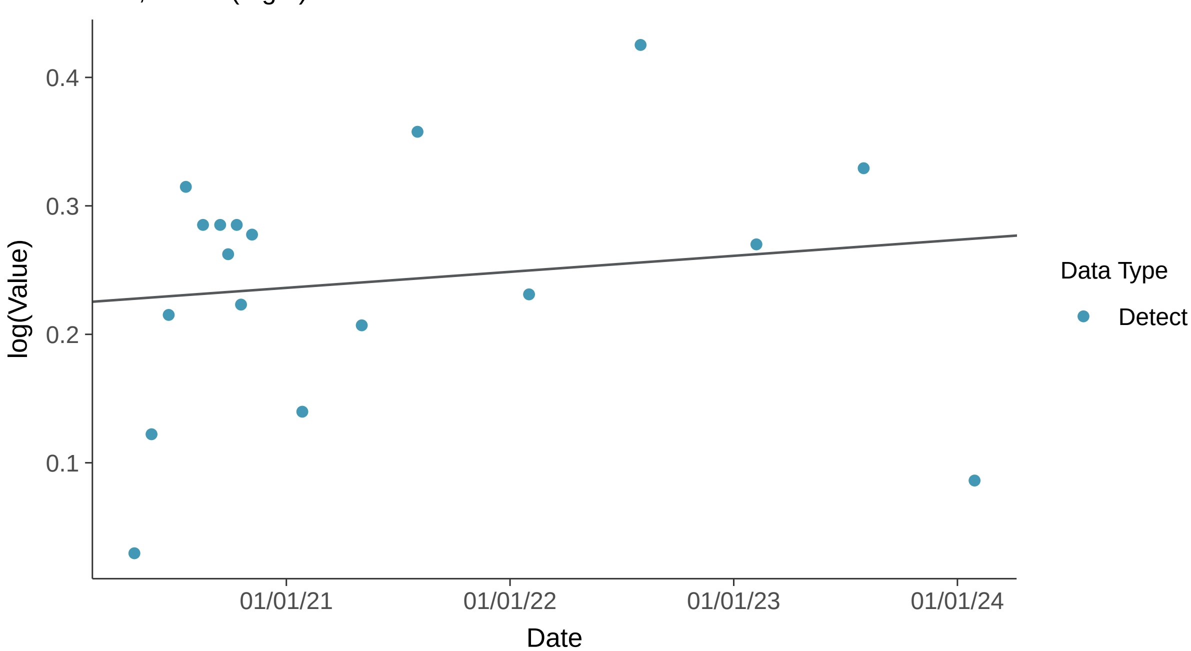
Gamma Q-Q plot

Iron, MW-4 (mg/L)



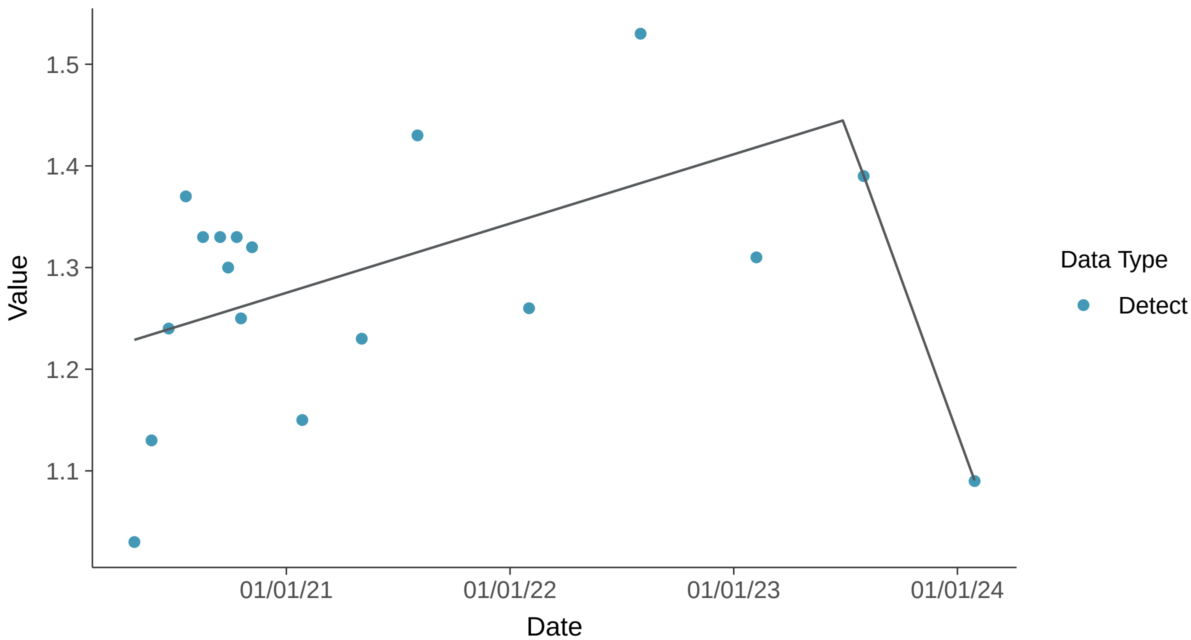
Trend Regression: Lognormal MLE

Iron, MW-4 (mg/L)



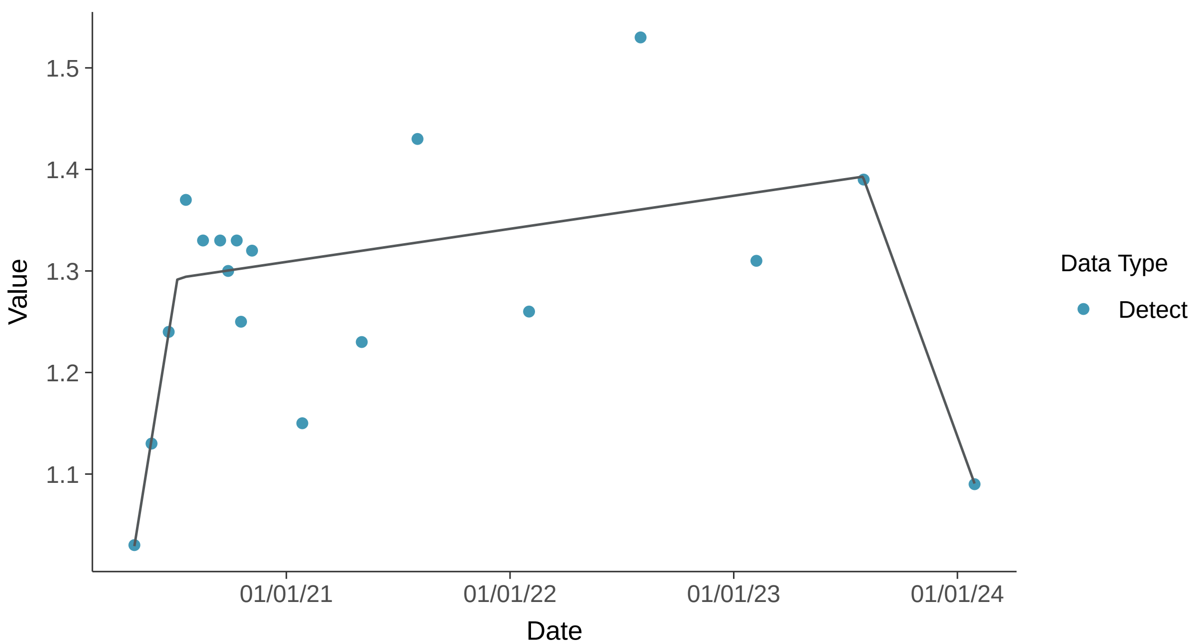
Trend Regression: Piecewise Linear-Linear

Iron, MW-4 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Iron, MW-4 (mg/L)

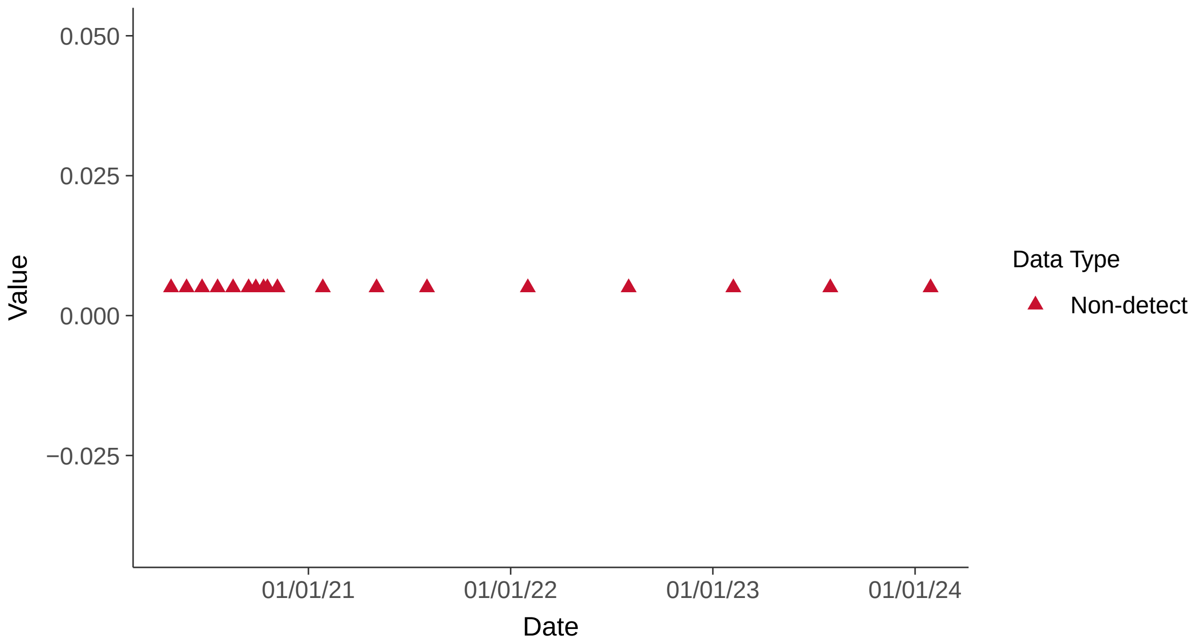


Part 115: Nickel, MW-4

ID: 04_5_39

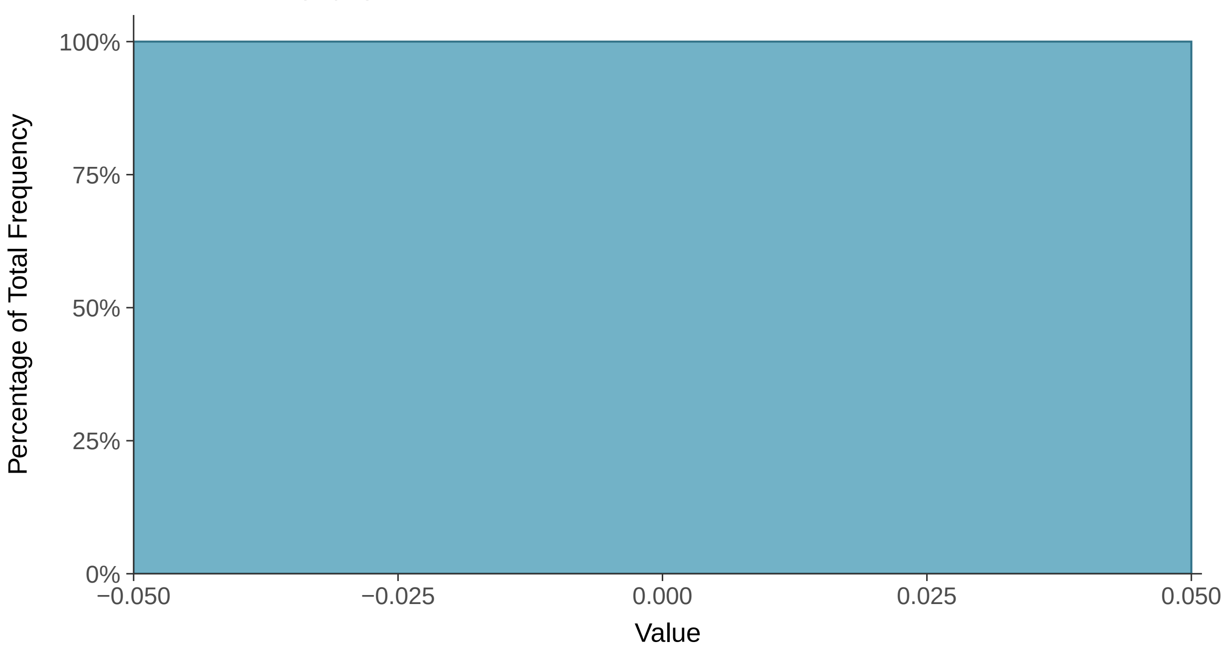
Scatter Plot

Nickel, MW-4 (mg/L)



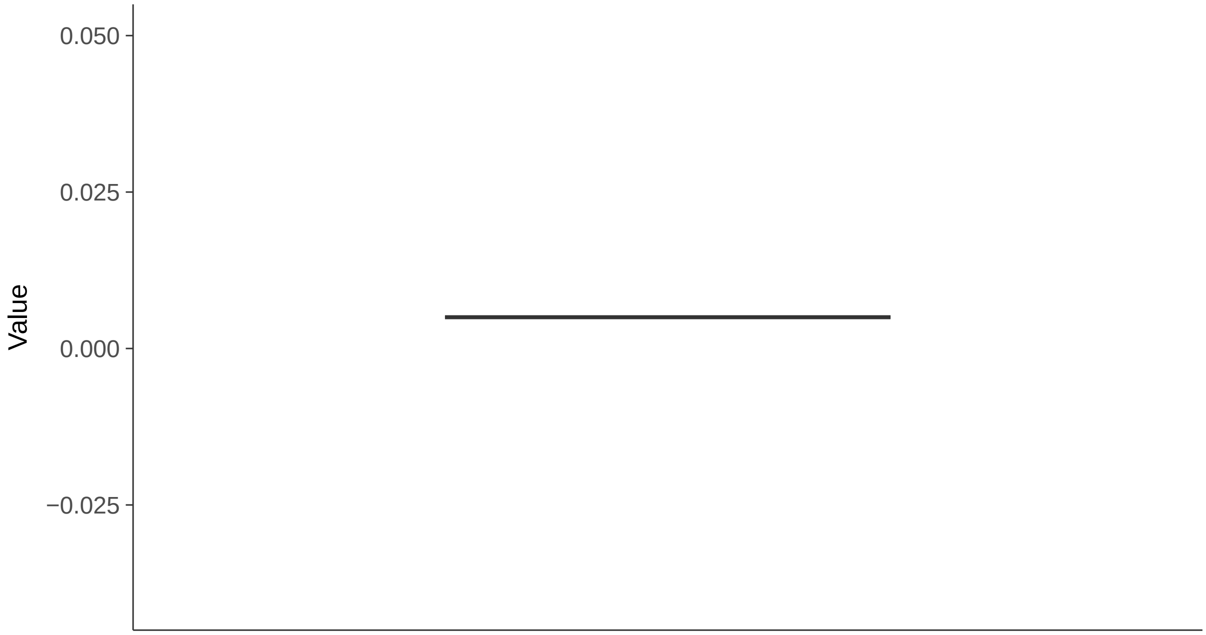
Histogram

Nickel, MW-4 (mg/L)



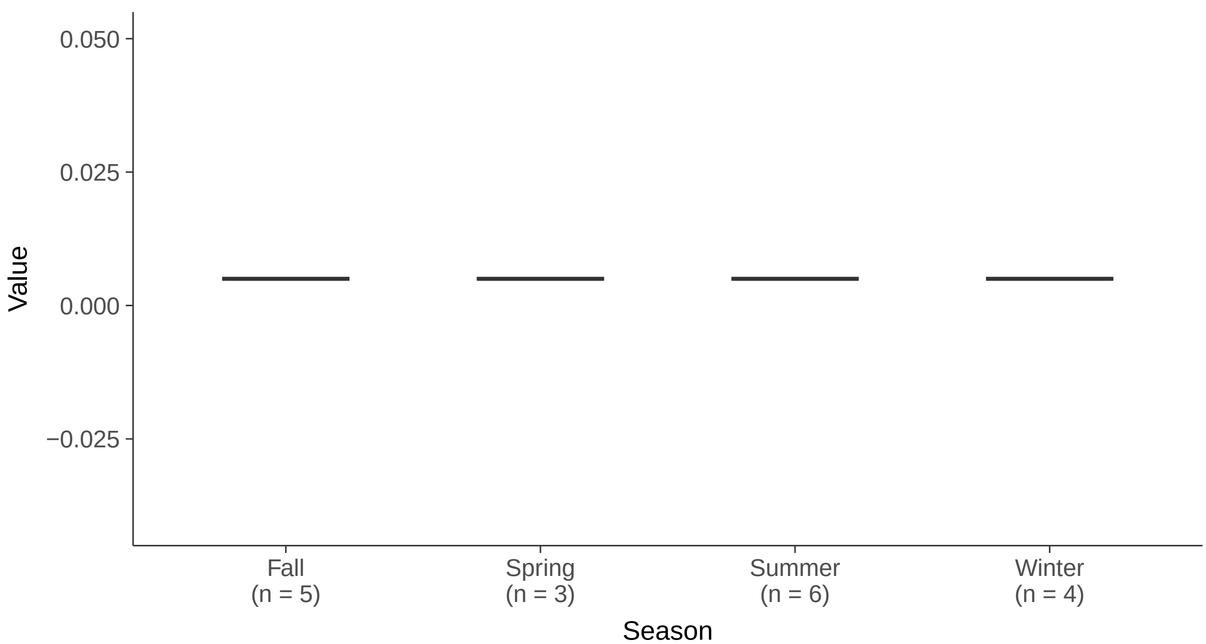
Boxplot

Nickel, MW-4 (mg/L)



Boxplot by Season

Nickel, MW-4 (mg/L)

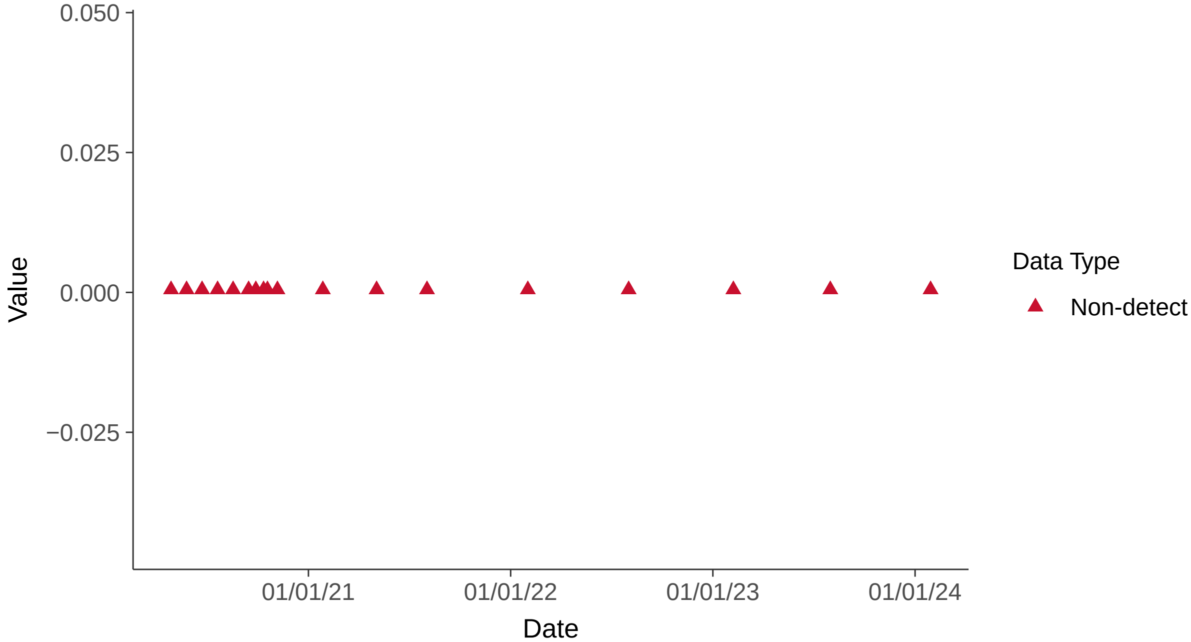


Part 115: Silver, MW-4

ID: 04_5_40

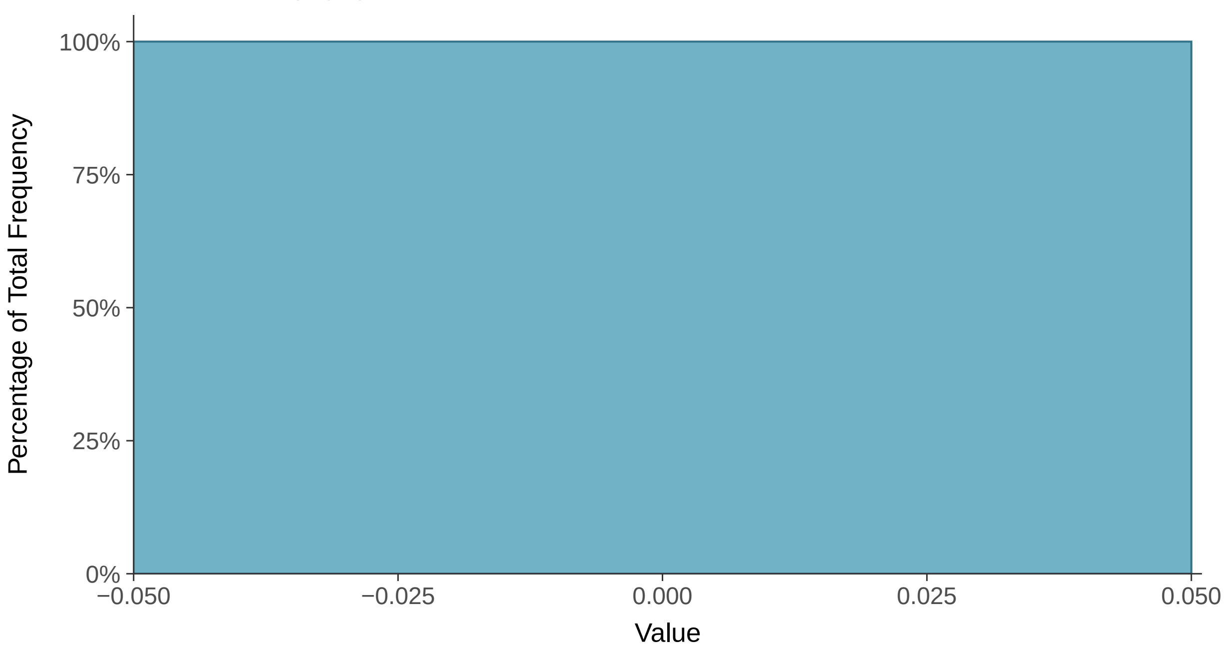
Scatter Plot

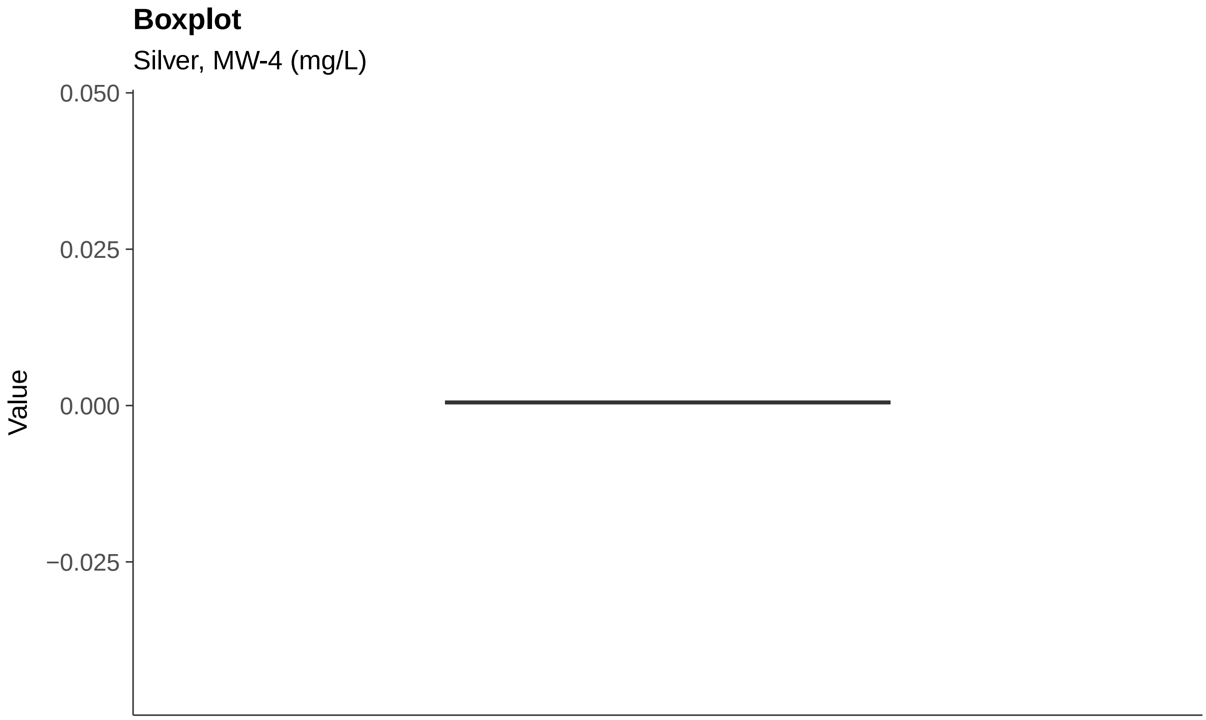
Silver, MW-4 (mg/L)

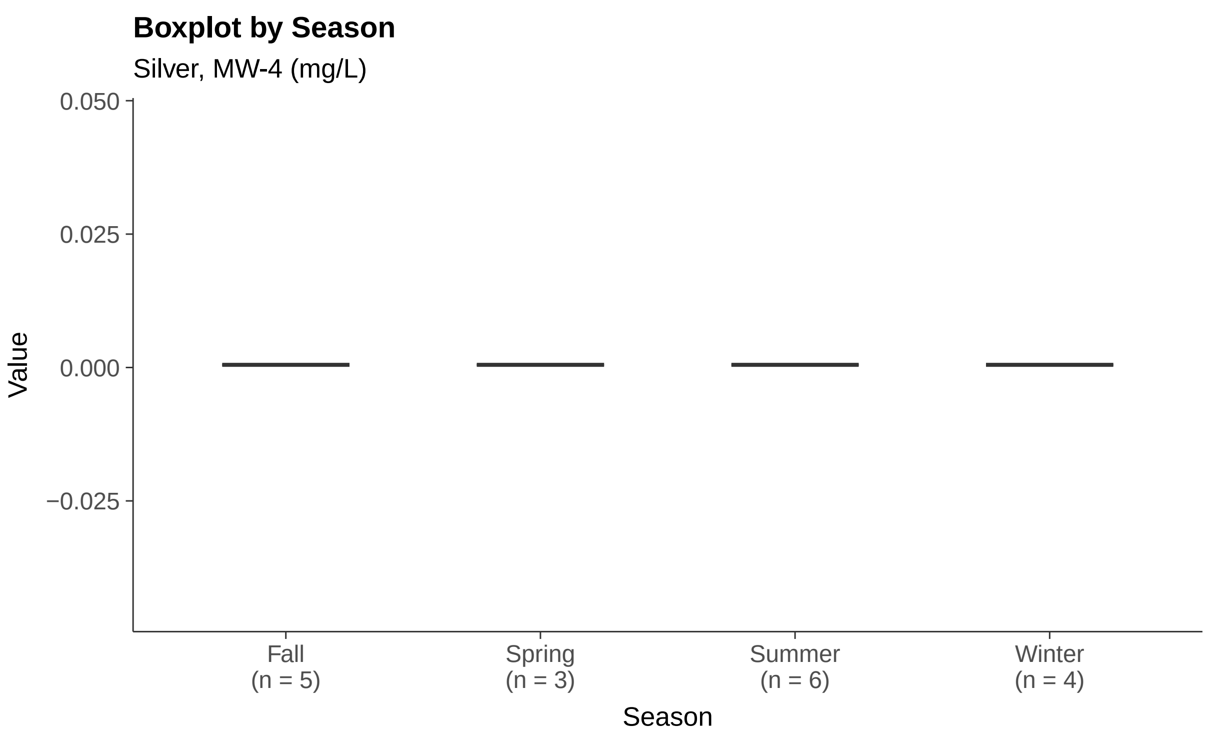


Histogram

Silver, MW-4 (mg/L)




Boxplot
Silver, MW-4 (mg/L)
Value
0.050
0.025
0.000
−0.025

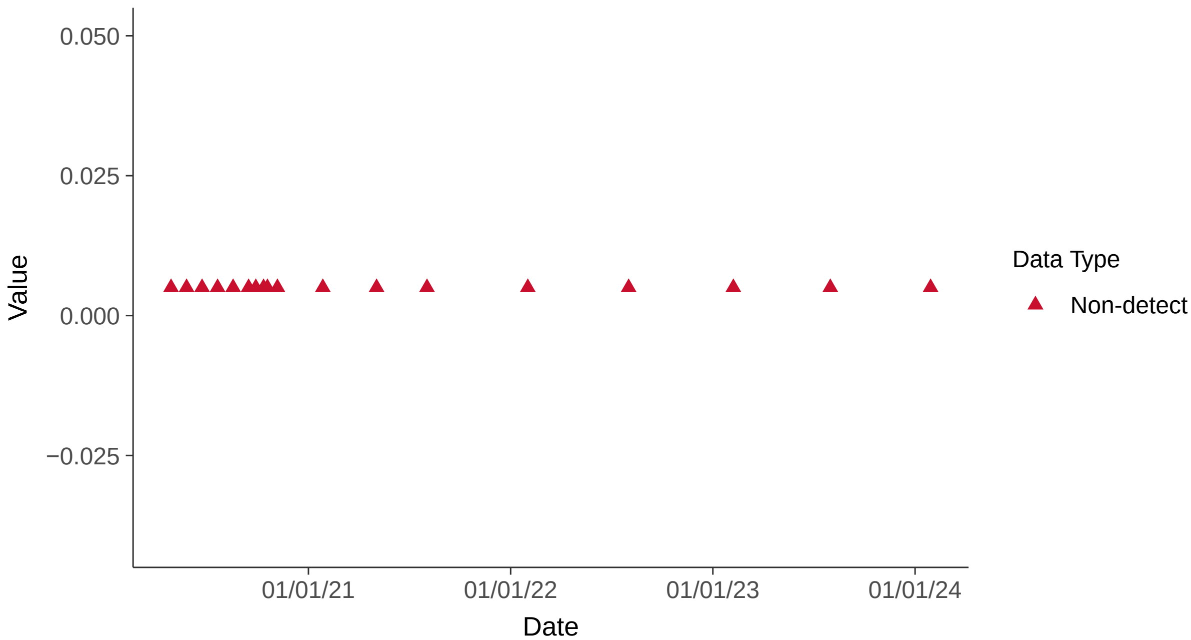

Boxplot by Season
Silver, MW-4 (mg/L)
Value
0.050
0.025
0.000
−0.025
Fall
(n = 5)
Spring
(n = 3)
Summer
(n = 6)
Winter
(n = 4)
Season

Part 115: Vanadium, MW-4

ID: 04_5_41

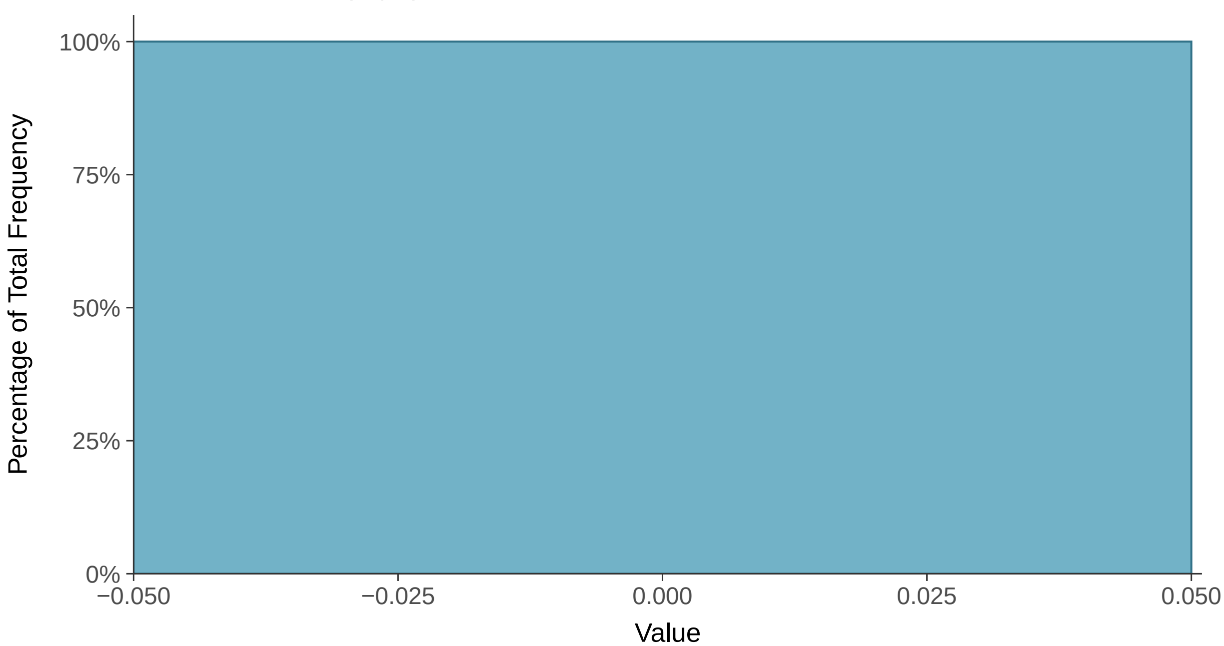
Scatter Plot

Vanadium, MW-4 (mg/L)



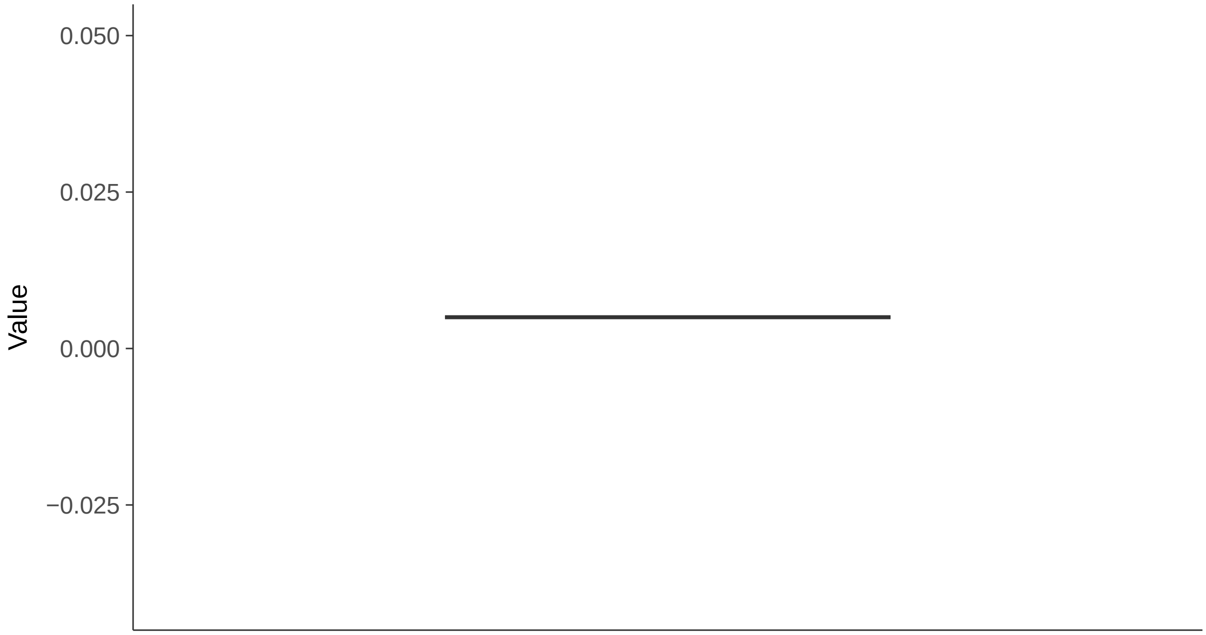
Histogram

Vanadium, MW-4 (mg/L)



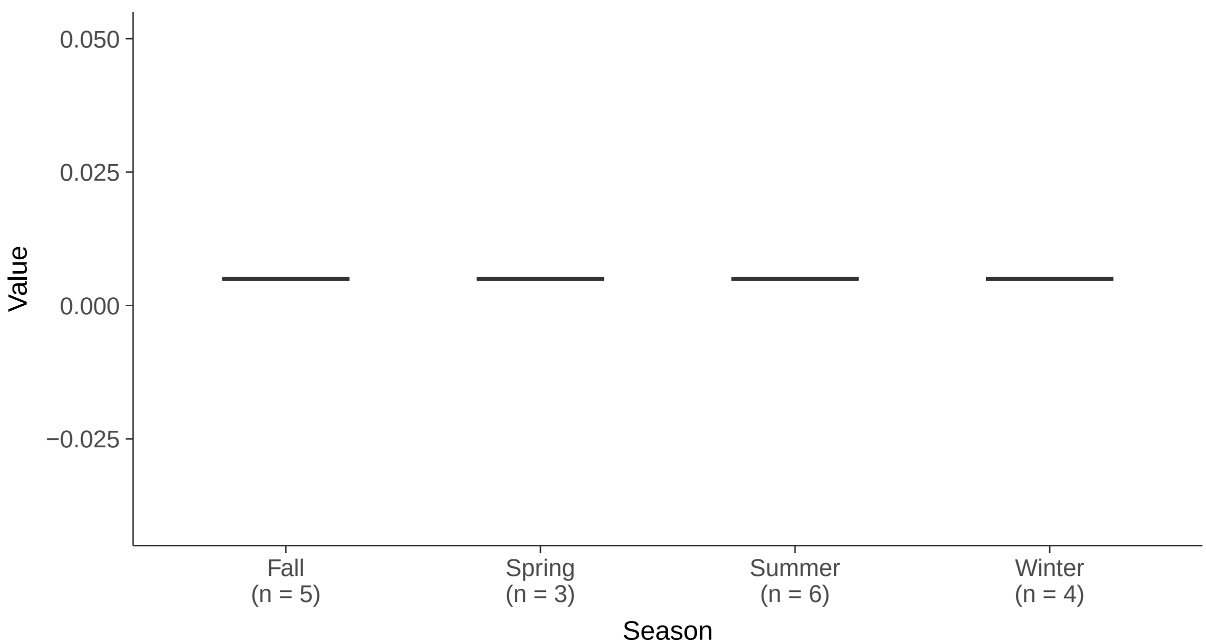
Boxplot

Vanadium, MW-4 (mg/L)



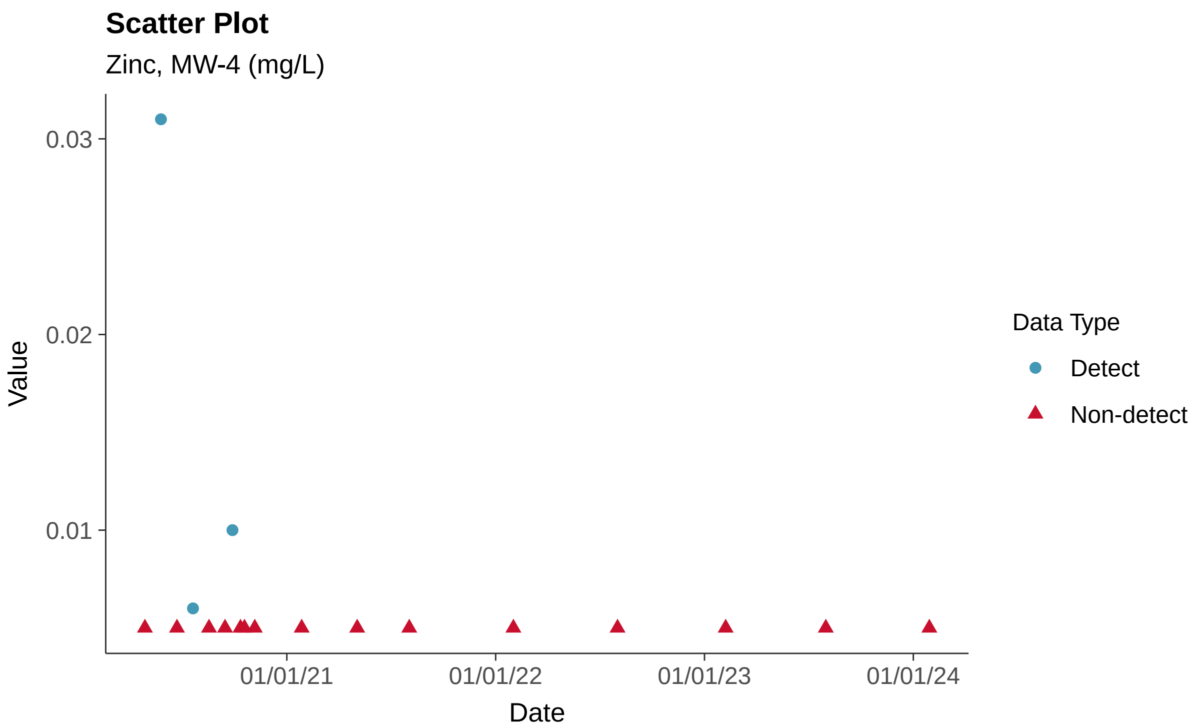
Boxplot by Season

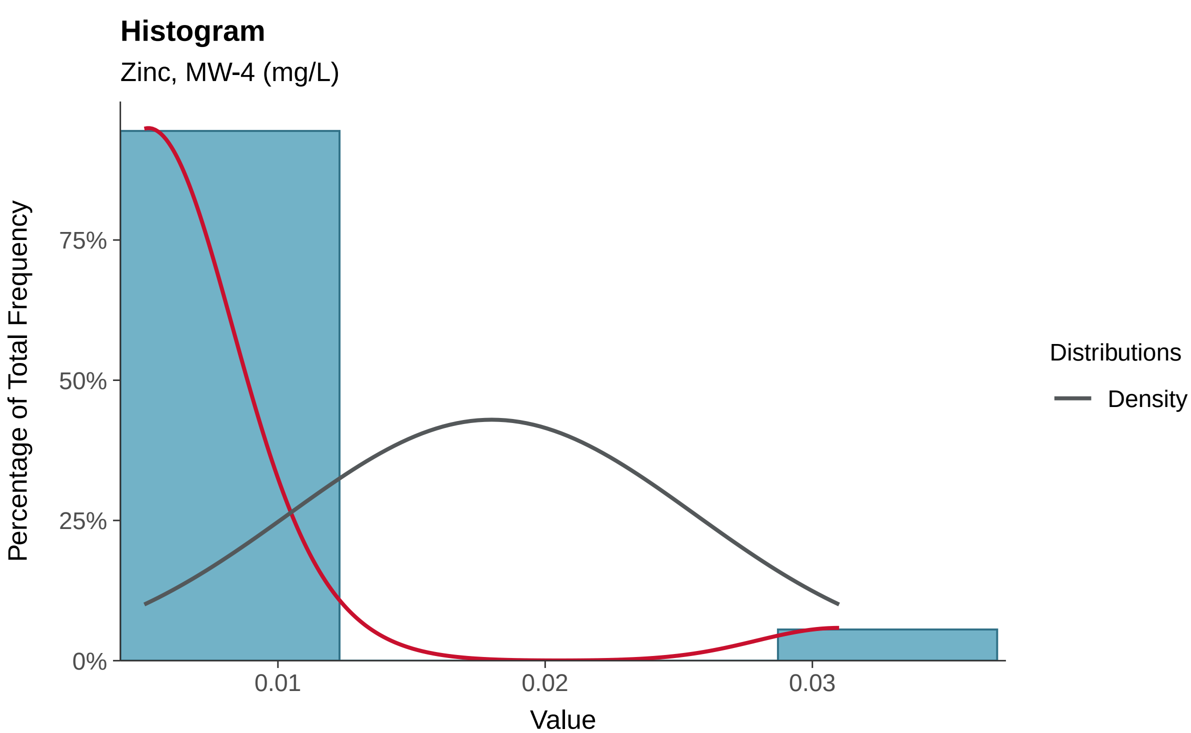
Vanadium, MW-4 (mg/L)



Part 115: Zinc, MW-4

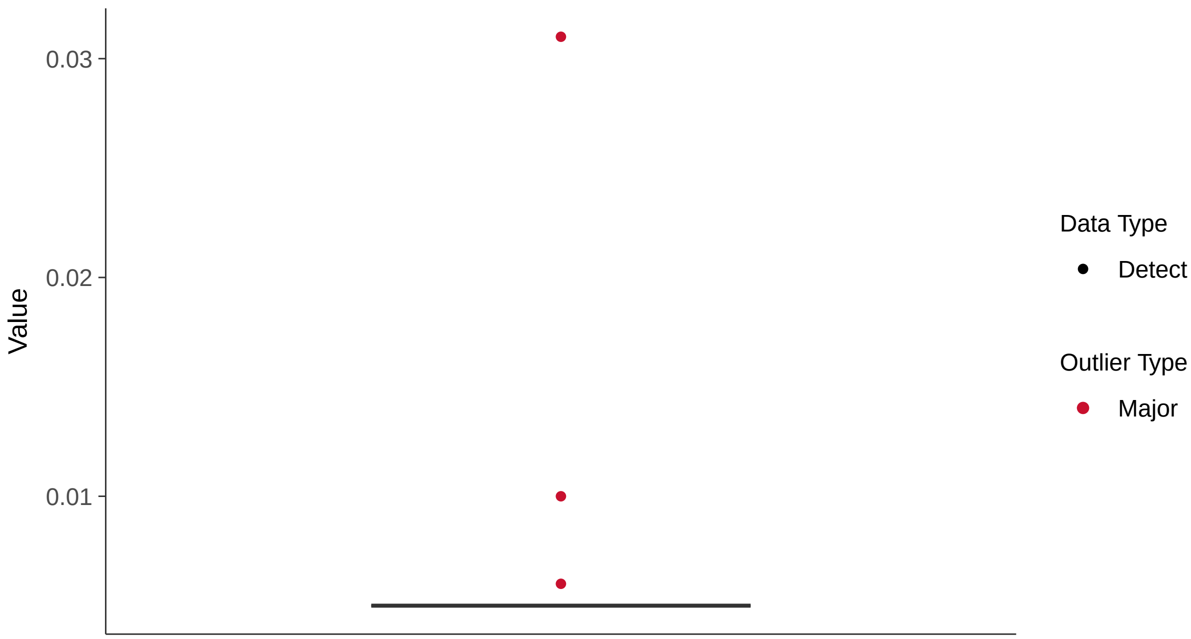
ID: 04_5_42





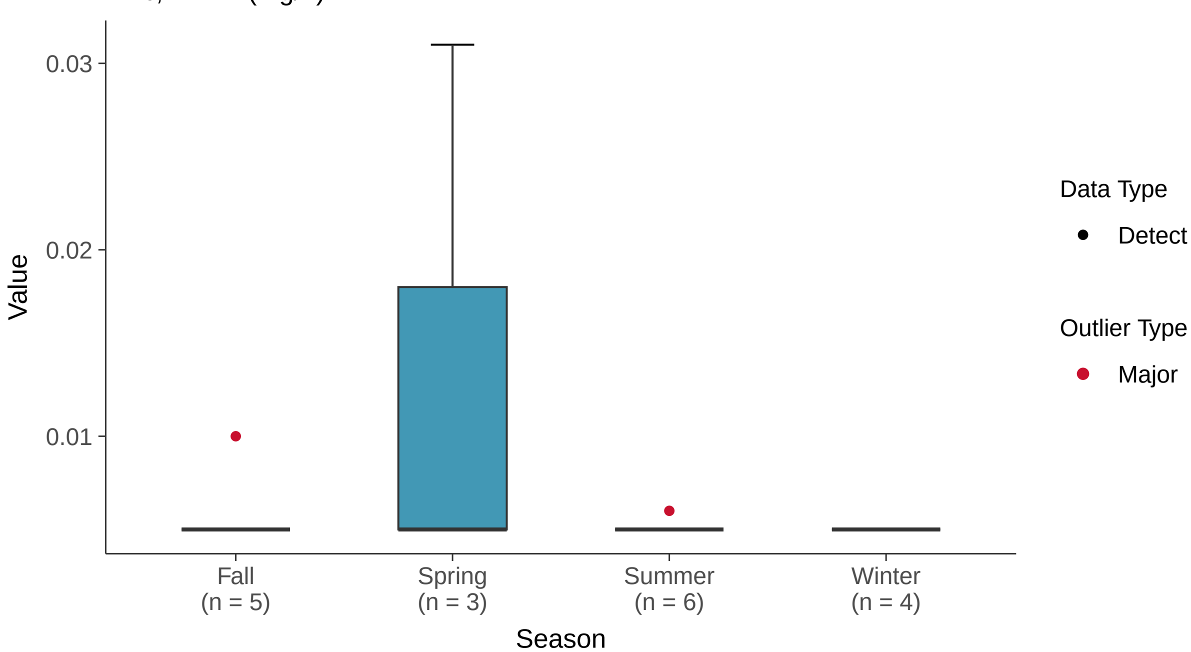
Boxplot

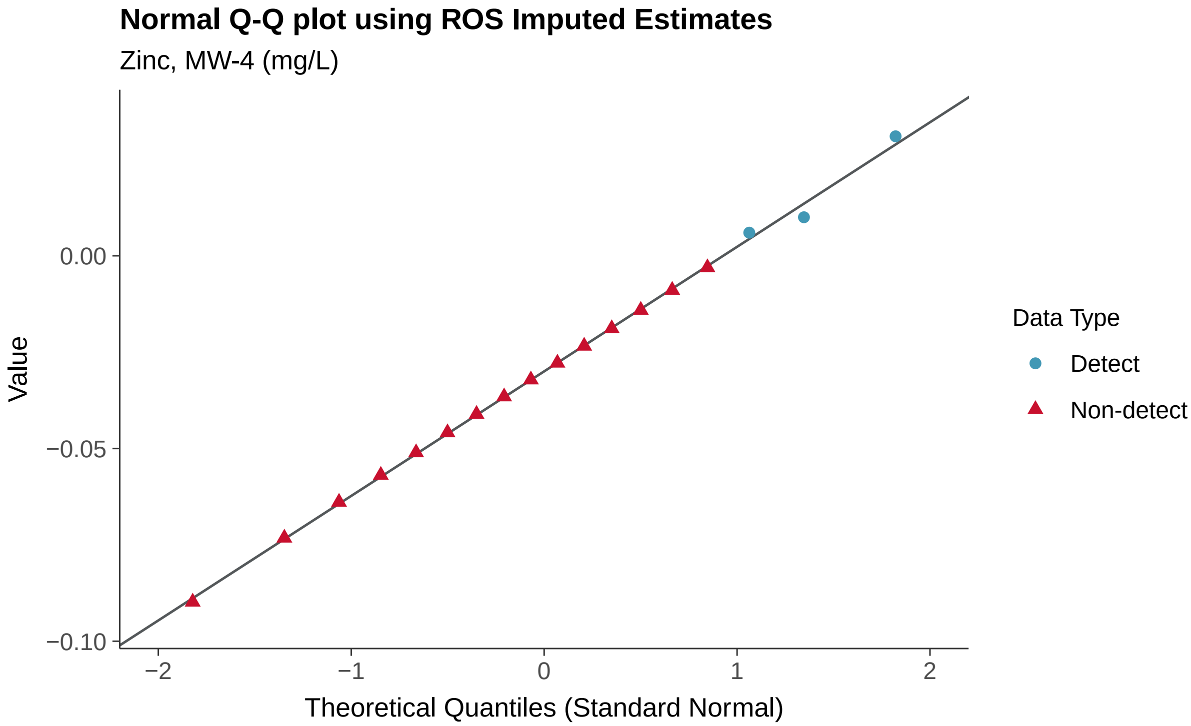
Zinc, MW-4 (mg/L)

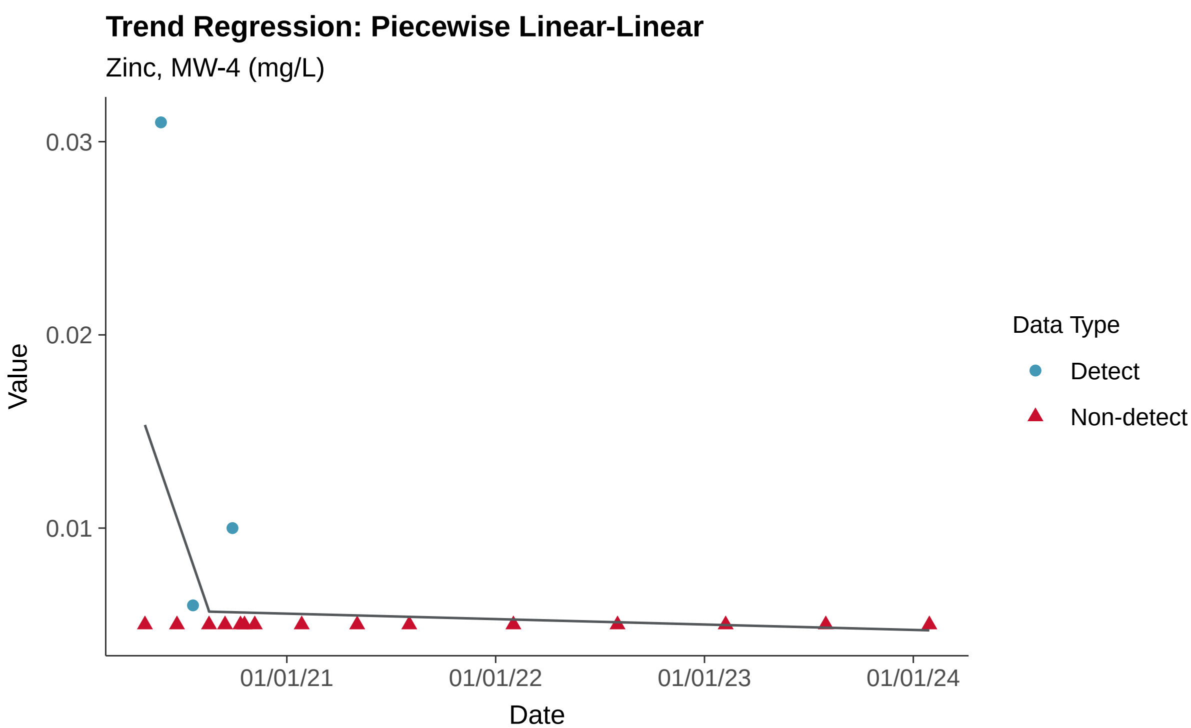


Boxplot by Season

Zinc, MW-4 (mg/L)

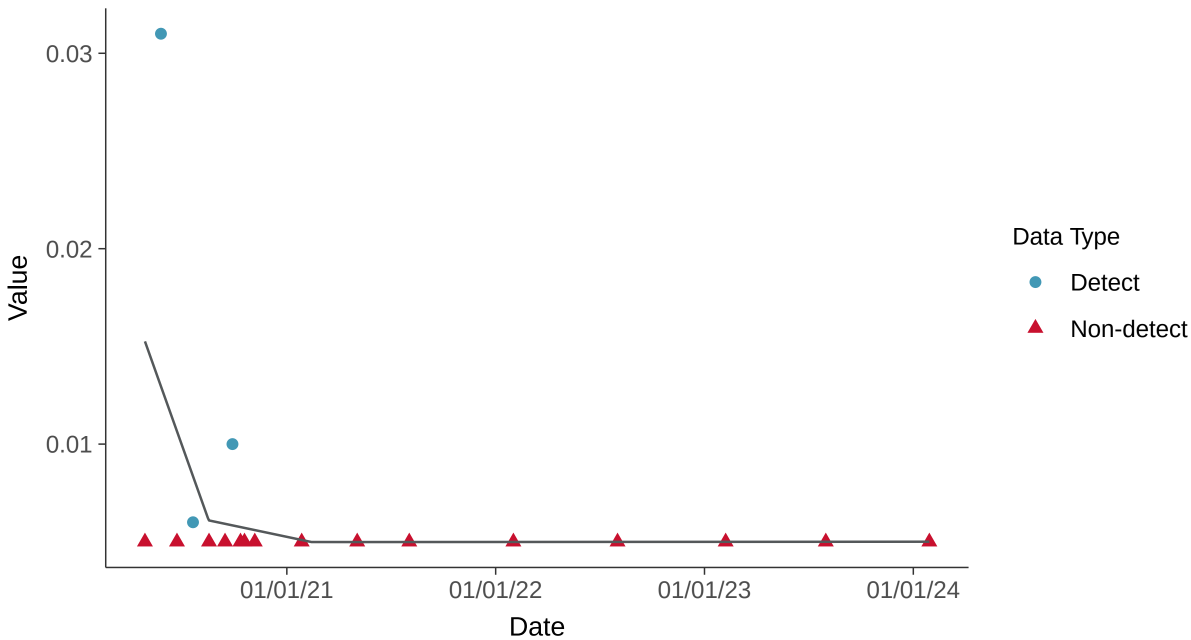



Normal Q-Q plot using ROS Imputed Estimates
Zinc, MW-4 (mg/L)
Value
0.00
−0.05
−0.10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Zinc, MW-4 (mg/L)
Value
0.03
0.02
0.01
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

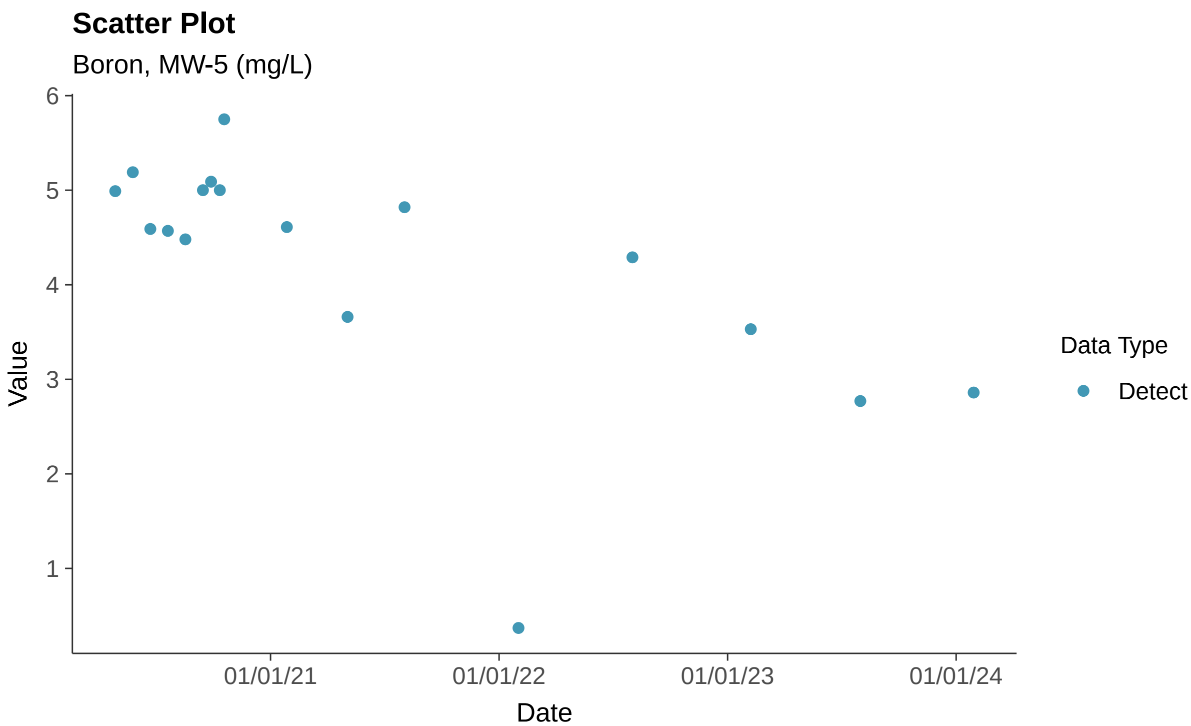
Trend Regression: Piecewise Linear-Linear-Linear

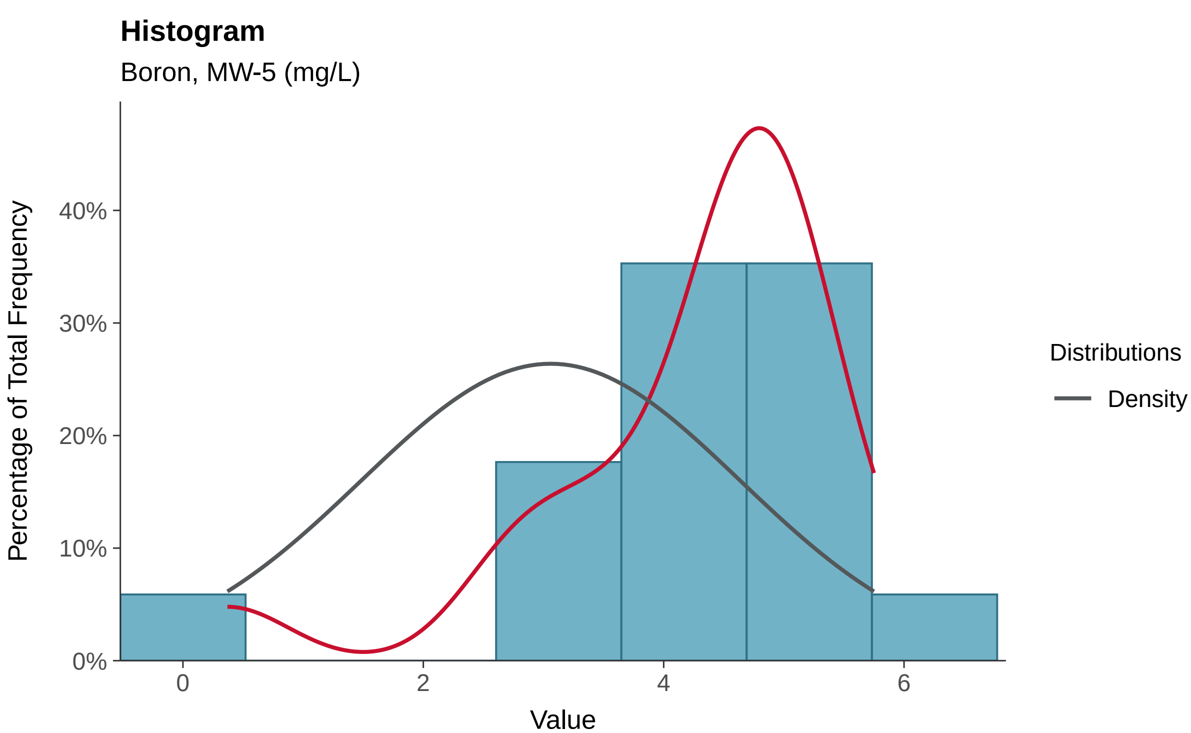
Zinc, MW-4 (mg/L)



Appendix III: Boron, MW-5

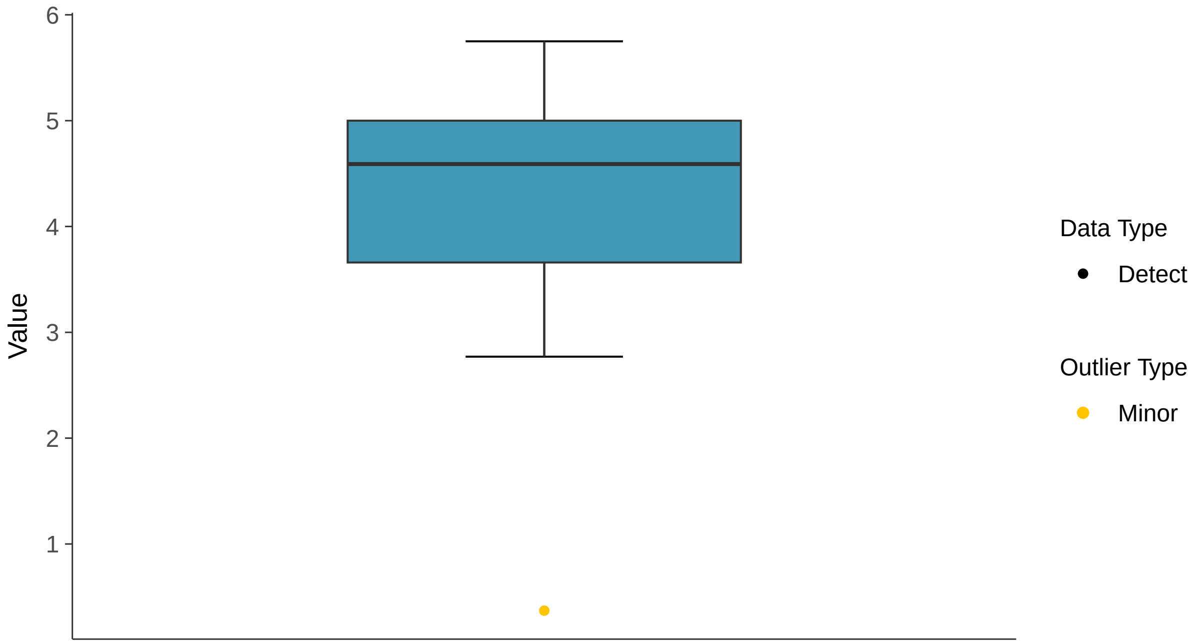
ID: 05_1_01





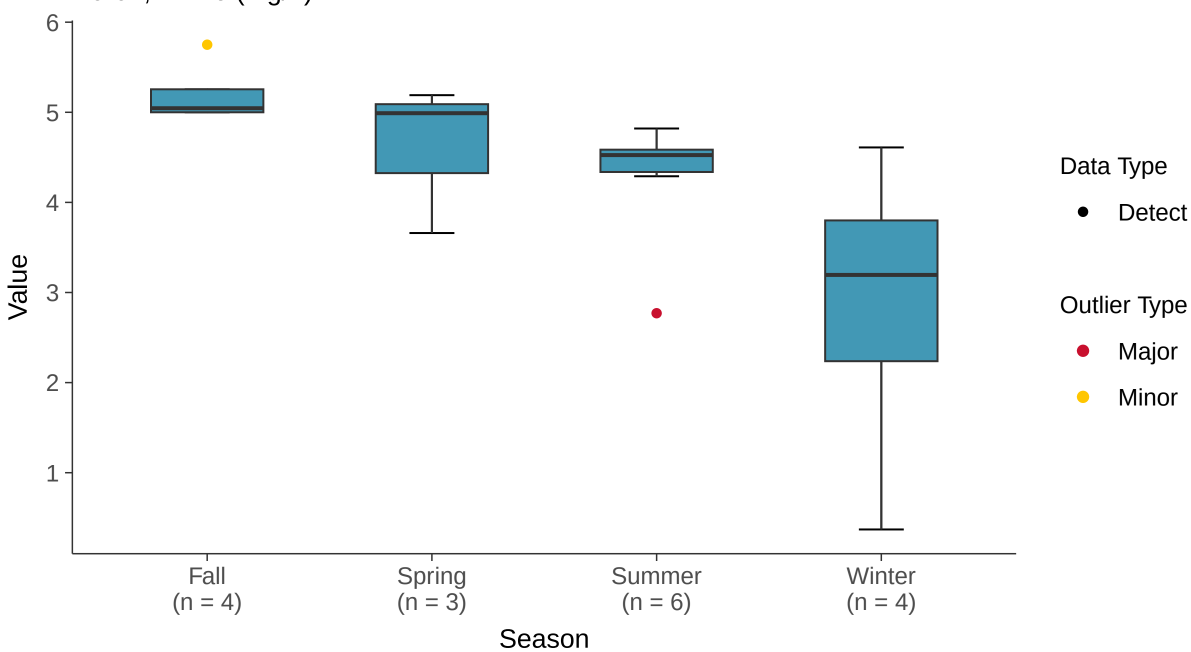
Boxplot

Boron, MW-5 (mg/L)



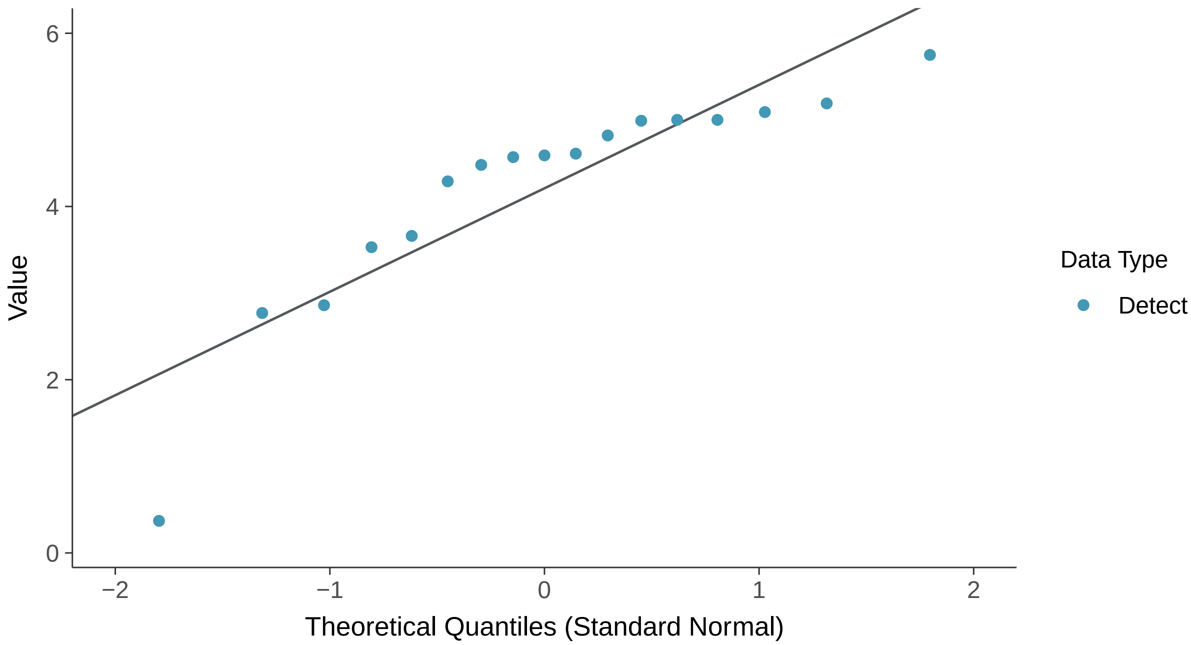
Boxplot by Season

Boron, MW-5 (mg/L)



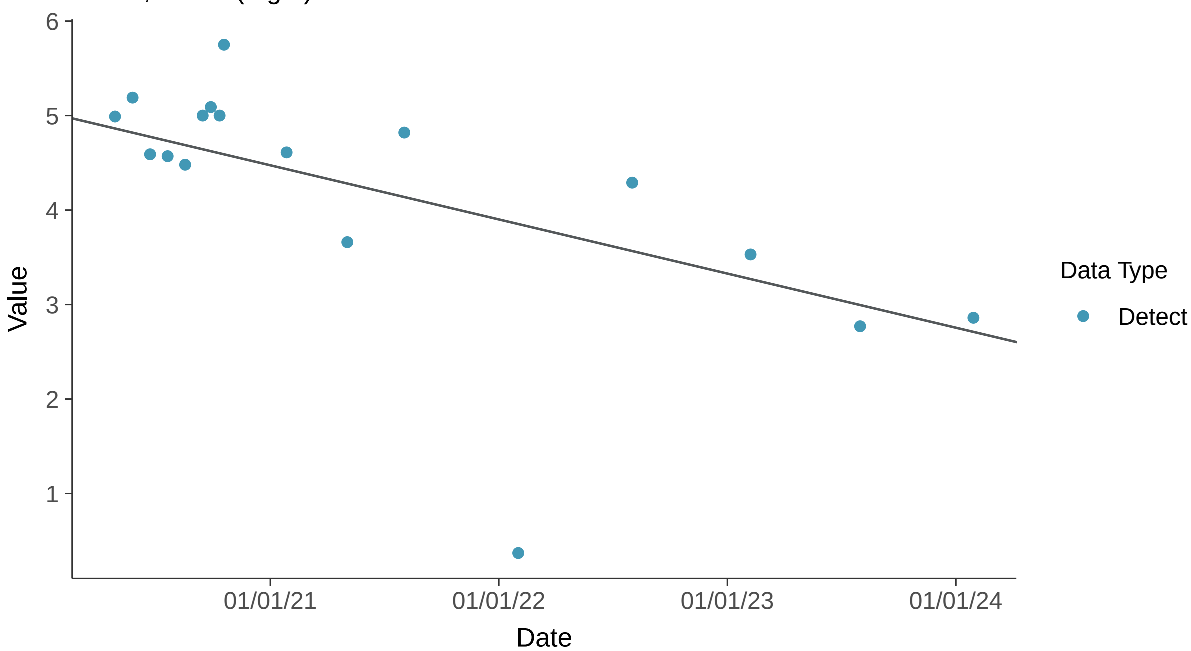
Normal Q-Q plot

Boron, MW-5 (mg/L)



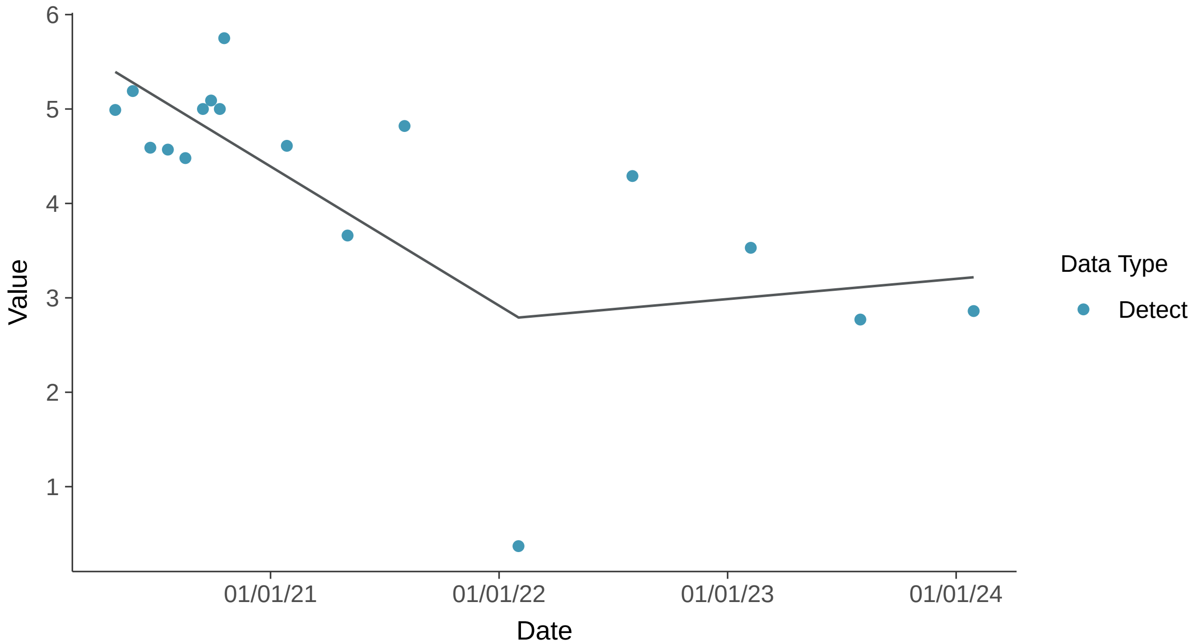
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Boron, MW-5 (mg/L)



Trend Regression: Piecewise Linear-Linear

Boron, MW-5 (mg/L)

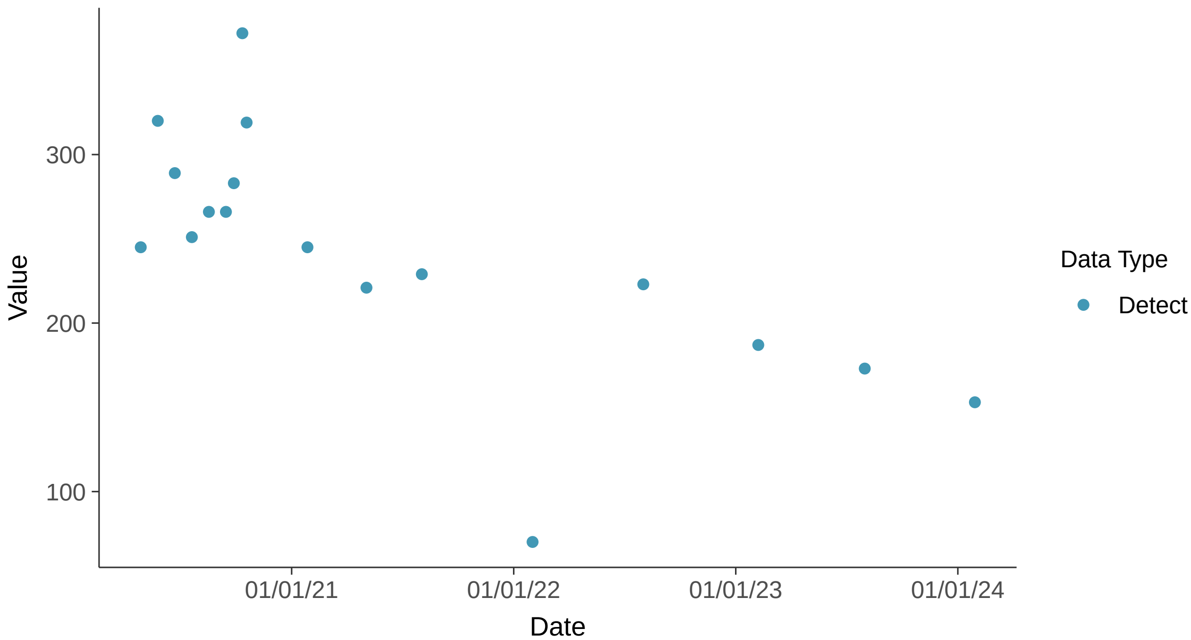


Appendix III: Calcium, MW-5

ID: 05_1_02

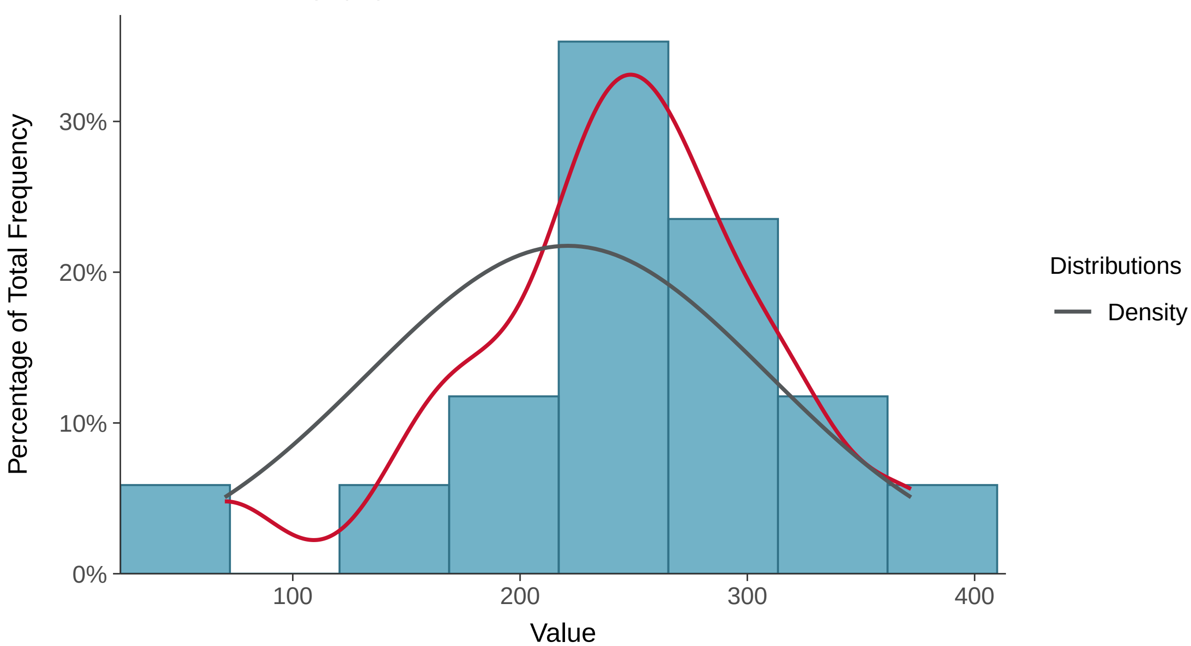
Scatter Plot

Calcium, MW-5 (mg/L)



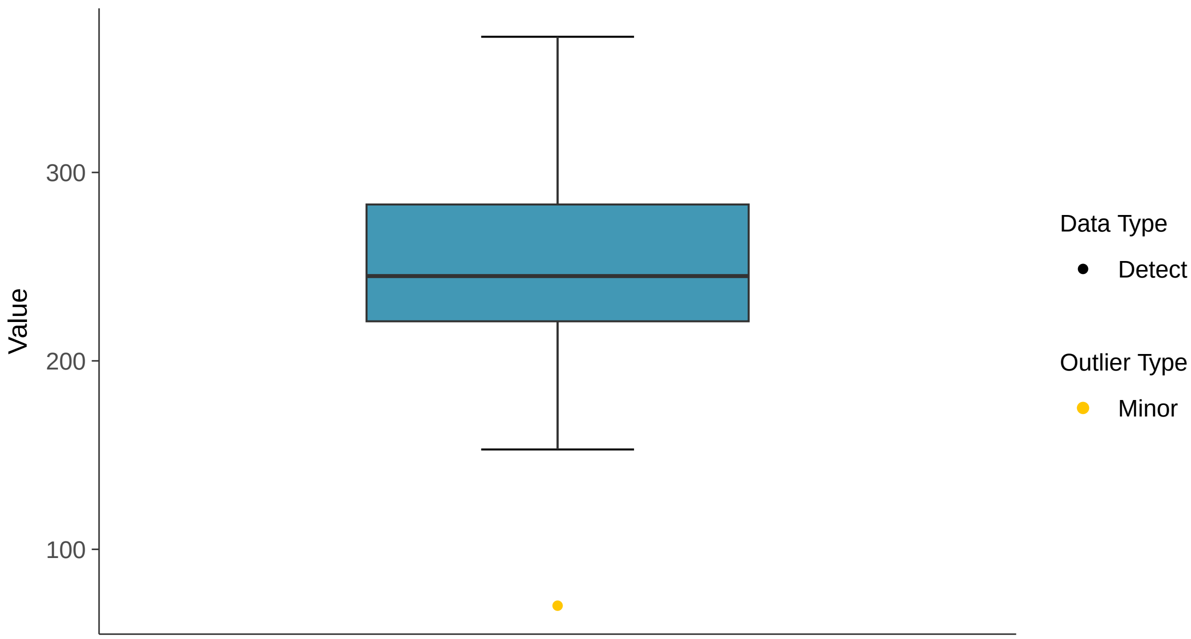
Histogram

Calcium, MW-5 (mg/L)



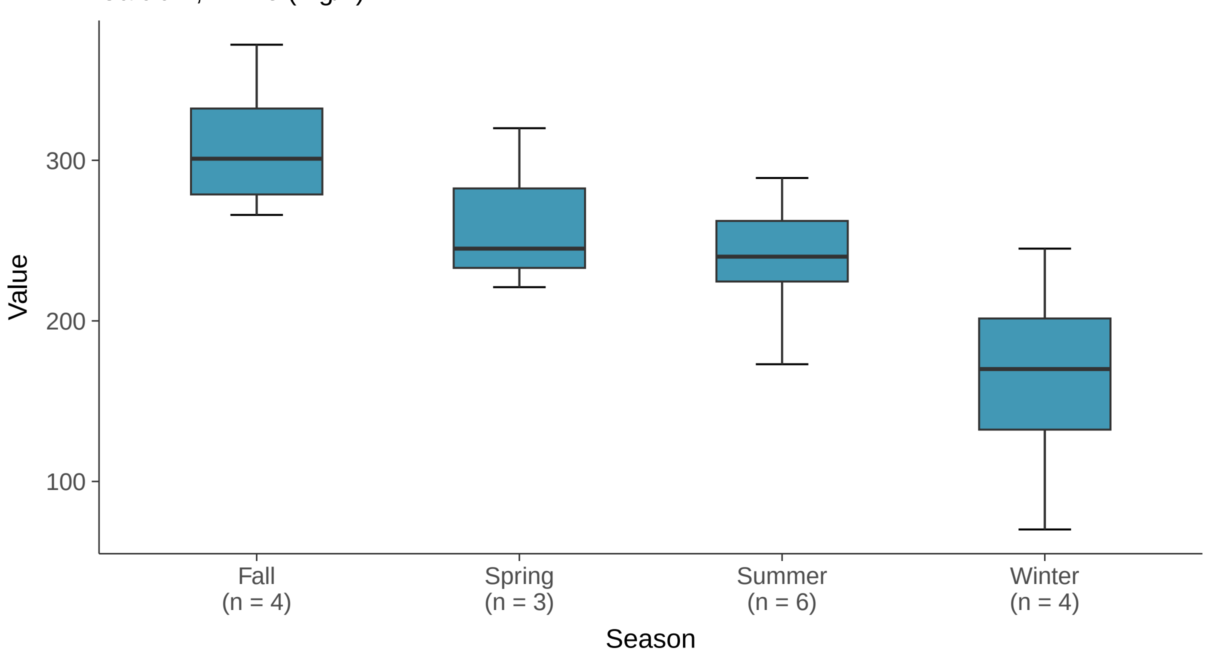
Boxplot

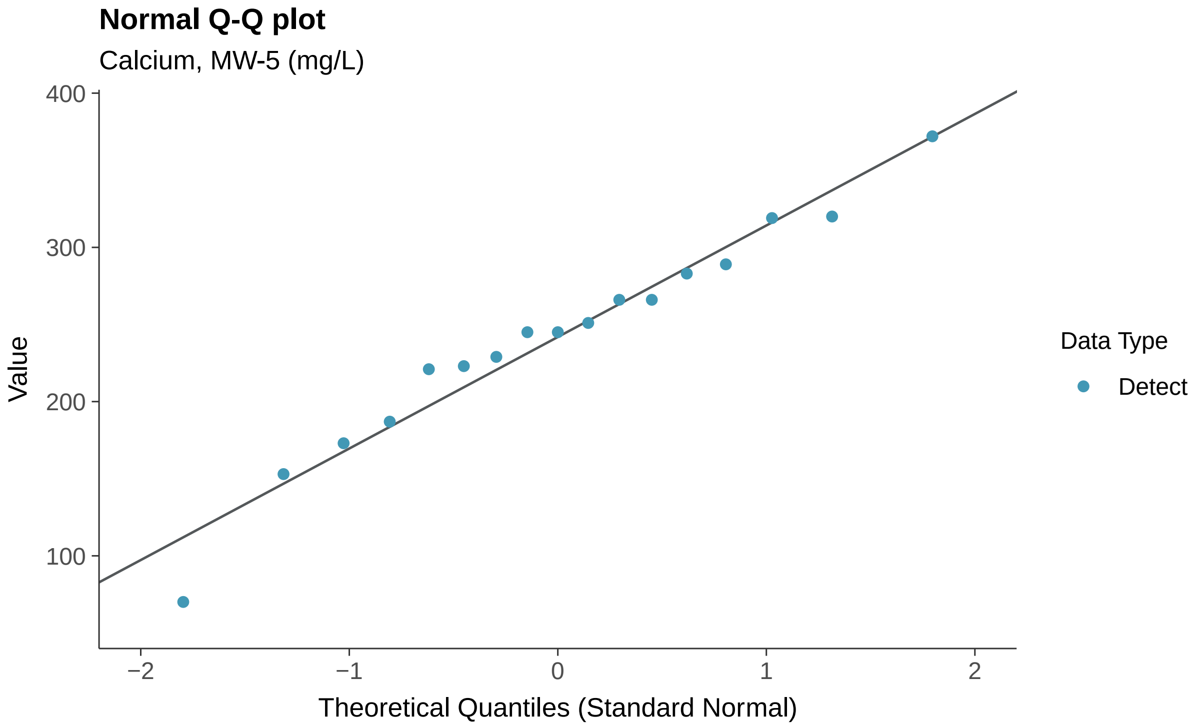
Calcium, MW-5 (mg/L)

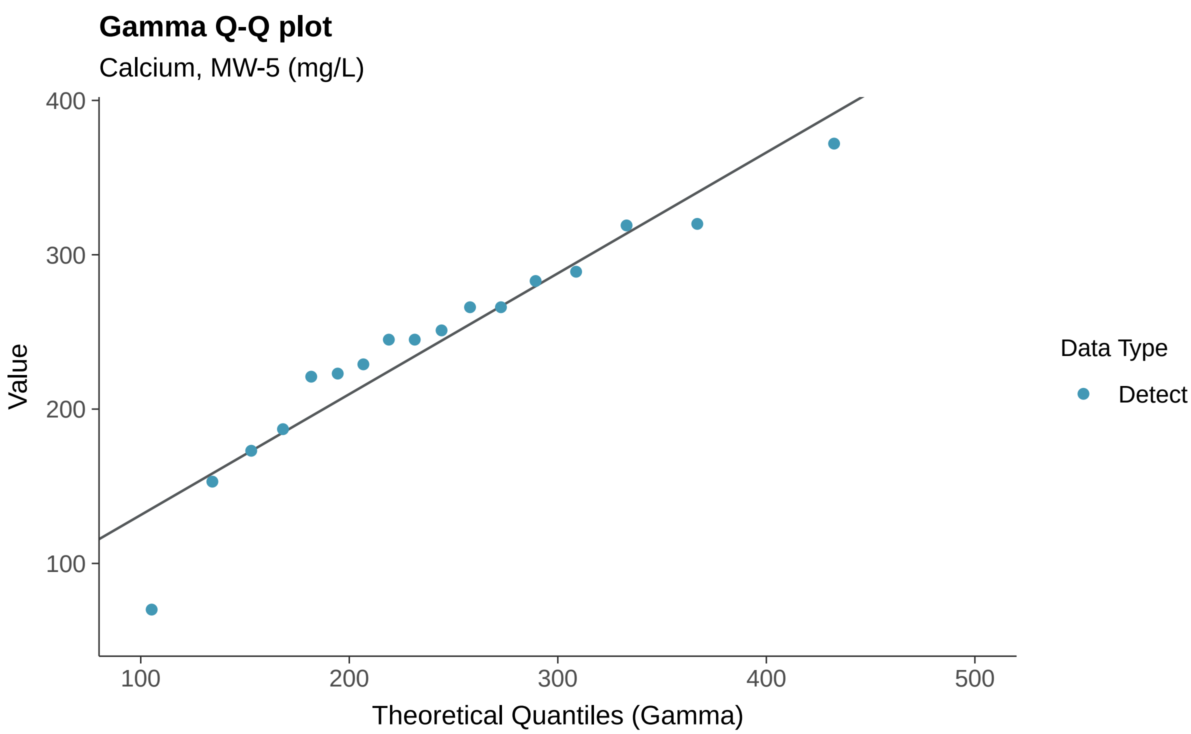


Boxplot by Season

Calcium, MW-5 (mg/L)

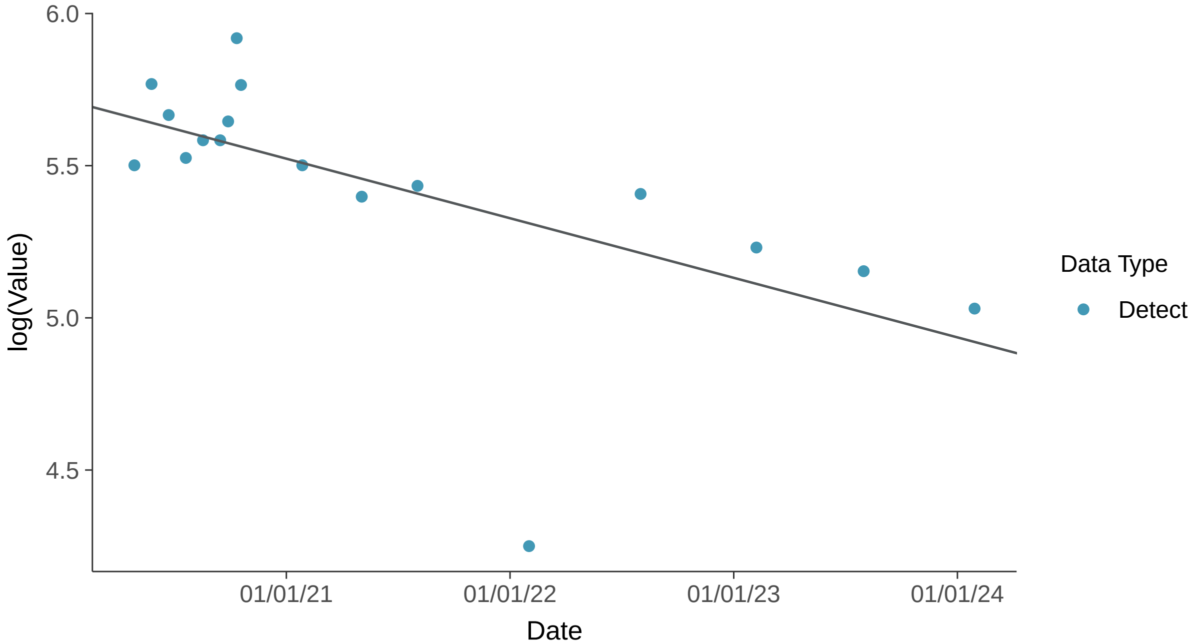



Normal Q-Q plot
Calcium, MW-5 (mg/L)
Value
400
300
200
100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Calcium, MW-5 (mg/L)
Value
400
300
200
100
100
200
300
400
500
Theoretical Quantiles (Gamma)
Data Type
Detect

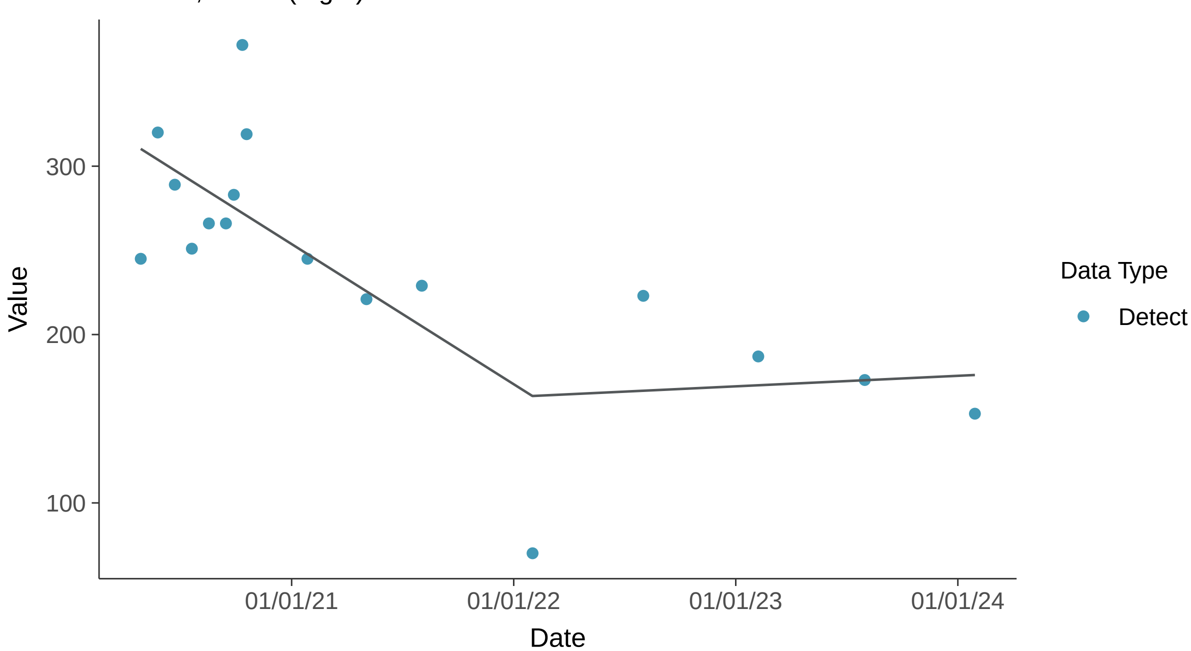
Trend Regression: Lognormal MLE

Calcium, MW-5 (mg/L)



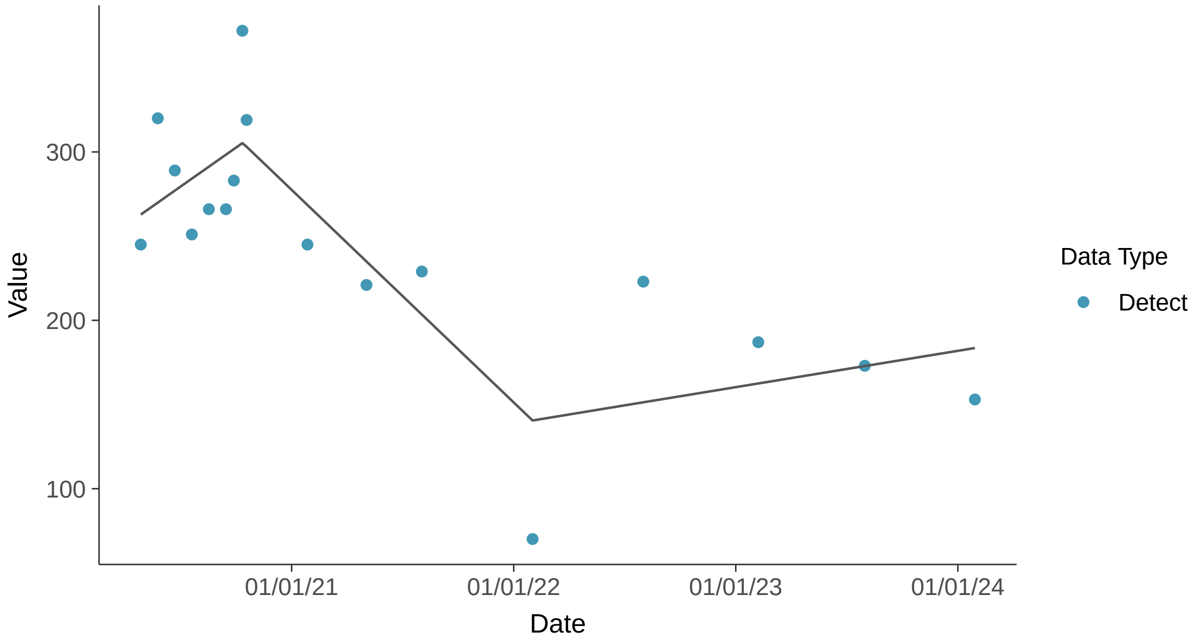
Trend Regression: Piecewise Linear-Linear

Calcium, MW-5 (mg/L)



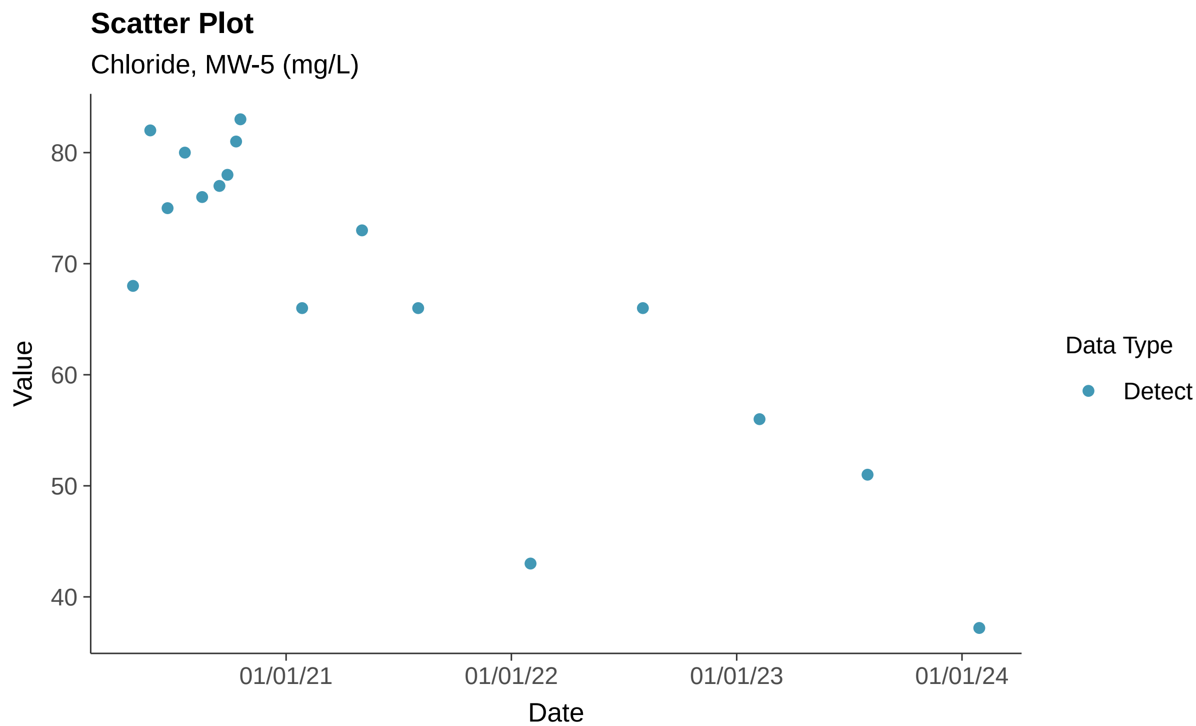
Trend Regression: Piecewise Linear-Linear-Linear

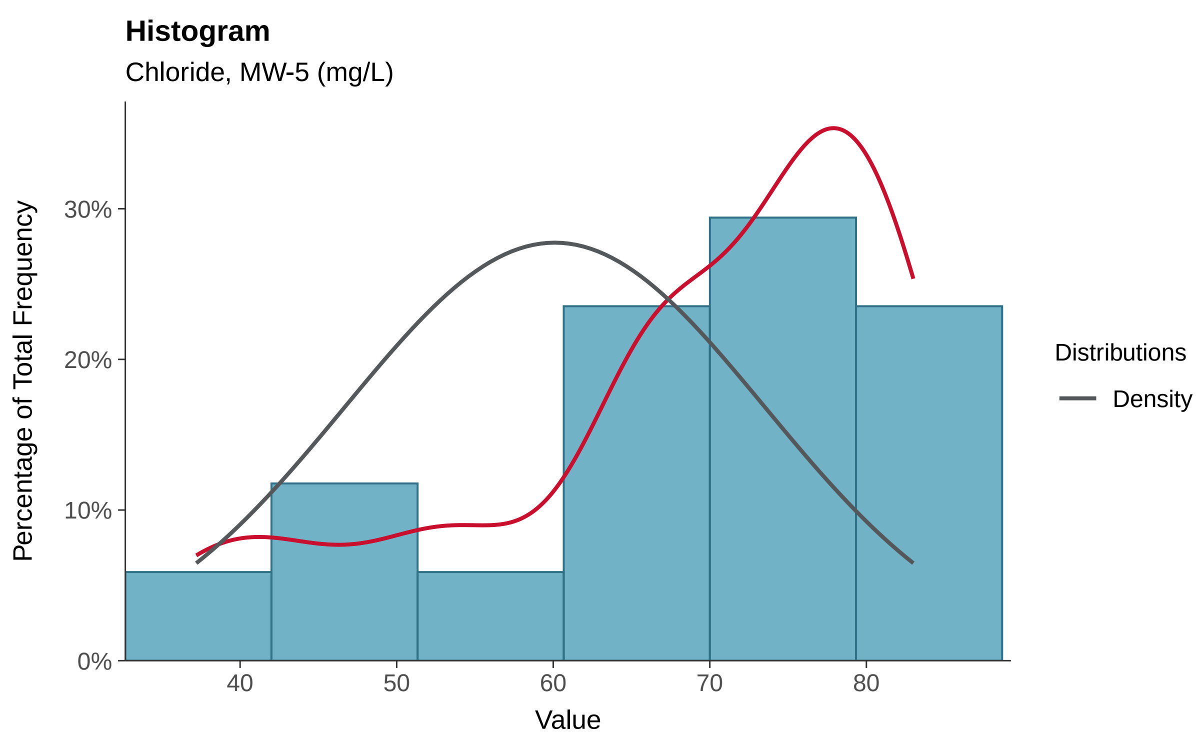
Calcium, MW-5 (mg/L)



Appendix III: Chloride, MW-5

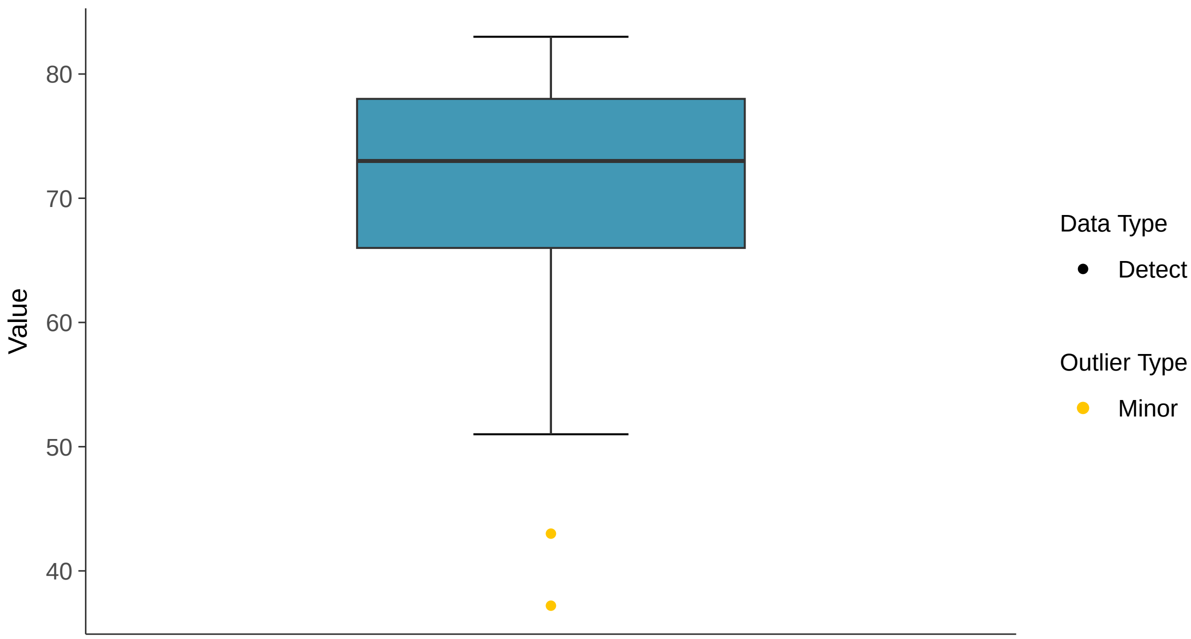
ID: 05_1_03





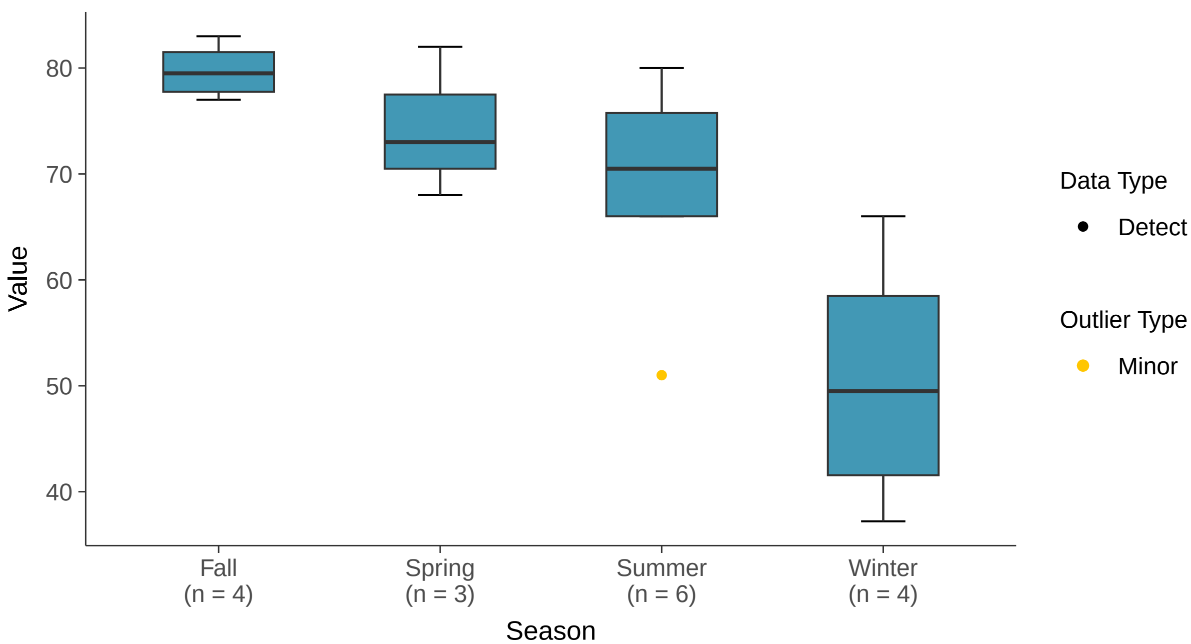
Boxplot

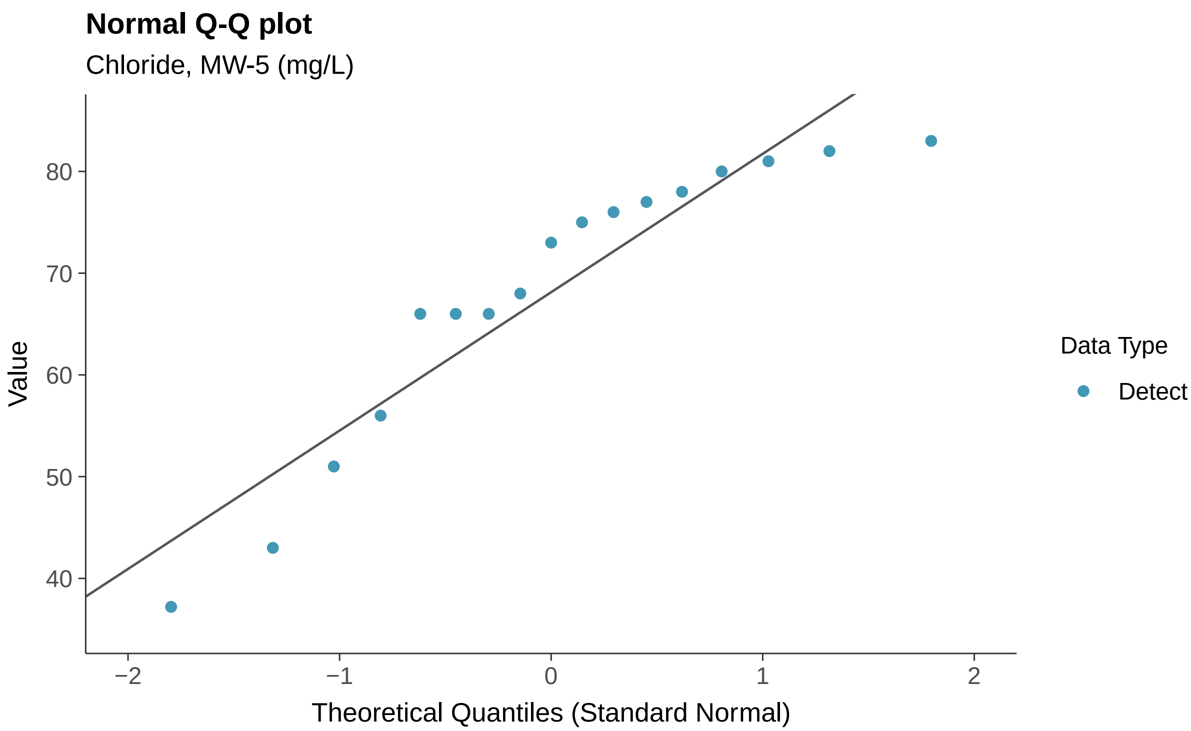
Chloride, MW-5 (mg/L)

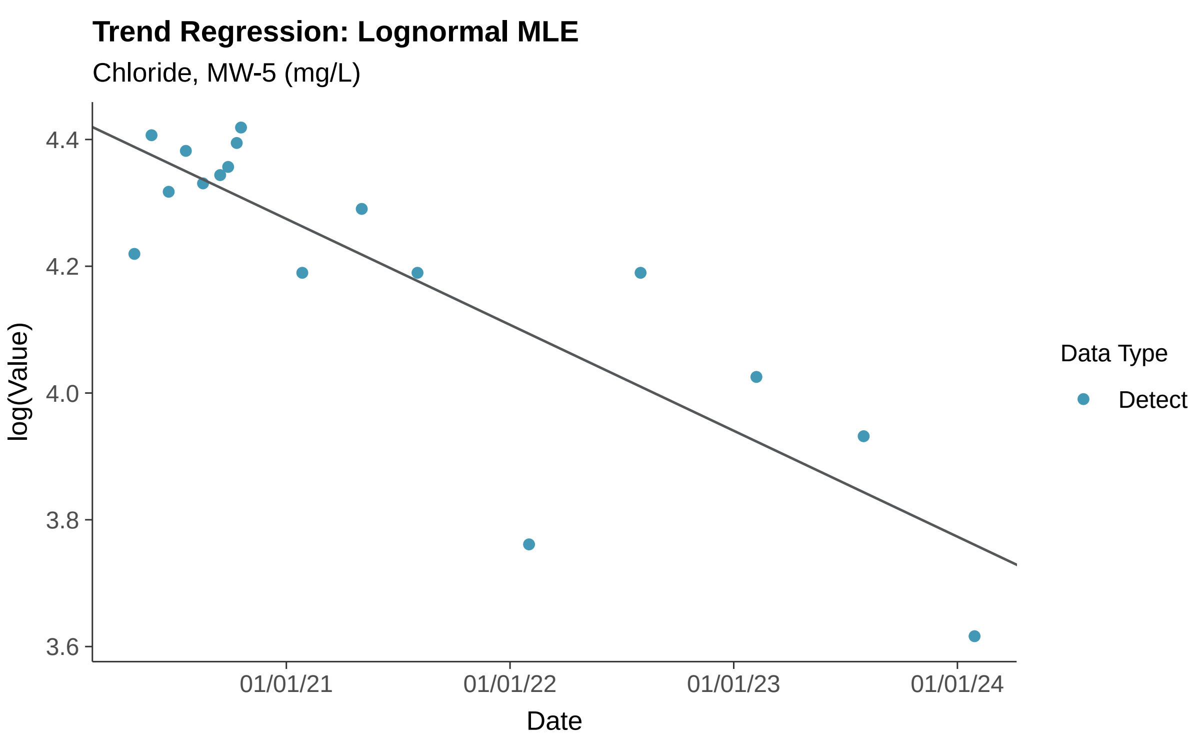


Boxplot by Season

Chloride, MW-5 (mg/L)

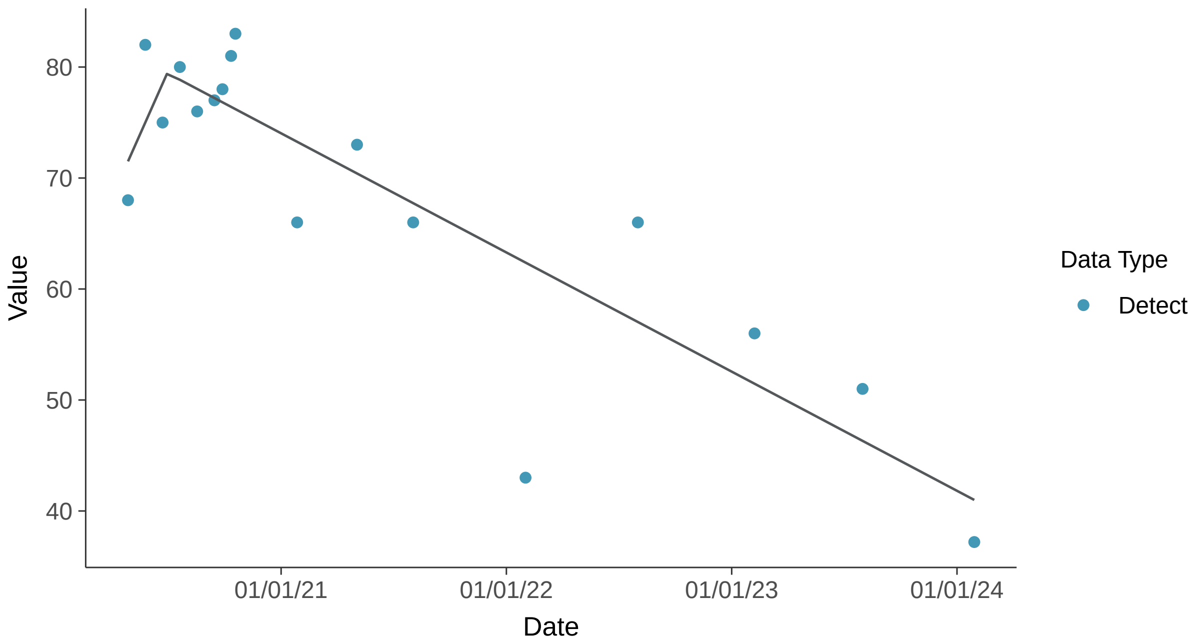



Normal Q-Q plot
Chloride, MW-5 (mg/L)
Value
40
50
60
70
80
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Chloride, MW-5 (mg/L)
log(Value)
3.6
3.8
4.0
4.2
4.4
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Chloride, MW-5 (mg/L)

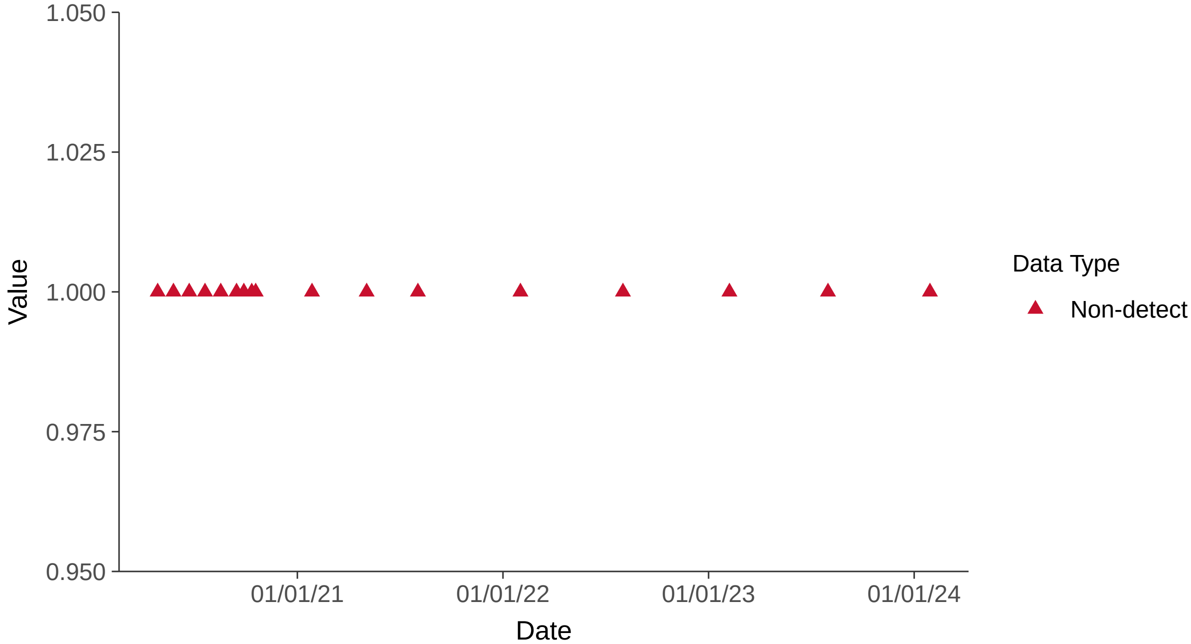


Appendix III: Fluoride, MW-5

ID: 05_1_04

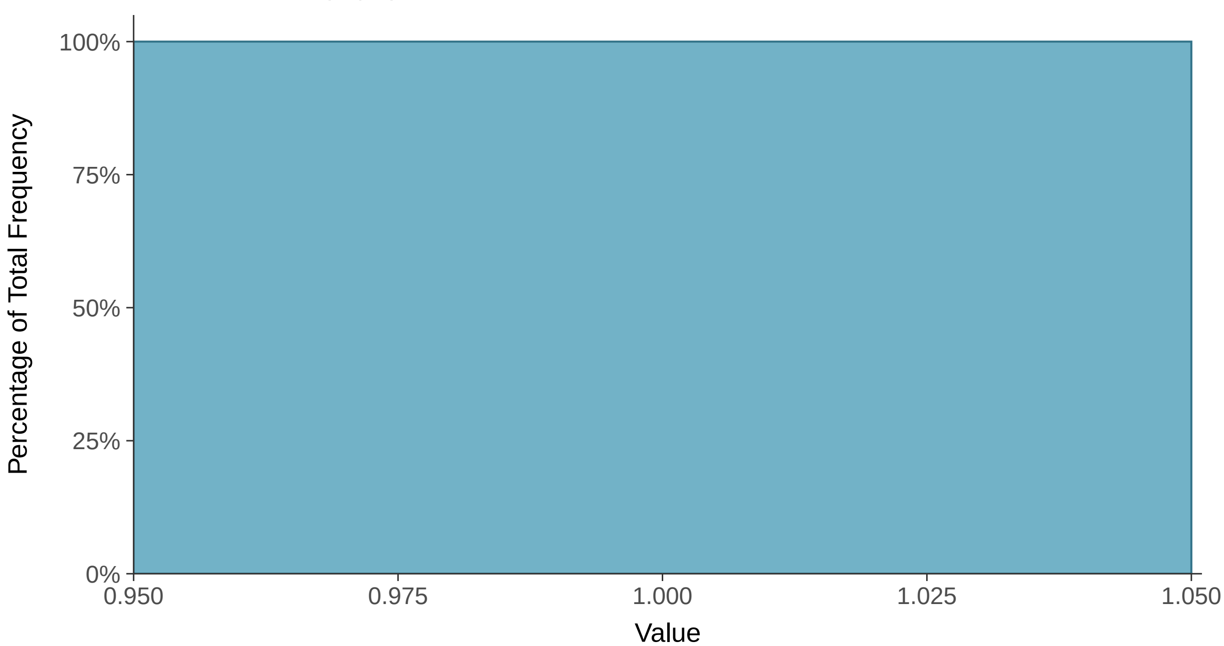
Scatter Plot

Fluoride, MW-5 (mg/L)



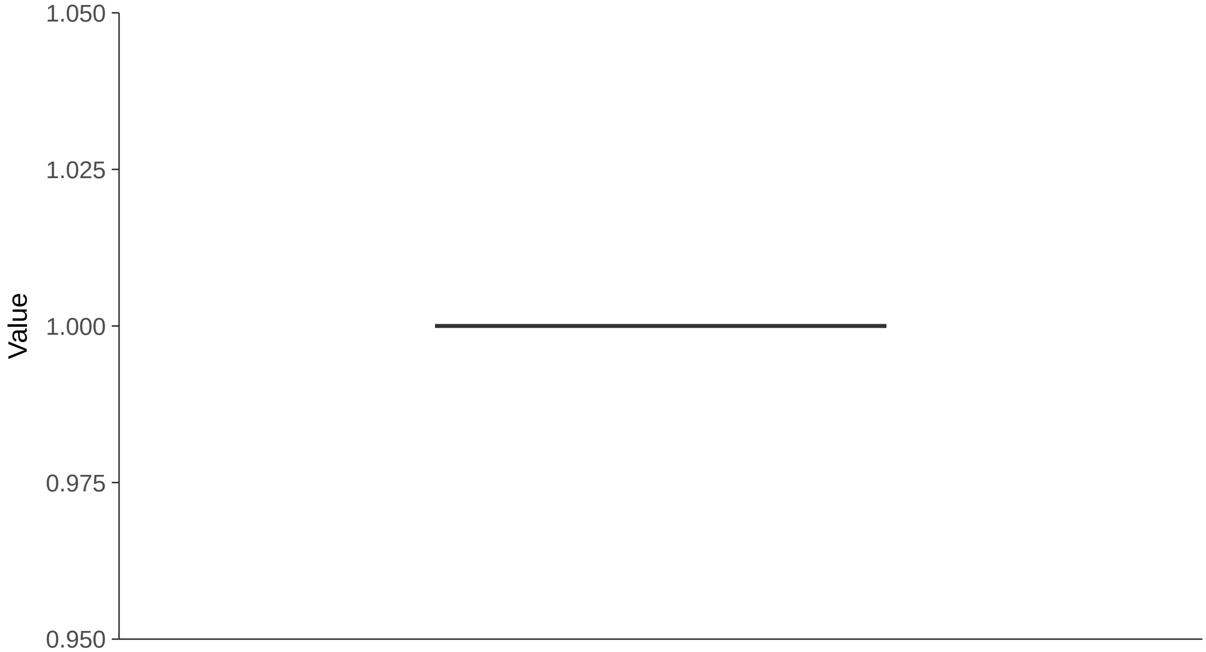
Histogram

Fluoride, MW-5 (mg/L)



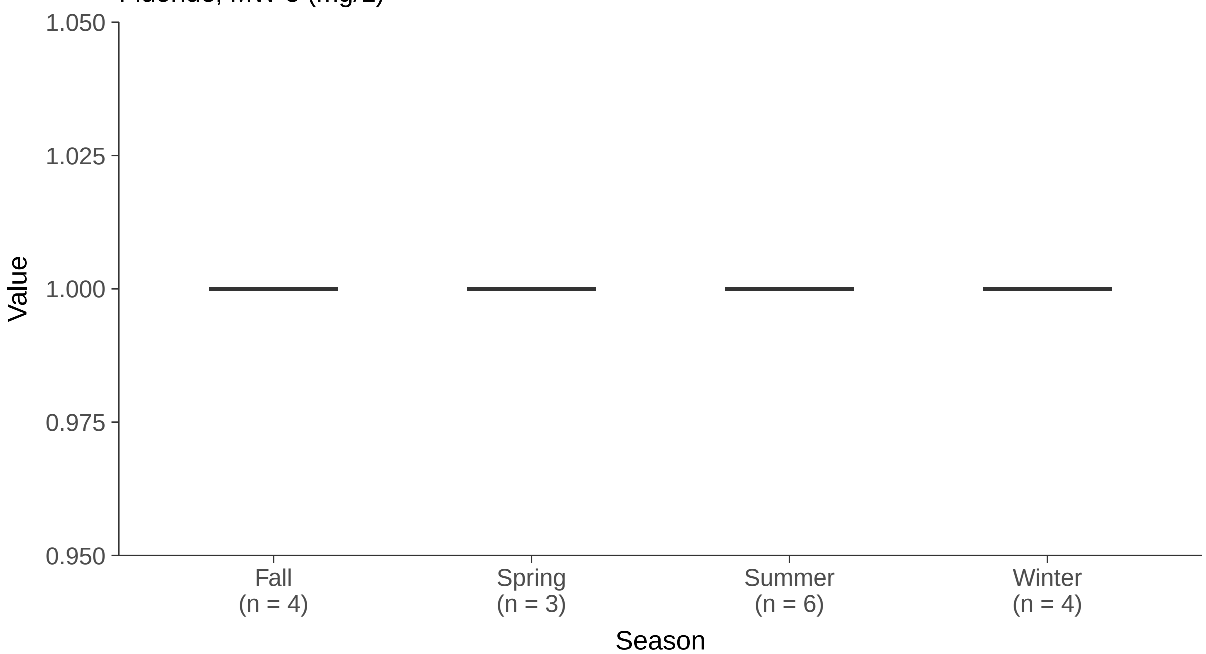
Boxplot

Fluoride, MW-5 (mg/L)



Boxplot by Season

Fluoride, MW-5 (mg/L)

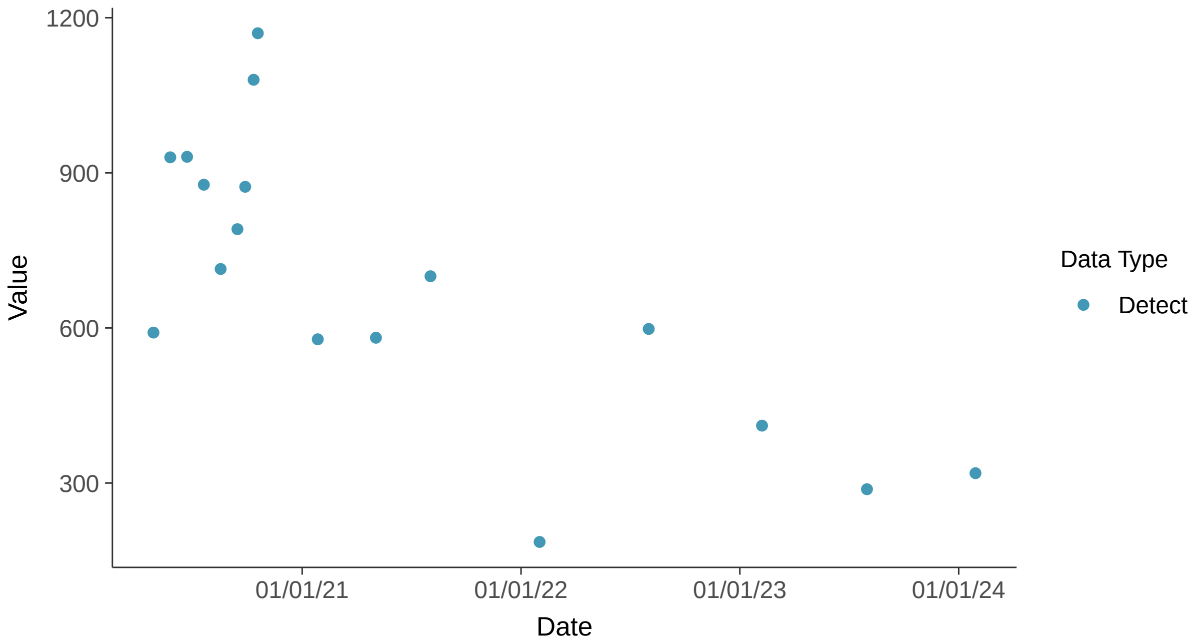


Appendix III: Sulfate, MW-5

ID: 05_1_05

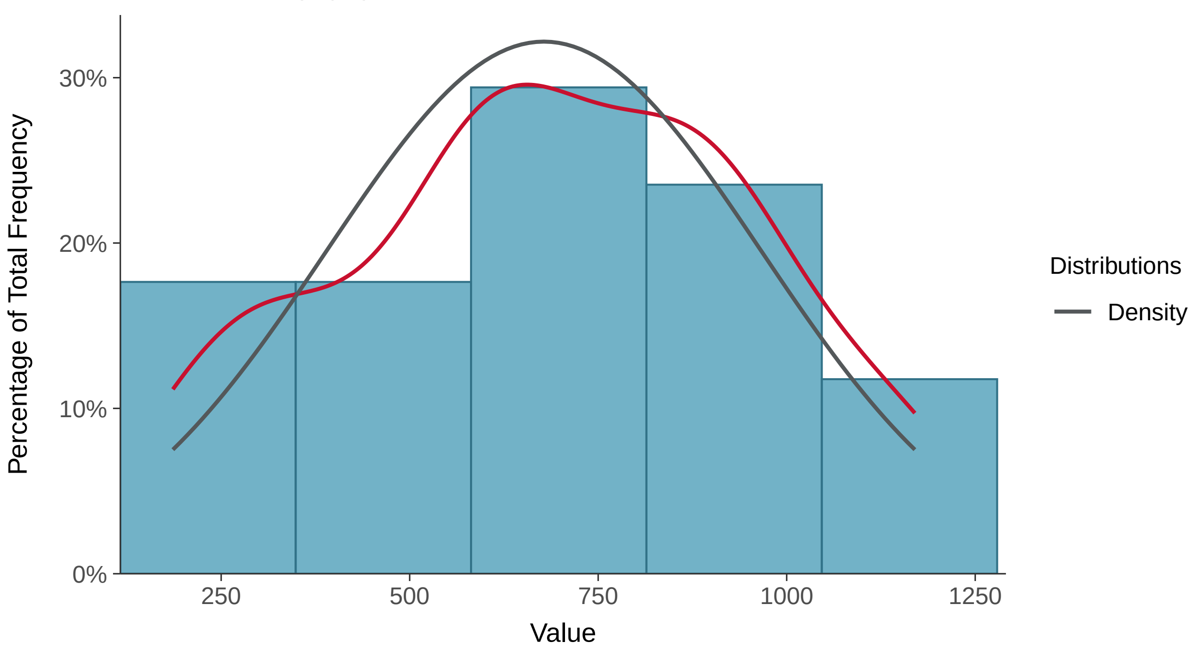
Scatter Plot

Sulfate, MW-5 (mg/L)



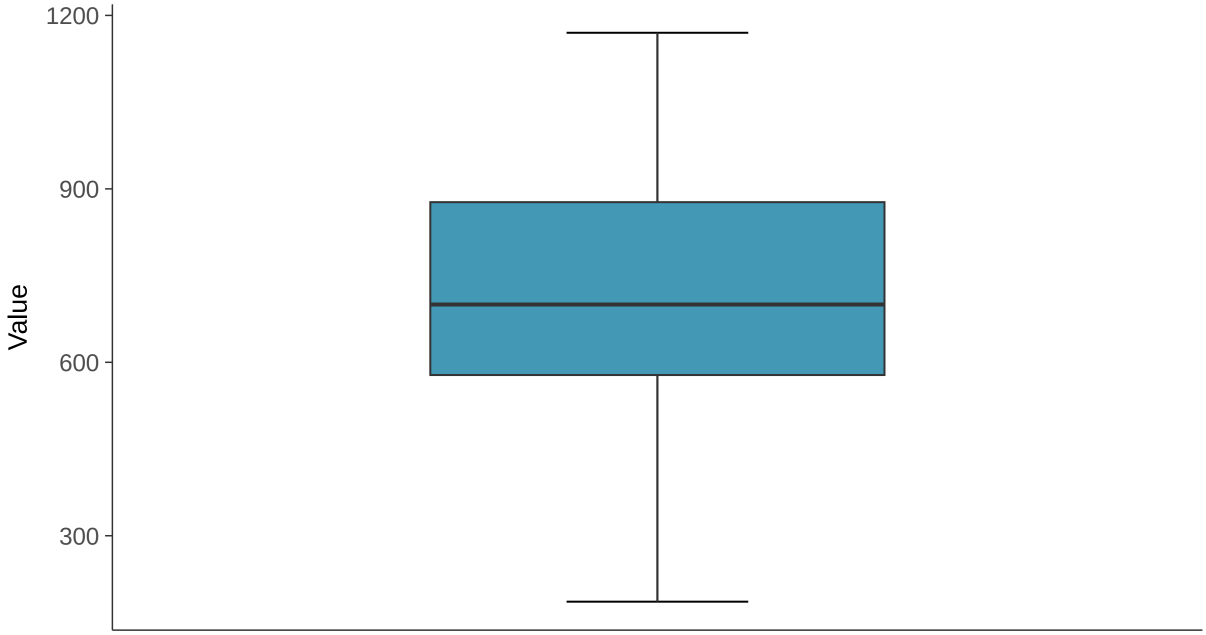
Histogram

Sulfate, MW-5 (mg/L)



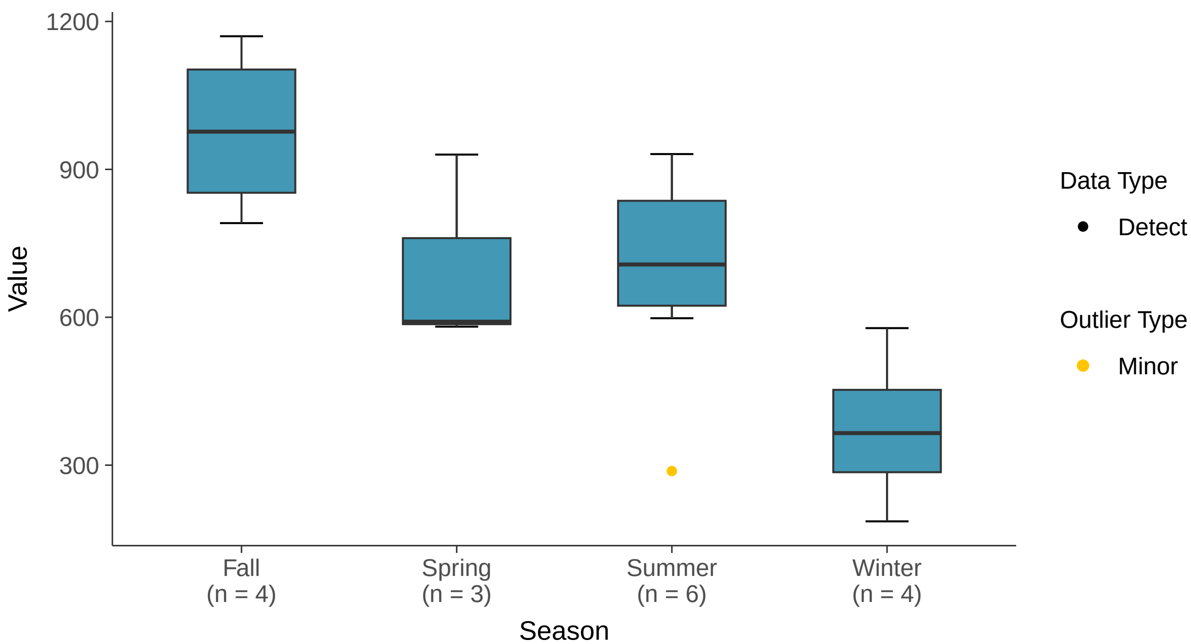
Boxplot

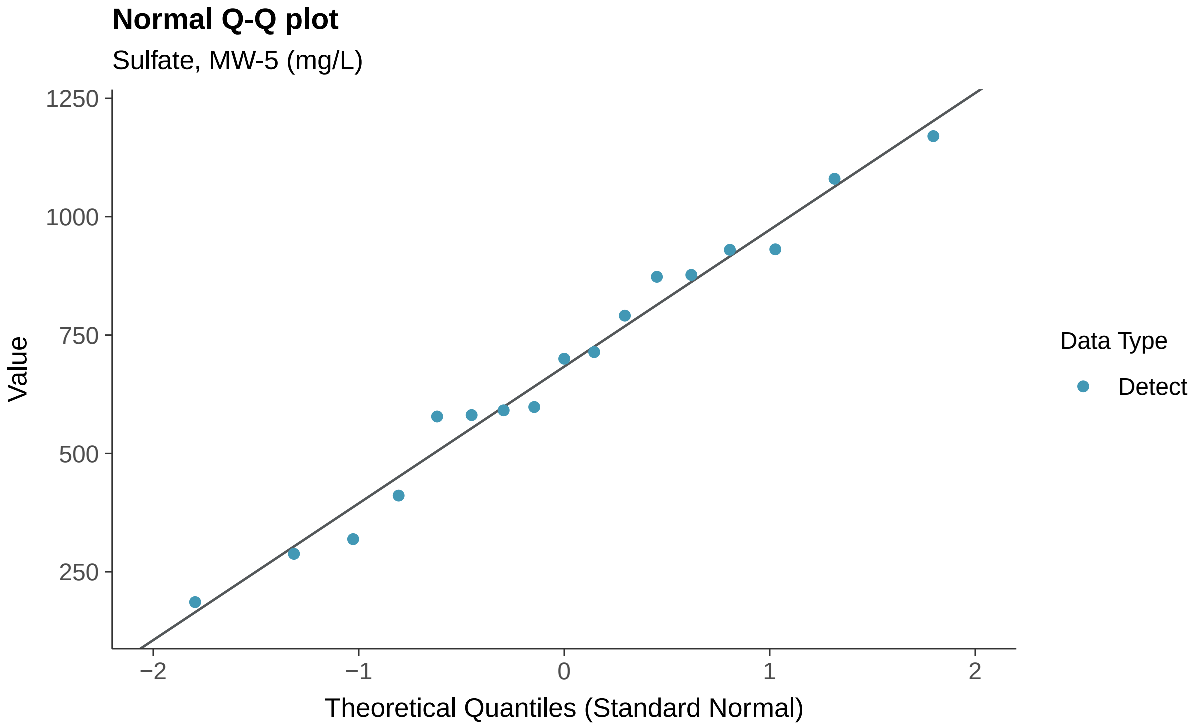
Sulfate, MW-5 (mg/L)

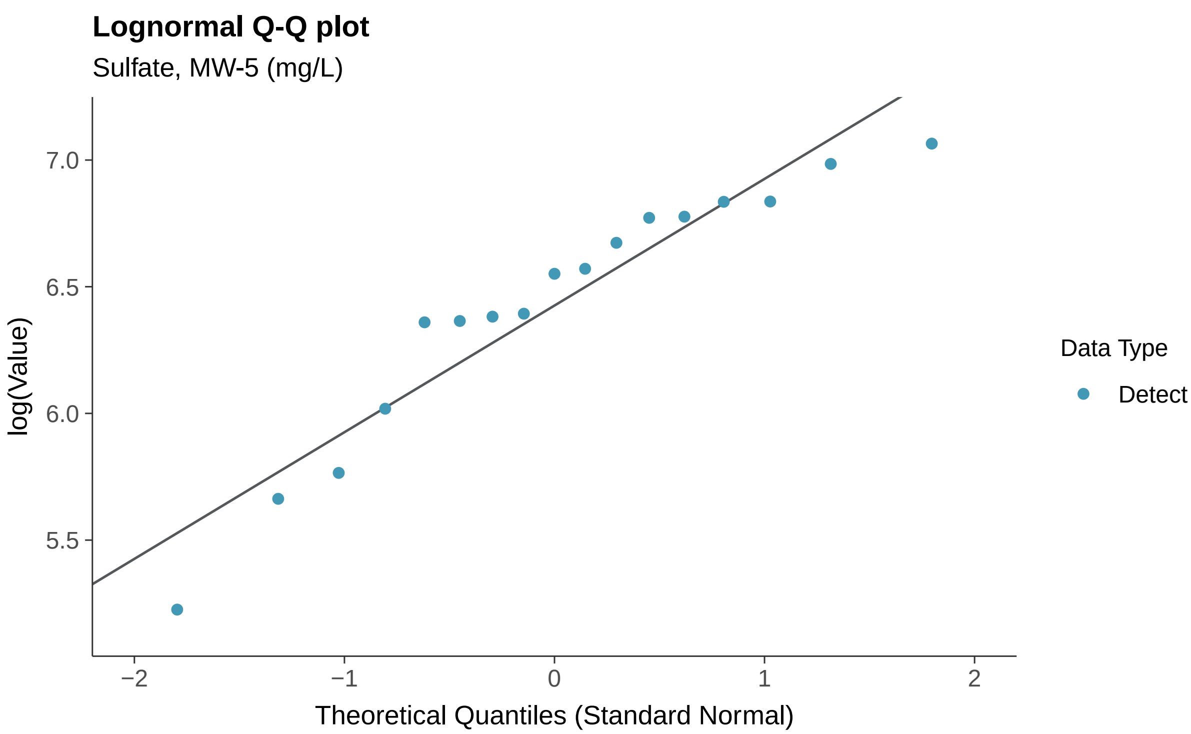


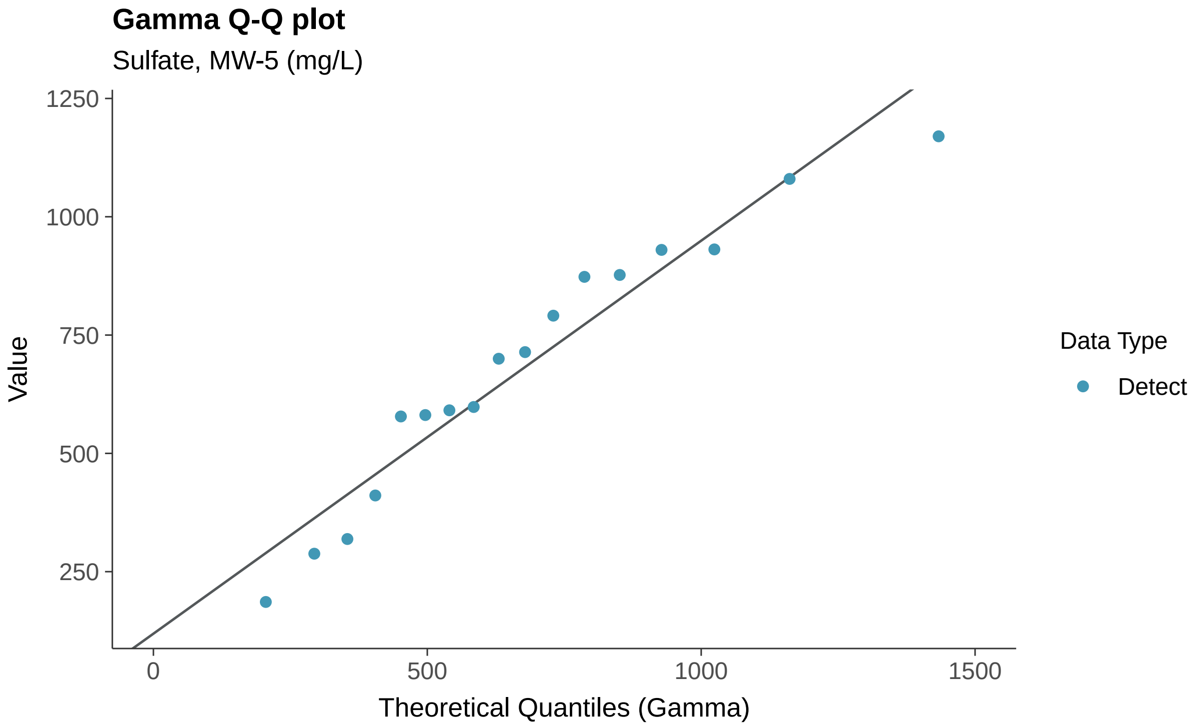
Boxplot by Season

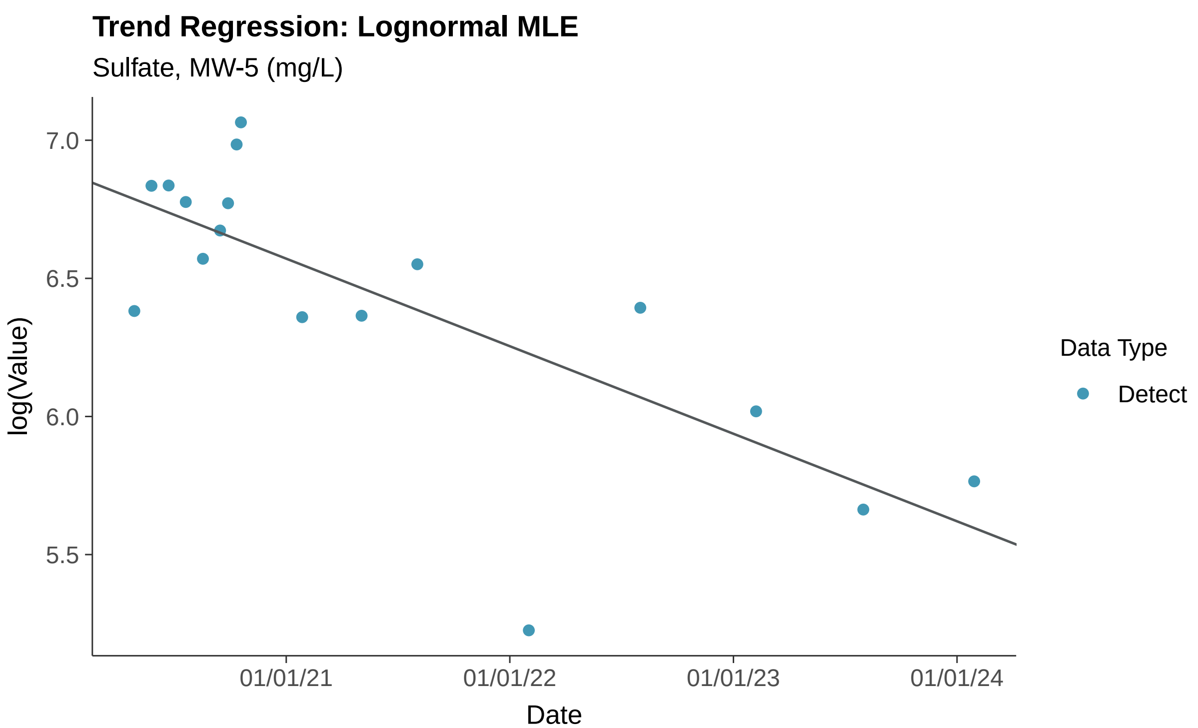
Sulfate, MW-5 (mg/L)




Normal Q-Q plot
Sulfate, MW-5 (mg/L)
Value
1250
1000
750
500
250
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

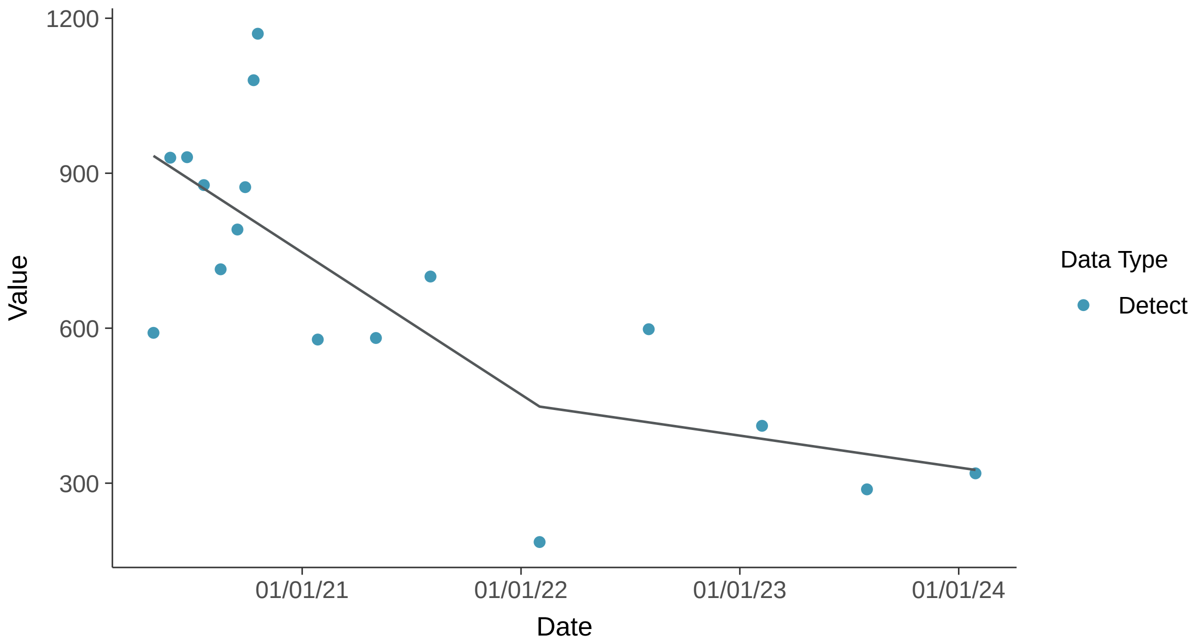

Lognormal Q-Q plot
Sulfate, MW-5 (mg/L)
log(Value)
7.0
6.5
6.0
5.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Sulfate, MW-5 (mg/L)
Value
1250
1000
750
500
250
0
500
1000
1500
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Sulfate, MW-5 (mg/L)
log(Value)
7.0
6.5
6.0
5.5
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

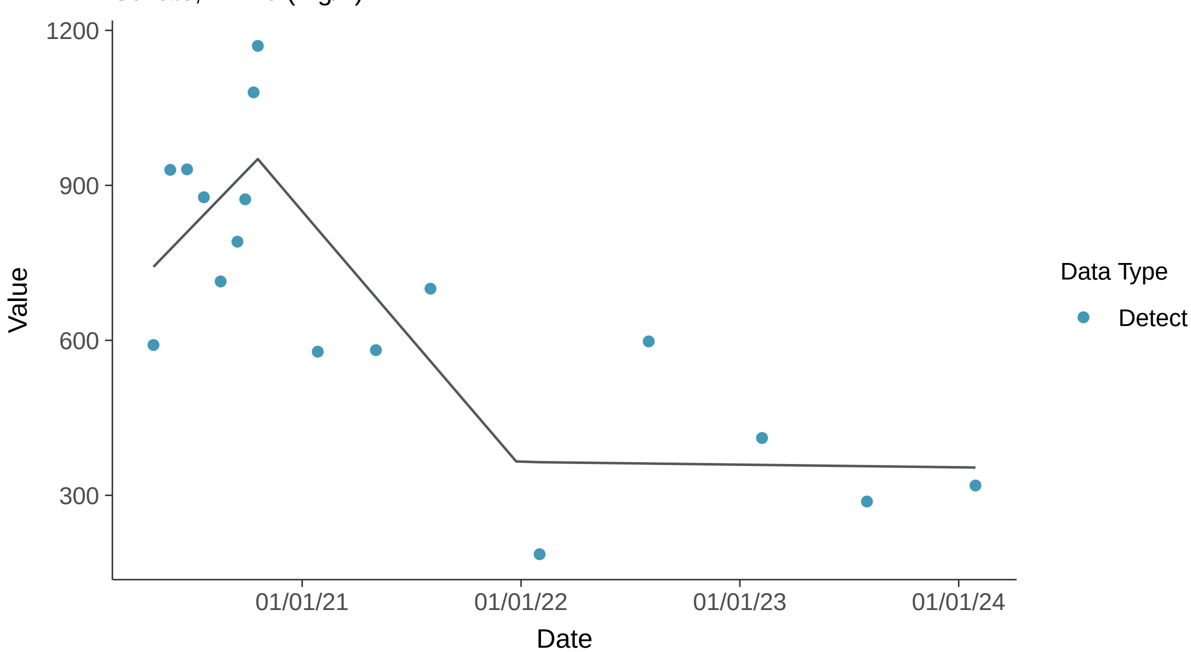
Trend Regression: Piecewise Linear-Linear

Sulfate, MW-5 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Sulfate, MW-5 (mg/L)

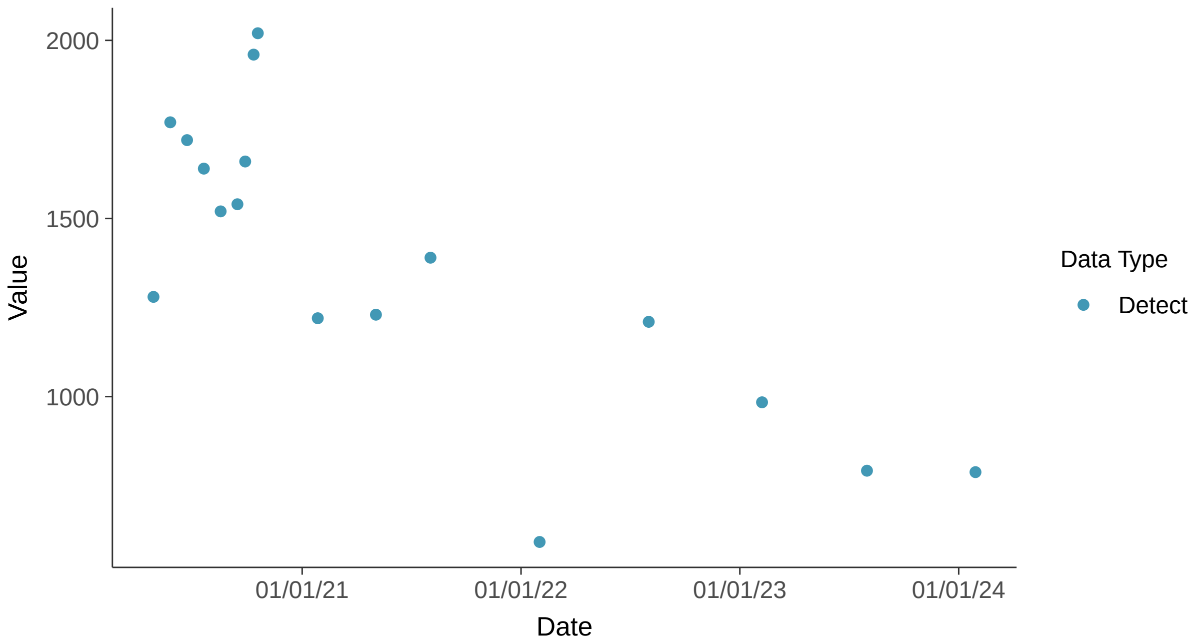


Appendix III: Total Dissolved Solids, MW-5

ID: 05_1_06

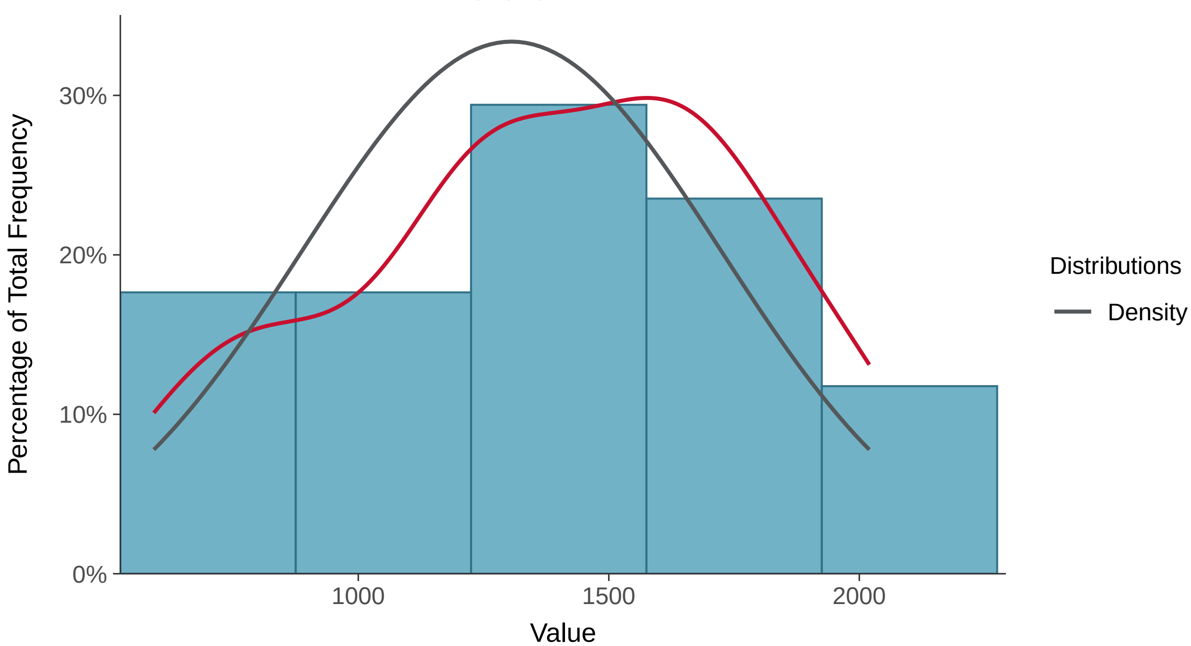
Scatter Plot

Total Dissolved Solids, MW-5 (mg/L)



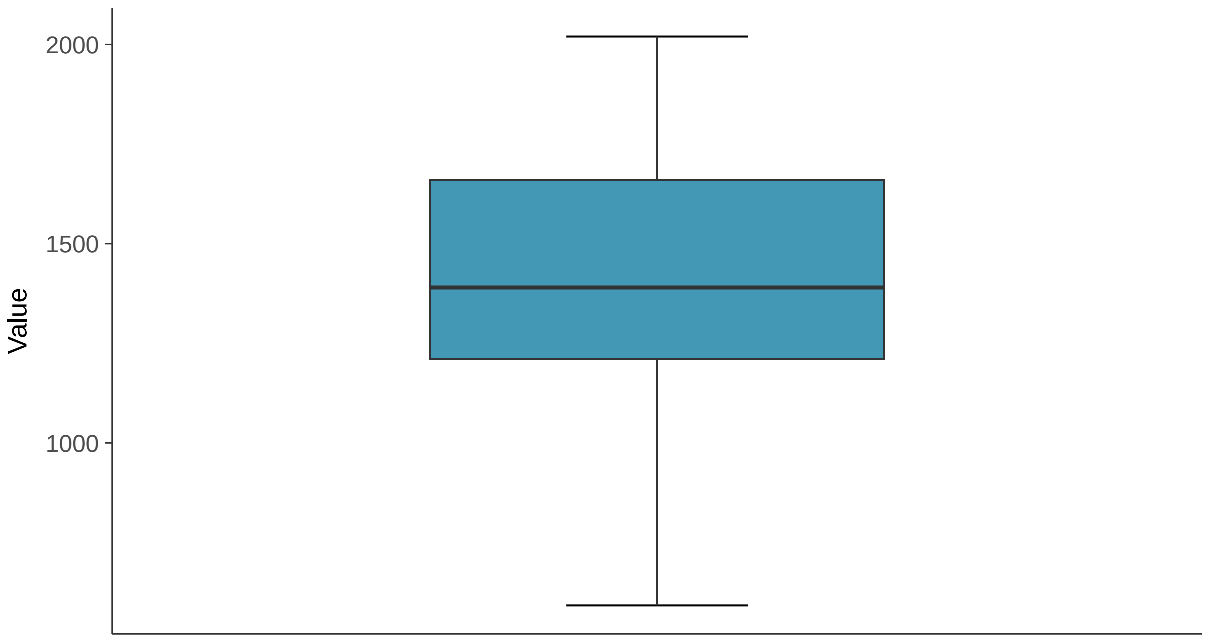
Histogram

Total Dissolved Solids, MW-5 (mg/L)



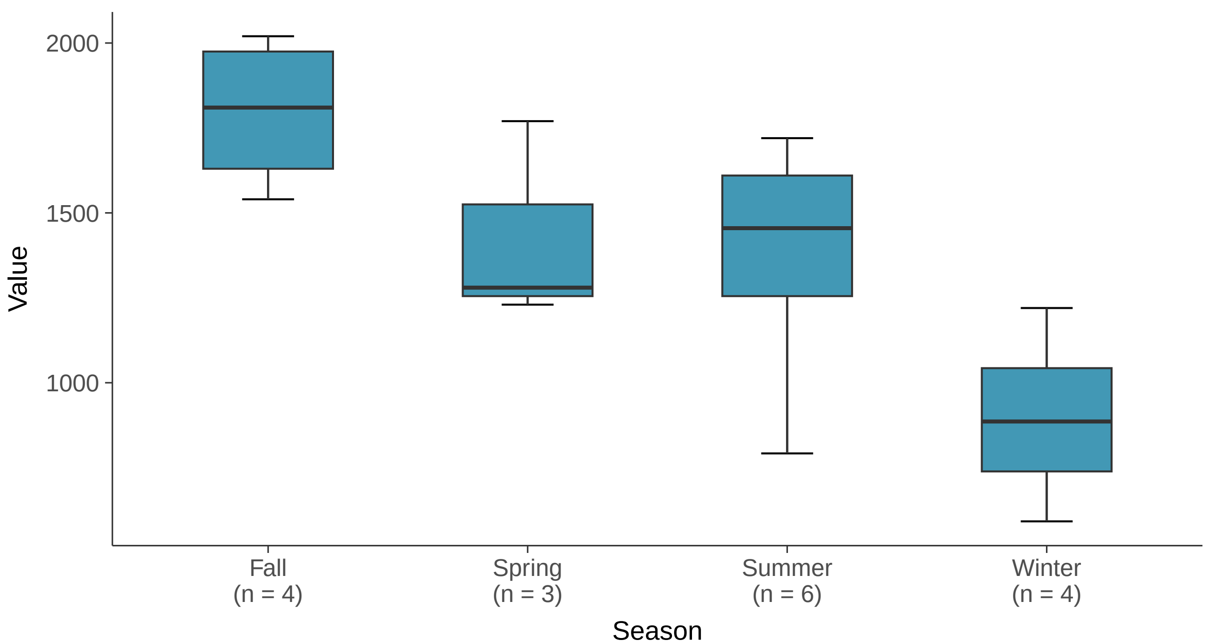
Boxplot

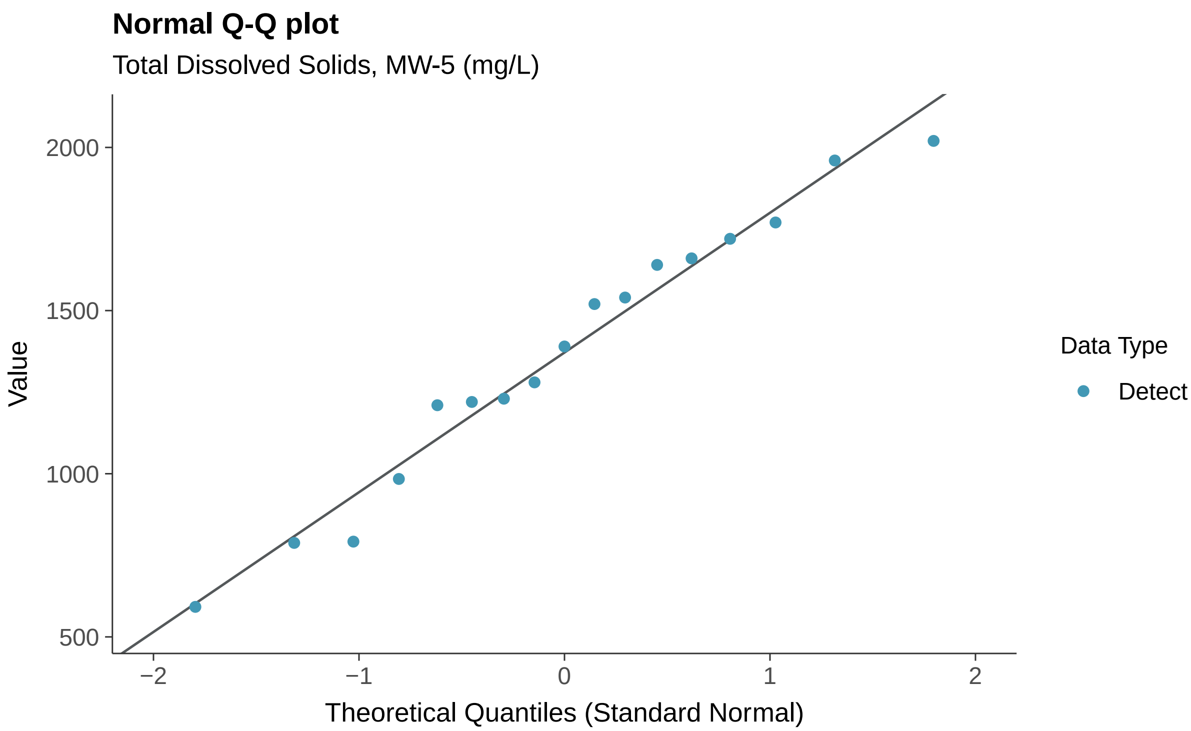
Total Dissolved Solids, MW-5 (mg/L)

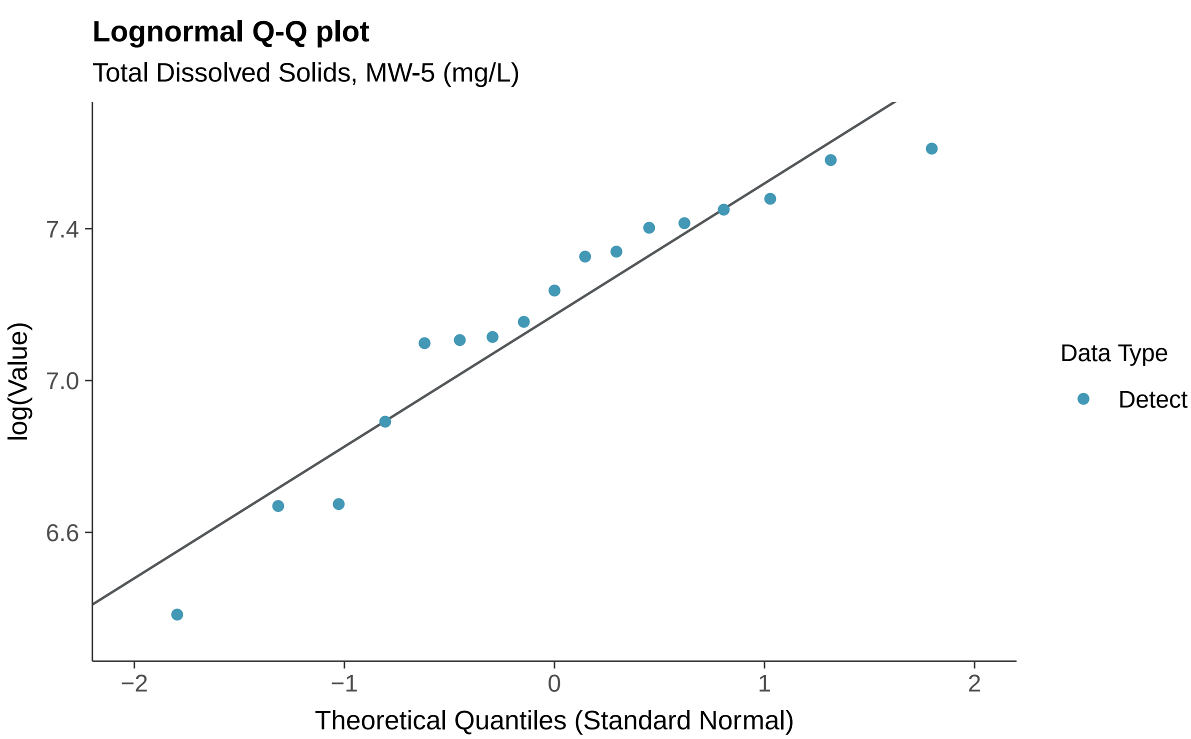


Boxplot by Season

Total Dissolved Solids, MW-5 (mg/L)

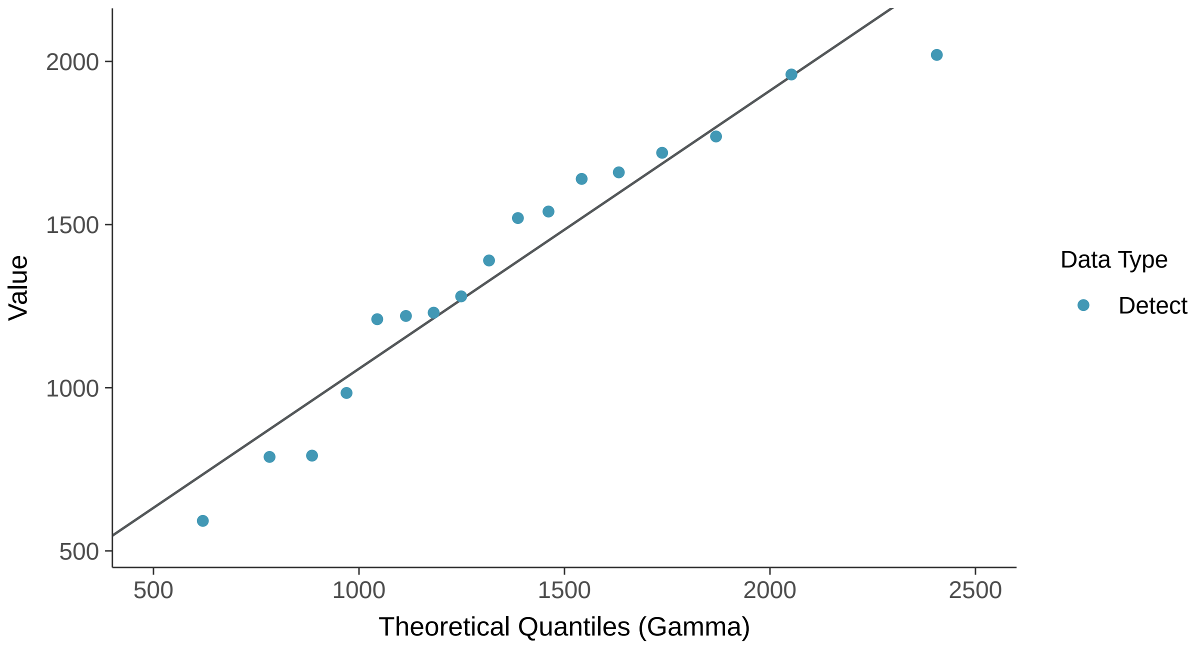



Normal Q-Q plot
Total Dissolved Solids, MW-5 (mg/L)
Value
2000
1500
1000
500
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Total Dissolved Solids, MW-5 (mg/L)
log(Value)
7.4
7.0
6.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

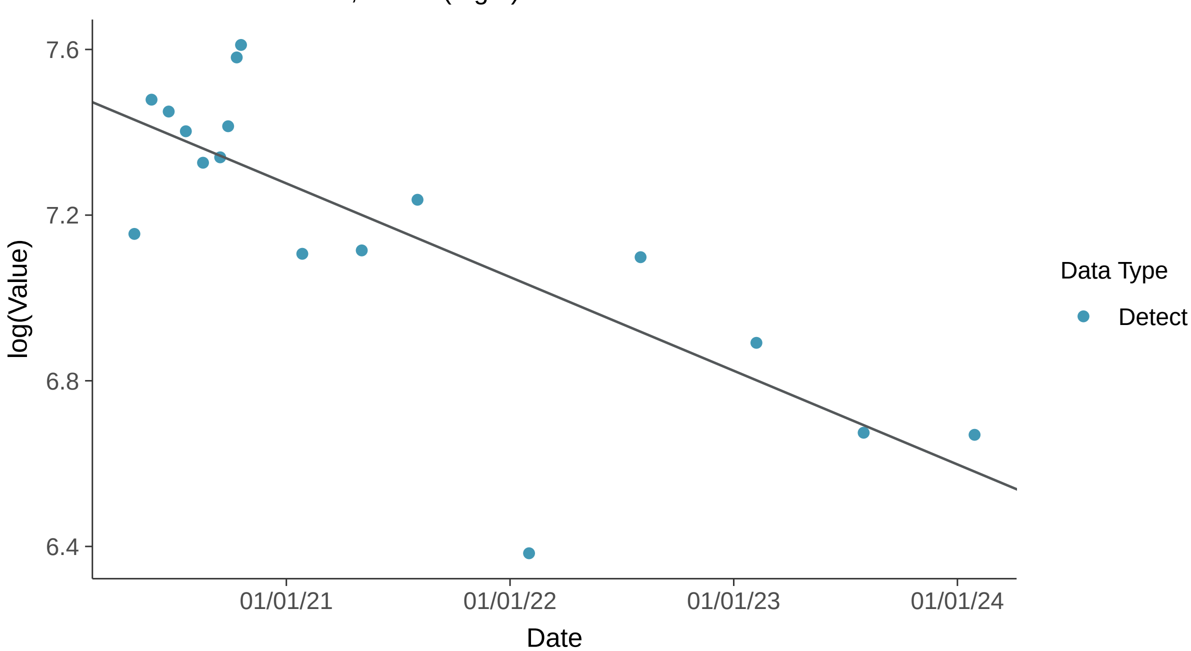
Gamma Q-Q plot

Total Dissolved Solids, MW-5 (mg/L)



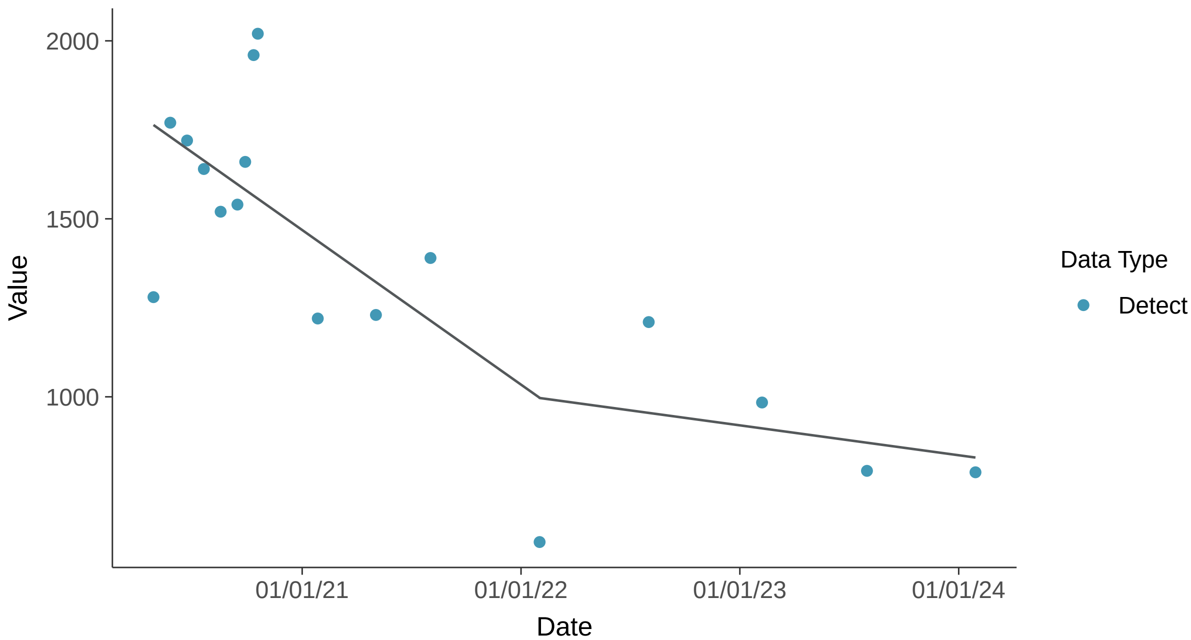
Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-5 (mg/L)



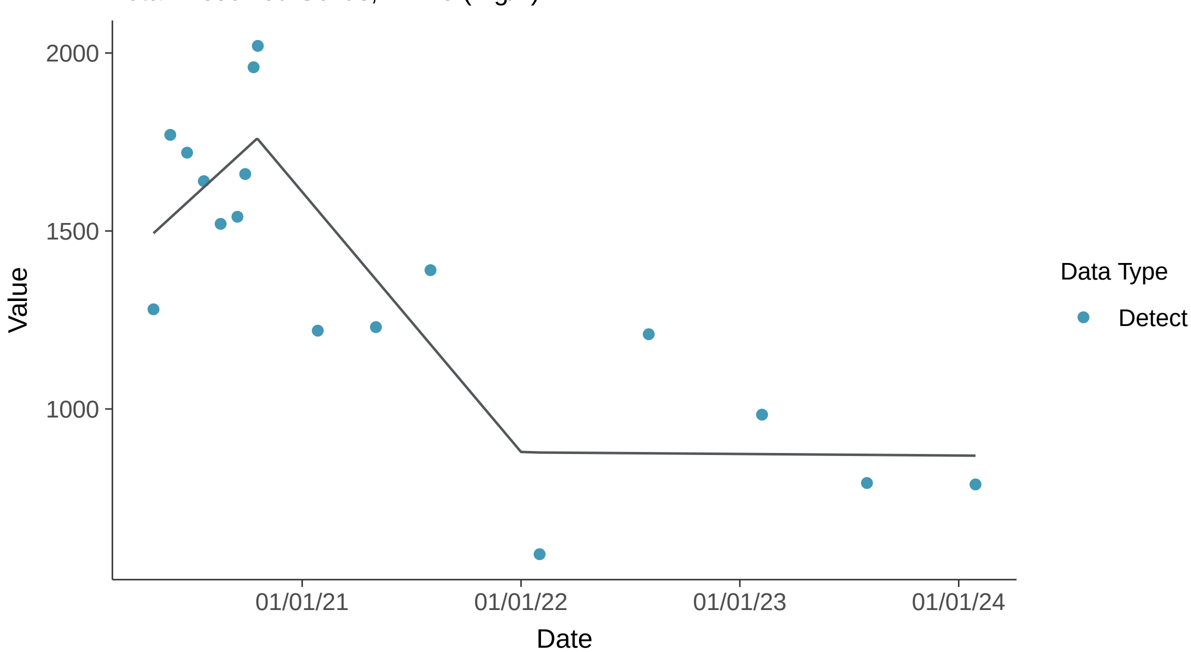
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-5 (mg/L)



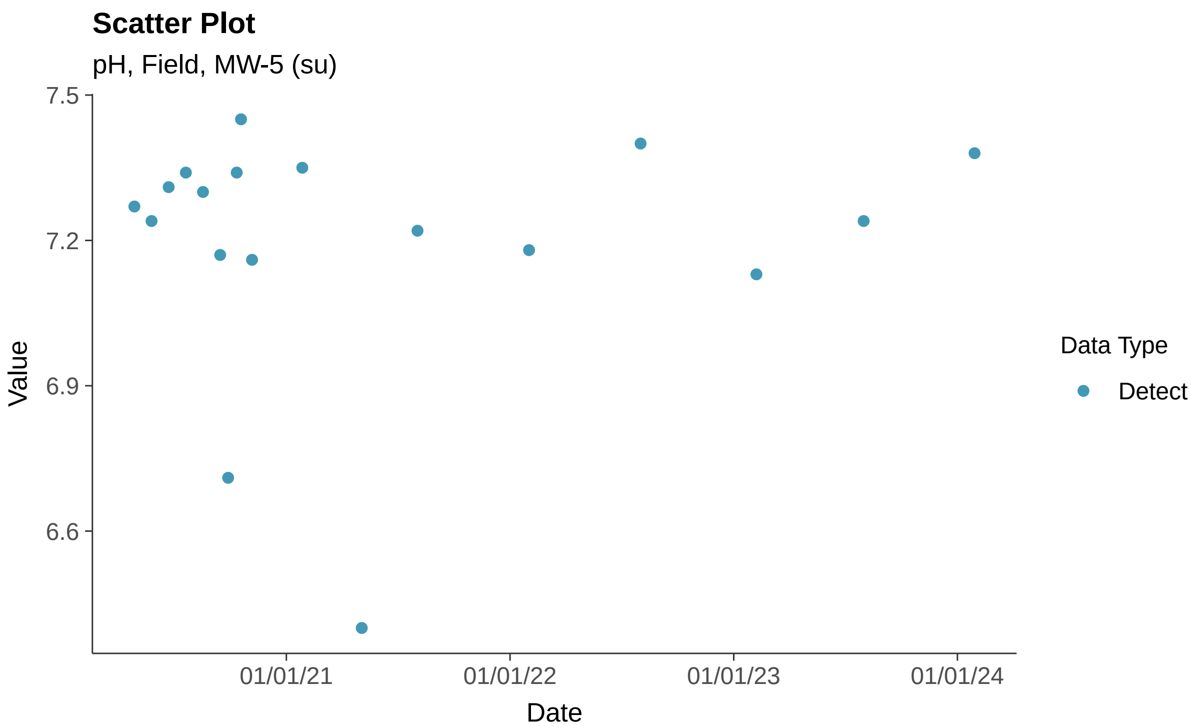
Trend Regression: Piecewise Linear-Linear-Linear

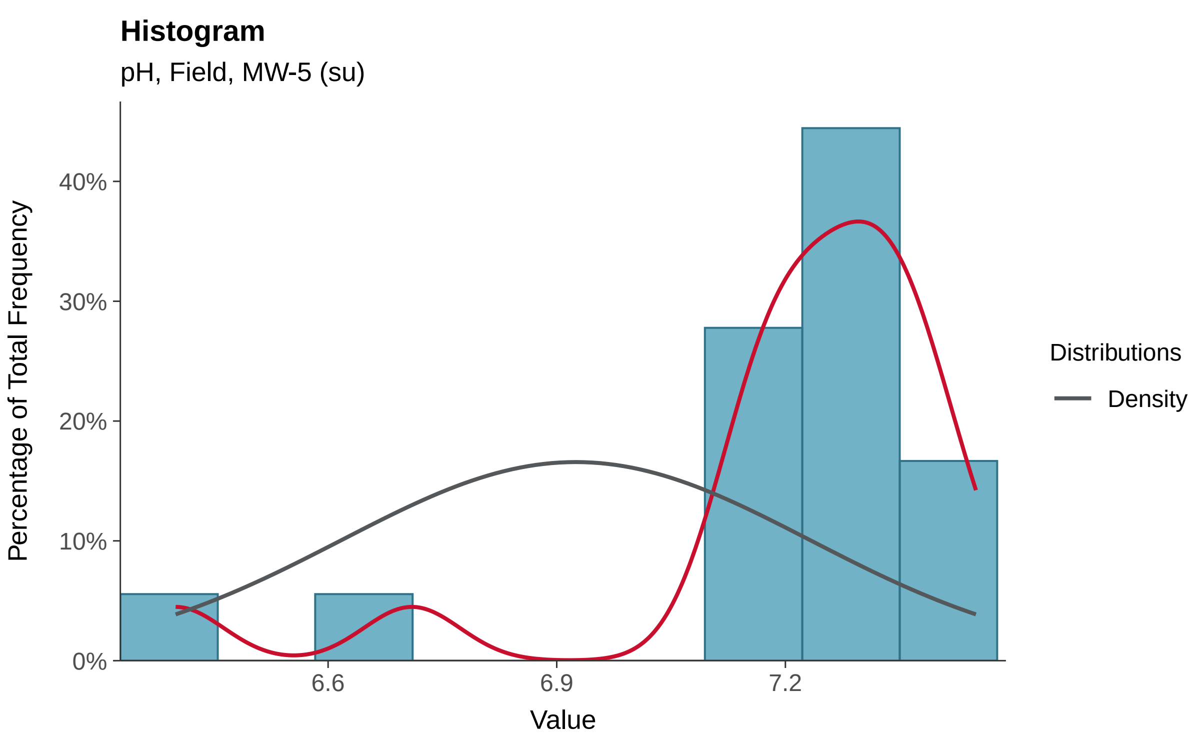
Total Dissolved Solids, MW-5 (mg/L)

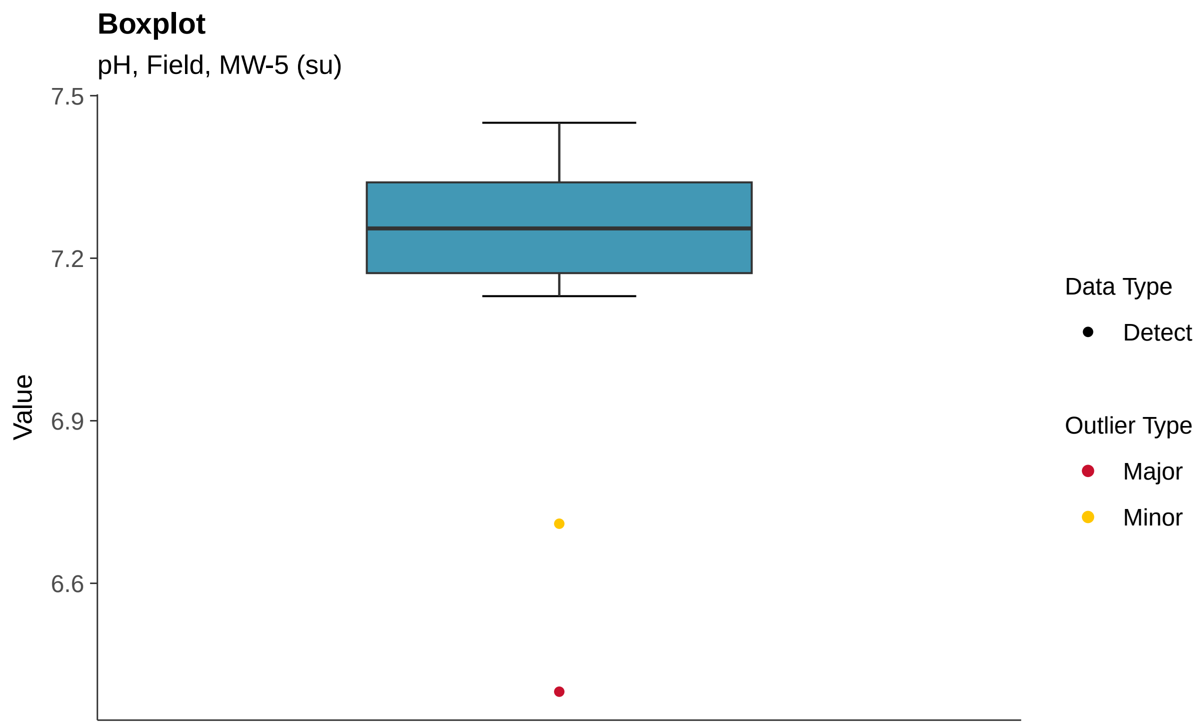


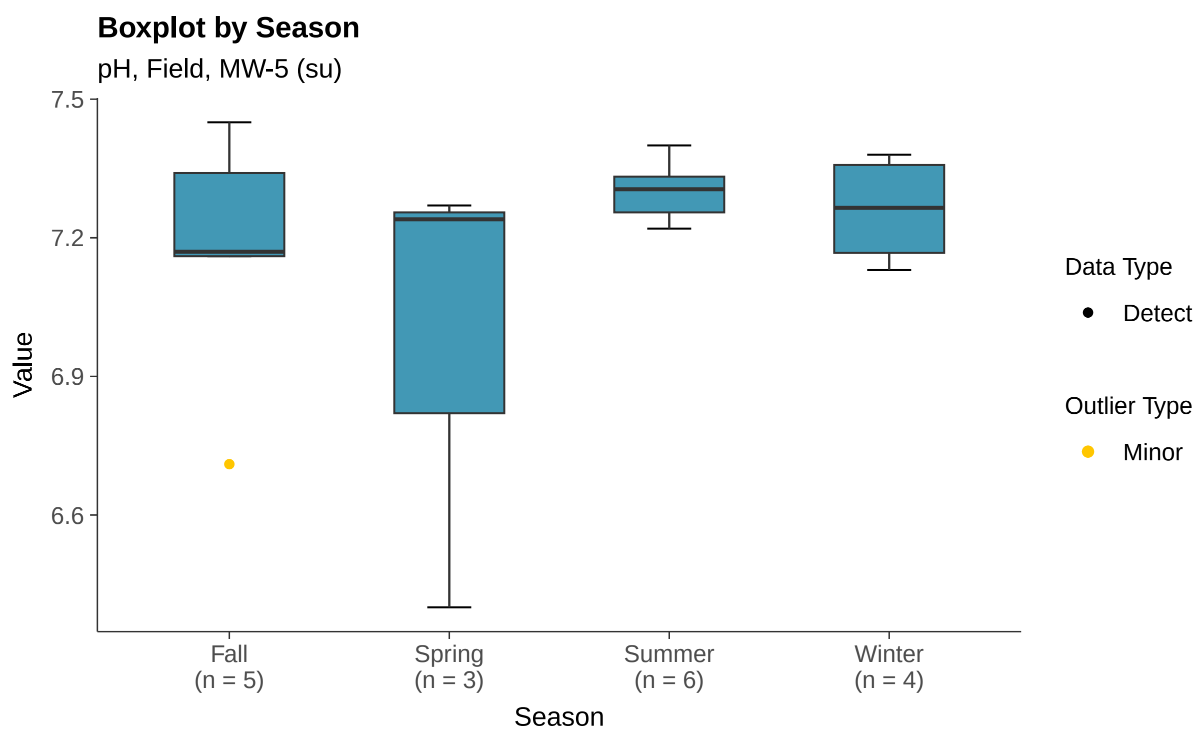
Appendix III: pH, Field, MW-5

ID: 05_1_07



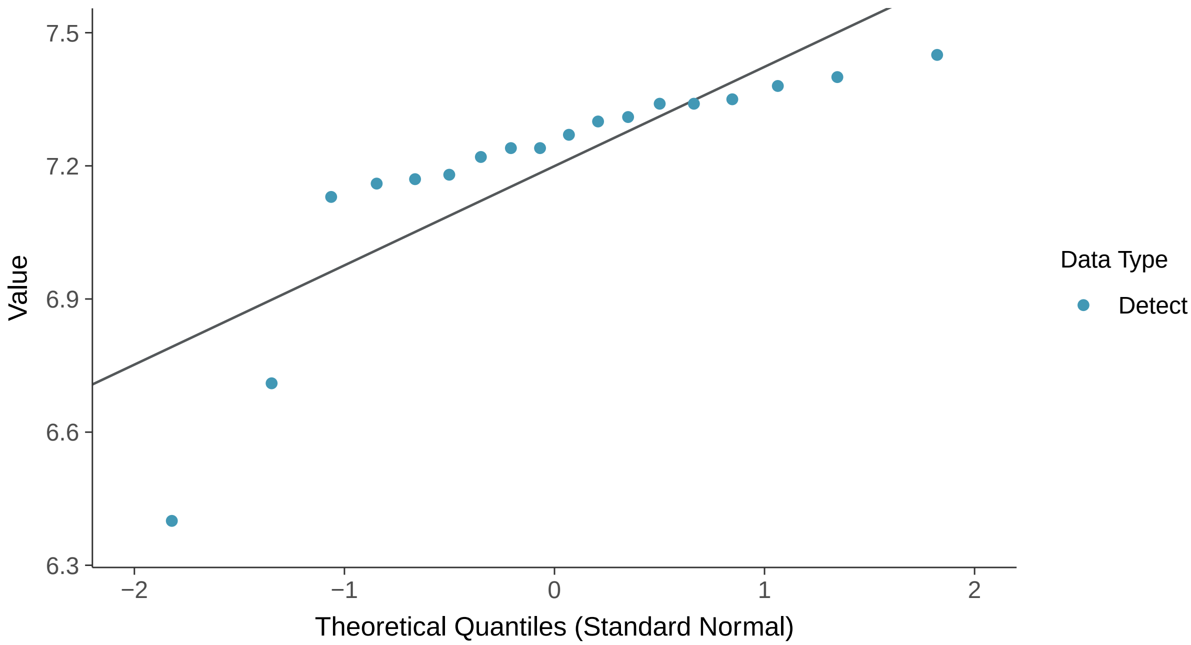



Boxplot
pH, Field, MW-5 (su)
Value
7.5
7.2
6.9
6.6
Data Type
Detect
Outlier Type
Major
Minor


Boxplot by Season
pH, Field, MW-5 (su)
Value
7.5
7.2
6.9
6.6
Fall
(n = 5)
Spring
(n = 3)
Summer
(n = 6)
Winter
(n = 4)
Season
Data Type
Detect
Outlier Type
Minor

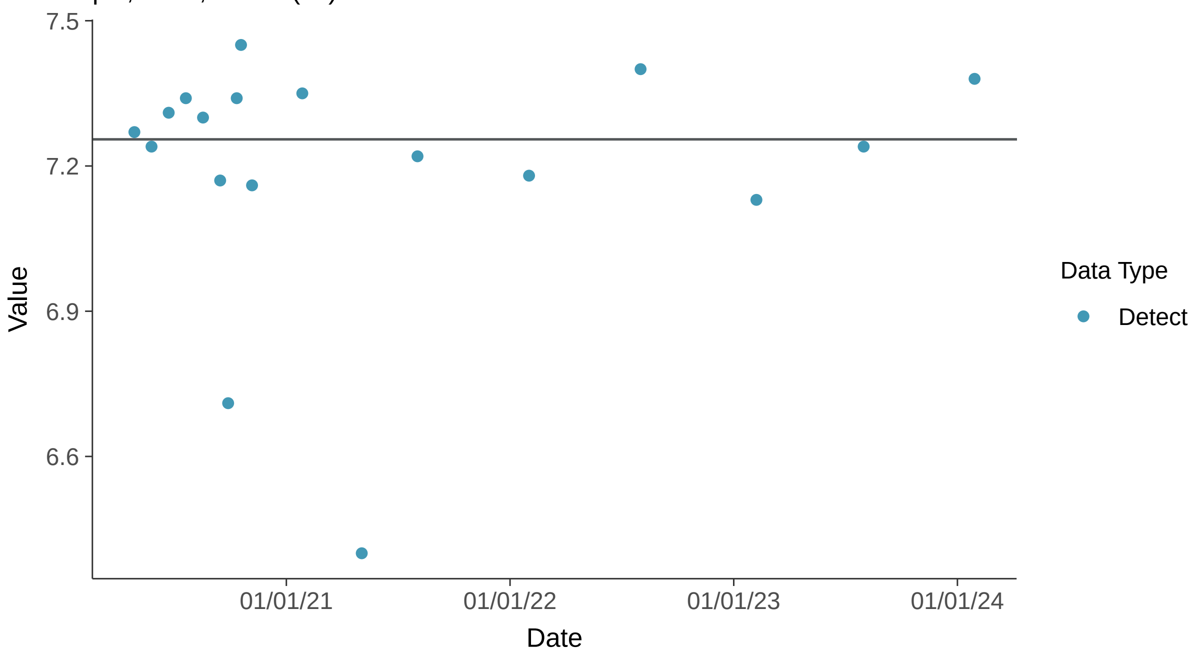
Normal Q-Q plot

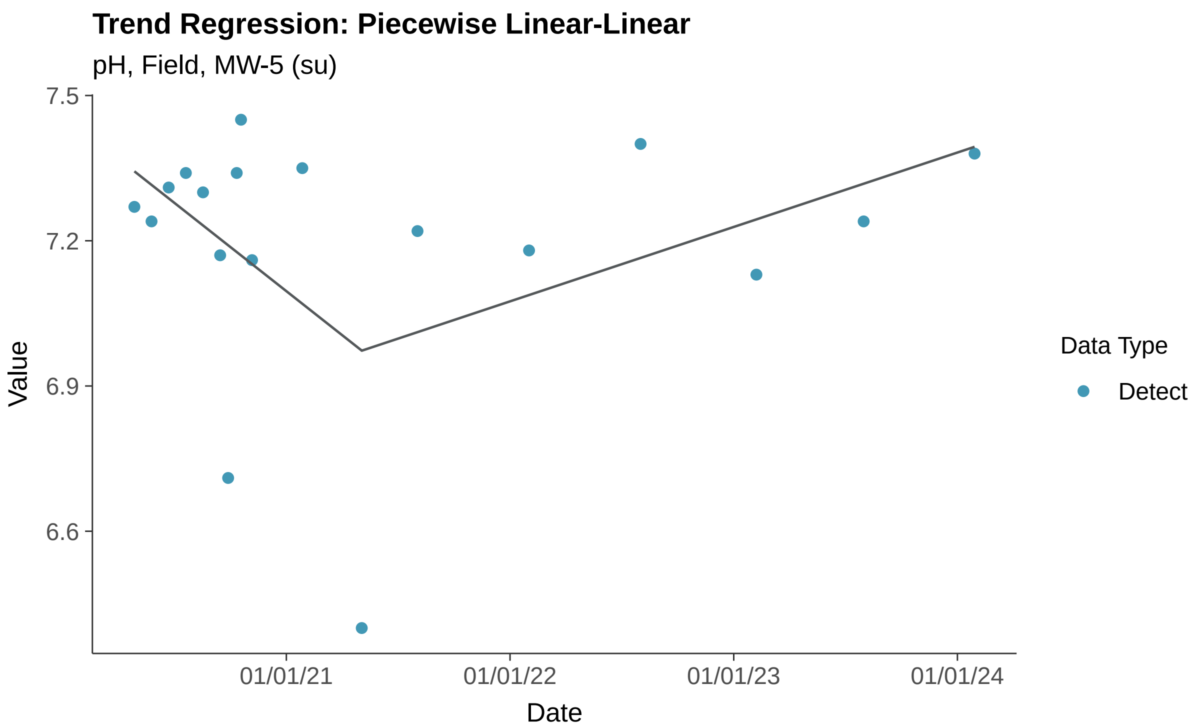
pH, Field, MW-5 (su)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

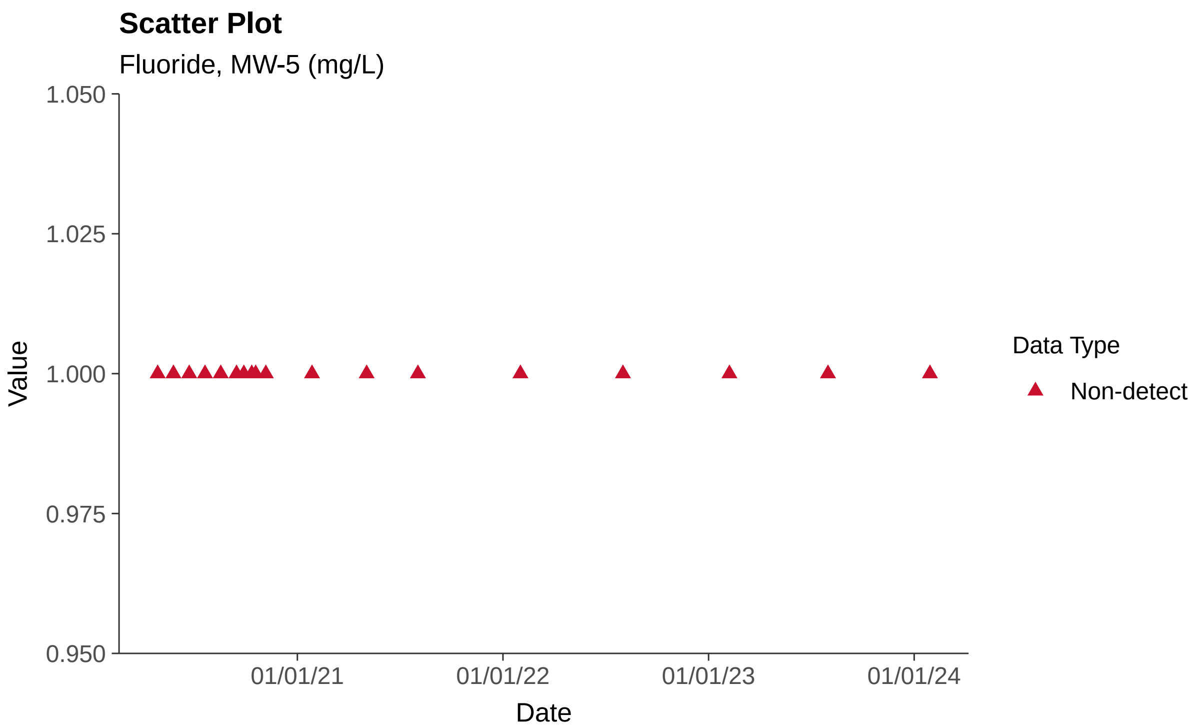
pH, Field, MW-5 (su)

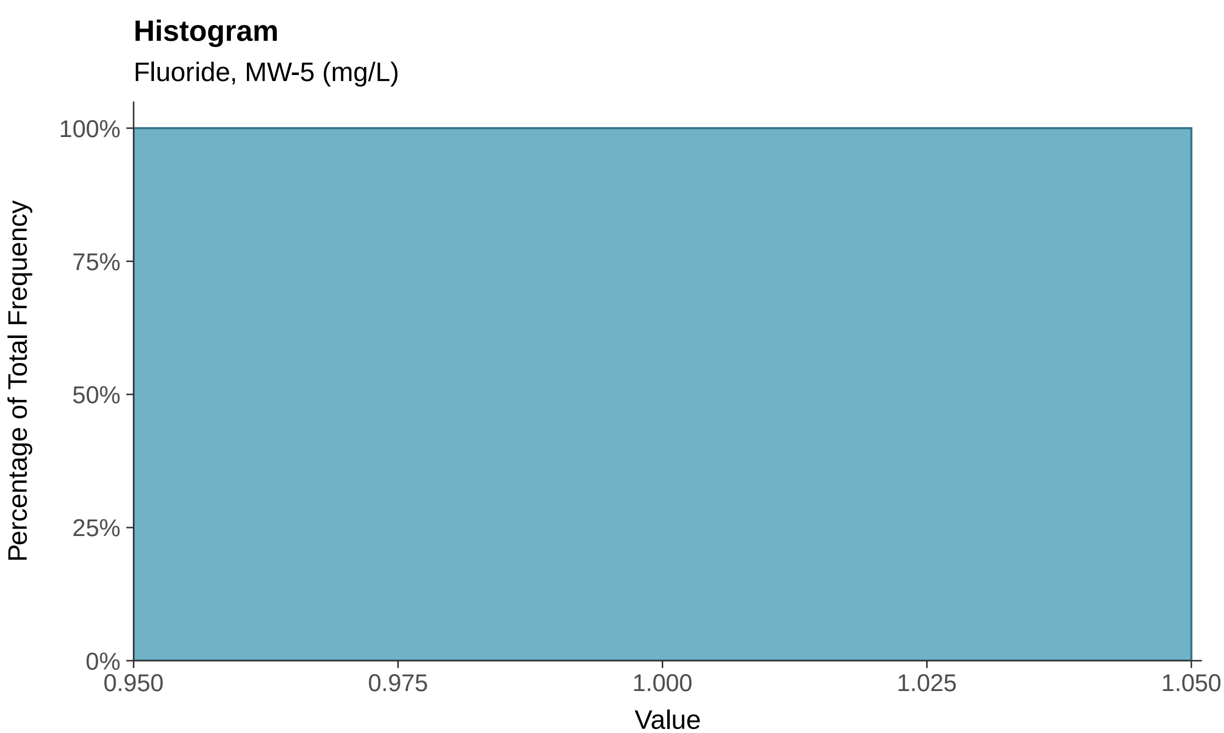



Trend Regression: Piecewise Linear-Linear
pH, Field, MW-5 (su)
7.5
7.2
6.9
6.6
Value
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Fluoride, MW-5

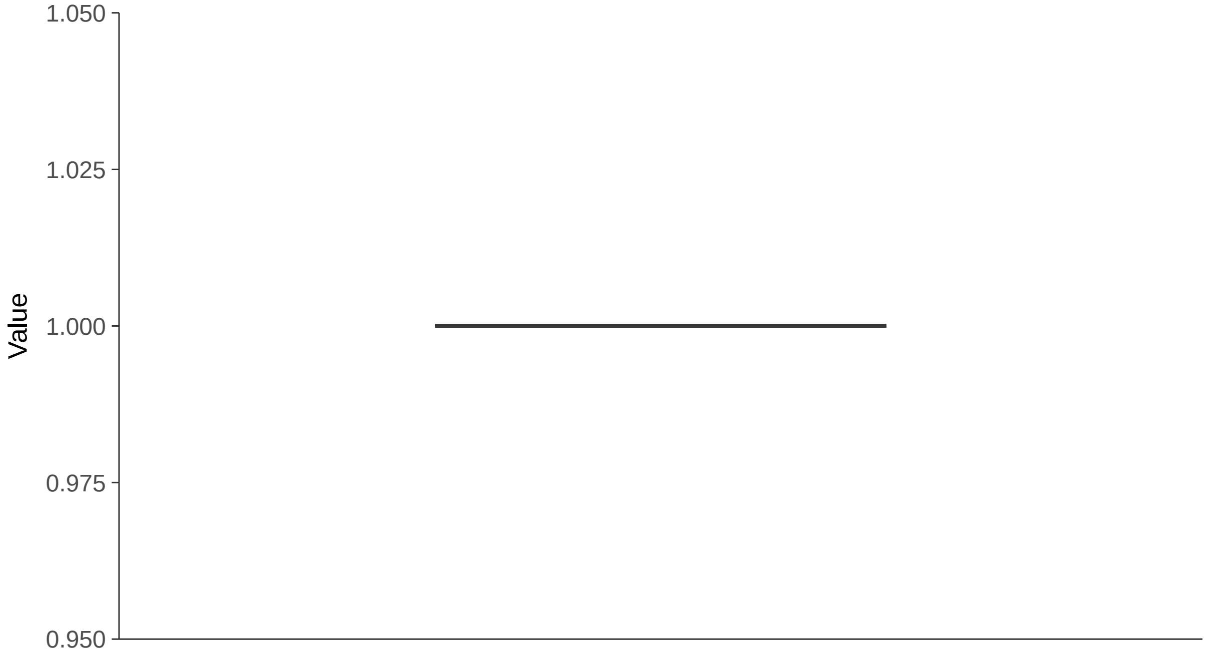
ID: 05_2_04





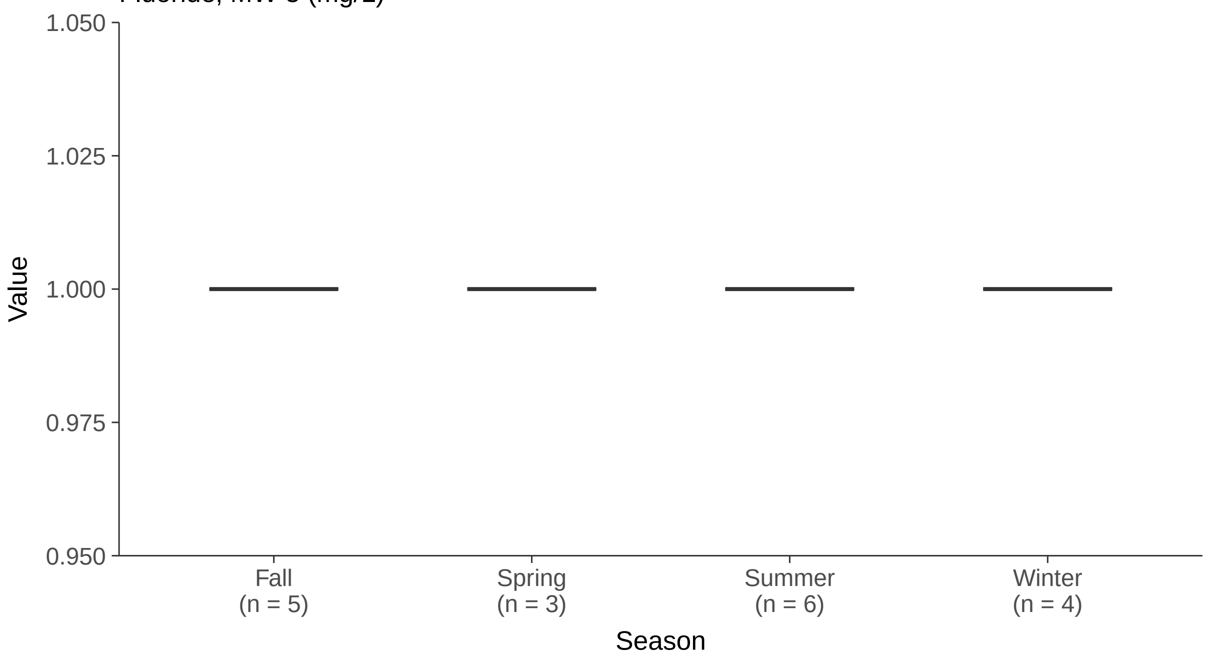
Boxplot

Fluoride, MW-5 (mg/L)



Boxplot by Season

Fluoride, MW-5 (mg/L)

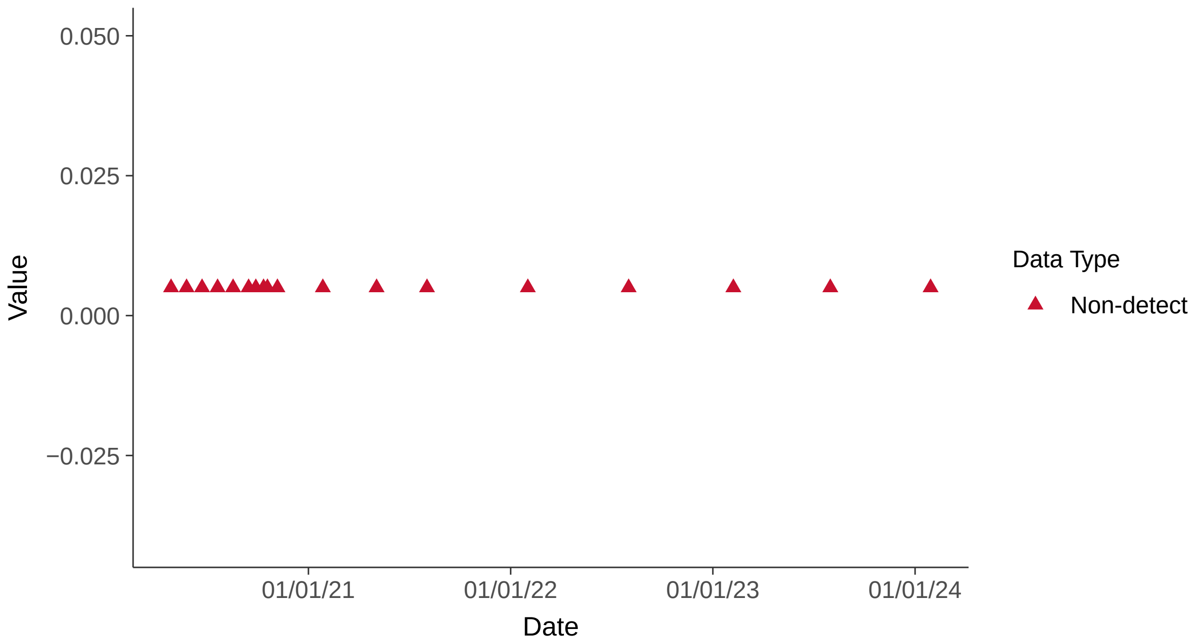


Appendix IV: Antimony, MW-5

ID: 05_2_08

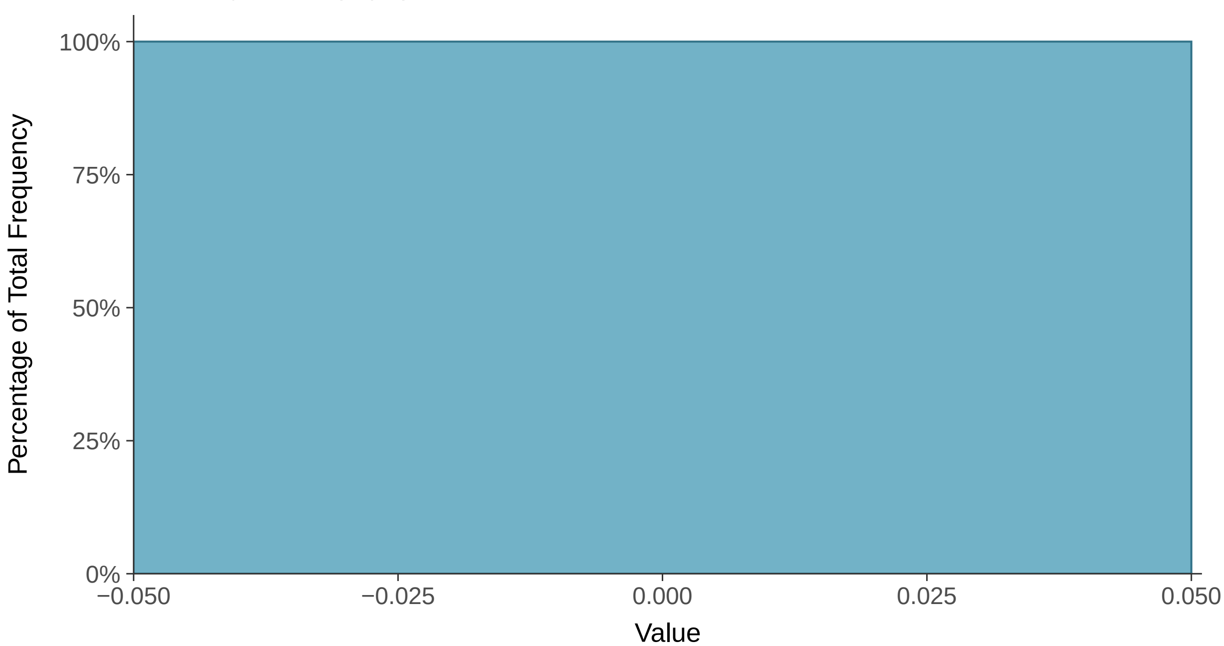
Scatter Plot

Antimony, MW-5 (mg/L)



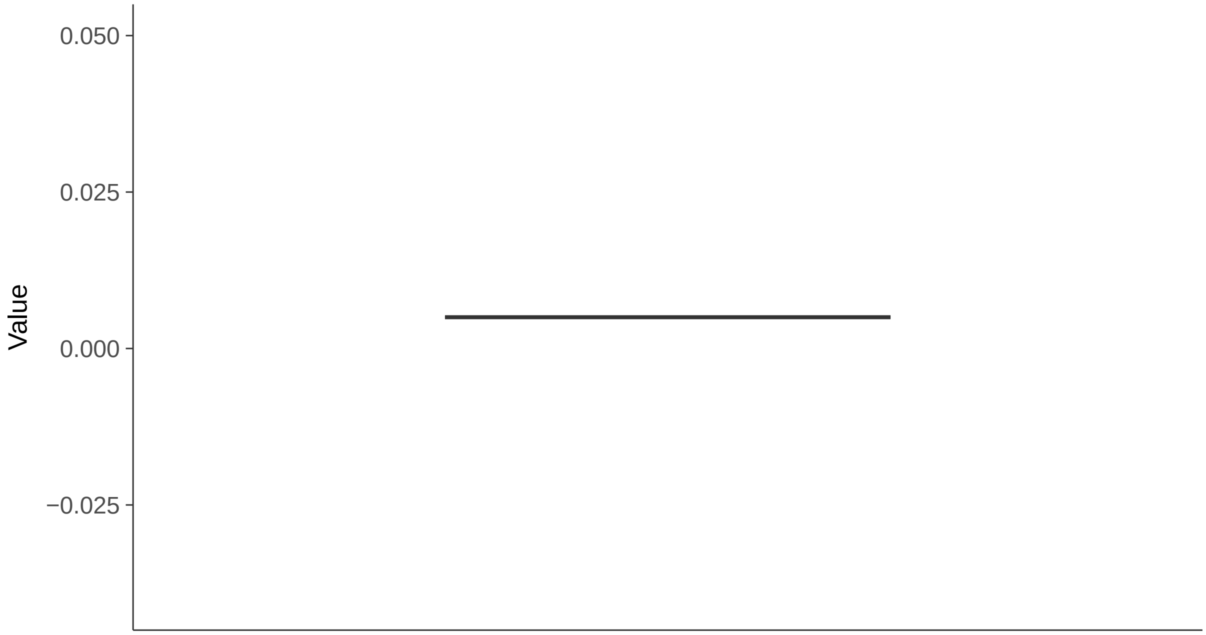
Histogram

Antimony, MW-5 (mg/L)



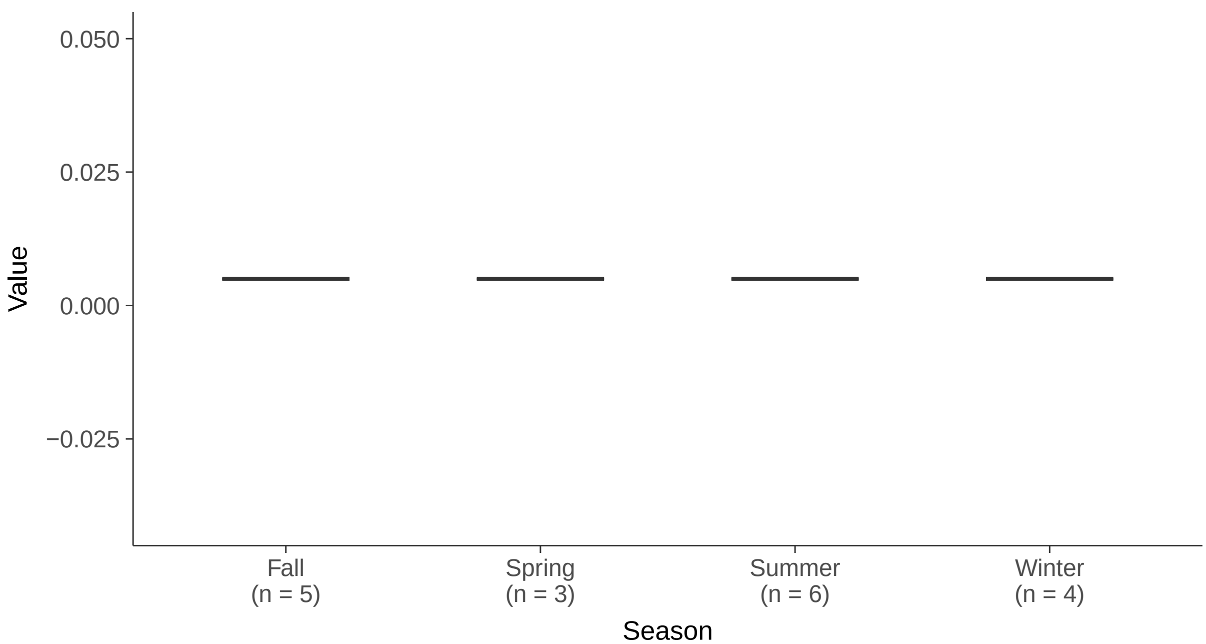
Boxplot

Antimony, MW-5 (mg/L)



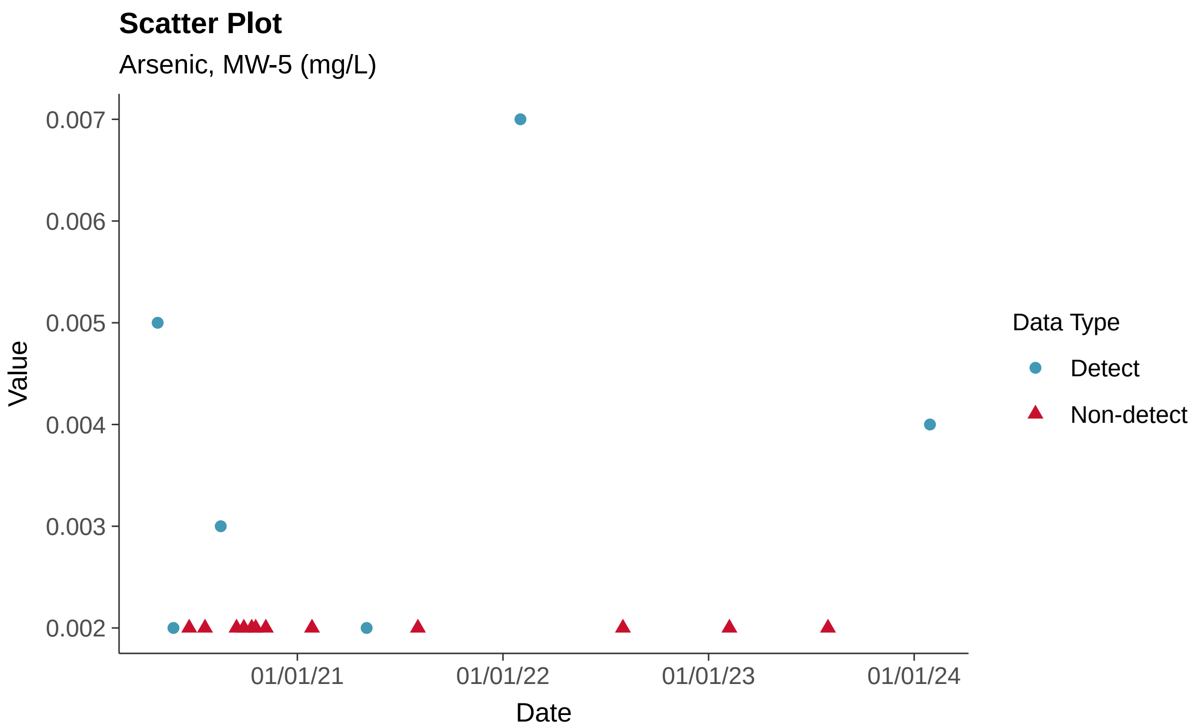
Boxplot by Season

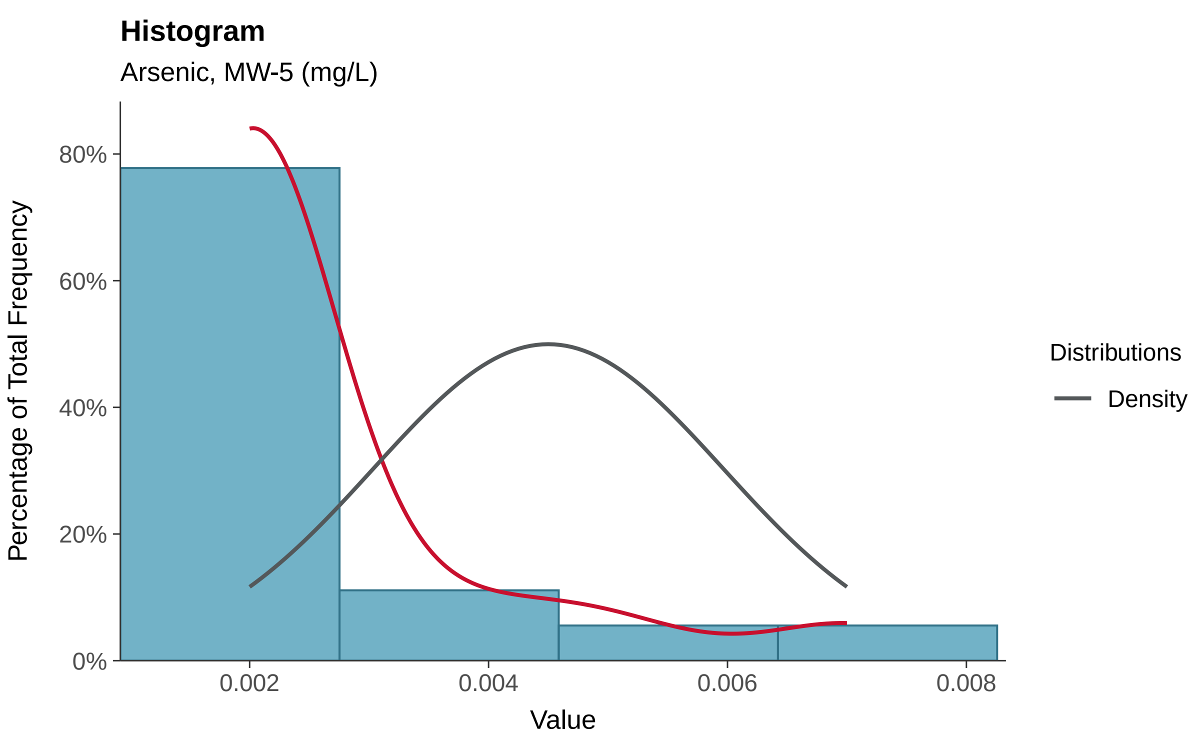
Antimony, MW-5 (mg/L)



Appendix IV: Arsenic, MW-5

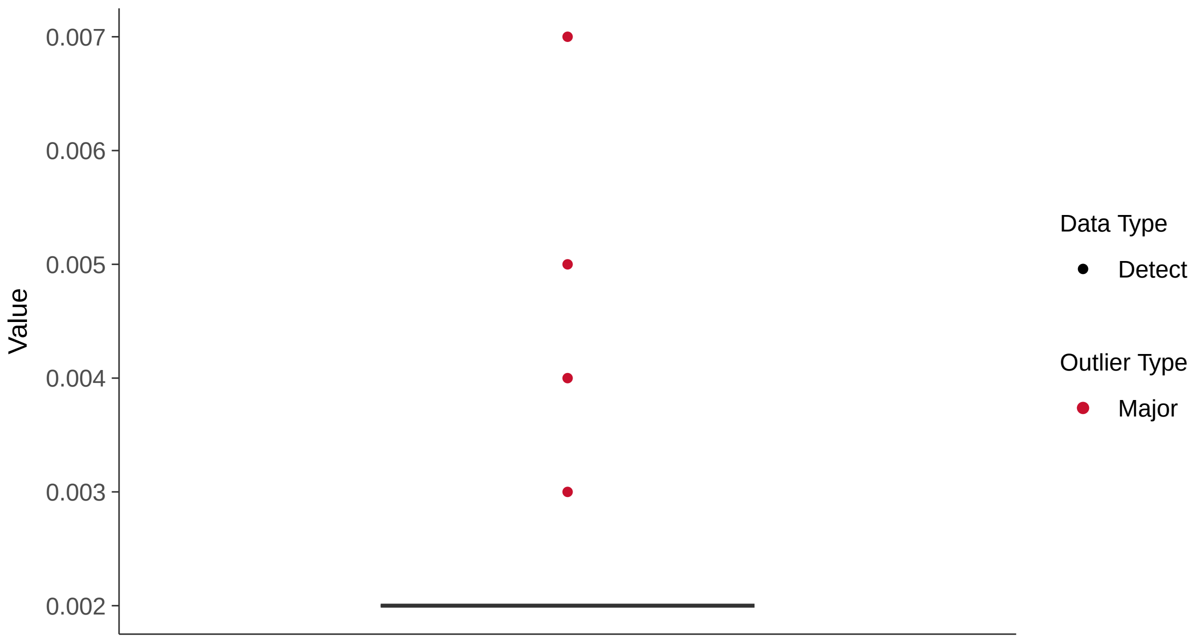
ID: 05_2_09





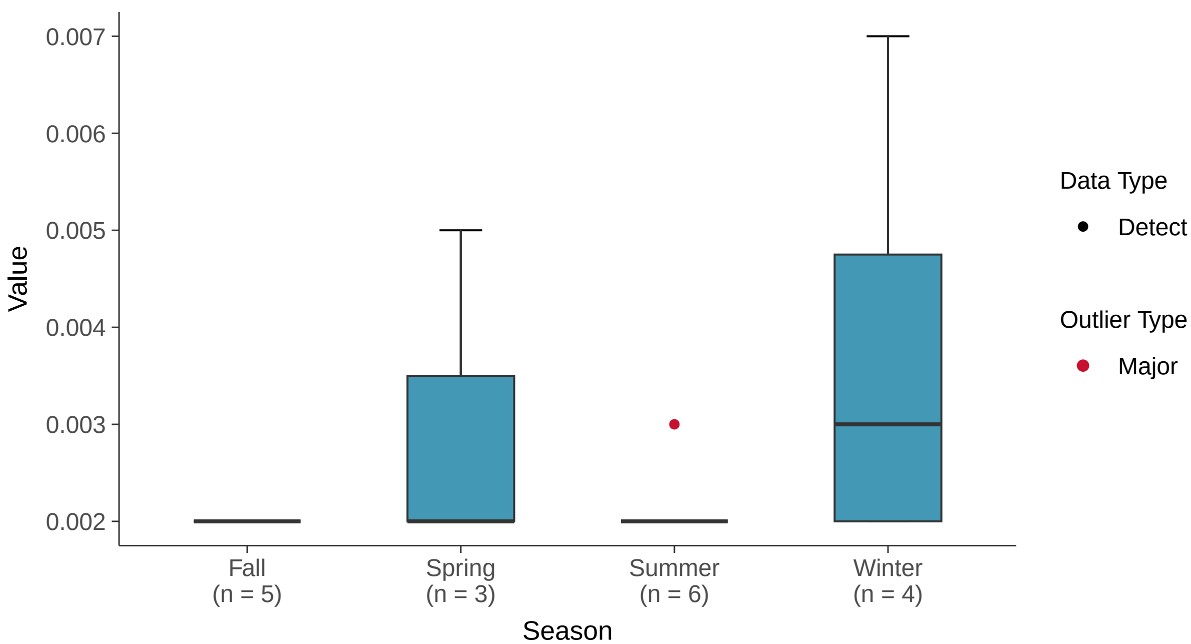
Boxplot

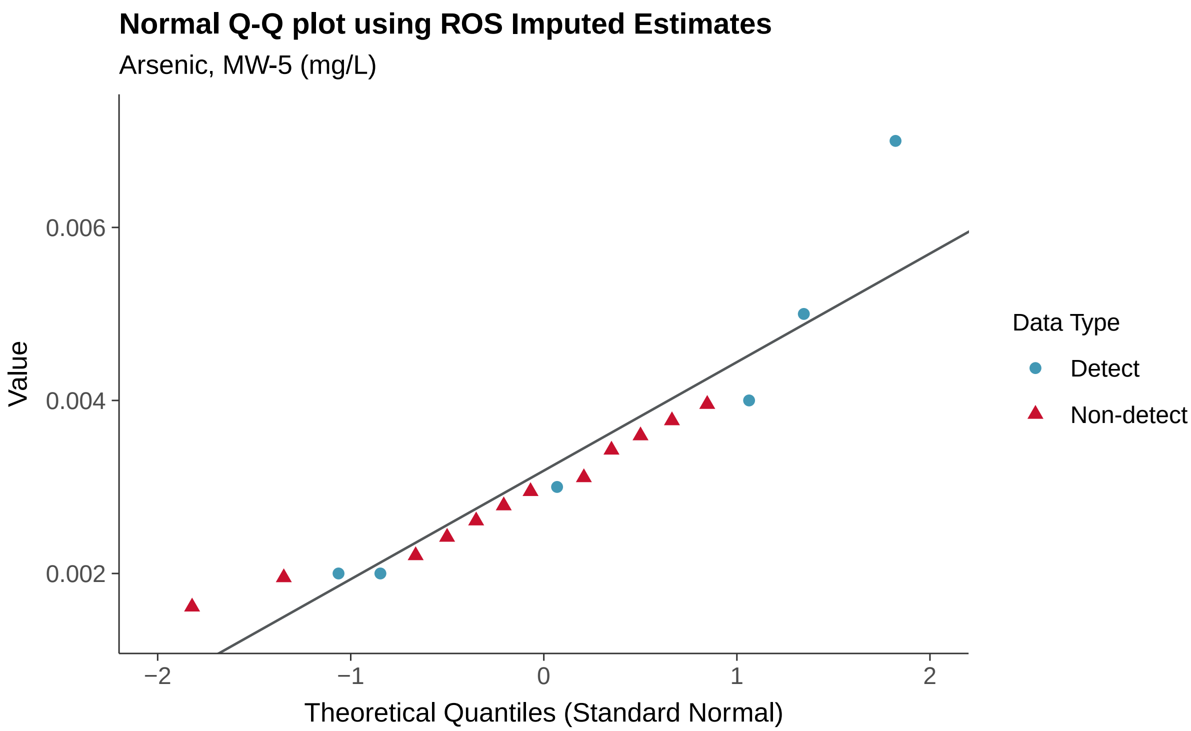
Arsenic, MW-5 (mg/L)

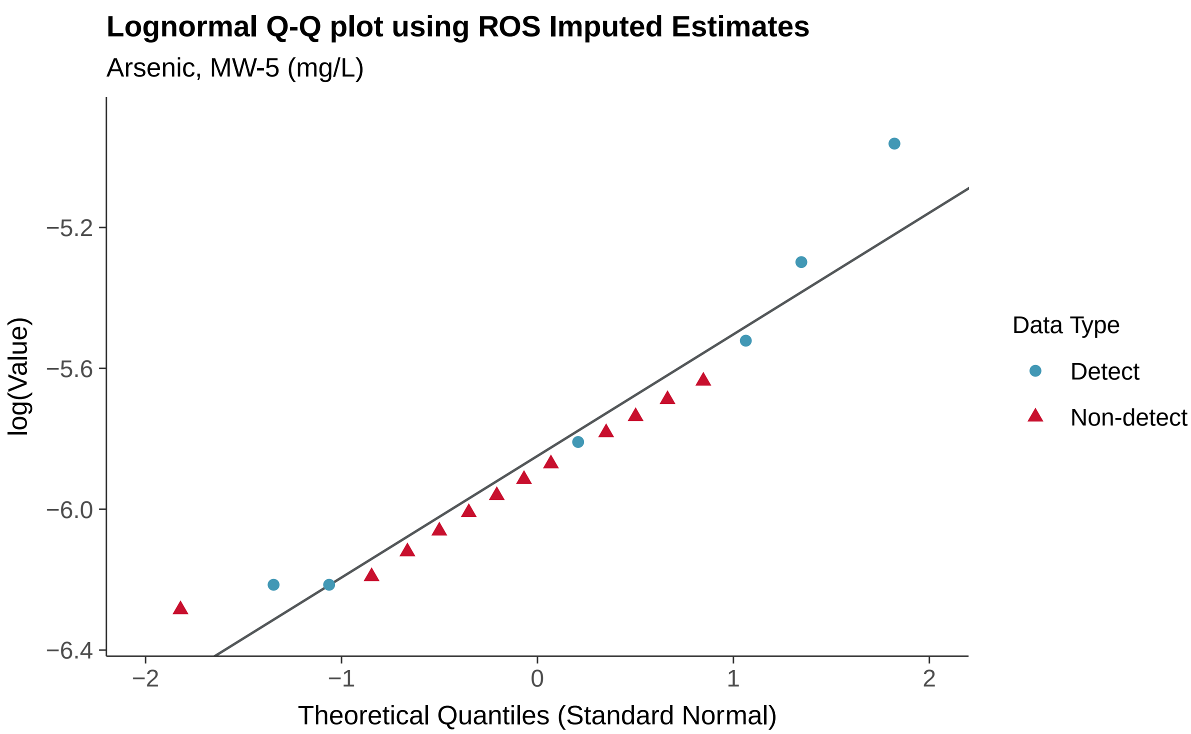


Boxplot by Season

Arsenic, MW-5 (mg/L)

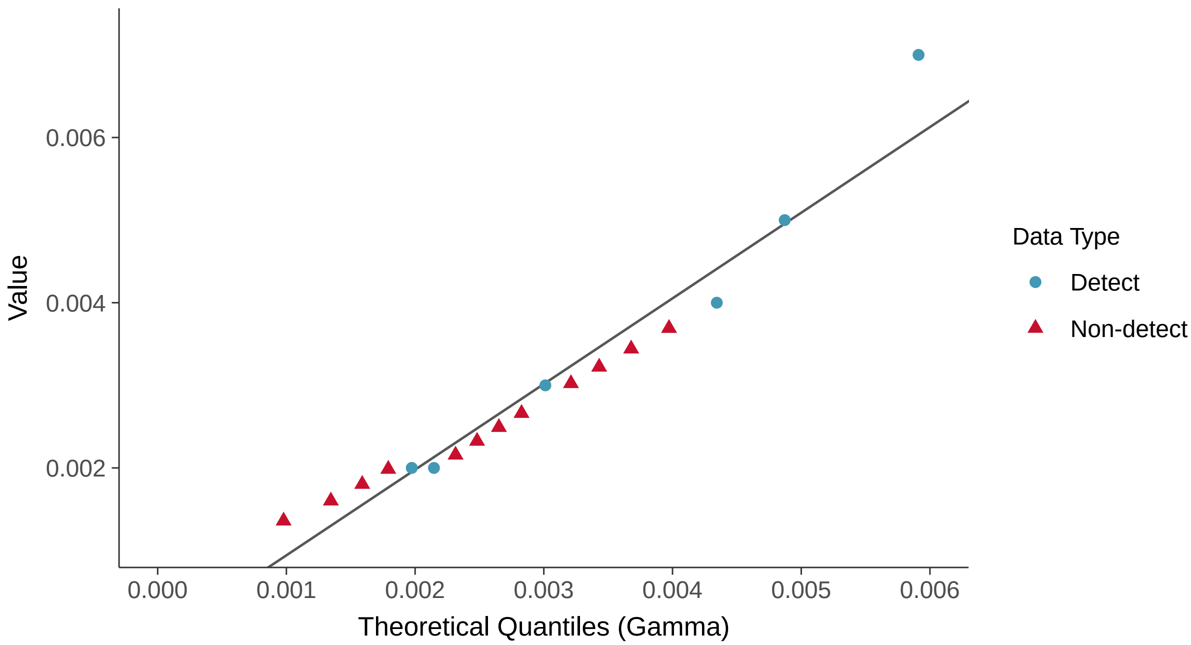



Normal Q-Q plot using ROS Imputed Estimates
Arsenic, MW-5 (mg/L)
Value
0.006
0.004
0.002
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Arsenic, MW-5 (mg/L)
log(Value)
−5.2
−5.6
−6.0
−6.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

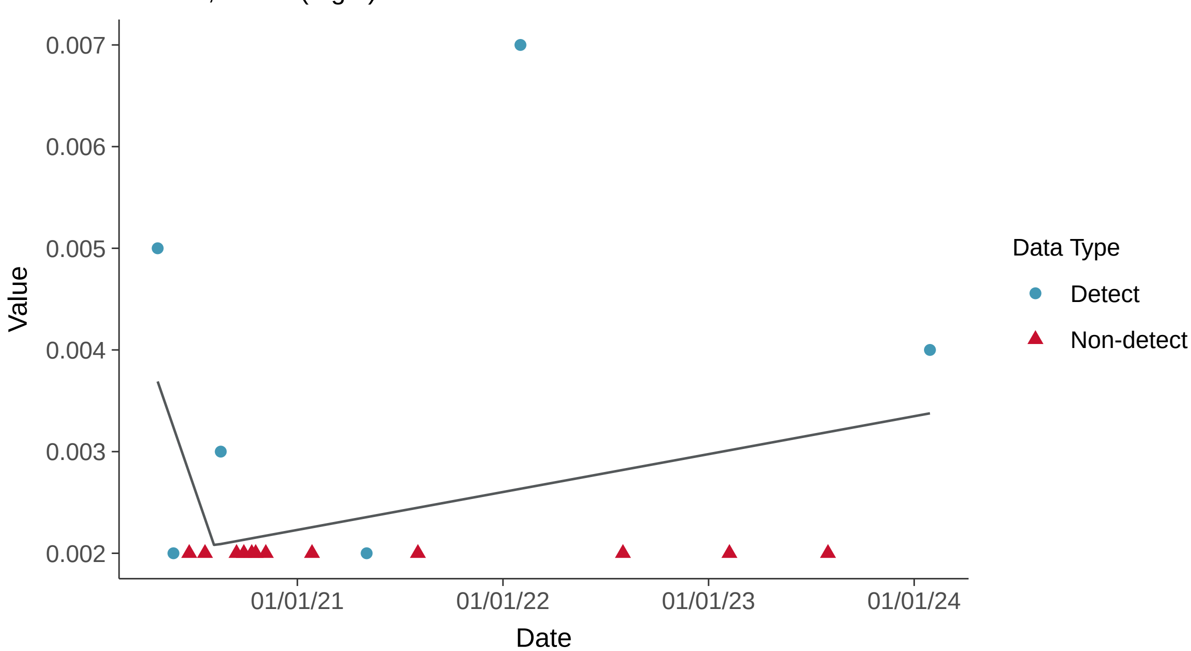
Gamma Q-Q plot using ROS Imputed Estimates

Arsenic, MW-5 (mg/L)



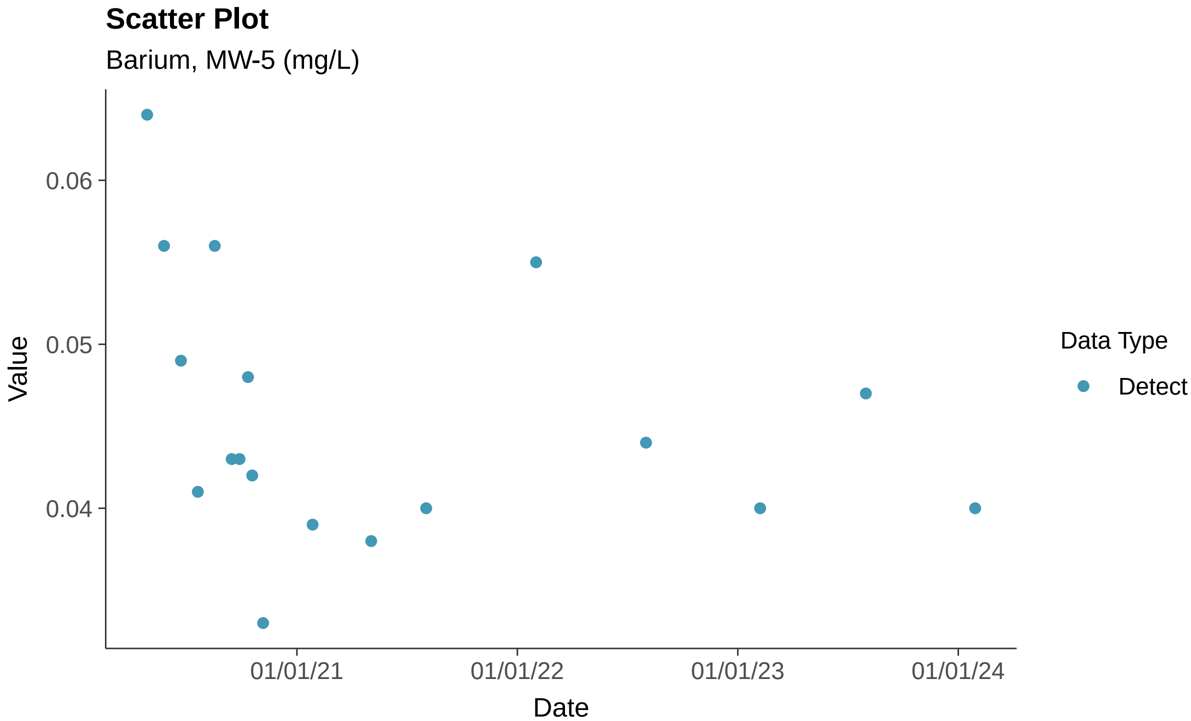
Trend Regression: Piecewise Linear-Linear

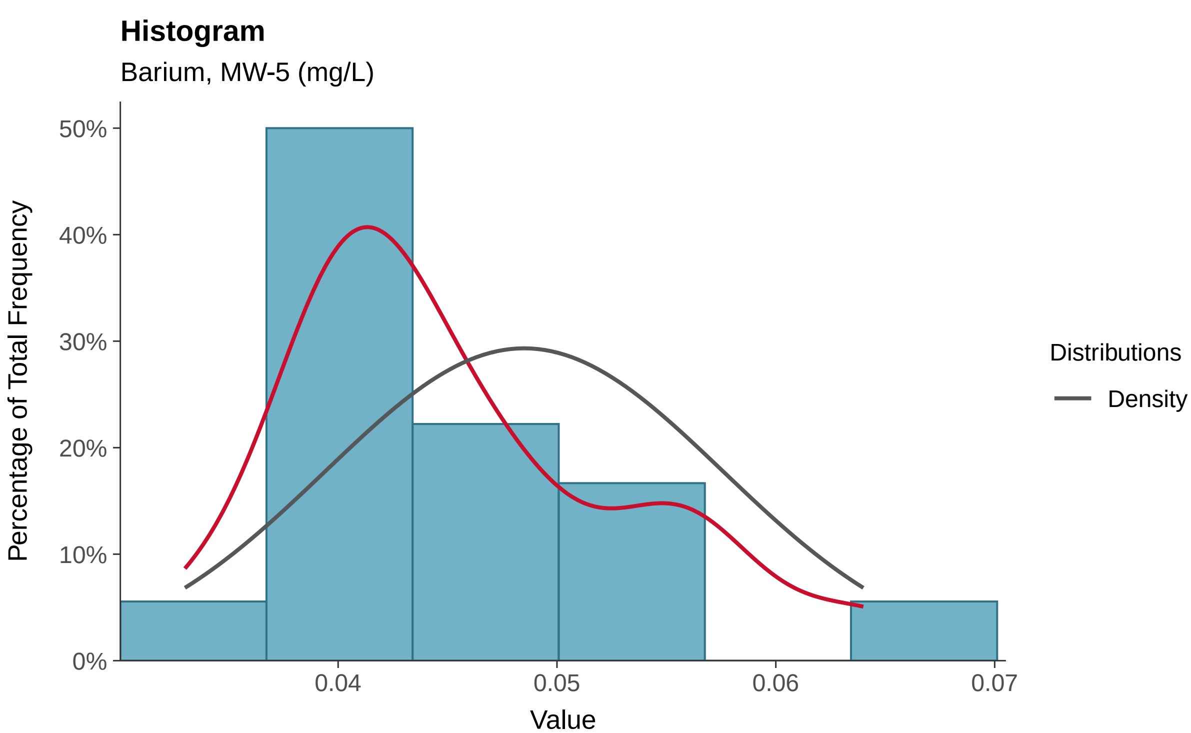
Arsenic, MW-5 (mg/L)

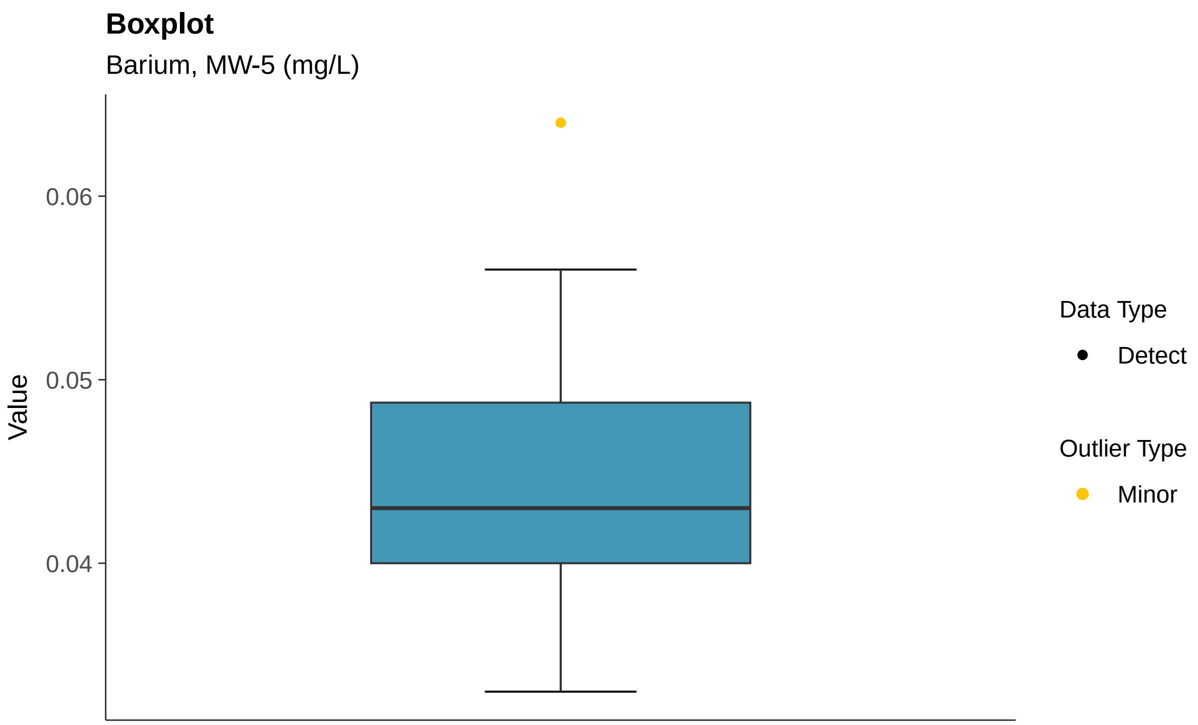


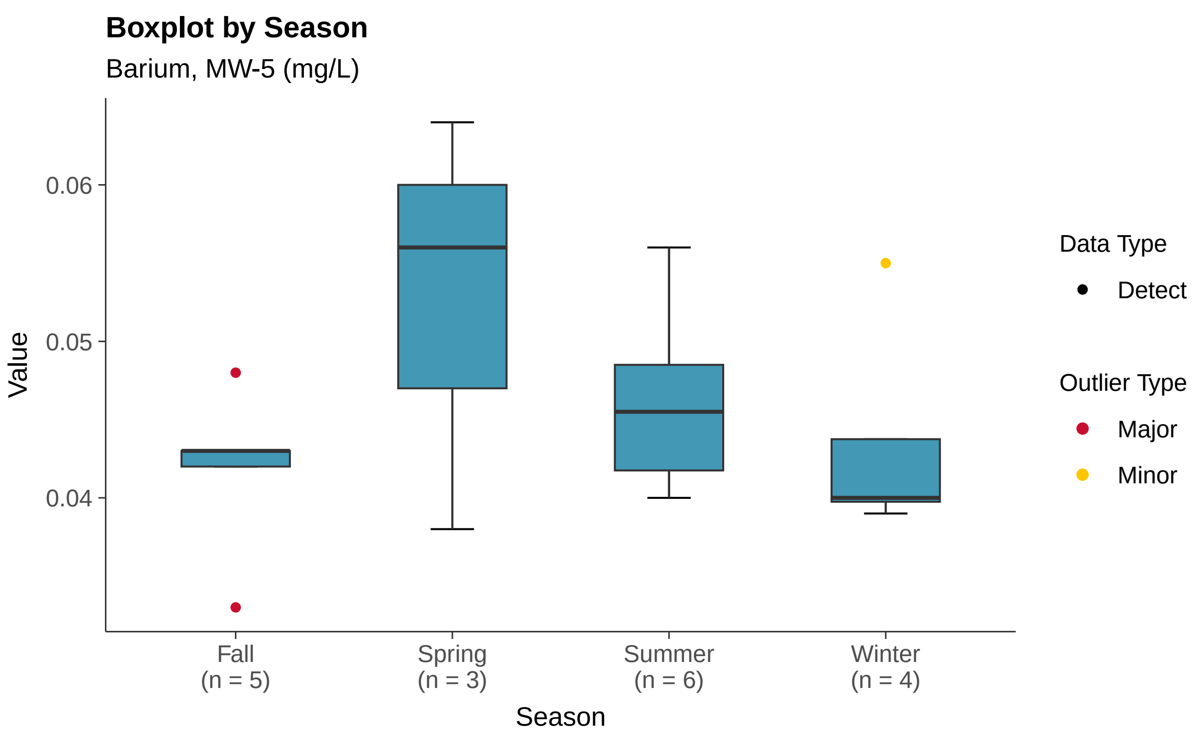
Appendix IV: Barium, MW-5

ID: 05_2_10



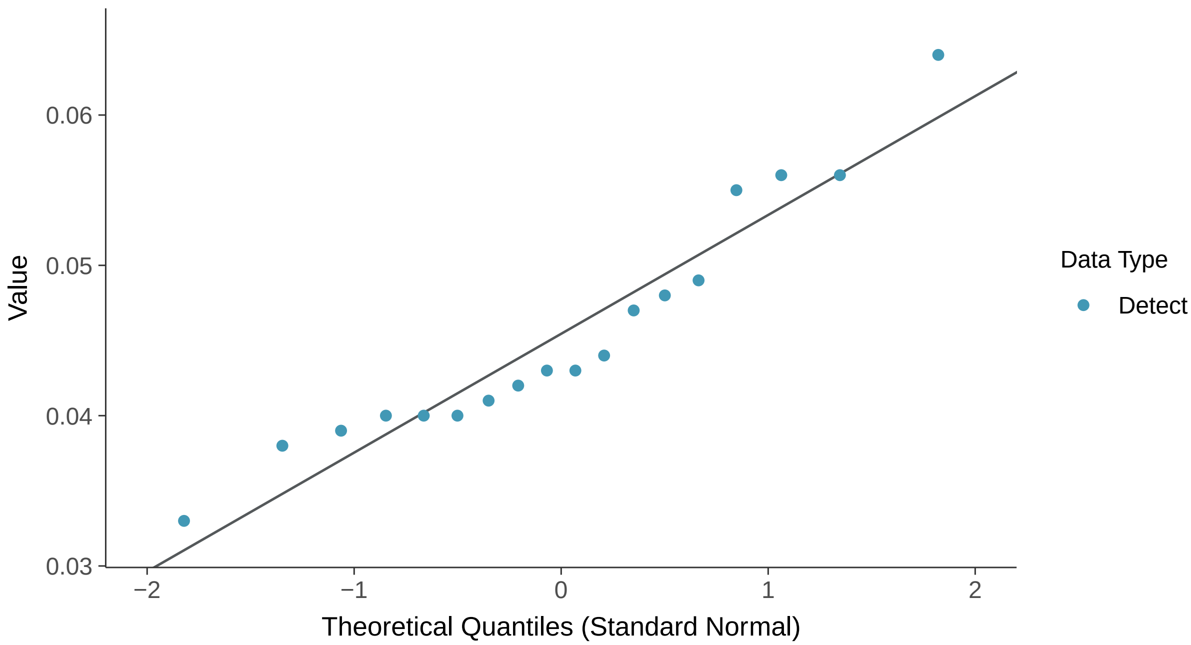



Boxplot
Barium, MW-5 (mg/L)
0.06
0.05
0.04
Value
Data Type
Detect
Outlier Type
Minor


Boxplot by Season
Barium, MW-5 (mg/L)
0.06
0.05
0.04
Value
Fall
(n = 5)
Spring
(n = 3)
Summer
(n = 6)
Winter
(n = 4)
Season
Data Type
Detect
Outlier Type
Major
Minor

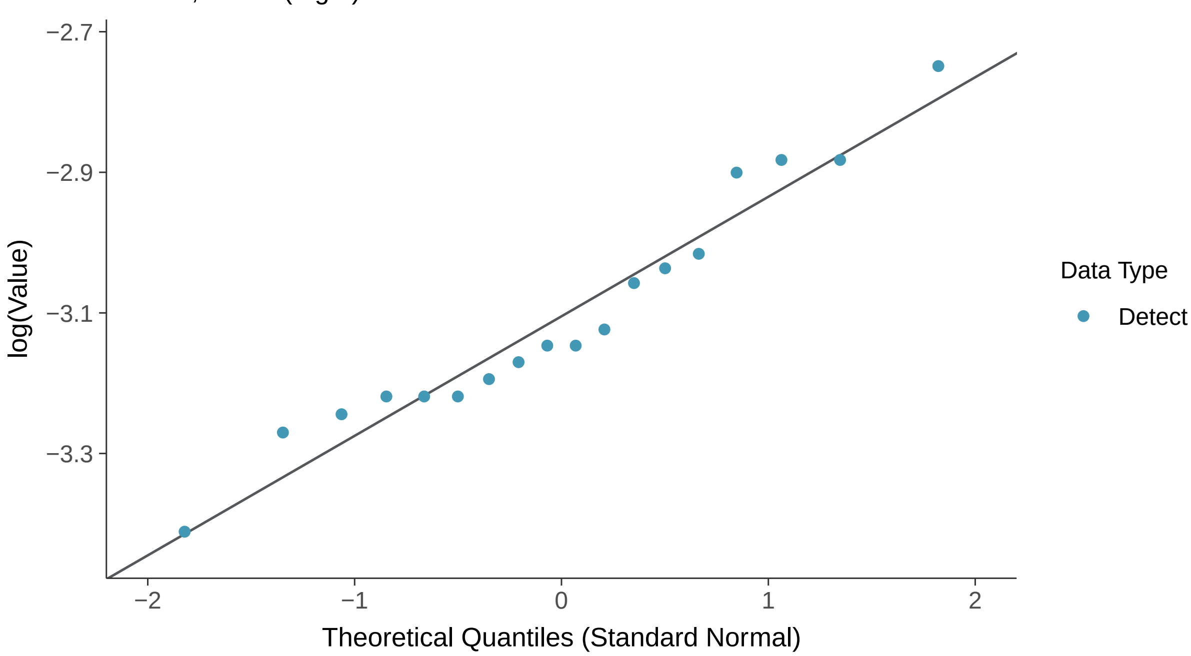
Normal Q-Q plot

Barium, MW-5 (mg/L)



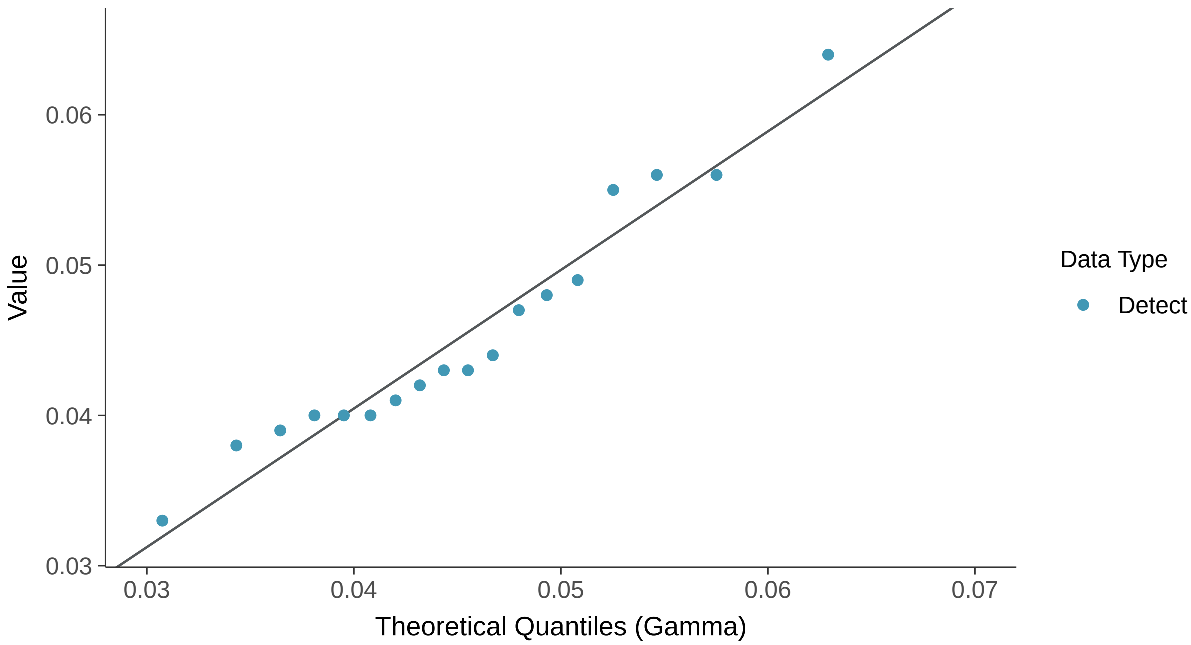
Lognormal Q-Q plot

Barium, MW-5 (mg/L)



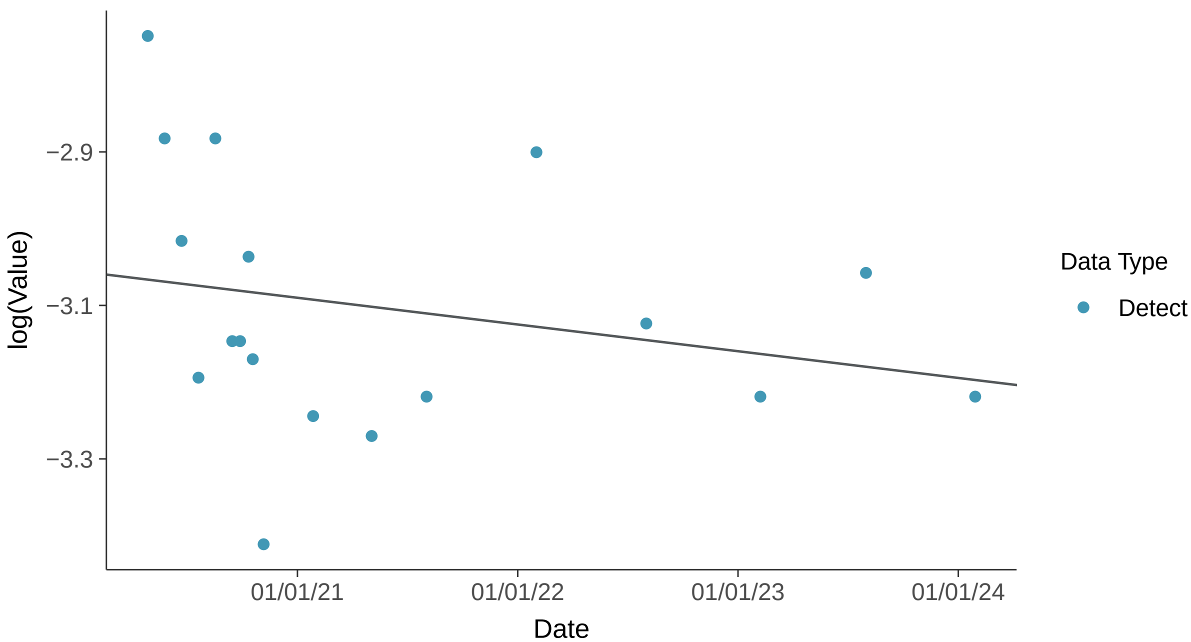
Gamma Q-Q plot

Barium, MW-5 (mg/L)



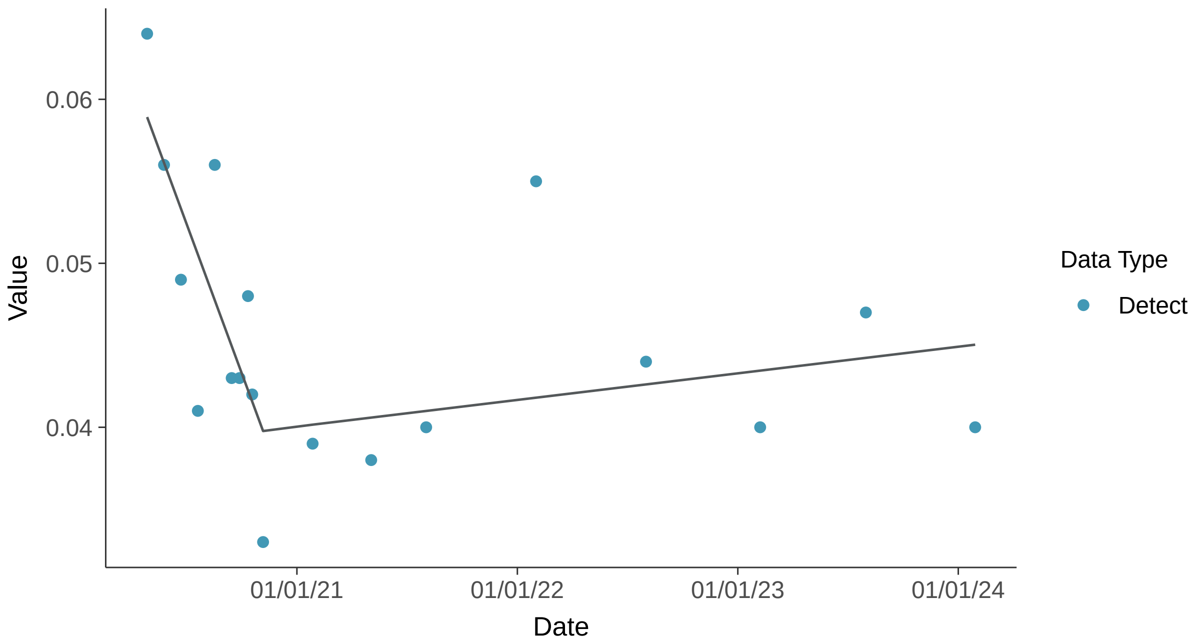
Trend Regression: Lognormal MLE

Barium, MW-5 (mg/L)



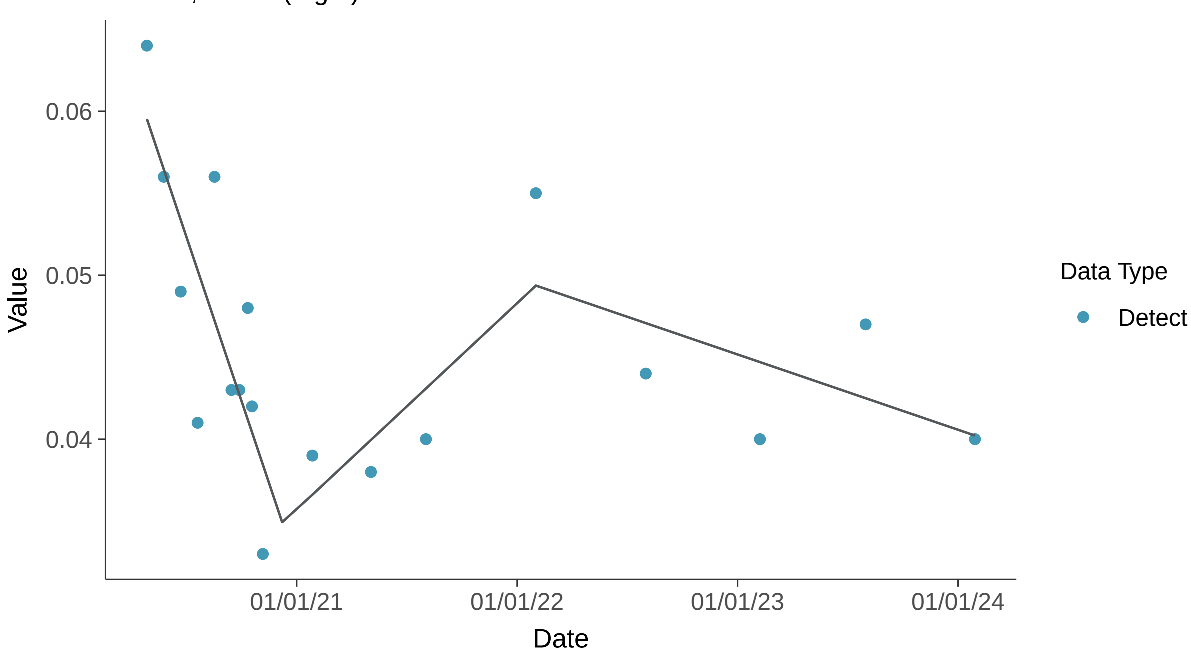
Trend Regression: Piecewise Linear-Linear

Barium, MW-5 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-5 (mg/L)

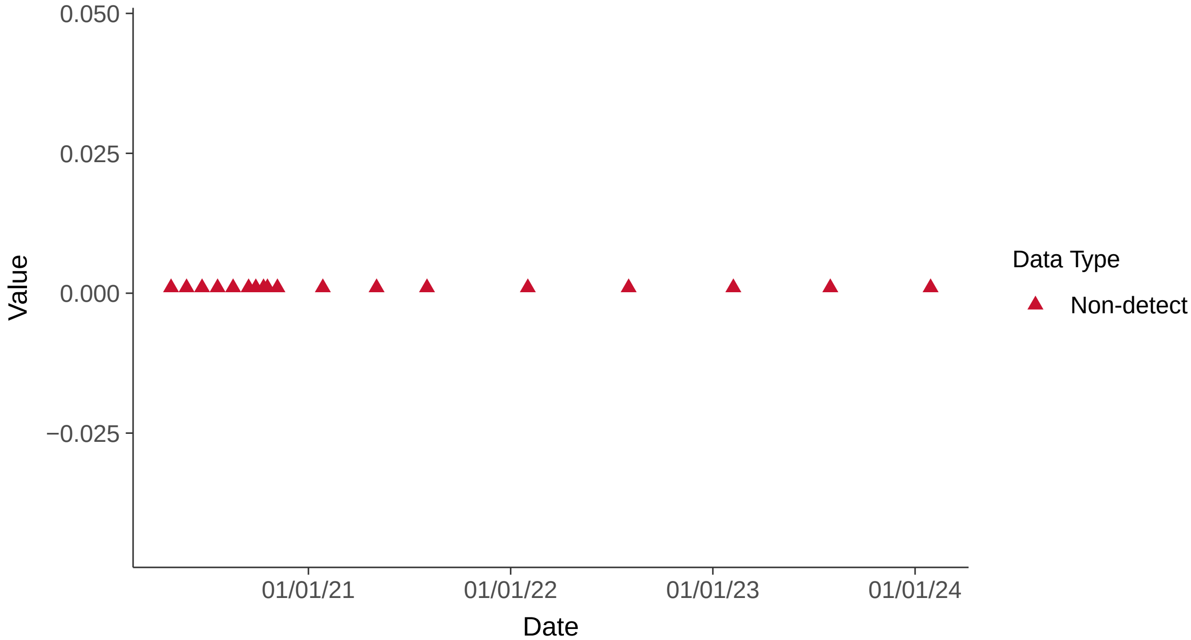


Appendix IV: Beryllium, MW-5

ID: 05_2_11

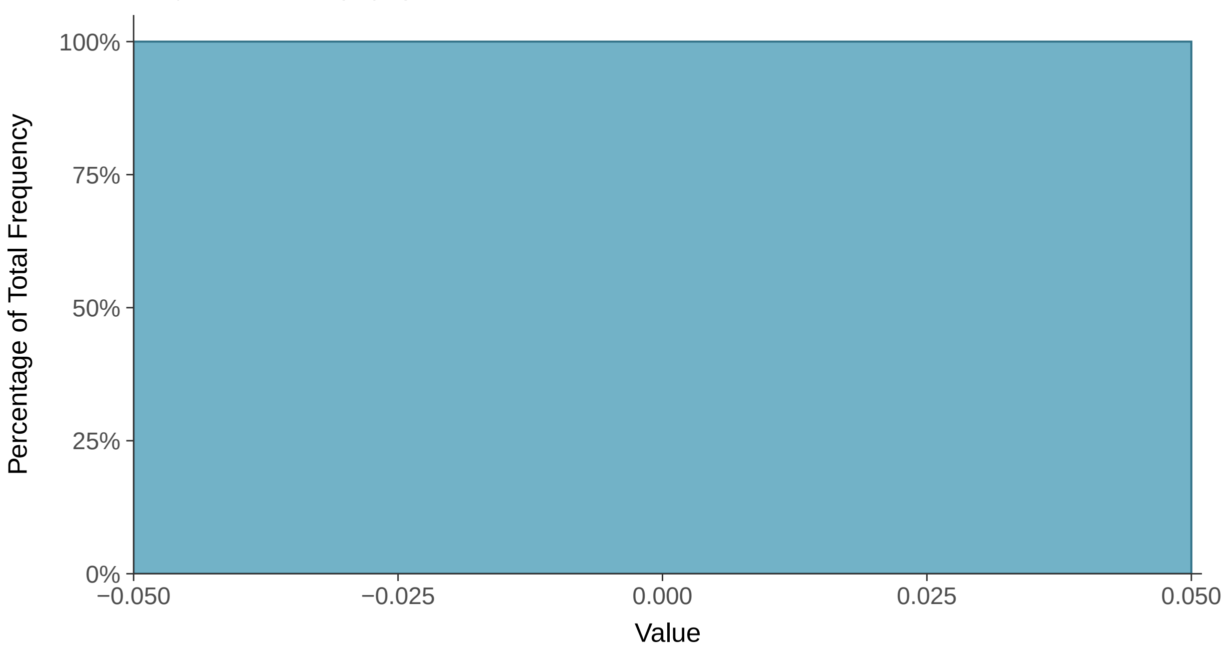
Scatter Plot

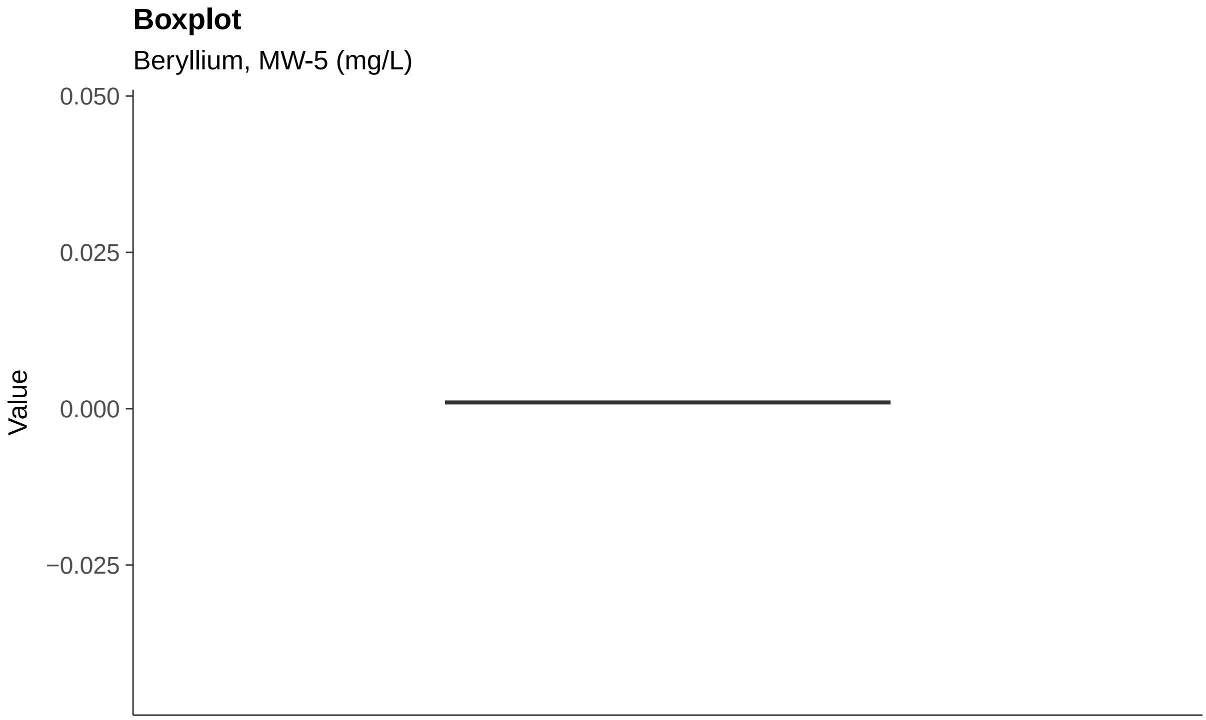
Beryllium, MW-5 (mg/L)

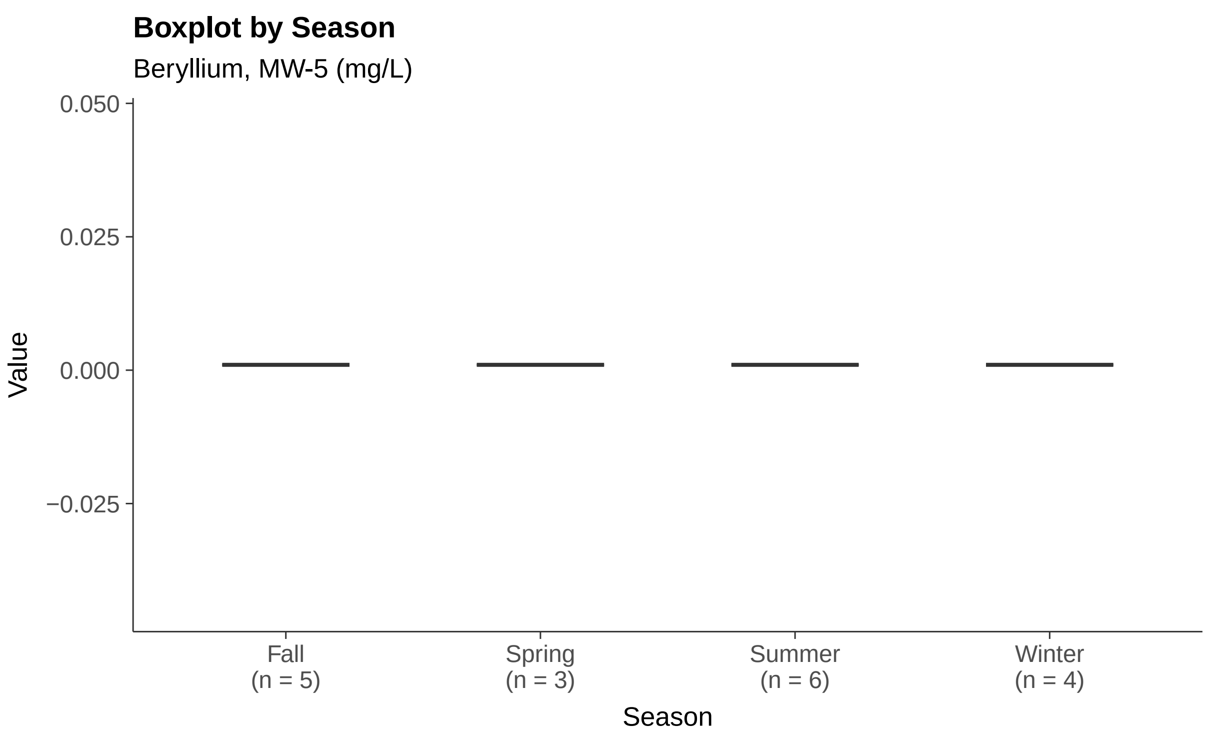


Histogram

Beryllium, MW-5 (mg/L)




Boxplot
Beryllium, MW-5 (mg/L)
0.050
0.025
0.000
−0.025
Value

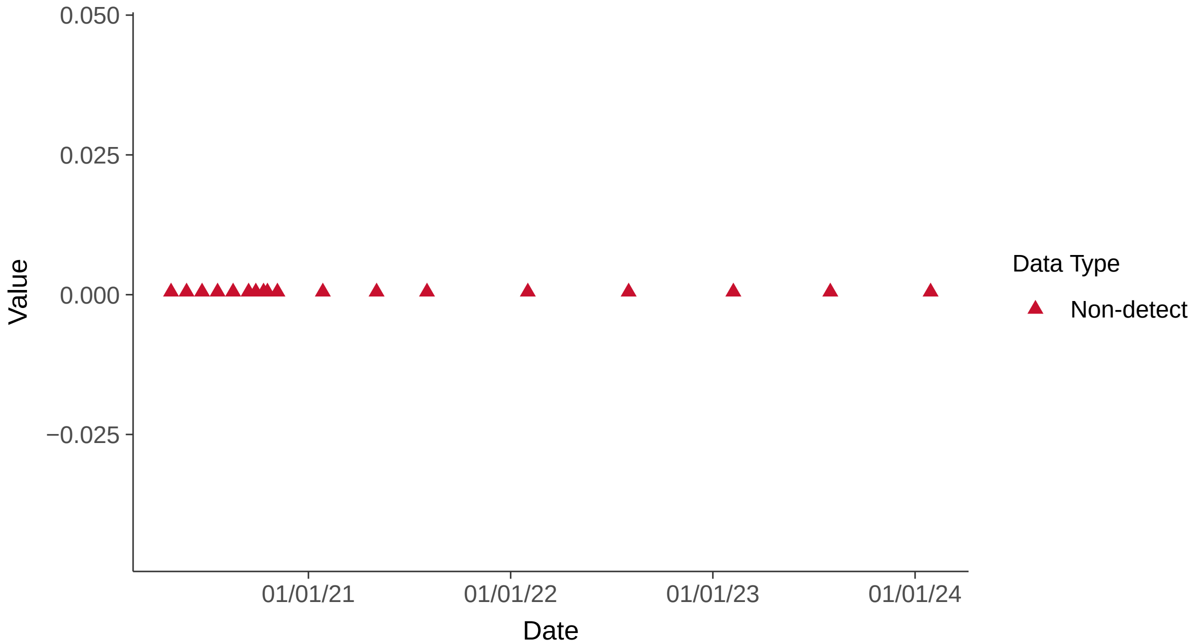

Boxplot by Season
Beryllium, MW-5 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 5)
Spring
(n = 3)
Summer
(n = 6)
Winter
(n = 4)
Season

Appendix IV: Cadmium, MW-5

ID: 05_2_12

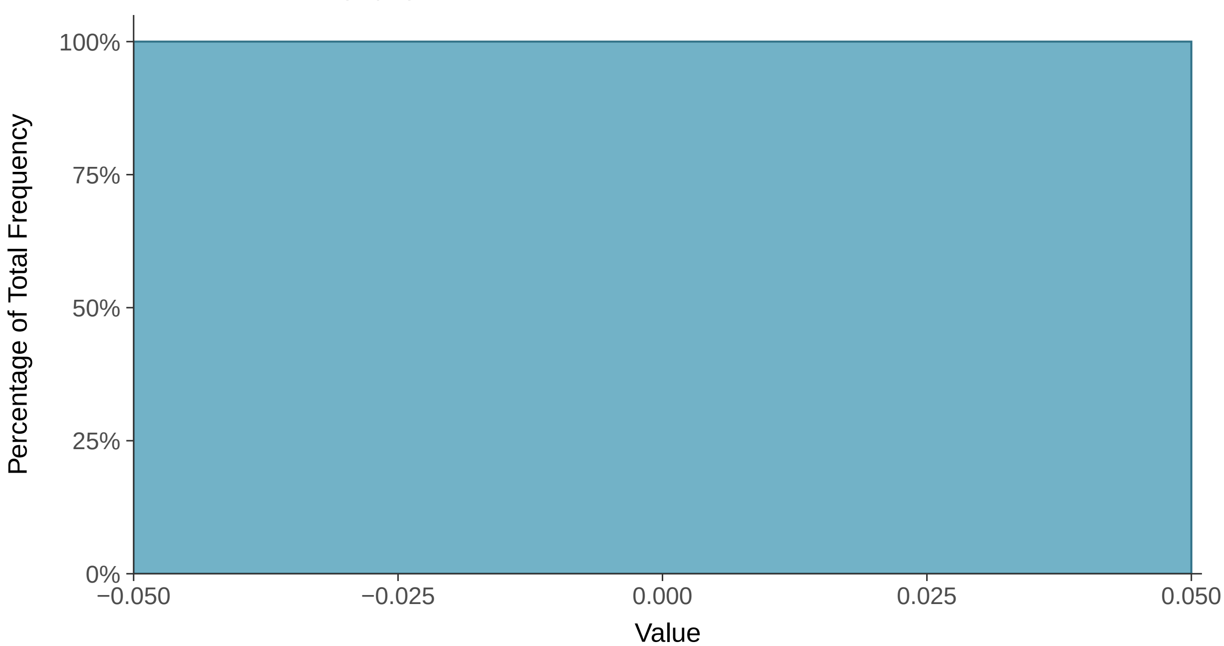
Scatter Plot

Cadmium, MW-5 (mg/L)



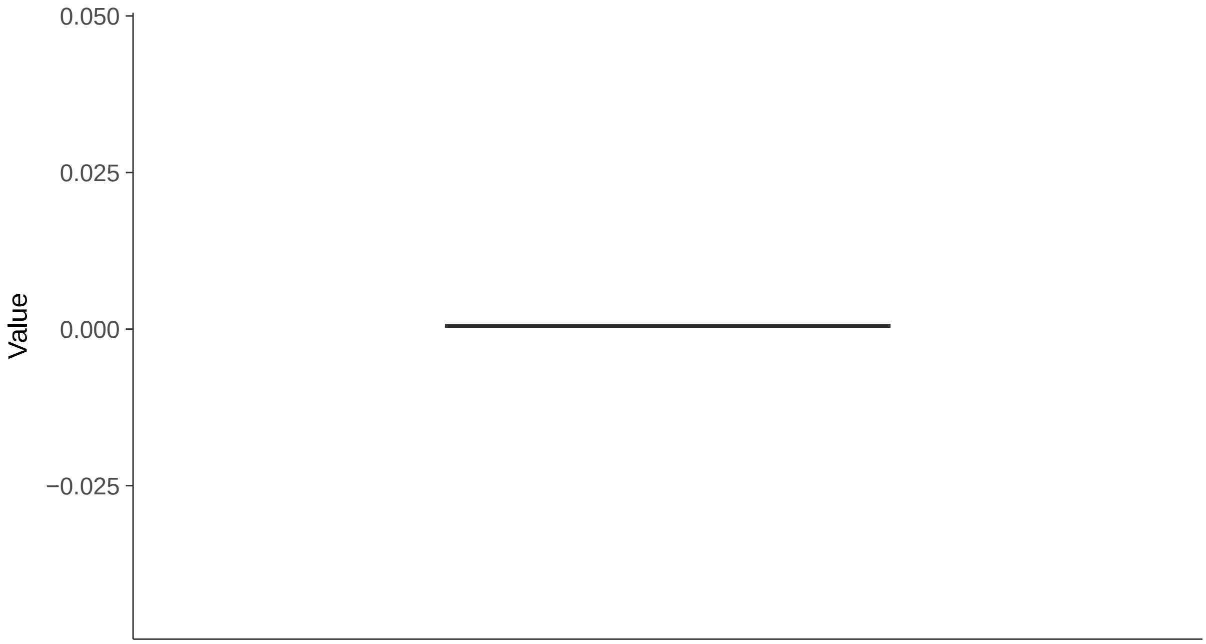
Histogram

Cadmium, MW-5 (mg/L)



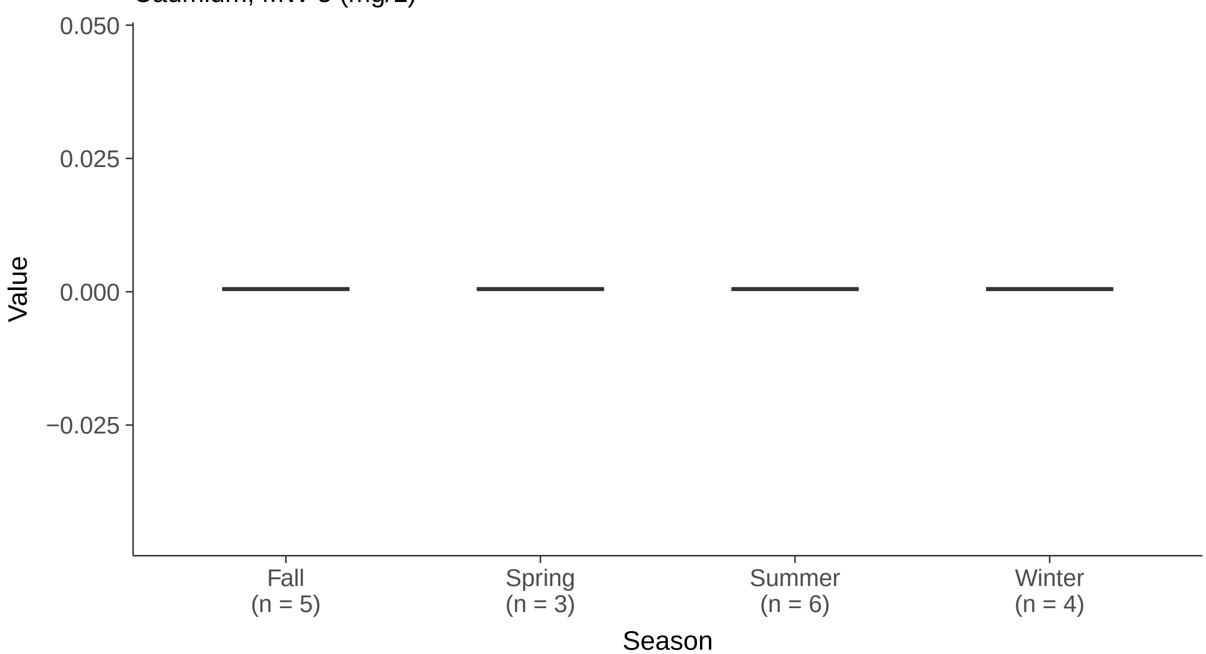
Boxplot

Cadmium, MW-5 (mg/L)



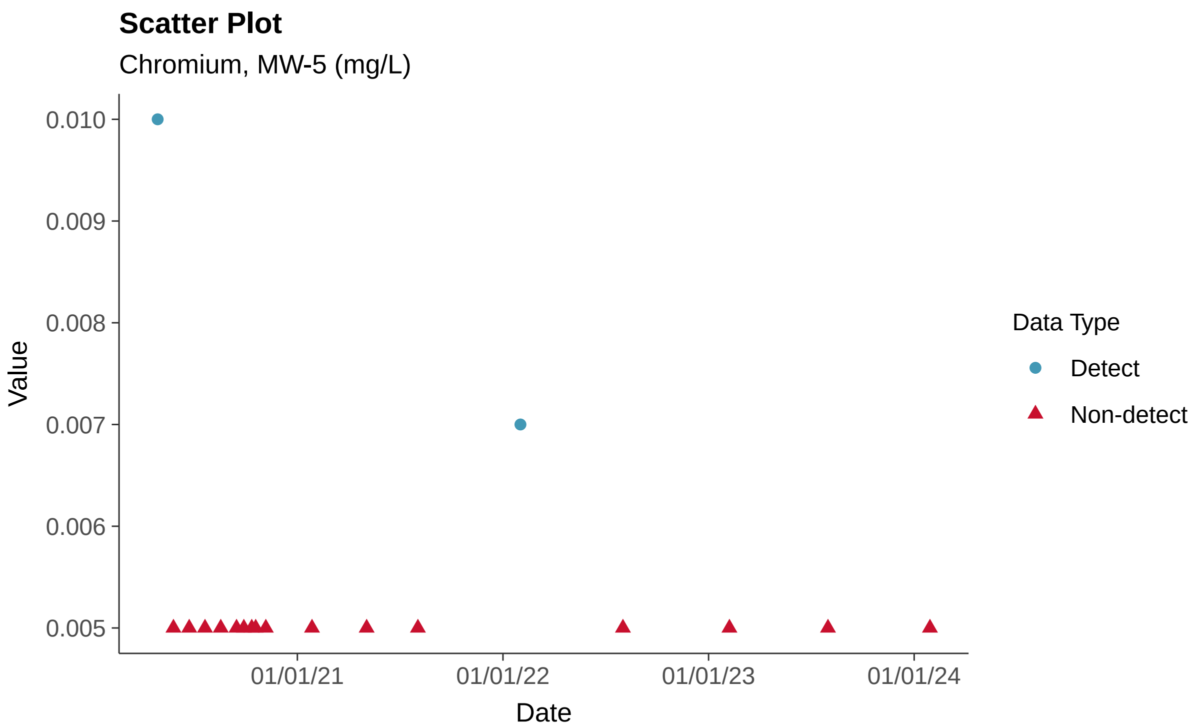
Boxplot by Season

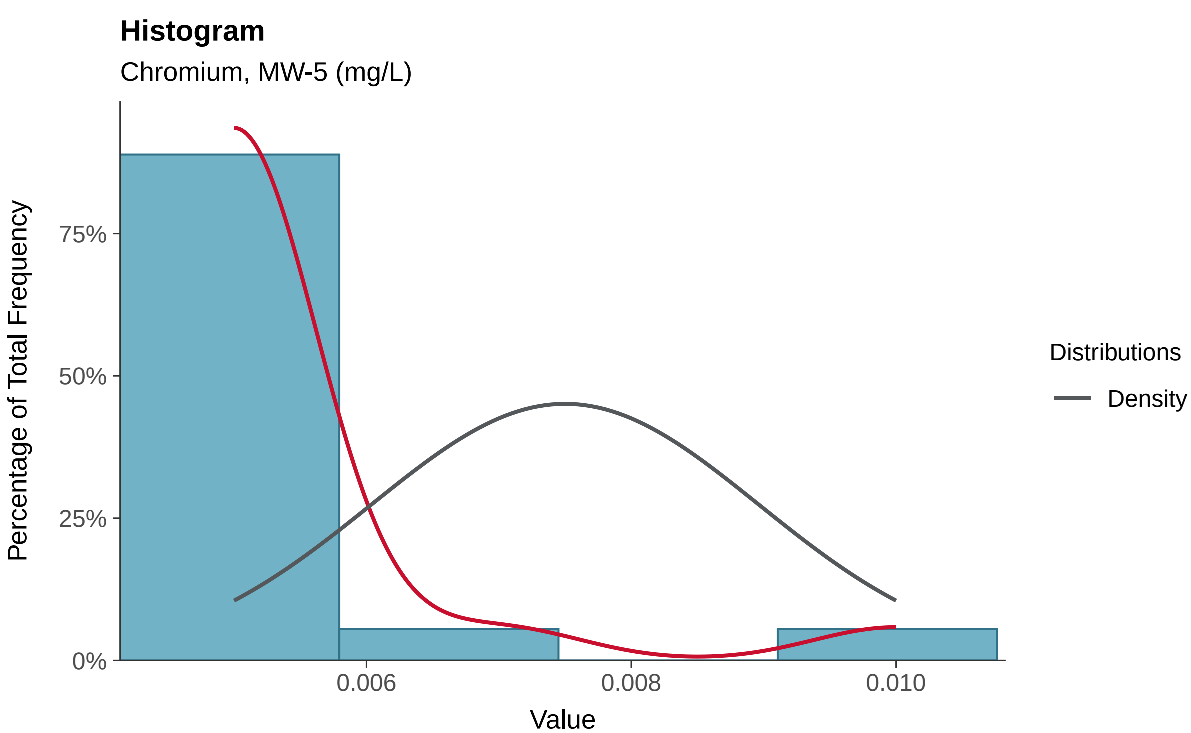
Cadmium, MW-5 (mg/L)



Appendix IV: Chromium, MW-5

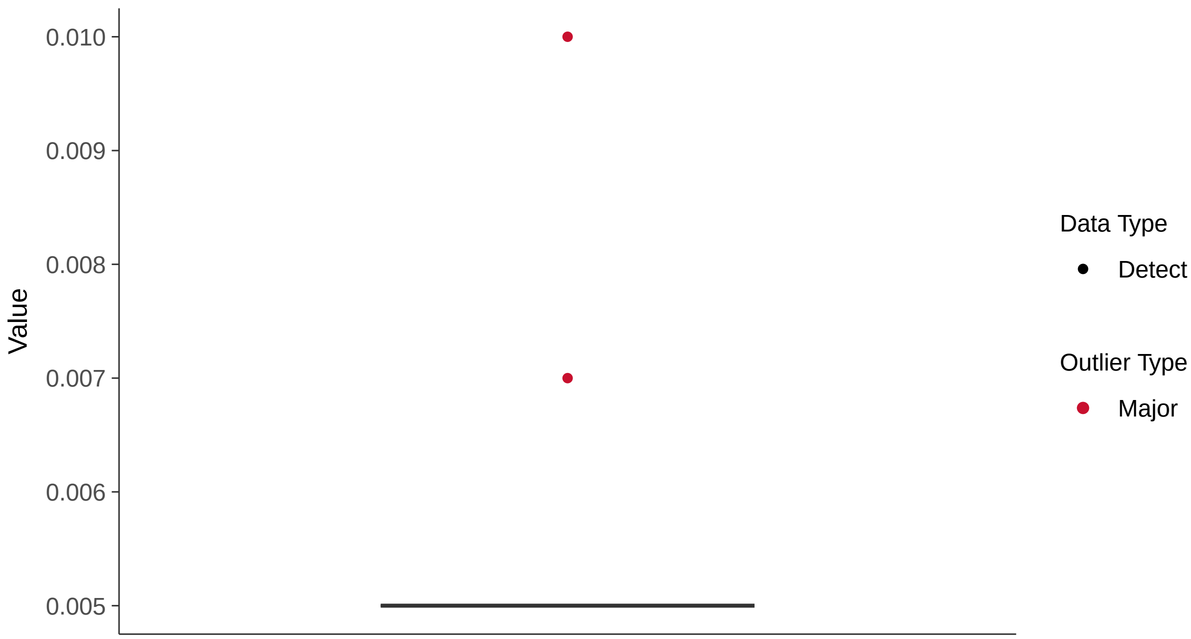
ID: 05_2_13





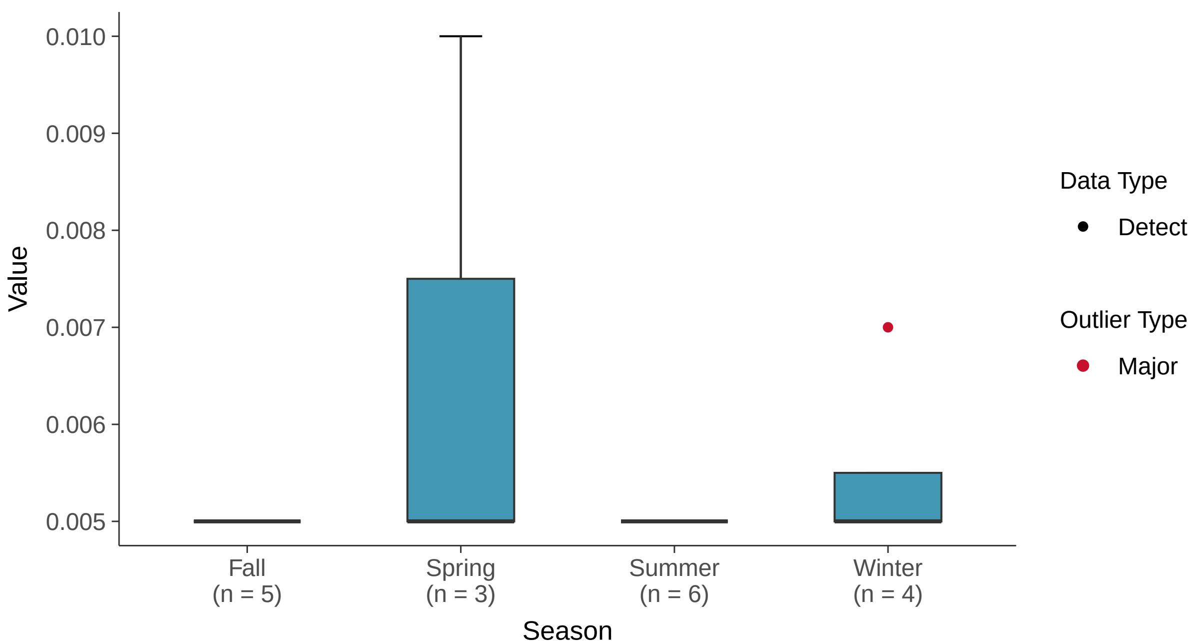
Boxplot

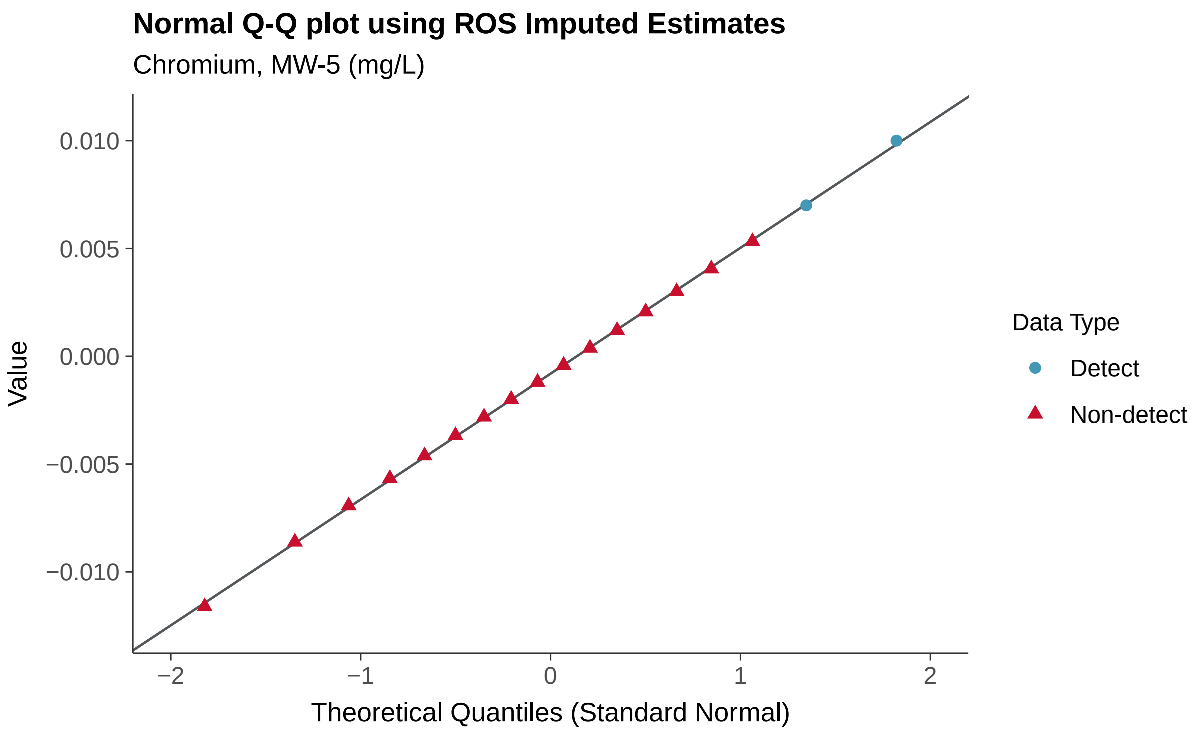
Chromium, MW-5 (mg/L)

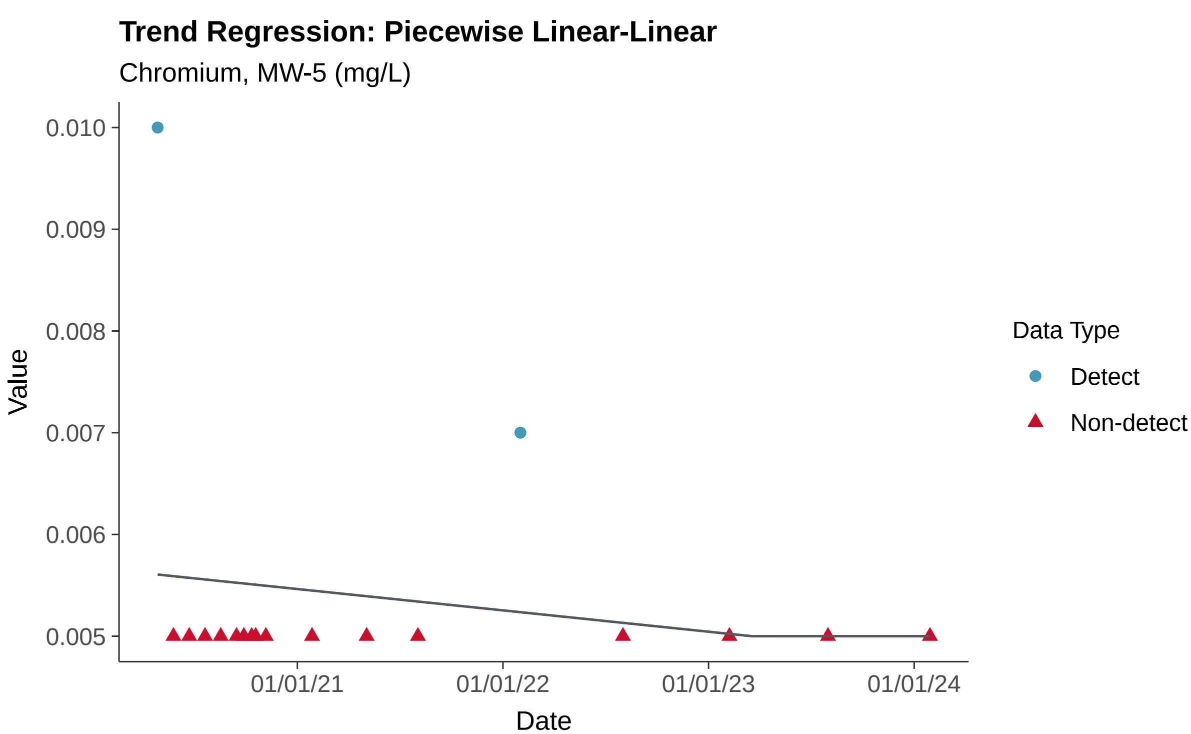


Boxplot by Season

Chromium, MW-5 (mg/L)

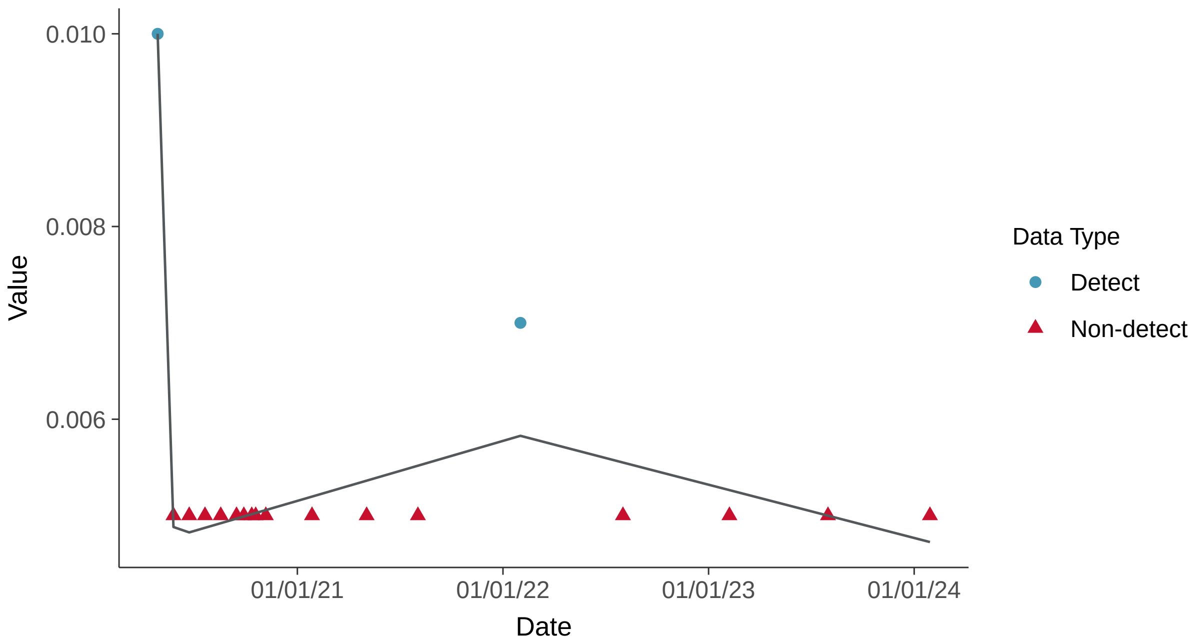



Normal Q-Q plot using ROS Imputed Estimates
Chromium, MW-5 (mg/L)
Value
0.010
0.005
0.000
−0.005
−0.010
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Chromium, MW-5 (mg/L)
Value
0.010
0.009
0.008
0.007
0.006
0.005
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

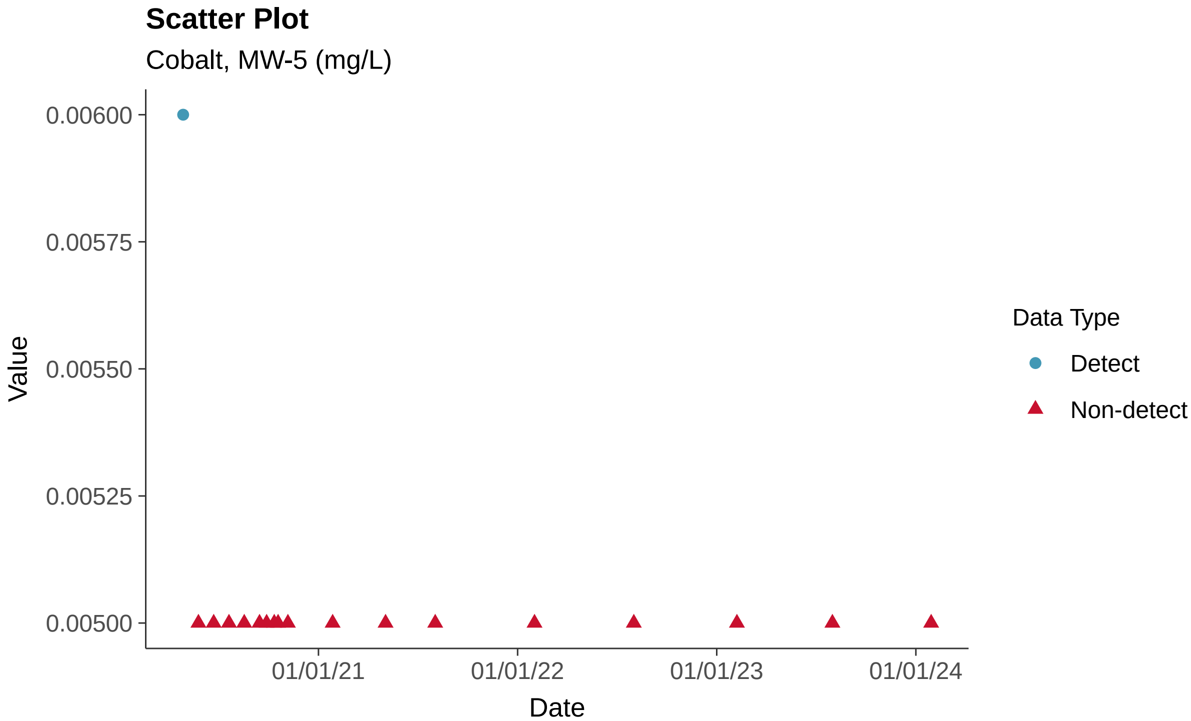
Trend Regression: Piecewise Linear-Linear-Linear

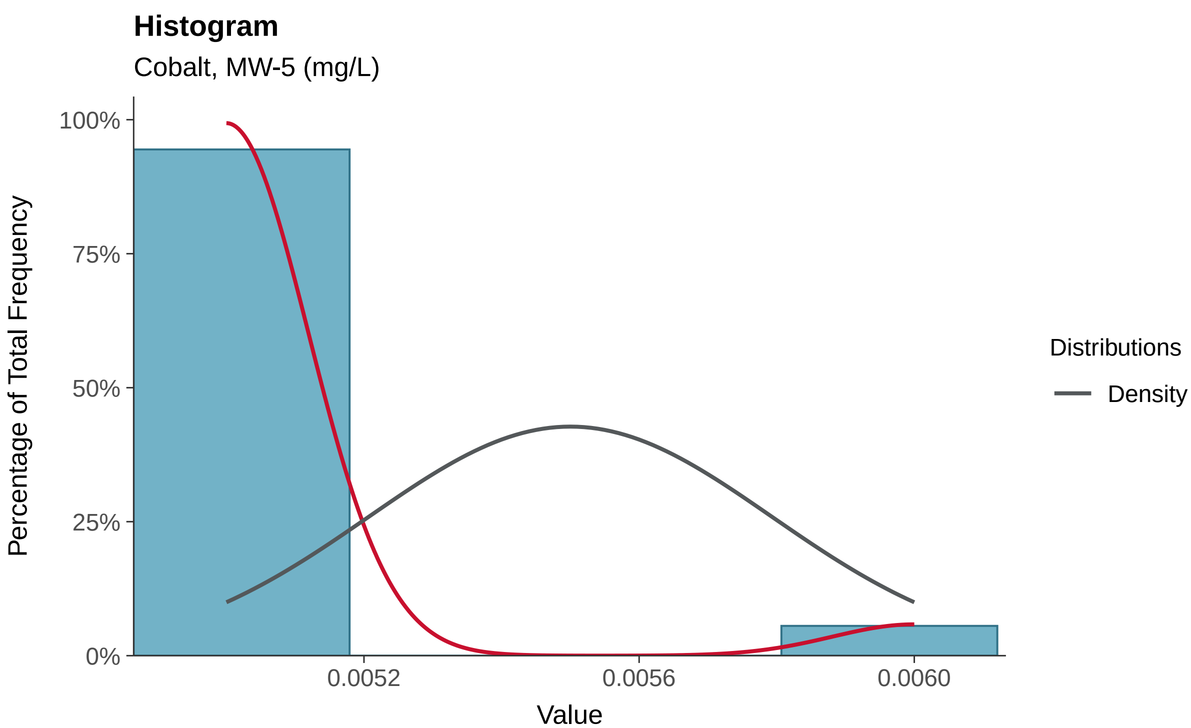
Chromium, MW-5 (mg/L)



Appendix IV: Cobalt, MW-5

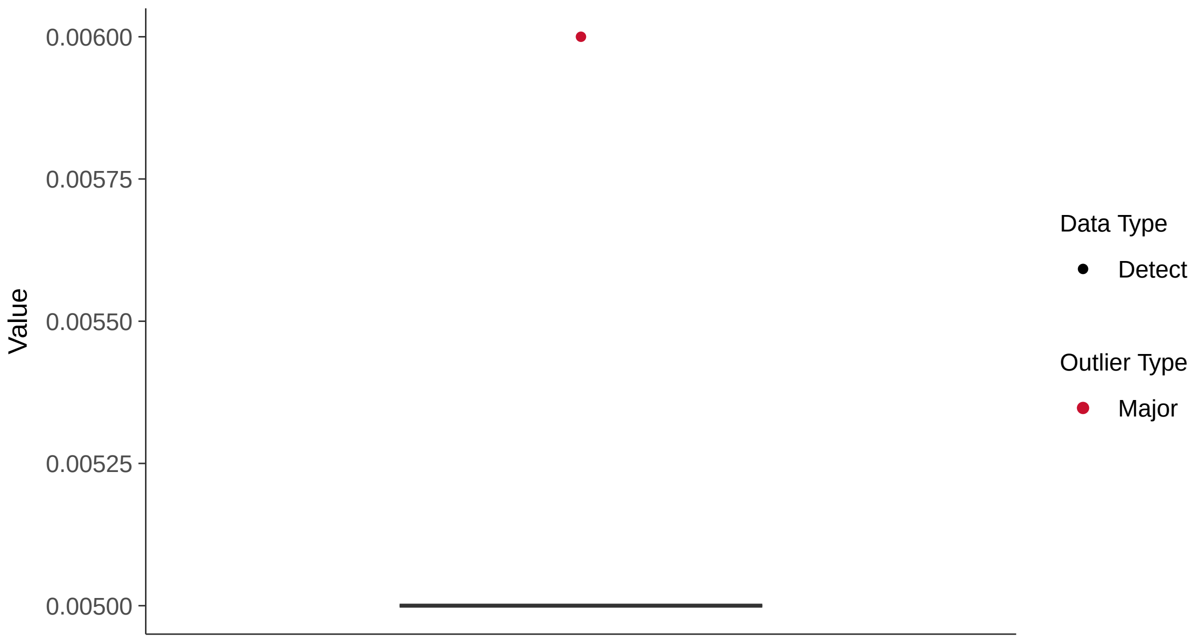
ID: 05_2_14





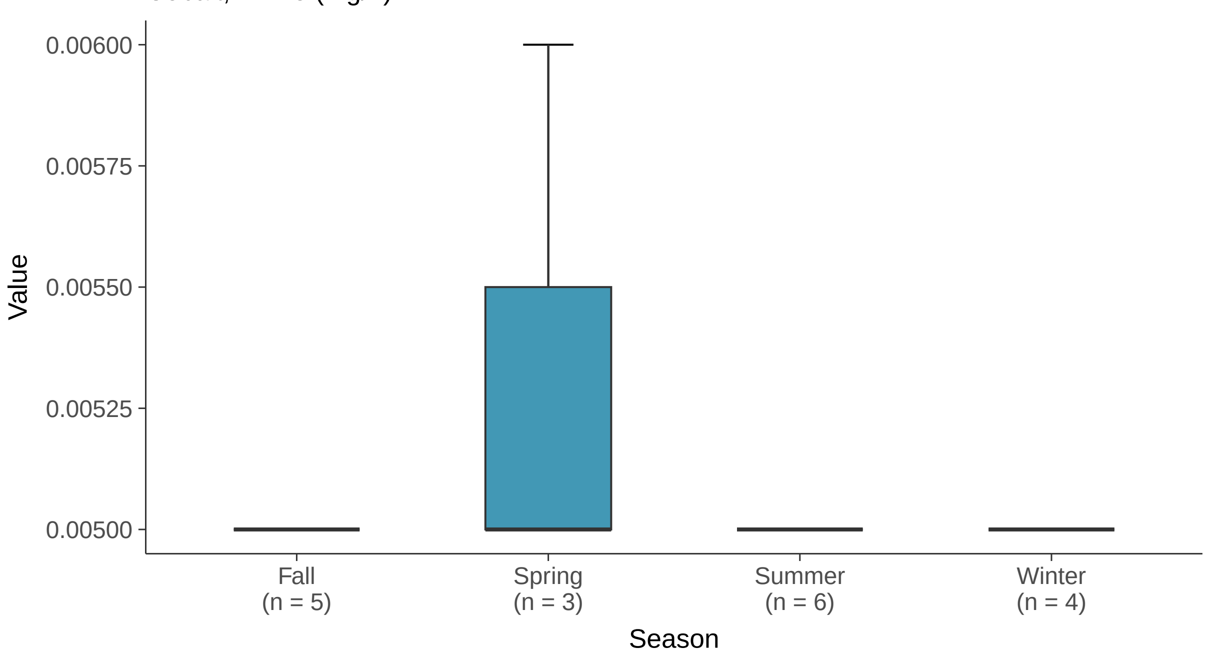
Boxplot

Cobalt, MW-5 (mg/L)



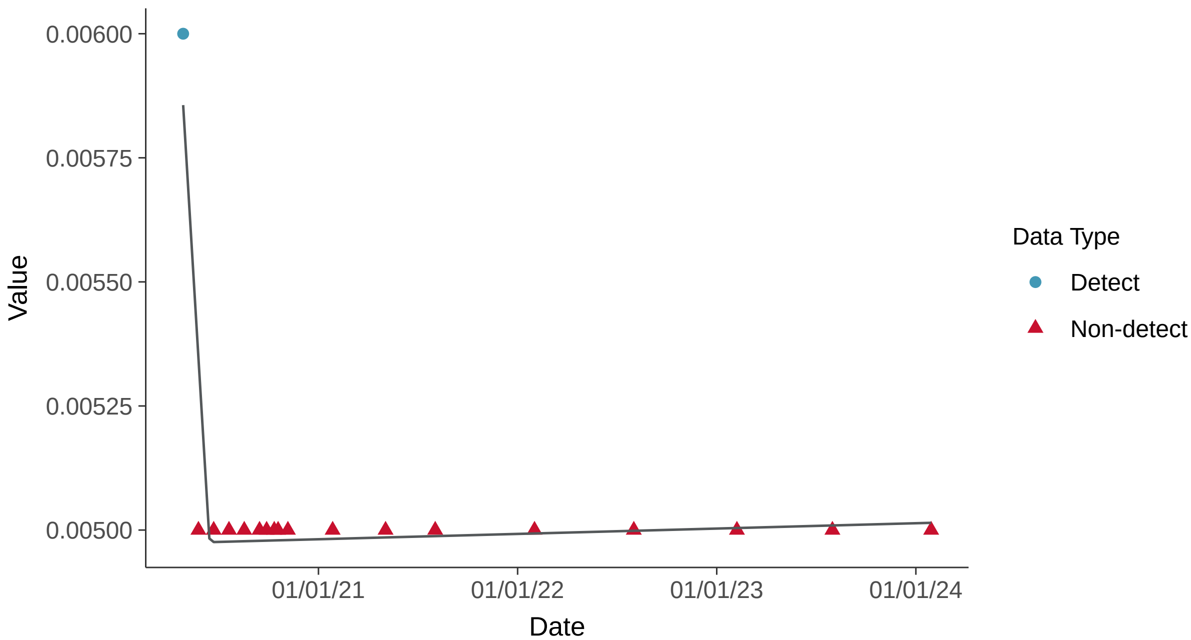
Boxplot by Season

Cobalt, MW-5 (mg/L)



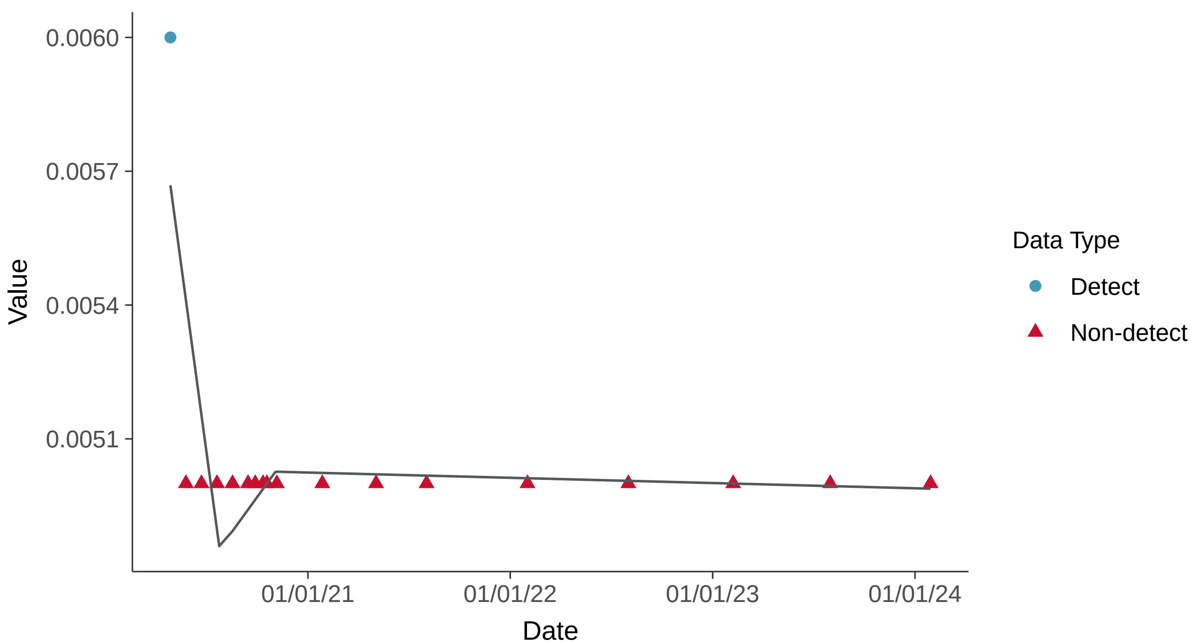
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-5 (mg/L)



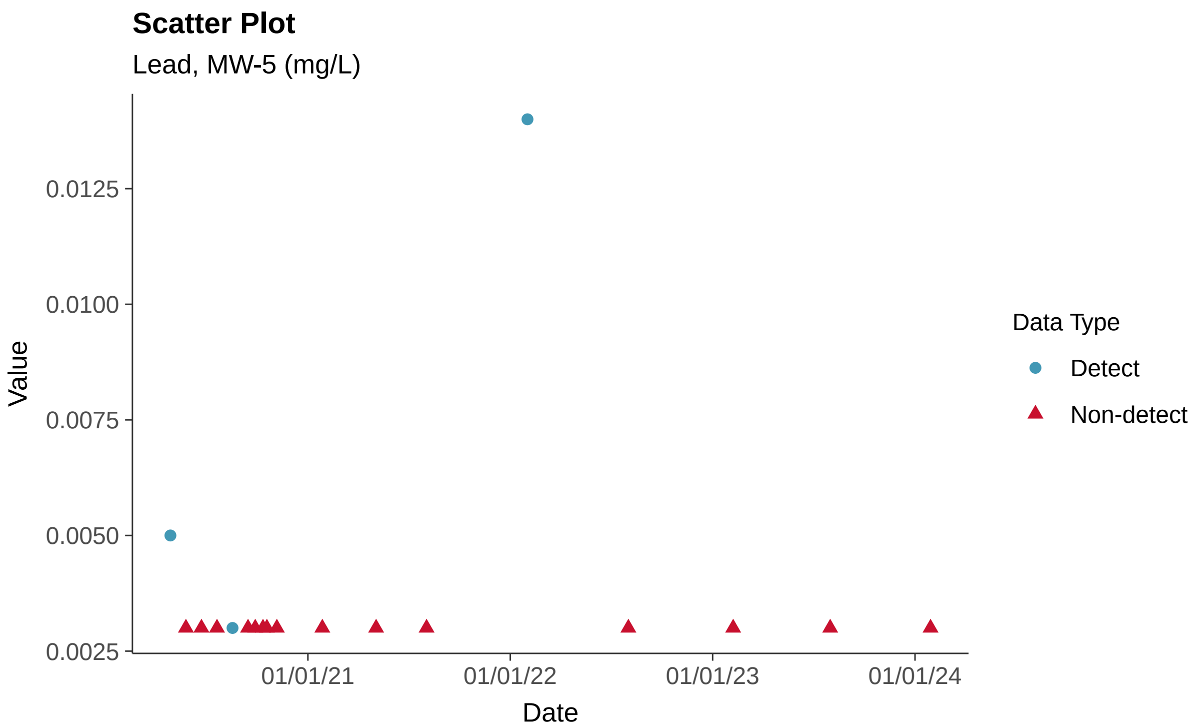
Trend Regression: Piecewise Linear-Linear-Linear

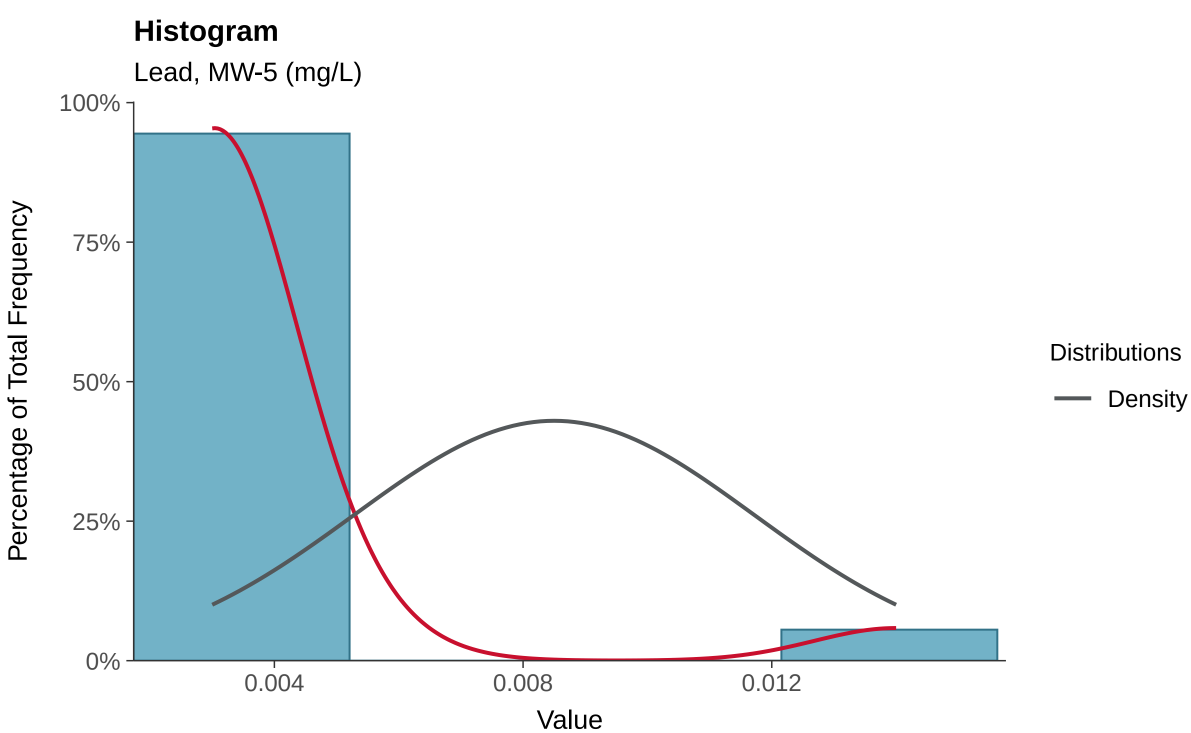
Cobalt, MW-5 (mg/L)



Appendix IV: Lead, MW-5

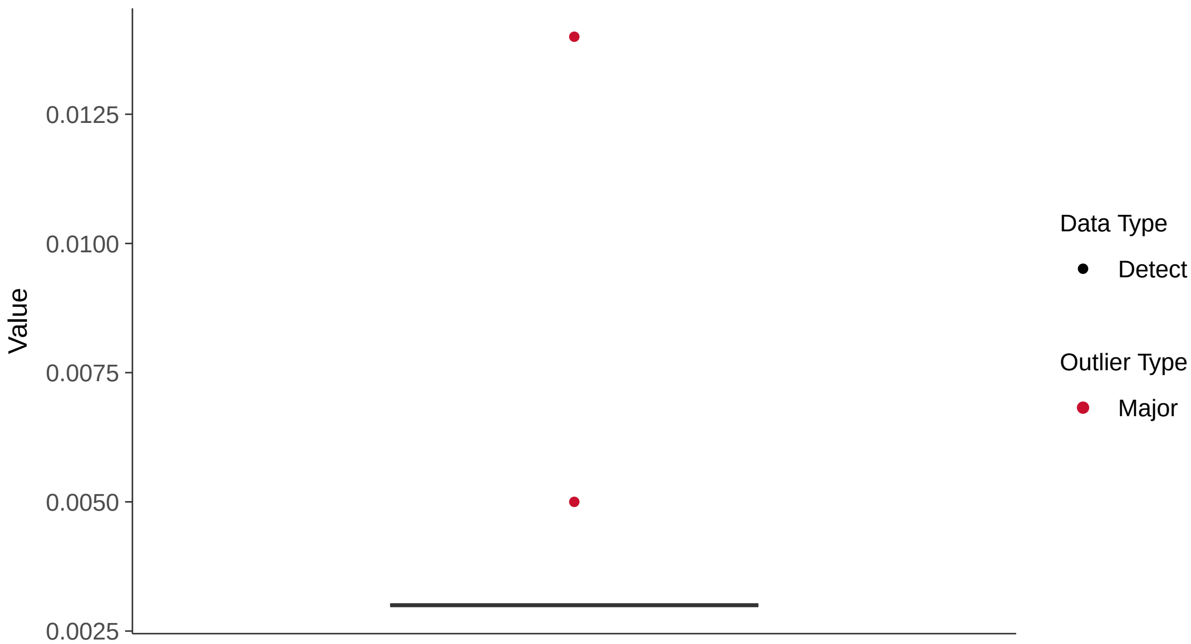
ID: 05_2_15





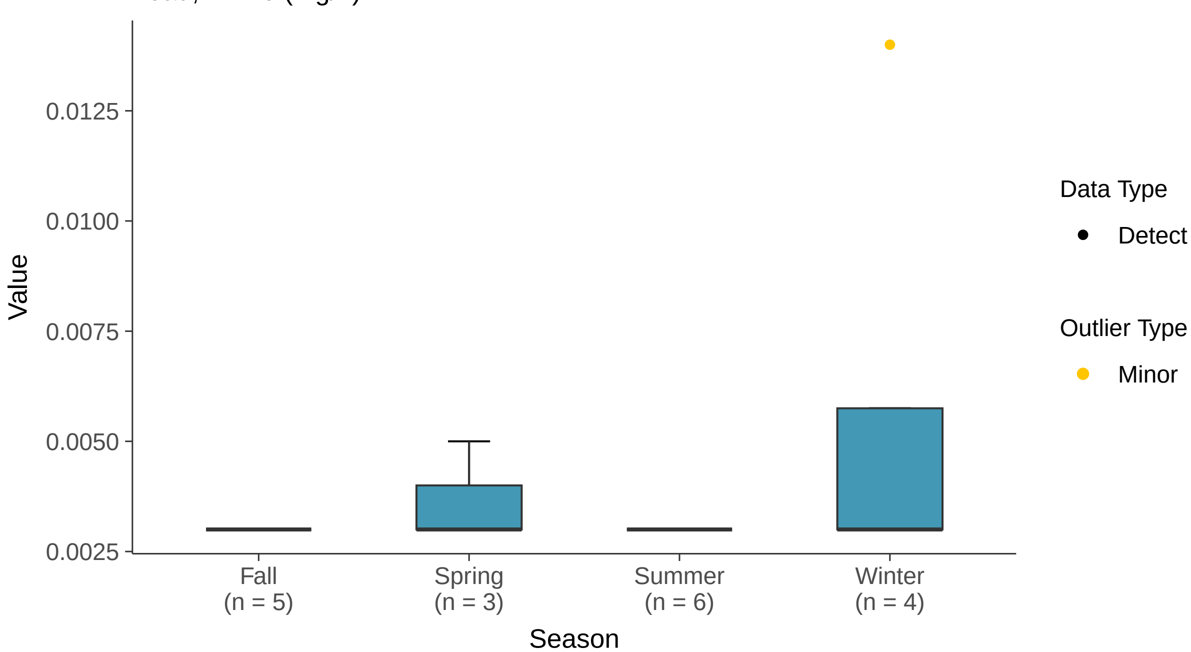
Boxplot

Lead, MW-5 (mg/L)



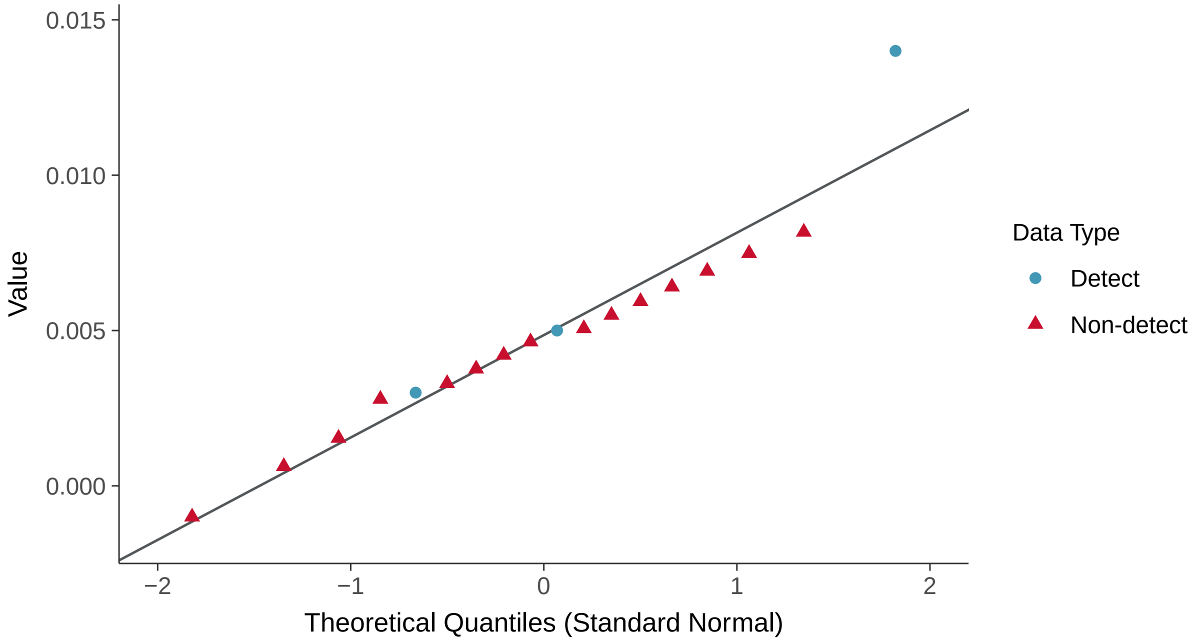
Boxplot by Season

Lead, MW-5 (mg/L)



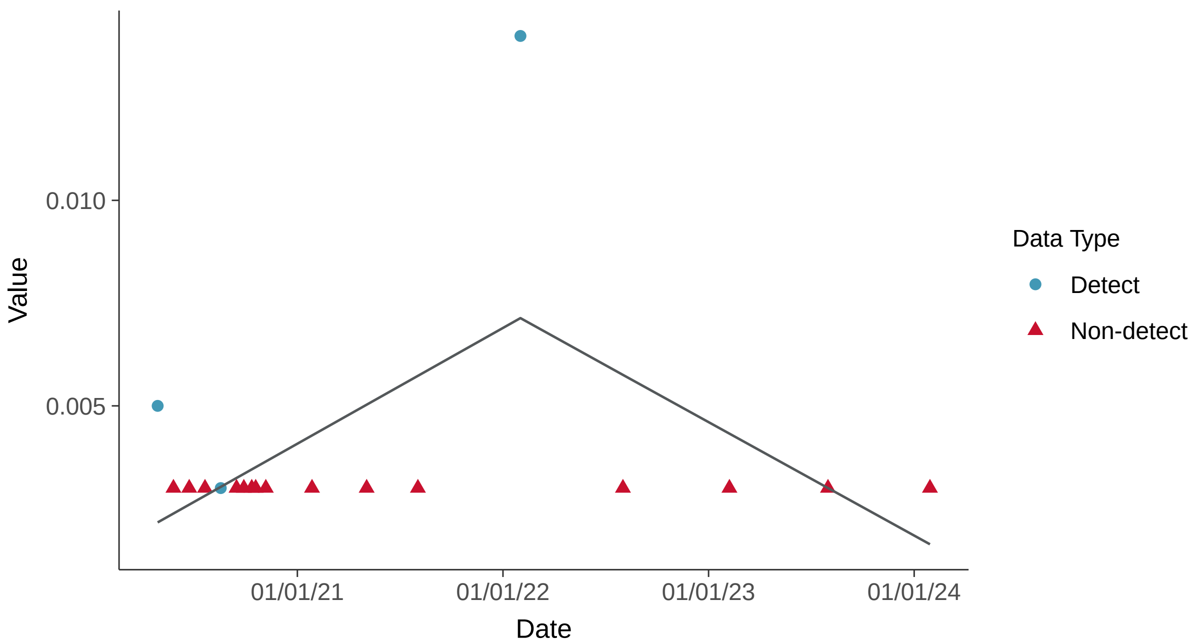
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-5 (mg/L)



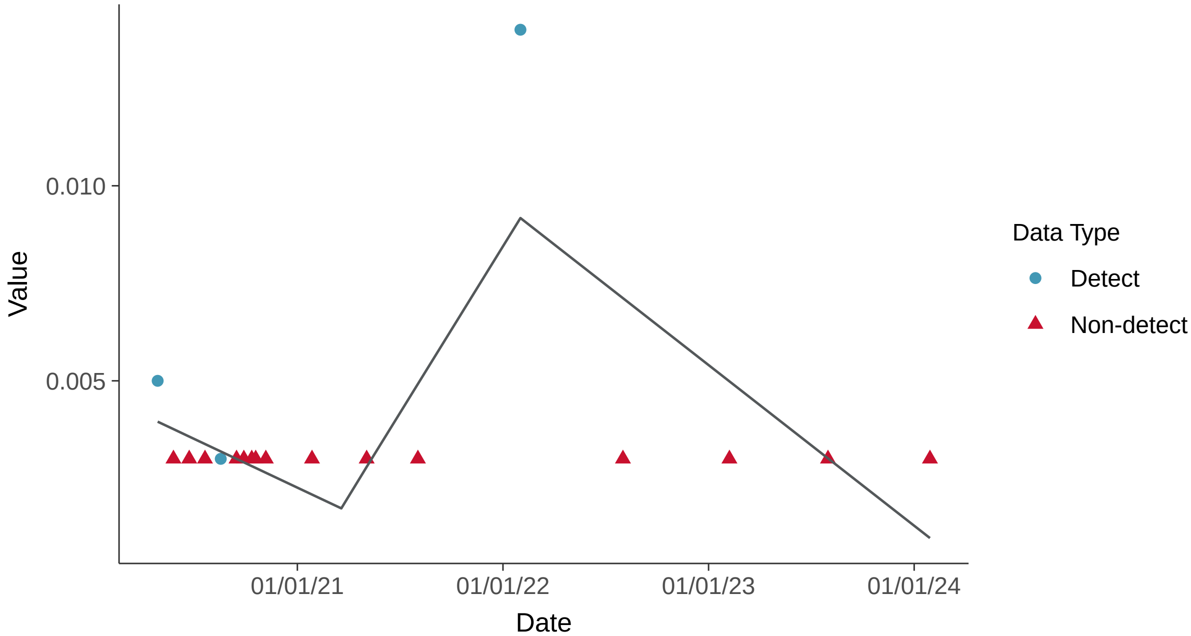
Trend Regression: Piecewise Linear-Linear

Lead, MW-5 (mg/L)



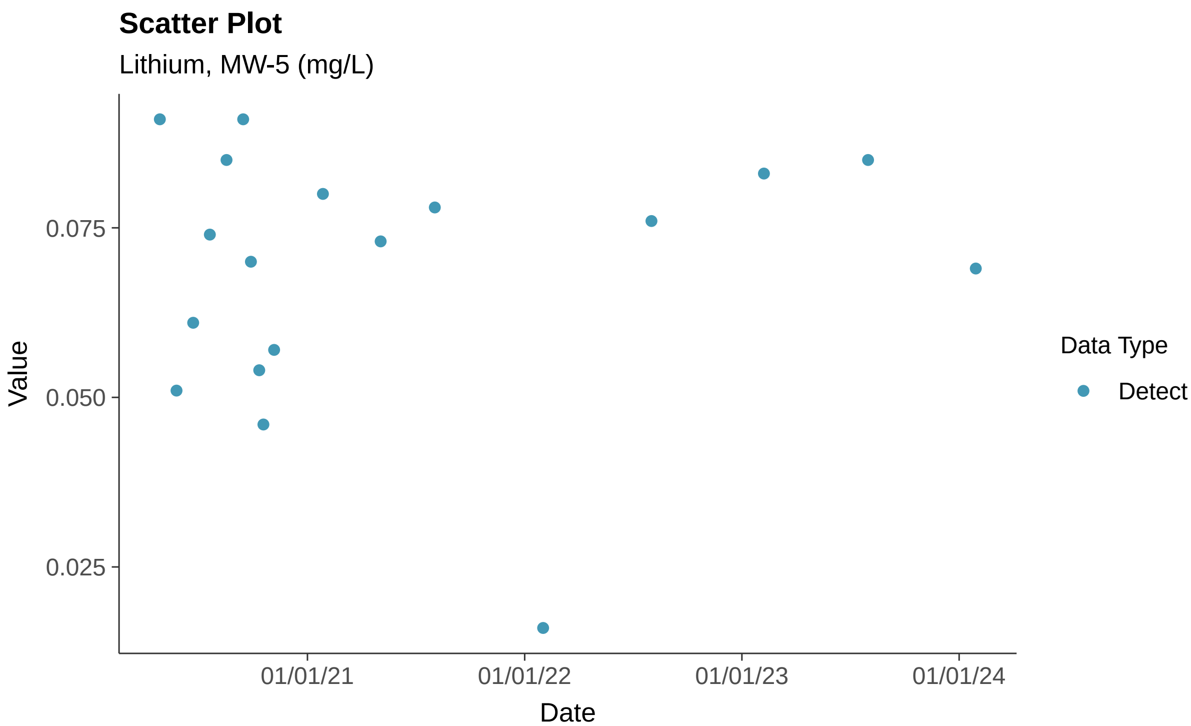
Trend Regression: Piecewise Linear-Linear-Linear

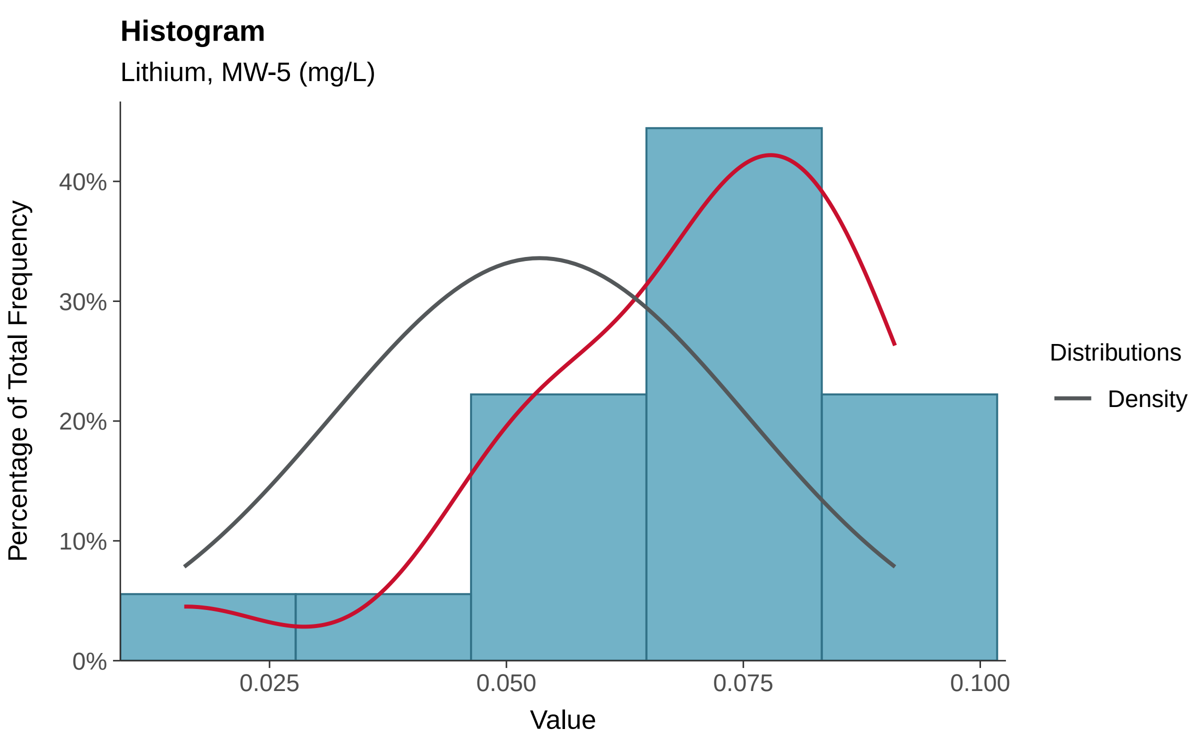
Lead, MW-5 (mg/L)



Appendix IV: Lithium, MW-5

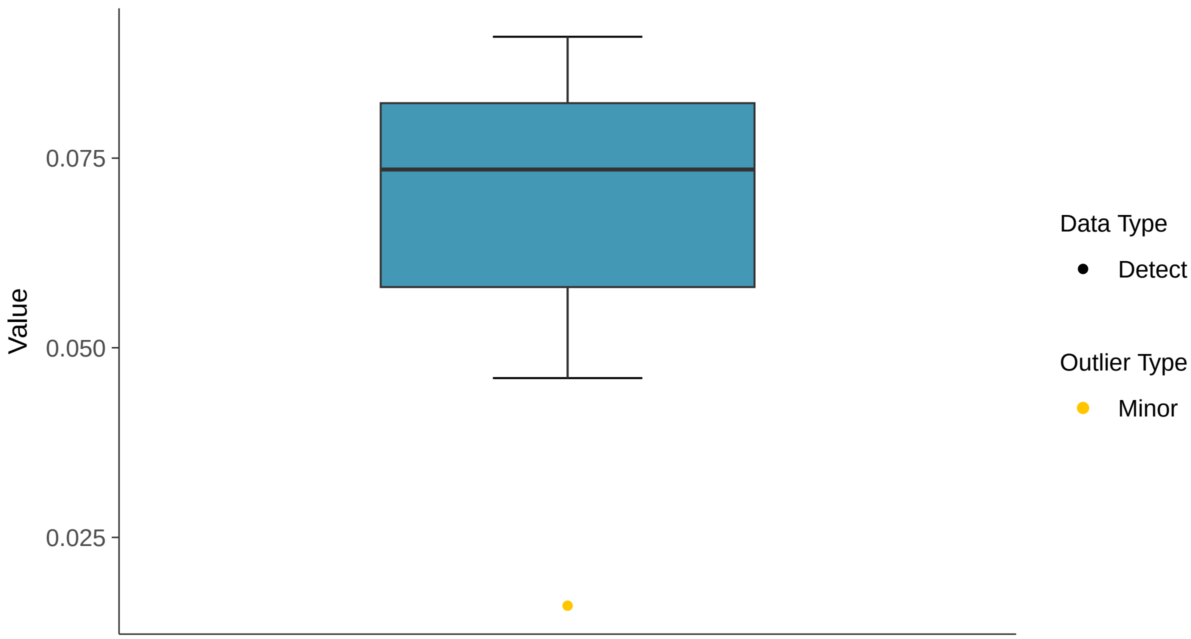
ID: 05_2_16





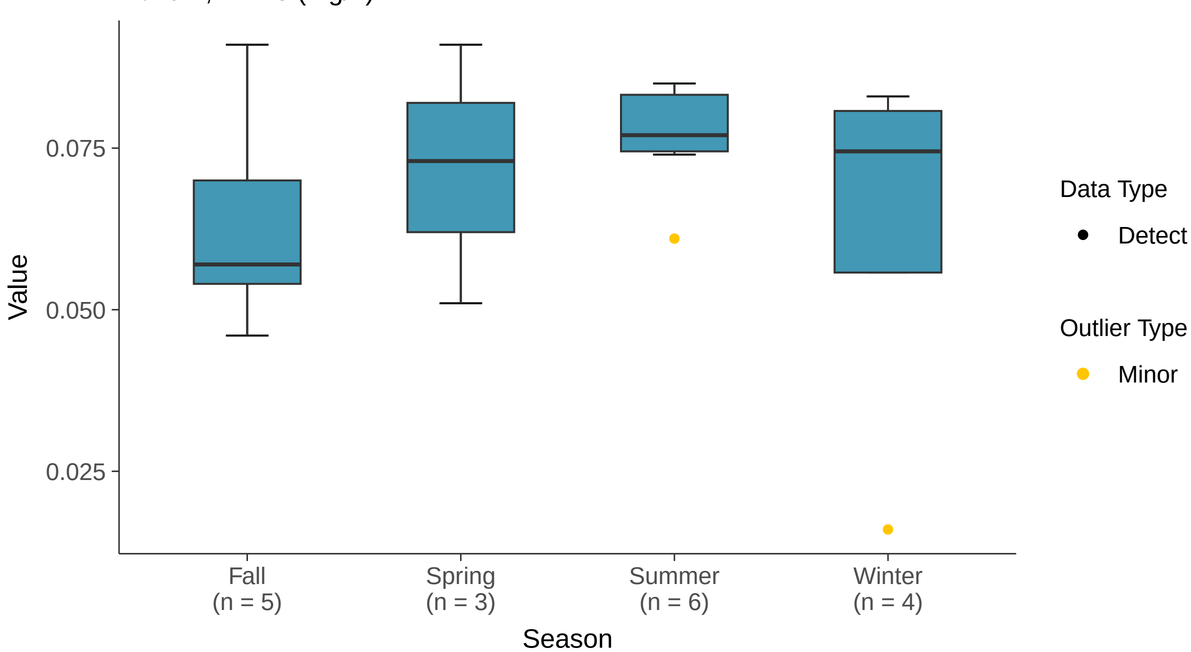
Boxplot

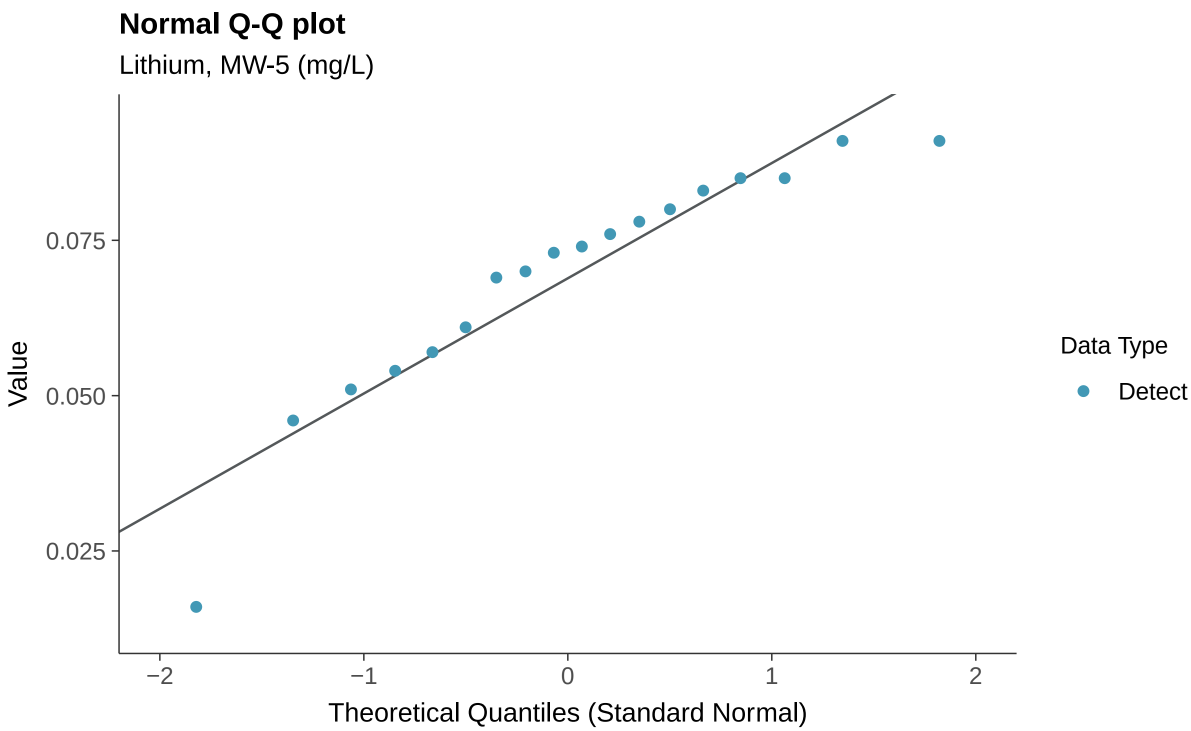
Lithium, MW-5 (mg/L)

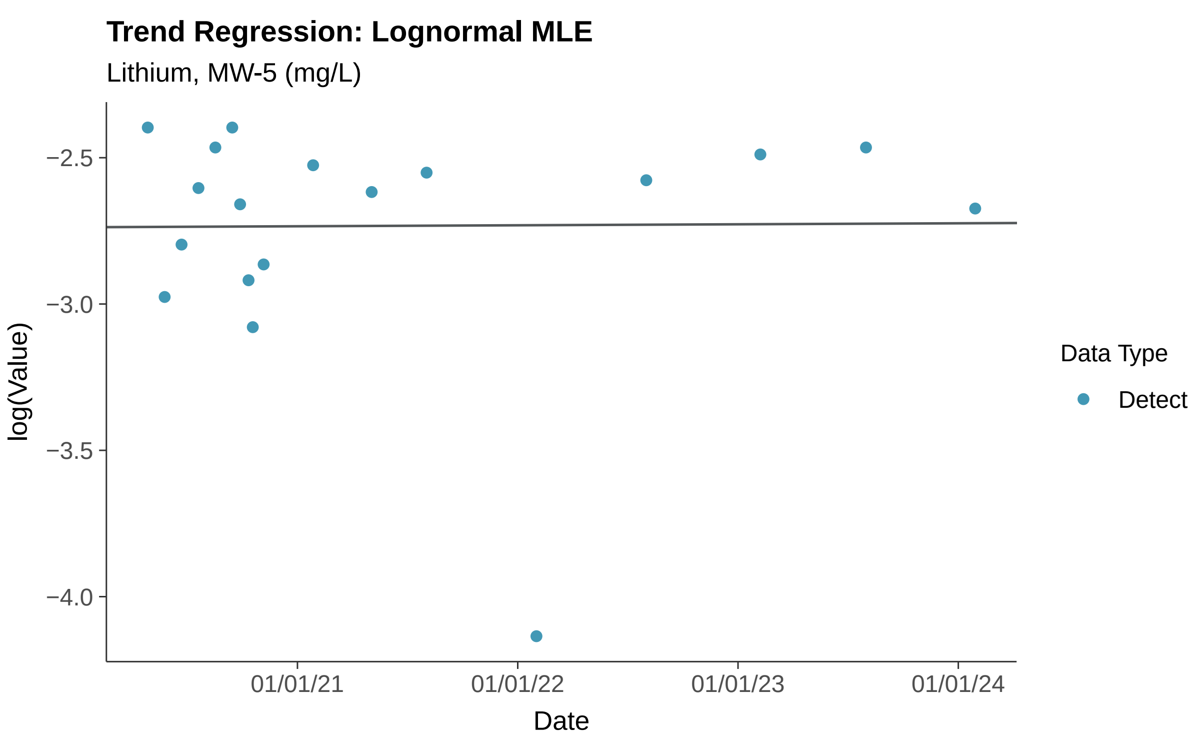


Boxplot by Season

Lithium, MW-5 (mg/L)

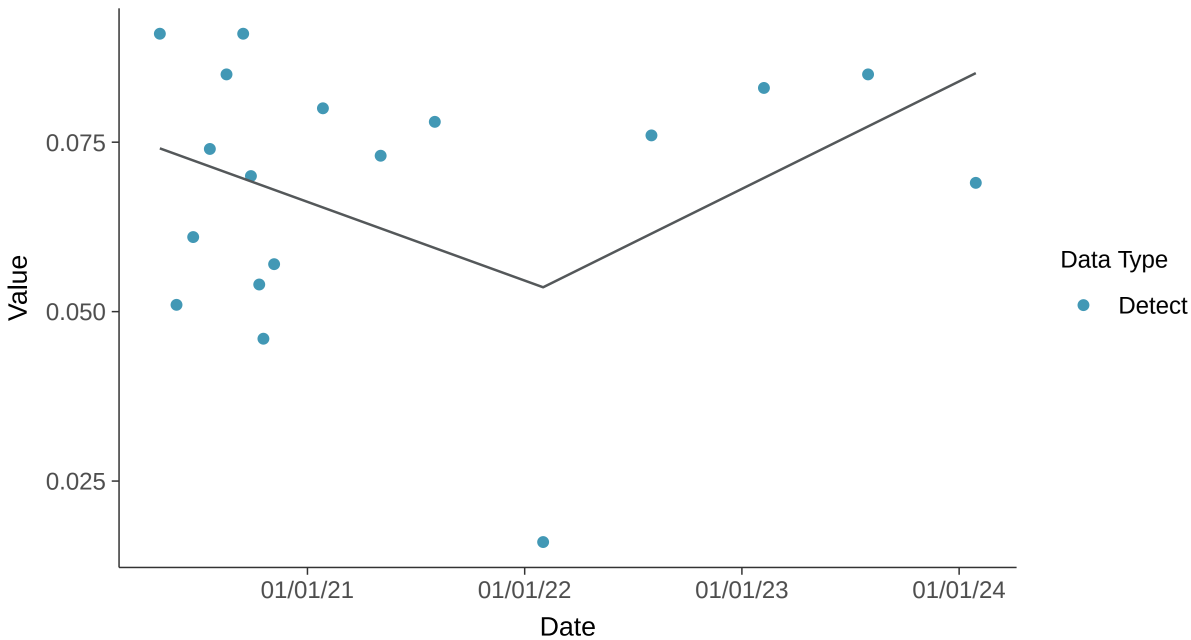



Normal Q-Q plot
Lithium, MW-5 (mg/L)
Value
0.075
0.050
0.025
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Lithium, MW-5 (mg/L)
log(Value)
−2.5
−3.0
−3.5
−4.0
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

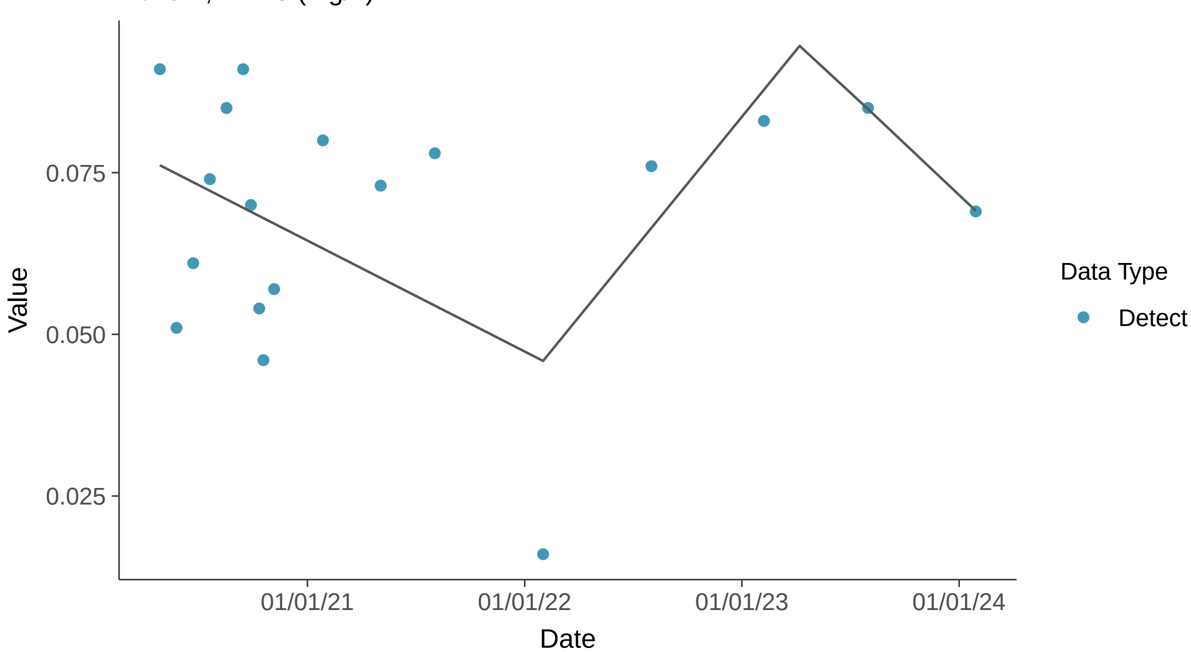
Trend Regression: Piecewise Linear-Linear

Lithium, MW-5 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lithium, MW-5 (mg/L)

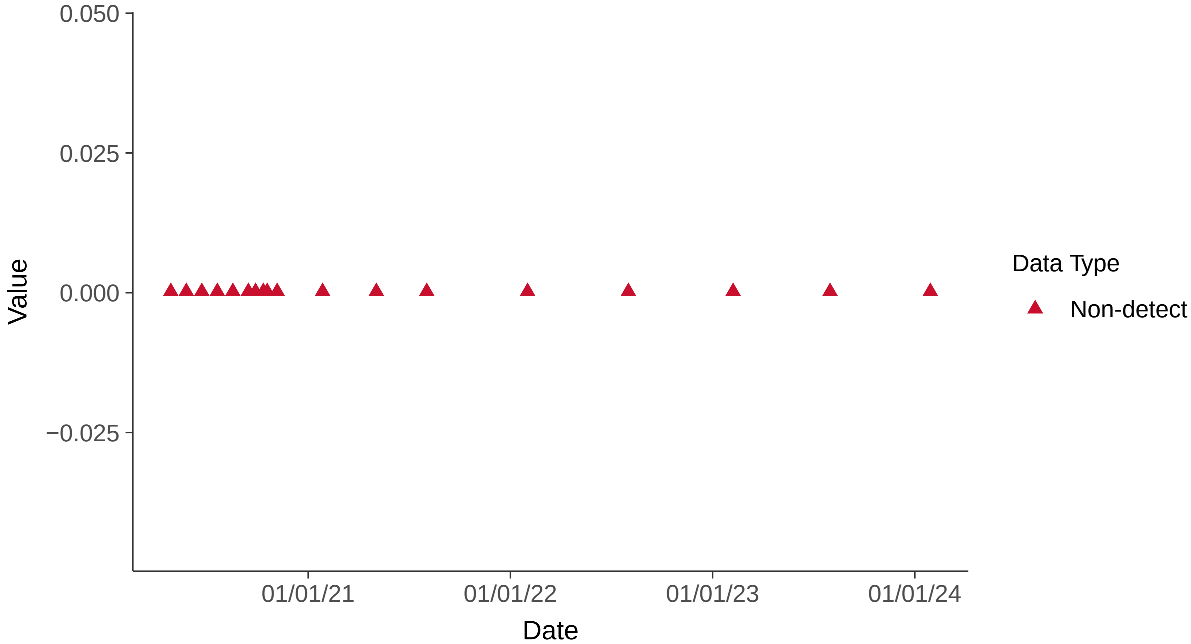


Appendix IV: Mercury, MW-5

ID: 05_2_17

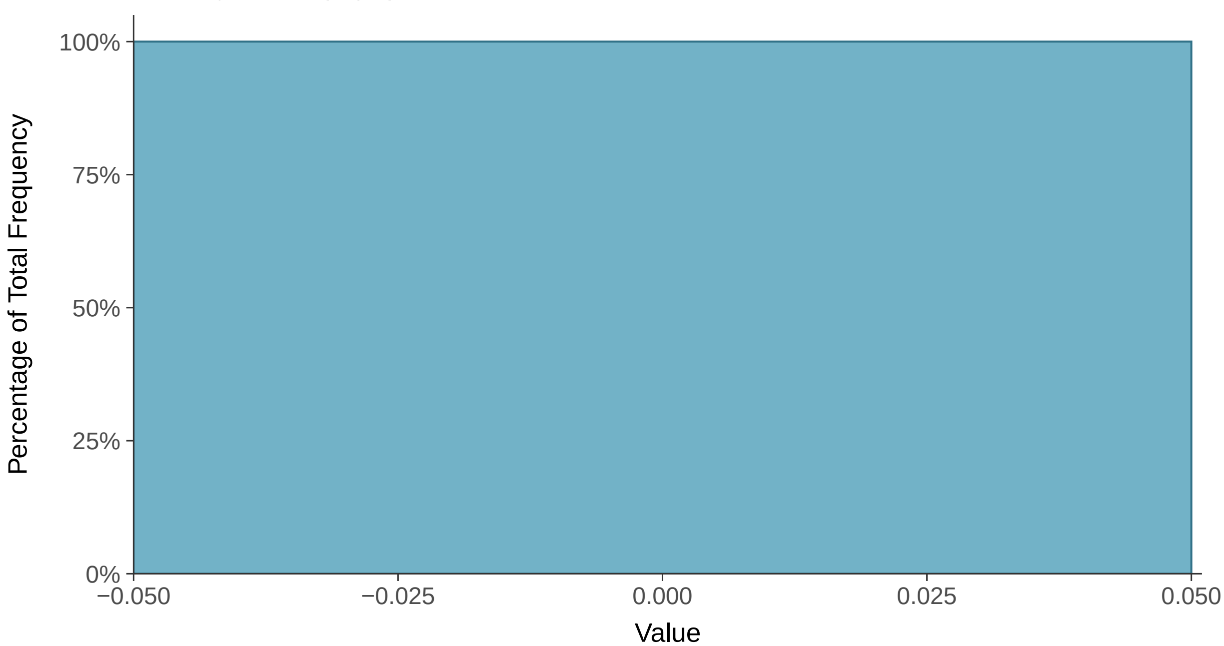
Scatter Plot

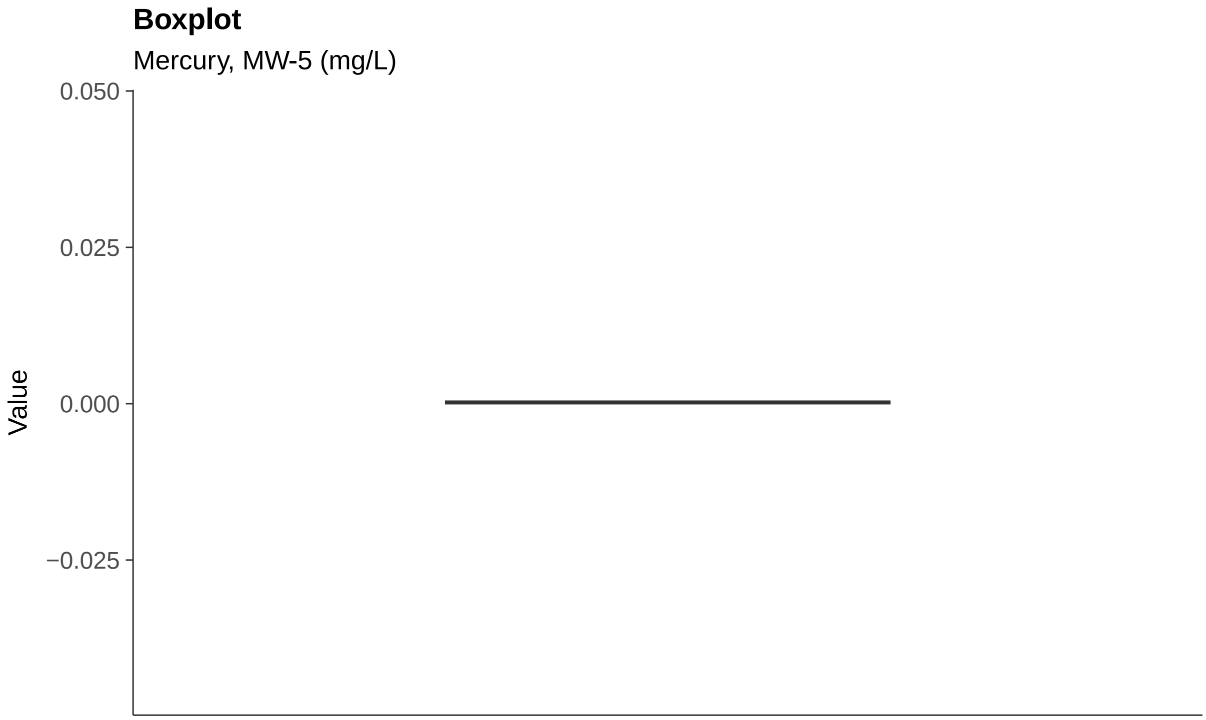
Mercury, MW-5 (mg/L)

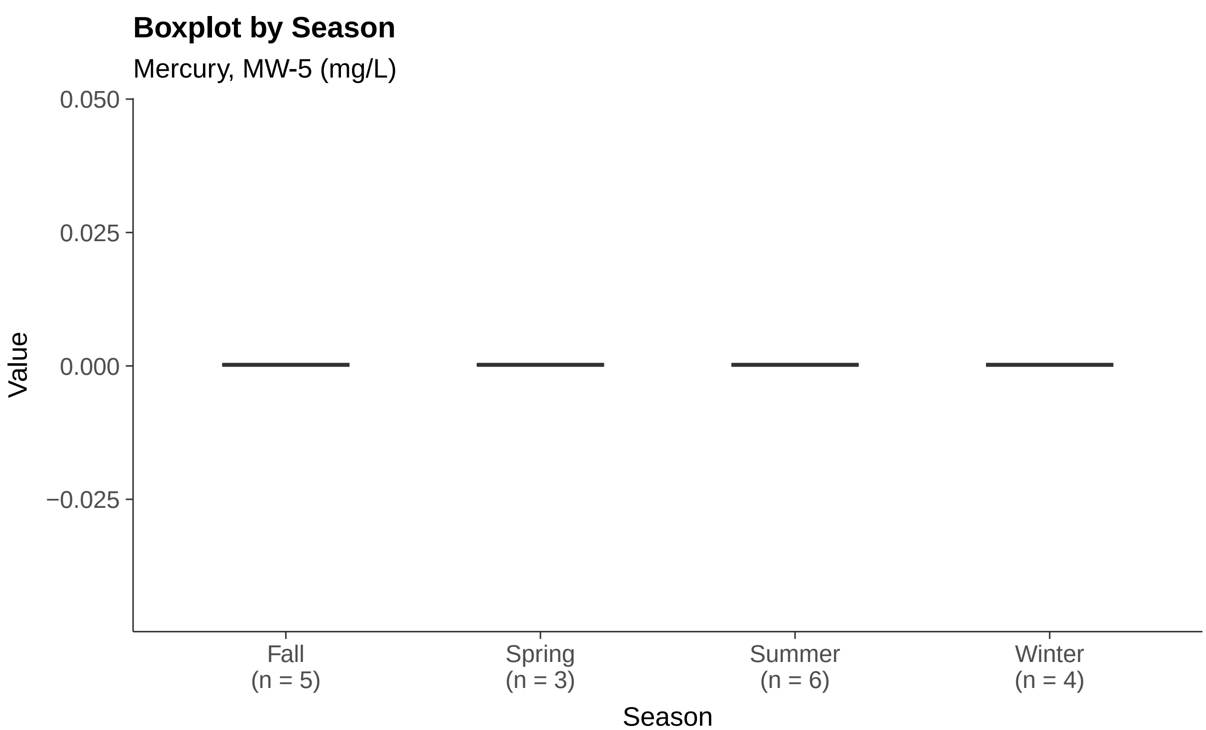


Histogram

Mercury, MW-5 (mg/L)




Boxplot
Mercury, MW-5 (mg/L)
0.050
0.025
0.000
−0.025
Value

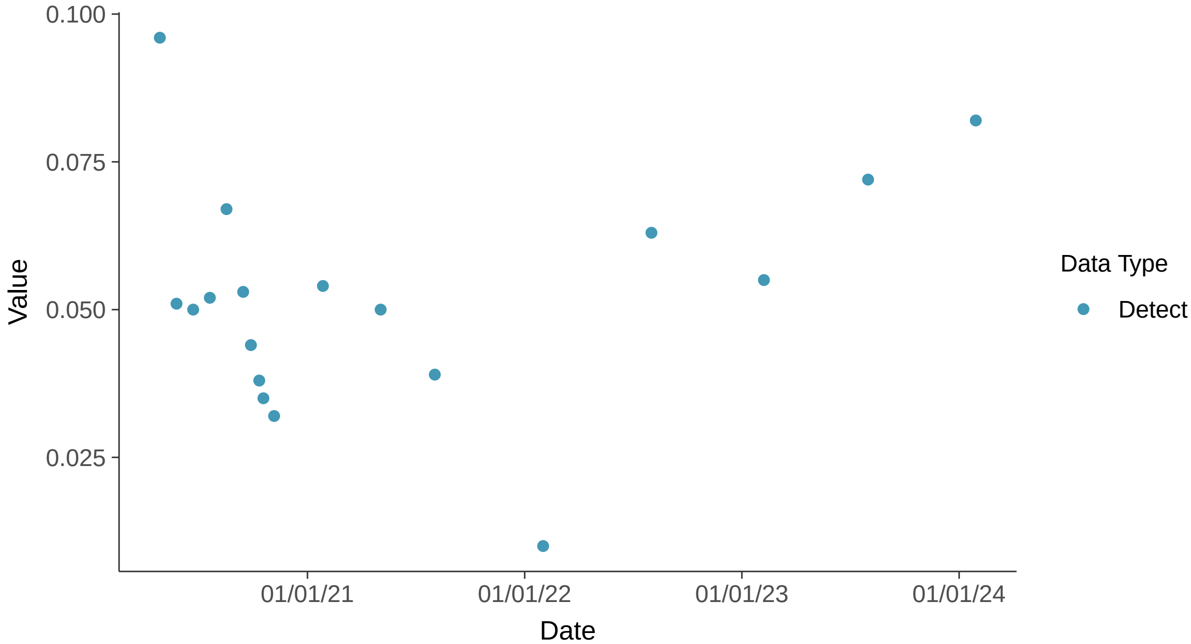

Boxplot by Season
Mercury, MW-5 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 5)
Spring
(n = 3)
Summer
(n = 6)
Winter
(n = 4)
Season

Appendix IV: Molybdenum, MW-5

ID: 05_2_18

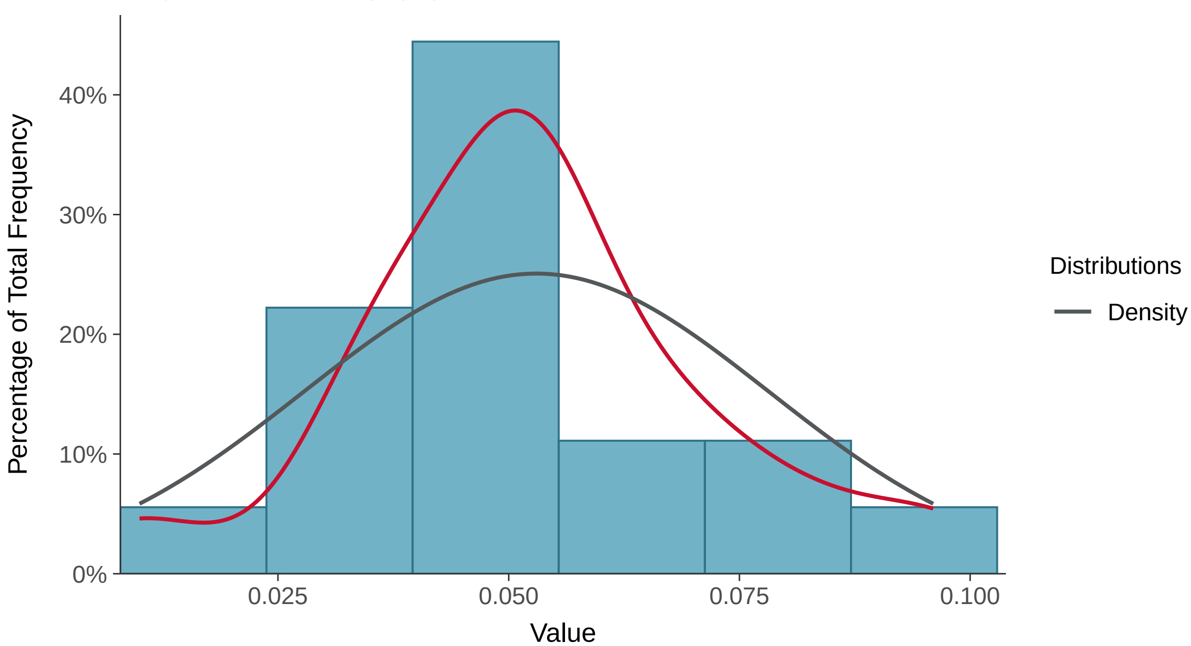
Scatter Plot

Molybdenum, MW-5 (mg/L)



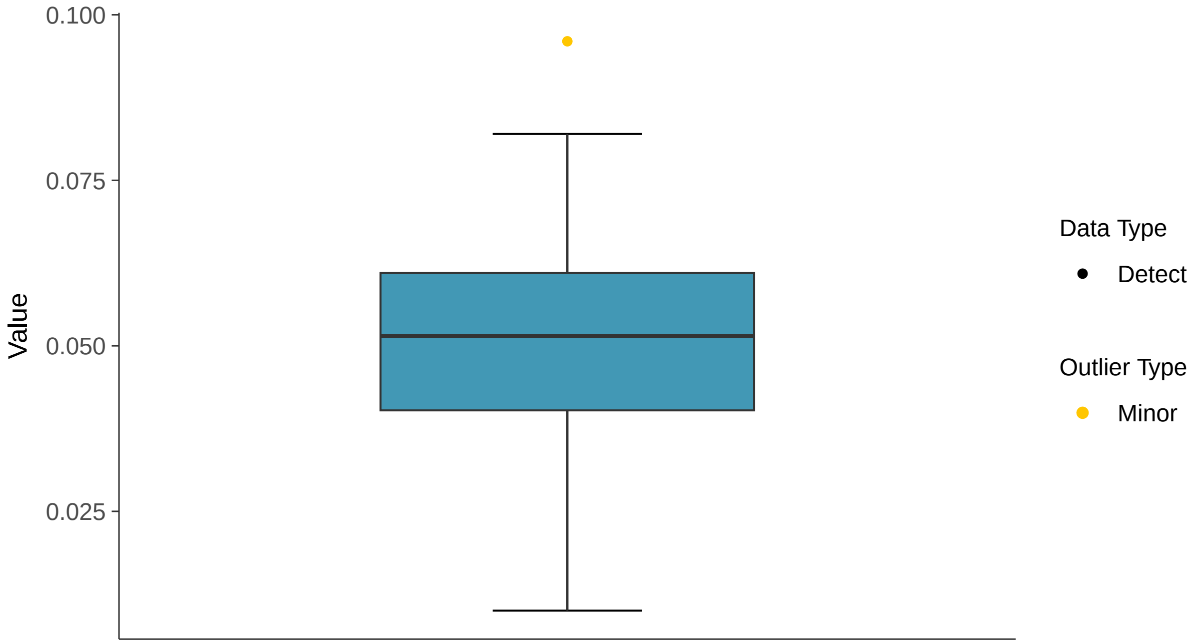
Histogram

Molybdenum, MW-5 (mg/L)



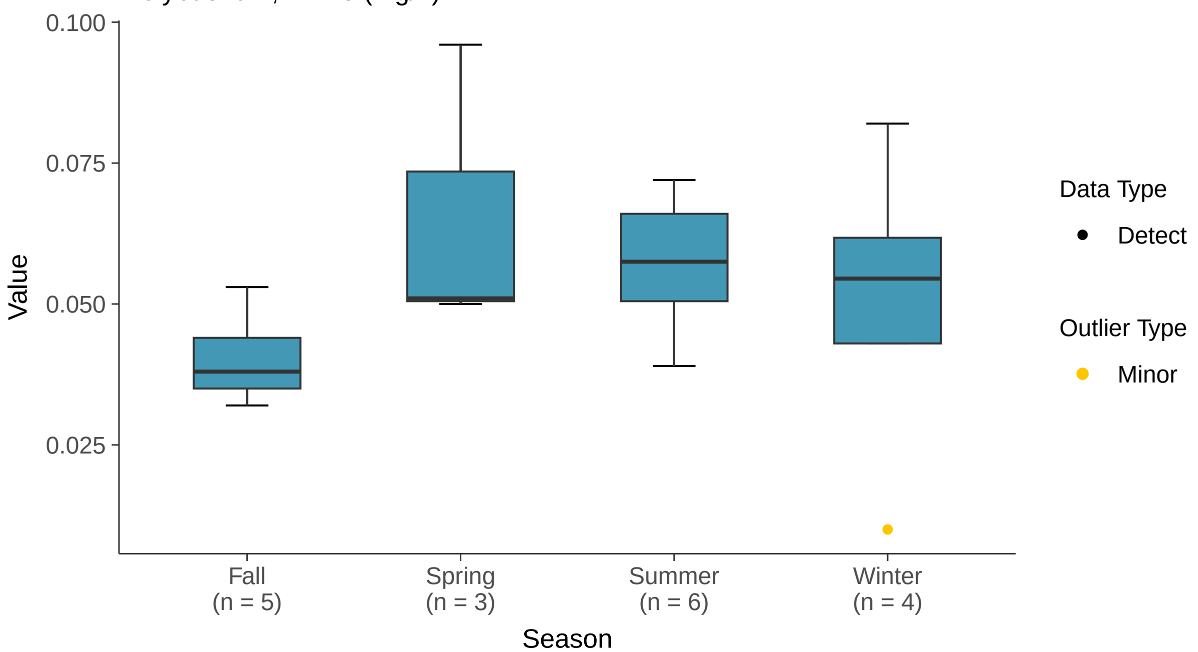
Boxplot

Molybdenum, MW-5 (mg/L)



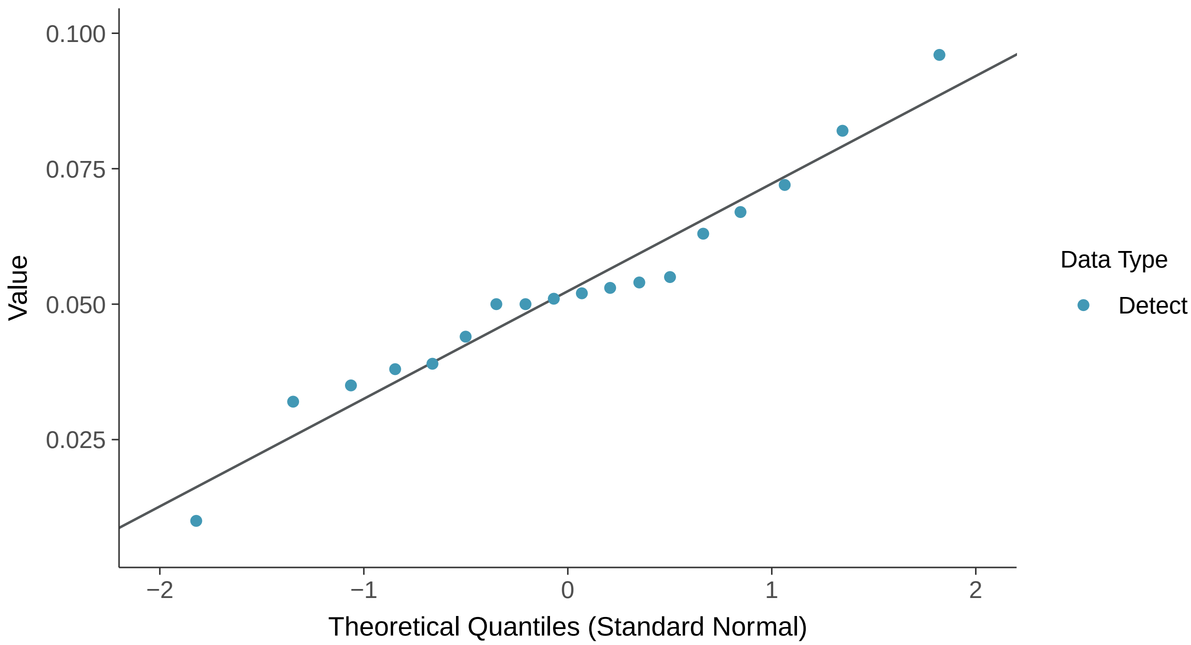
Boxplot by Season

Molybdenum, MW-5 (mg/L)



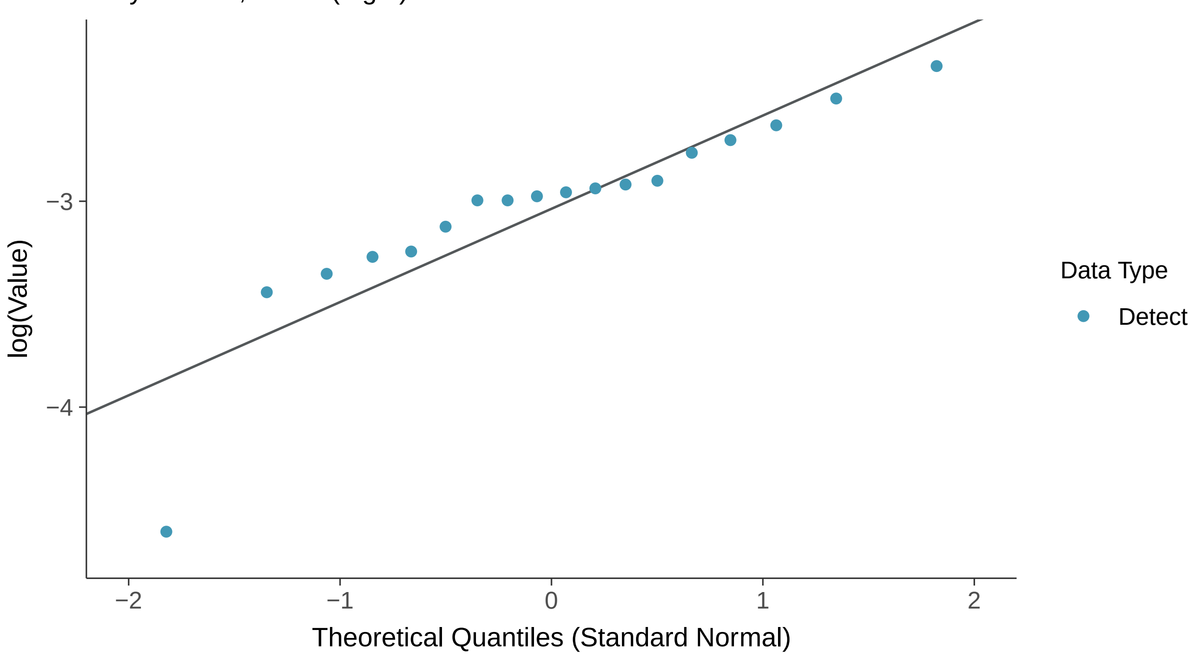
Normal Q-Q plot

Molybdenum, MW-5 (mg/L)



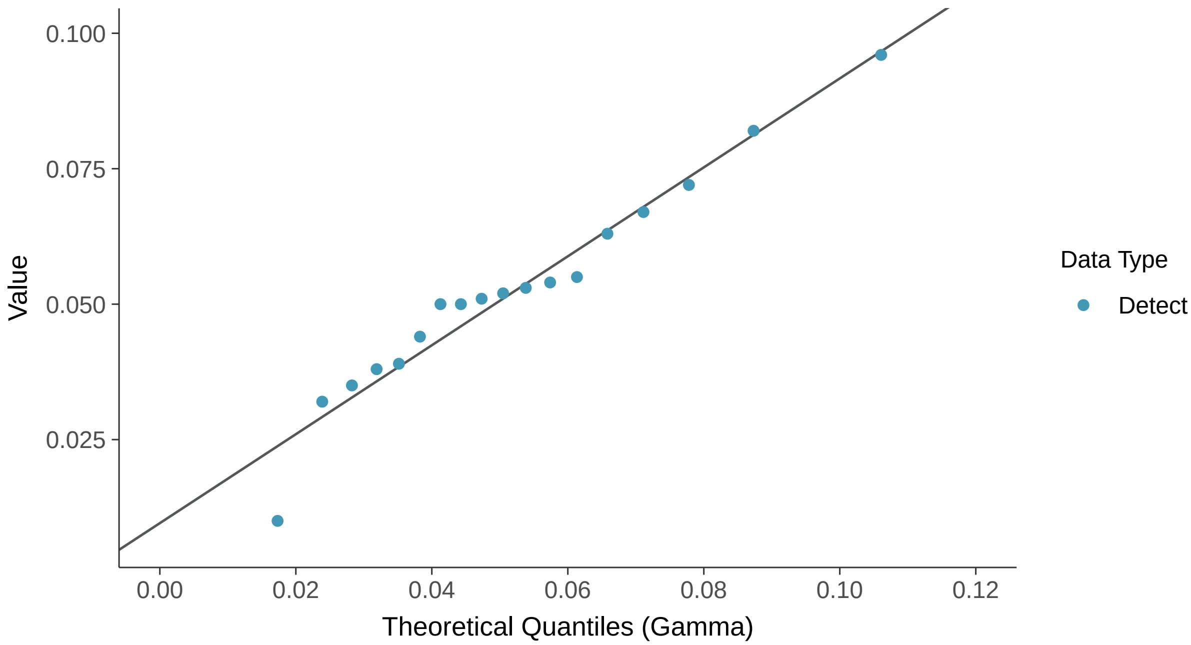
Lognormal Q-Q plot

Molybdenum, MW-5 (mg/L)



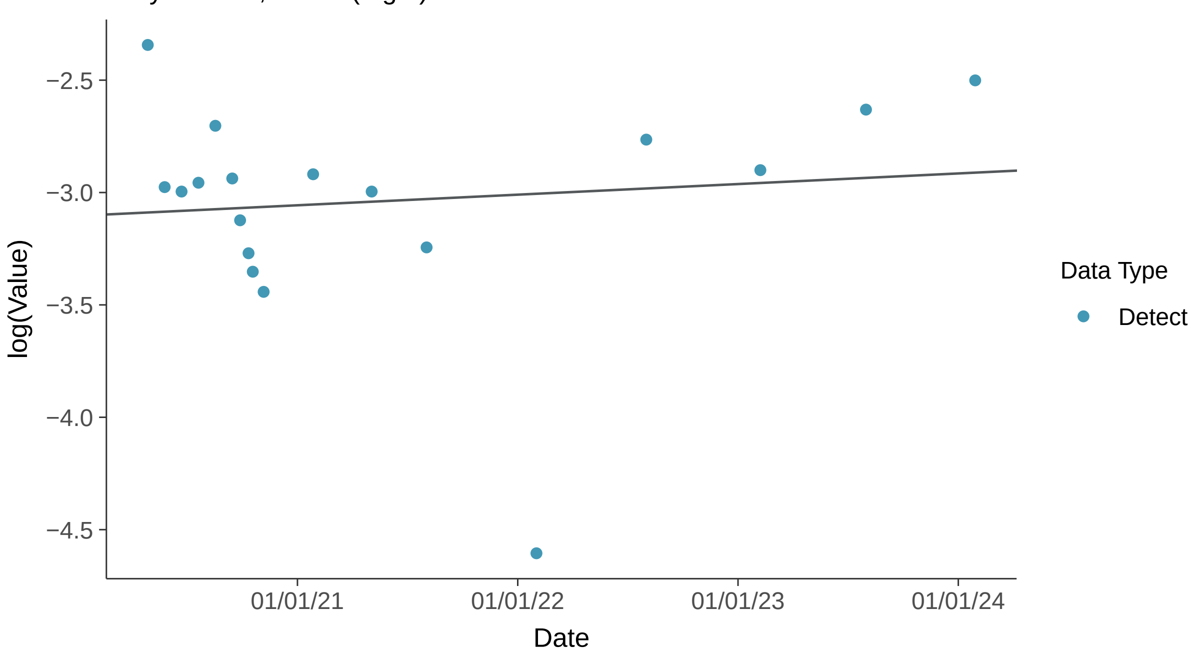
Gamma Q-Q plot

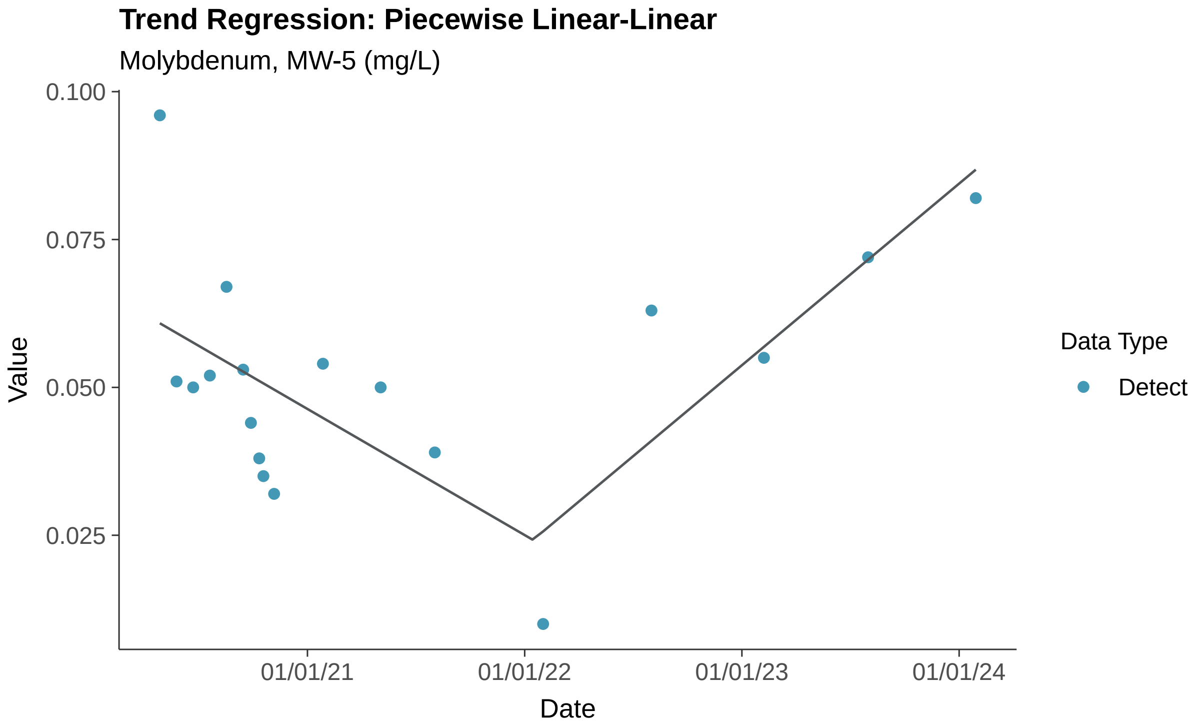
Molybdenum, MW-5 (mg/L)

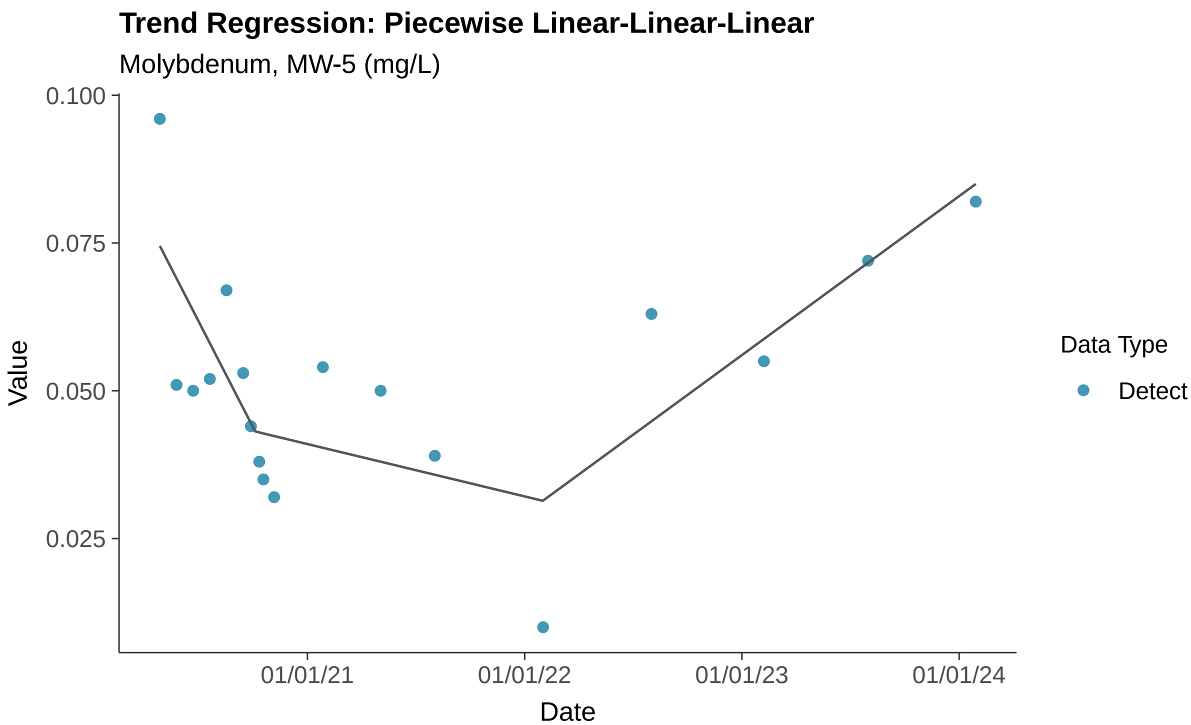


Trend Regression: Lognormal MLE

Molybdenum, MW-5 (mg/L)

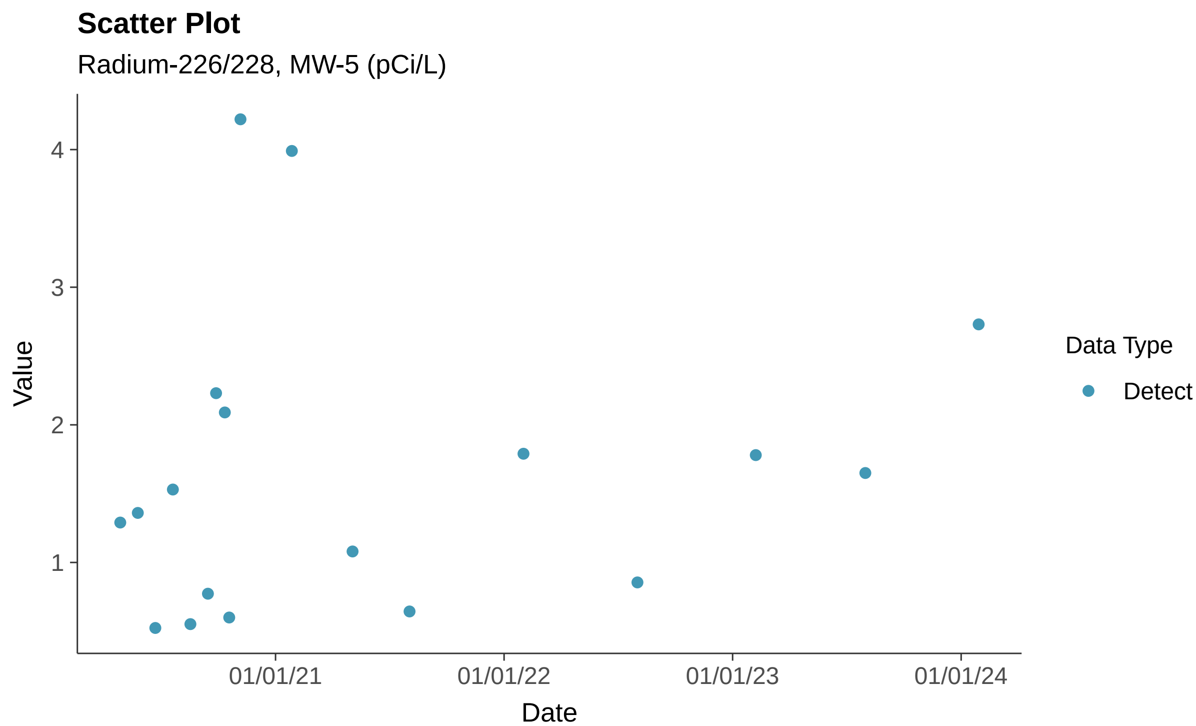


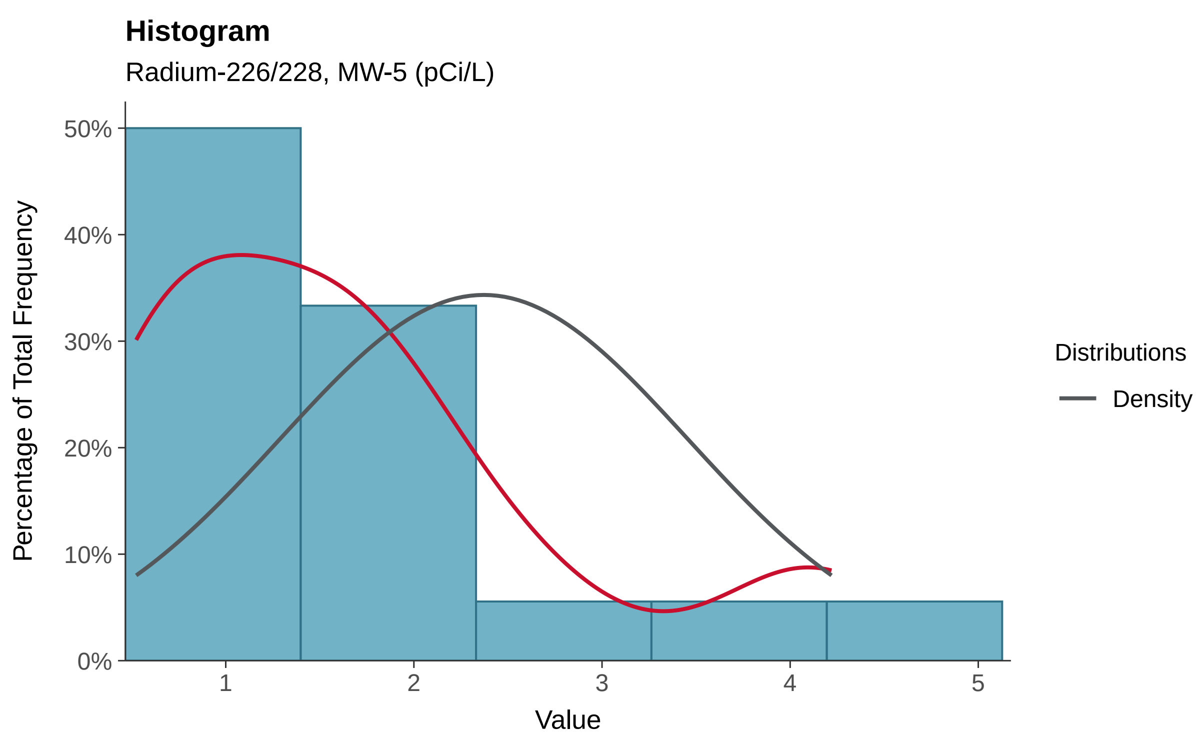

Trend Regression: Piecewise Linear-Linear
Molybdenum, MW-5 (mg/L)
0.100
0.075
0.050
0.025
Value
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Molybdenum, MW-5 (mg/L)
0.100
0.075
0.050
0.025
Value
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Radium-226/228, MW-5

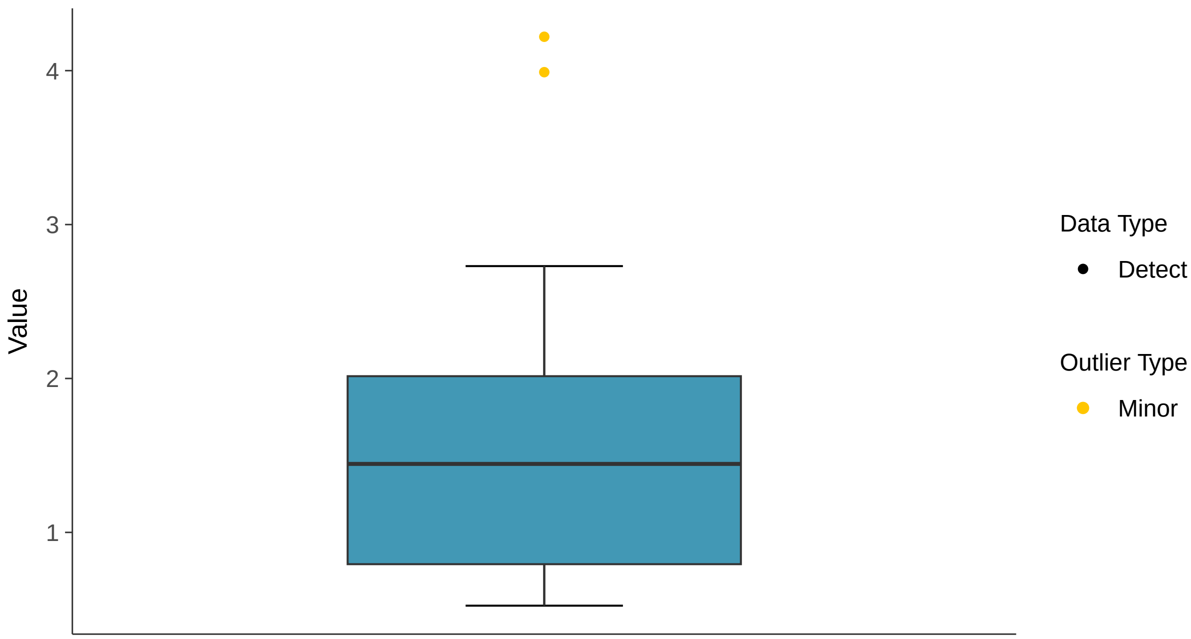
ID: 05_2_20





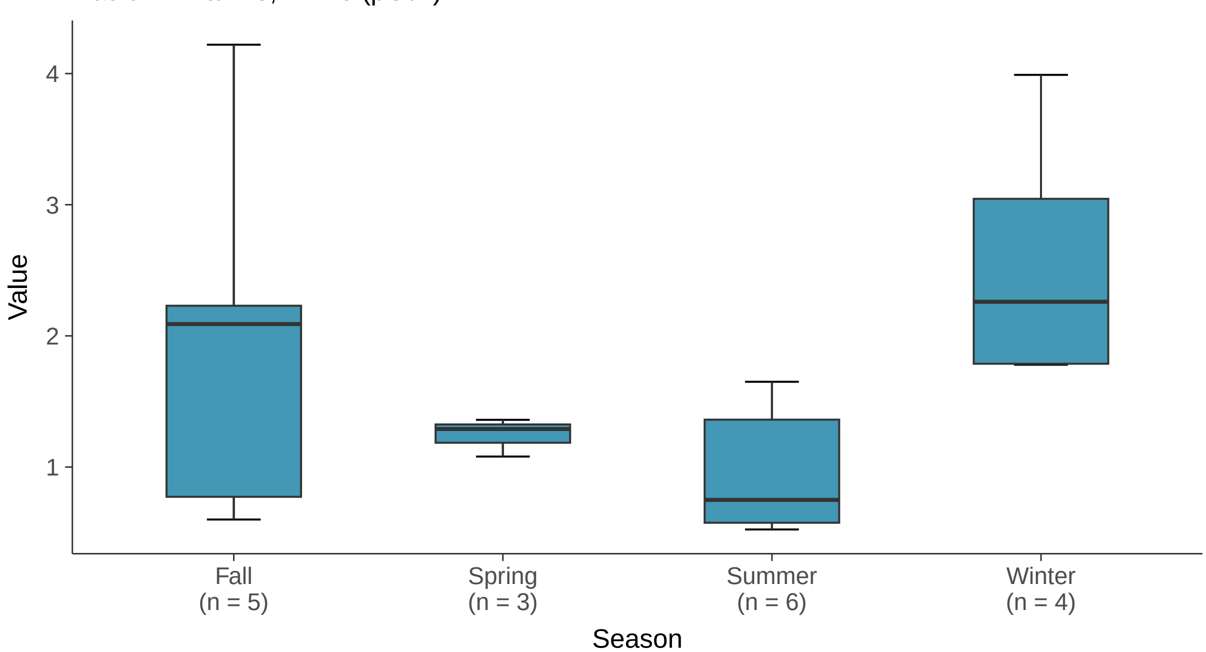
Boxplot

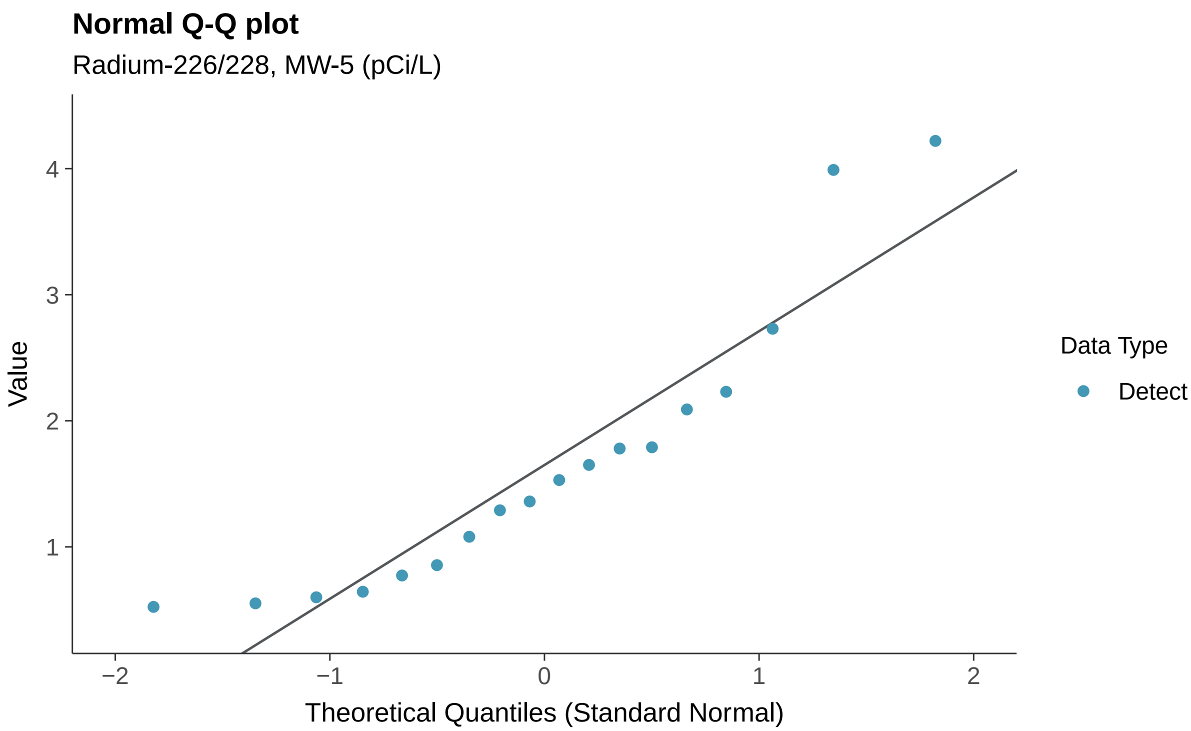
Radium-226/228, MW-5 (pCi/L)

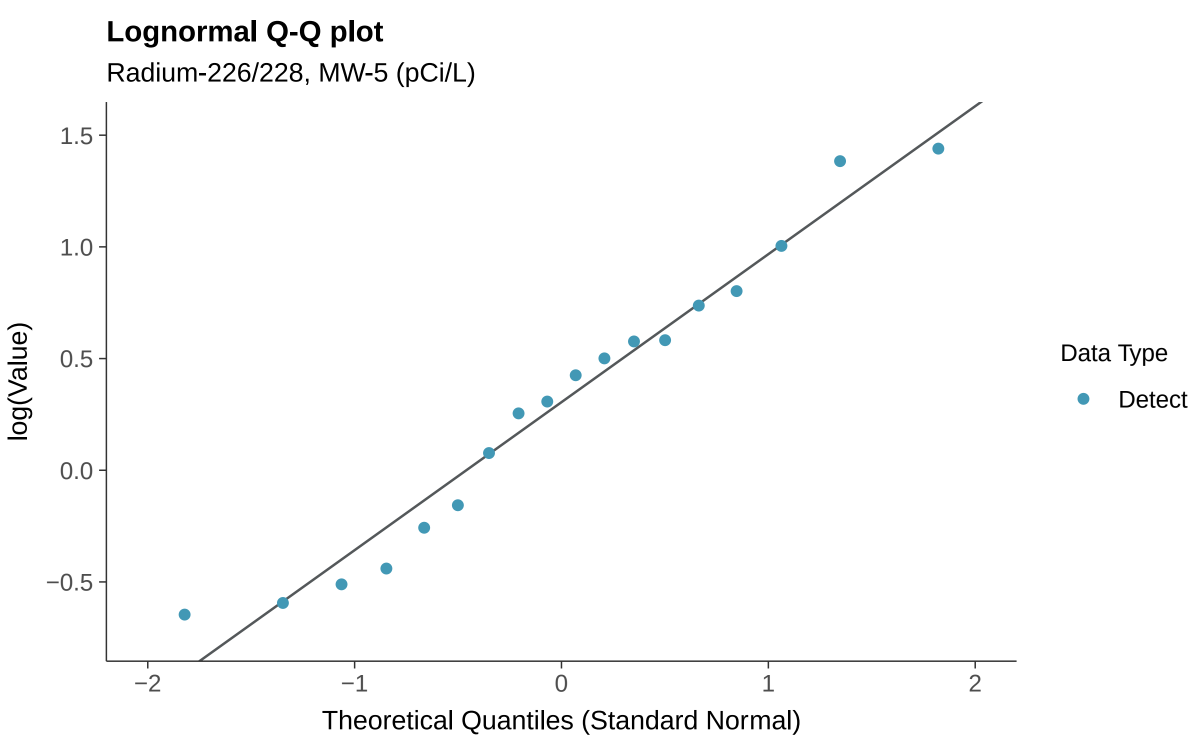


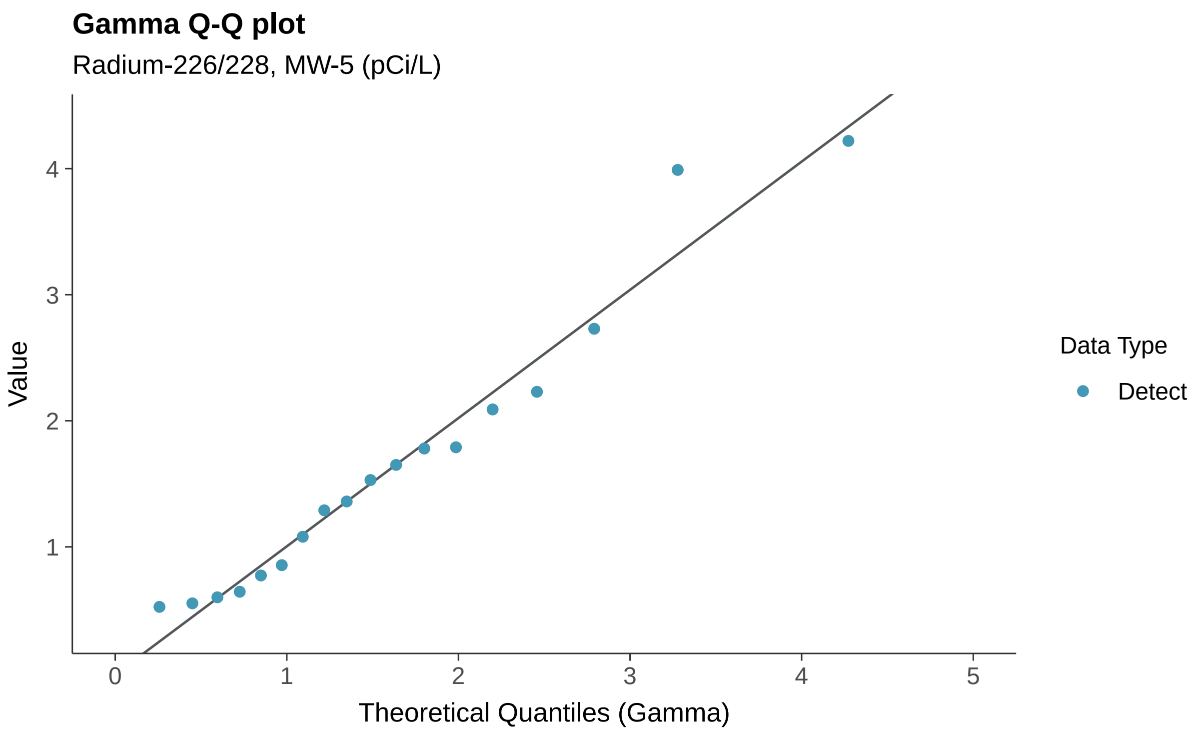
Boxplot by Season

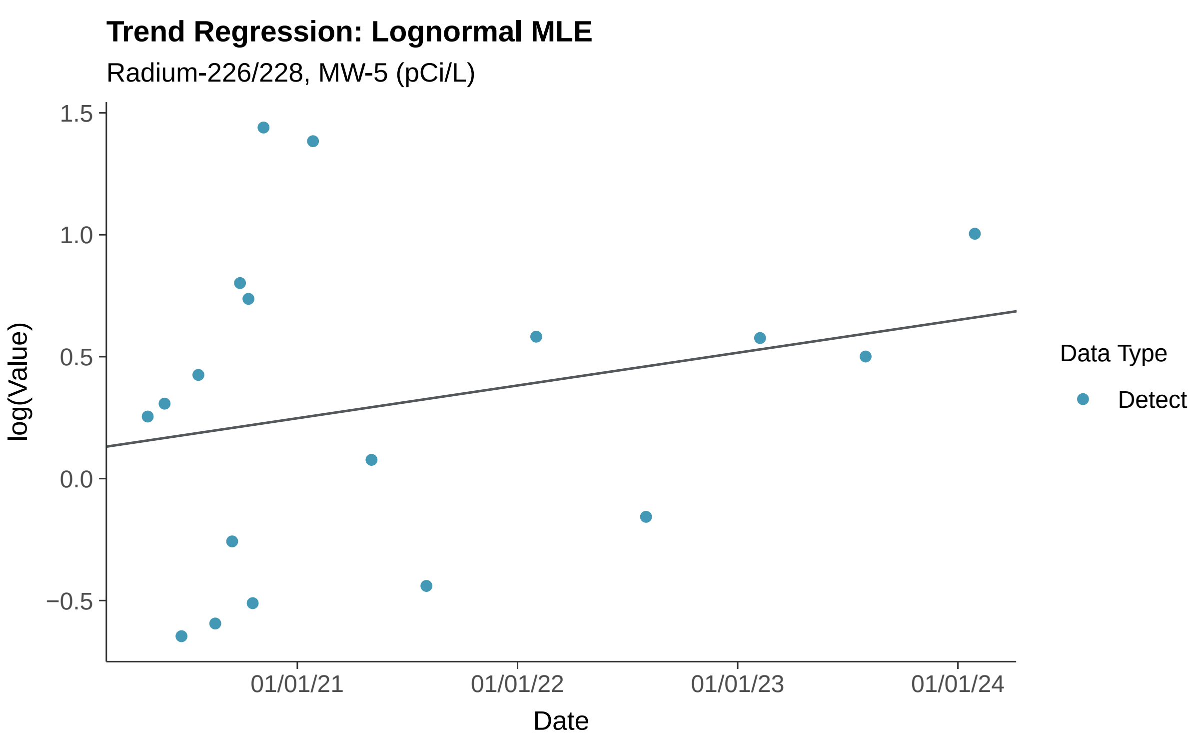
Radium-226/228, MW-5 (pCi/L)




Normal Q-Q plot
Radium-226/228, MW-5 (pCi/L)
Value
4
3
2
1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

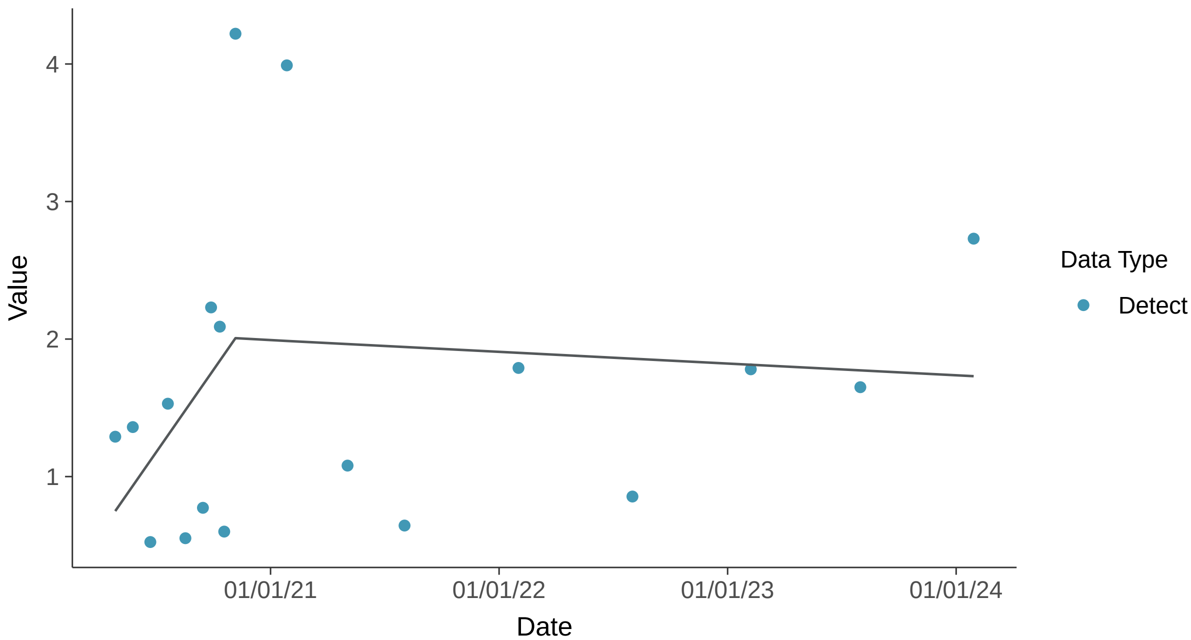

Lognormal Q-Q plot
Radium-226/228, MW-5 (pCi/L)
log(Value)
1.5
1.0
0.5
0.0
−0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Radium-226/228, MW-5 (pCi/L)
Value
4
3
2
1
0
1
2
3
4
5
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Radium-226/228, MW-5 (pCi/L)
log(Value)
1.5
1.0
0.5
0.0
−0.5
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

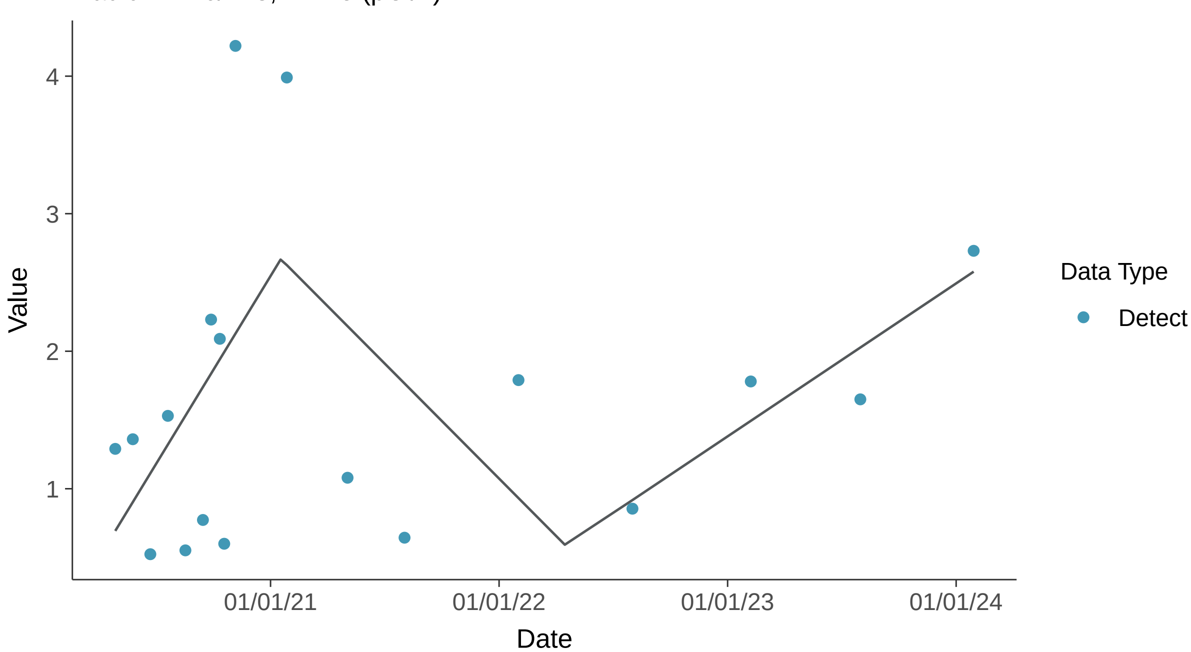
Trend Regression: Piecewise Linear-Linear

Radium-226/228, MW-5 (pCi/L)



Trend Regression: Piecewise Linear-Linear-Linear

Radium-226/228, MW-5 (pCi/L)

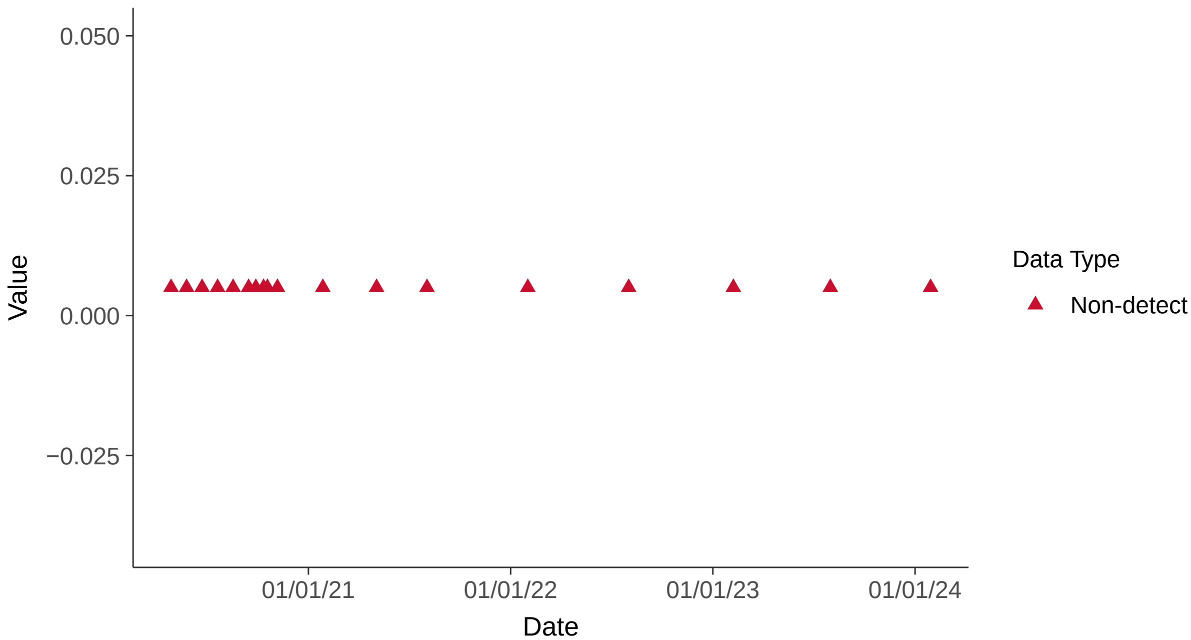


Appendix IV: Selenium, MW-5

ID: 05_2_22

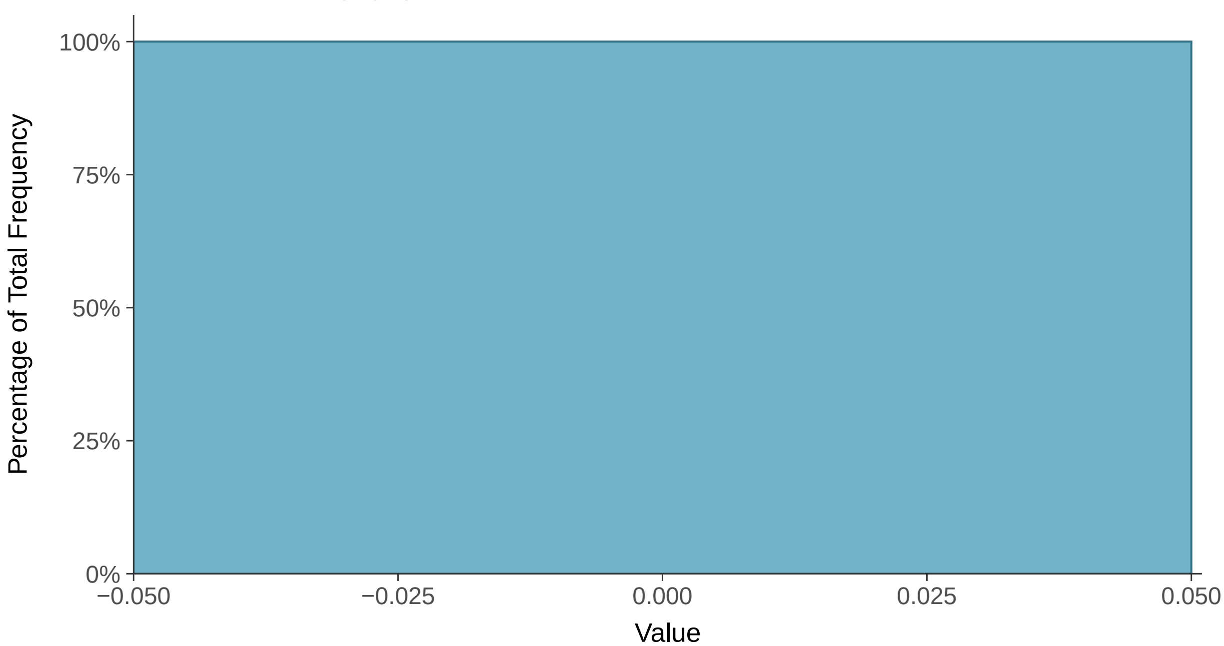
Scatter Plot

Selenium, MW-5 (mg/L)



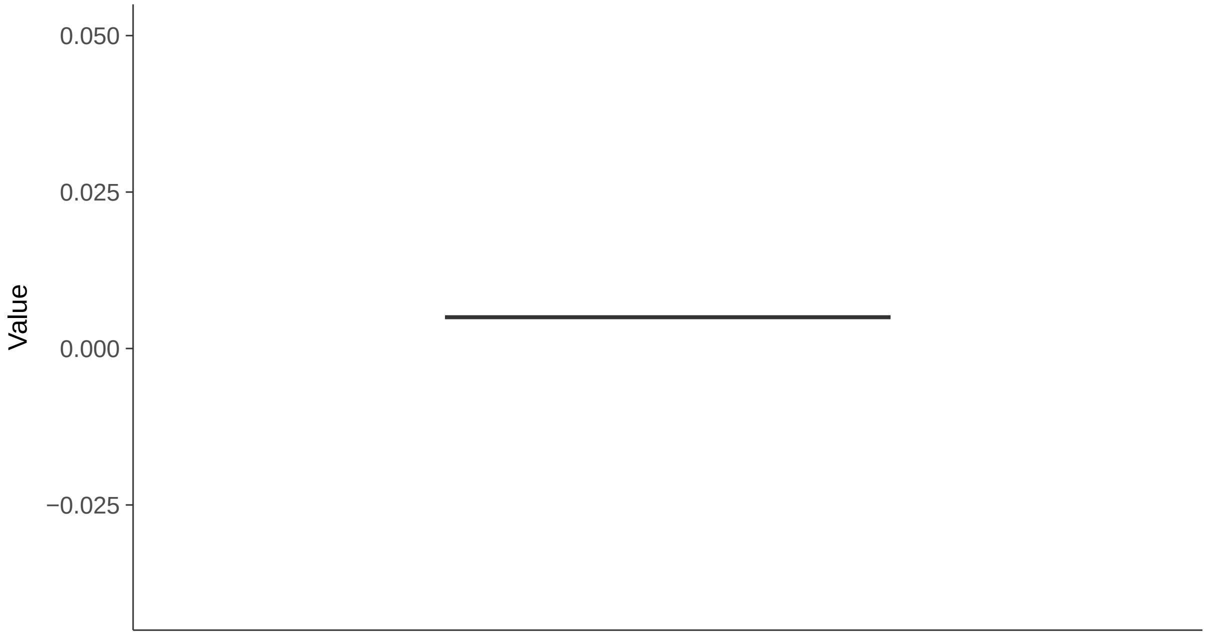
Histogram

Selenium, MW-5 (mg/L)



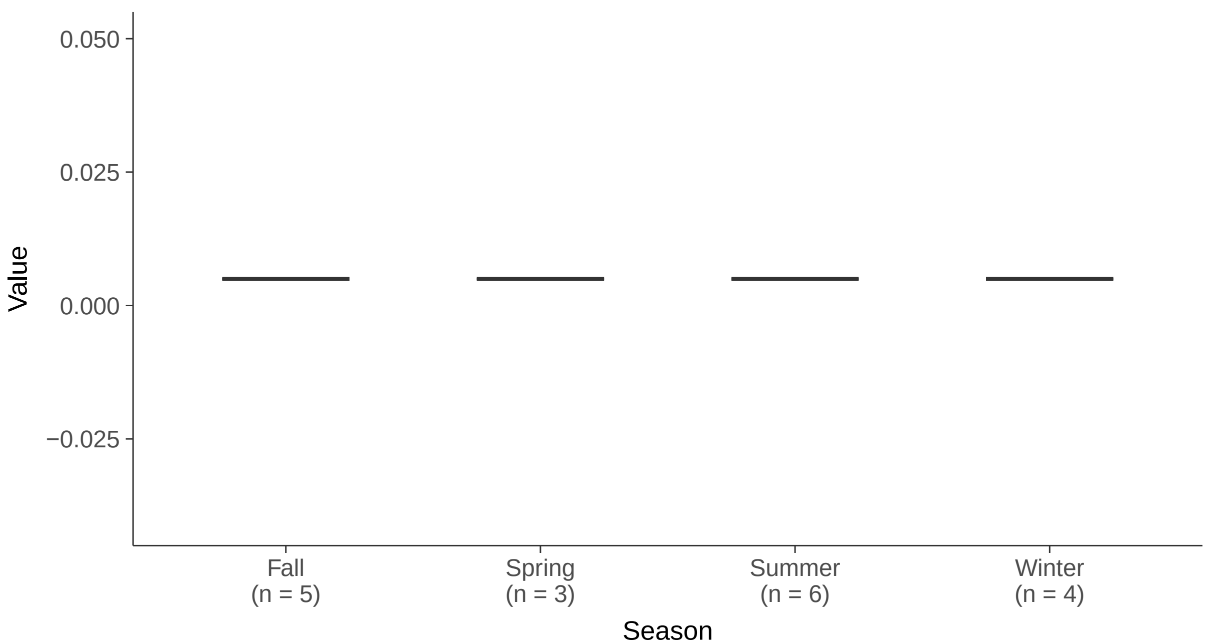
Boxplot

Selenium, MW-5 (mg/L)



Boxplot by Season

Selenium, MW-5 (mg/L)

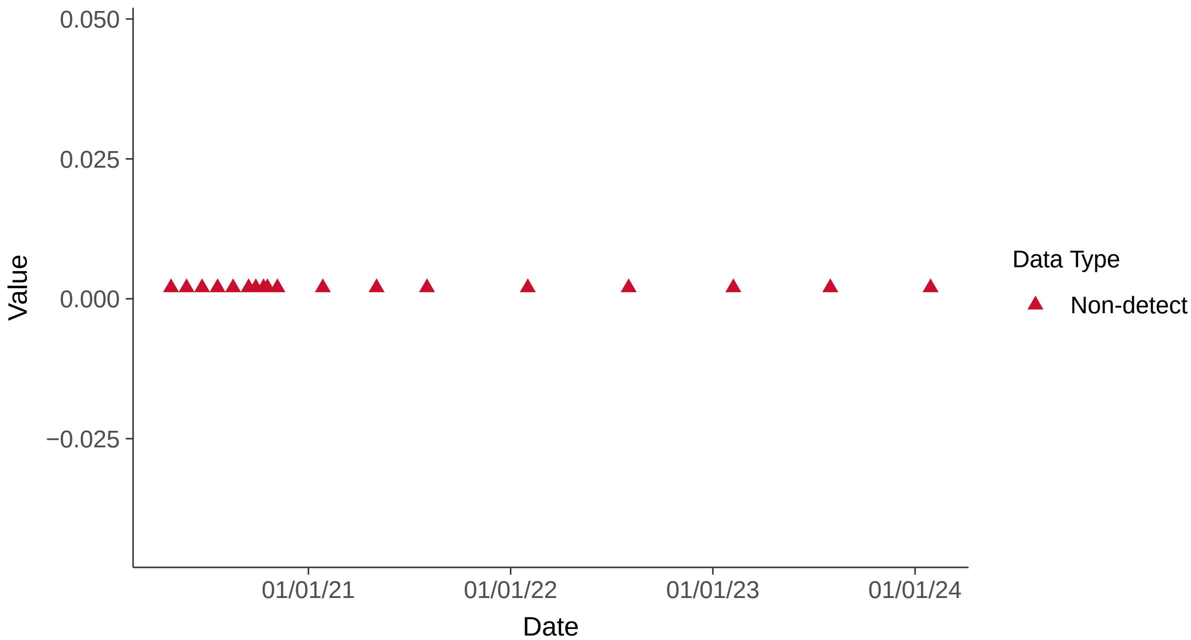


Appendix IV: Thallium, MW-5

ID: 05_2_23

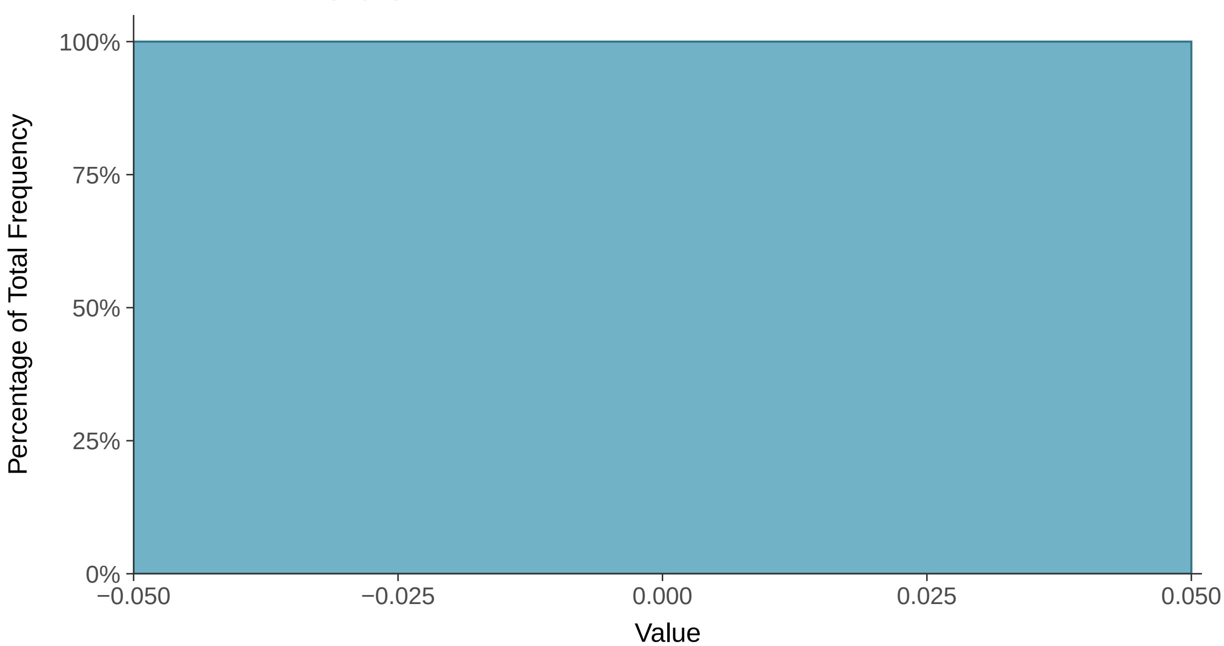
Scatter Plot

Thallium, MW-5 (mg/L)



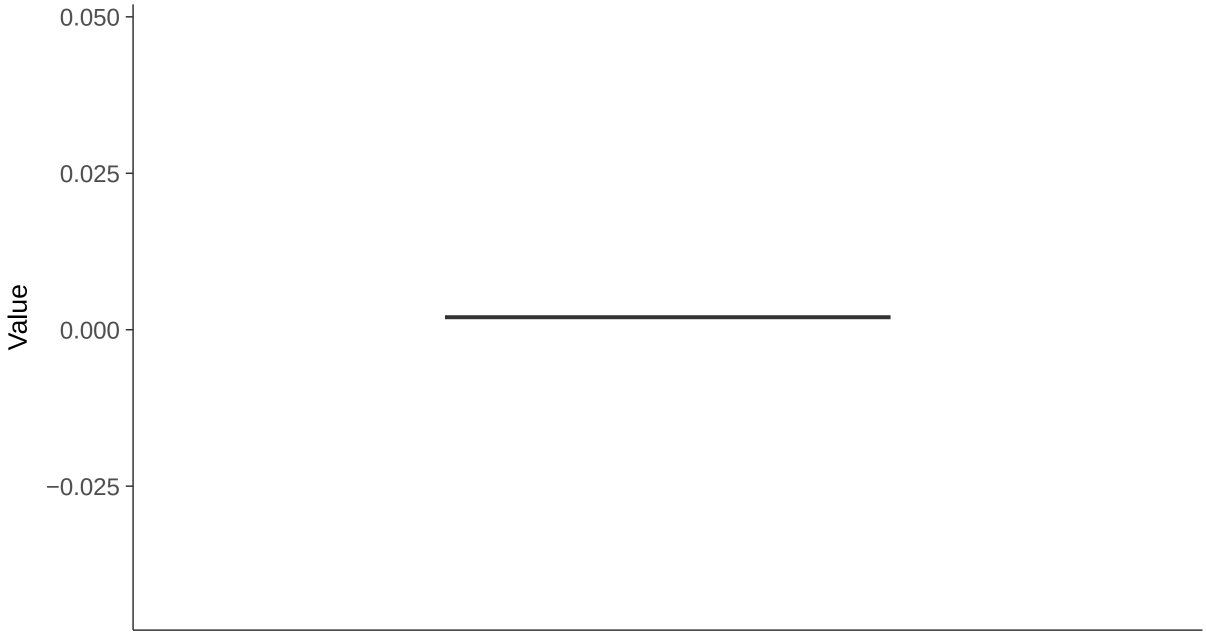
Histogram

Thallium, MW-5 (mg/L)



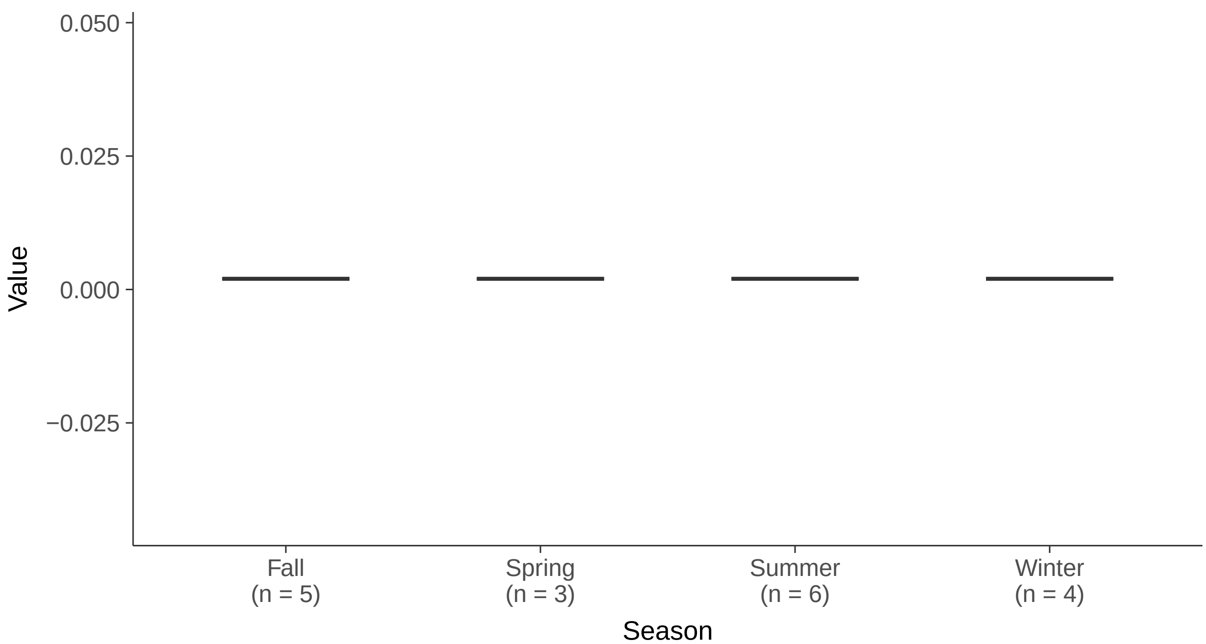
Boxplot

Thallium, MW-5 (mg/L)



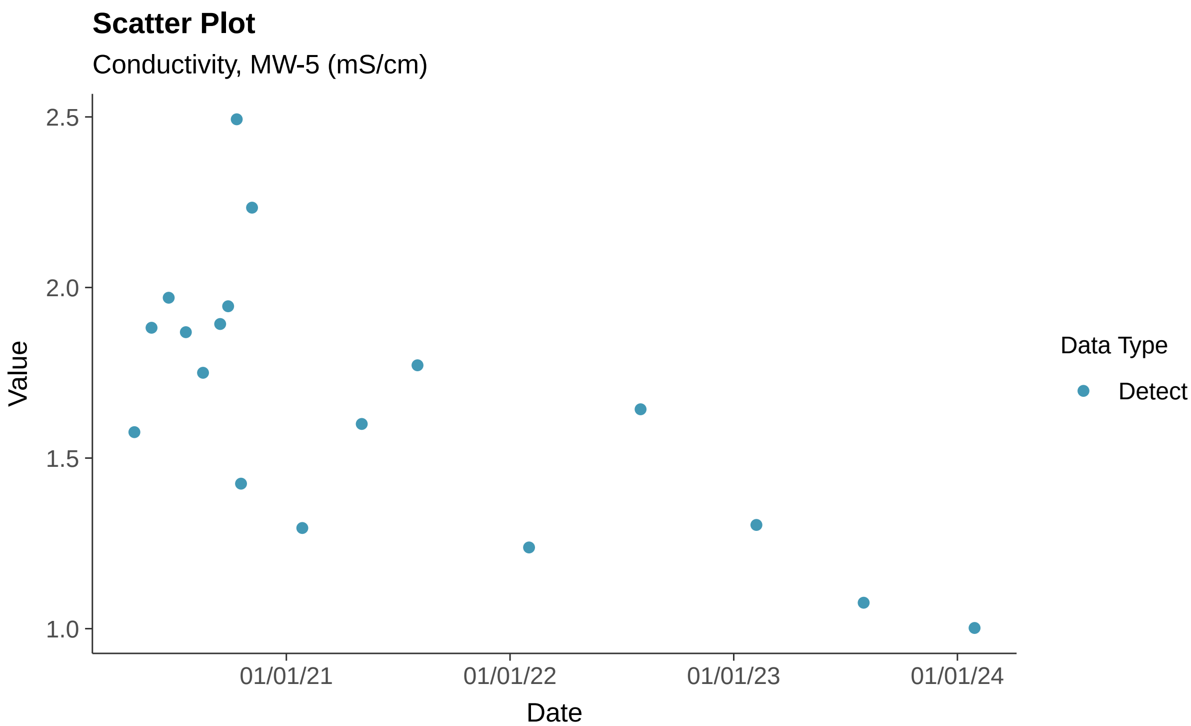
Boxplot by Season

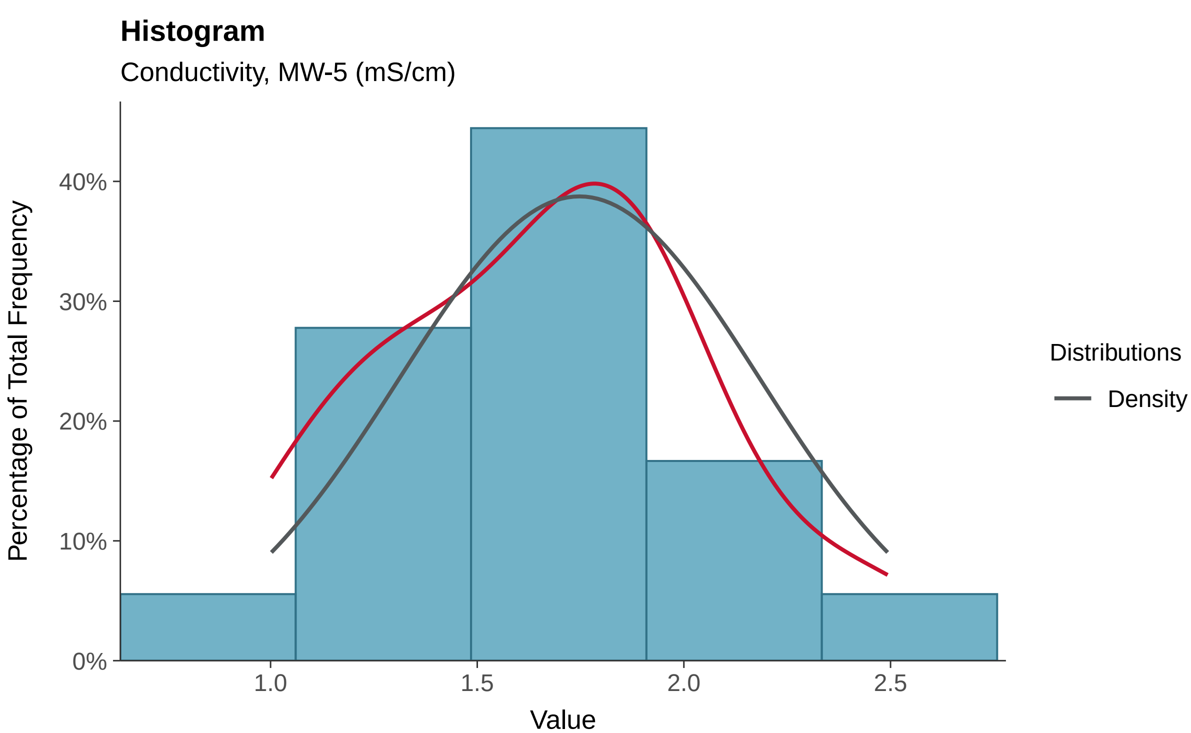
Thallium, MW-5 (mg/L)



Field Parameters: Conductivity, MW-5

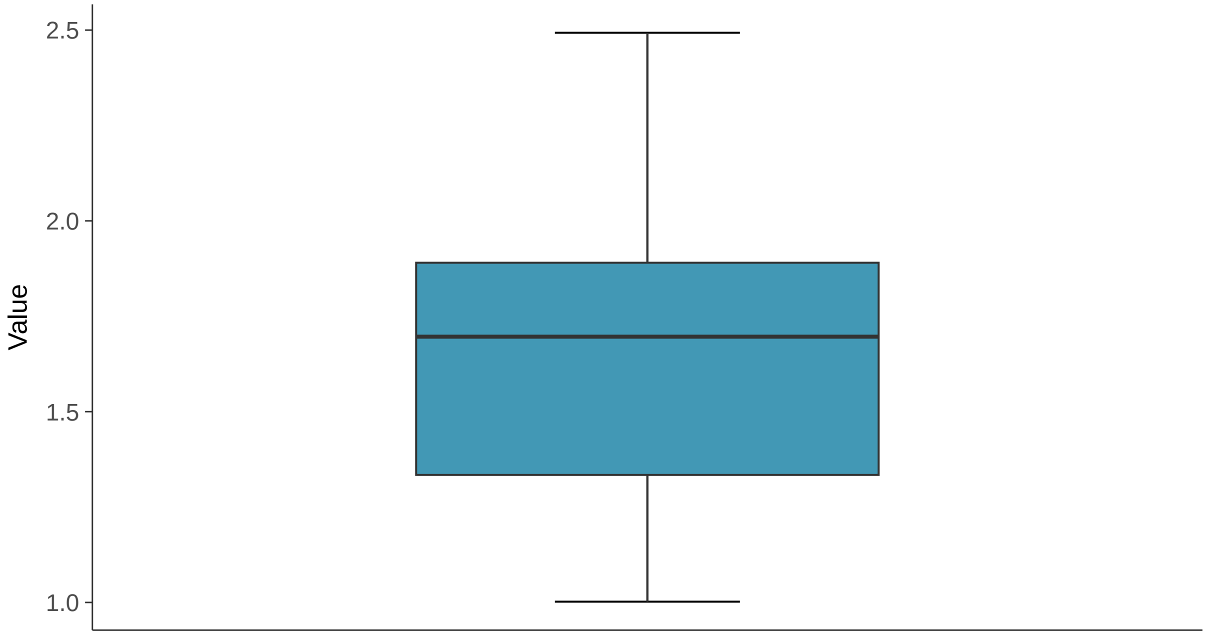
ID: 05_3_24





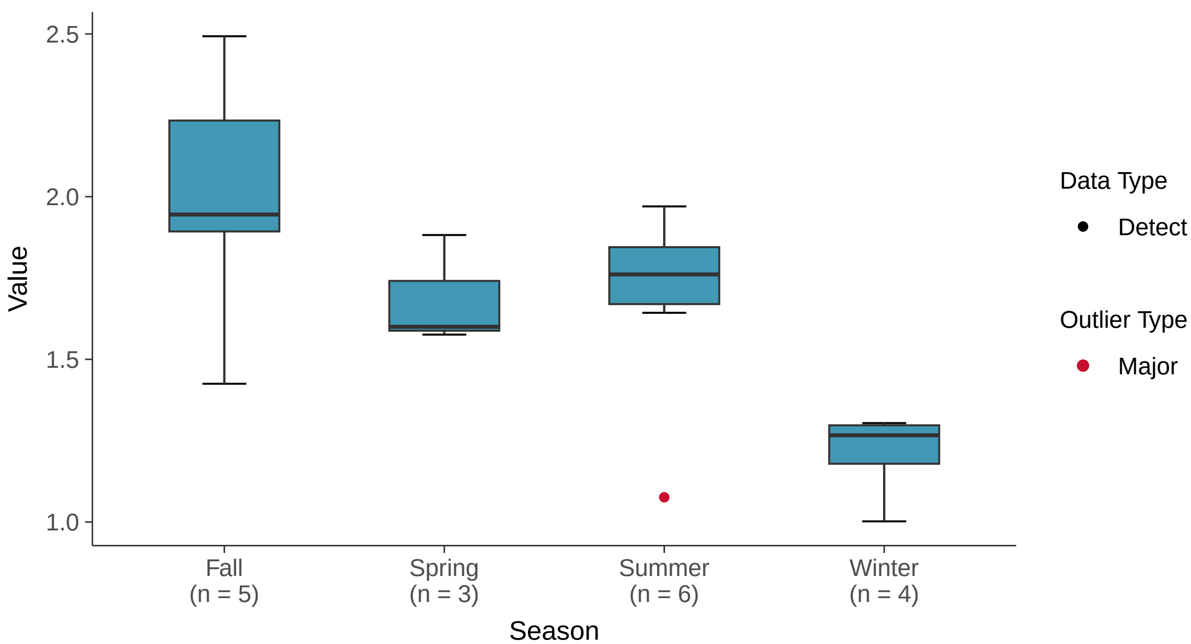
Boxplot

Conductivity, MW-5 (mS/cm)



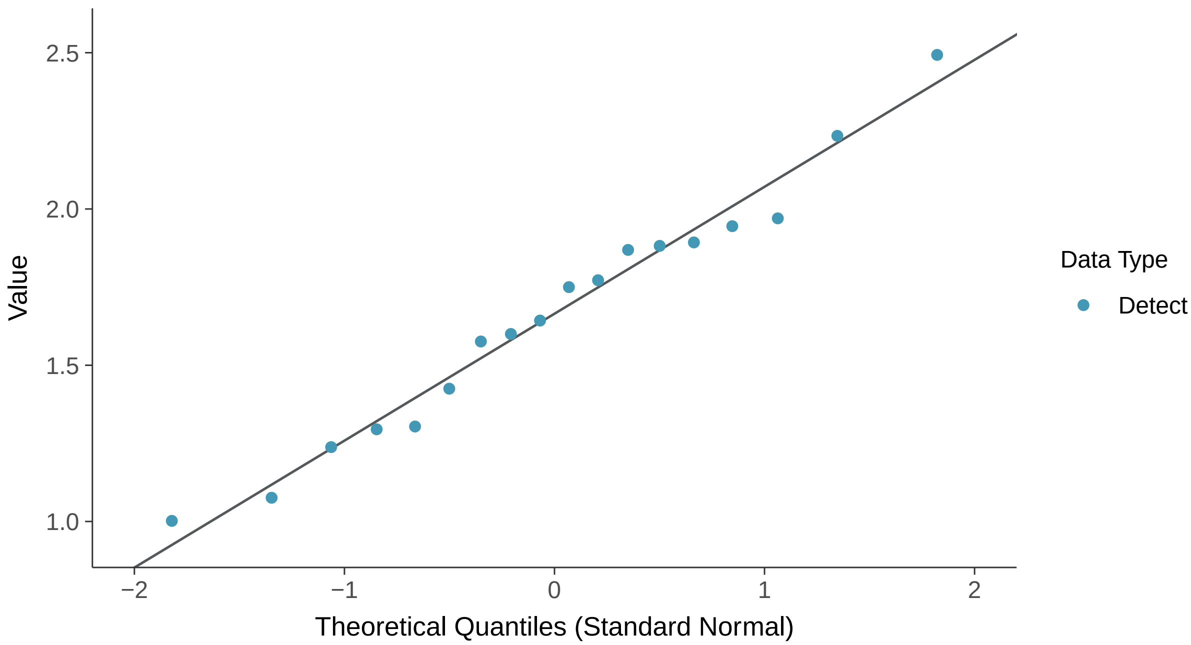
Boxplot by Season

Conductivity, MW-5 (mS/cm)



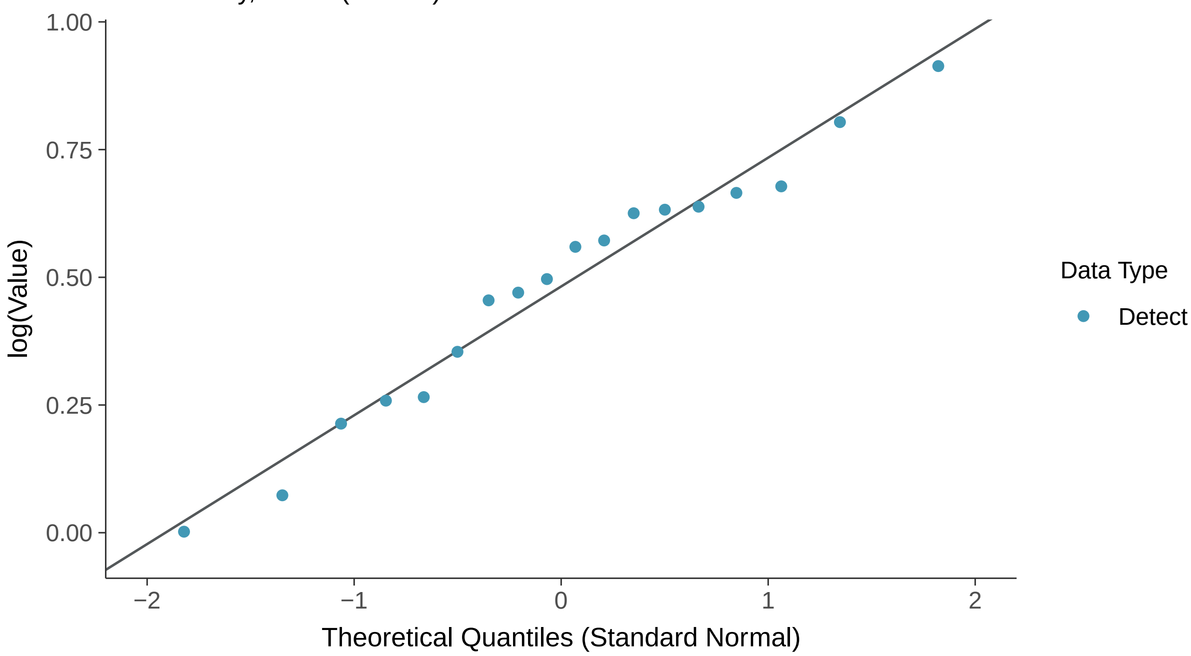
Normal Q-Q plot

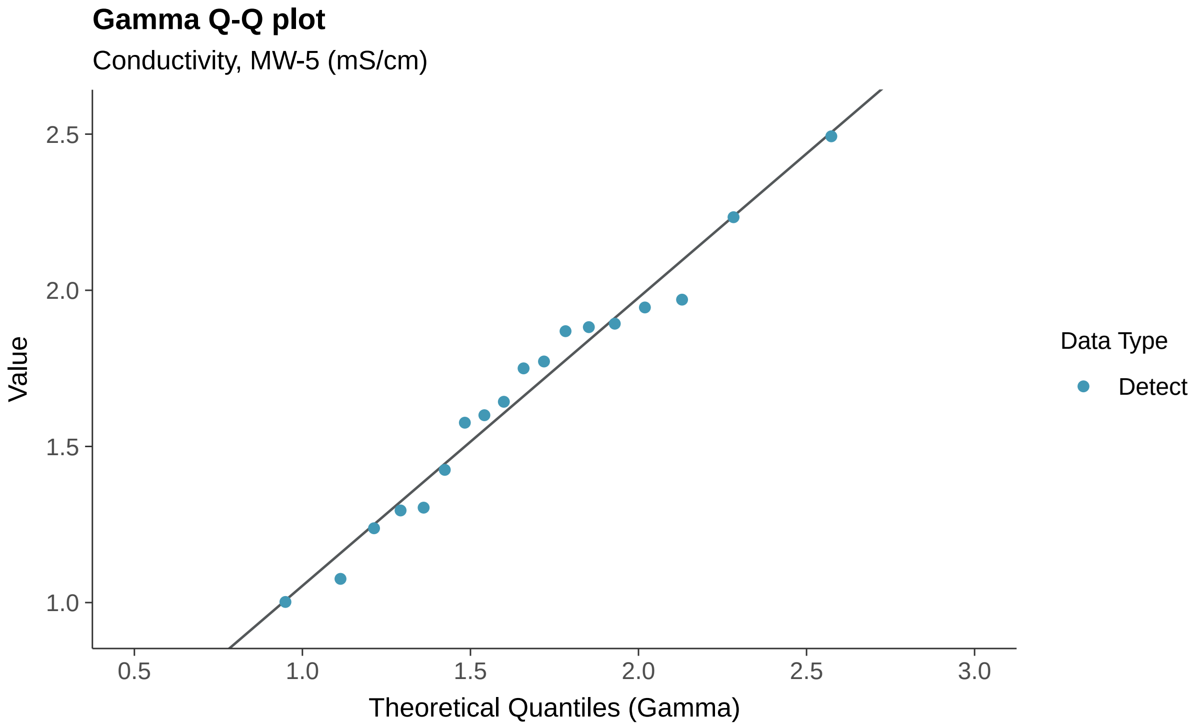
Conductivity, MW-5 (mS/cm)

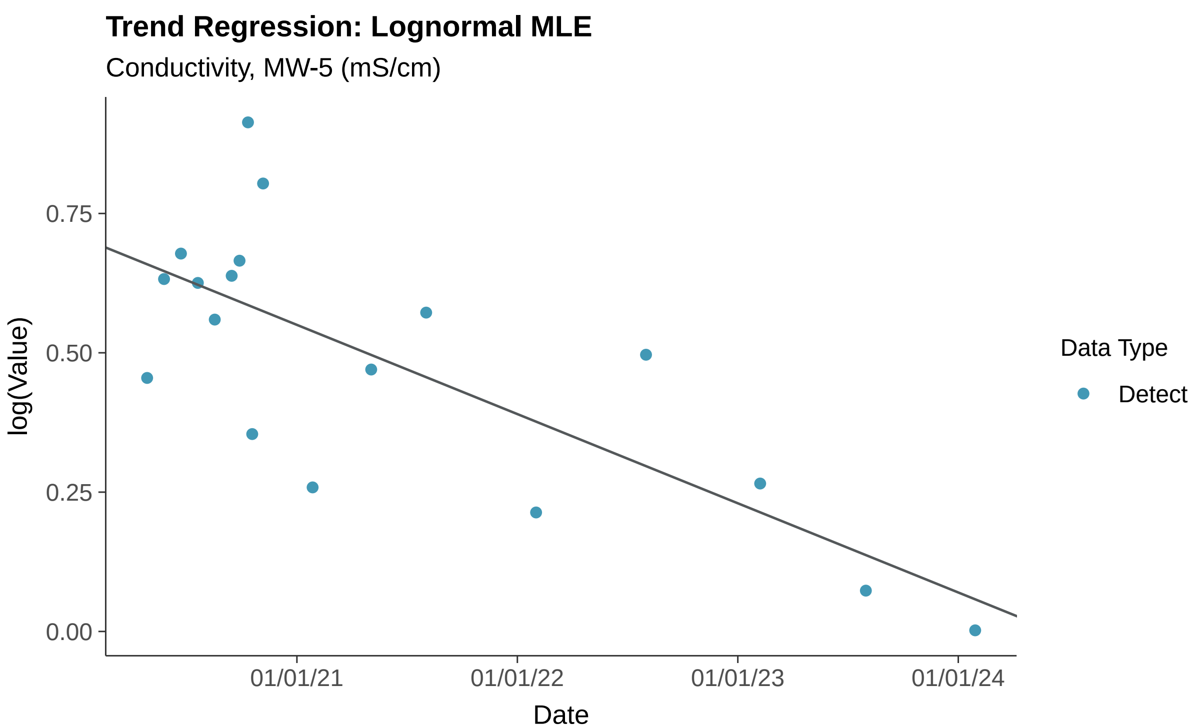


Lognormal Q-Q plot

Conductivity, MW-5 (mS/cm)

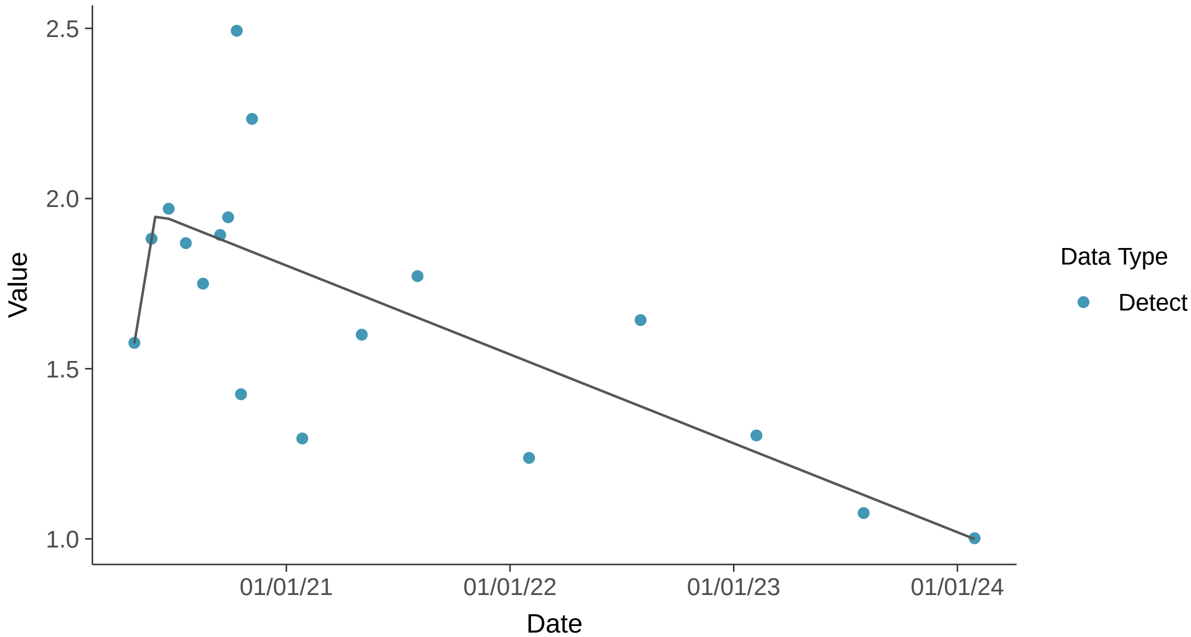



Gamma Q-Q plot
Conductivity, MW-5 (mS/cm)
Value
2.5
2.0
1.5
1.0
0.5
1.0
1.5
2.0
2.5
3.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Conductivity, MW-5 (mS/cm)
log(Value)
0.75
0.50
0.25
0.00
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

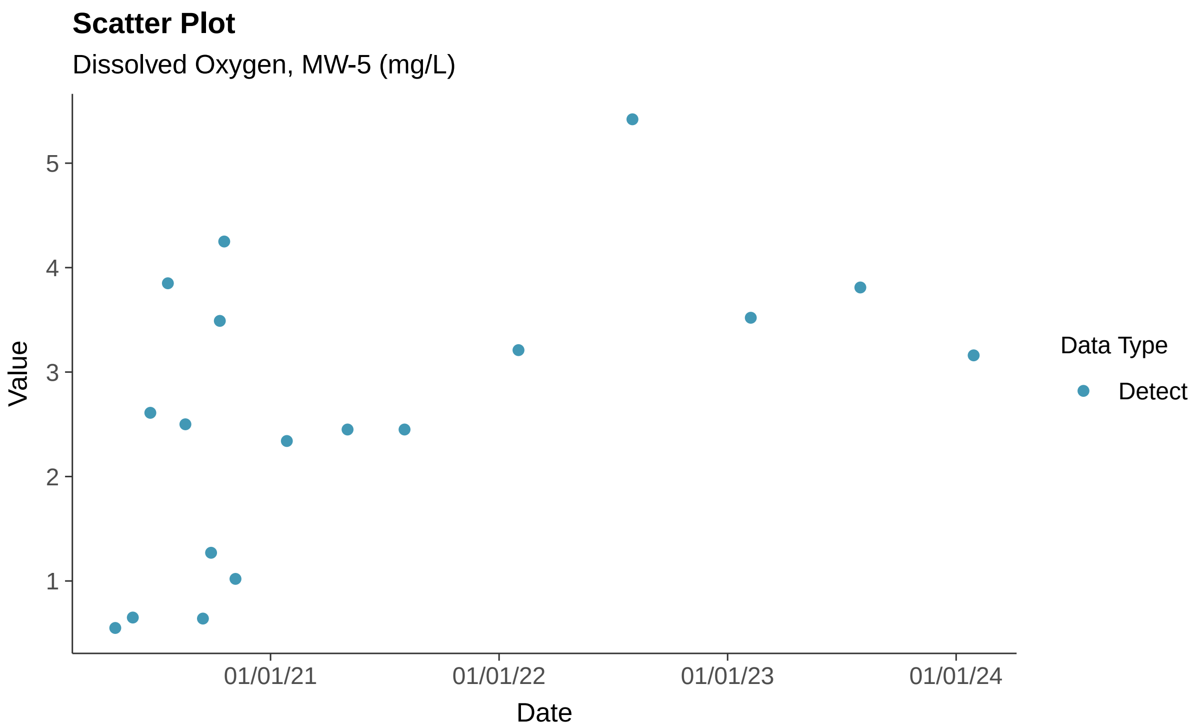
Trend Regression: Piecewise Linear-Linear

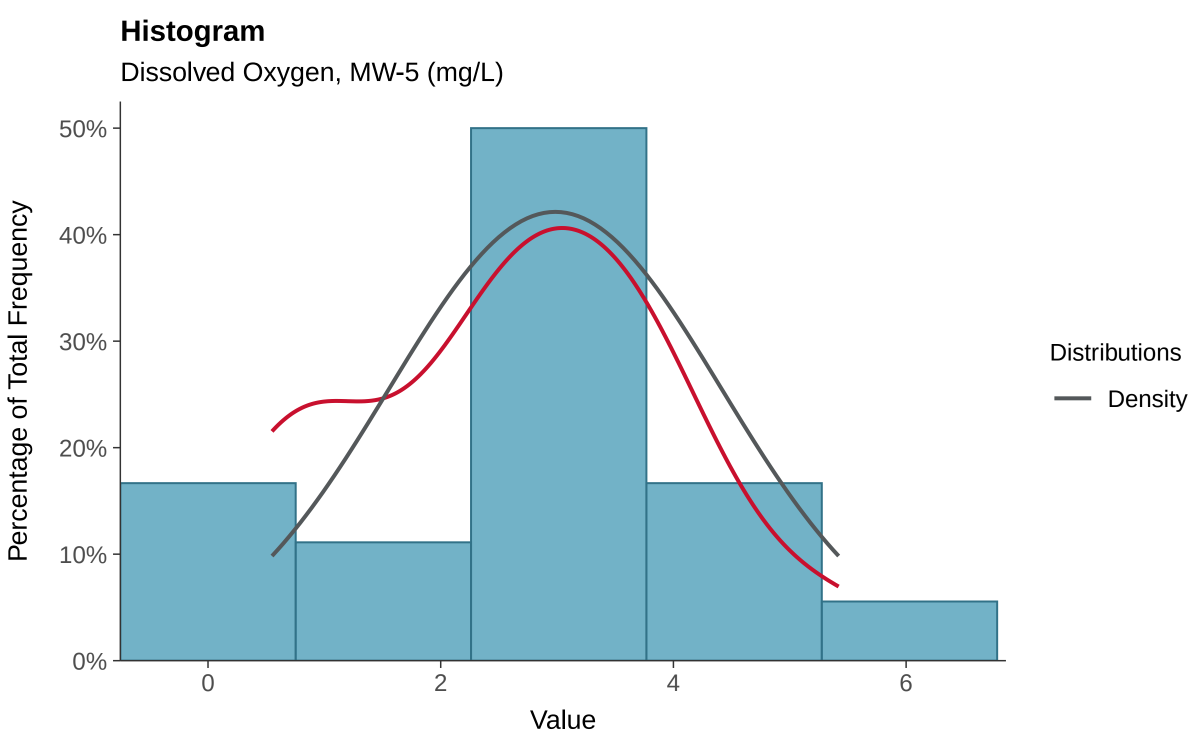
Conductivity, MW-5 (mS/cm)



Field Parameters: Dissolved Oxygen, MW-5

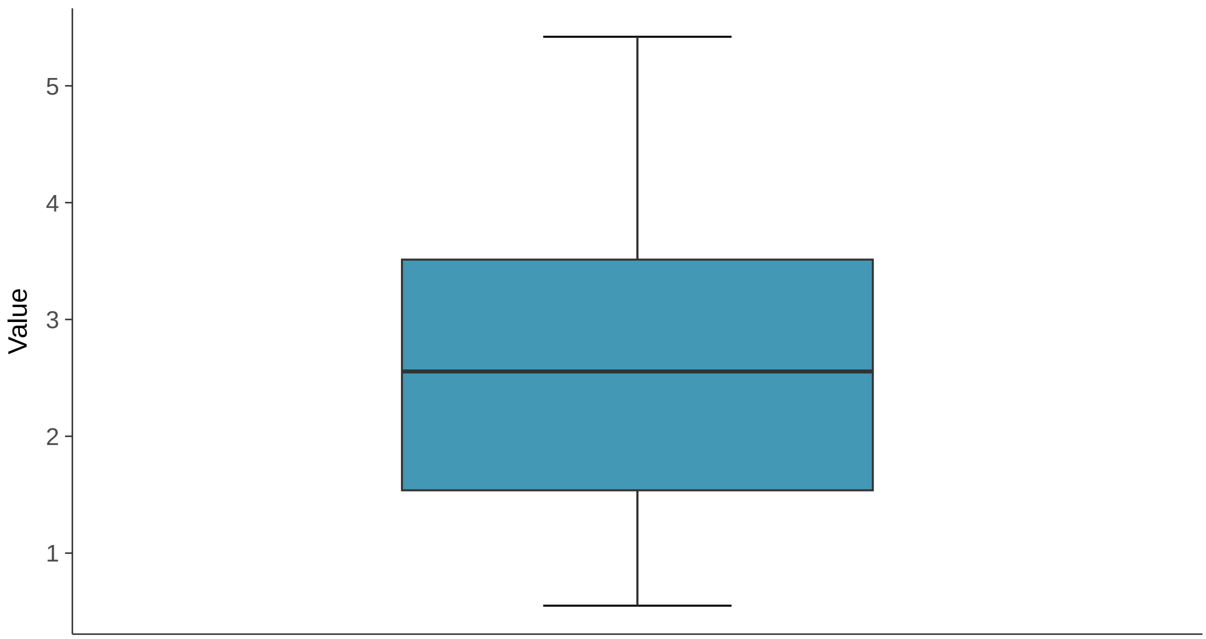
ID: 05_3_25





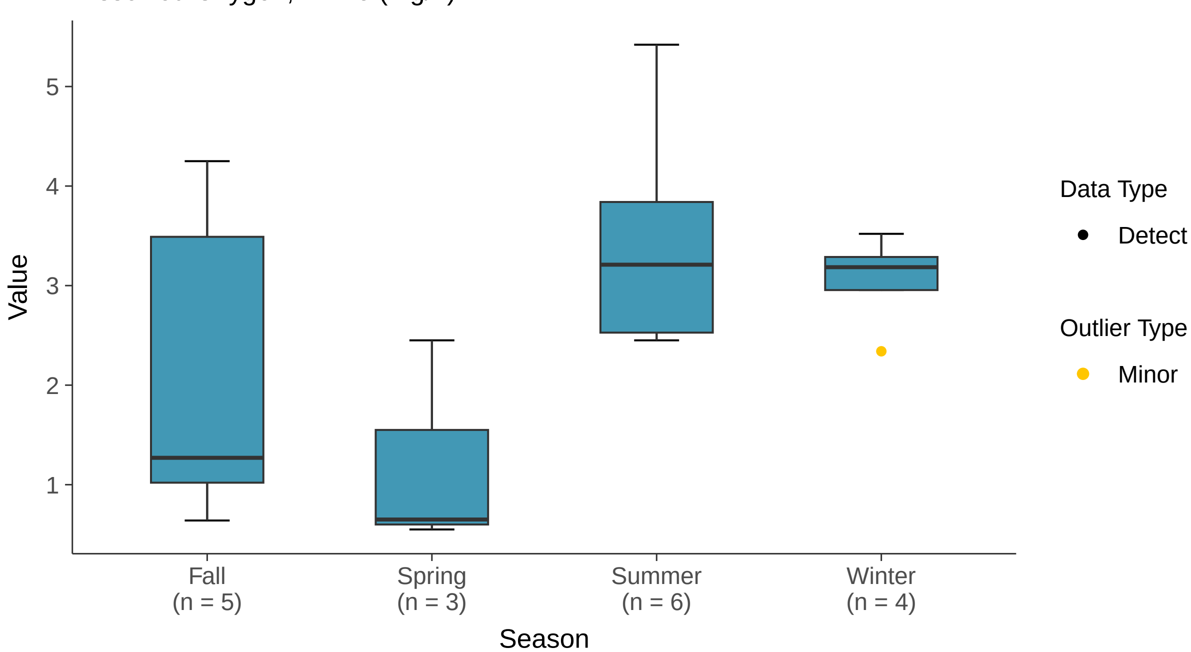
Boxplot

Dissolved Oxygen, MW-5 (mg/L)



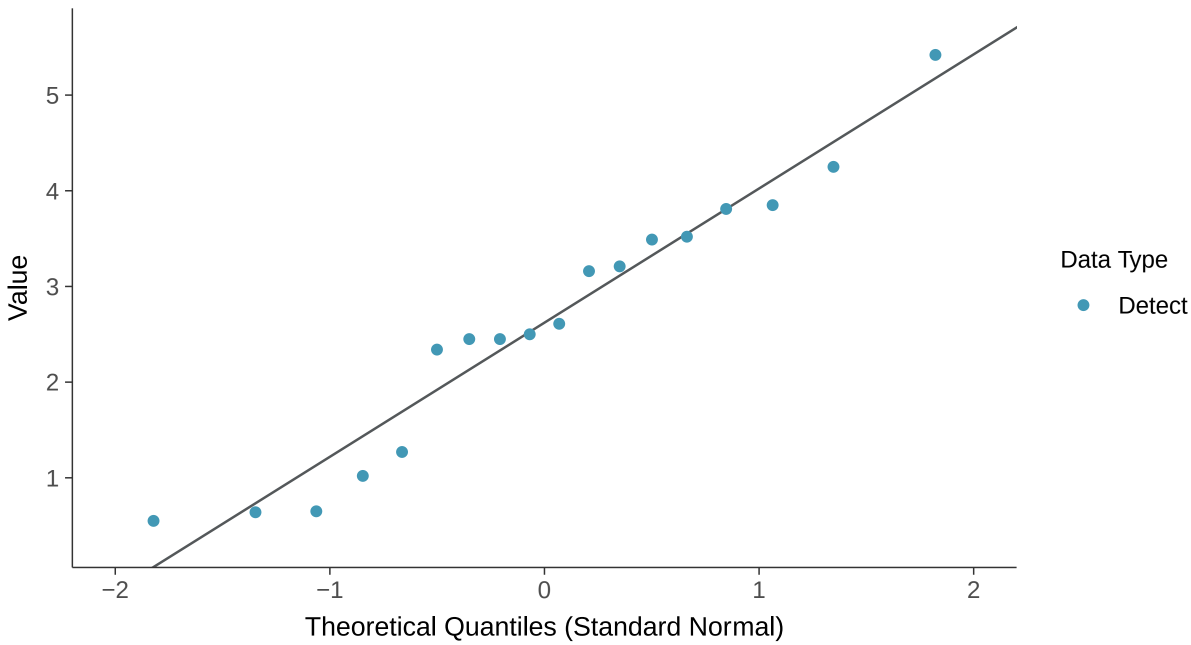
Boxplot by Season

Dissolved Oxygen, MW-5 (mg/L)



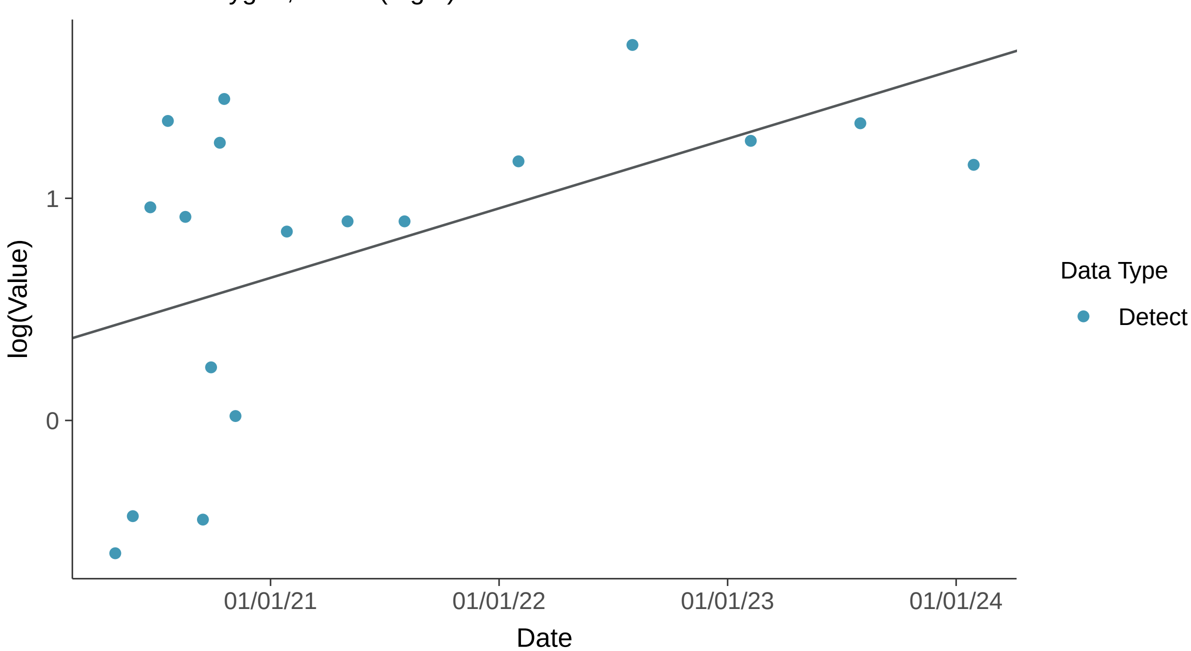
Normal Q-Q plot

Dissolved Oxygen, MW-5 (mg/L)



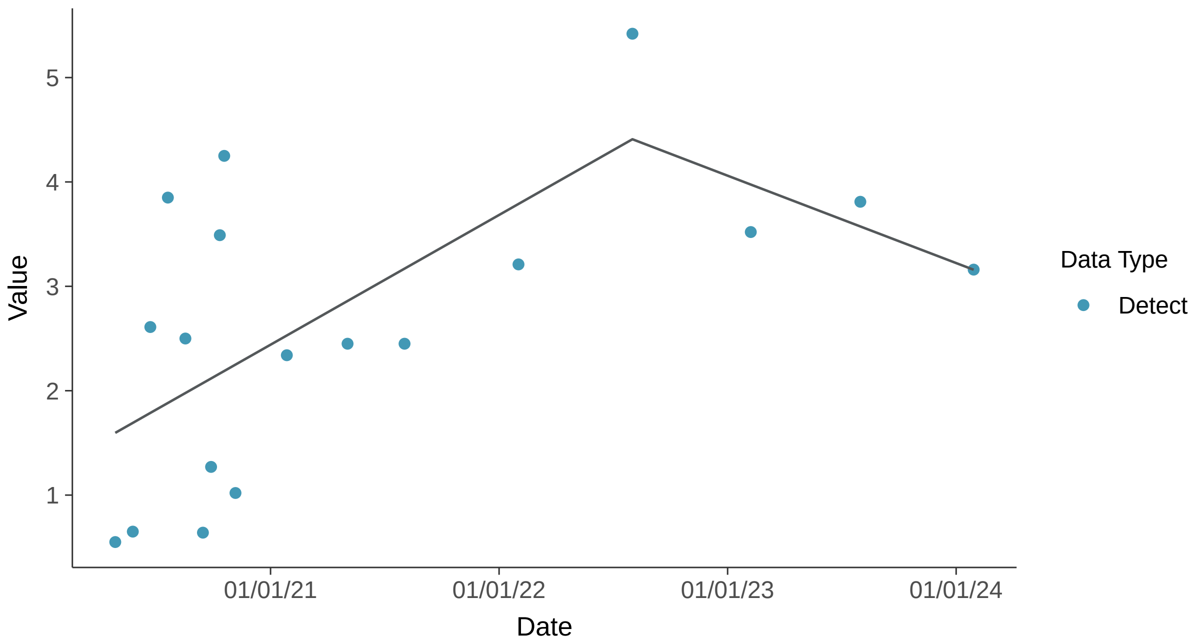
Trend Regression: Lognormal MLE

Dissolved Oxygen, MW-5 (mg/L)



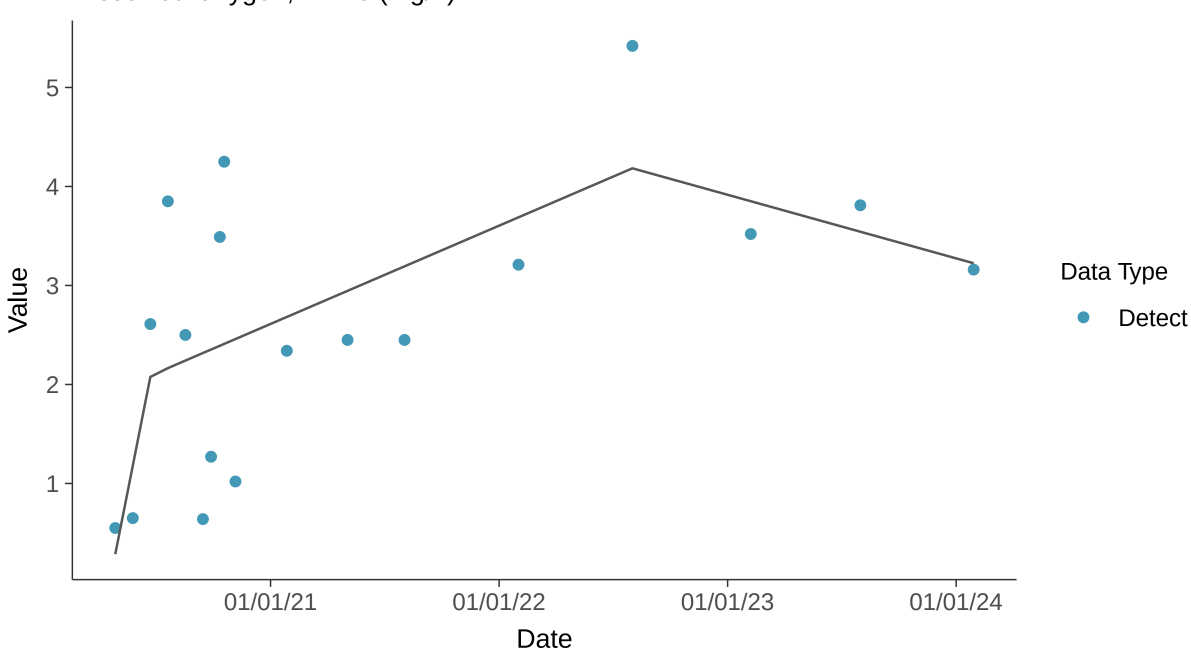
Trend Regression: Piecewise Linear-Linear

Dissolved Oxygen, MW-5 (mg/L)



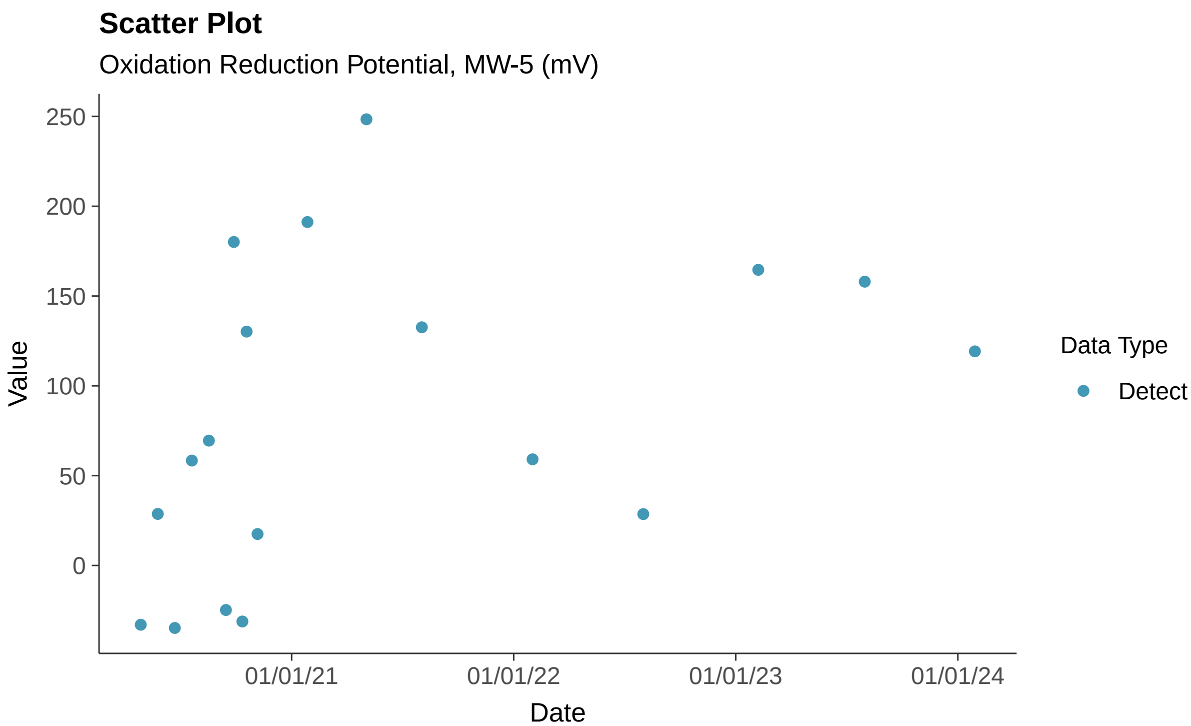
Trend Regression: Piecewise Linear-Linear-Linear

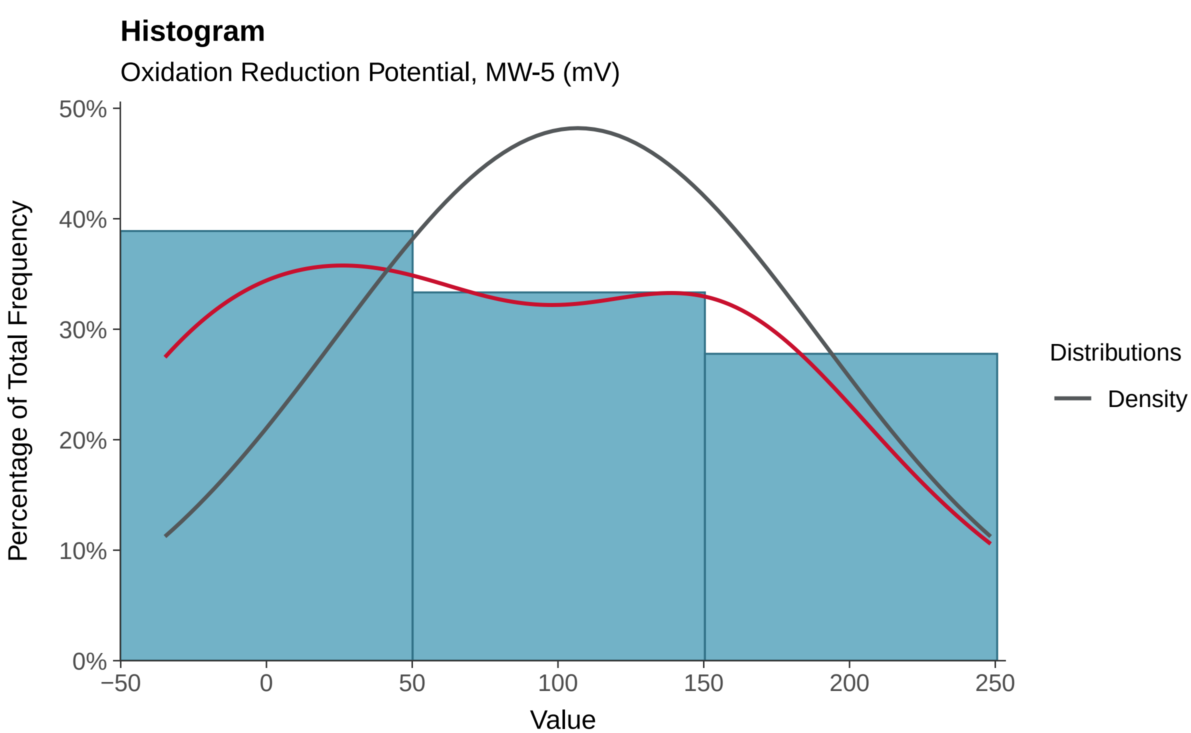
Dissolved Oxygen, MW-5 (mg/L)



Field Parameters: Oxidation Reduction Potential, MW-5

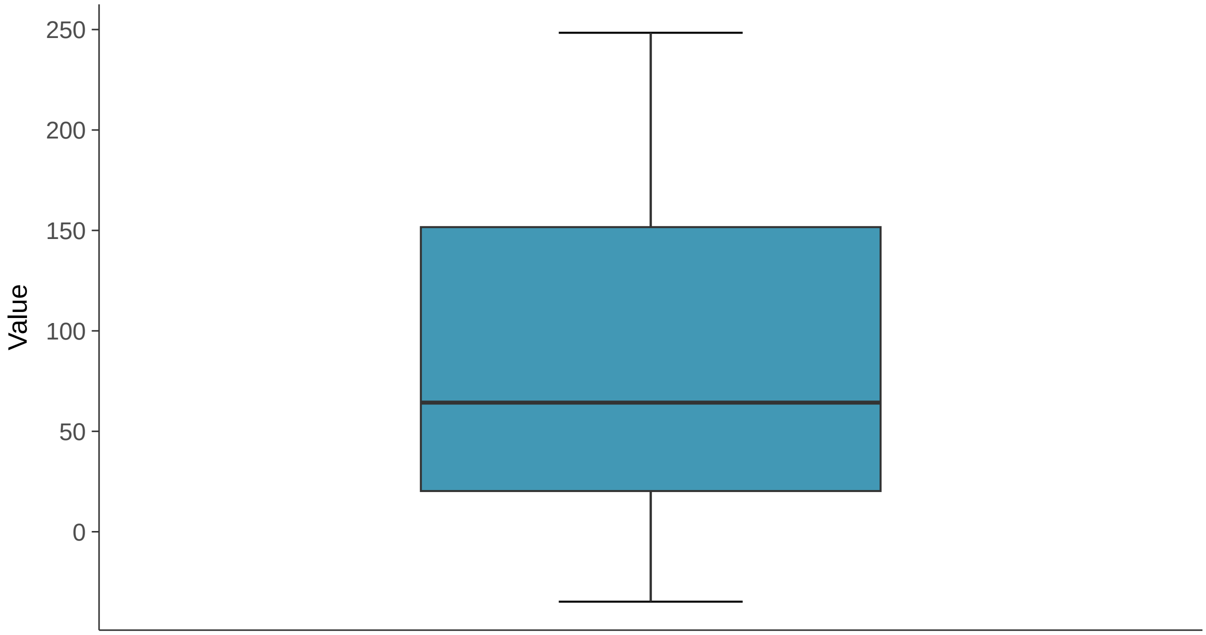
ID: 05_3_26





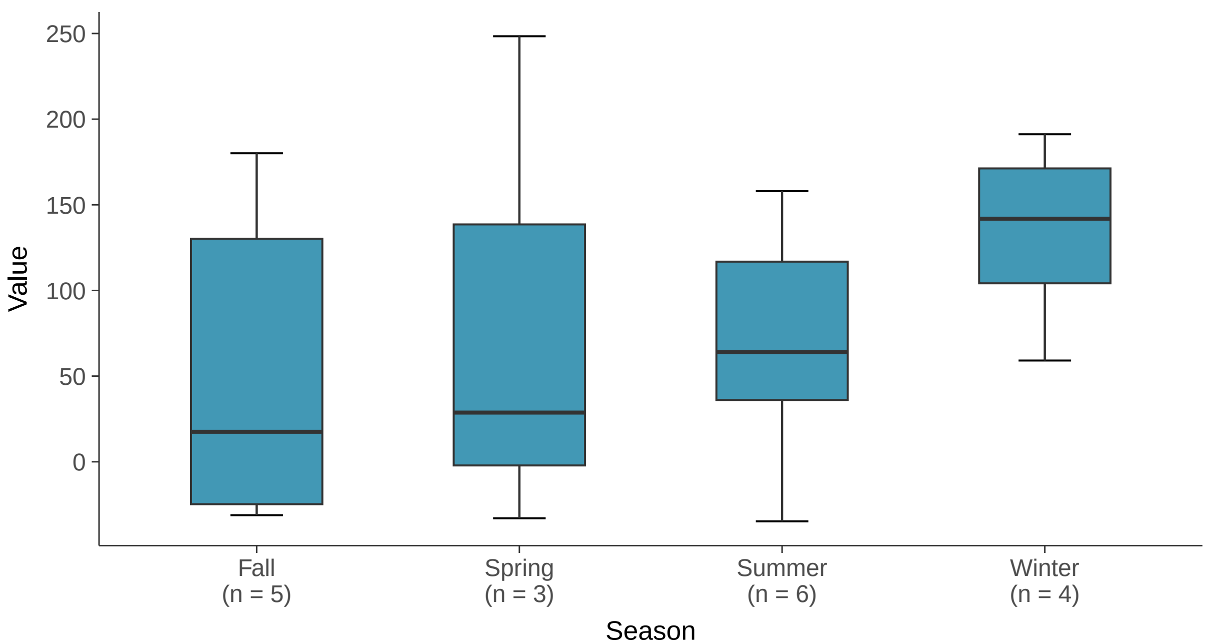
Boxplot

Oxidation Reduction Potential, MW-5 (mV)



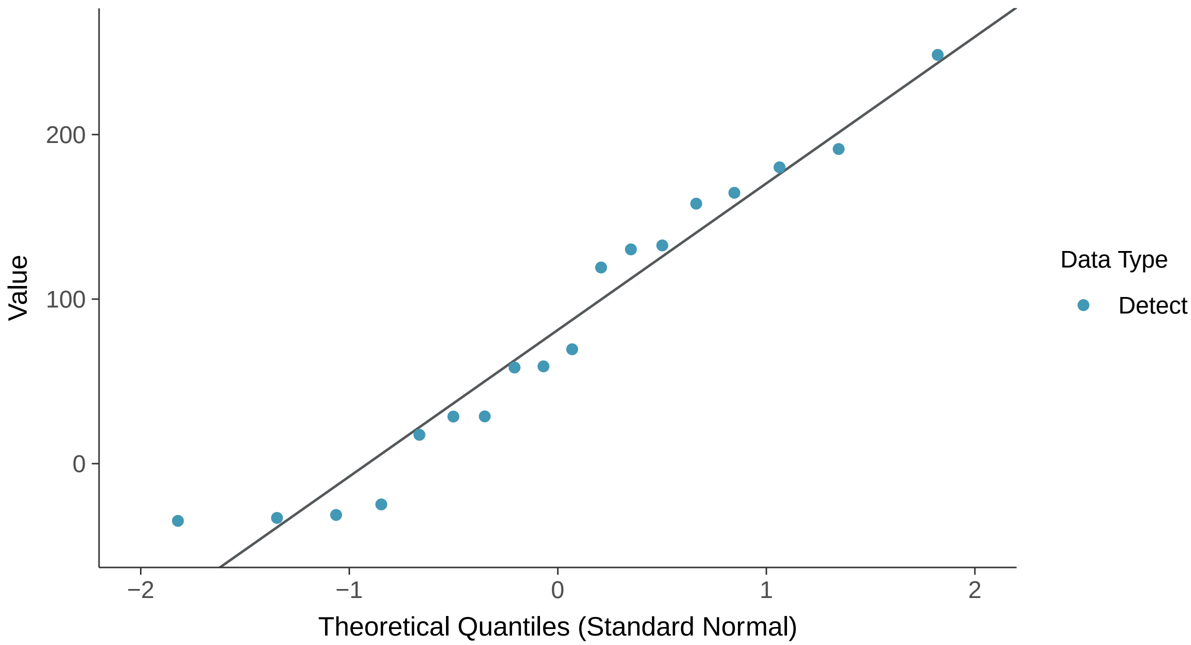
Boxplot by Season

Oxidation Reduction Potential, MW-5 (mV)



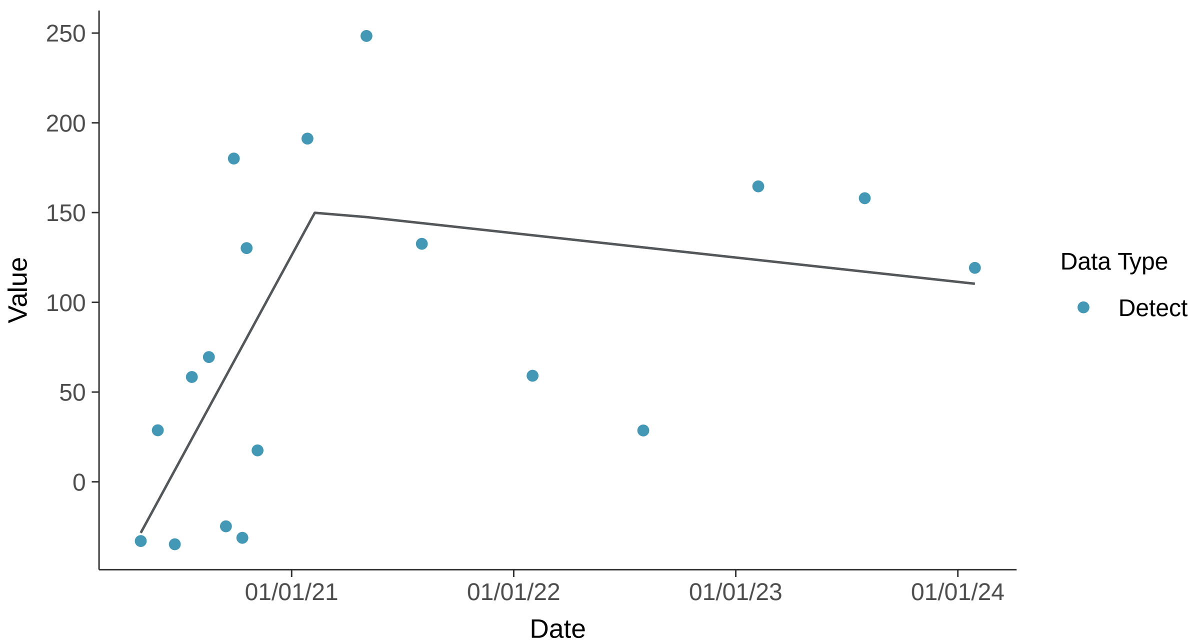
Normal Q-Q plot

Oxidation Reduction Potential, MW-5 (mV)



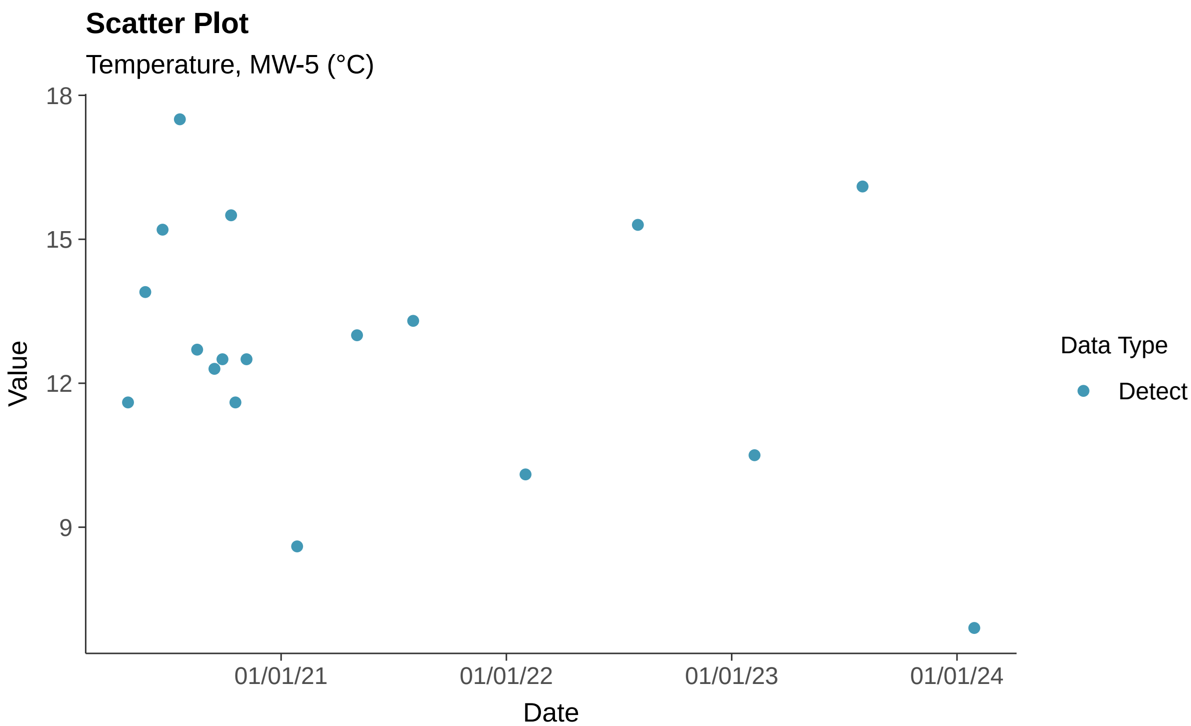
Trend Regression: Piecewise Linear-Linear

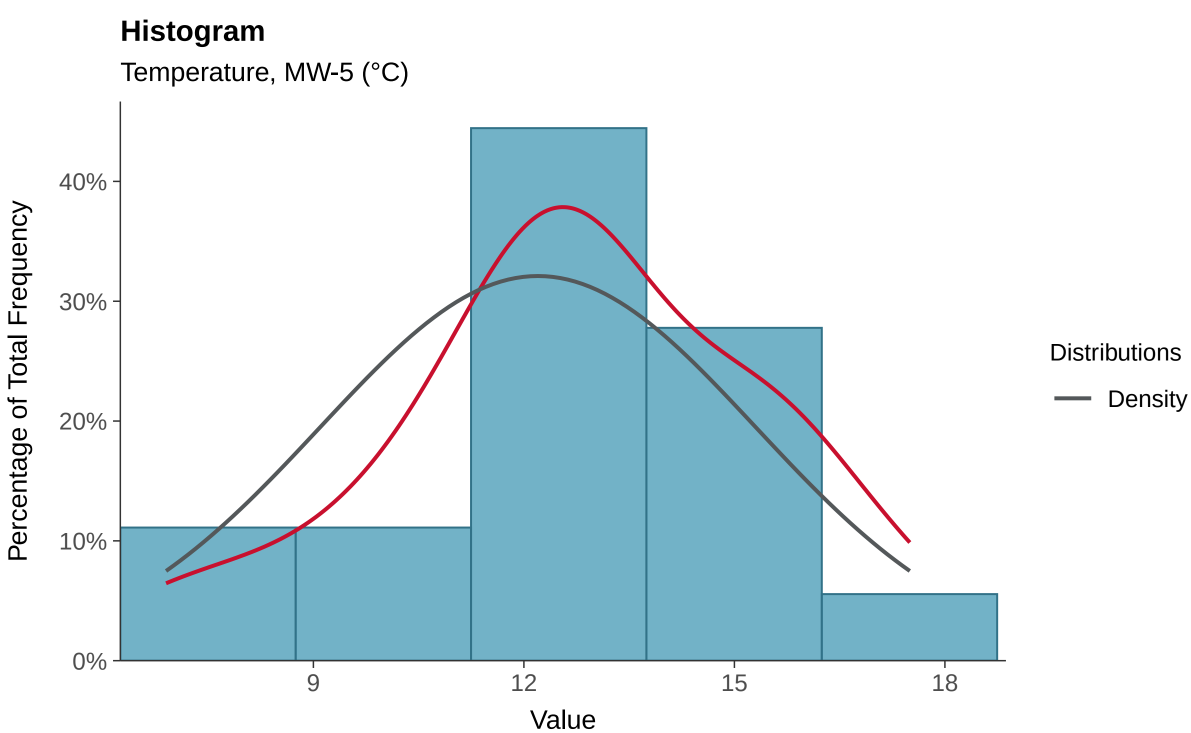
Oxidation Reduction Potential, MW-5 (mV)



Field Parameters: Temperature, MW-5

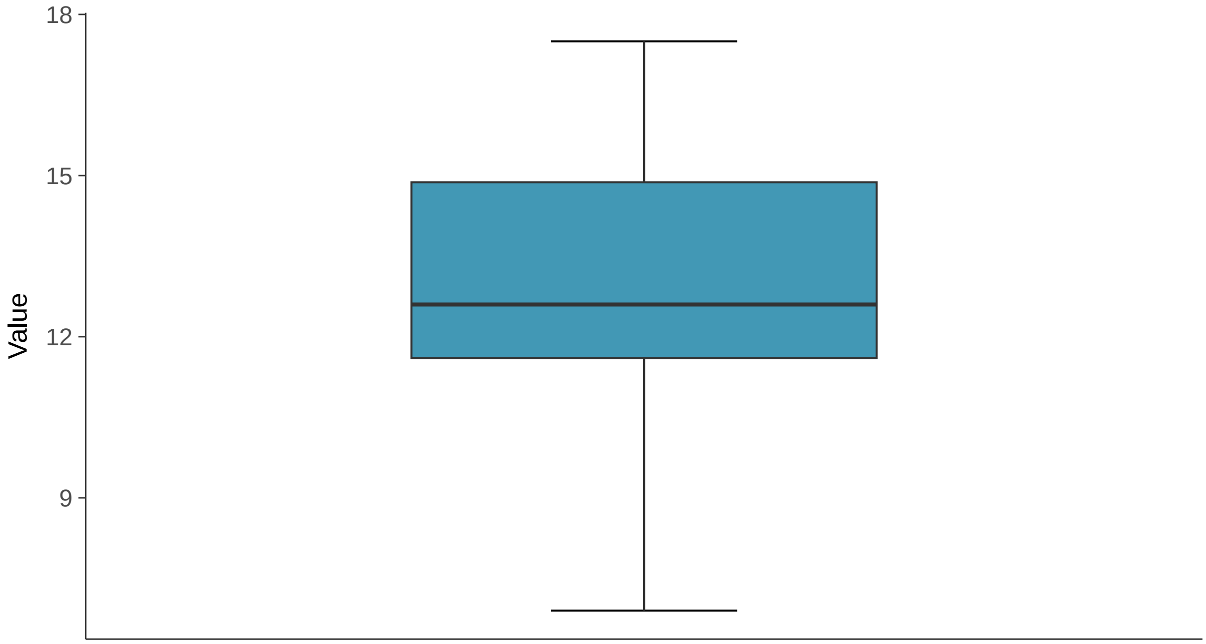
ID: 05_3_27





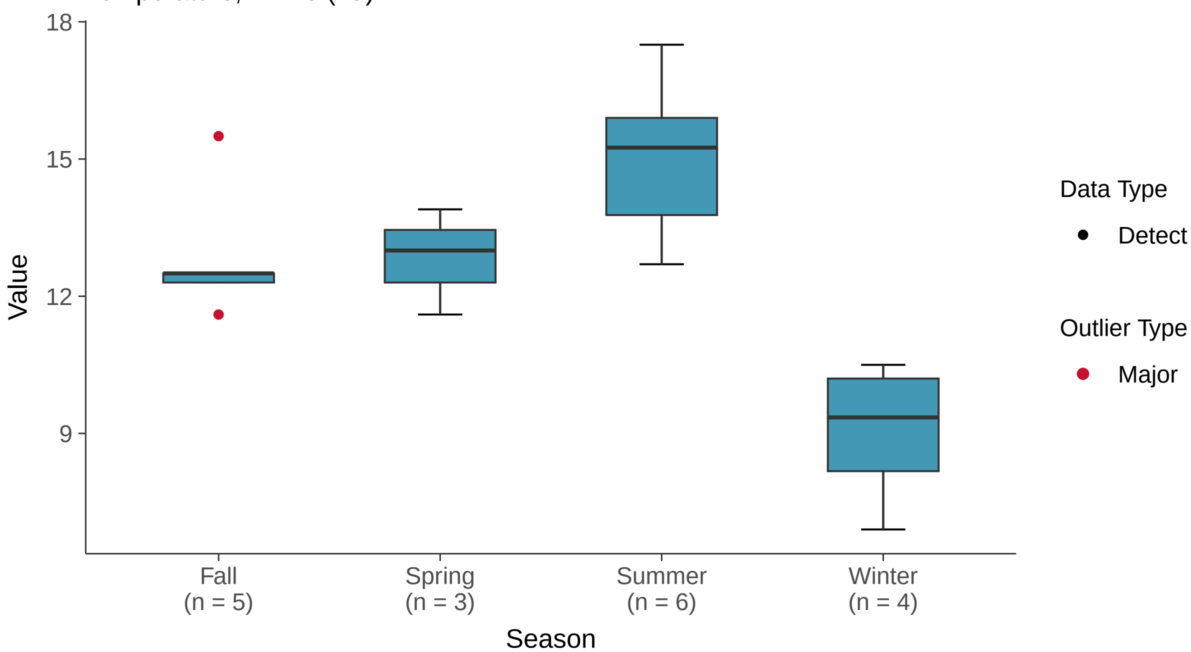
Boxplot

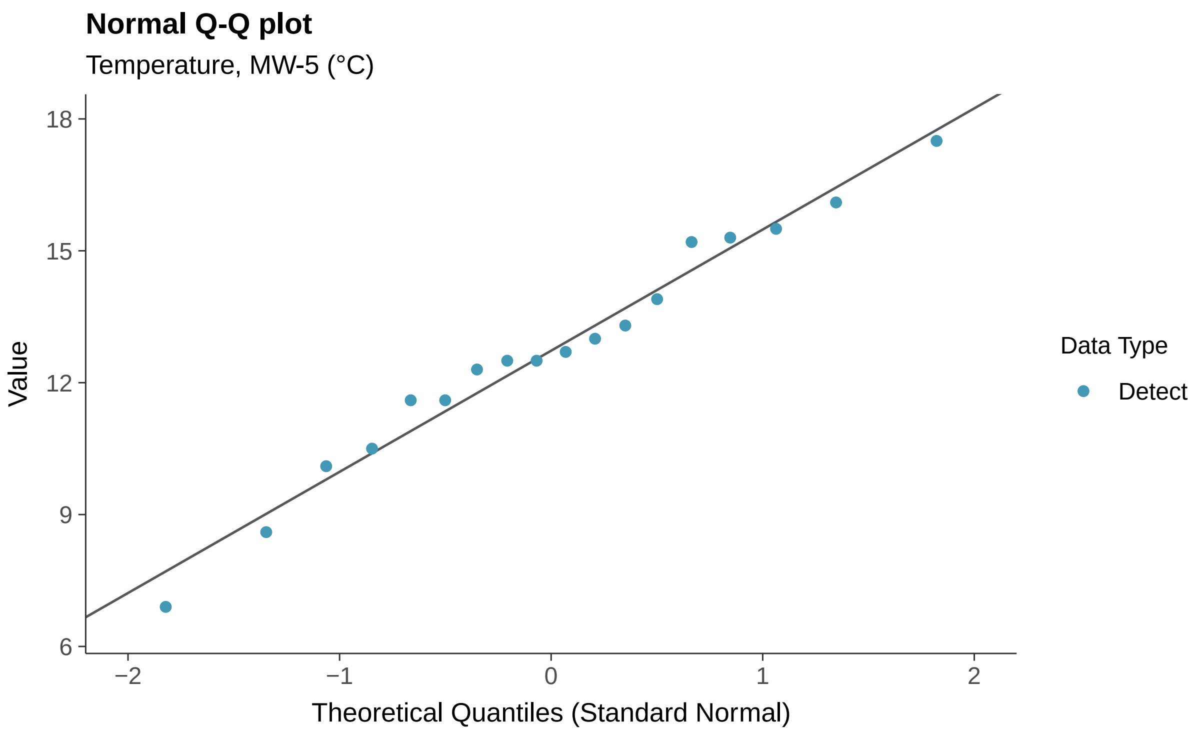
Temperature, MW-5 (°C)

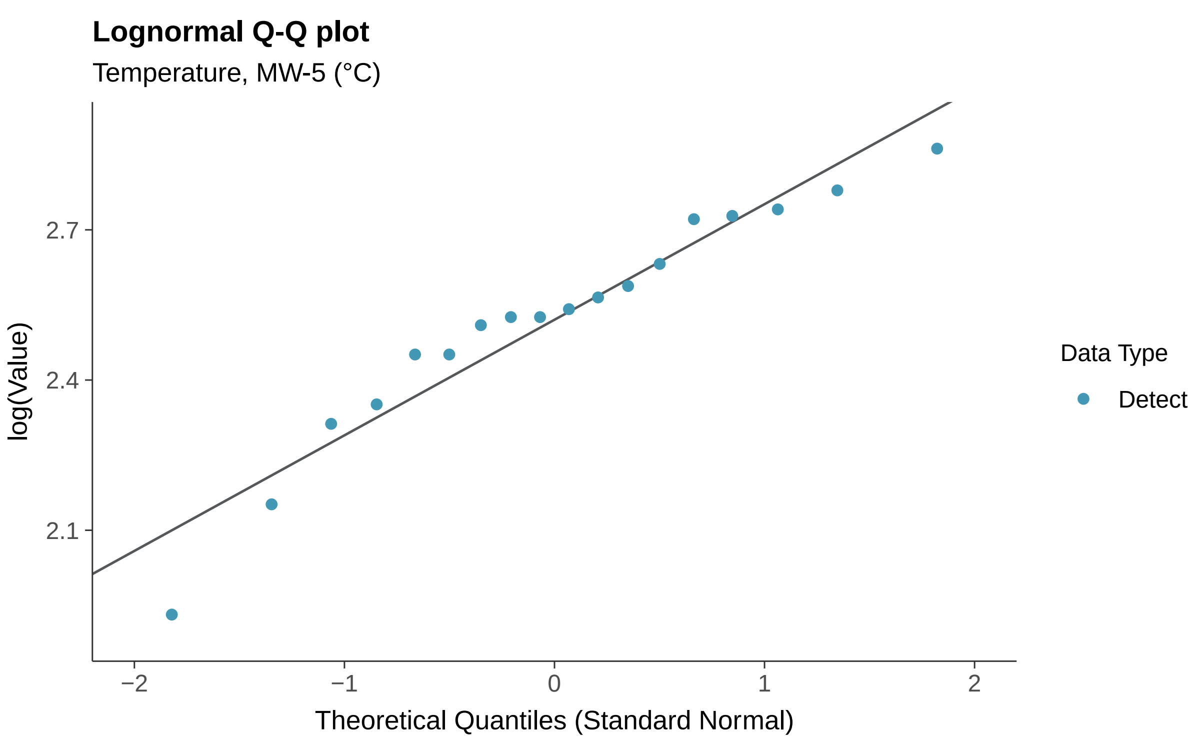


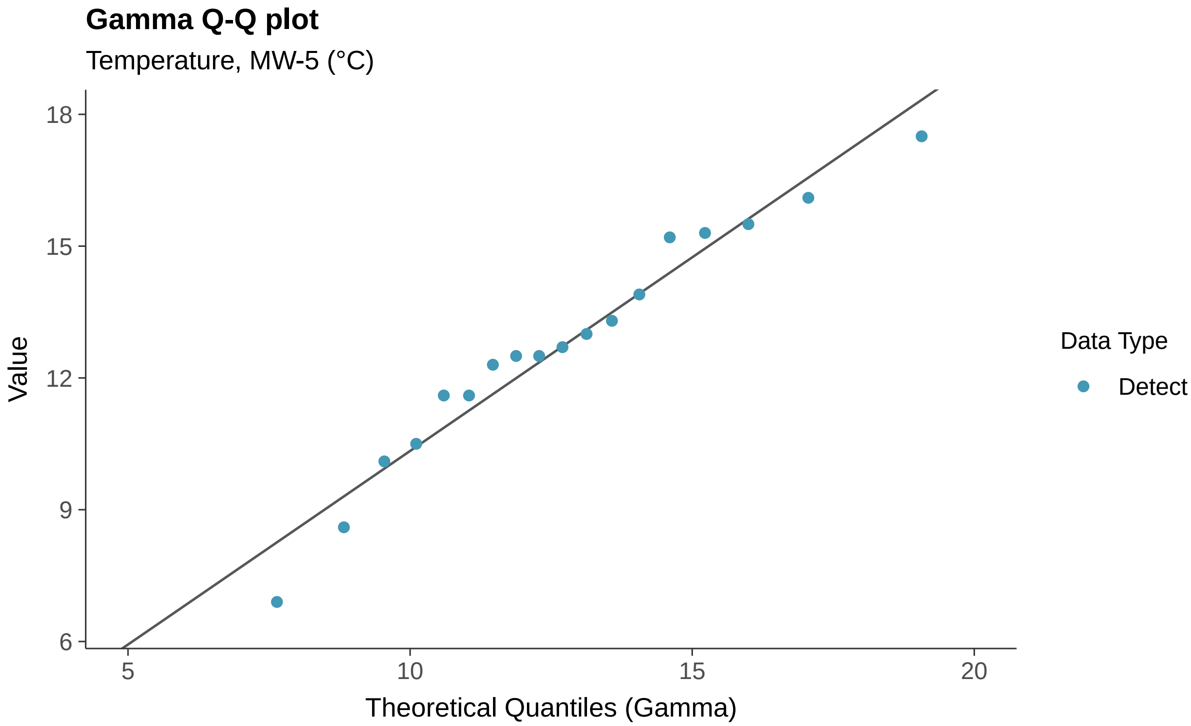
Boxplot by Season

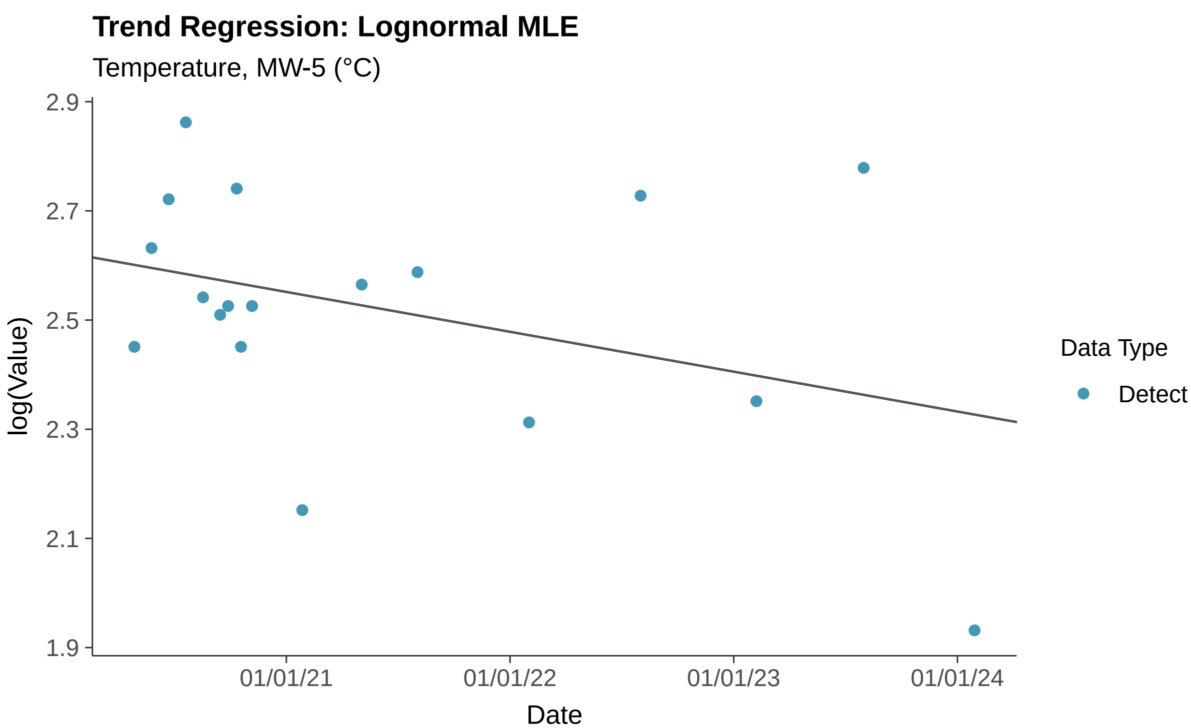
Temperature, MW-5 (°C)




Normal Q-Q plot
Temperature, MW-5 (°C)
Value
18
15
12
9
6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

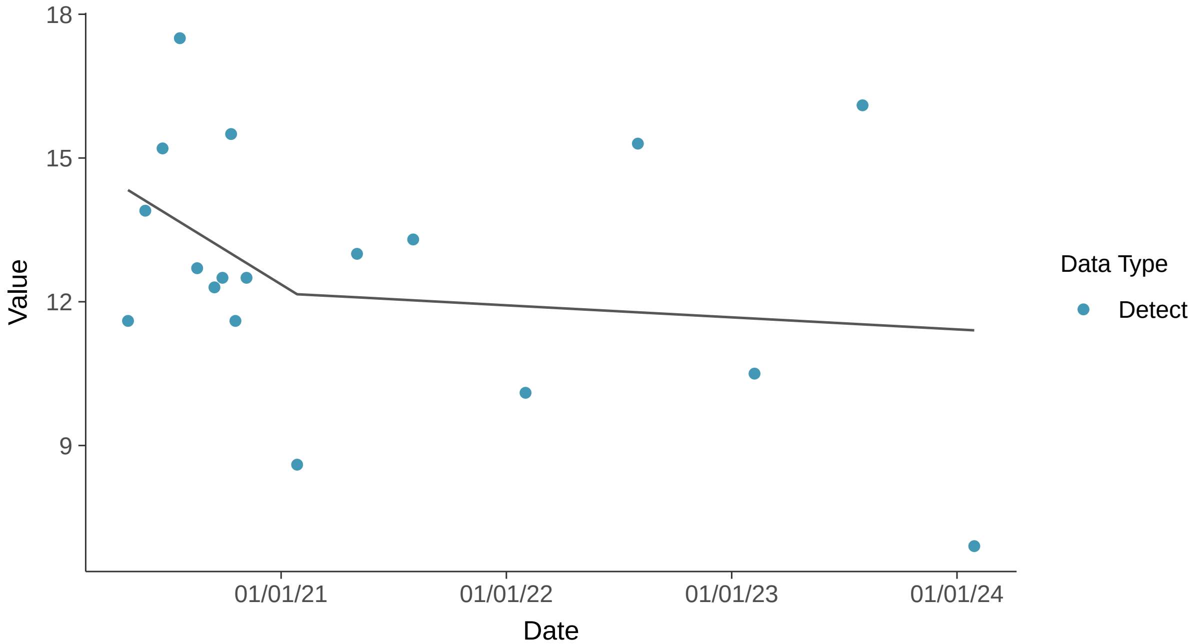

Lognormal Q-Q plot
Temperature, MW-5 (°C)
log(Value)
2.7
2.4
2.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Temperature, MW-5 (°C)
Value
18
15
12
9
6
5
10
15
20
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Temperature, MW-5 (°C)
log(Value)
2.9
2.7
2.5
2.3
2.1
1.9
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

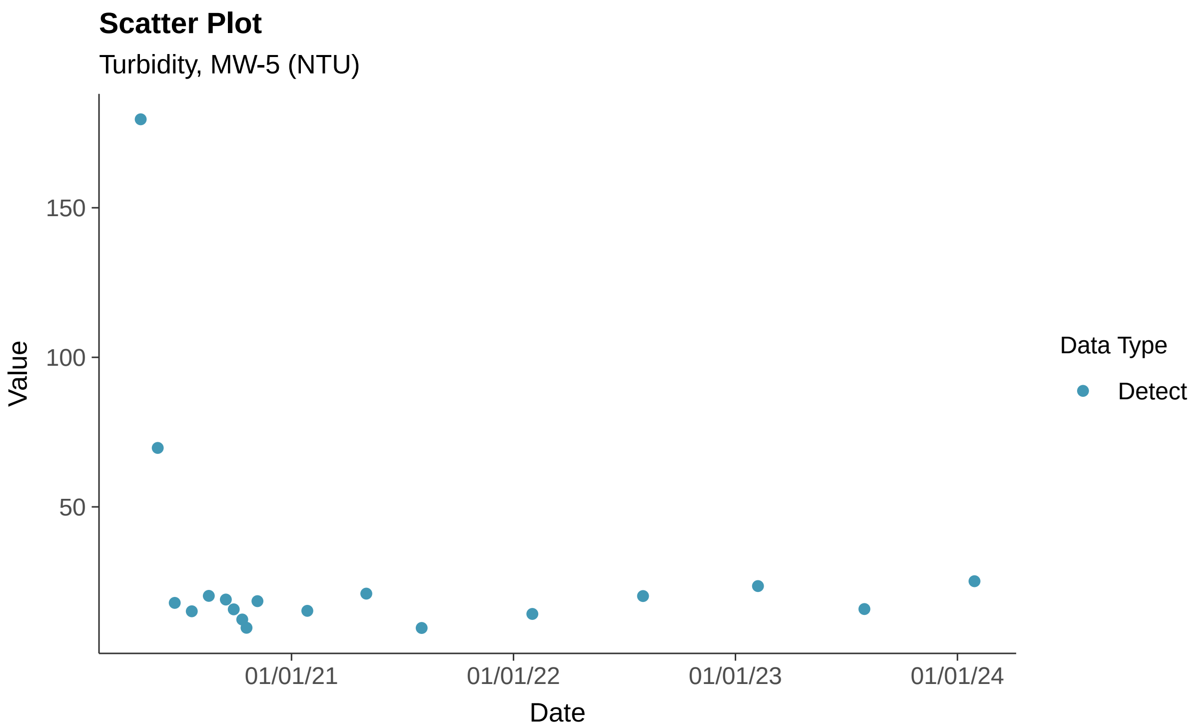
Trend Regression: Piecewise Linear-Linear

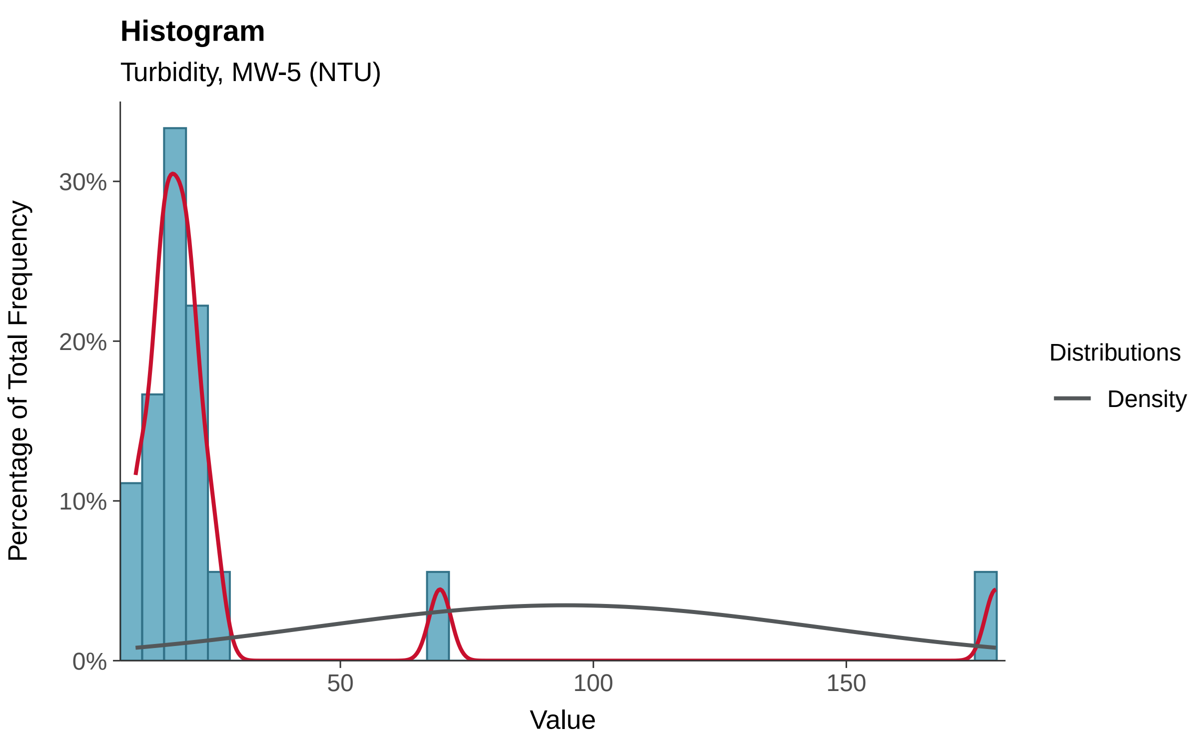
Temperature, MW-5 (°C)



Field Parameters: Turbidity, MW-5

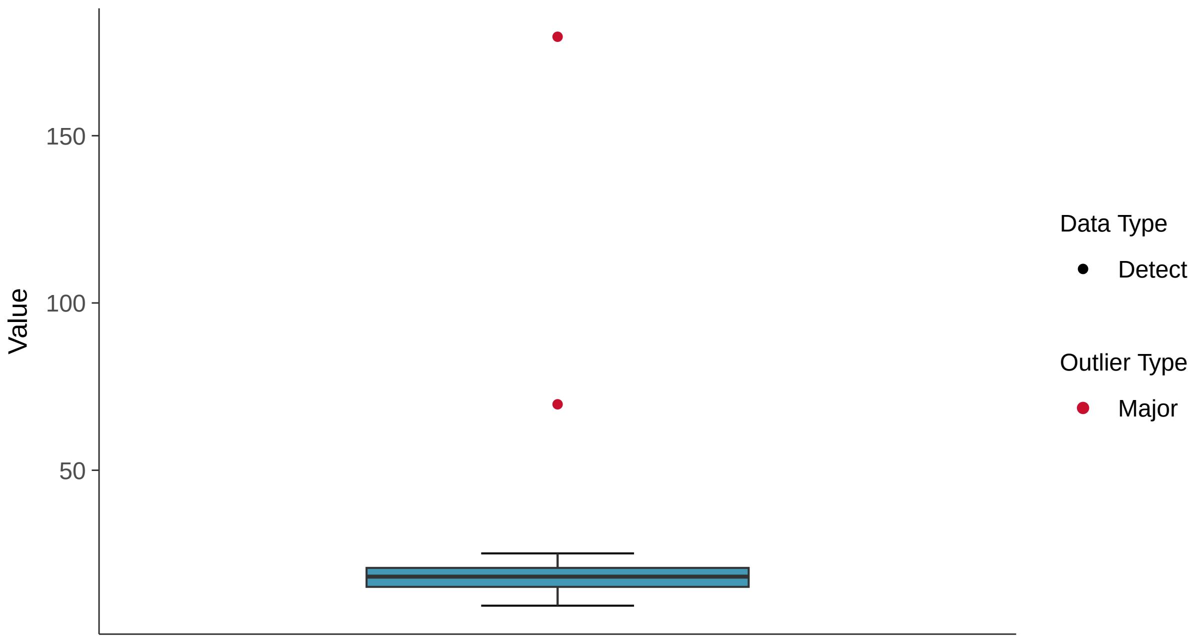
ID: 05_3_28





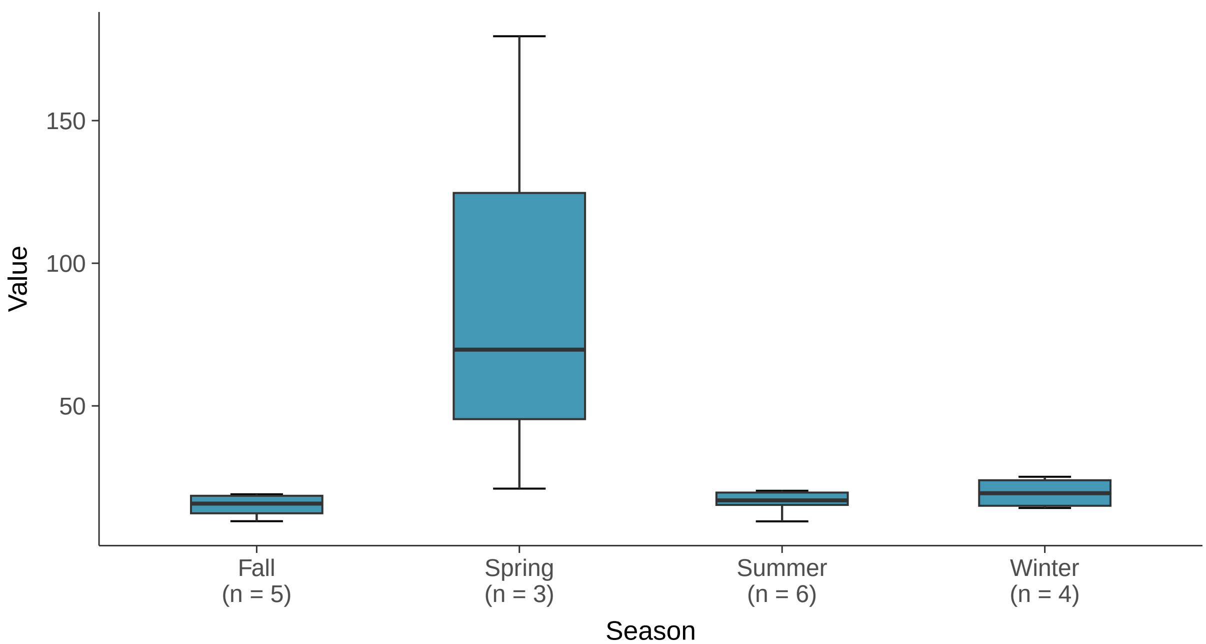
Boxplot

Turbidity, MW-5 (NTU)



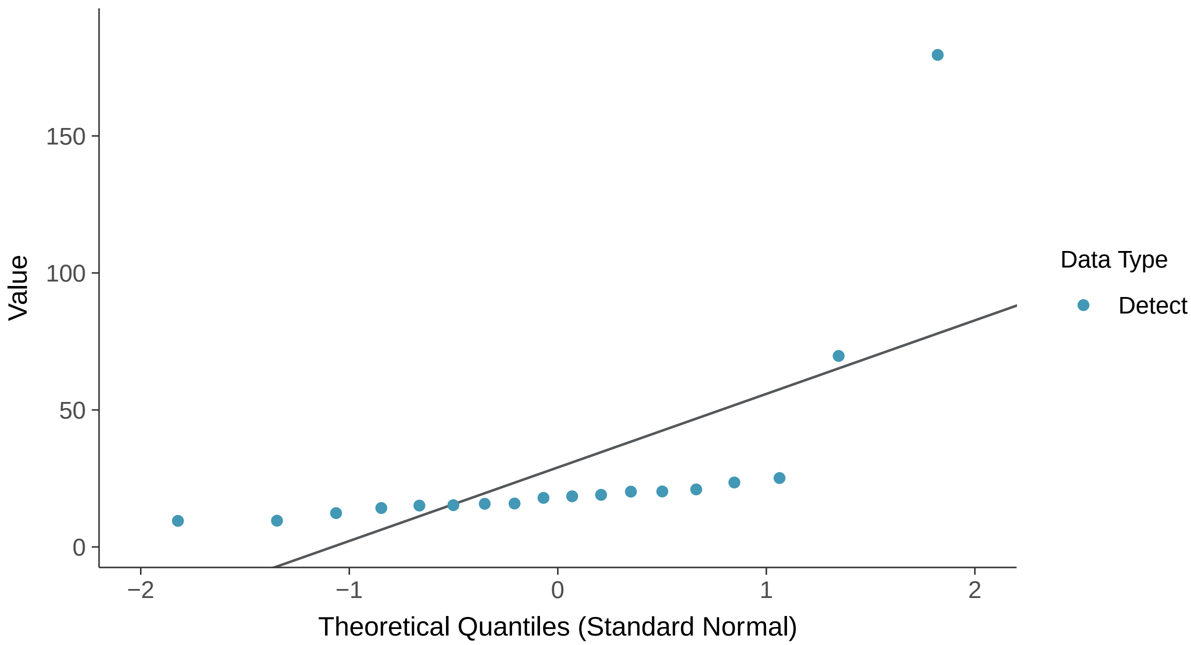
Boxplot by Season

Turbidity, MW-5 (NTU)



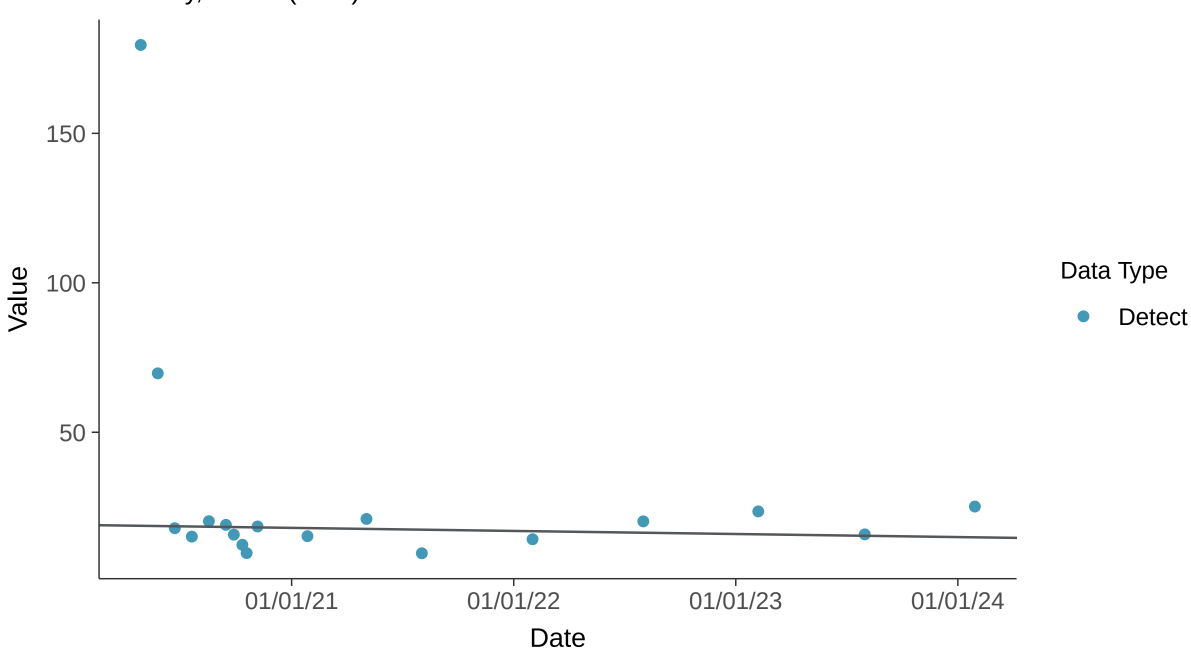
Normal Q-Q plot

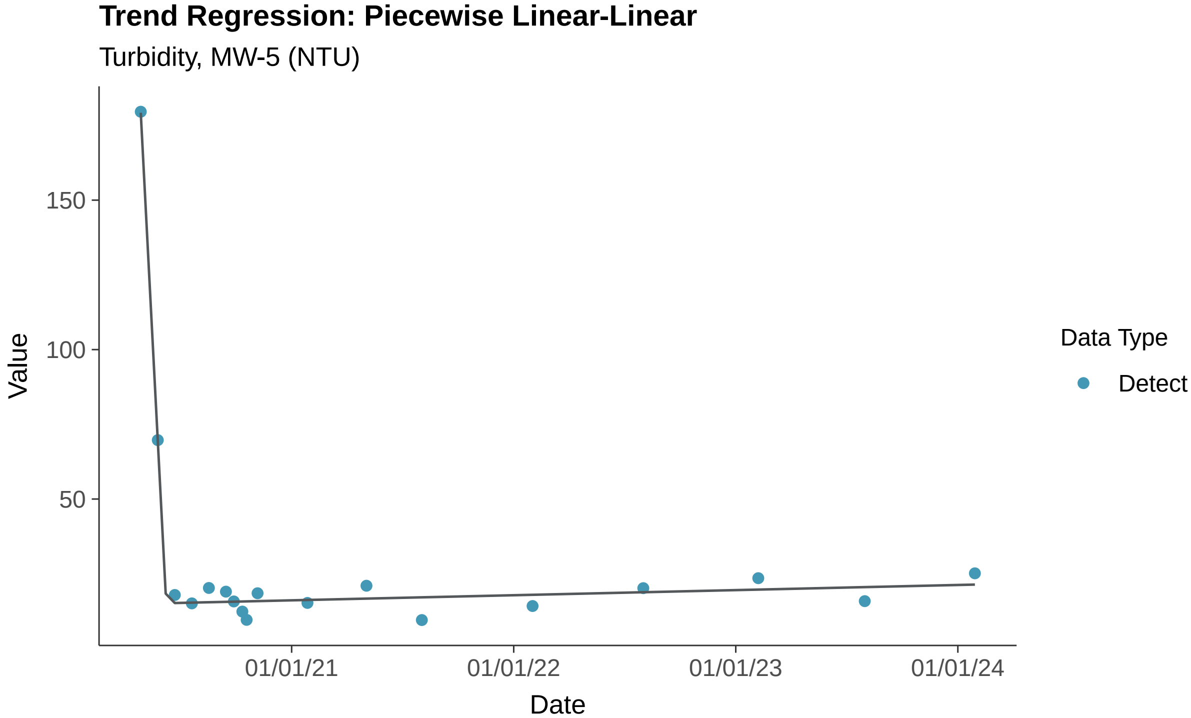
Turbidity, MW-5 (NTU)

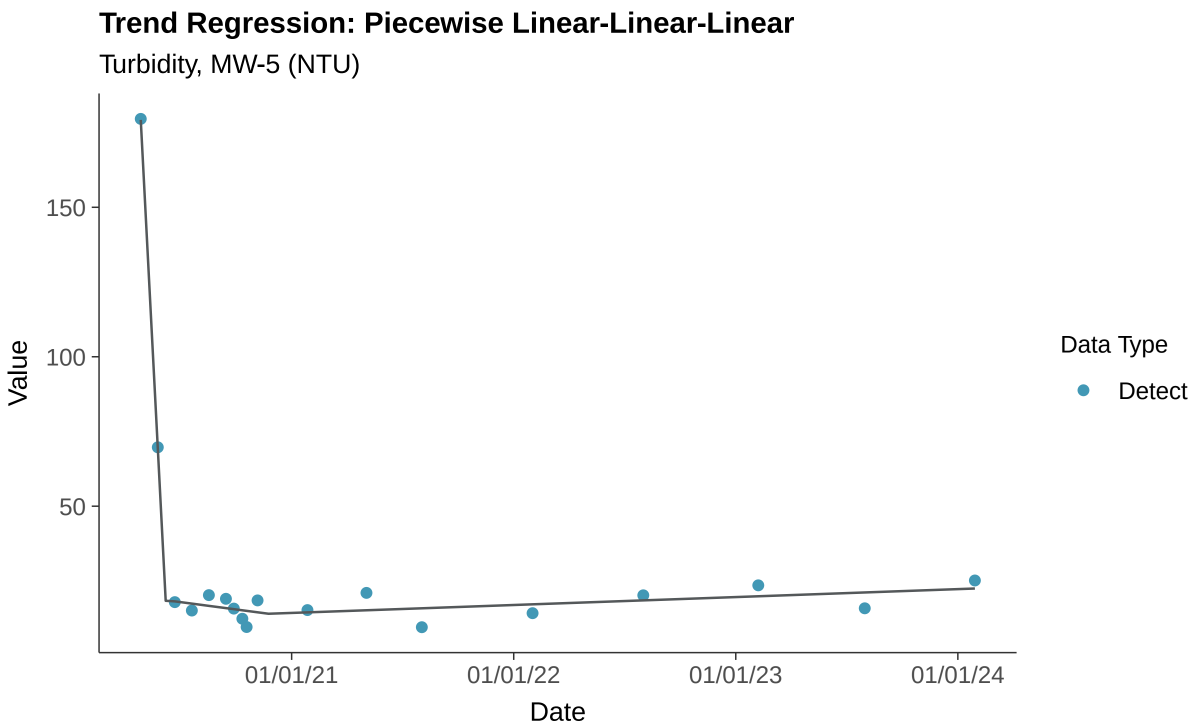


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Turbidity, MW-5 (NTU)

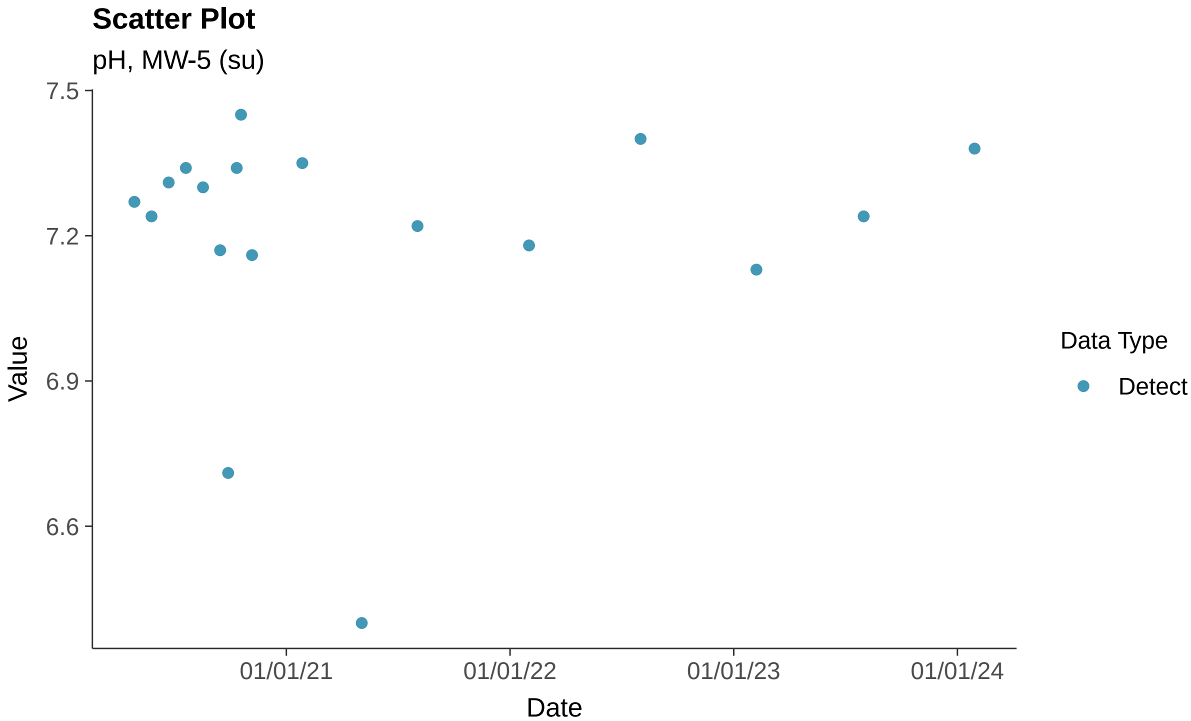


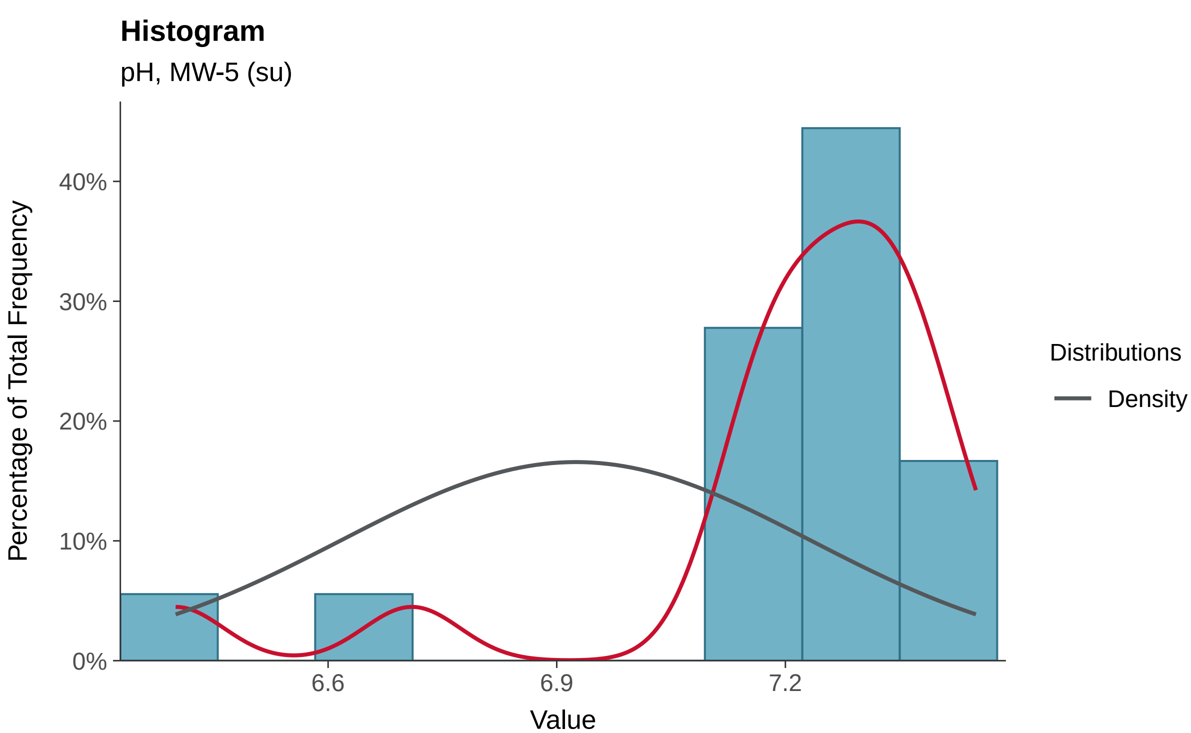

Trend Regression: Piecewise Linear-Linear
Turbidity, MW-5 (NTU)
Value
150
100
50
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Turbidity, MW-5 (NTU)
Value
150
100
50
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: pH, MW-5

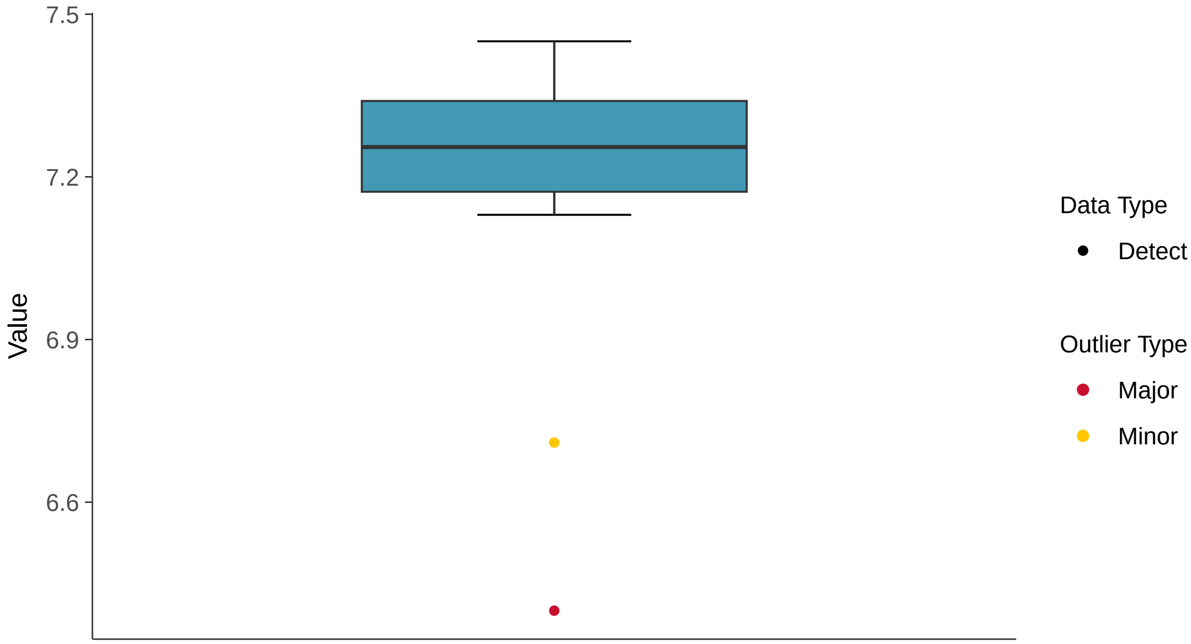
ID: 05_3_29





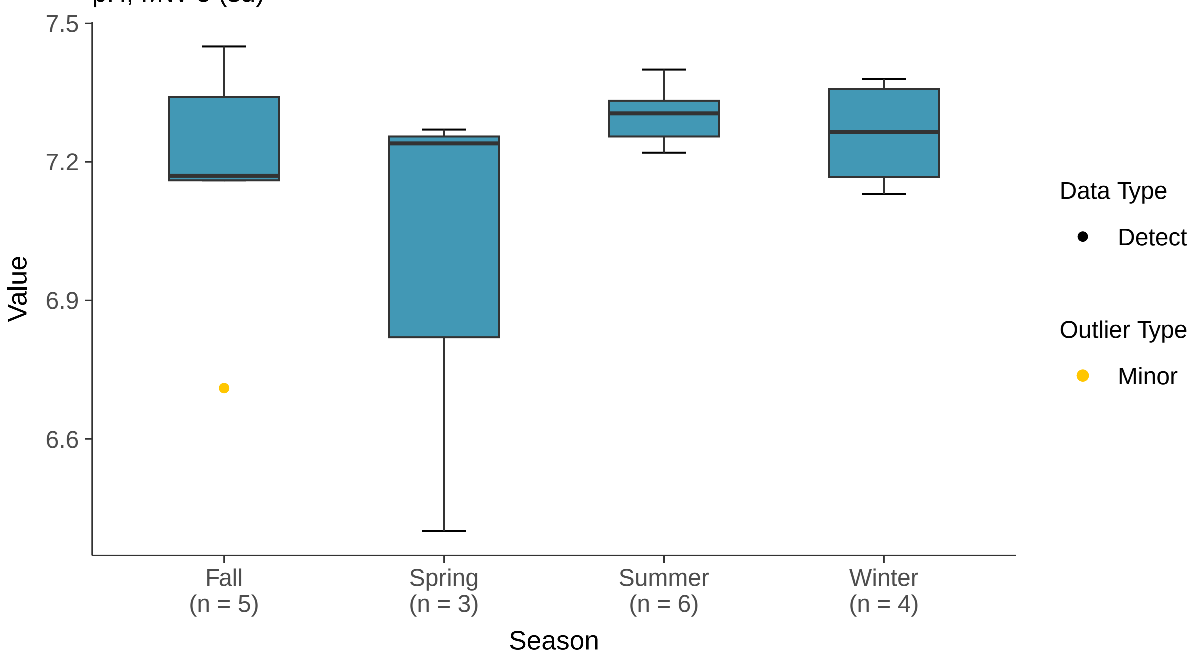
Boxplot

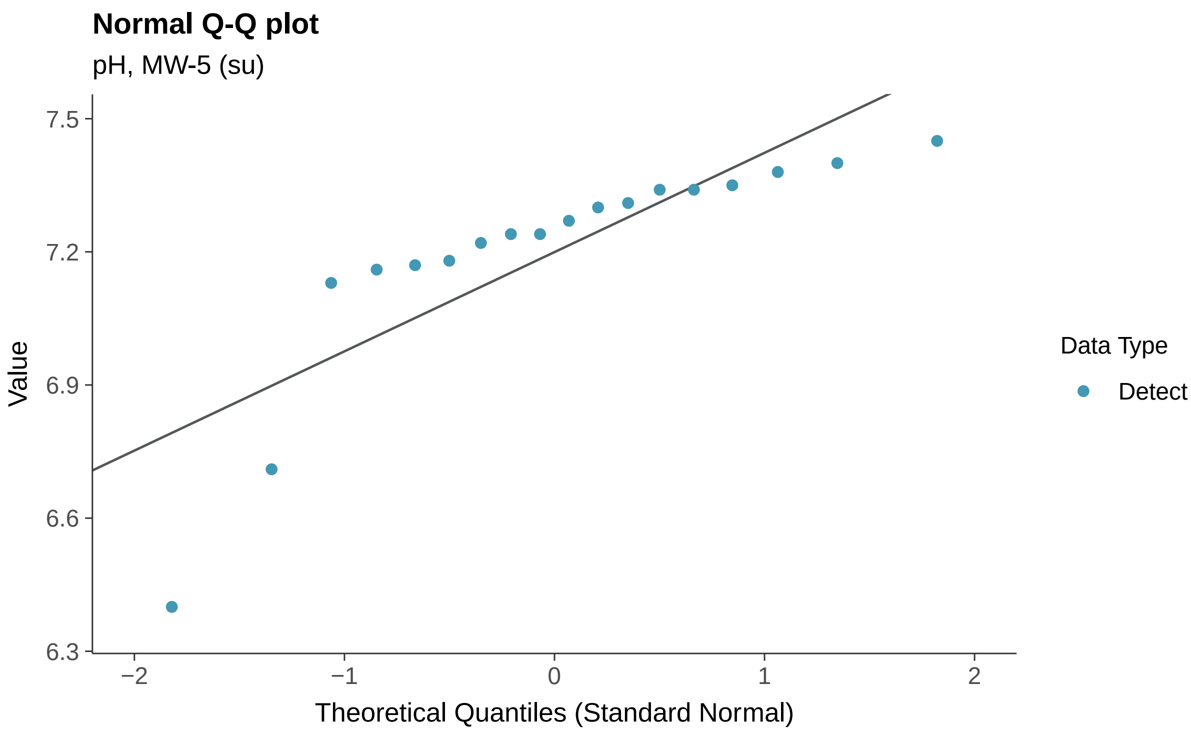
pH, MW-5 (su)

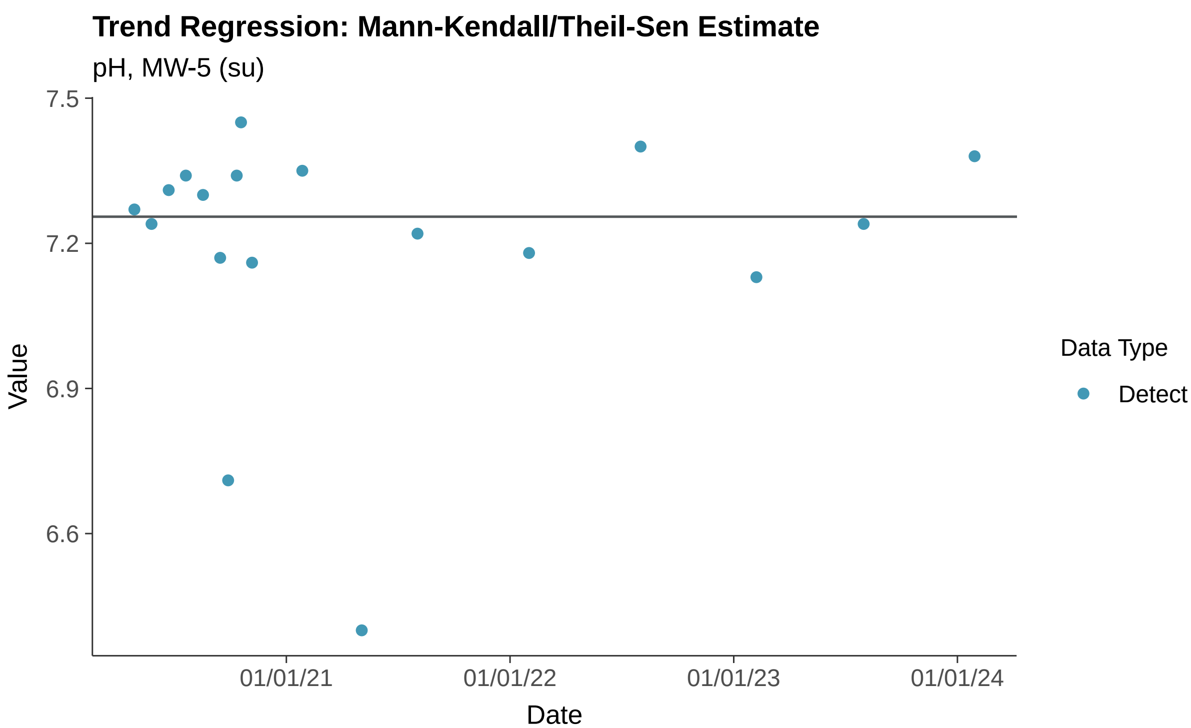


Boxplot by Season

pH, MW-5 (su)

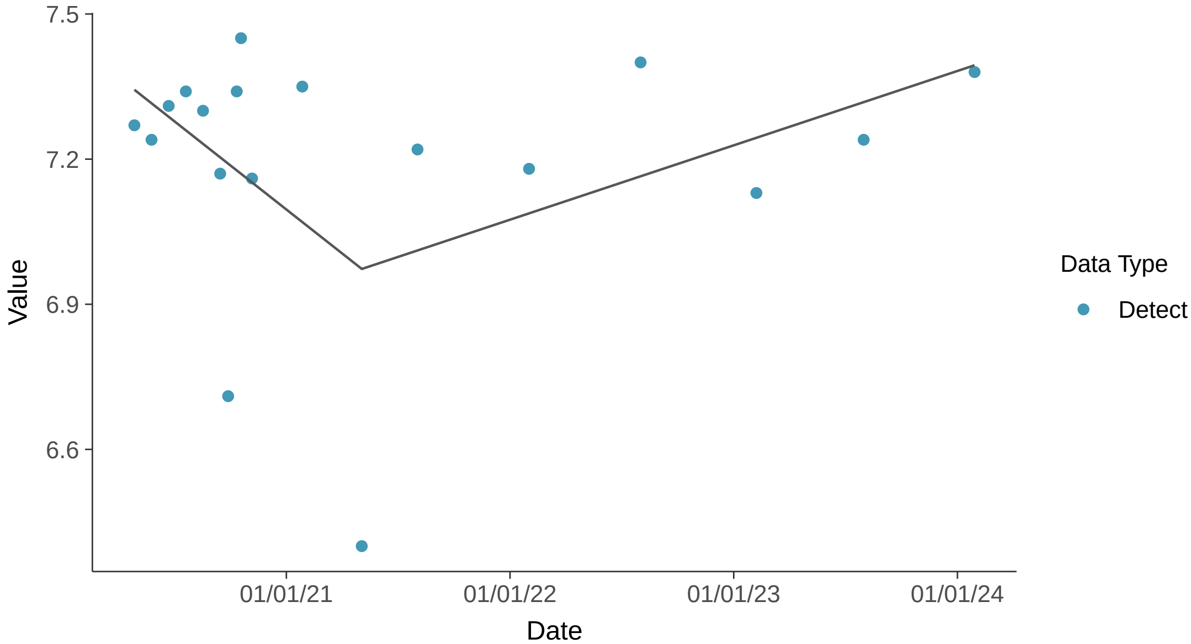



Normal Q-Q plot
pH, MW-5 (su)
Value
7.5
7.2
6.9
6.6
6.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
pH, MW-5 (su)
Value
7.5
7.2
6.9
6.6
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

pH, MW-5 (su)

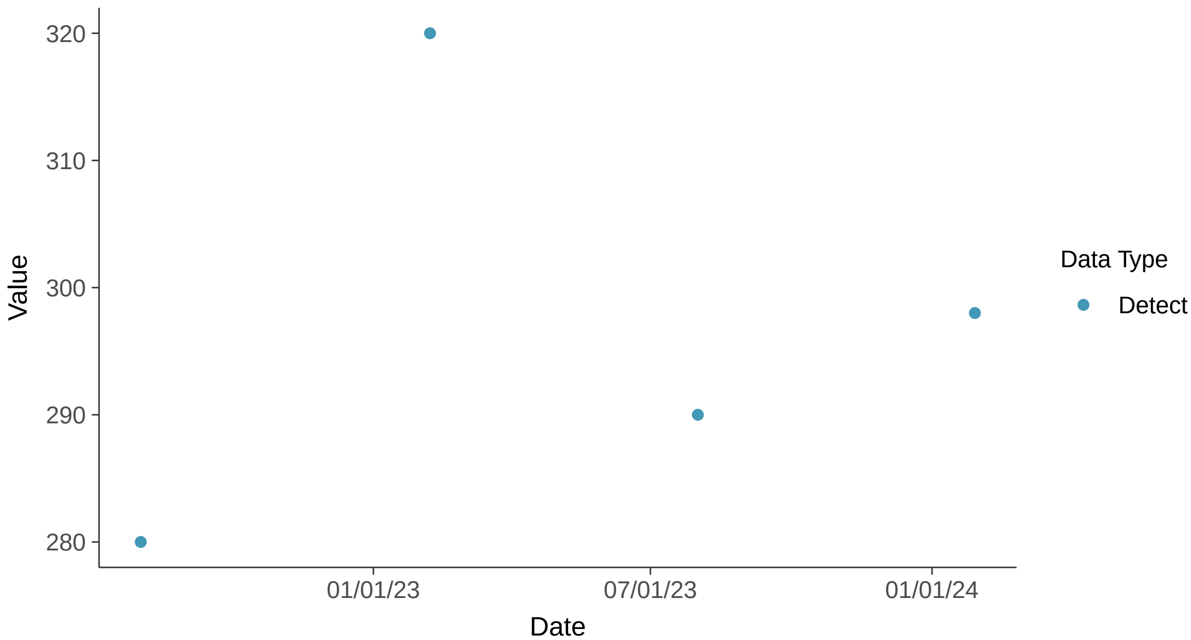


Other: Bicarbonate, MW-5

ID: 05_4_30

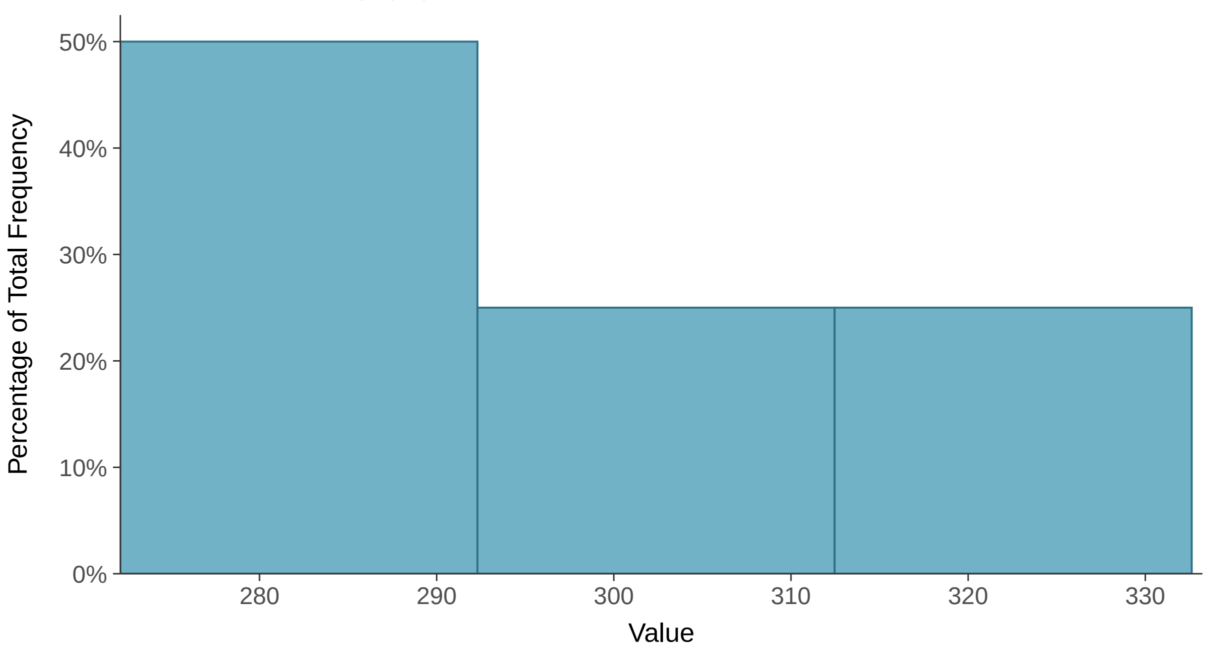
Scatter Plot

Bicarbonate, MW-5 (mg/L)



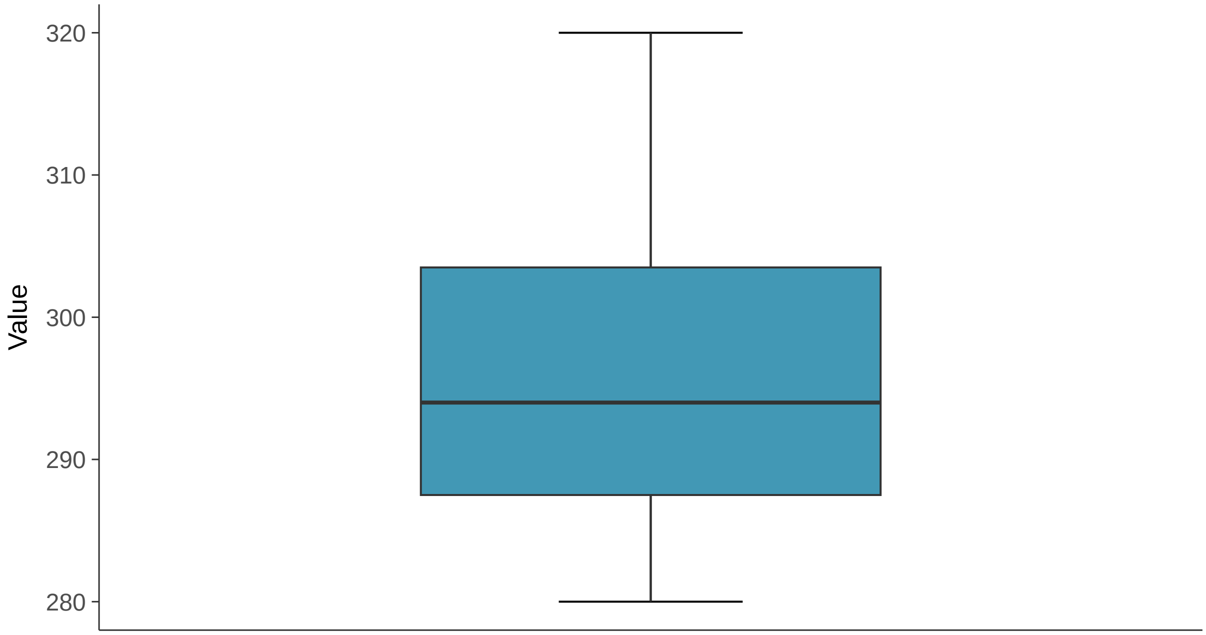
Histogram

Bicarbonate, MW-5 (mg/L)



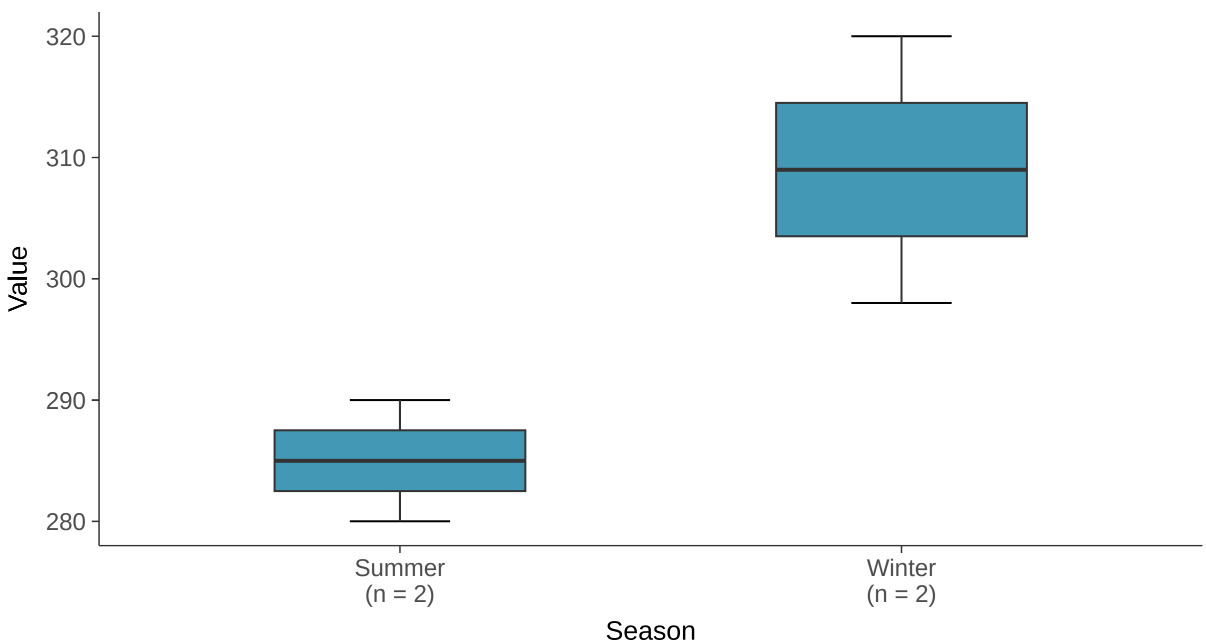
Boxplot

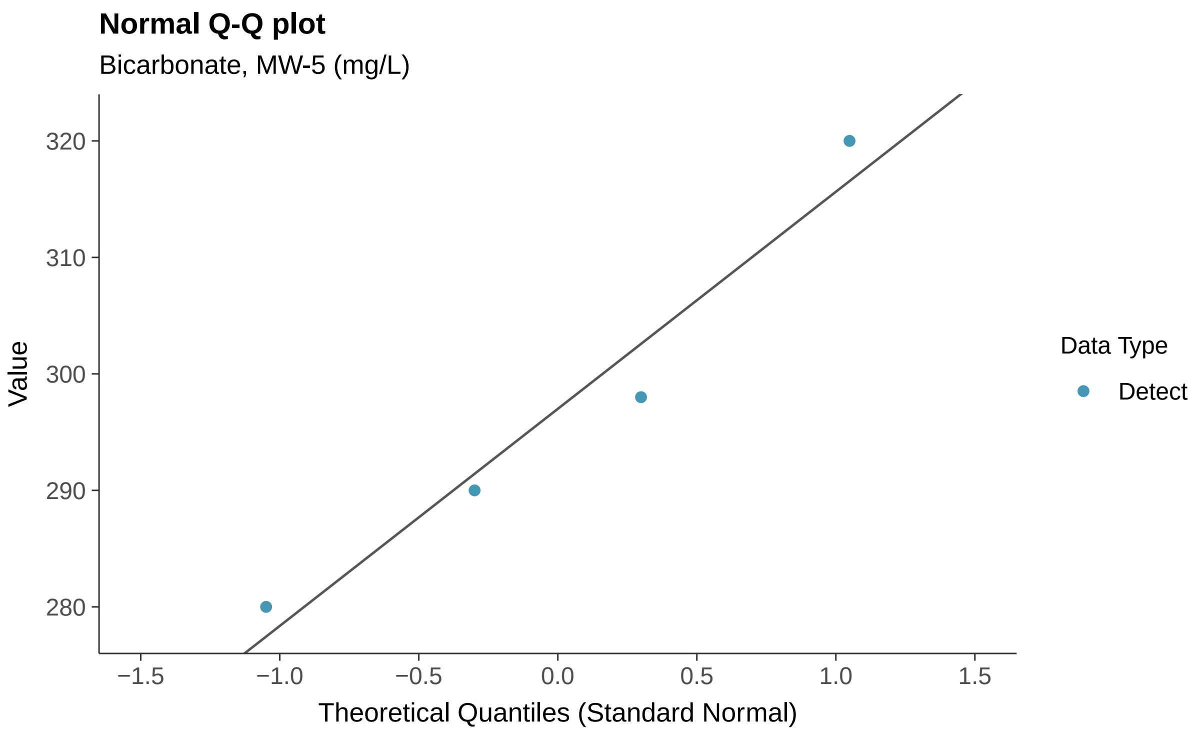
Bicarbonate, MW-5 (mg/L)



Boxplot by Season

Bicarbonate, MW-5 (mg/L)



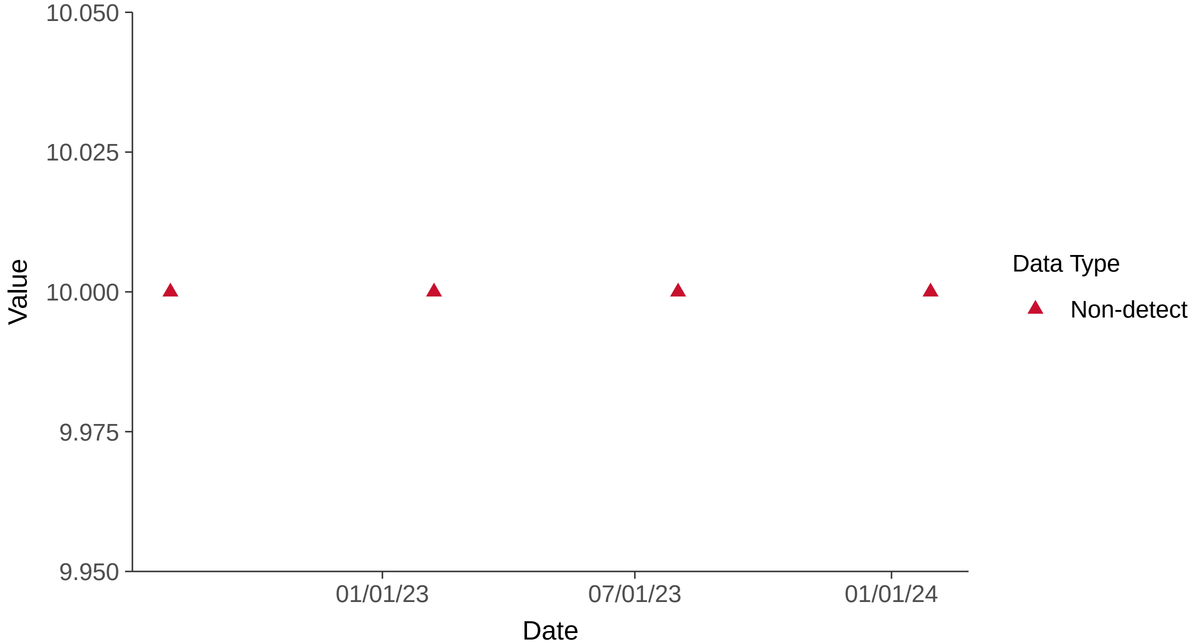

Normal Q-Q plot
Bicarbonate, MW-5 (mg/L)
Value
320
310
300
290
280
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Carbonate, MW-5

ID: 05_4_31

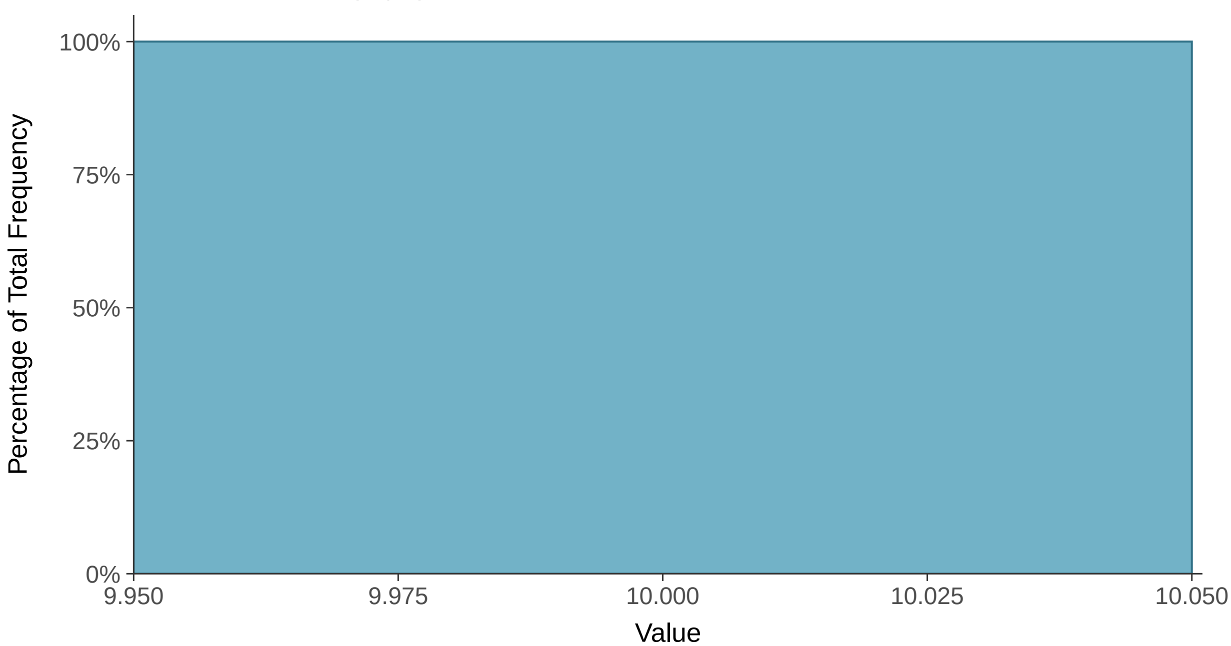
Scatter Plot

Carbonate, MW-5 (mg/L)



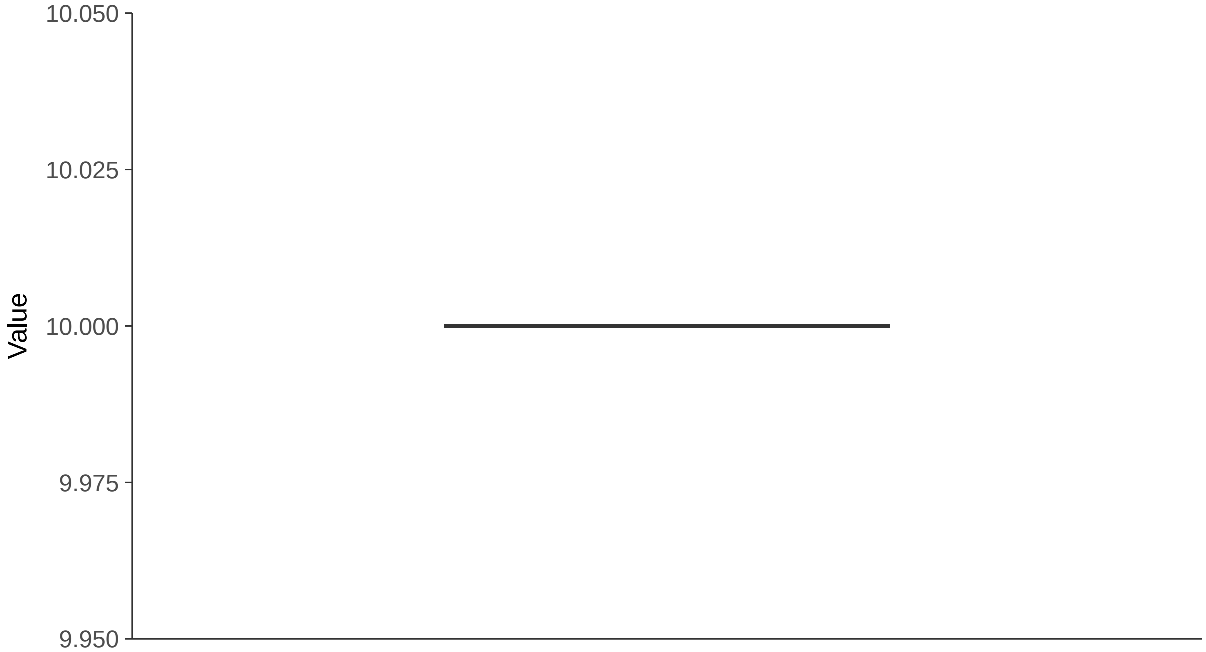
Histogram

Carbonate, MW-5 (mg/L)



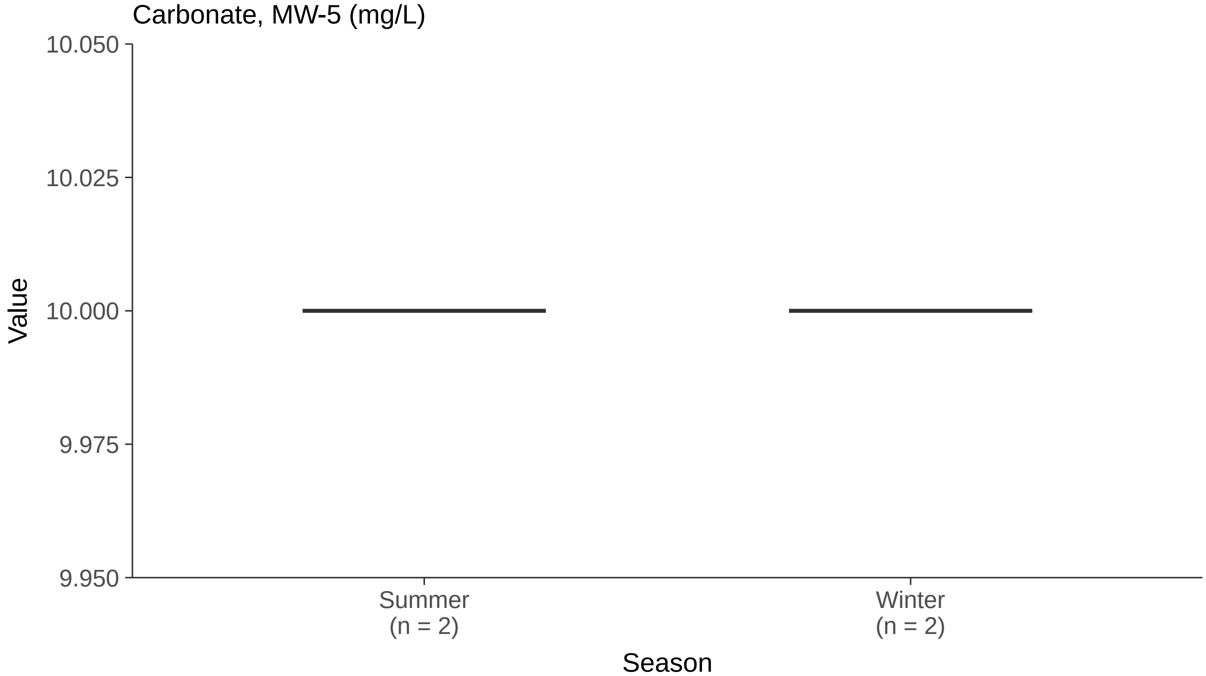
Boxplot

Carbonate, MW-5 (mg/L)



Boxplot by Season

Carbonate, MW-5 (mg/L)

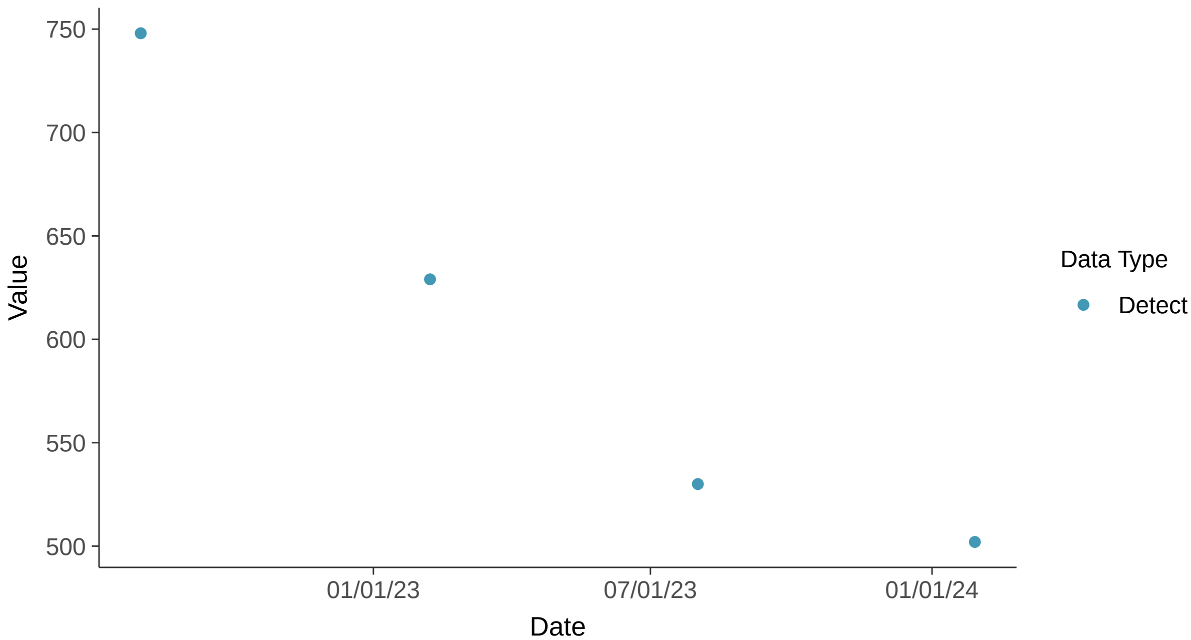


Other: Hardness, MW-5

ID: 05_4_32

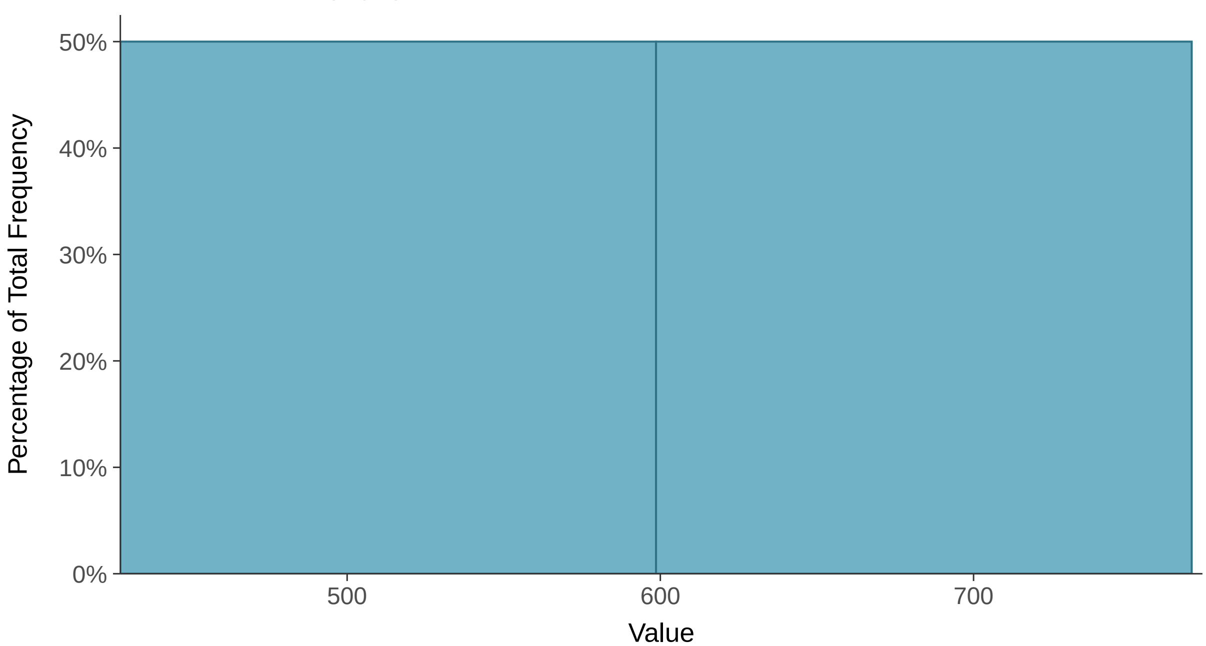
Scatter Plot

Hardness, MW-5 (mg/L)



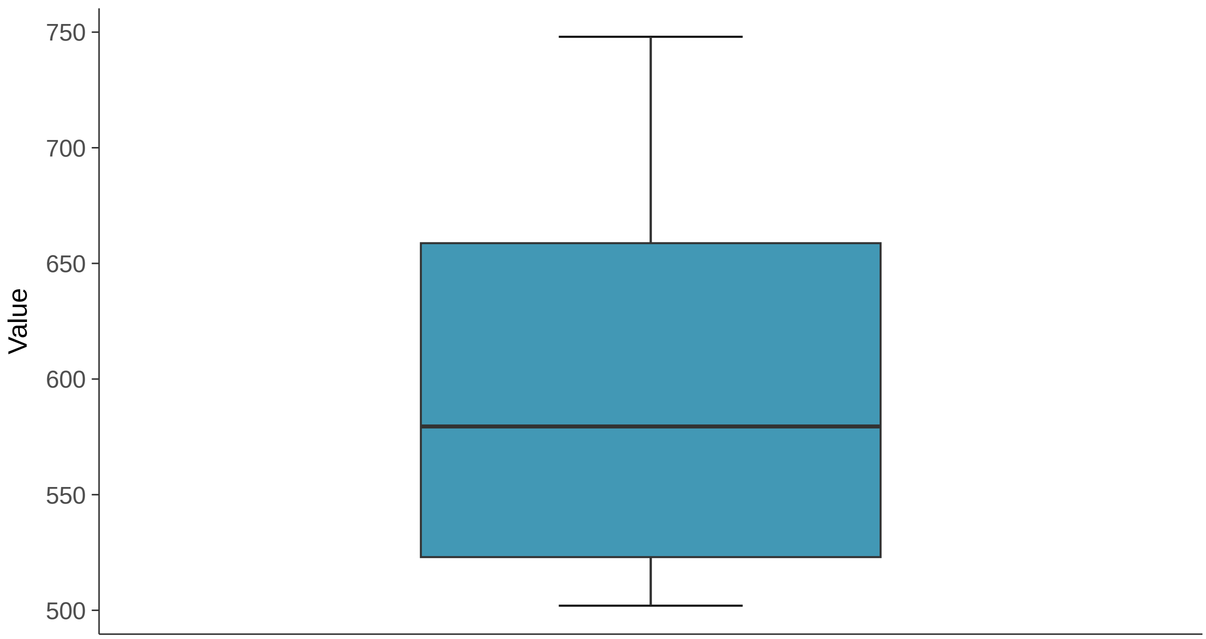
Histogram

Hardness, MW-5 (mg/L)



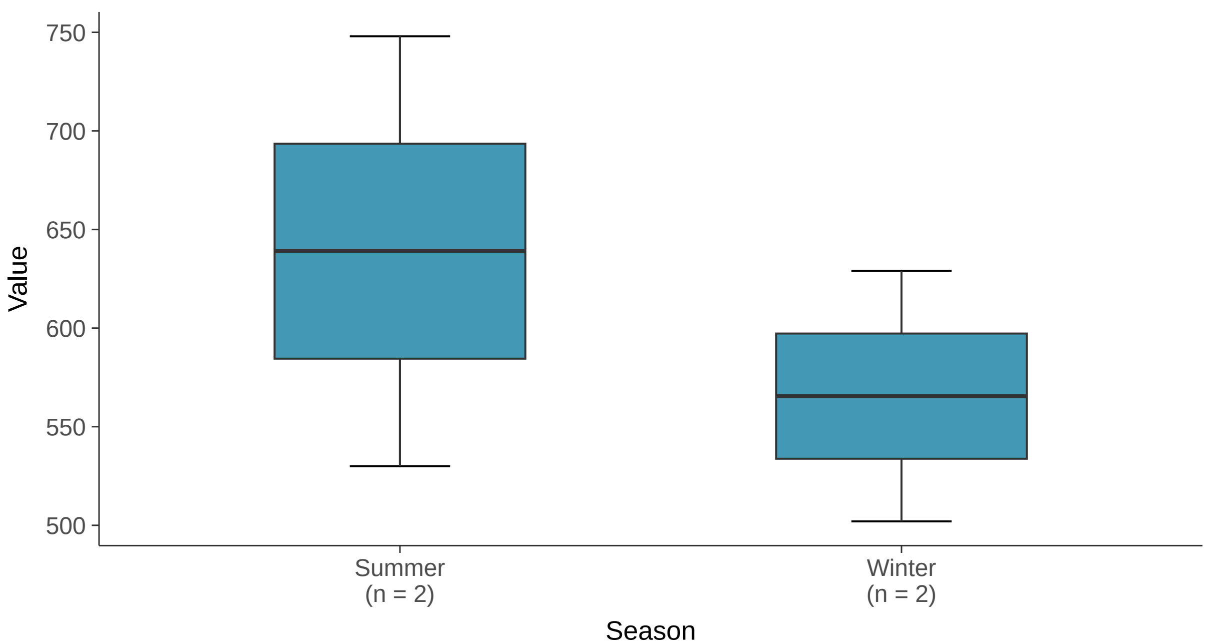
Boxplot

Hardness, MW-5 (mg/L)



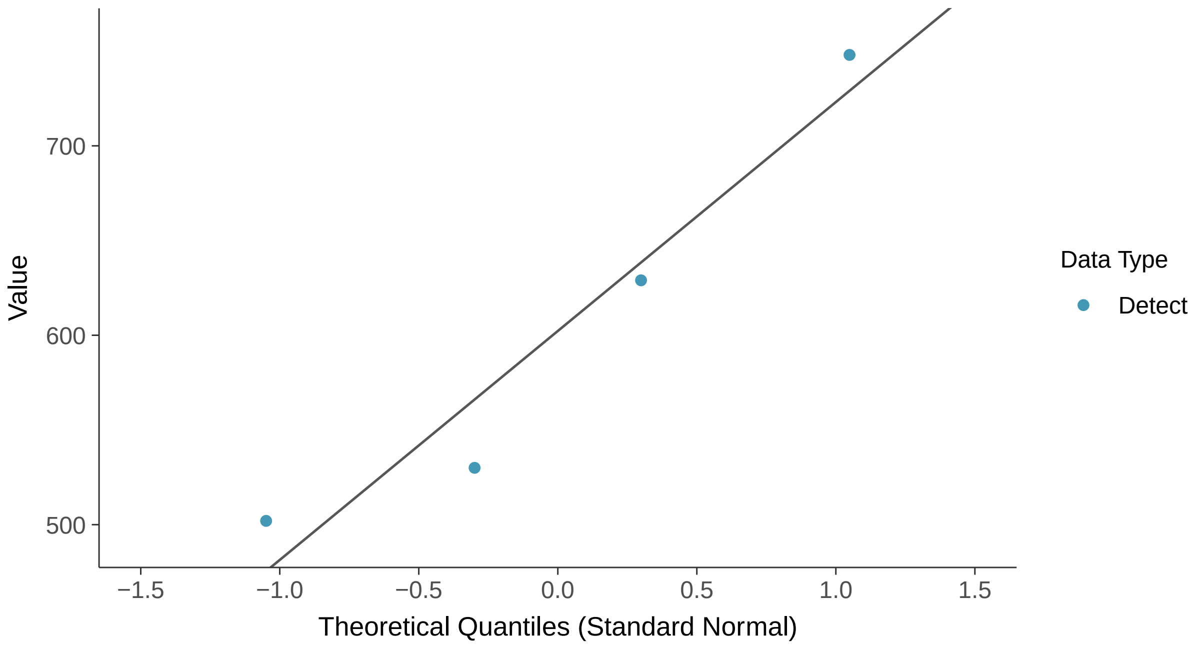
Boxplot by Season

Hardness, MW-5 (mg/L)



Normal Q-Q plot

Hardness, MW-5 (mg/L)

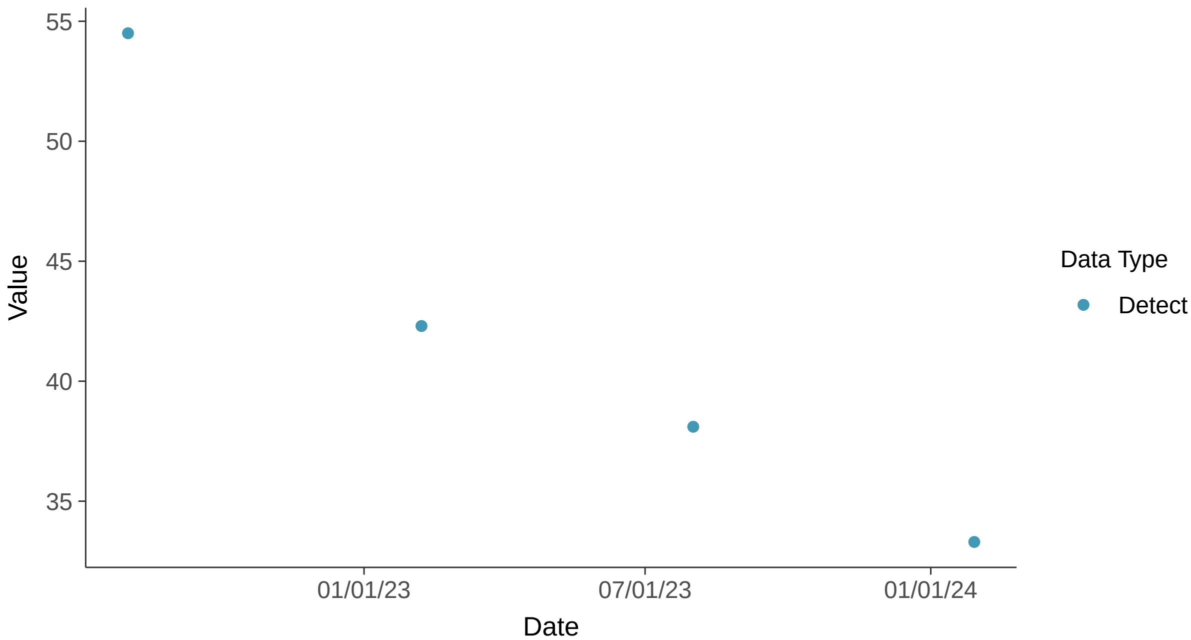


Other: Magnesium, MW-5

ID: 05_4_33

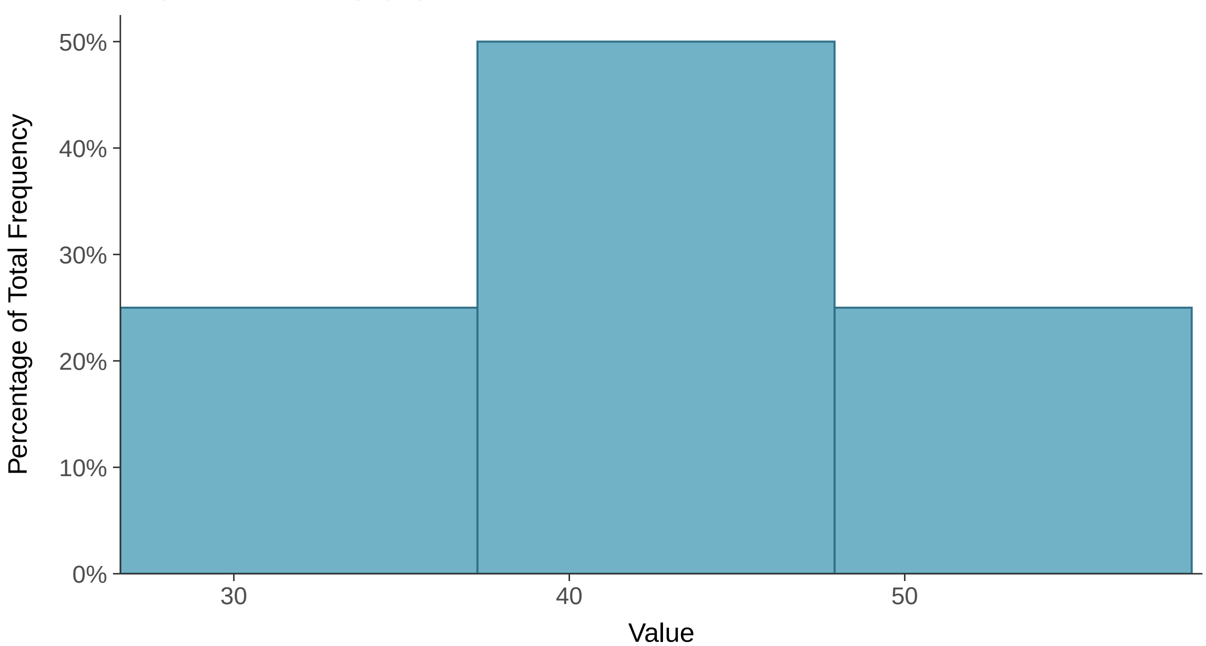
Scatter Plot

Magnesium, MW-5 (mg/L)



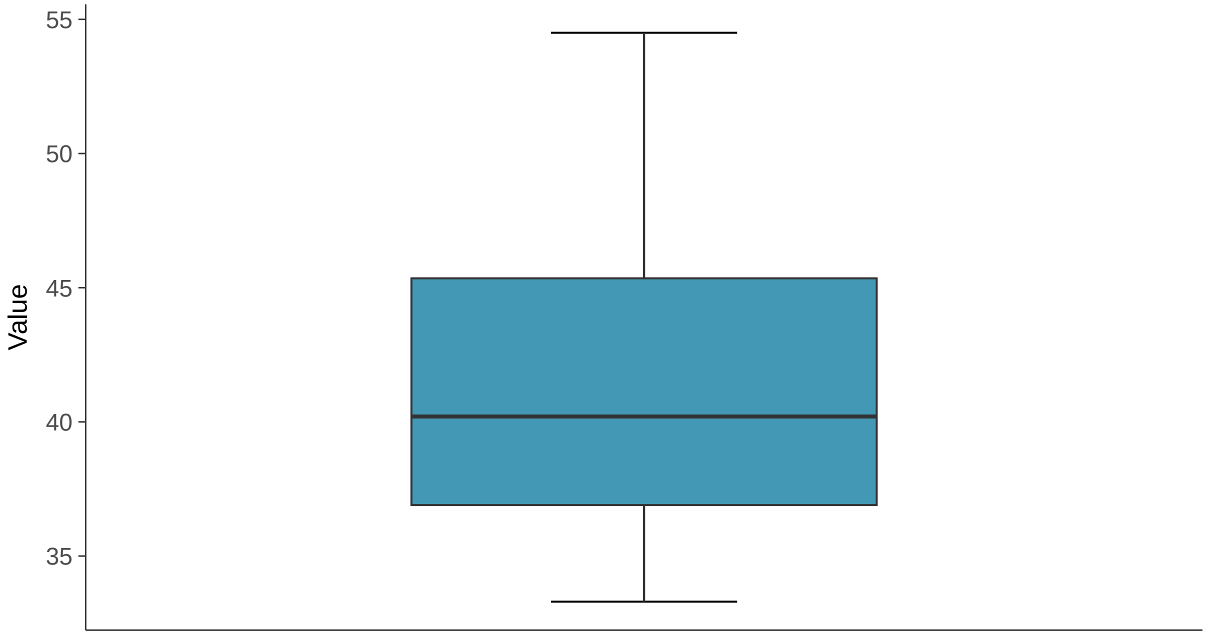
Histogram

Magnesium, MW-5 (mg/L)



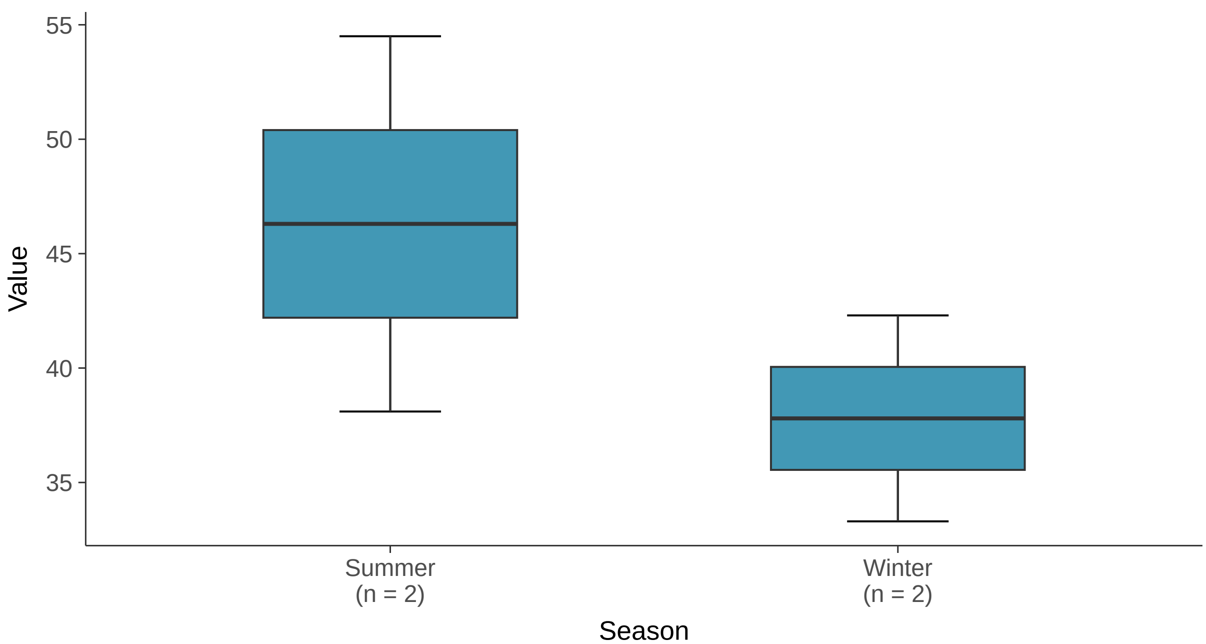
Boxplot

Magnesium, MW-5 (mg/L)



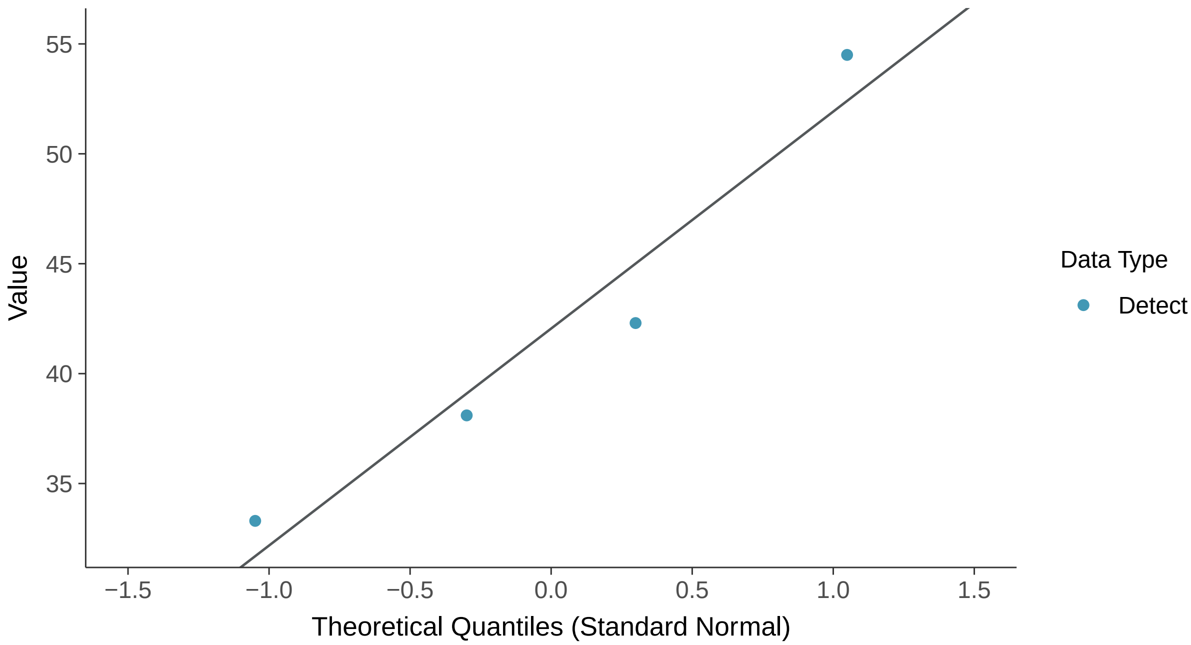
Boxplot by Season

Magnesium, MW-5 (mg/L)



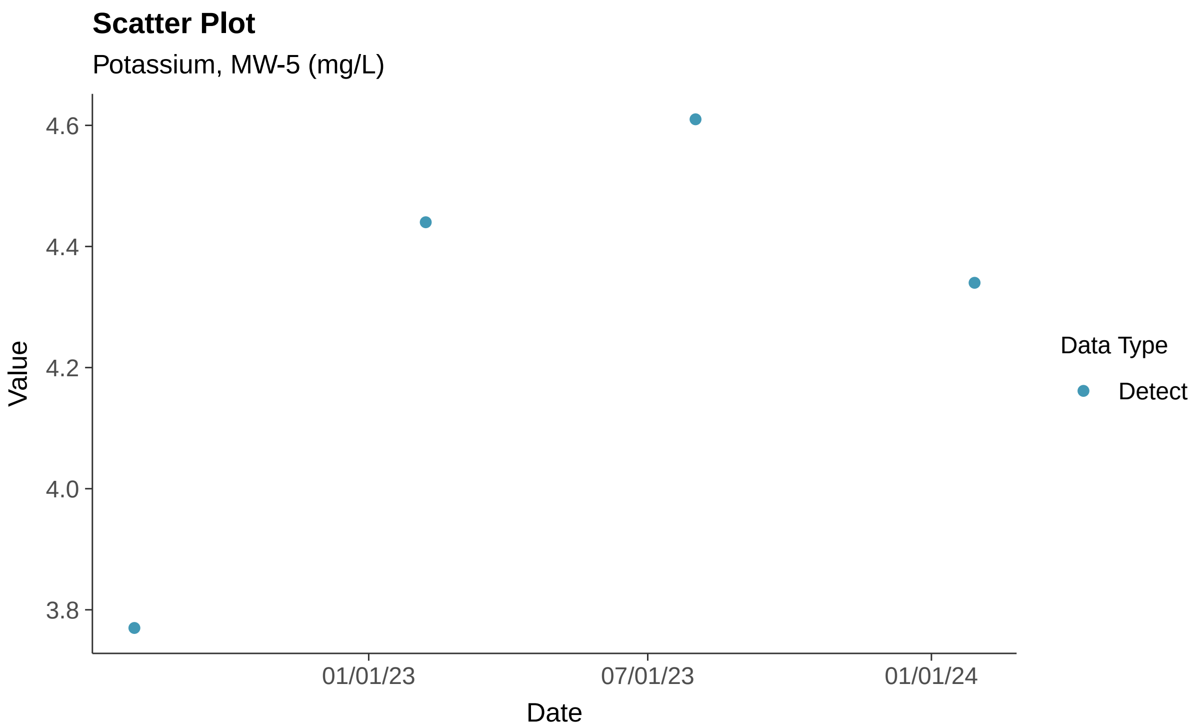
Normal Q-Q plot

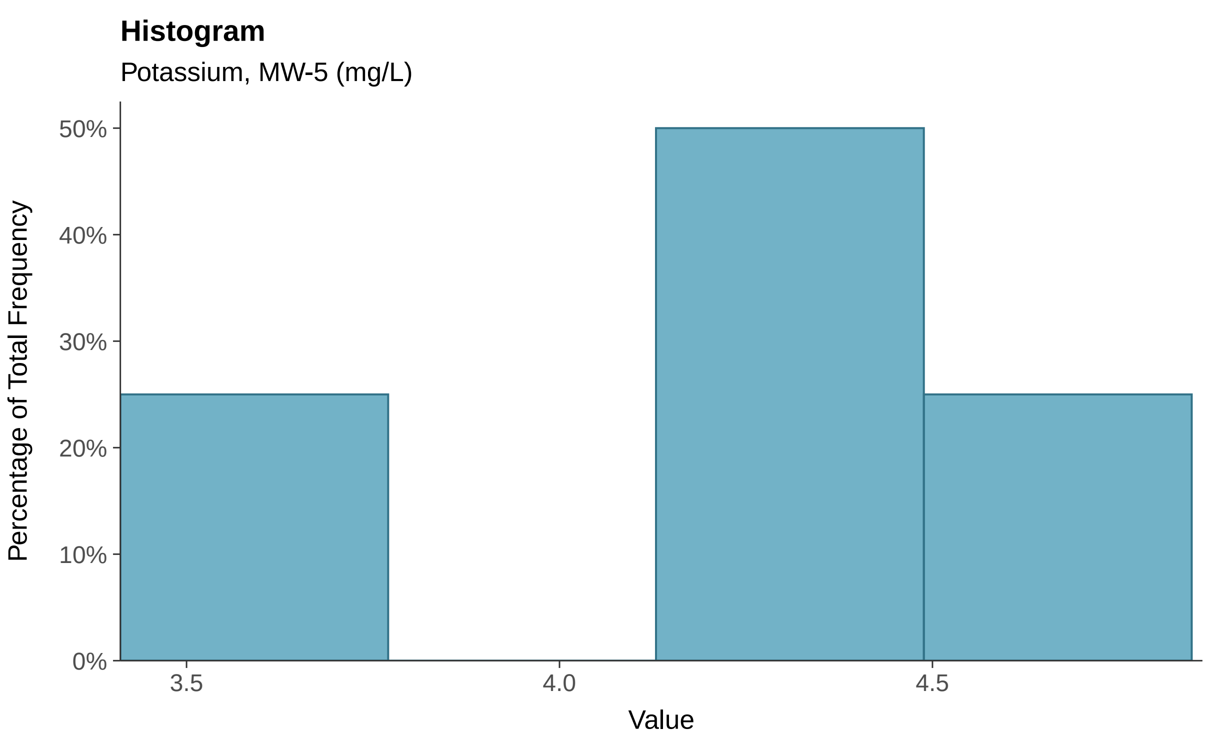
Magnesium, MW-5 (mg/L)



Other: Potassium, MW-5

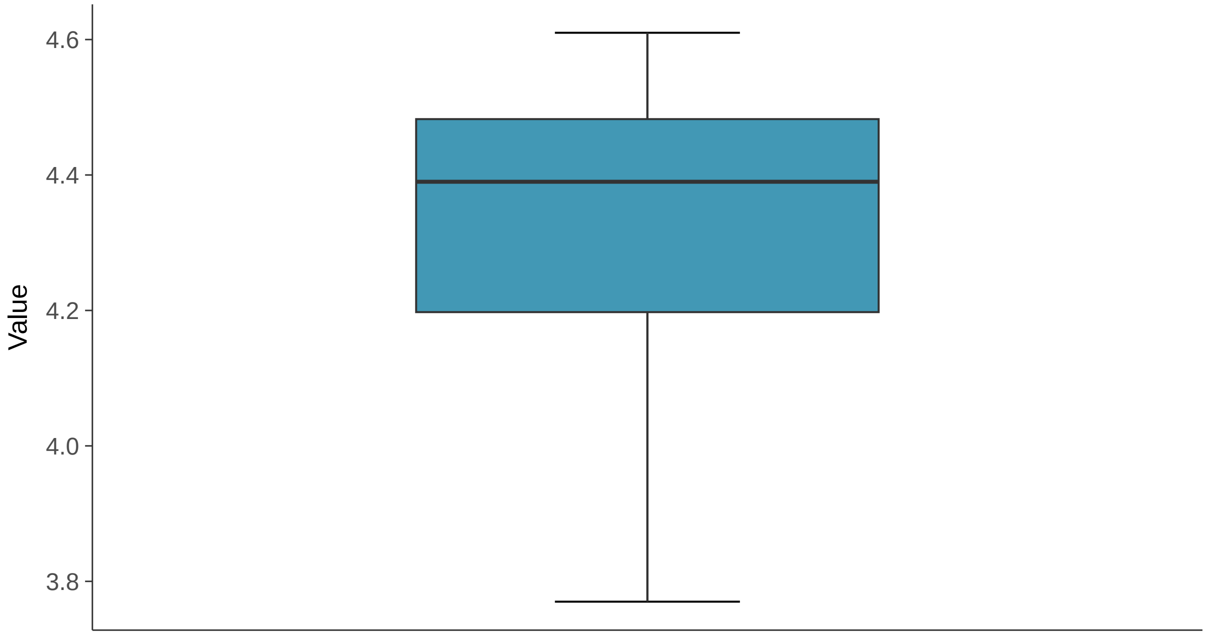
ID: 05_4_34





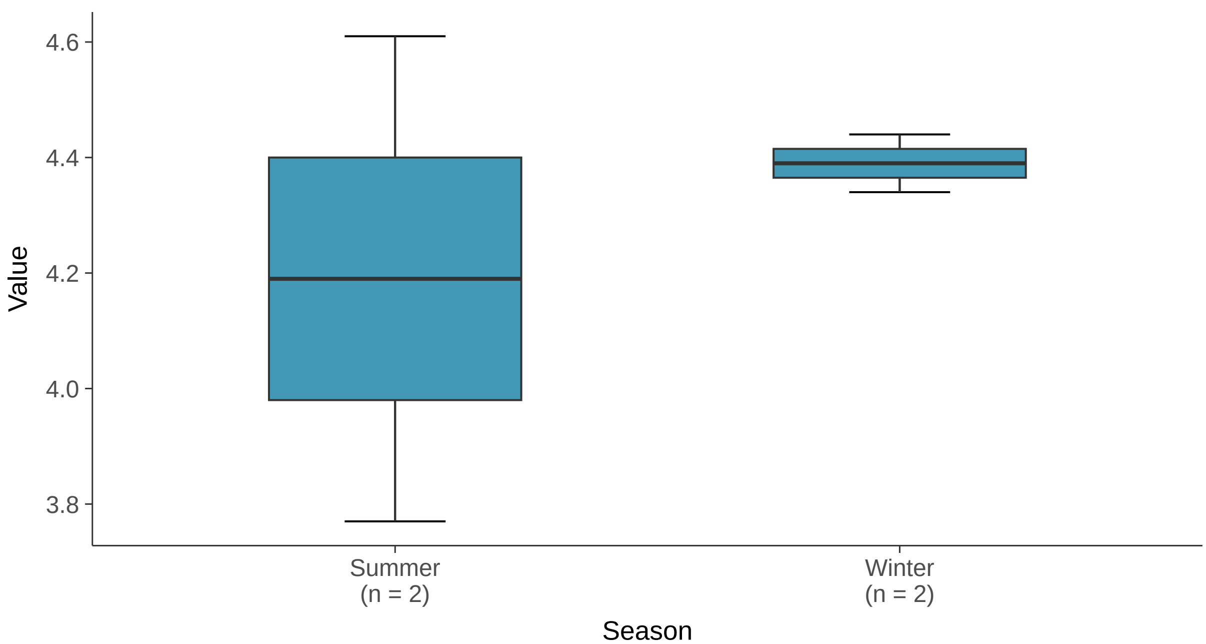
Boxplot

Potassium, MW-5 (mg/L)



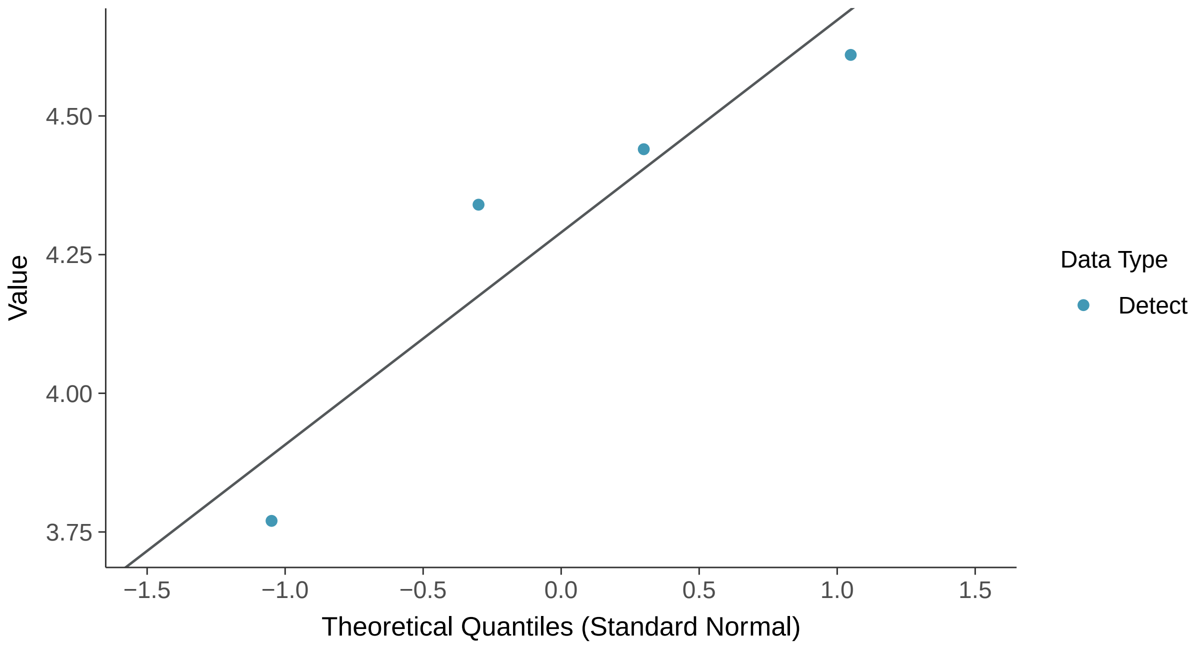
Boxplot by Season

Potassium, MW-5 (mg/L)



Normal Q-Q plot

Potassium, MW-5 (mg/L)

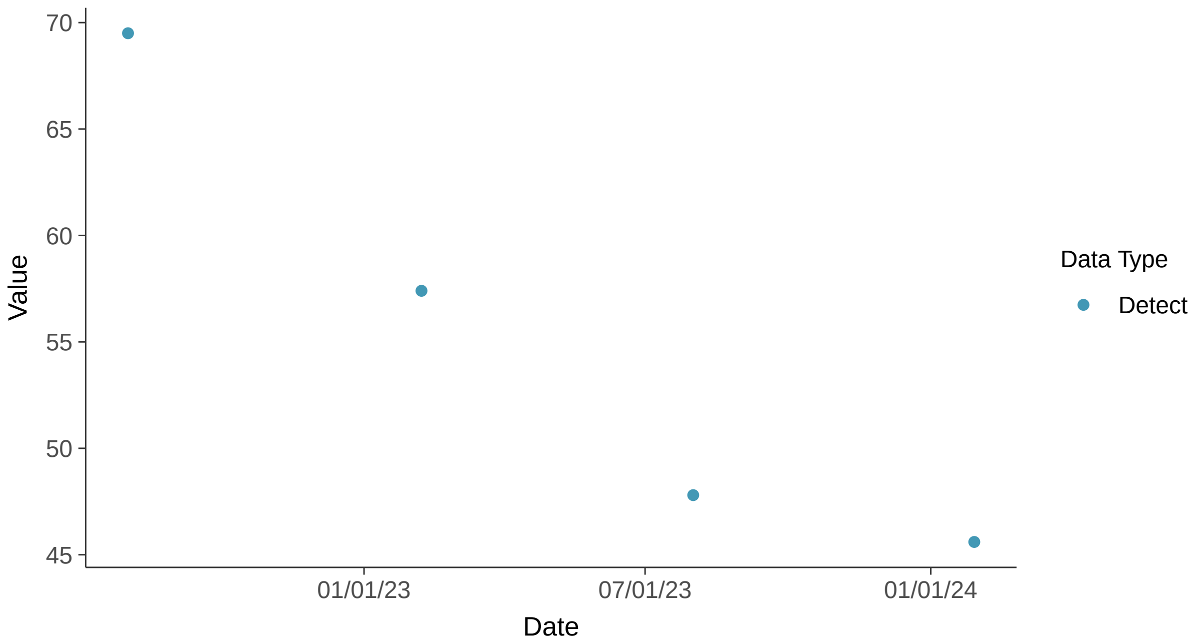


Other: Sodium, MW-5

ID: 05_4_35

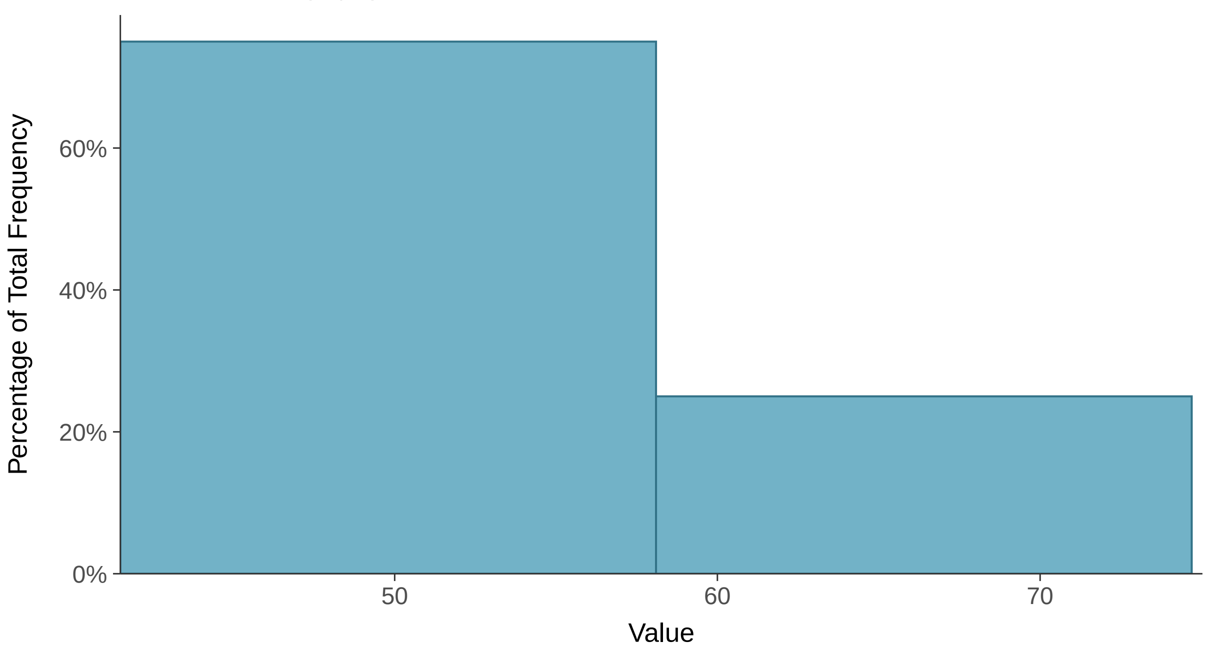
Scatter Plot

Sodium, MW-5 (mg/L)



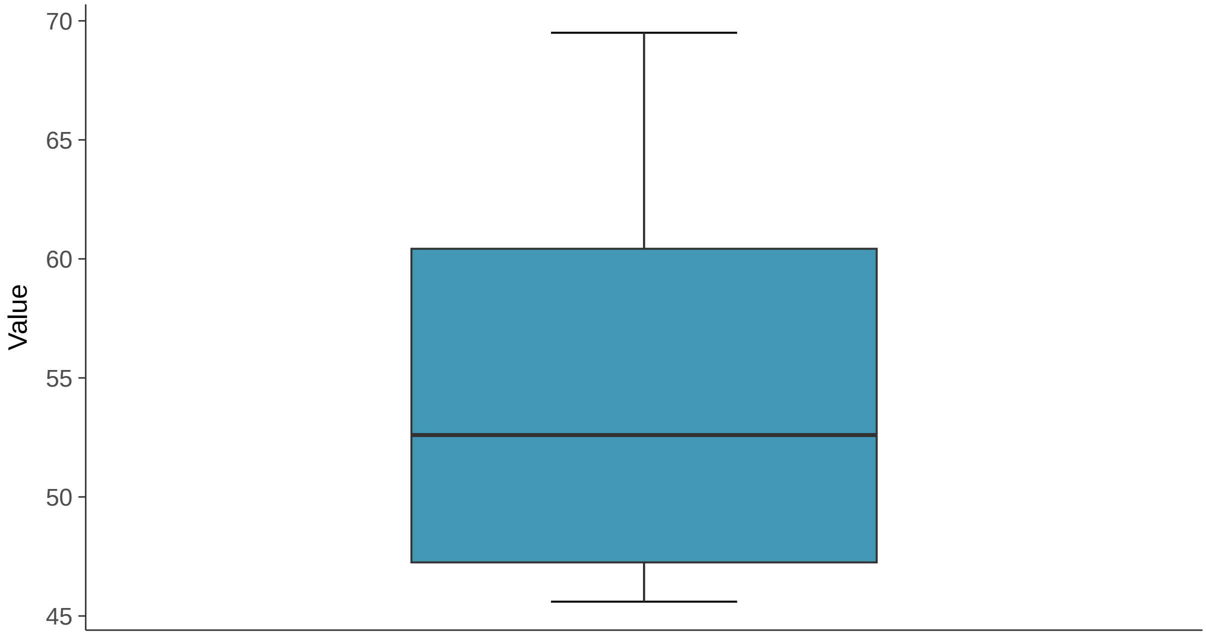
Histogram

Sodium, MW-5 (mg/L)



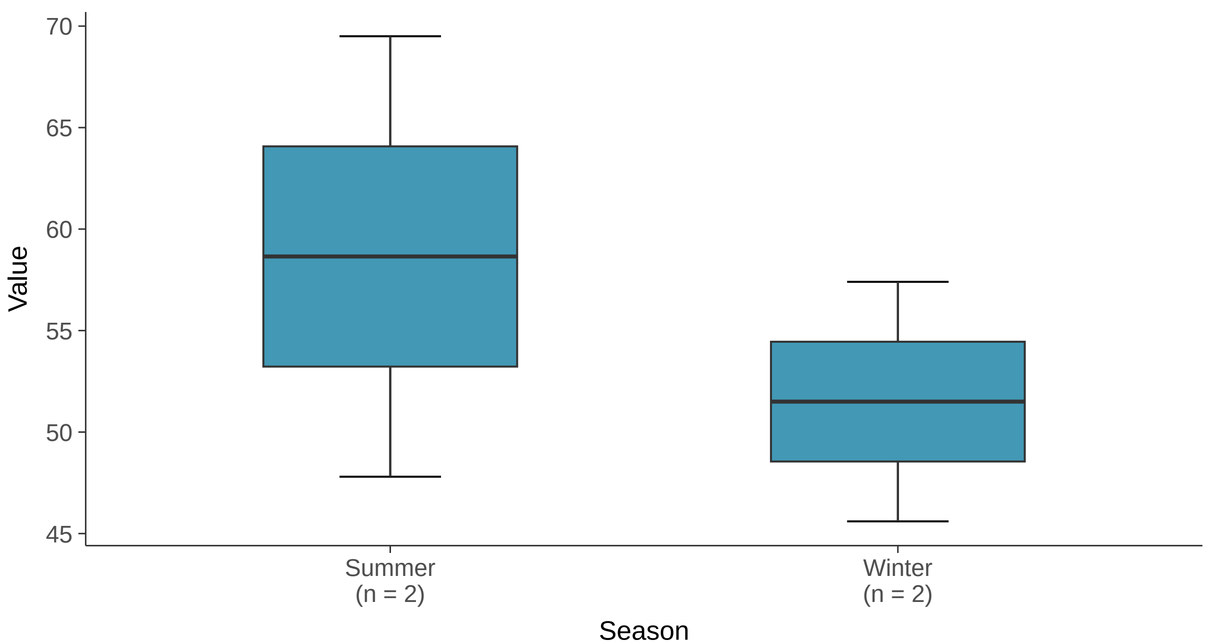
Boxplot

Sodium, MW-5 (mg/L)



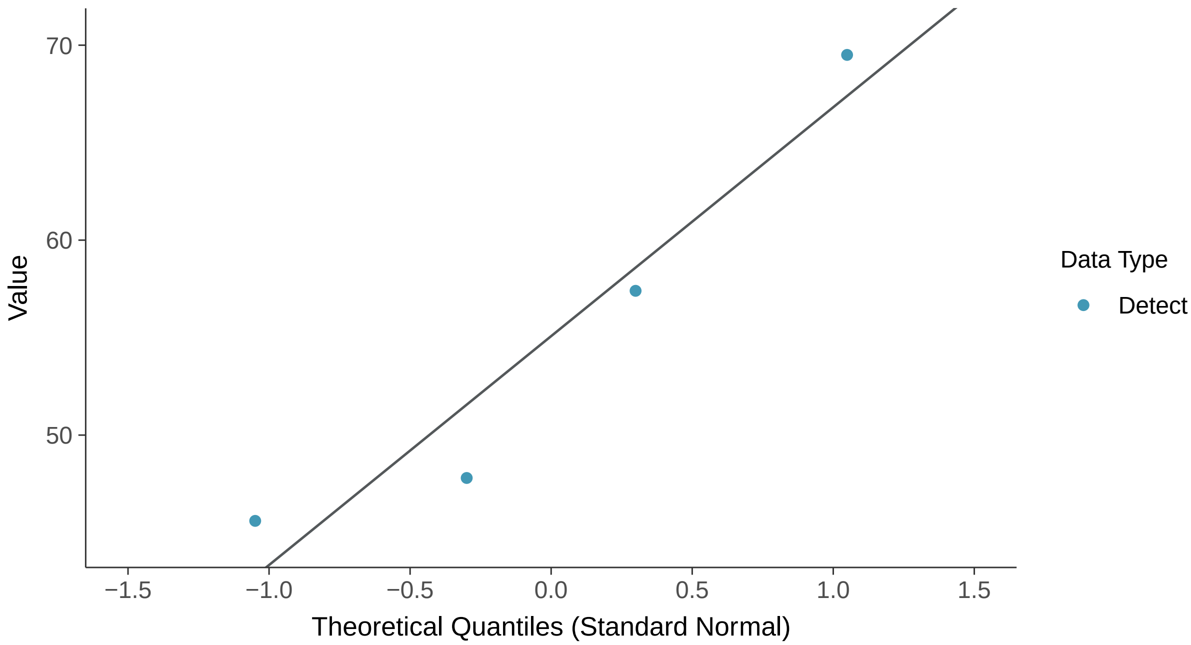
Boxplot by Season

Sodium, MW-5 (mg/L)



Normal Q-Q plot

Sodium, MW-5 (mg/L)

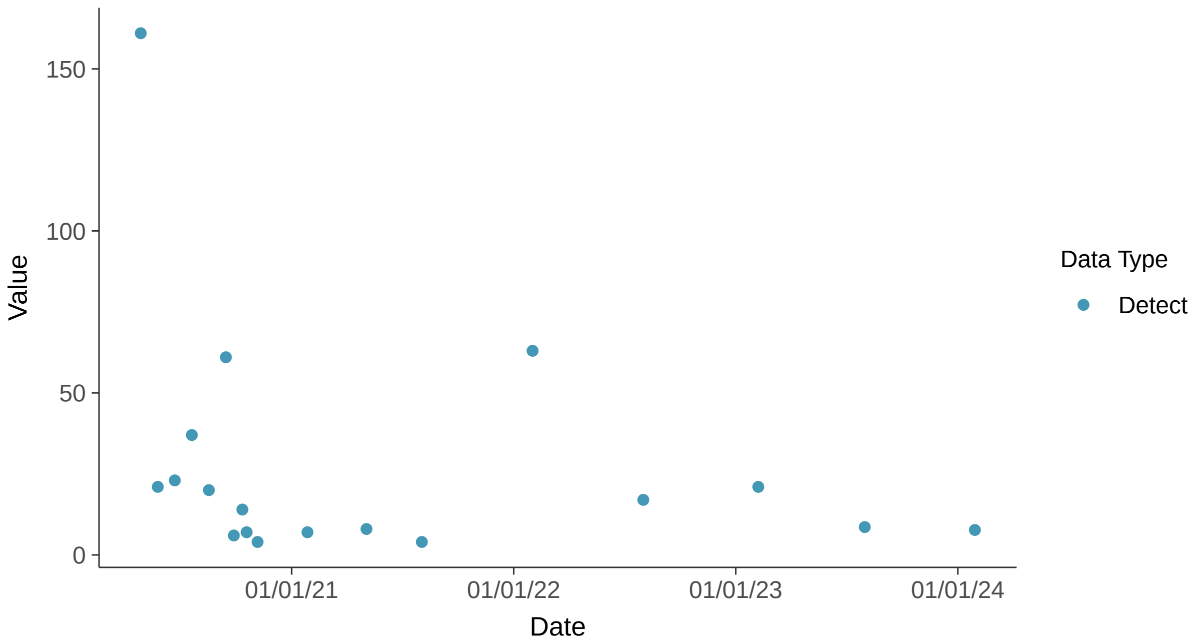


Other: Total Suspended Solids, MW-5

ID: 05_4_36

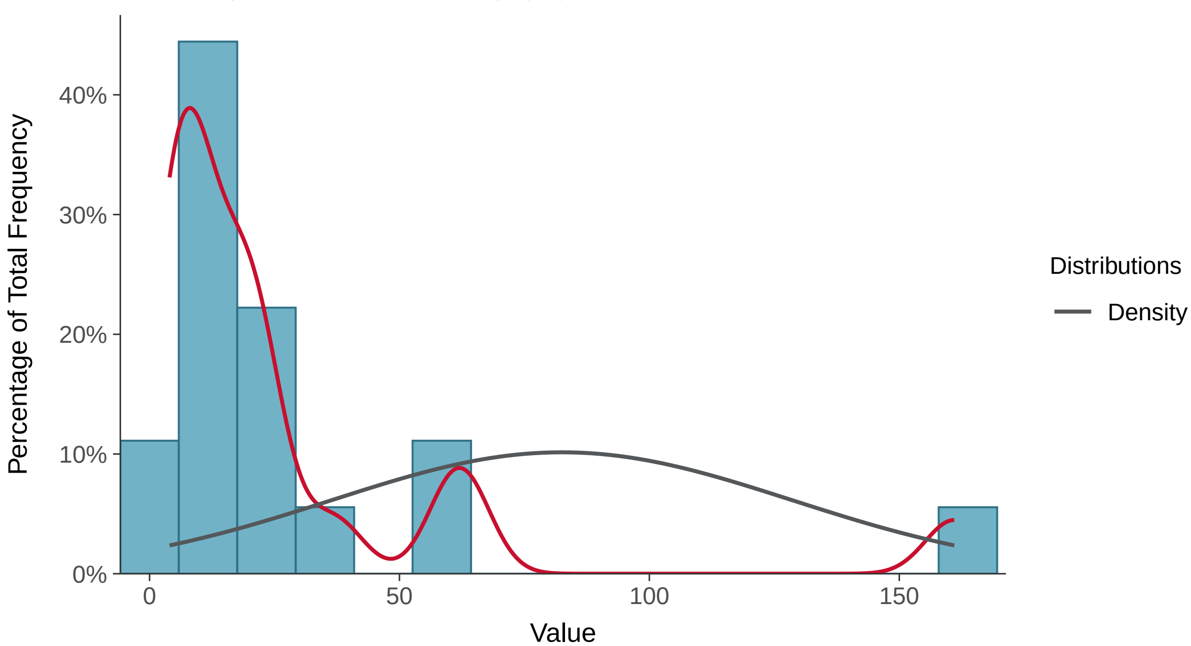
Scatter Plot

Total Suspended Solids, MW-5 (mg/L)



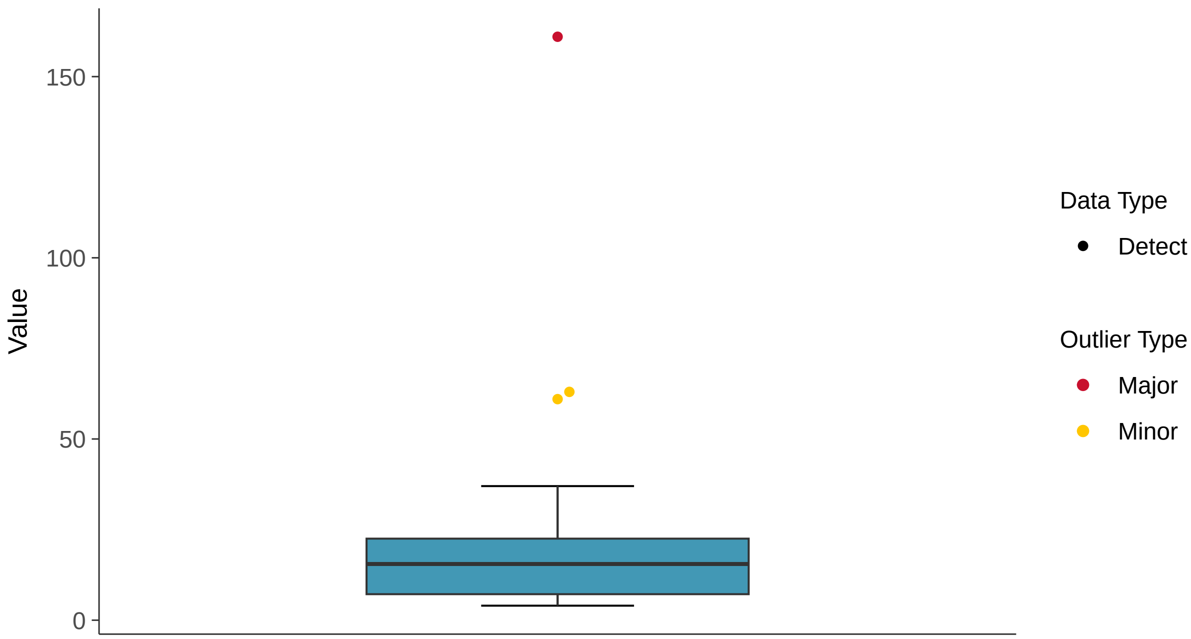
Histogram

Total Suspended Solids, MW-5 (mg/L)



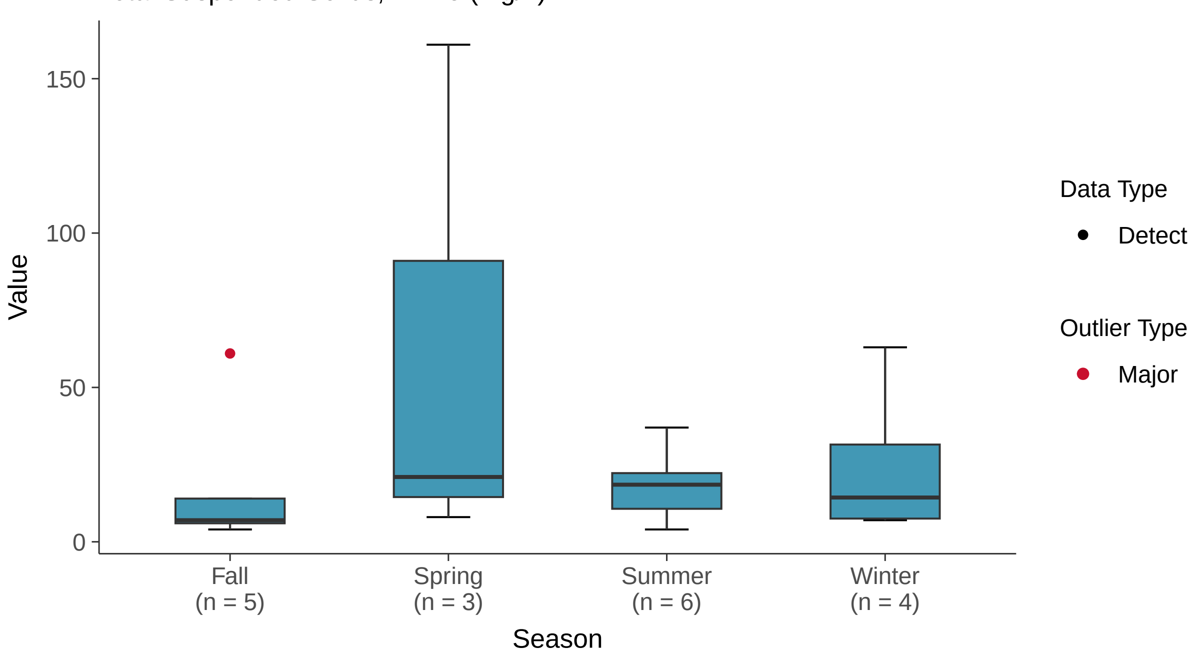
Boxplot

Total Suspended Solids, MW-5 (mg/L)



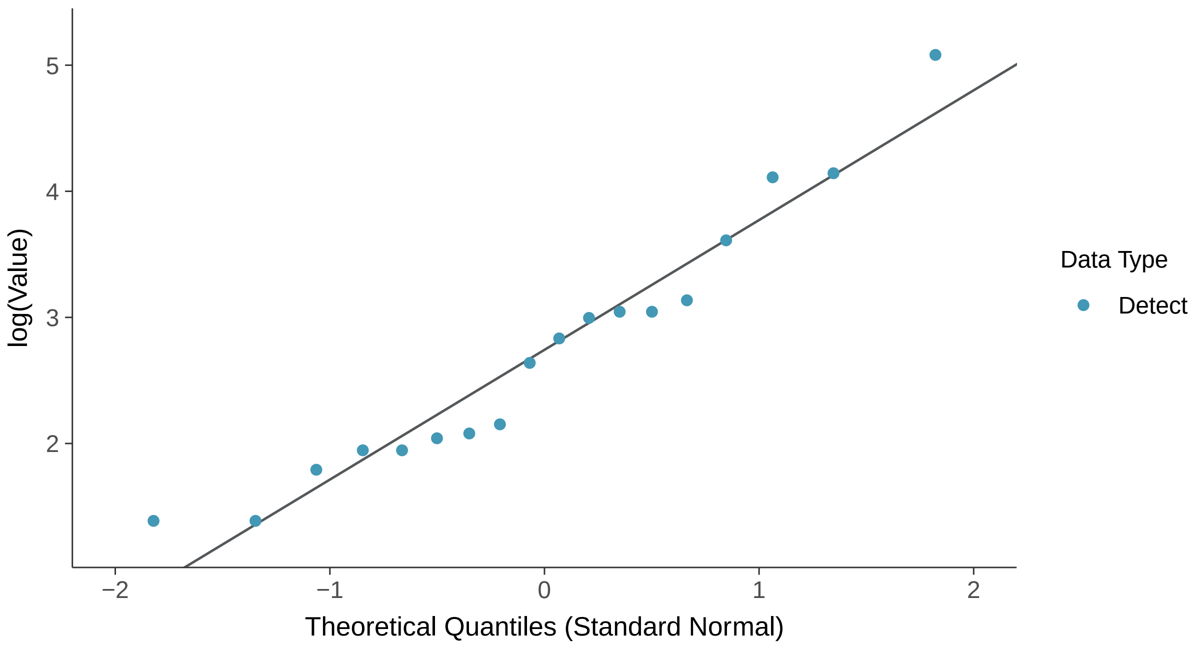
Boxplot by Season

Total Suspended Solids, MW-5 (mg/L)



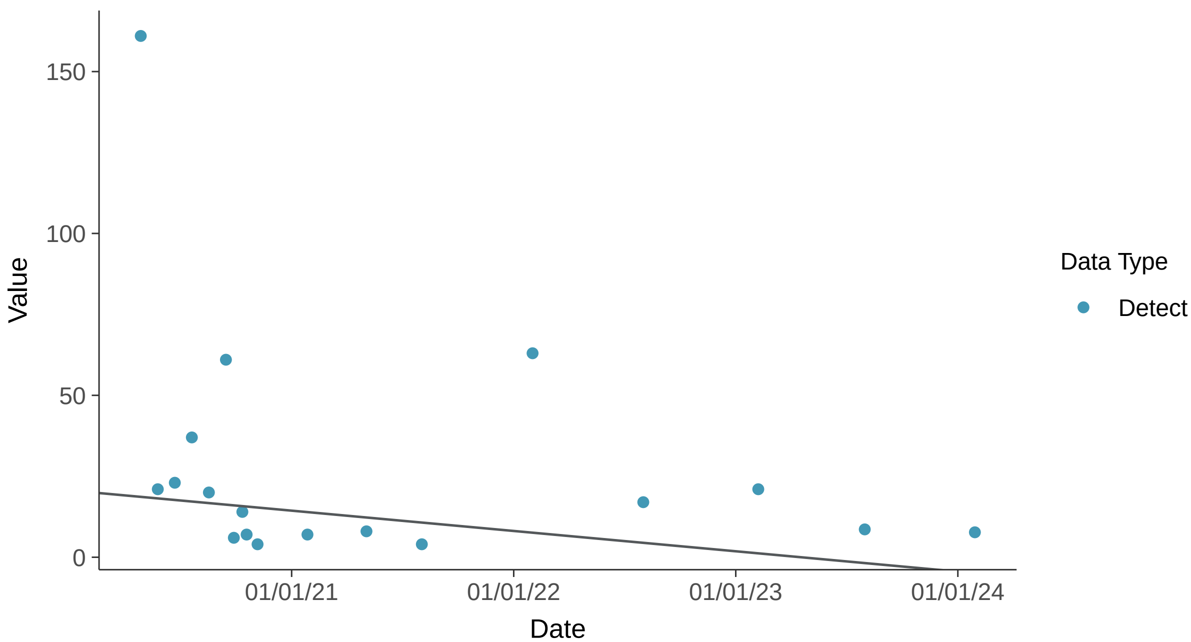
Lognormal Q-Q plot

Total Suspended Solids, MW-5 (mg/L)



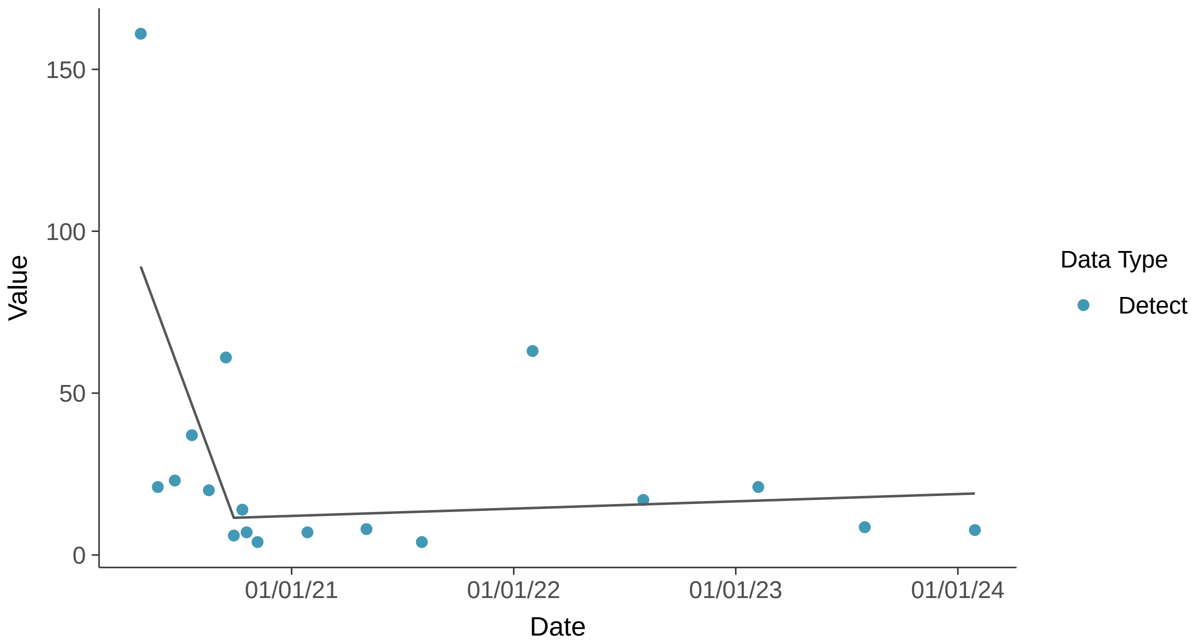
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Total Suspended Solids, MW-5 (mg/L)



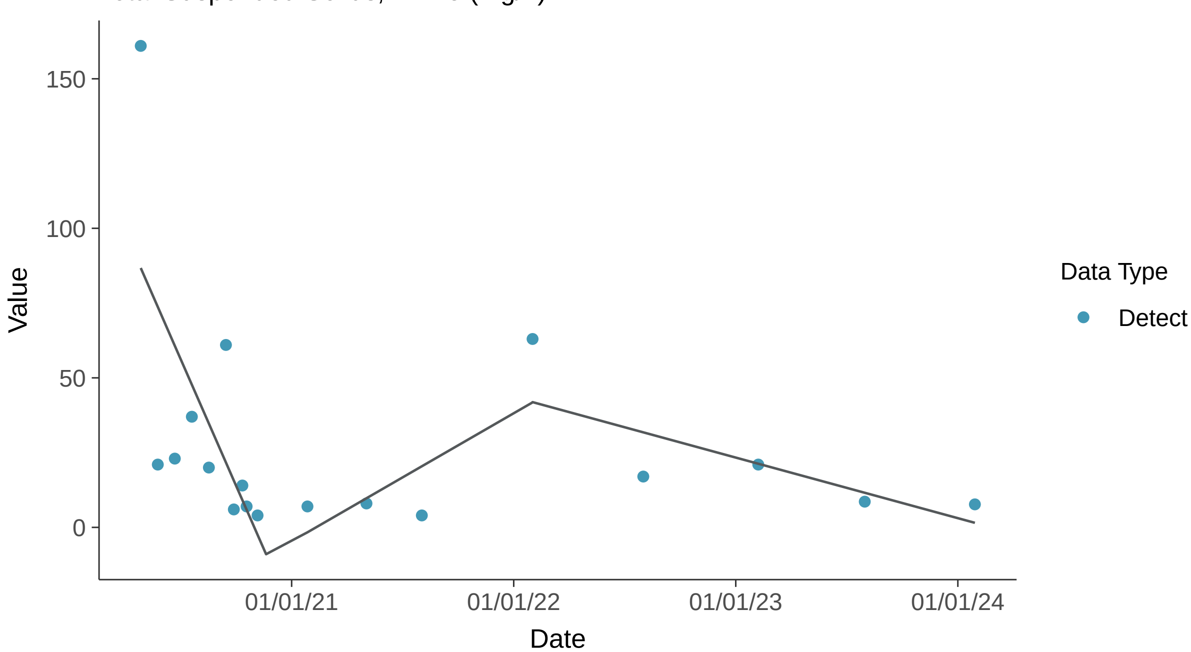
Trend Regression: Piecewise Linear-Linear

Total Suspended Solids, MW-5 (mg/L)



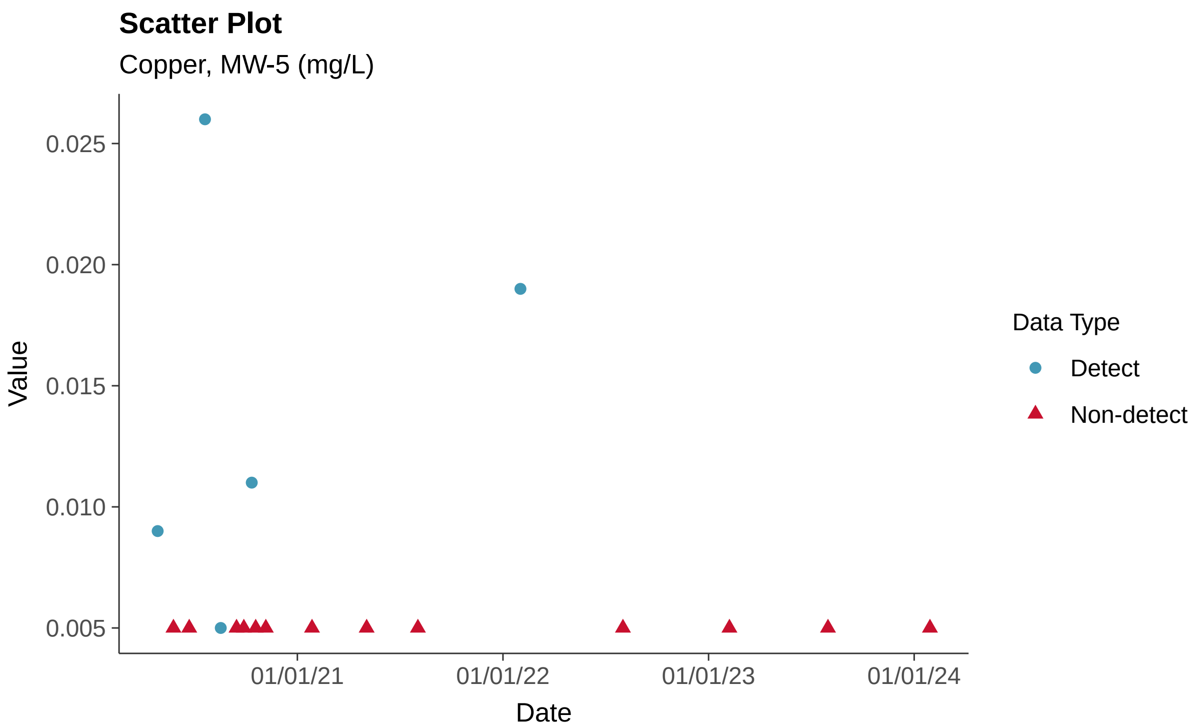
Trend Regression: Piecewise Linear-Linear-Linear

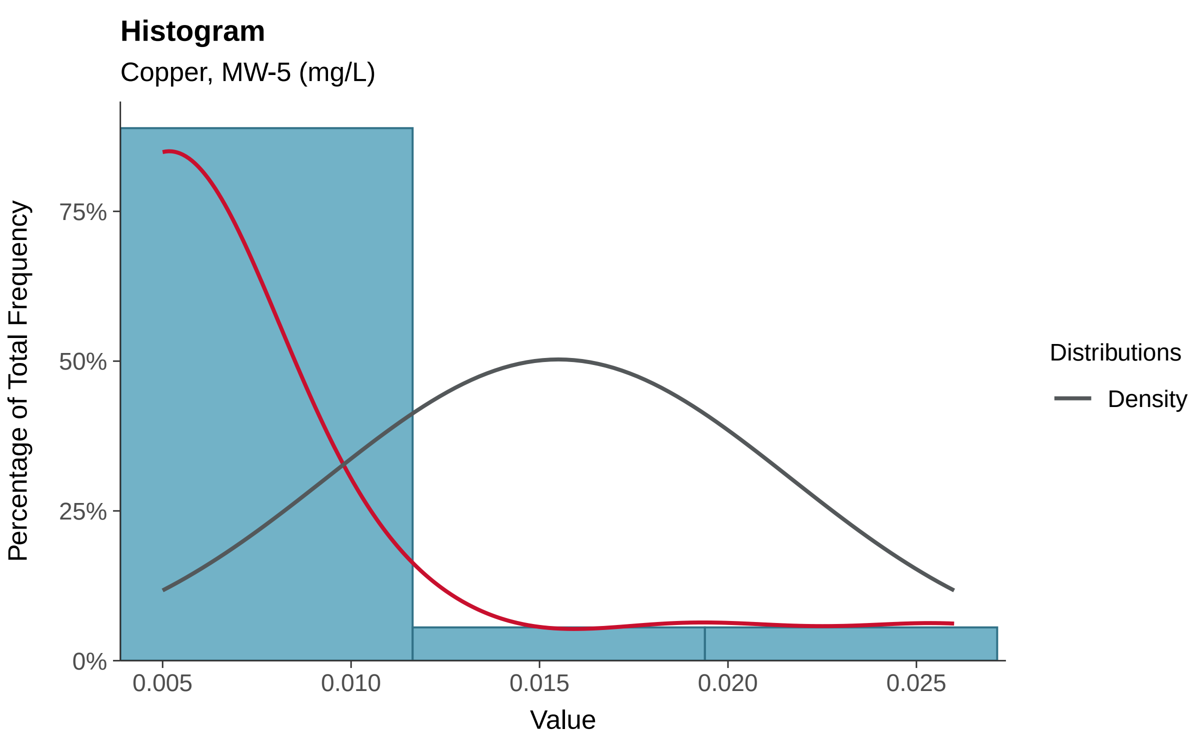
Total Suspended Solids, MW-5 (mg/L)



Part 115: Copper, MW-5

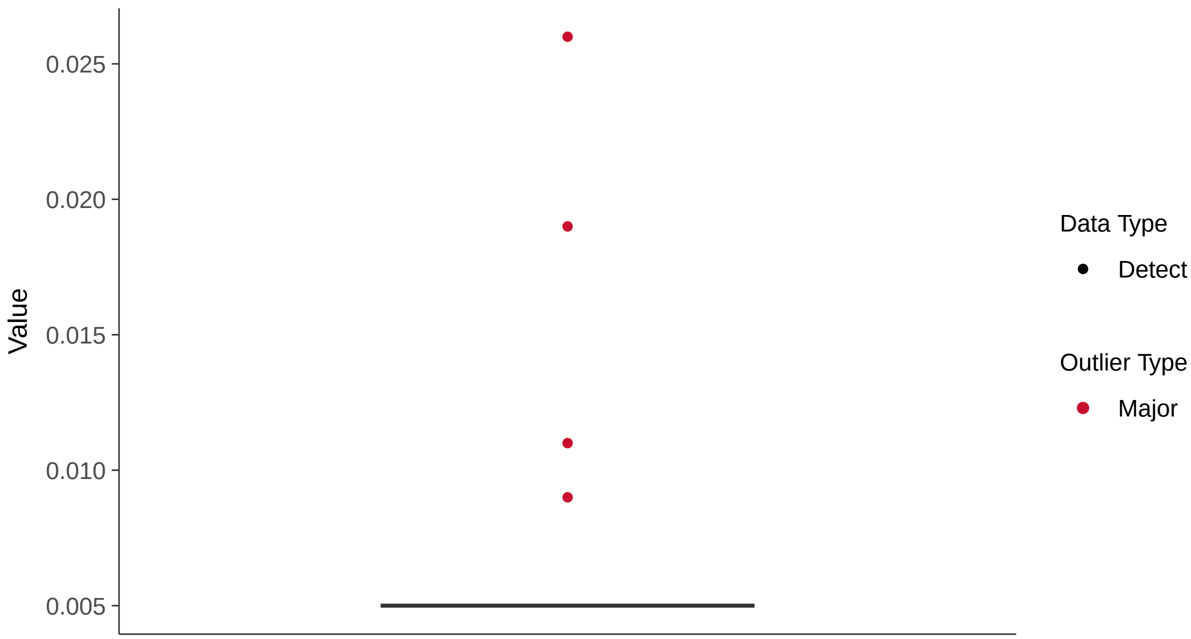
ID: 05_5_37





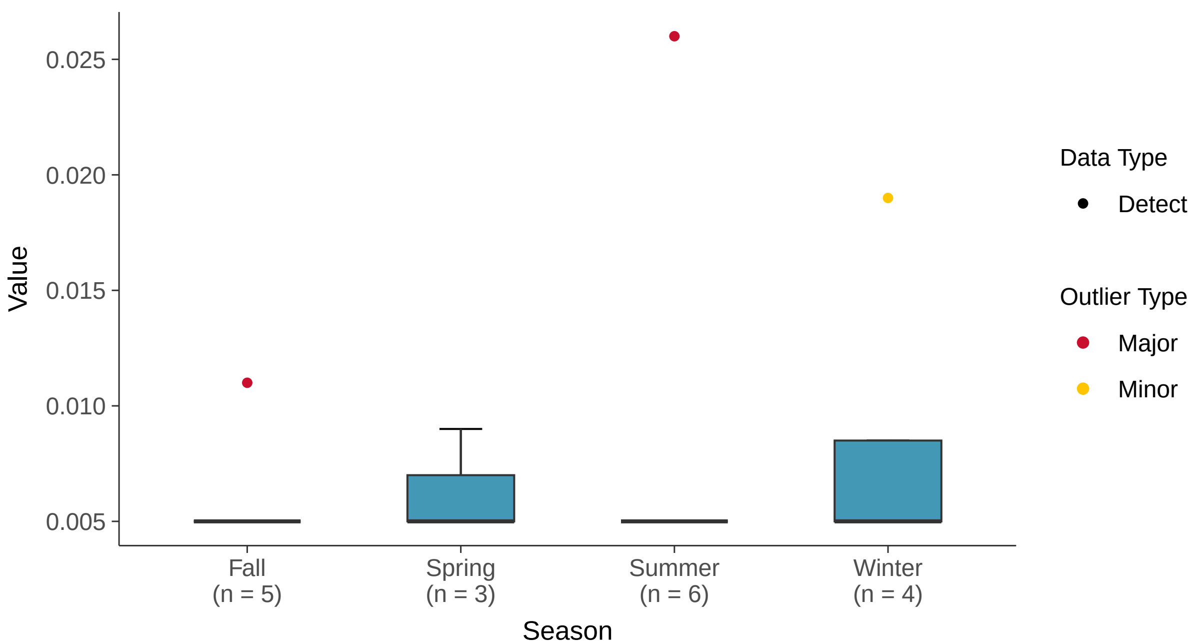
Boxplot

Copper, MW-5 (mg/L)



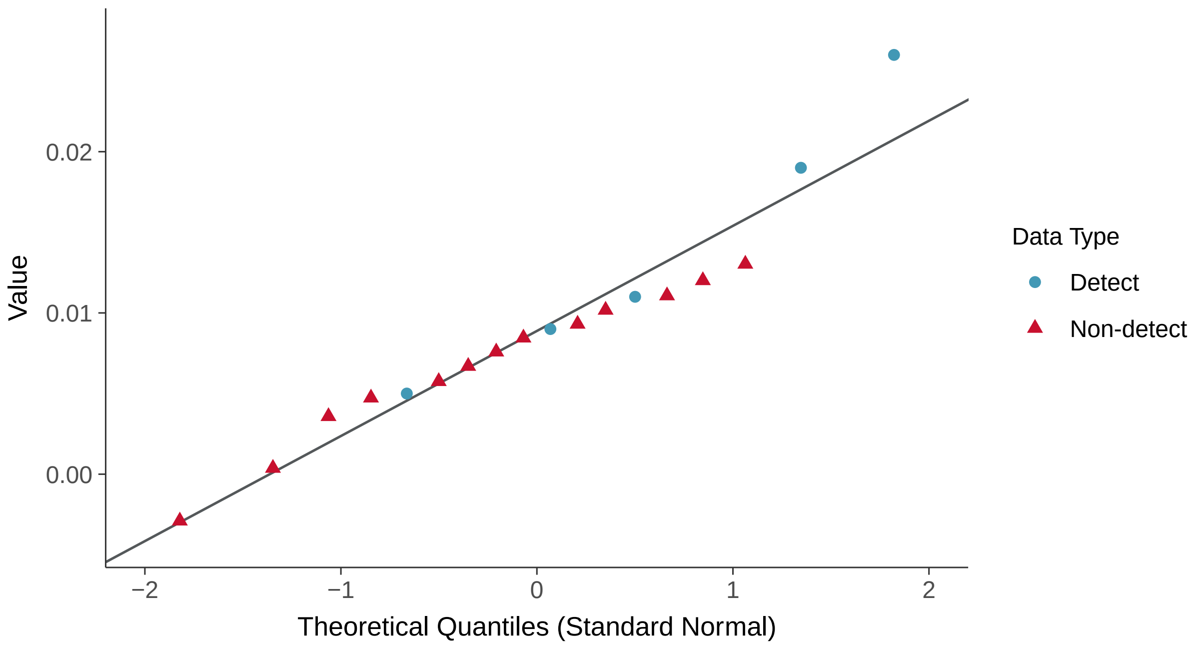
Boxplot by Season

Copper, MW-5 (mg/L)



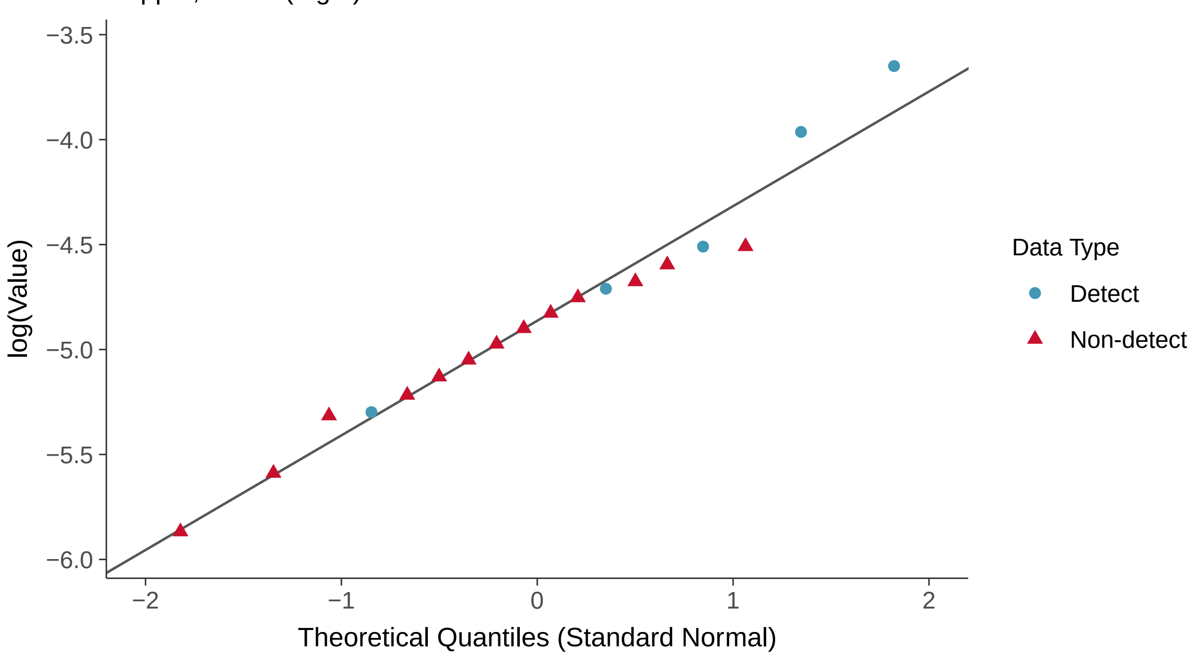
Normal Q-Q plot using ROS Imputed Estimates

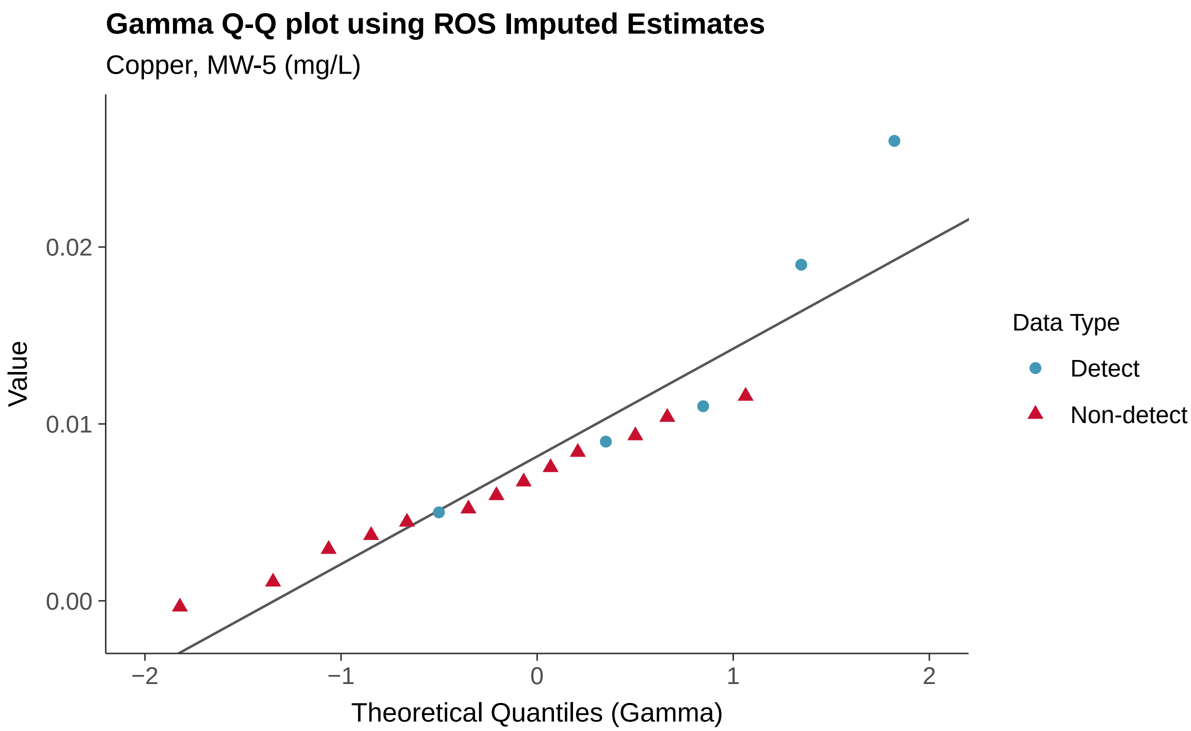
Copper, MW-5 (mg/L)

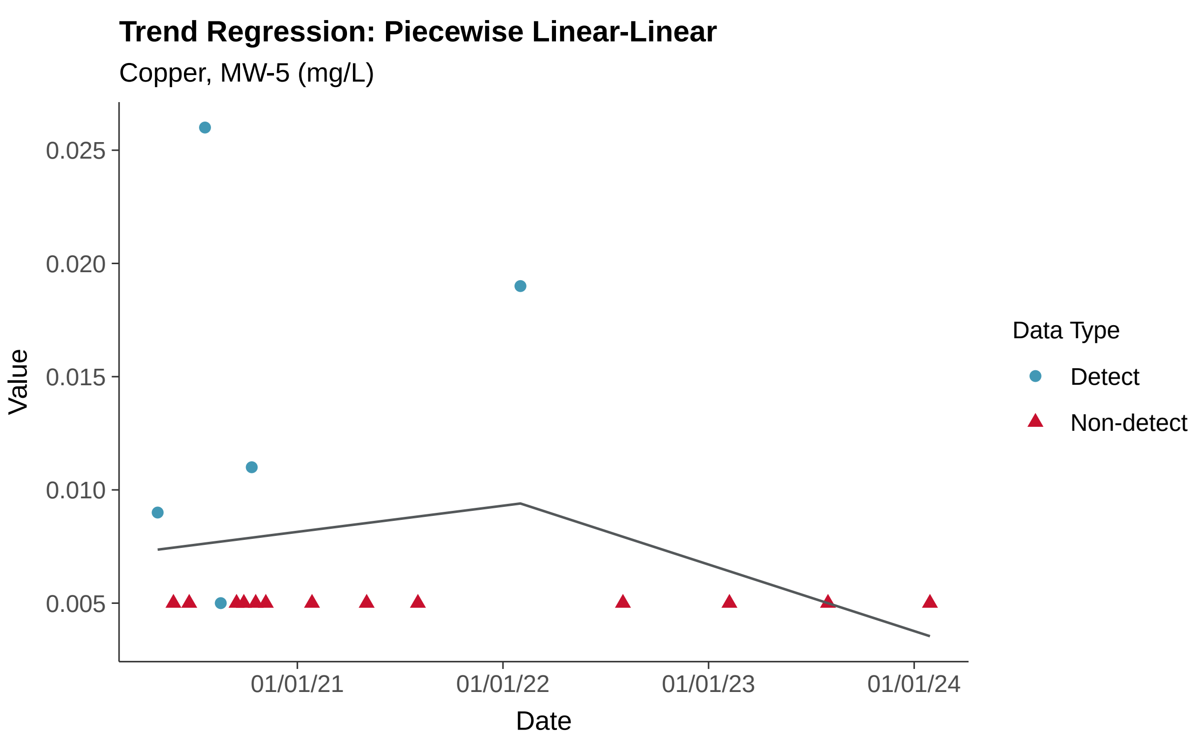


Lognormal Q-Q plot using ROS Imputed Estimates

Copper, MW-5 (mg/L)

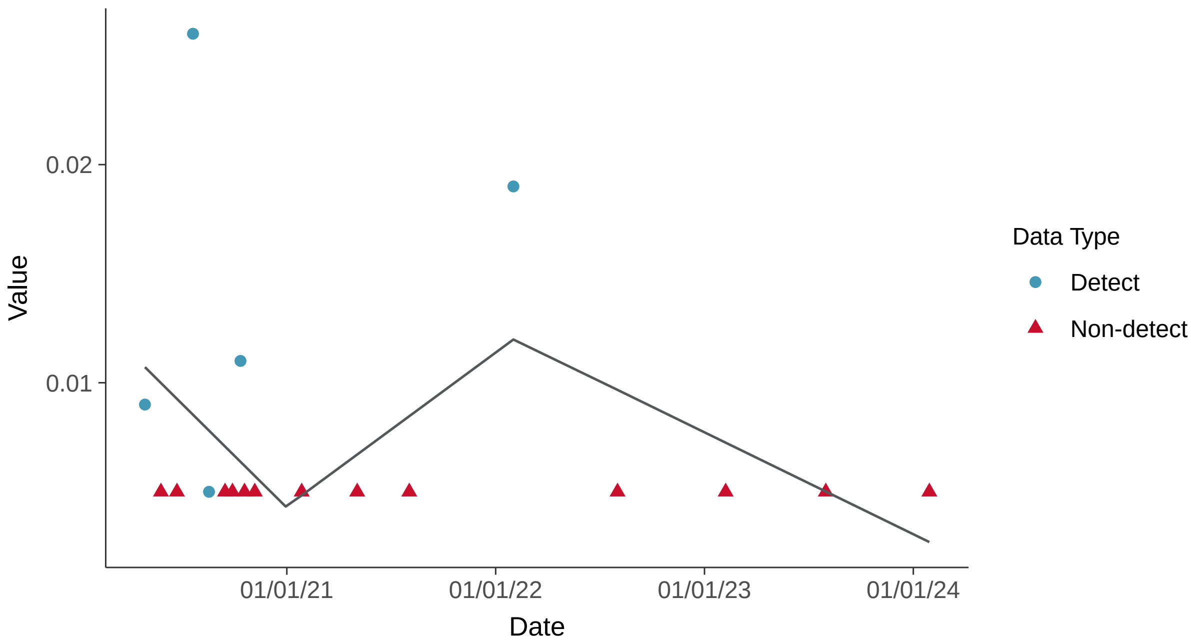



Gamma Q-Q plot using ROS Imputed Estimates
Copper, MW-5 (mg/L)
Value
0.02
0.01
0.00
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Copper, MW-5 (mg/L)
Value
0.025
0.020
0.015
0.010
0.005
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

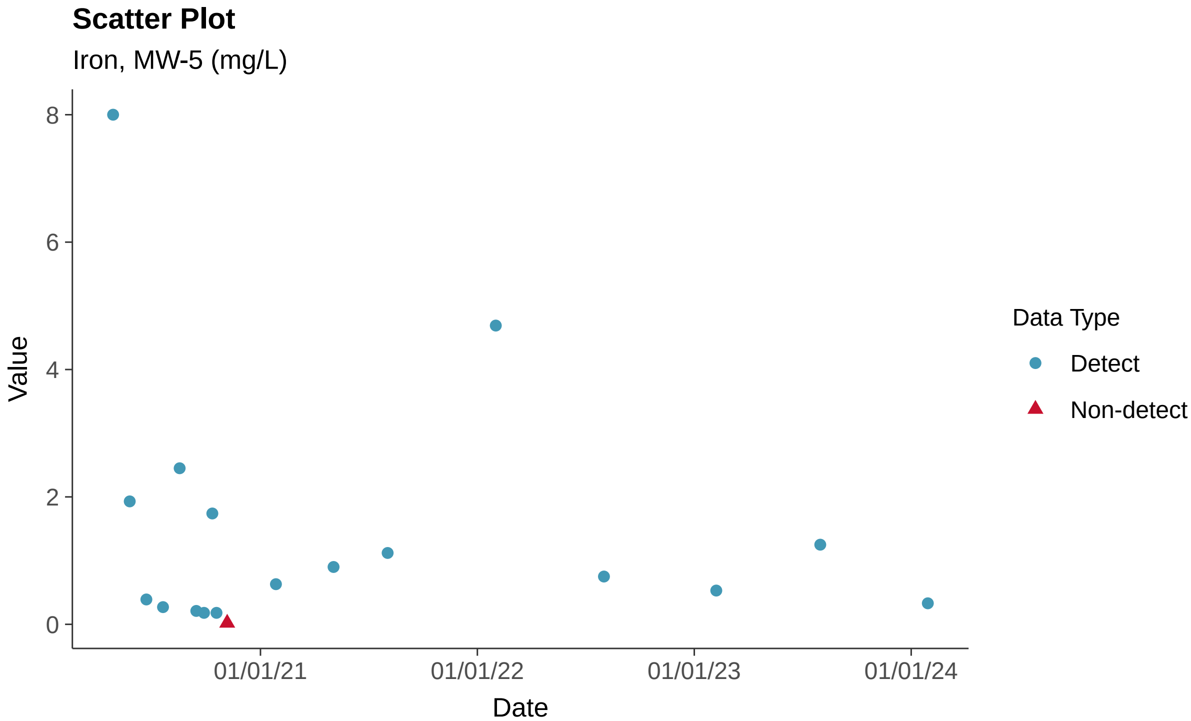
Trend Regression: Piecewise Linear-Linear-Linear

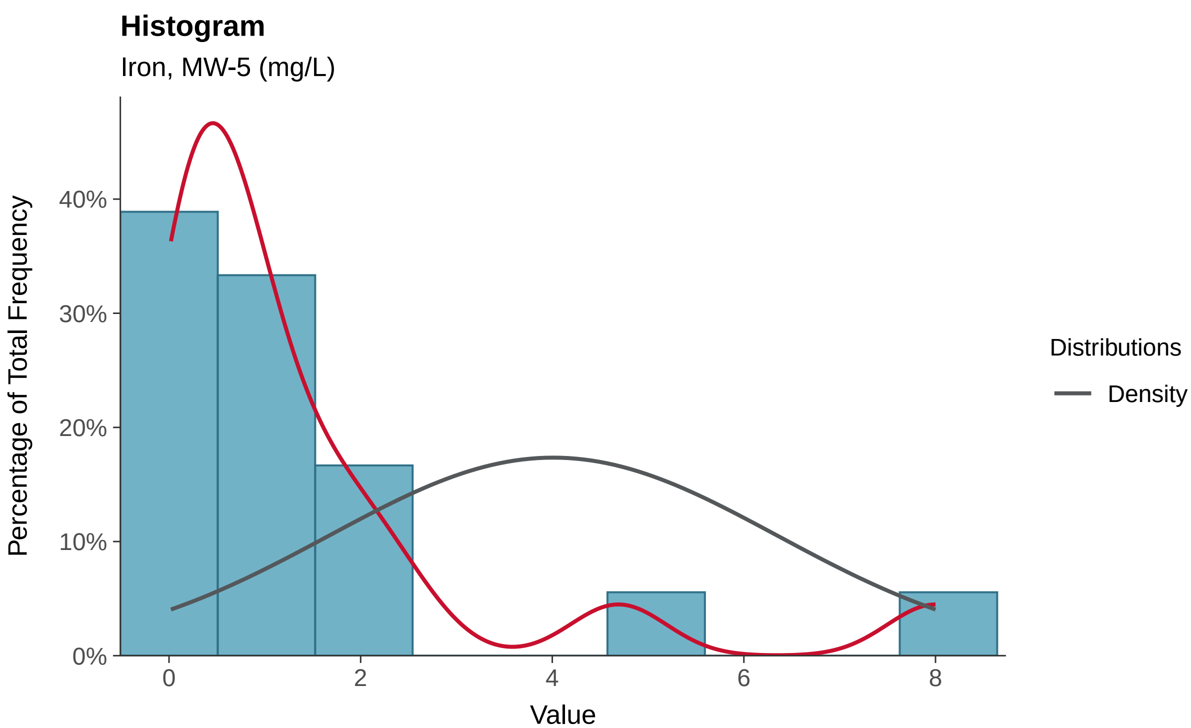
Copper, MW-5 (mg/L)



Part 115: Iron, MW-5

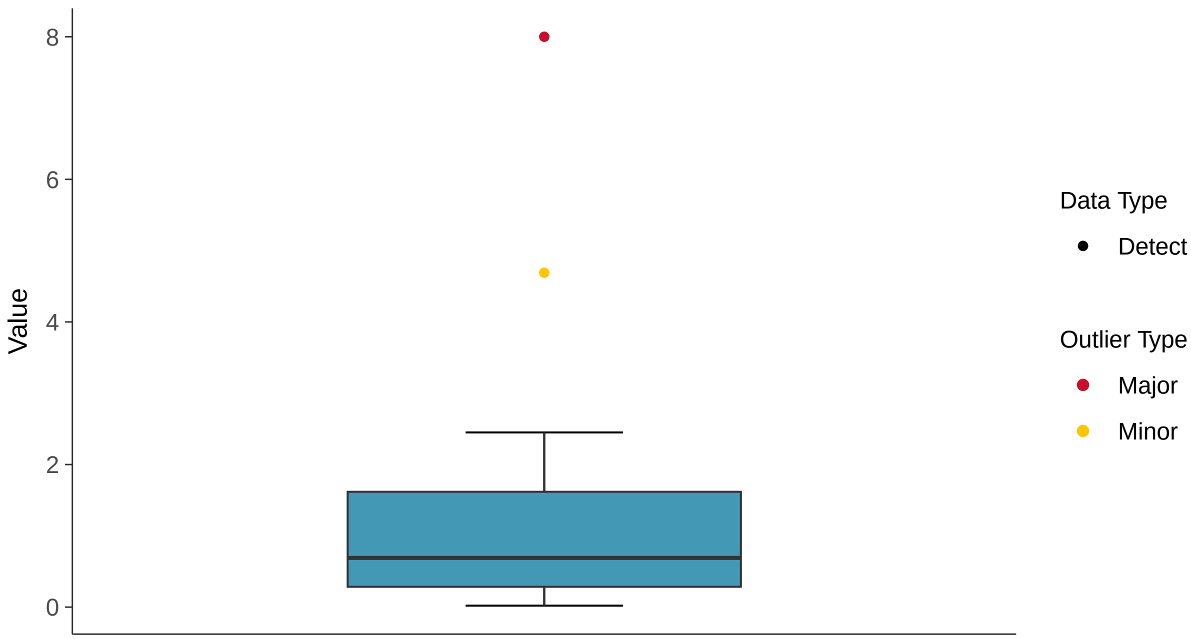
ID: 05_5_38





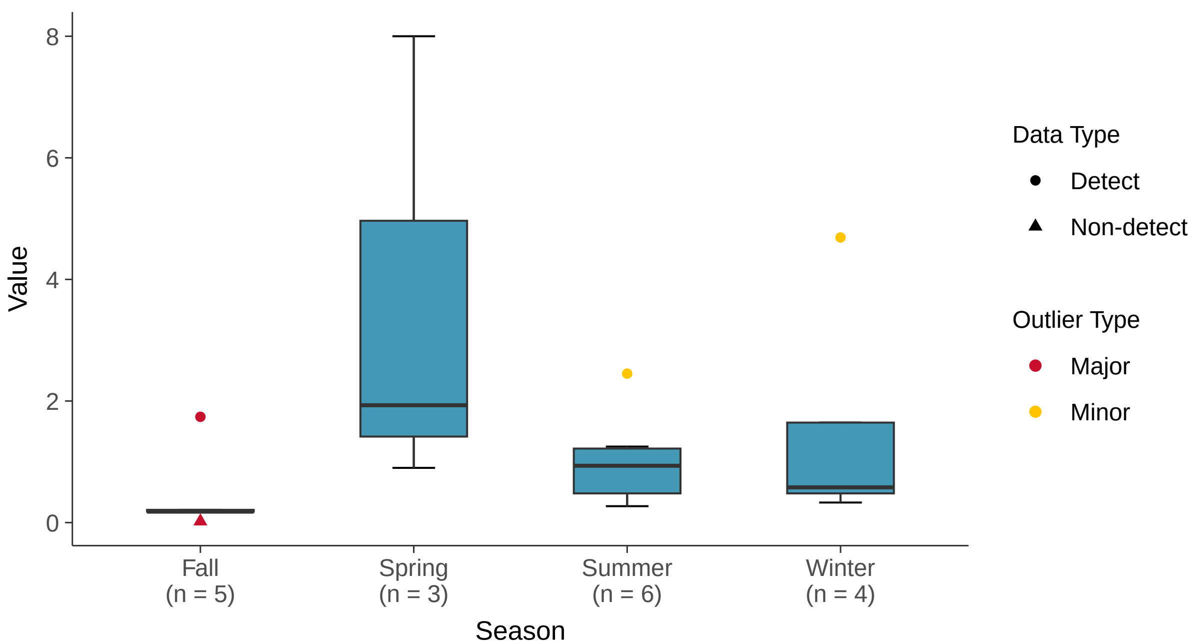
Boxplot

Iron, MW-5 (mg/L)



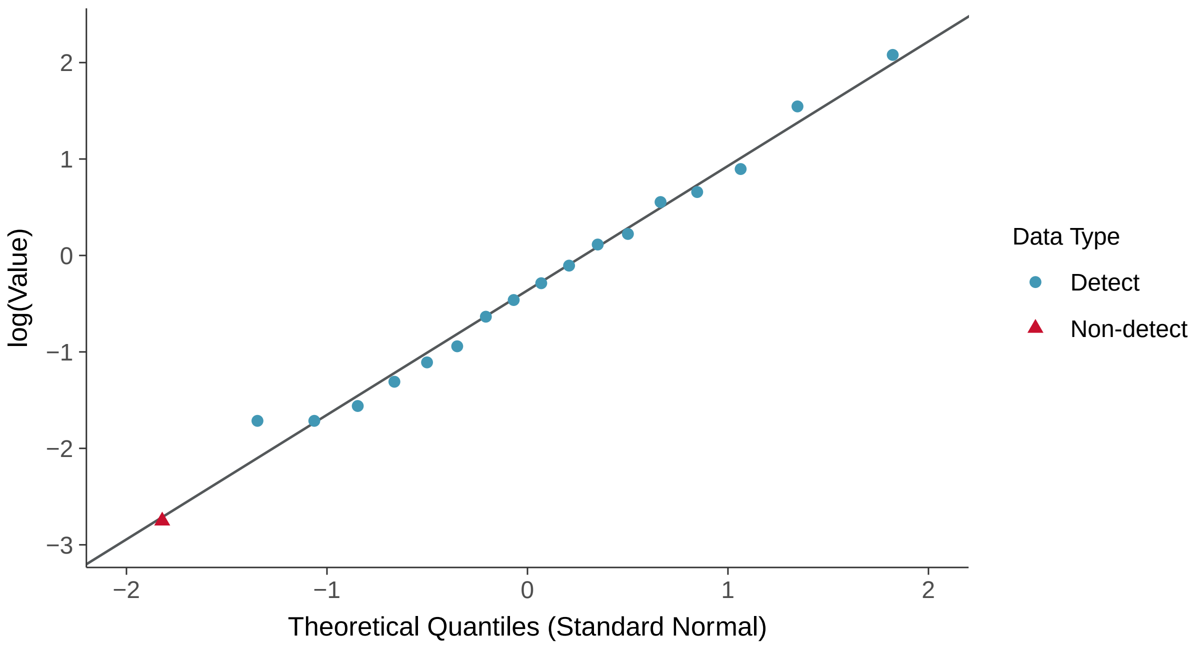
Boxplot by Season

Iron, MW-5 (mg/L)



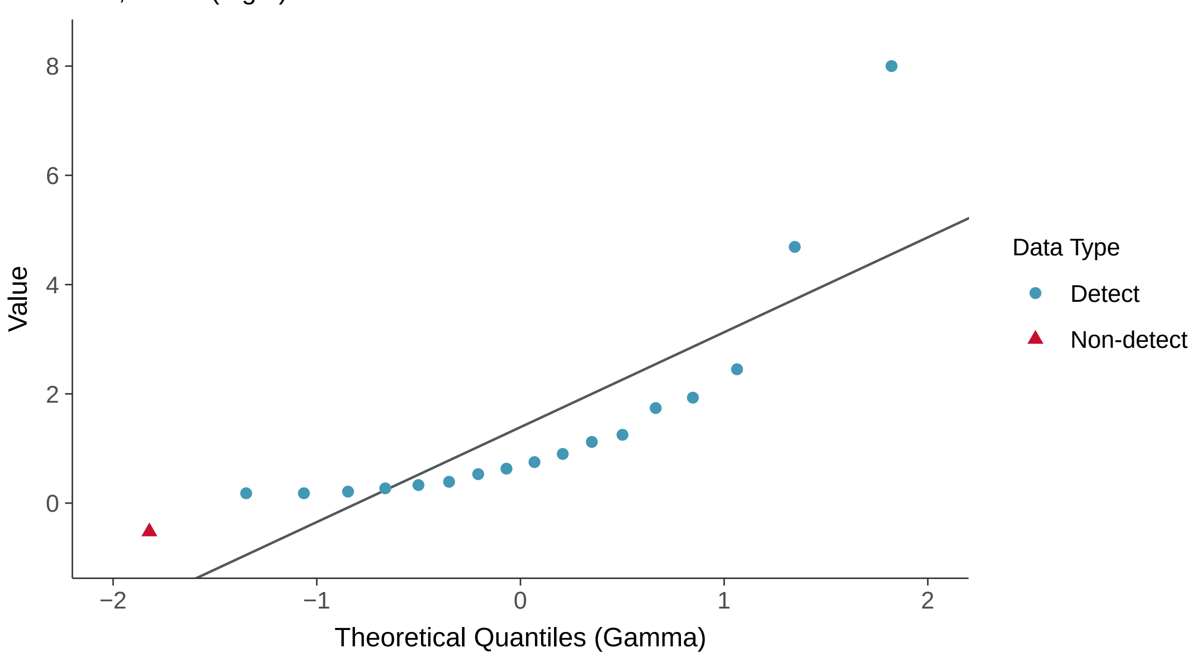
Lognormal Q-Q plot using ROS Imputed Estimates

Iron, MW-5 (mg/L)



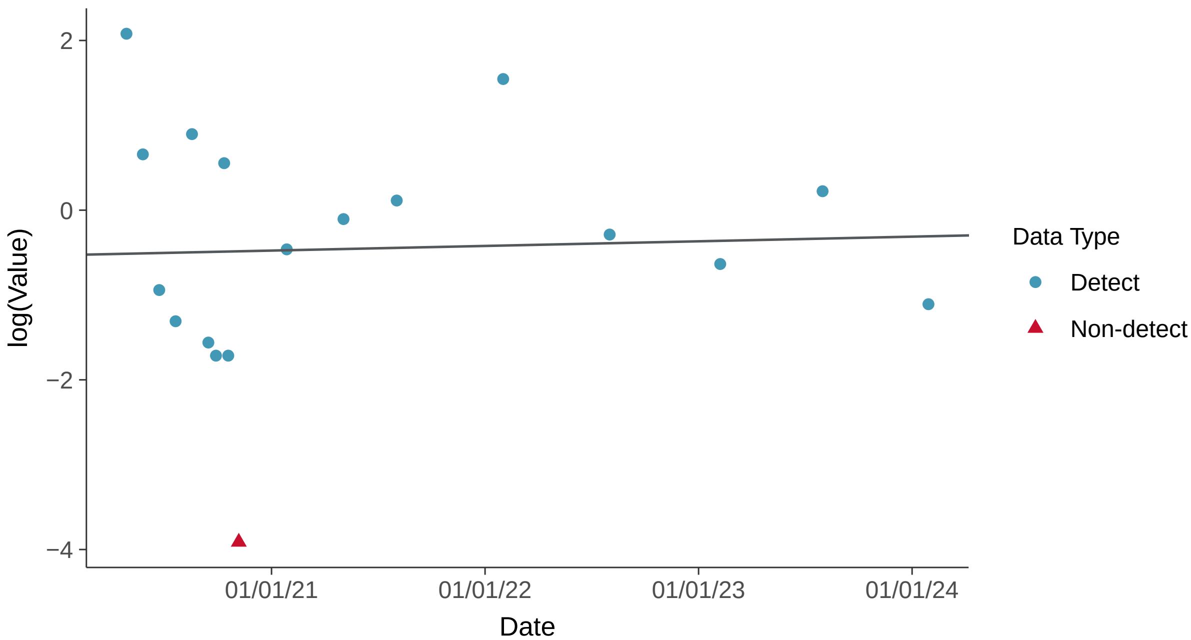
Gamma Q-Q plot using ROS Imputed Estimates

Iron, MW-5 (mg/L)



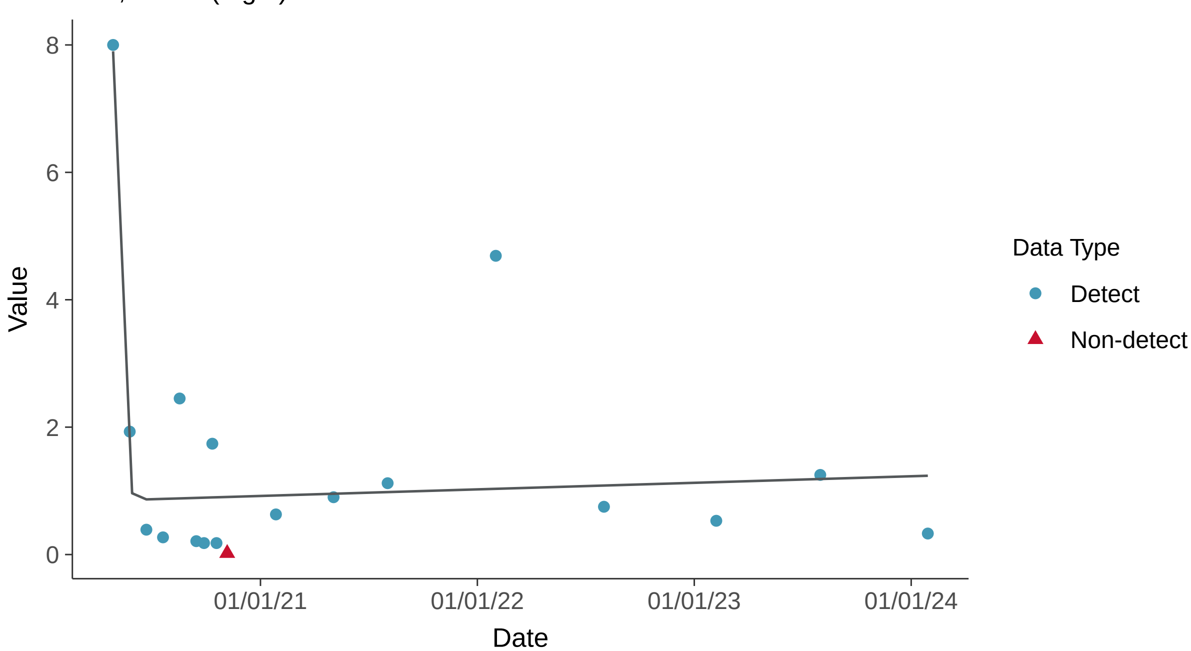
Trend Regression: Lognormal MLE

Iron, MW-5 (mg/L)



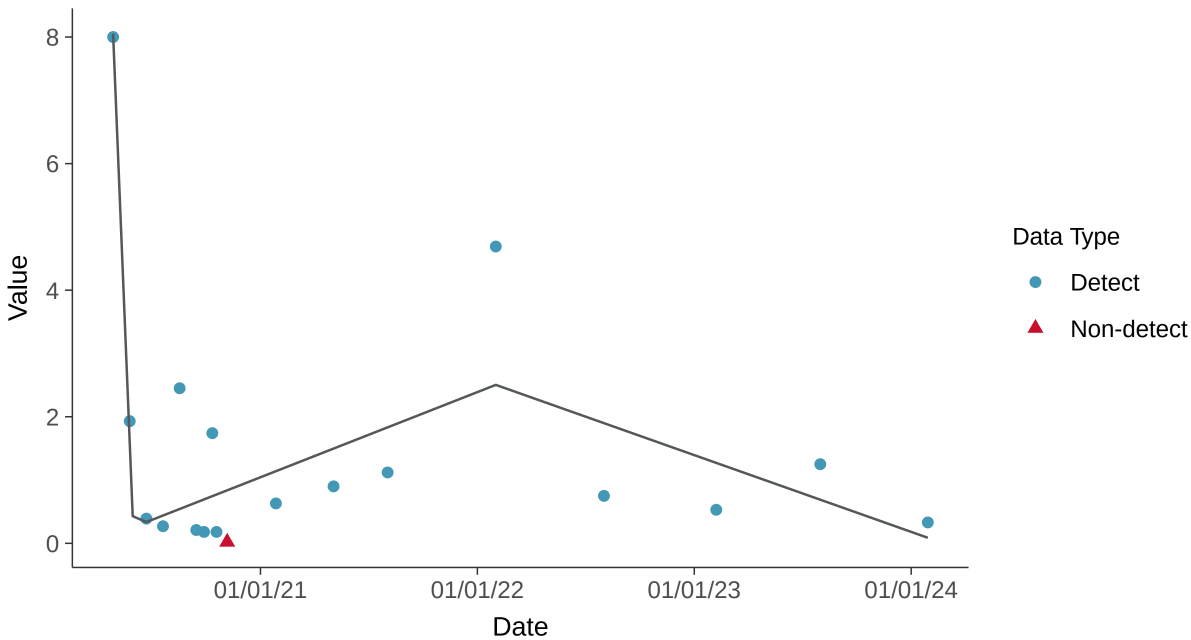
Trend Regression: Piecewise Linear-Linear

Iron, MW-5 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Iron, MW-5 (mg/L)

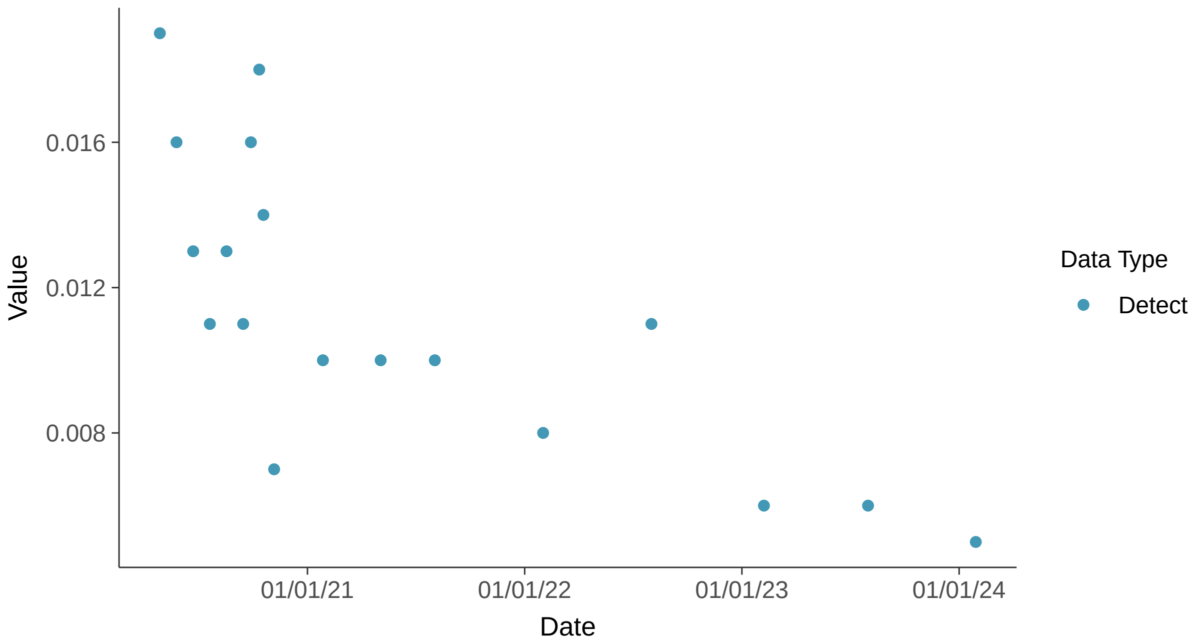


Part 115: Nickel, MW-5

ID: 05_5_39

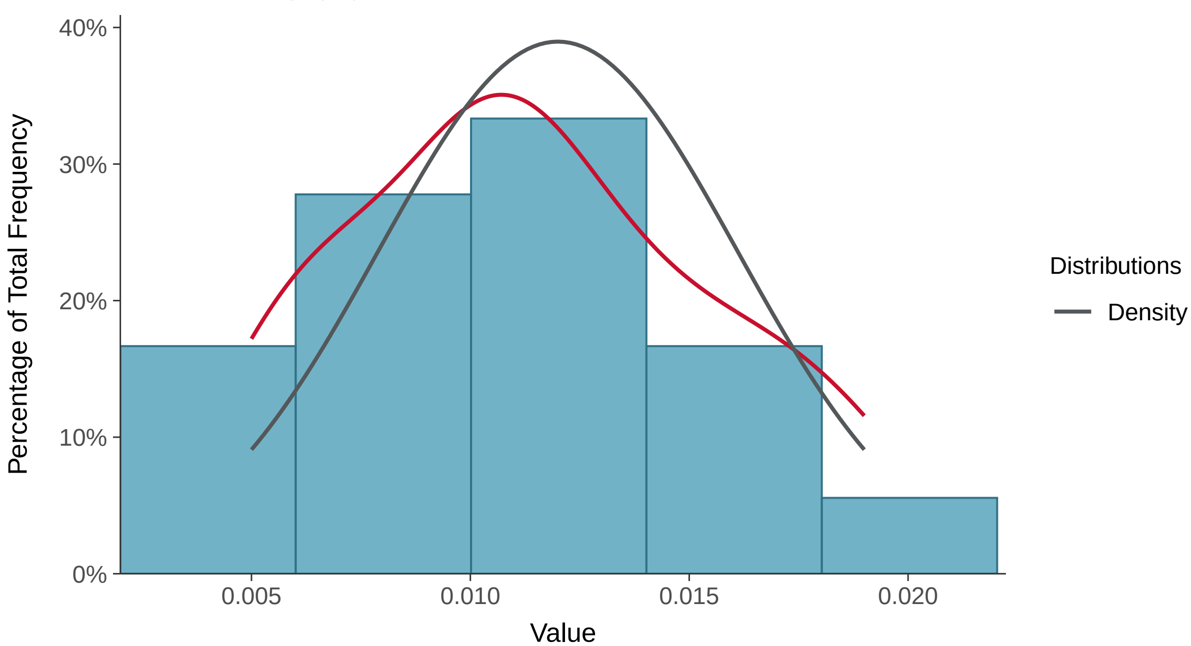
Scatter Plot

Nickel, MW-5 (mg/L)



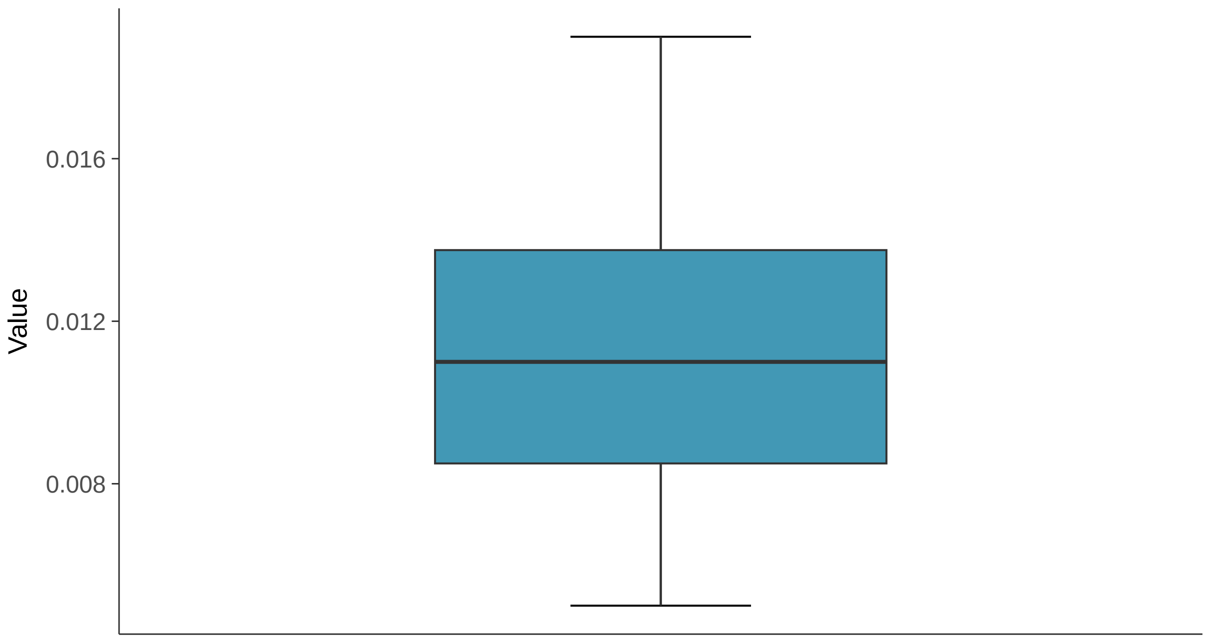
Histogram

Nickel, MW-5 (mg/L)



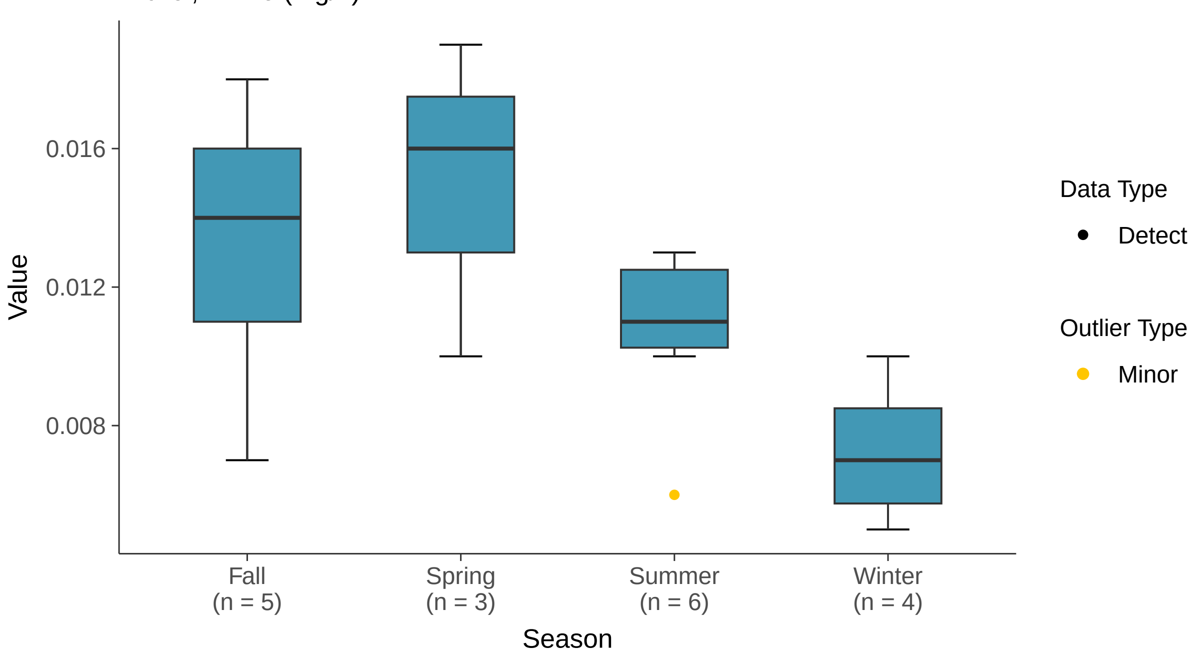
Boxplot

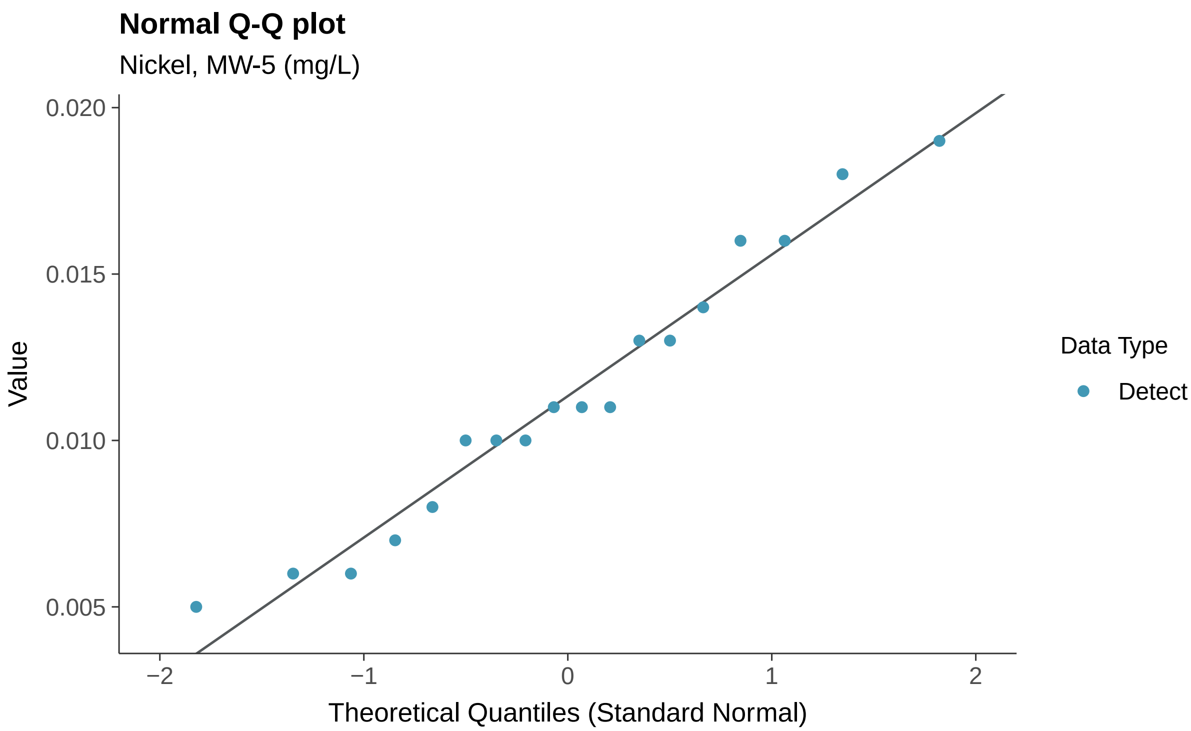
Nickel, MW-5 (mg/L)

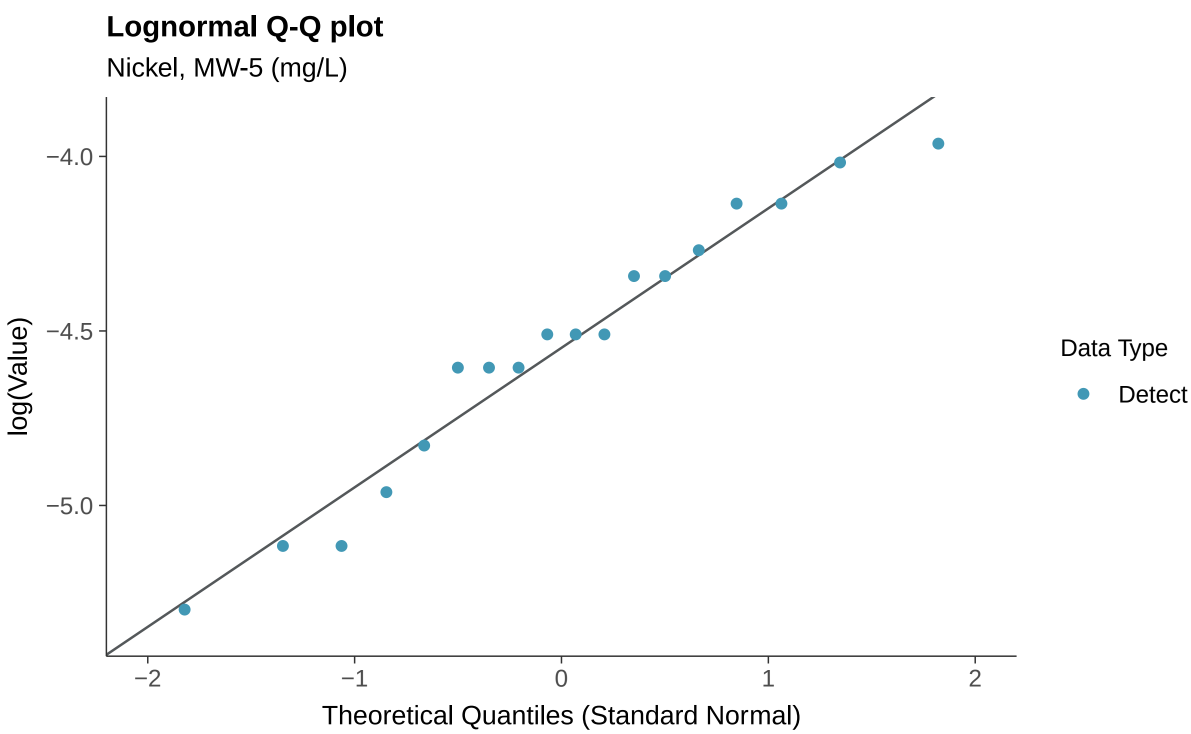


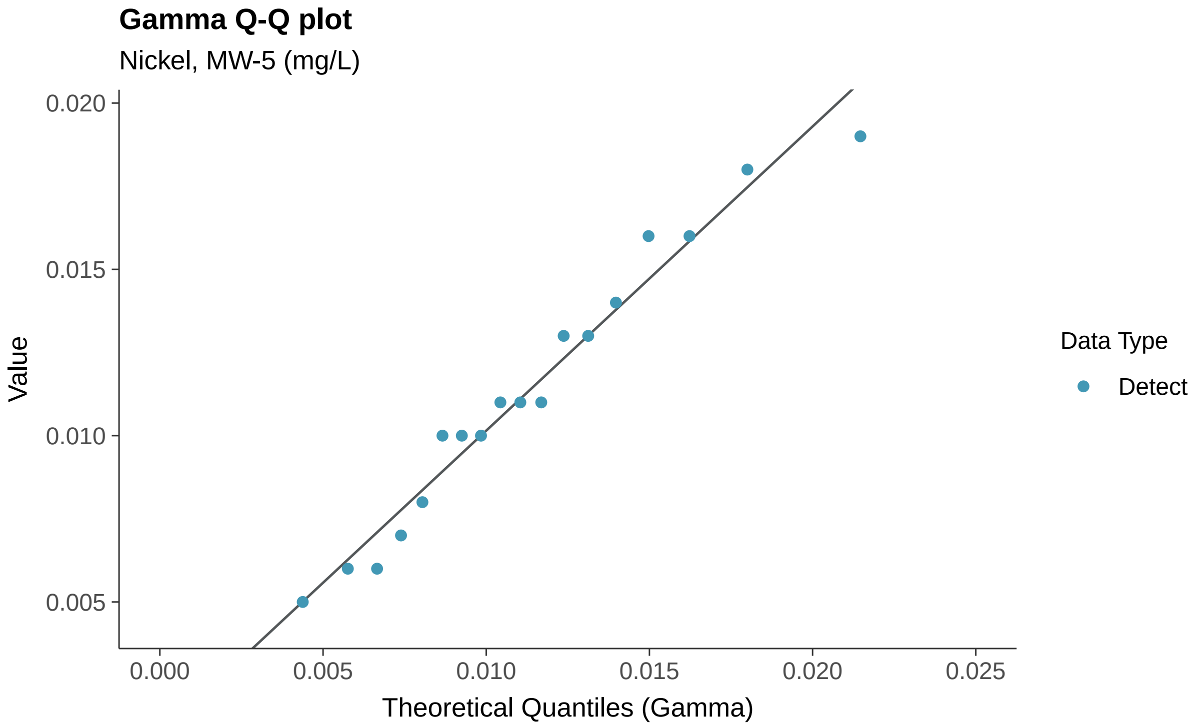
Boxplot by Season

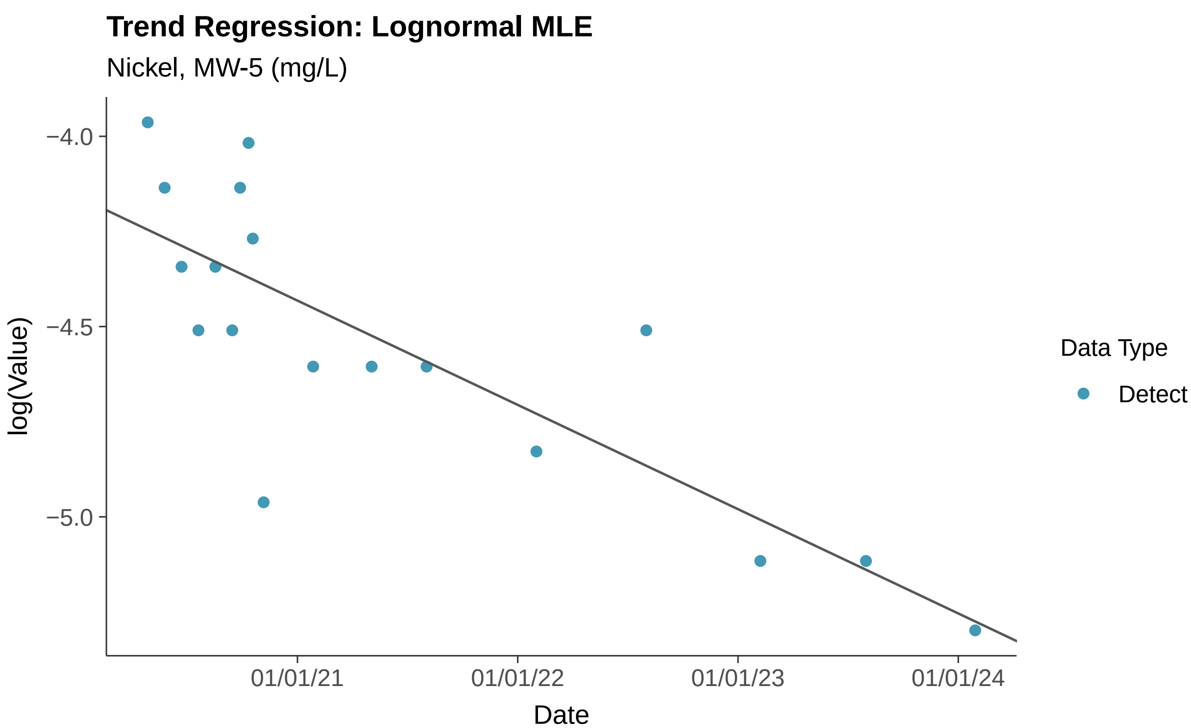
Nickel, MW-5 (mg/L)




Normal Q-Q plot
Nickel, MW-5 (mg/L)
Value
0.020
0.015
0.010
0.005
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

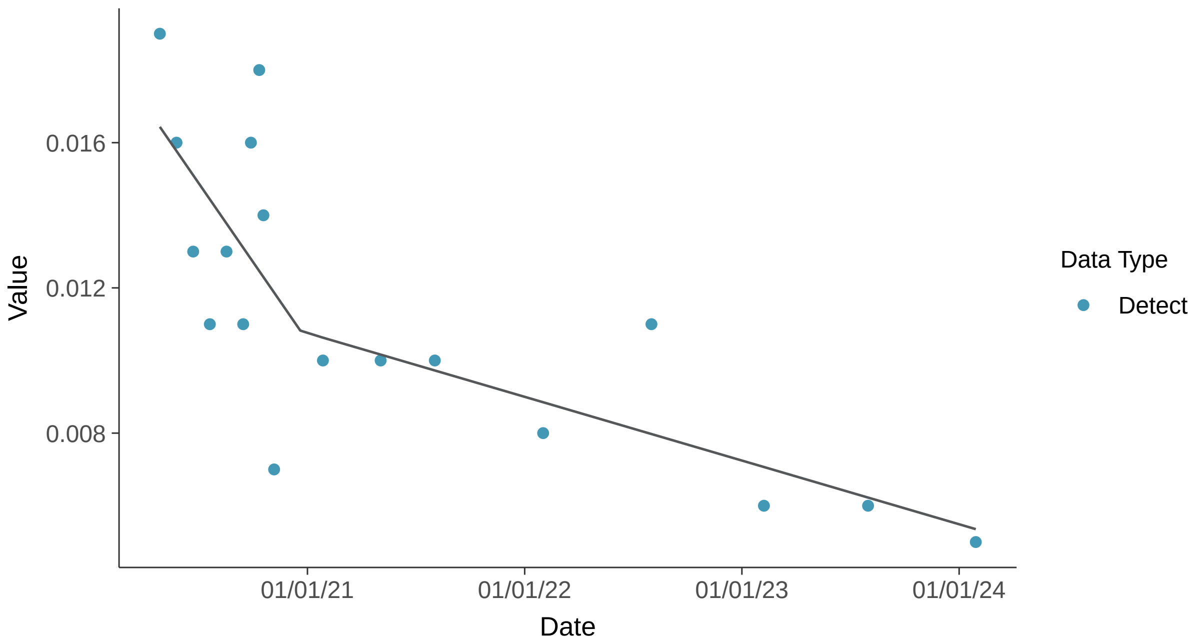

Lognormal Q-Q plot
Nickel, MW-5 (mg/L)
log(Value)
−4.0
−4.5
−5.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Nickel, MW-5 (mg/L)
Value
0.020
0.015
0.010
0.005
0.000
0.005
0.010
0.015
0.020
0.025
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Nickel, MW-5 (mg/L)
log(Value)
−4.0
−4.5
−5.0
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Nickel, MW-5 (mg/L)

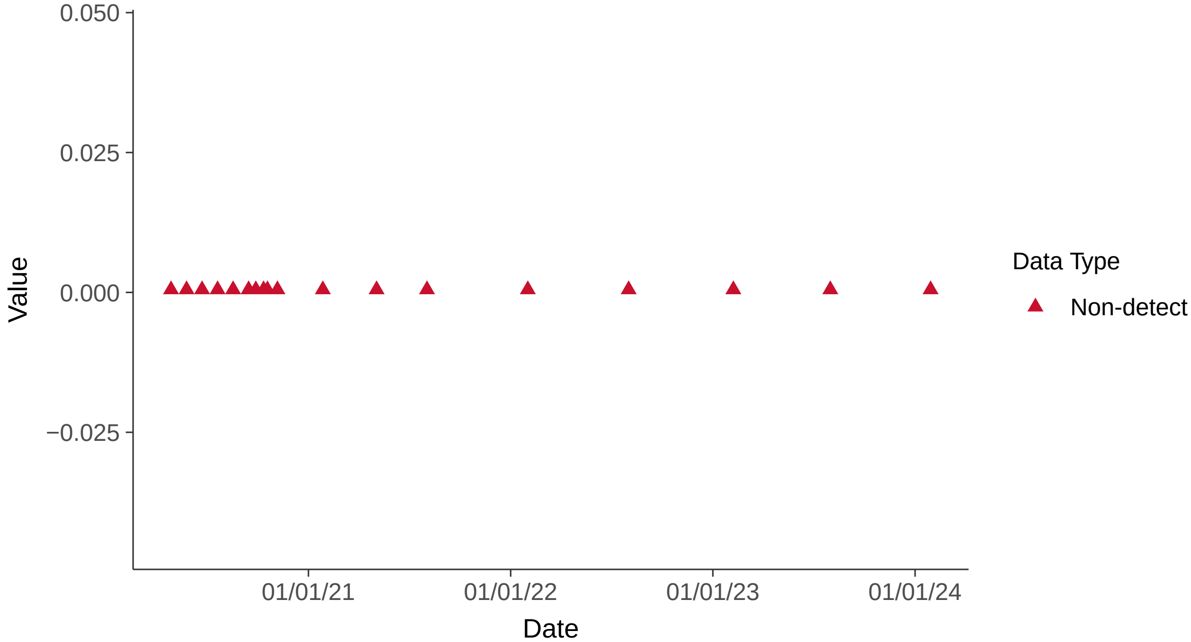


Part 115: Silver, MW-5

ID: 05_5_40

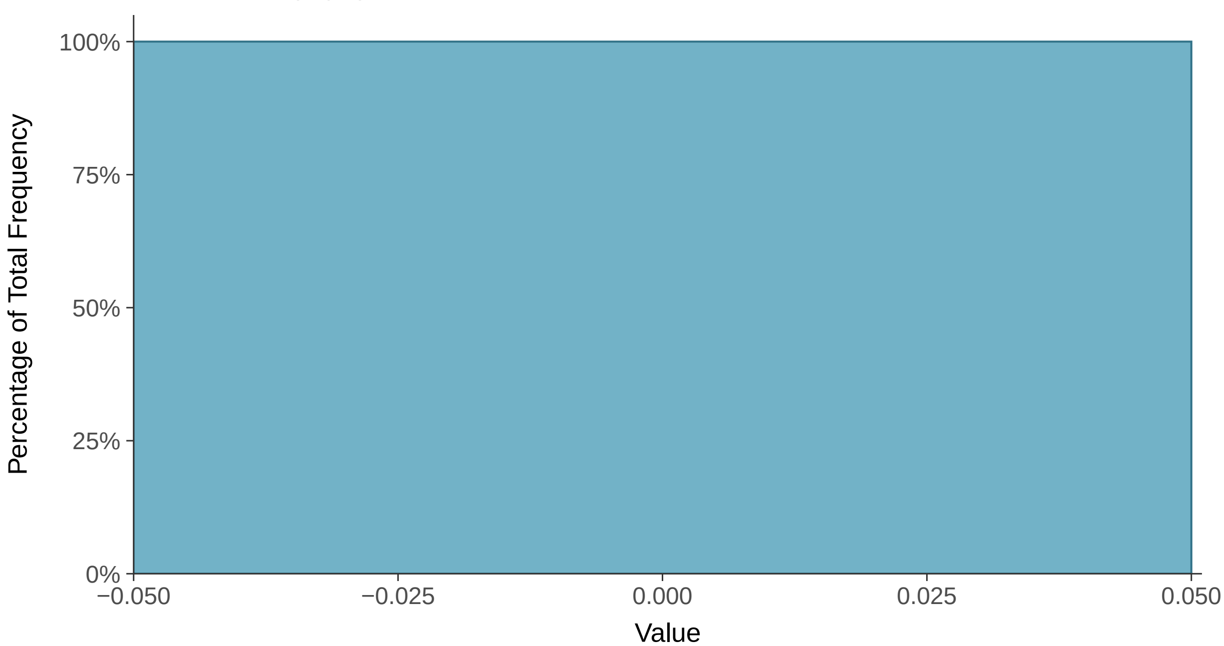
Scatter Plot

Silver, MW-5 (mg/L)



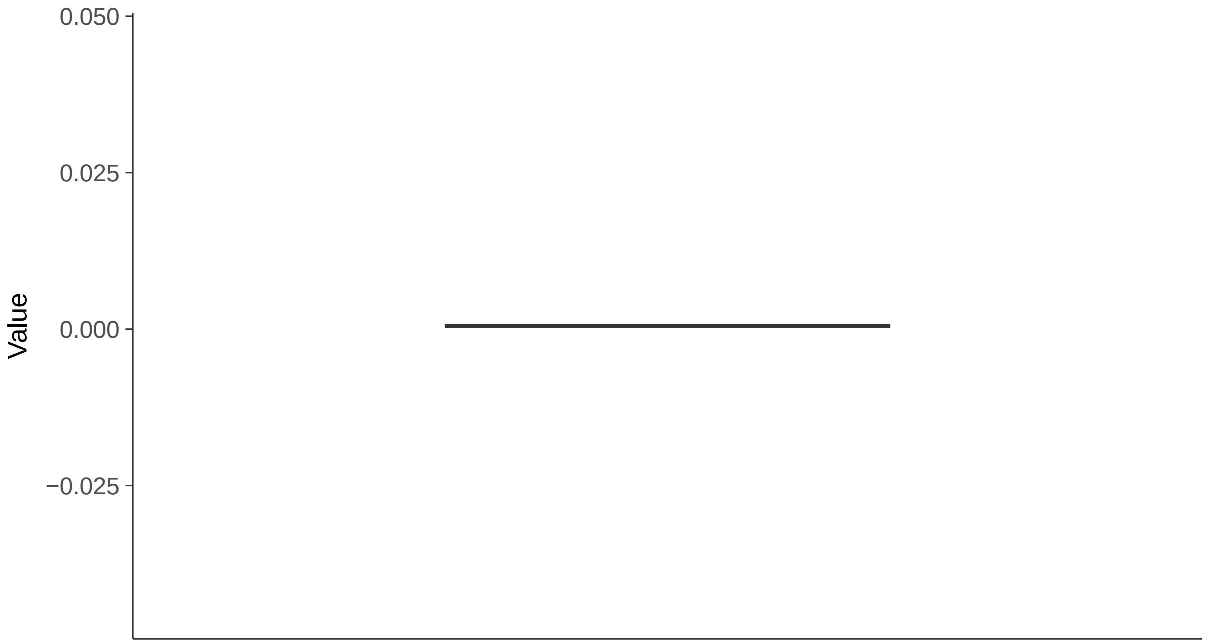
Histogram

Silver, MW-5 (mg/L)



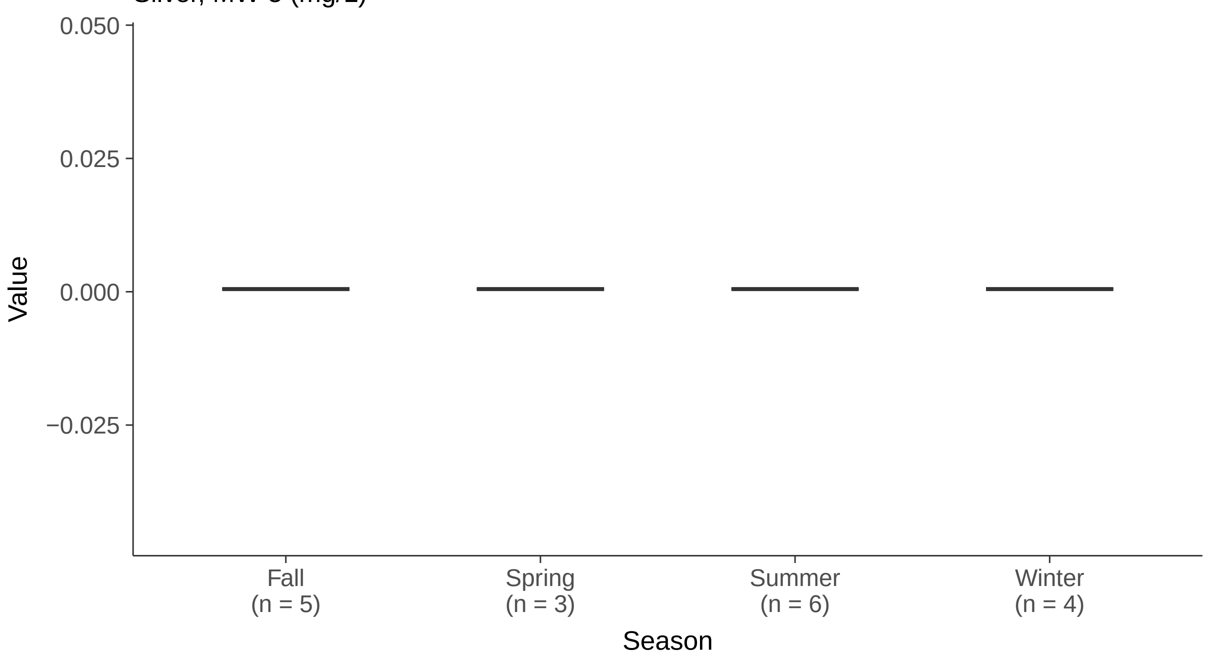
Boxplot

Silver, MW-5 (mg/L)



Boxplot by Season

Silver, MW-5 (mg/L)

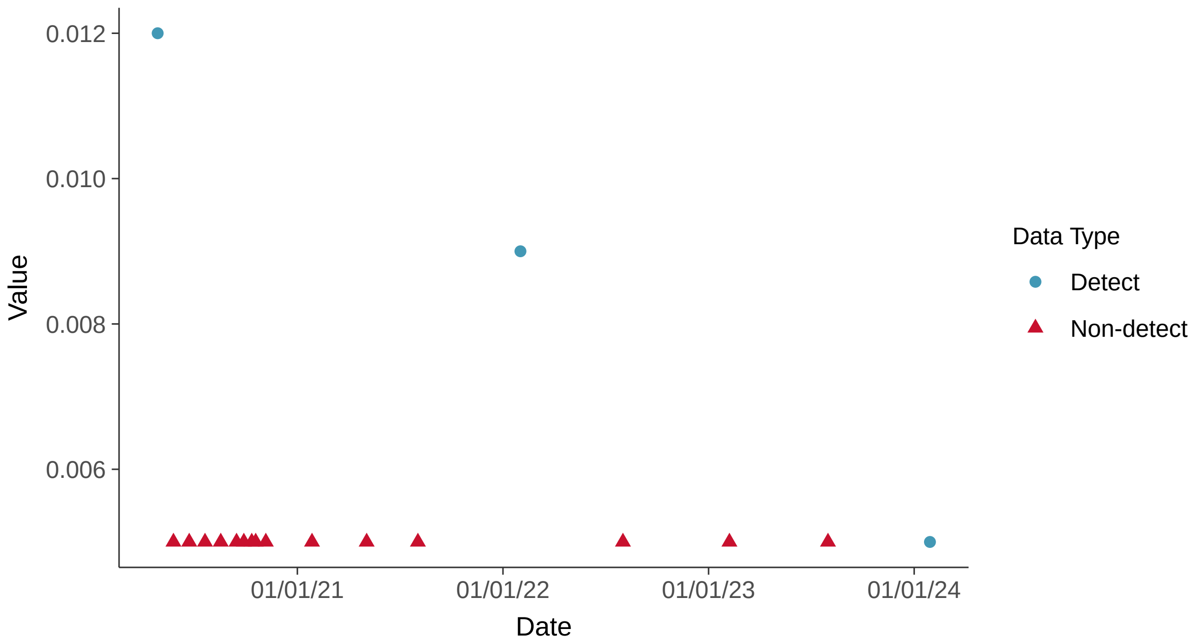


Part 115: Vanadium, MW-5

ID: 05_5_41

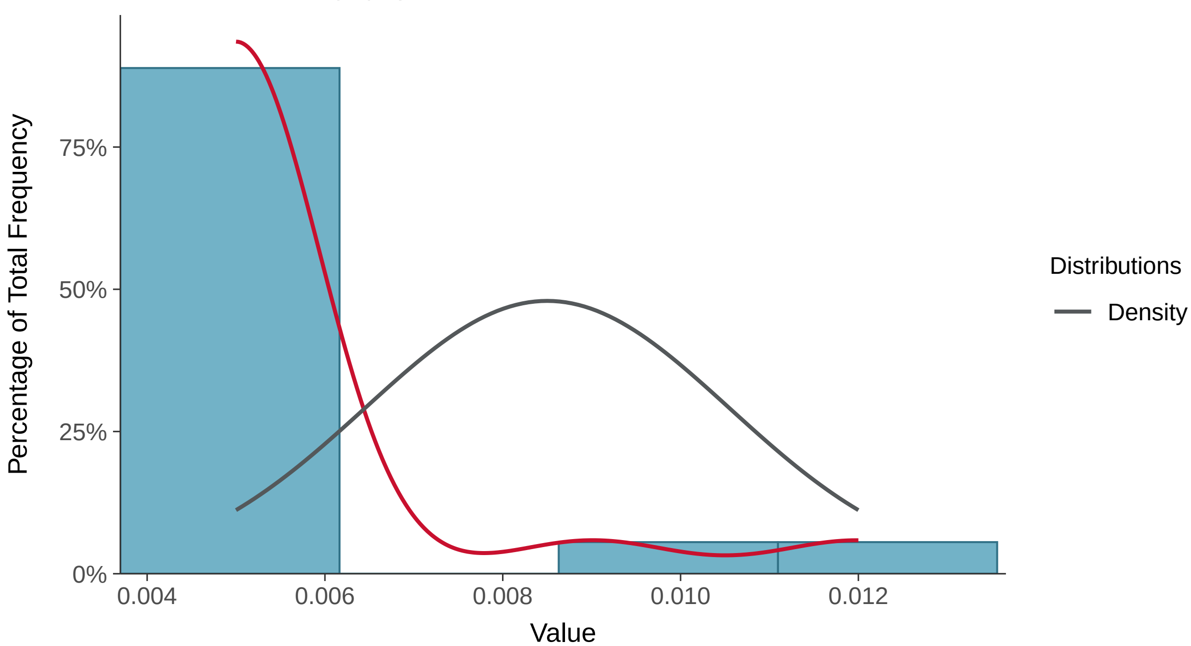
Scatter Plot

Vanadium, MW-5 (mg/L)



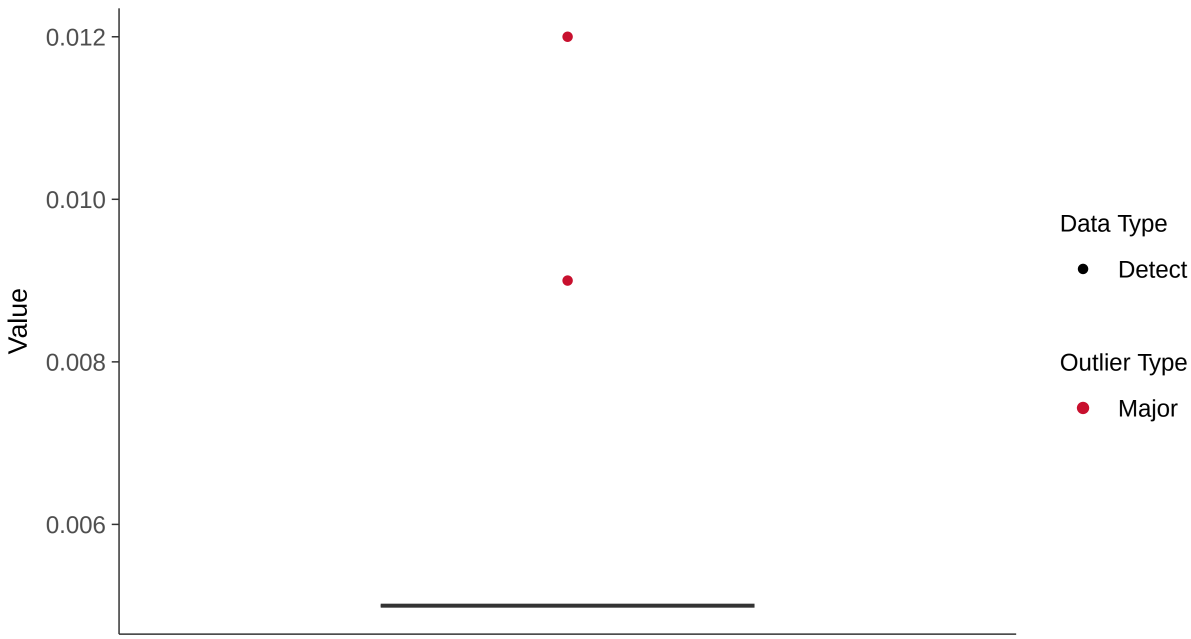
Histogram

Vanadium, MW-5 (mg/L)



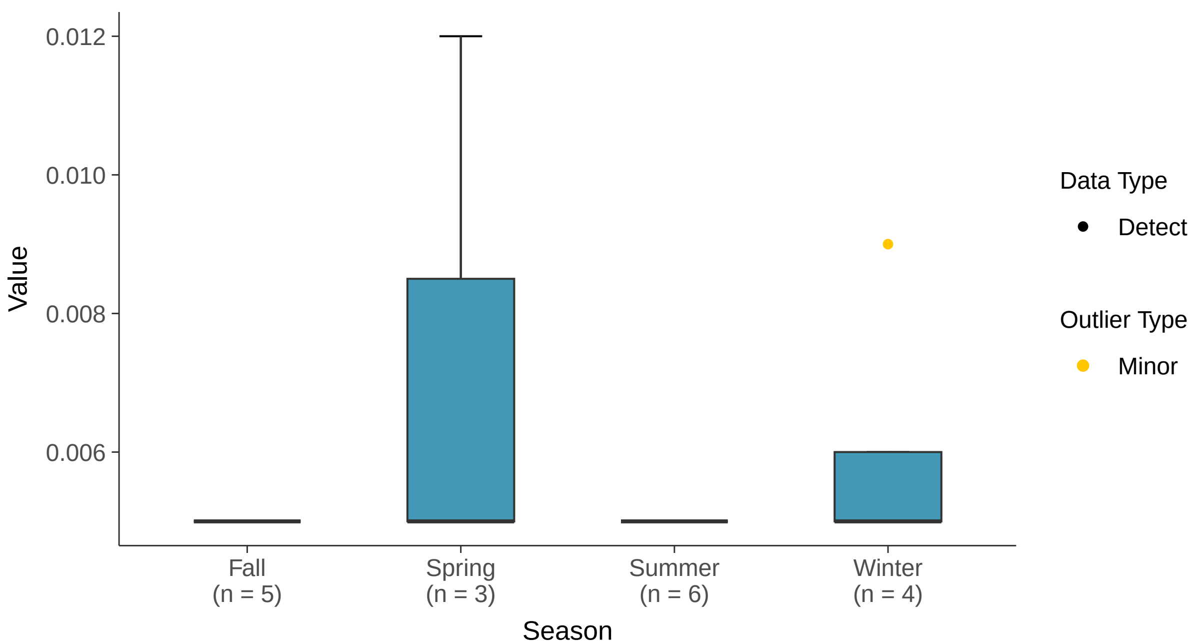
Boxplot

Vanadium, MW-5 (mg/L)



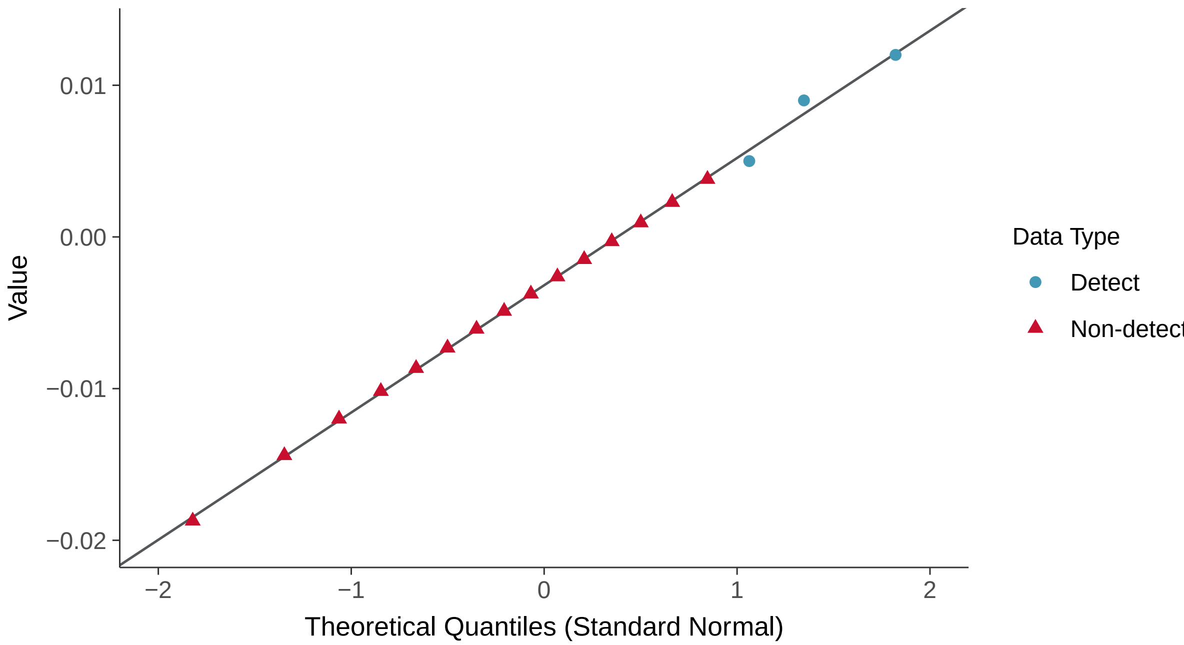
Boxplot by Season

Vanadium, MW-5 (mg/L)



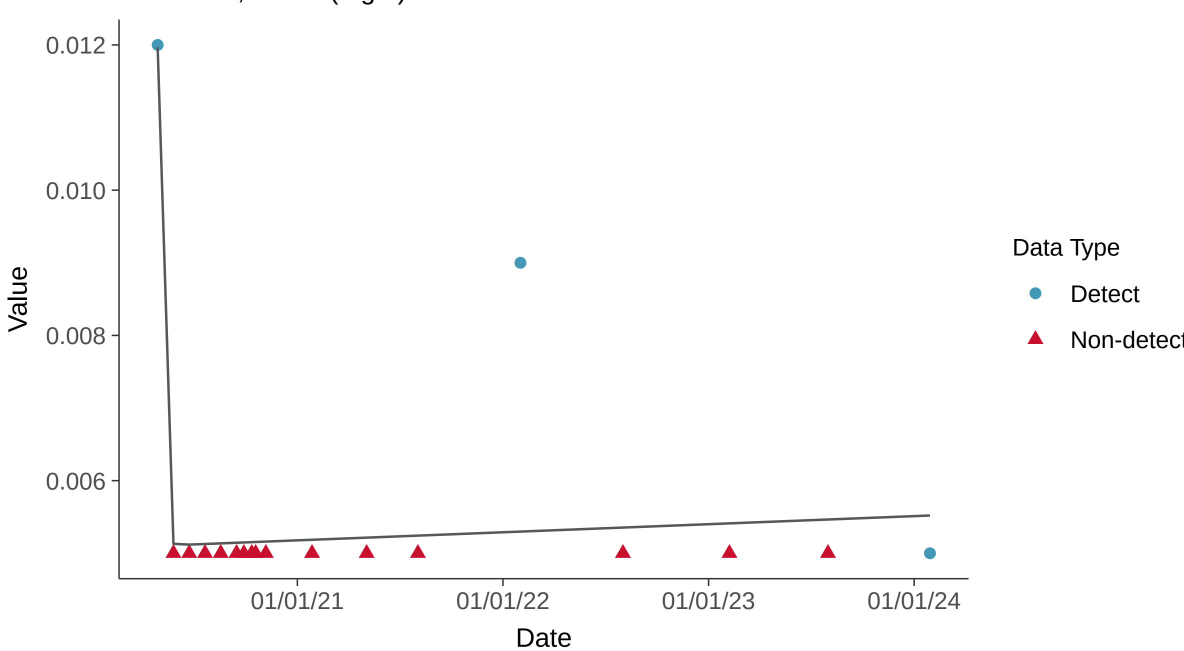
Normal Q-Q plot using ROS Imputed Estimates

Vanadium, MW-5 (mg/L)



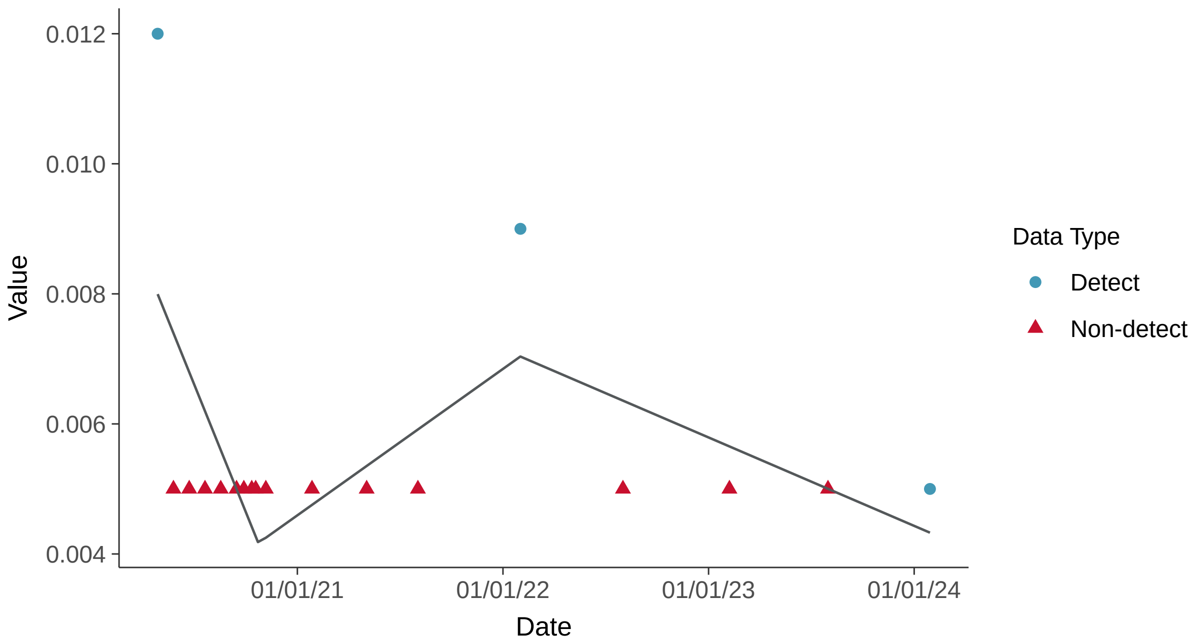
Trend Regression: Piecewise Linear-Linear

Vanadium, MW-5 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Vanadium, MW-5 (mg/L)

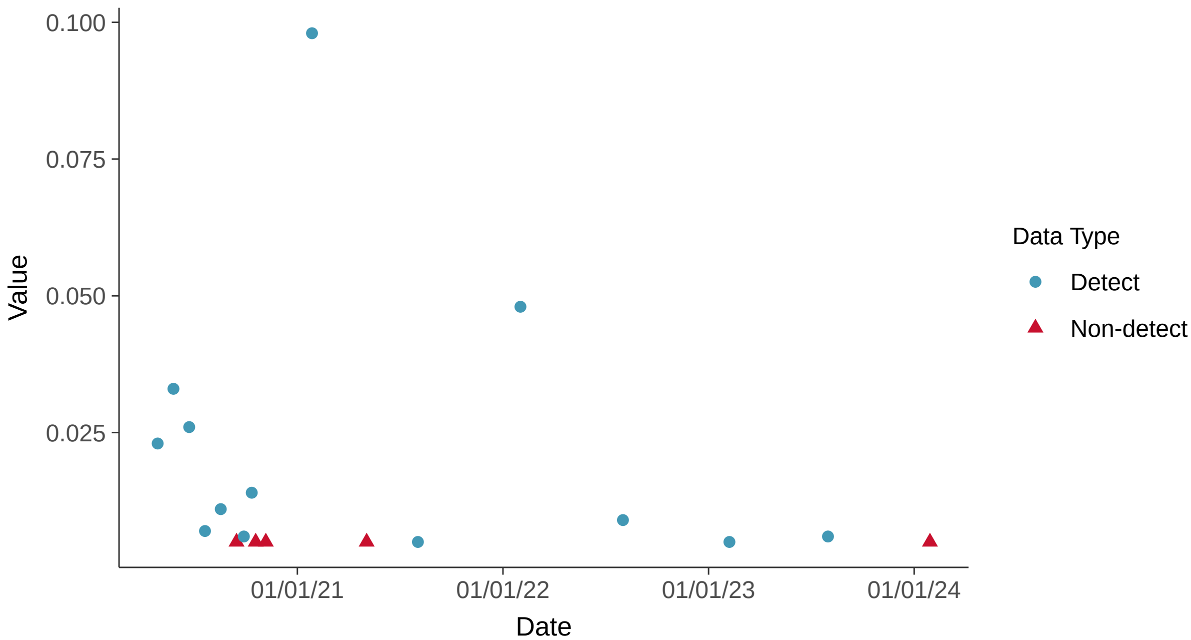


Part 115: Zinc, MW-5

ID: 05_5_42

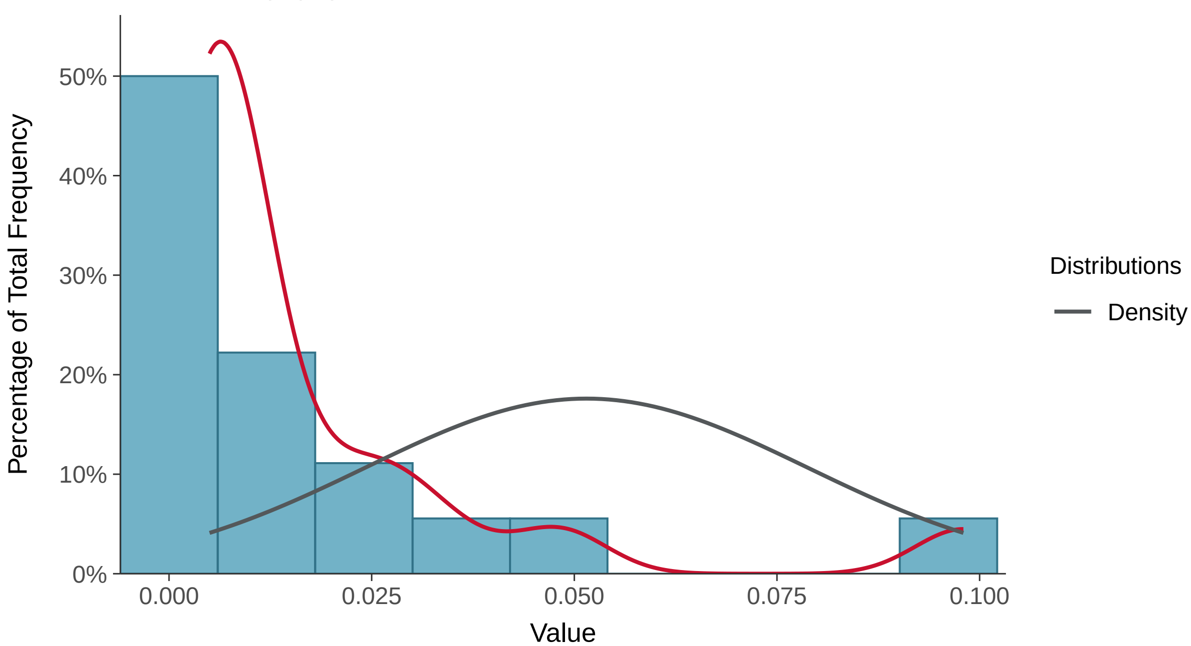
Scatter Plot

Zinc, MW-5 (mg/L)



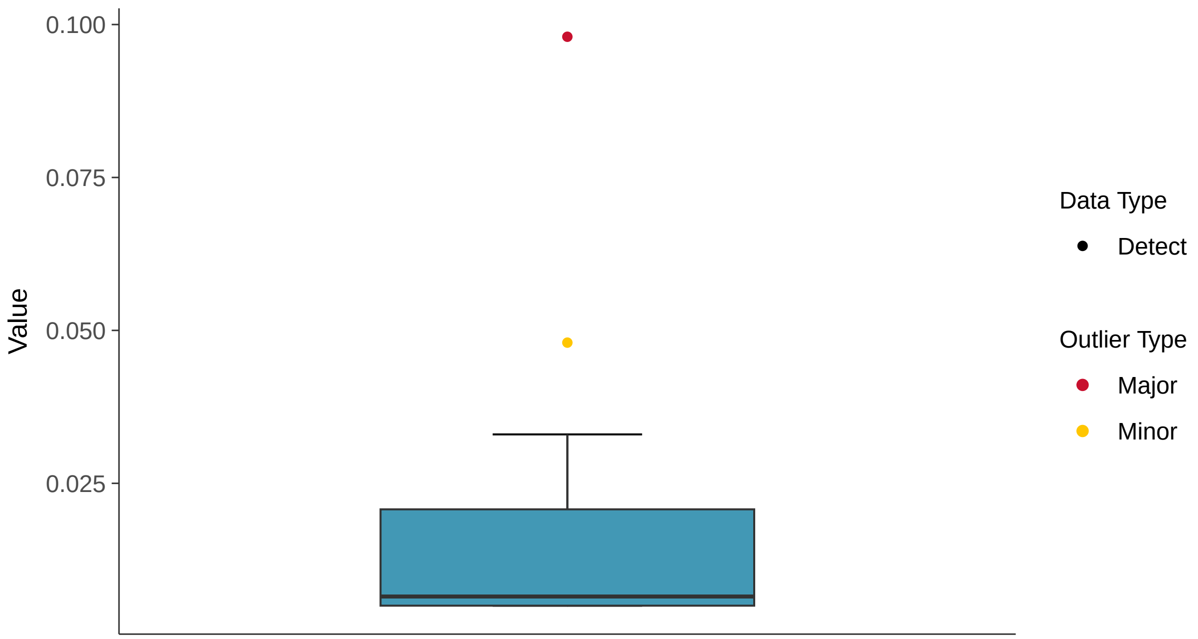
Histogram

Zinc, MW-5 (mg/L)



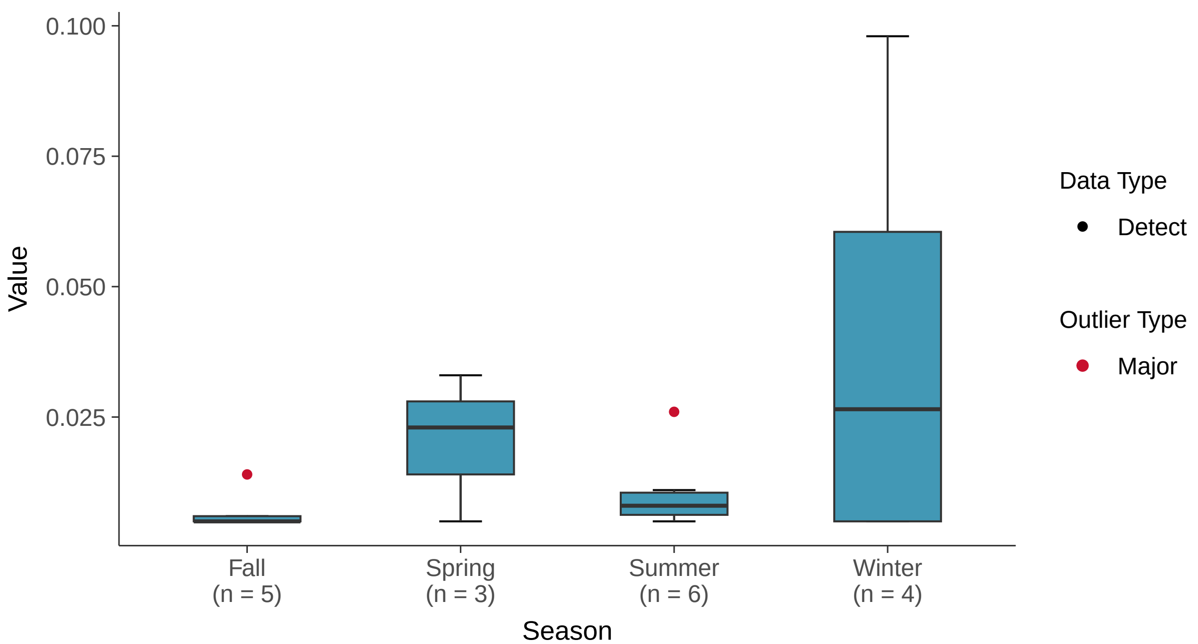
Boxplot

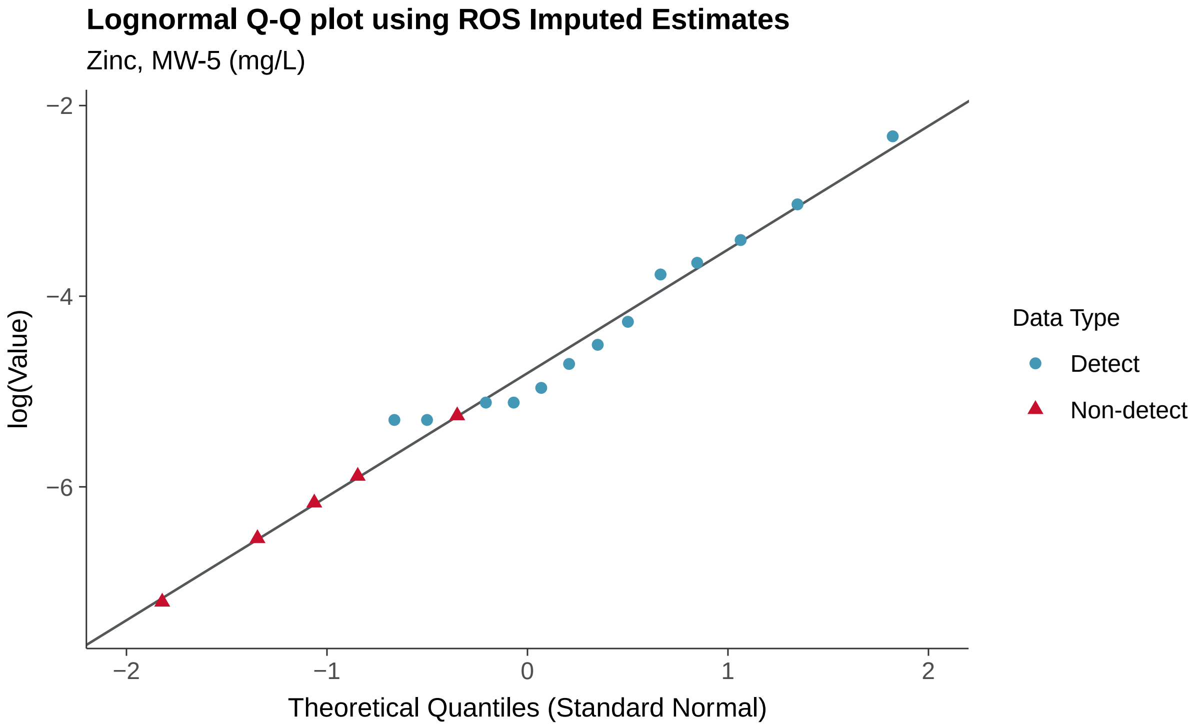
Zinc, MW-5 (mg/L)

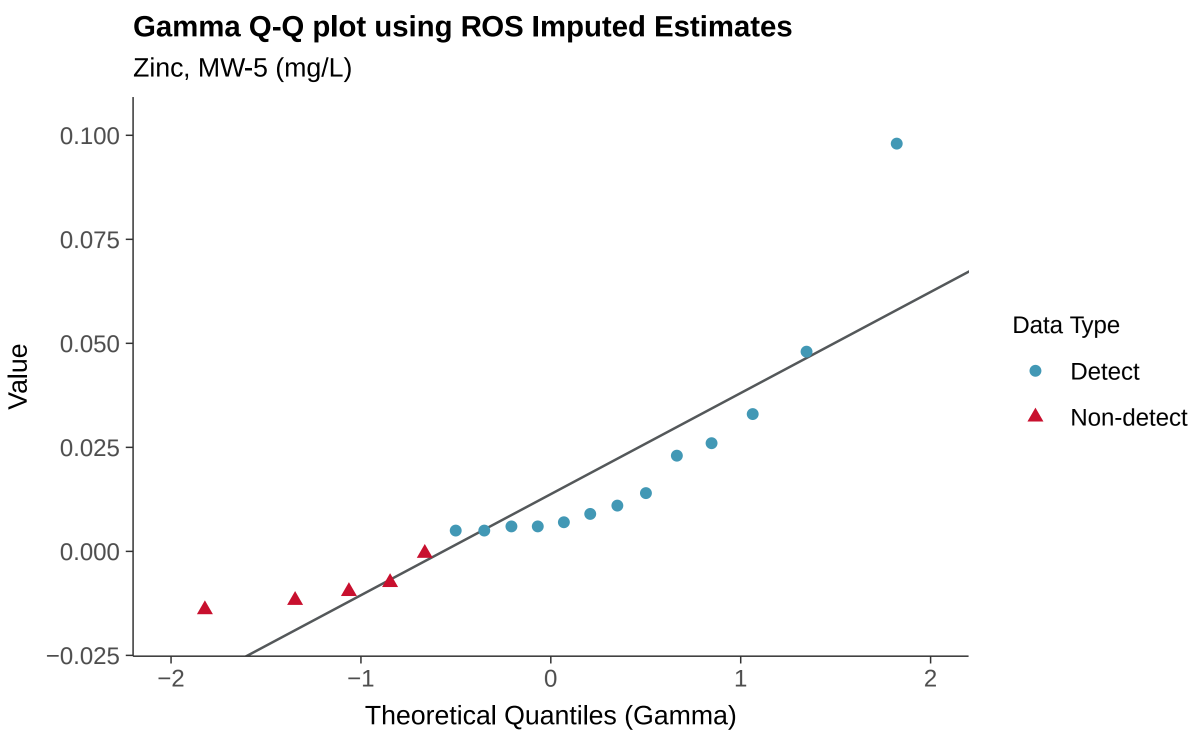


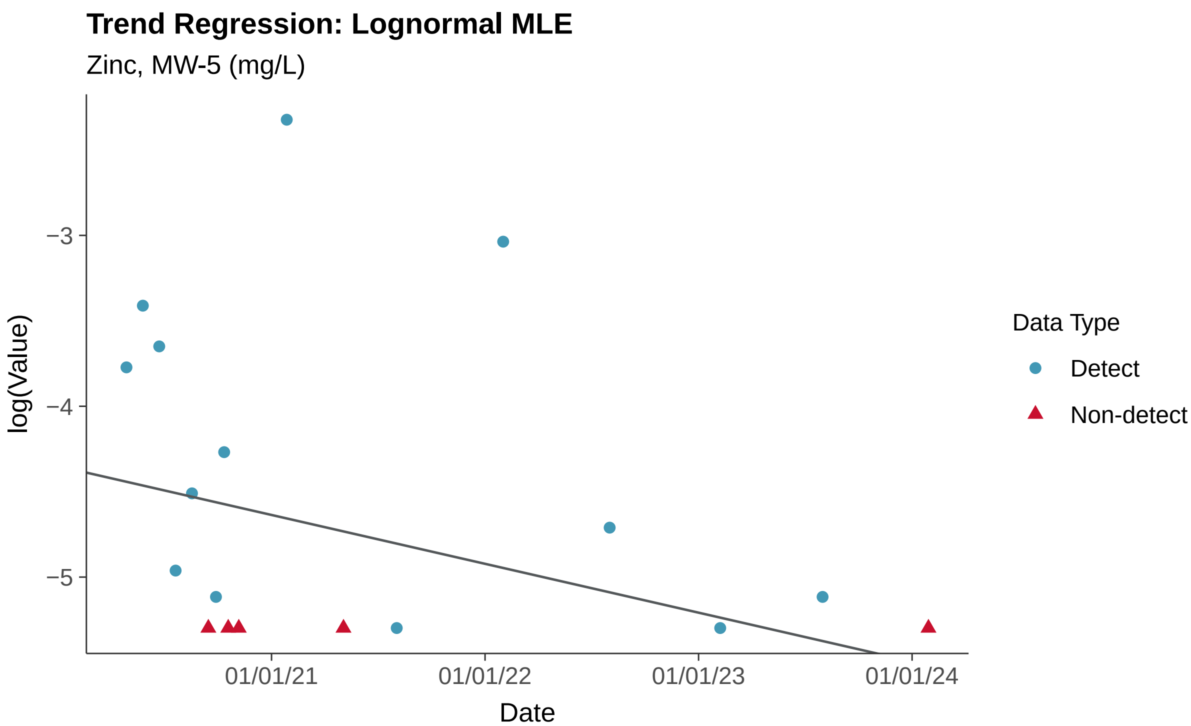
Boxplot by Season

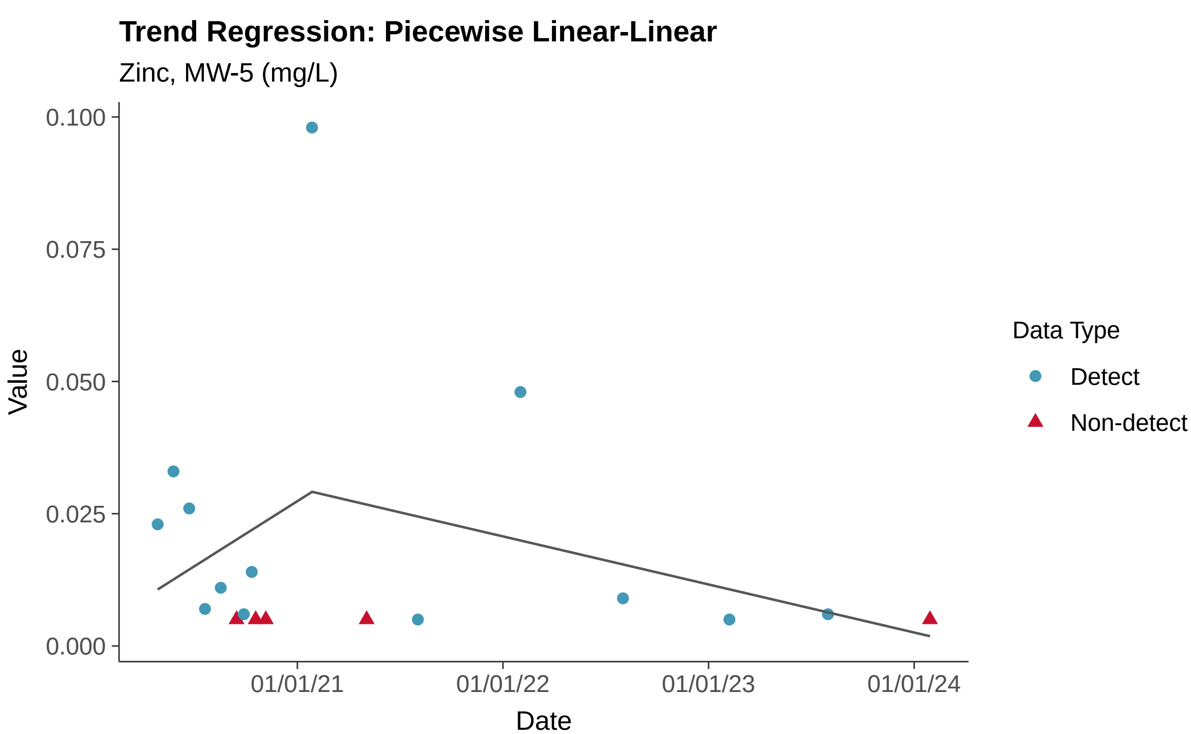
Zinc, MW-5 (mg/L)




Lognormal Q-Q plot using ROS Imputed Estimates
Zinc, MW-5 (mg/L)
log(Value)
−2
−4
−6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

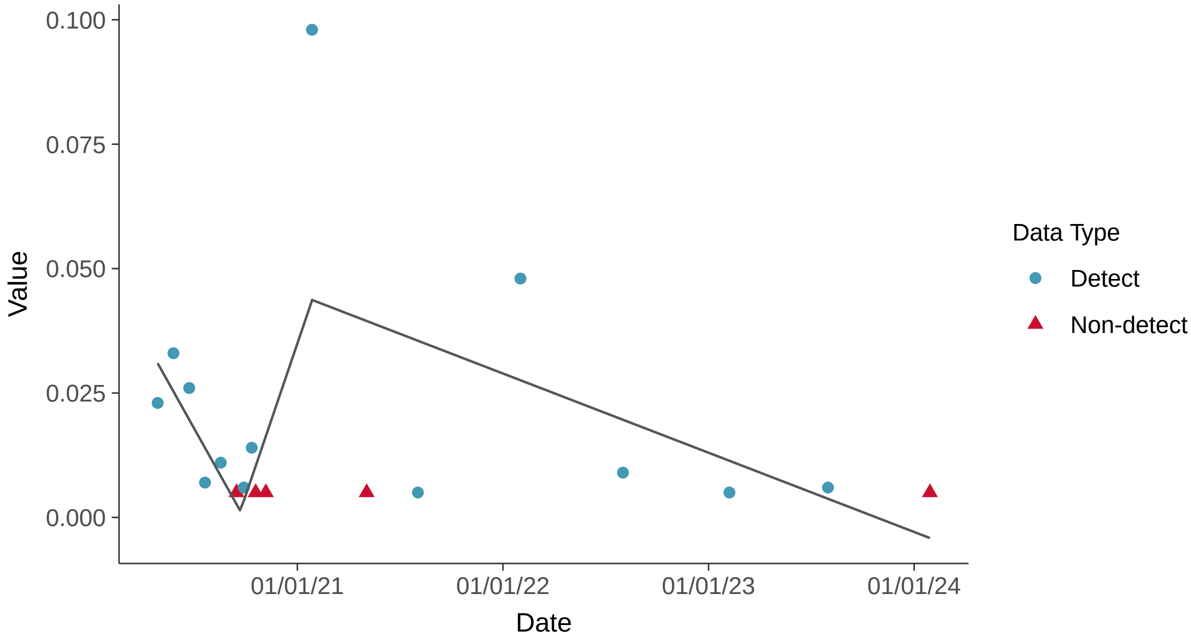

Gamma Q-Q plot using ROS Imputed Estimates
Zinc, MW-5 (mg/L)
Value
0.100
0.075
0.050
0.025
0.000
−0.025
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Zinc, MW-5 (mg/L)
log(Value)
−3
−4
−5
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Zinc, MW-5 (mg/L)
Value
0.100
0.075
0.050
0.025
0.000
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

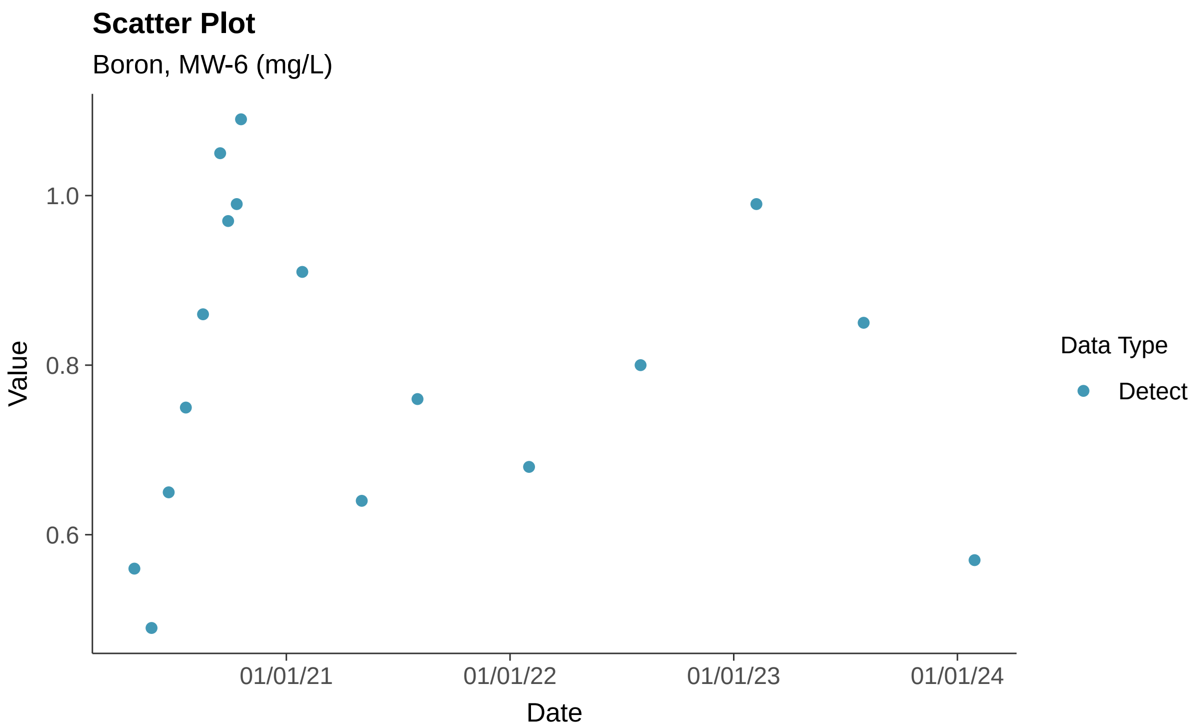
Trend Regression: Piecewise Linear-Linear-Linear

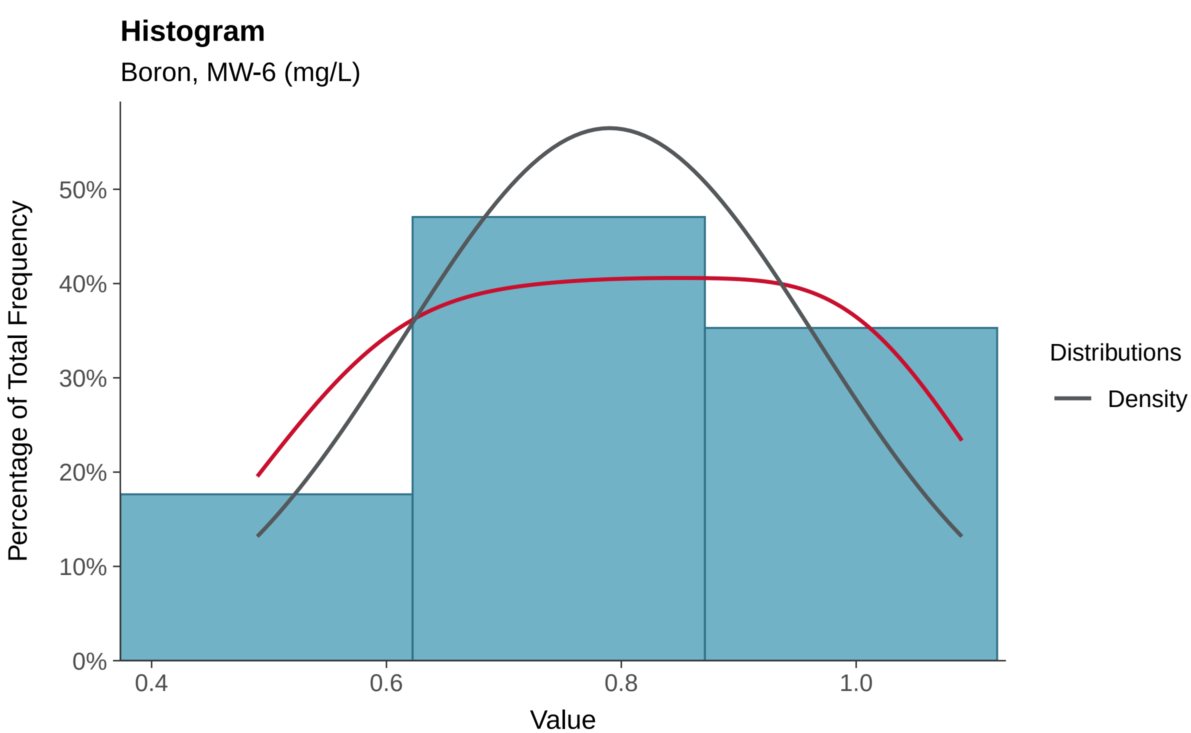
Zinc, MW-5 (mg/L)

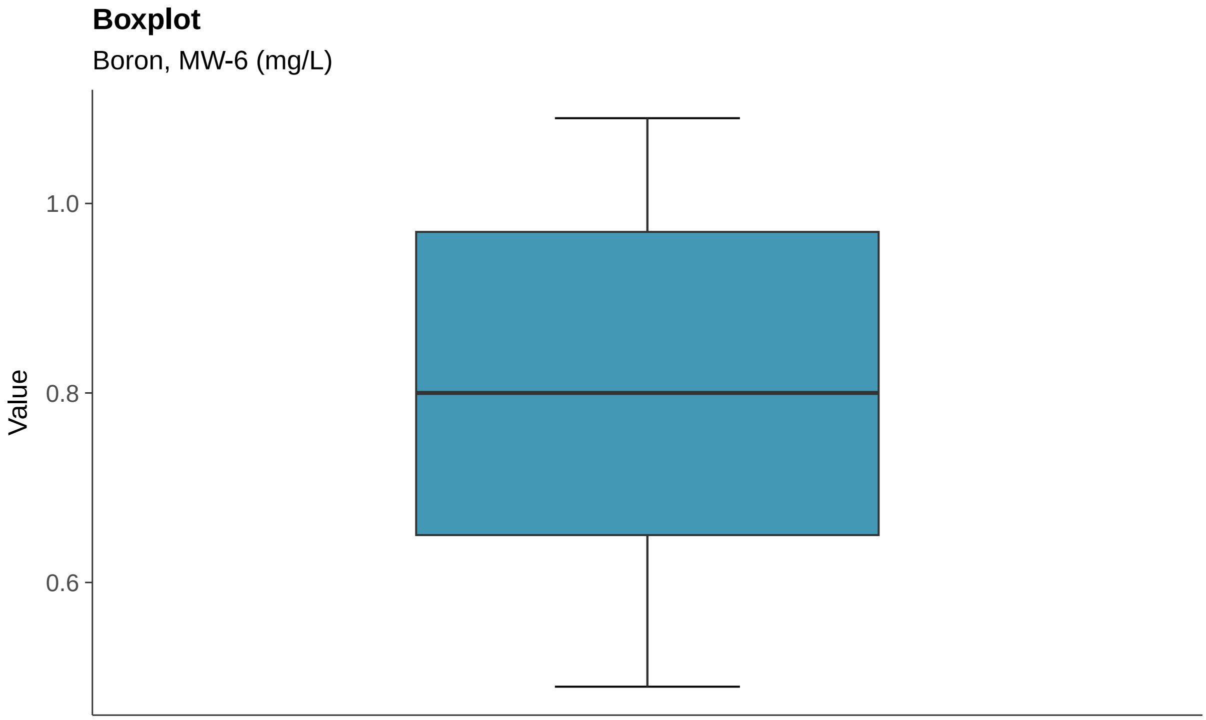


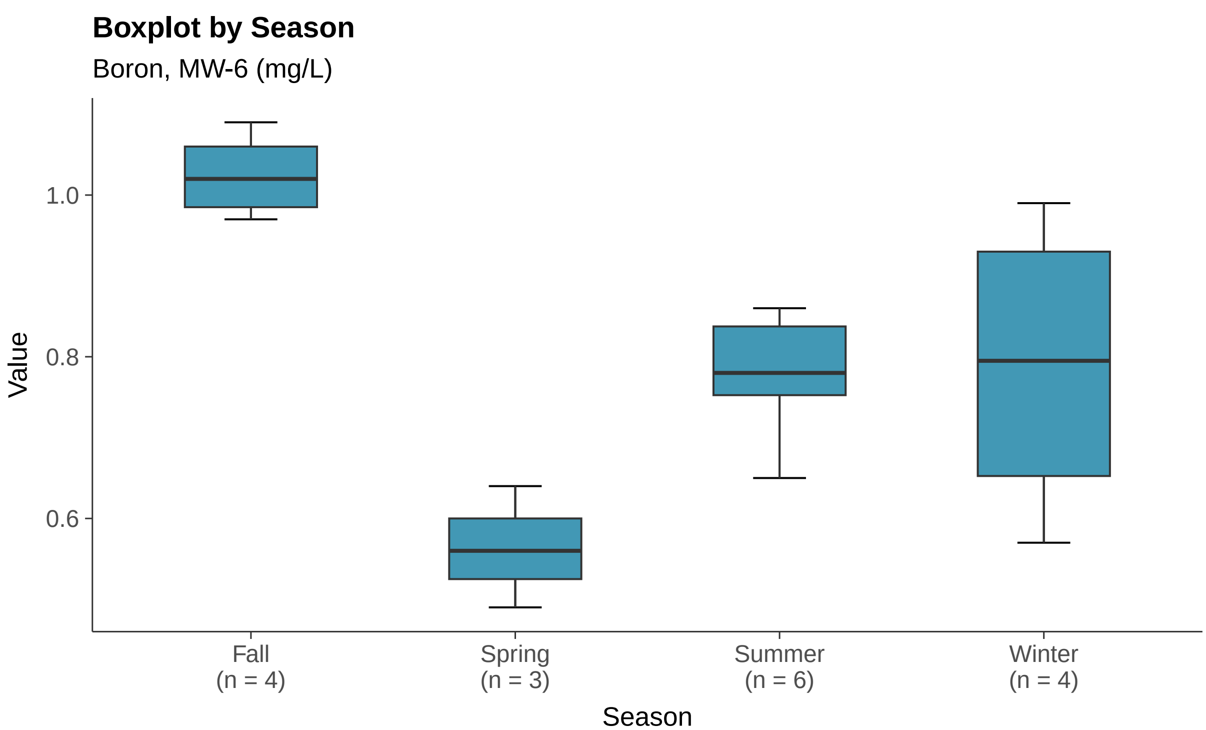
Appendix III: Boron, MW-6

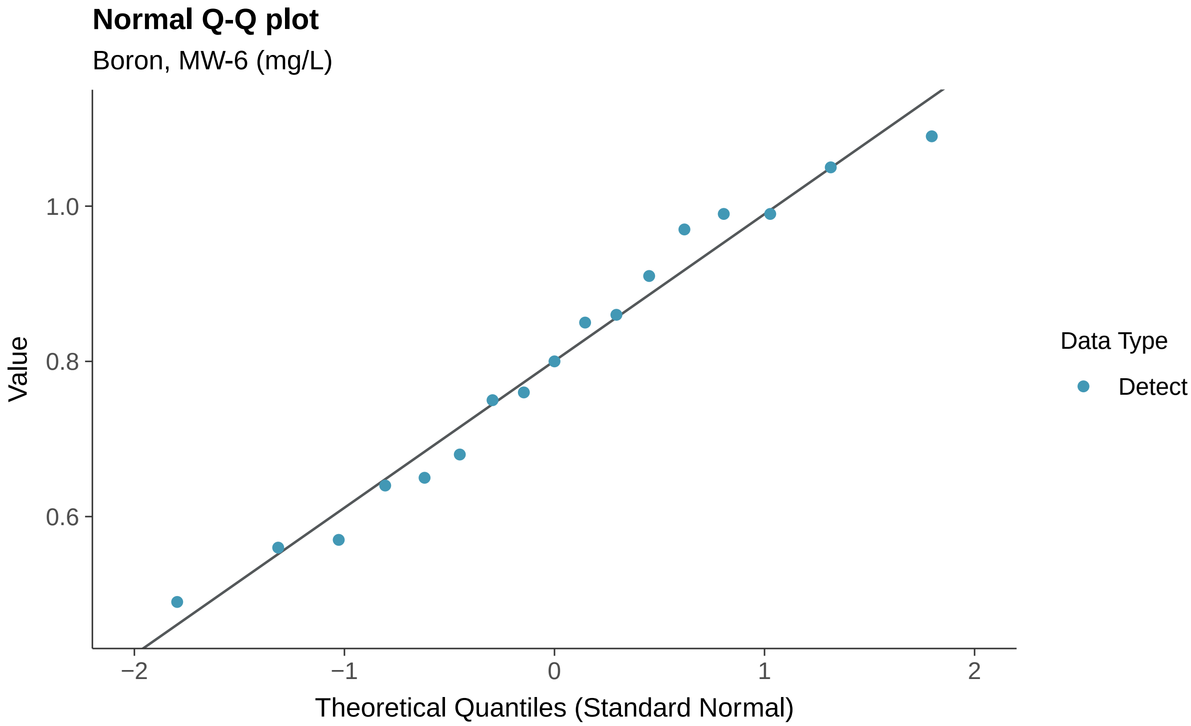
ID: 06_1_01

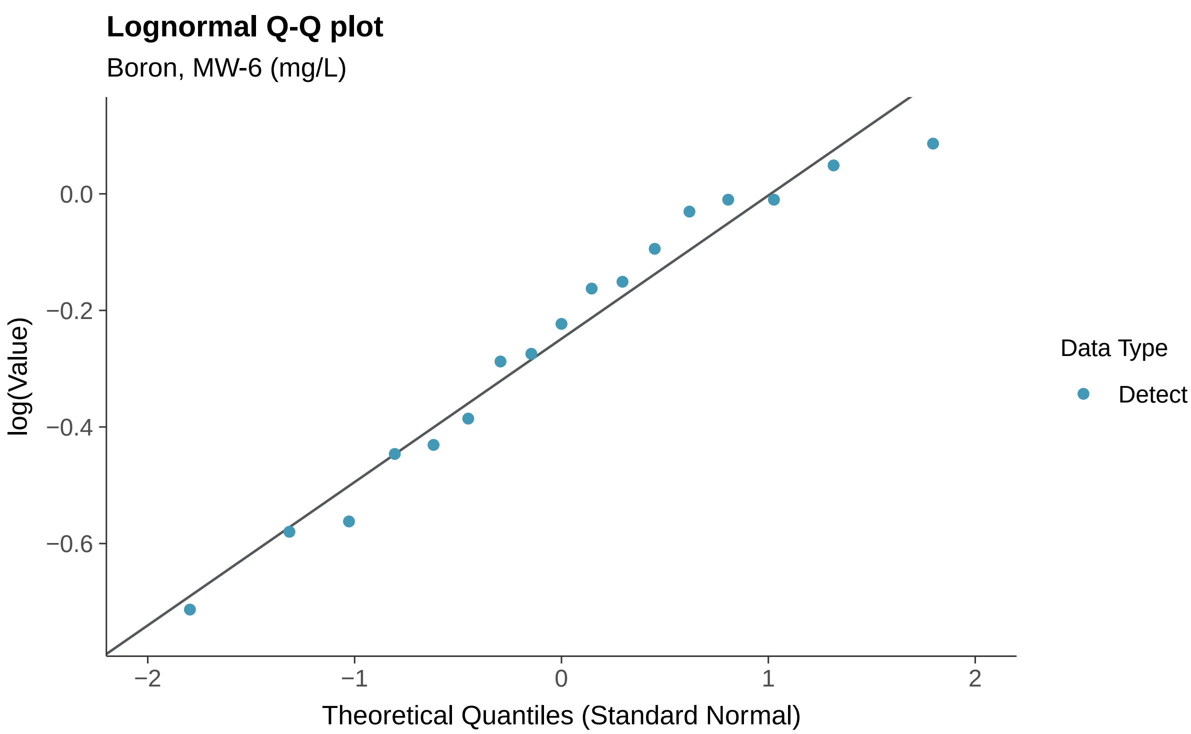





Boxplot
Boron, MW-6 (mg/L)
Value
1.0
0.8
0.6

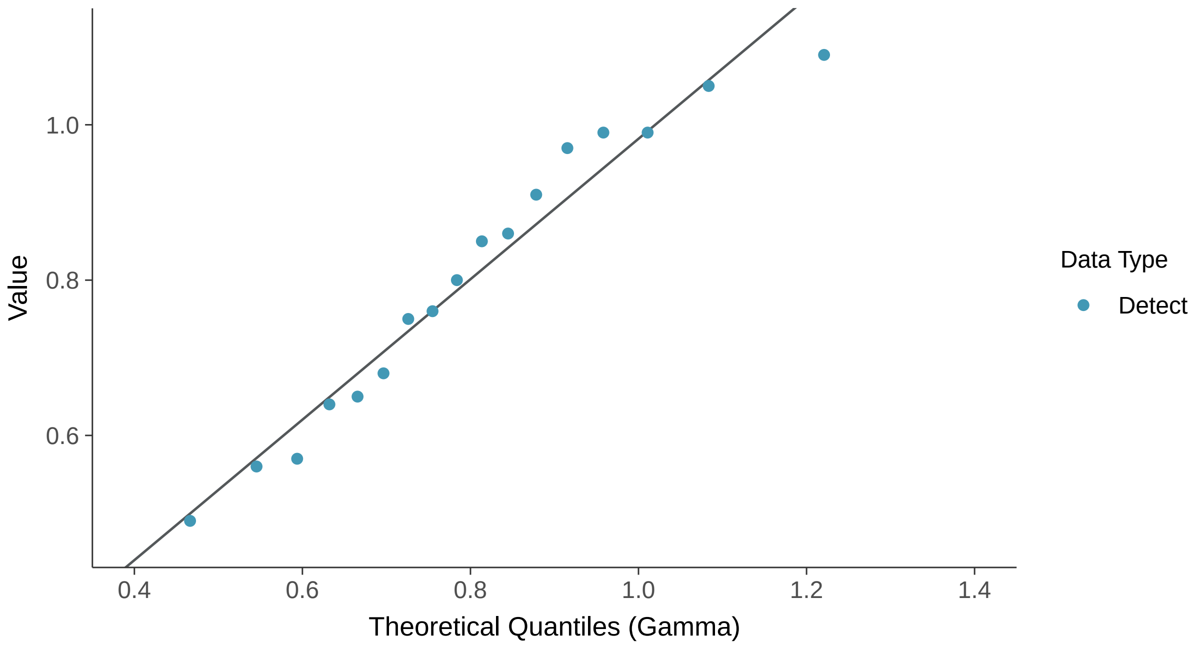

Boxplot by Season
Boron, MW-6 (mg/L)
Value
1.0
0.8
0.6
Fall
(n = 4)
Spring
(n = 3)
Summer
(n = 6)
Winter
(n = 4)
Season


Normal Q-Q plot
Boron, MW-6 (mg/L)
Value
1.0
0.8
0.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Boron, MW-6 (mg/L)
log(Value)
0.0
−0.2
−0.4
−0.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

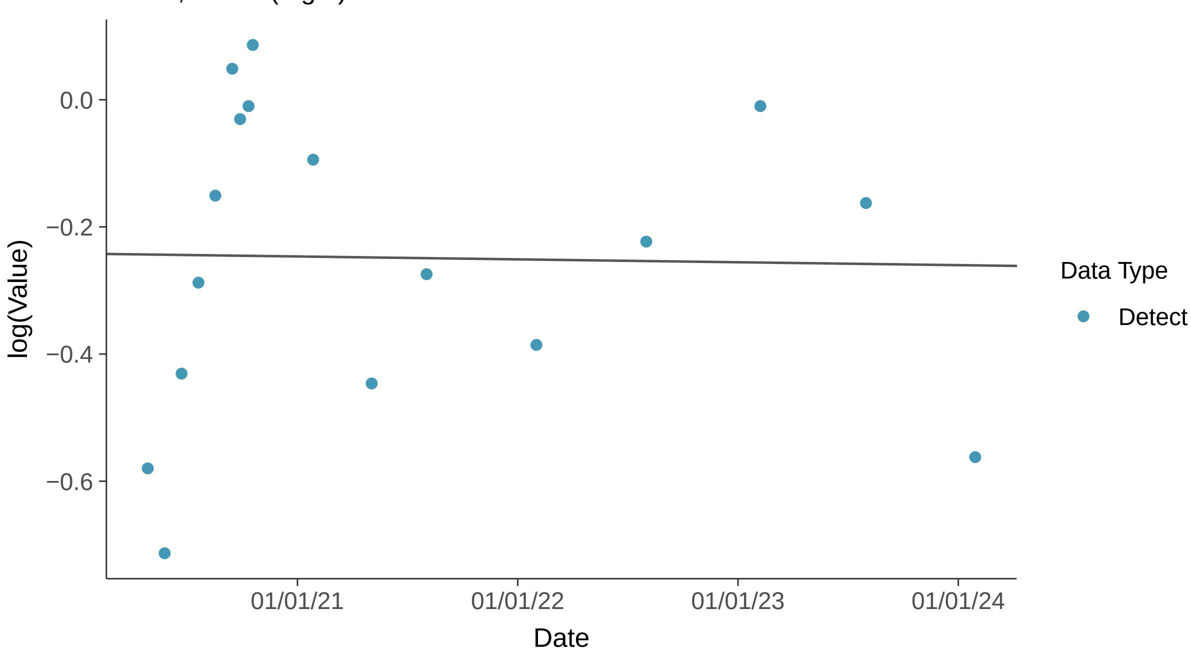
Gamma Q-Q plot

Boron, MW-6 (mg/L)



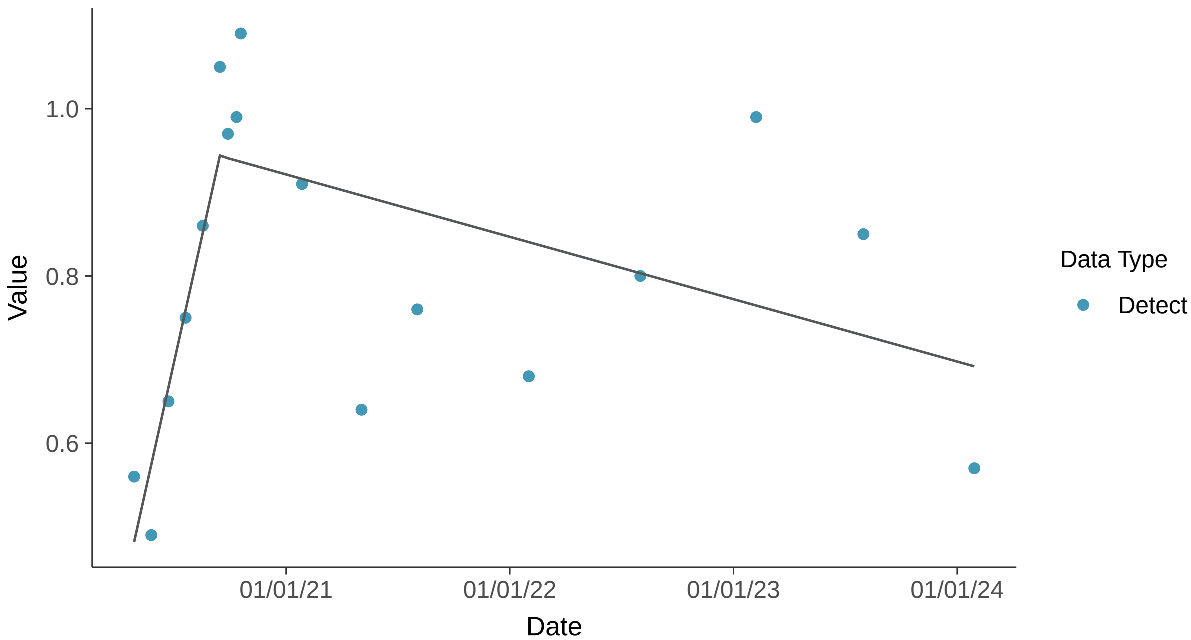
Trend Regression: Lognormal MLE

Boron, MW-6 (mg/L)



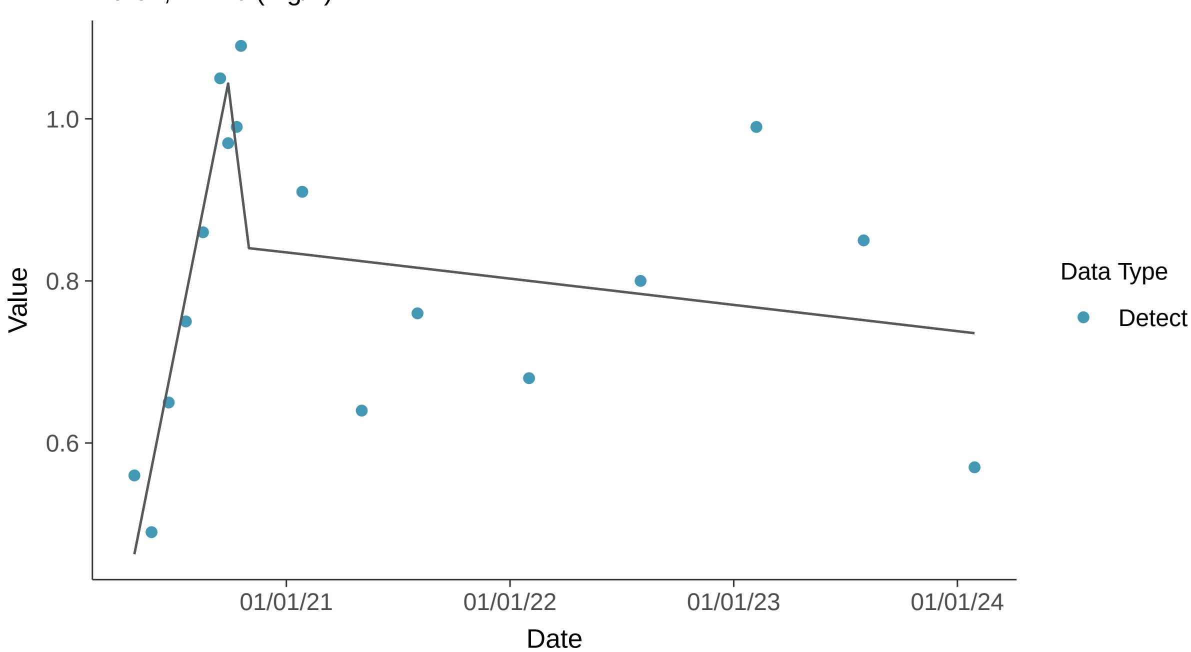
Trend Regression: Piecewise Linear-Linear

Boron, MW-6 (mg/L)



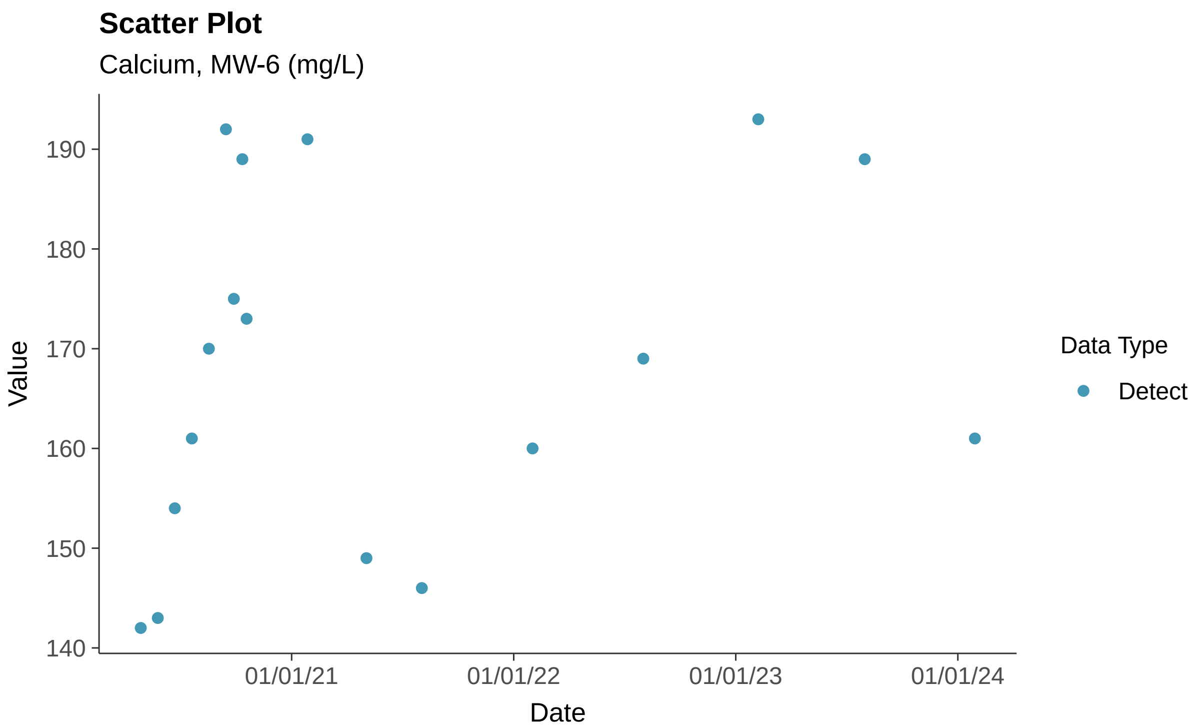
Trend Regression: Piecewise Linear-Linear-Linear

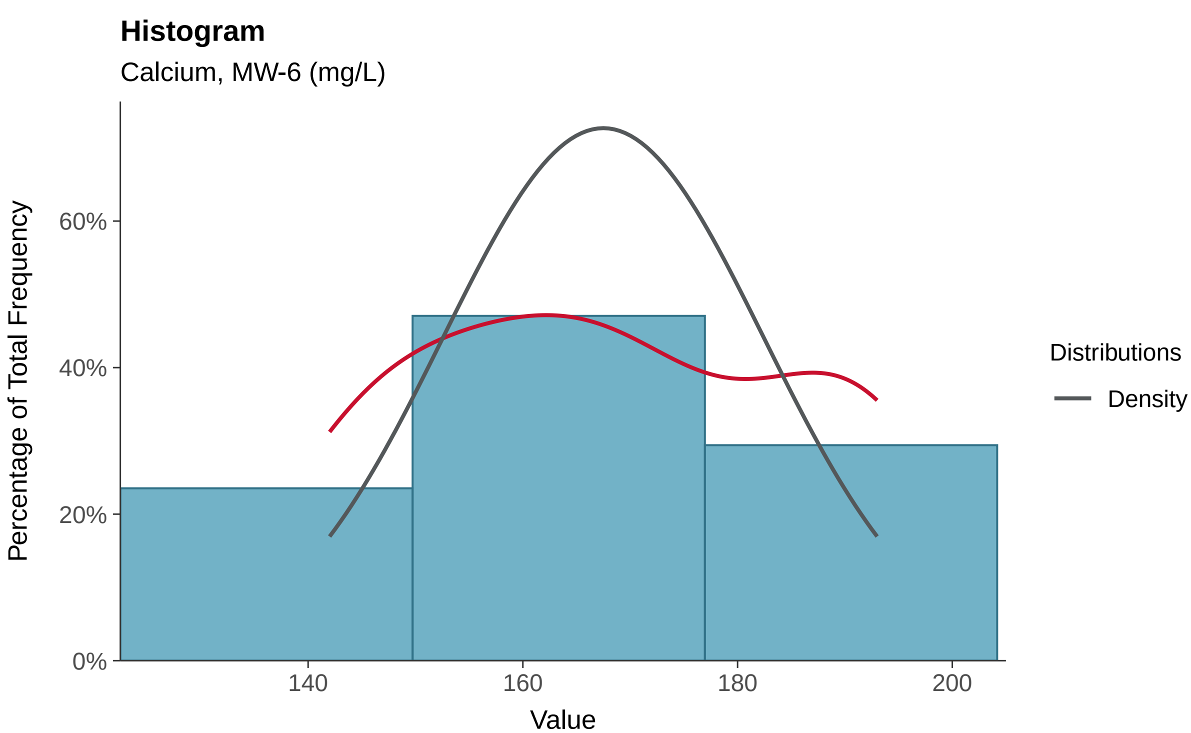
Boron, MW-6 (mg/L)



Appendix III: Calcium, MW-6

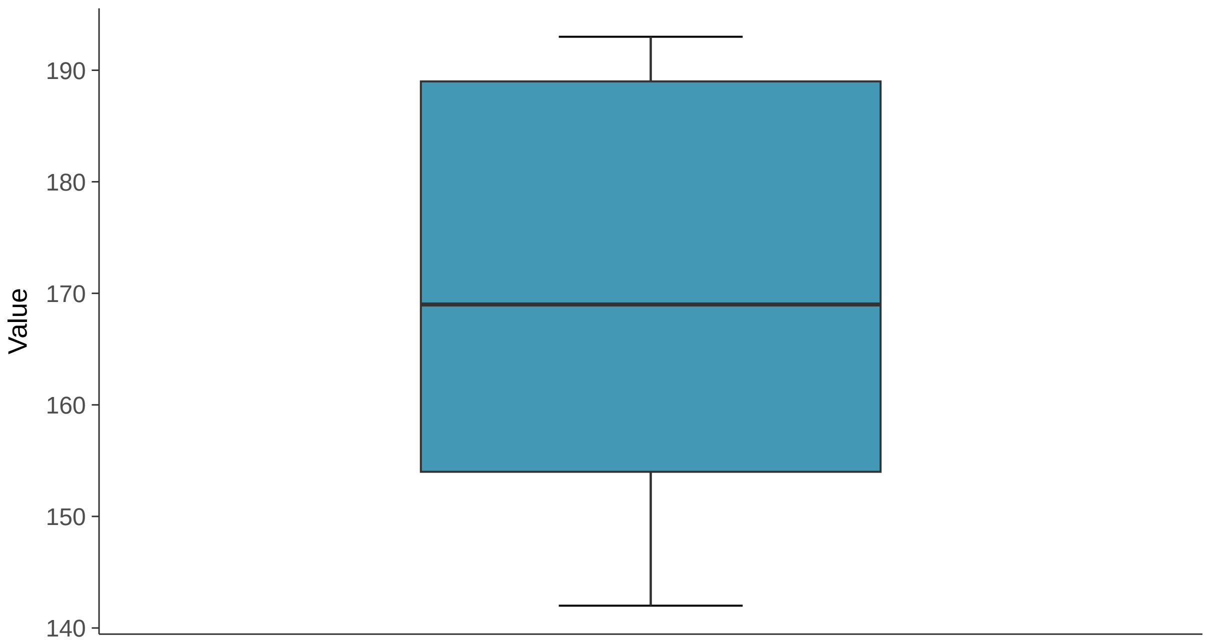
ID: 06_1_02





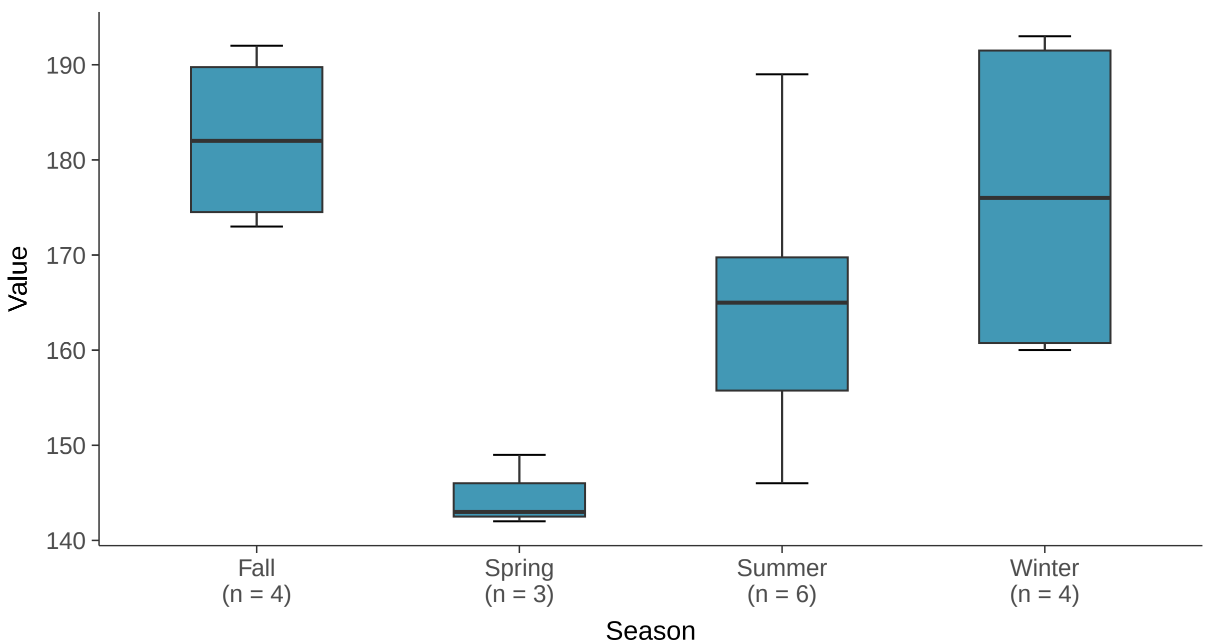
Boxplot

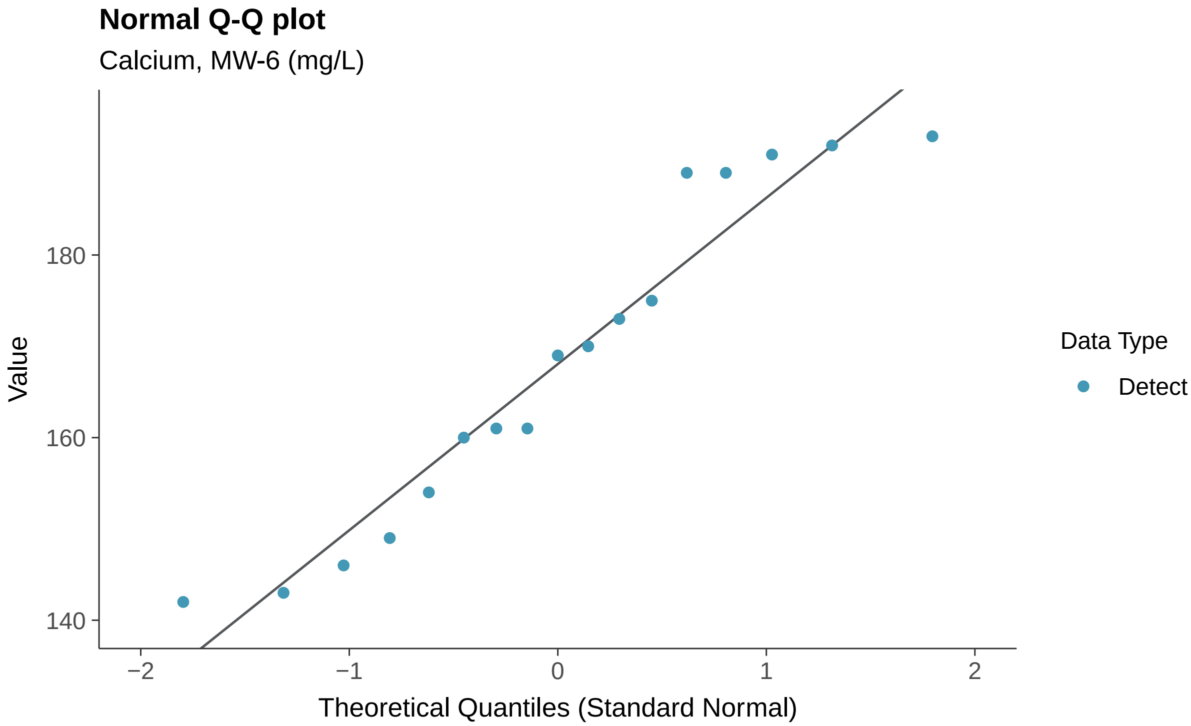
Calcium, MW-6 (mg/L)

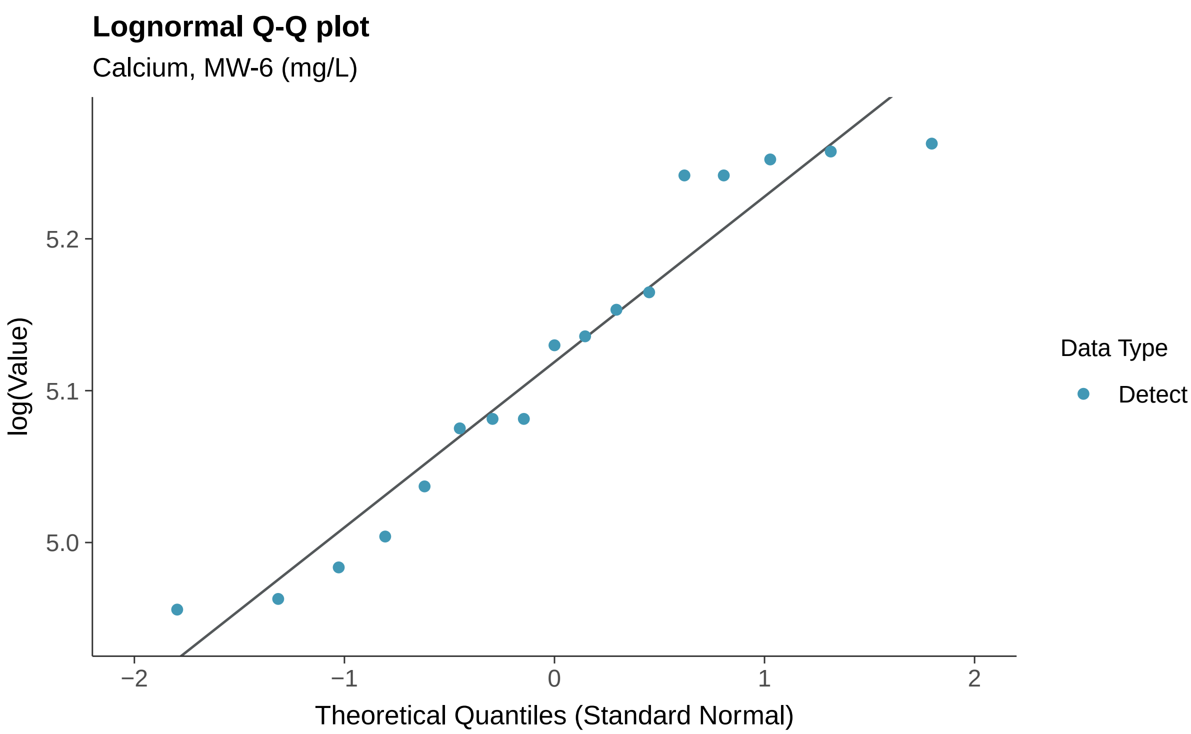


Boxplot by Season

Calcium, MW-6 (mg/L)

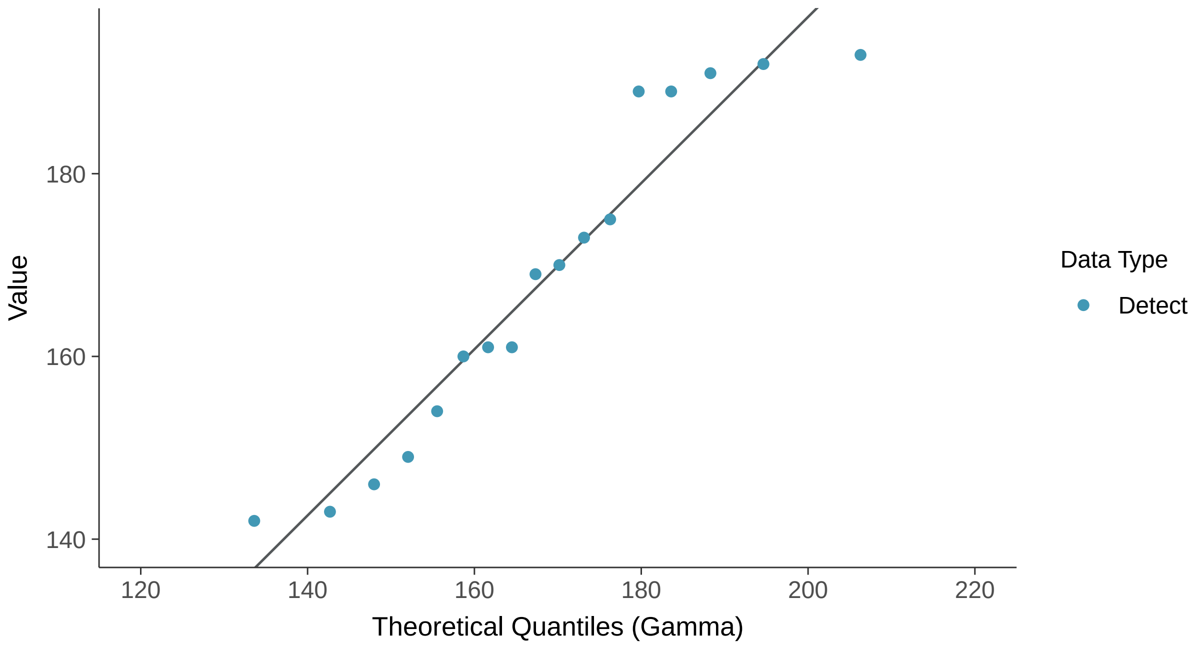



Normal Q-Q plot
Calcium, MW-6 (mg/L)
Value
180
160
140
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-6 (mg/L)
log(Value)
5.2
5.1
5.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

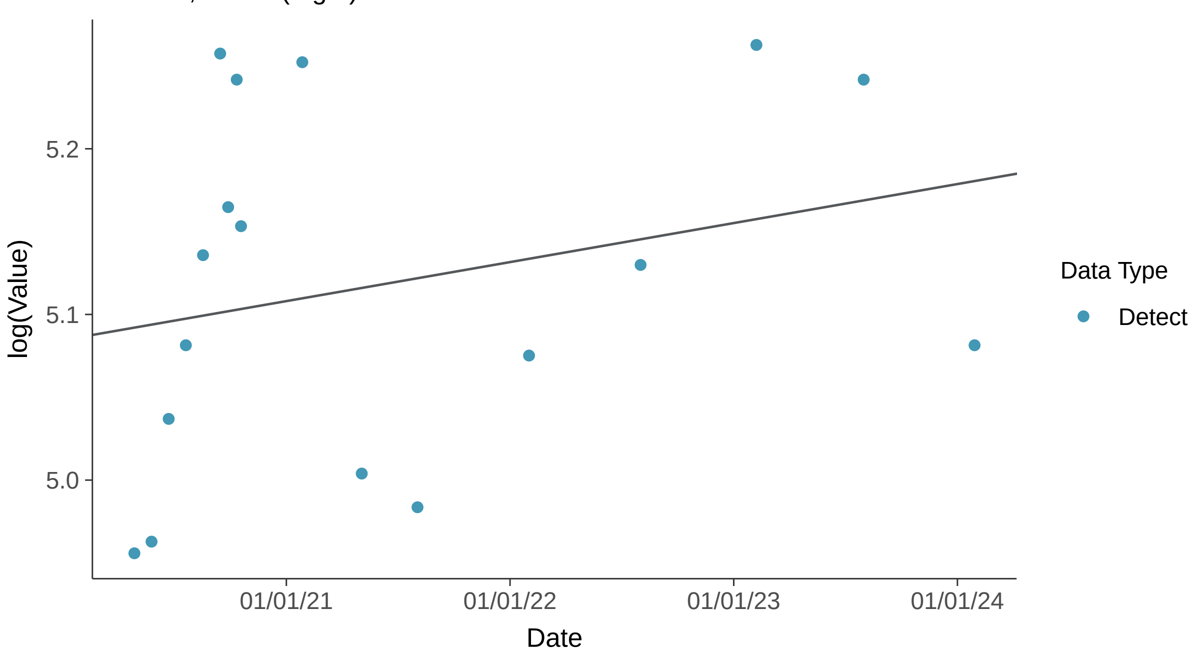
Gamma Q-Q plot

Calcium, MW-6 (mg/L)



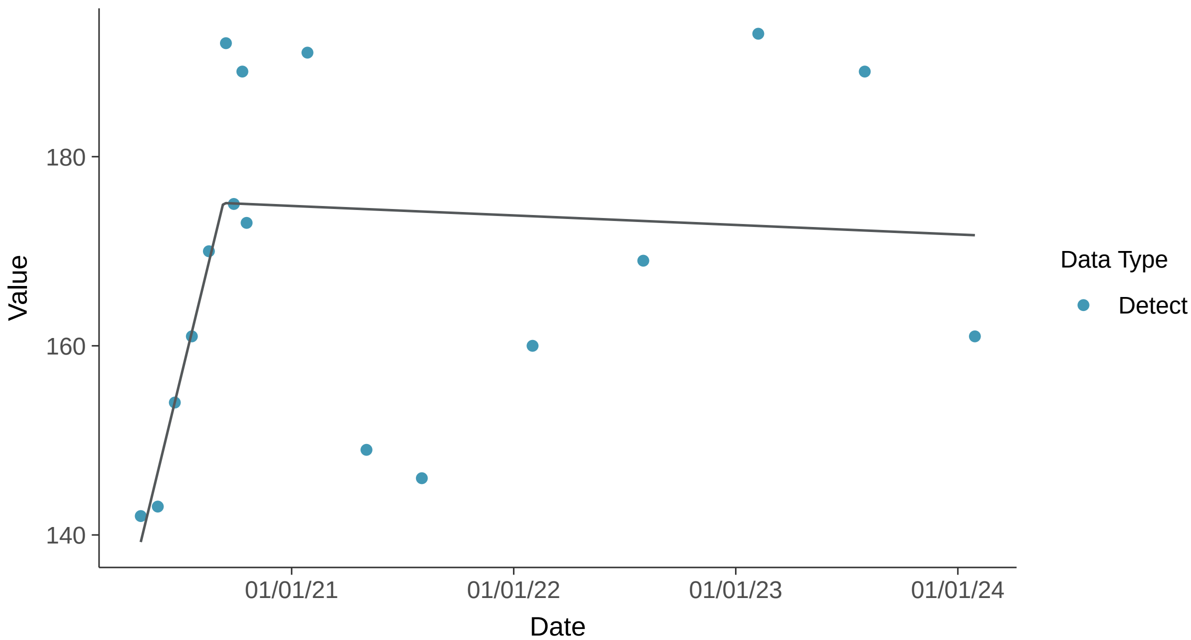
Trend Regression: Lognormal MLE

Calcium, MW-6 (mg/L)



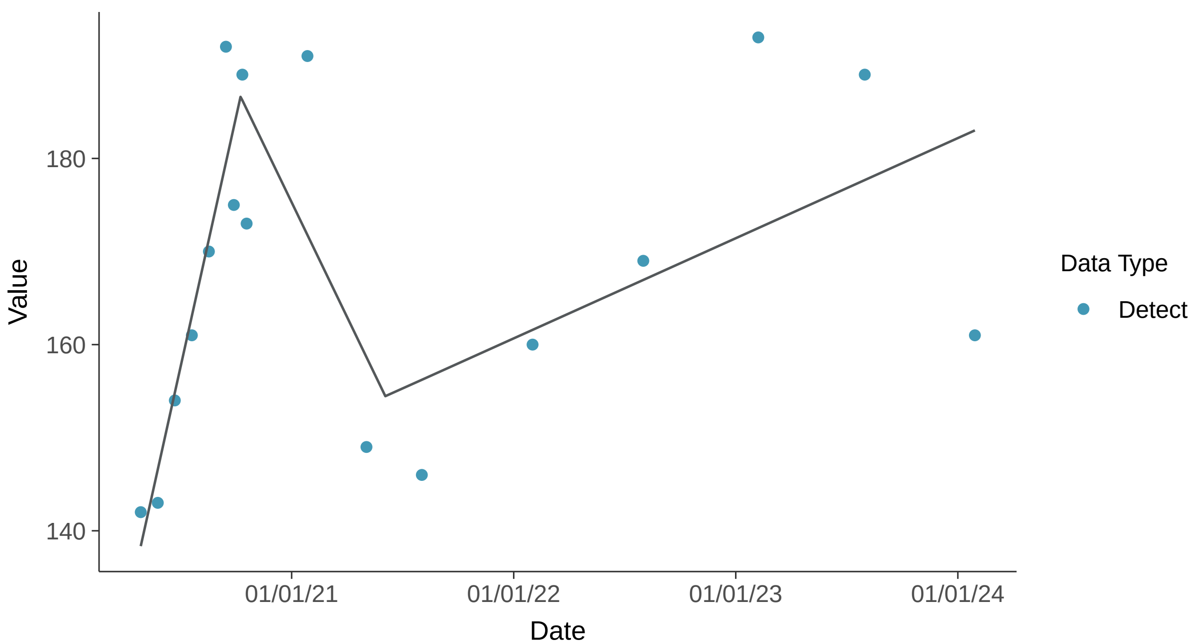
Trend Regression: Piecewise Linear-Linear

Calcium, MW-6 (mg/L)



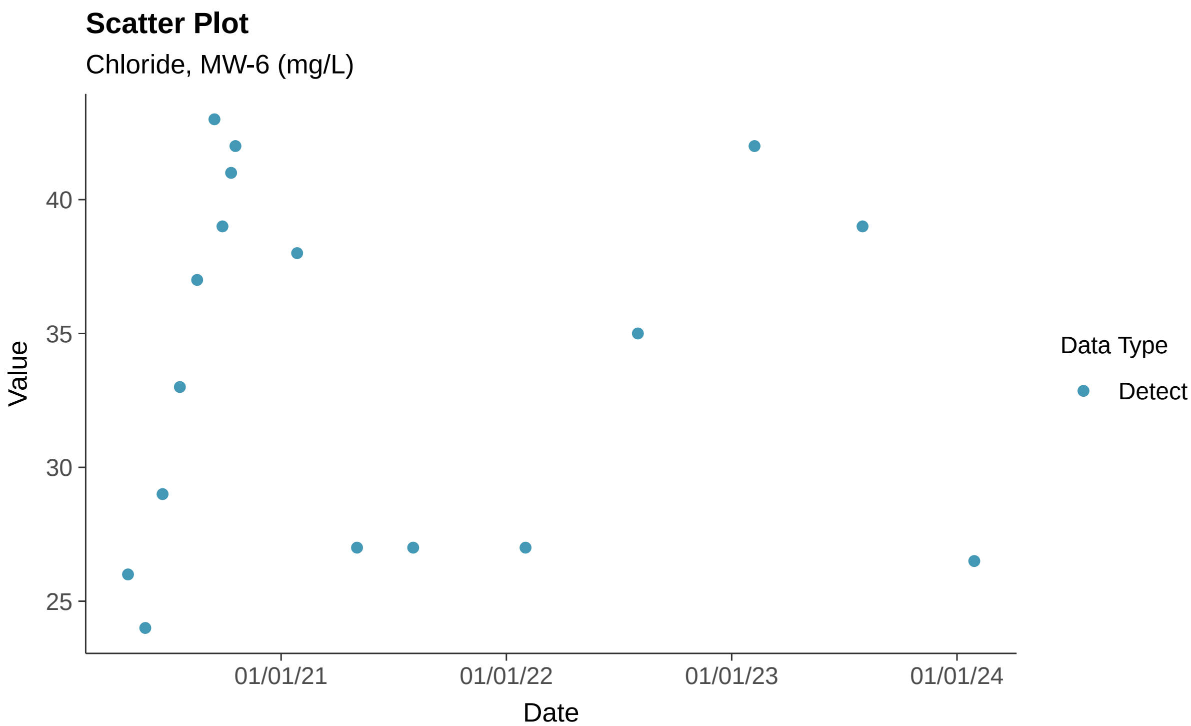
Trend Regression: Piecewise Linear-Linear-Linear

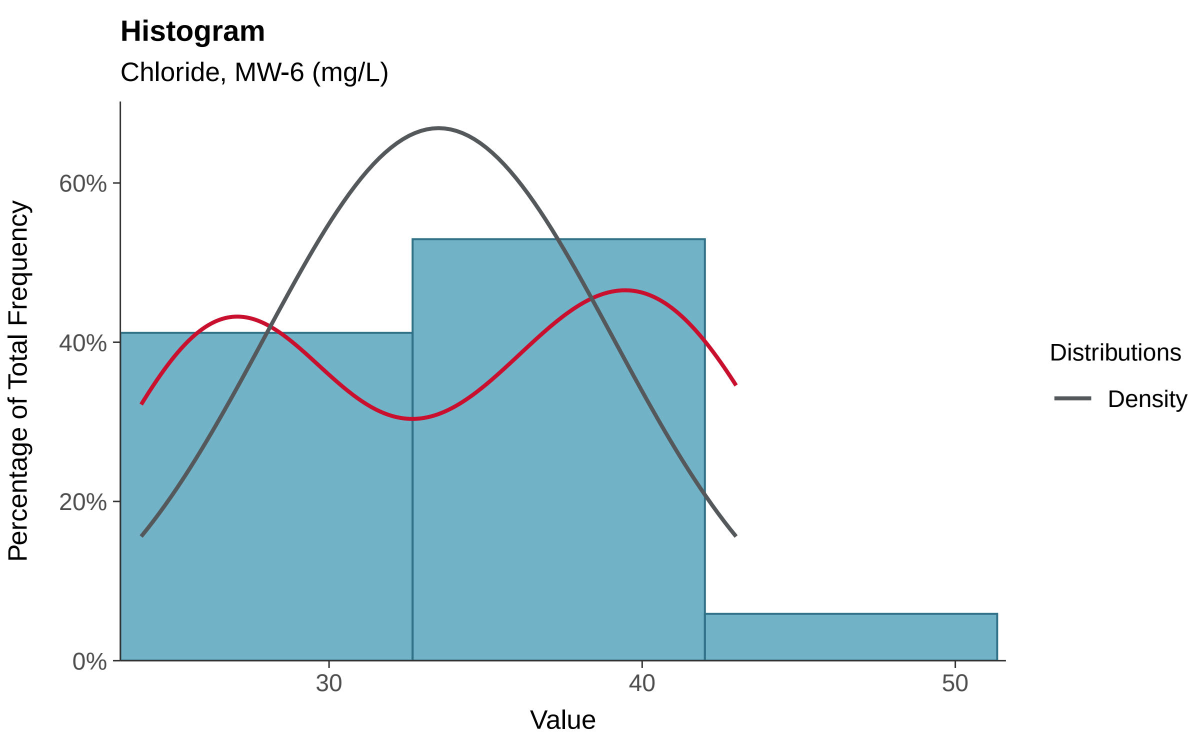
Calcium, MW-6 (mg/L)



Appendix III: Chloride, MW-6

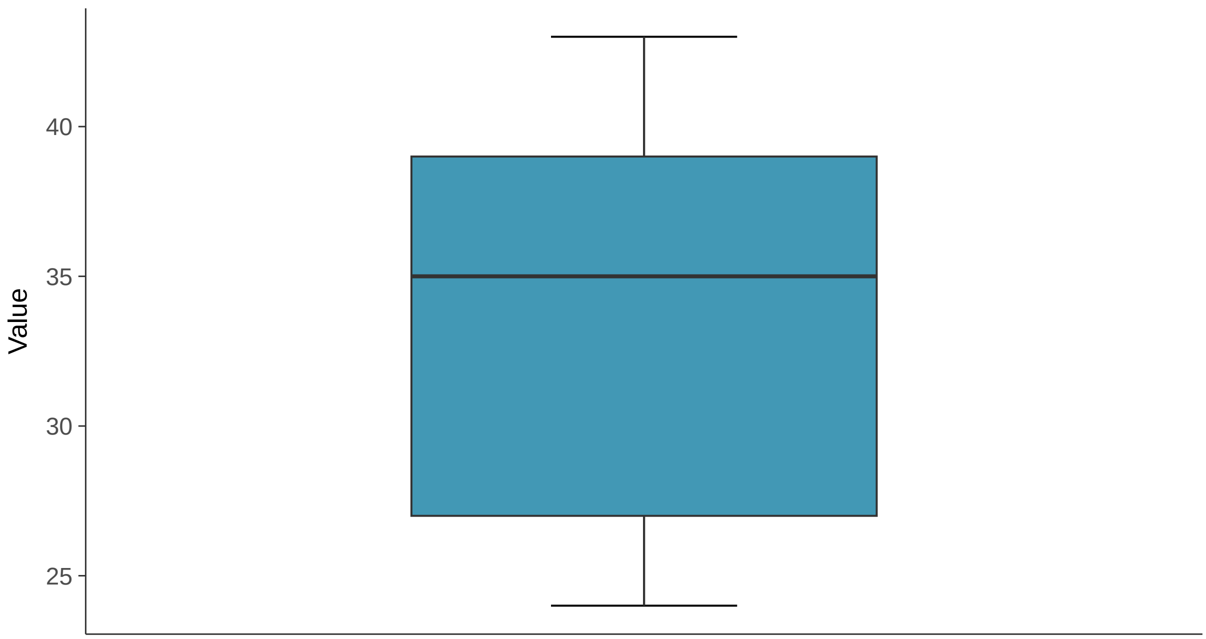
ID: 06_1_03





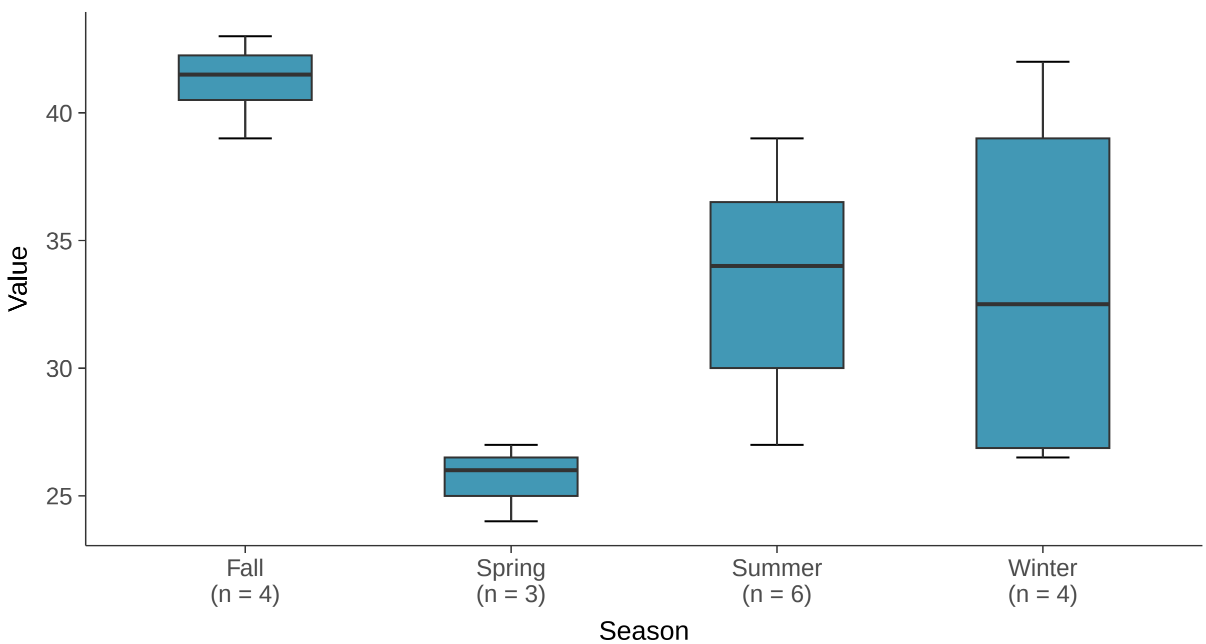
Boxplot

Chloride, MW-6 (mg/L)



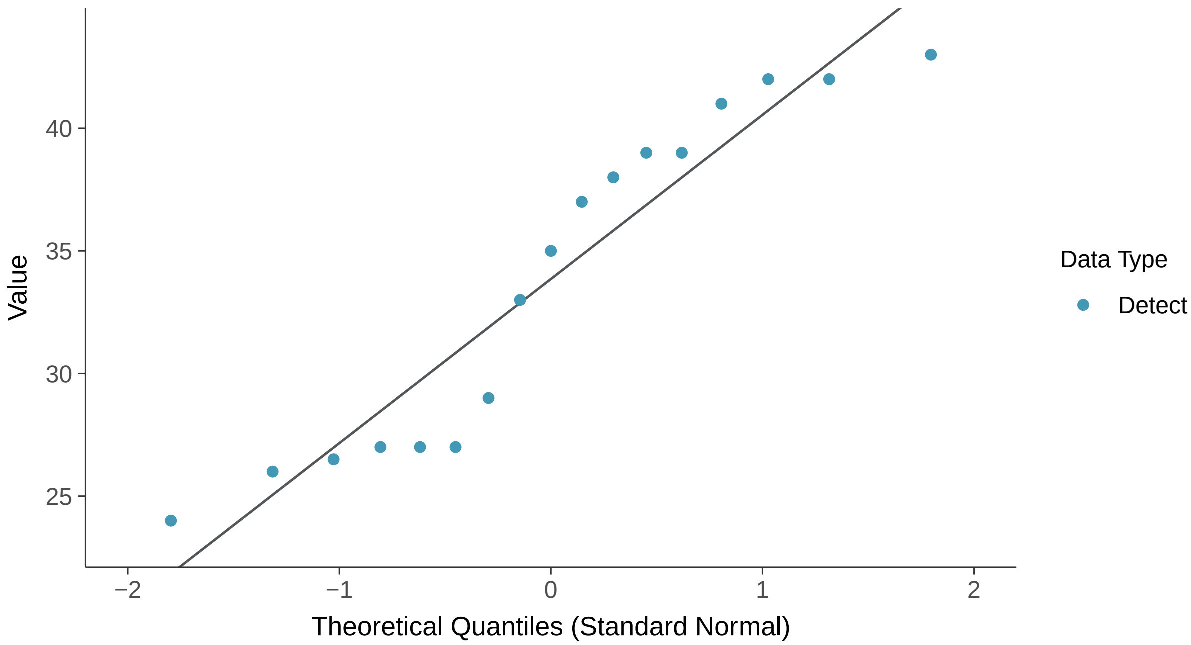
Boxplot by Season

Chloride, MW-6 (mg/L)



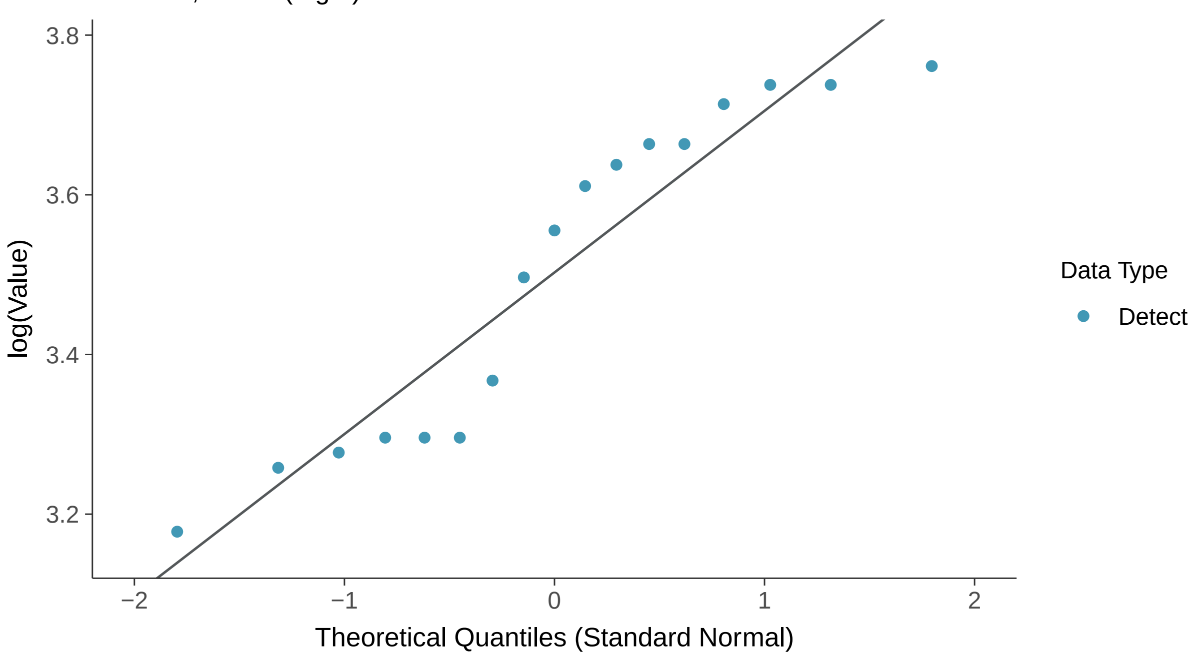
Normal Q-Q plot

Chloride, MW-6 (mg/L)



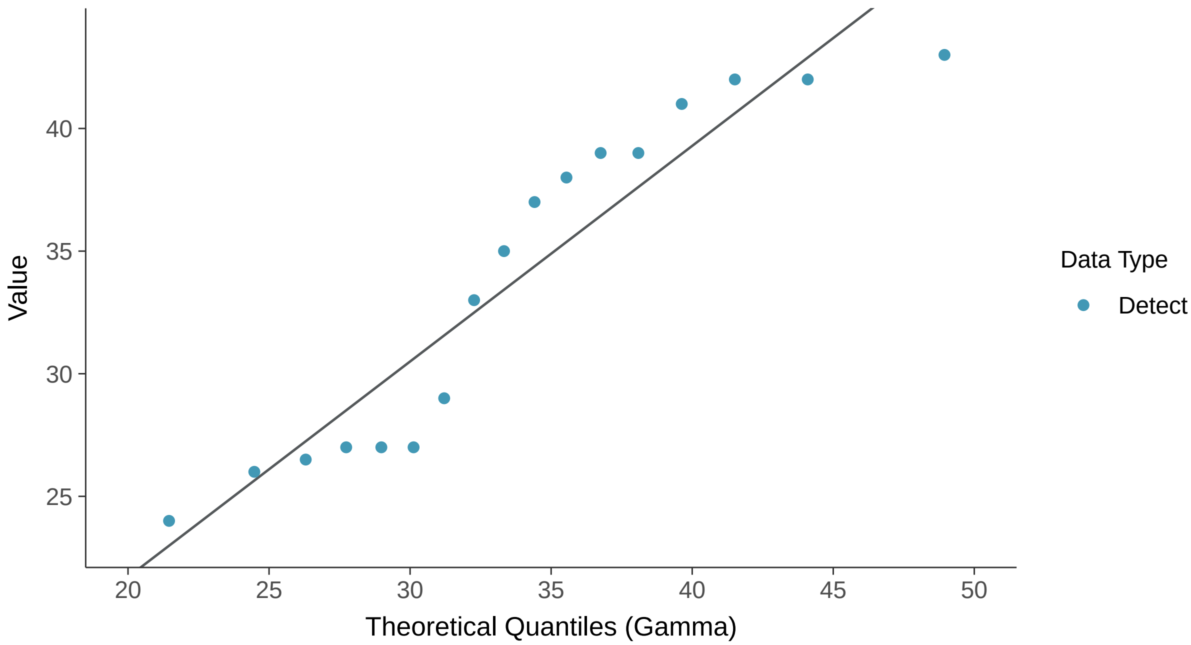
Lognormal Q-Q plot

Chloride, MW-6 (mg/L)



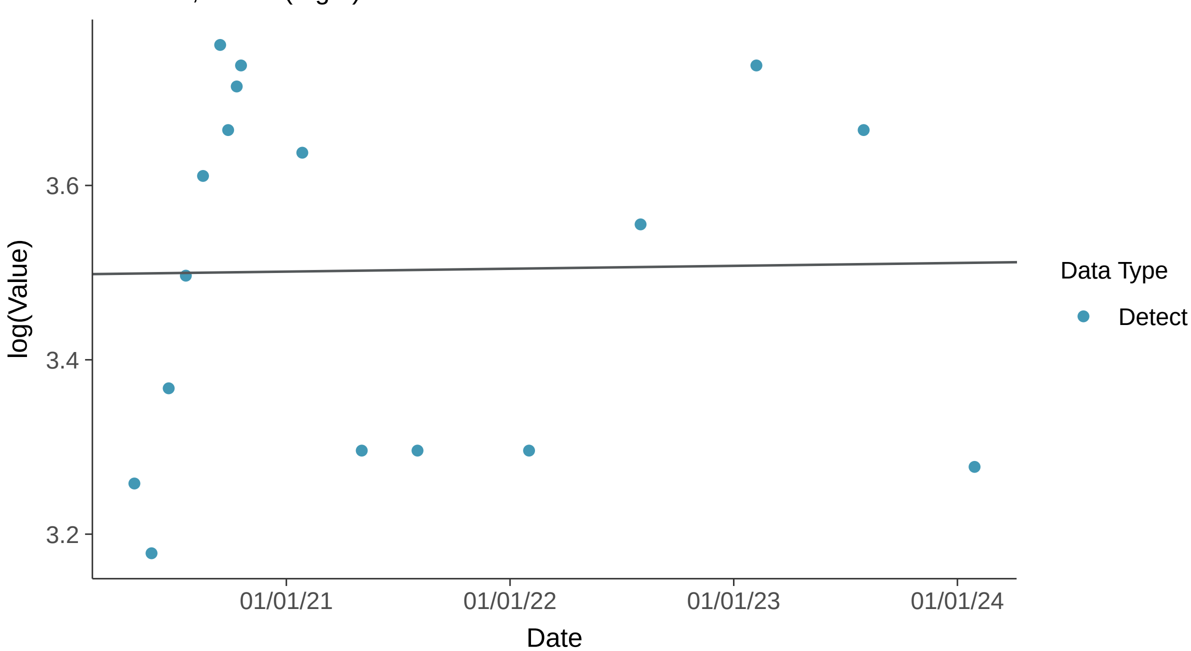
Gamma Q-Q plot

Chloride, MW-6 (mg/L)



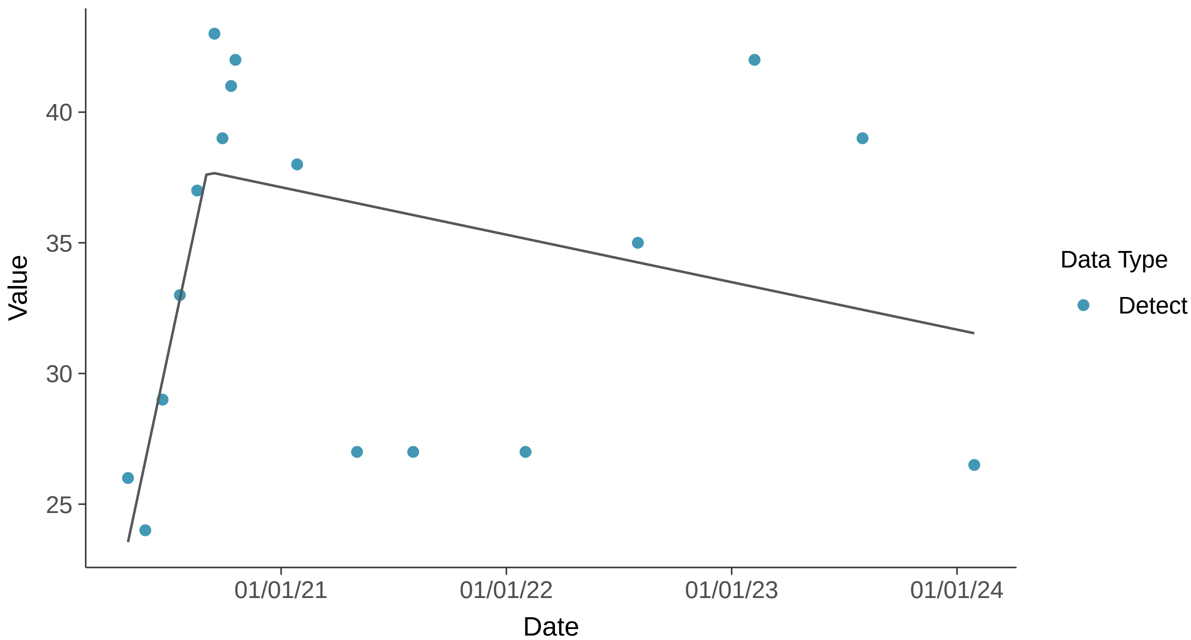
Trend Regression: Lognormal MLE

Chloride, MW-6 (mg/L)



Trend Regression: Piecewise Linear-Linear

Chloride, MW-6 (mg/L)

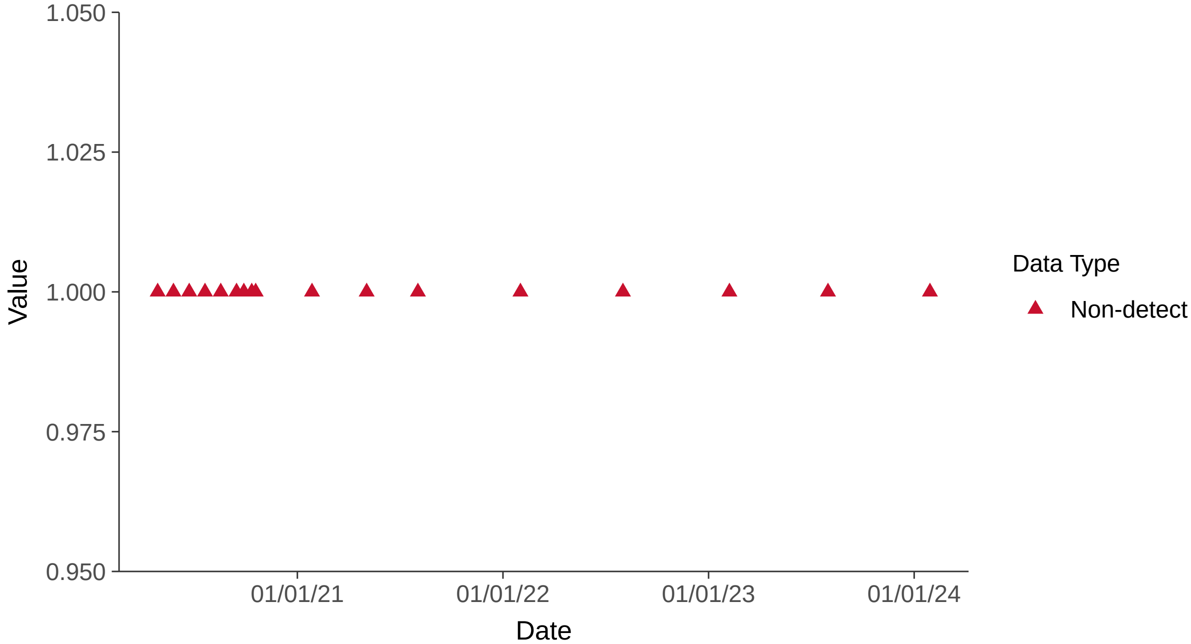


Appendix III: Fluoride, MW-6

ID: 06_1_04

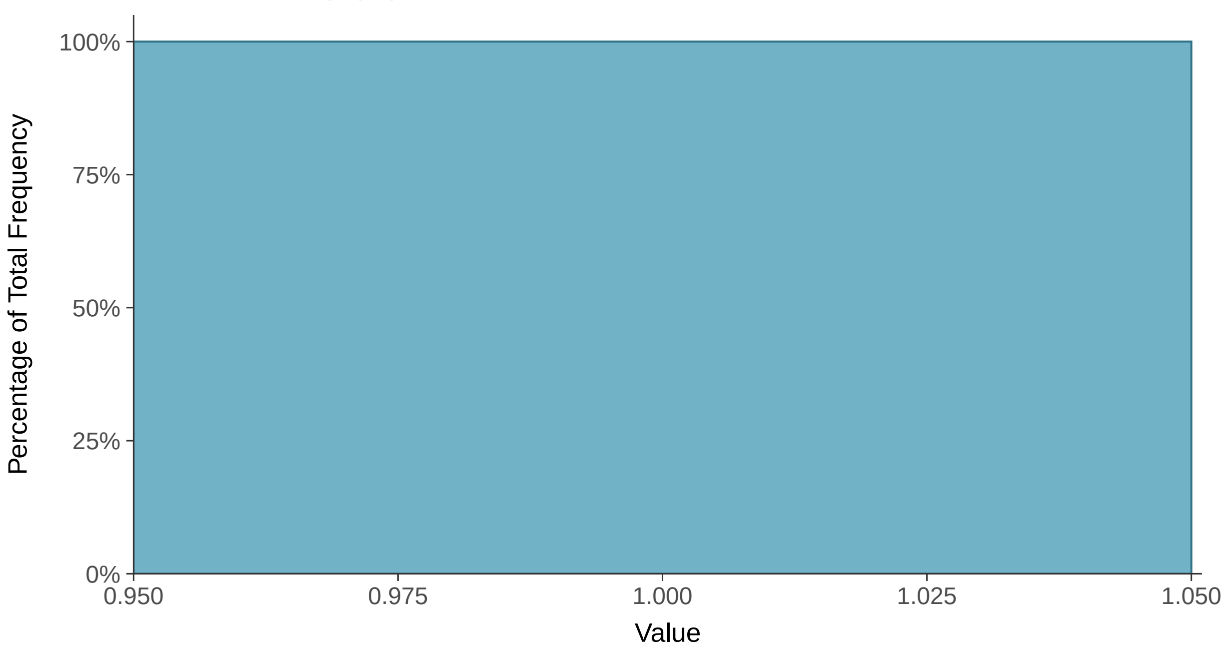
Scatter Plot

Fluoride, MW-6 (mg/L)



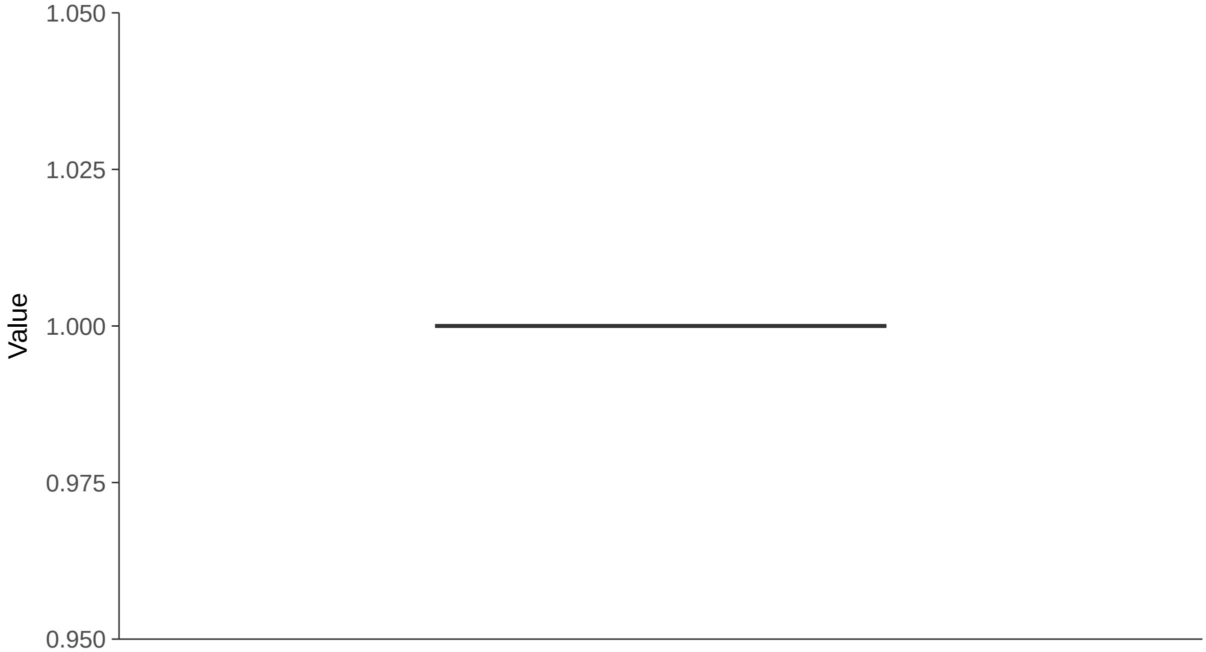
Histogram

Fluoride, MW-6 (mg/L)



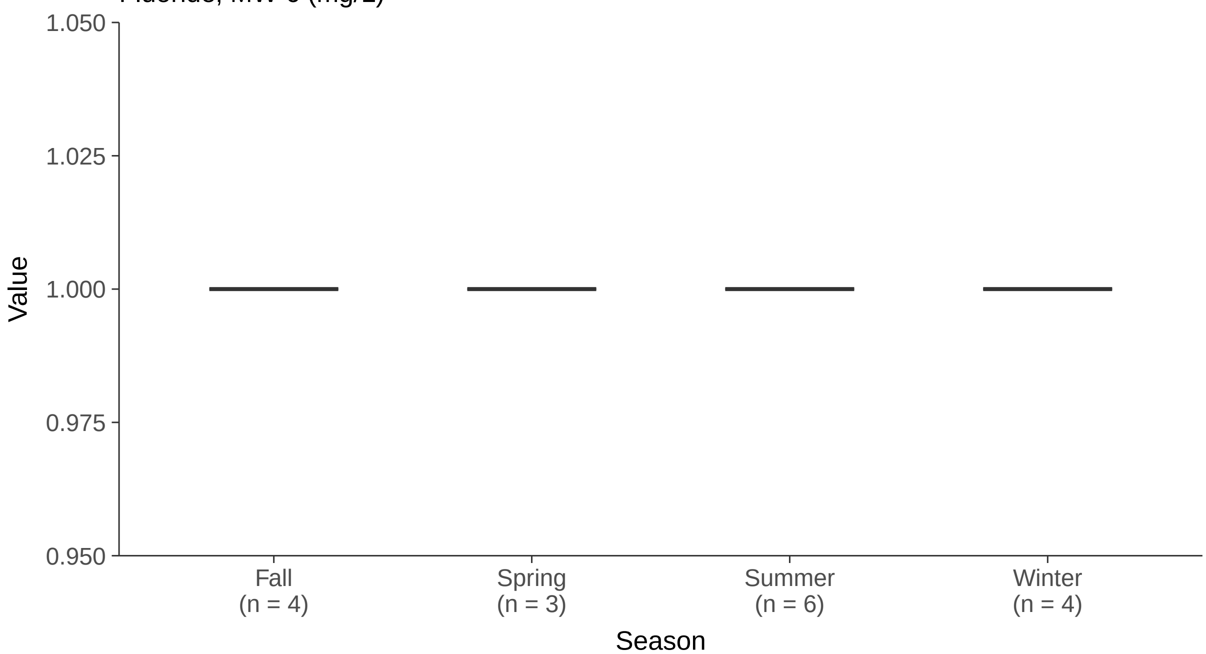
Boxplot

Fluoride, MW-6 (mg/L)



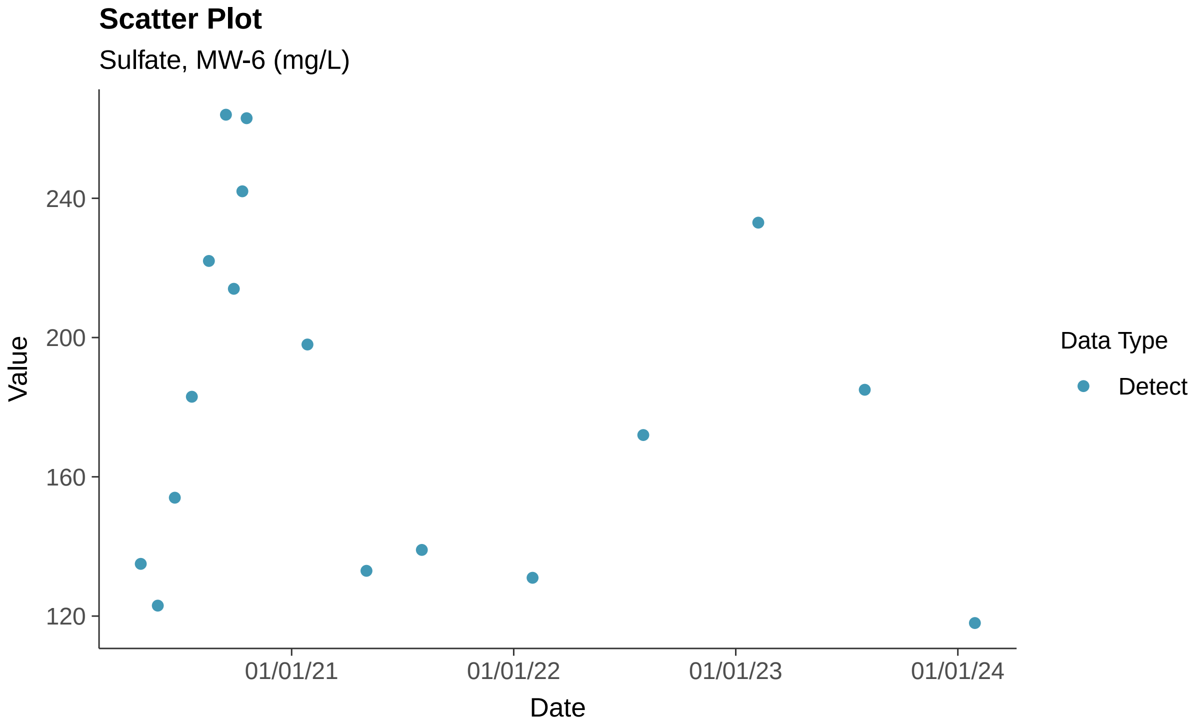
Boxplot by Season

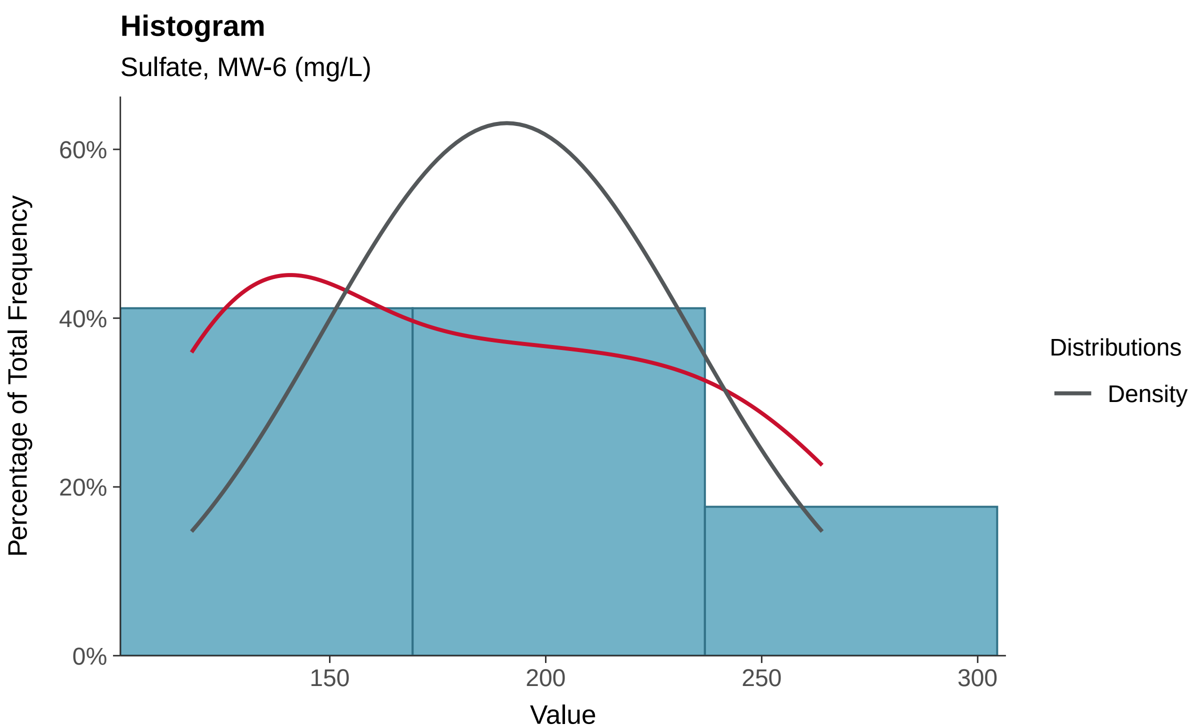
Fluoride, MW-6 (mg/L)



Appendix III: Sulfate, MW-6

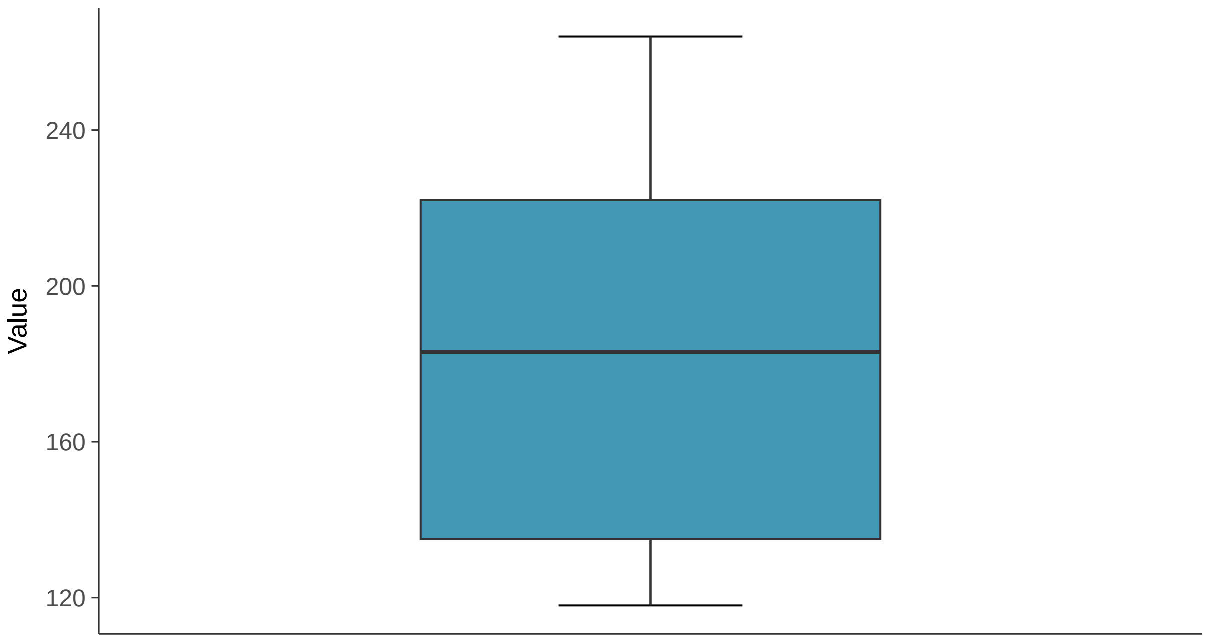
ID: 06_1_05





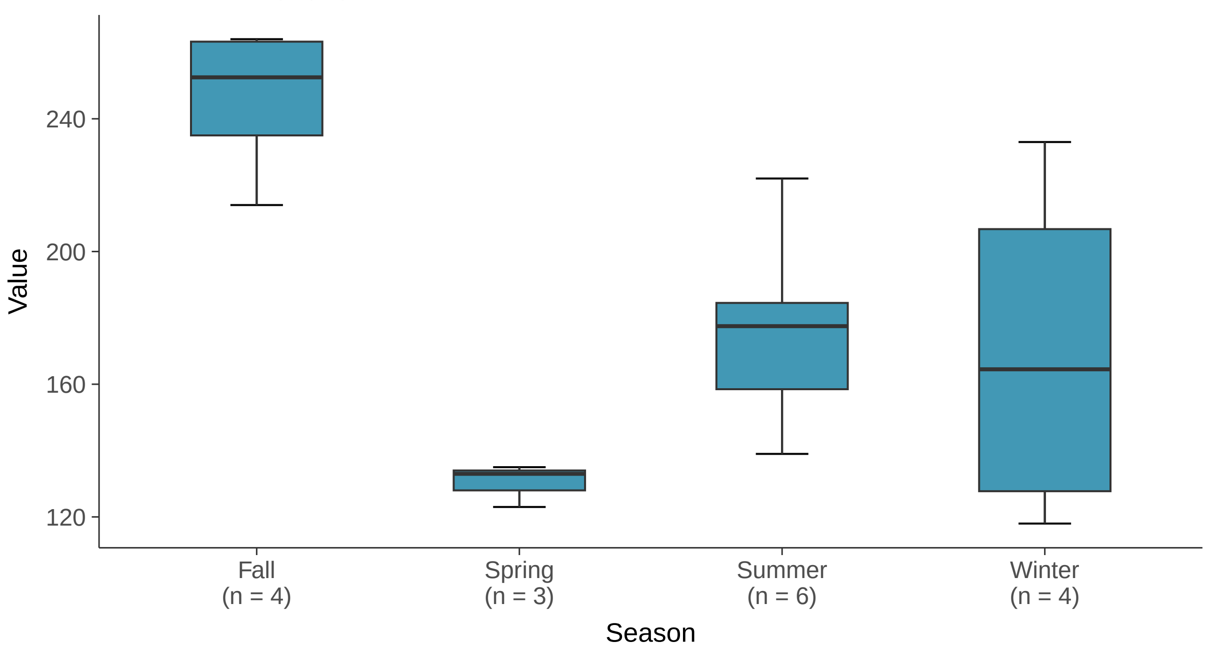
Boxplot

Sulfate, MW-6 (mg/L)



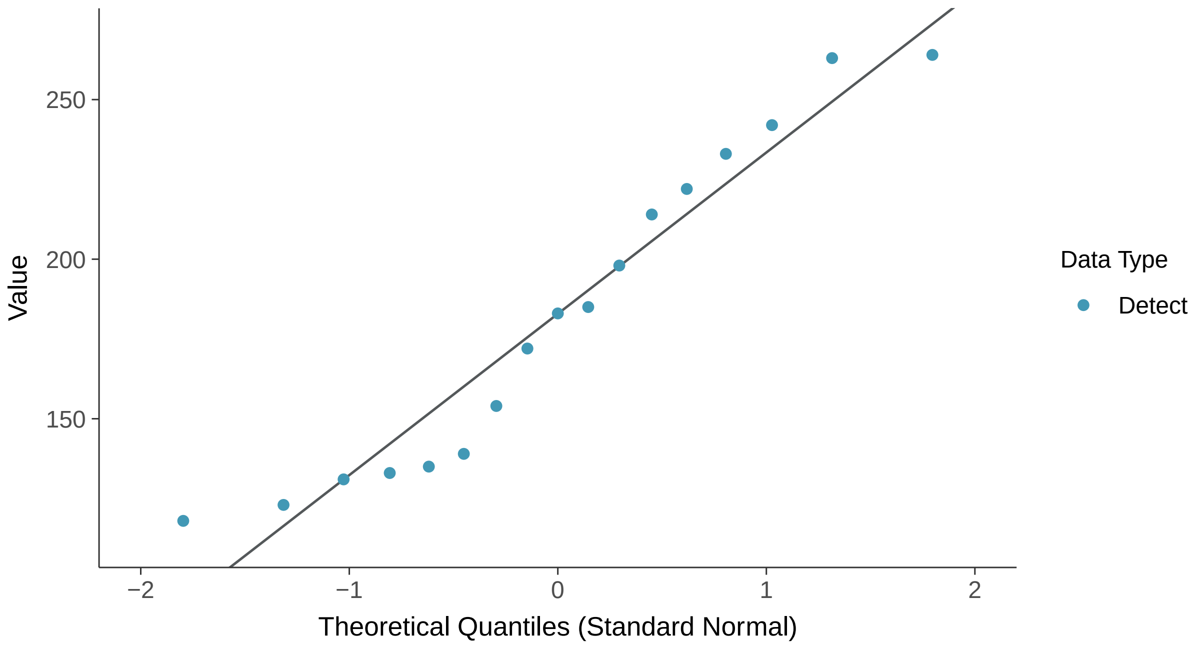
Boxplot by Season

Sulfate, MW-6 (mg/L)



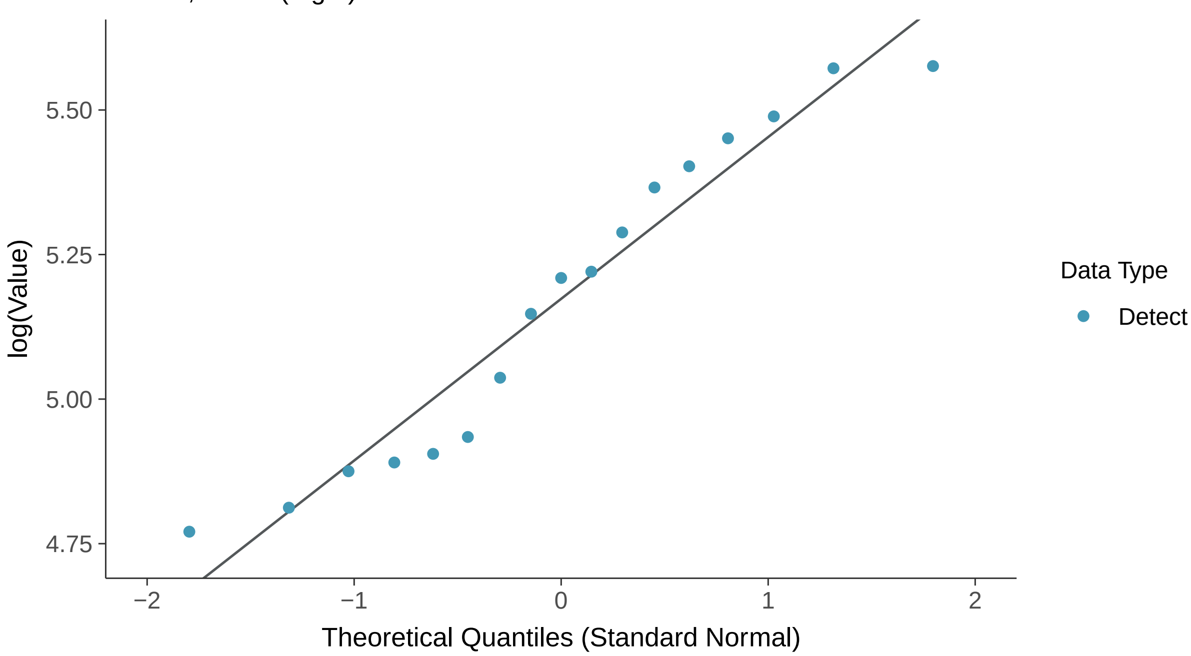
Normal Q-Q plot

Sulfate, MW-6 (mg/L)



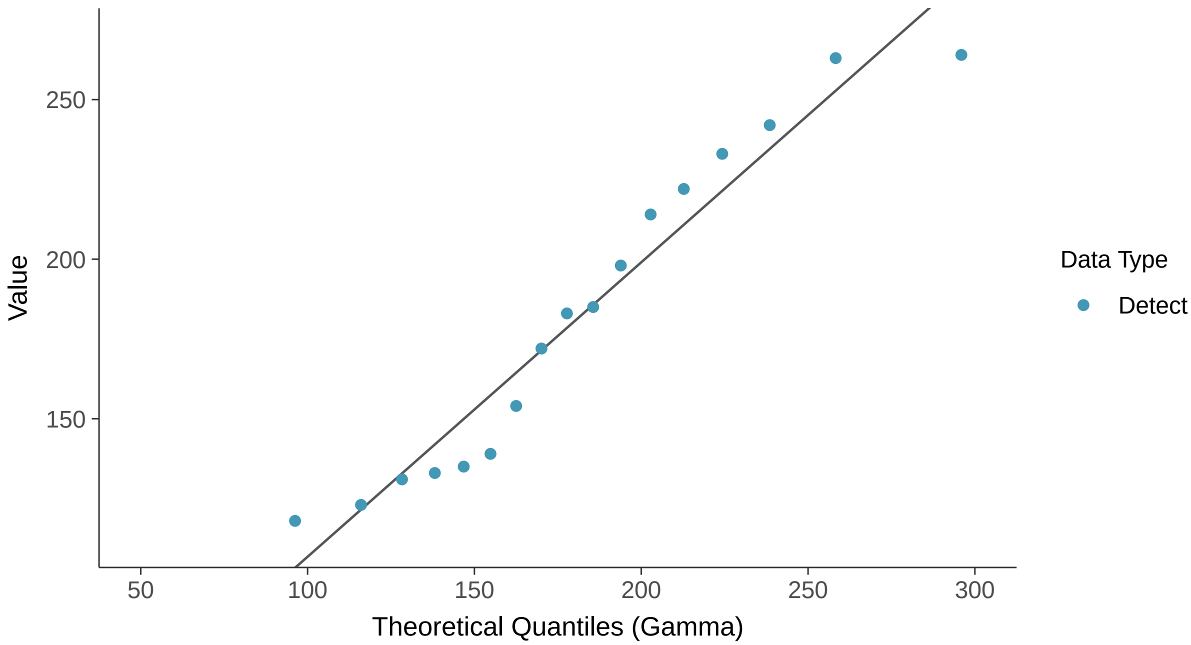
Lognormal Q-Q plot

Sulfate, MW-6 (mg/L)



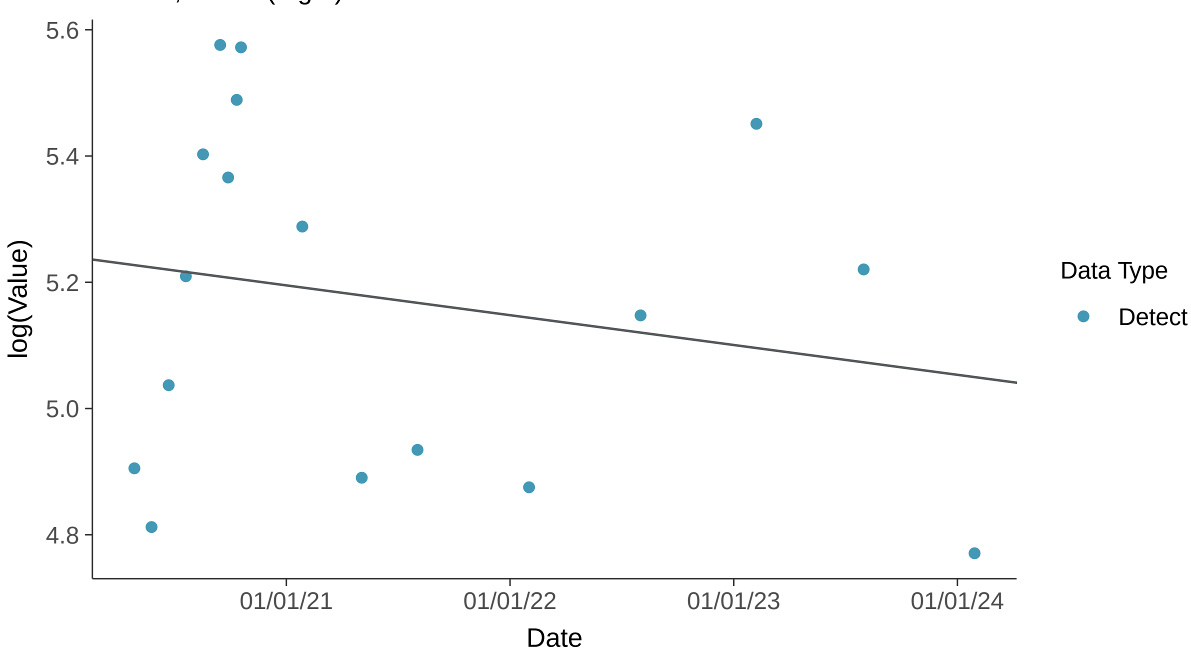
Gamma Q-Q plot

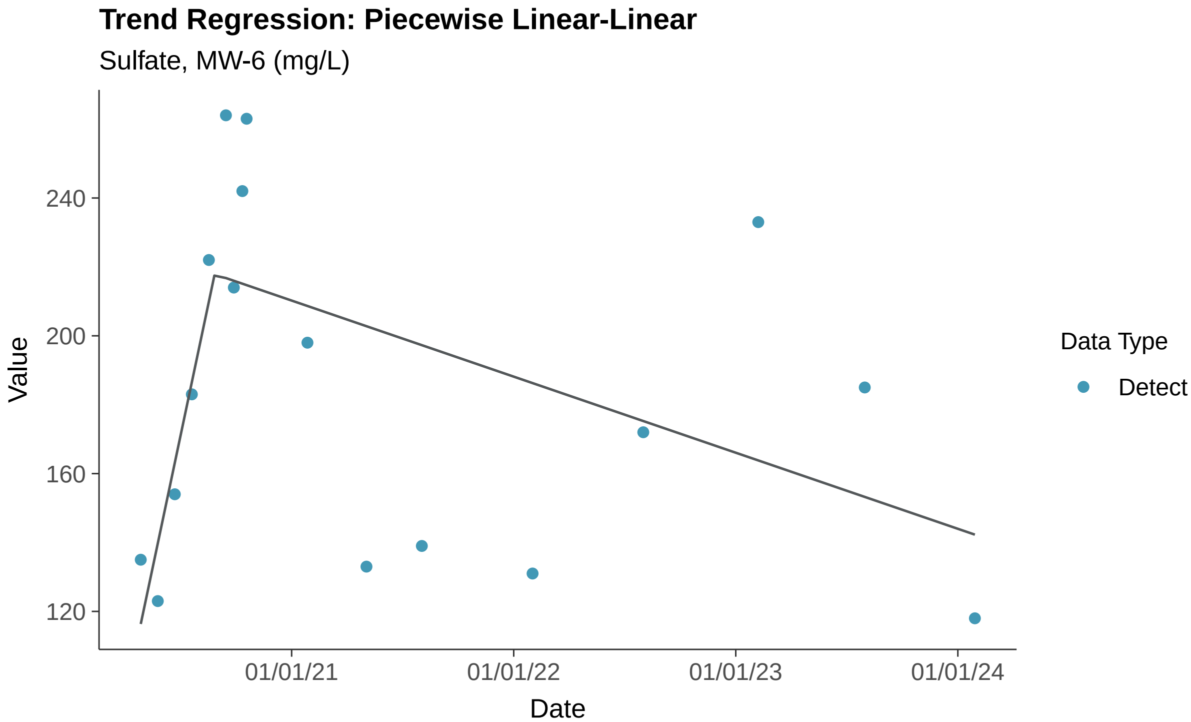
Sulfate, MW-6 (mg/L)

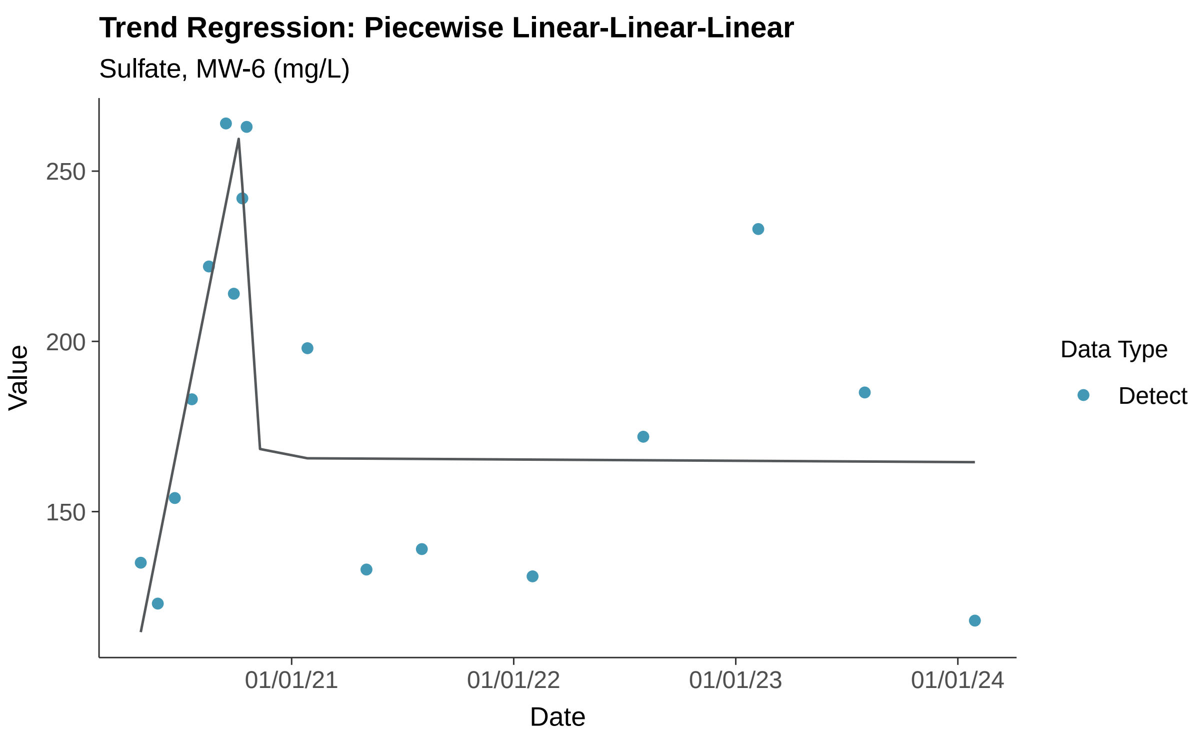


Trend Regression: Lognormal MLE

Sulfate, MW-6 (mg/L)

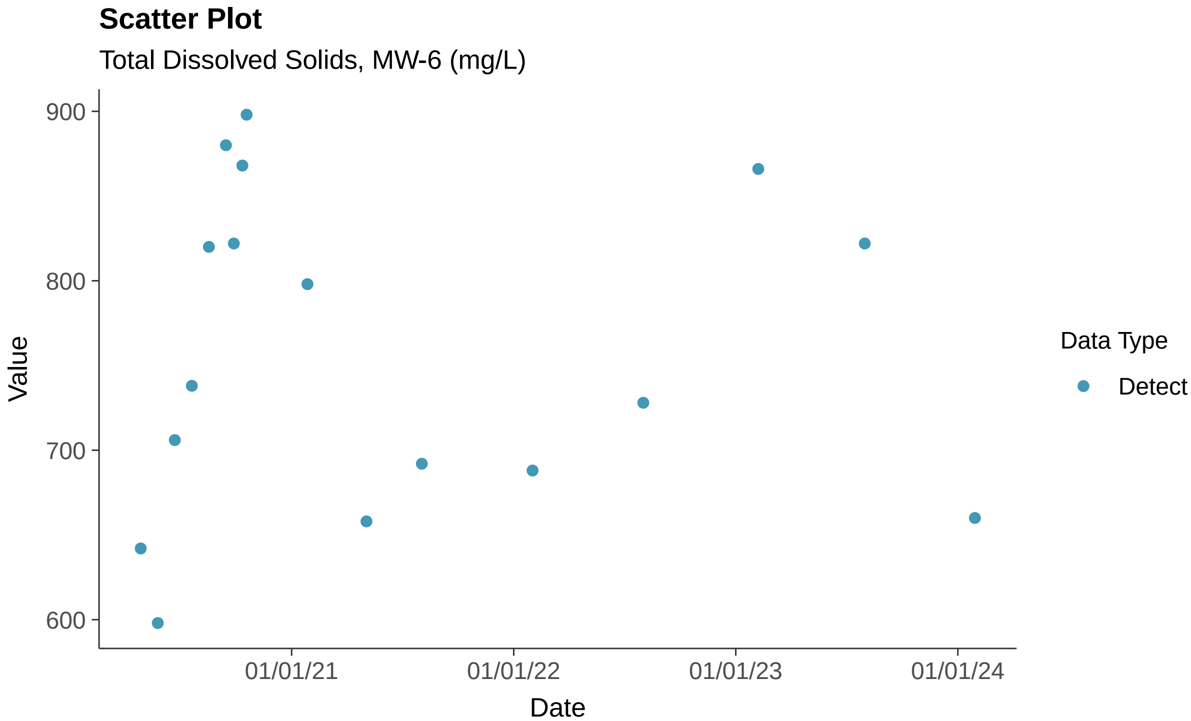


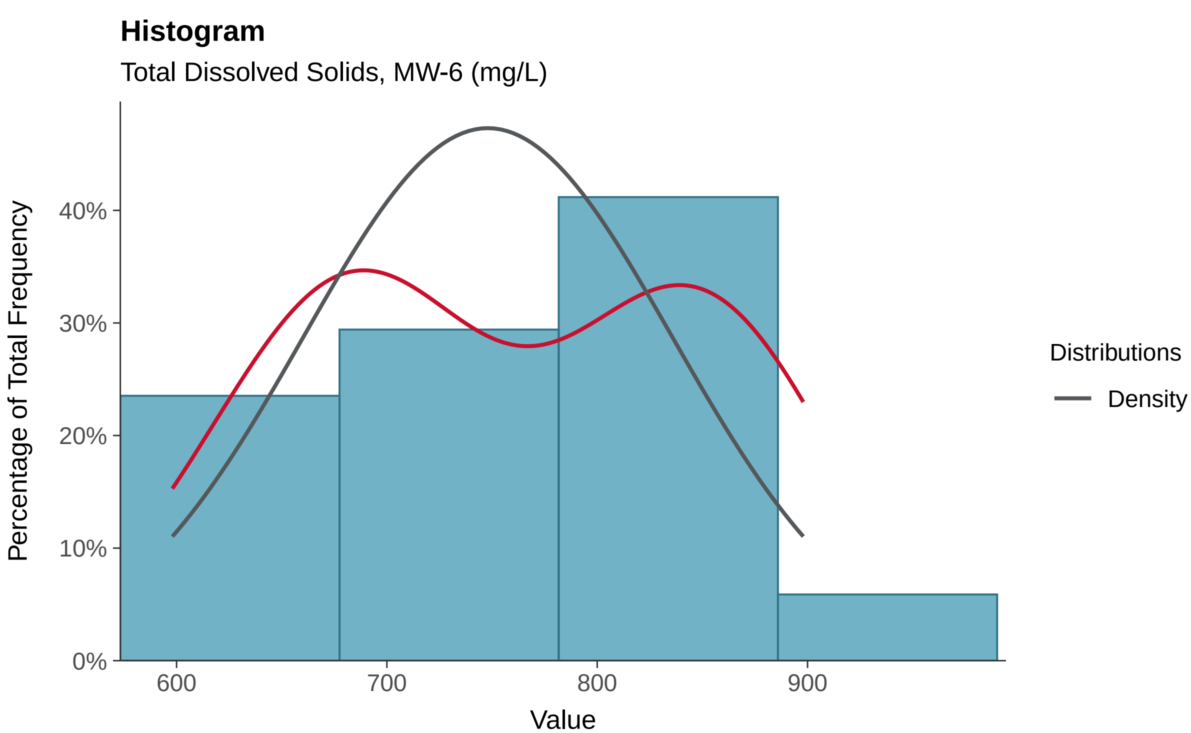

Trend Regression: Piecewise Linear-Linear
Sulfate, MW-6 (mg/L)
Value
240
200
160
120
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Sulfate, MW-6 (mg/L)
Value
250
200
150
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Appendix III: Total Dissolved Solids, MW-6

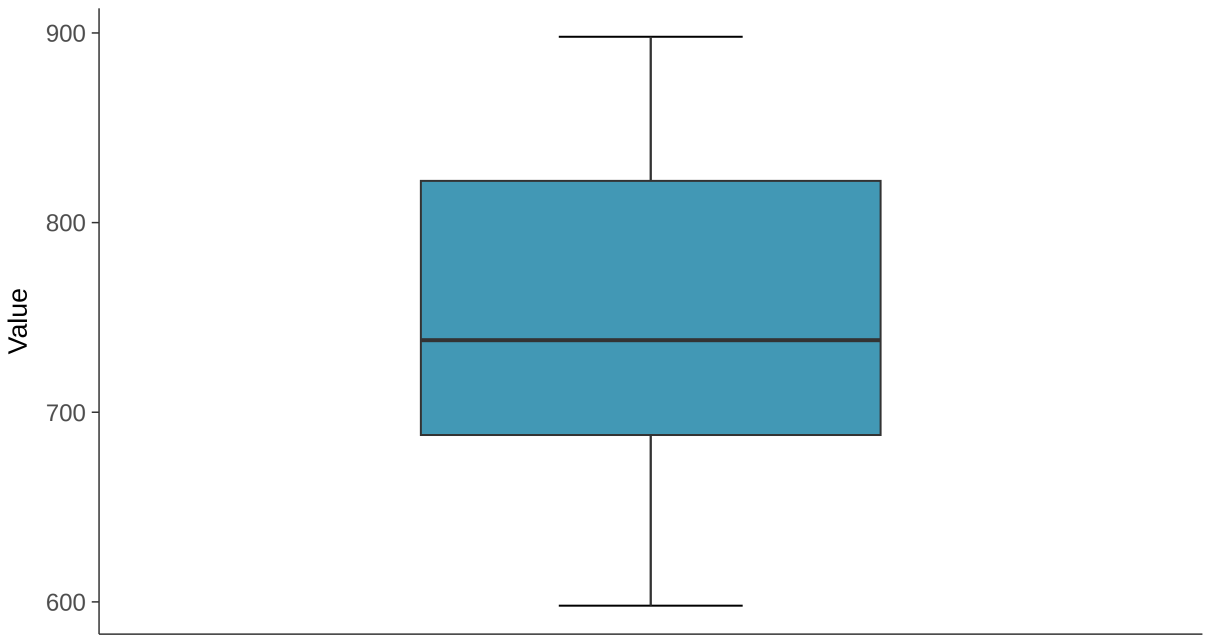
ID: 06_1_06





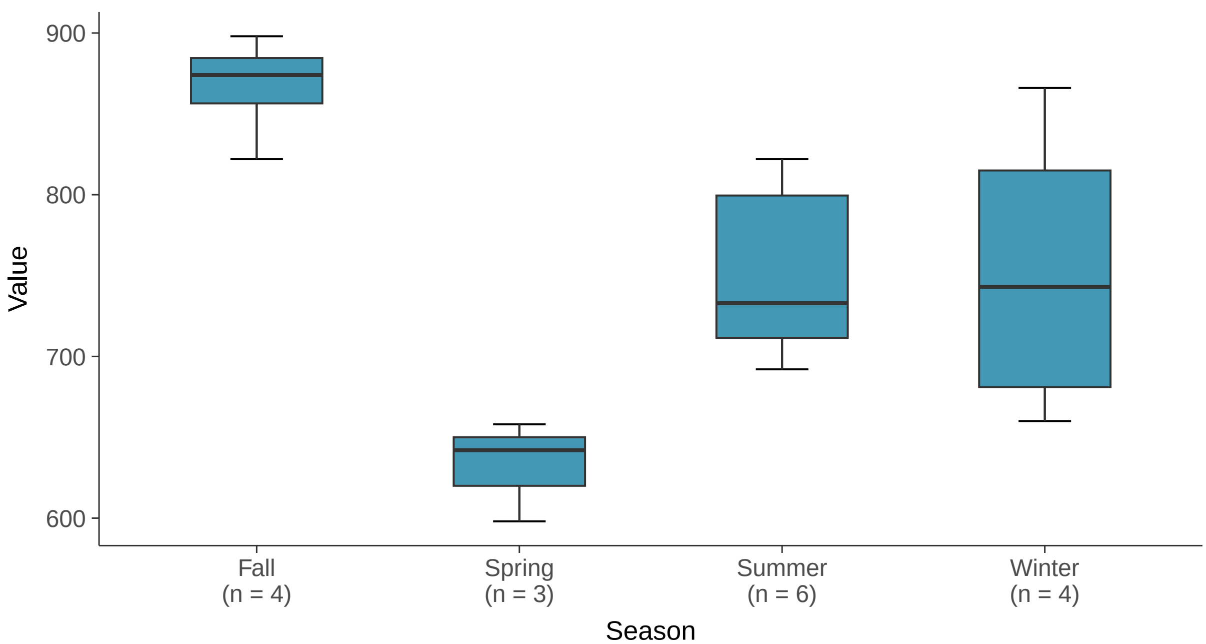
Boxplot

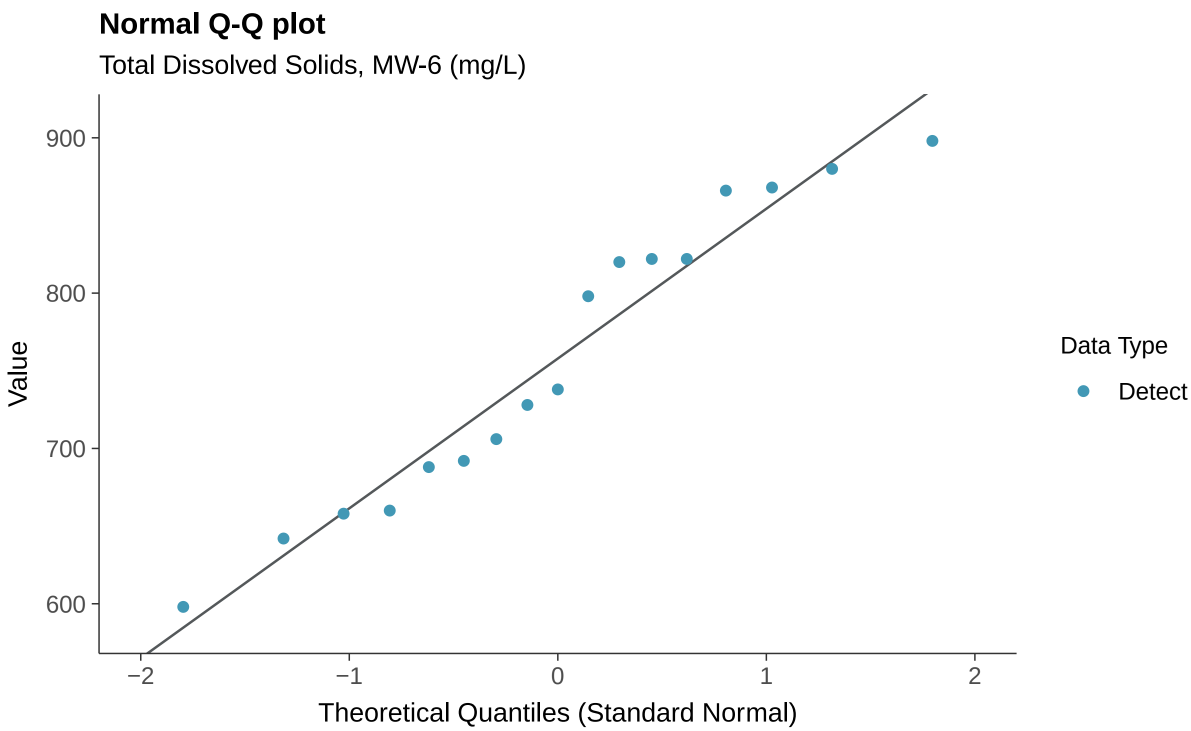
Total Dissolved Solids, MW-6 (mg/L)

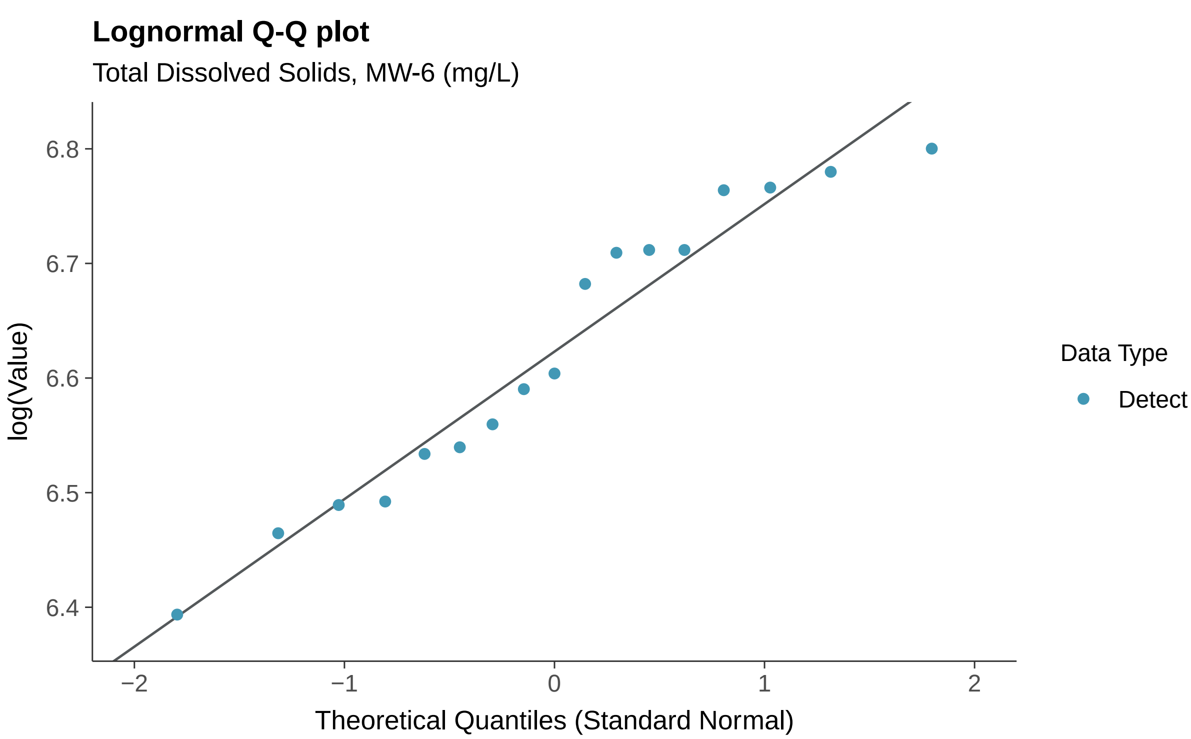


Boxplot by Season

Total Dissolved Solids, MW-6 (mg/L)

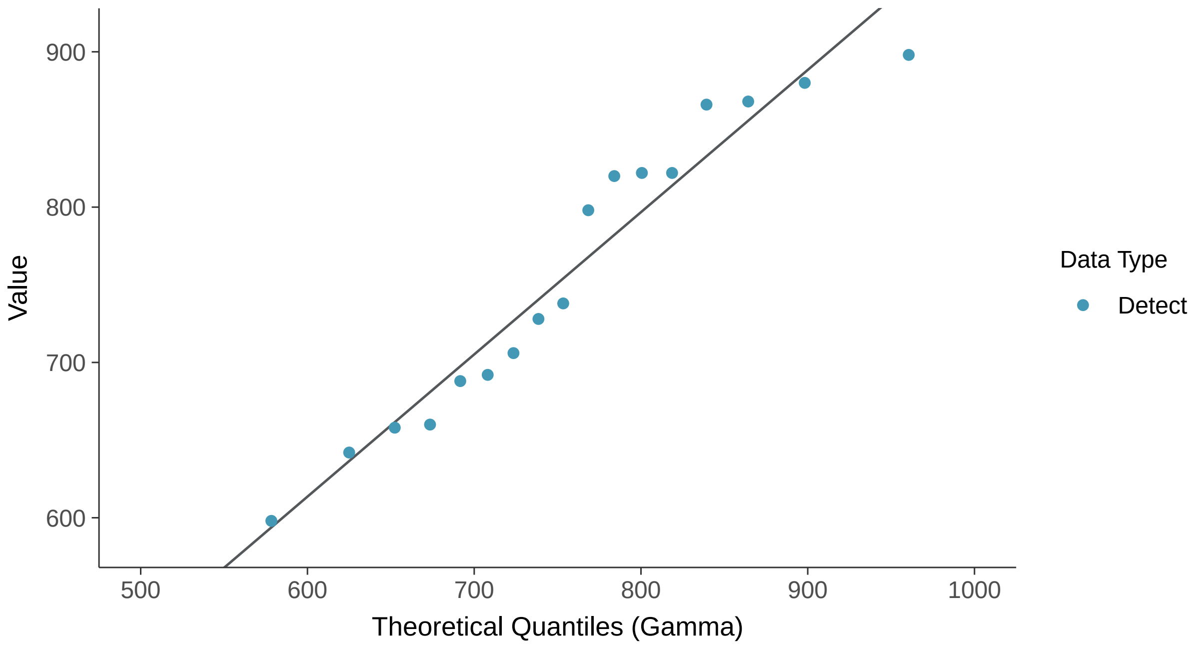



Normal Q-Q plot
Total Dissolved Solids, MW-6 (mg/L)
Value
900
800
700
600
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Total Dissolved Solids, MW-6 (mg/L)
log(Value)
6.8
6.7
6.6
6.5
6.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

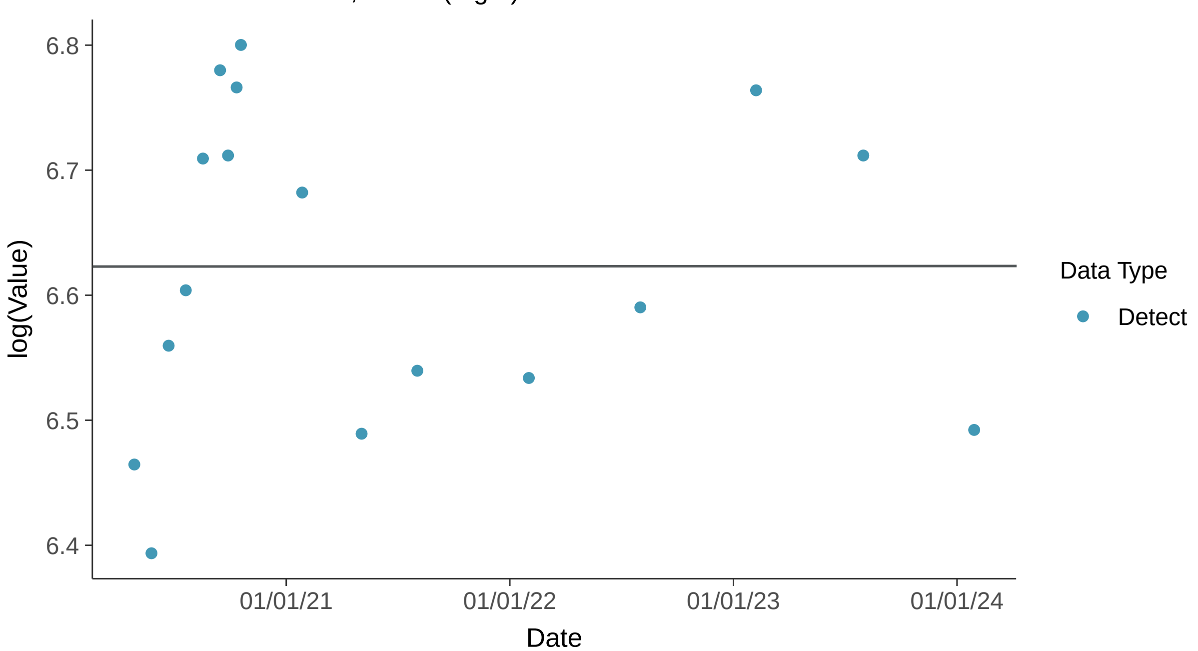
Gamma Q-Q plot

Total Dissolved Solids, MW-6 (mg/L)



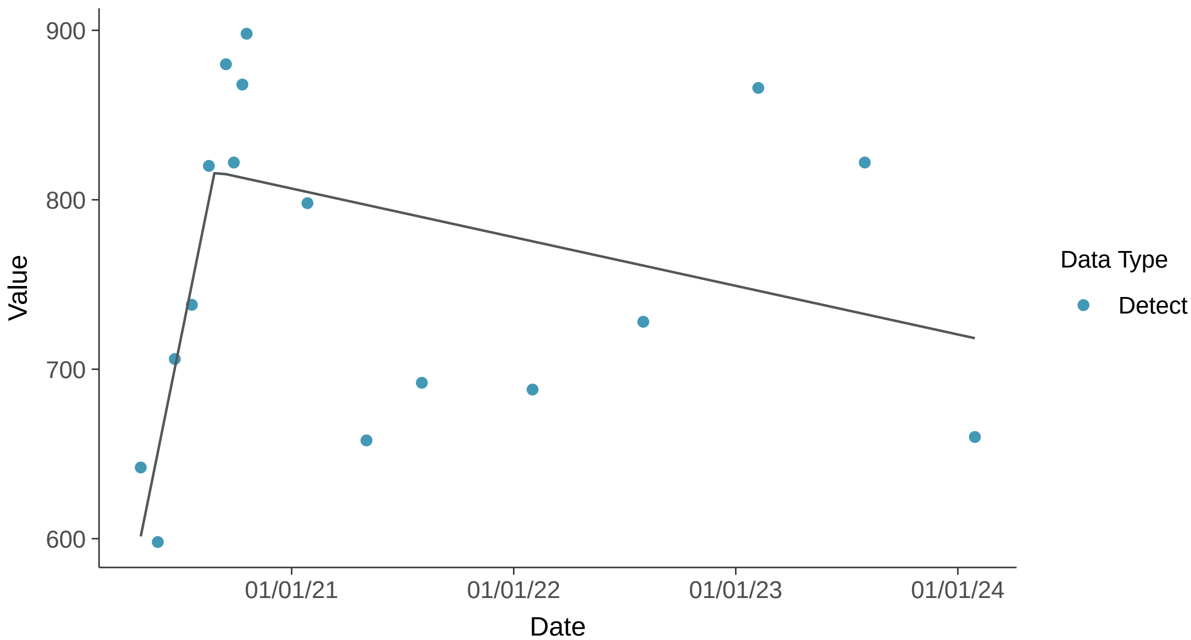
Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-6 (mg/L)



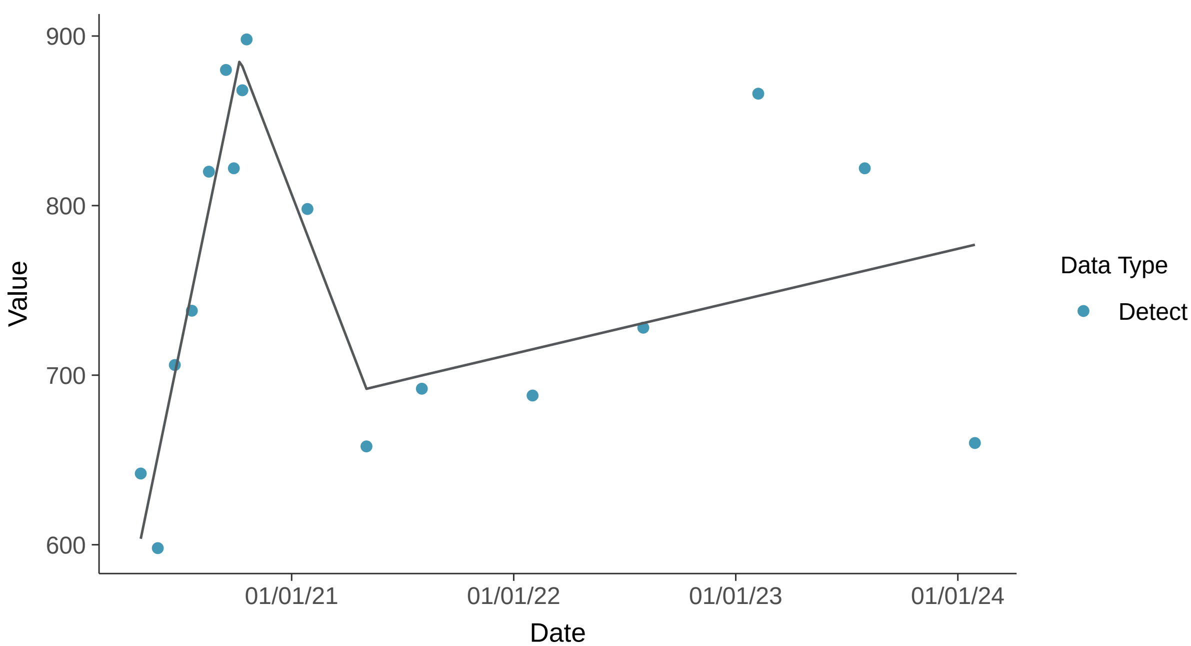
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-6 (mg/L)



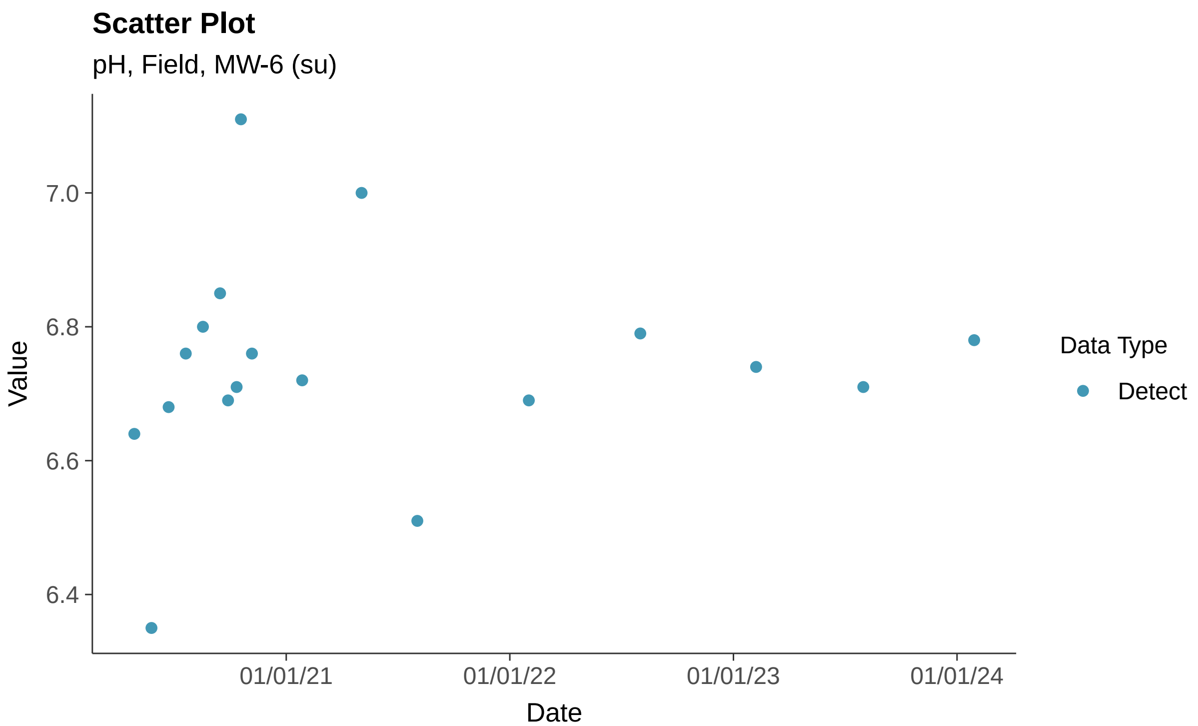
Trend Regression: Piecewise Linear-Linear-Linear

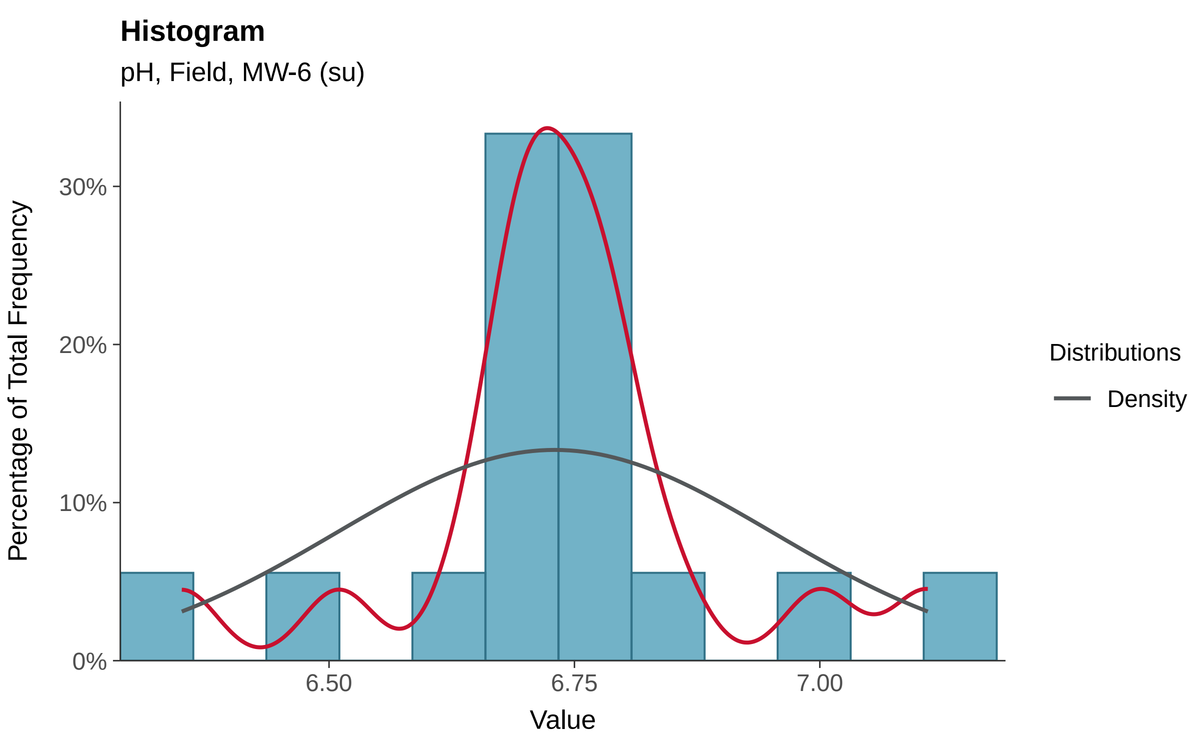
Total Dissolved Solids, MW-6 (mg/L)



Appendix III: pH, Field, MW-6

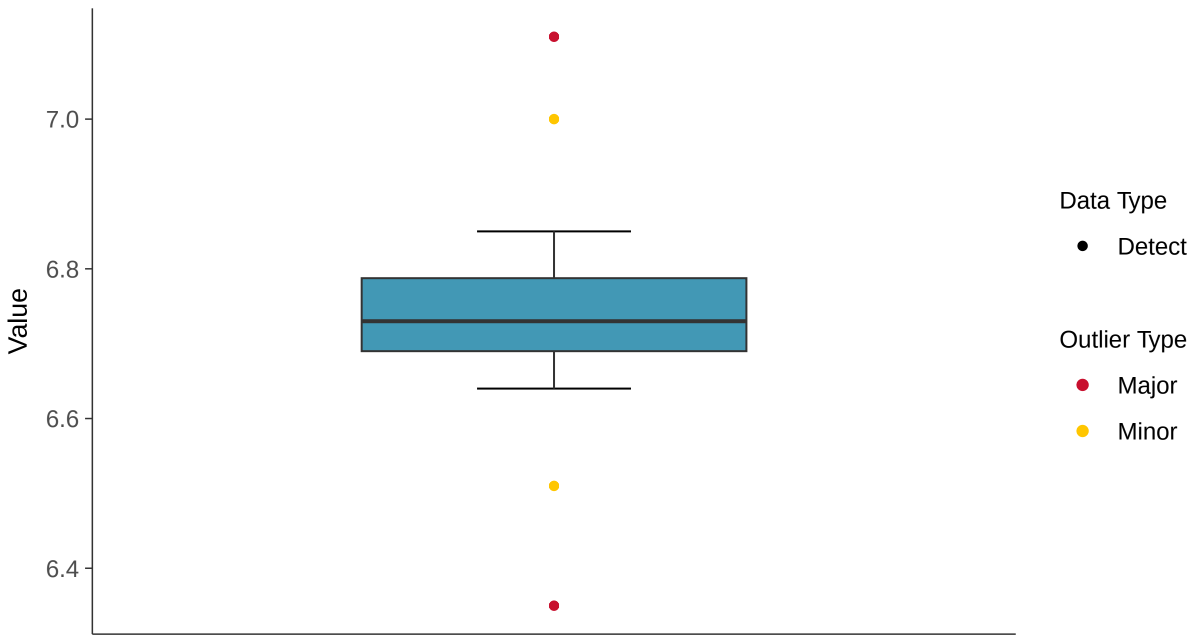
ID: 06_1_07





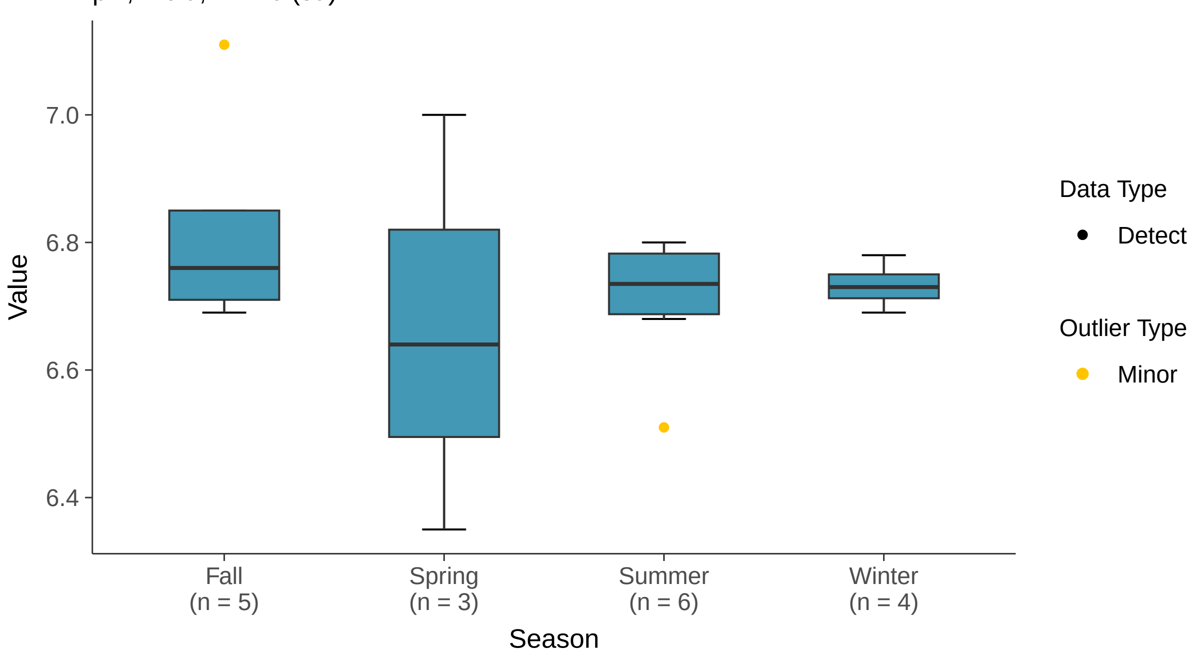
Boxplot

pH, Field, MW-6 (su)



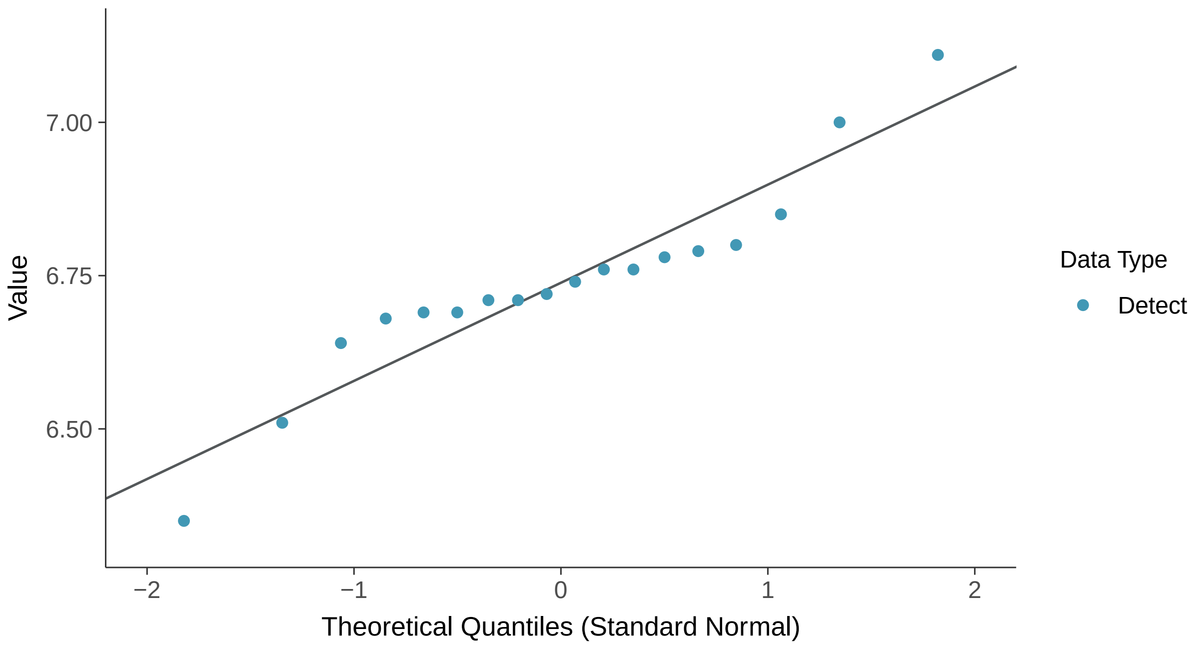
Boxplot by Season

pH, Field, MW-6 (su)



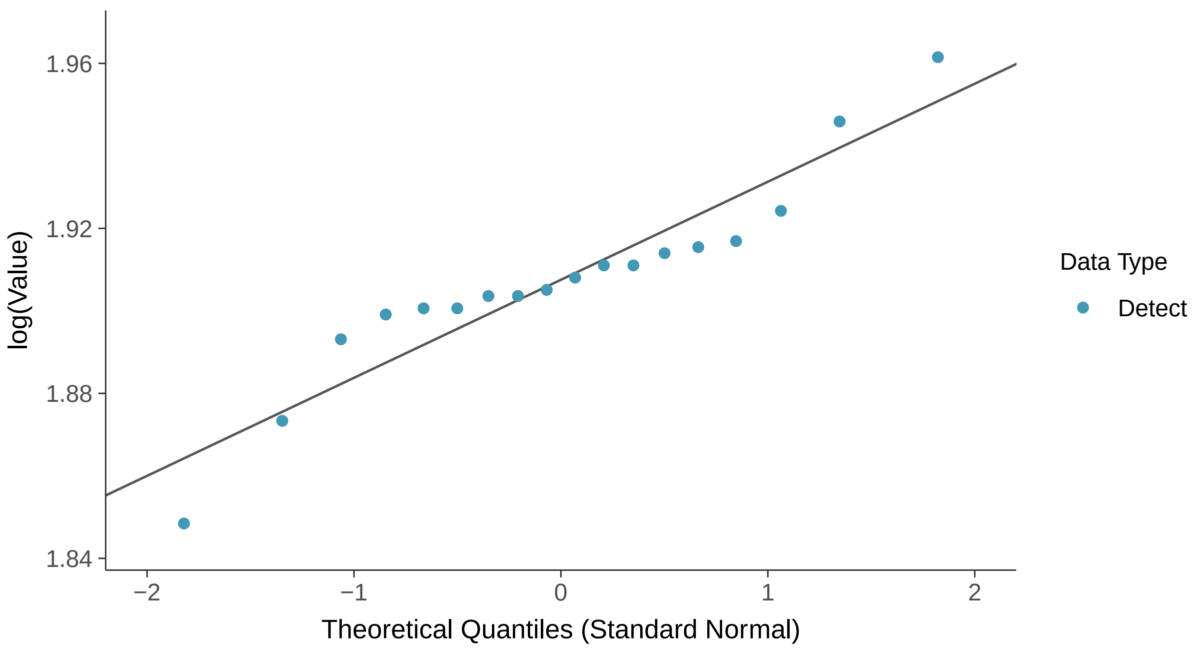
Normal Q-Q plot

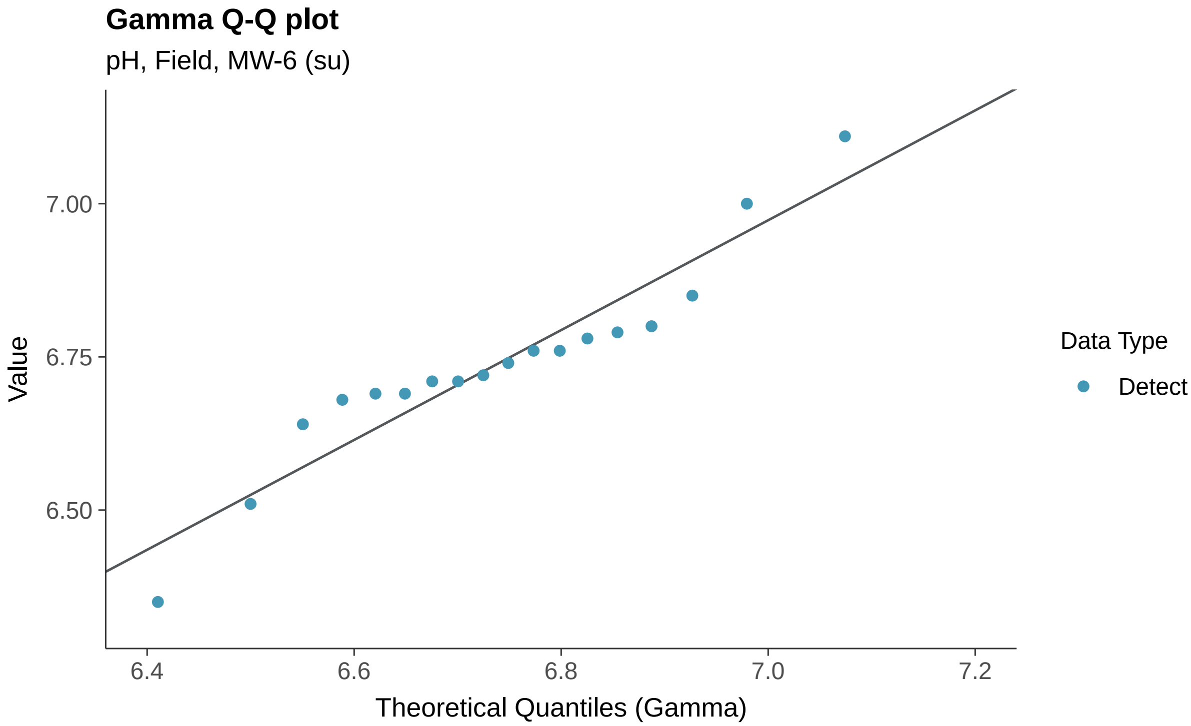
pH, Field, MW-6 (su)

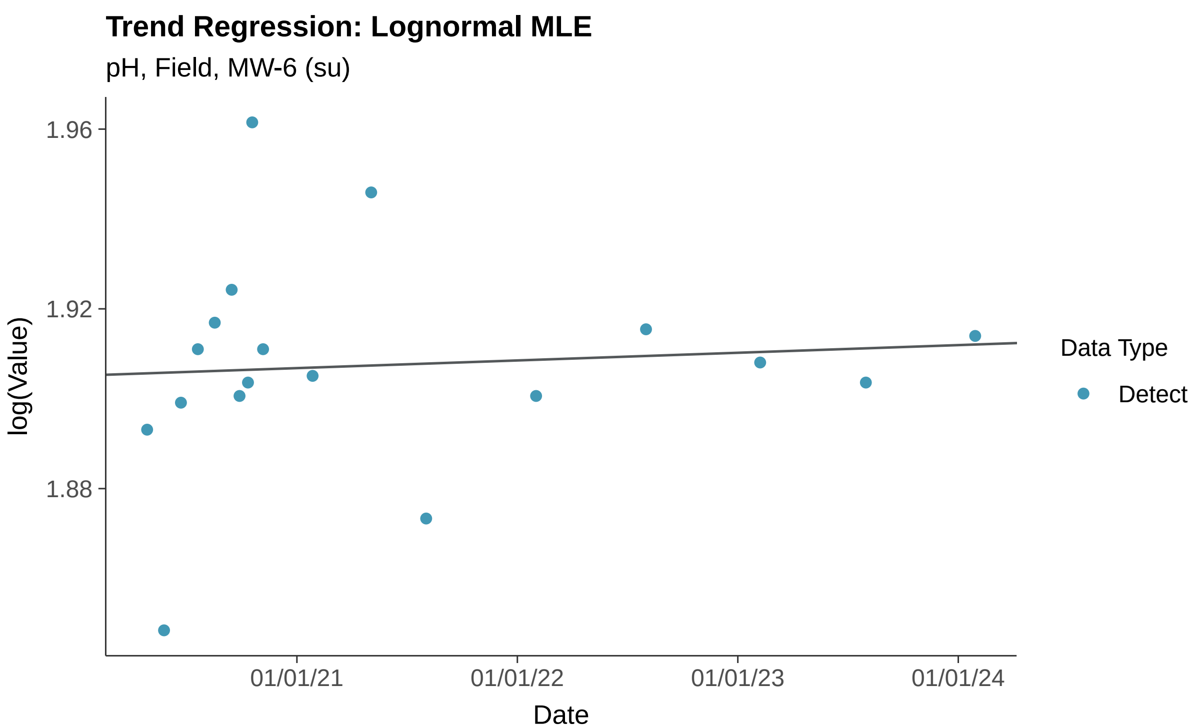


Lognormal Q-Q plot

pH, Field, MW-6 (su)

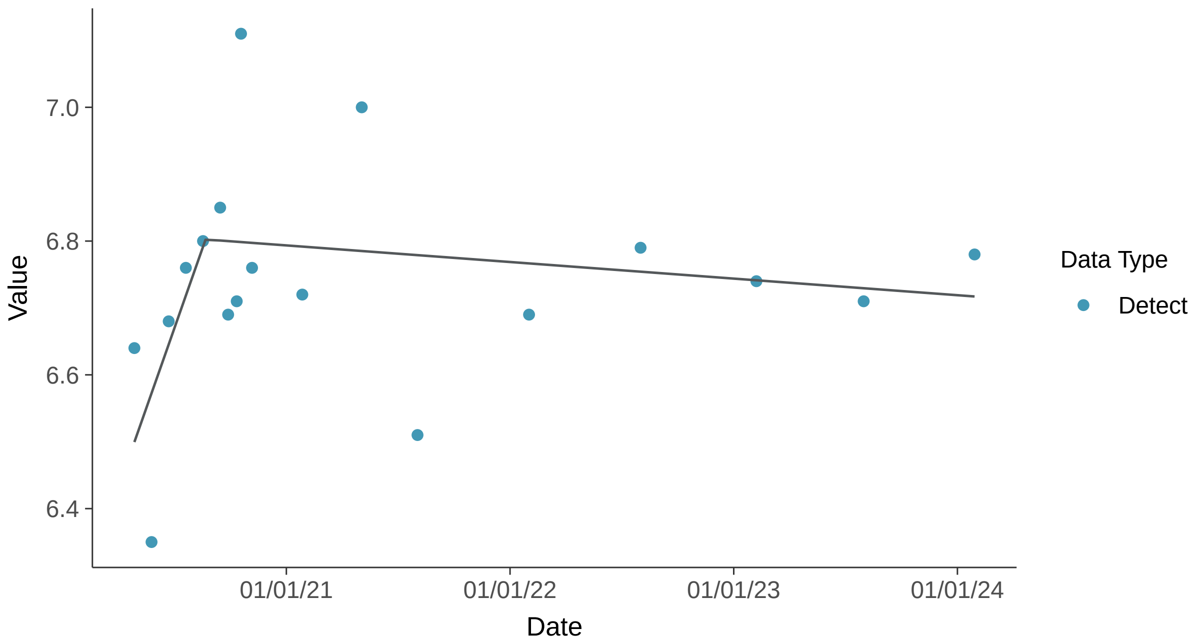



Gamma Q-Q plot
pH, Field, MW-6 (su)
Value
7.00
6.75
6.50
6.4
6.6
6.8
7.0
7.2
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, Field, MW-6 (su)
log(Value)
1.96
1.92
1.88
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

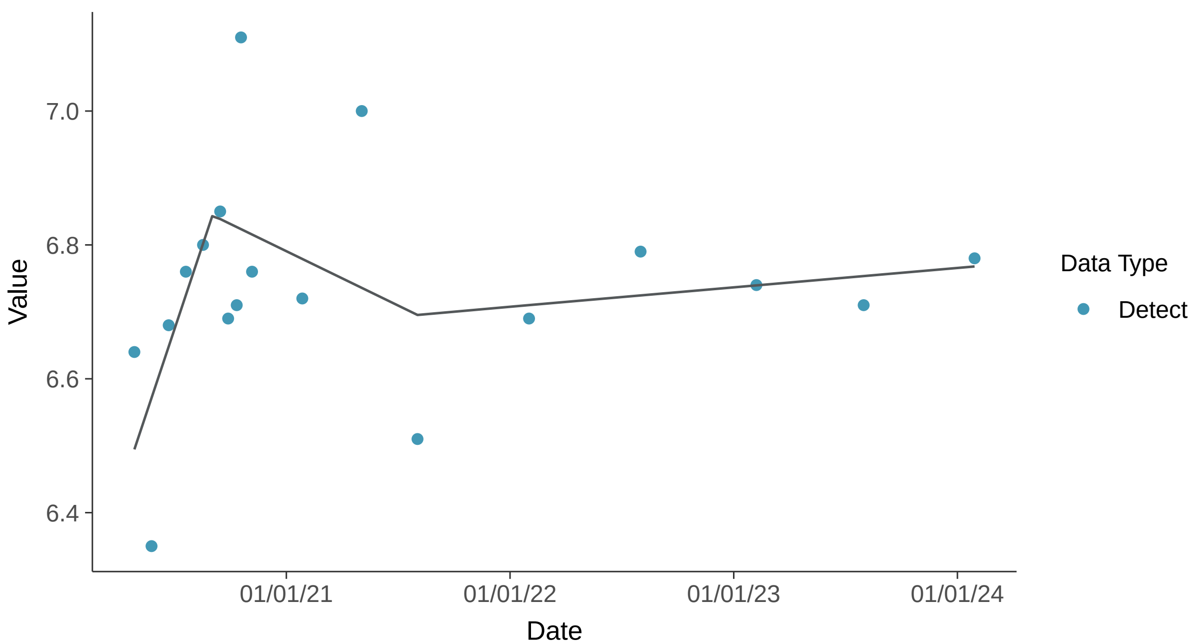
Trend Regression: Piecewise Linear-Linear

pH, Field, MW-6 (su)



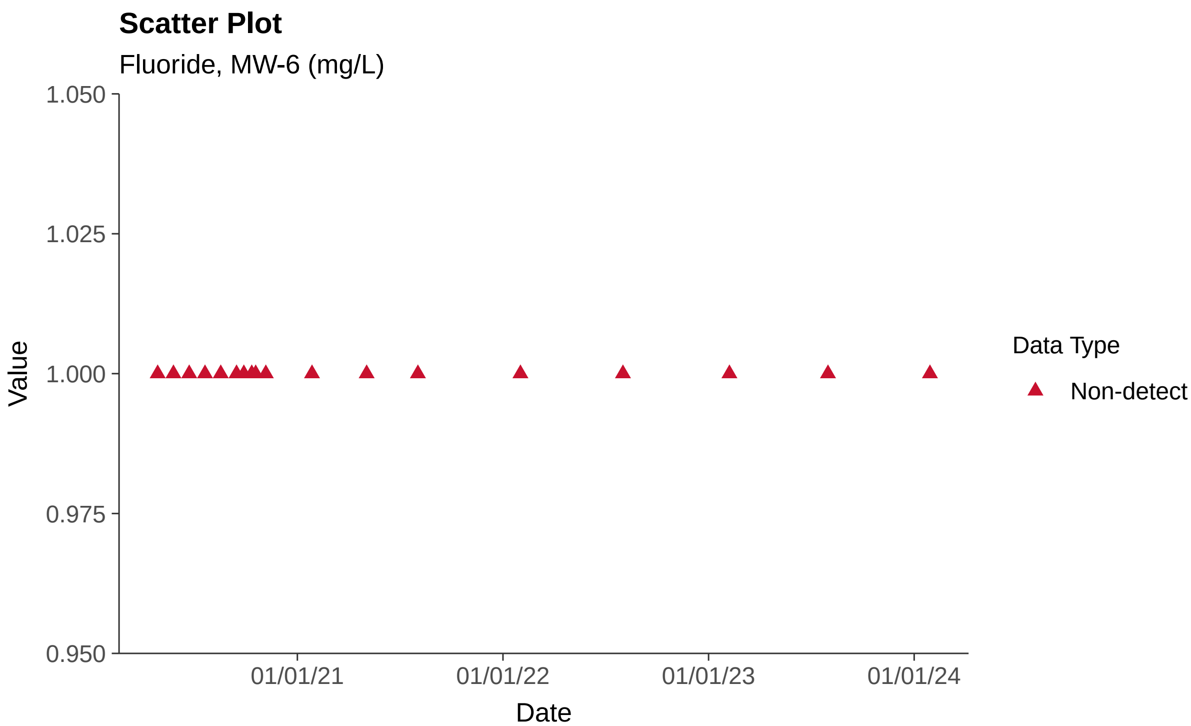
Trend Regression: Piecewise Linear-Linear-Linear

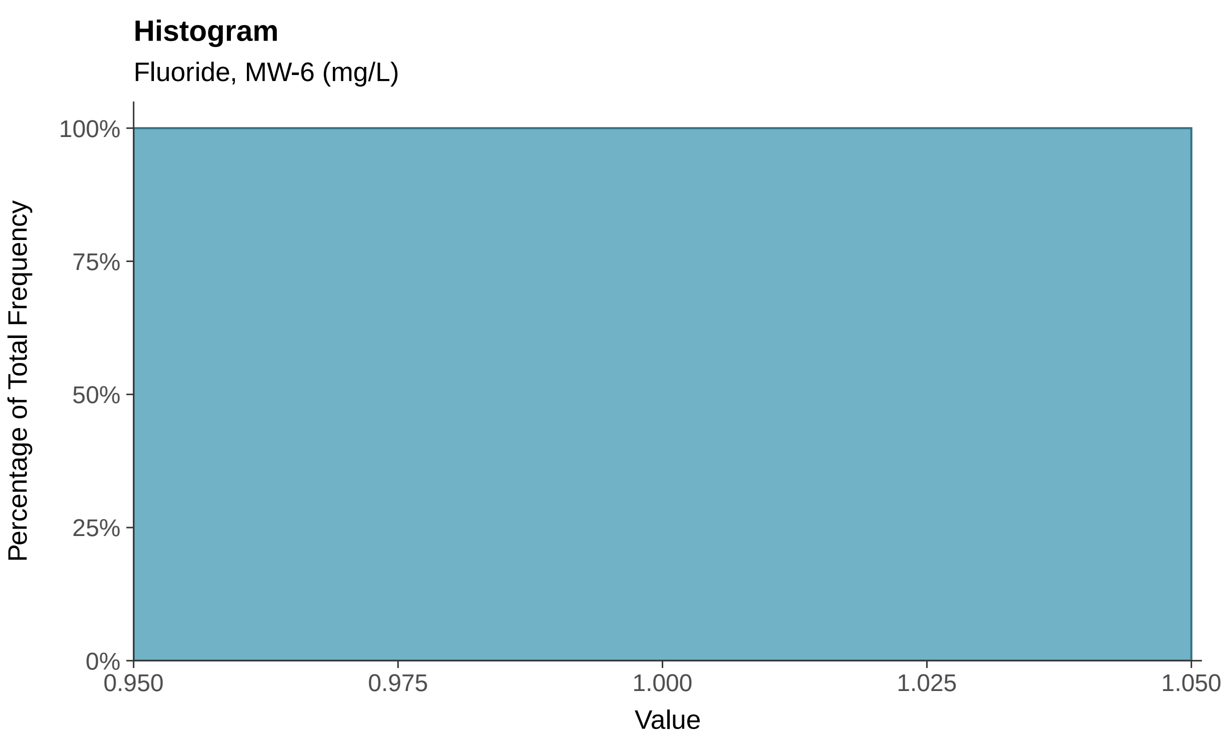
pH, Field, MW-6 (su)



Appendix IV: Fluoride, MW-6

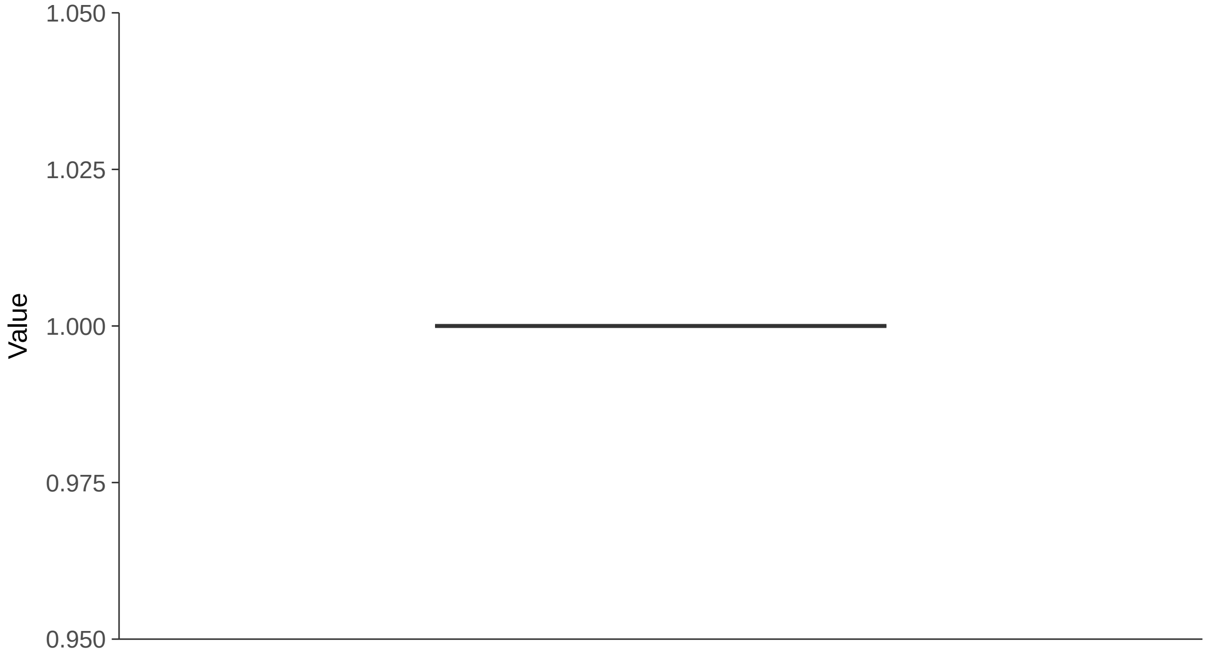
ID: 06_2_04





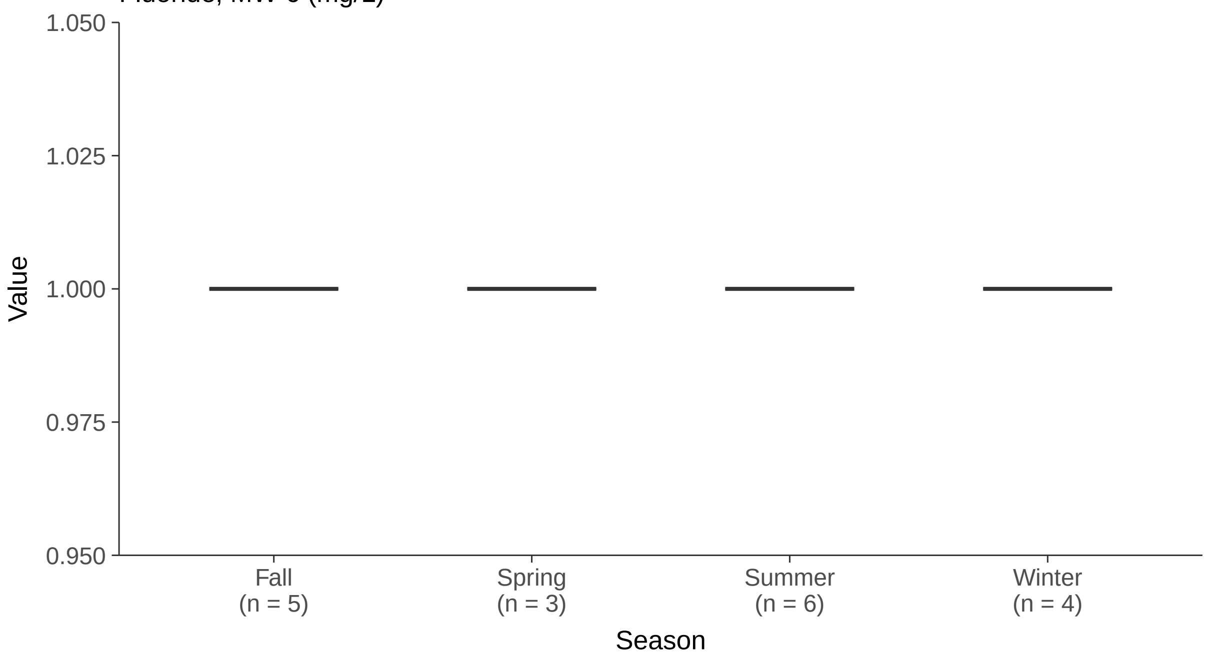
Boxplot

Fluoride, MW-6 (mg/L)



Boxplot by Season

Fluoride, MW-6 (mg/L)

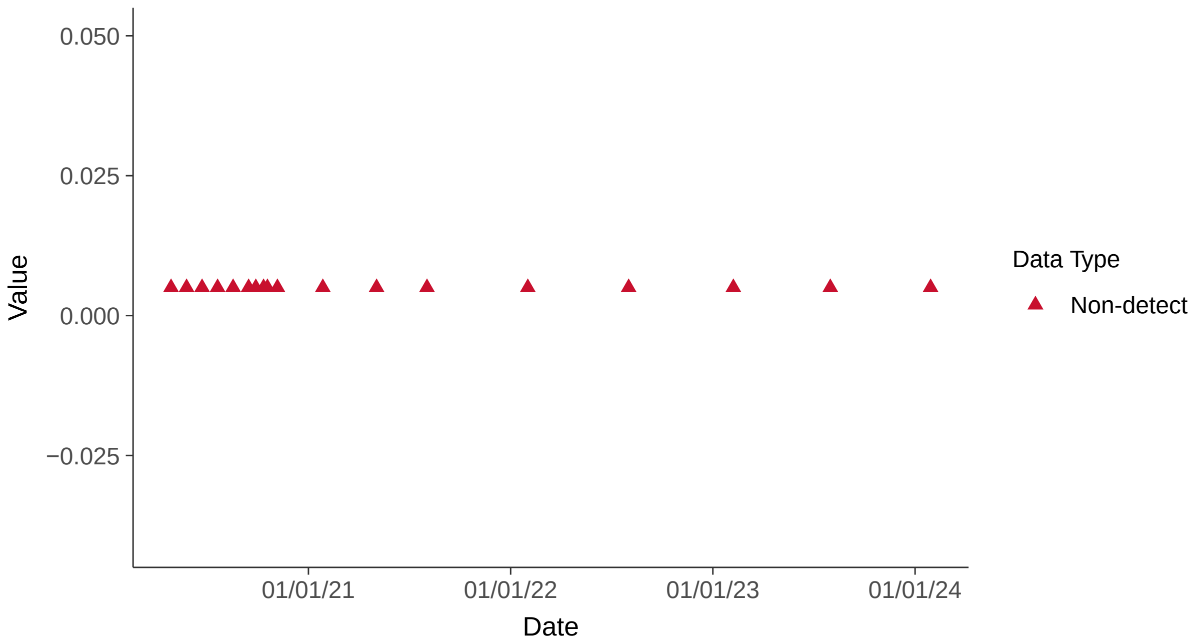


Appendix IV: Antimony, MW-6

ID: 06_2_08

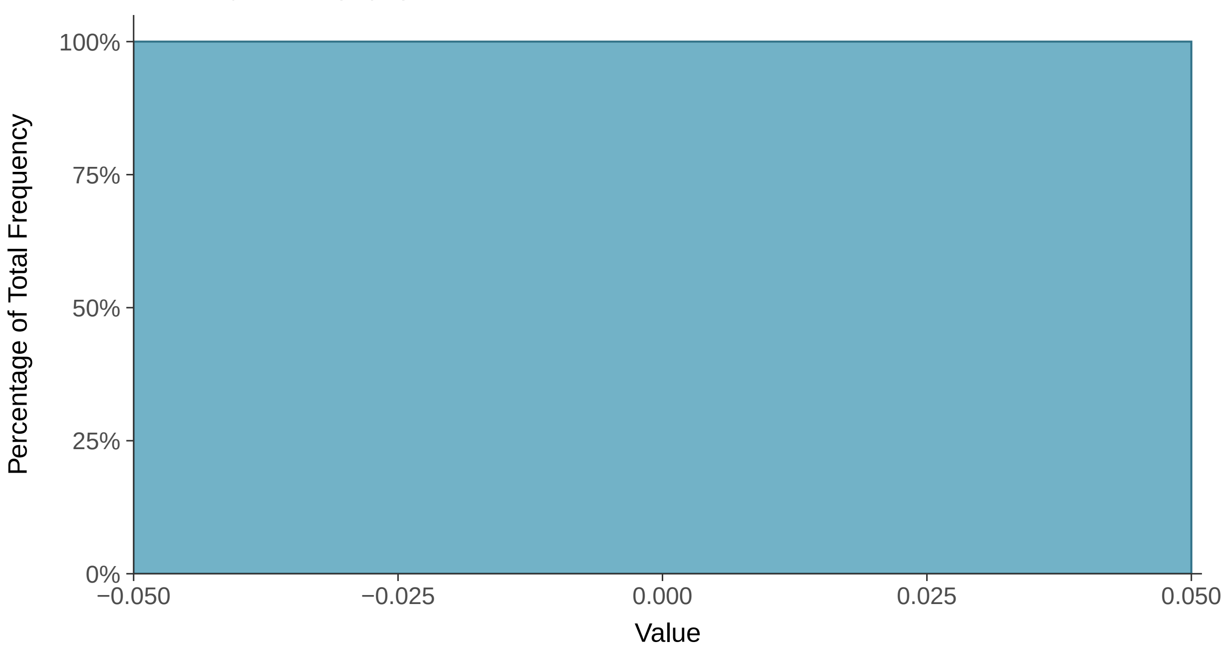
Scatter Plot

Antimony, MW-6 (mg/L)



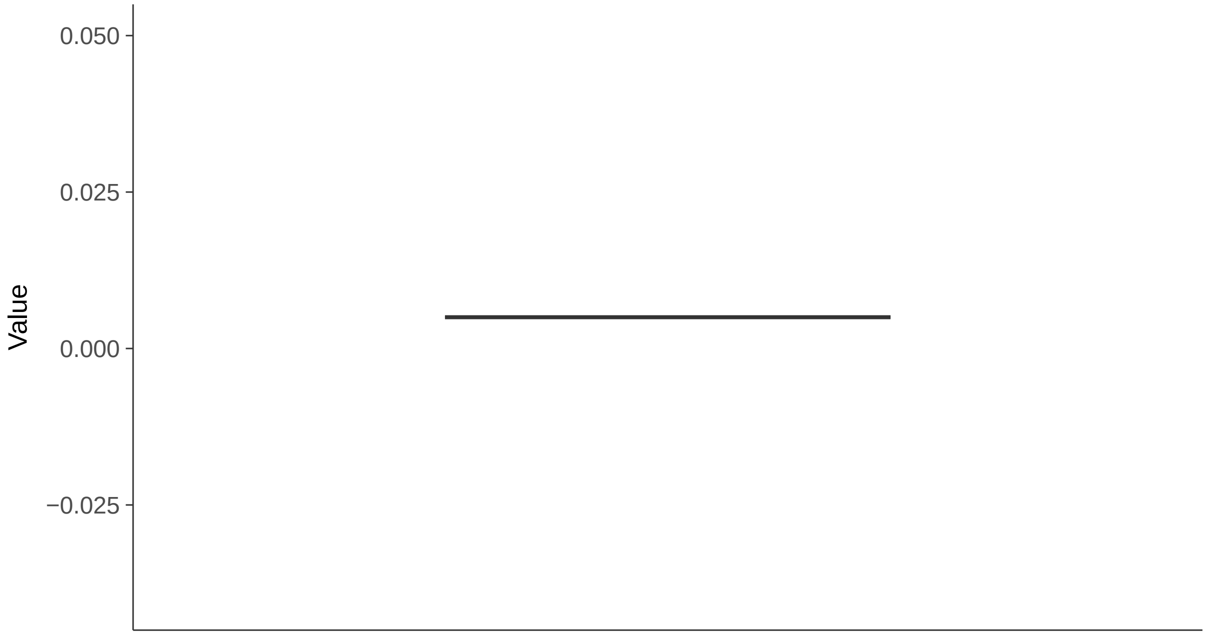
Histogram

Antimony, MW-6 (mg/L)



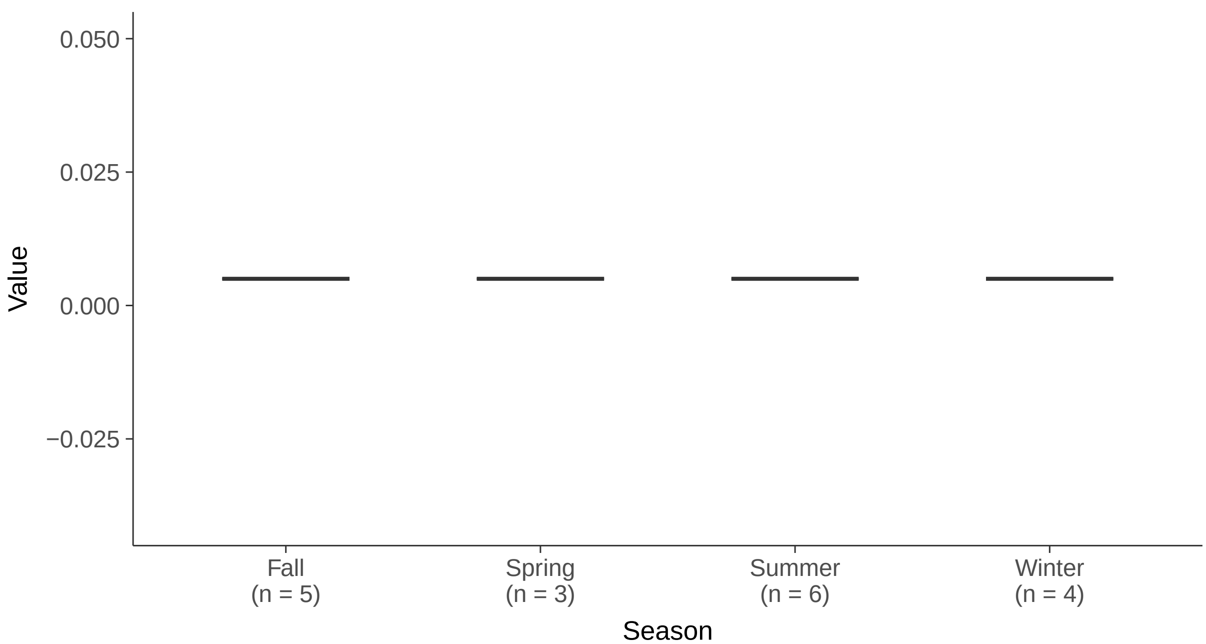
Boxplot

Antimony, MW-6 (mg/L)



Boxplot by Season

Antimony, MW-6 (mg/L)

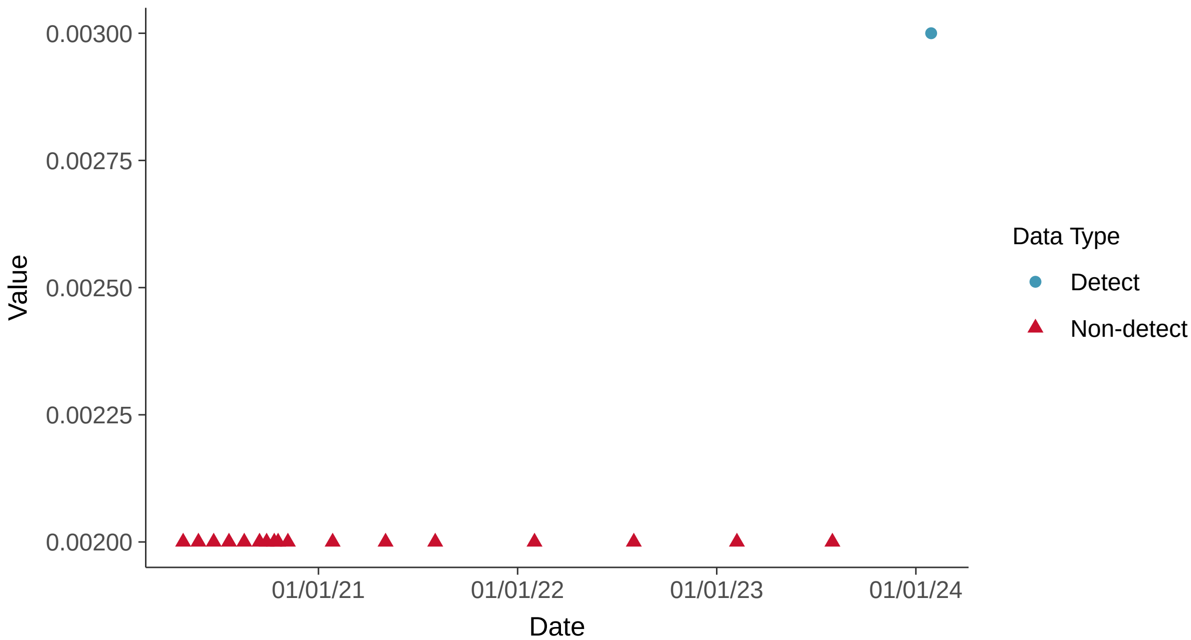


Appendix IV: Arsenic, MW-6

ID: 06_2_09

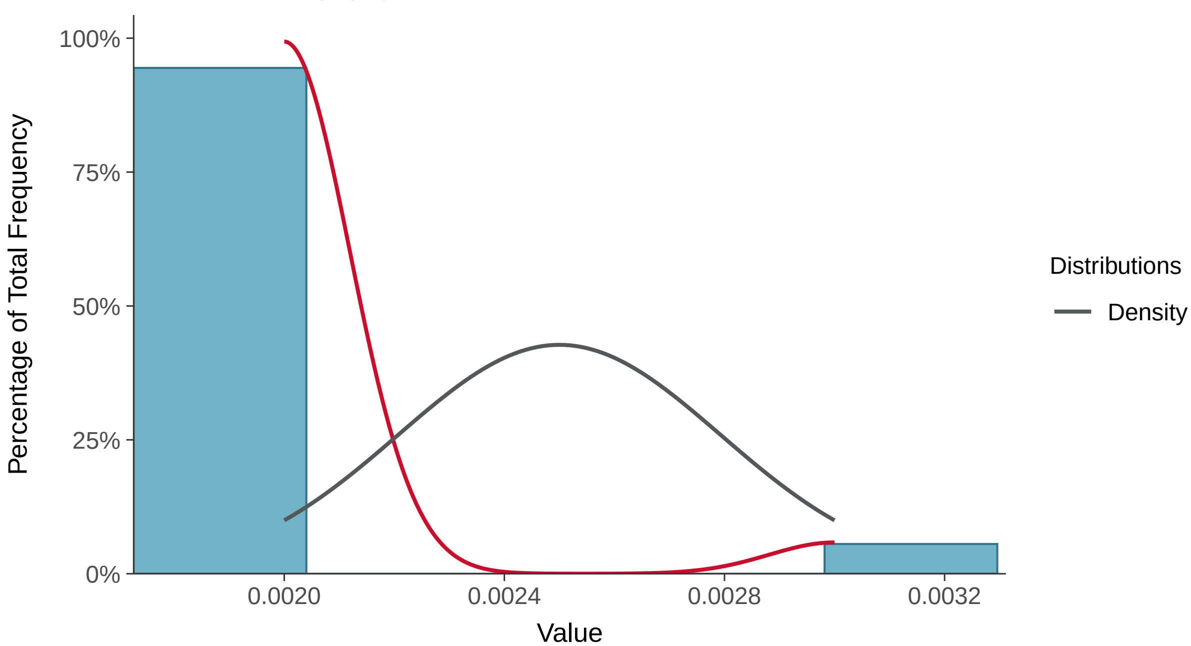
Scatter Plot

Arsenic, MW-6 (mg/L)



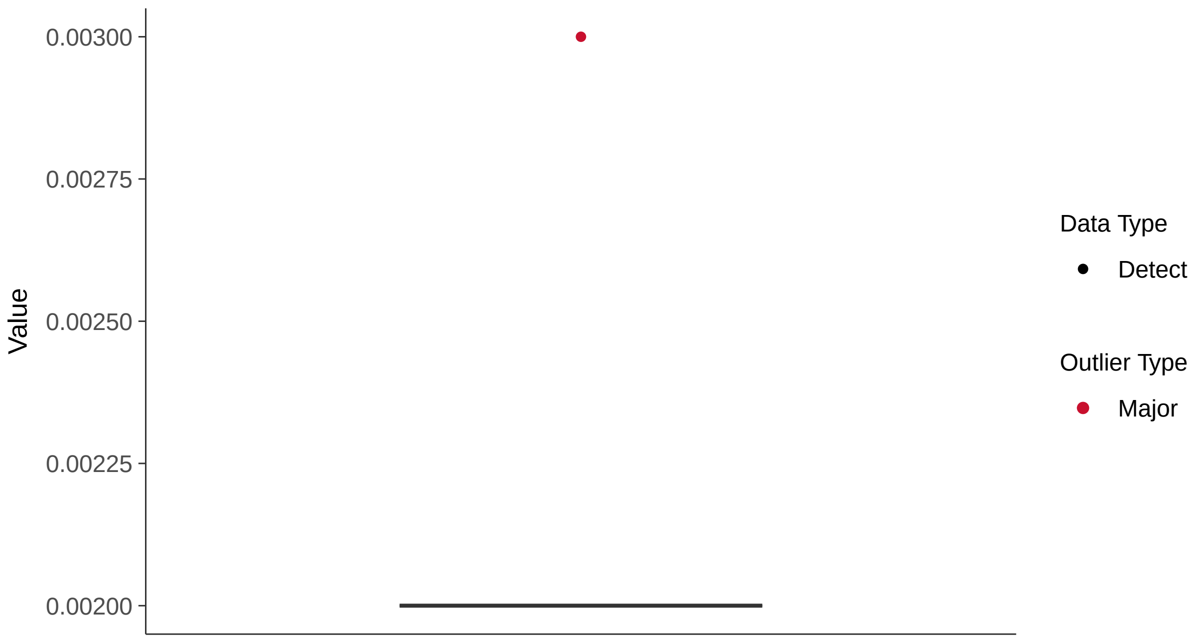
Histogram

Arsenic, MW-6 (mg/L)



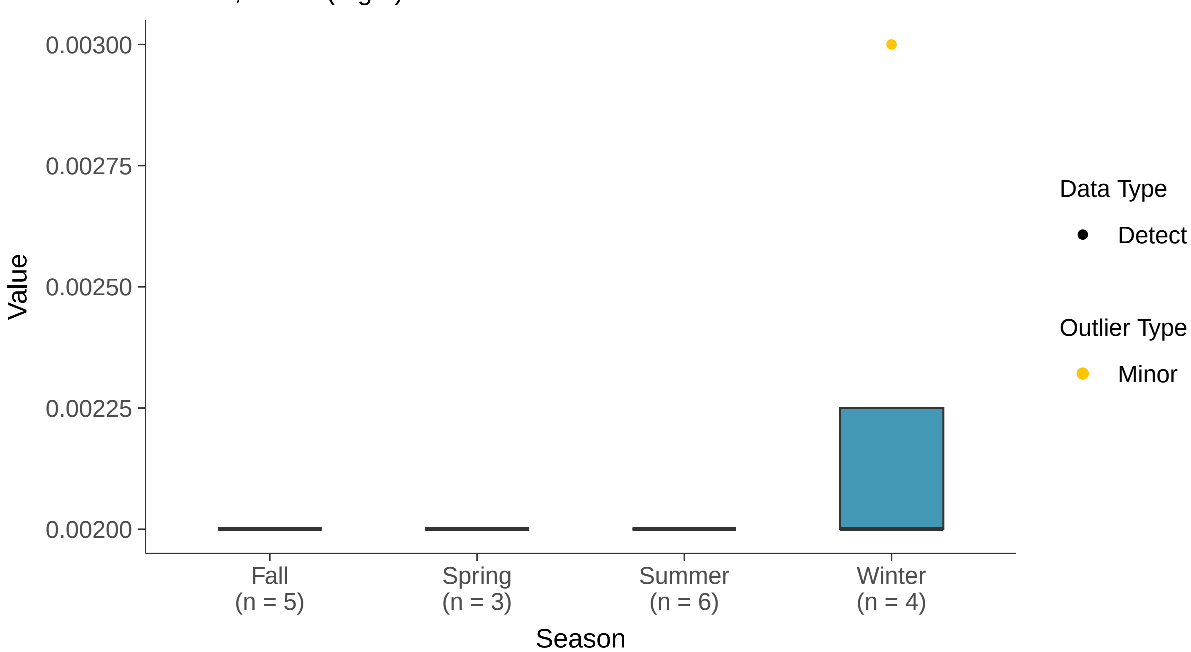
Boxplot

Arsenic, MW-6 (mg/L)



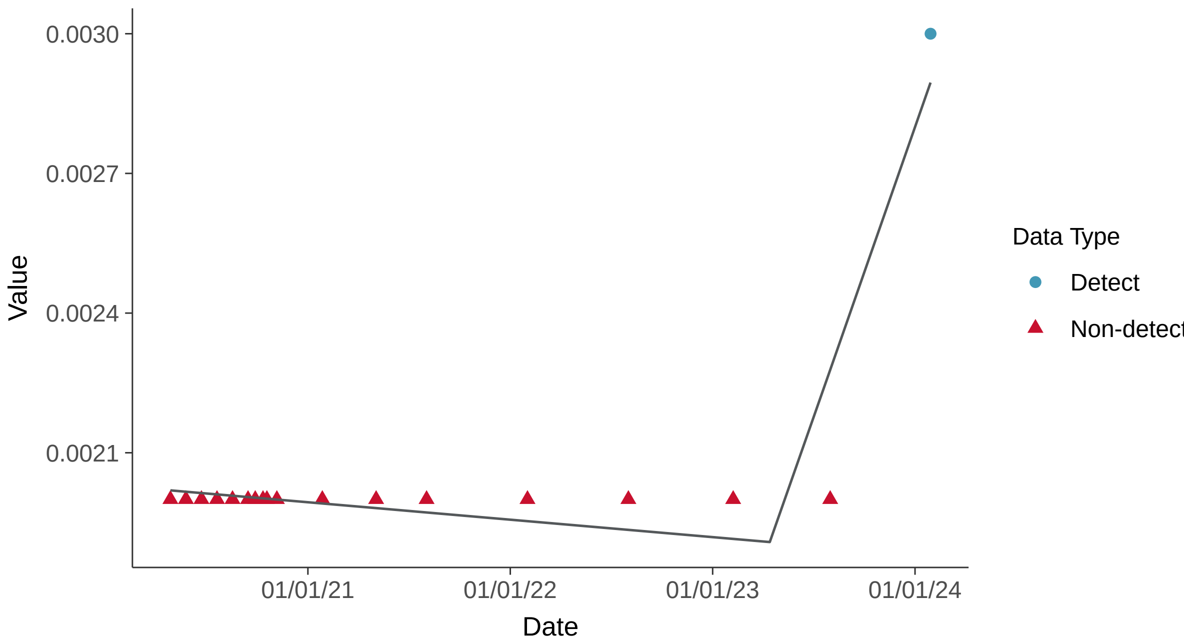
Boxplot by Season

Arsenic, MW-6 (mg/L)



Trend Regression: Piecewise Linear-Linear

Arsenic, MW-6 (mg/L)

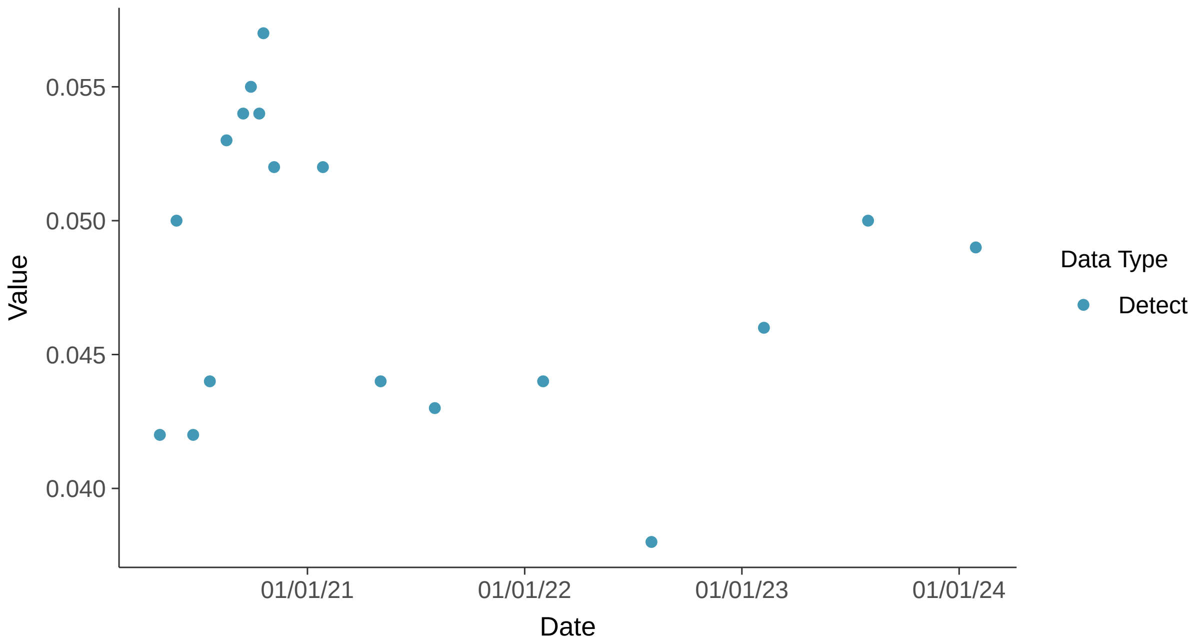


Appendix IV: Barium, MW-6

ID: 06_2_10

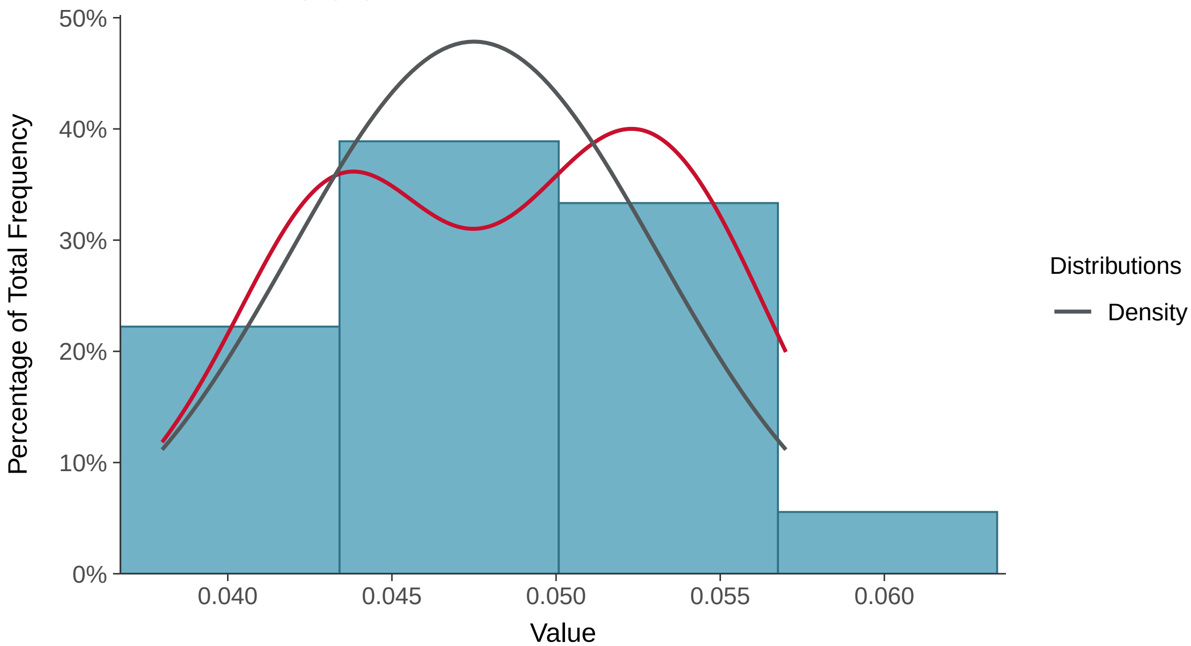
Scatter Plot

Barium, MW-6 (mg/L)



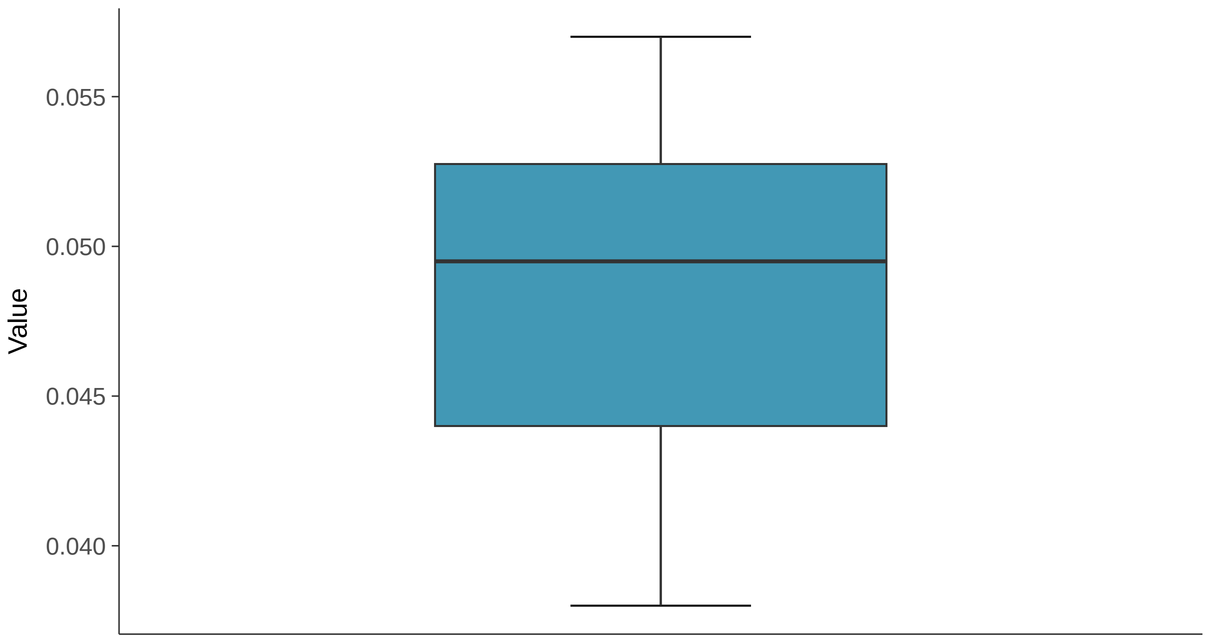
Histogram

Barium, MW-6 (mg/L)



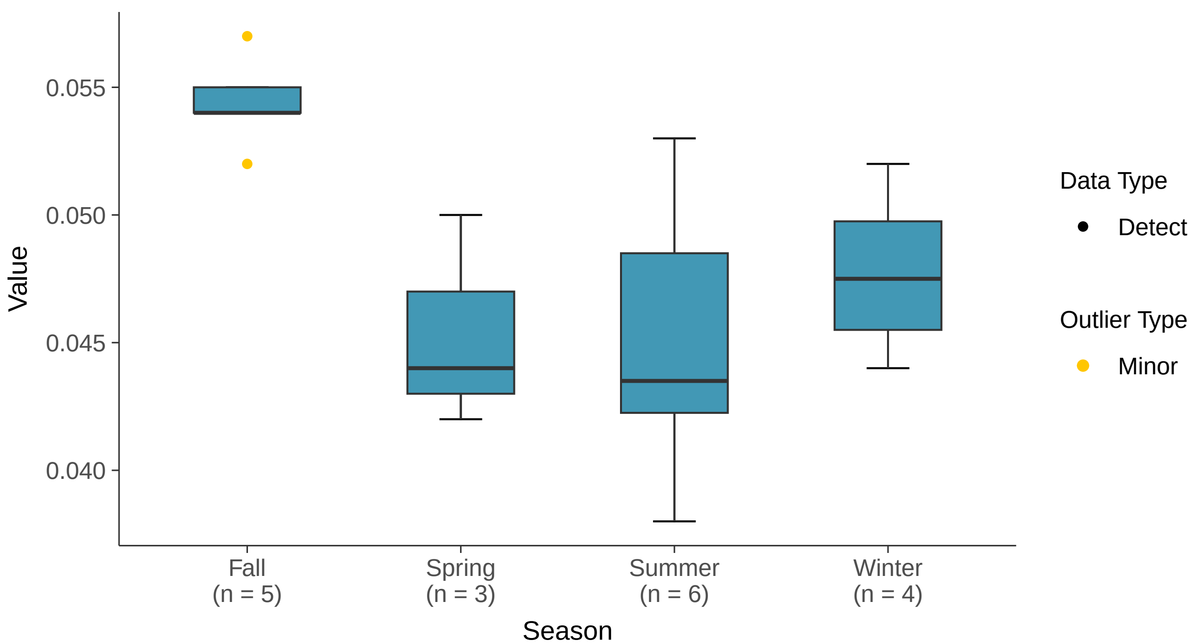
Boxplot

Barium, MW-6 (mg/L)



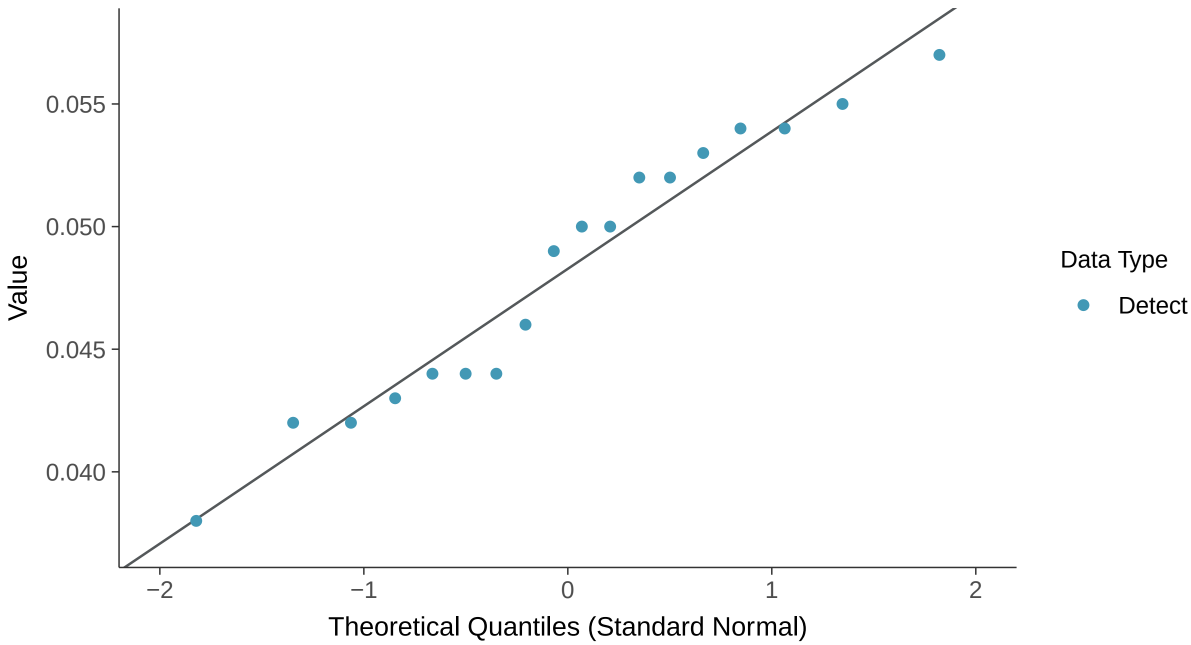
Boxplot by Season

Barium, MW-6 (mg/L)



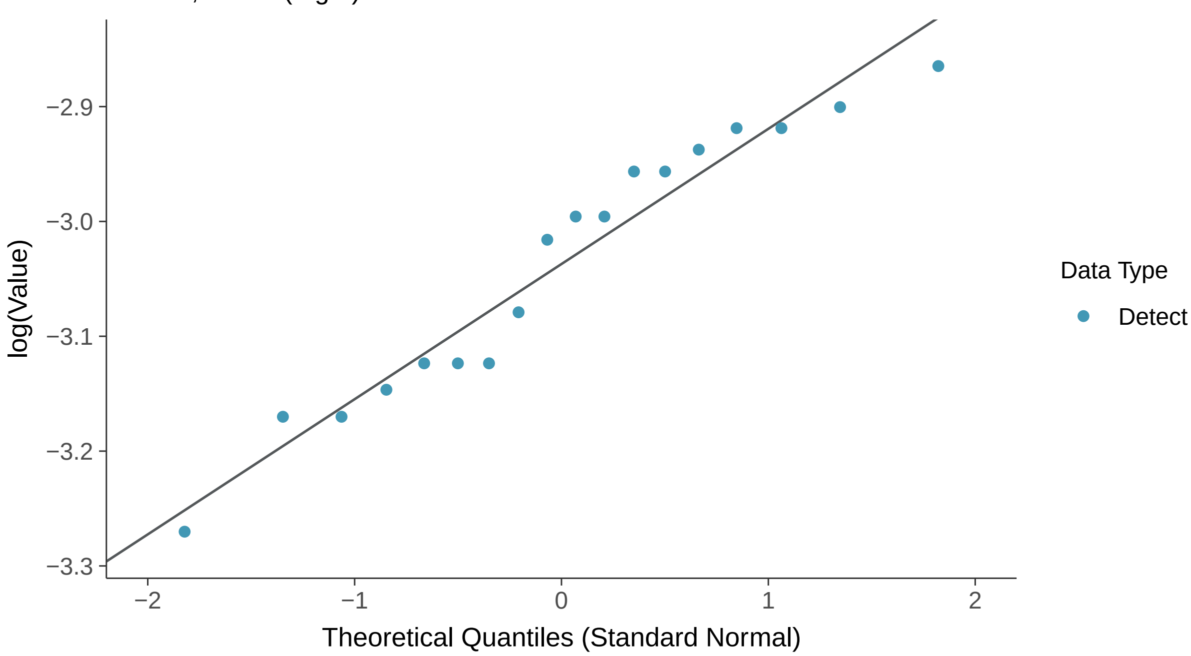
Normal Q-Q plot

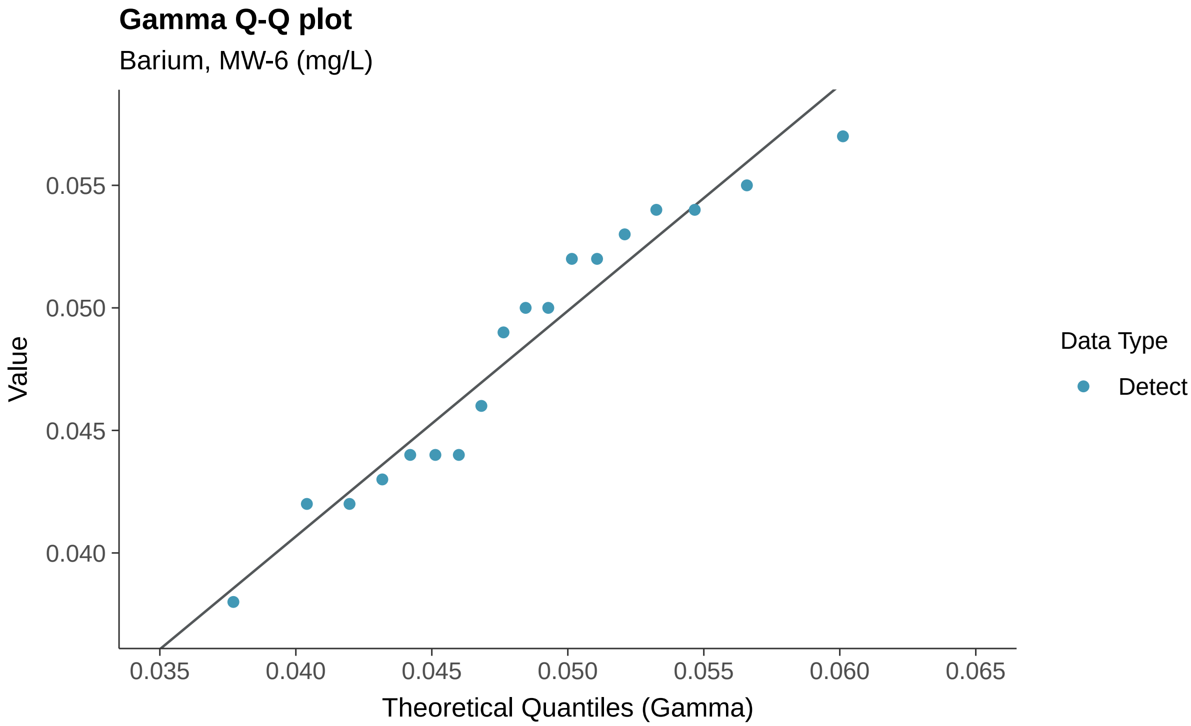
Barium, MW-6 (mg/L)

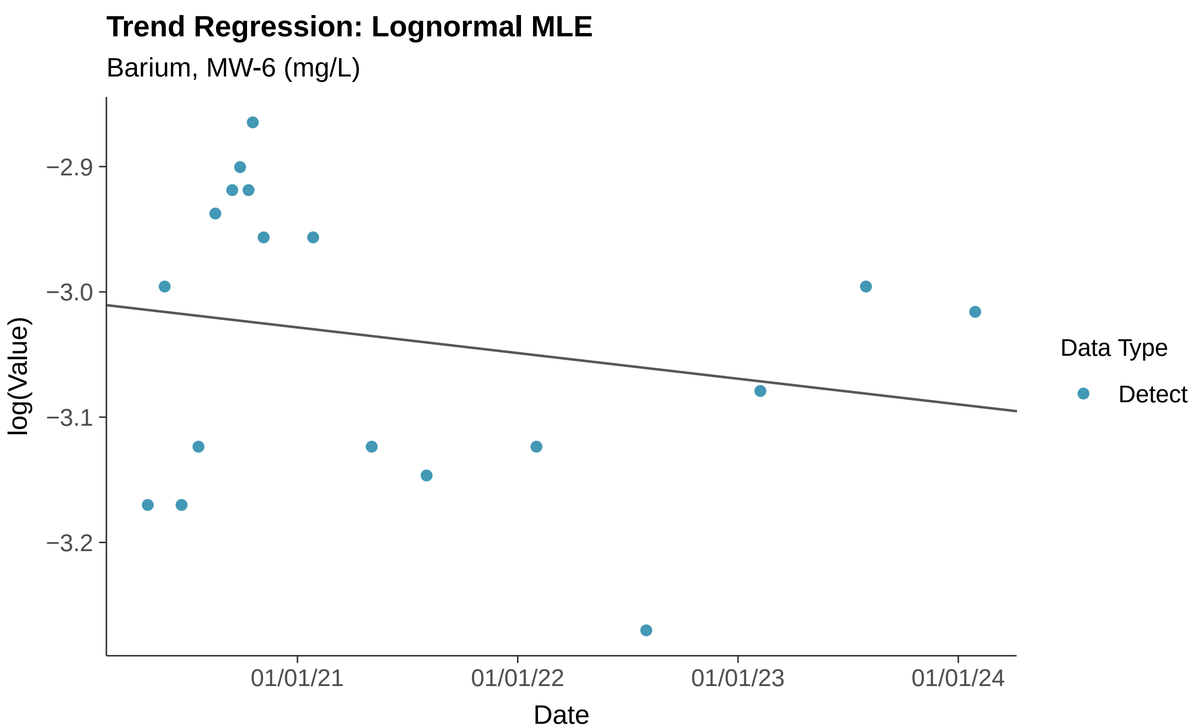


Lognormal Q-Q plot

Barium, MW-6 (mg/L)

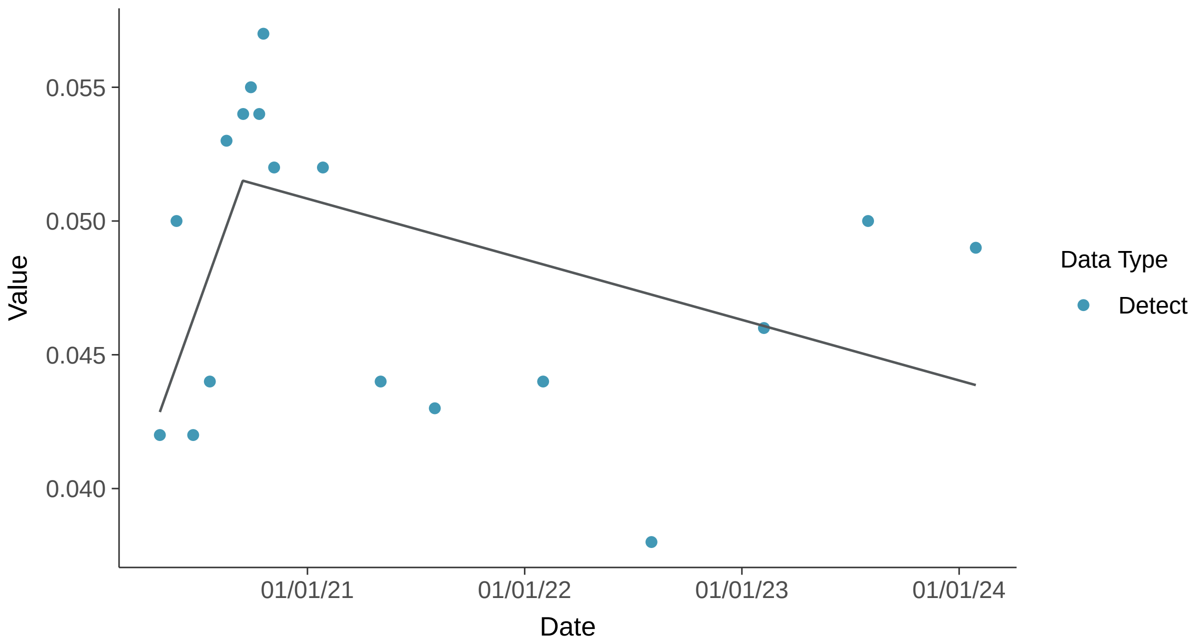



Gamma Q-Q plot
Barium, MW-6 (mg/L)
Value
0.055
0.050
0.045
0.040
0.035
0.040
0.045
0.050
0.055
0.060
0.065
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-6 (mg/L)
log(Value)
−2.9
−3.0
−3.1
−3.2
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

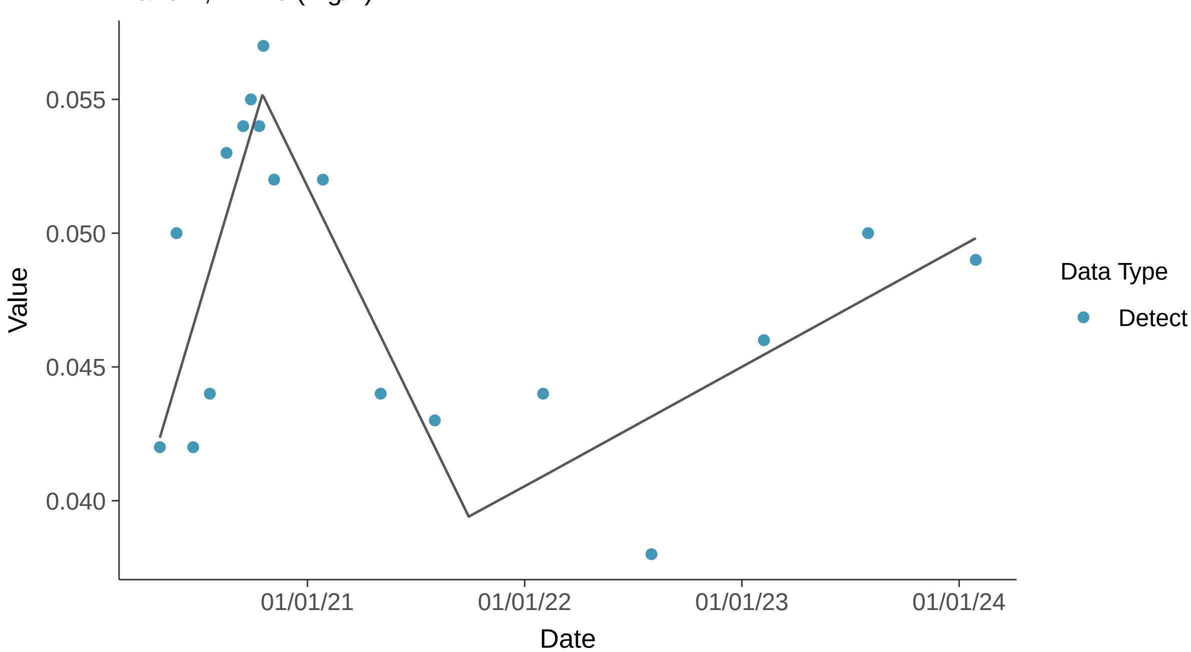
Trend Regression: Piecewise Linear-Linear

Barium, MW-6 (mg/L)



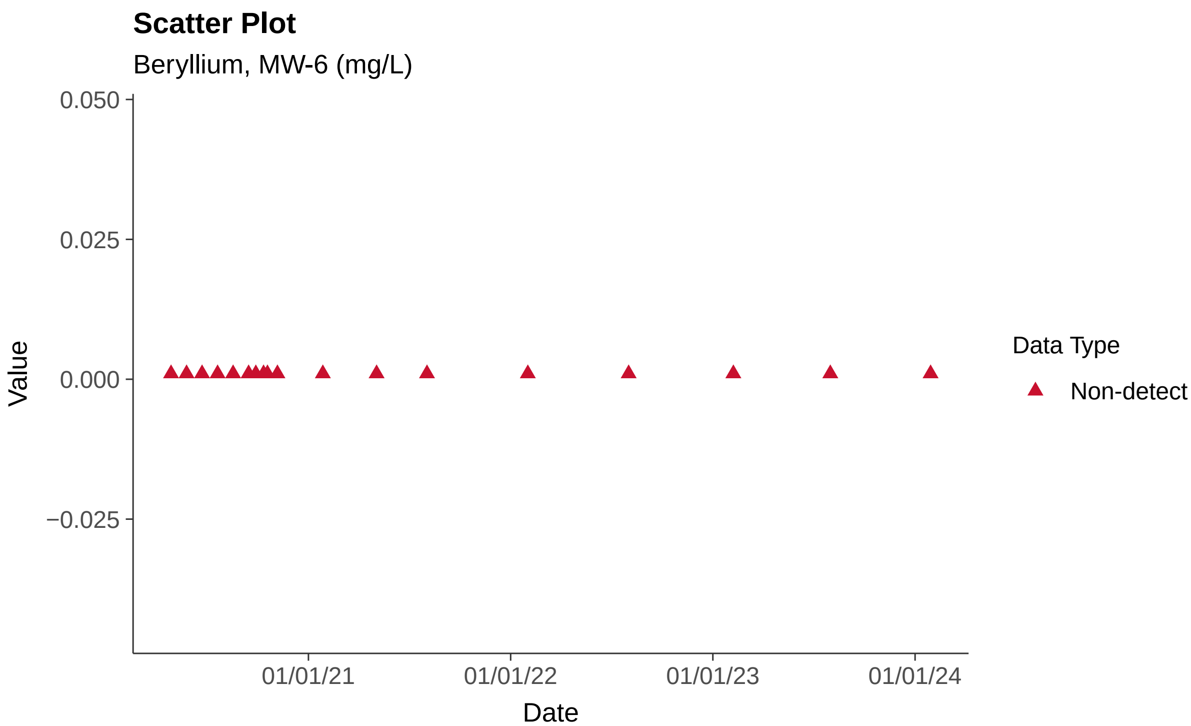
Trend Regression: Piecewise Linear-Linear-Linear

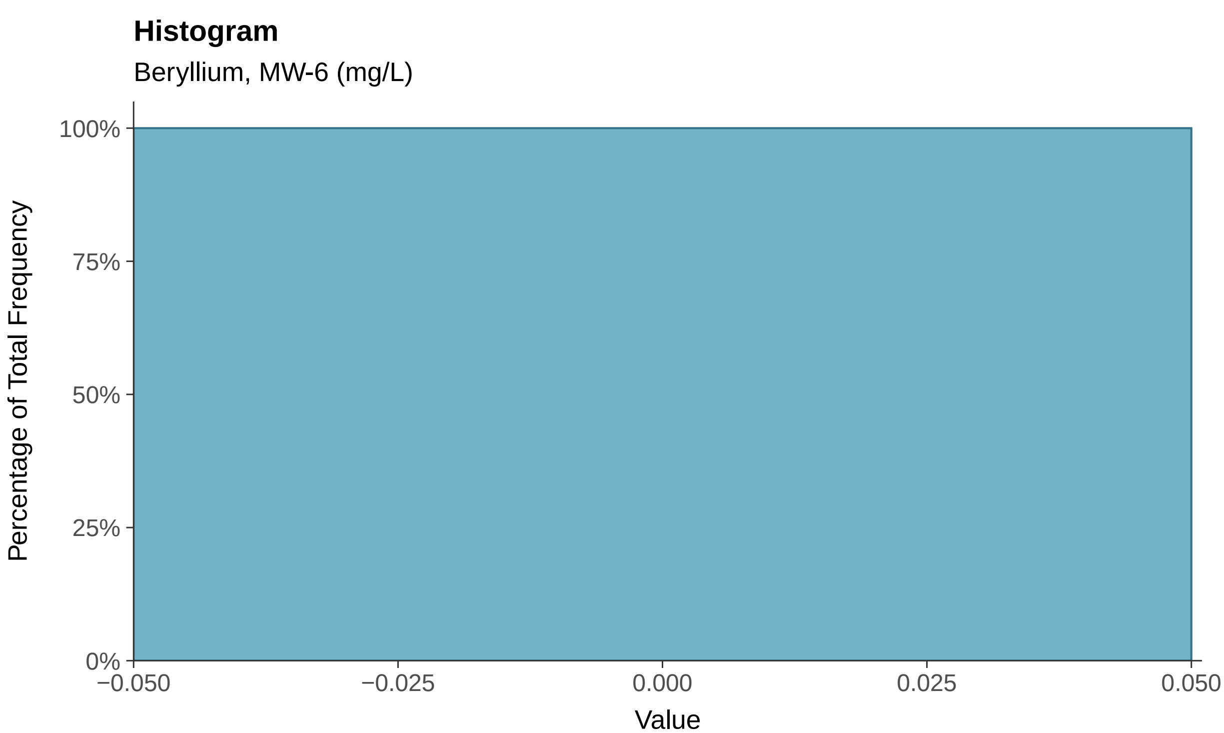
Barium, MW-6 (mg/L)

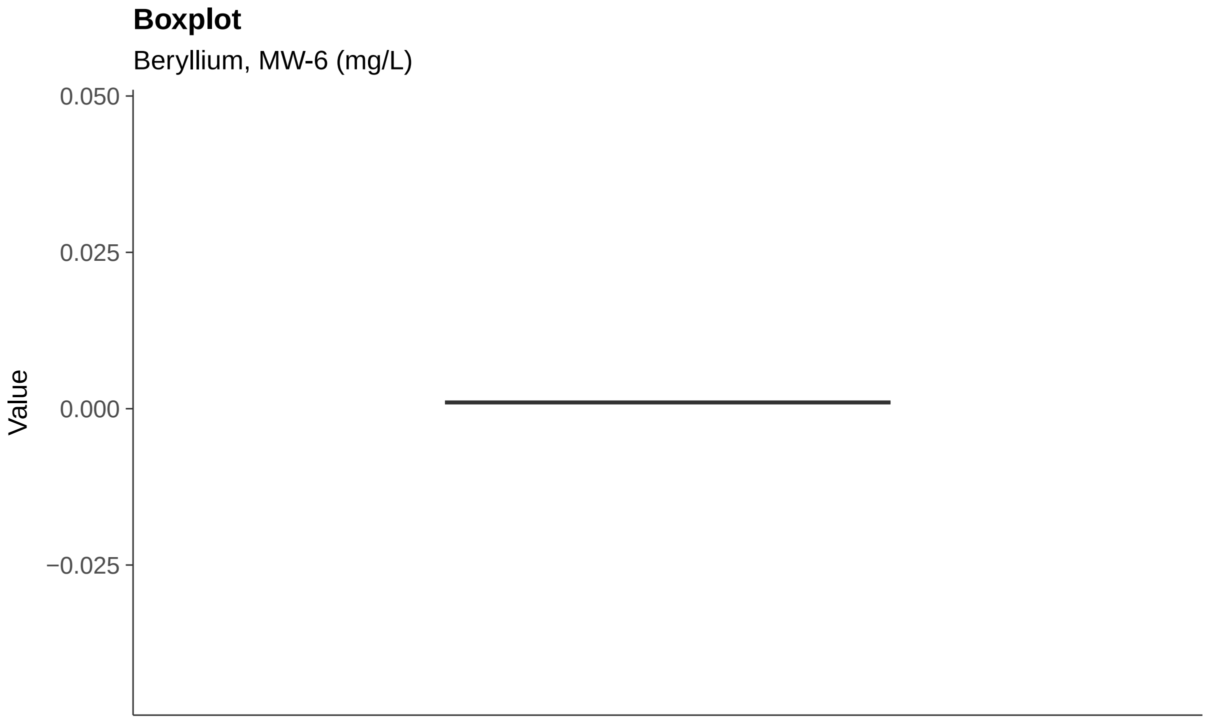


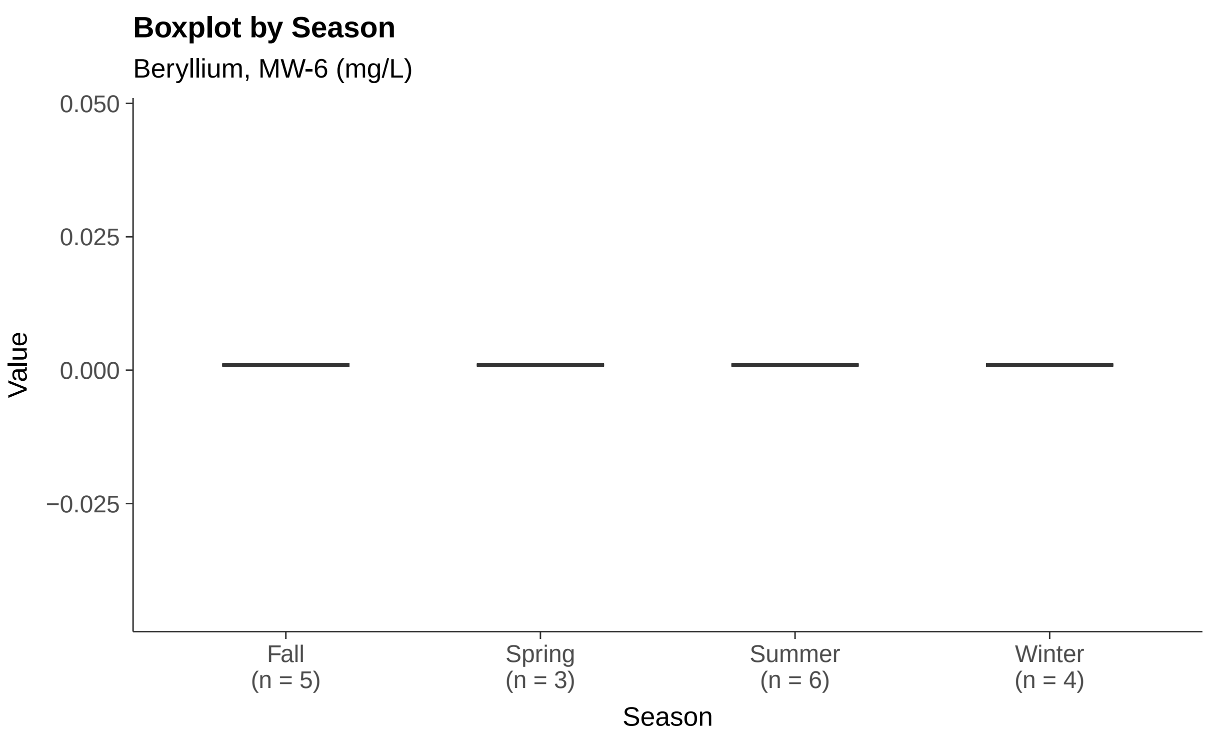
Appendix IV: Beryllium, MW-6

ID: 06_2_11






Boxplot
Beryllium, MW-6 (mg/L)
Value
0.050
0.025
0.000
−0.025

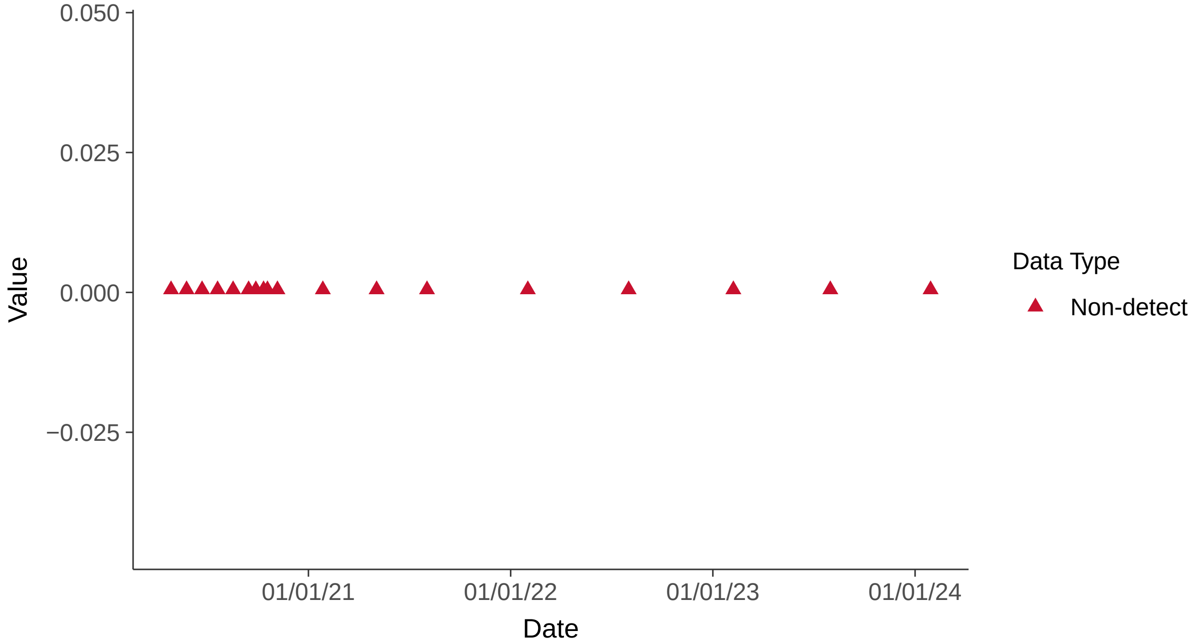

Boxplot by Season
Beryllium, MW-6 (mg/L)
Value
0.050
0.025
0.000
−0.025
Fall
(n = 5)
Spring
(n = 3)
Summer
(n = 6)
Winter
(n = 4)
Season

Appendix IV: Cadmium, MW-6

ID: 06_2_12

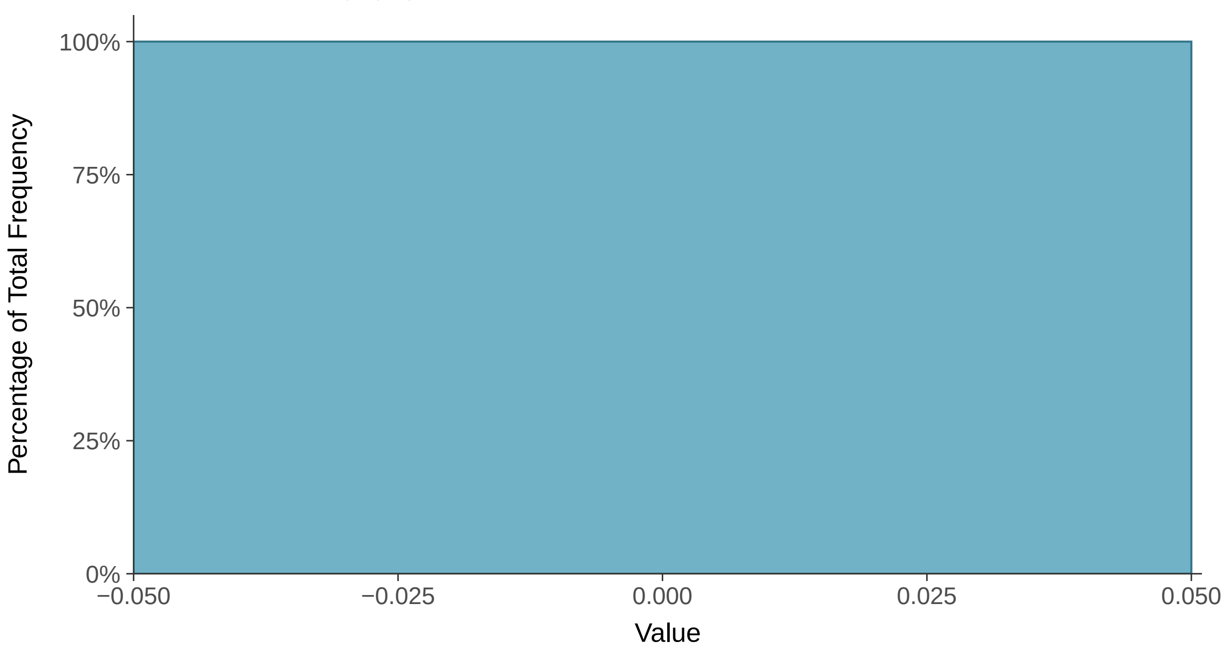
Scatter Plot

Cadmium, MW-6 (mg/L)



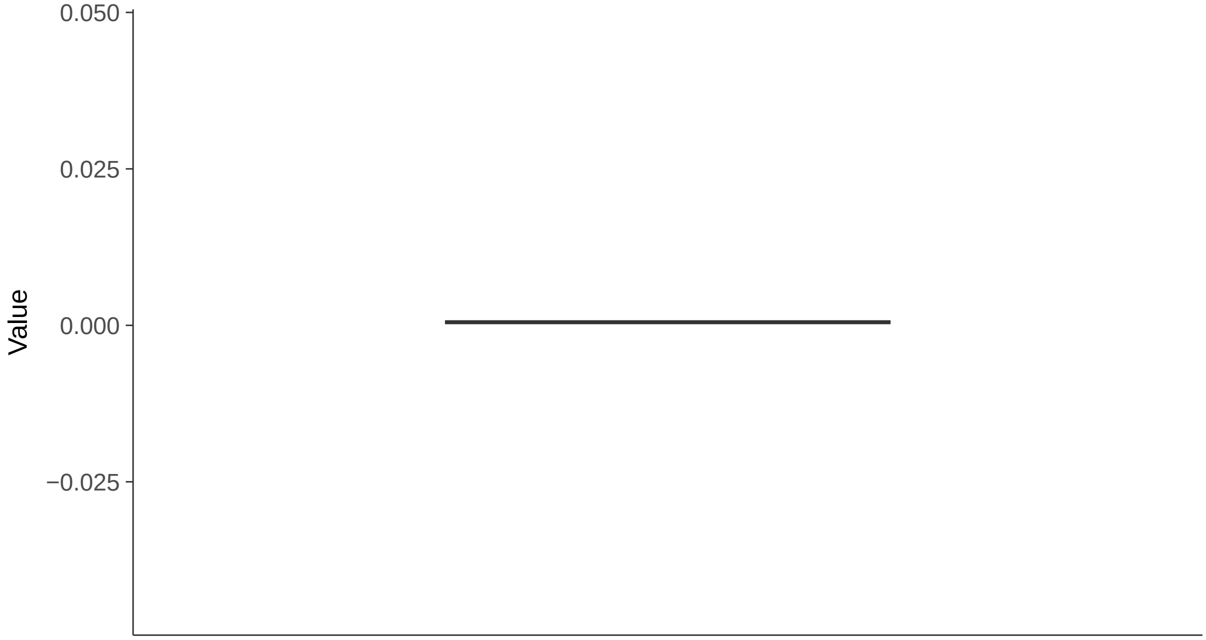
Histogram

Cadmium, MW-6 (mg/L)



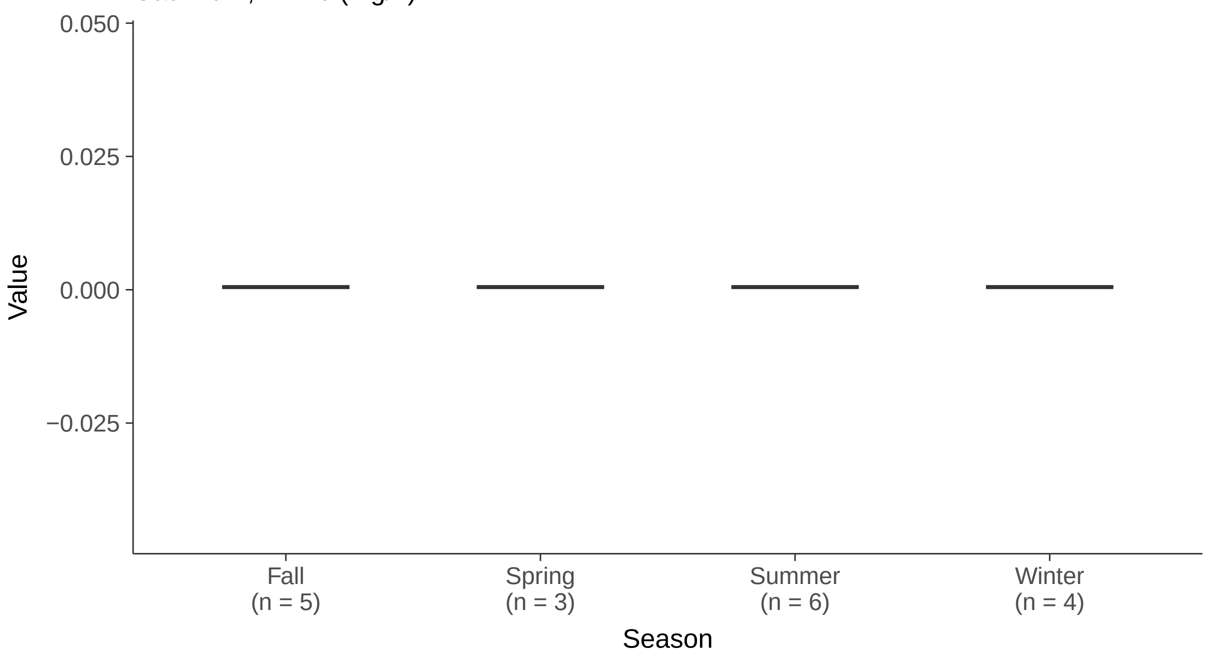
Boxplot

Cadmium, MW-6 (mg/L)



Boxplot by Season

Cadmium, MW-6 (mg/L)

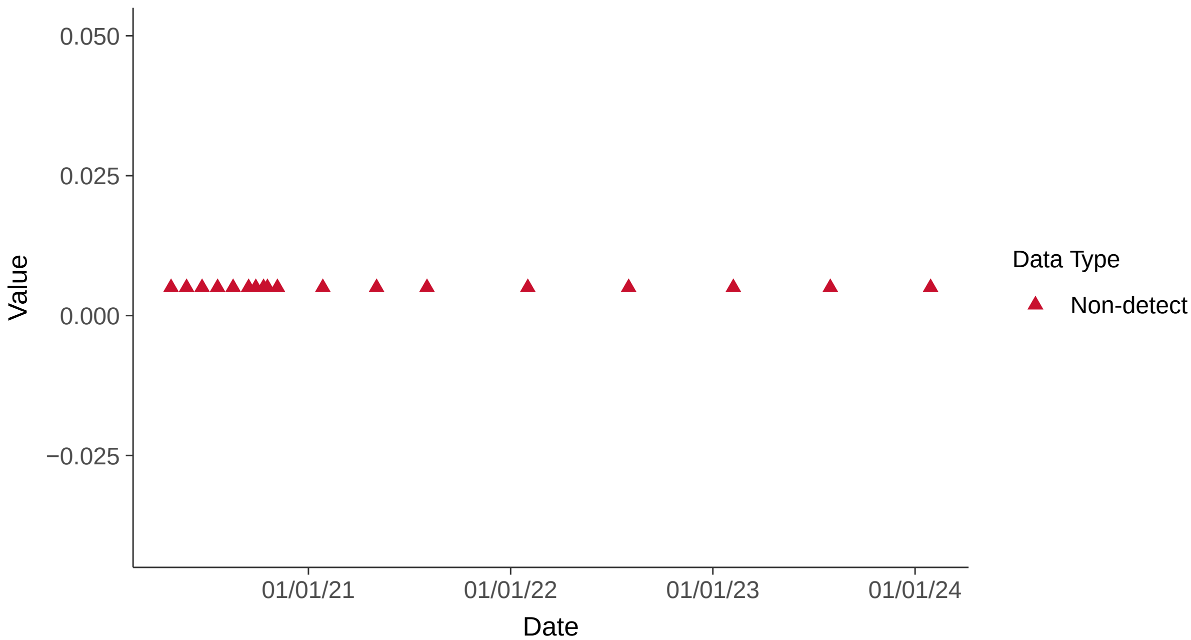


Appendix IV: Chromium, MW-6

ID: 06_2_13

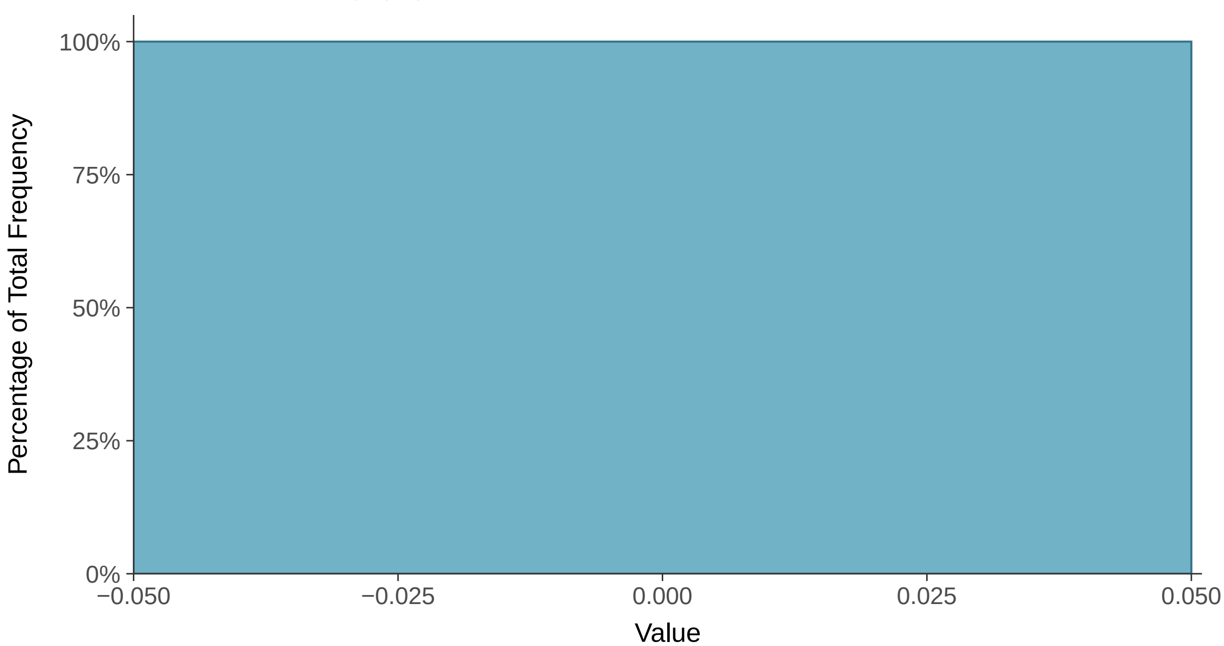
Scatter Plot

Chromium, MW-6 (mg/L)



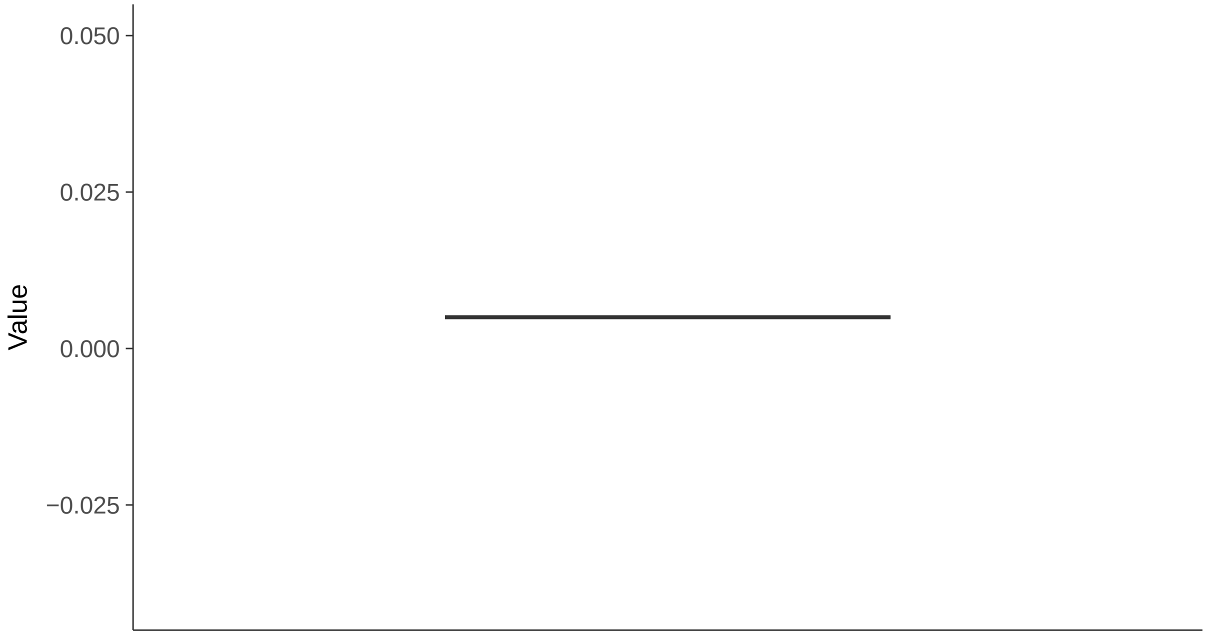
Histogram

Chromium, MW-6 (mg/L)



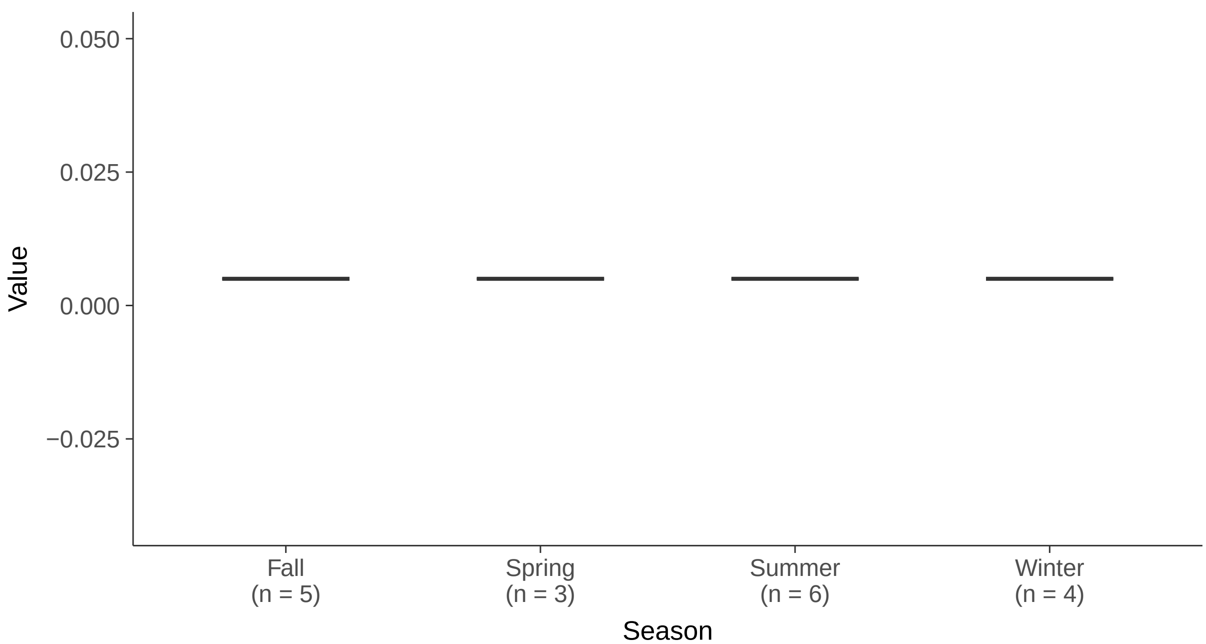
Boxplot

Chromium, MW-6 (mg/L)



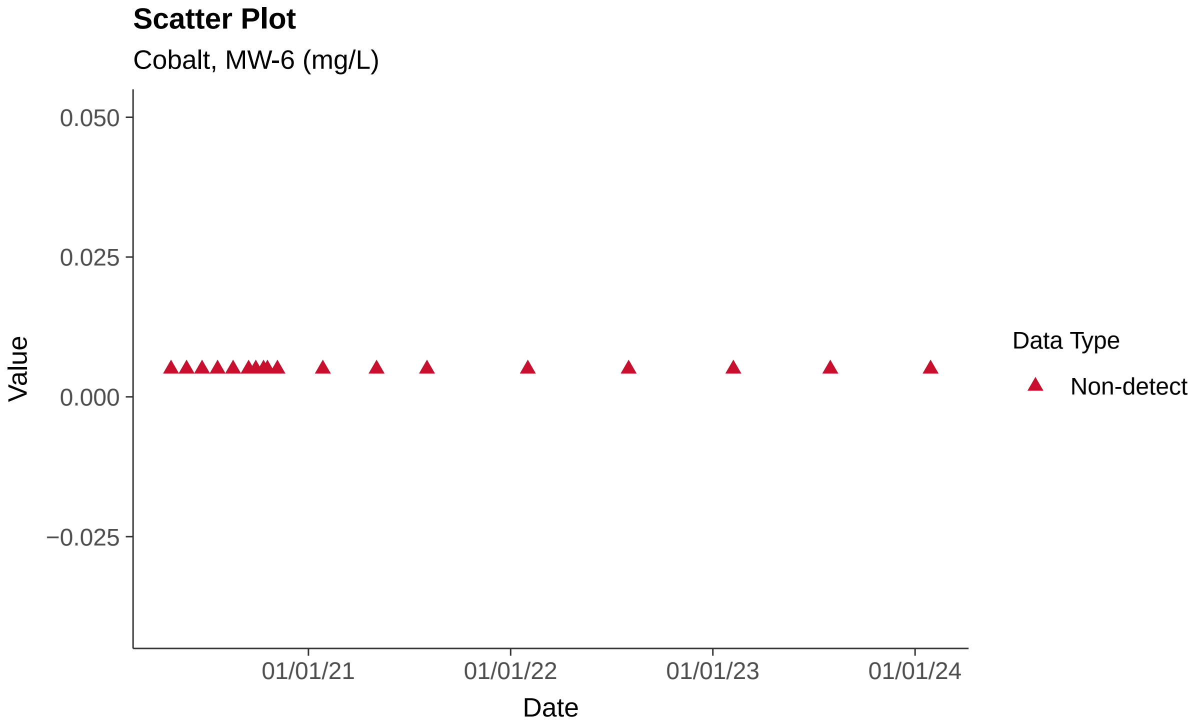
Boxplot by Season

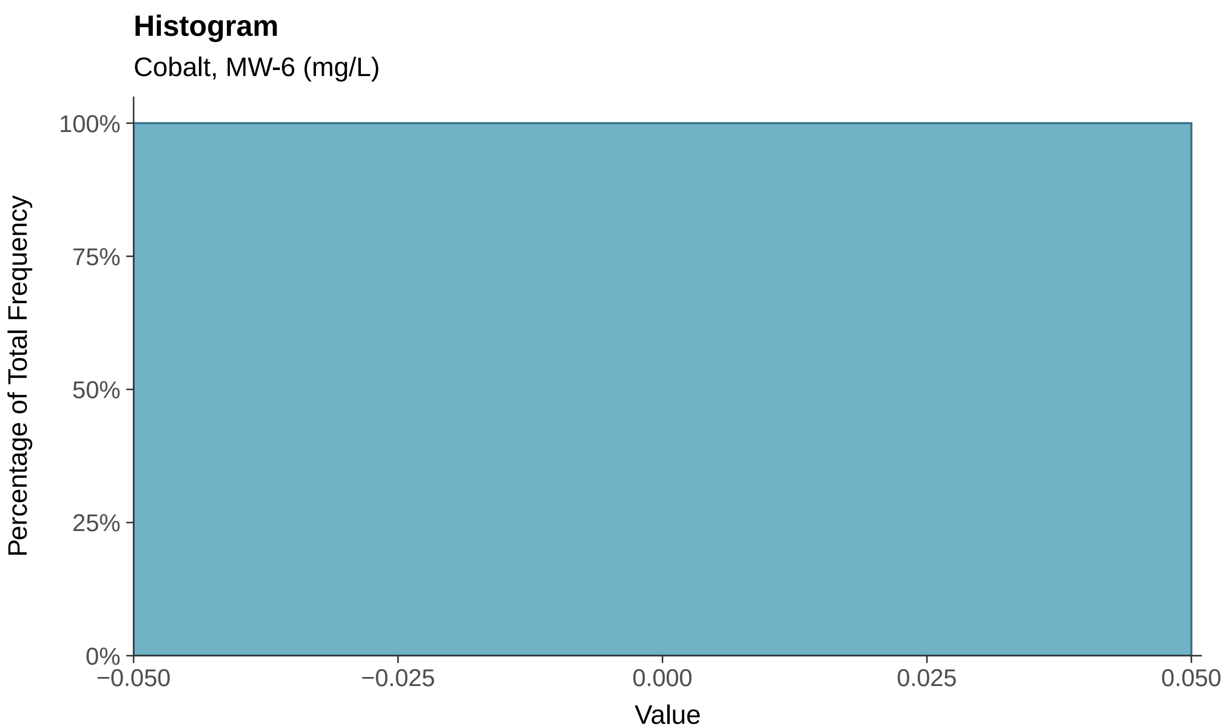
Chromium, MW-6 (mg/L)



Appendix IV: Cobalt, MW-6

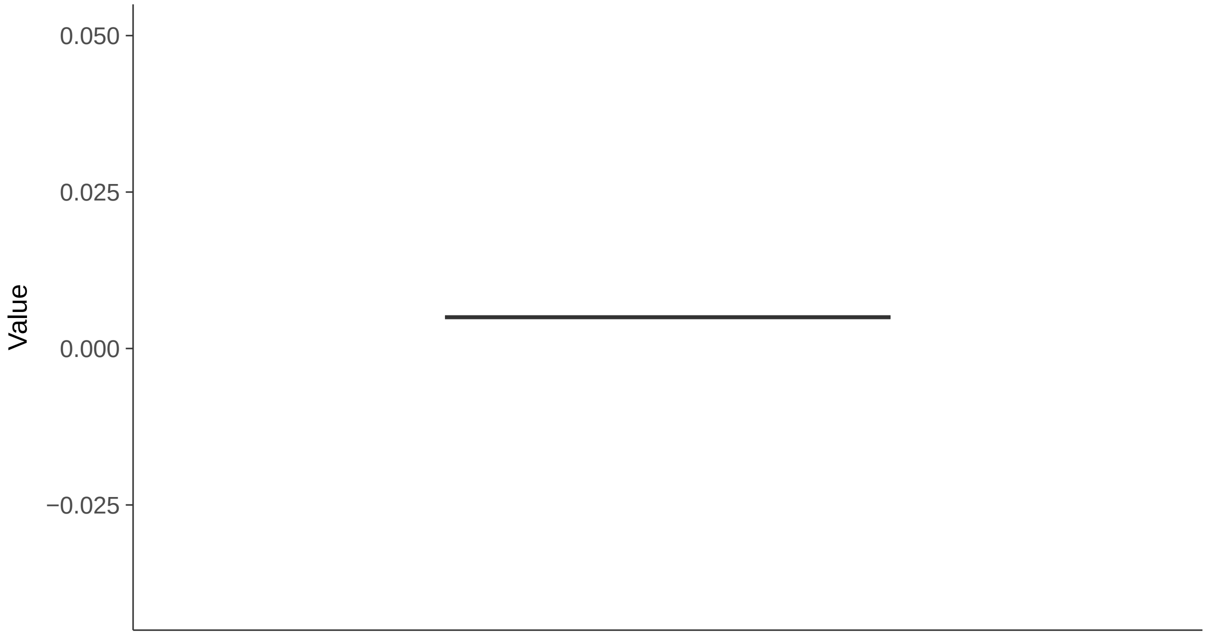
ID: 06_2_14





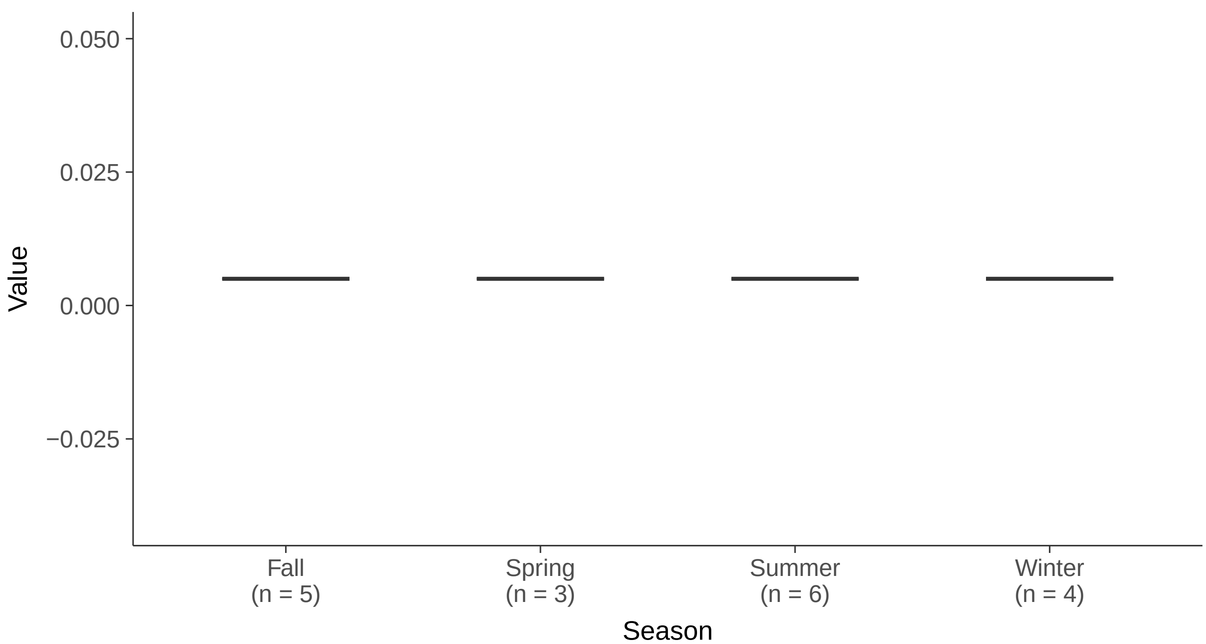
Boxplot

Cobalt, MW-6 (mg/L)



Boxplot by Season

Cobalt, MW-6 (mg/L)

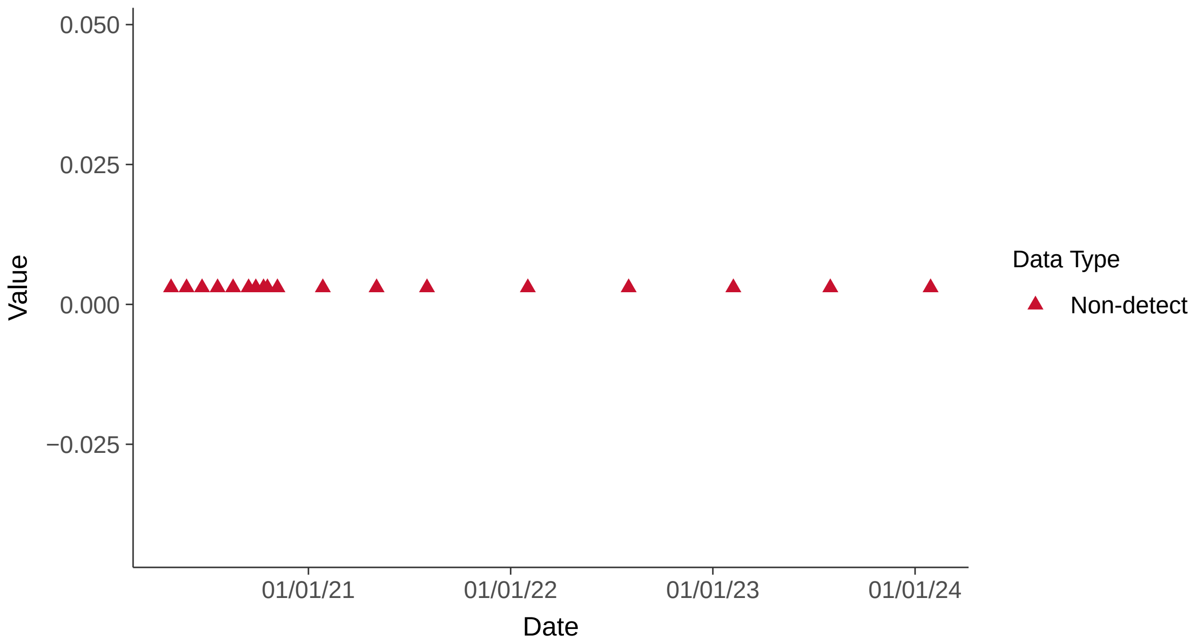


Appendix IV: Lead, MW-6

ID: 06_2_15

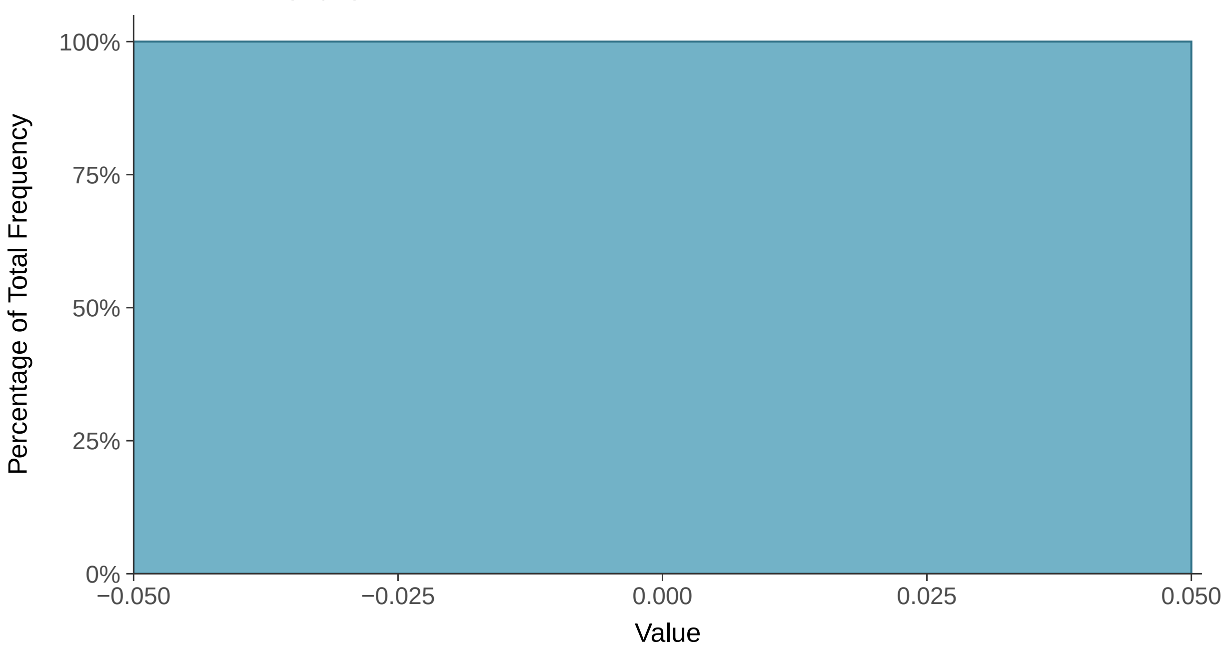
Scatter Plot

Lead, MW-6 (mg/L)



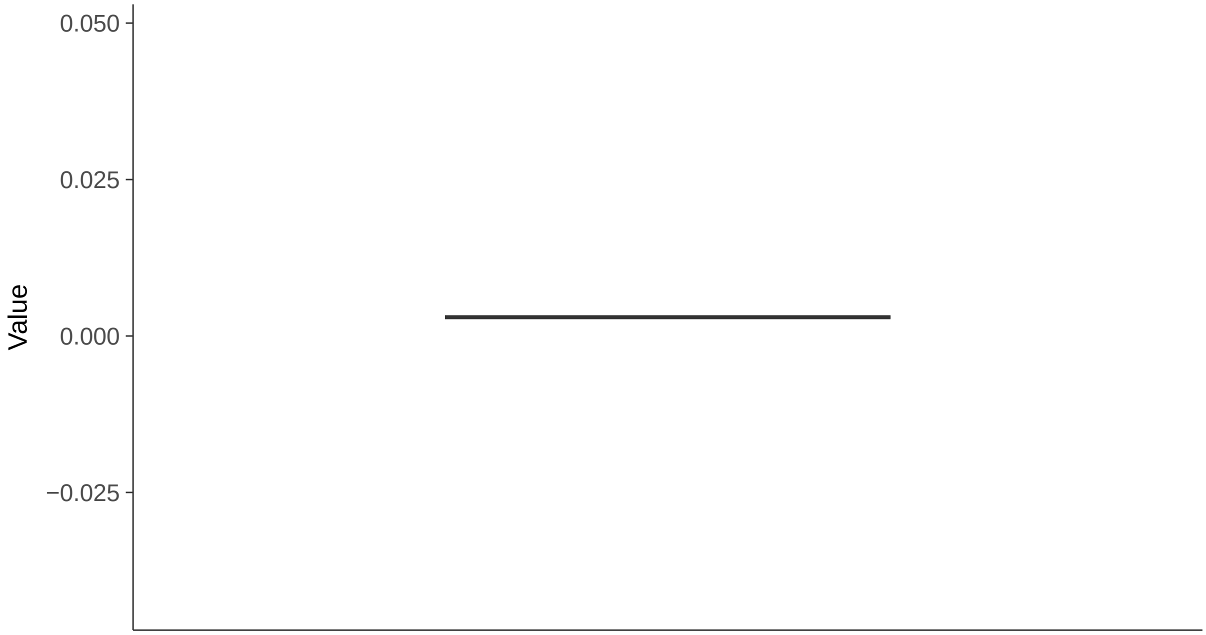
Histogram

Lead, MW-6 (mg/L)



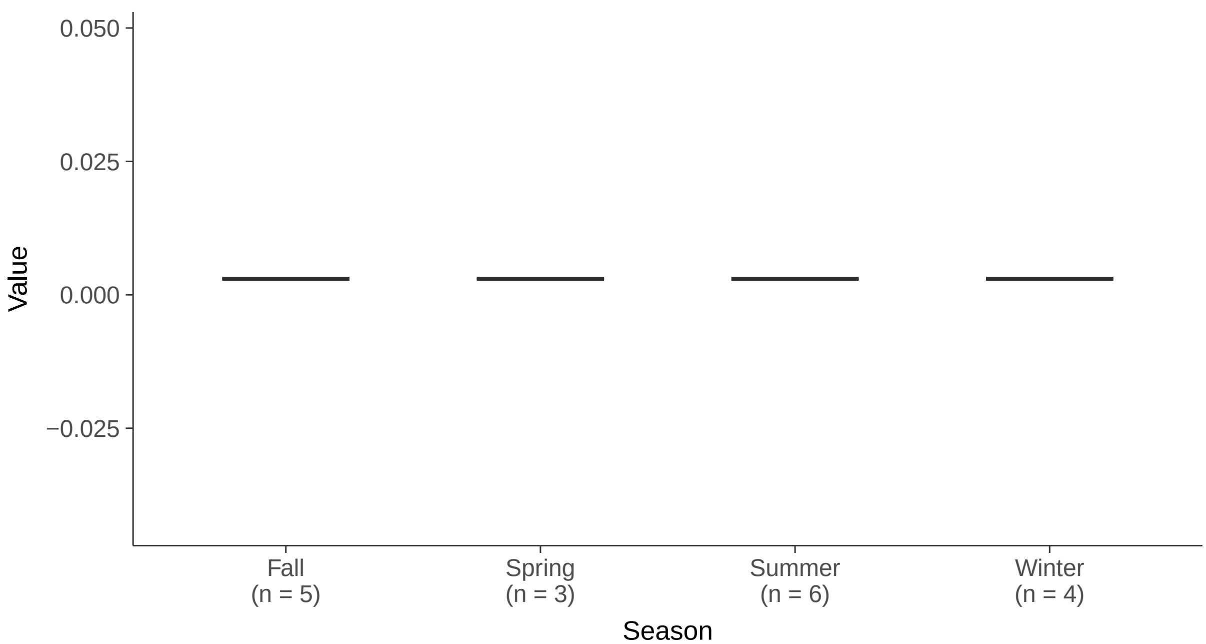
Boxplot

Lead, MW-6 (mg/L)



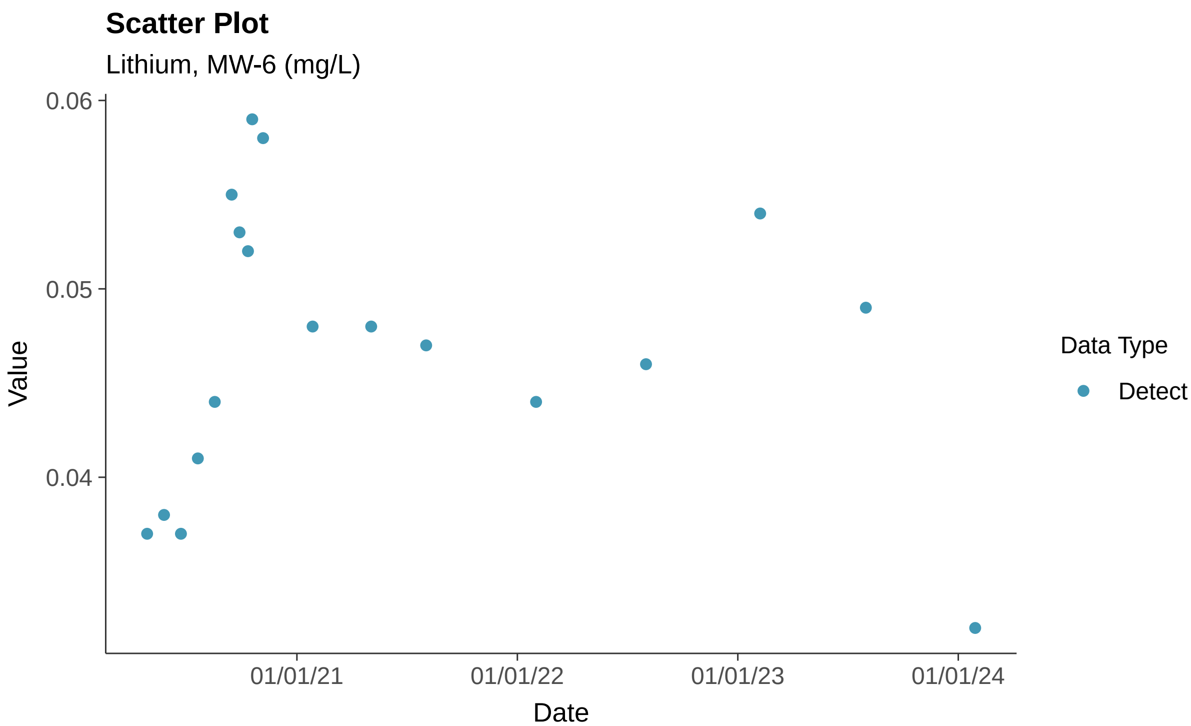
Boxplot by Season

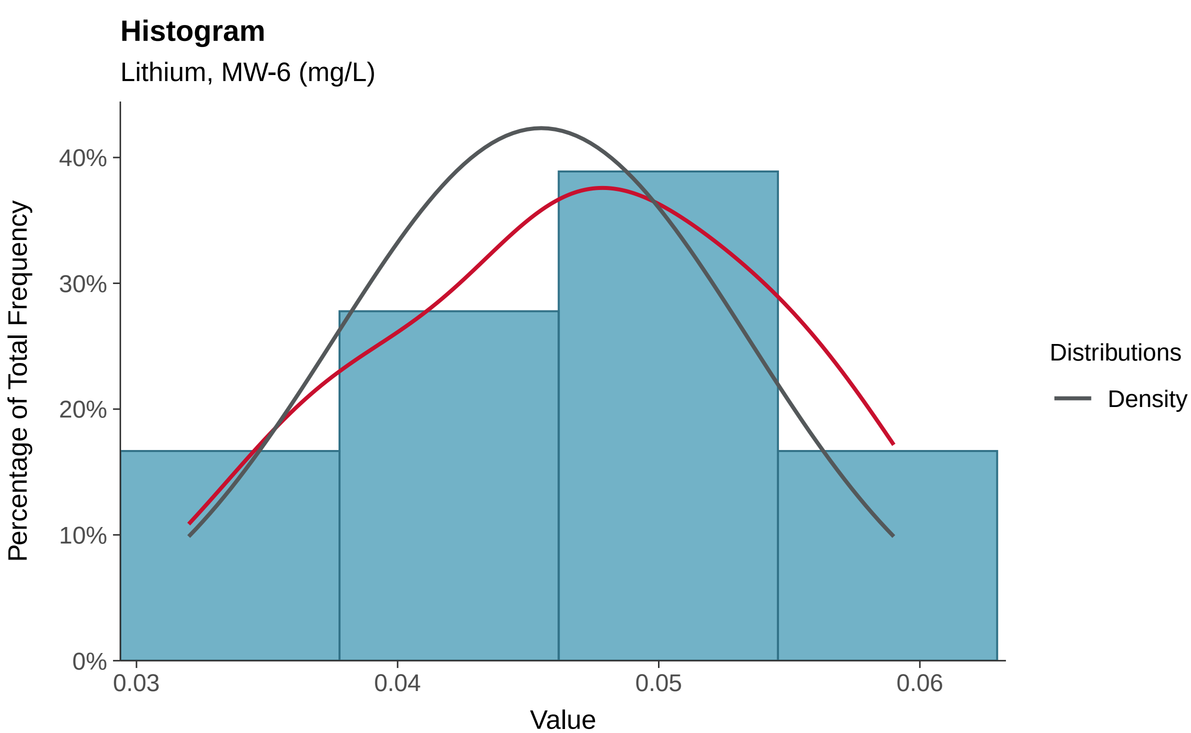
Lead, MW-6 (mg/L)



Appendix IV: Lithium, MW-6

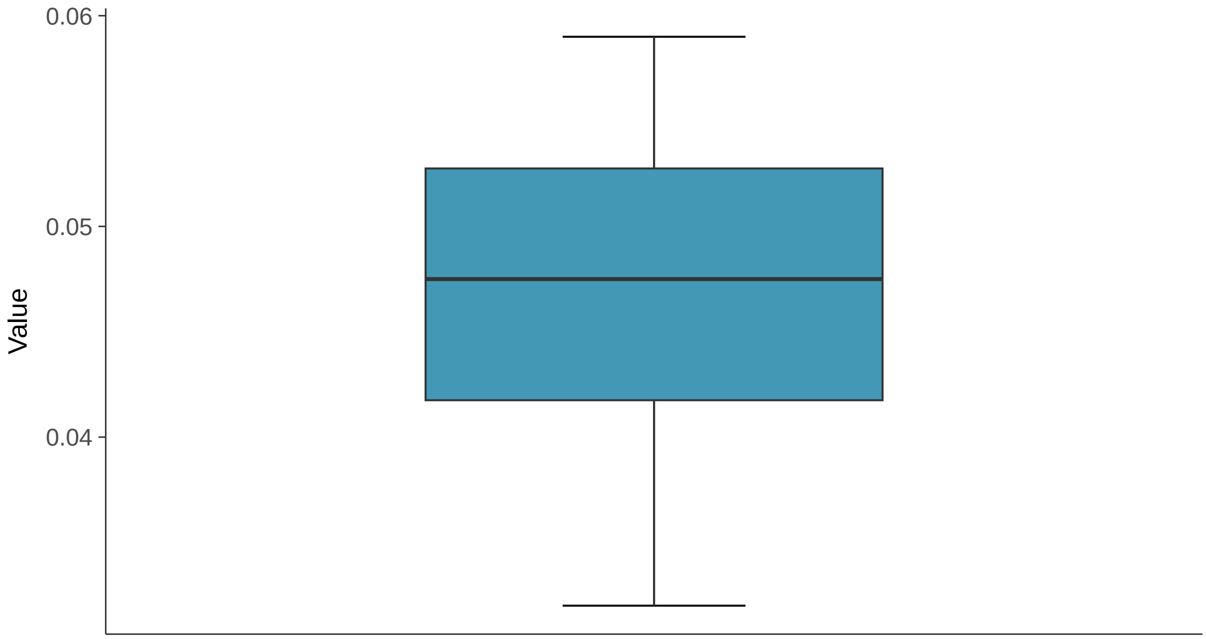
ID: 06_2_16





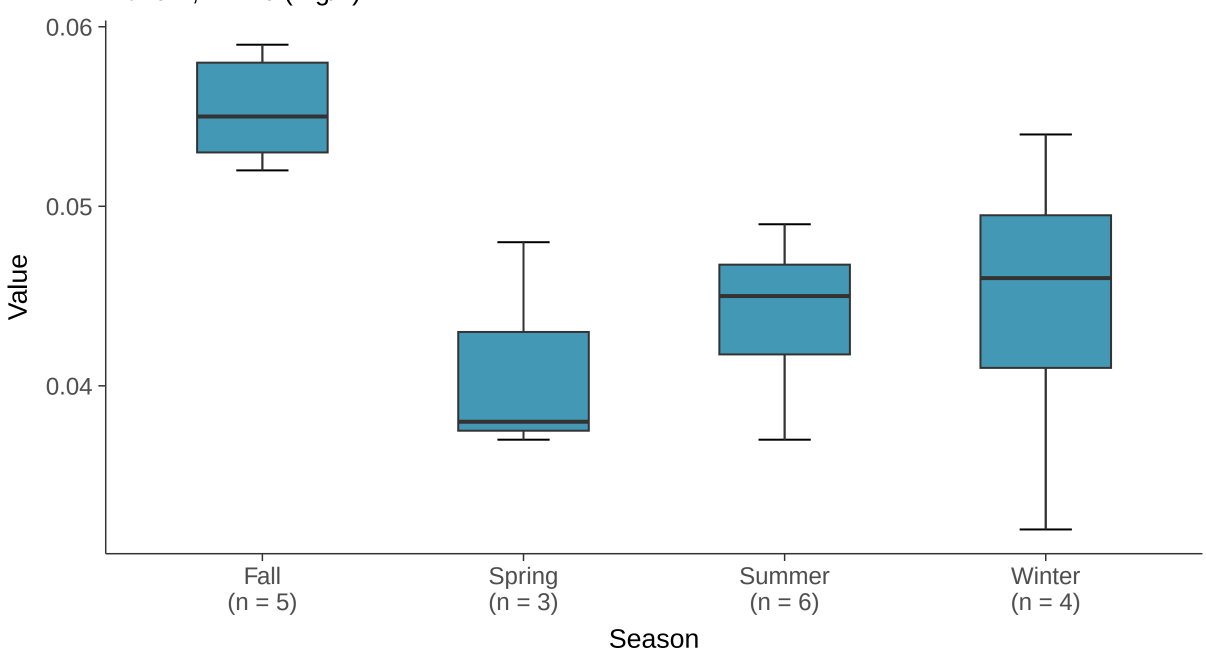
Boxplot

Lithium, MW-6 (mg/L)



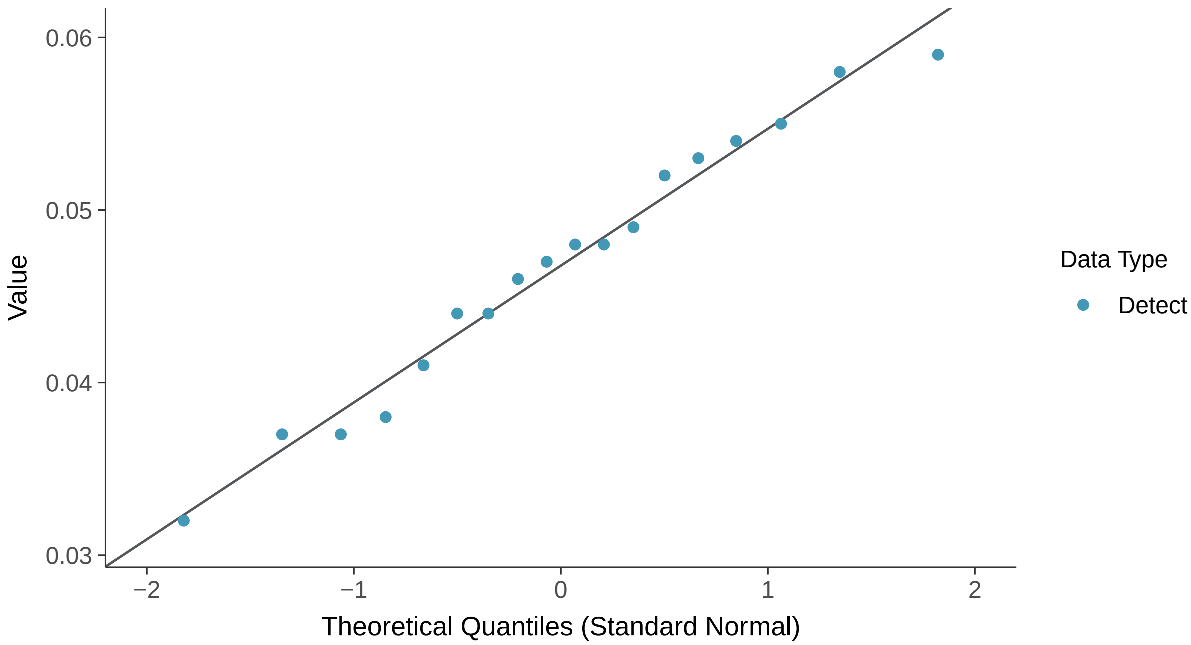
Boxplot by Season

Lithium, MW-6 (mg/L)



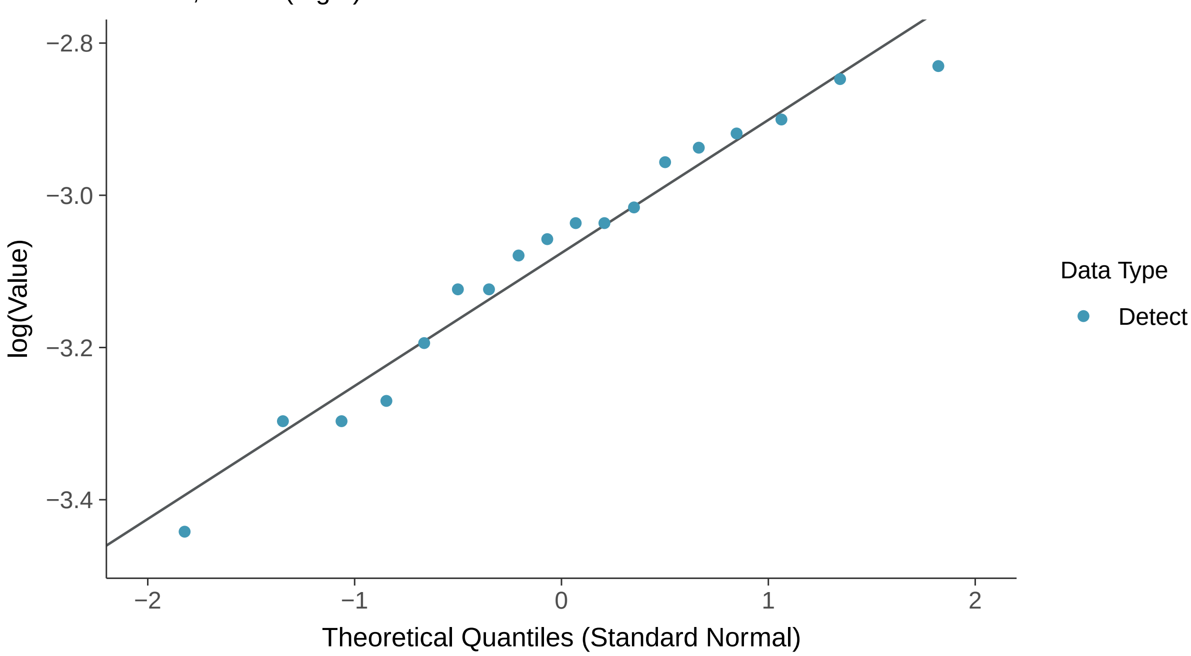
Normal Q-Q plot

Lithium, MW-6 (mg/L)



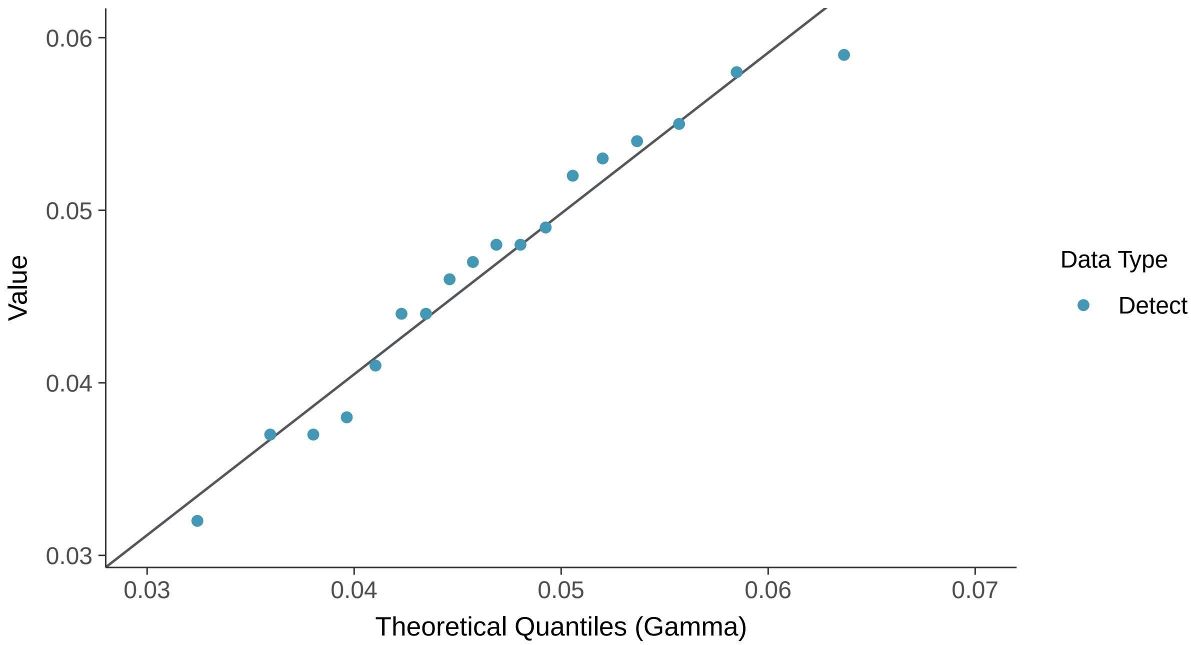
Lognormal Q-Q plot

Lithium, MW-6 (mg/L)



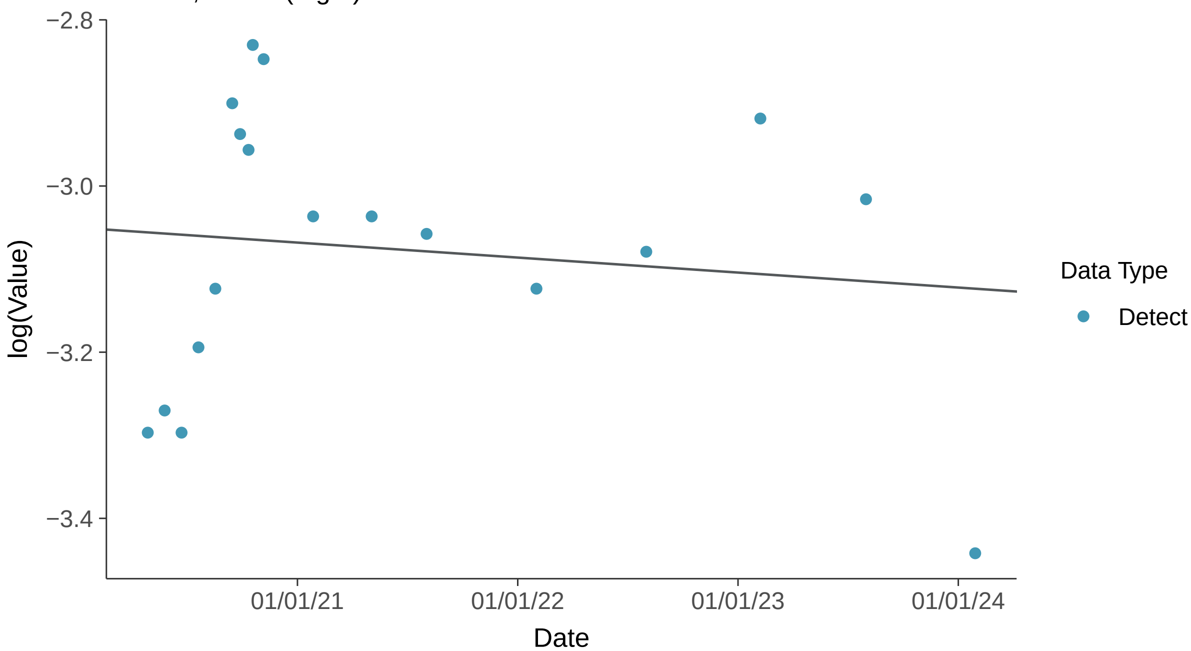
Gamma Q-Q plot

Lithium, MW-6 (mg/L)



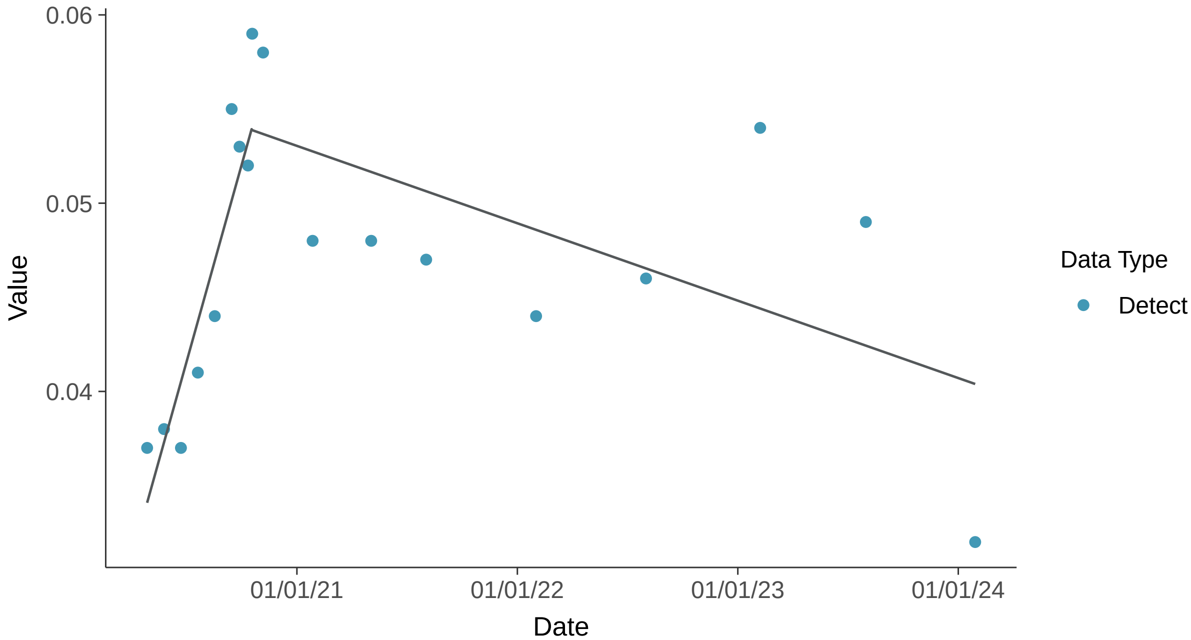
Trend Regression: Lognormal MLE

Lithium, MW-6 (mg/L)



Trend Regression: Piecewise Linear-Linear

Lithium, MW-6 (mg/L)

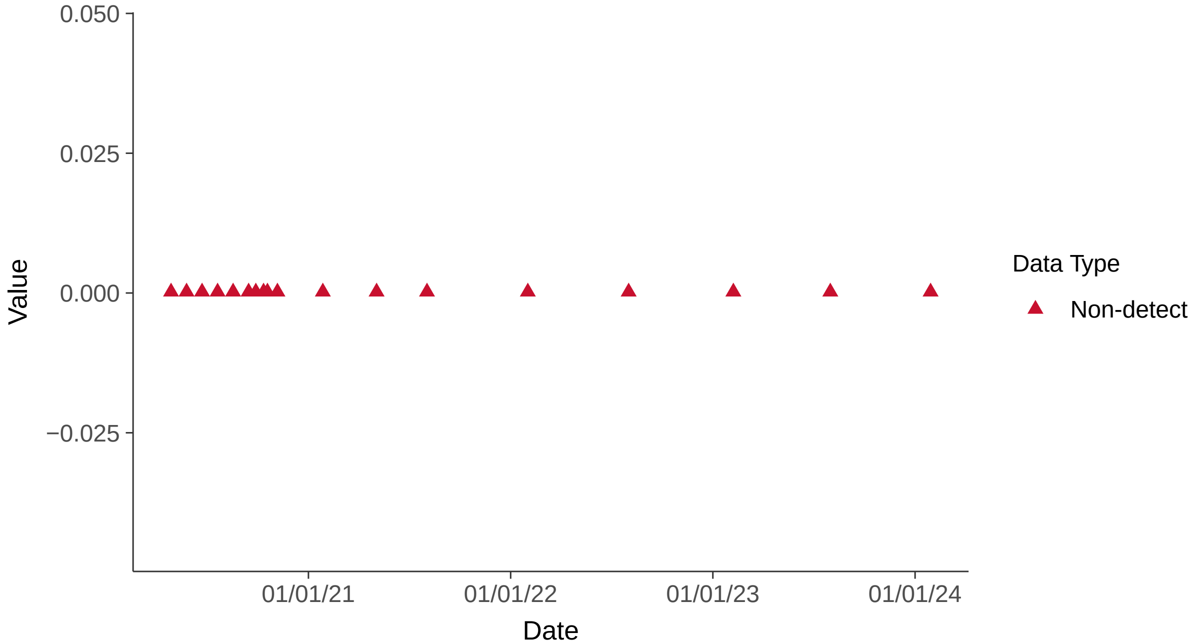


Appendix IV: Mercury, MW-6

ID: 06_2_17

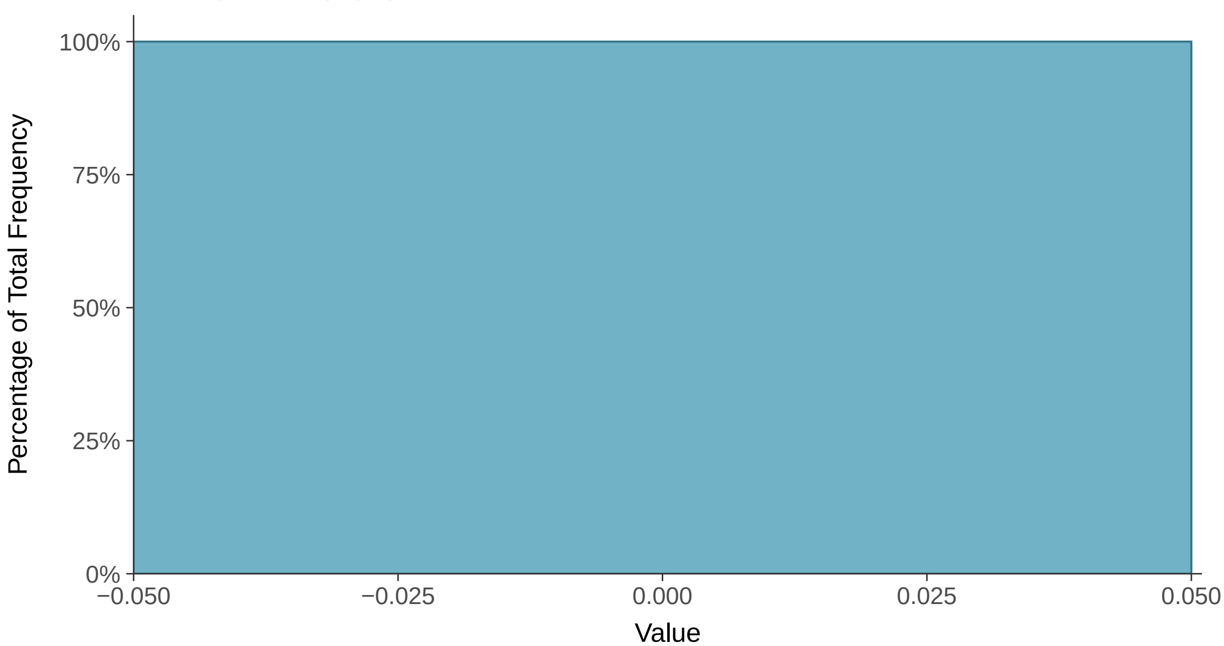
Scatter Plot

Mercury, MW-6 (mg/L)



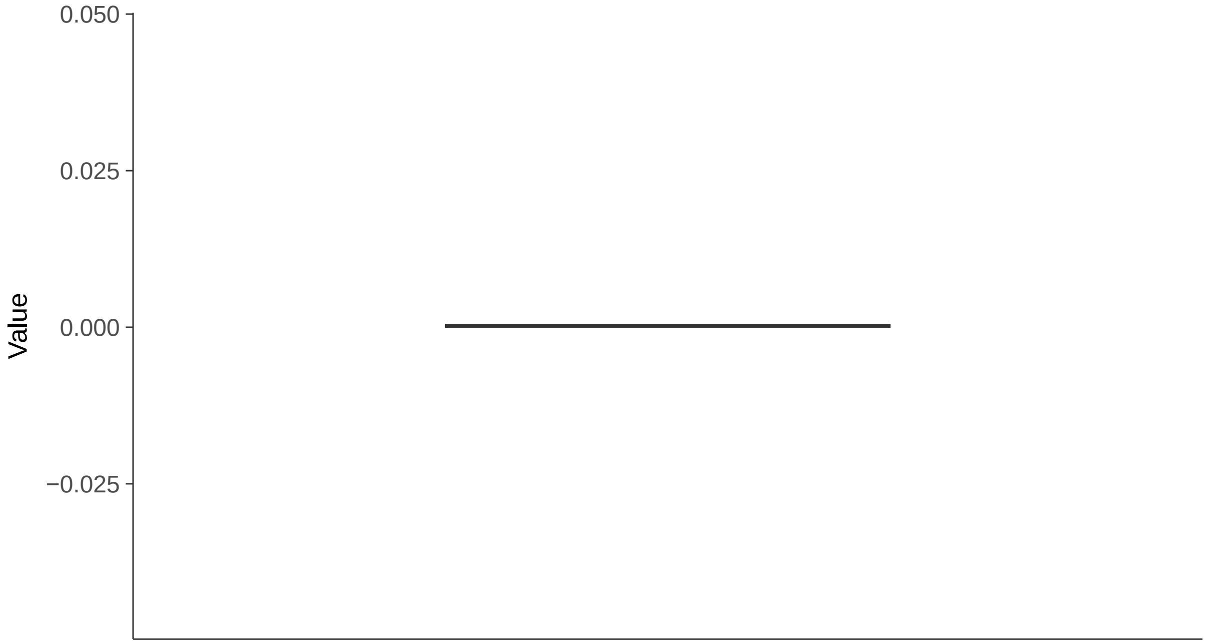
Histogram

Mercury, MW-6 (mg/L)



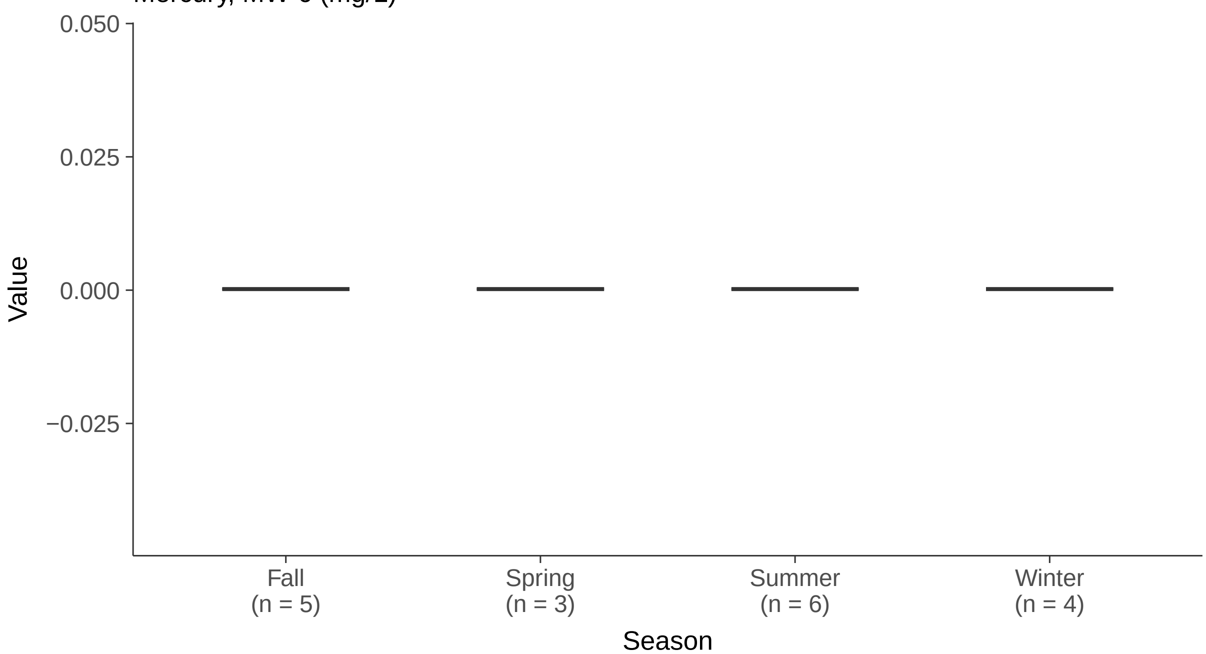
Boxplot

Mercury, MW-6 (mg/L)



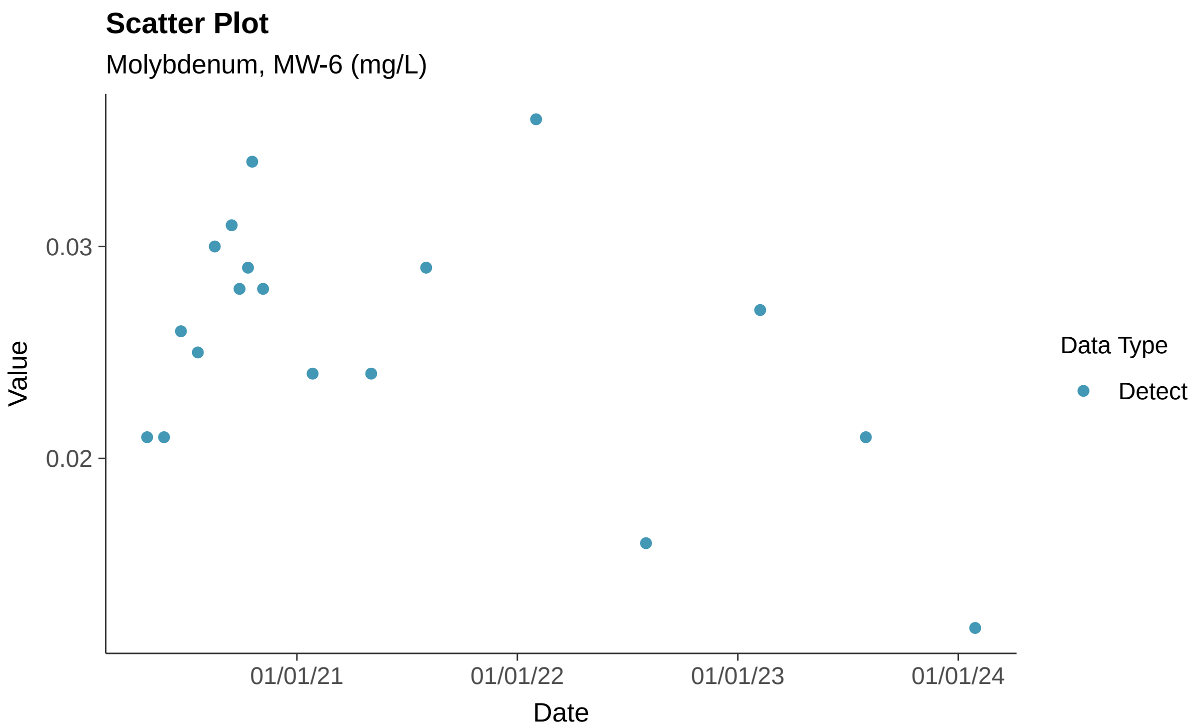
Boxplot by Season

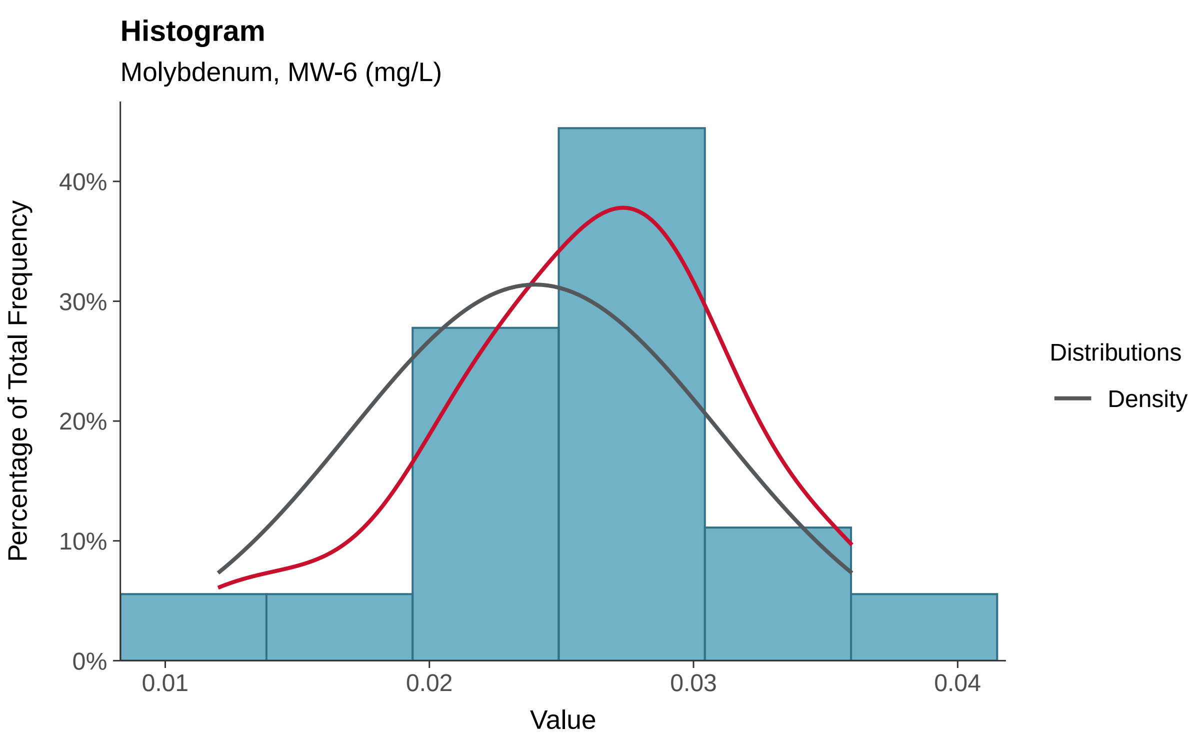
Mercury, MW-6 (mg/L)



Appendix IV: Molybdenum, MW-6

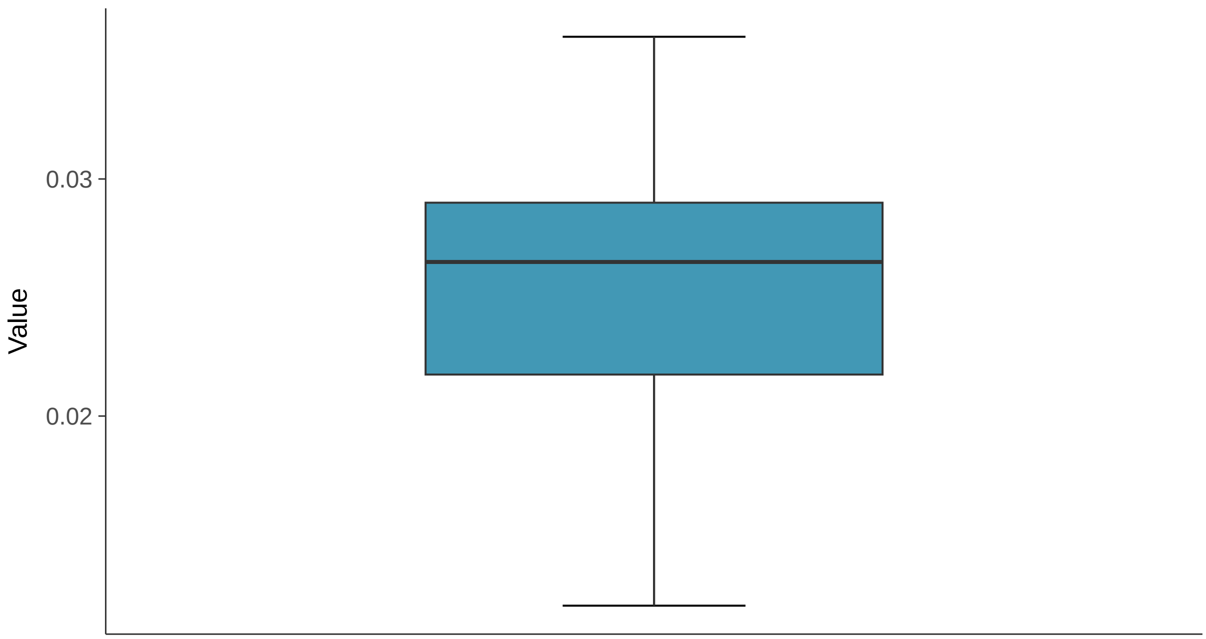
ID: 06_2_18





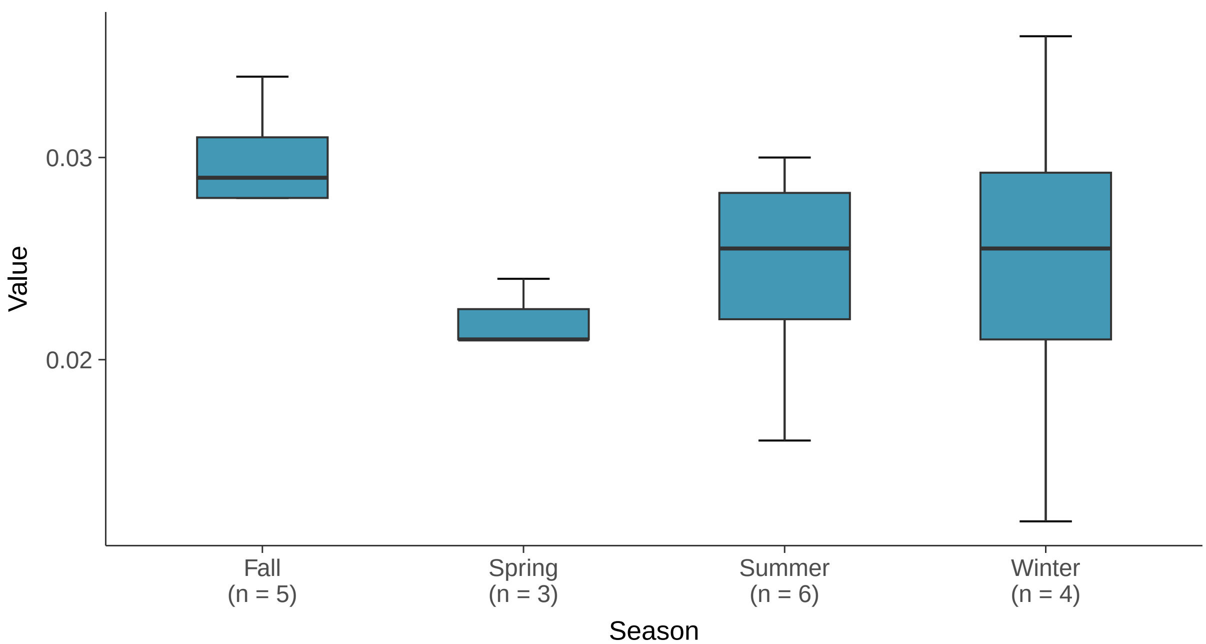
Boxplot

Molybdenum, MW-6 (mg/L)



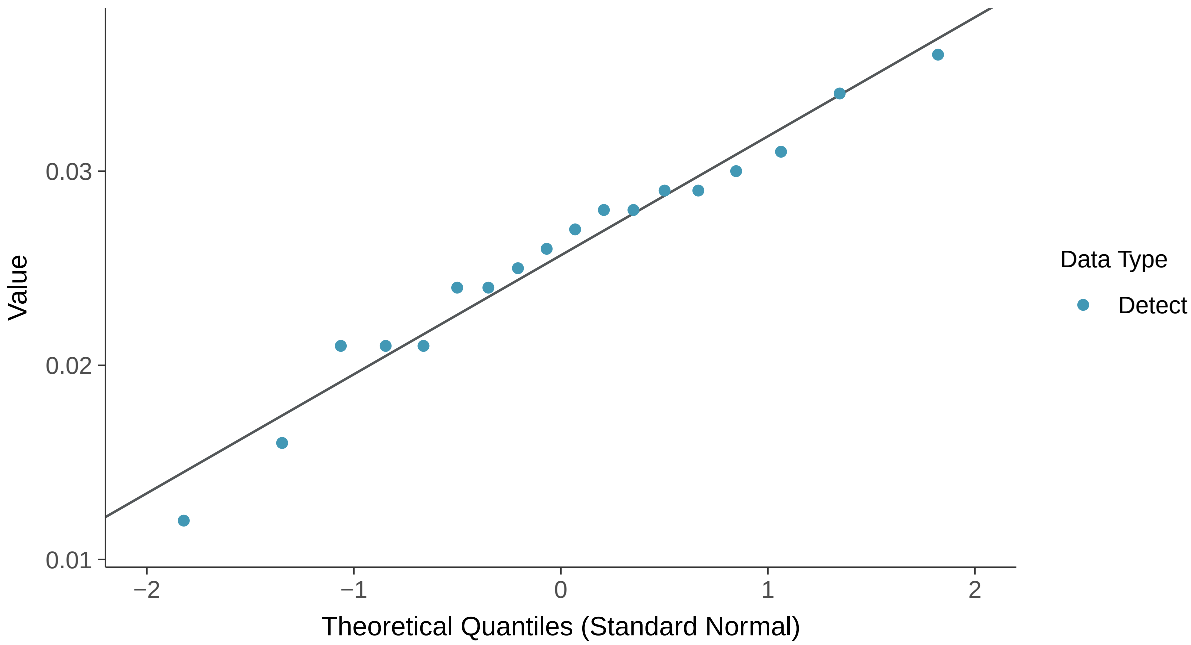
Boxplot by Season

Molybdenum, MW-6 (mg/L)



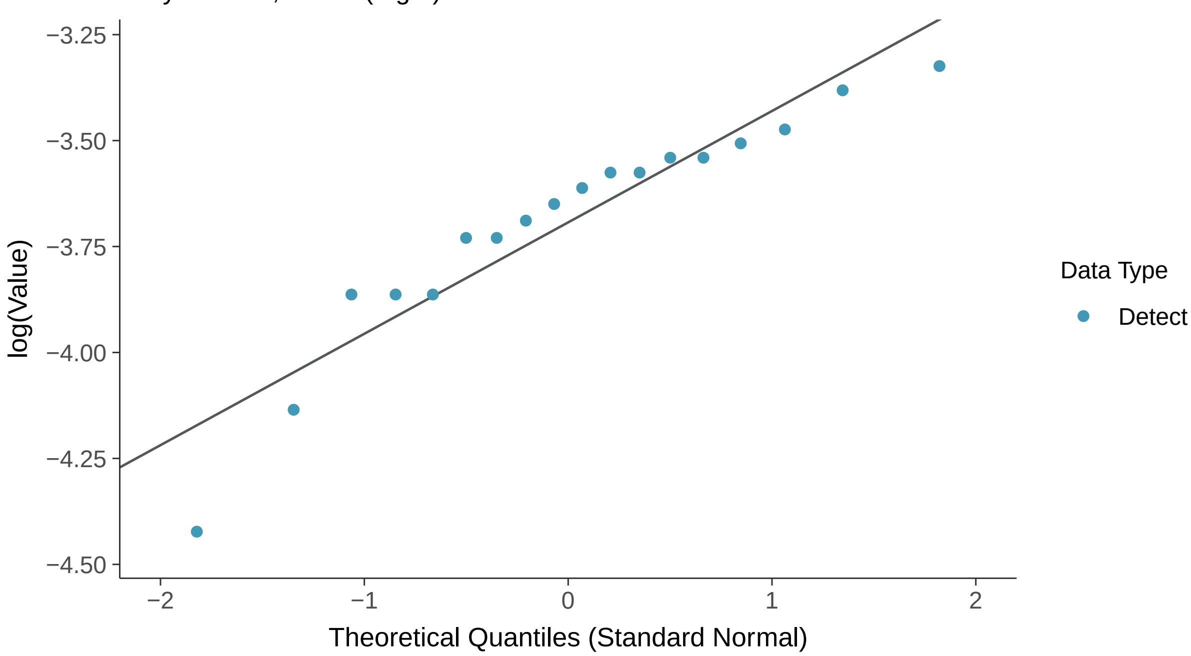
Normal Q-Q plot

Molybdenum, MW-6 (mg/L)



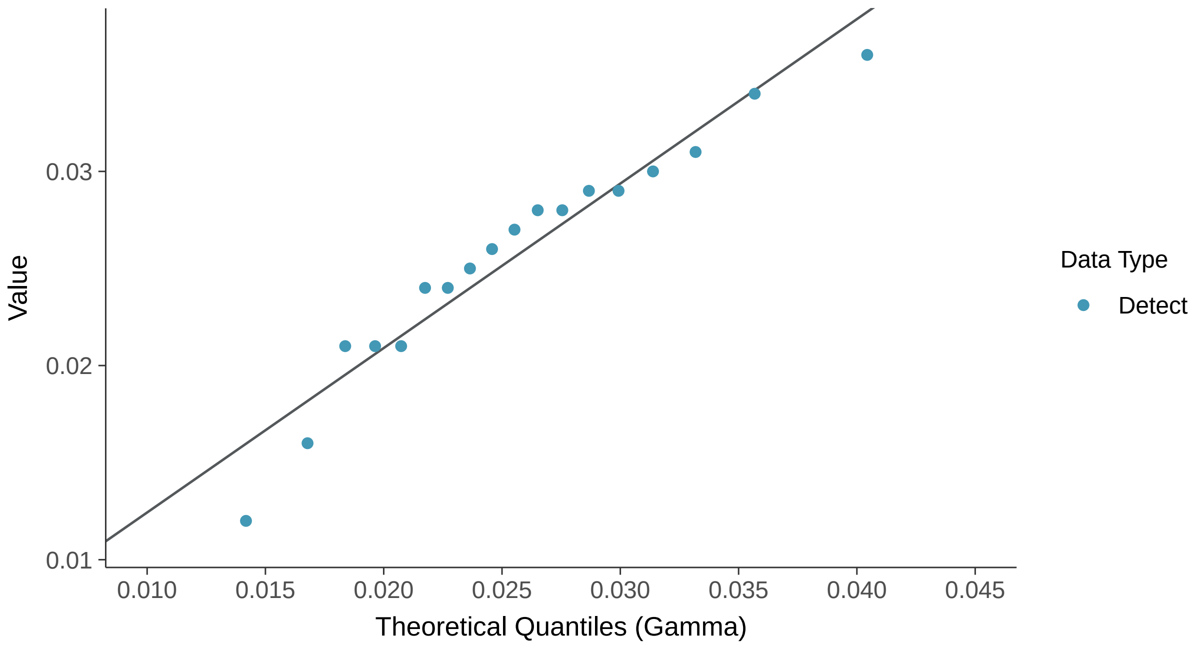
Lognormal Q-Q plot

Molybdenum, MW-6 (mg/L)



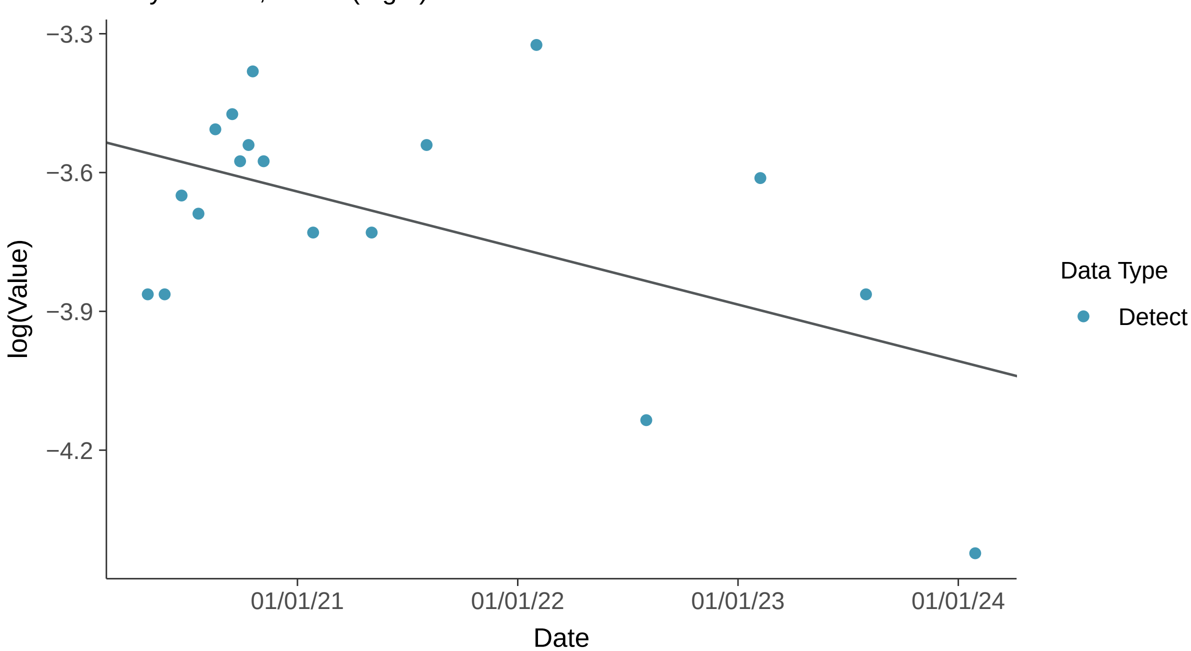
Gamma Q-Q plot

Molybdenum, MW-6 (mg/L)



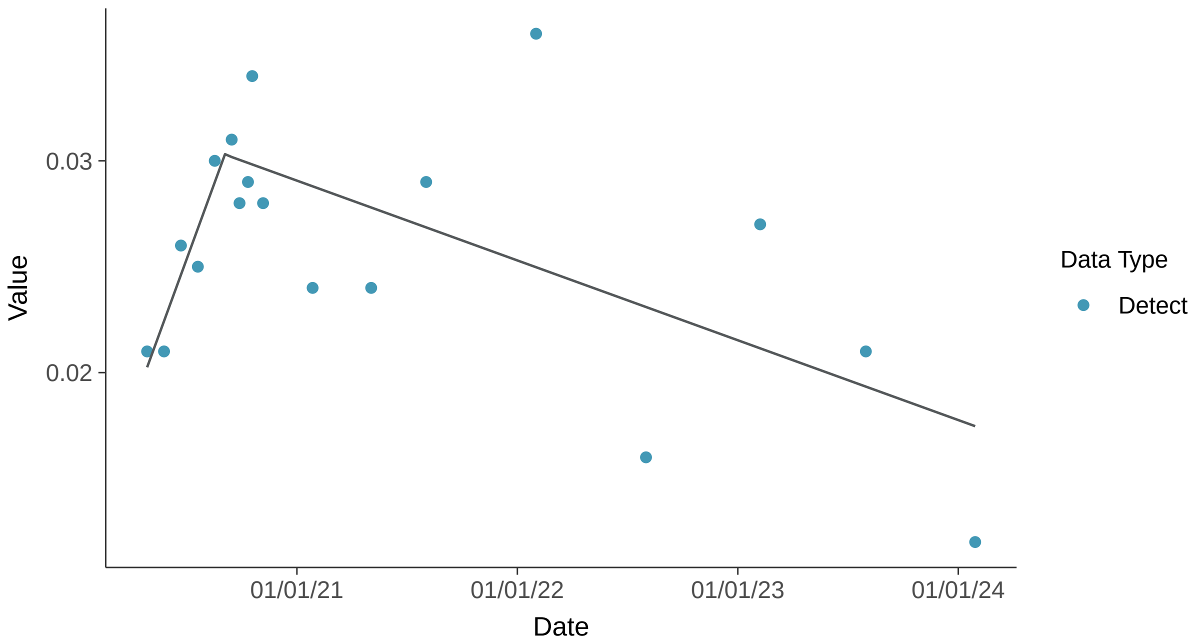
Trend Regression: Lognormal MLE

Molybdenum, MW-6 (mg/L)



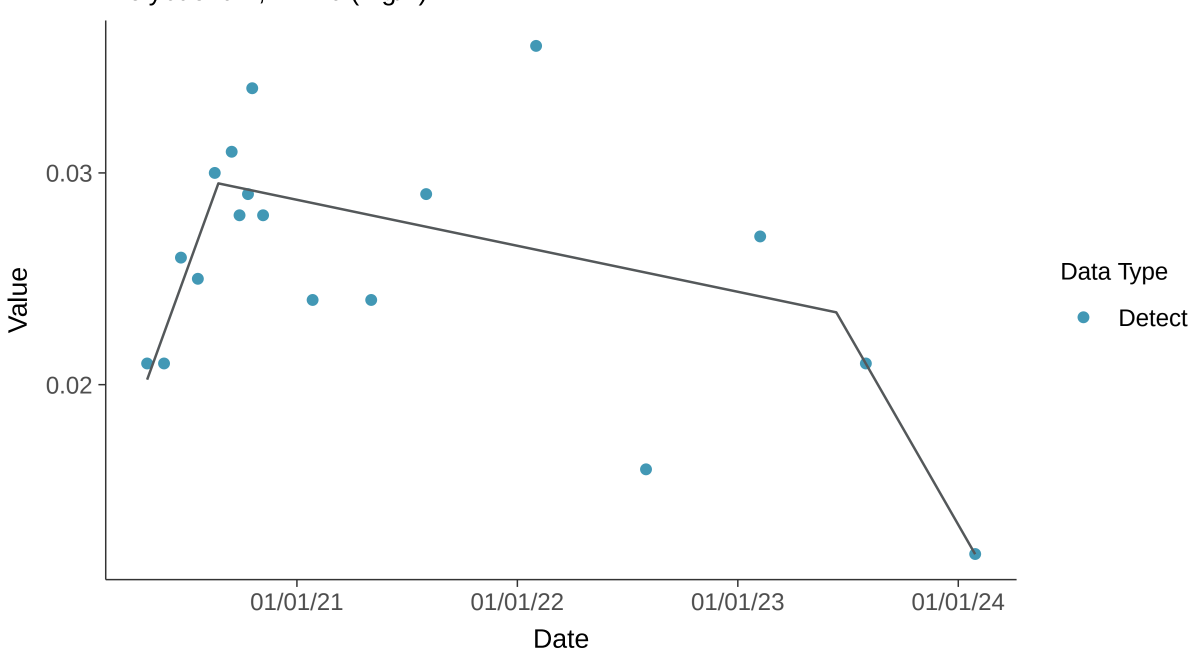
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-6 (mg/L)



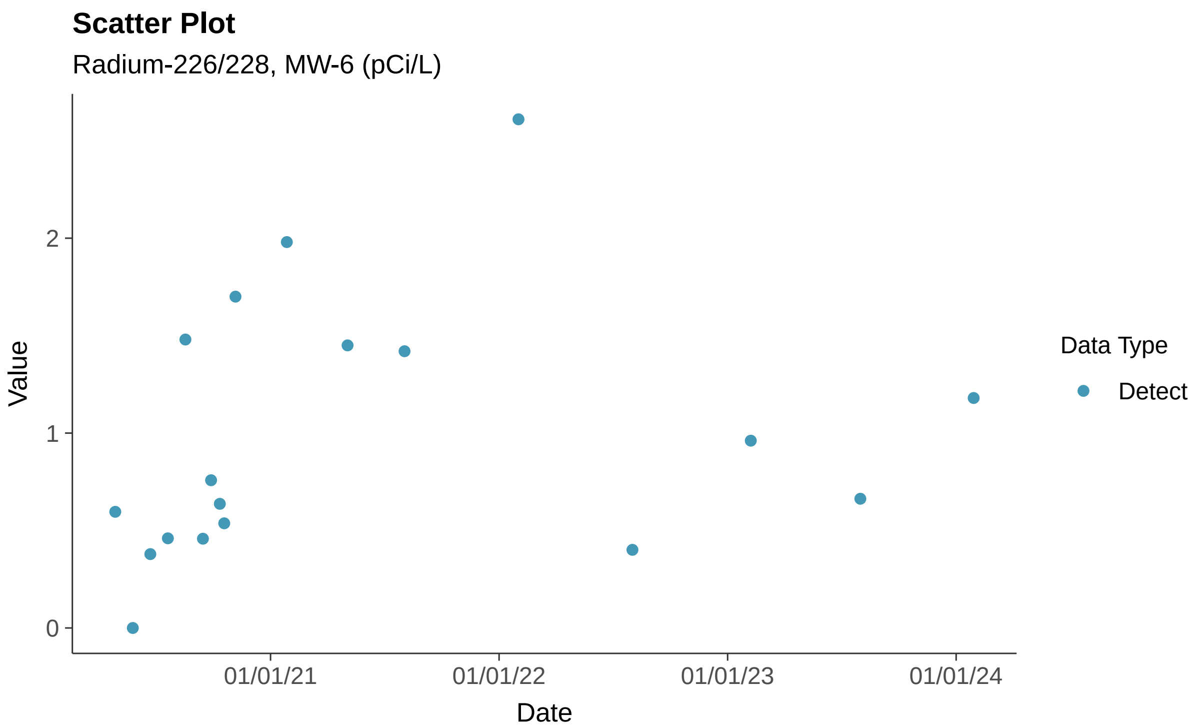
Trend Regression: Piecewise Linear-Linear-Linear

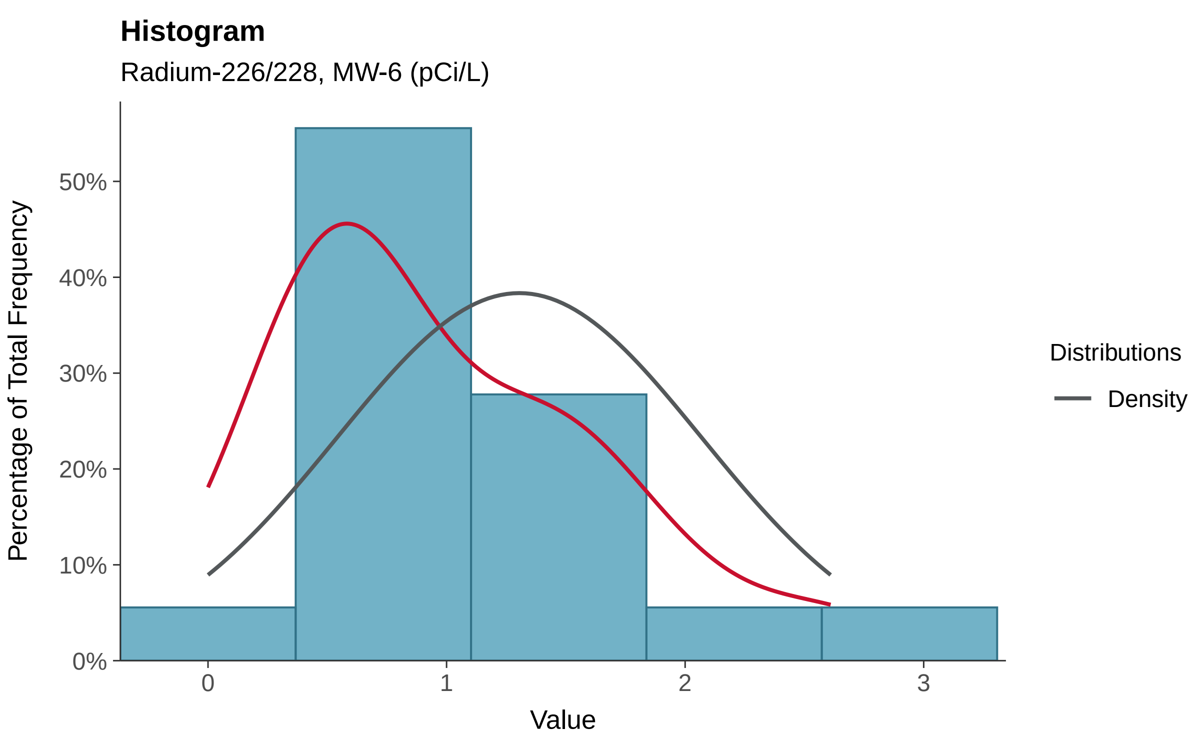
Molybdenum, MW-6 (mg/L)



Appendix IV: Radium-226/228, MW-6

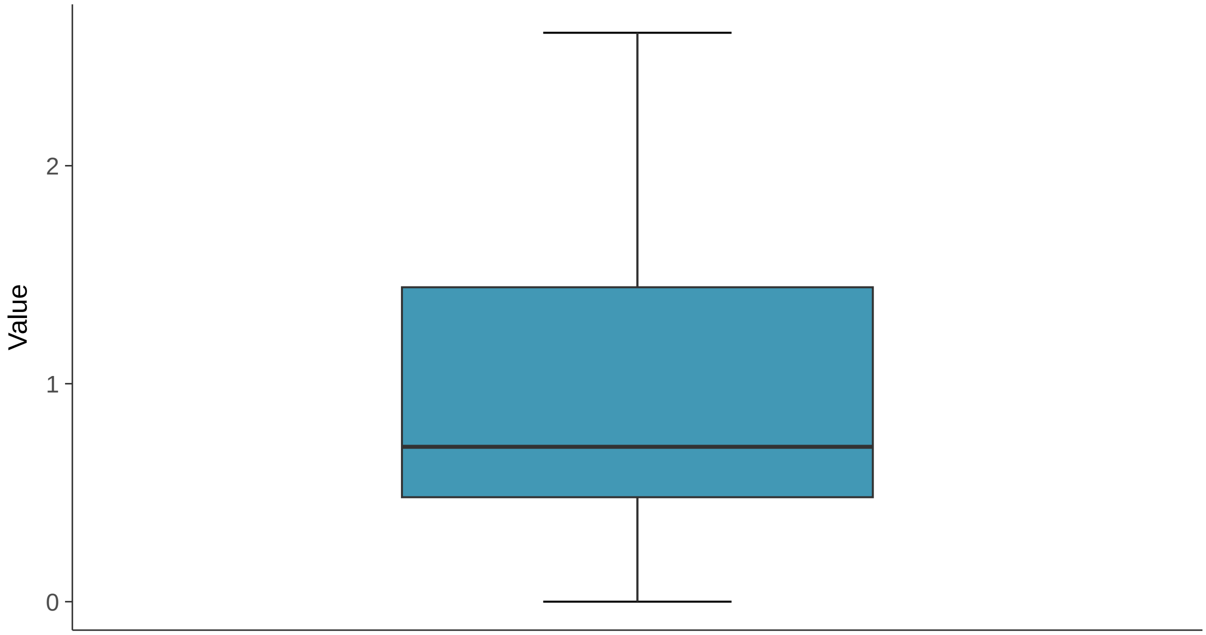
ID: 06_2_20





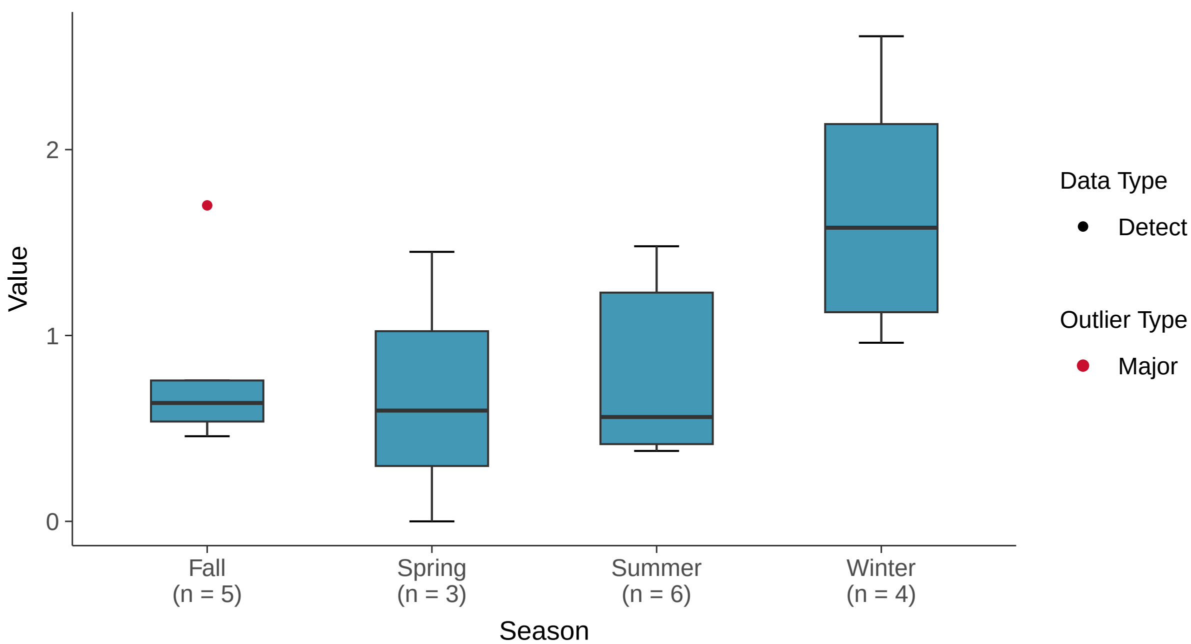
Boxplot

Radium-226/228, MW-6 (pCi/L)



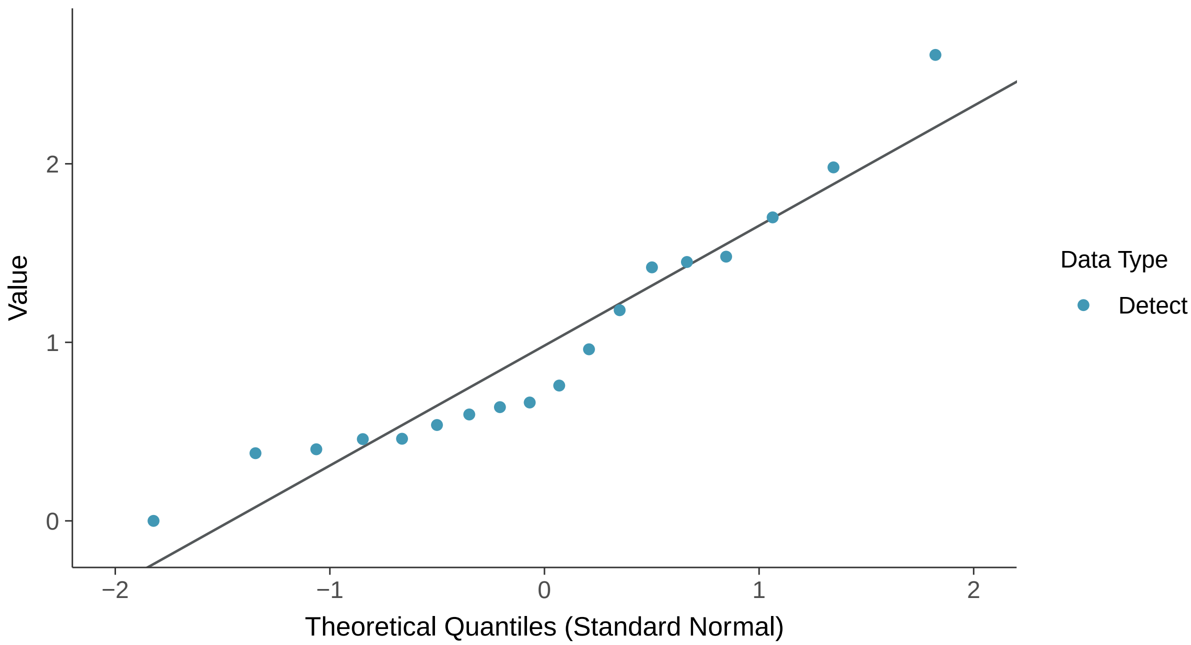
Boxplot by Season

Radium-226/228, MW-6 (pCi/L)



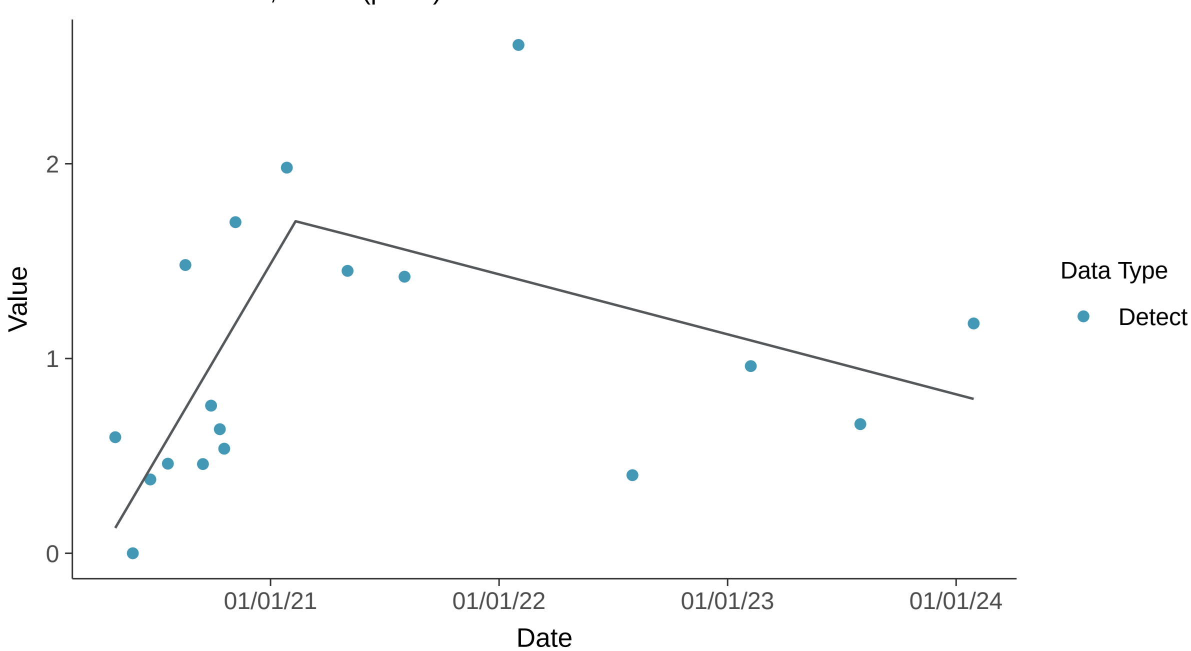
Normal Q-Q plot

Radium-226/228, MW-6 (pCi/L)



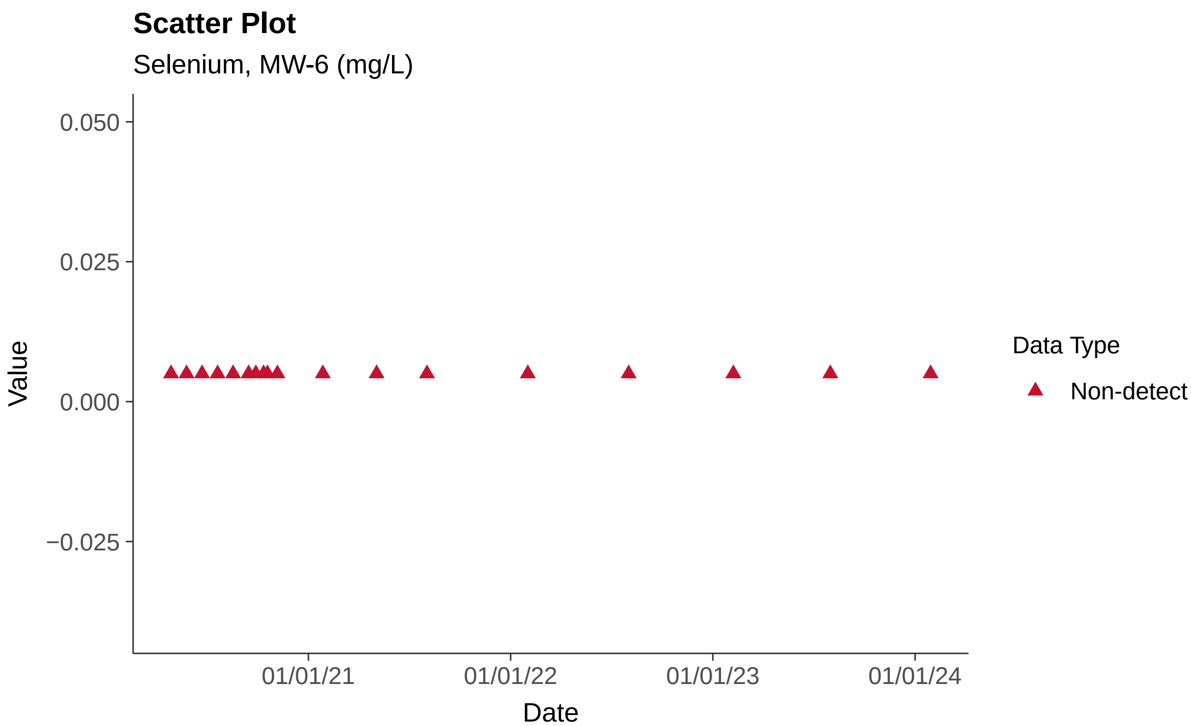
Trend Regression: Piecewise Linear-Linear

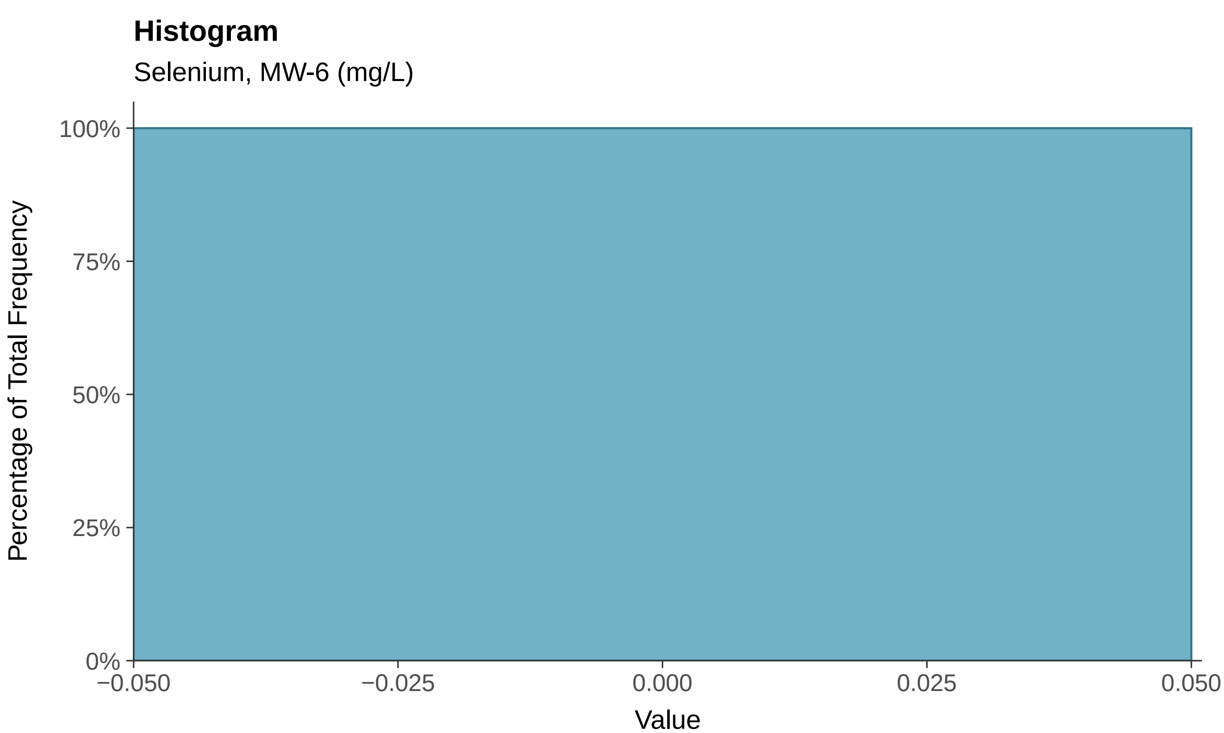
Radium-226/228, MW-6 (pCi/L)



Appendix IV: Selenium, MW-6

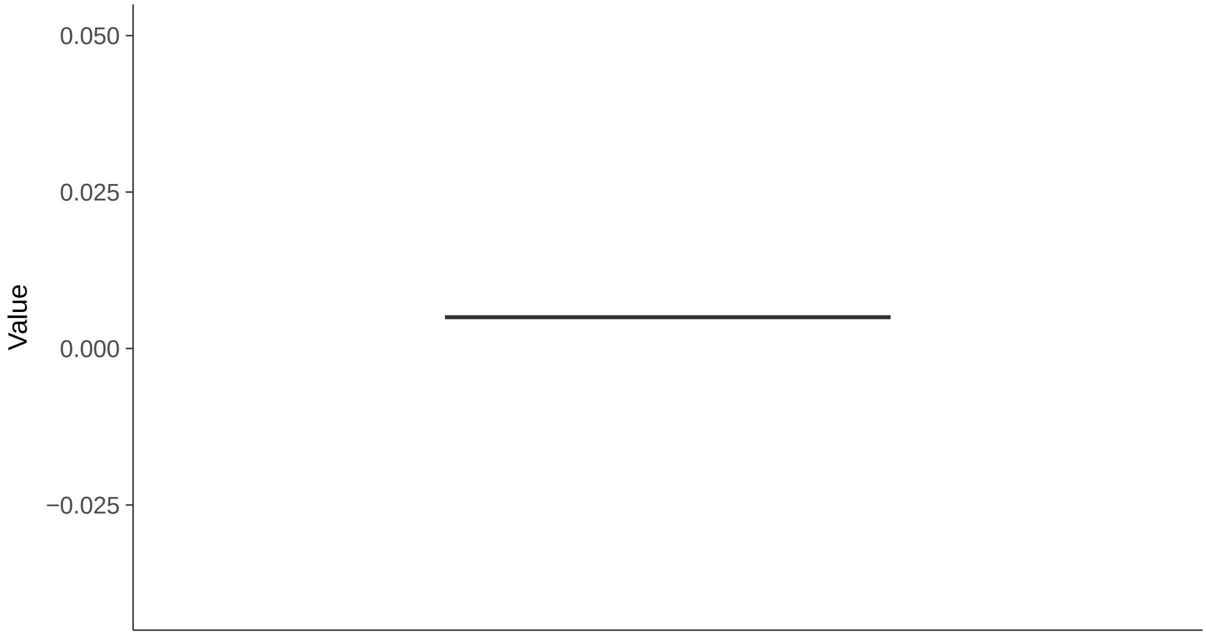
ID: 06_2_22





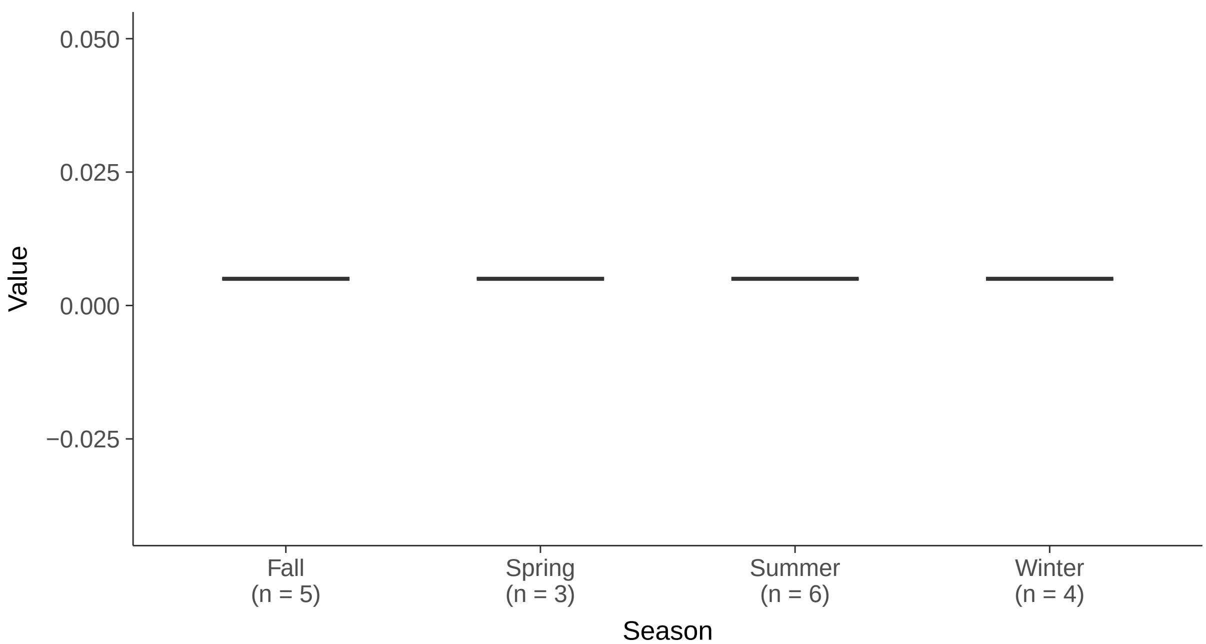
Boxplot

Selenium, MW-6 (mg/L)



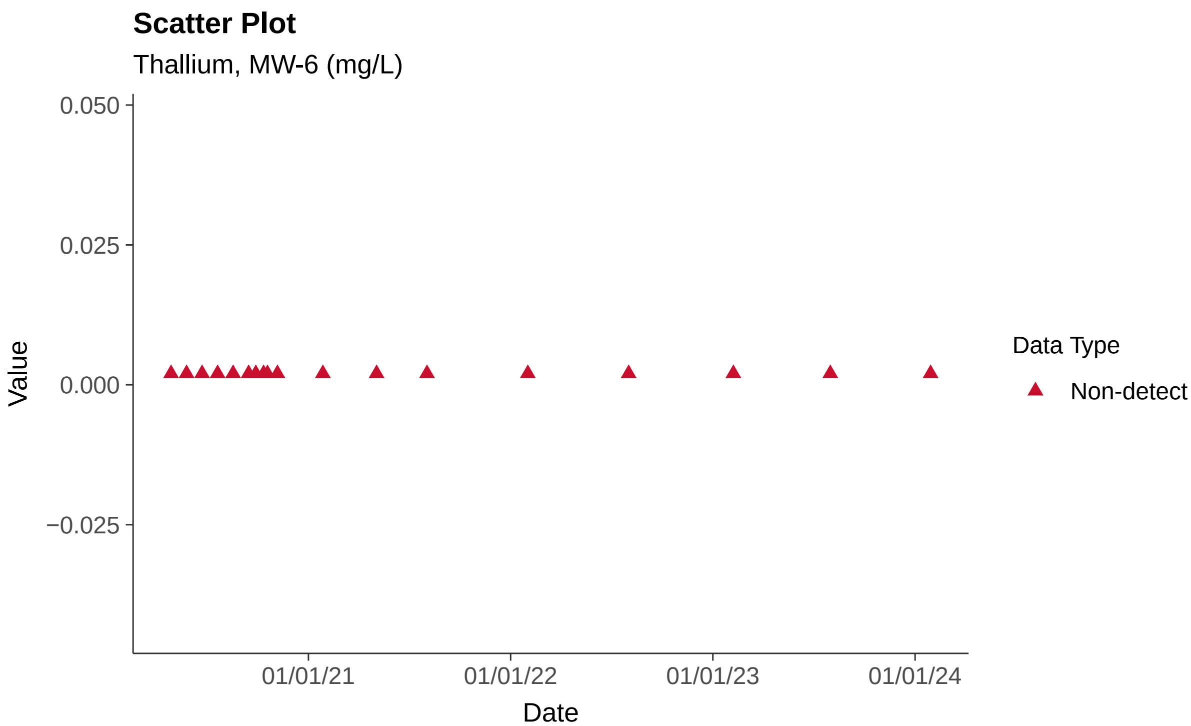
Boxplot by Season

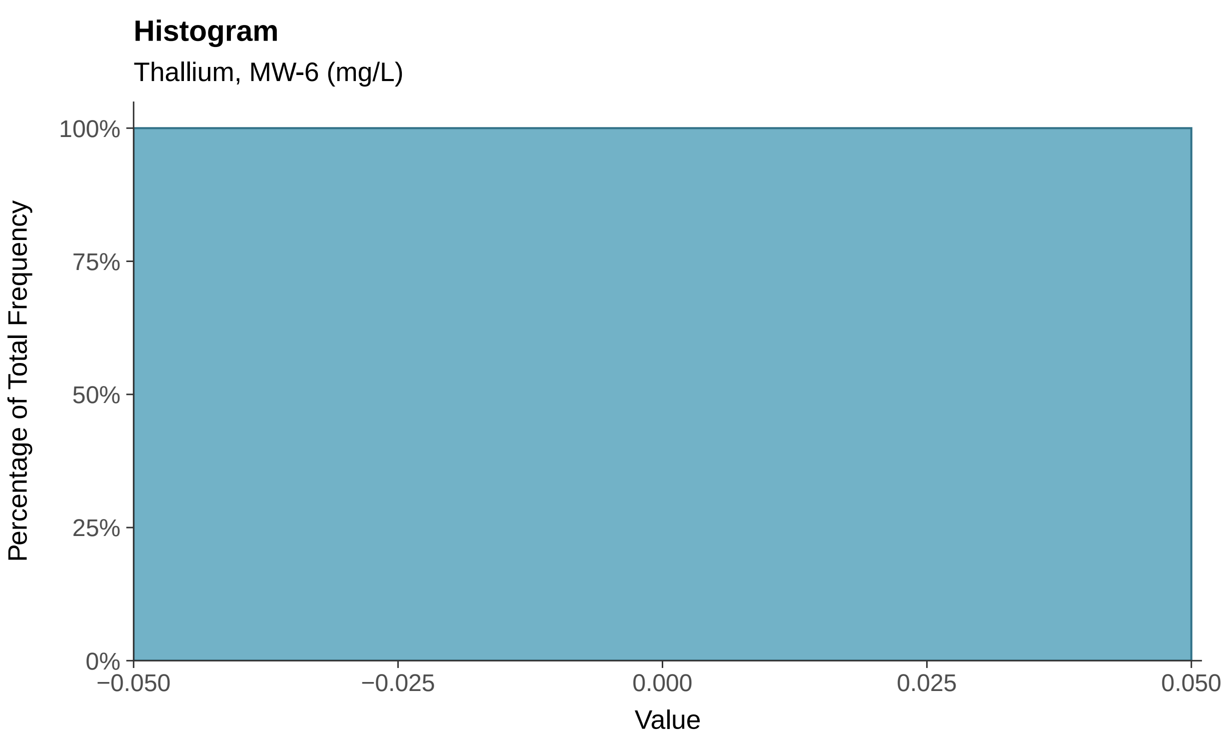
Selenium, MW-6 (mg/L)

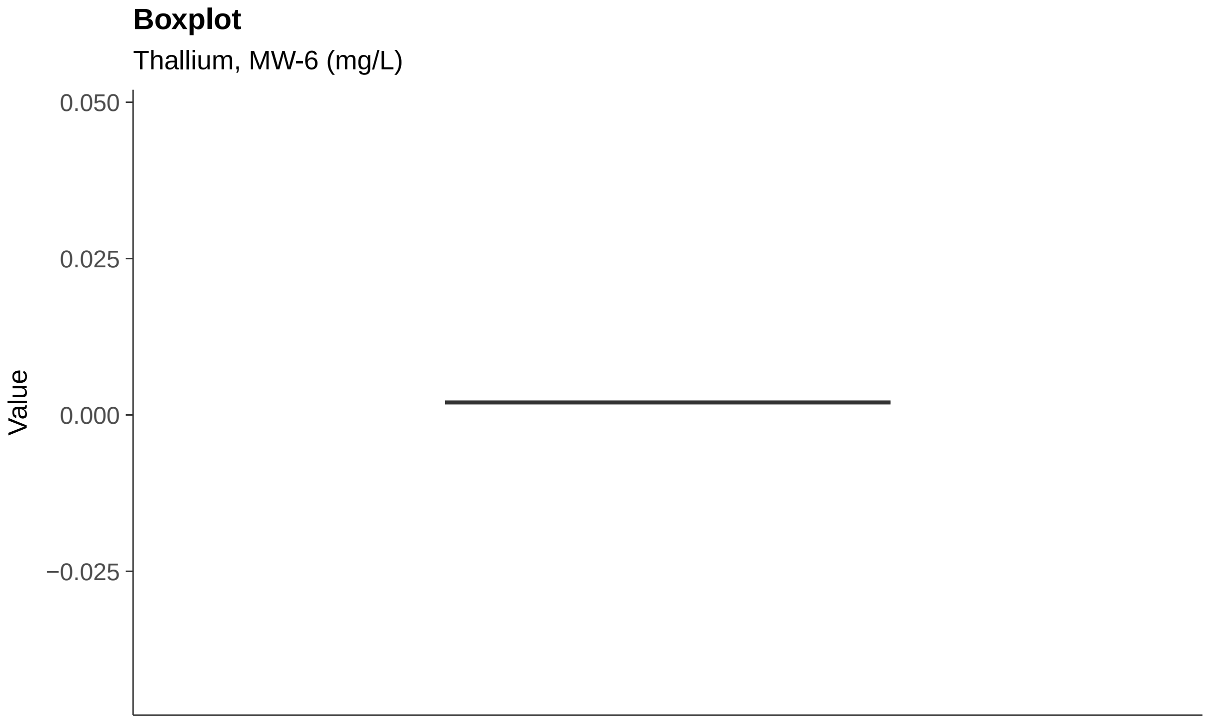


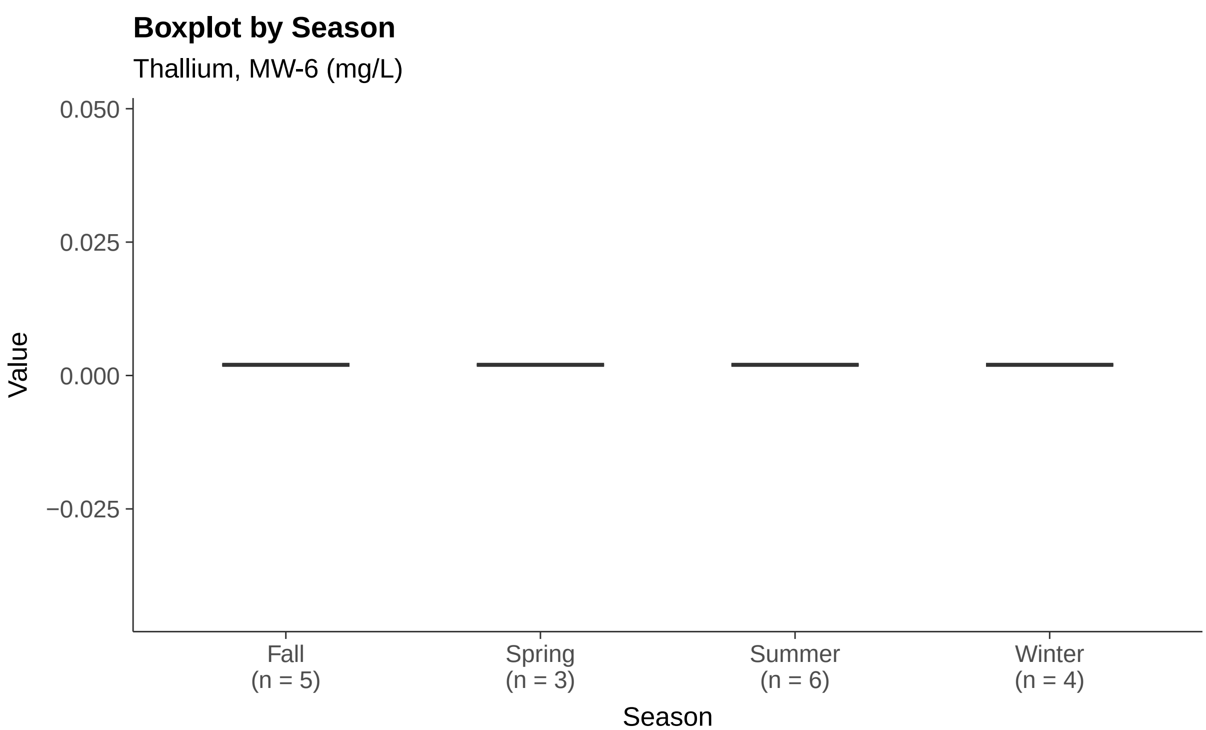
Appendix IV: Thallium, MW-6

ID: 06_2_23



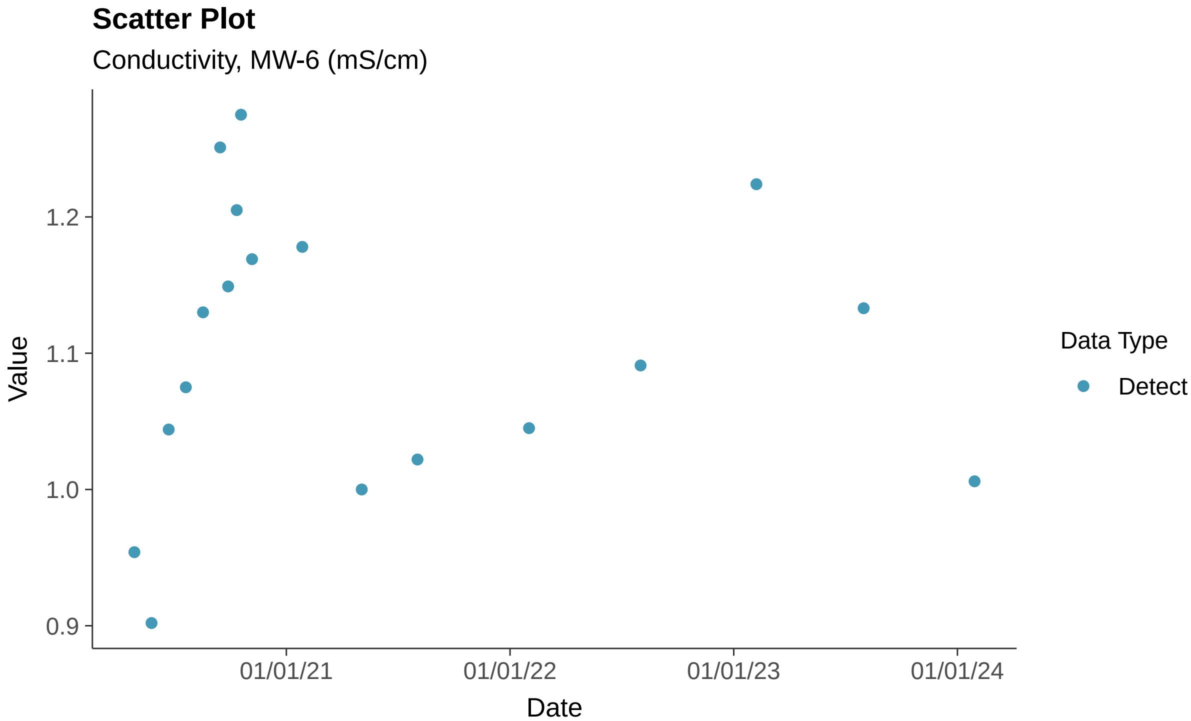


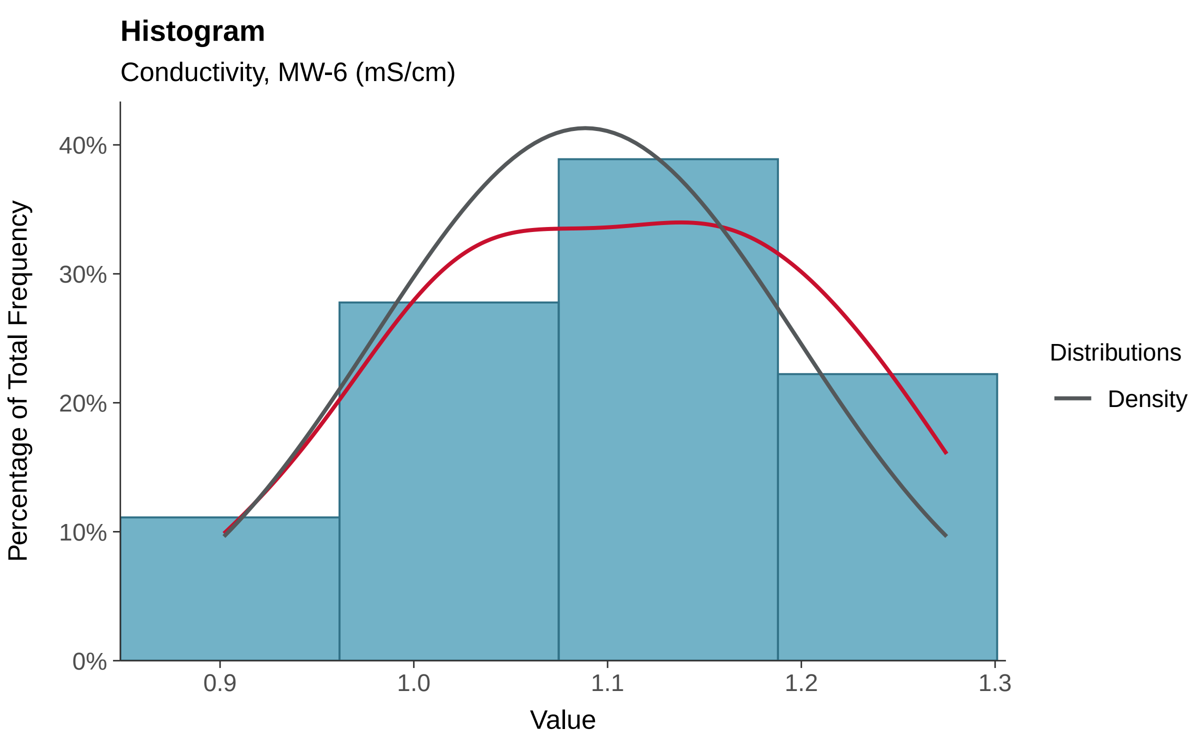

Boxplot
Thallium, MW-6 (mg/L)
0.050
0.025
0.000
−0.025
Value


Boxplot by Season
Thallium, MW-6 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 5)
Spring
(n = 3)
Summer
(n = 6)
Winter
(n = 4)
Season

Field Parameters: Conductivity, MW-6

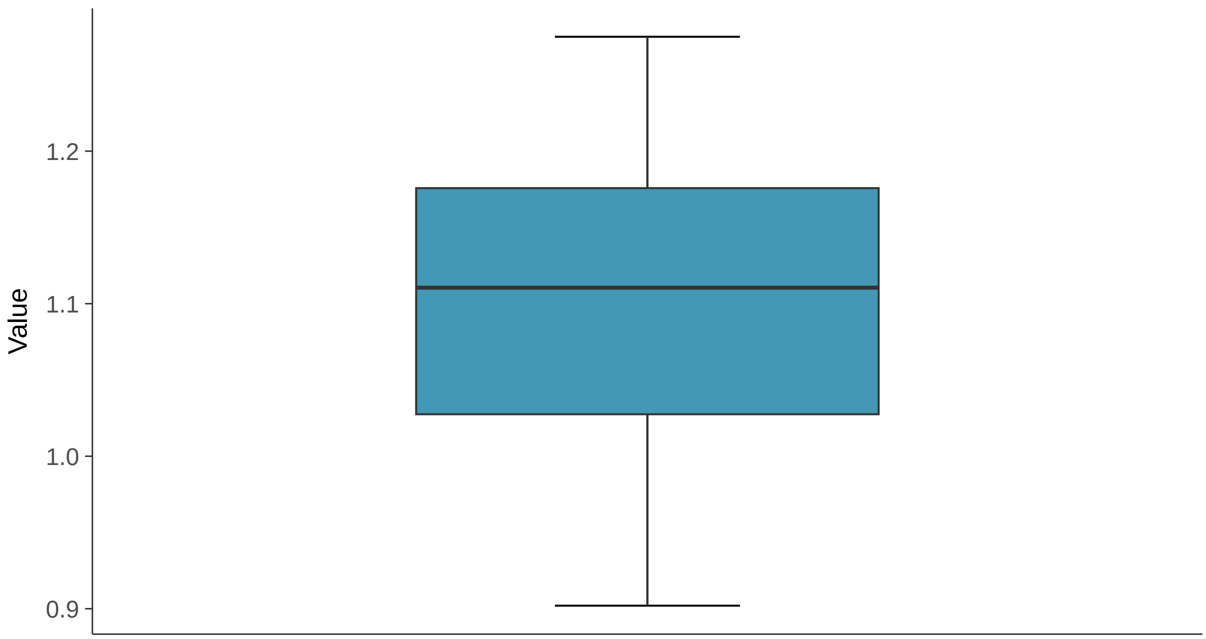
ID: 06_3_24





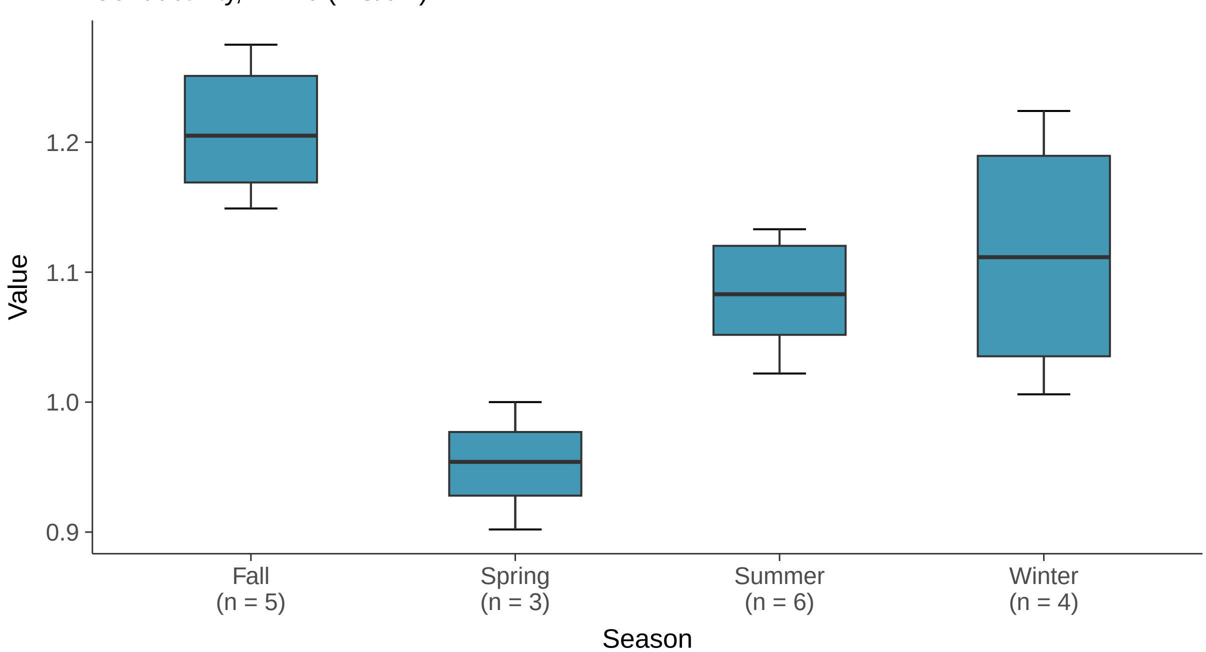
Boxplot

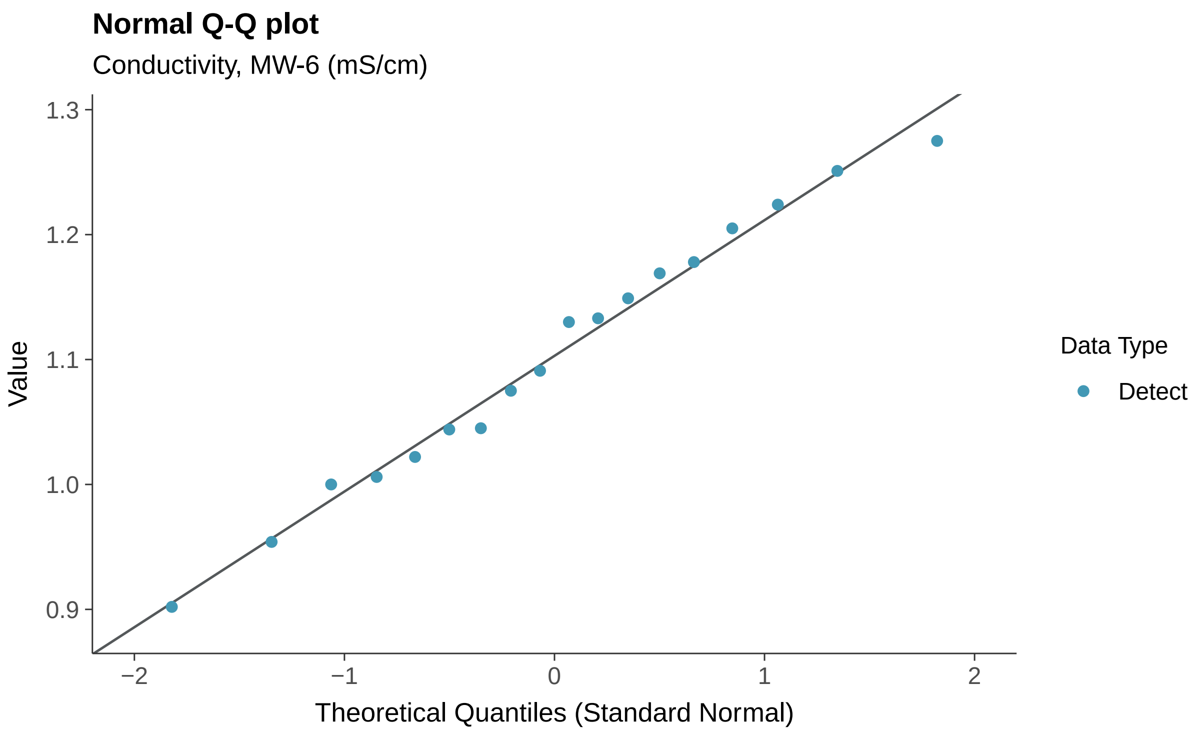
Conductivity, MW-6 (mS/cm)

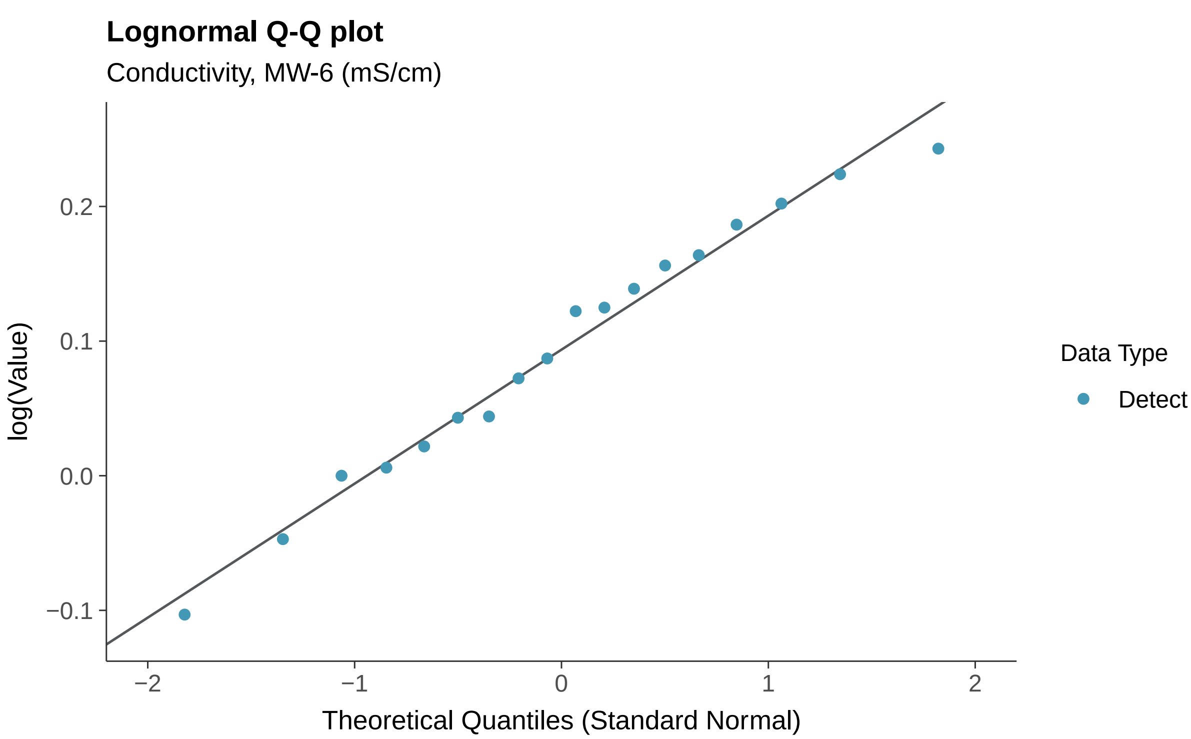


Boxplot by Season

Conductivity, MW-6 (mS/cm)

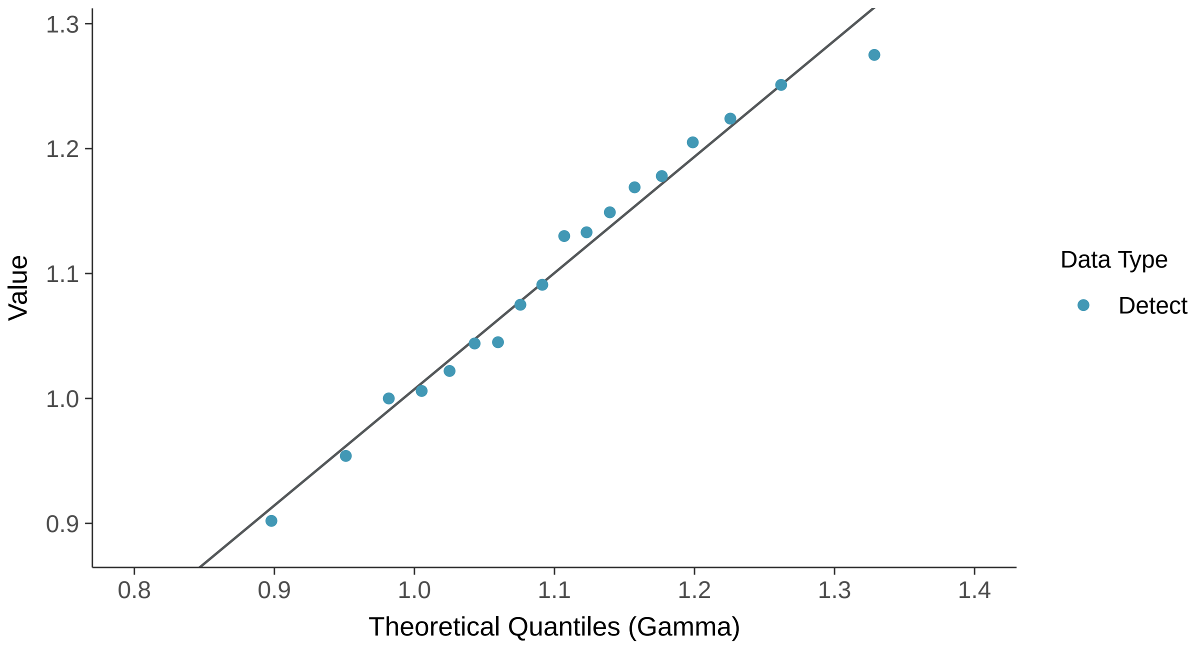



Normal Q-Q plot
Conductivity, MW-6 (mS/cm)
Value
1.3
1.2
1.1
1.0
0.9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Conductivity, MW-6 (mS/cm)
log(Value)
0.2
0.1
0.0
−0.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

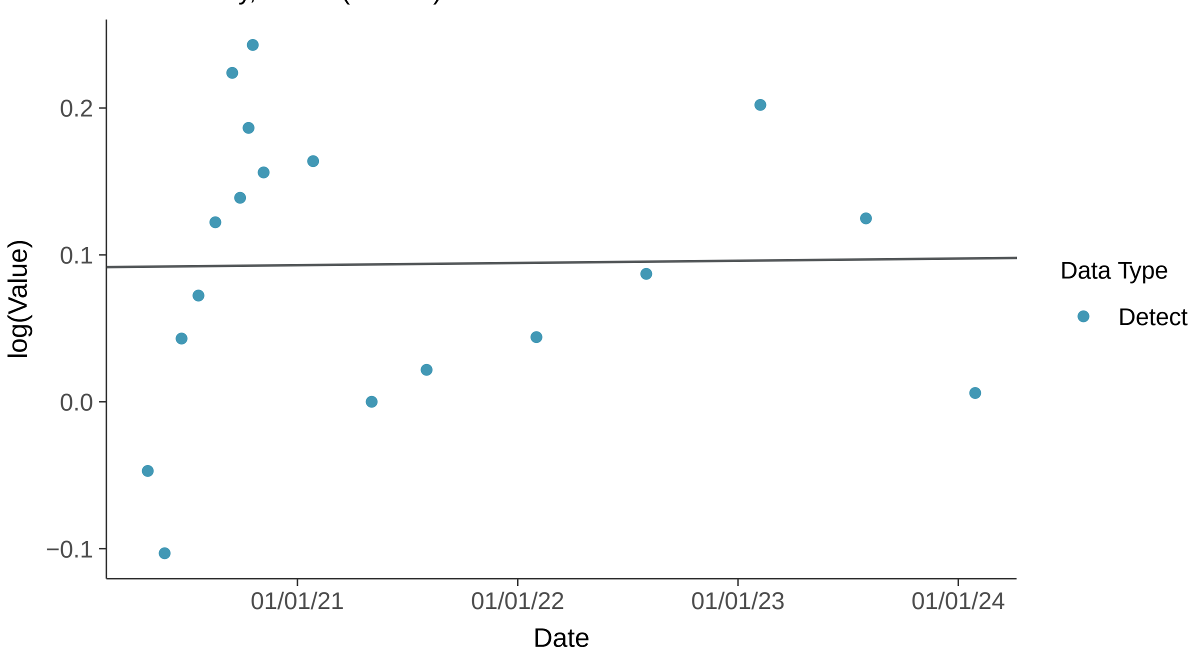
Gamma Q-Q plot

Conductivity, MW-6 (mS/cm)



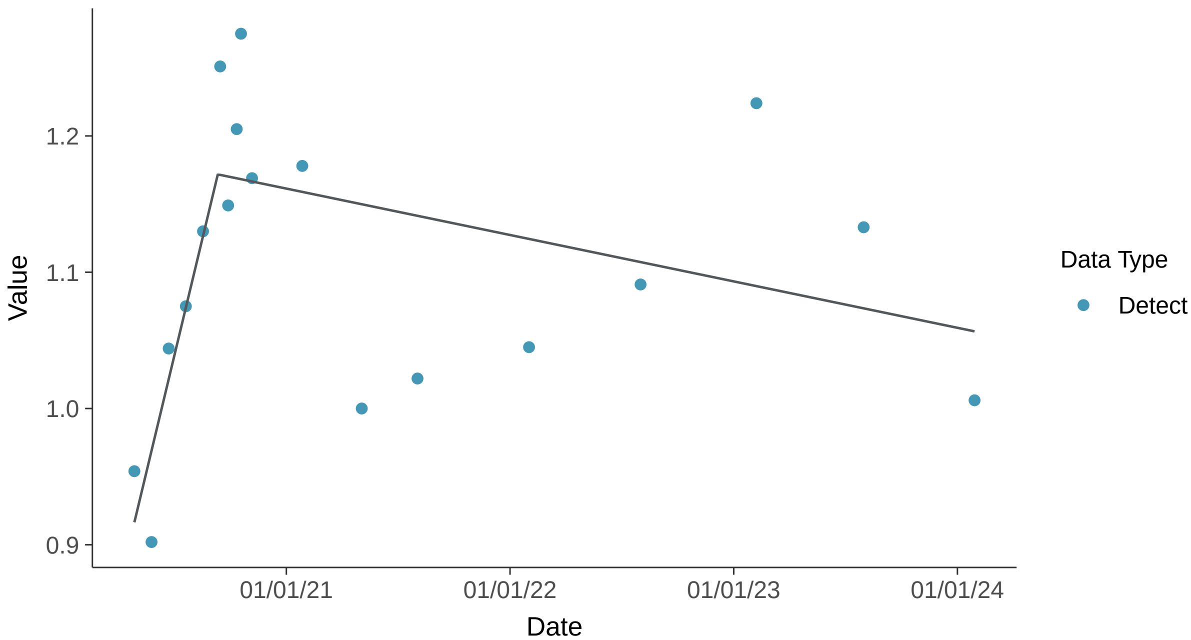
Trend Regression: Lognormal MLE

Conductivity, MW-6 (mS/cm)



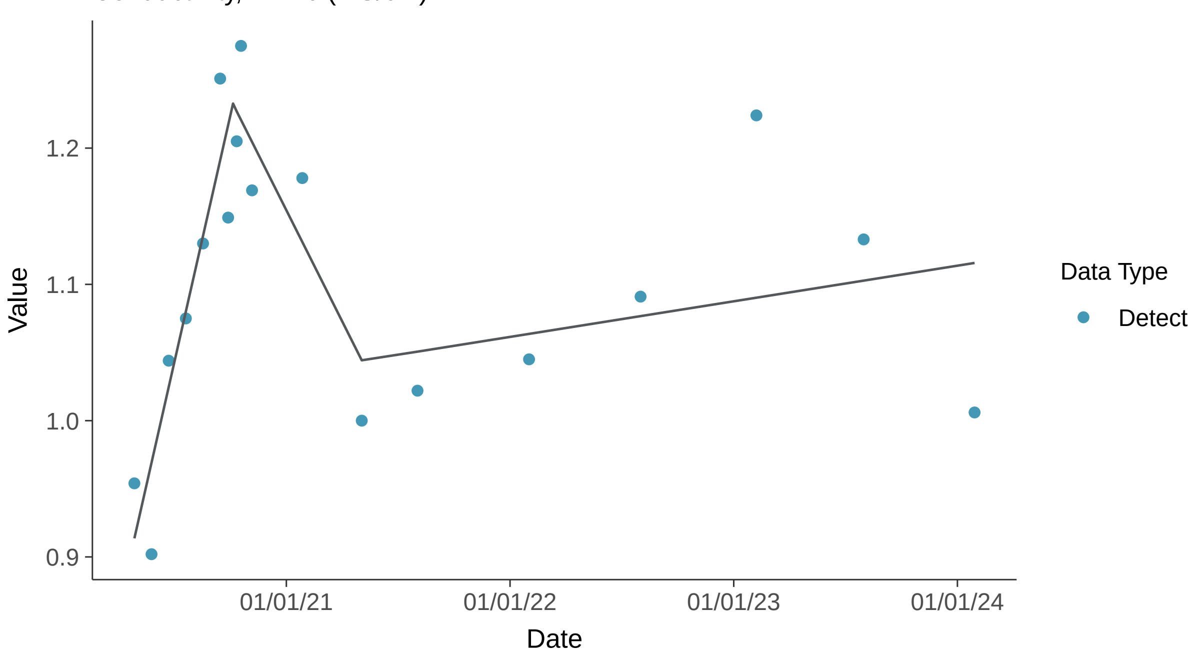
Trend Regression: Piecewise Linear-Linear

Conductivity, MW-6 (mS/cm)



Trend Regression: Piecewise Linear-Linear-Linear

Conductivity, MW-6 (mS/cm)

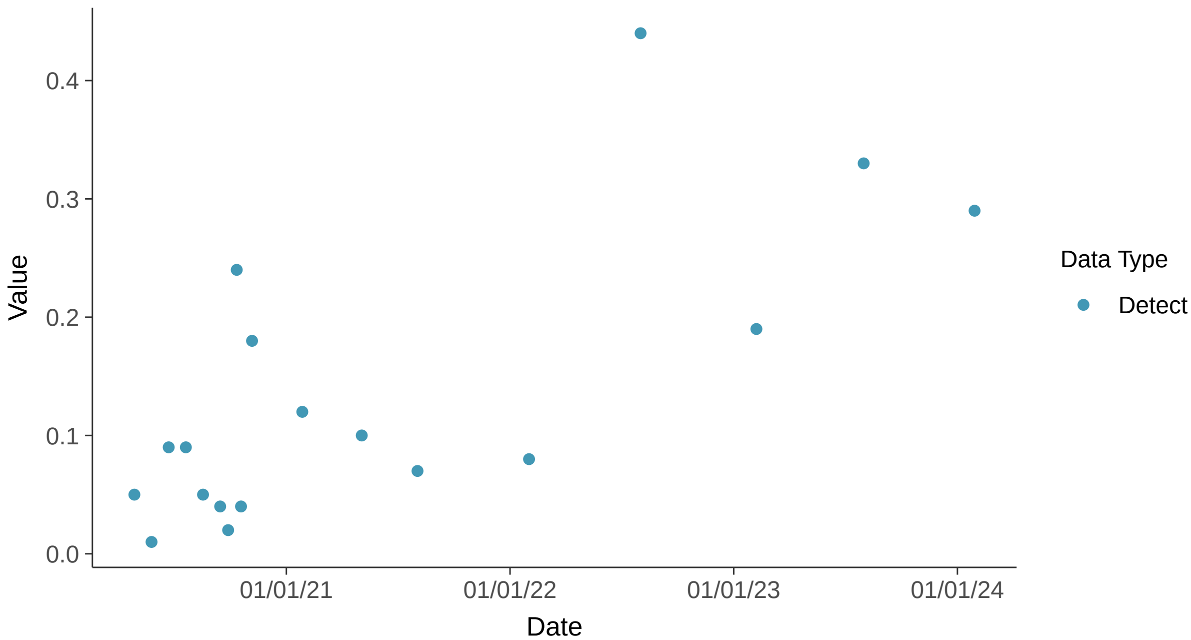


Field Parameters: Dissolved Oxygen, MW-6

ID: 06_3_25

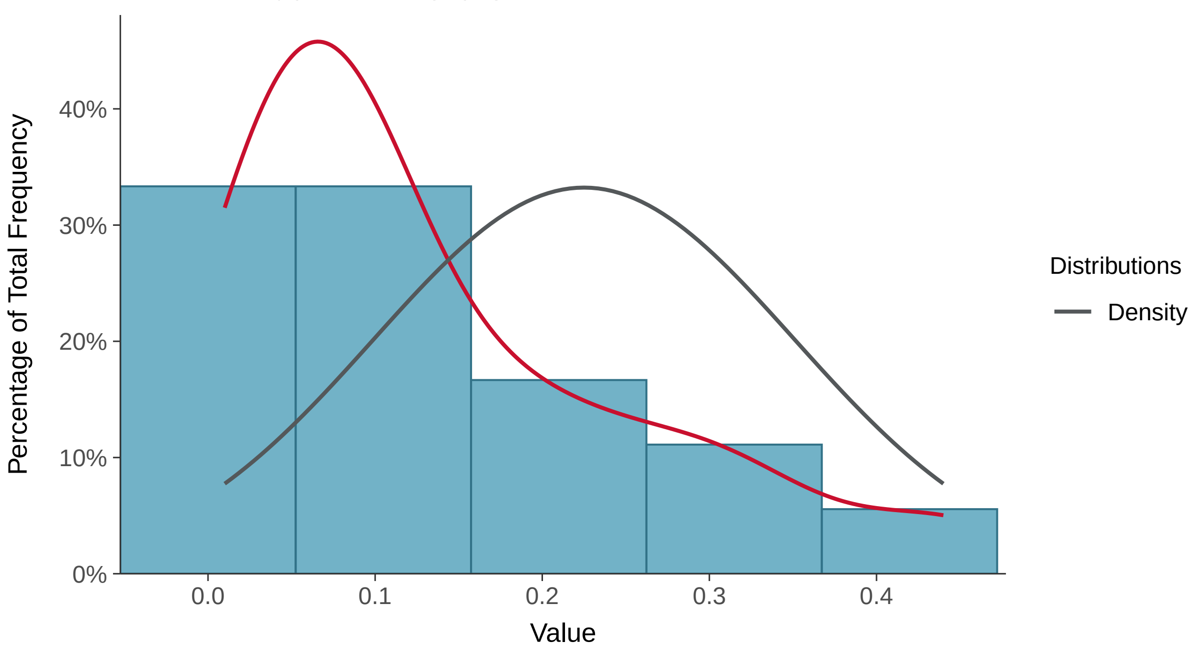
Scatter Plot

Dissolved Oxygen, MW-6 (mg/L)



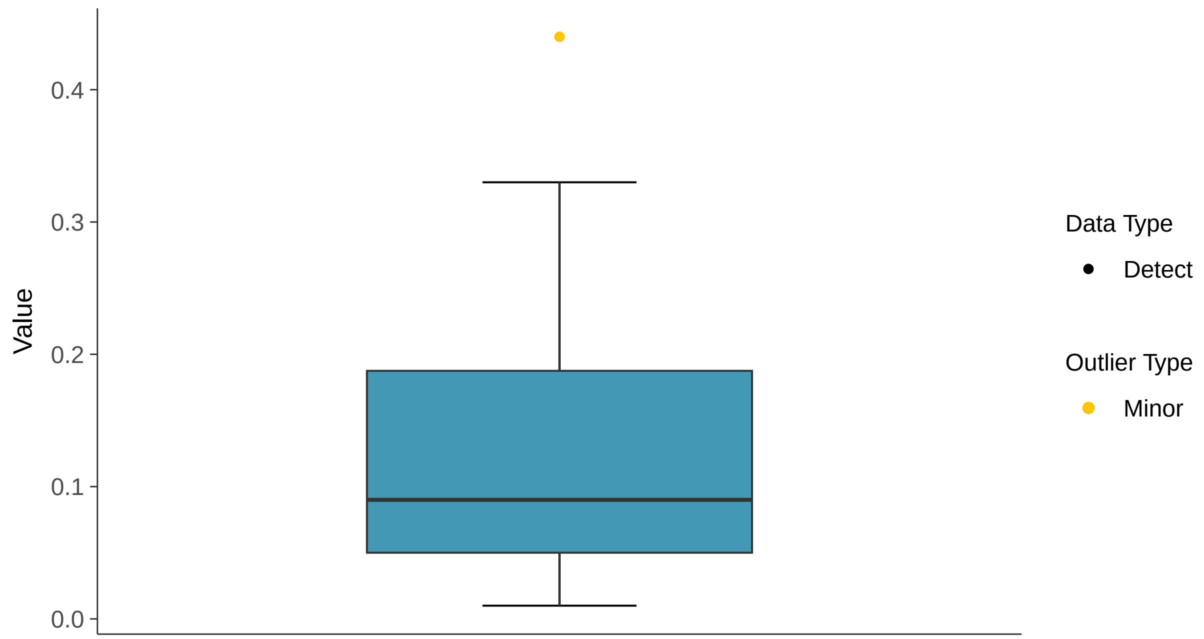
Histogram

Dissolved Oxygen, MW-6 (mg/L)



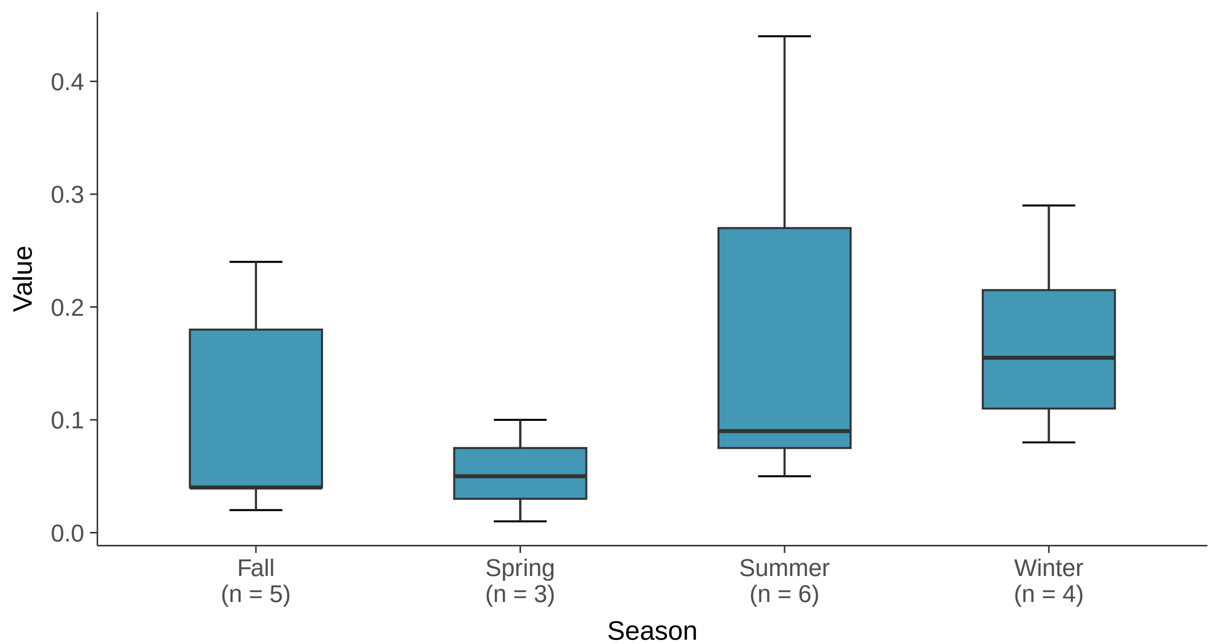
Boxplot

Dissolved Oxygen, MW-6 (mg/L)



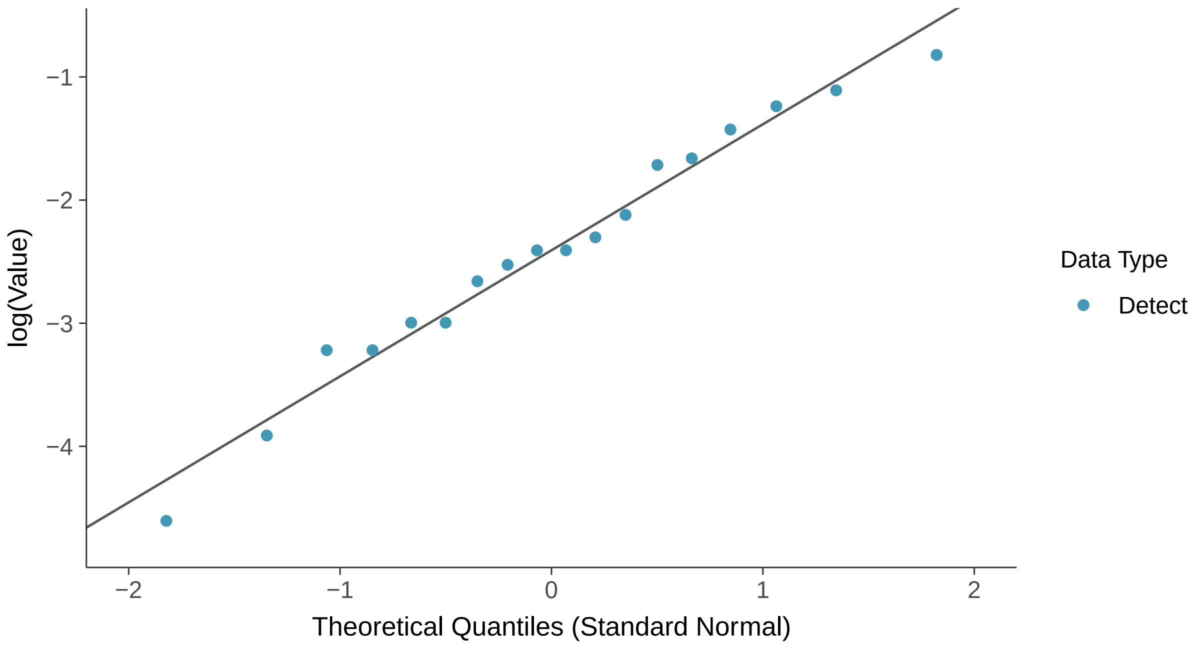
Boxplot by Season

Dissolved Oxygen, MW-6 (mg/L)



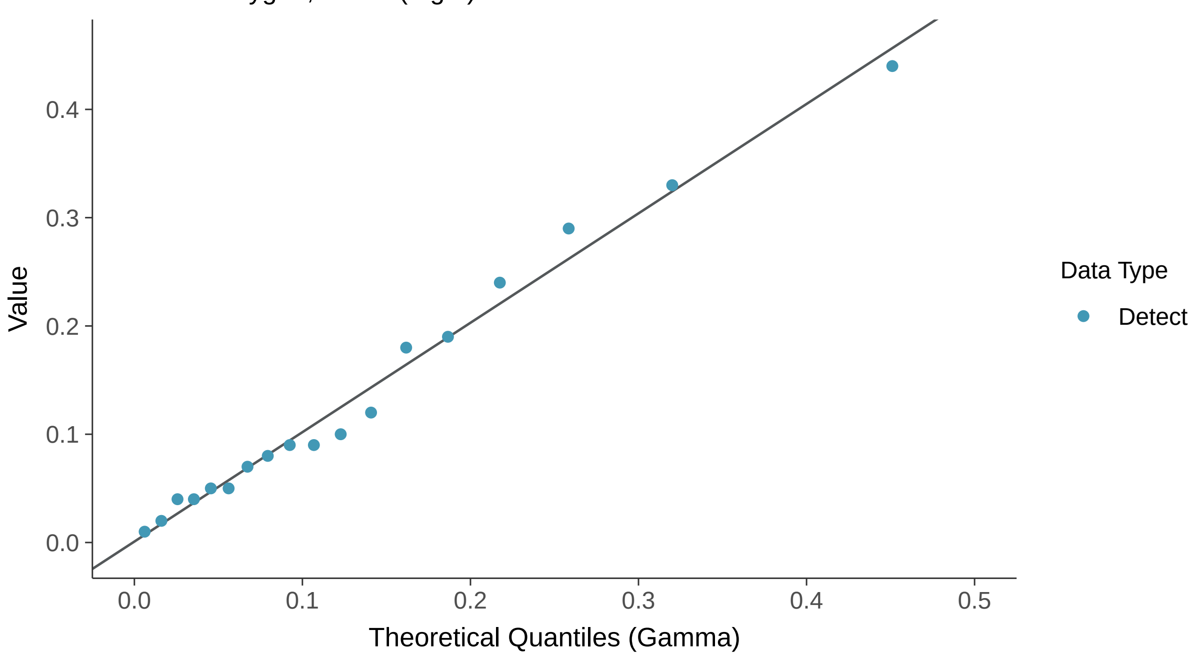
Lognormal Q-Q plot

Dissolved Oxygen, MW-6 (mg/L)



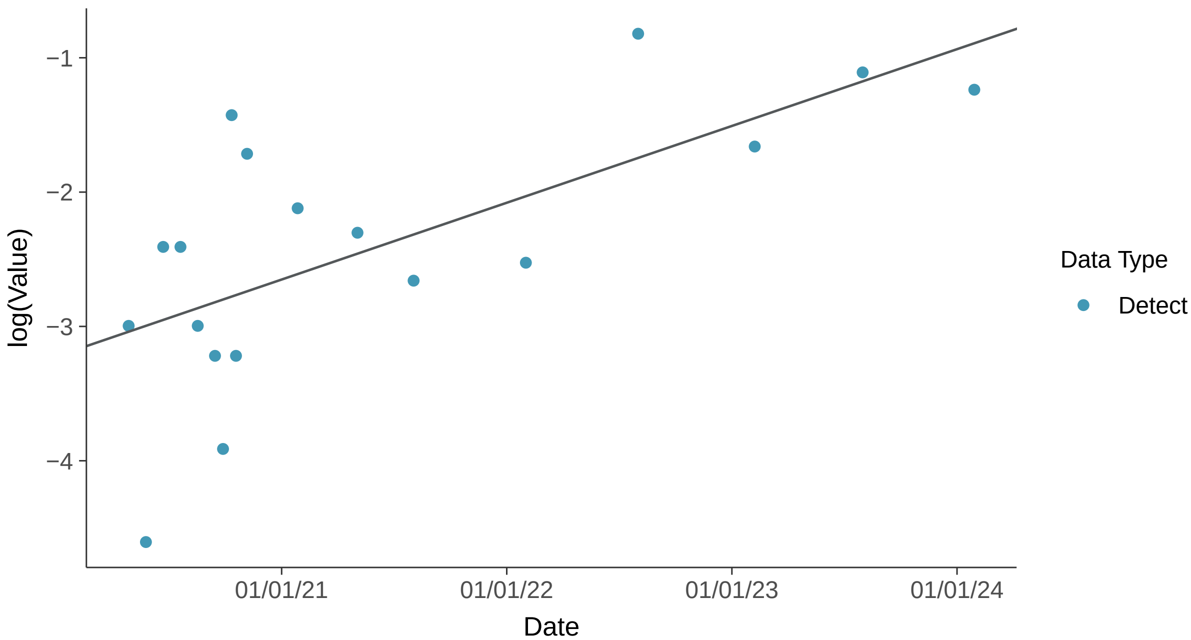
Gamma Q-Q plot

Dissolved Oxygen, MW-6 (mg/L)



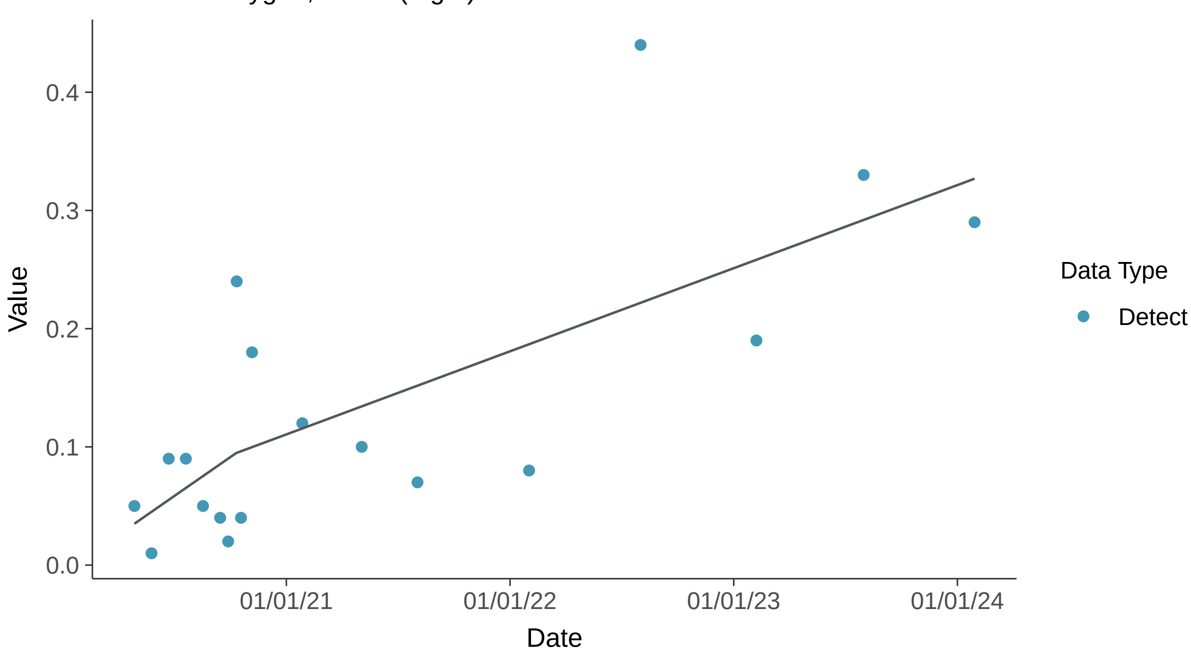
Trend Regression: Lognormal MLE

Dissolved Oxygen, MW-6 (mg/L)



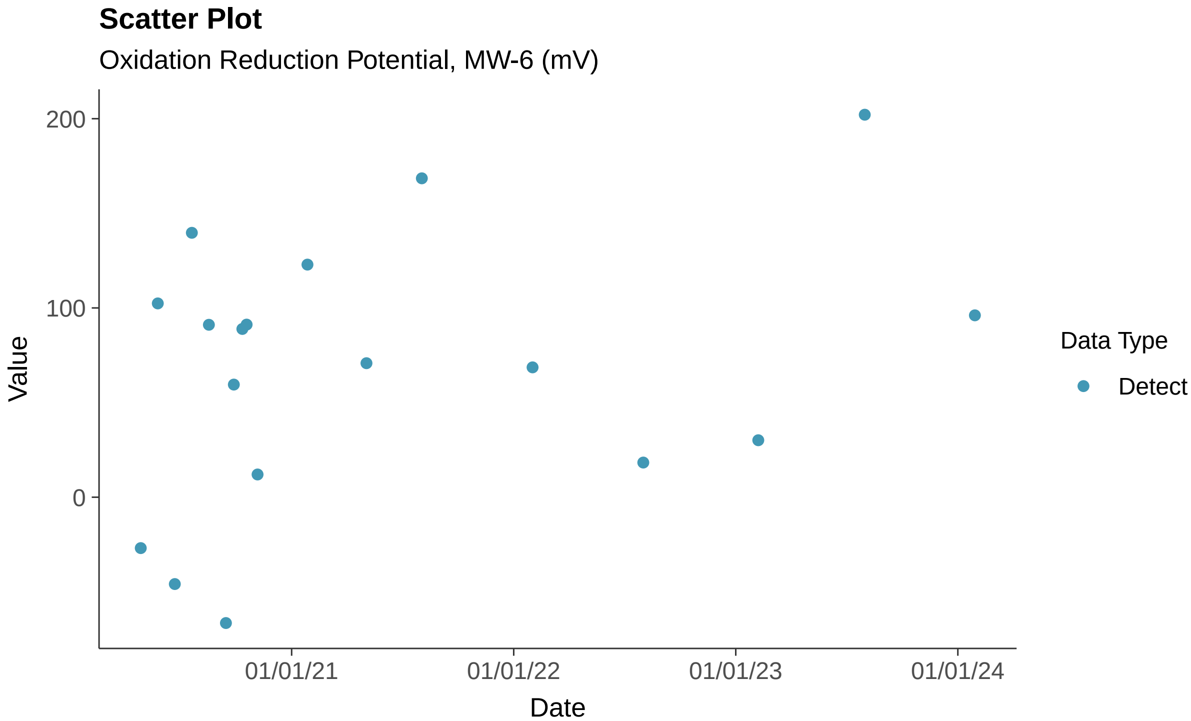
Trend Regression: Piecewise Linear-Linear

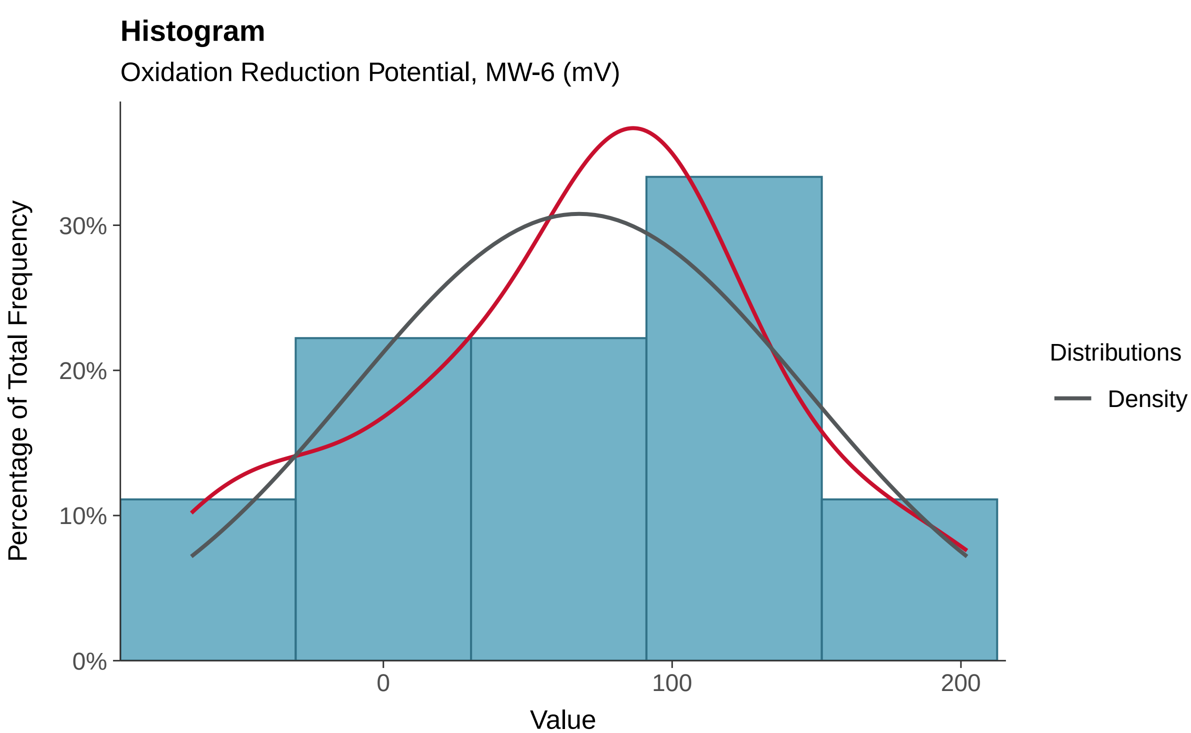
Dissolved Oxygen, MW-6 (mg/L)



Field Parameters: Oxidation Reduction Potential, MW-6

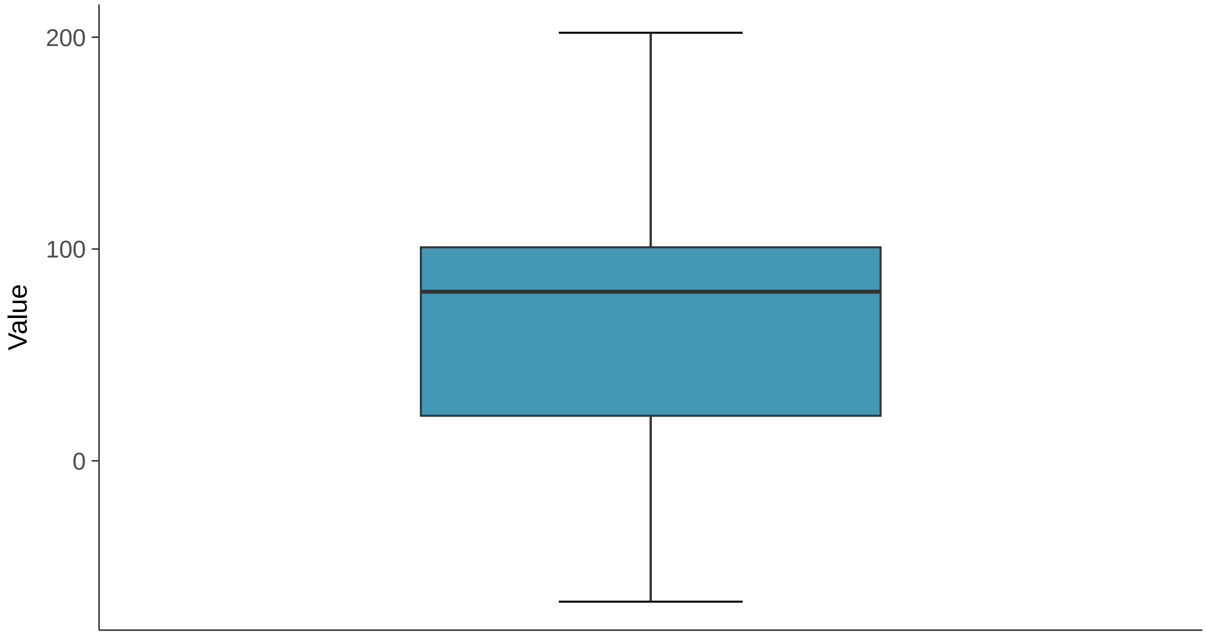
ID: 06_3_26





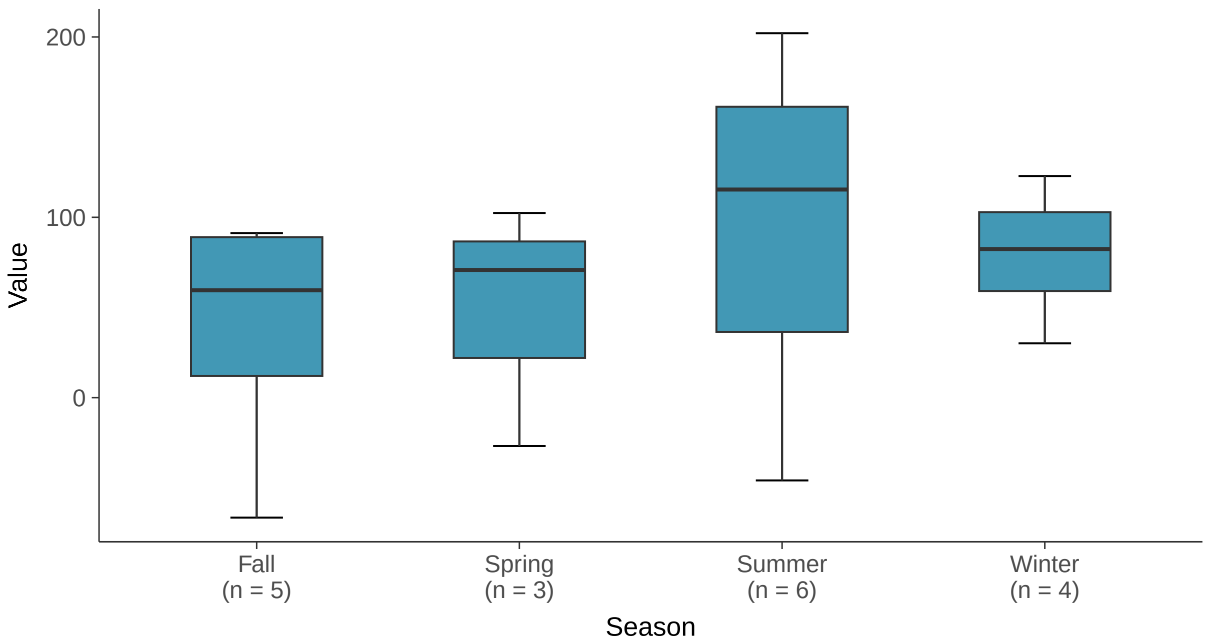
Boxplot

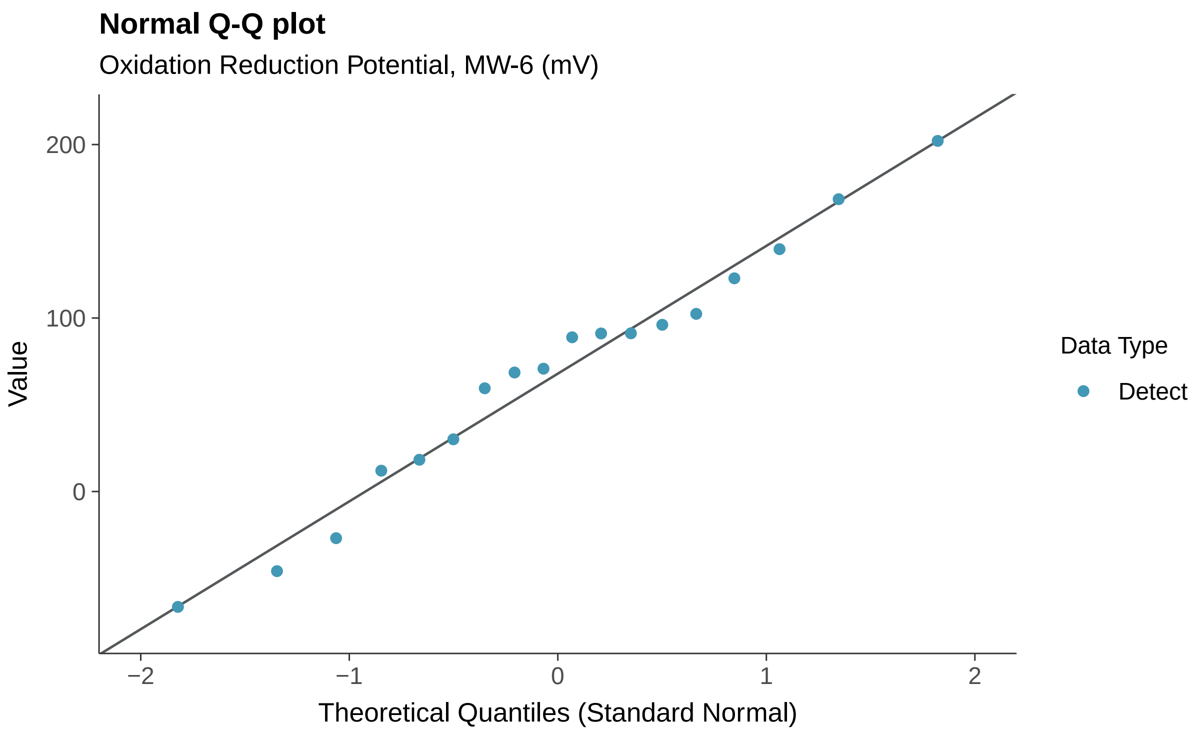
Oxidation Reduction Potential, MW-6 (mV)

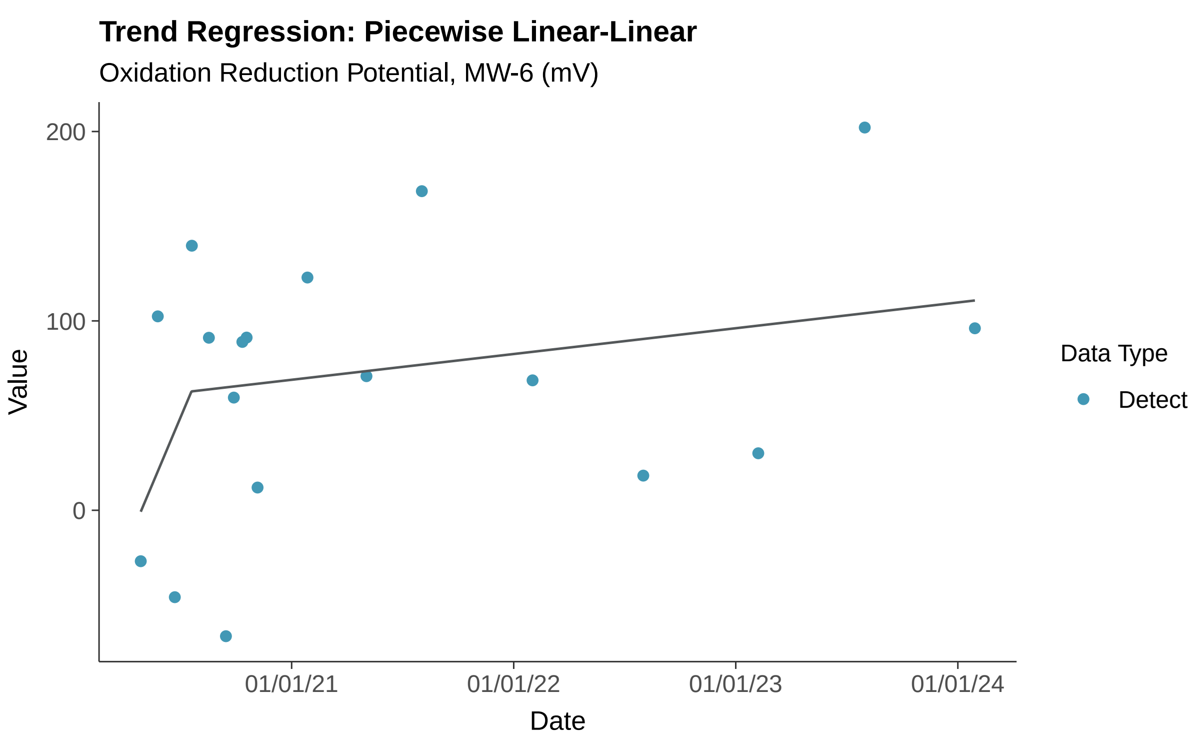


Boxplot by Season

Oxidation Reduction Potential, MW-6 (mV)




Normal Q-Q plot
Oxidation Reduction Potential, MW-6 (mV)
Value
200
100
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

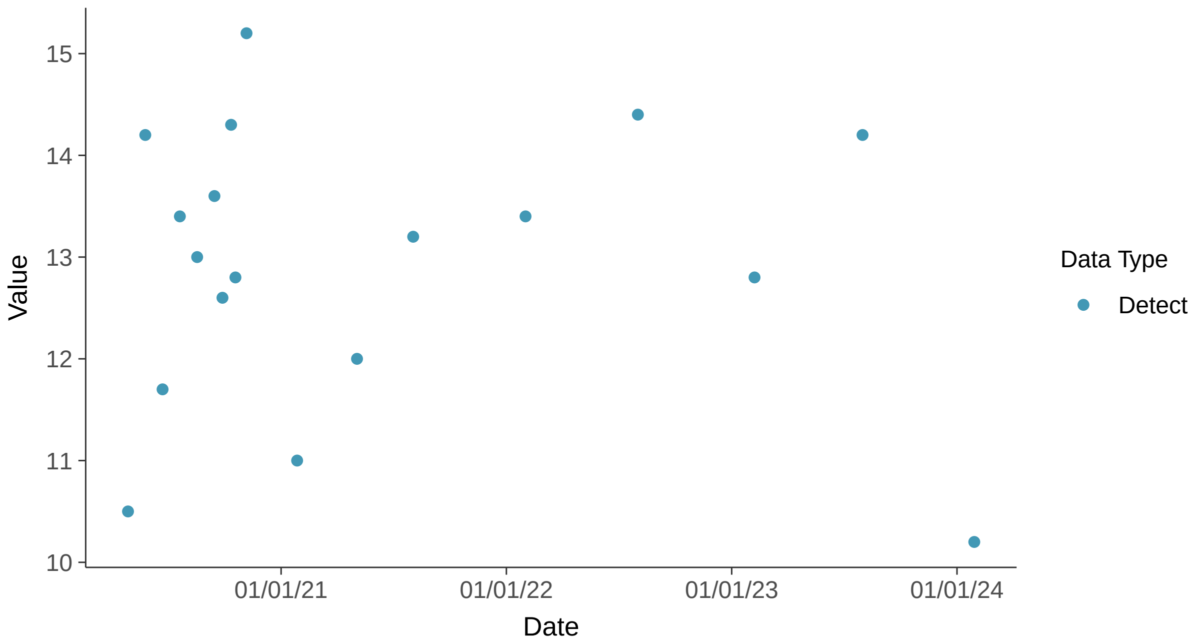

Trend Regression: Piecewise Linear-Linear
Oxidation Reduction Potential, MW-6 (mV)
Value
200
100
0
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Temperature, MW-6

ID: 06_3_27

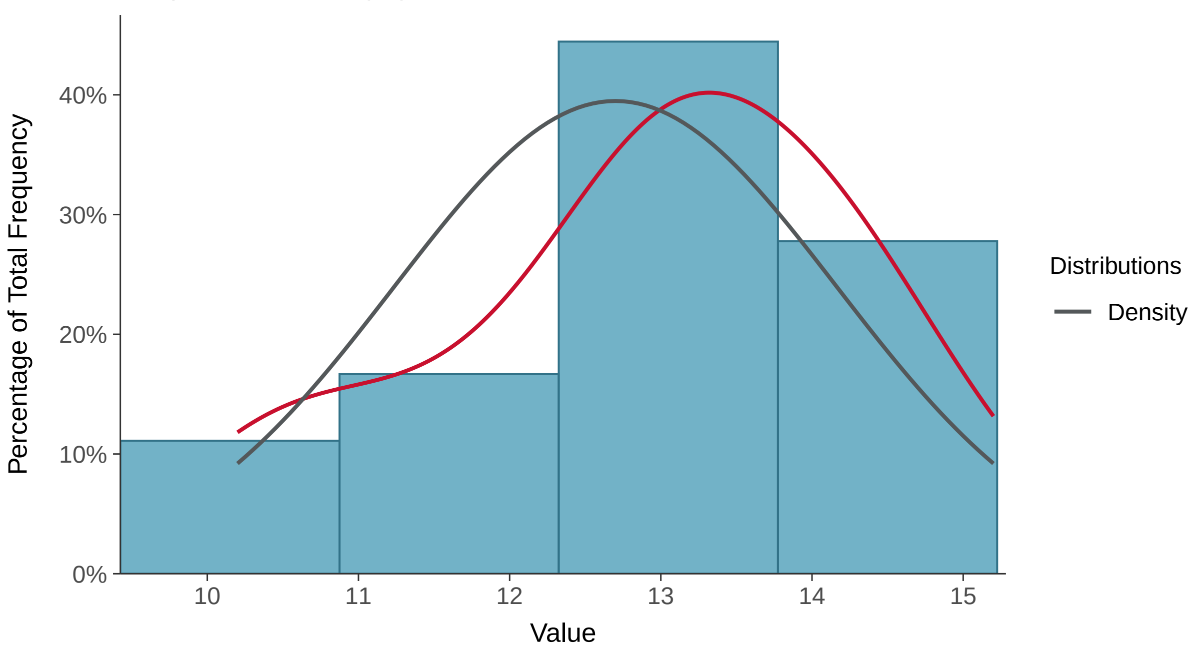
Scatter Plot

Temperature, MW-6 (°C)



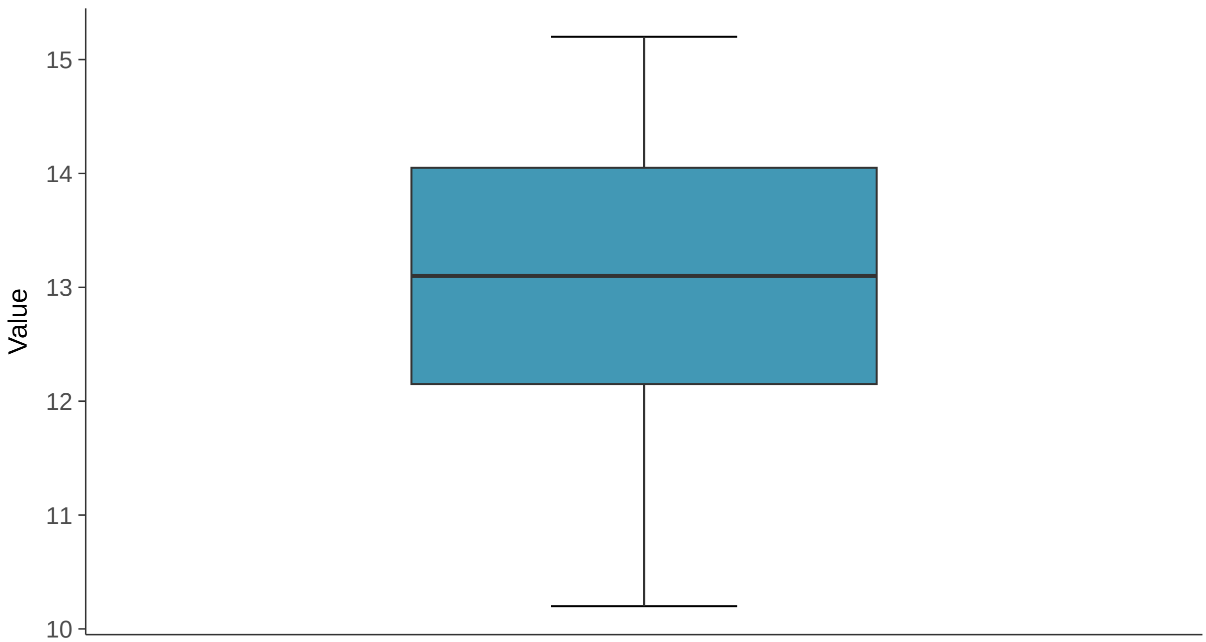
Histogram

Temperature, MW-6 (°C)



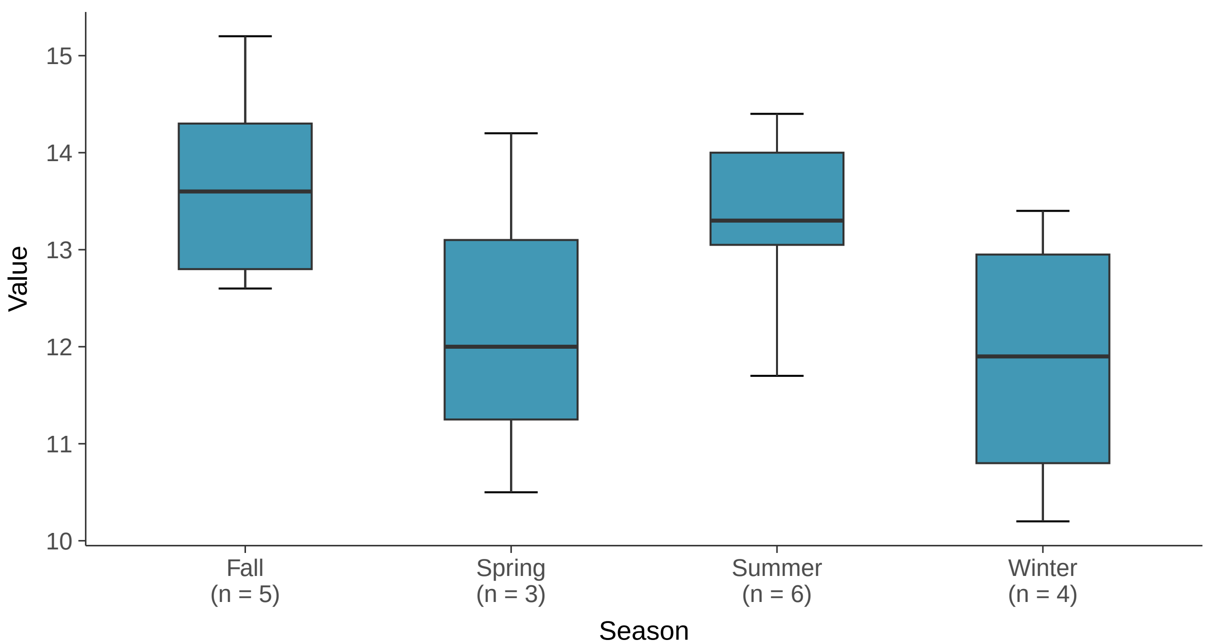
Boxplot

Temperature, MW-6 (°C)



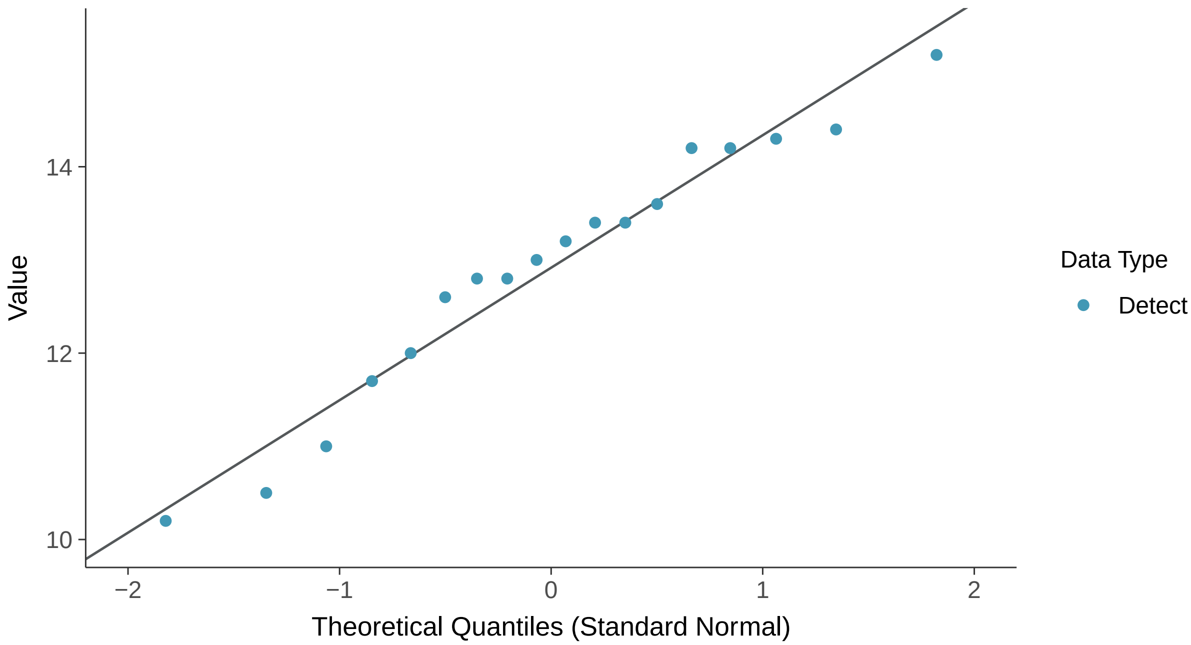
Boxplot by Season

Temperature, MW-6 (°C)



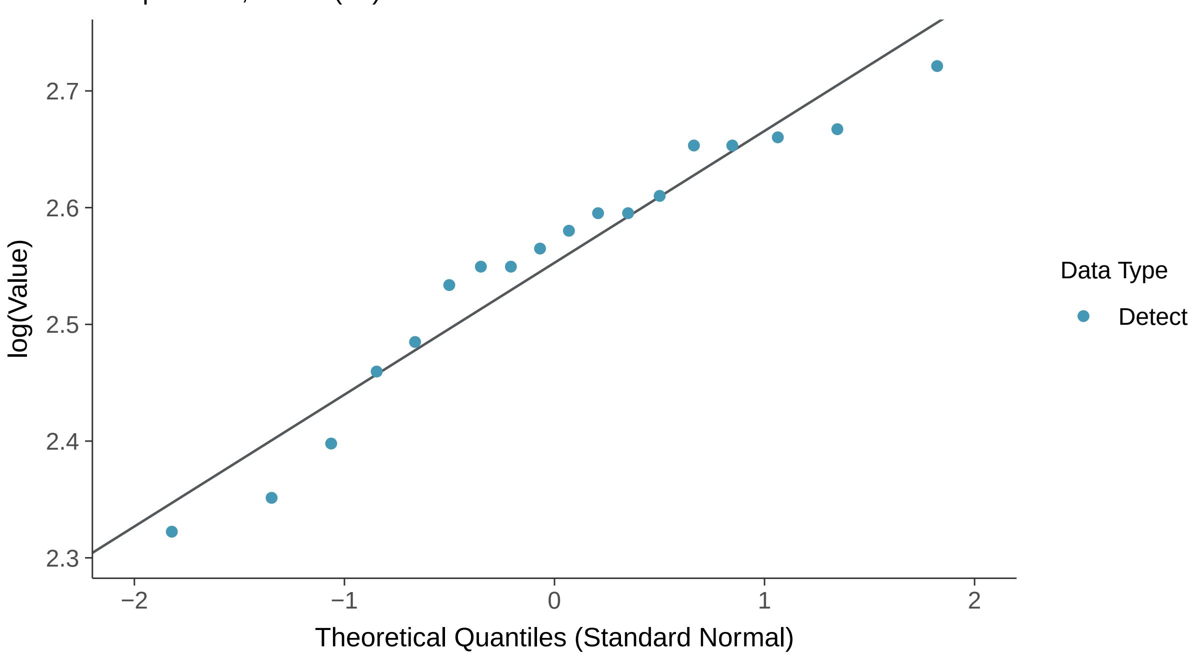
Normal Q-Q plot

Temperature, MW-6 (°C)



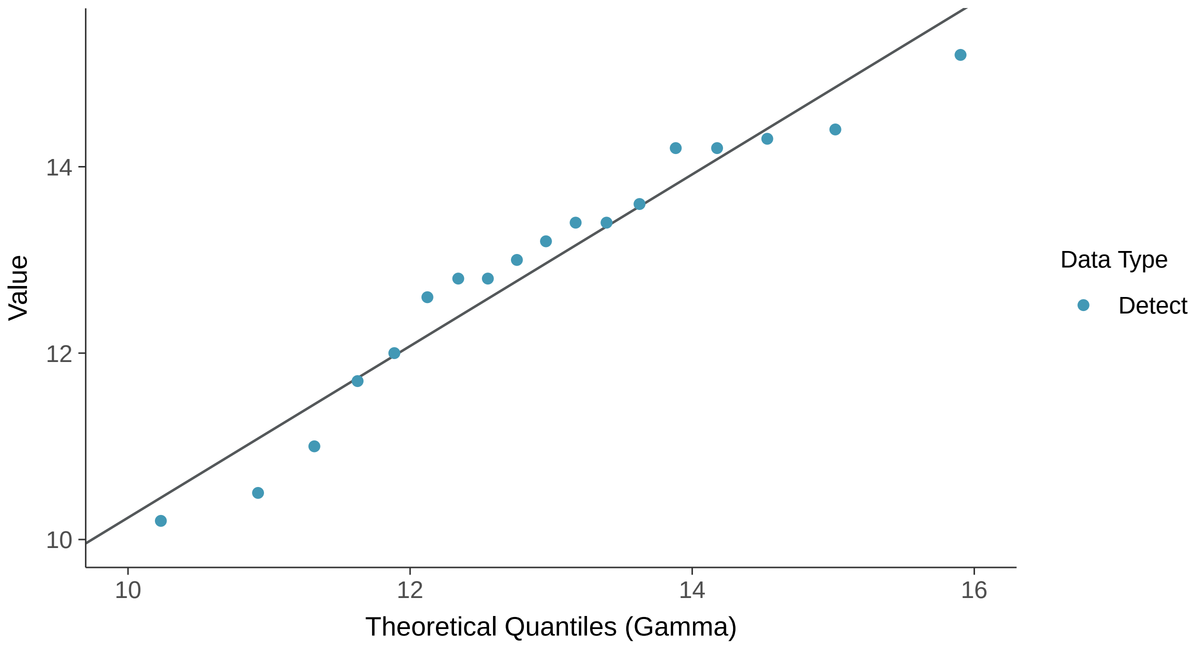
Lognormal Q-Q plot

Temperature, MW-6 (°C)



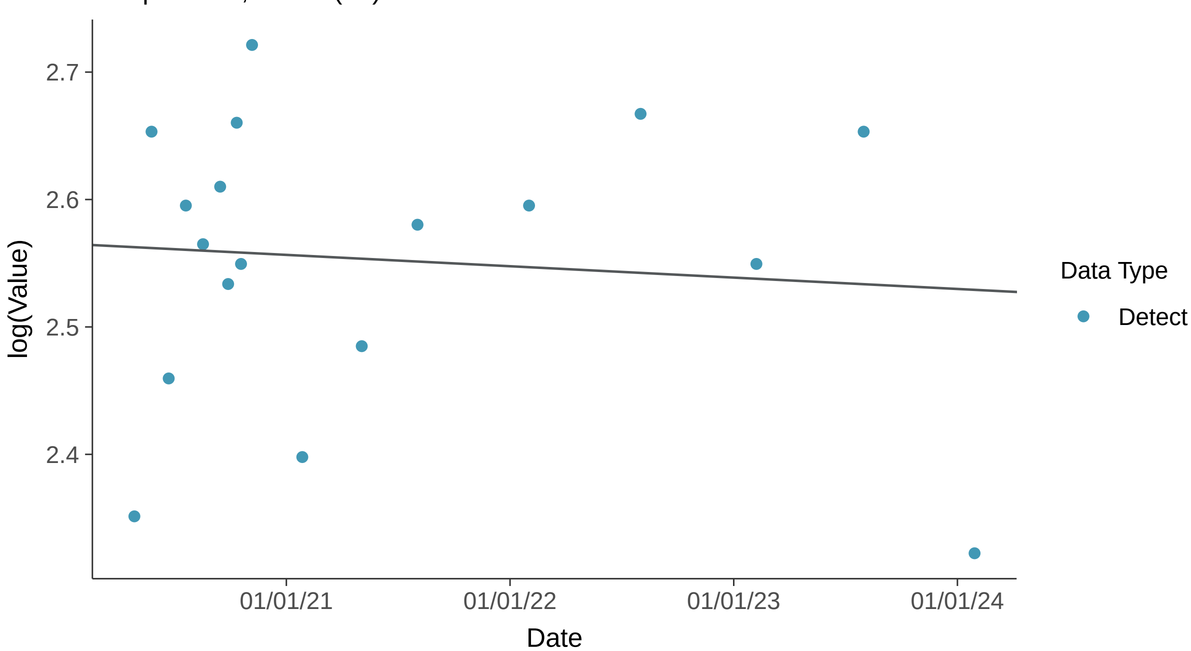
Gamma Q-Q plot

Temperature, MW-6 (°C)



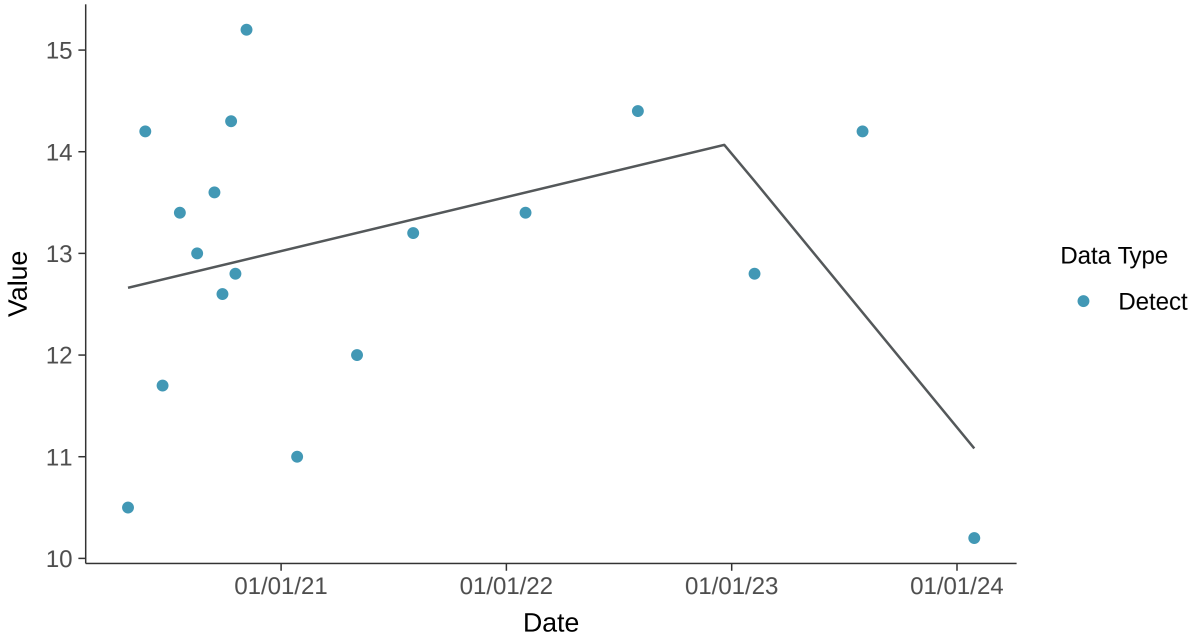
Trend Regression: Lognormal MLE

Temperature, MW-6 (°C)



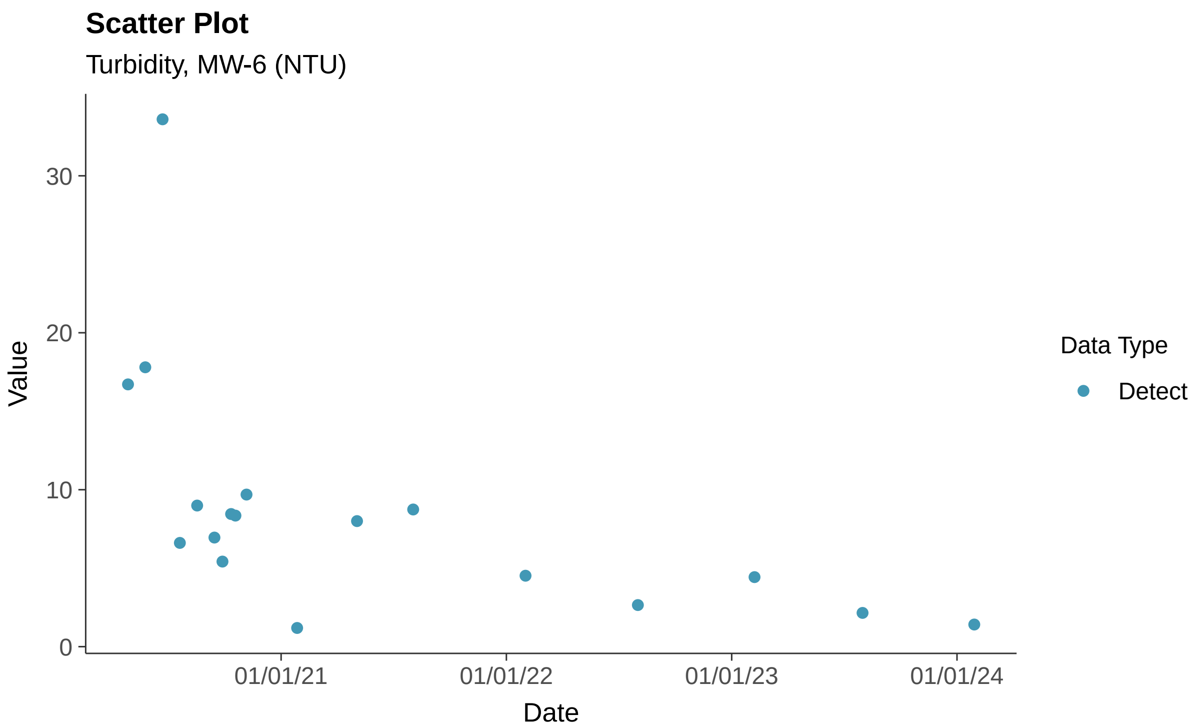
Trend Regression: Piecewise Linear-Linear

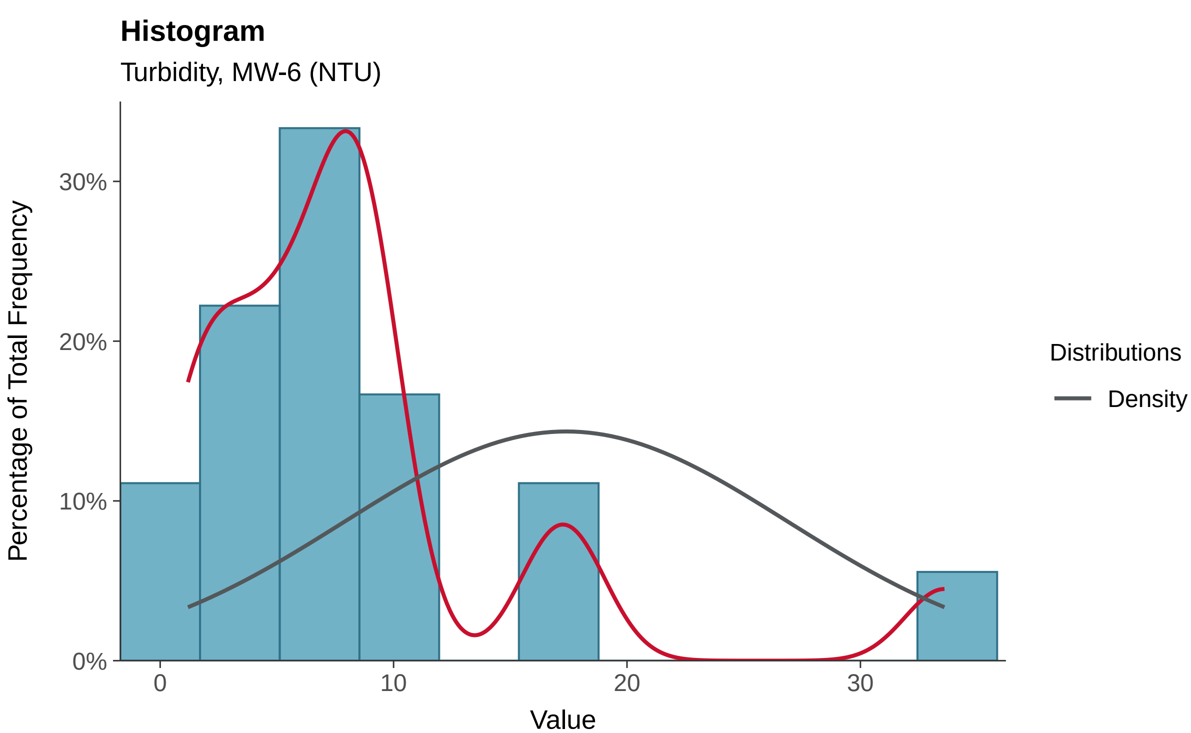
Temperature, MW-6 (°C)



Field Parameters: Turbidity, MW-6

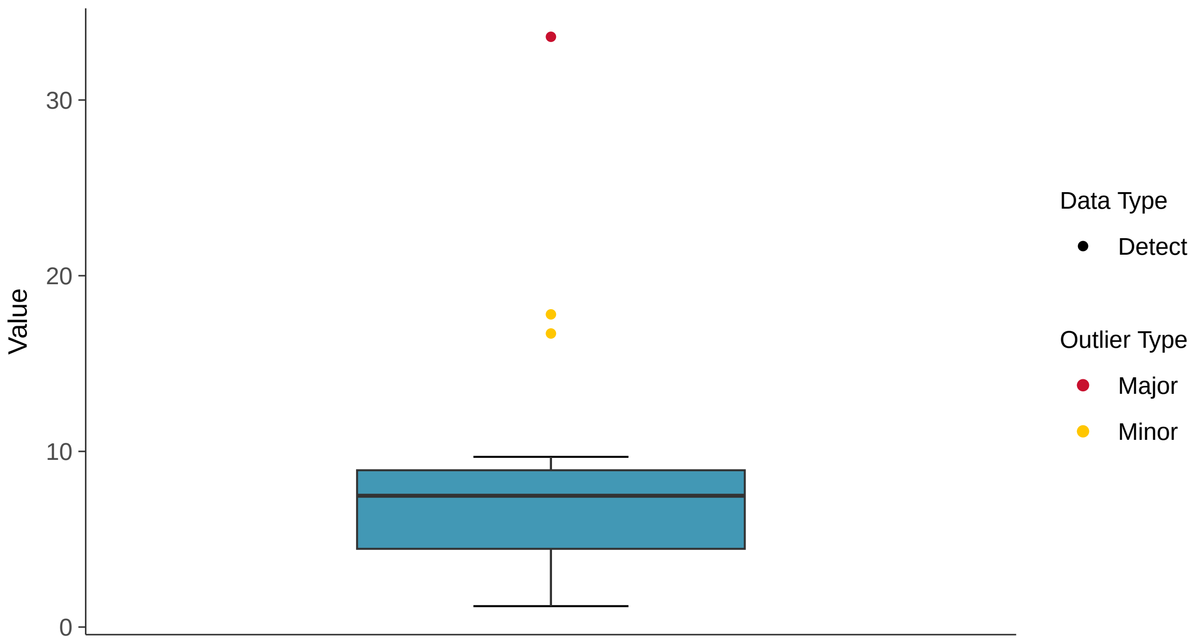
ID: 06_3_28





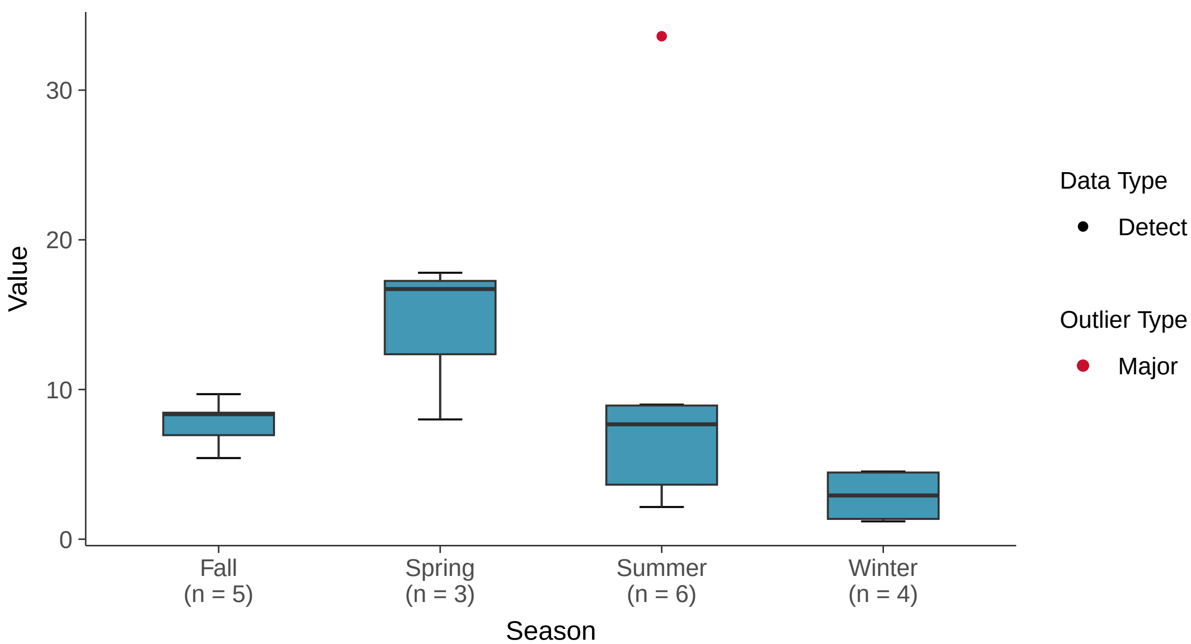
Boxplot

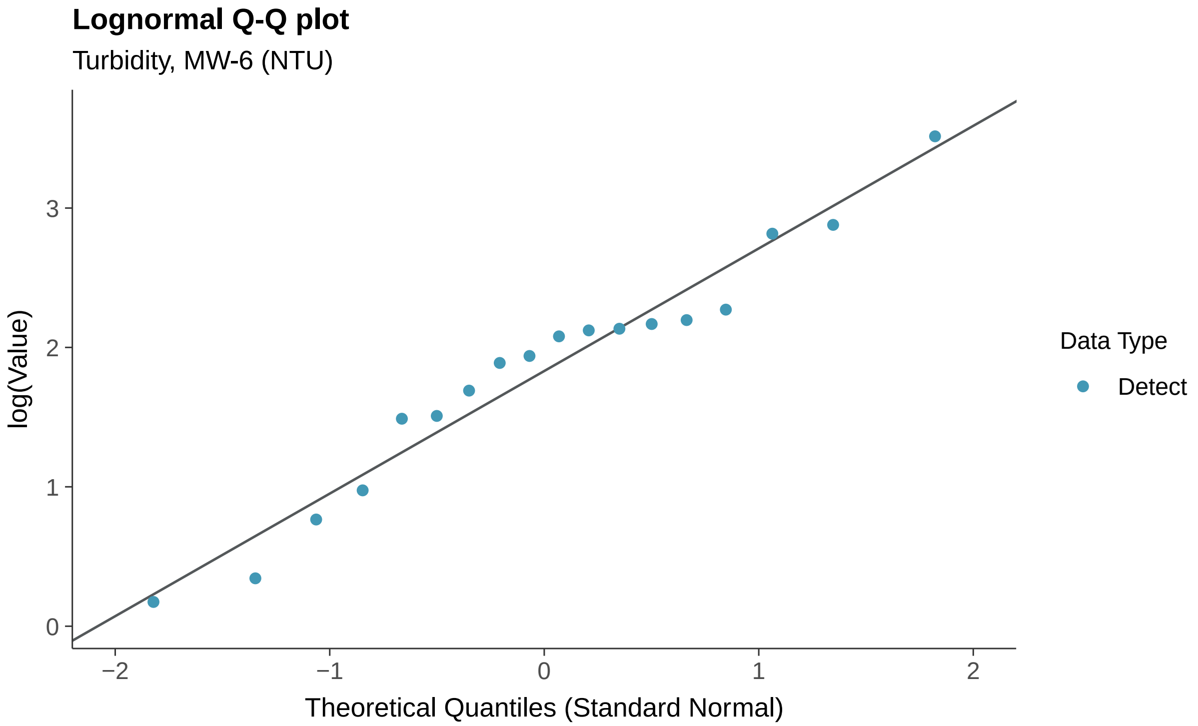
Turbidity, MW-6 (NTU)

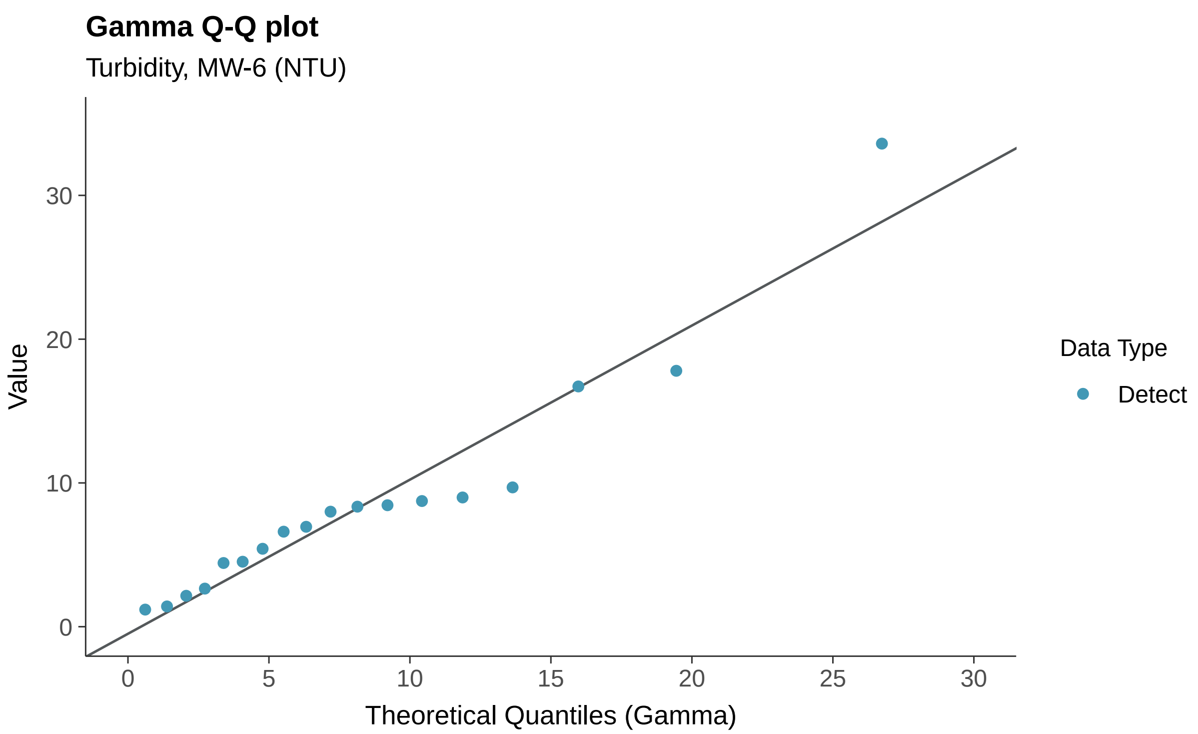


Boxplot by Season

Turbidity, MW-6 (NTU)

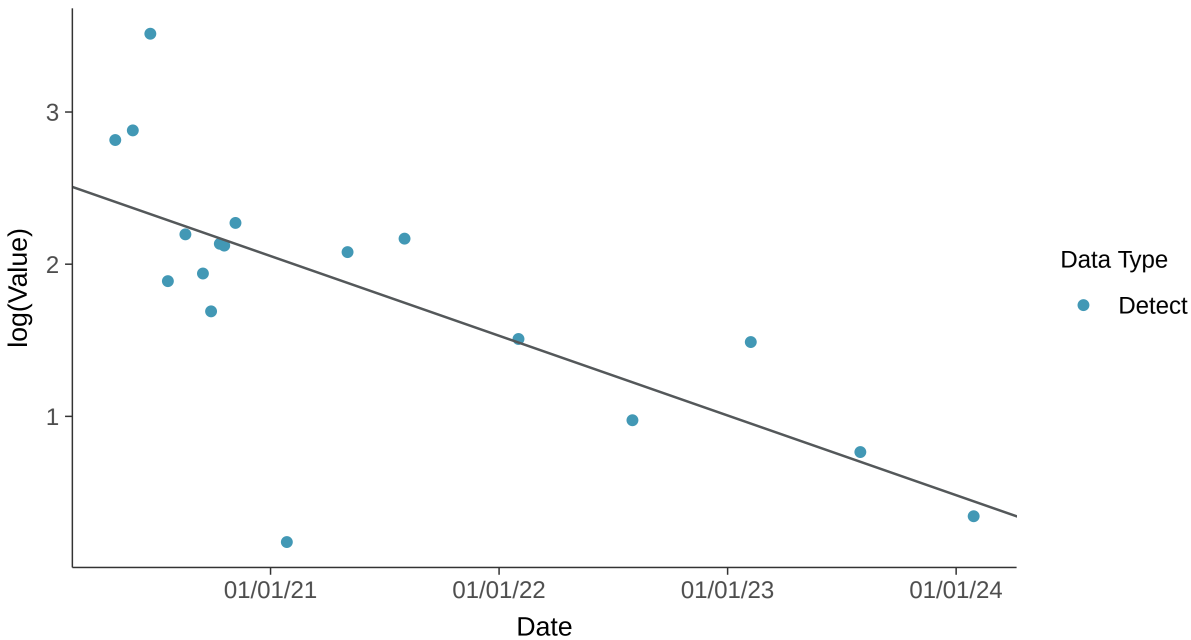



Lognormal Q-Q plot
Turbidity, MW-6 (NTU)
log(Value)
3
2
1
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Turbidity, MW-6 (NTU)
Value
30
20
10
0
0
5
10
15
20
25
30
Theoretical Quantiles (Gamma)
Data Type
Detect

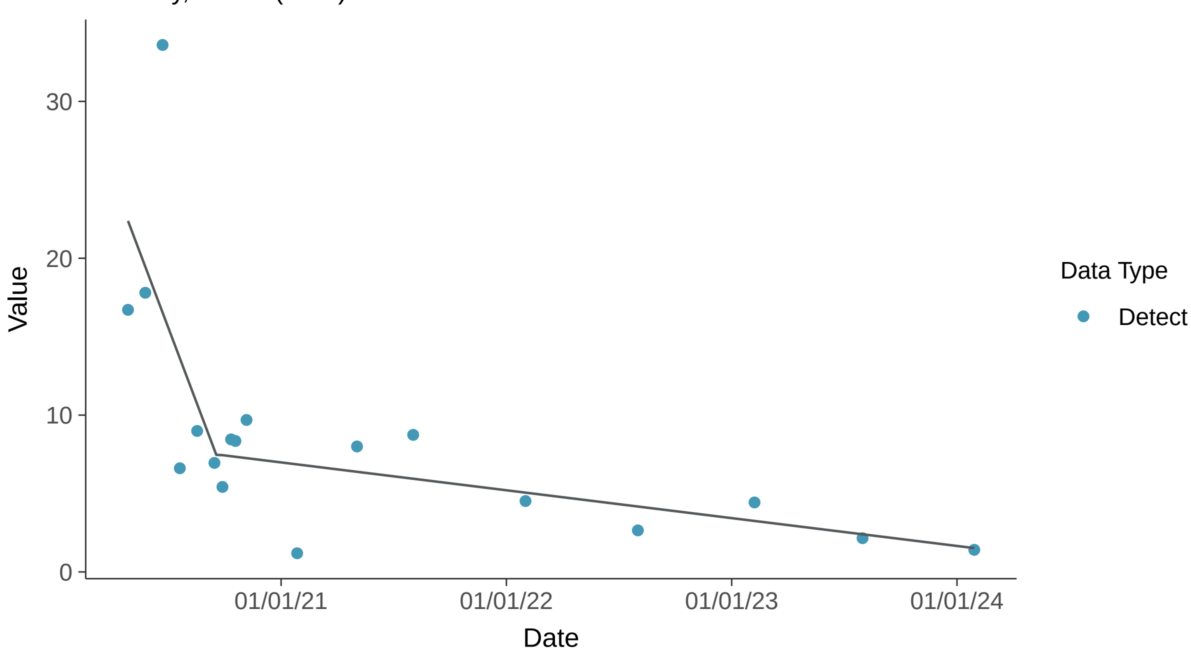
Trend Regression: Lognormal MLE

Turbidity, MW-6 (NTU)



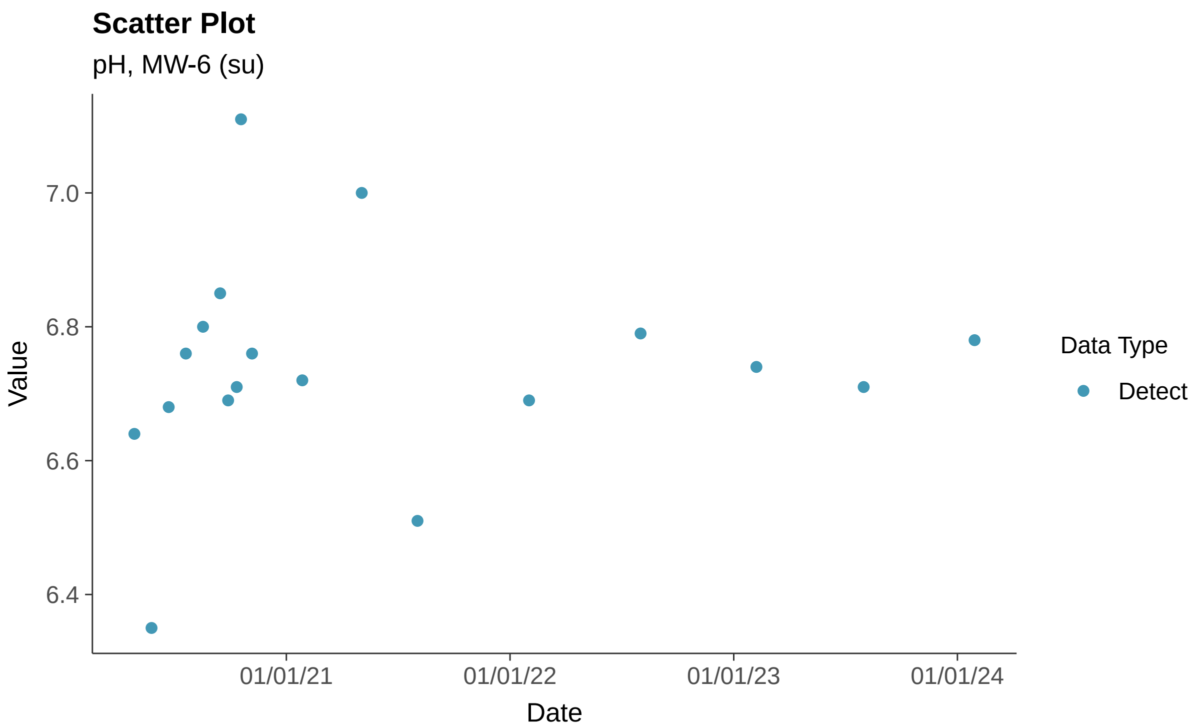
Trend Regression: Piecewise Linear-Linear

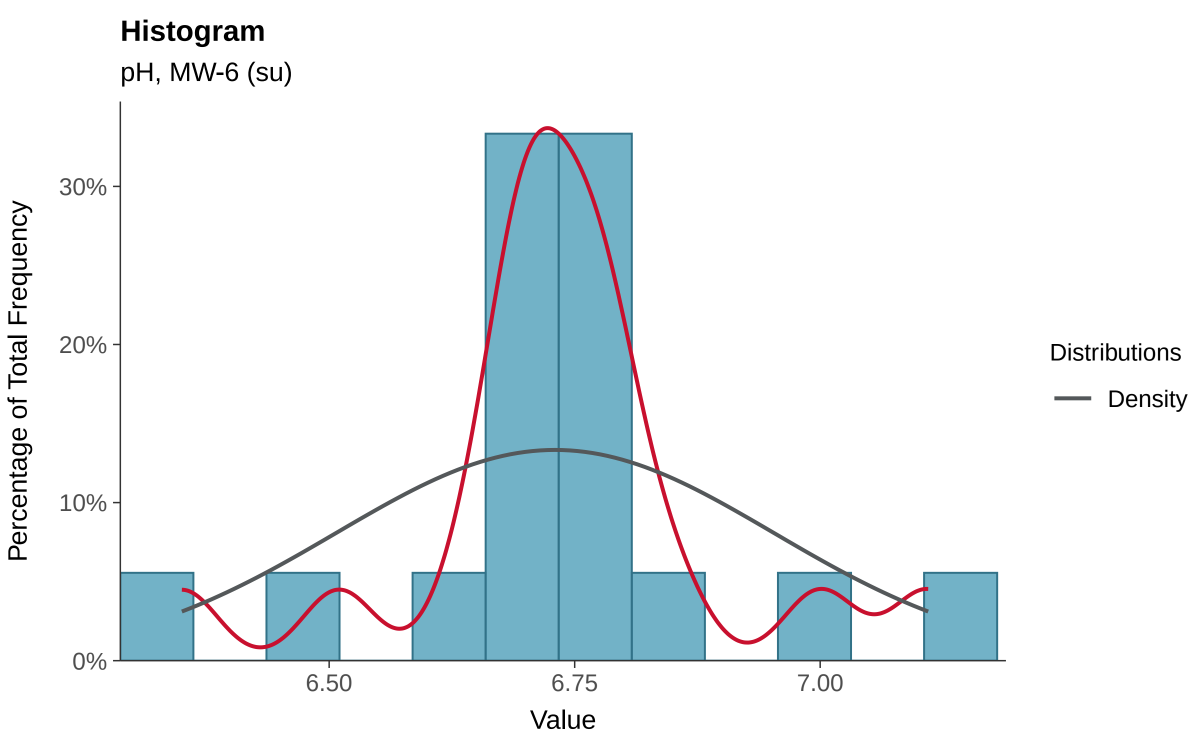
Turbidity, MW-6 (NTU)



Field Parameters: pH, MW-6

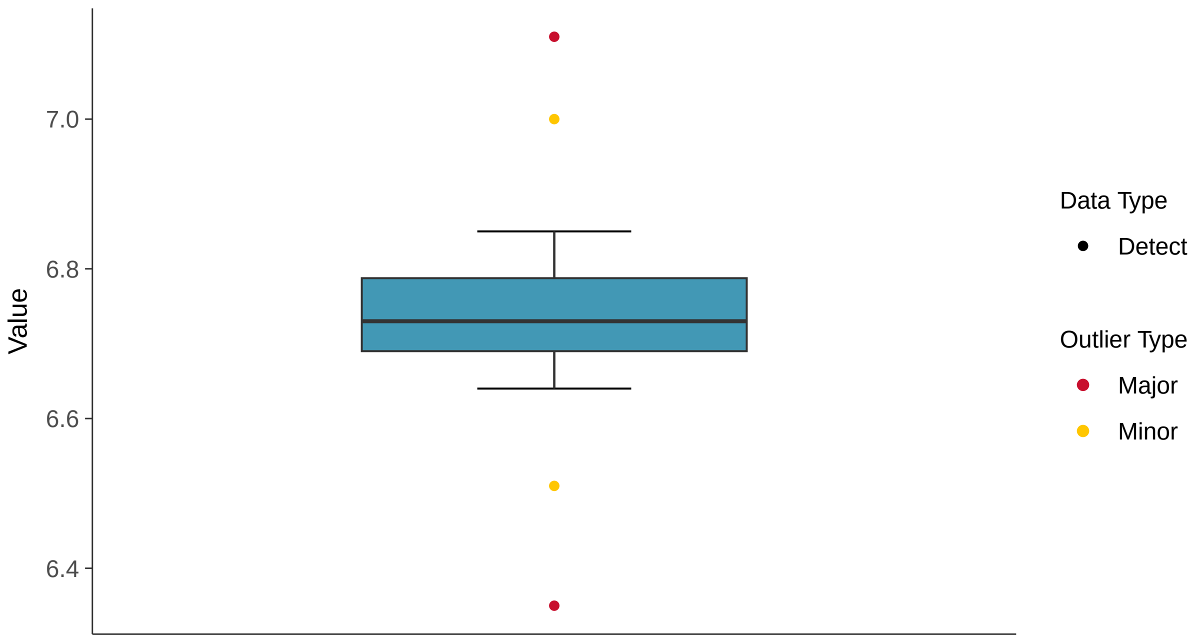
ID: 06_3_29





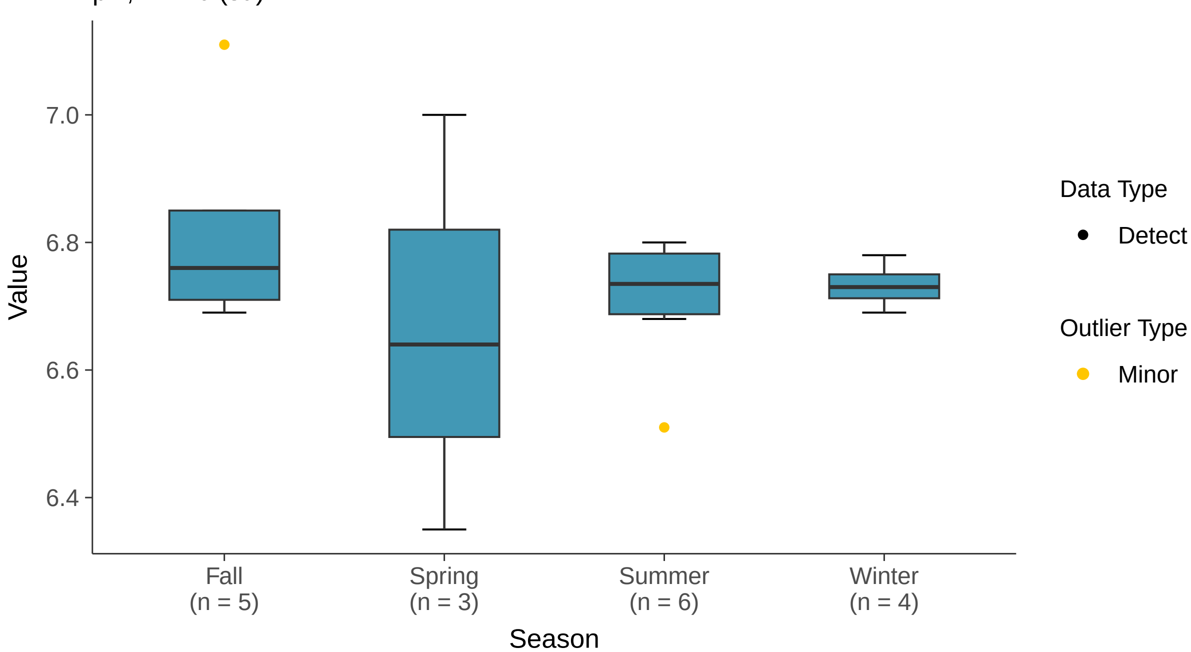
Boxplot

pH, MW-6 (su)



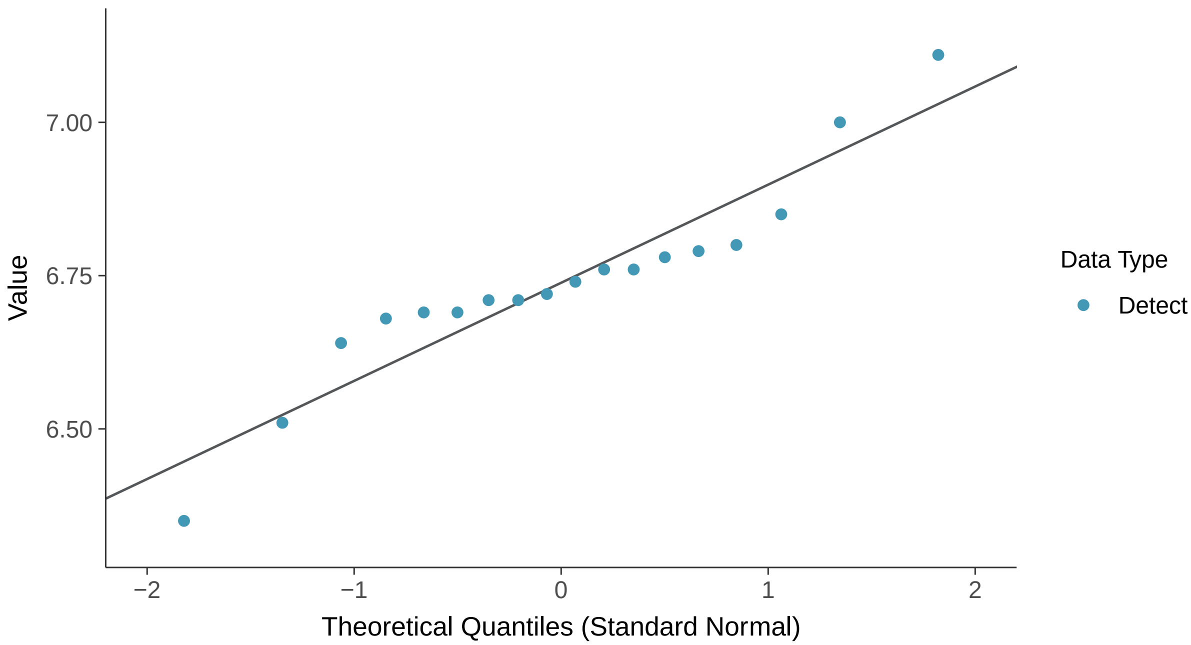
Boxplot by Season

pH, MW-6 (su)



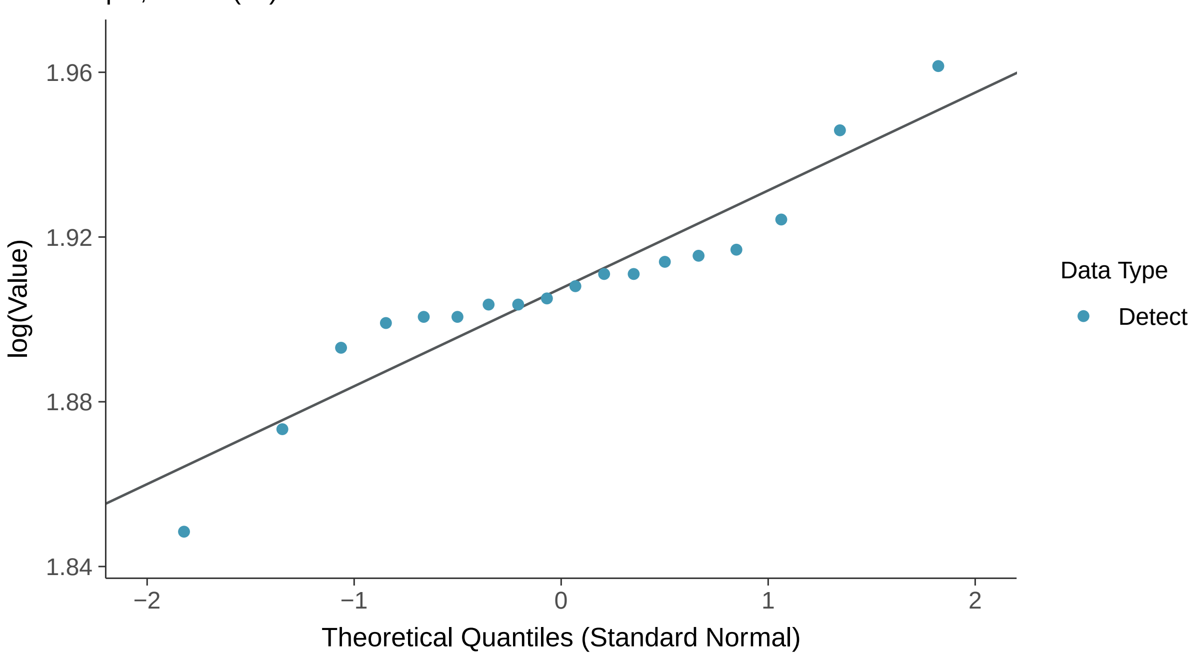
Normal Q-Q plot

pH, MW-6 (su)



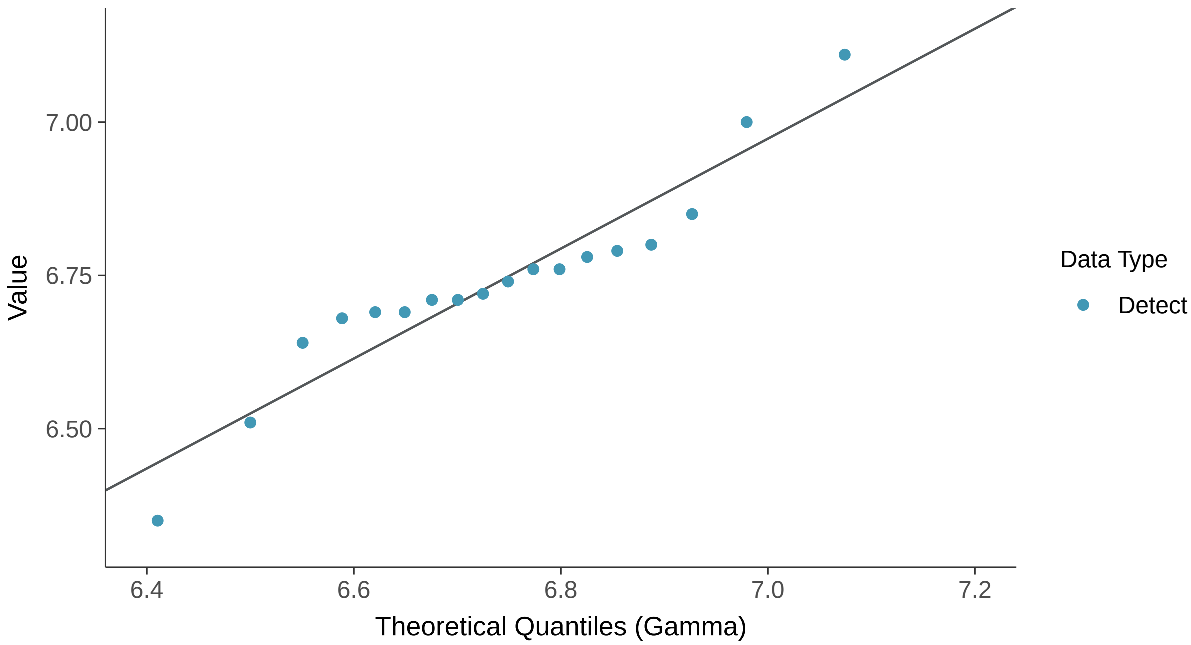
Lognormal Q-Q plot

pH, MW-6 (su)



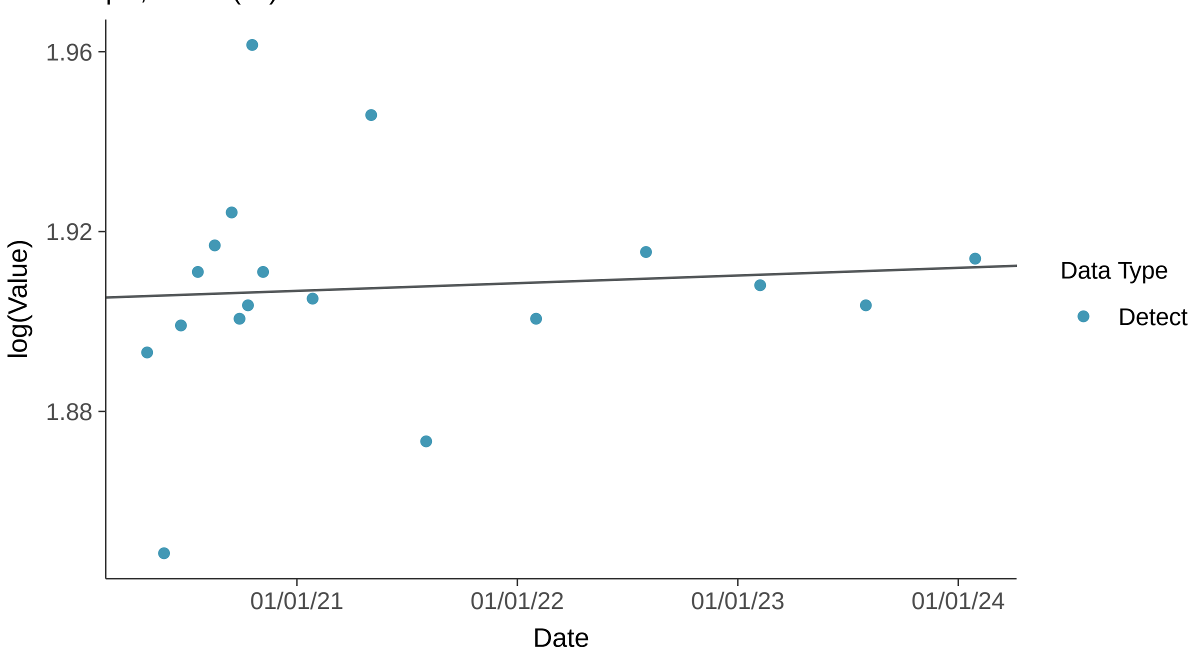
Gamma Q-Q plot

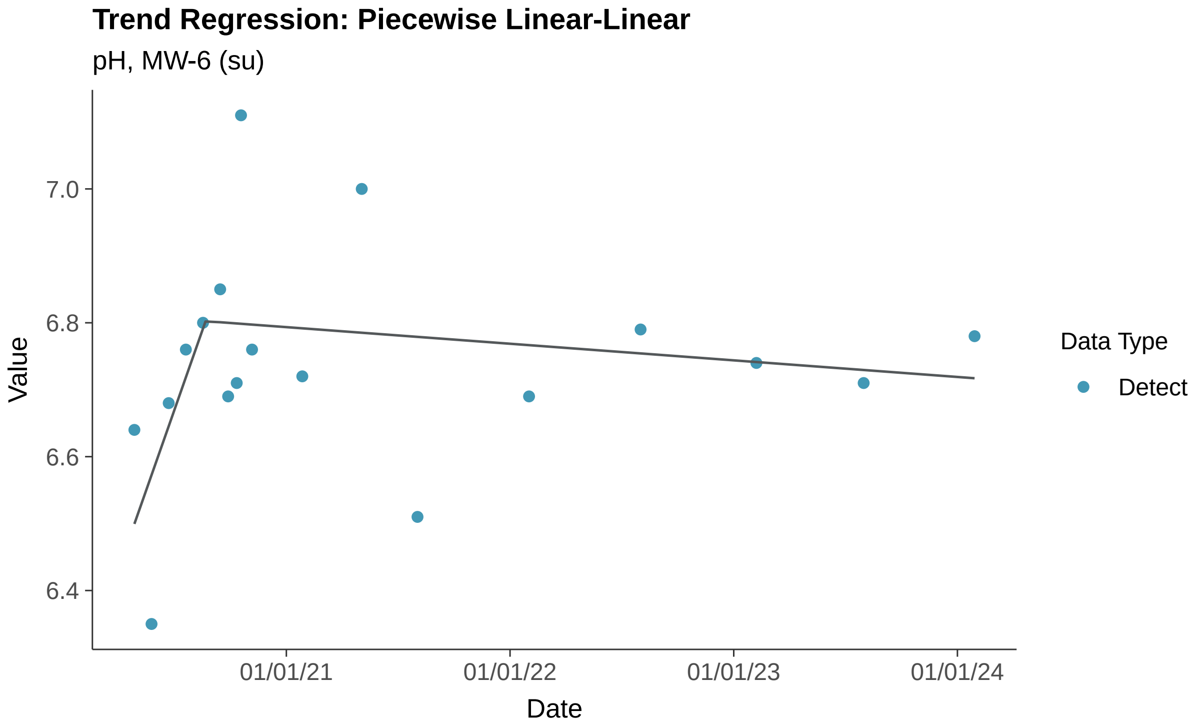
pH, MW-6 (su)

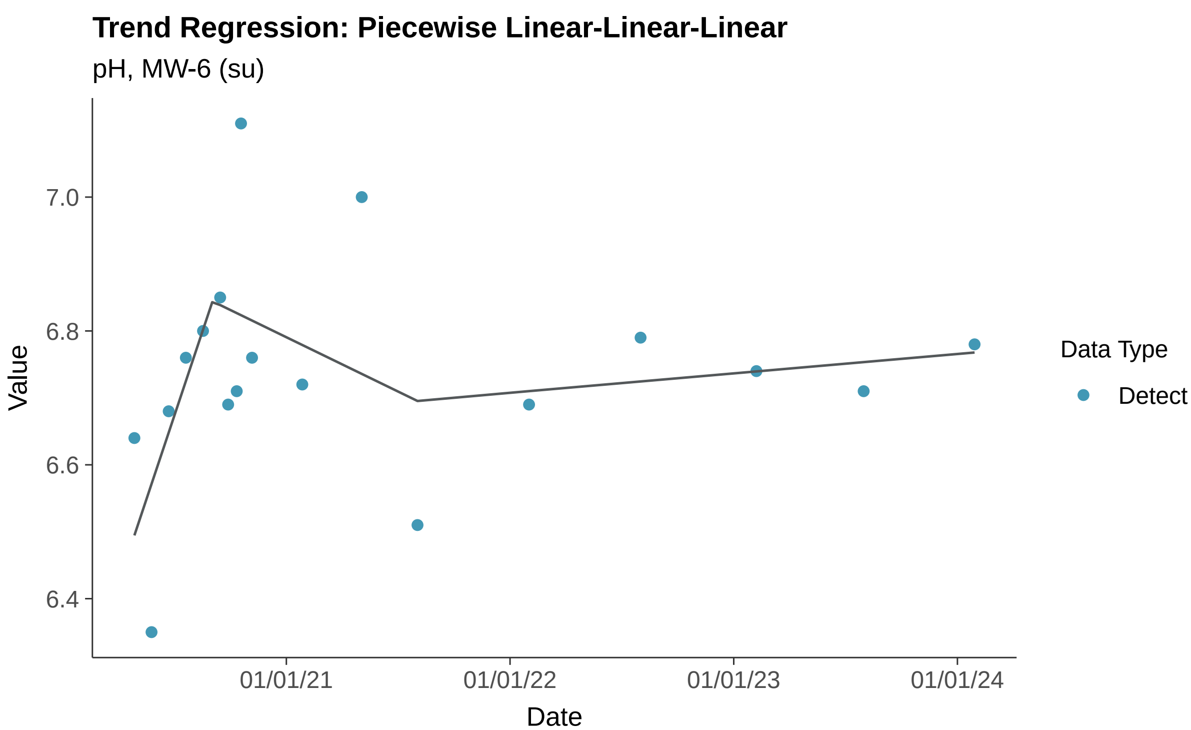


Trend Regression: Lognormal MLE

pH, MW-6 (su)

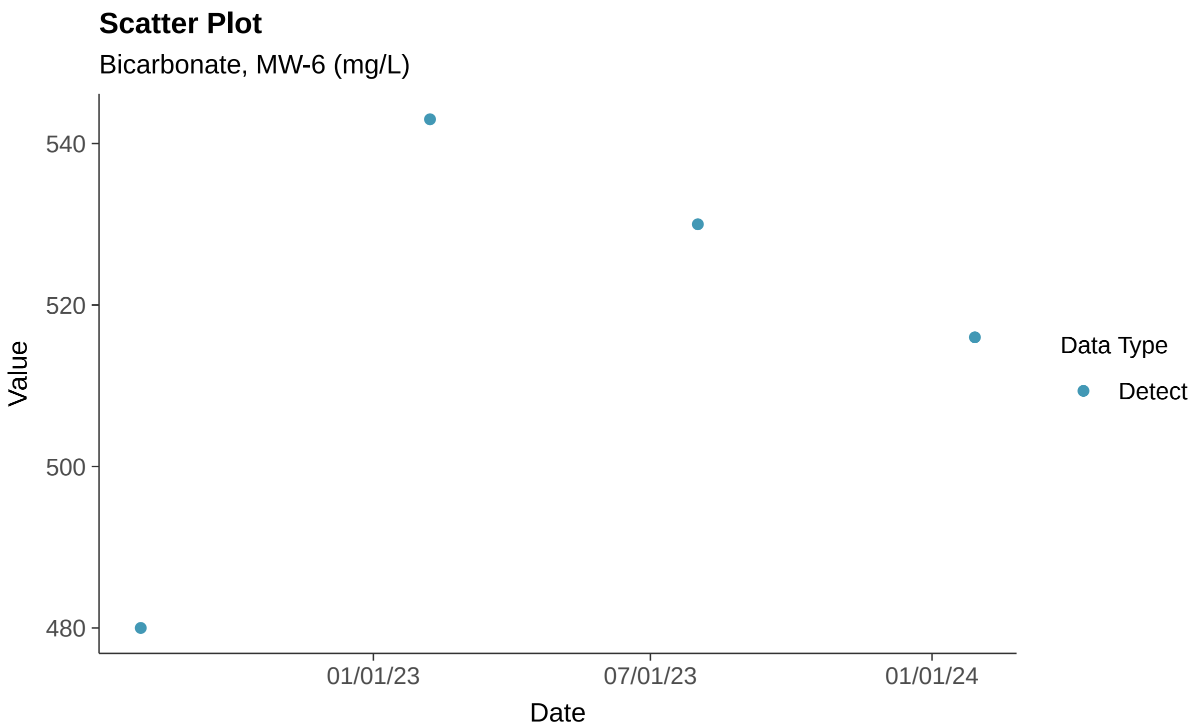


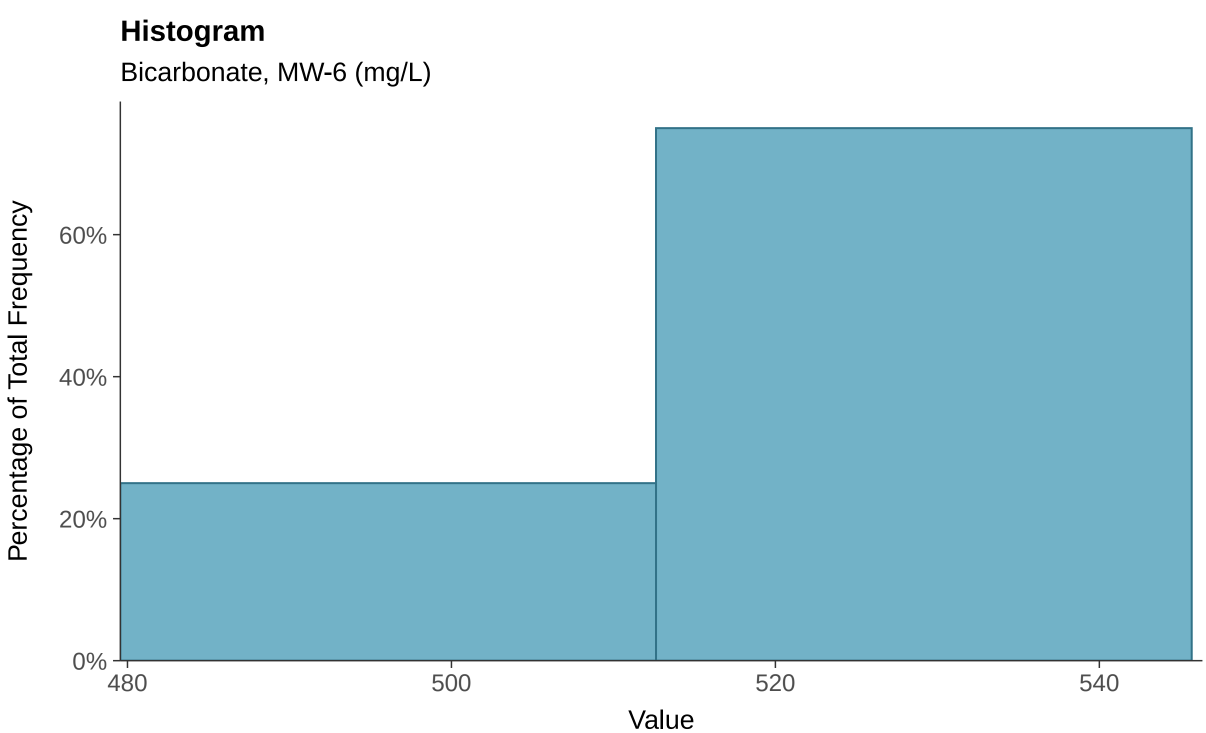

Trend Regression: Piecewise Linear-Linear
pH, MW-6 (su)
Value
7.0
6.8
6.6
6.4
Date
01/01/21
01/01/22
01/01/23
01/01/24
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
pH, MW-6 (su)
Value
7.0
6.8
6.6
6.4
Date
01/01/21
01/01/22
01/01/23
01/01/24
Data Type
Detect

Other: Bicarbonate, MW-6

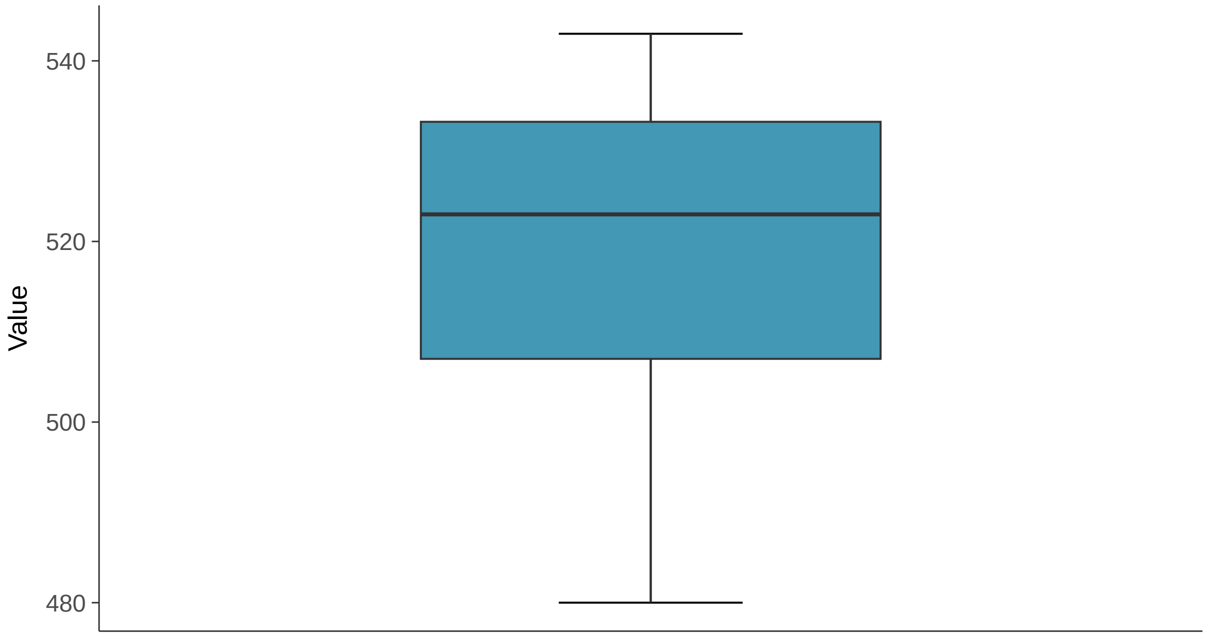
ID: 06_4_30





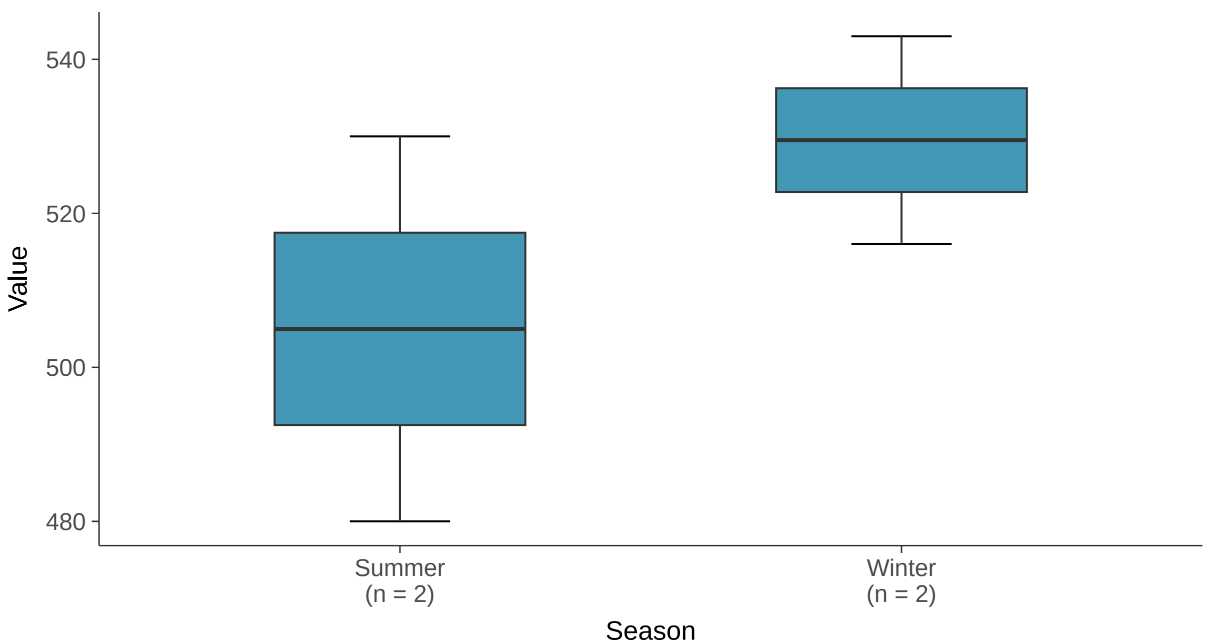
Boxplot

Bicarbonate, MW-6 (mg/L)



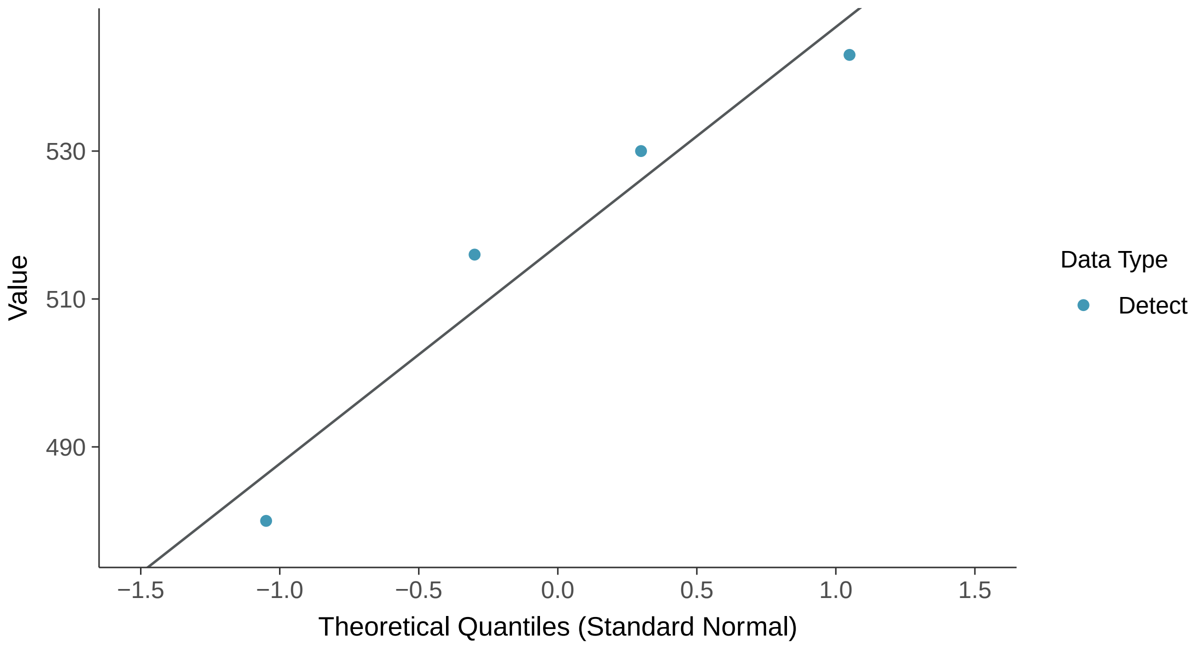
Boxplot by Season

Bicarbonate, MW-6 (mg/L)



Normal Q-Q plot

Bicarbonate, MW-6 (mg/L)

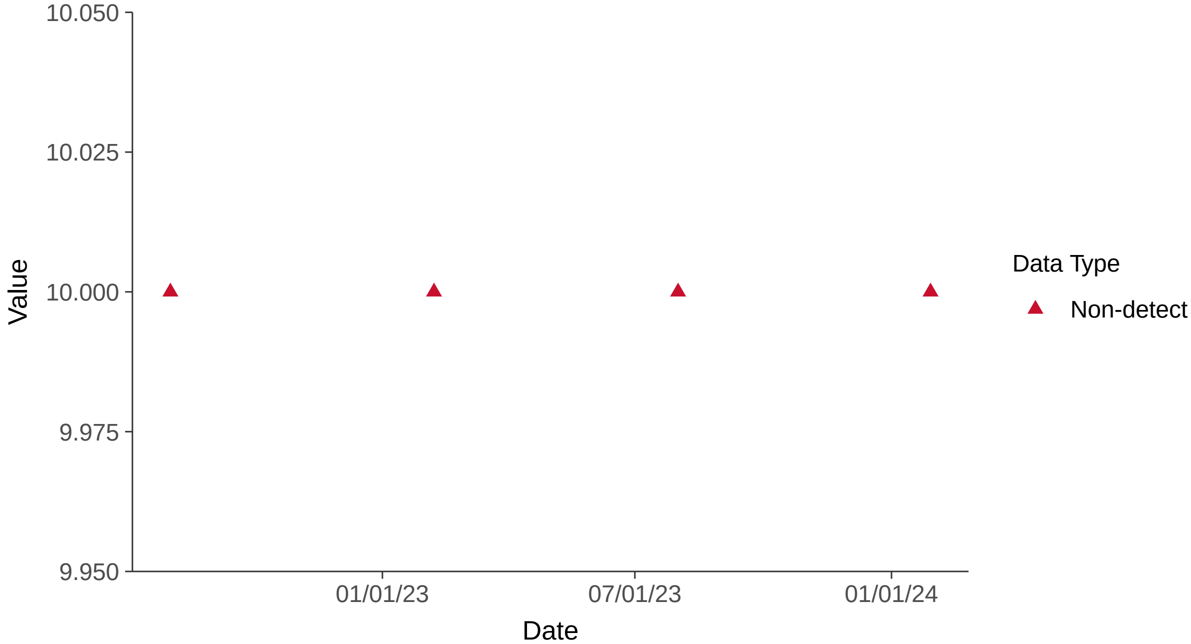


Other: Carbonate, MW-6

ID: 06_4_31

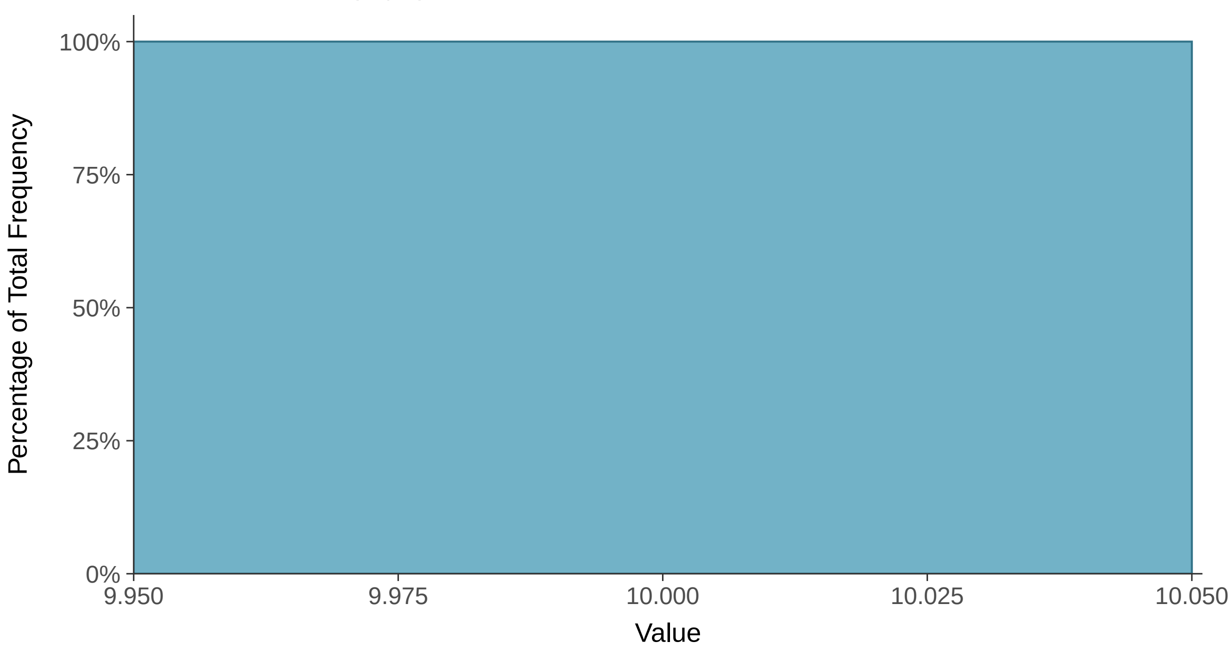
Scatter Plot

Carbonate, MW-6 (mg/L)



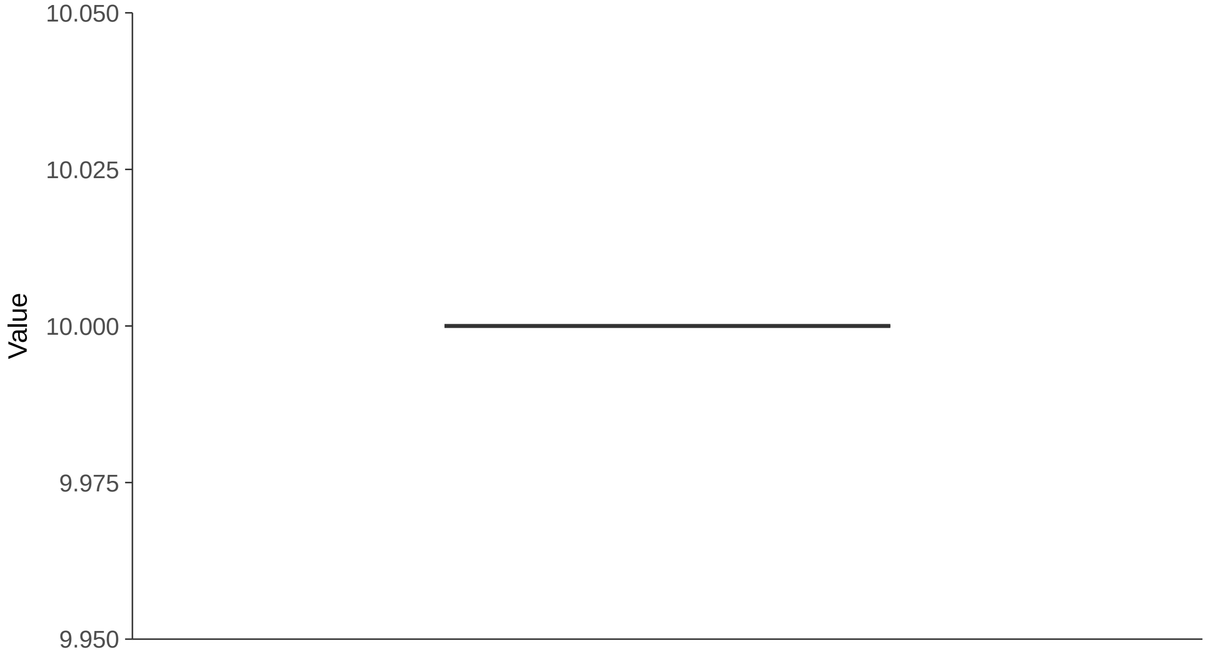
Histogram

Carbonate, MW-6 (mg/L)



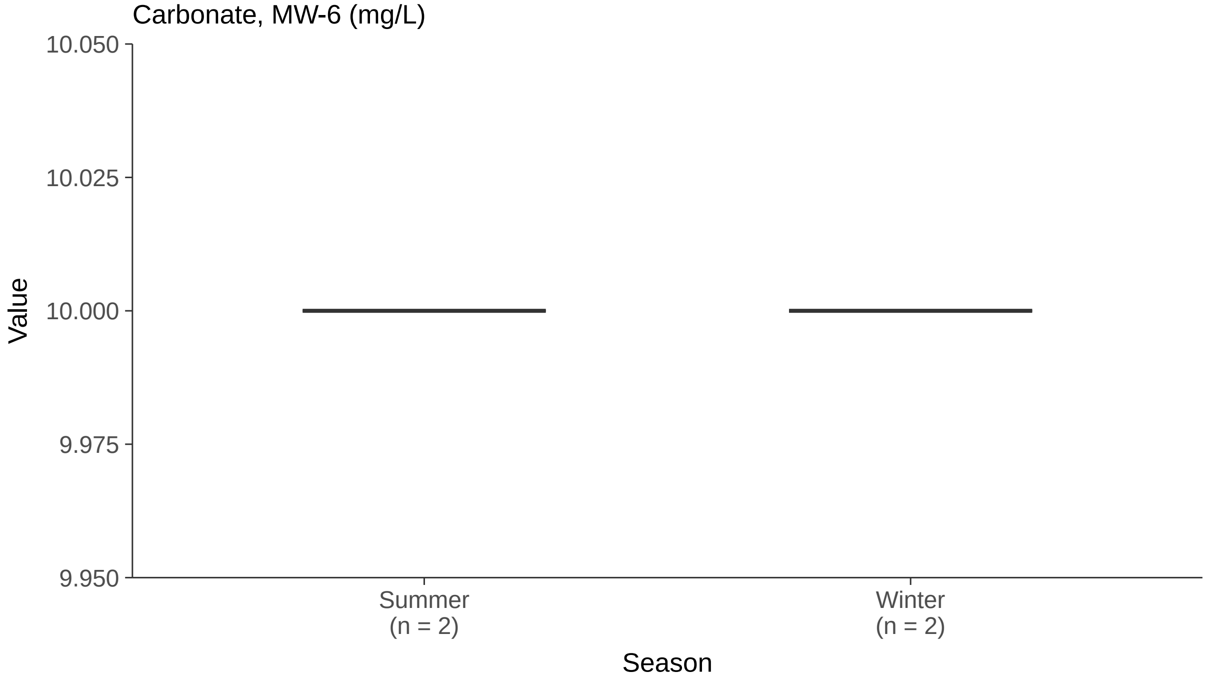
Boxplot

Carbonate, MW-6 (mg/L)



Boxplot by Season

Carbonate, MW-6 (mg/L)

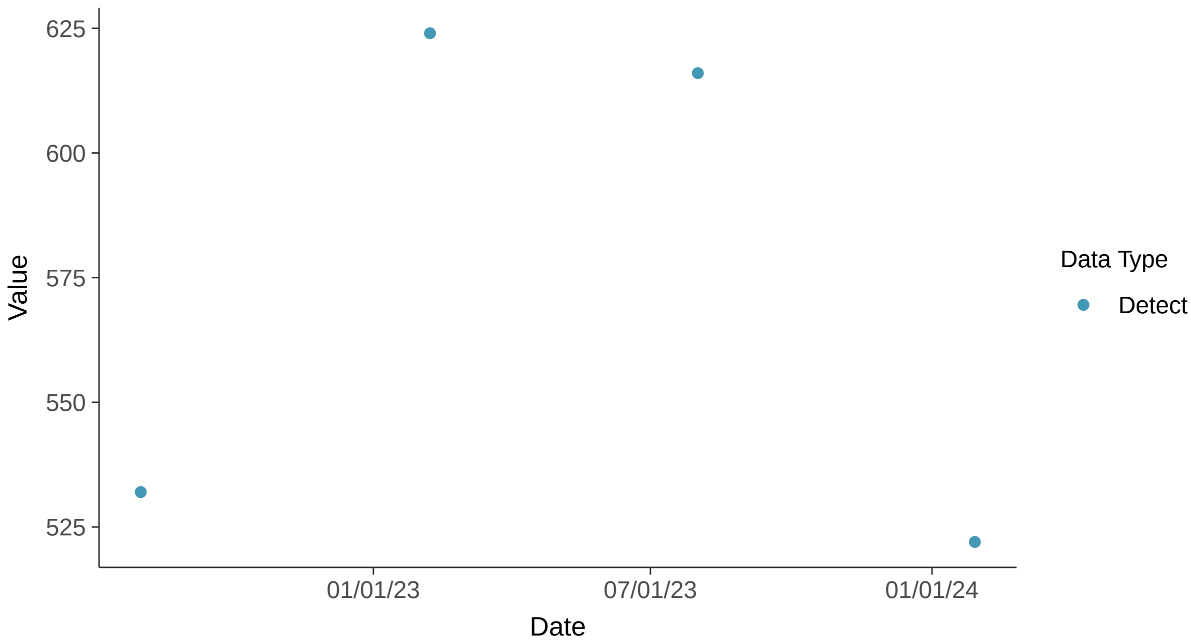


Other: Hardness, MW-6

ID: 06_4_32

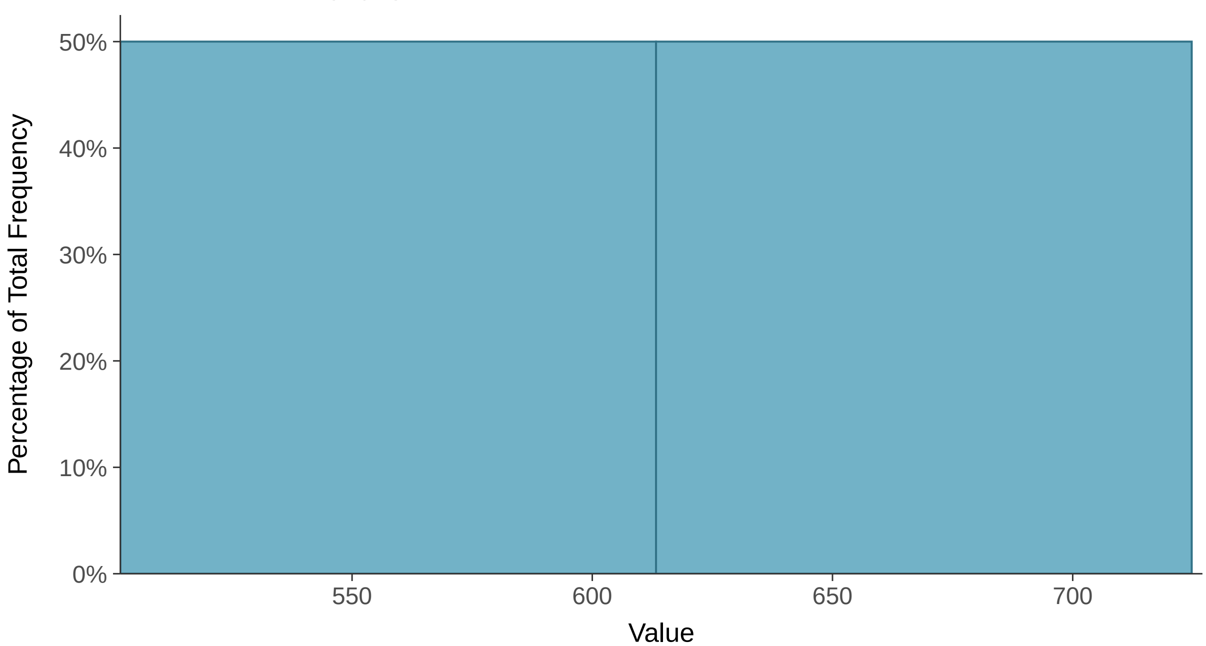
Scatter Plot

Hardness, MW-6 (mg/L)



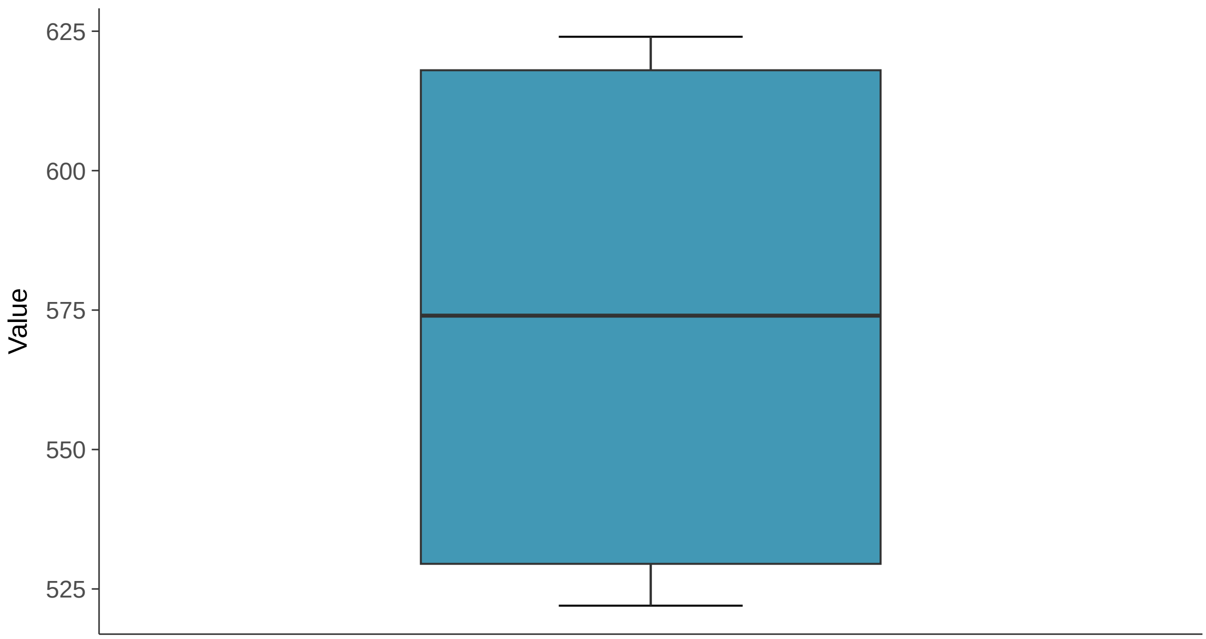
Histogram

Hardness, MW-6 (mg/L)



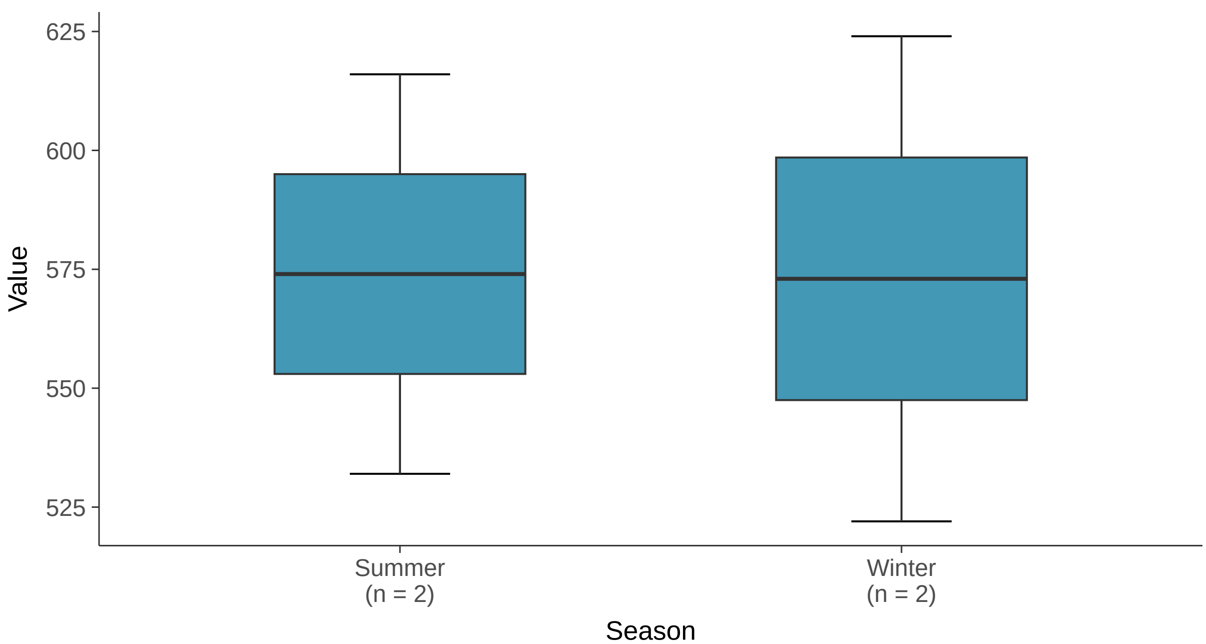
Boxplot

Hardness, MW-6 (mg/L)



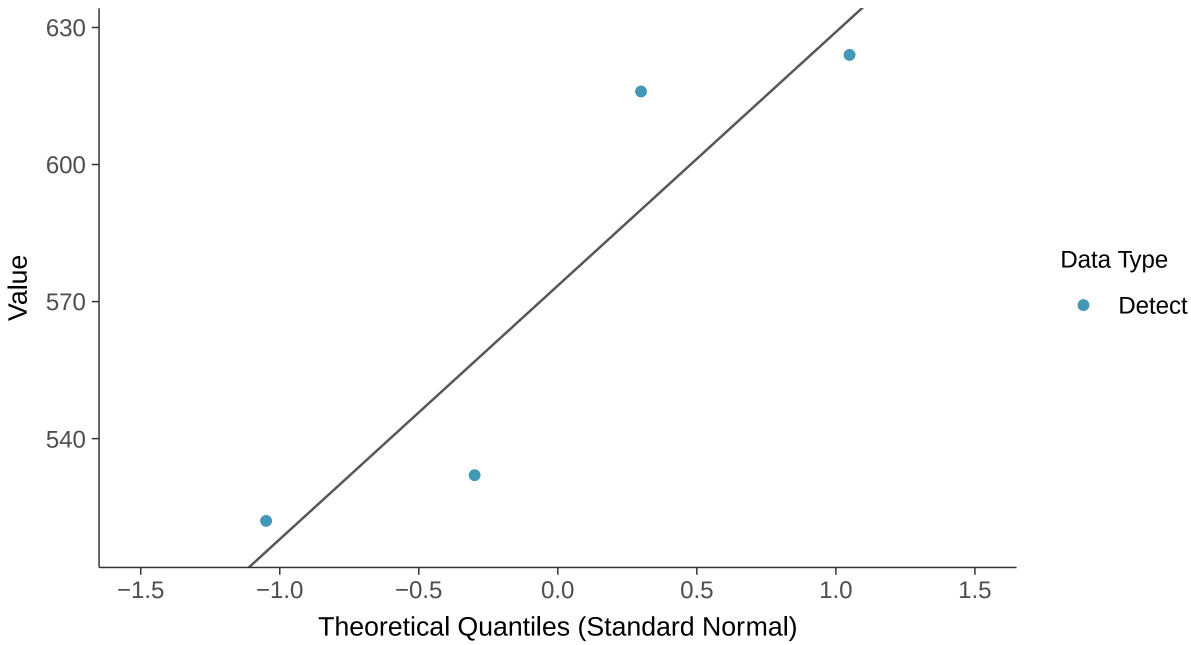
Boxplot by Season

Hardness, MW-6 (mg/L)



Normal Q-Q plot

Hardness, MW-6 (mg/L)

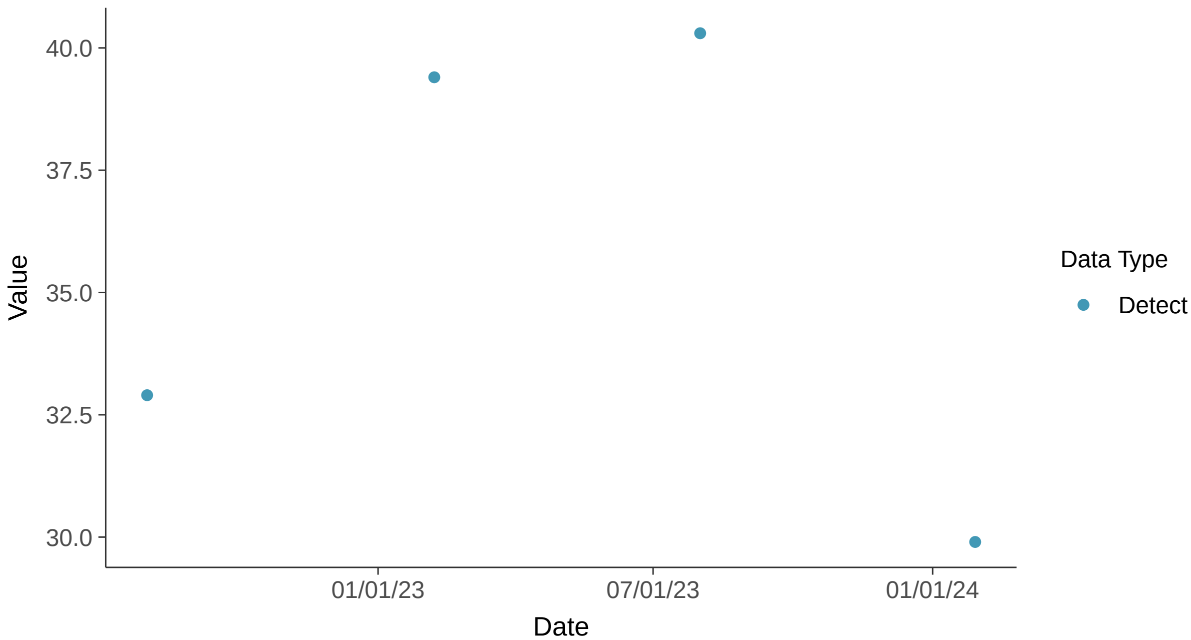


Other: Magnesium, MW-6

ID: 06_4_33

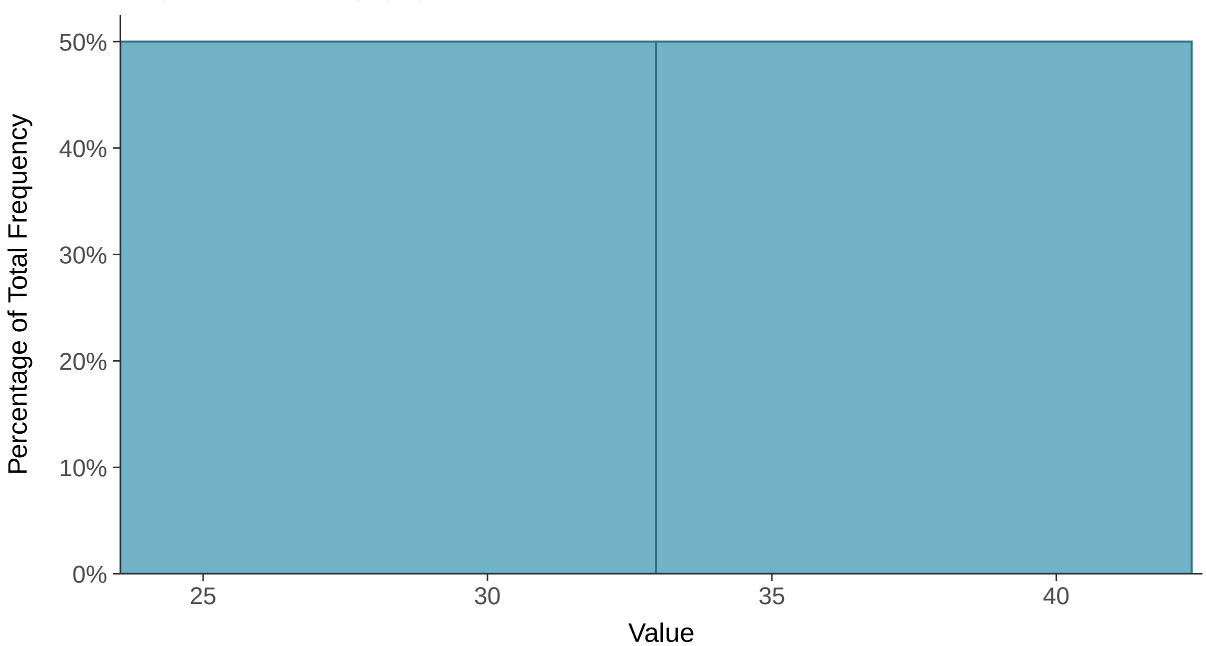
Scatter Plot

Magnesium, MW-6 (mg/L)



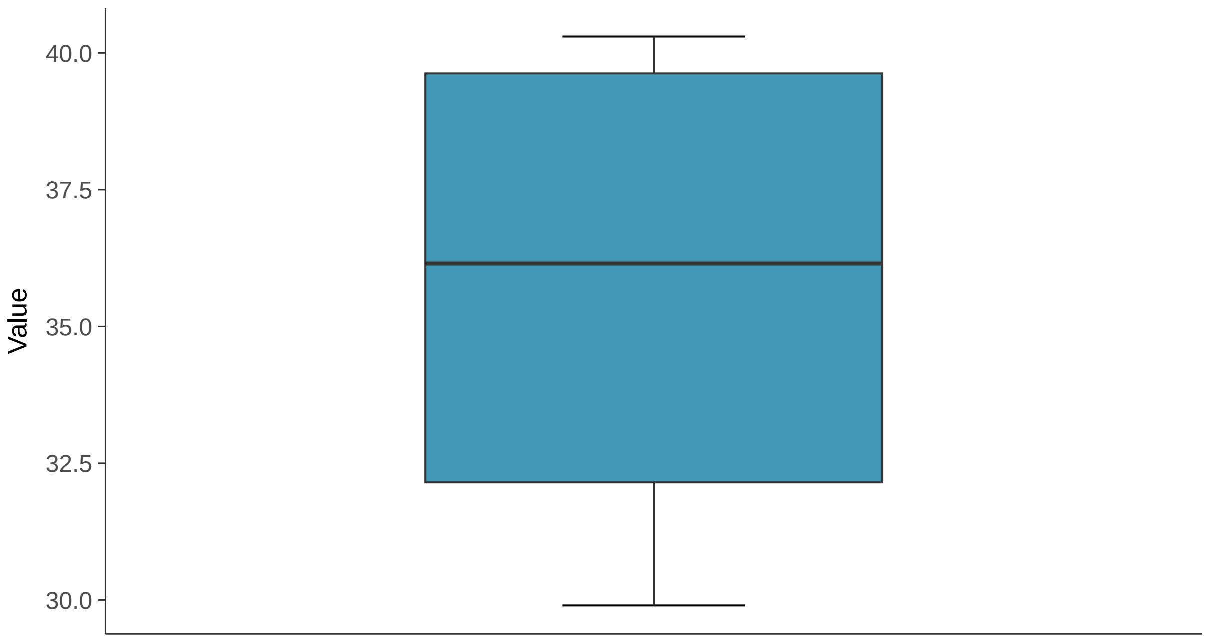
Histogram

Magnesium, MW-6 (mg/L)



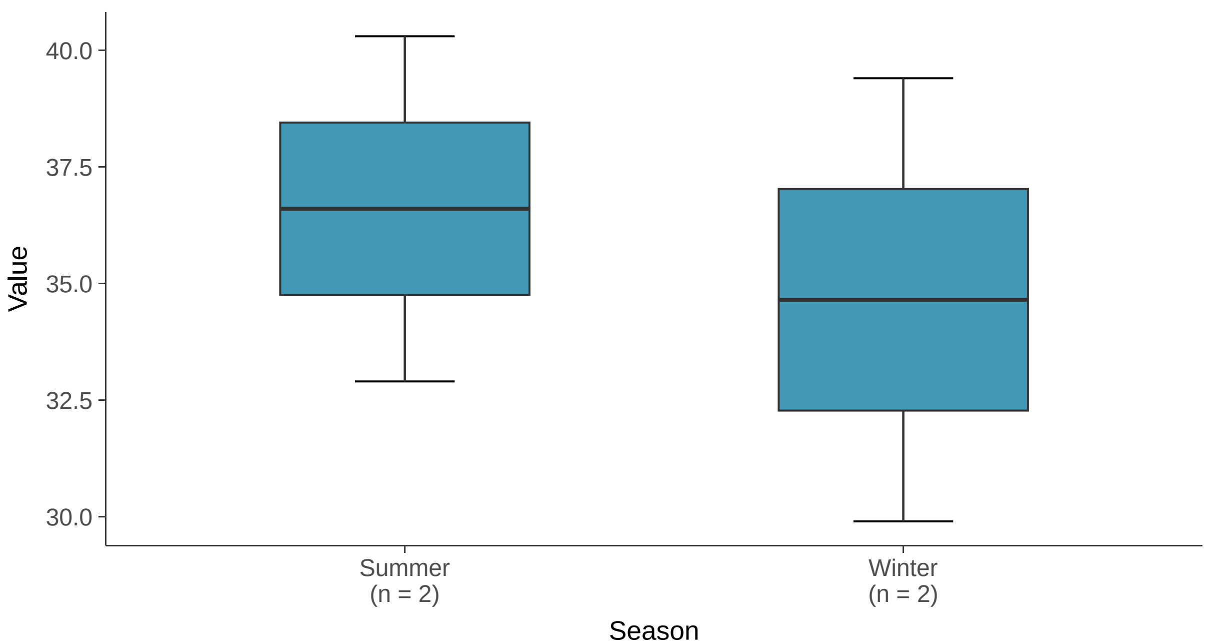
Boxplot

Magnesium, MW-6 (mg/L)



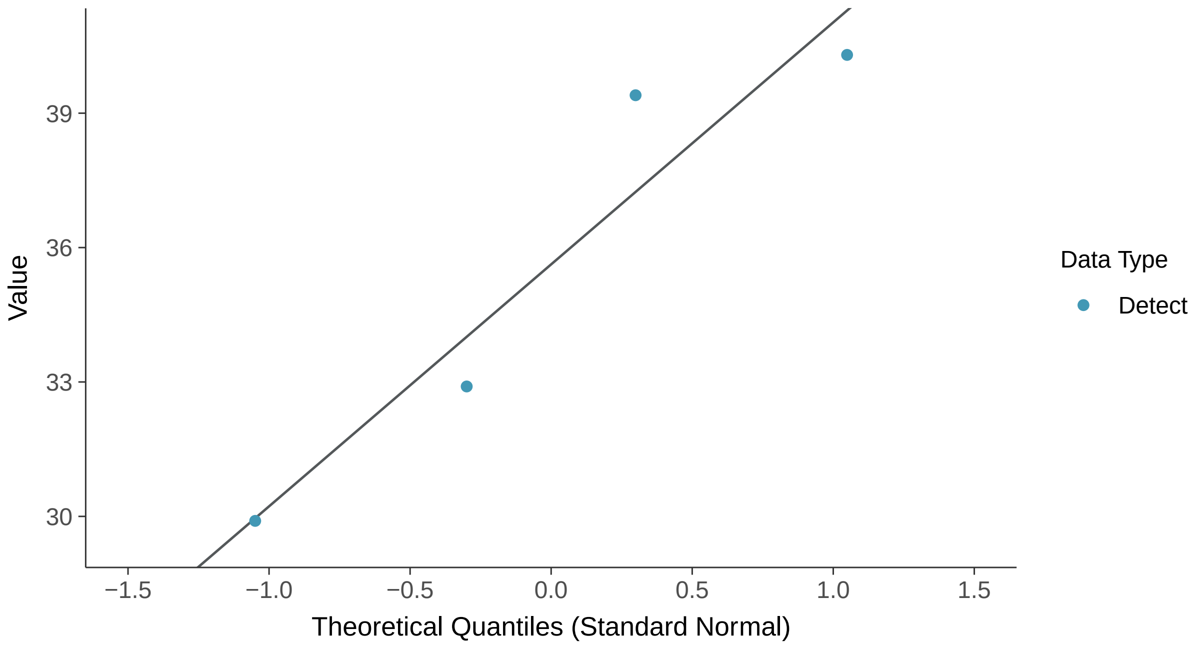
Boxplot by Season

Magnesium, MW-6 (mg/L)



Normal Q-Q plot

Magnesium, MW-6 (mg/L)

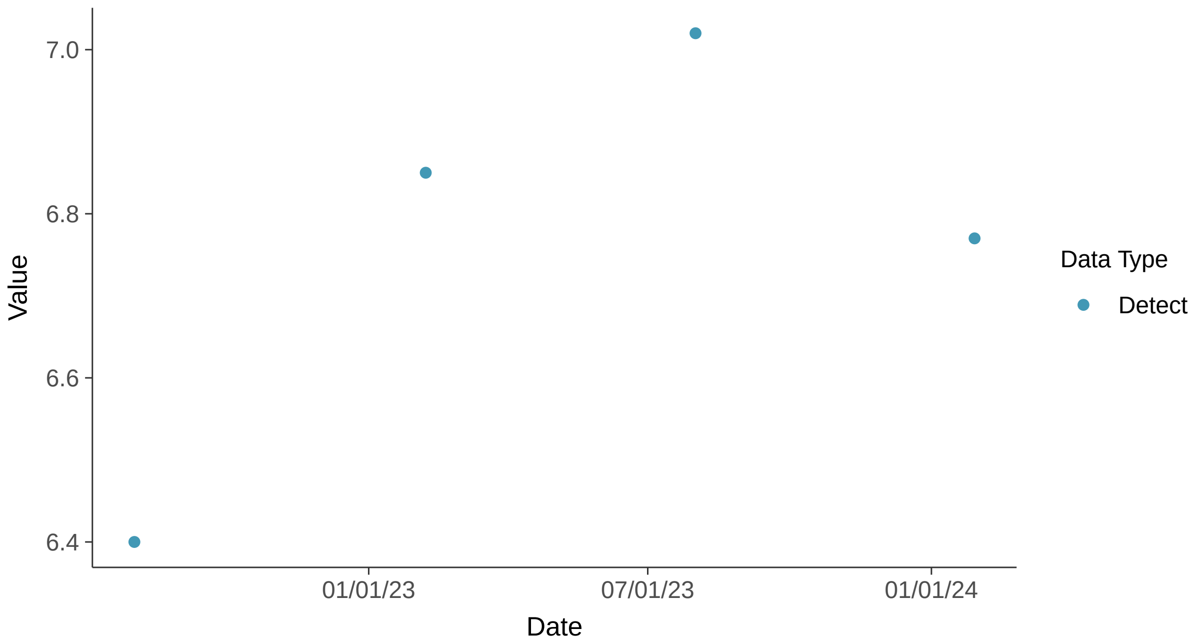


Other: Potassium, MW-6

ID: 06_4_34

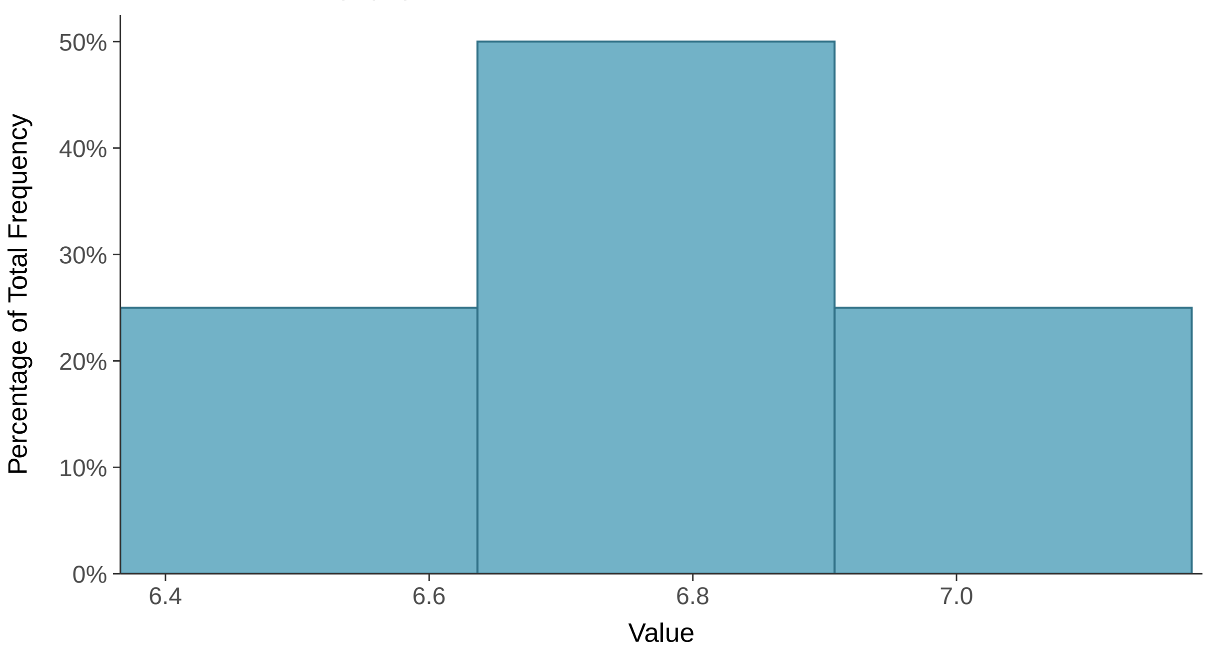
Scatter Plot

Potassium, MW-6 (mg/L)



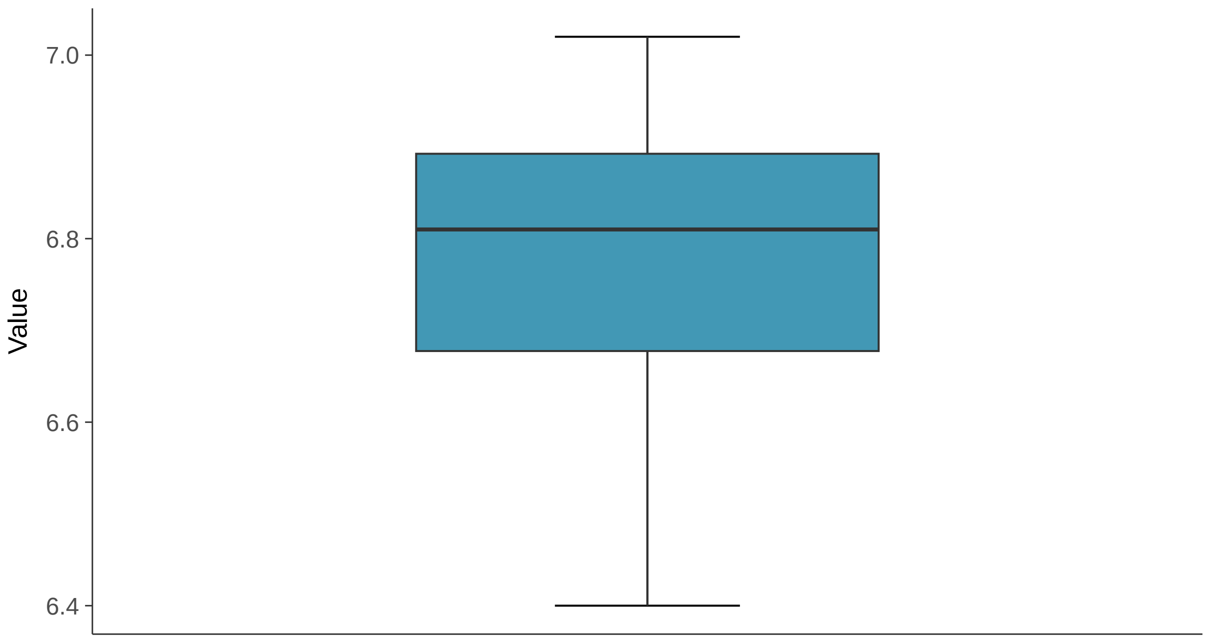
Histogram

Potassium, MW-6 (mg/L)



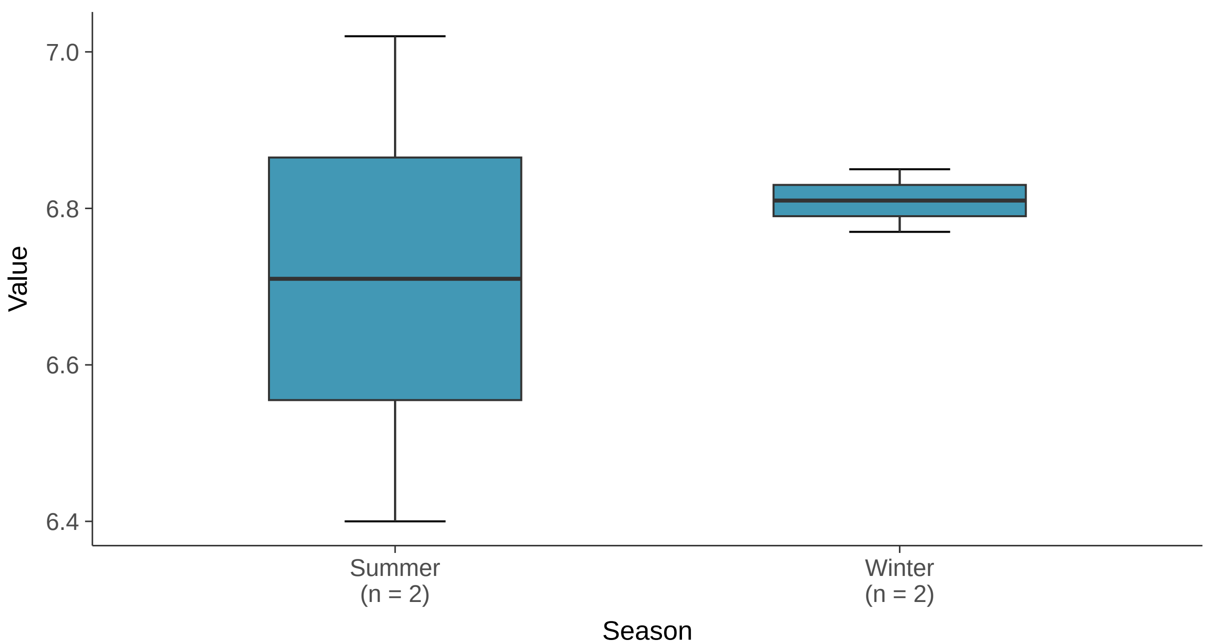
Boxplot

Potassium, MW-6 (mg/L)



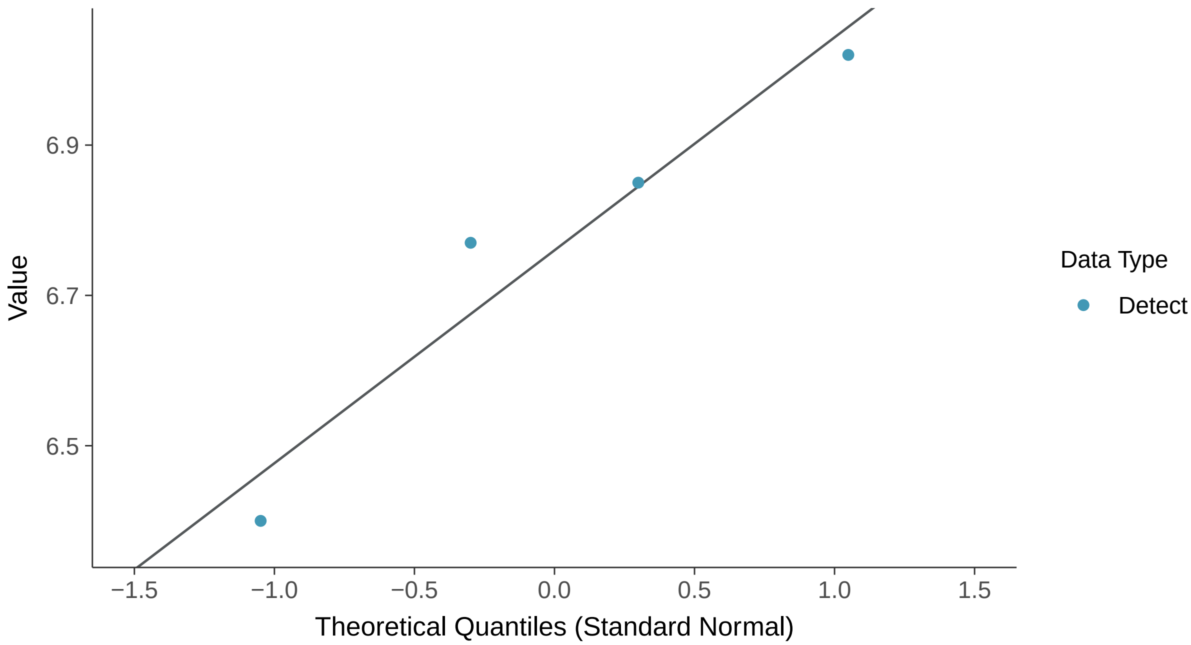
Boxplot by Season

Potassium, MW-6 (mg/L)



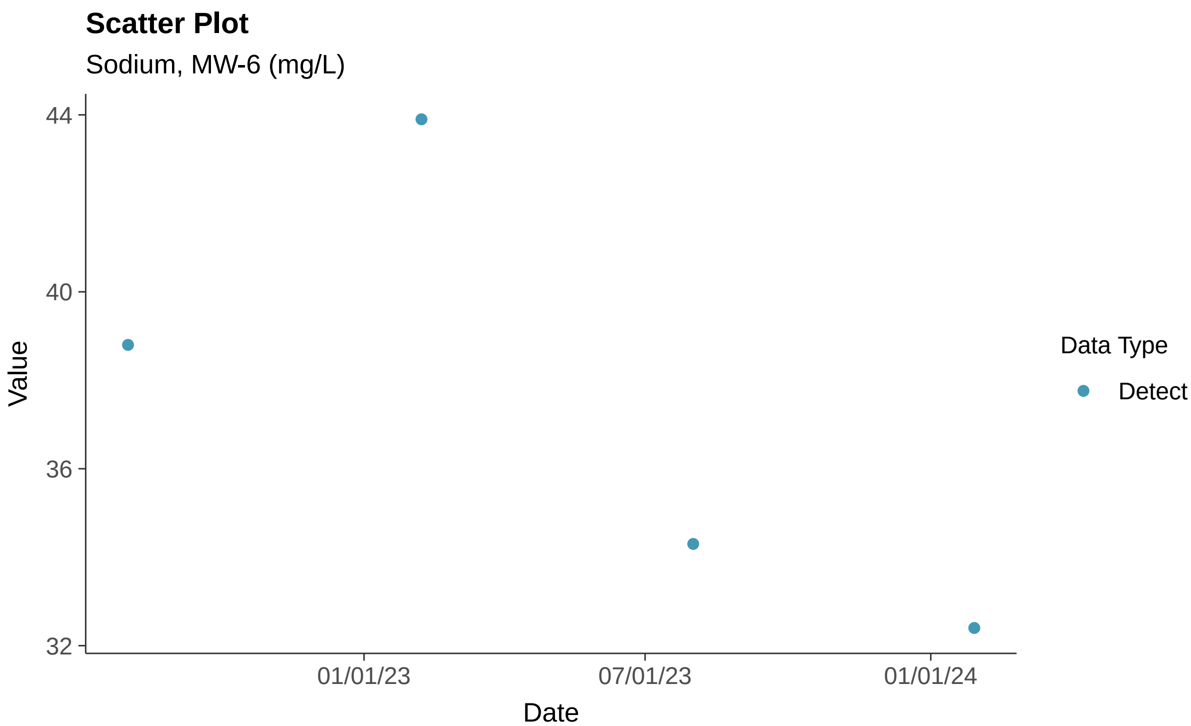
Normal Q-Q plot

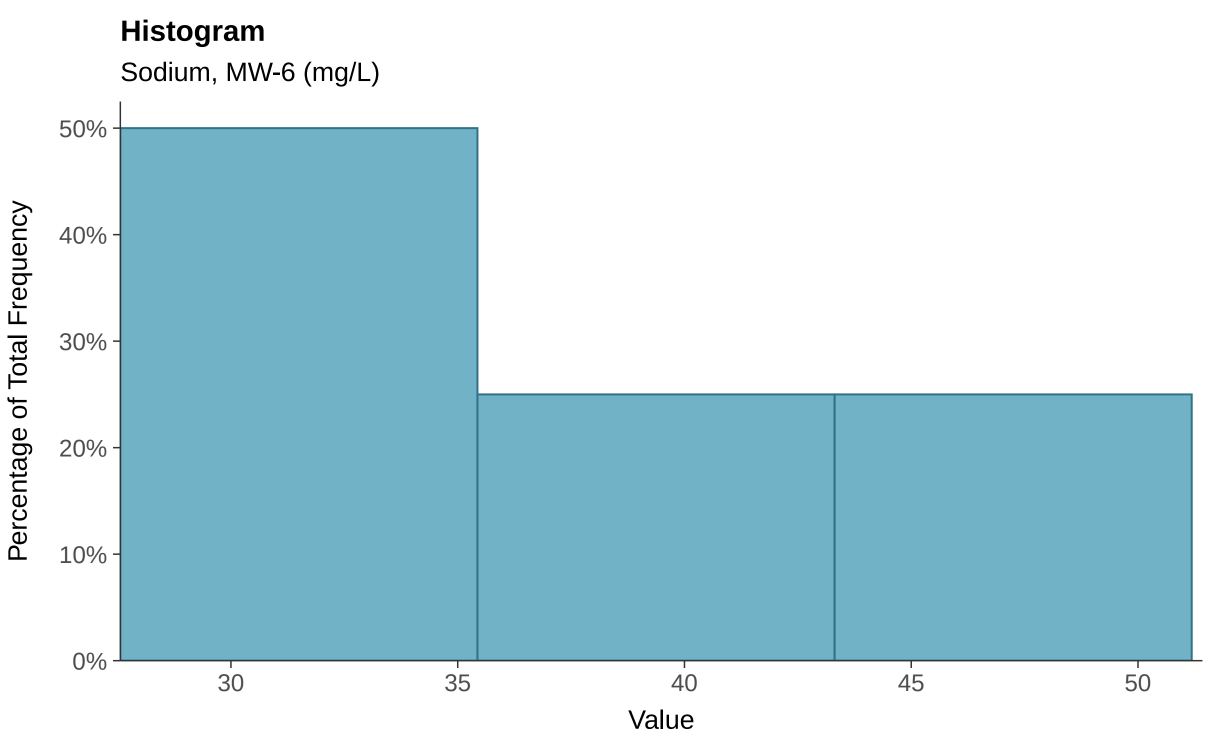
Potassium, MW-6 (mg/L)



Other: Sodium, MW-6

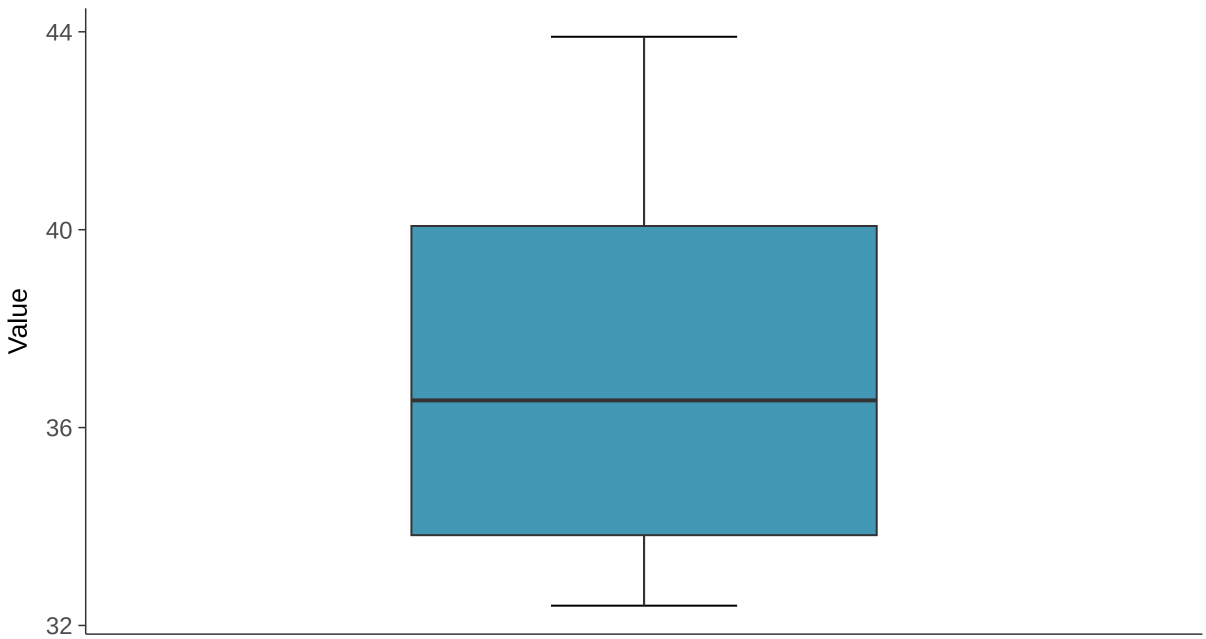
ID: 06_4_35





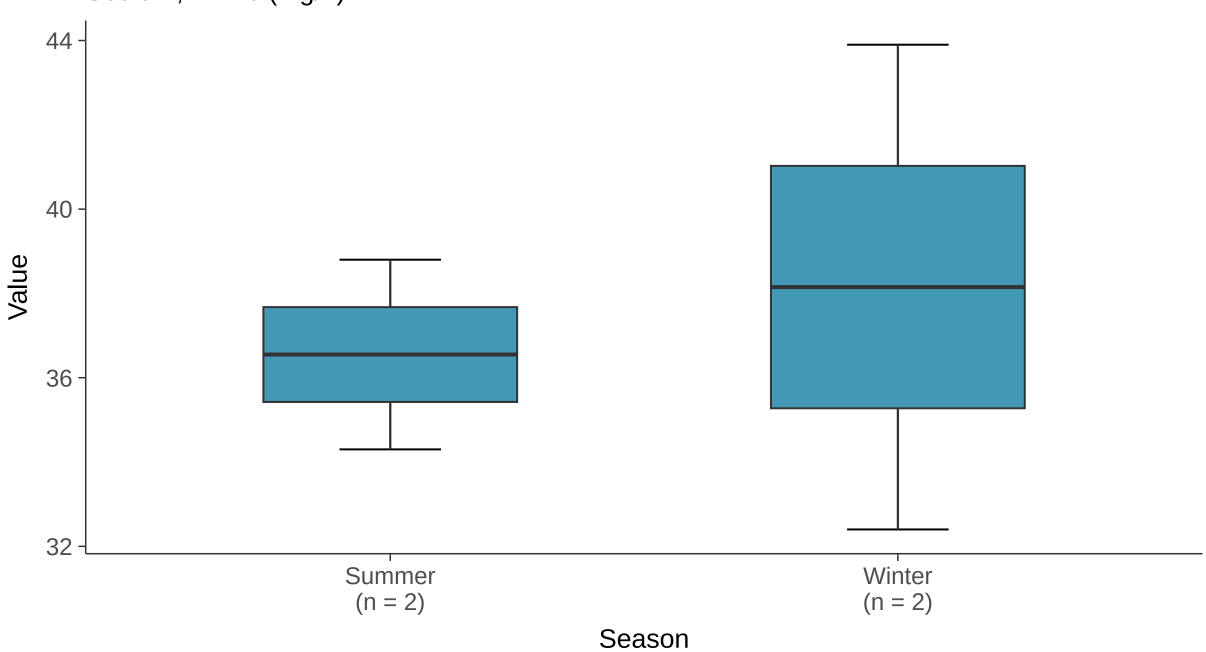
Boxplot

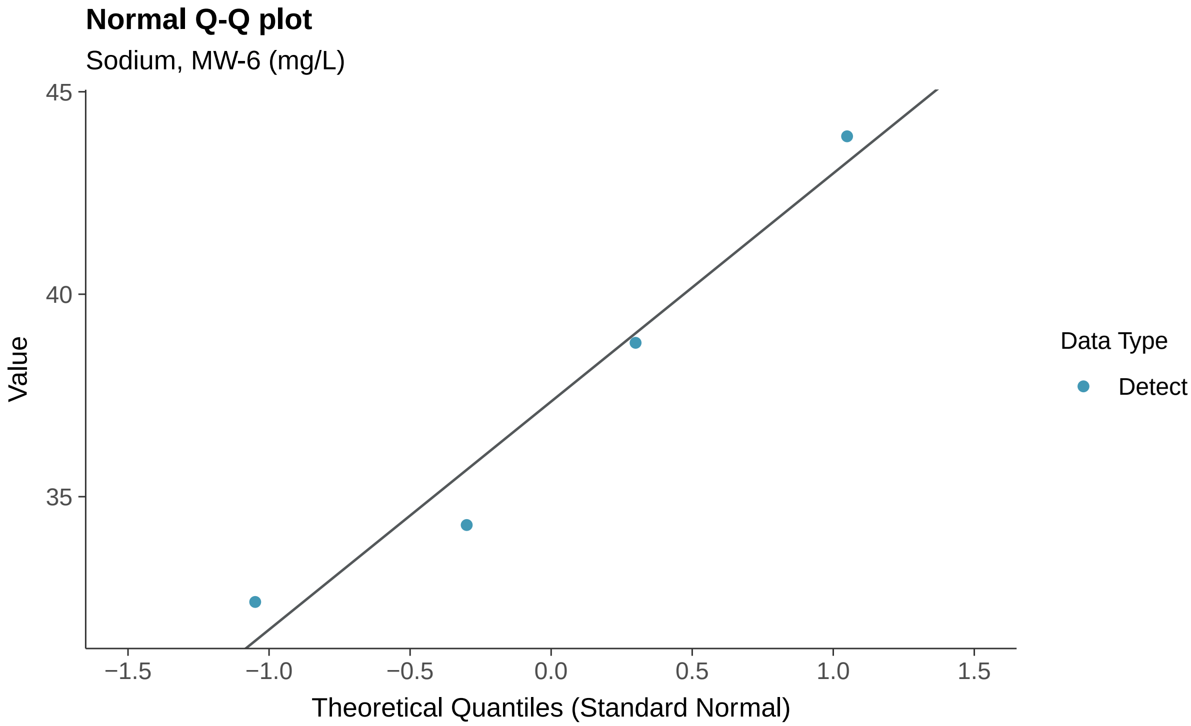
Sodium, MW-6 (mg/L)



Boxplot by Season

Sodium, MW-6 (mg/L)



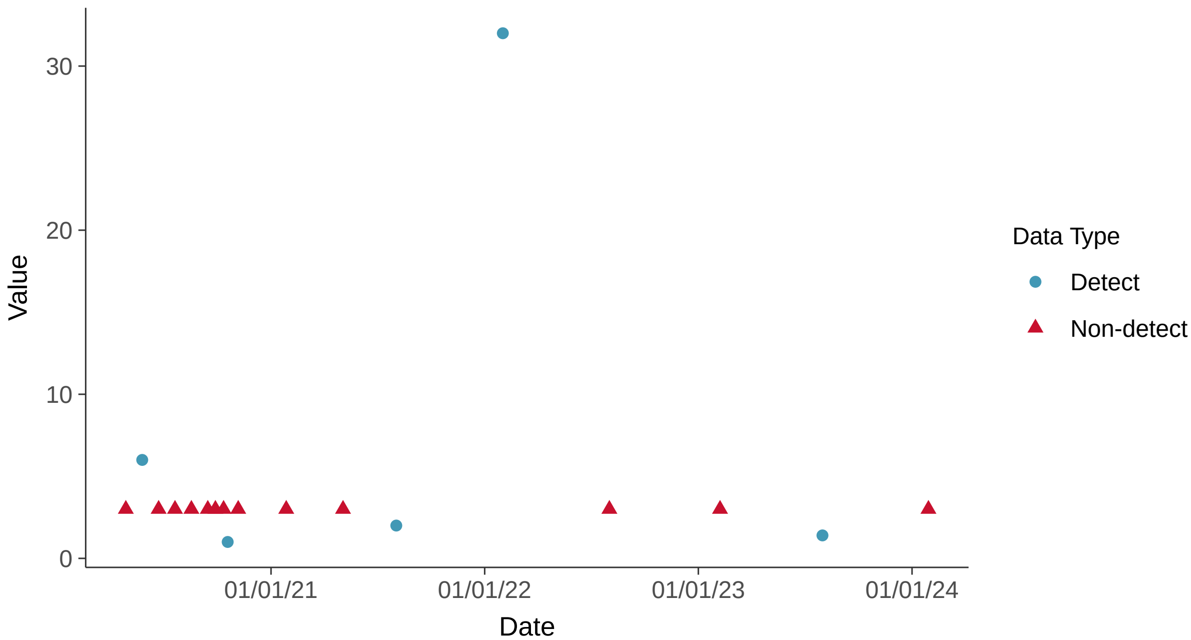

Normal Q-Q plot
Sodium, MW-6 (mg/L)
45
40
35
Value
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Total Suspended Solids, MW-6

ID: 06_4_36

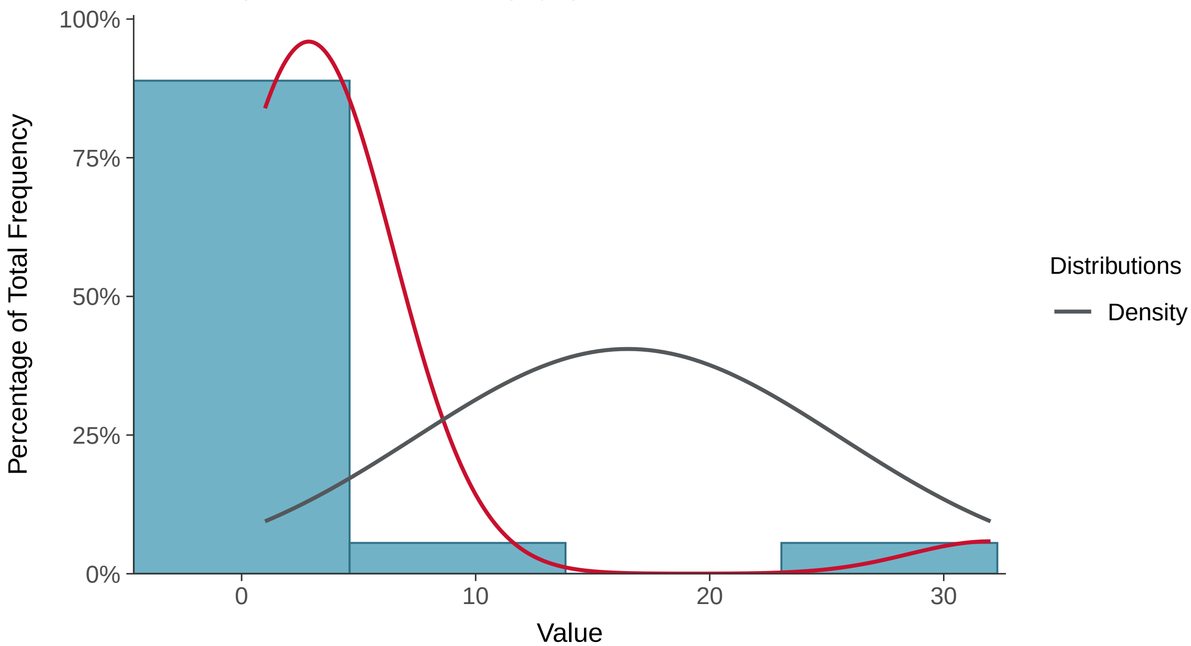
Scatter Plot

Total Suspended Solids, MW-6 (mg/L)



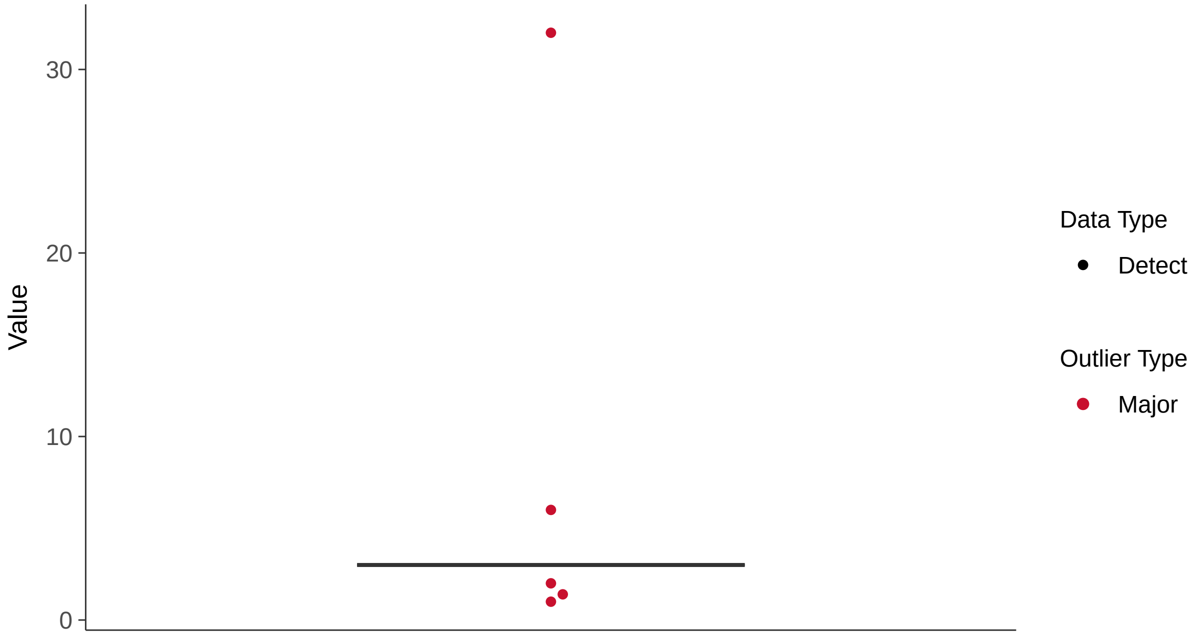
Histogram

Total Suspended Solids, MW-6 (mg/L)



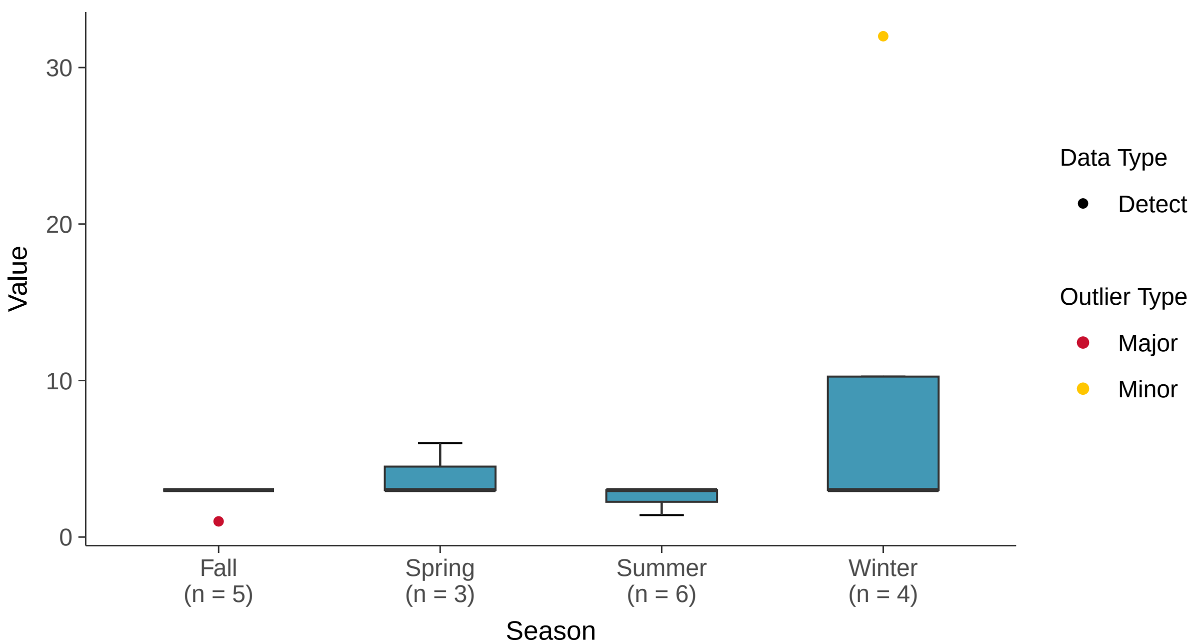
Boxplot

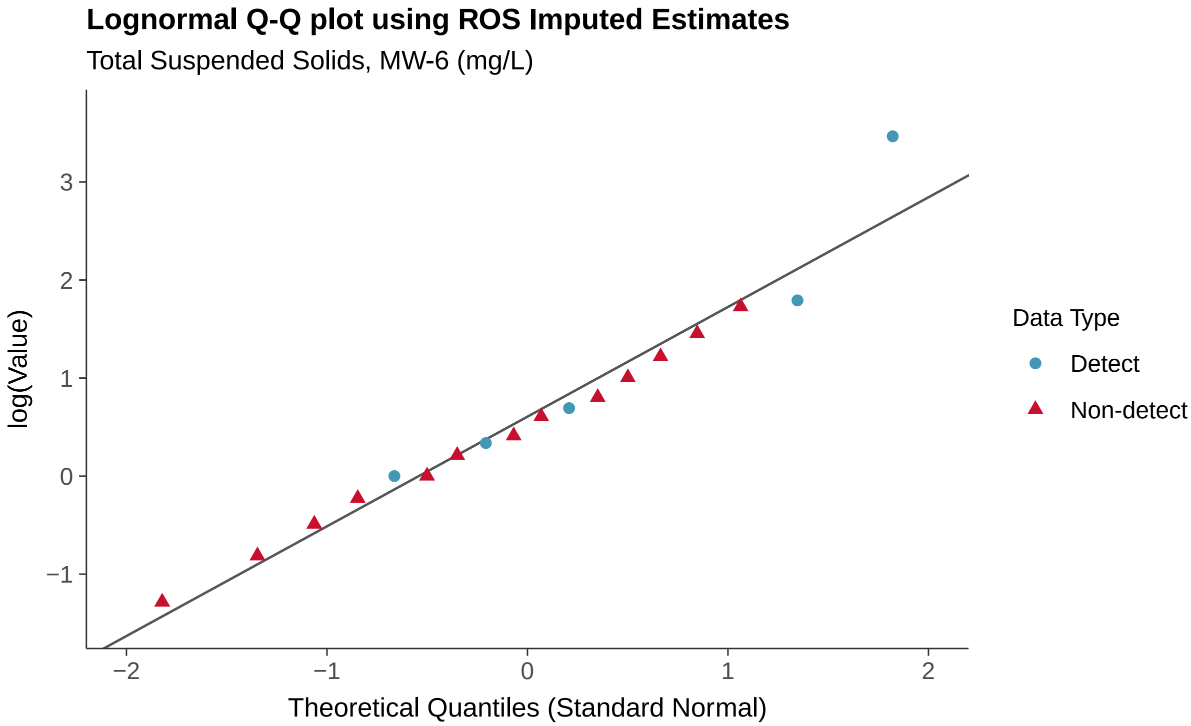
Total Suspended Solids, MW-6 (mg/L)

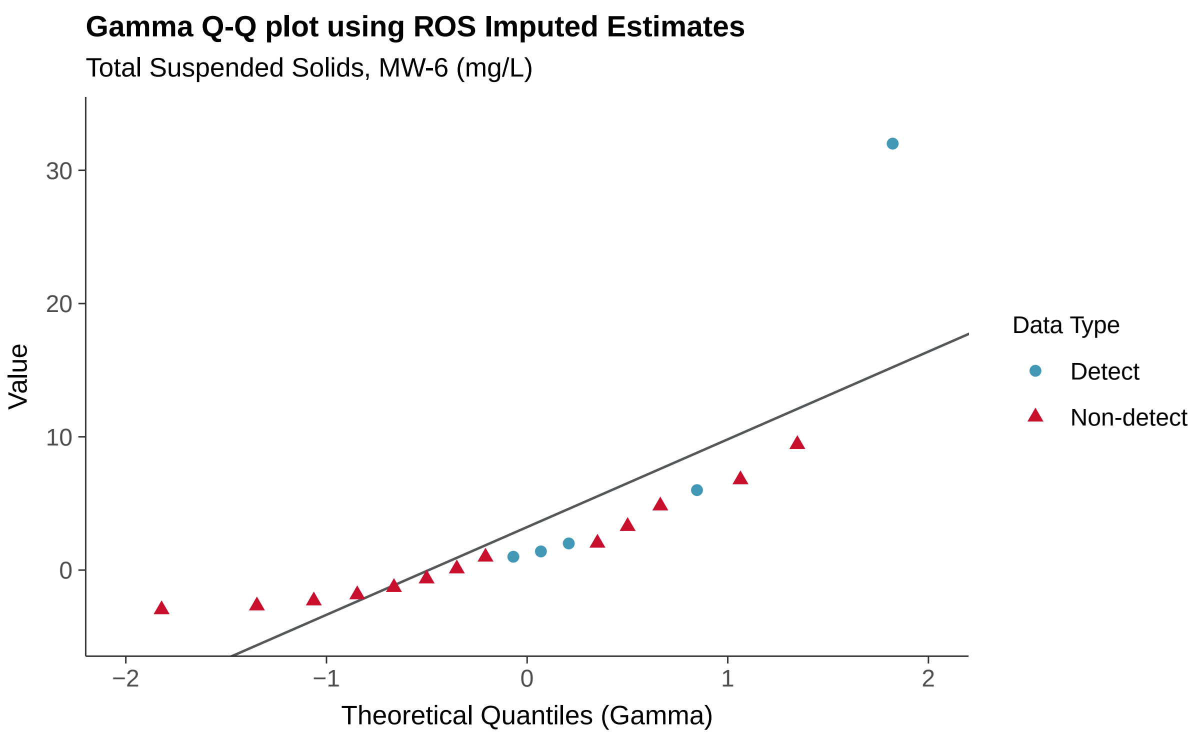


Boxplot by Season

Total Suspended Solids, MW-6 (mg/L)

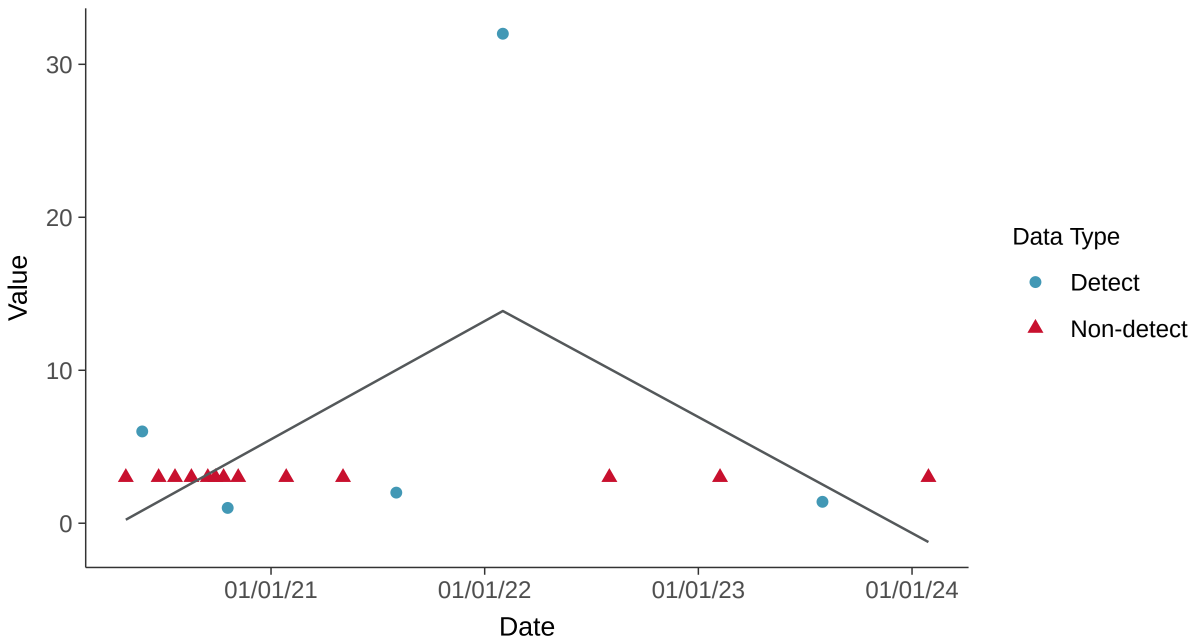



Lognormal Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-6 (mg/L)
log(Value)
3
2
1
0
−1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-6 (mg/L)
Value
30
20
10
0
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

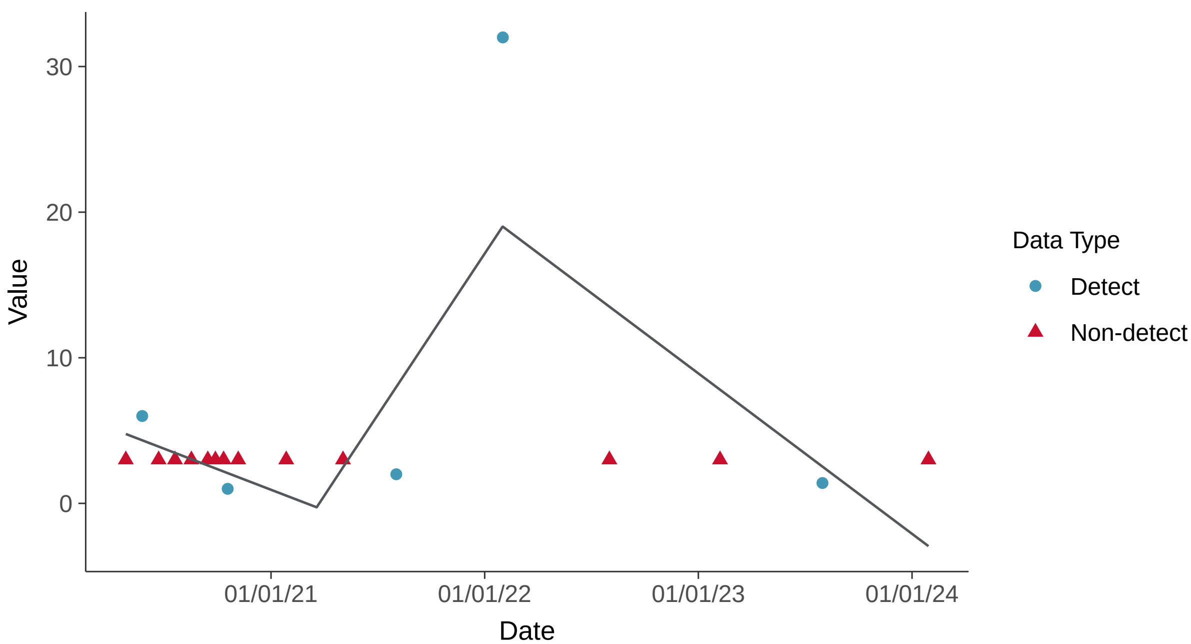
Trend Regression: Piecewise Linear-Linear

Total Suspended Solids, MW-6 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Total Suspended Solids, MW-6 (mg/L)

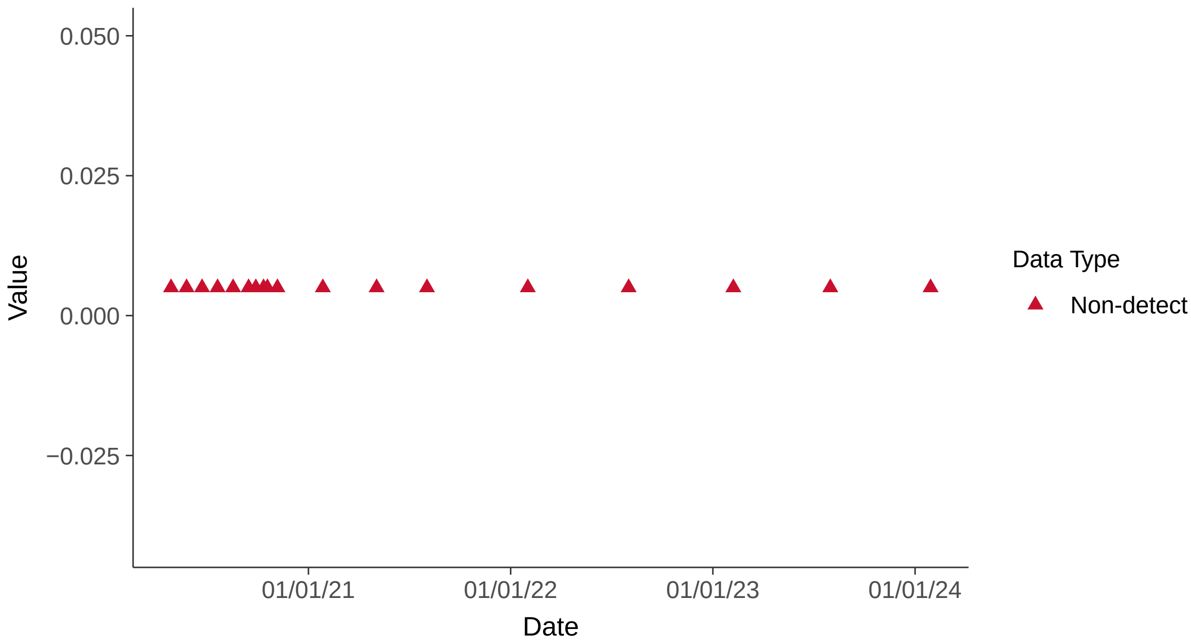


Part 115: Copper, MW-6

ID: 06_5_37

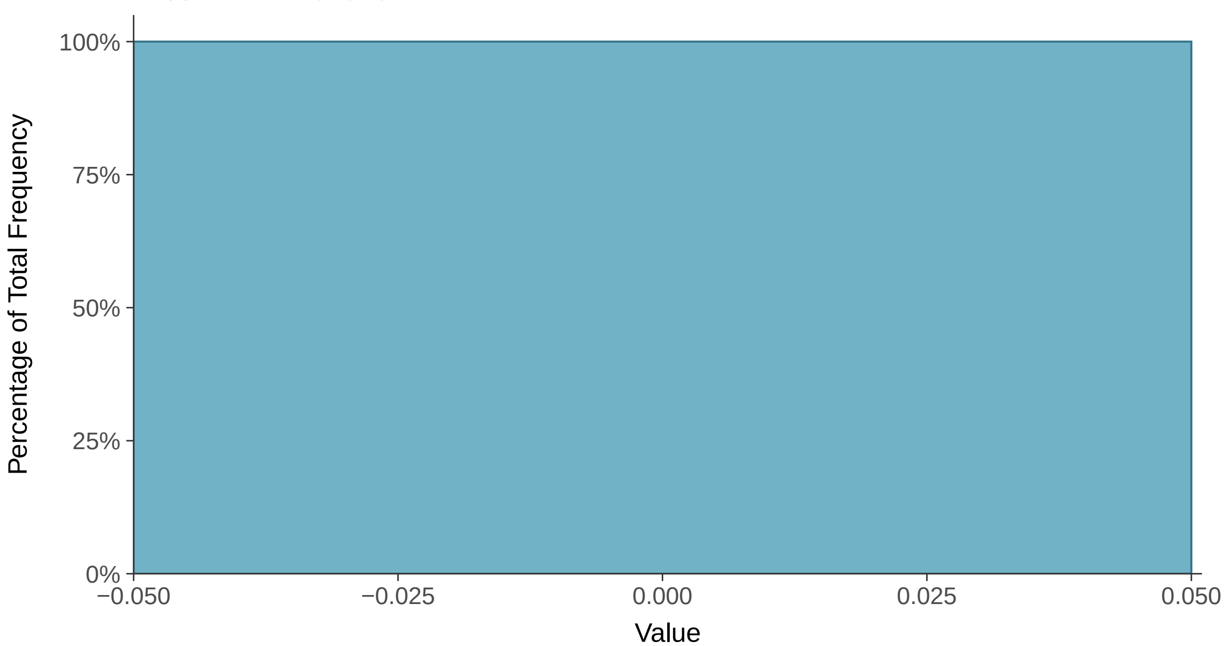
Scatter Plot

Copper, MW-6 (mg/L)



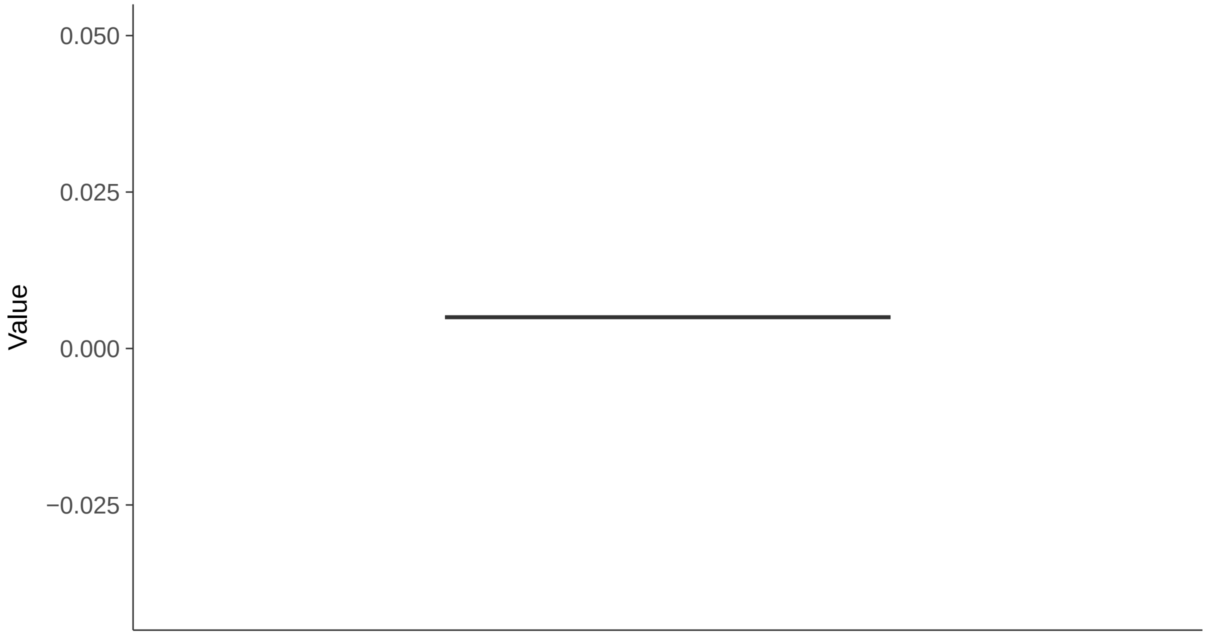
Histogram

Copper, MW-6 (mg/L)



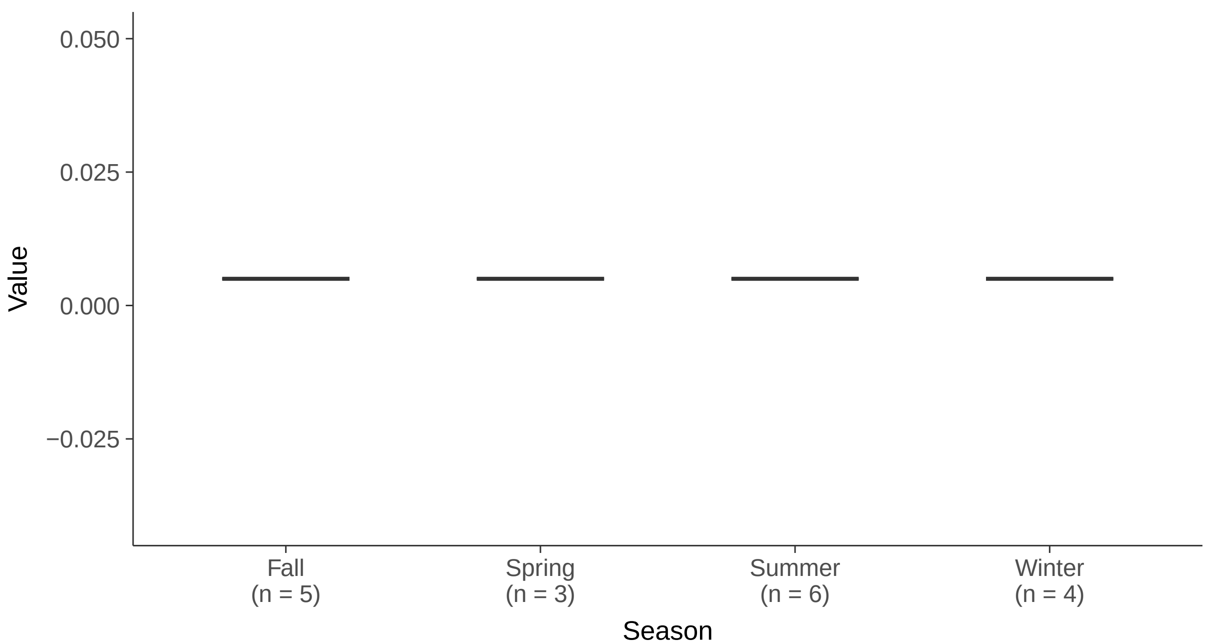
Boxplot

Copper, MW-6 (mg/L)



Boxplot by Season

Copper, MW-6 (mg/L)

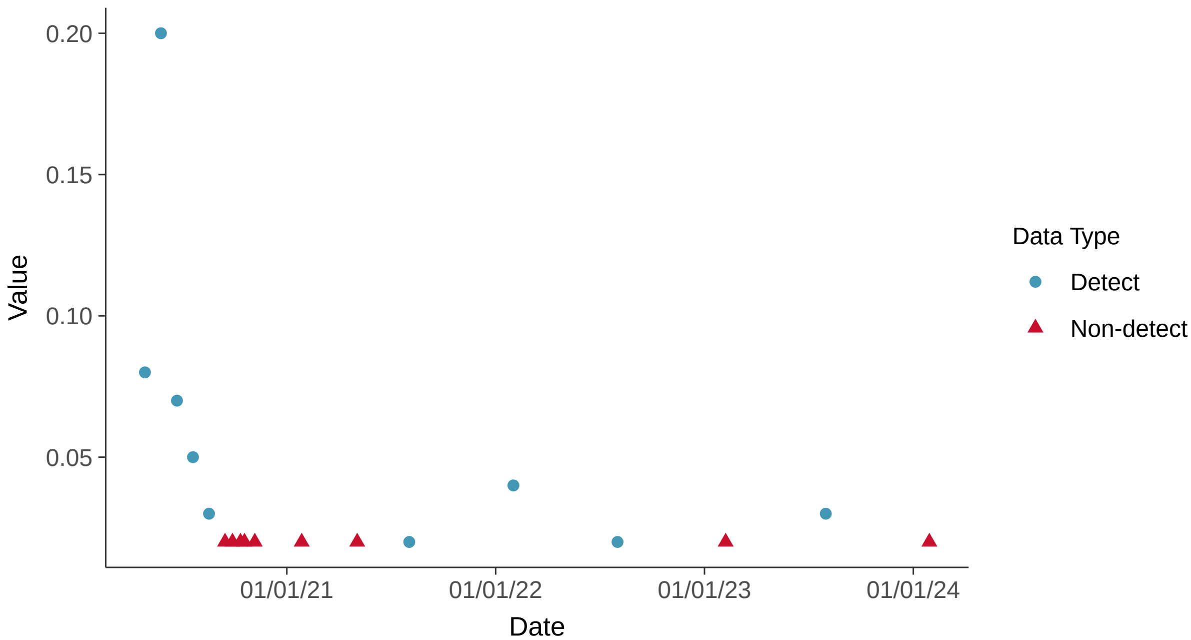


Part 115: Iron, MW-6

ID: 06_5_38

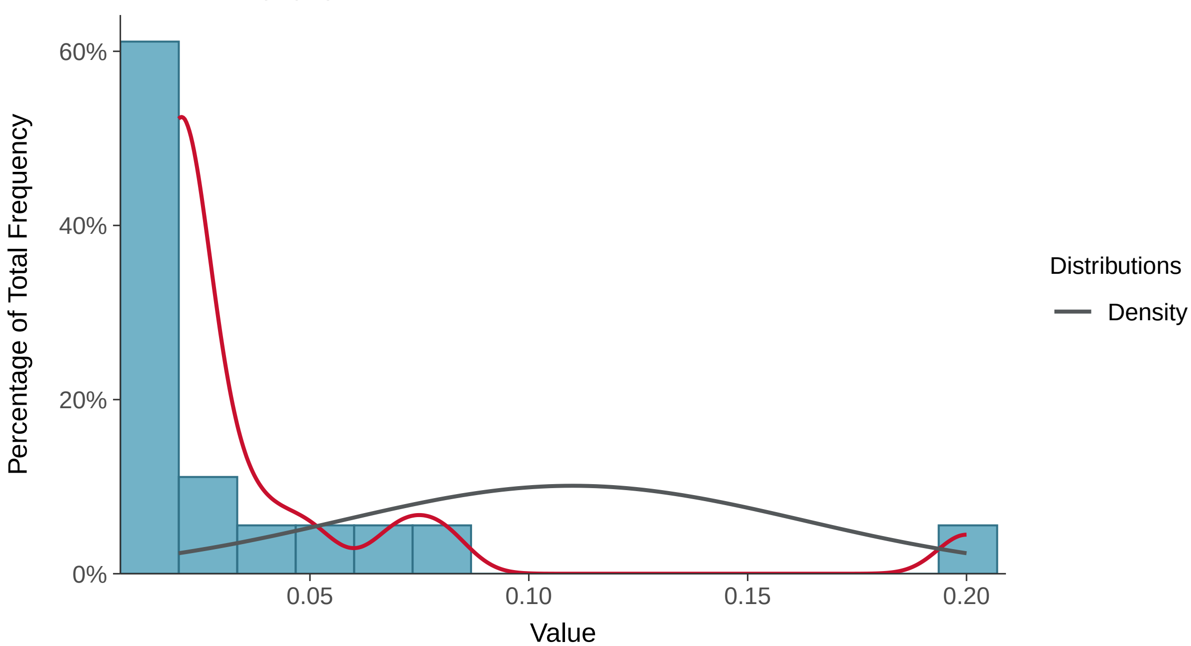
Scatter Plot

Iron, MW-6 (mg/L)



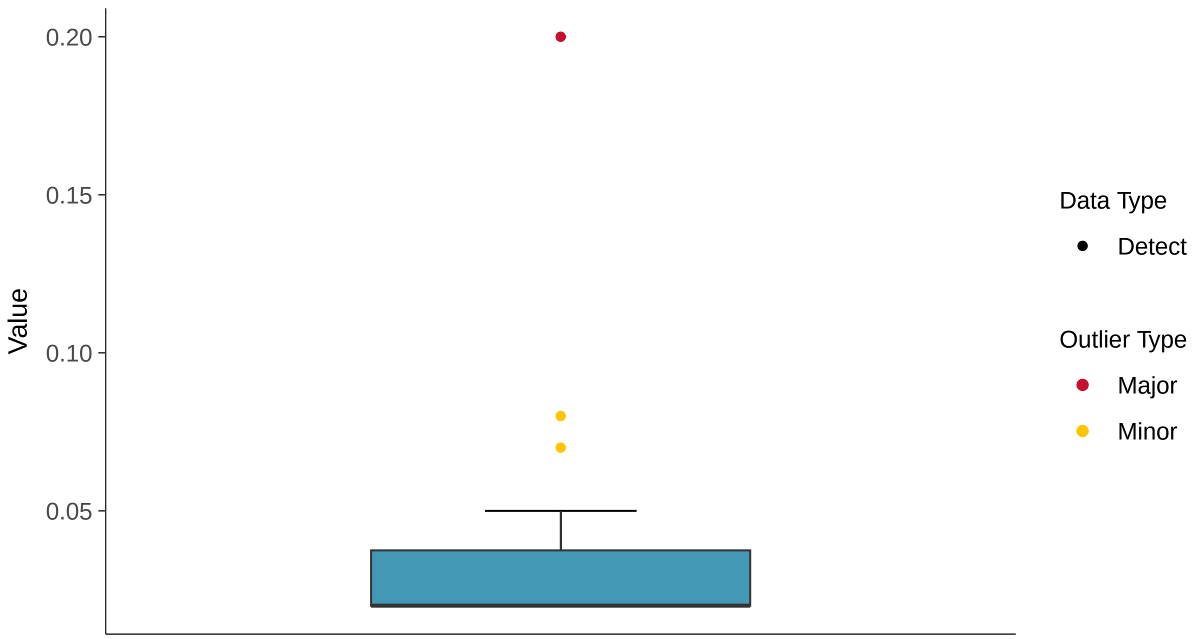
Histogram

Iron, MW-6 (mg/L)



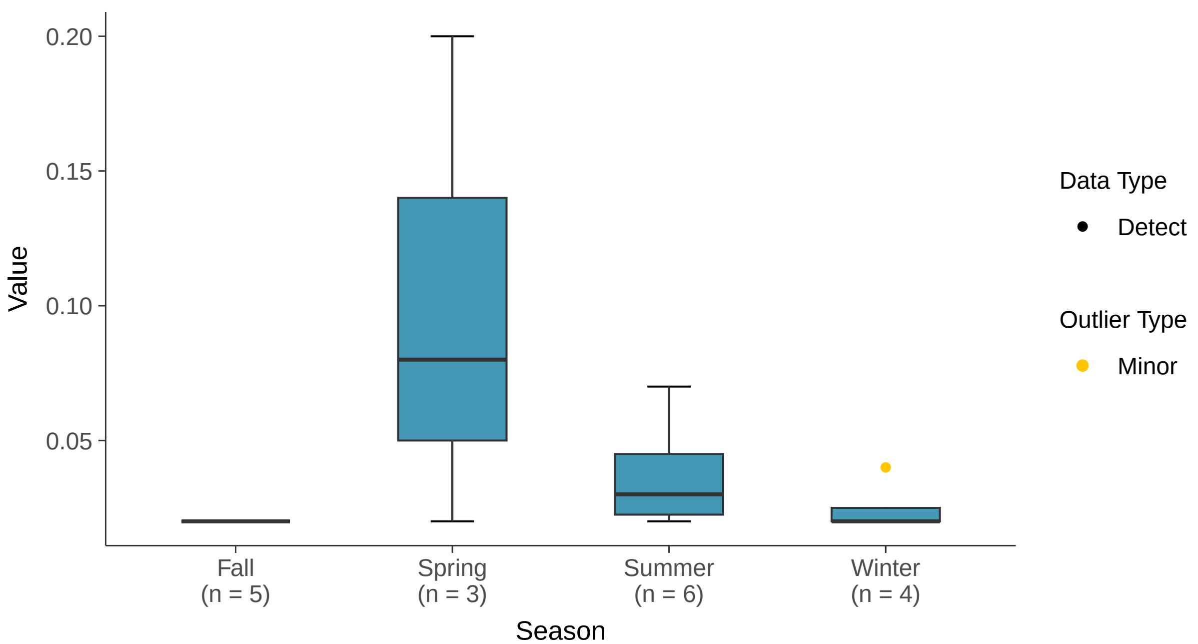
Boxplot

Iron, MW-6 (mg/L)



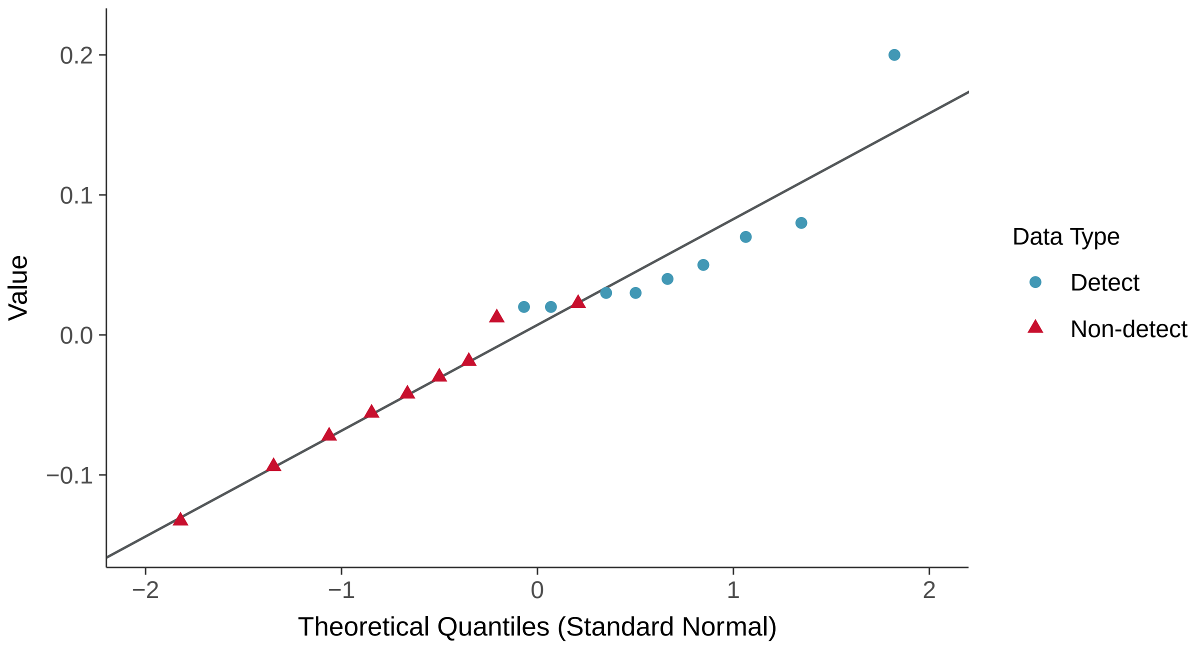
Boxplot by Season

Iron, MW-6 (mg/L)



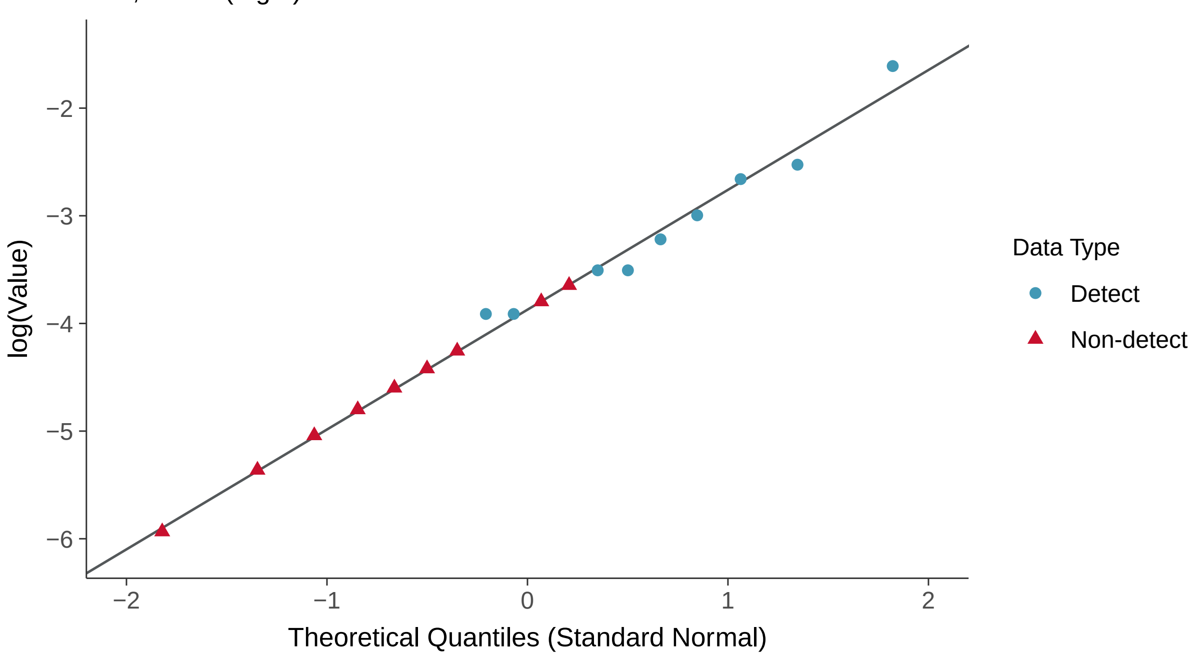
Normal Q-Q plot using ROS Imputed Estimates

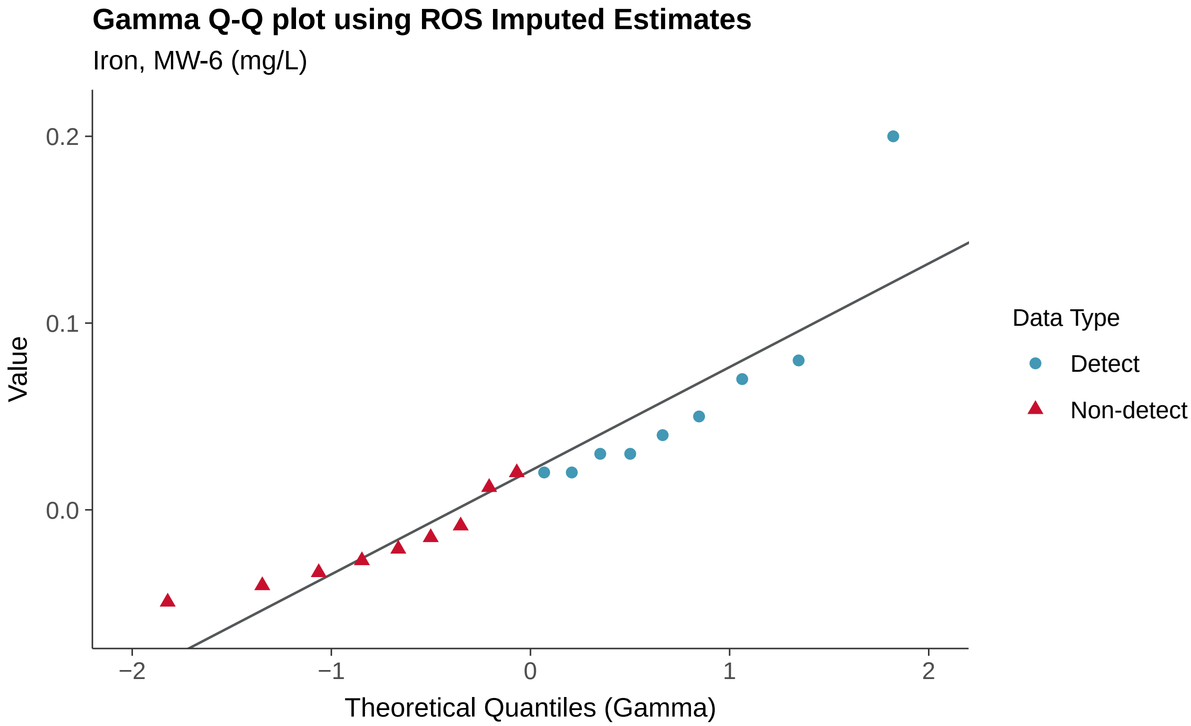
Iron, MW-6 (mg/L)

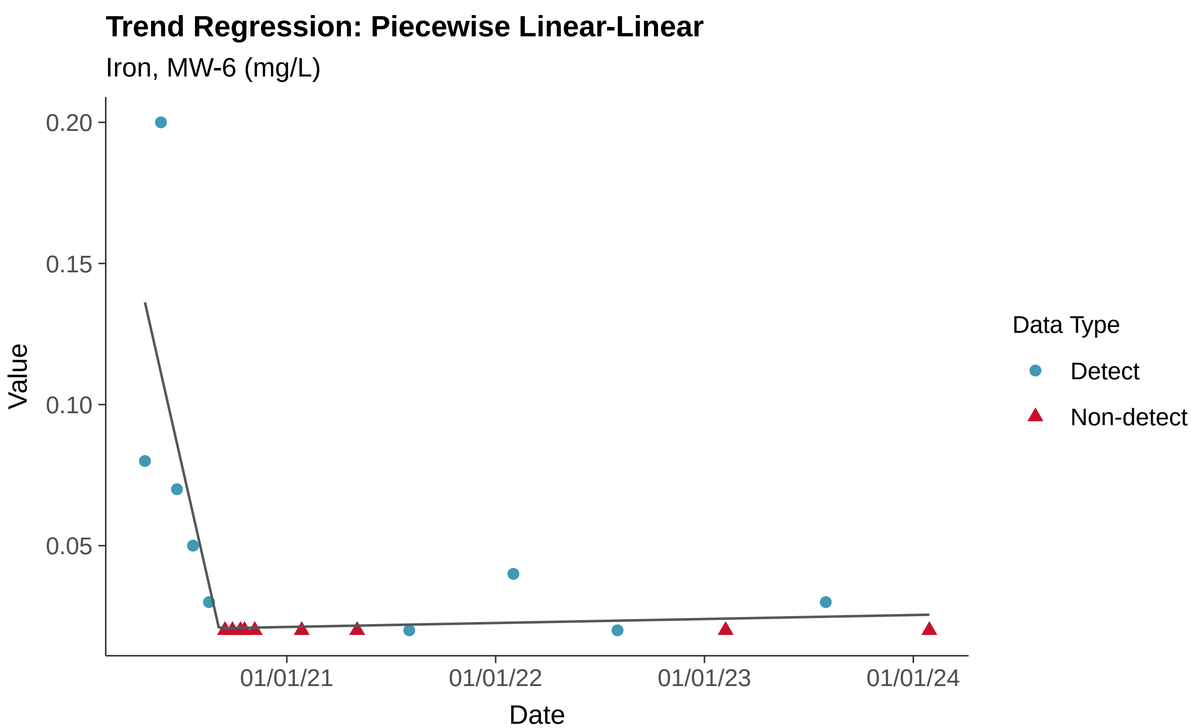


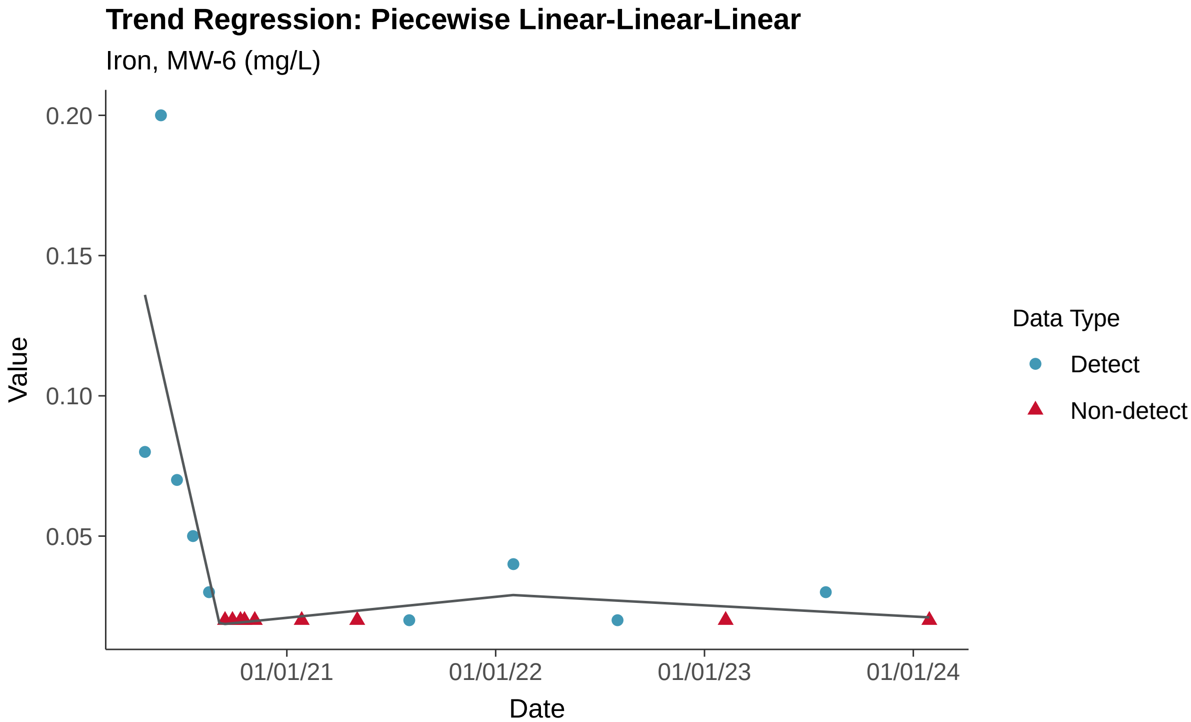
Lognormal Q-Q plot using ROS Imputed Estimates

Iron, MW-6 (mg/L)




Gamma Q-Q plot using ROS Imputed Estimates
Iron, MW-6 (mg/L)
Value
0.2
0.1
0.0
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Iron, MW-6 (mg/L)
Value
0.20
0.15
0.10
0.05
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

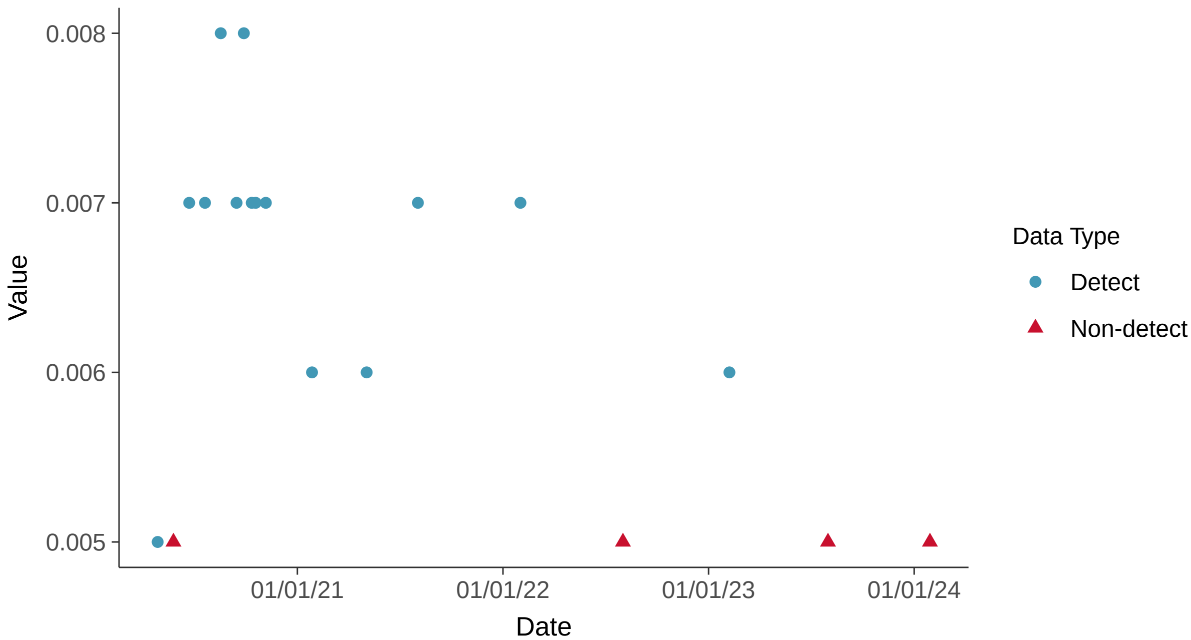

Trend Regression: Piecewise Linear-Linear-Linear
Iron, MW-6 (mg/L)
Value
0.20
0.15
0.10
0.05
01/01/21
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Part 115: Nickel, MW-6

ID: 06_5_39

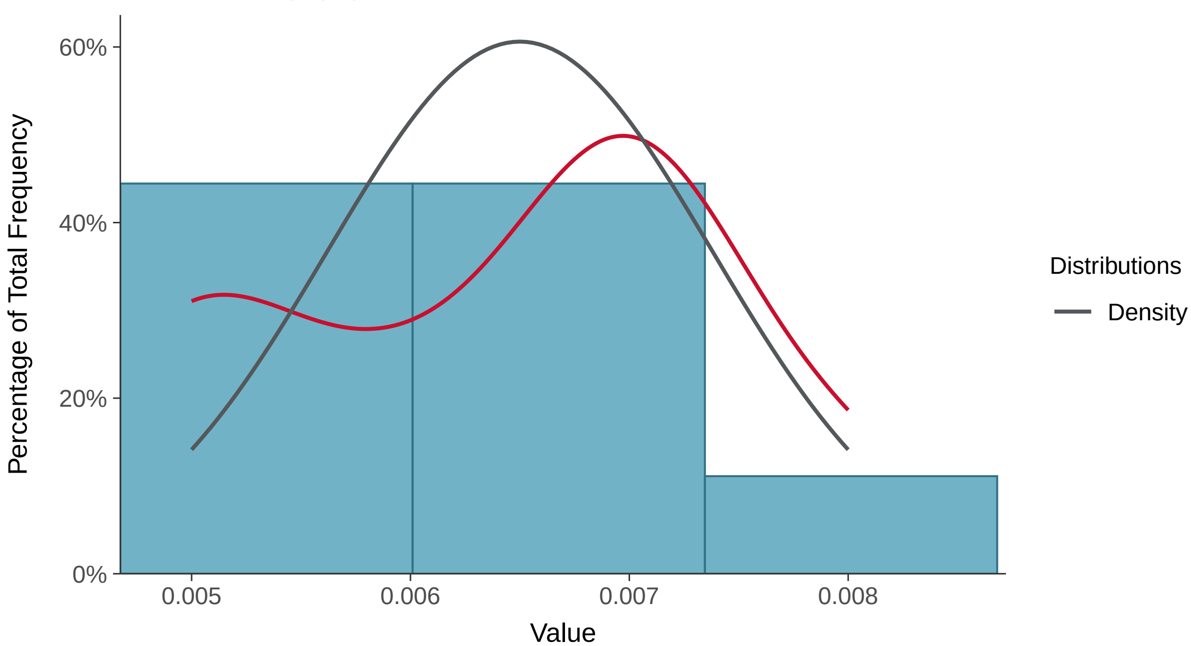
Scatter Plot

Nickel, MW-6 (mg/L)



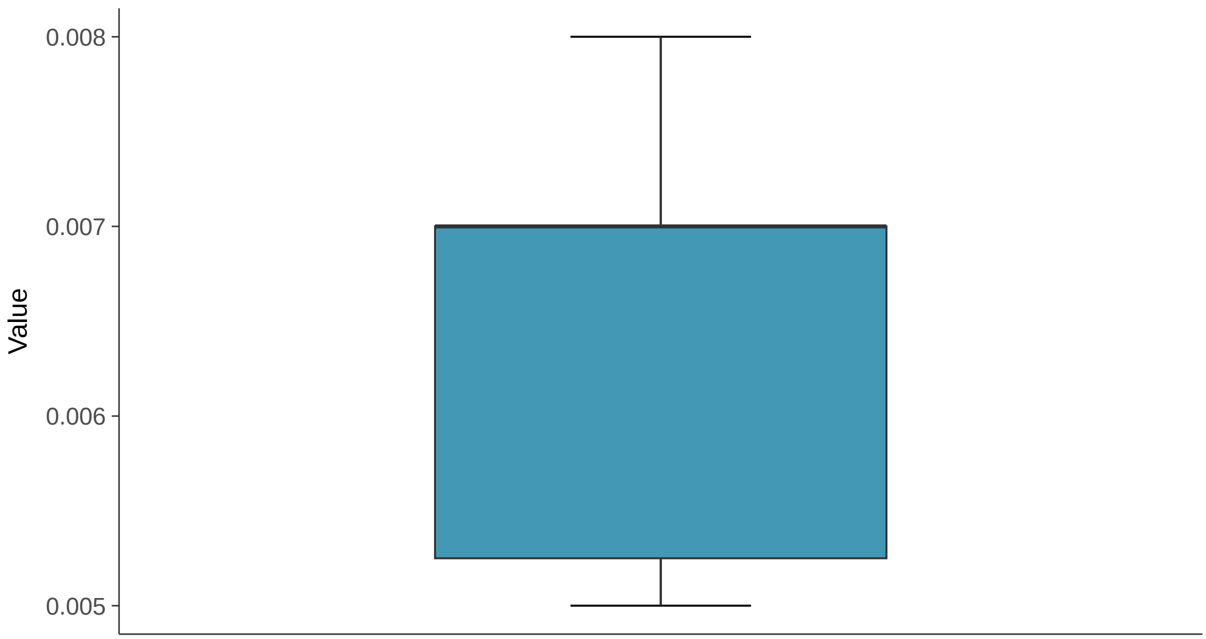
Histogram

Nickel, MW-6 (mg/L)



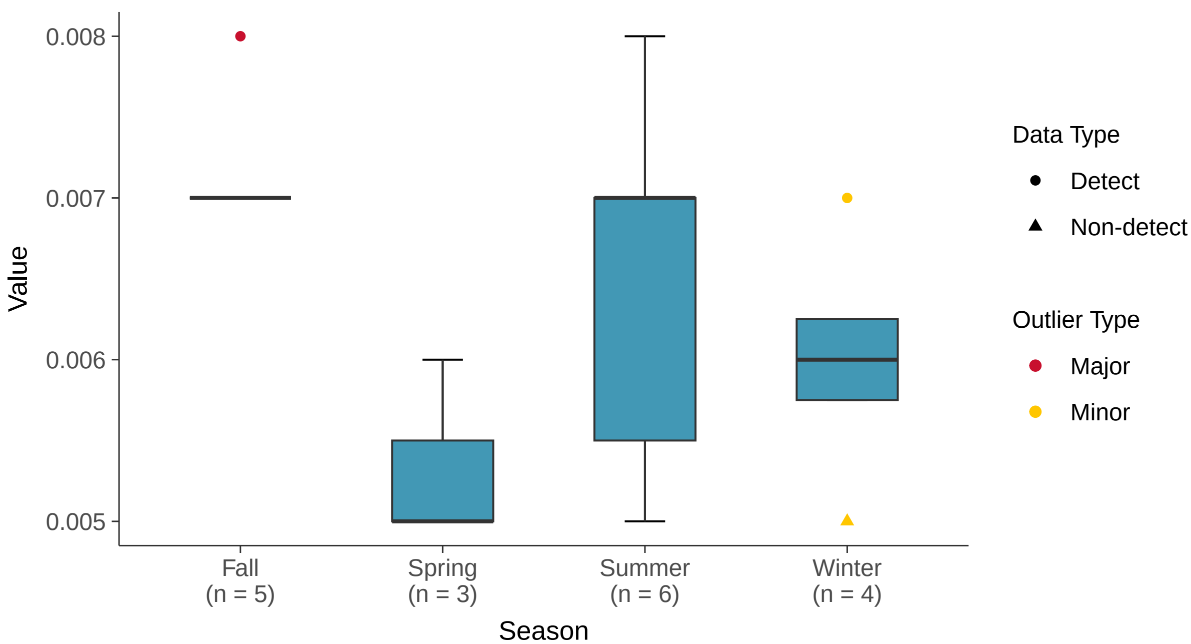
Boxplot

Nickel, MW-6 (mg/L)



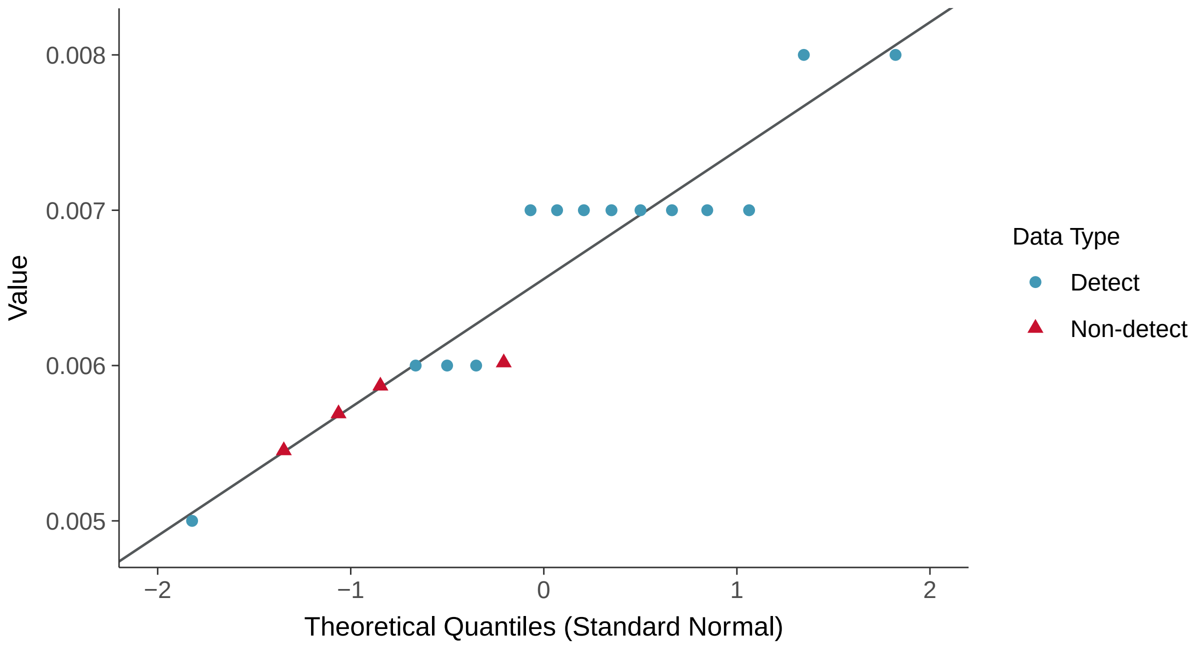
Boxplot by Season

Nickel, MW-6 (mg/L)



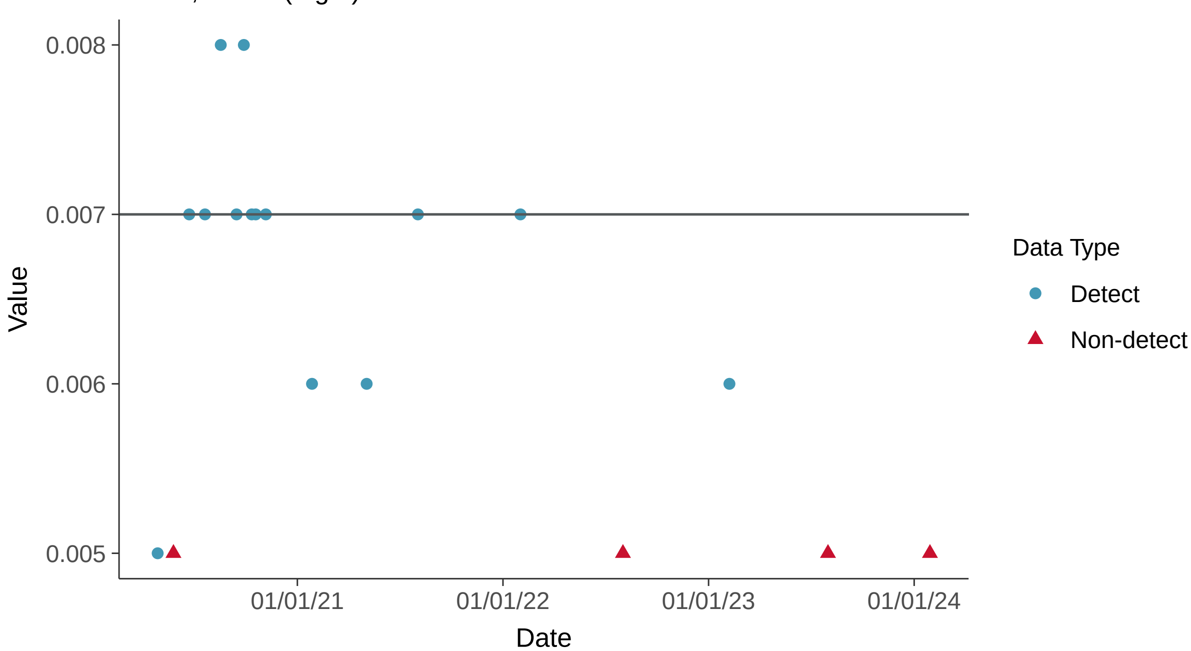
Normal Q-Q plot using ROS Imputed Estimates

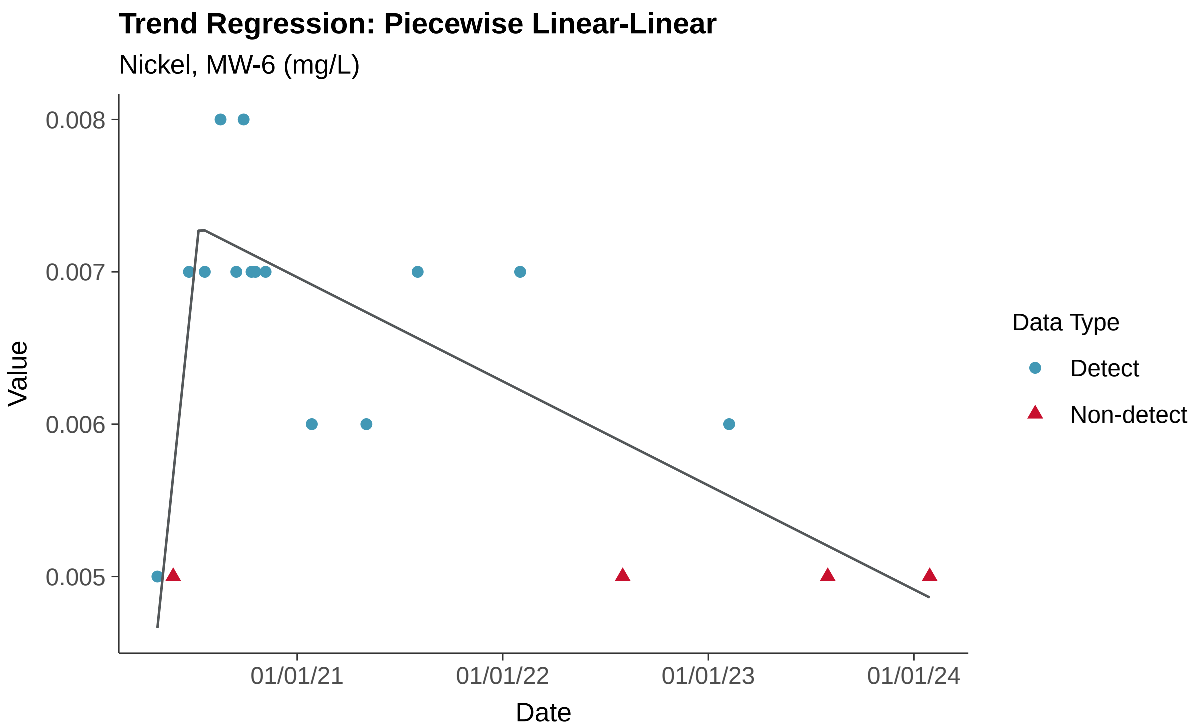
Nickel, MW-6 (mg/L)

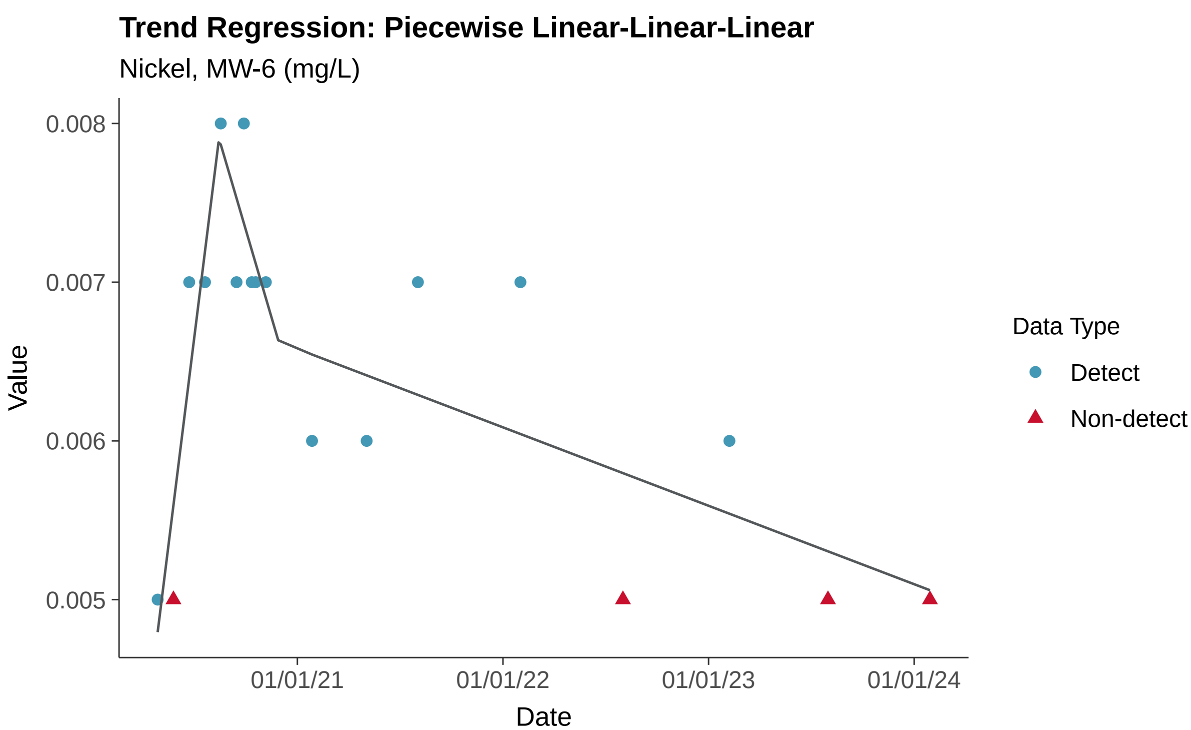


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Nickel, MW-6 (mg/L)




Trend Regression: Piecewise Linear-Linear
Nickel, MW-6 (mg/L)
Value
0.008
0.007
0.006
0.005
Date
01/01/21
01/01/22
01/01/23
01/01/24
Data Type
Detect
Non-detect

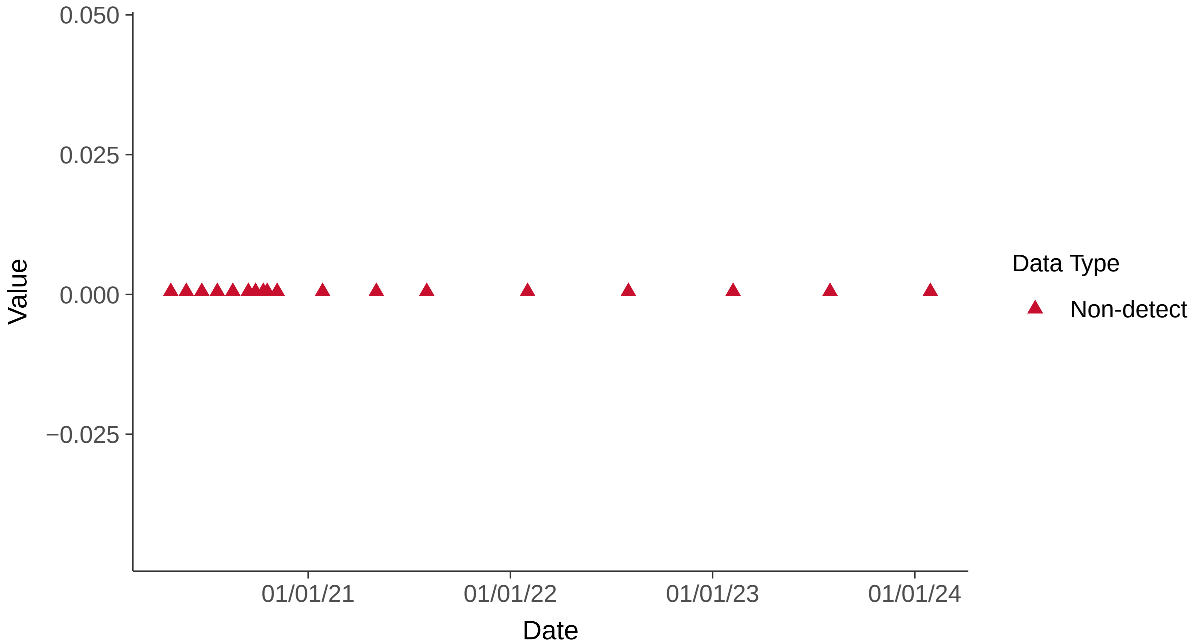

Trend Regression: Piecewise Linear-Linear-Linear
Nickel, MW-6 (mg/L)
Value
0.008
0.007
0.006
0.005
Date
01/01/21
01/01/22
01/01/23
01/01/24
Data Type
Detect
Non-detect

Part 115: Silver, MW-6

ID: 06_5_40

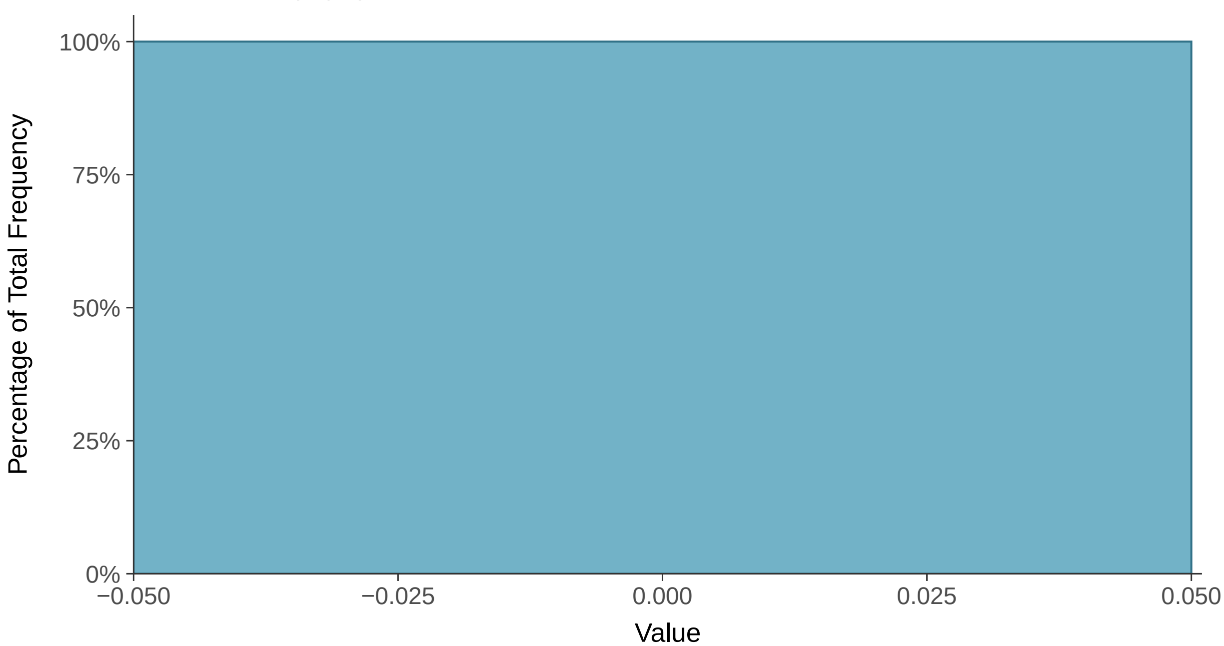
Scatter Plot

Silver, MW-6 (mg/L)



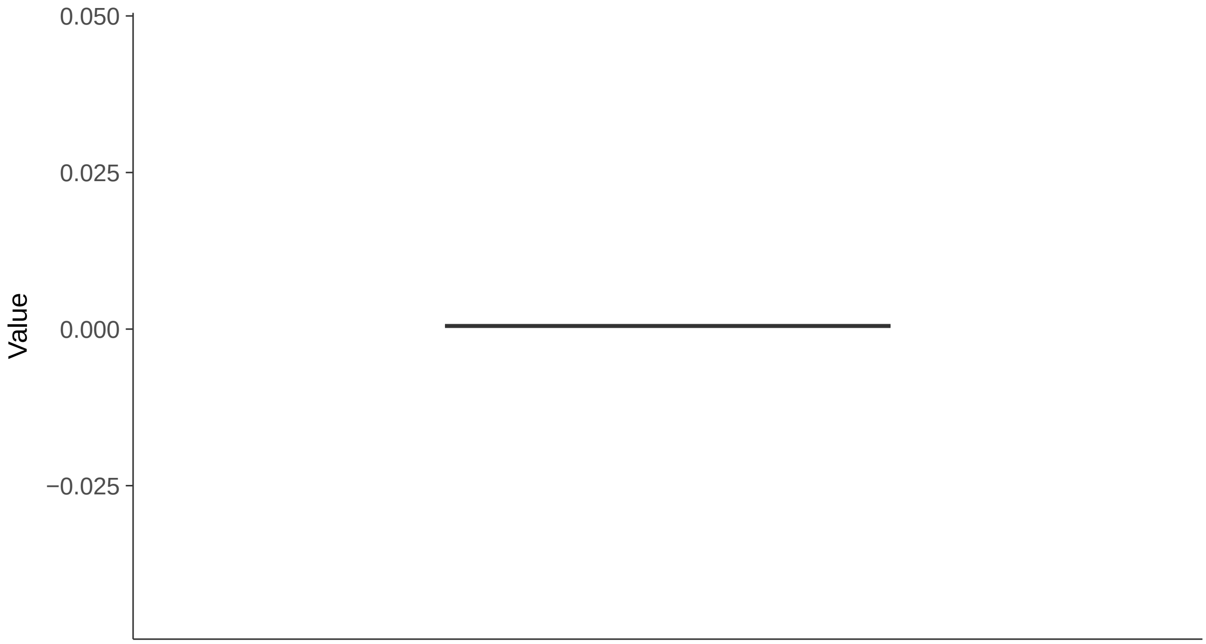
Histogram

Silver, MW-6 (mg/L)



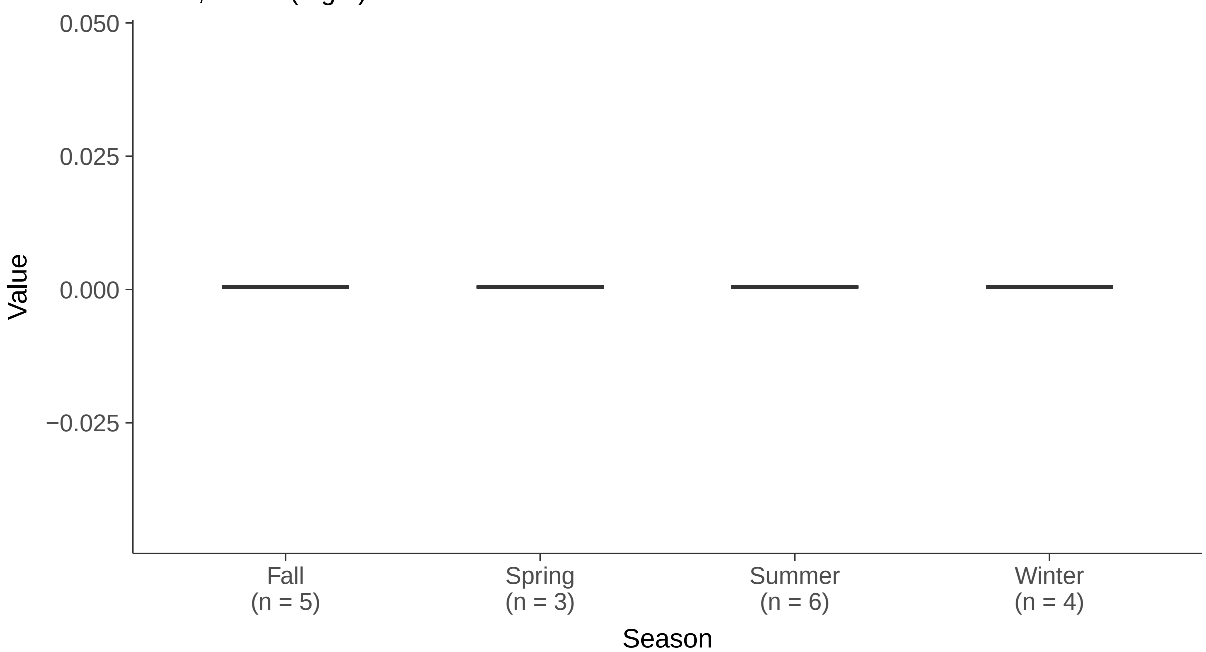
Boxplot

Silver, MW-6 (mg/L)



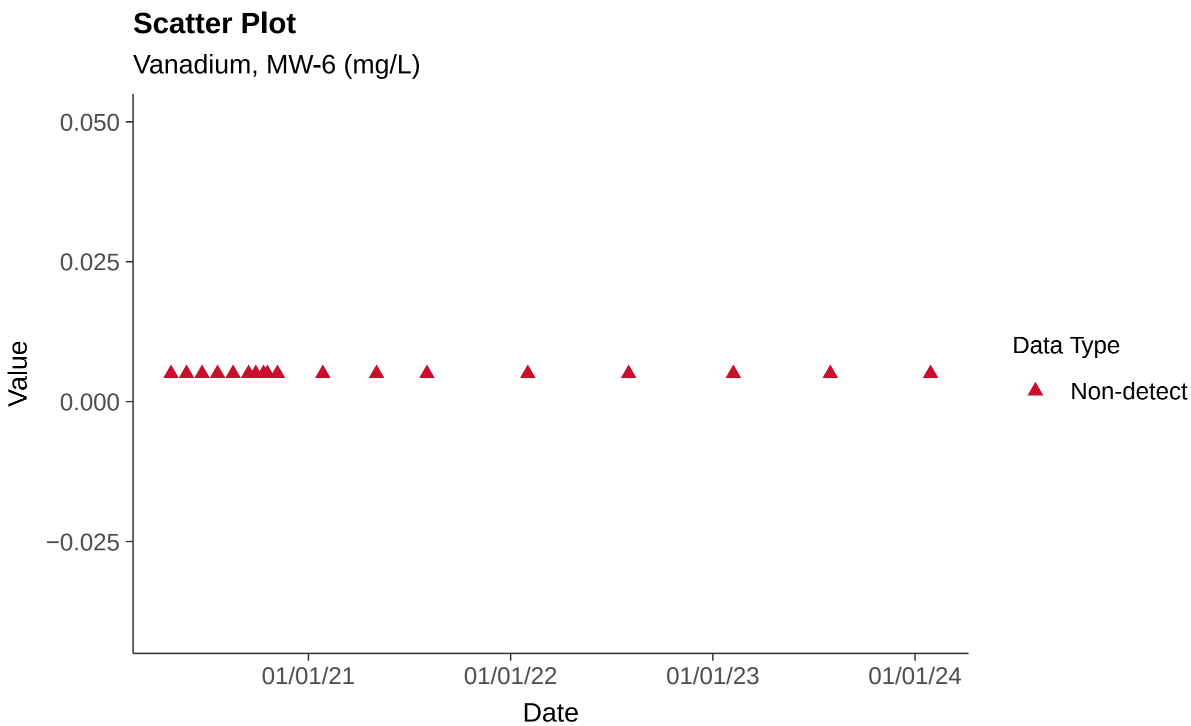
Boxplot by Season

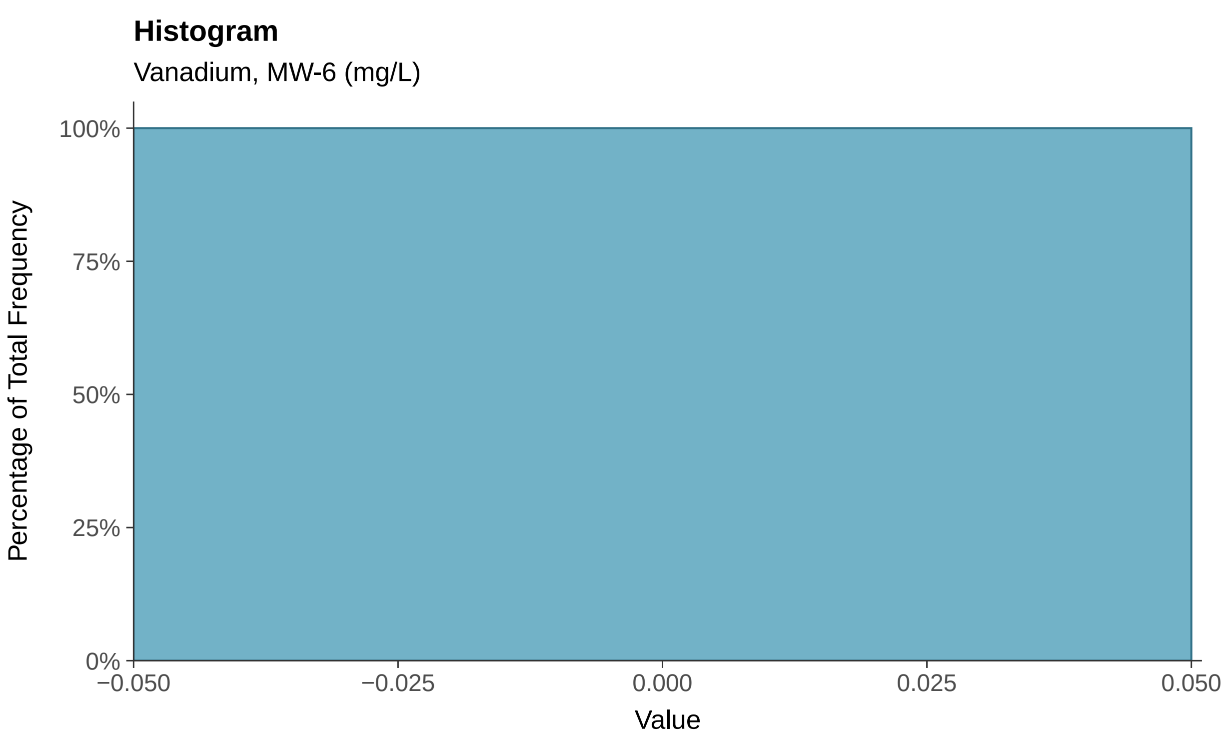
Silver, MW-6 (mg/L)



Part 115: Vanadium, MW-6

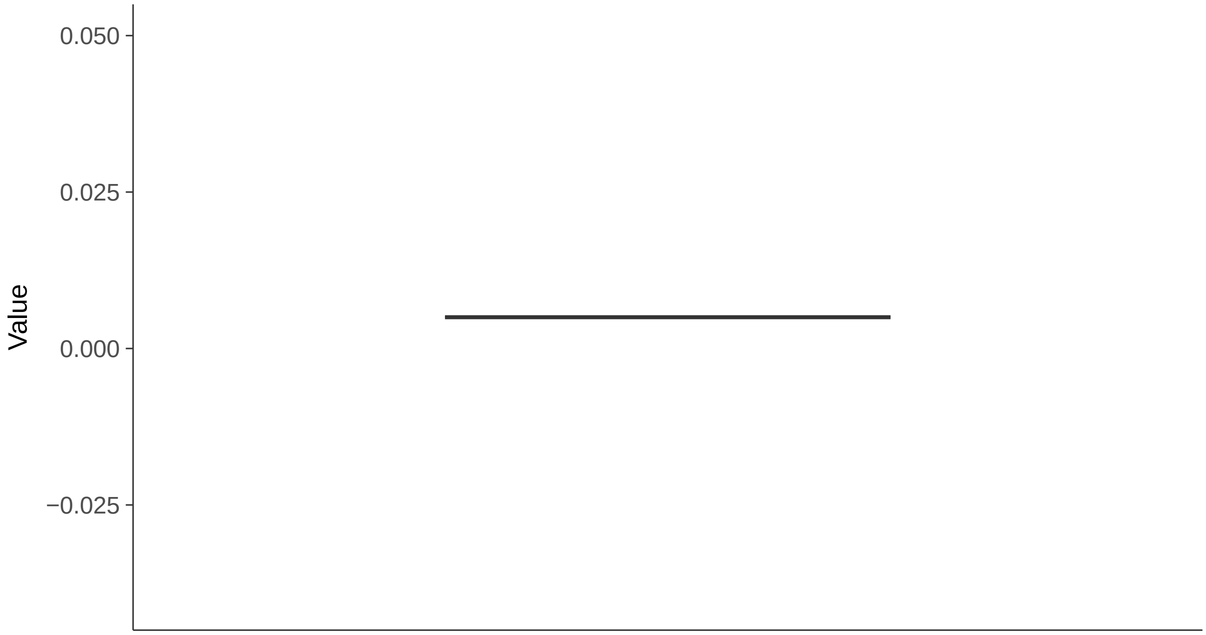
ID: 06_5_41





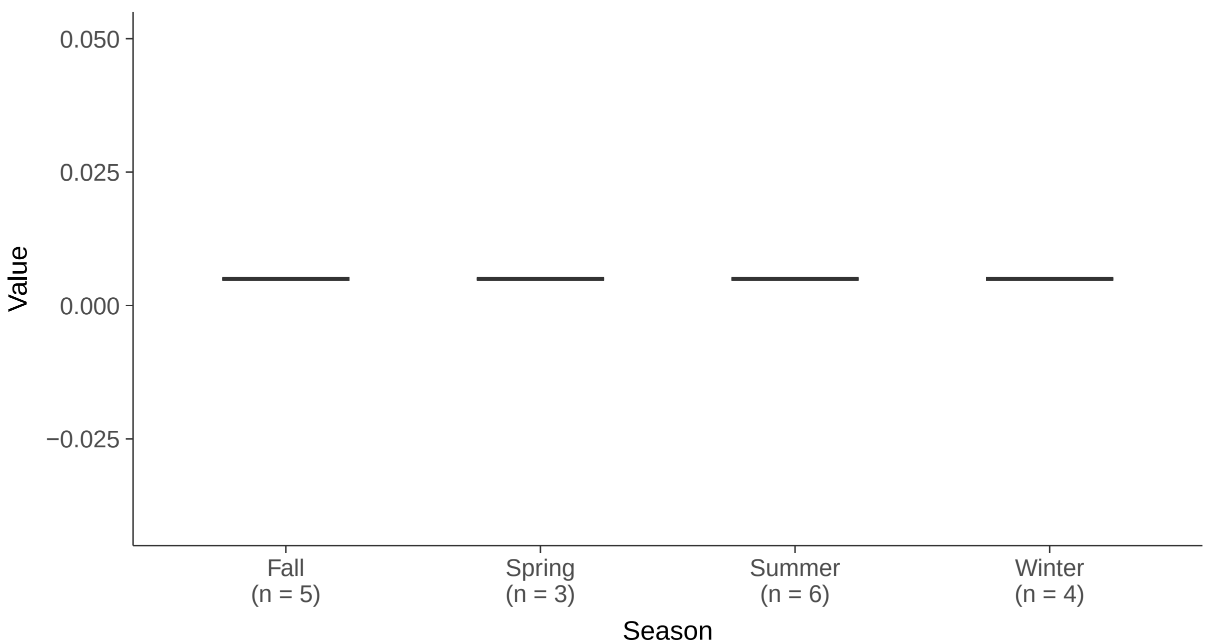
Boxplot

Vanadium, MW-6 (mg/L)



Boxplot by Season

Vanadium, MW-6 (mg/L)

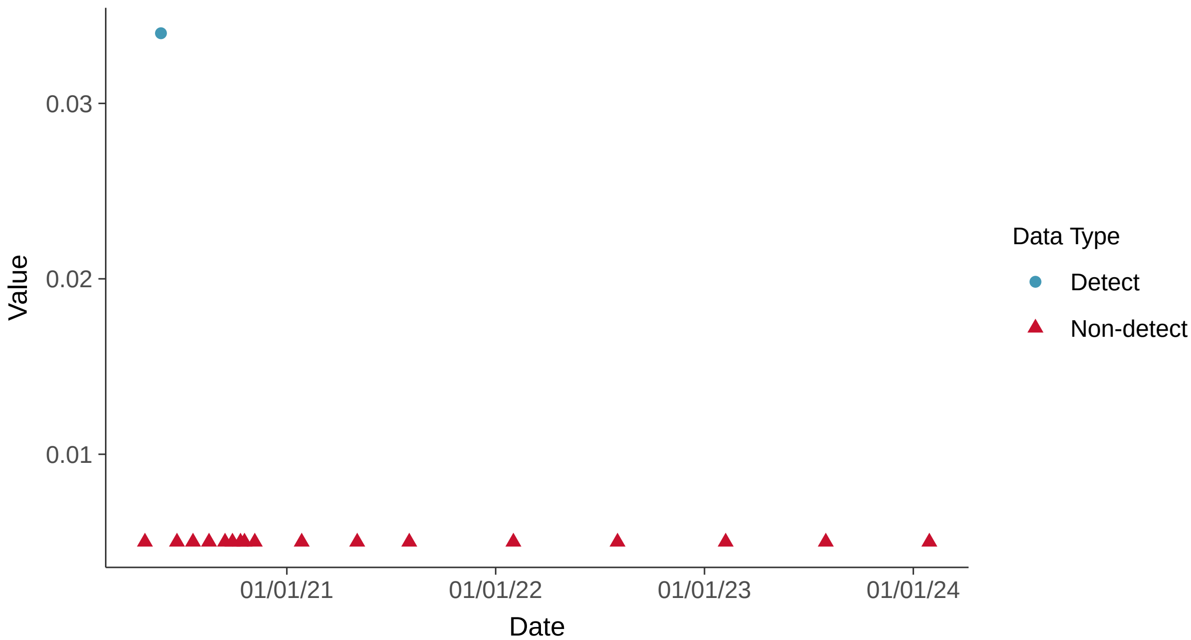


Part 115: Zinc, MW-6

ID: 06_5_42

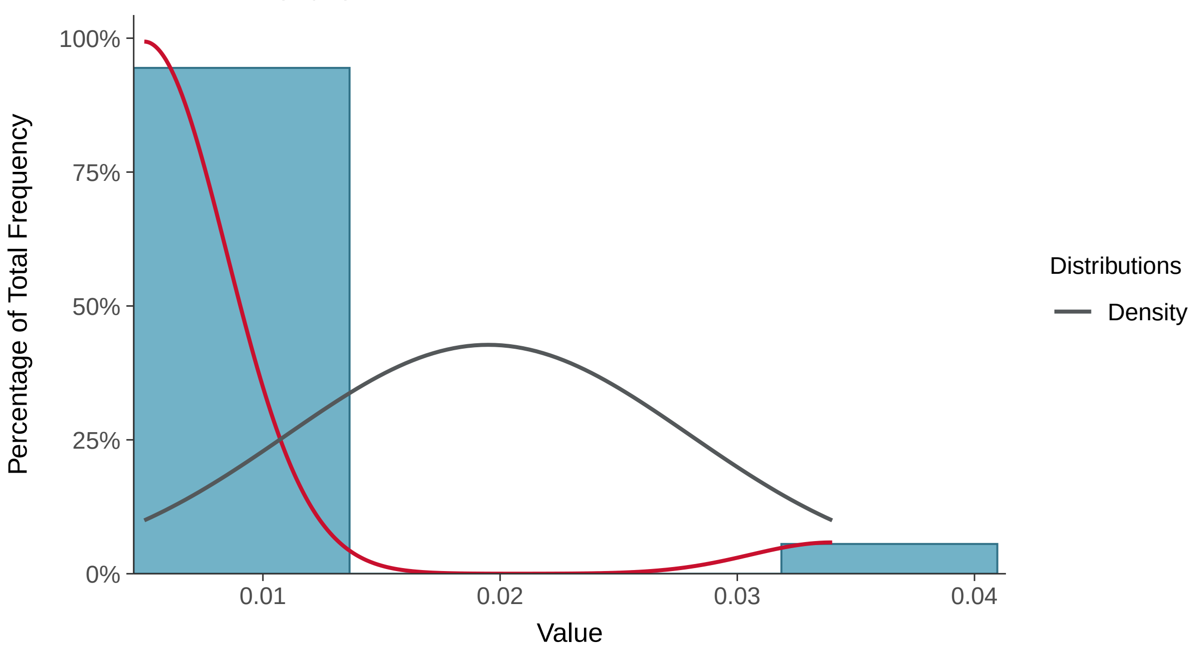
Scatter Plot

Zinc, MW-6 (mg/L)



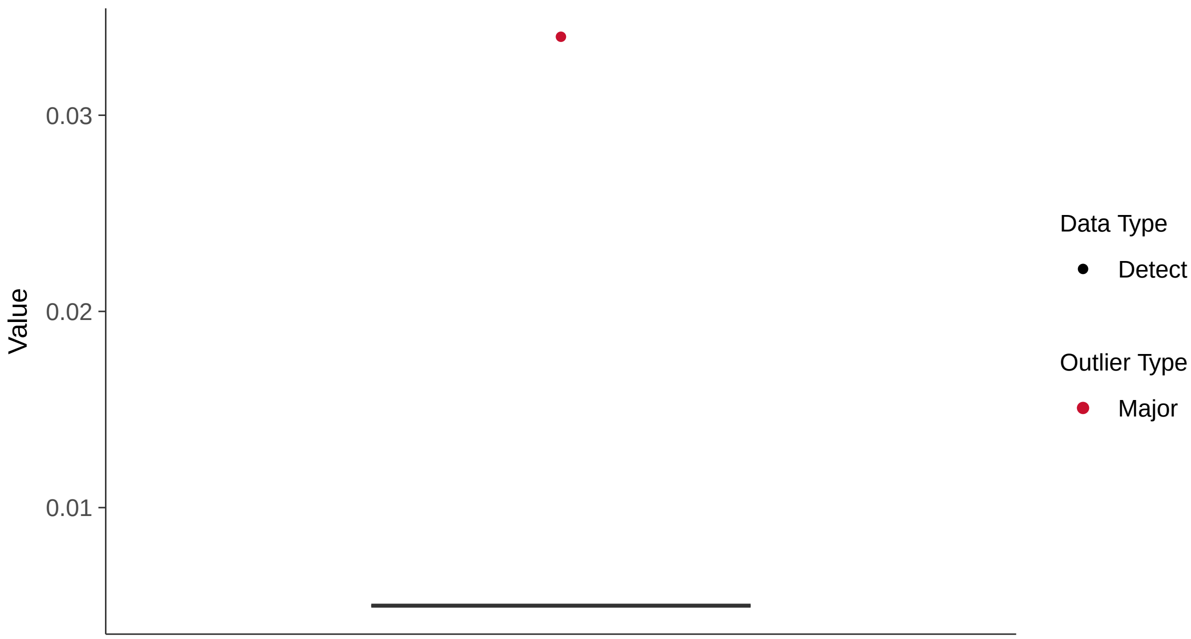
Histogram

Zinc, MW-6 (mg/L)



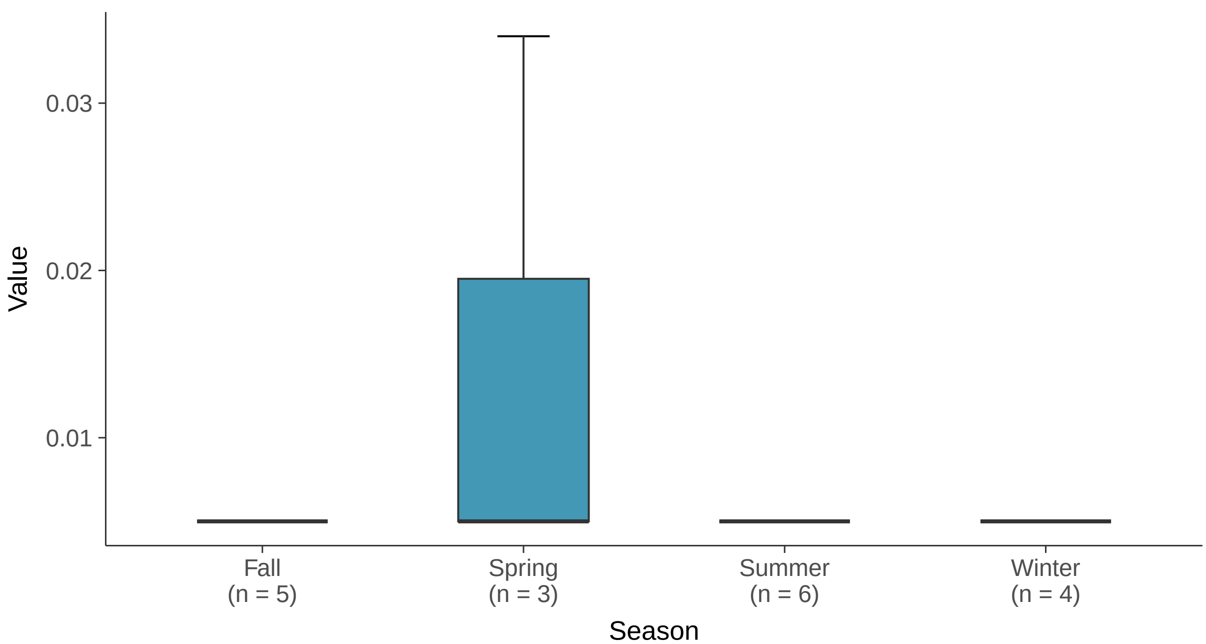
Boxplot

Zinc, MW-6 (mg/L)



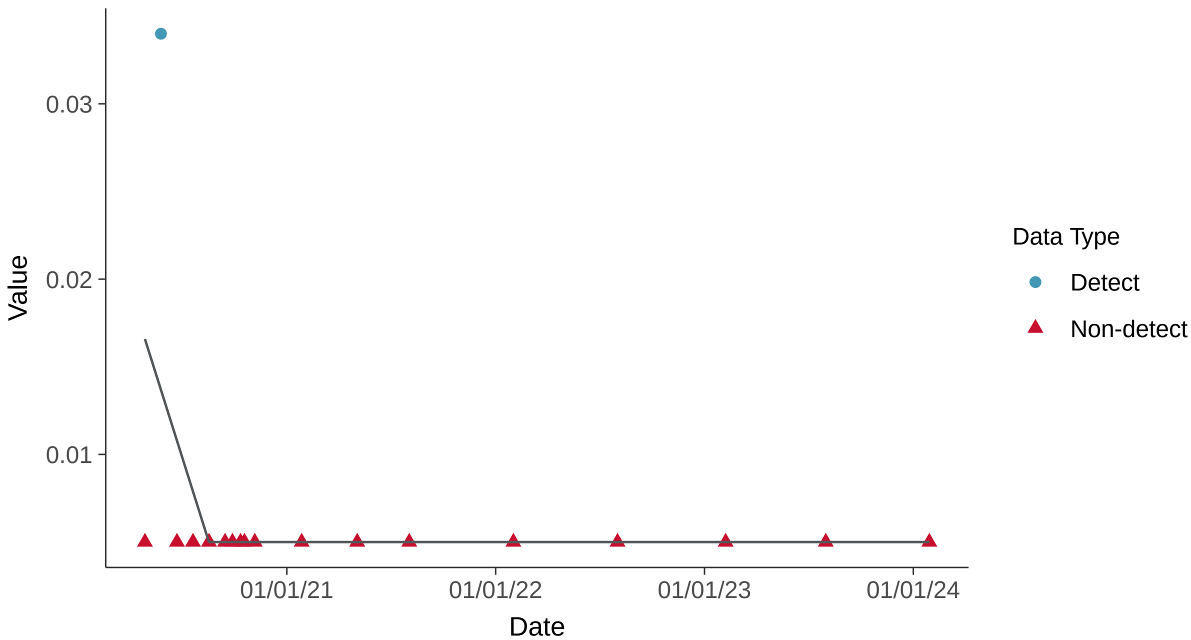
Boxplot by Season

Zinc, MW-6 (mg/L)



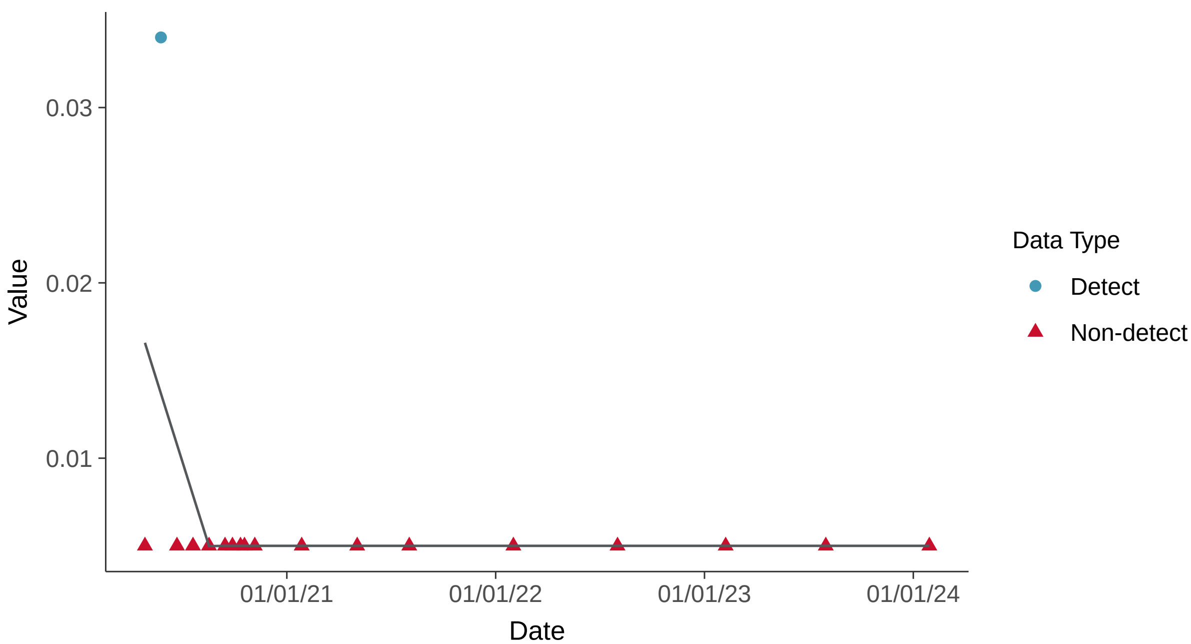
Trend Regression: Piecewise Linear-Linear

Zinc, MW-6 (mg/L)



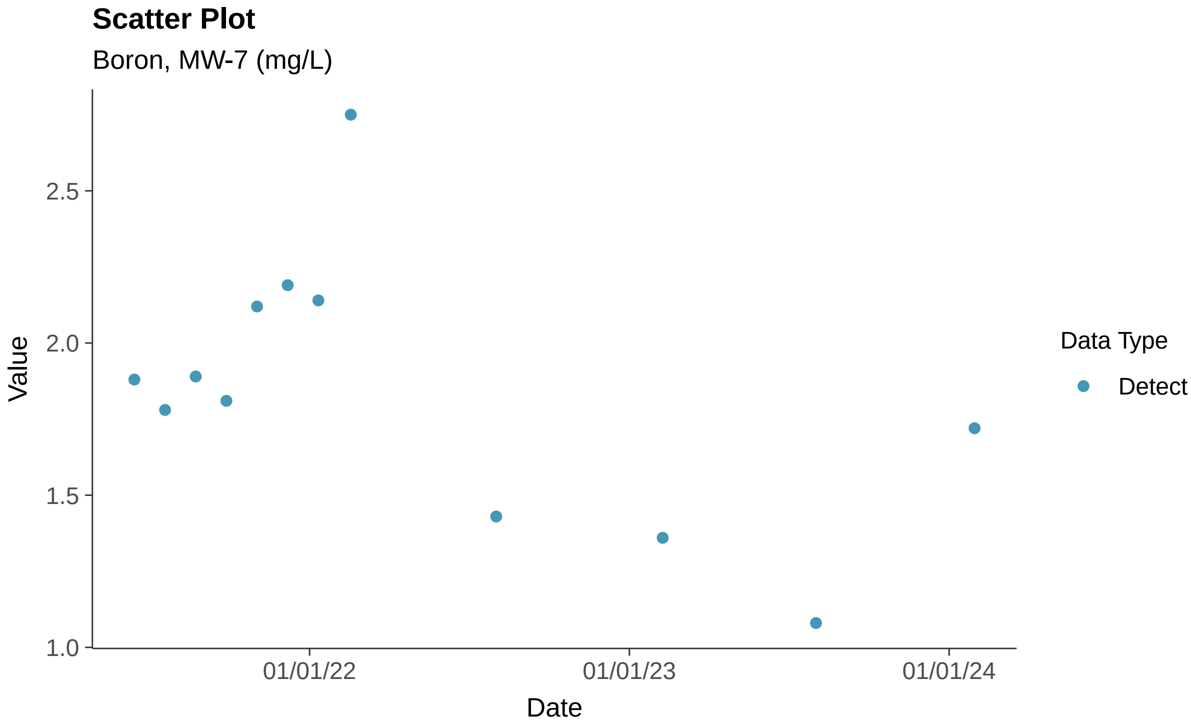
Trend Regression: Piecewise Linear-Linear-Linear

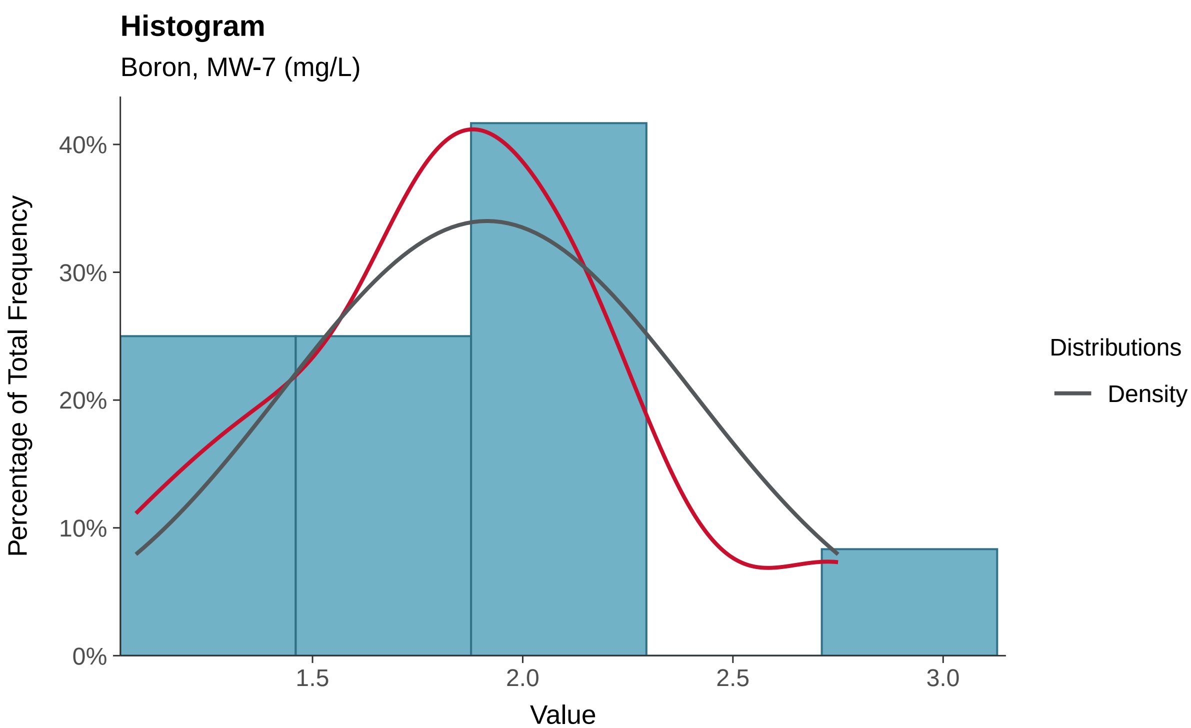
Zinc, MW-6 (mg/L)



Appendix III: Boron, MW-7

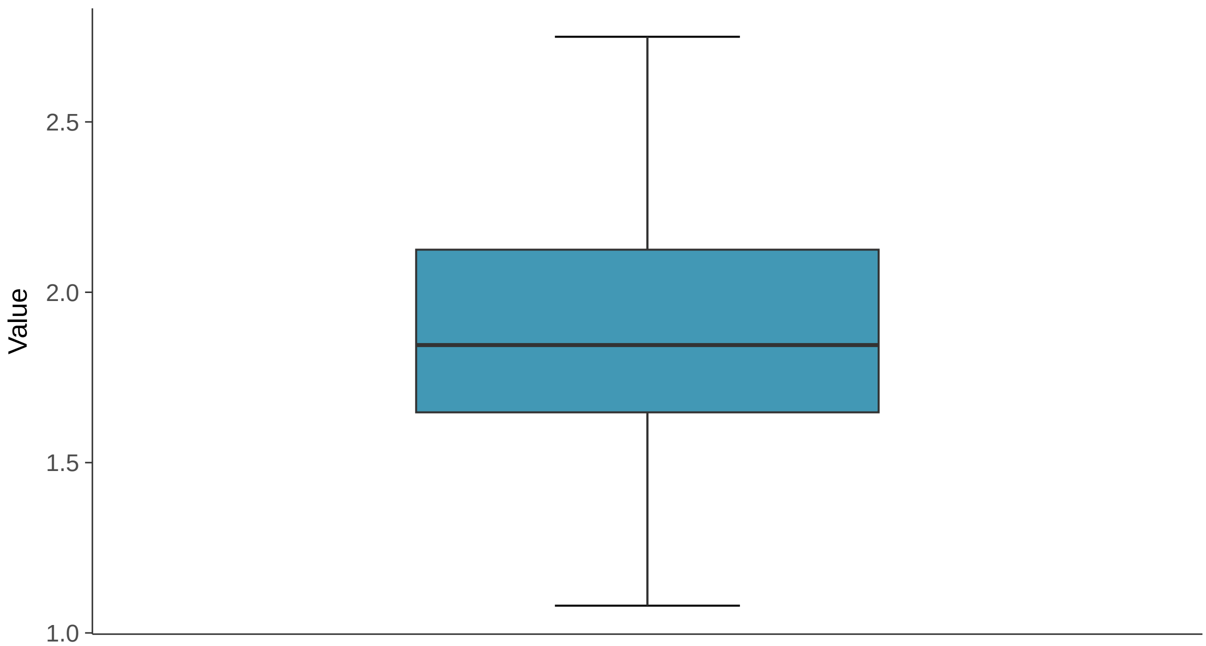
ID: 07_1_01





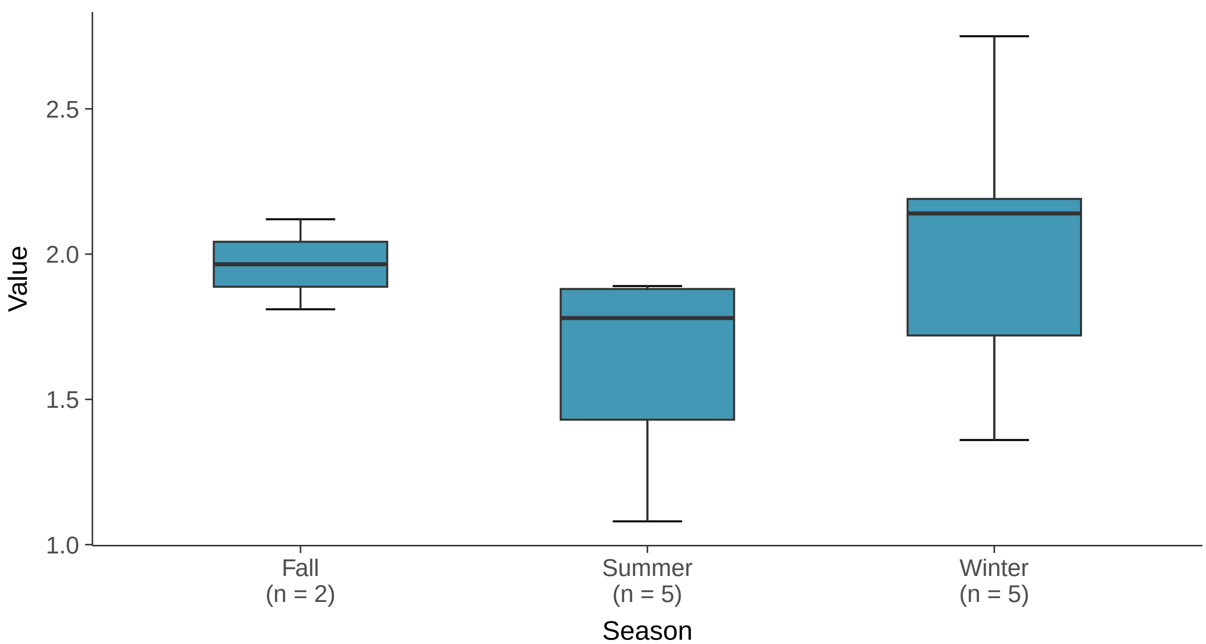
Boxplot

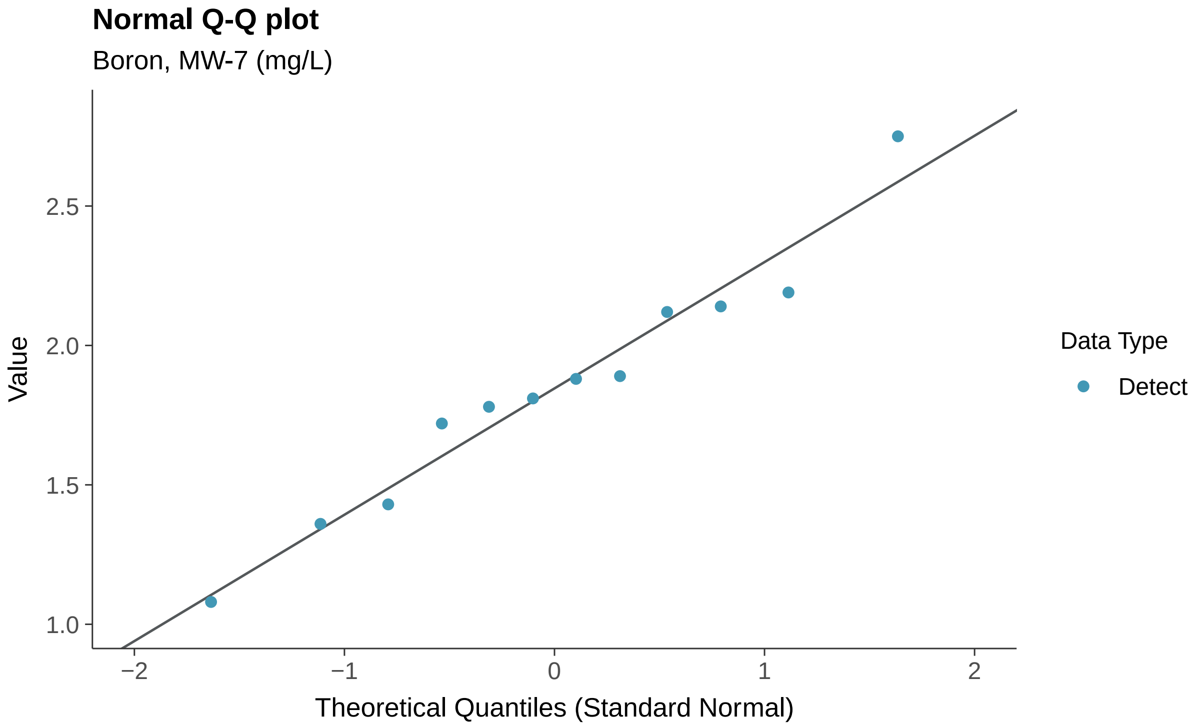
Boron, MW-7 (mg/L)

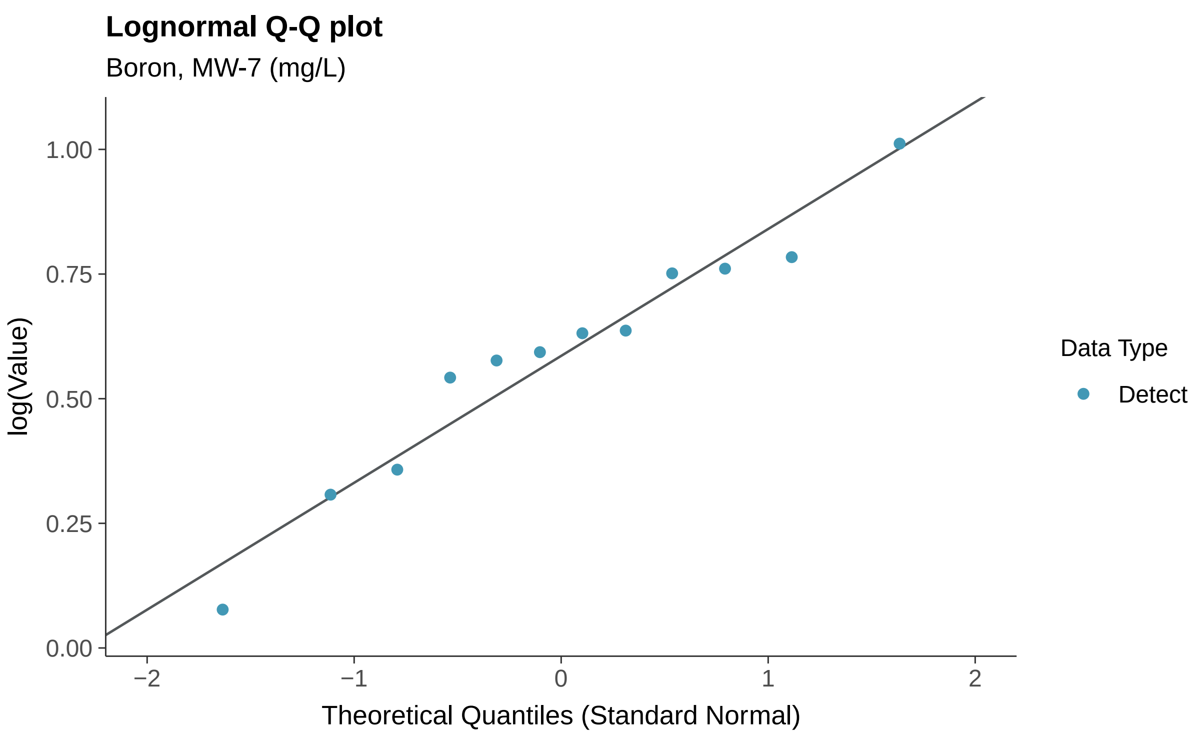


Boxplot by Season

Boron, MW-7 (mg/L)

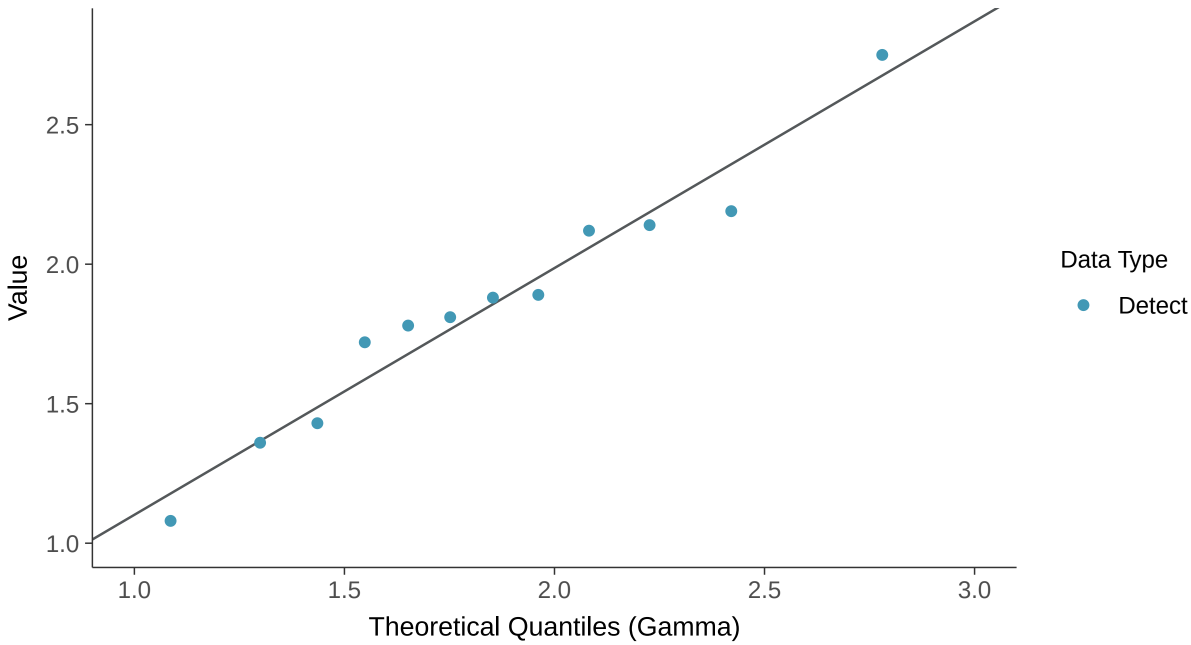



Normal Q-Q plot
Boron, MW-7 (mg/L)
Value
2.5
2.0
1.5
1.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Boron, MW-7 (mg/L)
log(Value)
1.00
0.75
0.50
0.25
0.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

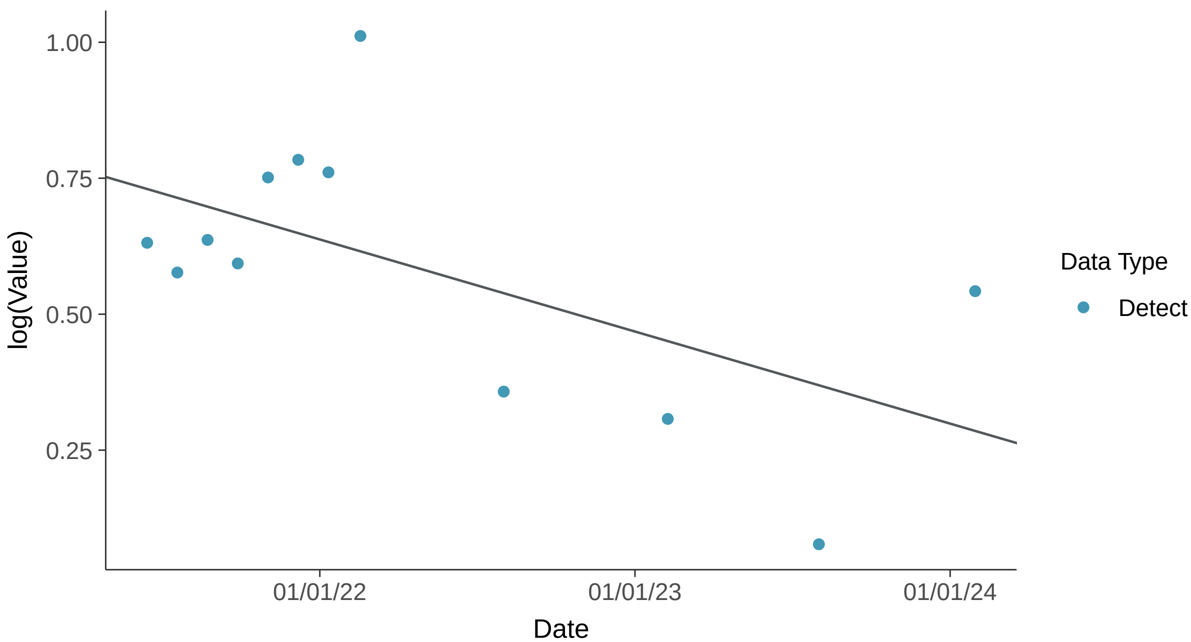
Gamma Q-Q plot

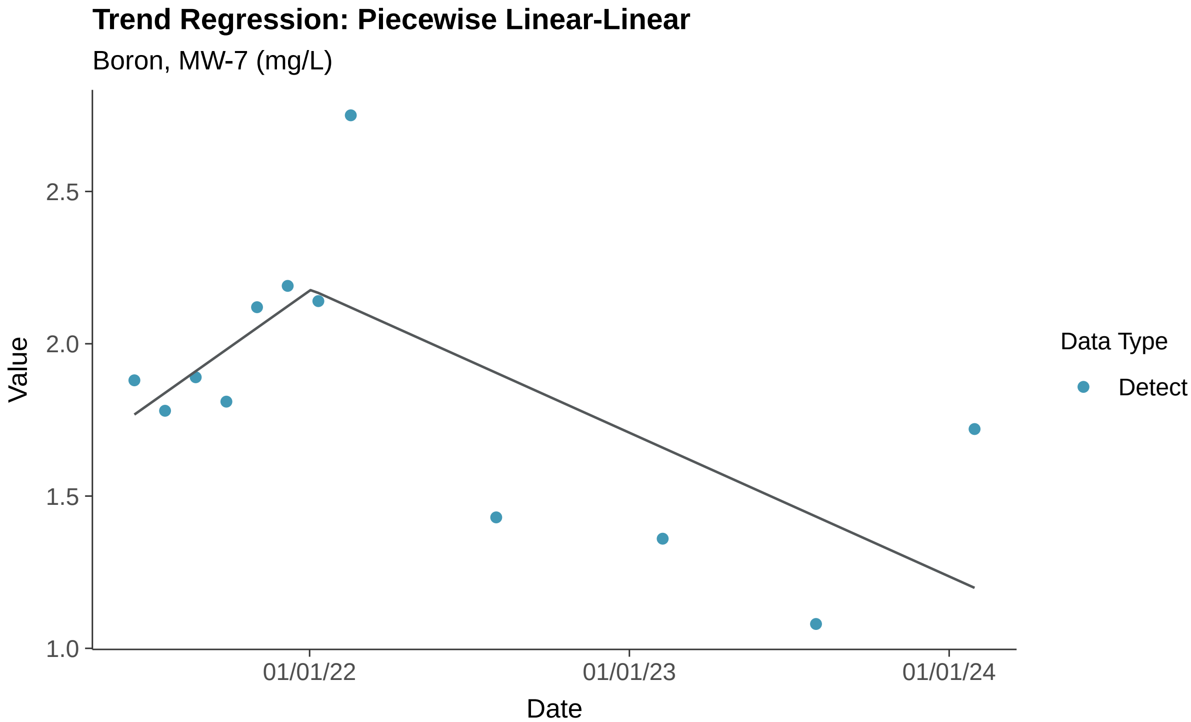
Boron, MW-7 (mg/L)

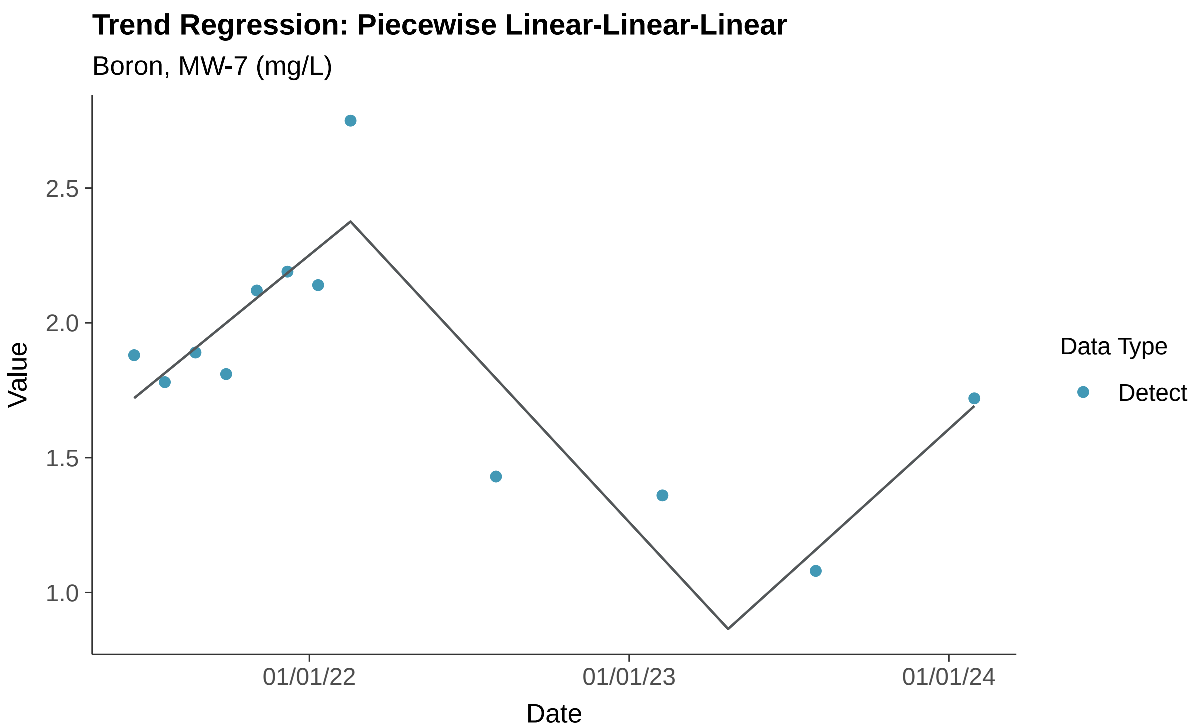


Trend Regression: Lognormal MLE

Boron, MW-7 (mg/L)

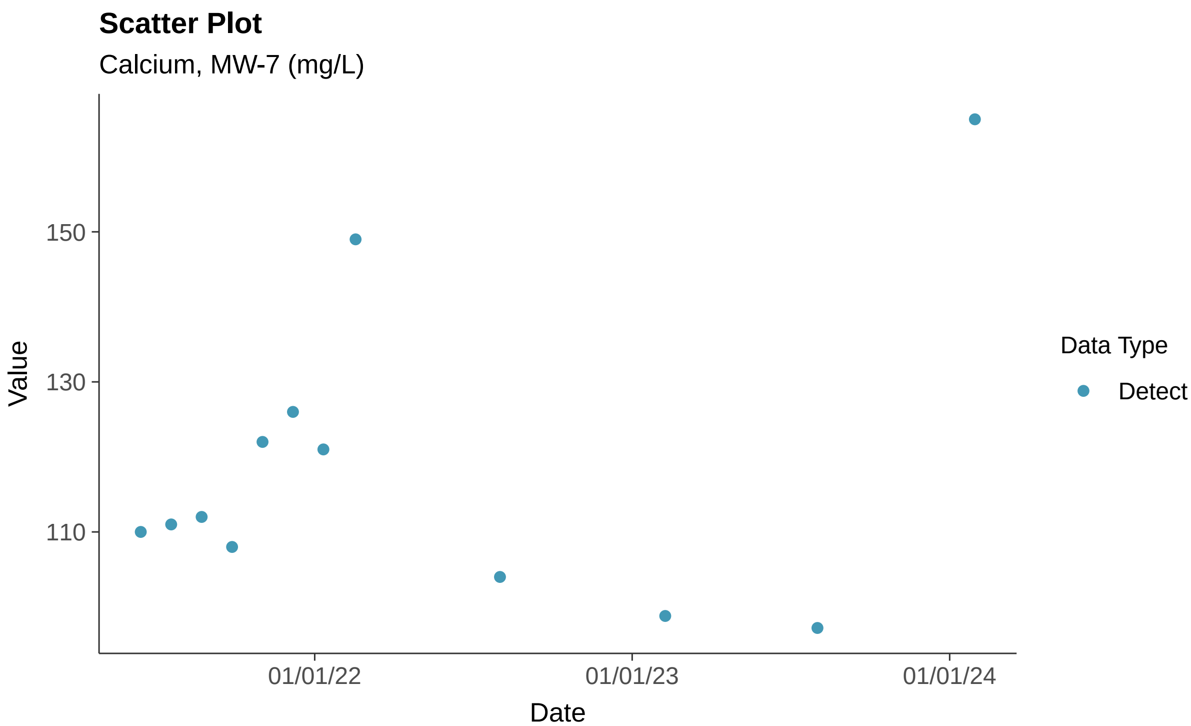


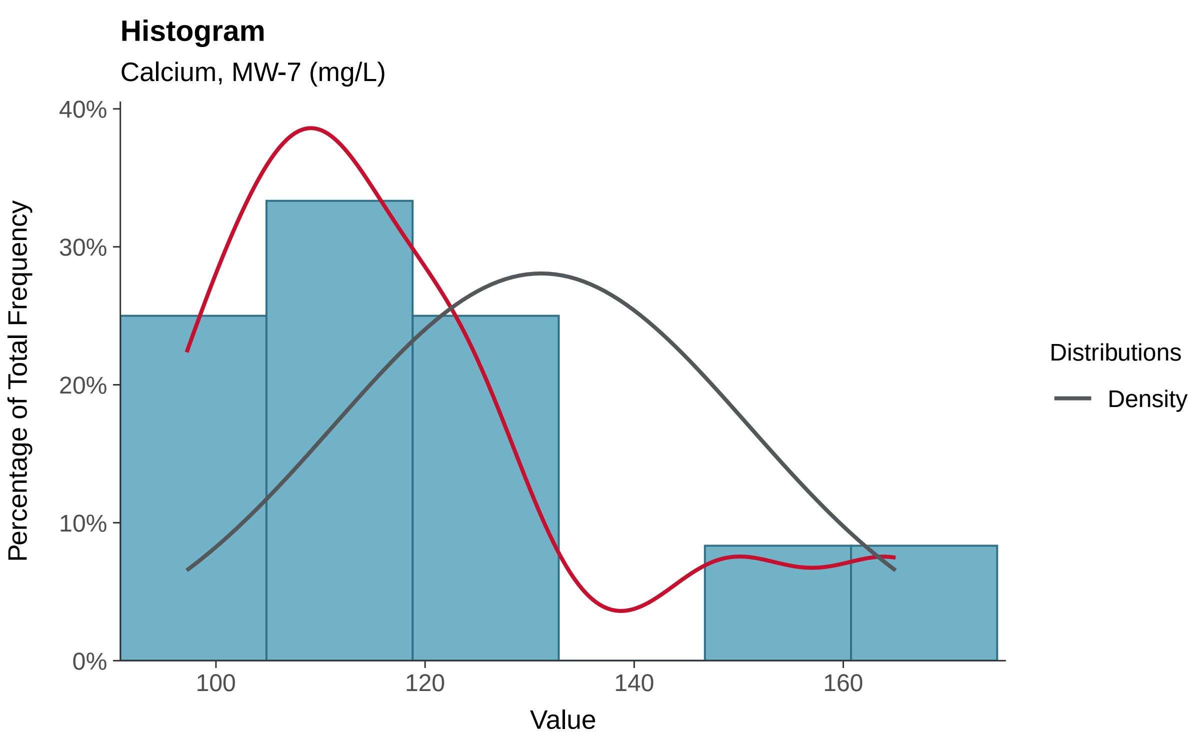

Trend Regression: Piecewise Linear-Linear
Boron, MW-7 (mg/L)
Value
2.5
2.0
1.5
1.0
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Boron, MW-7 (mg/L)
Value
2.5
2.0
1.5
1.0
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Appendix III: Calcium, MW-7

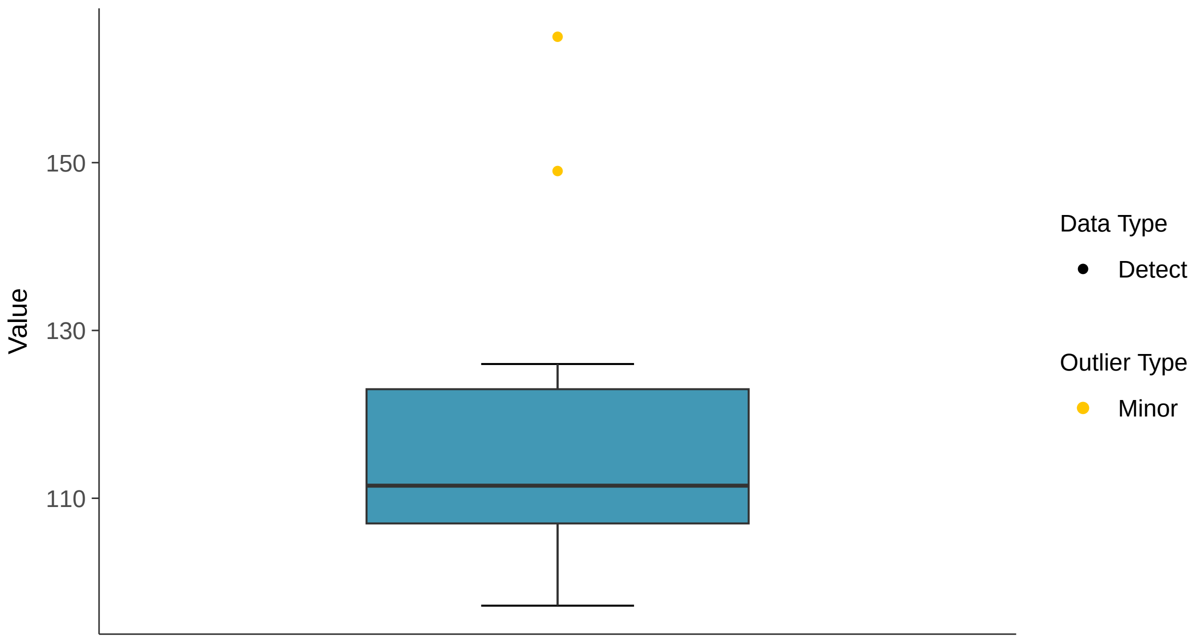
ID: 07_1_02





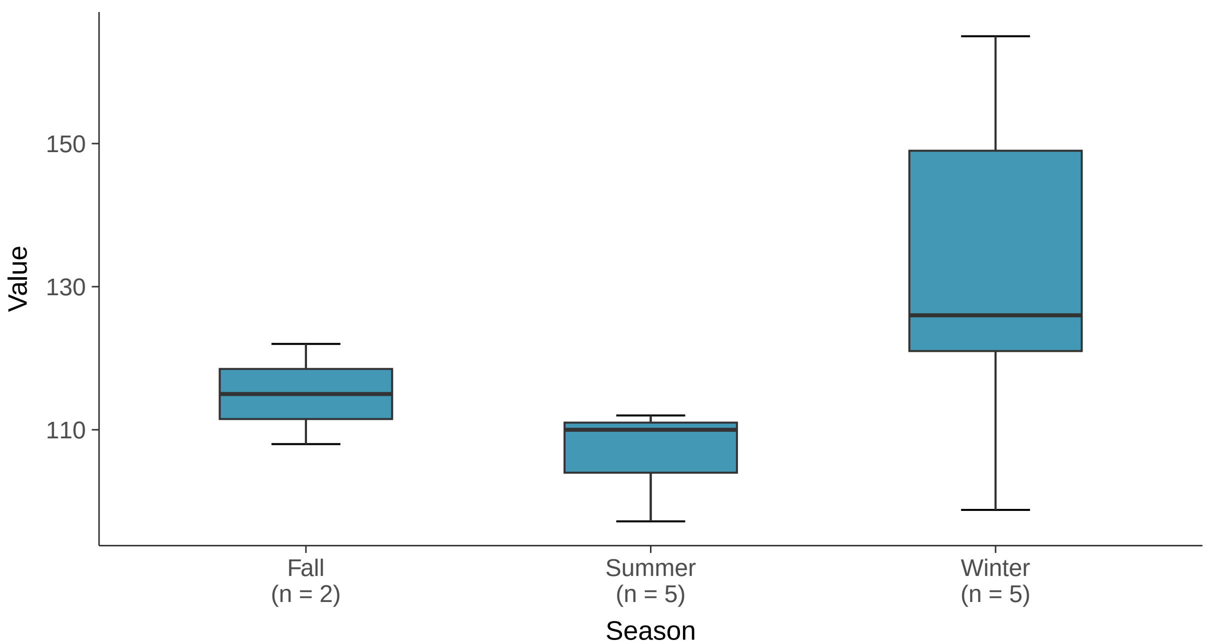
Boxplot

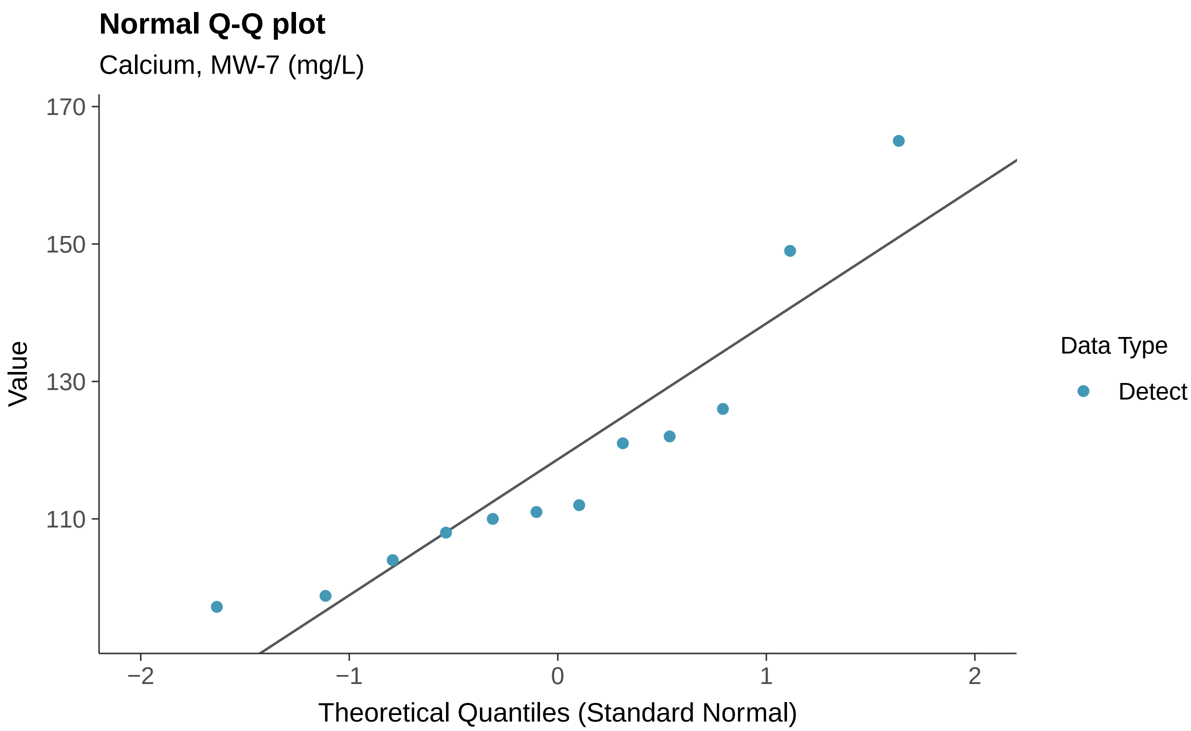
Calcium, MW-7 (mg/L)

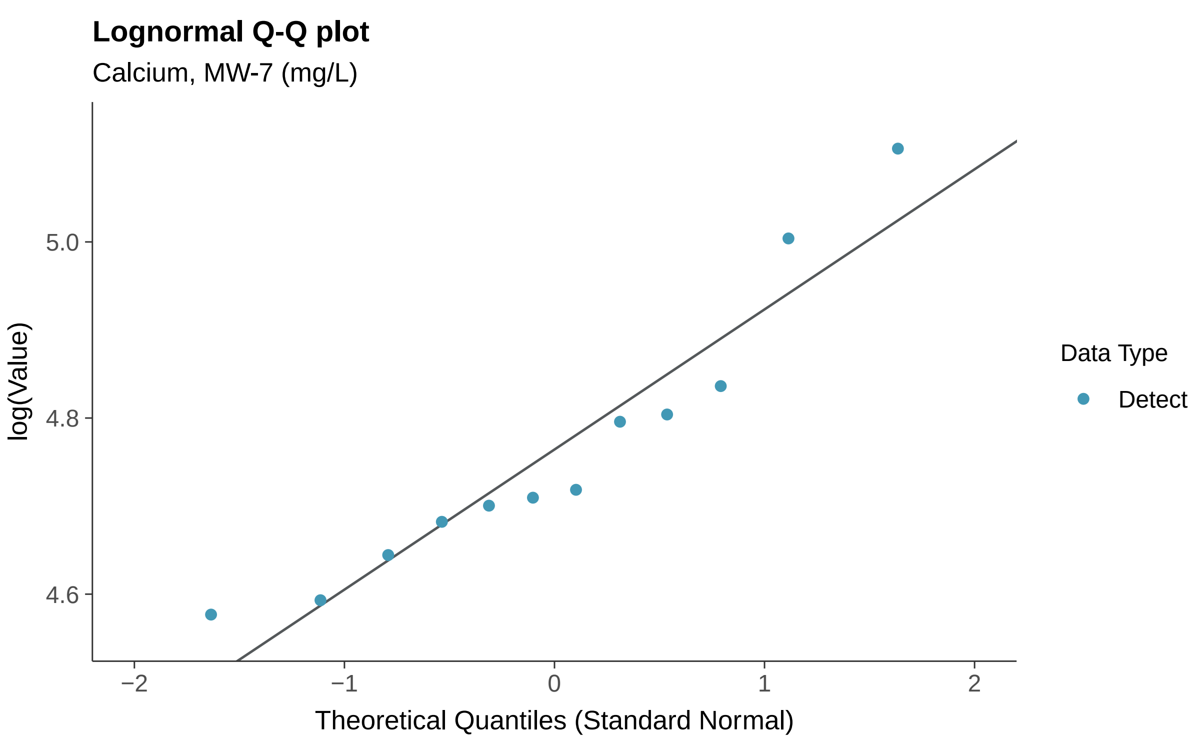


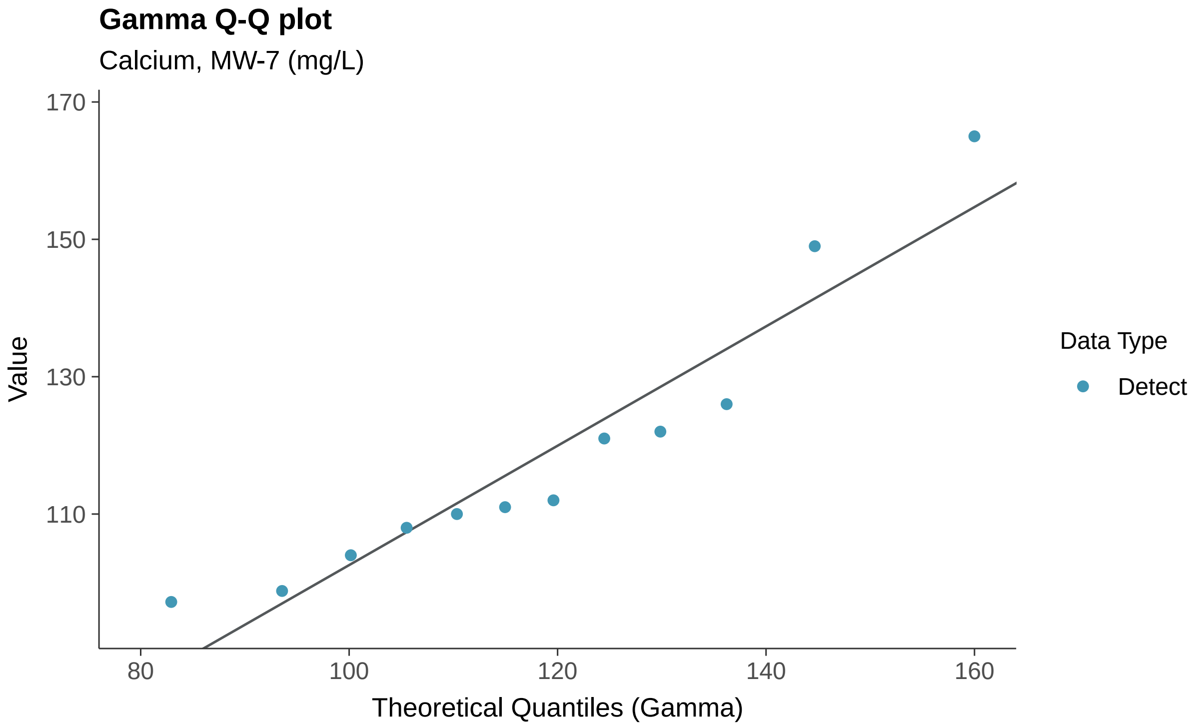
Boxplot by Season

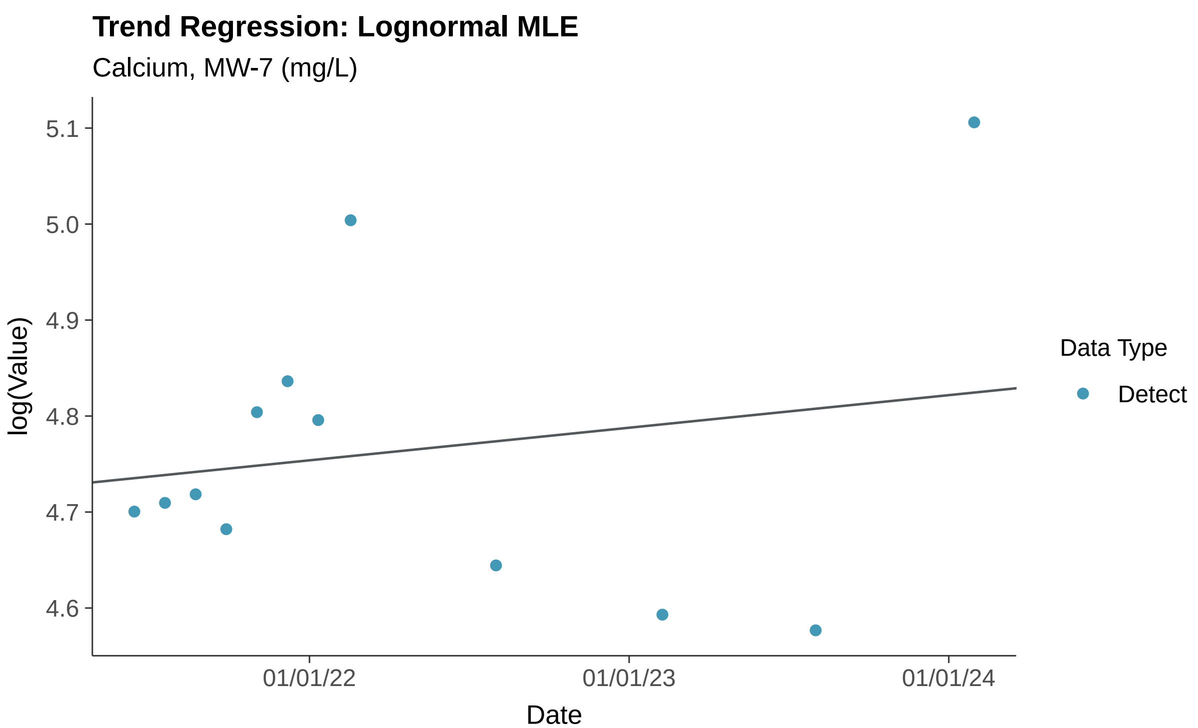
Calcium, MW-7 (mg/L)




Normal Q-Q plot
Calcium, MW-7 (mg/L)
Value
170
150
130
110
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

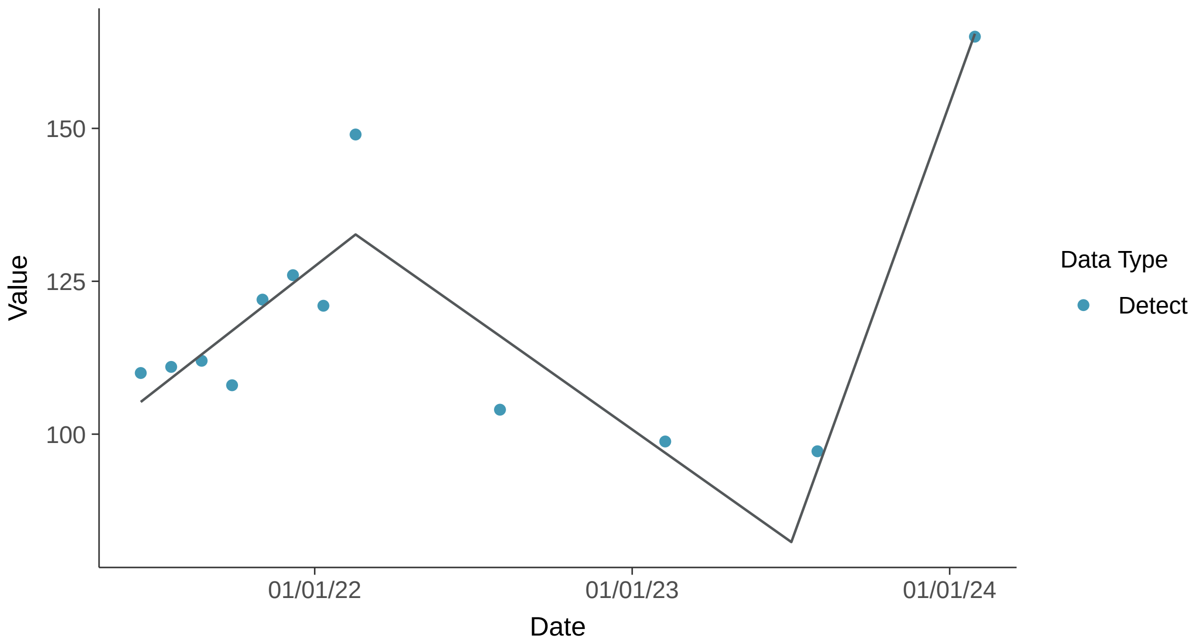

Lognormal Q-Q plot
Calcium, MW-7 (mg/L)
log(Value)
5.0
4.8
4.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Calcium, MW-7 (mg/L)
Value
170
150
130
110
80
100
120
140
160
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Calcium, MW-7 (mg/L)
log(Value)
5.1
5.0
4.9
4.8
4.7
4.6
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

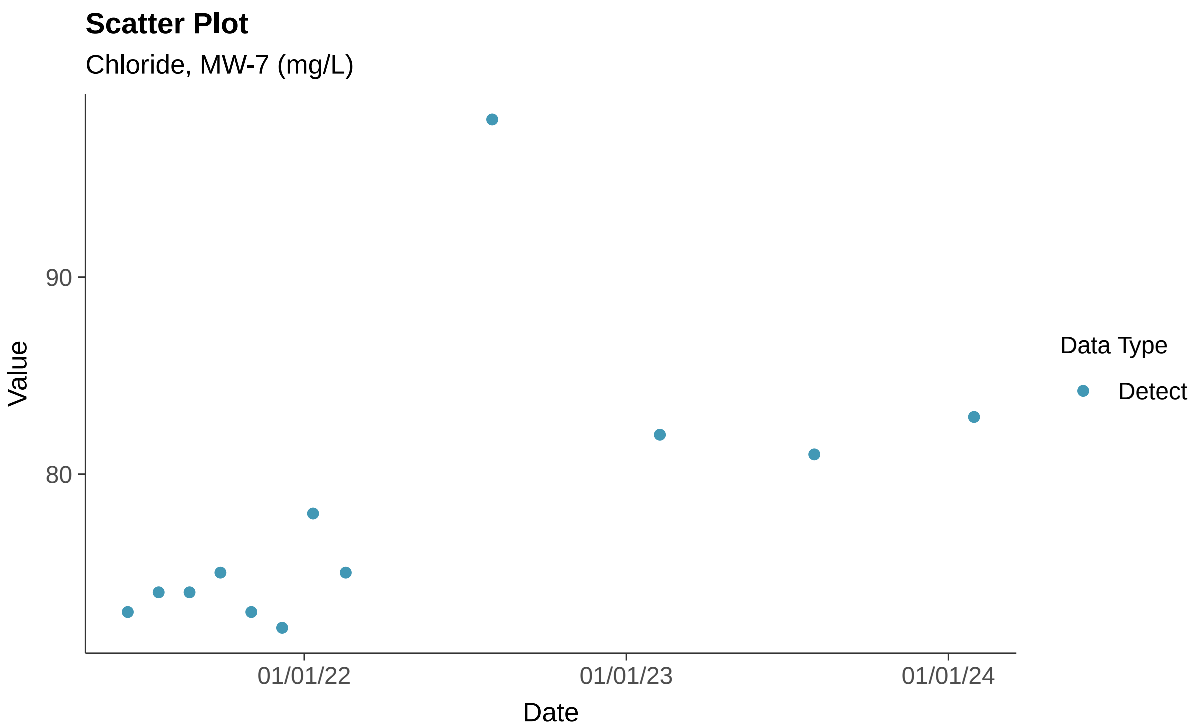
Trend Regression: Piecewise Linear-Linear-Linear

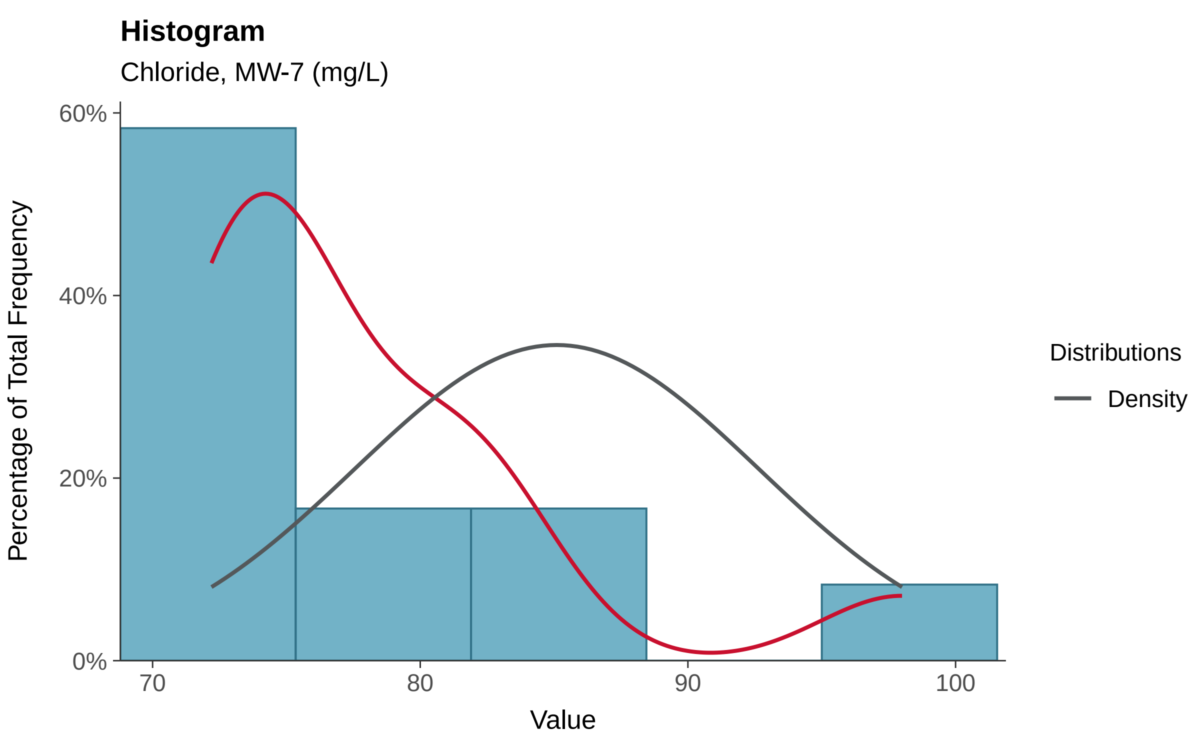
Calcium, MW-7 (mg/L)



Appendix III: Chloride, MW-7

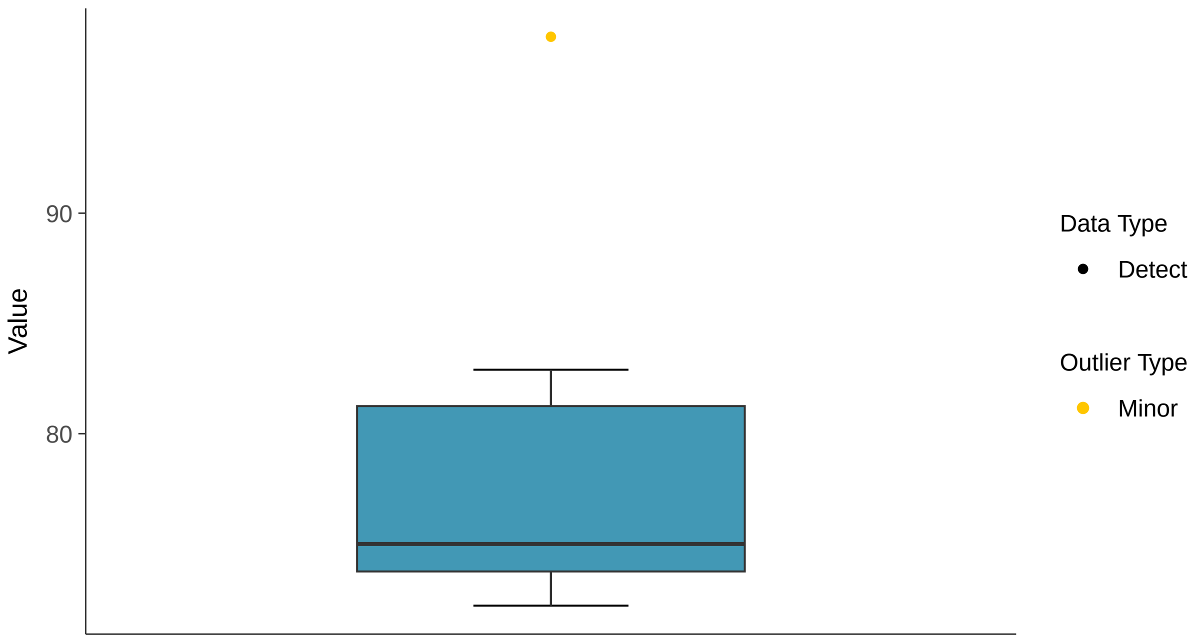
ID: 07_1_03





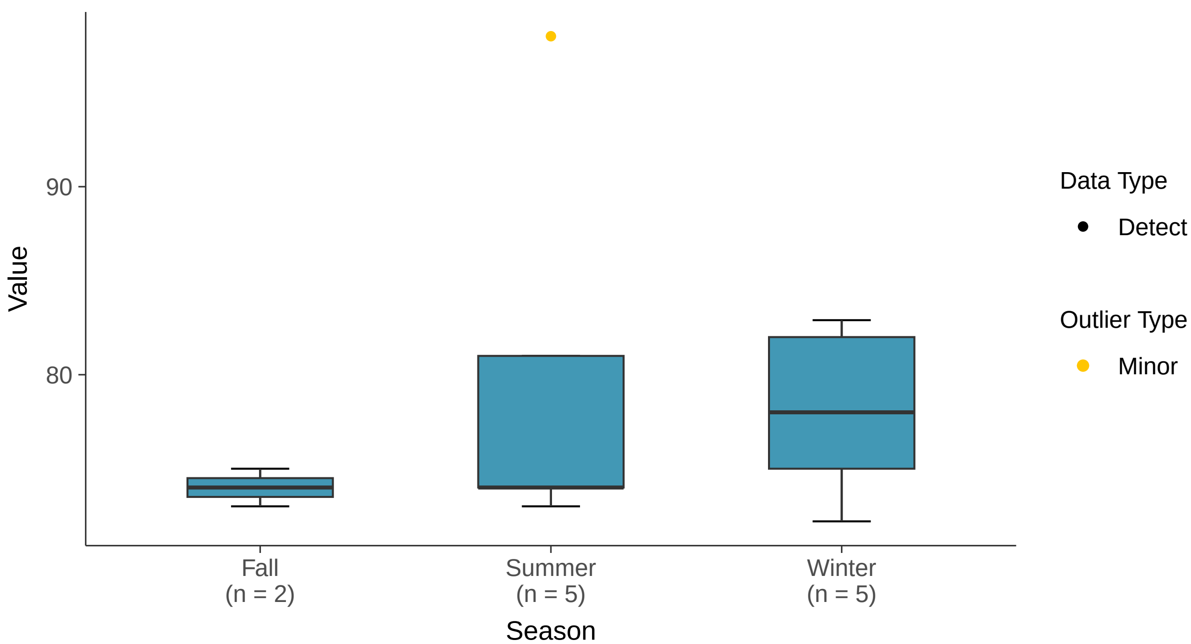
Boxplot

Chloride, MW-7 (mg/L)



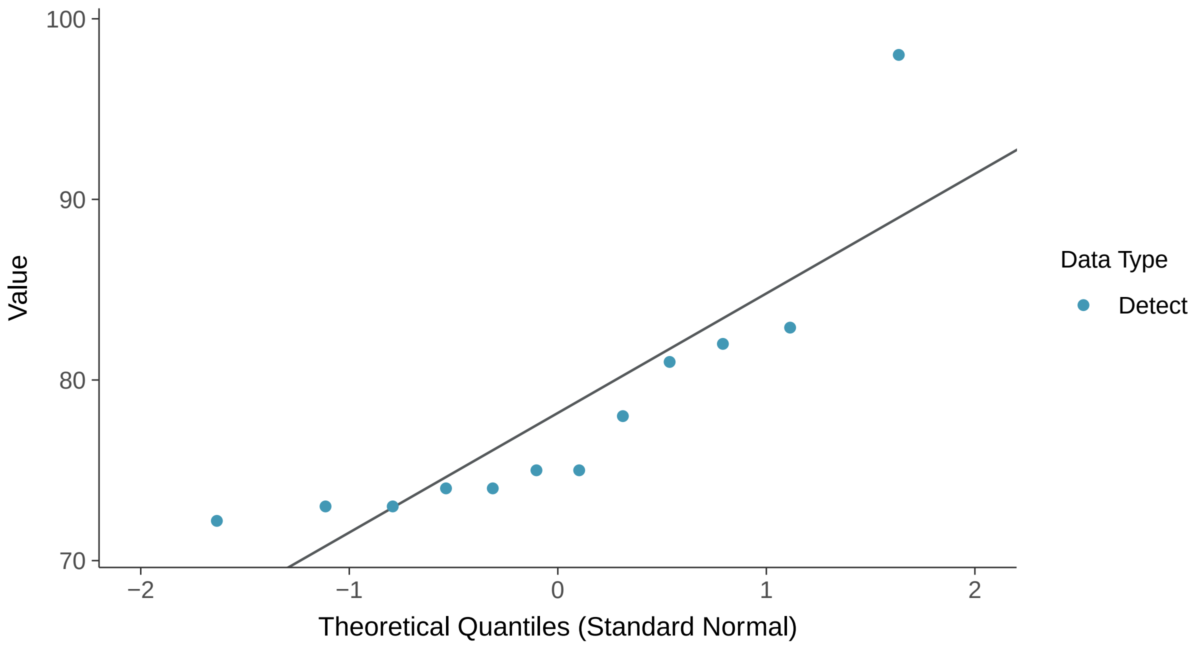
Boxplot by Season

Chloride, MW-7 (mg/L)



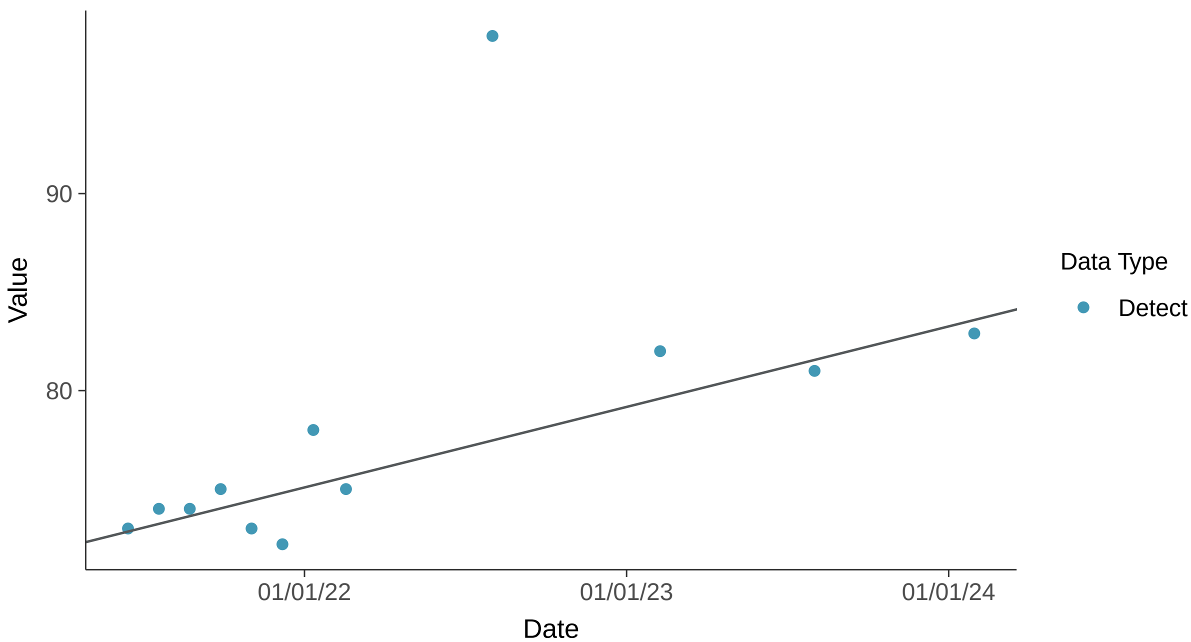
Normal Q-Q plot

Chloride, MW-7 (mg/L)



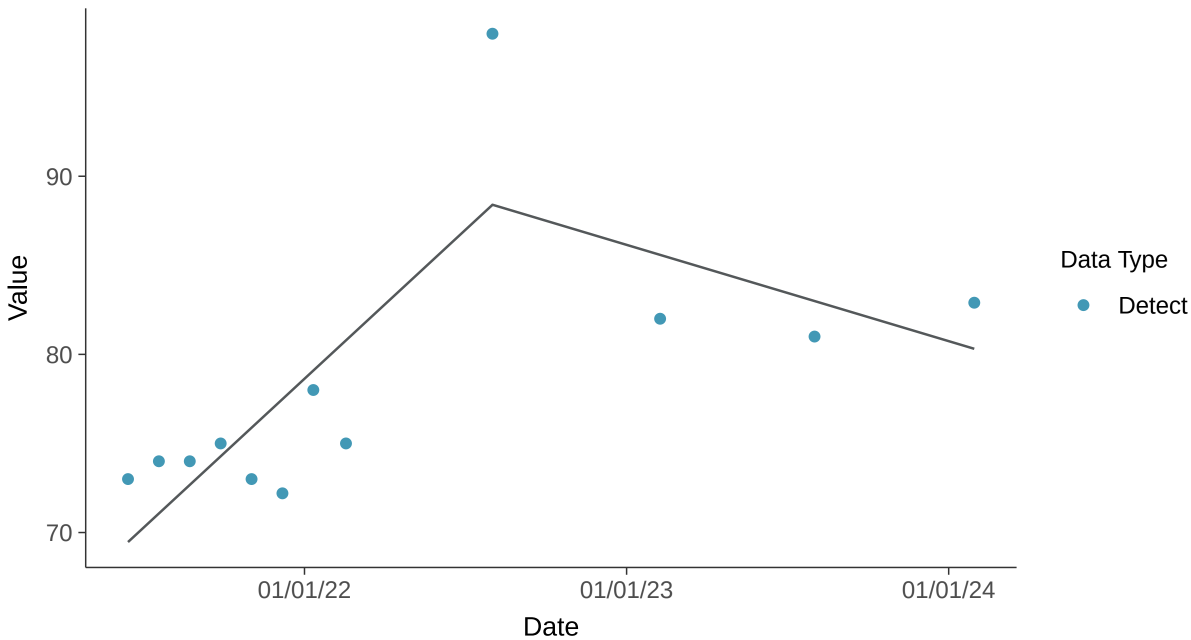
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Chloride, MW-7 (mg/L)



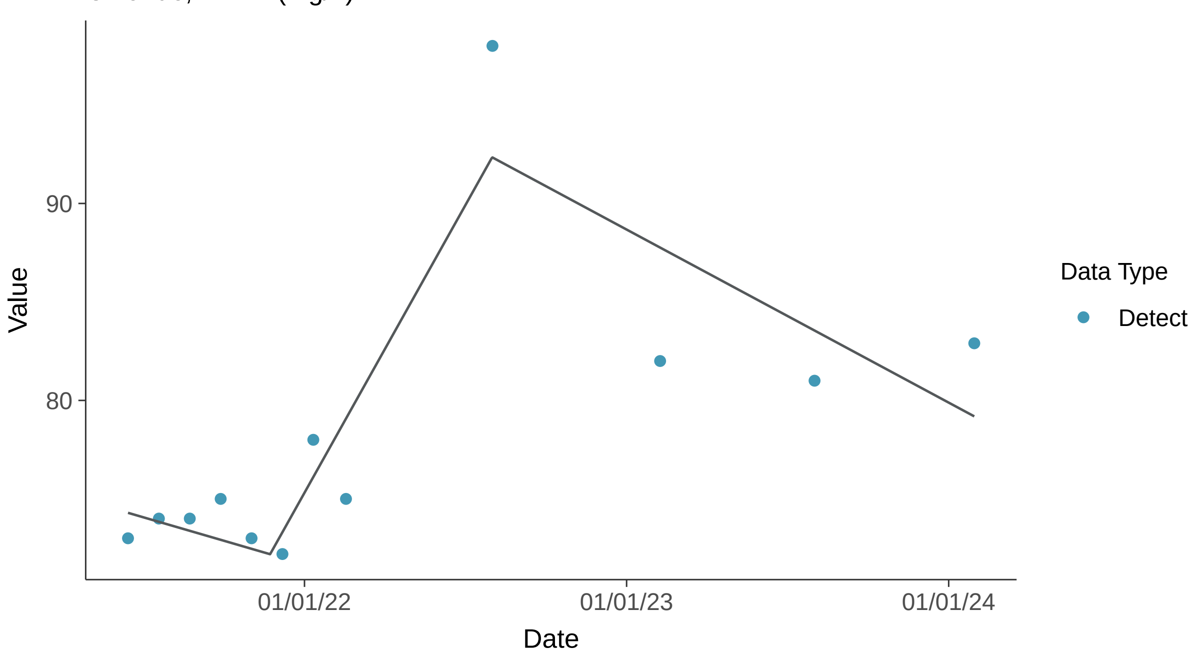
Trend Regression: Piecewise Linear-Linear

Chloride, MW-7 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Chloride, MW-7 (mg/L)

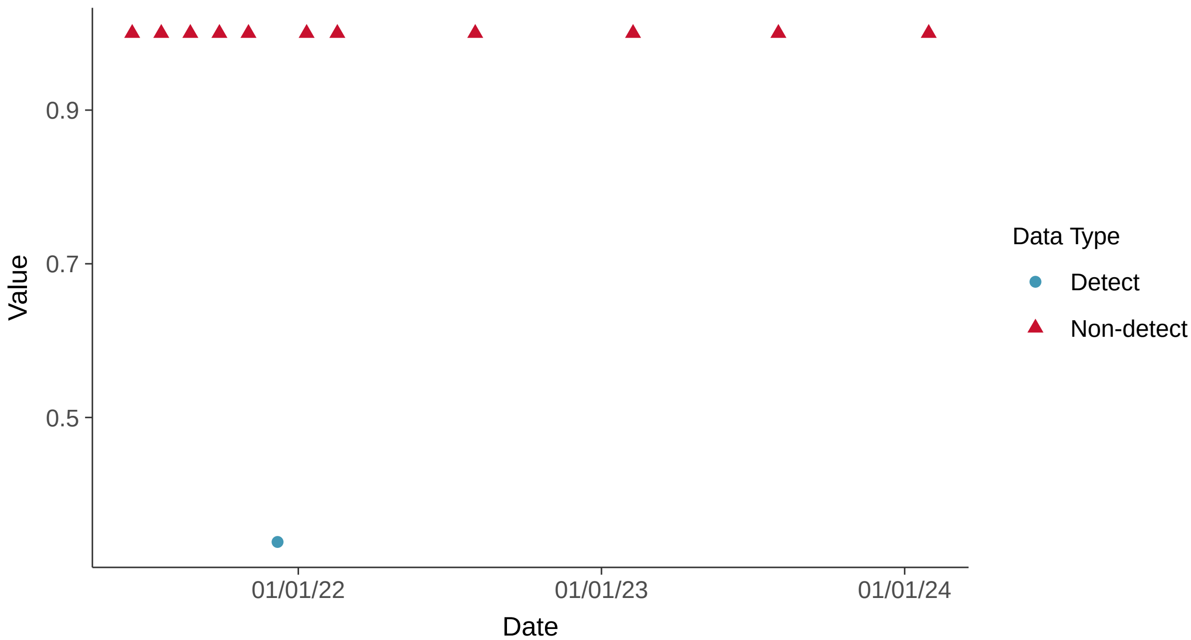


Appendix III: Fluoride, MW-7

ID: 07_1_04

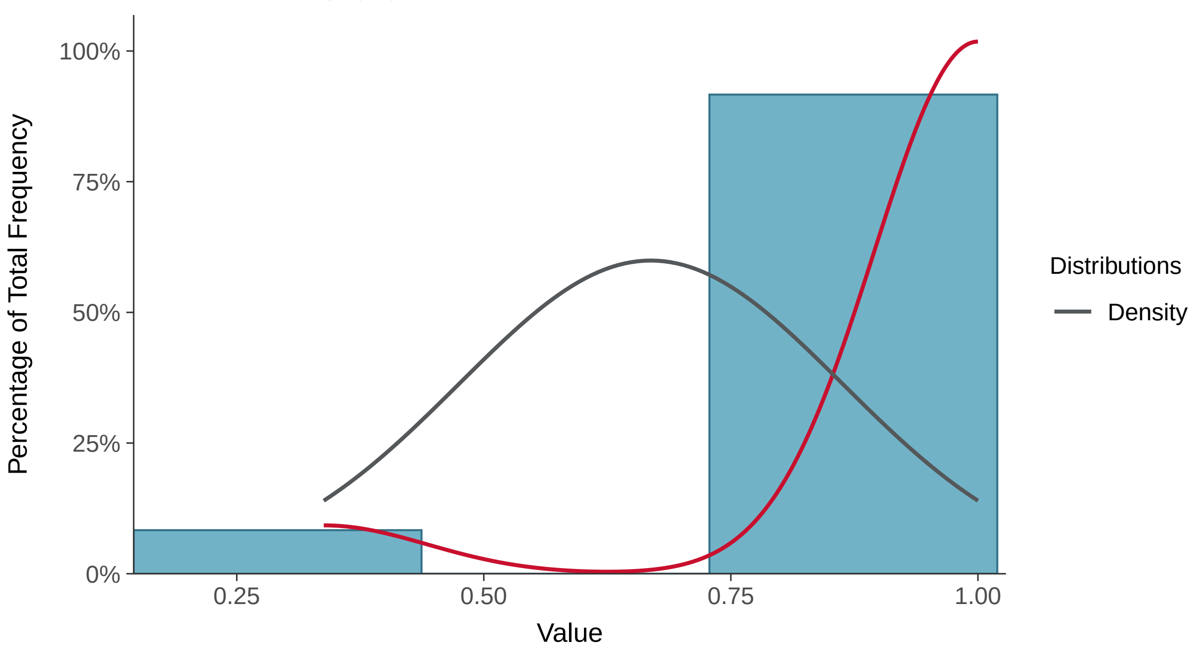
Scatter Plot

Fluoride, MW-7 (mg/L)



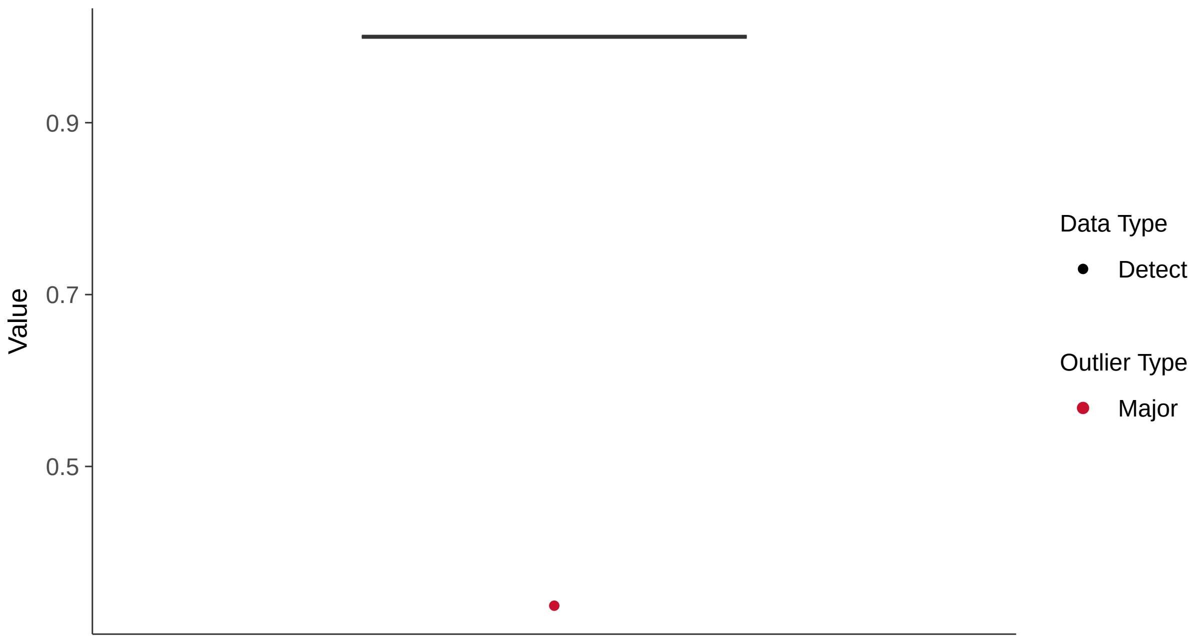
Histogram

Fluoride, MW-7 (mg/L)



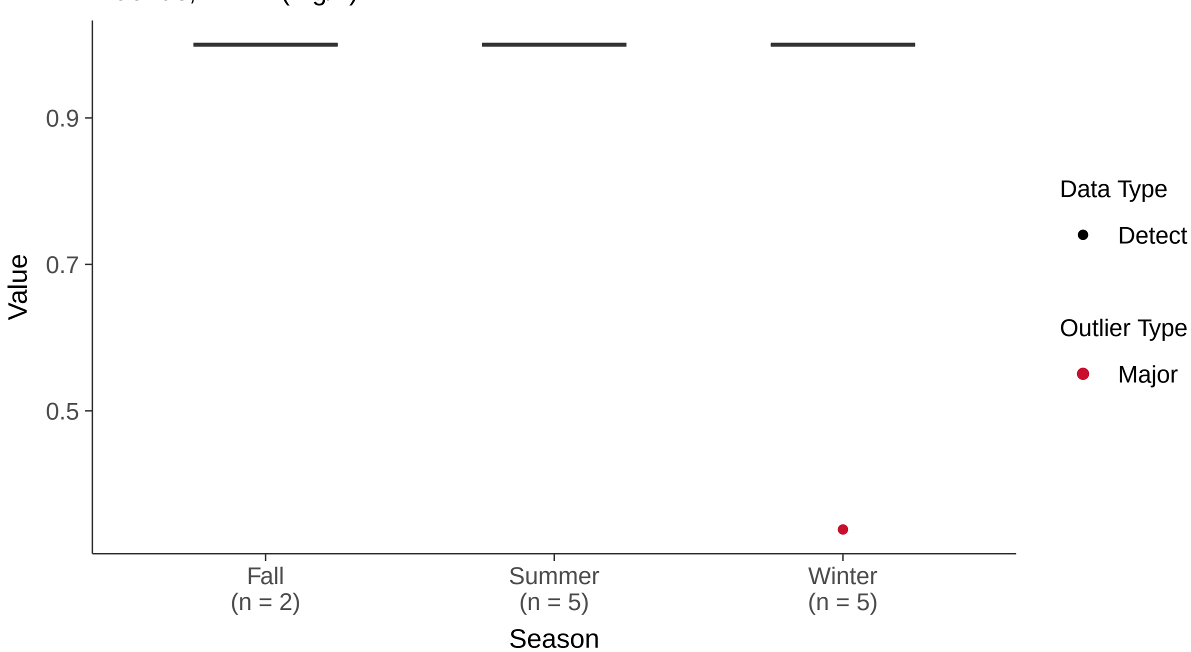
Boxplot

Fluoride, MW-7 (mg/L)



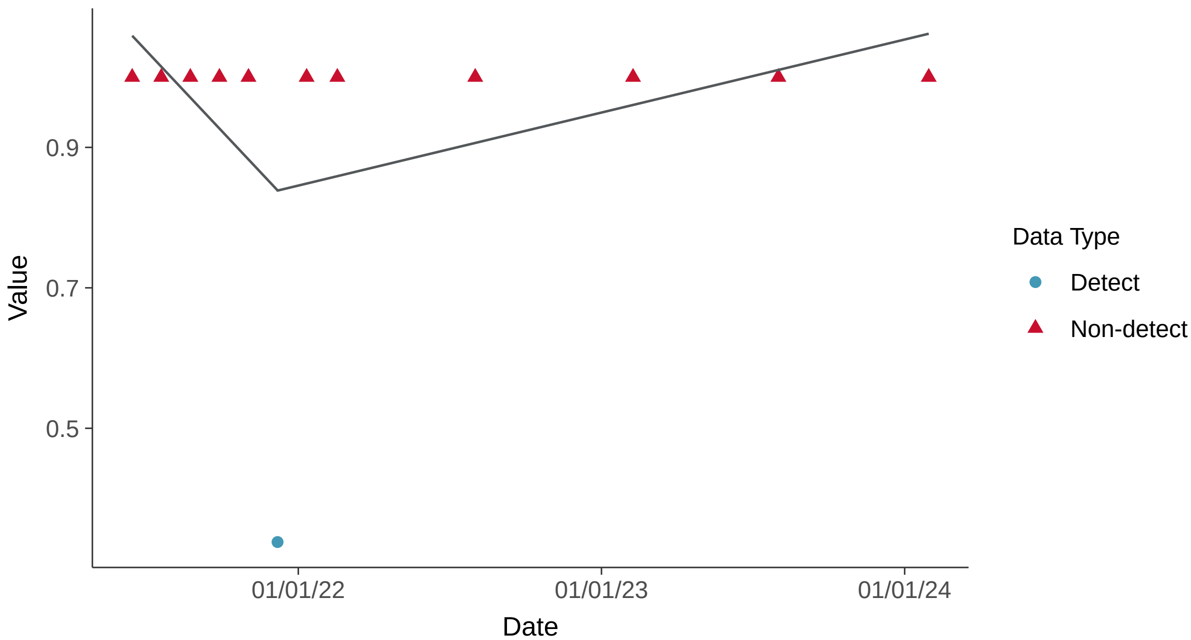
Boxplot by Season

Fluoride, MW-7 (mg/L)



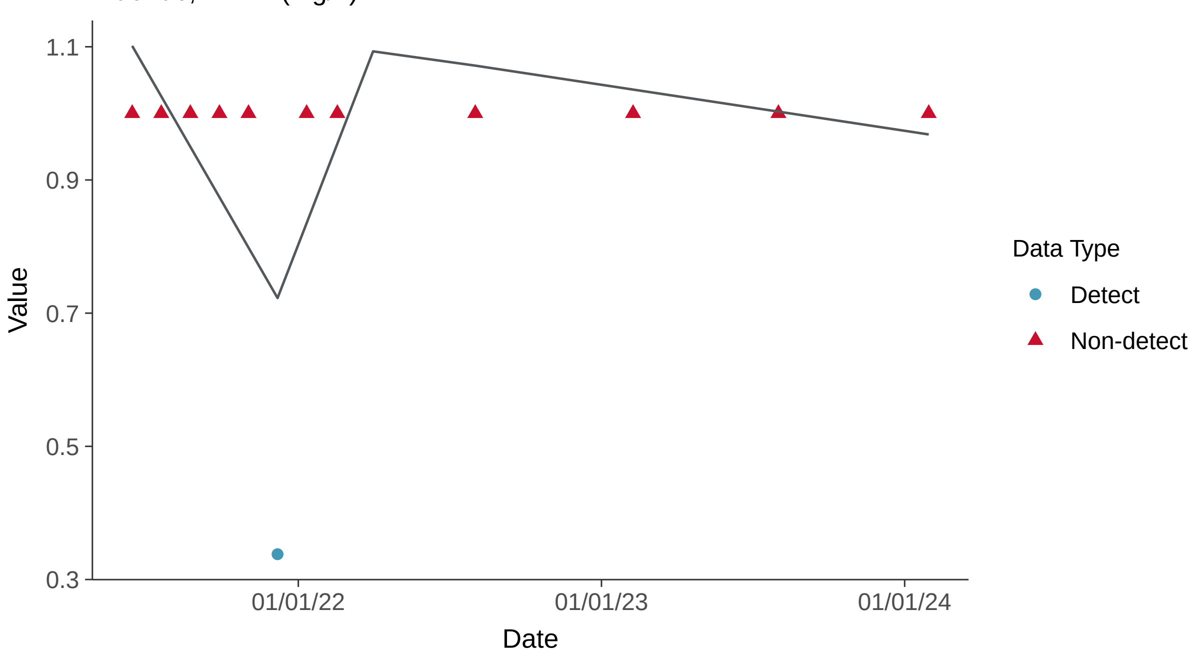
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-7 (mg/L)



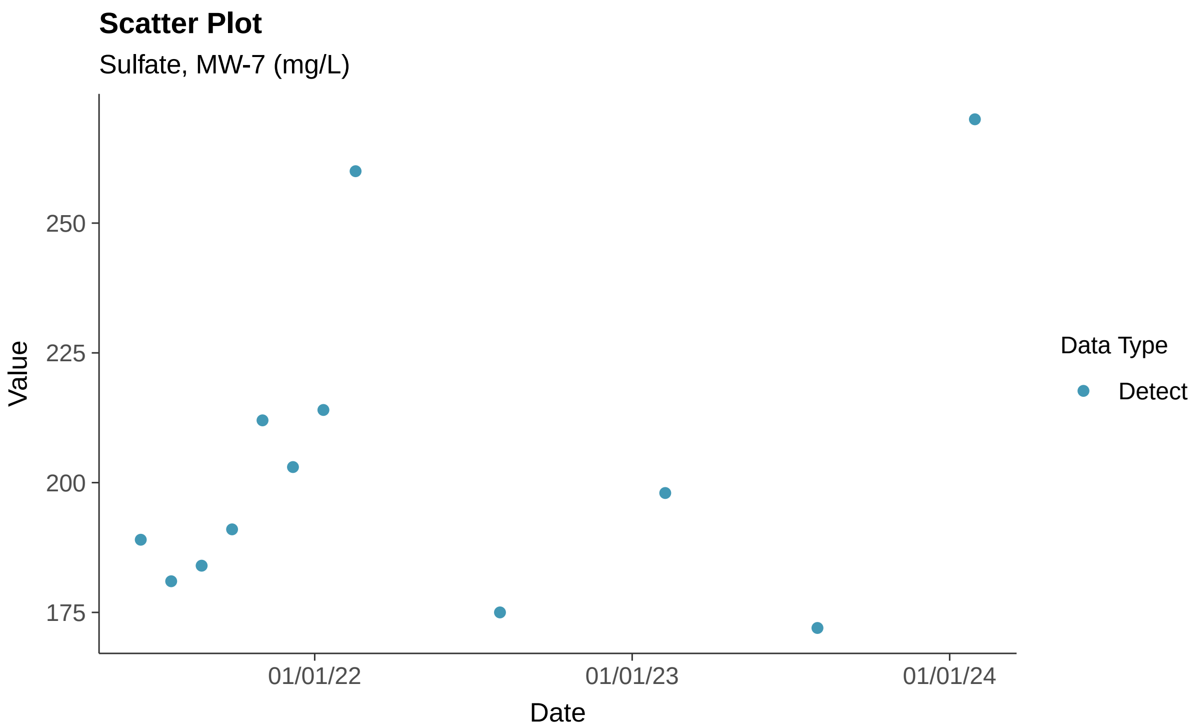
Trend Regression: Piecewise Linear-Linear-Linear

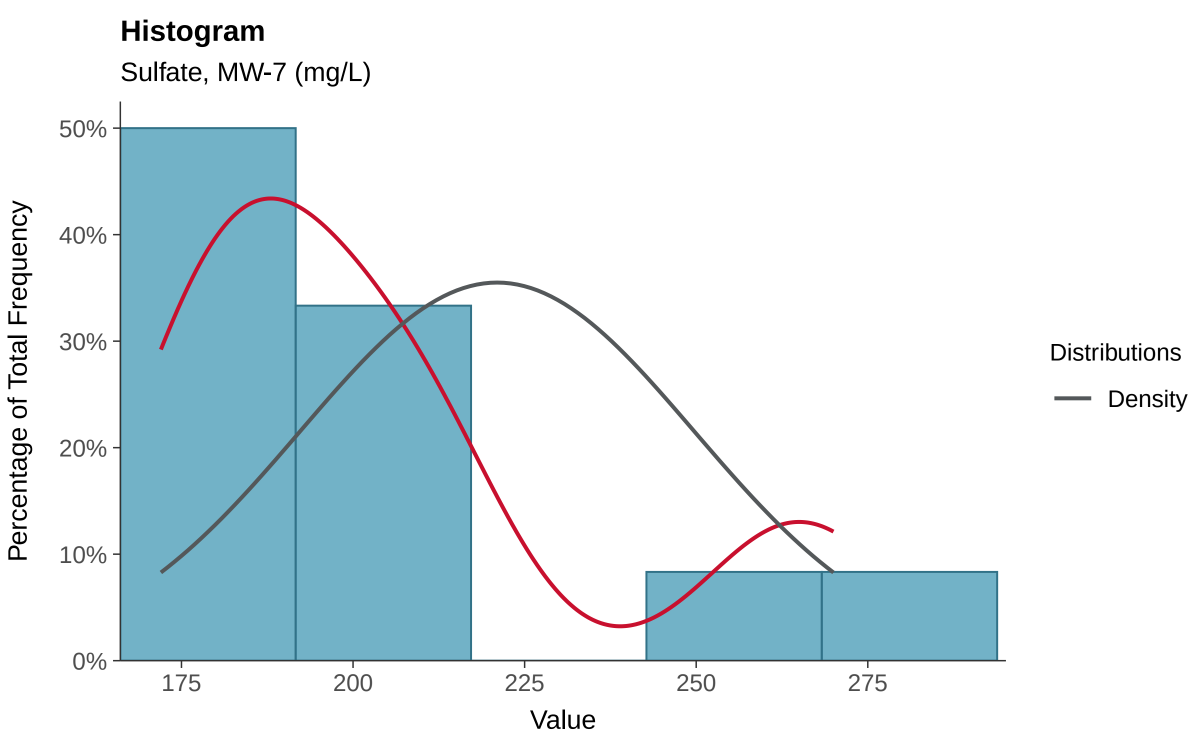
Fluoride, MW-7 (mg/L)



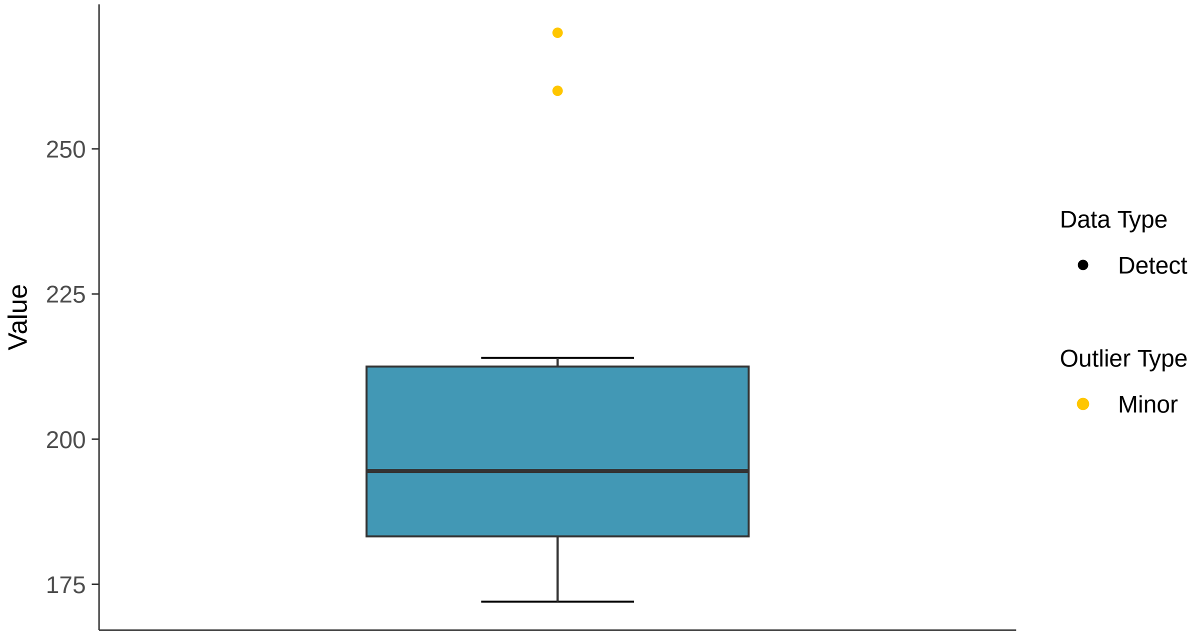
Appendix III: Sulfate, MW-7

ID: 07_1_05

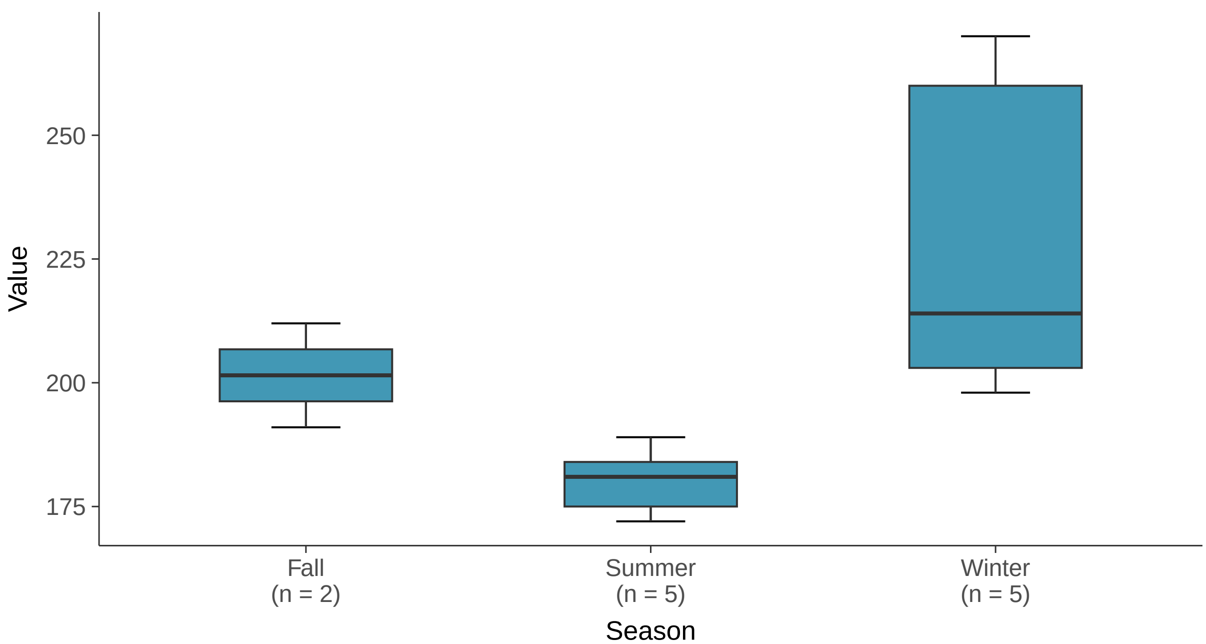


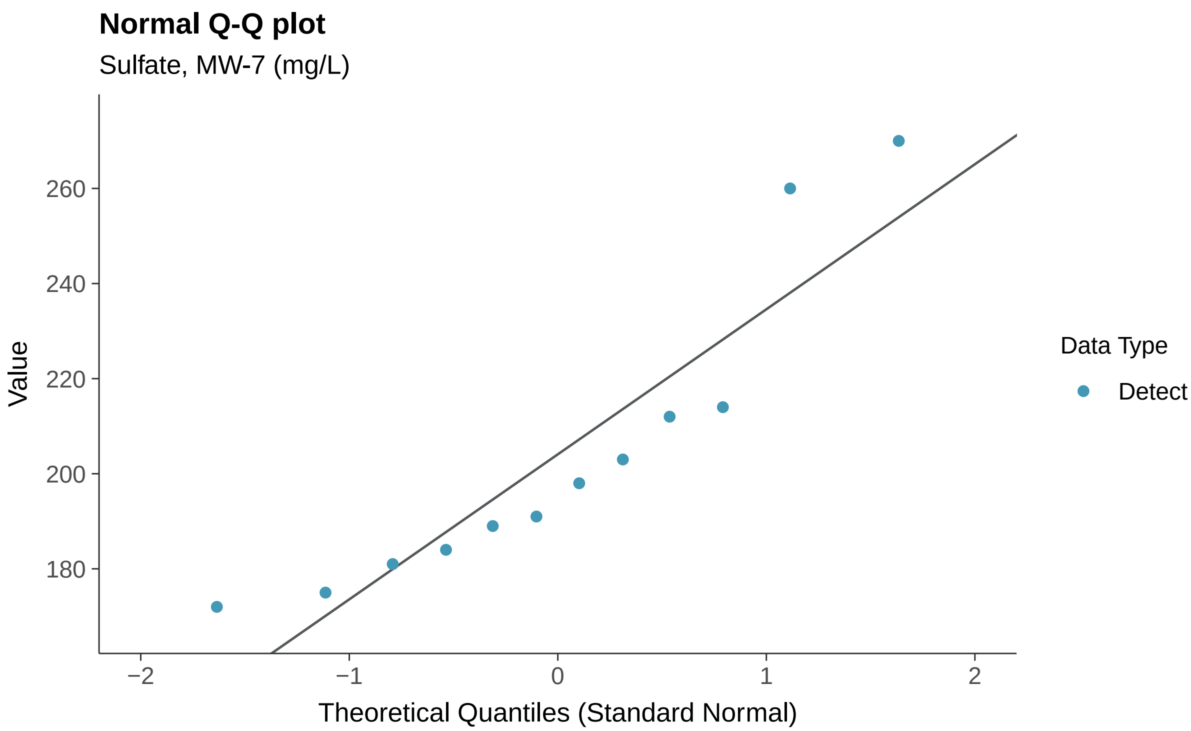


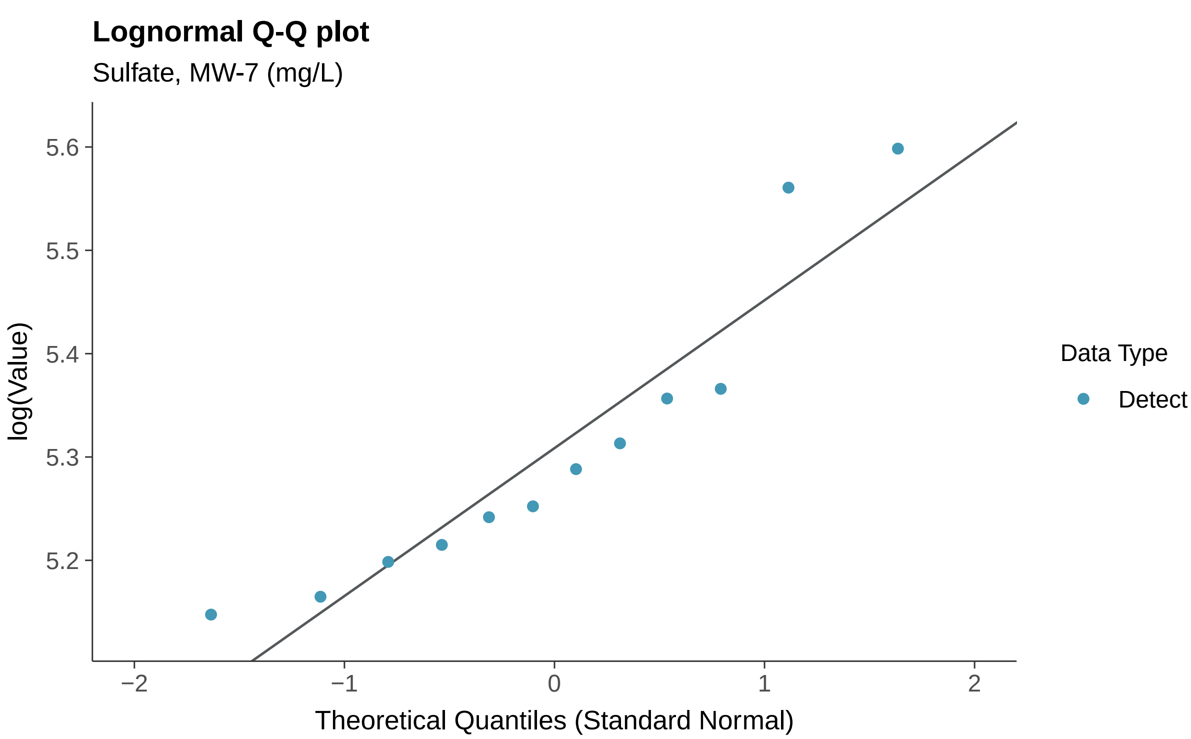
Boxplot
Sulfate, MW-7 (mg/L)

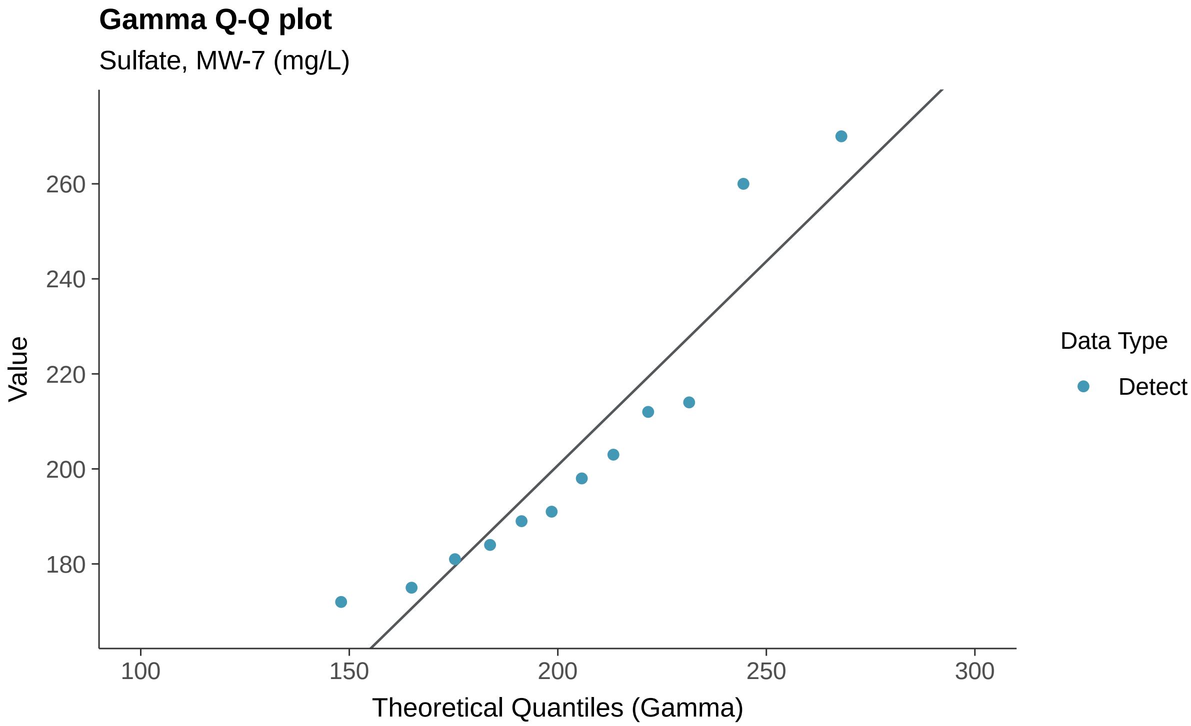


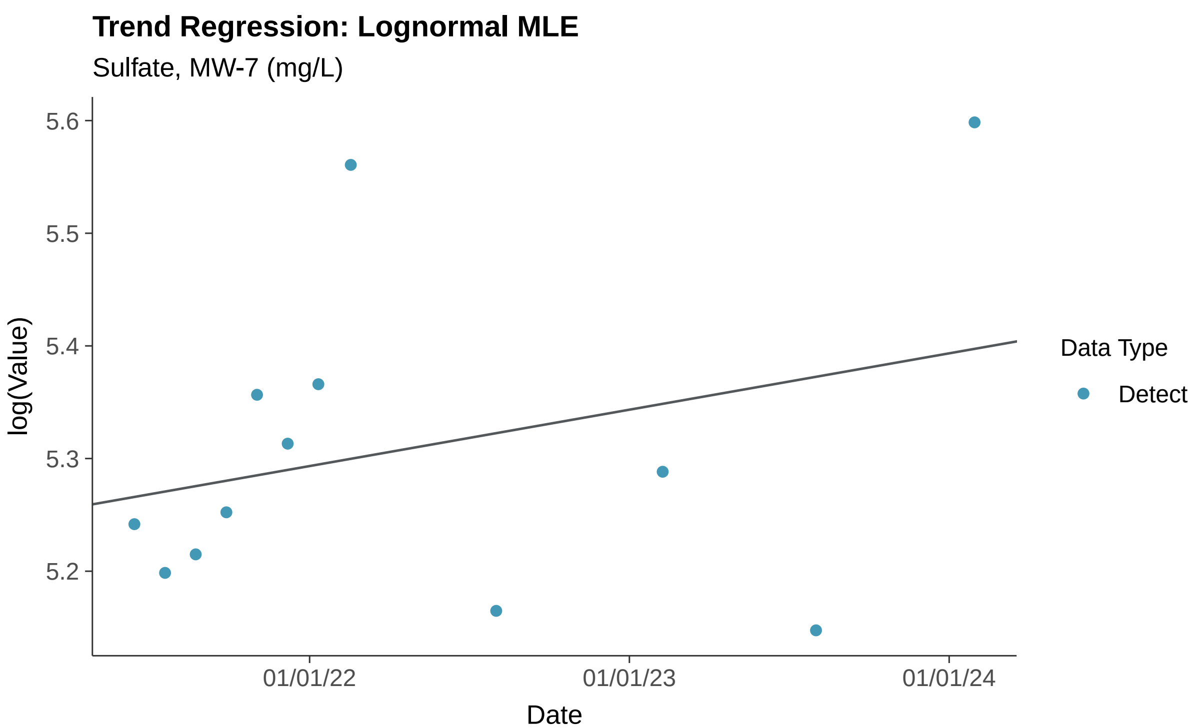
Boxplot by Season
Sulfate, MW-7 (mg/L)

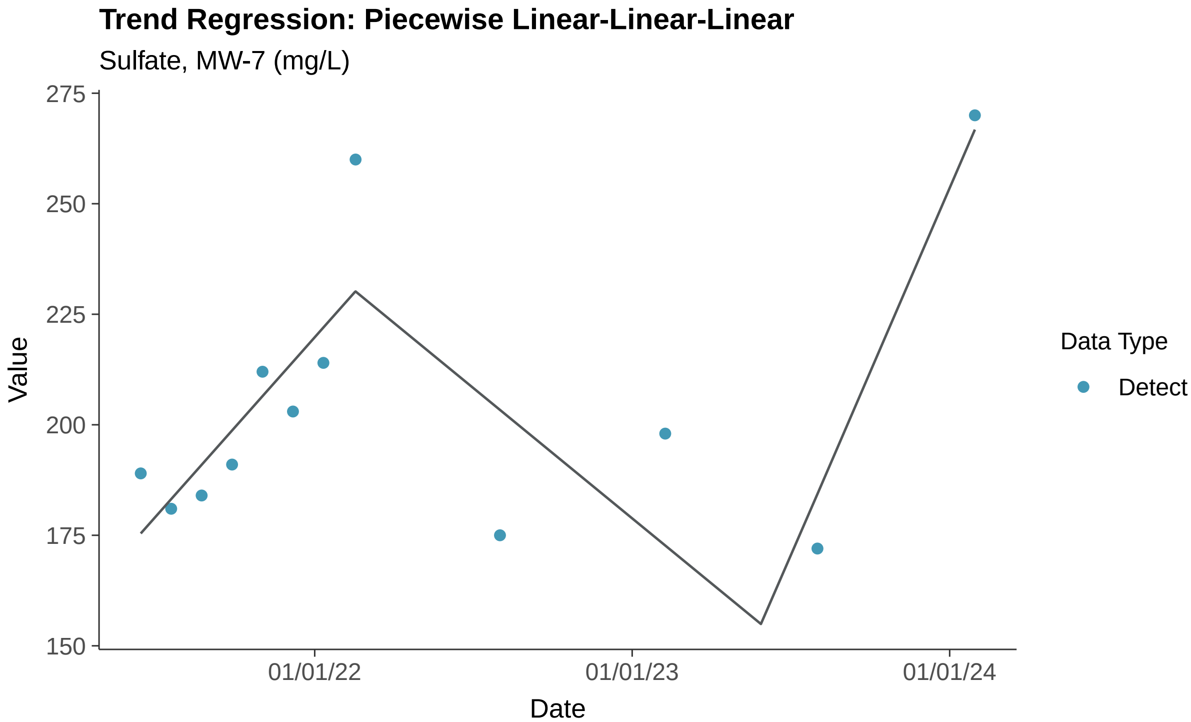



Normal Q-Q plot
Sulfate, MW-7 (mg/L)
Value
260
240
220
200
180
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Sulfate, MW-7 (mg/L)
log(Value)
5.6
5.5
5.4
5.3
5.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Sulfate, MW-7 (mg/L)
Value
260
240
220
200
180
100
150
200
250
300
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Sulfate, MW-7 (mg/L)
log(Value)
5.6
5.5
5.4
5.3
5.2
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

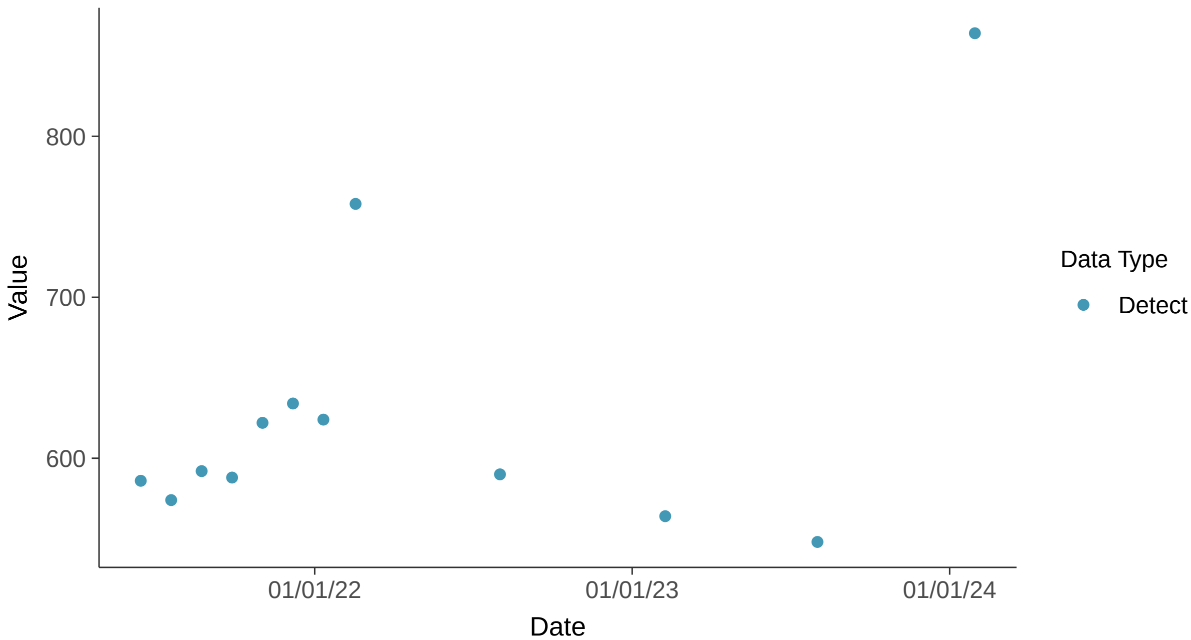

Trend Regression: Piecewise Linear-Linear-Linear
Sulfate, MW-7 (mg/L)
Value
275
250
225
200
175
150
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Appendix III: Total Dissolved Solids, MW-7

ID: 07_1_06

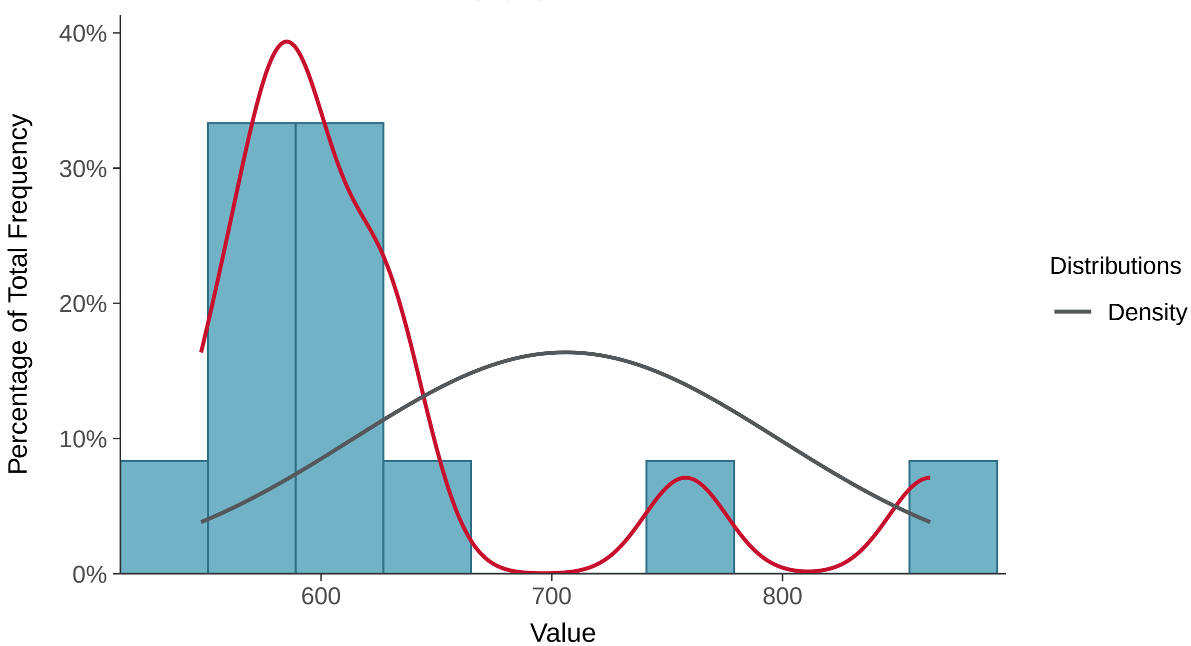
Scatter Plot

Total Dissolved Solids, MW-7 (mg/L)



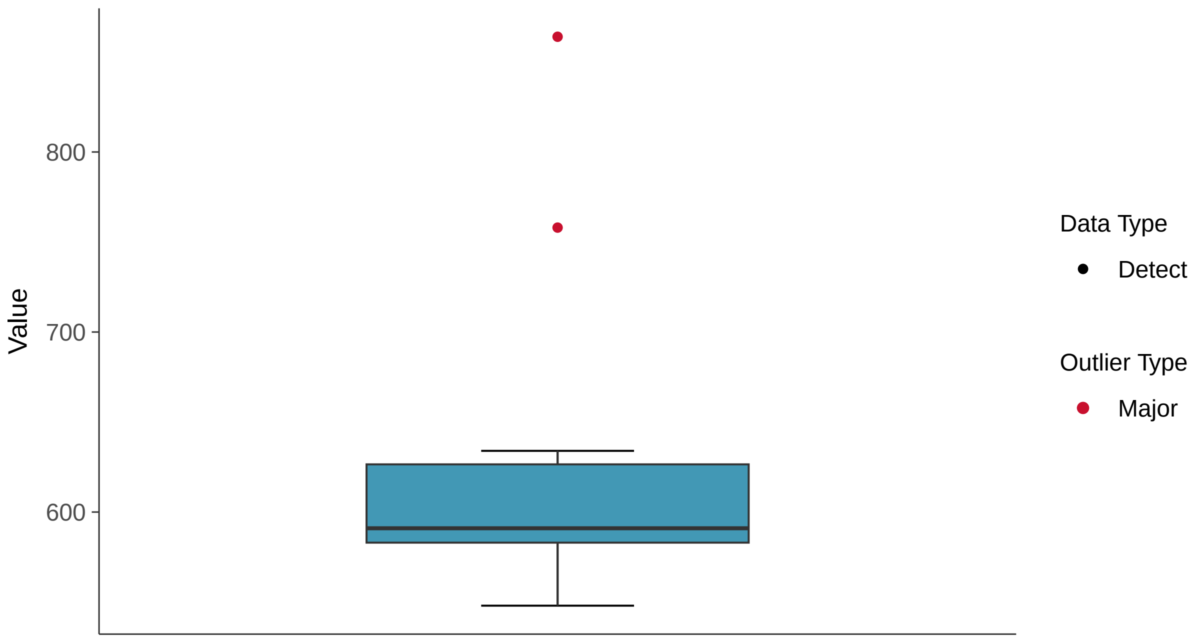
Histogram

Total Dissolved Solids, MW-7 (mg/L)



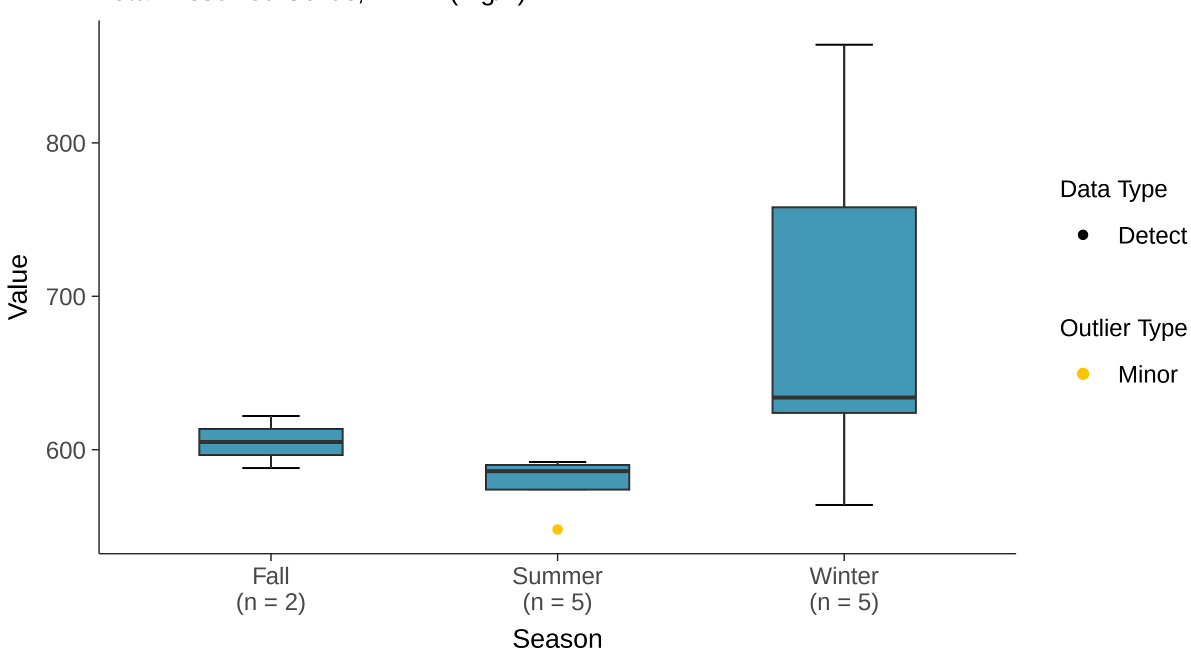
Boxplot

Total Dissolved Solids, MW-7 (mg/L)



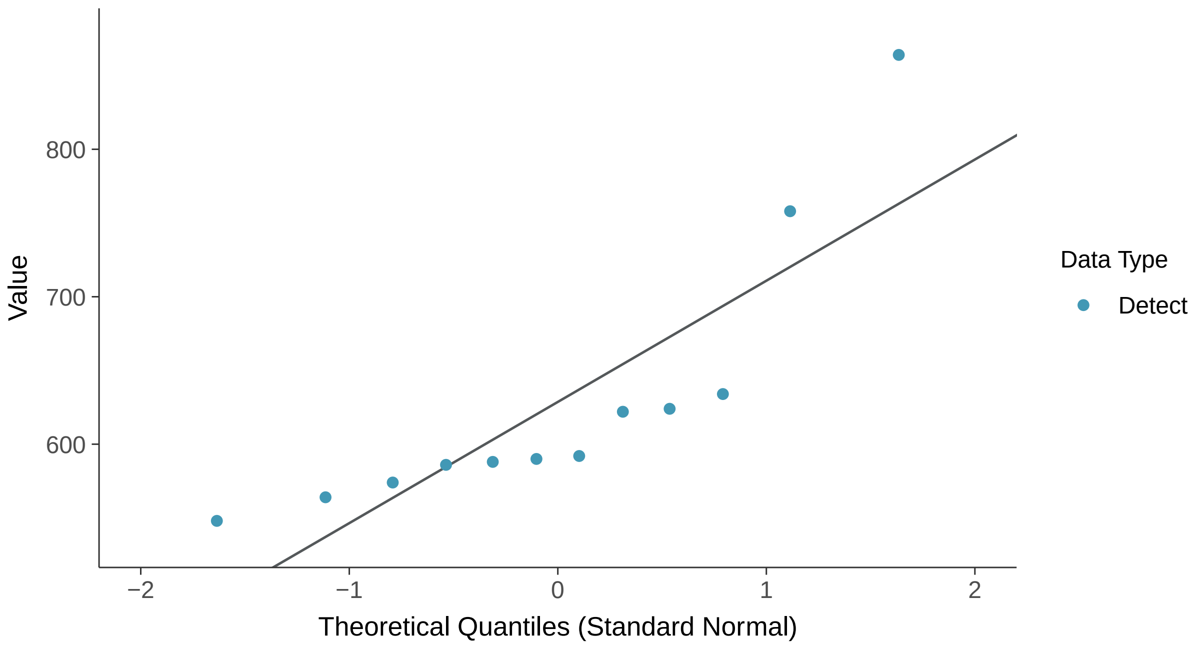
Boxplot by Season

Total Dissolved Solids, MW-7 (mg/L)



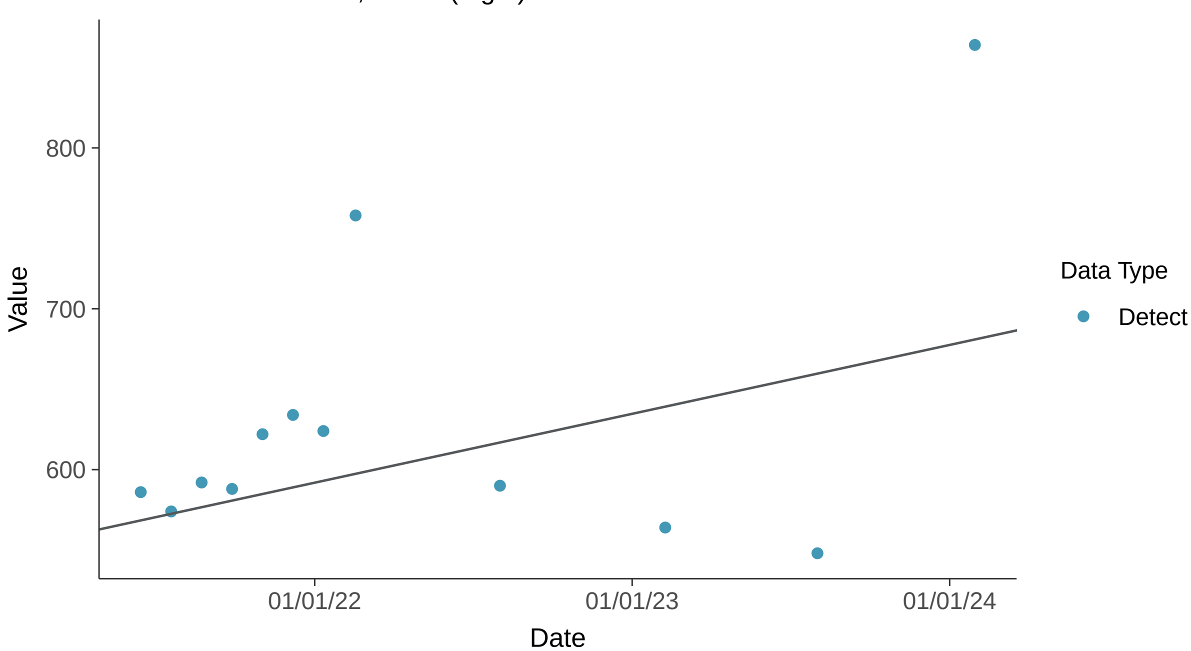
Normal Q-Q plot

Total Dissolved Solids, MW-7 (mg/L)



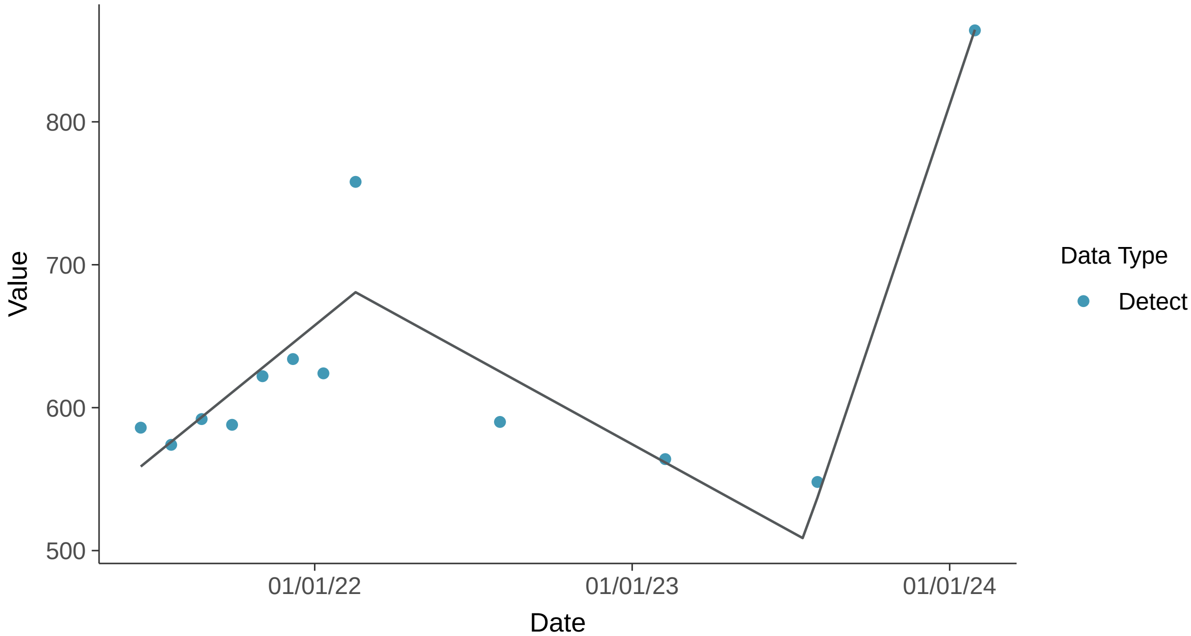
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Total Dissolved Solids, MW-7 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Total Dissolved Solids, MW-7 (mg/L)

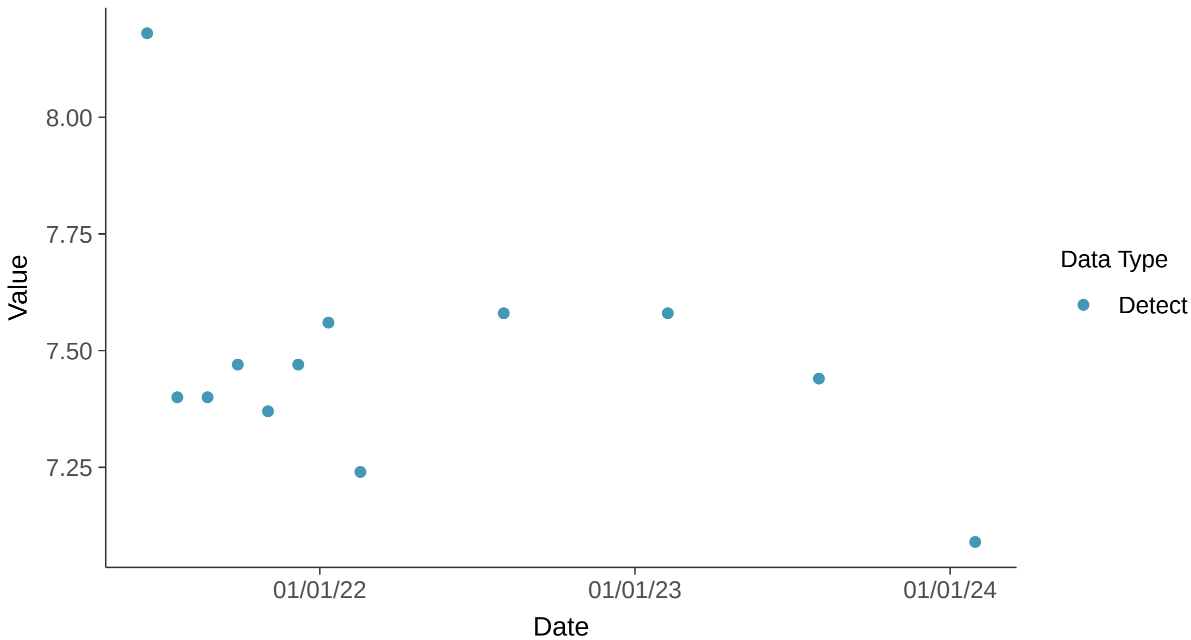


Appendix III: pH, Field, MW-7

ID: 07_1_07

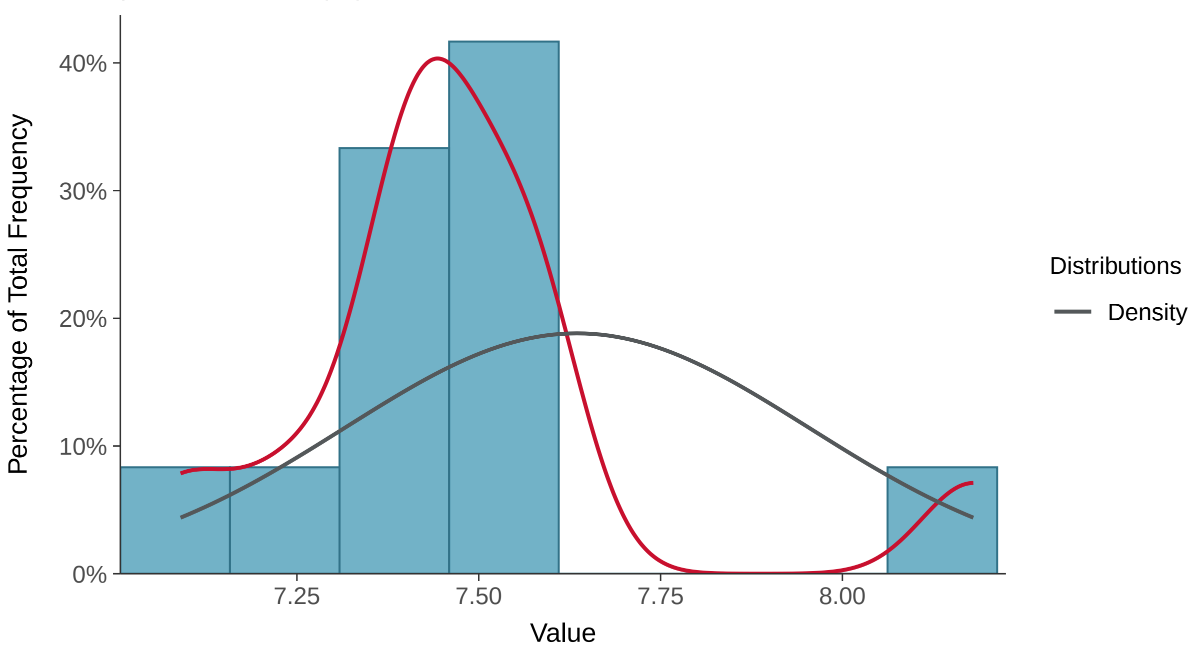
Scatter Plot

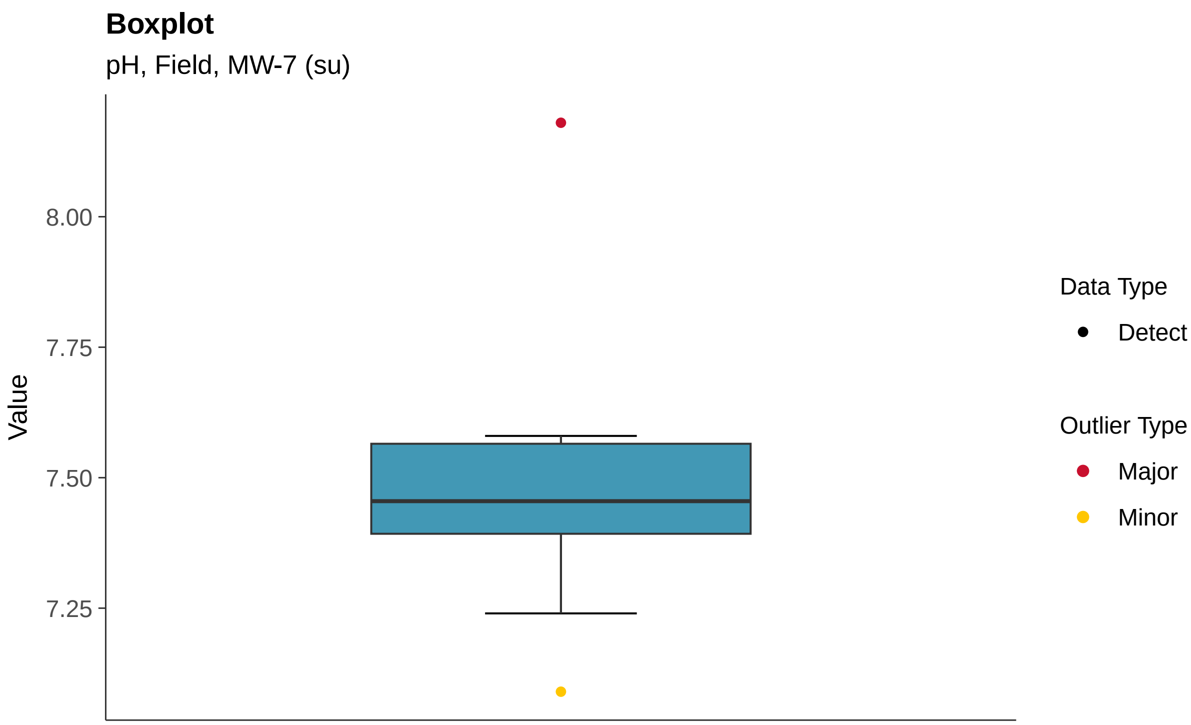
pH, Field, MW-7 (su)

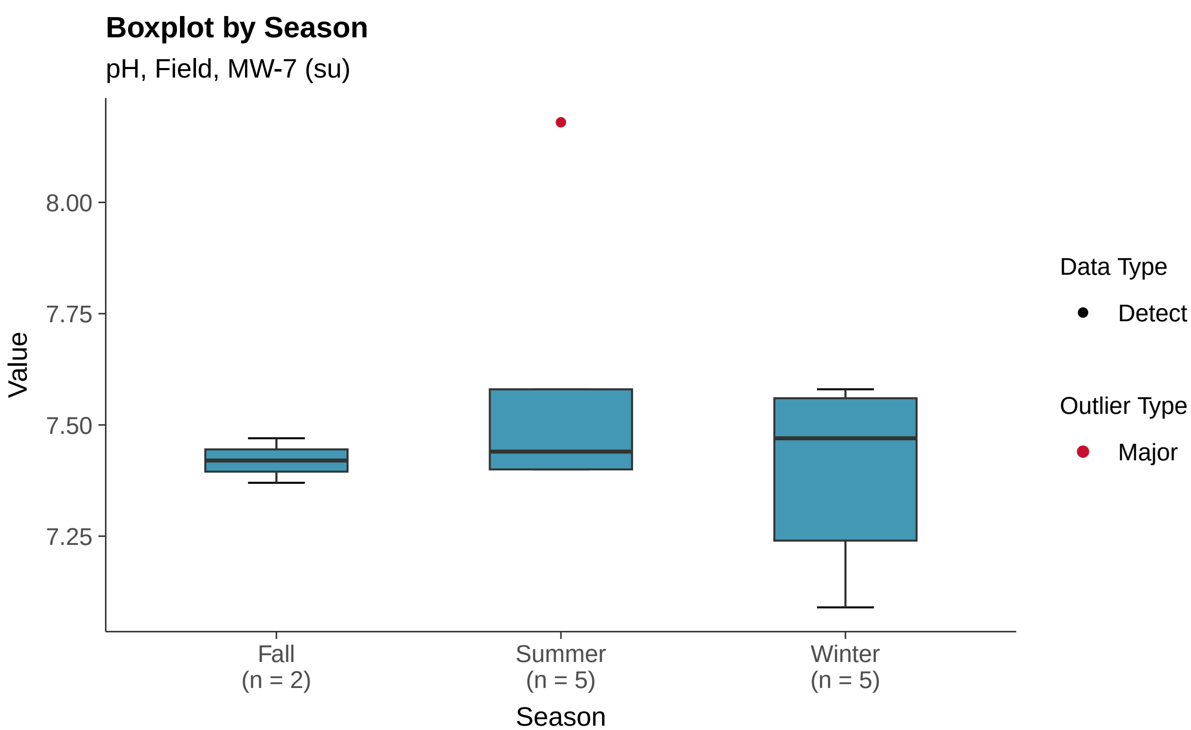


Histogram

pH, Field, MW-7 (su)

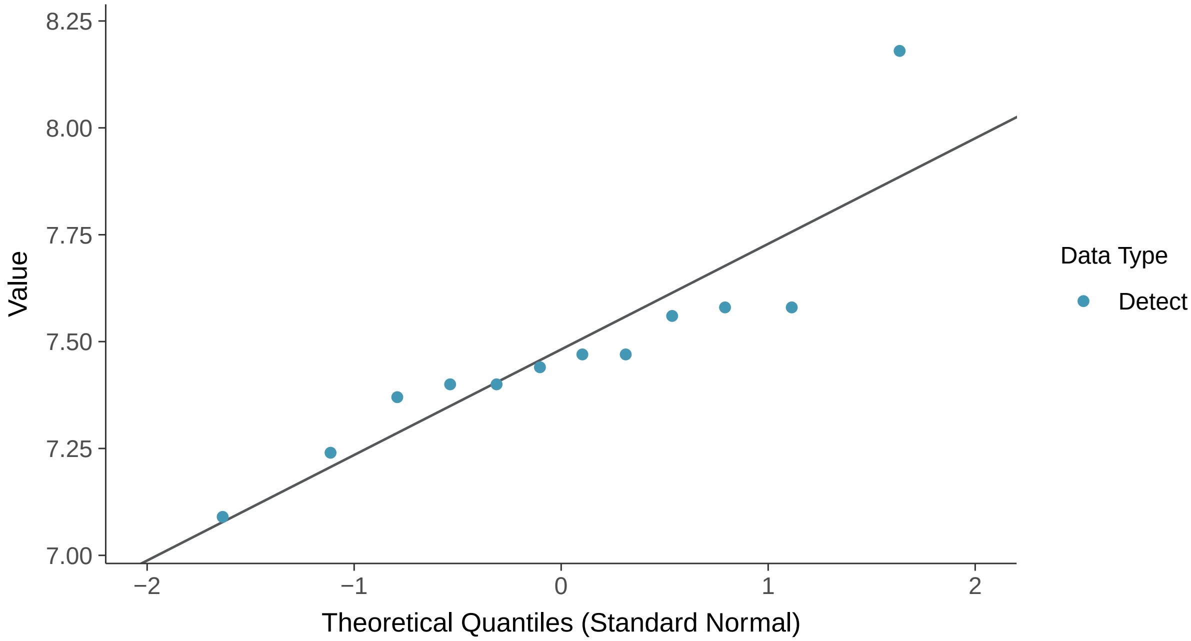



Boxplot
pH, Field, MW-7 (su)
Value
8.00
7.75
7.50
7.25
Data Type
Detect
Outlier Type
Major
Minor


Boxplot by Season
pH, Field, MW-7 (su)
Value
8.00
7.75
7.50
7.25
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major

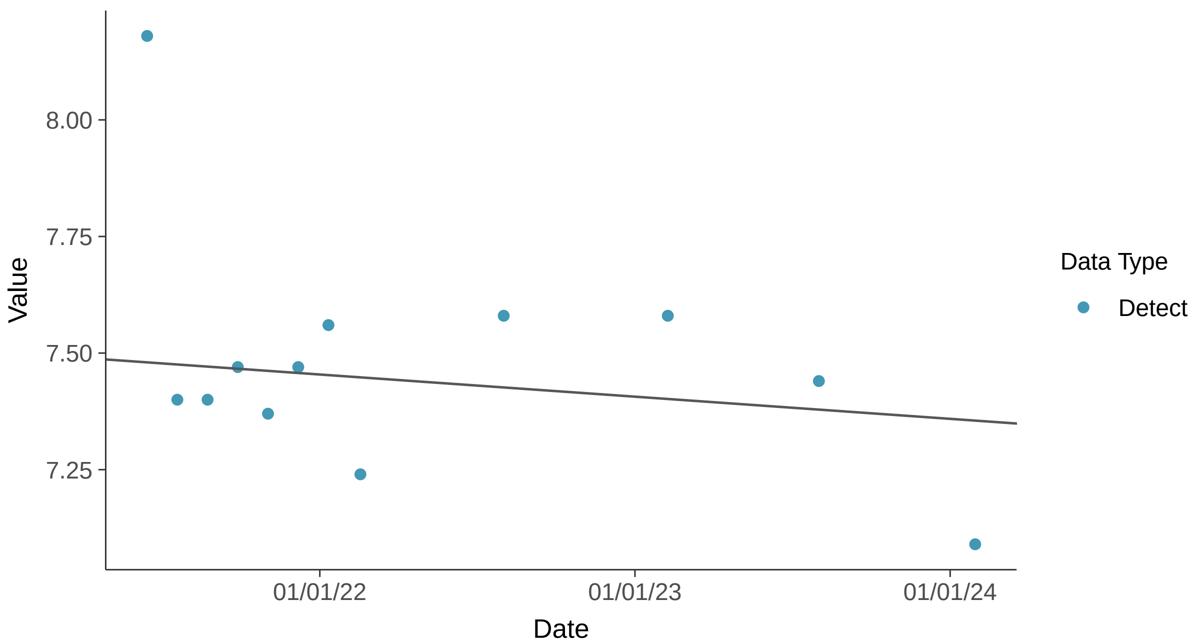
Normal Q-Q plot

pH, Field, MW-7 (su)



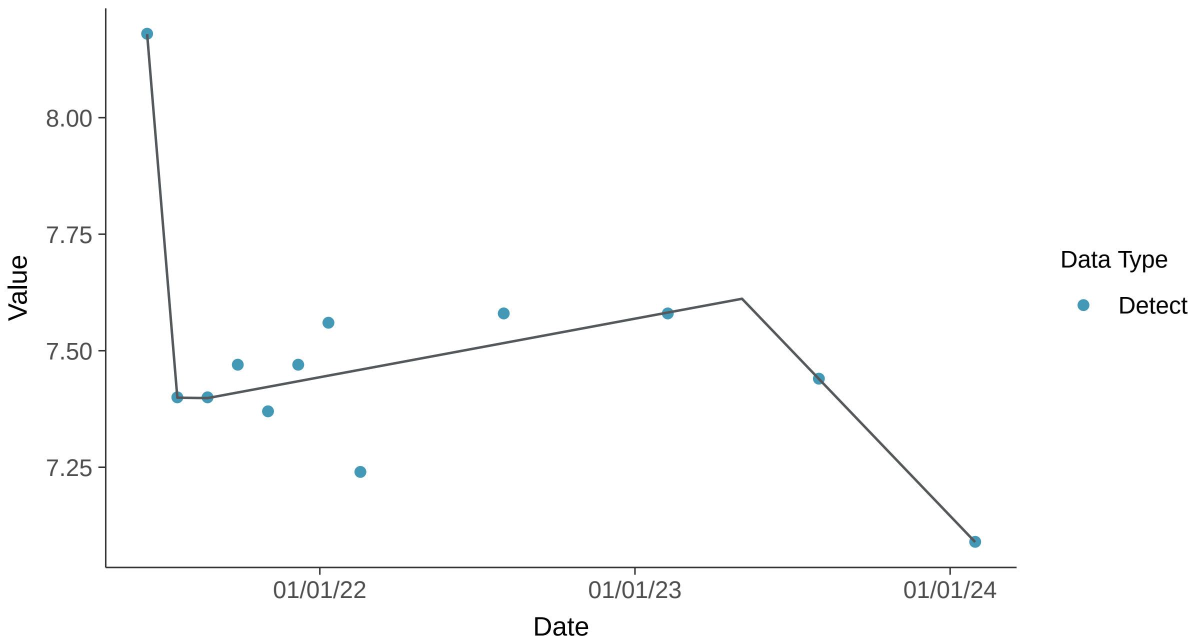
Trend Regression: Mann-Kendall/Theil-Sen Estimate

pH, Field, MW-7 (su)



Trend Regression: Piecewise Linear-Linear-Linear

pH, Field, MW-7 (su)

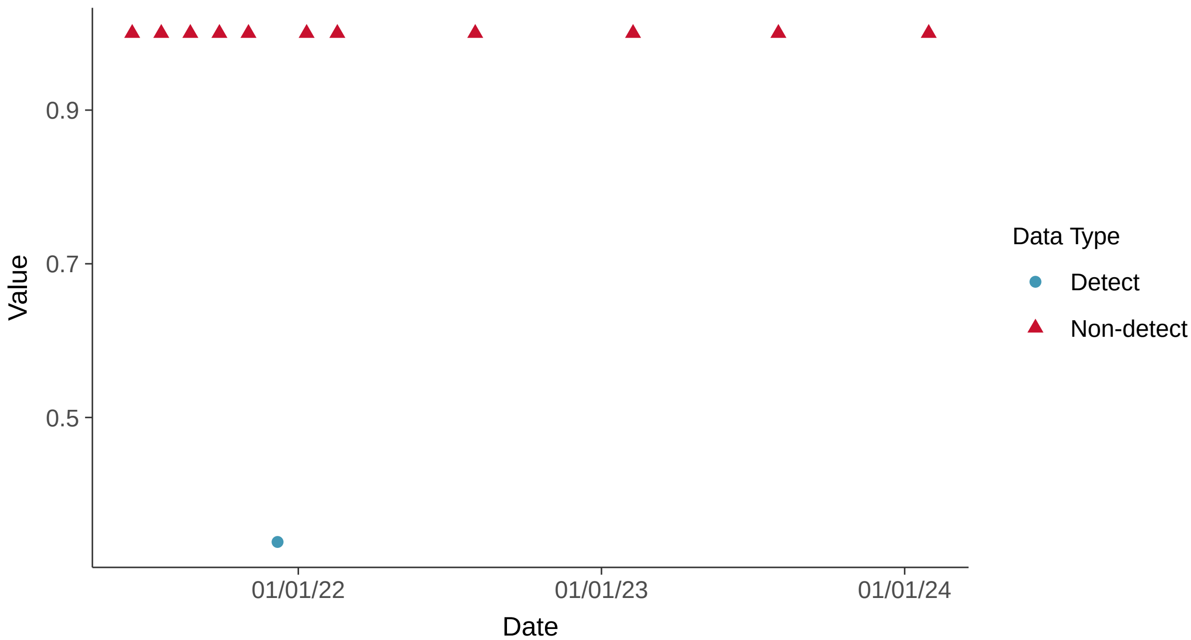


Appendix IV: Fluoride, MW-7

ID: 07_2_04

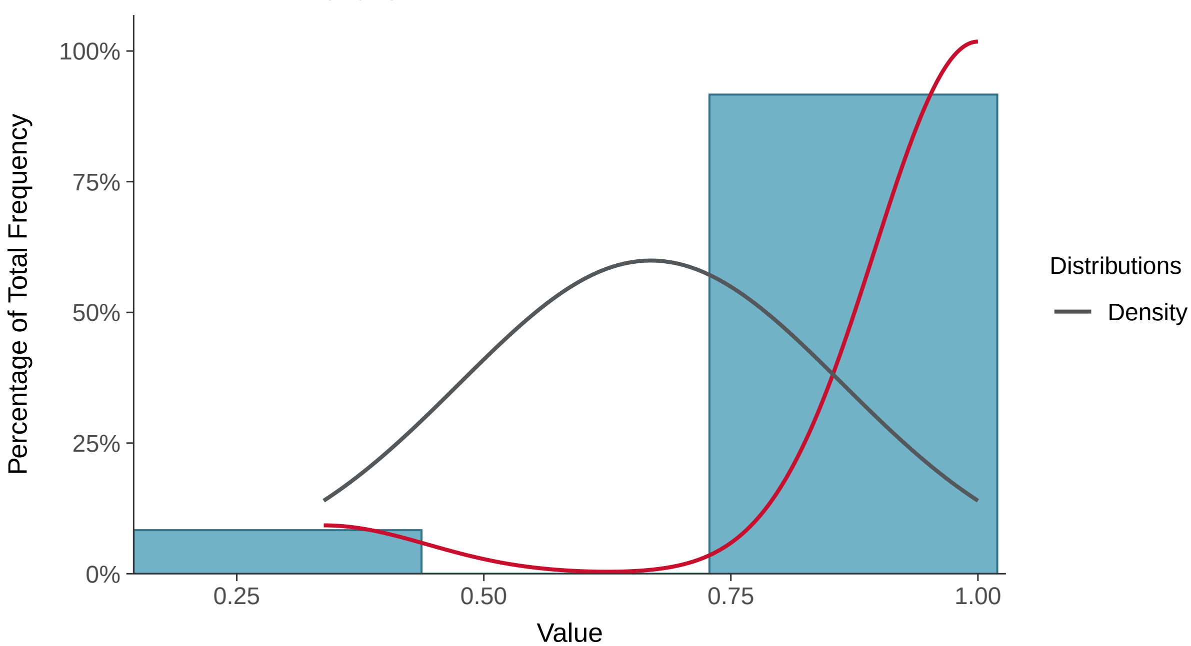
Scatter Plot

Fluoride, MW-7 (mg/L)



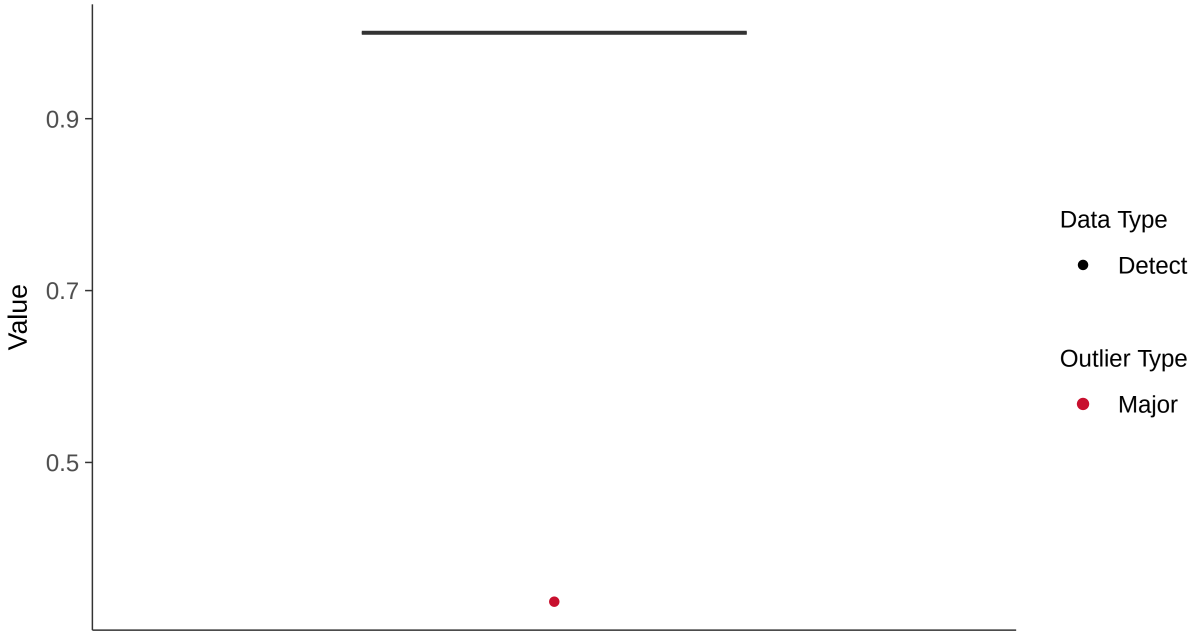
Histogram

Fluoride, MW-7 (mg/L)



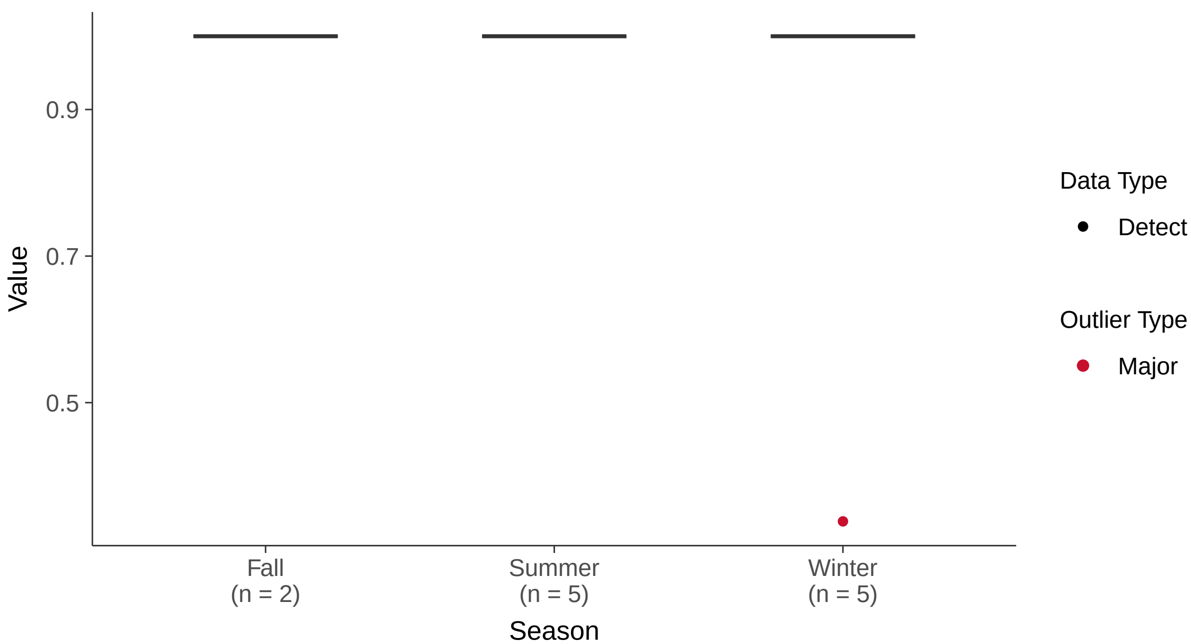
Boxplot

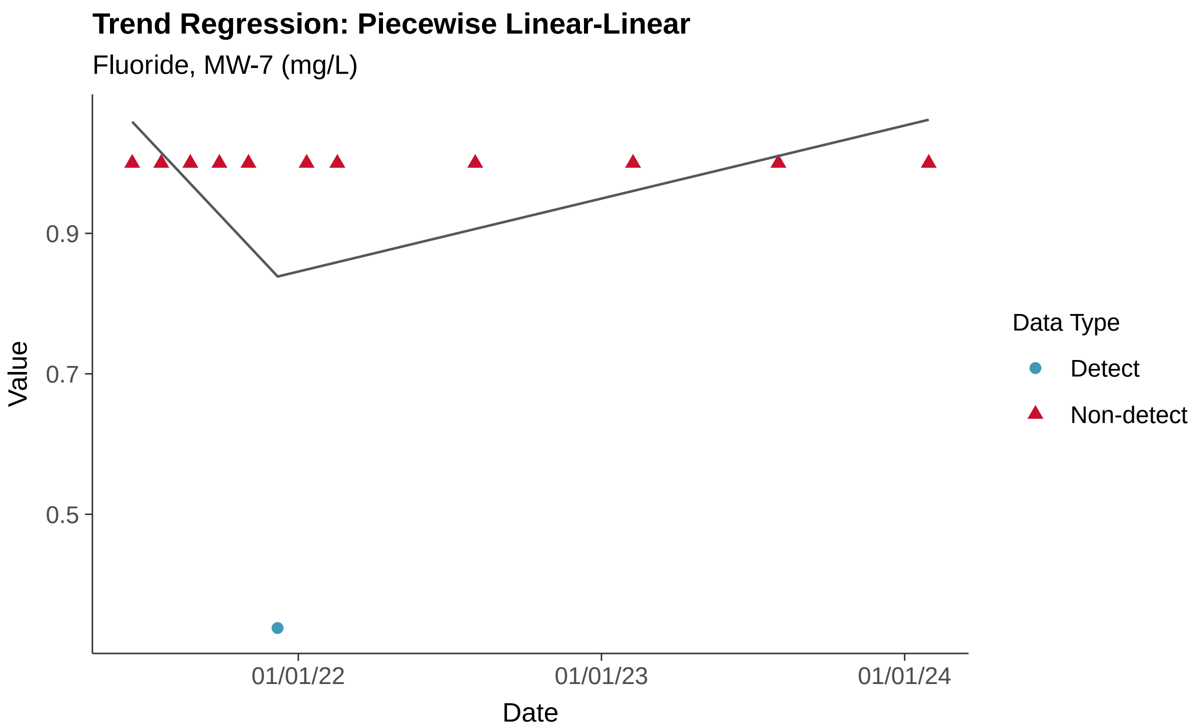
Fluoride, MW-7 (mg/L)

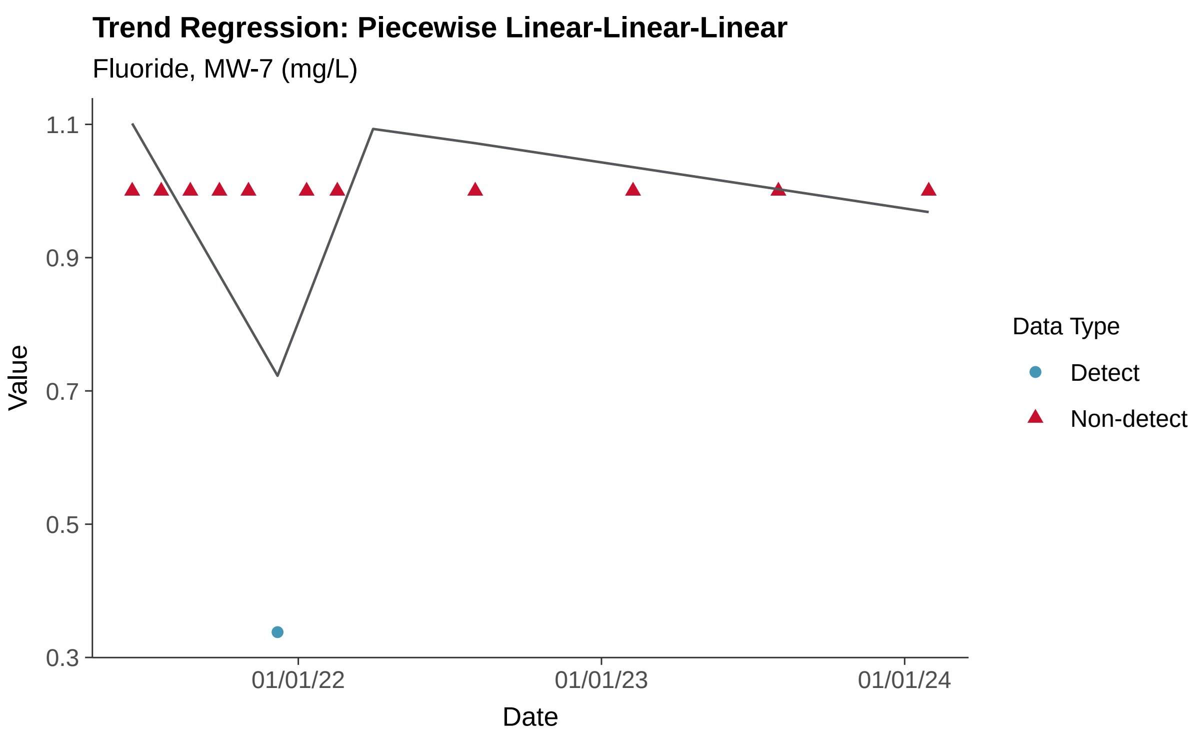


Boxplot by Season

Fluoride, MW-7 (mg/L)




Trend Regression: Piecewise Linear-Linear
Fluoride, MW-7 (mg/L)
Value
0.9
0.7
0.5
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

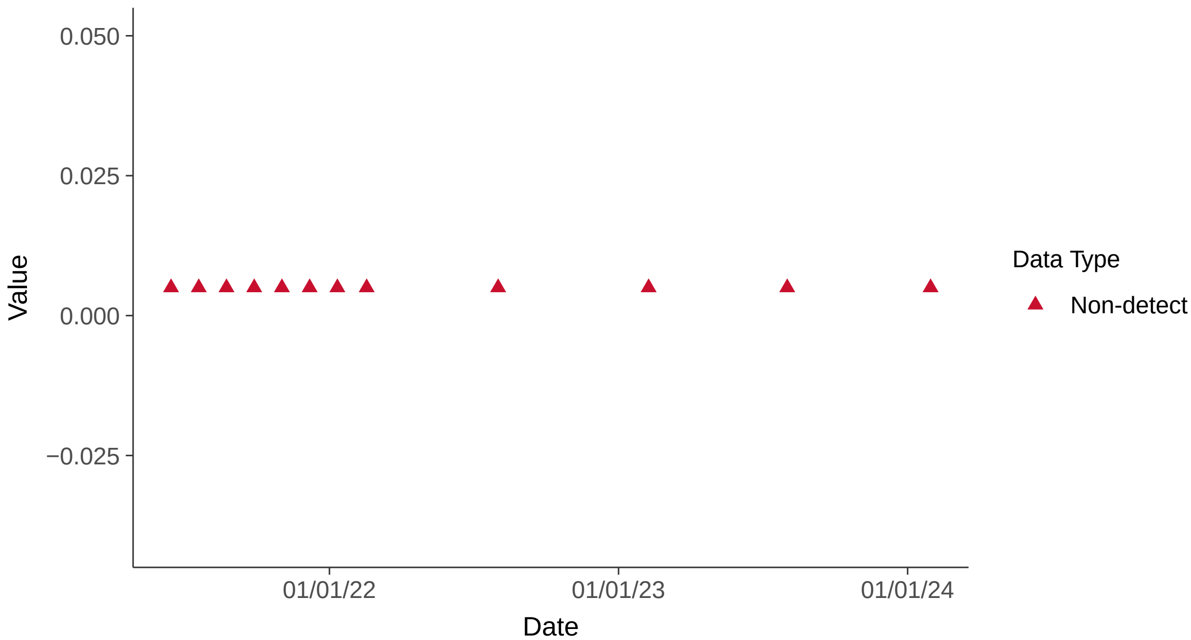

Trend Regression: Piecewise Linear-Linear-Linear
Fluoride, MW-7 (mg/L)
Value
1.1
0.9
0.7
0.5
0.3
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Appendix IV: Antimony, MW-7

ID: 07_2_08

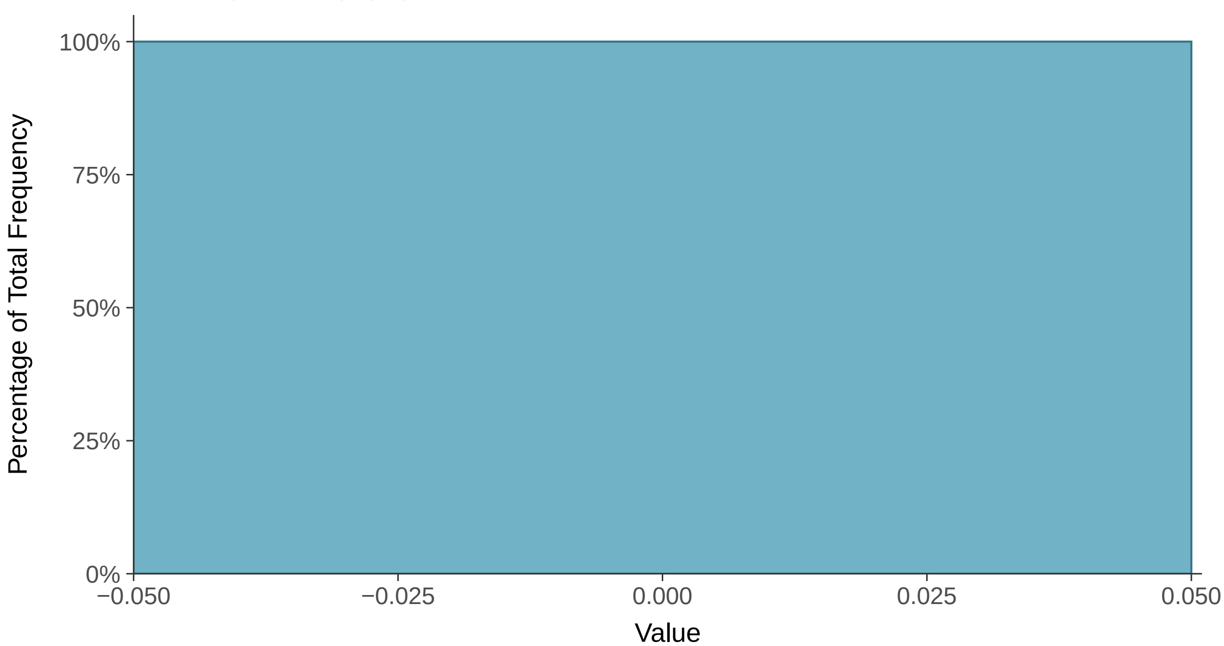
Scatter Plot

Antimony, MW-7 (mg/L)



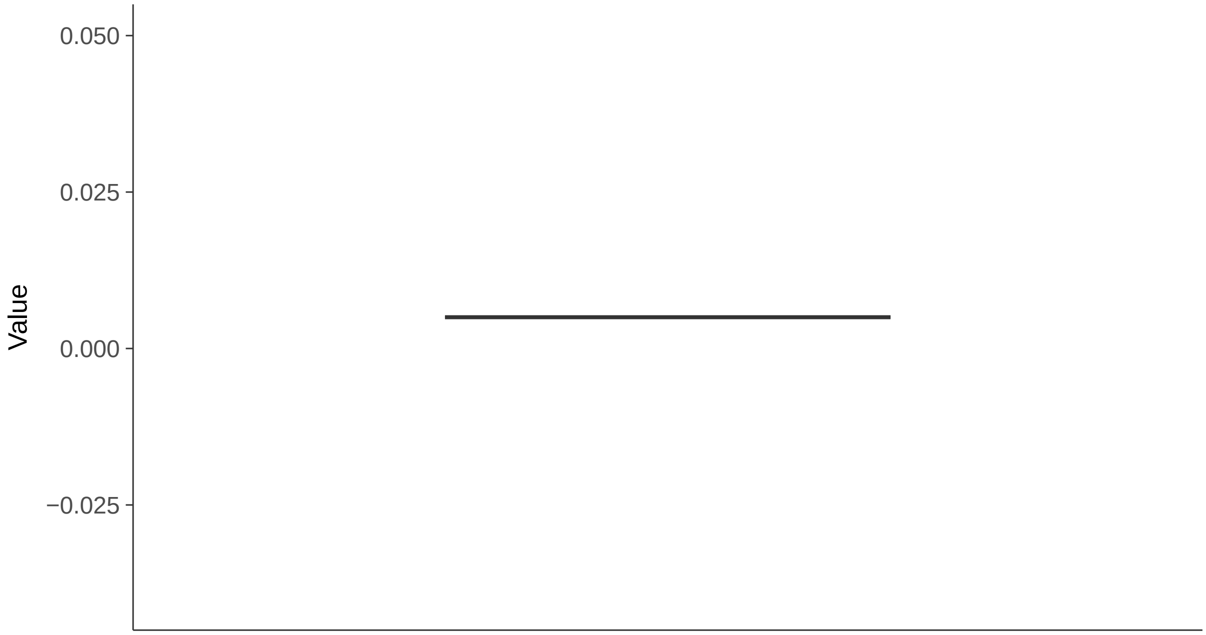
Histogram

Antimony, MW-7 (mg/L)



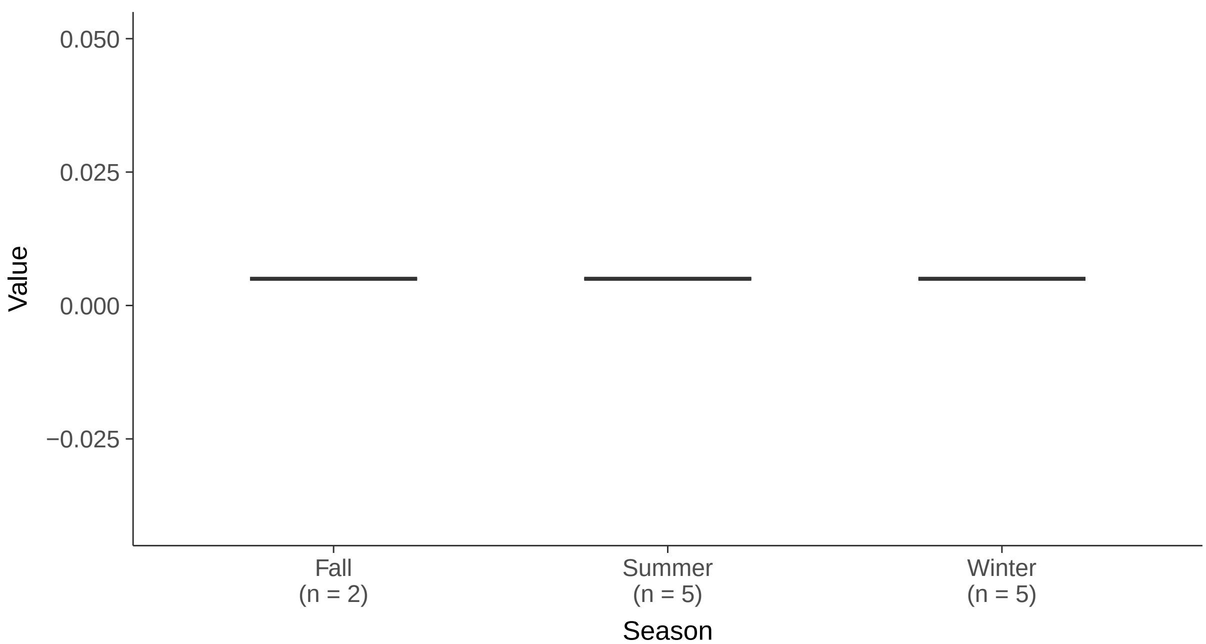
Boxplot

Antimony, MW-7 (mg/L)



Boxplot by Season

Antimony, MW-7 (mg/L)

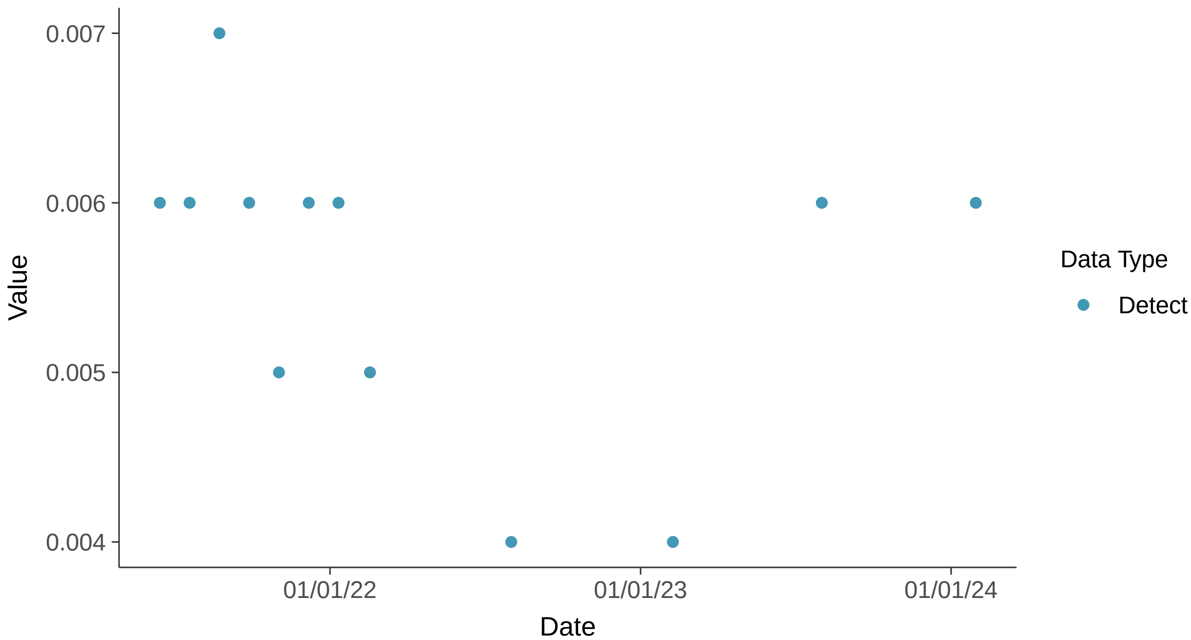


Appendix IV: Arsenic, MW-7

ID: 07_2_09

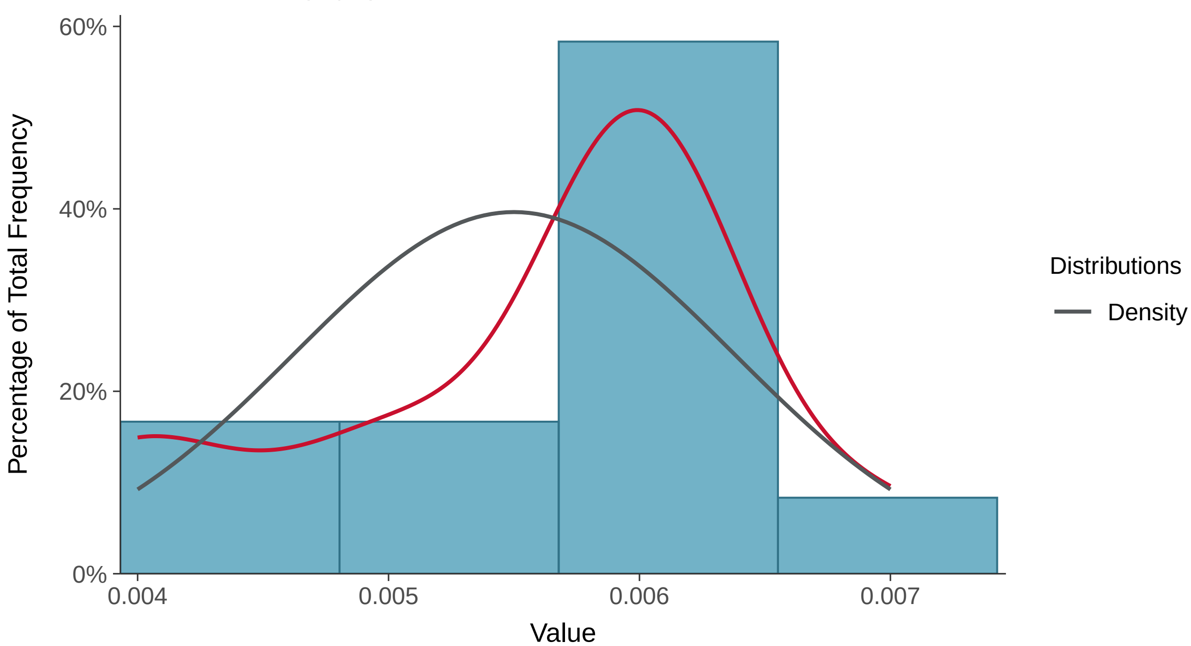
Scatter Plot

Arsenic, MW-7 (mg/L)



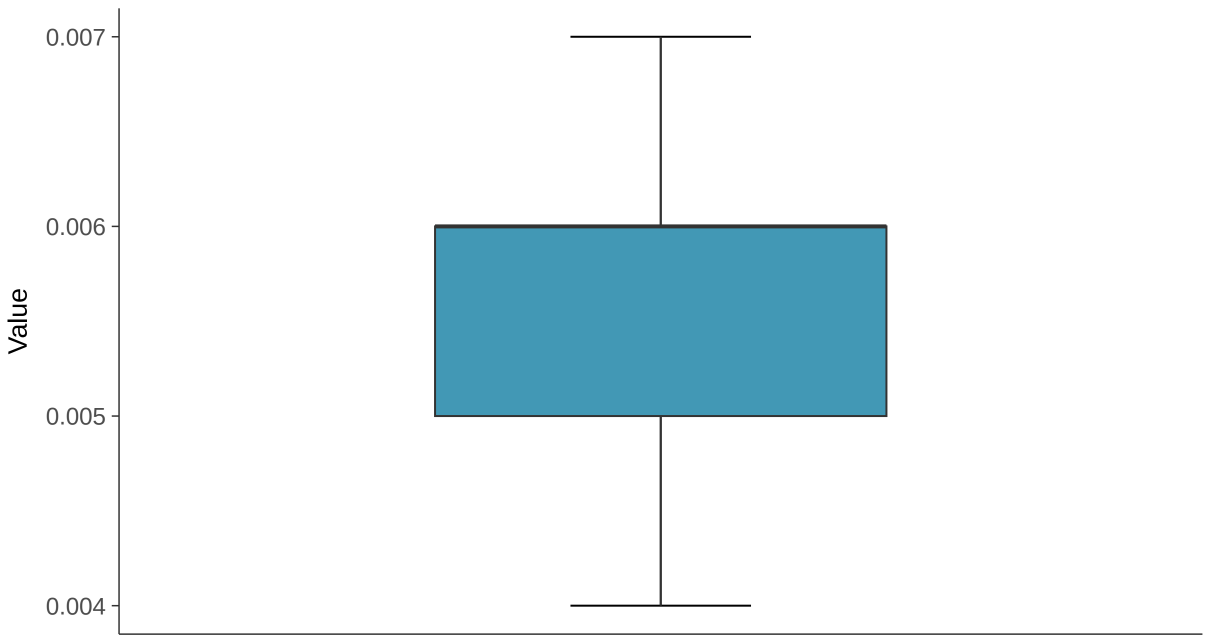
Histogram

Arsenic, MW-7 (mg/L)



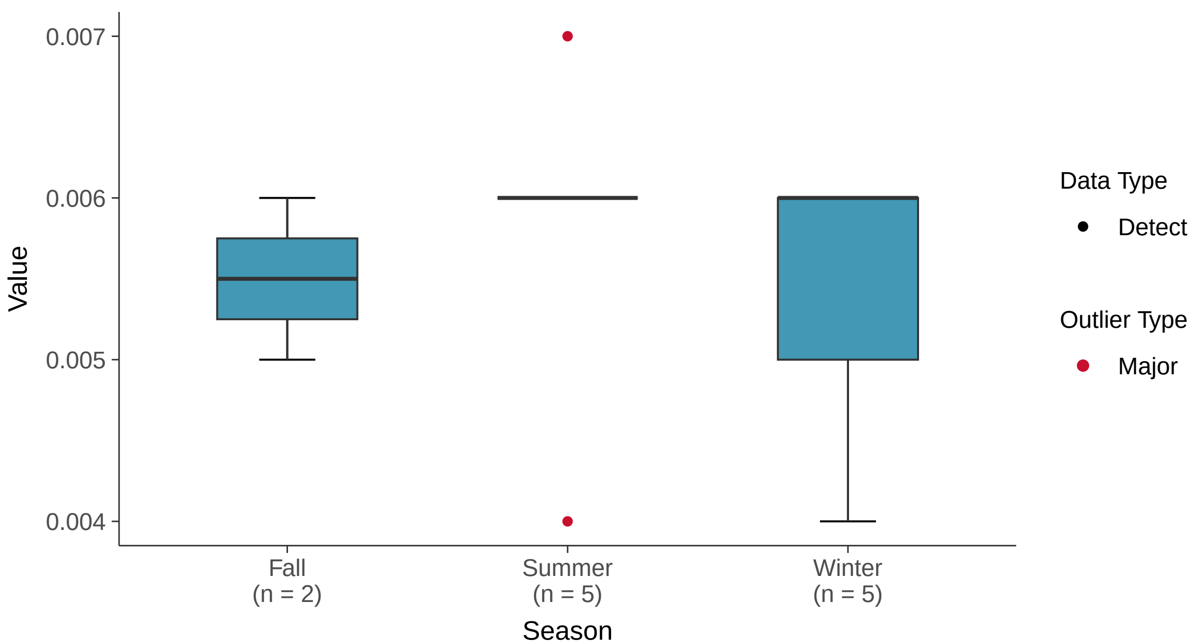
Boxplot

Arsenic, MW-7 (mg/L)

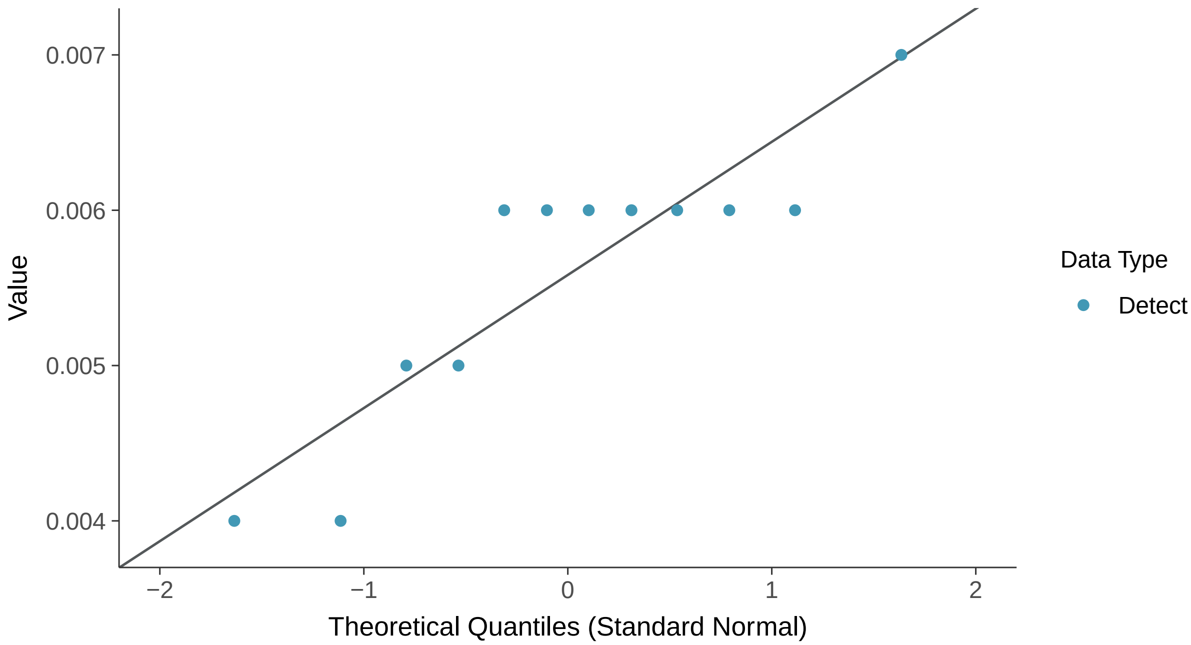


Boxplot by Season

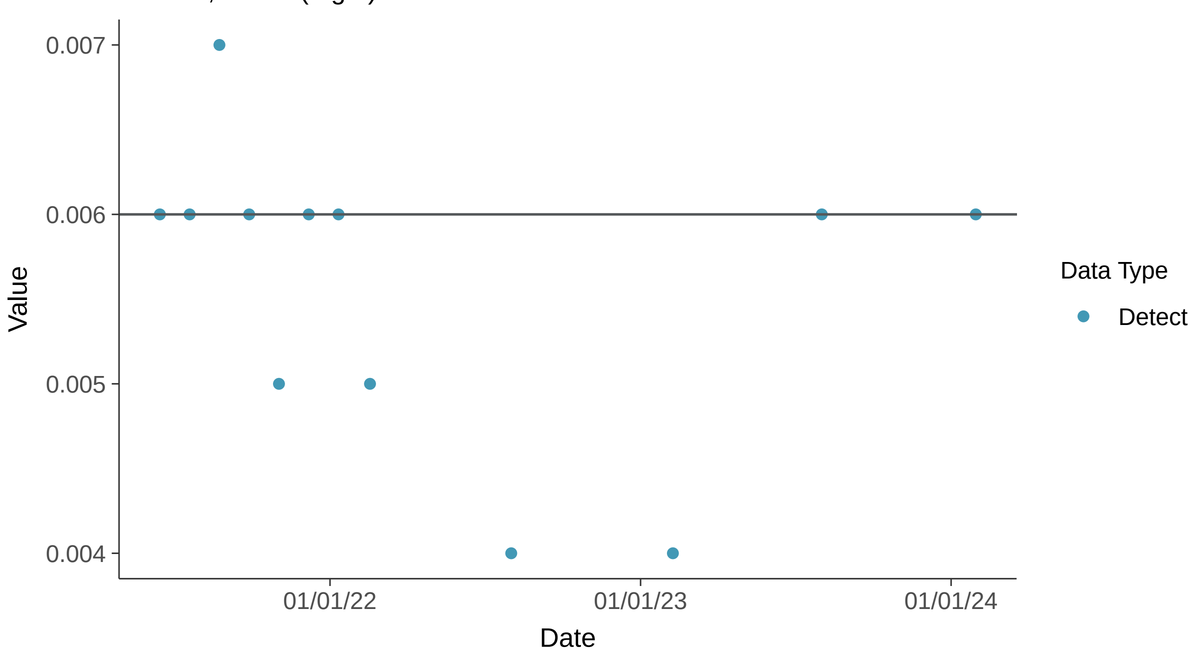
Arsenic, MW-7 (mg/L)



Normal Q-Q plot
Arsenic, MW-7 (mg/L)

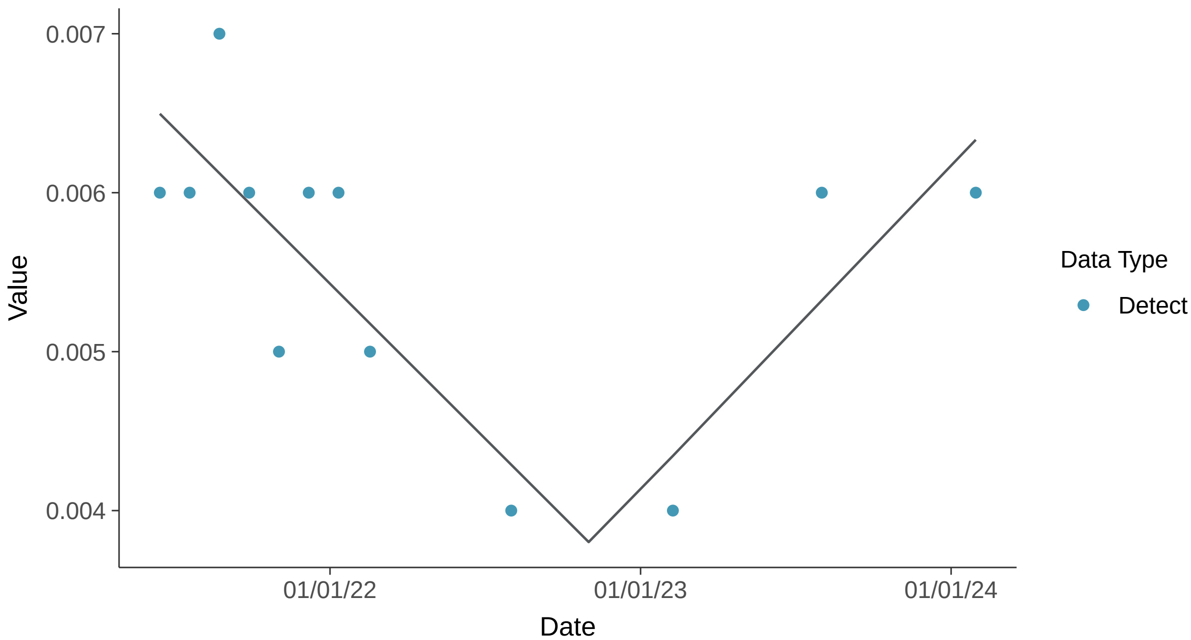


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Arsenic, MW-7 (mg/L)



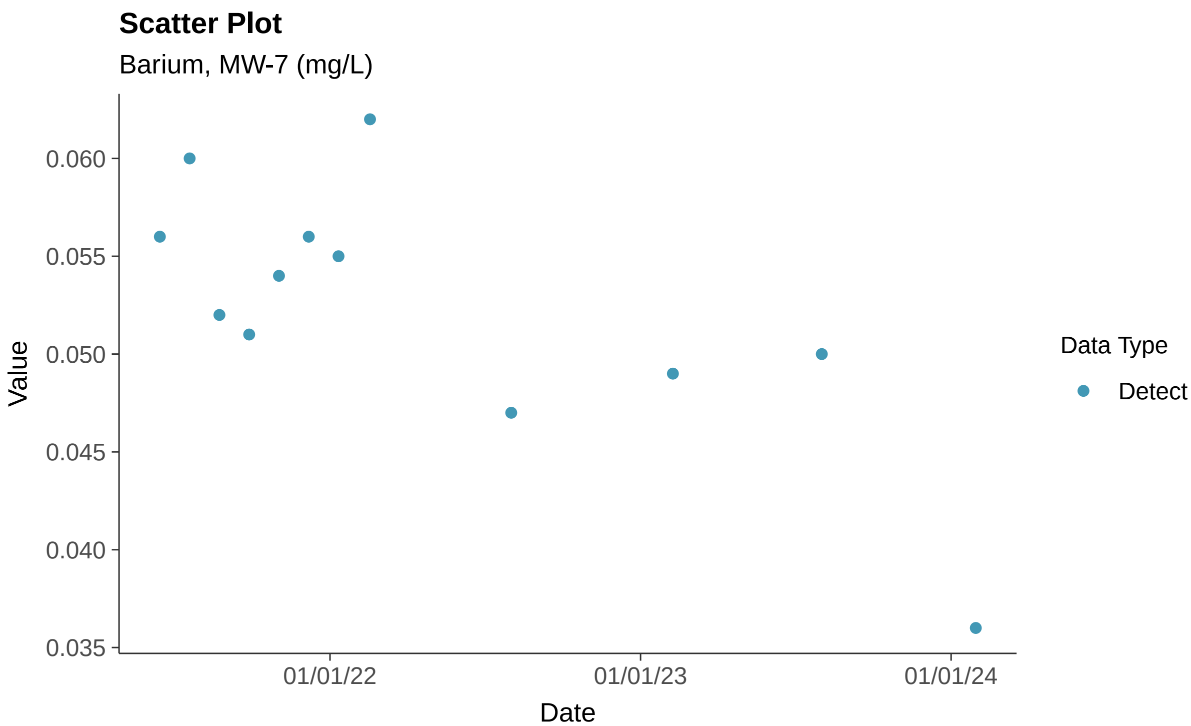
Trend Regression: Piecewise Linear-Linear

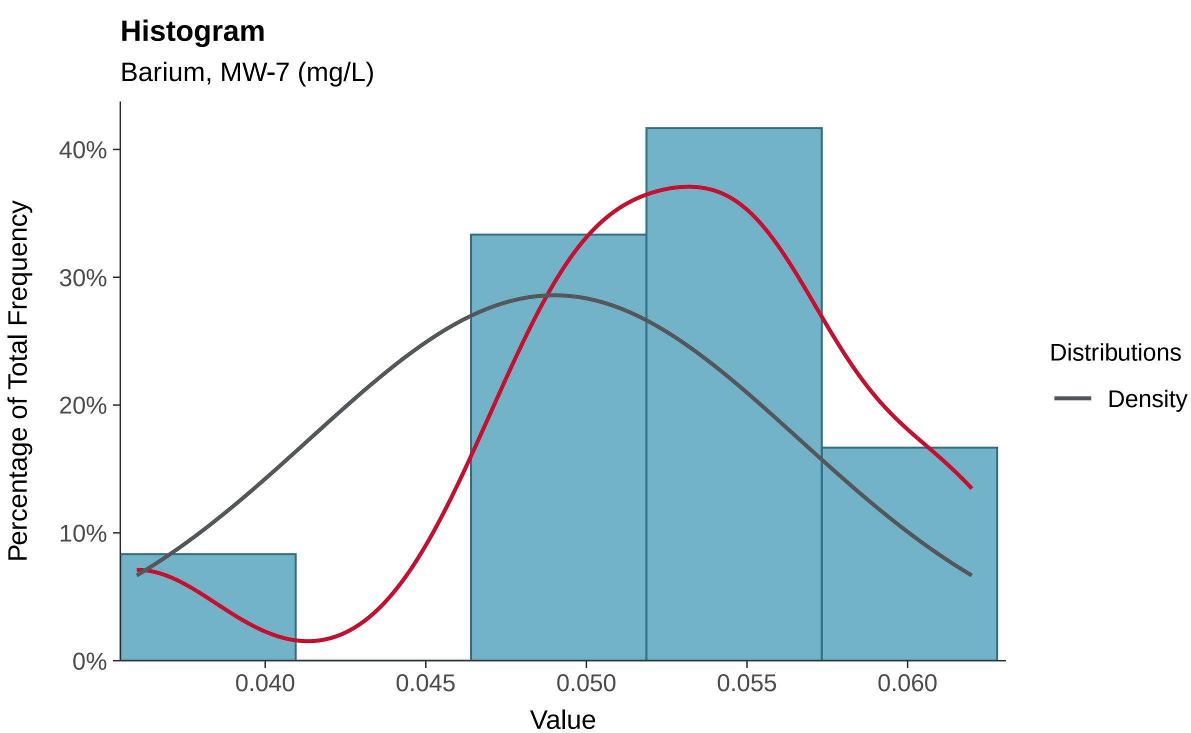
Arsenic, MW-7 (mg/L)



Appendix IV: Barium, MW-7

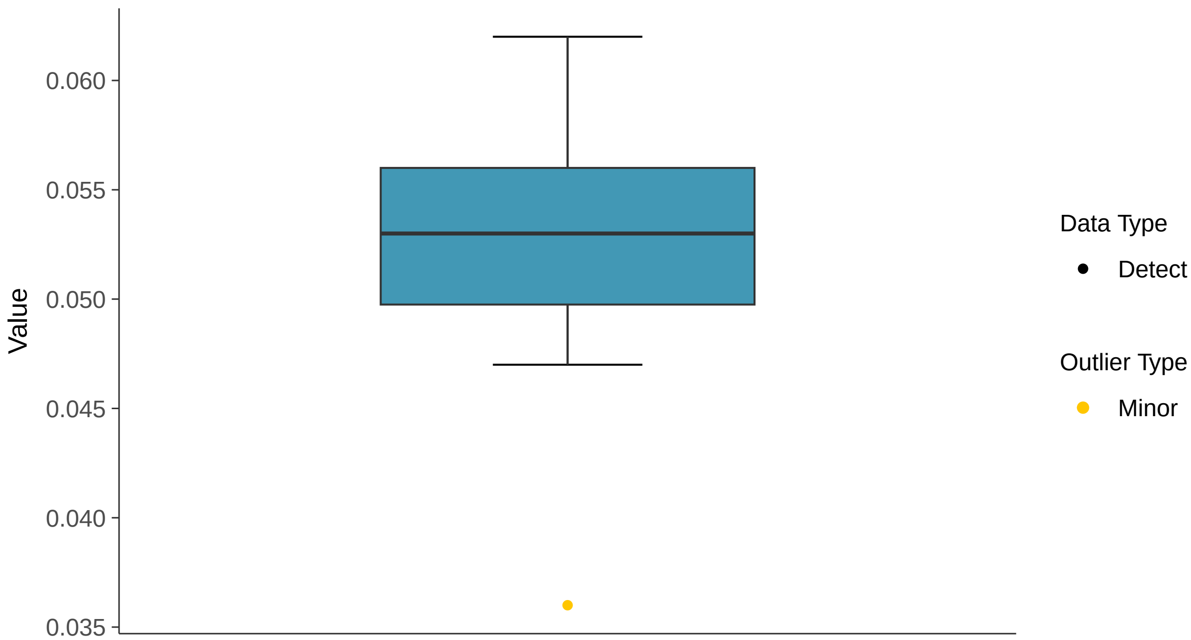
ID: 07_2_10





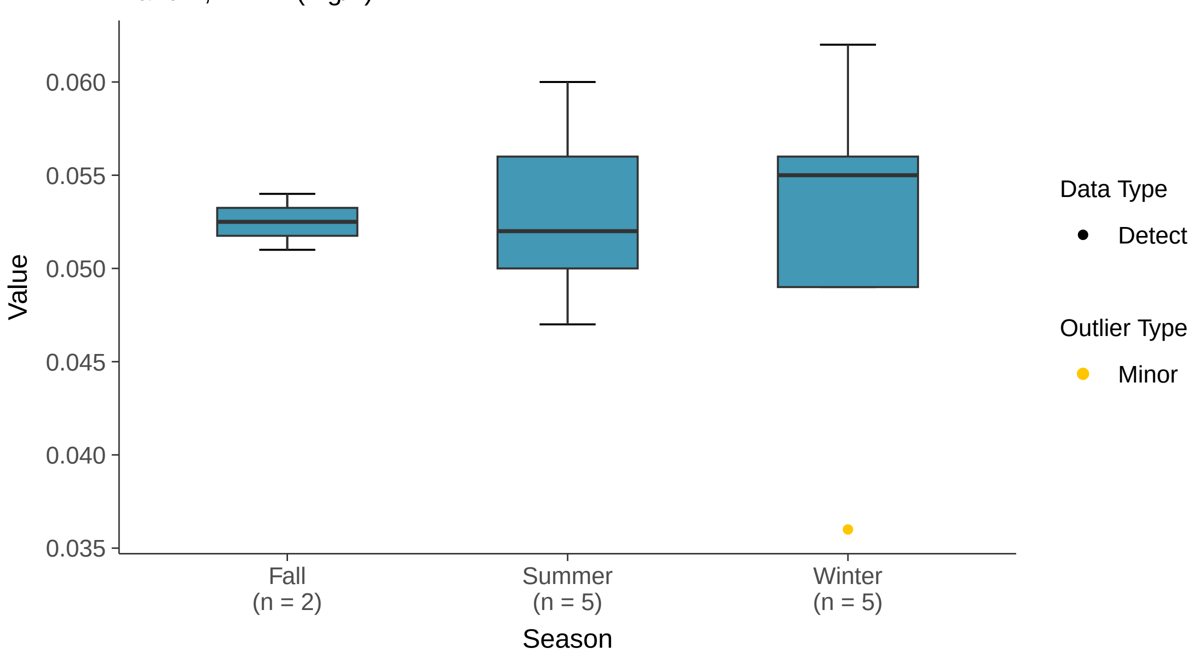
Boxplot

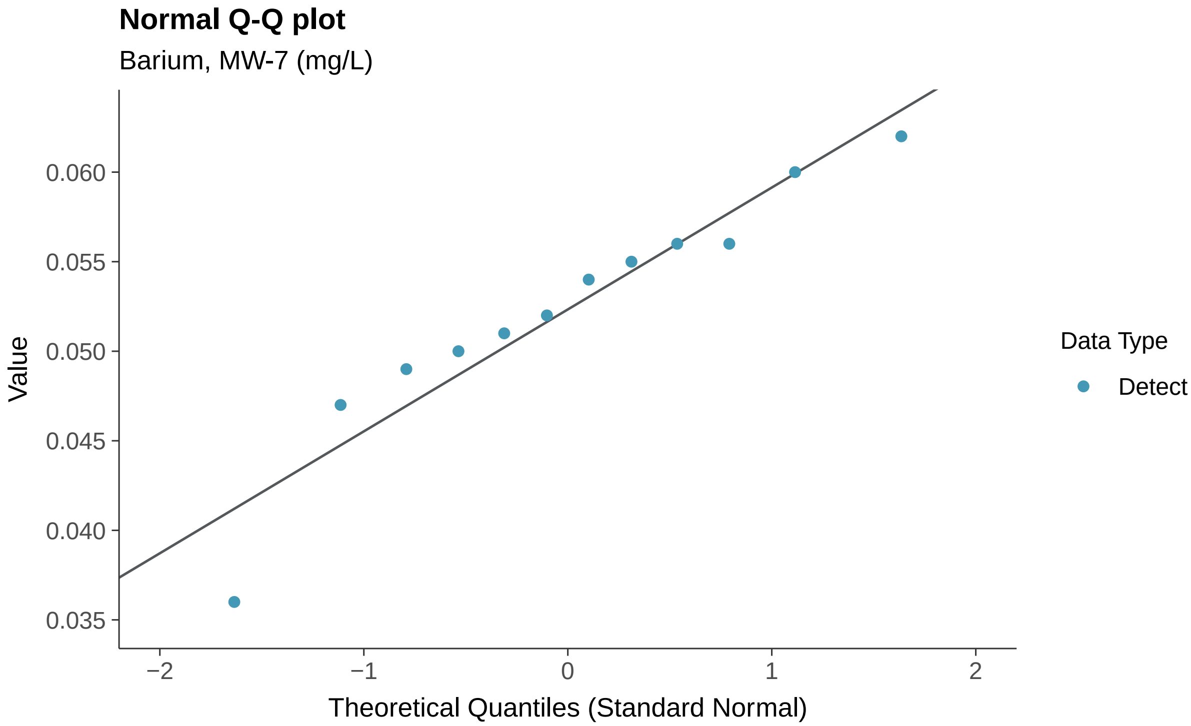
Barium, MW-7 (mg/L)

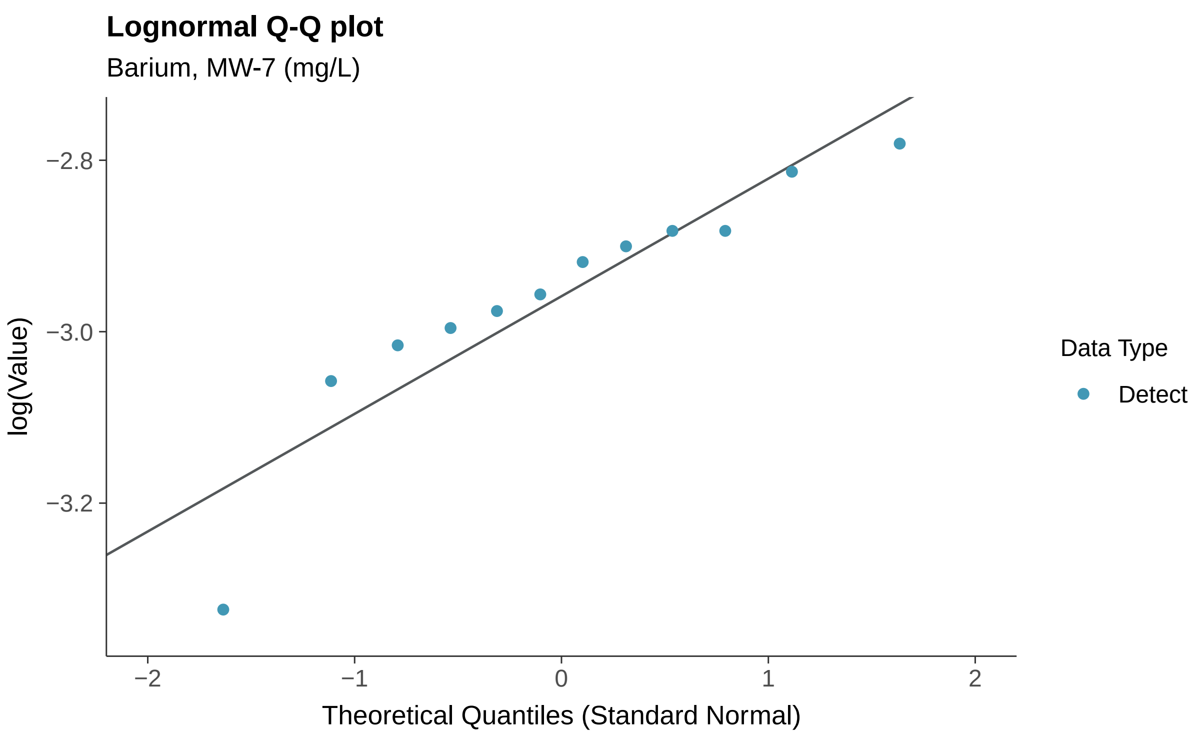


Boxplot by Season

Barium, MW-7 (mg/L)

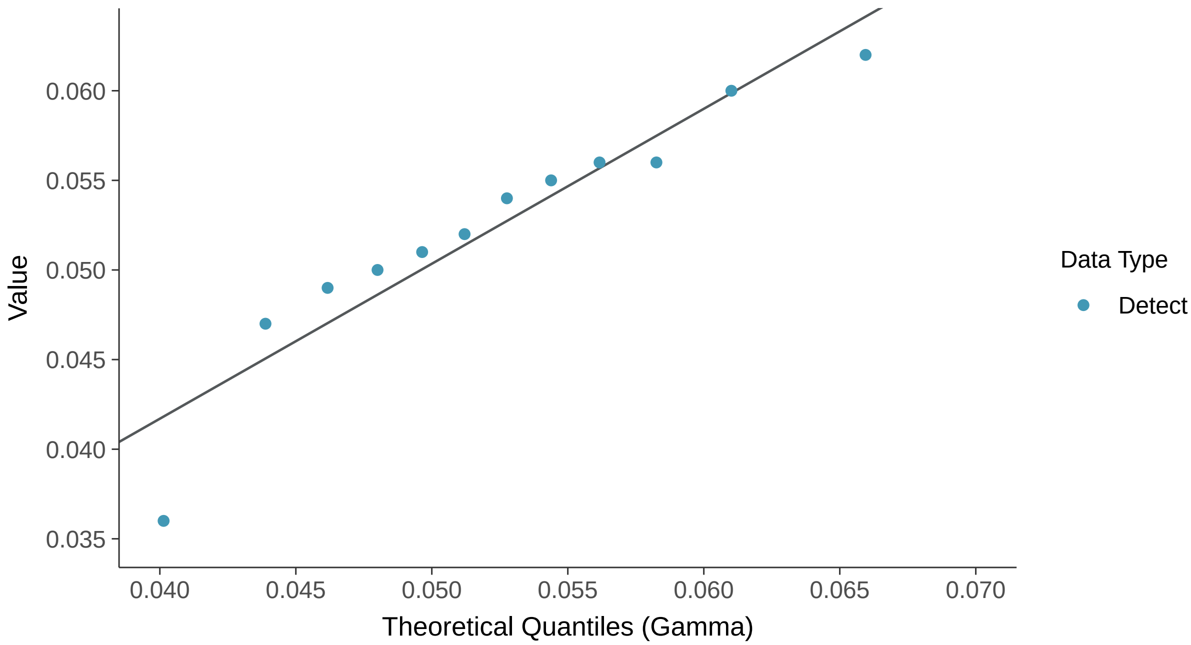



Normal Q-Q plot
Barium, MW-7 (mg/L)
Value
0.060
0.055
0.050
0.045
0.040
0.035
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-7 (mg/L)
log(Value)
−2.8
−3.0
−3.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

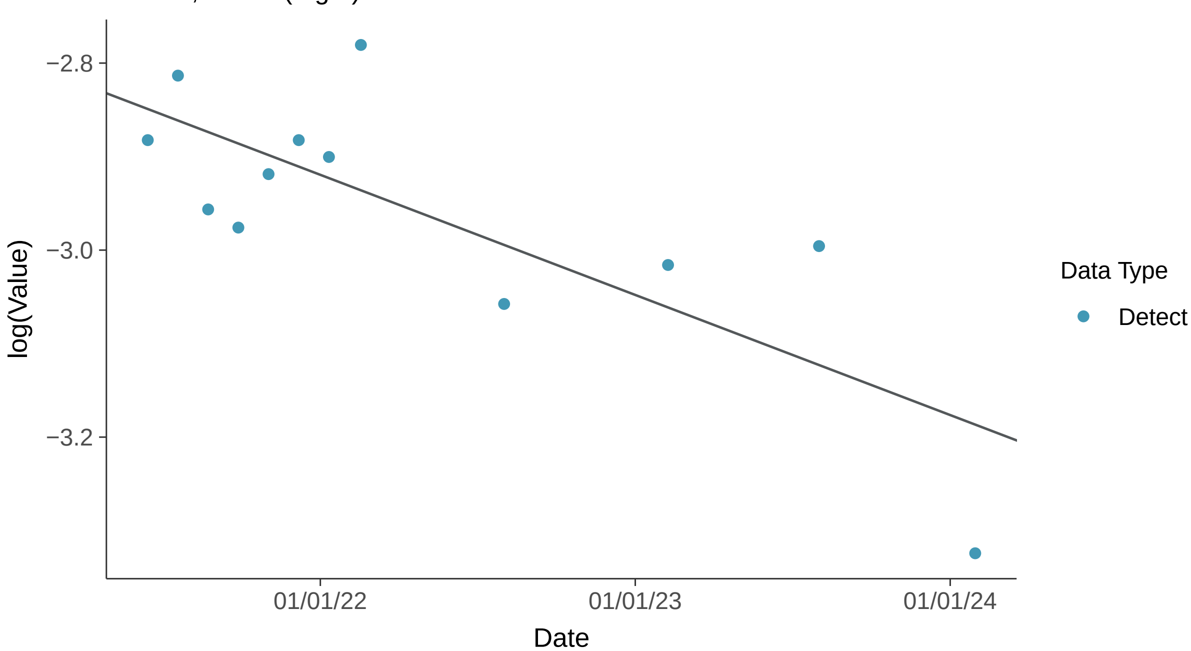
Gamma Q-Q plot

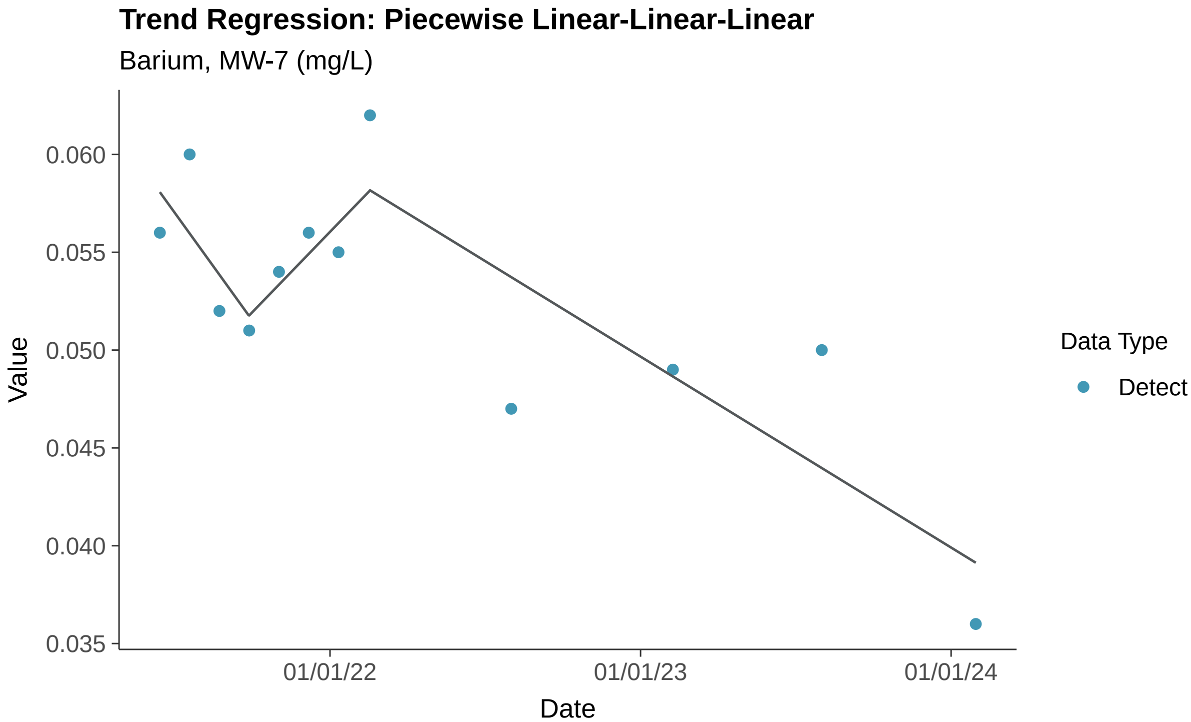
Barium, MW-7 (mg/L)



Trend Regression: Lognormal MLE

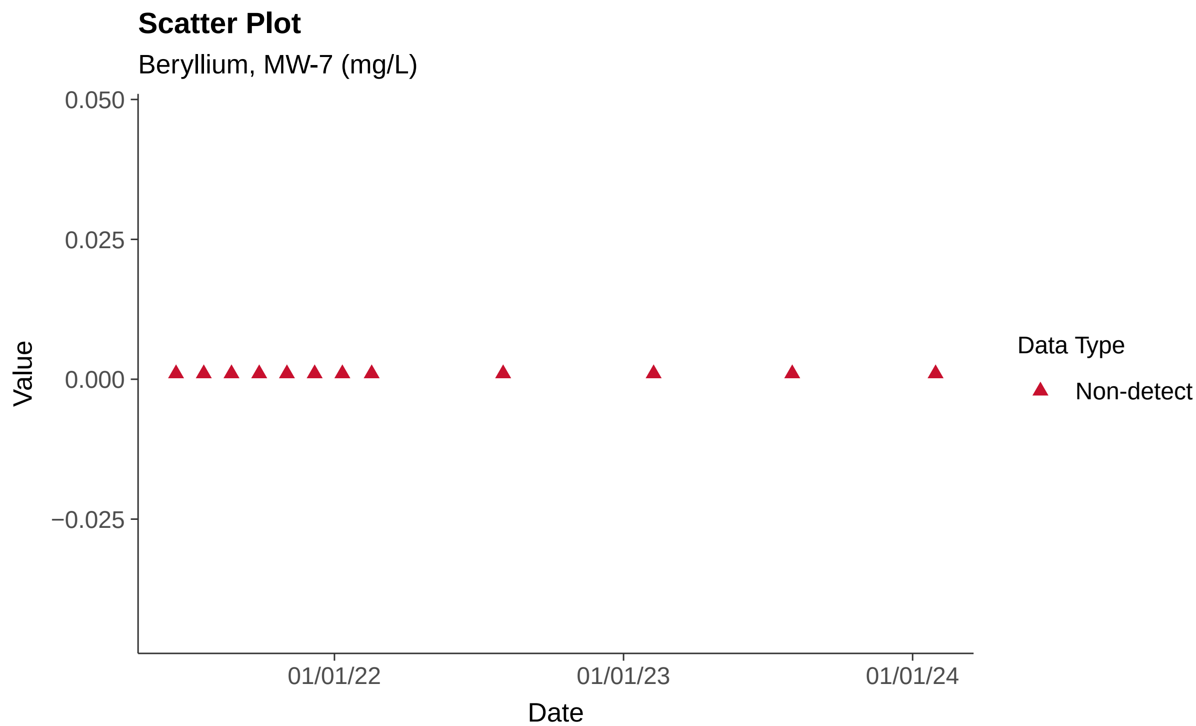
Barium, MW-7 (mg/L)

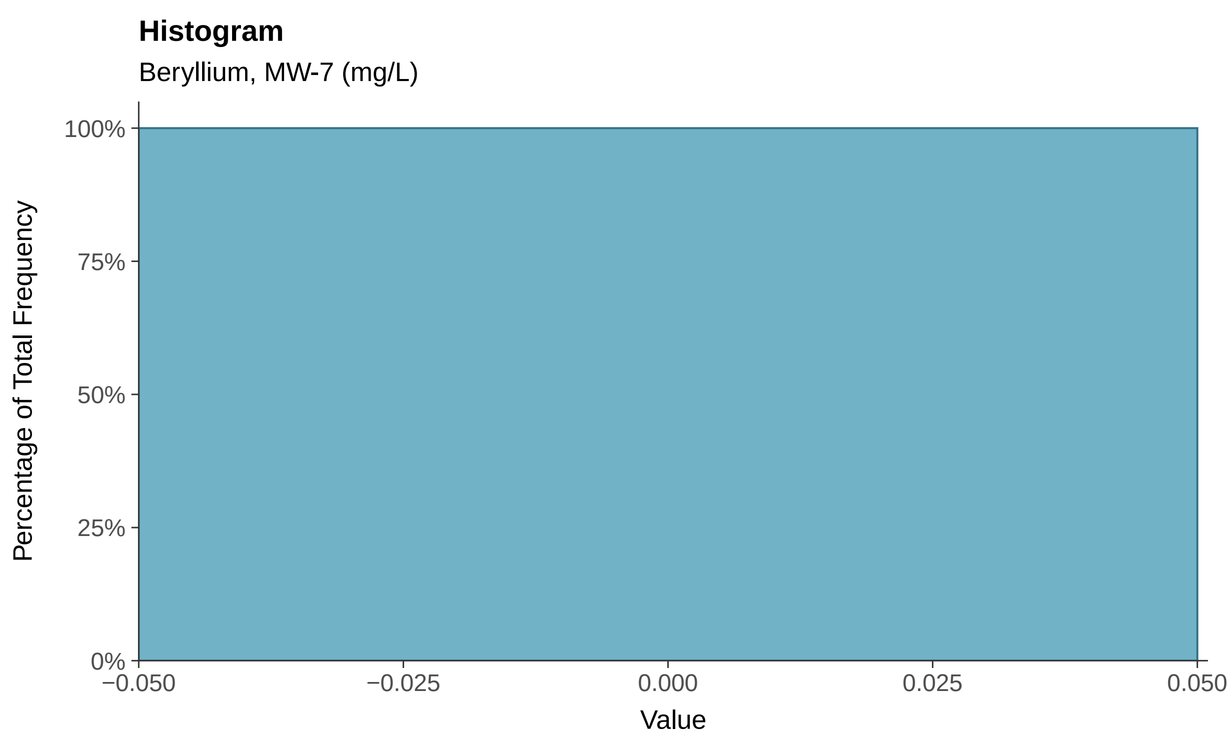



Trend Regression: Piecewise Linear-Linear-Linear
Barium, MW-7 (mg/L)
Value
0.060
0.055
0.050
0.045
0.040
0.035
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Beryllium, MW-7

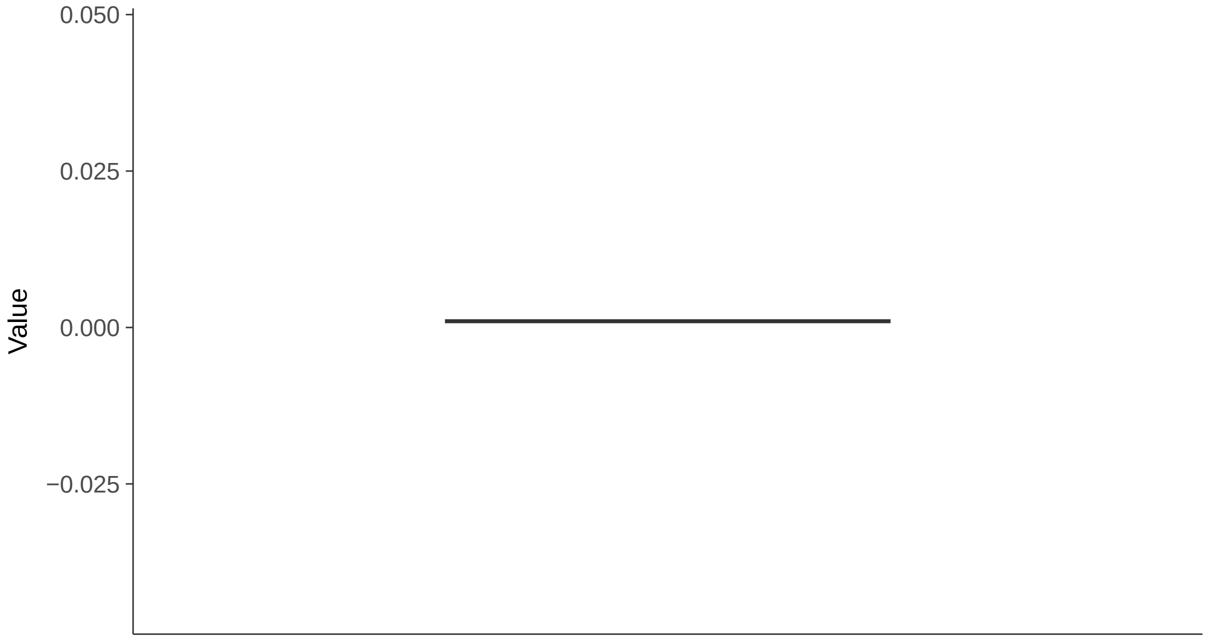
ID: 07_2_11





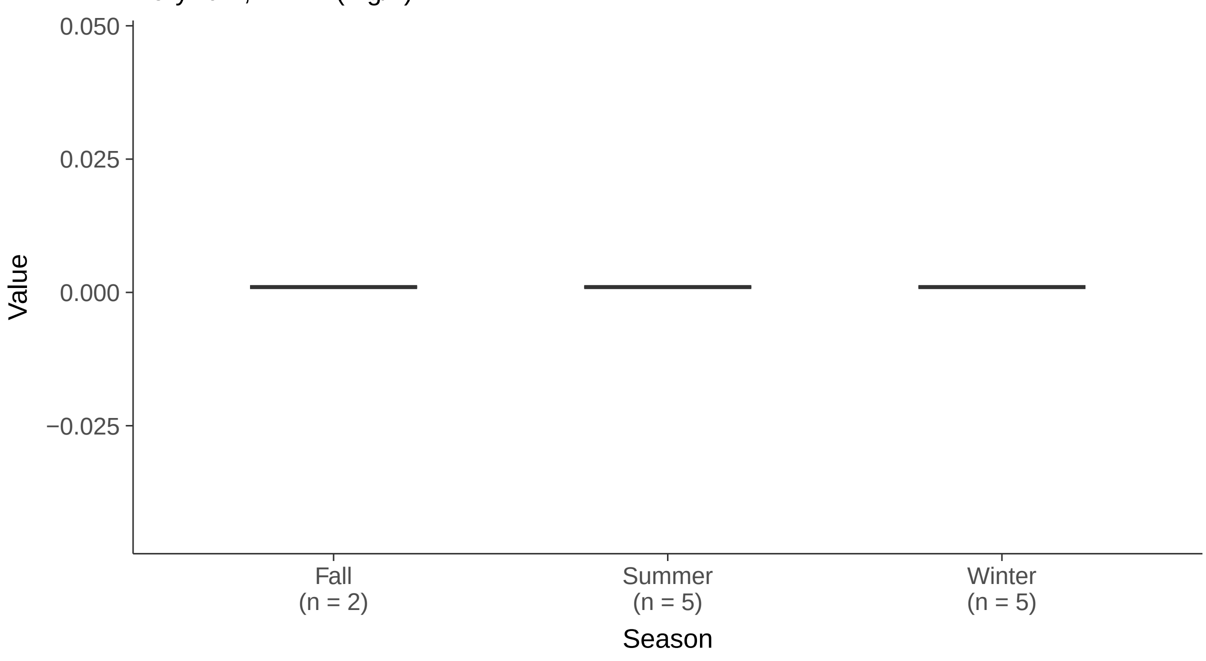
Boxplot

Beryllium, MW-7 (mg/L)



Boxplot by Season

Beryllium, MW-7 (mg/L)

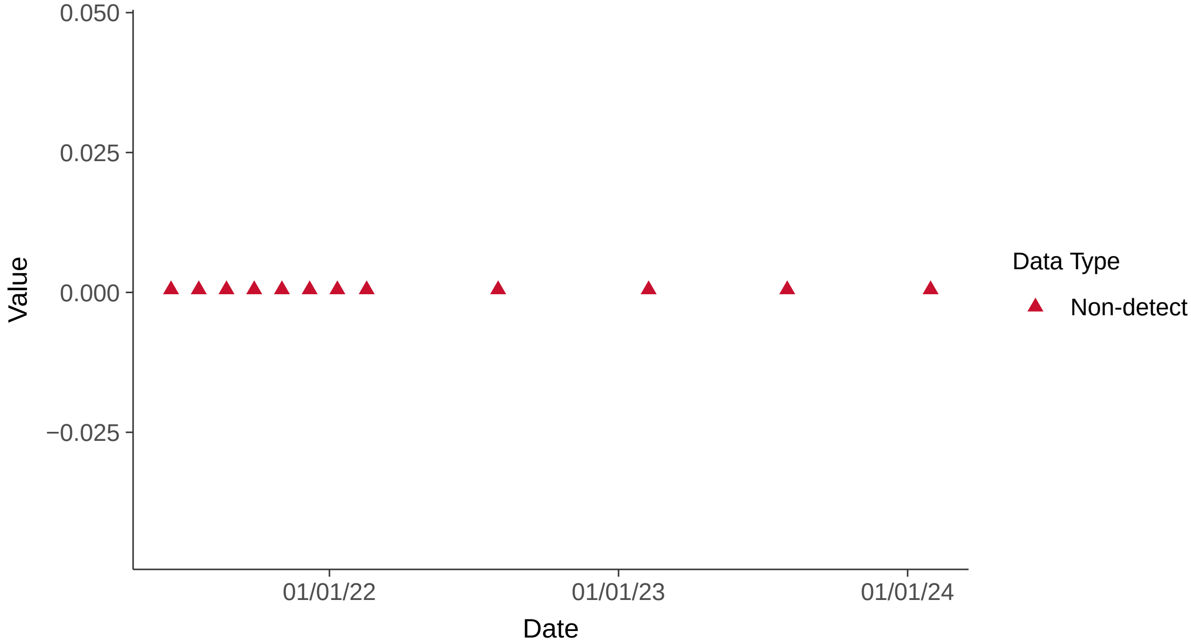


Appendix IV: Cadmium, MW-7

ID: 07_2_12

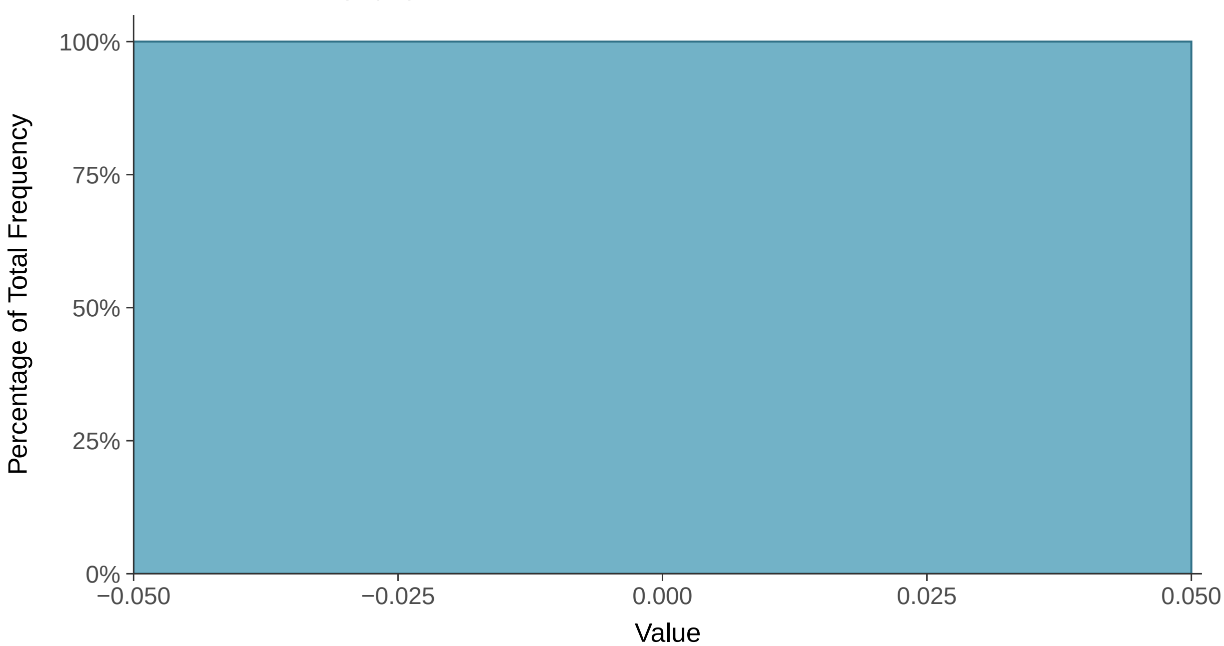
Scatter Plot

Cadmium, MW-7 (mg/L)



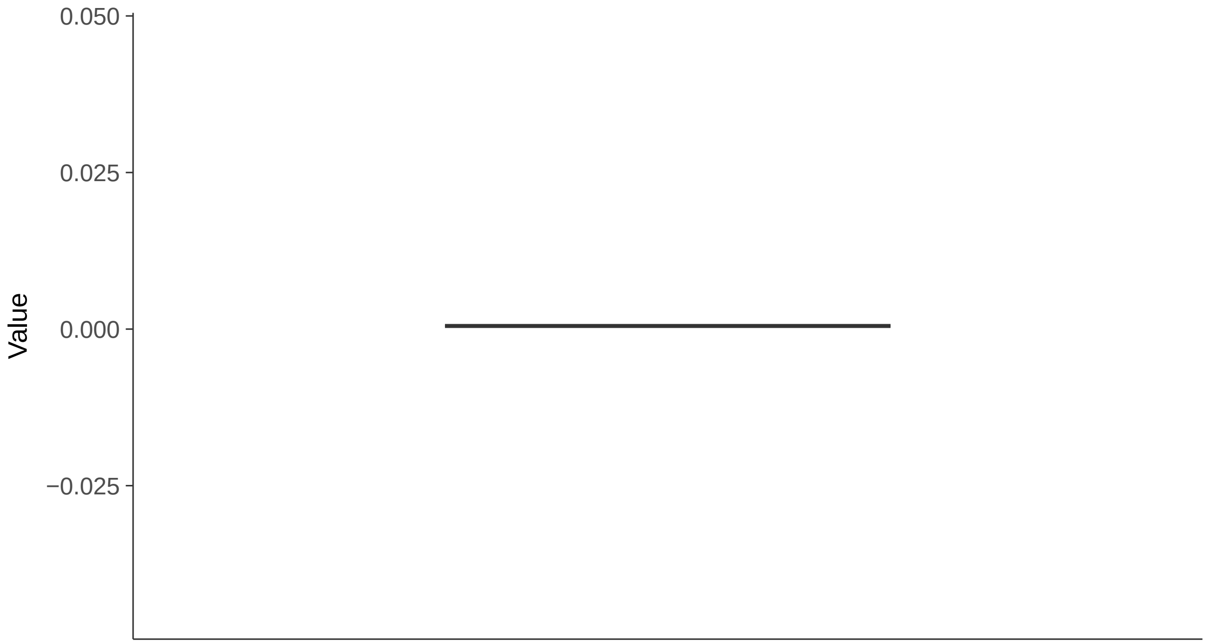
Histogram

Cadmium, MW-7 (mg/L)



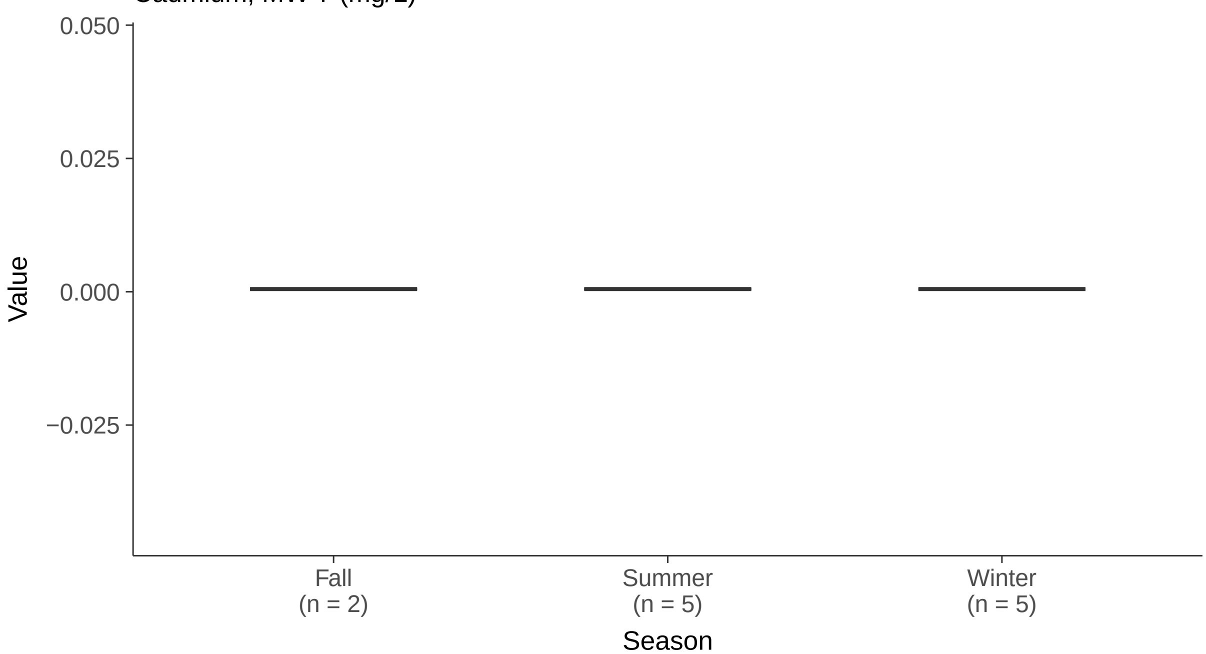
Boxplot

Cadmium, MW-7 (mg/L)



Boxplot by Season

Cadmium, MW-7 (mg/L)

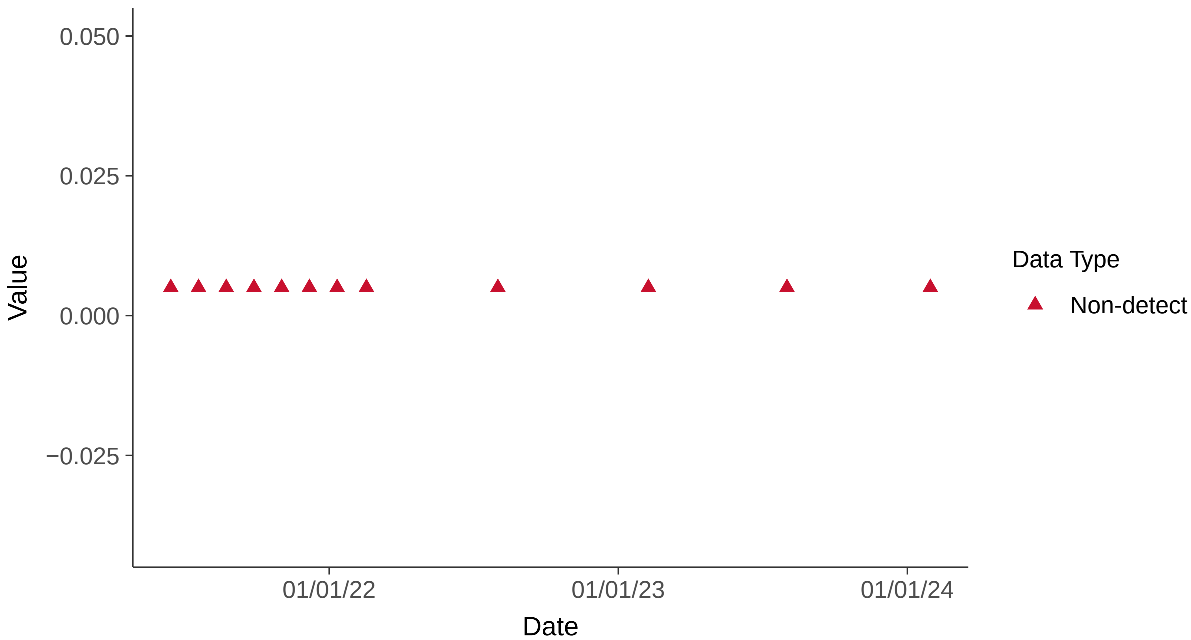


Appendix IV: Chromium, MW-7

ID: 07_2_13

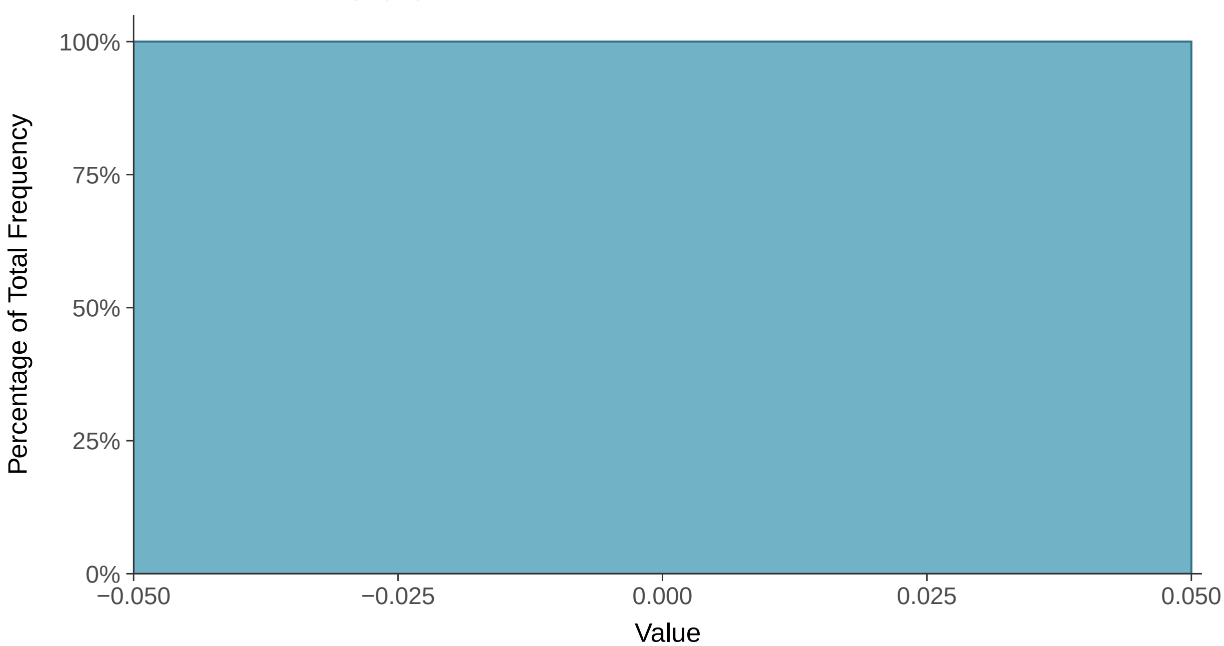
Scatter Plot

Chromium, MW-7 (mg/L)



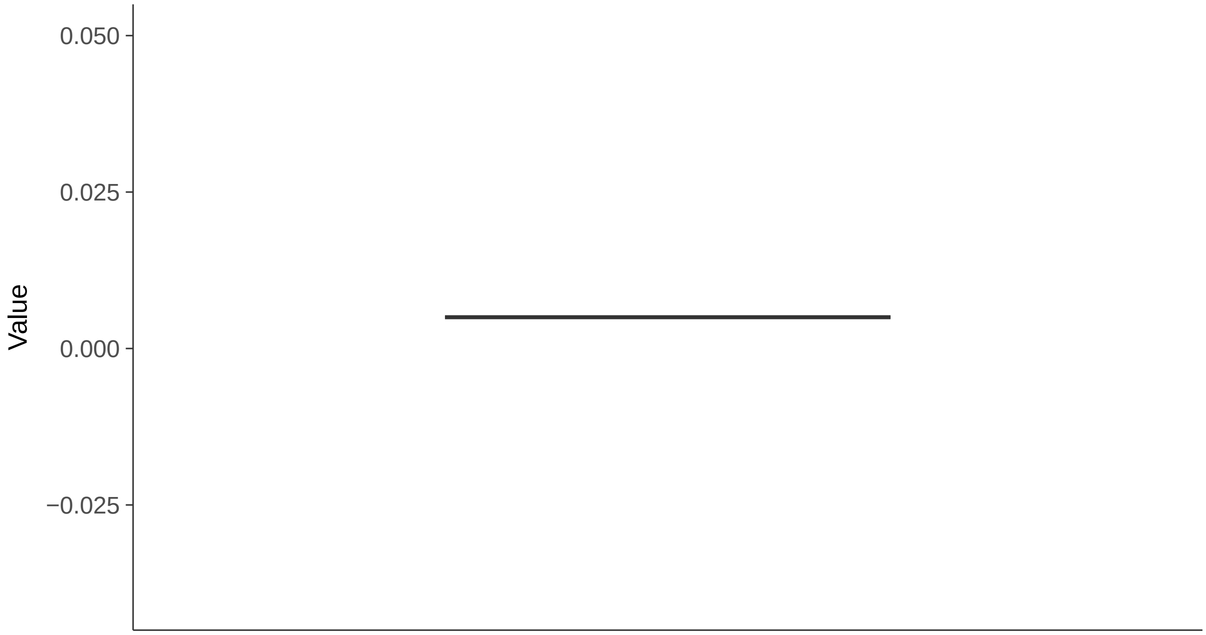
Histogram

Chromium, MW-7 (mg/L)



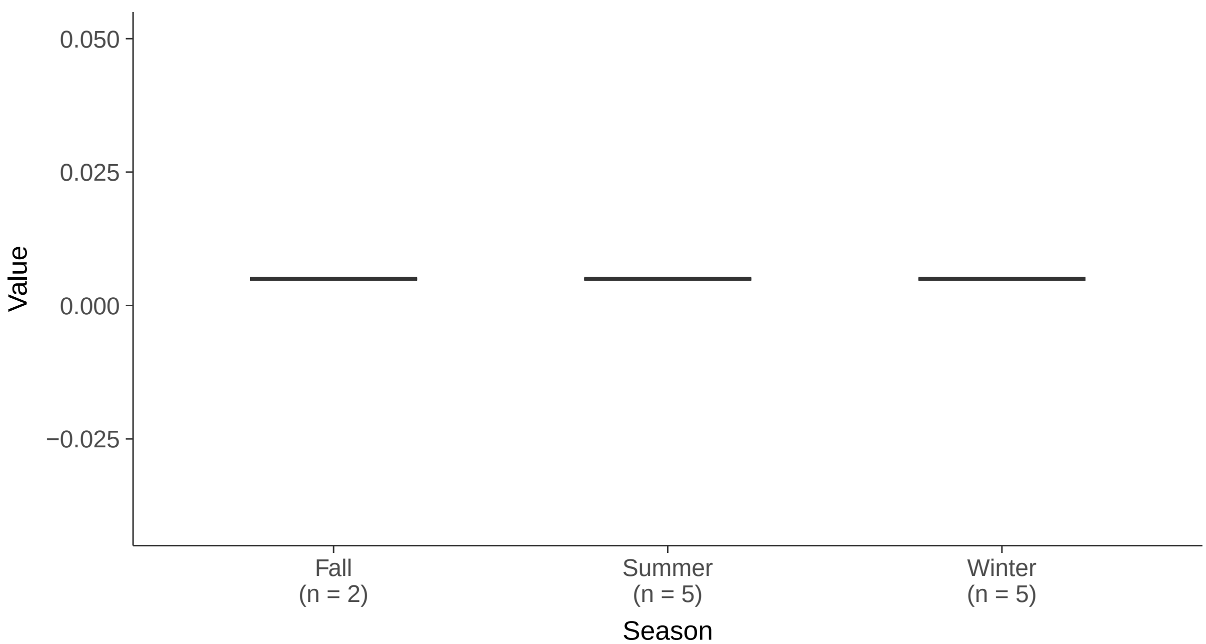
Boxplot

Chromium, MW-7 (mg/L)



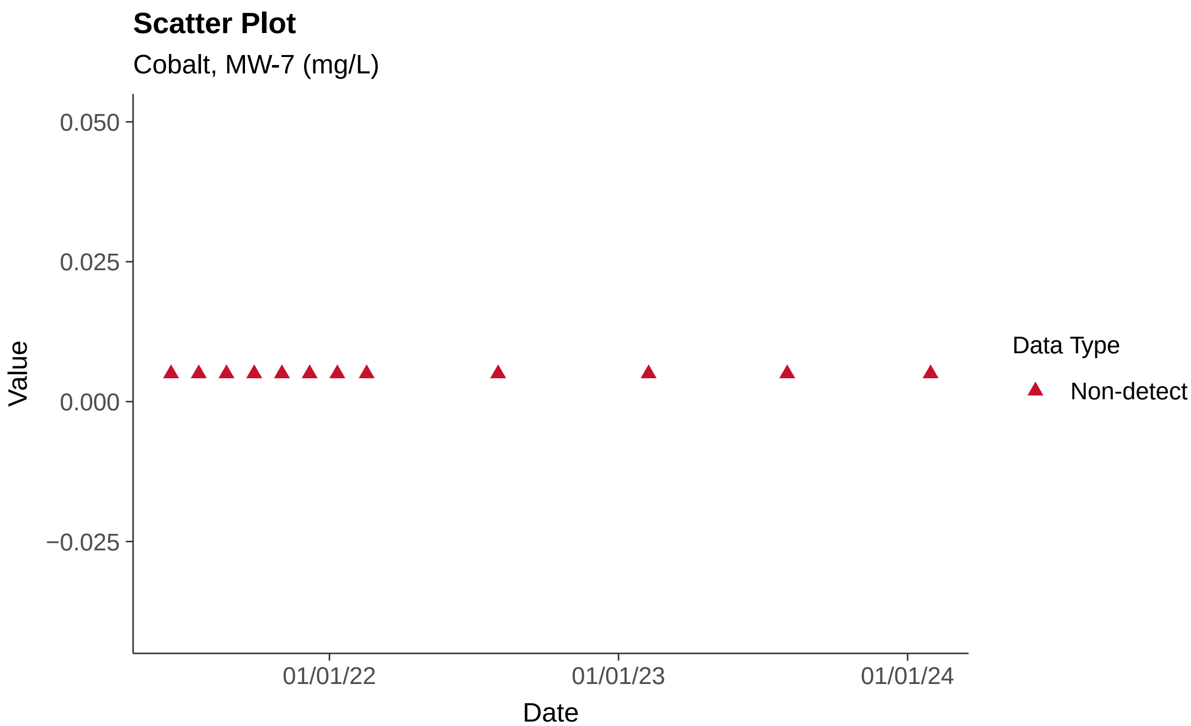
Boxplot by Season

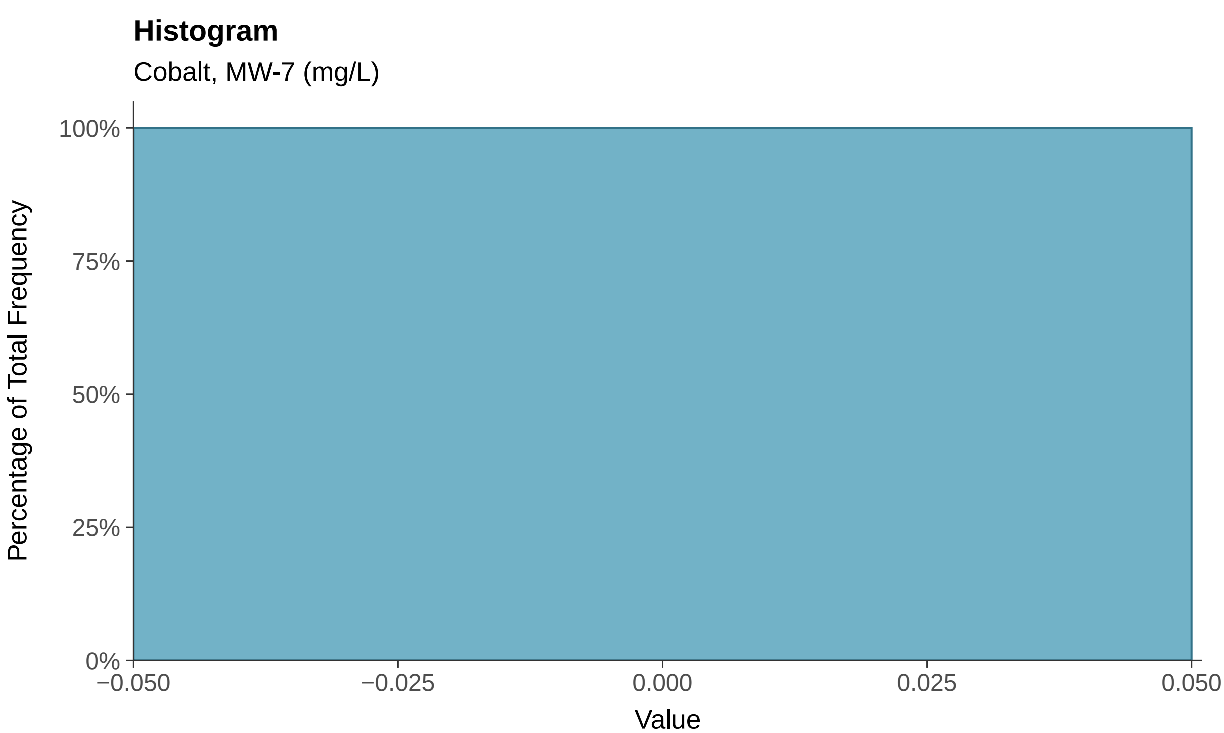
Chromium, MW-7 (mg/L)



Appendix IV: Cobalt, MW-7

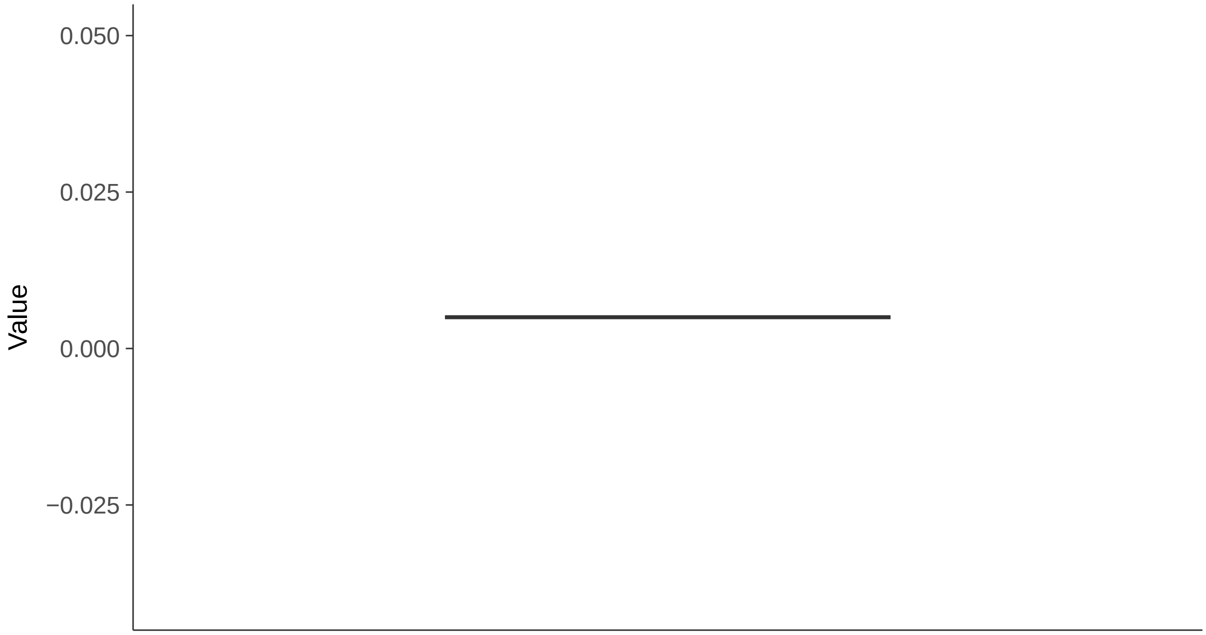
ID: 07_2_14





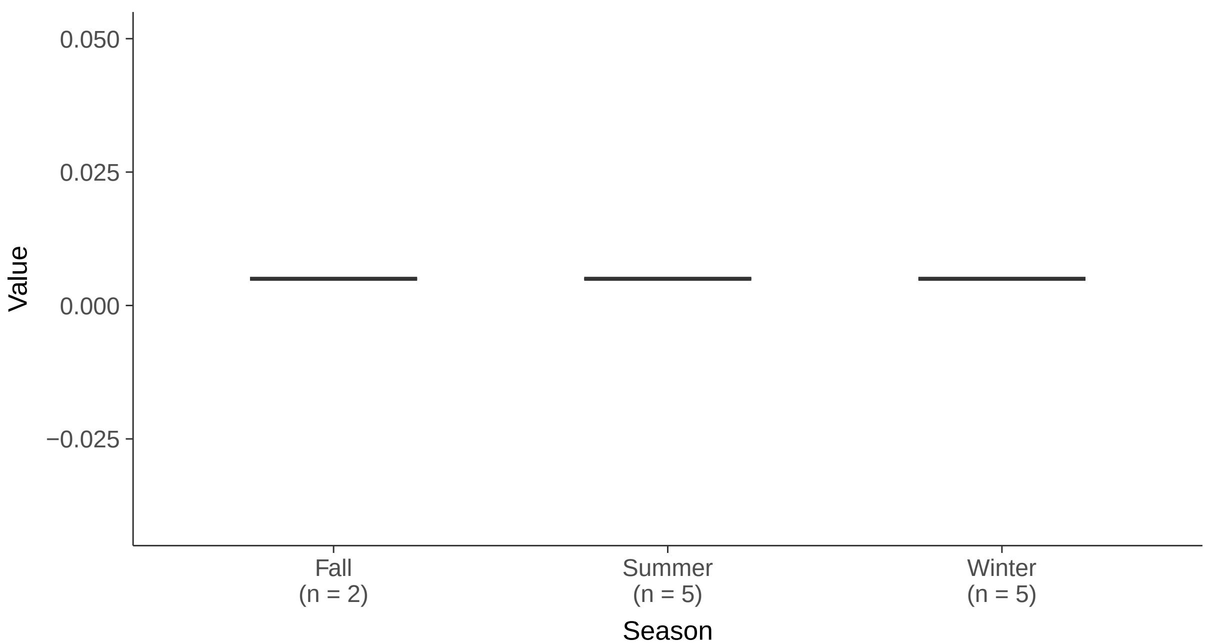
Boxplot

Cobalt, MW-7 (mg/L)



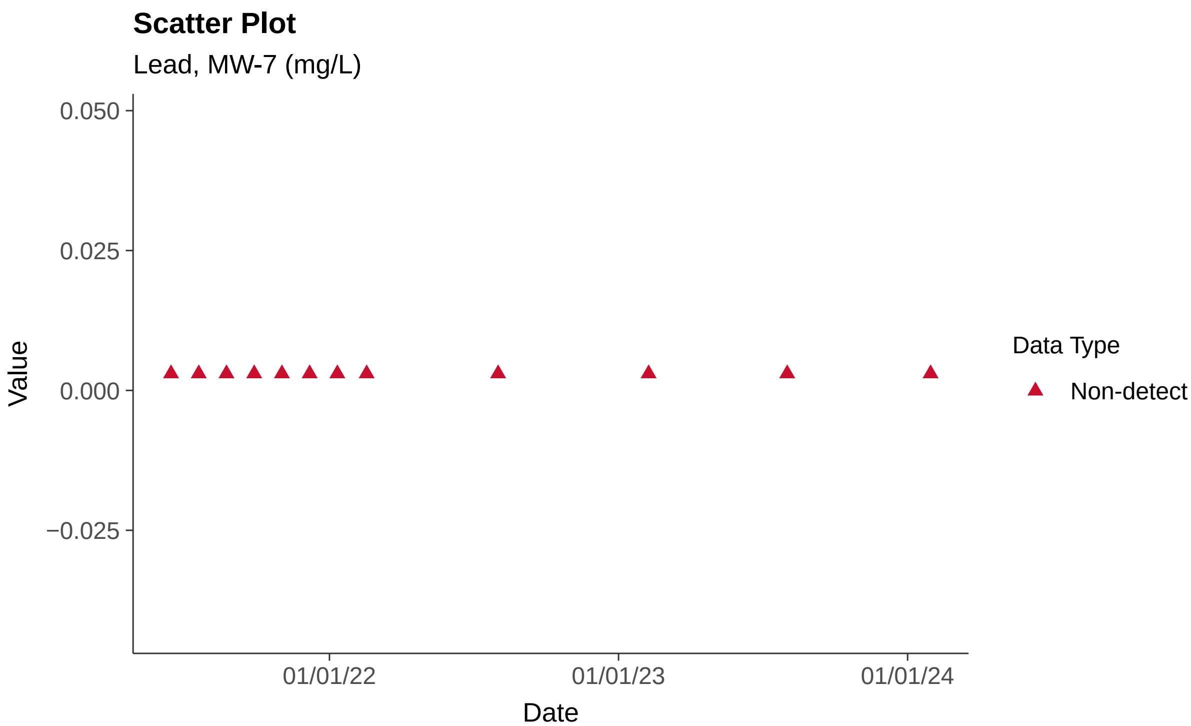
Boxplot by Season

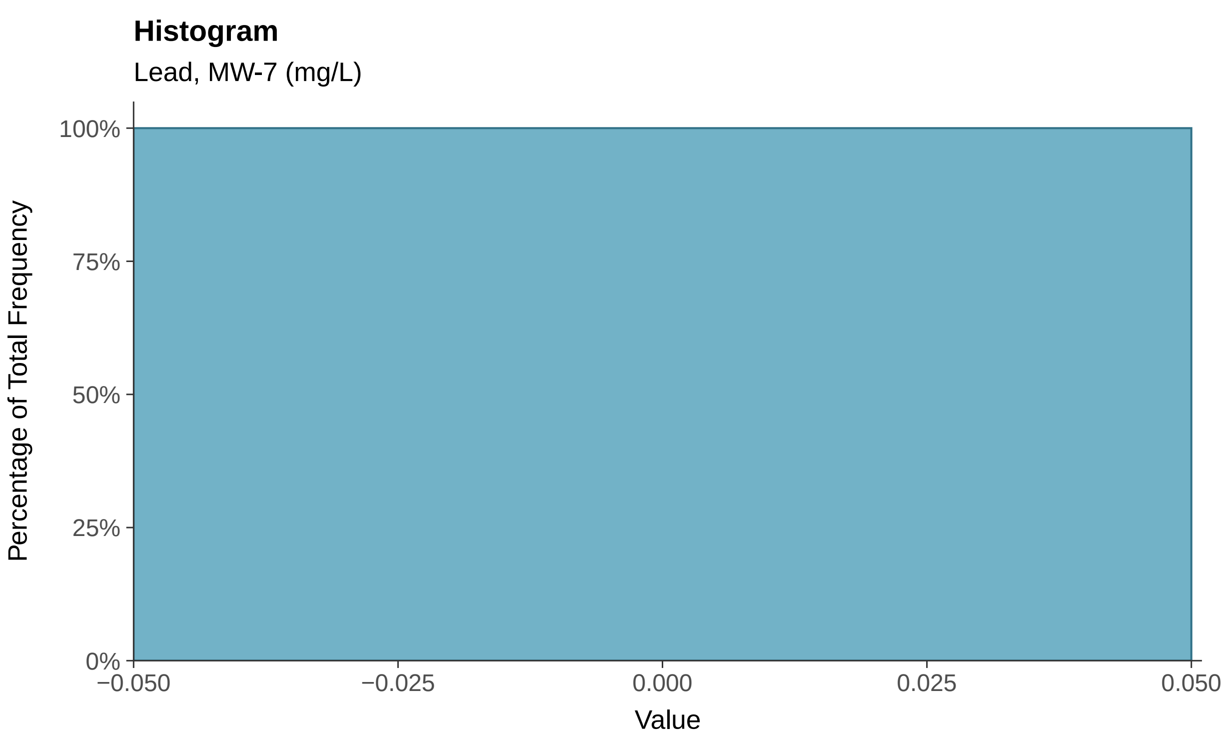
Cobalt, MW-7 (mg/L)



Appendix IV: Lead, MW-7

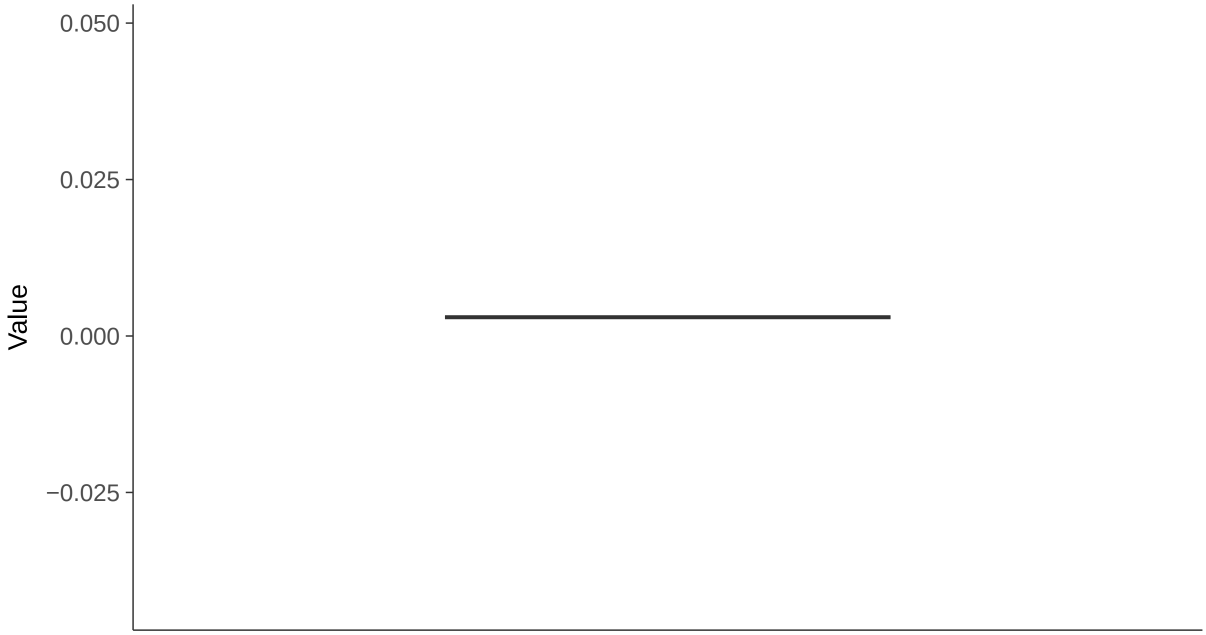
ID: 07_2_15





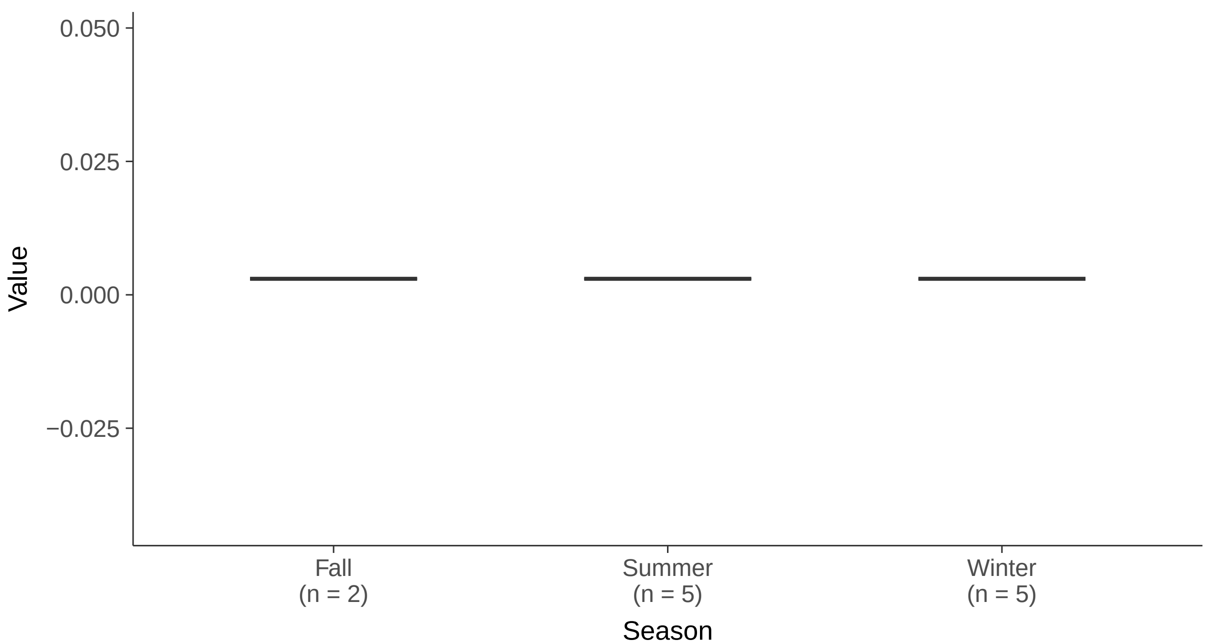
Boxplot

Lead, MW-7 (mg/L)



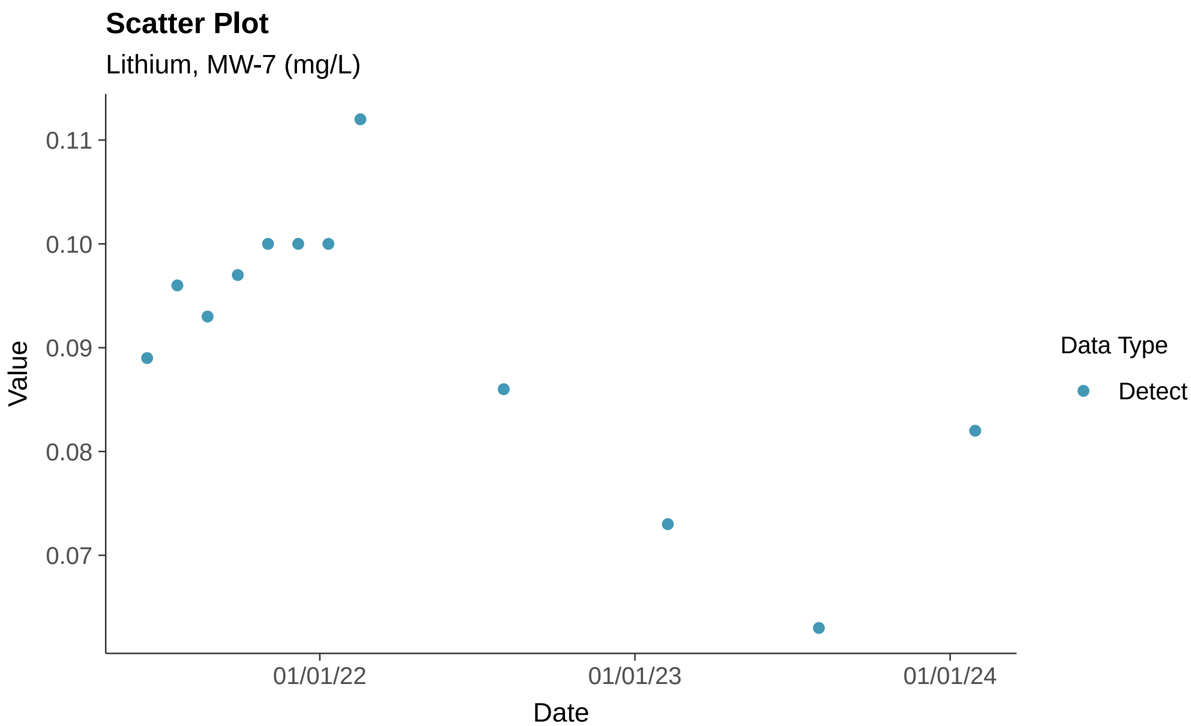
Boxplot by Season

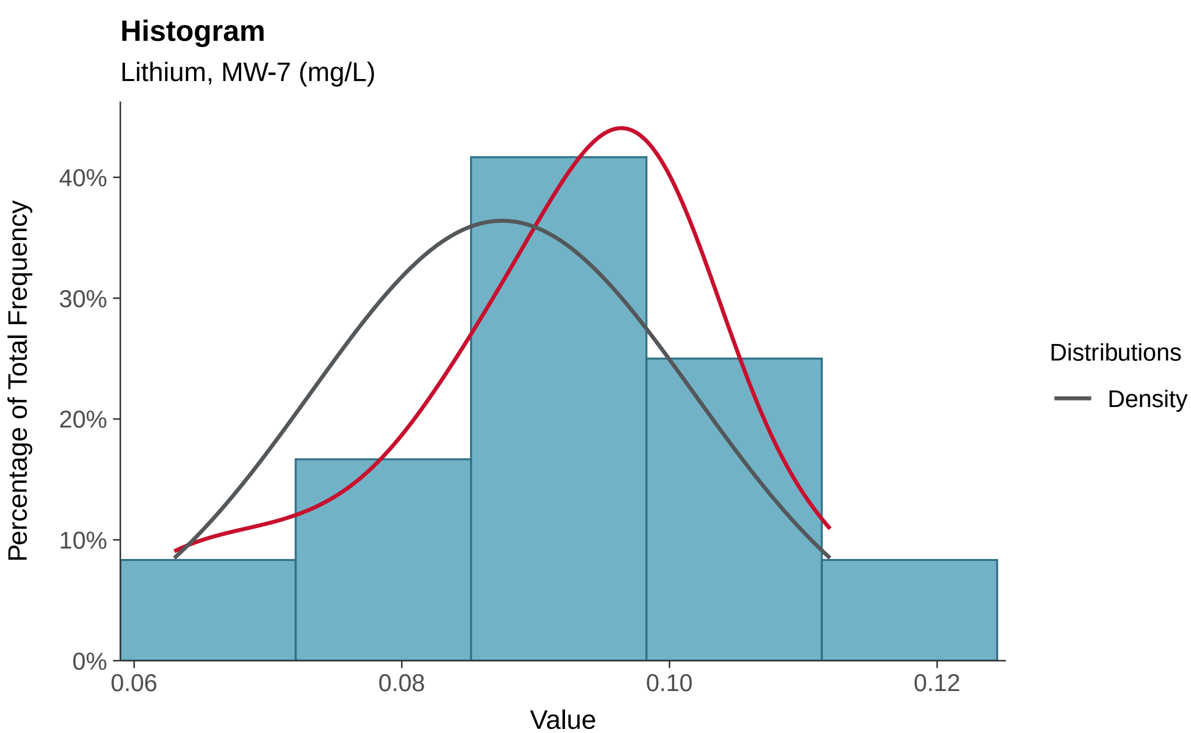
Lead, MW-7 (mg/L)



Appendix IV: Lithium, MW-7

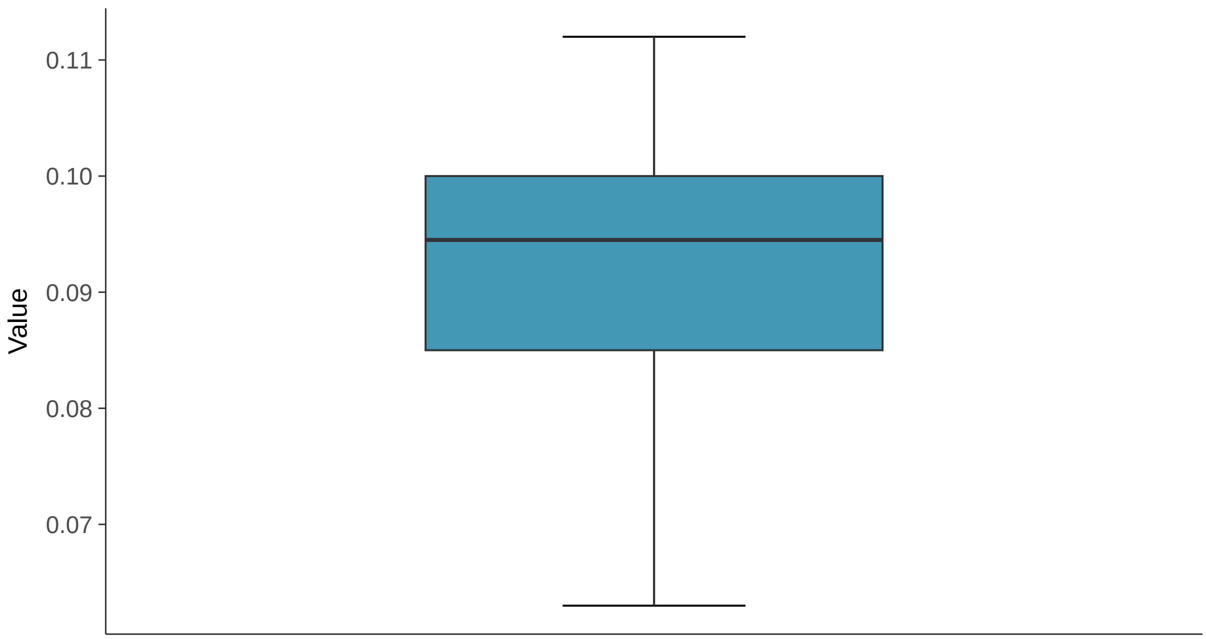
ID: 07_2_16





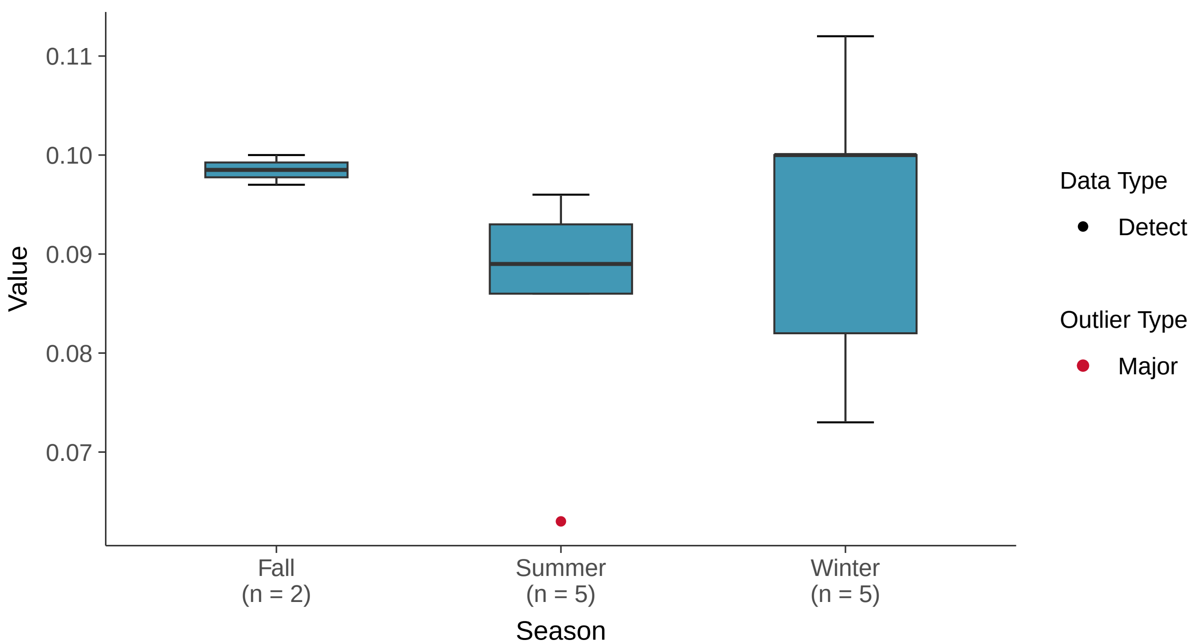
Boxplot

Lithium, MW-7 (mg/L)



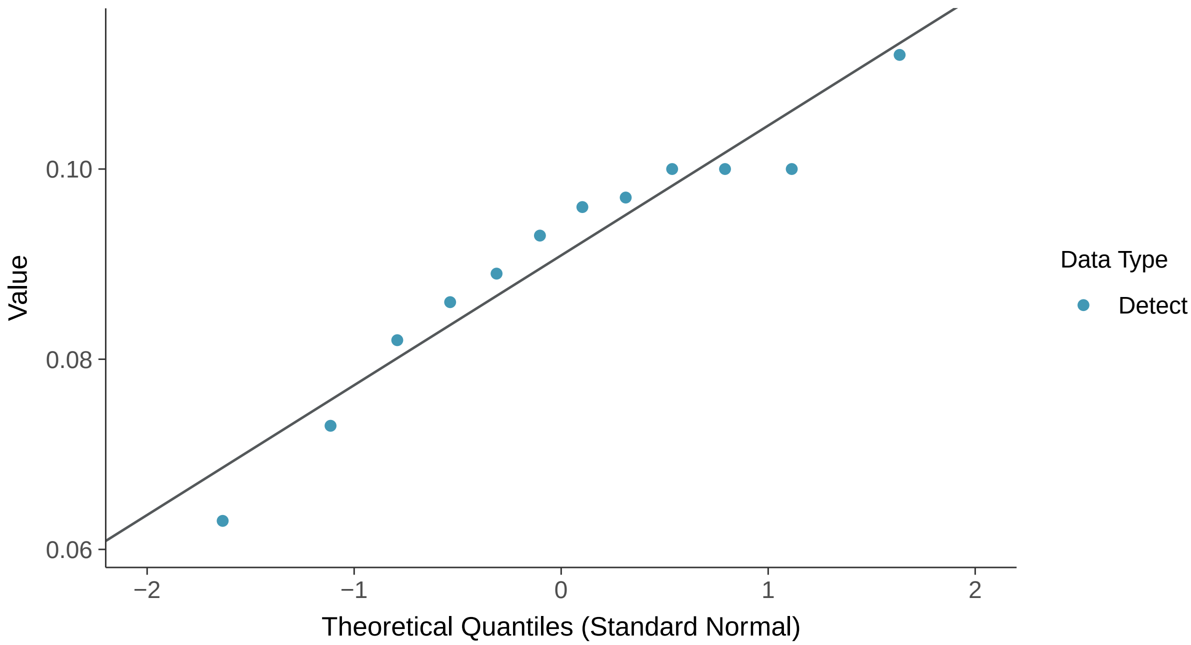
Boxplot by Season

Lithium, MW-7 (mg/L)



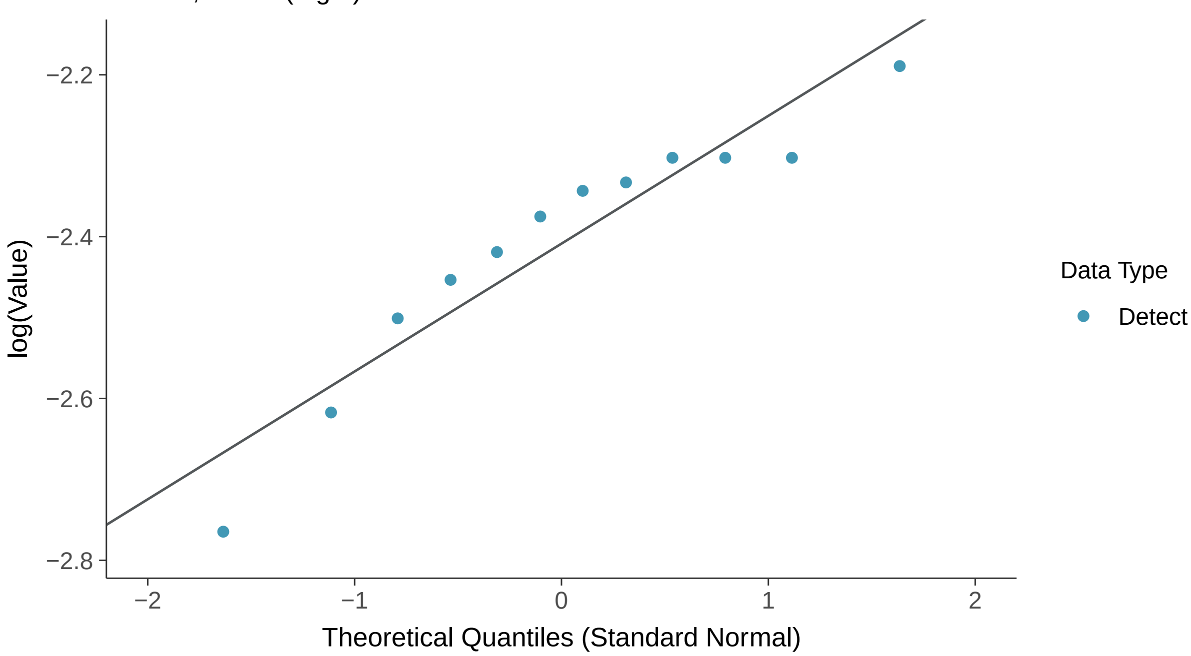
Normal Q-Q plot

Lithium, MW-7 (mg/L)



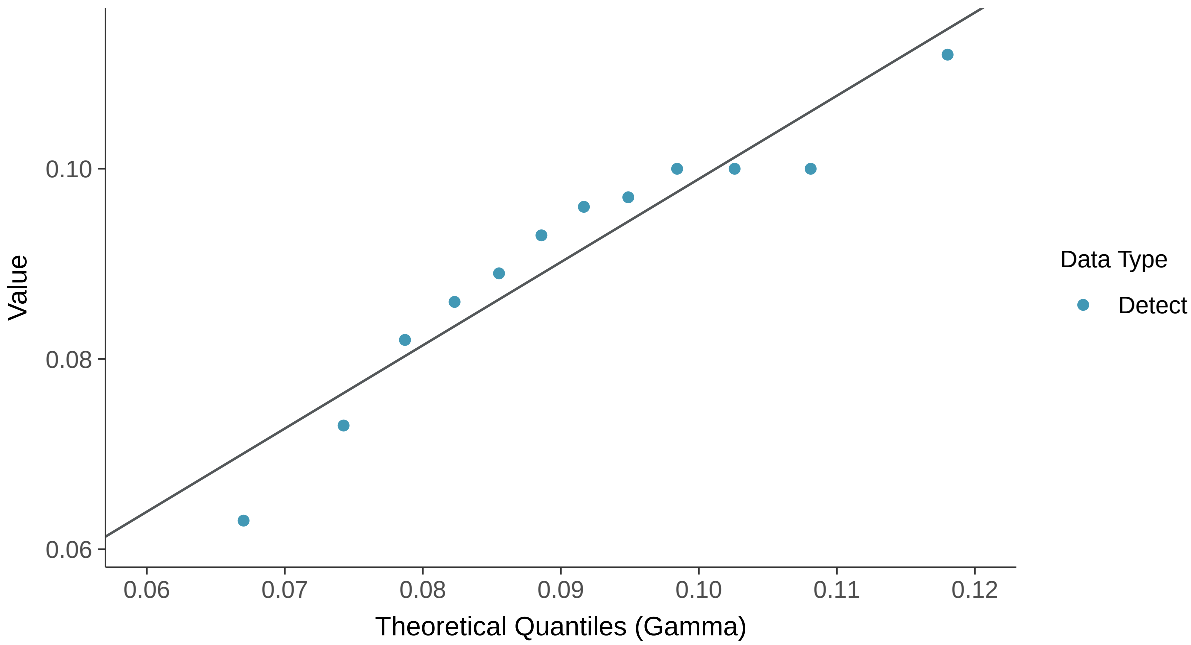
Lognormal Q-Q plot

Lithium, MW-7 (mg/L)



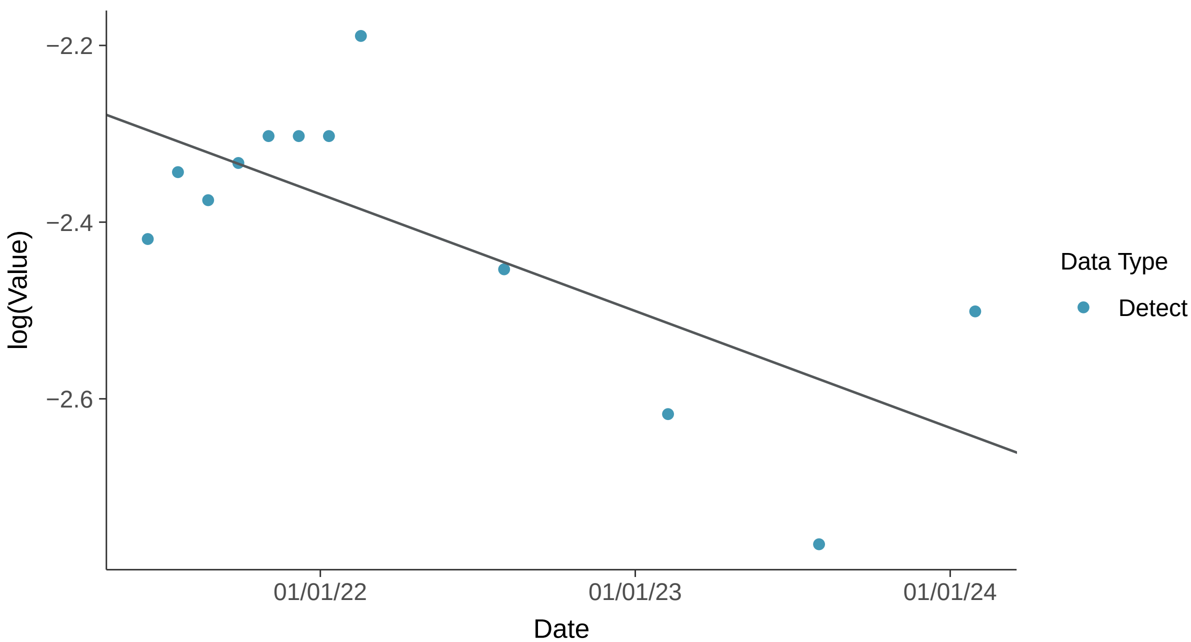
Gamma Q-Q plot

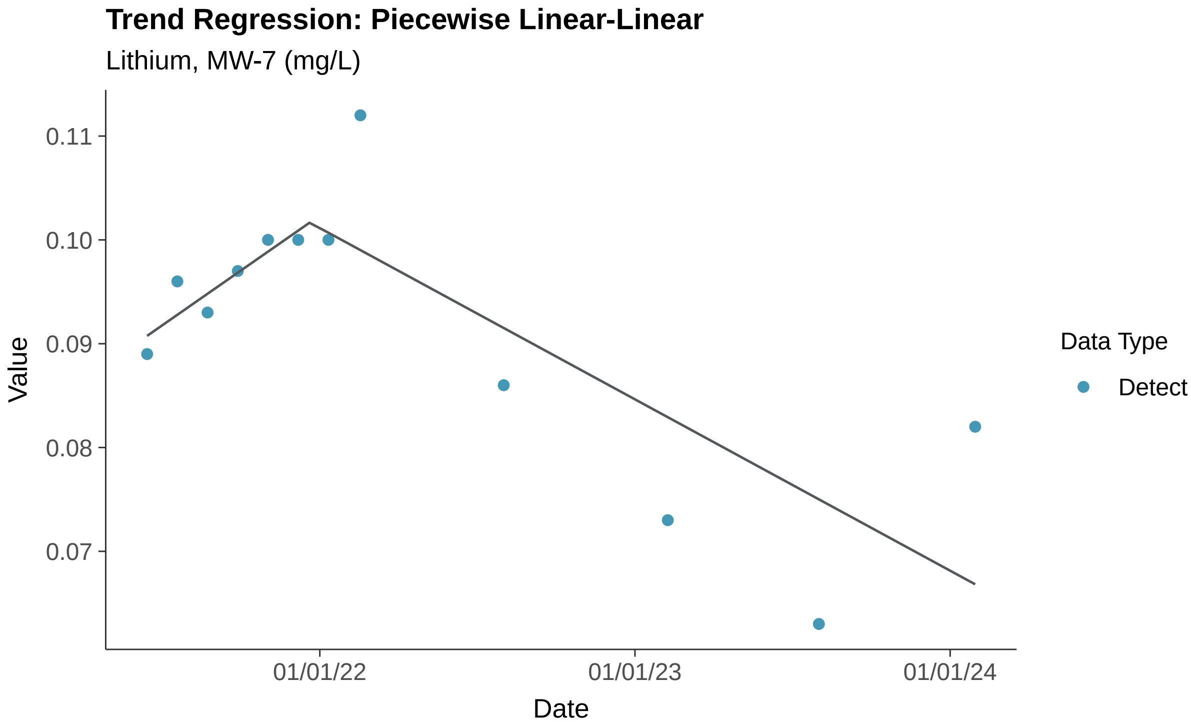
Lithium, MW-7 (mg/L)

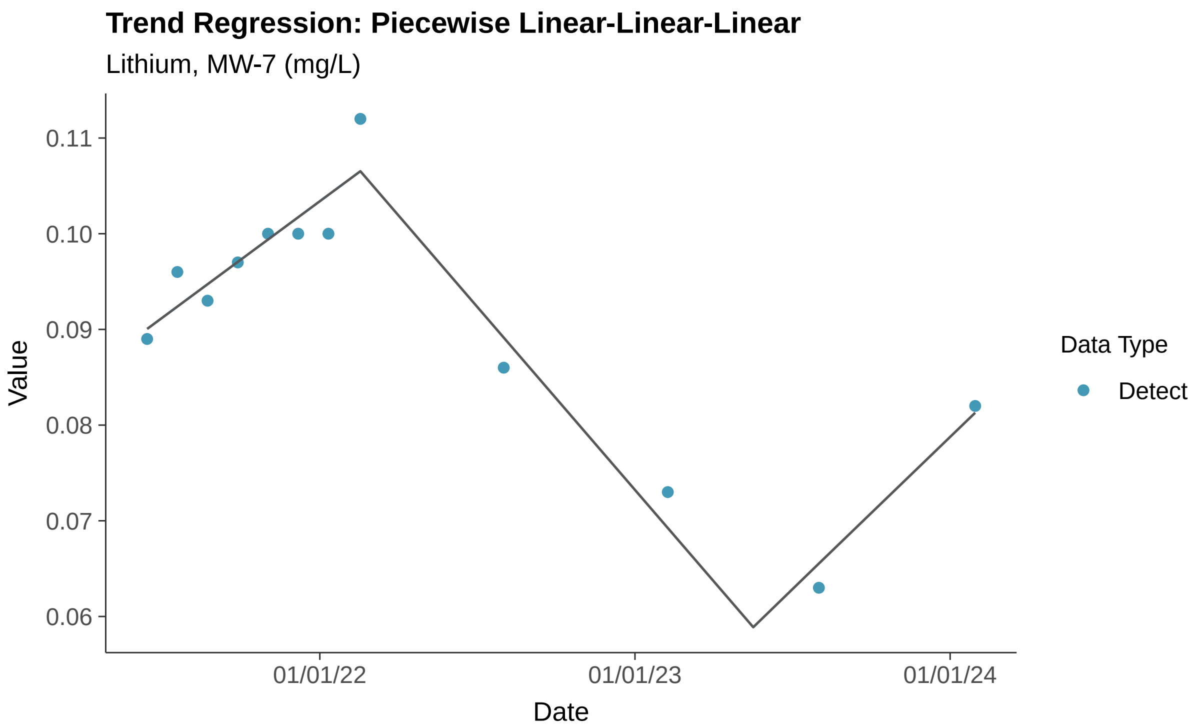


Trend Regression: Lognormal MLE

Lithium, MW-7 (mg/L)

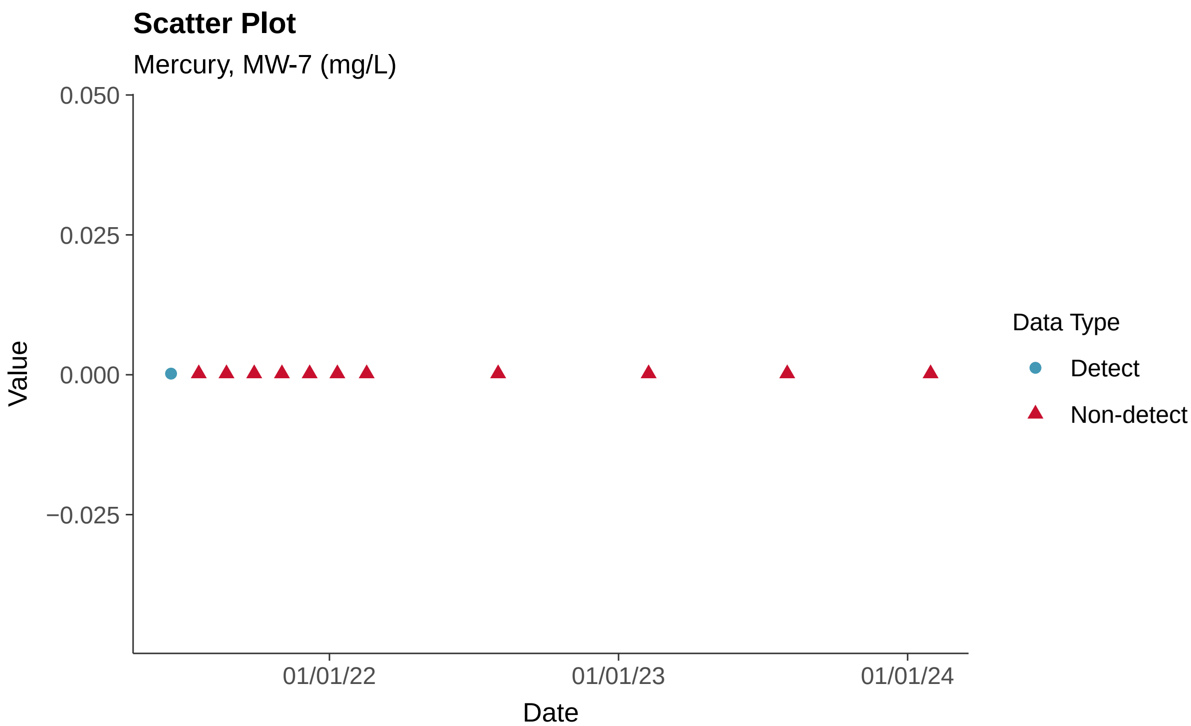


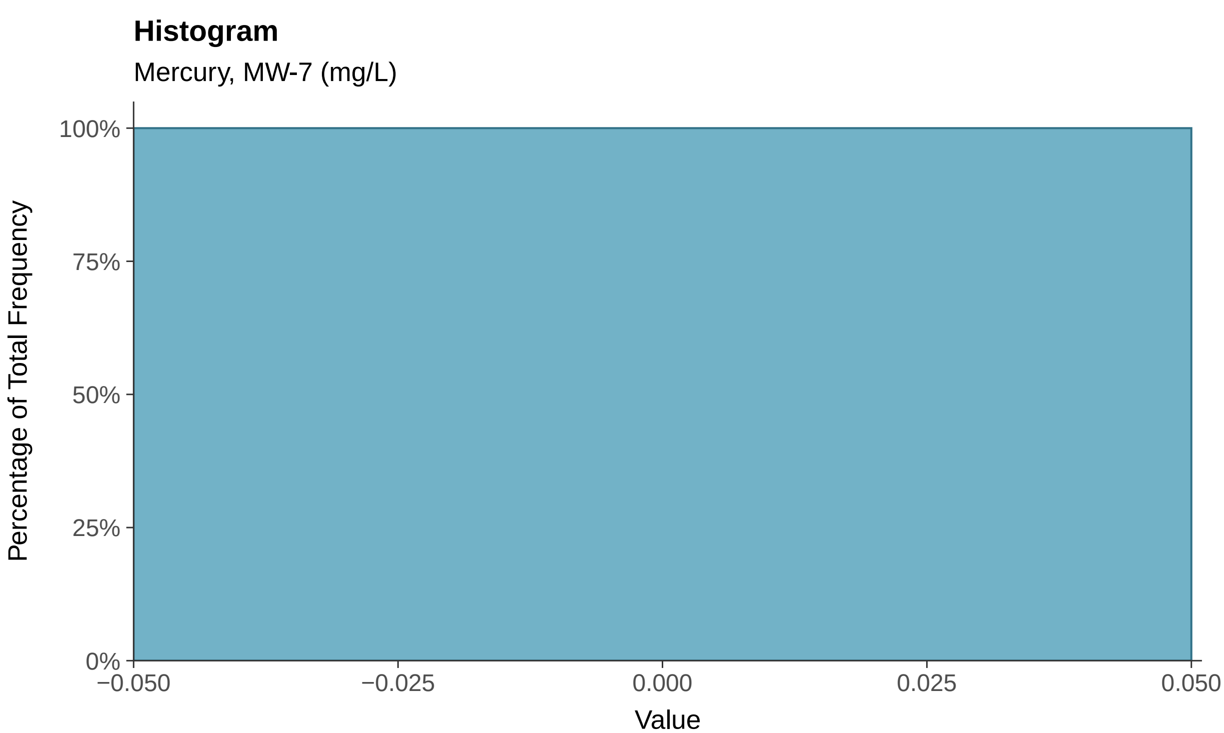

Trend Regression: Piecewise Linear-Linear
Lithium, MW-7 (mg/L)
Value
0.11
0.10
0.09
0.08
0.07
Date
01/01/22
01/01/23
01/01/24
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Lithium, MW-7 (mg/L)
Value
0.11
0.10
0.09
0.08
0.07
0.06
Date
01/01/22
01/01/23
01/01/24
Data Type
Detect

Appendix IV: Mercury, MW-7

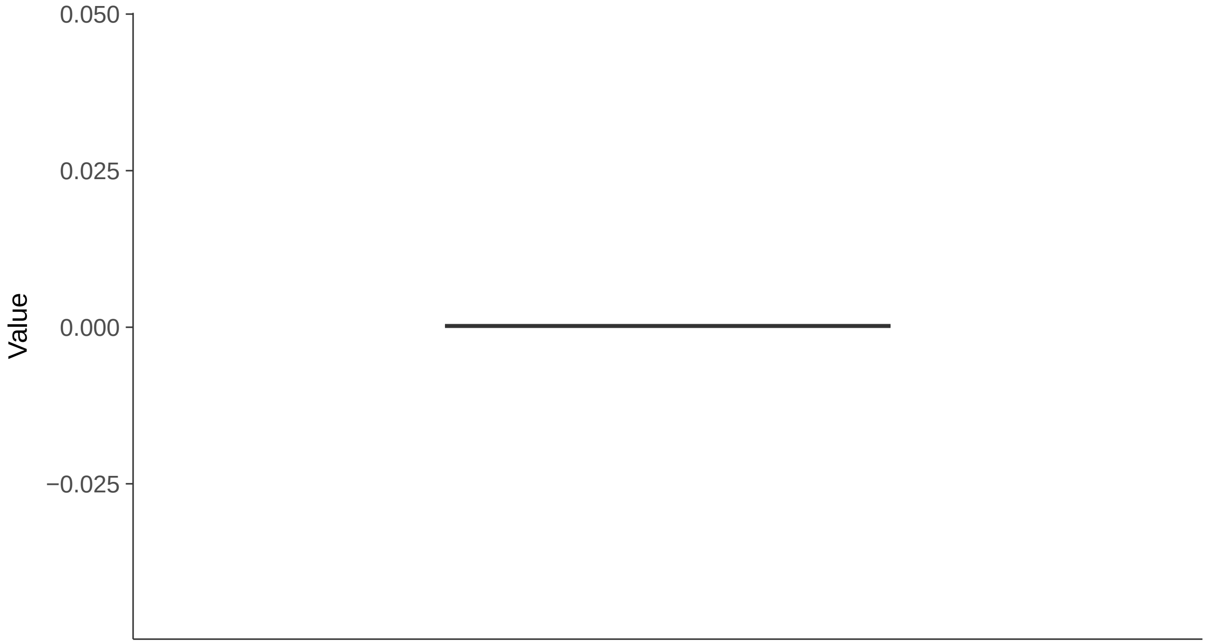
ID: 07_2_17





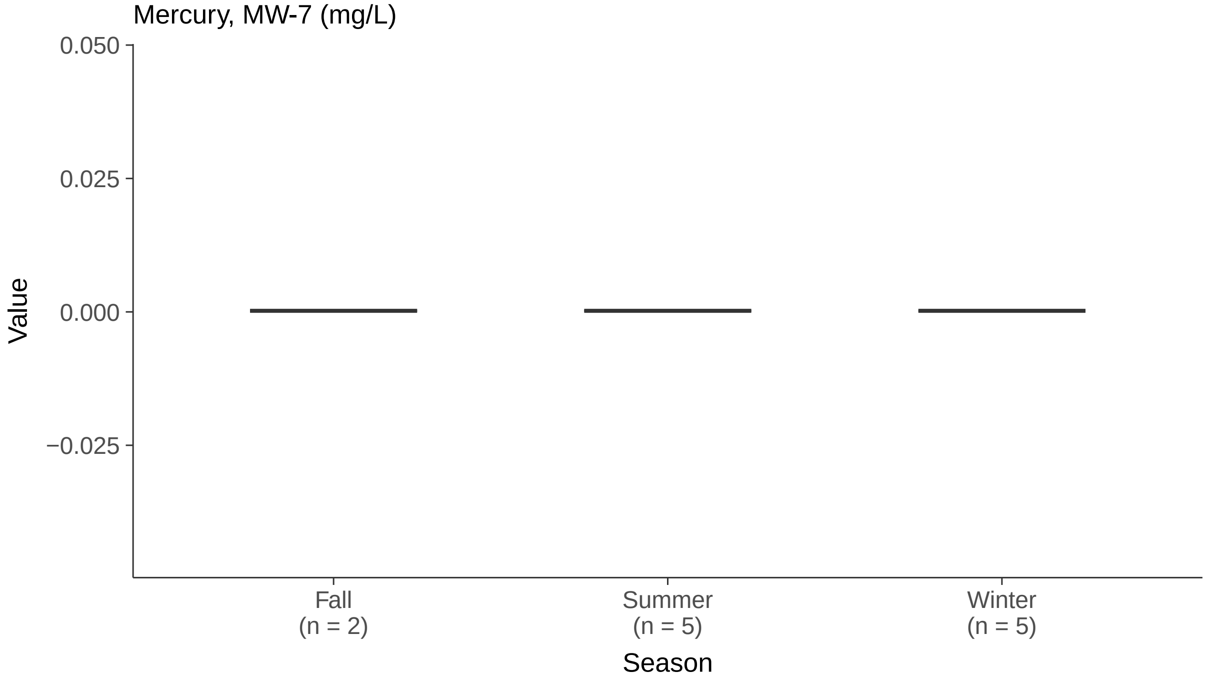
Boxplot

Mercury, MW-7 (mg/L)



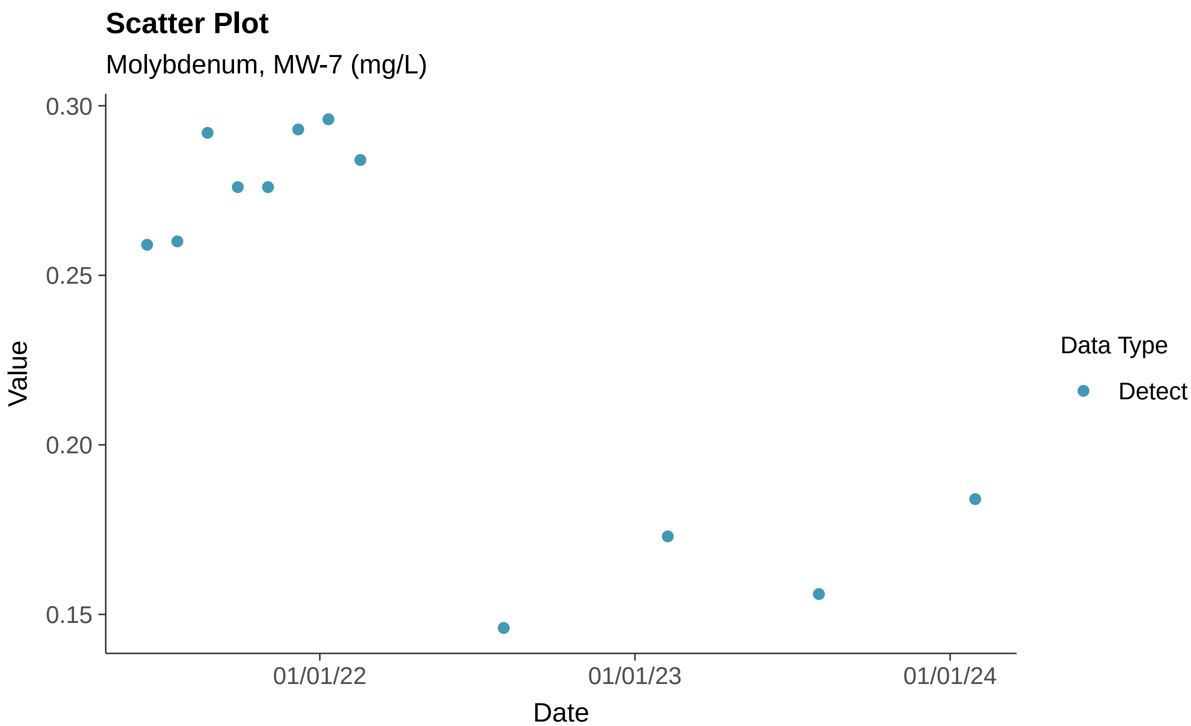
Boxplot by Season

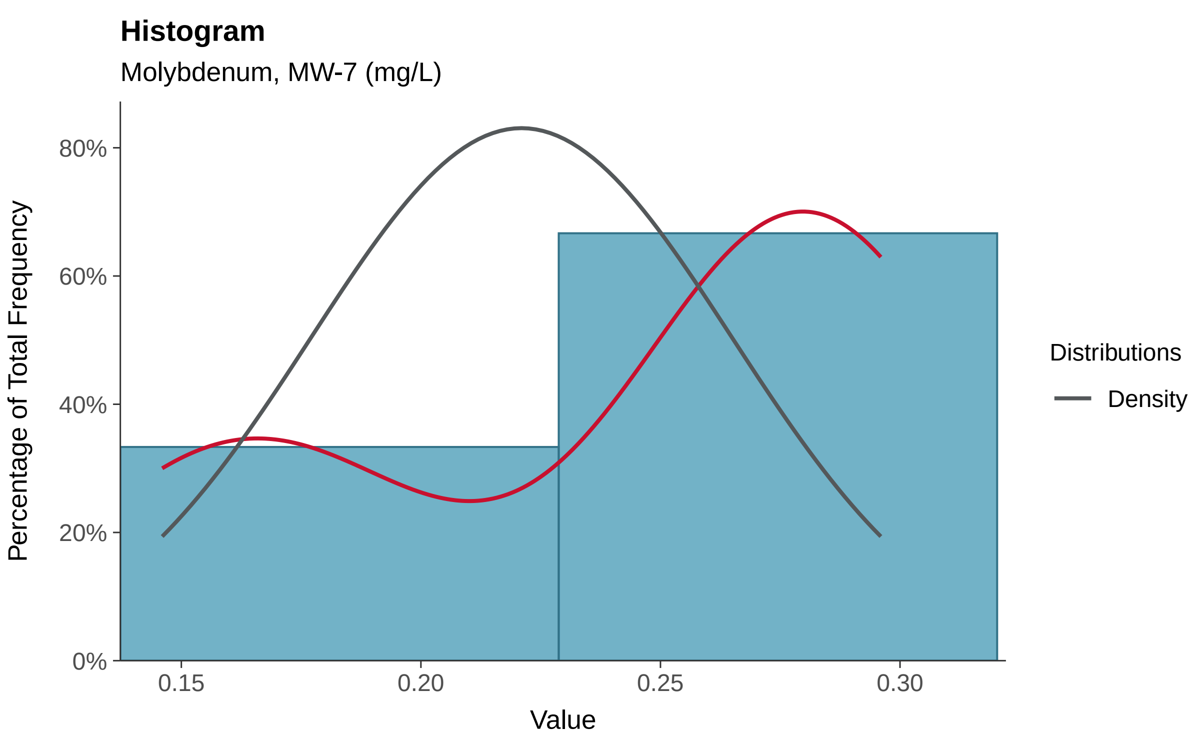
Mercury, MW-7 (mg/L)



Appendix IV: Molybdenum, MW-7

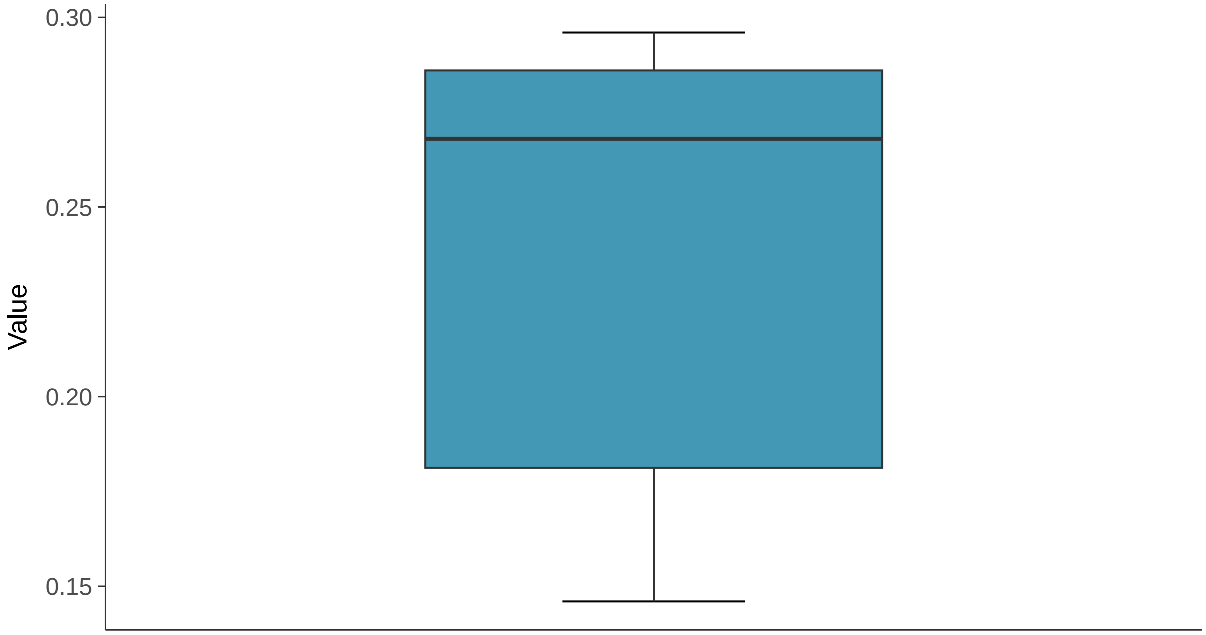
ID: 07_2_18





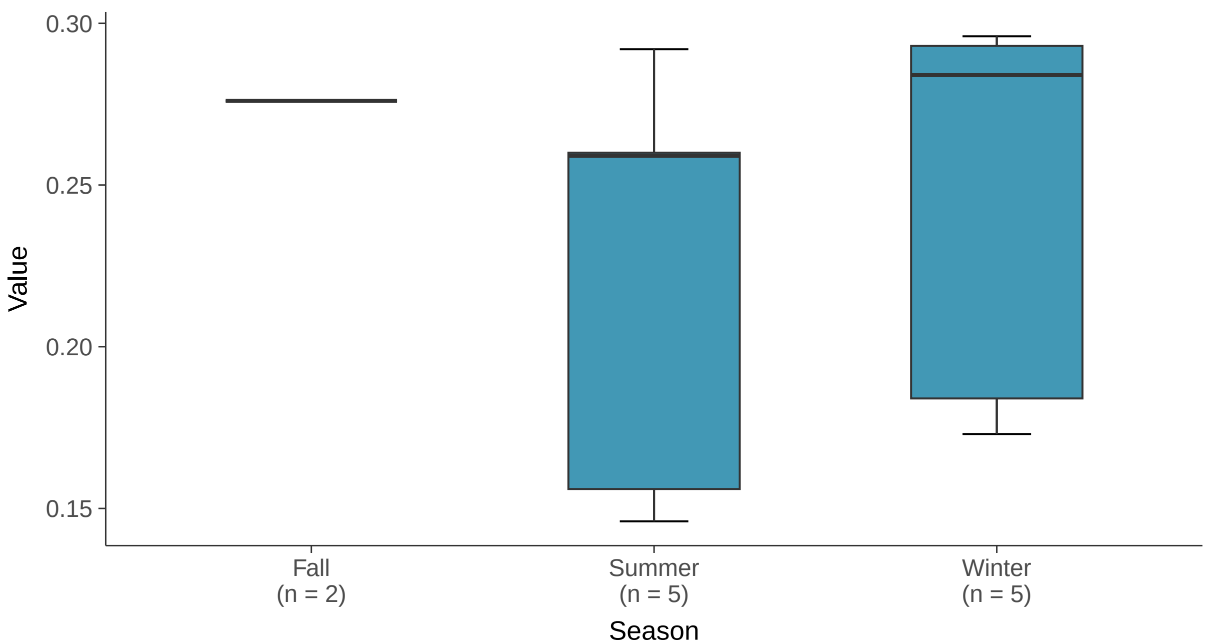
Boxplot

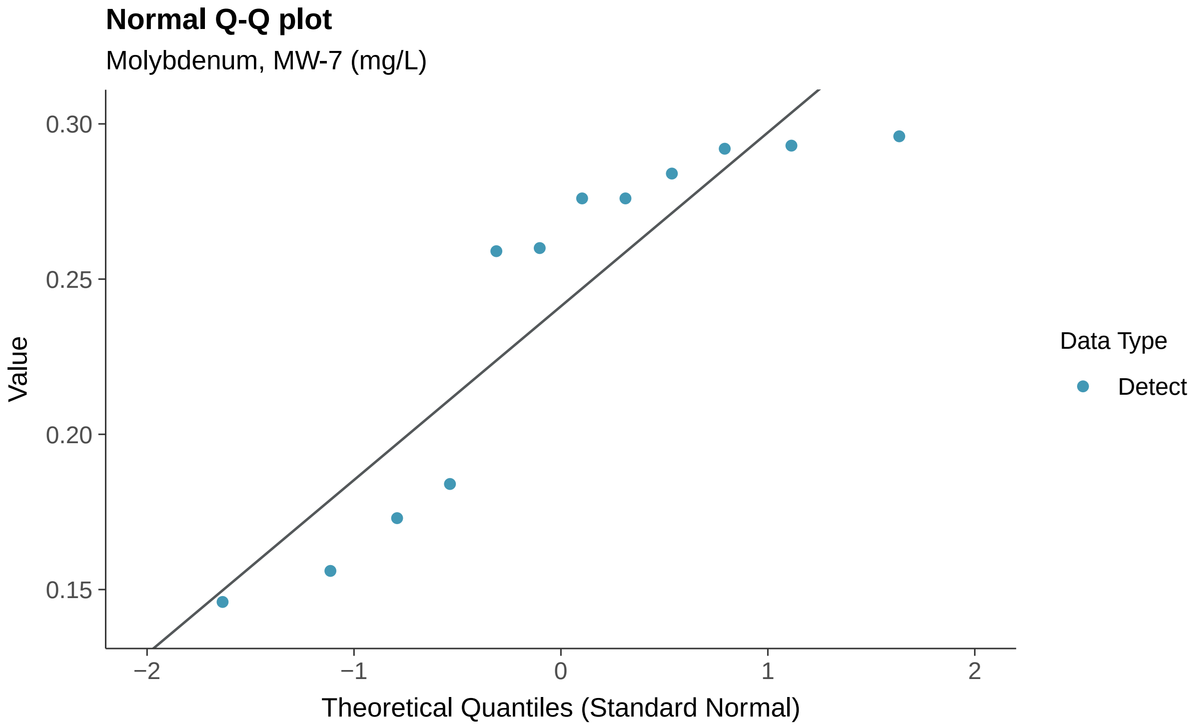
Molybdenum, MW-7 (mg/L)

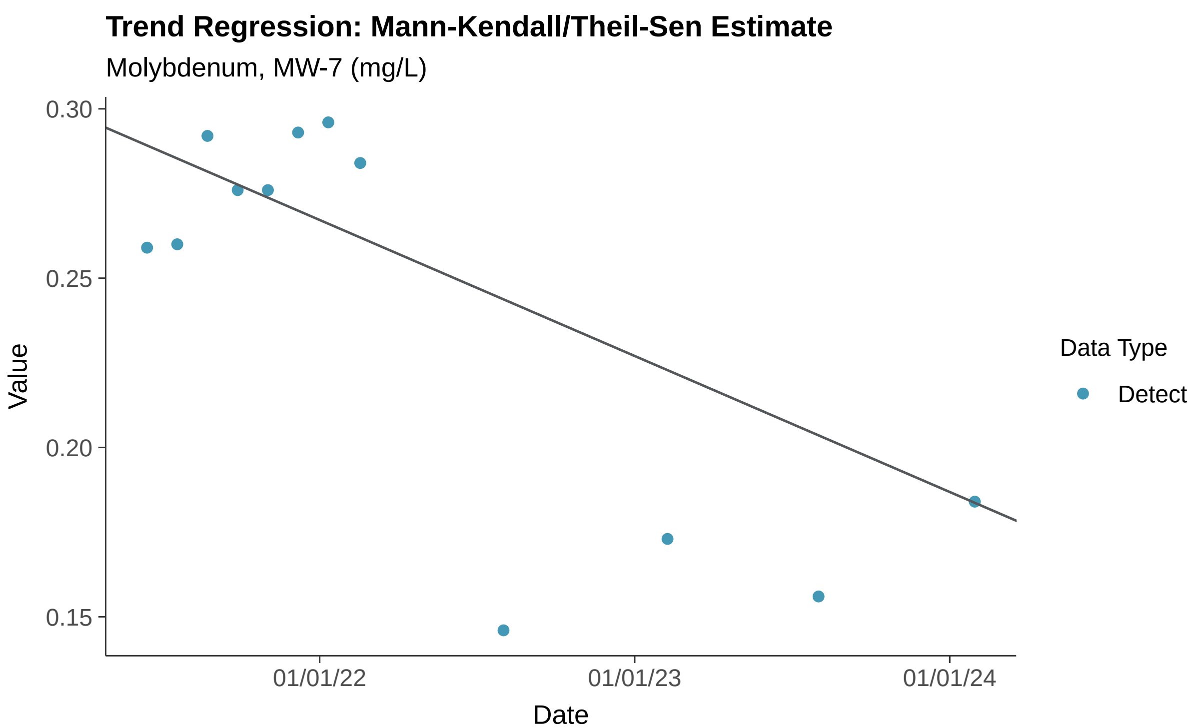


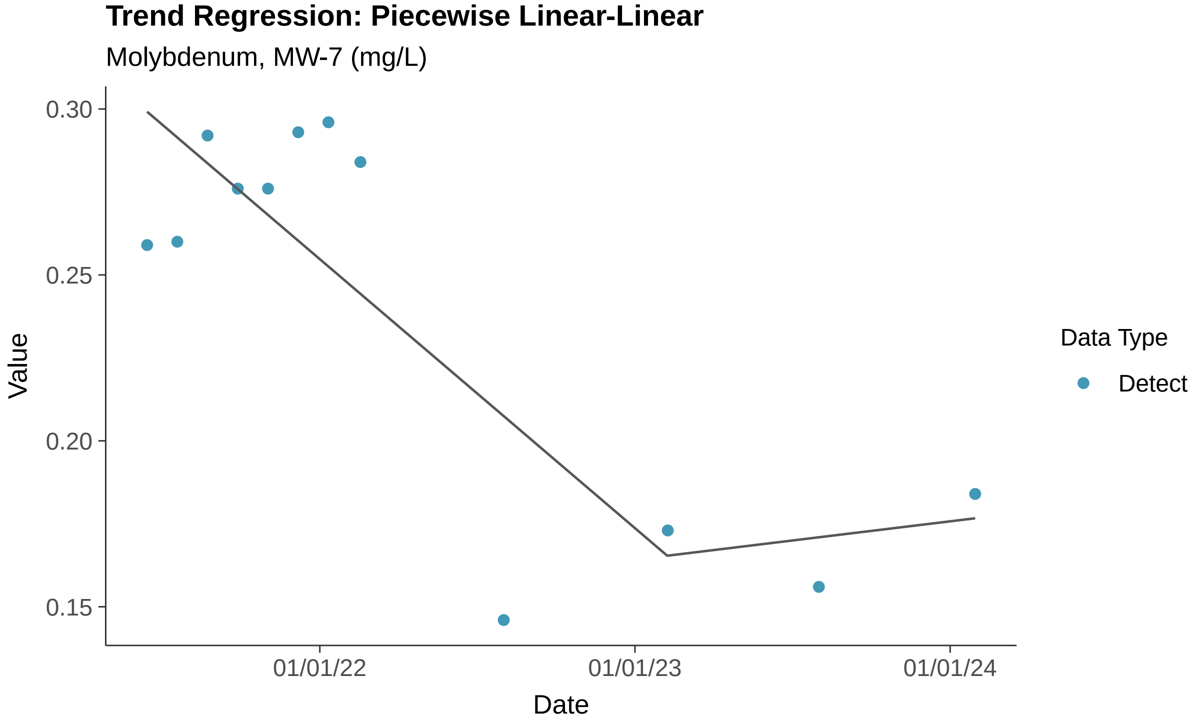
Boxplot by Season

Molybdenum, MW-7 (mg/L)




Normal Q-Q plot
Molybdenum, MW-7 (mg/L)
Value
0.30
0.25
0.20
0.15
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Molybdenum, MW-7 (mg/L)
Value
0.30
0.25
0.20
0.15
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

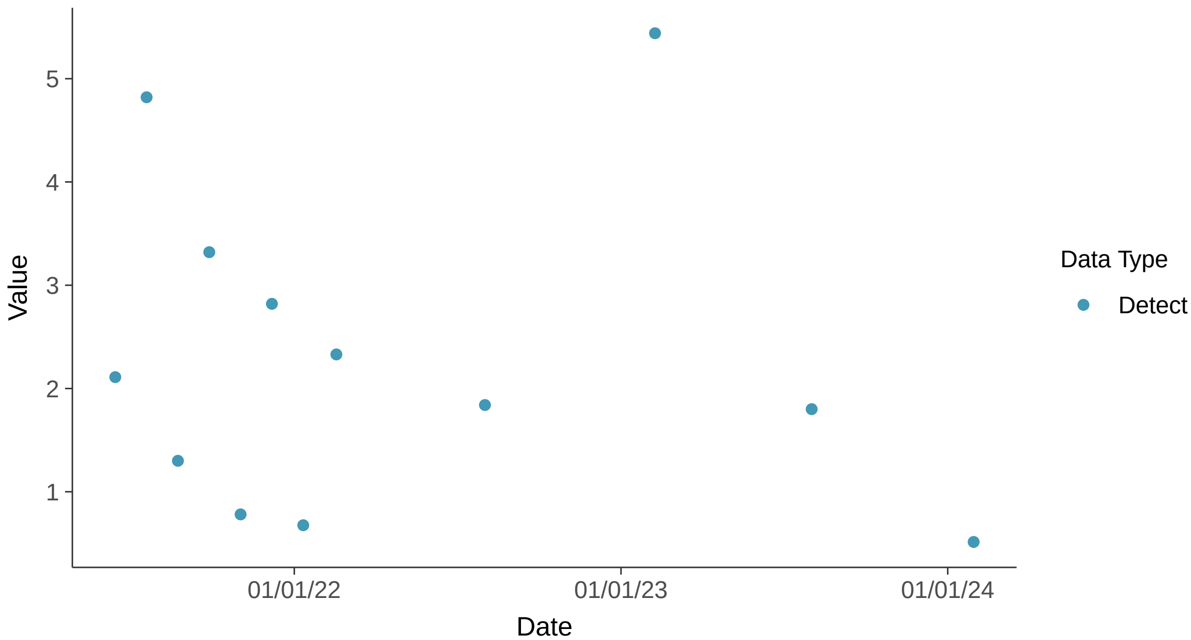

Trend Regression: Piecewise Linear-Linear
Molybdenum, MW-7 (mg/L)
Value
0.30
0.25
0.20
0.15
Date
01/01/22
01/01/23
01/01/24
Data Type
Detect

Appendix IV: Radium-226/228, MW-7

ID: 07_2_20

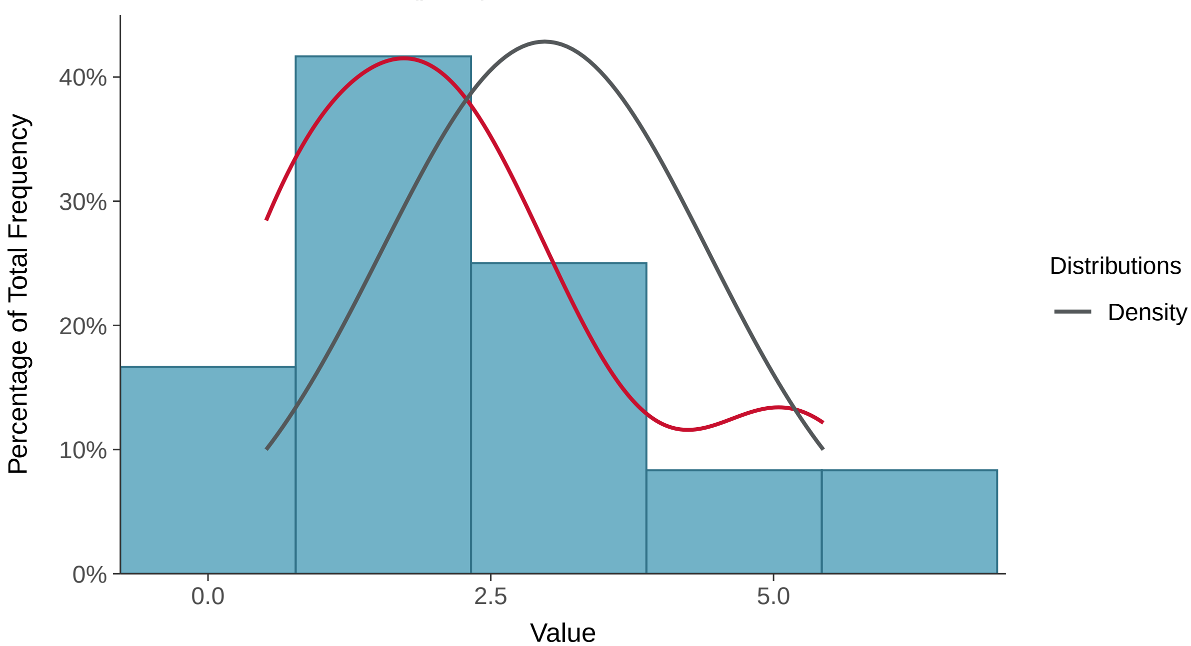
Scatter Plot

Radium-226/228, MW-7 (pCi/L)



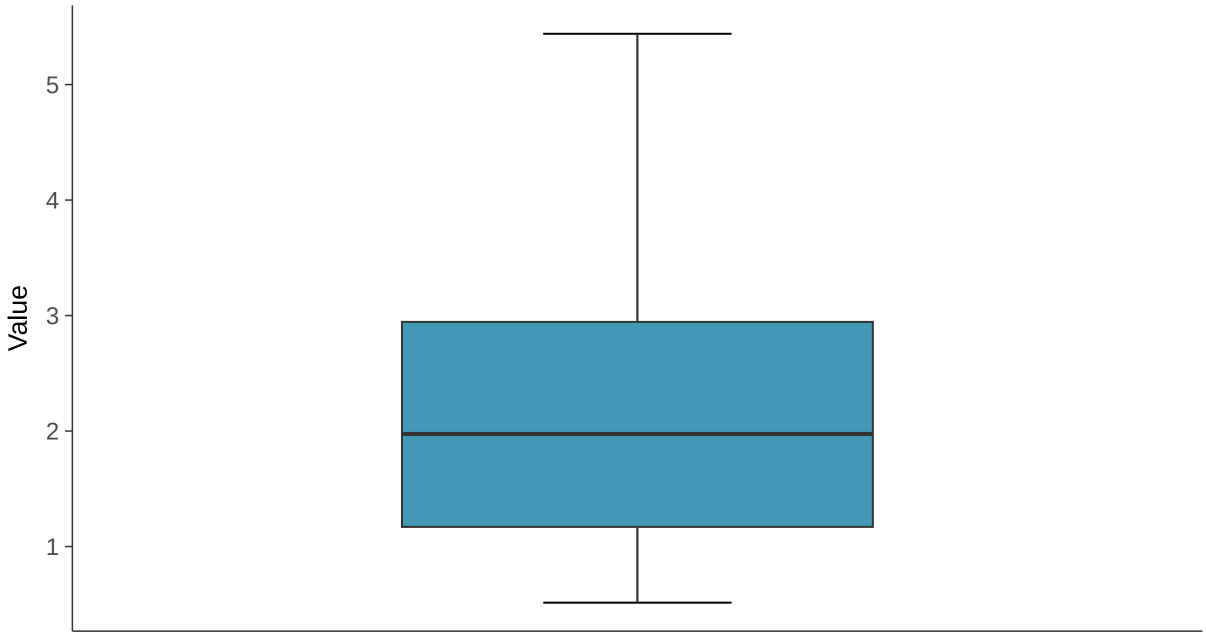
Histogram

Radium-226/228, MW-7 (pCi/L)



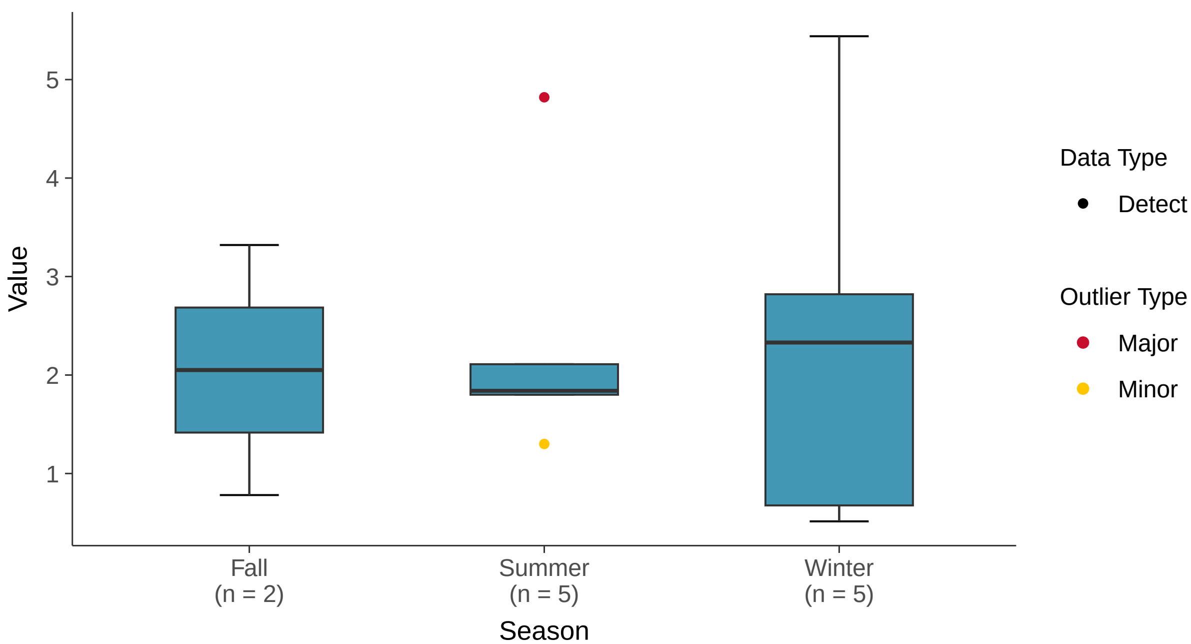
Boxplot

Radium-226/228, MW-7 (pCi/L)



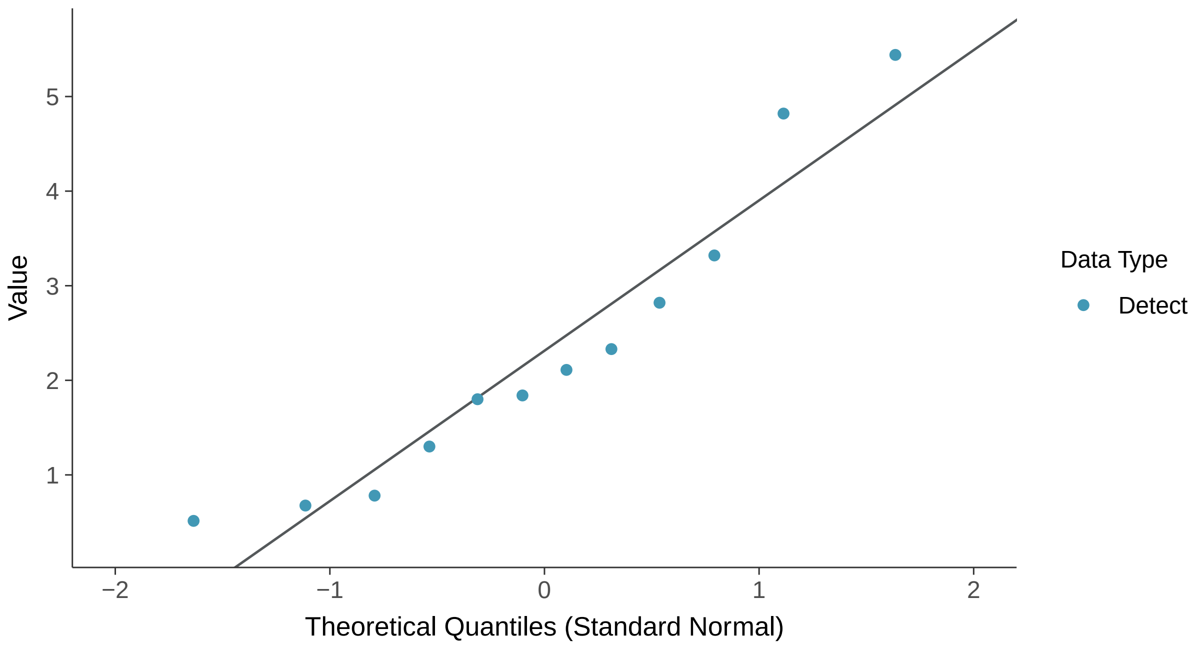
Boxplot by Season

Radium-226/228, MW-7 (pCi/L)



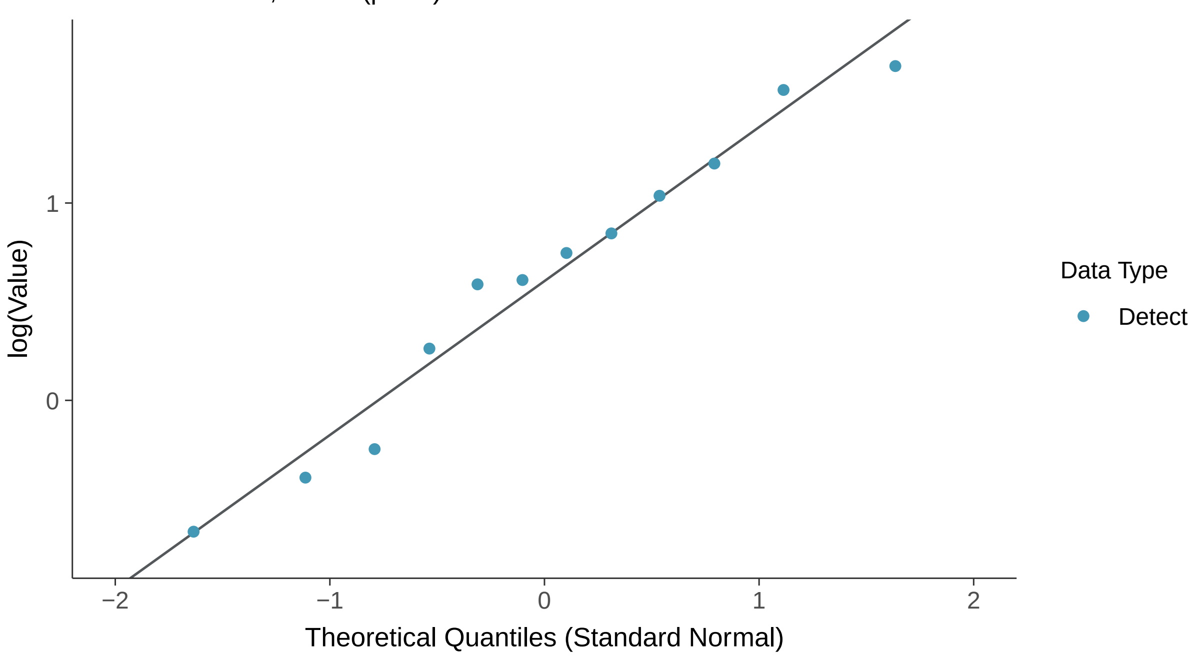
Normal Q-Q plot

Radium-226/228, MW-7 (pCi/L)



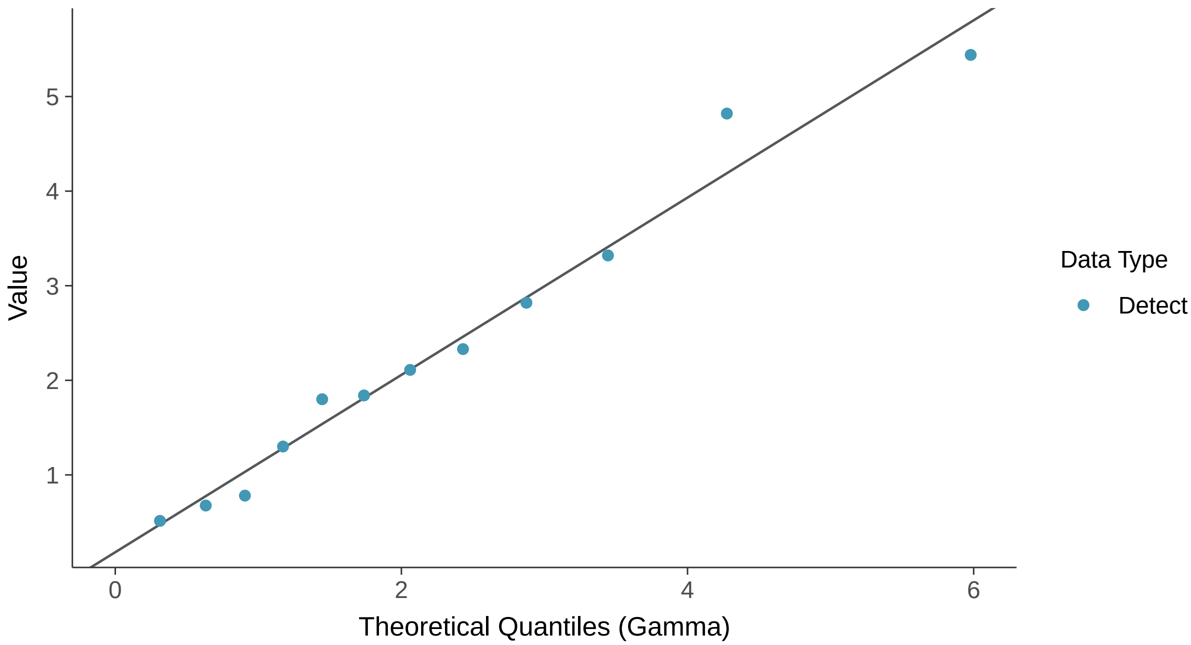
Lognormal Q-Q plot

Radium-226/228, MW-7 (pCi/L)



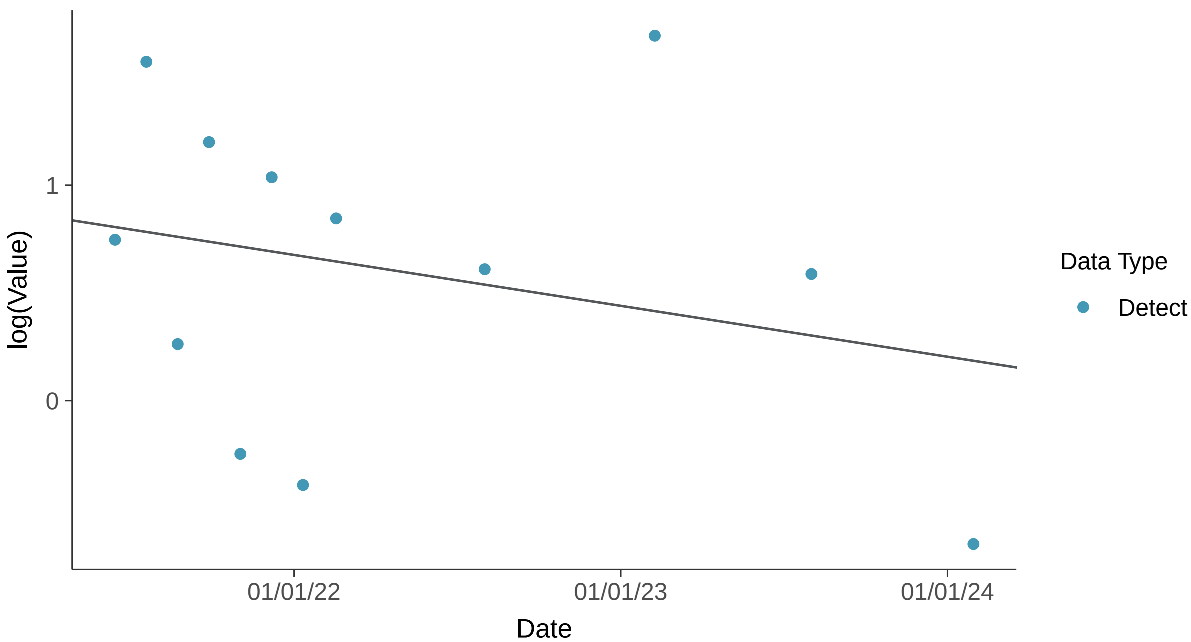
Gamma Q-Q plot

Radium-226/228, MW-7 (pCi/L)



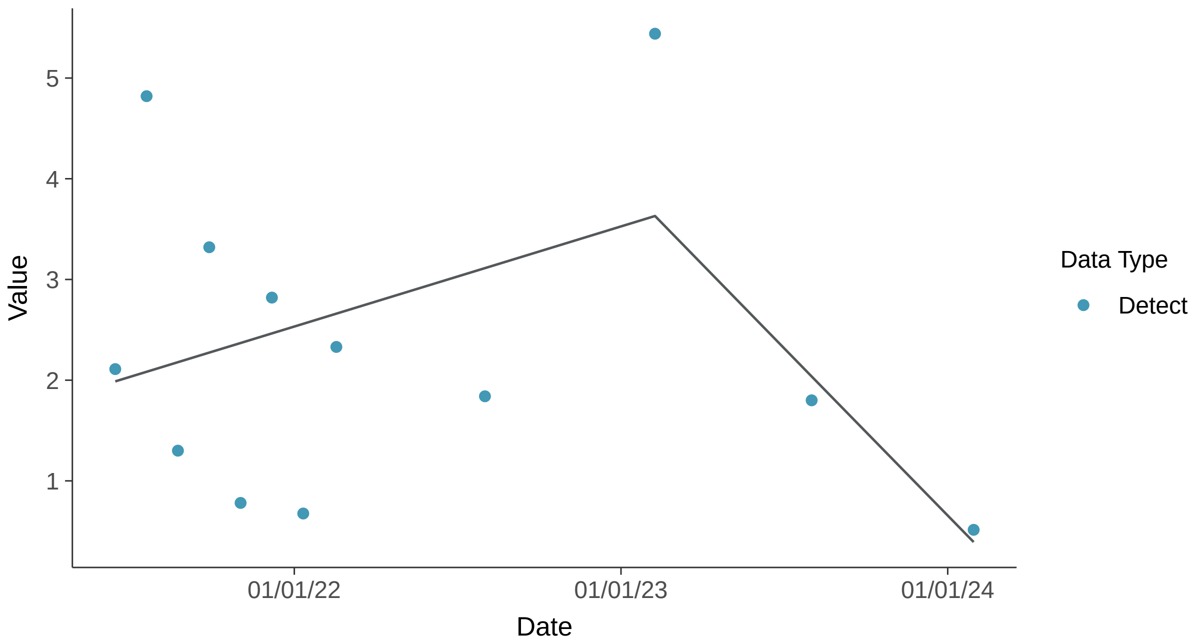
Trend Regression: Lognormal MLE

Radium-226/228, MW-7 (pCi/L)



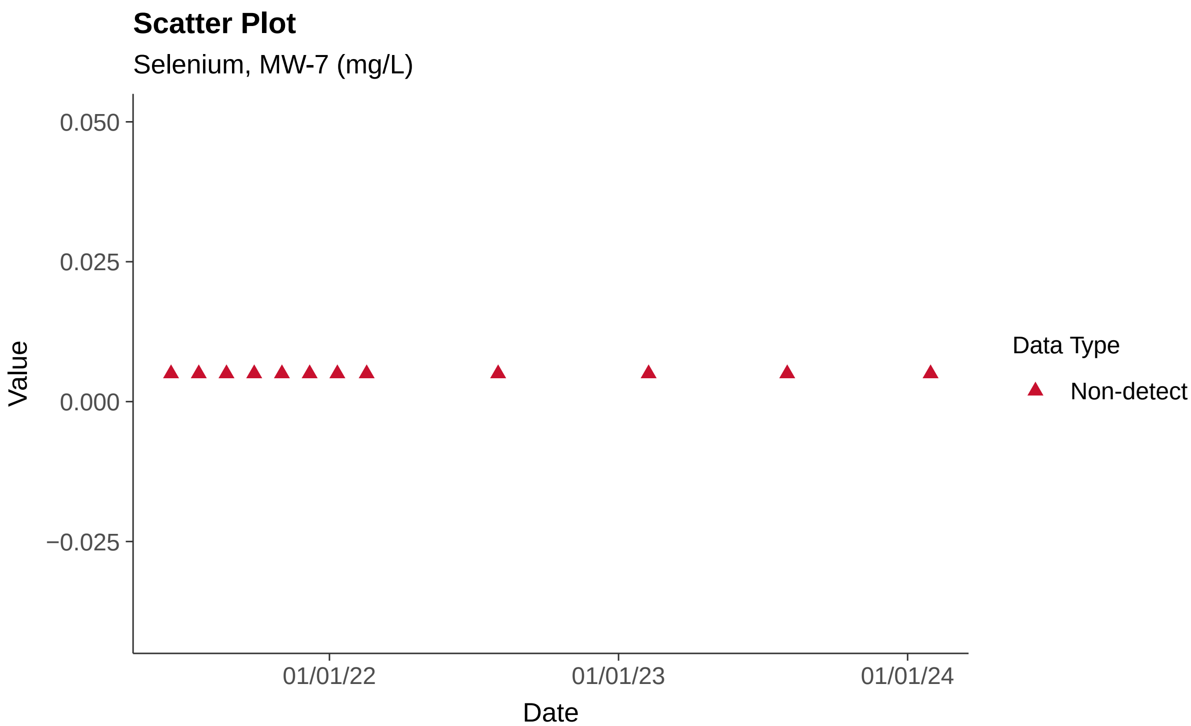
Trend Regression: Piecewise Linear-Linear

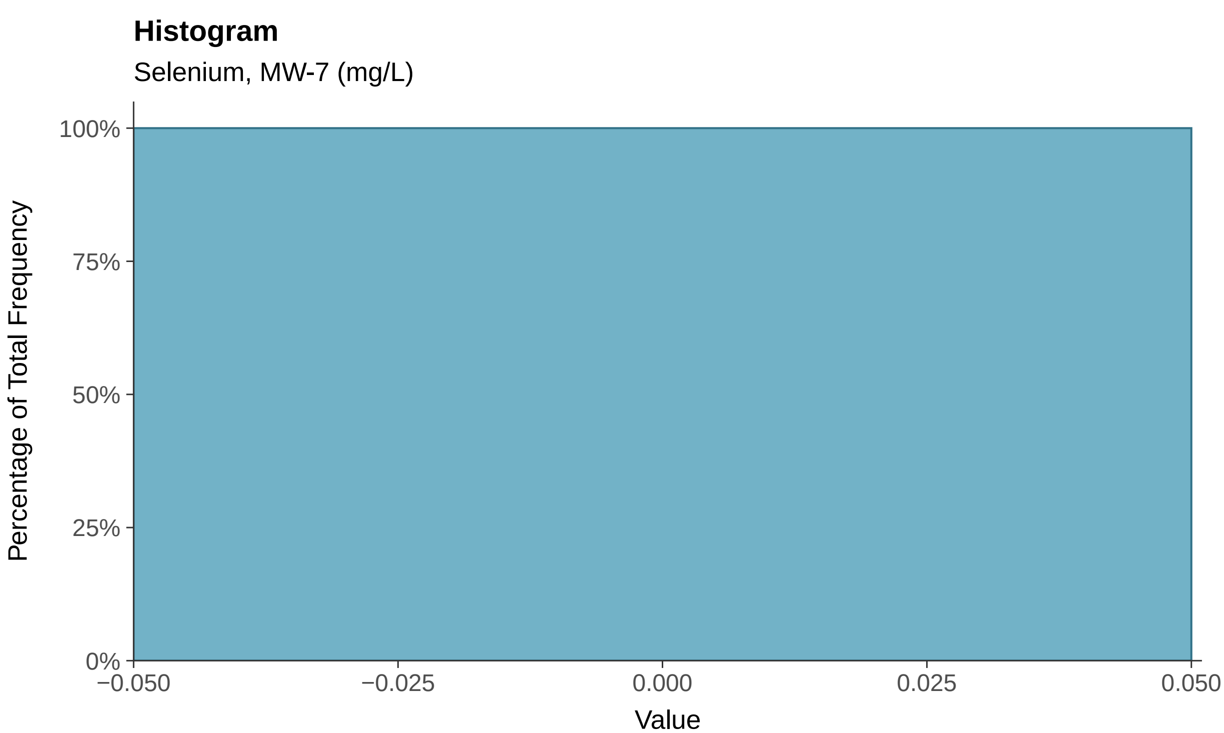
Radium-226/228, MW-7 (pCi/L)



Appendix IV: Selenium, MW-7

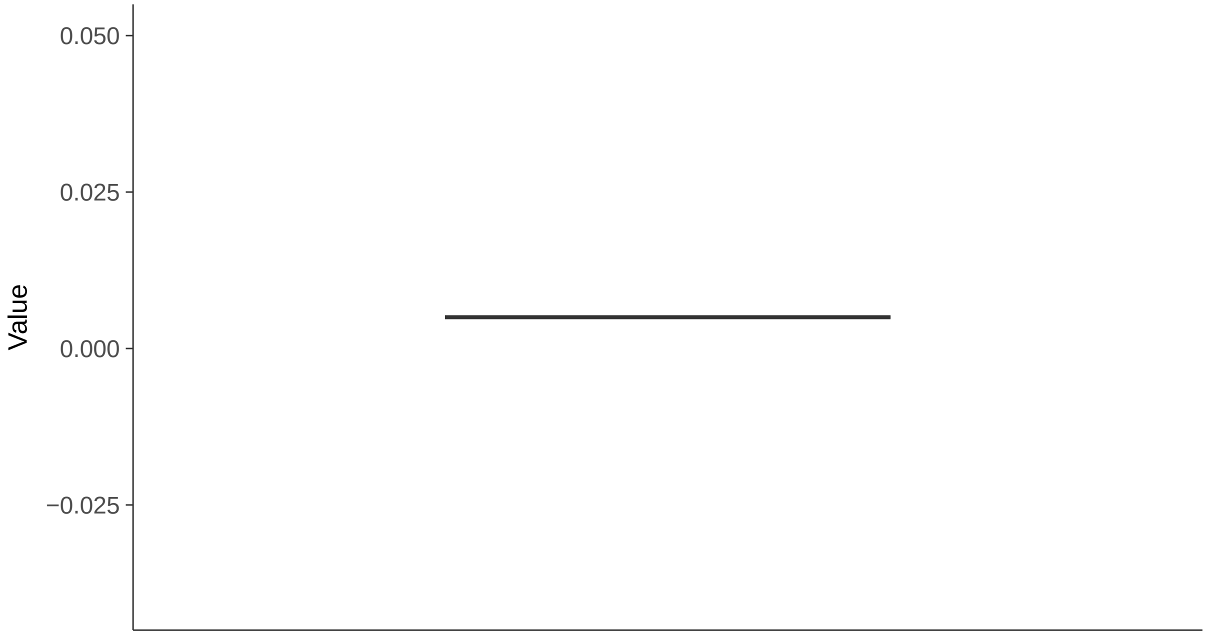
ID: 07_2_22





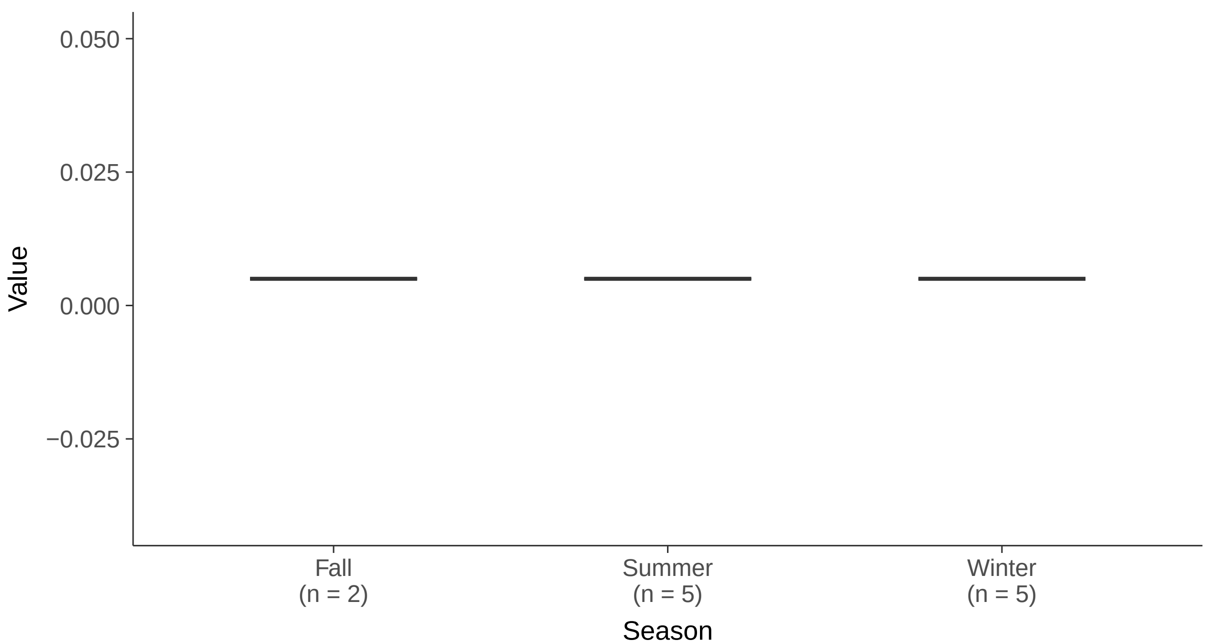
Boxplot

Selenium, MW-7 (mg/L)



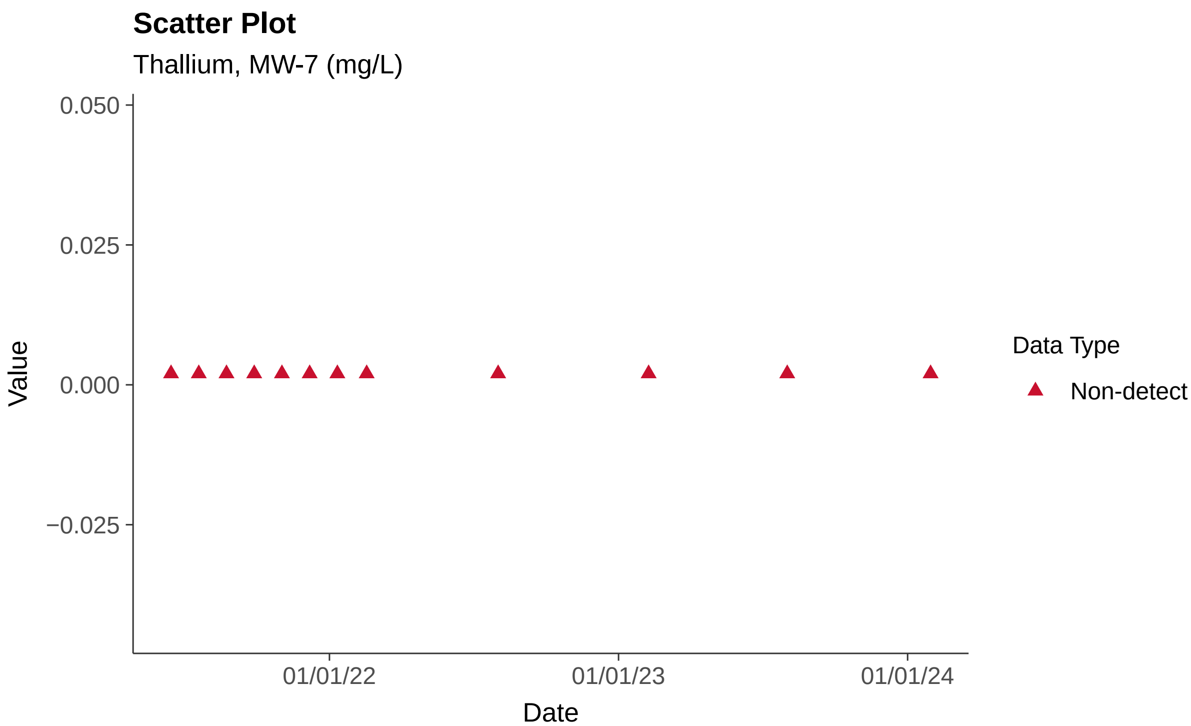
Boxplot by Season

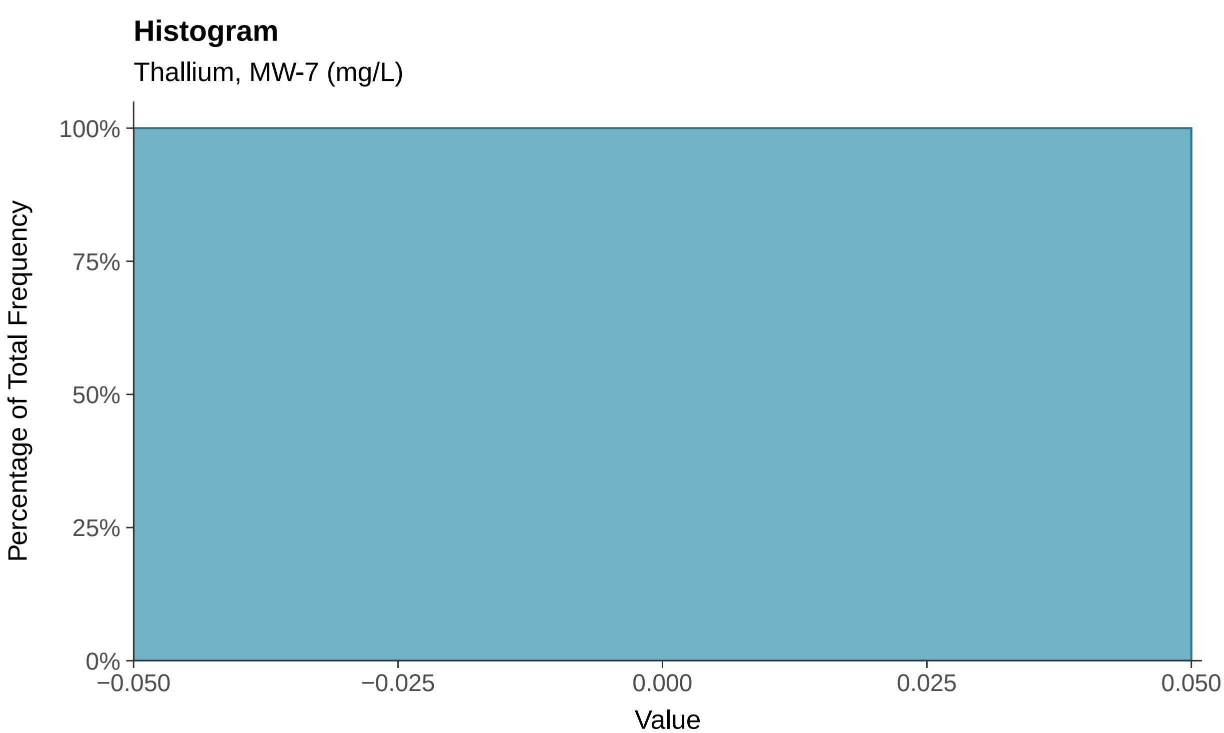
Selenium, MW-7 (mg/L)



Appendix IV: Thallium, MW-7

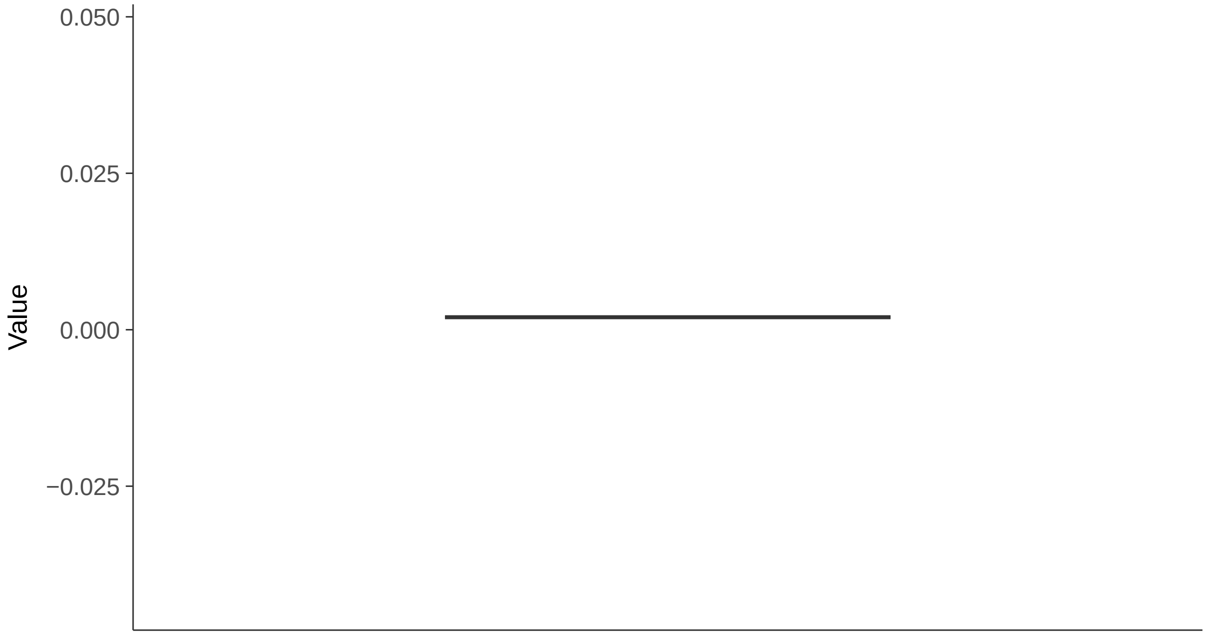
ID: 07_2_23





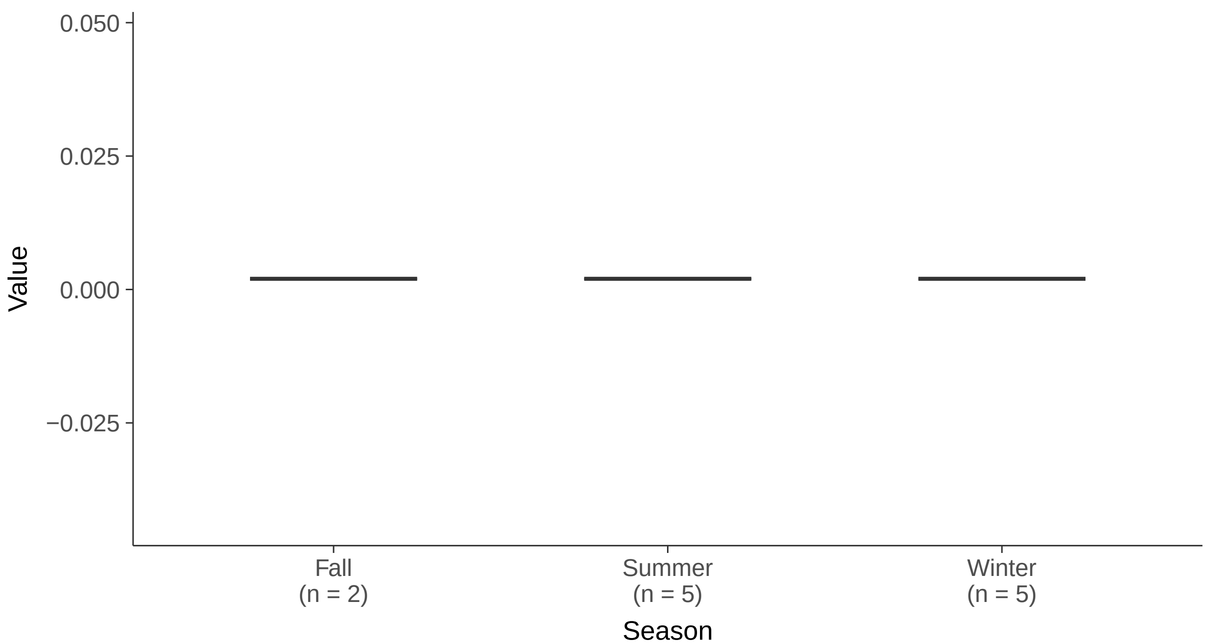
Boxplot

Thallium, MW-7 (mg/L)



Boxplot by Season

Thallium, MW-7 (mg/L)

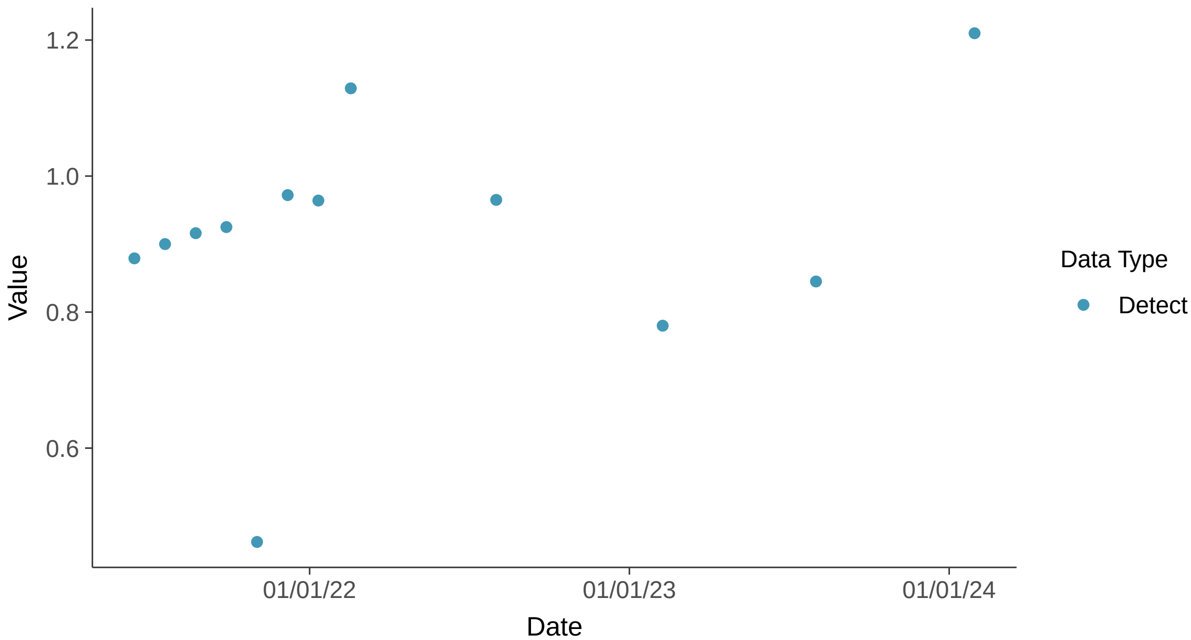


Field Parameters: Conductivity, MW-7

ID: 07_3_24

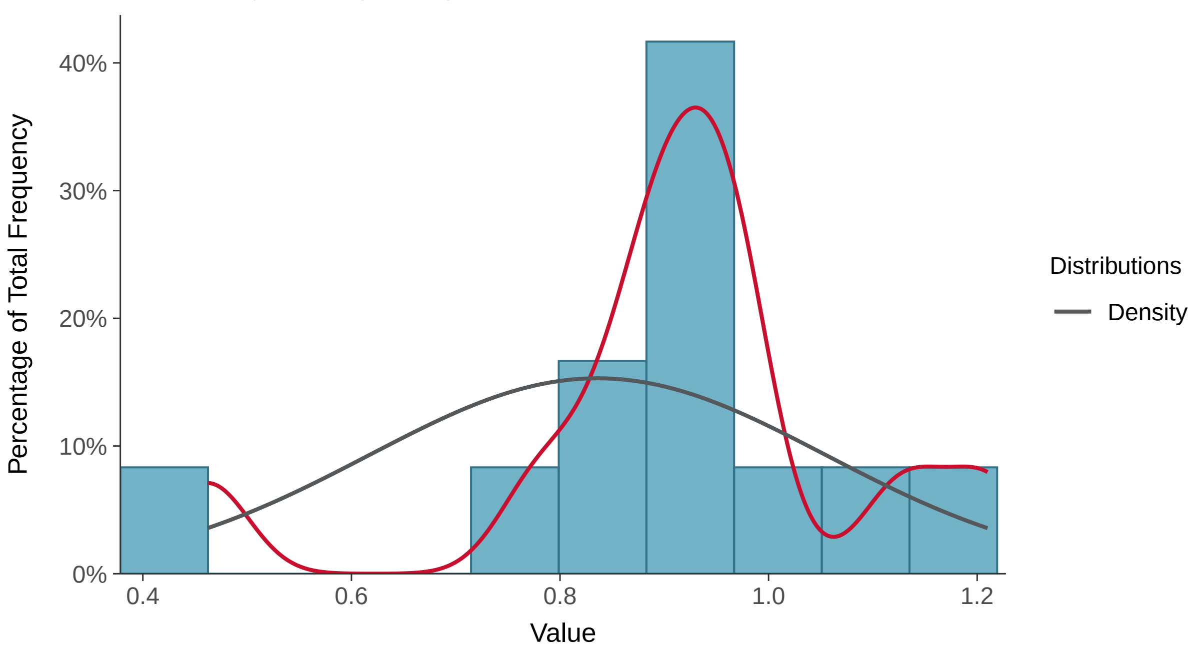
Scatter Plot

Conductivity, MW-7 (mS/cm)



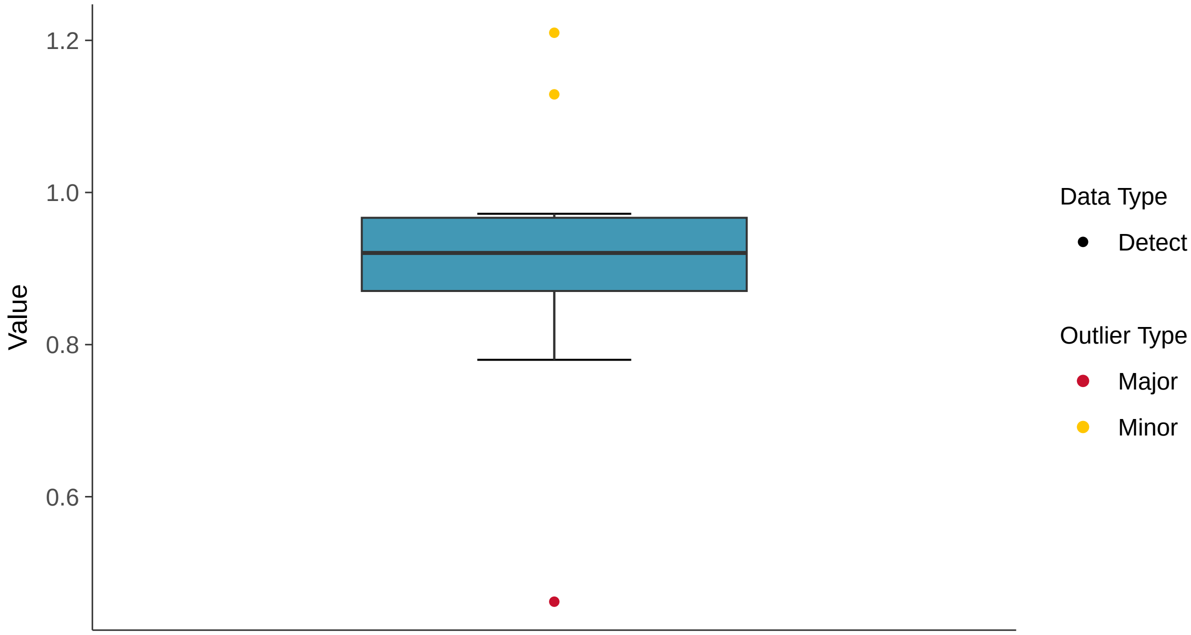
Histogram

Conductivity, MW-7 (mS/cm)



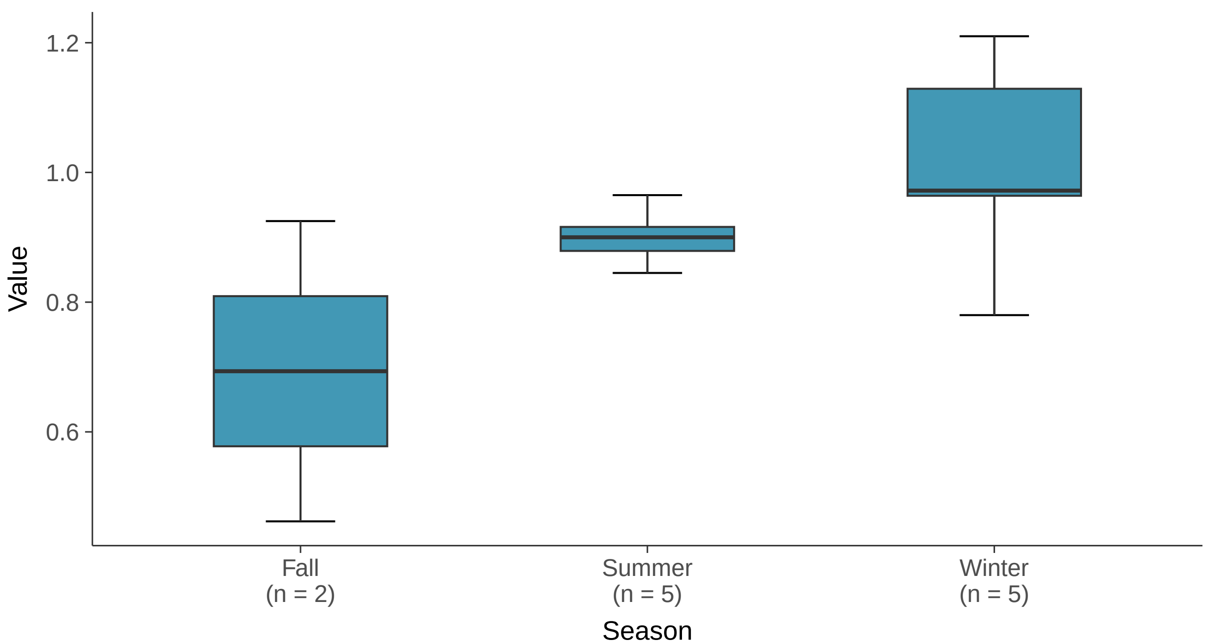
Boxplot

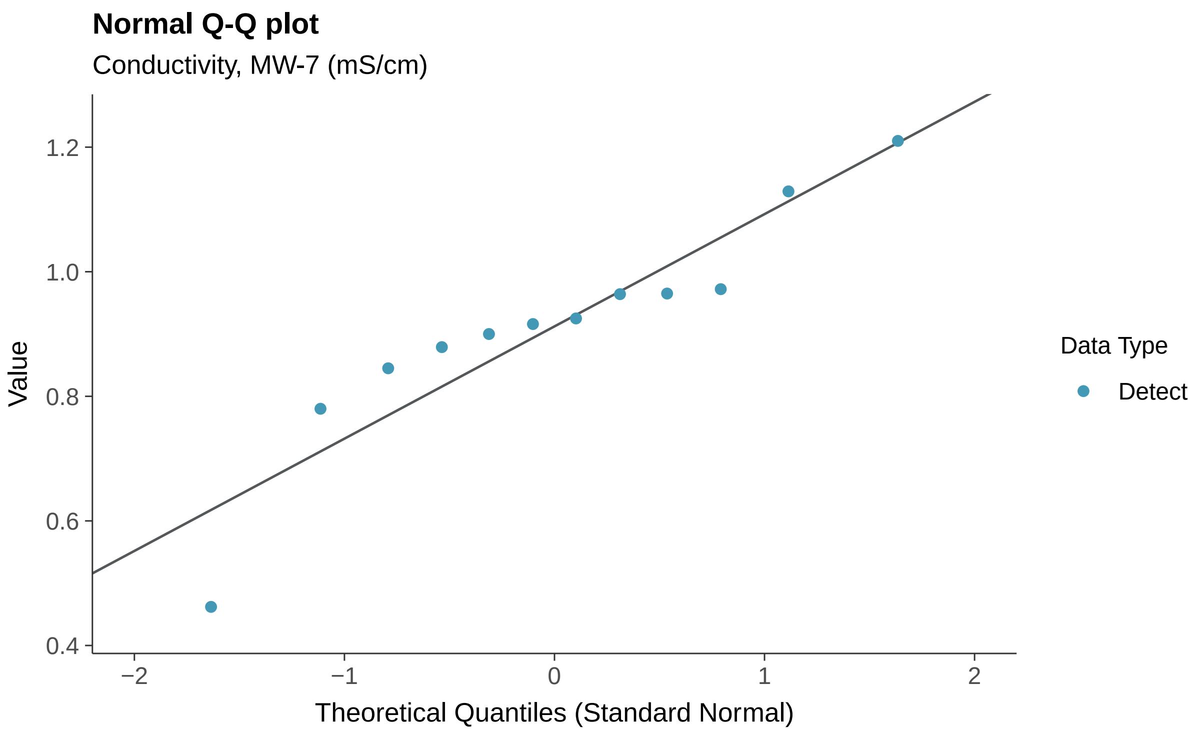
Conductivity, MW-7 (mS/cm)

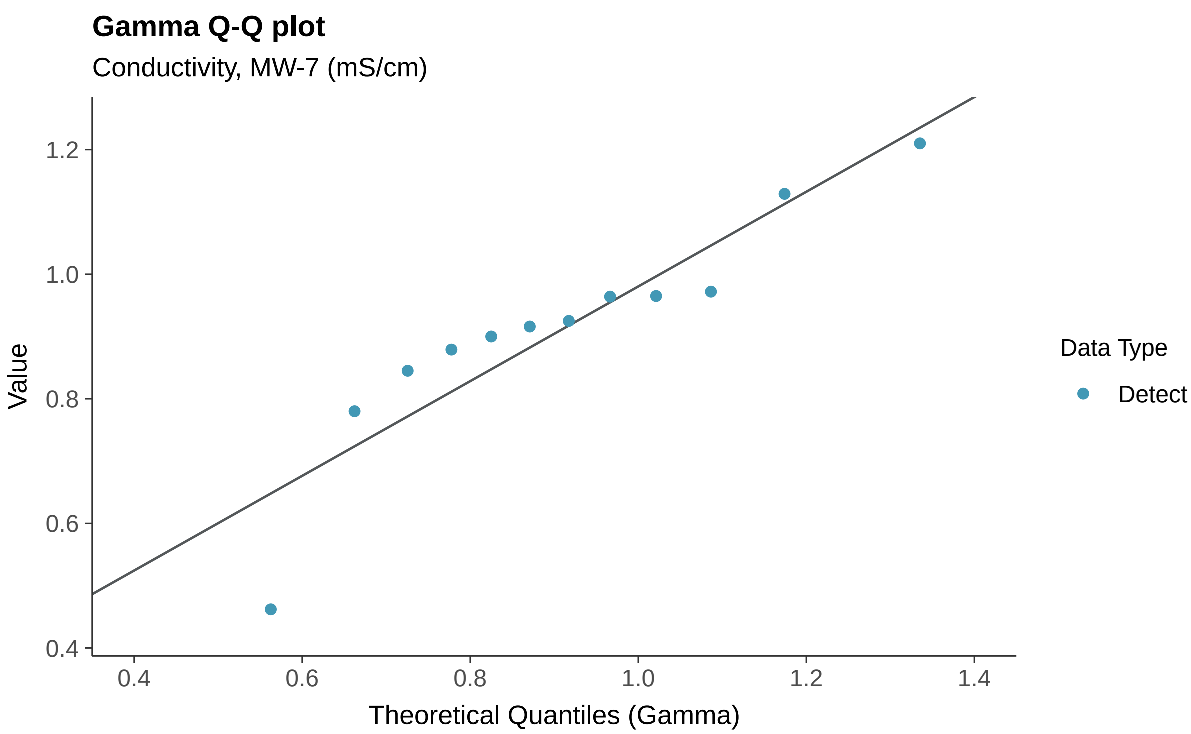


Boxplot by Season

Conductivity, MW-7 (mS/cm)

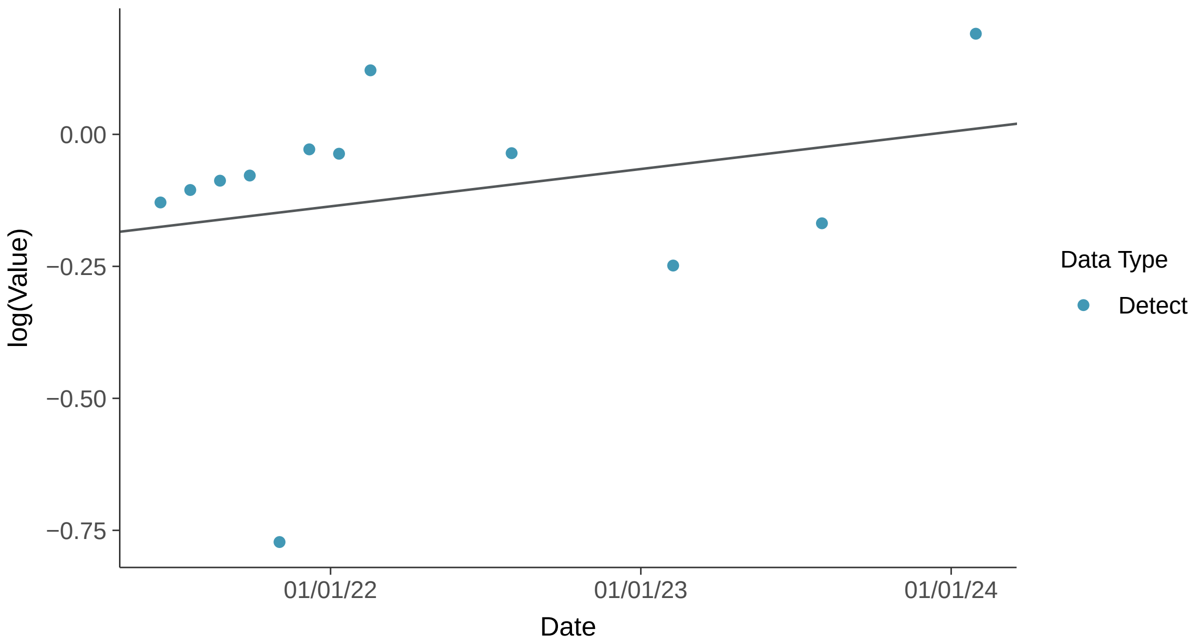



Normal Q-Q plot
Conductivity, MW-7 (mS/cm)
Value
1.2
1.0
0.8
0.6
0.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Conductivity, MW-7 (mS/cm)
Value
1.2
1.0
0.8
0.6
0.4
0.4
0.6
0.8
1.0
1.2
1.4
Theoretical Quantiles (Gamma)
Data Type
Detect

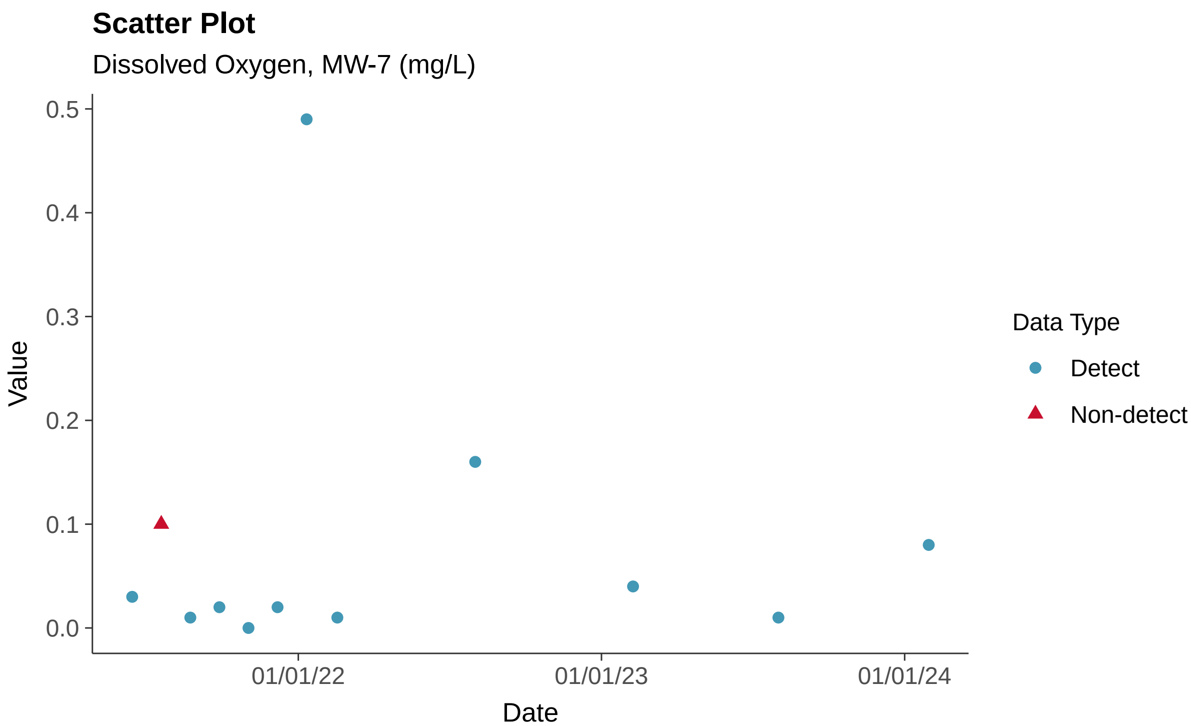
Trend Regression: Lognormal MLE

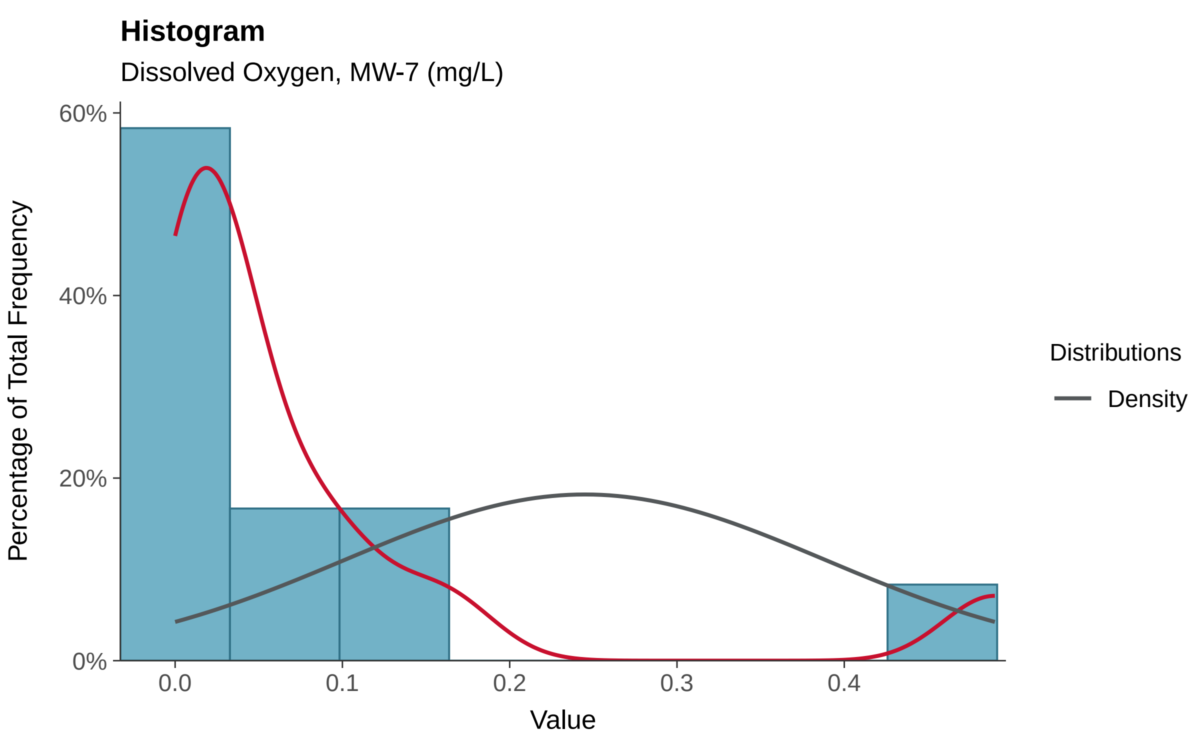
Conductivity, MW-7 (mS/cm)



Field Parameters: Dissolved Oxygen, MW-7

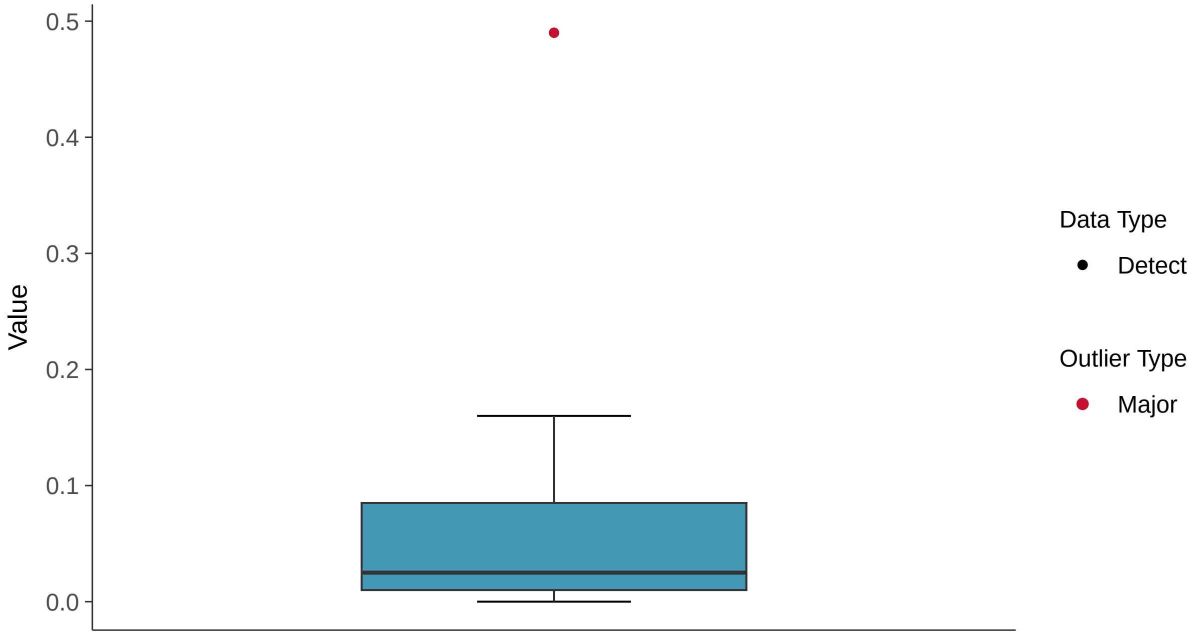
ID: 07_3_25





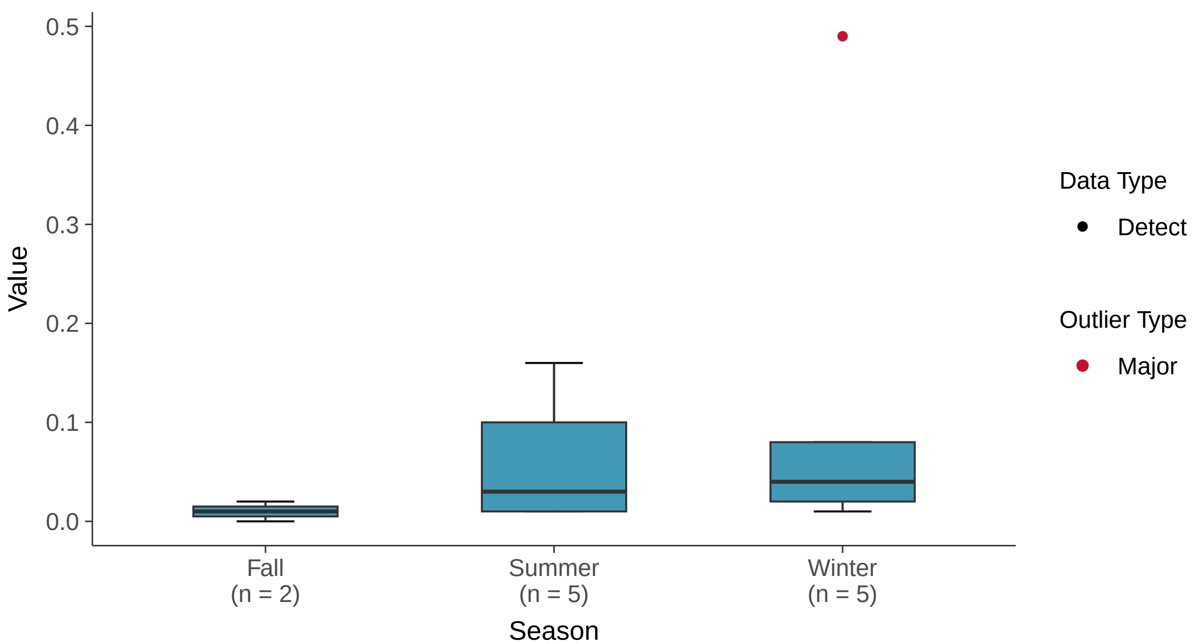
Boxplot

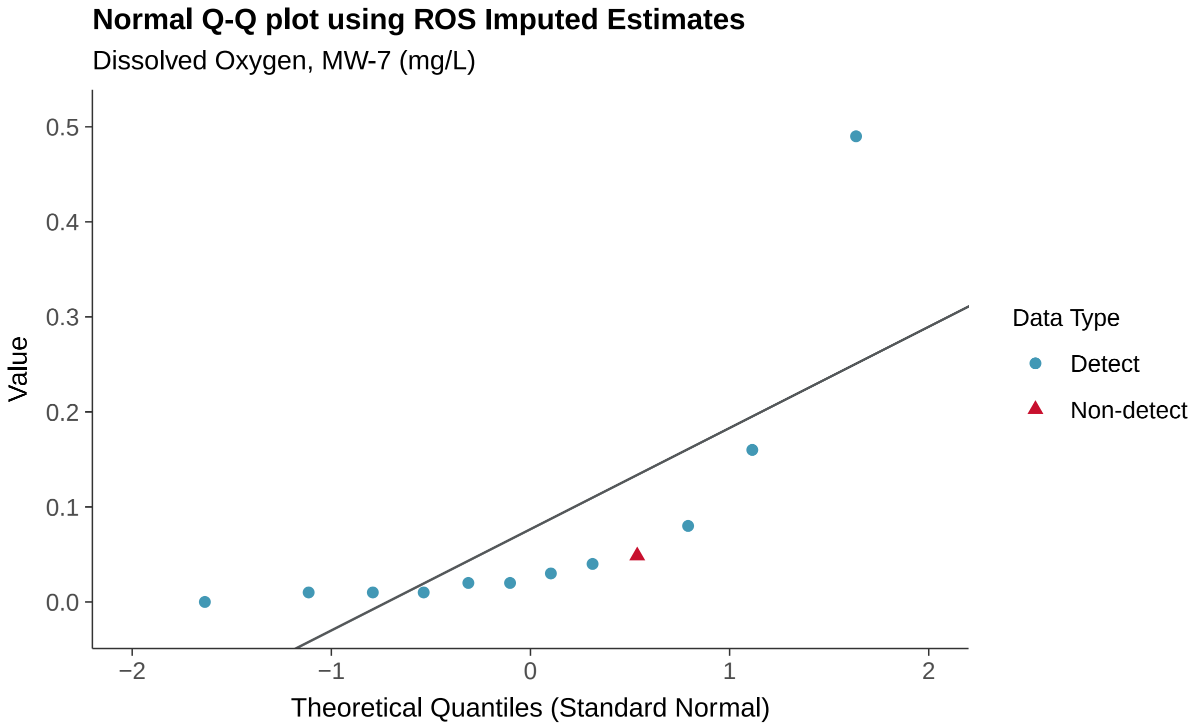
Dissolved Oxygen, MW-7 (mg/L)

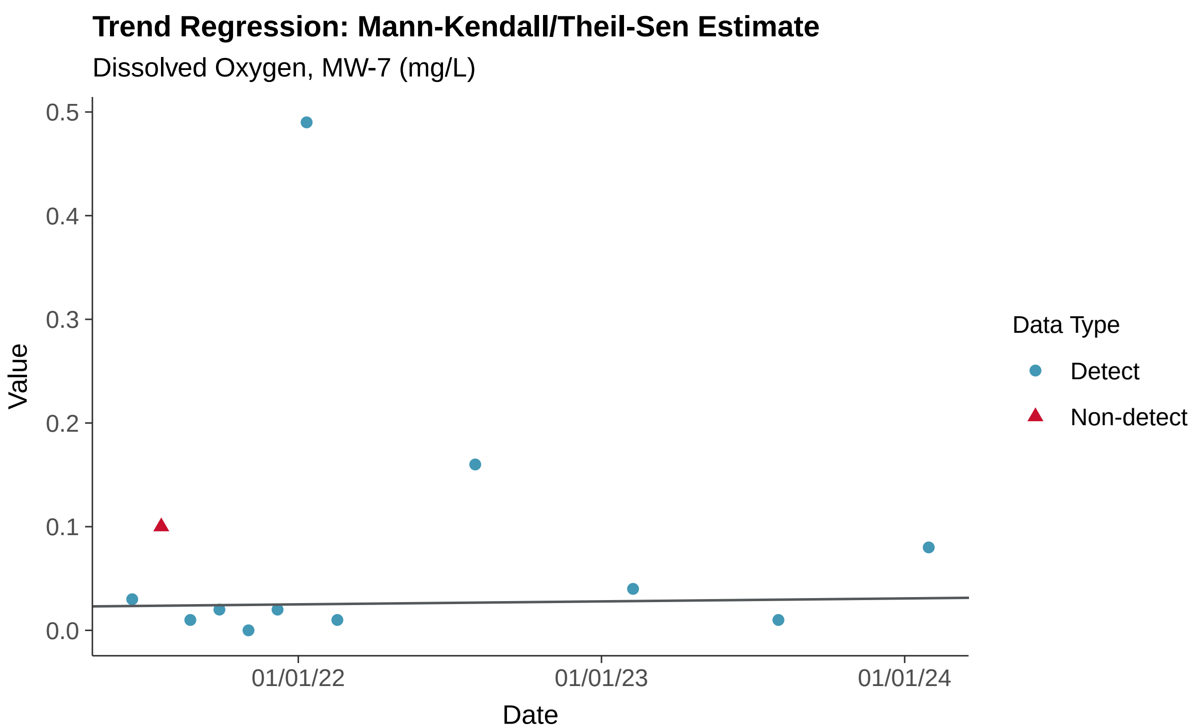


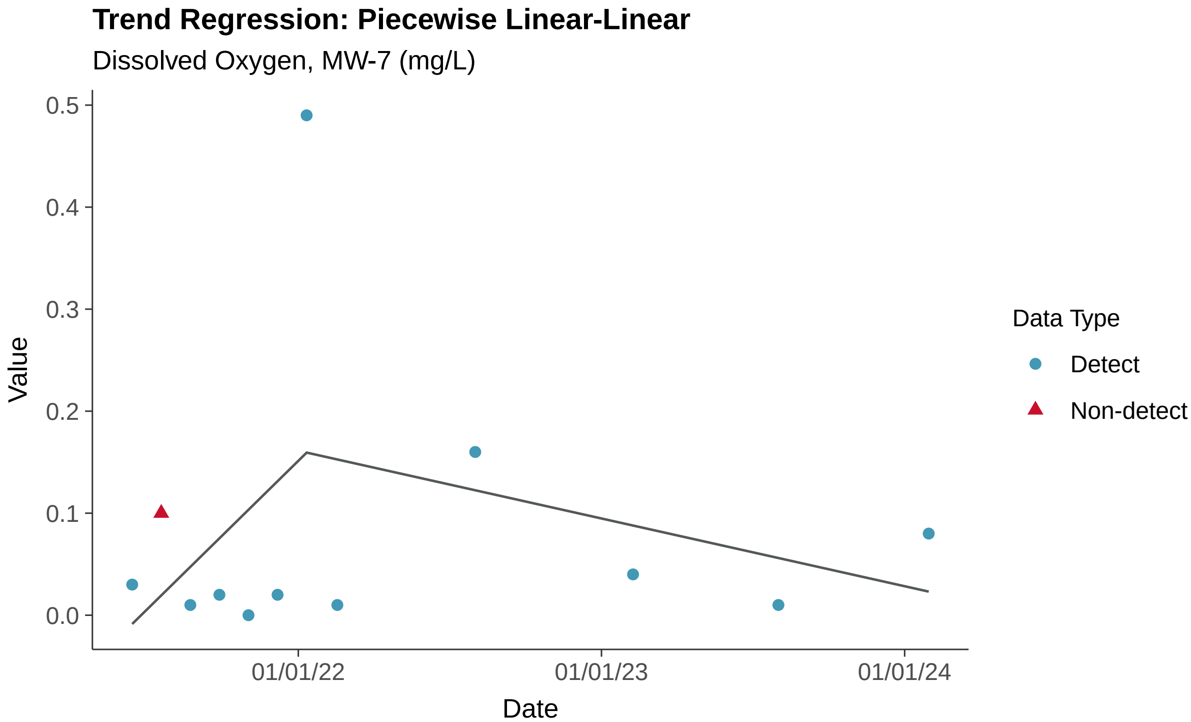
Boxplot by Season

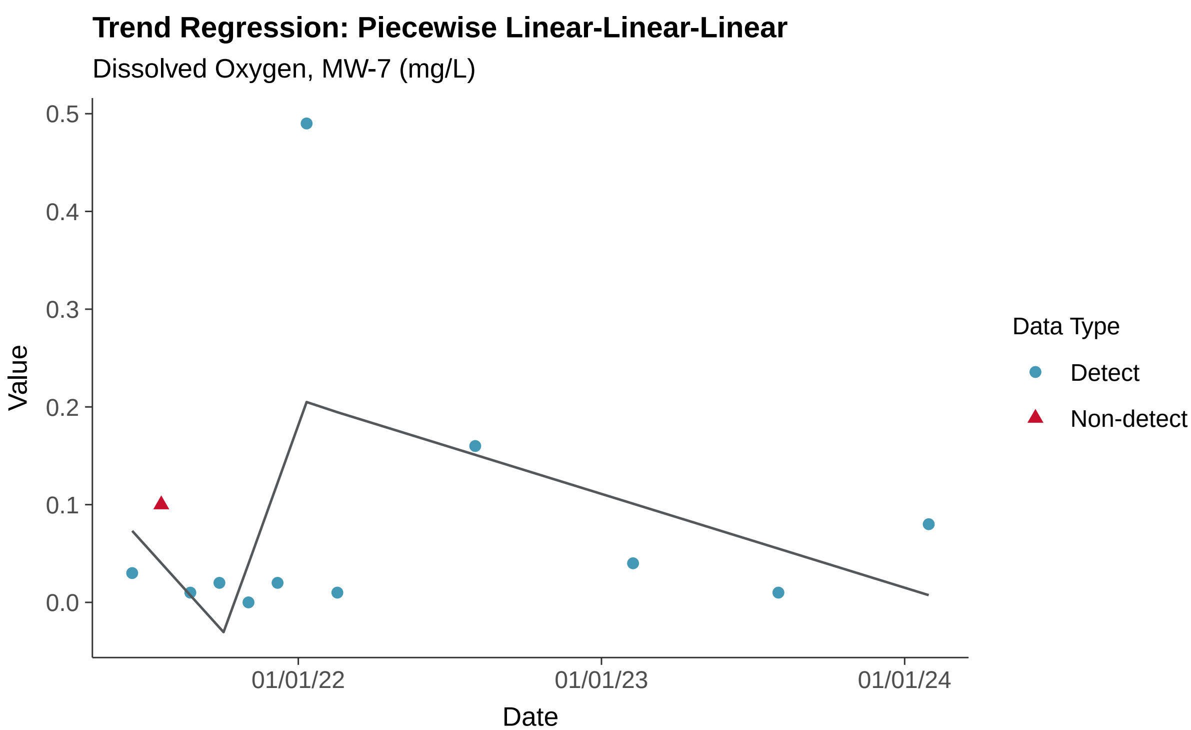
Dissolved Oxygen, MW-7 (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Dissolved Oxygen, MW-7 (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
0.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

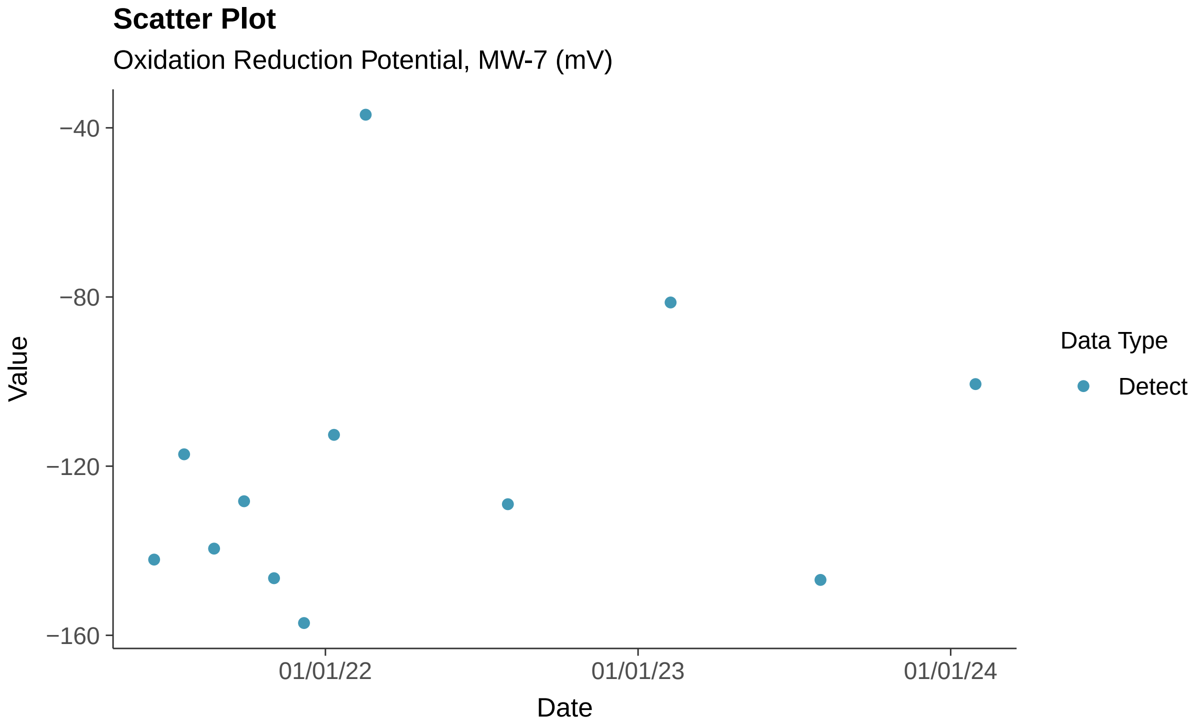

Trend Regression: Mann-Kendall/Theil-Sen Estimate
Dissolved Oxygen, MW-7 (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
0.0
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

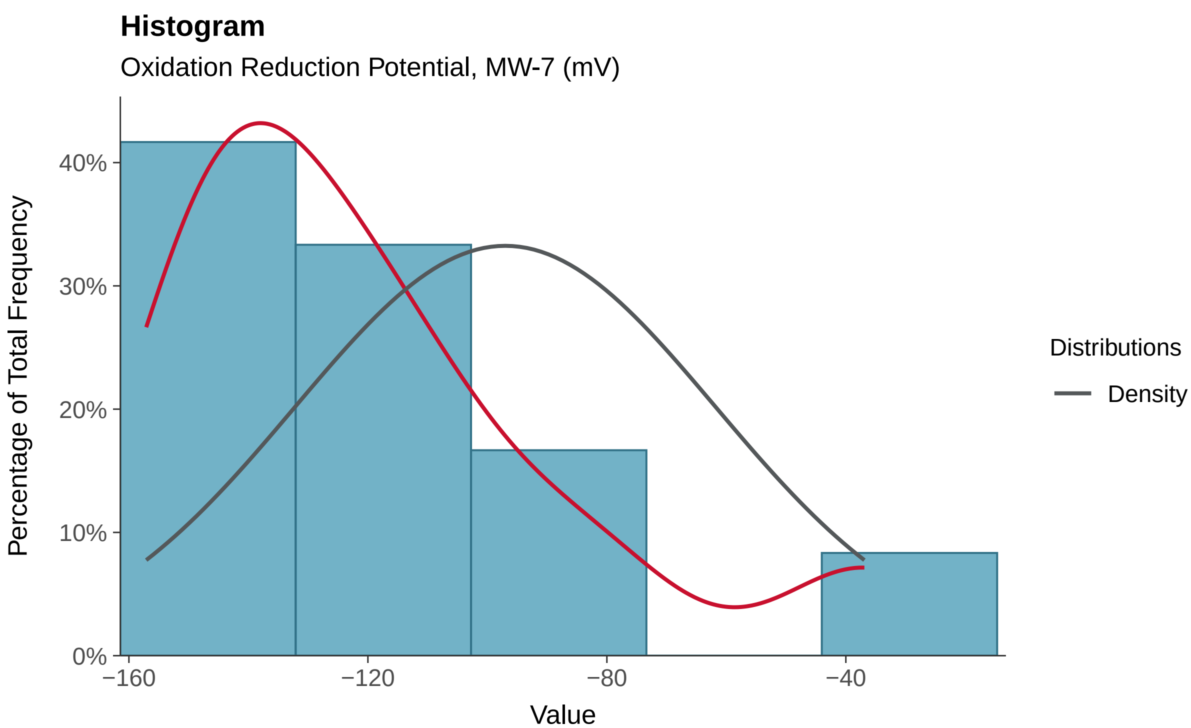

Trend Regression: Piecewise Linear-Linear
Dissolved Oxygen, MW-7 (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
0.0
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Dissolved Oxygen, MW-7 (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
0.0
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Field Parameters: Oxidation Reduction Potential, MW-7

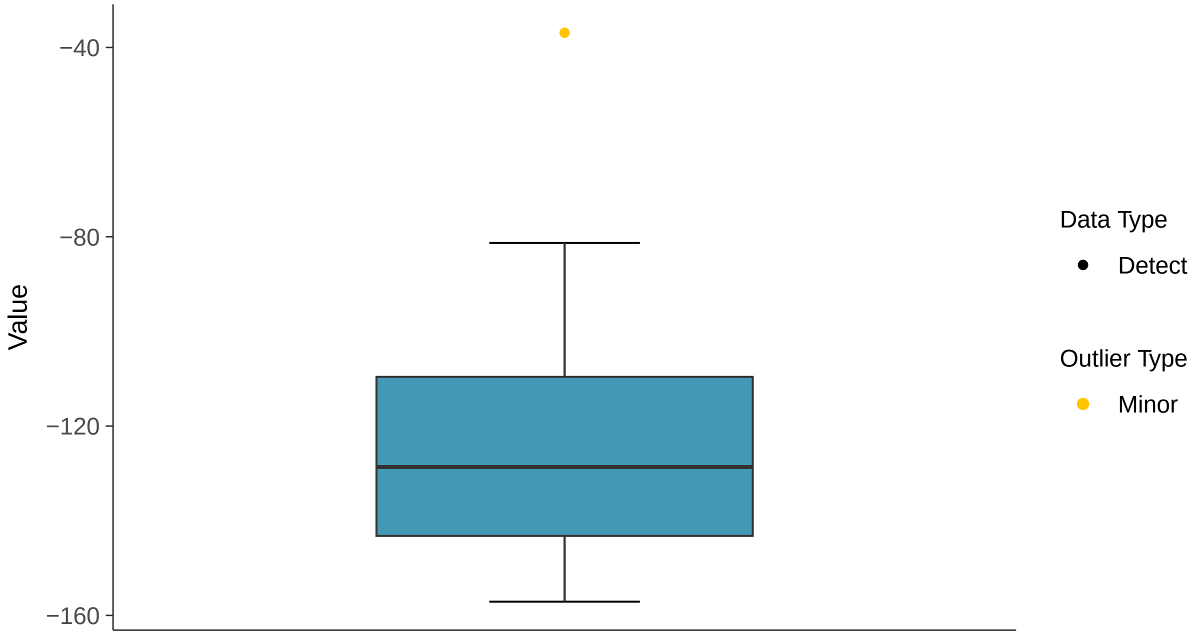
ID: 07_3_26





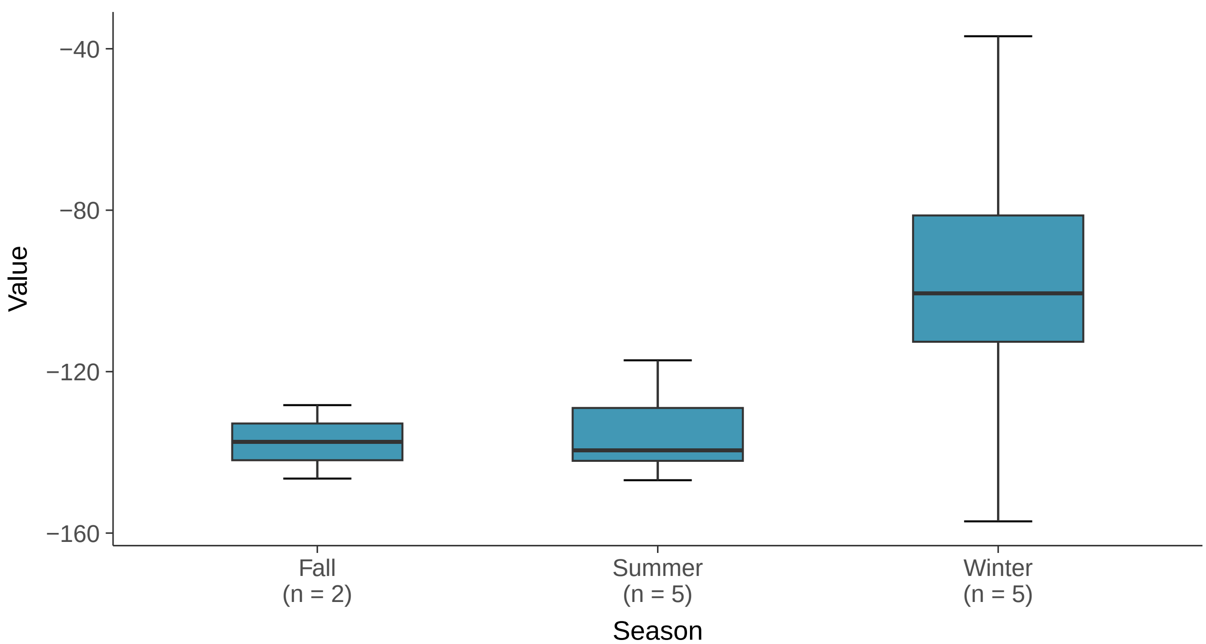
Boxplot

Oxidation Reduction Potential, MW-7 (mV)



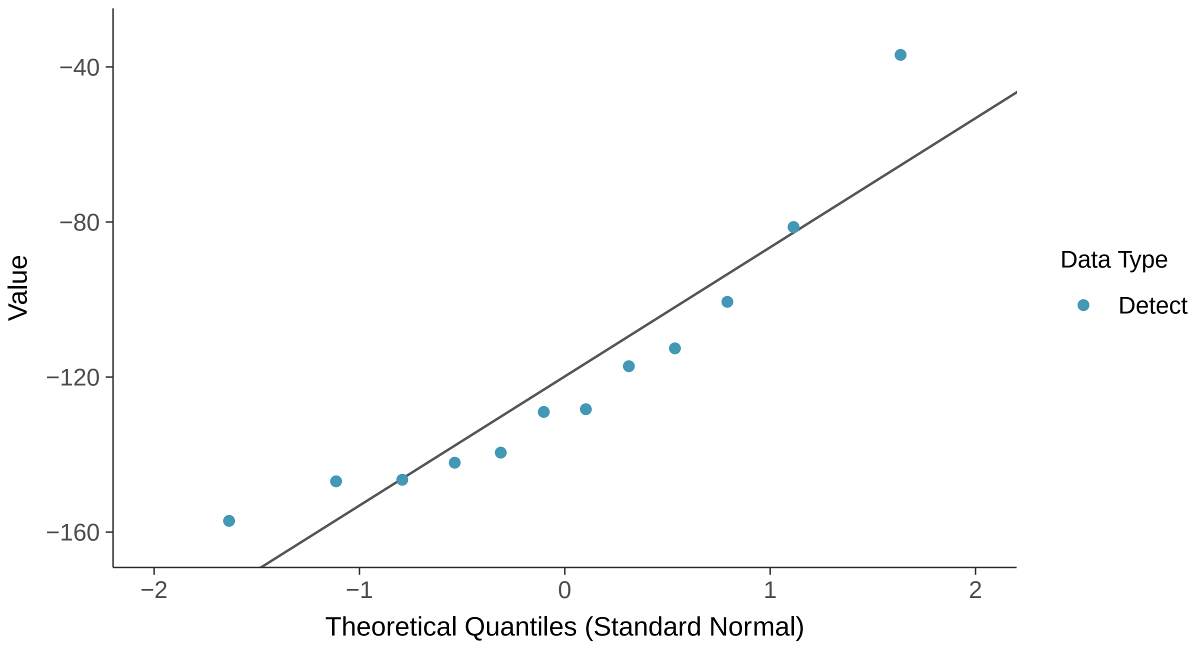
Boxplot by Season

Oxidation Reduction Potential, MW-7 (mV)



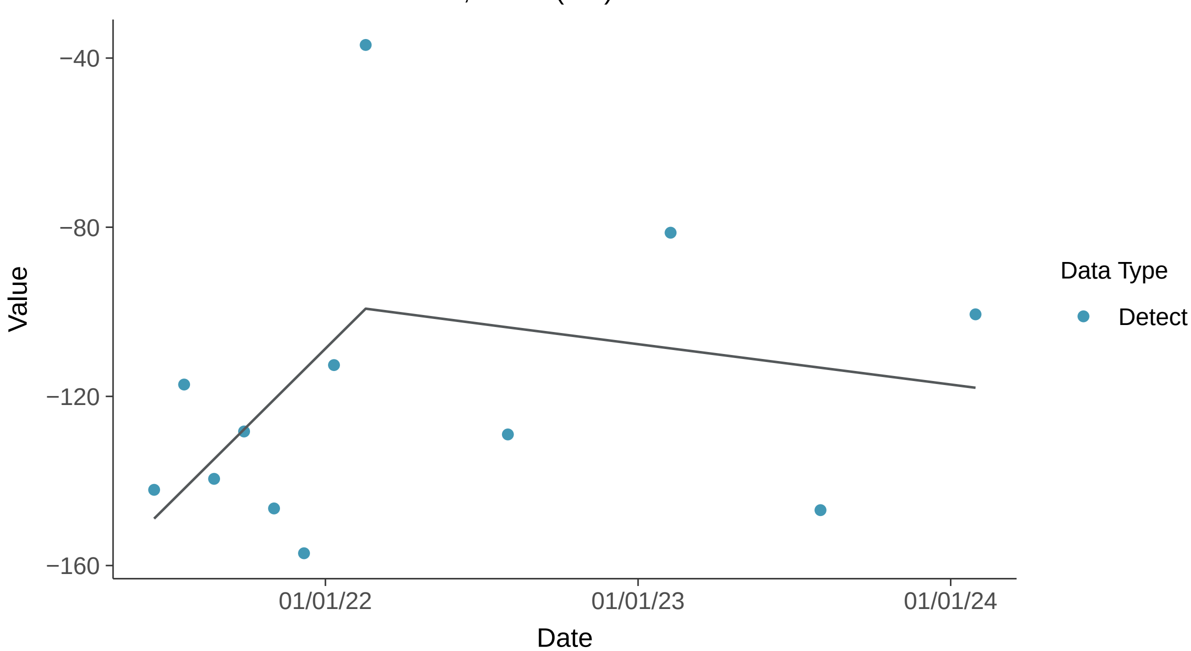
Normal Q-Q plot

Oxidation Reduction Potential, MW-7 (mV)



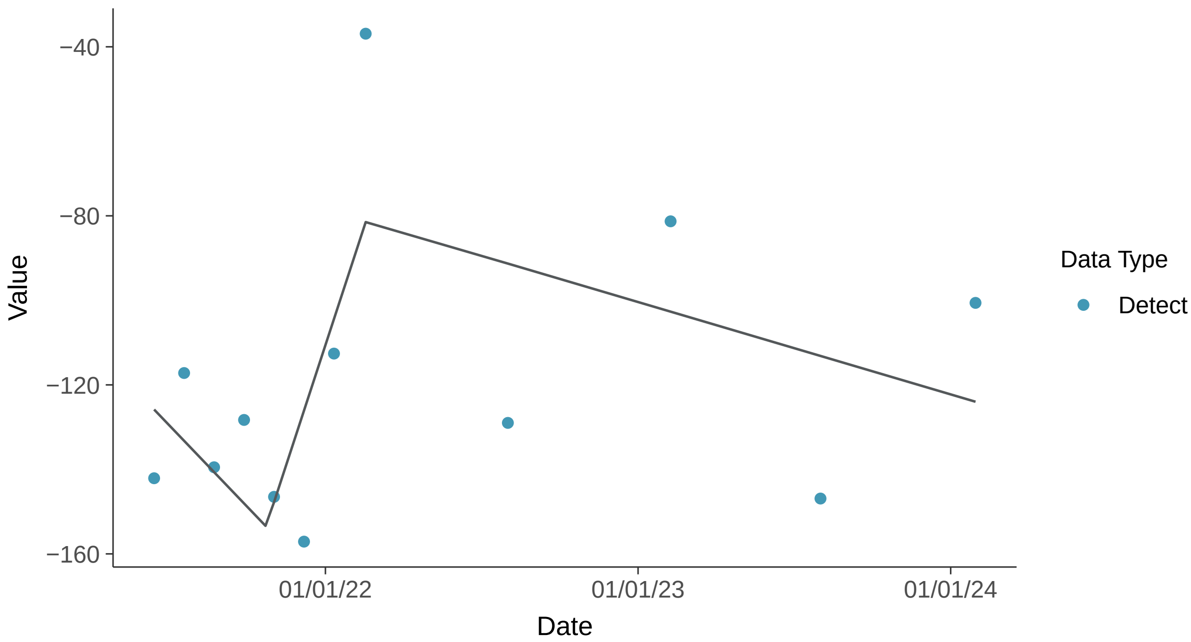
Trend Regression: Piecewise Linear-Linear

Oxidation Reduction Potential, MW-7 (mV)



Trend Regression: Piecewise Linear-Linear-Linear

Oxidation Reduction Potential, MW-7 (mV)

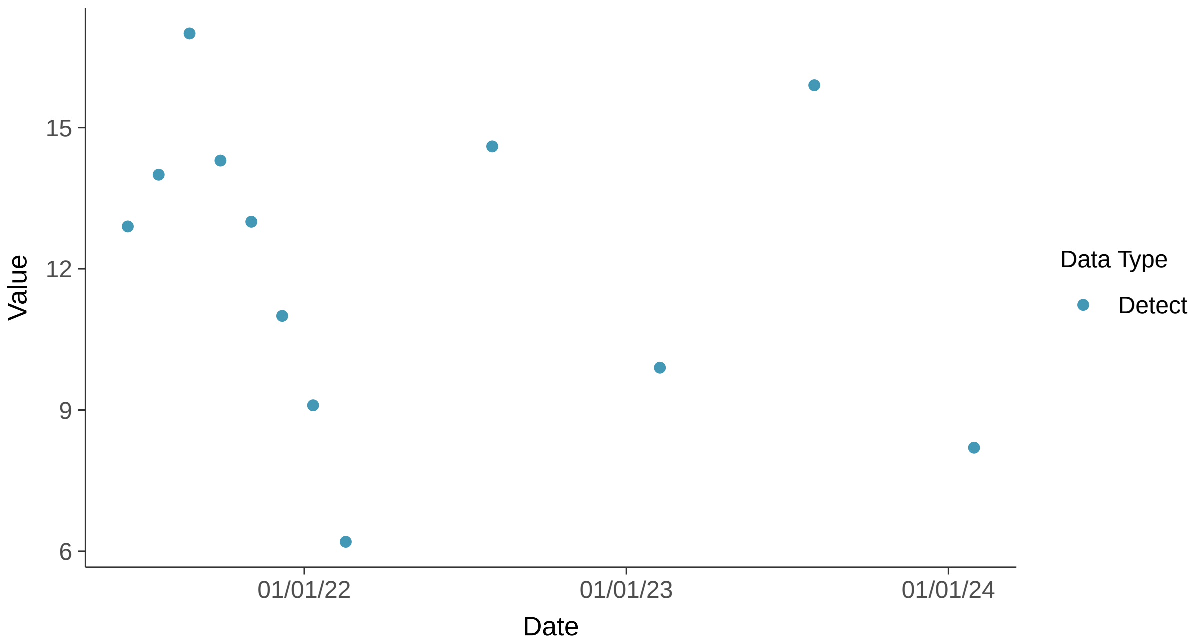


Field Parameters: Temperature, MW-7

ID: 07_3_27

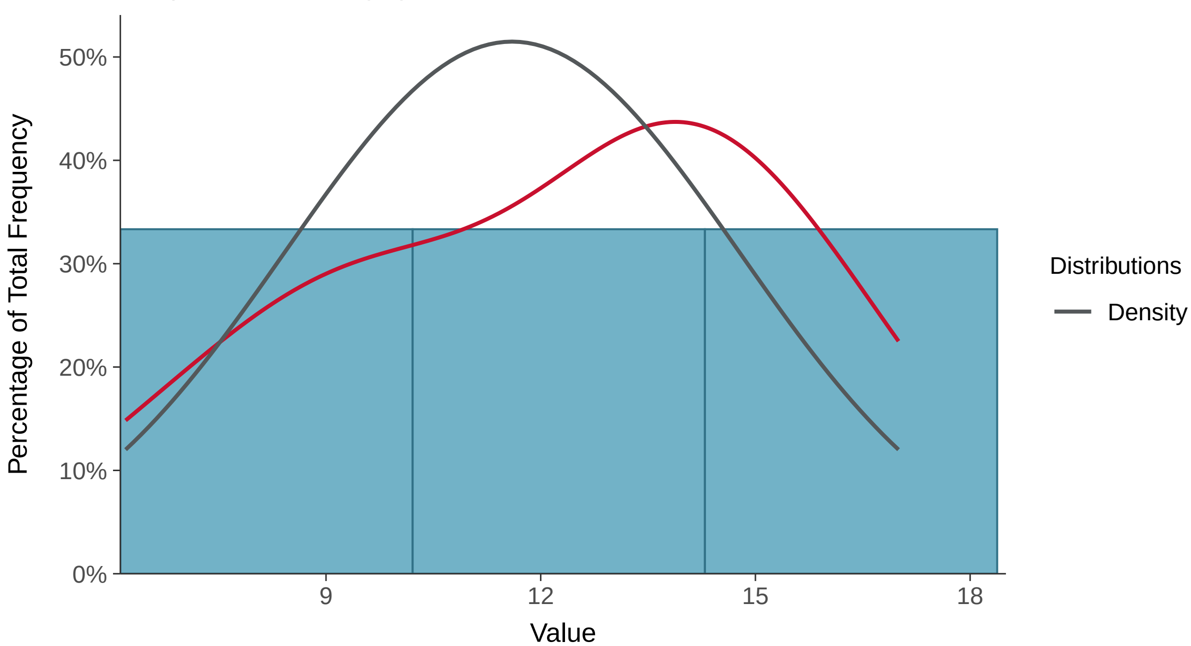
Scatter Plot

Temperature, MW-7 (°C)



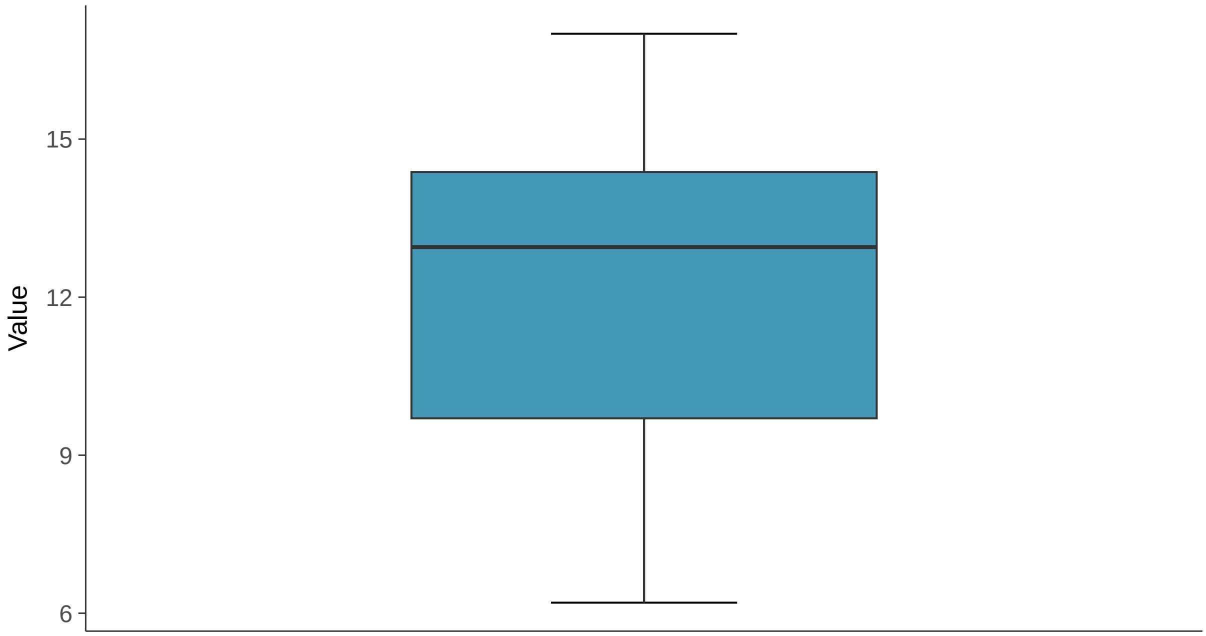
Histogram

Temperature, MW-7 (°C)



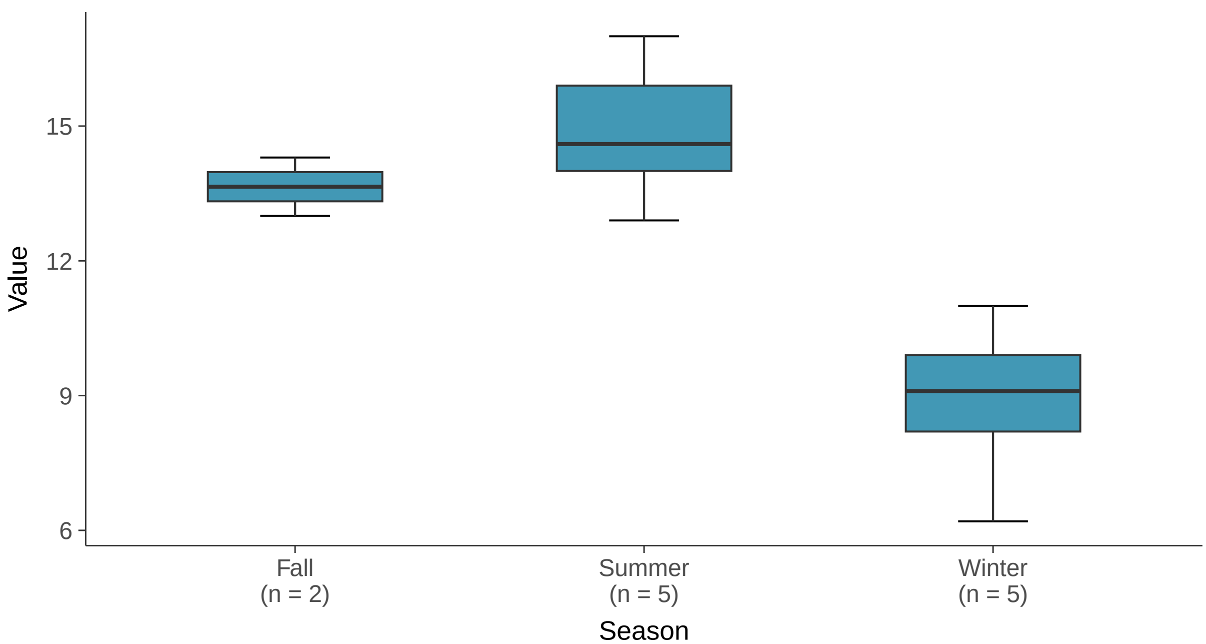
Boxplot

Temperature, MW-7 (°C)



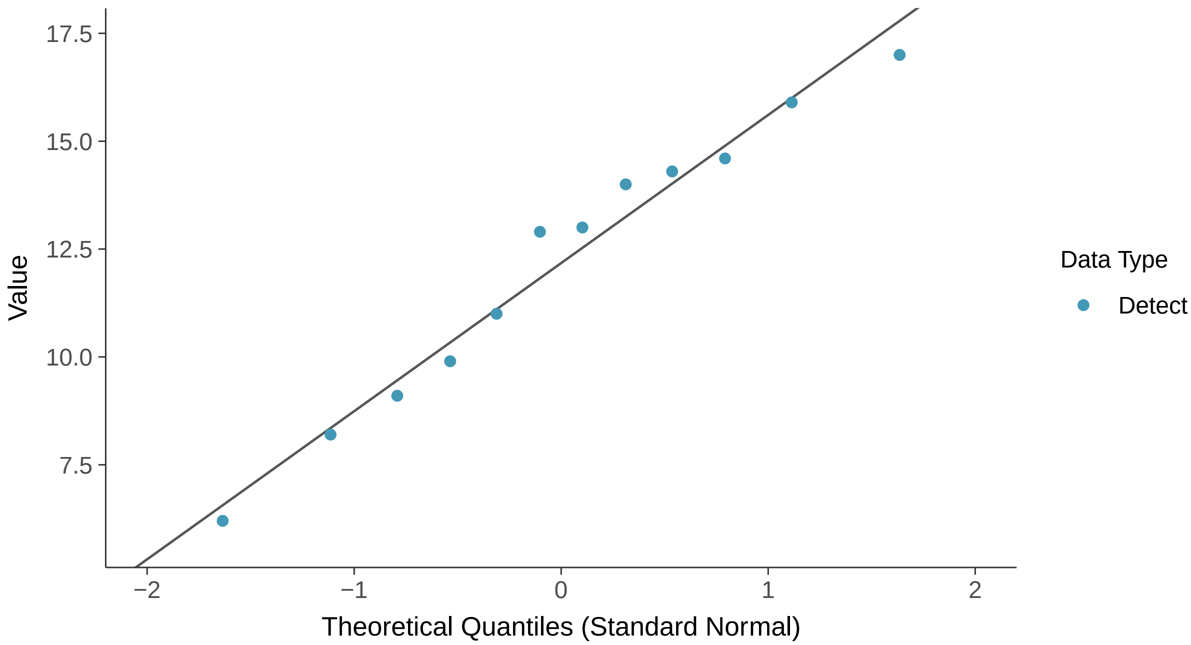
Boxplot by Season

Temperature, MW-7 (°C)



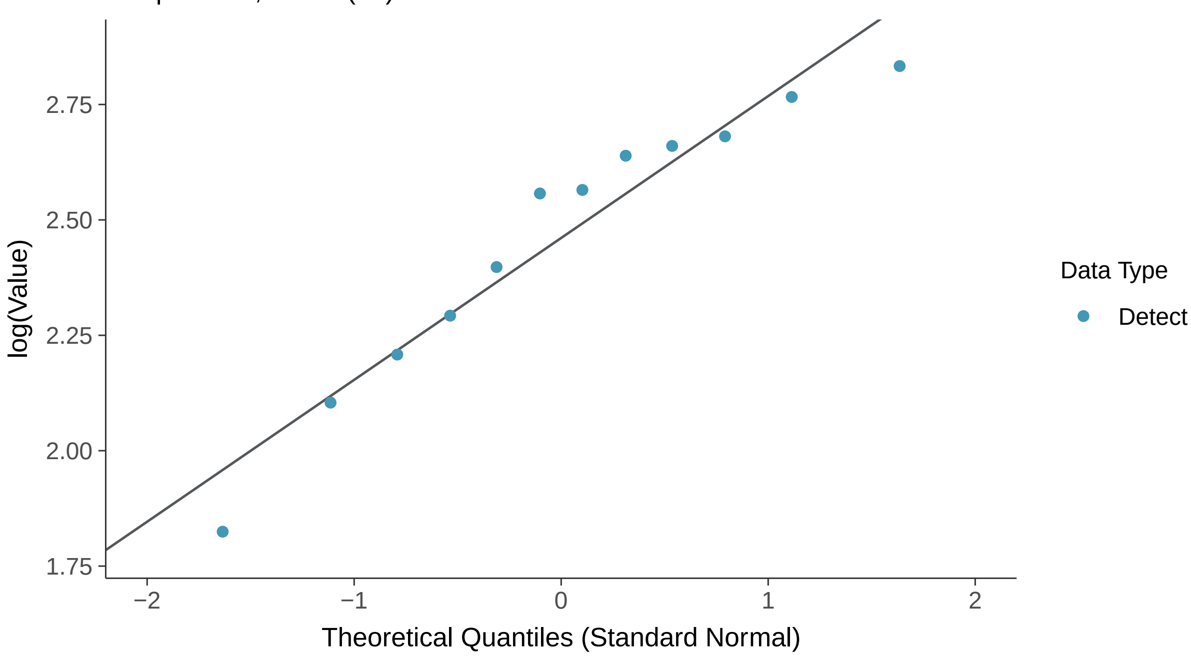
Normal Q-Q plot

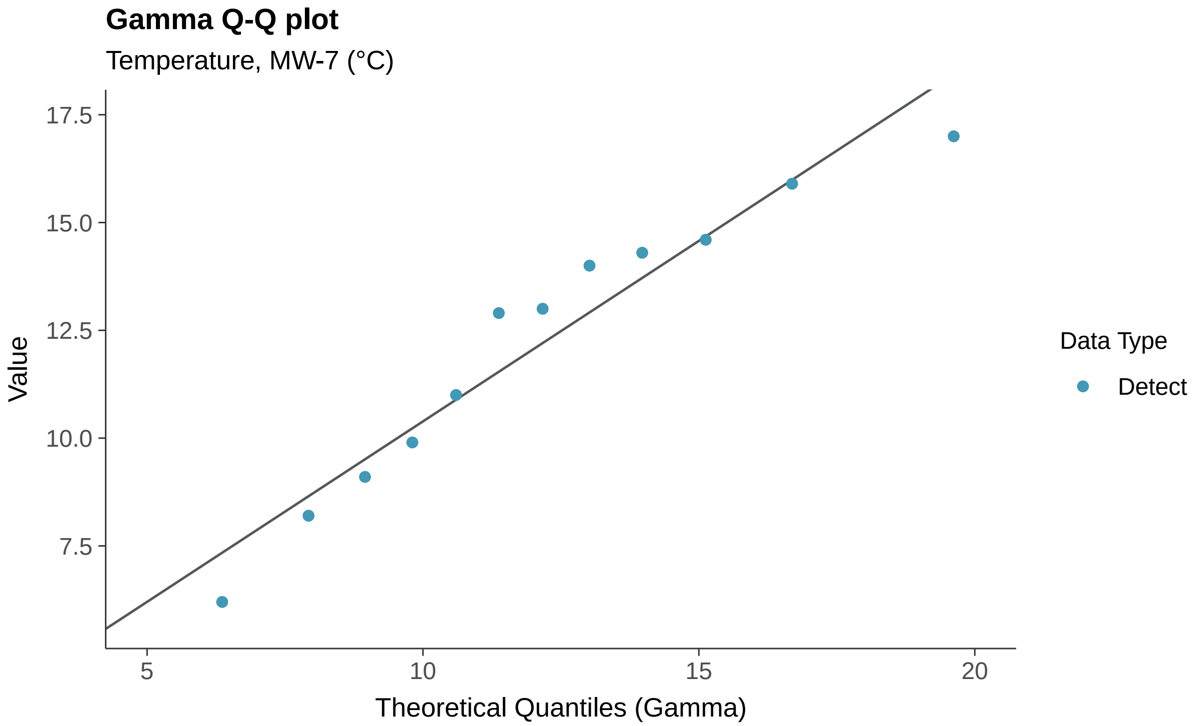
Temperature, MW-7 (°C)

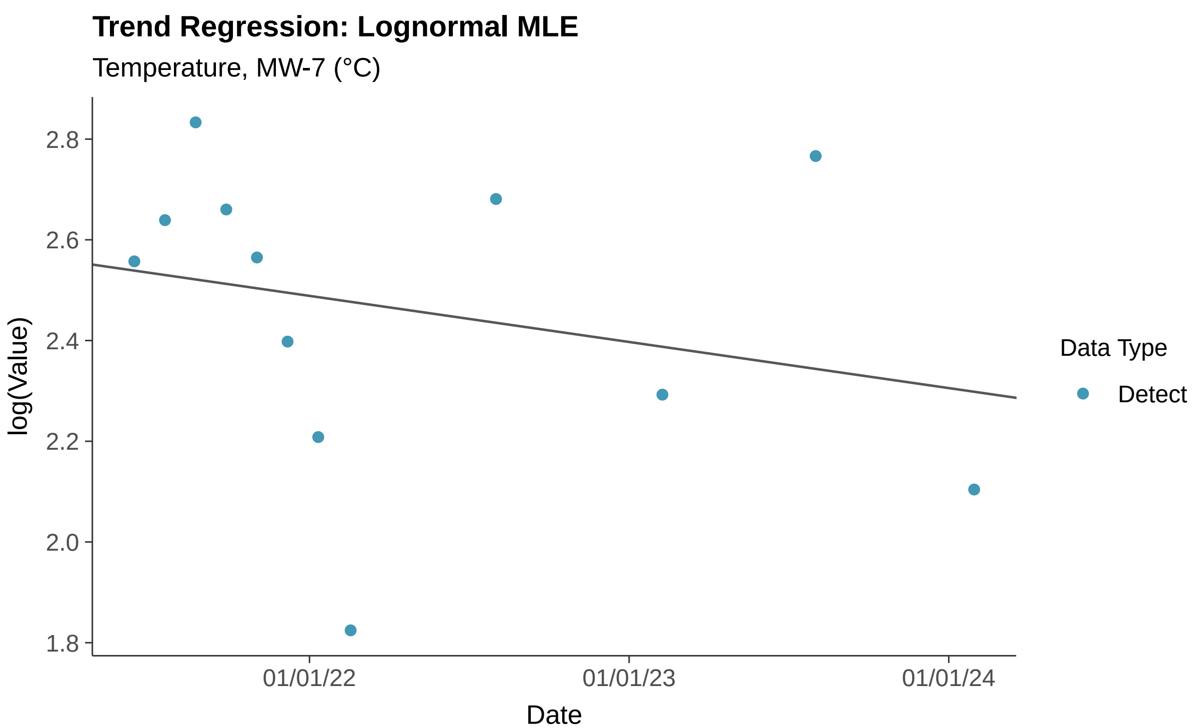


Lognormal Q-Q plot

Temperature, MW-7 (°C)

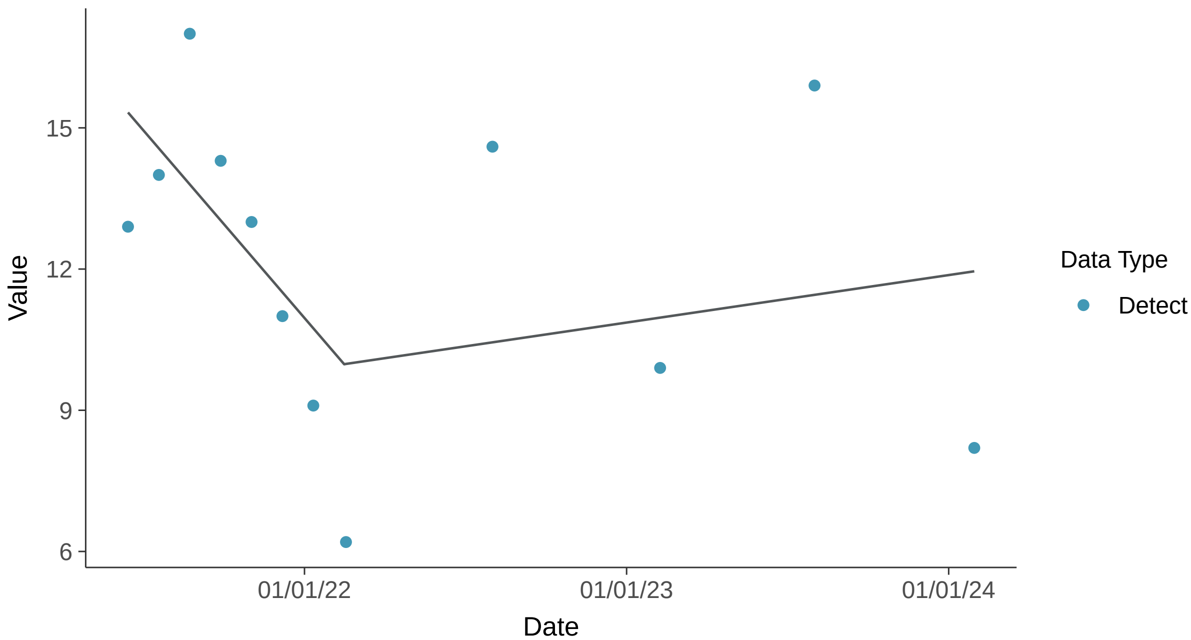



Gamma Q-Q plot
Temperature, MW-7 (°C)
Value
17.5
15.0
12.5
10.0
7.5
5
10
15
20
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Temperature, MW-7 (°C)
log(Value)
2.8
2.6
2.4
2.2
2.0
1.8
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

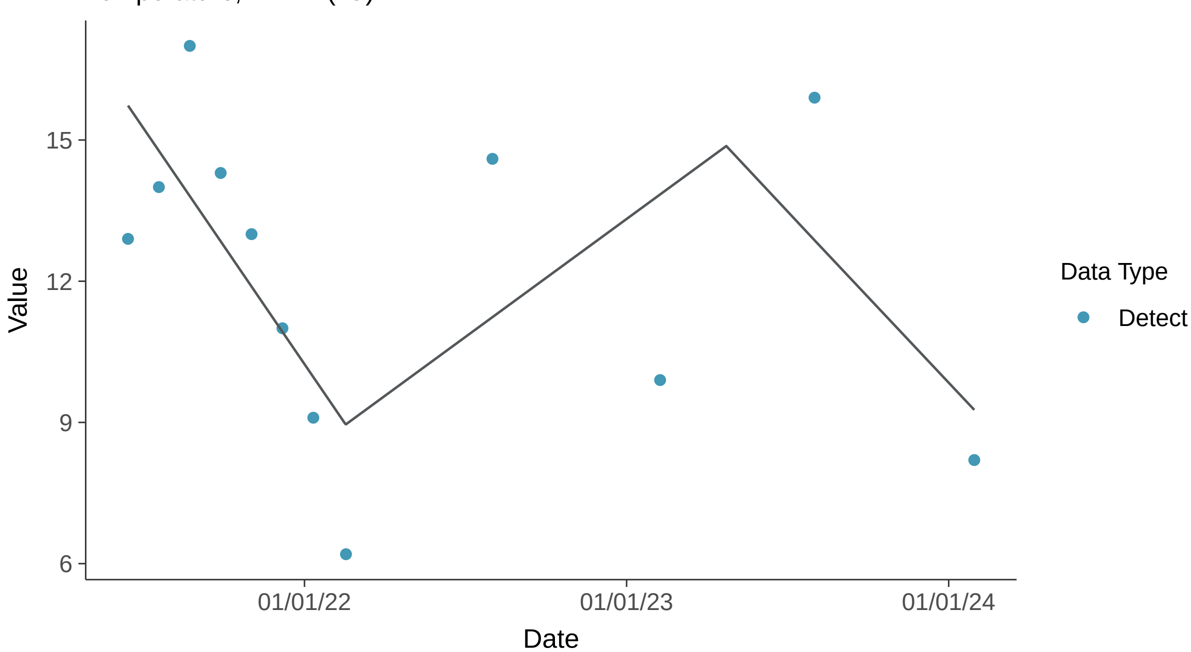
Trend Regression: Piecewise Linear-Linear

Temperature, MW-7 (°C)



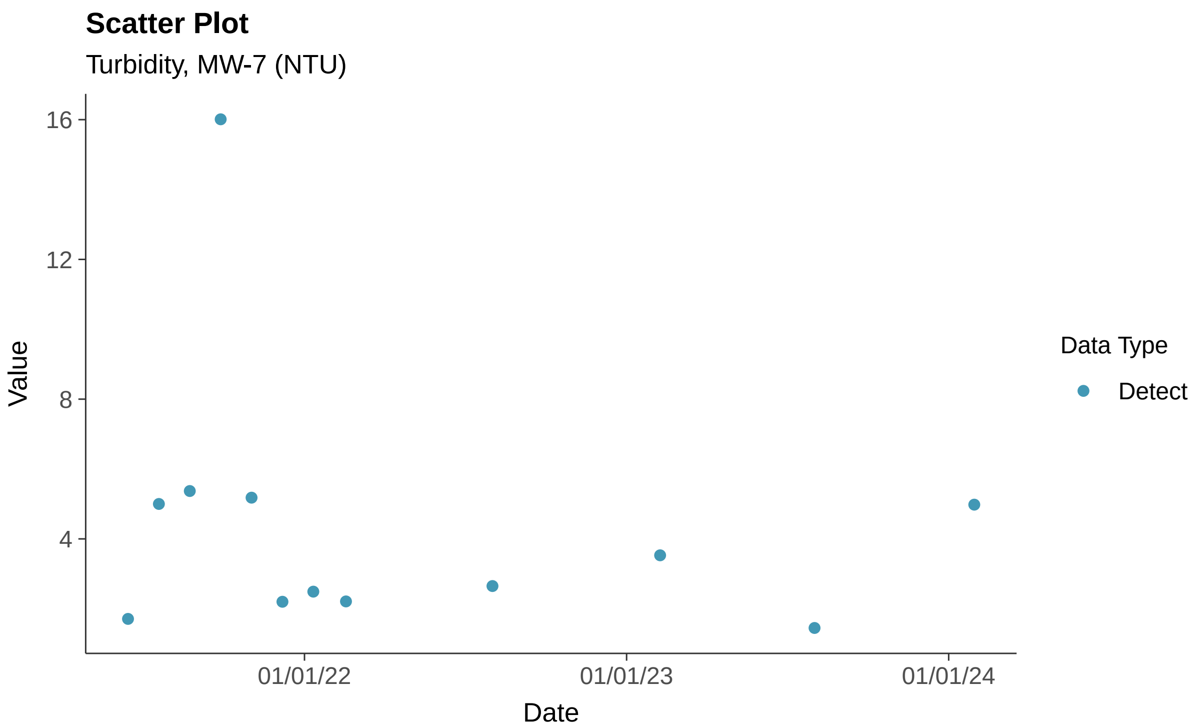
Trend Regression: Piecewise Linear-Linear-Linear

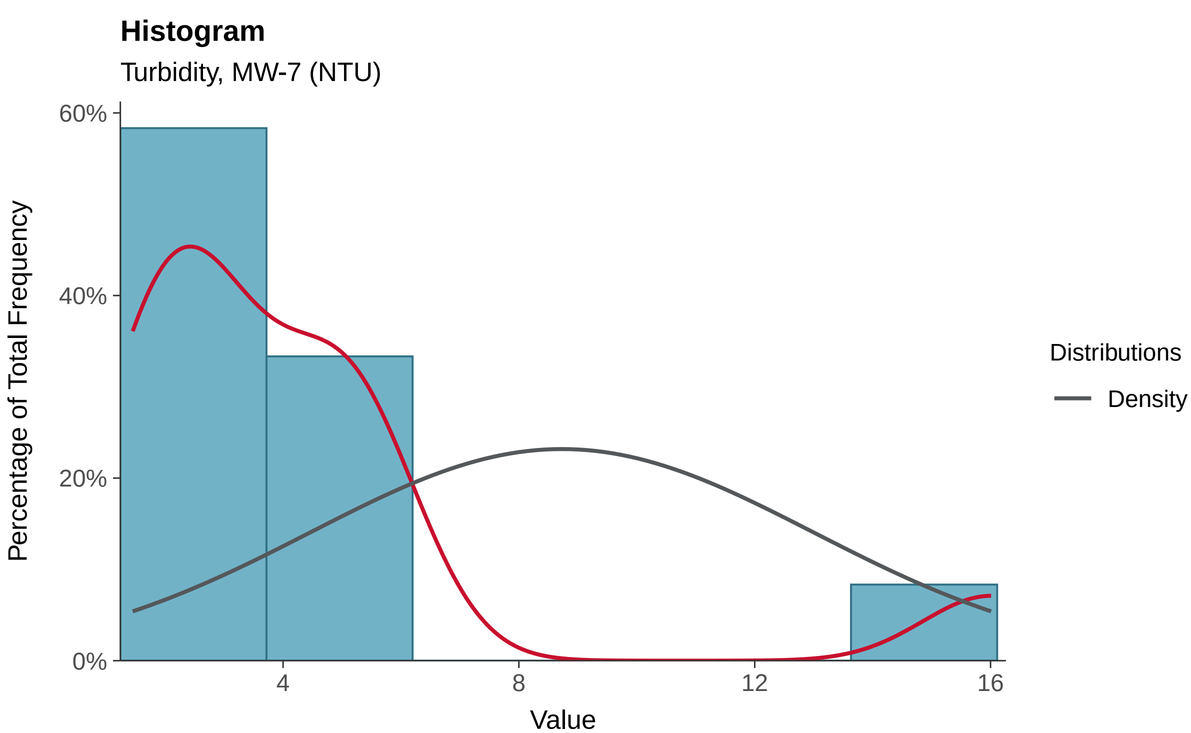
Temperature, MW-7 (°C)



Field Parameters: Turbidity, MW-7

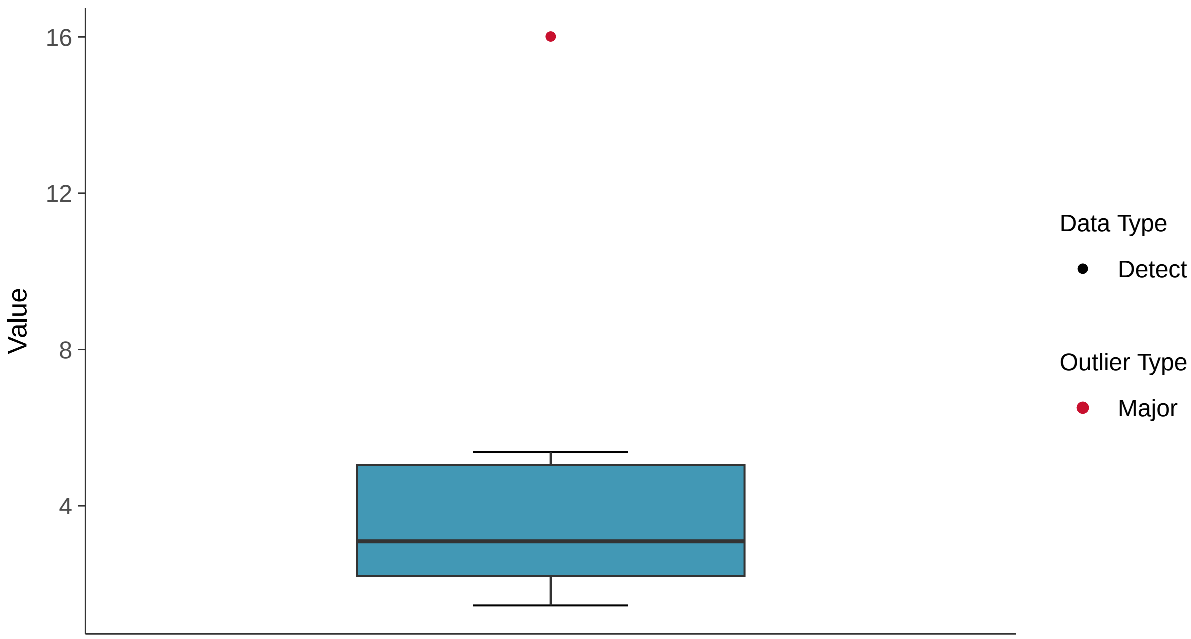
ID: 07_3_28





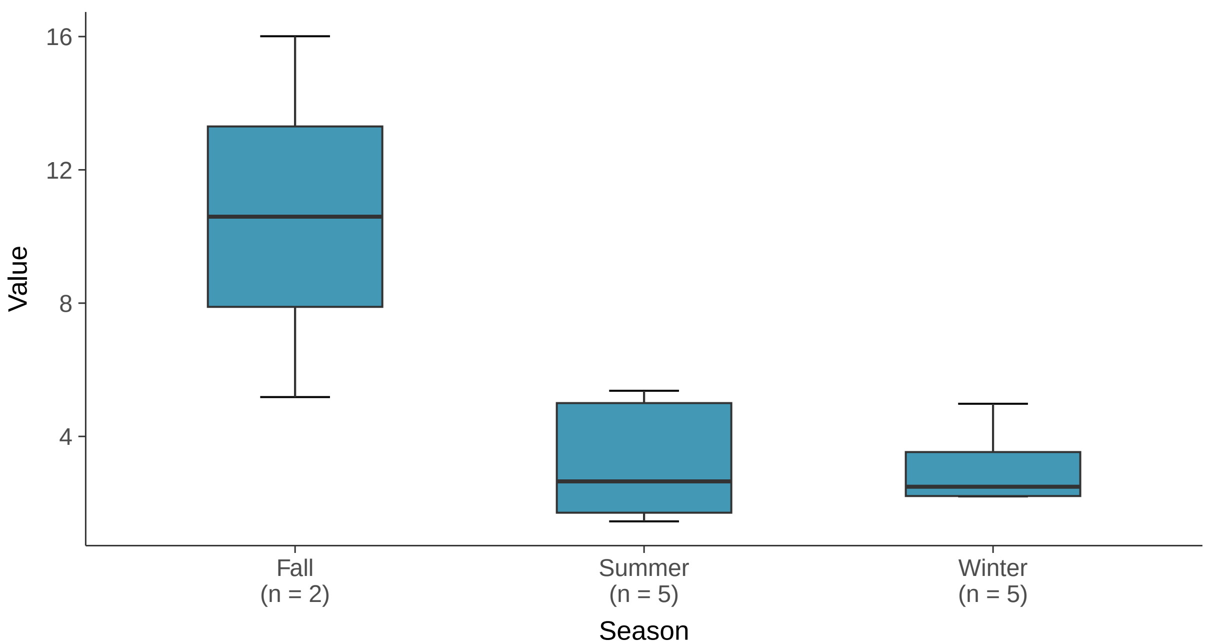
Boxplot

Turbidity, MW-7 (NTU)



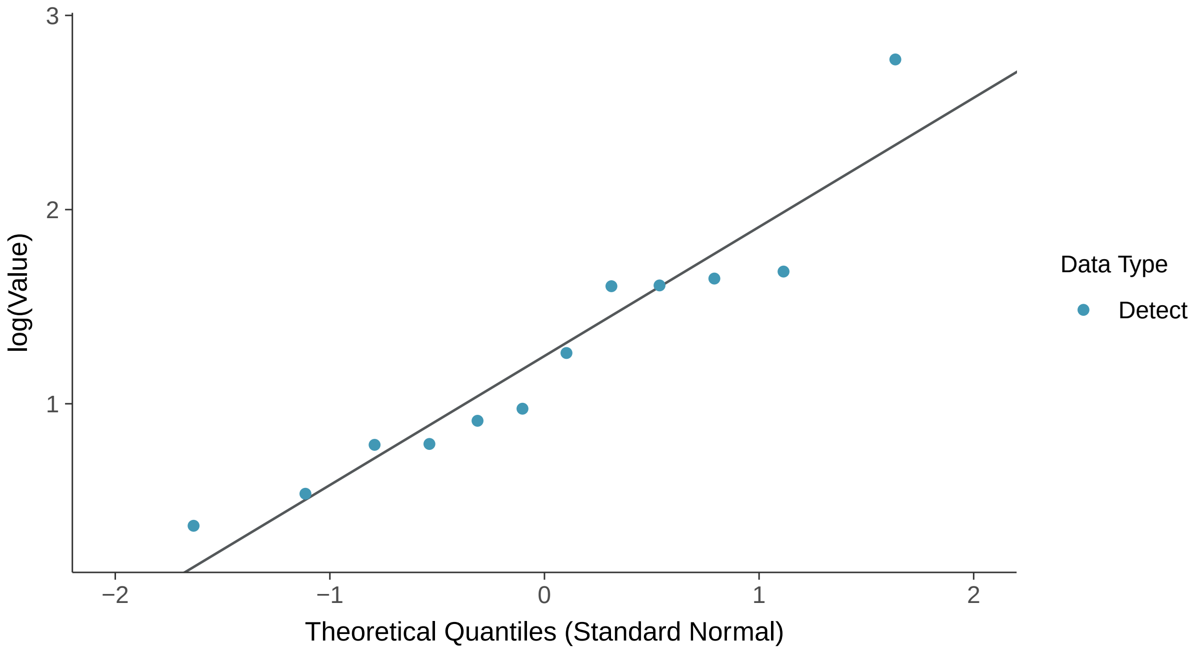
Boxplot by Season

Turbidity, MW-7 (NTU)



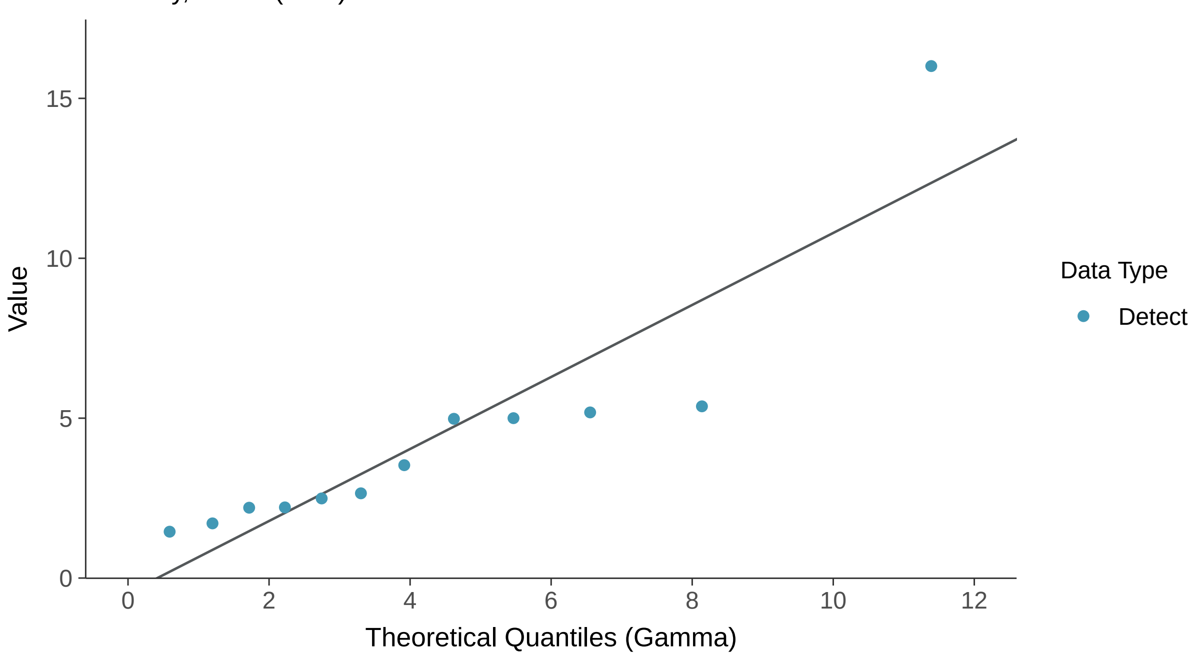
Lognormal Q-Q plot

Turbidity, MW-7 (NTU)



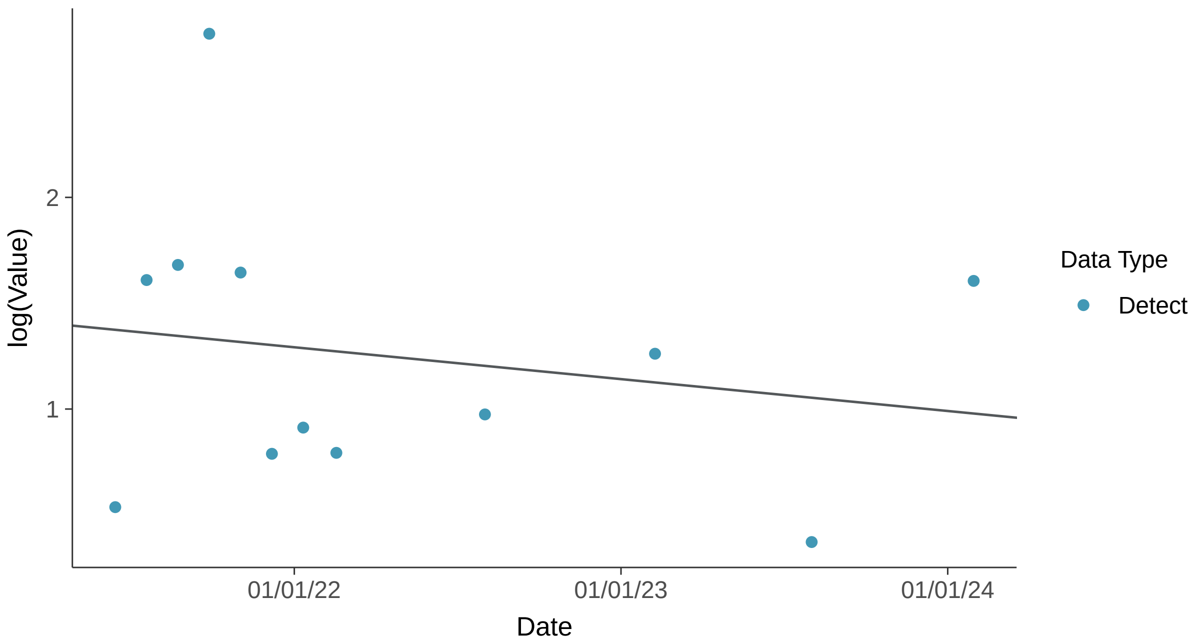
Gamma Q-Q plot

Turbidity, MW-7 (NTU)



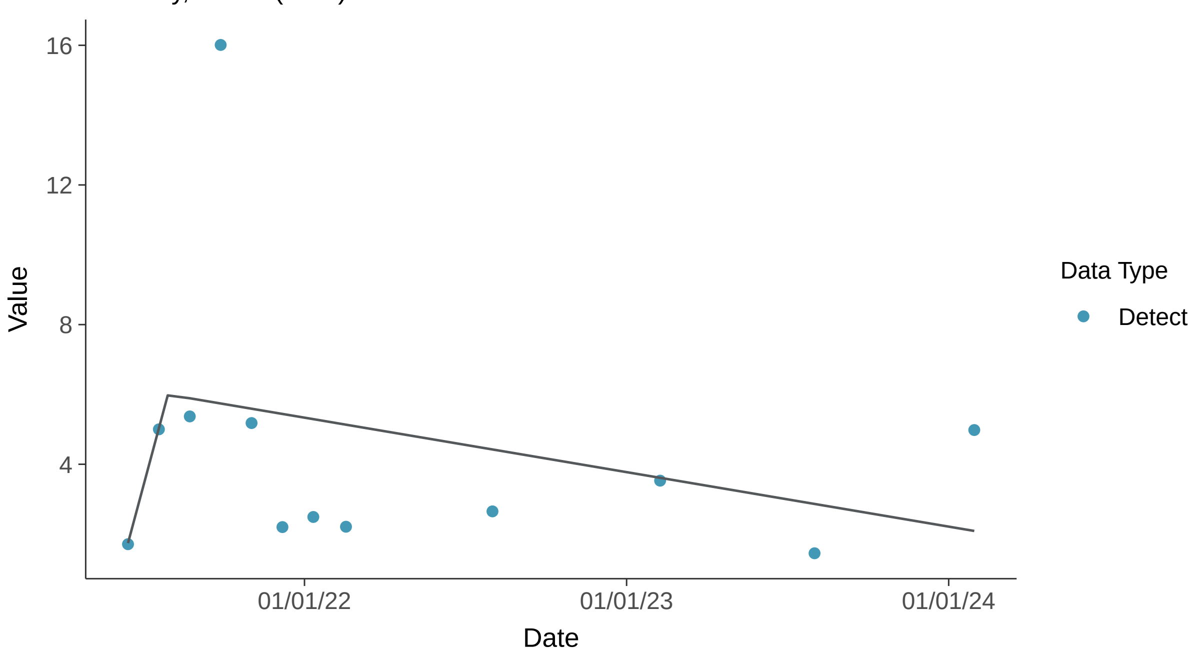
Trend Regression: Lognormal MLE

Turbidity, MW-7 (NTU)



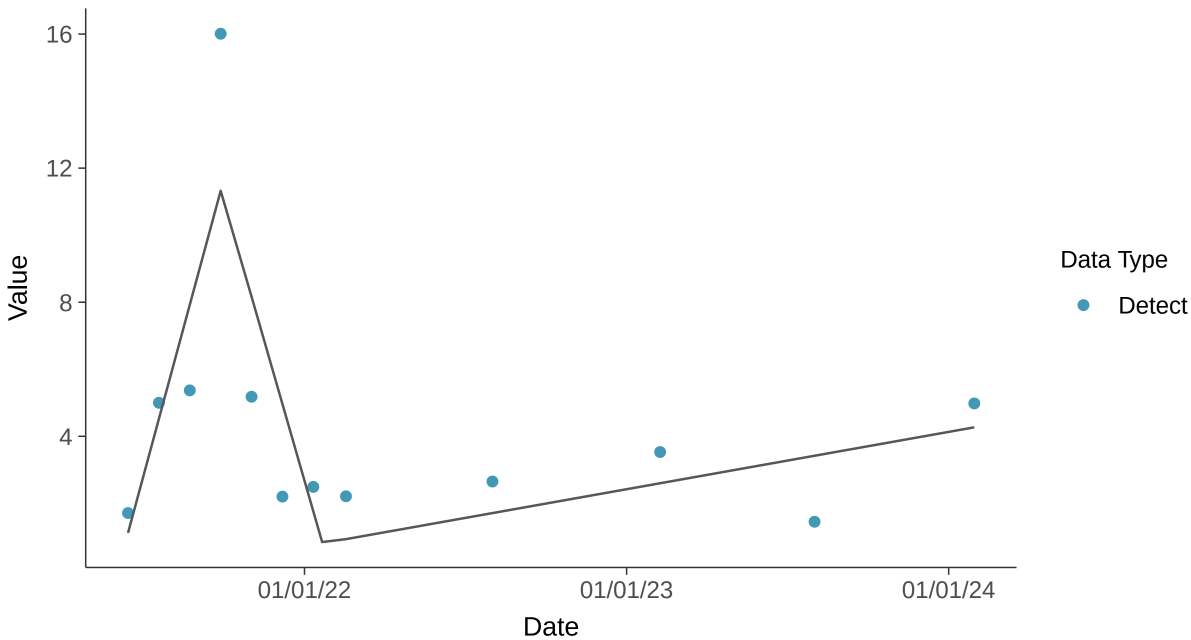
Trend Regression: Piecewise Linear-Linear

Turbidity, MW-7 (NTU)



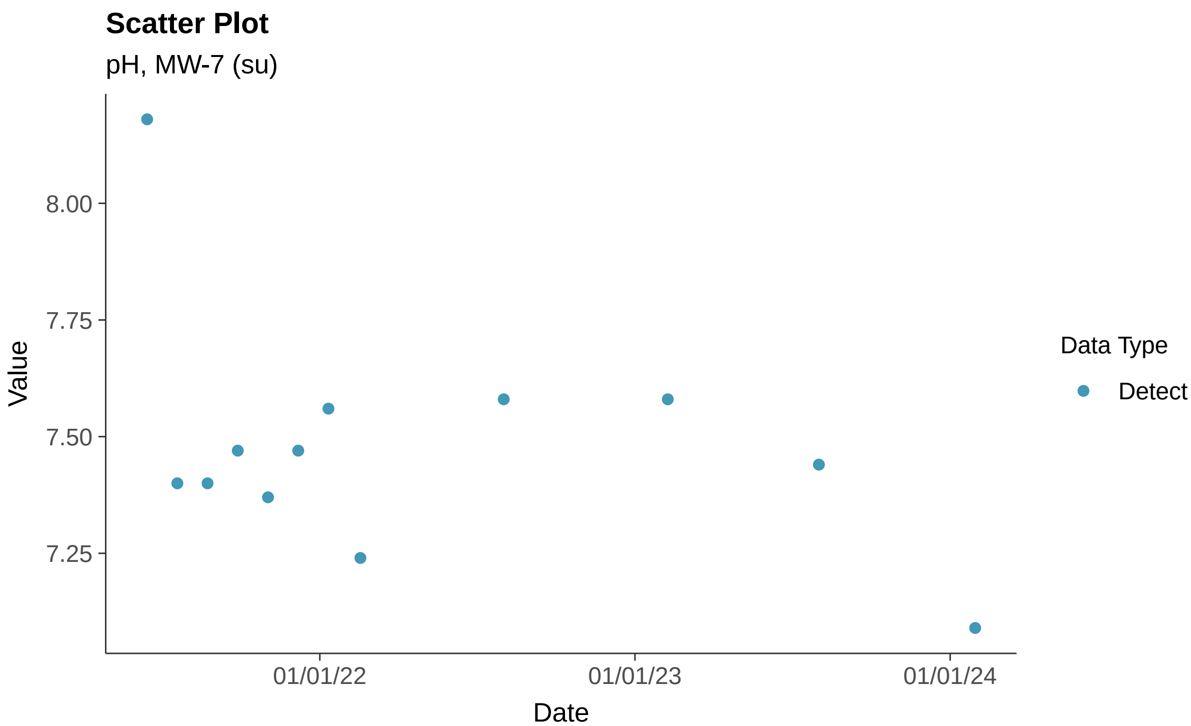
Trend Regression: Piecewise Linear-Linear-Linear

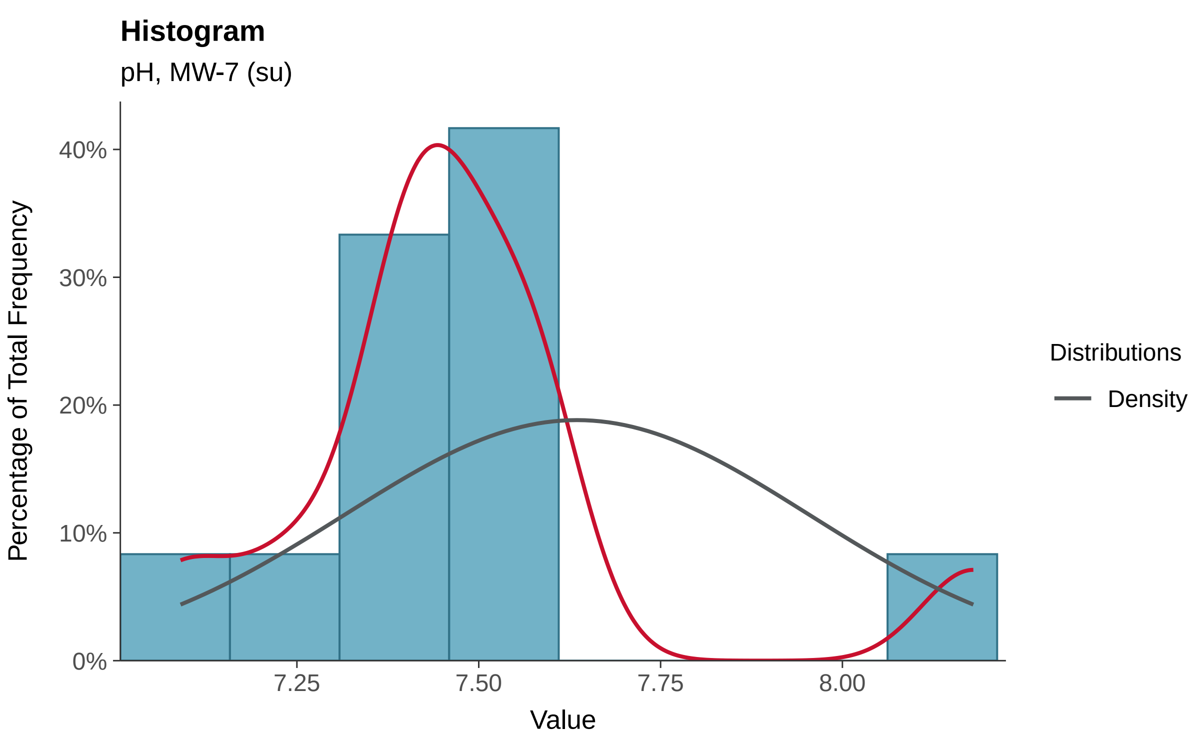
Turbidity, MW-7 (NTU)

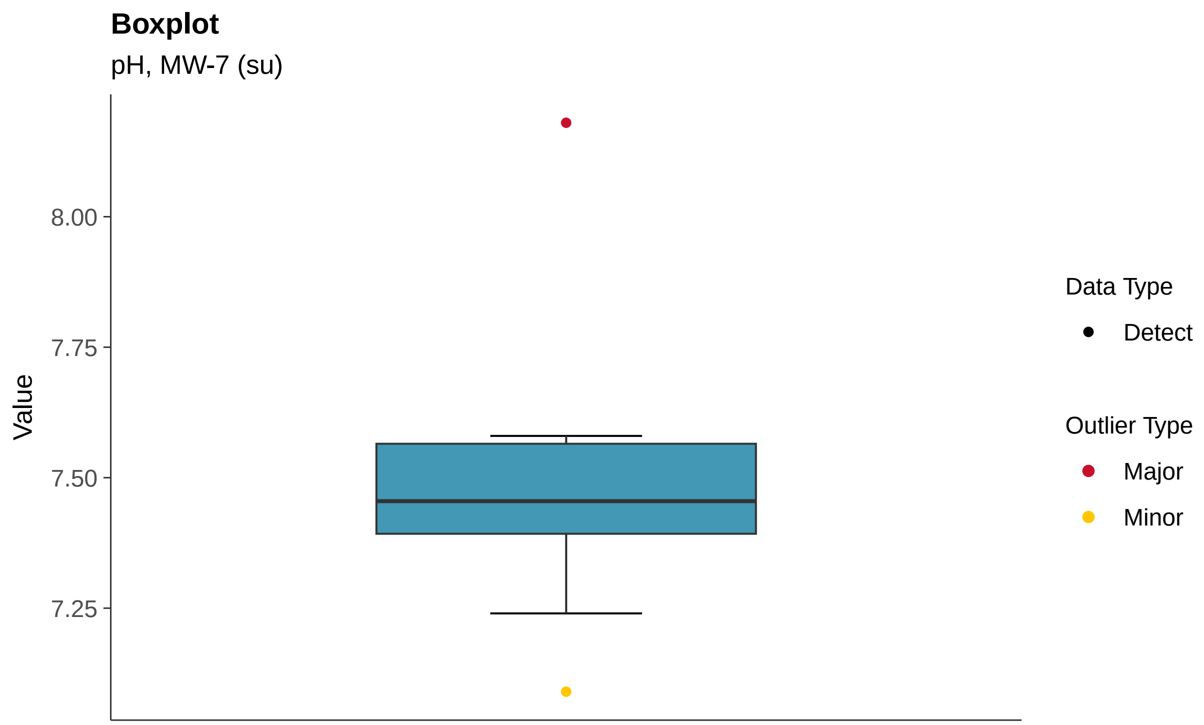


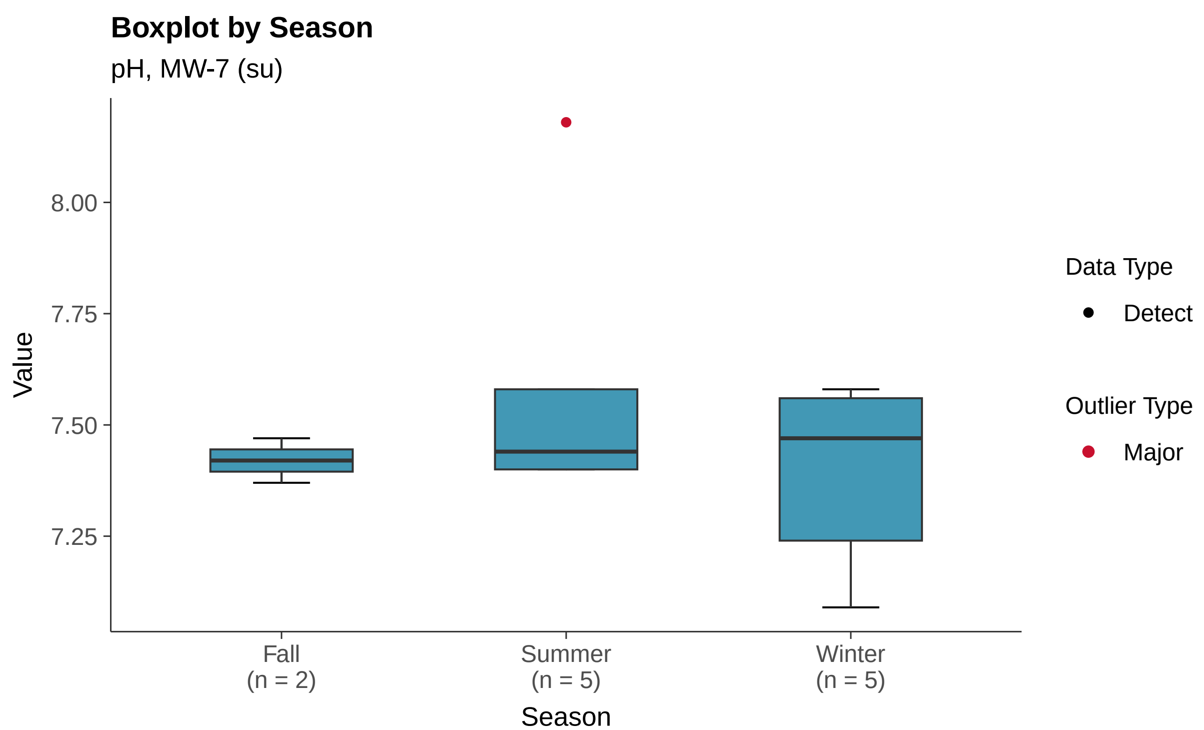
Field Parameters: pH, MW-7

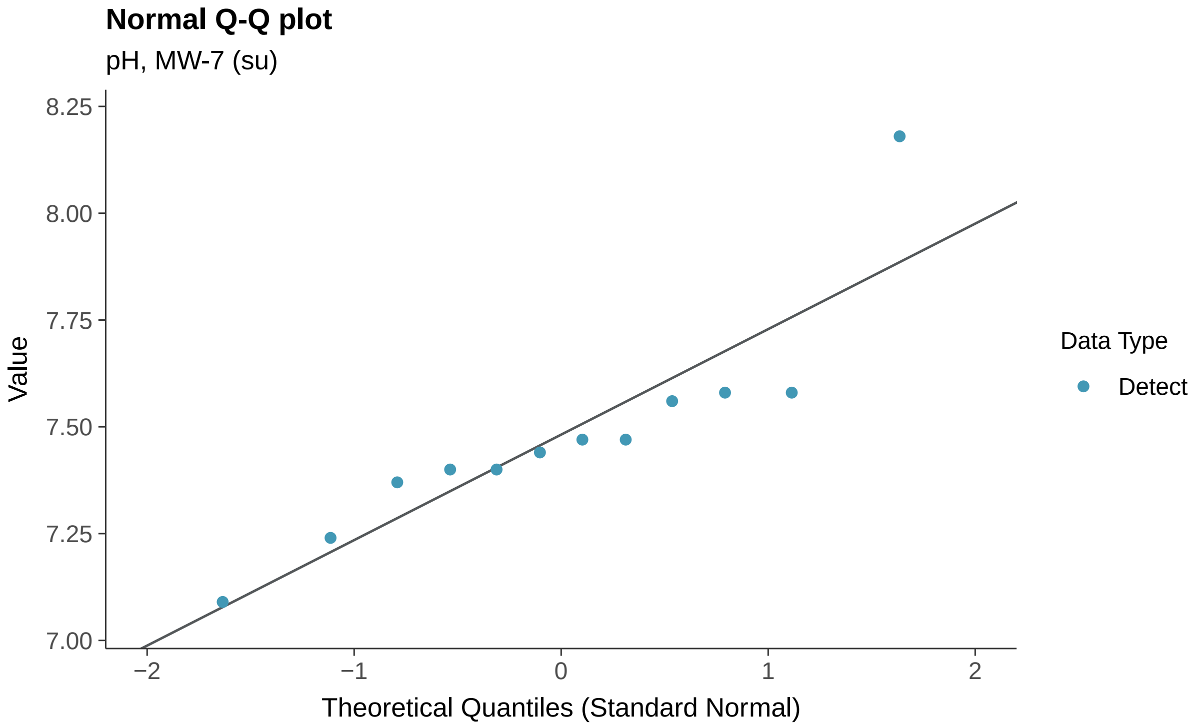
ID: 07_3_29

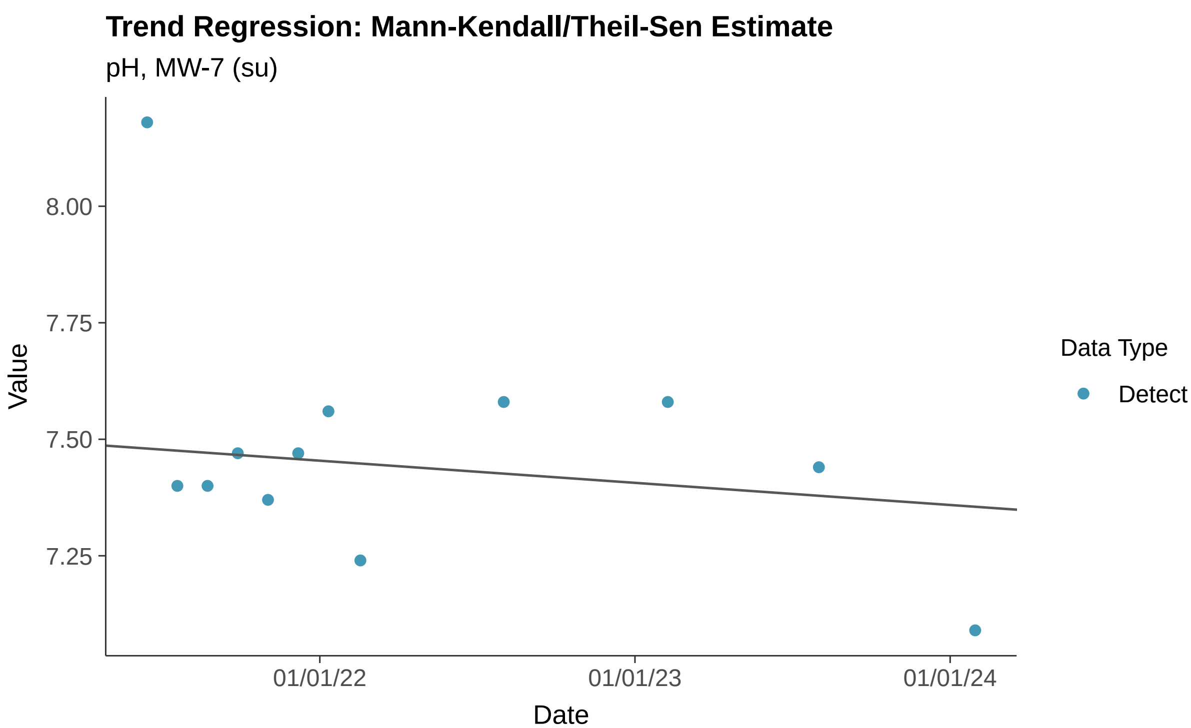


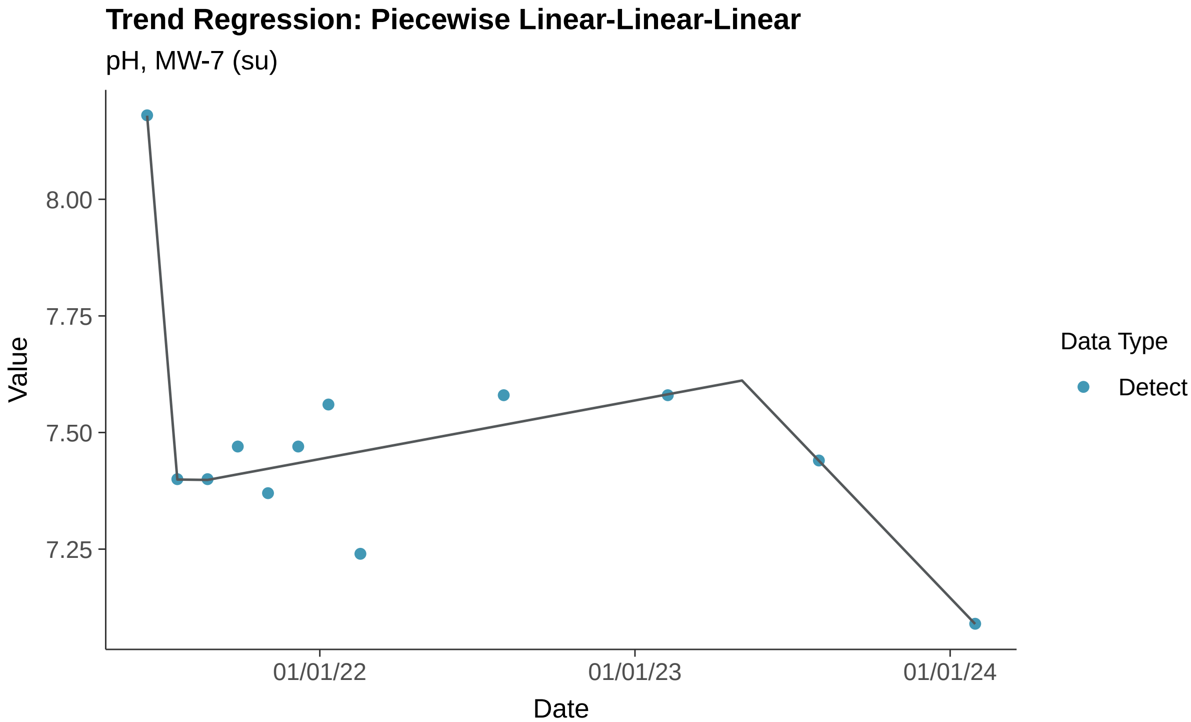



Boxplot
pH, MW-7 (su)
Value
8.00
7.75
7.50
7.25
Data Type
Detect
Outlier Type
Major
Minor


Boxplot by Season
pH, MW-7 (su)
Value
8.00
7.75
7.50
7.25
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major

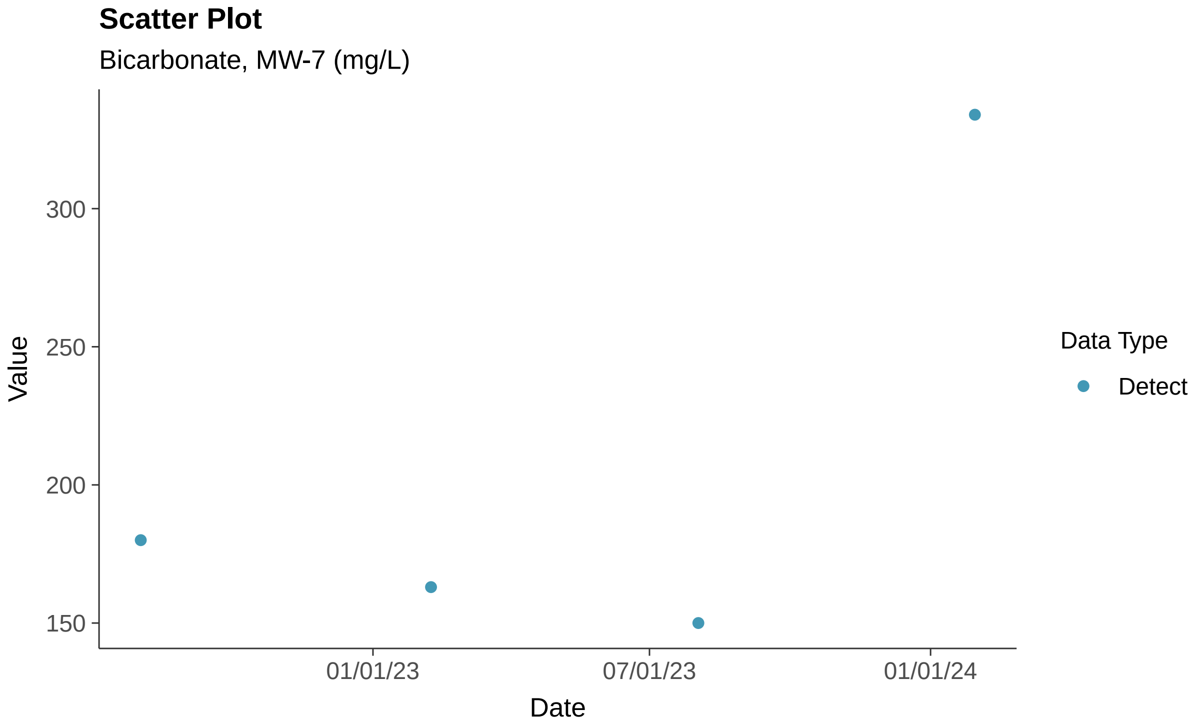

Normal Q-Q plot
pH, MW-7 (su)
Value
8.25
8.00
7.75
7.50
7.25
7.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

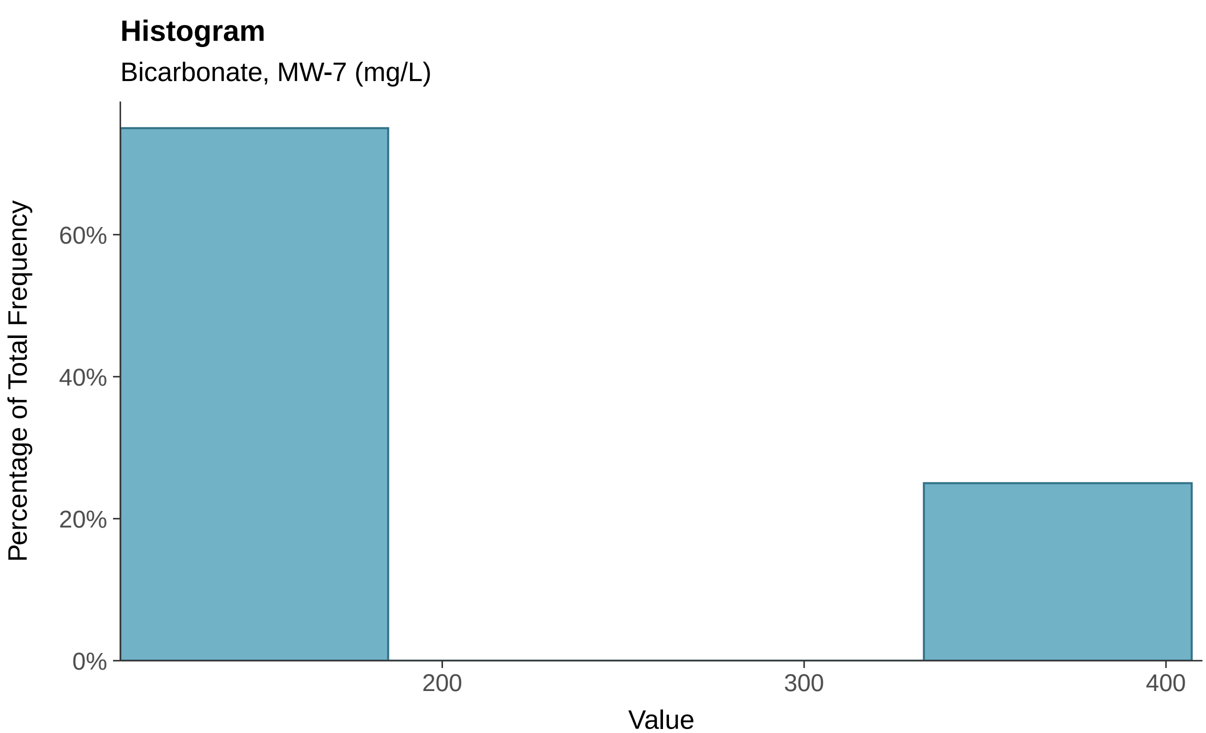

Trend Regression: Mann-Kendall/Theil-Sen Estimate
pH, MW-7 (su)
Value
8.00
7.75
7.50
7.25
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
pH, MW-7 (su)
8.00
7.75
7.50
7.25
Value
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Other: Bicarbonate, MW-7

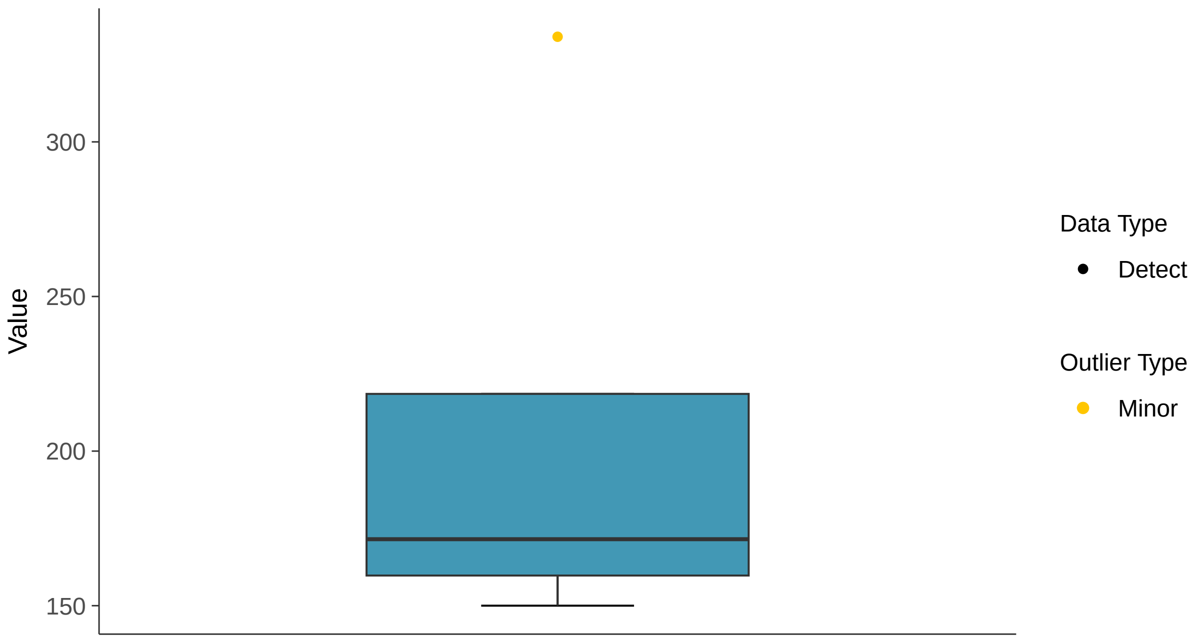
ID: 07_4_30





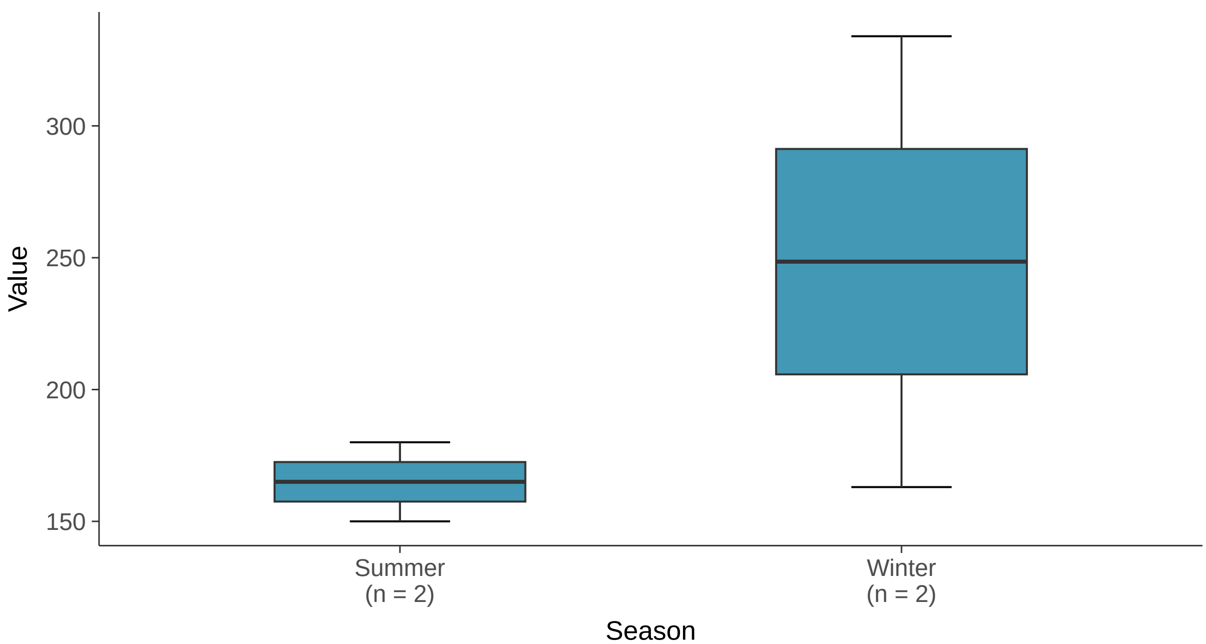
Boxplot

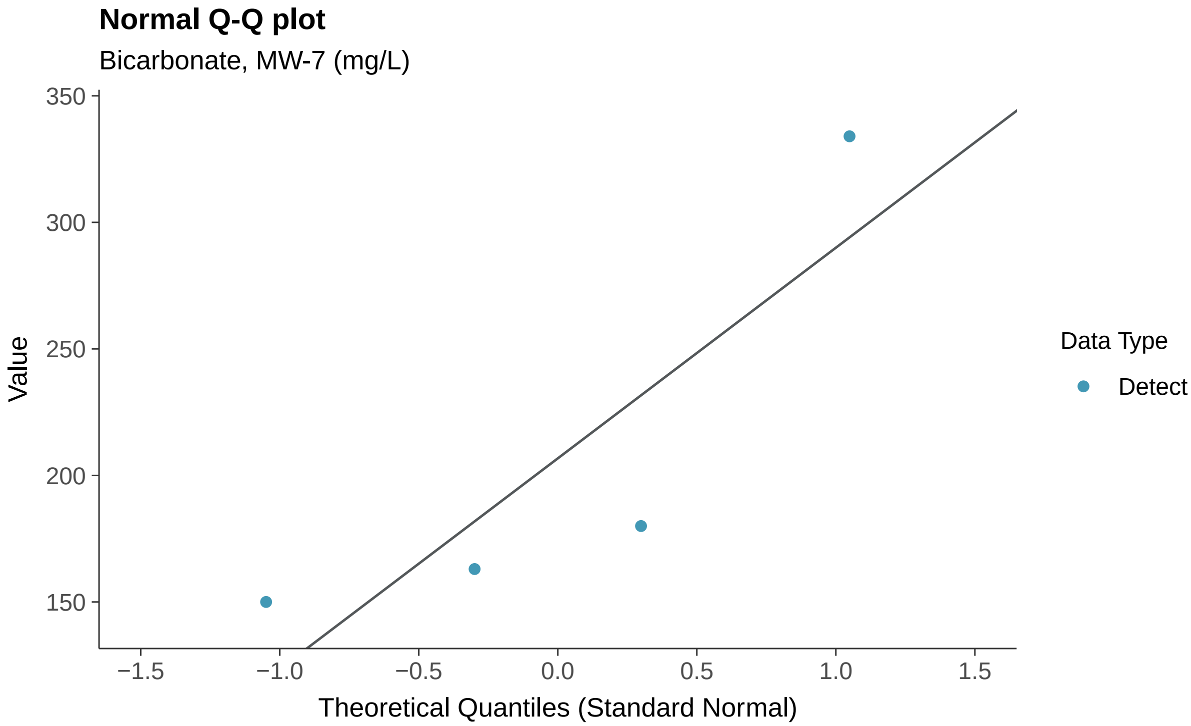
Bicarbonate, MW-7 (mg/L)



Boxplot by Season

Bicarbonate, MW-7 (mg/L)



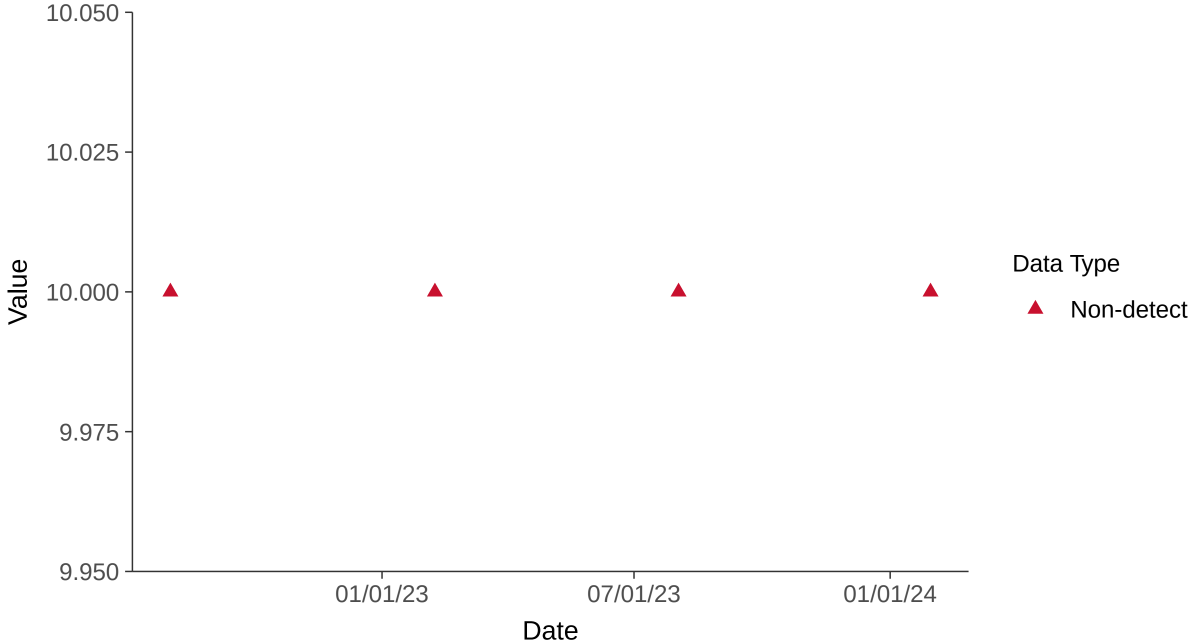

Normal Q-Q plot
Bicarbonate, MW-7 (mg/L)
Value
350
300
250
200
150
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Carbonate, MW-7

ID: 07_4_31

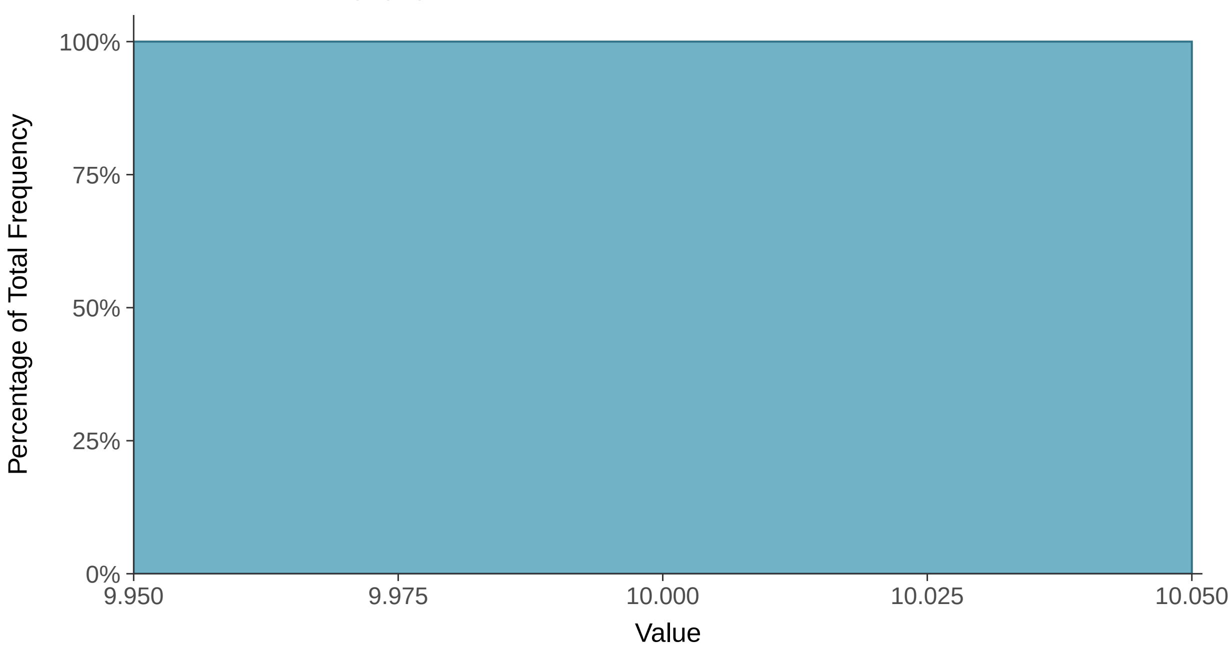
Scatter Plot

Carbonate, MW-7 (mg/L)



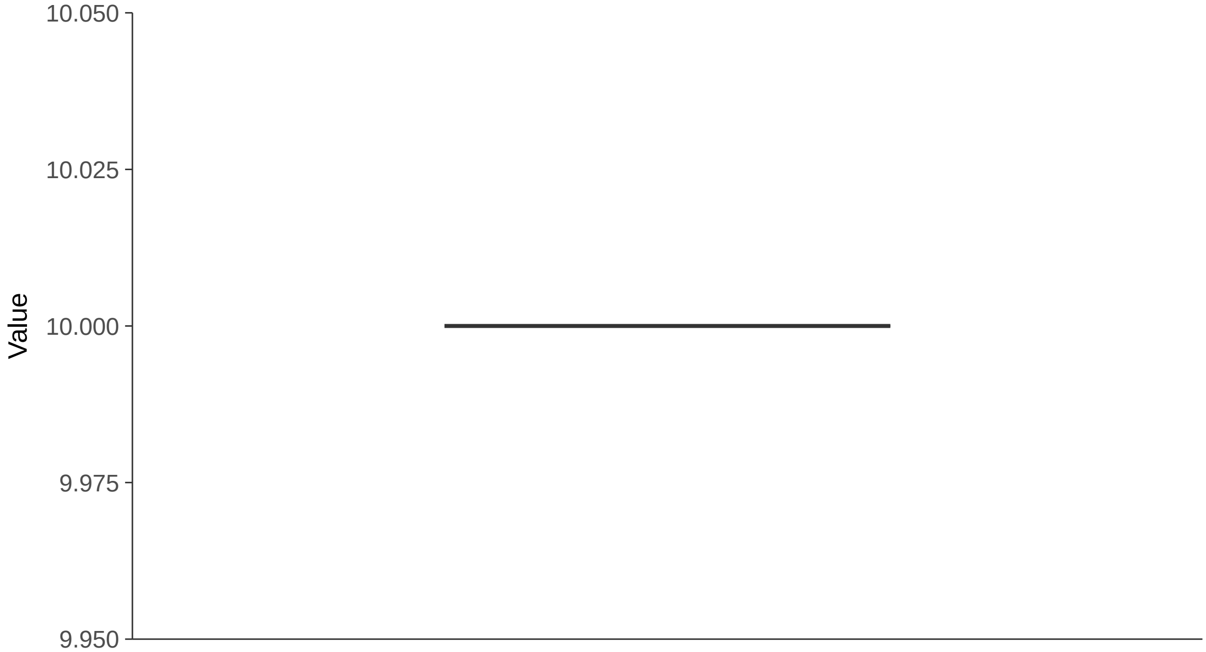
Histogram

Carbonate, MW-7 (mg/L)



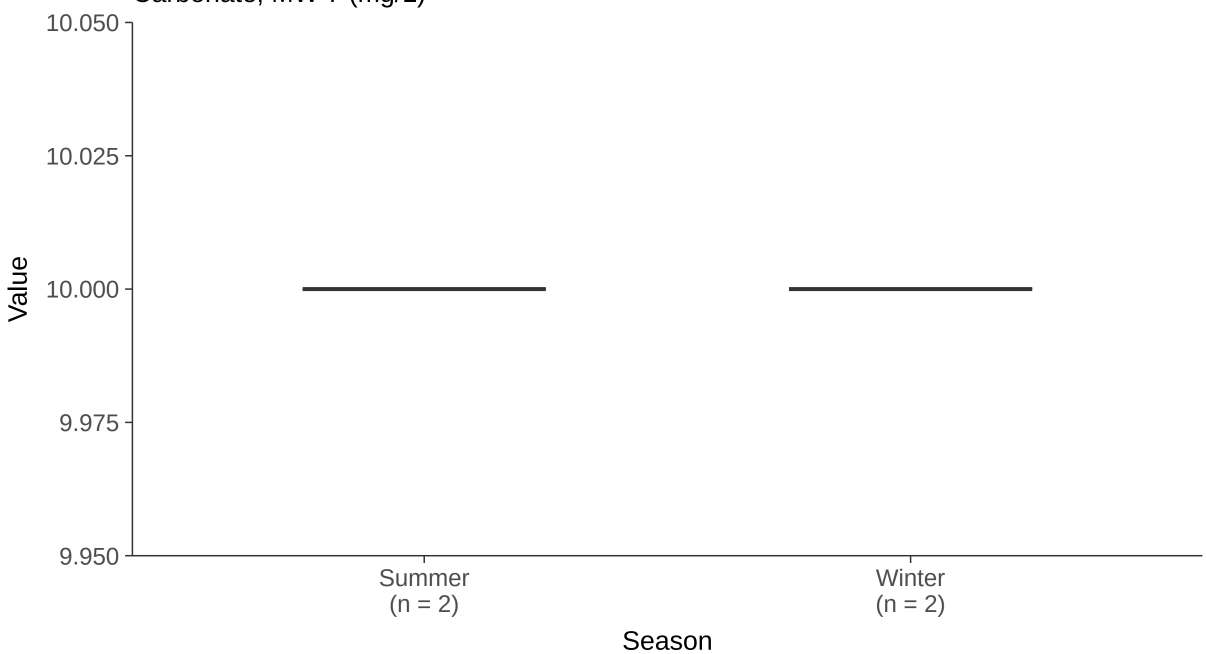
Boxplot

Carbonate, MW-7 (mg/L)



Boxplot by Season

Carbonate, MW-7 (mg/L)

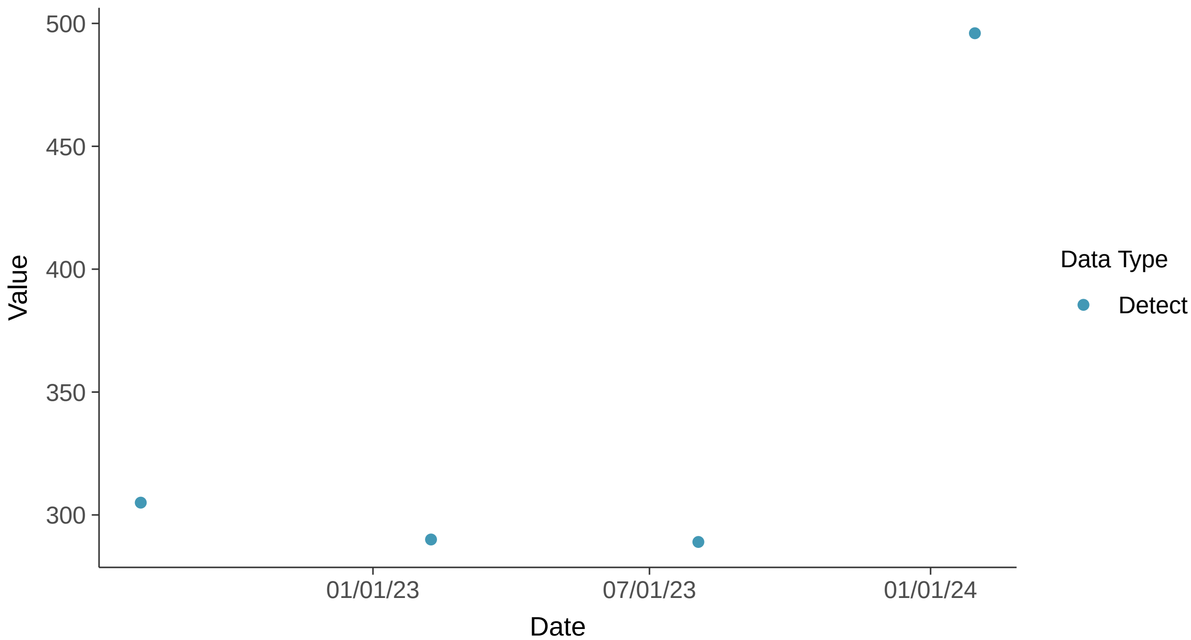


Other: Hardness, MW-7

ID: 07_4_32

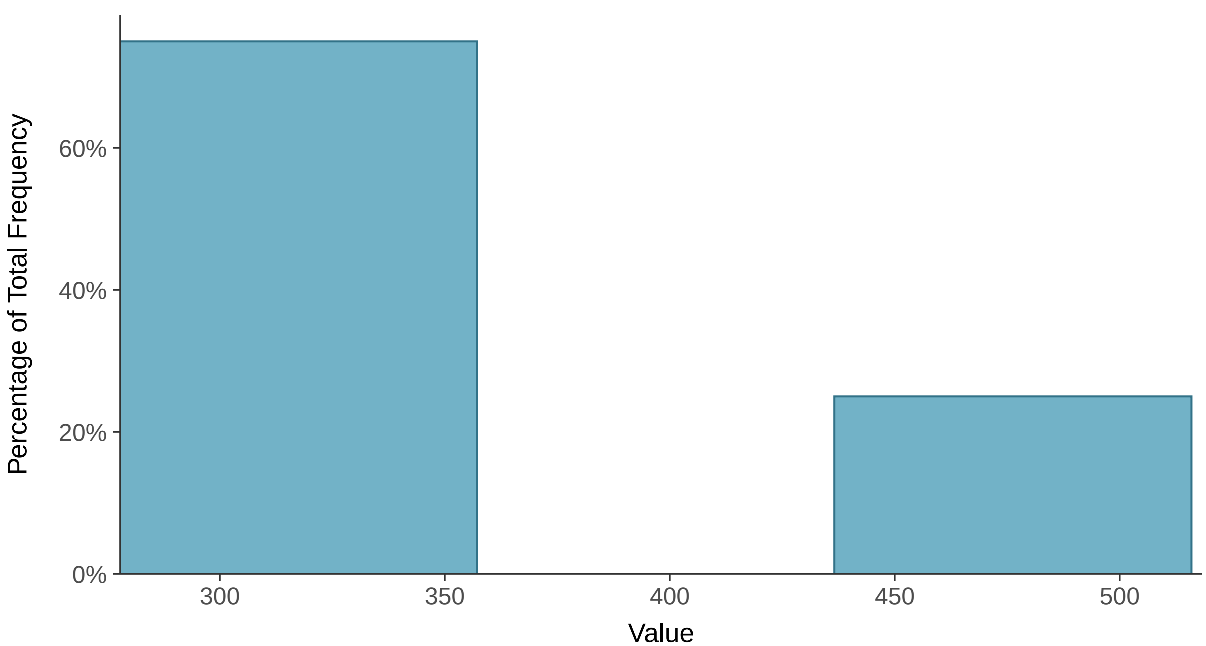
Scatter Plot

Hardness, MW-7 (mg/L)



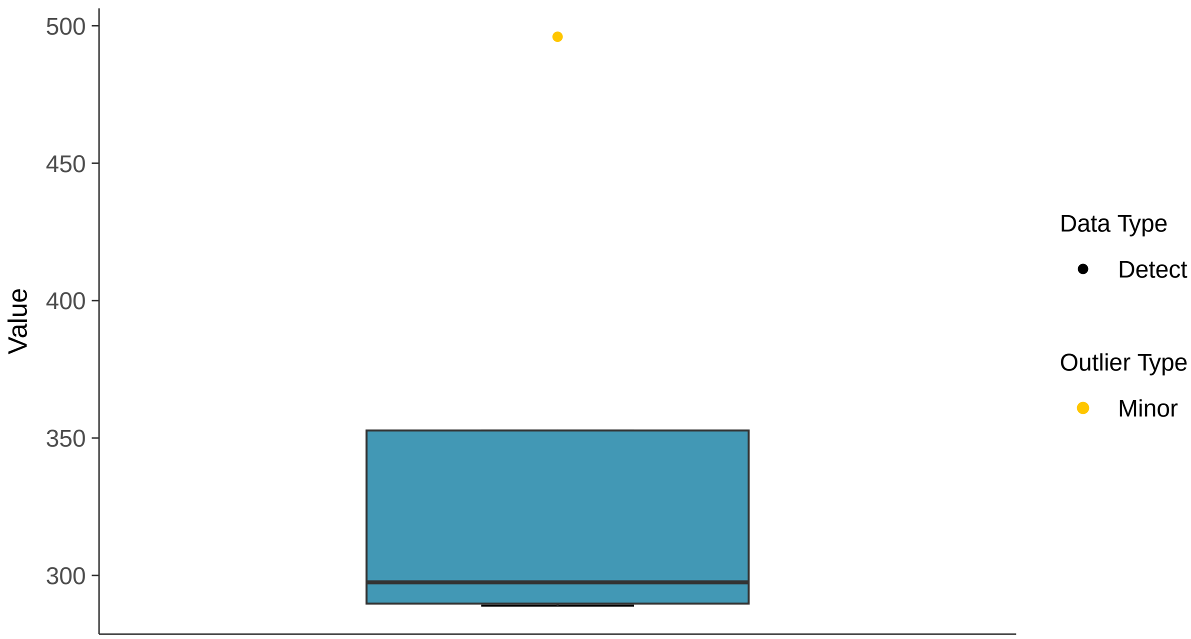
Histogram

Hardness, MW-7 (mg/L)



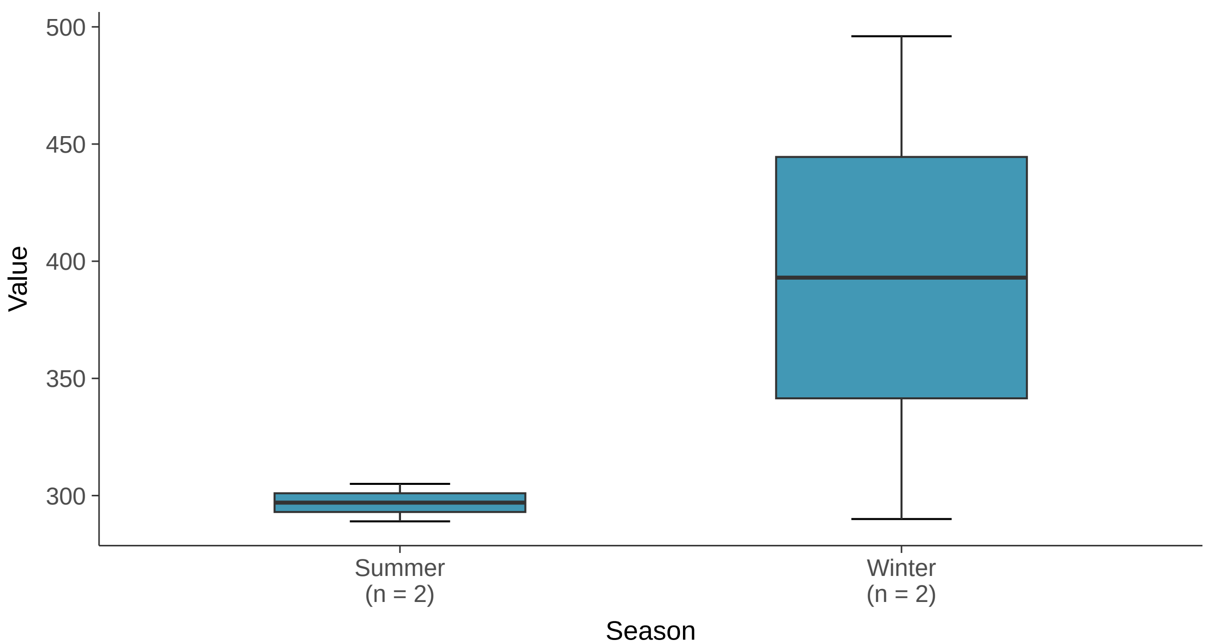
Boxplot

Hardness, MW-7 (mg/L)



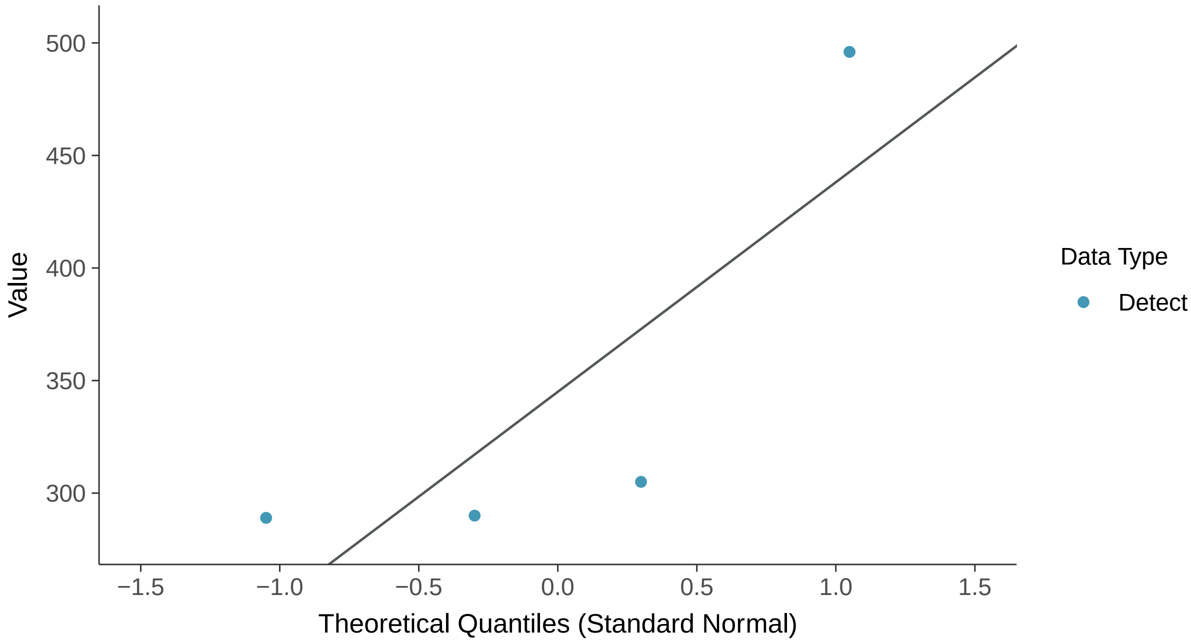
Boxplot by Season

Hardness, MW-7 (mg/L)



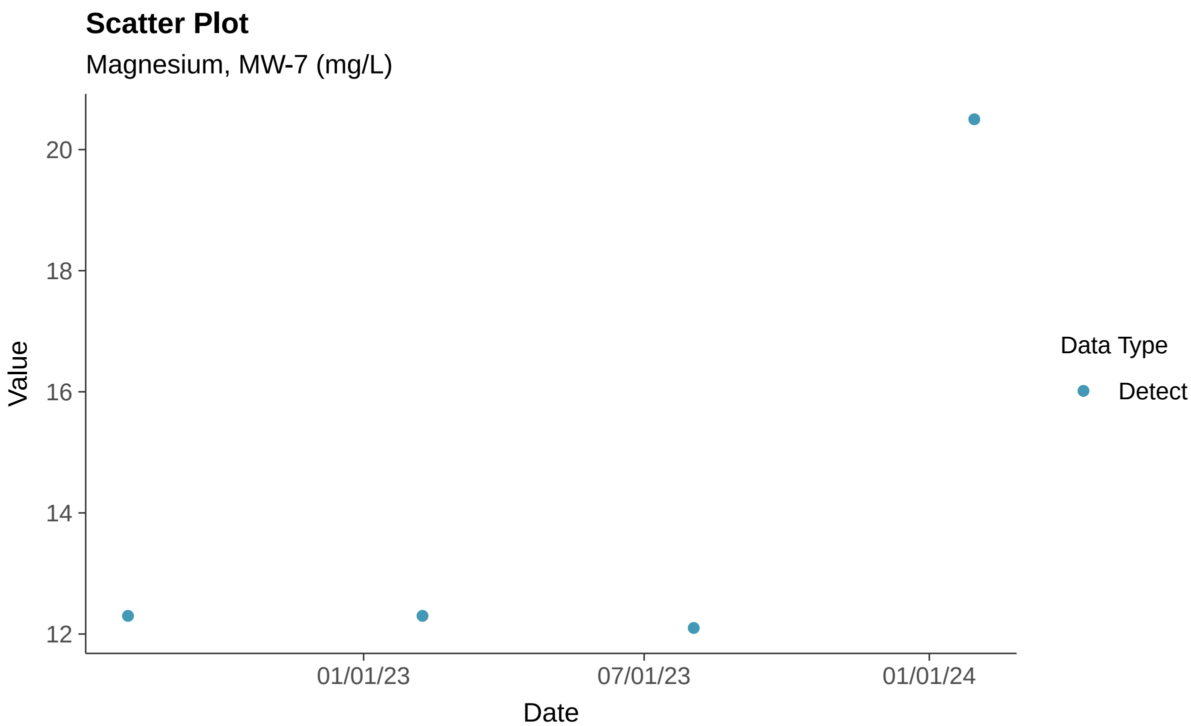
Normal Q-Q plot

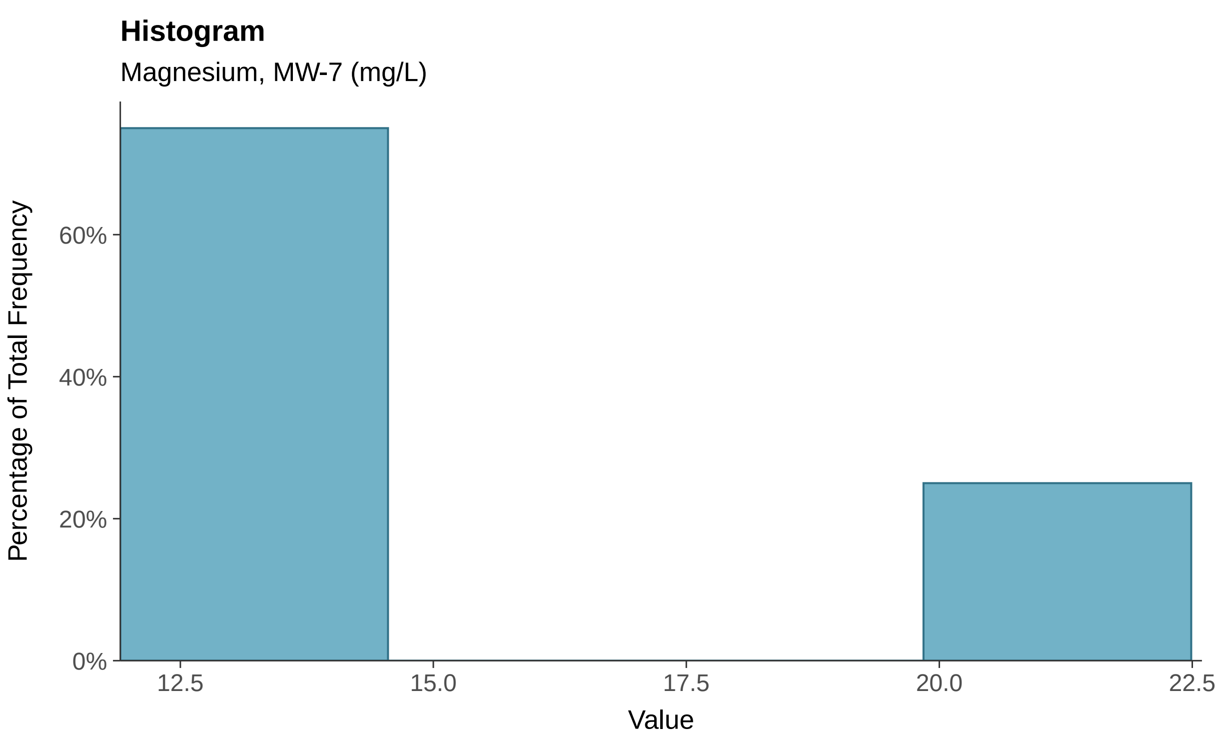
Hardness, MW-7 (mg/L)



Other: Magnesium, MW-7

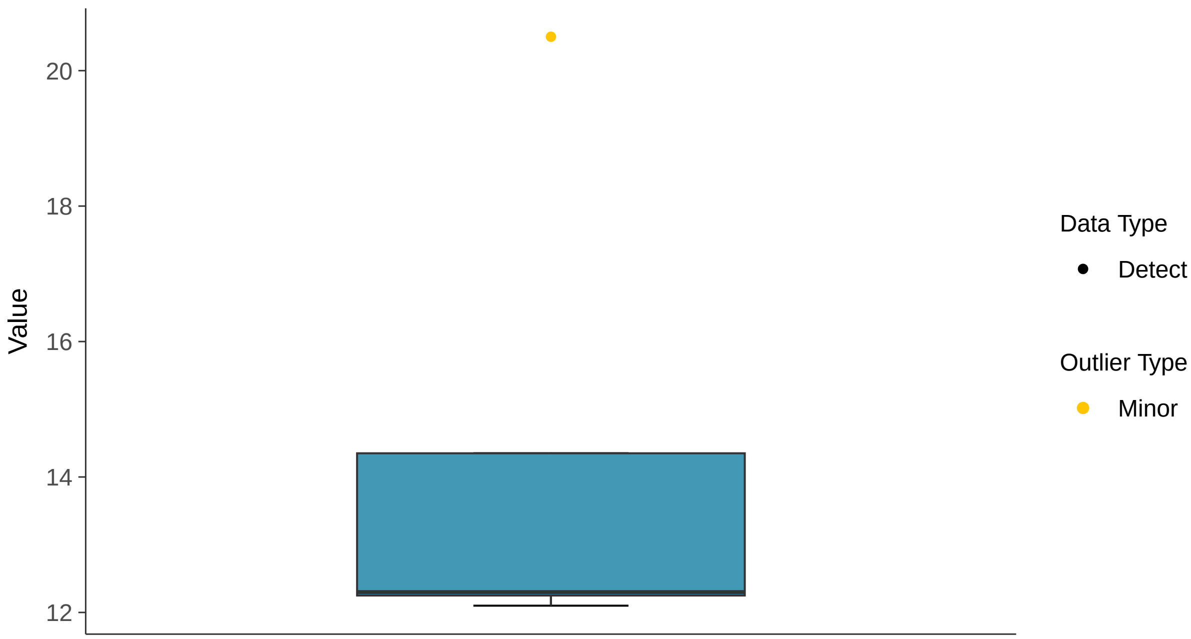
ID: 07_4_33





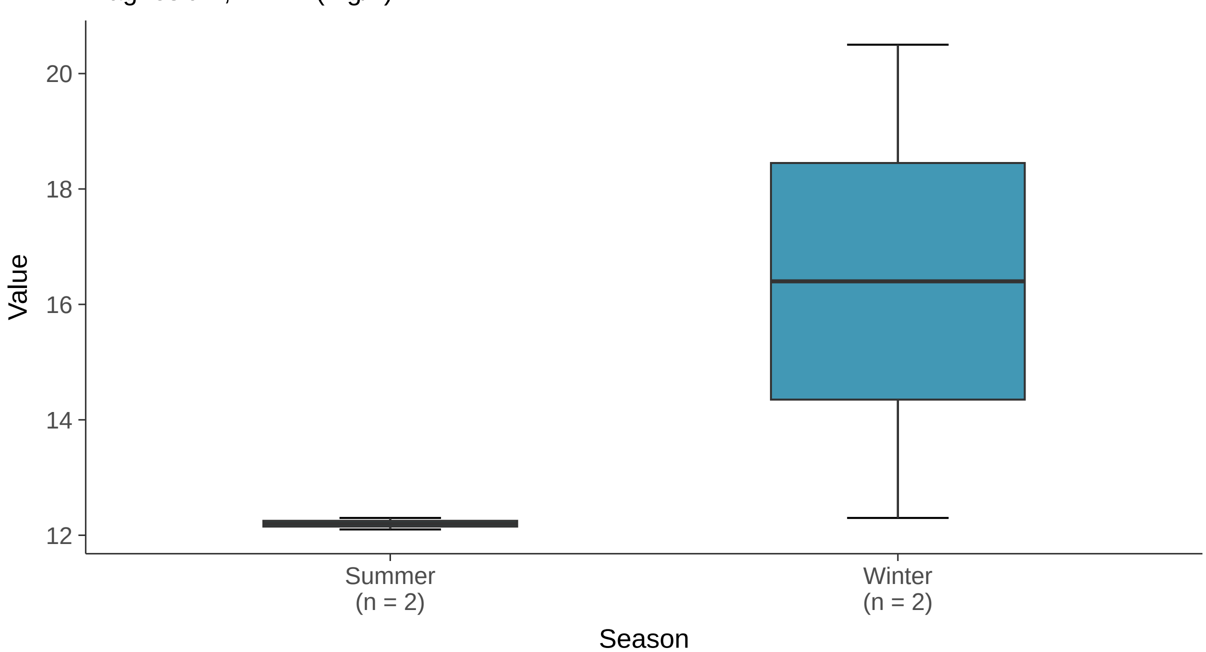
Boxplot

Magnesium, MW-7 (mg/L)



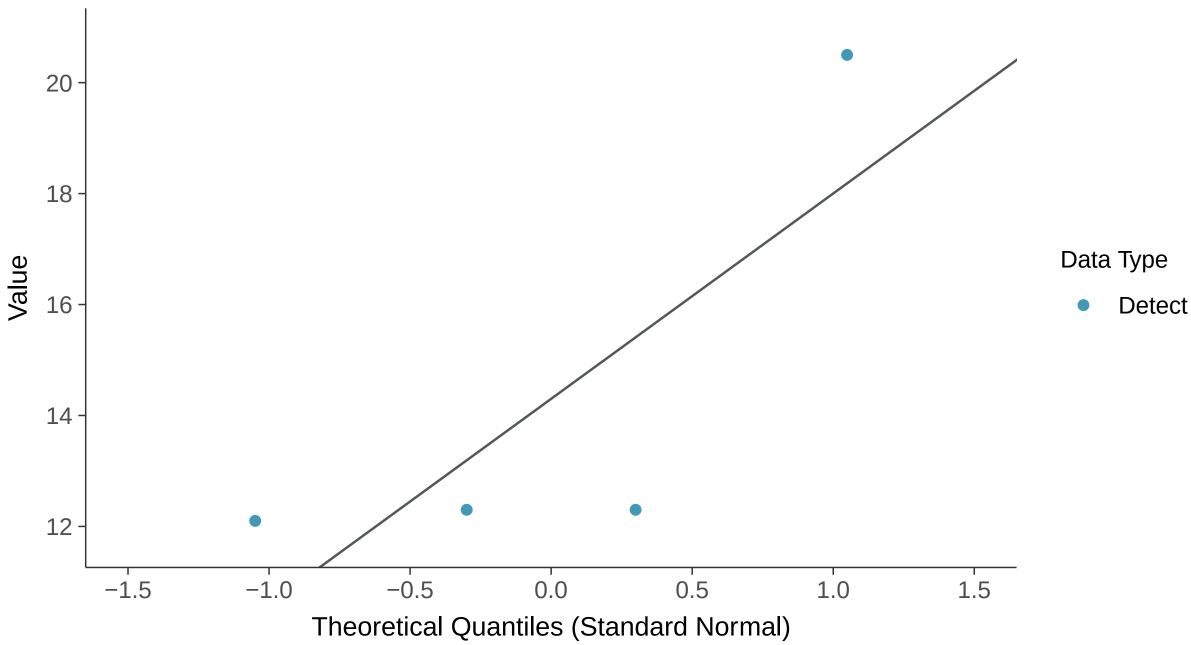
Boxplot by Season

Magnesium, MW-7 (mg/L)



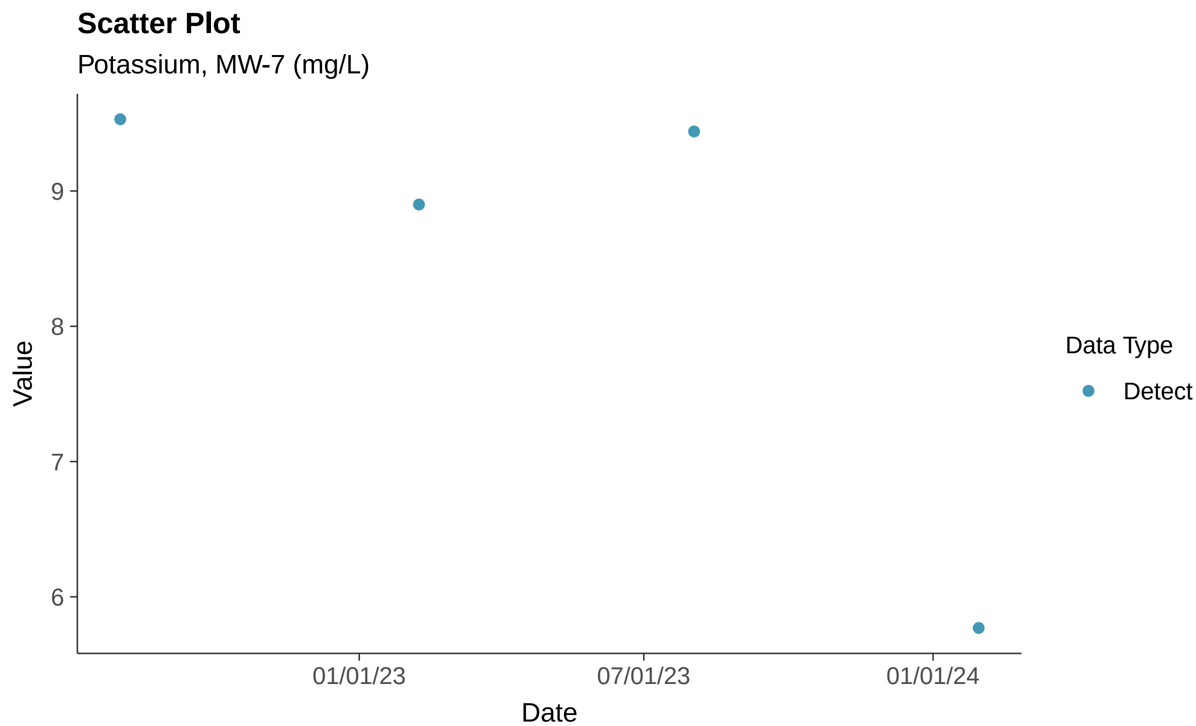
Normal Q-Q plot

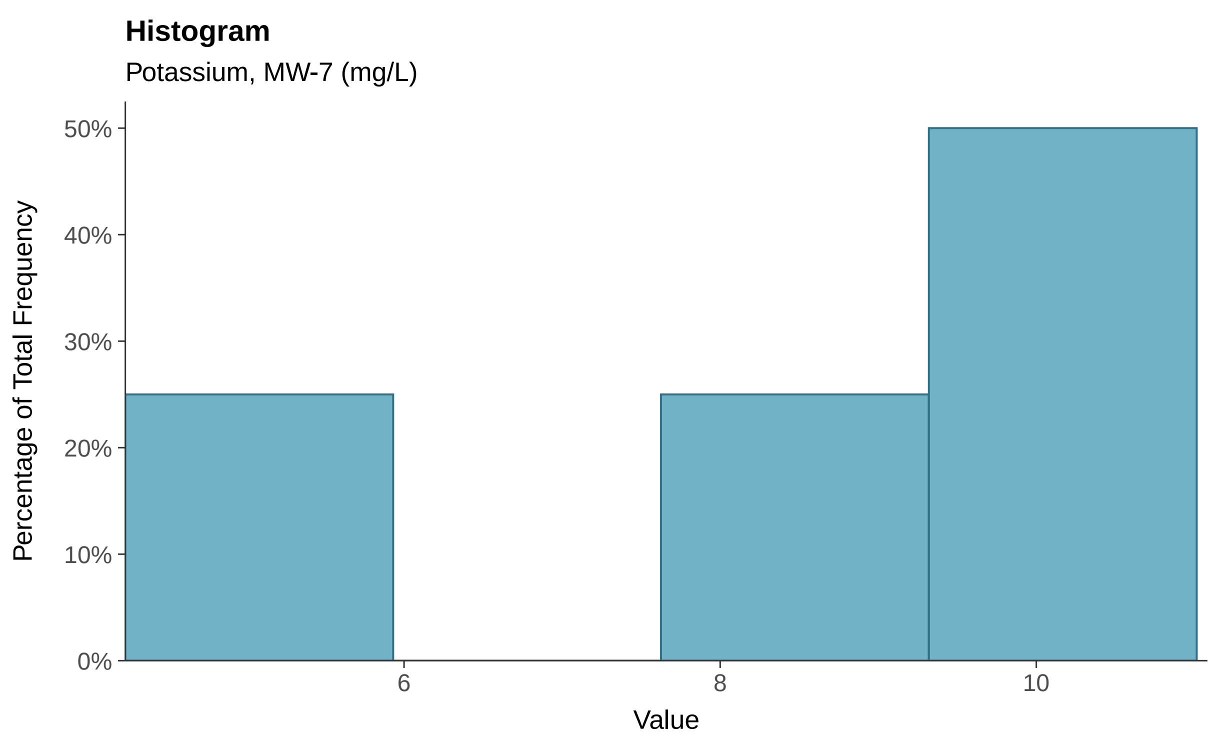
Magnesium, MW-7 (mg/L)



Other: Potassium, MW-7

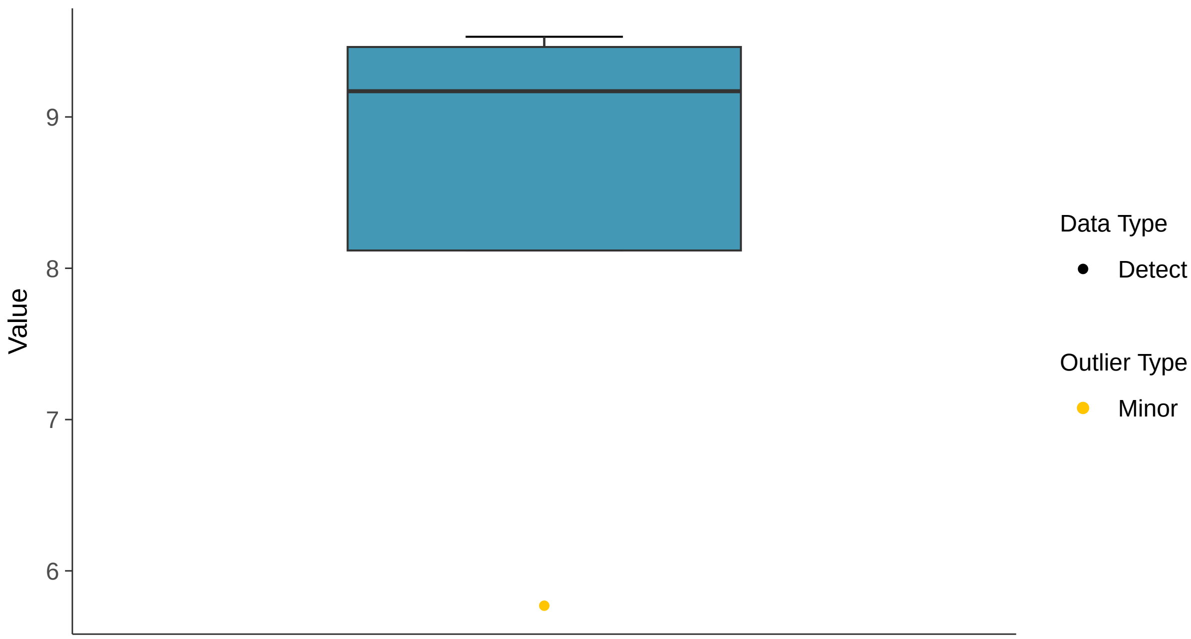
ID: 07_4_34





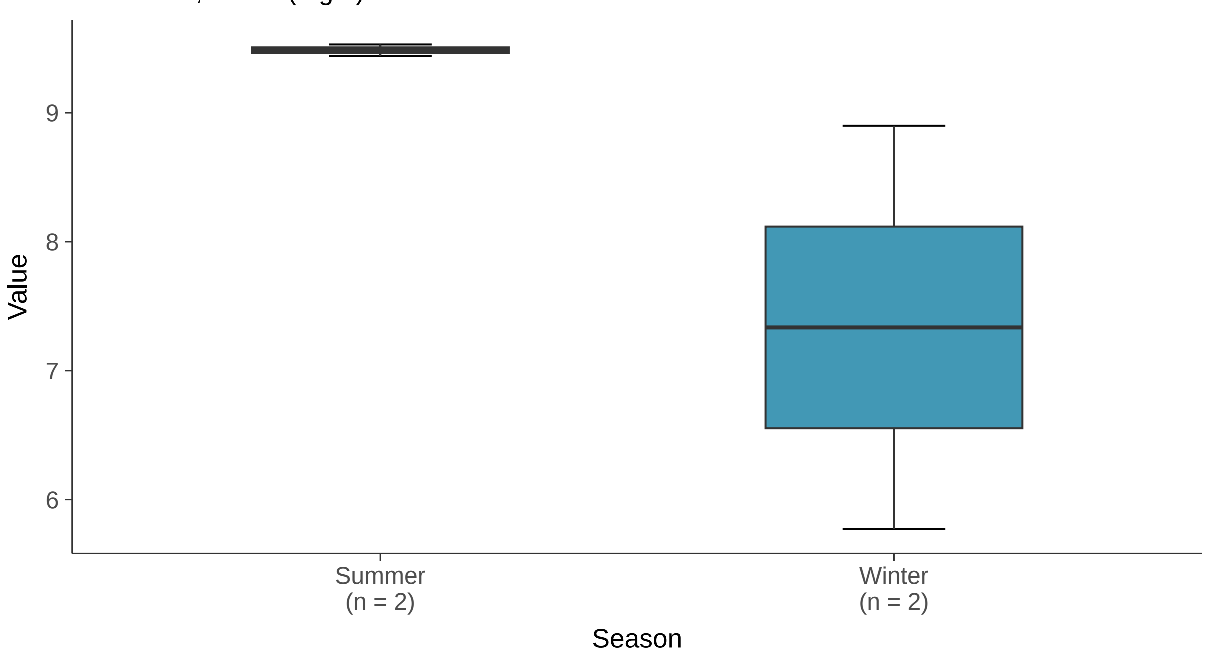
Boxplot

Potassium, MW-7 (mg/L)



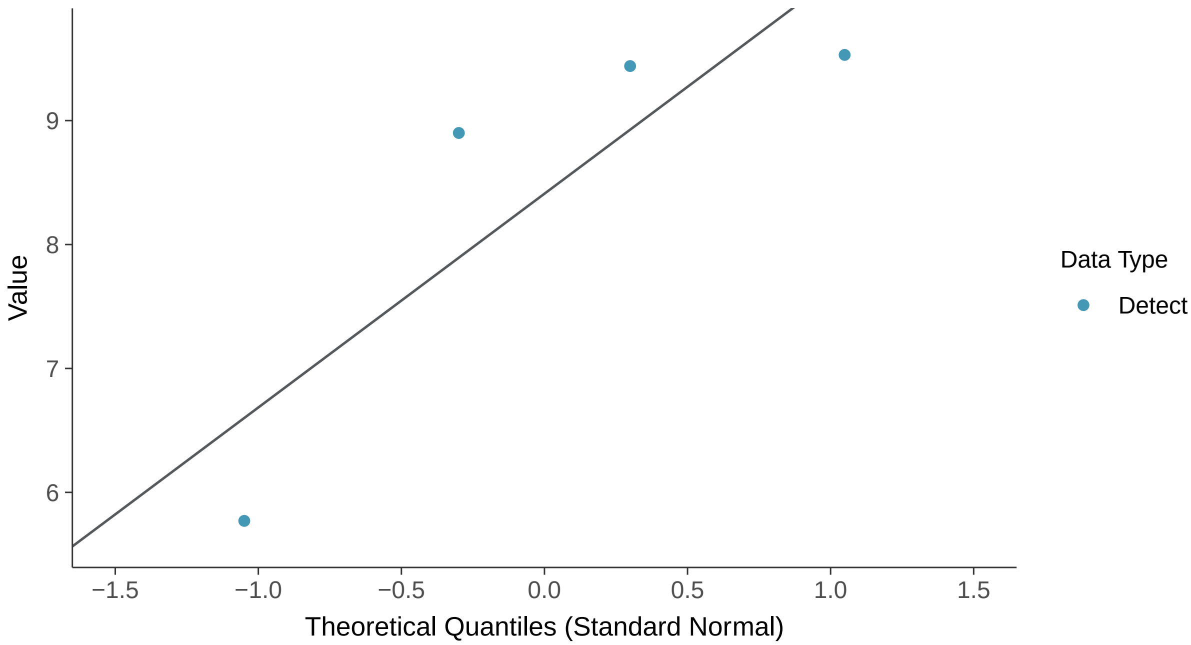
Boxplot by Season

Potassium, MW-7 (mg/L)



Normal Q-Q plot

Potassium, MW-7 (mg/L)

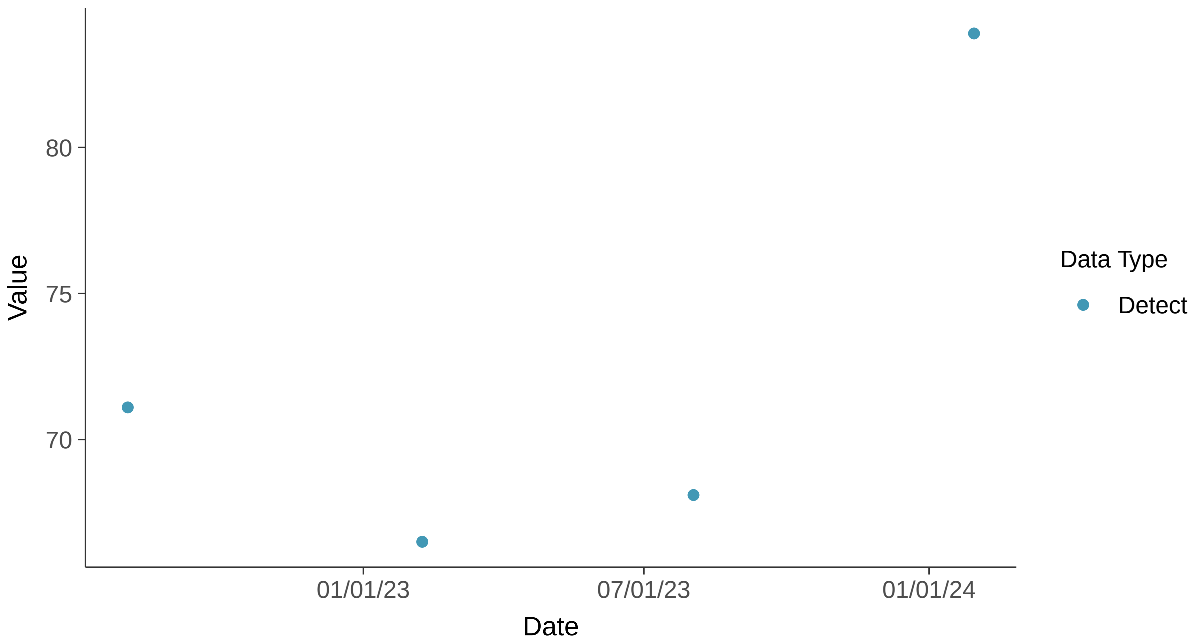


Other: Sodium, MW-7

ID: 07_4_35

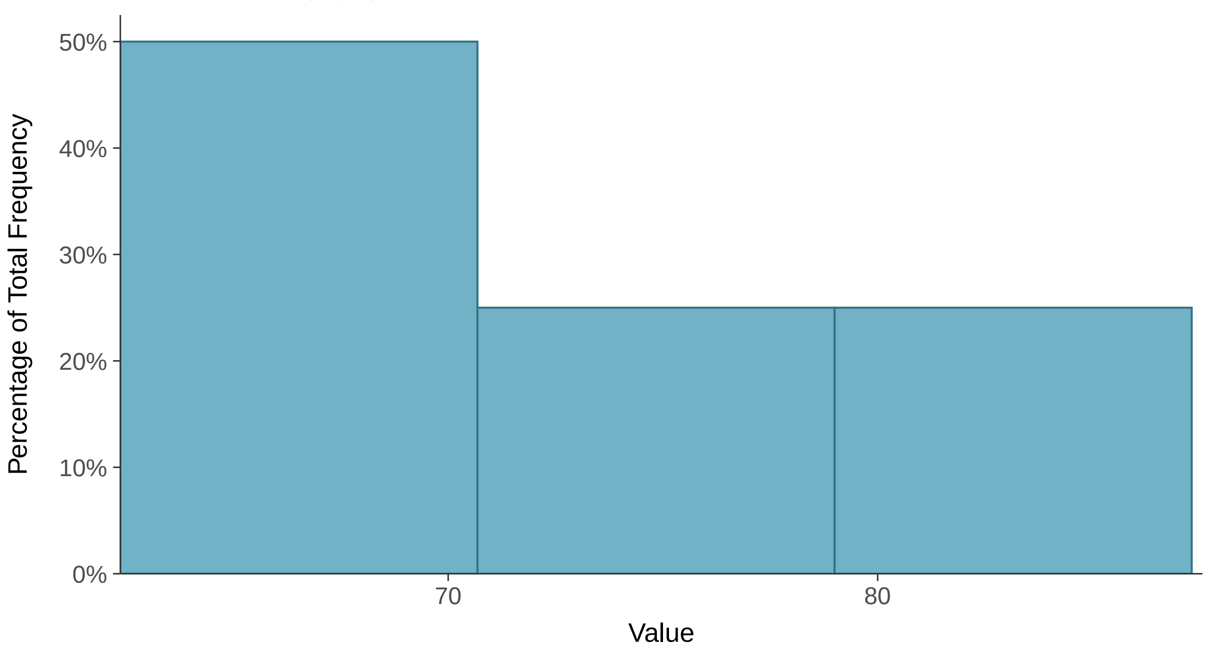
Scatter Plot

Sodium, MW-7 (mg/L)



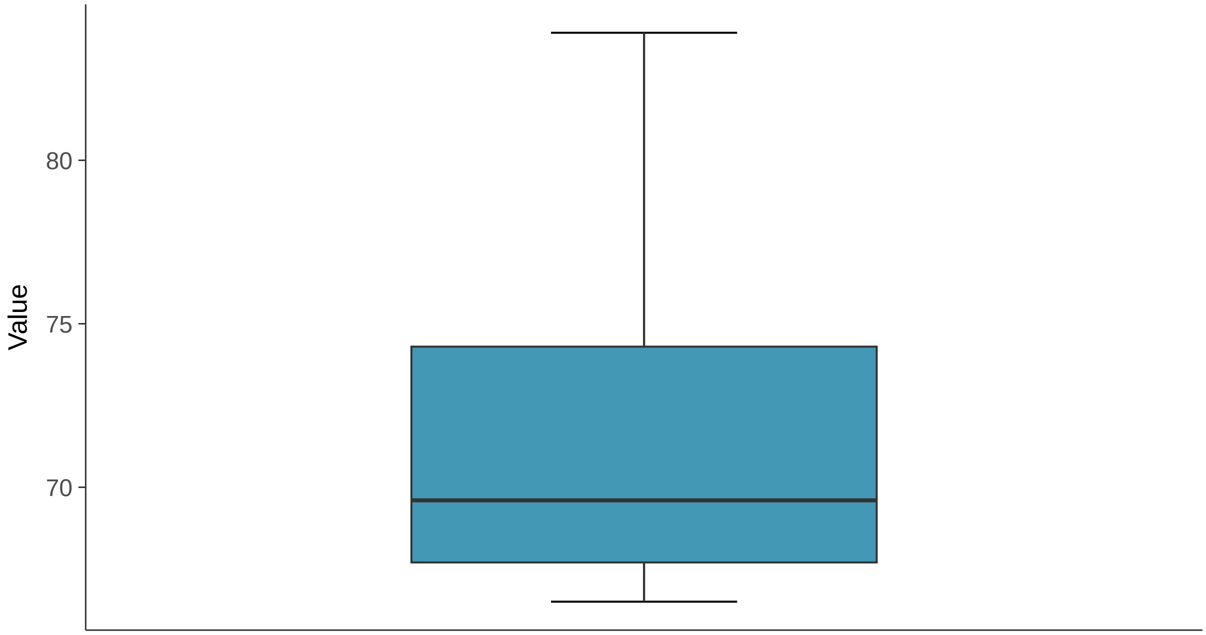
Histogram

Sodium, MW-7 (mg/L)



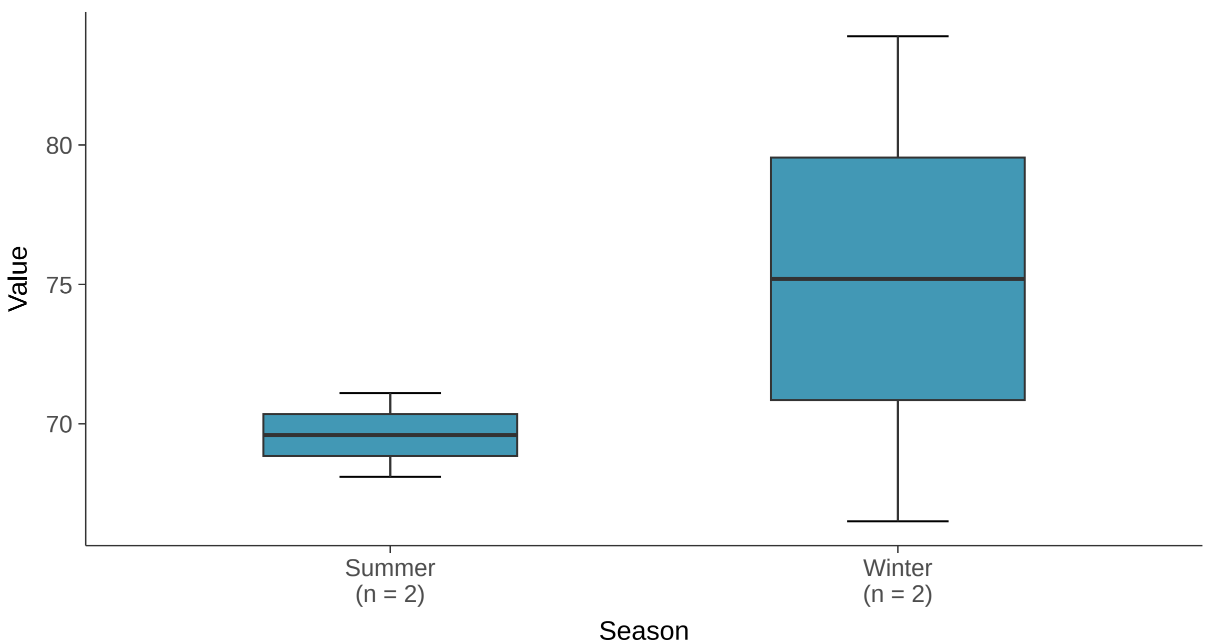
Boxplot

Sodium, MW-7 (mg/L)



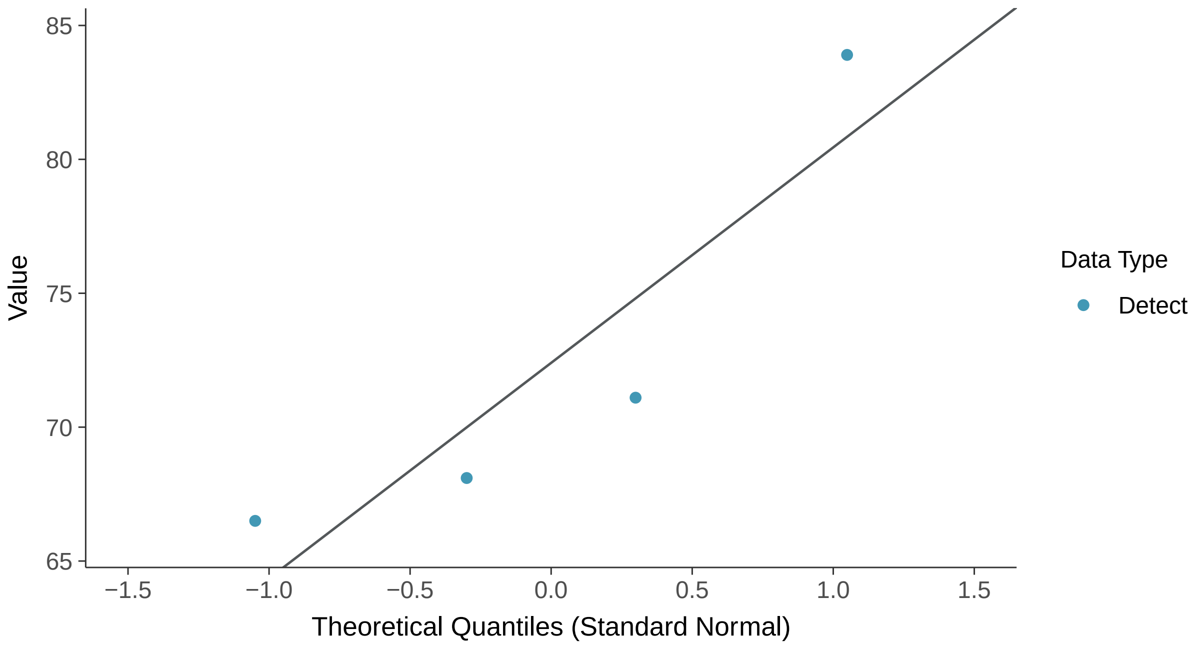
Boxplot by Season

Sodium, MW-7 (mg/L)



Normal Q-Q plot

Sodium, MW-7 (mg/L)

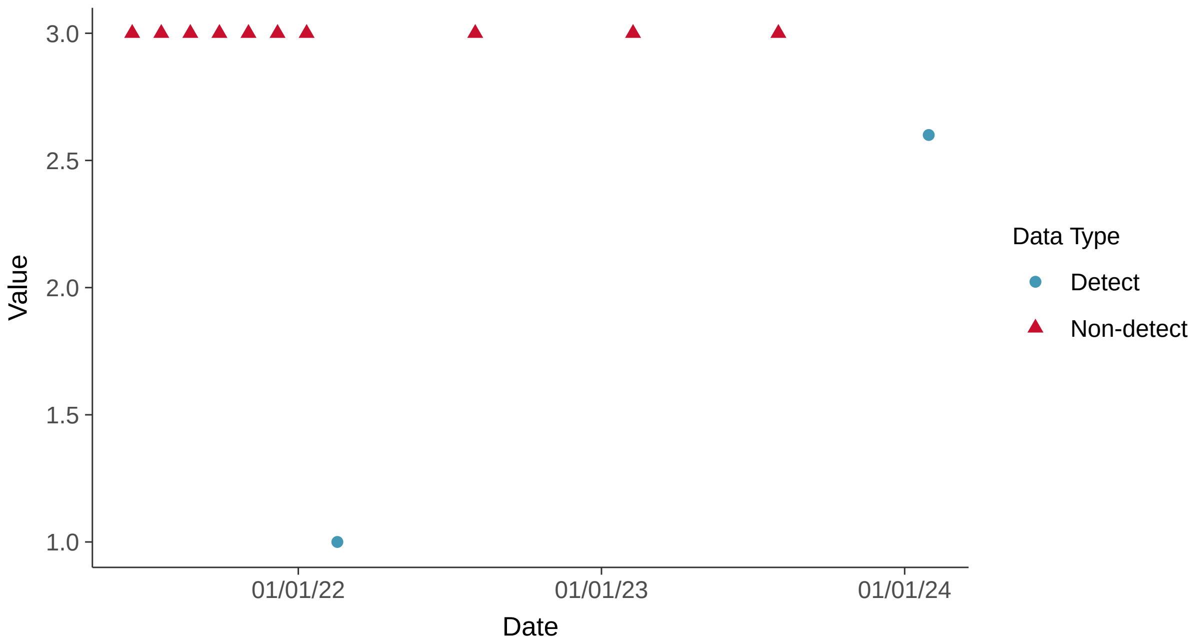


Other: Total Suspended Solids, MW-7

ID: 07_4_36

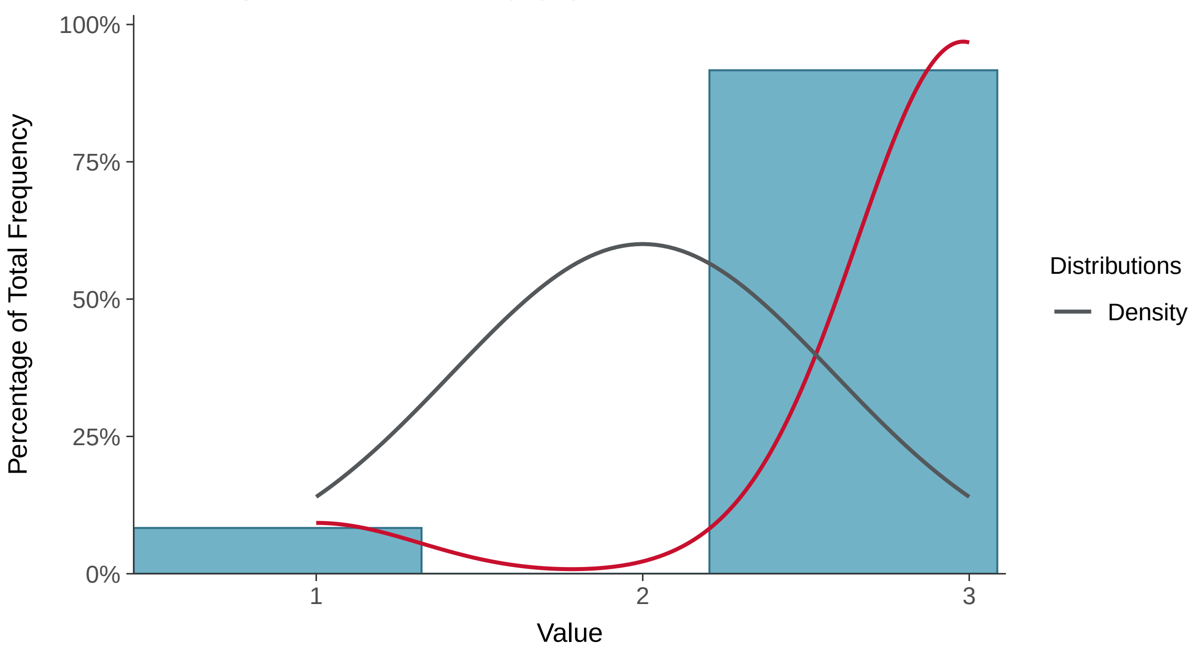
Scatter Plot

Total Suspended Solids, MW-7 (mg/L)



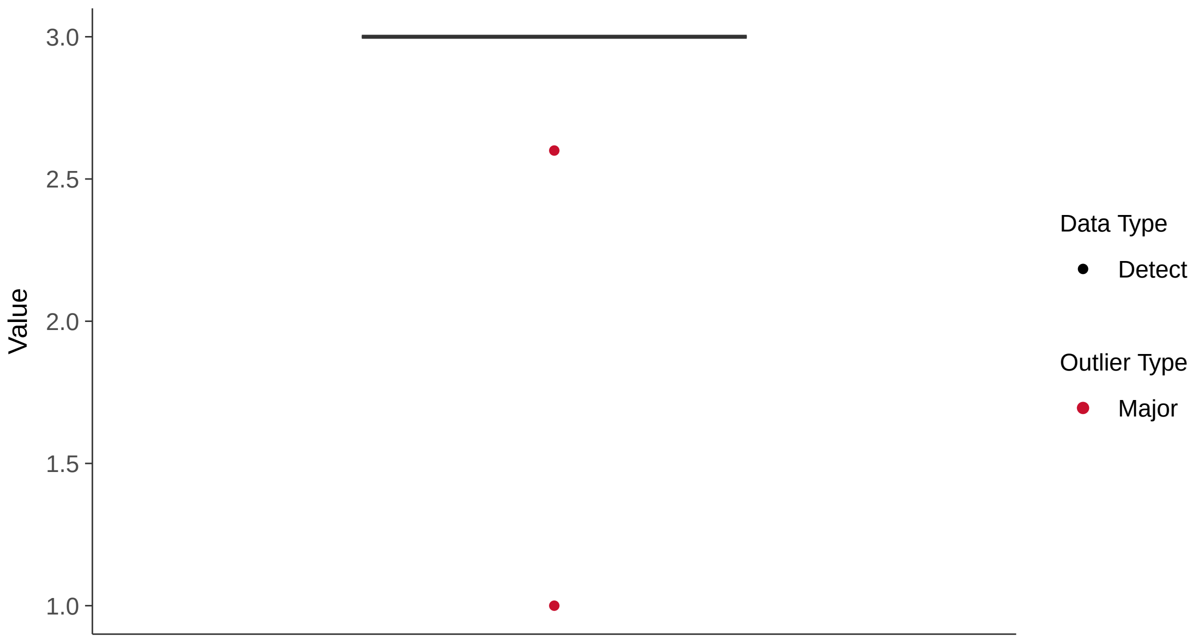
Histogram

Total Suspended Solids, MW-7 (mg/L)



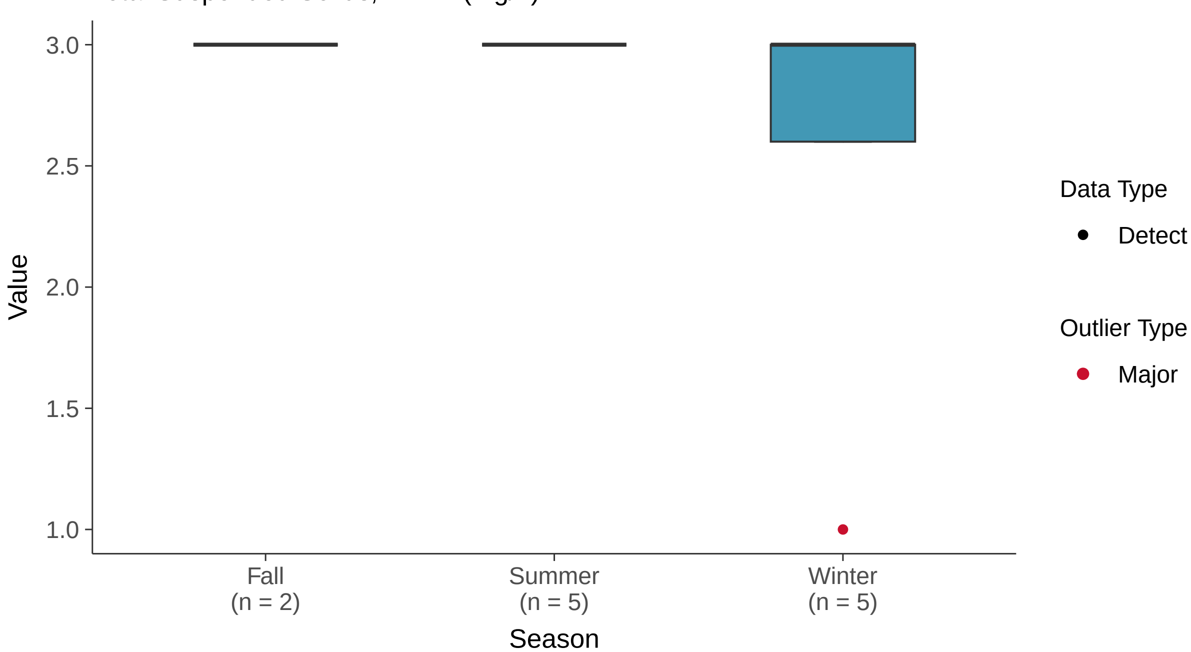
Boxplot

Total Suspended Solids, MW-7 (mg/L)



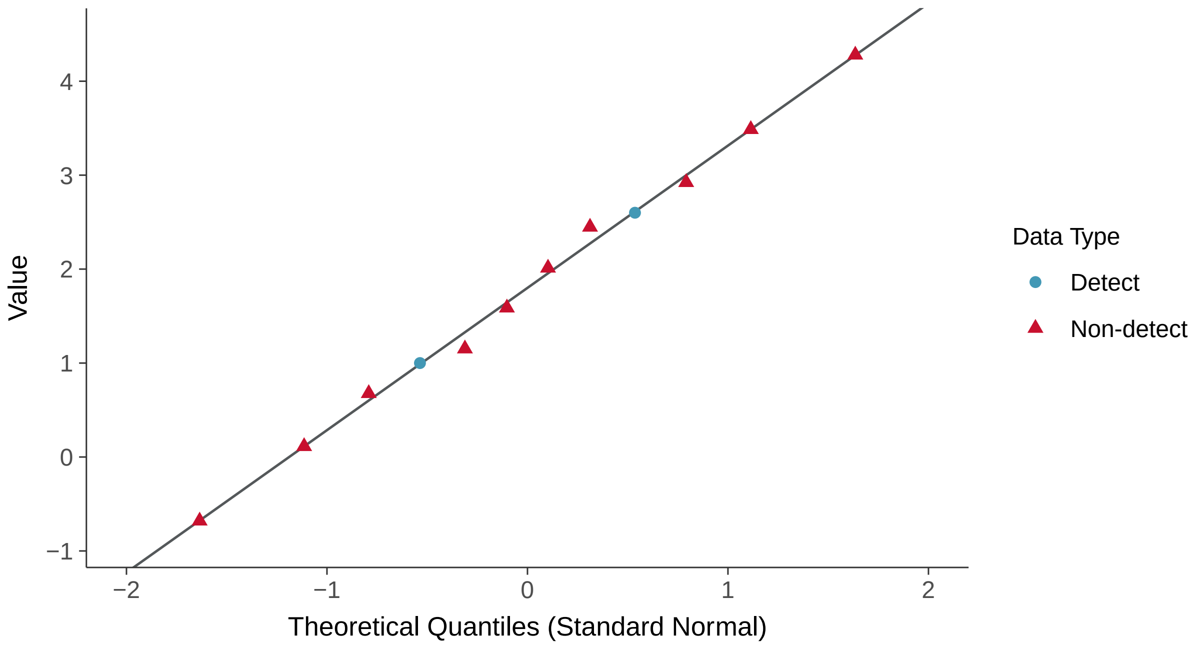
Boxplot by Season

Total Suspended Solids, MW-7 (mg/L)



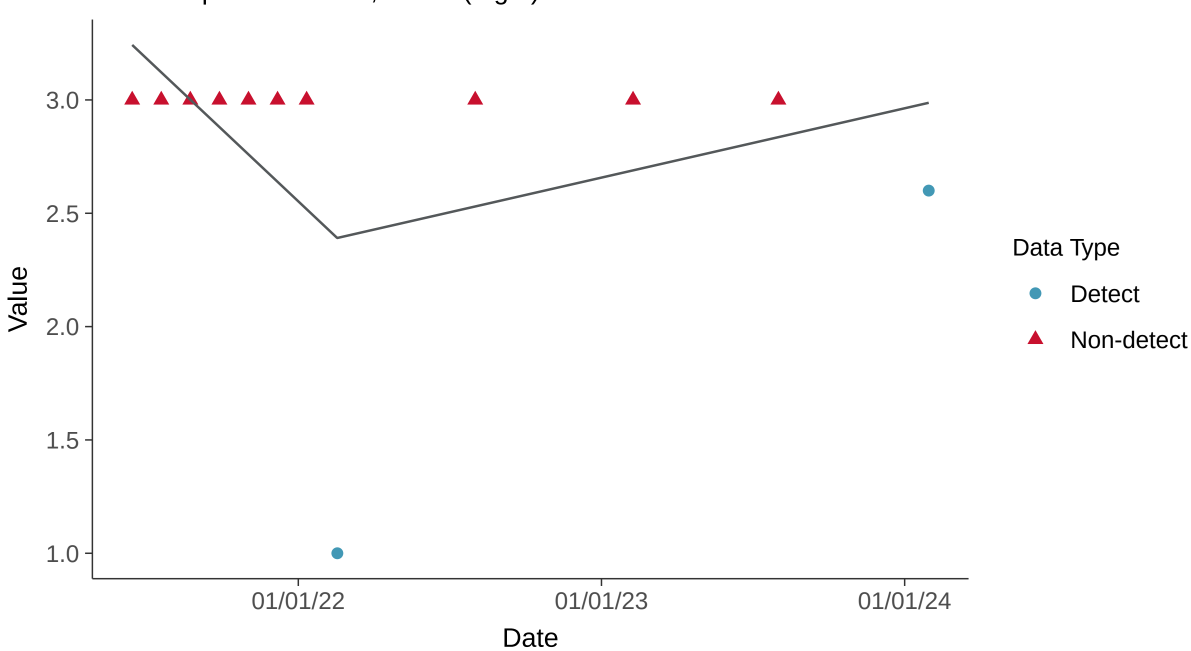
Normal Q-Q plot using ROS Imputed Estimates

Total Suspended Solids, MW-7 (mg/L)



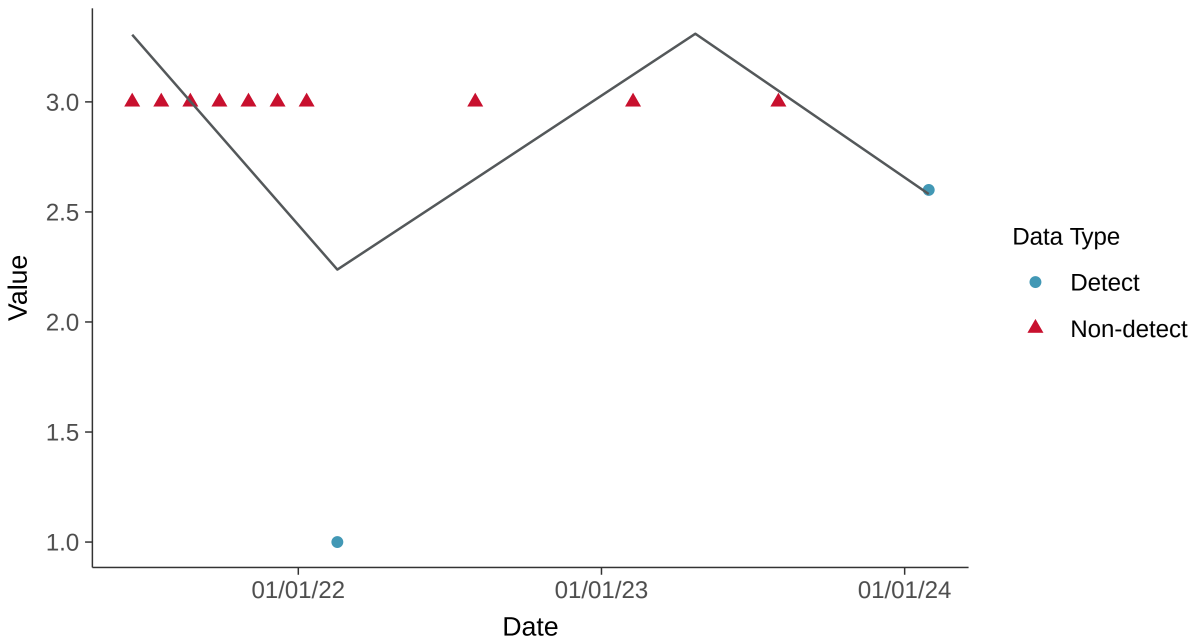
Trend Regression: Piecewise Linear-Linear

Total Suspended Solids, MW-7 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Total Suspended Solids, MW-7 (mg/L)

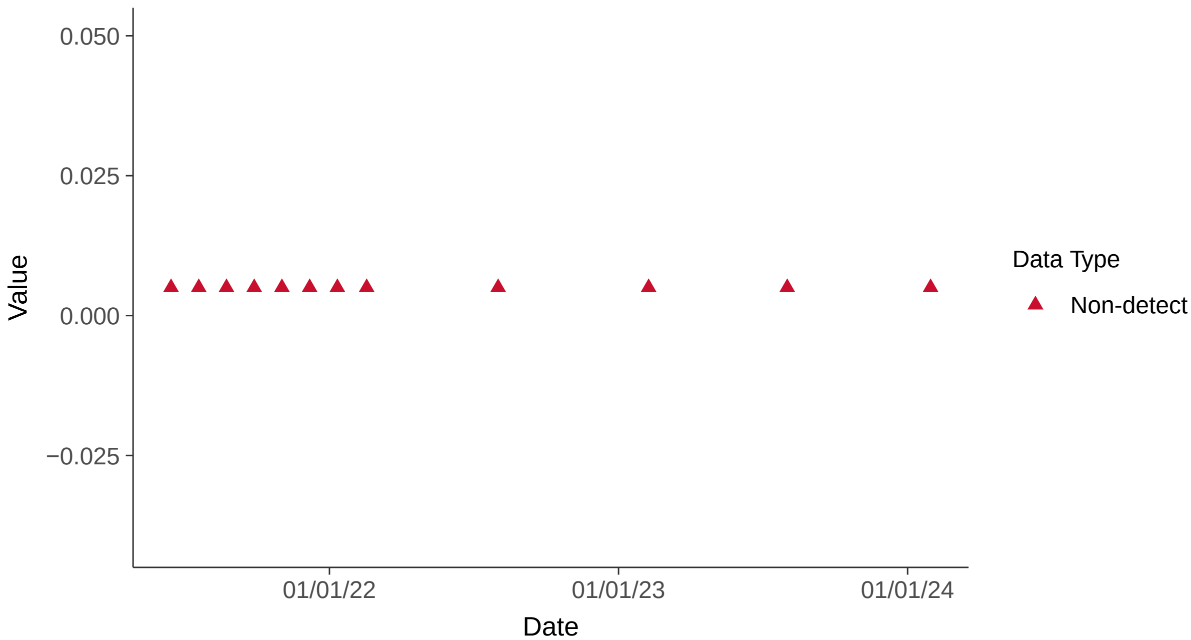


Part 115: Copper, MW-7

ID: 07_5_37

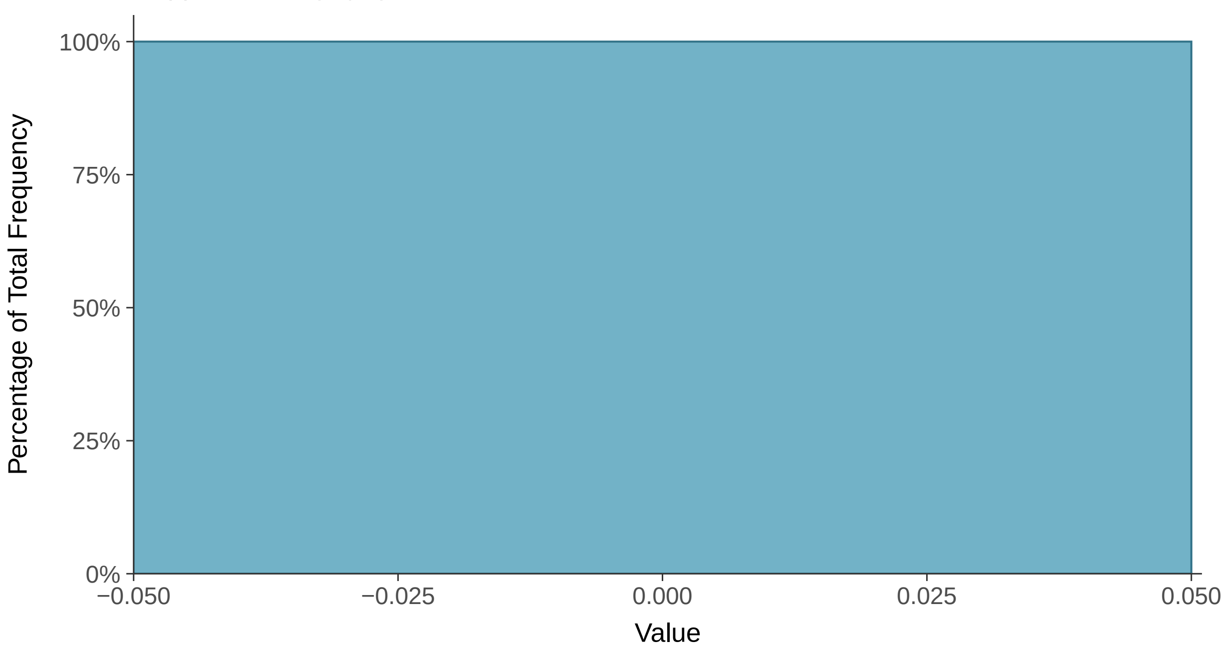
Scatter Plot

Copper, MW-7 (mg/L)



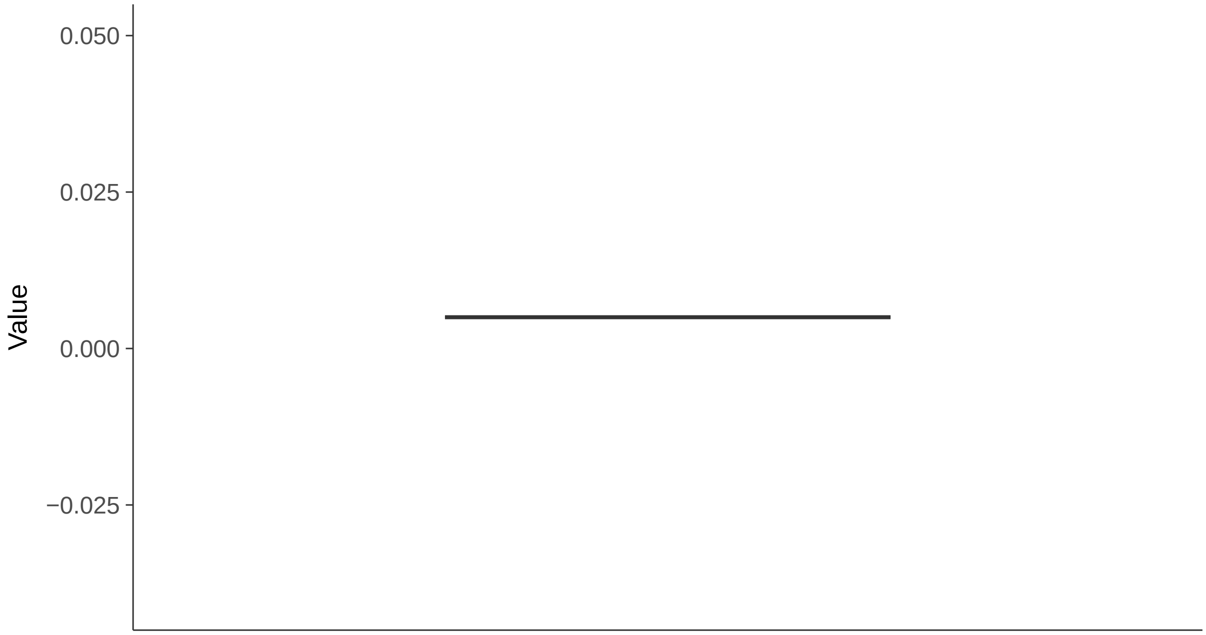
Histogram

Copper, MW-7 (mg/L)



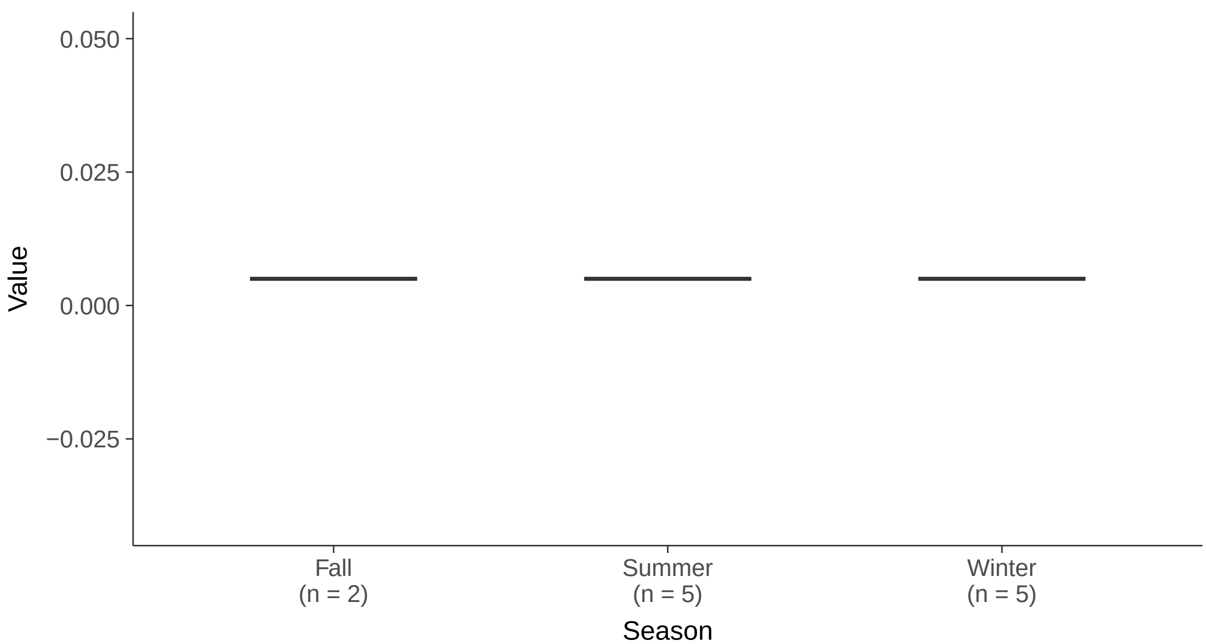
Boxplot

Copper, MW-7 (mg/L)



Boxplot by Season

Copper, MW-7 (mg/L)

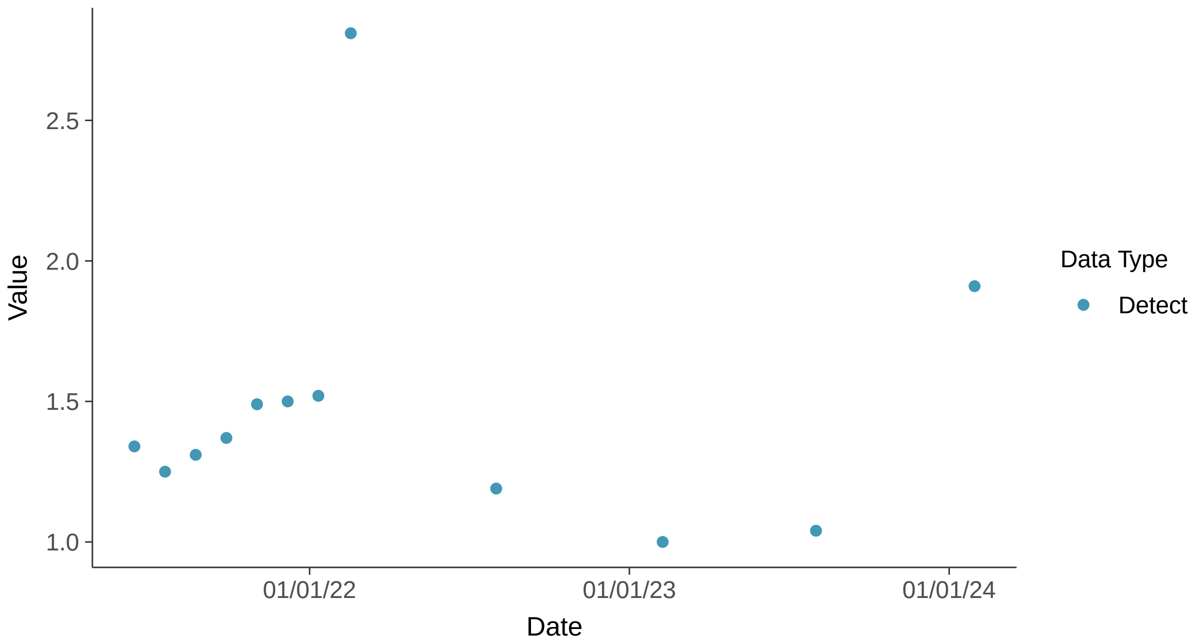


Part 115: Iron, MW-7

ID: 07_5_38

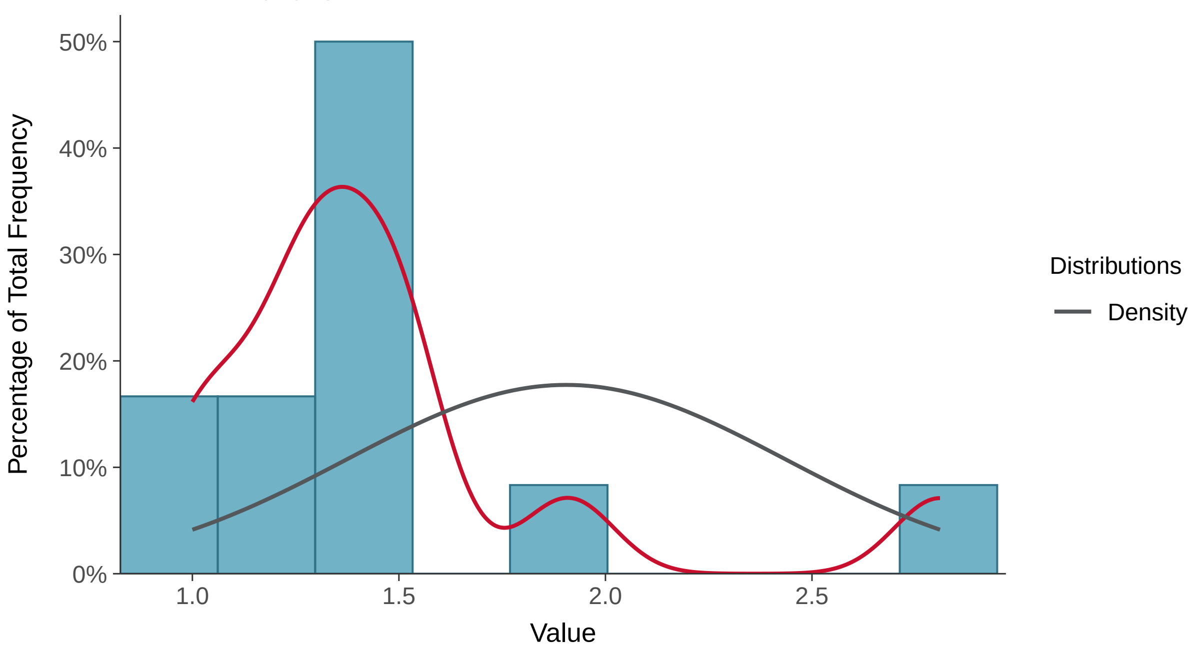
Scatter Plot

Iron, MW-7 (mg/L)



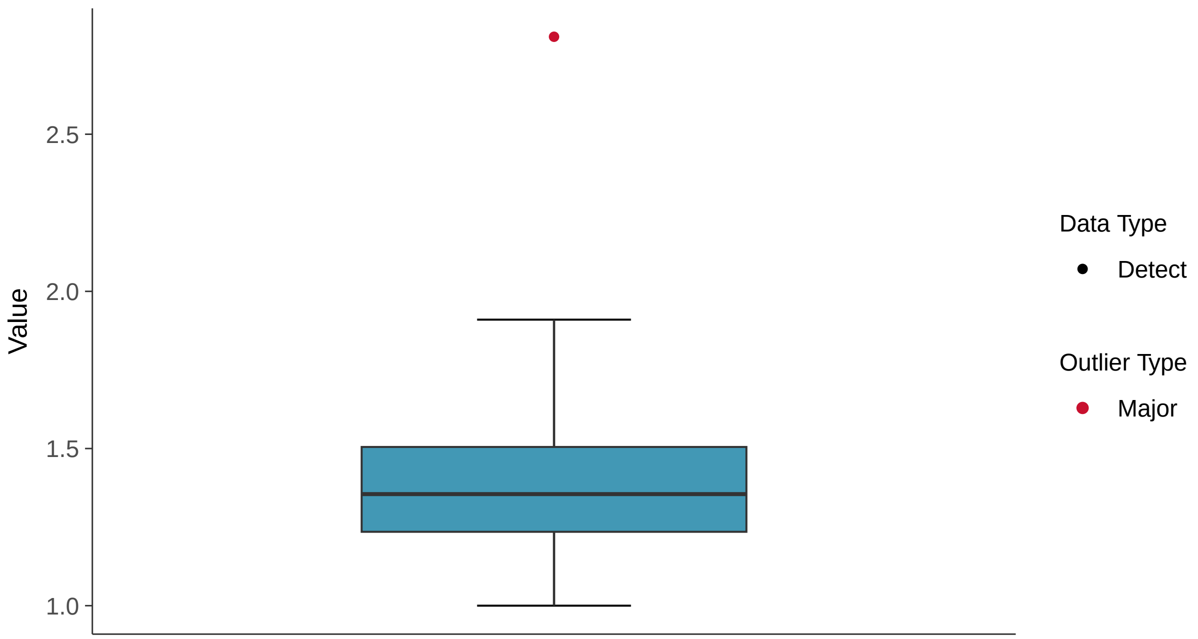
Histogram

Iron, MW-7 (mg/L)



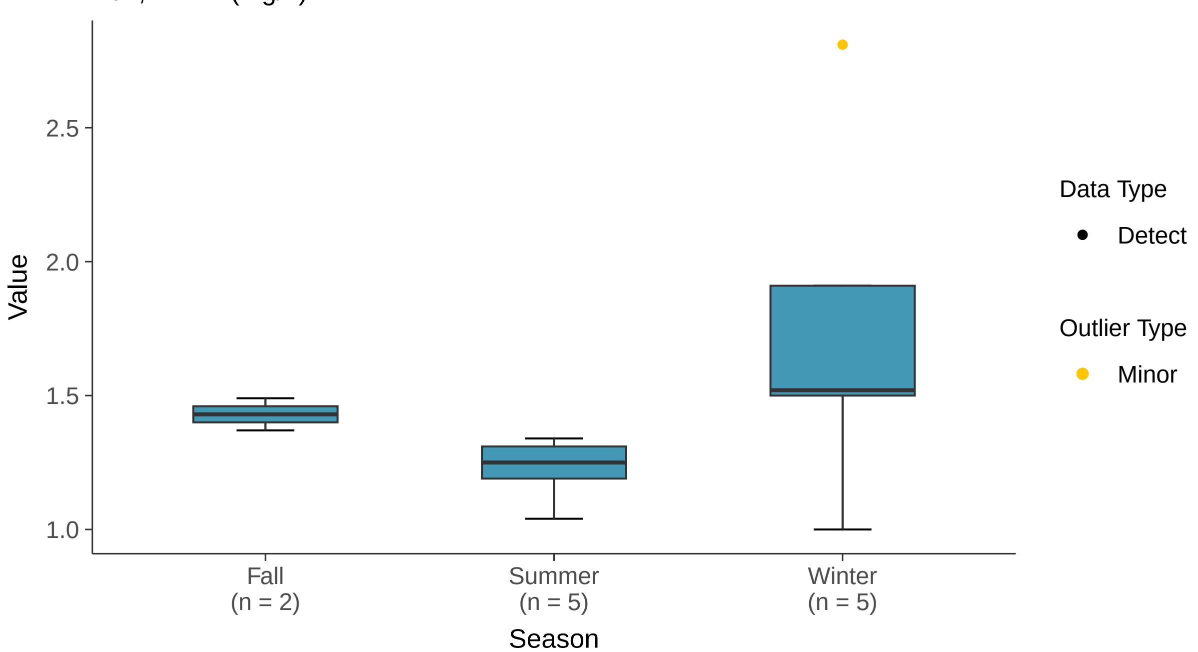
Boxplot

Iron, MW-7 (mg/L)



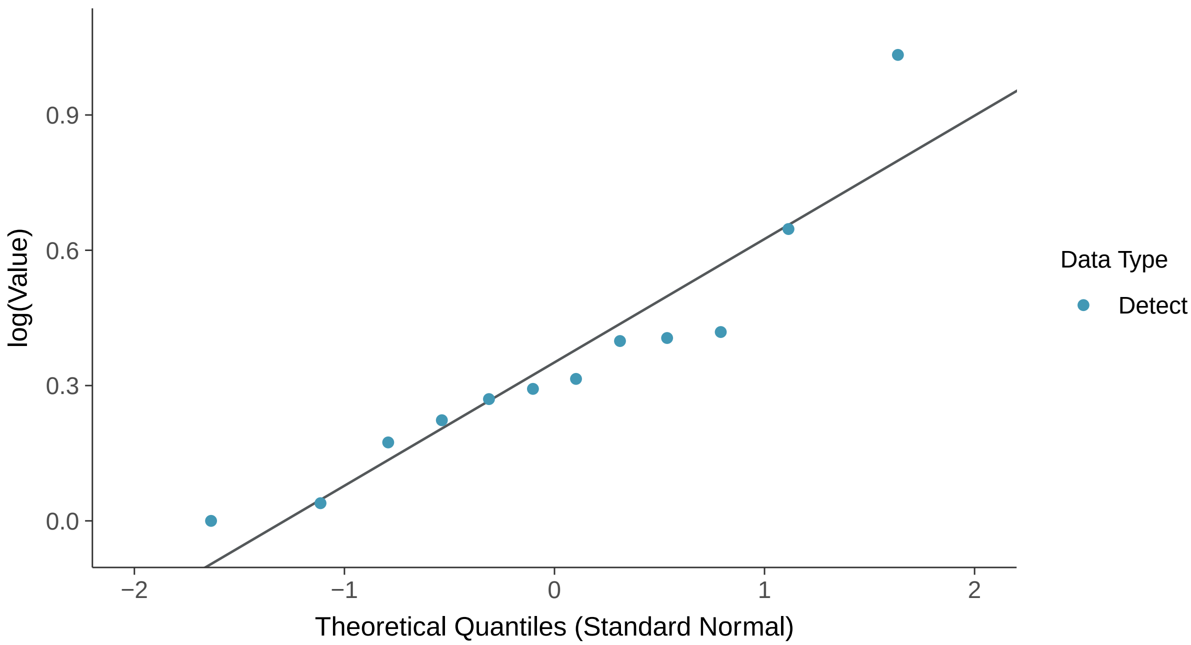
Boxplot by Season

Iron, MW-7 (mg/L)



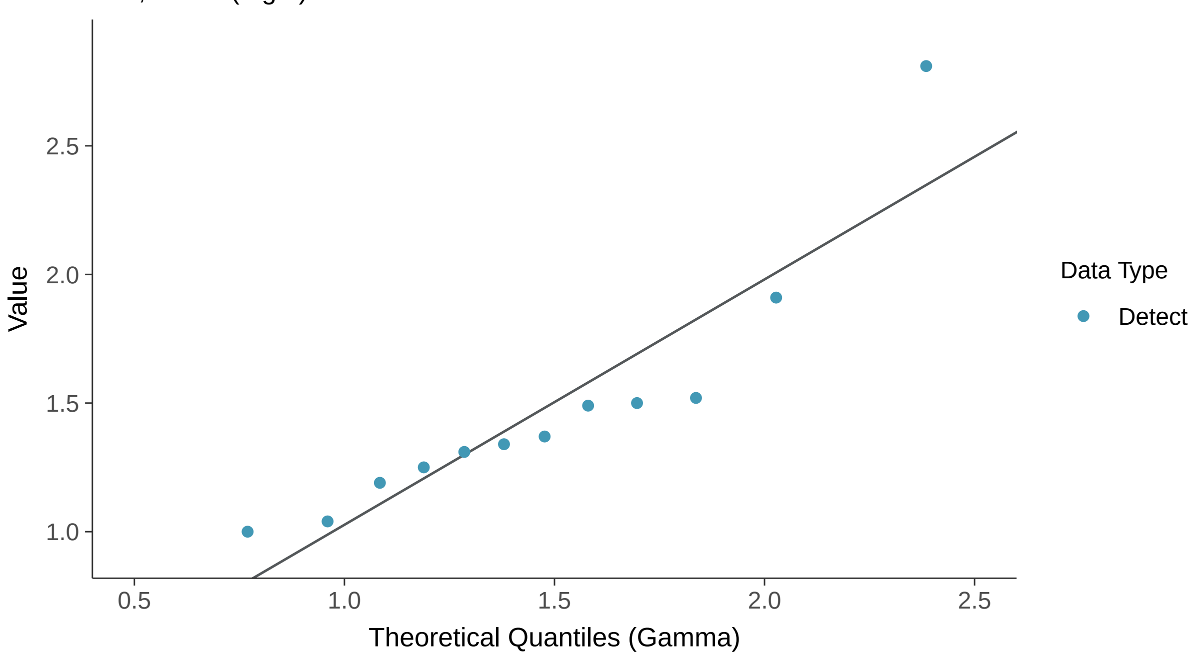
Lognormal Q-Q plot

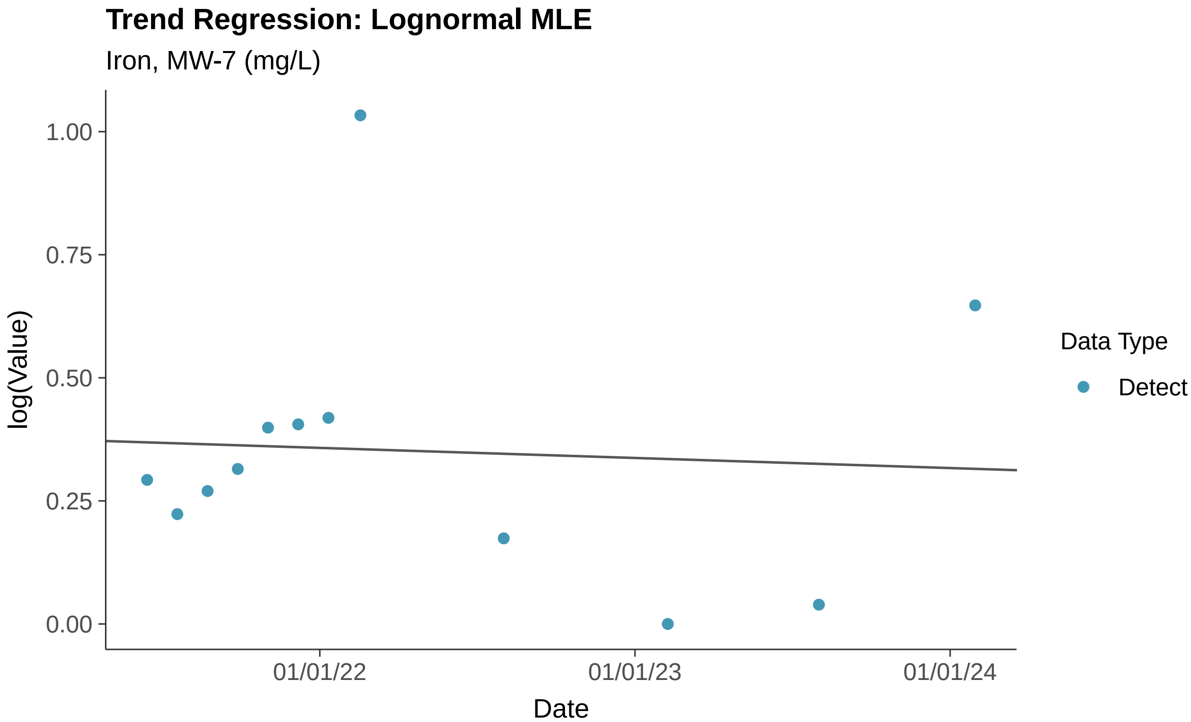
Iron, MW-7 (mg/L)

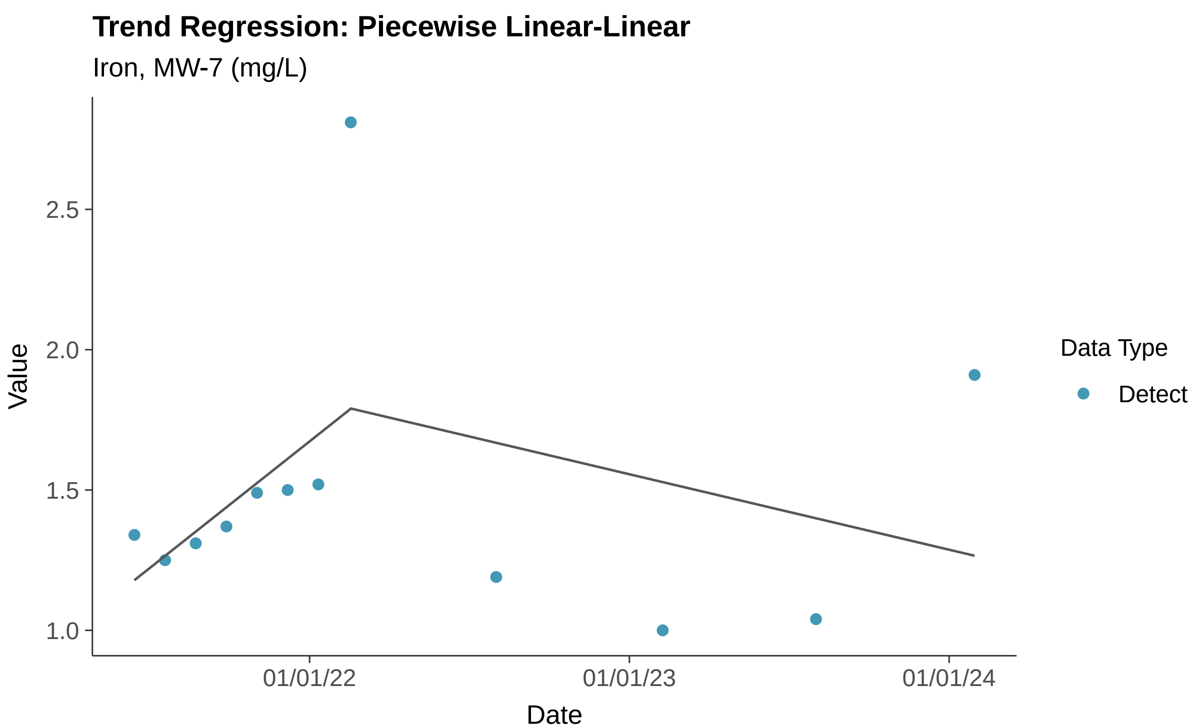


Gamma Q-Q plot

Iron, MW-7 (mg/L)

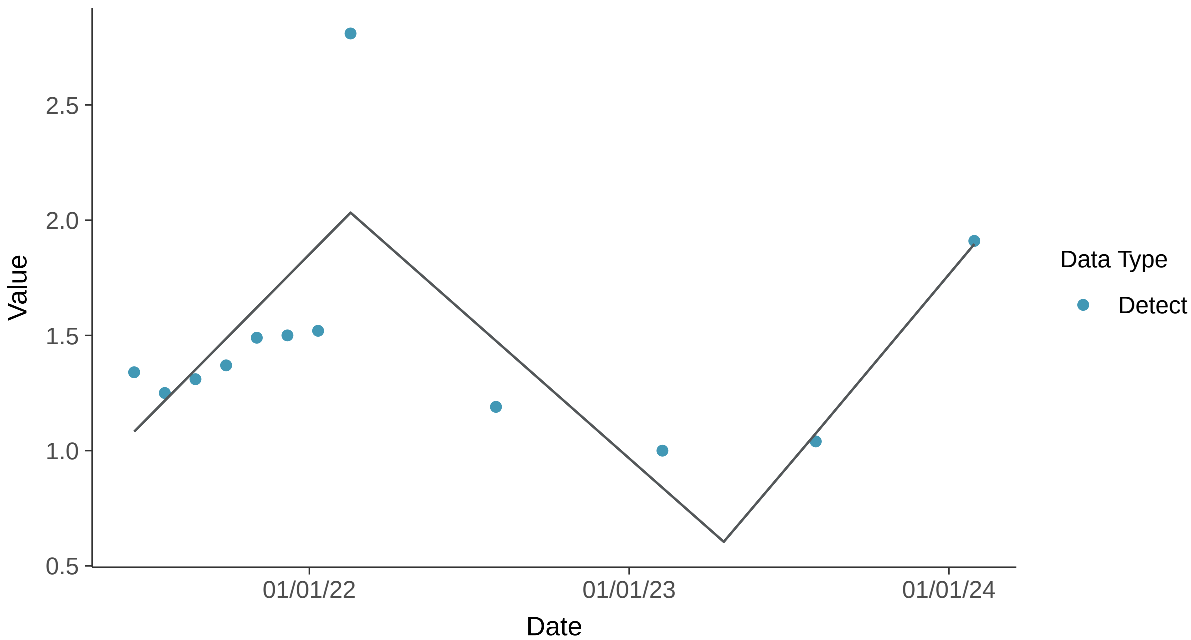



Trend Regression: Lognormal MLE
Iron, MW-7 (mg/L)
log(Value)
1.00
0.75
0.50
0.25
0.00
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Iron, MW-7 (mg/L)
Value
2.5
2.0
1.5
1.0
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

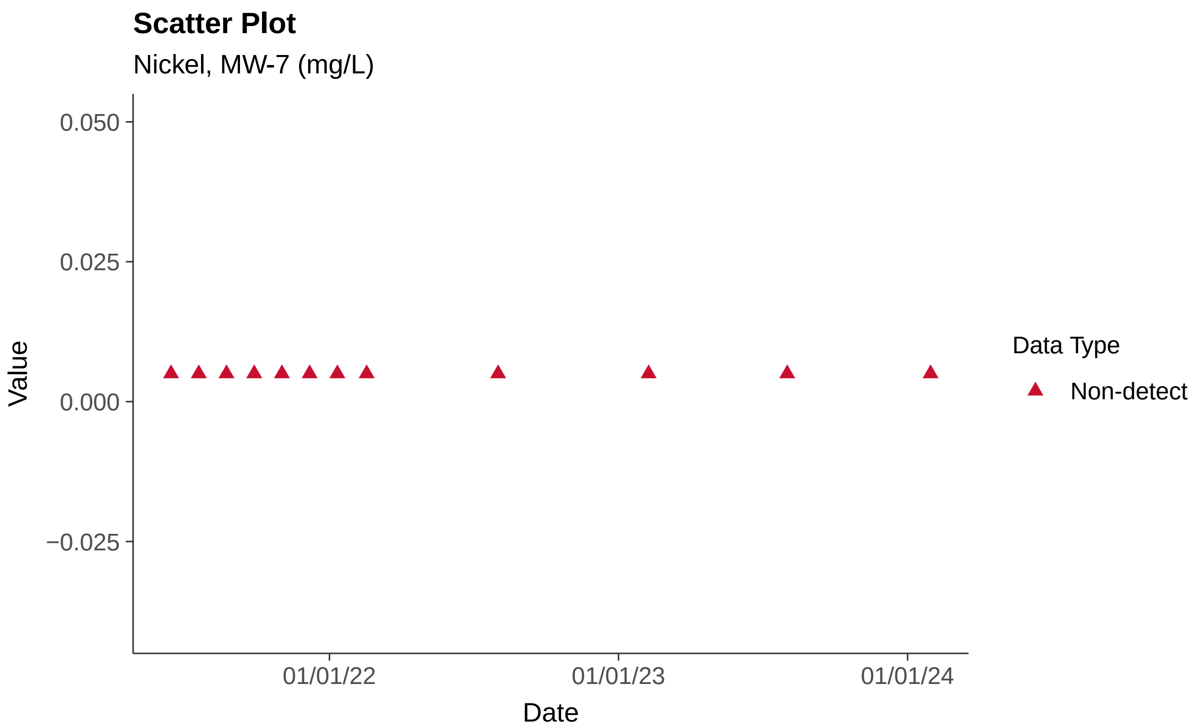
Trend Regression: Piecewise Linear-Linear-Linear

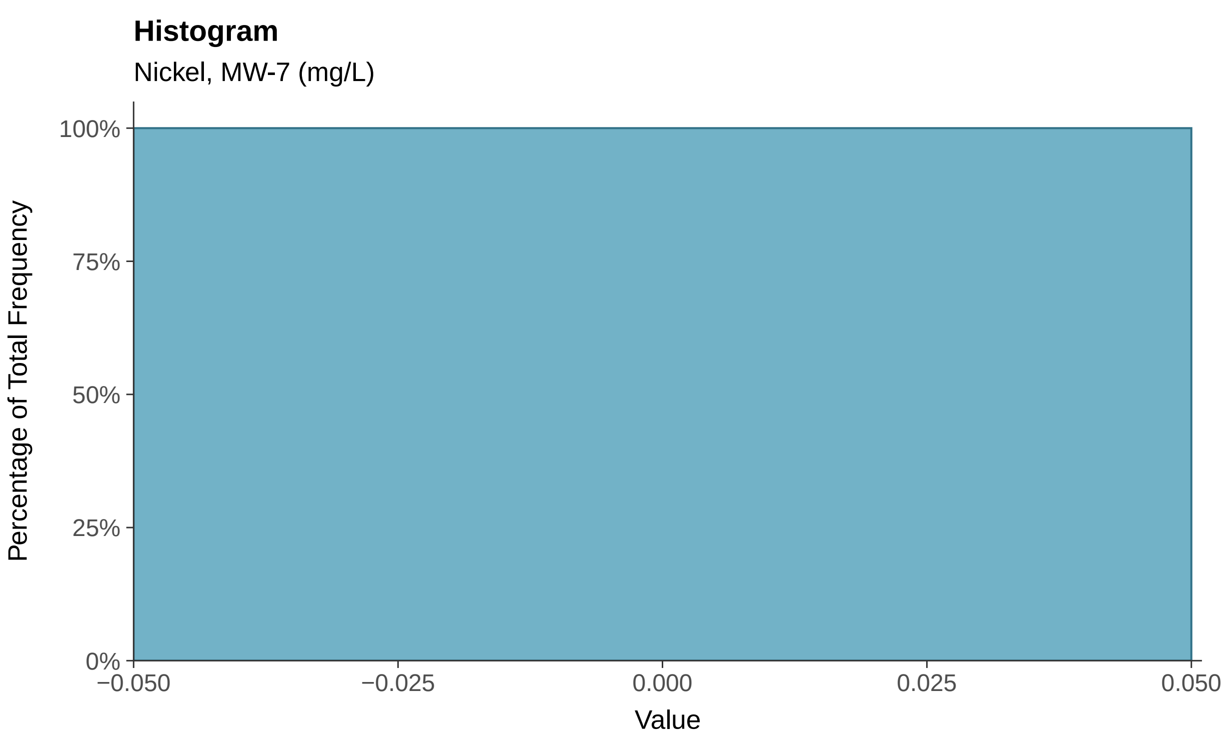
Iron, MW-7 (mg/L)



Part 115: Nickel, MW-7

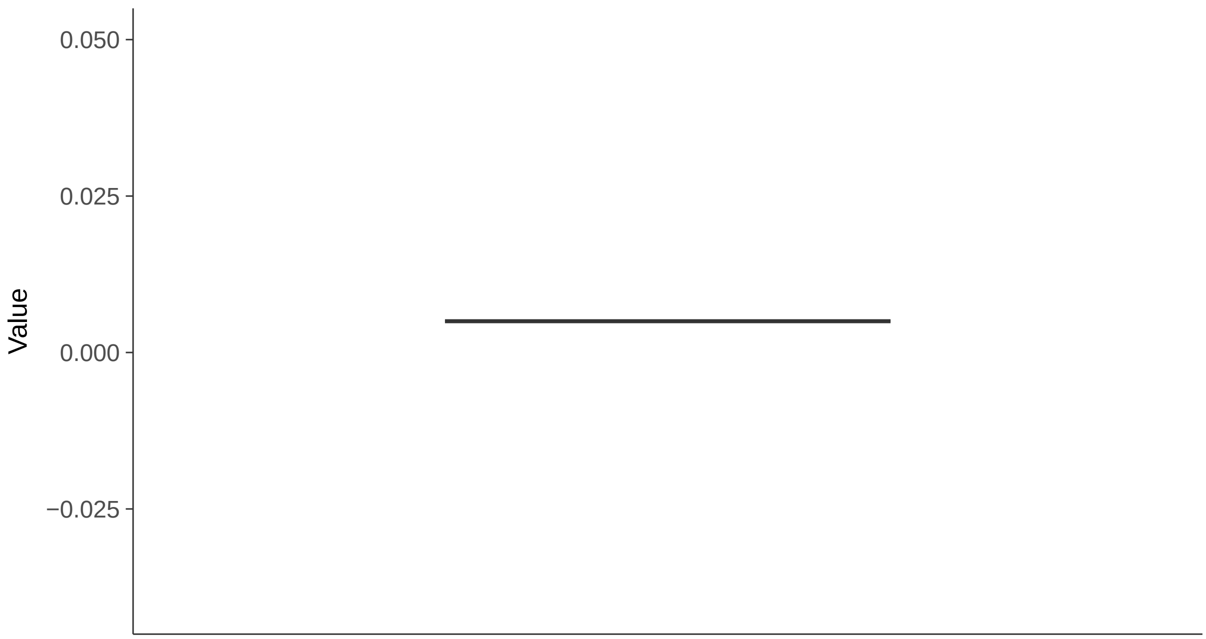
ID: 07_5_39





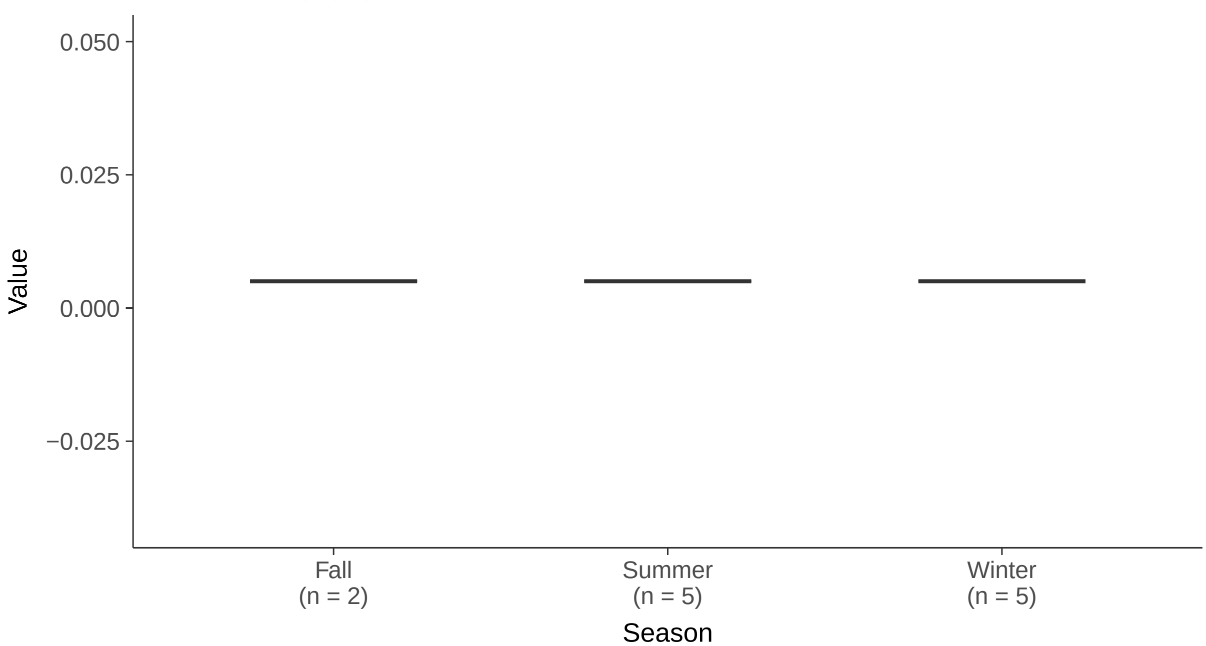
Boxplot

Nickel, MW-7 (mg/L)



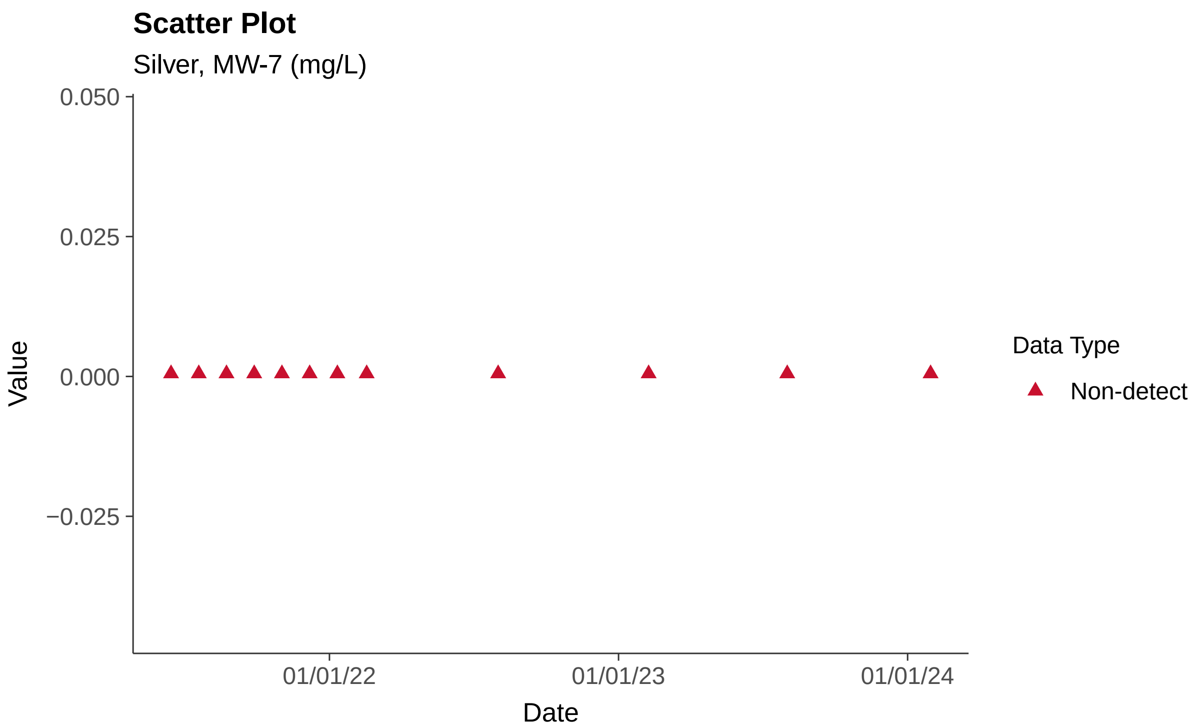
Boxplot by Season

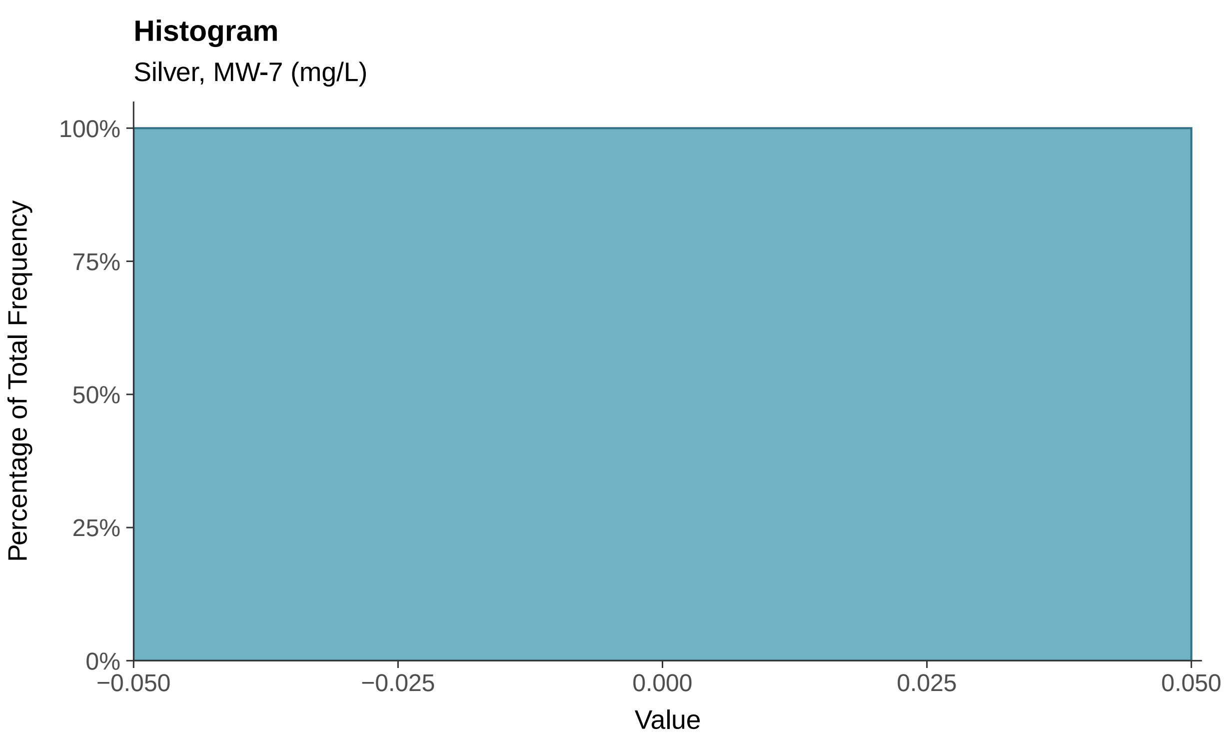
Nickel, MW-7 (mg/L)

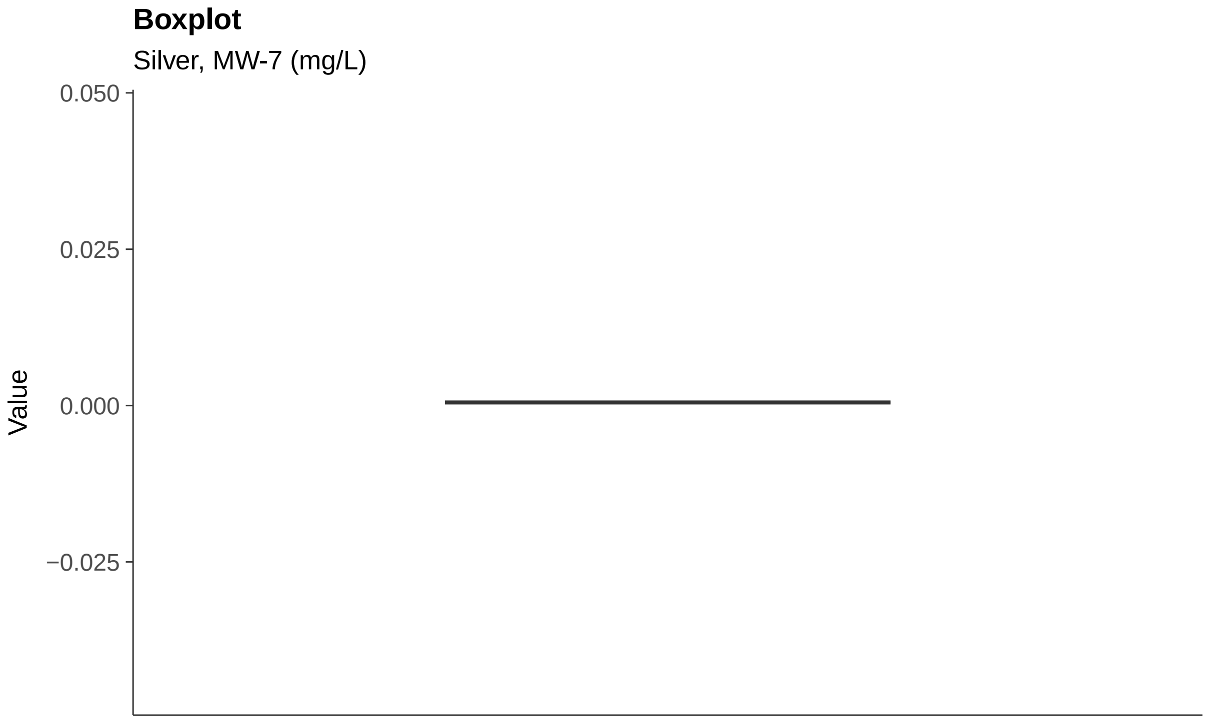


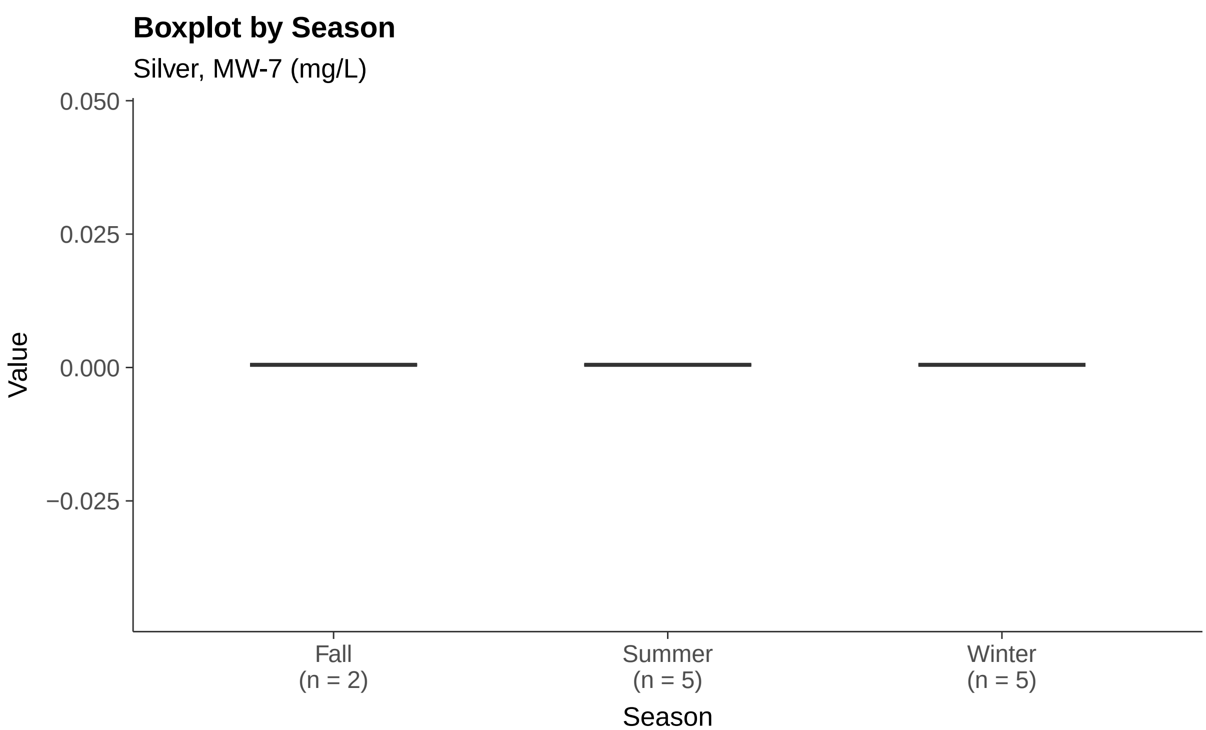
Part 115: Silver, MW-7

ID: 07_5_40



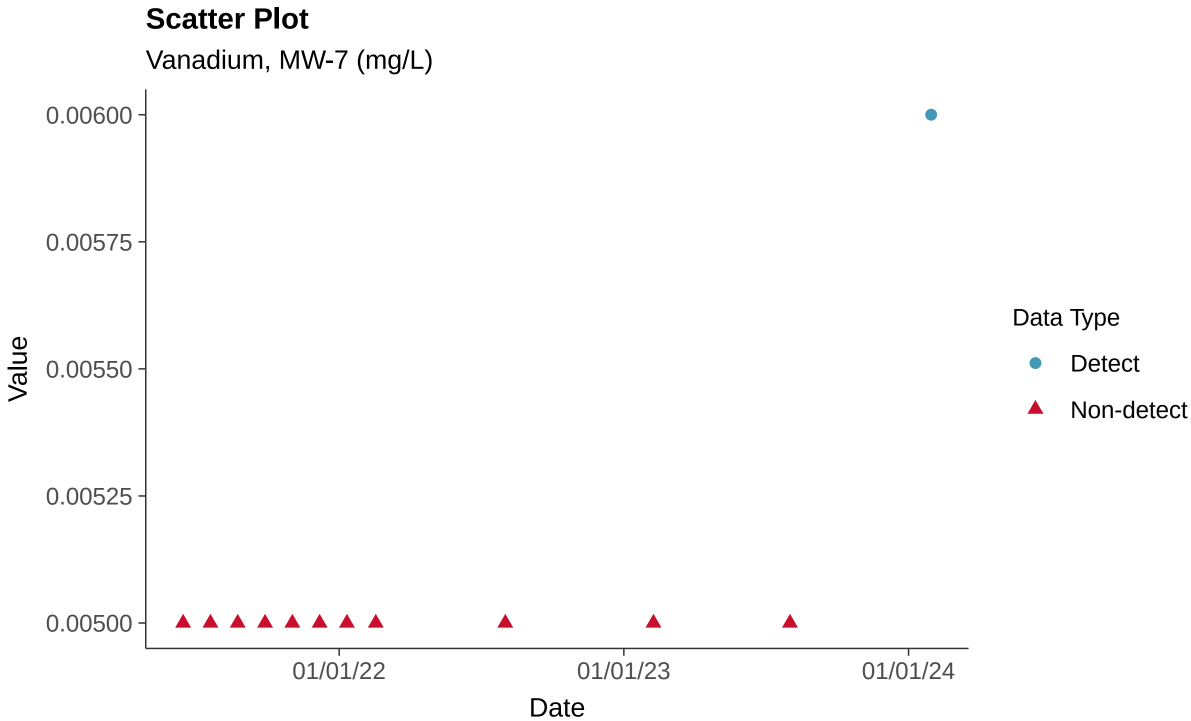


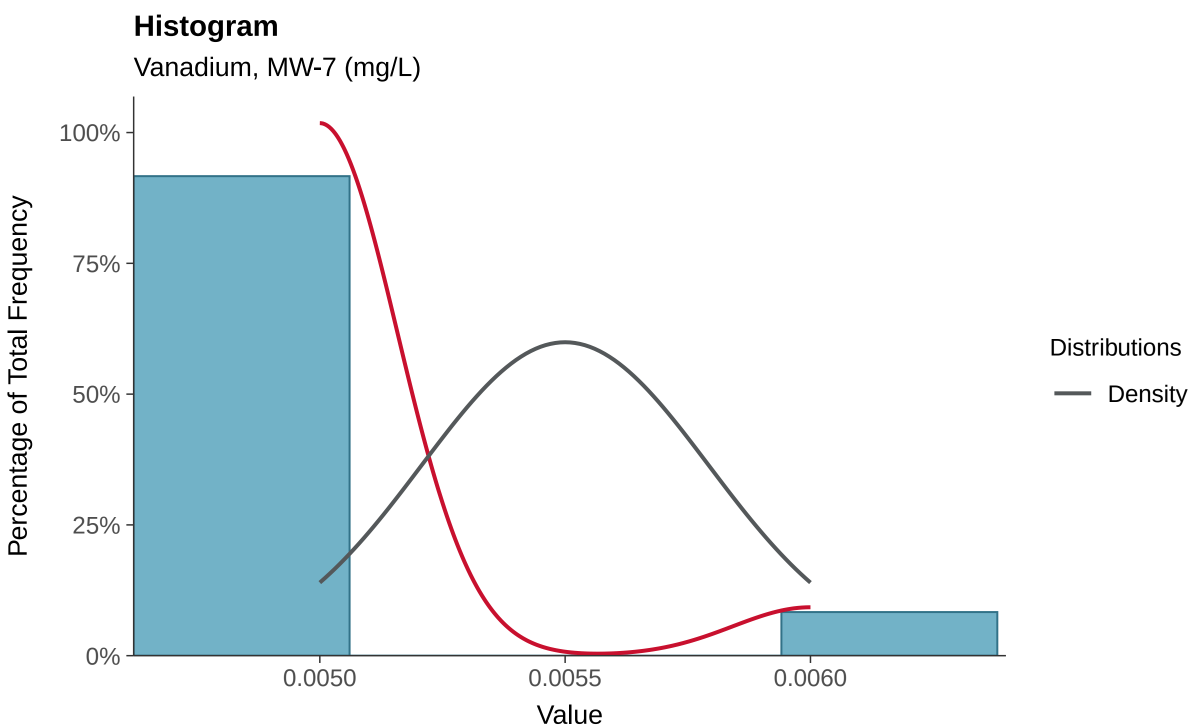

Boxplot
Silver, MW-7 (mg/L)
0.050
0.025
0.000
−0.025
Value

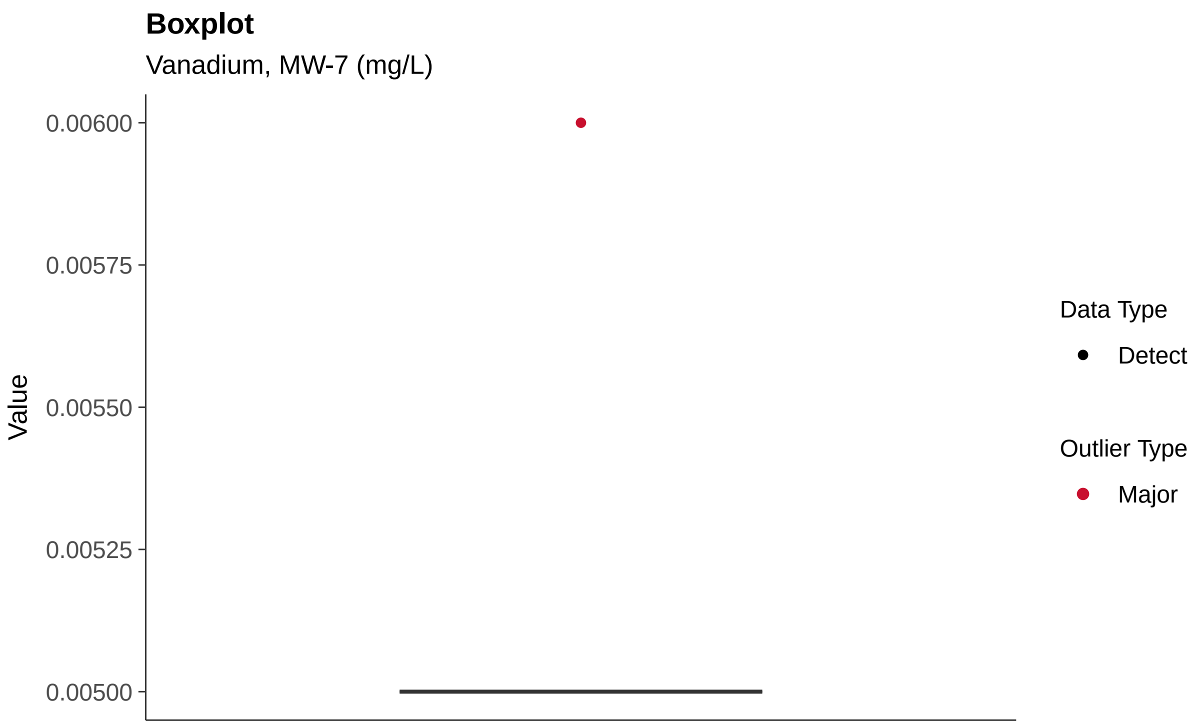

Boxplot by Season
Silver, MW-7 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season

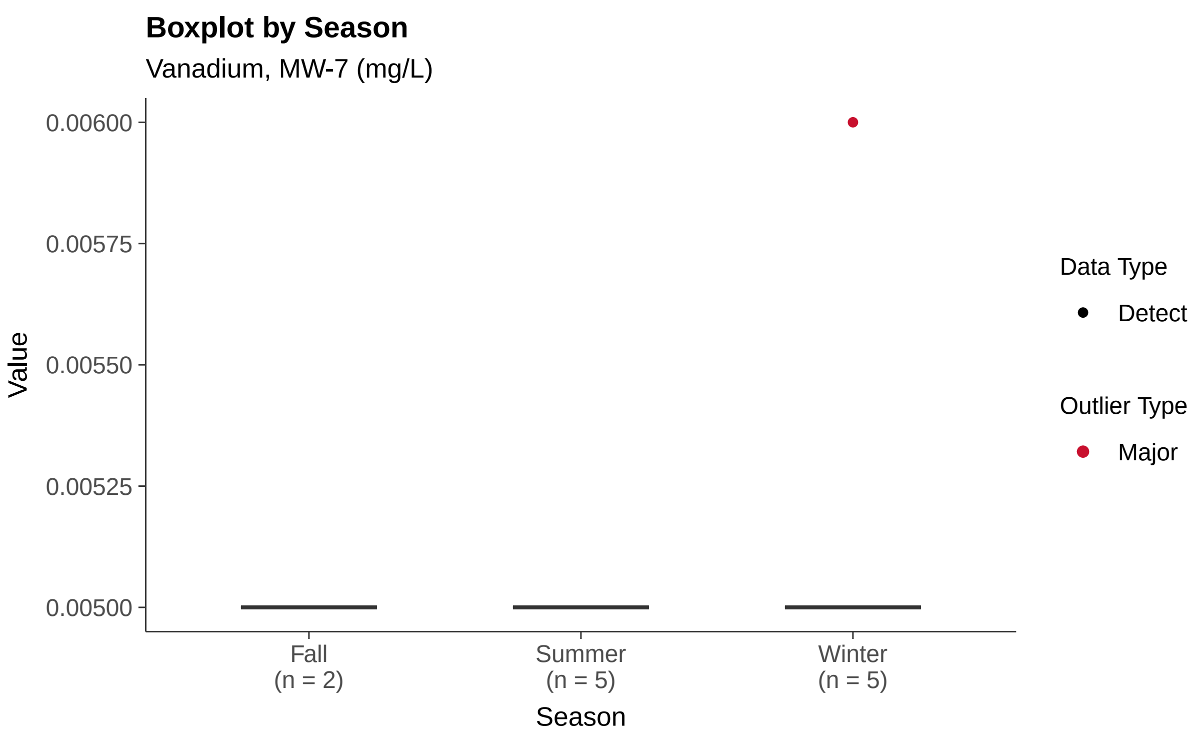
Part 115: Vanadium, MW-7

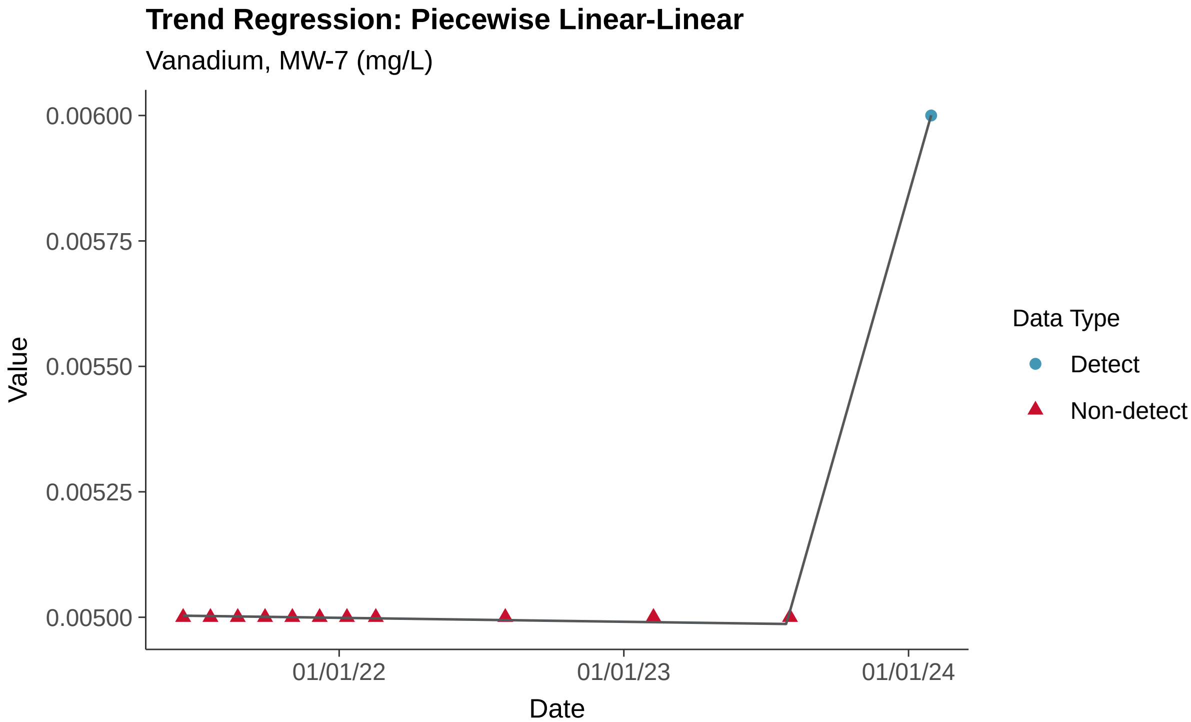
ID: 07_5_41

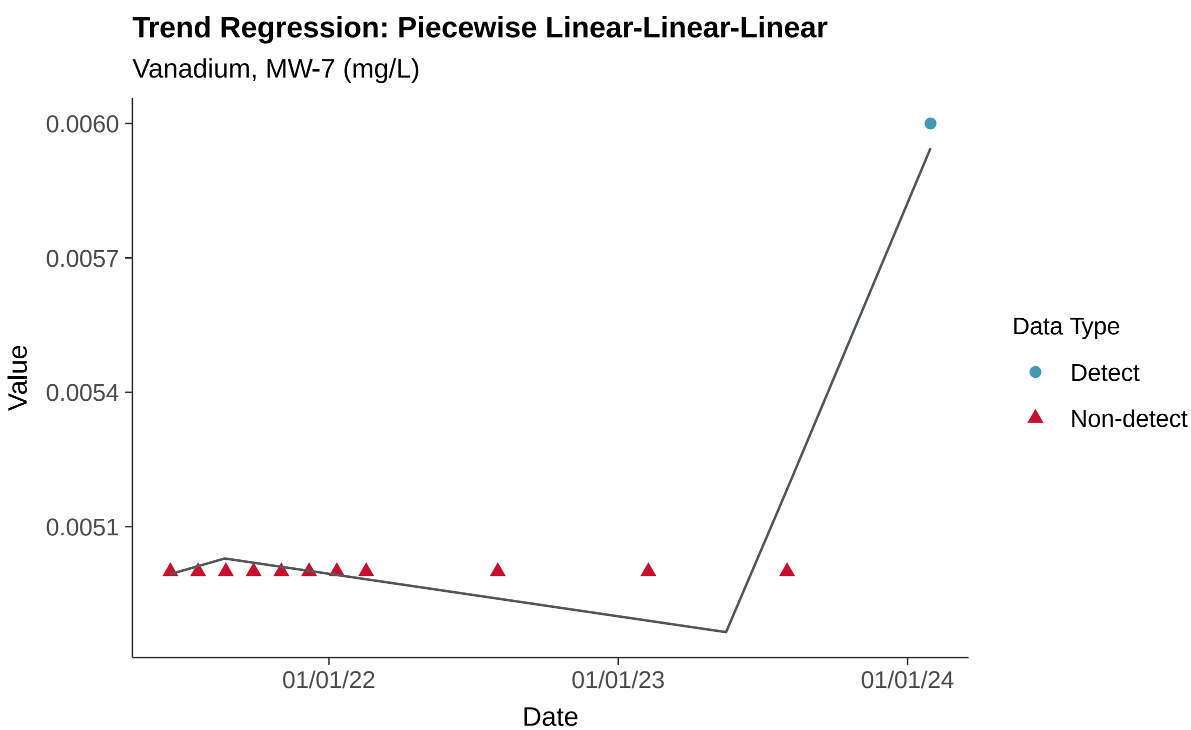





Boxplot
Vanadium, MW-7 (mg/L)
Value
0.00600
0.00575
0.00550
0.00525
0.00500
Data Type
Detect
Outlier Type
Major

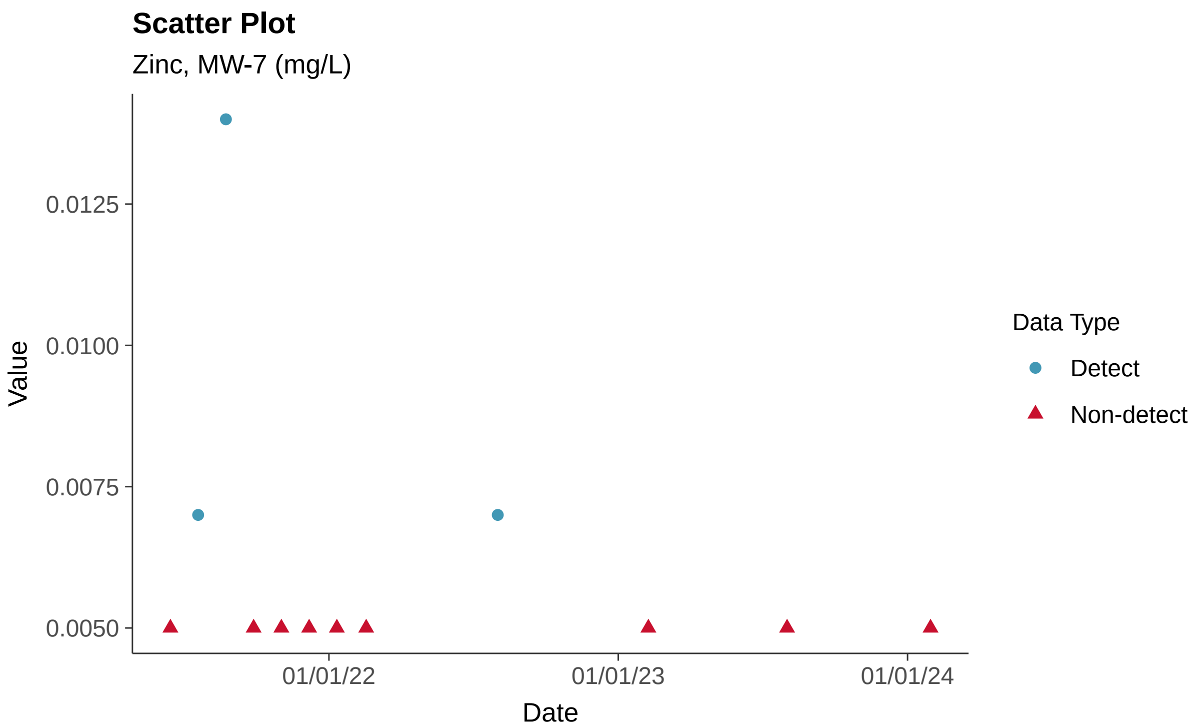

Boxplot by Season
Vanadium, MW-7 (mg/L)
Value
0.00600
0.00575
0.00550
0.00525
0.00500
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major

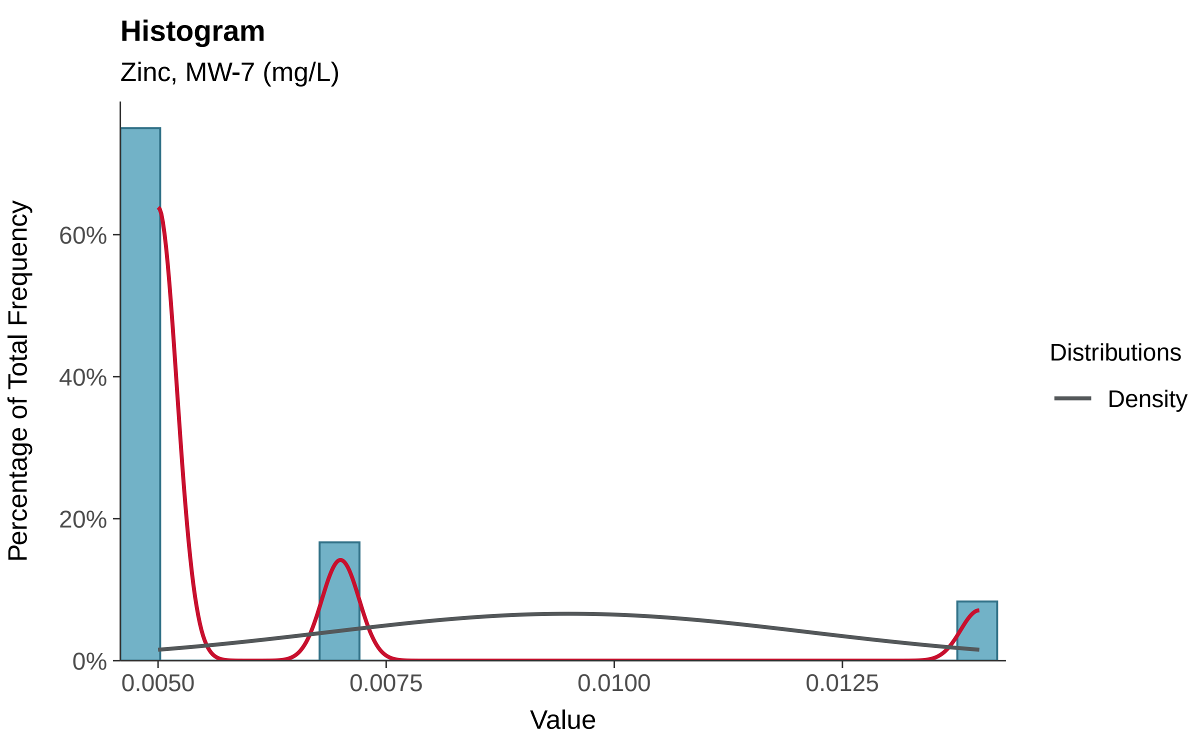

Trend Regression: Piecewise Linear-Linear
Vanadium, MW-7 (mg/L)
Value
0.00600
0.00575
0.00550
0.00525
0.00500
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Vanadium, MW-7 (mg/L)
Value
0.0060
0.0057
0.0054
0.0051
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Part 115: Zinc, MW-7

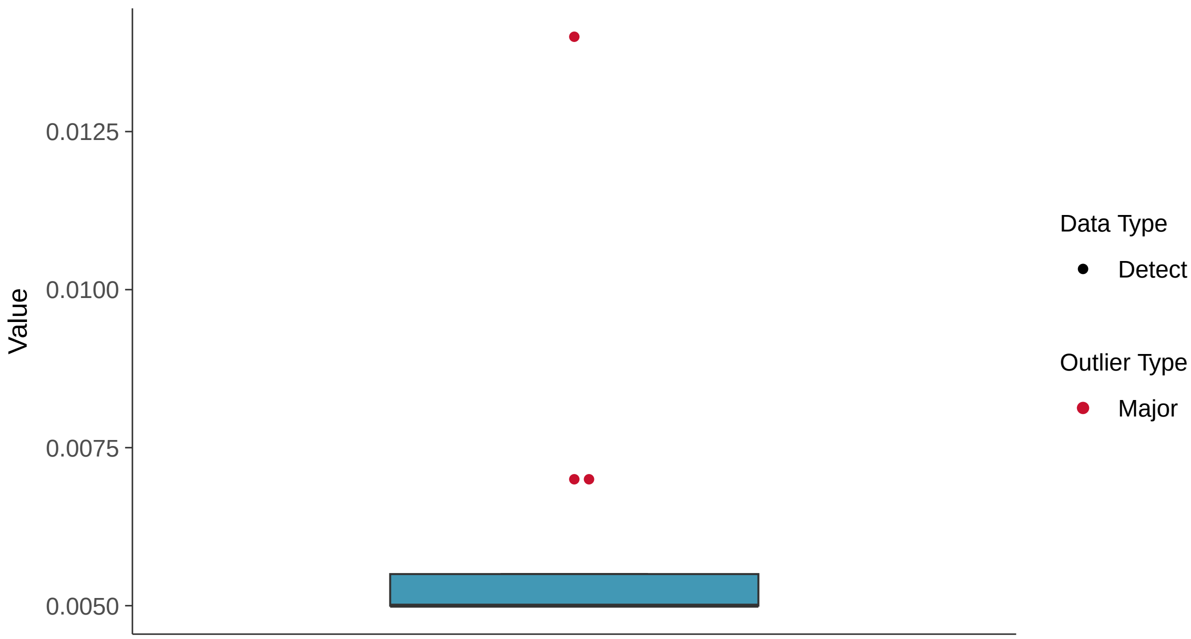
ID: 07_5_42





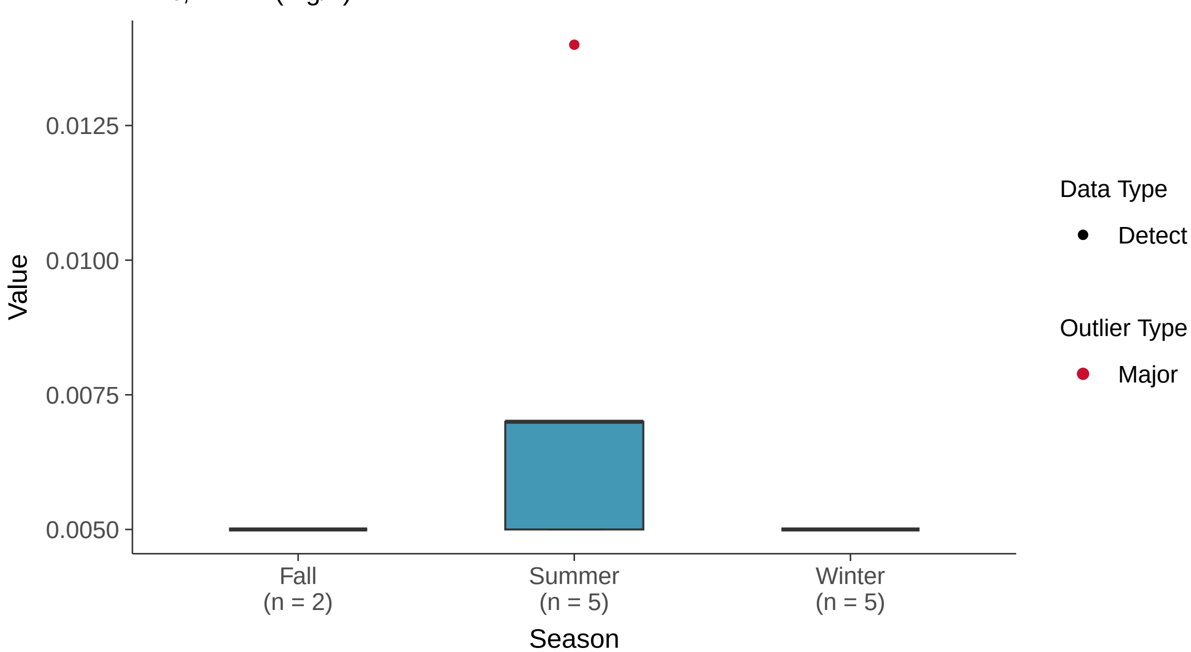
Boxplot

Zinc, MW-7 (mg/L)



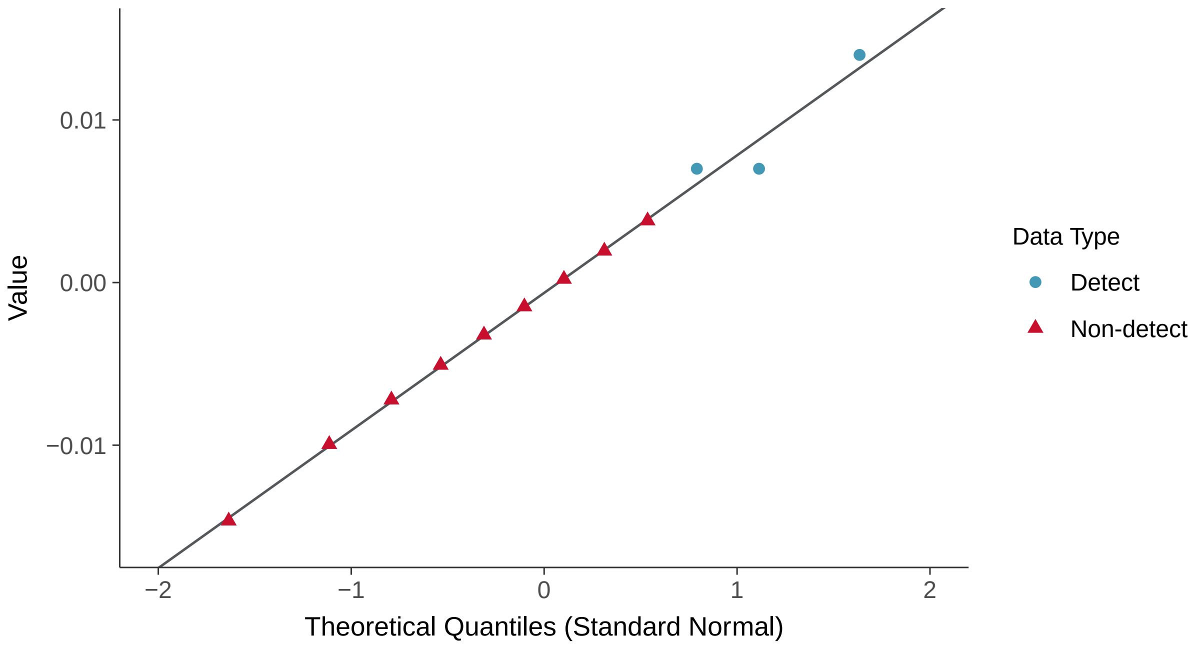
Boxplot by Season

Zinc, MW-7 (mg/L)



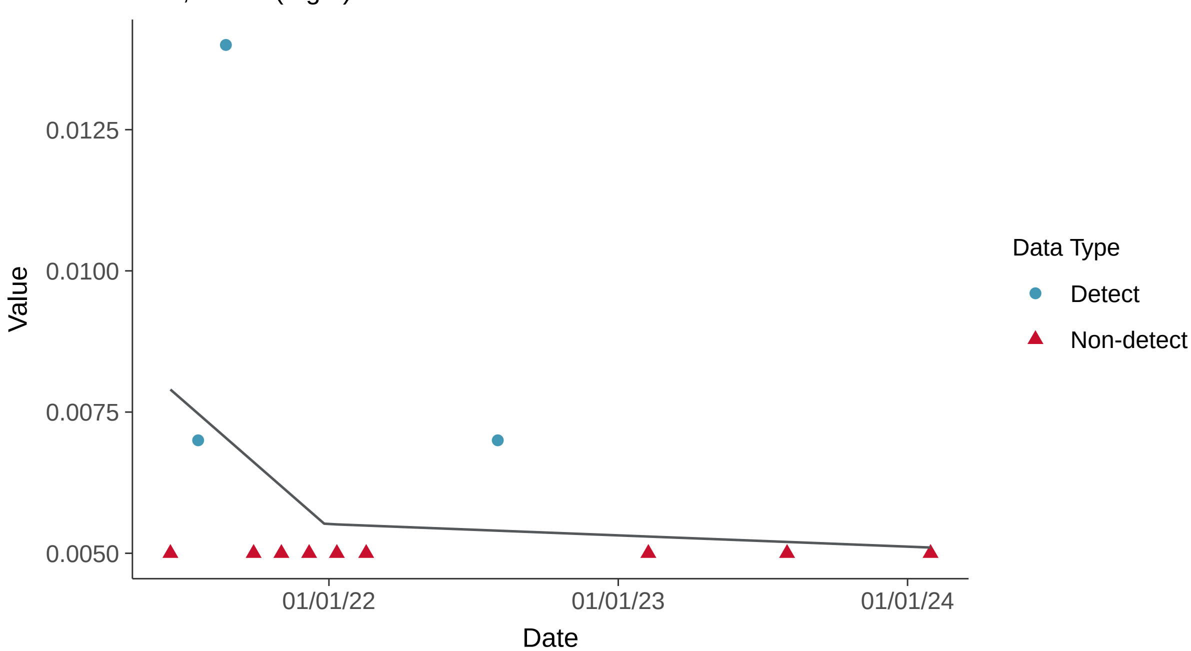
Normal Q-Q plot using ROS Imputed Estimates

Zinc, MW-7 (mg/L)



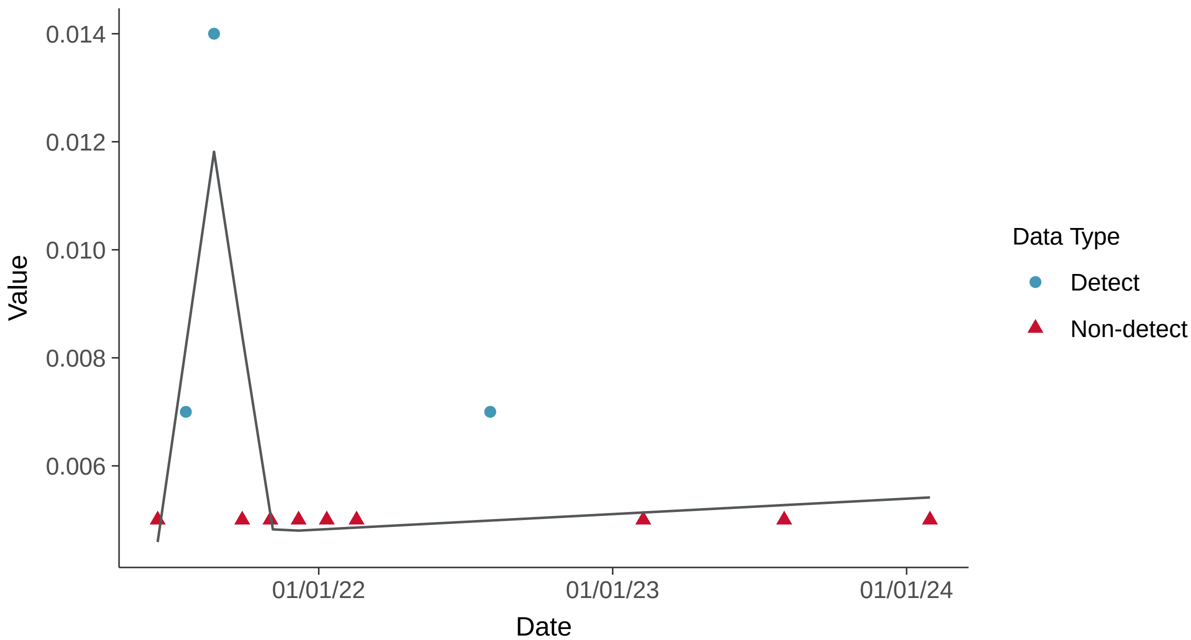
Trend Regression: Piecewise Linear-Linear

Zinc, MW-7 (mg/L)



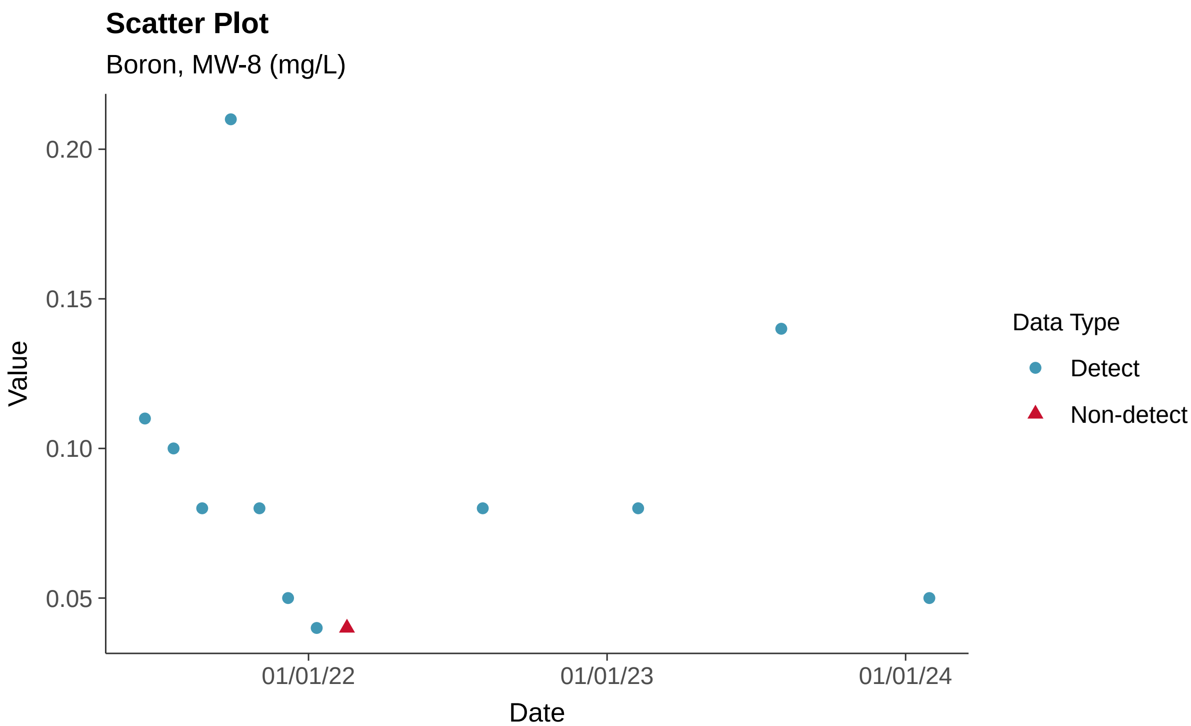
Trend Regression: Piecewise Linear-Linear-Linear

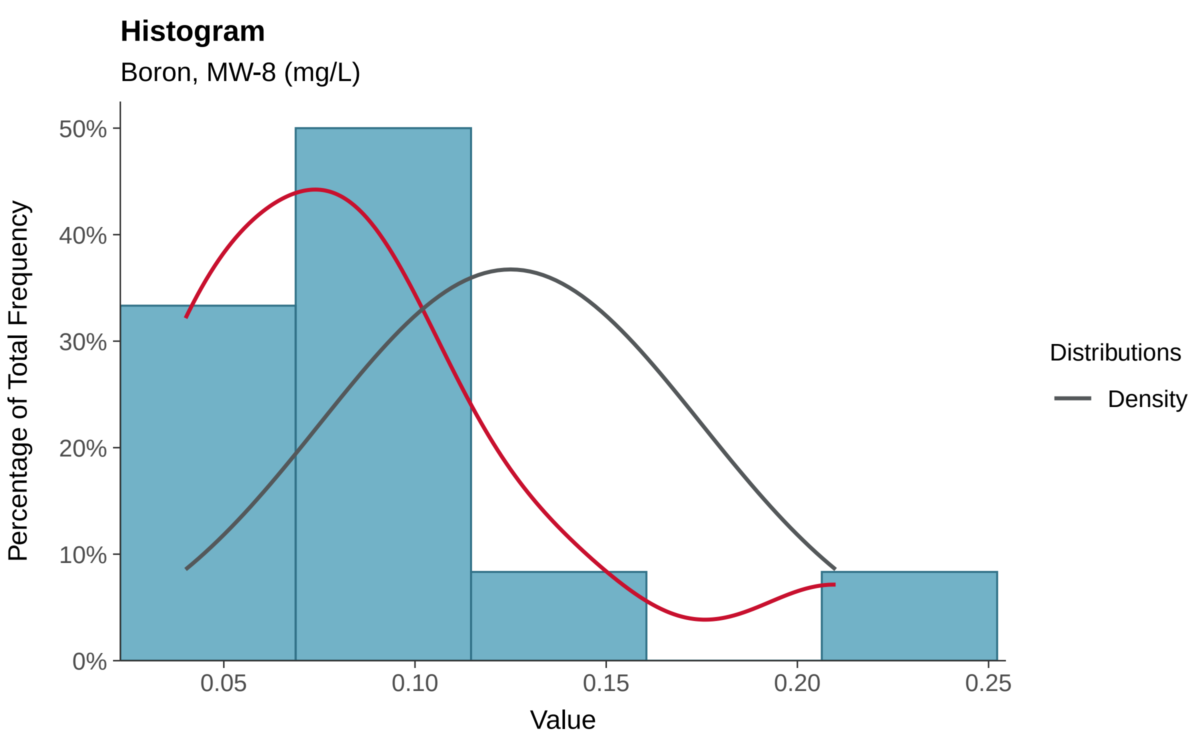
Zinc, MW-7 (mg/L)



Appendix III: Boron, MW-8

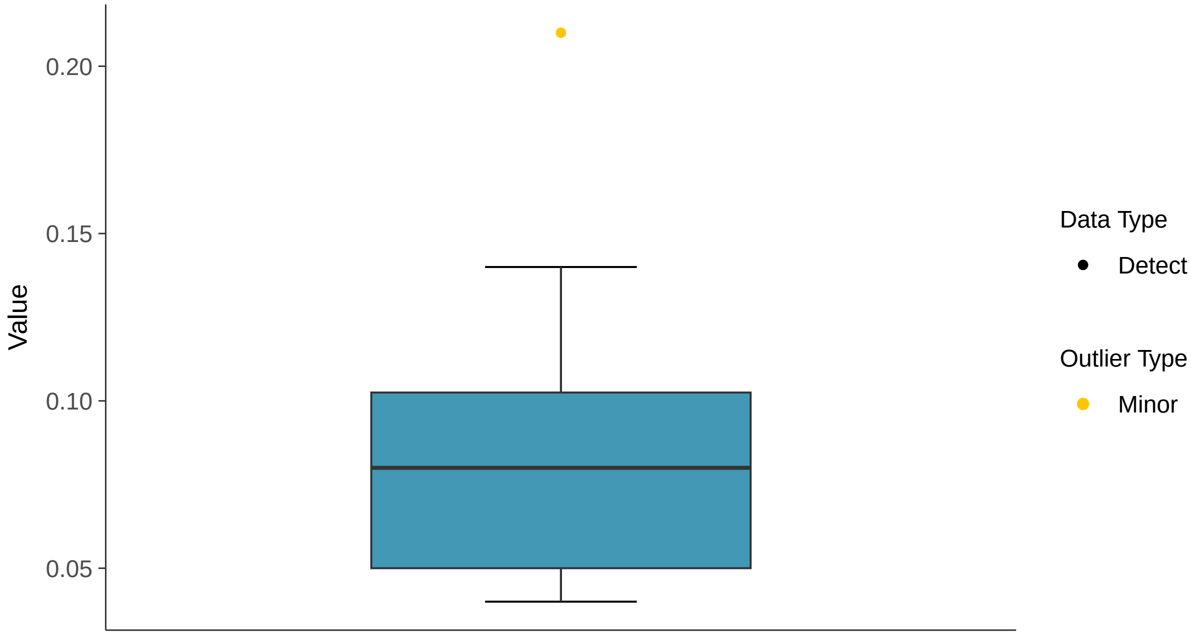
ID: 08_1_01





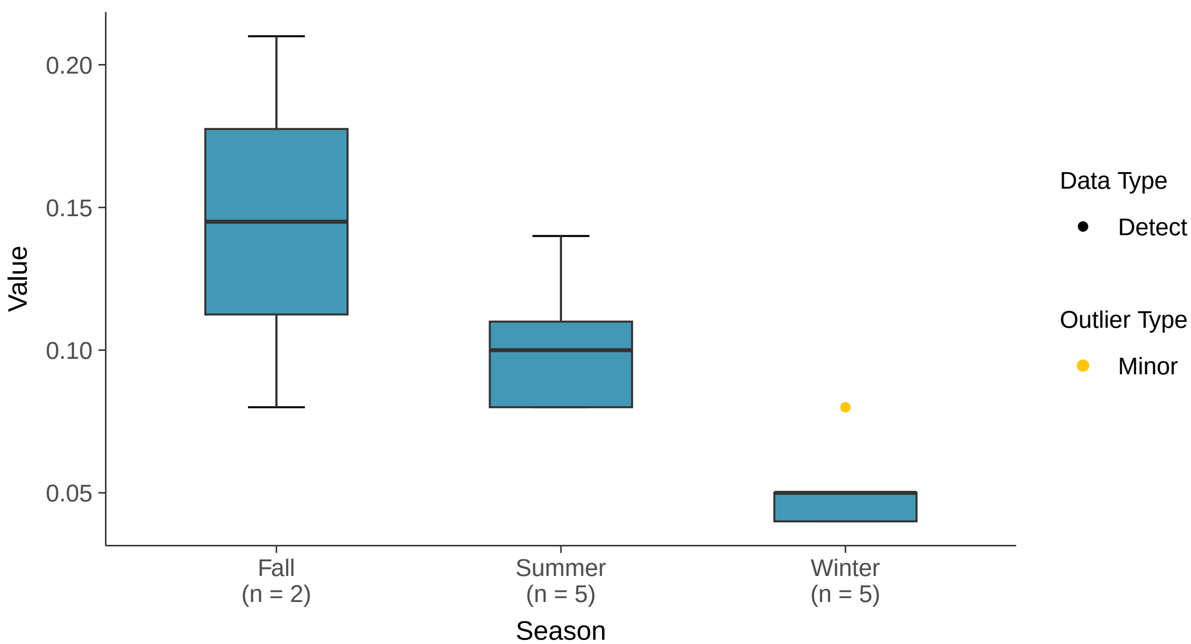
Boxplot

Boron, MW-8 (mg/L)



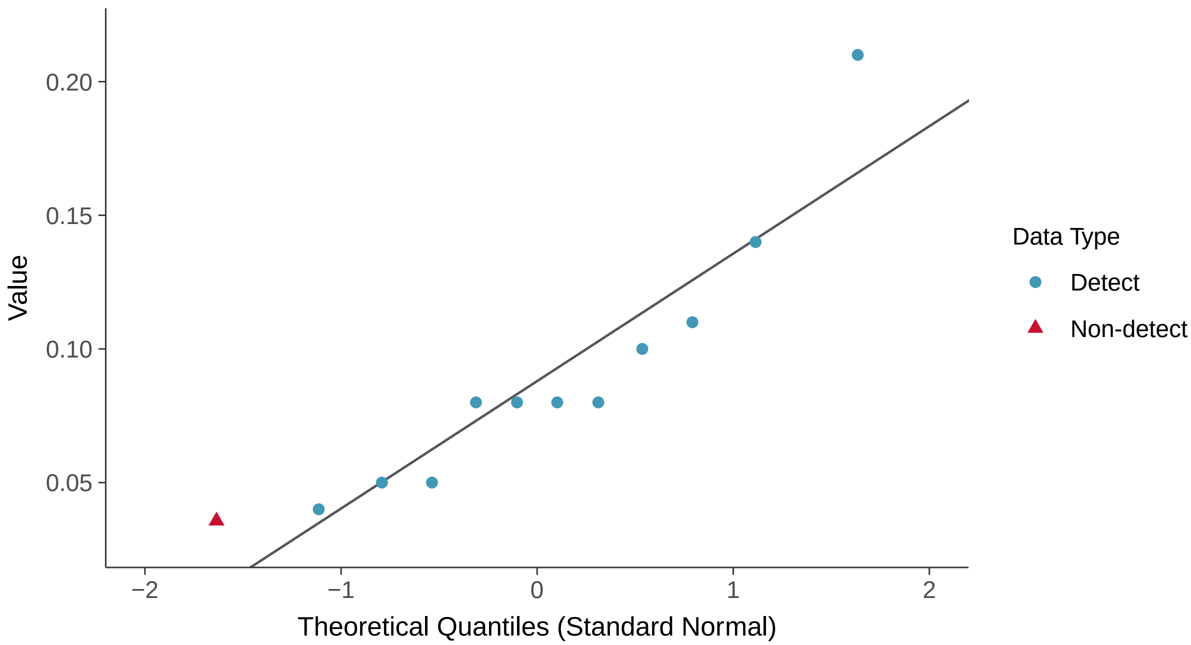
Boxplot by Season

Boron, MW-8 (mg/L)



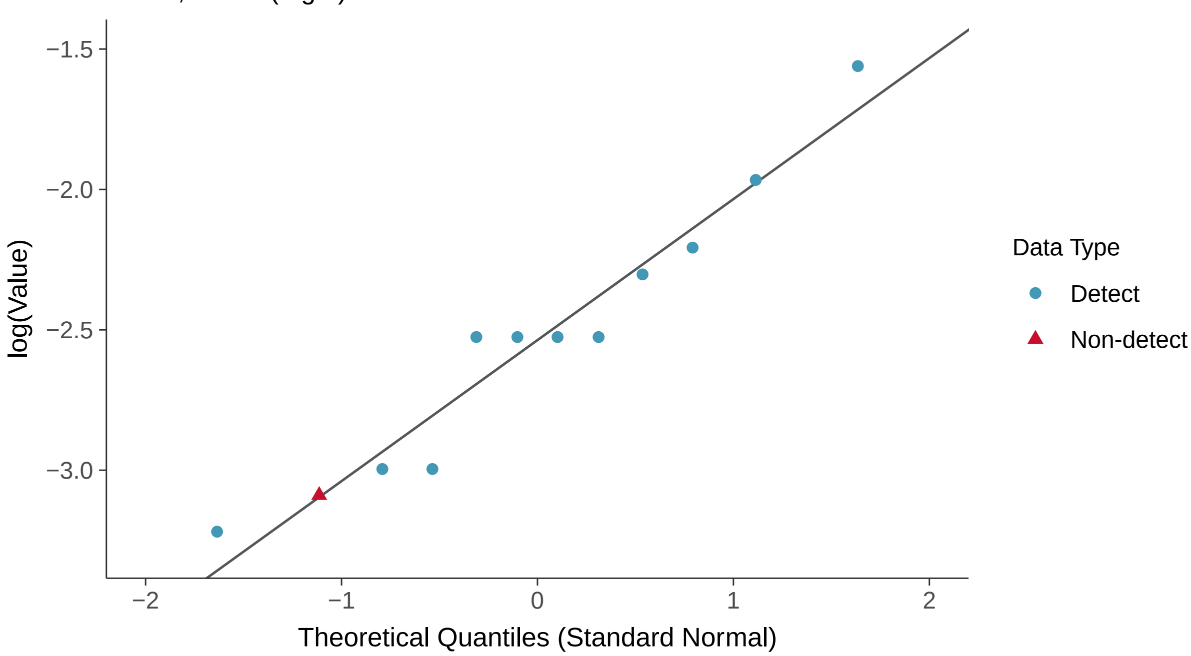
Normal Q-Q plot using ROS Imputed Estimates

Boron, MW-8 (mg/L)



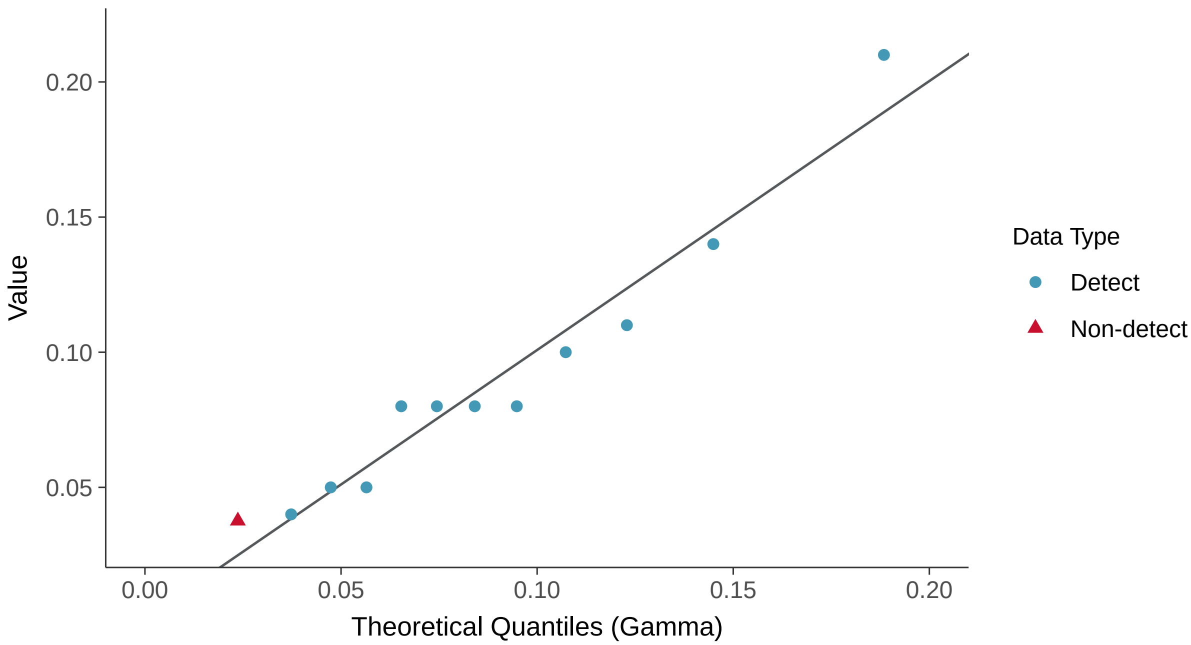
Lognormal Q-Q plot using ROS Imputed Estimates

Boron, MW-8 (mg/L)



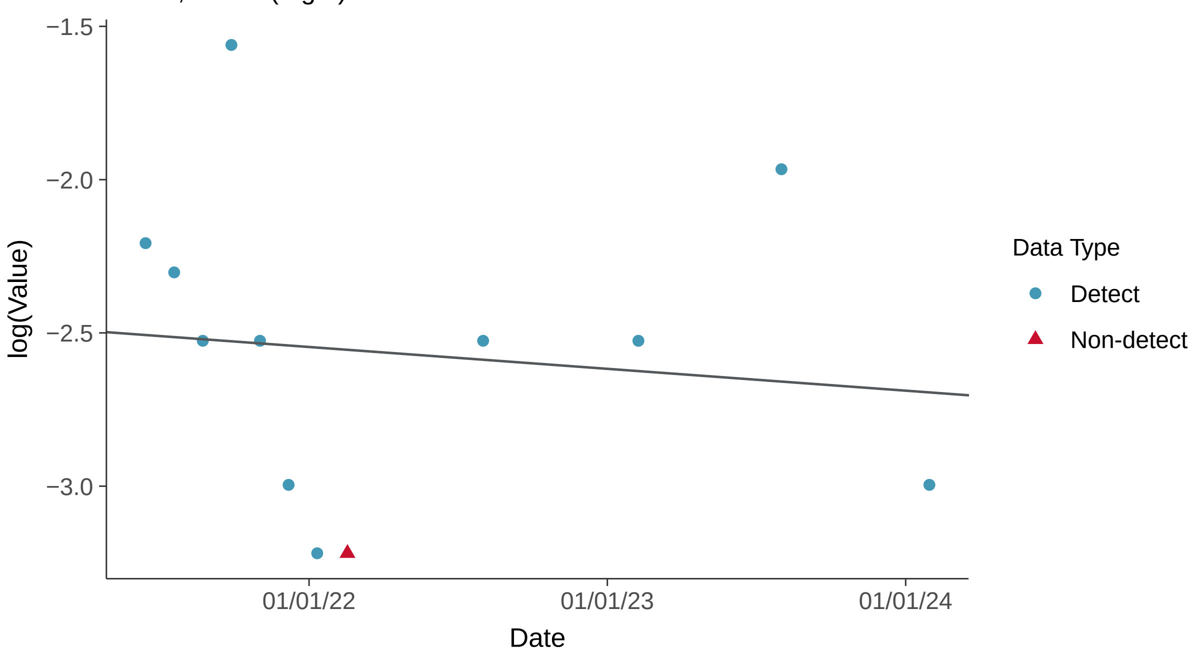
Gamma Q-Q plot using ROS Imputed Estimates

Boron, MW-8 (mg/L)



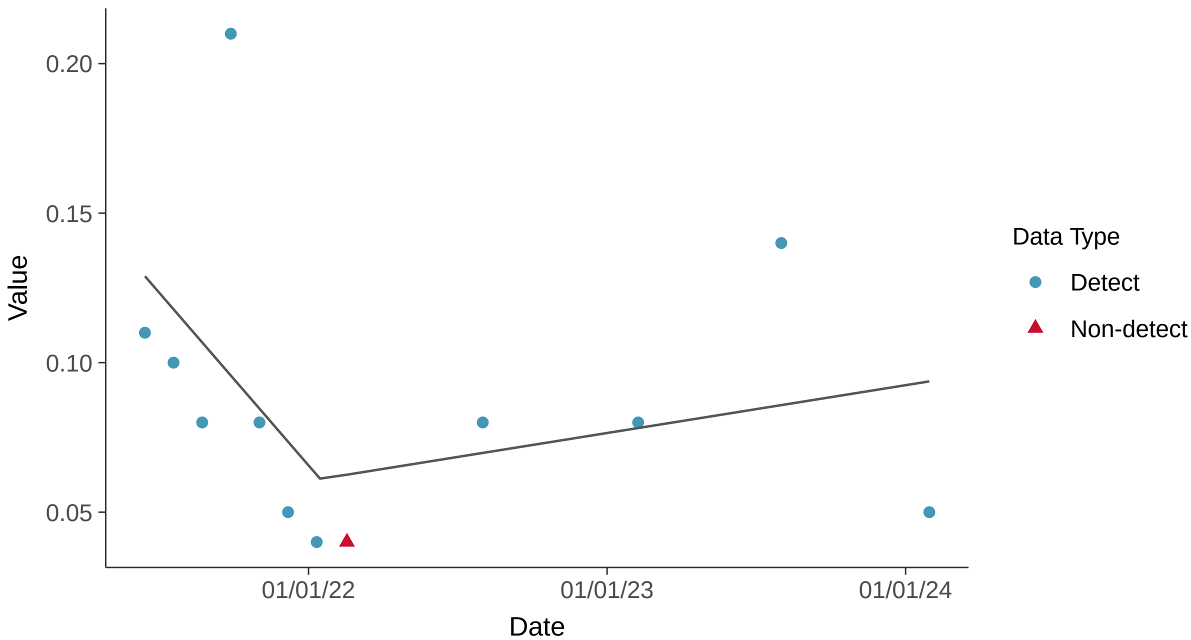
Trend Regression: Lognormal MLE

Boron, MW-8 (mg/L)



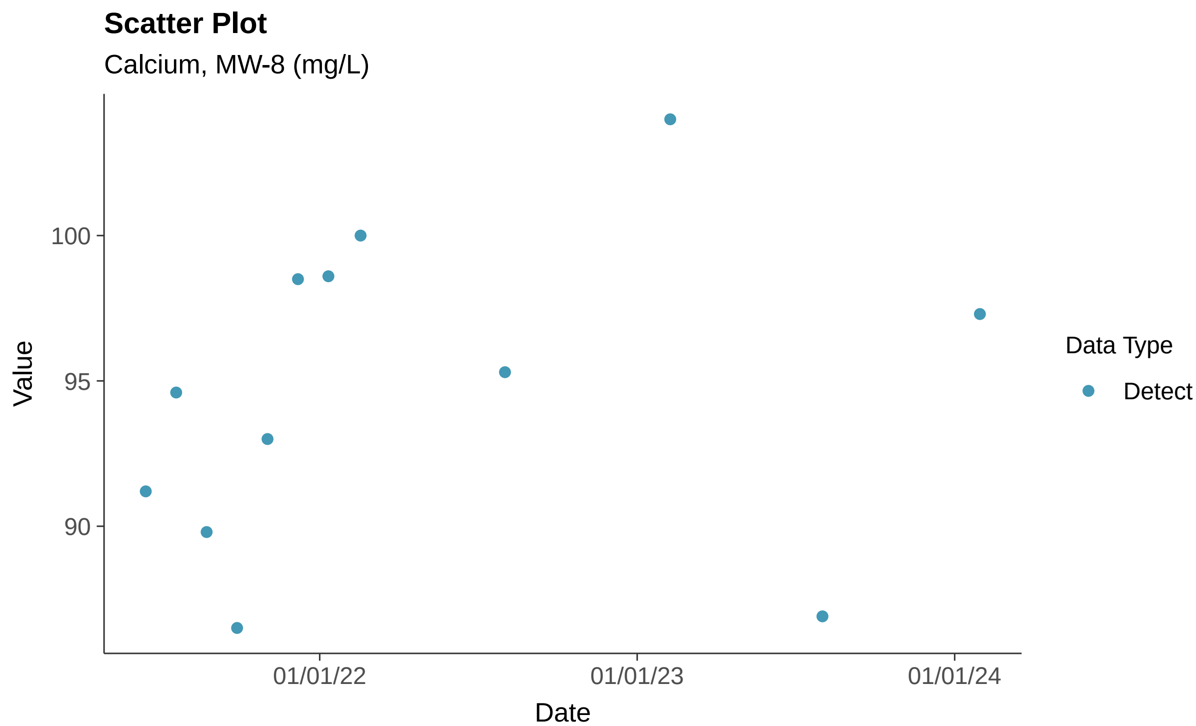
Trend Regression: Piecewise Linear-Linear

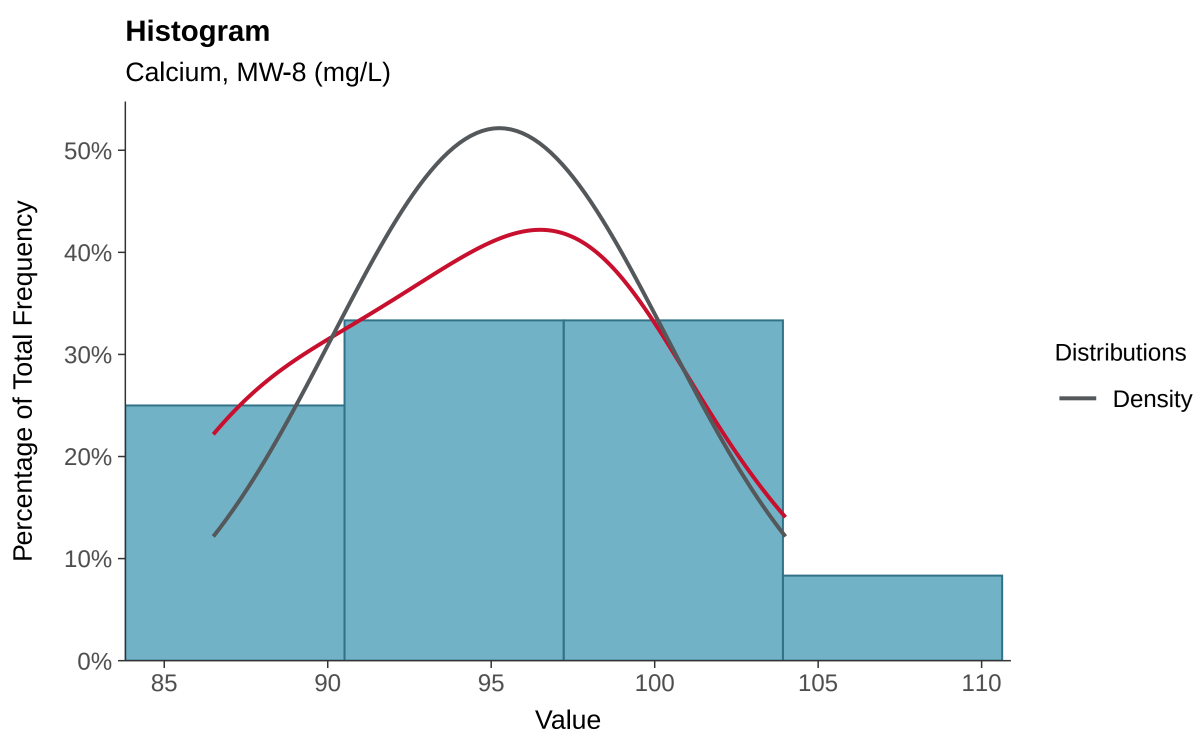
Boron, MW-8 (mg/L)



Appendix III: Calcium, MW-8

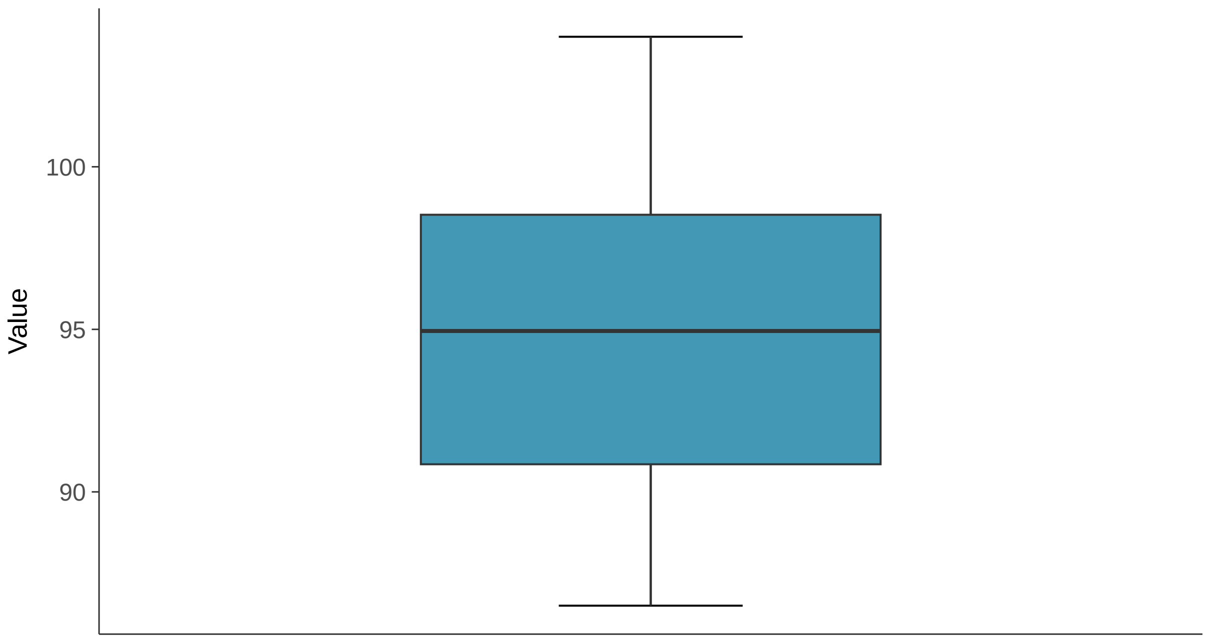
ID: 08_1_02





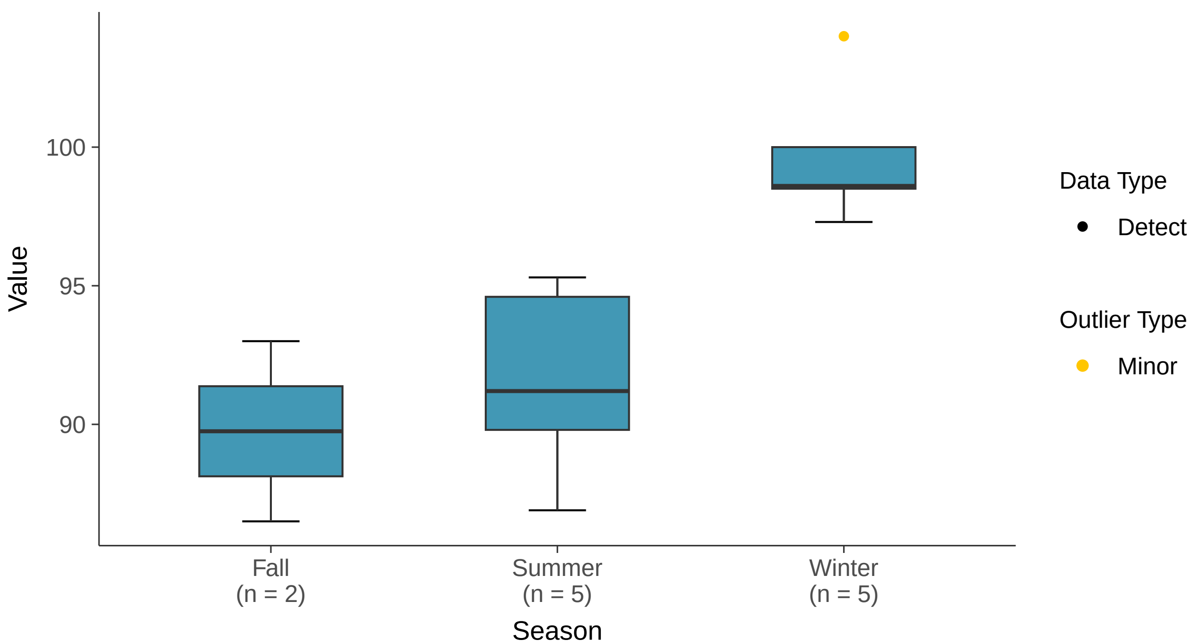
Boxplot

Calcium, MW-8 (mg/L)



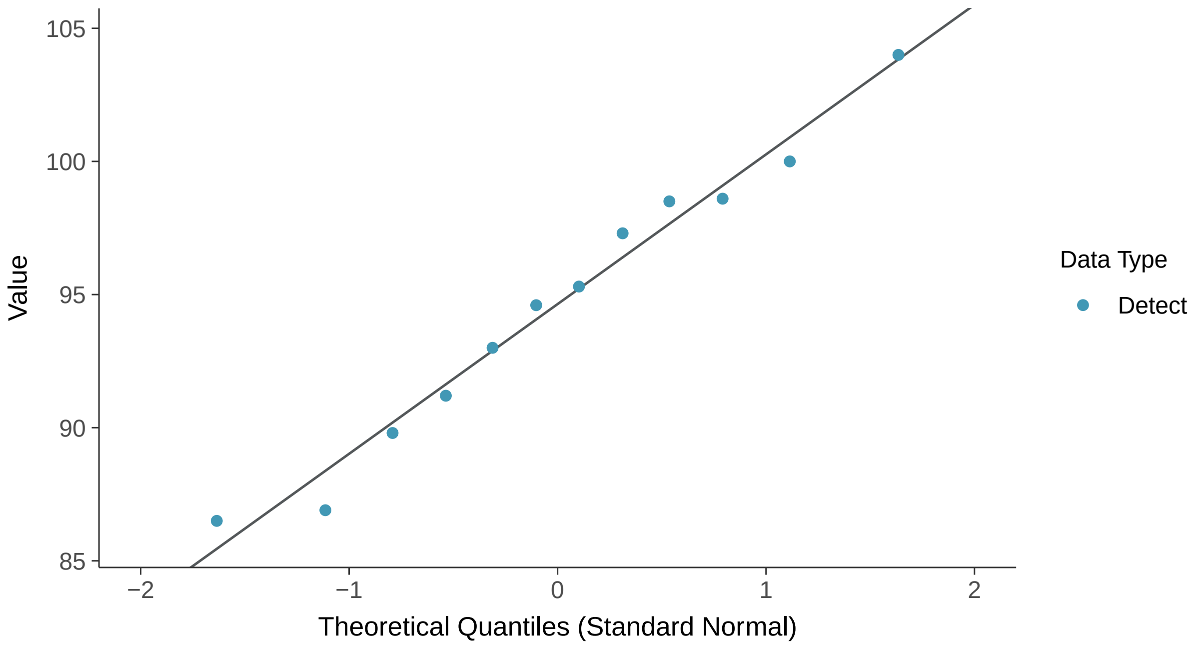
Boxplot by Season

Calcium, MW-8 (mg/L)



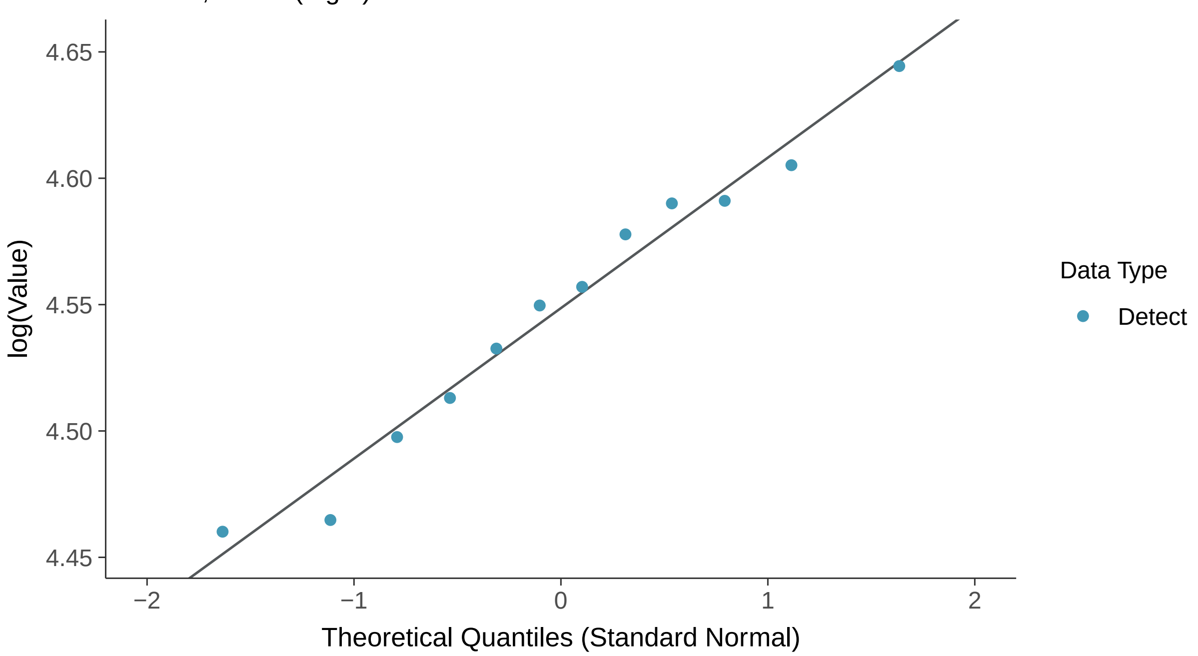
Normal Q-Q plot

Calcium, MW-8 (mg/L)



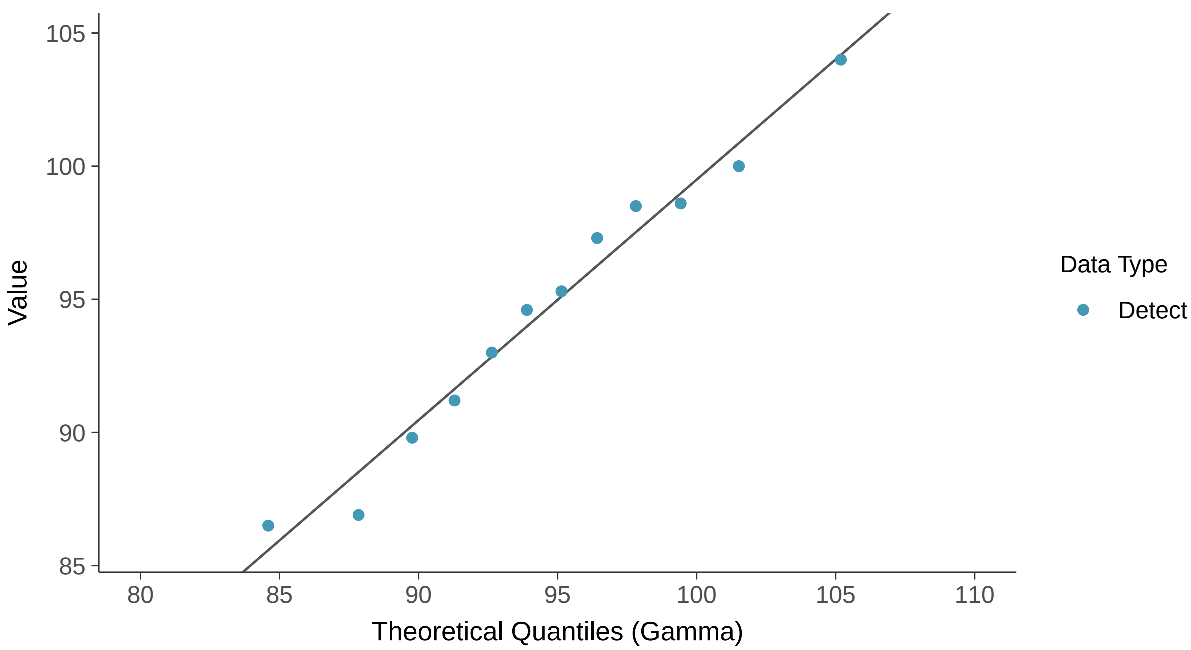
Lognormal Q-Q plot

Calcium, MW-8 (mg/L)



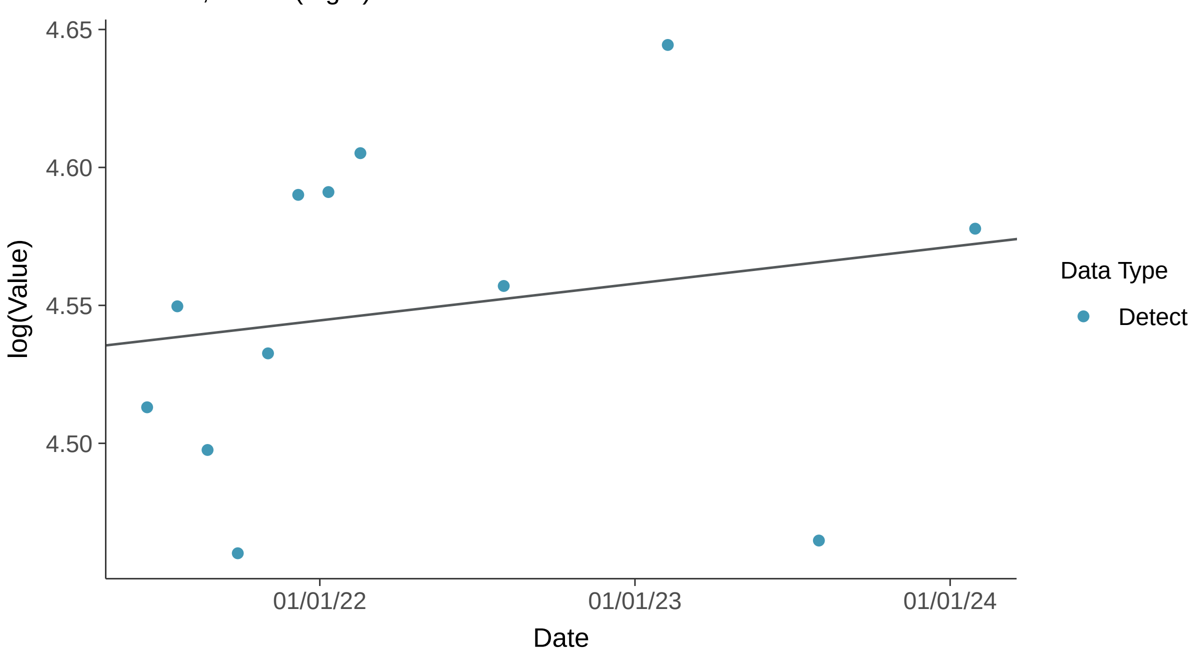
Gamma Q-Q plot

Calcium, MW-8 (mg/L)



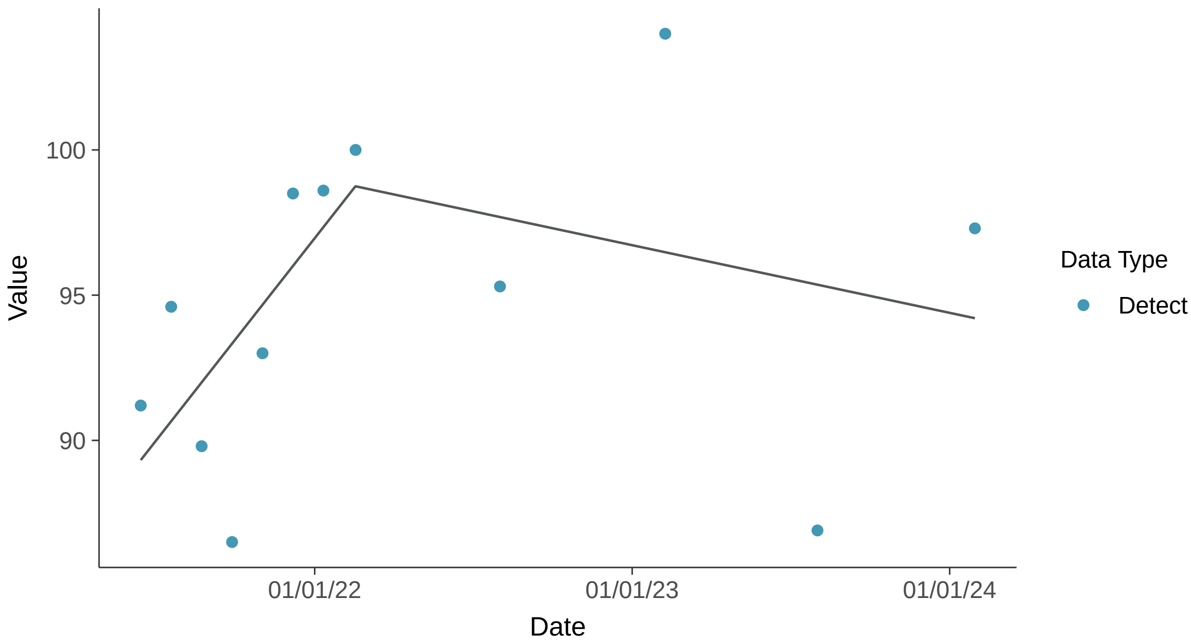
Trend Regression: Lognormal MLE

Calcium, MW-8 (mg/L)



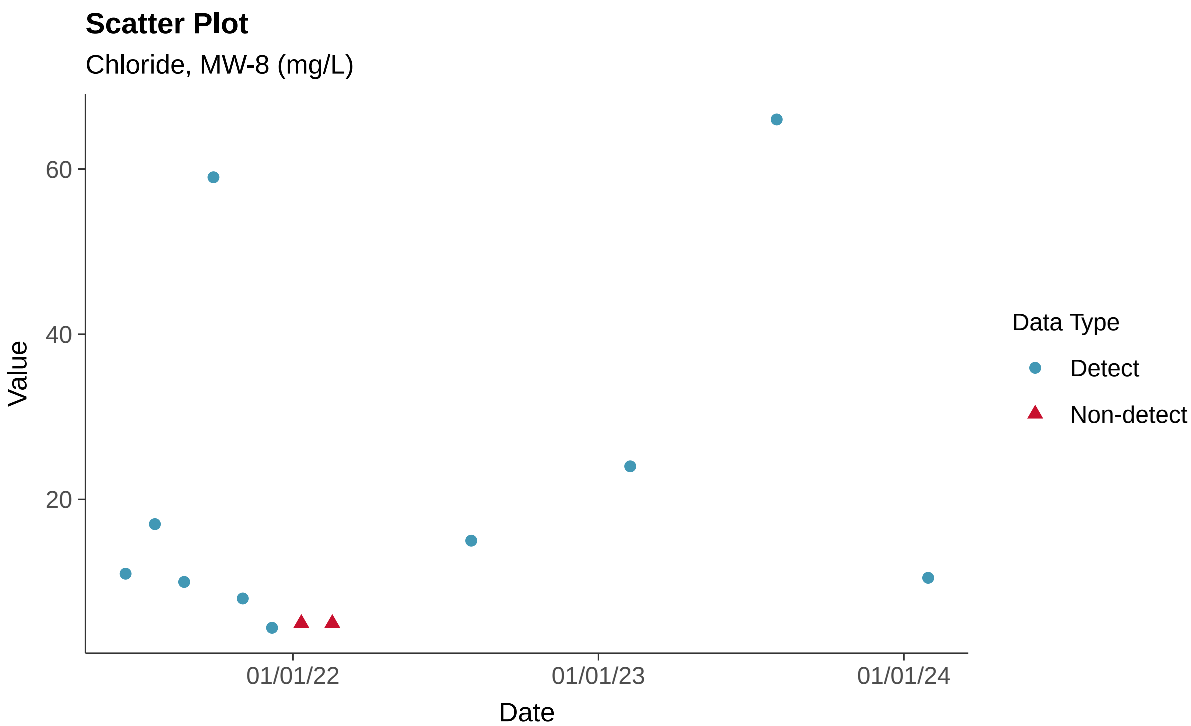
Trend Regression: Piecewise Linear-Linear

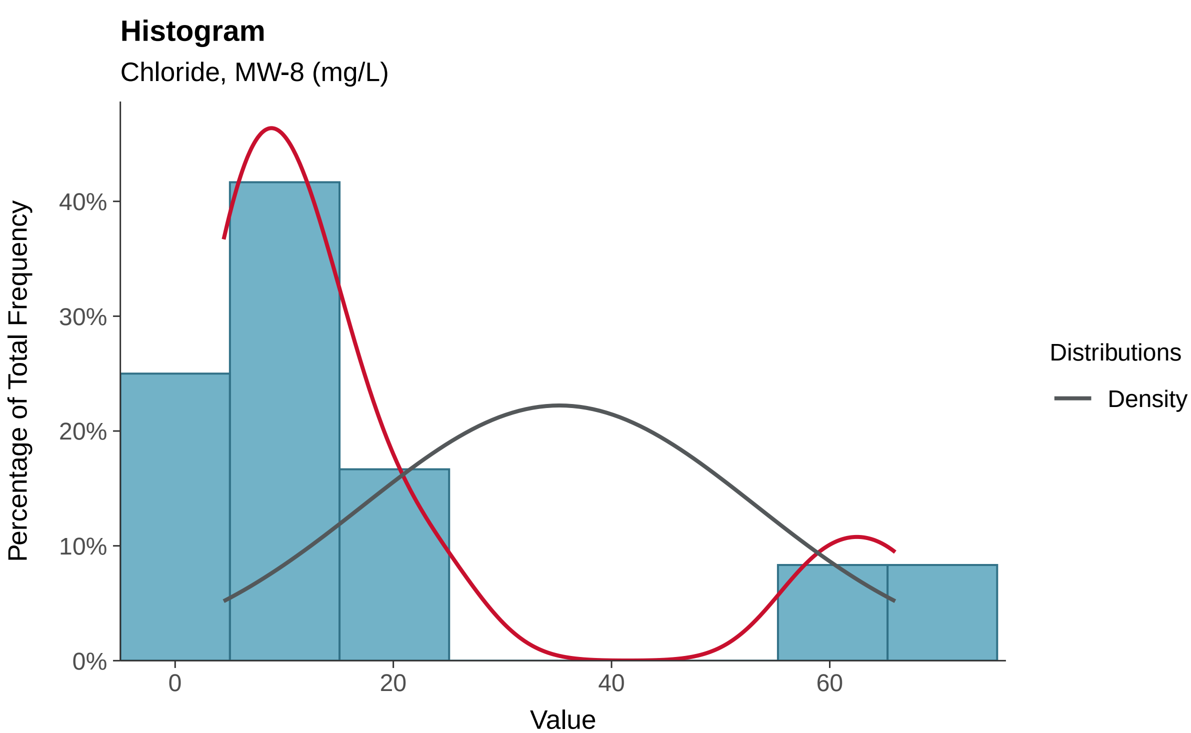
Calcium, MW-8 (mg/L)



Appendix III: Chloride, MW-8

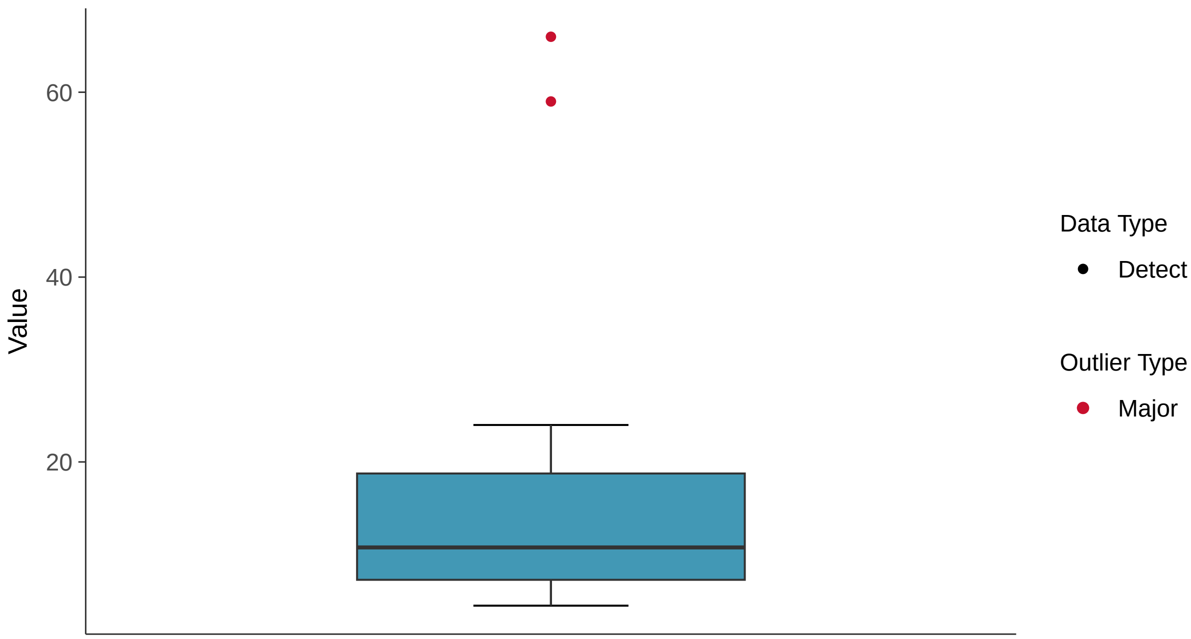
ID: 08_1_03





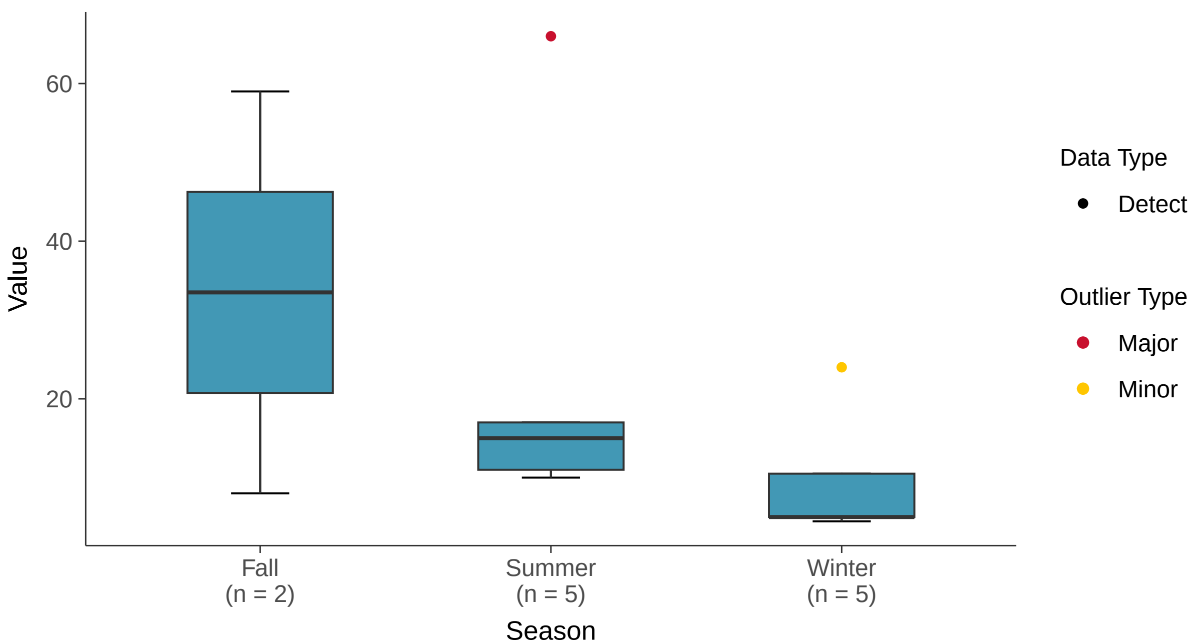
Boxplot

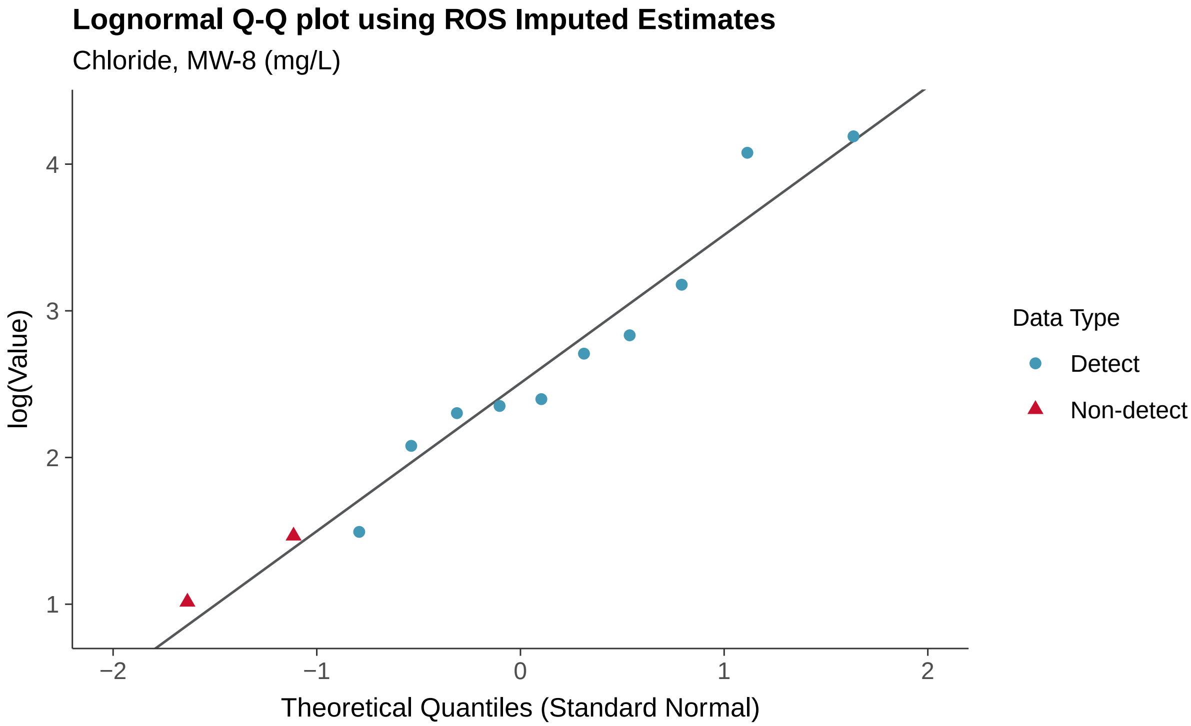
Chloride, MW-8 (mg/L)

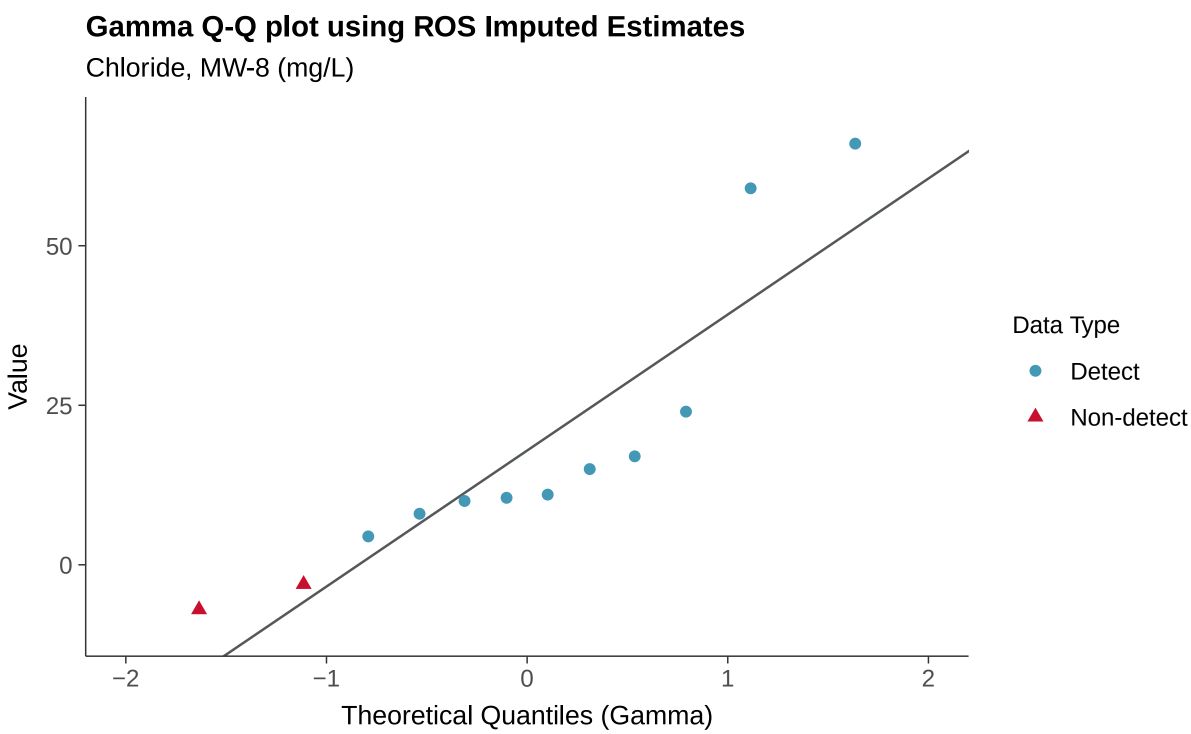


Boxplot by Season

Chloride, MW-8 (mg/L)

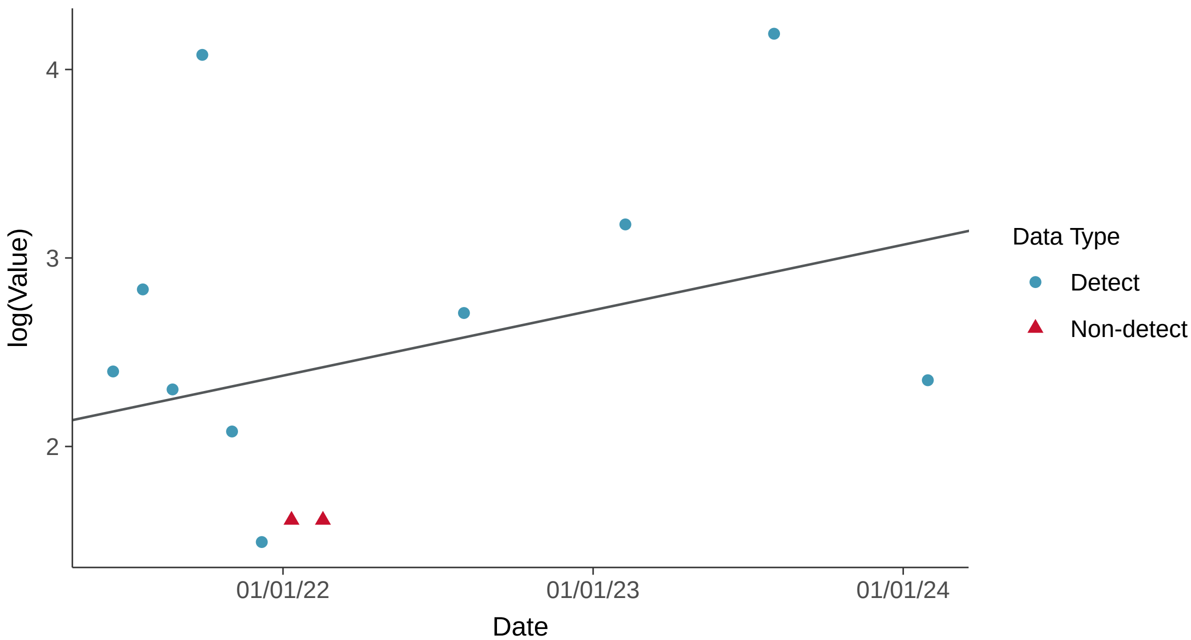



Lognormal Q-Q plot using ROS Imputed Estimates
Chloride, MW-8 (mg/L)
log(Value)
4
3
2
1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Chloride, MW-8 (mg/L)
Value
50
25
0
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

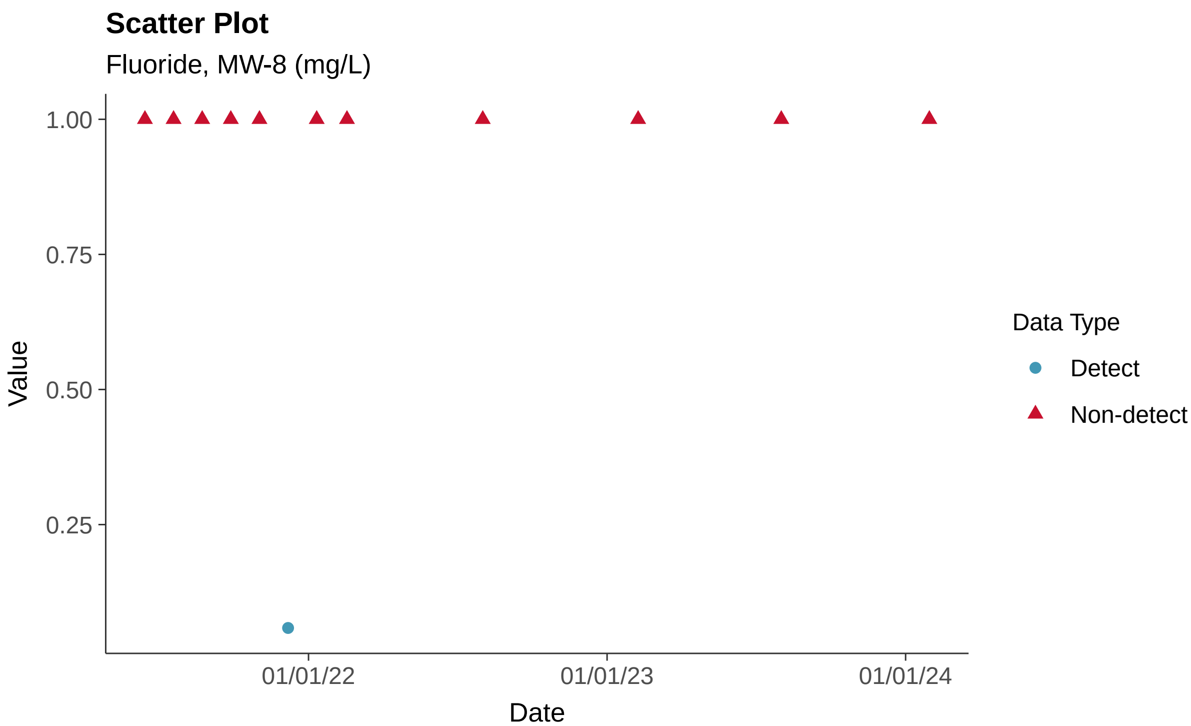
Trend Regression: Lognormal MLE

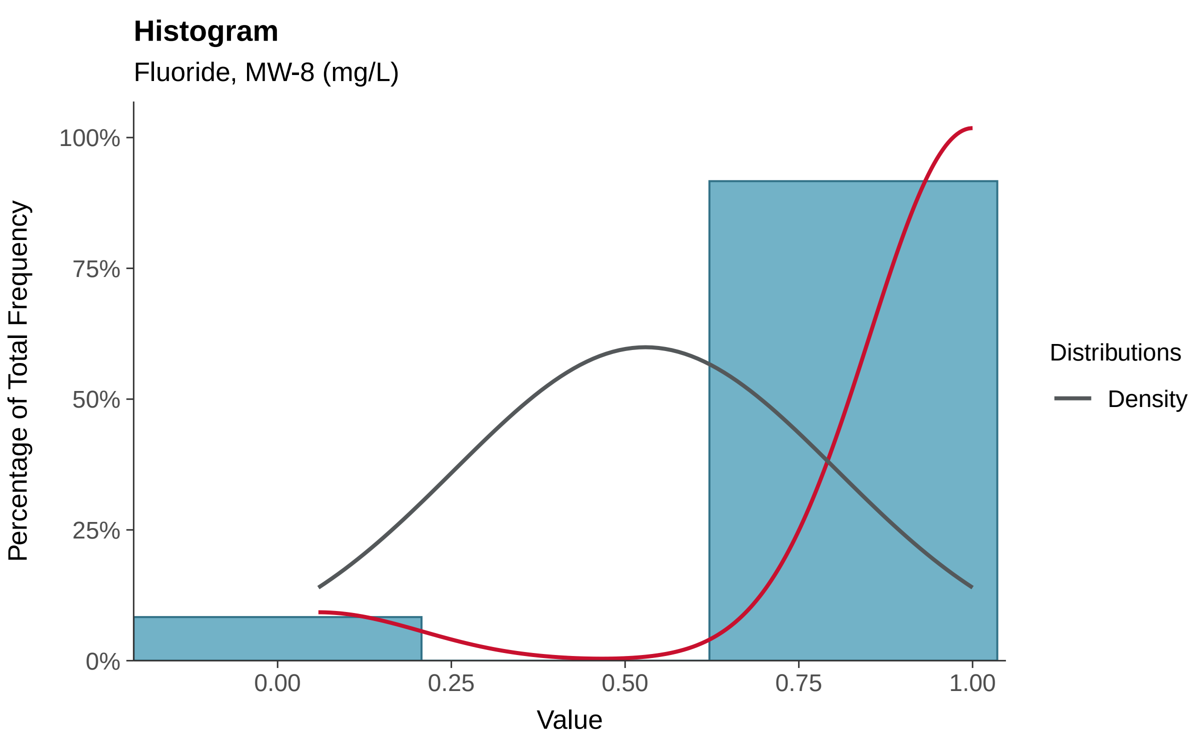
Chloride, MW-8 (mg/L)



Appendix III: Fluoride, MW-8

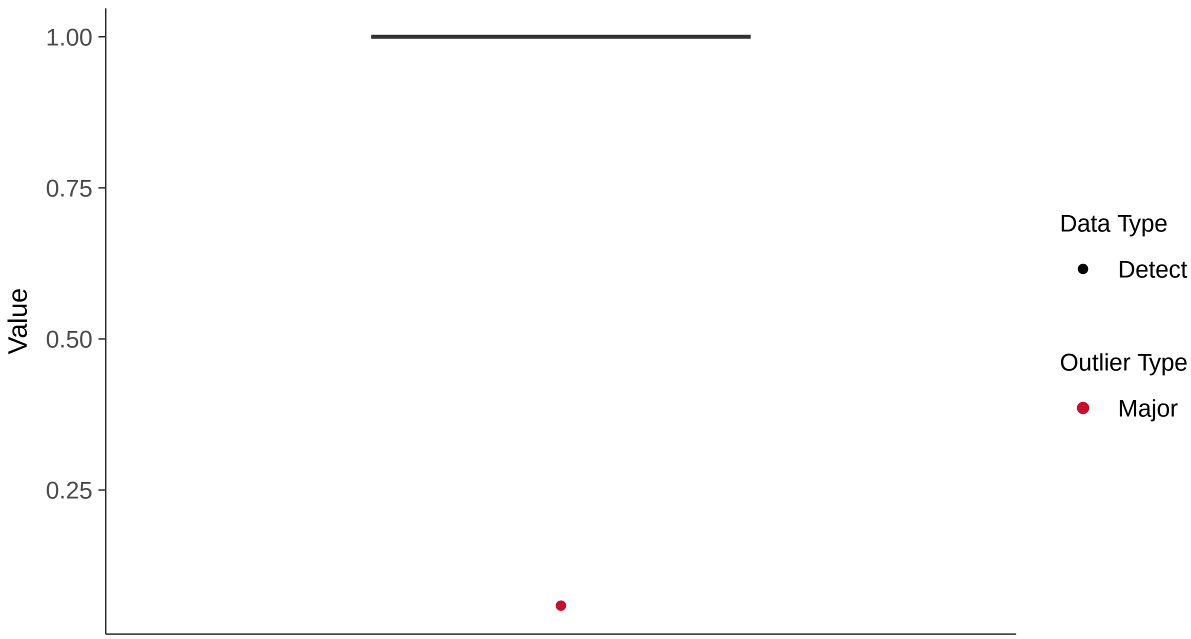
ID: 08_1_04





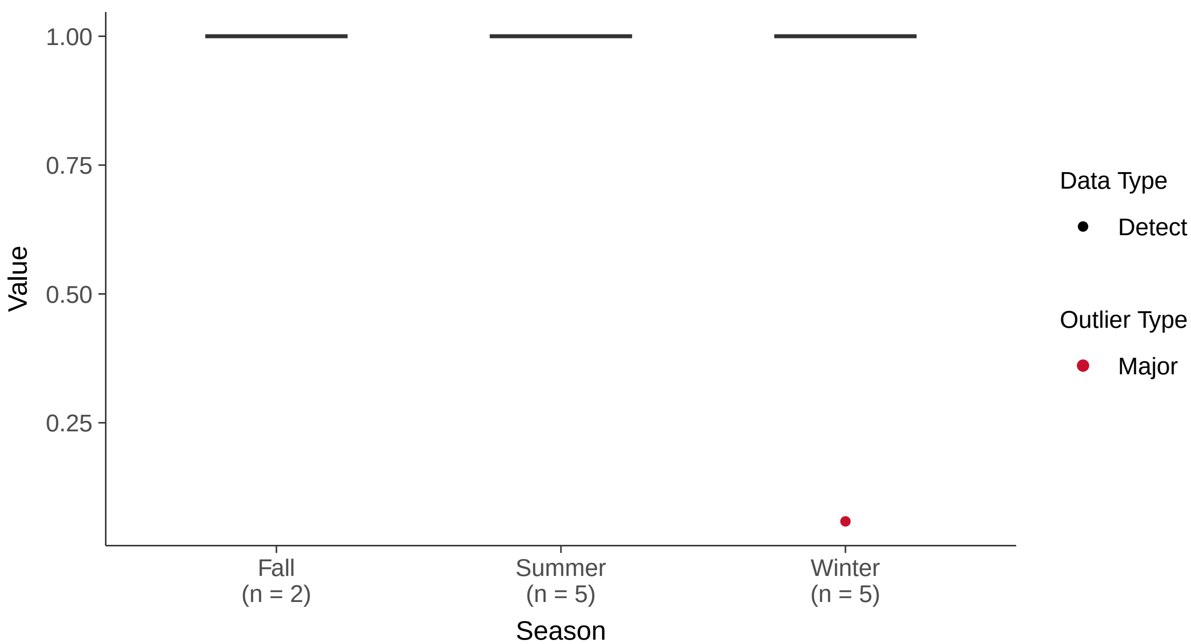
Boxplot

Fluoride, MW-8 (mg/L)



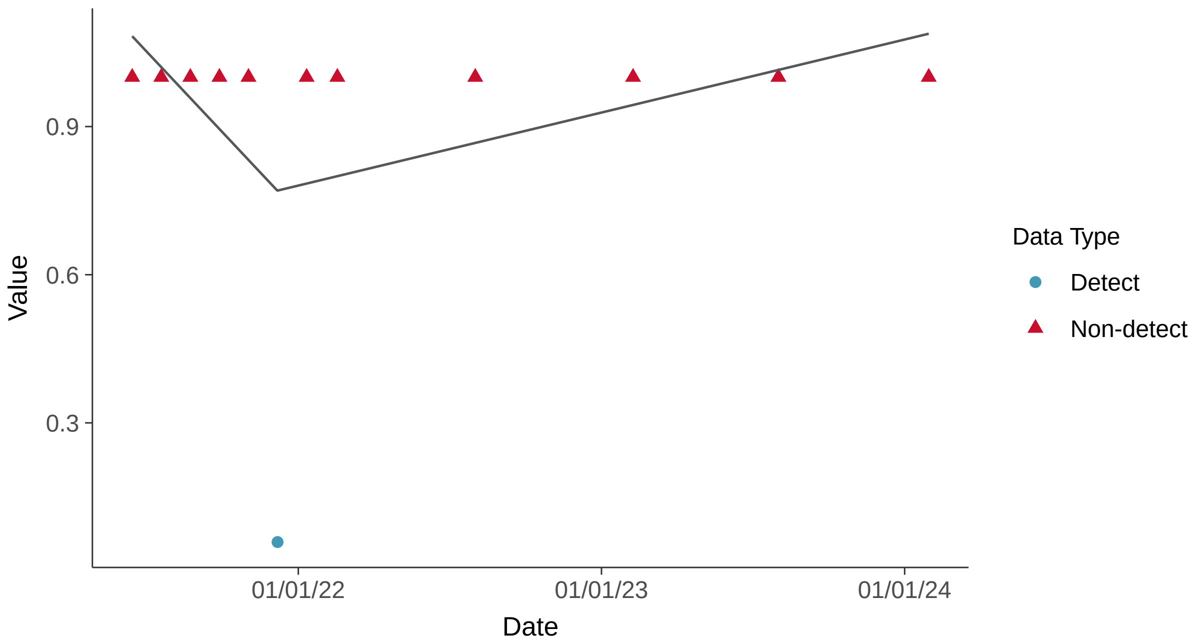
Boxplot by Season

Fluoride, MW-8 (mg/L)



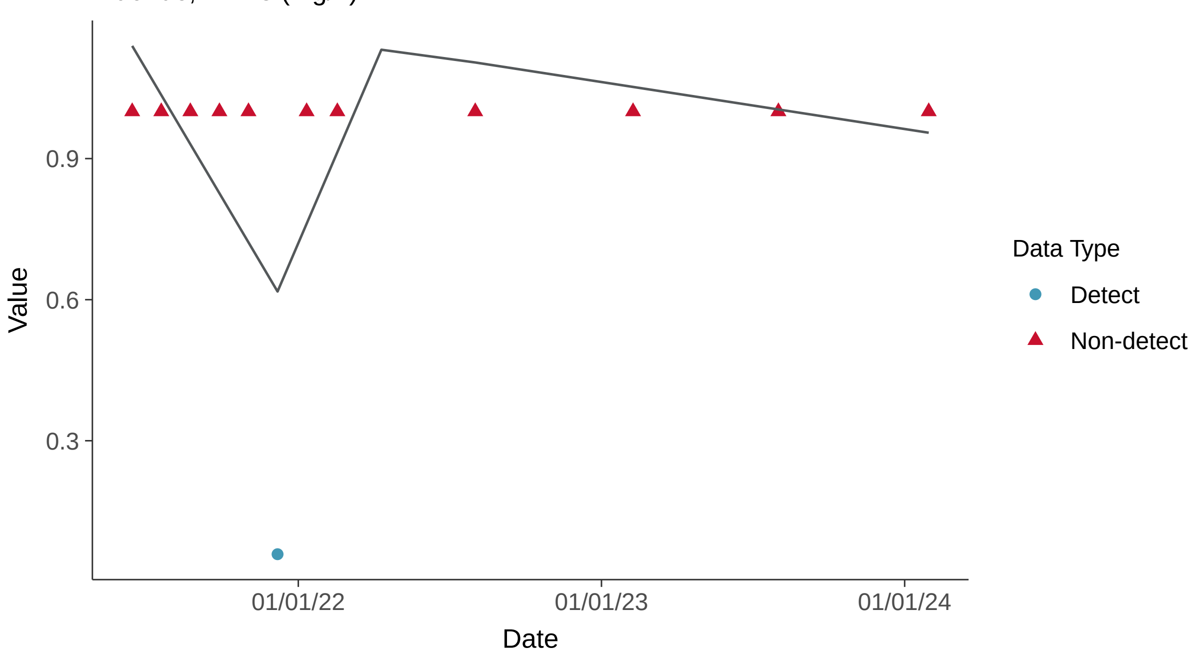
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-8 (mg/L)



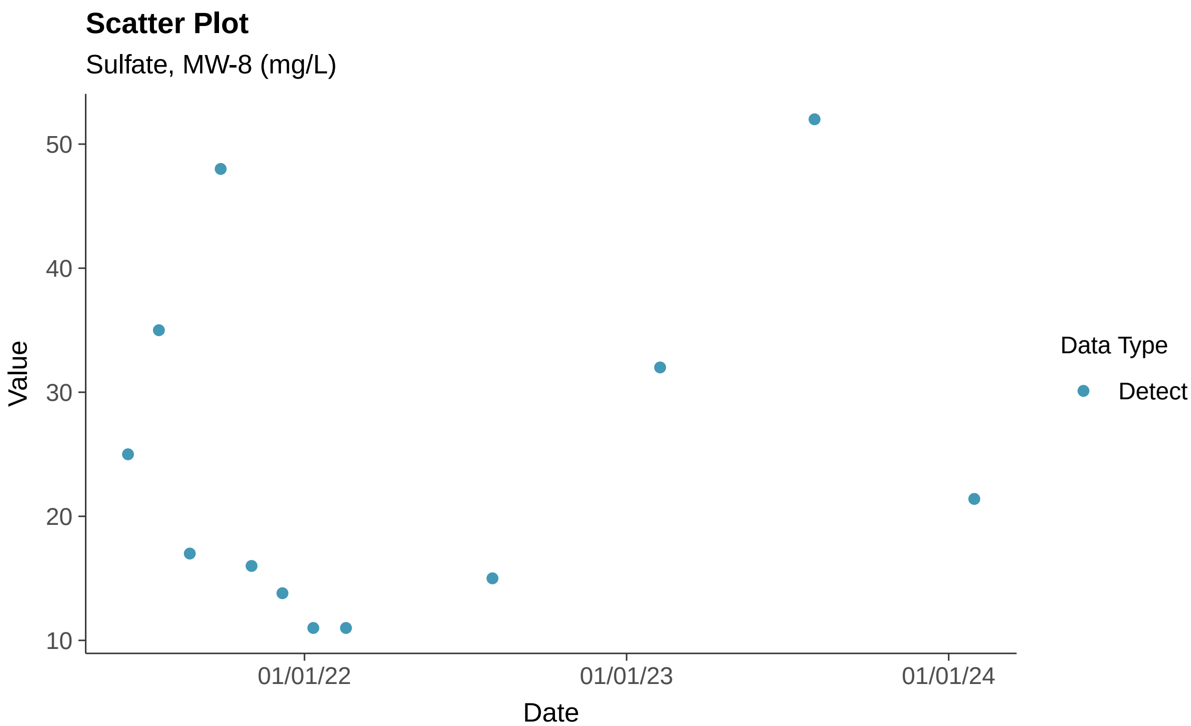
Trend Regression: Piecewise Linear-Linear-Linear

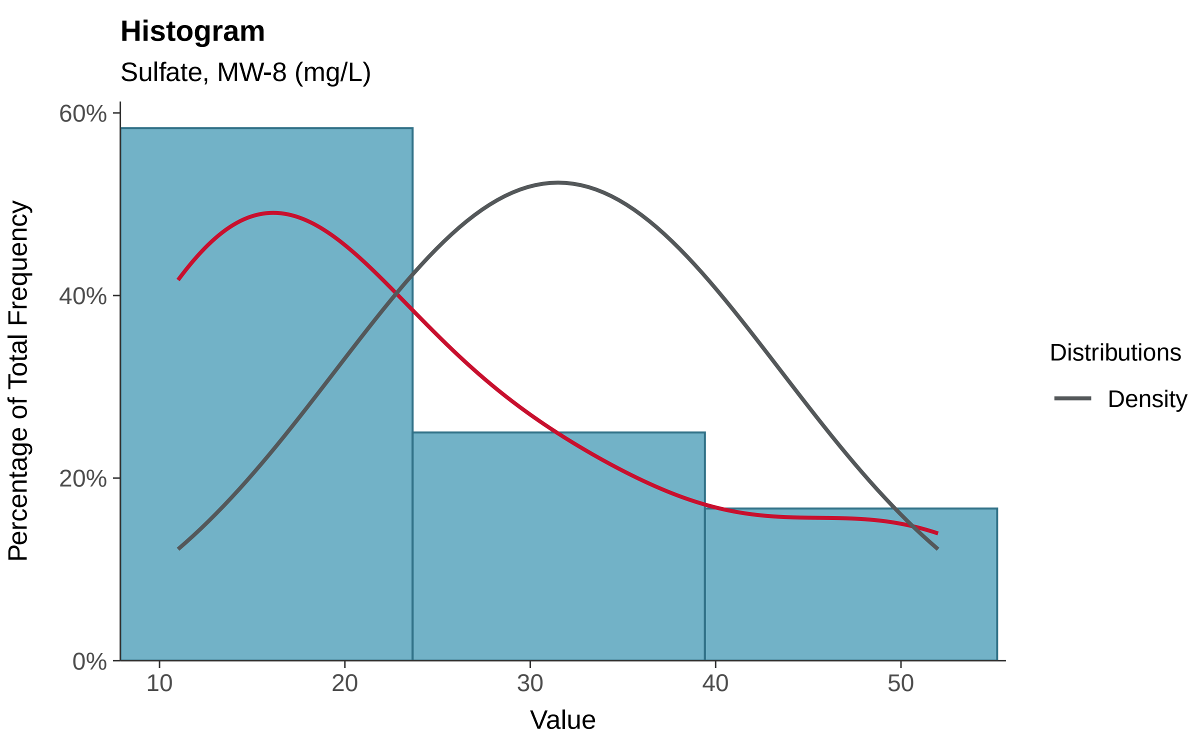
Fluoride, MW-8 (mg/L)



Appendix III: Sulfate, MW-8

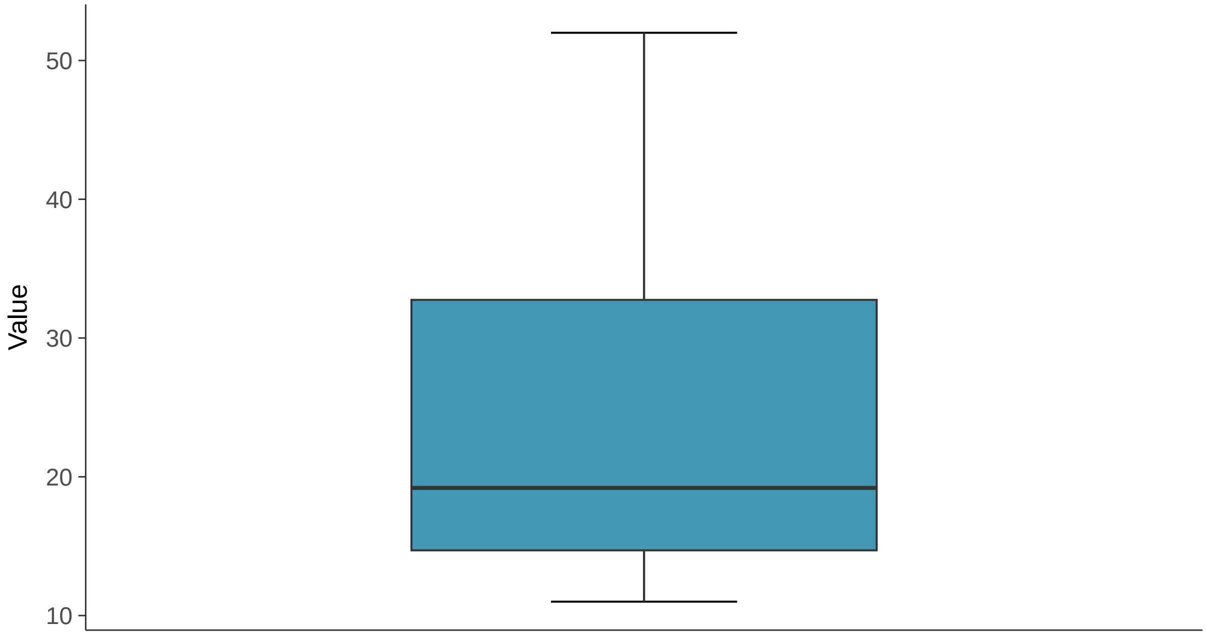
ID: 08_1_05





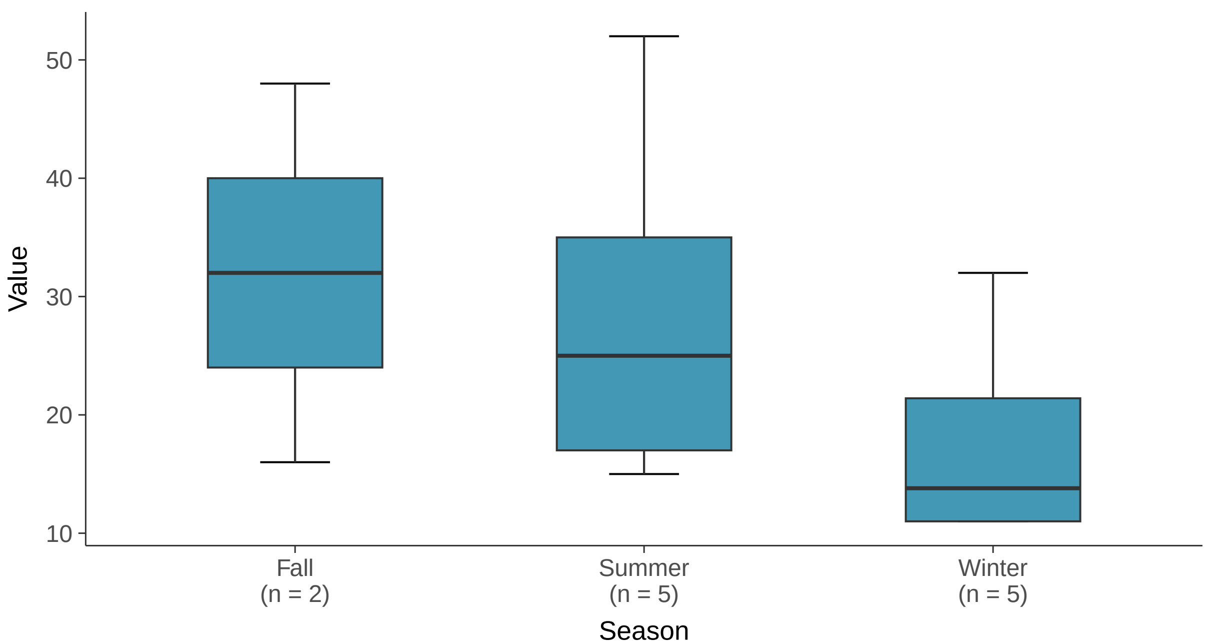
Boxplot

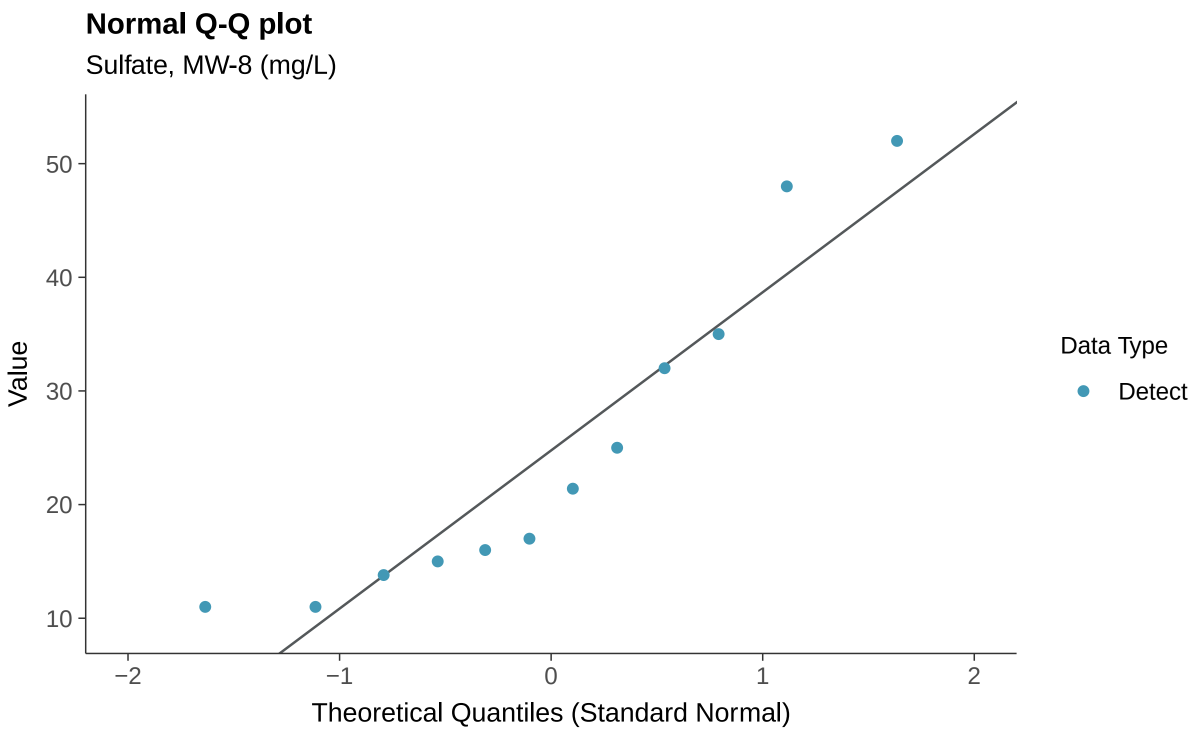
Sulfate, MW-8 (mg/L)

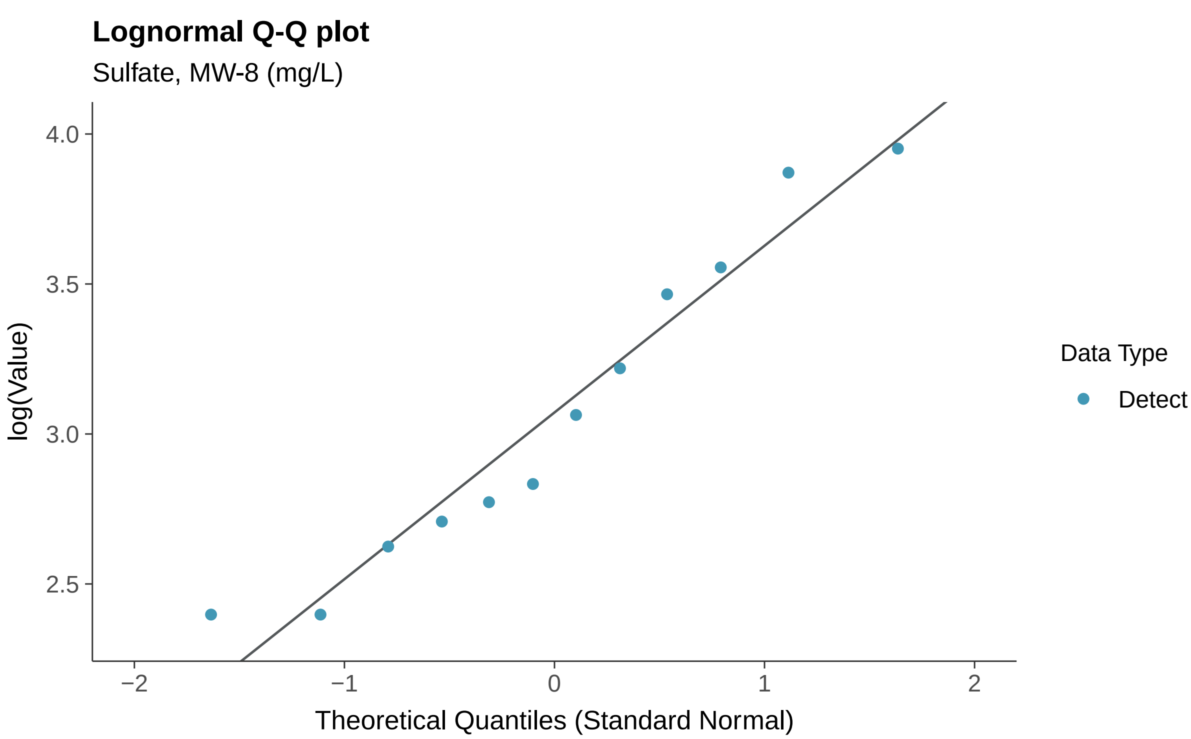


Boxplot by Season

Sulfate, MW-8 (mg/L)

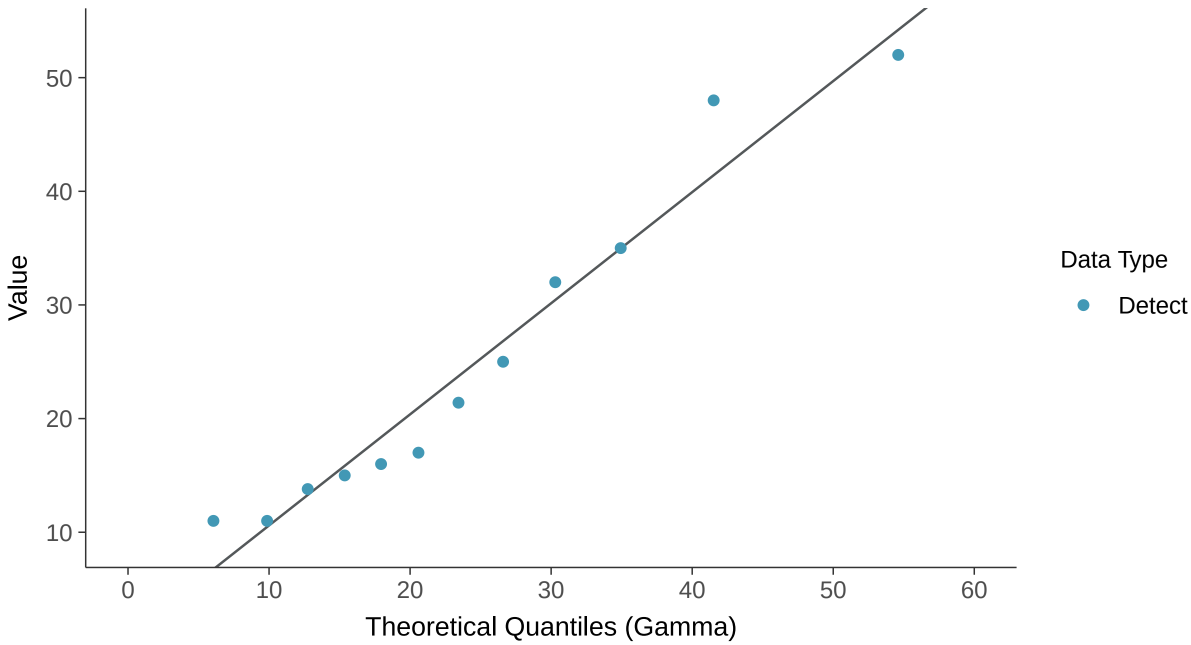



Normal Q-Q plot
Sulfate, MW-8 (mg/L)
Value
50
40
30
20
10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Sulfate, MW-8 (mg/L)
log(Value)
4.0
3.5
3.0
2.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

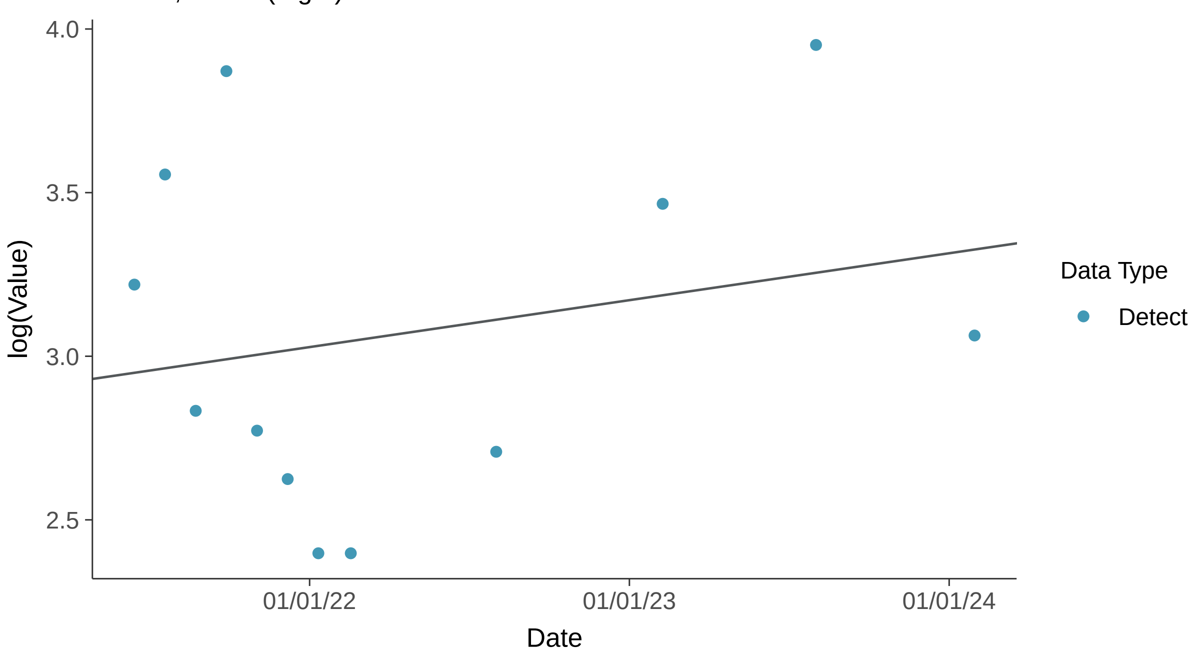
Gamma Q-Q plot

Sulfate, MW-8 (mg/L)



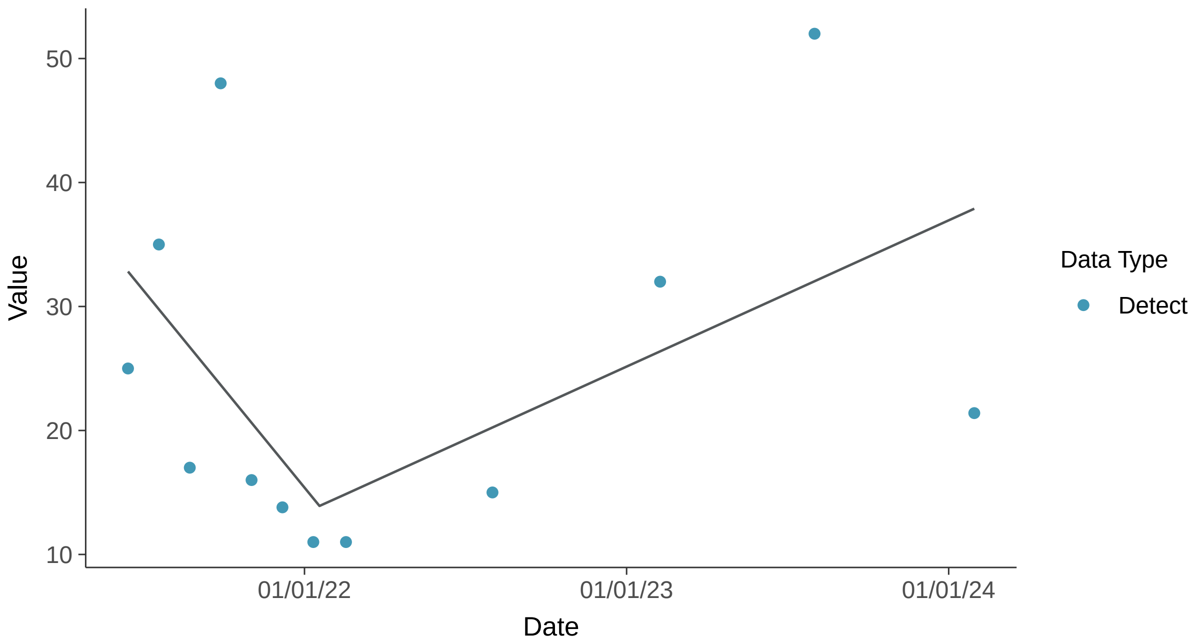
Trend Regression: Lognormal MLE

Sulfate, MW-8 (mg/L)



Trend Regression: Piecewise Linear-Linear

Sulfate, MW-8 (mg/L)

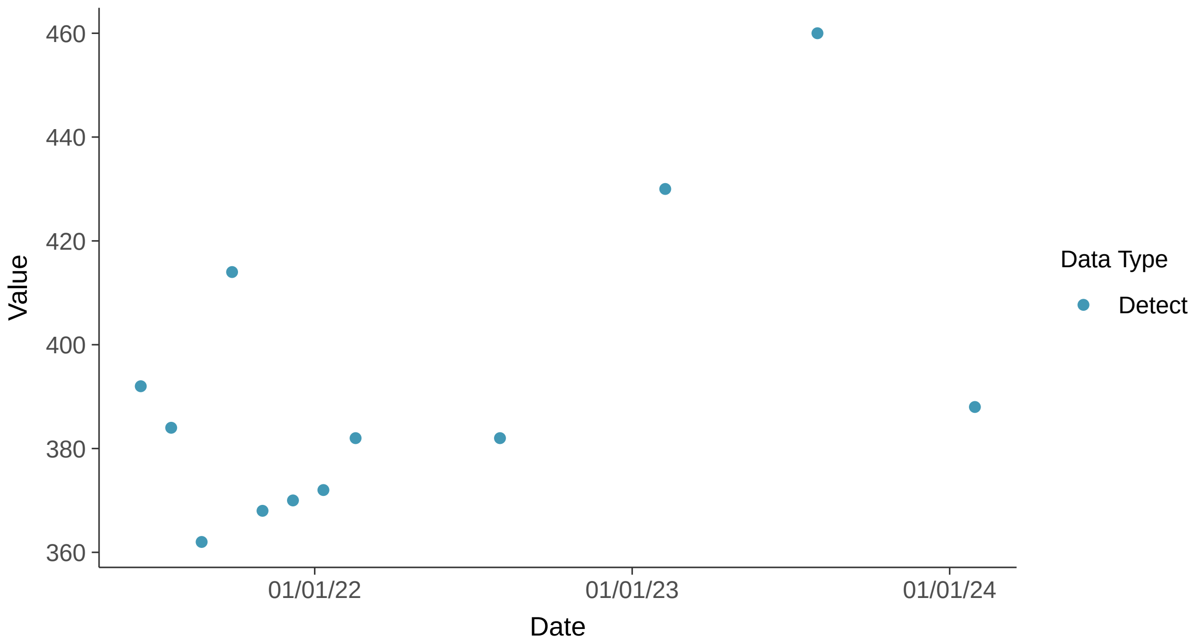


Appendix III: Total Dissolved Solids, MW-8

ID: 08_1_06

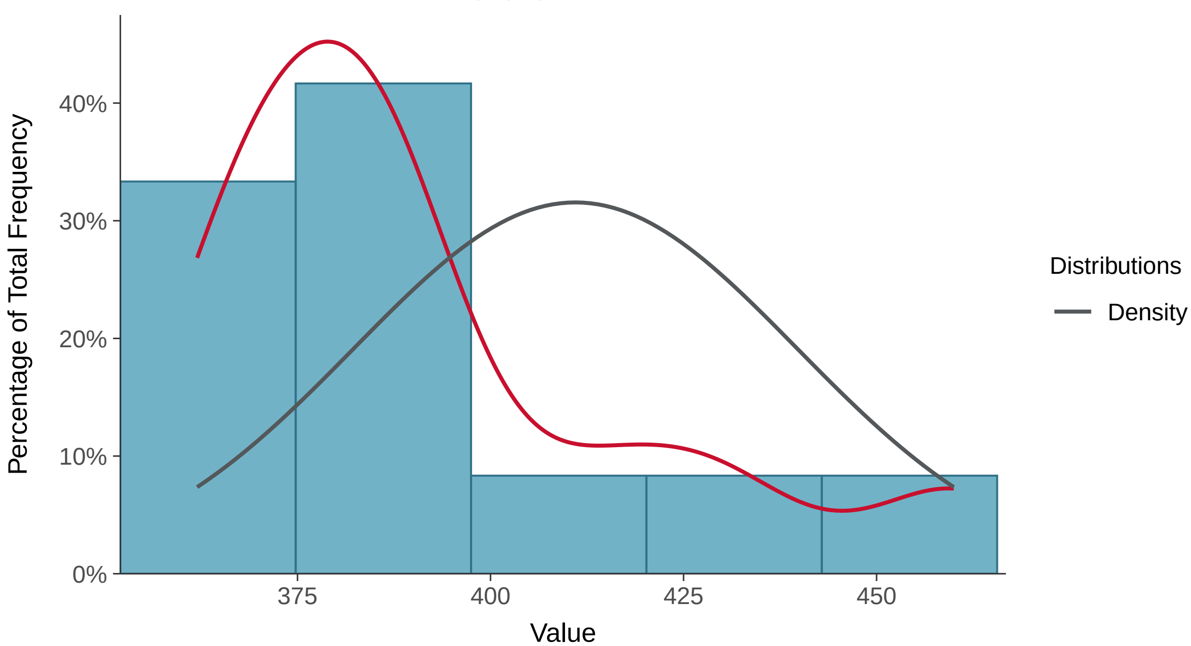
Scatter Plot

Total Dissolved Solids, MW-8 (mg/L)



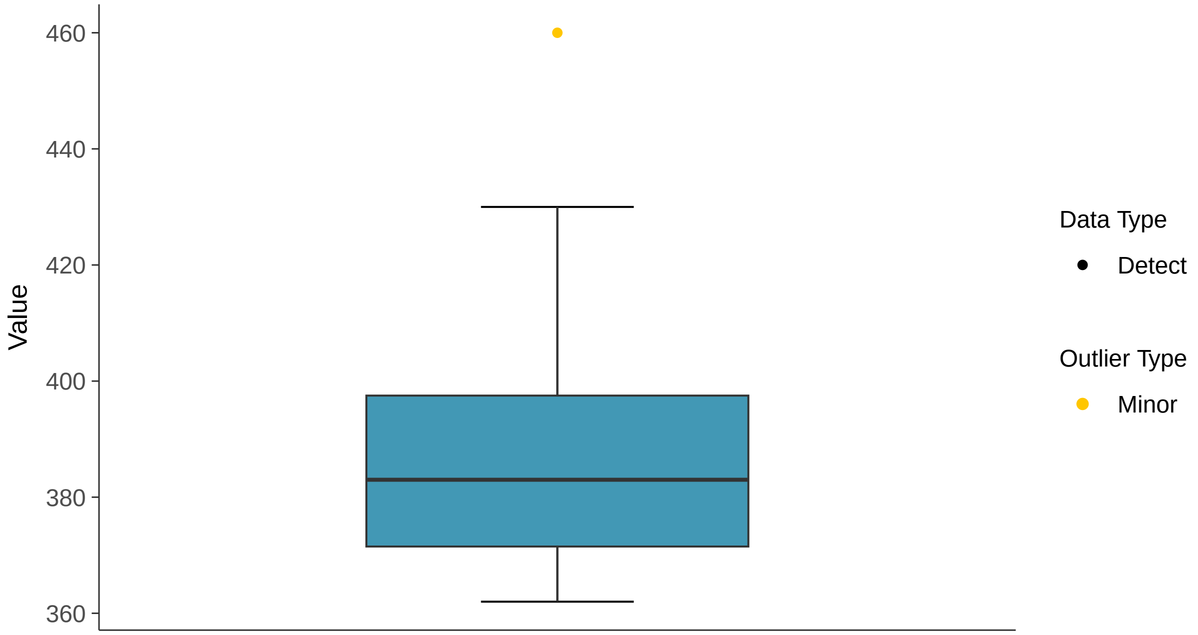
Histogram

Total Dissolved Solids, MW-8 (mg/L)



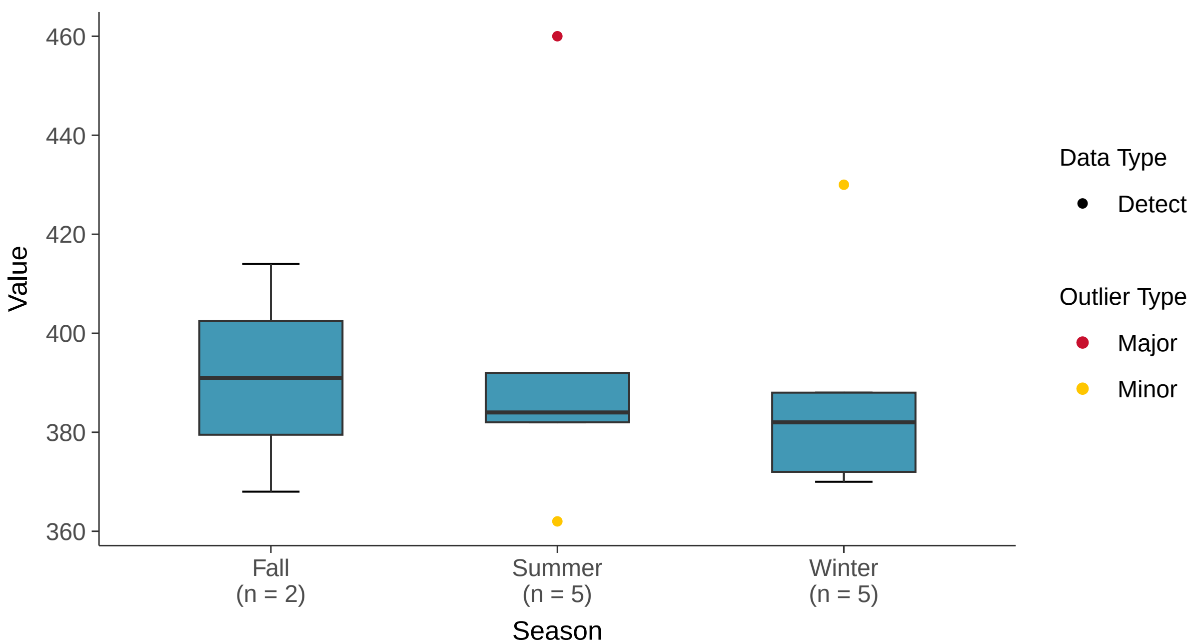
Boxplot

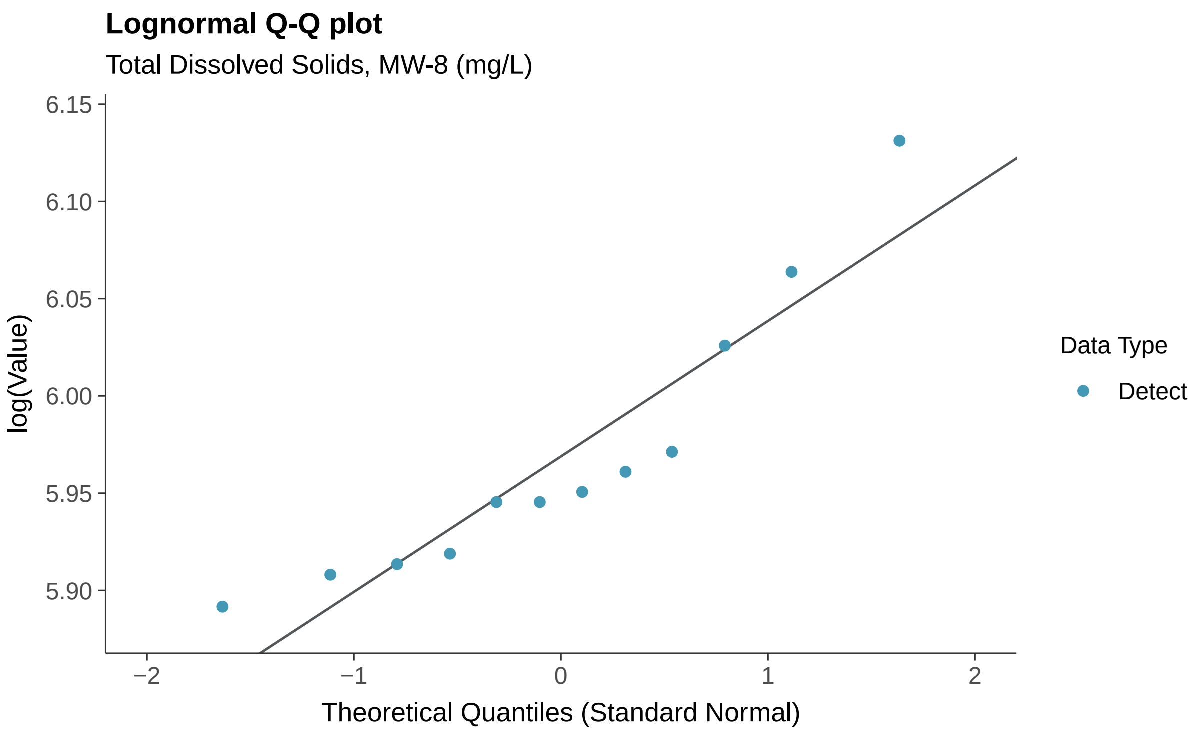
Total Dissolved Solids, MW-8 (mg/L)

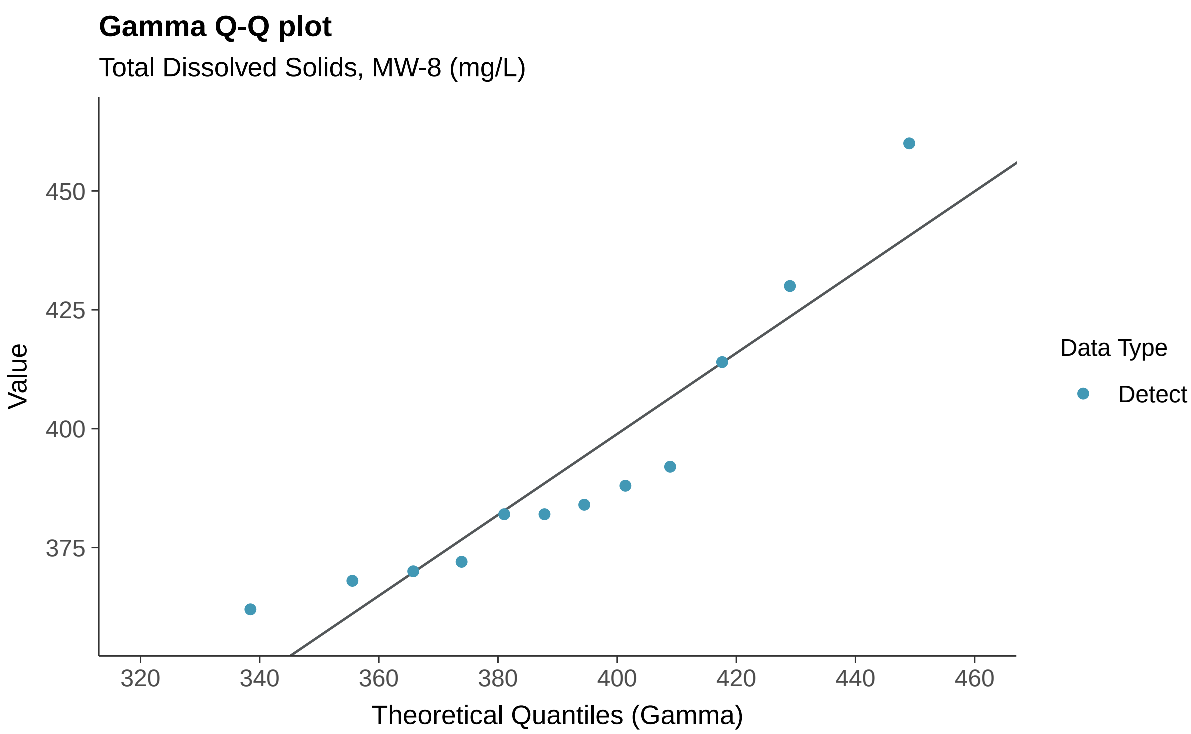


Boxplot by Season

Total Dissolved Solids, MW-8 (mg/L)

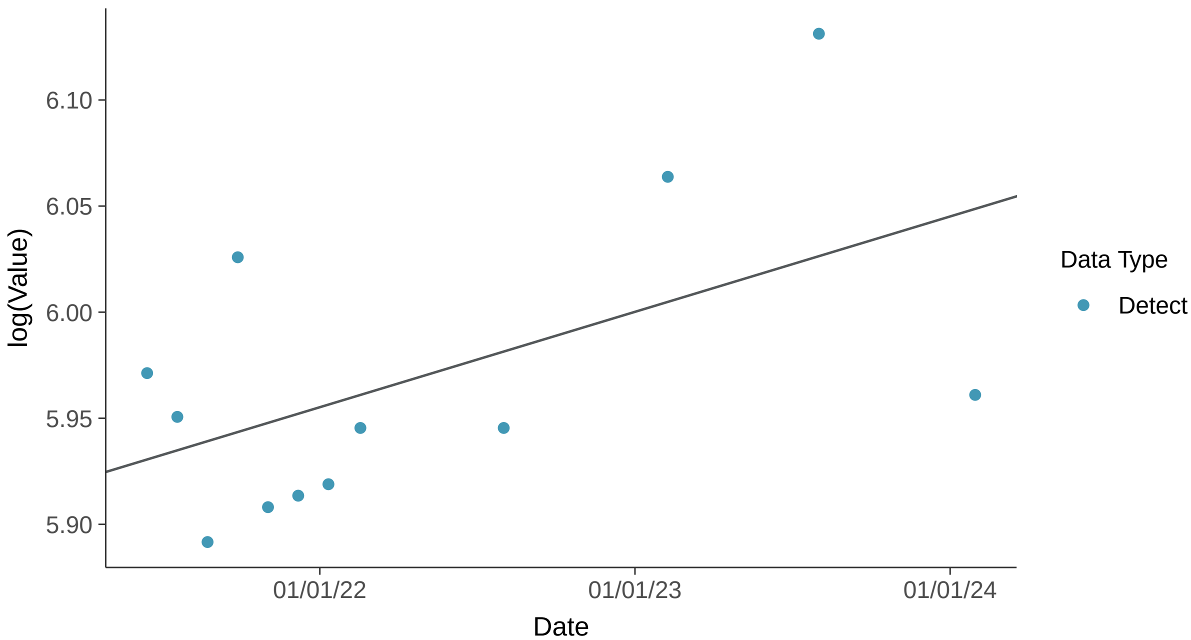



Lognormal Q-Q plot
Total Dissolved Solids, MW-8 (mg/L)
log(Value)
6.15
6.10
6.05
6.00
5.95
5.90
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Dissolved Solids, MW-8 (mg/L)
Value
450
425
400
375
320
340
360
380
400
420
440
460
Theoretical Quantiles (Gamma)
Data Type
Detect

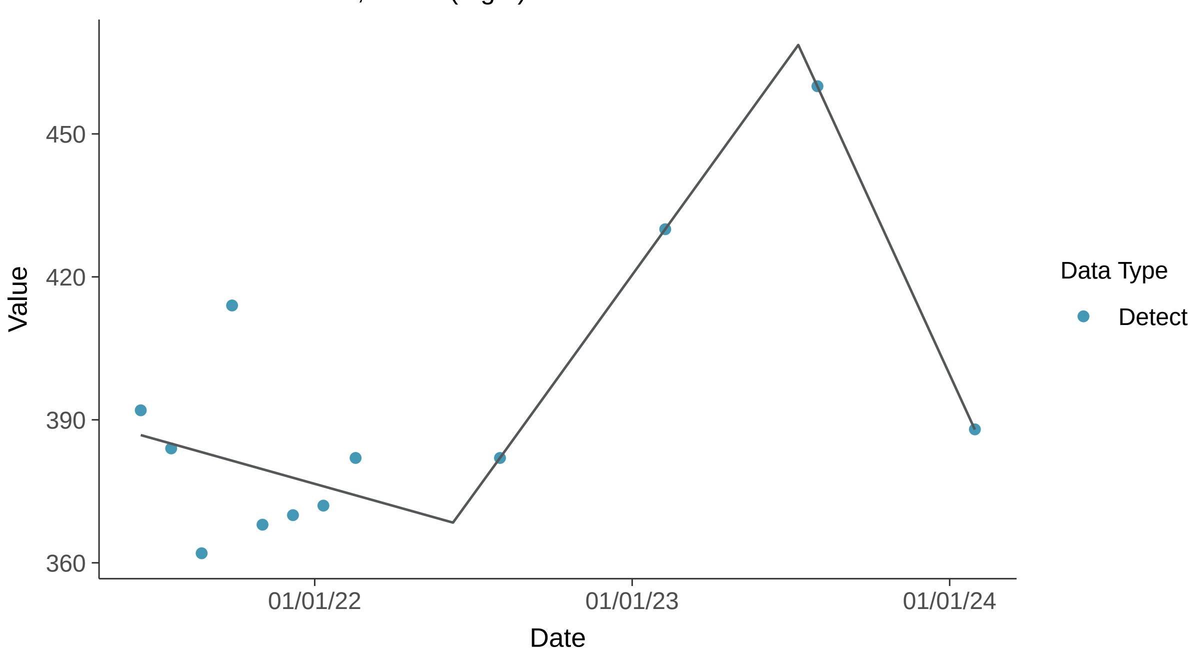
Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-8 (mg/L)



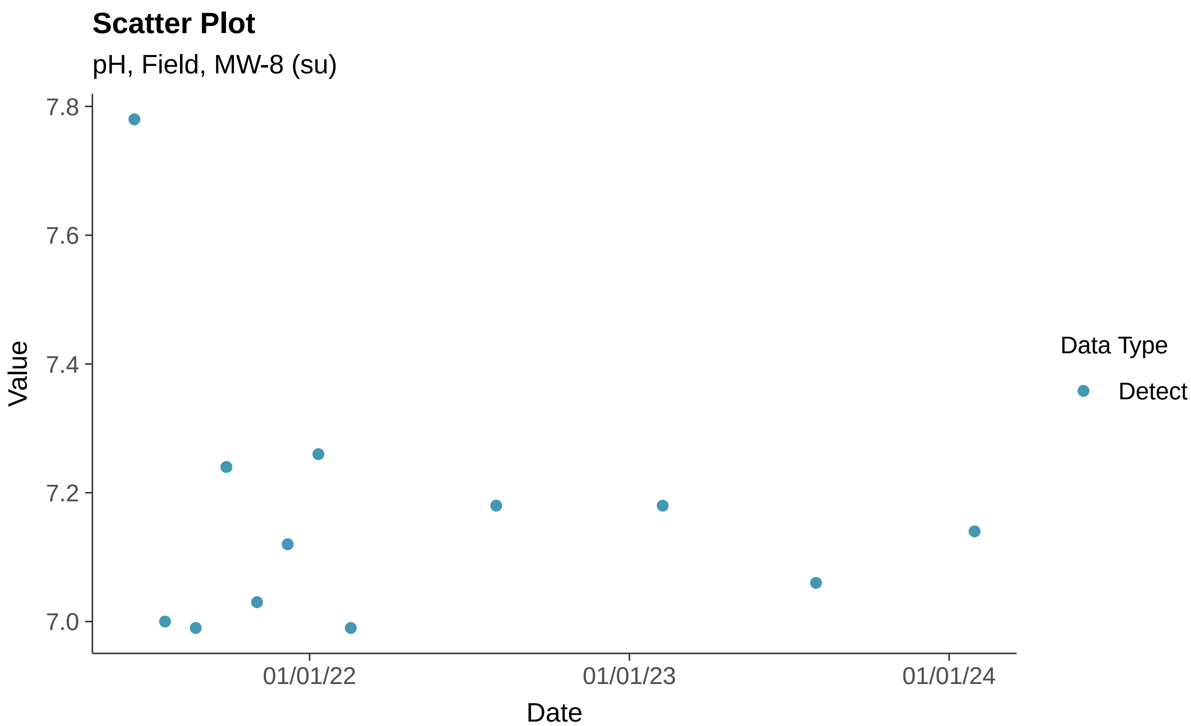
Trend Regression: Piecewise Linear-Linear-Linear

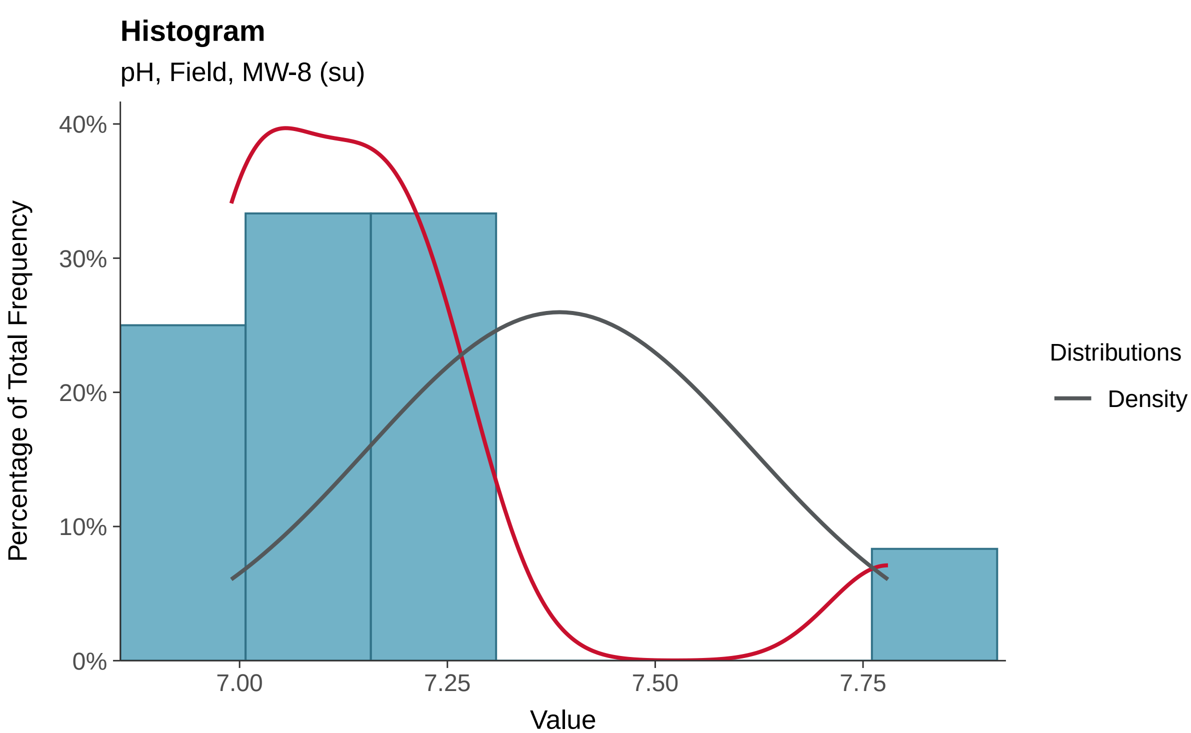
Total Dissolved Solids, MW-8 (mg/L)

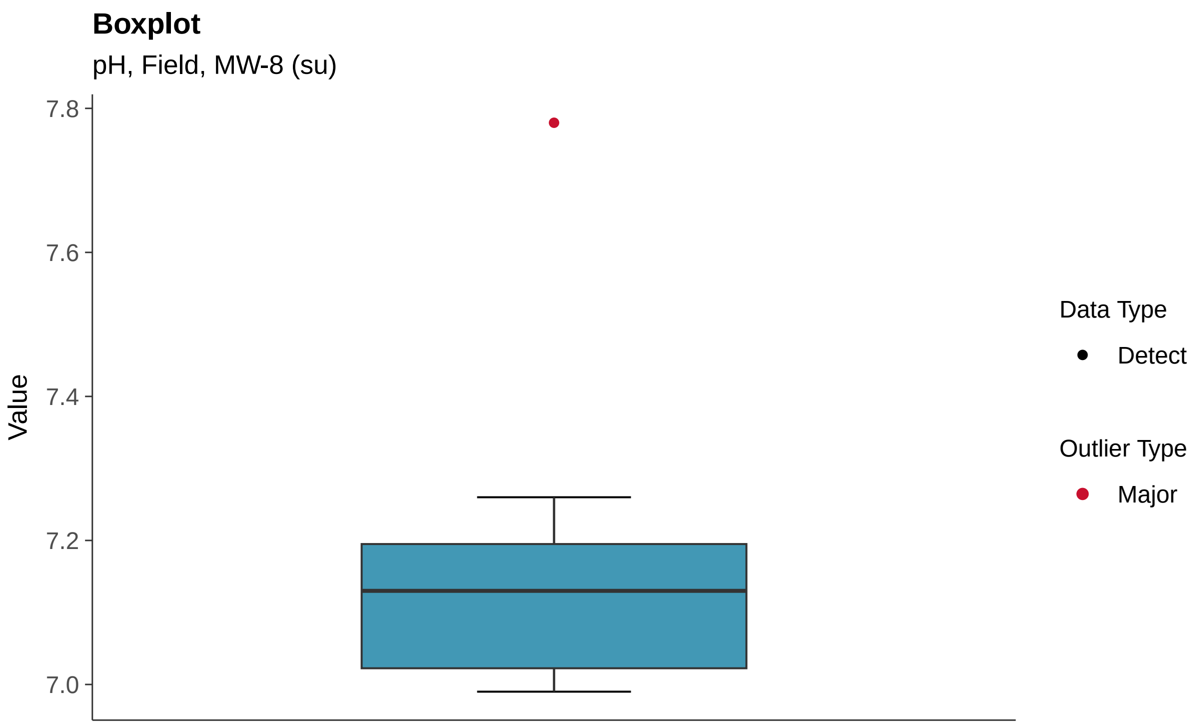


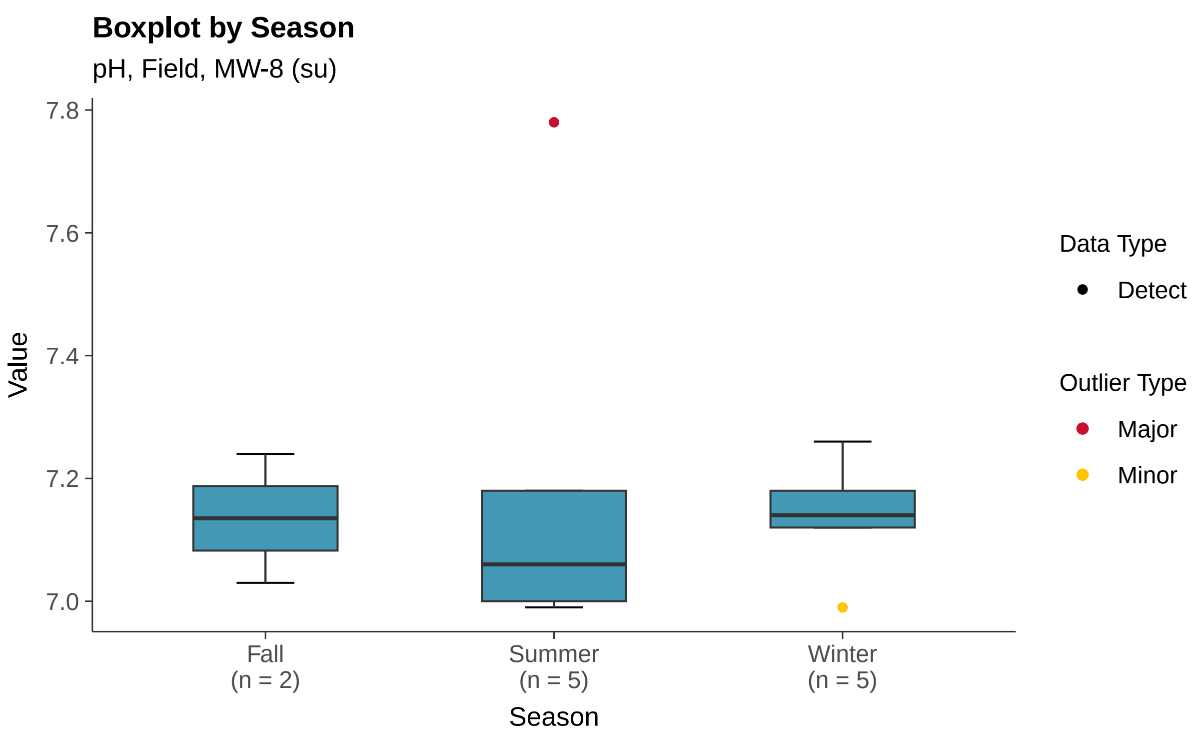
Appendix III: pH, Field, MW-8

ID: 08_1_07



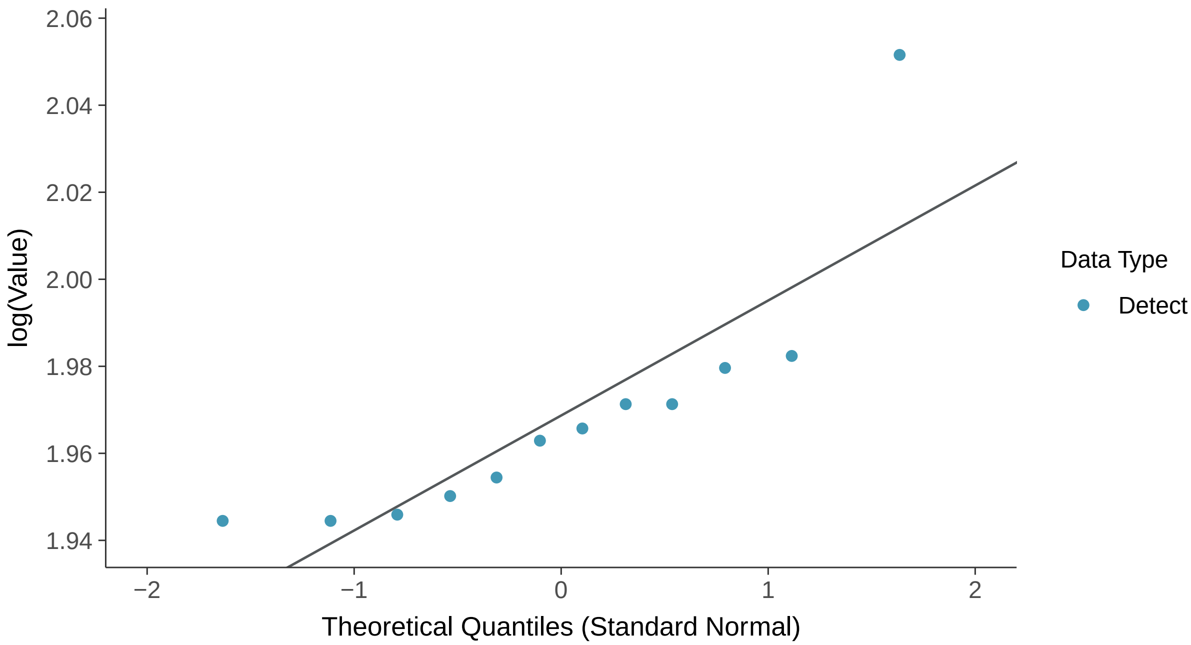



Boxplot
pH, Field, MW-8 (su)
Value
7.8
7.6
7.4
7.2
7.0
Data Type
Detect
Outlier Type
Major


Boxplot by Season
pH, Field, MW-8 (su)
Value
7.8
7.6
7.4
7.2
7.0
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major
Minor

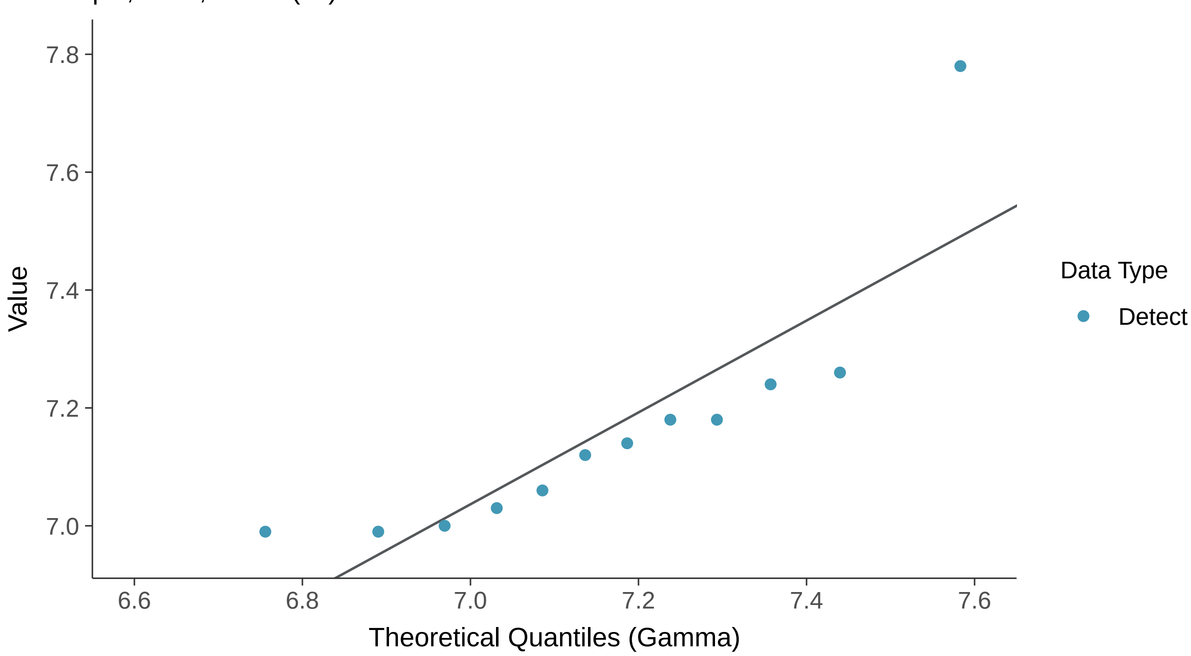
Lognormal Q-Q plot

pH, Field, MW-8 (su)



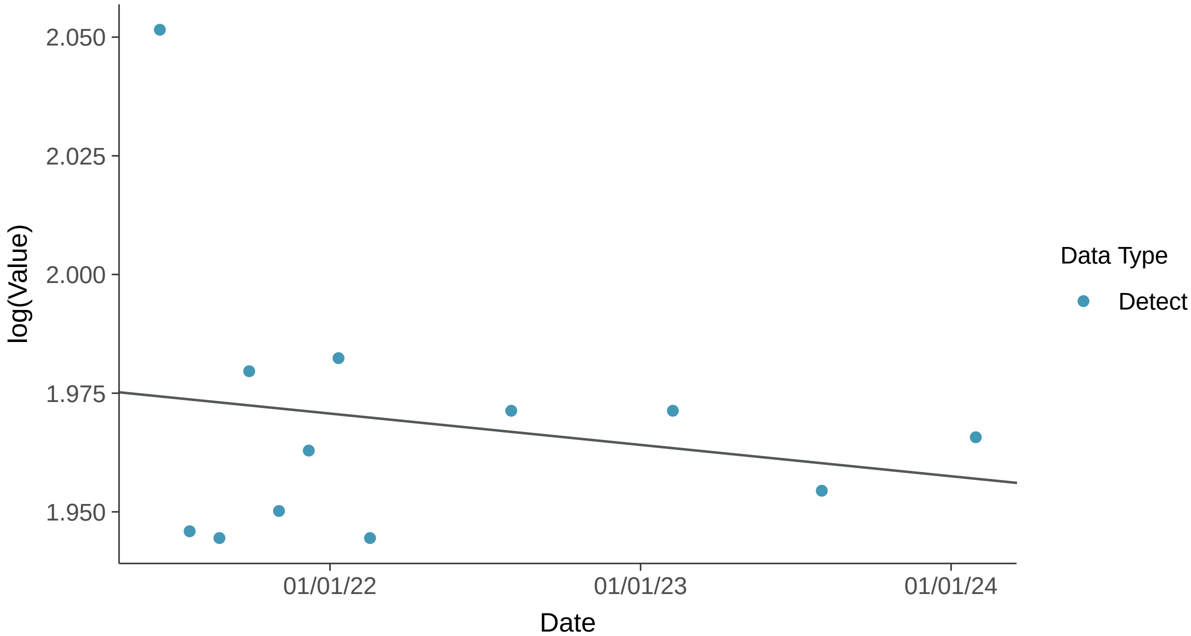
Gamma Q-Q plot

pH, Field, MW-8 (su)



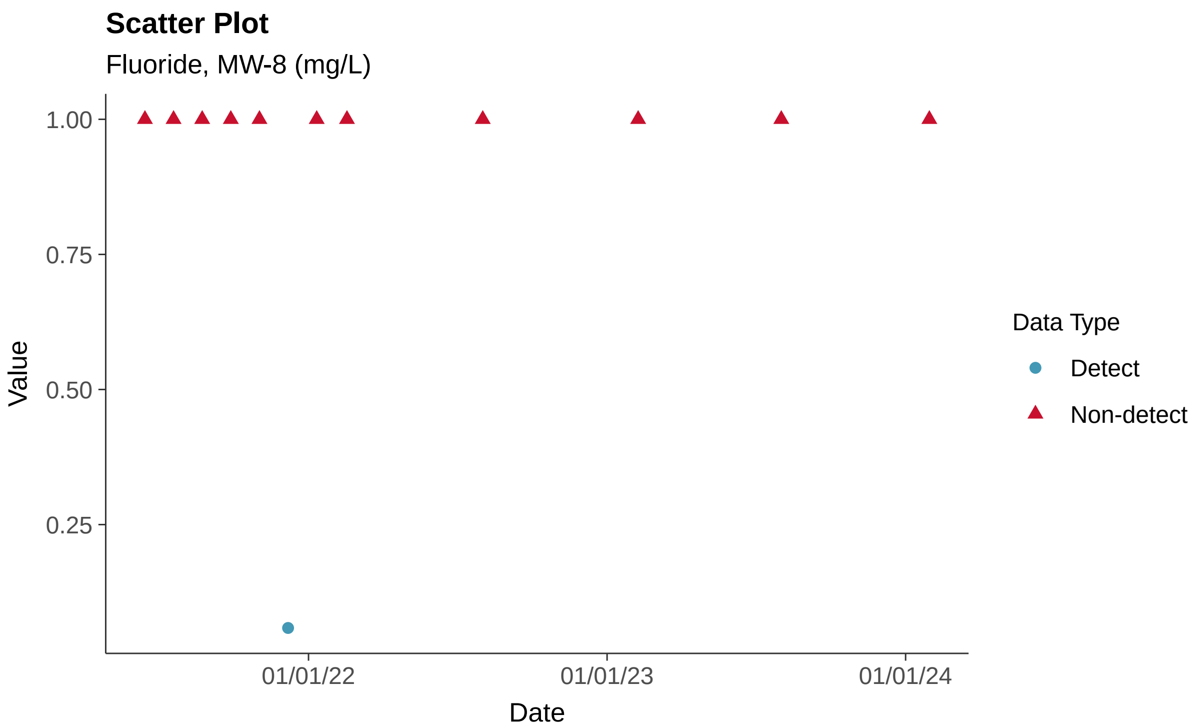
Trend Regression: Lognormal MLE

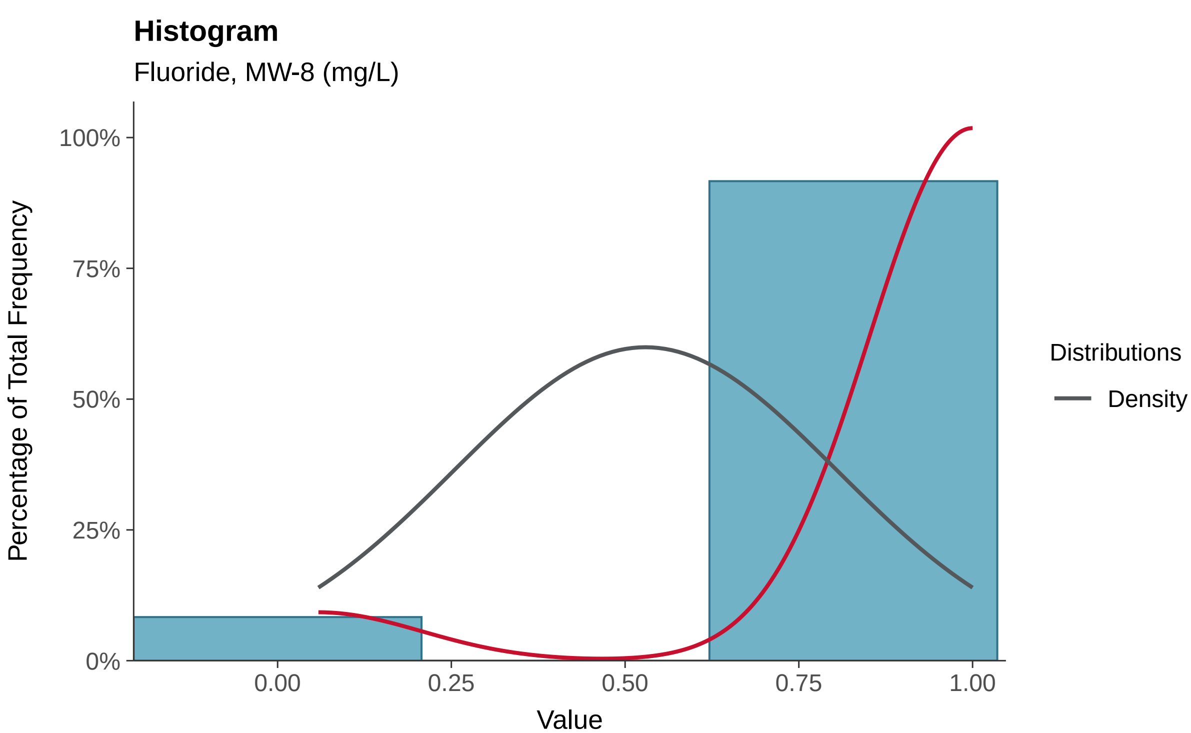
pH, Field, MW-8 (su)



Appendix IV: Fluoride, MW-8

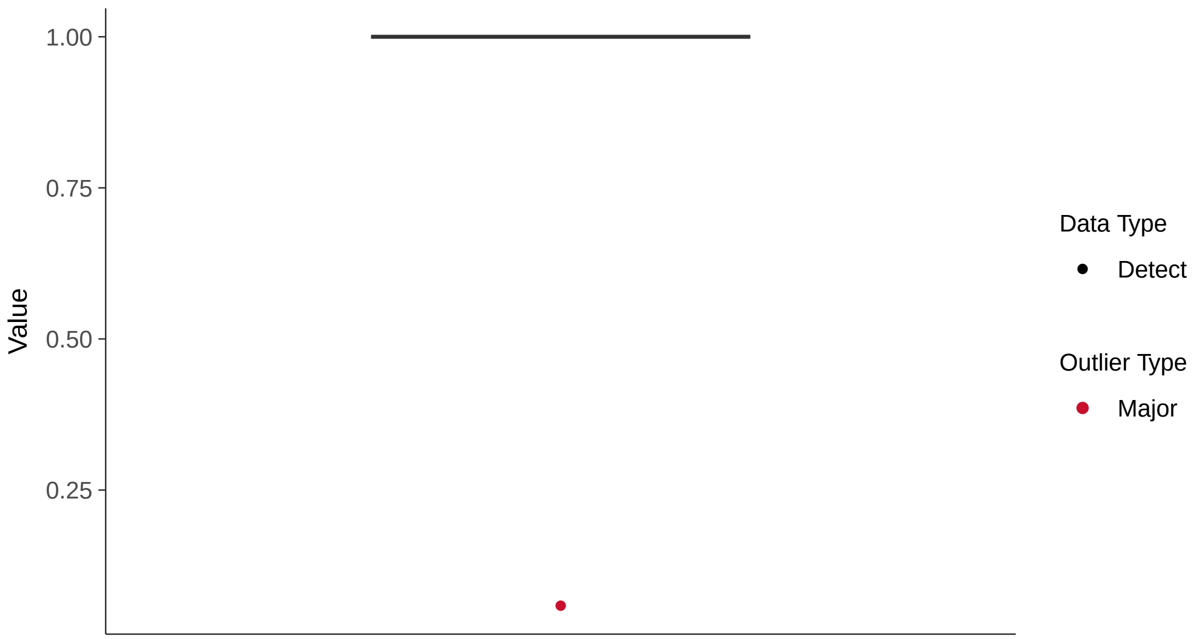
ID: 08_2_04





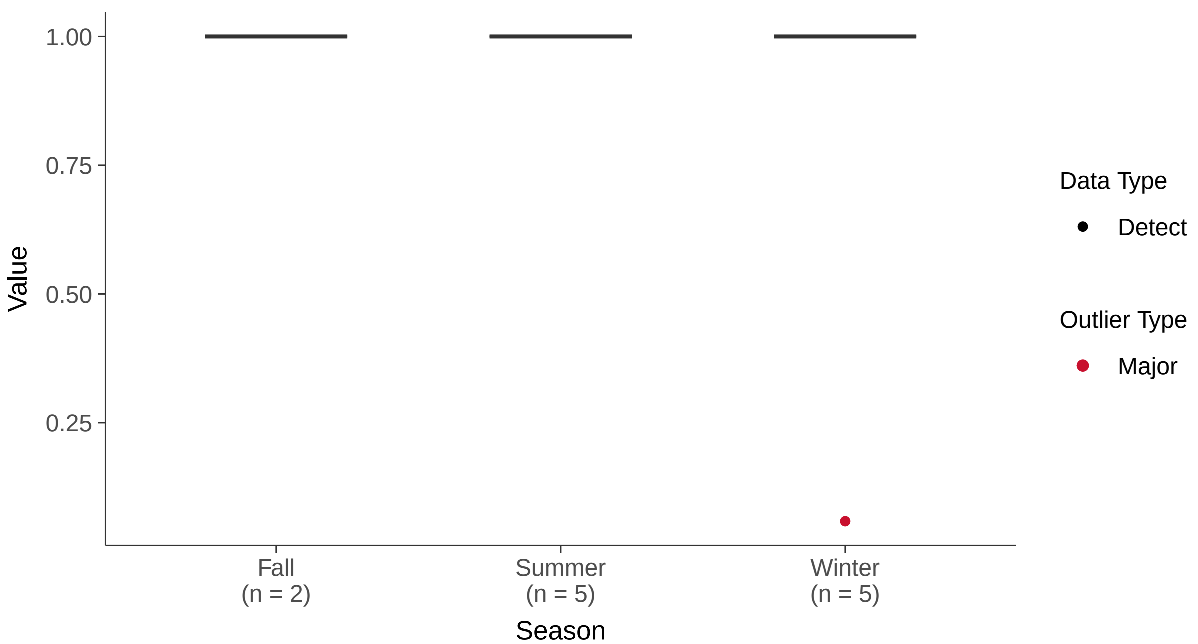
Boxplot

Fluoride, MW-8 (mg/L)



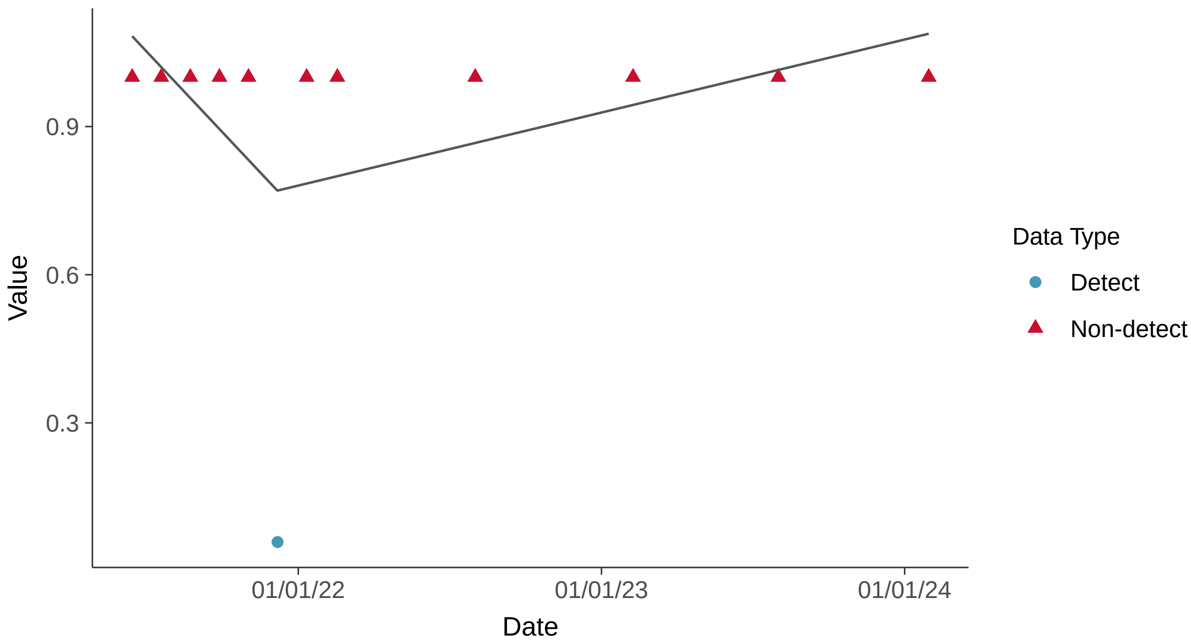
Boxplot by Season

Fluoride, MW-8 (mg/L)



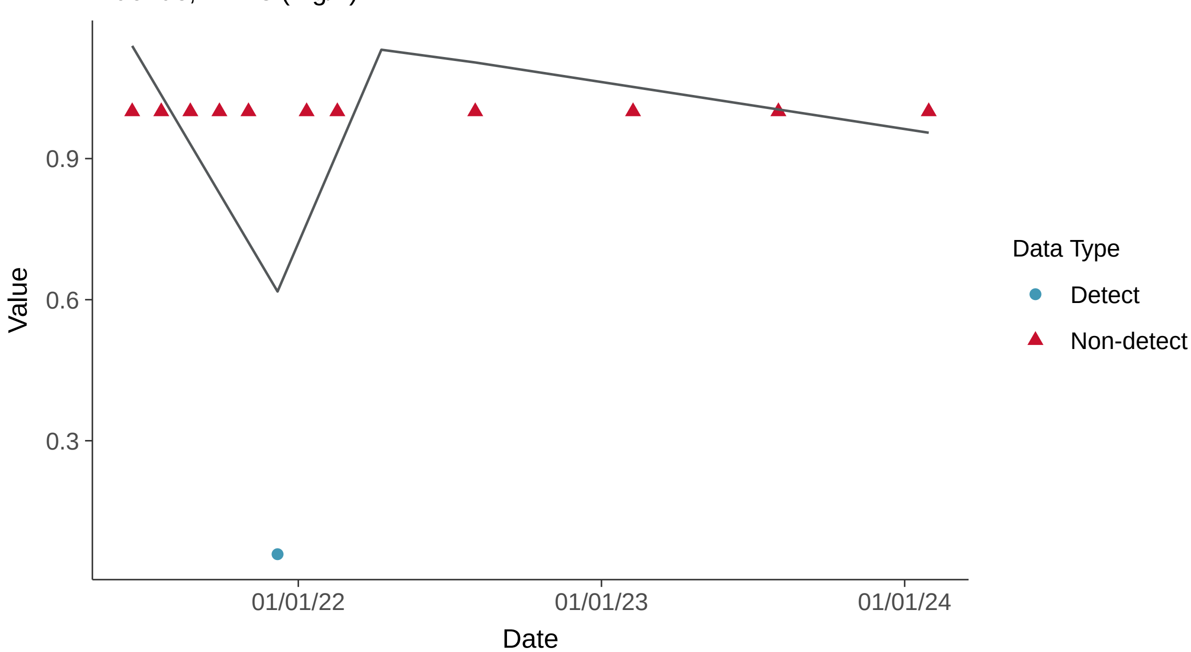
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-8 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-8 (mg/L)

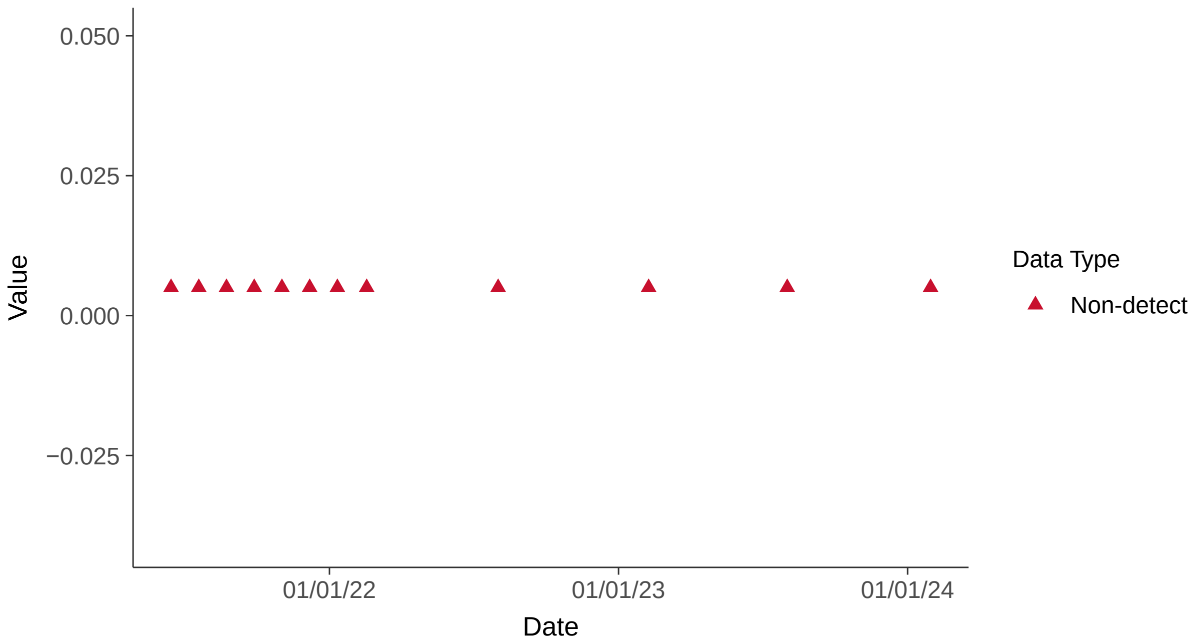


Appendix IV: Antimony, MW-8

ID: 08_2_08

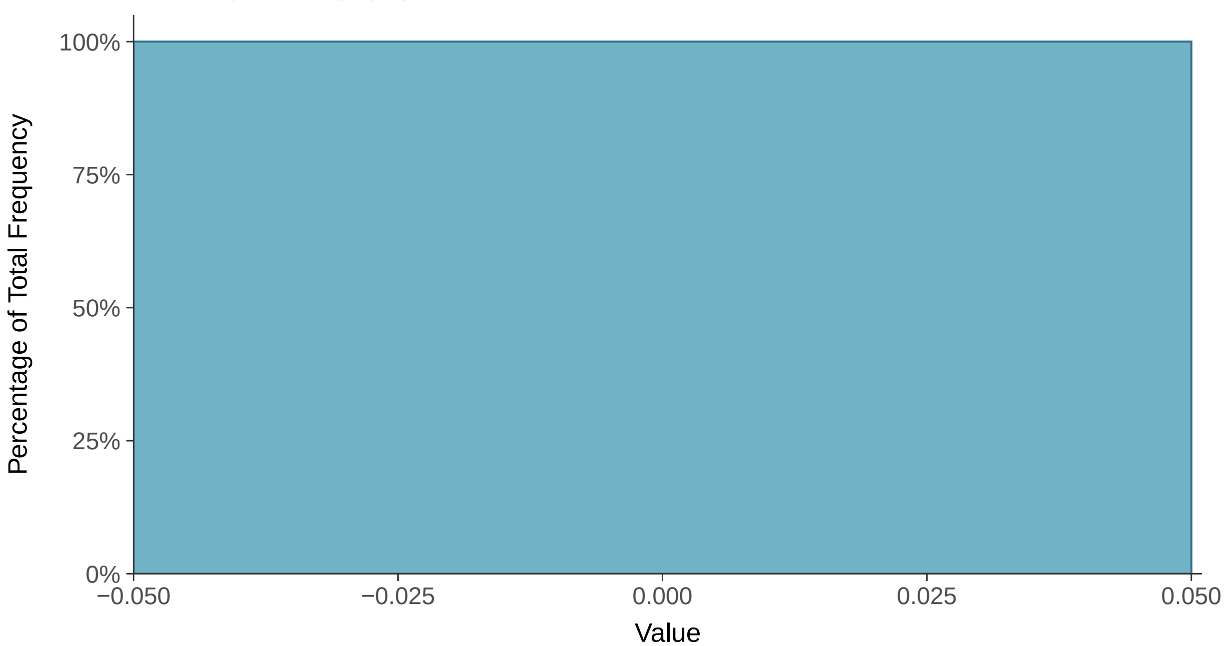
Scatter Plot

Antimony, MW-8 (mg/L)



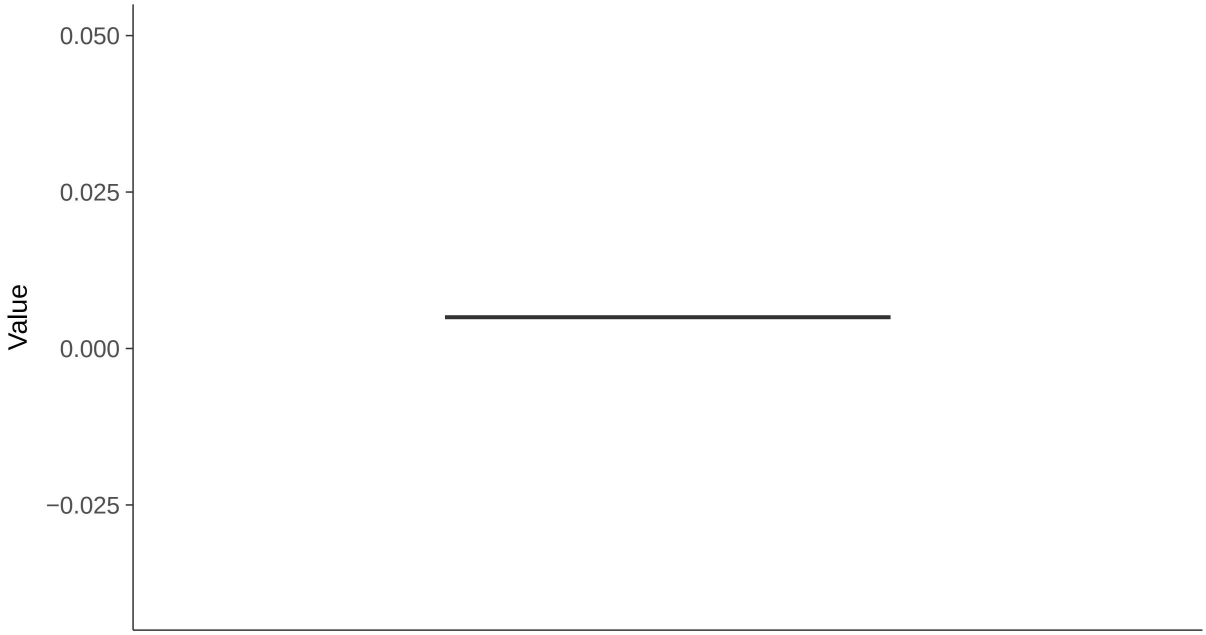
Histogram

Antimony, MW-8 (mg/L)



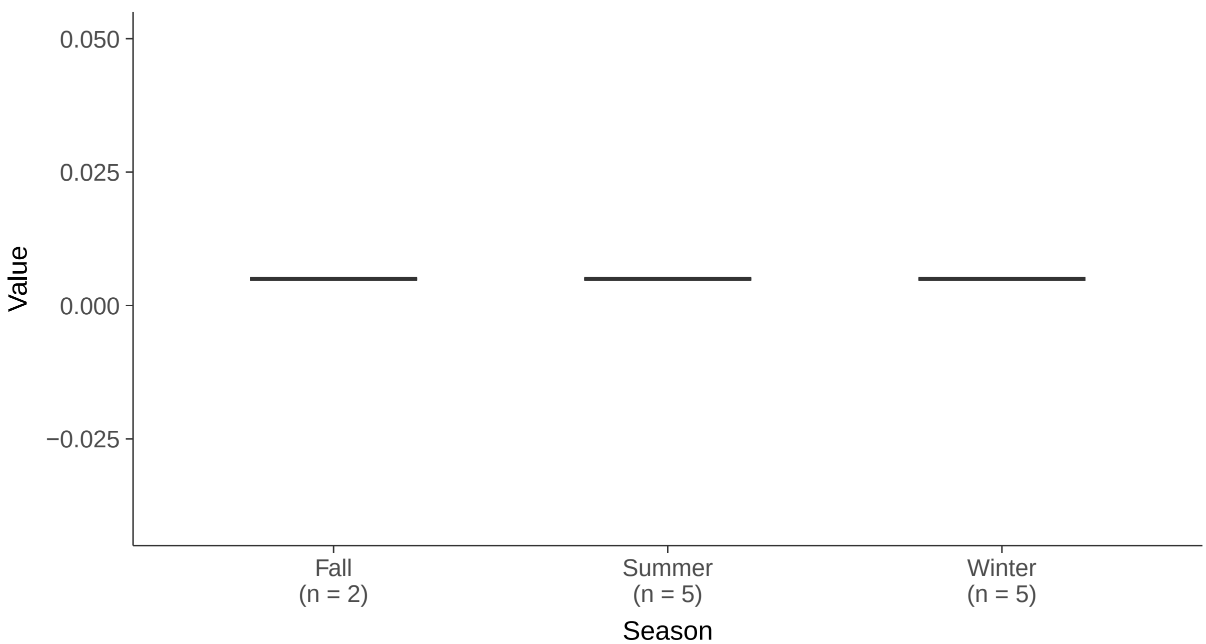
Boxplot

Antimony, MW-8 (mg/L)



Boxplot by Season

Antimony, MW-8 (mg/L)

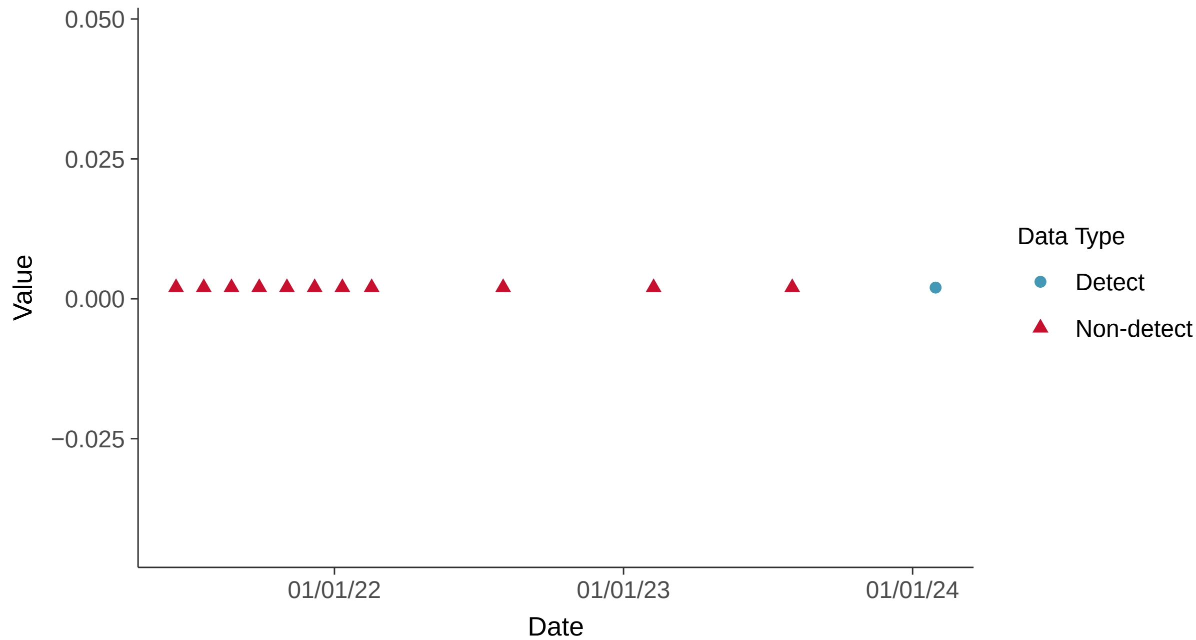


Appendix IV: Arsenic, MW-8

ID: 08_2_09

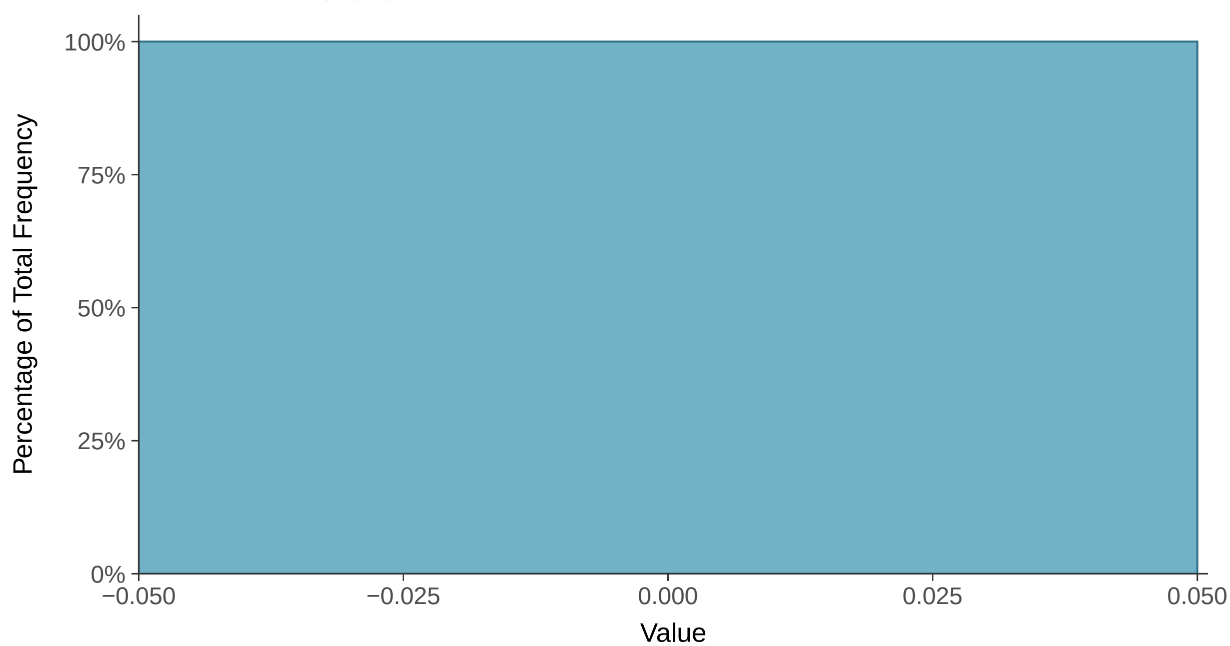
Scatter Plot

Arsenic, MW-8 (mg/L)



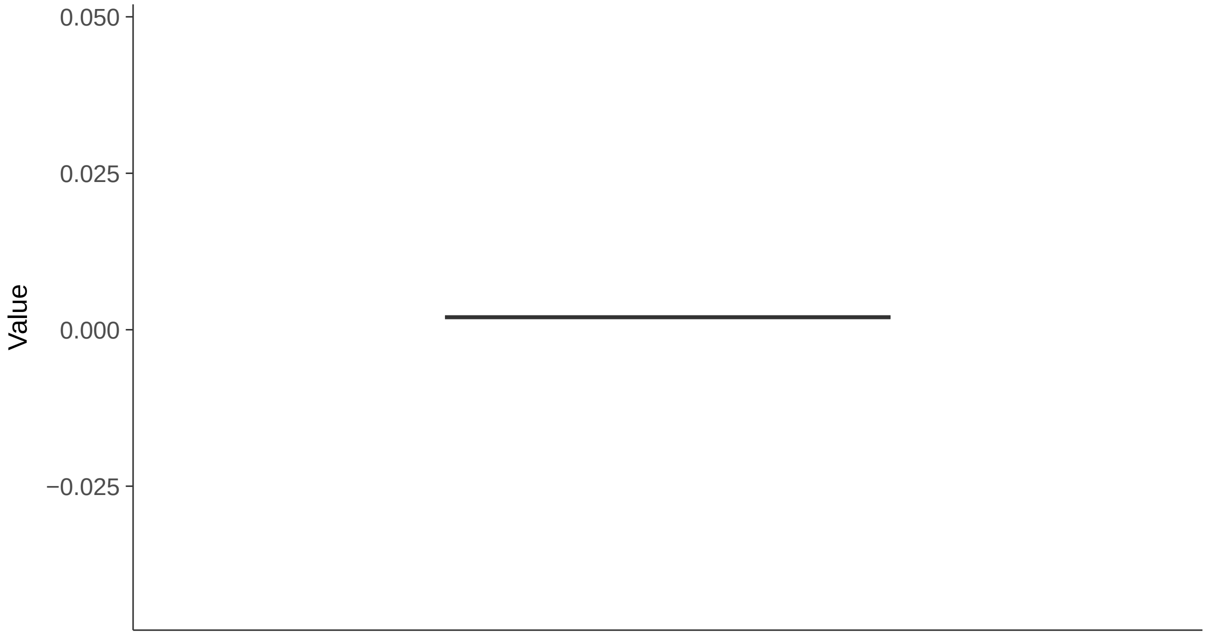
Histogram

Arsenic, MW-8 (mg/L)



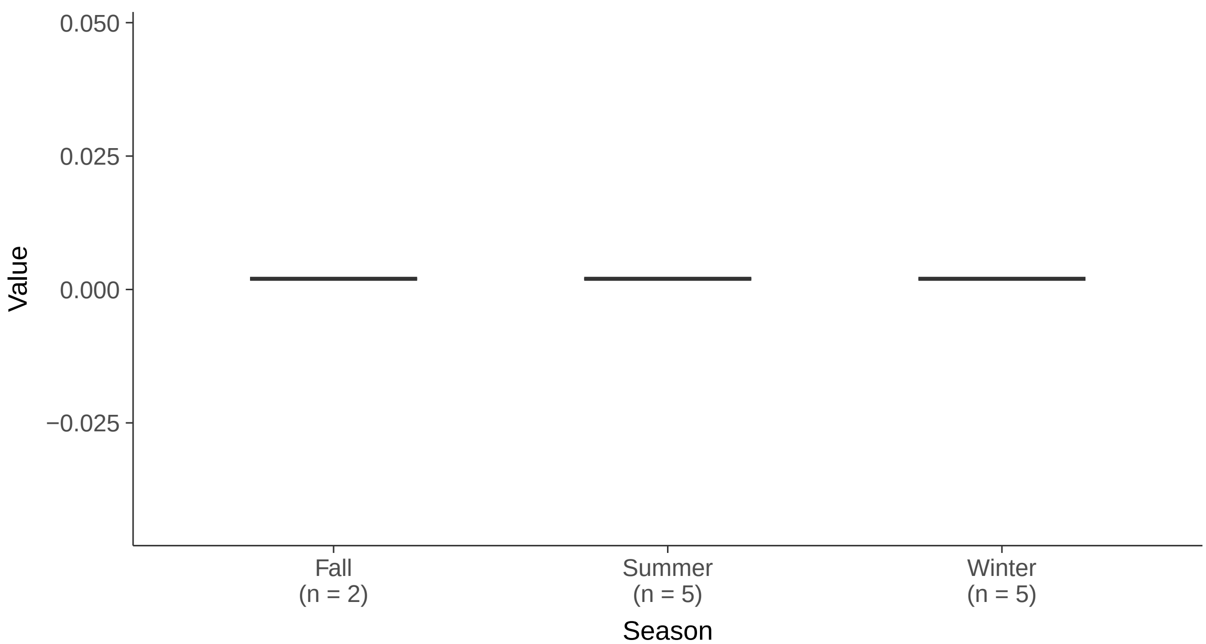
Boxplot

Arsenic, MW-8 (mg/L)



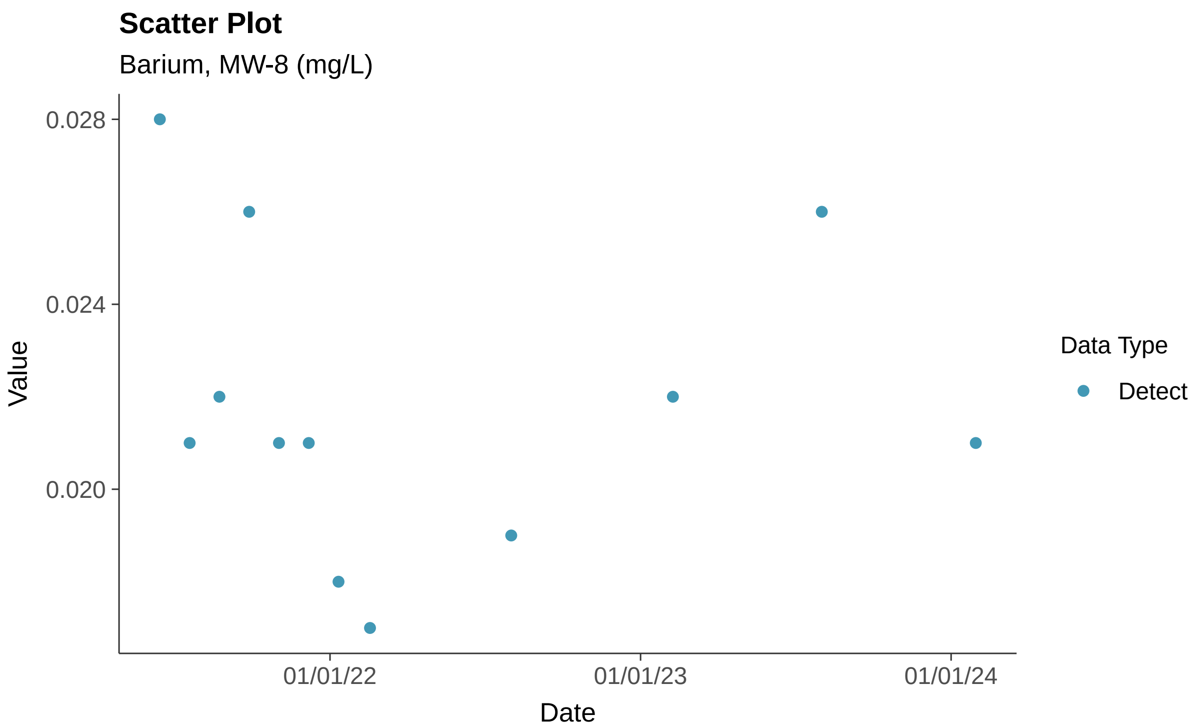
Boxplot by Season

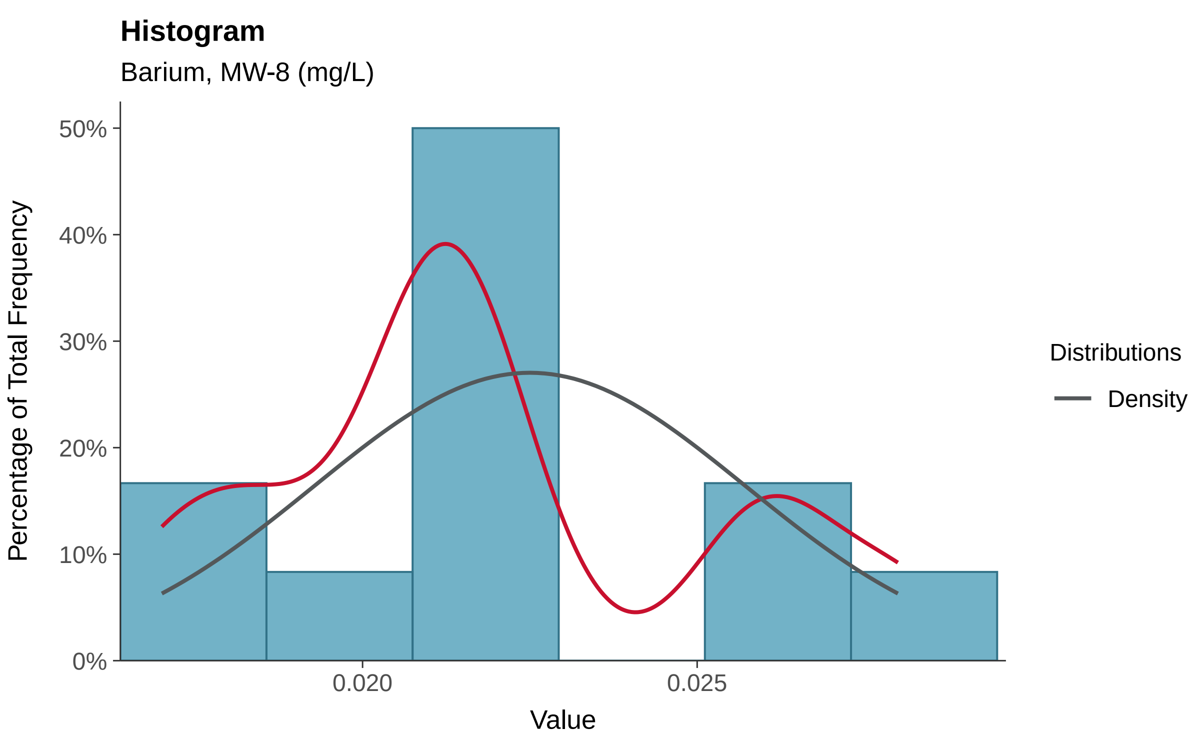
Arsenic, MW-8 (mg/L)



Appendix IV: Barium, MW-8

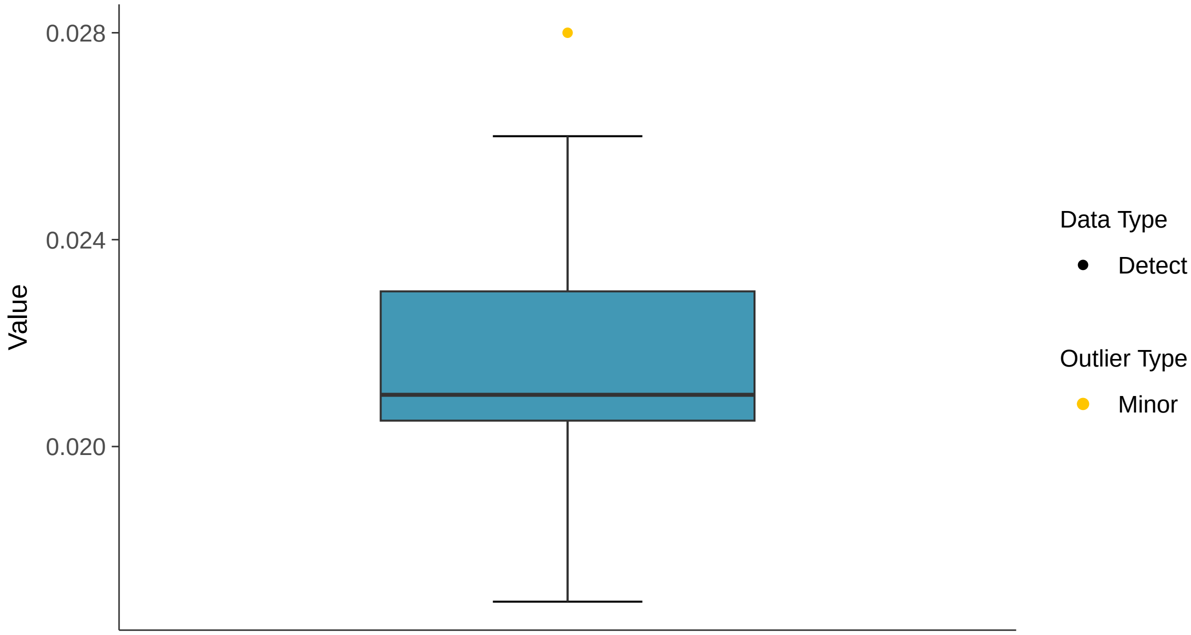
ID: 08_2_10





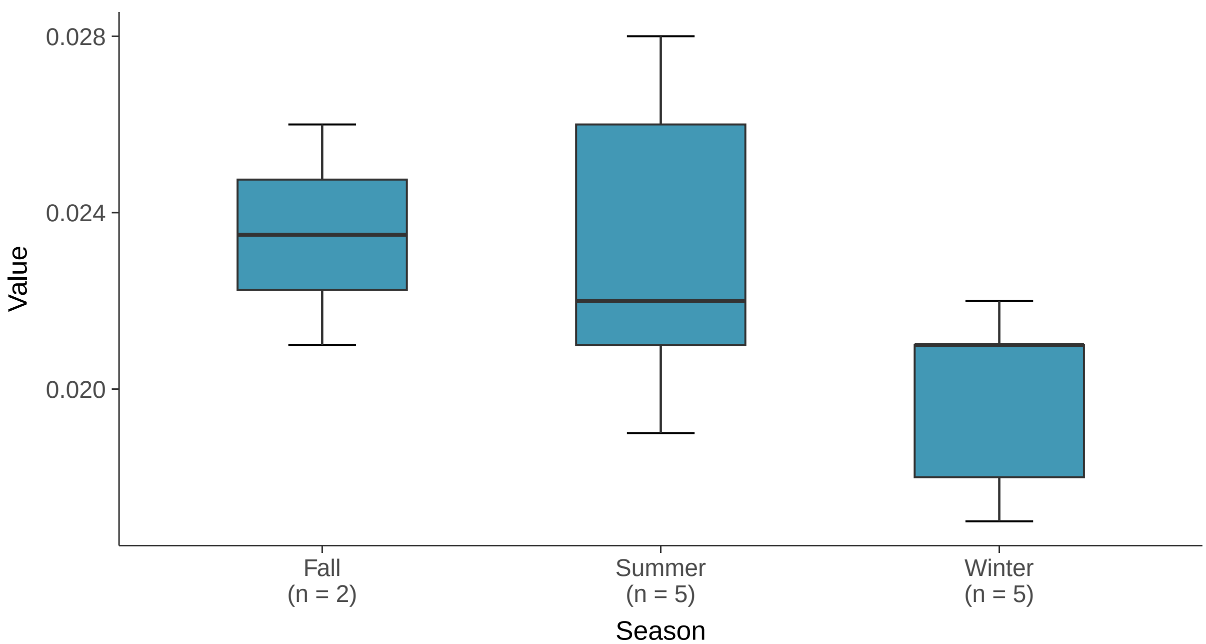
Boxplot

Barium, MW-8 (mg/L)



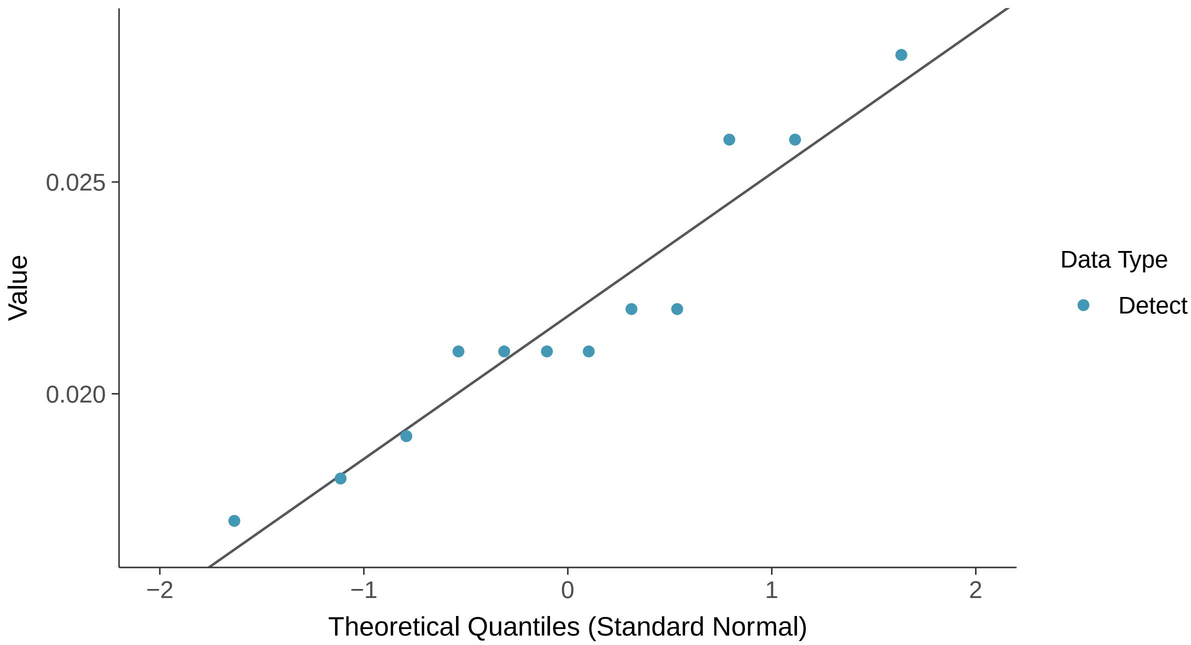
Boxplot by Season

Barium, MW-8 (mg/L)



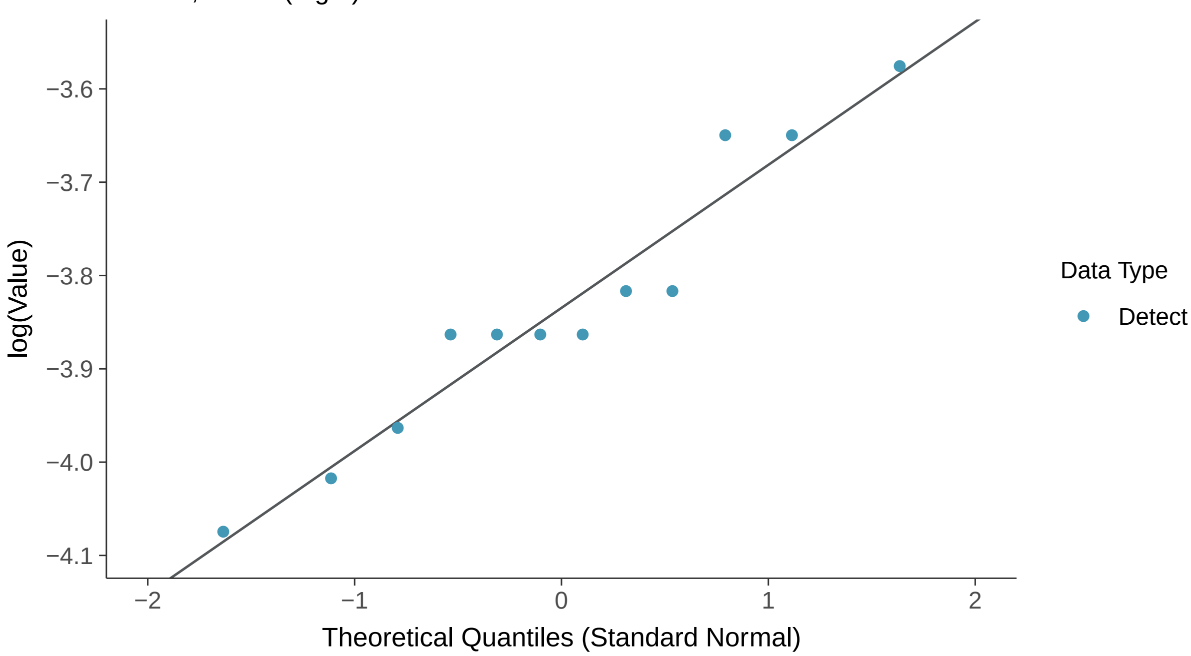
Normal Q-Q plot

Barium, MW-8 (mg/L)



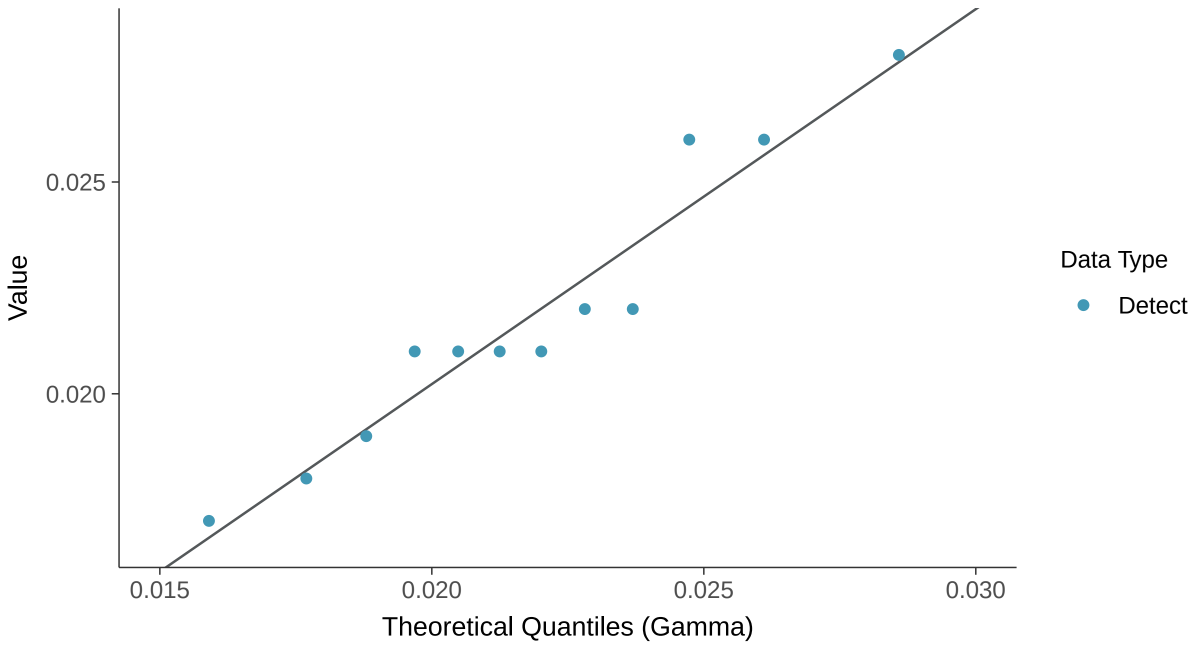
Lognormal Q-Q plot

Barium, MW-8 (mg/L)



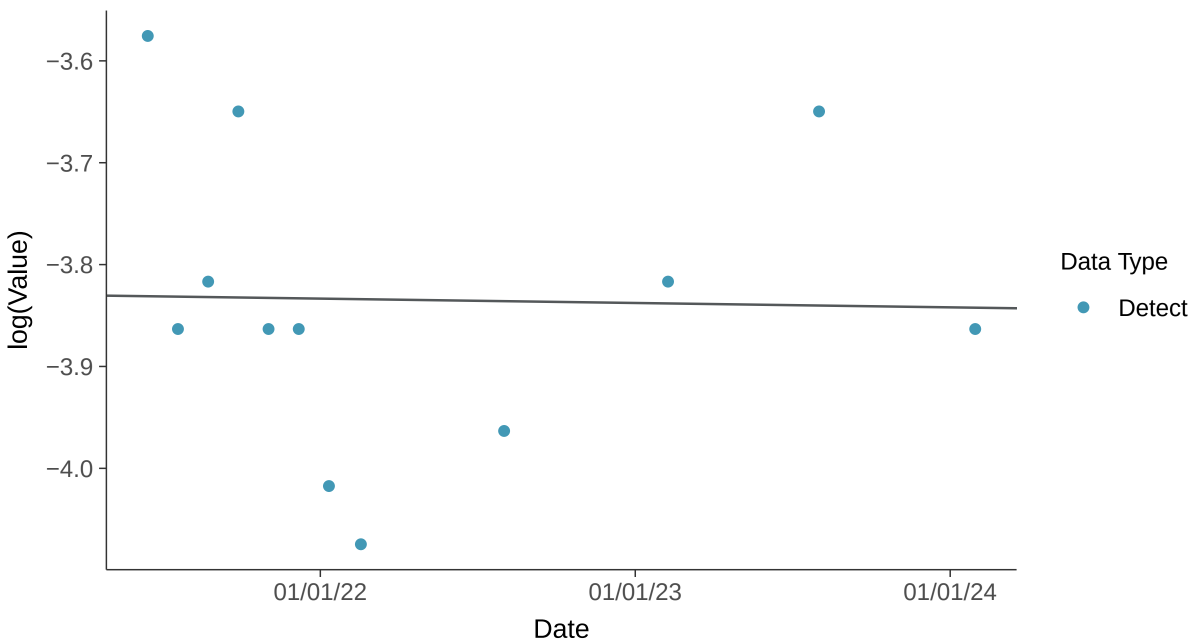
Gamma Q-Q plot

Barium, MW-8 (mg/L)



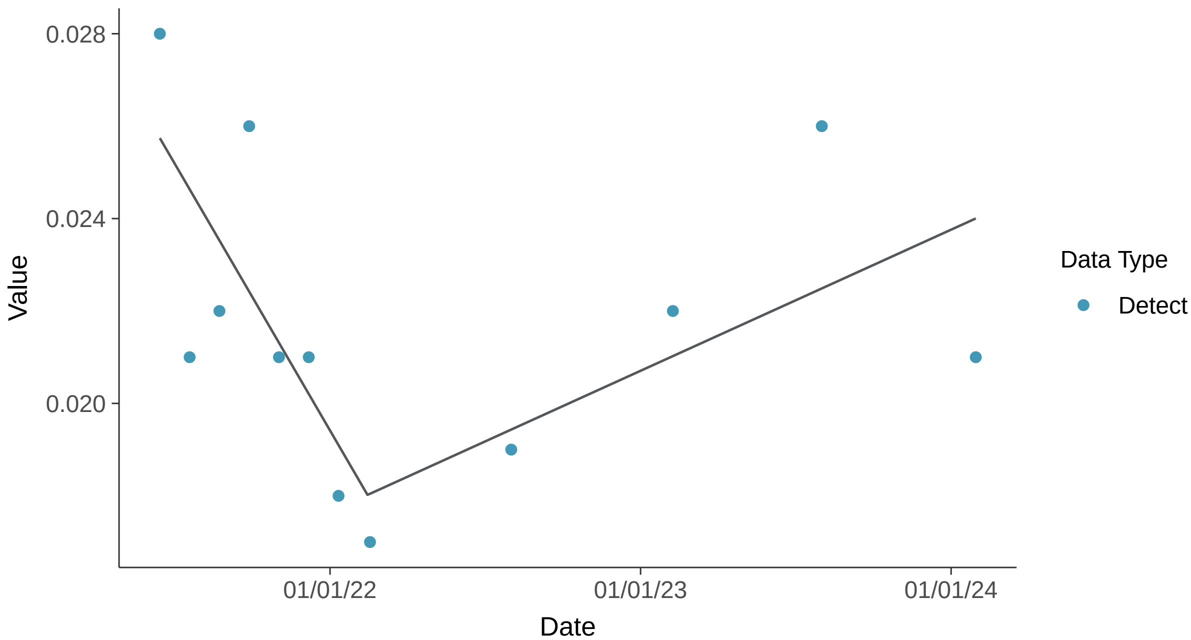
Trend Regression: Lognormal MLE

Barium, MW-8 (mg/L)



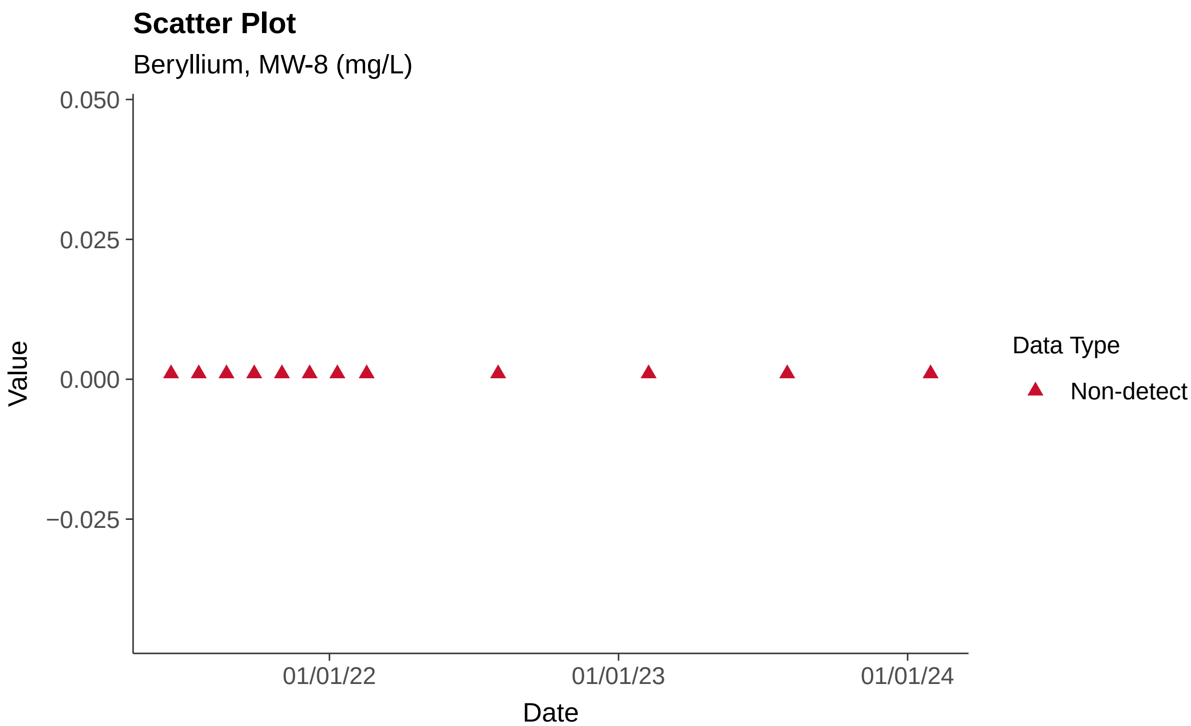
Trend Regression: Piecewise Linear-Linear

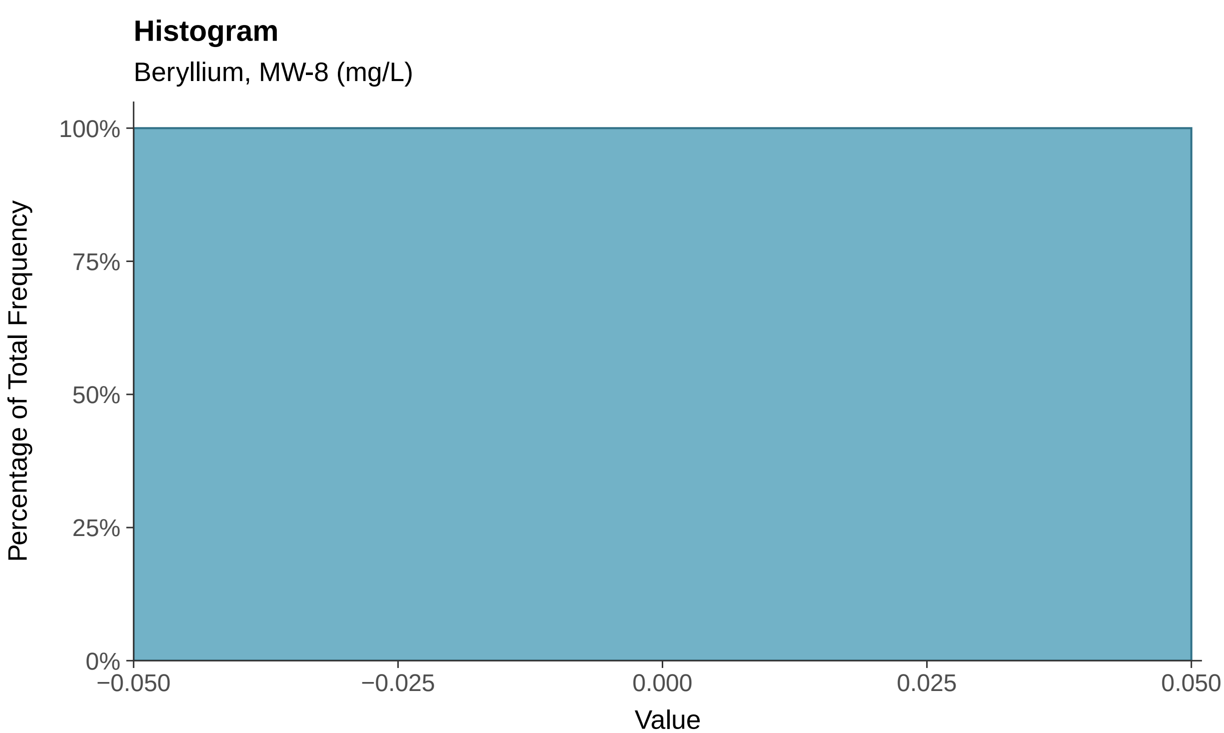
Barium, MW-8 (mg/L)



Appendix IV: Beryllium, MW-8

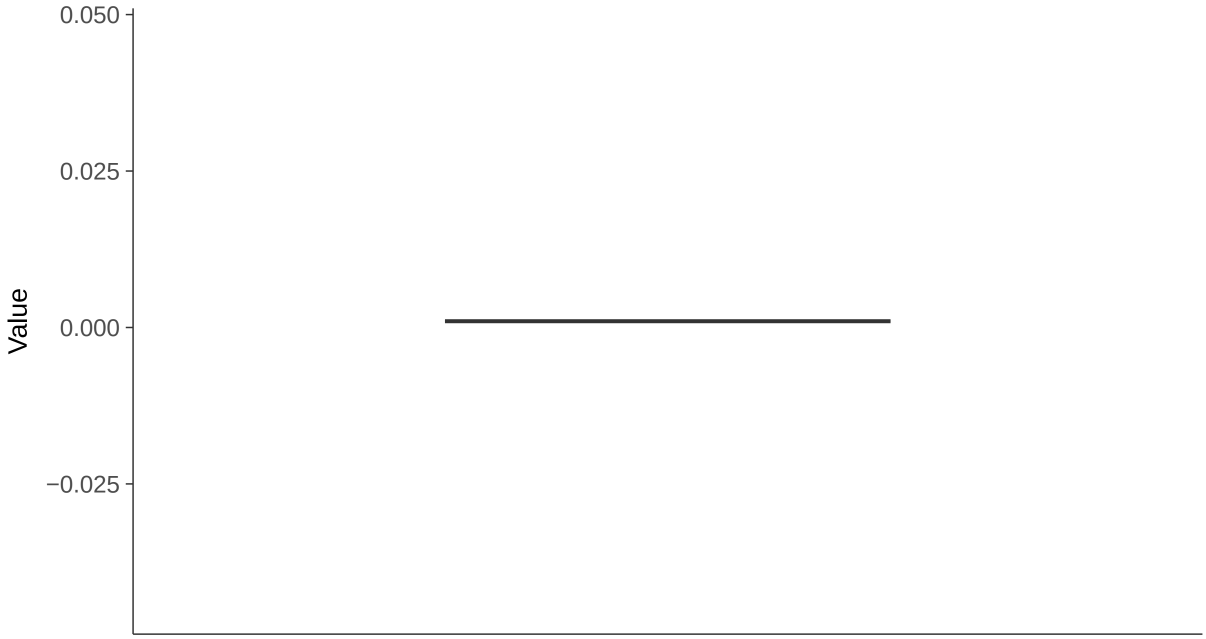
ID: 08_2_11





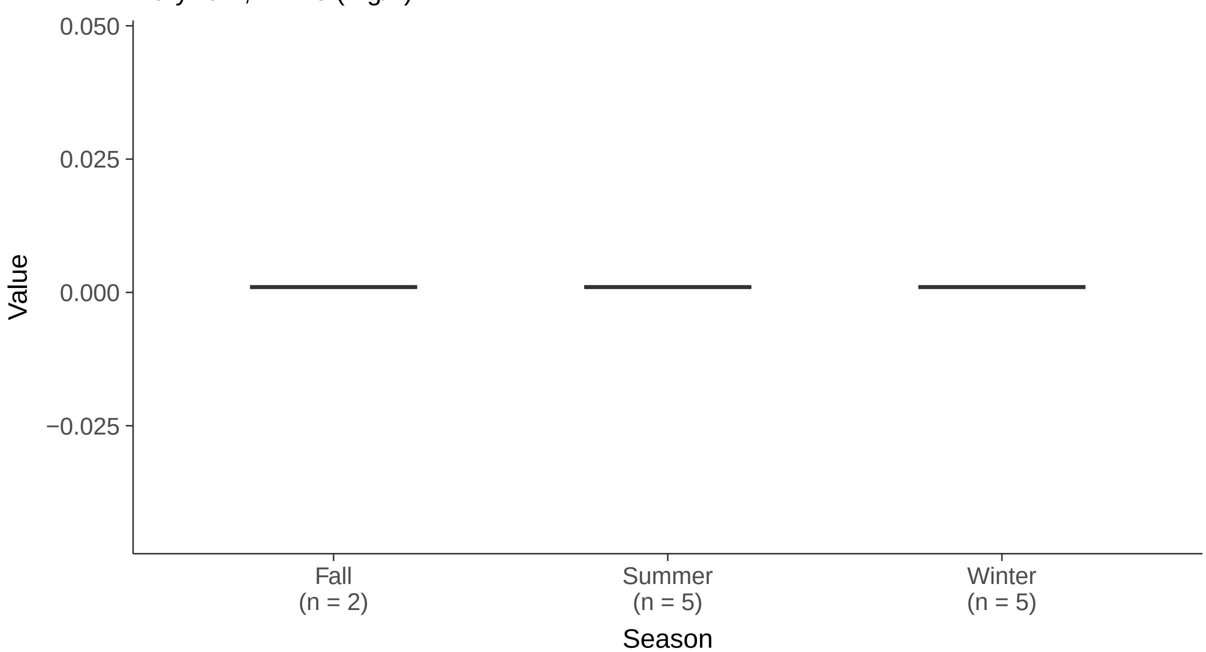
Boxplot

Beryllium, MW-8 (mg/L)



Boxplot by Season

Beryllium, MW-8 (mg/L)

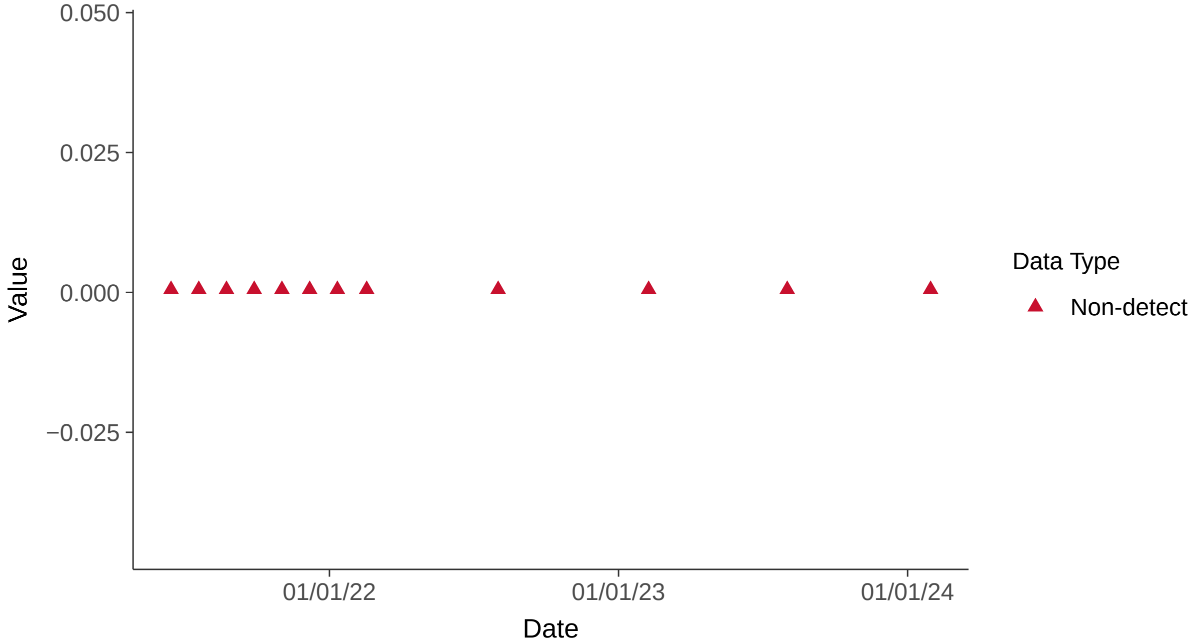


Appendix IV: Cadmium, MW-8

ID: 08_2_12

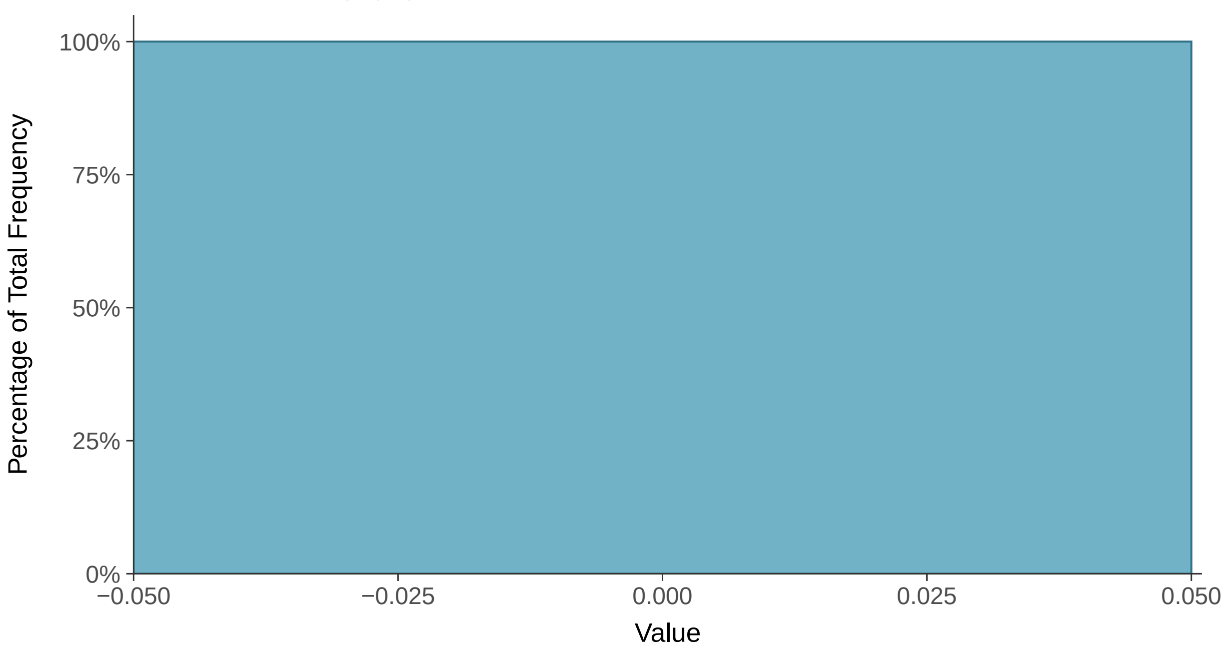
Scatter Plot

Cadmium, MW-8 (mg/L)



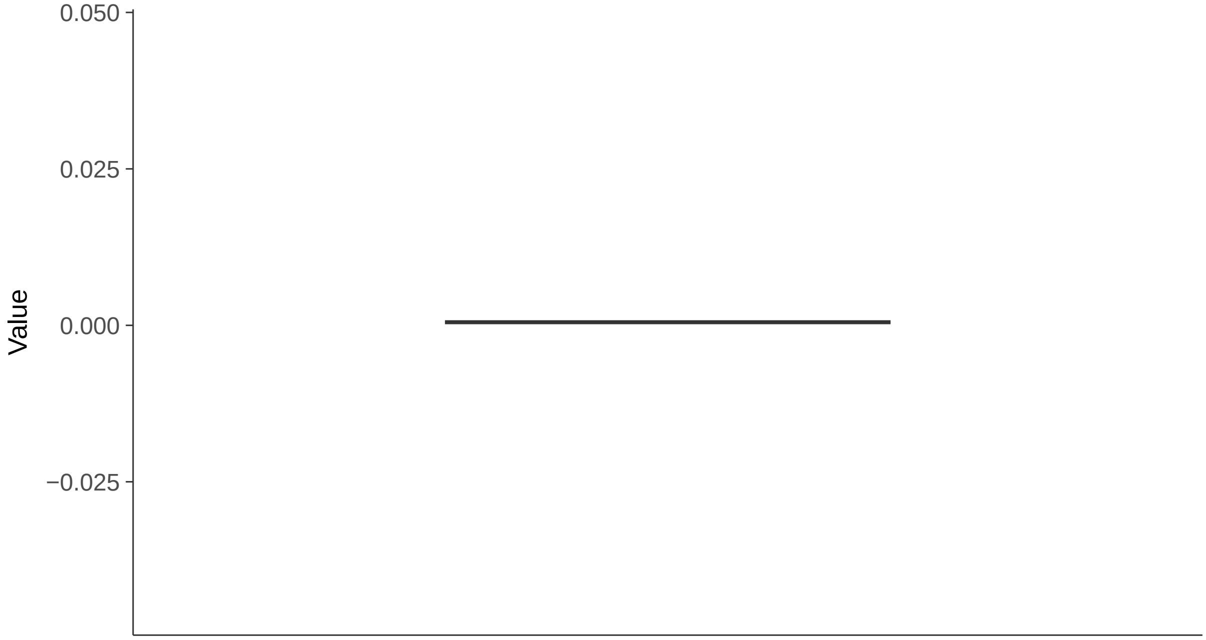
Histogram

Cadmium, MW-8 (mg/L)



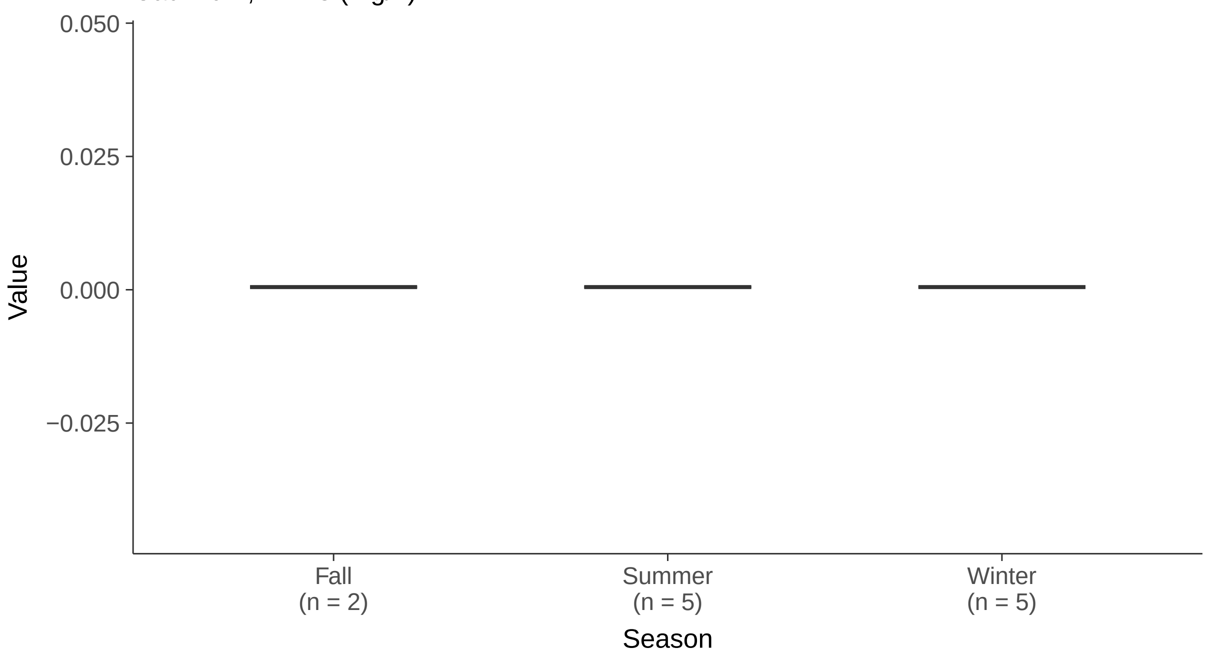
Boxplot

Cadmium, MW-8 (mg/L)



Boxplot by Season

Cadmium, MW-8 (mg/L)

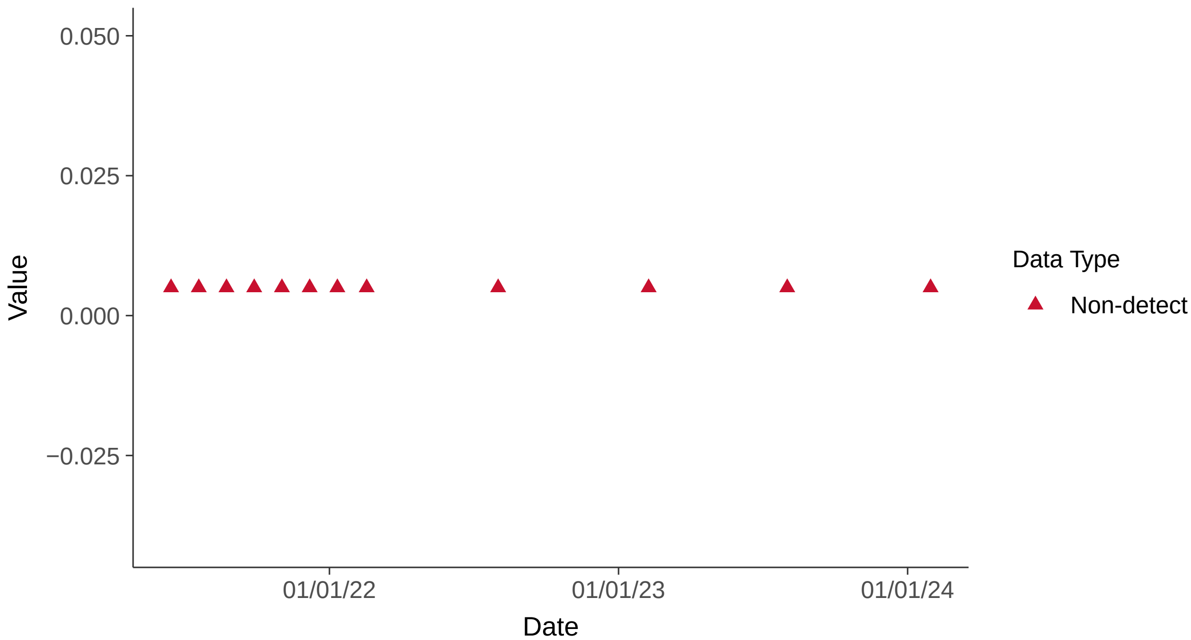


Appendix IV: Chromium, MW-8

ID: 08_2_13

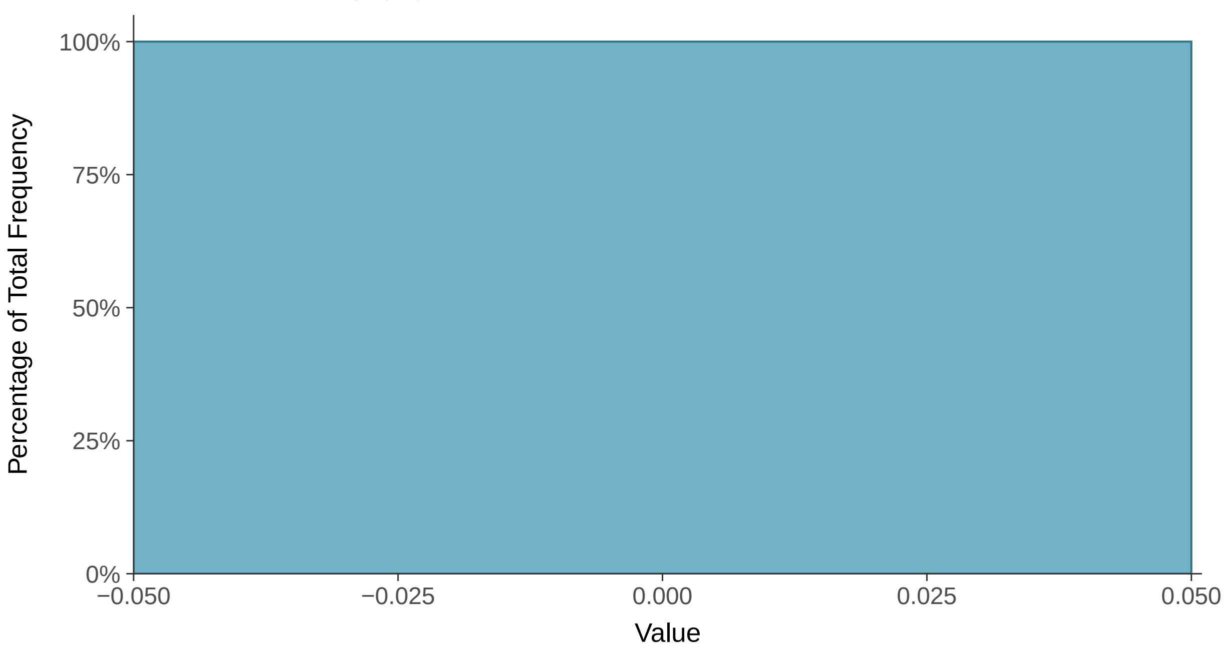
Scatter Plot

Chromium, MW-8 (mg/L)



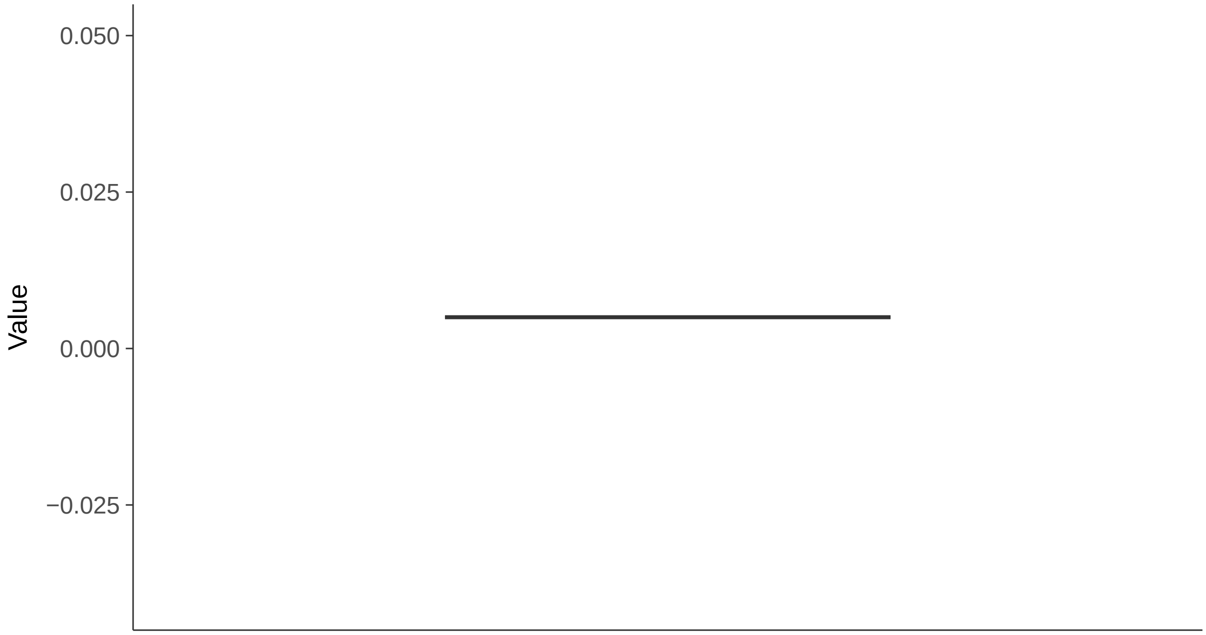
Histogram

Chromium, MW-8 (mg/L)



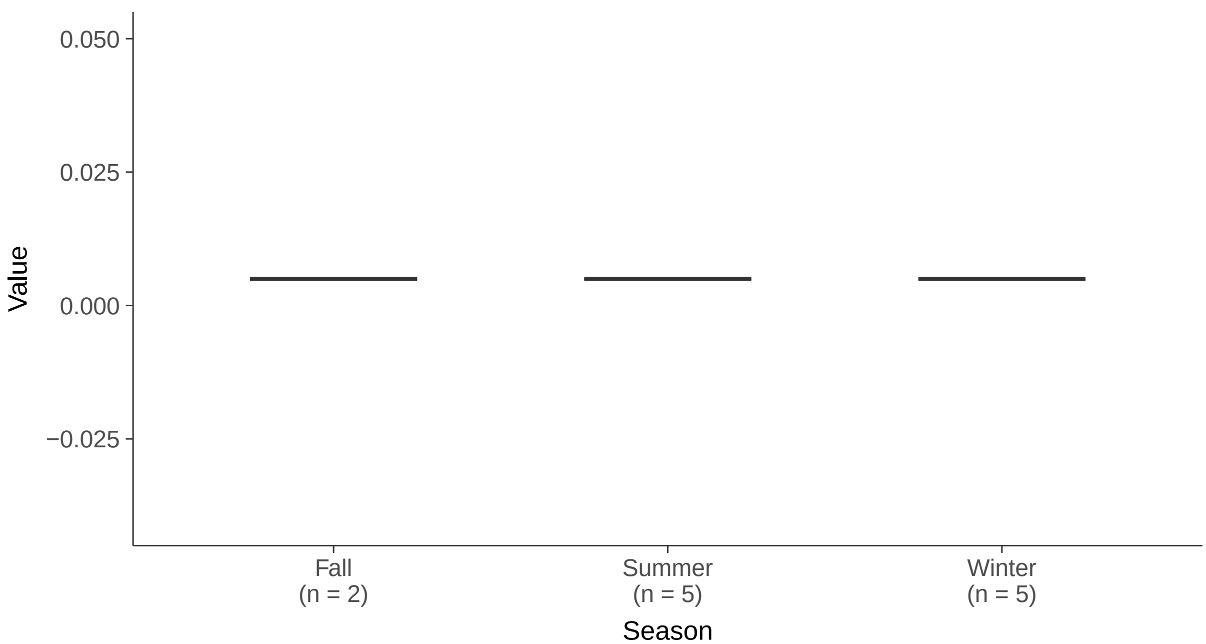
Boxplot

Chromium, MW-8 (mg/L)



Boxplot by Season

Chromium, MW-8 (mg/L)

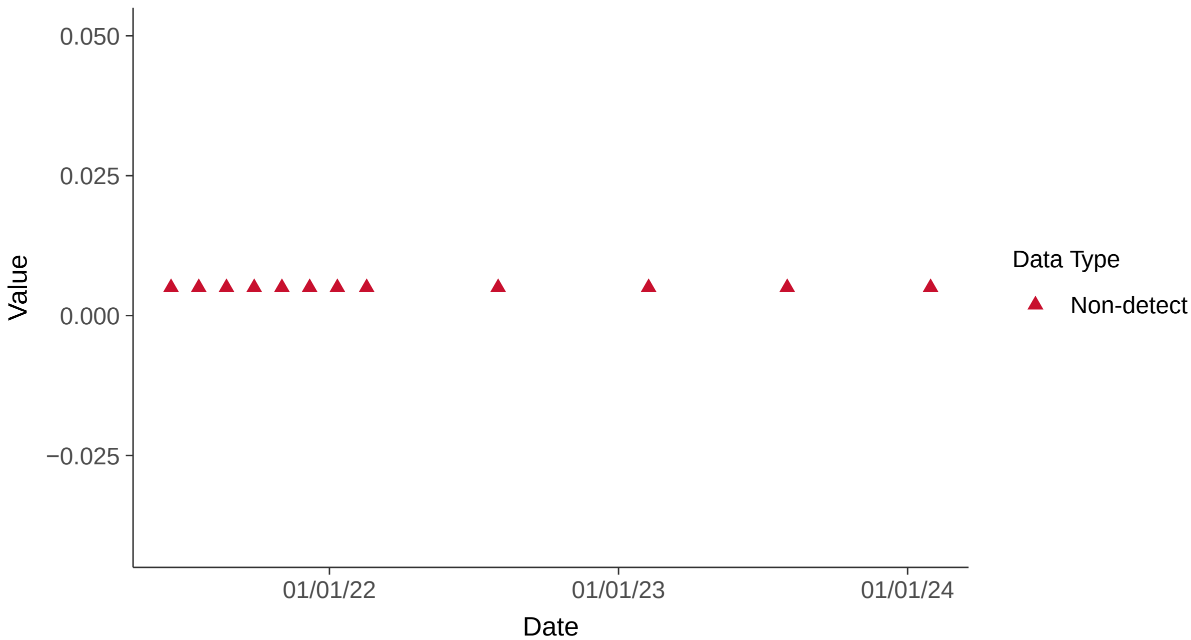


Appendix IV: Cobalt, MW-8

ID: 08_2_14

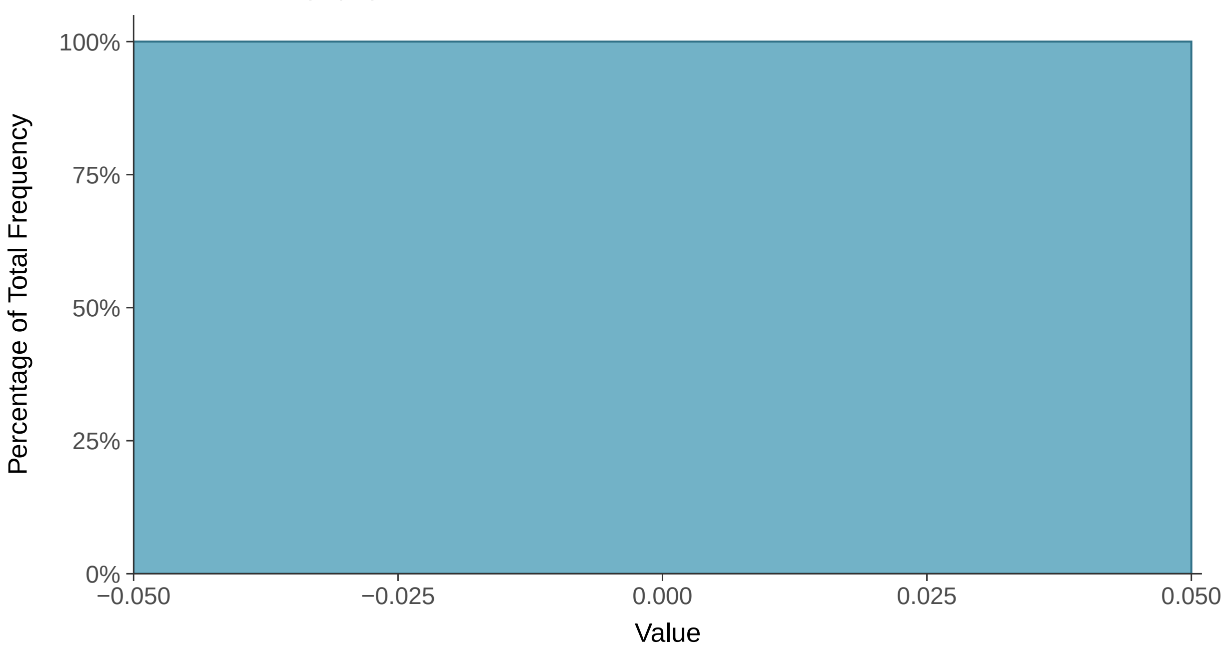
Scatter Plot

Cobalt, MW-8 (mg/L)



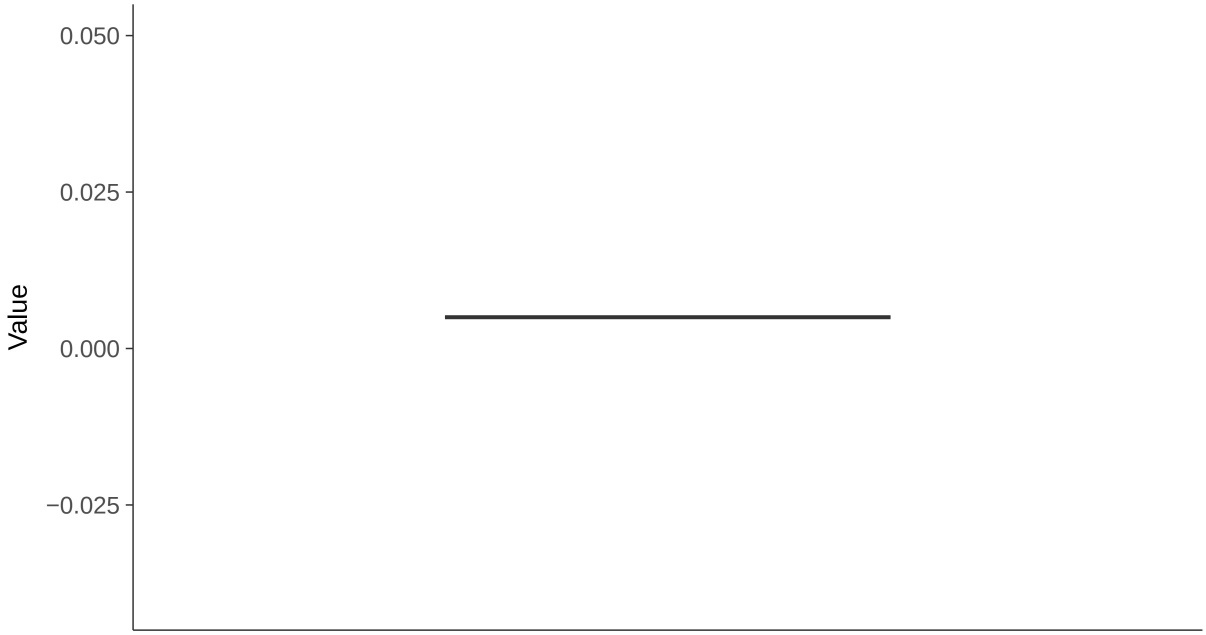
Histogram

Cobalt, MW-8 (mg/L)



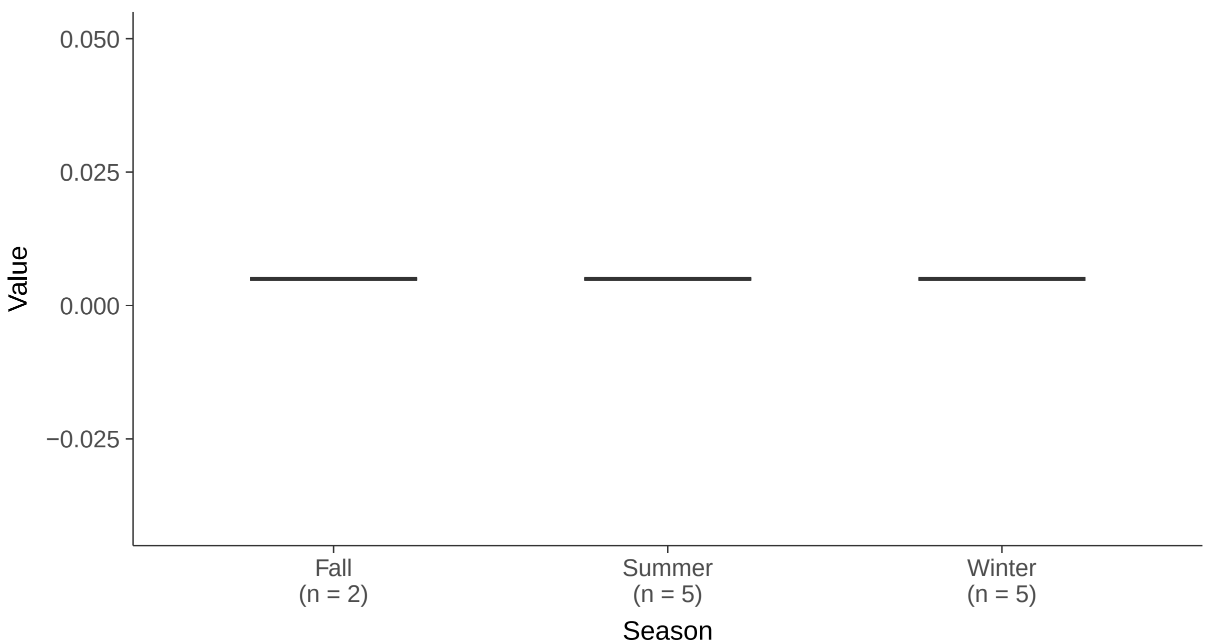
Boxplot

Cobalt, MW-8 (mg/L)



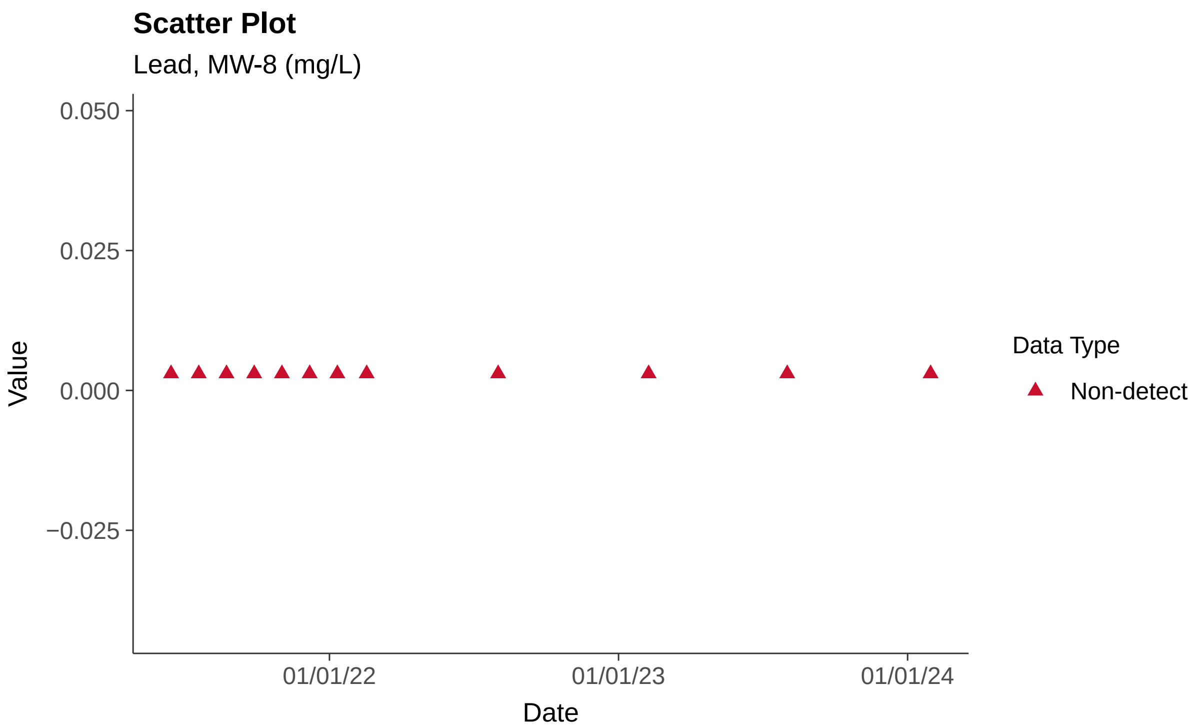
Boxplot by Season

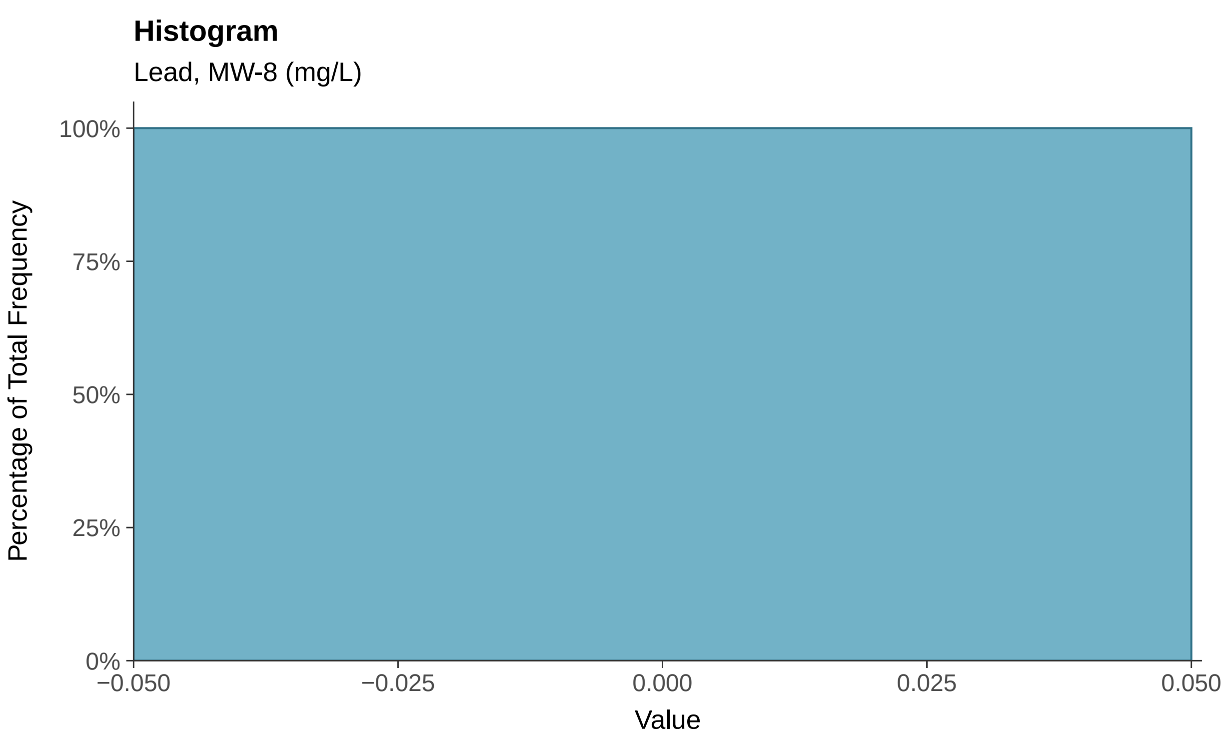
Cobalt, MW-8 (mg/L)



Appendix IV: Lead, MW-8

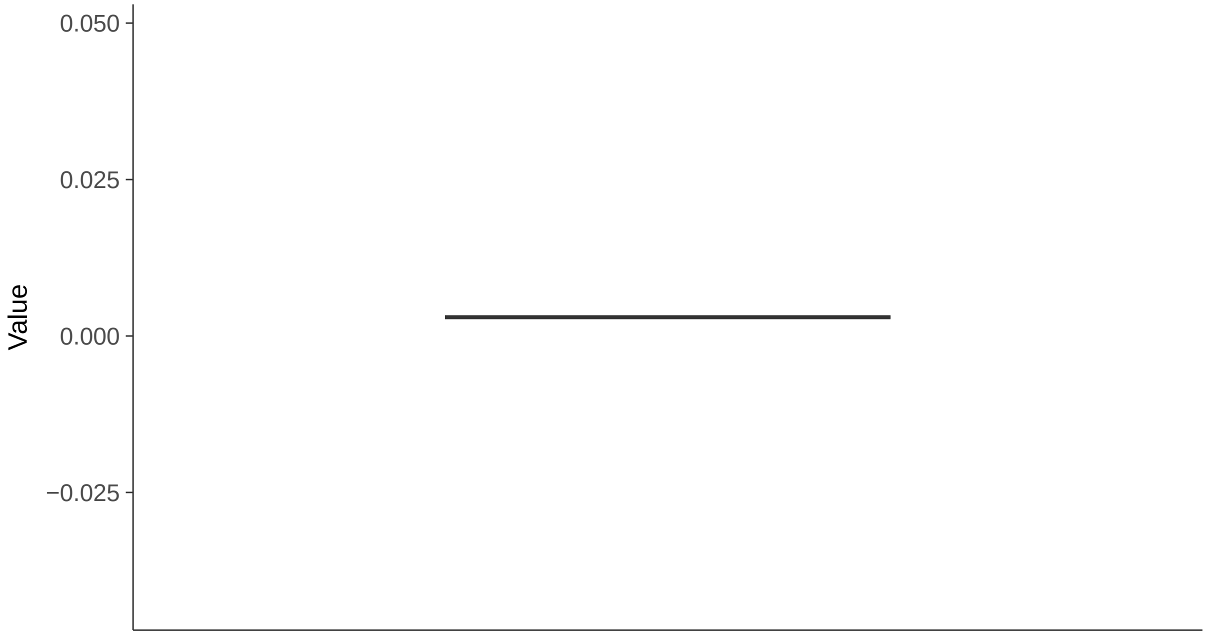
ID: 08_2_15





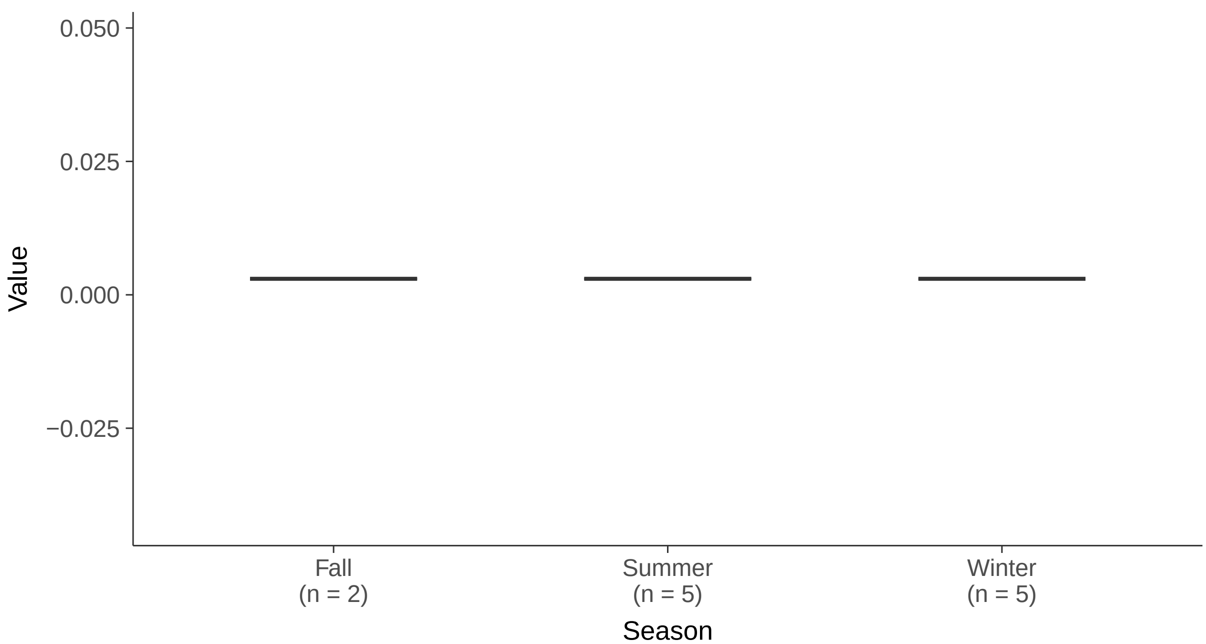
Boxplot

Lead, MW-8 (mg/L)



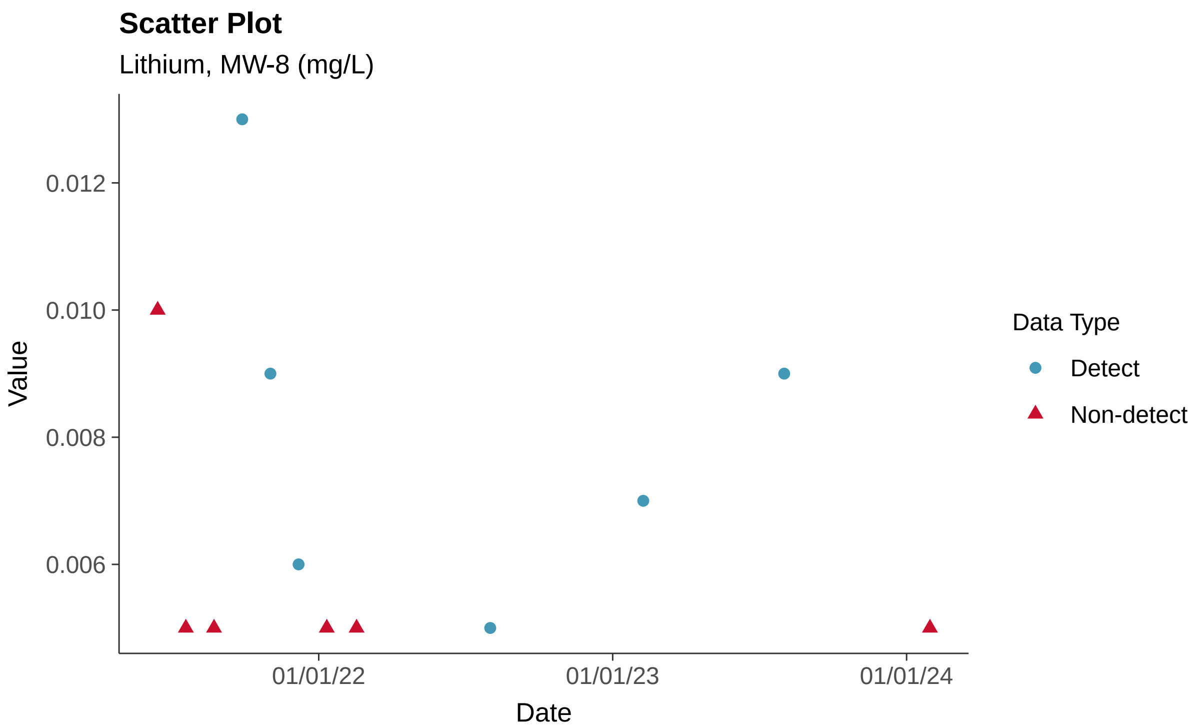
Boxplot by Season

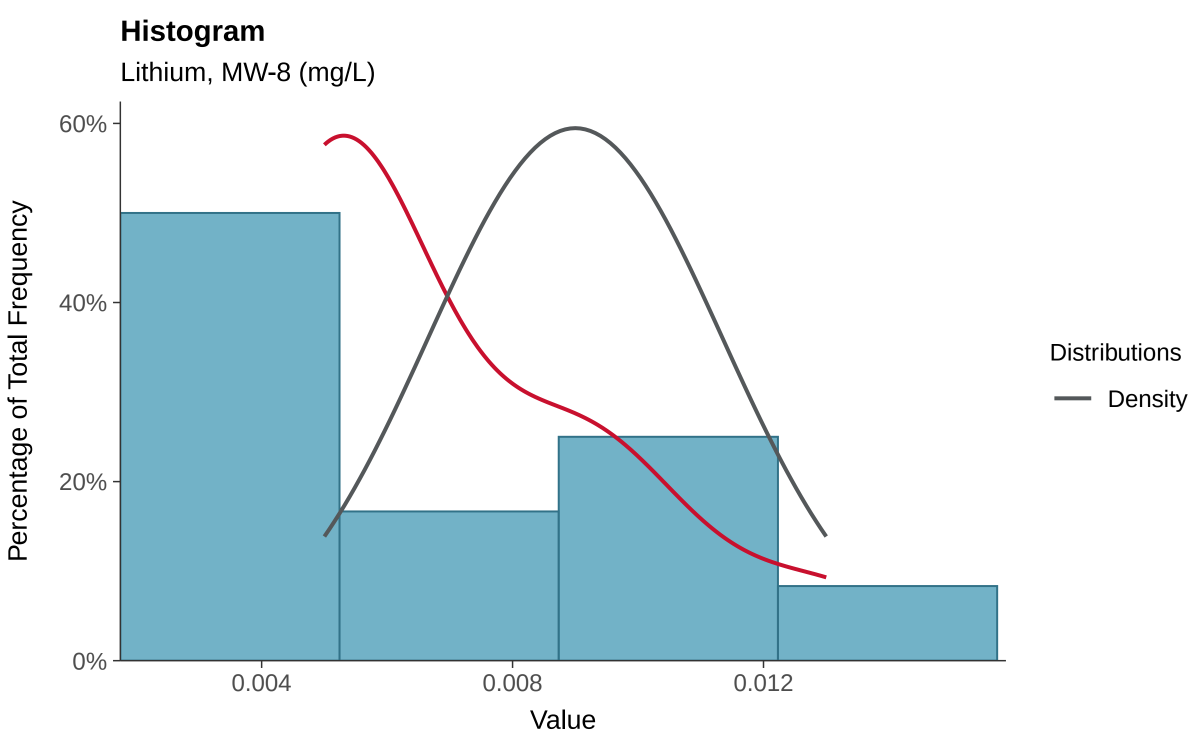
Lead, MW-8 (mg/L)



Appendix IV: Lithium, MW-8

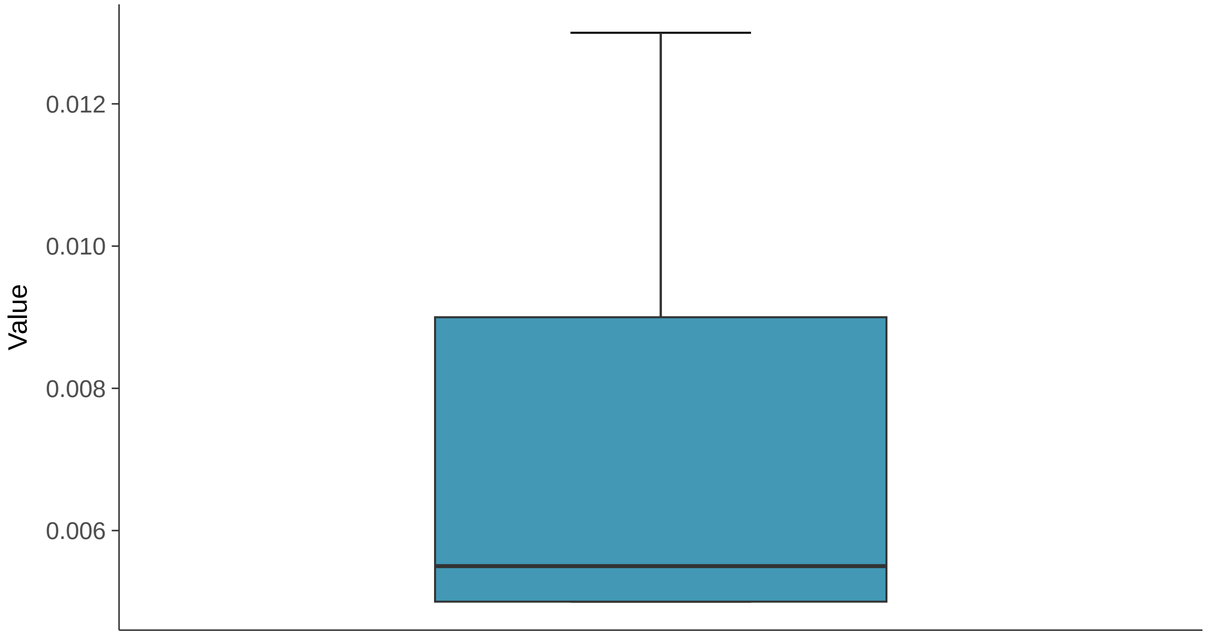
ID: 08_2_16





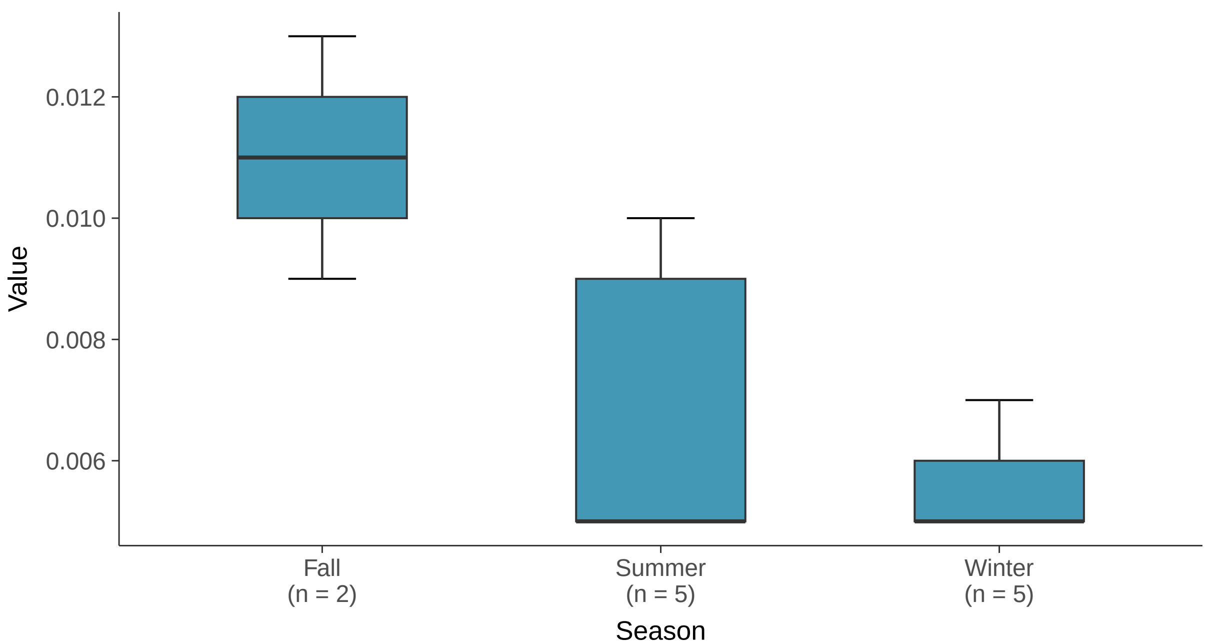
Boxplot

Lithium, MW-8 (mg/L)



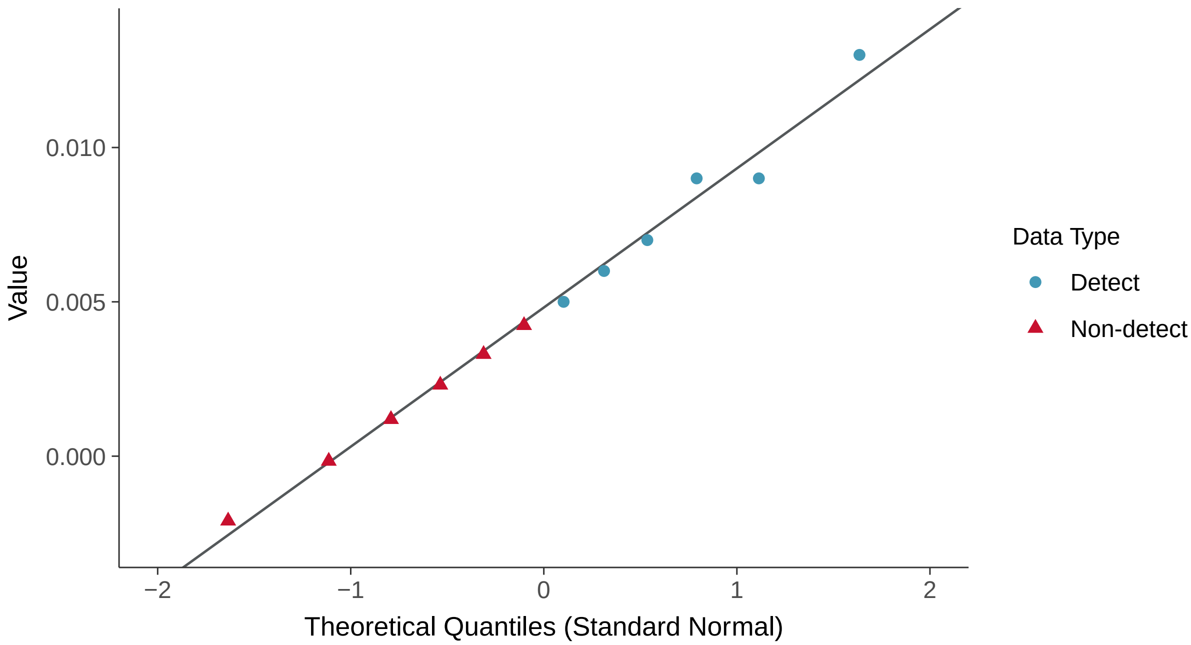
Boxplot by Season

Lithium, MW-8 (mg/L)



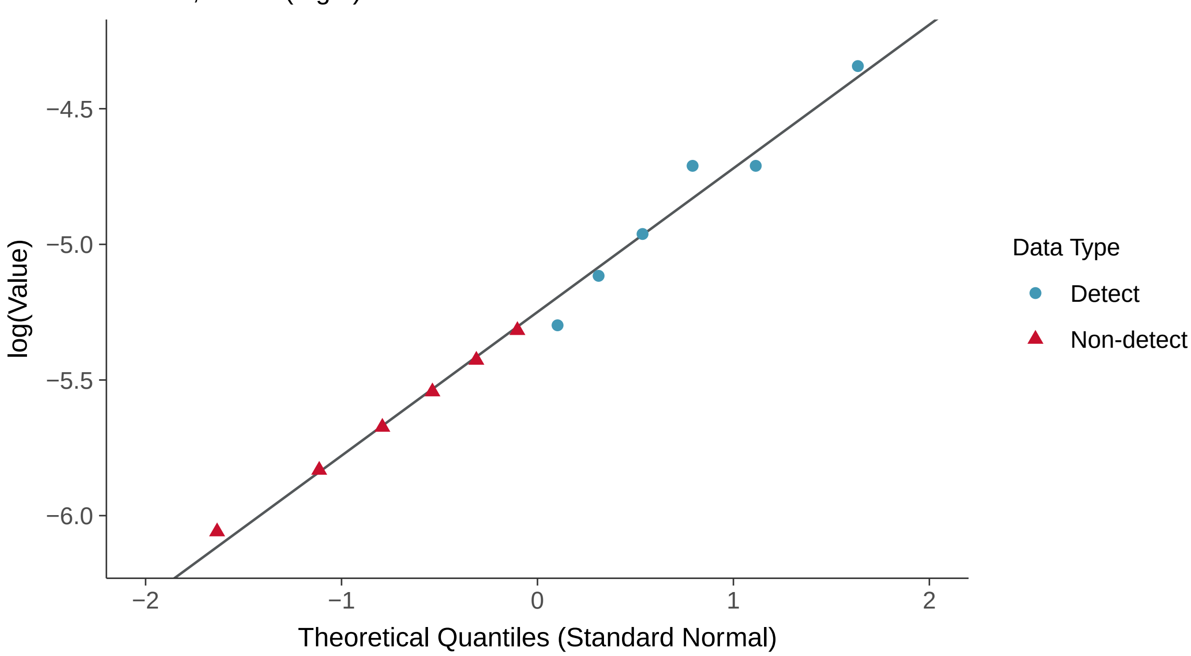
Normal Q-Q plot using ROS Imputed Estimates

Lithium, MW-8 (mg/L)



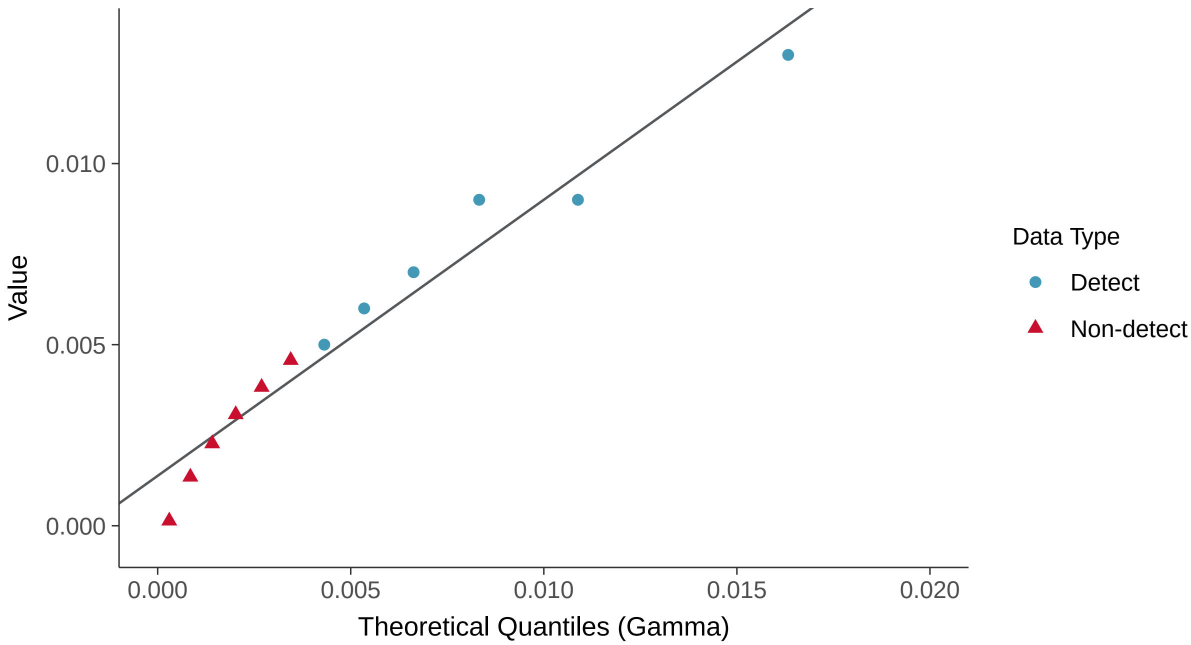
Lognormal Q-Q plot using ROS Imputed Estimates

Lithium, MW-8 (mg/L)



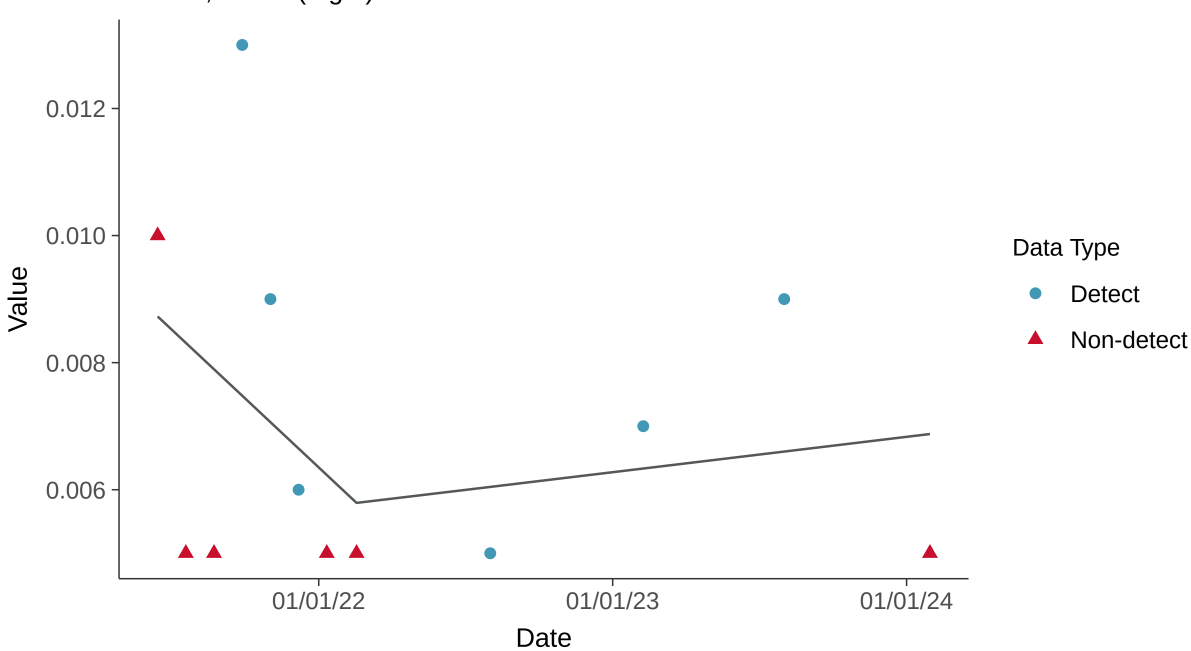
Gamma Q-Q plot using ROS Imputed Estimates

Lithium, MW-8 (mg/L)



Trend Regression: Piecewise Linear-Linear

Lithium, MW-8 (mg/L)

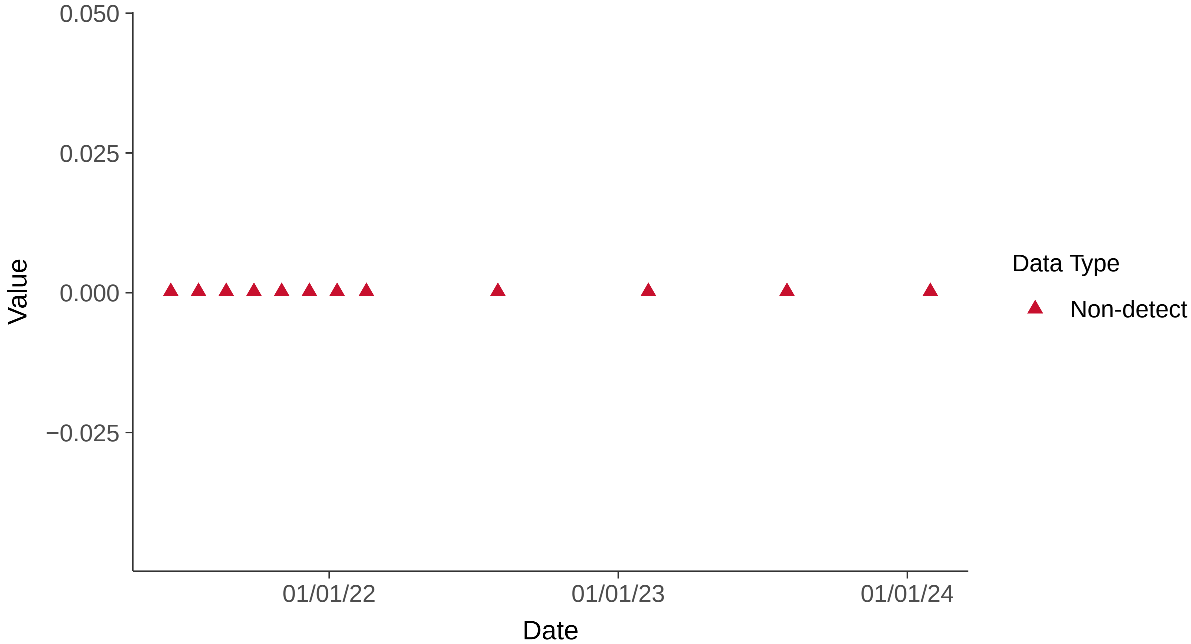


Appendix IV: Mercury, MW-8

ID: 08_2_17

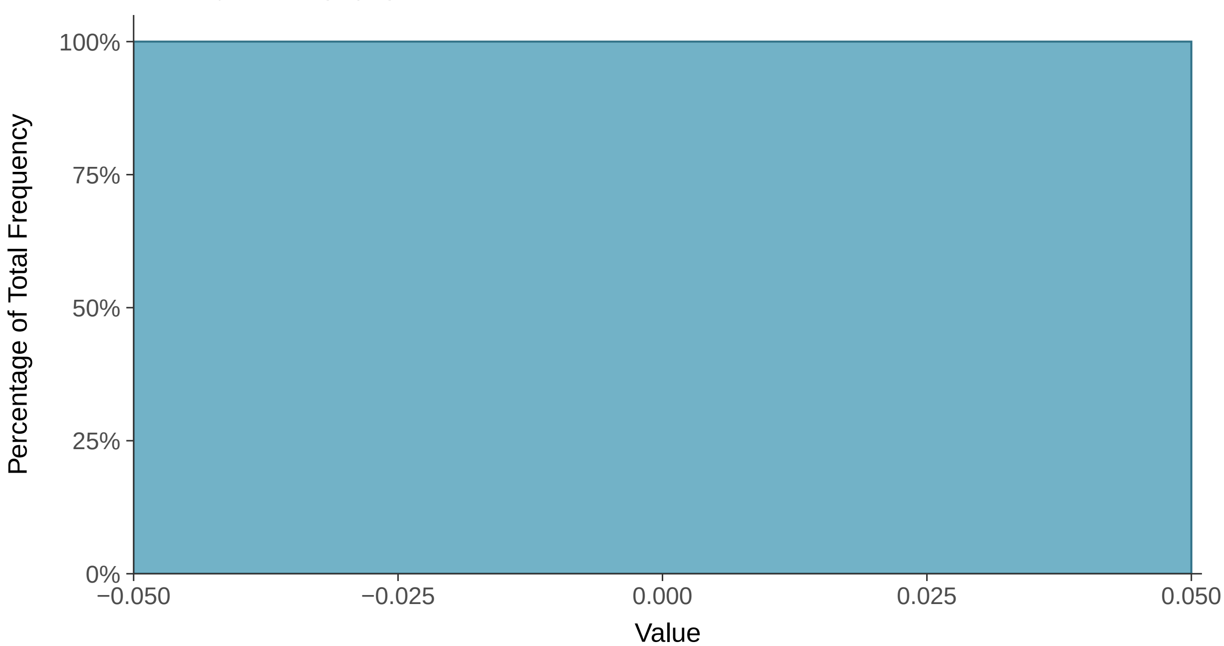
Scatter Plot

Mercury, MW-8 (mg/L)



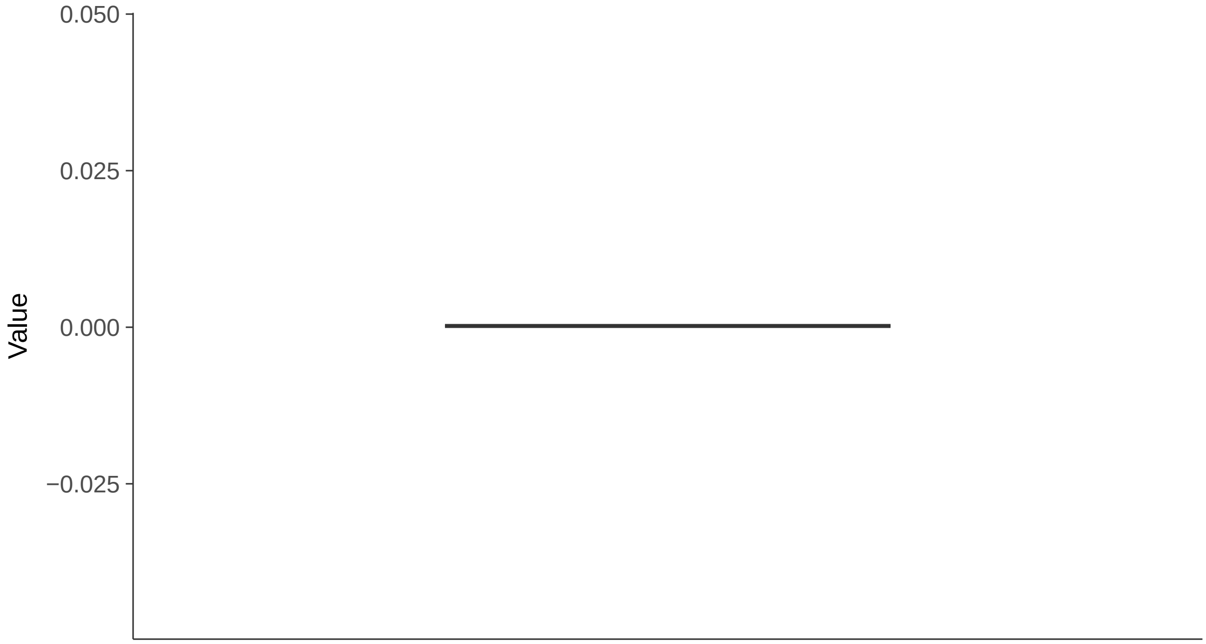
Histogram

Mercury, MW-8 (mg/L)



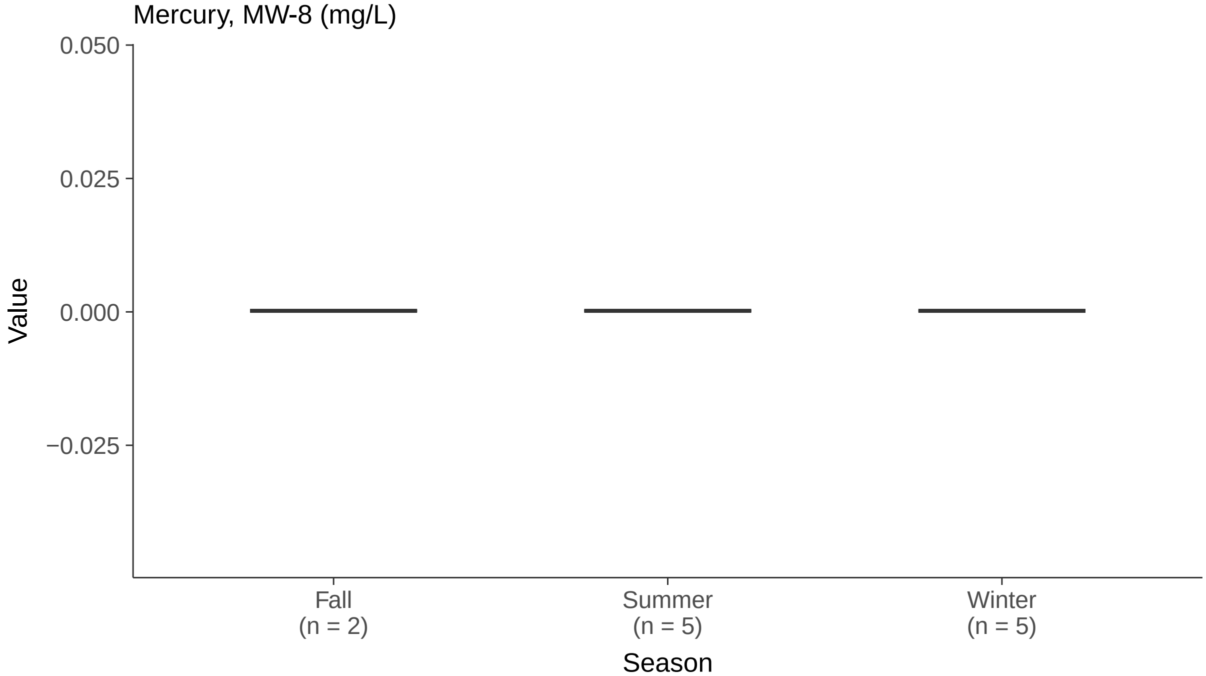
Boxplot

Mercury, MW-8 (mg/L)



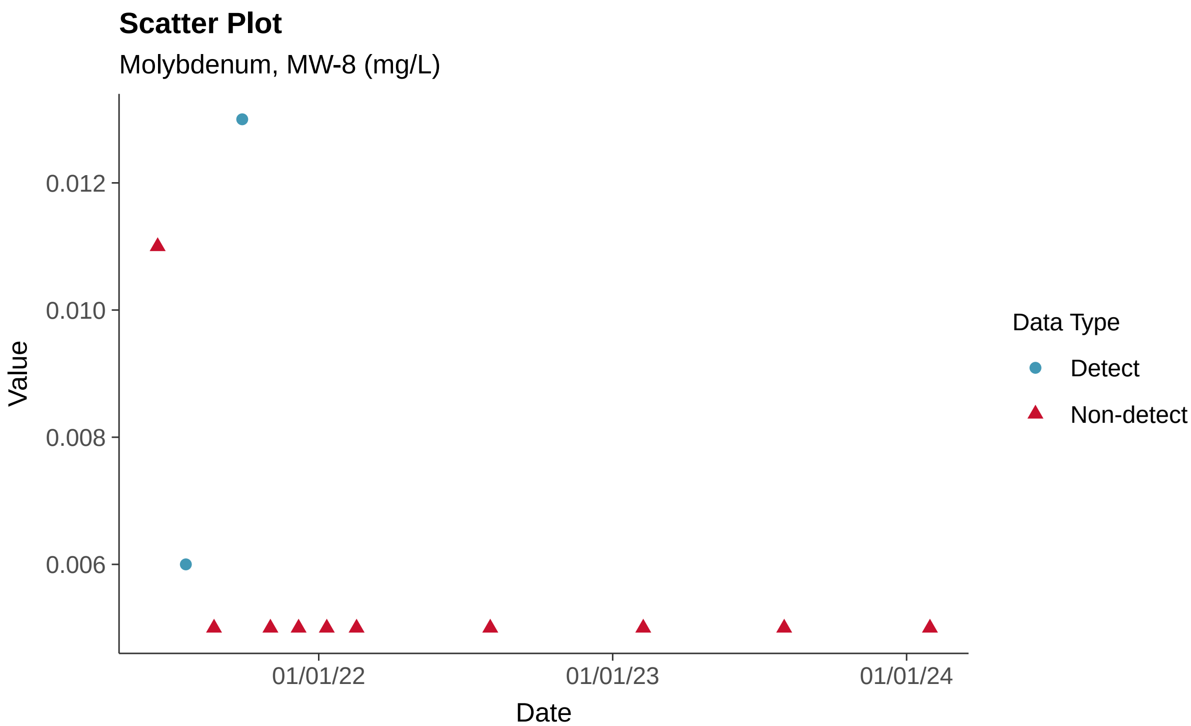
Boxplot by Season

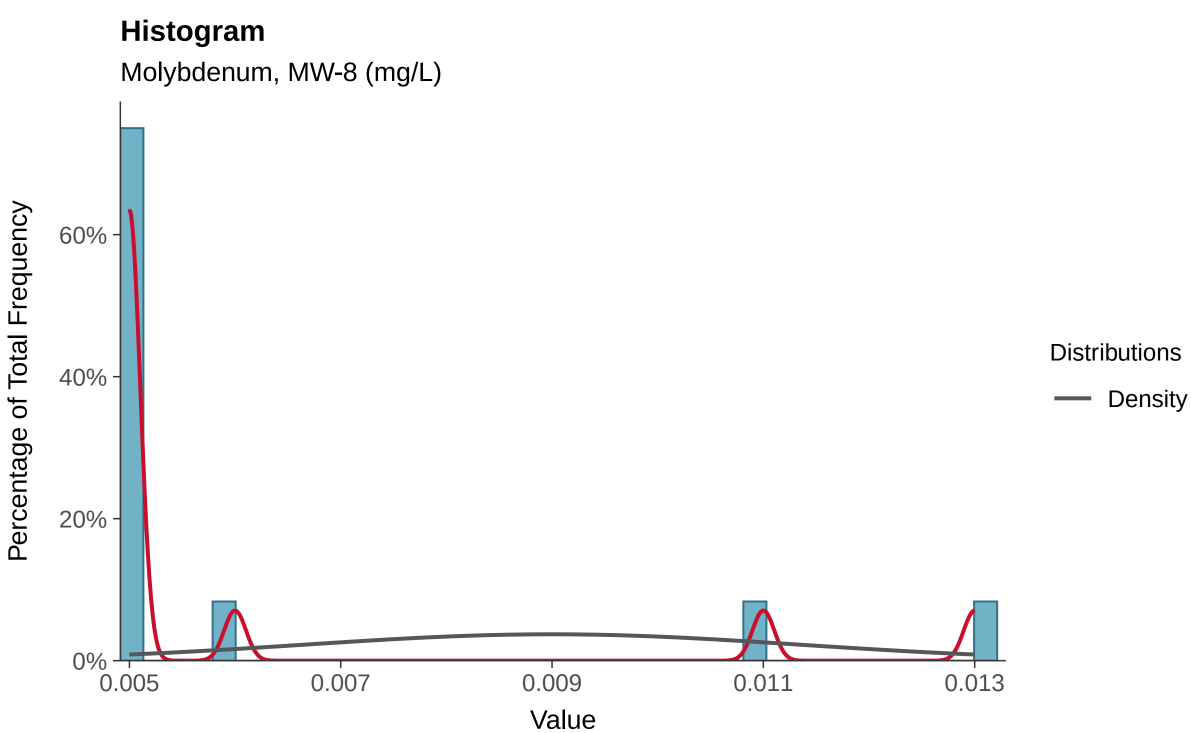
Mercury, MW-8 (mg/L)

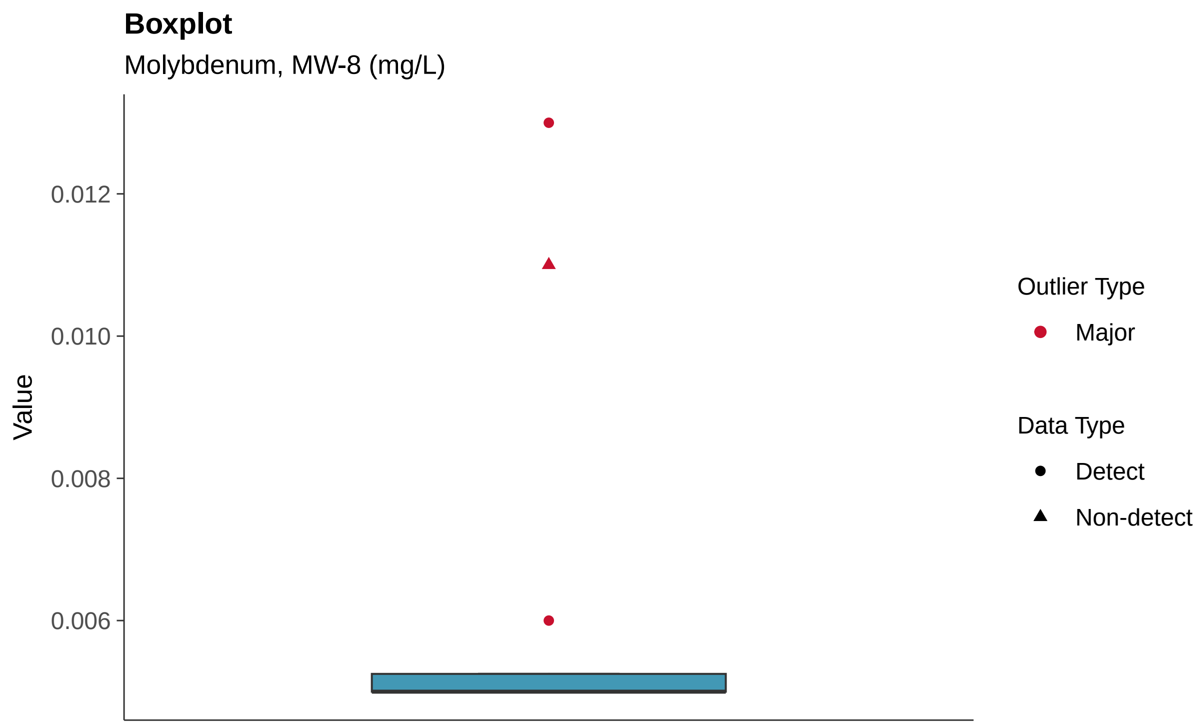


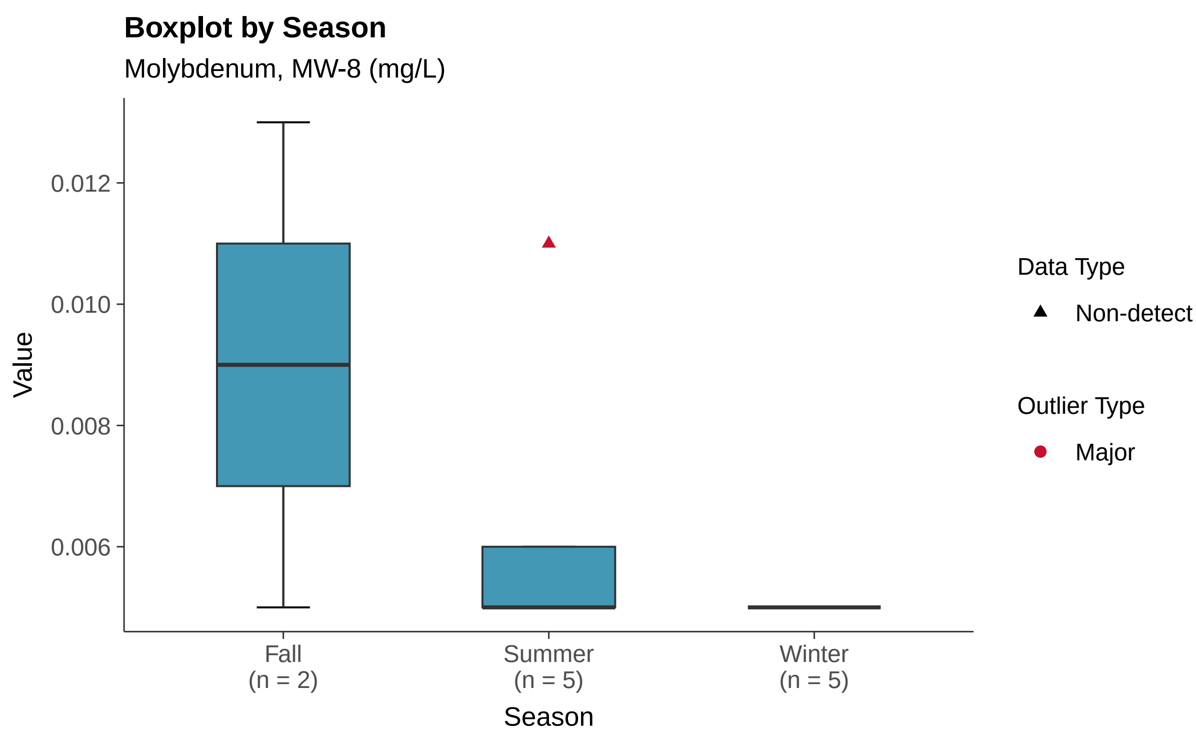
Appendix IV: Molybdenum, MW-8

ID: 08_2_18



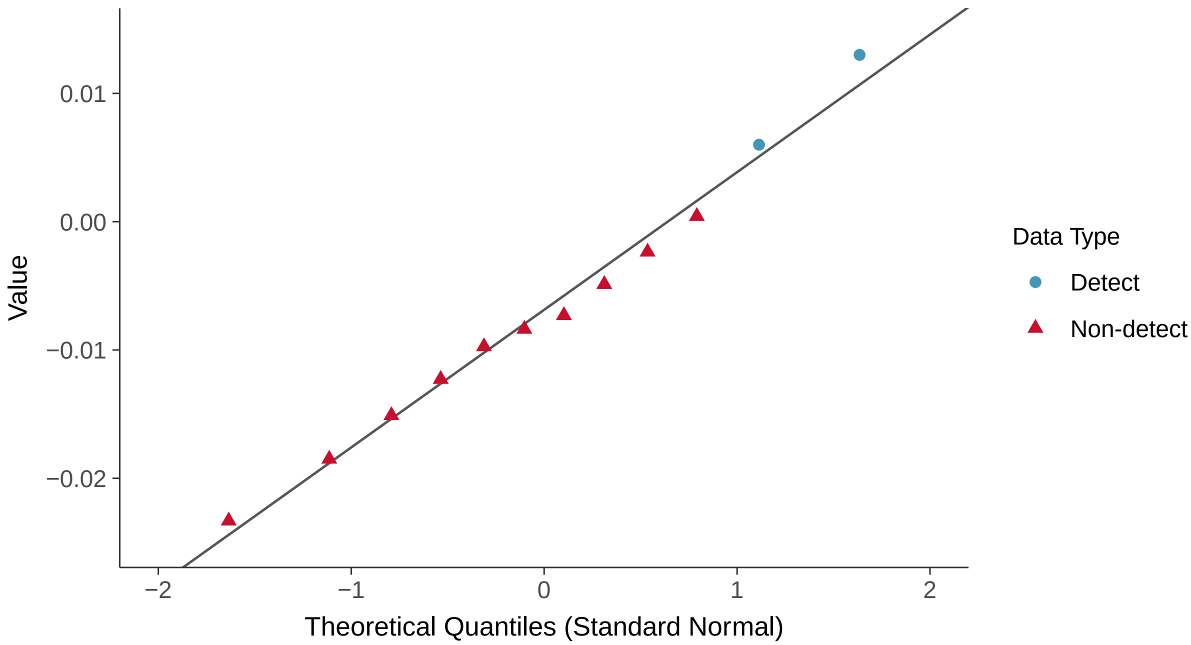



Boxplot
Molybdenum, MW-8 (mg/L)
Value
0.012
0.010
0.008
0.006
Outlier Type
Major
Data Type
Detect
Non-detect


Boxplot by Season
Molybdenum, MW-8 (mg/L)
Value
0.012
0.010
0.008
0.006
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season
Data Type
Non-detect
Outlier Type
Major

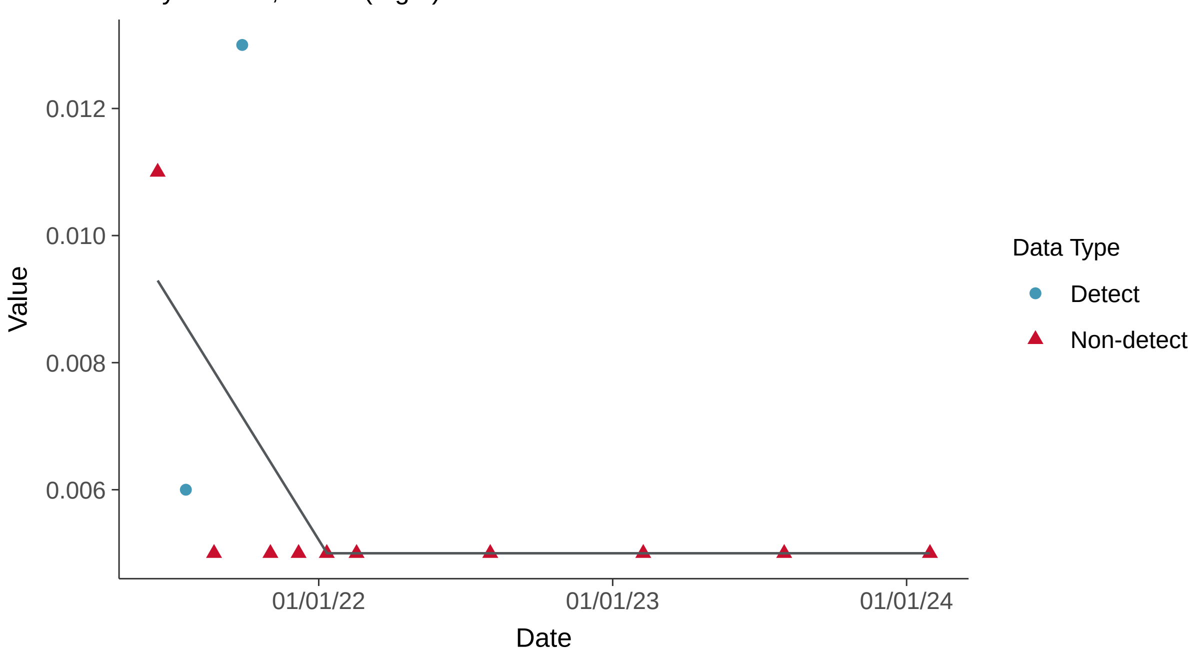
Normal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-8 (mg/L)



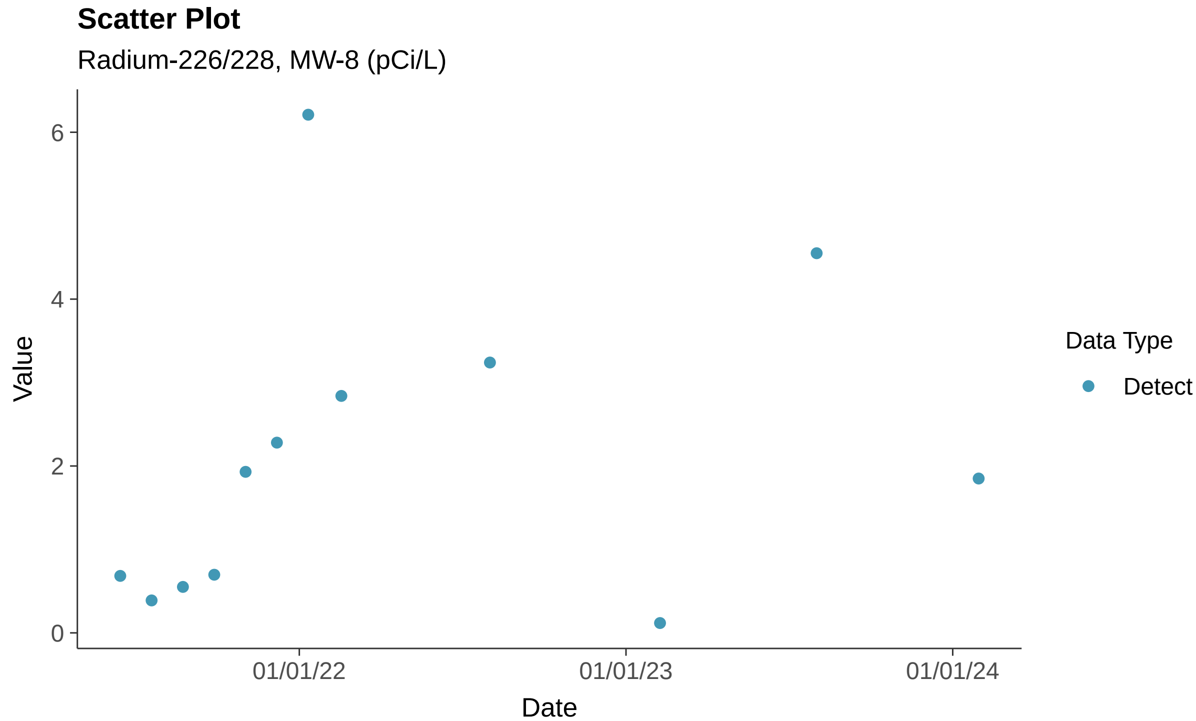
Trend Regression: Piecewise Linear-Linear

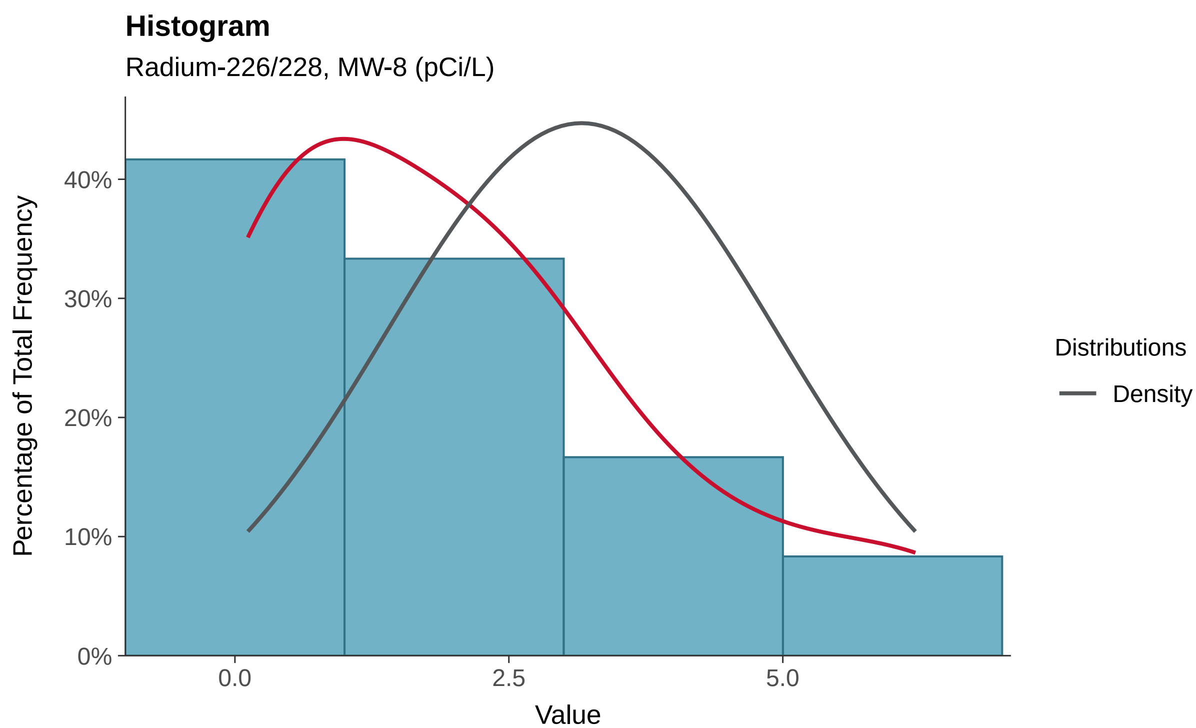
Molybdenum, MW-8 (mg/L)



Appendix IV: Radium-226/228, MW-8

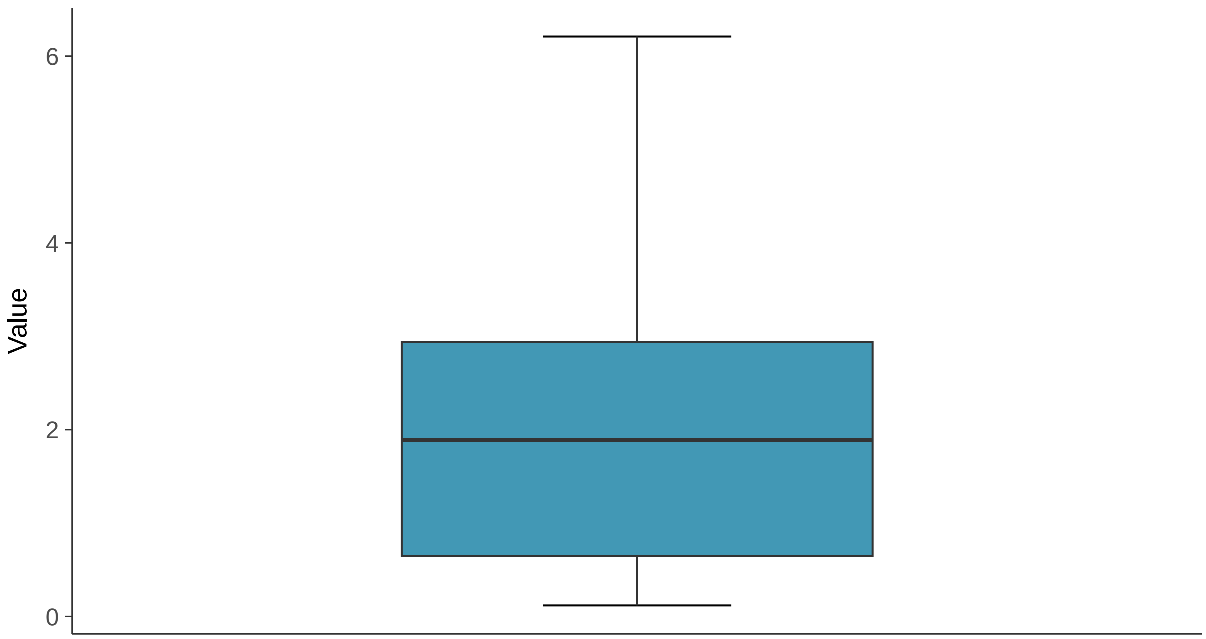
ID: 08_2_20





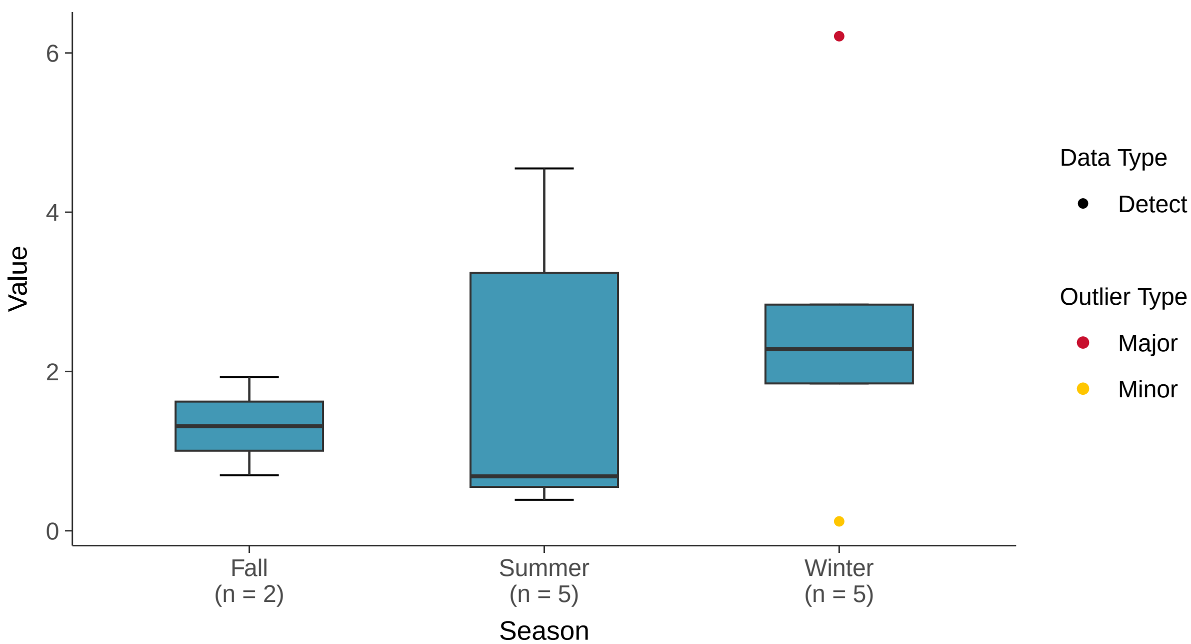
Boxplot

Radium-226/228, MW-8 (pCi/L)



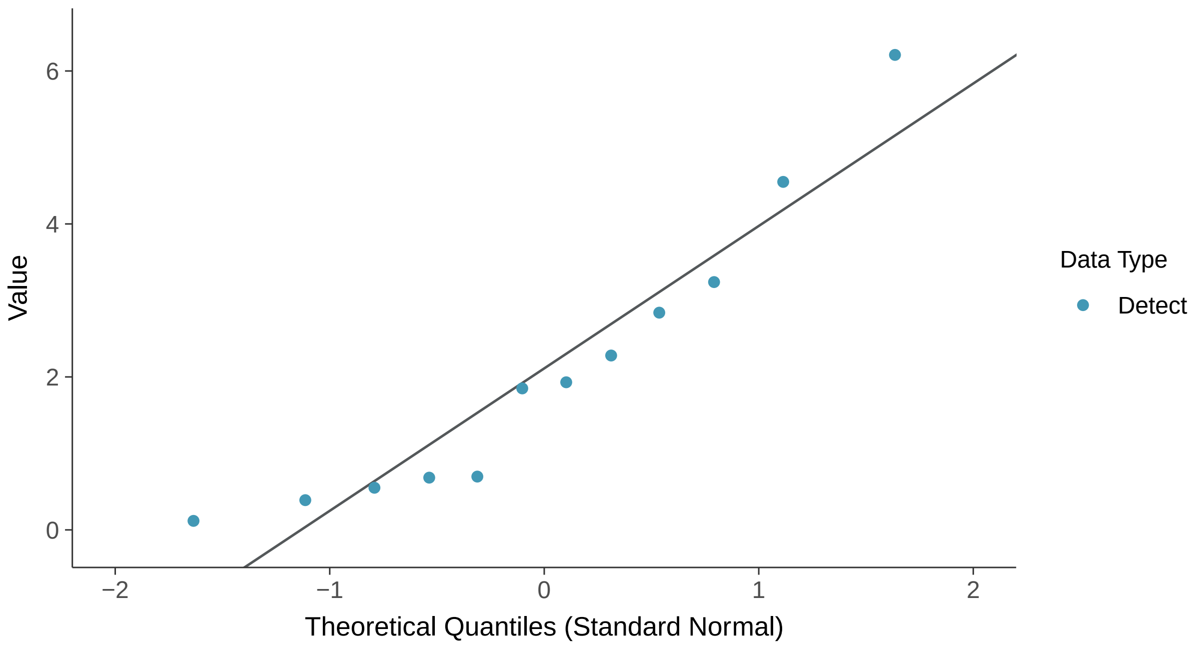
Boxplot by Season

Radium-226/228, MW-8 (pCi/L)



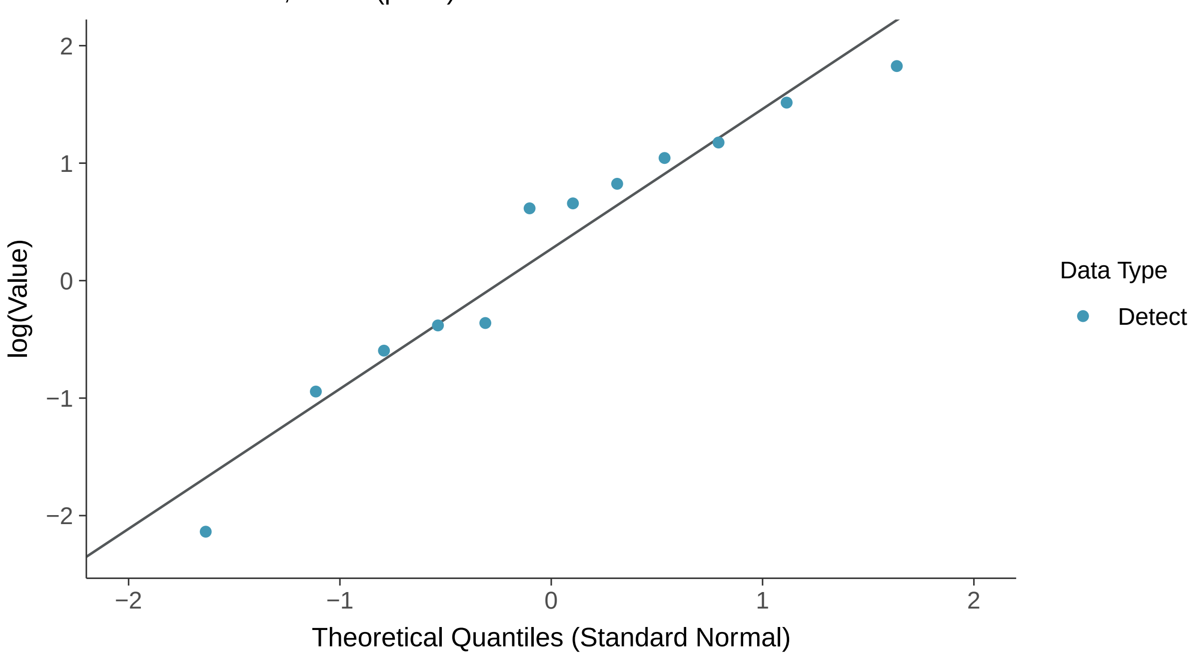
Normal Q-Q plot

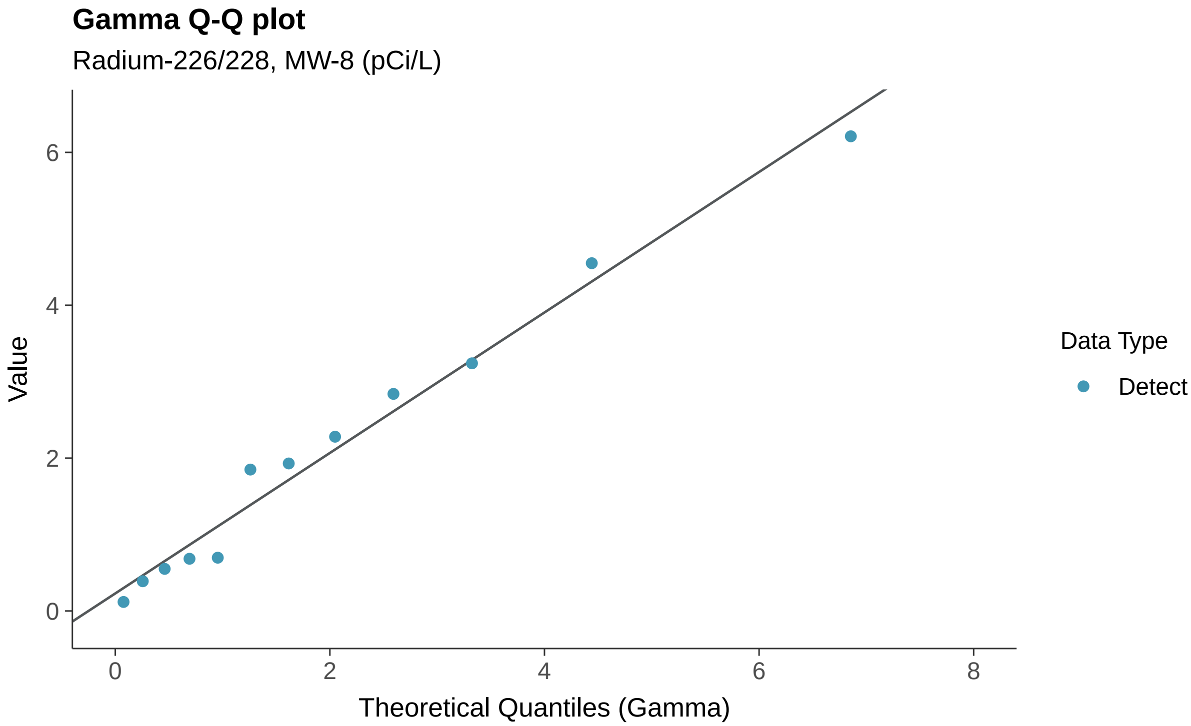
Radium-226/228, MW-8 (pCi/L)

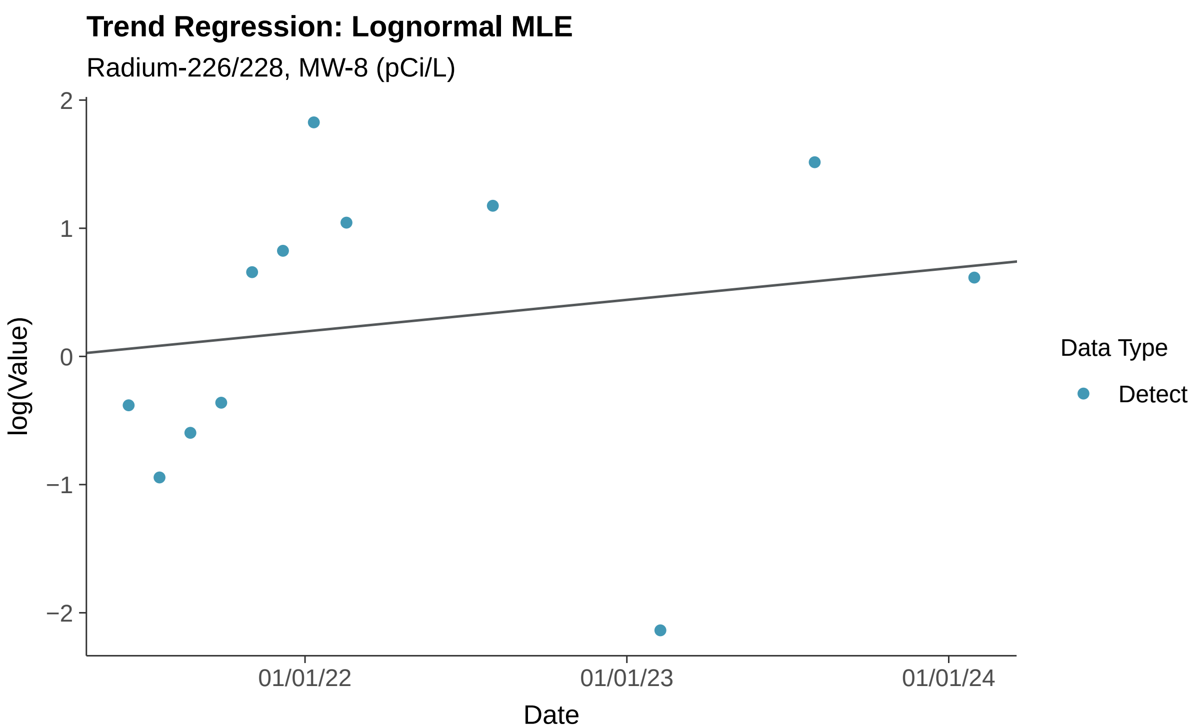


Lognormal Q-Q plot

Radium-226/228, MW-8 (pCi/L)

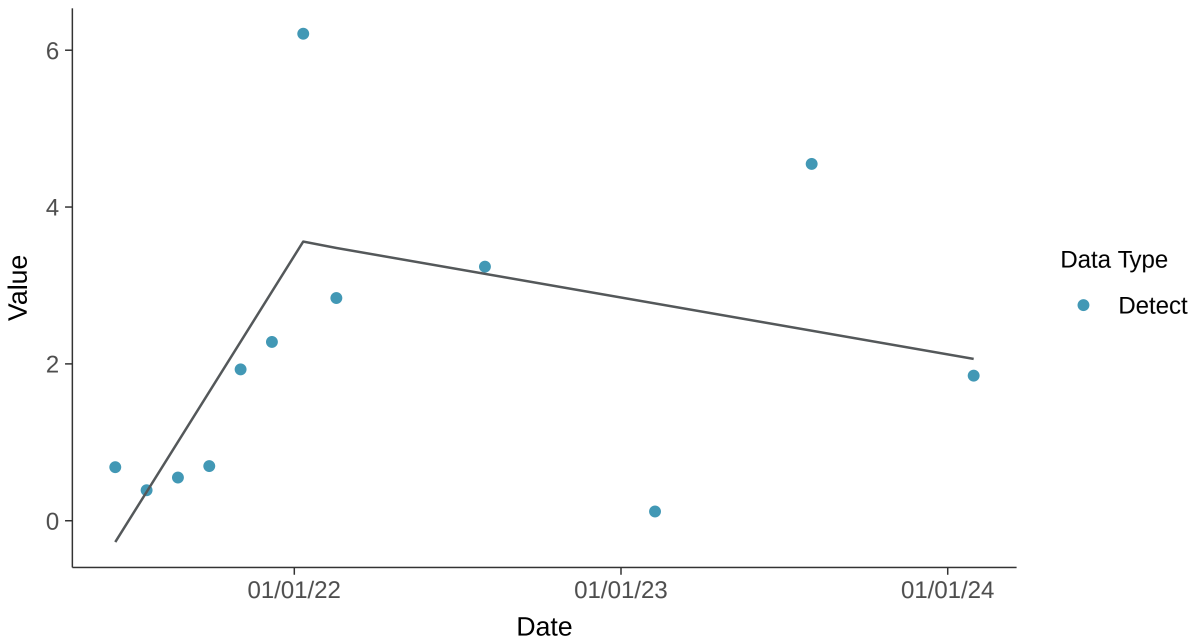



Gamma Q-Q plot
Radium-226/228, MW-8 (pCi/L)
Value
Theoretical Quantiles (Gamma)
0
2
4
6
8
Data Type
Detect


Trend Regression: Lognormal MLE
Radium-226/228, MW-8 (pCi/L)
log(Value)
Date
01/01/22
01/01/23
01/01/24
2
1
0
−1
−2
Data Type
Detect

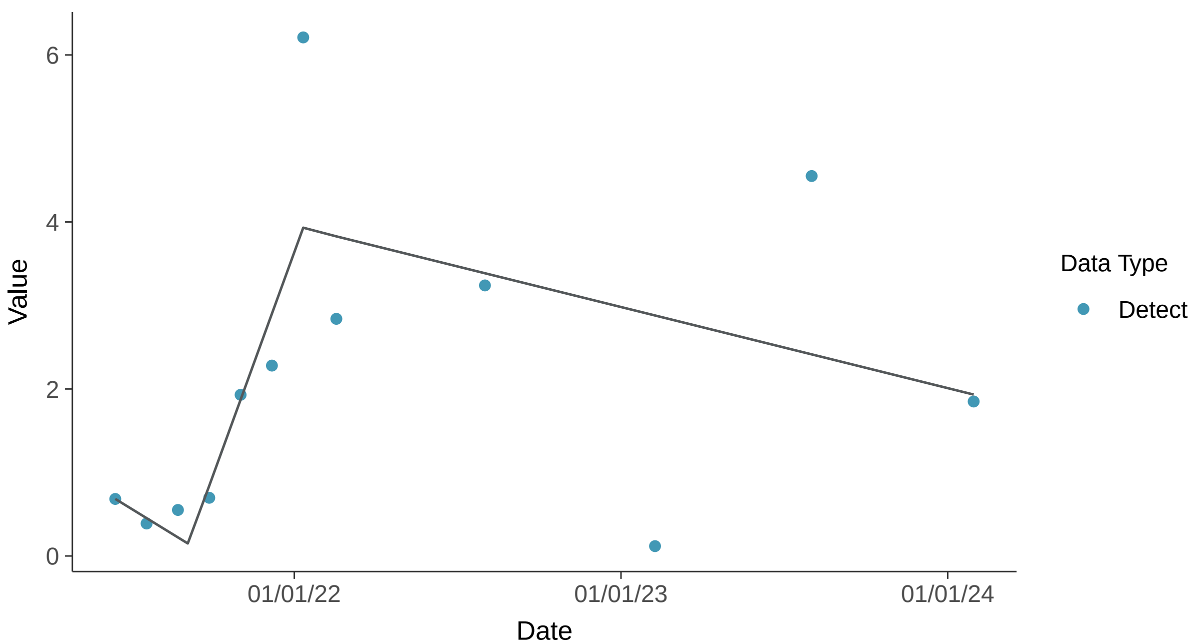
Trend Regression: Piecewise Linear-Linear

Radium-226/228, MW-8 (pCi/L)



Trend Regression: Piecewise Linear-Linear-Linear

Radium-226/228, MW-8 (pCi/L)

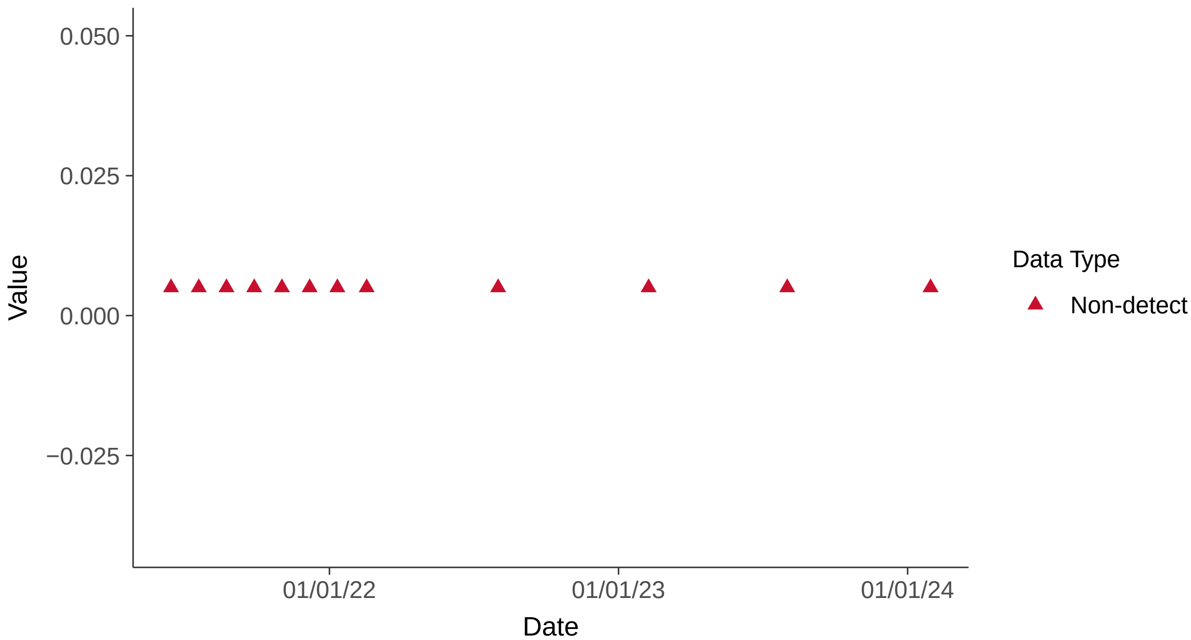


Appendix IV: Selenium, MW-8

ID: 08_2_22

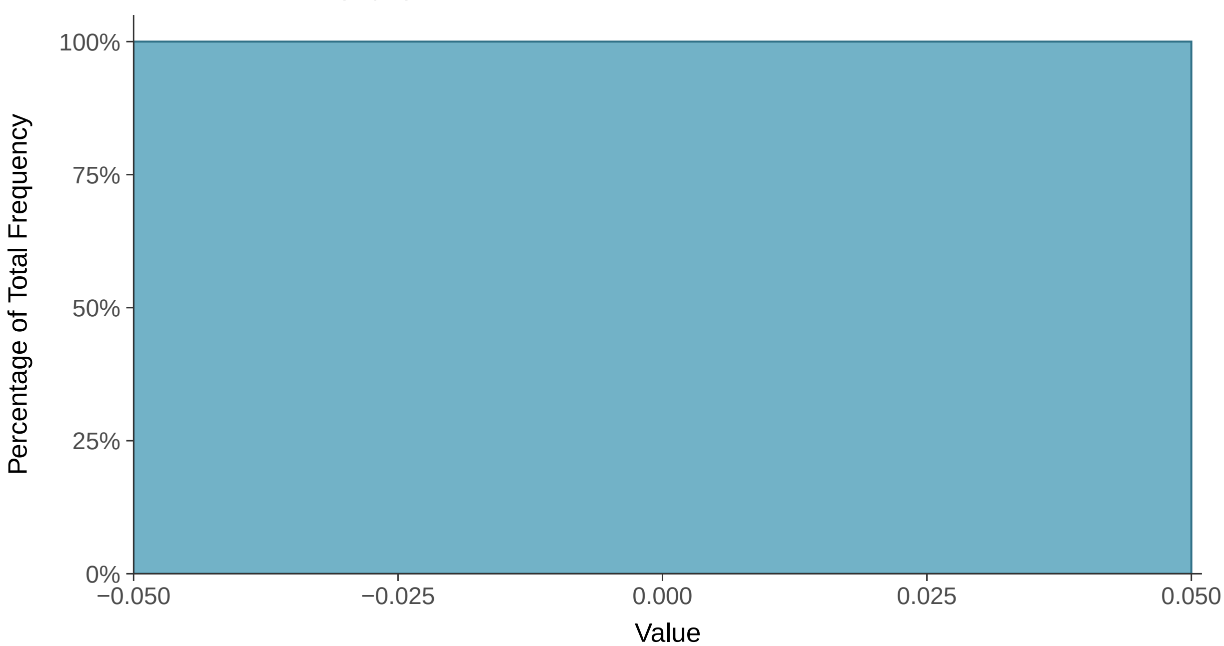
Scatter Plot

Selenium, MW-8 (mg/L)



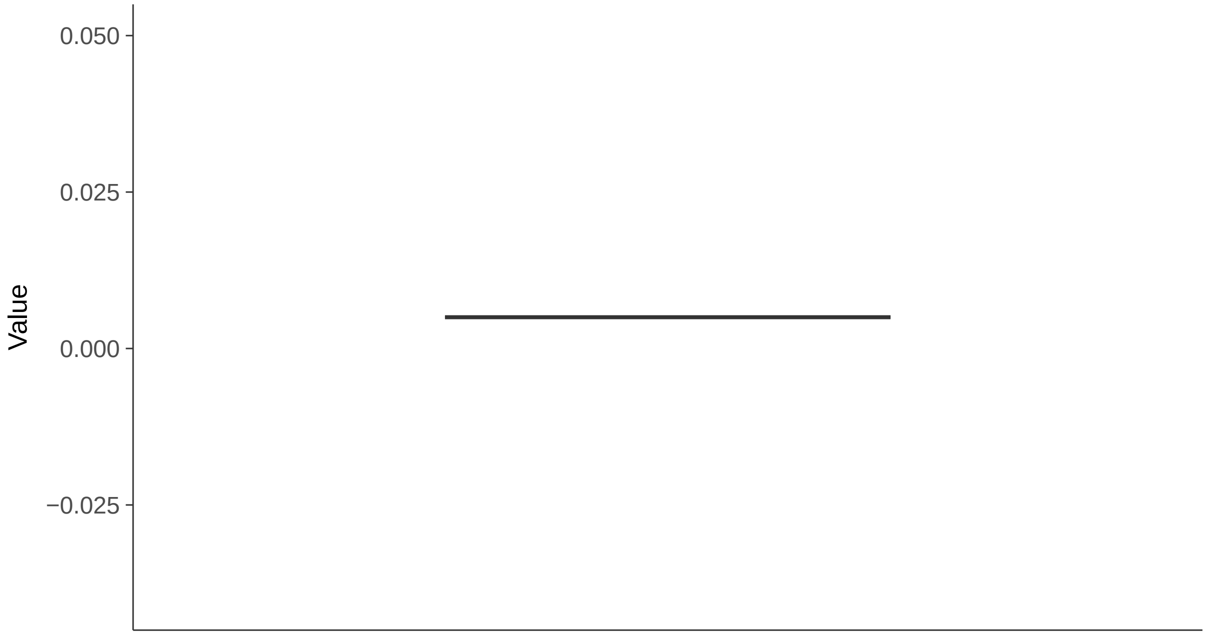
Histogram

Selenium, MW-8 (mg/L)



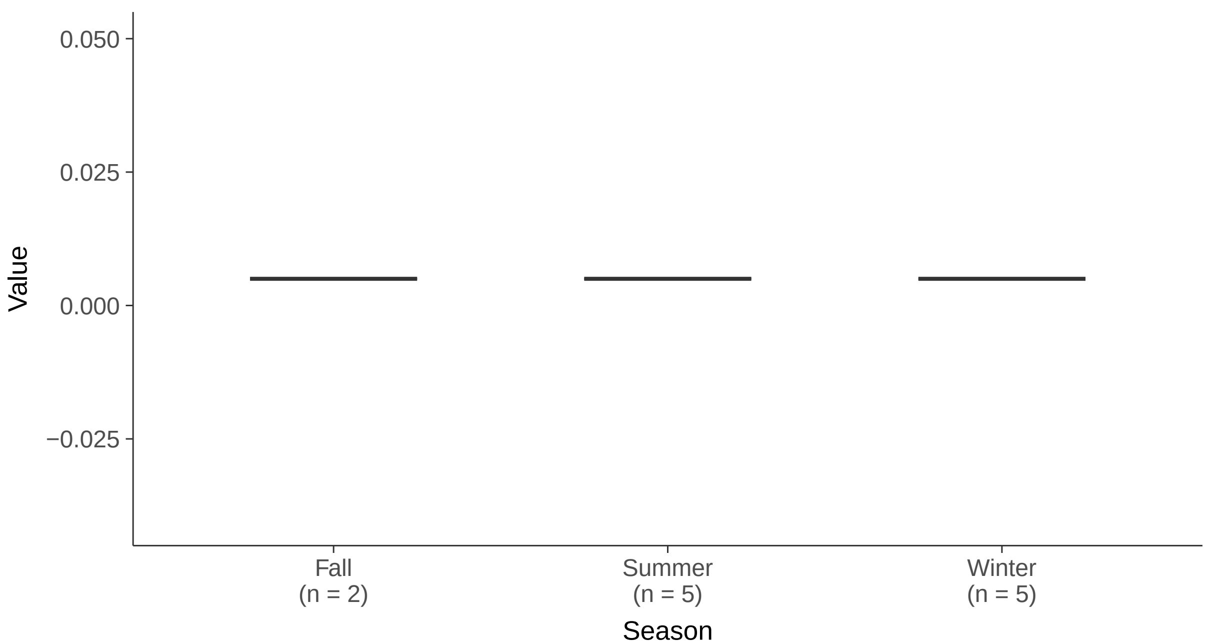
Boxplot

Selenium, MW-8 (mg/L)



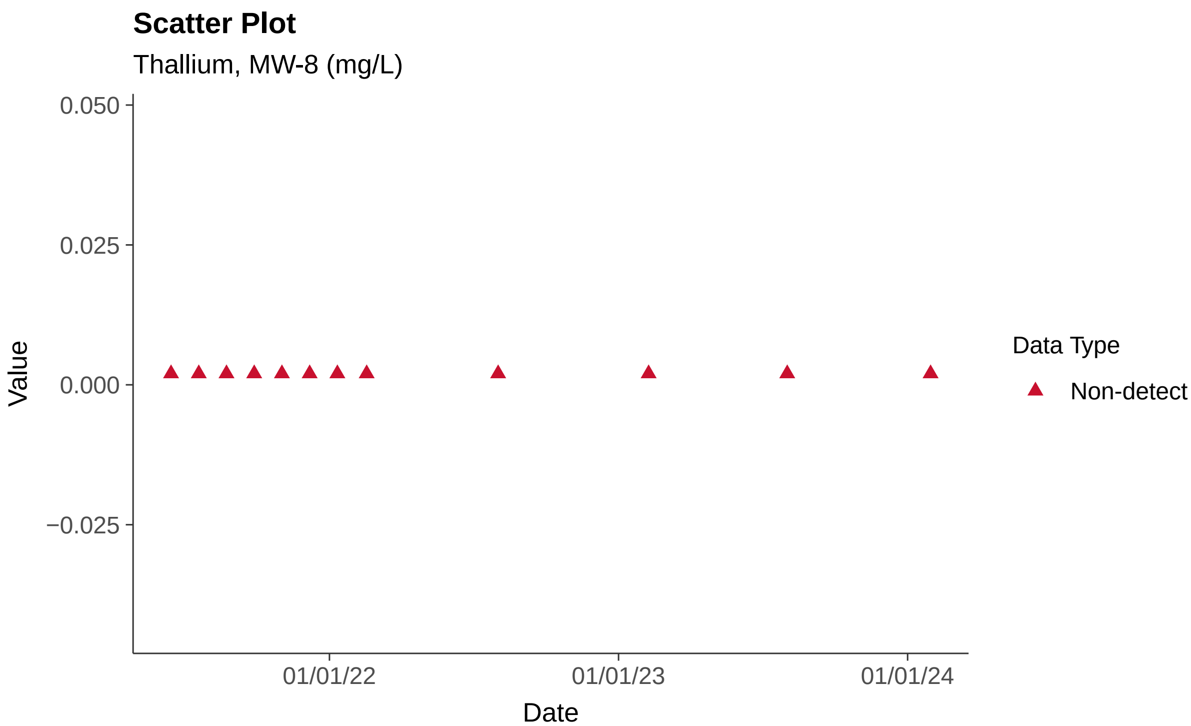
Boxplot by Season

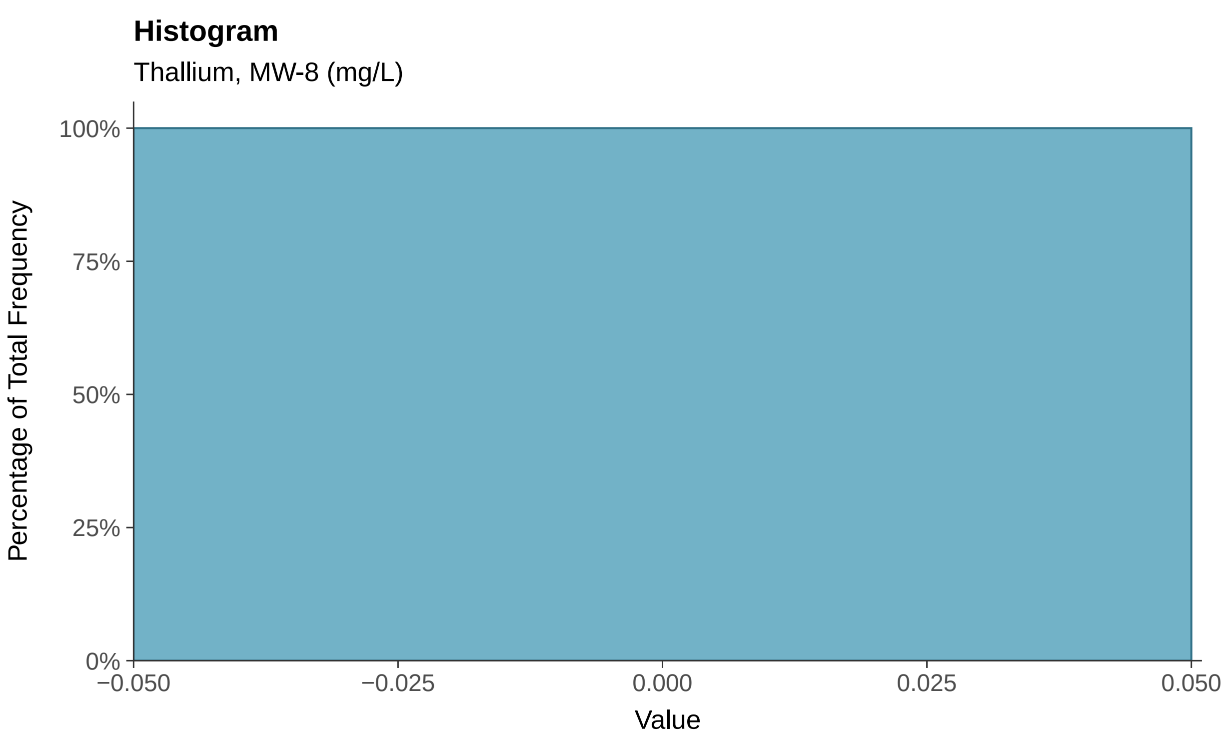
Selenium, MW-8 (mg/L)



Appendix IV: Thallium, MW-8

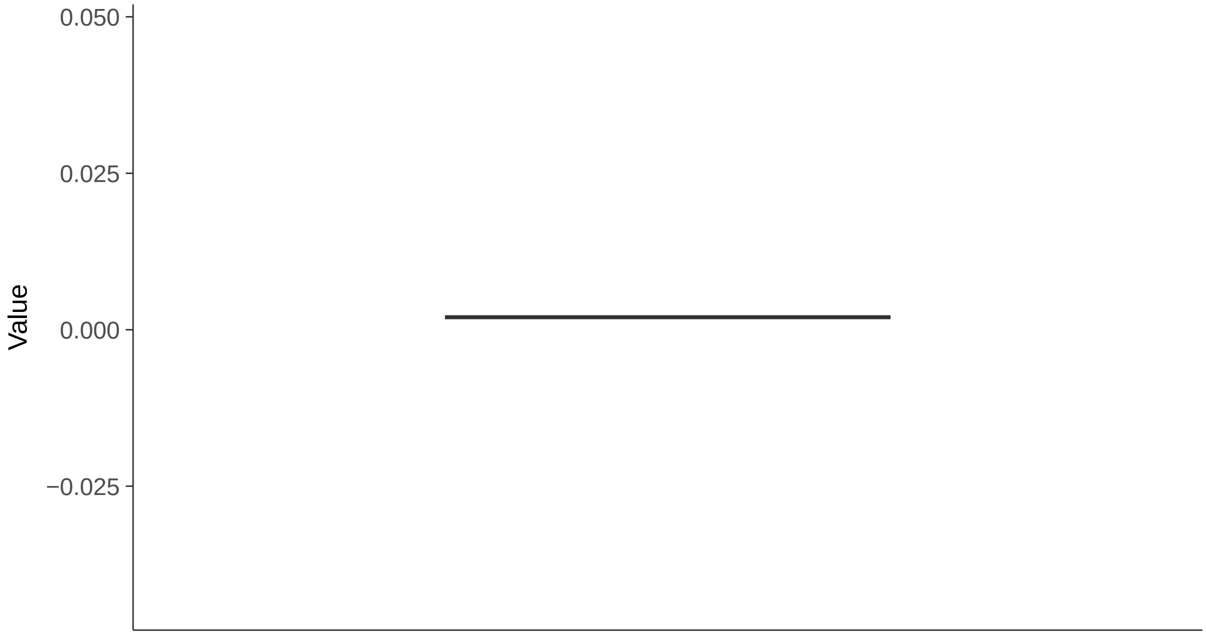
ID: 08_2_23





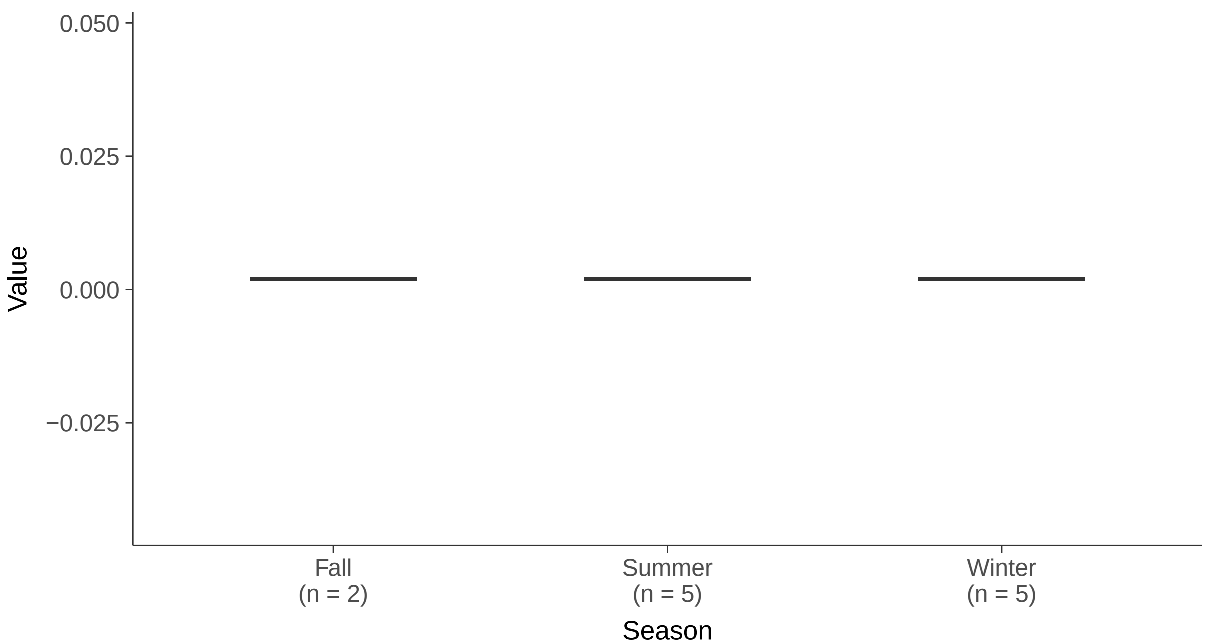
Boxplot

Thallium, MW-8 (mg/L)



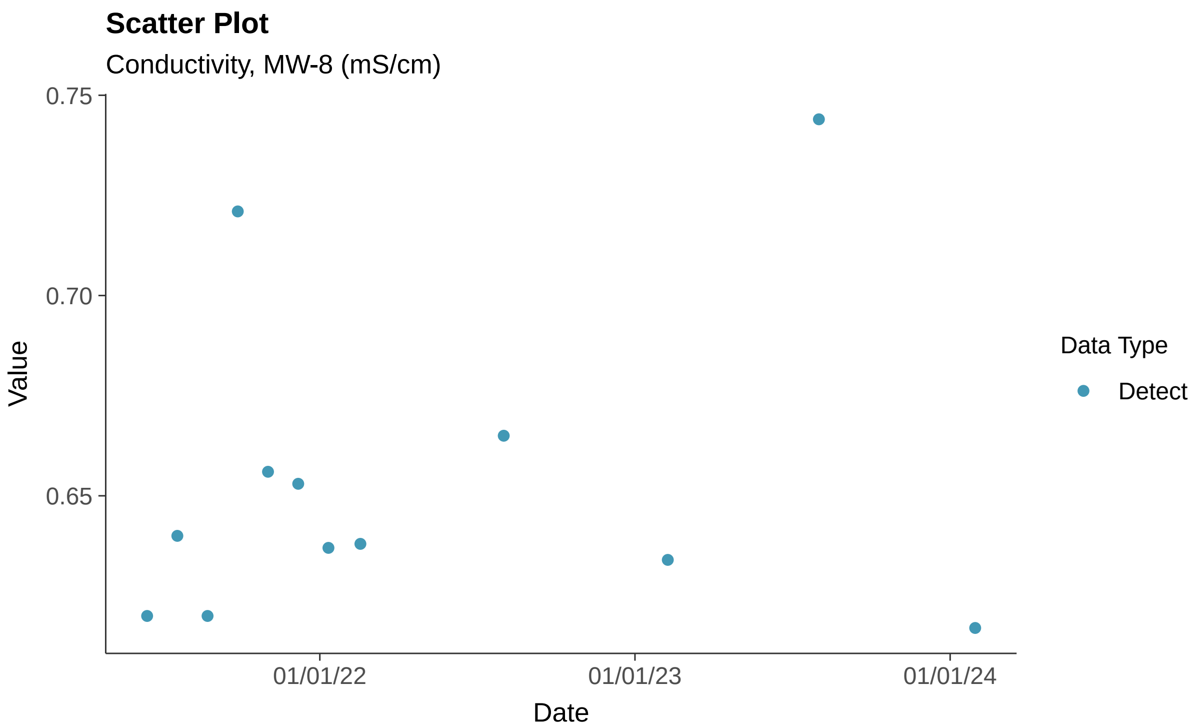
Boxplot by Season

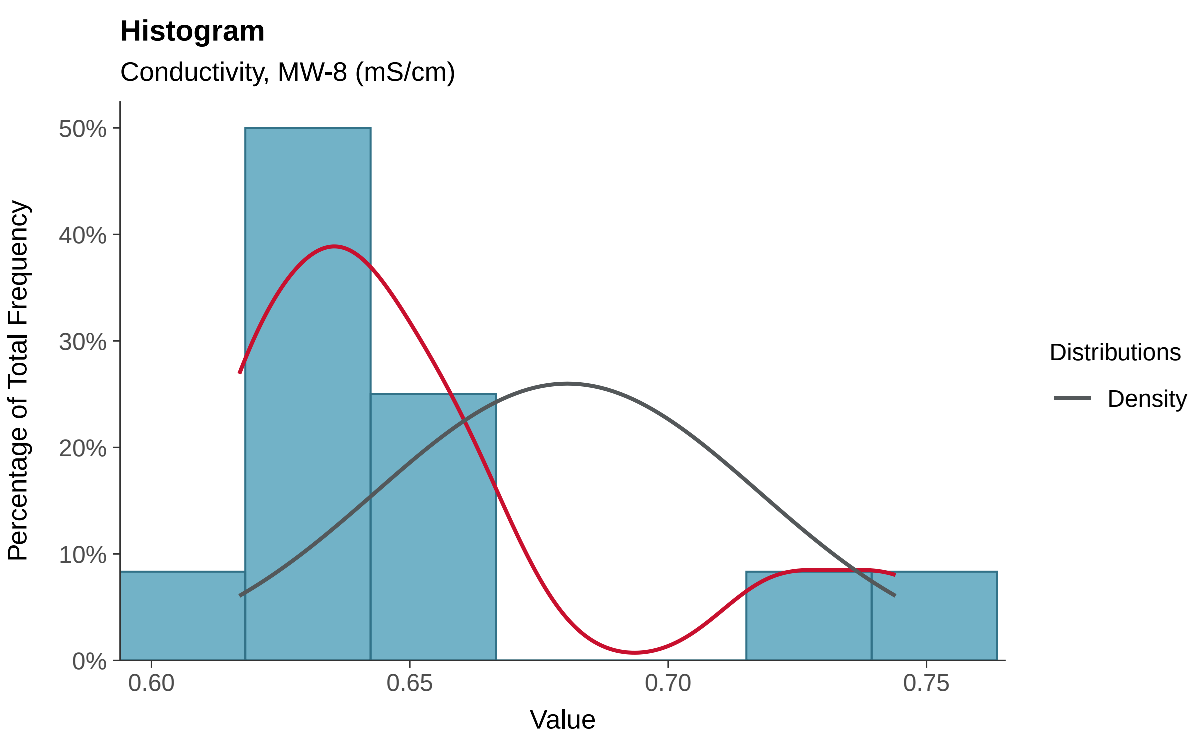
Thallium, MW-8 (mg/L)



Field Parameters: Conductivity, MW-8

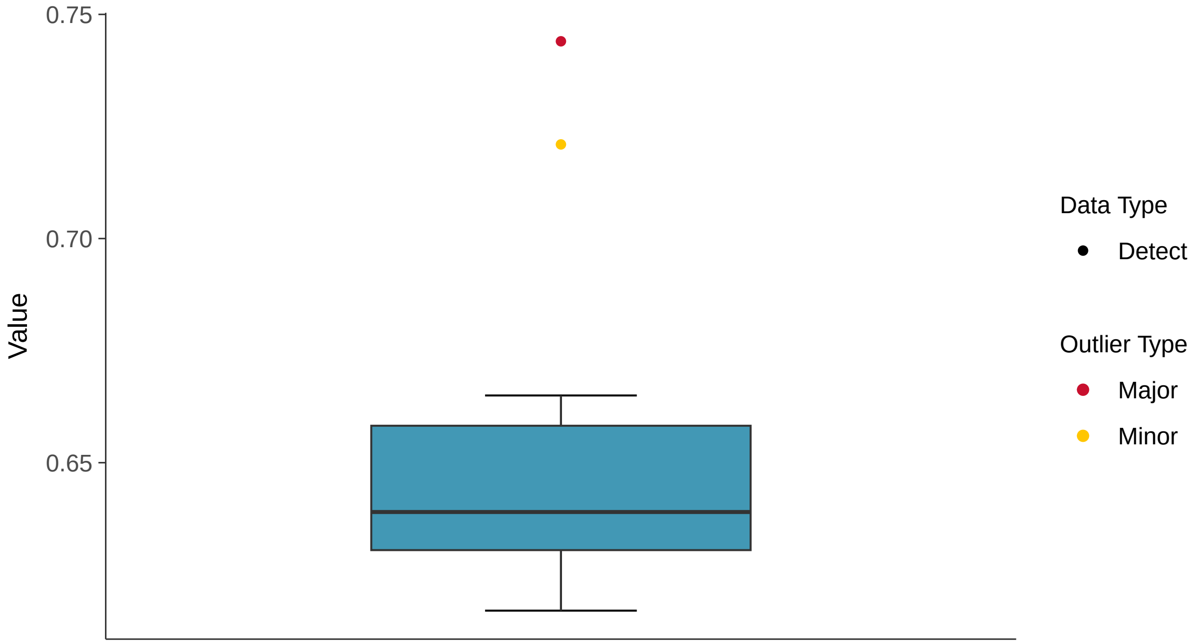
ID: 08_3_24





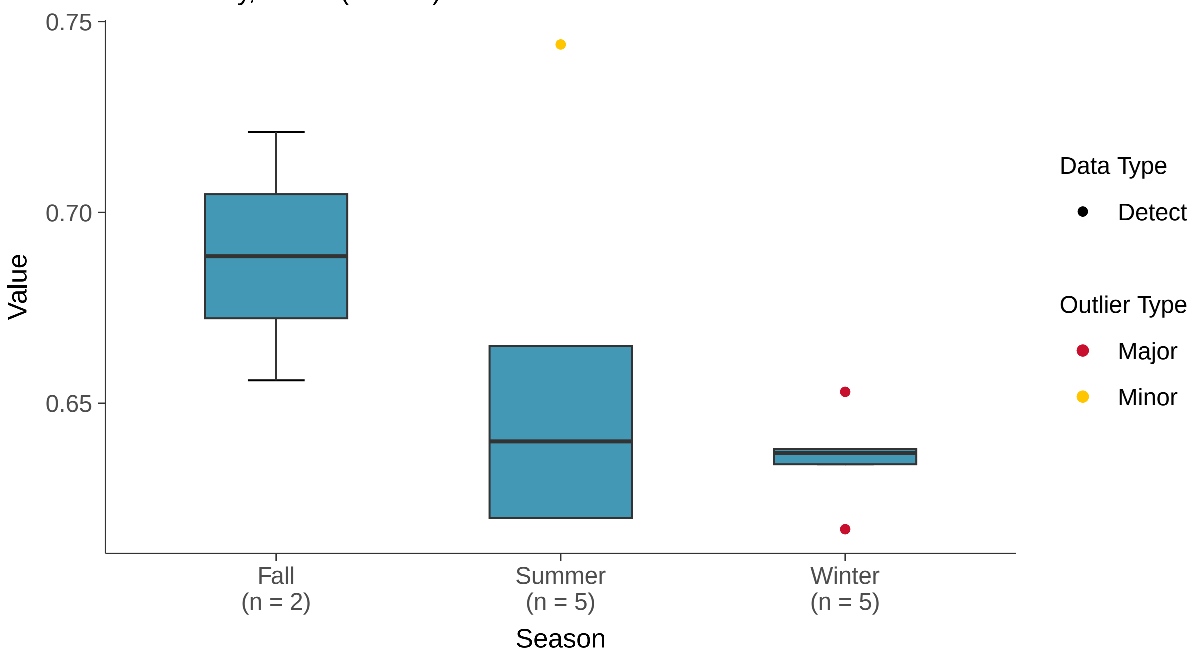
Boxplot

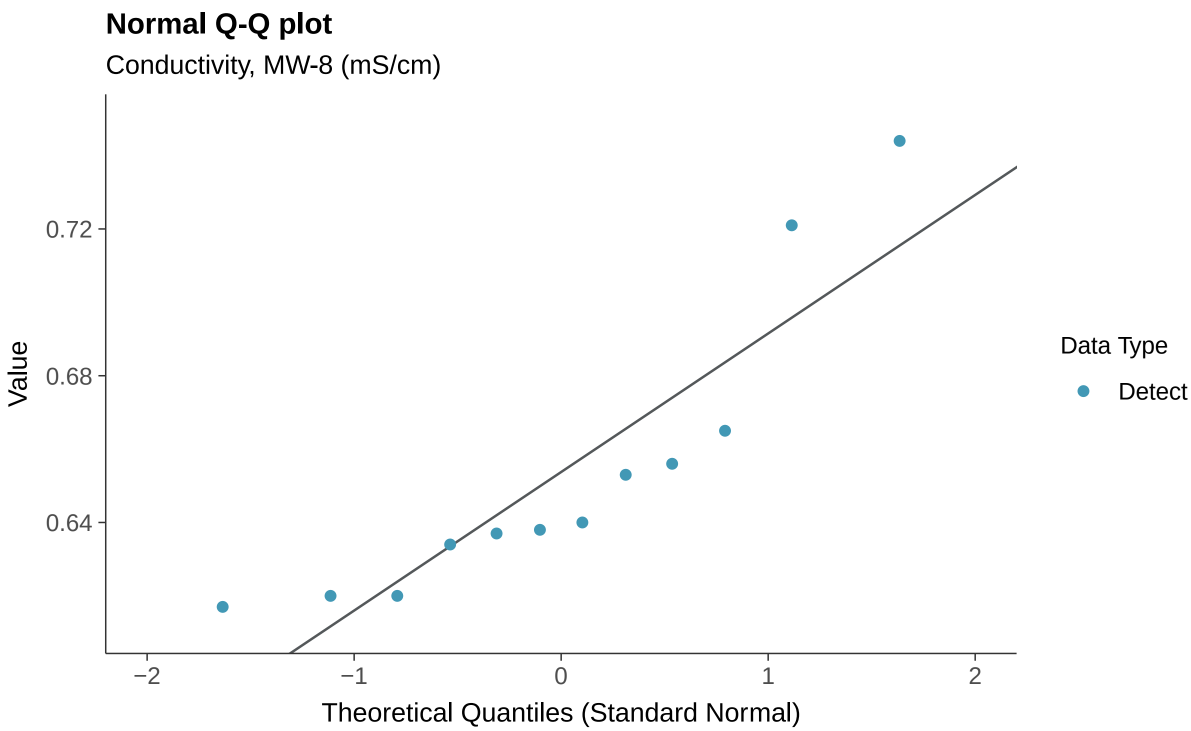
Conductivity, MW-8 (mS/cm)

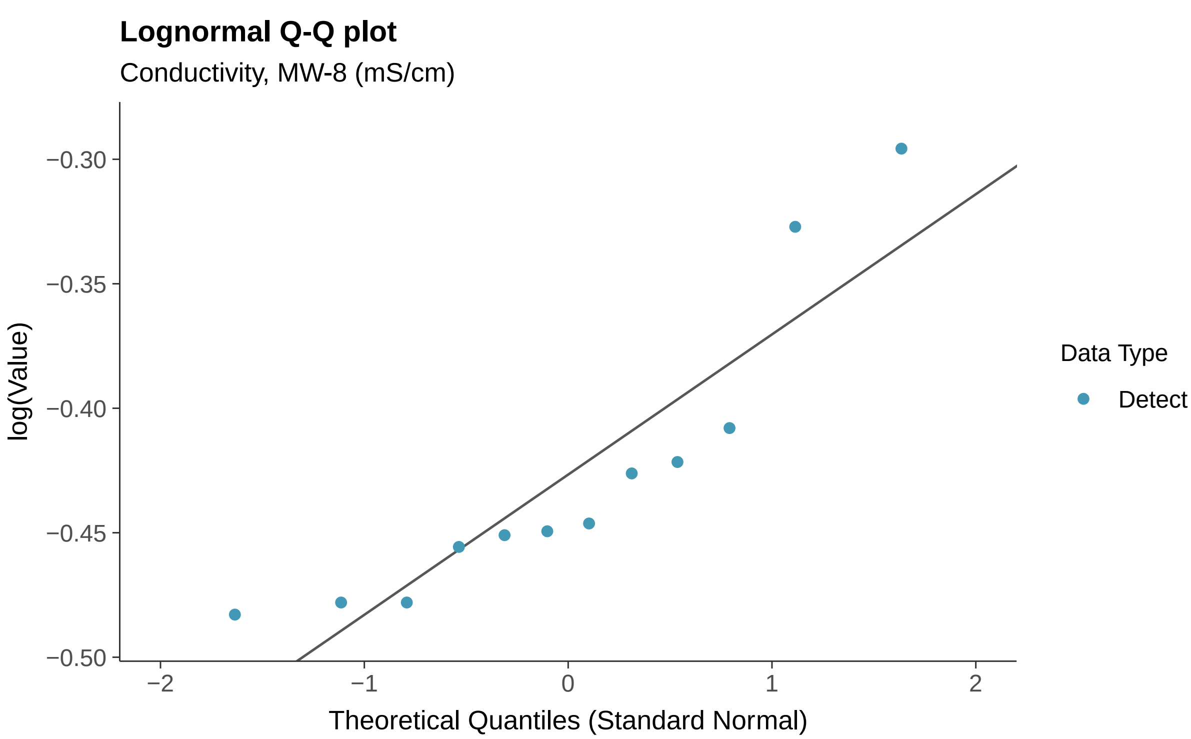


Boxplot by Season

Conductivity, MW-8 (mS/cm)

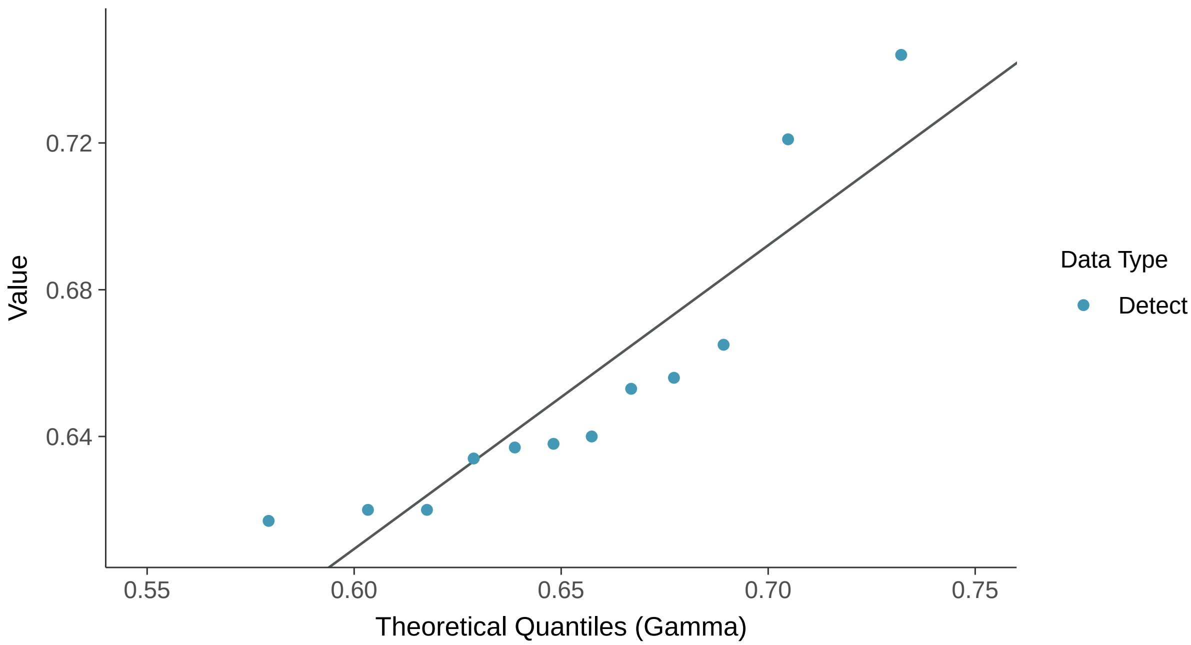



Normal Q-Q plot
Conductivity, MW-8 (mS/cm)
Value
0.72
0.68
0.64
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Conductivity, MW-8 (mS/cm)
log(Value)
−0.30
−0.35
−0.40
−0.45
−0.50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

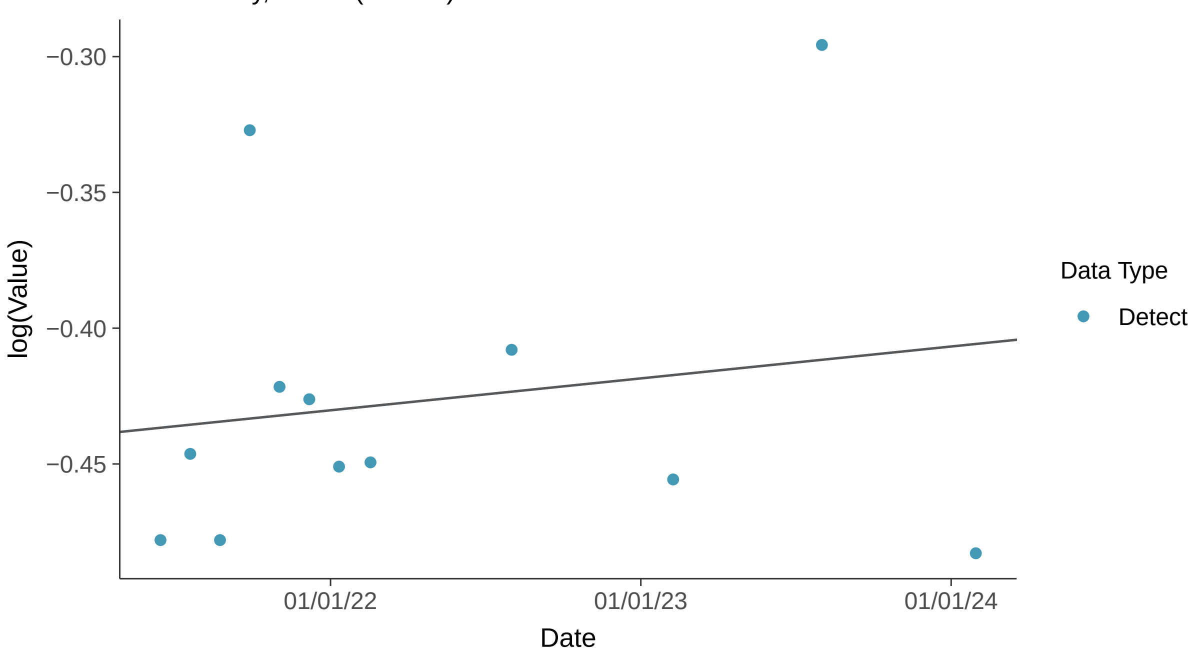
Gamma Q-Q plot

Conductivity, MW-8 (mS/cm)



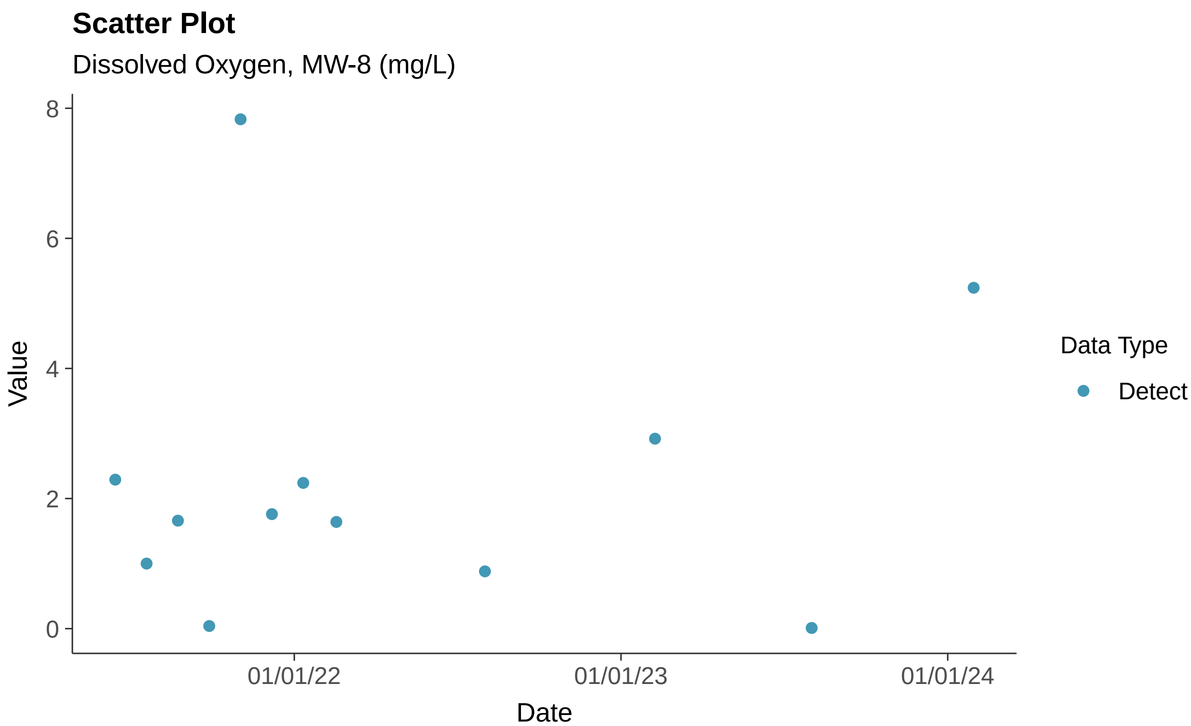
Trend Regression: Lognormal MLE

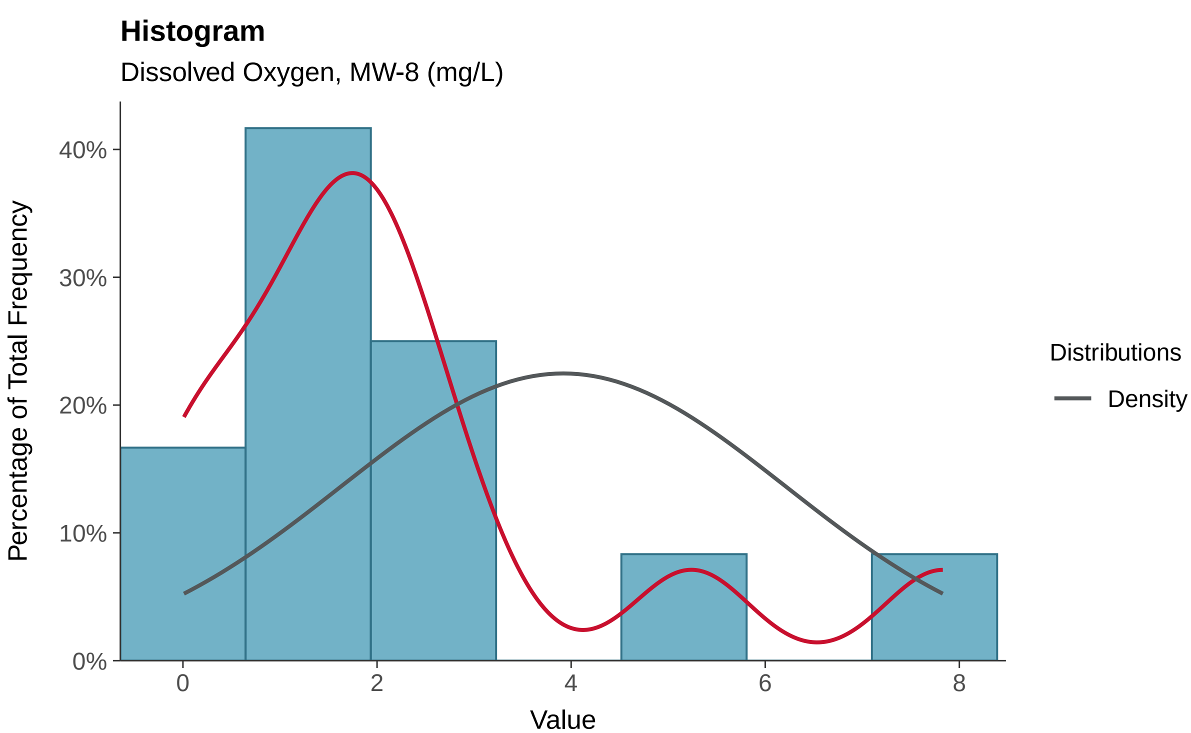
Conductivity, MW-8 (mS/cm)



Field Parameters: Dissolved Oxygen, MW-8

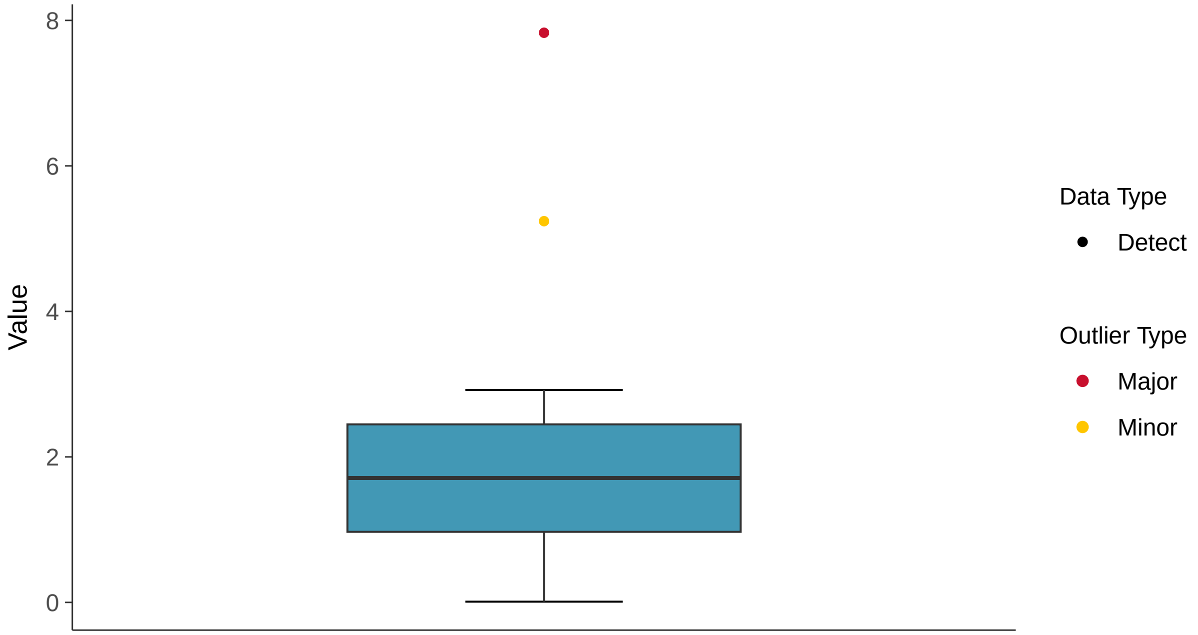
ID: 08_3_25





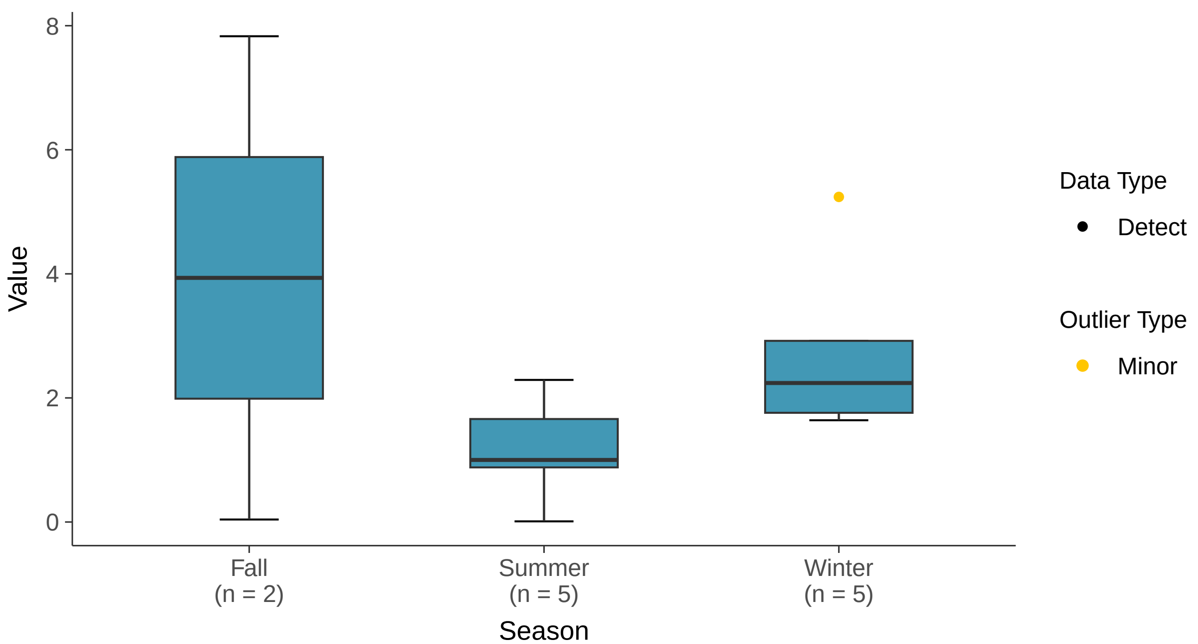
Boxplot

Dissolved Oxygen, MW-8 (mg/L)



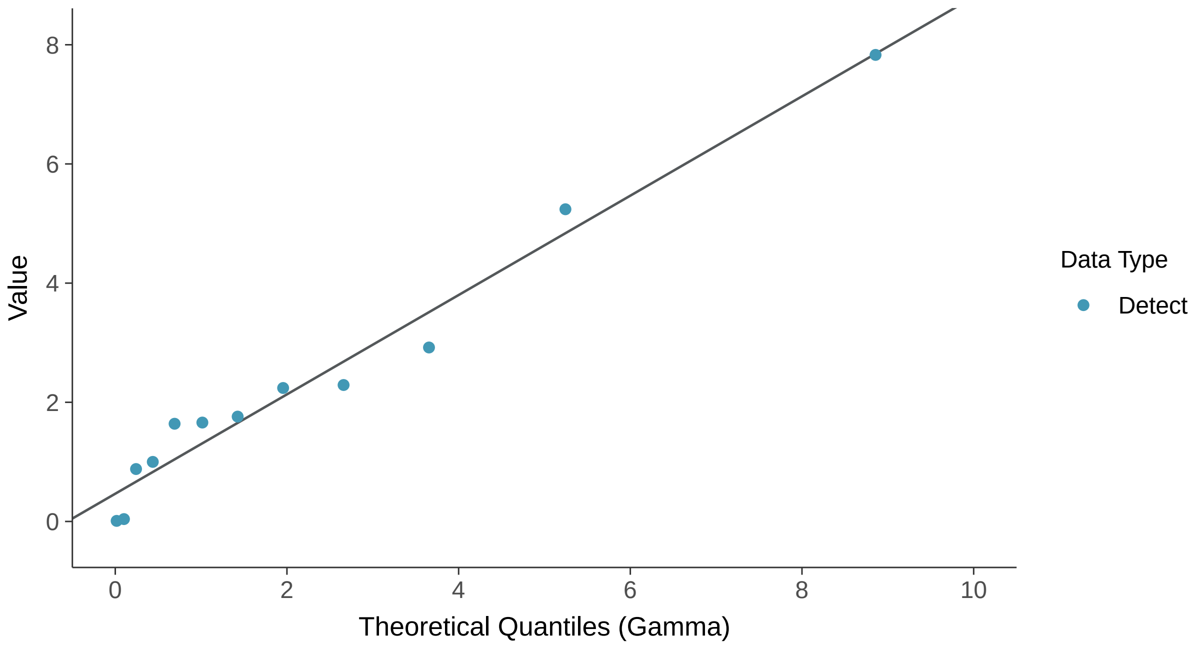
Boxplot by Season

Dissolved Oxygen, MW-8 (mg/L)



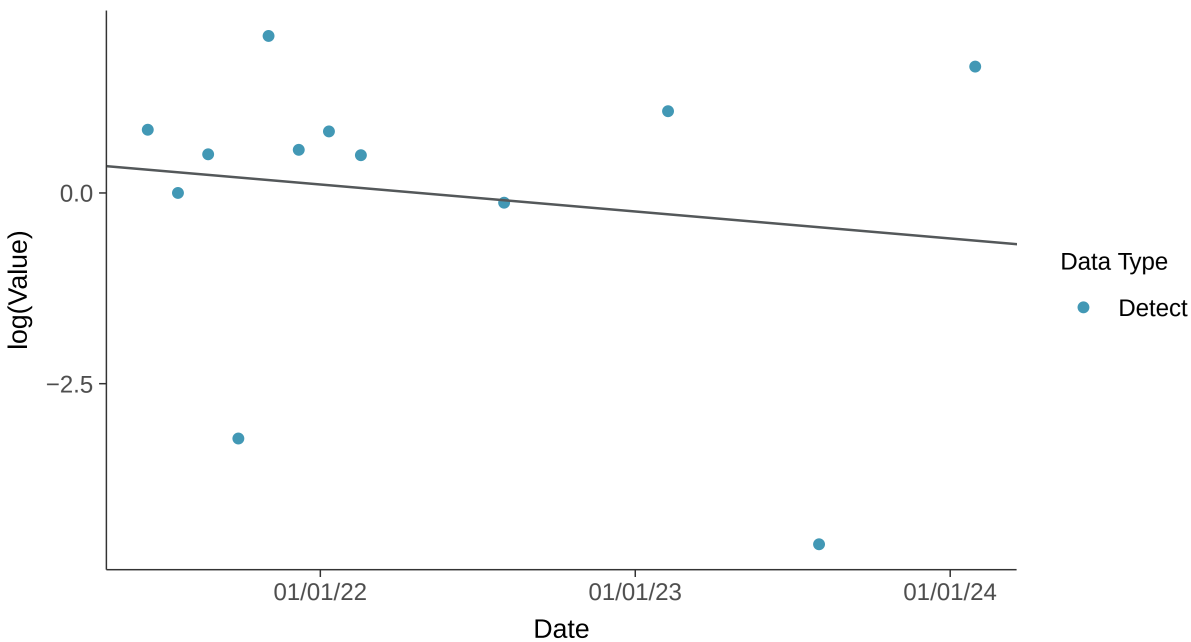
Gamma Q-Q plot

Dissolved Oxygen, MW-8 (mg/L)



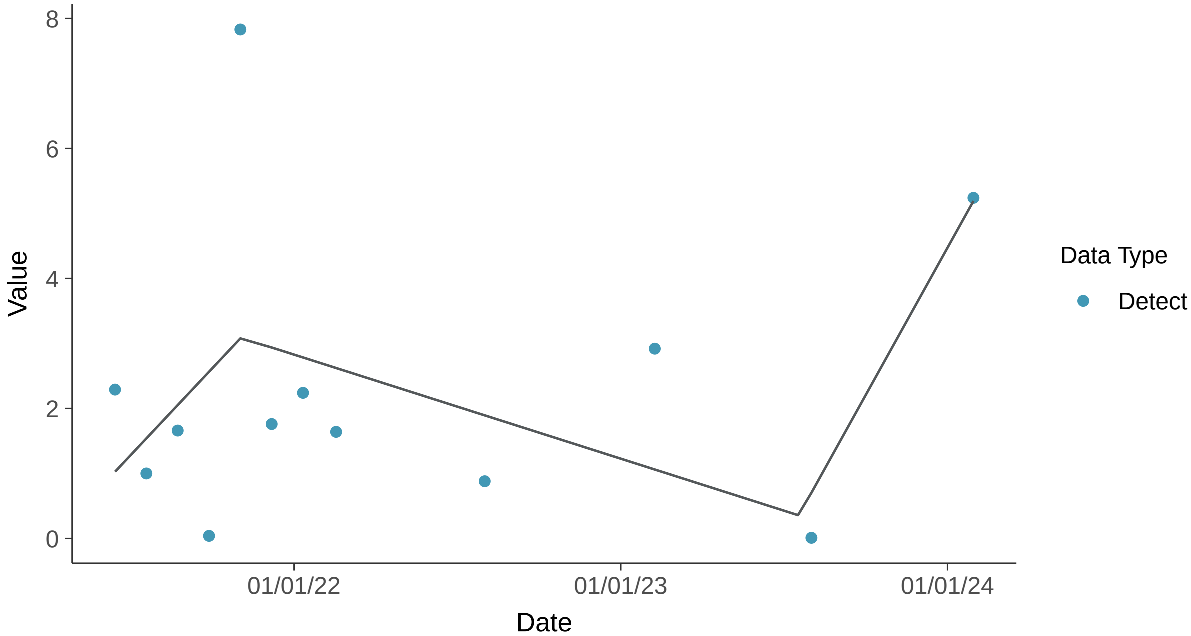
Trend Regression: Lognormal MLE

Dissolved Oxygen, MW-8 (mg/L)



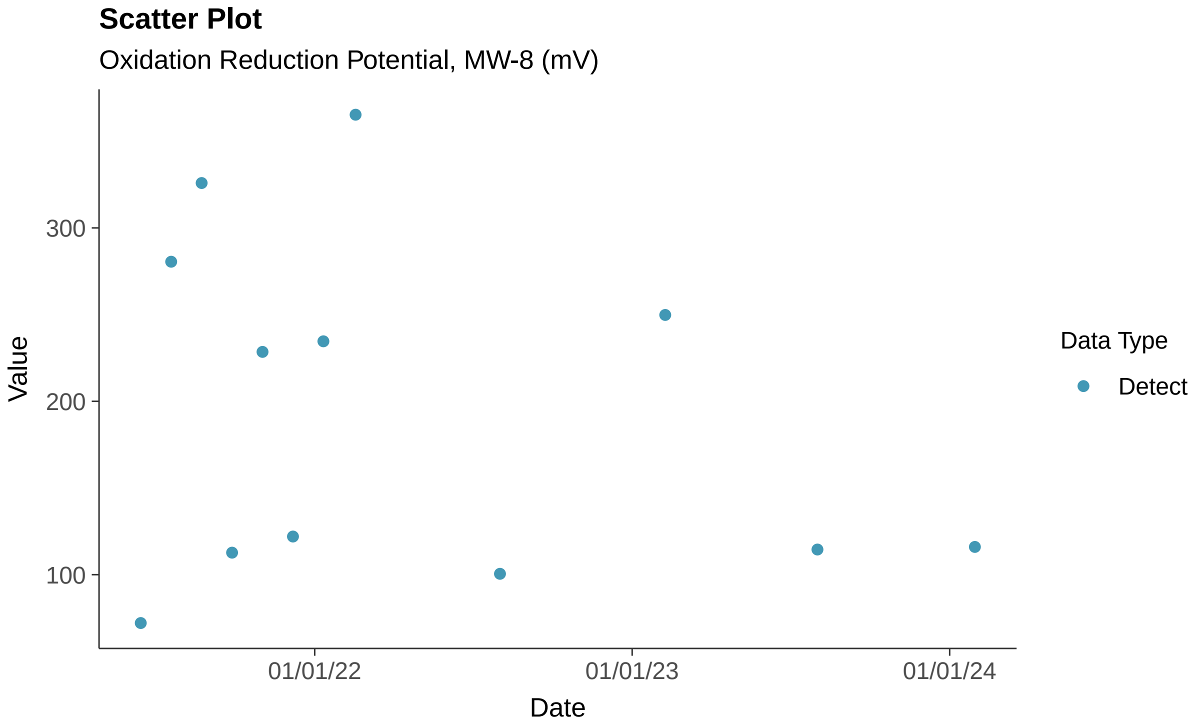
Trend Regression: Piecewise Linear-Linear-Linear

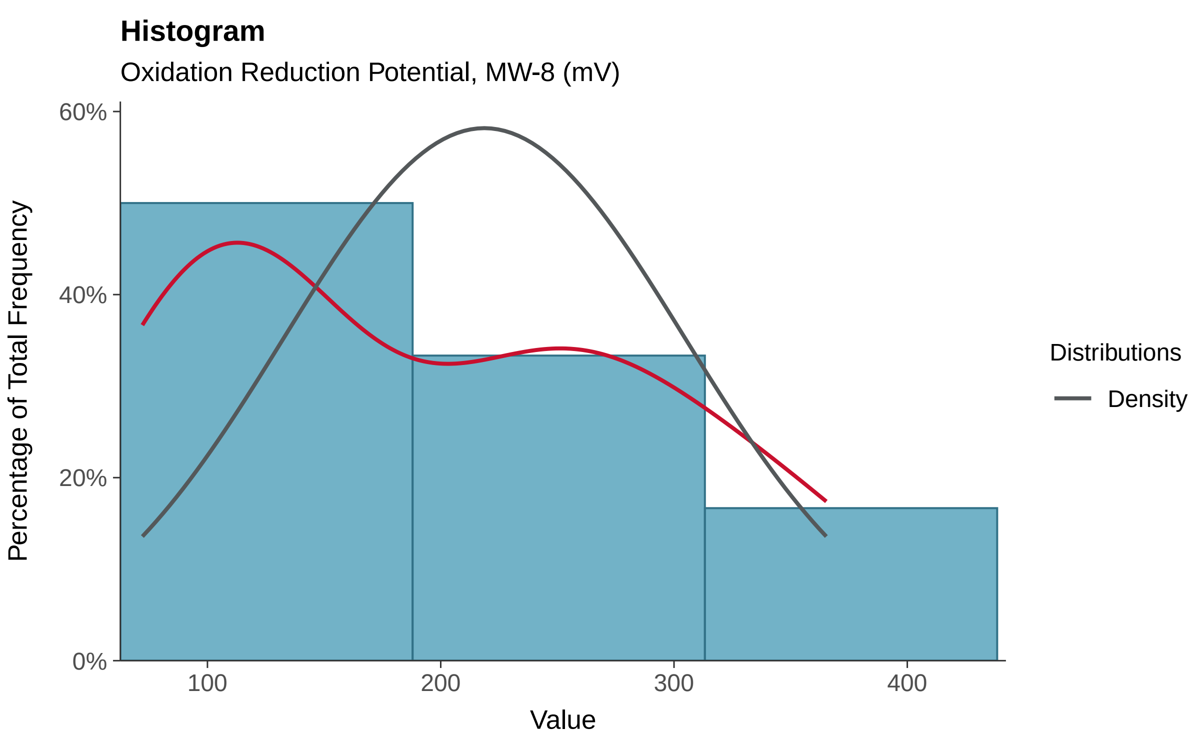
Dissolved Oxygen, MW-8 (mg/L)



Field Parameters: Oxidation Reduction Potential, MW-8

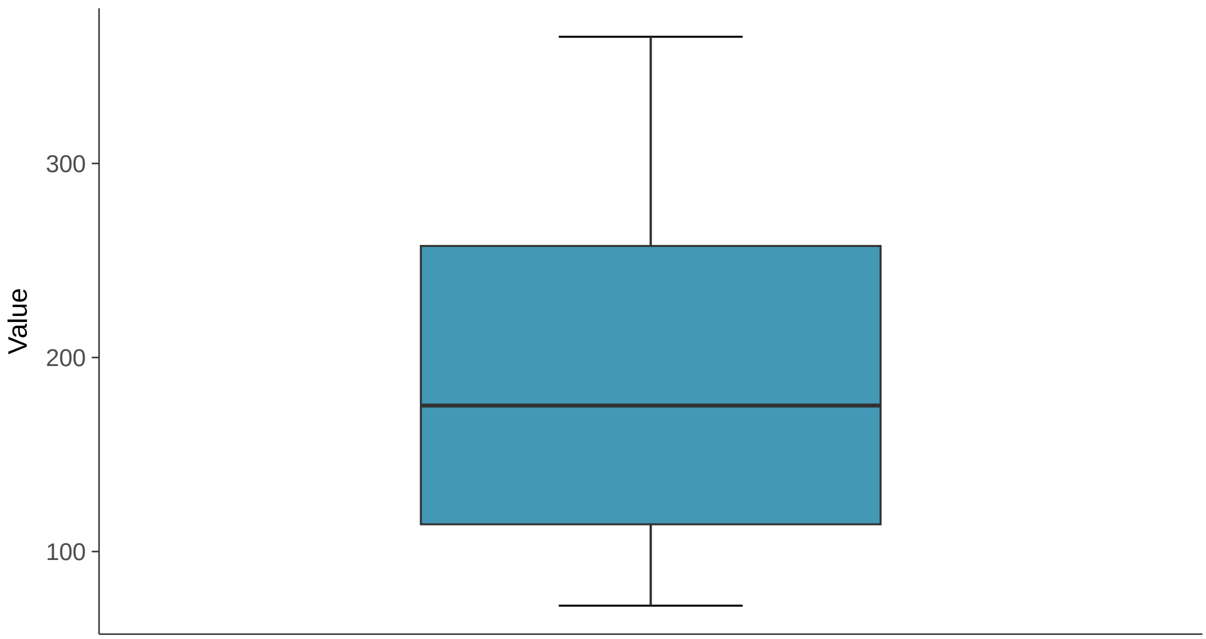
ID: 08_3_26





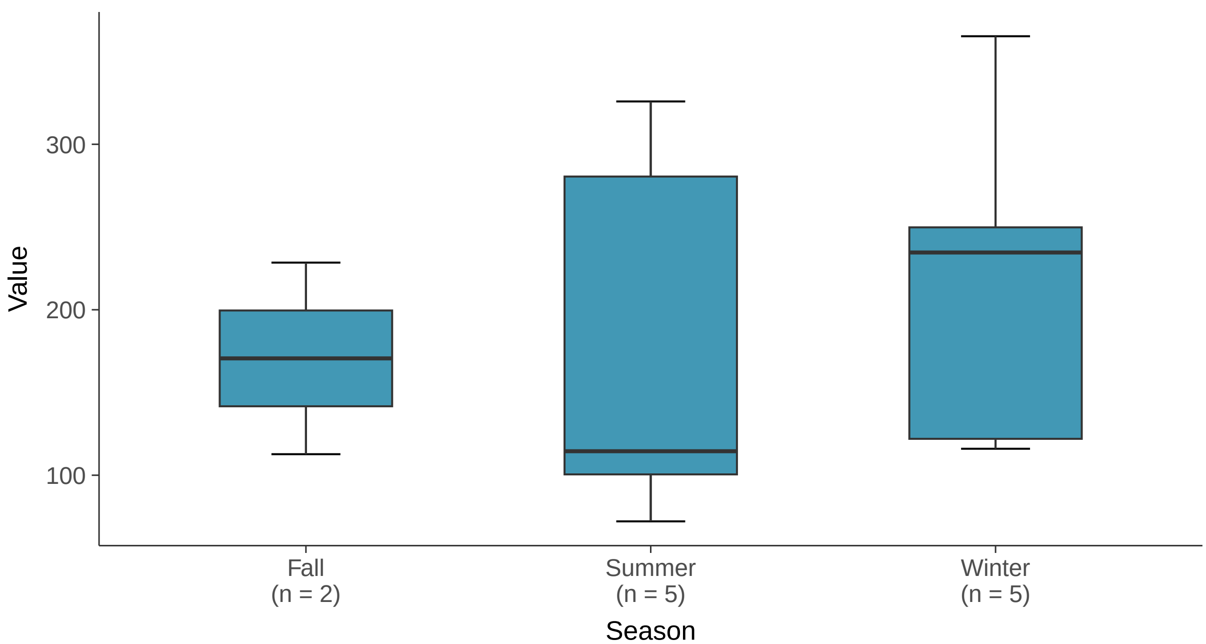
Boxplot

Oxidation Reduction Potential, MW-8 (mV)



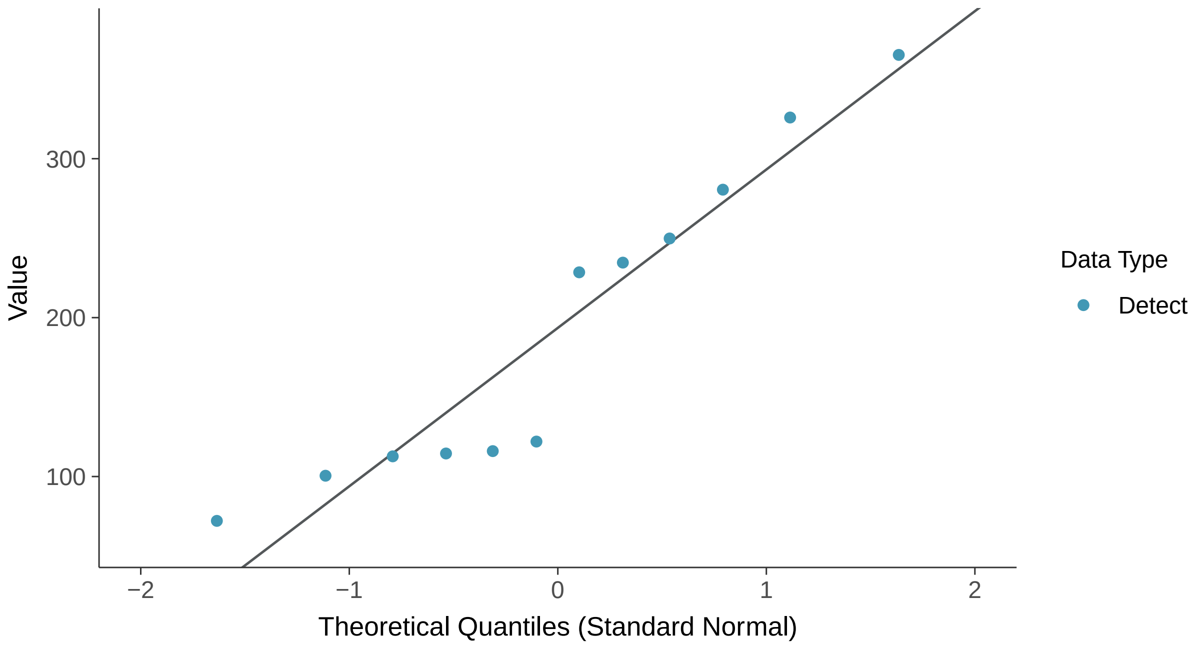
Boxplot by Season

Oxidation Reduction Potential, MW-8 (mV)



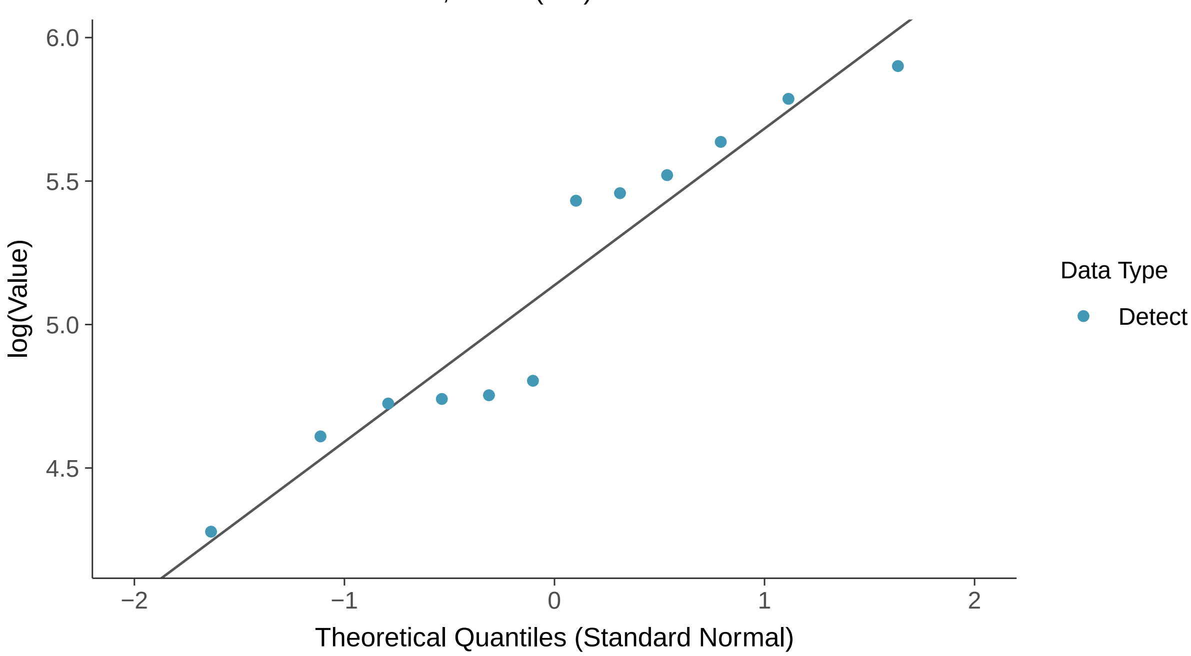
Normal Q-Q plot

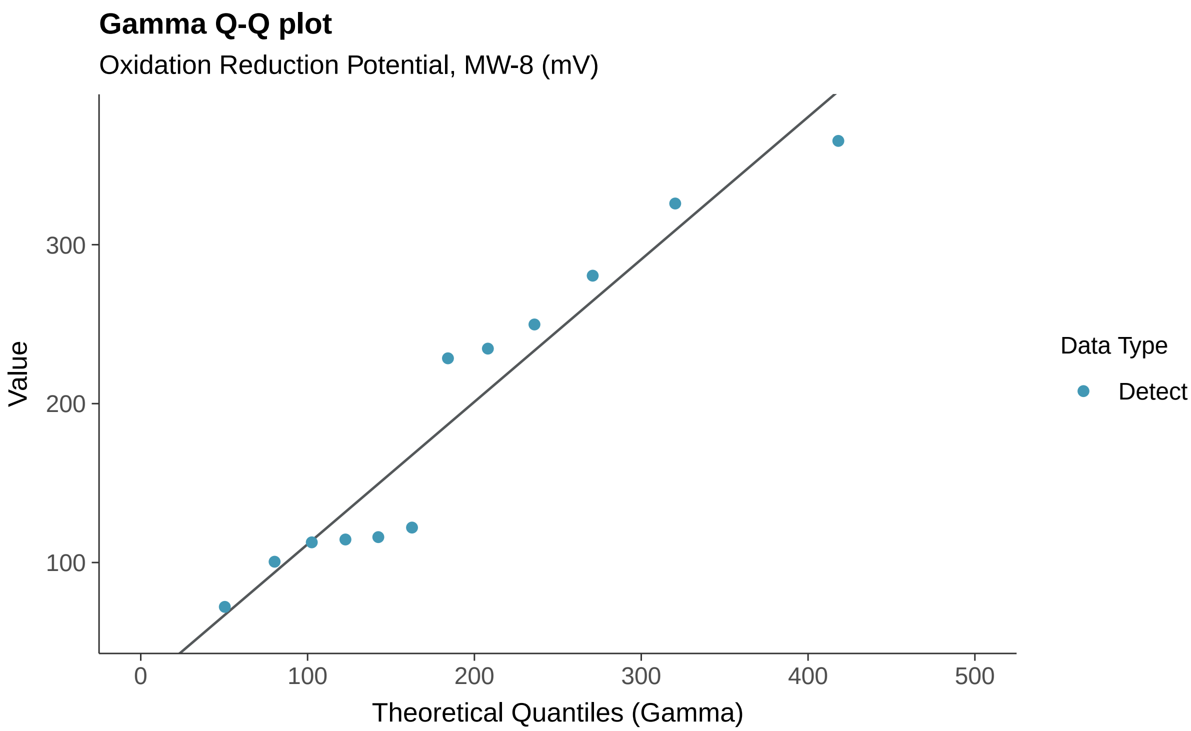
Oxidation Reduction Potential, MW-8 (mV)

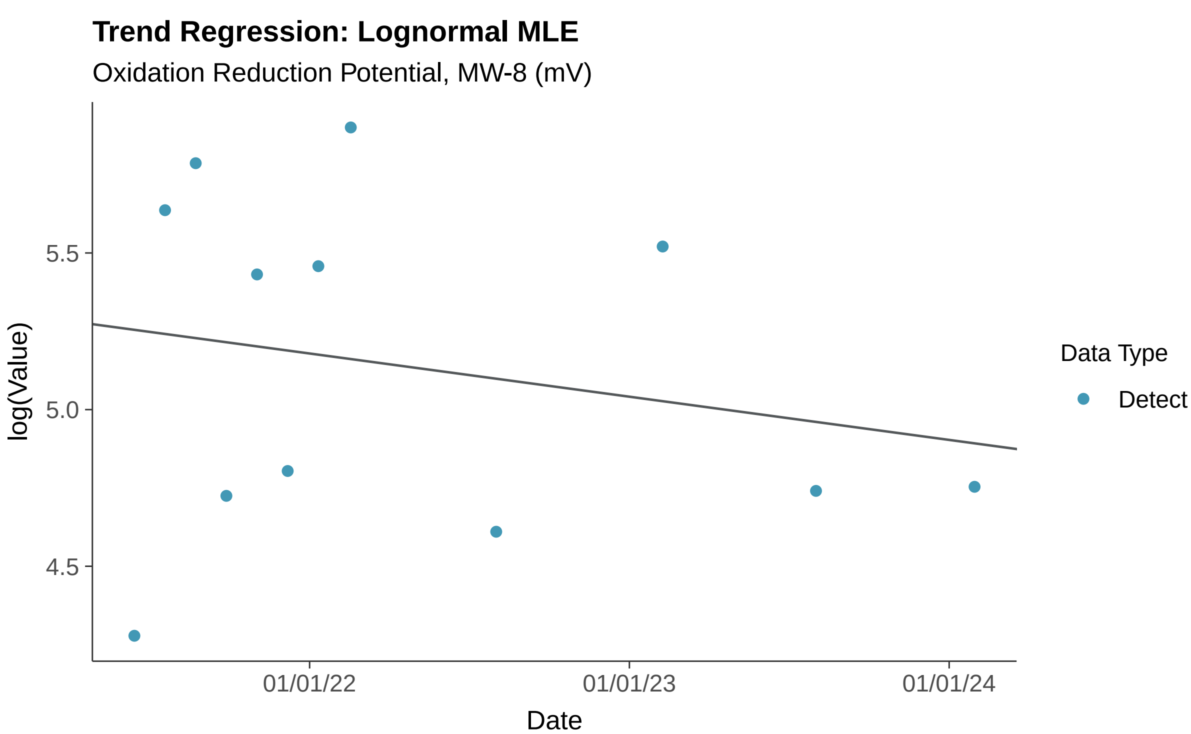


Lognormal Q-Q plot

Oxidation Reduction Potential, MW-8 (mV)

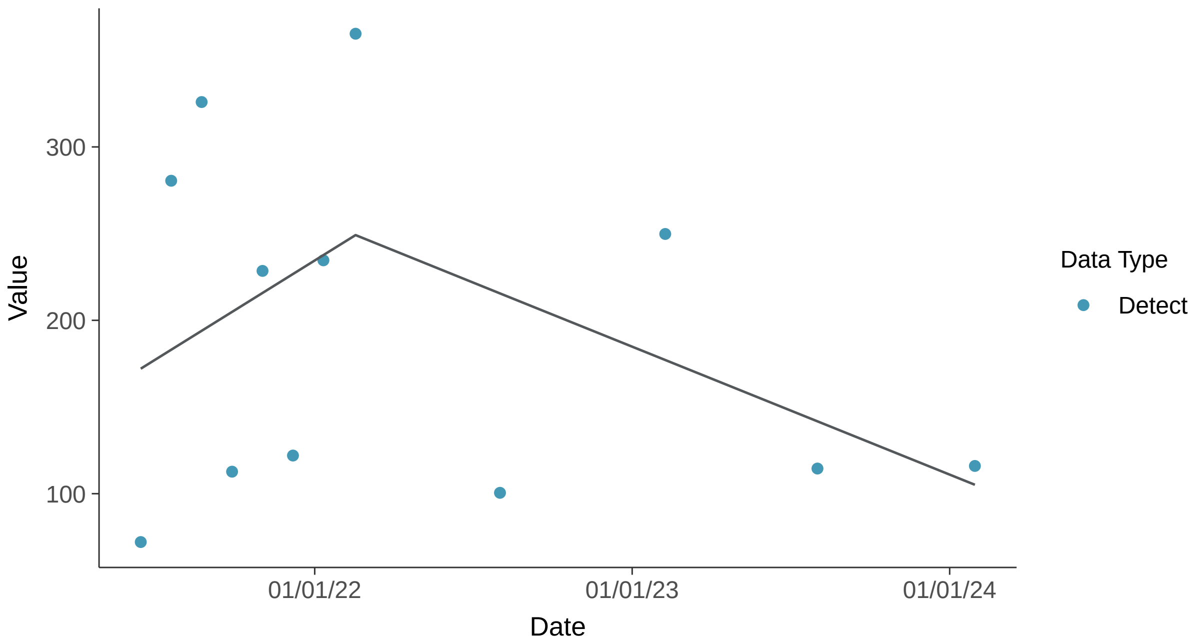



Gamma Q-Q plot
Oxidation Reduction Potential, MW-8 (mV)
Value
300
200
100
0
100
200
300
400
500
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Oxidation Reduction Potential, MW-8 (mV)
log(Value)
5.5
5.0
4.5
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

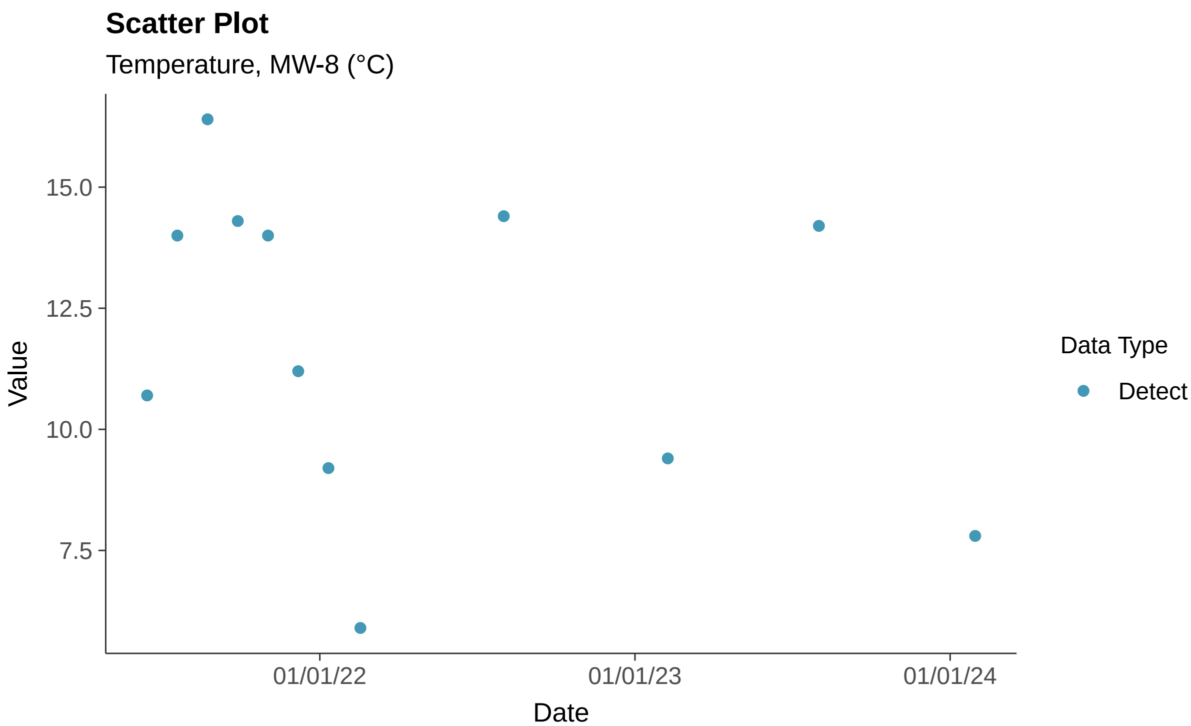
Trend Regression: Piecewise Linear-Linear

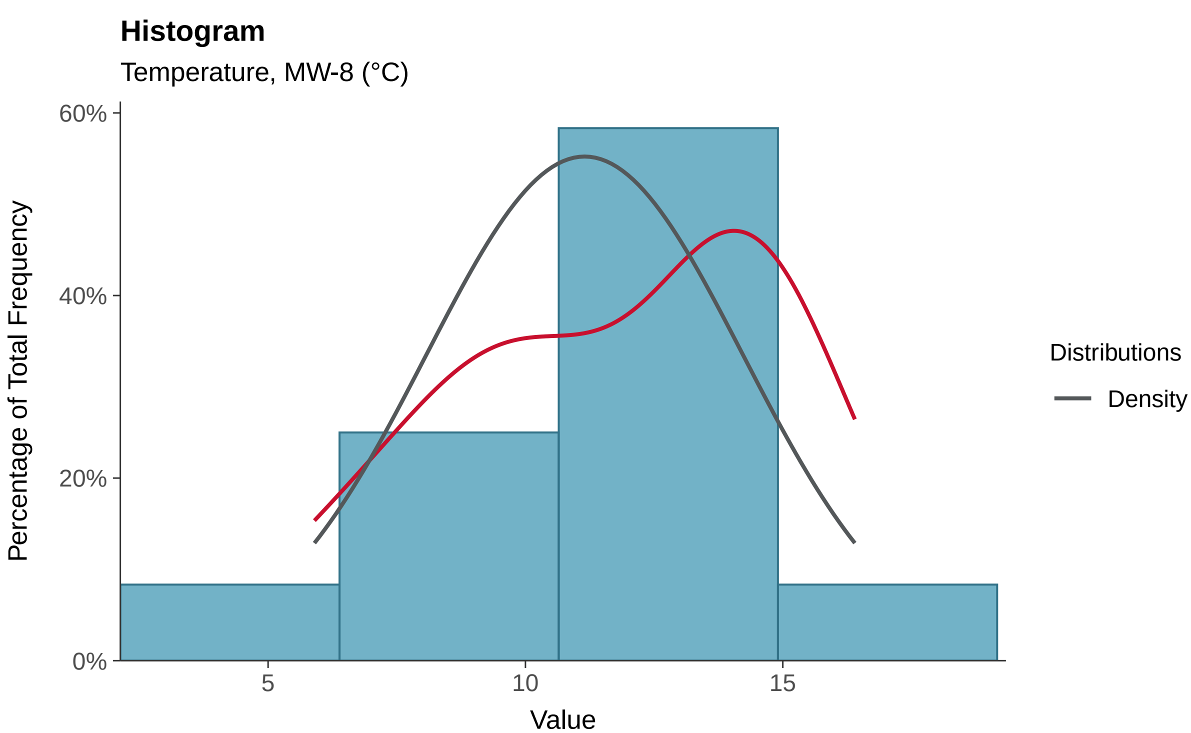
Oxidation Reduction Potential, MW-8 (mV)



Field Parameters: Temperature, MW-8

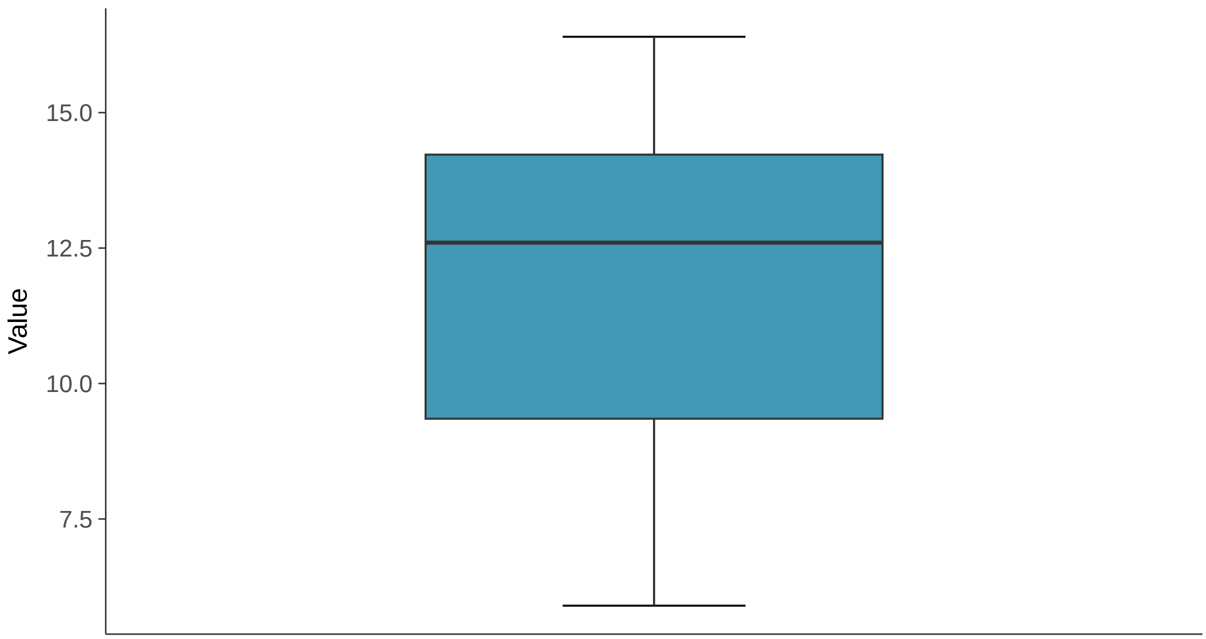
ID: 08_3_27





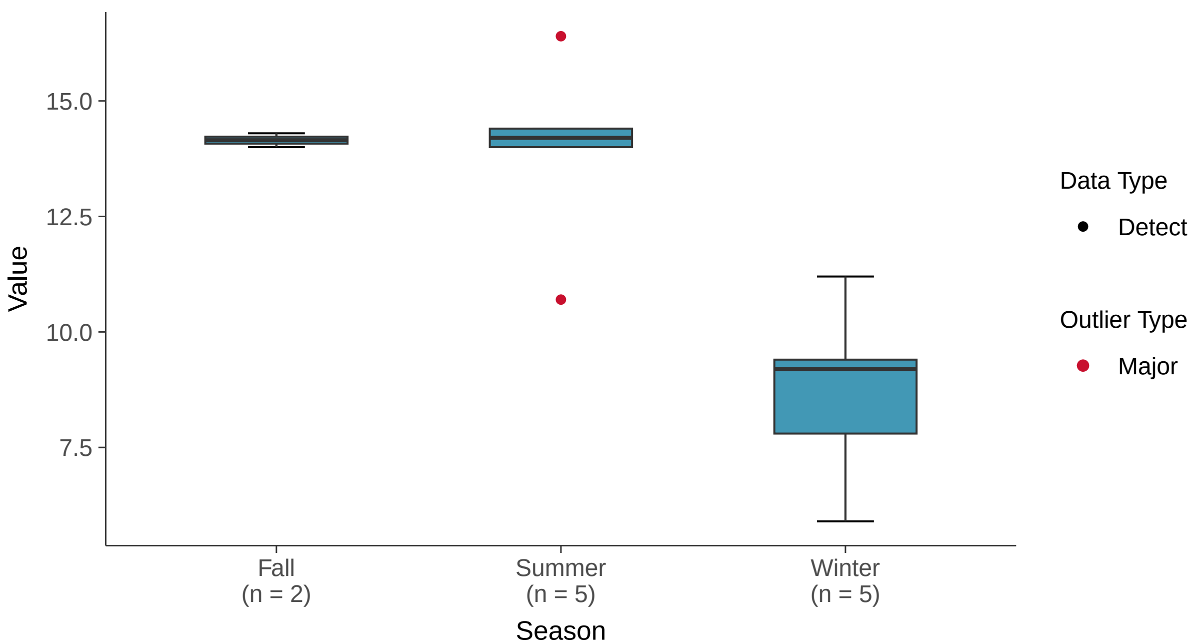
Boxplot

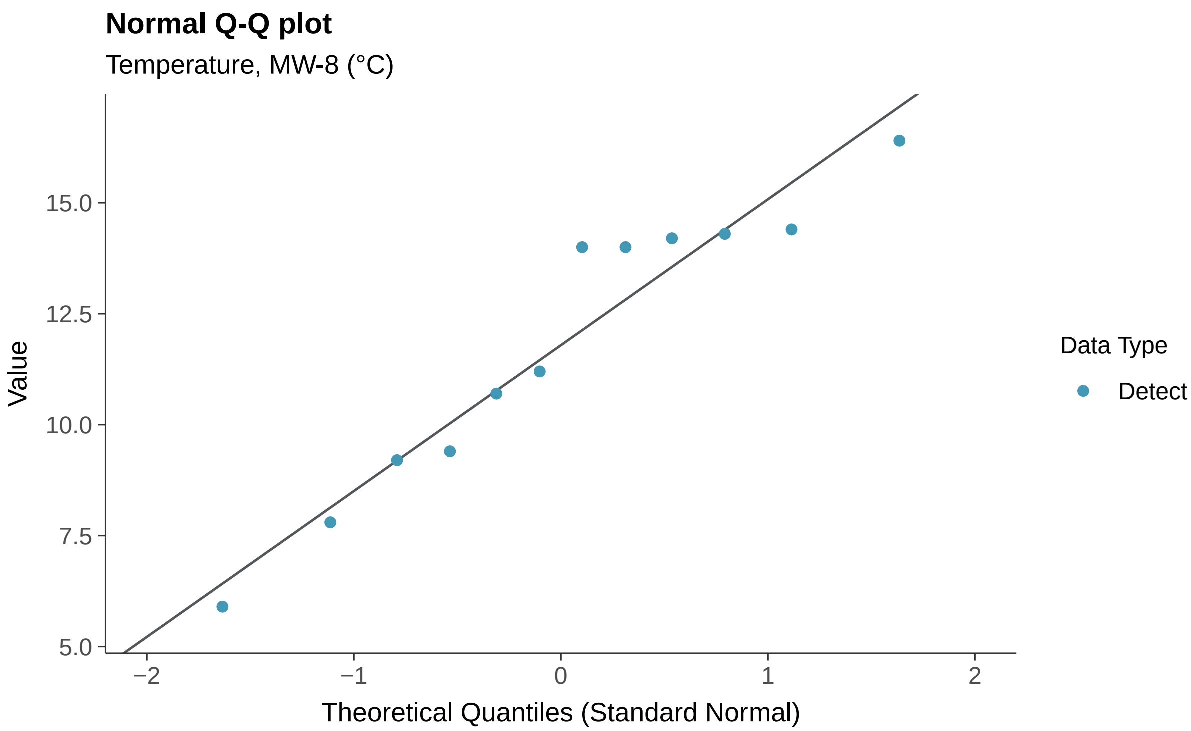
Temperature, MW-8 (°C)

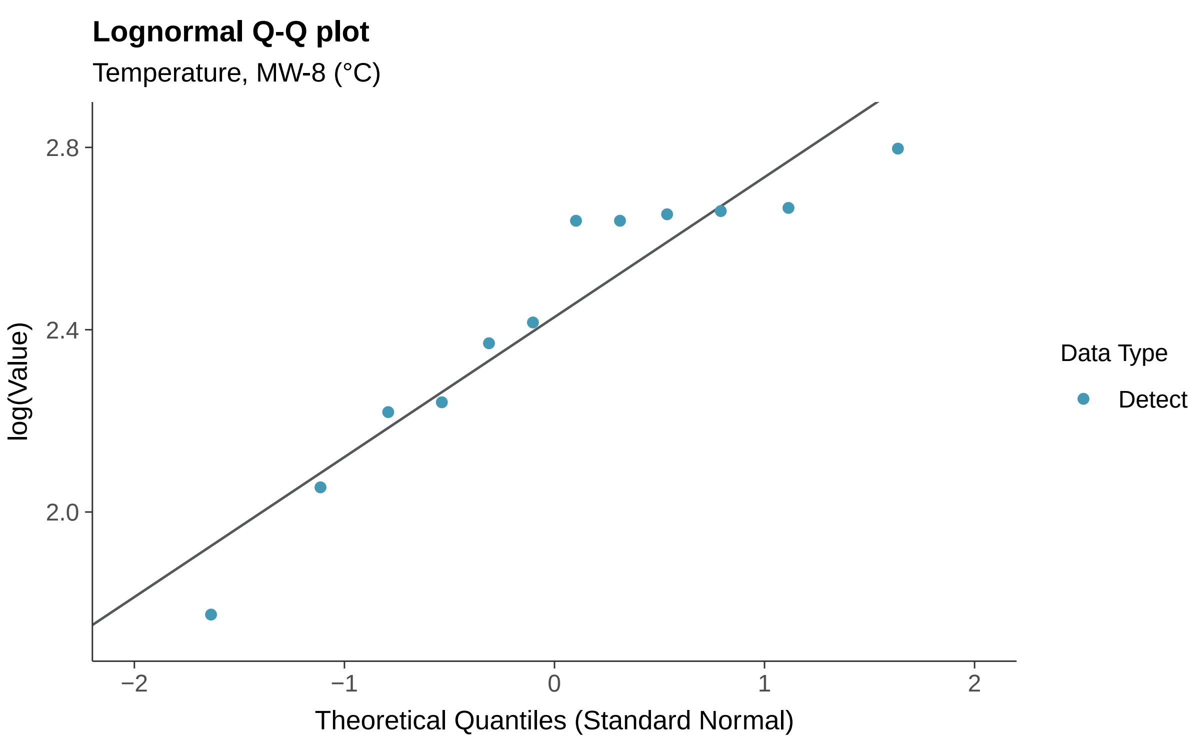


Boxplot by Season

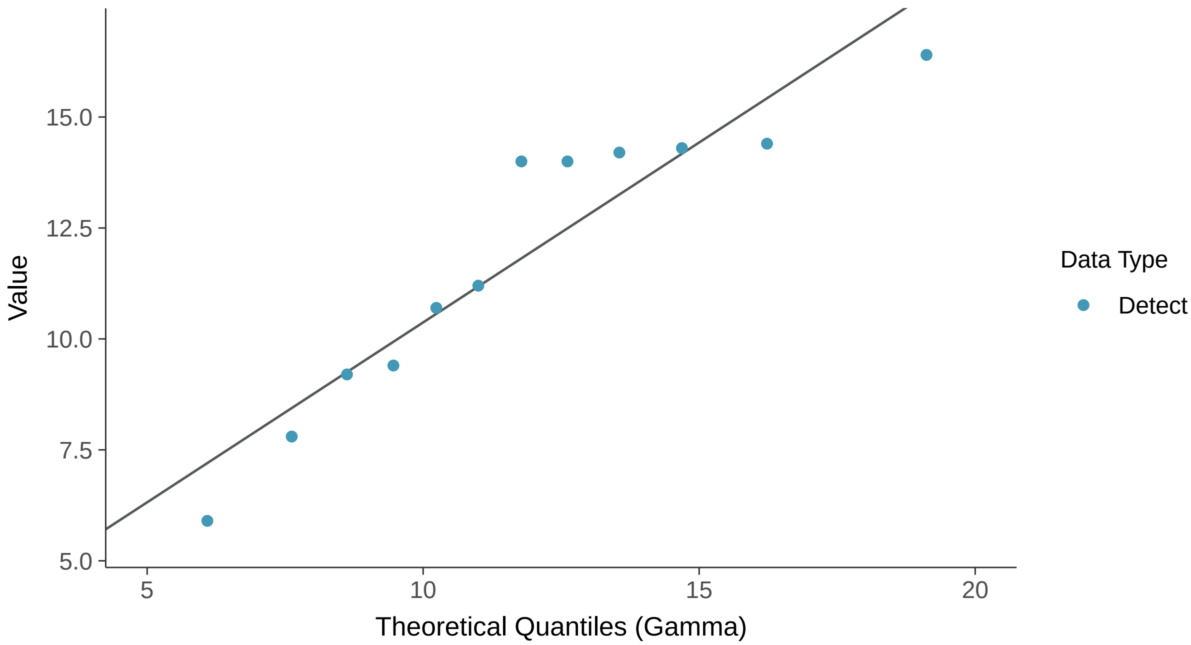
Temperature, MW-8 (°C)



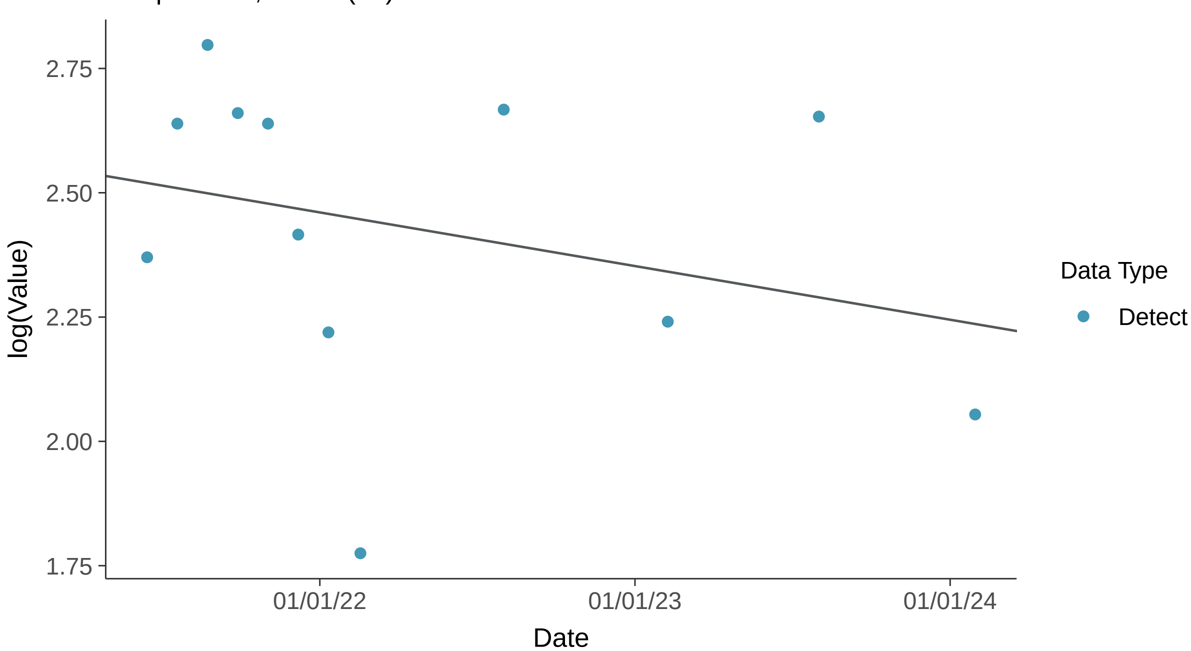

Normal Q-Q plot
Temperature, MW-8 (°C)
Value
15.0
12.5
10.0
7.5
5.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

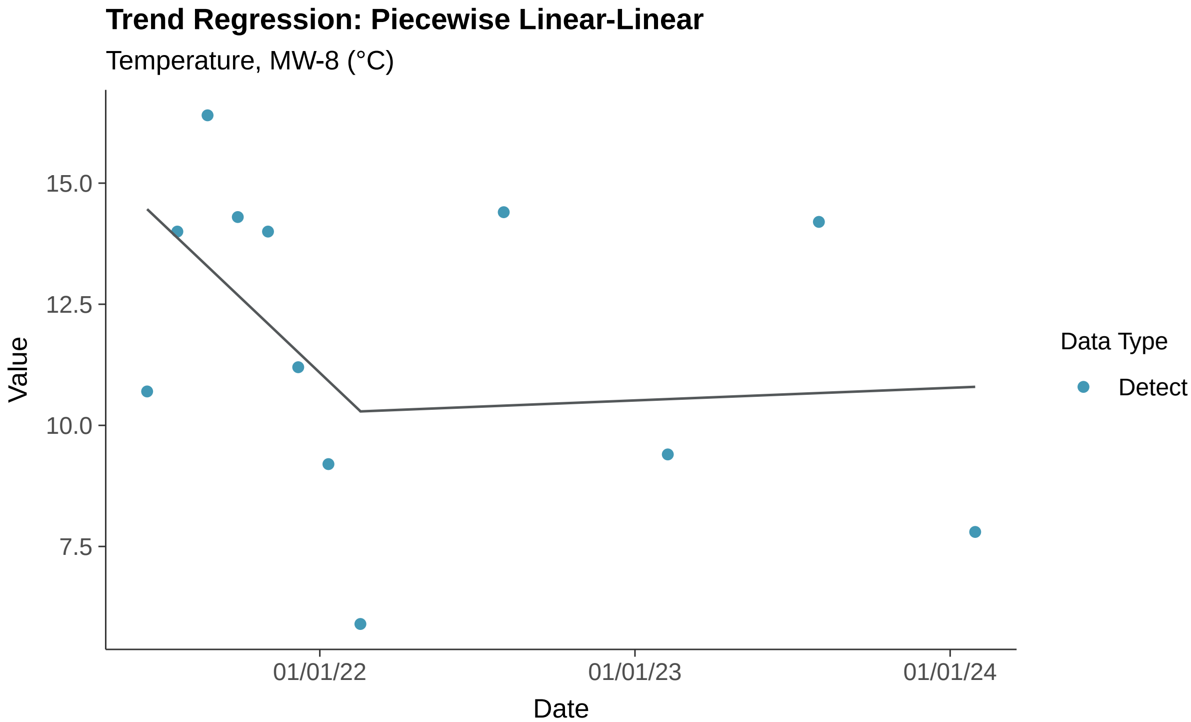

Lognormal Q-Q plot
Temperature, MW-8 (°C)
log(Value)
2.8
2.4
2.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

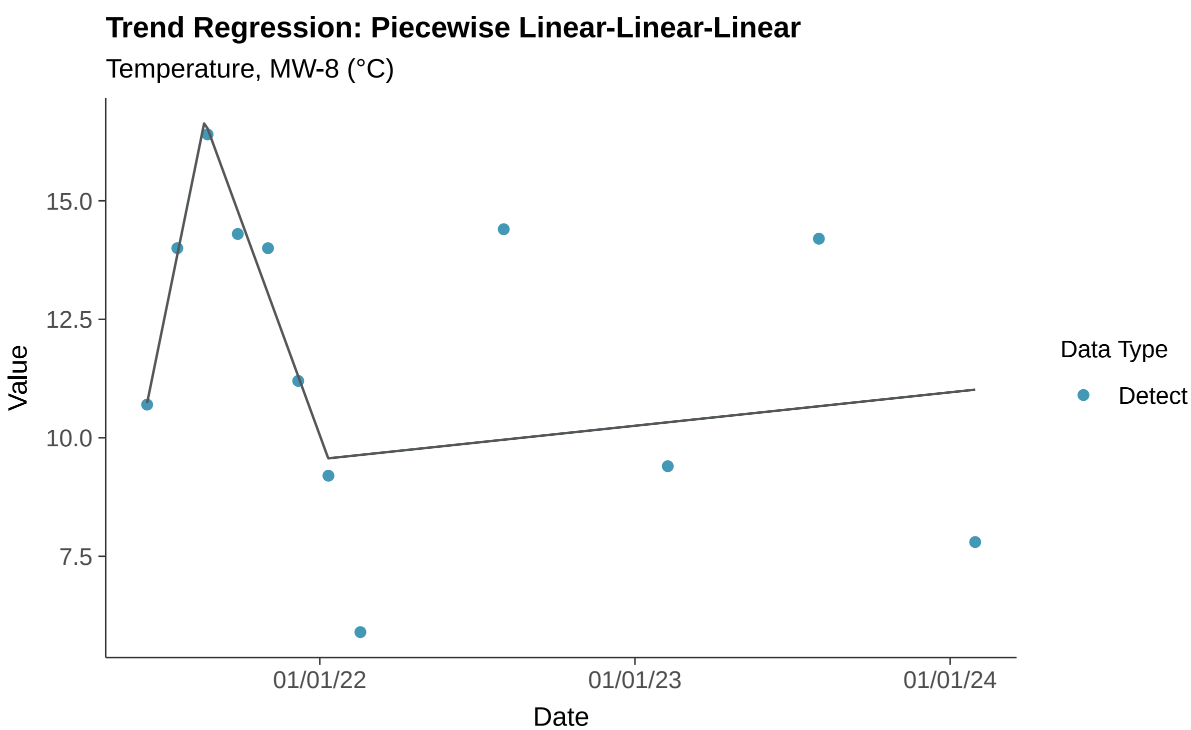
Gamma Q-Q plot
Temperature, MW-8 (°C)



Trend Regression: Lognormal MLE
Temperature, MW-8 (°C)

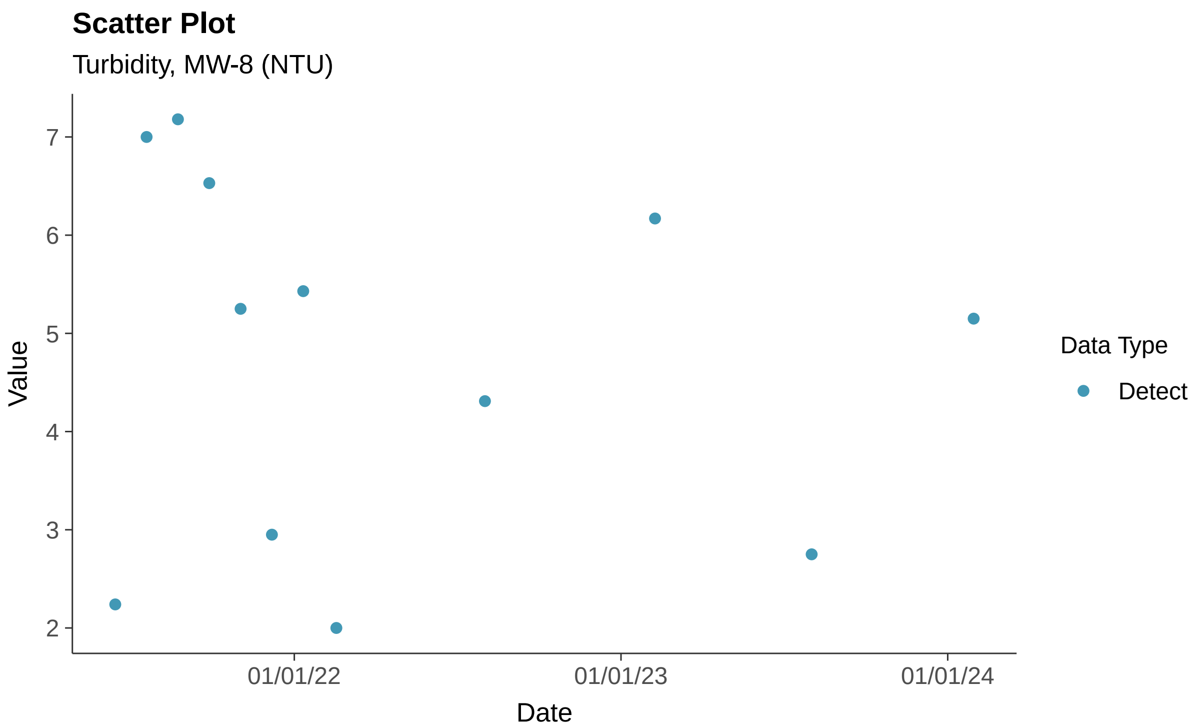


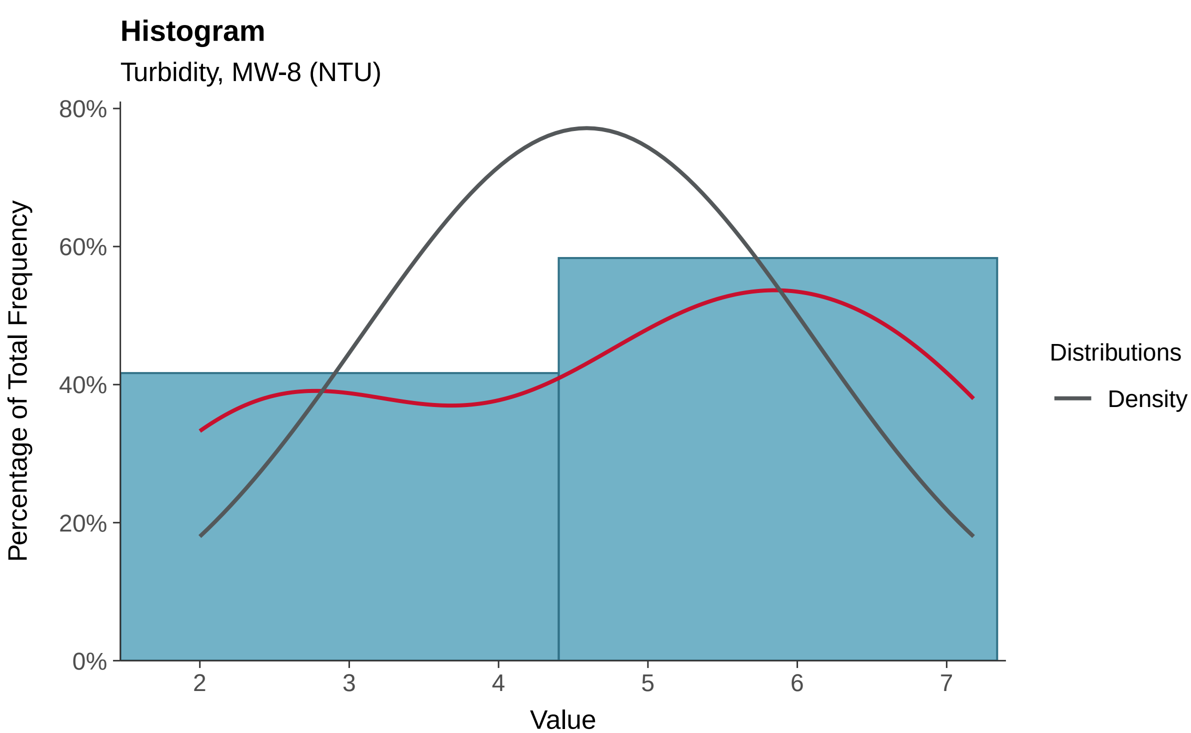

Trend Regression: Piecewise Linear-Linear
Temperature, MW-8 (°C)
Value
15.0
12.5
10.0
7.5
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Temperature, MW-8 (°C)
Value
15.0
12.5
10.0
7.5
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Turbidity, MW-8

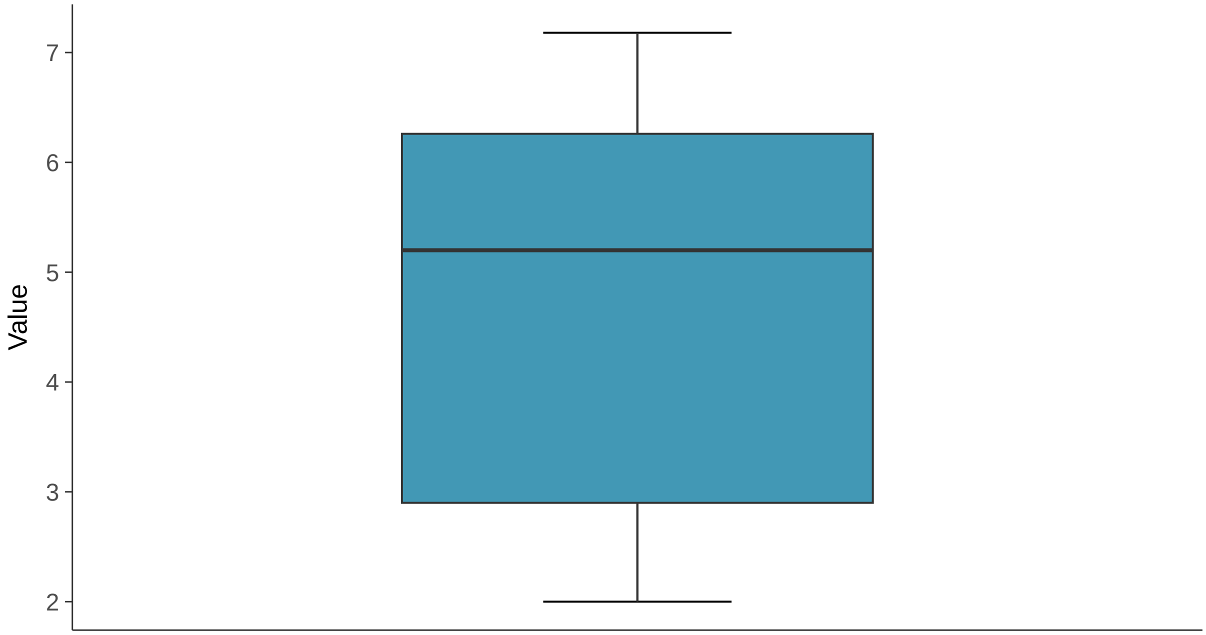
ID: 08_3_28





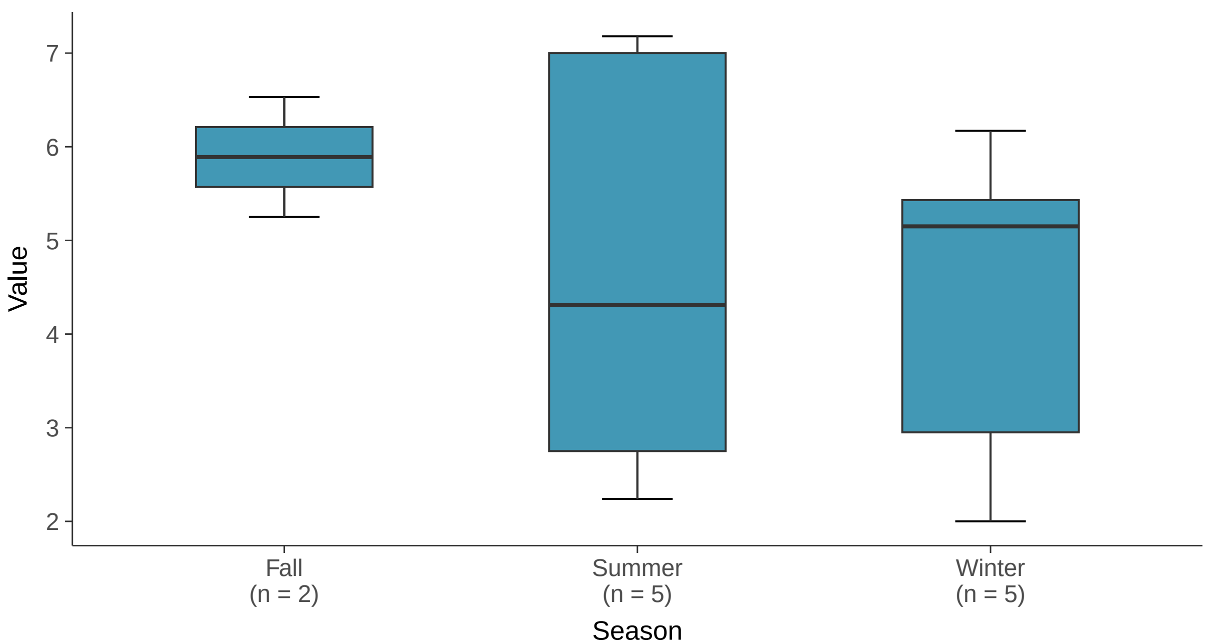
Boxplot

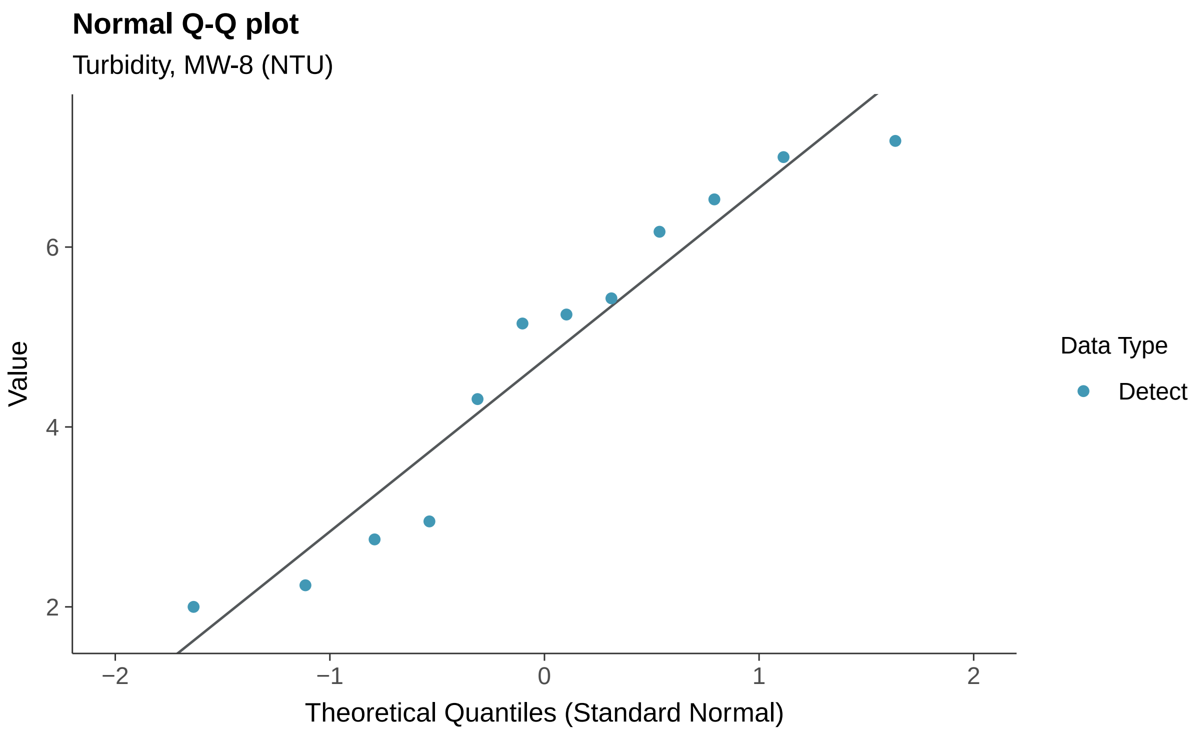
Turbidity, MW-8 (NTU)

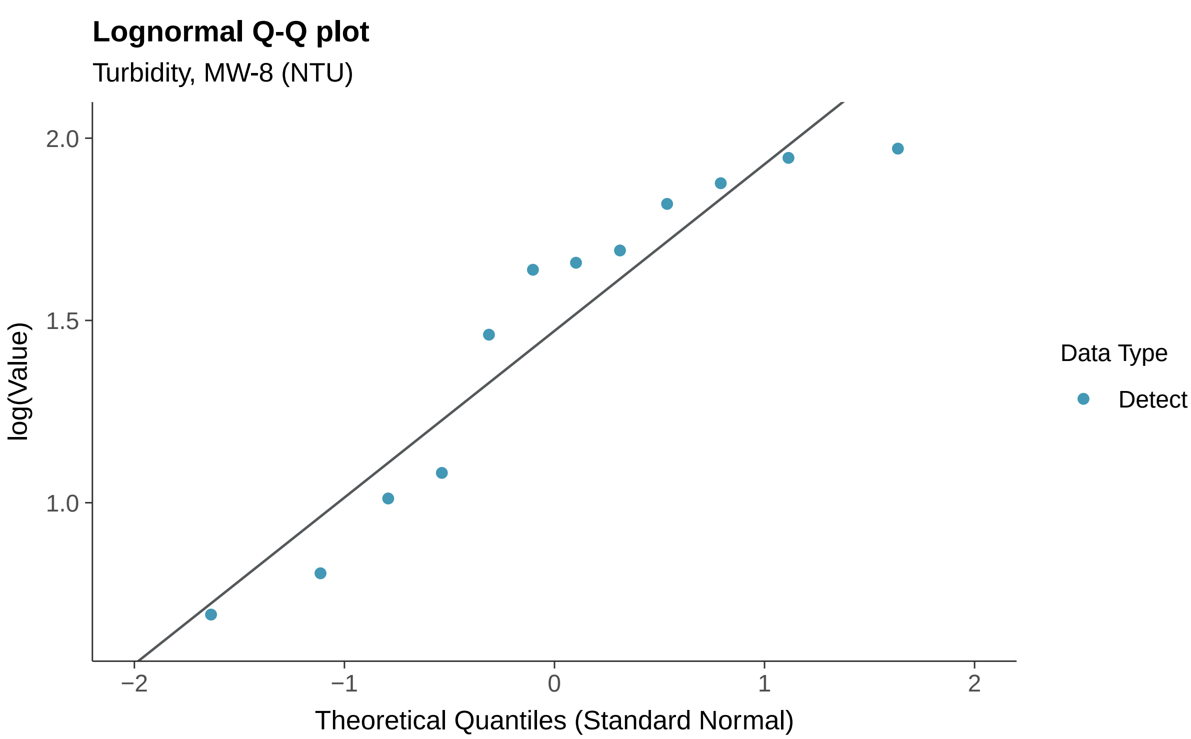


Boxplot by Season

Turbidity, MW-8 (NTU)

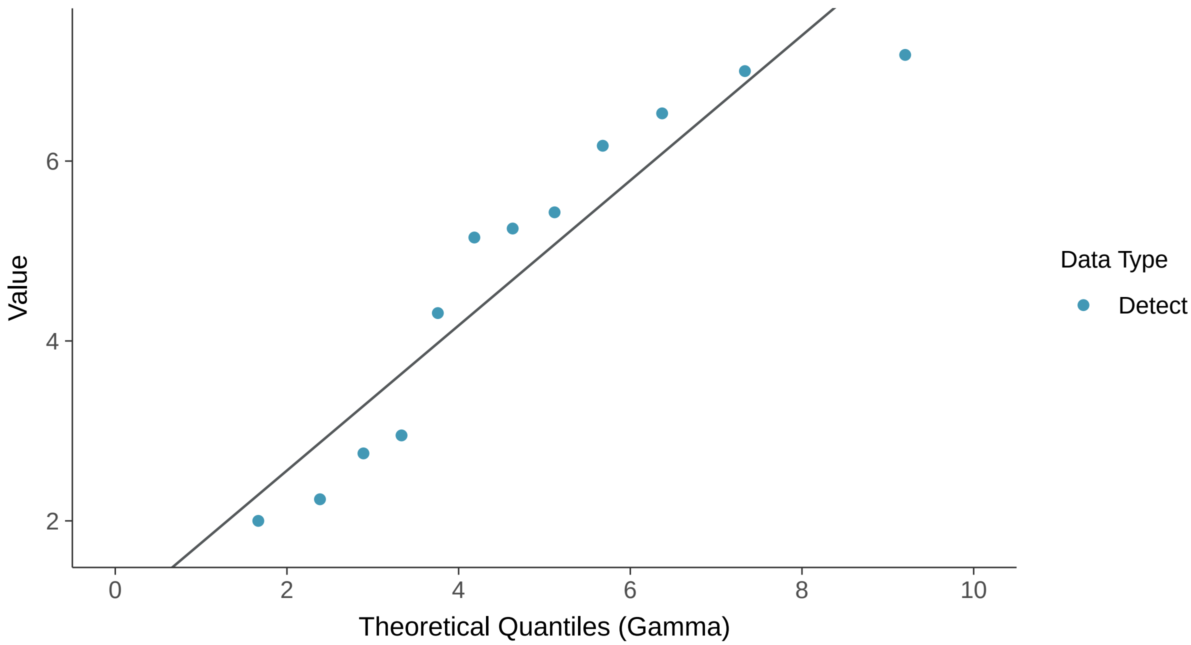



Normal Q-Q plot
Turbidity, MW-8 (NTU)
Value
6
4
2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Turbidity, MW-8 (NTU)
log(Value)
2.0
1.5
1.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

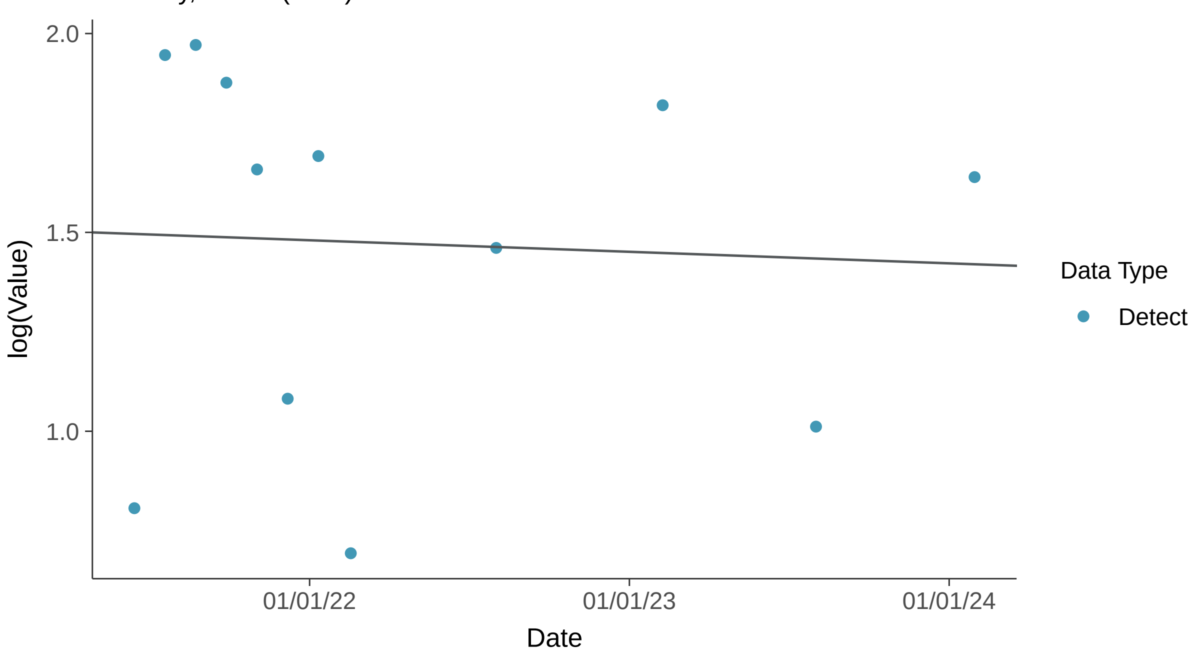
Gamma Q-Q plot

Turbidity, MW-8 (NTU)



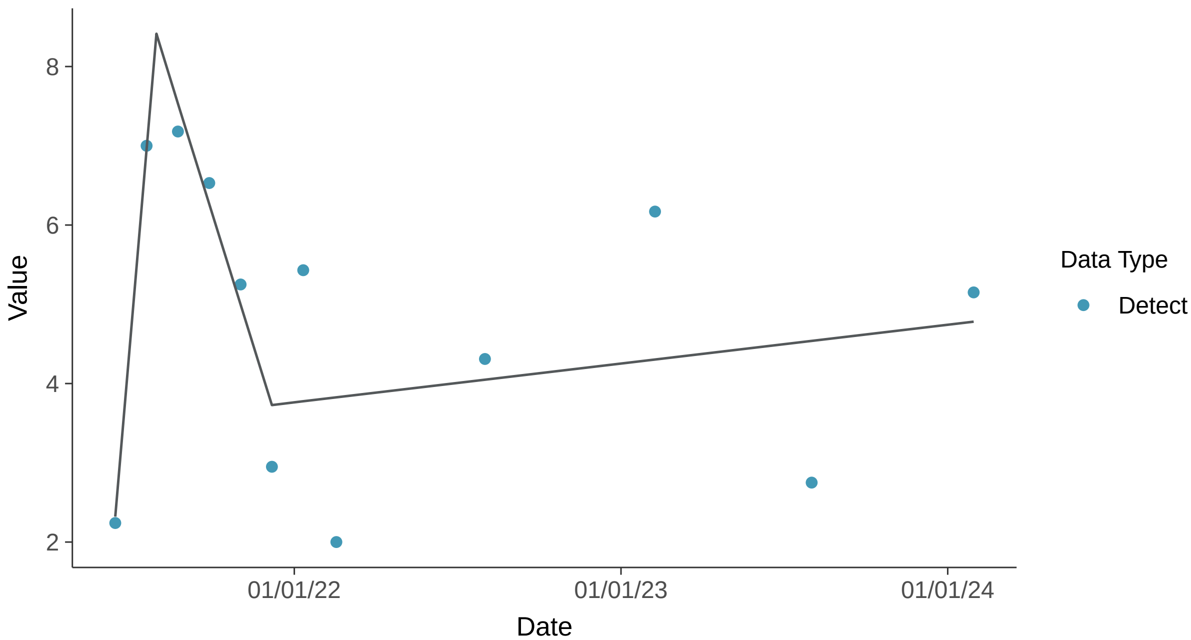
Trend Regression: Lognormal MLE

Turbidity, MW-8 (NTU)



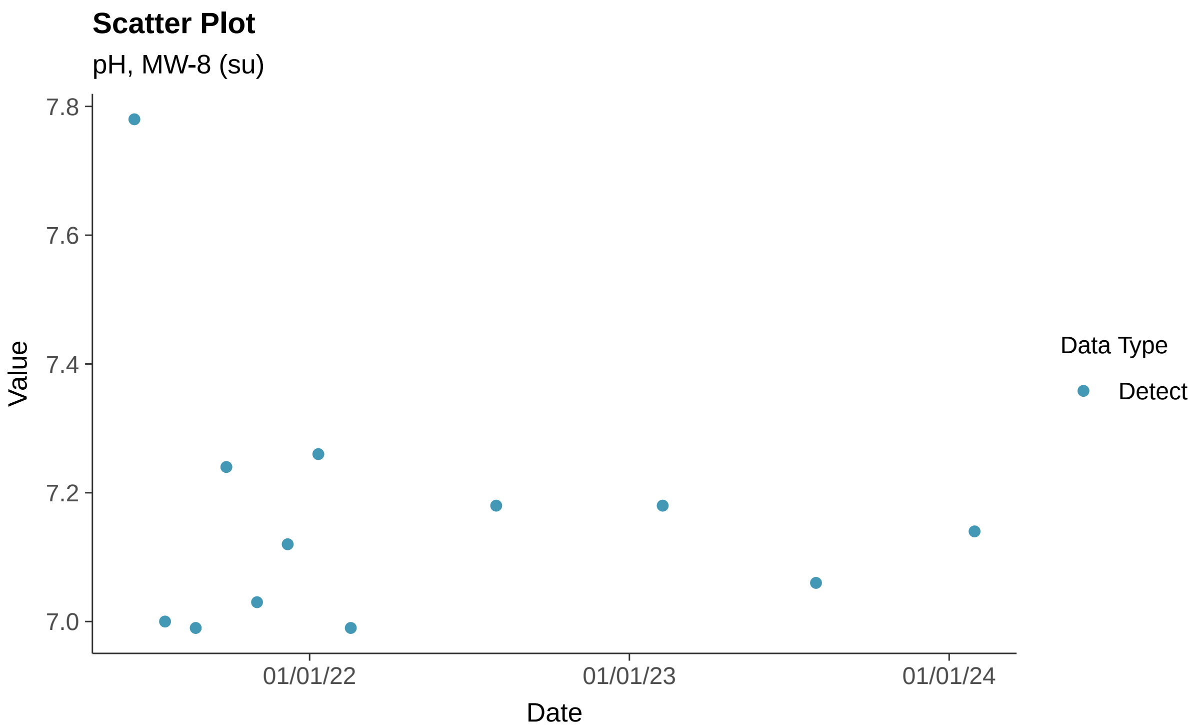
Trend Regression: Piecewise Linear-Linear-Linear

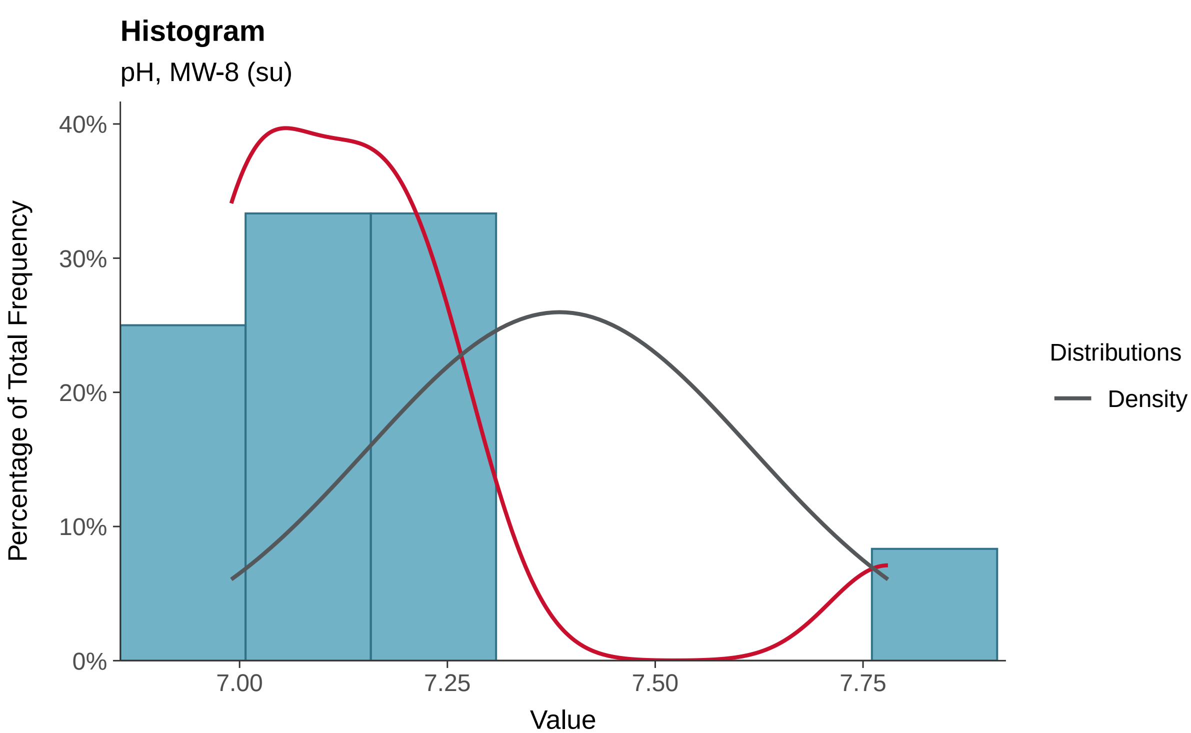
Turbidity, MW-8 (NTU)

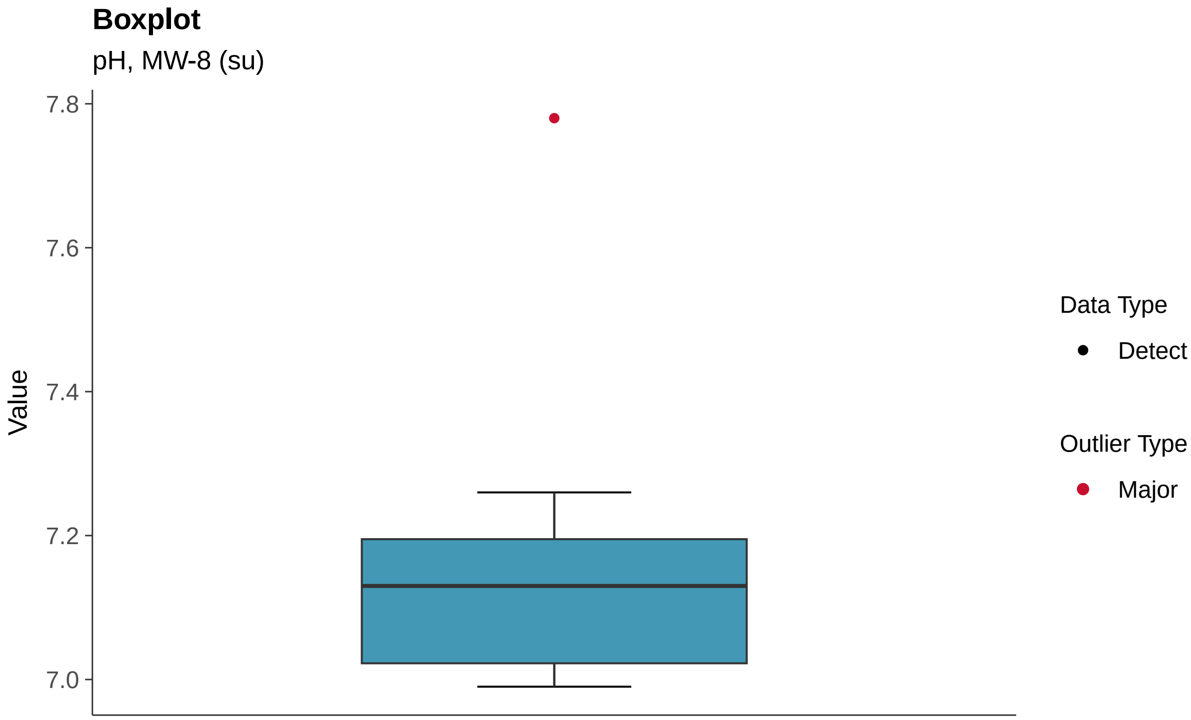


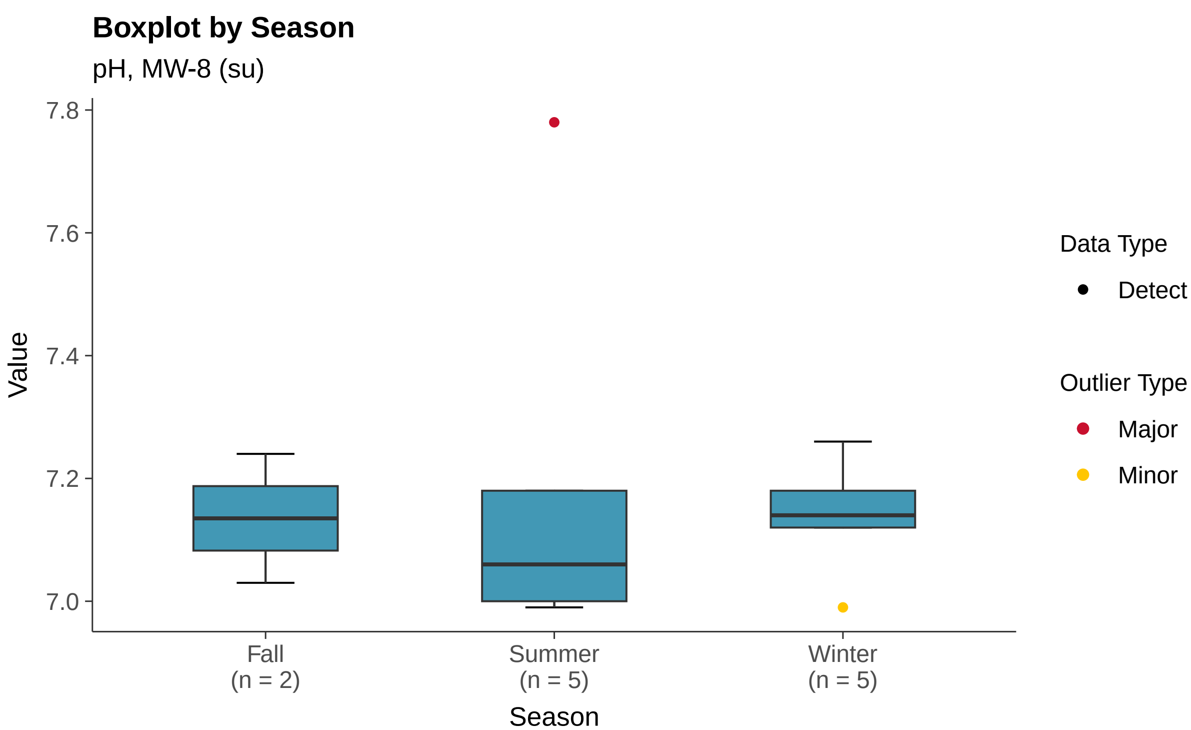
Field Parameters: pH, MW-8

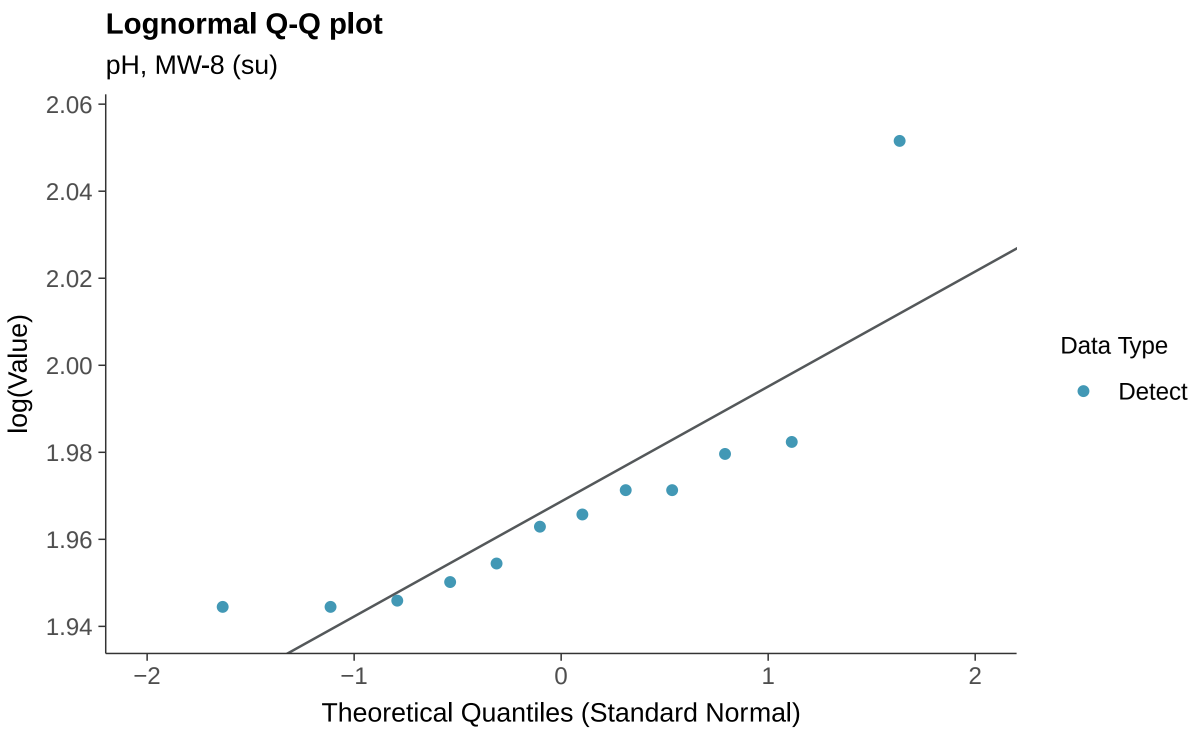
ID: 08_3_29

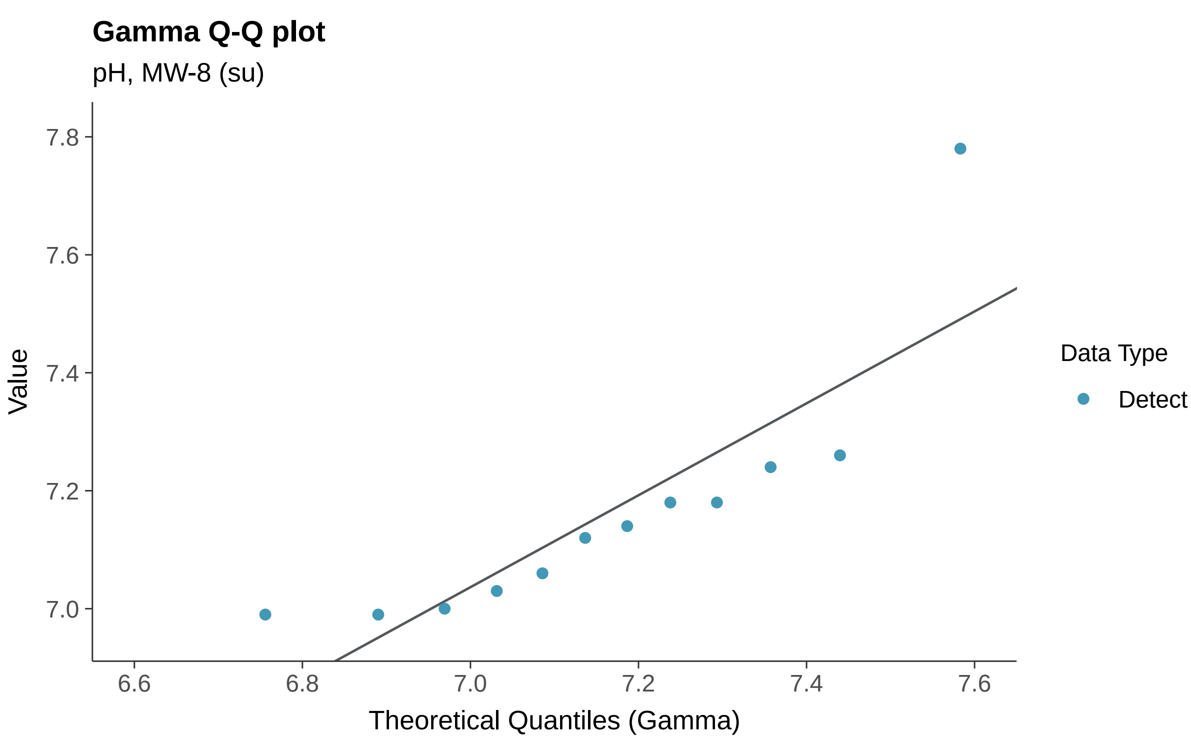





Boxplot
pH, MW-8 (su)
Value
7.8
7.6
7.4
7.2
7.0
Data Type
Detect
Outlier Type
Major

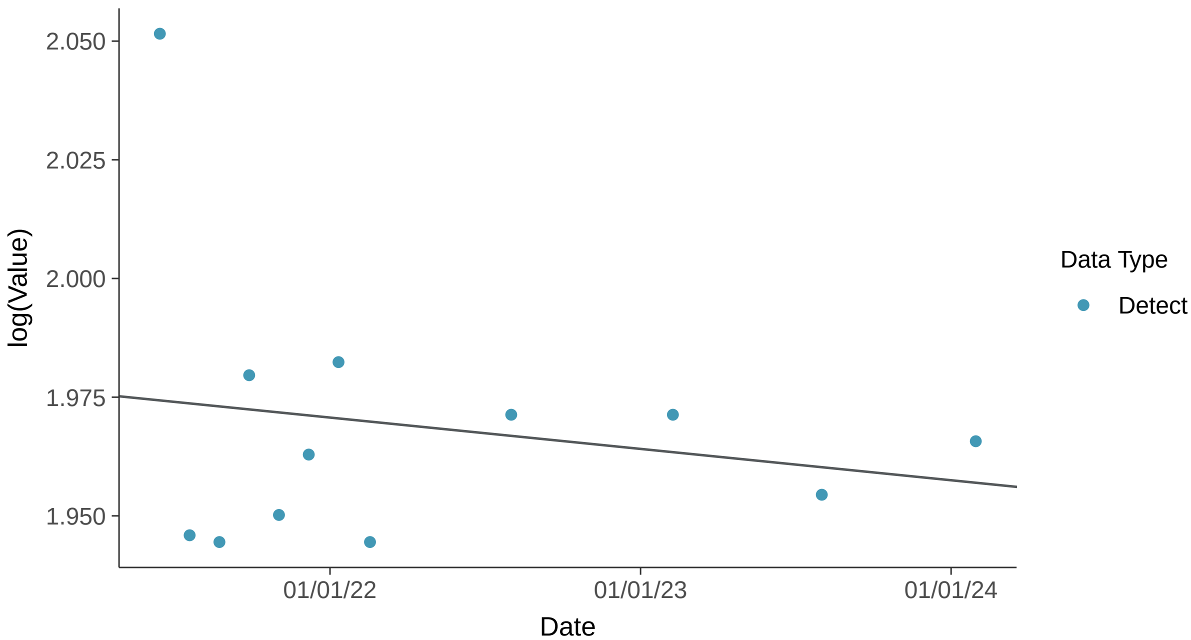

Boxplot by Season
pH, MW-8 (su)
Value
7.8
7.6
7.4
7.2
7.0
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major
Minor


Lognormal Q-Q plot
pH, MW-8 (su)
log(Value)
2.06
2.04
2.02
2.00
1.98
1.96
1.94
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, MW-8 (su)
Value
7.8
7.6
7.4
7.2
7.0
6.6
6.8
7.0
7.2
7.4
7.6
Theoretical Quantiles (Gamma)
Data Type
Detect

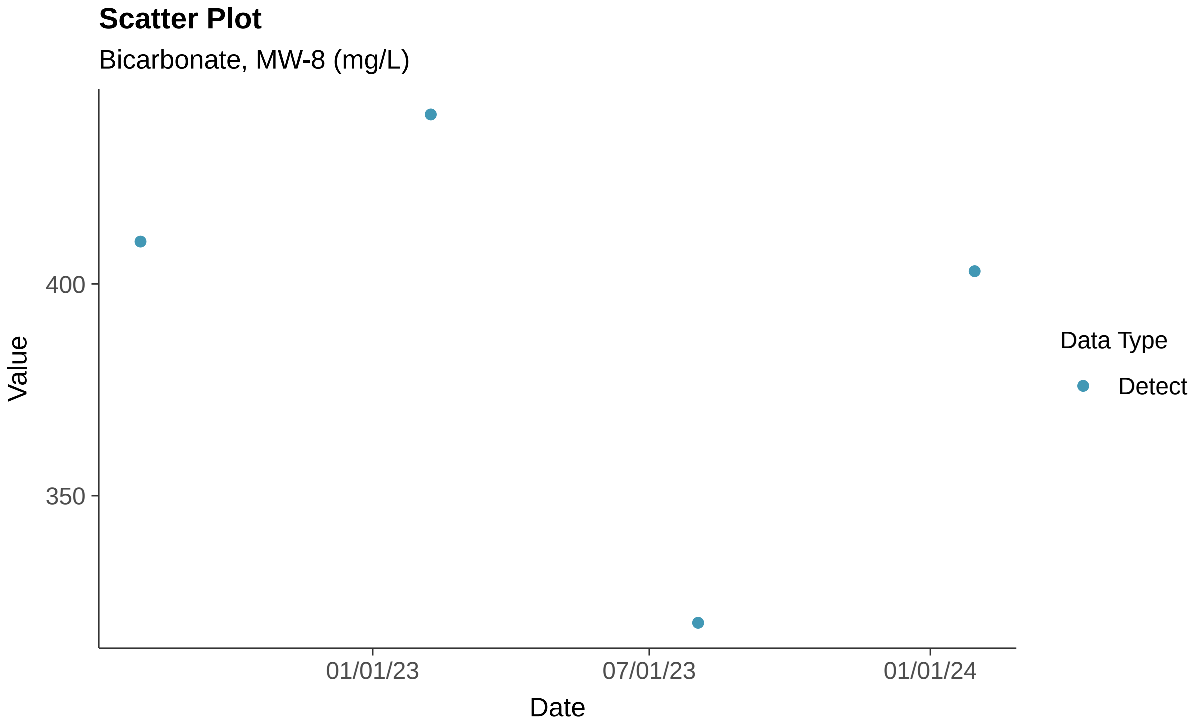
Trend Regression: Lognormal MLE

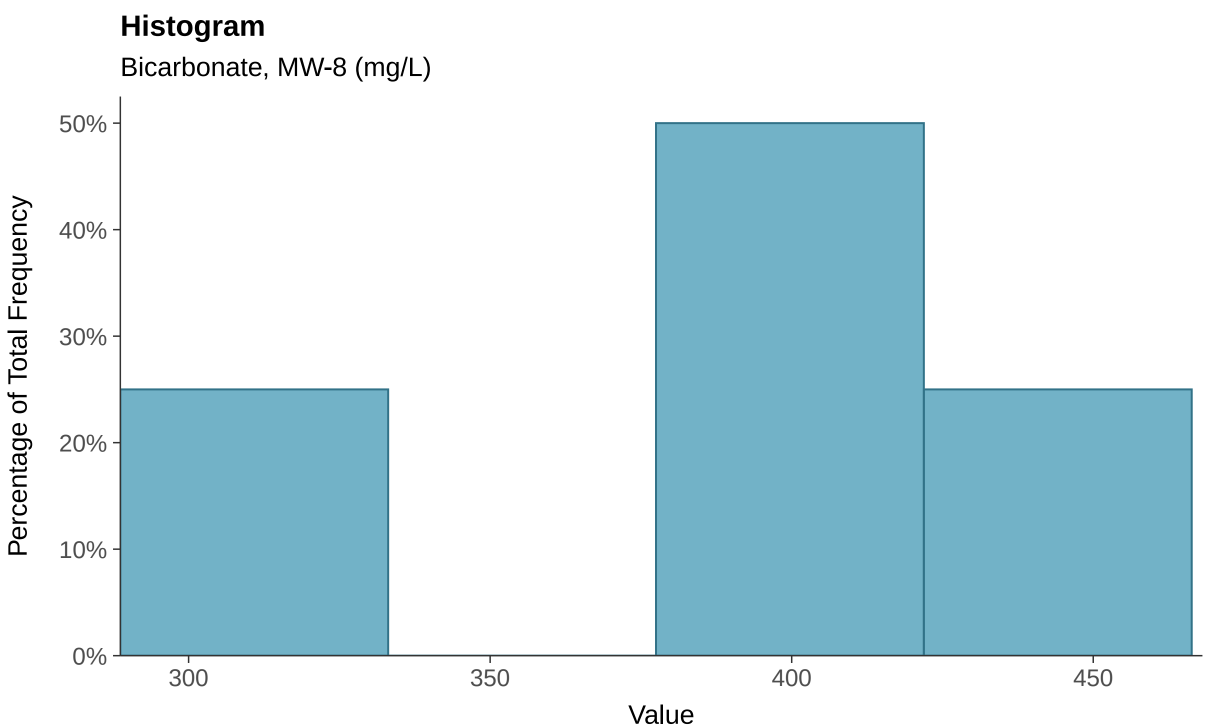
pH, MW-8 (su)



Other: Bicarbonate, MW-8

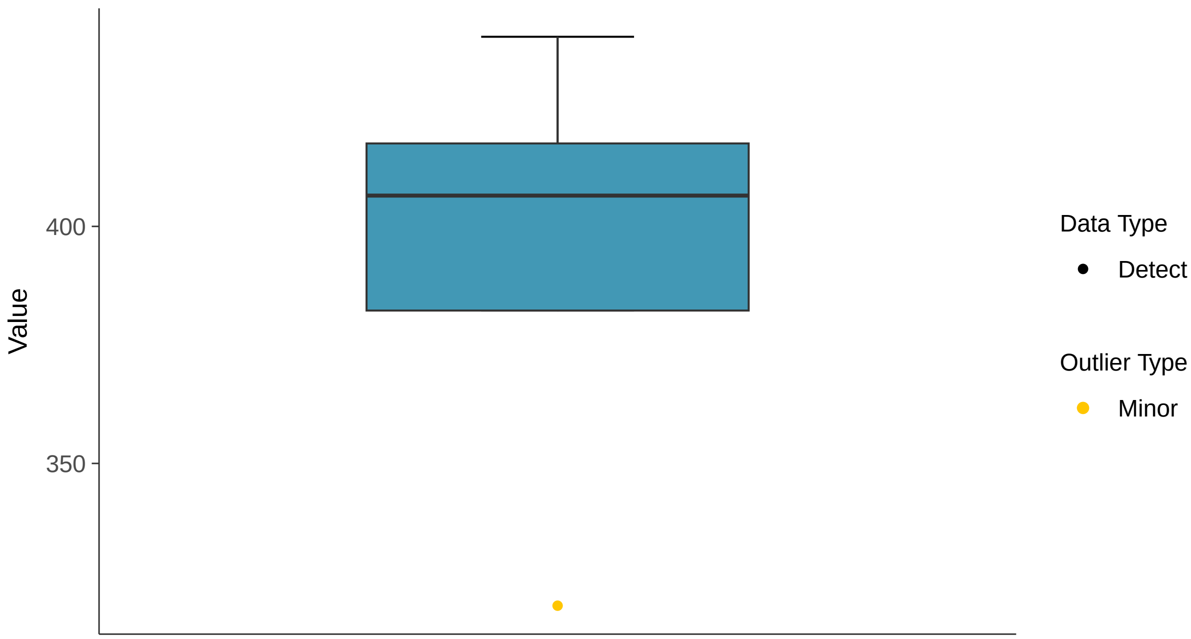
ID: 08_4_30





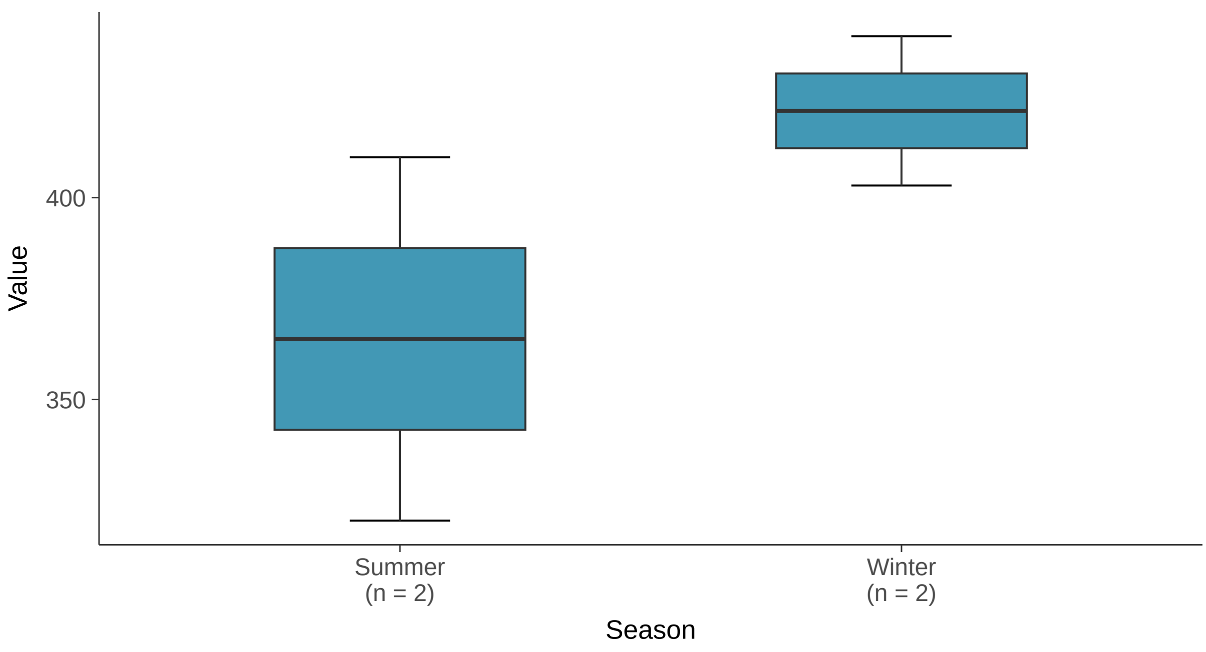
Boxplot

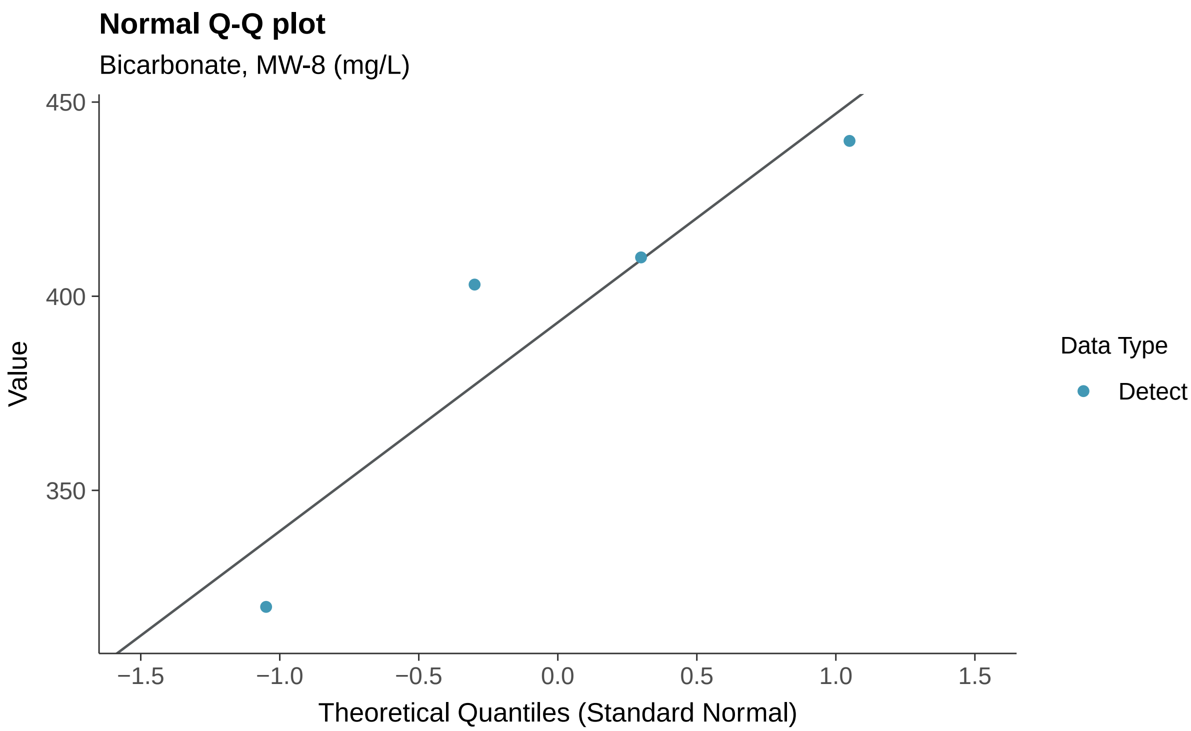
Bicarbonate, MW-8 (mg/L)



Boxplot by Season

Bicarbonate, MW-8 (mg/L)



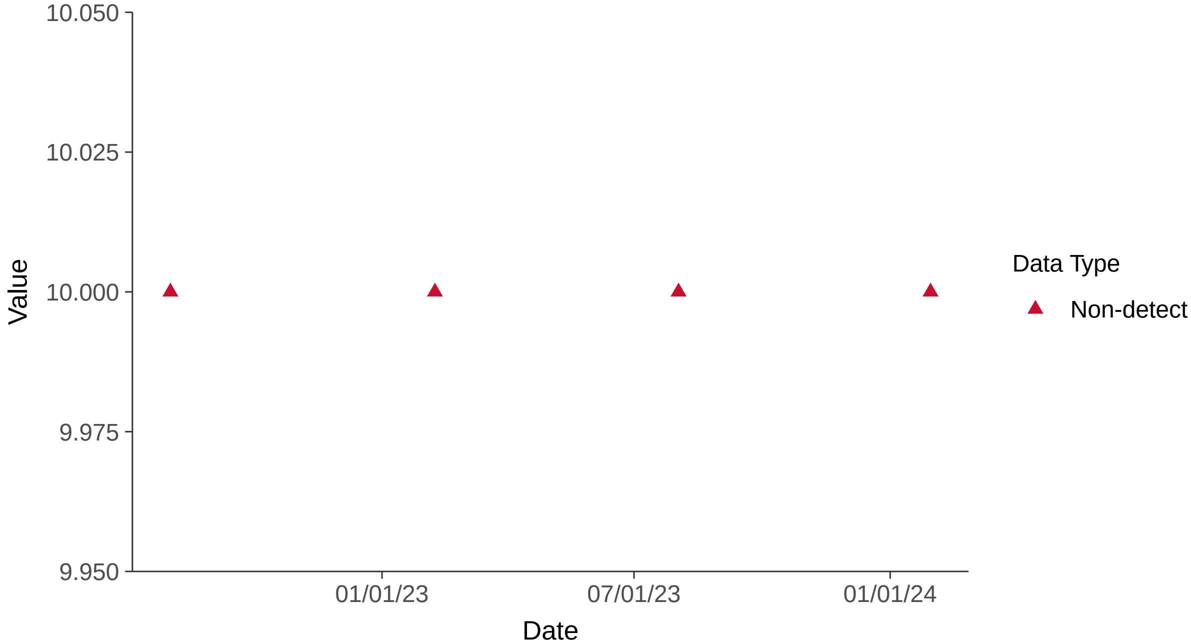

Normal Q-Q plot
Bicarbonate, MW-8 (mg/L)
450
400
350
Value
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Carbonate, MW-8

ID: 08_4_31

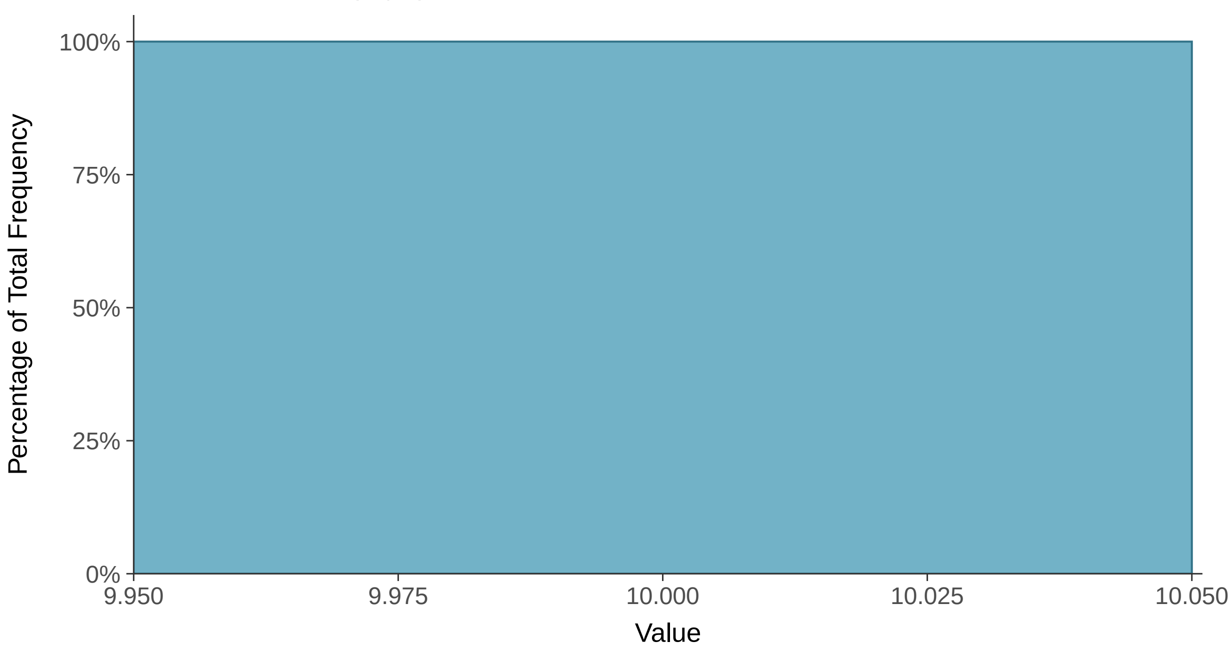
Scatter Plot

Carbonate, MW-8 (mg/L)



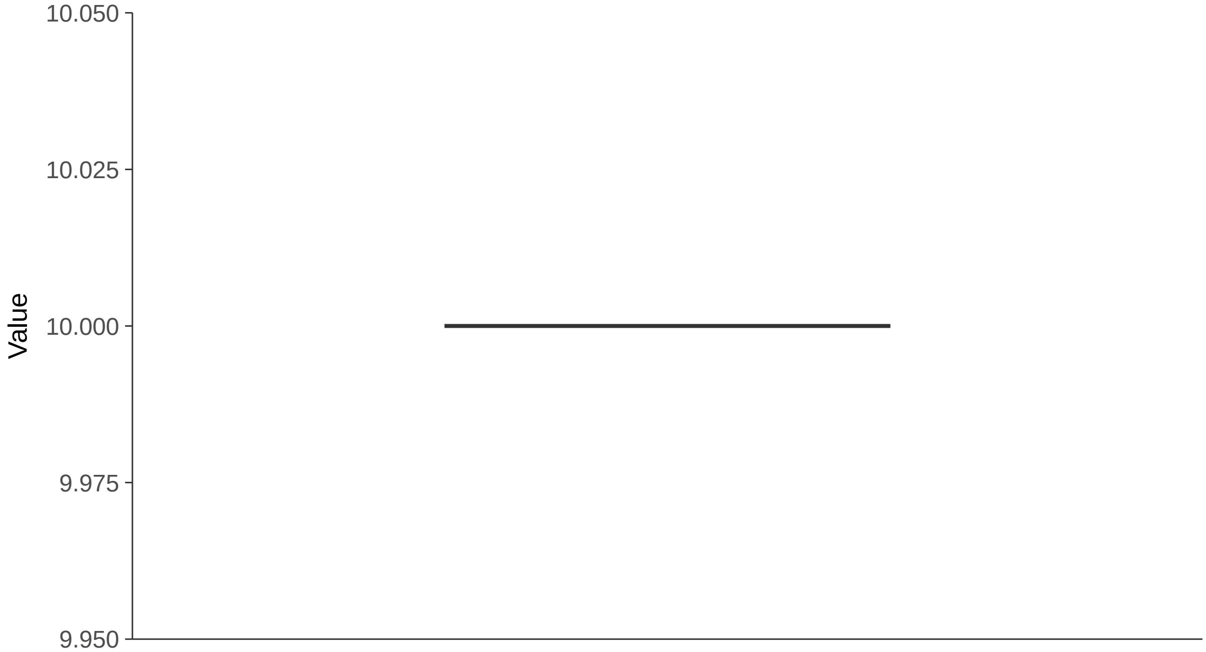
Histogram

Carbonate, MW-8 (mg/L)



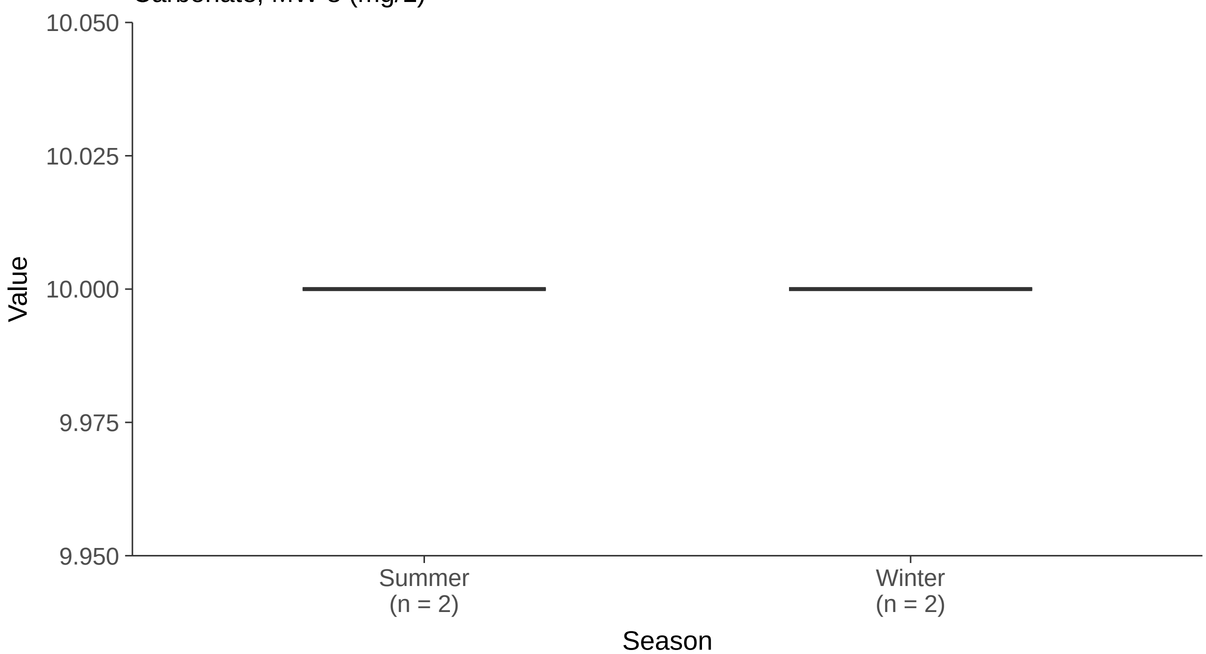
Boxplot

Carbonate, MW-8 (mg/L)



Boxplot by Season

Carbonate, MW-8 (mg/L)

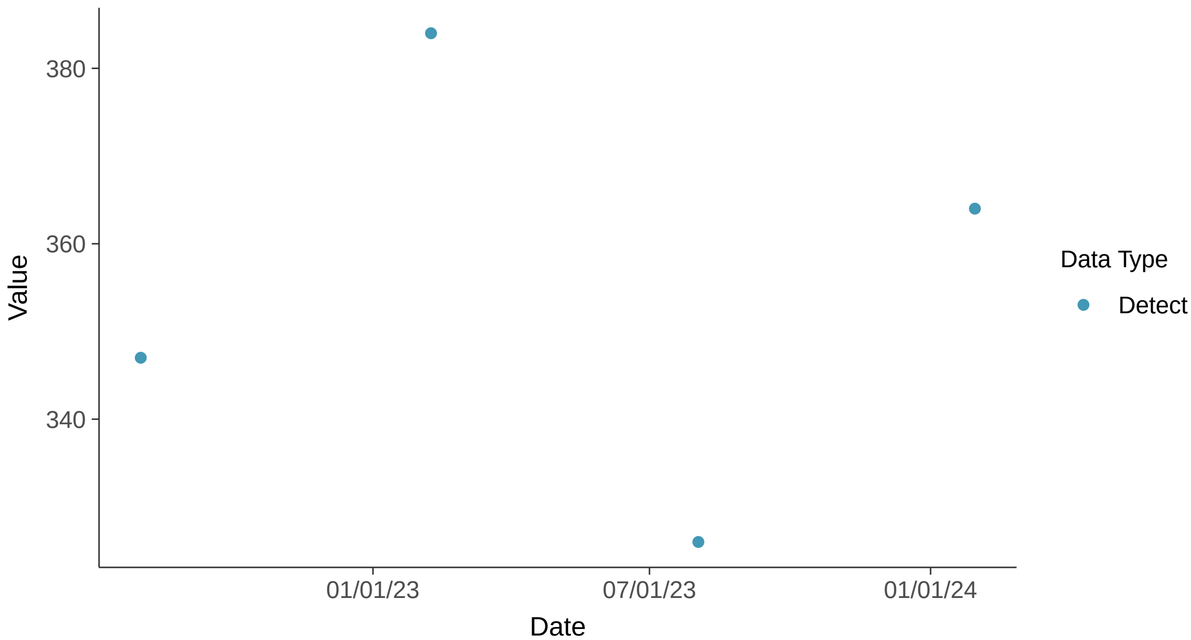


Other: Hardness, MW-8

ID: 08_4_32

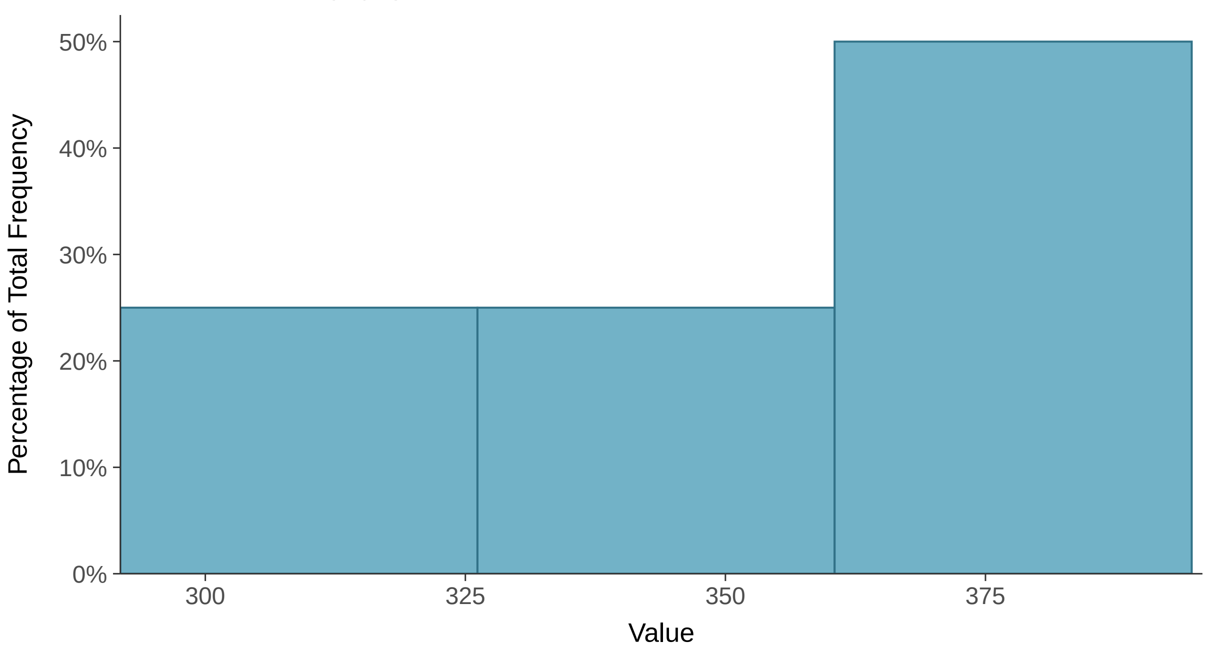
Scatter Plot

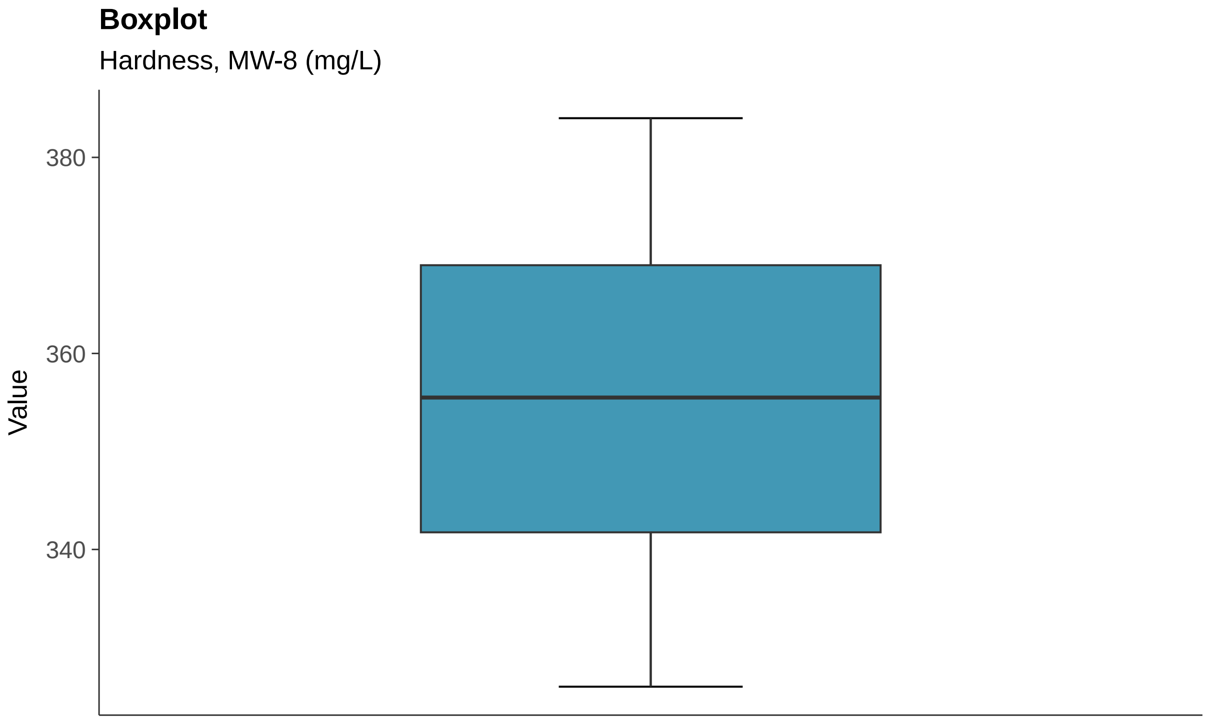
Hardness, MW-8 (mg/L)

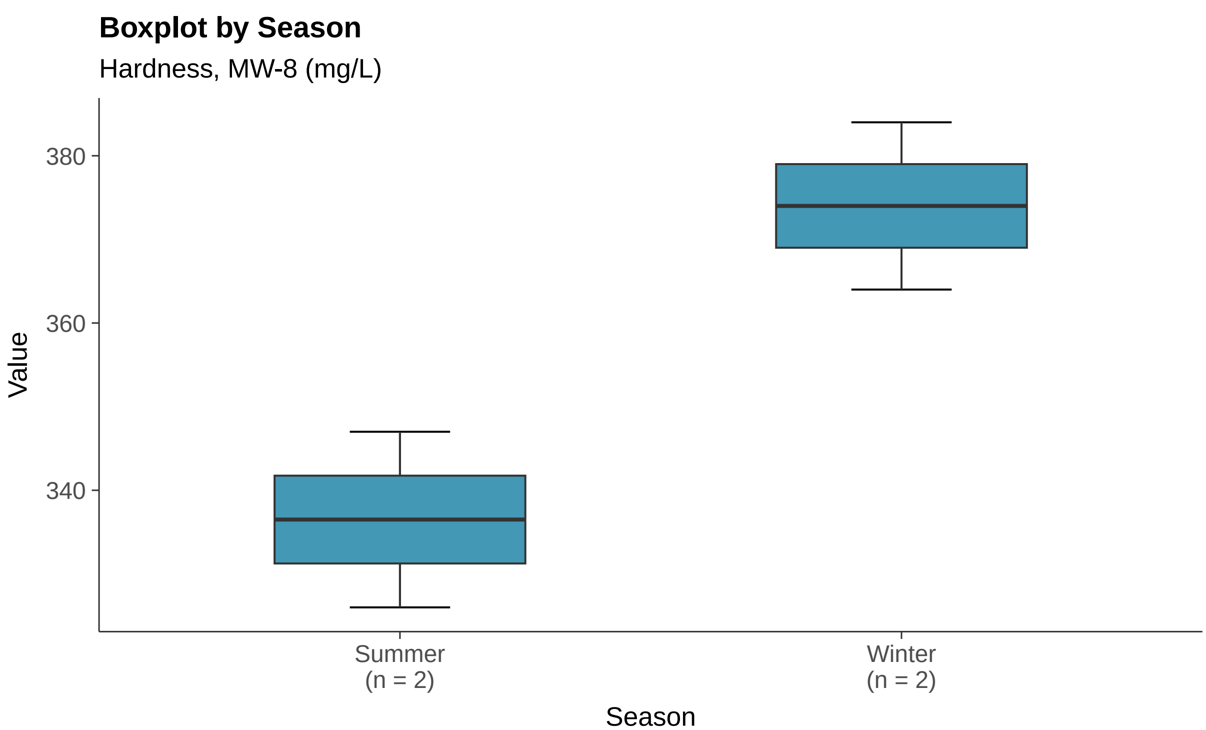


Histogram

Hardness, MW-8 (mg/L)

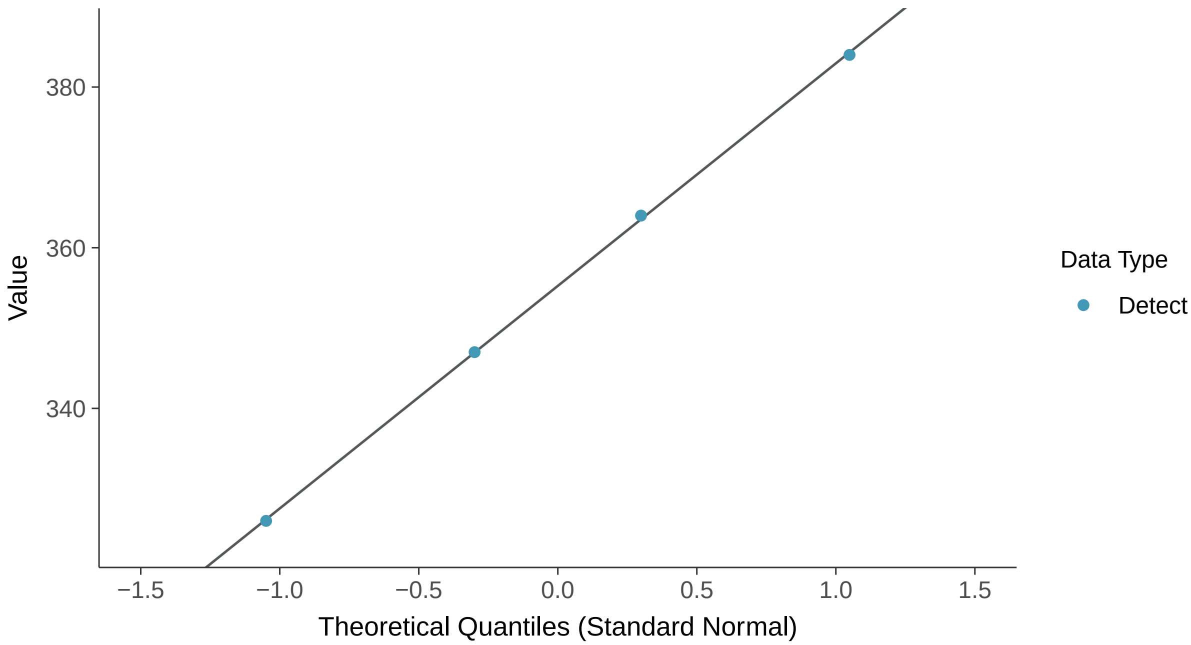



Boxplot
Hardness, MW-8 (mg/L)
Value
380
360
340


Boxplot by Season
Hardness, MW-8 (mg/L)
Value
380
360
340
Summer
(n = 2)
Winter
(n = 2)
Season

Normal Q-Q plot

Hardness, MW-8 (mg/L)

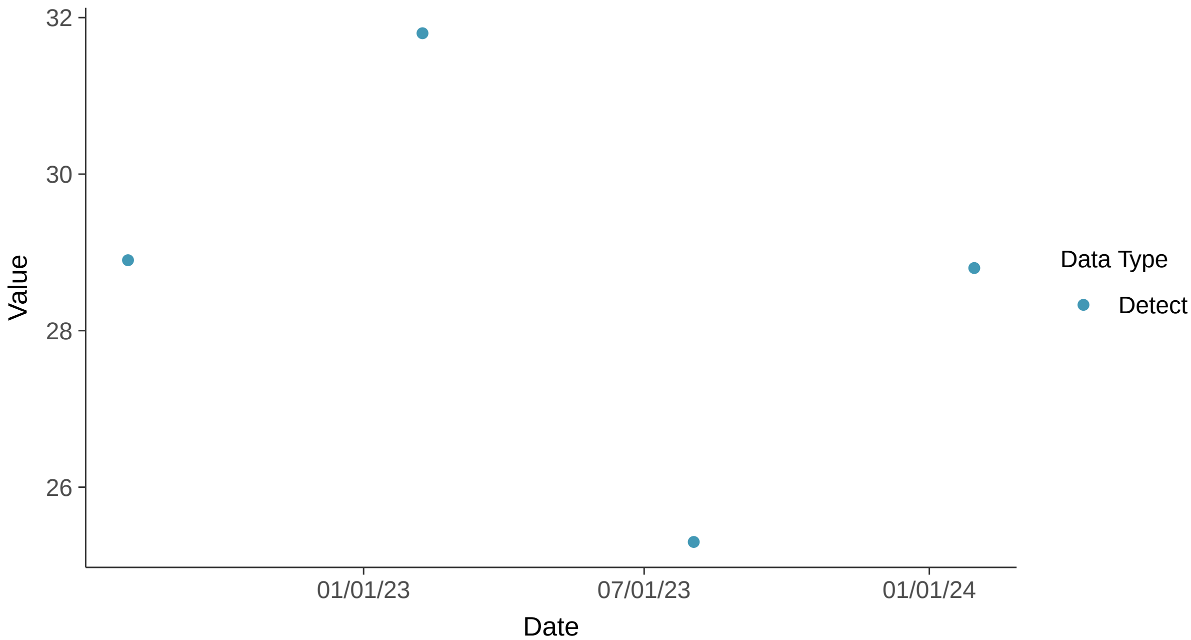


Other: Magnesium, MW-8

ID: 08_4_33

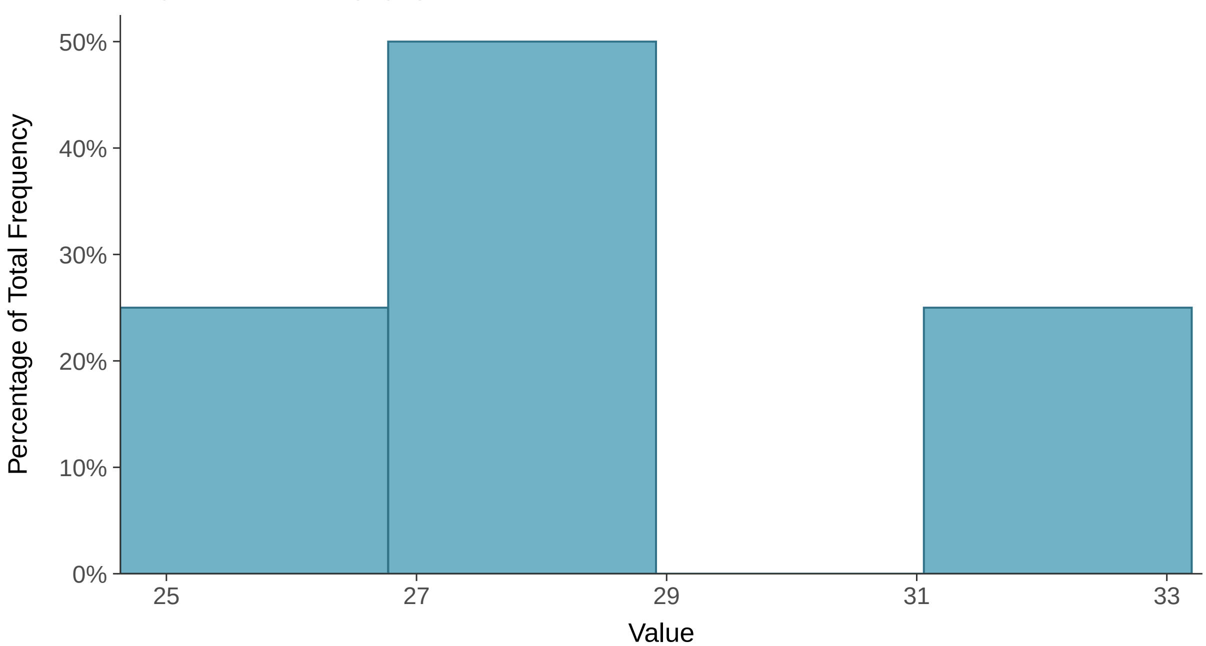
Scatter Plot

Magnesium, MW-8 (mg/L)



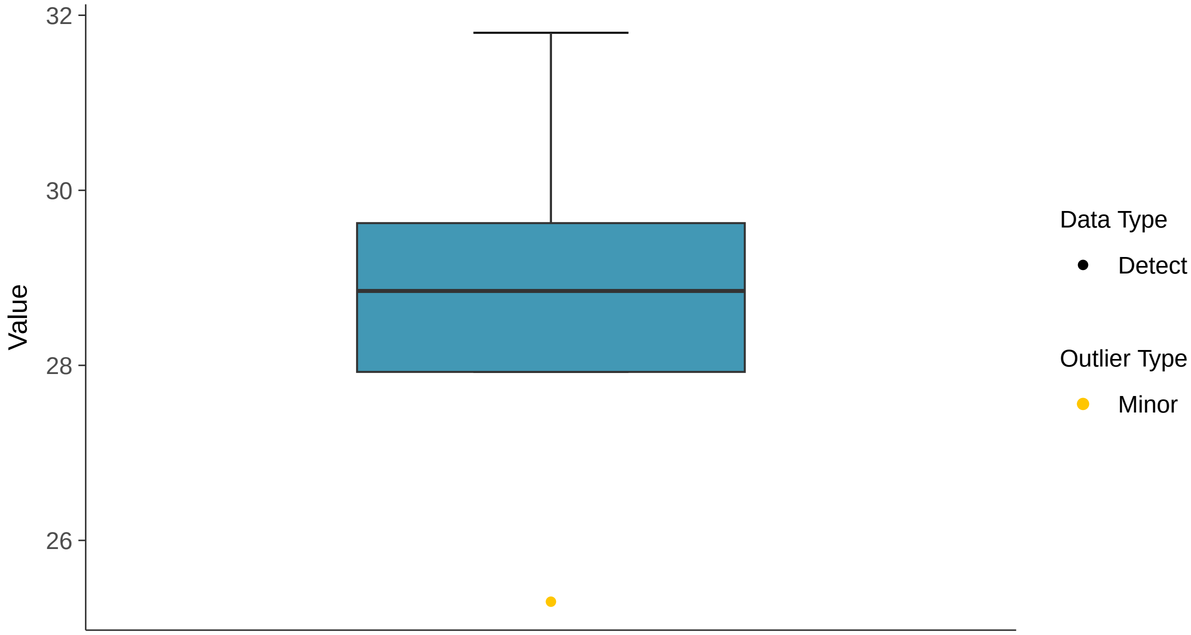
Histogram

Magnesium, MW-8 (mg/L)



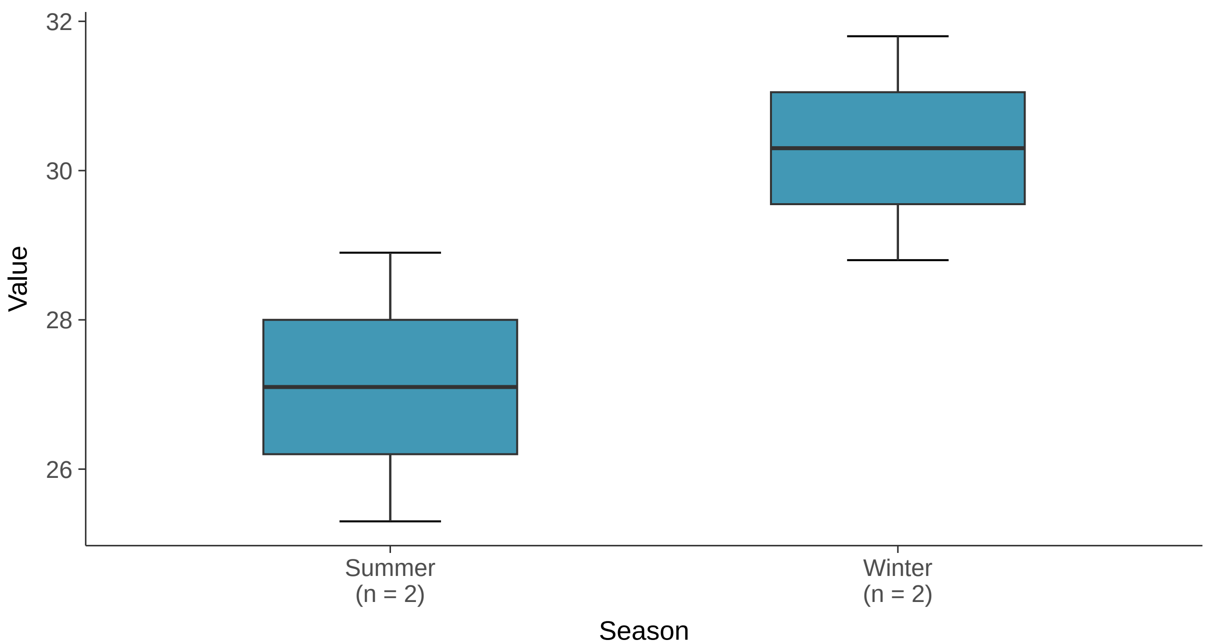
Boxplot

Magnesium, MW-8 (mg/L)



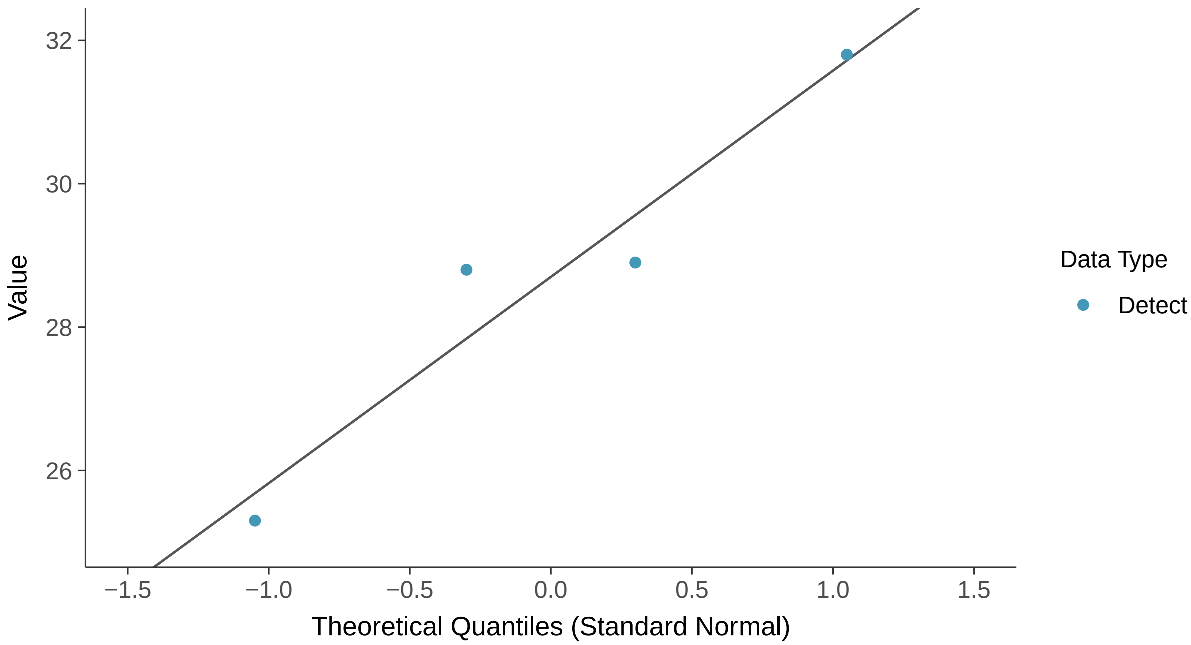
Boxplot by Season

Magnesium, MW-8 (mg/L)



Normal Q-Q plot

Magnesium, MW-8 (mg/L)

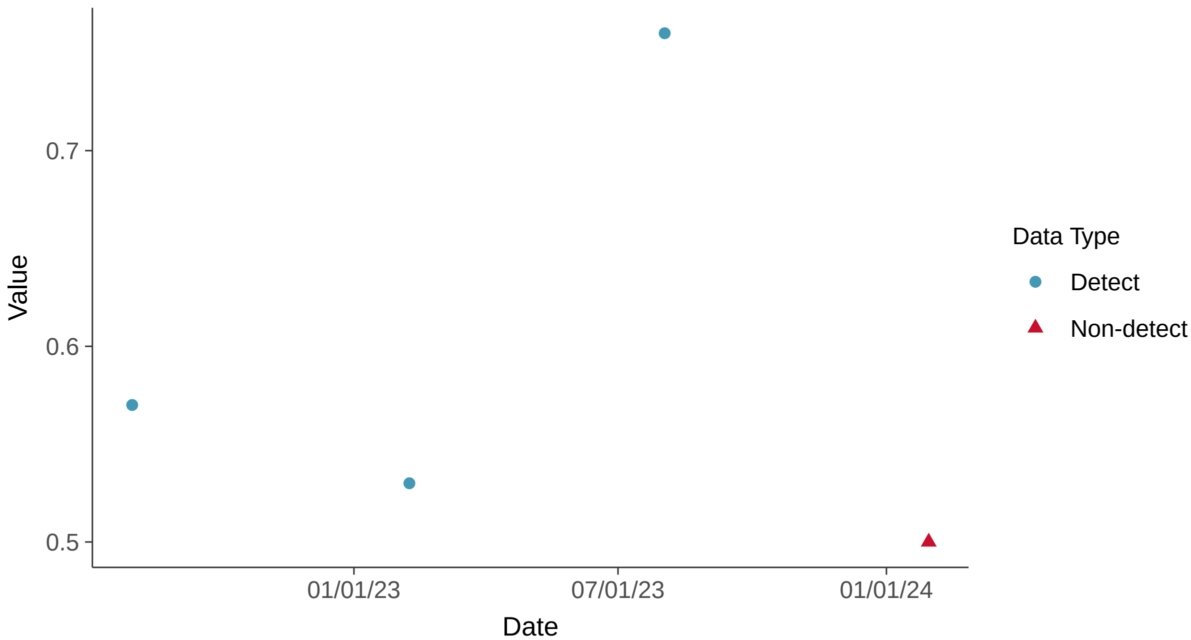


Other: Potassium, MW-8

ID: 08_4_34

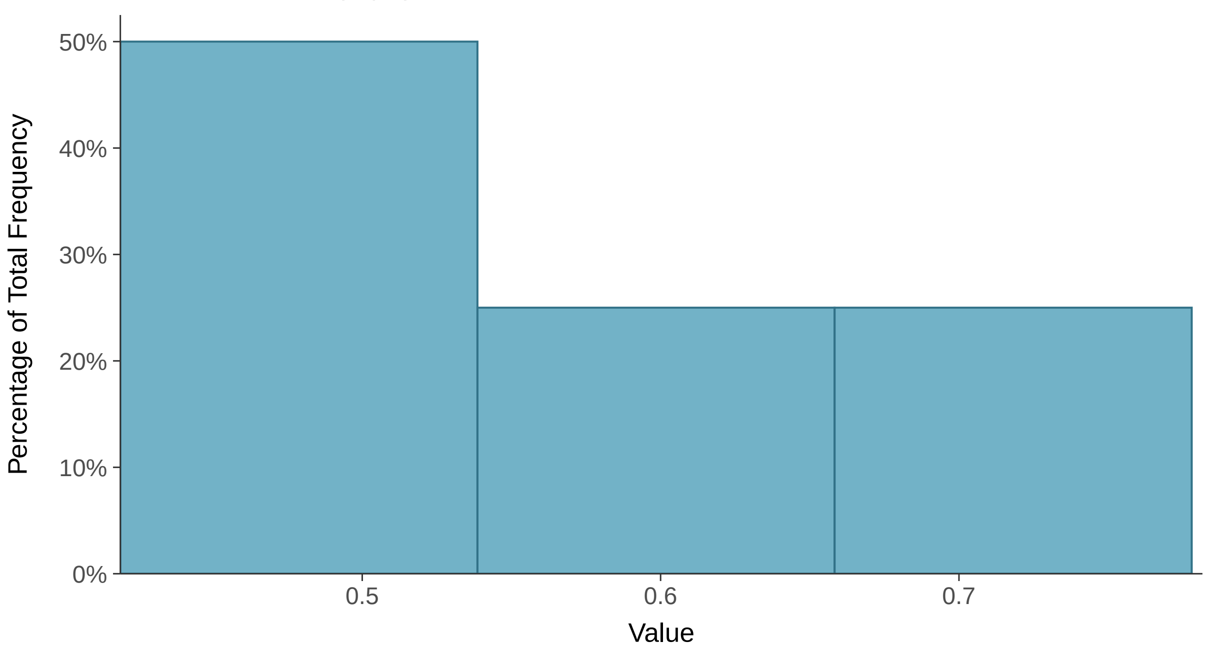
Scatter Plot

Potassium, MW-8 (mg/L)



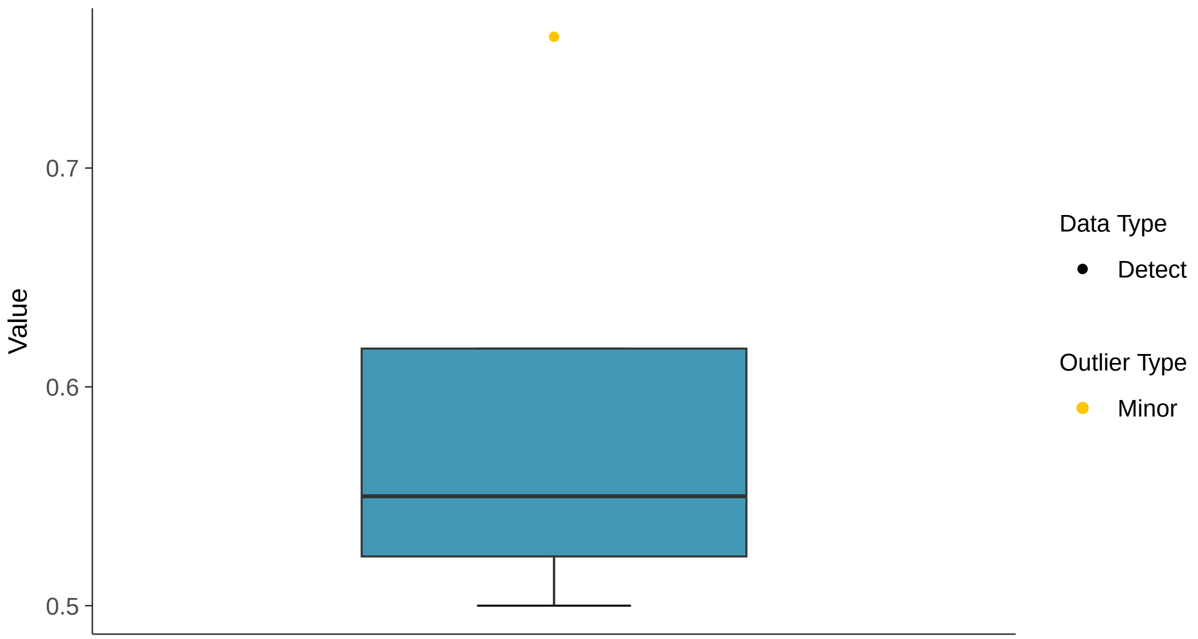
Histogram

Potassium, MW-8 (mg/L)



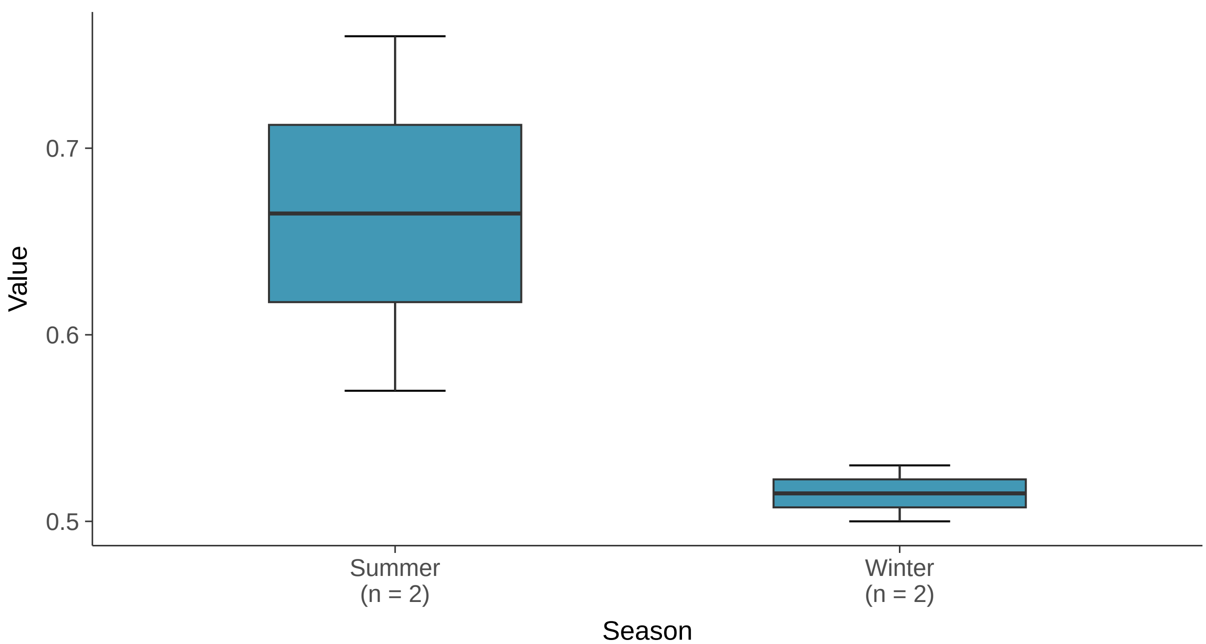
Boxplot

Potassium, MW-8 (mg/L)



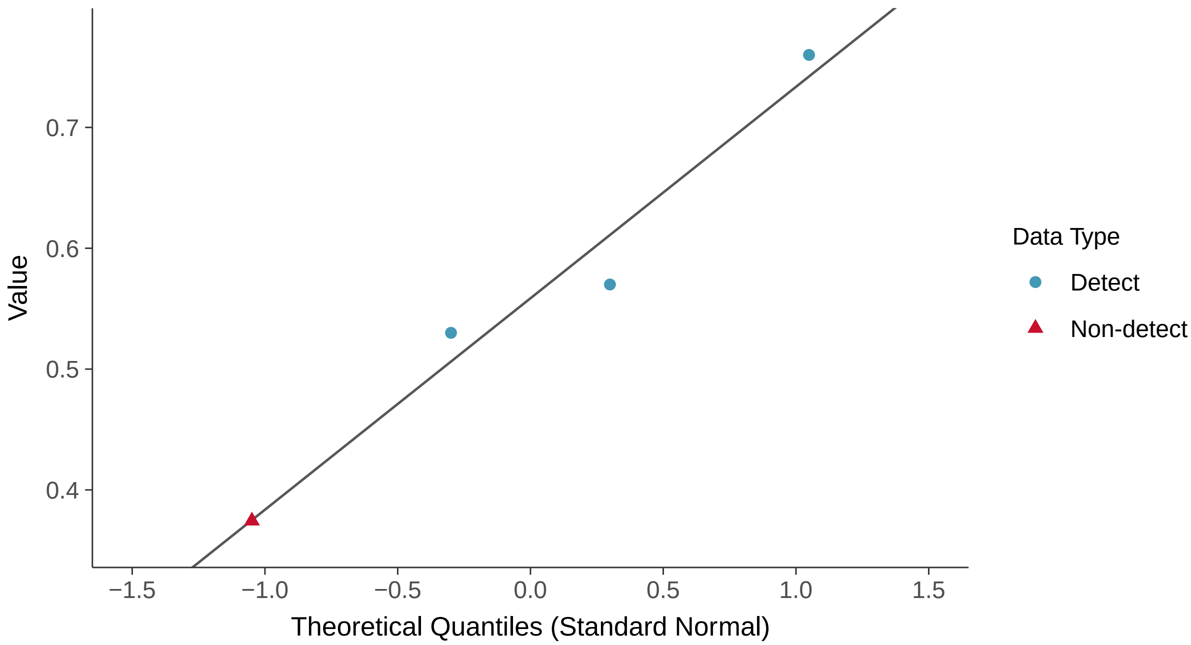
Boxplot by Season

Potassium, MW-8 (mg/L)



Normal Q-Q plot using ROS Imputed Estimates

Potassium, MW-8 (mg/L)

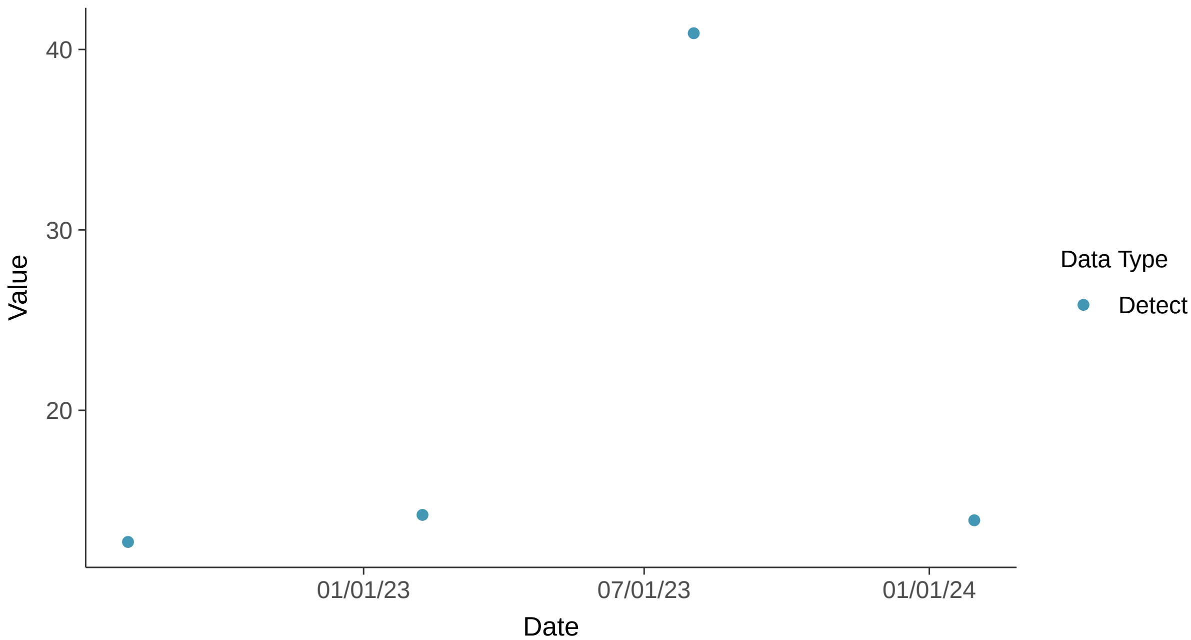


Other: Sodium, MW-8

ID: 08_4_35

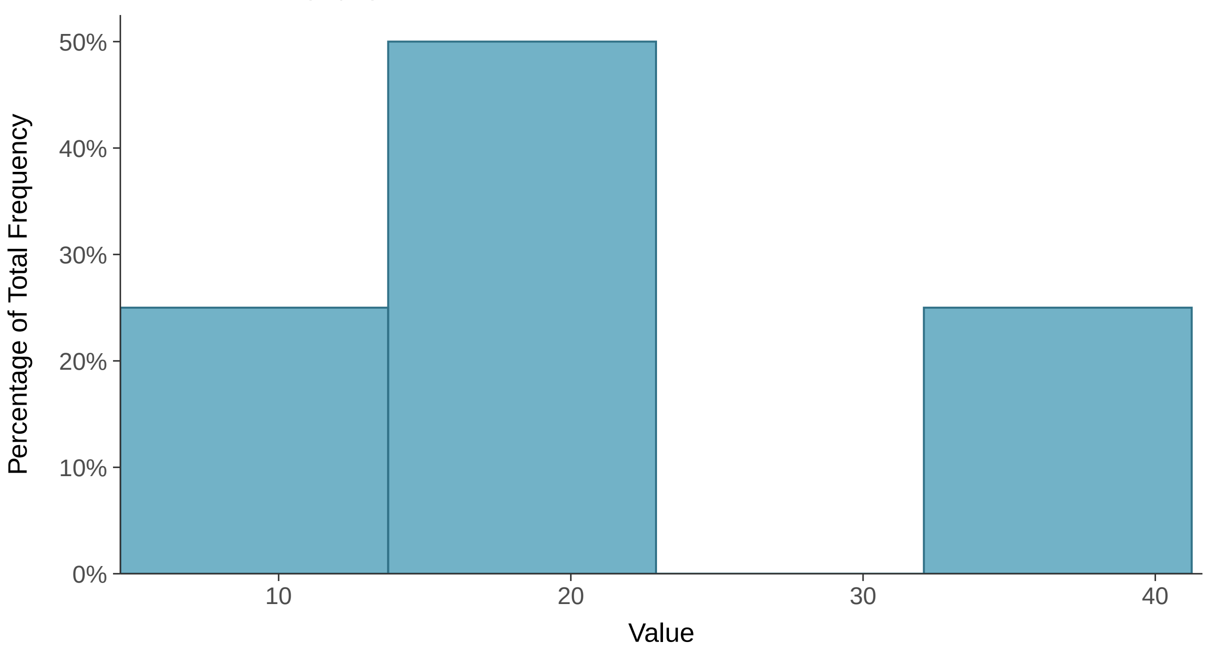
Scatter Plot

Sodium, MW-8 (mg/L)



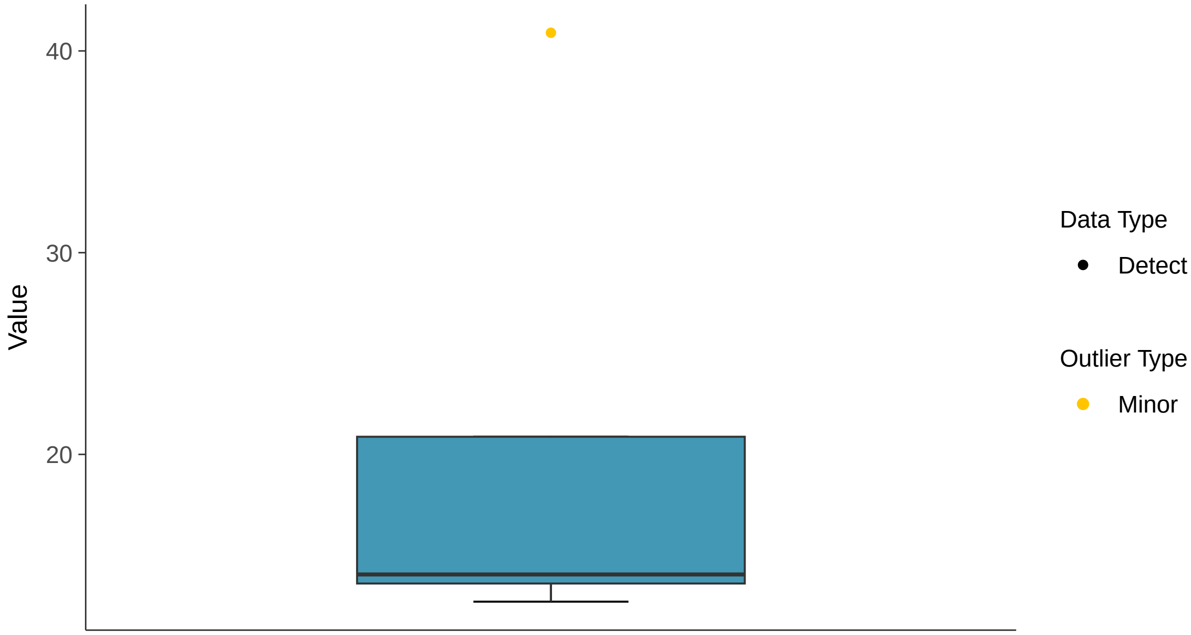
Histogram

Sodium, MW-8 (mg/L)



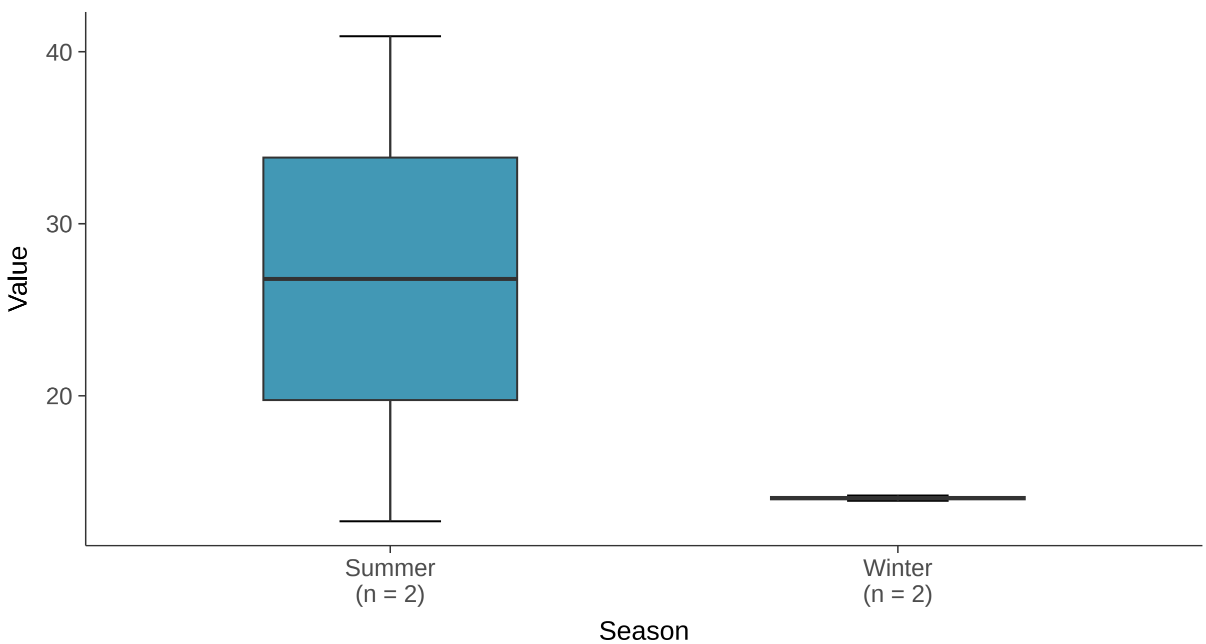
Boxplot

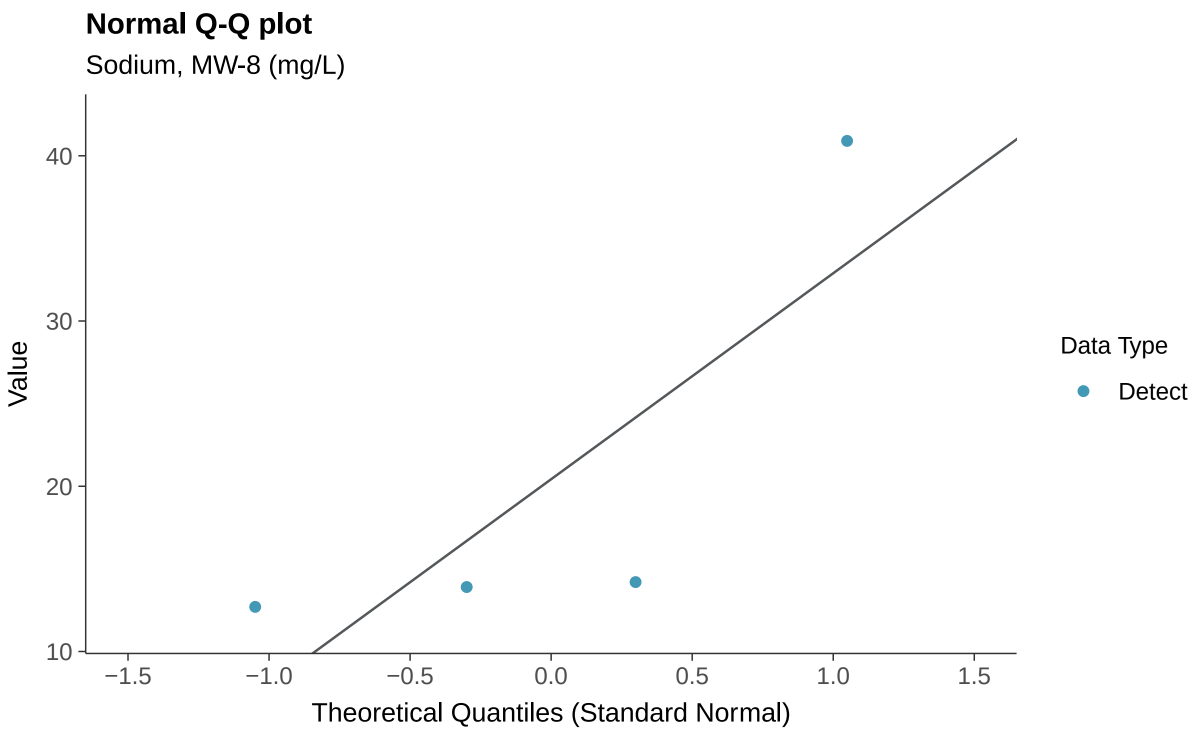
Sodium, MW-8 (mg/L)



Boxplot by Season

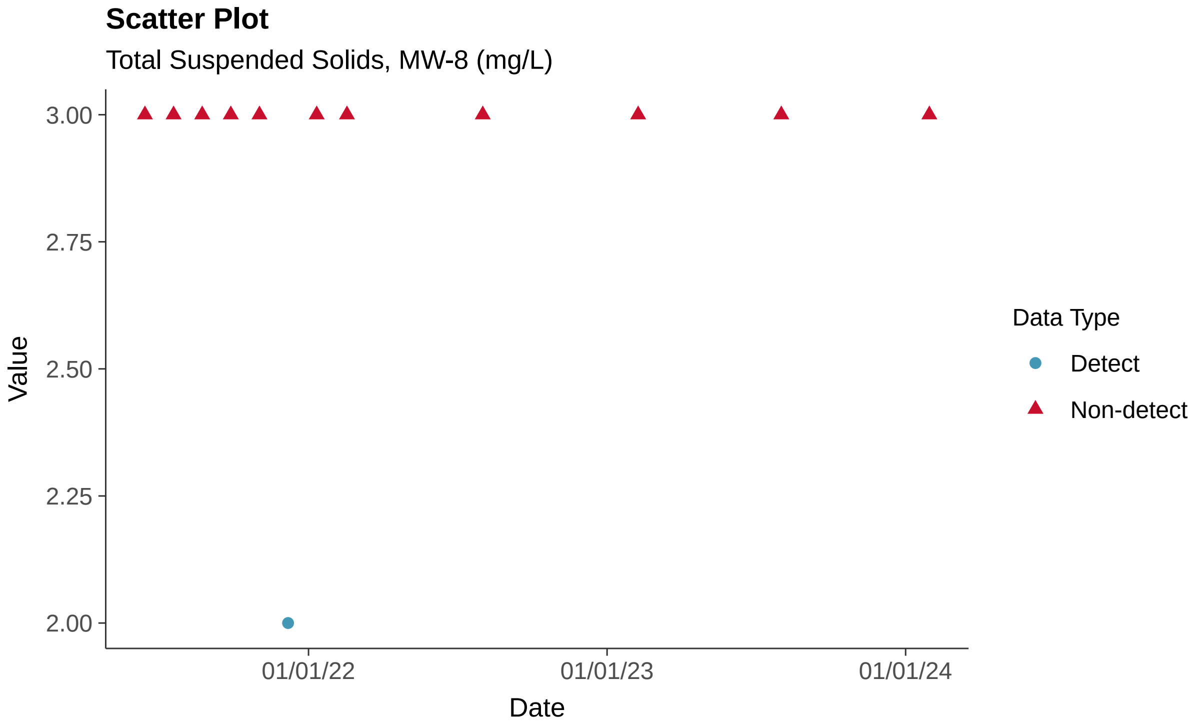
Sodium, MW-8 (mg/L)

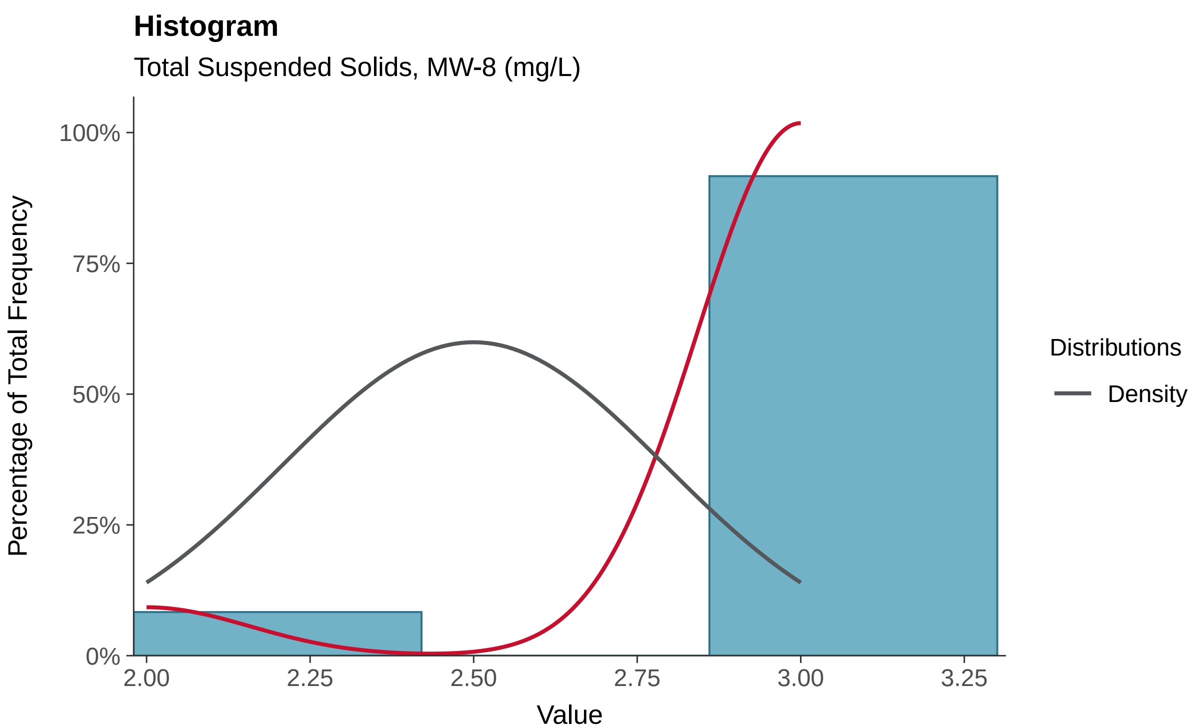



Normal Q-Q plot
Sodium, MW-8 (mg/L)
Value
40
30
20
10
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Total Suspended Solids, MW-8

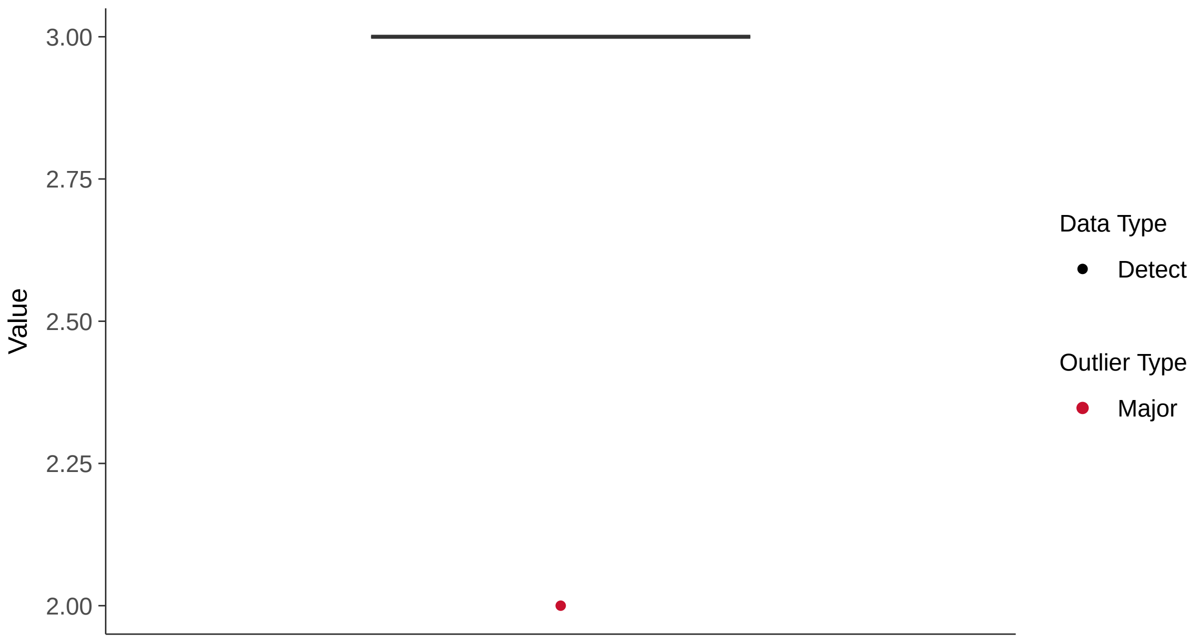
ID: 08_4_36





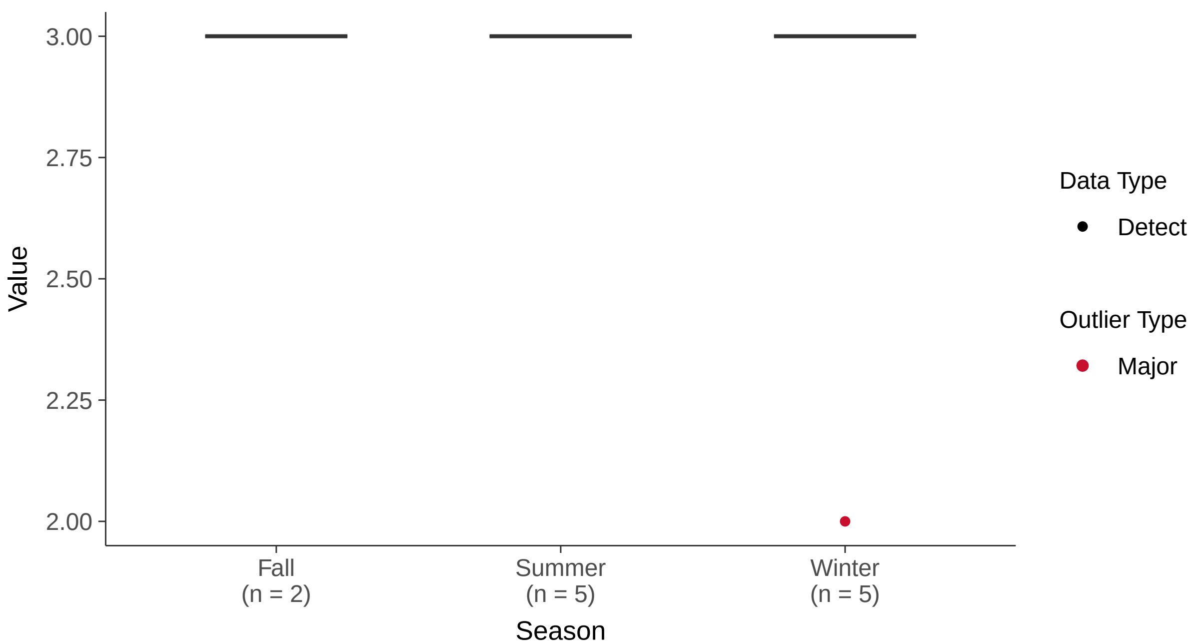
Boxplot

Total Suspended Solids, MW-8 (mg/L)



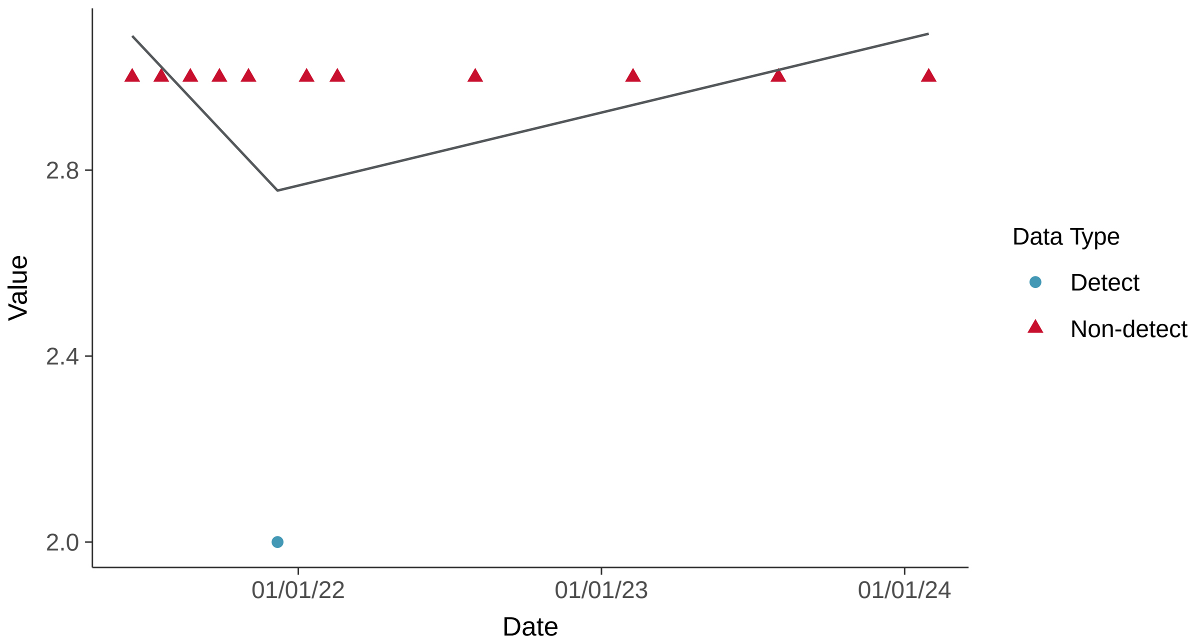
Boxplot by Season

Total Suspended Solids, MW-8 (mg/L)



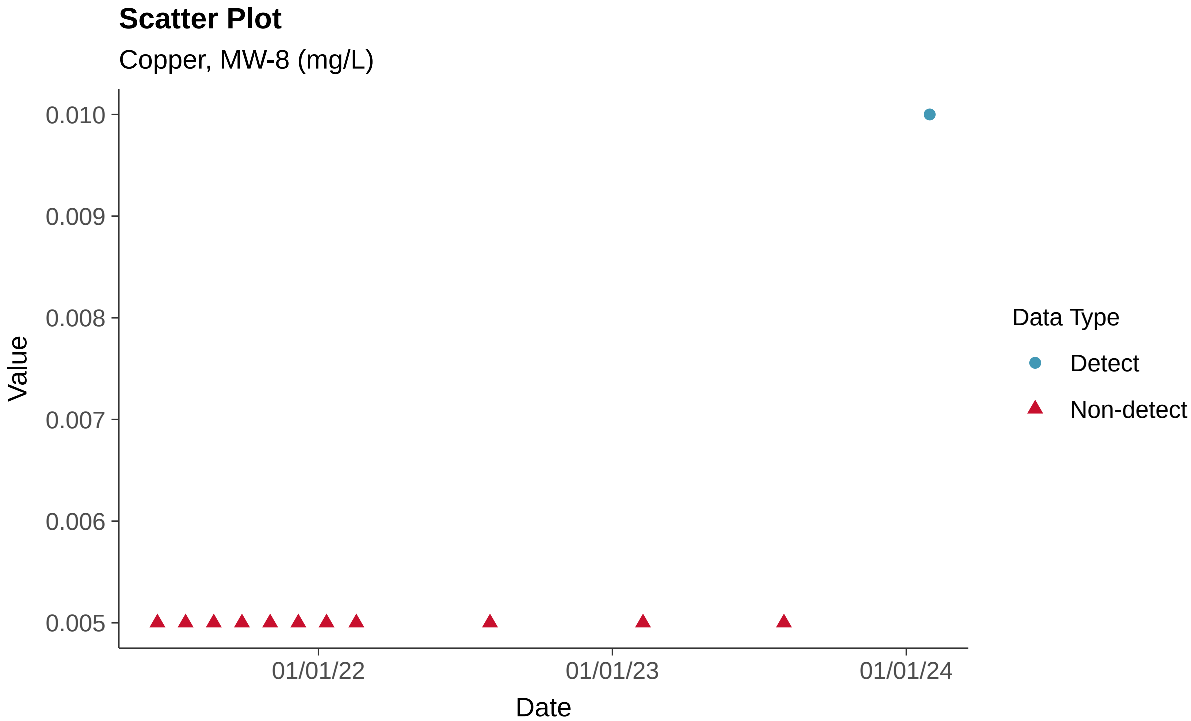
Trend Regression: Piecewise Linear-Linear

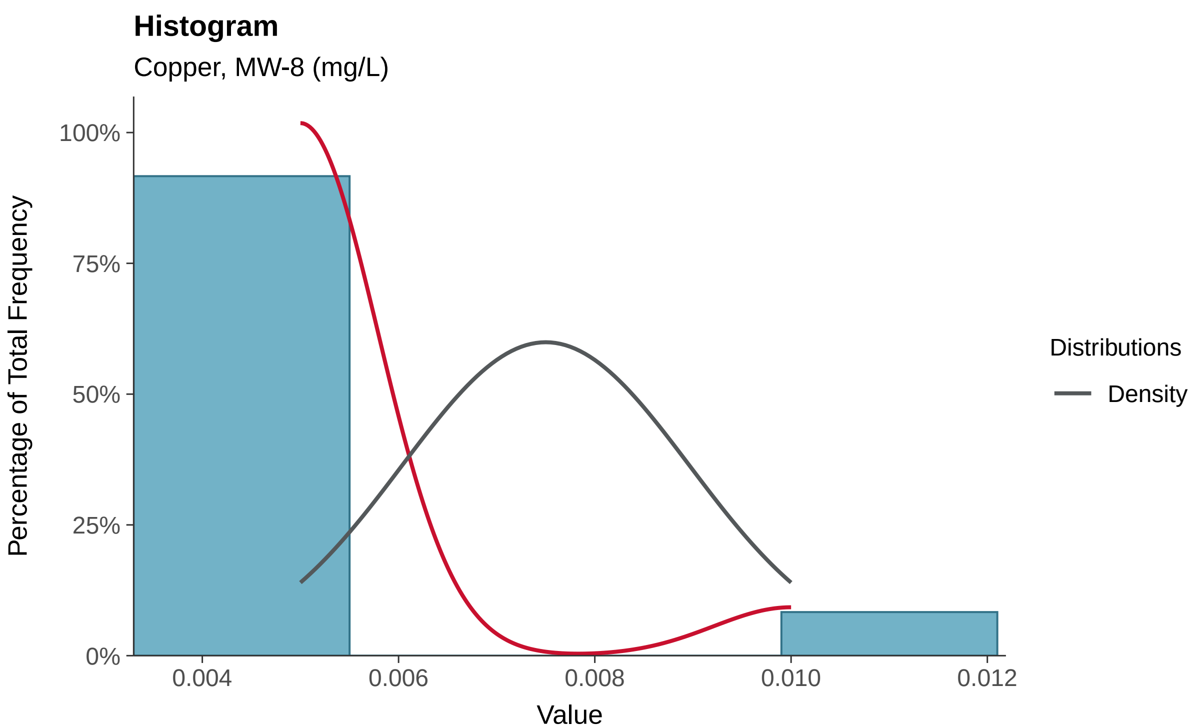
Total Suspended Solids, MW-8 (mg/L)



Part 115: Copper, MW-8

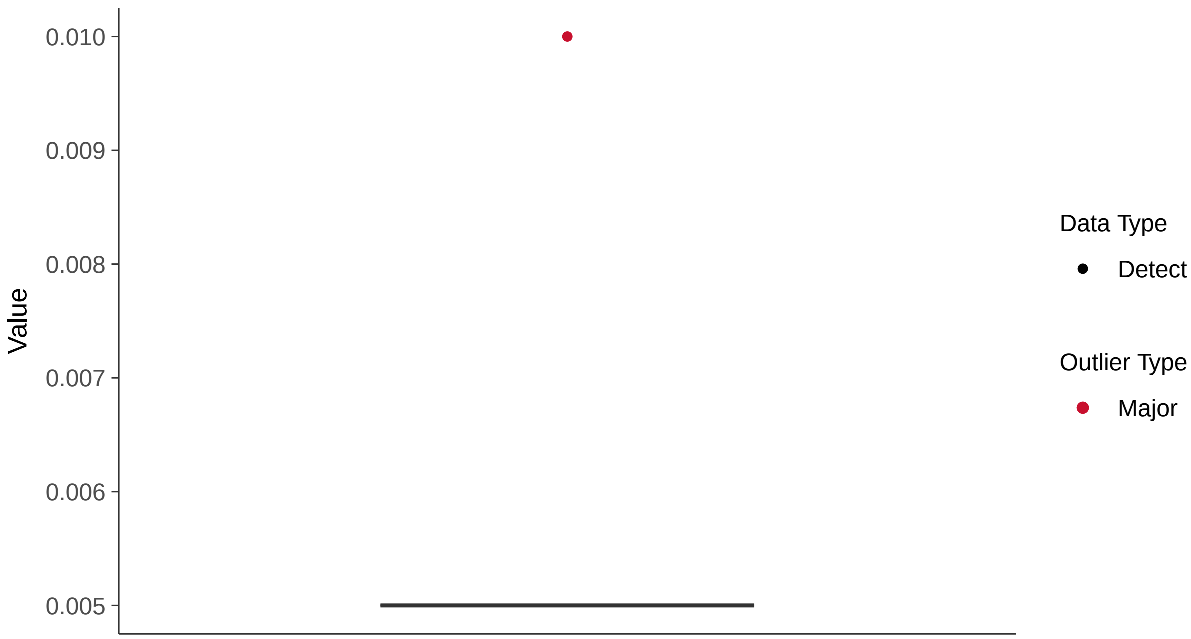
ID: 08_5_37





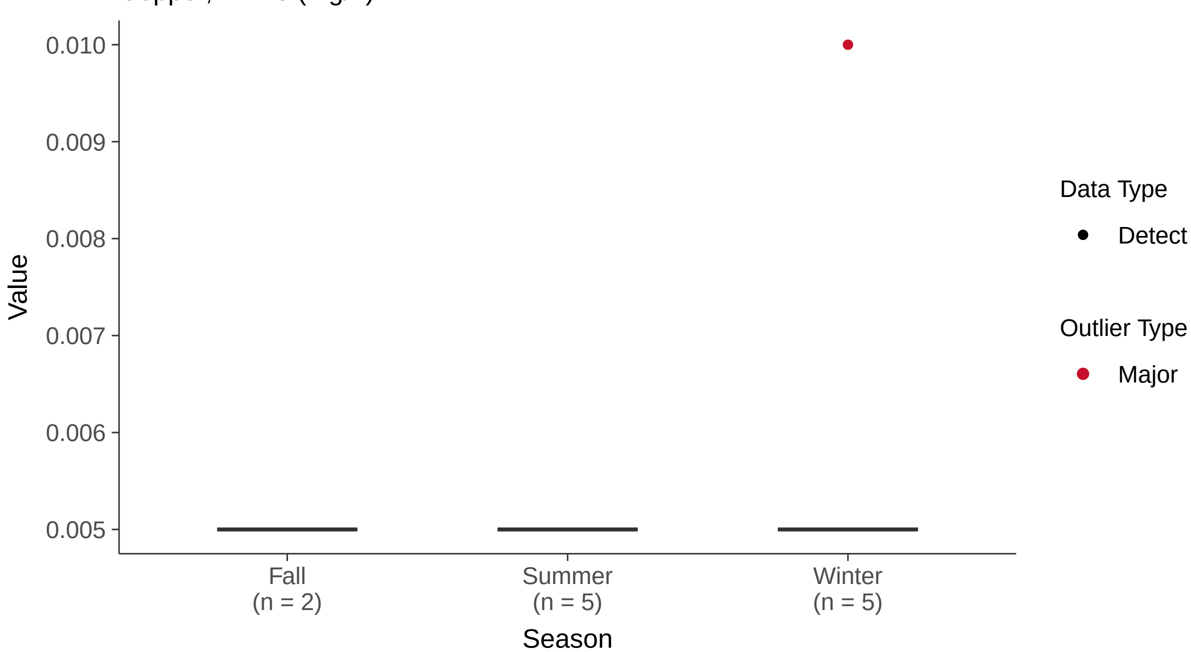
Boxplot

Copper, MW-8 (mg/L)



Boxplot by Season

Copper, MW-8 (mg/L)

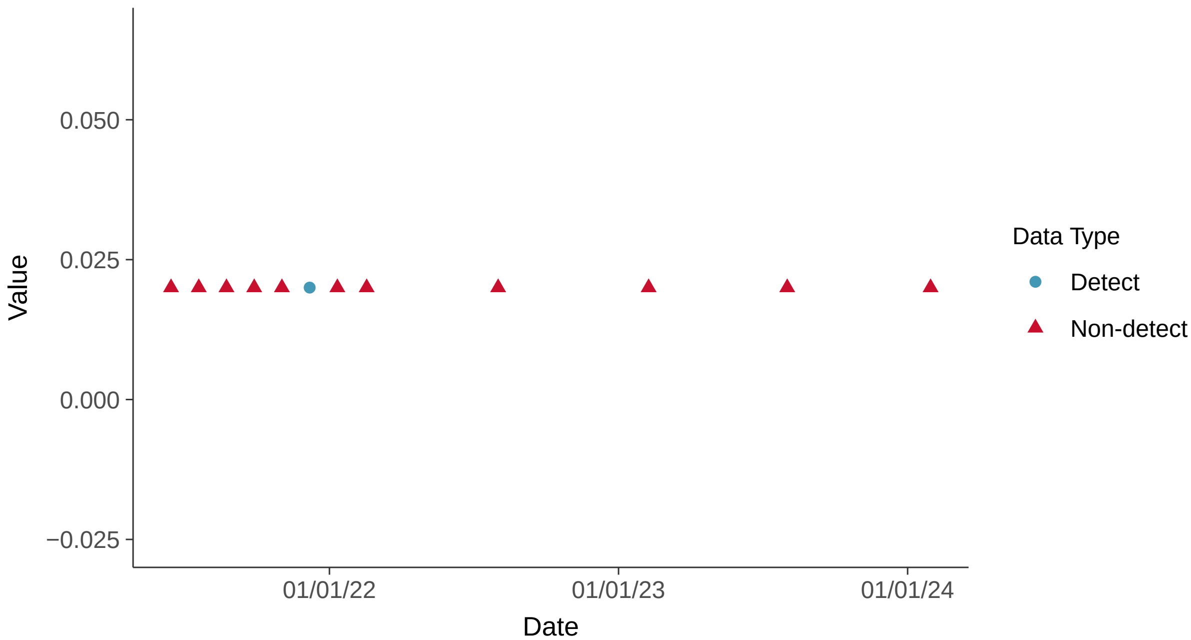


Part 115: Iron, MW-8

ID: 08_5_38

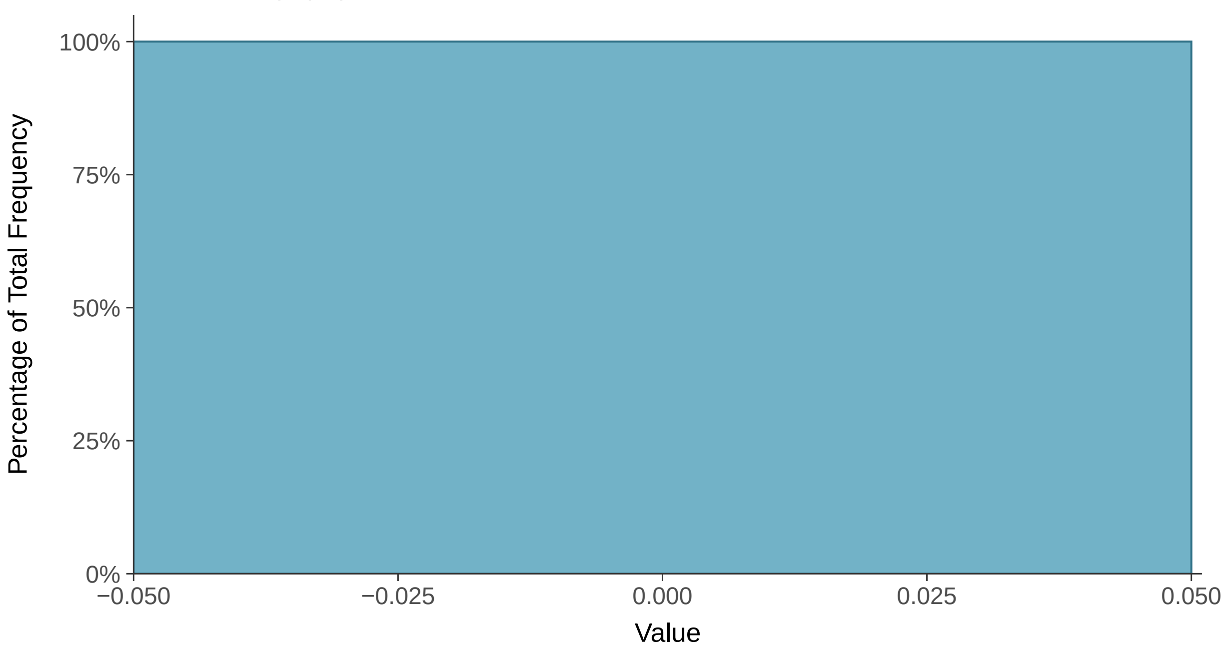
Scatter Plot

Iron, MW-8 (mg/L)



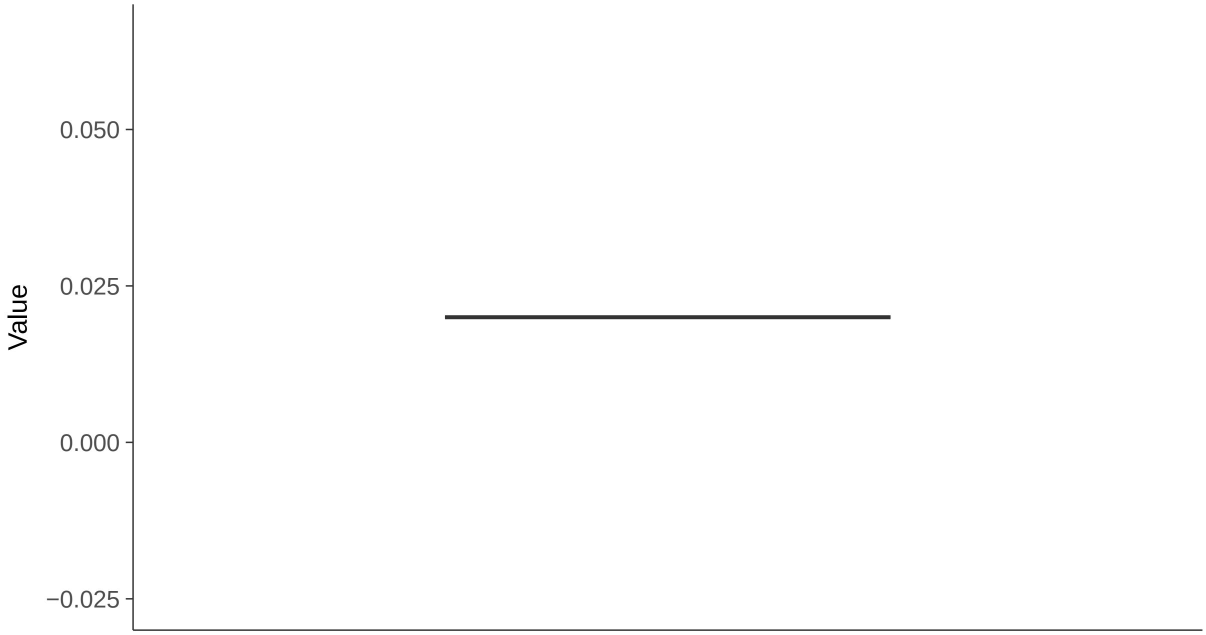
Histogram

Iron, MW-8 (mg/L)



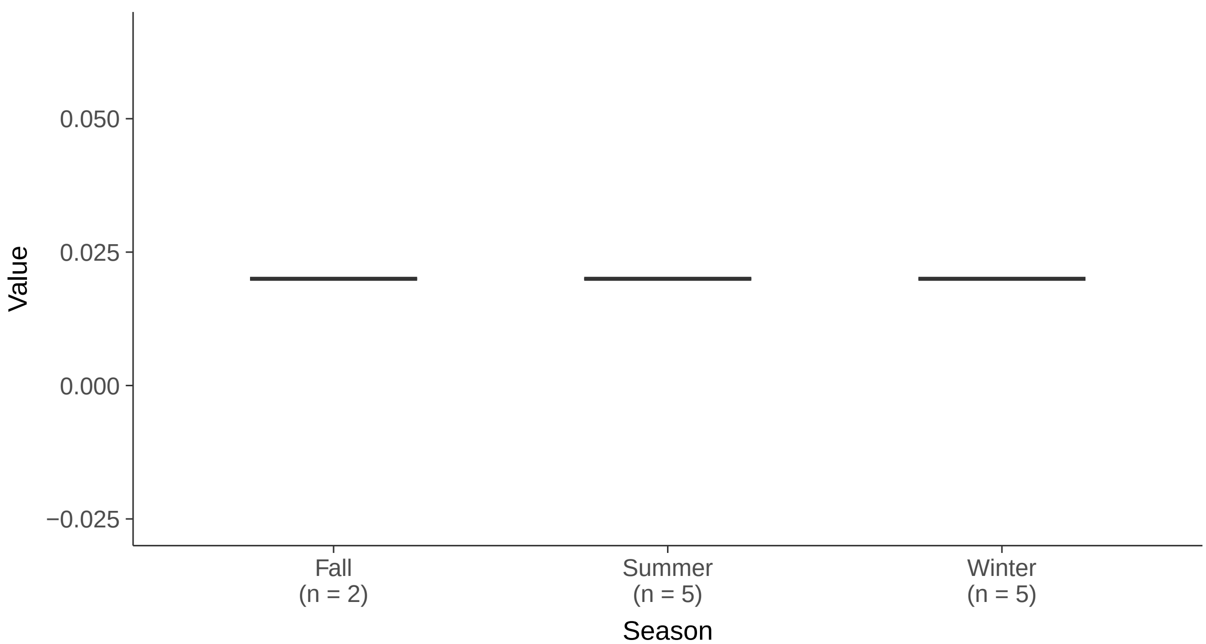
Boxplot

Iron, MW-8 (mg/L)



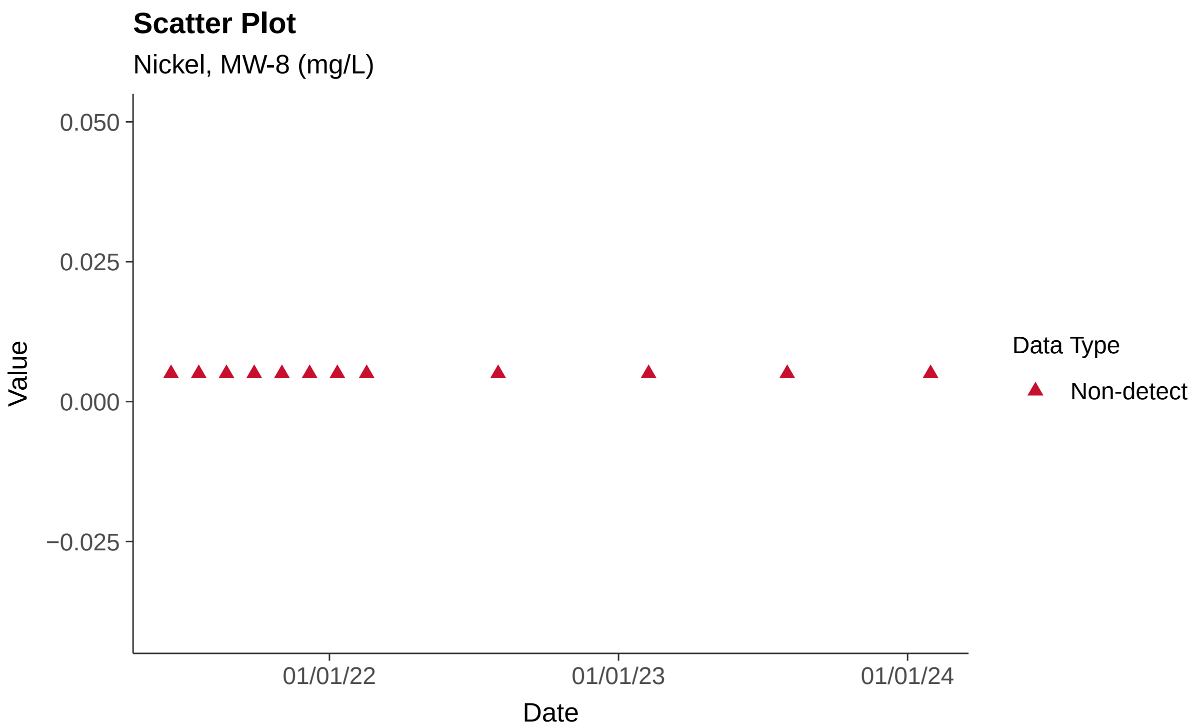
Boxplot by Season

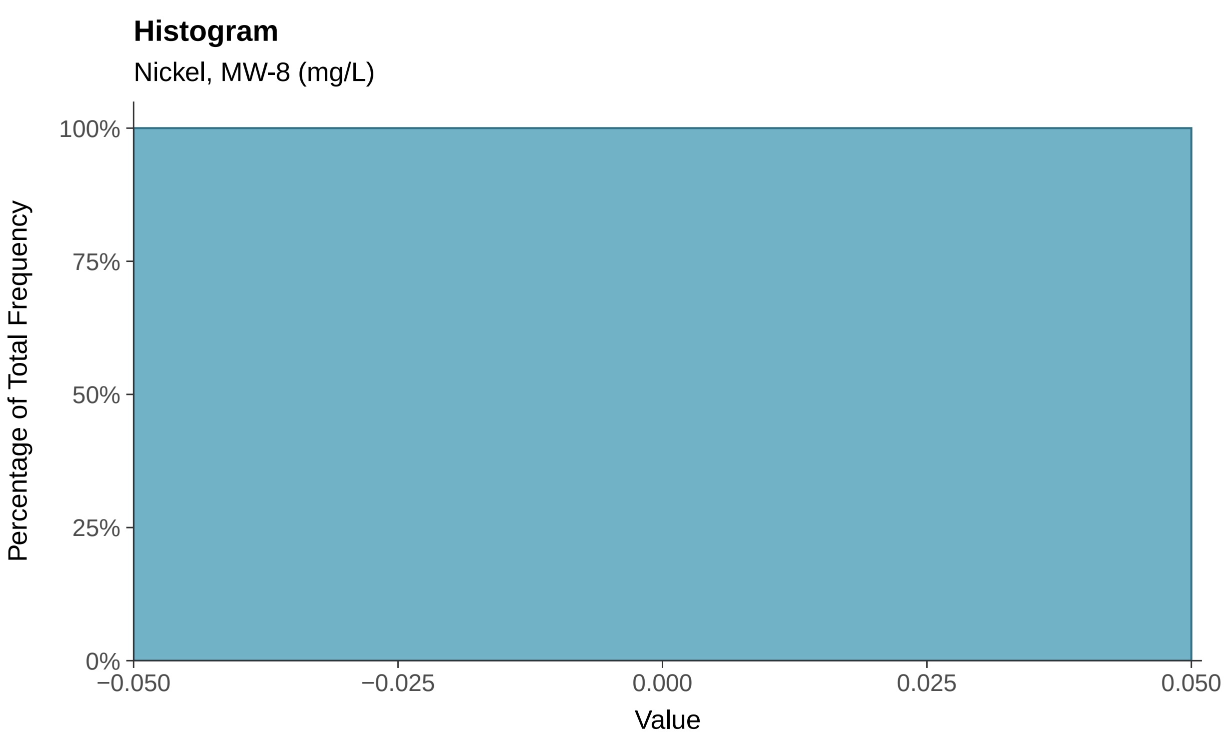
Iron, MW-8 (mg/L)



Part 115: Nickel, MW-8

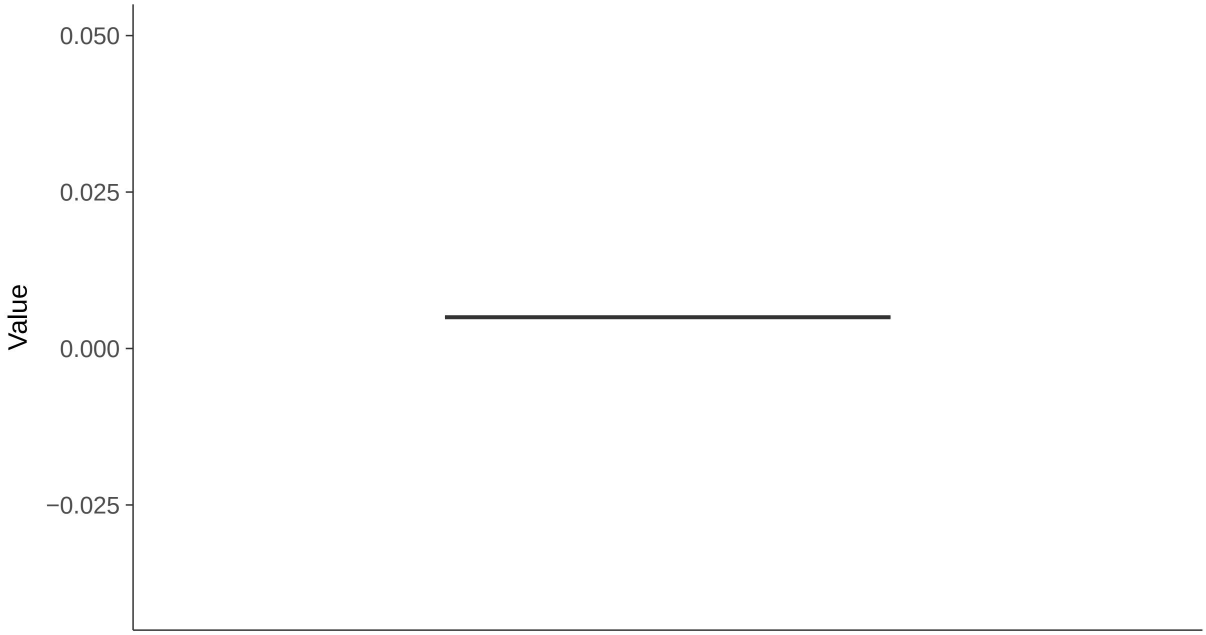
ID: 08_5_39





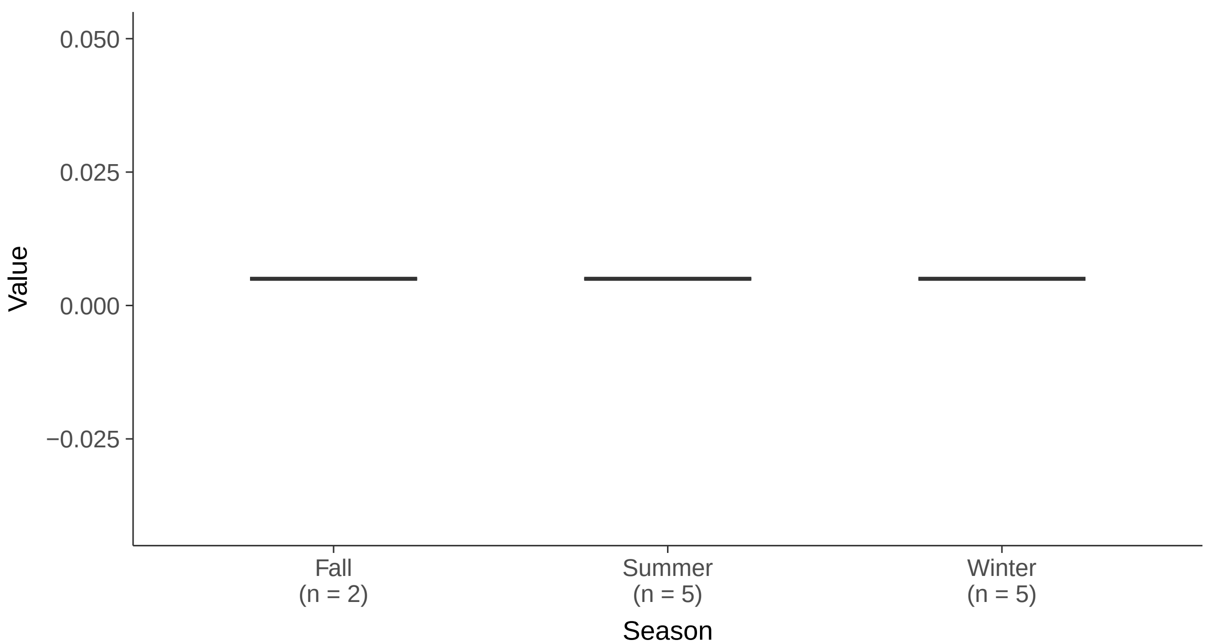
Boxplot

Nickel, MW-8 (mg/L)



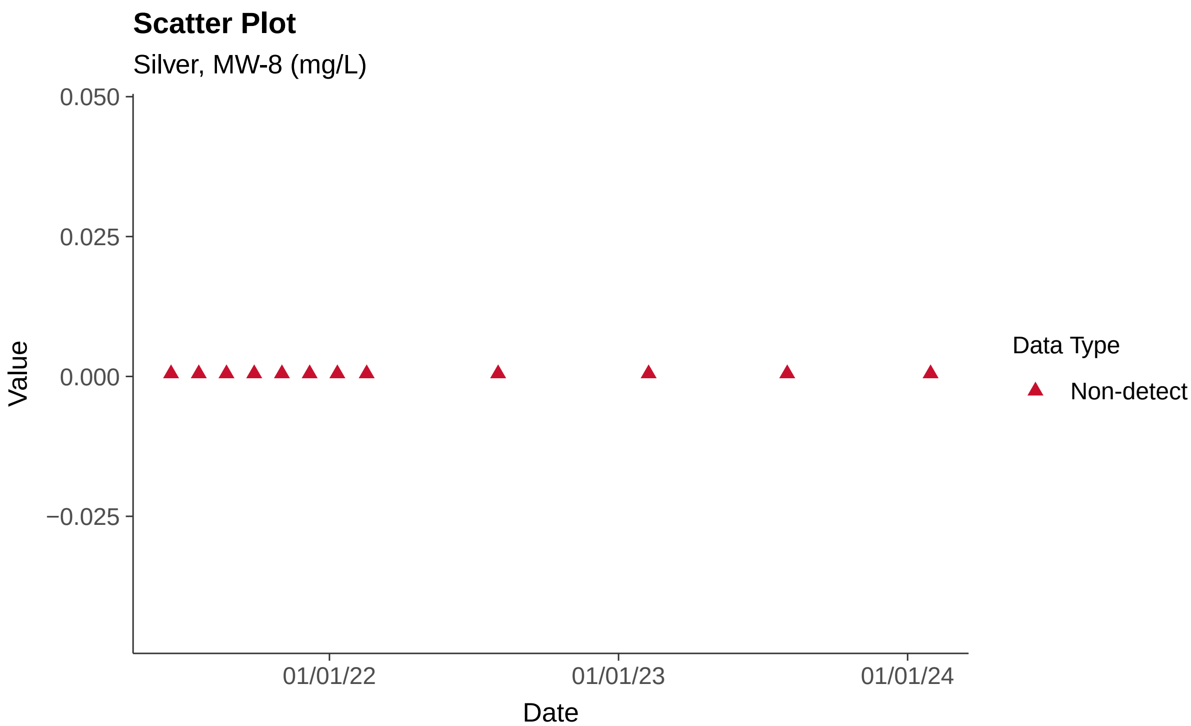
Boxplot by Season

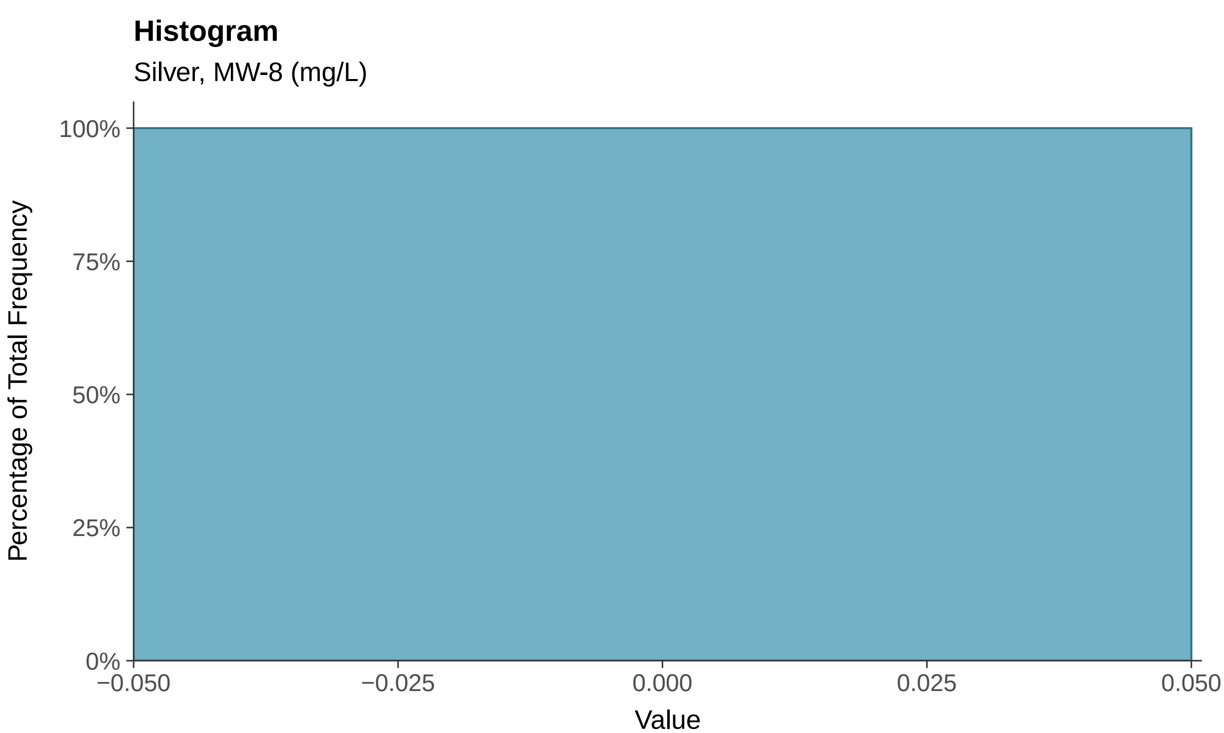
Nickel, MW-8 (mg/L)



Part 115: Silver, MW-8

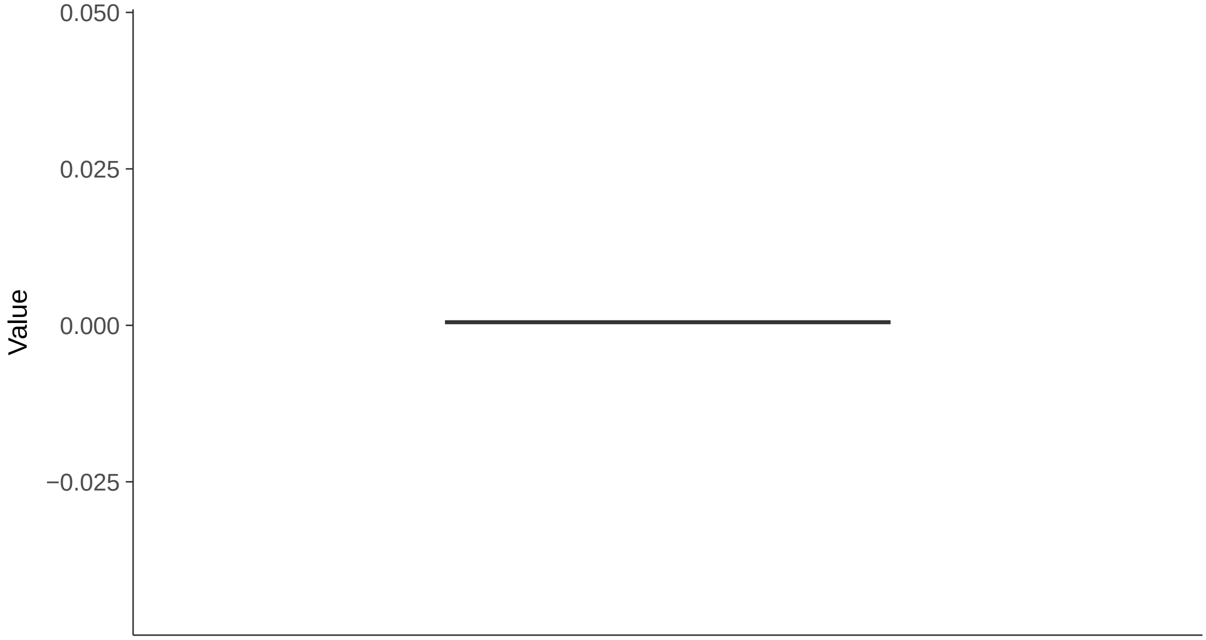
ID: 08_5_40





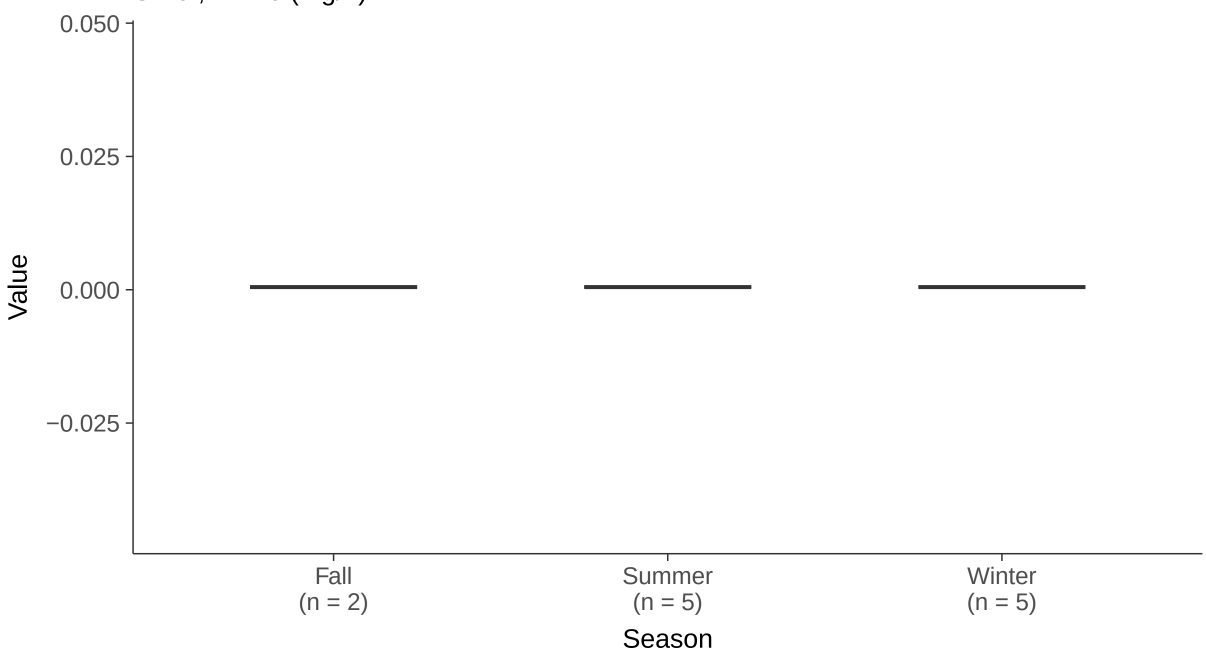
Boxplot

Silver, MW-8 (mg/L)



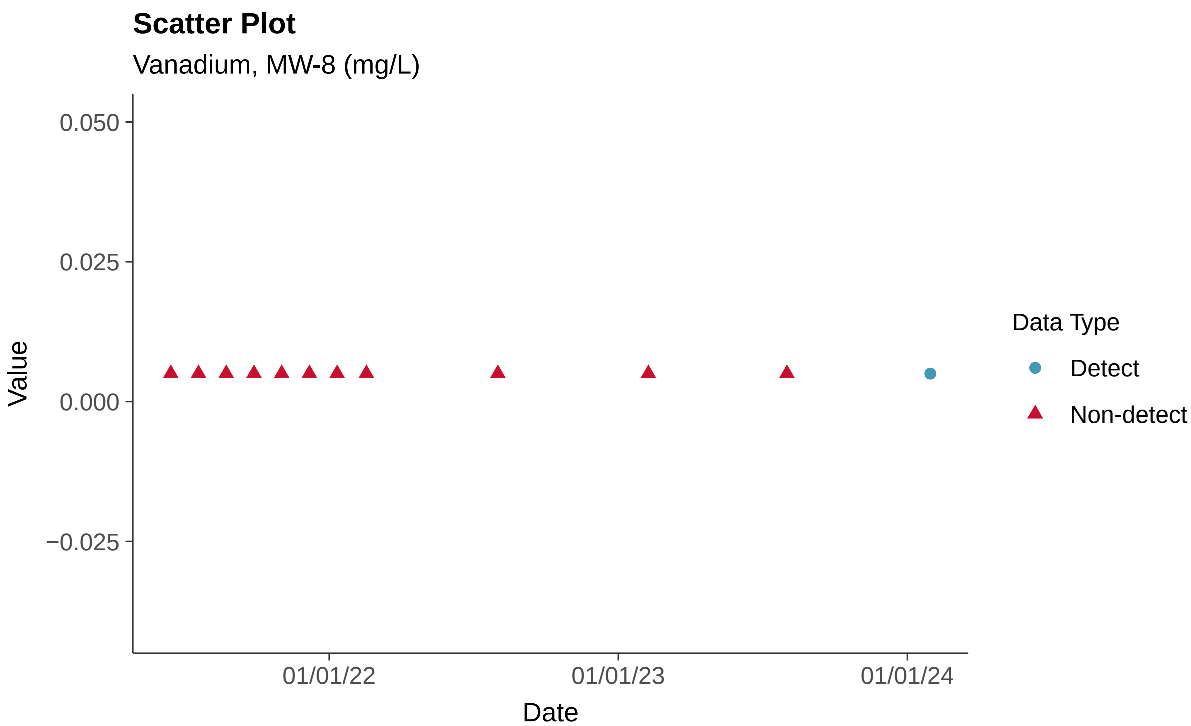
Boxplot by Season

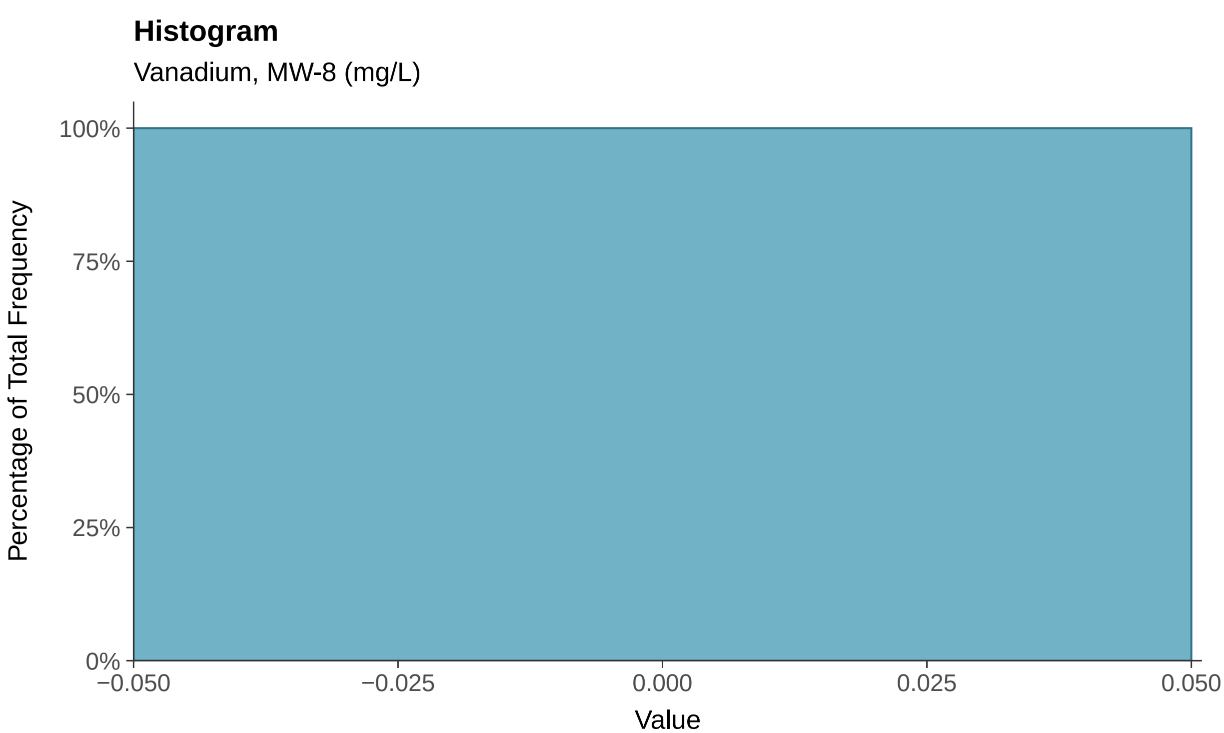
Silver, MW-8 (mg/L)



Part 115: Vanadium, MW-8

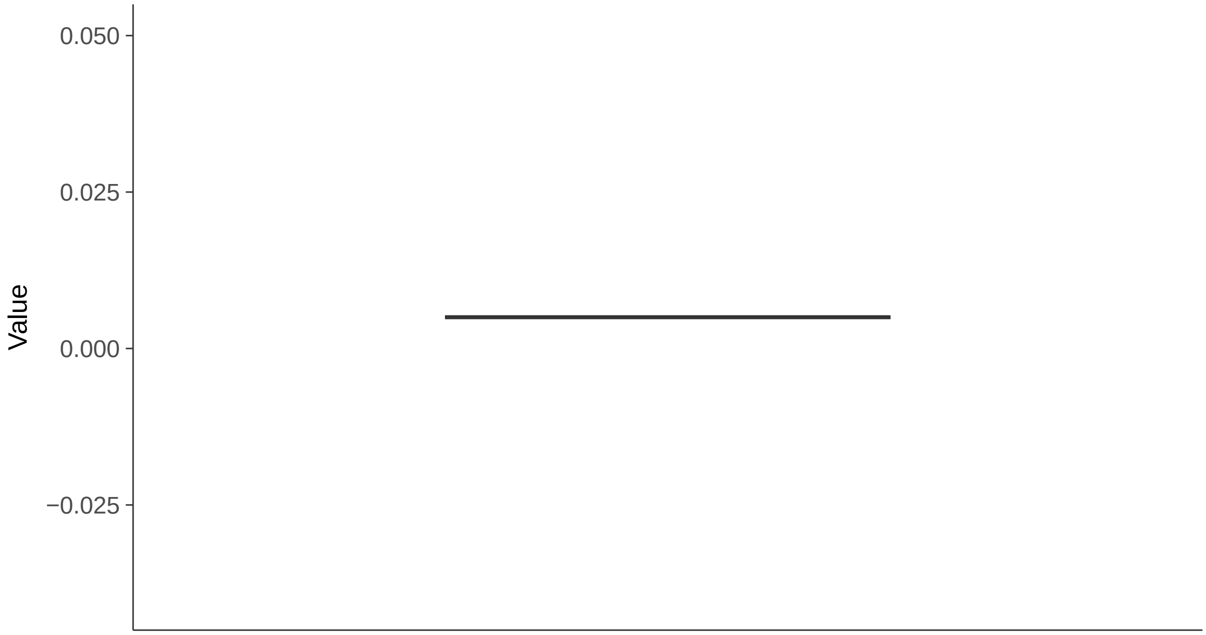
ID: 08_5_41





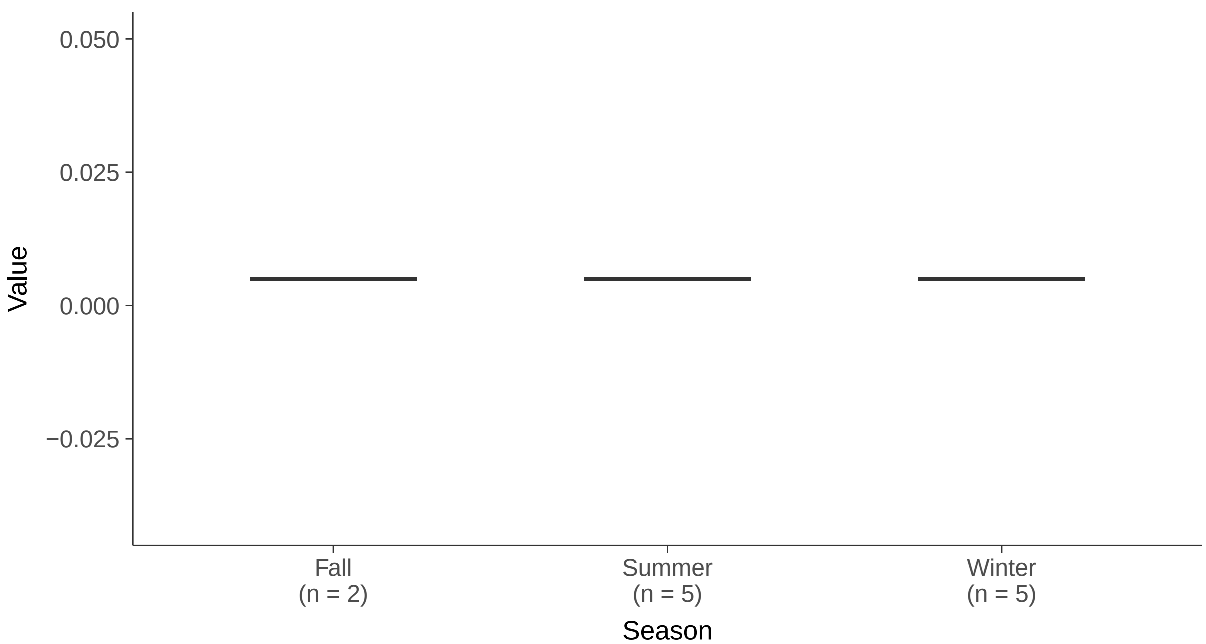
Boxplot

Vanadium, MW-8 (mg/L)



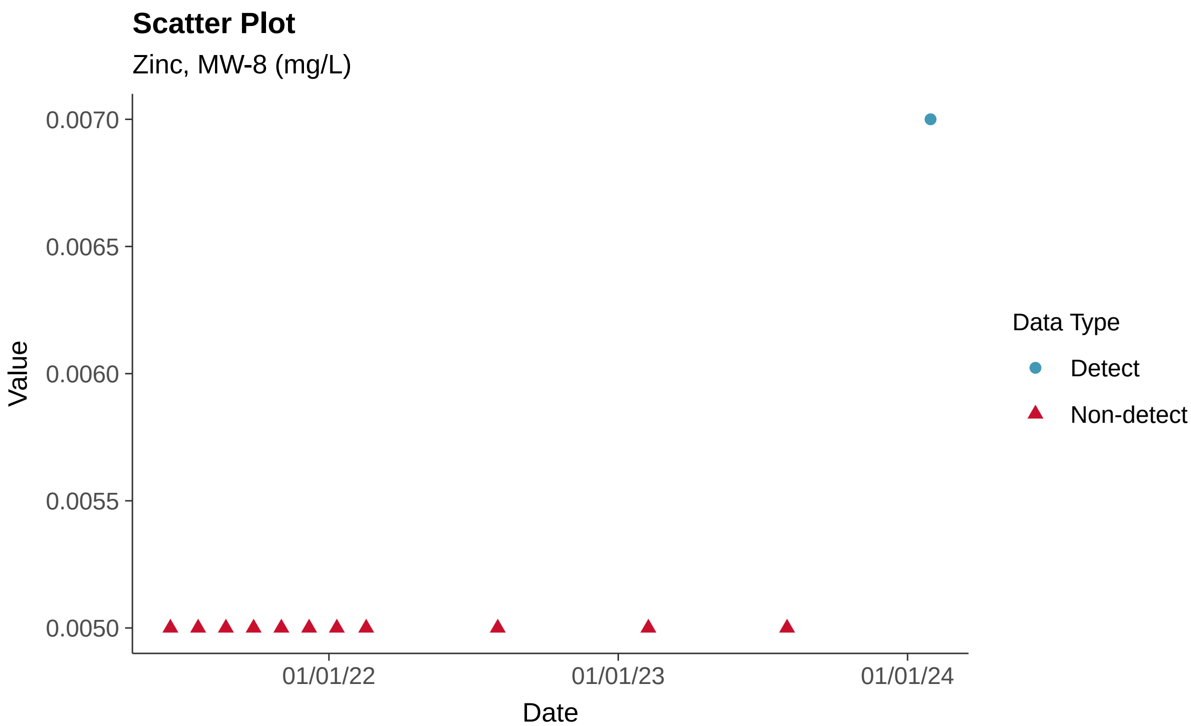
Boxplot by Season

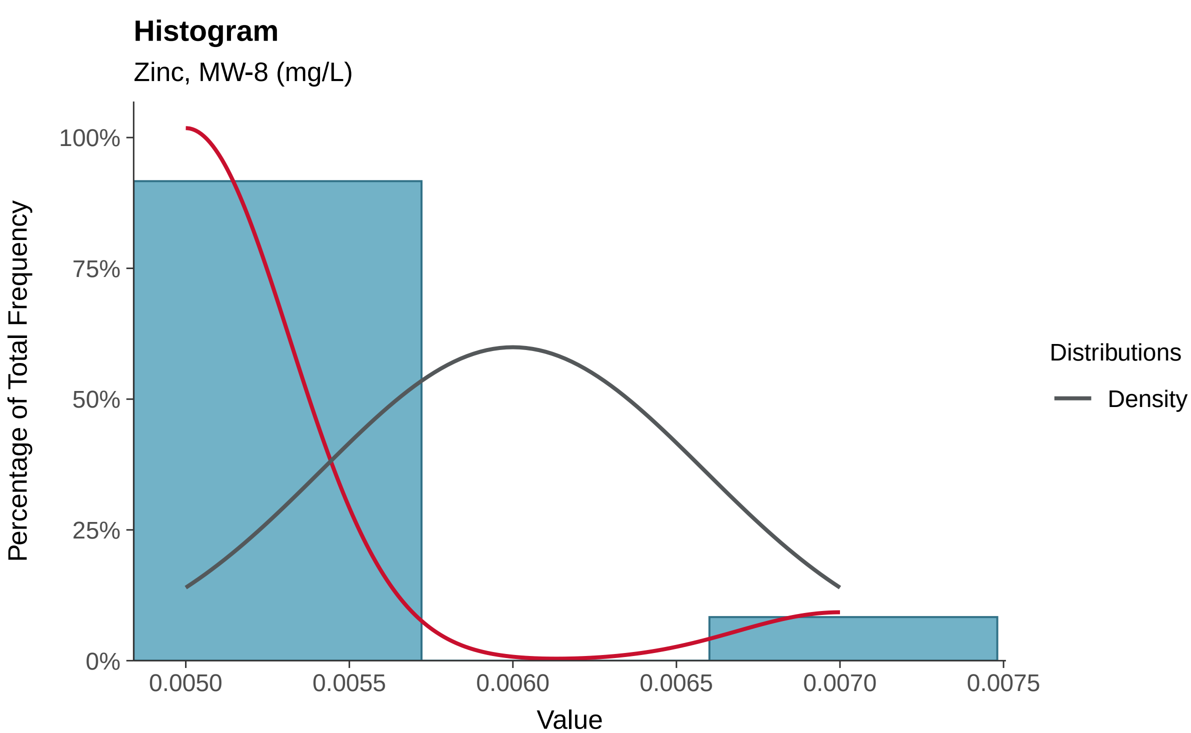
Vanadium, MW-8 (mg/L)



Part 115: Zinc, MW-8

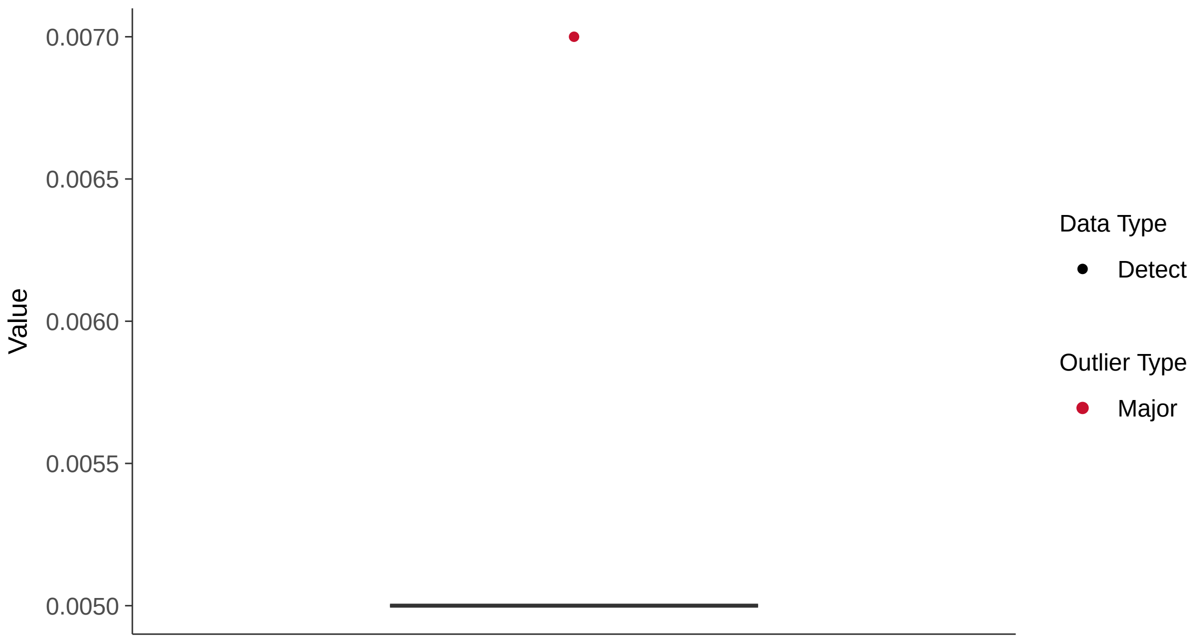
ID: 08_5_42





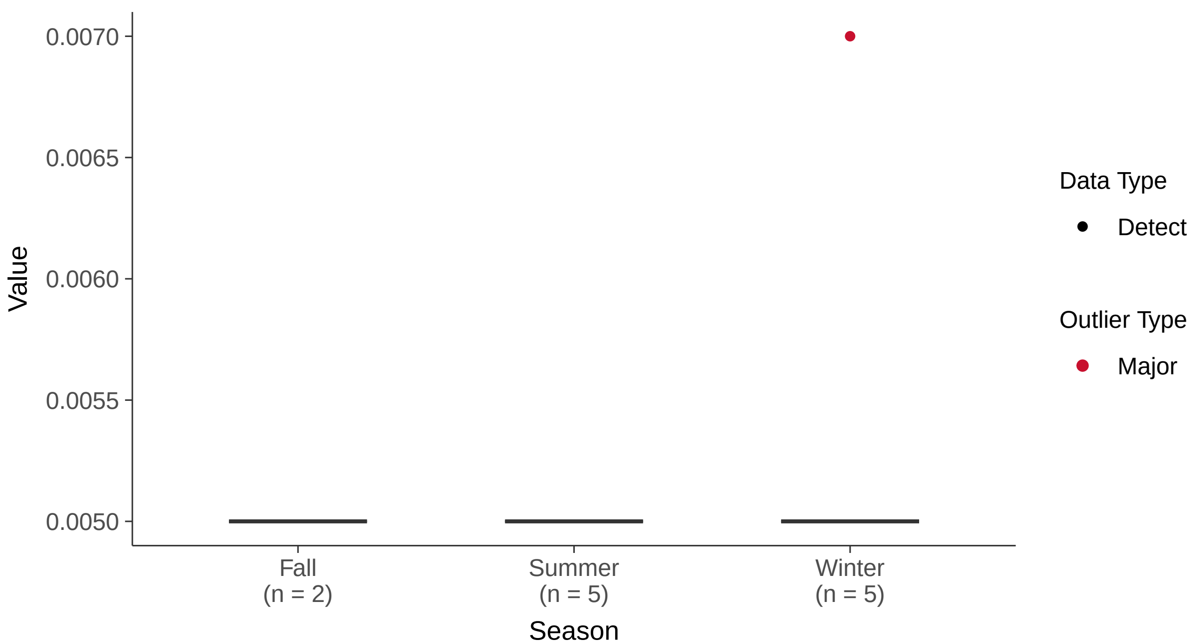
Boxplot

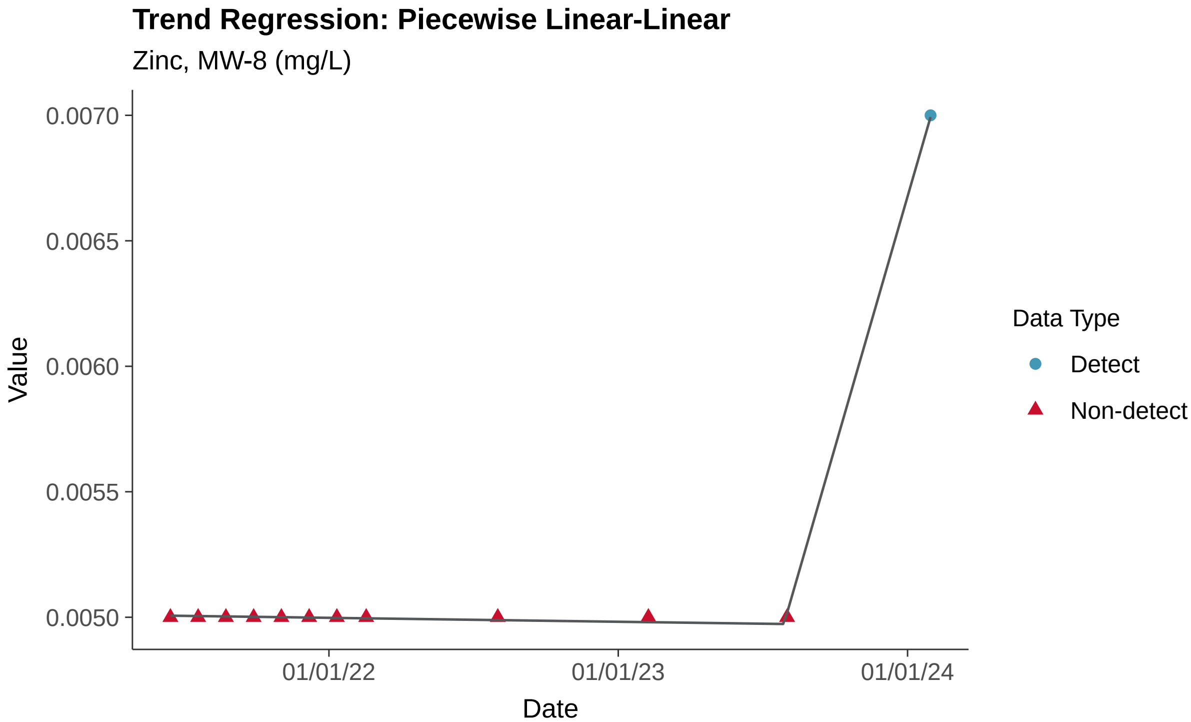
Zinc, MW-8 (mg/L)

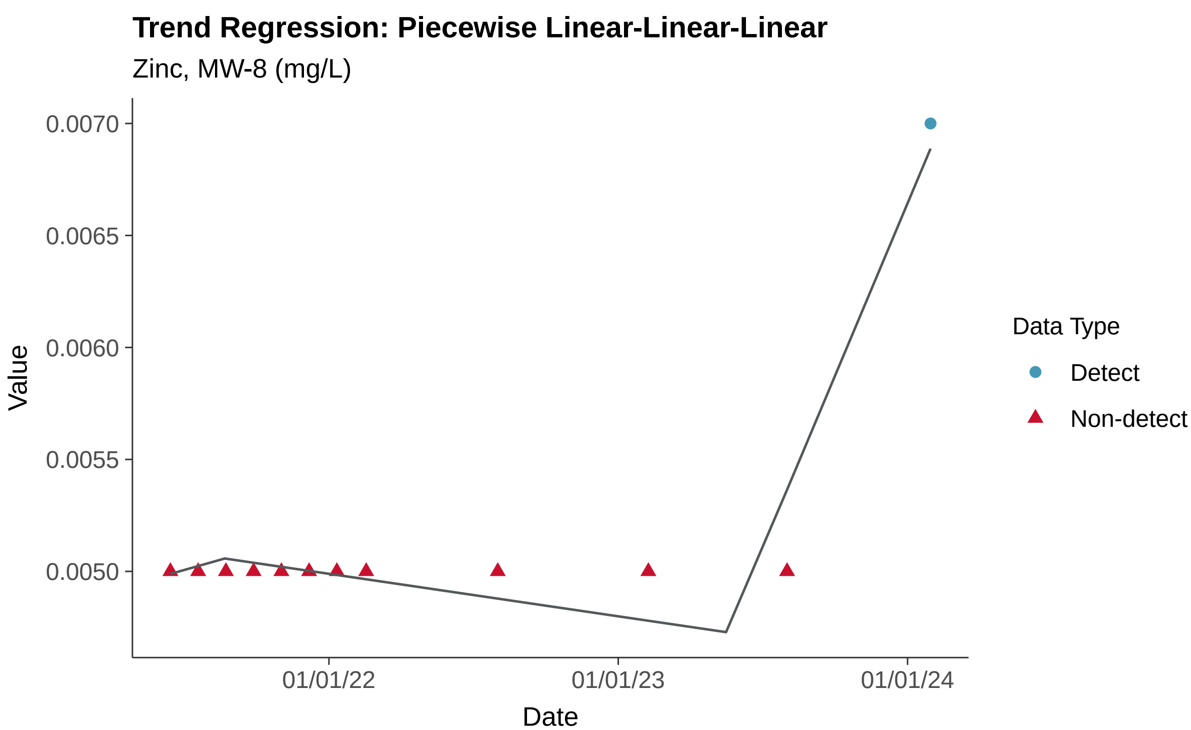


Boxplot by Season

Zinc, MW-8 (mg/L)




Trend Regression: Piecewise Linear-Linear
Zinc, MW-8 (mg/L)
Value
0.0070
0.0065
0.0060
0.0055
0.0050
Date
01/01/22
01/01/23
01/01/24
Data Type
Detect
Non-detect

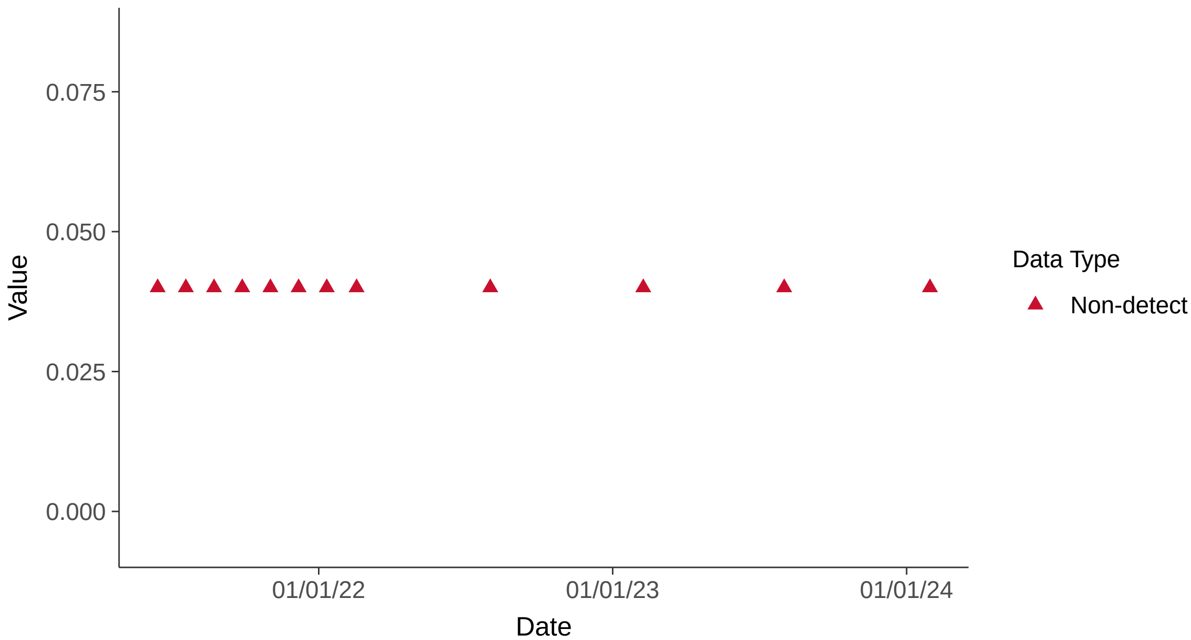

Trend Regression: Piecewise Linear-Linear-Linear
Zinc, MW-8 (mg/L)
Value
0.0070
0.0065
0.0060
0.0055
0.0050
Date
01/01/22
01/01/23
01/01/24
Data Type
Detect
Non-detect

Appendix III: Boron, MW-9

ID: 09_1_01

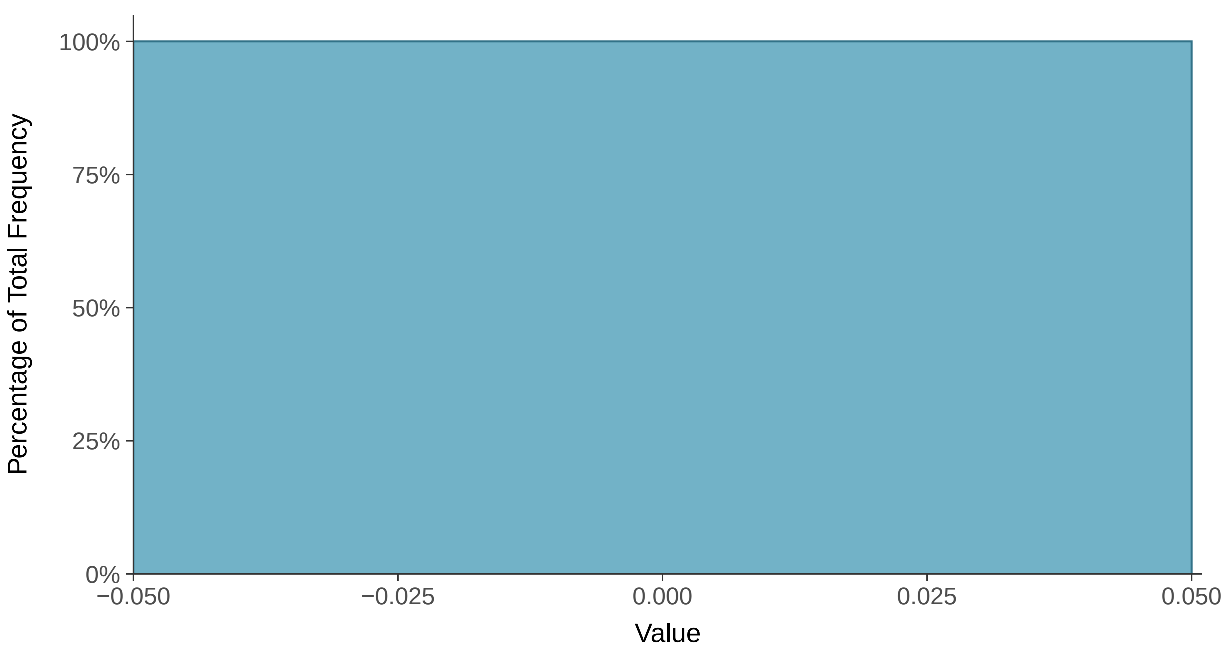
Scatter Plot

Boron, MW-9 (mg/L)



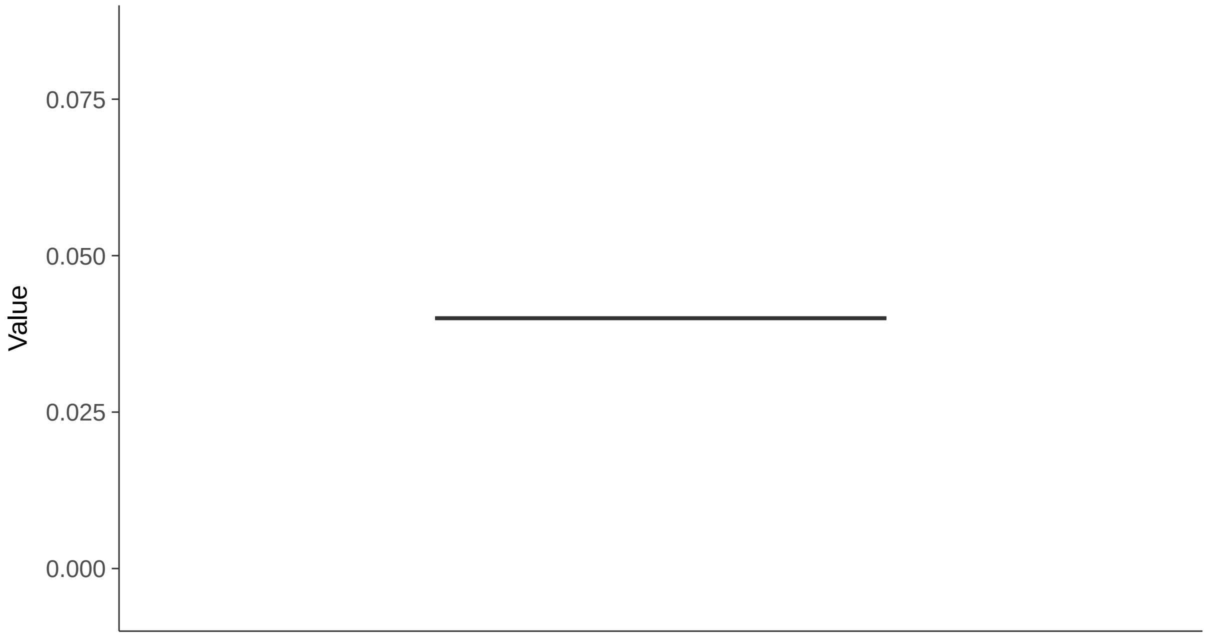
Histogram

Boron, MW-9 (mg/L)



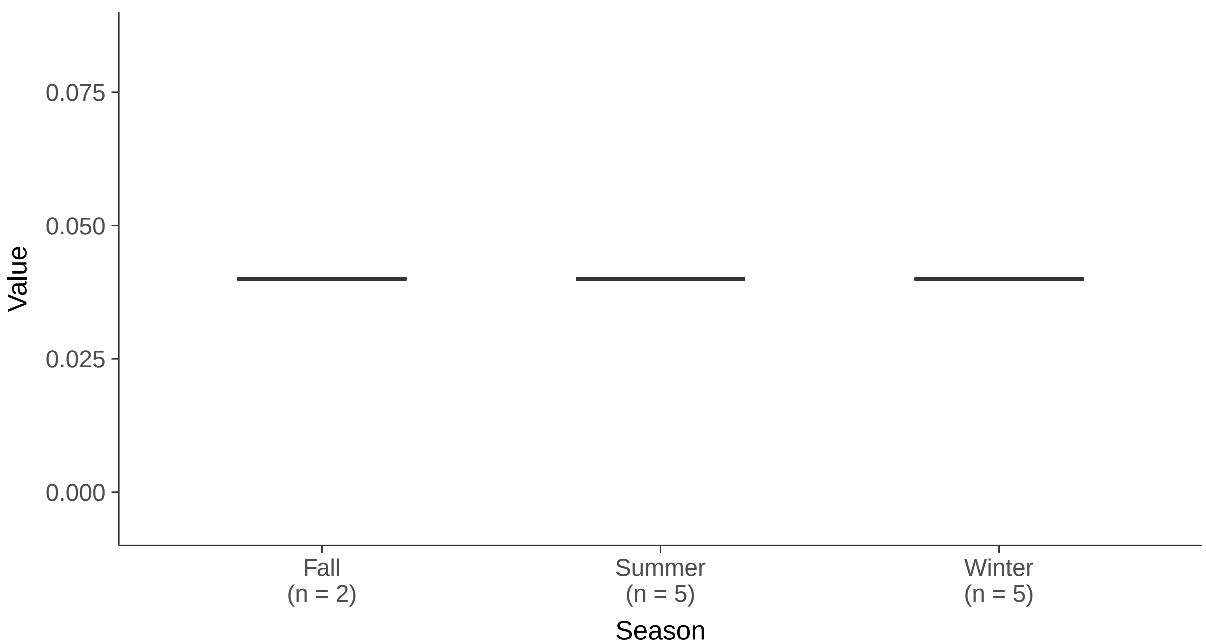
Boxplot

Boron, MW-9 (mg/L)



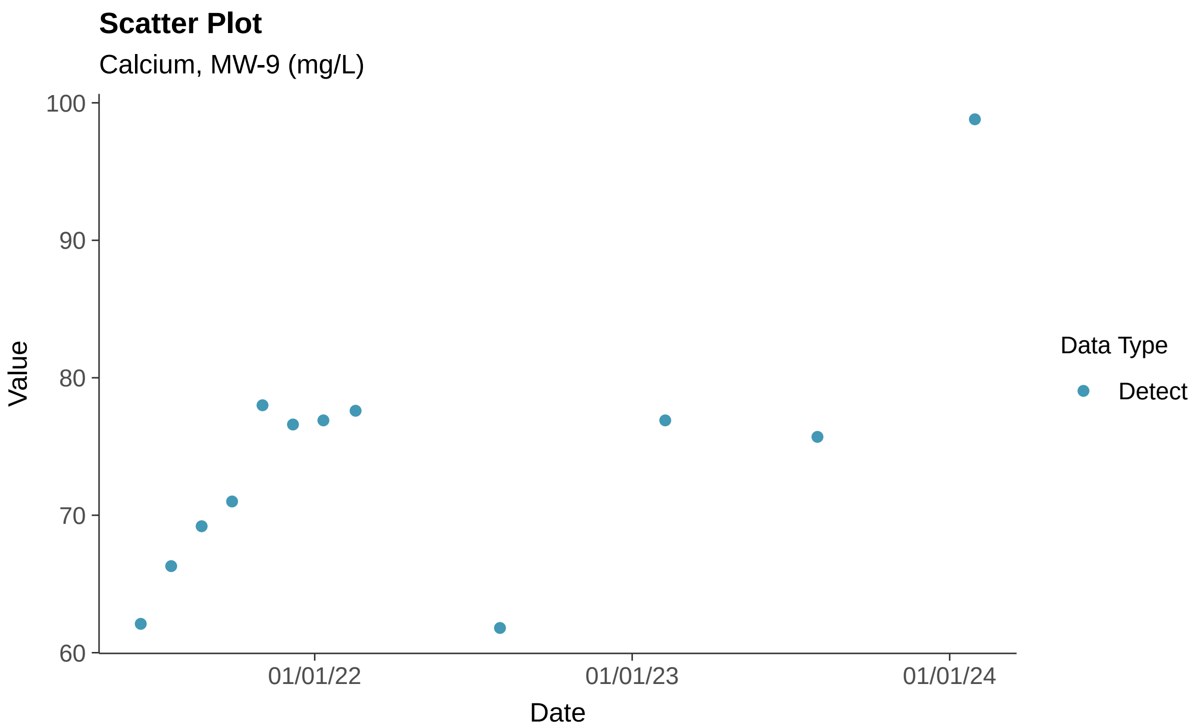
Boxplot by Season

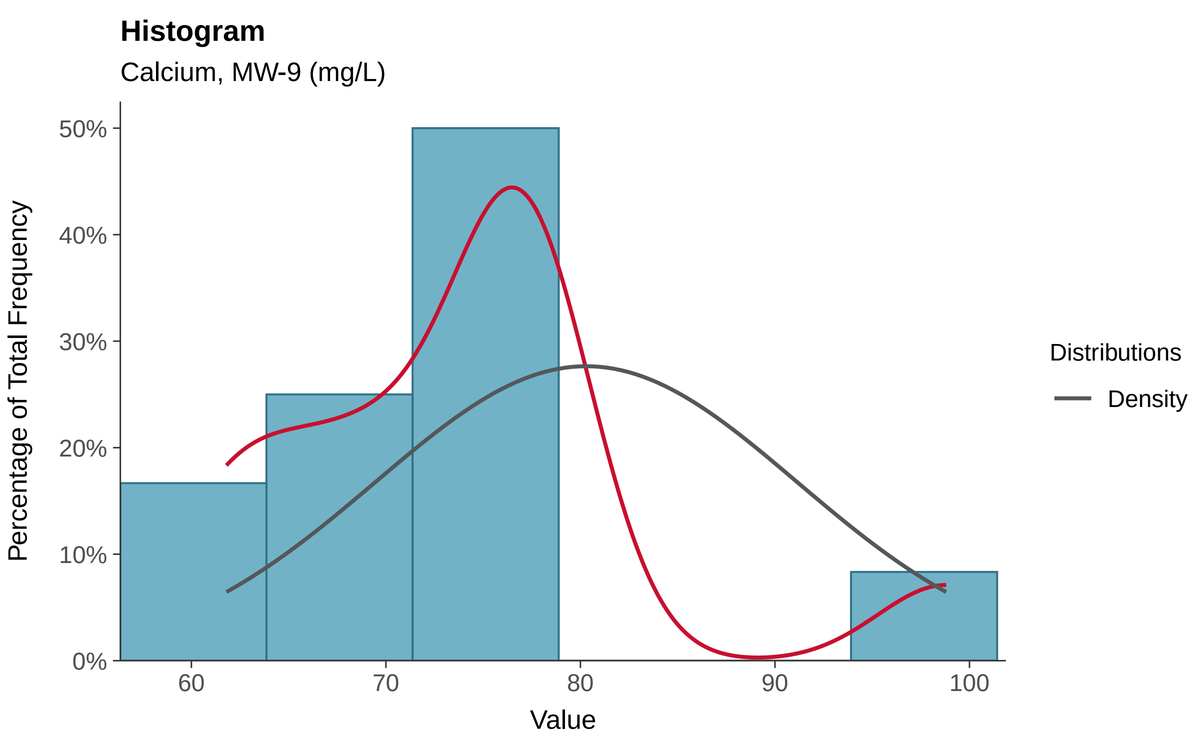
Boron, MW-9 (mg/L)



Appendix III: Calcium, MW-9

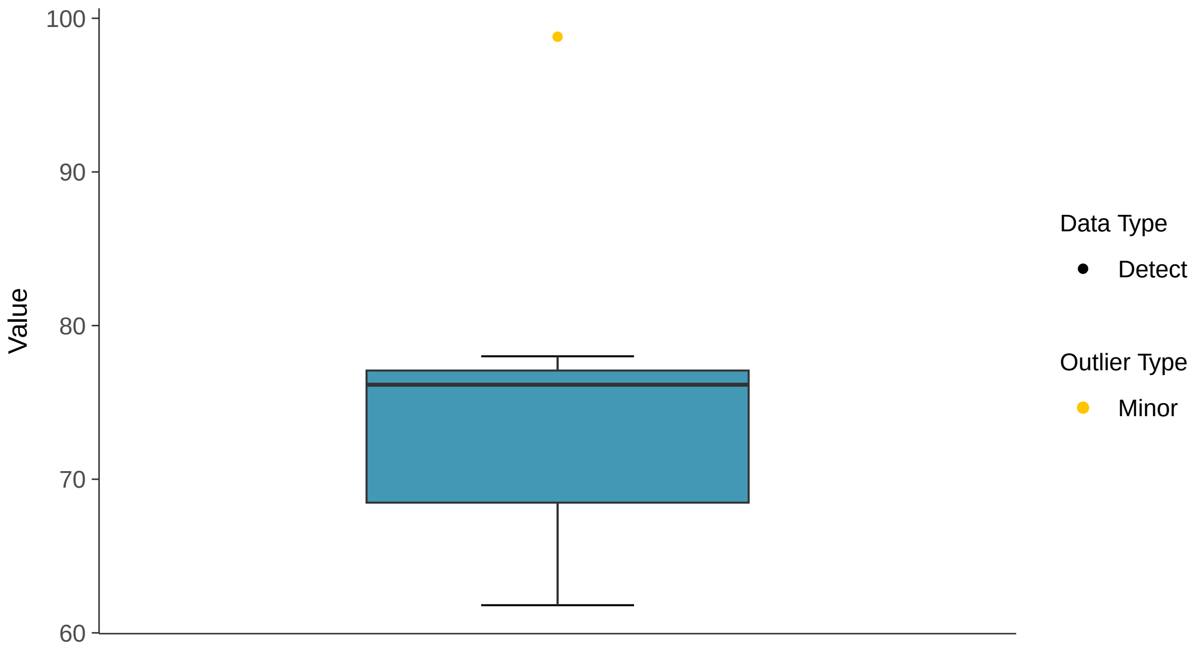
ID: 09_1_02





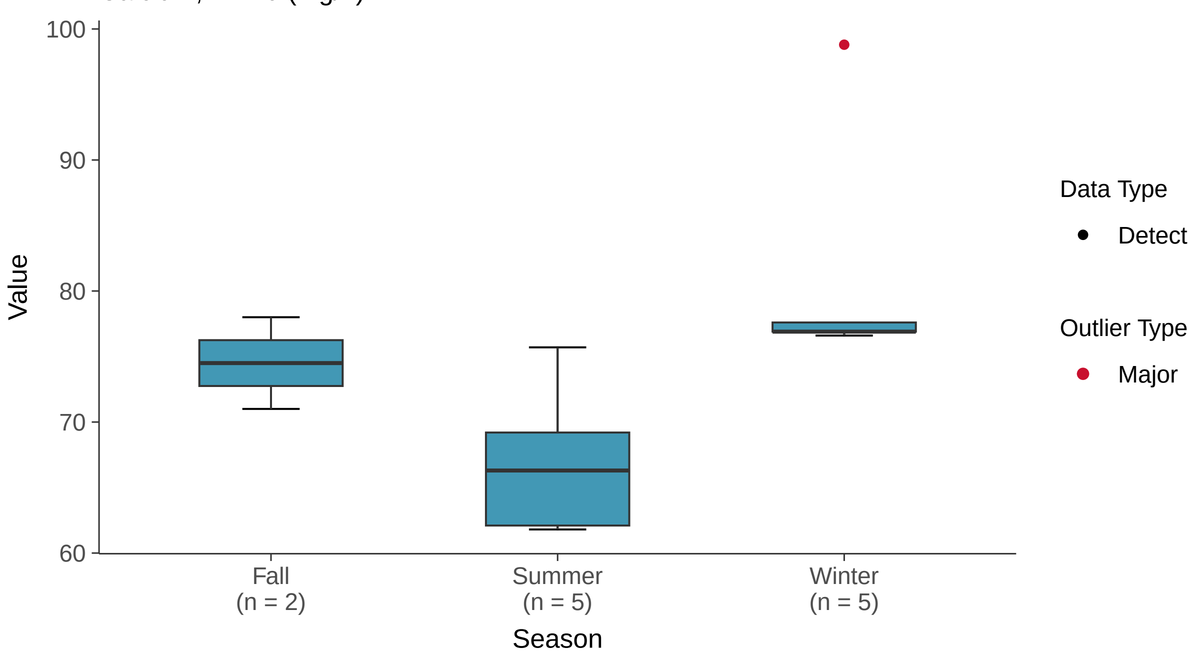
Boxplot

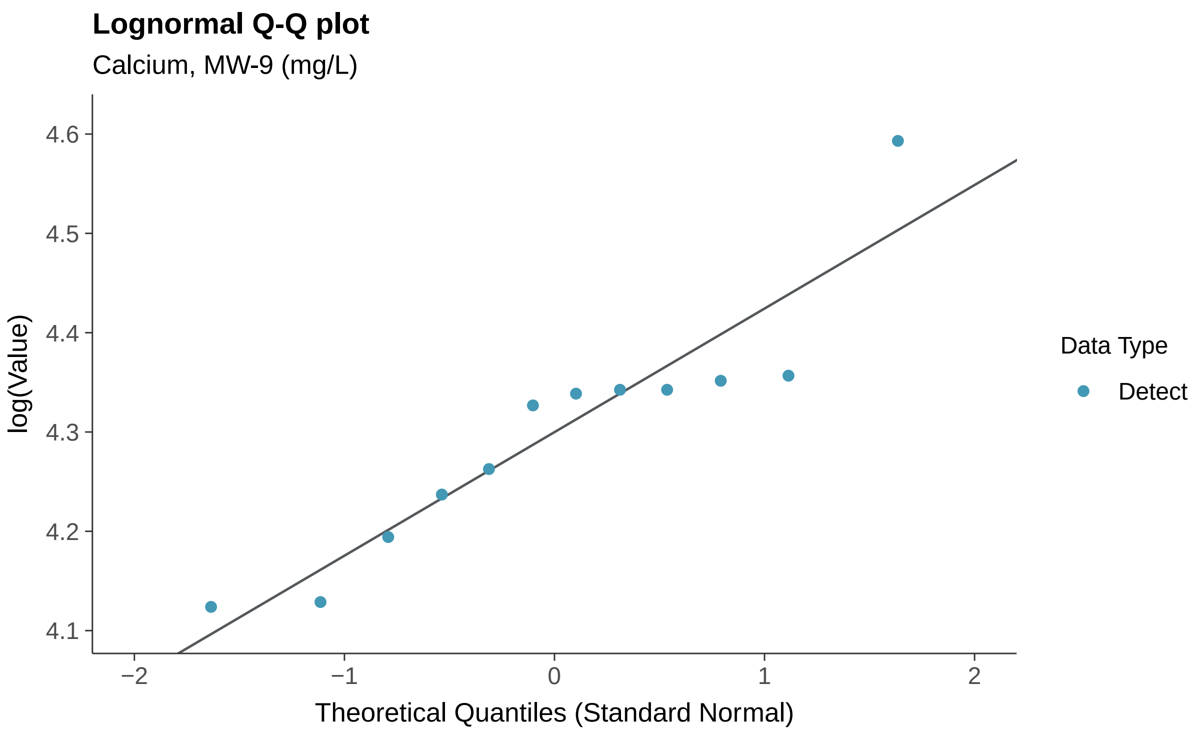
Calcium, MW-9 (mg/L)

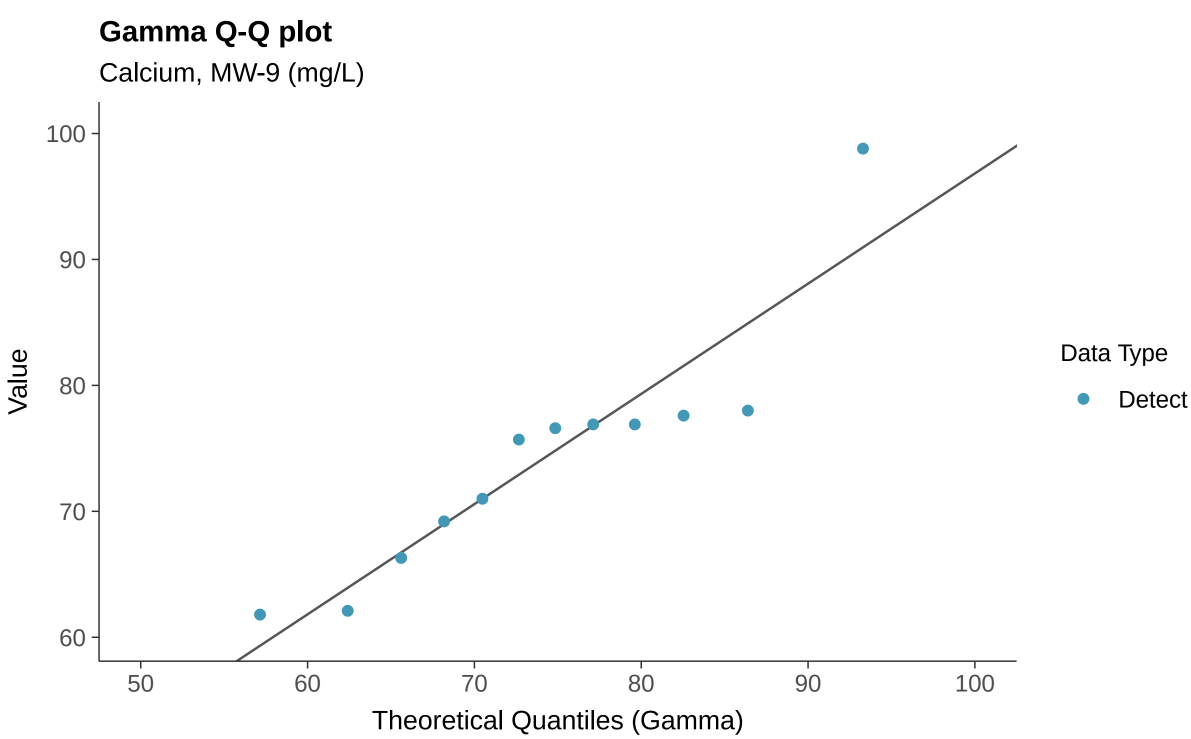


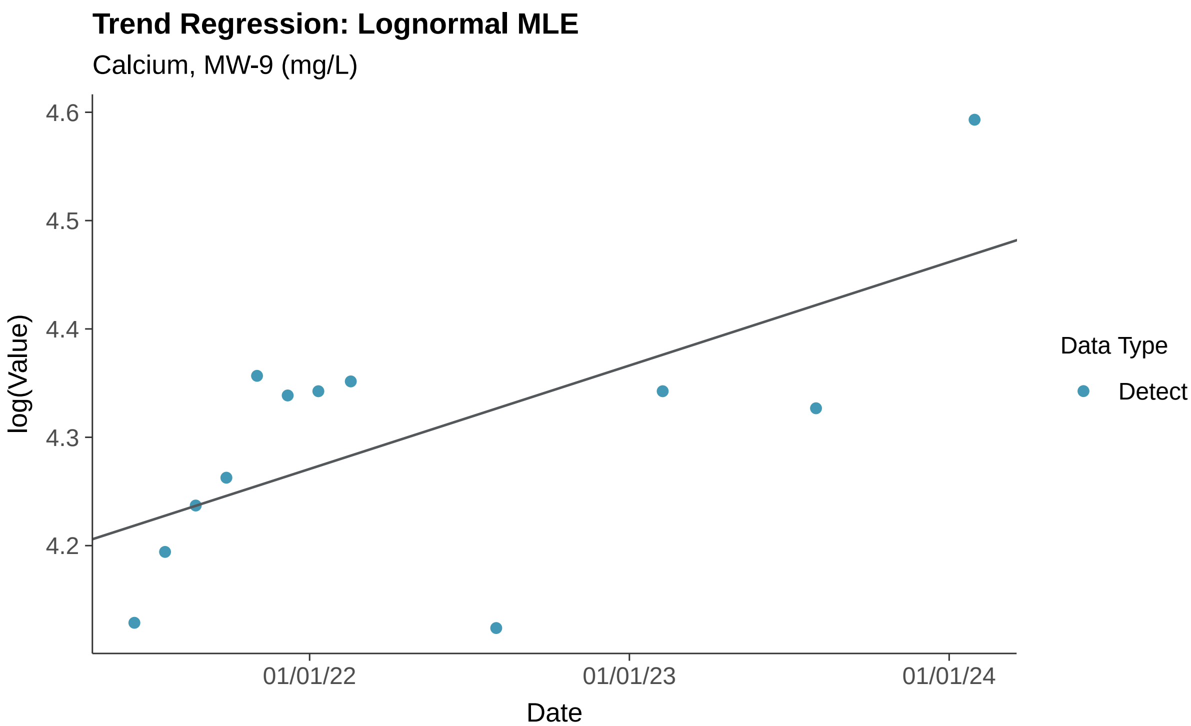
Boxplot by Season

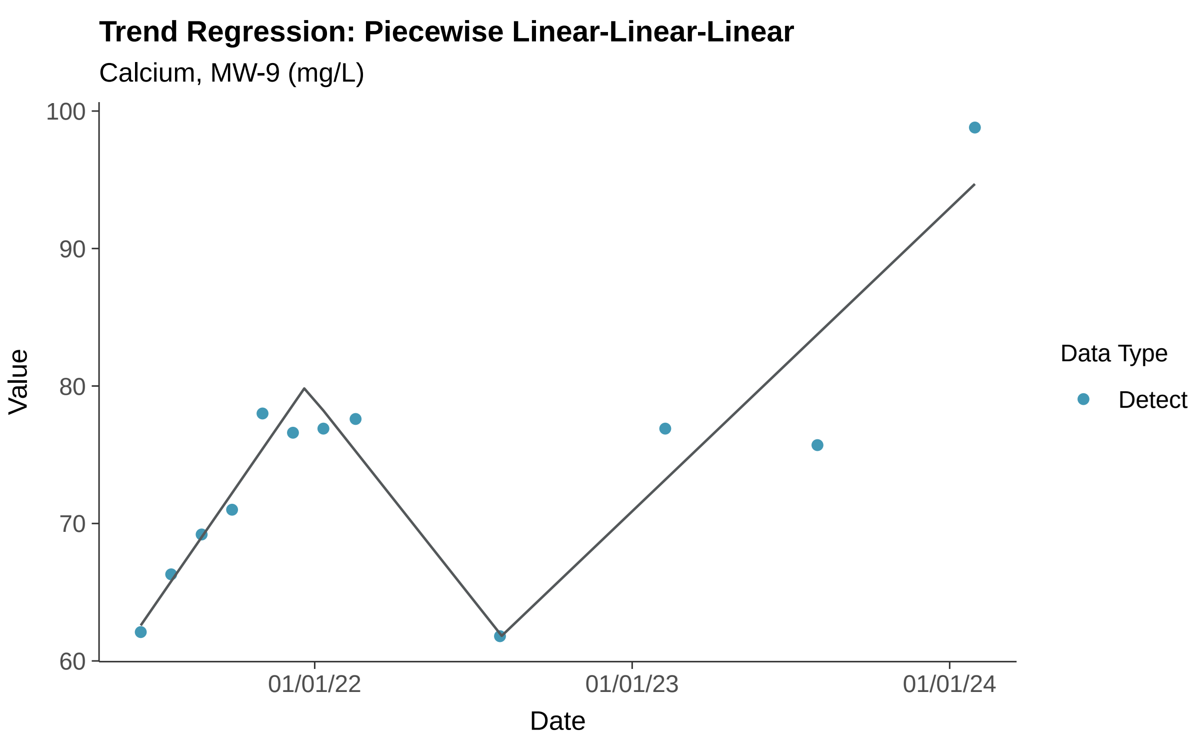
Calcium, MW-9 (mg/L)




Lognormal Q-Q plot
Calcium, MW-9 (mg/L)
log(Value)
4.6
4.5
4.4
4.3
4.2
4.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

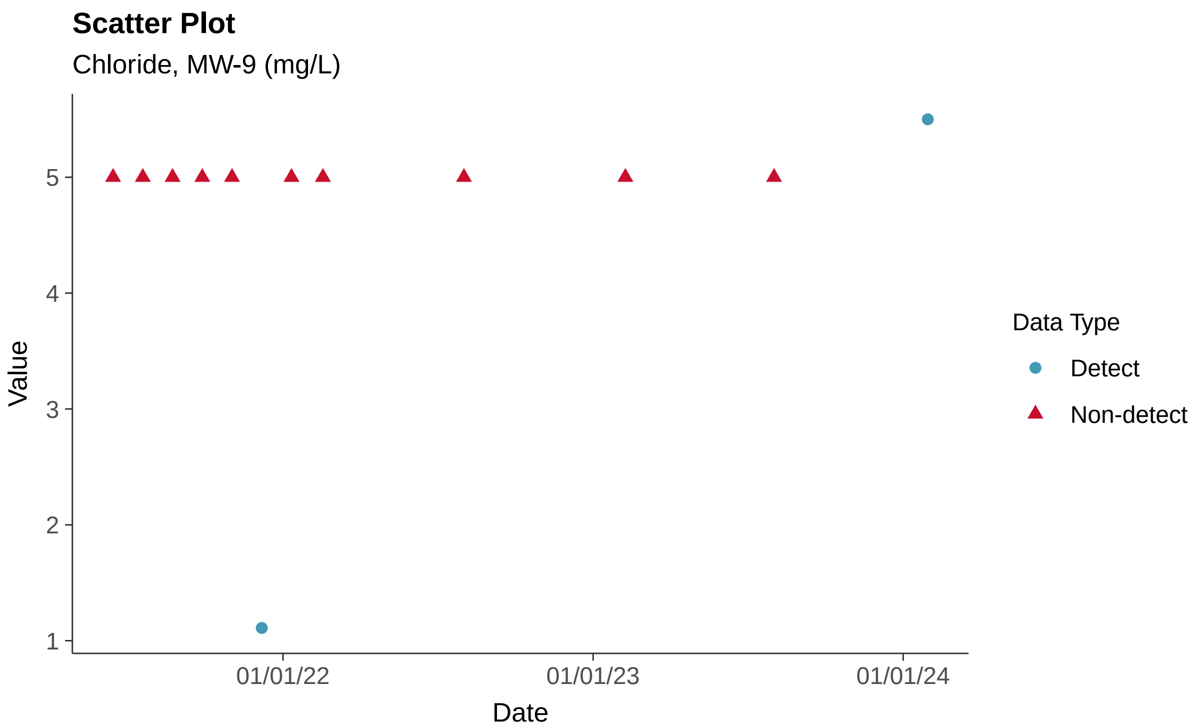

Gamma Q-Q plot
Calcium, MW-9 (mg/L)
Value
100
90
80
70
60
50
60
70
80
90
100
Theoretical Quantiles (Gamma)
Data Type
Detect

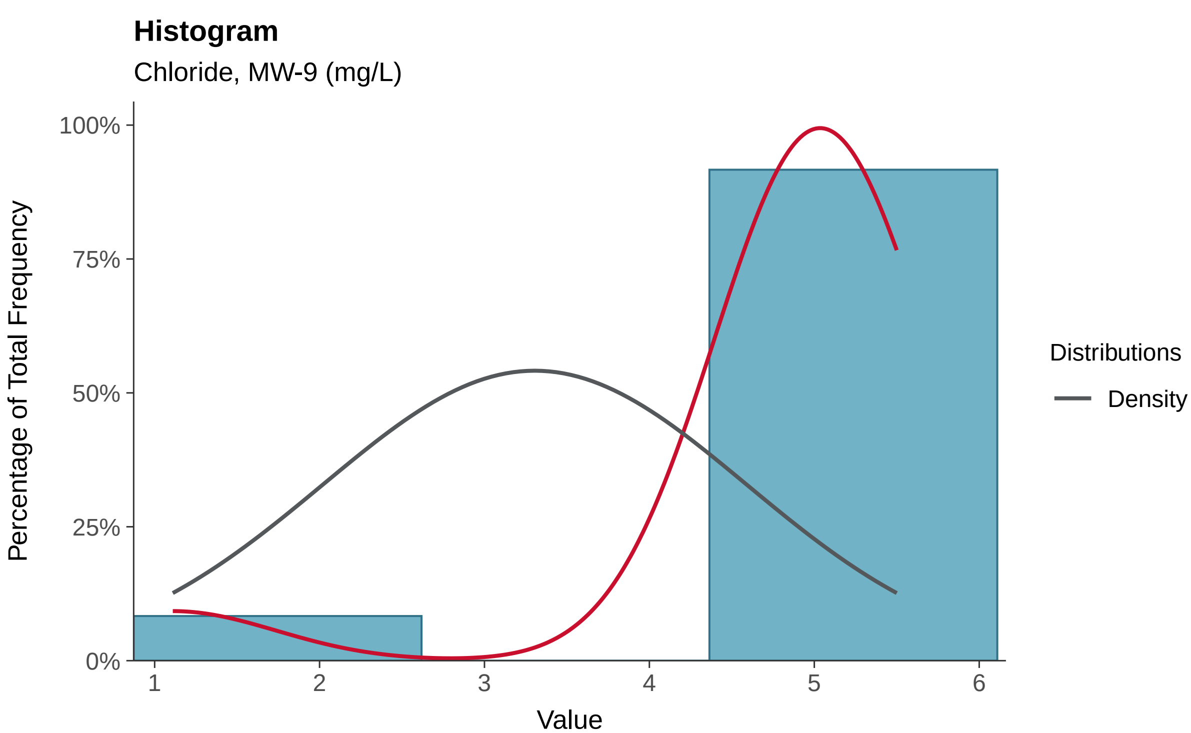

Trend Regression: Lognormal MLE
Calcium, MW-9 (mg/L)
log(Value)
4.6
4.5
4.4
4.3
4.2
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Calcium, MW-9 (mg/L)
Value
100
90
80
70
60
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Appendix III: Chloride, MW-9

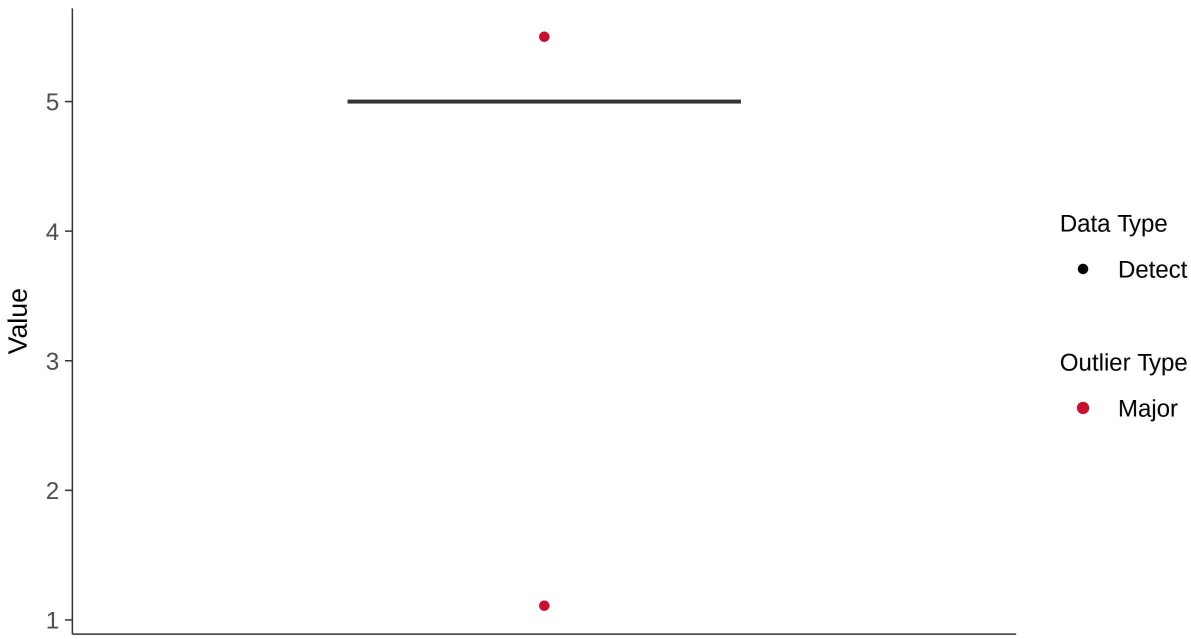
ID: 09_1_03





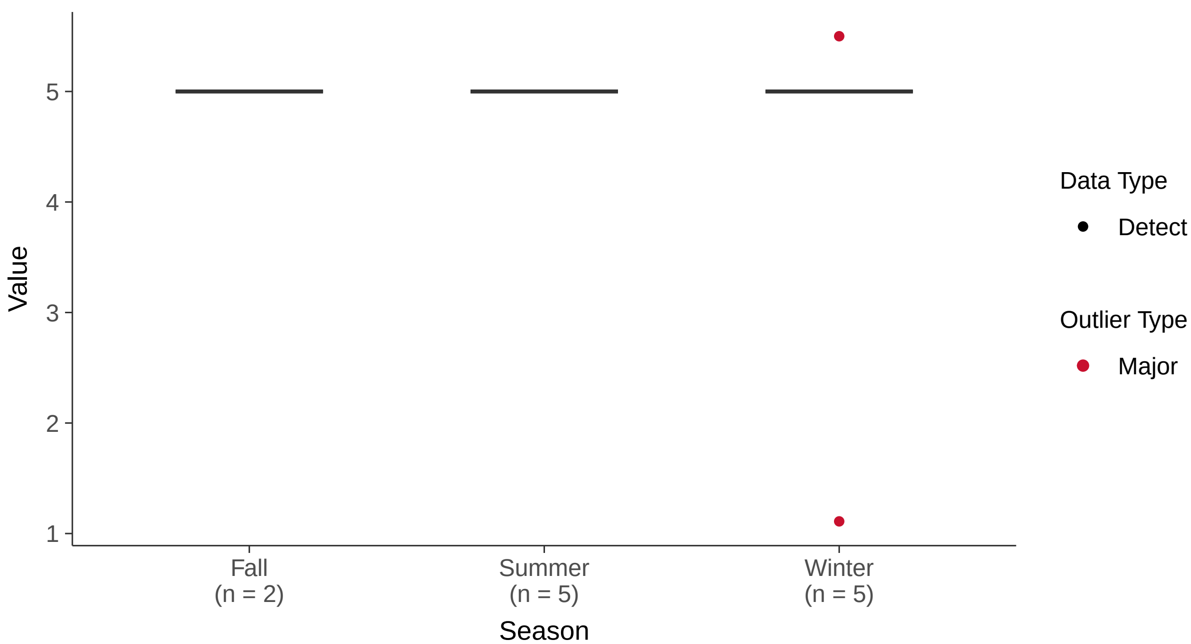
Boxplot

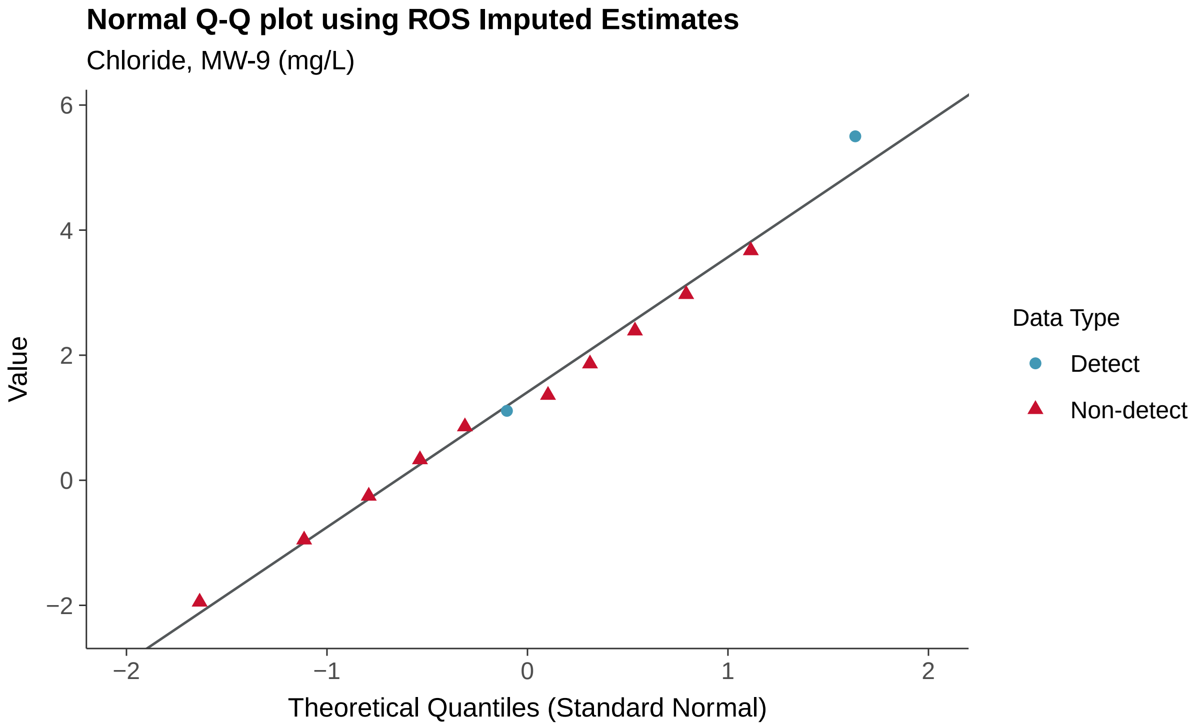
Chloride, MW-9 (mg/L)

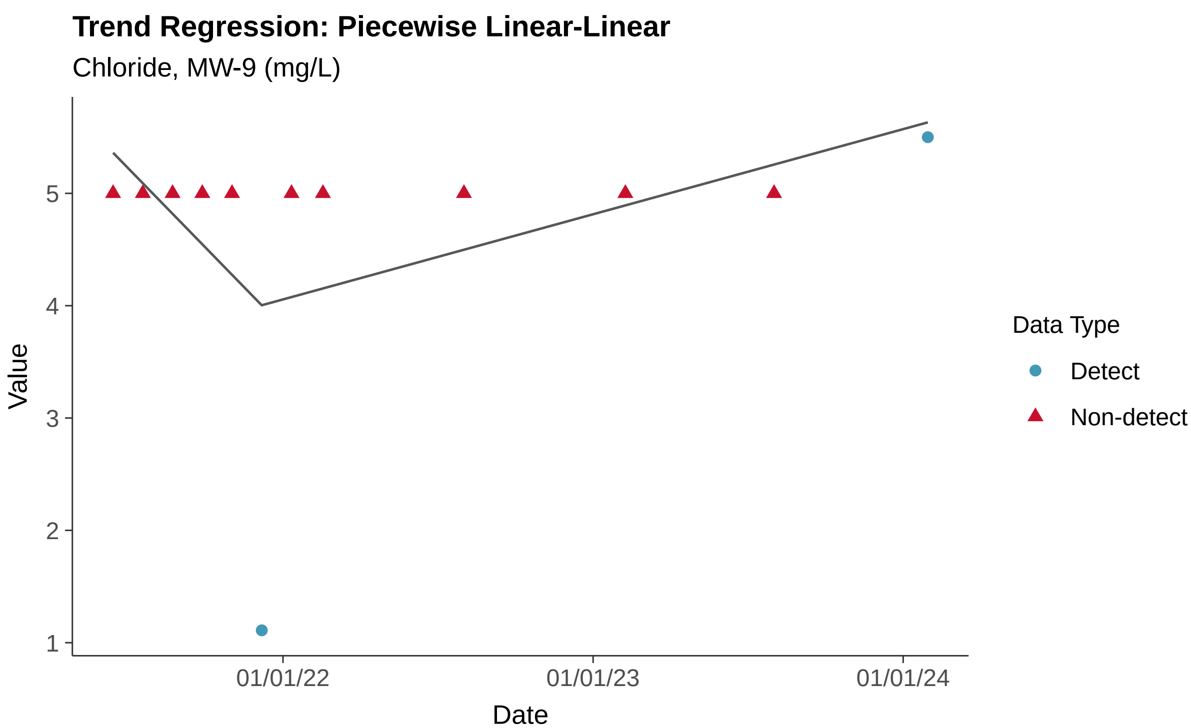


Boxplot by Season

Chloride, MW-9 (mg/L)

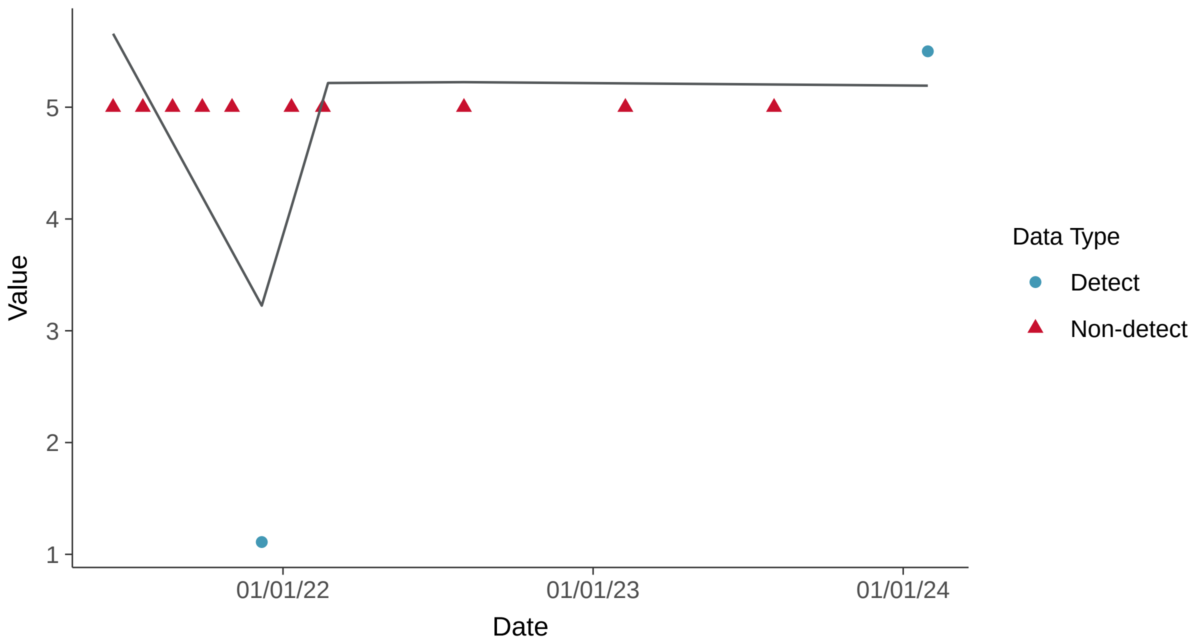



Normal Q-Q plot using ROS Imputed Estimates
Chloride, MW-9 (mg/L)
Value
6
4
2
0
−2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Chloride, MW-9 (mg/L)
Value
5
4
3
2
1
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear-Linear

Chloride, MW-9 (mg/L)

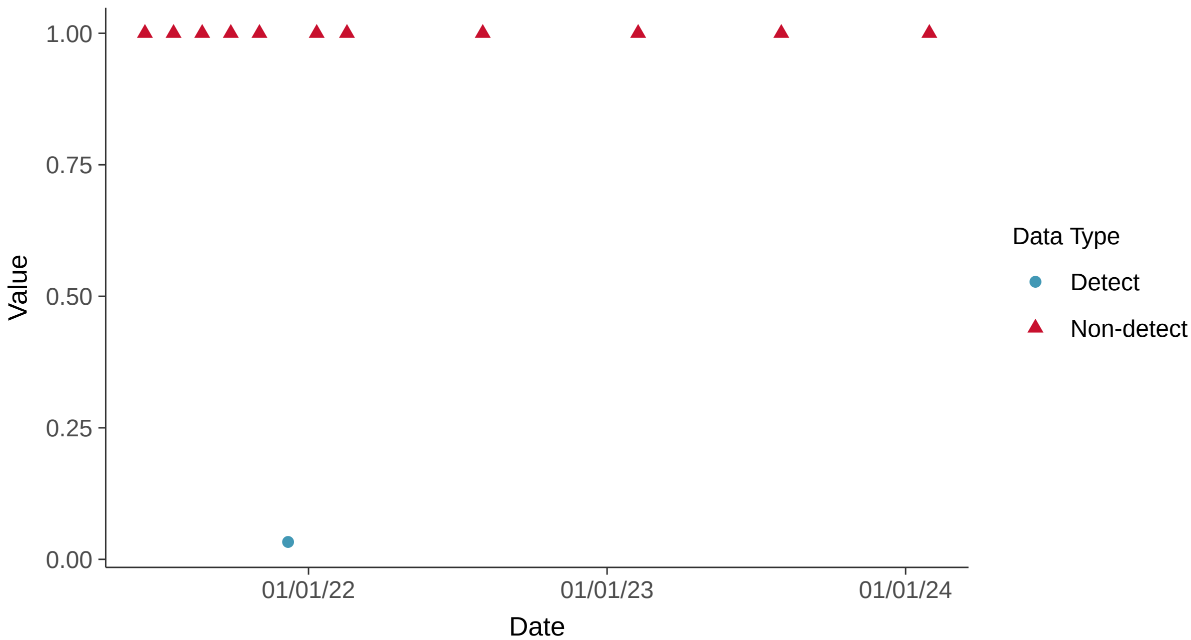


Appendix III: Fluoride, MW-9

ID: 09_1_04

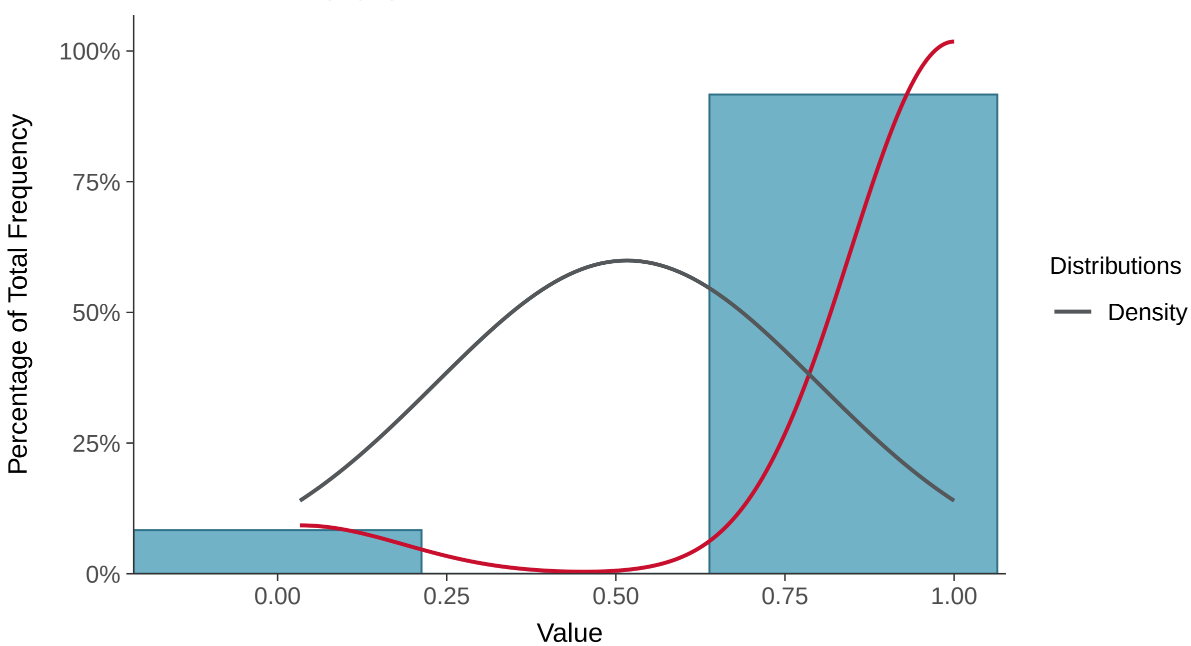
Scatter Plot

Fluoride, MW-9 (mg/L)



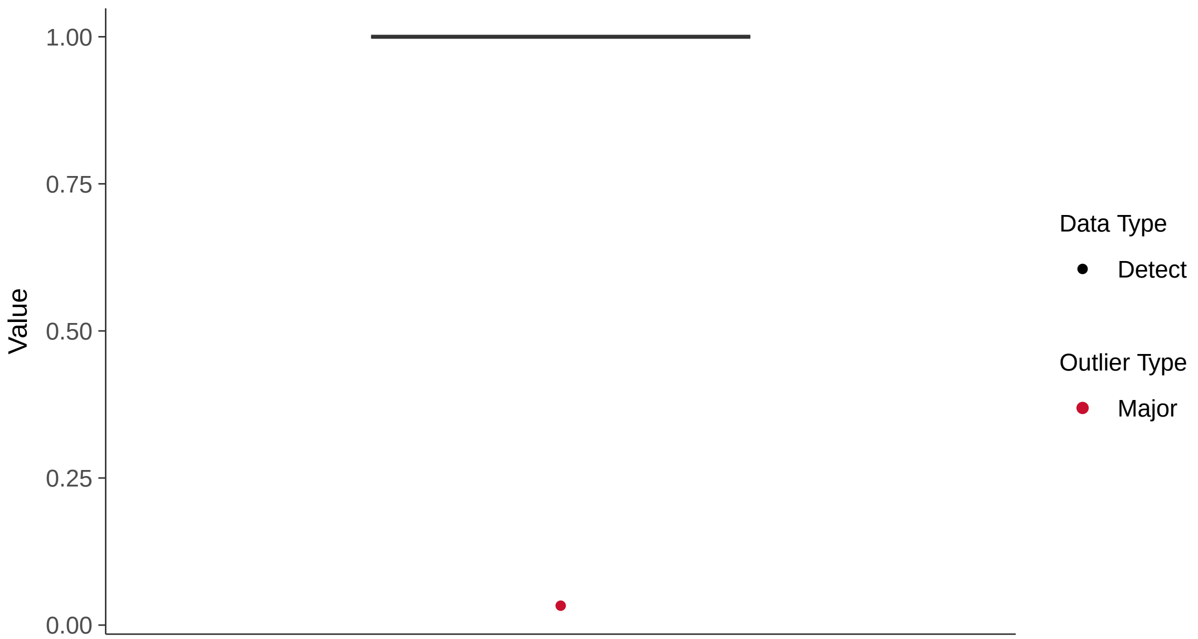
Histogram

Fluoride, MW-9 (mg/L)



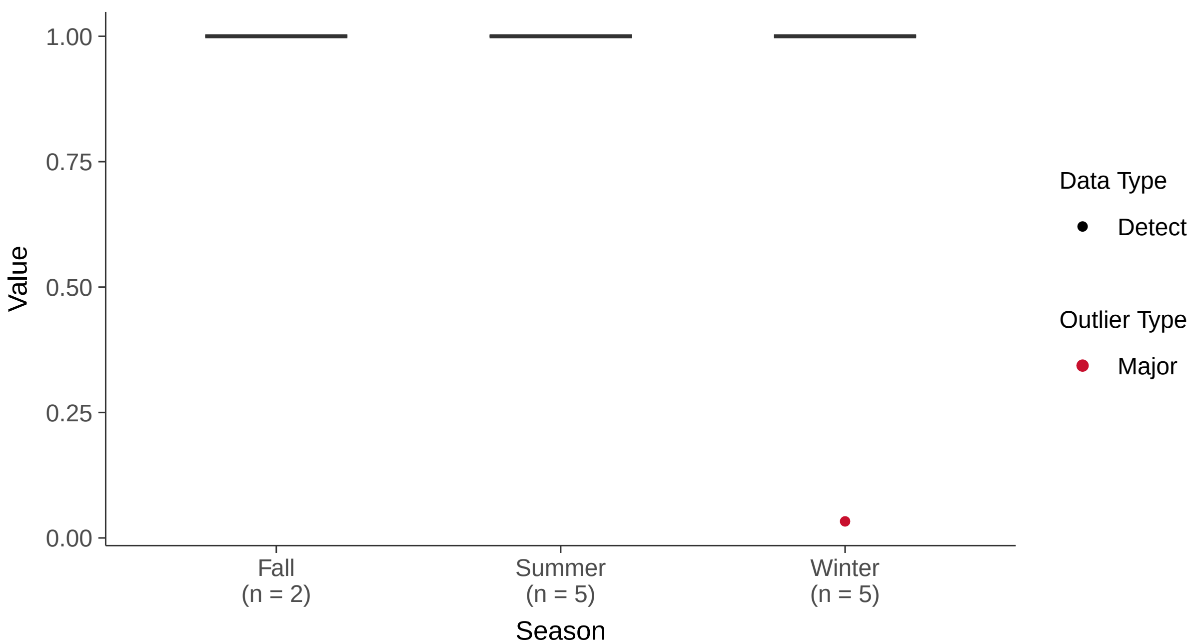
Boxplot

Fluoride, MW-9 (mg/L)



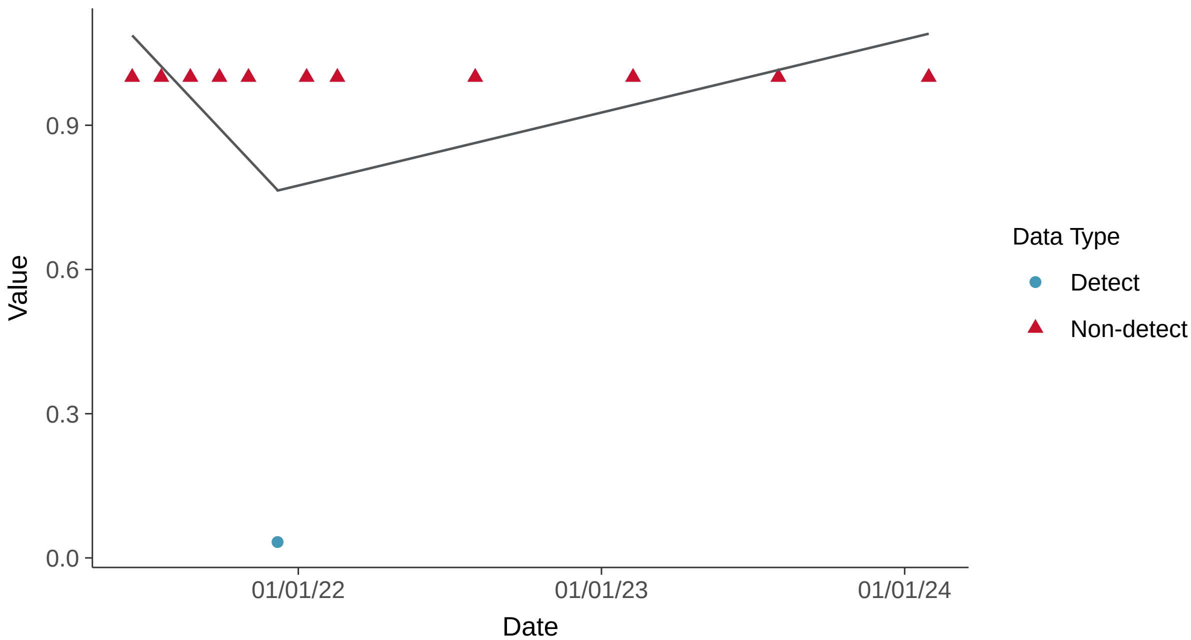
Boxplot by Season

Fluoride, MW-9 (mg/L)



Trend Regression: Piecewise Linear-Linear

Fluoride, MW-9 (mg/L)

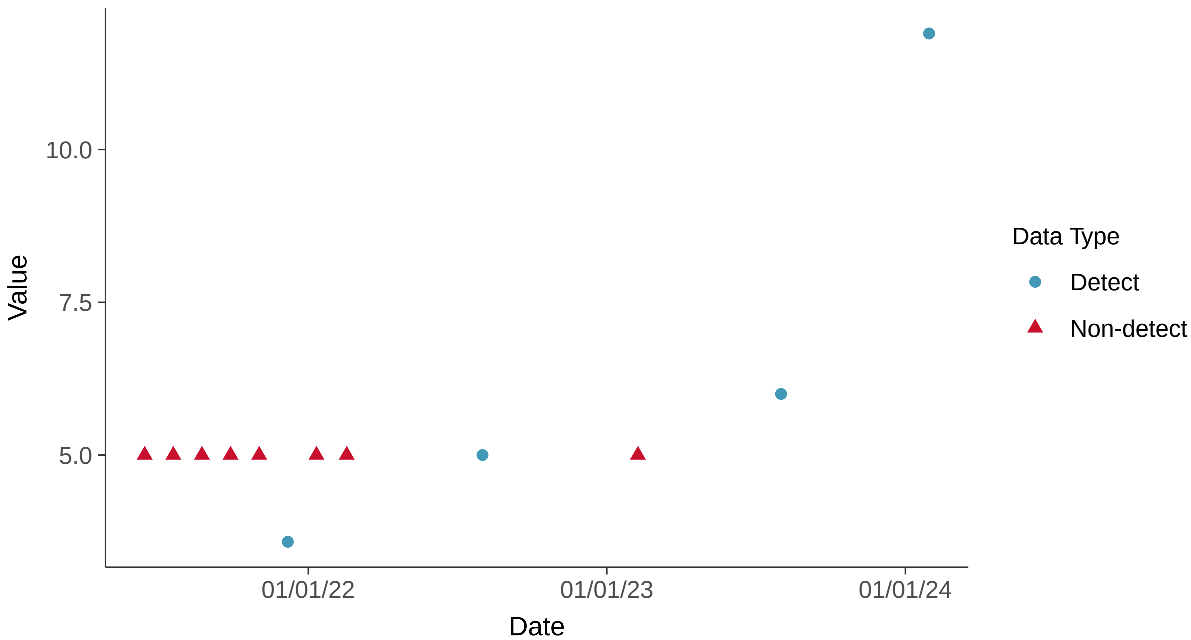


Appendix III: Sulfate, MW-9

ID: 09_1_05

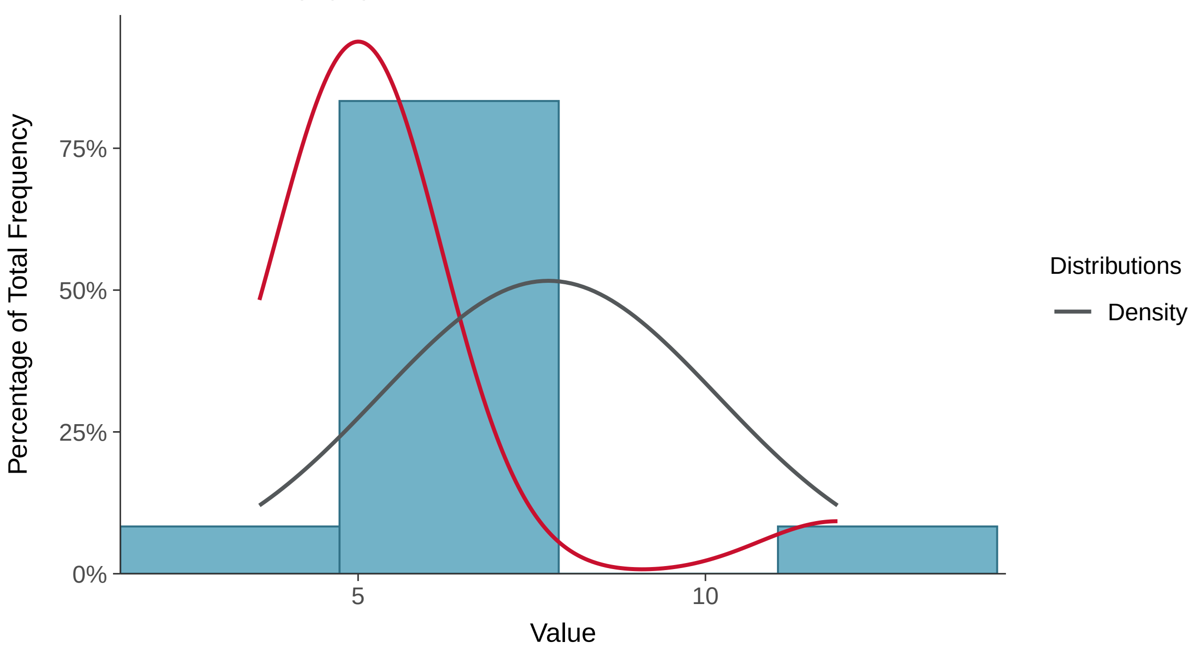
Scatter Plot

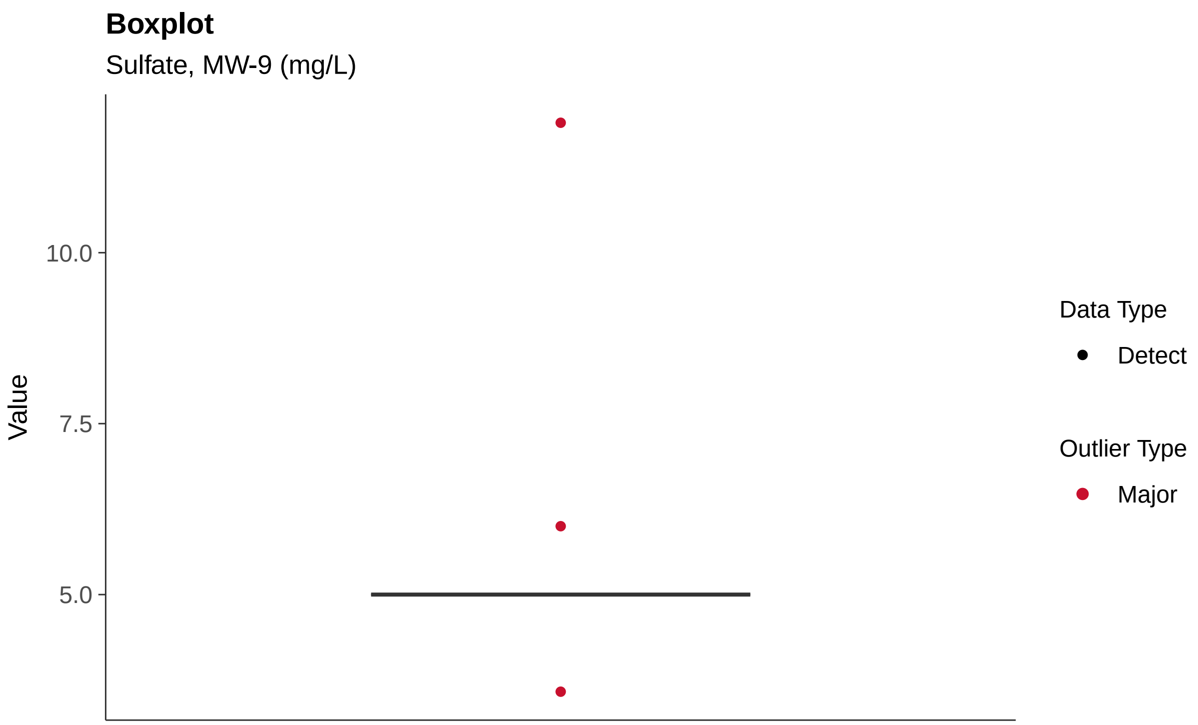
Sulfate, MW-9 (mg/L)

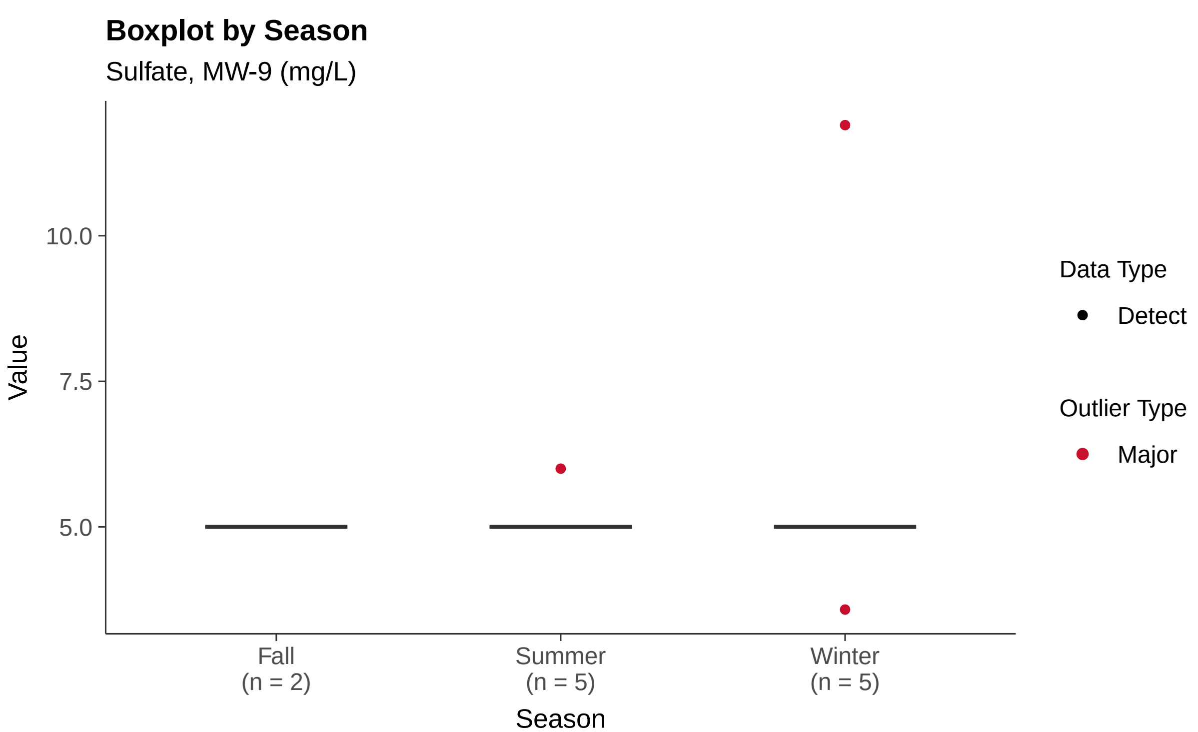


Histogram

Sulfate, MW-9 (mg/L)

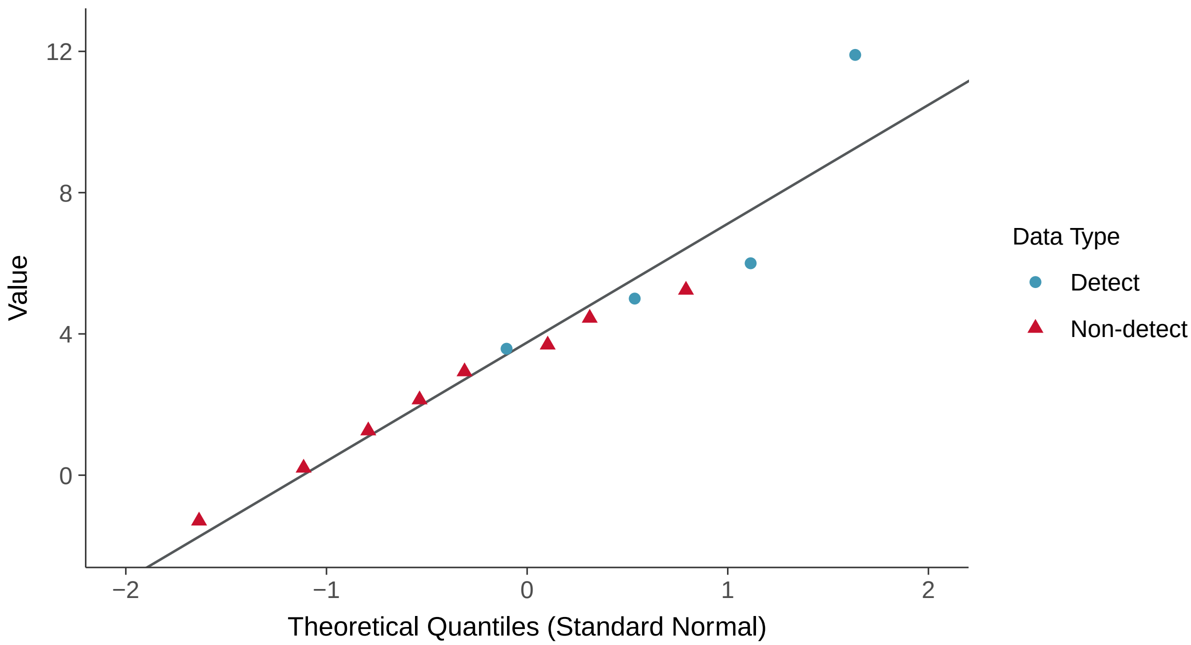



Boxplot
Sulfate, MW-9 (mg/L)
Value
10.0
7.5
5.0
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Sulfate, MW-9 (mg/L)
Value
10.0
7.5
5.0
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major

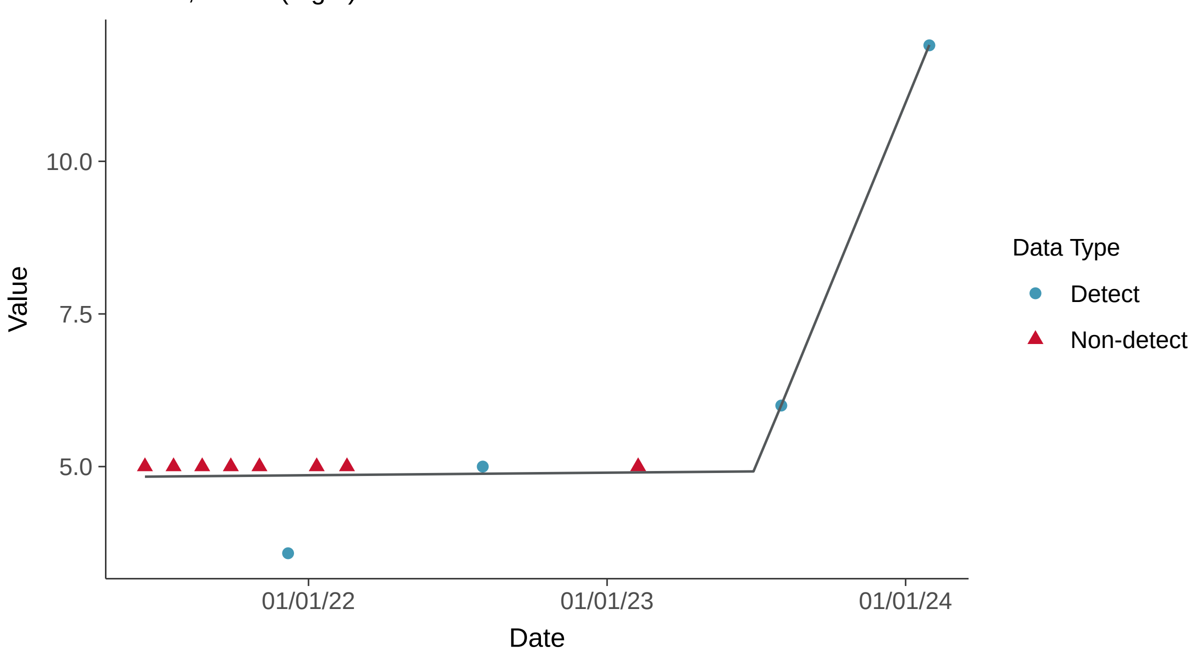
Normal Q-Q plot using ROS Imputed Estimates

Sulfate, MW-9 (mg/L)



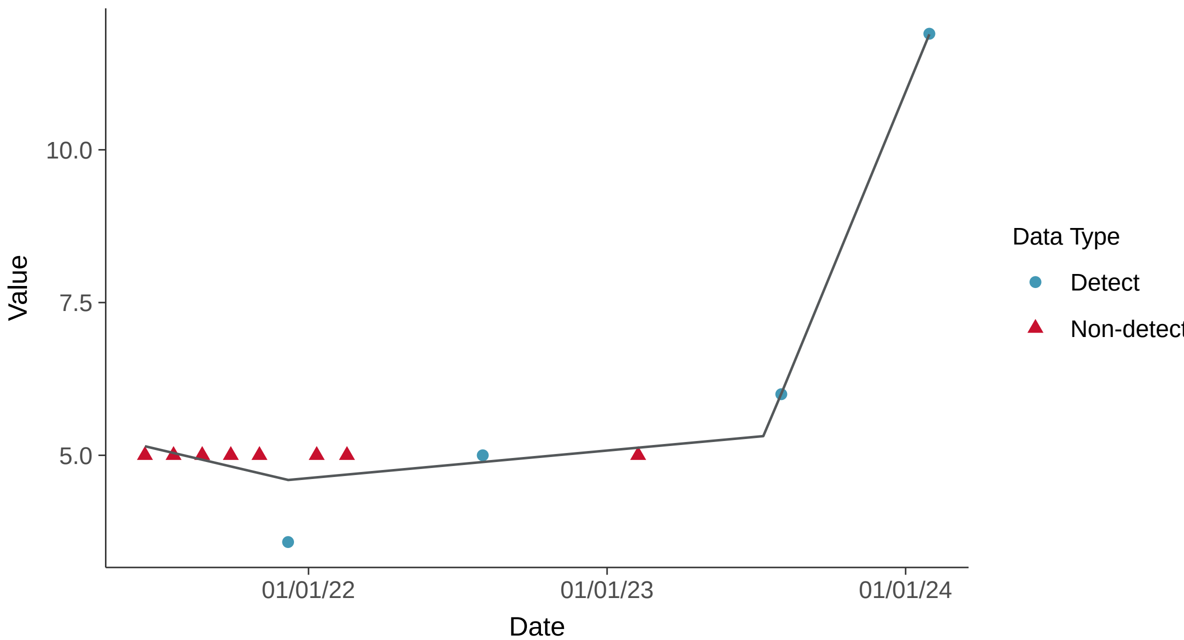
Trend Regression: Piecewise Linear-Linear

Sulfate, MW-9 (mg/L)



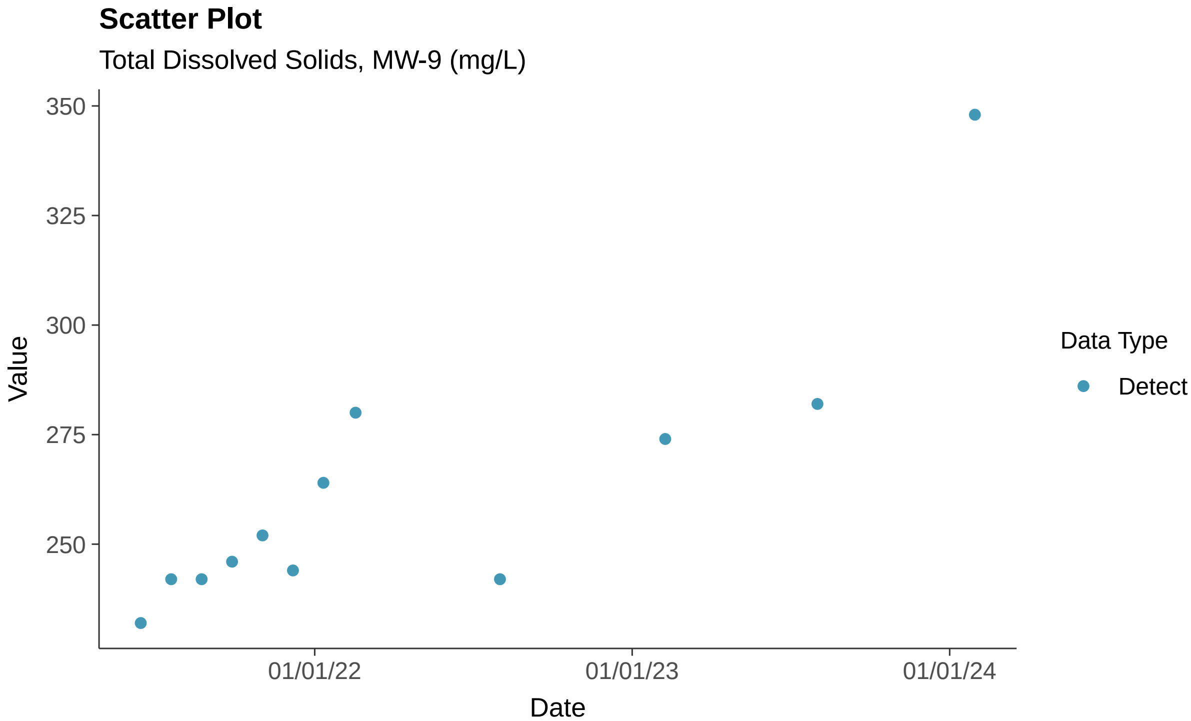
Trend Regression: Piecewise Linear-Linear-Linear

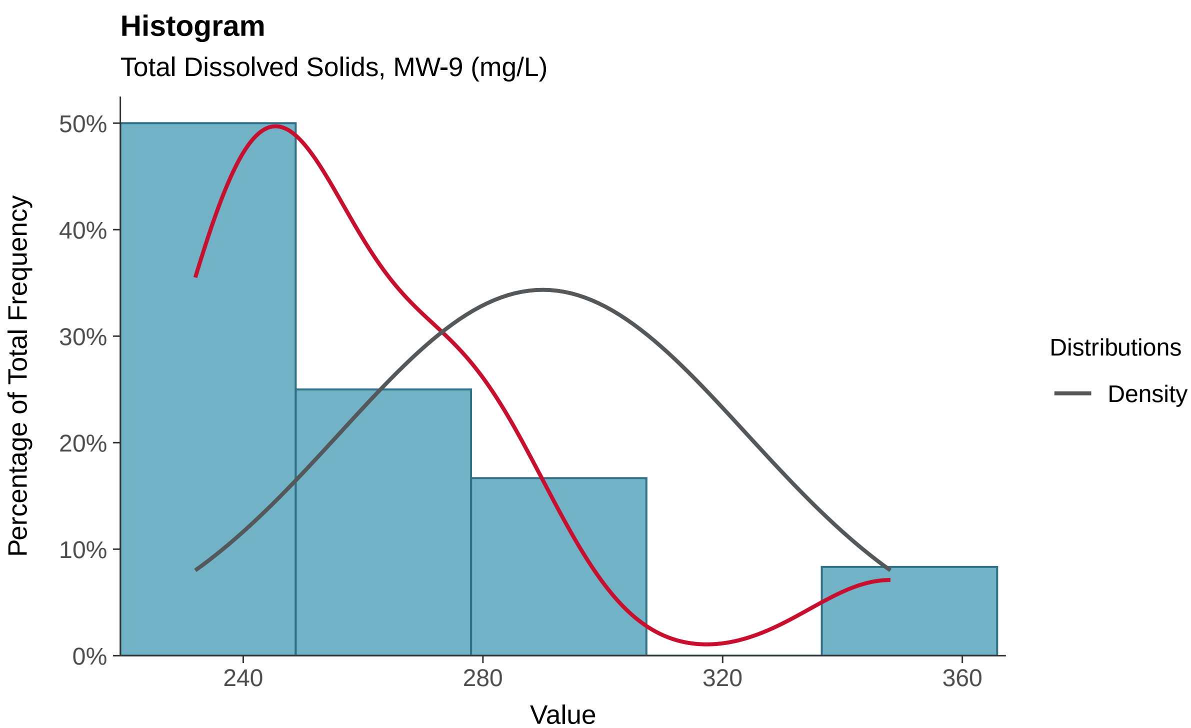
Sulfate, MW-9 (mg/L)



Appendix III: Total Dissolved Solids, MW-9

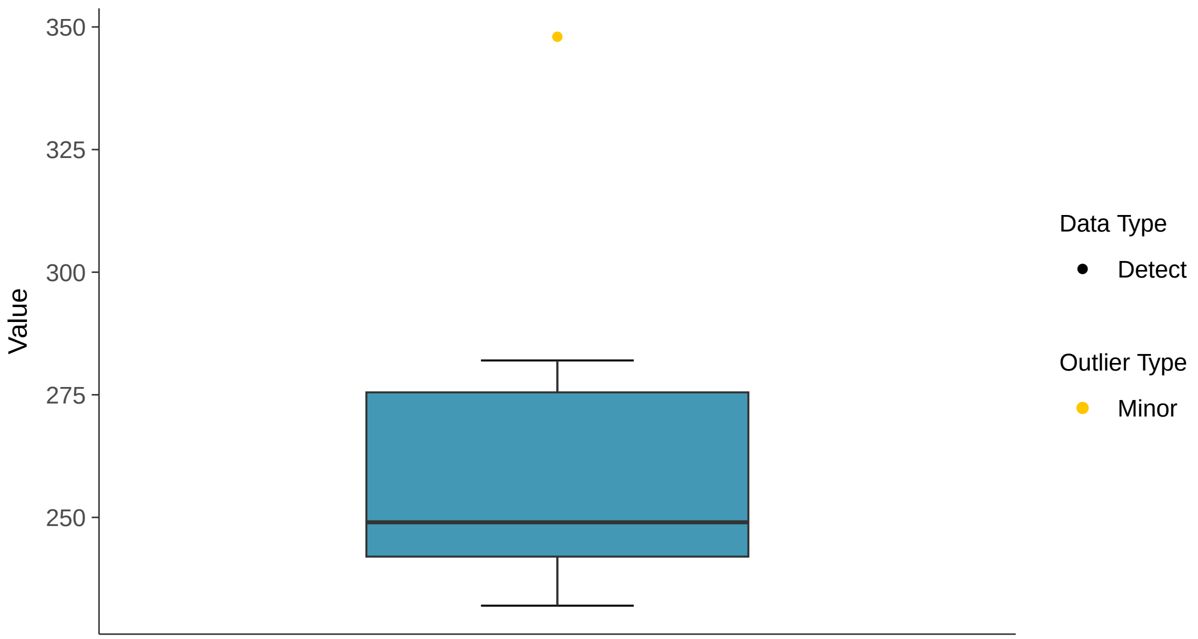
ID: 09_1_06





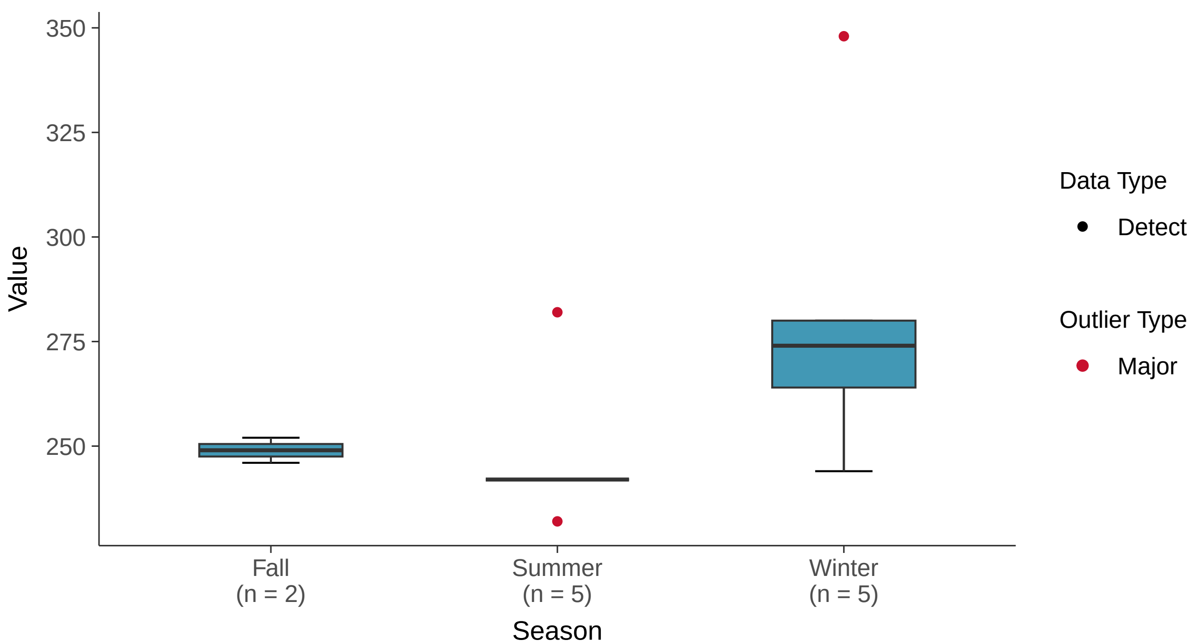
Boxplot

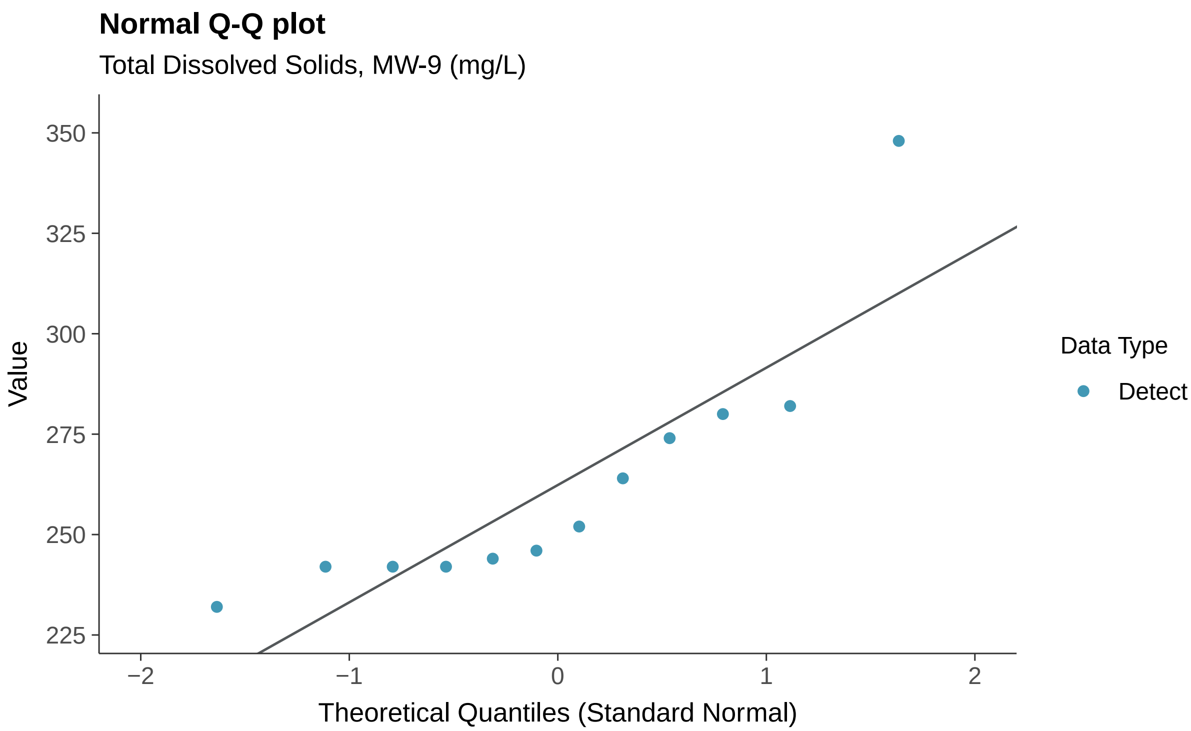
Total Dissolved Solids, MW-9 (mg/L)

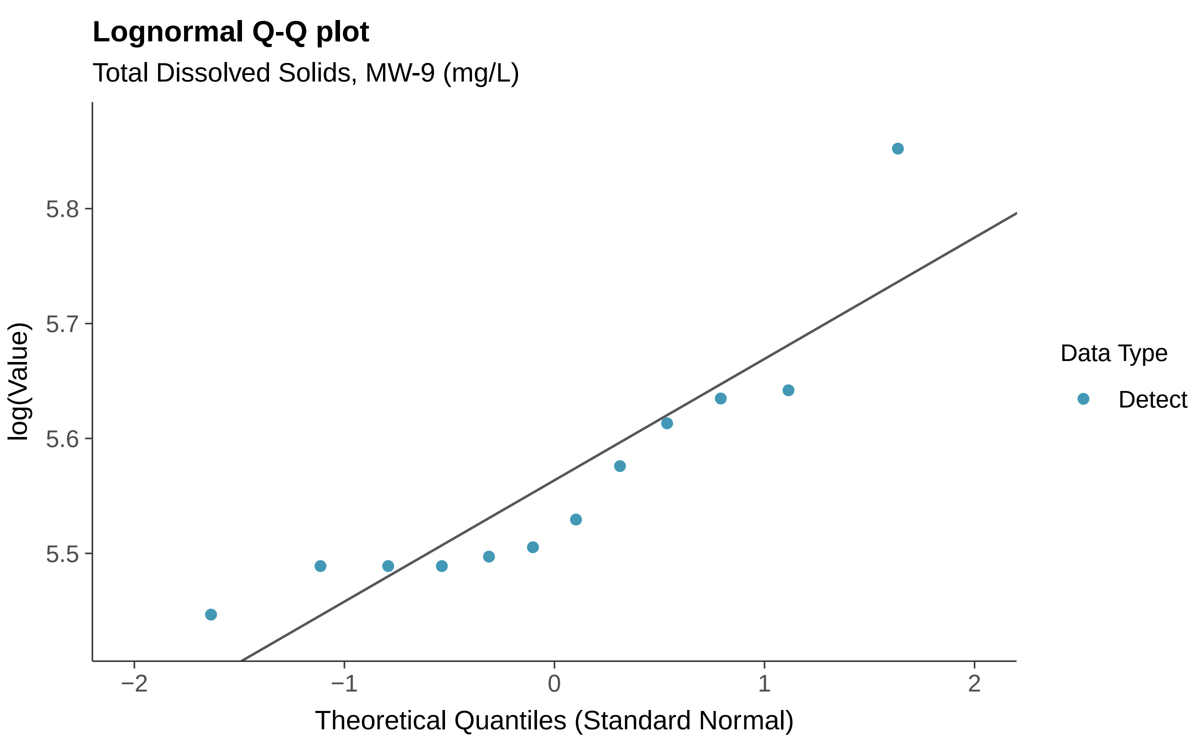


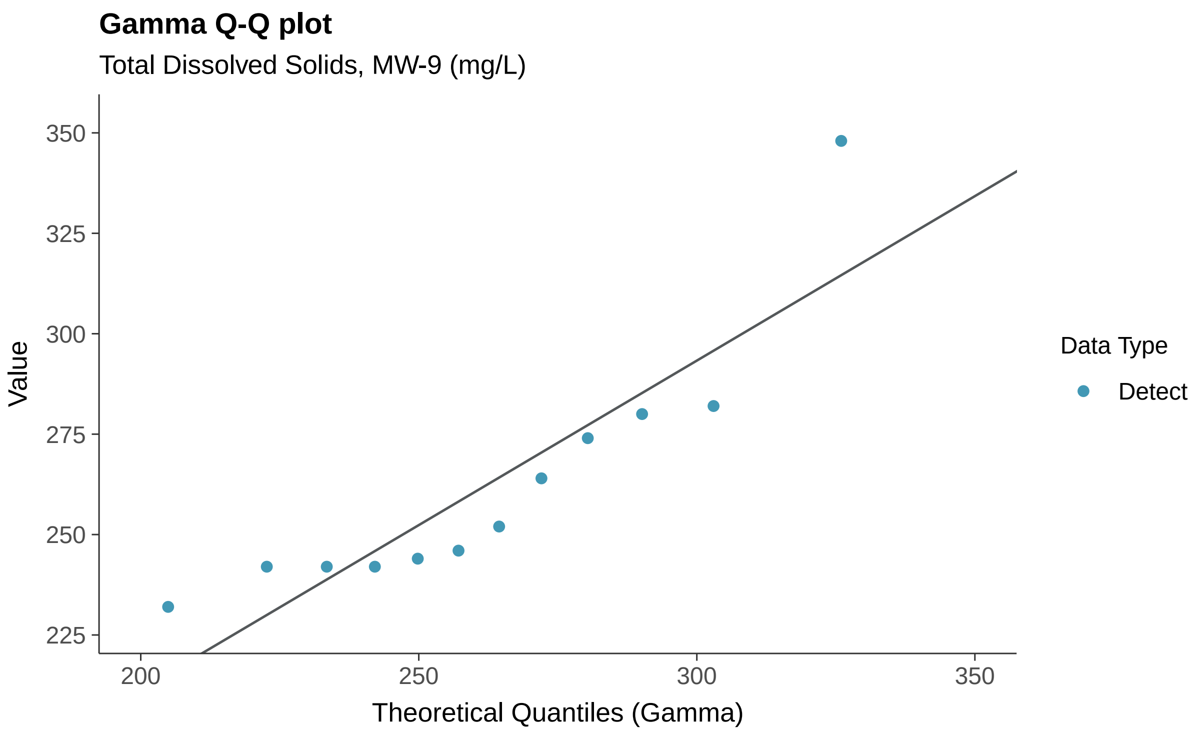
Boxplot by Season

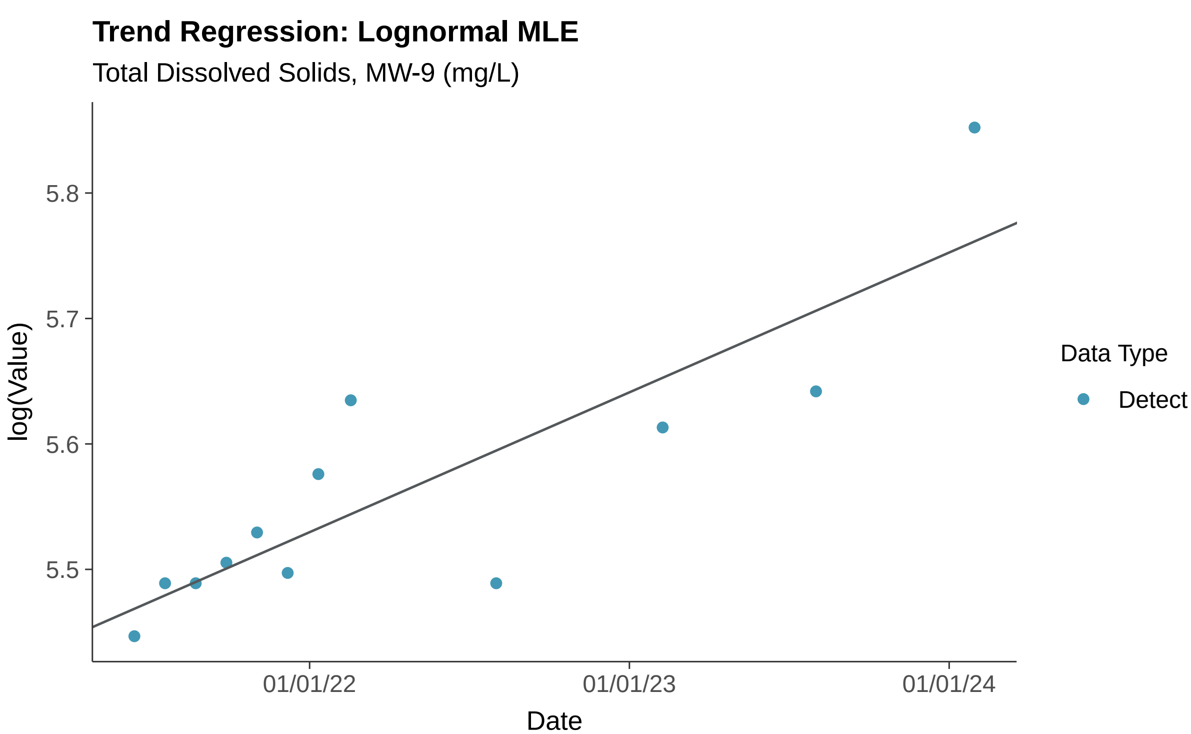
Total Dissolved Solids, MW-9 (mg/L)




Normal Q-Q plot
Total Dissolved Solids, MW-9 (mg/L)
Value
350
325
300
275
250
225
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

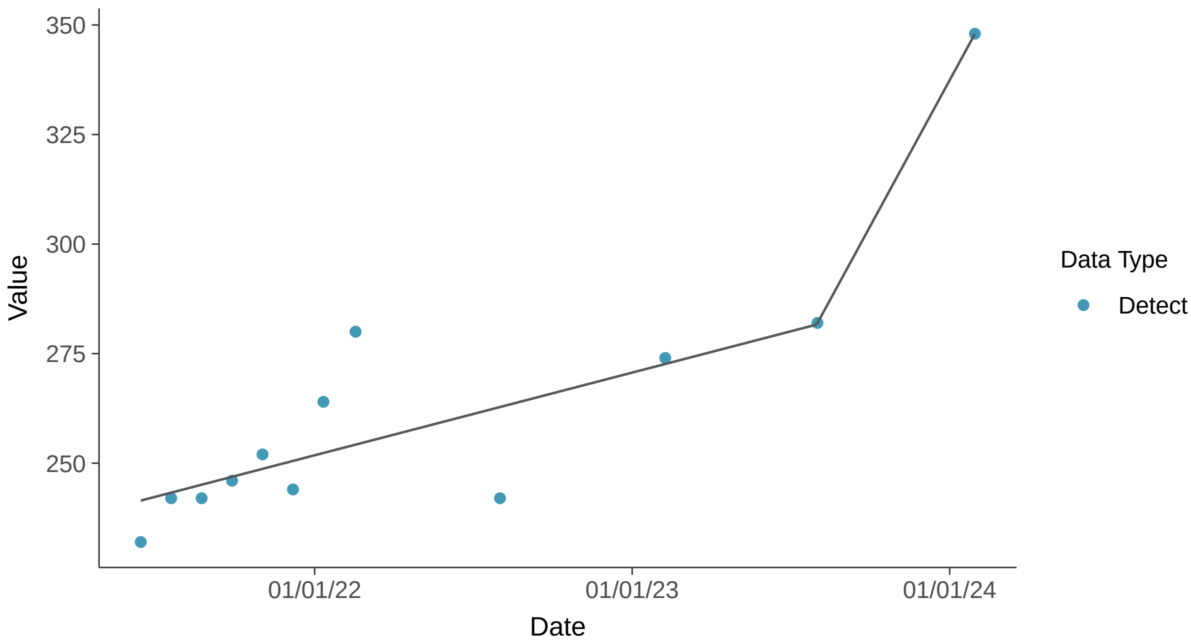

Lognormal Q-Q plot
Total Dissolved Solids, MW-9 (mg/L)
log(Value)
5.8
5.7
5.6
5.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Dissolved Solids, MW-9 (mg/L)
Value
350
325
300
275
250
225
200
250
300
350
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-9 (mg/L)
log(Value)
5.8
5.7
5.6
5.5
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

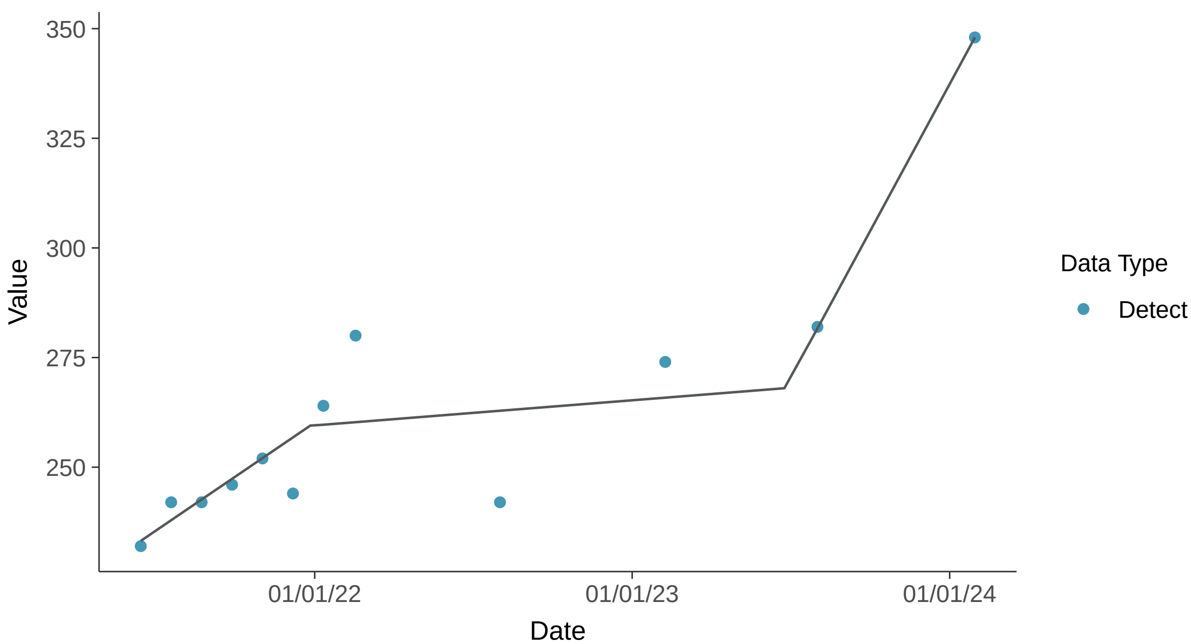
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-9 (mg/L)



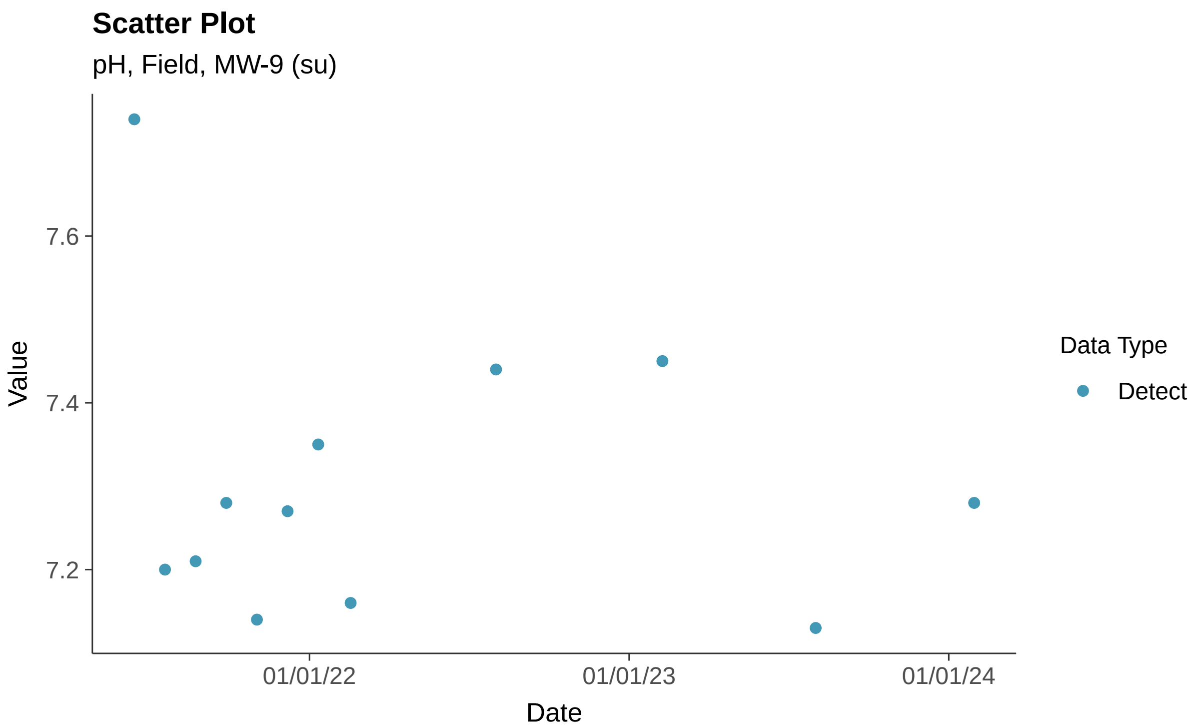
Trend Regression: Piecewise Linear-Linear-Linear

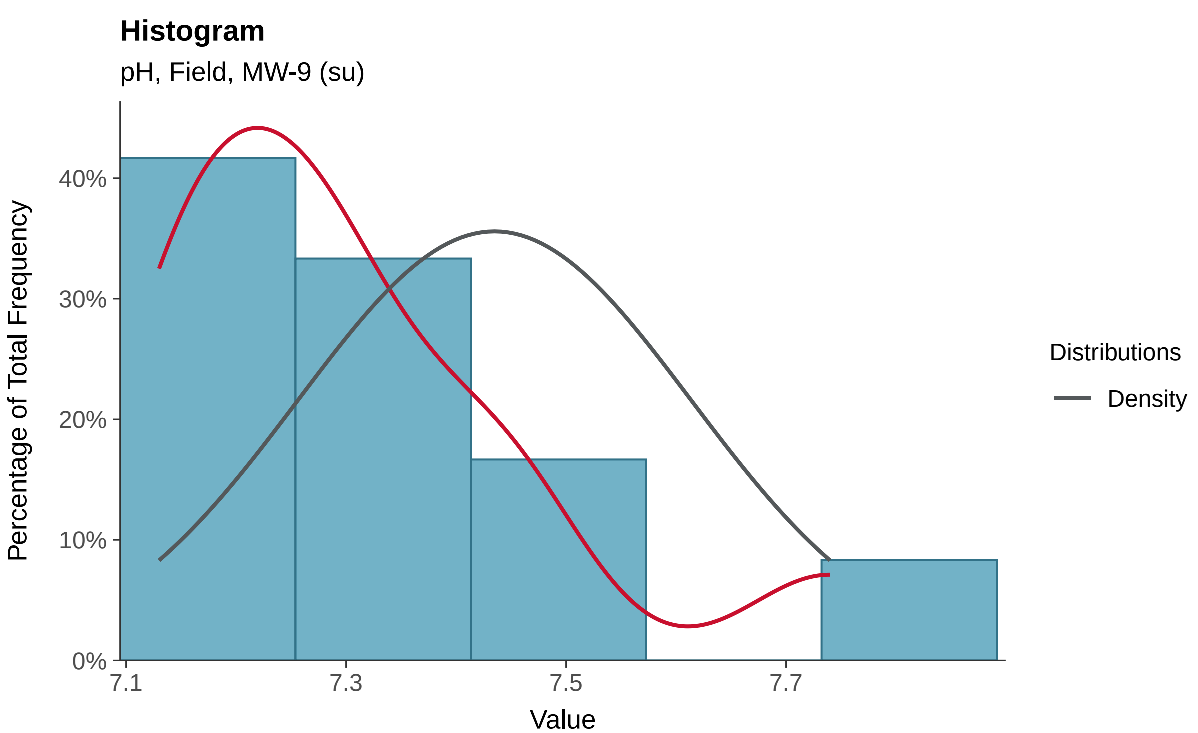
Total Dissolved Solids, MW-9 (mg/L)



Appendix III: pH, Field, MW-9

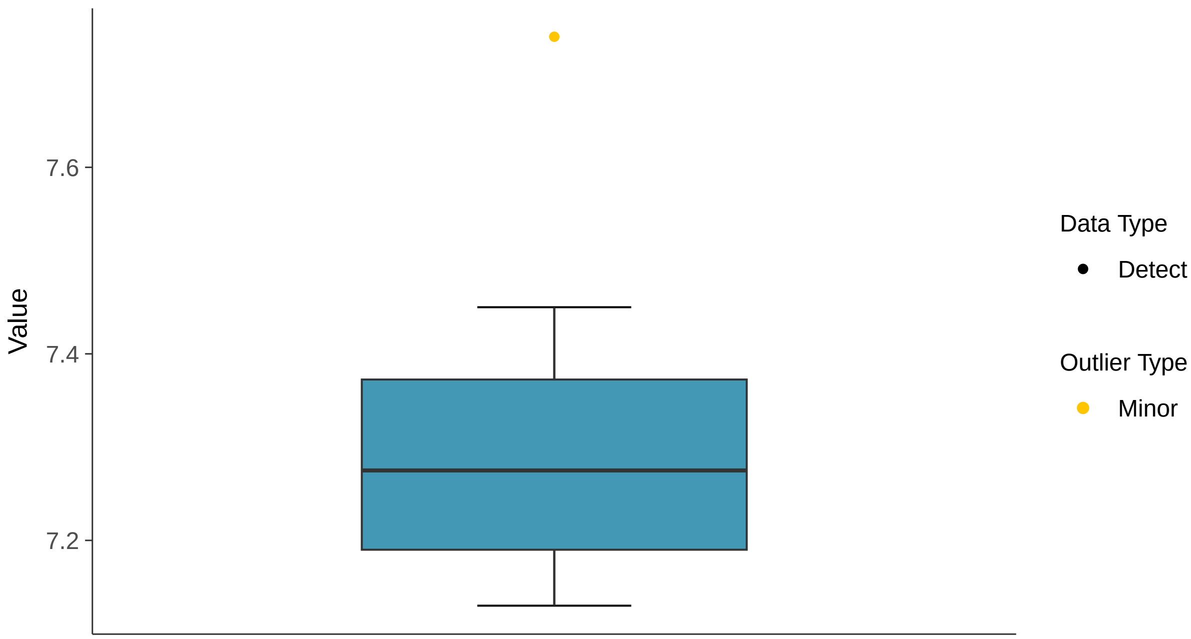
ID: 09_1_07





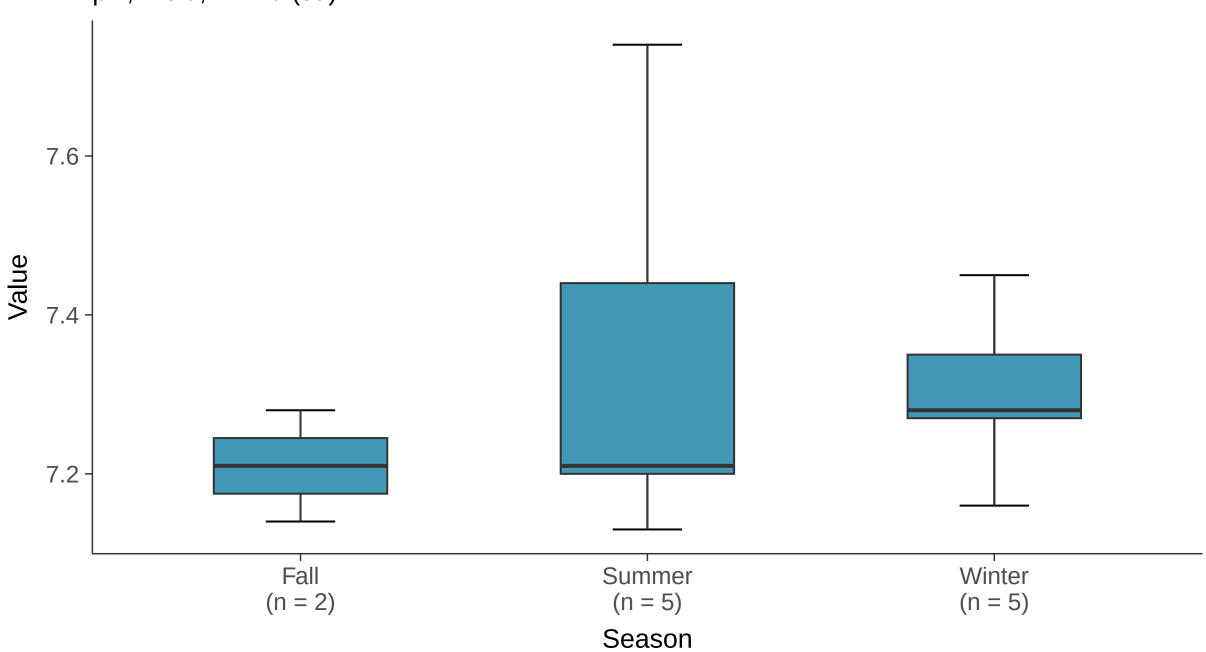
Boxplot

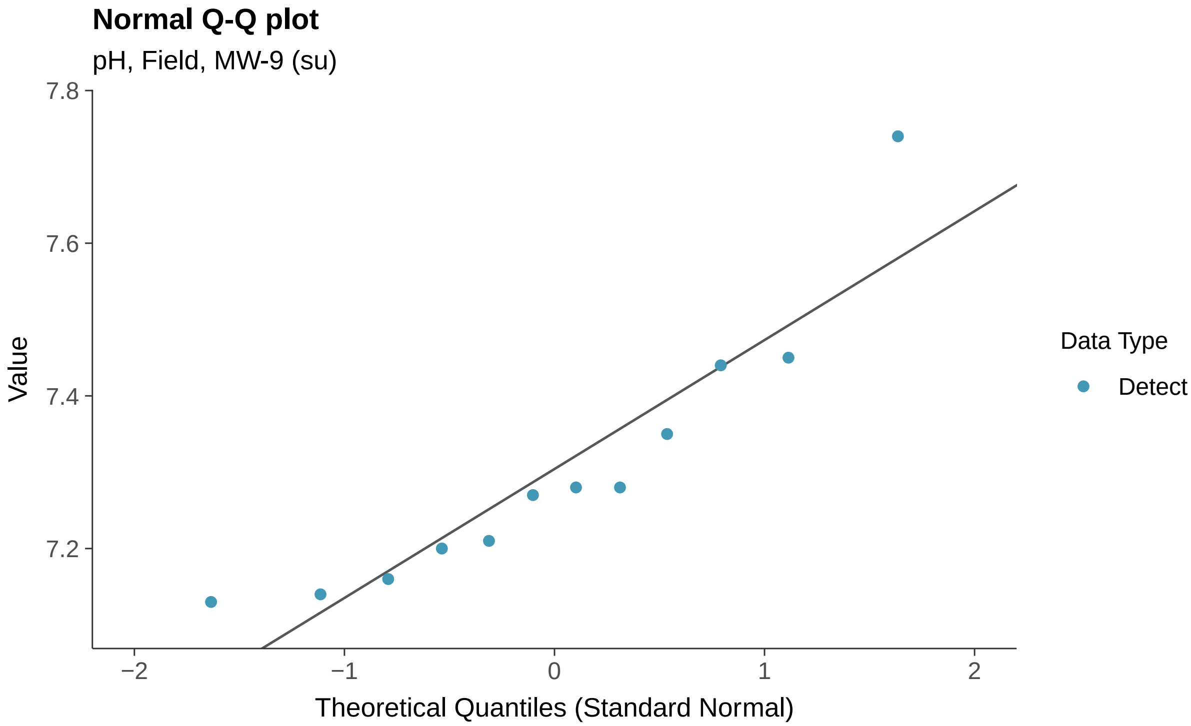
pH, Field, MW-9 (su)

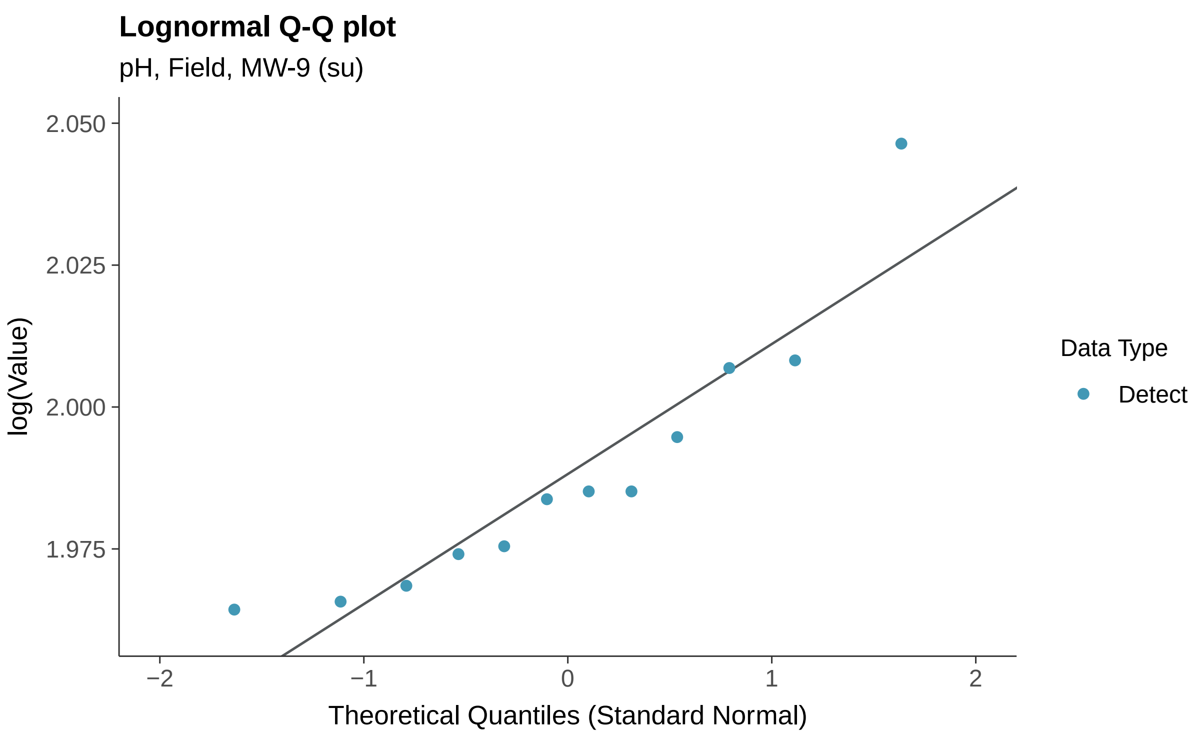


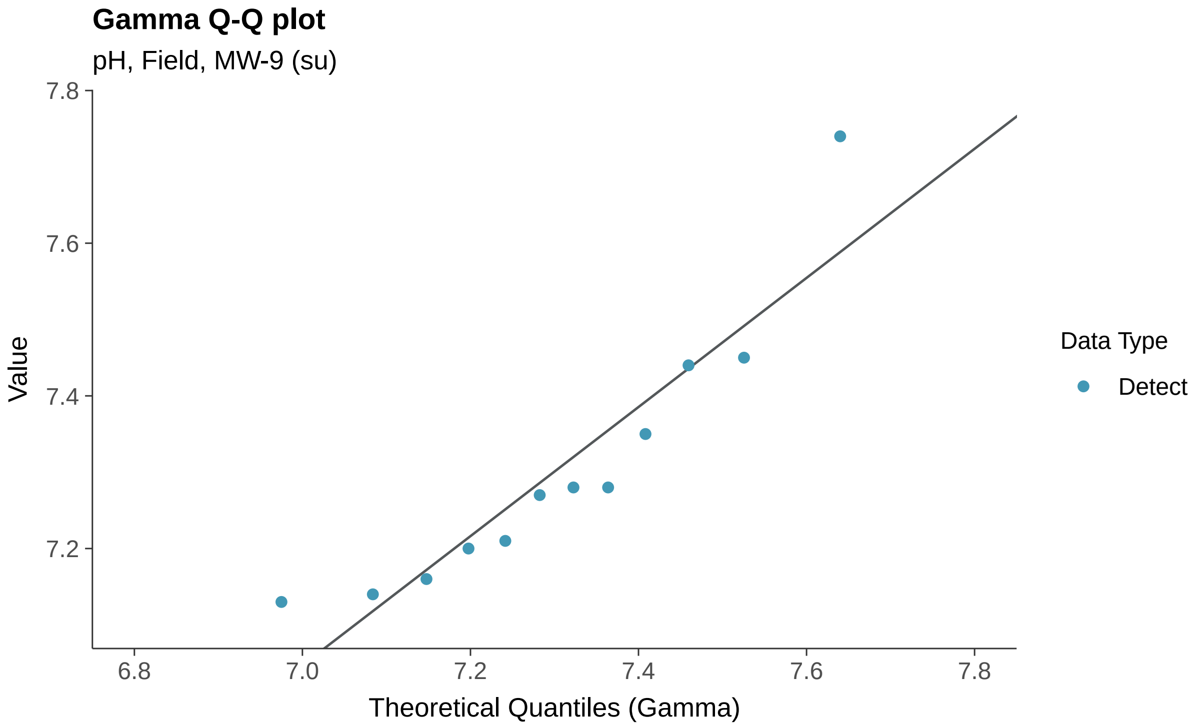
Boxplot by Season

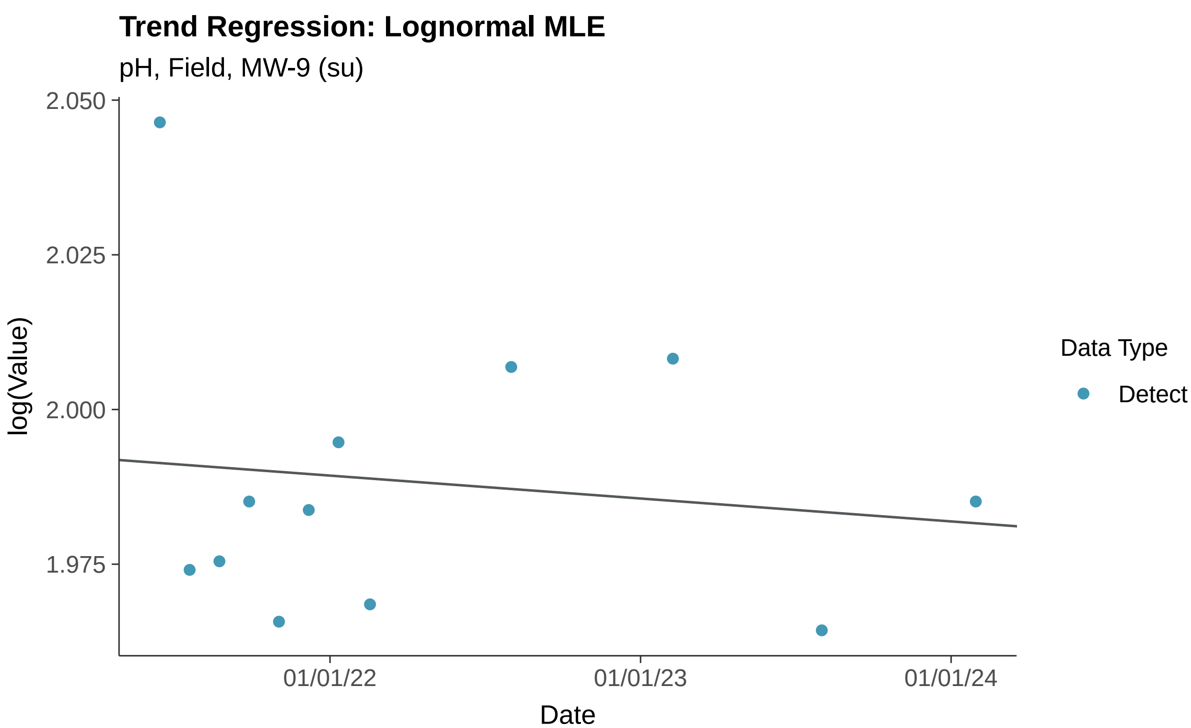
pH, Field, MW-9 (su)




Normal Q-Q plot
pH, Field, MW-9 (su)
Value
7.8
7.6
7.4
7.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

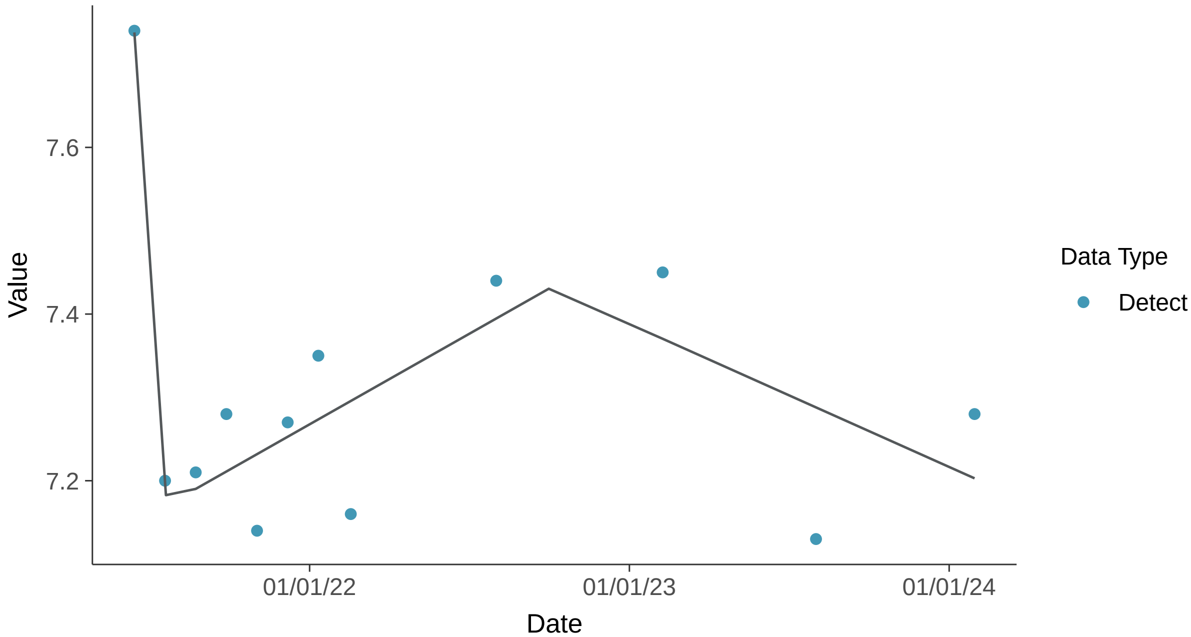

Lognormal Q-Q plot
pH, Field, MW-9 (su)
log(Value)
2.050
2.025
2.000
1.975
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, Field, MW-9 (su)
Value
7.8
7.6
7.4
7.2
6.8
7.0
7.2
7.4
7.6
7.8
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, Field, MW-9 (su)
log(Value)
2.050
2.025
2.000
1.975
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

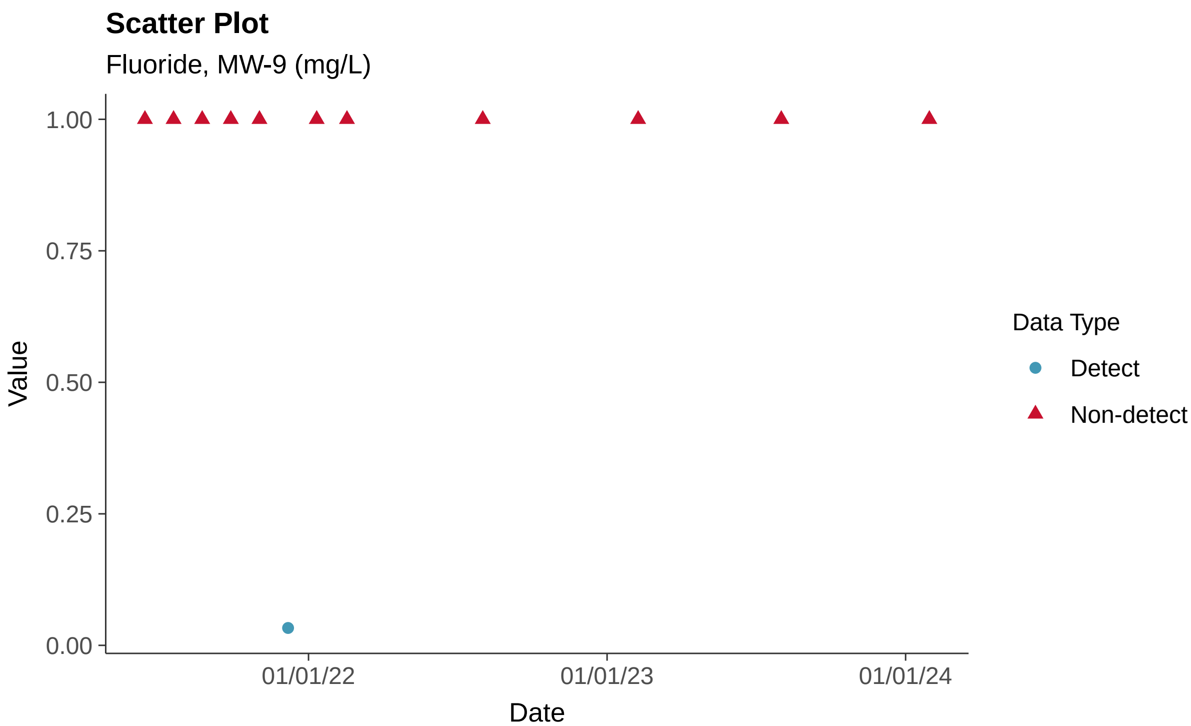
Trend Regression: Piecewise Linear-Linear-Linear

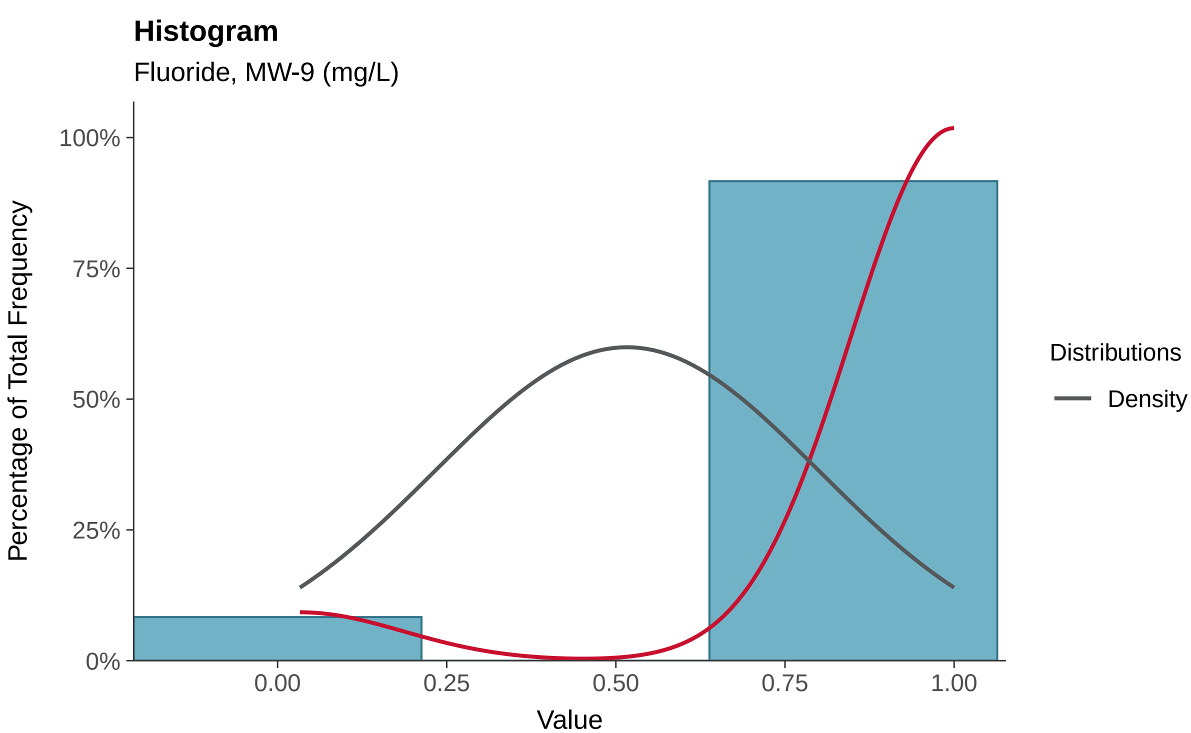
pH, Field, MW-9 (su)

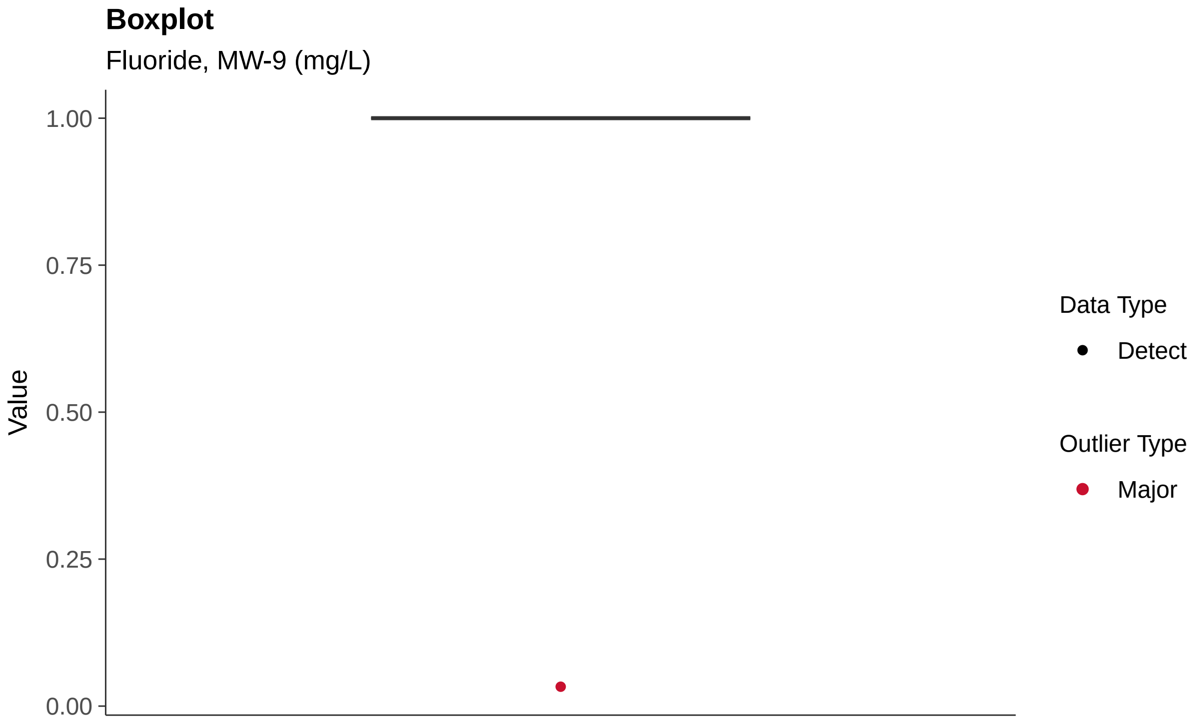


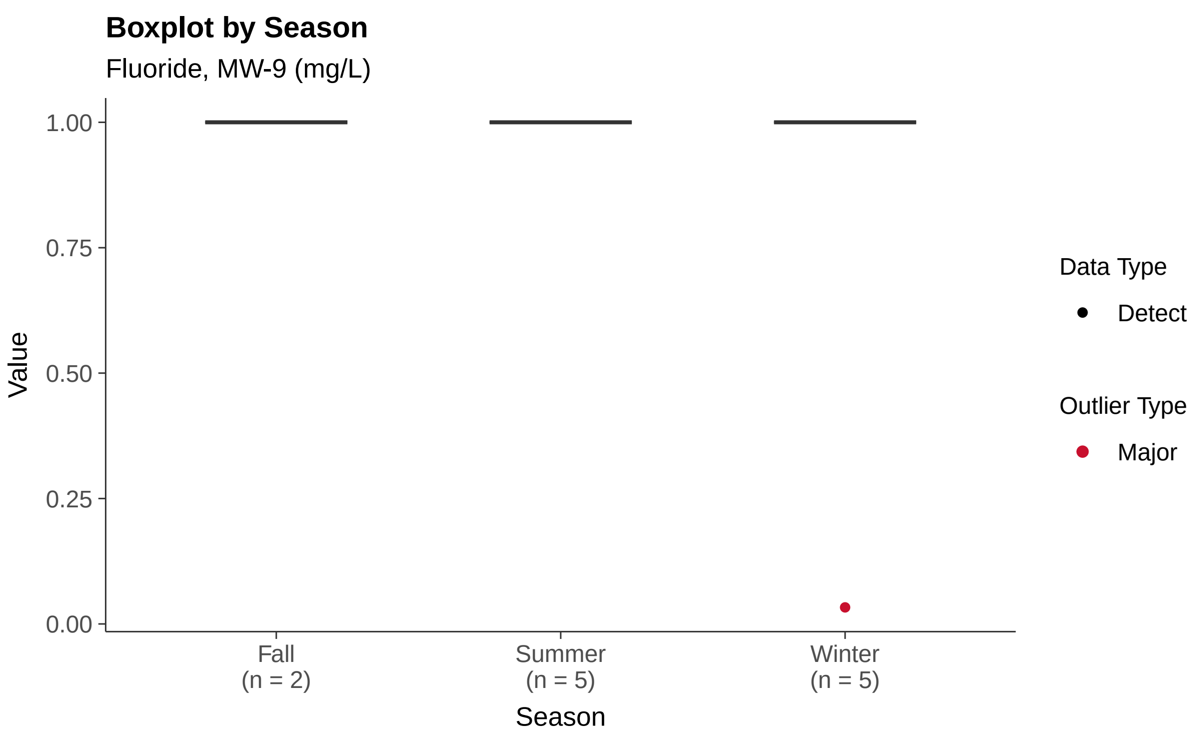
Appendix IV: Fluoride, MW-9

ID: 09_2_04



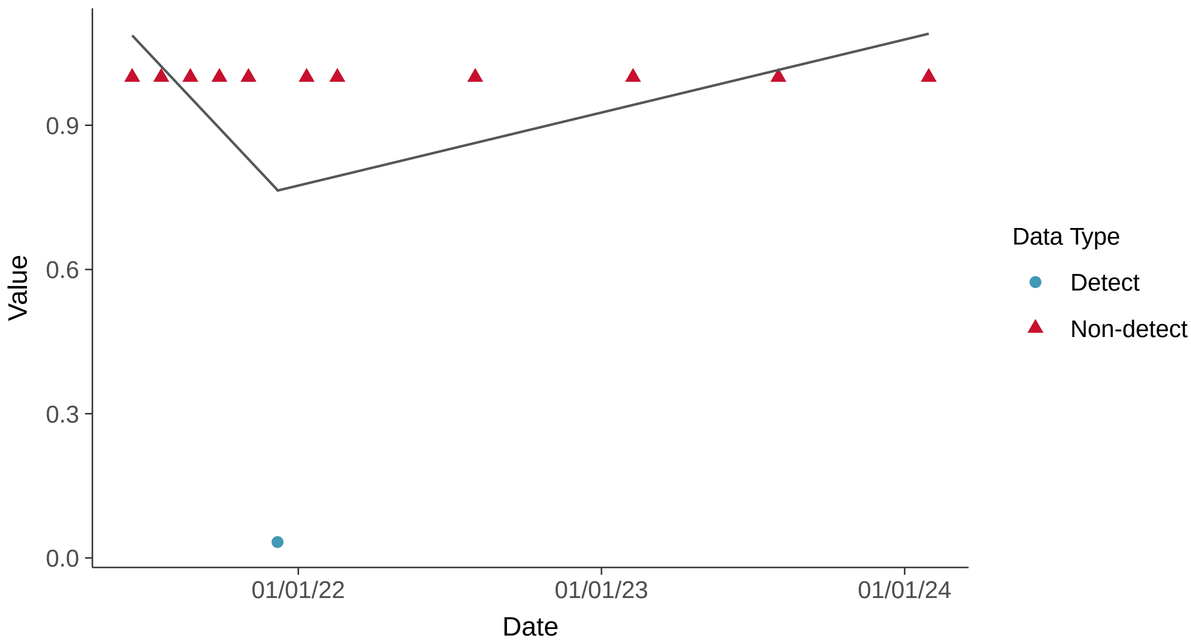



Boxplot
Fluoride, MW-9 (mg/L)
1.00
0.75
0.50
0.25
0.00
Value
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Fluoride, MW-9 (mg/L)
1.00
0.75
0.50
0.25
0.00
Value
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major

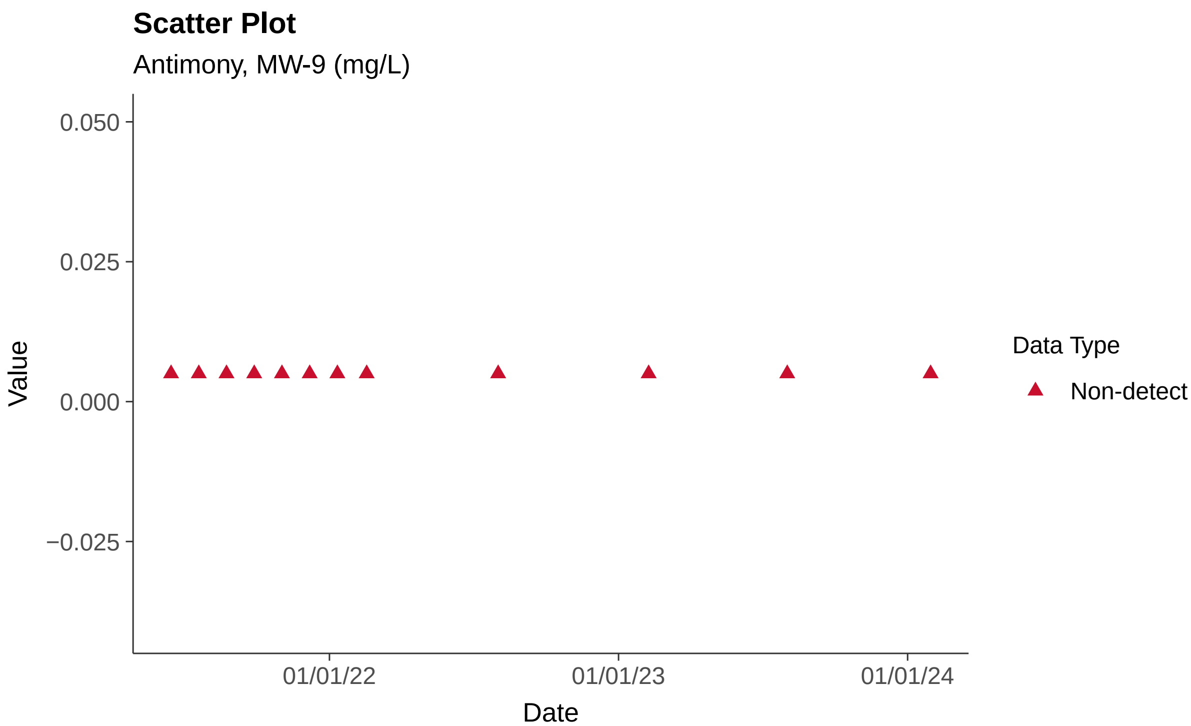
Trend Regression: Piecewise Linear-Linear

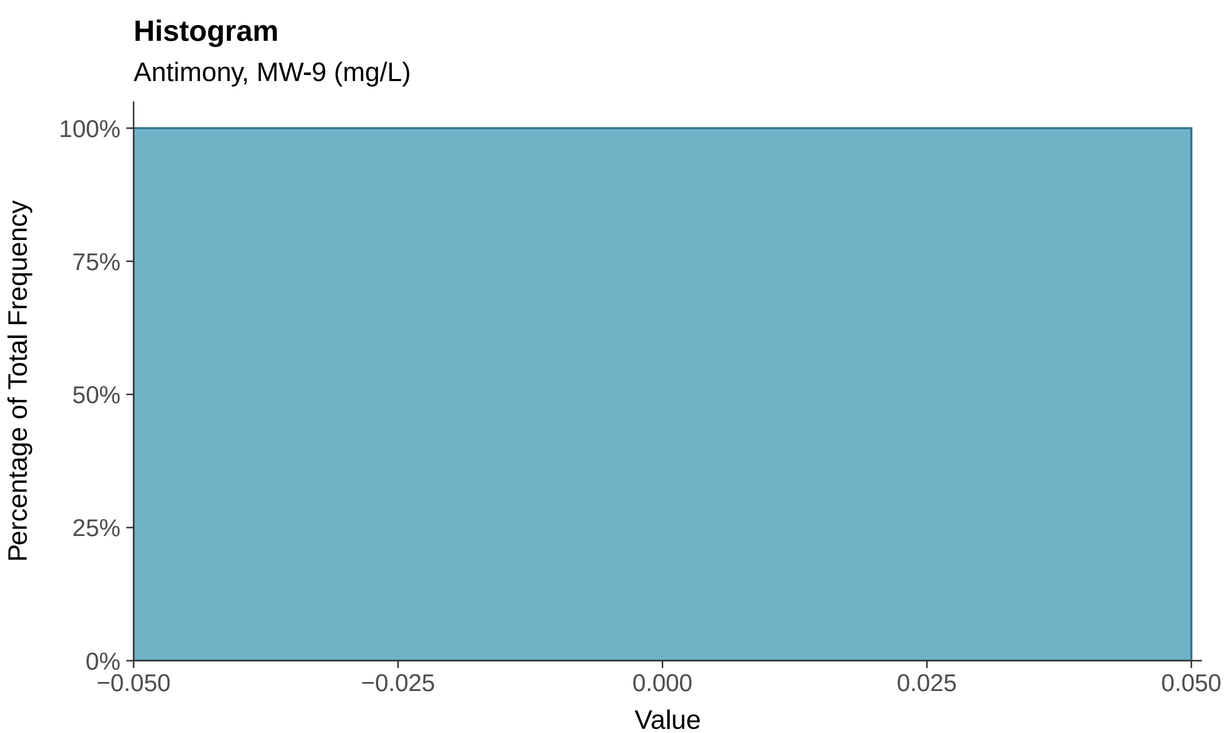
Fluoride, MW-9 (mg/L)



Appendix IV: Antimony, MW-9

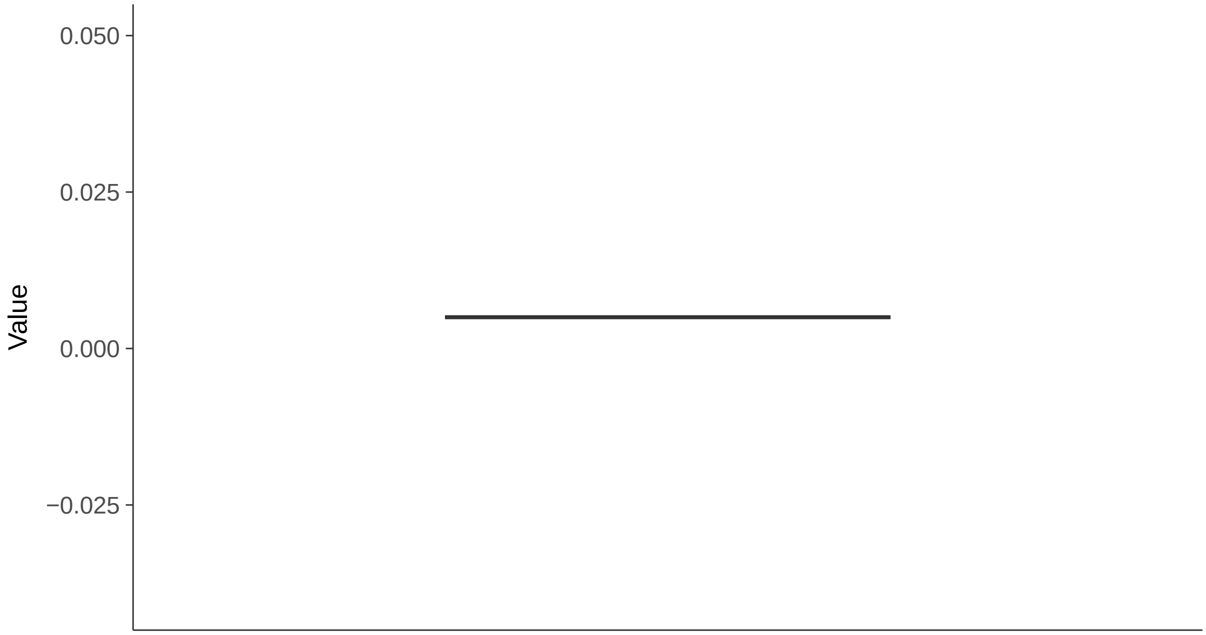
ID: 09_2_08





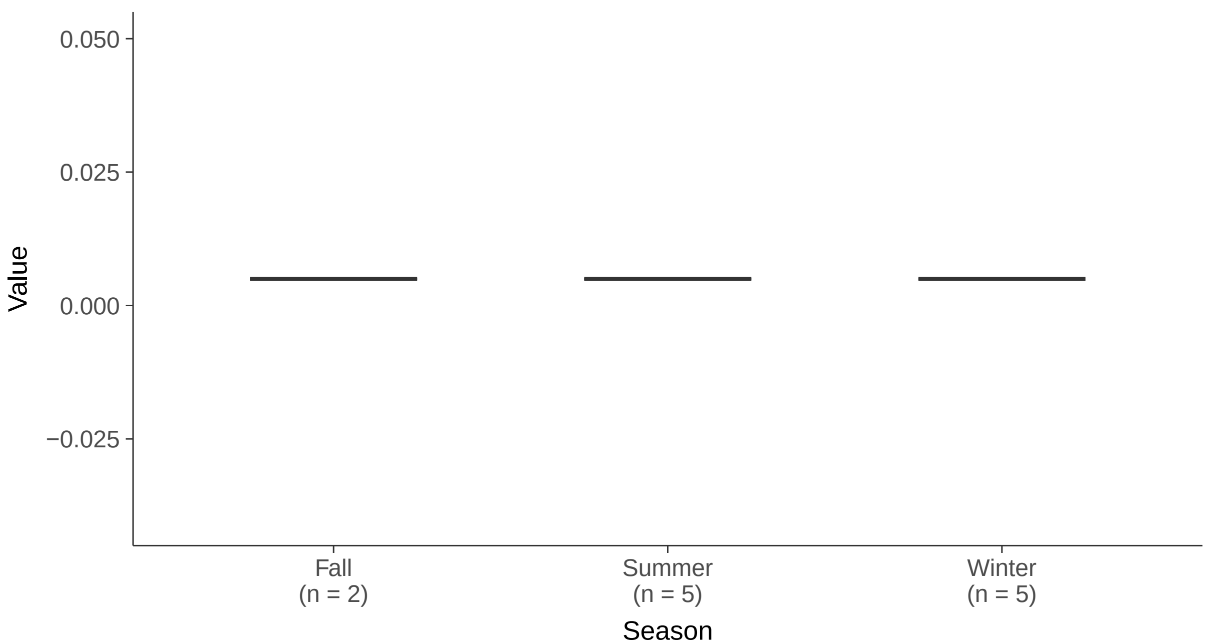
Boxplot

Antimony, MW-9 (mg/L)



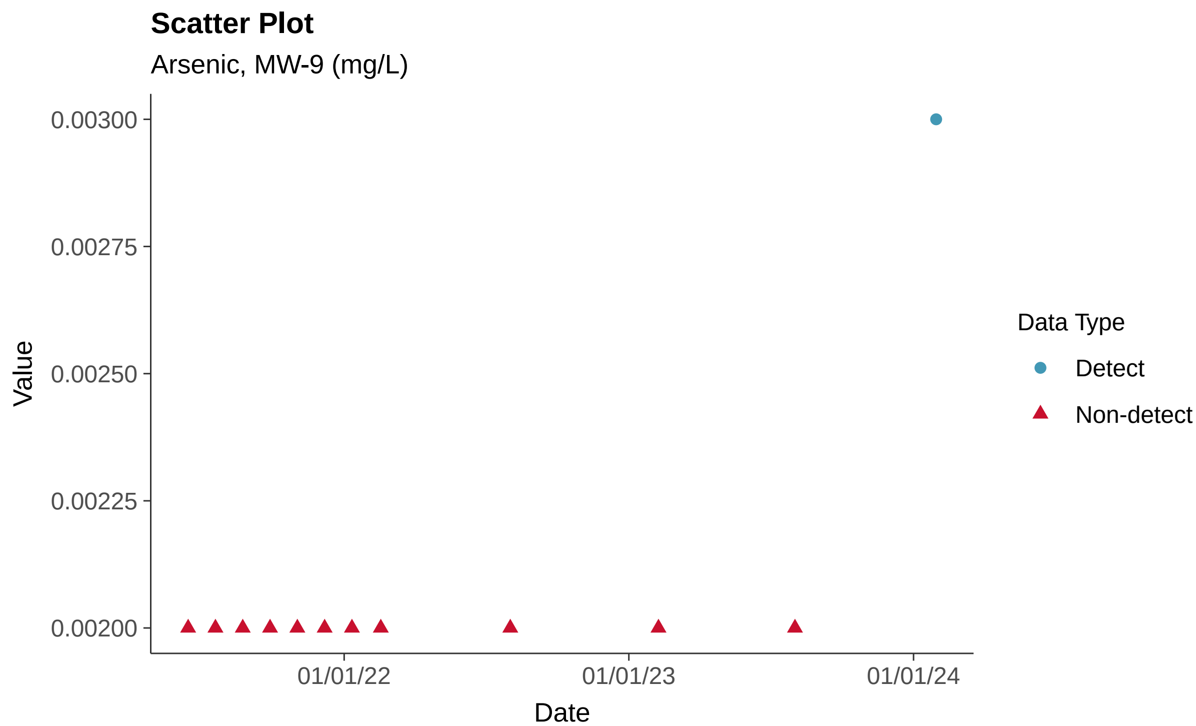
Boxplot by Season

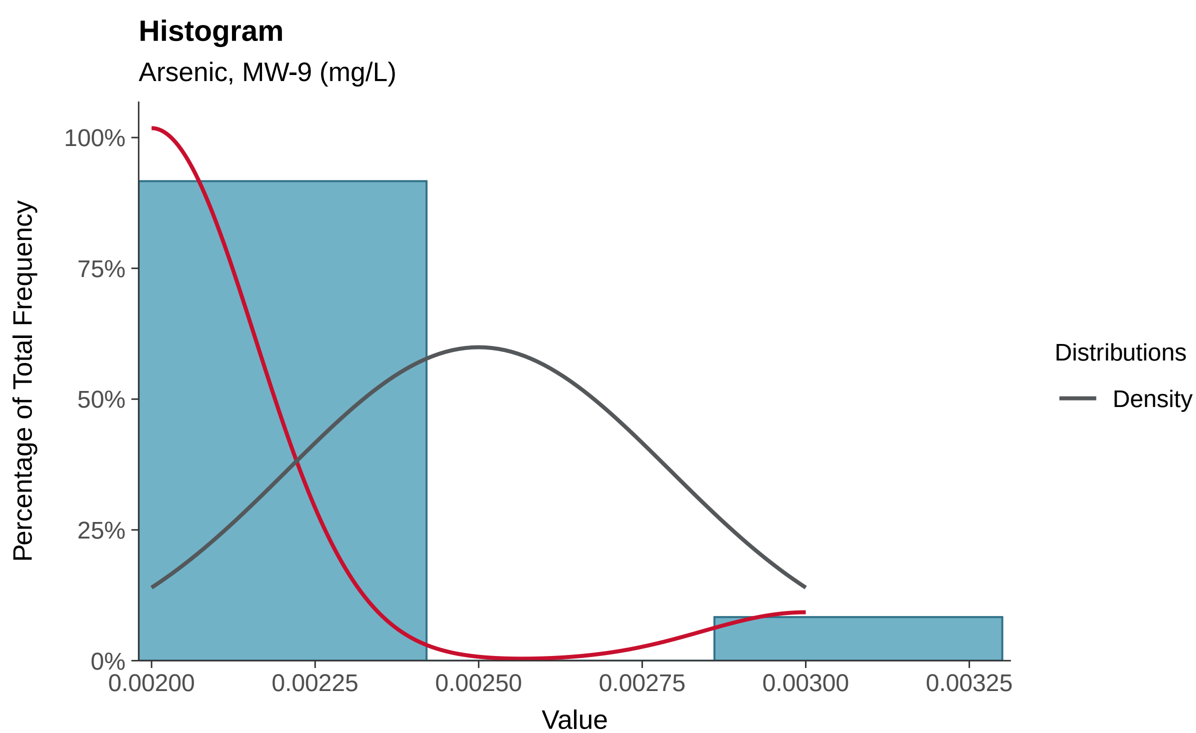
Antimony, MW-9 (mg/L)



Appendix IV: Arsenic, MW-9

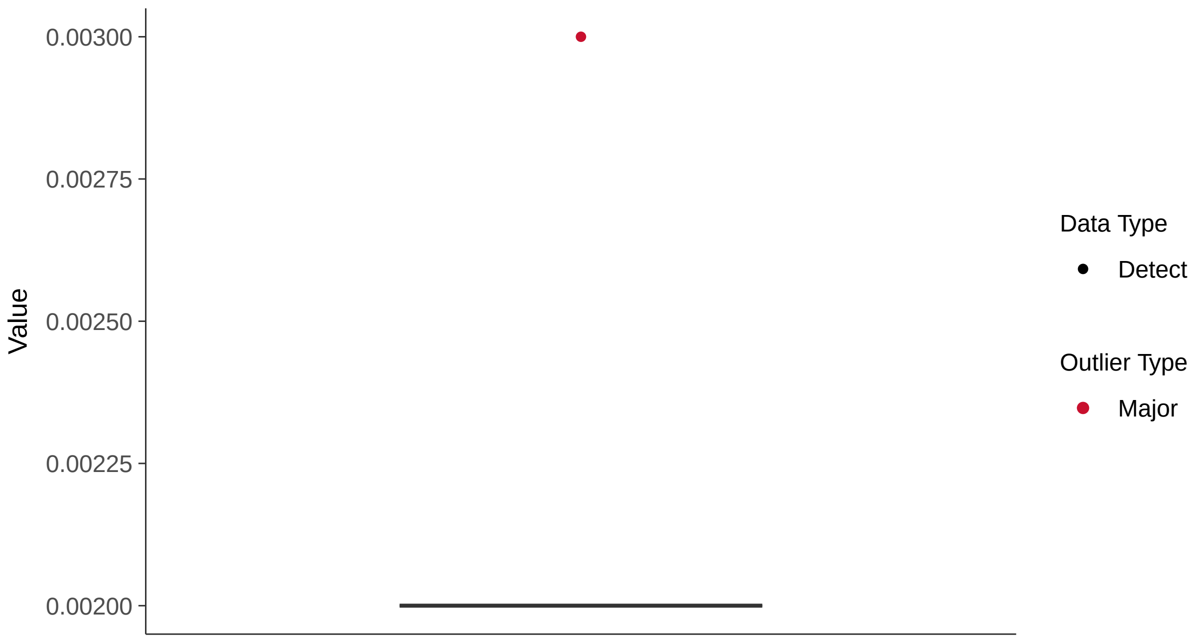
ID: 09_2_09





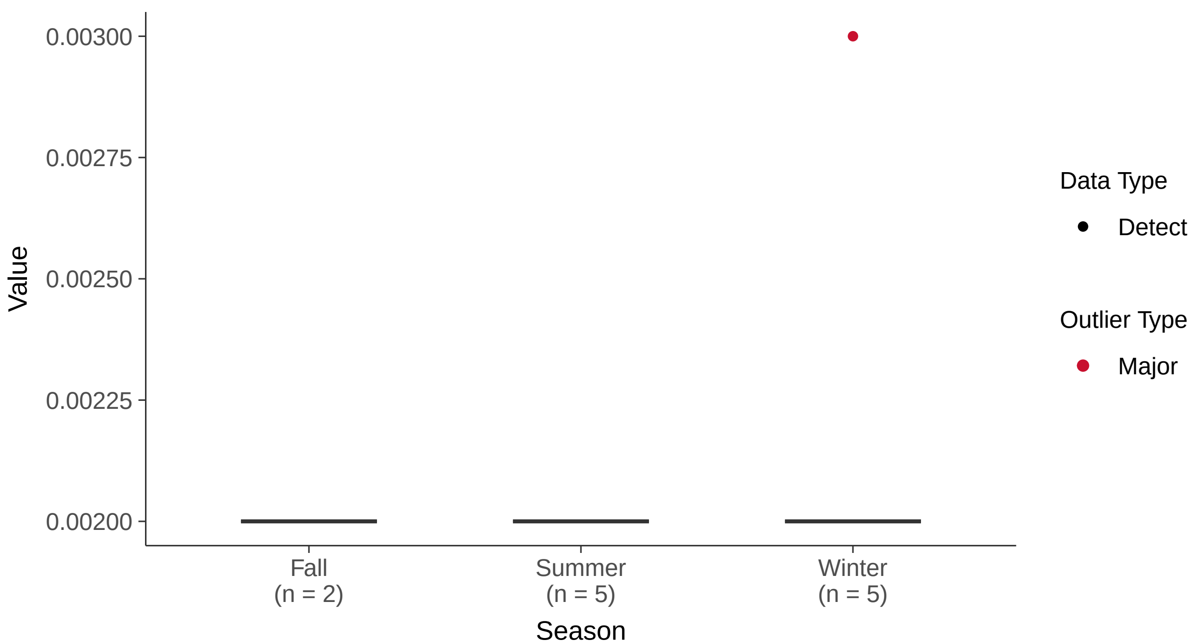
Boxplot

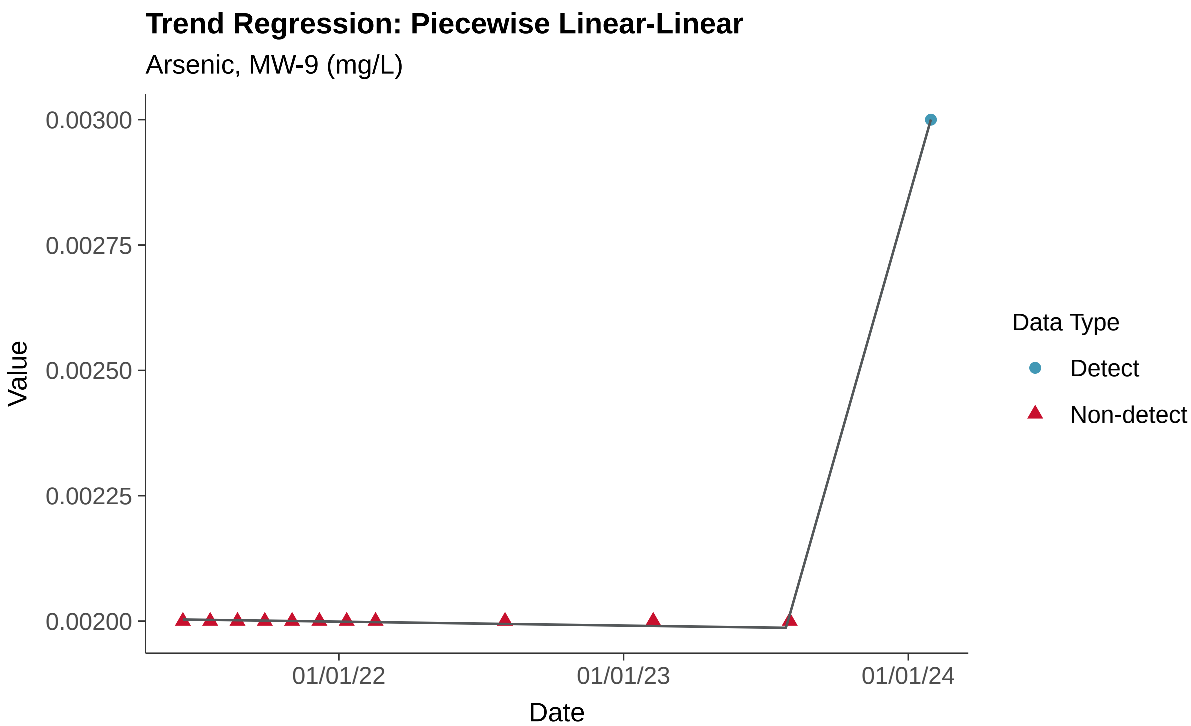
Arsenic, MW-9 (mg/L)

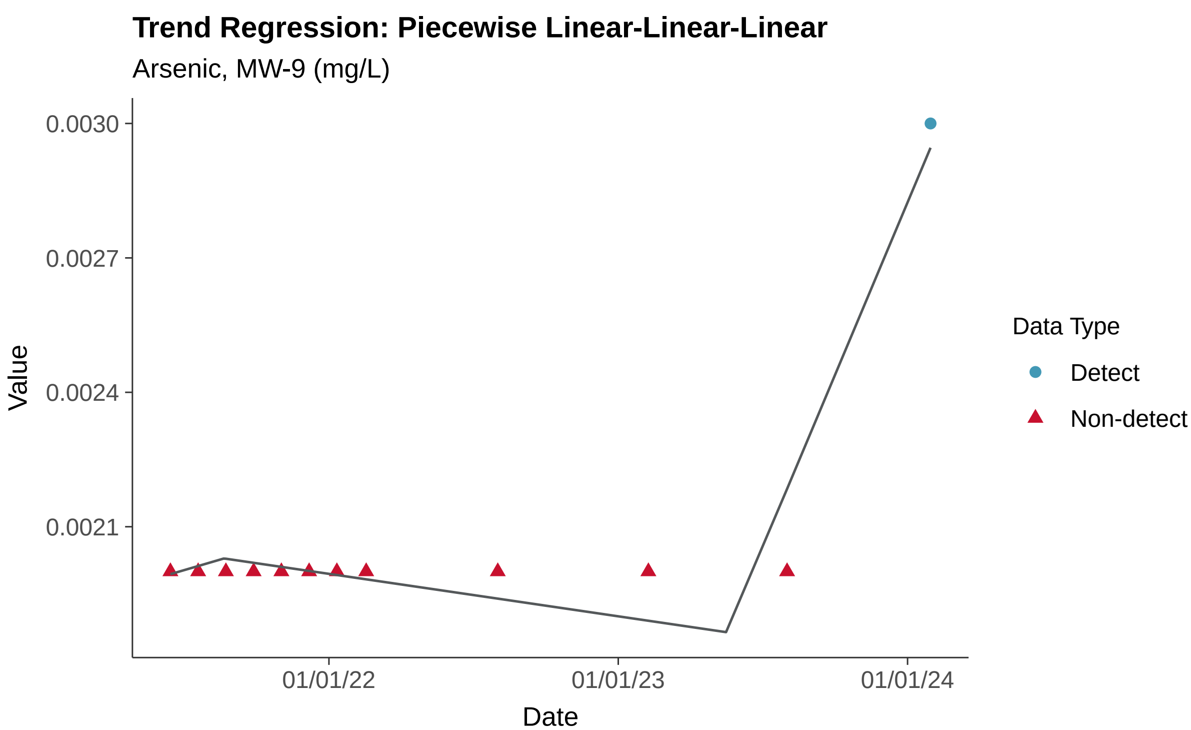


Boxplot by Season

Arsenic, MW-9 (mg/L)

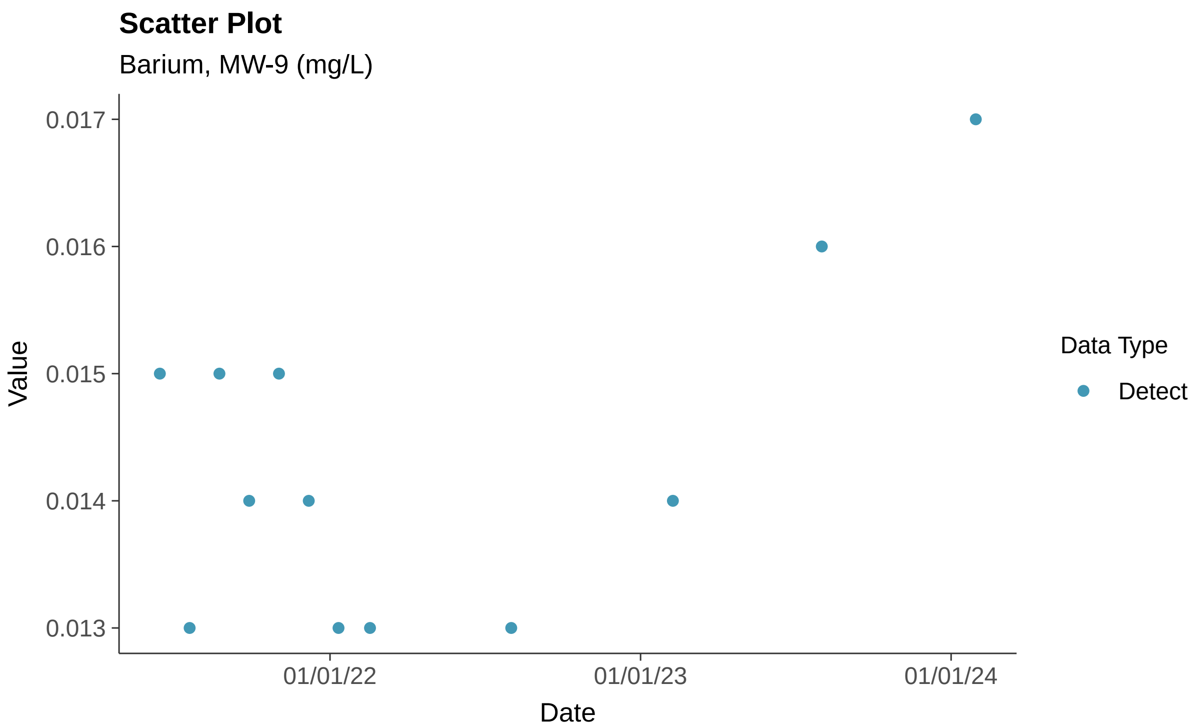


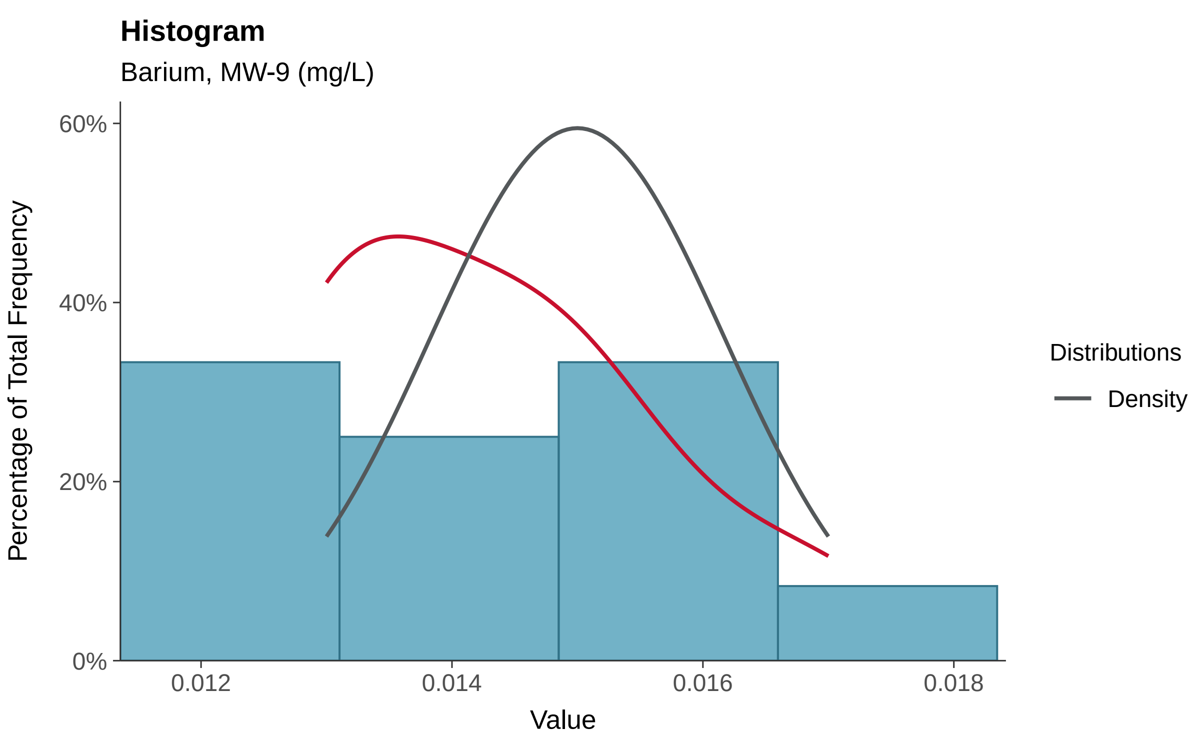

Trend Regression: Piecewise Linear-Linear
Arsenic, MW-9 (mg/L)
0.00300
0.00275
0.00250
0.00225
0.00200
Value
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-9 (mg/L)
0.0030
0.0027
0.0024
0.0021
Value
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Appendix IV: Barium, MW-9

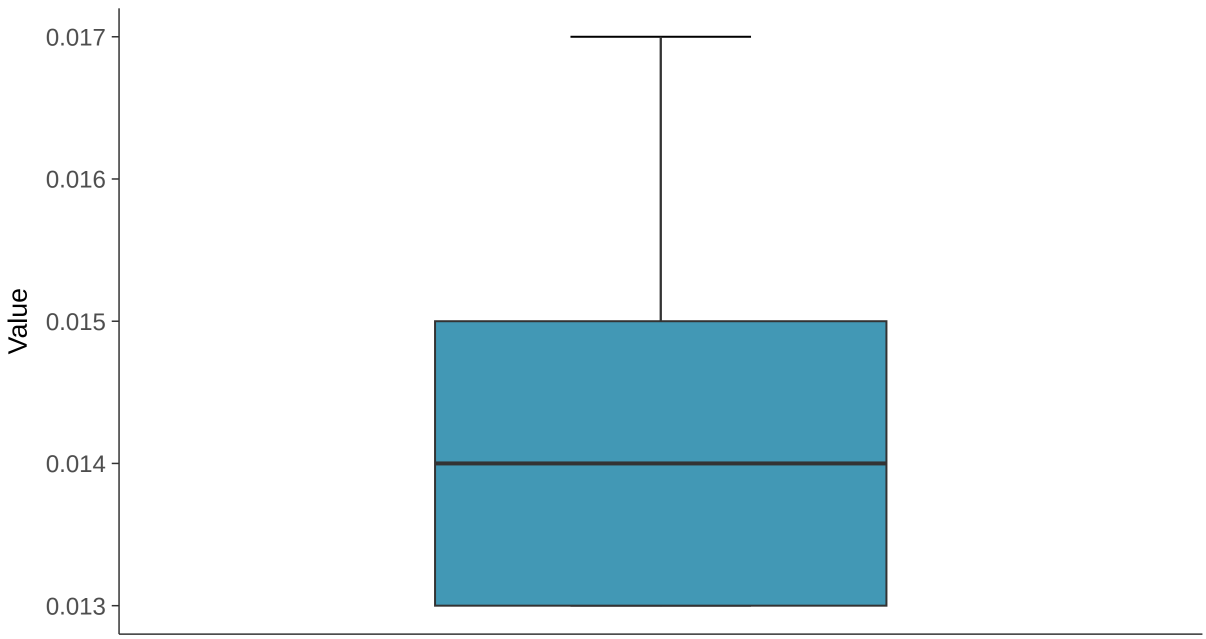
ID: 09_2_10





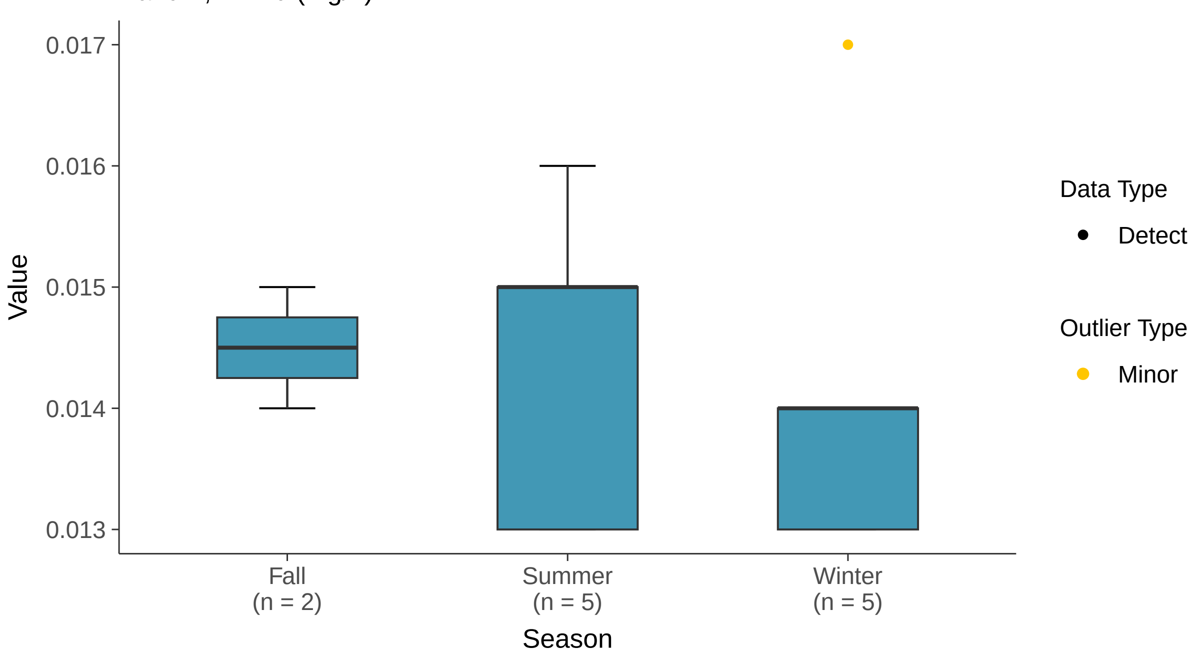
Boxplot

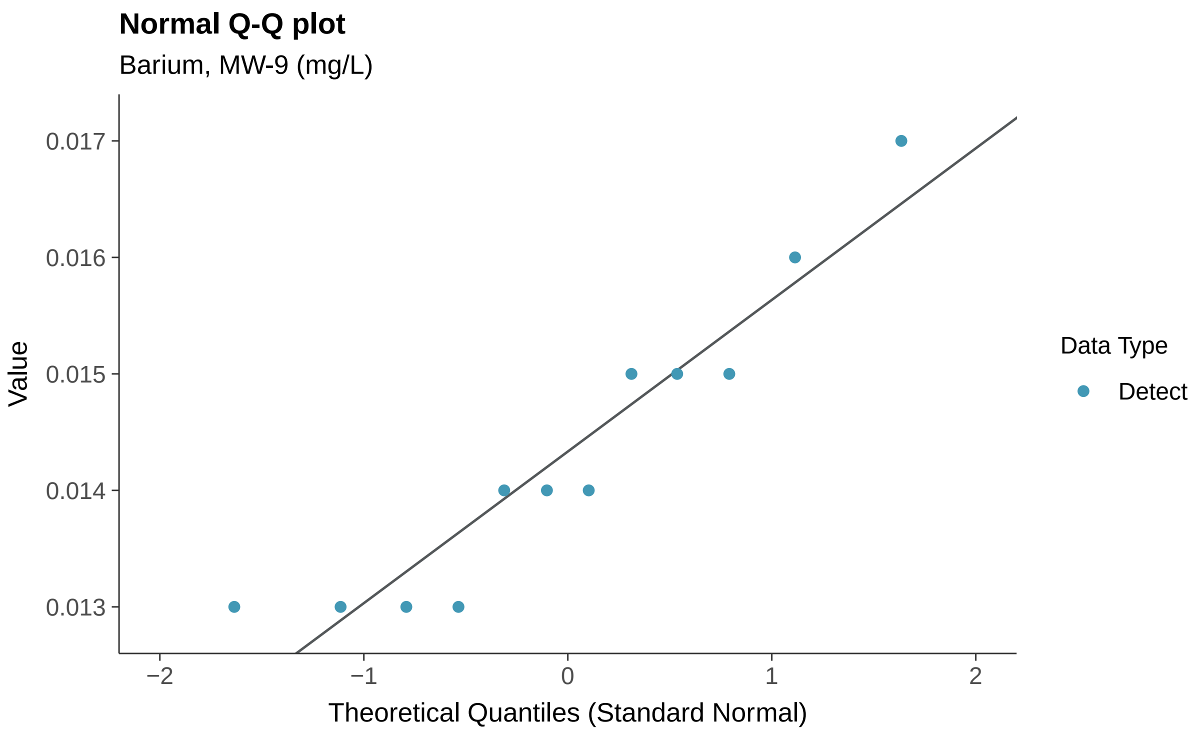
Barium, MW-9 (mg/L)

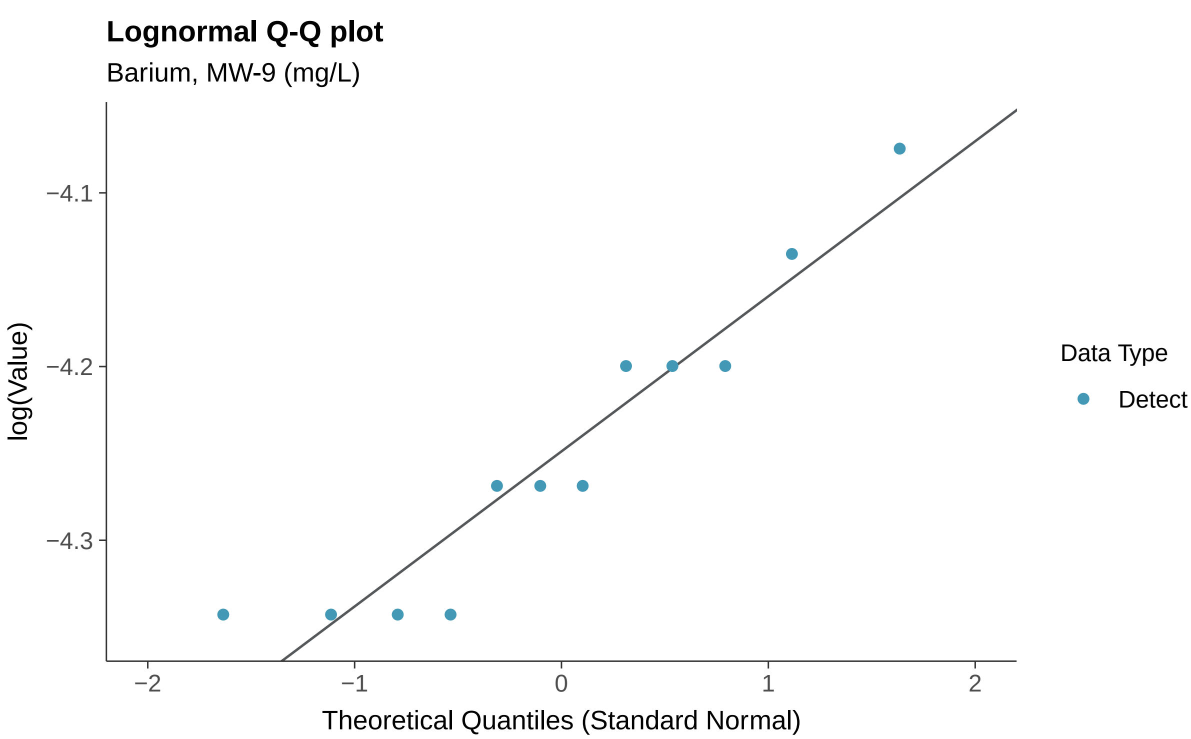


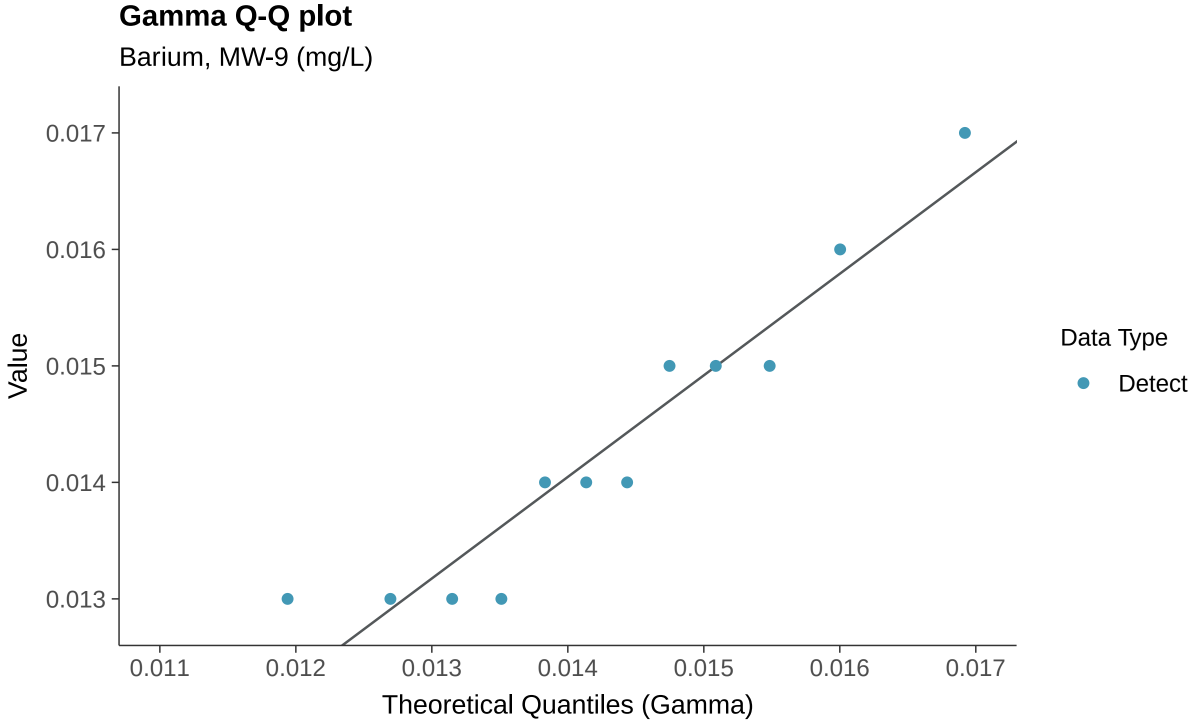
Boxplot by Season

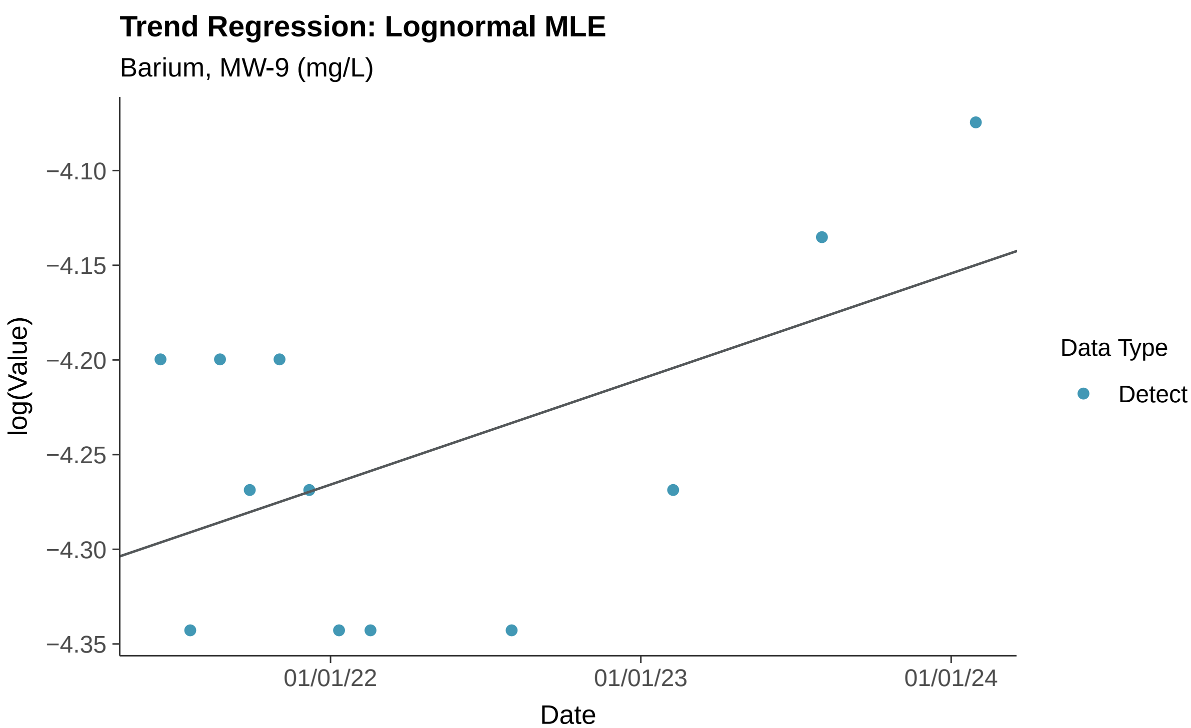
Barium, MW-9 (mg/L)

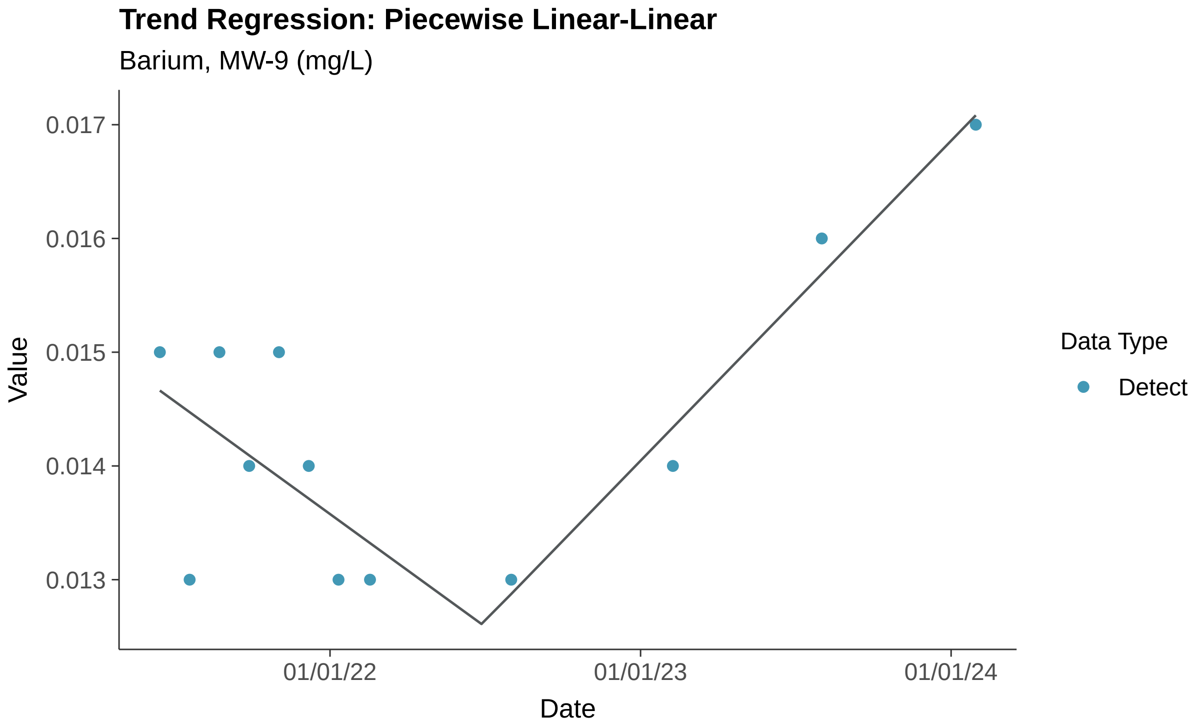


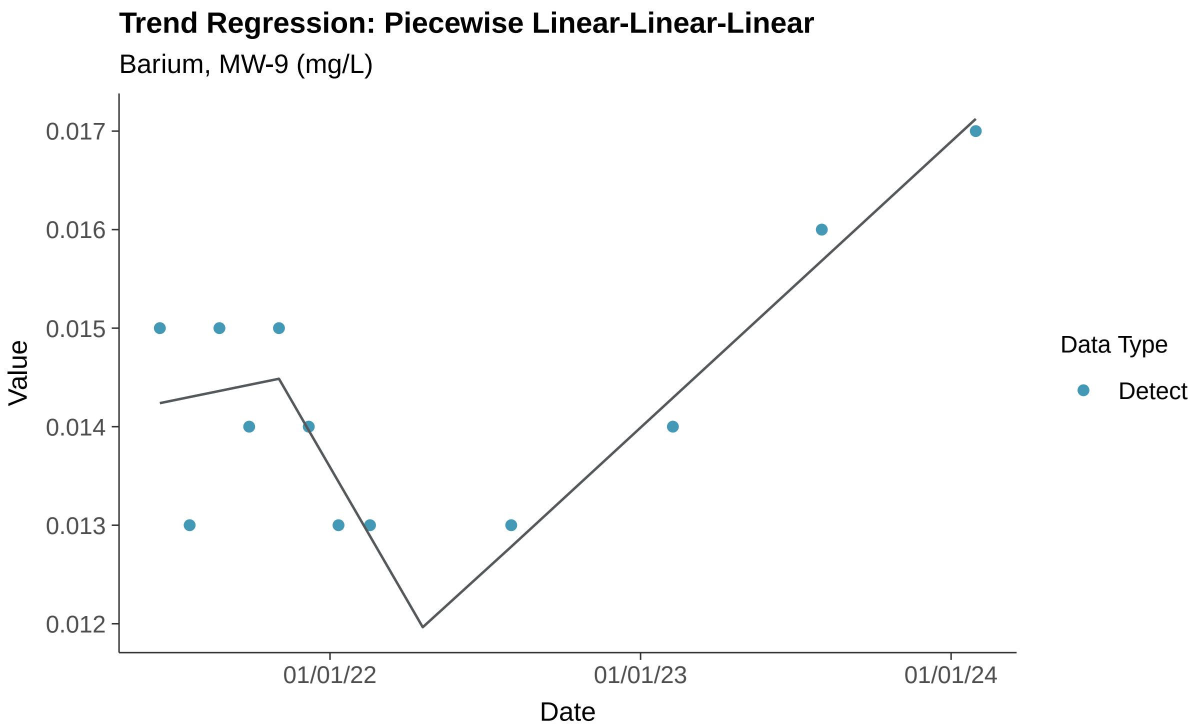

Normal Q-Q plot
Barium, MW-9 (mg/L)
Value
0.017
0.016
0.015
0.014
0.013
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-9 (mg/L)
log(Value)
−4.1
−4.2
−4.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Barium, MW-9 (mg/L)
Value
0.017
0.016
0.015
0.014
0.013
0.011
0.012
0.013
0.014
0.015
0.016
0.017
Theoretical Quantiles (Gamma)
Data Type
Detect

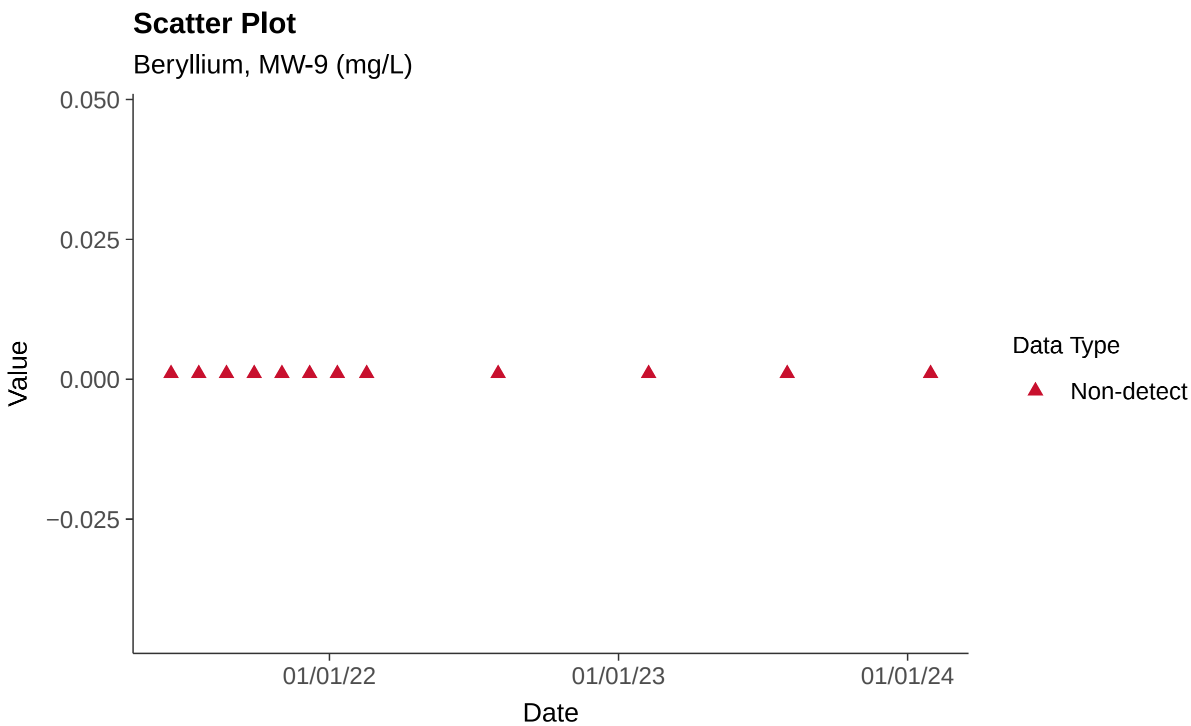

Trend Regression: Lognormal MLE
Barium, MW-9 (mg/L)
log(Value)
−4.10
−4.15
−4.20
−4.25
−4.30
−4.35
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

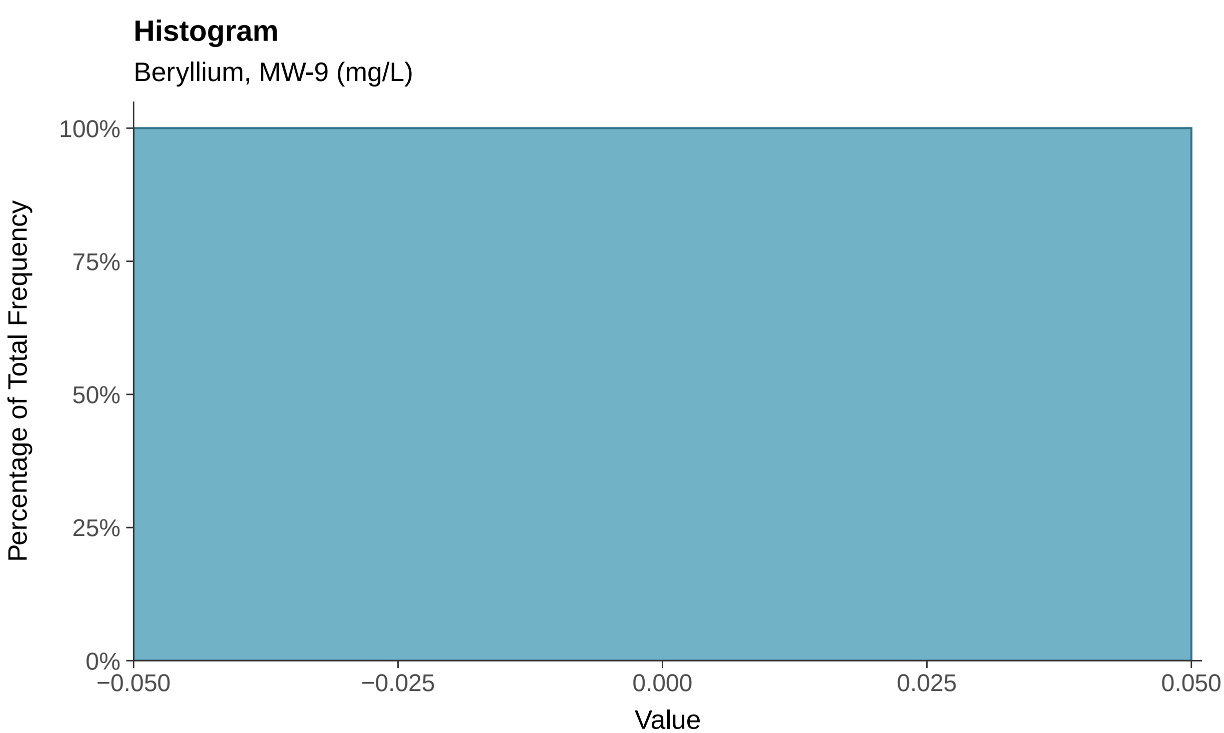

Trend Regression: Piecewise Linear-Linear
Barium, MW-9 (mg/L)
0.017
0.016
0.015
0.014
0.013
Value
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Barium, MW-9 (mg/L)
0.017
0.016
0.015
0.014
0.013
0.012
Value
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Beryllium, MW-9

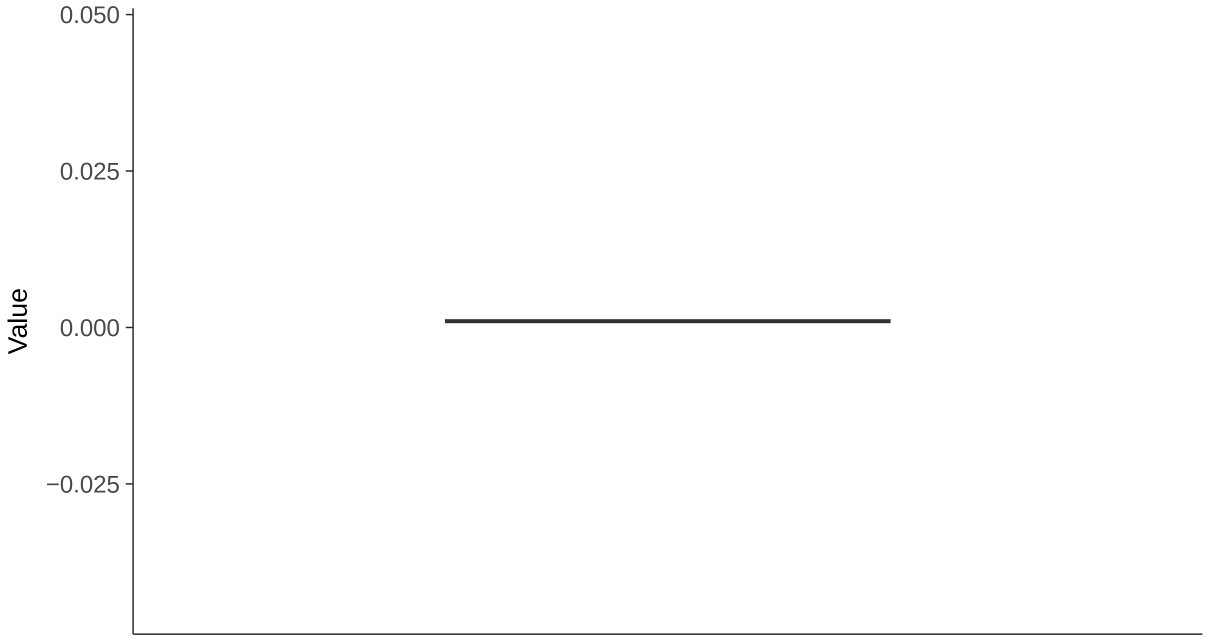
ID: 09_2_11





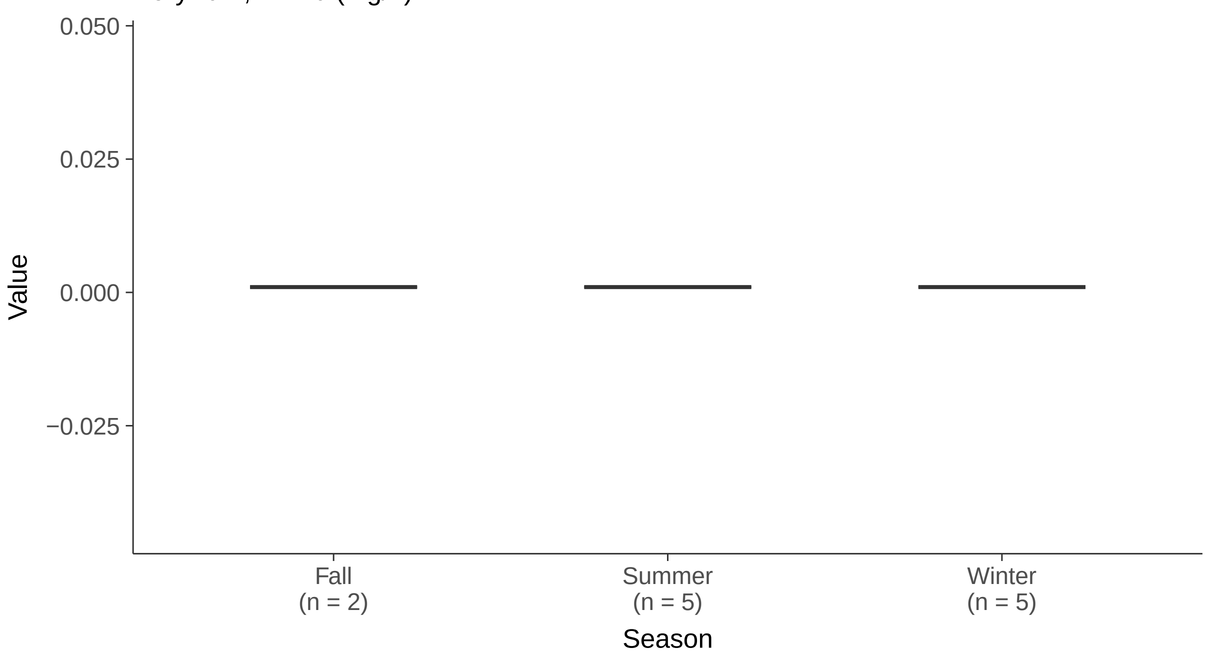
Boxplot

Beryllium, MW-9 (mg/L)



Boxplot by Season

Beryllium, MW-9 (mg/L)

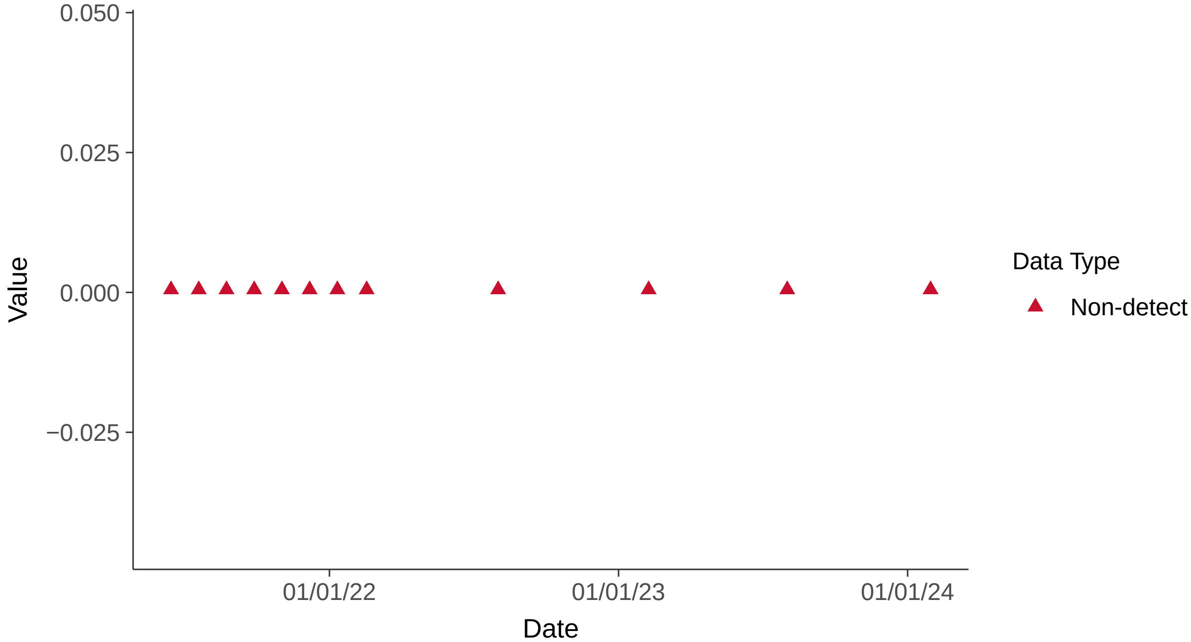


Appendix IV: Cadmium, MW-9

ID: 09_2_12

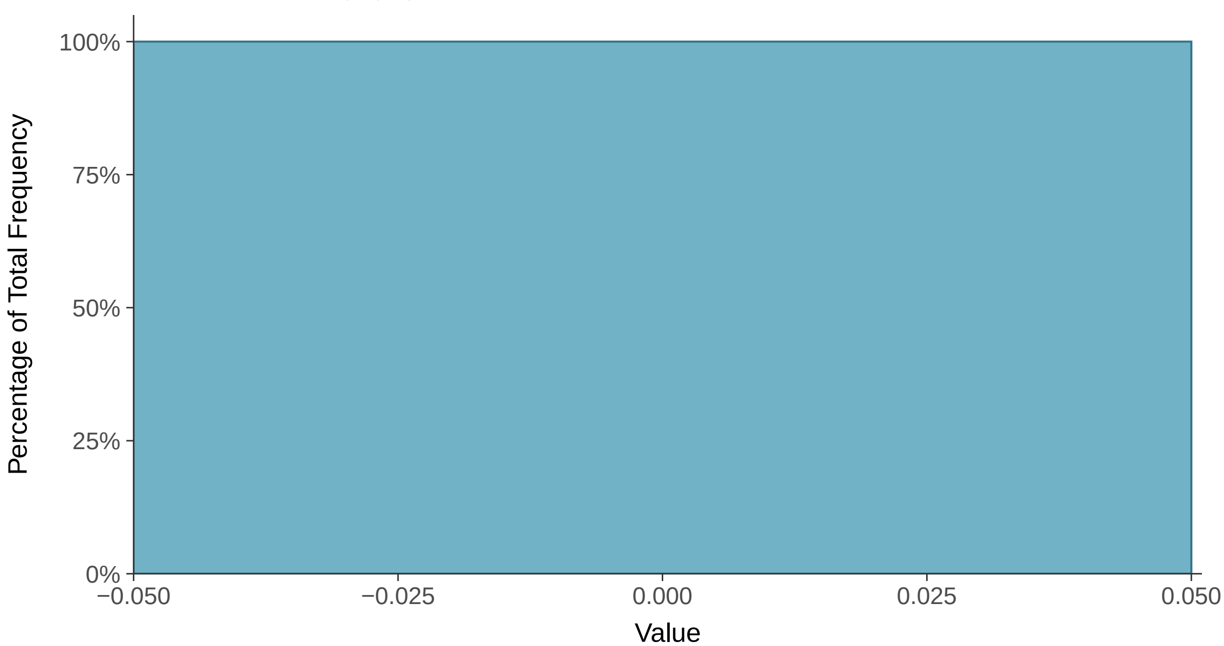
Scatter Plot

Cadmium, MW-9 (mg/L)



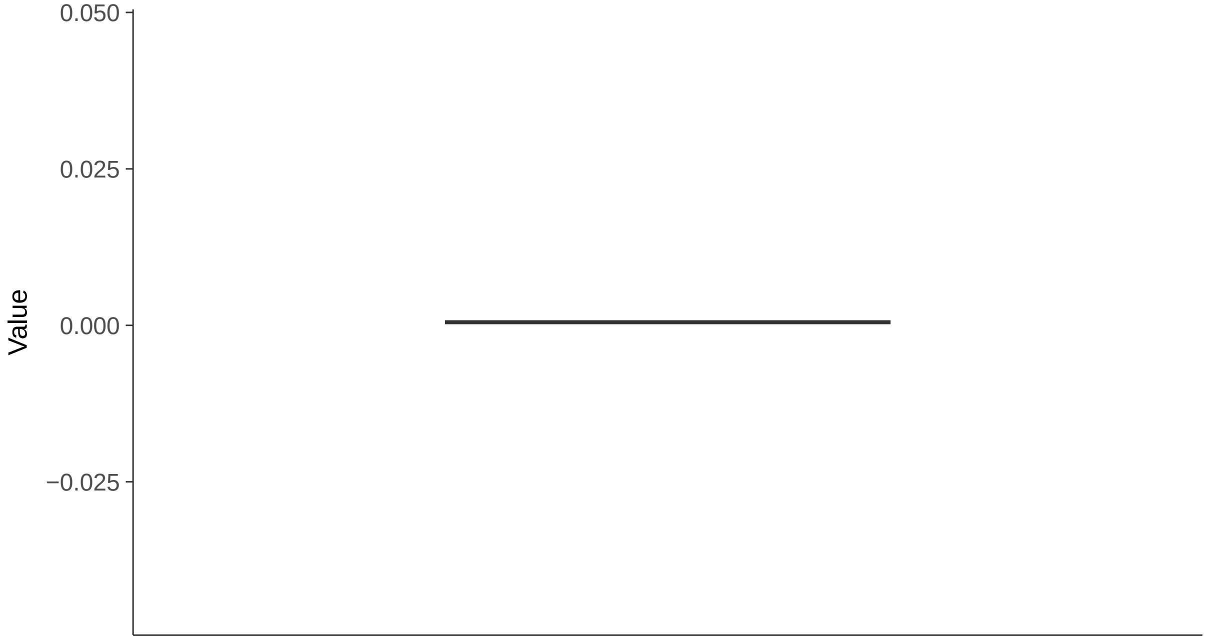
Histogram

Cadmium, MW-9 (mg/L)



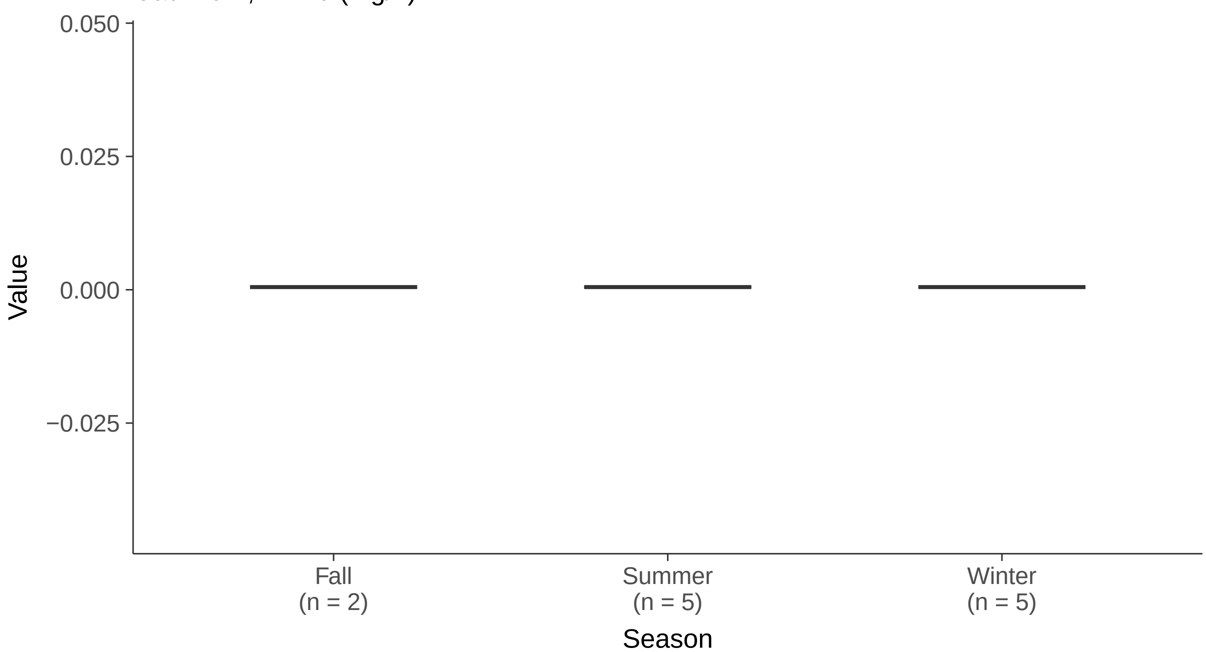
Boxplot

Cadmium, MW-9 (mg/L)



Boxplot by Season

Cadmium, MW-9 (mg/L)

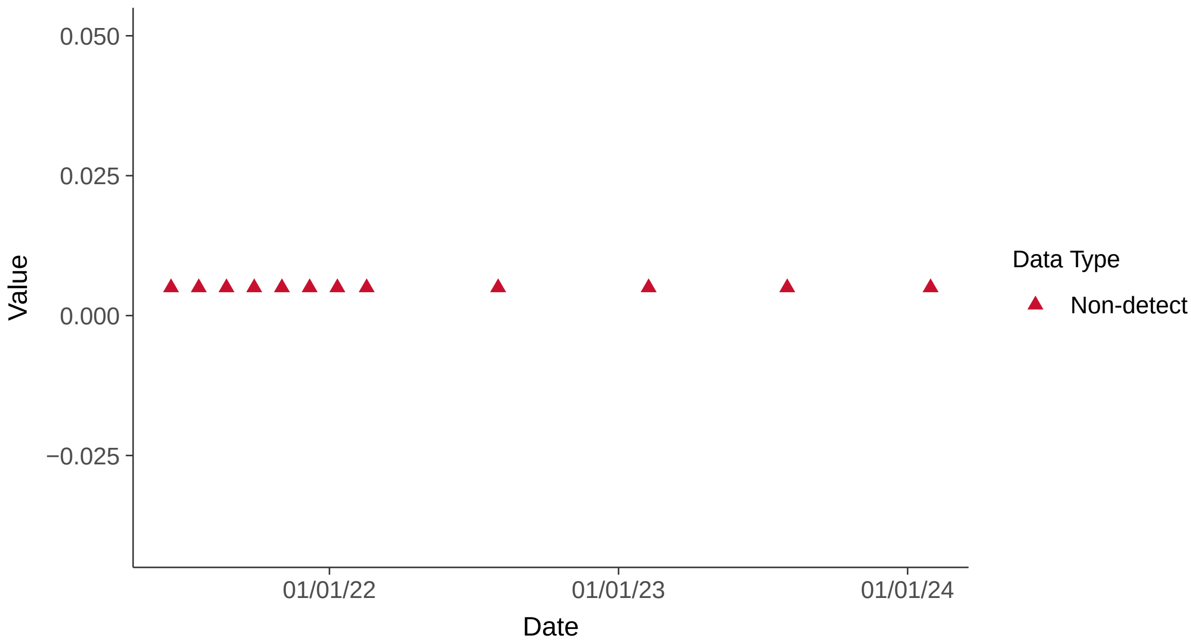


Appendix IV: Chromium, MW-9

ID: 09_2_13

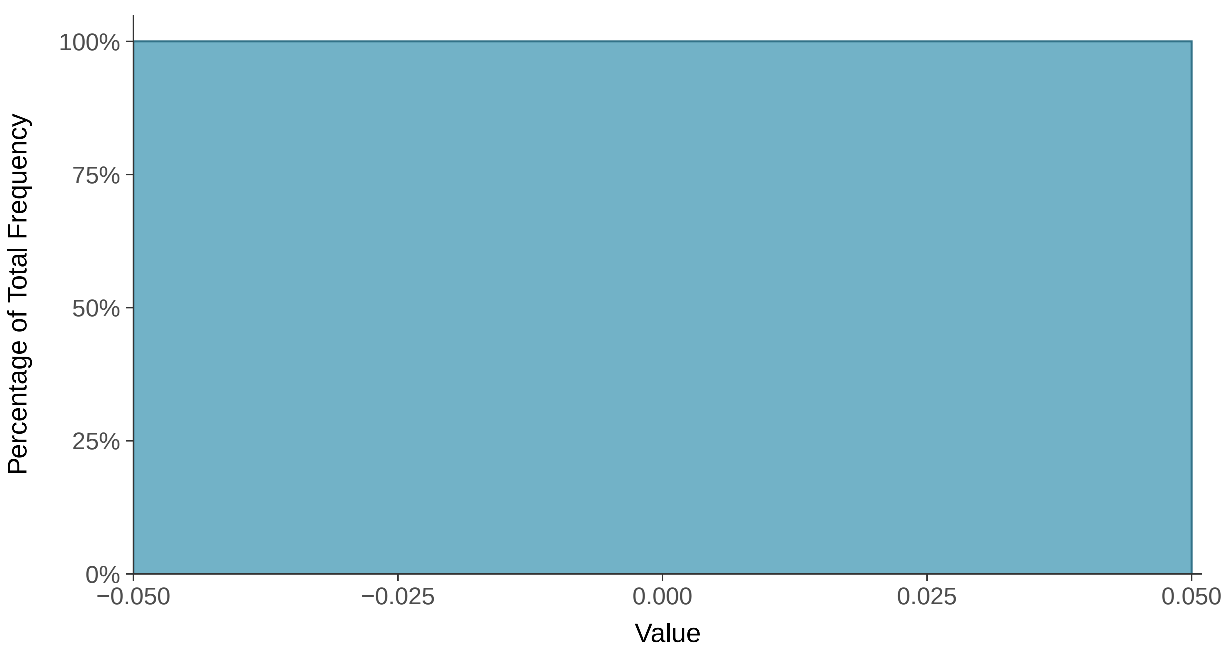
Scatter Plot

Chromium, MW-9 (mg/L)



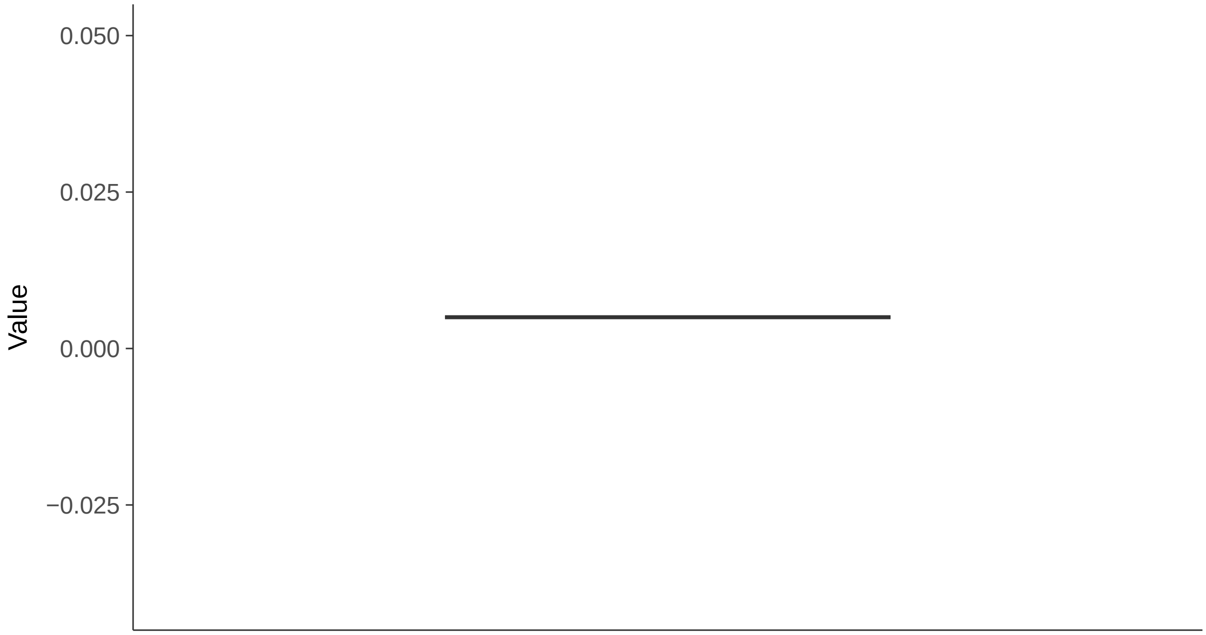
Histogram

Chromium, MW-9 (mg/L)



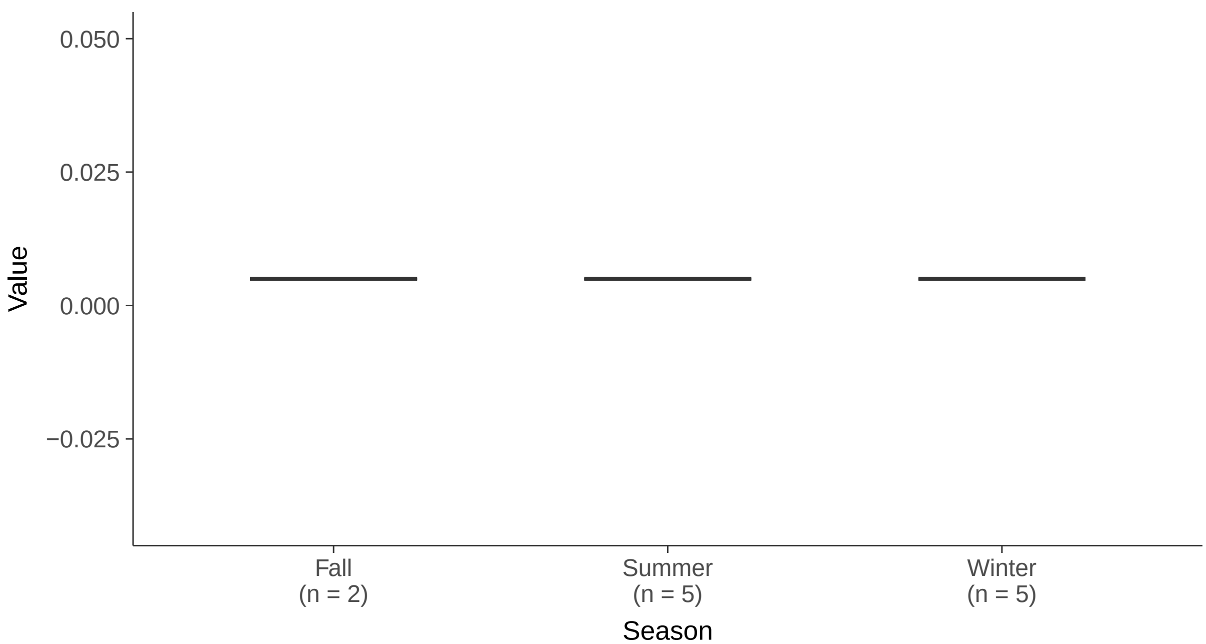
Boxplot

Chromium, MW-9 (mg/L)



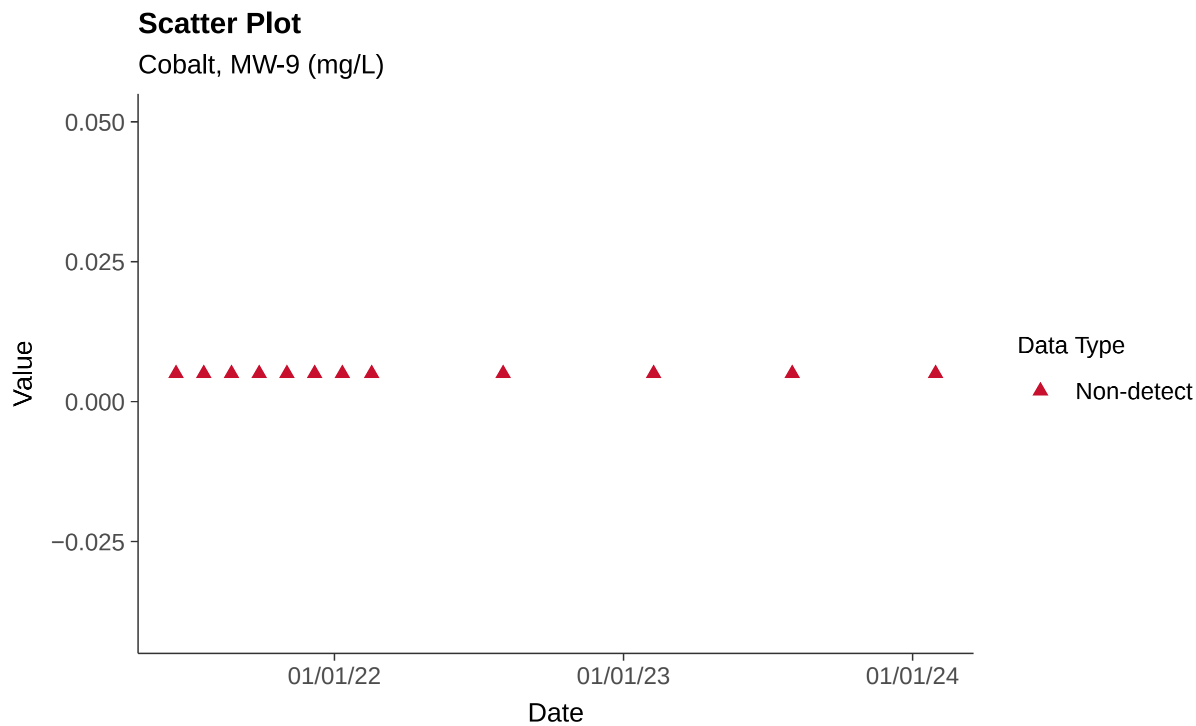
Boxplot by Season

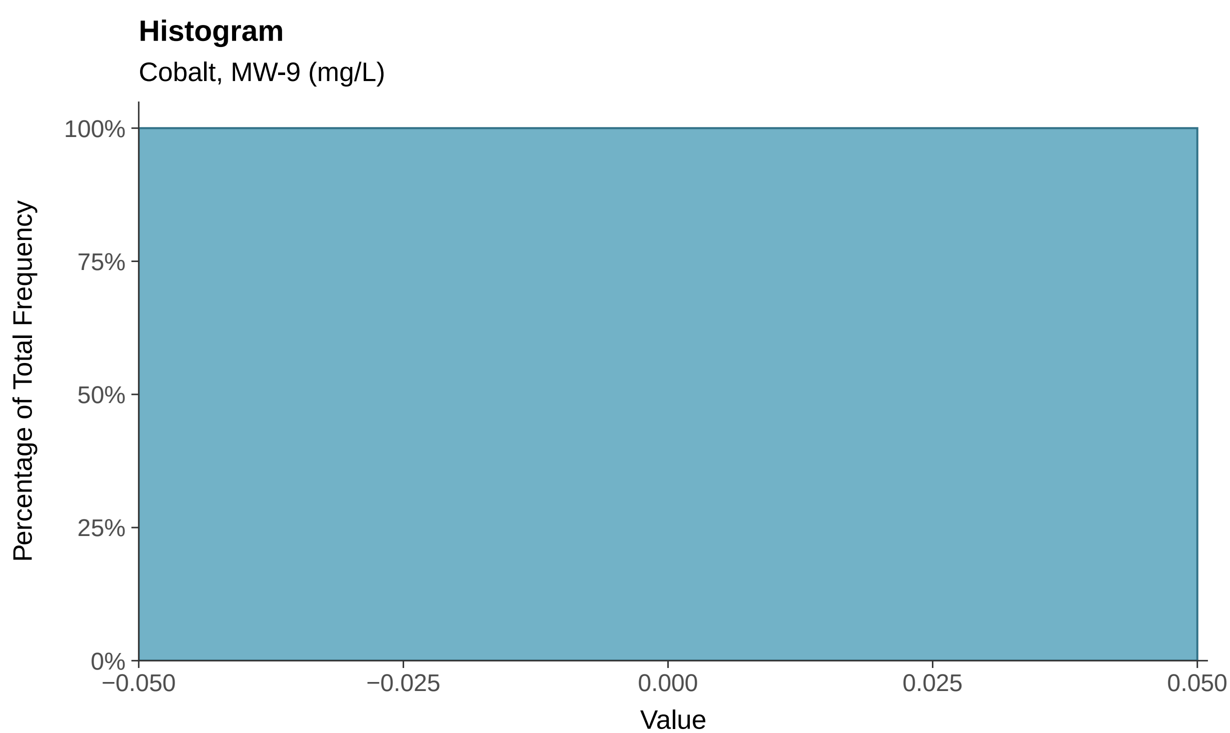
Chromium, MW-9 (mg/L)



Appendix IV: Cobalt, MW-9

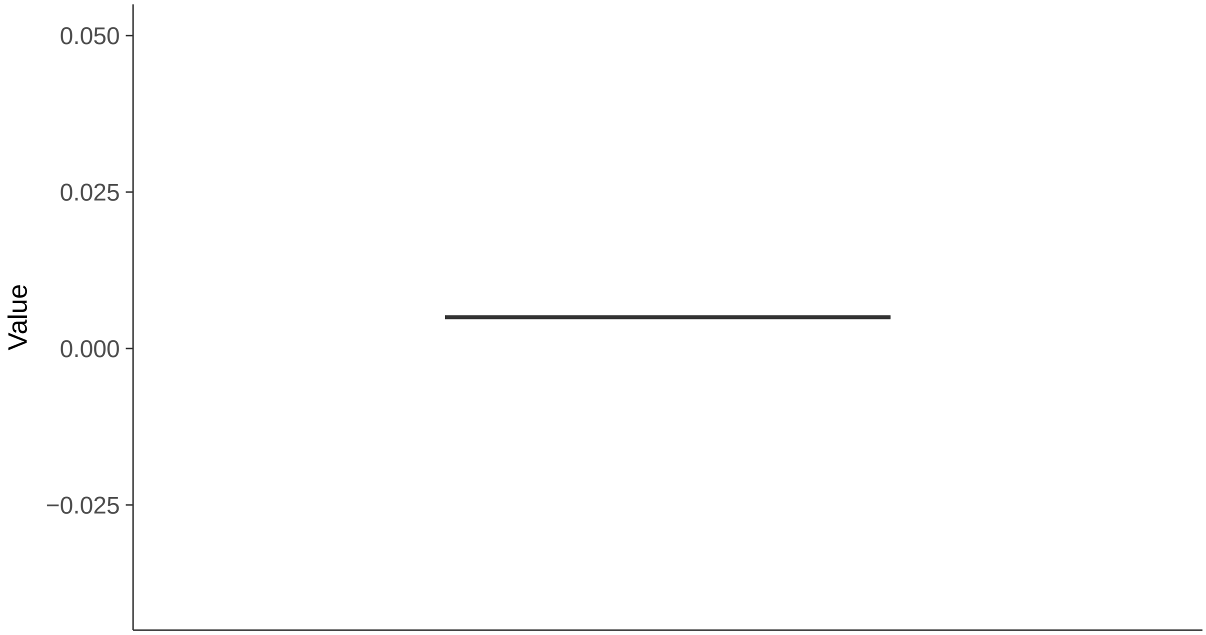
ID: 09_2_14





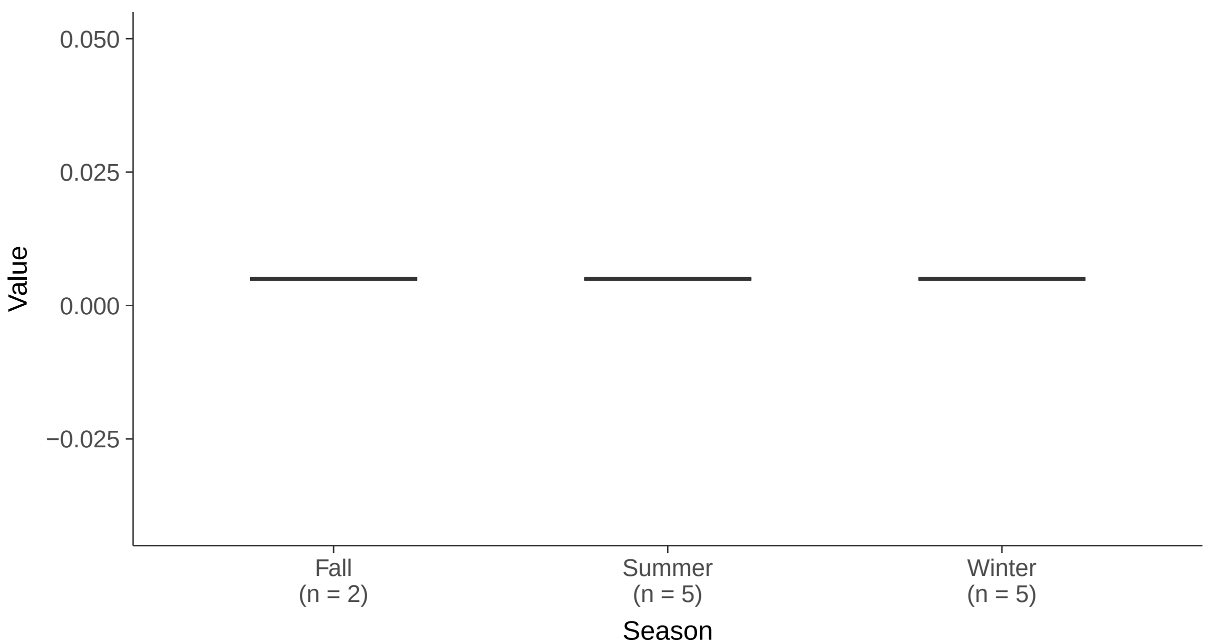
Boxplot

Cobalt, MW-9 (mg/L)



Boxplot by Season

Cobalt, MW-9 (mg/L)

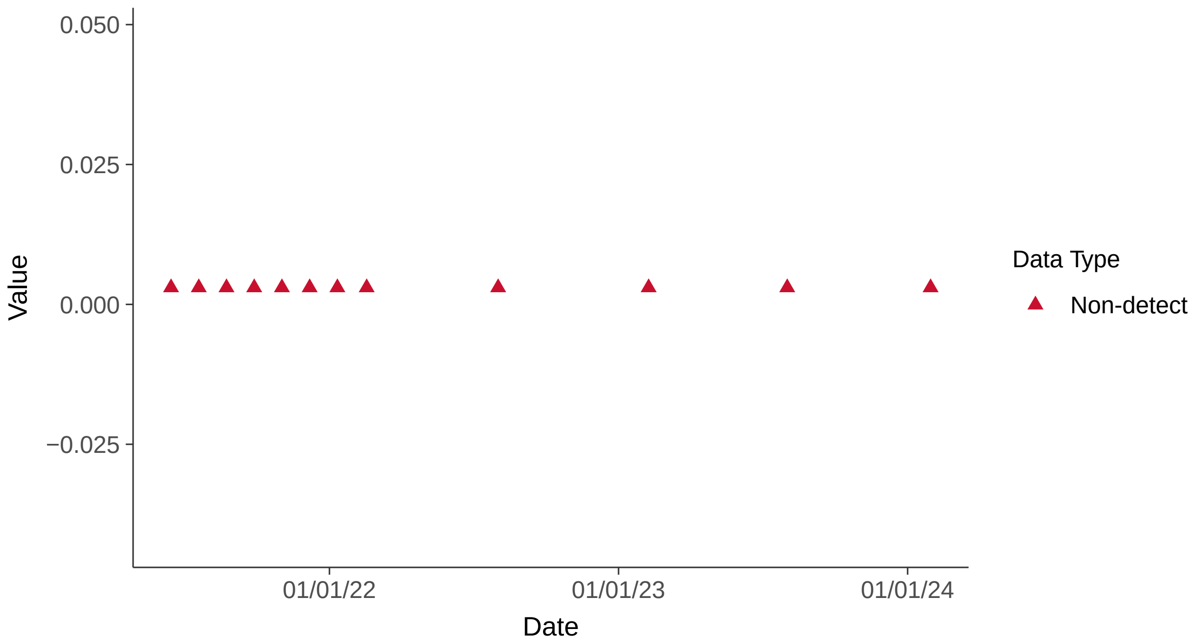


Appendix IV: Lead, MW-9

ID: 09_2_15

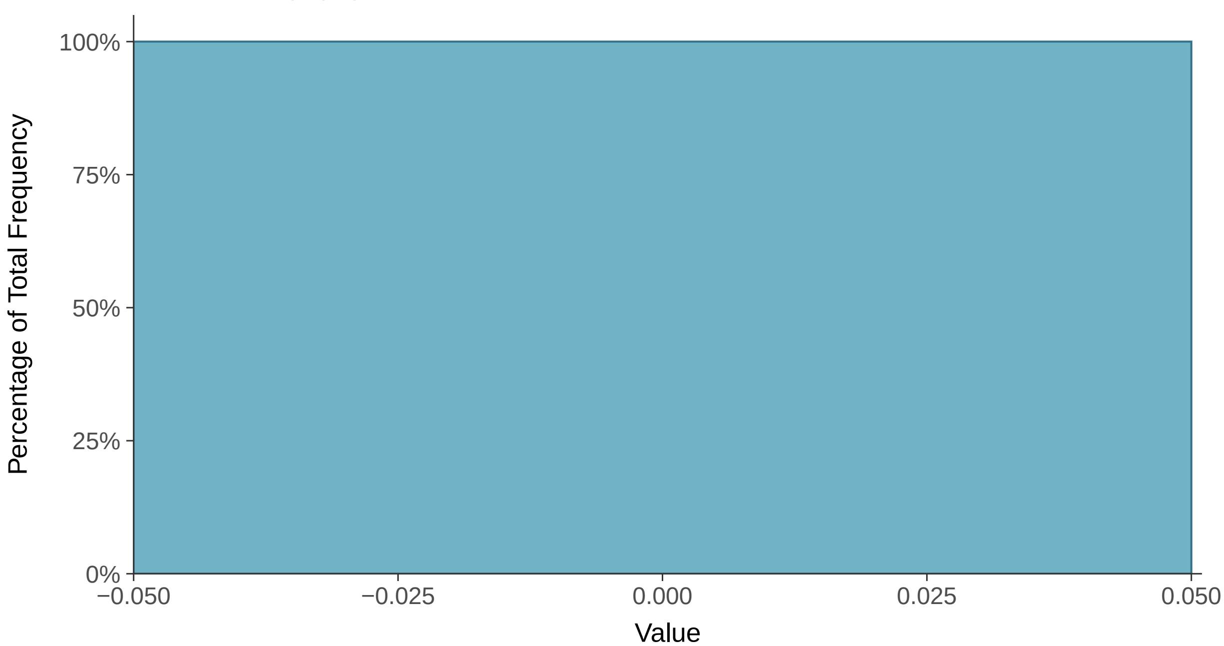
Scatter Plot

Lead, MW-9 (mg/L)



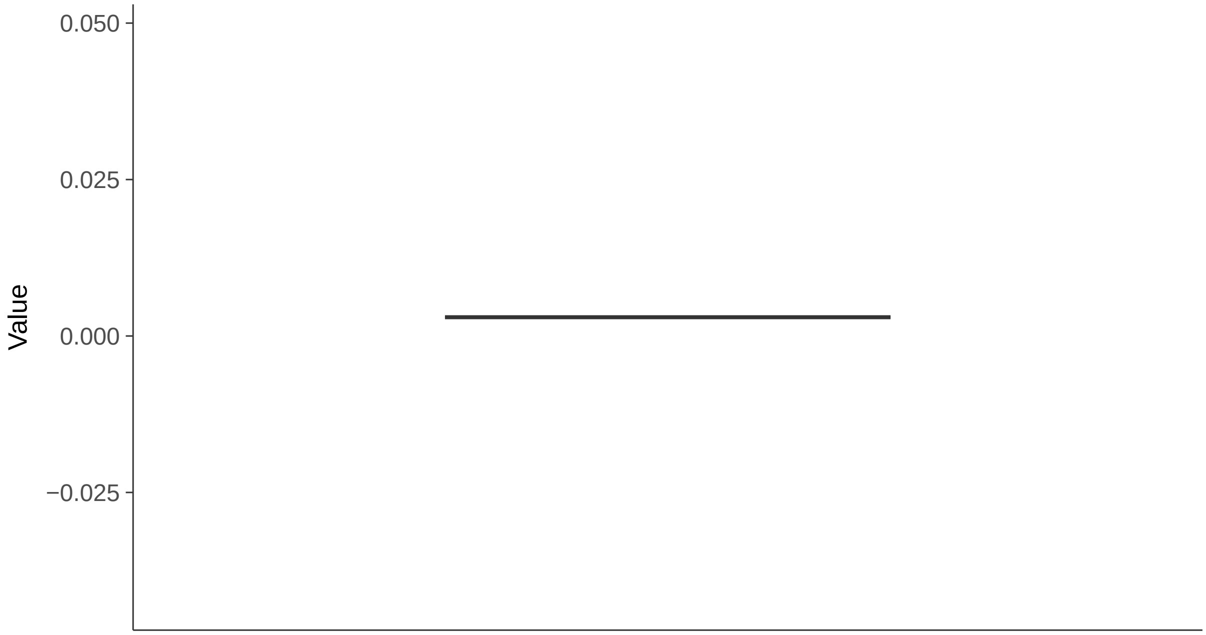
Histogram

Lead, MW-9 (mg/L)



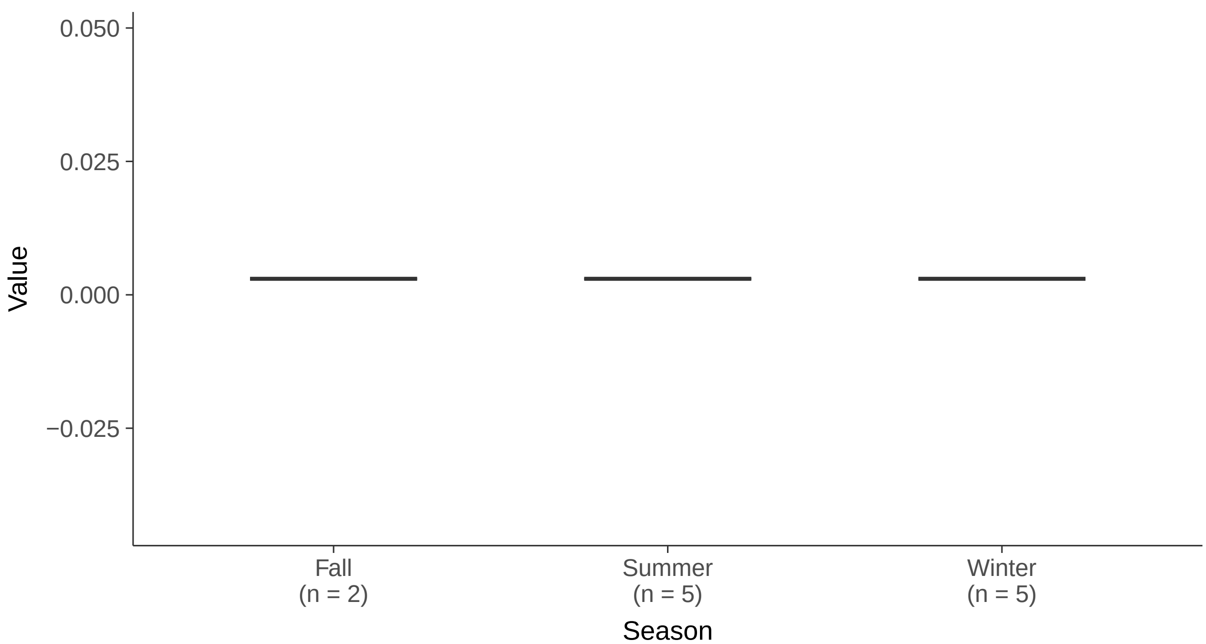
Boxplot

Lead, MW-9 (mg/L)



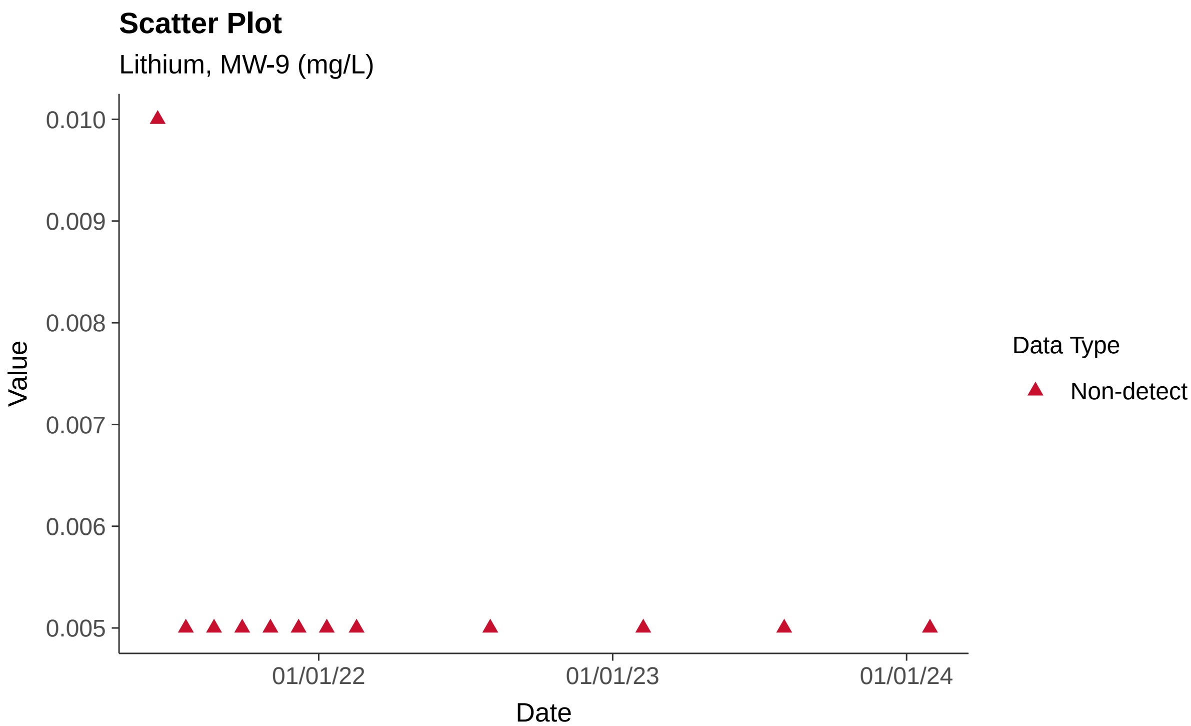
Boxplot by Season

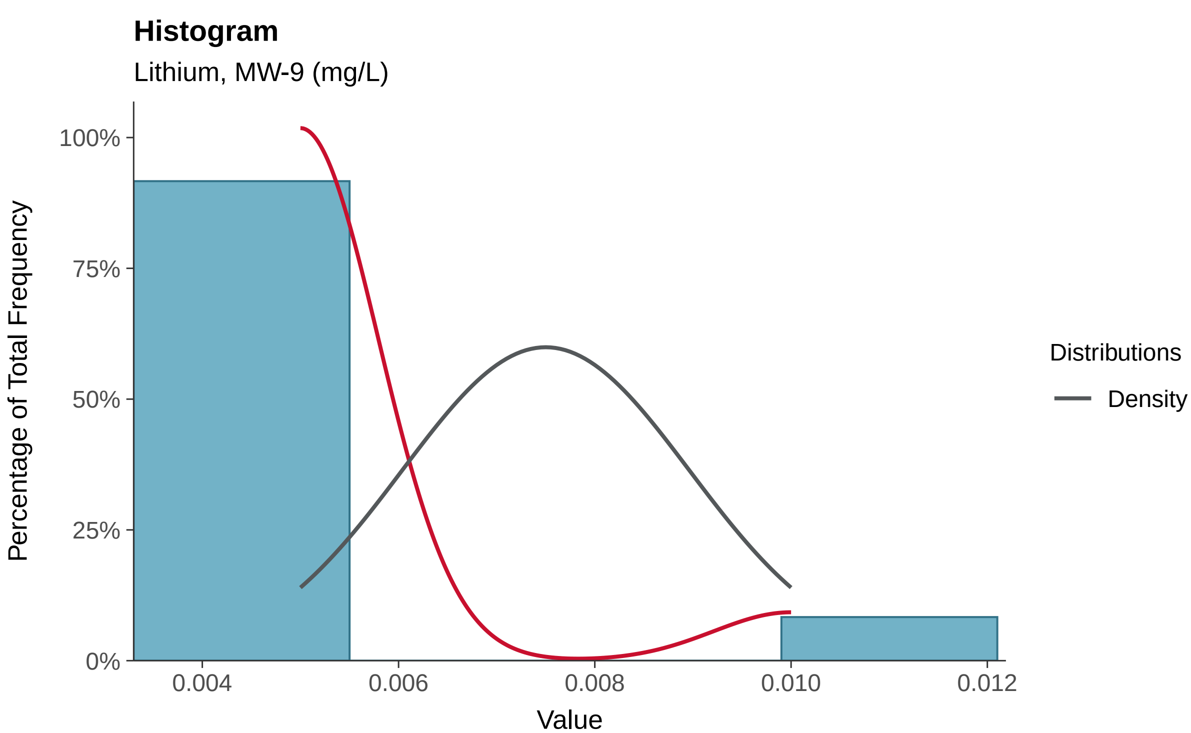
Lead, MW-9 (mg/L)



Appendix IV: Lithium, MW-9

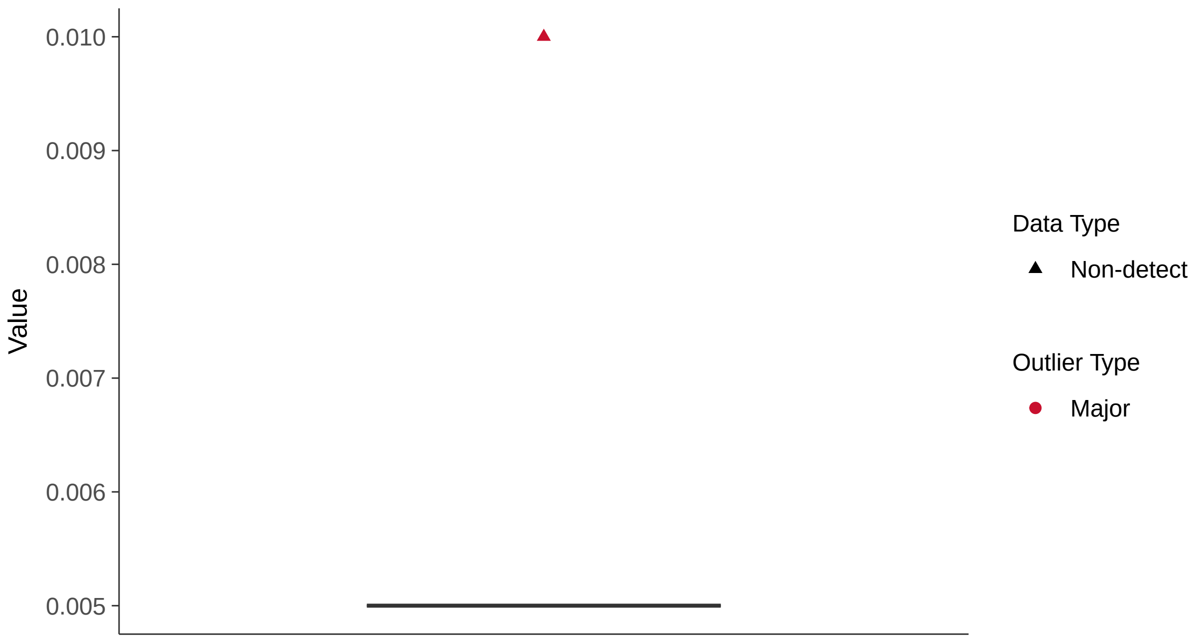
ID: 09_2_16





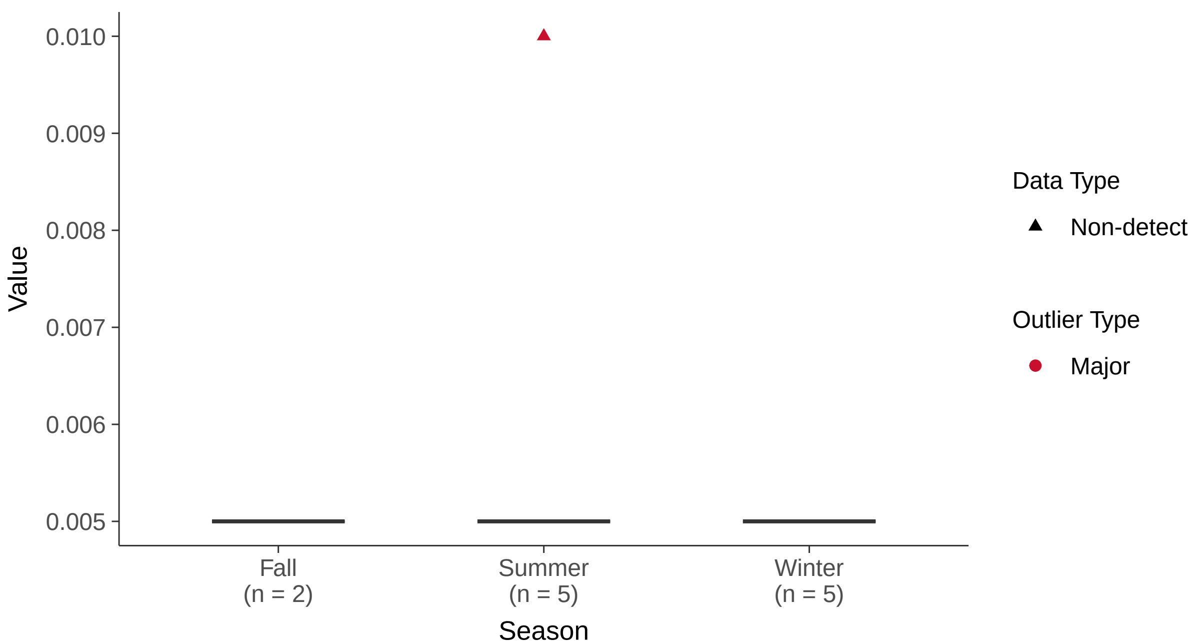
Boxplot

Lithium, MW-9 (mg/L)



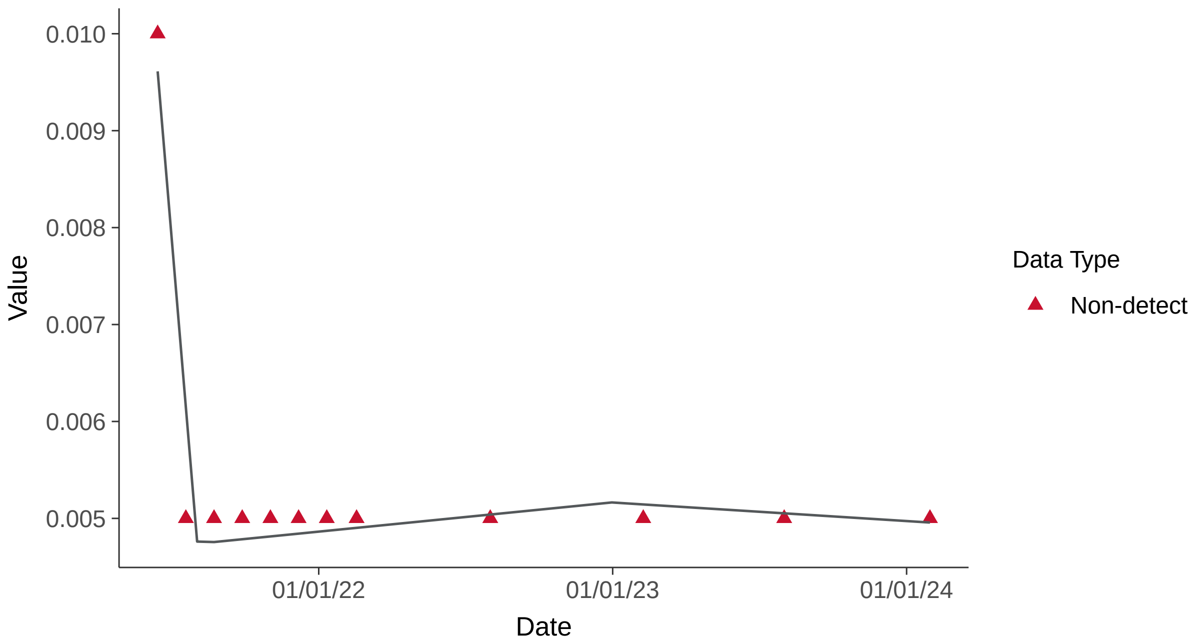
Boxplot by Season

Lithium, MW-9 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lithium, MW-9 (mg/L)

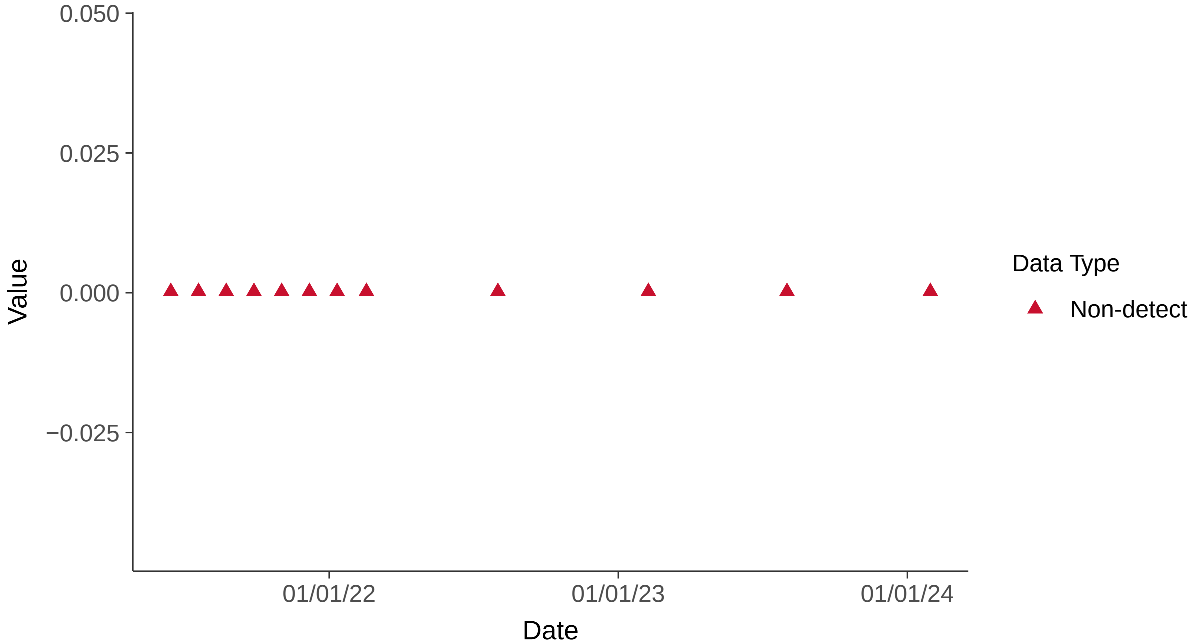


Appendix IV: Mercury, MW-9

ID: 09_2_17

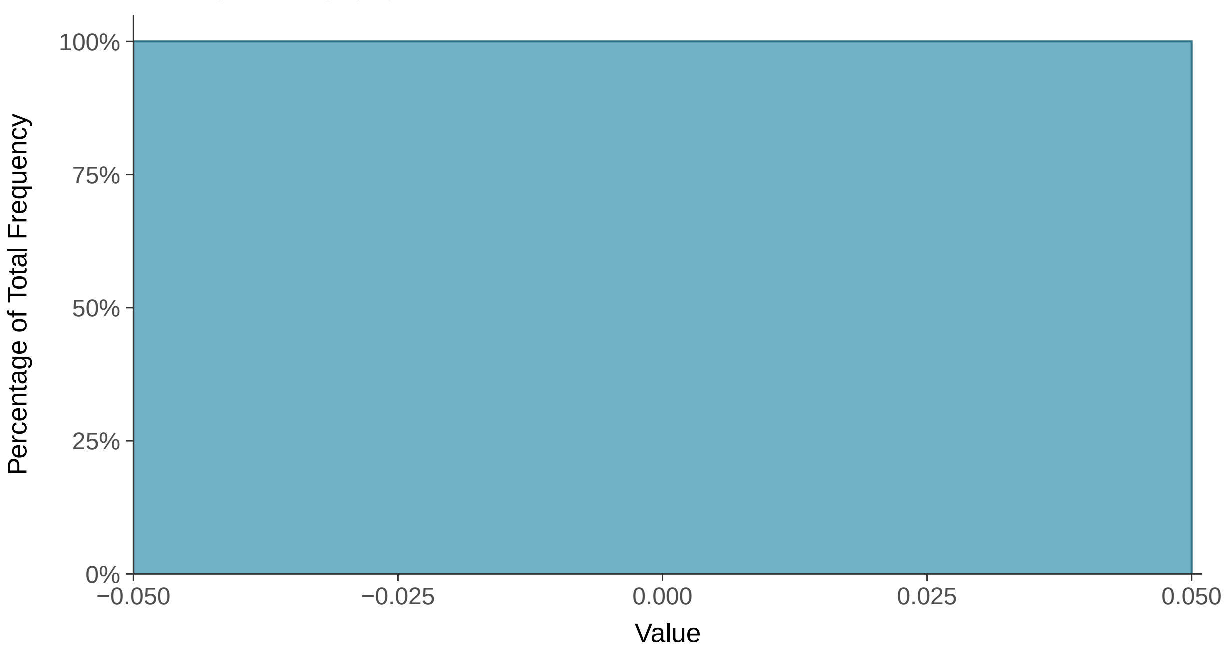
Scatter Plot

Mercury, MW-9 (mg/L)



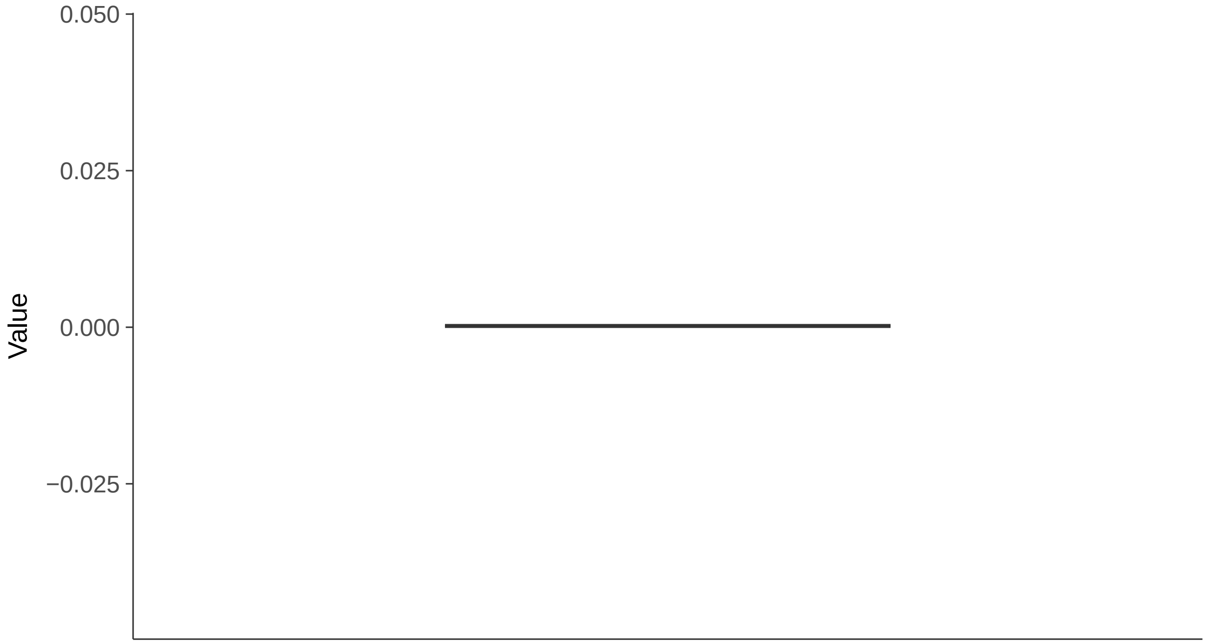
Histogram

Mercury, MW-9 (mg/L)



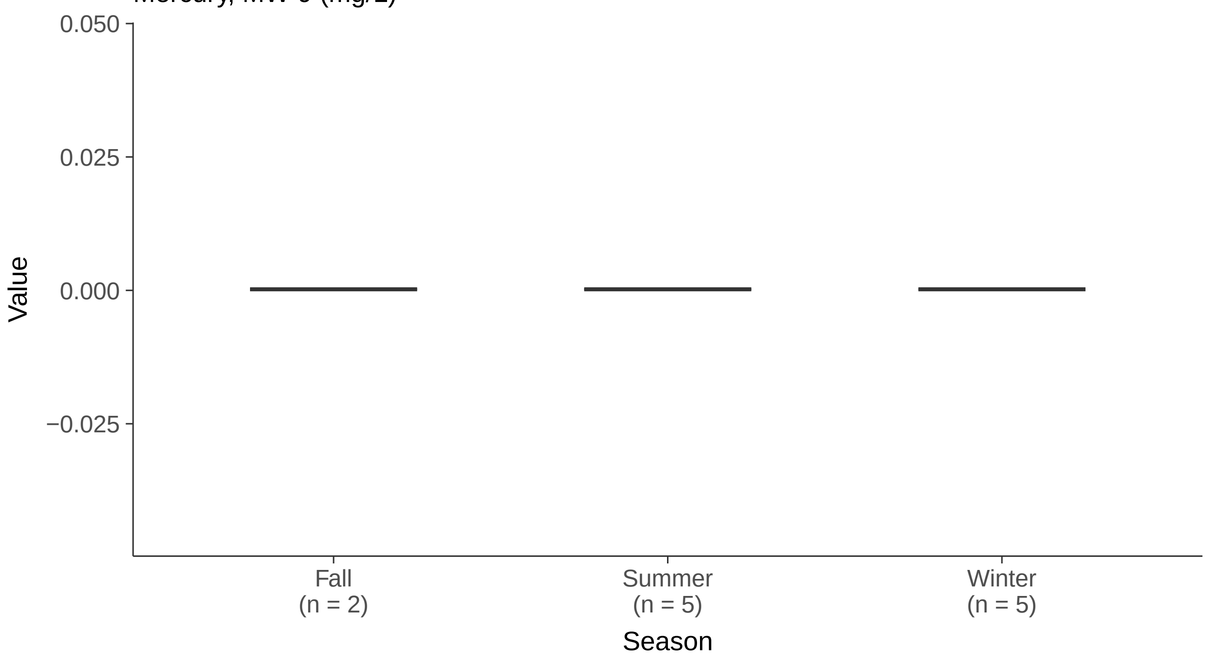
Boxplot

Mercury, MW-9 (mg/L)



Boxplot by Season

Mercury, MW-9 (mg/L)

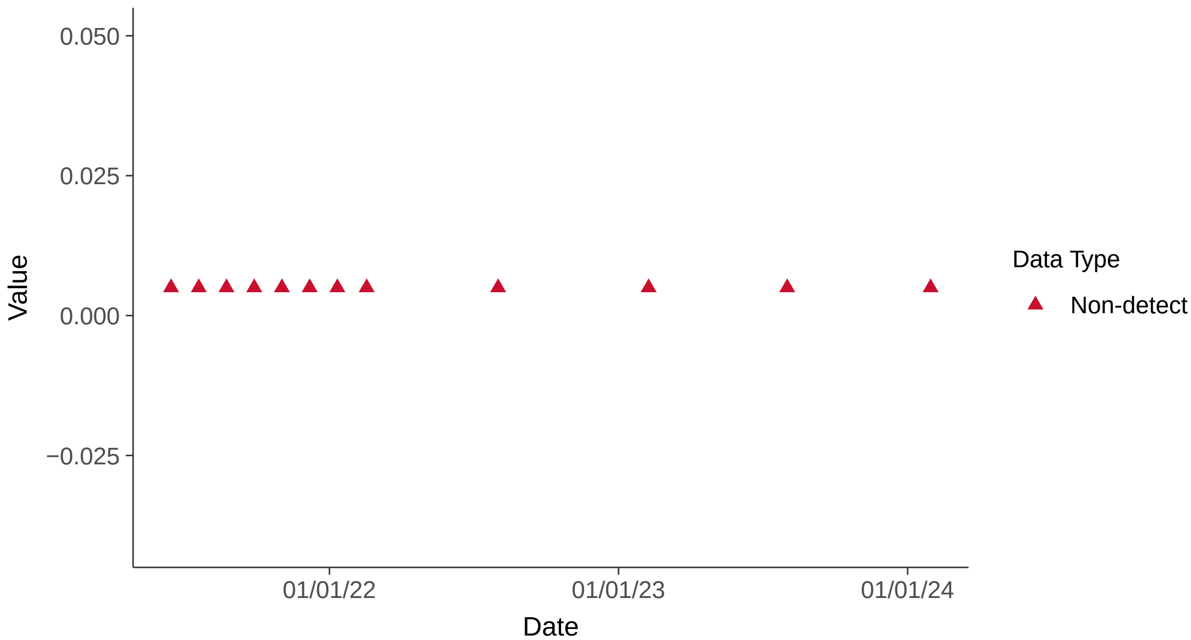


Appendix IV: Molybdenum, MW-9

ID: 09_2_18

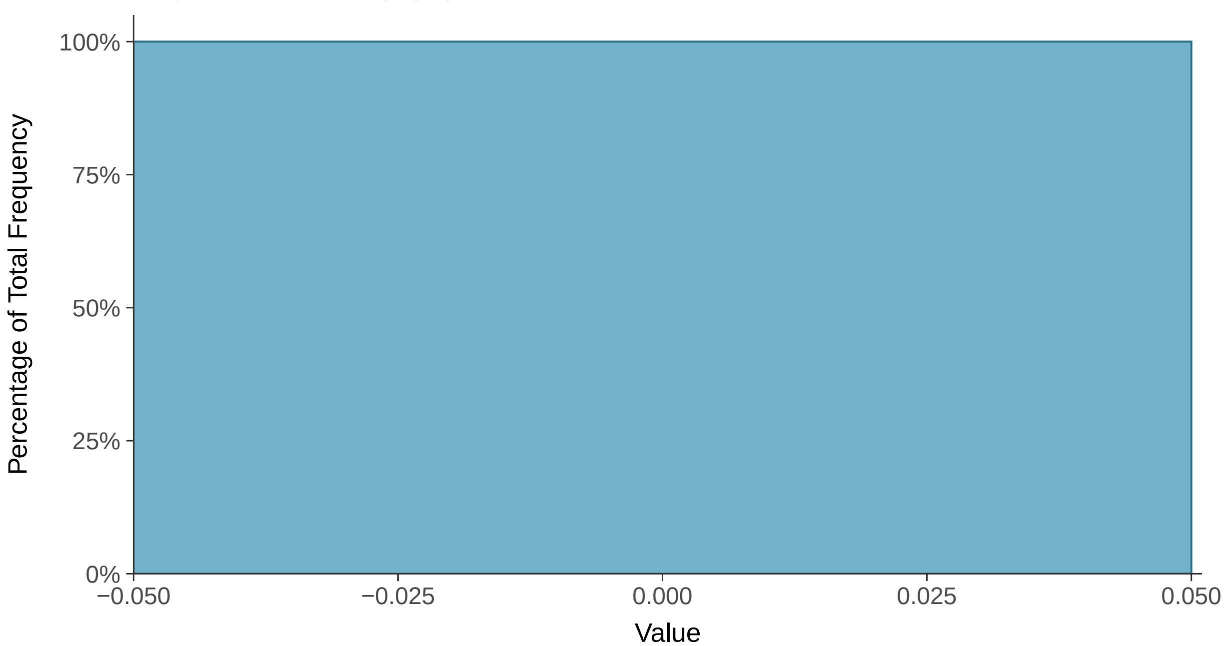
Scatter Plot

Molybdenum, MW-9 (mg/L)



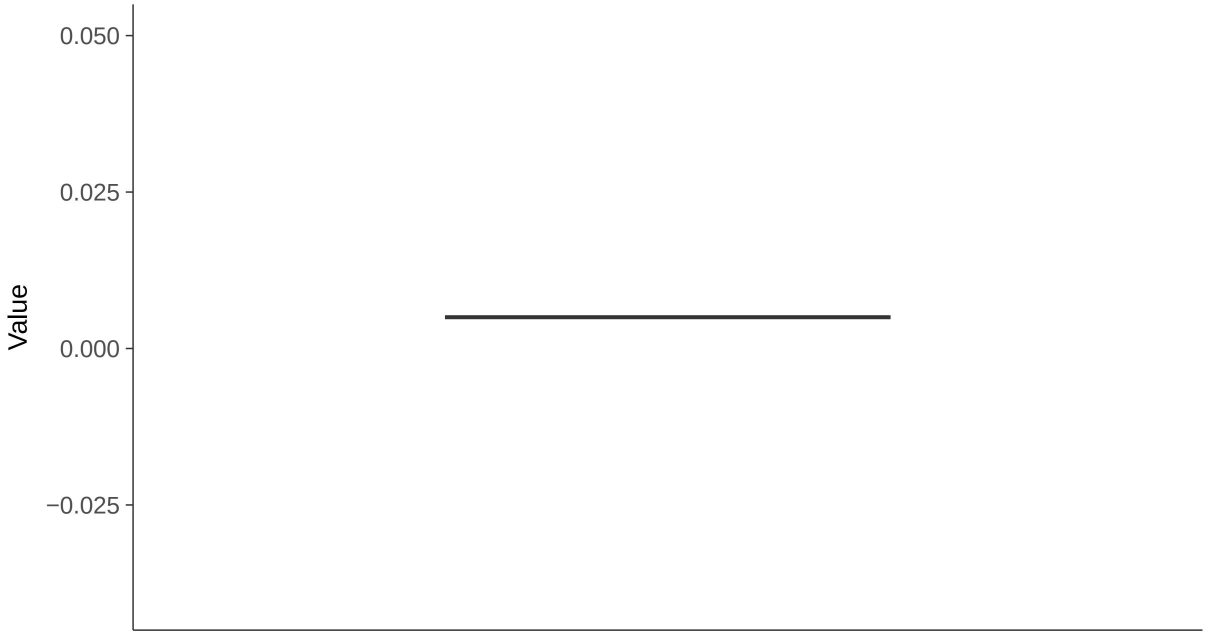
Histogram

Molybdenum, MW-9 (mg/L)



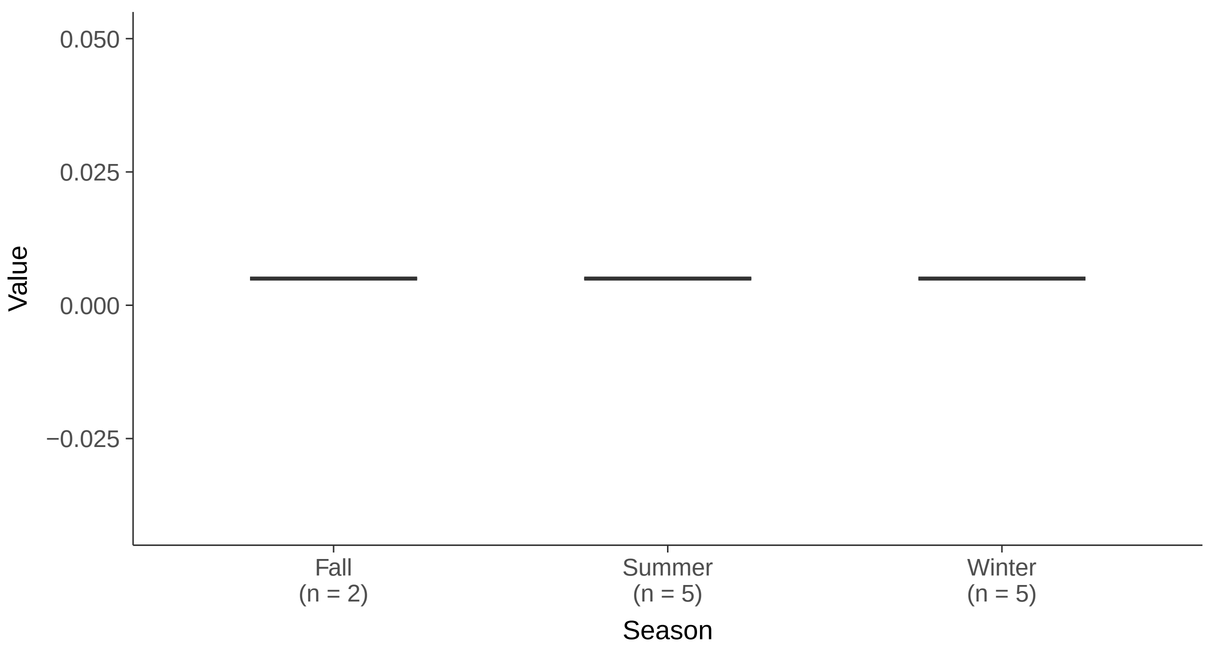
Boxplot

Molybdenum, MW-9 (mg/L)



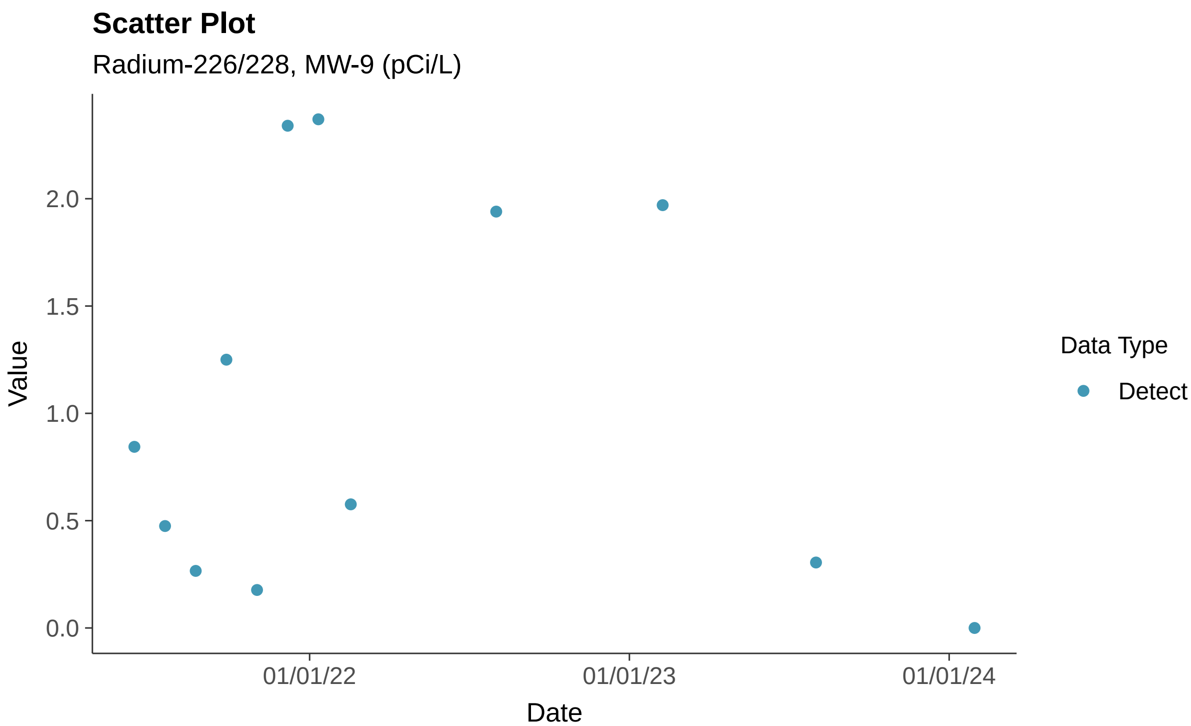
Boxplot by Season

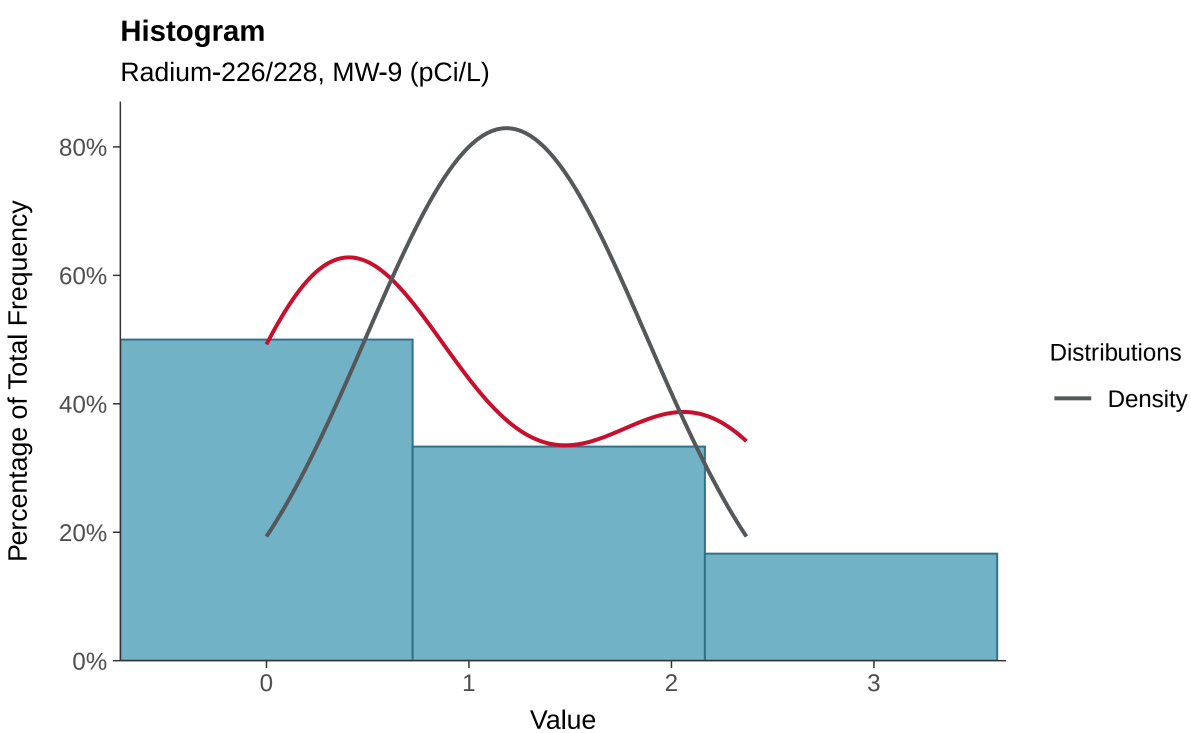
Molybdenum, MW-9 (mg/L)



Appendix IV: Radium-226/228, MW-9

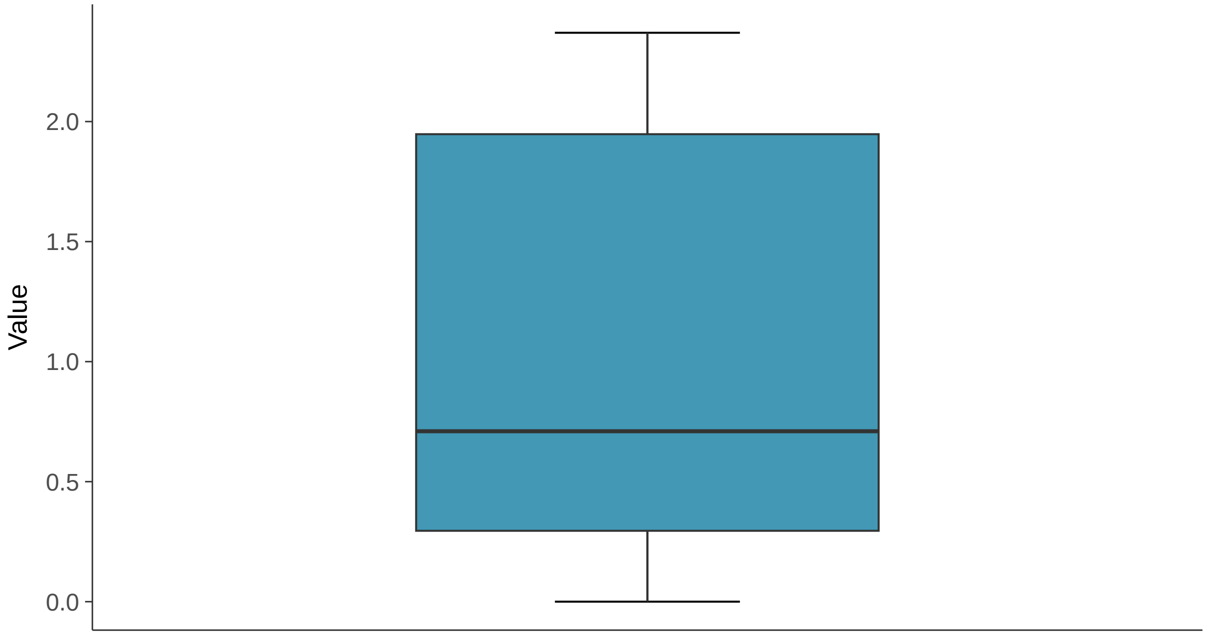
ID: 09_2_20





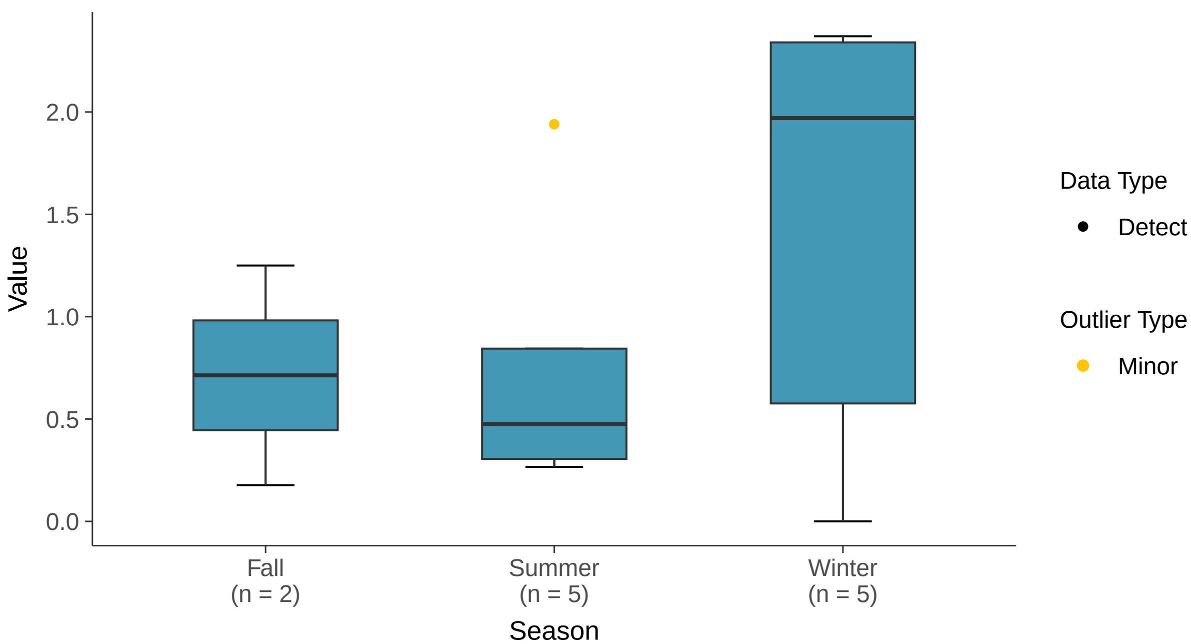
Boxplot

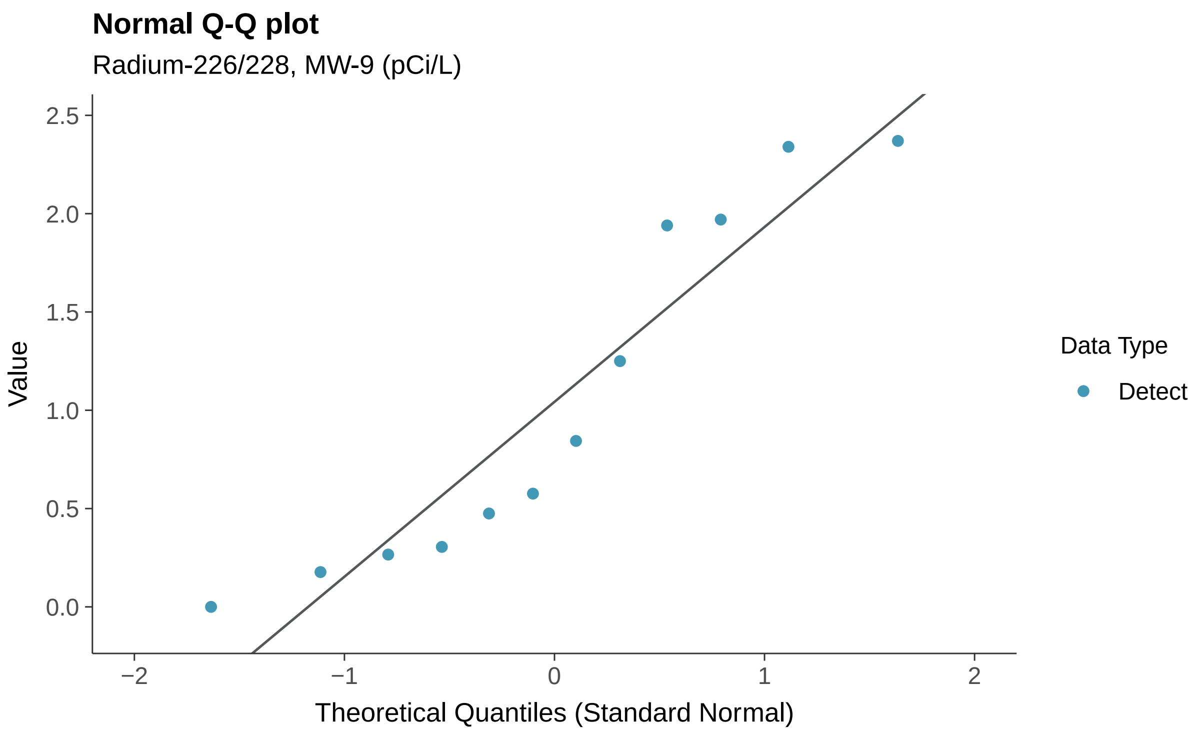
Radium-226/228, MW-9 (pCi/L)

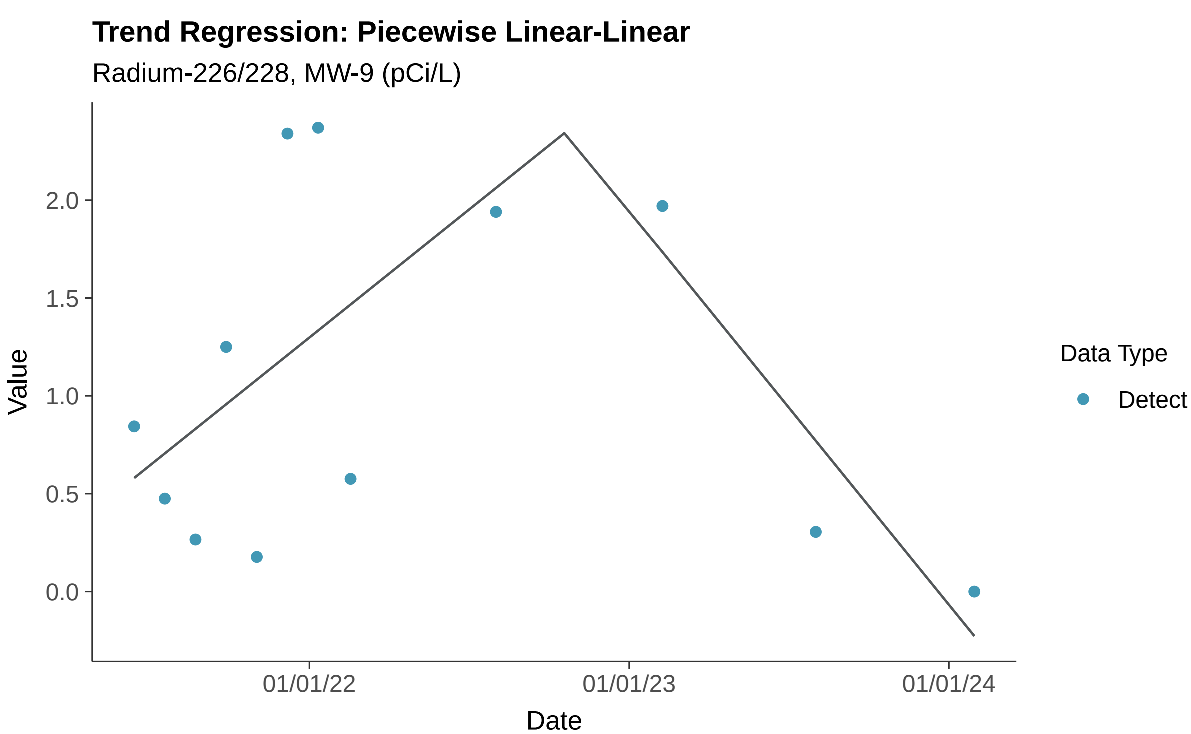


Boxplot by Season

Radium-226/228, MW-9 (pCi/L)

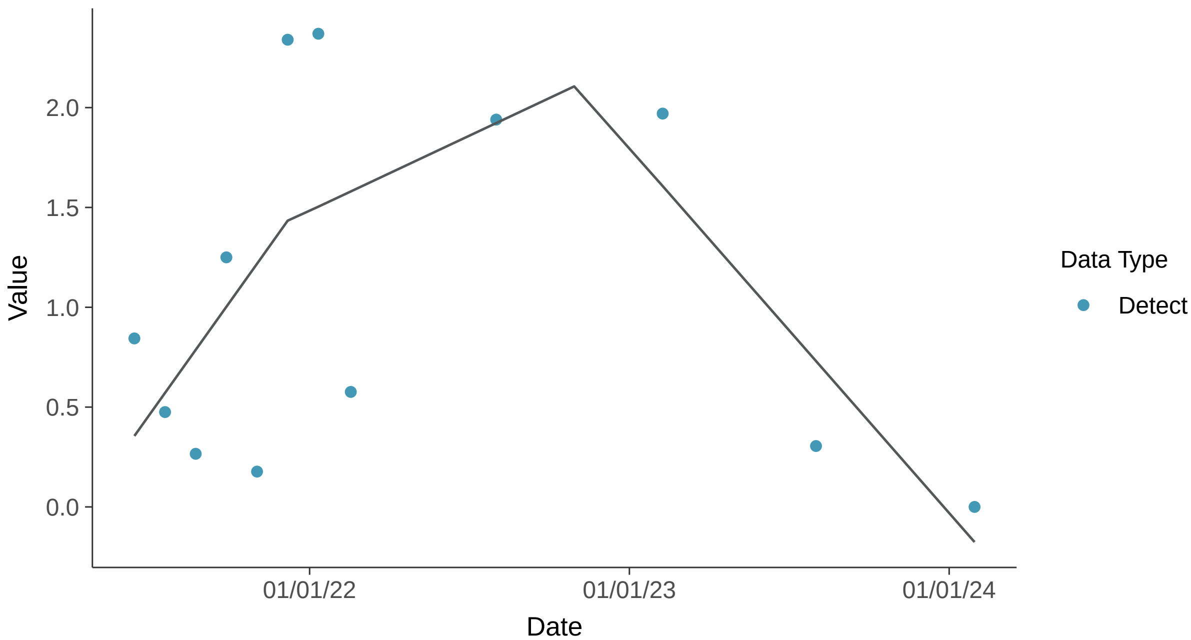



Normal Q-Q plot
Radium-226/228, MW-9 (pCi/L)
Value
2.5
2.0
1.5
1.0
0.5
0.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Radium-226/228, MW-9 (pCi/L)
Value
2.0
1.5
1.0
0.5
0.0
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear-Linear

Radium-226/228, MW-9 (pCi/L)

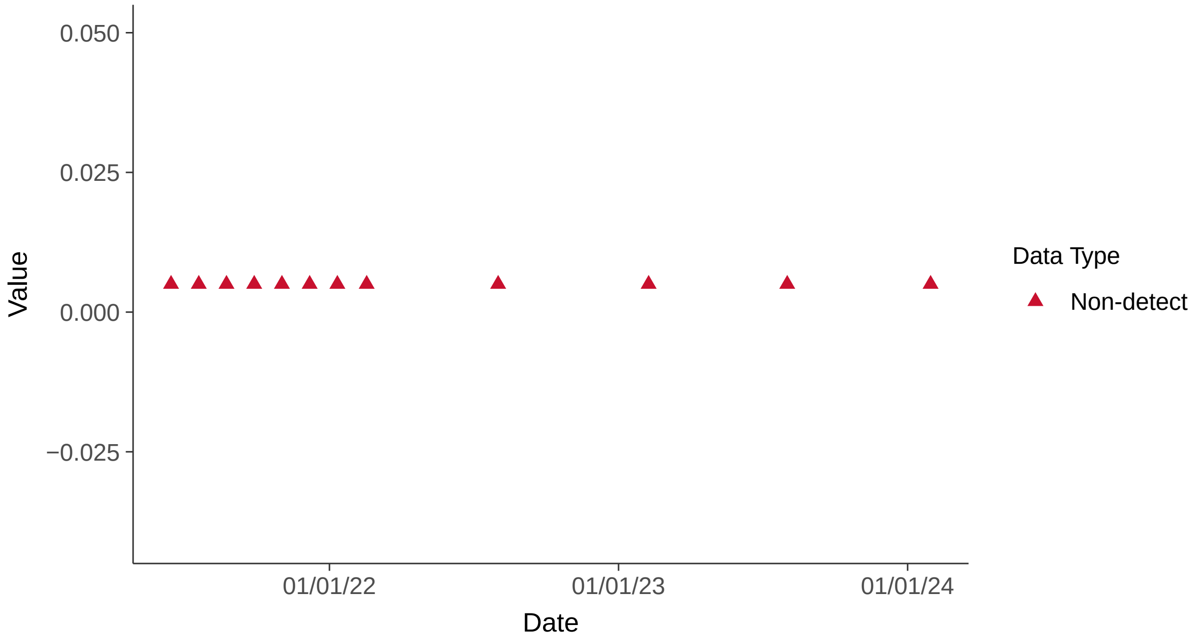


Appendix IV: Selenium, MW-9

ID: 09_2_22

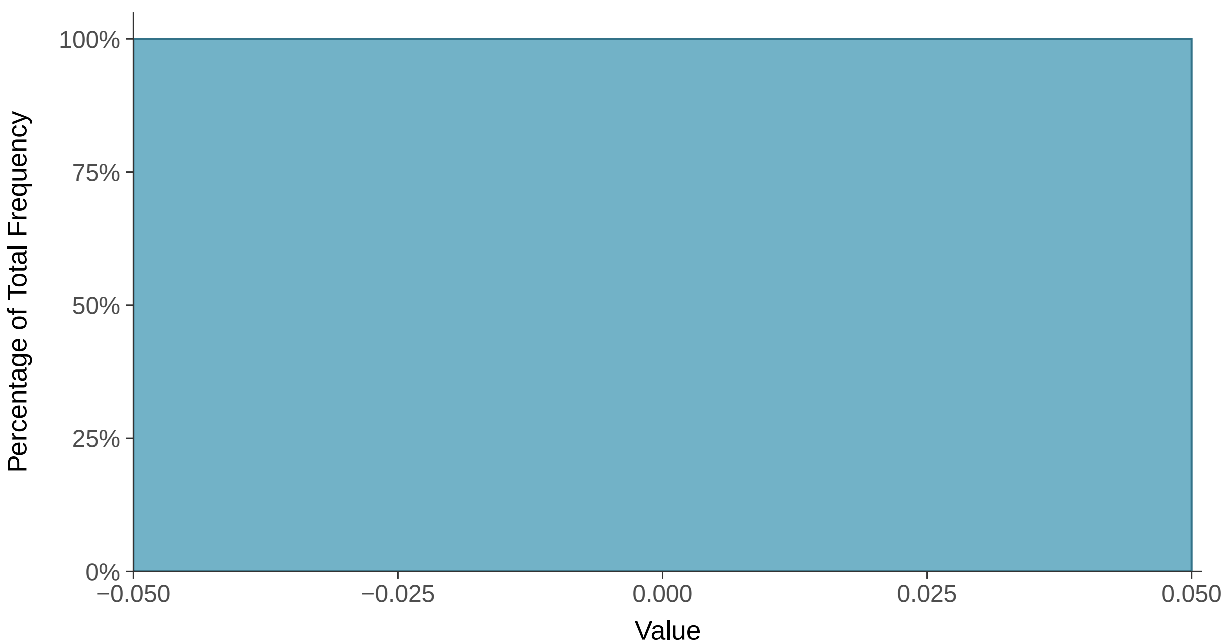
Scatter Plot

Selenium, MW-9 (mg/L)



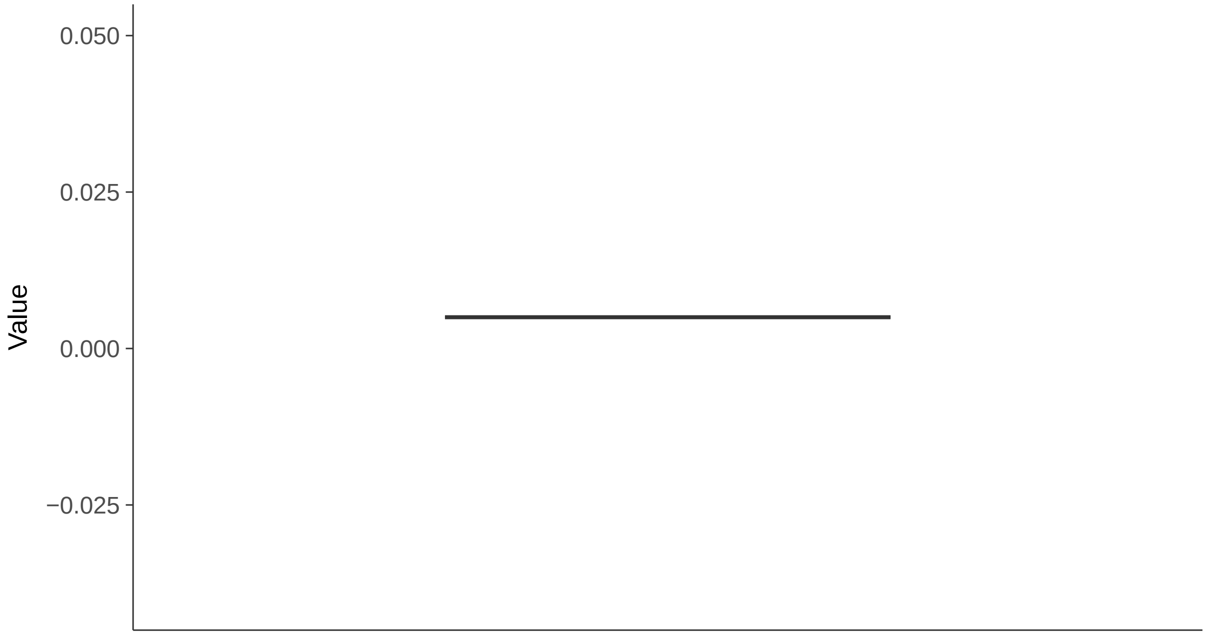
Histogram

Selenium, MW-9 (mg/L)



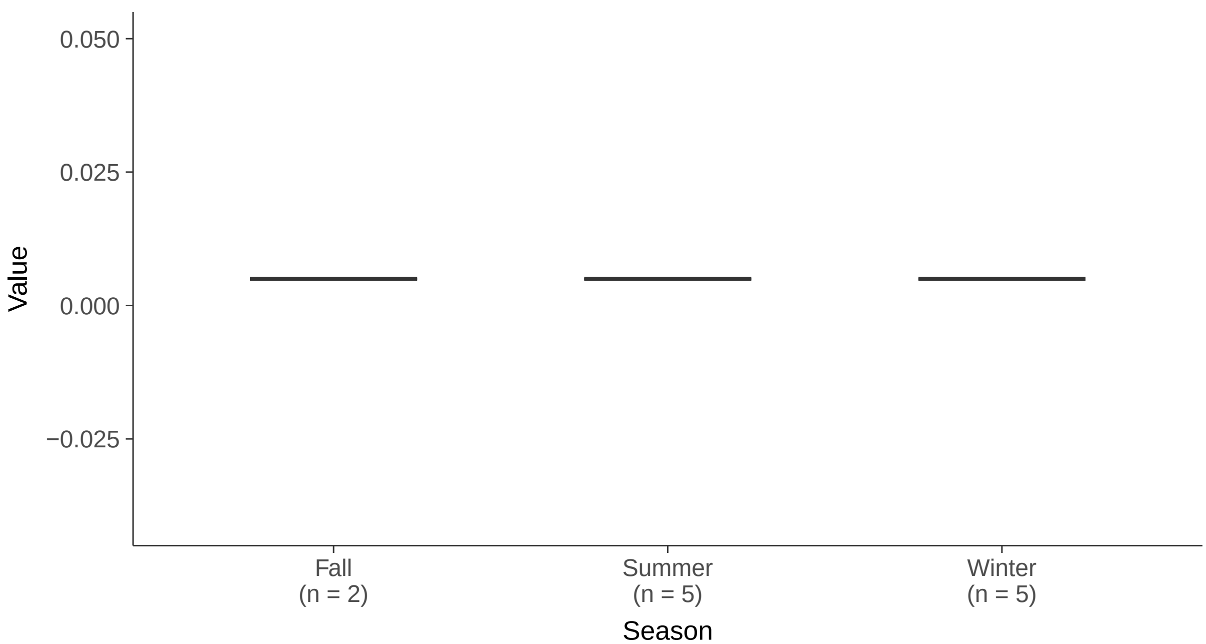
Boxplot

Selenium, MW-9 (mg/L)



Boxplot by Season

Selenium, MW-9 (mg/L)

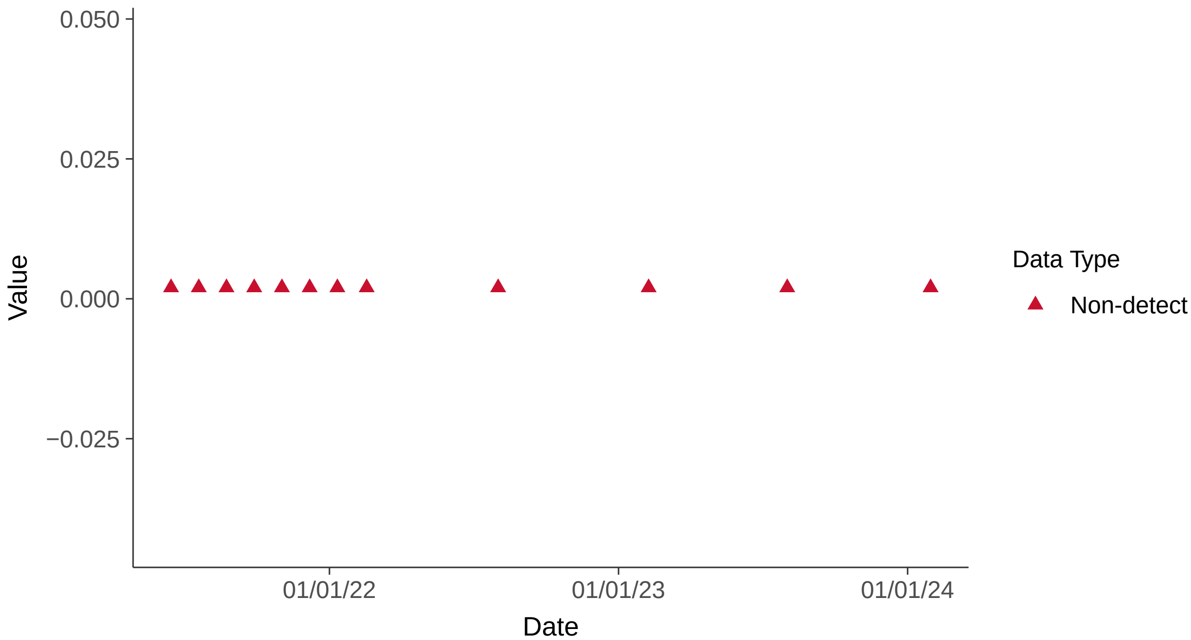


Appendix IV: Thallium, MW-9

ID: 09_2_23

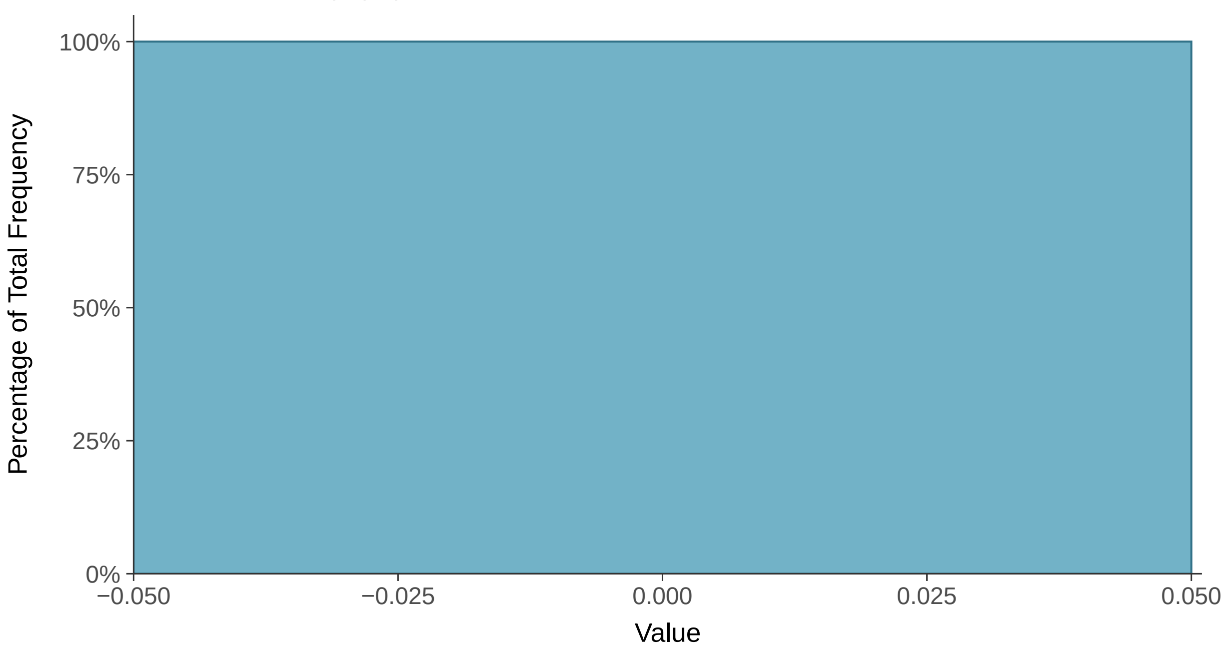
Scatter Plot

Thallium, MW-9 (mg/L)



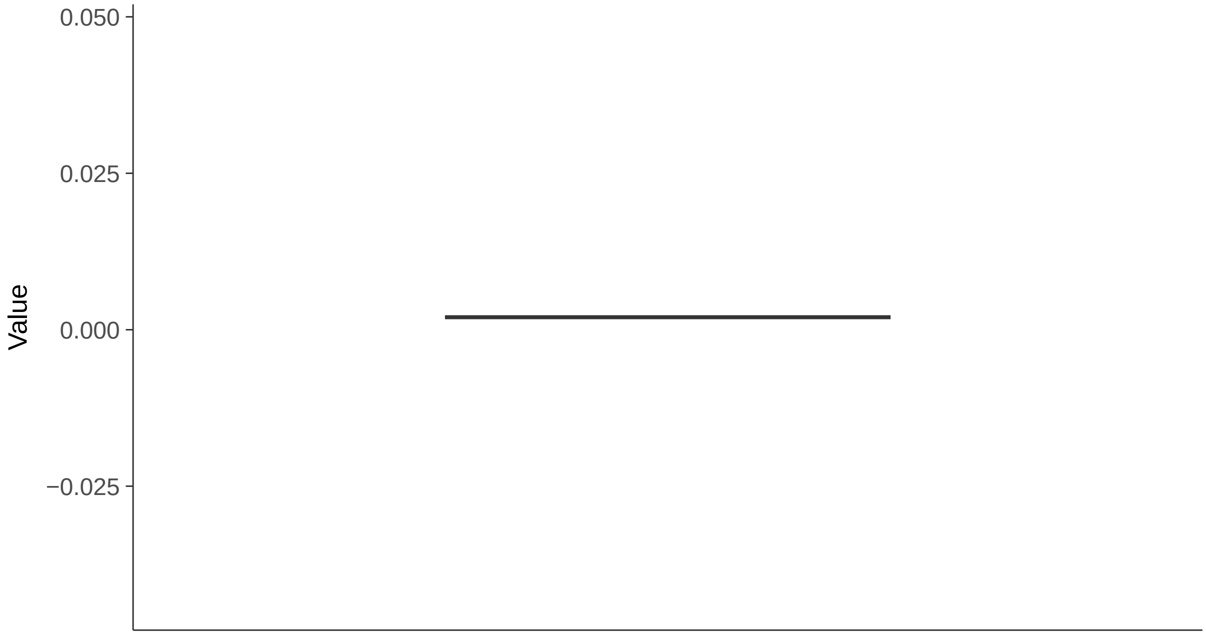
Histogram

Thallium, MW-9 (mg/L)



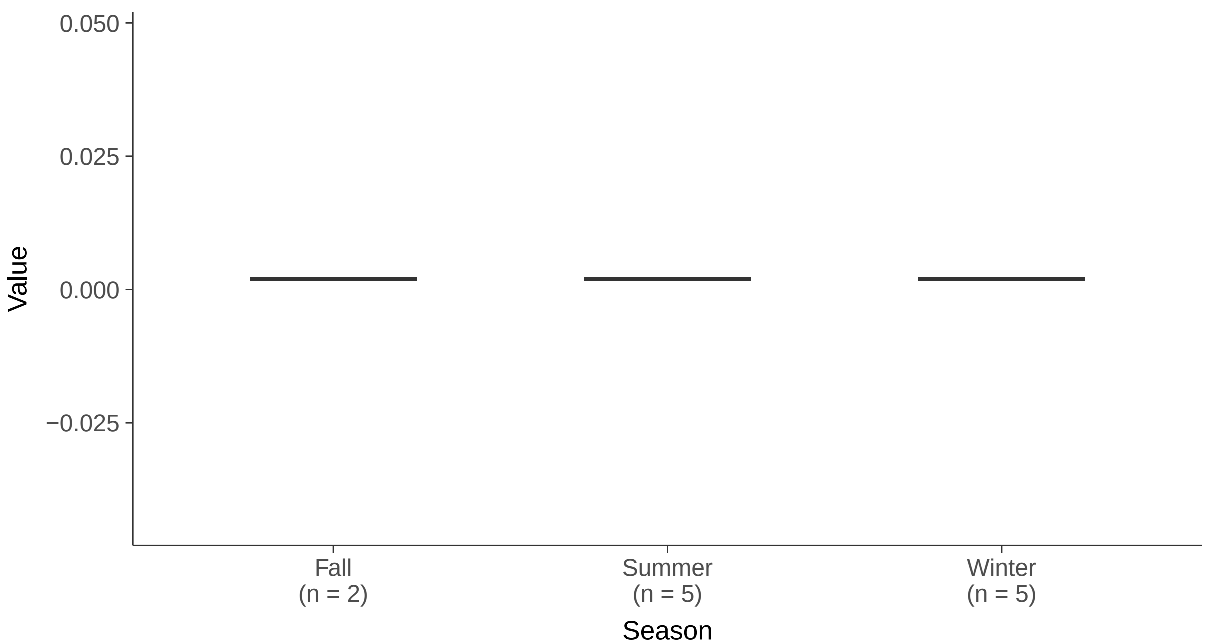
Boxplot

Thallium, MW-9 (mg/L)



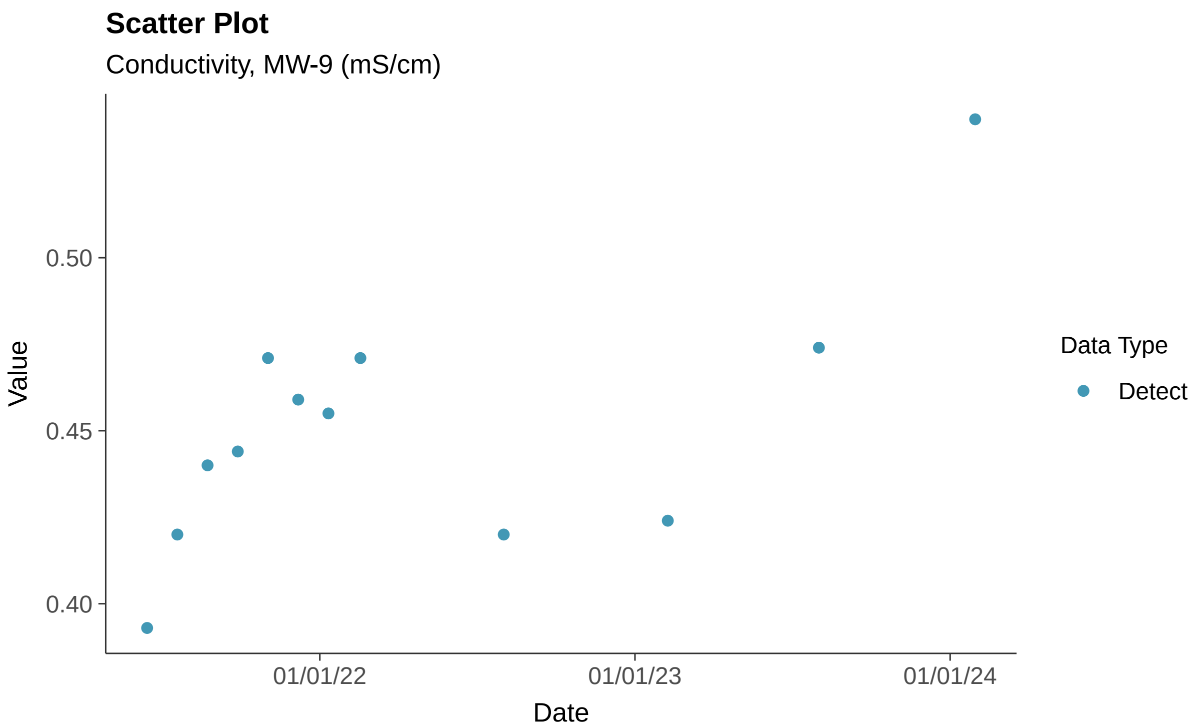
Boxplot by Season

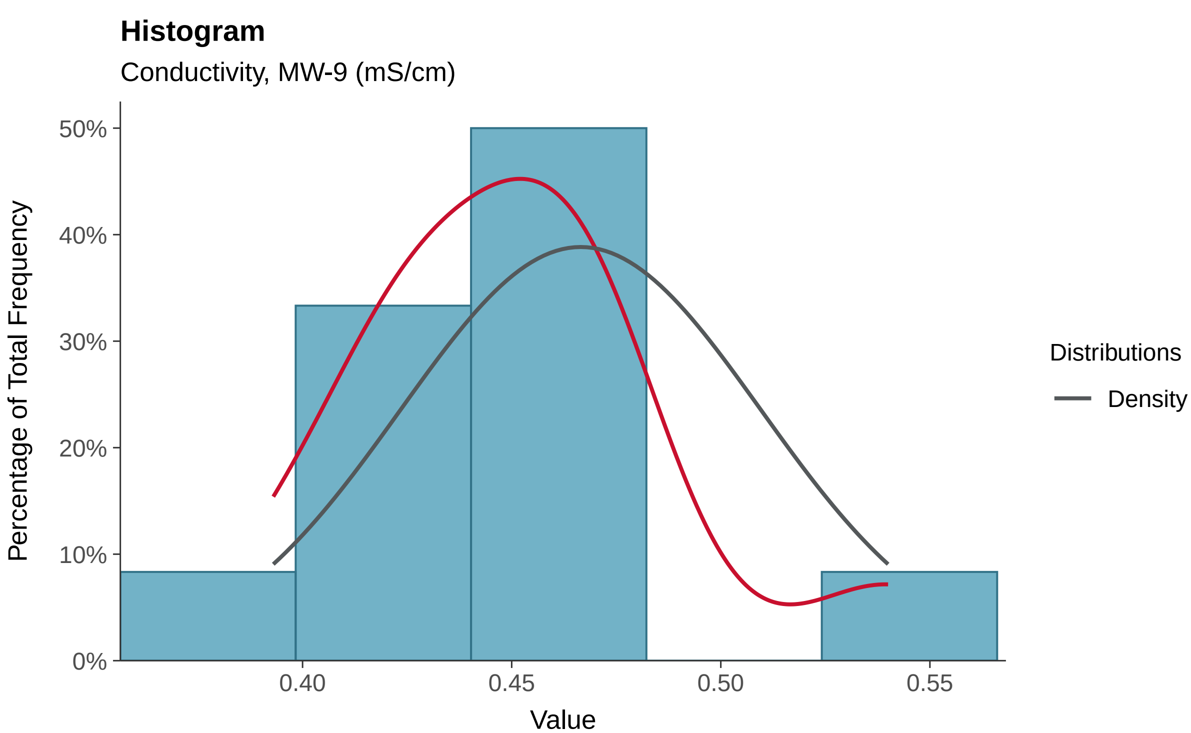
Thallium, MW-9 (mg/L)



Field Parameters: Conductivity, MW-9

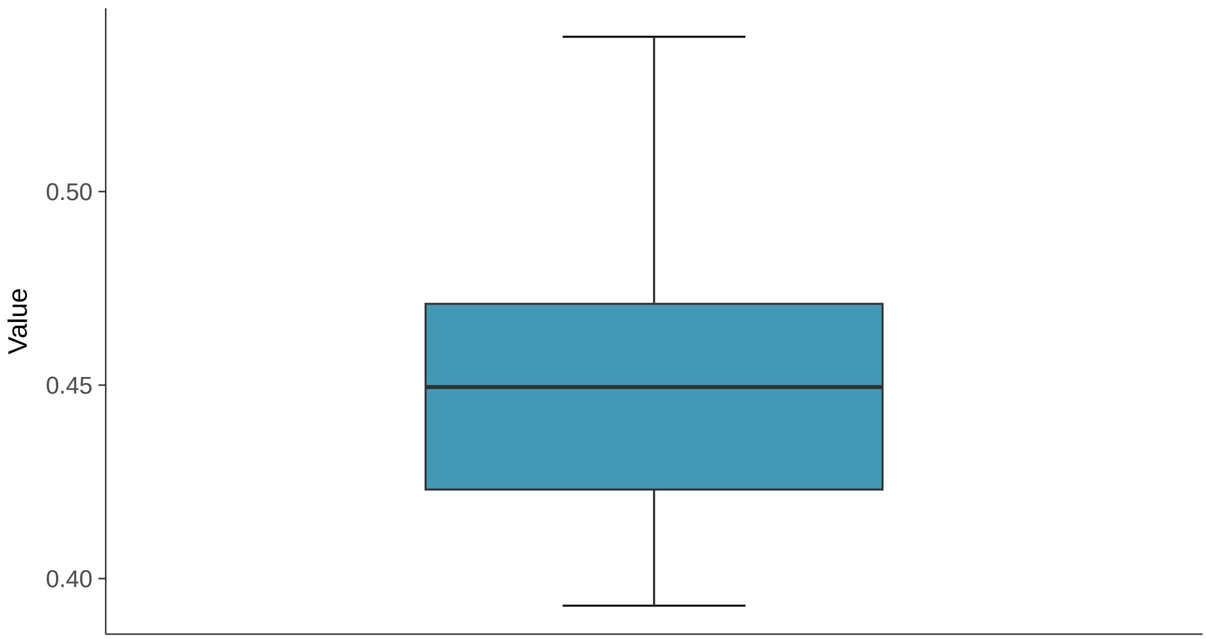
ID: 09_3_24





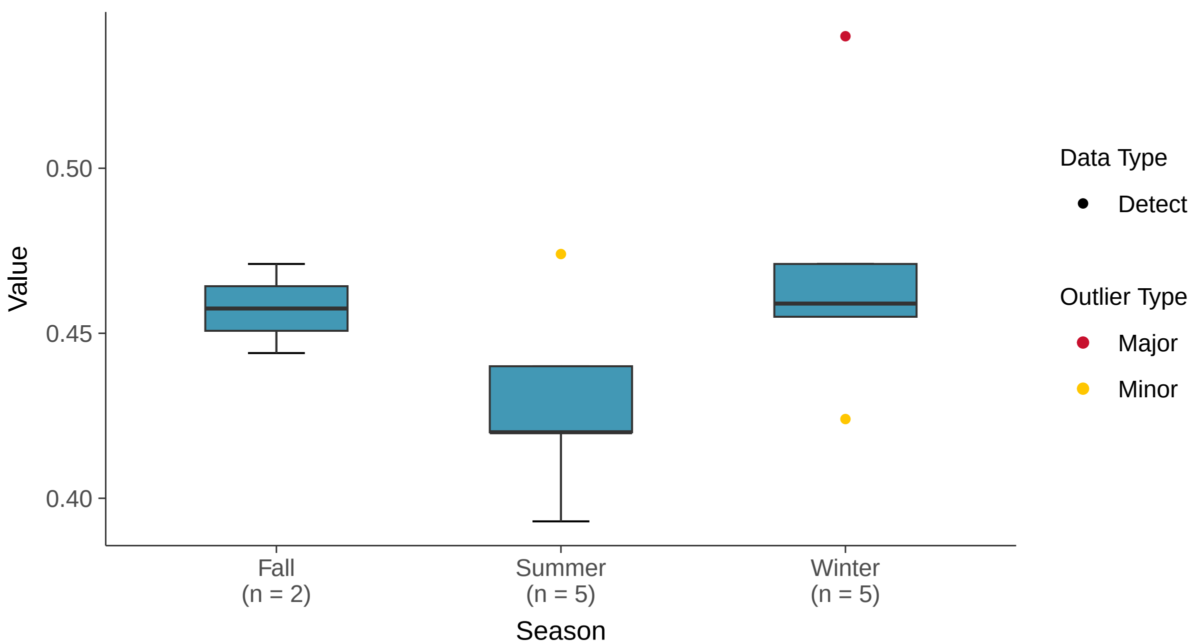
Boxplot

Conductivity, MW-9 (mS/cm)



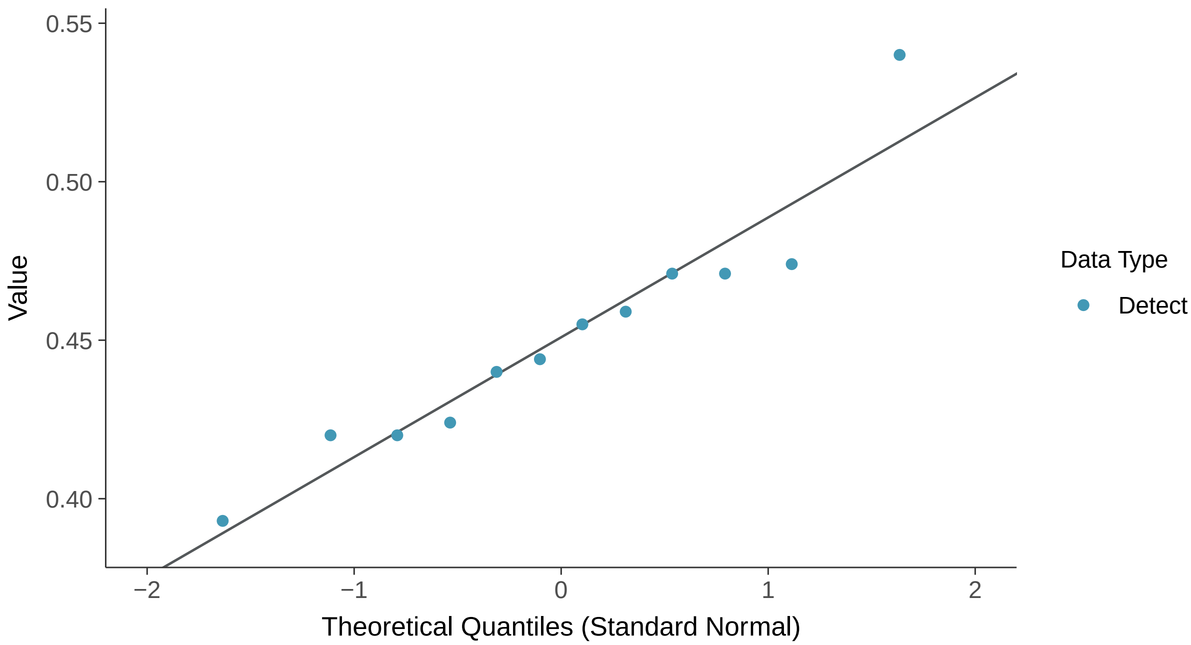
Boxplot by Season

Conductivity, MW-9 (mS/cm)



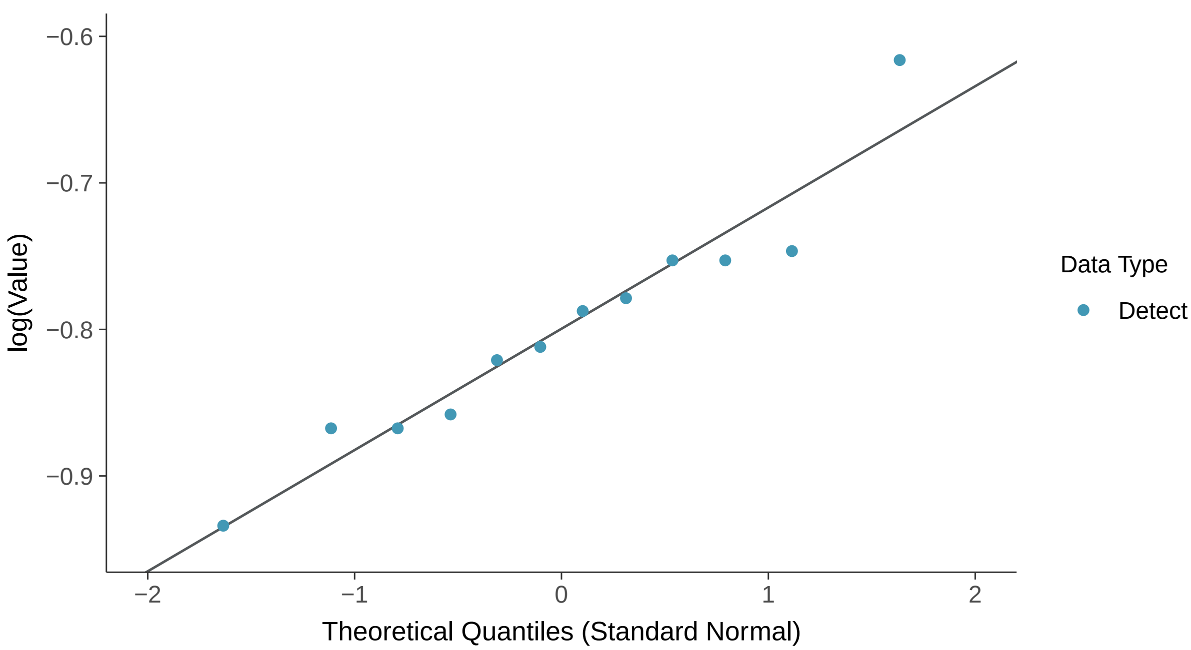
Normal Q-Q plot

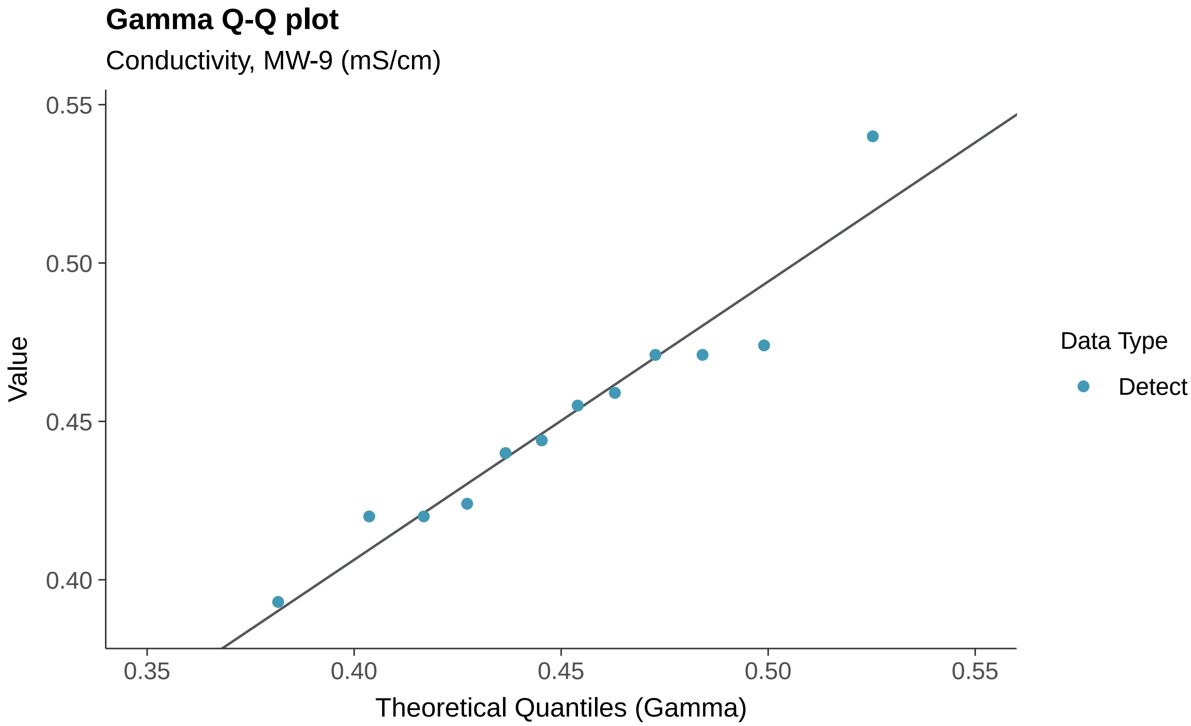
Conductivity, MW-9 (mS/cm)

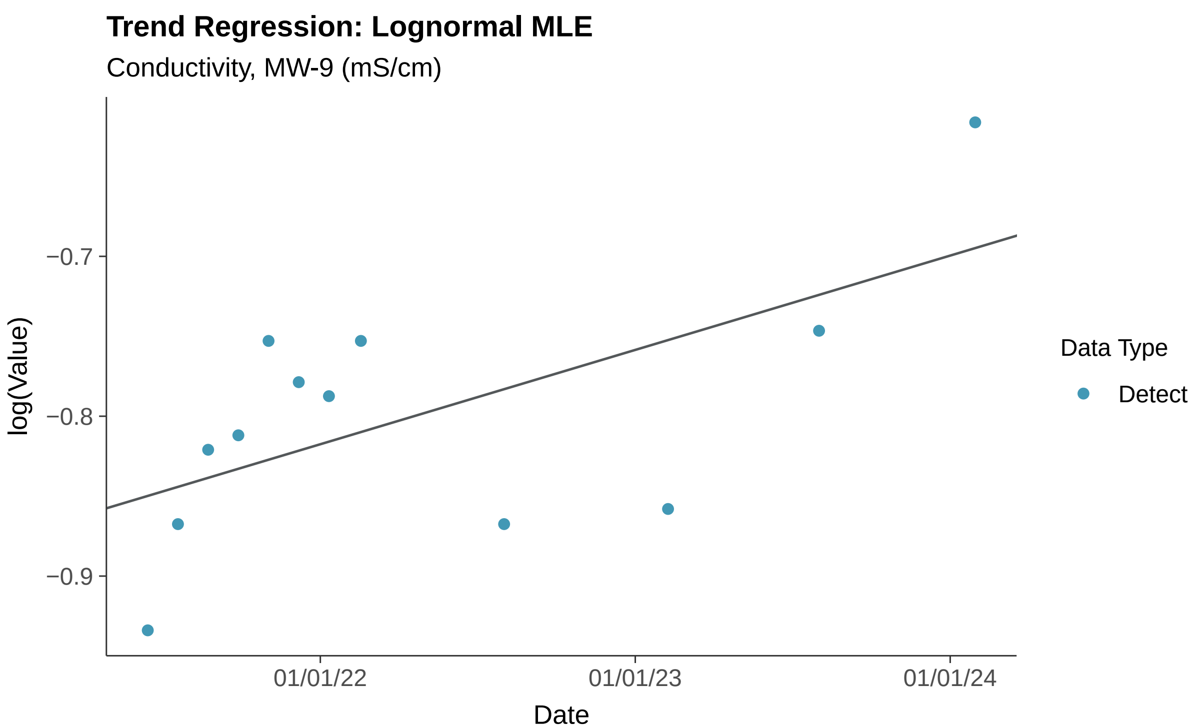


Lognormal Q-Q plot

Conductivity, MW-9 (mS/cm)

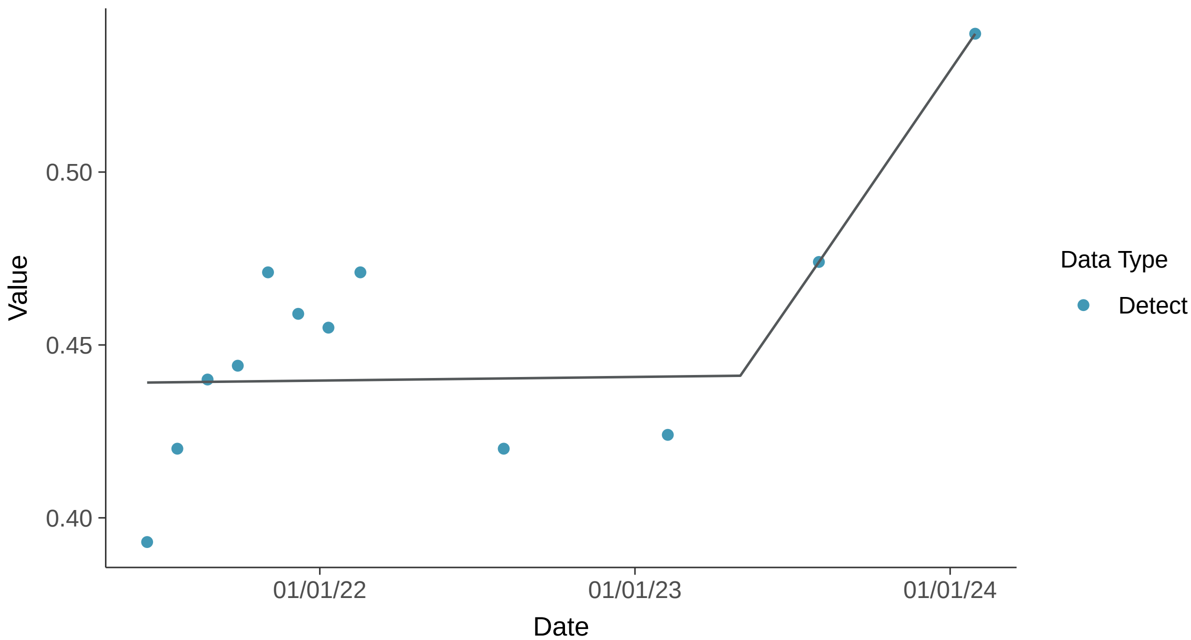



Gamma Q-Q plot
Conductivity, MW-9 (mS/cm)
Value
0.55
0.50
0.45
0.40
0.35
0.40
0.45
0.50
0.55
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Conductivity, MW-9 (mS/cm)
log(Value)
−0.7
−0.8
−0.9
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

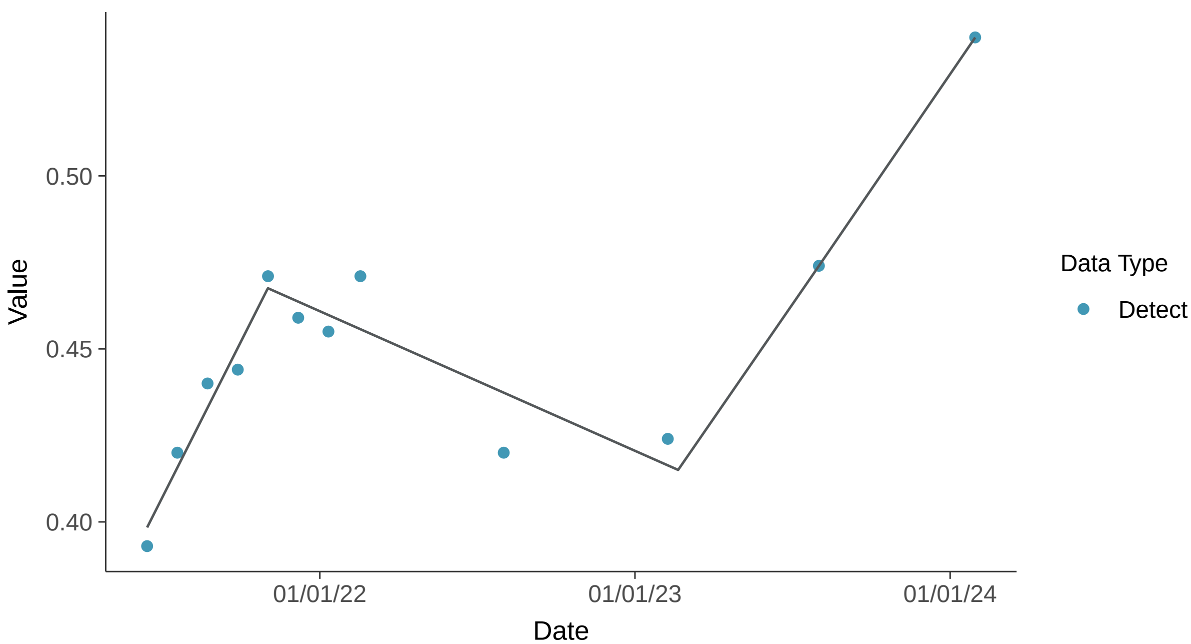
Trend Regression: Piecewise Linear-Linear

Conductivity, MW-9 (mS/cm)



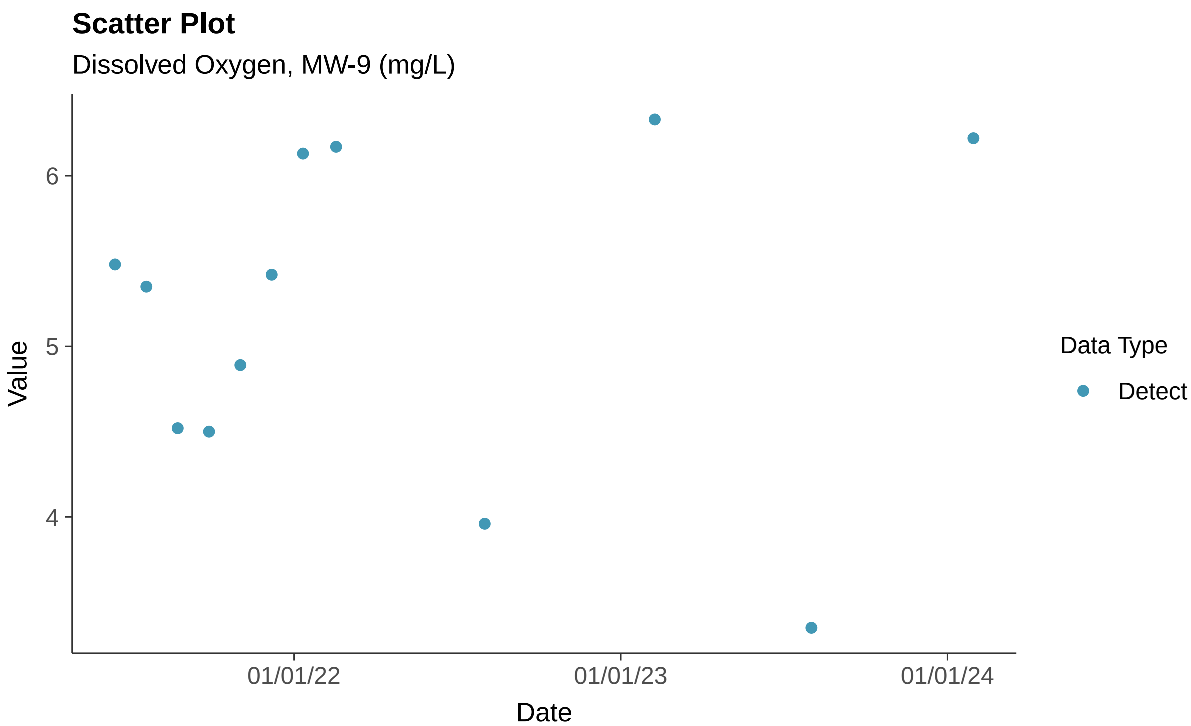
Trend Regression: Piecewise Linear-Linear-Linear

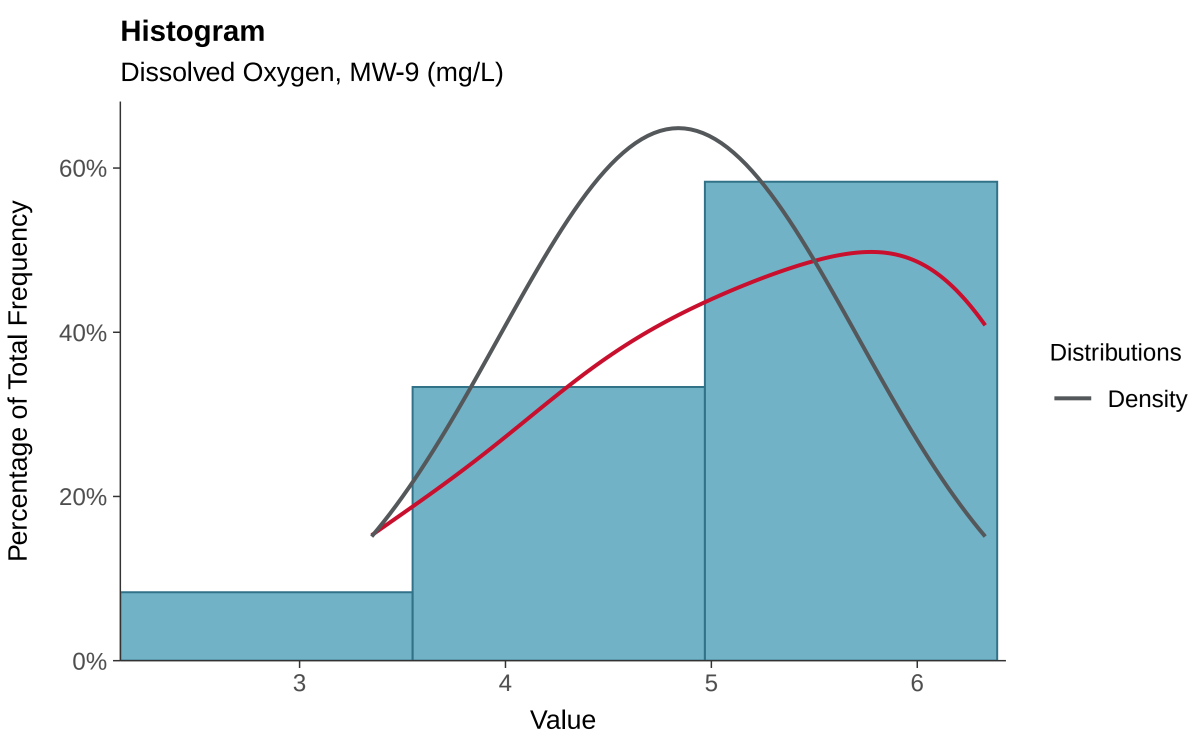
Conductivity, MW-9 (mS/cm)



Field Parameters: Dissolved Oxygen, MW-9

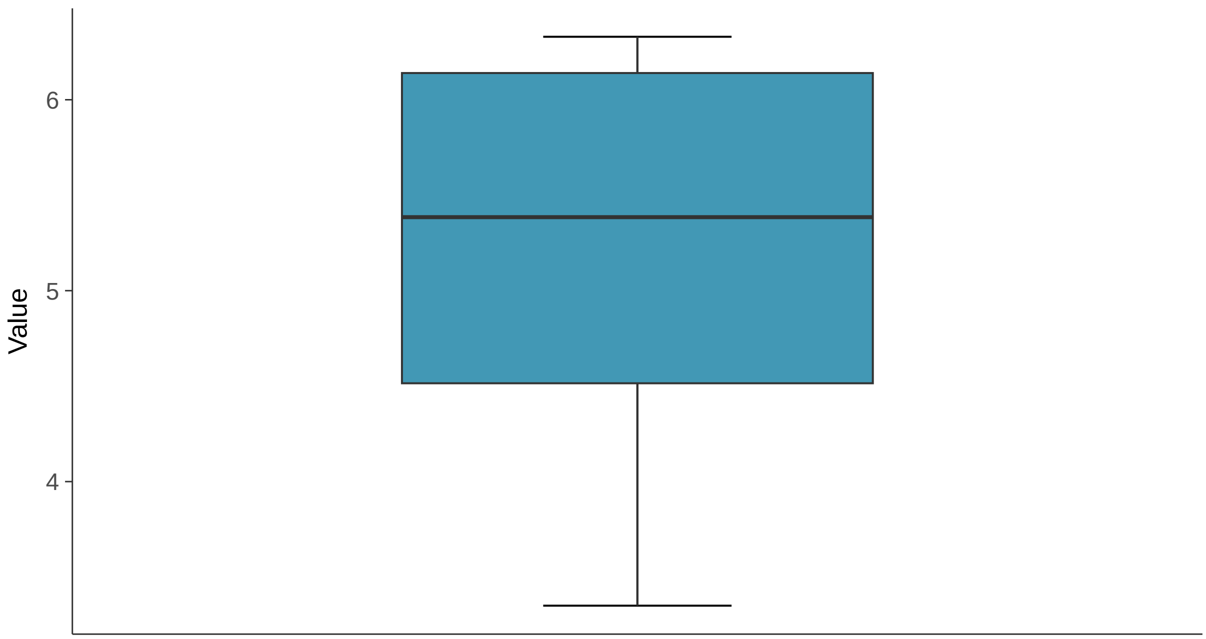
ID: 09_3_25





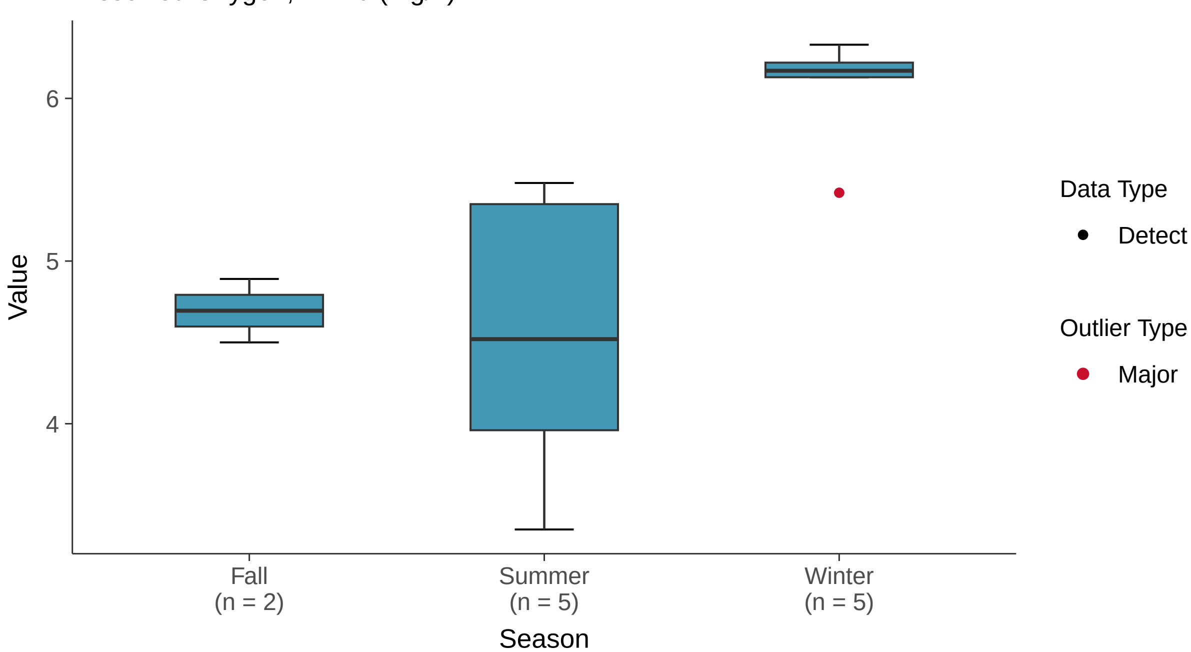
Boxplot

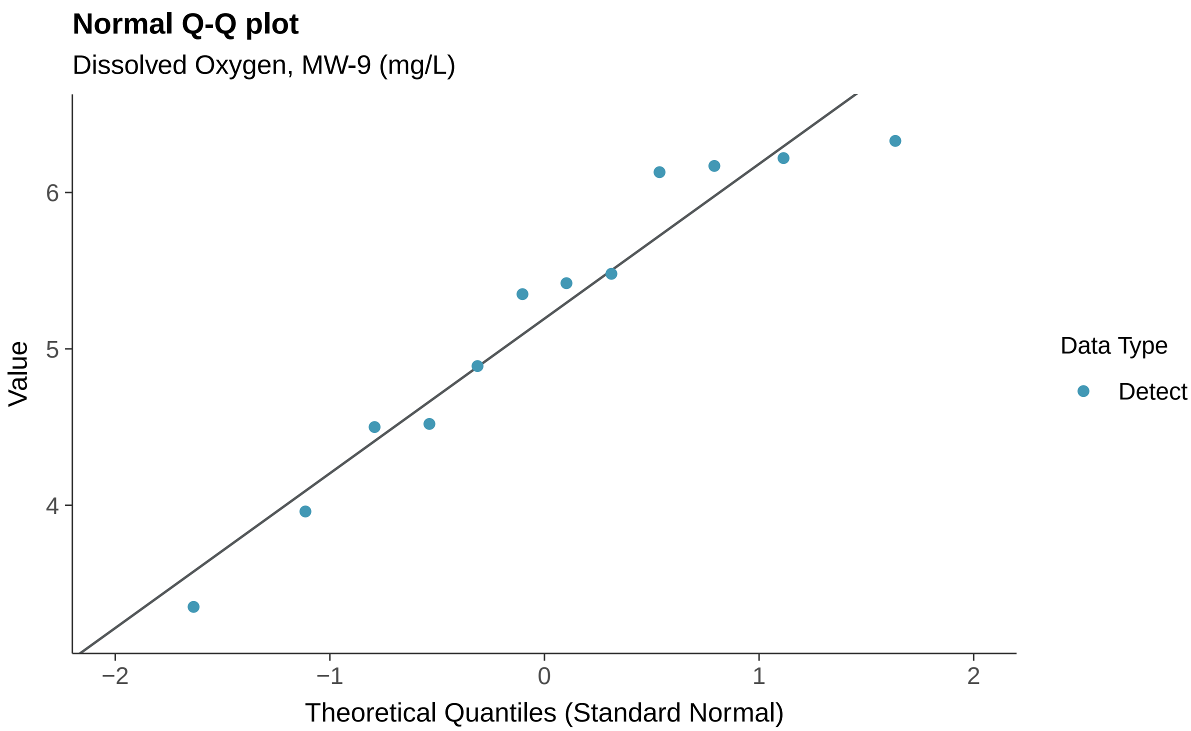
Dissolved Oxygen, MW-9 (mg/L)

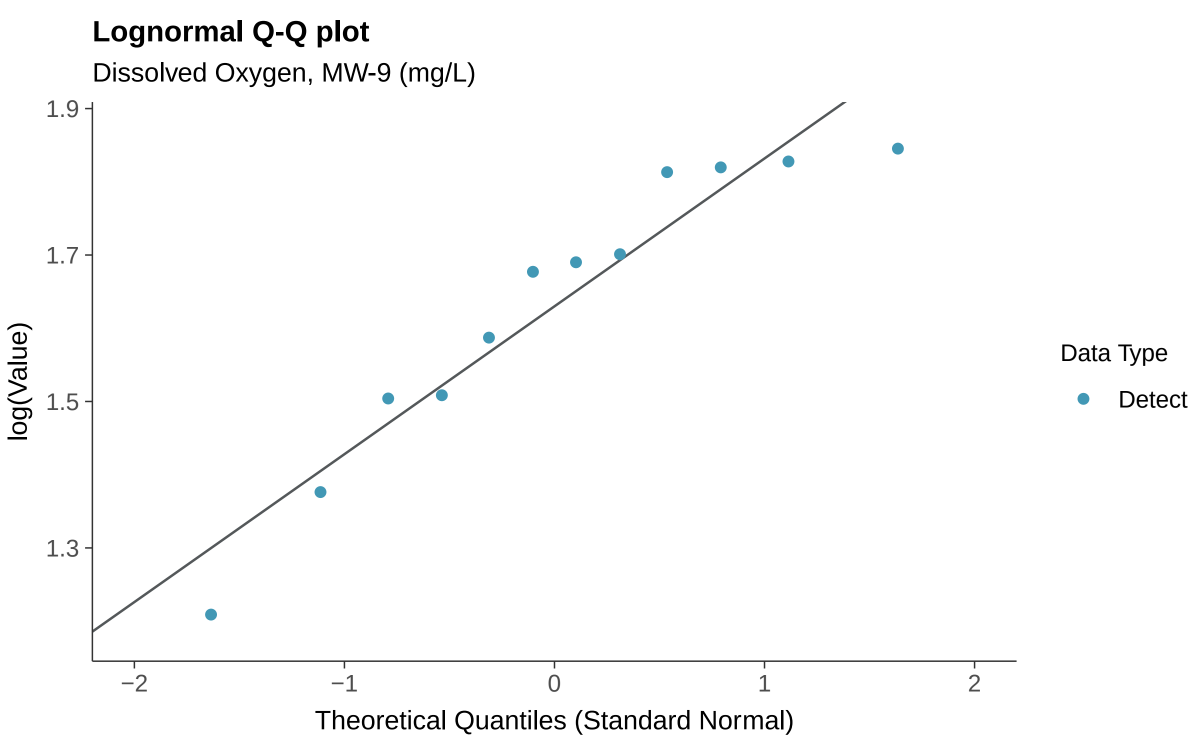


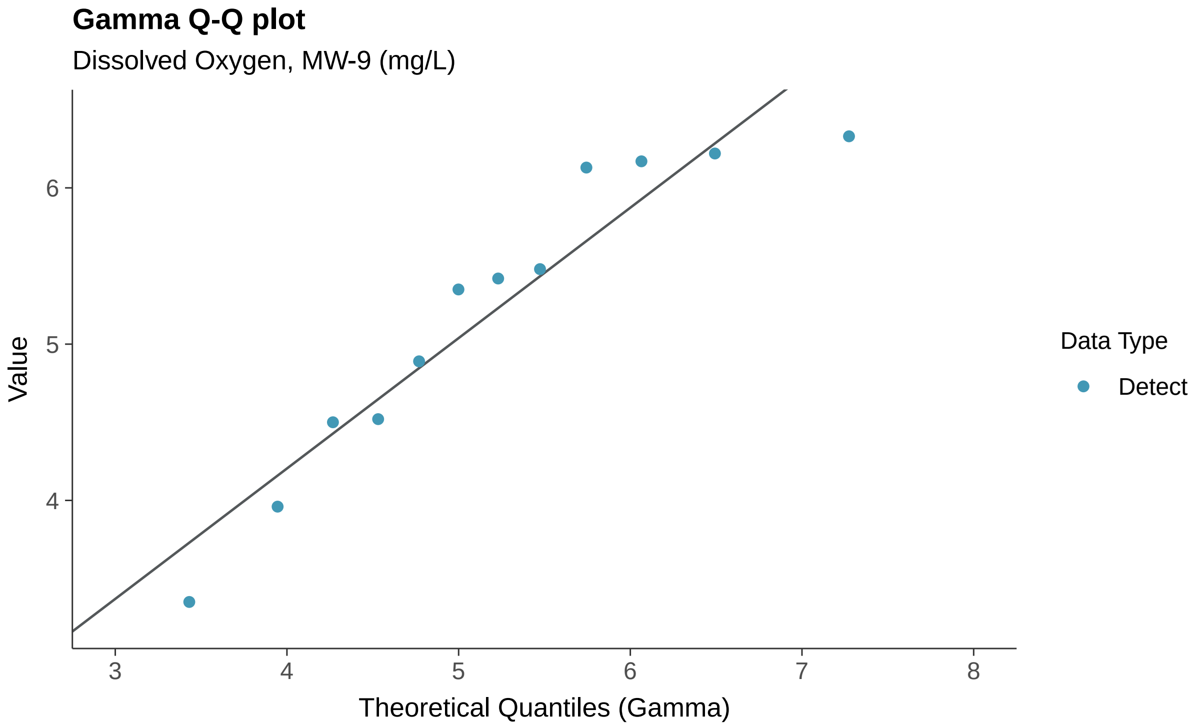
Boxplot by Season

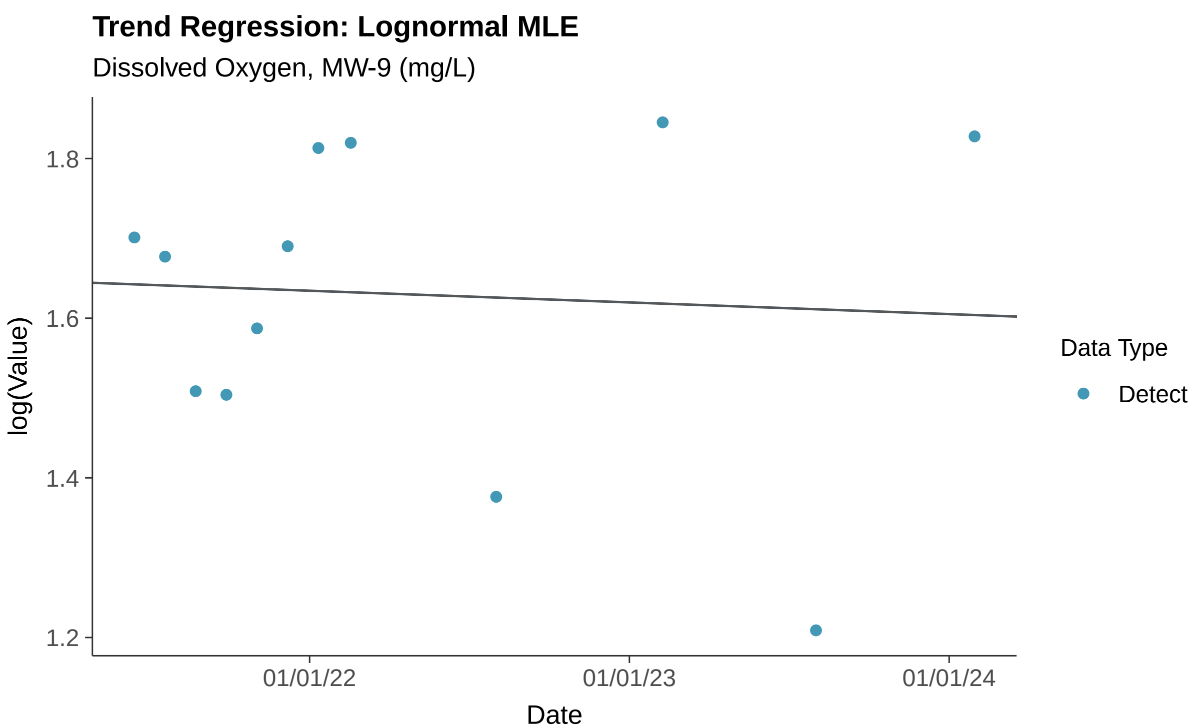
Dissolved Oxygen, MW-9 (mg/L)




Normal Q-Q plot
Dissolved Oxygen, MW-9 (mg/L)
Value
6
5
4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Dissolved Oxygen, MW-9 (mg/L)
log(Value)
1.9
1.7
1.5
1.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Dissolved Oxygen, MW-9 (mg/L)
Value
Theoretical Quantiles (Gamma)
Data Type
Detect
3
4
5
6
7
8

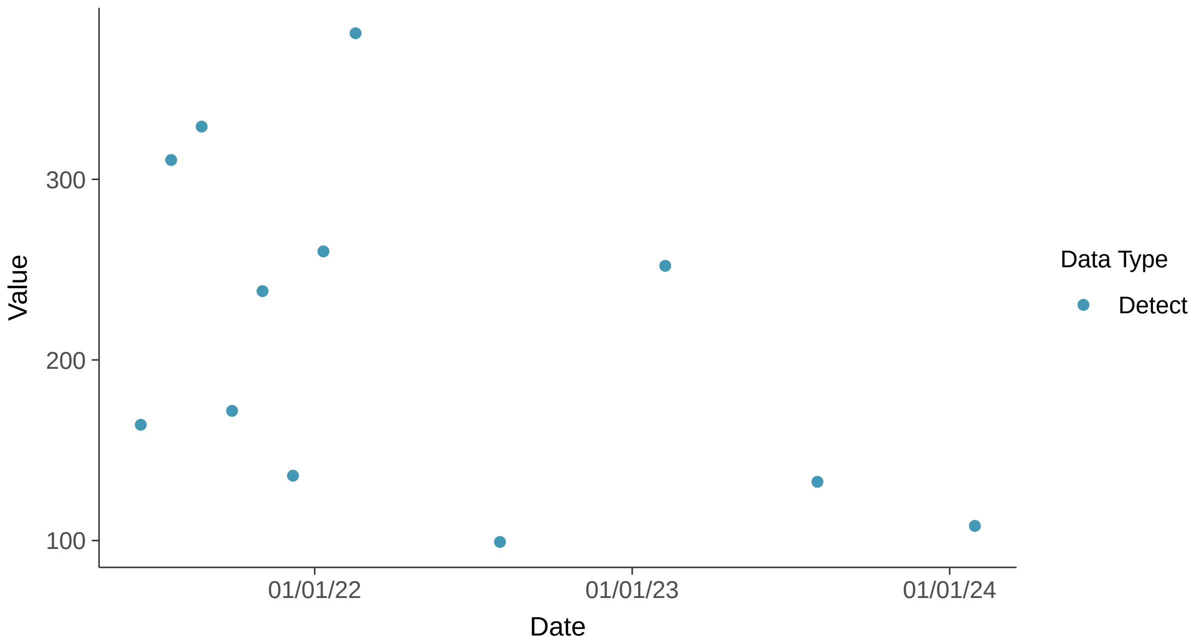

Trend Regression: Lognormal MLE
Dissolved Oxygen, MW-9 (mg/L)
log(Value)
Date
01/01/22
01/01/23
01/01/24
Data Type
Detect
1.2
1.4
1.6
1.8

Field Parameters: Oxidation Reduction Potential, MW-9

ID: 09_3_26

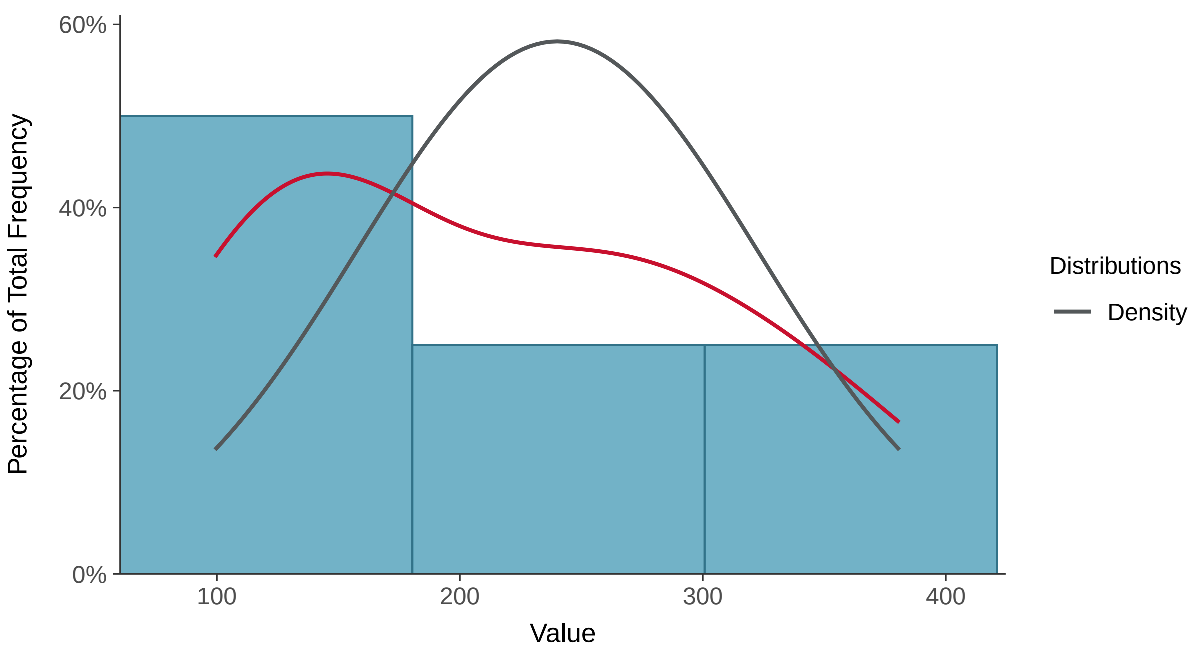
Scatter Plot

Oxidation Reduction Potential, MW-9 (mV)



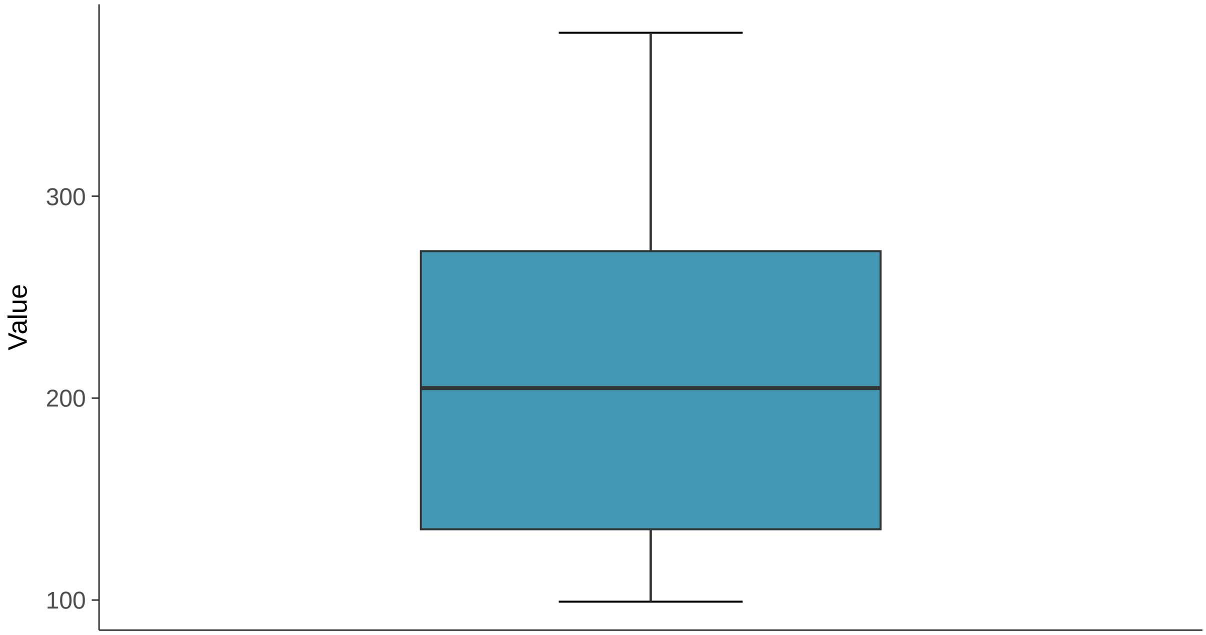
Histogram

Oxidation Reduction Potential, MW-9 (mV)



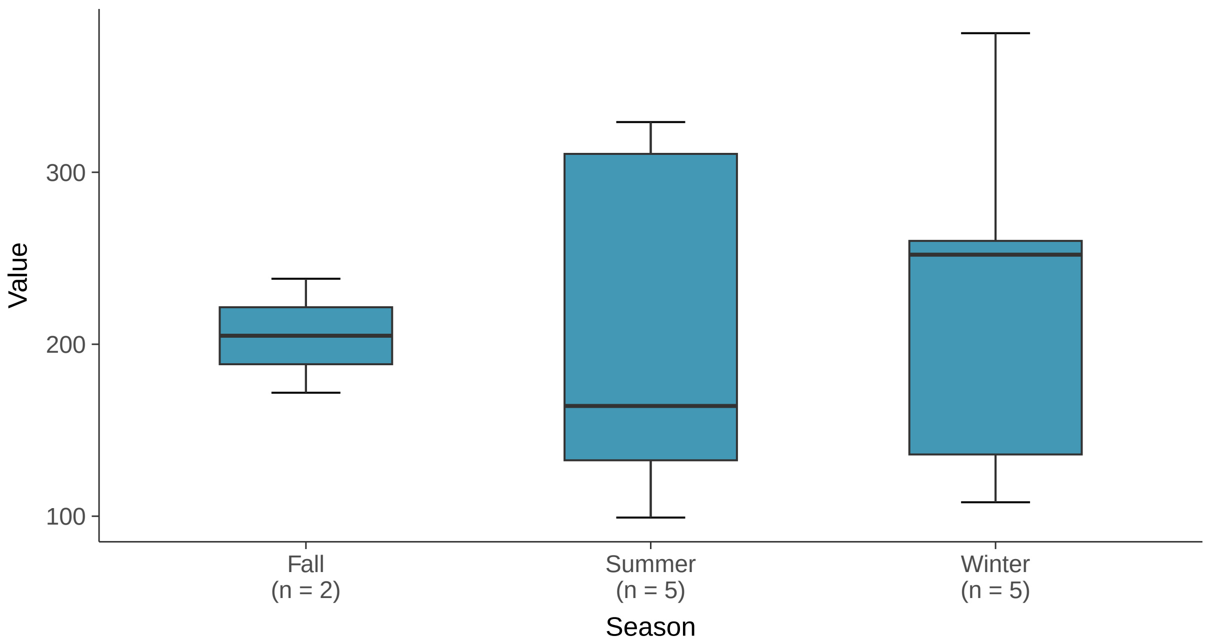
Boxplot

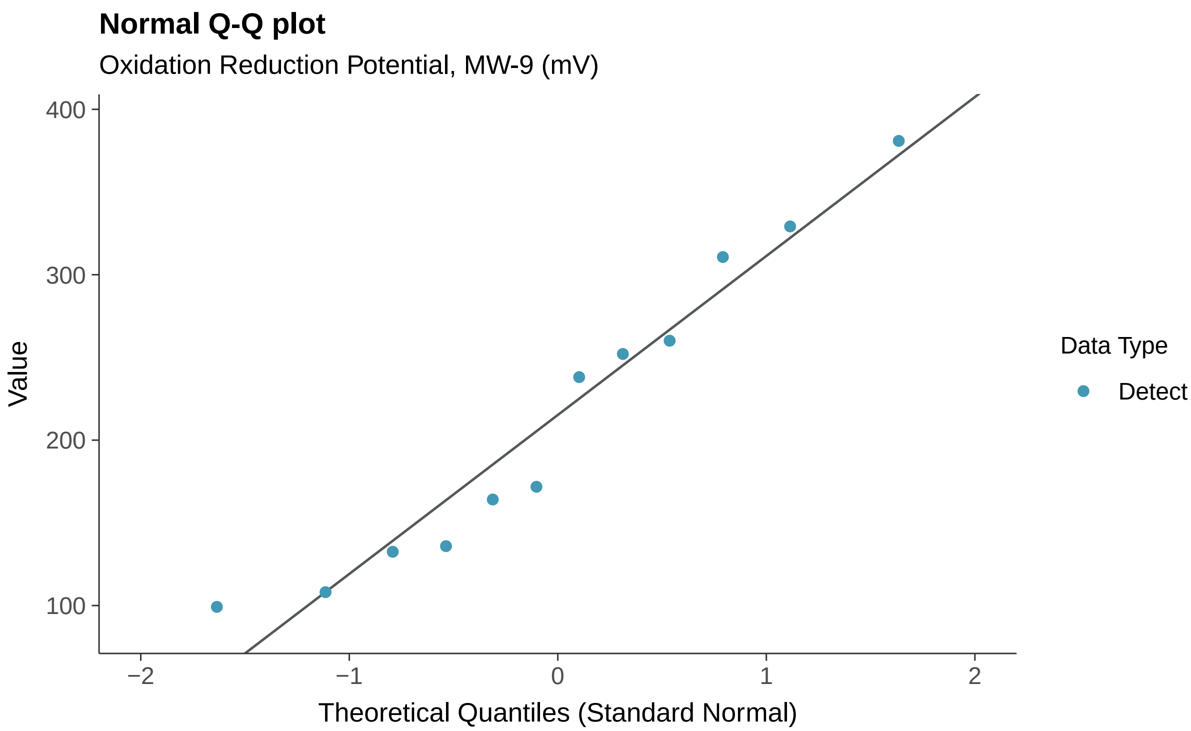
Oxidation Reduction Potential, MW-9 (mV)

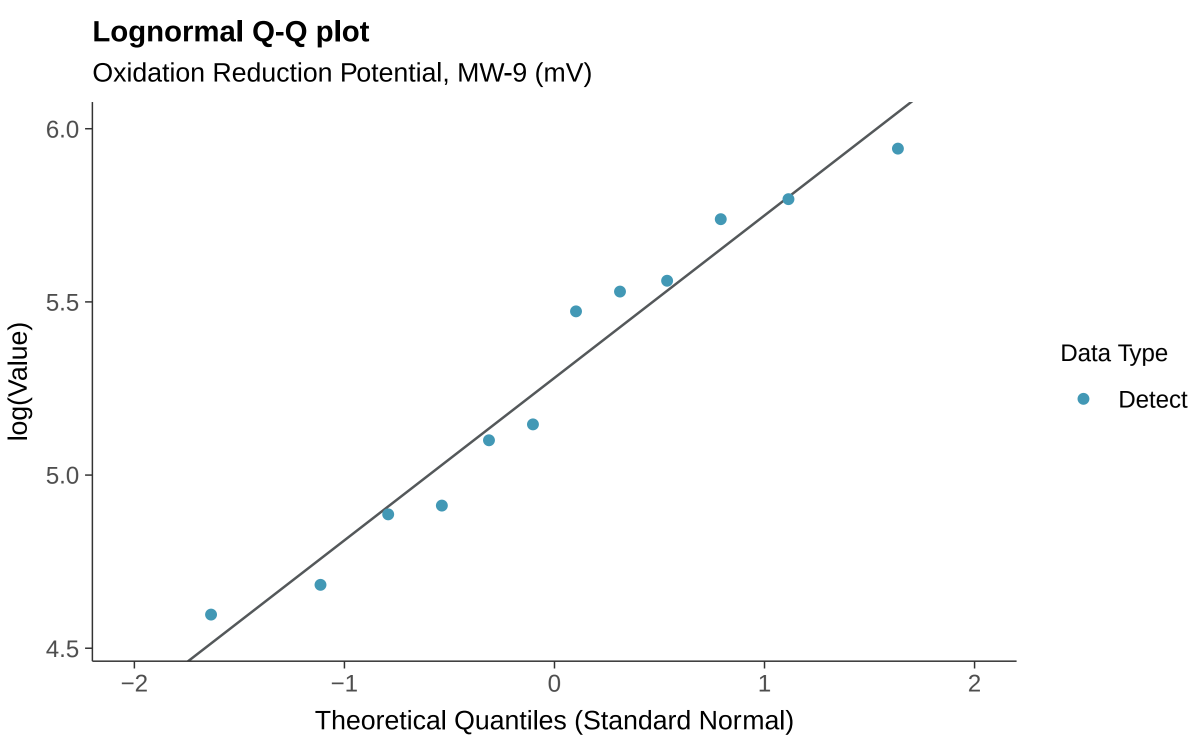


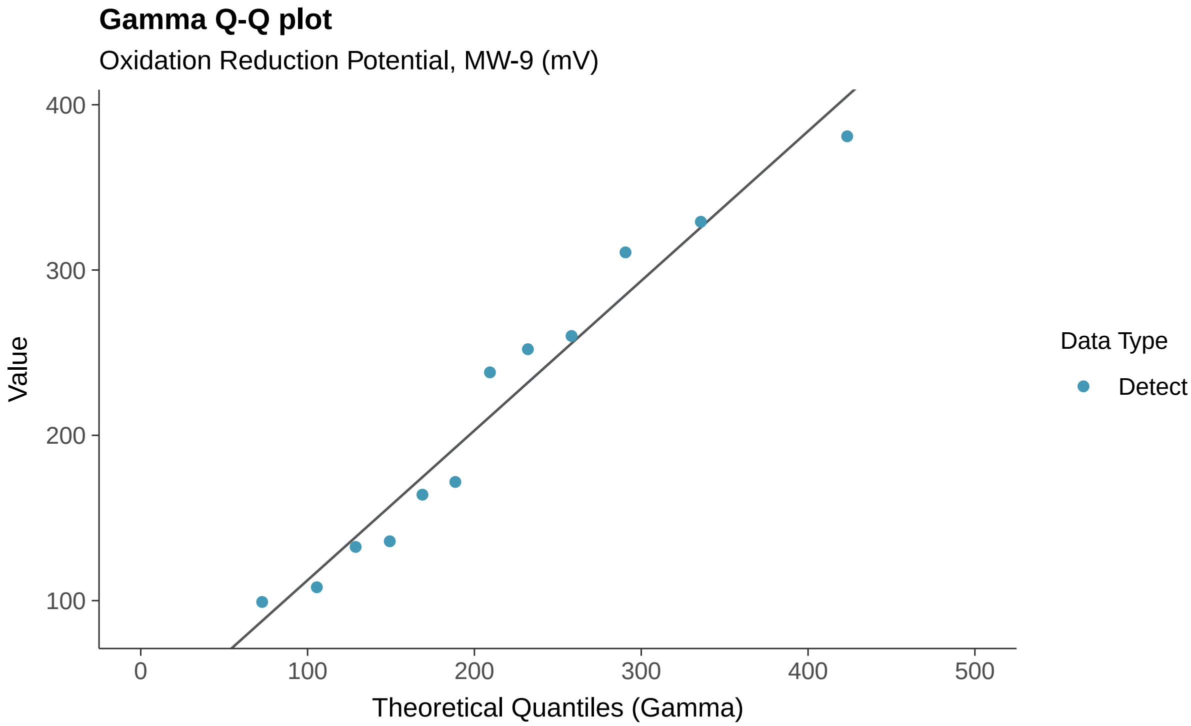
Boxplot by Season

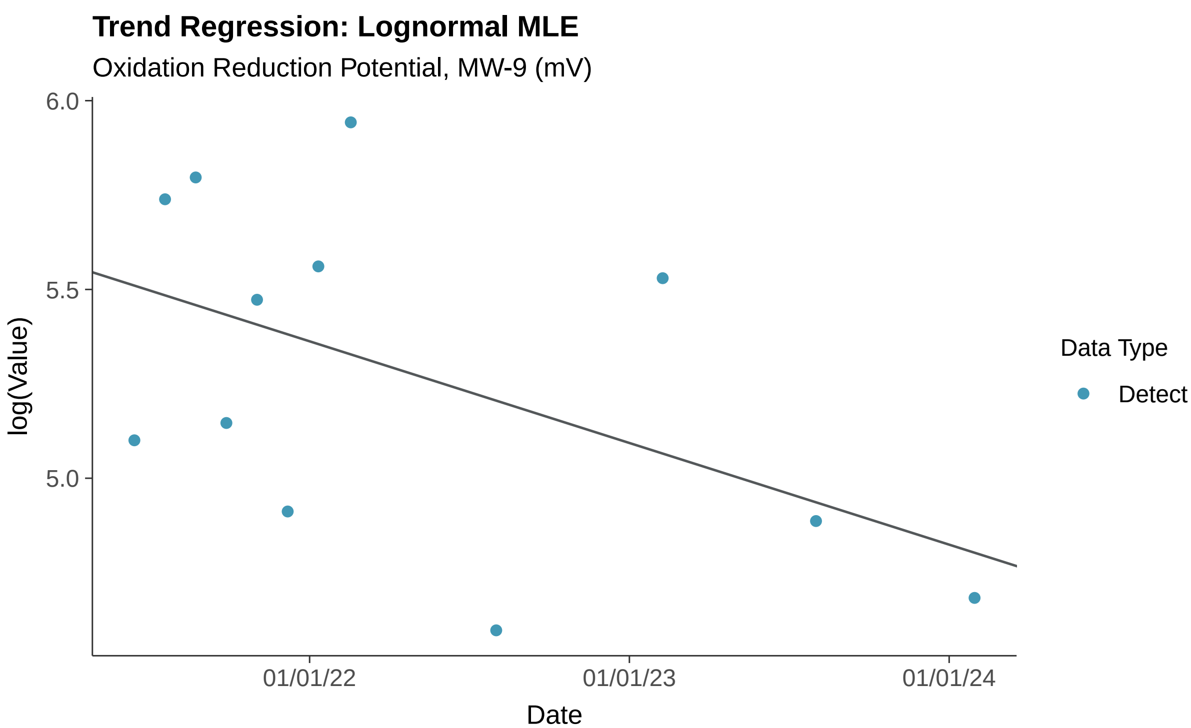
Oxidation Reduction Potential, MW-9 (mV)




Normal Q-Q plot
Oxidation Reduction Potential, MW-9 (mV)
Value
400
300
200
100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Oxidation Reduction Potential, MW-9 (mV)
log(Value)
6.0
5.5
5.0
4.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Oxidation Reduction Potential, MW-9 (mV)
Value
400
300
200
100
0
100
200
300
400
500
Theoretical Quantiles (Gamma)
Data Type
Detect

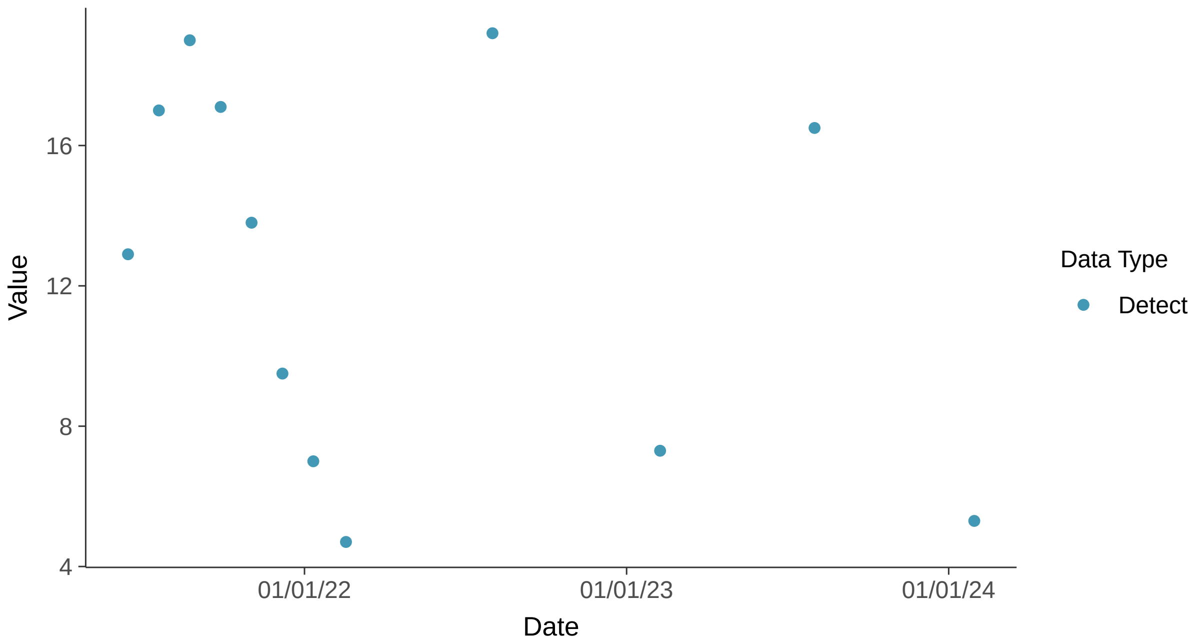

Trend Regression: Lognormal MLE
Oxidation Reduction Potential, MW-9 (mV)
log(Value)
6.0
5.5
5.0
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Temperature, MW-9

ID: 09_3_27

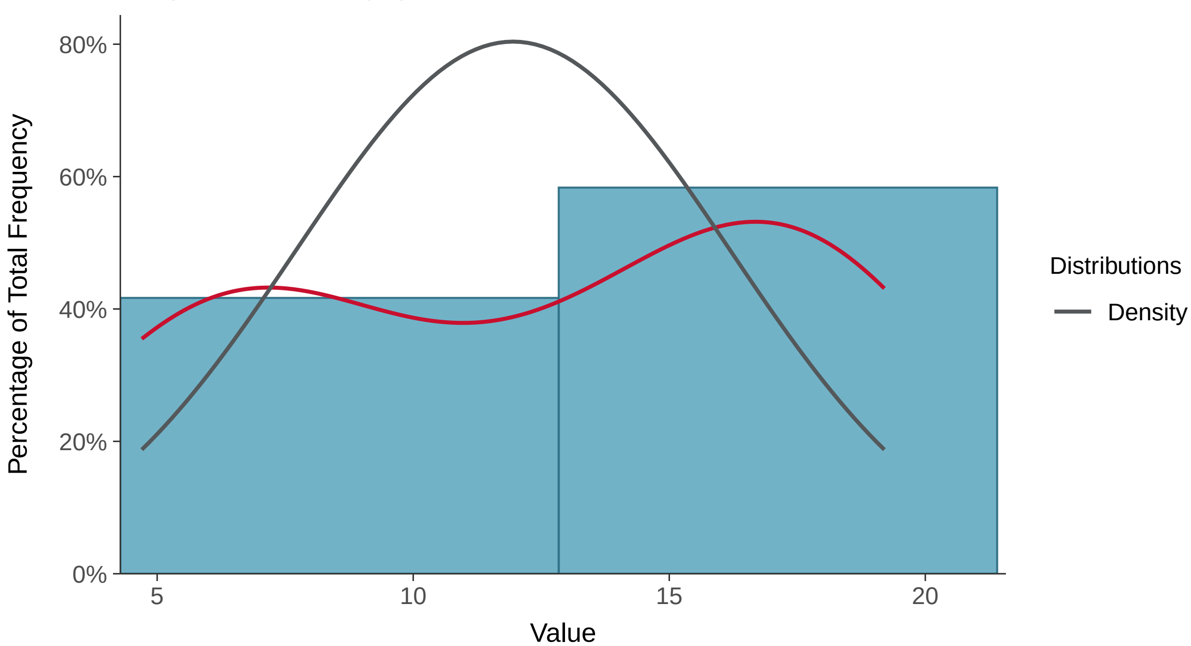
Scatter Plot

Temperature, MW-9 (°C)



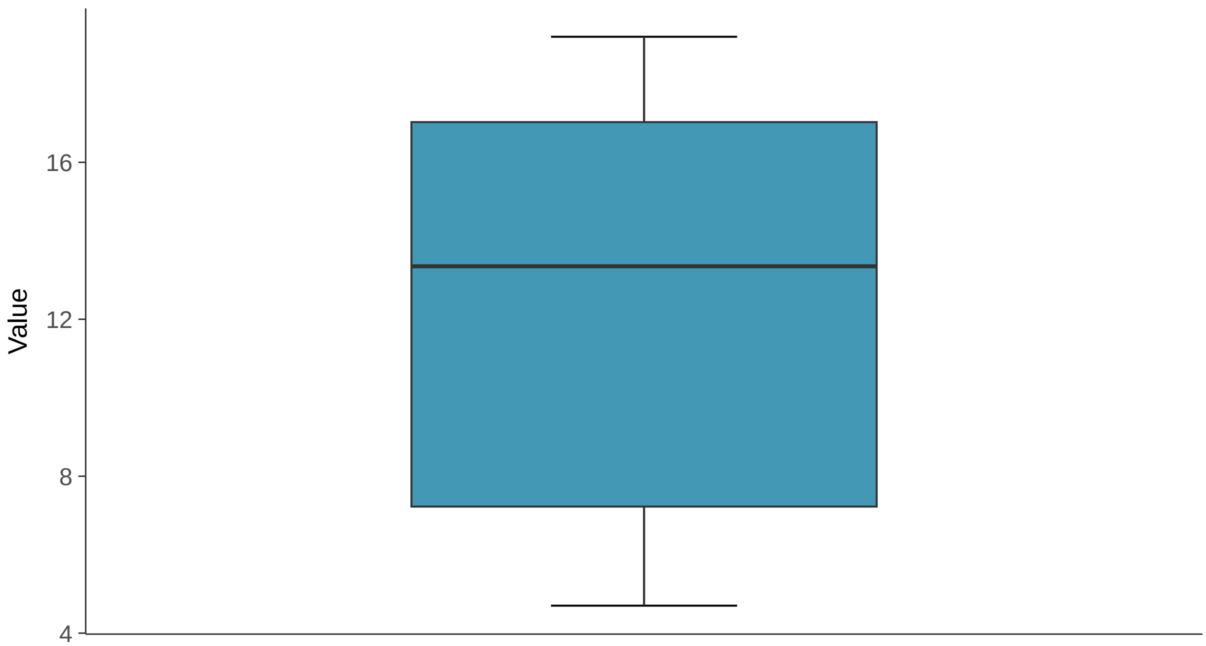
Histogram

Temperature, MW-9 (°C)



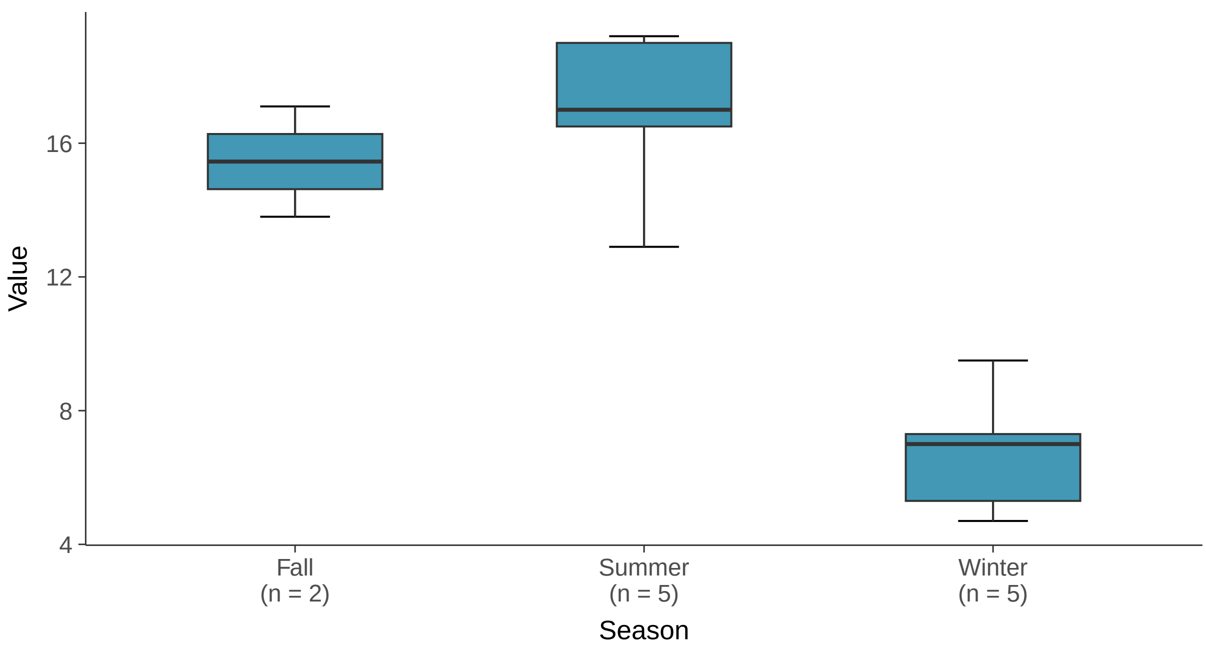
Boxplot

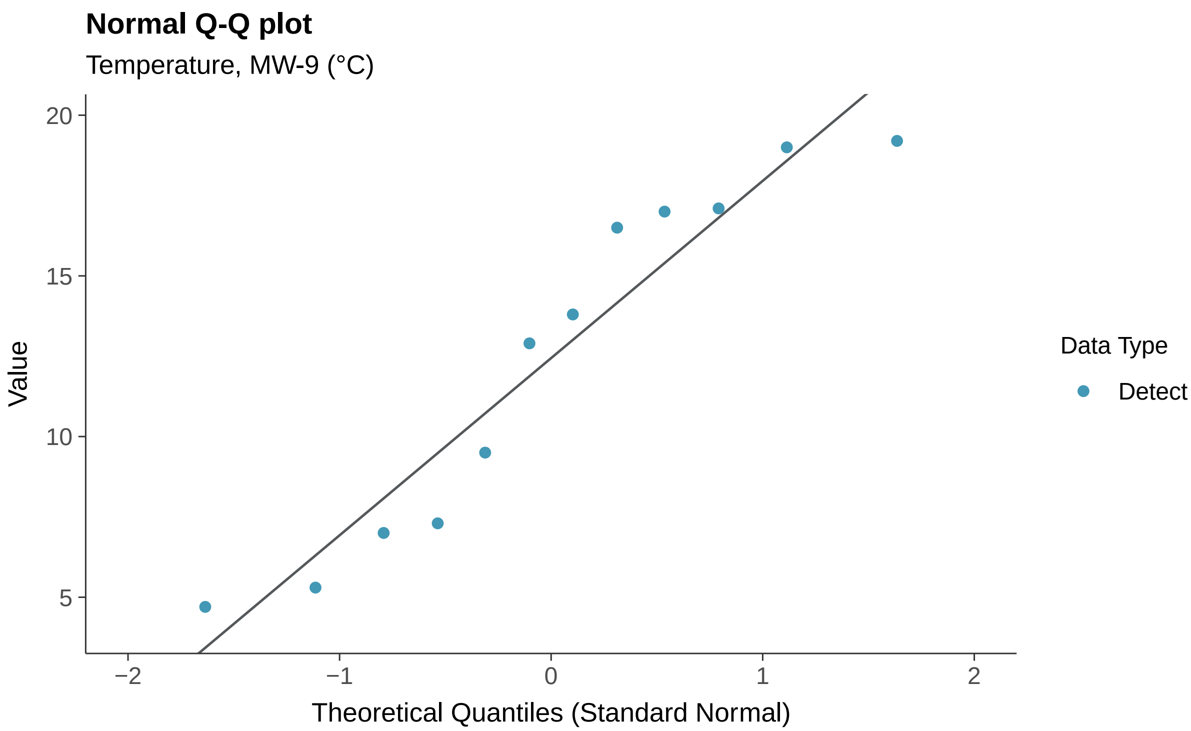
Temperature, MW-9 (°C)

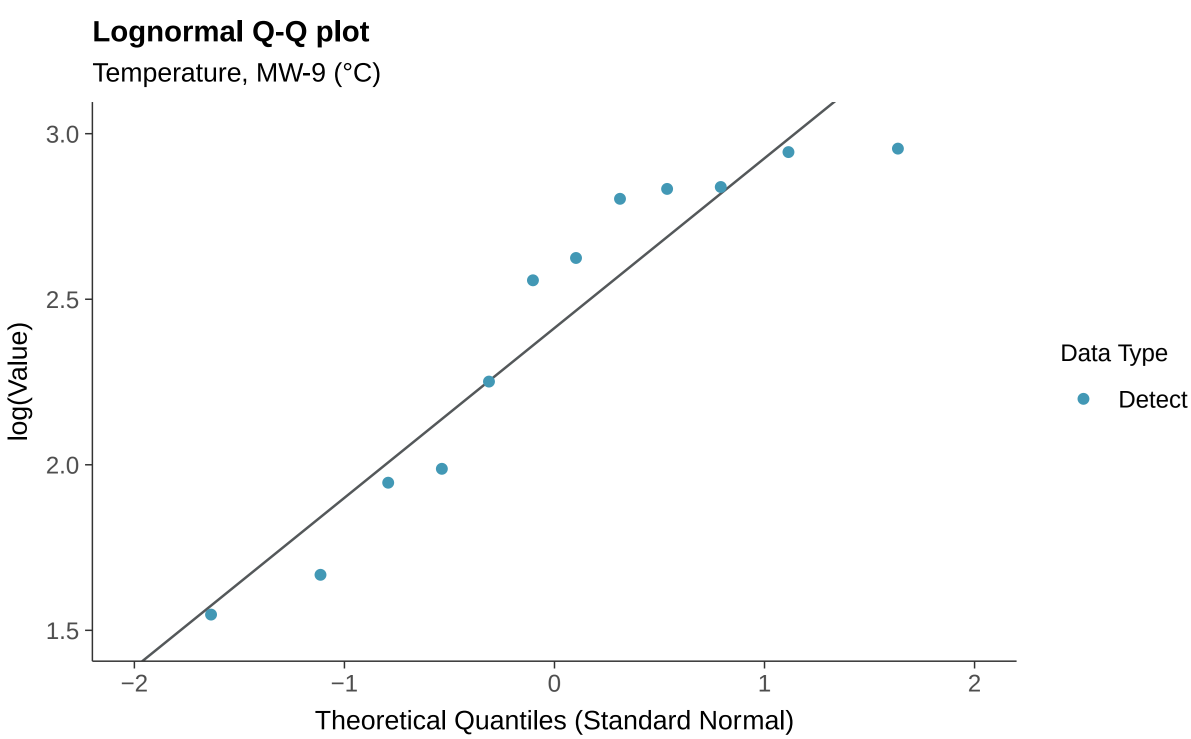


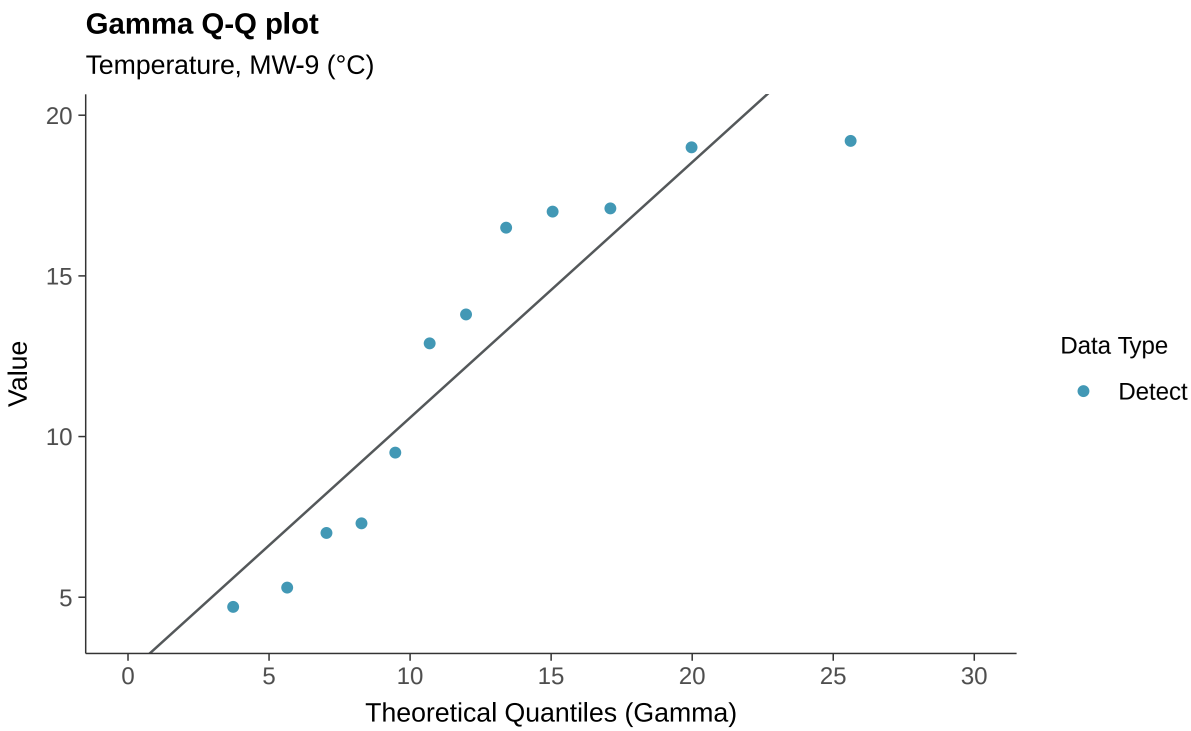
Boxplot by Season

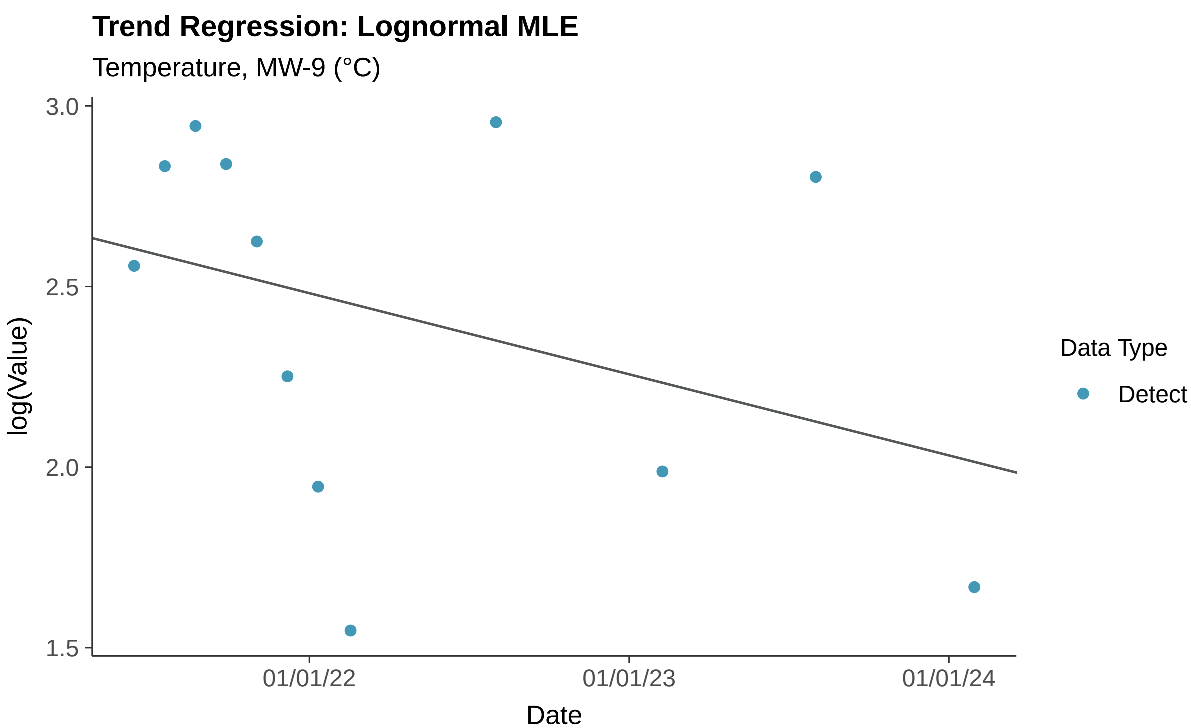
Temperature, MW-9 (°C)

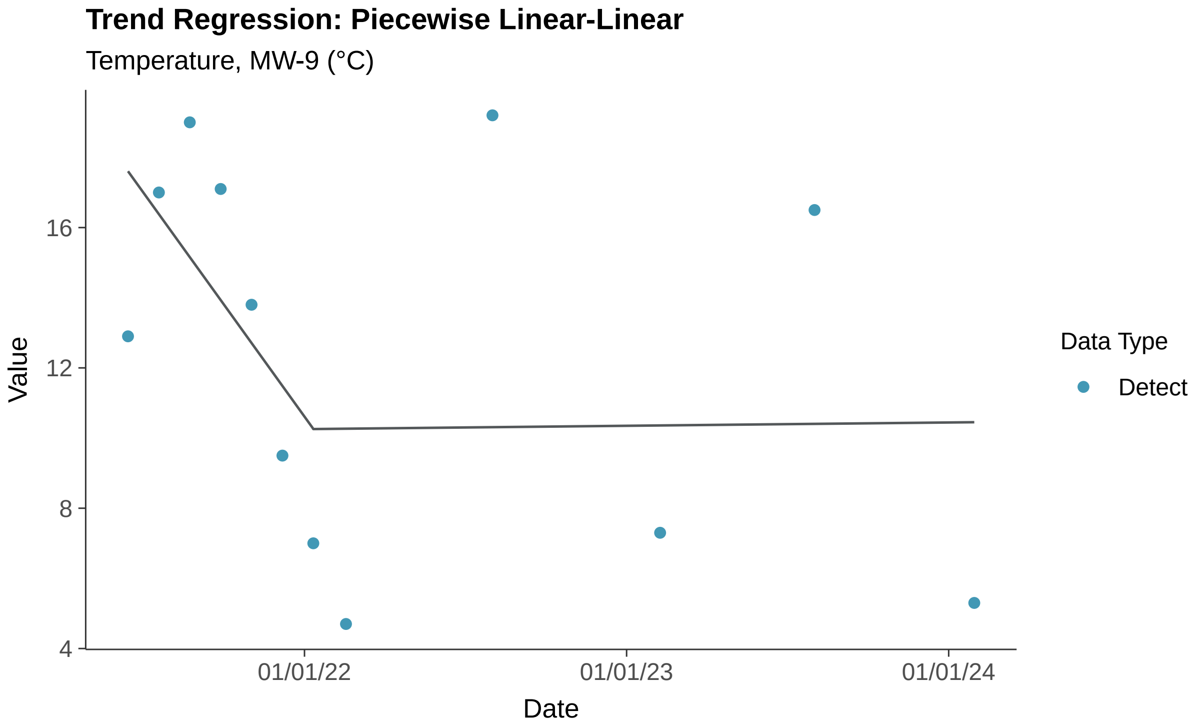



Normal Q-Q plot
Temperature, MW-9 (°C)
Value
20
15
10
5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Temperature, MW-9 (°C)
log(Value)
3.0
2.5
2.0
1.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Temperature, MW-9 (°C)
Value
20
15
10
5
0
5
10
15
20
25
30
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Temperature, MW-9 (°C)
log(Value)
3.0
2.5
2.0
1.5
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

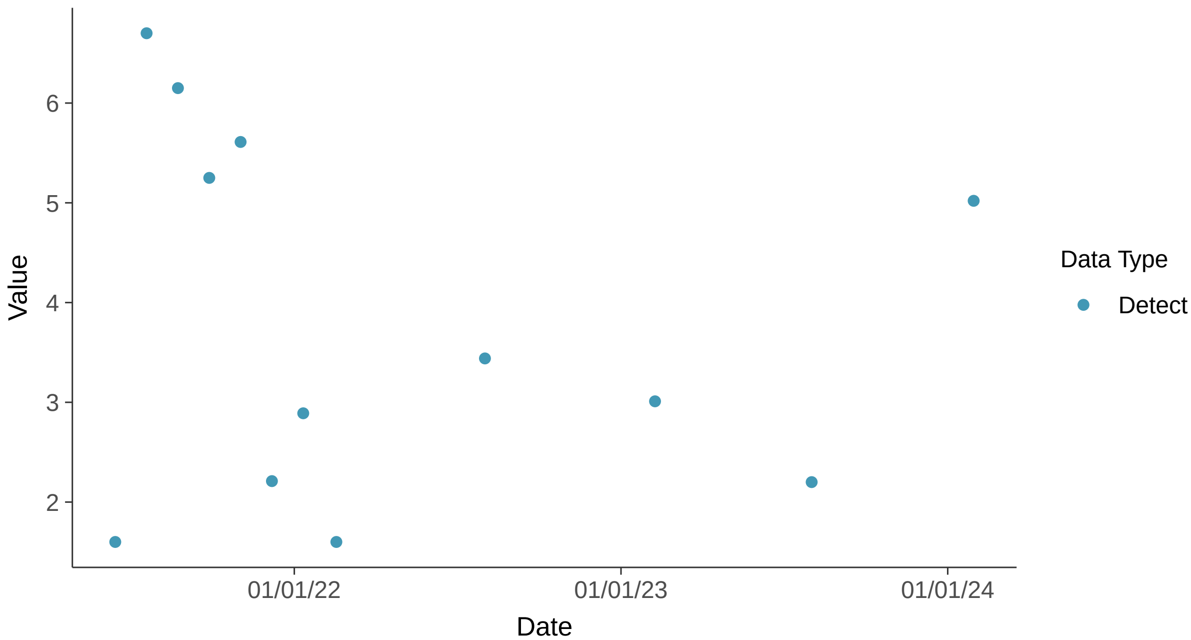

Trend Regression: Piecewise Linear-Linear
Temperature, MW-9 (°C)
Value
16
12
8
4
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Turbidity, MW-9

ID: 09_3_28

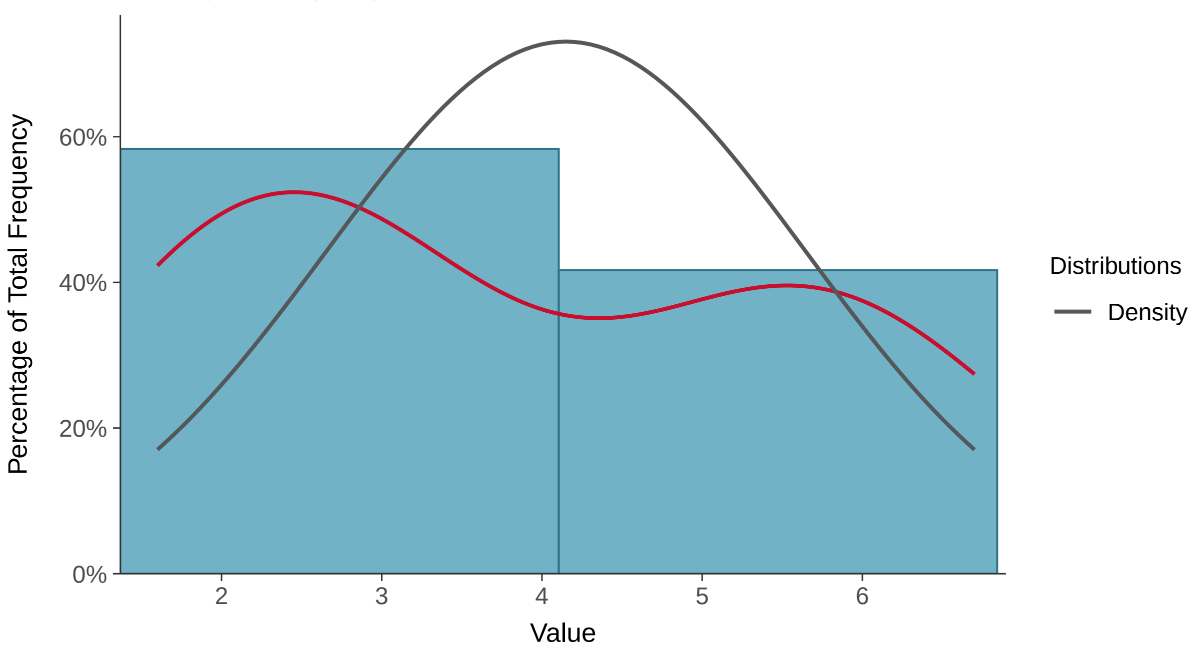
Scatter Plot

Turbidity, MW-9 (NTU)



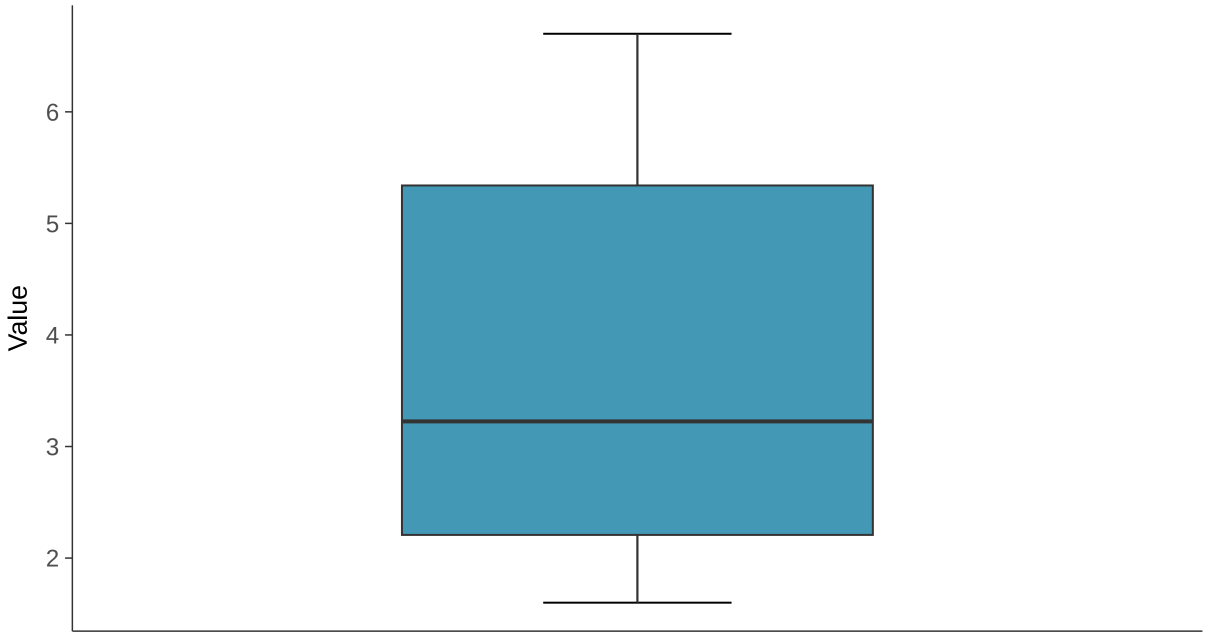
Histogram

Turbidity, MW-9 (NTU)



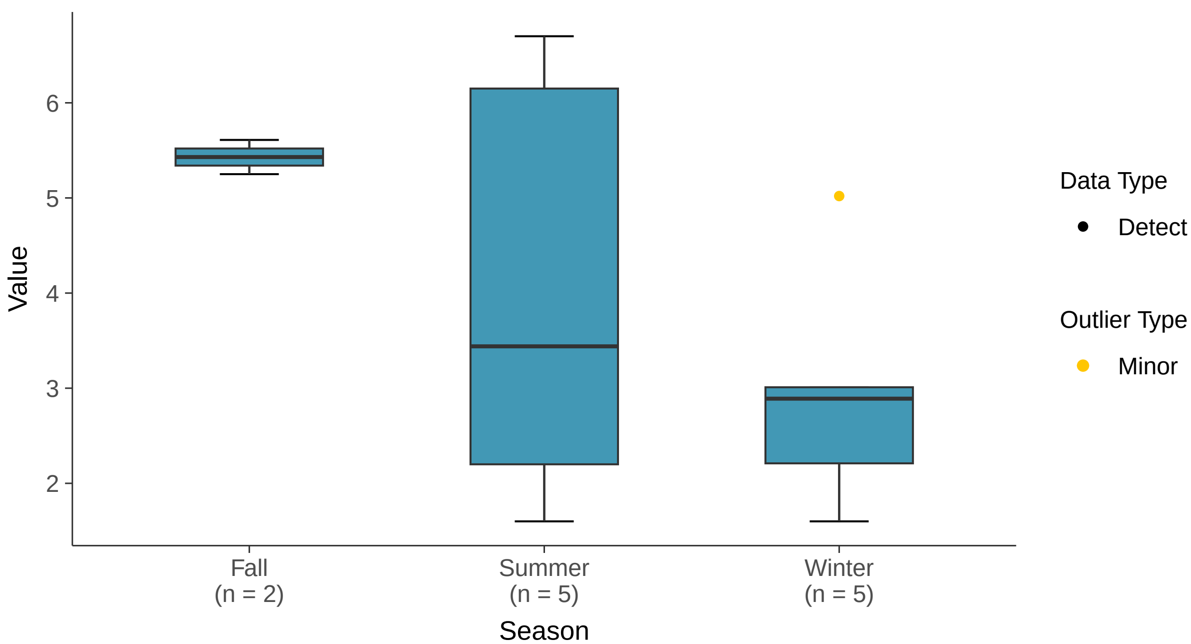
Boxplot

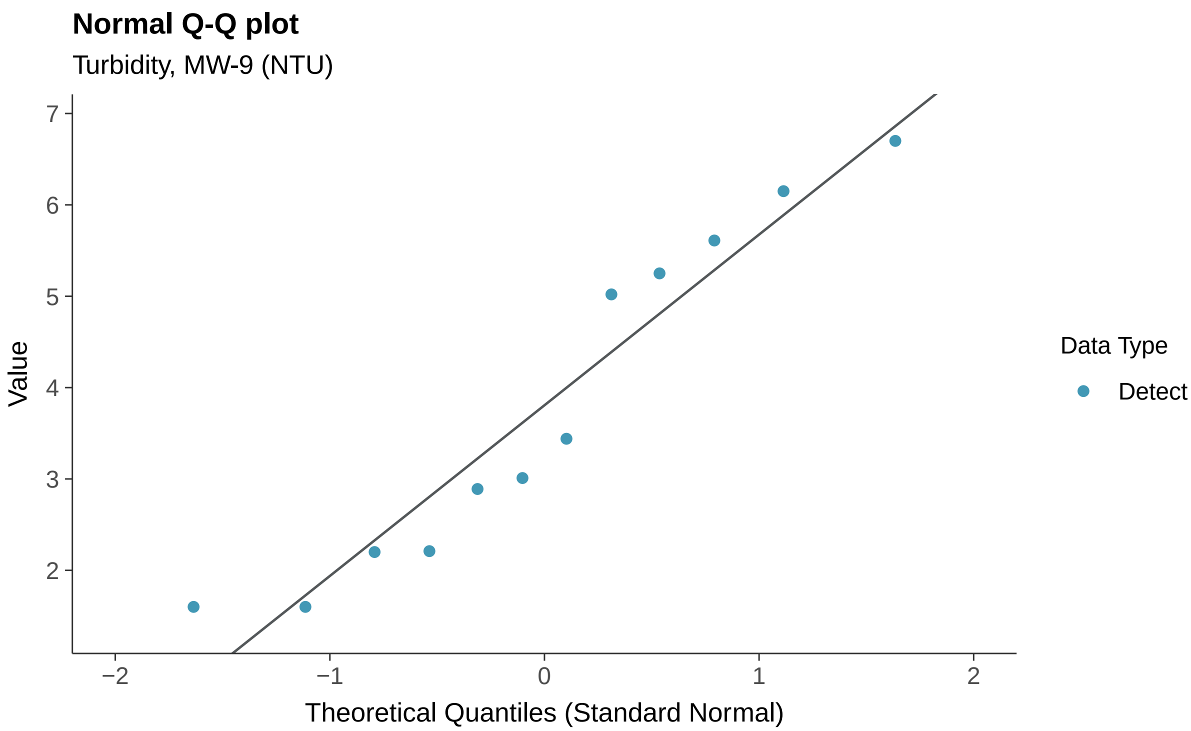
Turbidity, MW-9 (NTU)

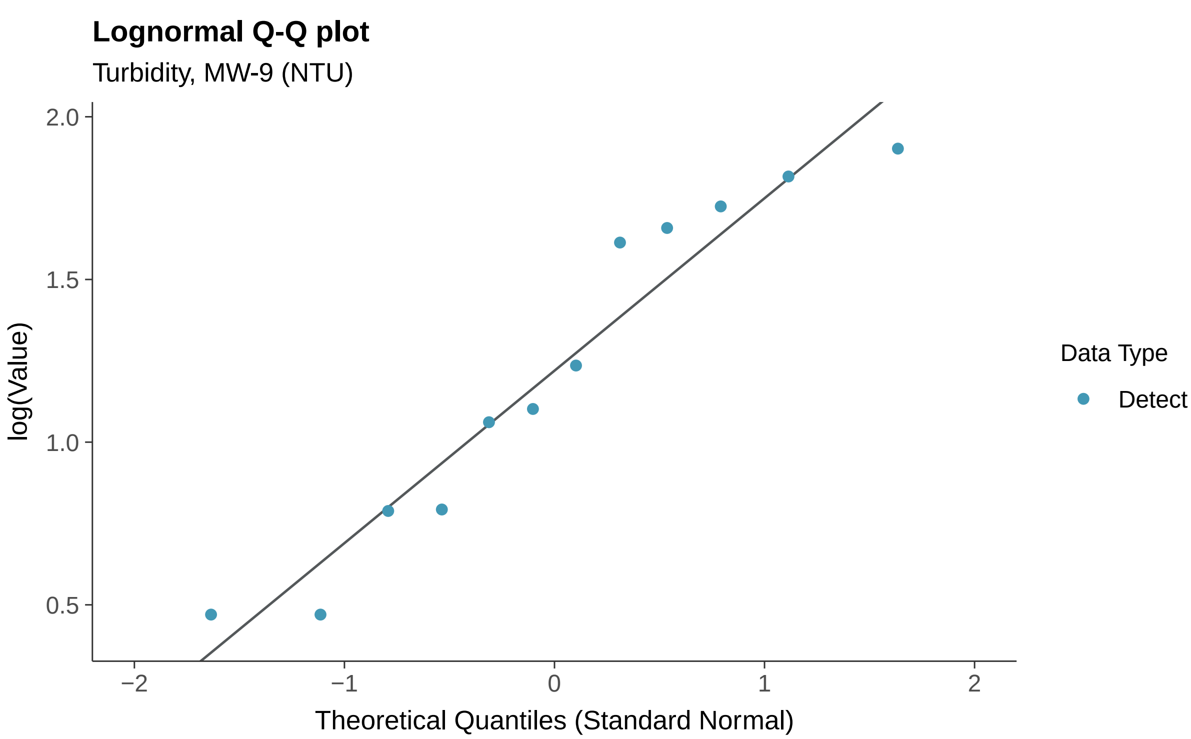


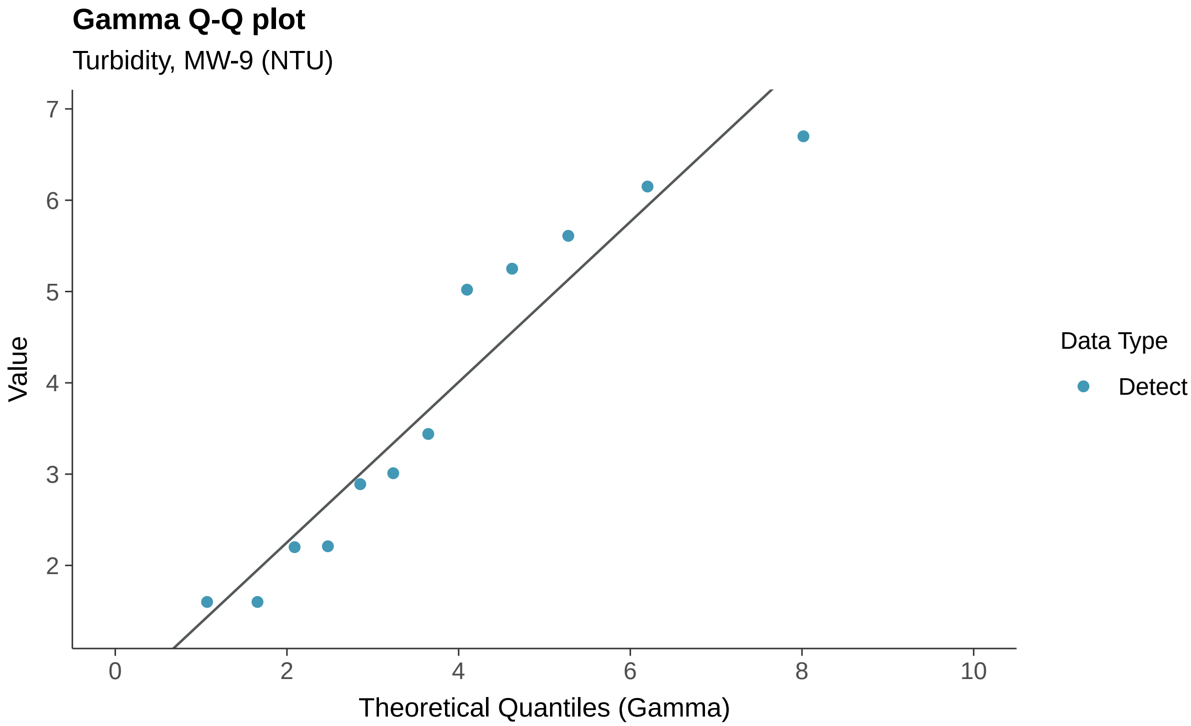
Boxplot by Season

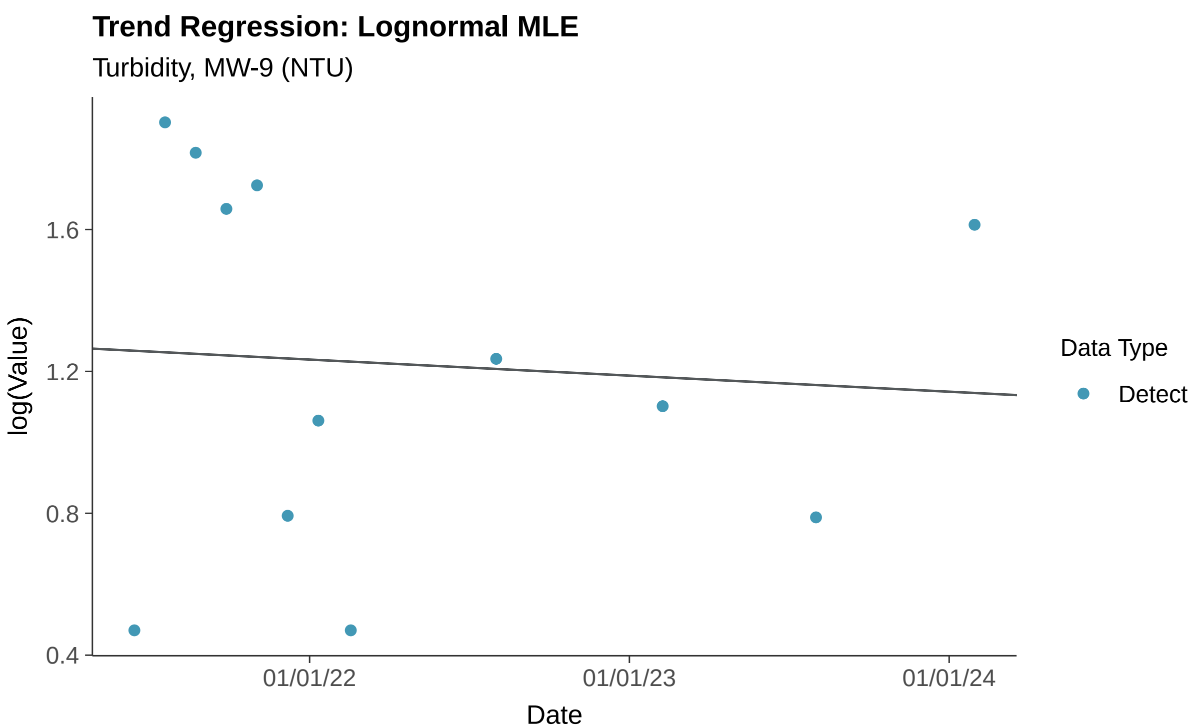
Turbidity, MW-9 (NTU)

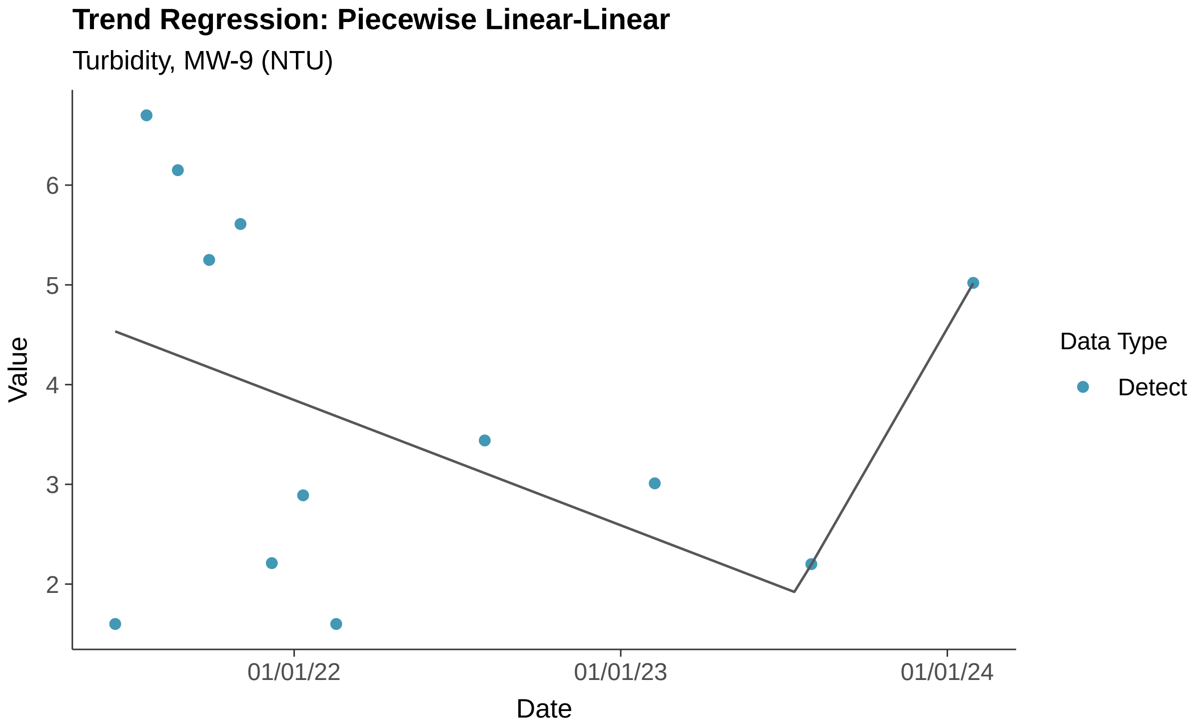


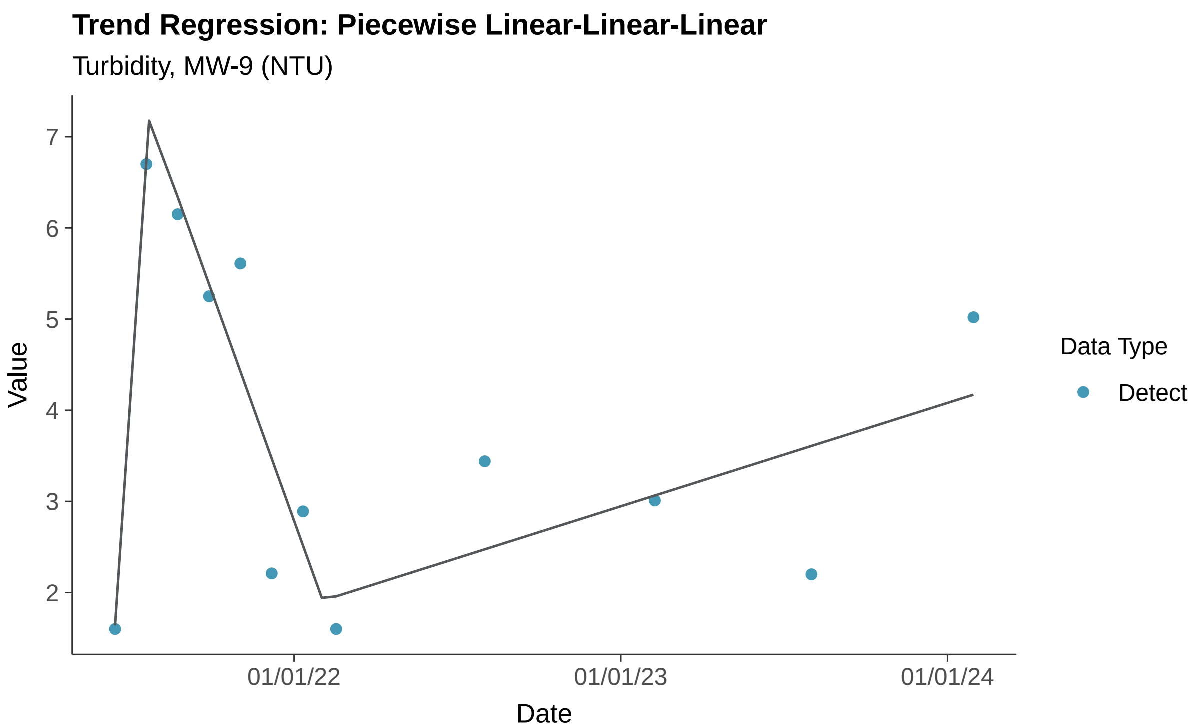

Normal Q-Q plot
Turbidity, MW-9 (NTU)
Value
7
6
5
4
3
2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Turbidity, MW-9 (NTU)
log(Value)
2.0
1.5
1.0
0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Turbidity, MW-9 (NTU)
Value
Theoretical Quantiles (Gamma)
Data Type
Detect
7
6
5
4
3
2
0
2
4
6
8
10

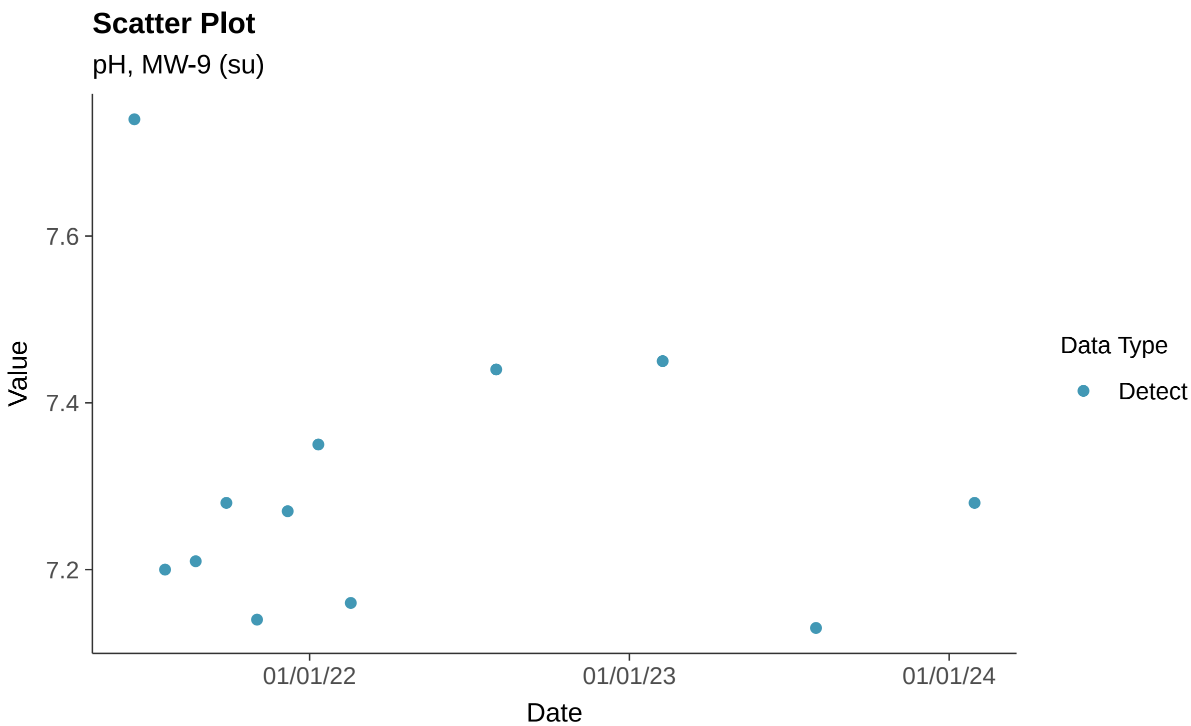

Trend Regression: Lognormal MLE
Turbidity, MW-9 (NTU)
log(Value)
Date
Data Type
Detect
1.6
1.2
0.8
0.4
01/01/22
01/01/23
01/01/24

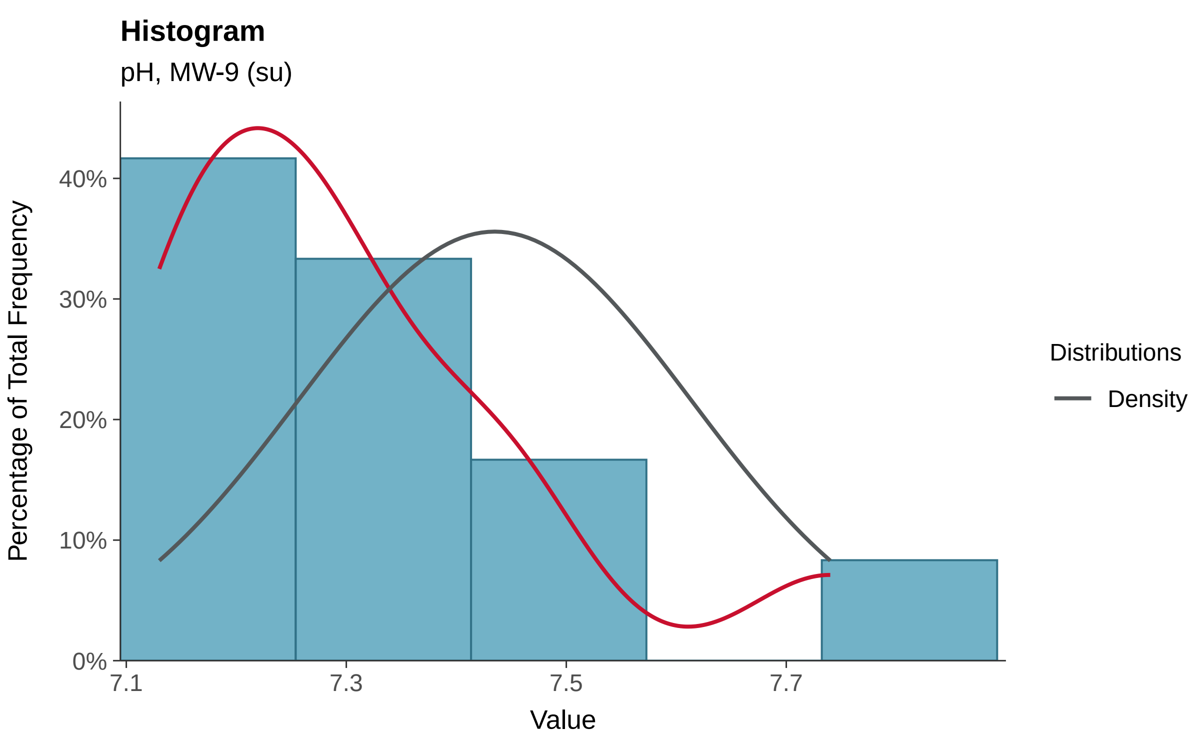

Trend Regression: Piecewise Linear-Linear
Turbidity, MW-9 (NTU)
Value
6
5
4
3
2
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Turbidity, MW-9 (NTU)
Value
7
6
5
4
3
2
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: pH, MW-9

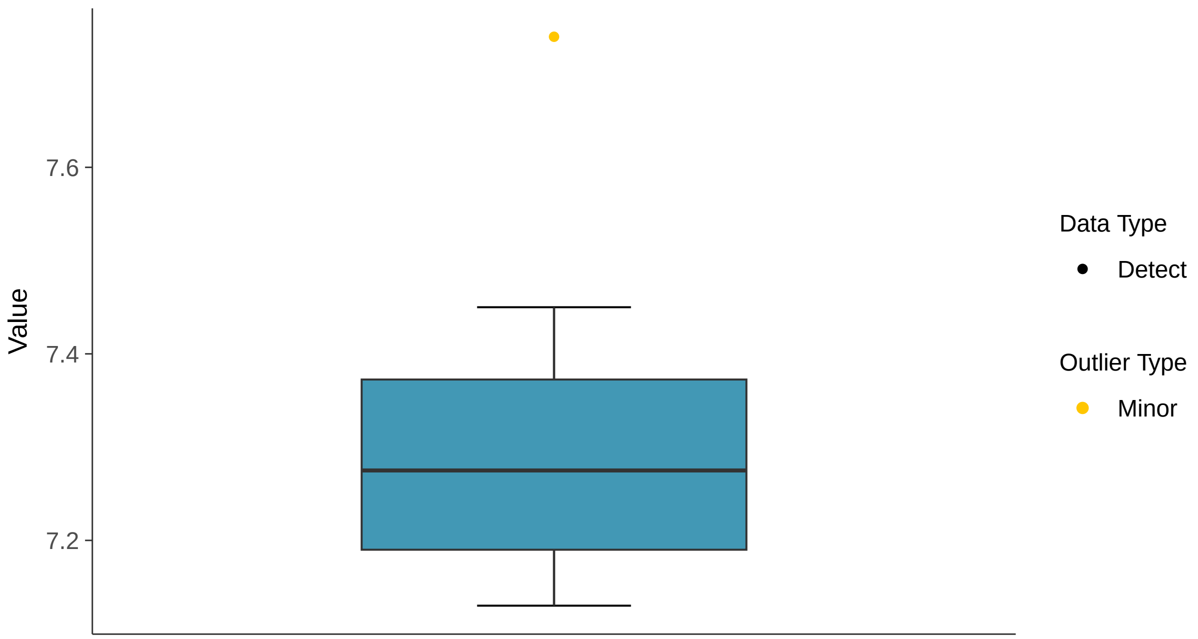
ID: 09_3_29





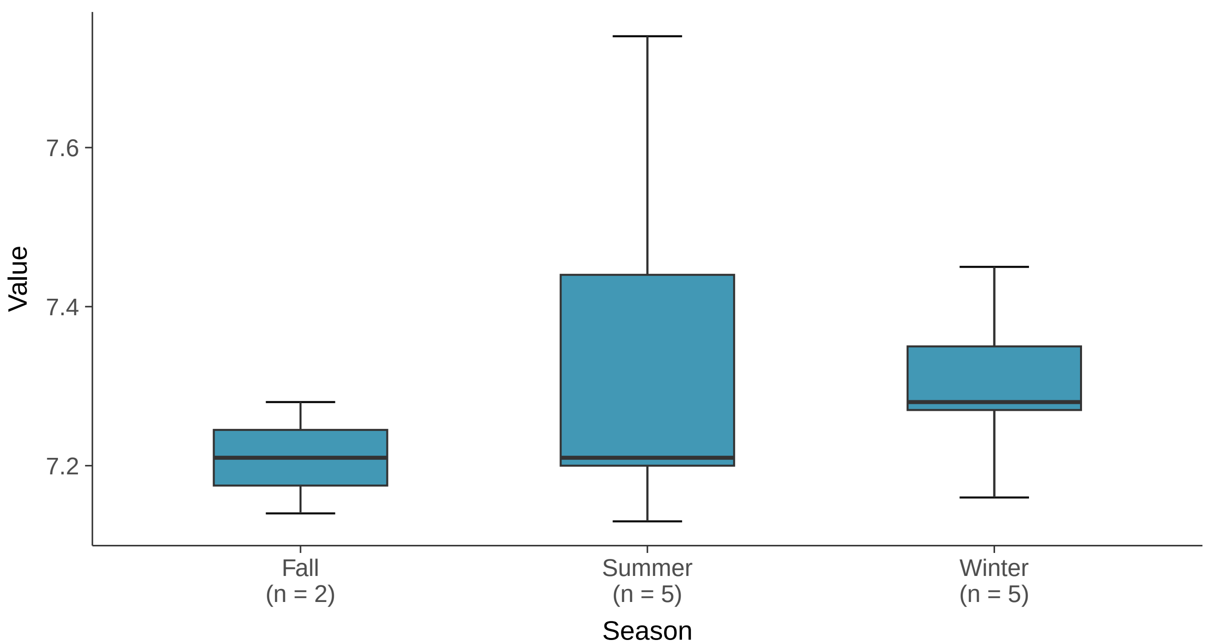
Boxplot

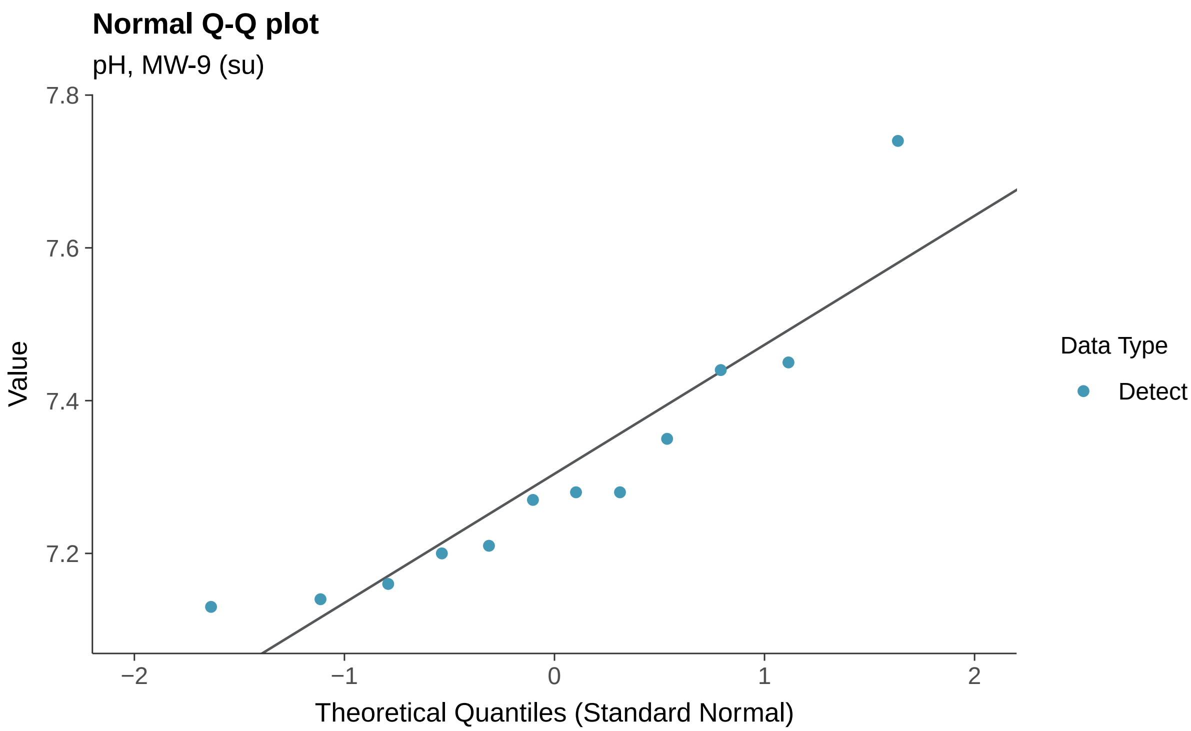
pH, MW-9 (su)

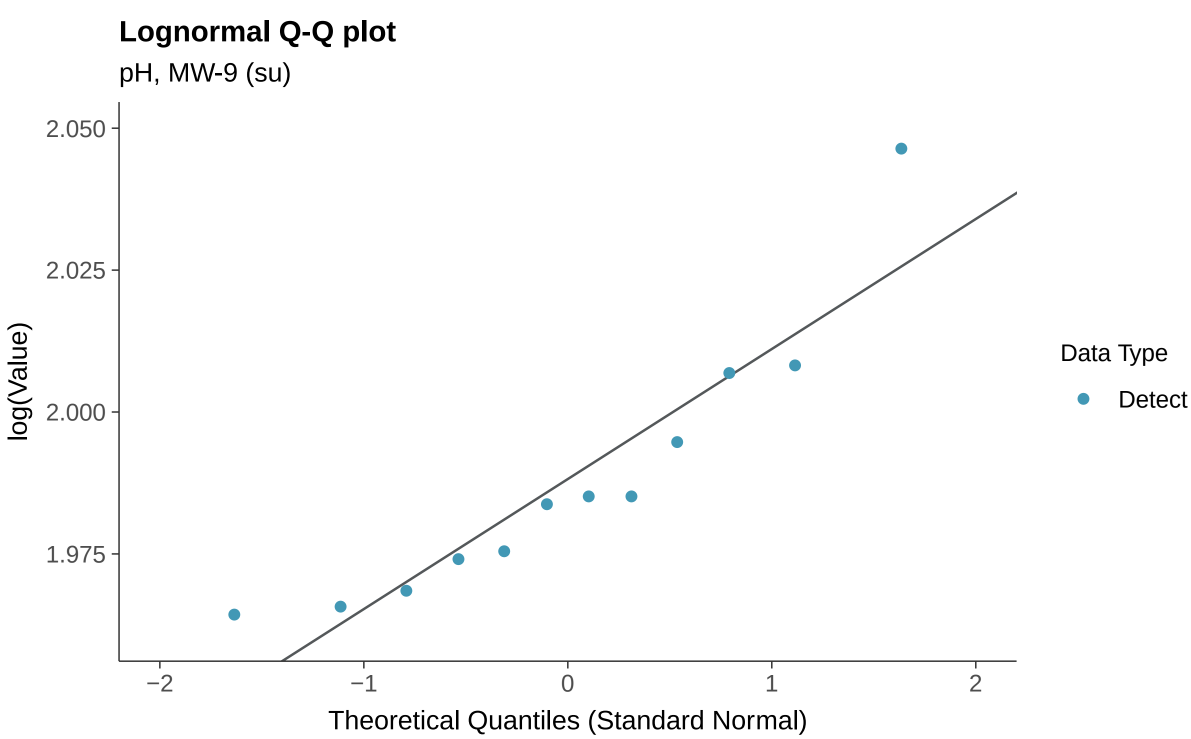


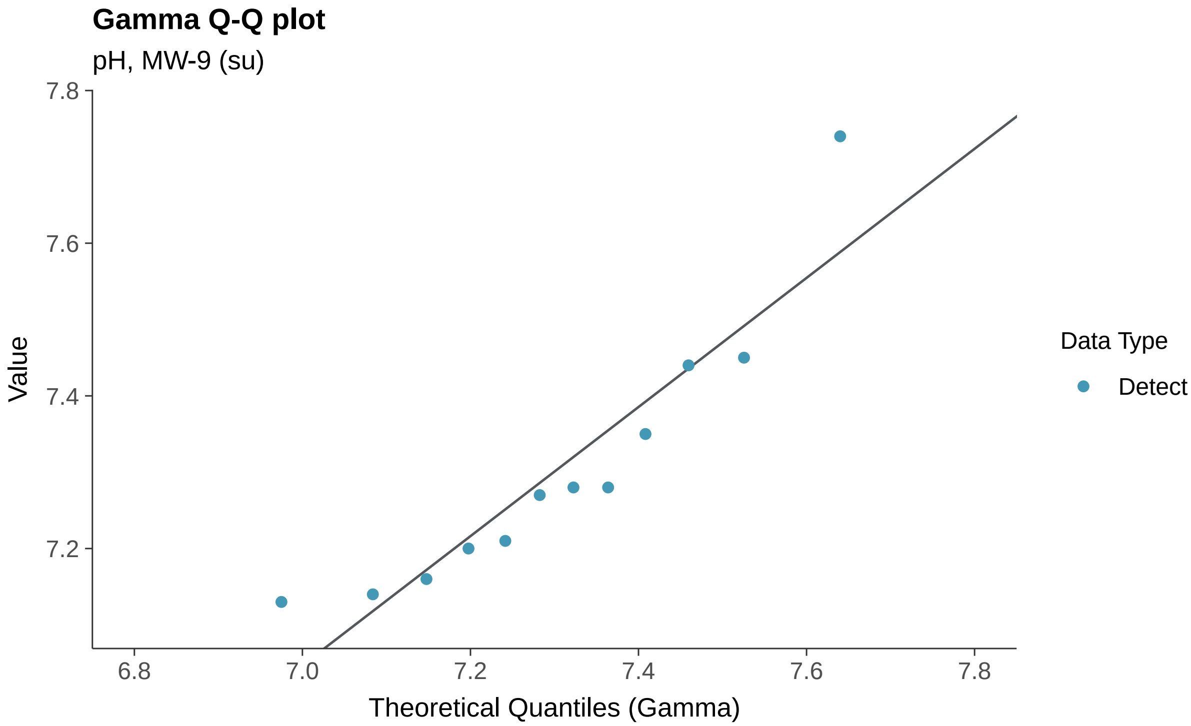
Boxplot by Season

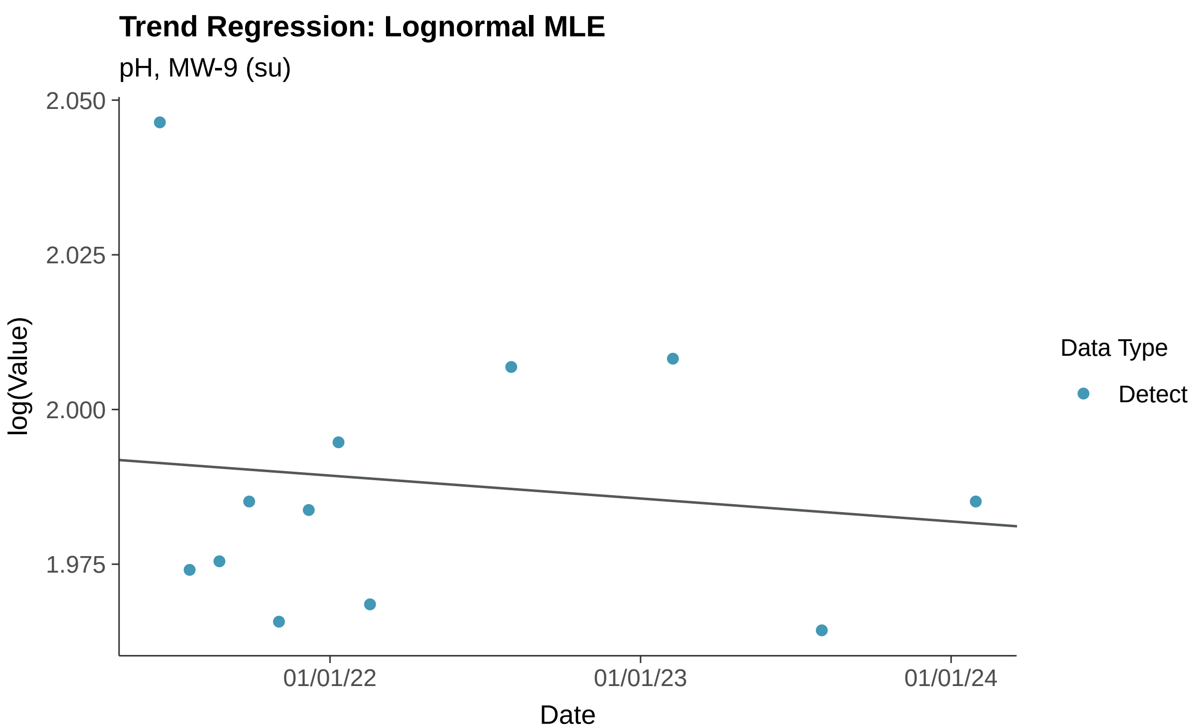
pH, MW-9 (su)




Normal Q-Q plot
pH, MW-9 (su)
Value
7.8
7.6
7.4
7.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

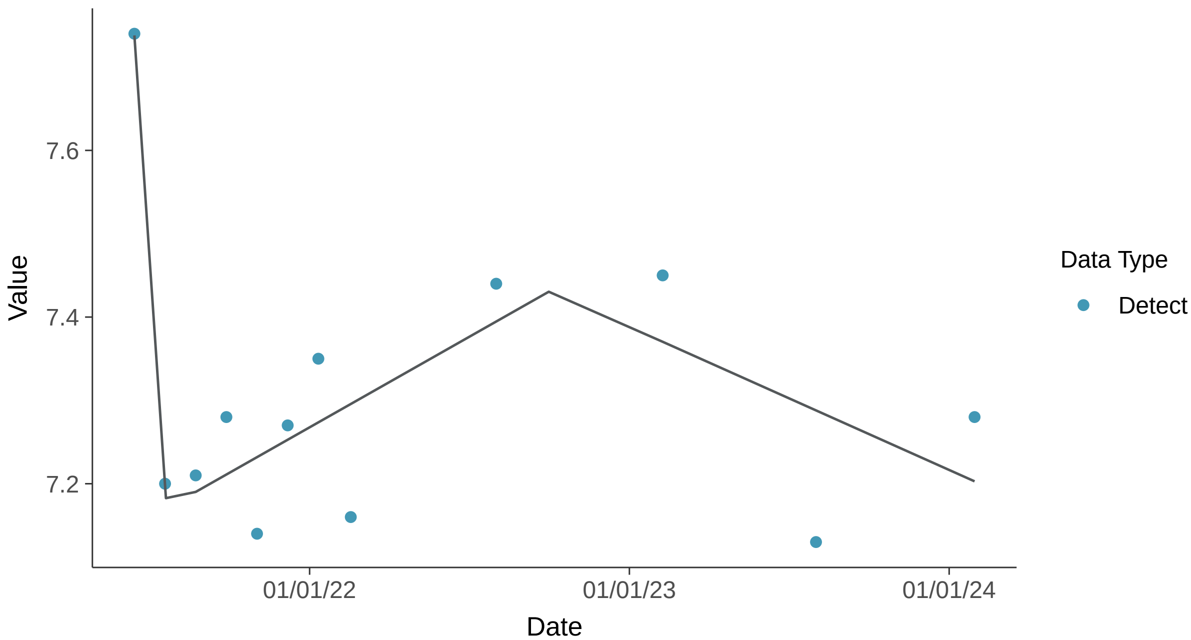

Lognormal Q-Q plot
pH, MW-9 (su)
log(Value)
2.050
2.025
2.000
1.975
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, MW-9 (su)
Value
7.8
7.6
7.4
7.2
6.8
7.0
7.2
7.4
7.6
7.8
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, MW-9 (su)
log(Value)
2.050
2.025
2.000
1.975
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear-Linear

pH, MW-9 (su)

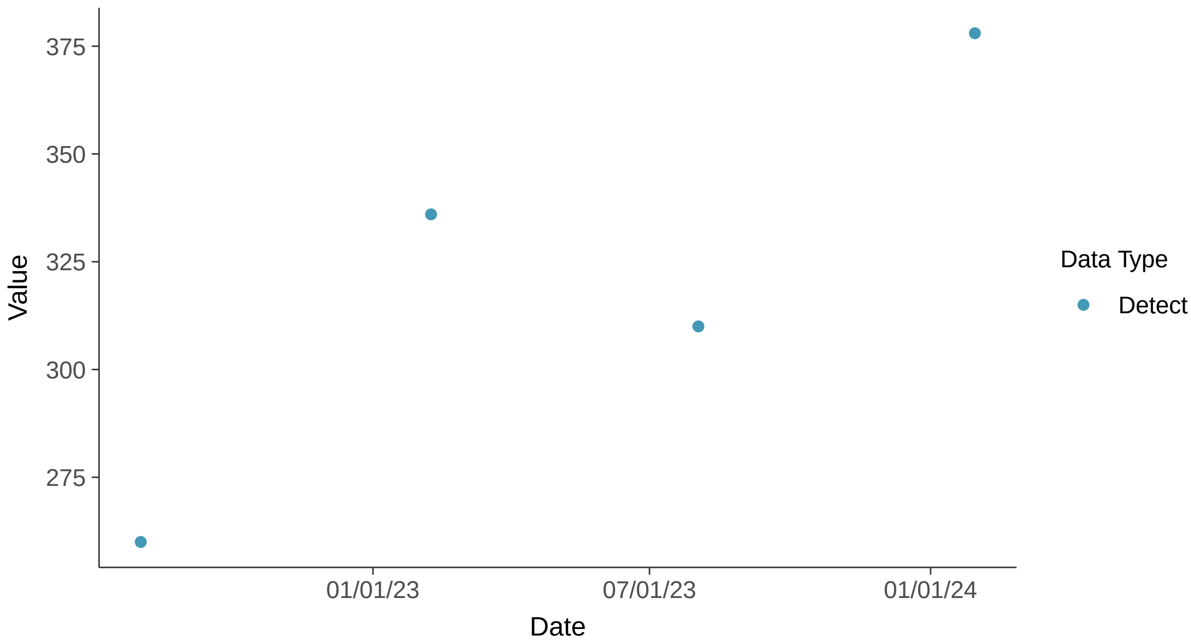


Other: Bicarbonate, MW-9

ID: 09_4_30

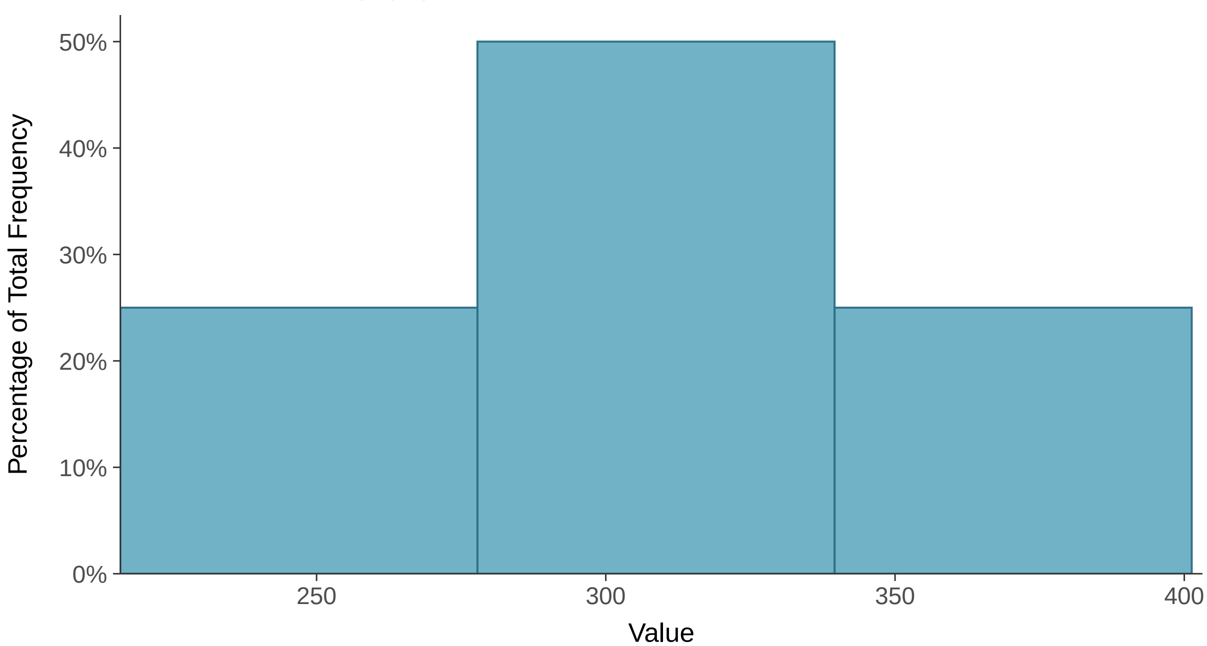
Scatter Plot

Bicarbonate, MW-9 (mg/L)



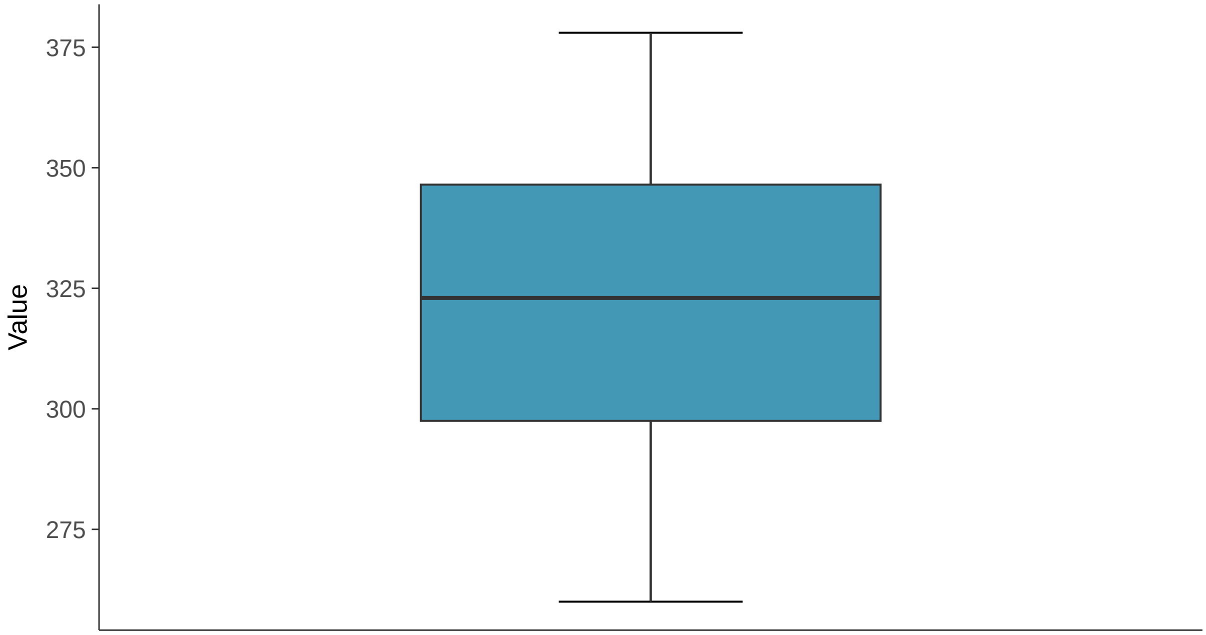
Histogram

Bicarbonate, MW-9 (mg/L)



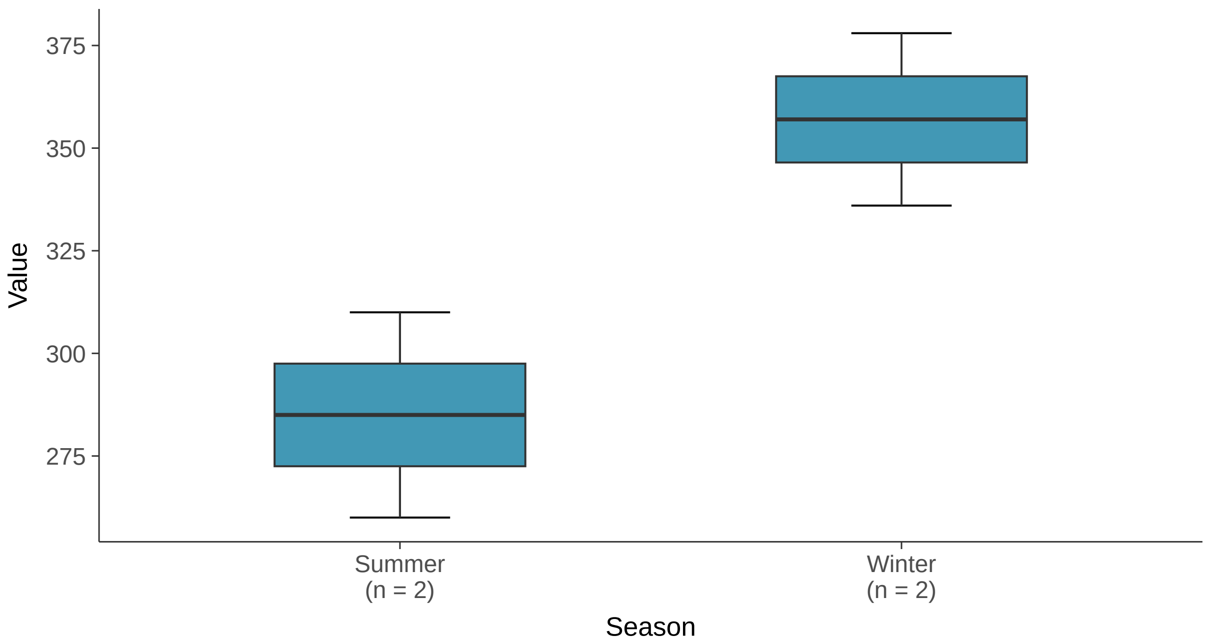
Boxplot

Bicarbonate, MW-9 (mg/L)



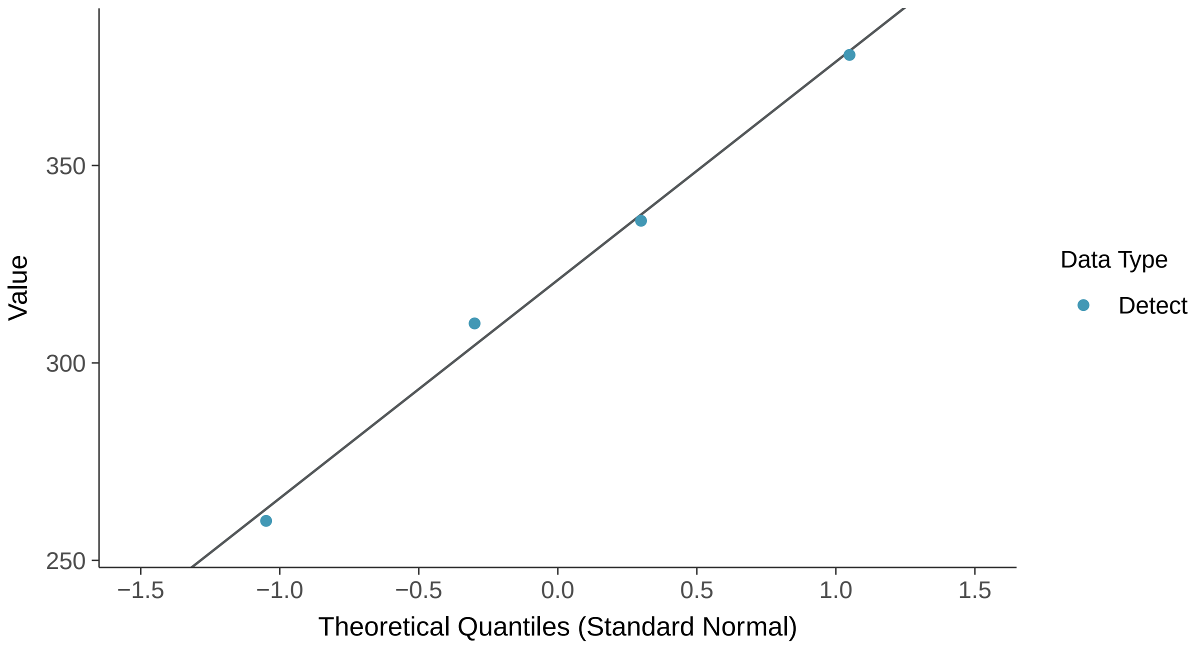
Boxplot by Season

Bicarbonate, MW-9 (mg/L)



Normal Q-Q plot

Bicarbonate, MW-9 (mg/L)

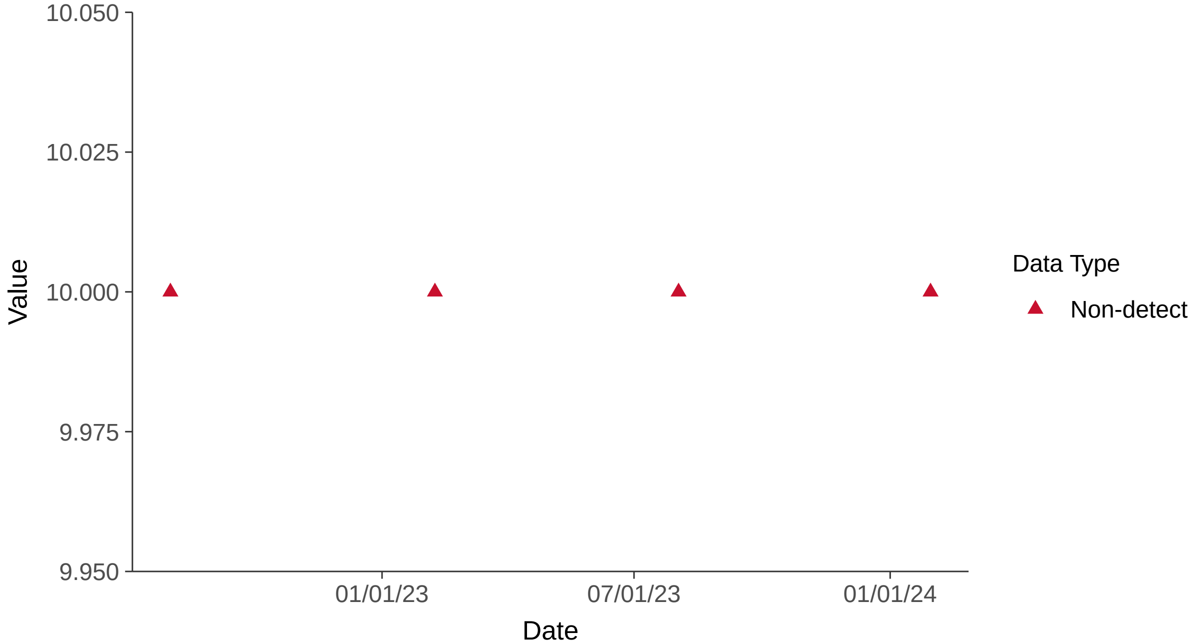


Other: Carbonate, MW-9

ID: 09_4_31

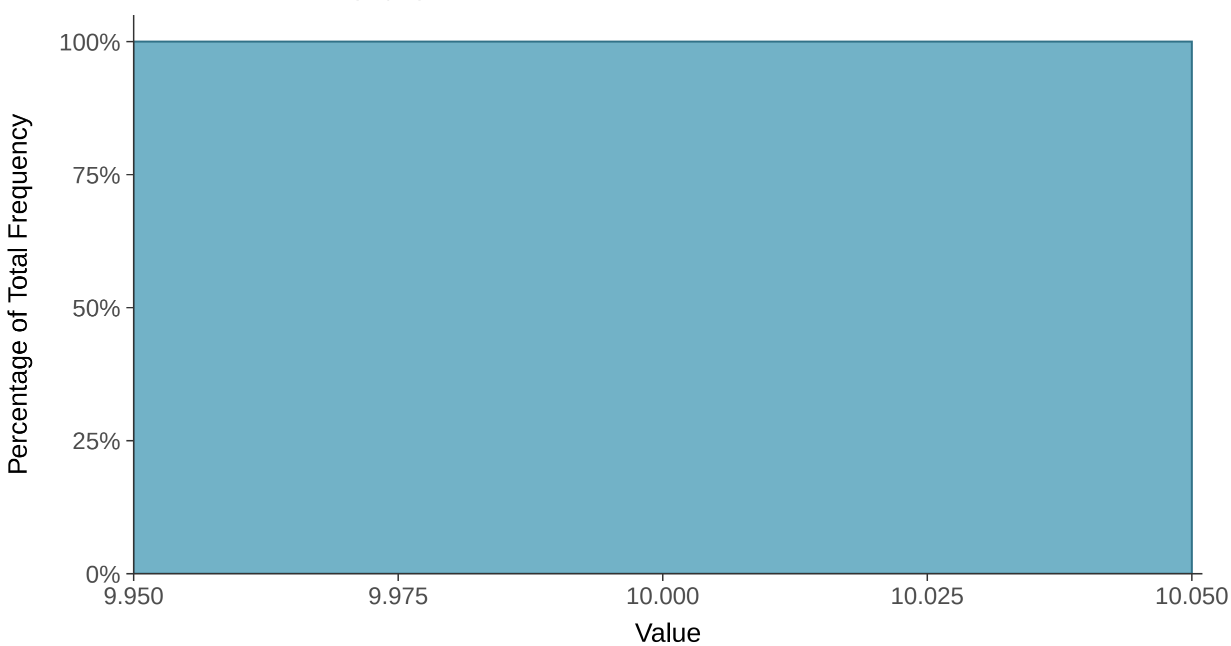
Scatter Plot

Carbonate, MW-9 (mg/L)



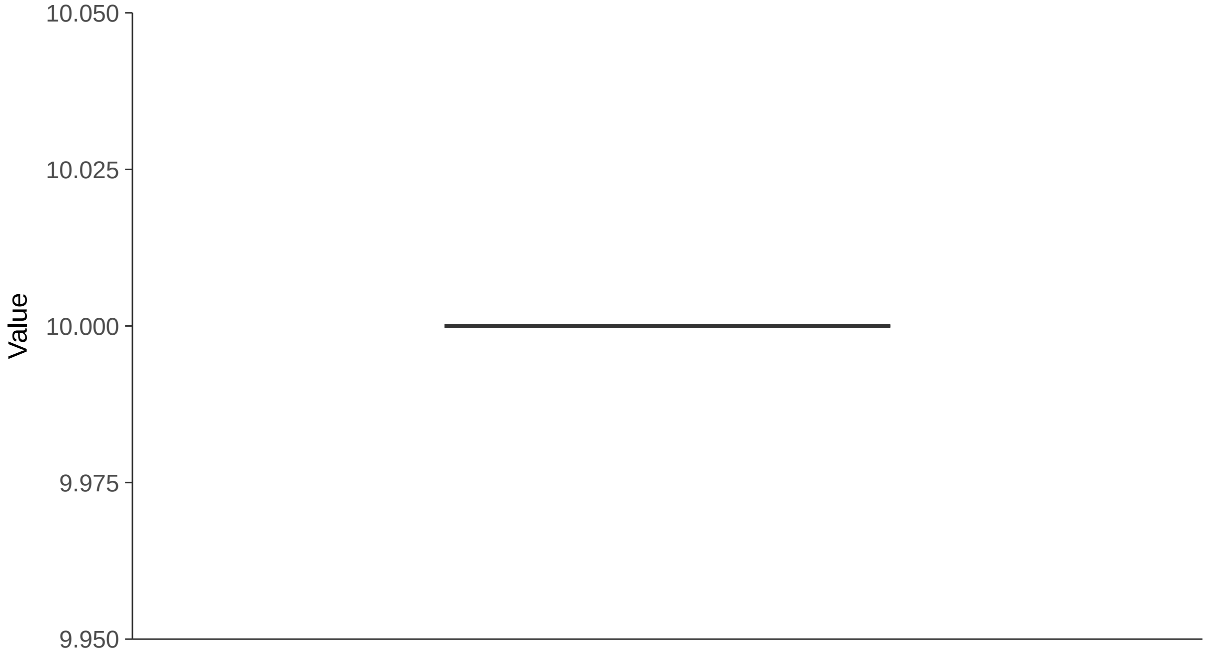
Histogram

Carbonate, MW-9 (mg/L)



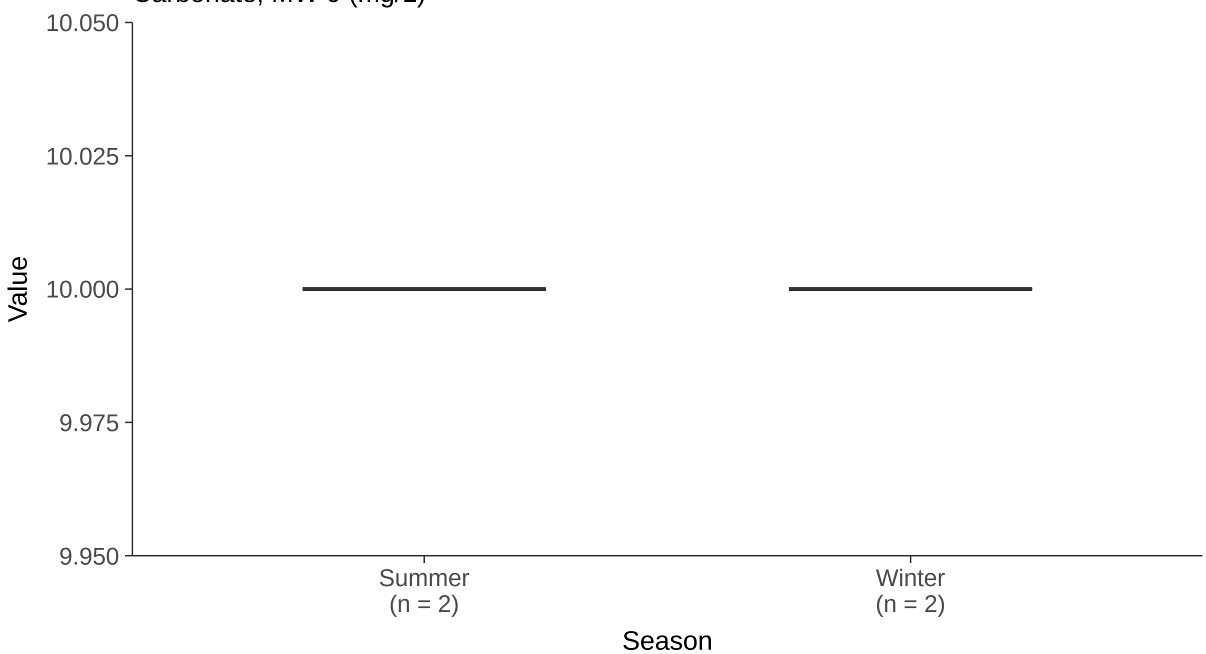
Boxplot

Carbonate, MW-9 (mg/L)



Boxplot by Season

Carbonate, MW-9 (mg/L)

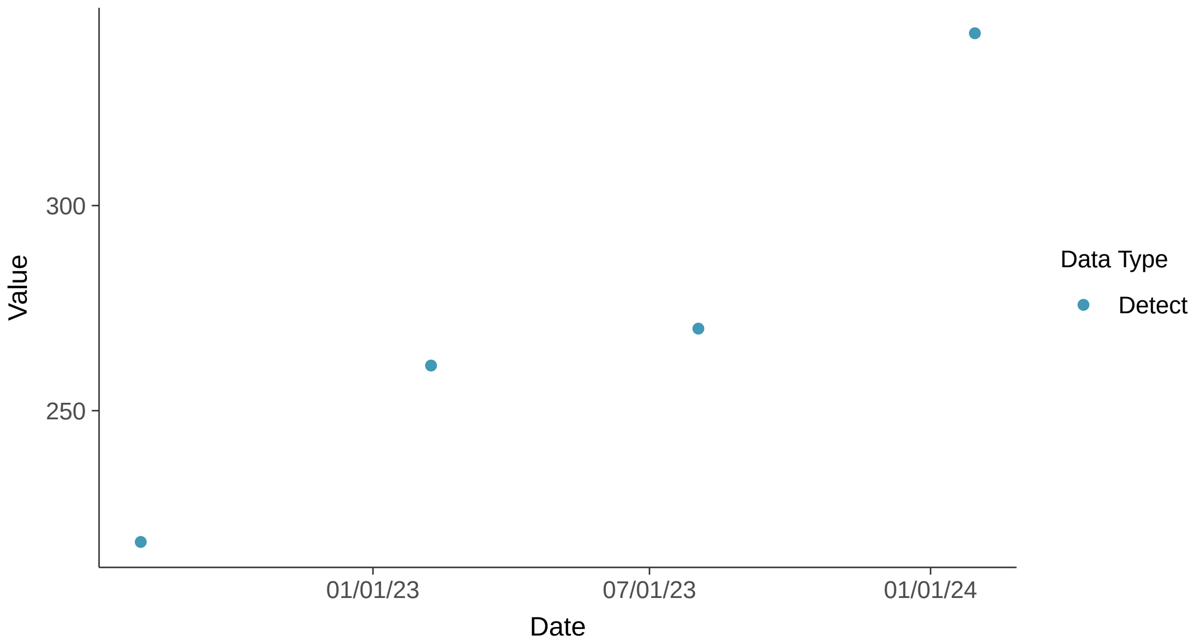


Other: Hardness, MW-9

ID: 09_4_32

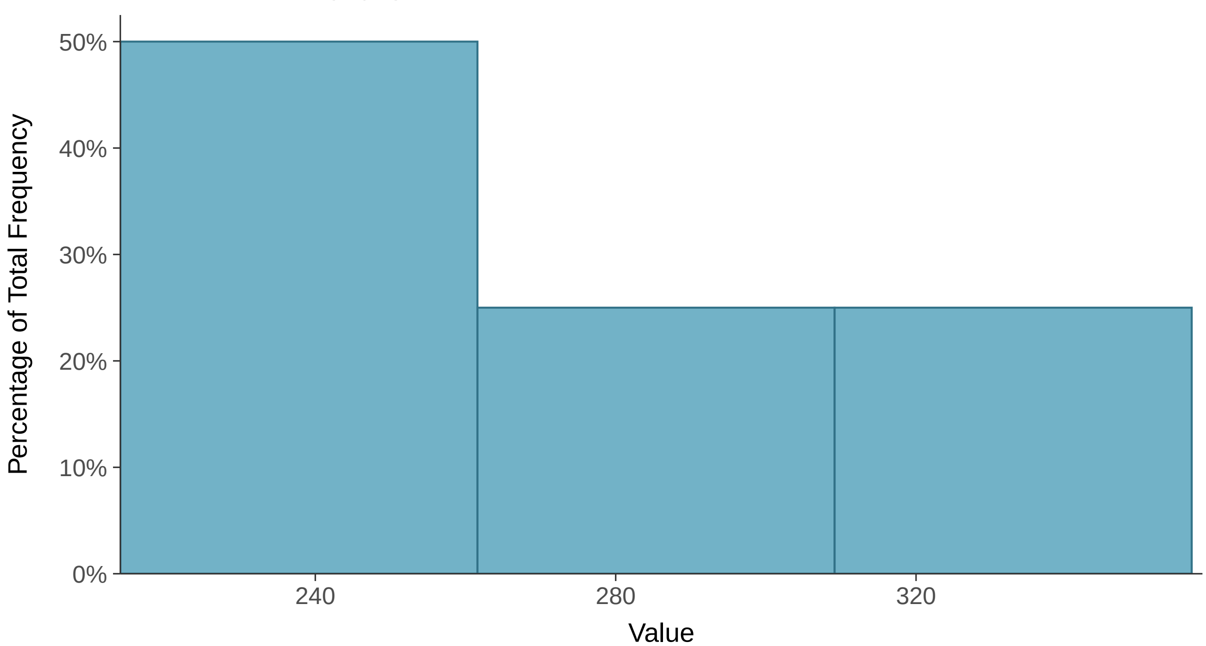
Scatter Plot

Hardness, MW-9 (mg/L)



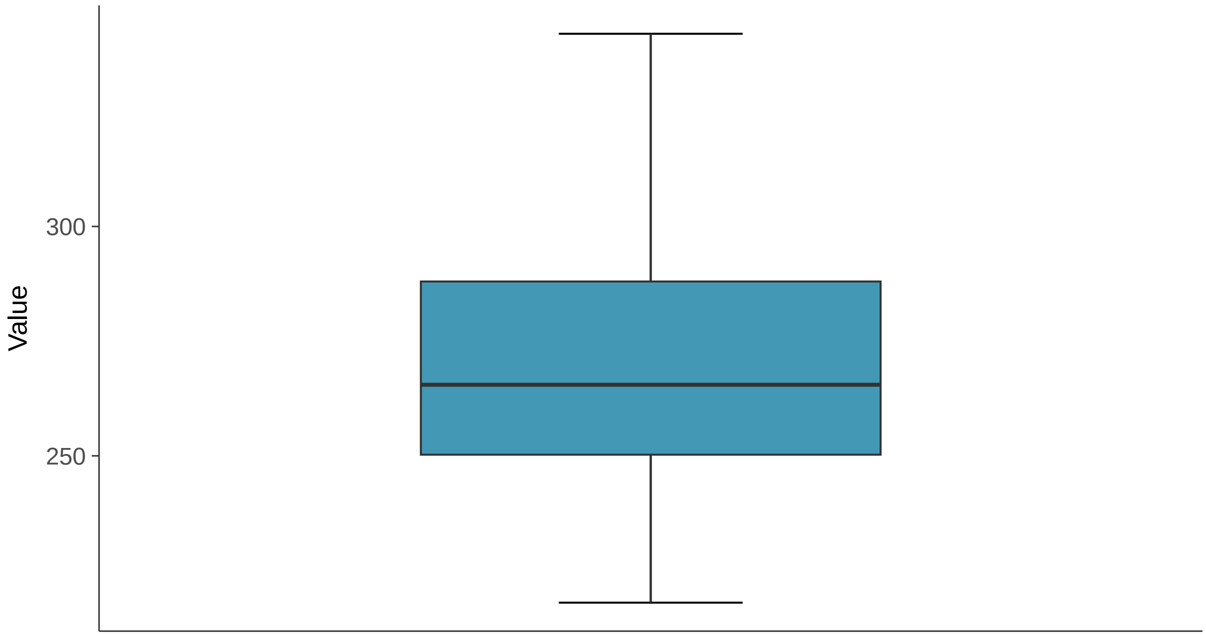
Histogram

Hardness, MW-9 (mg/L)



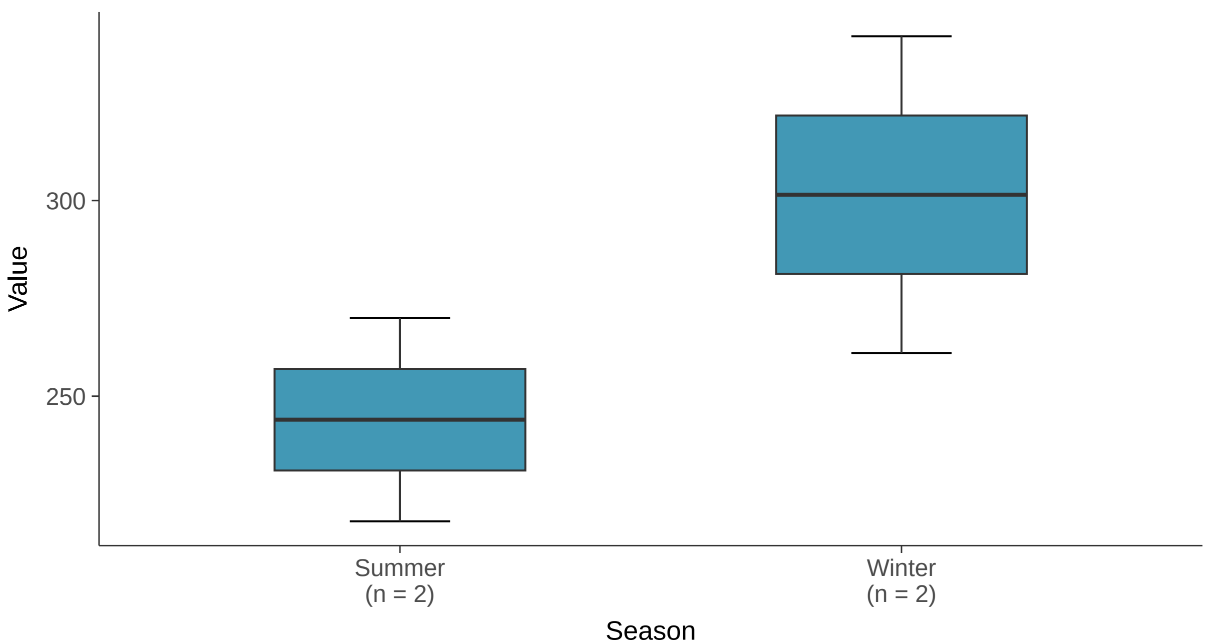
Boxplot

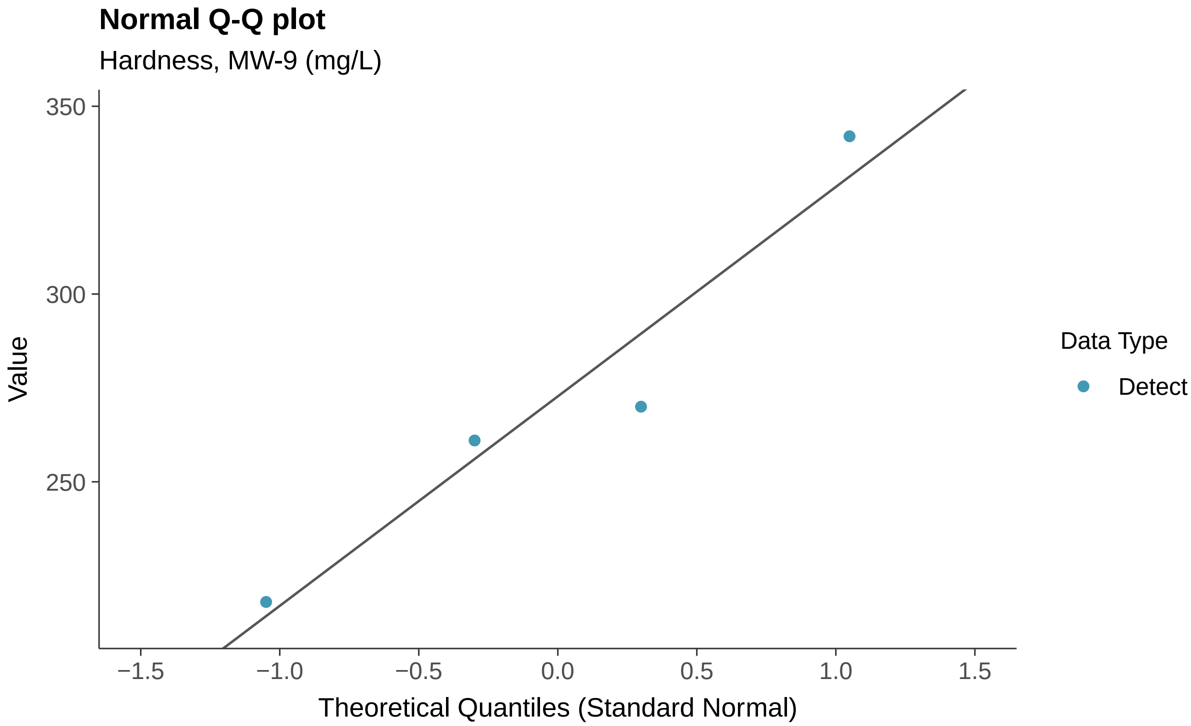
Hardness, MW-9 (mg/L)



Boxplot by Season

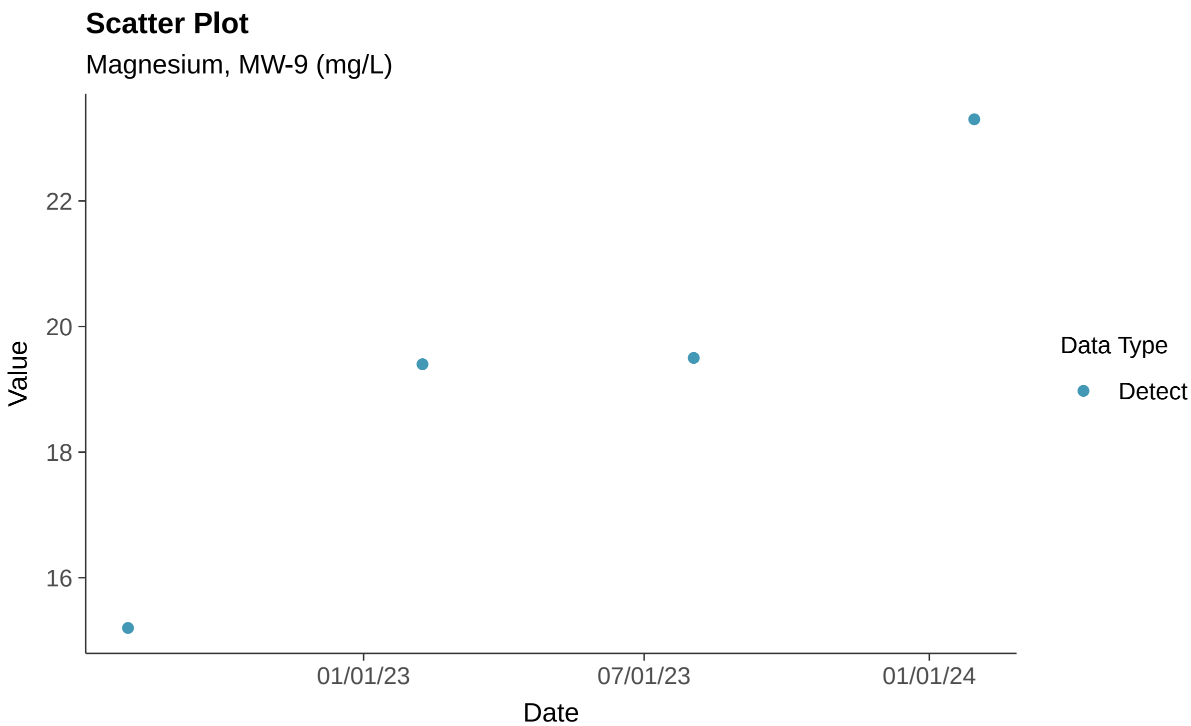
Hardness, MW-9 (mg/L)

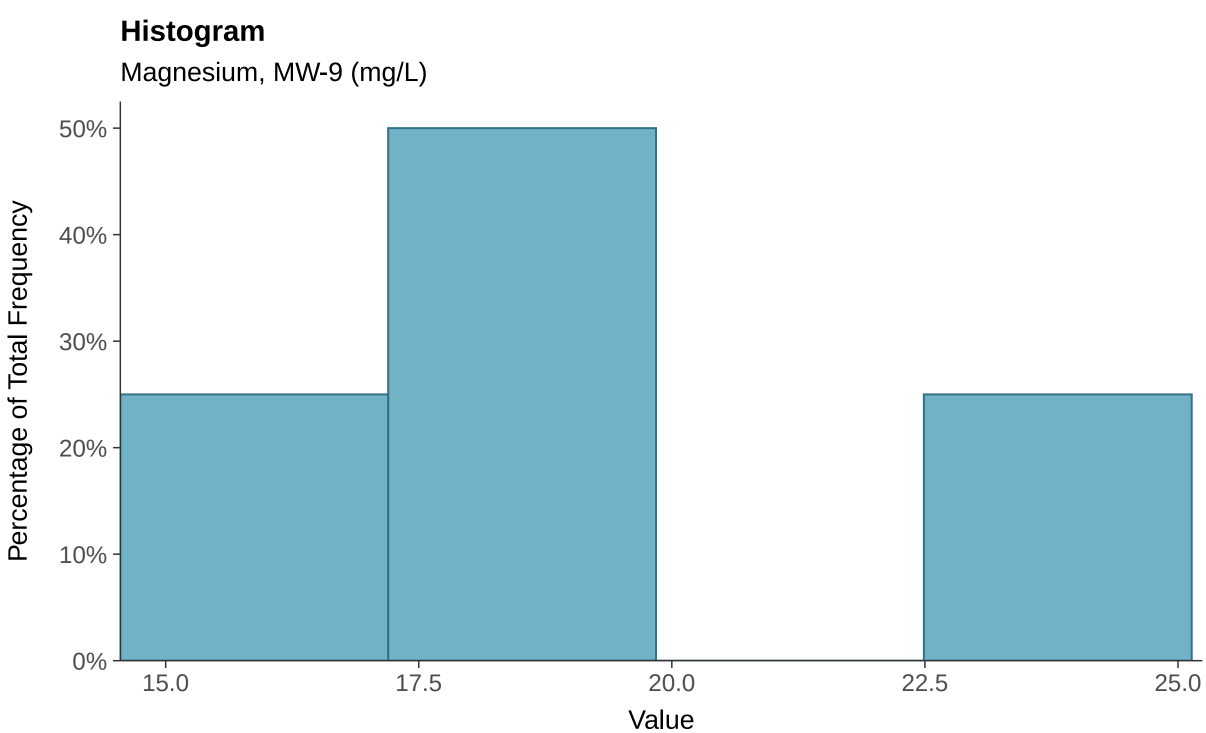



Normal Q-Q plot
Hardness, MW-9 (mg/L)
Value
350
300
250
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Magnesium, MW-9

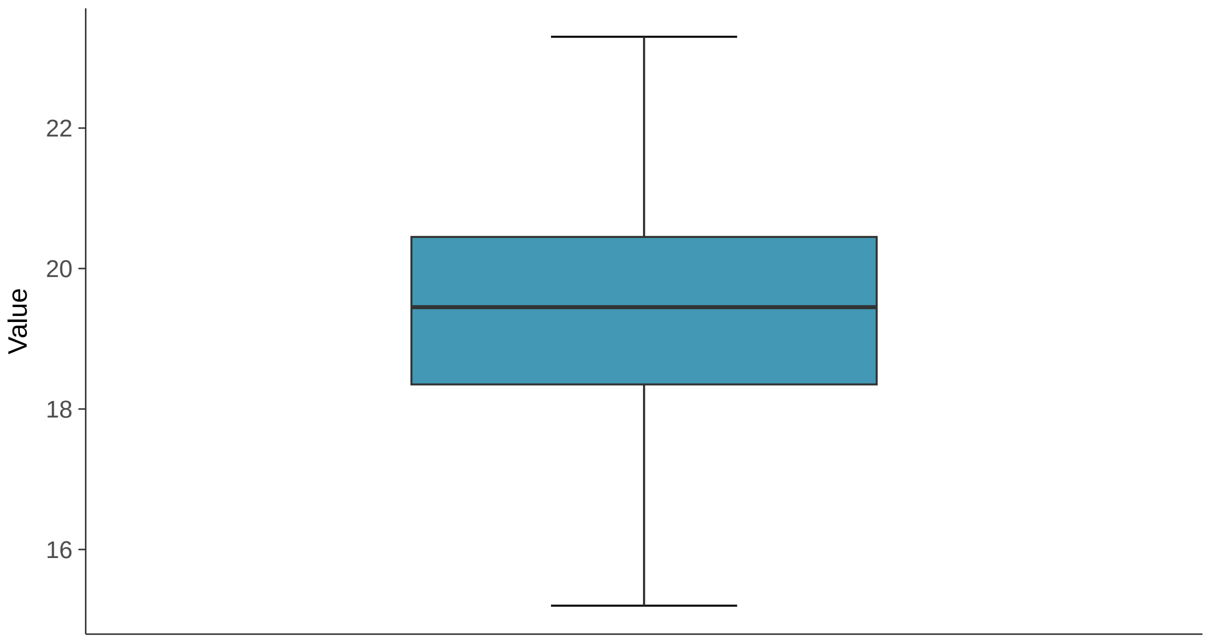
ID: 09_4_33





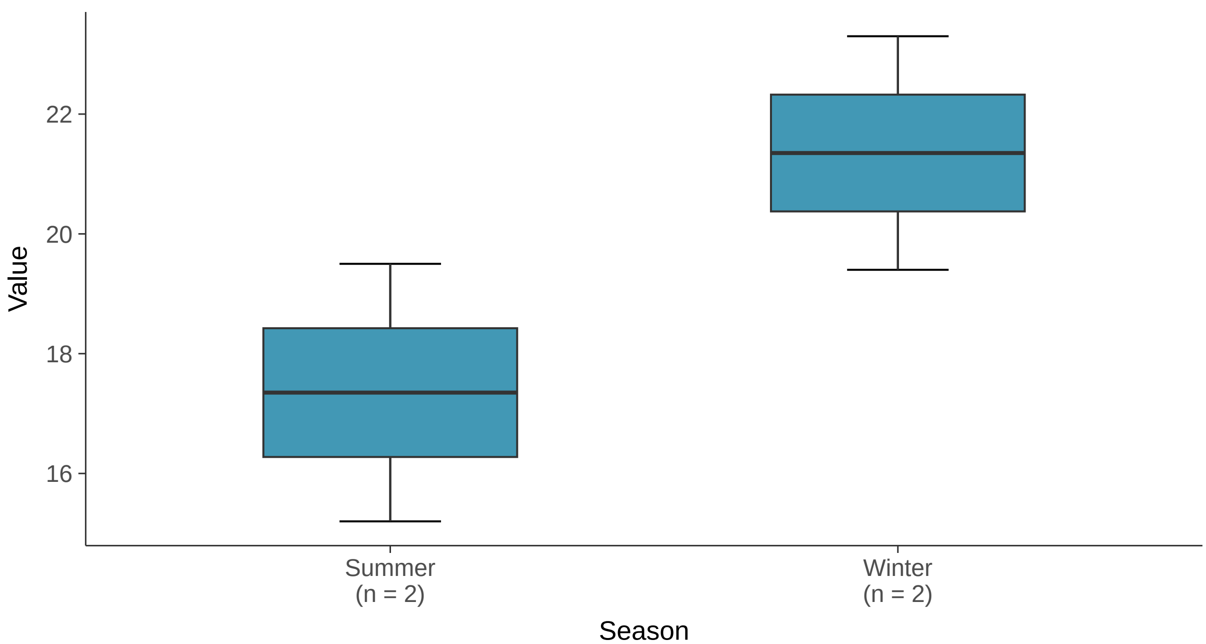
Boxplot

Magnesium, MW-9 (mg/L)



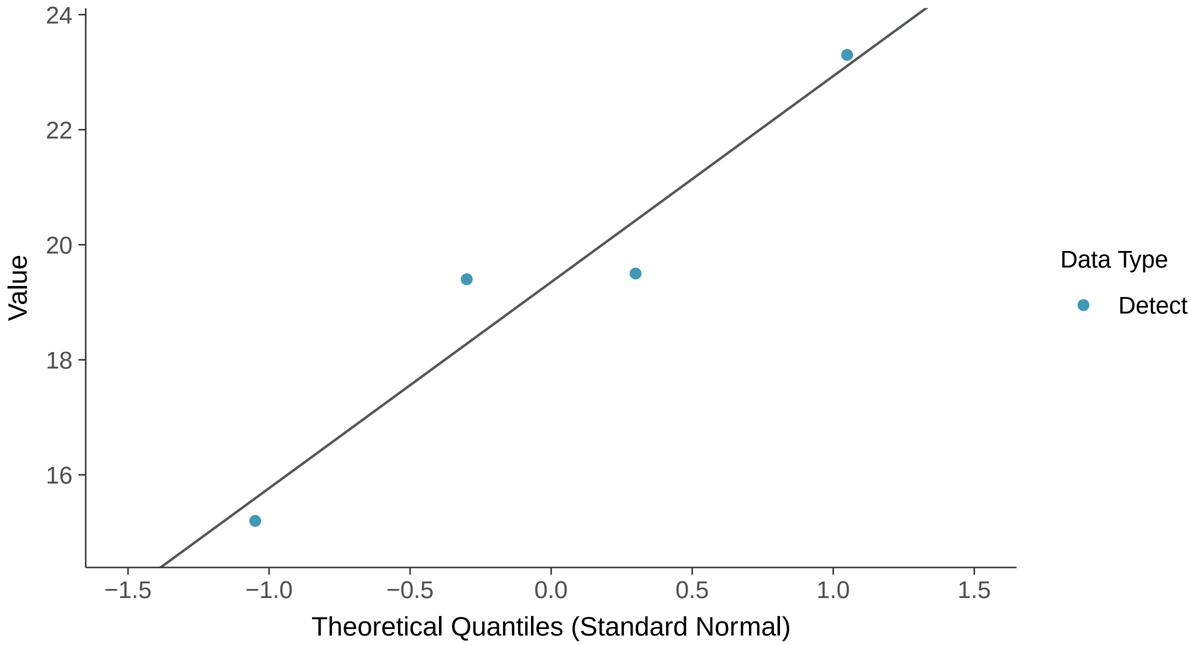
Boxplot by Season

Magnesium, MW-9 (mg/L)



Normal Q-Q plot

Magnesium, MW-9 (mg/L)

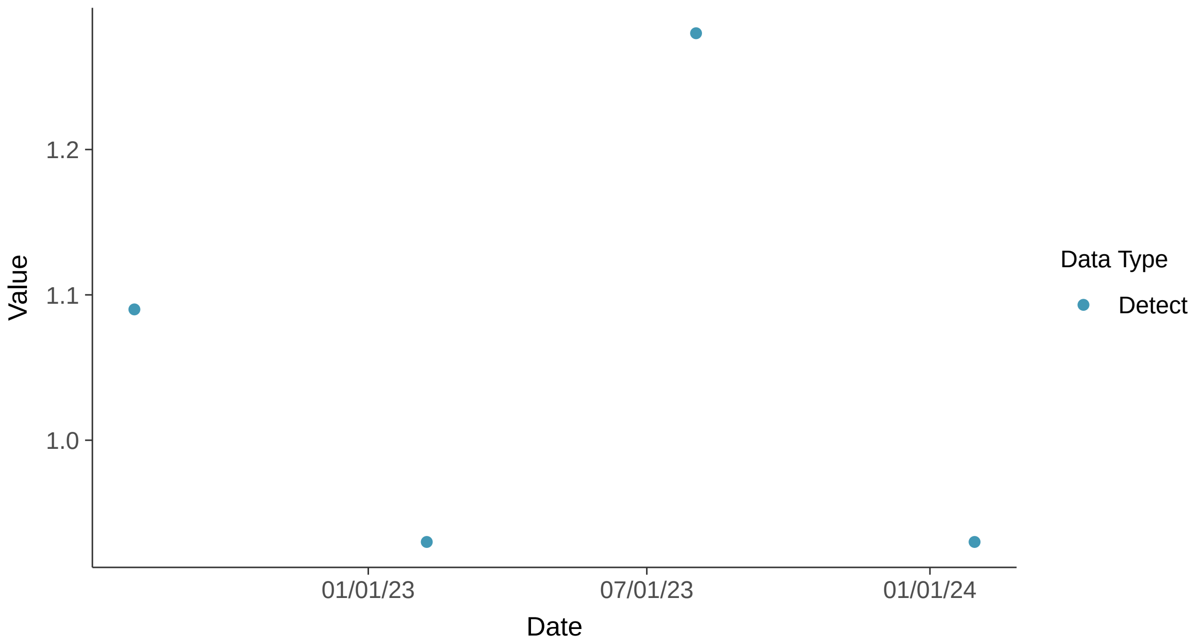


Other: Potassium, MW-9

ID: 09_4_34

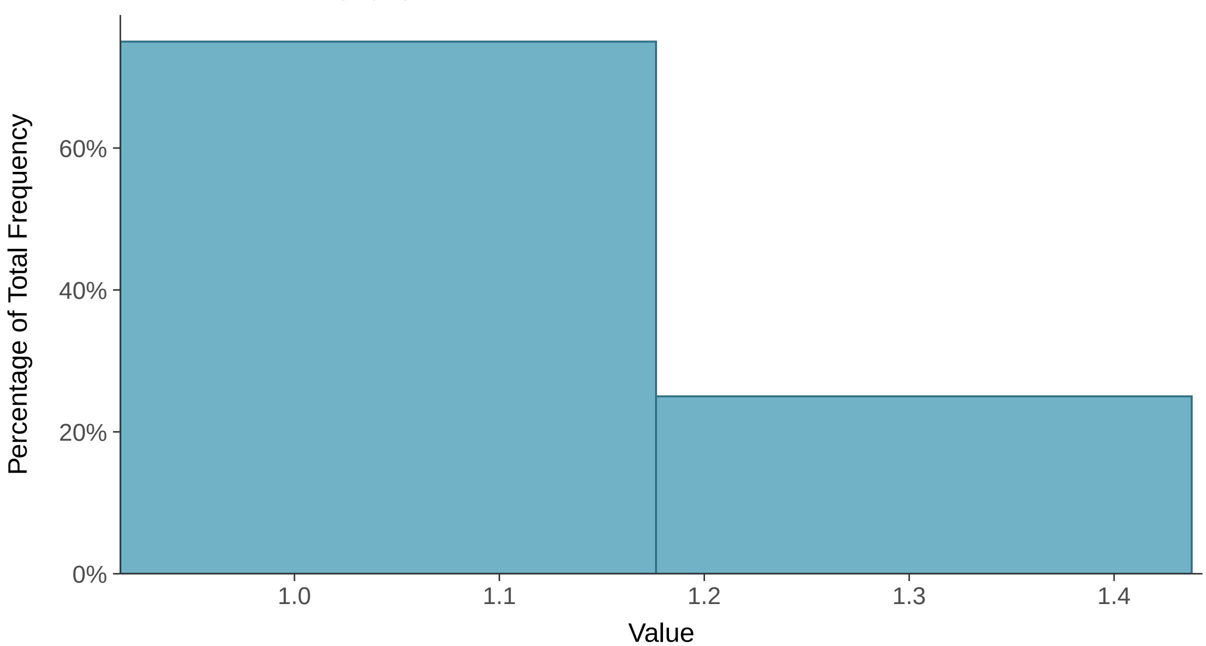
Scatter Plot

Potassium, MW-9 (mg/L)



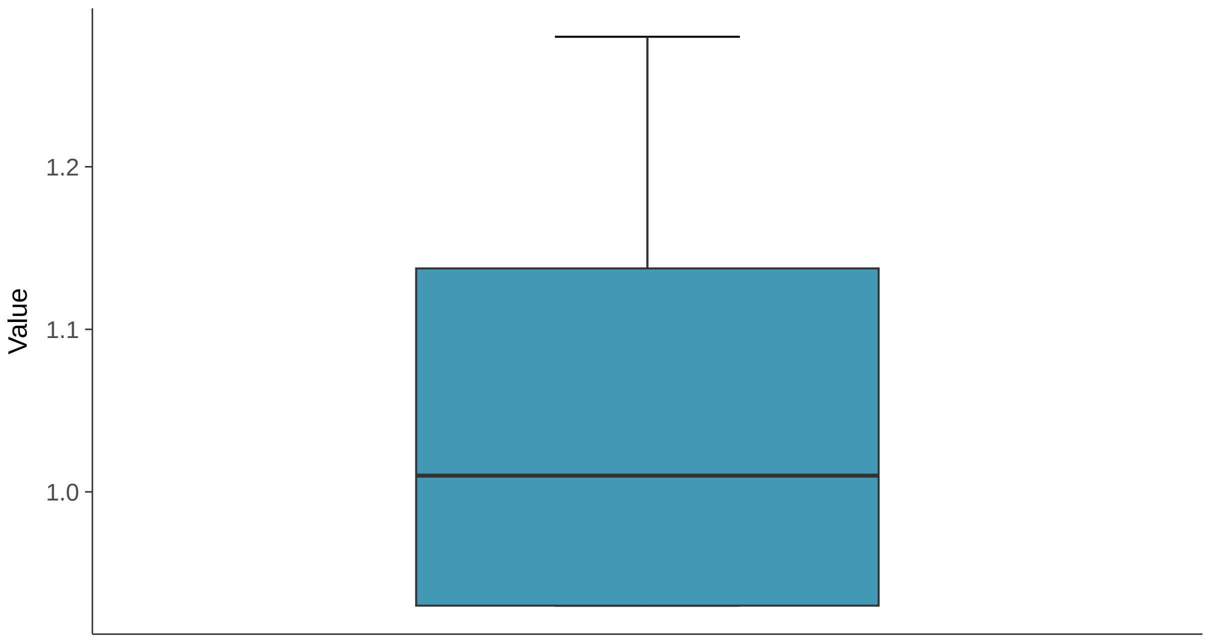
Histogram

Potassium, MW-9 (mg/L)



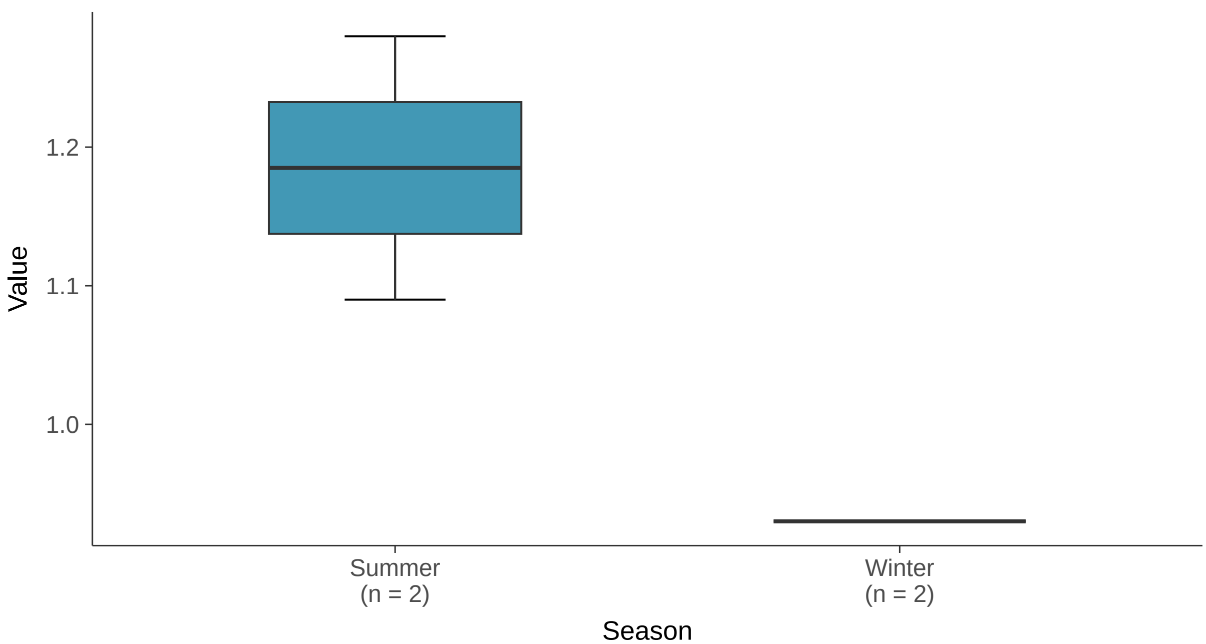
Boxplot

Potassium, MW-9 (mg/L)



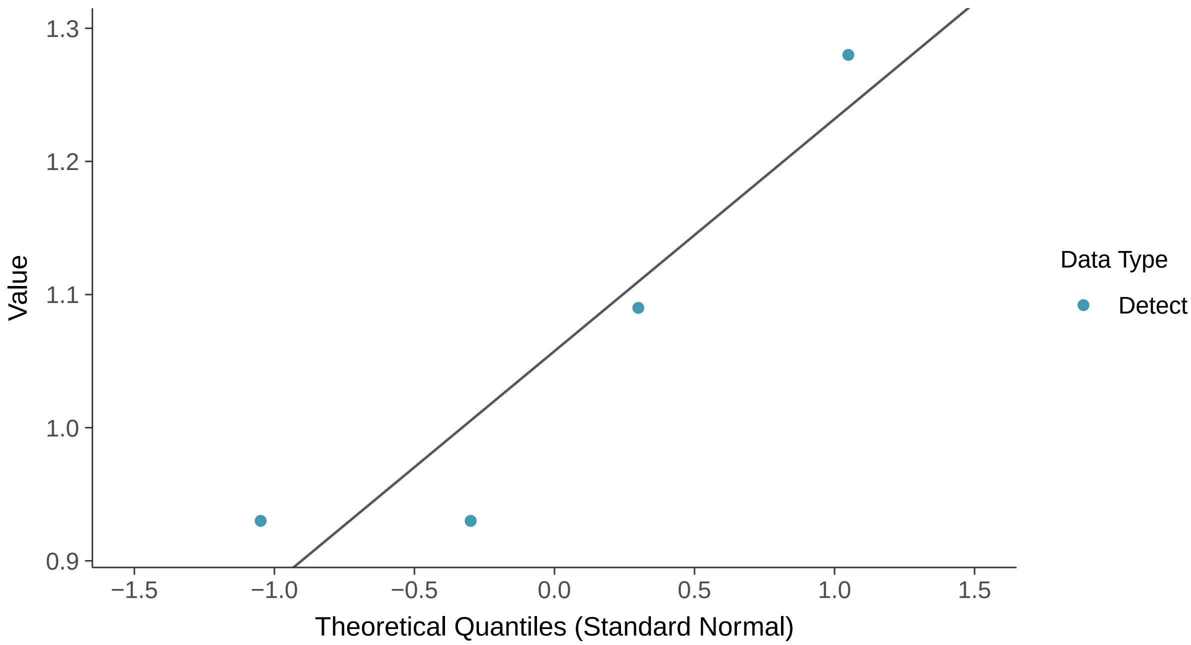
Boxplot by Season

Potassium, MW-9 (mg/L)



Normal Q-Q plot

Potassium, MW-9 (mg/L)

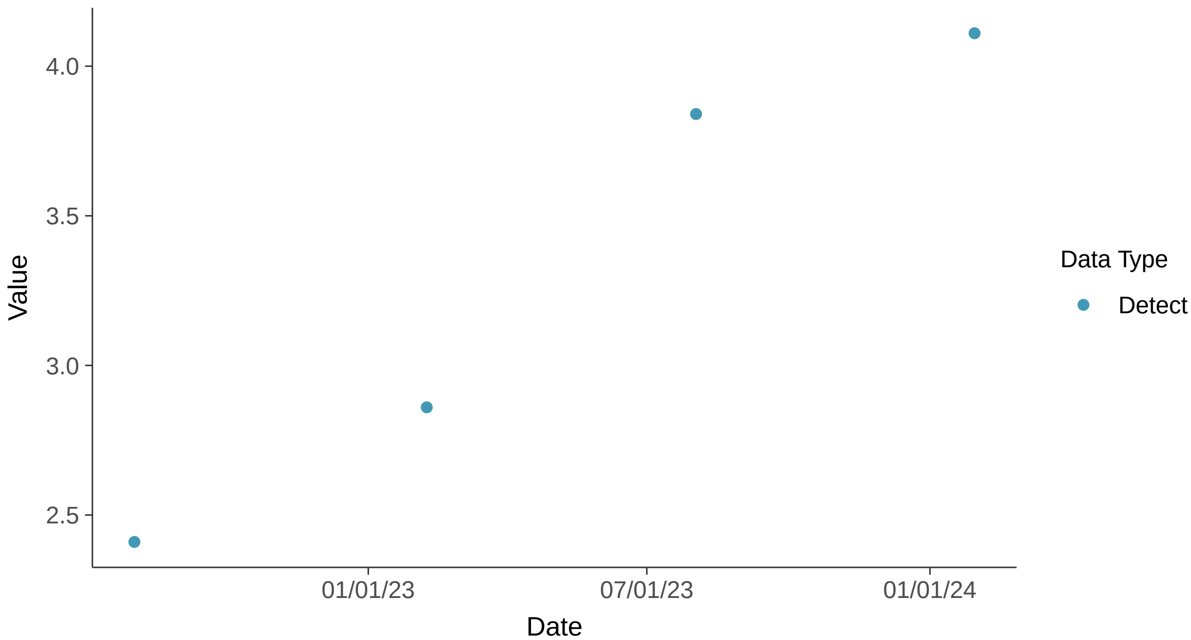


Other: Sodium, MW-9

ID: 09_4_35

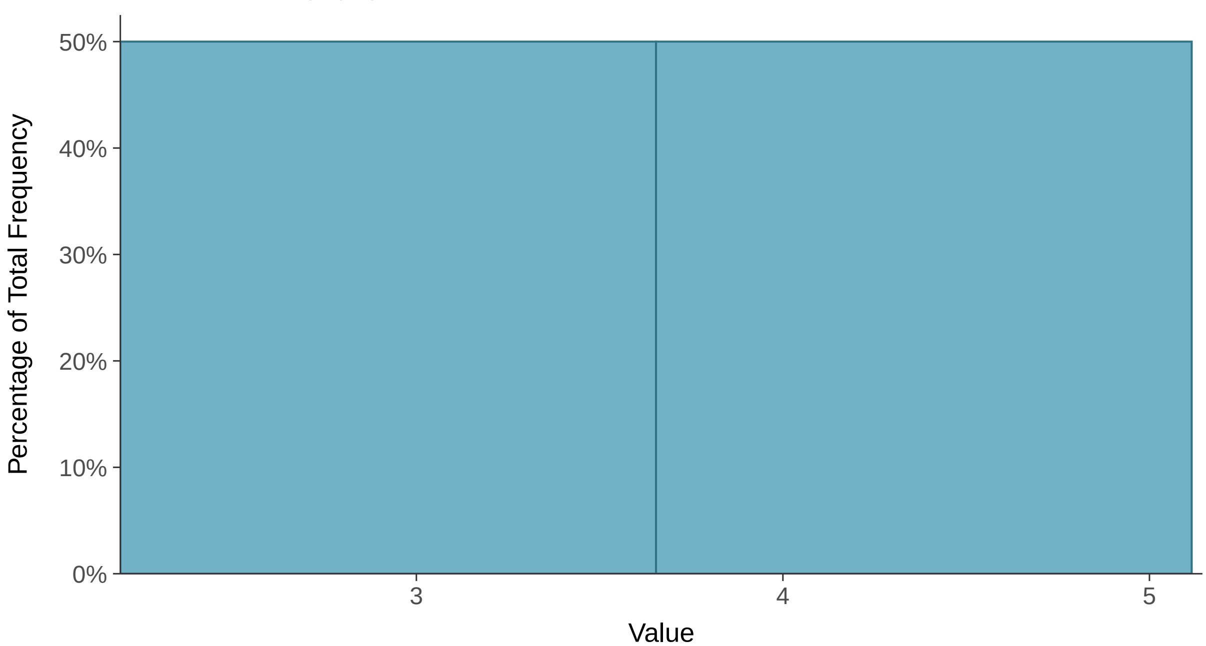
Scatter Plot

Sodium, MW-9 (mg/L)



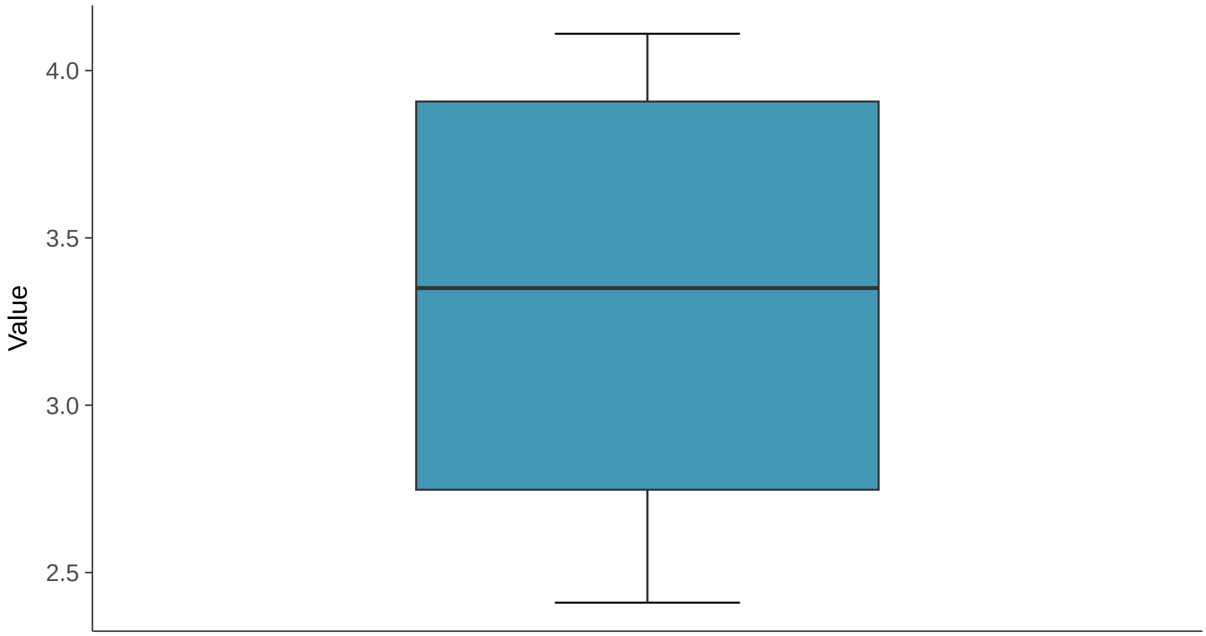
Histogram

Sodium, MW-9 (mg/L)



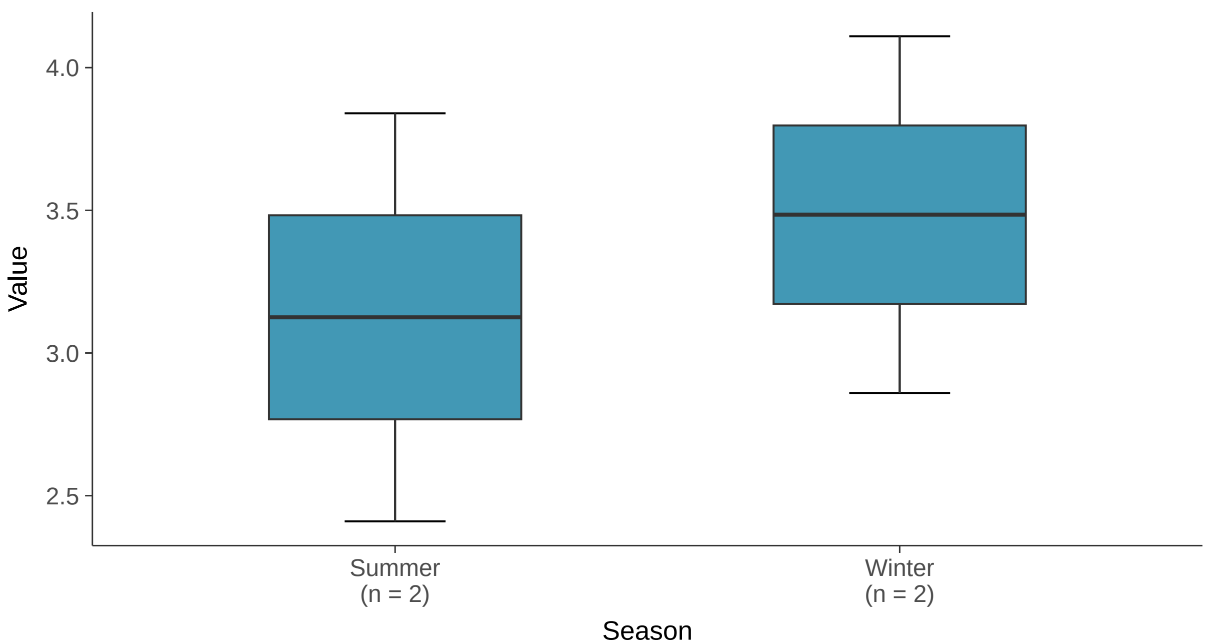
Boxplot

Sodium, MW-9 (mg/L)



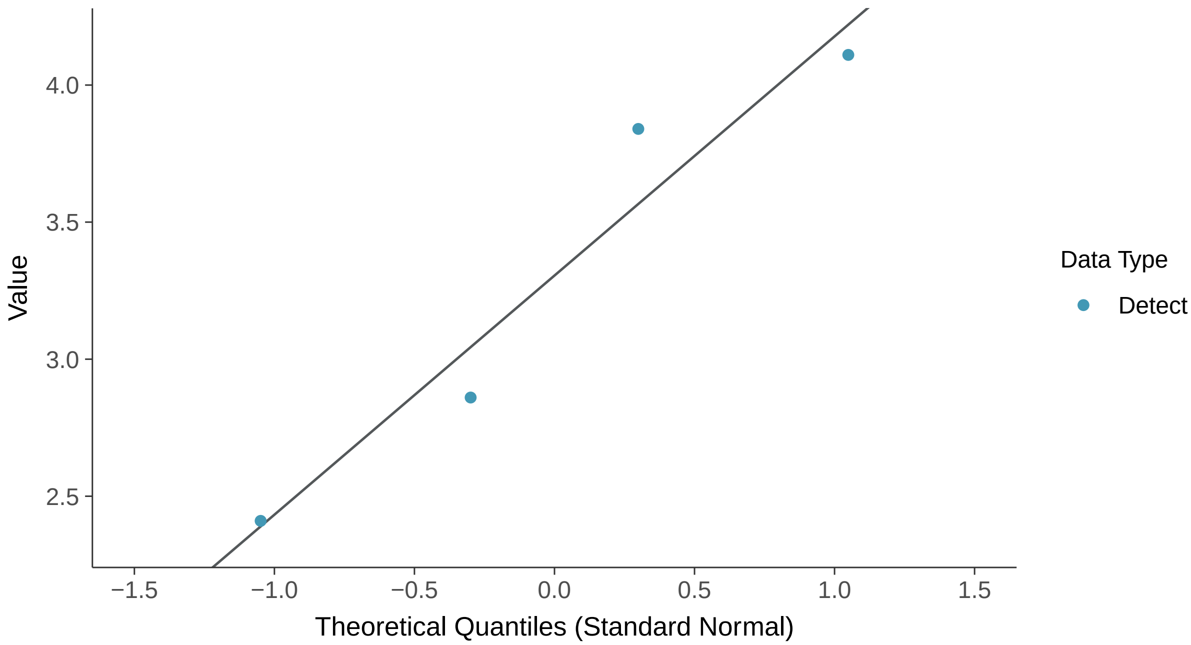
Boxplot by Season

Sodium, MW-9 (mg/L)



Normal Q-Q plot

Sodium, MW-9 (mg/L)

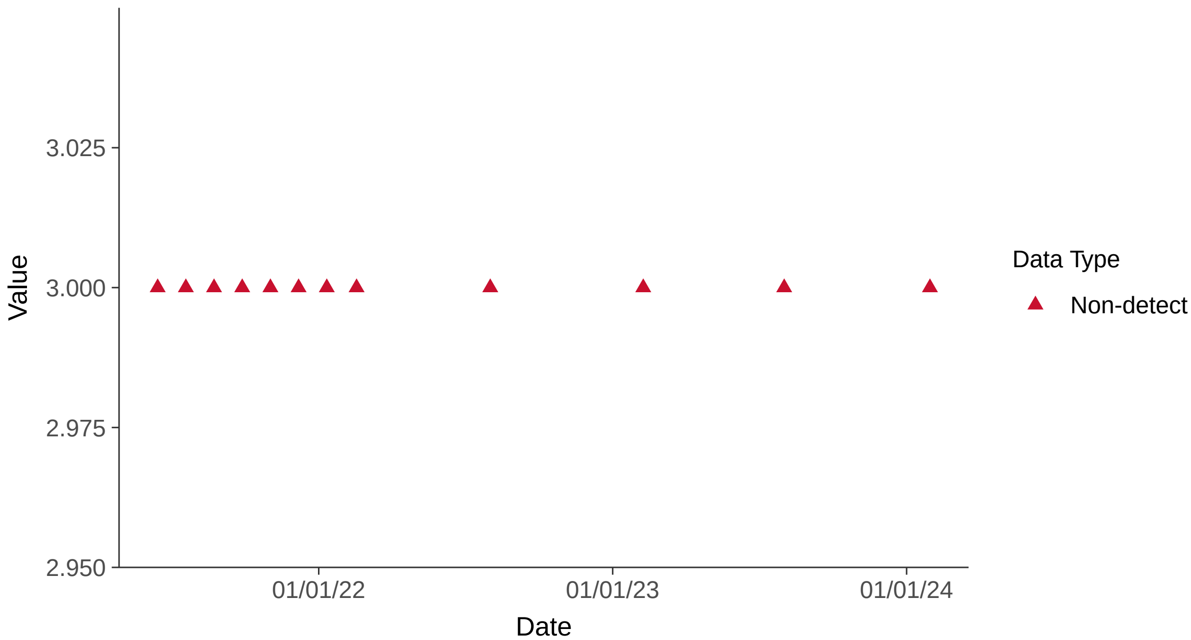


Other: Total Suspended Solids, MW-9

ID: 09_4_36

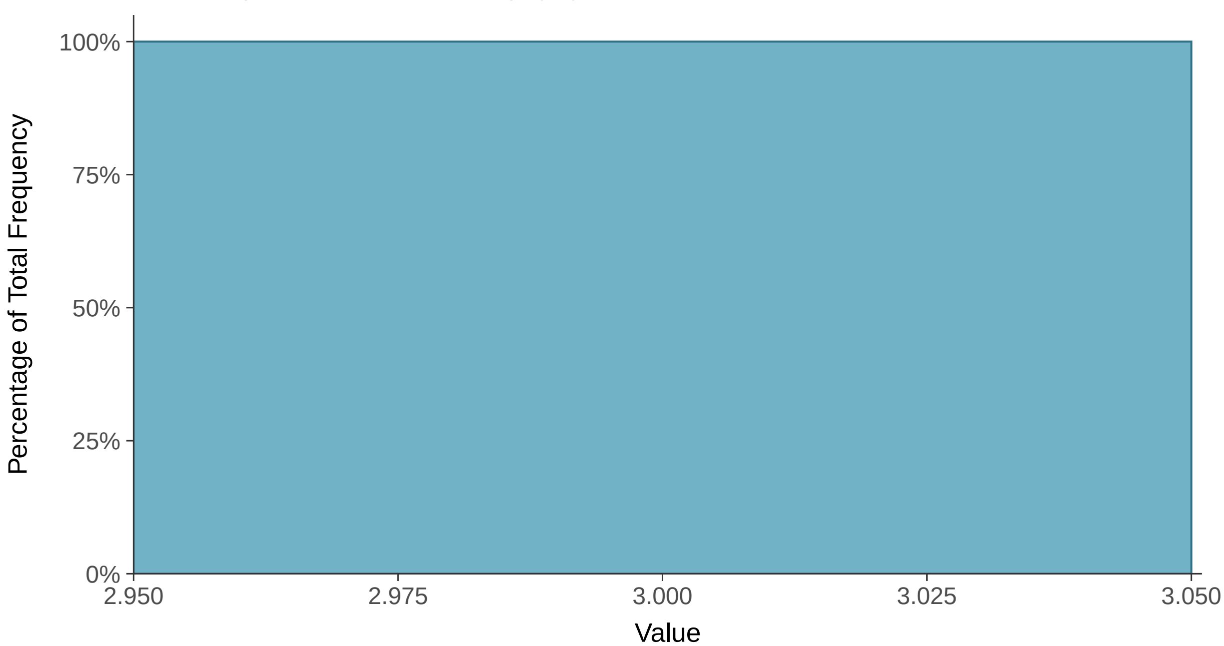
Scatter Plot

Total Suspended Solids, MW-9 (mg/L)



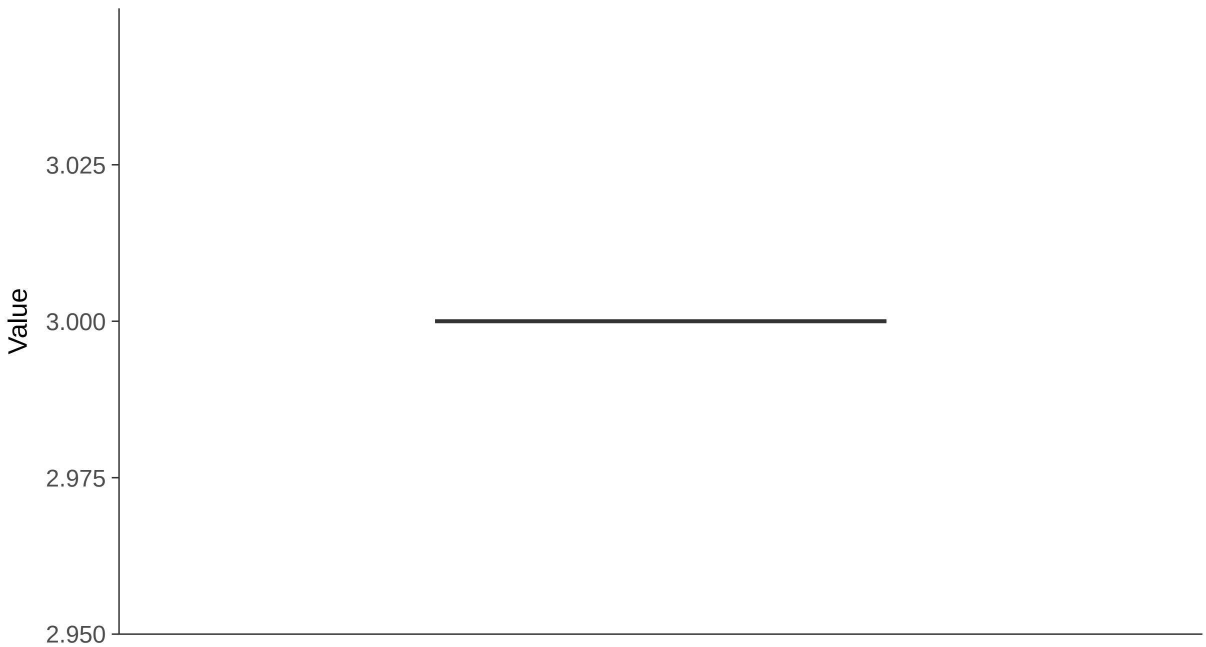
Histogram

Total Suspended Solids, MW-9 (mg/L)



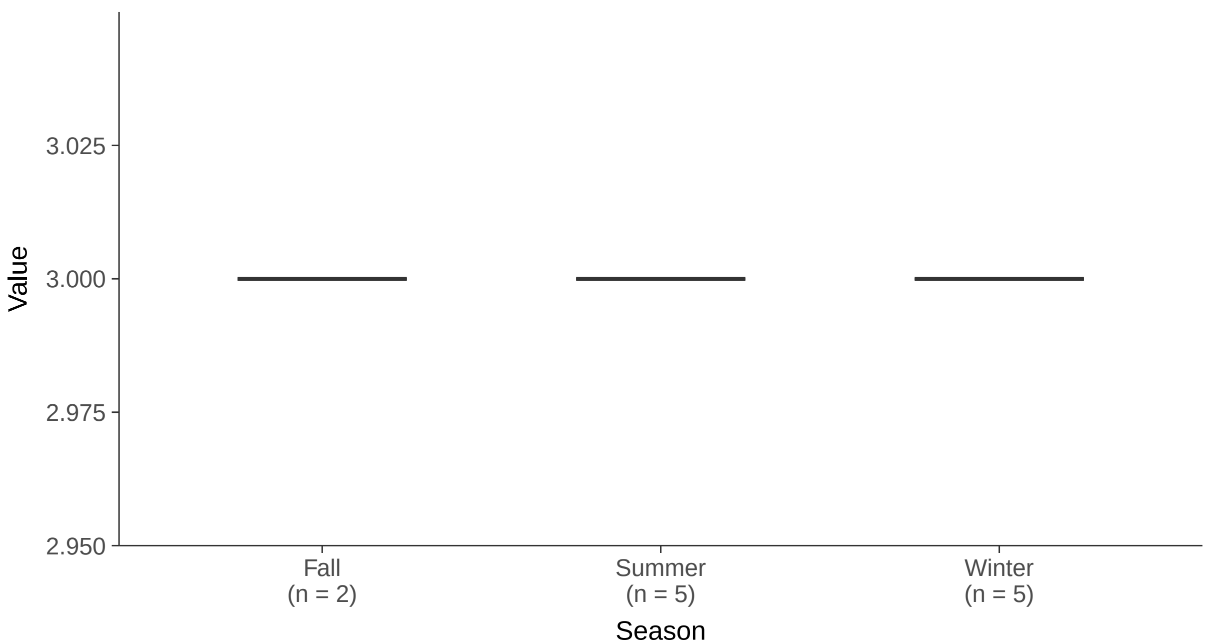
Boxplot

Total Suspended Solids, MW-9 (mg/L)



Boxplot by Season

Total Suspended Solids, MW-9 (mg/L)

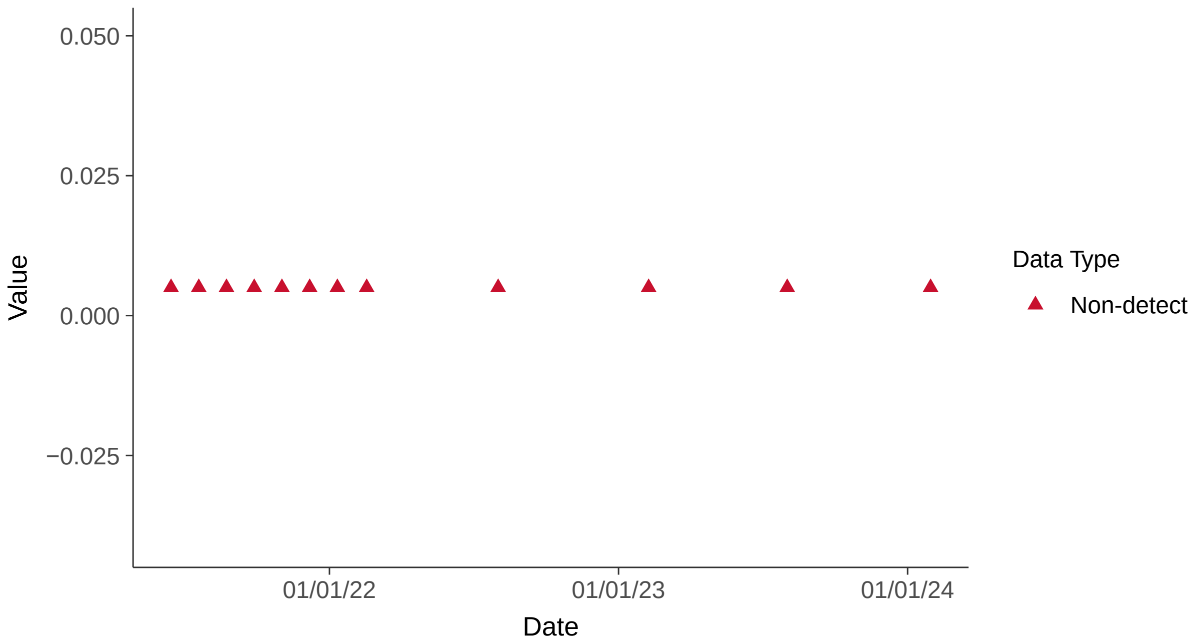


Part 115: Copper, MW-9

ID: 09_5_37

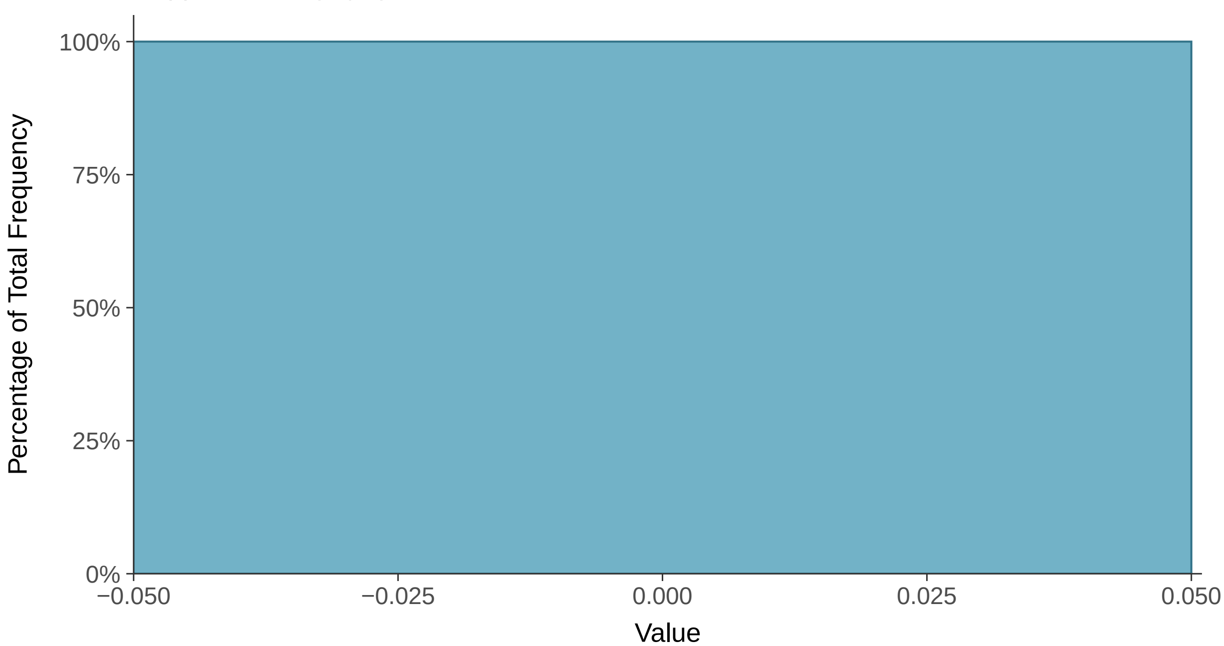
Scatter Plot

Copper, MW-9 (mg/L)



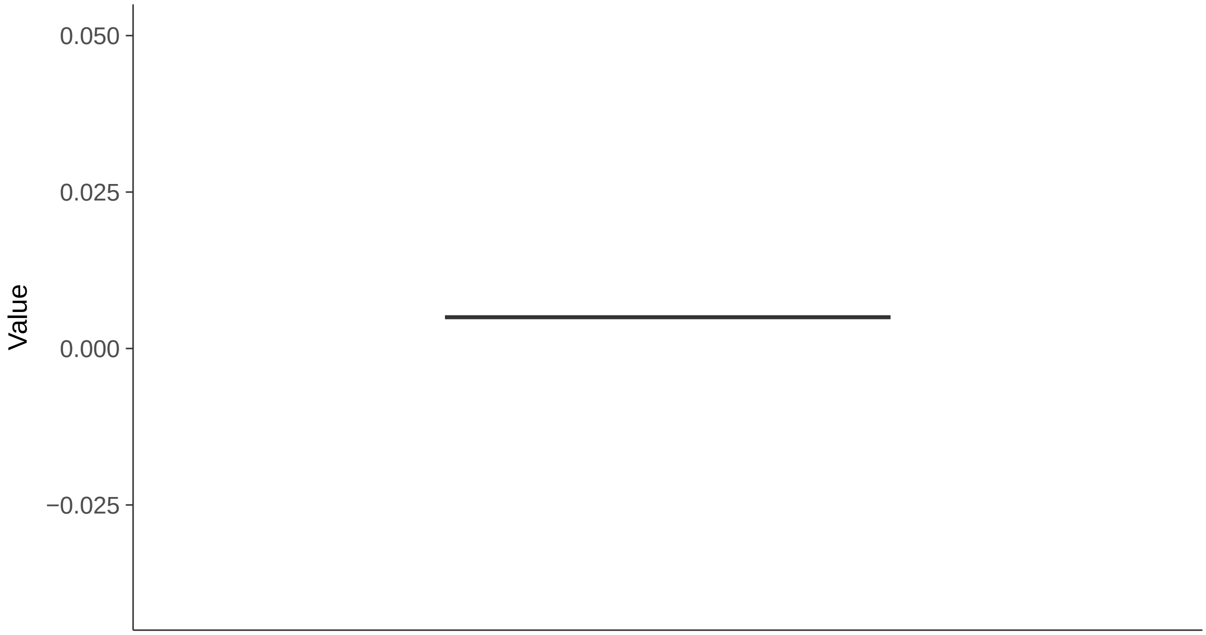
Histogram

Copper, MW-9 (mg/L)



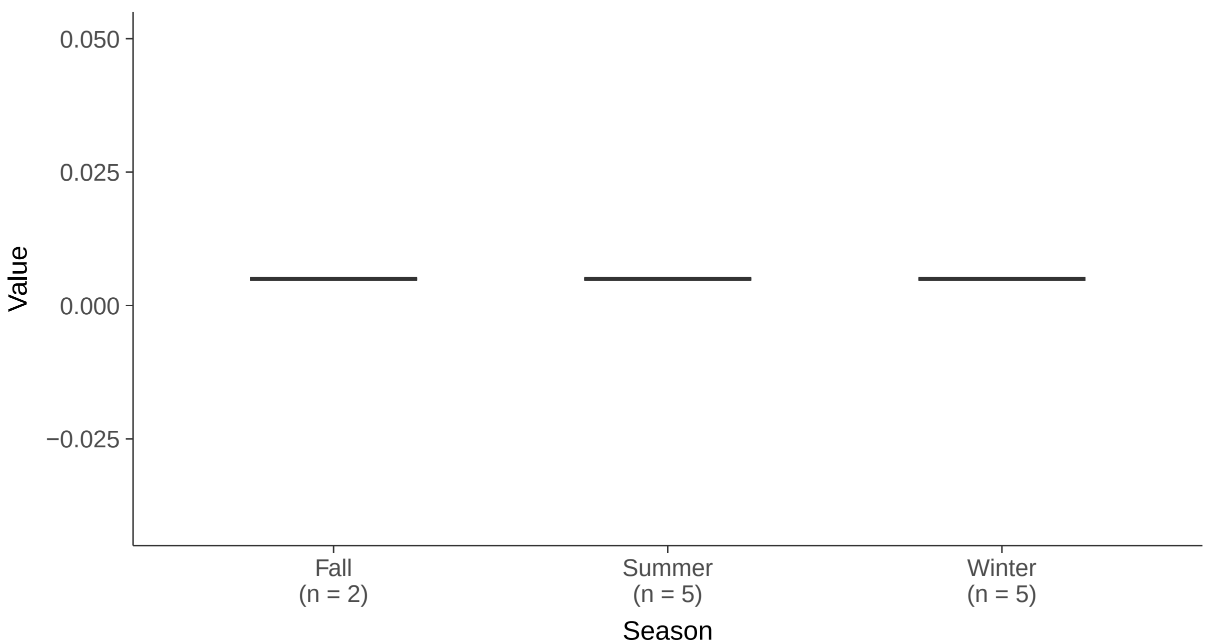
Boxplot

Copper, MW-9 (mg/L)



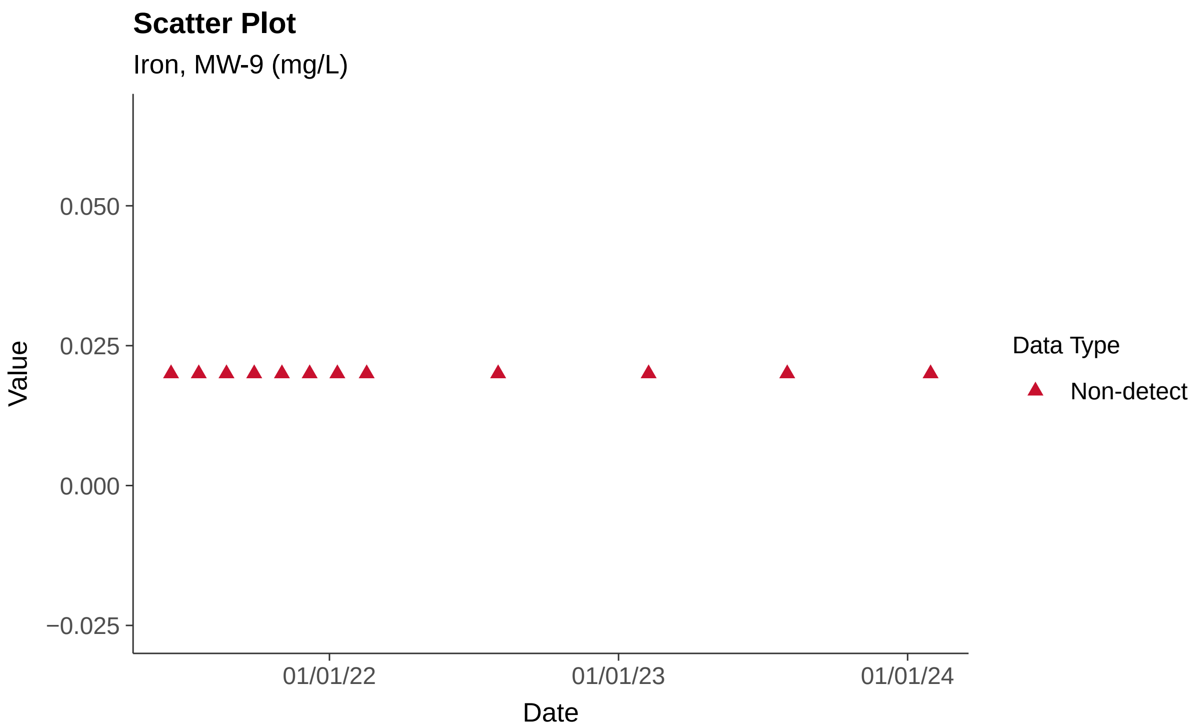
Boxplot by Season

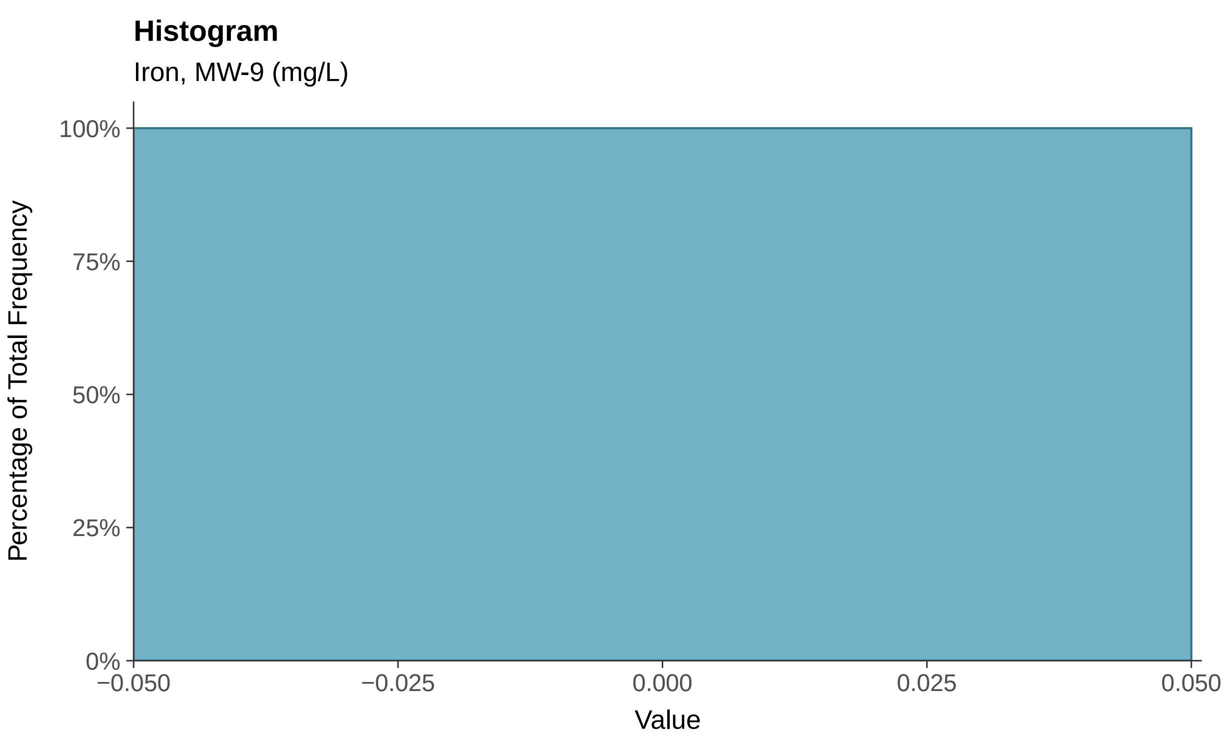
Copper, MW-9 (mg/L)



Part 115: Iron, MW-9

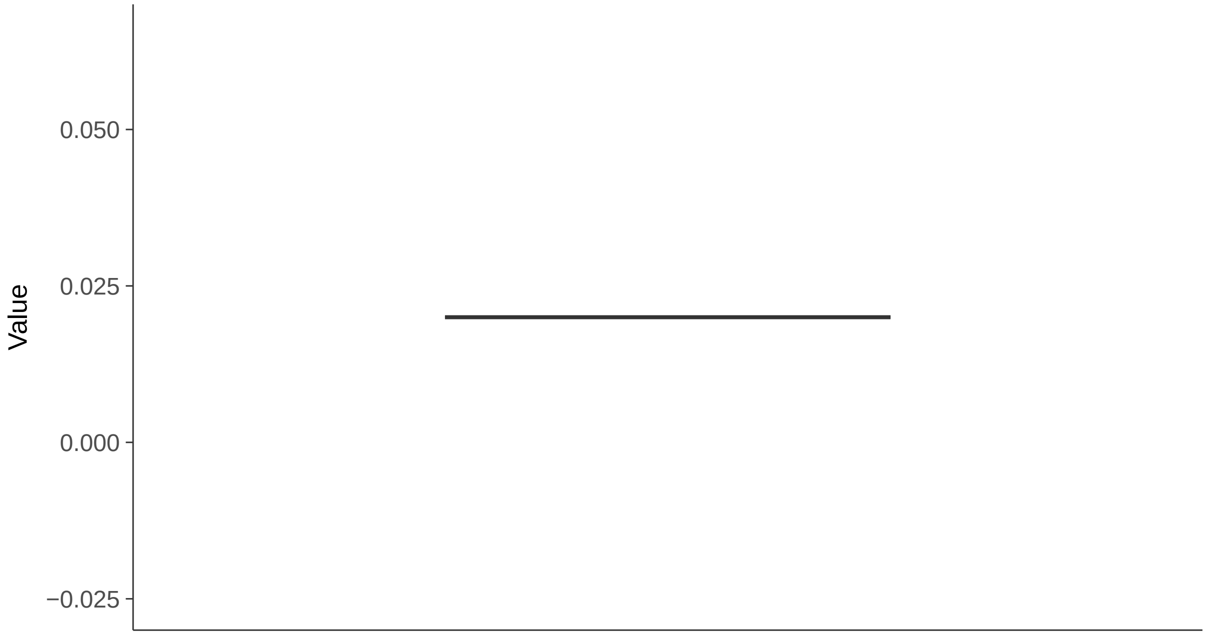
ID: 09_5_38





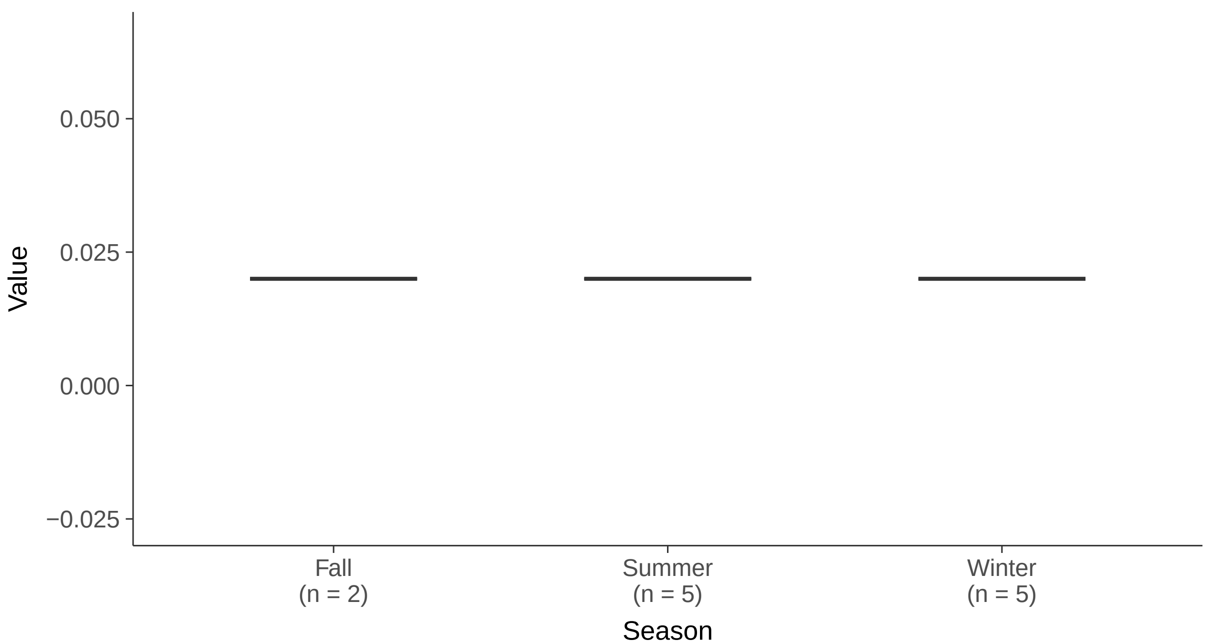
Boxplot

Iron, MW-9 (mg/L)



Boxplot by Season

Iron, MW-9 (mg/L)

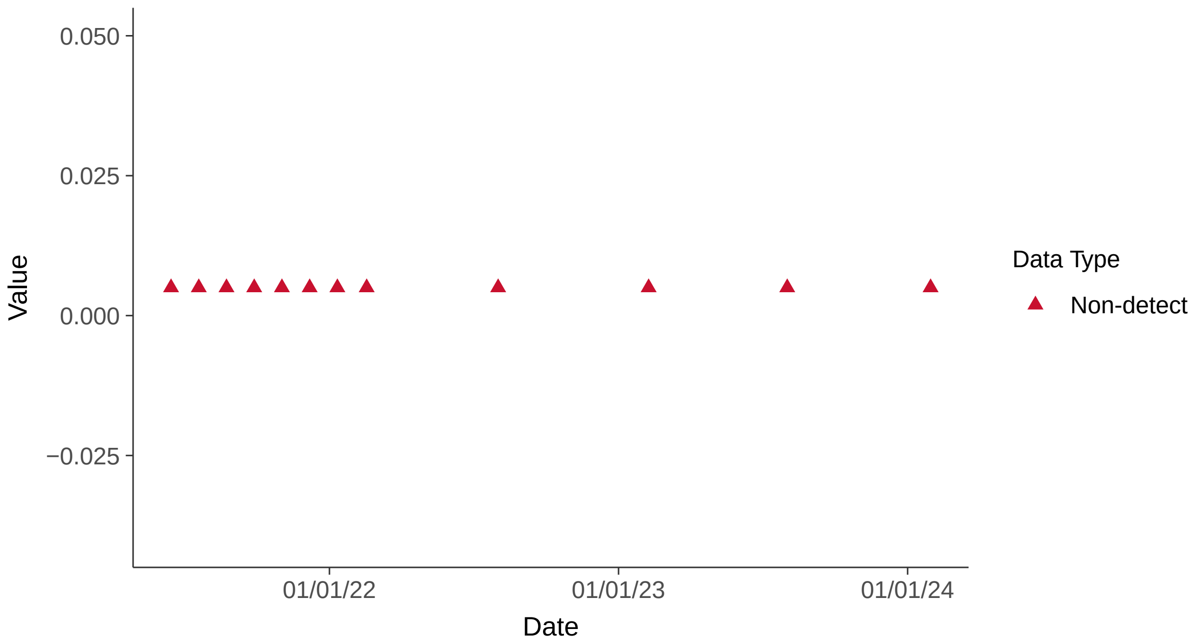


Part 115: Nickel, MW-9

ID: 09_5_39

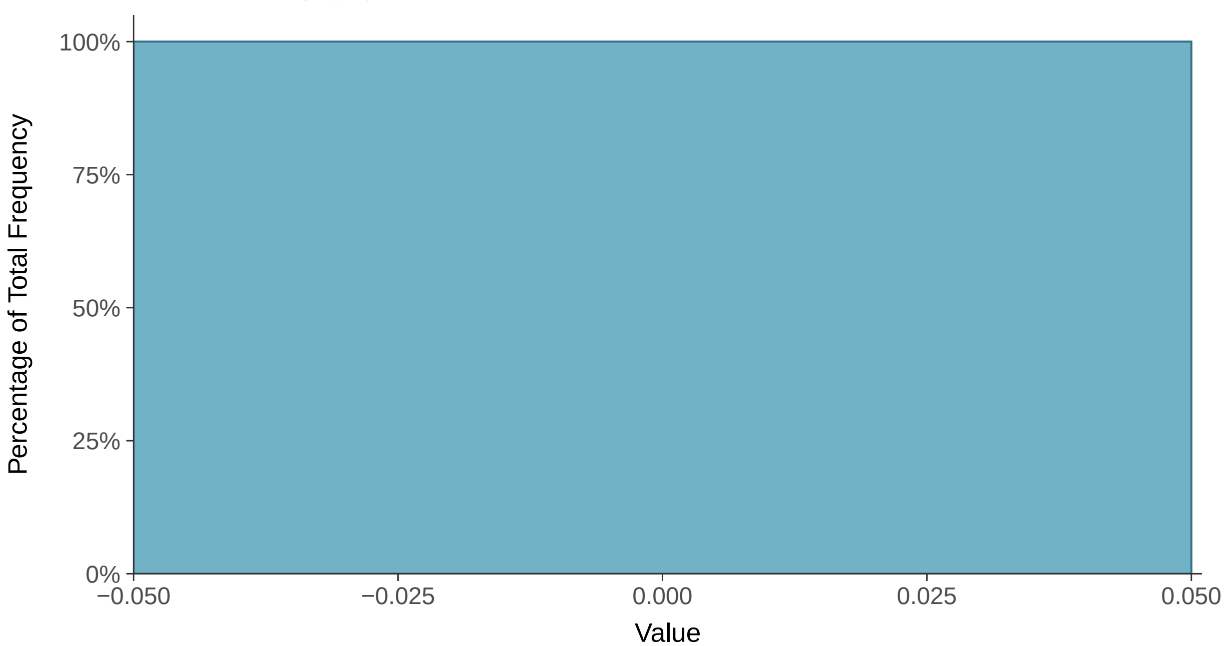
Scatter Plot

Nickel, MW-9 (mg/L)



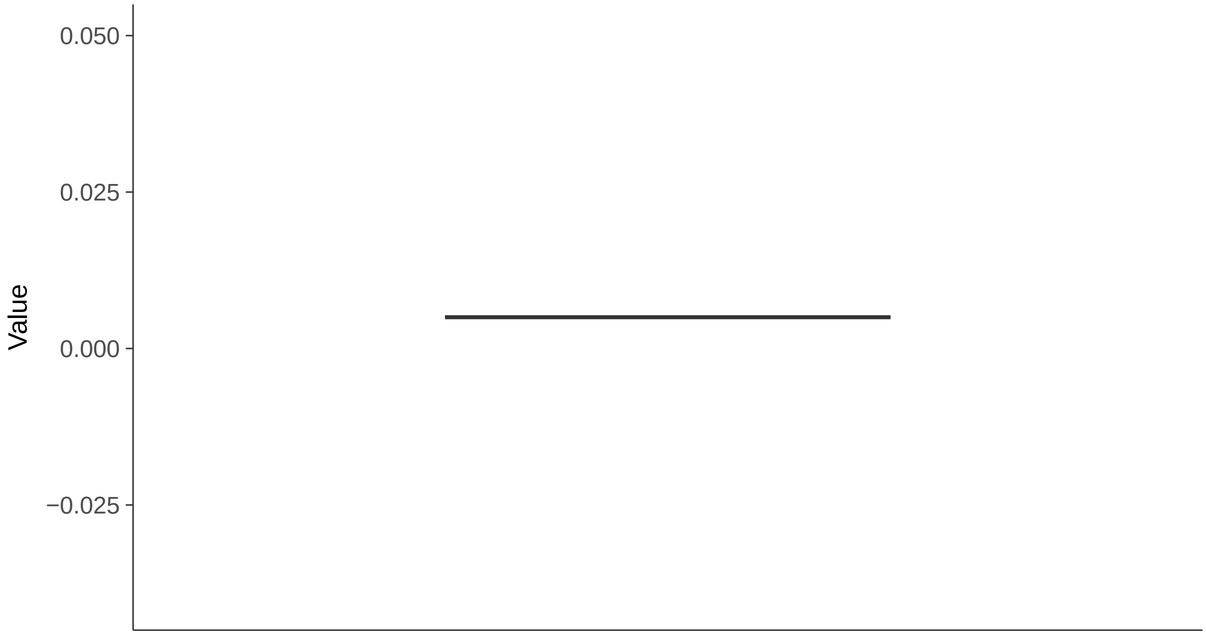
Histogram

Nickel, MW-9 (mg/L)



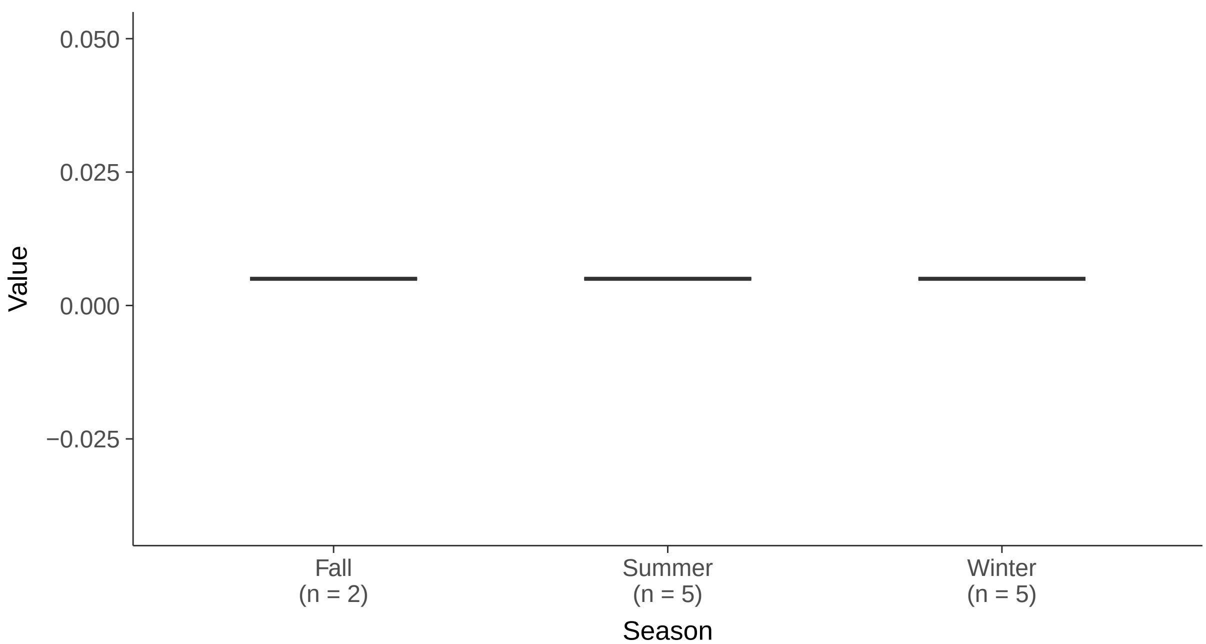
Boxplot

Nickel, MW-9 (mg/L)



Boxplot by Season

Nickel, MW-9 (mg/L)

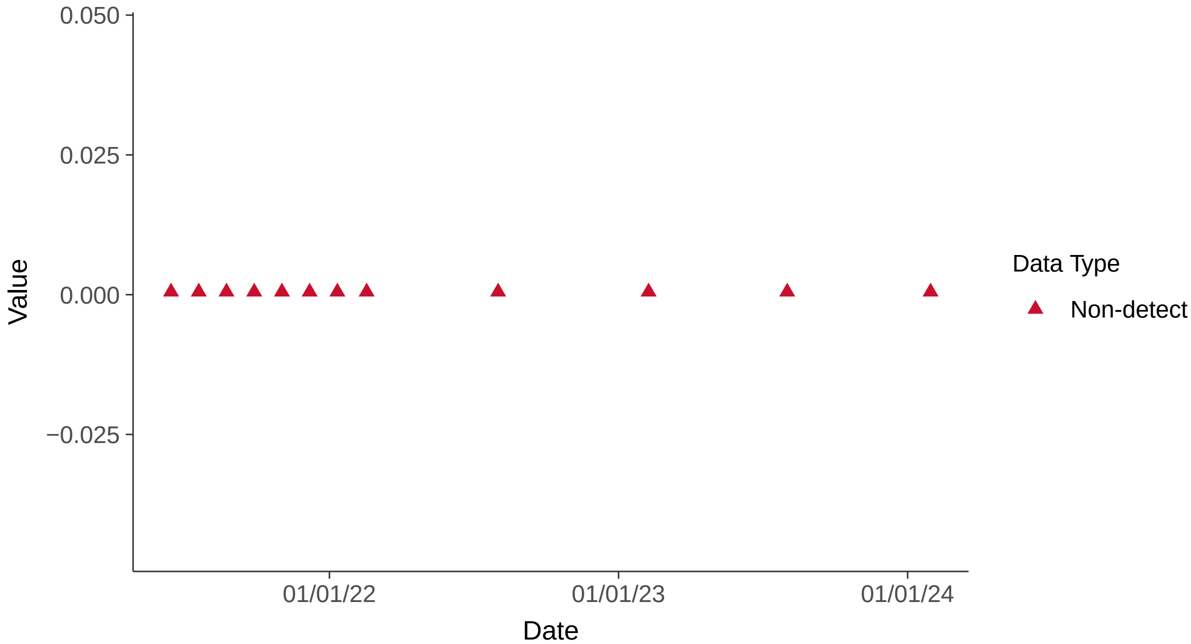


Part 115: Silver, MW-9

ID: 09_5_40

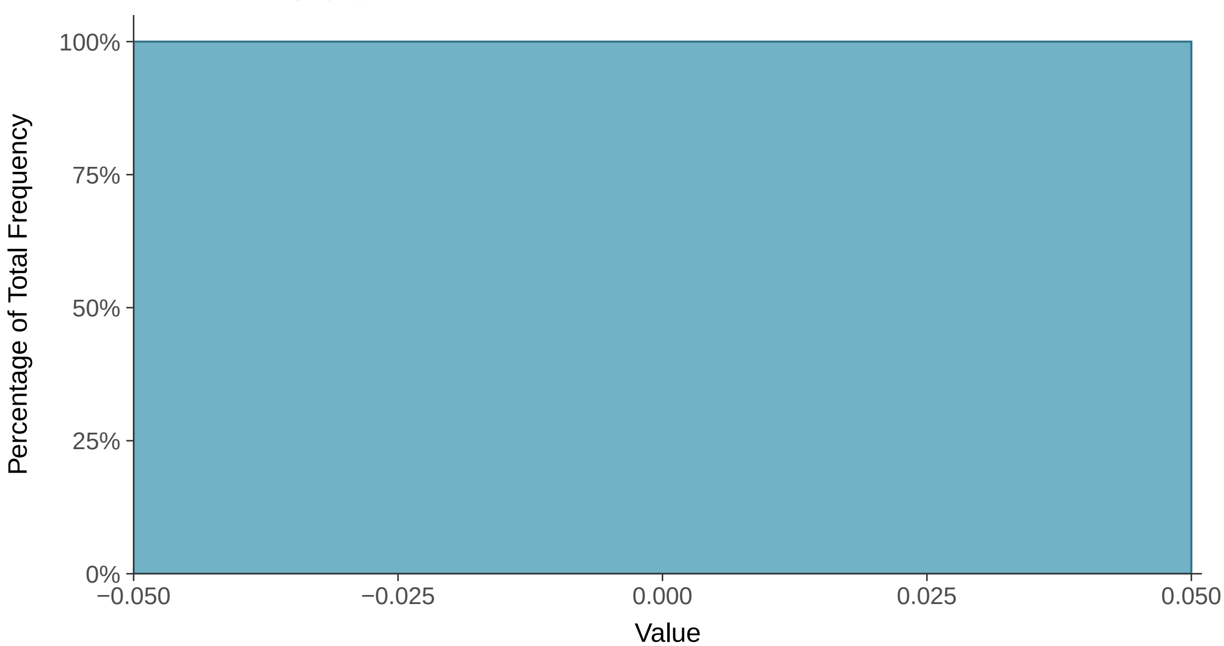
Scatter Plot

Silver, MW-9 (mg/L)



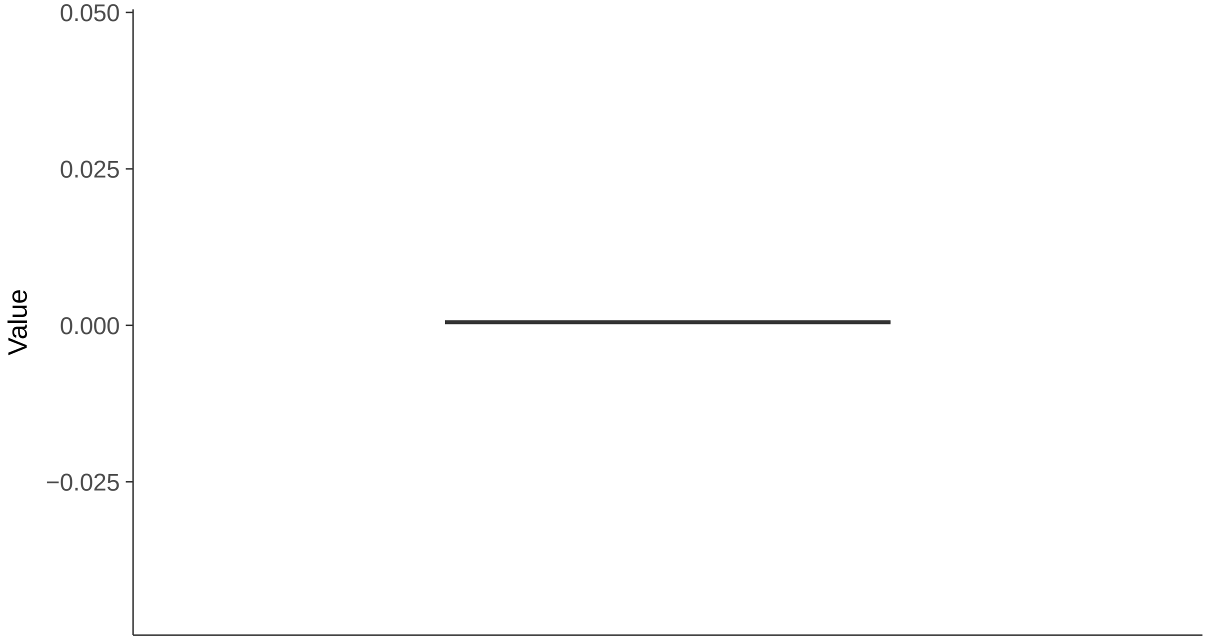
Histogram

Silver, MW-9 (mg/L)



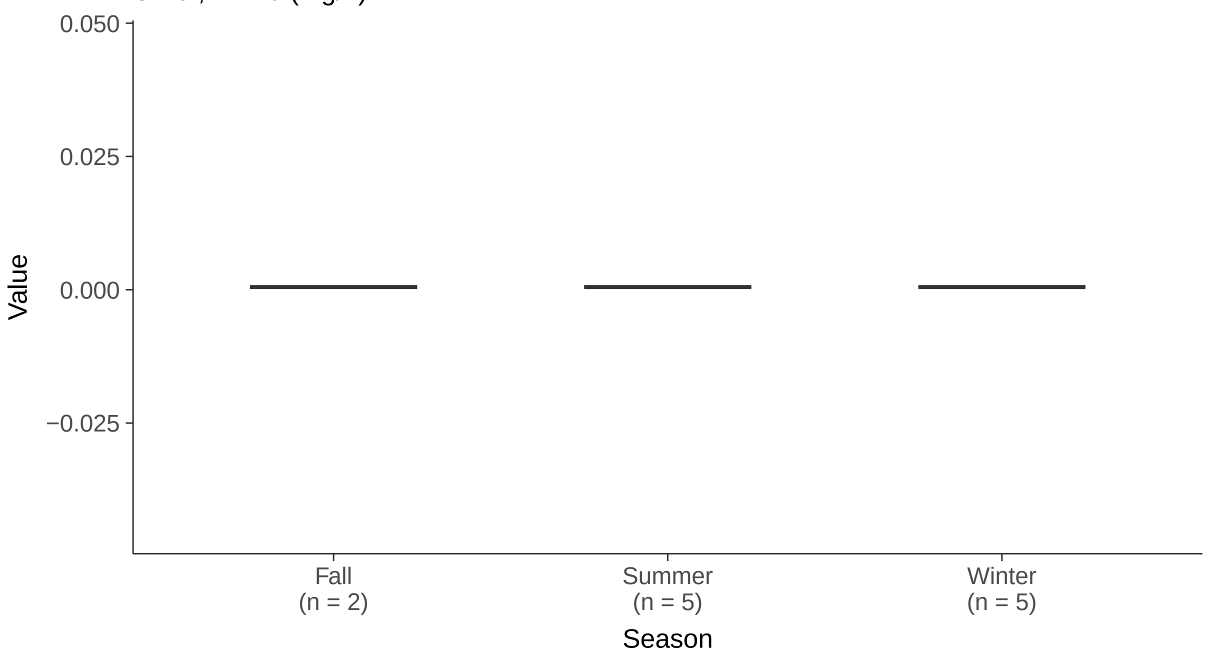
Boxplot

Silver, MW-9 (mg/L)



Boxplot by Season

Silver, MW-9 (mg/L)

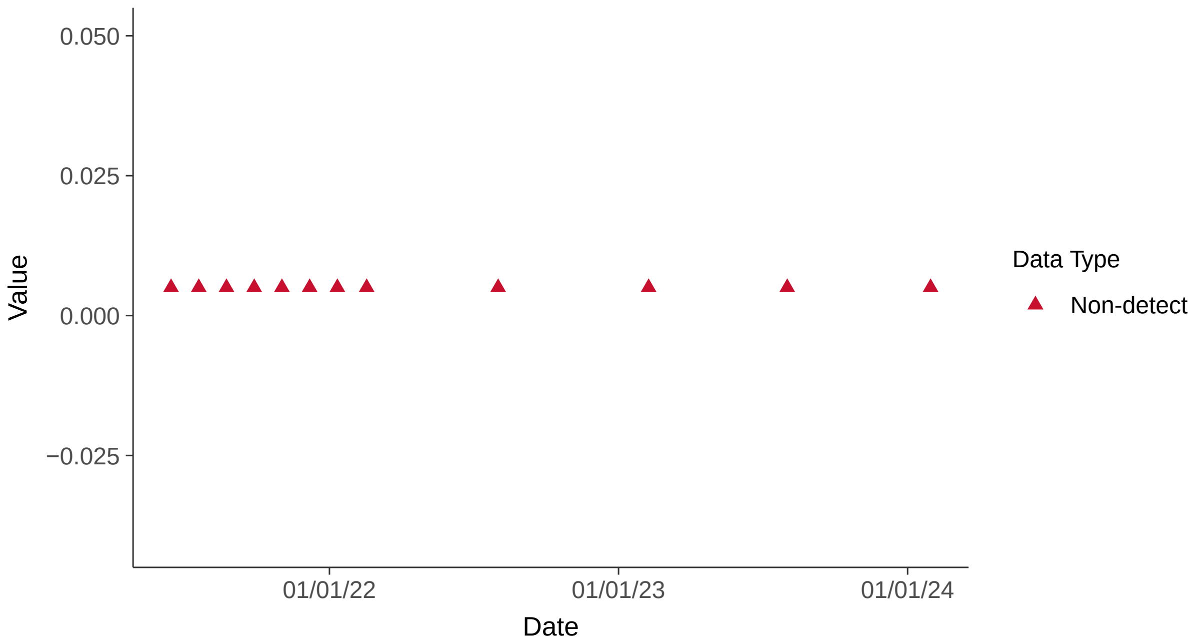


Part 115: Vanadium, MW-9

ID: 09_5_41

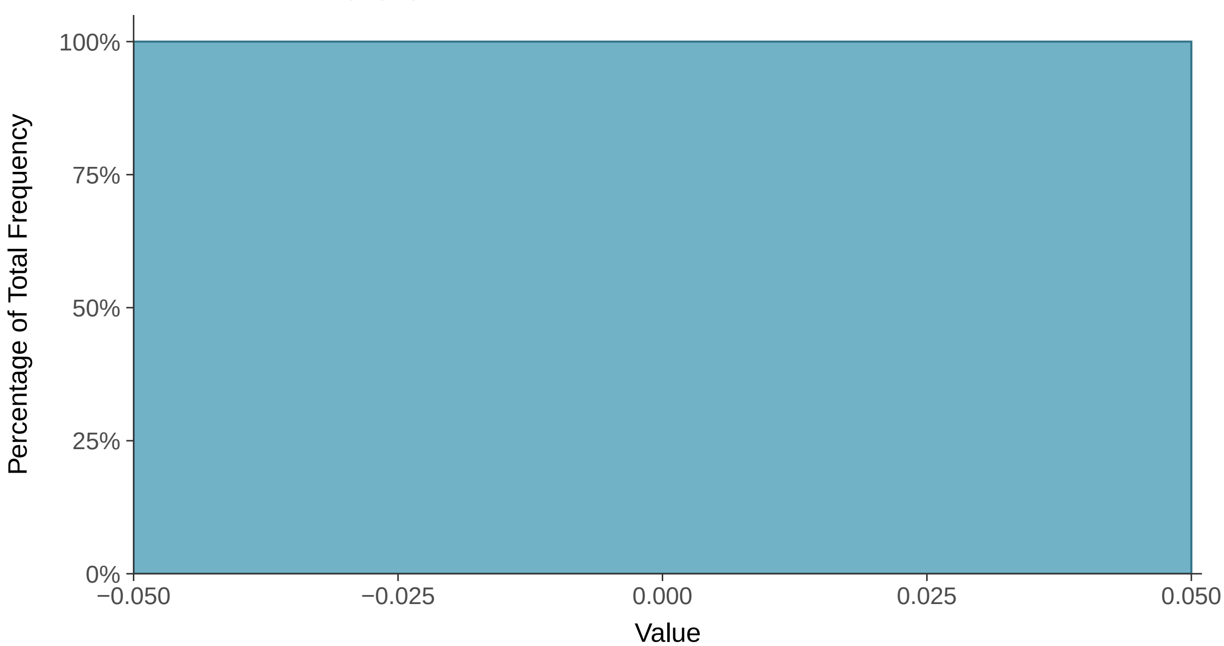
Scatter Plot

Vanadium, MW-9 (mg/L)



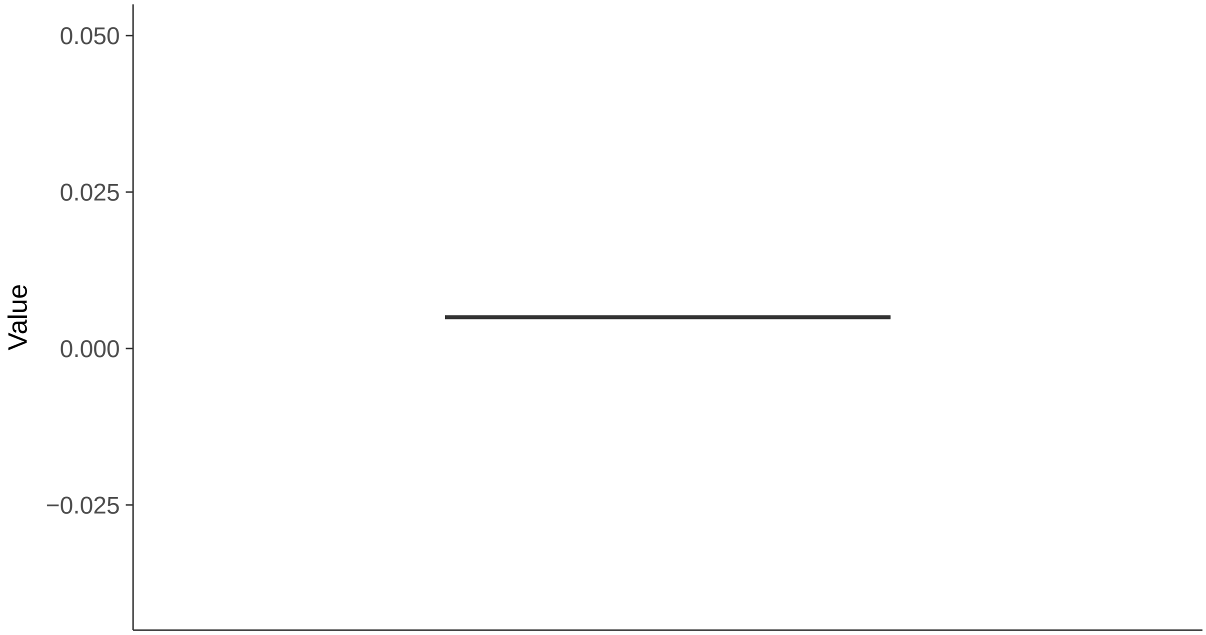
Histogram

Vanadium, MW-9 (mg/L)



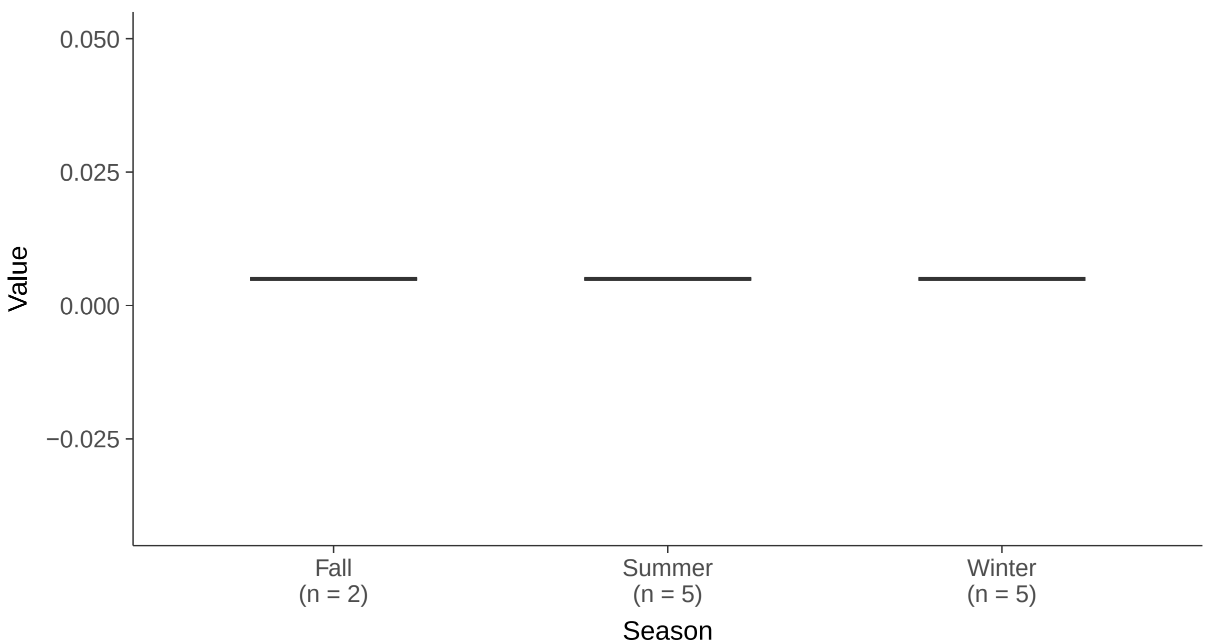
Boxplot

Vanadium, MW-9 (mg/L)



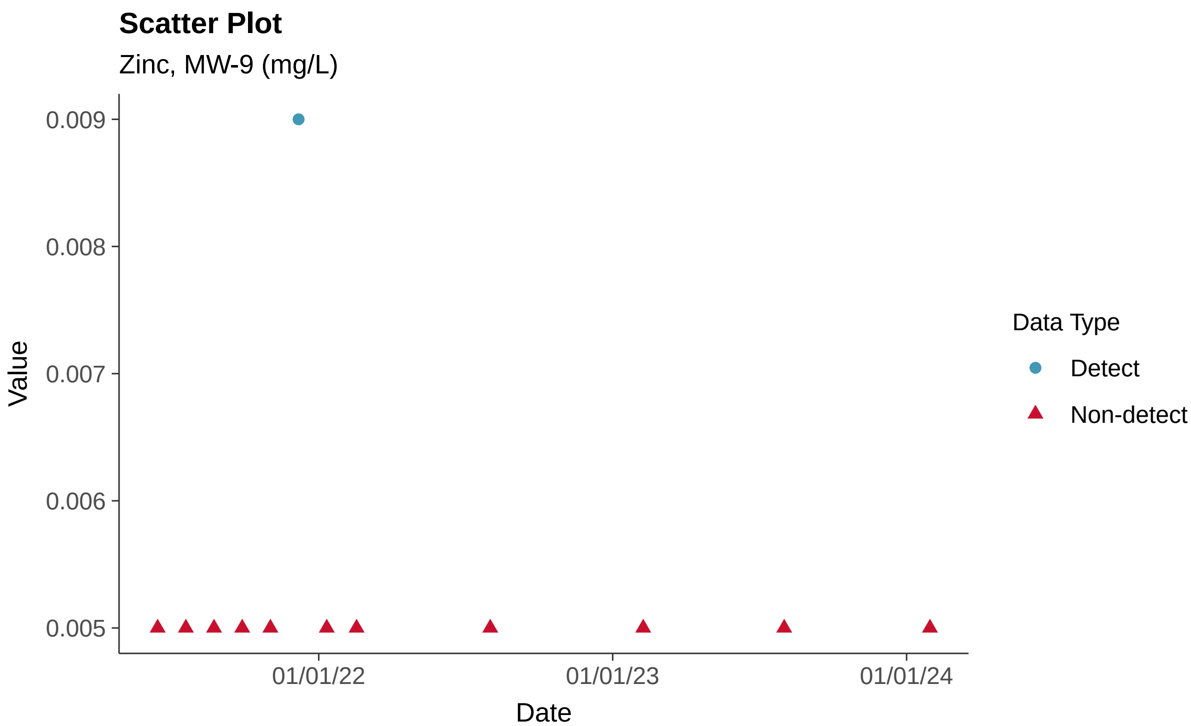
Boxplot by Season

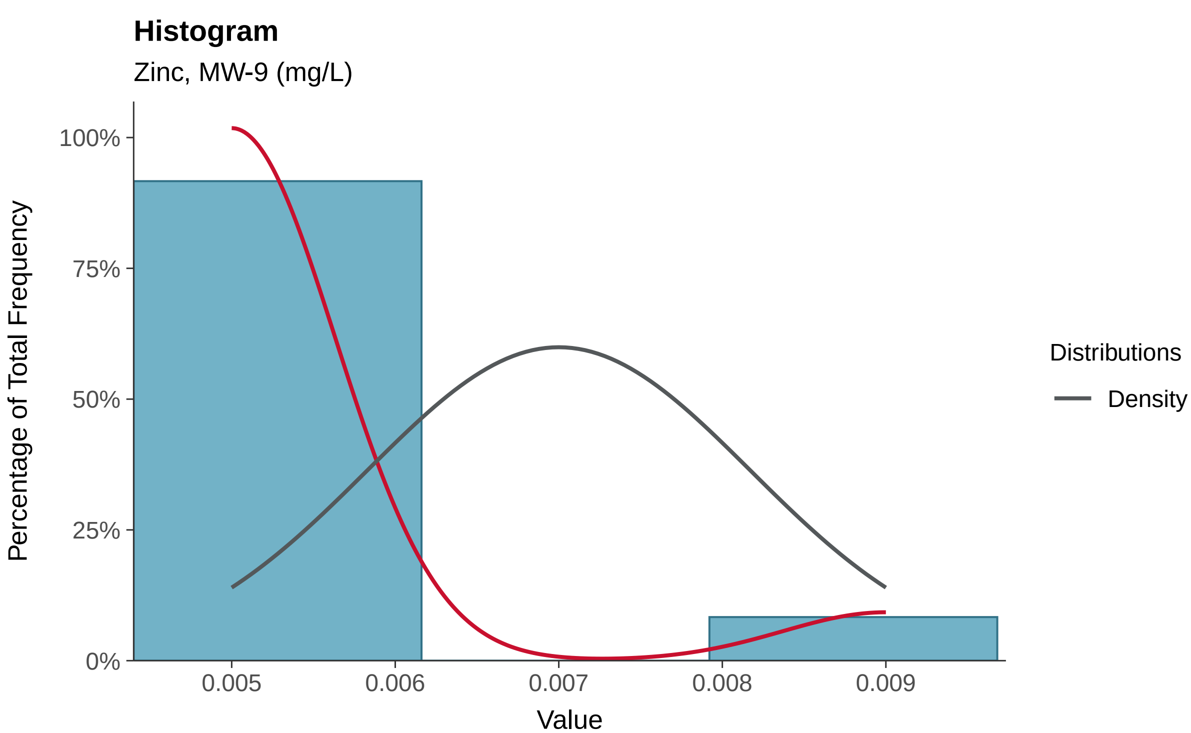
Vanadium, MW-9 (mg/L)



Part 115: Zinc, MW-9

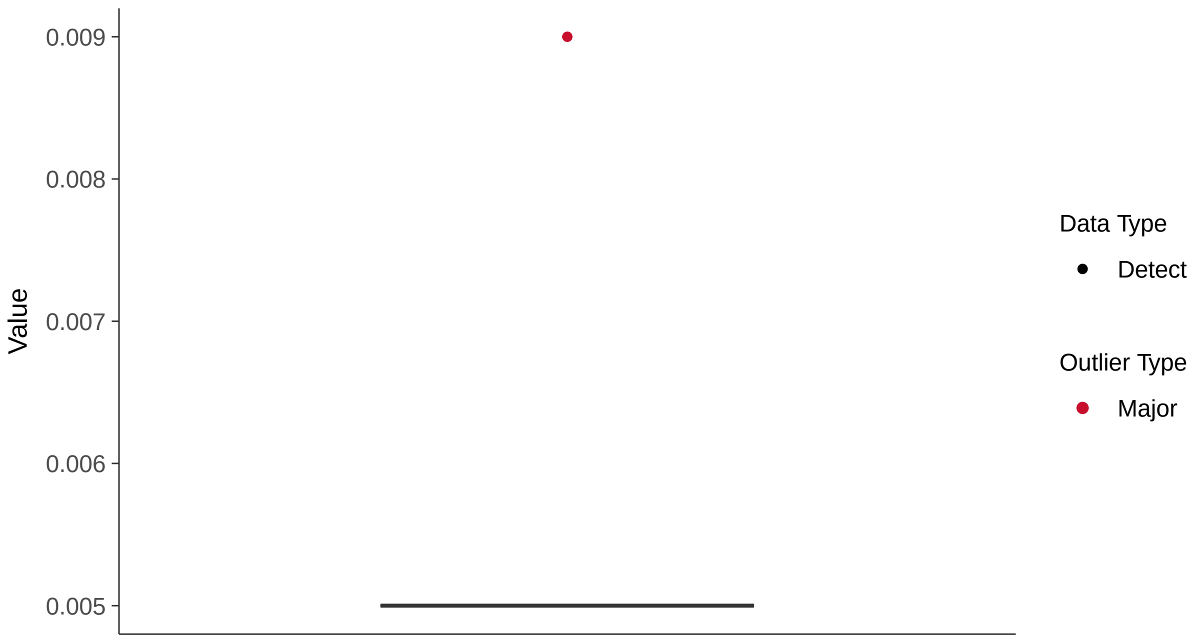
ID: 09_5_42





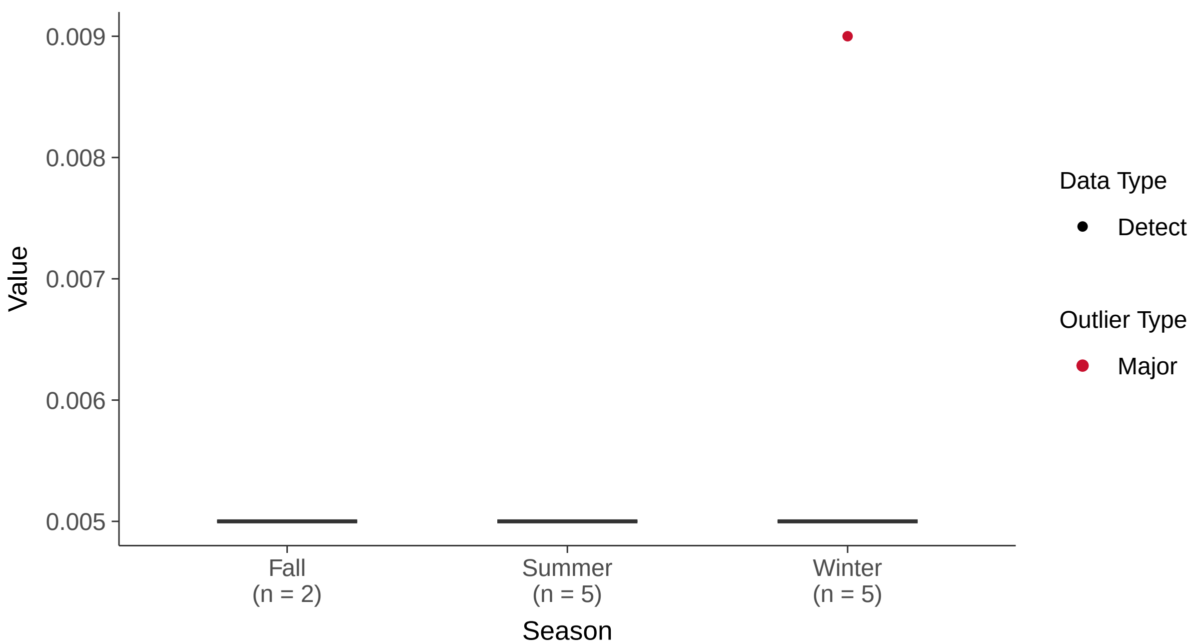
Boxplot

Zinc, MW-9 (mg/L)



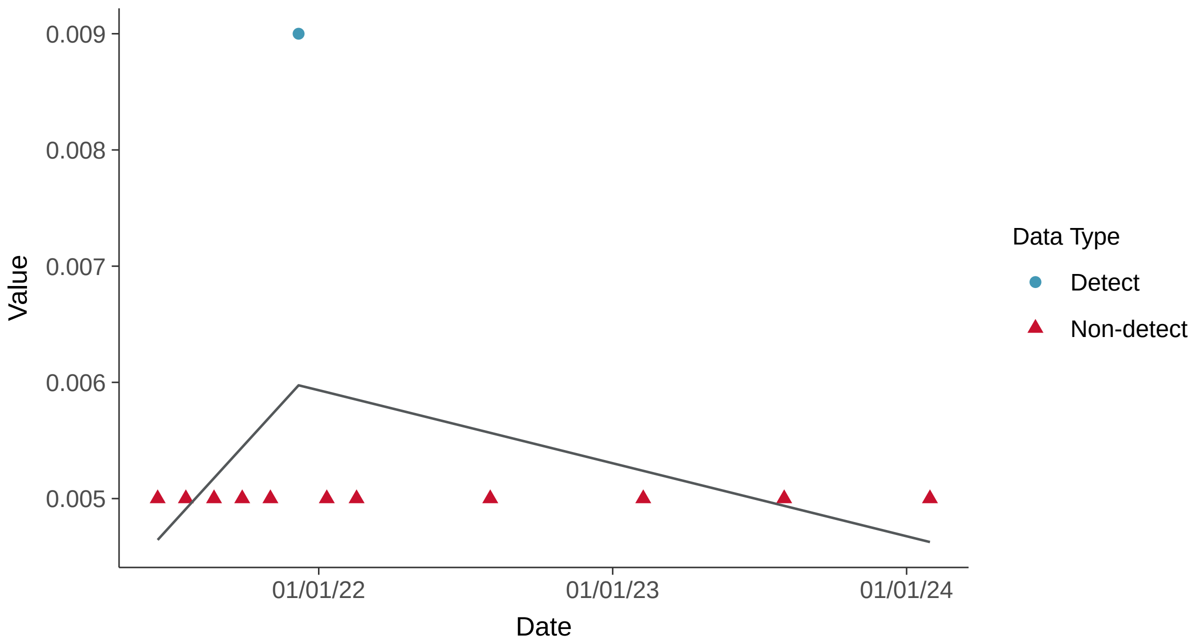
Boxplot by Season

Zinc, MW-9 (mg/L)



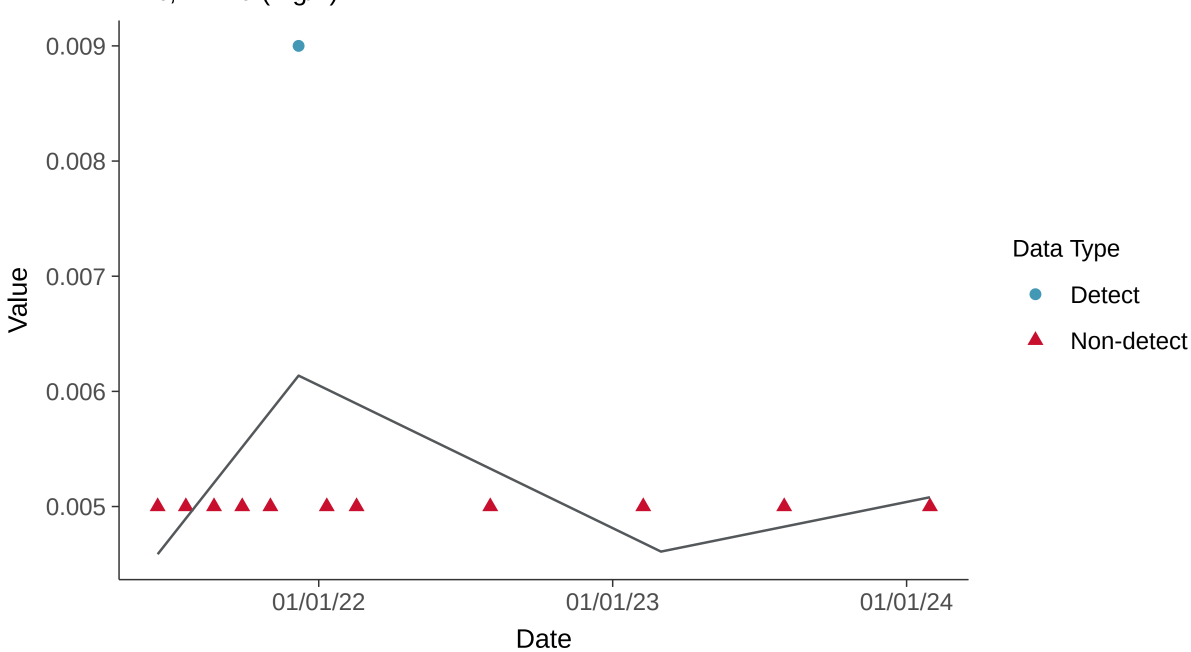
Trend Regression: Piecewise Linear-Linear

Zinc, MW-9 (mg/L)



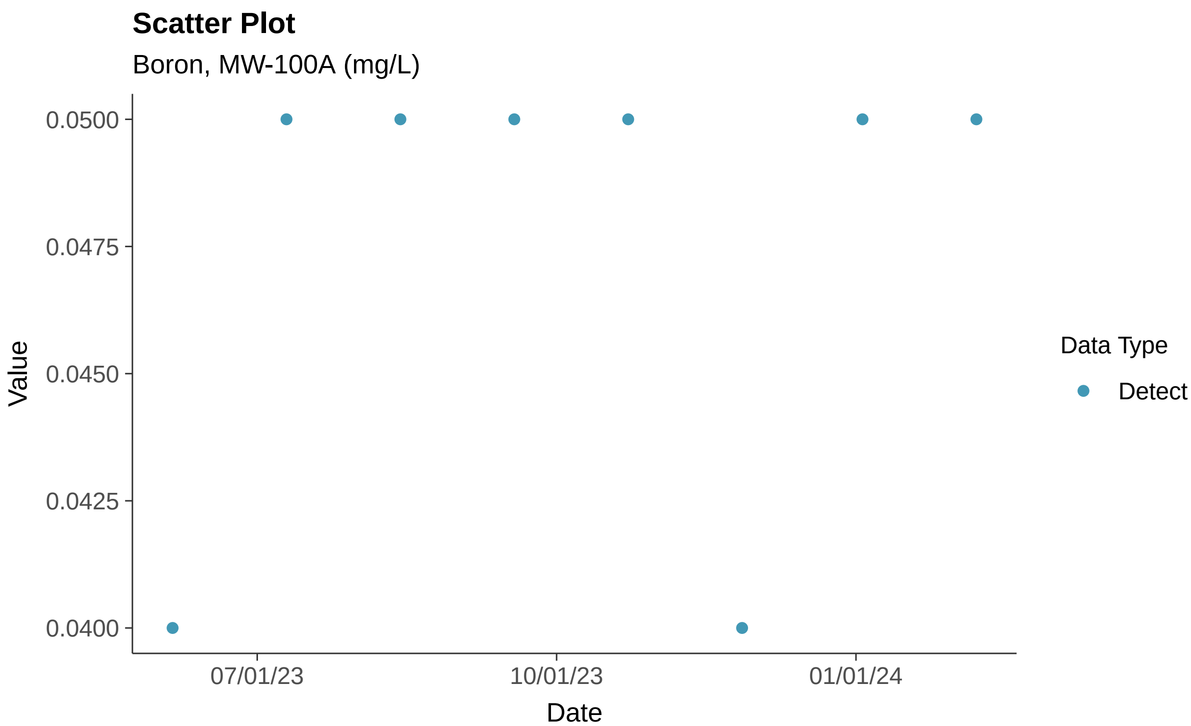
Trend Regression: Piecewise Linear-Linear-Linear

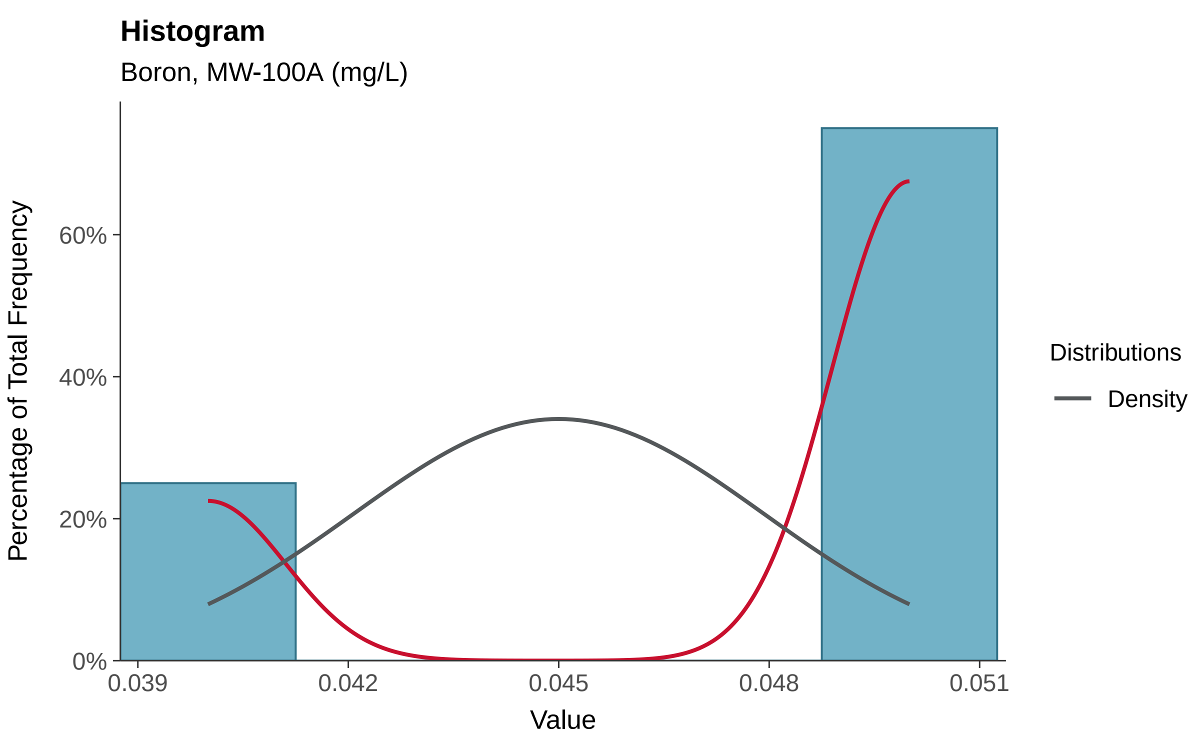
Zinc, MW-9 (mg/L)



Appendix III: Boron, MW-100A

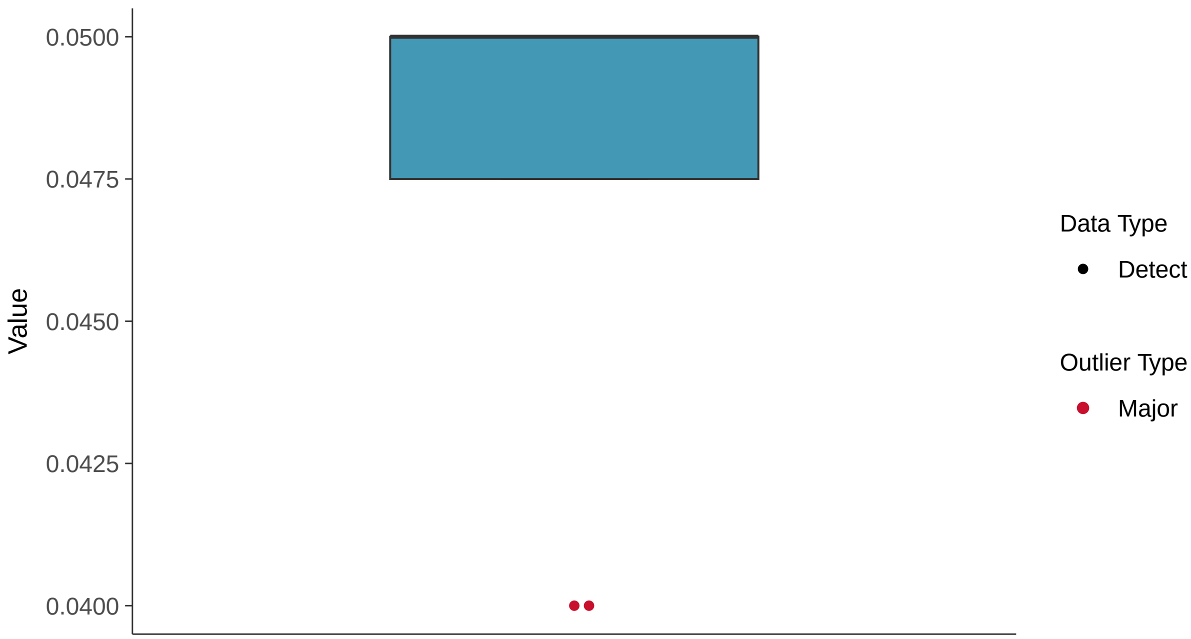
ID: 100A_1_01





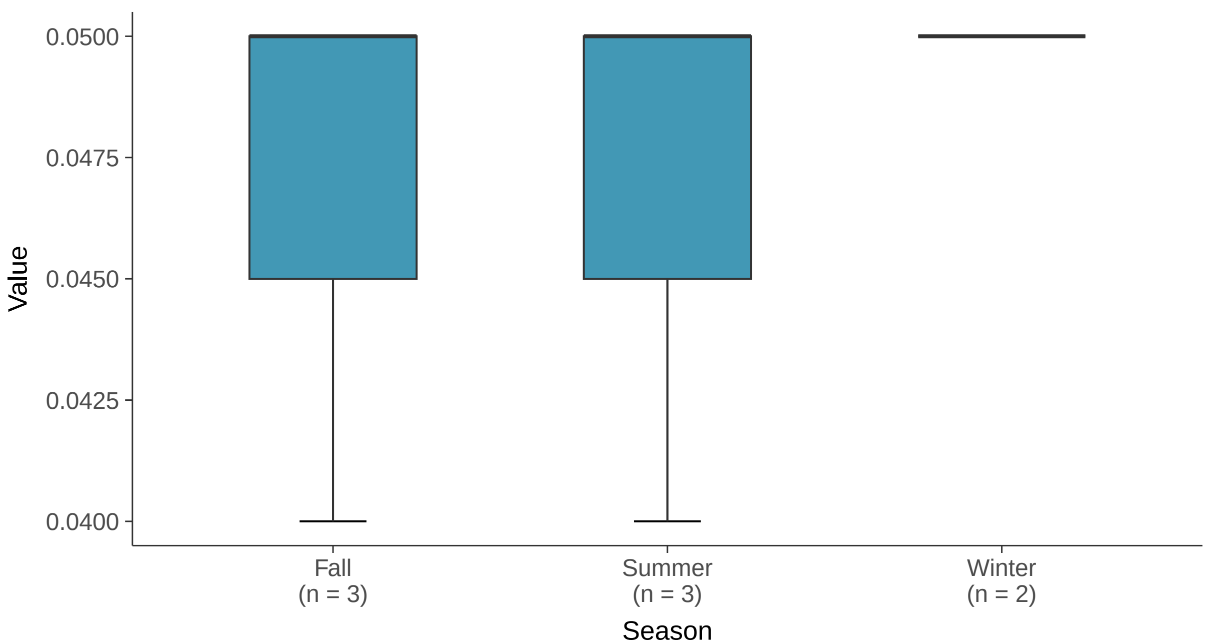
Boxplot

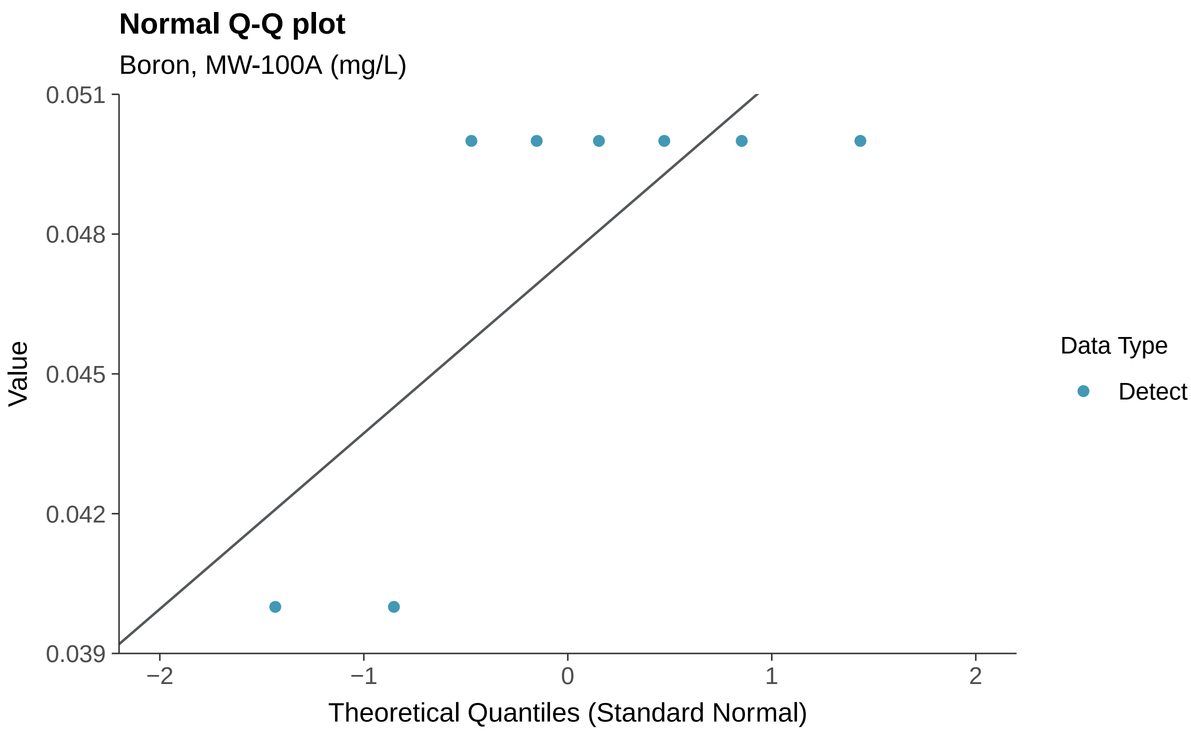
Boron, MW-100A (mg/L)

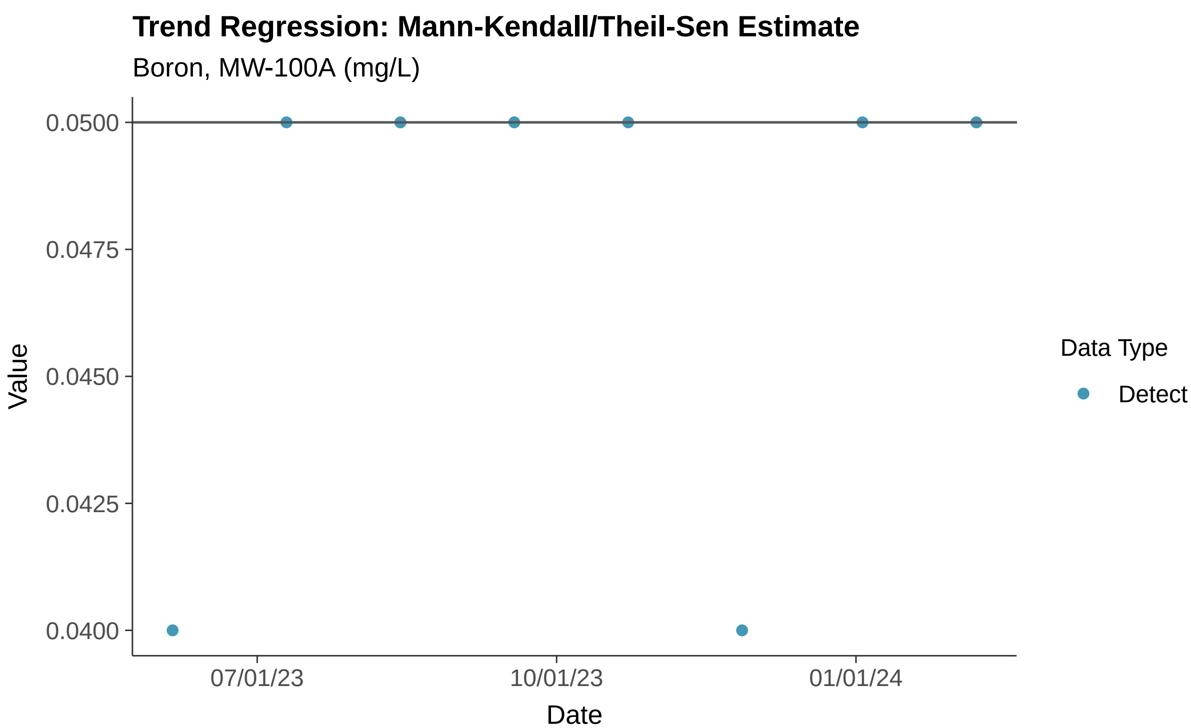


Boxplot by Season

Boron, MW-100A (mg/L)

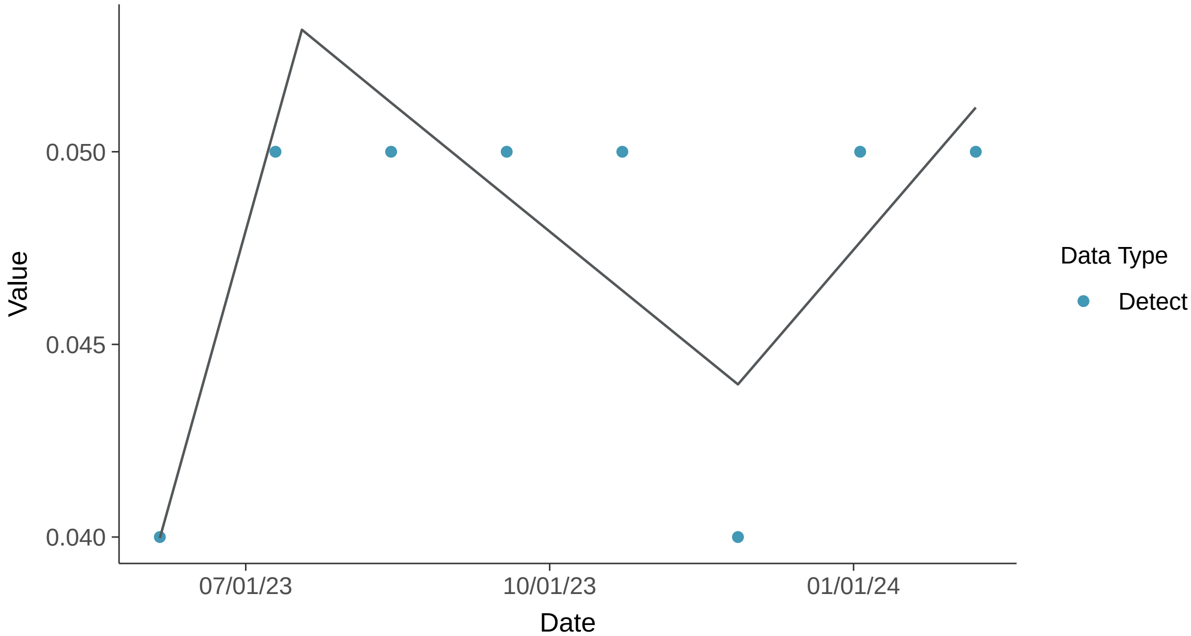



Normal Q-Q plot
Boron, MW-100A (mg/L)
Value
0.051
0.048
0.045
0.042
0.039
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Boron, MW-100A (mg/L)
Value
0.0500
0.0475
0.0450
0.0425
0.0400
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear-Linear

Boron, MW-100A (mg/L)

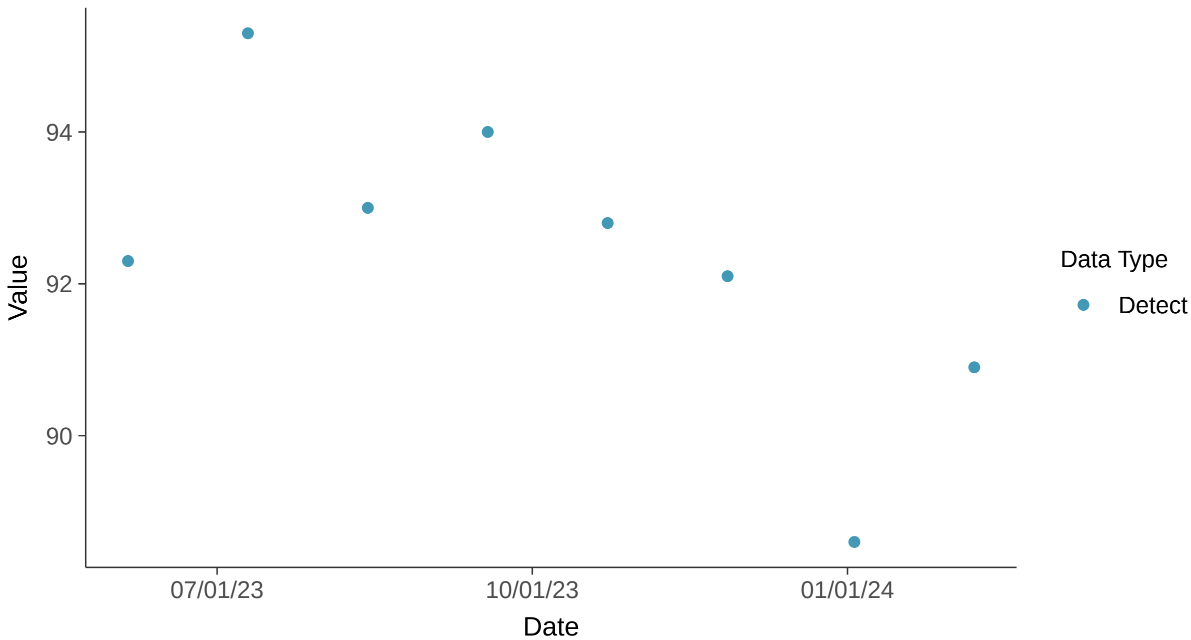


Appendix III: Calcium, MW-100A

ID: 100A_1_02

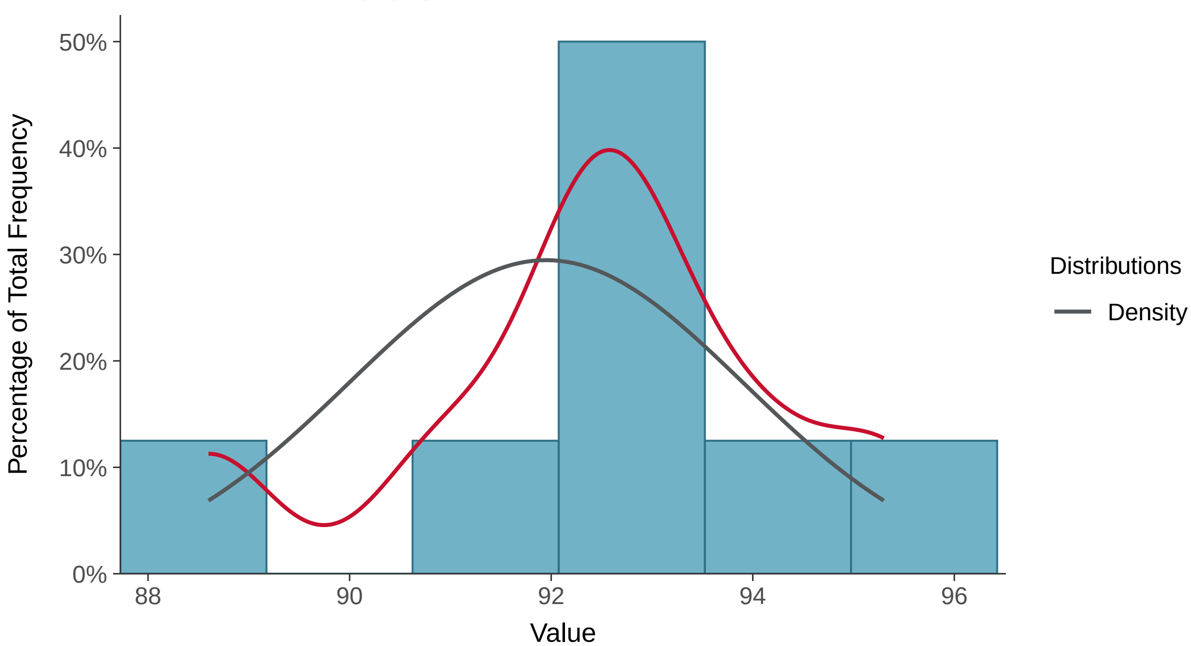
Scatter Plot

Calcium, MW-100A (mg/L)



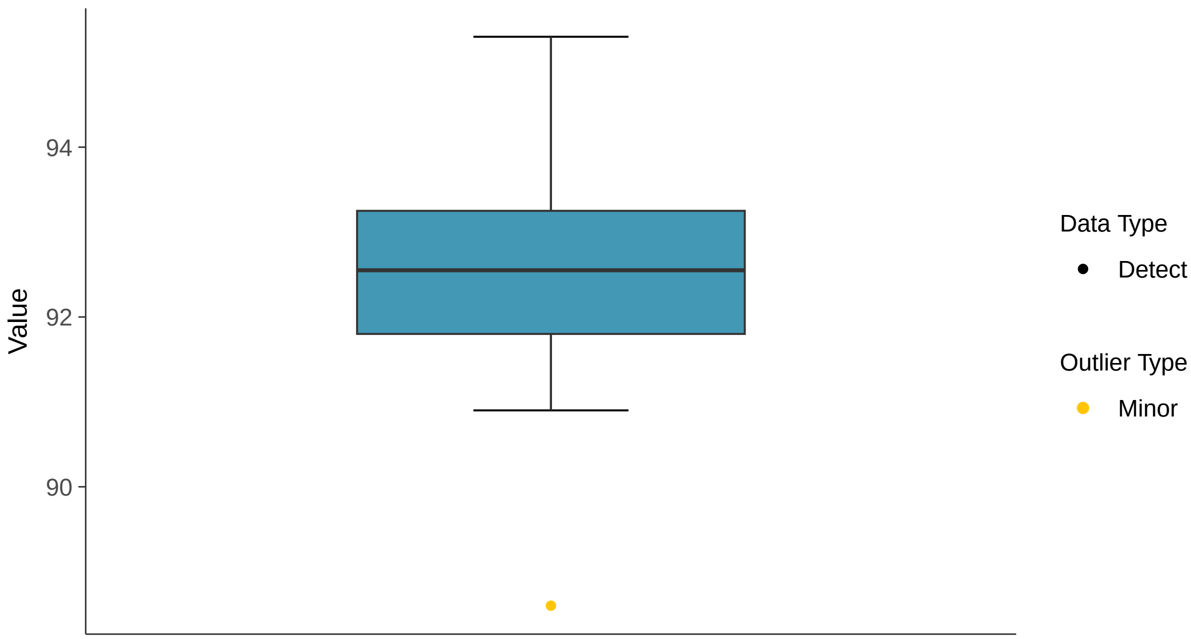
Histogram

Calcium, MW-100A (mg/L)



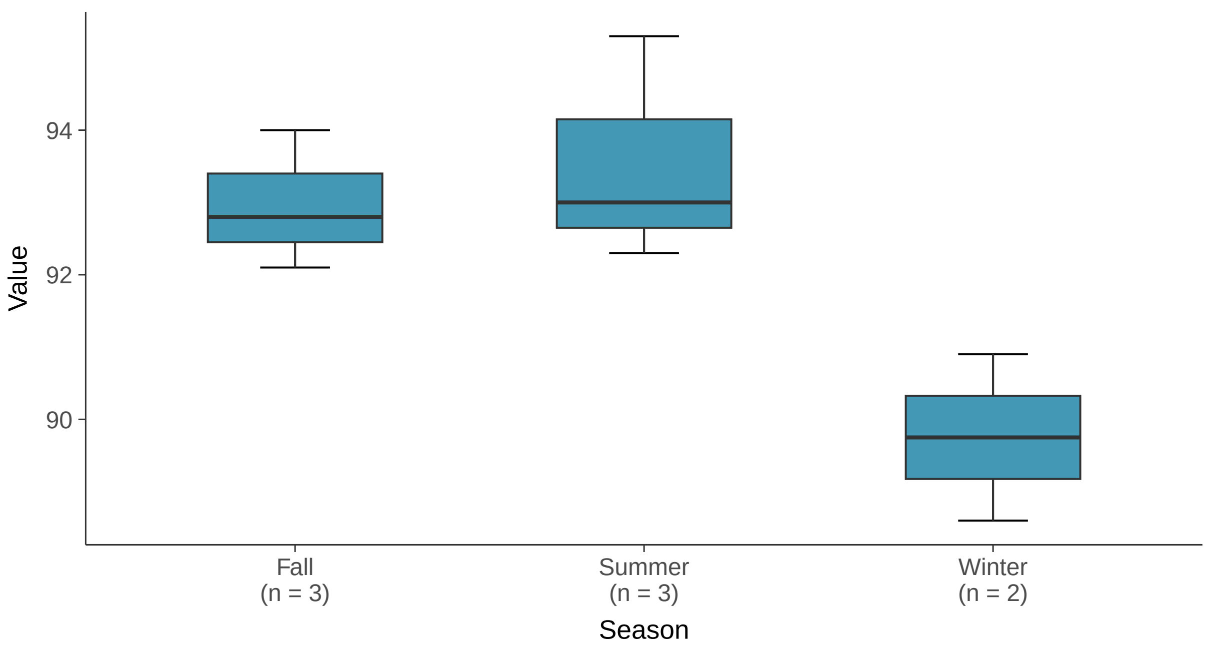
Boxplot

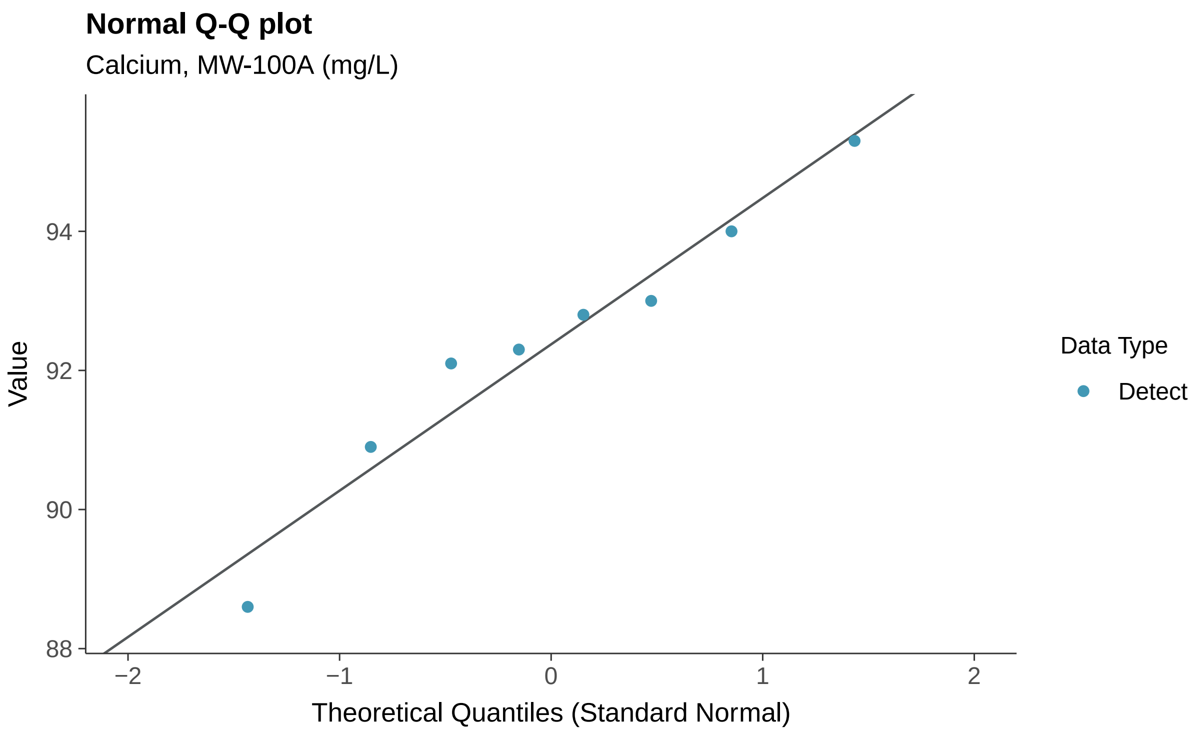
Calcium, MW-100A (mg/L)

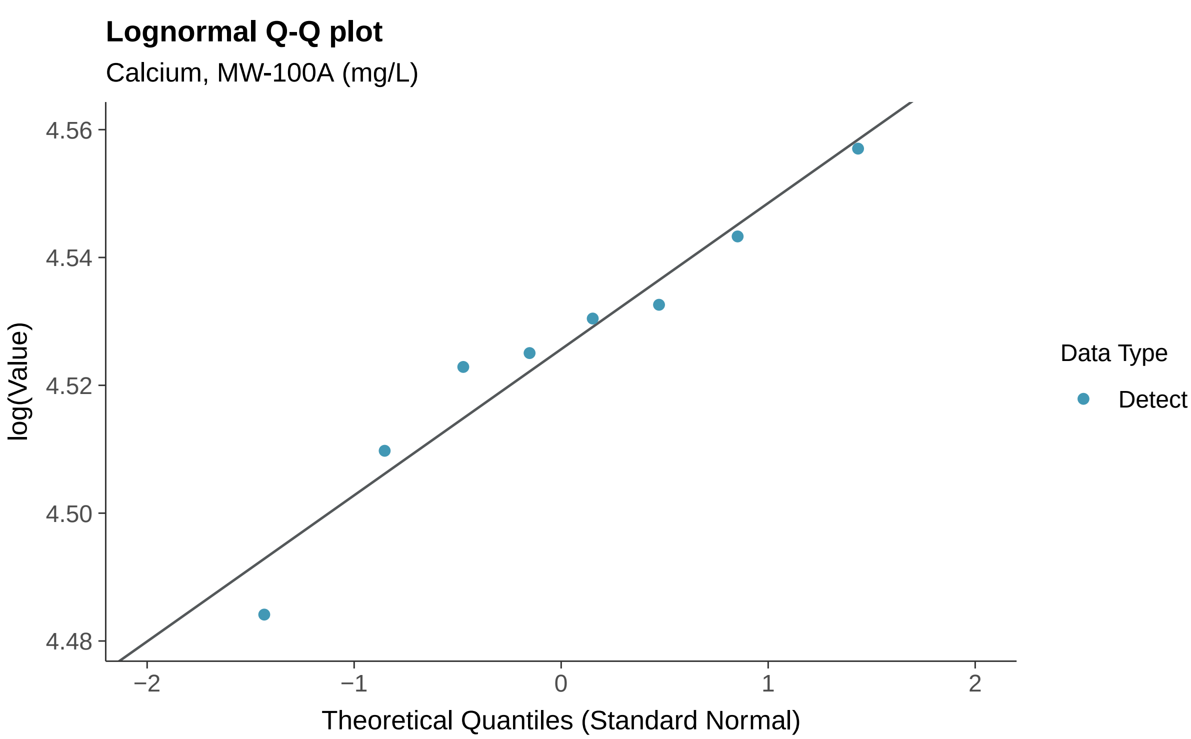


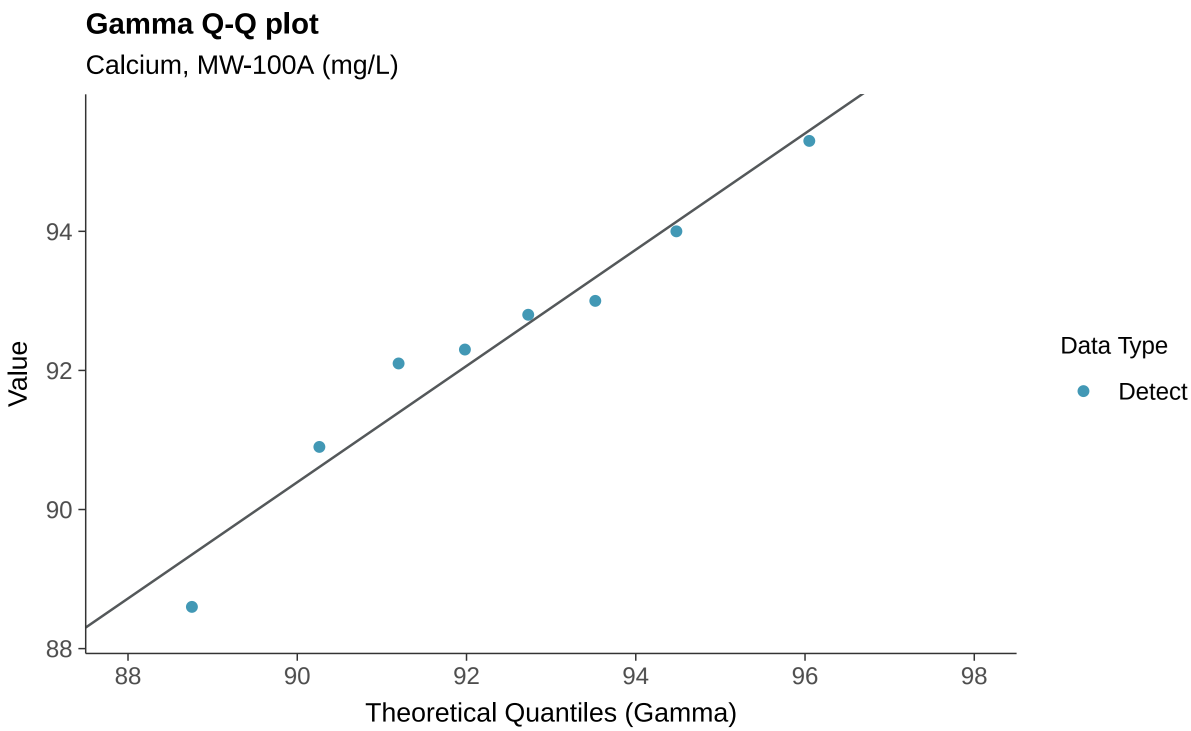
Boxplot by Season

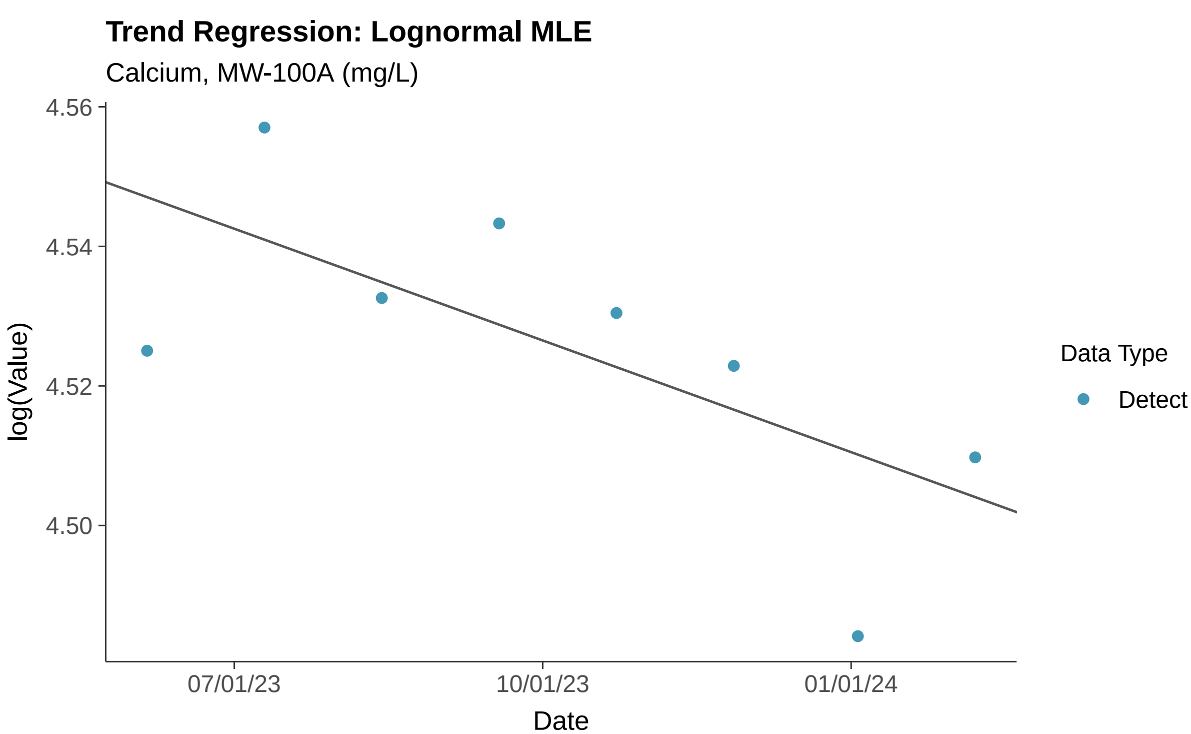
Calcium, MW-100A (mg/L)




Normal Q-Q plot
Calcium, MW-100A (mg/L)
Value
94
92
90
88
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

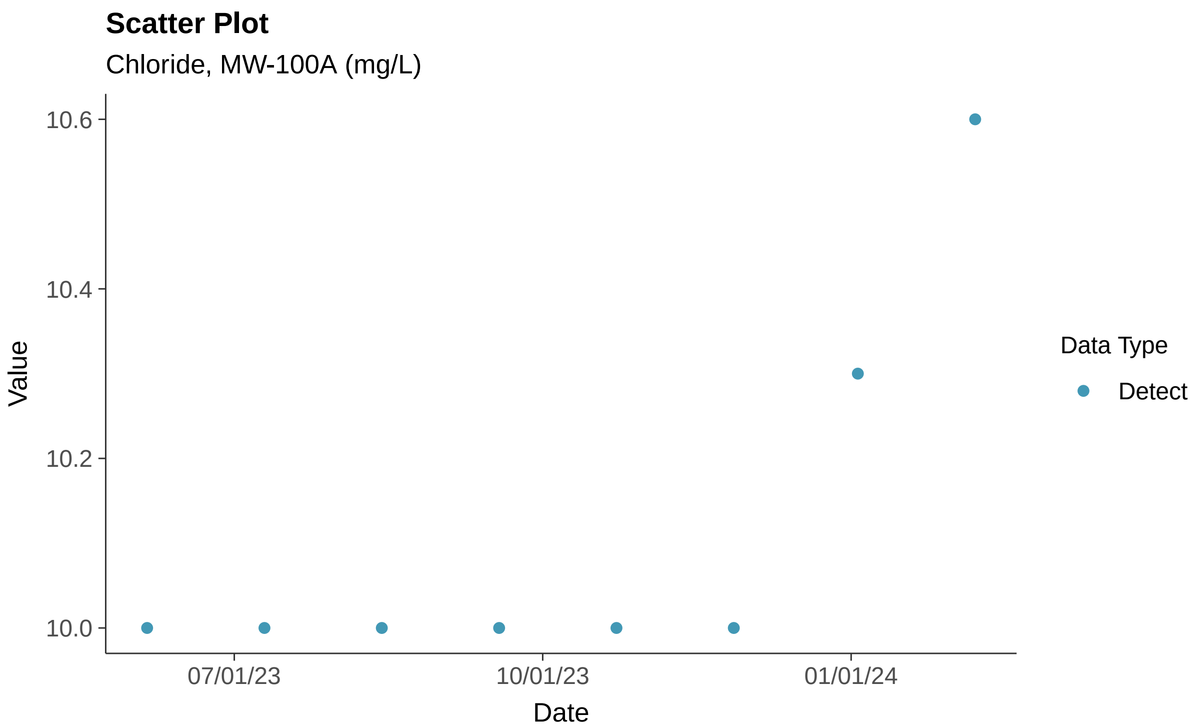

Lognormal Q-Q plot
Calcium, MW-100A (mg/L)
log(Value)
4.56
4.54
4.52
4.50
4.48
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

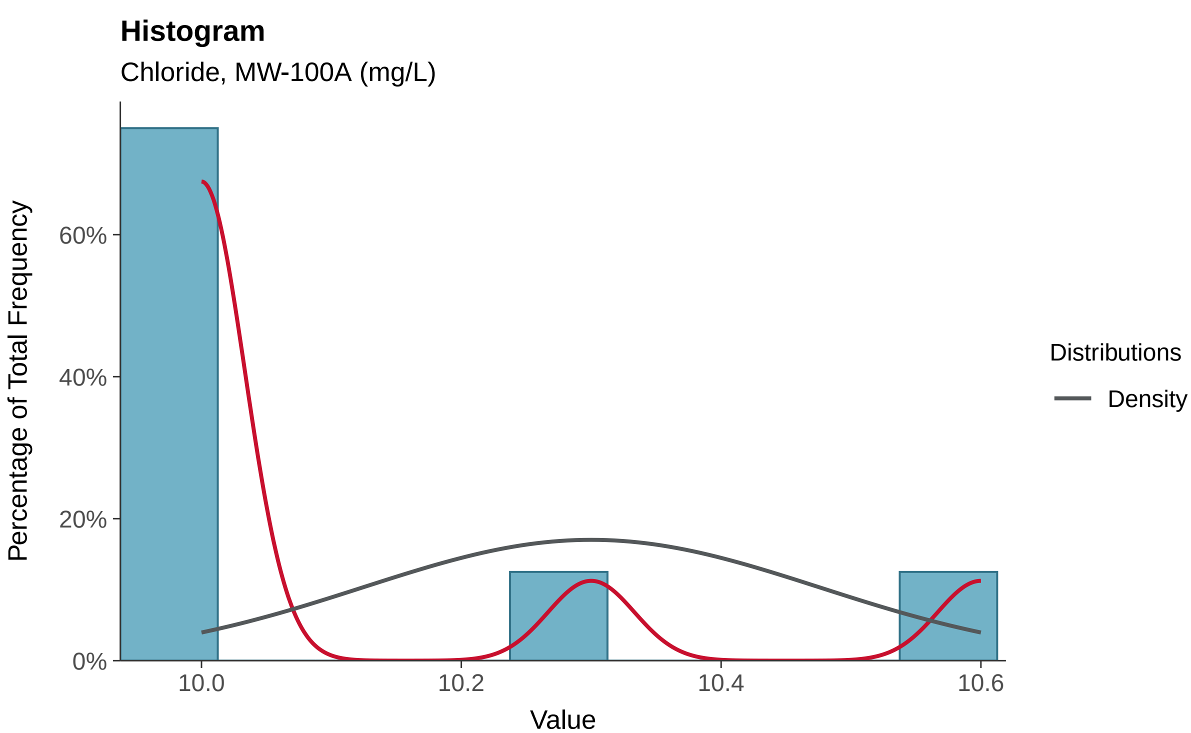

Gamma Q-Q plot
Calcium, MW-100A (mg/L)
Value
94
92
90
88
88
90
92
94
96
98
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Calcium, MW-100A (mg/L)
log(Value)
4.56
4.54
4.52
4.50
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix III: Chloride, MW-100A

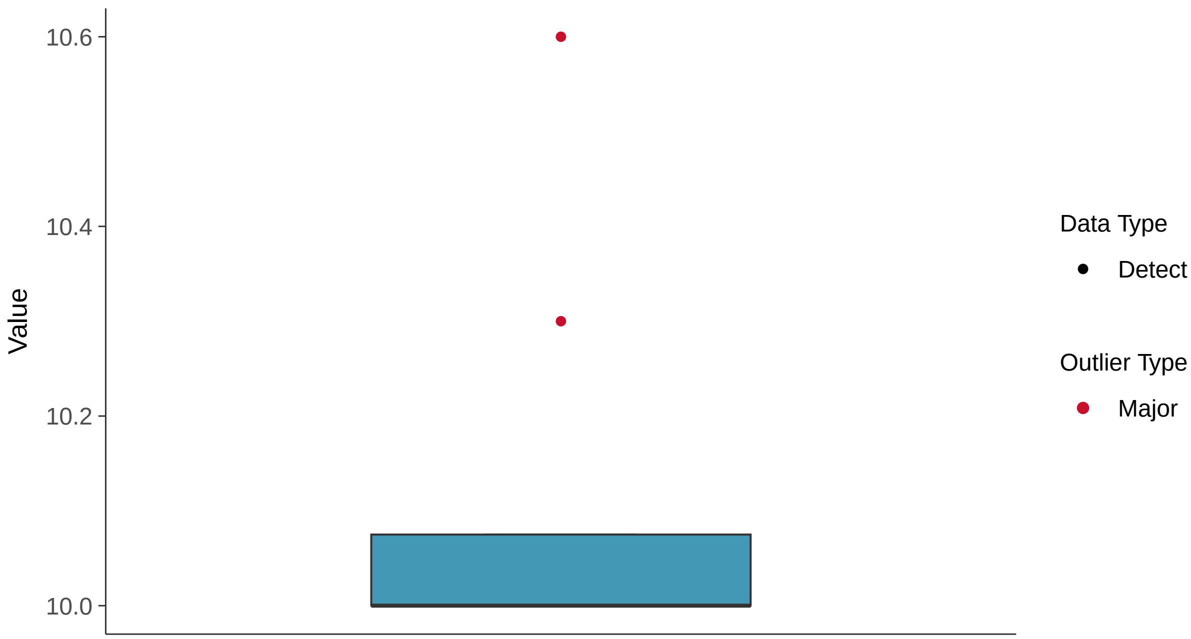
ID: 100A_1_03





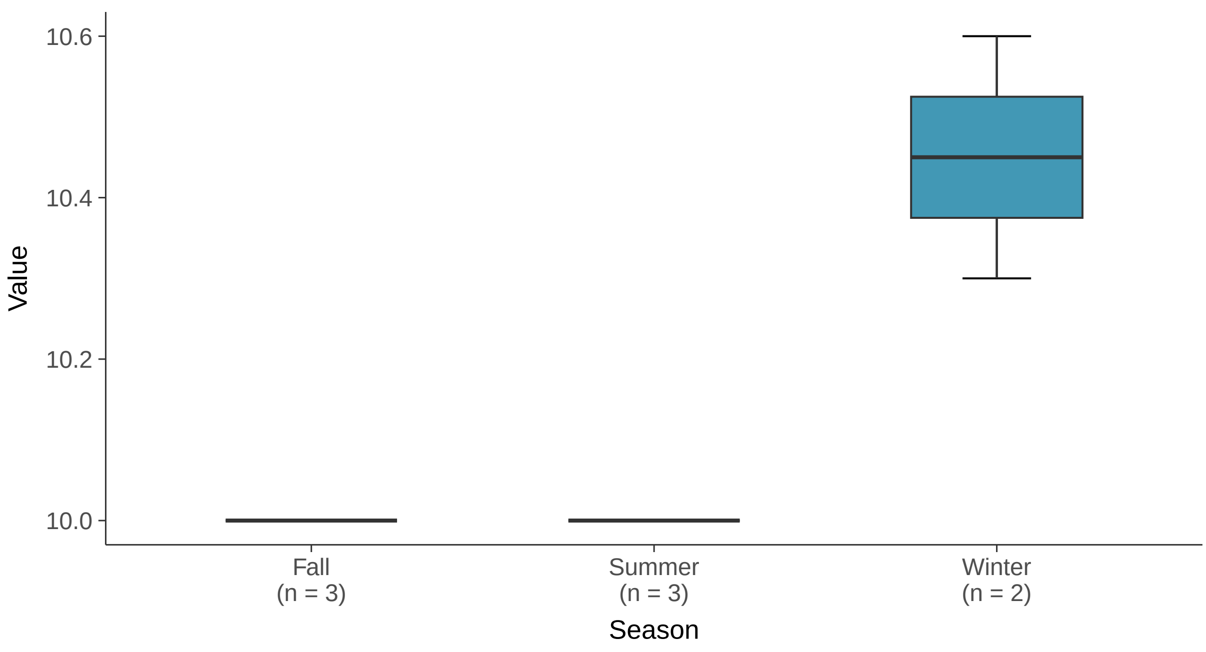
Boxplot

Chloride, MW-100A (mg/L)



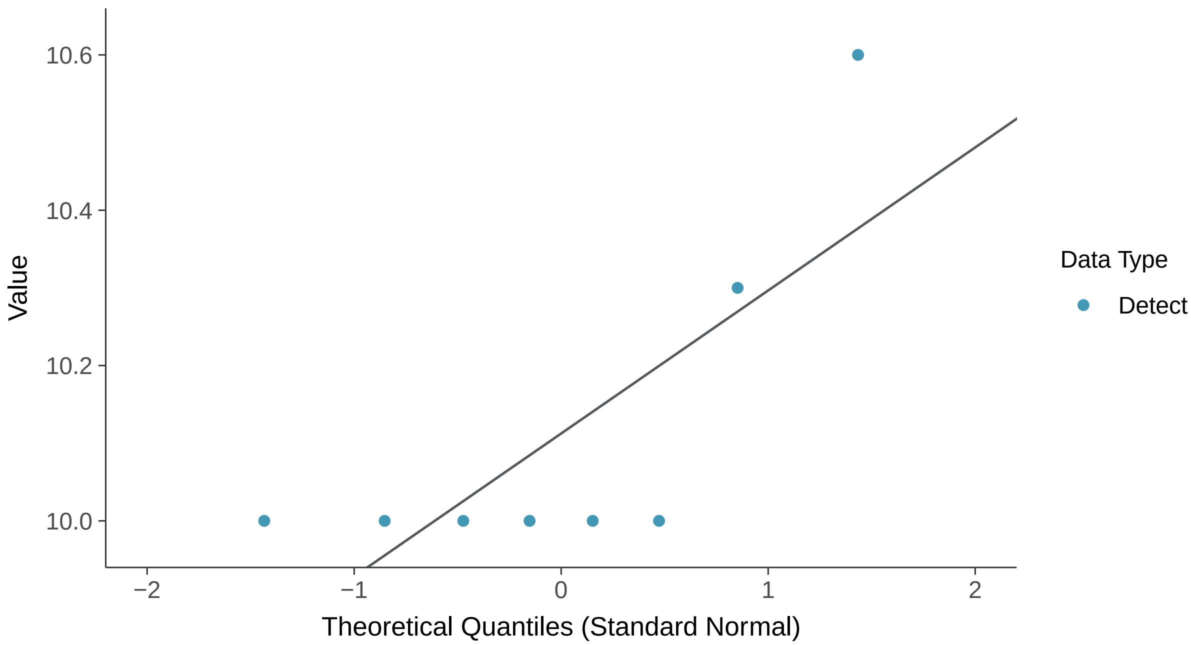
Boxplot by Season

Chloride, MW-100A (mg/L)



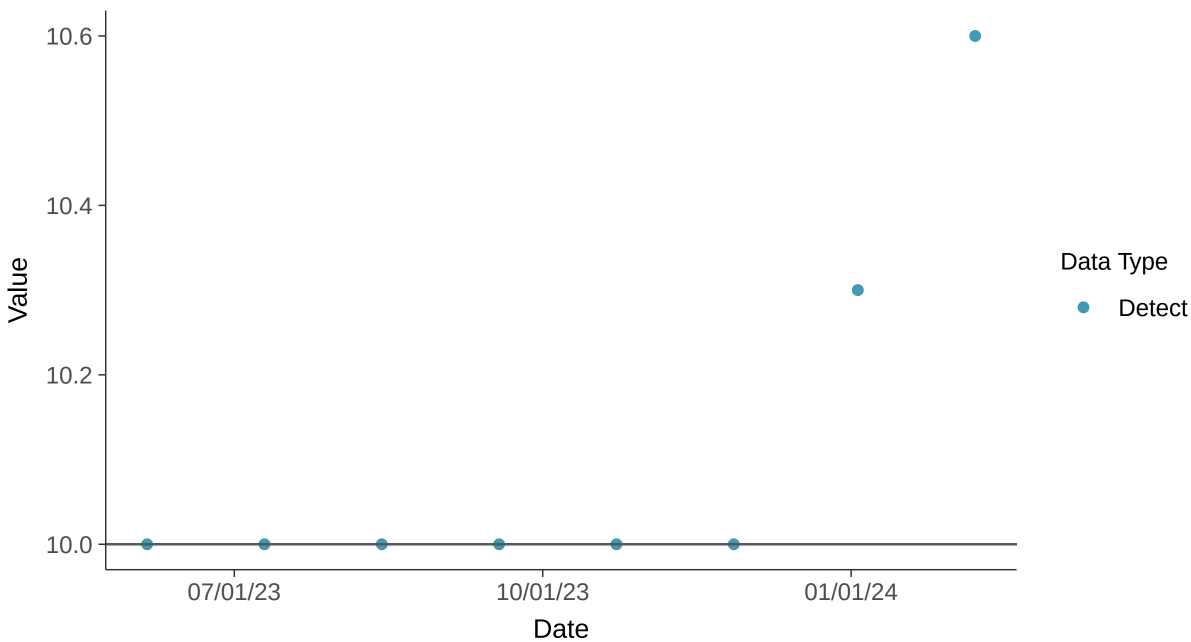
Normal Q-Q plot

Chloride, MW-100A (mg/L)



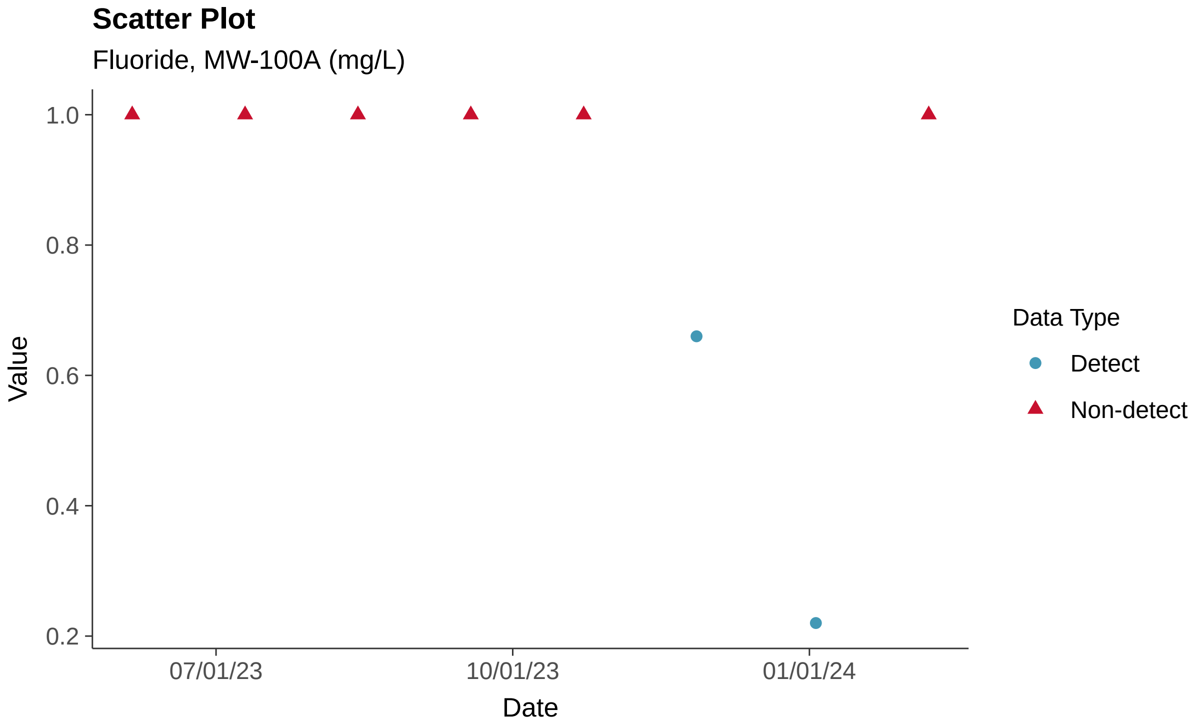
Trend Regression: Mann-Kendall/Theil-Sen Estimate

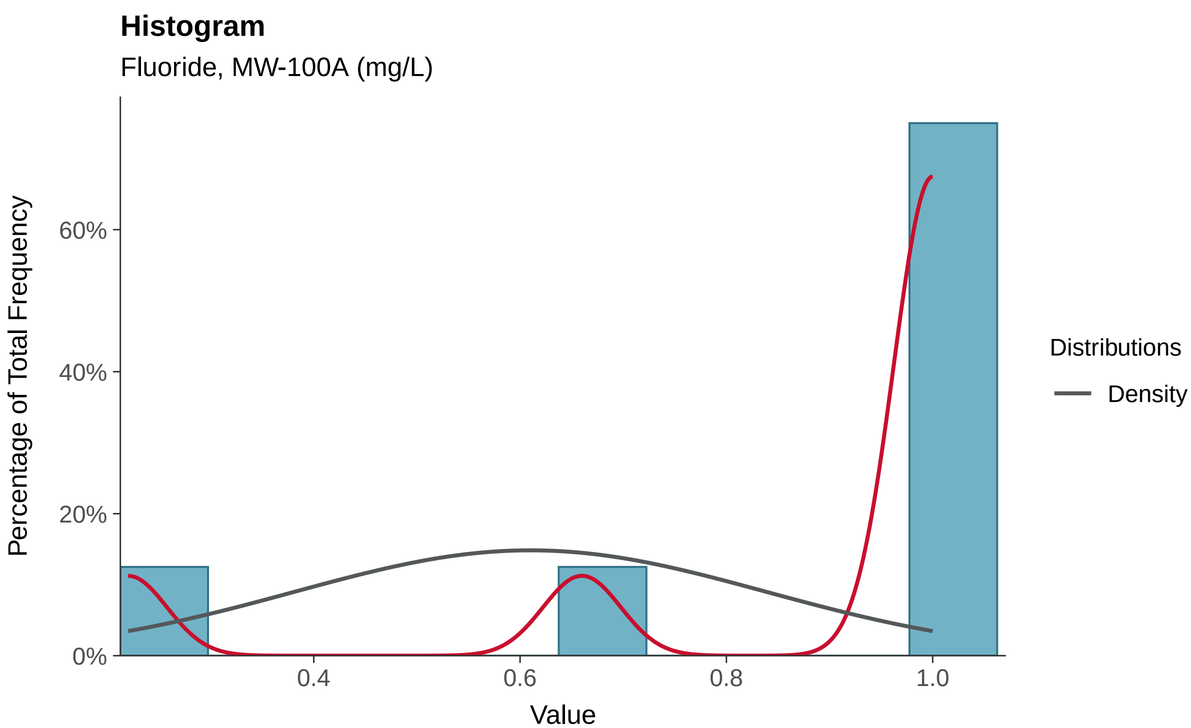
Chloride, MW-100A (mg/L)



Appendix III: Fluoride, MW-100A

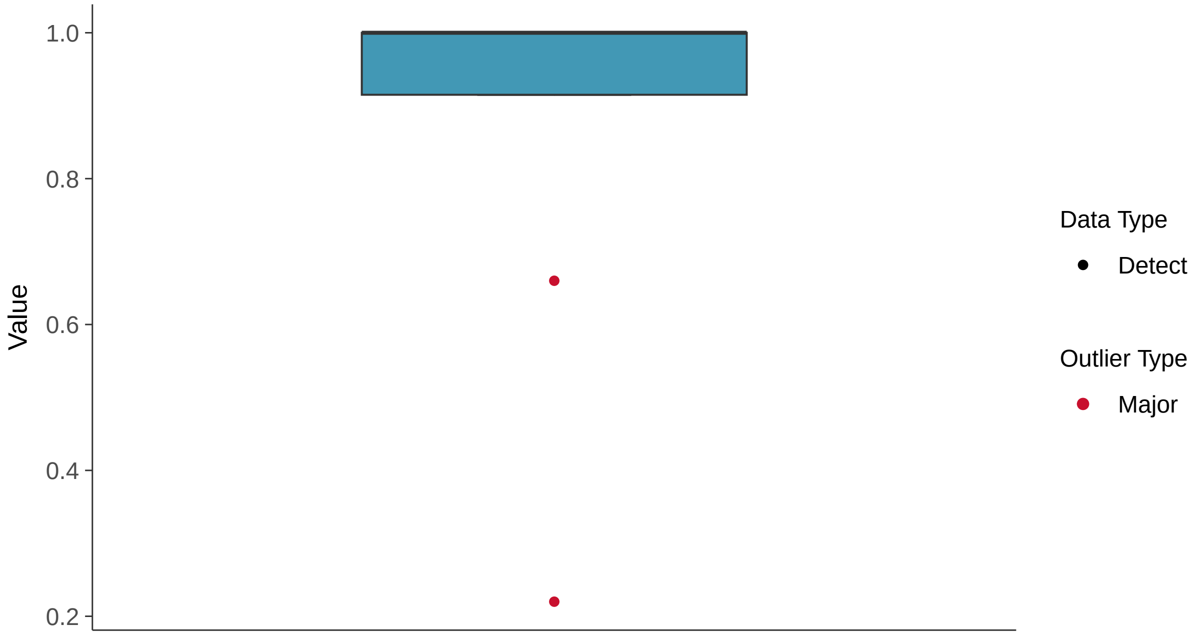
ID: 100A_1_04





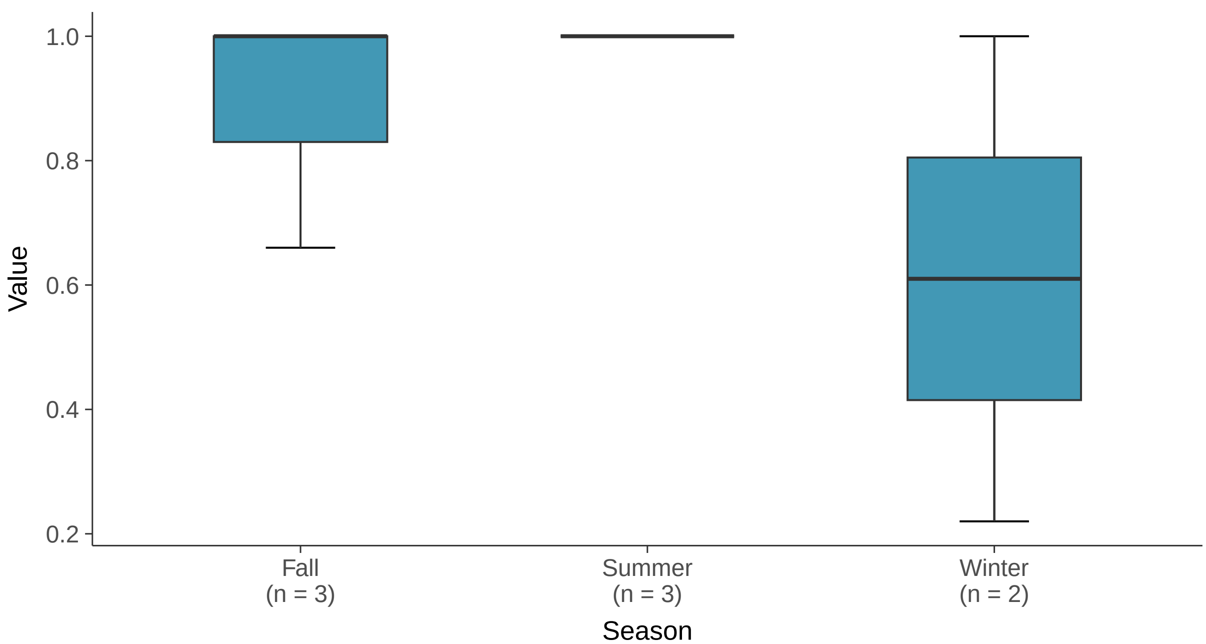
Boxplot

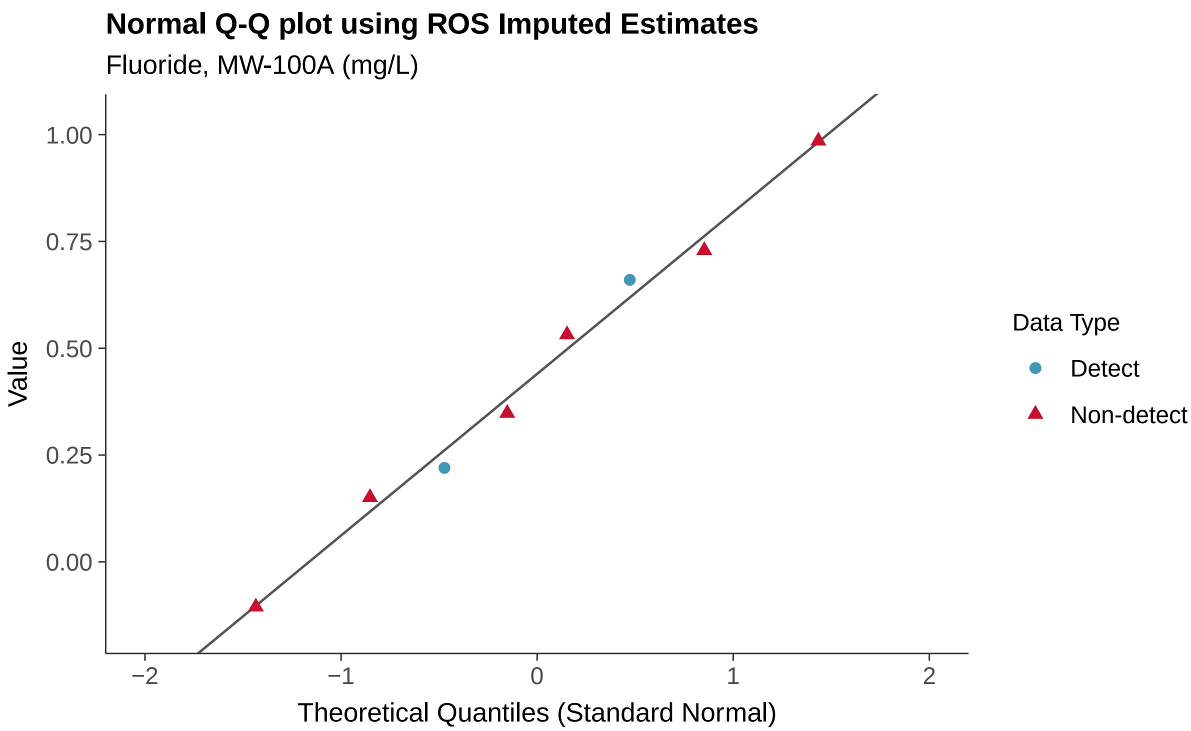
Fluoride, MW-100A (mg/L)



Boxplot by Season

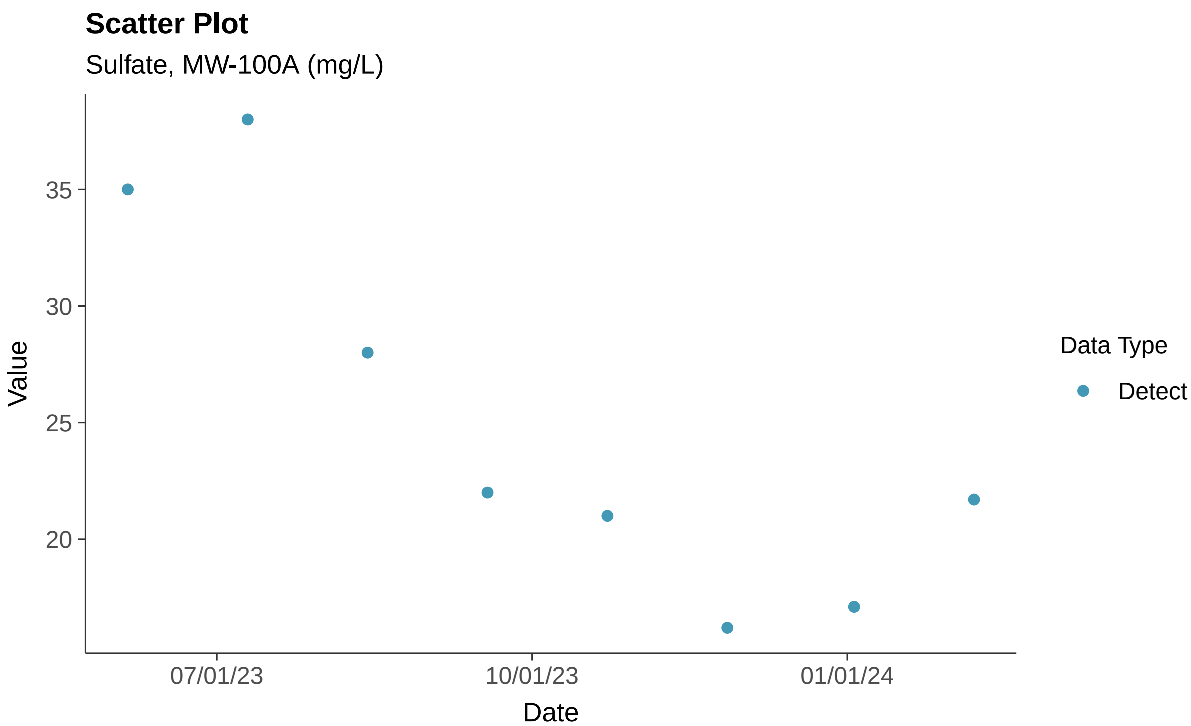
Fluoride, MW-100A (mg/L)

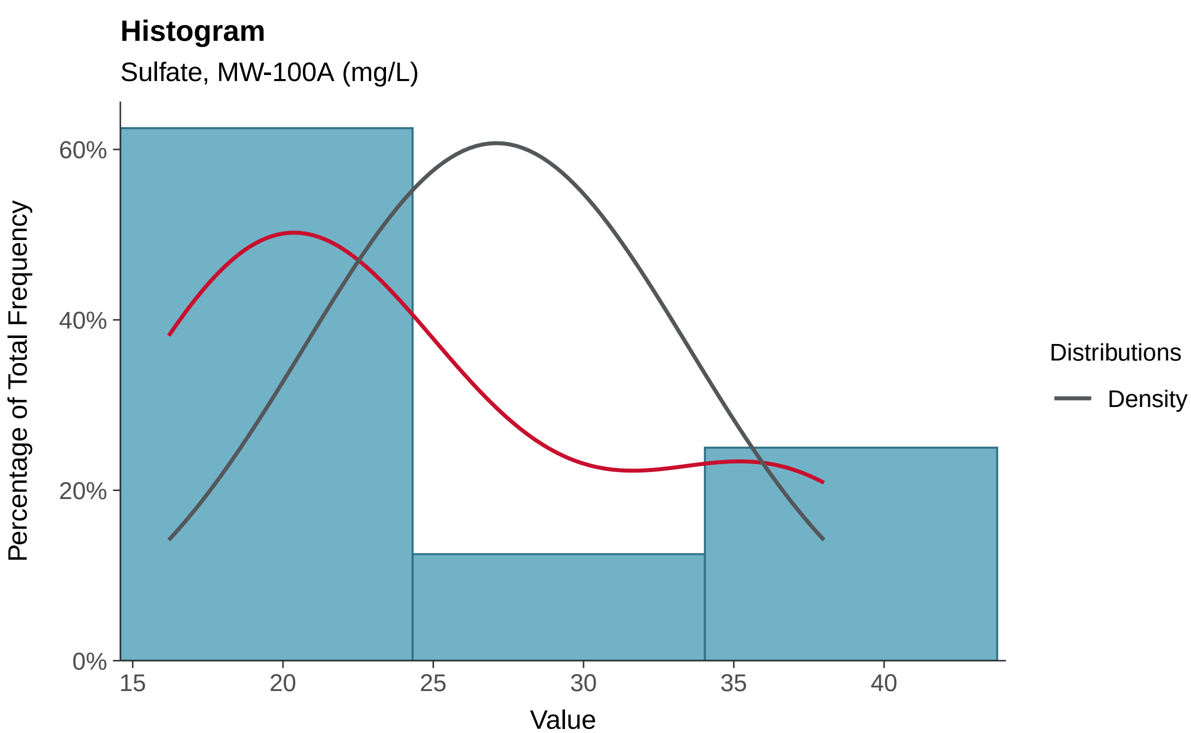



Normal Q-Q plot using ROS Imputed Estimates
Fluoride, MW-100A (mg/L)
Value
1.00
0.75
0.50
0.25
0.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

Appendix III: Sulfate, MW-100A

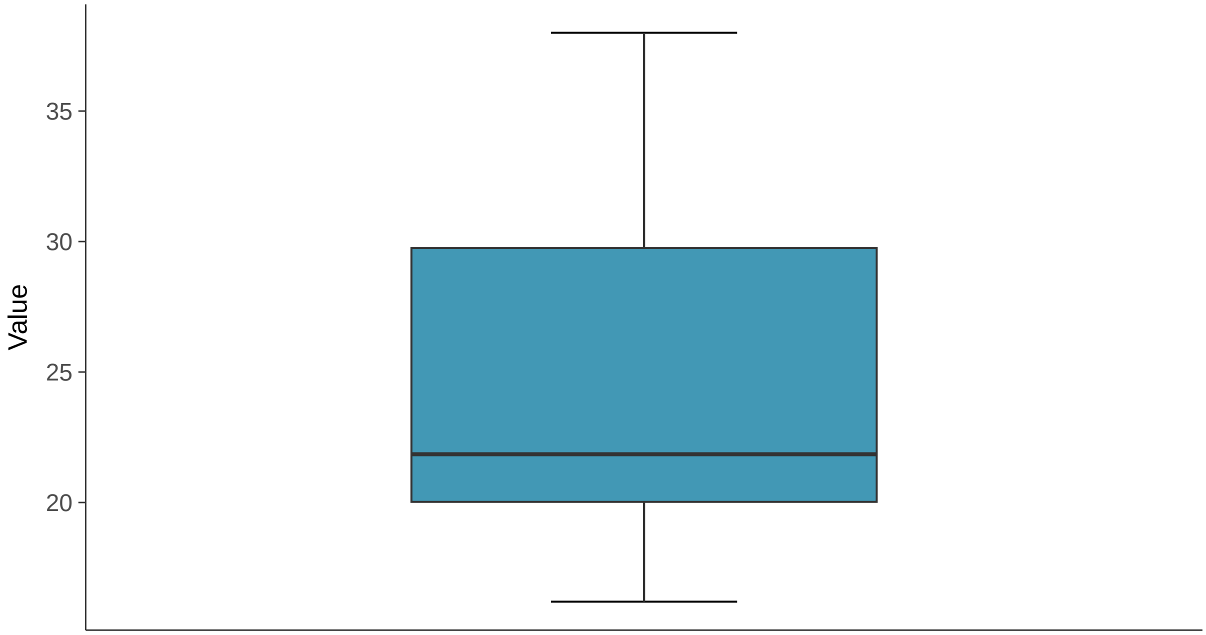
ID: 100A_1_05





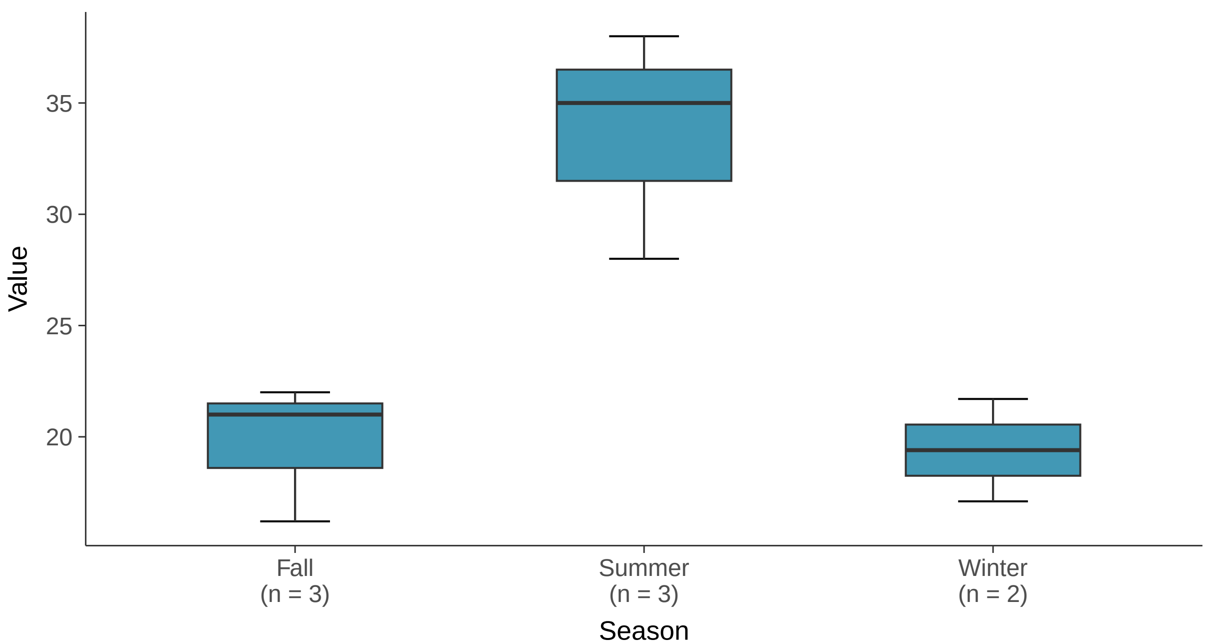
Boxplot

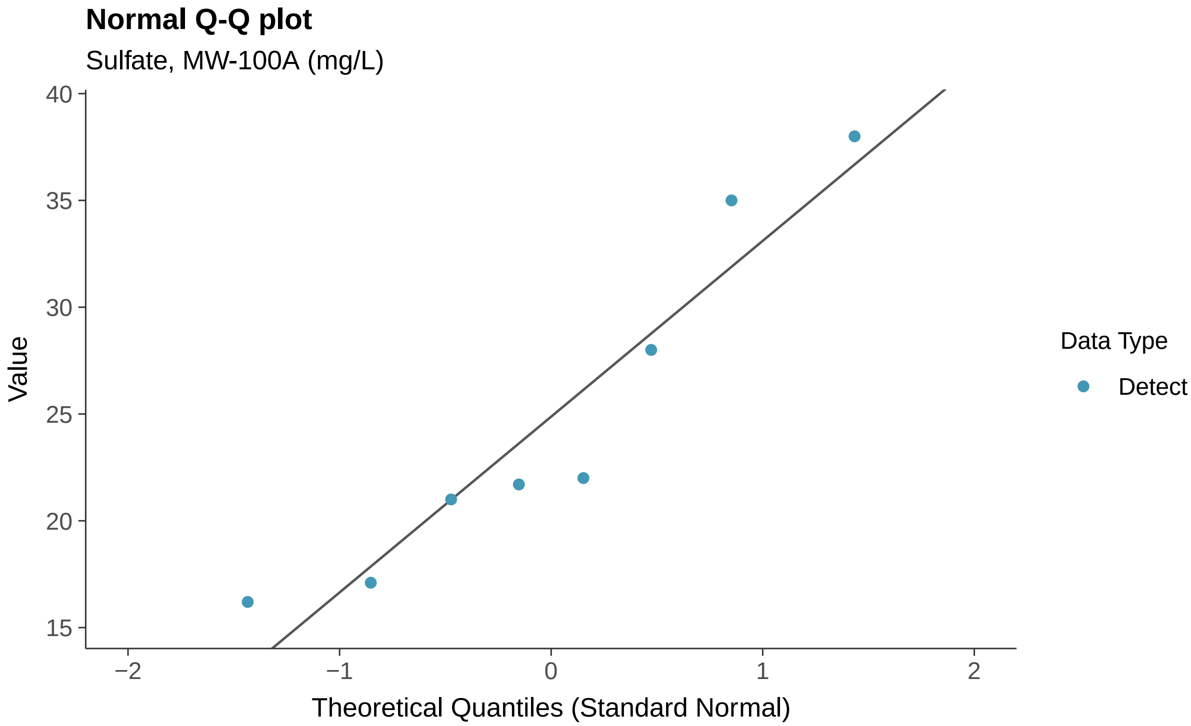
Sulfate, MW-100A (mg/L)

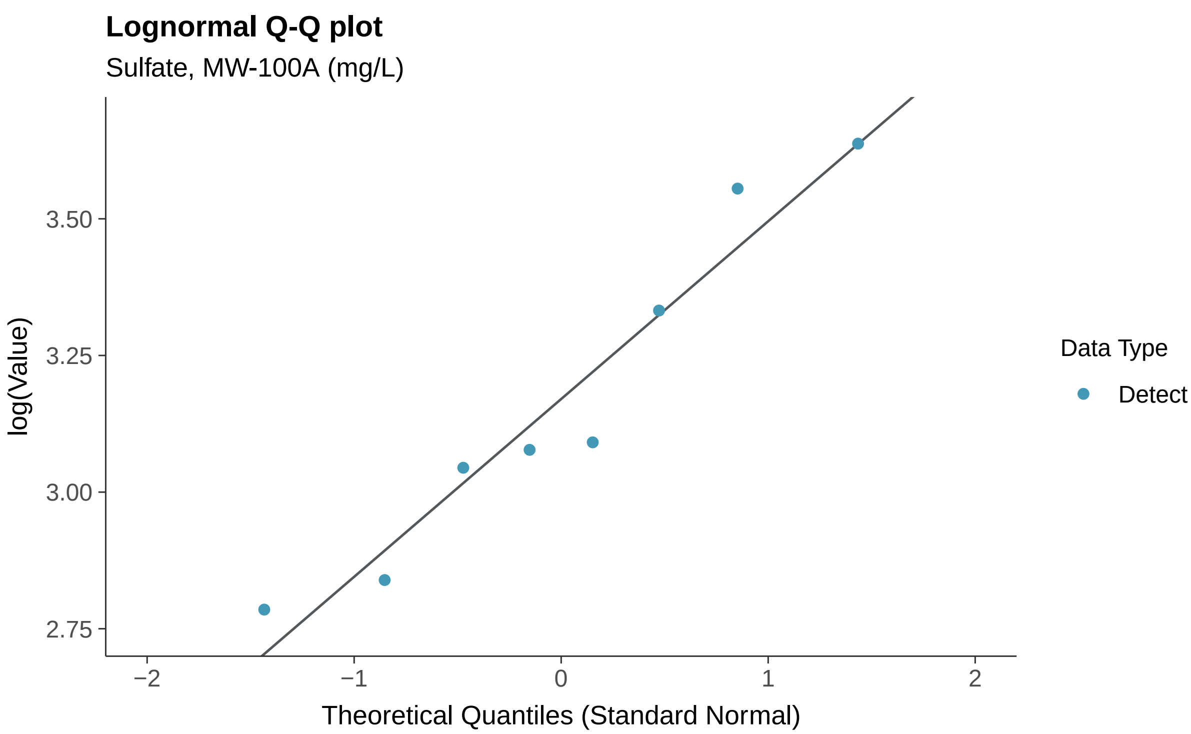


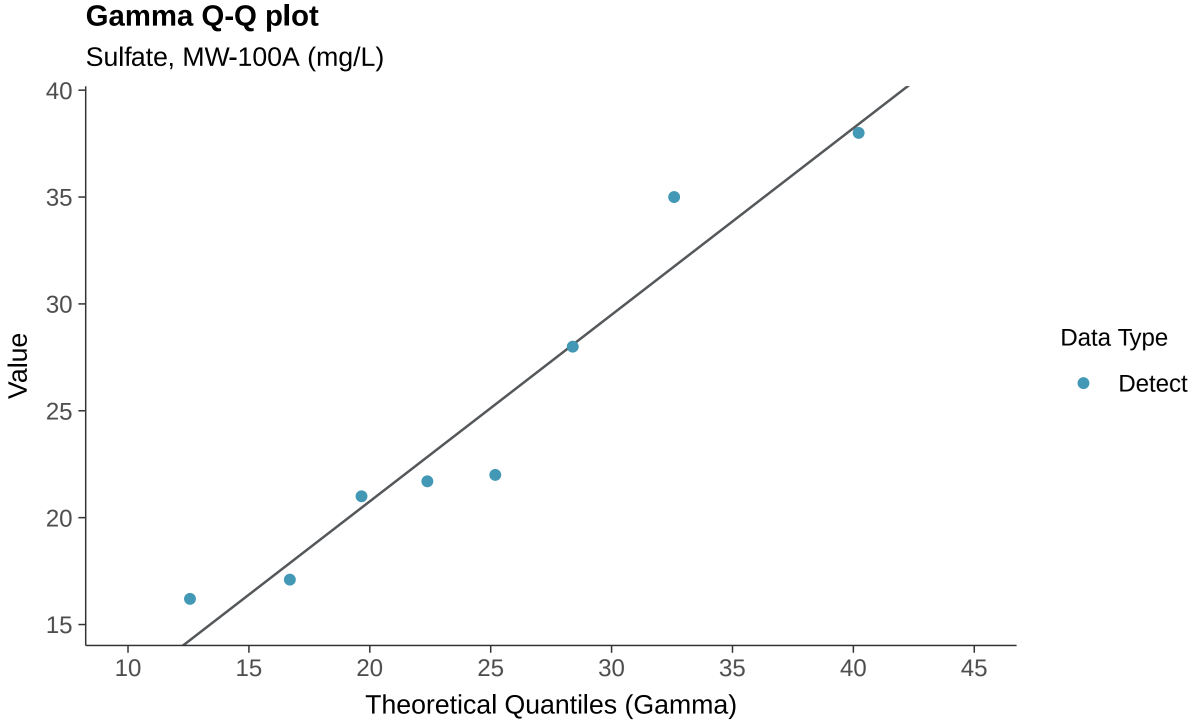
Boxplot by Season

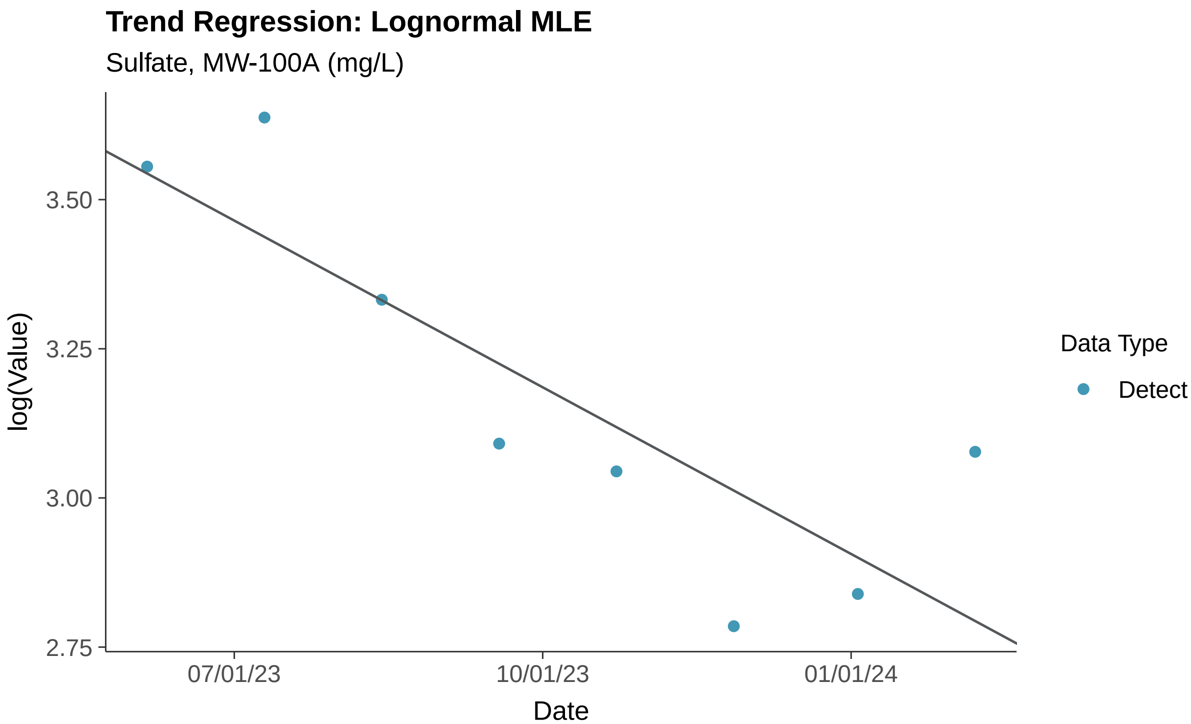
Sulfate, MW-100A (mg/L)




Normal Q-Q plot
Sulfate, MW-100A (mg/L)
Value
40
35
30
25
20
15
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

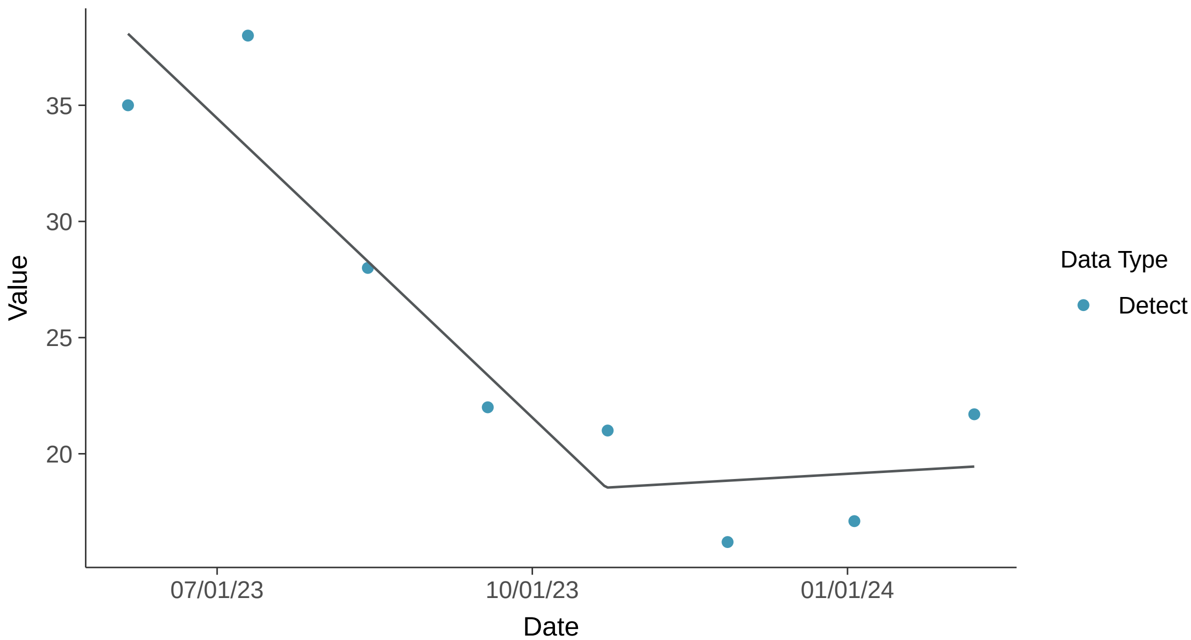

Lognormal Q-Q plot
Sulfate, MW-100A (mg/L)
log(Value)
3.50
3.25
3.00
2.75
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Sulfate, MW-100A (mg/L)
Value
Theoretical Quantiles (Gamma)
40
35
30
25
20
15
10
15
20
25
30
35
40
45
Data Type
Detect


Trend Regression: Lognormal MLE
Sulfate, MW-100A (mg/L)
log(Value)
Date
3.50
3.25
3.00
2.75
07/01/23
10/01/23
01/01/24
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Sulfate, MW-100A (mg/L)

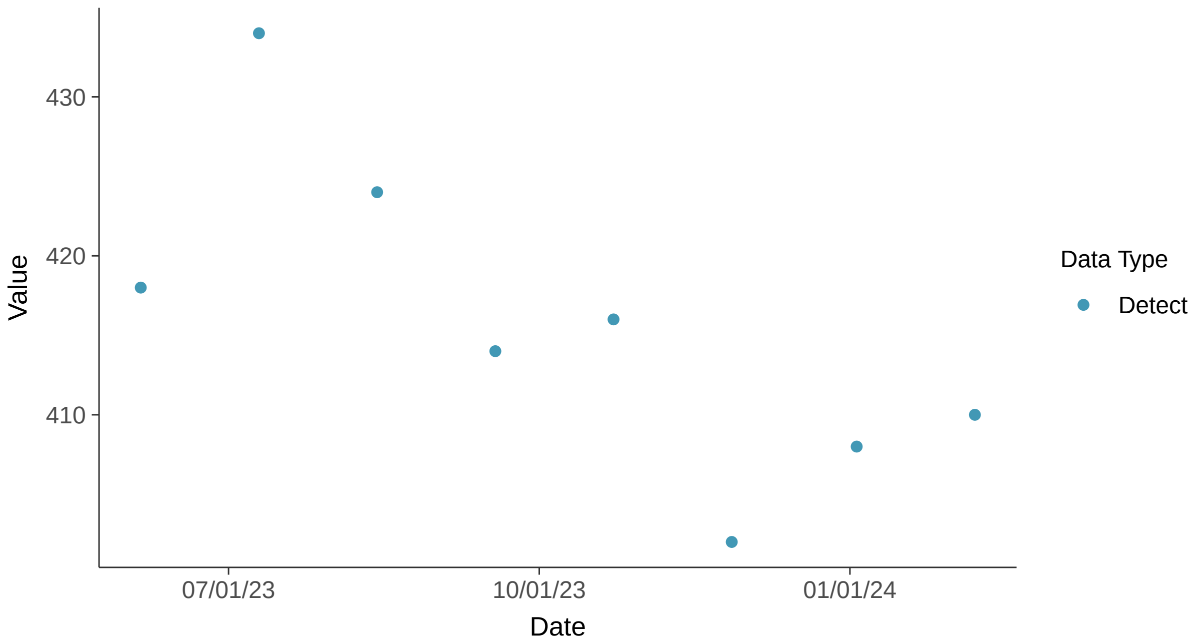


Appendix III: Total Dissolved Solids, MW-100A

ID: 100A_1_06

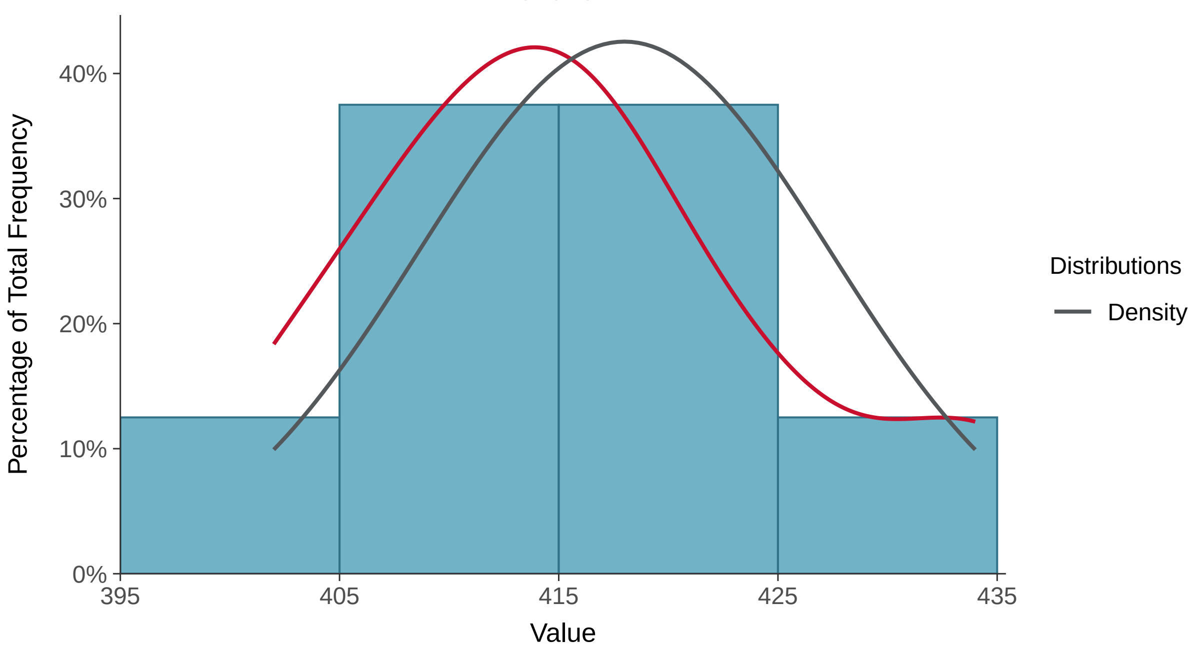
Scatter Plot

Total Dissolved Solids, MW-100A (mg/L)



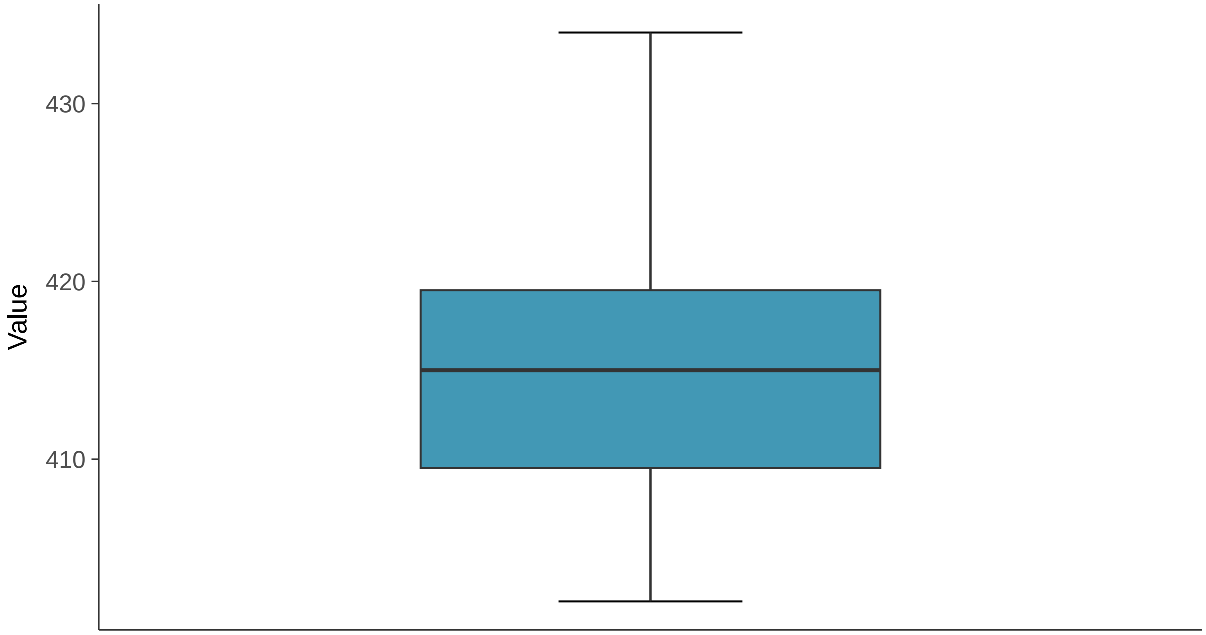
Histogram

Total Dissolved Solids, MW-100A (mg/L)



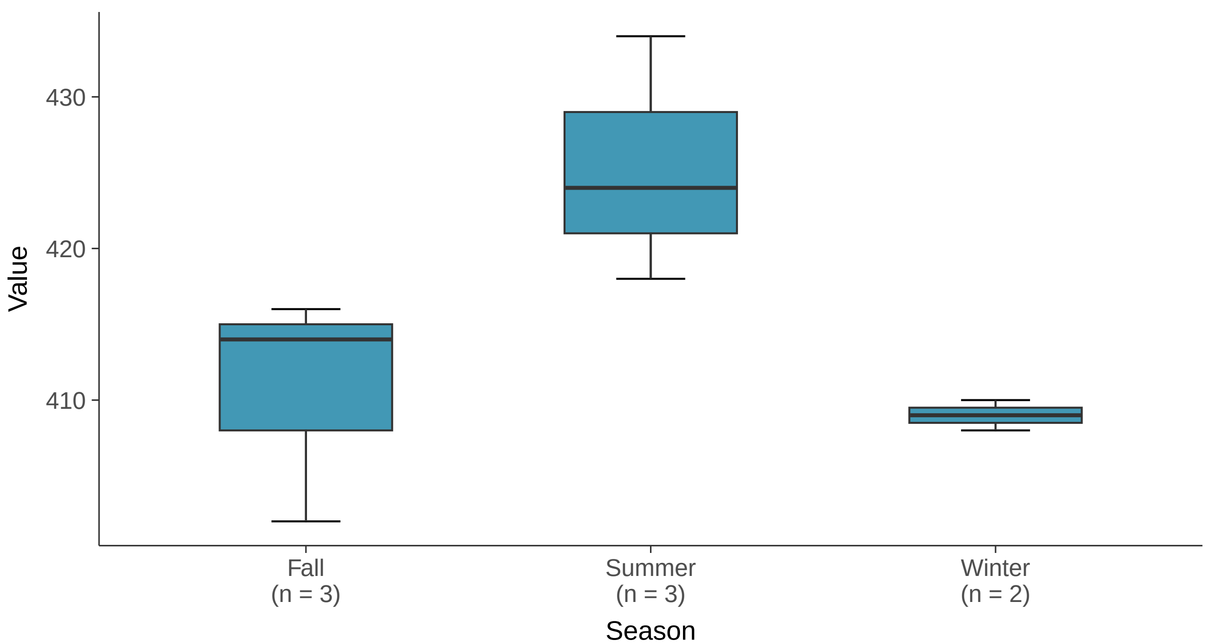
Boxplot

Total Dissolved Solids, MW-100A (mg/L)



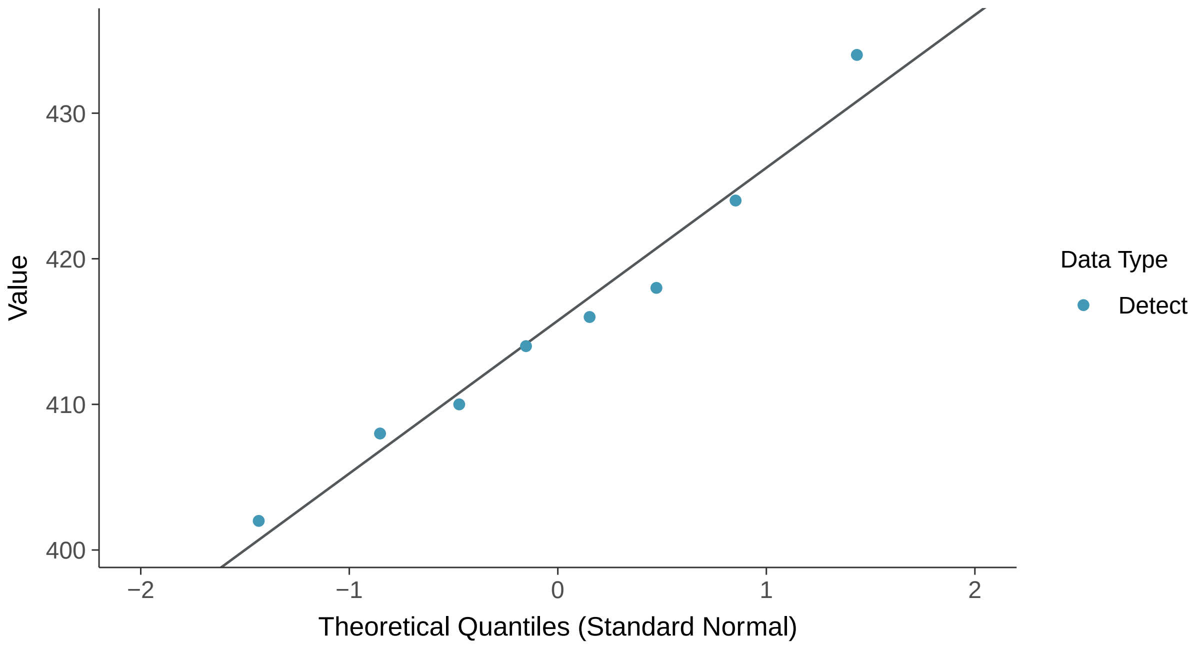
Boxplot by Season

Total Dissolved Solids, MW-100A (mg/L)



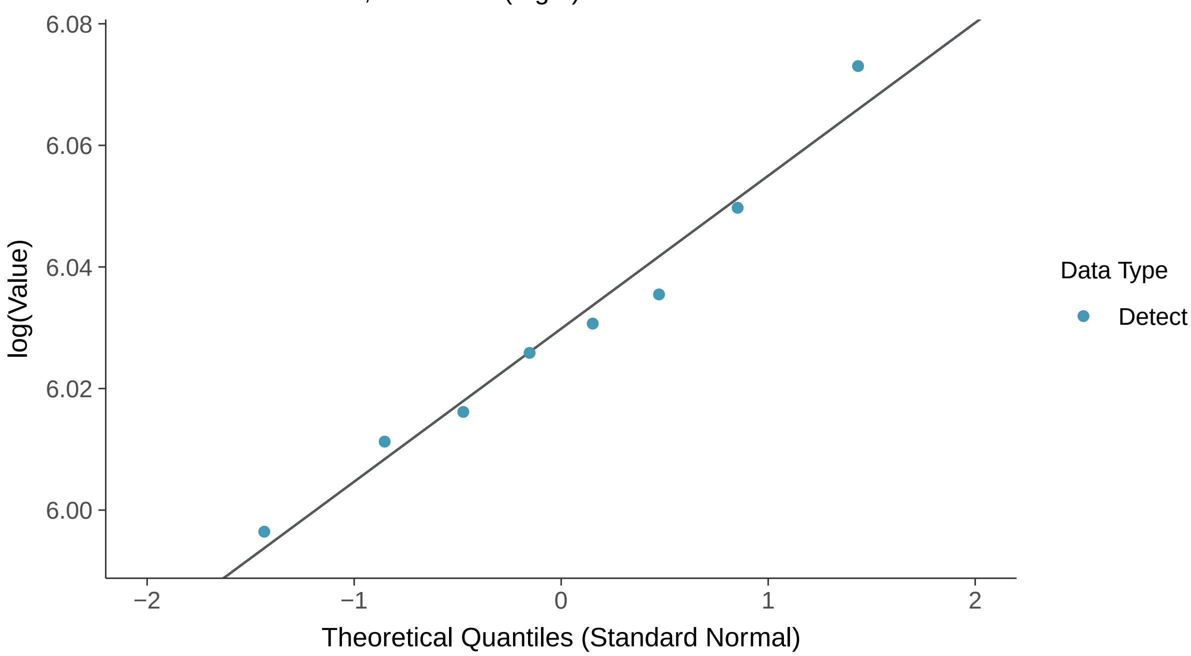
Normal Q-Q plot

Total Dissolved Solids, MW-100A (mg/L)



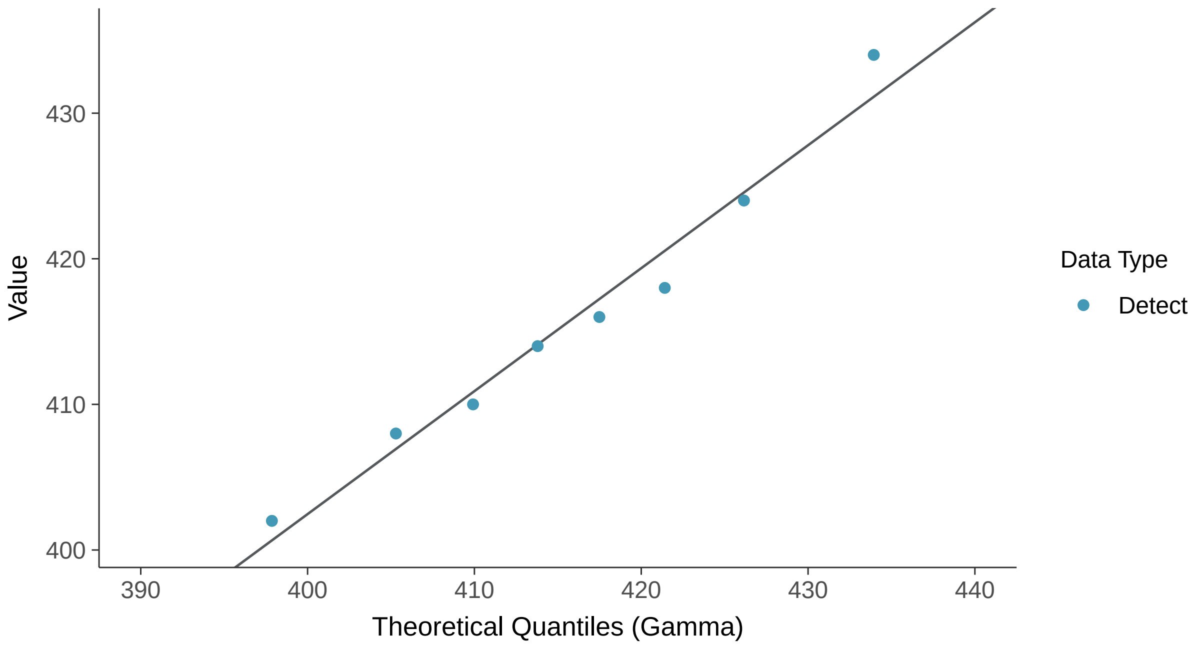
Lognormal Q-Q plot

Total Dissolved Solids, MW-100A (mg/L)



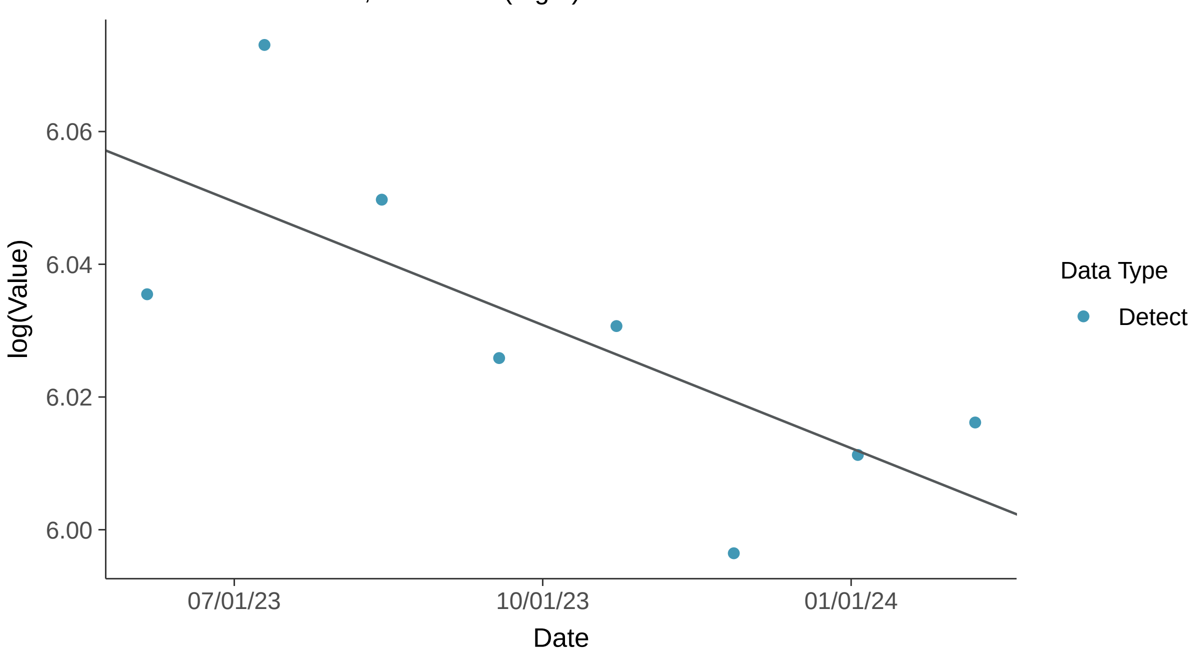
Gamma Q-Q plot

Total Dissolved Solids, MW-100A (mg/L)



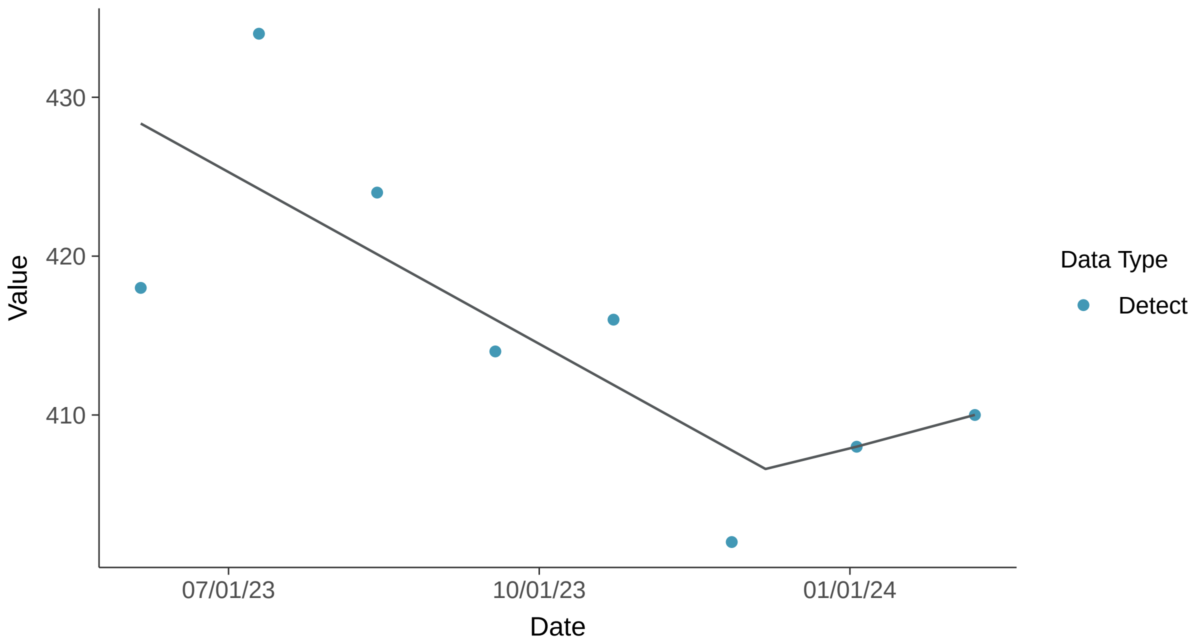
Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-100A (mg/L)



Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-100A (mg/L)

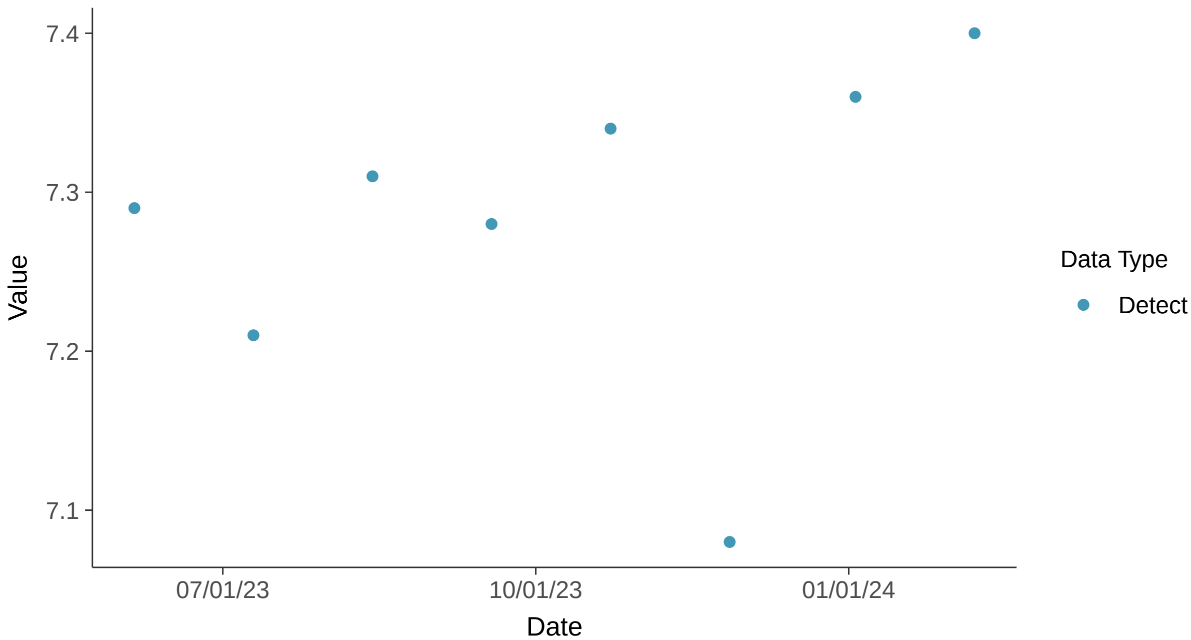


Appendix III: pH, Field, MW-100A

ID: 100A_1_07

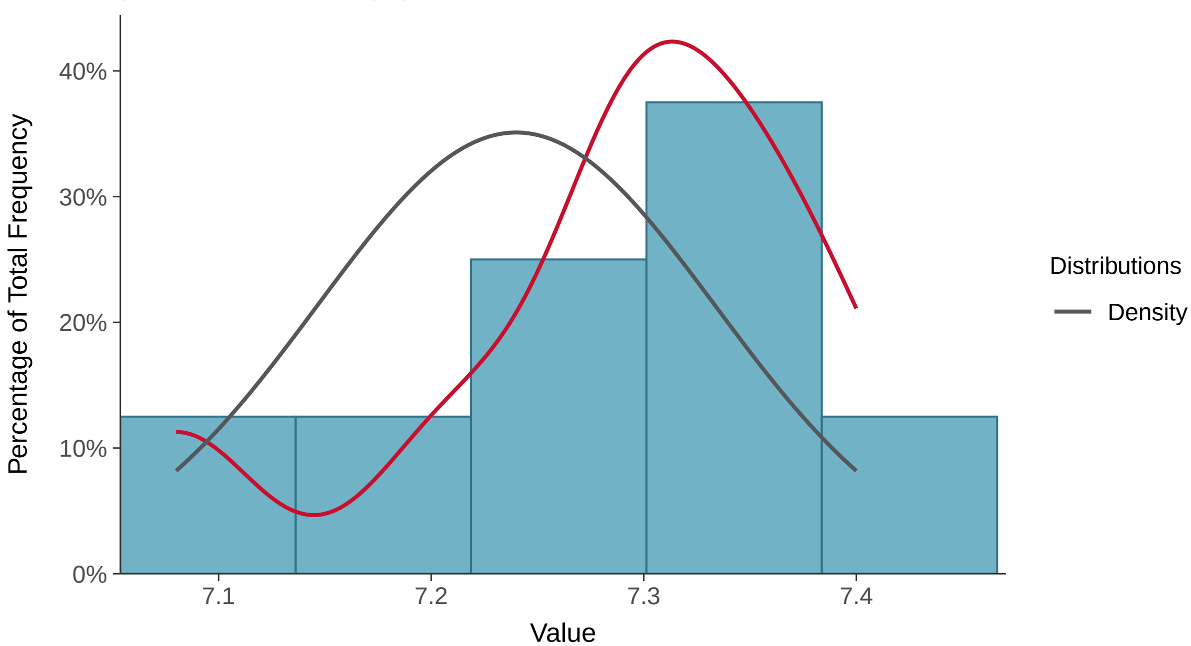
Scatter Plot

pH, Field, MW-100A (su)



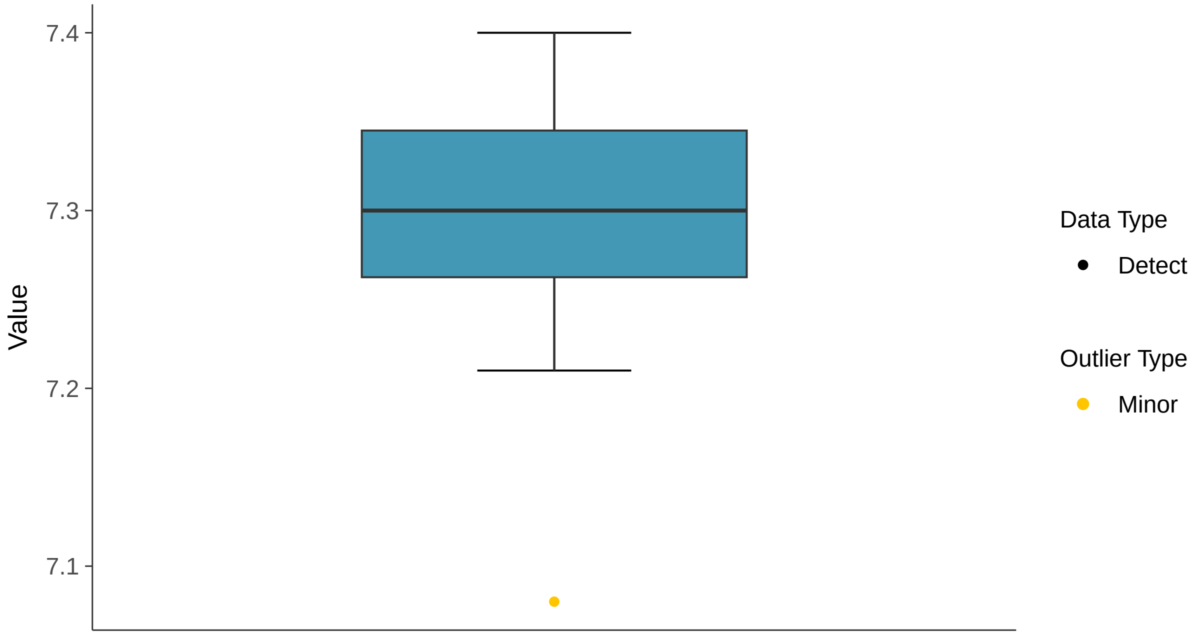
Histogram

pH, Field, MW-100A (su)



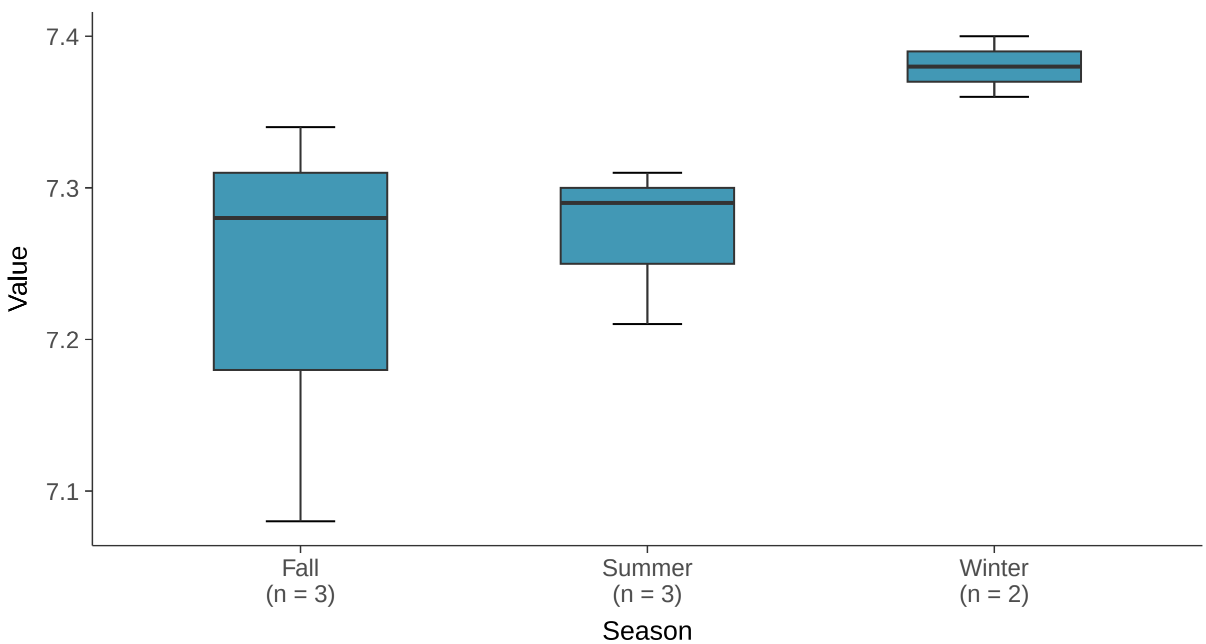
Boxplot

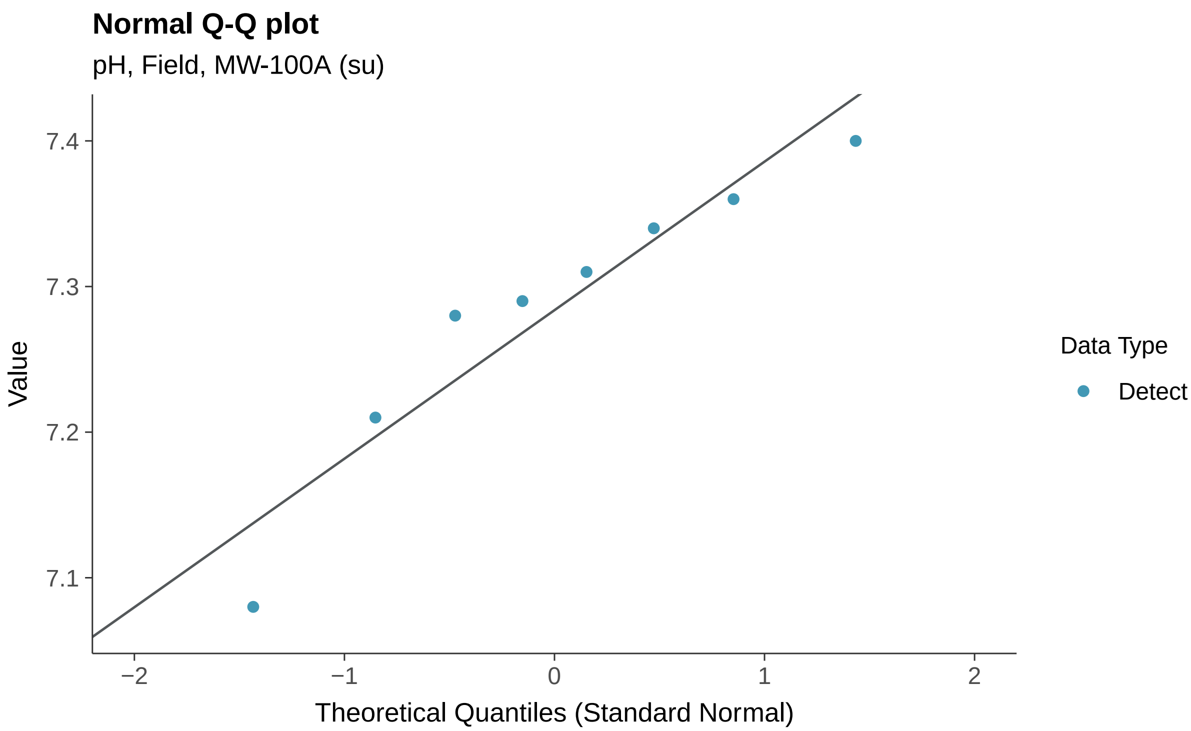
pH, Field, MW-100A (su)

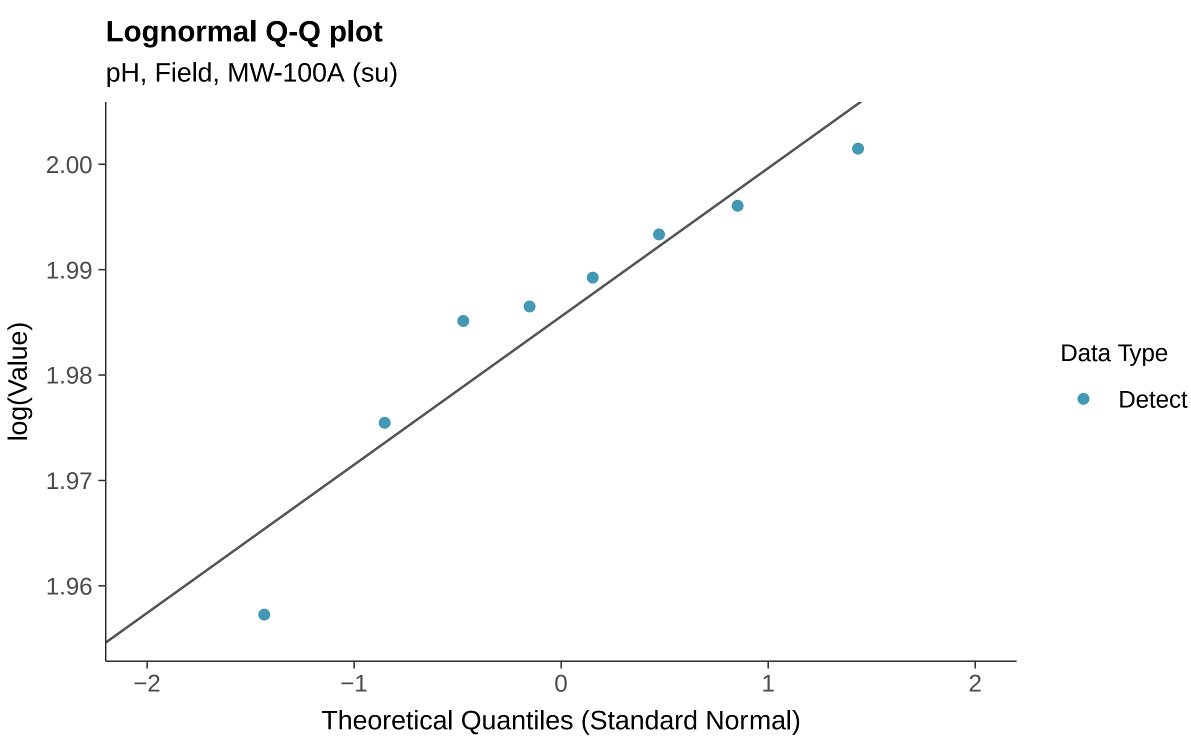


Boxplot by Season

pH, Field, MW-100A (su)

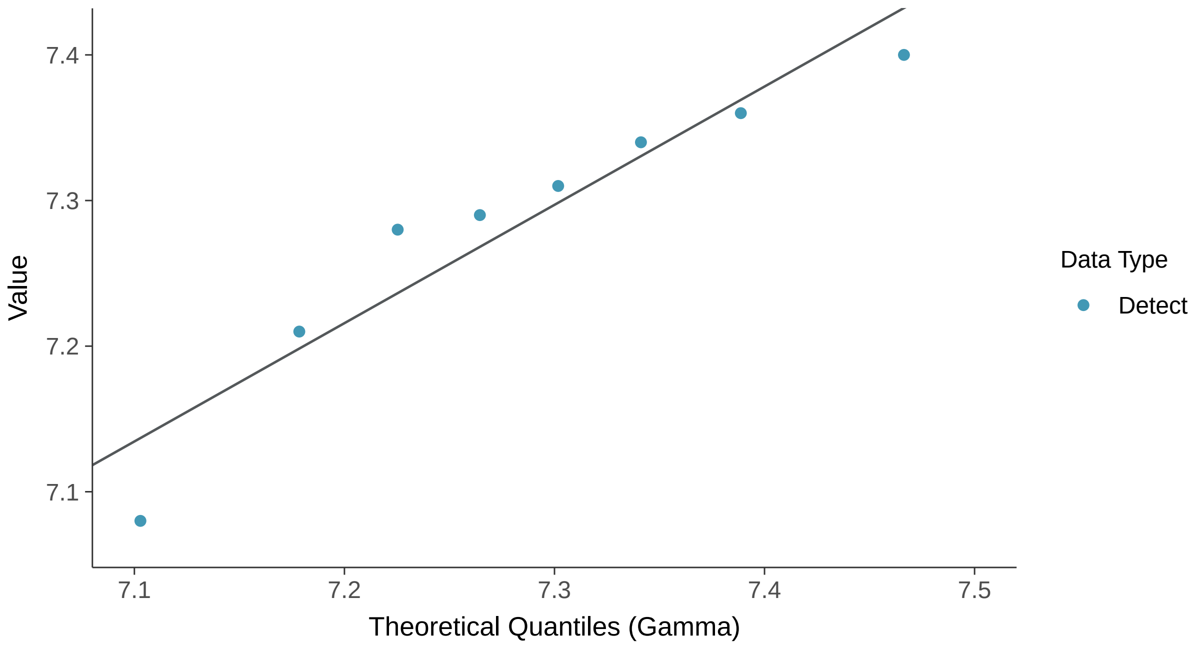



Normal Q-Q plot
pH, Field, MW-100A (su)
Value
7.4
7.3
7.2
7.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH, Field, MW-100A (su)
log(Value)
2.00
1.99
1.98
1.97
1.96
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

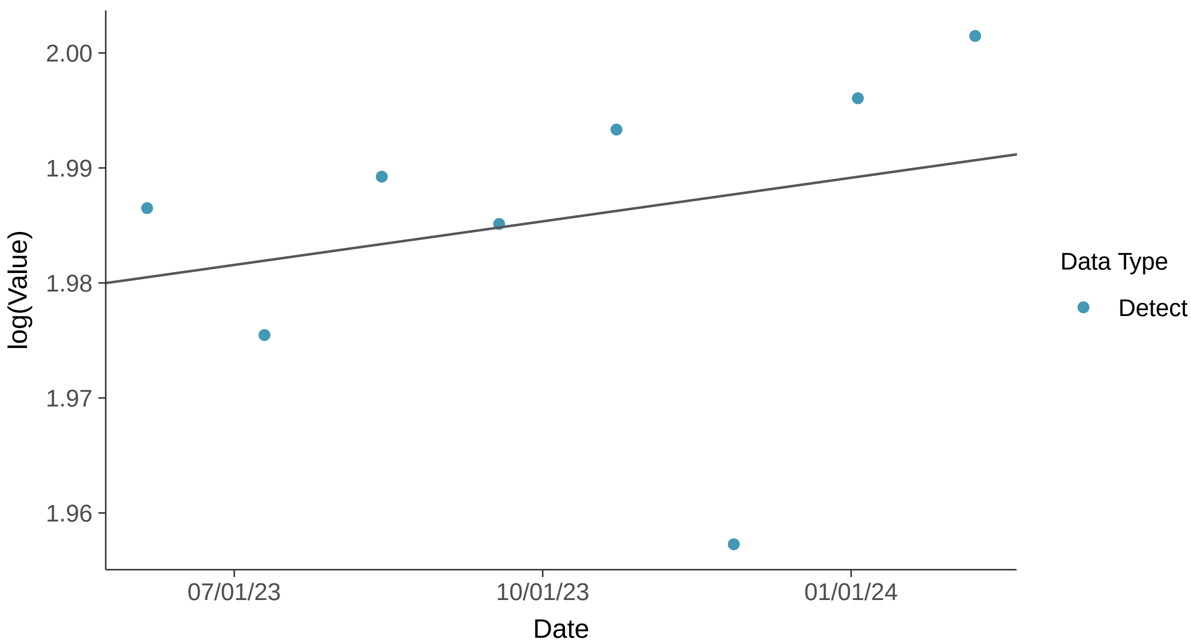
Gamma Q-Q plot

pH, Field, MW-100A (su)



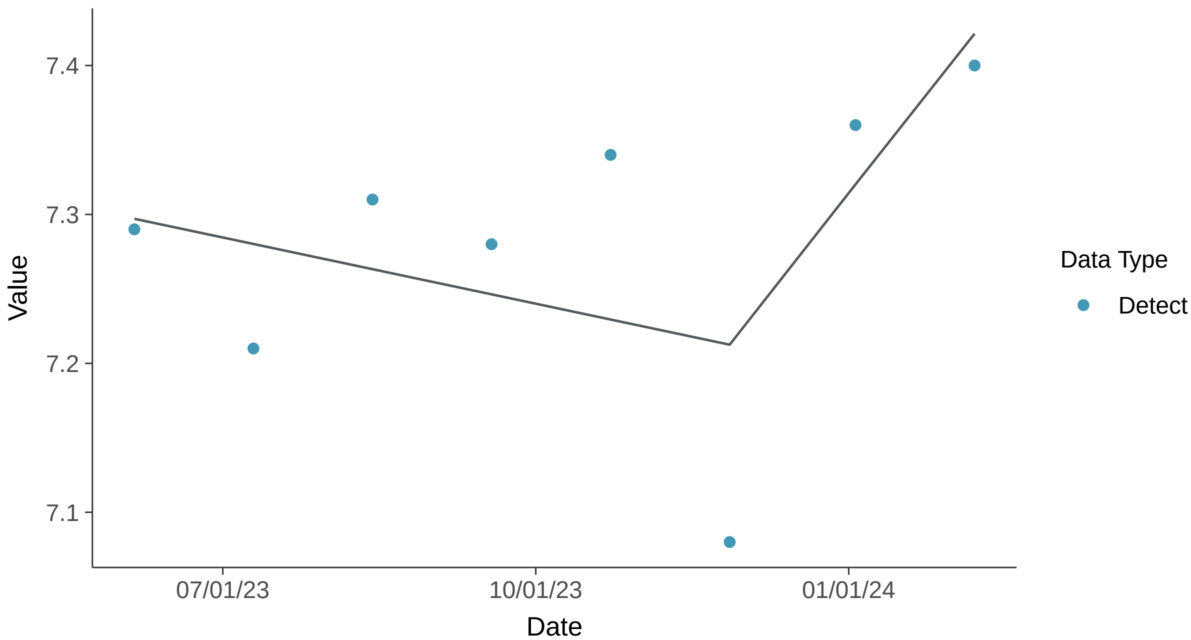
Trend Regression: Lognormal MLE

pH, Field, MW-100A (su)



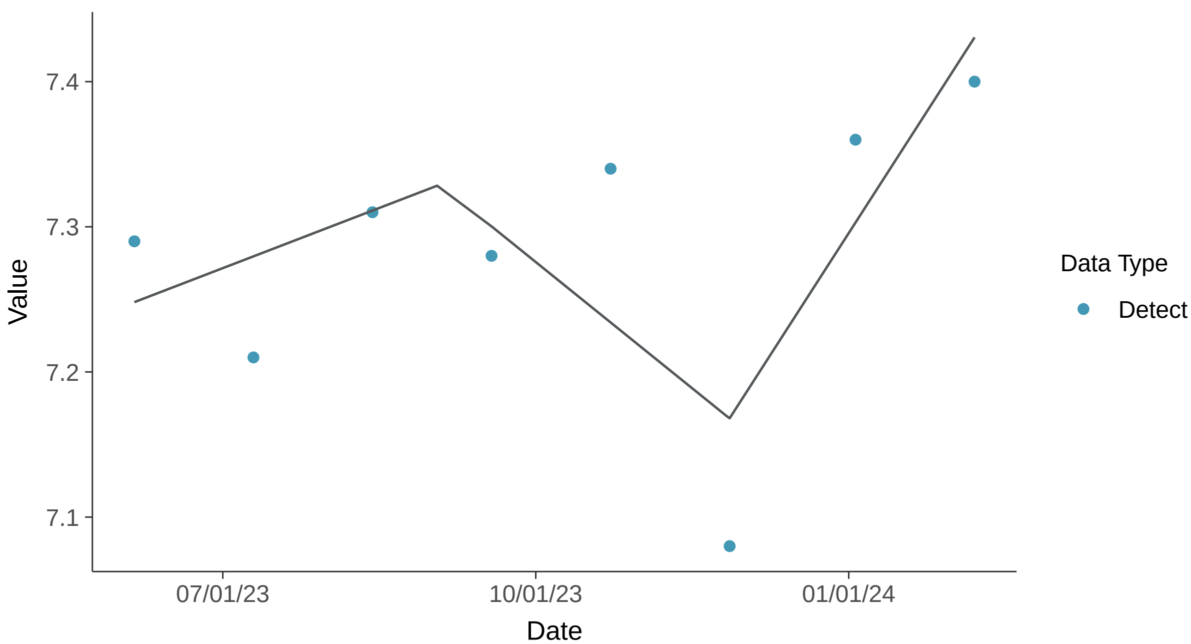
Trend Regression: Piecewise Linear-Linear

pH, Field, MW-100A (su)



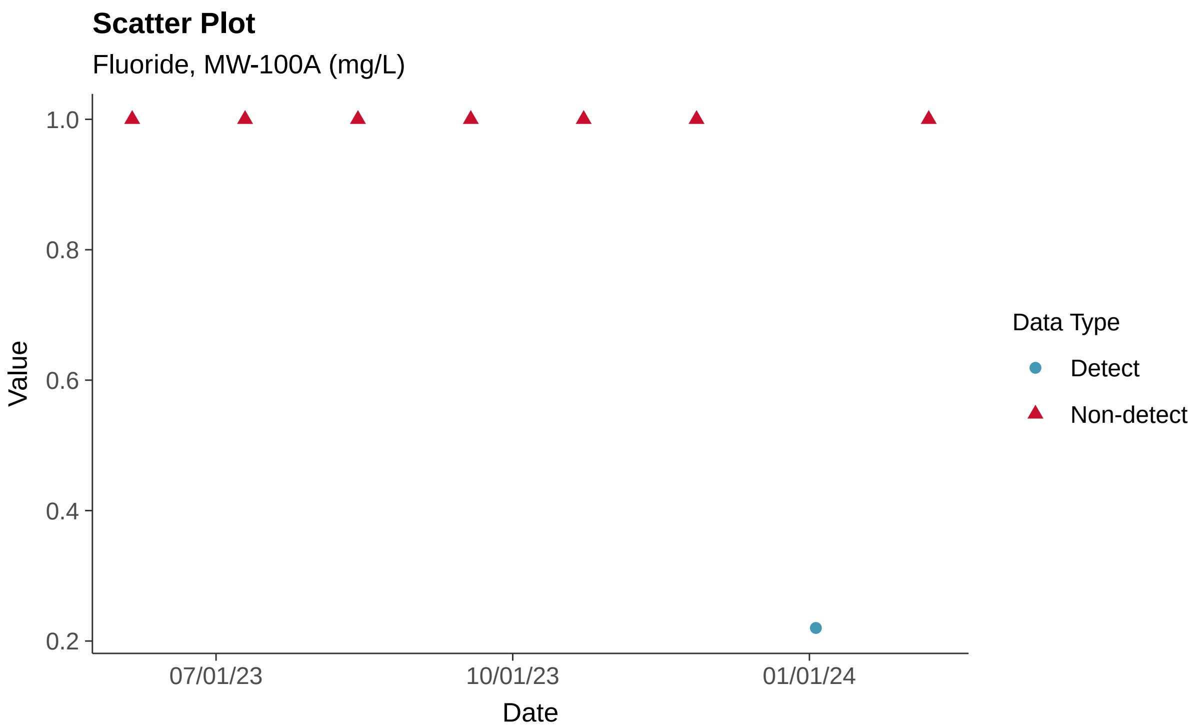
Trend Regression: Piecewise Linear-Linear-Linear

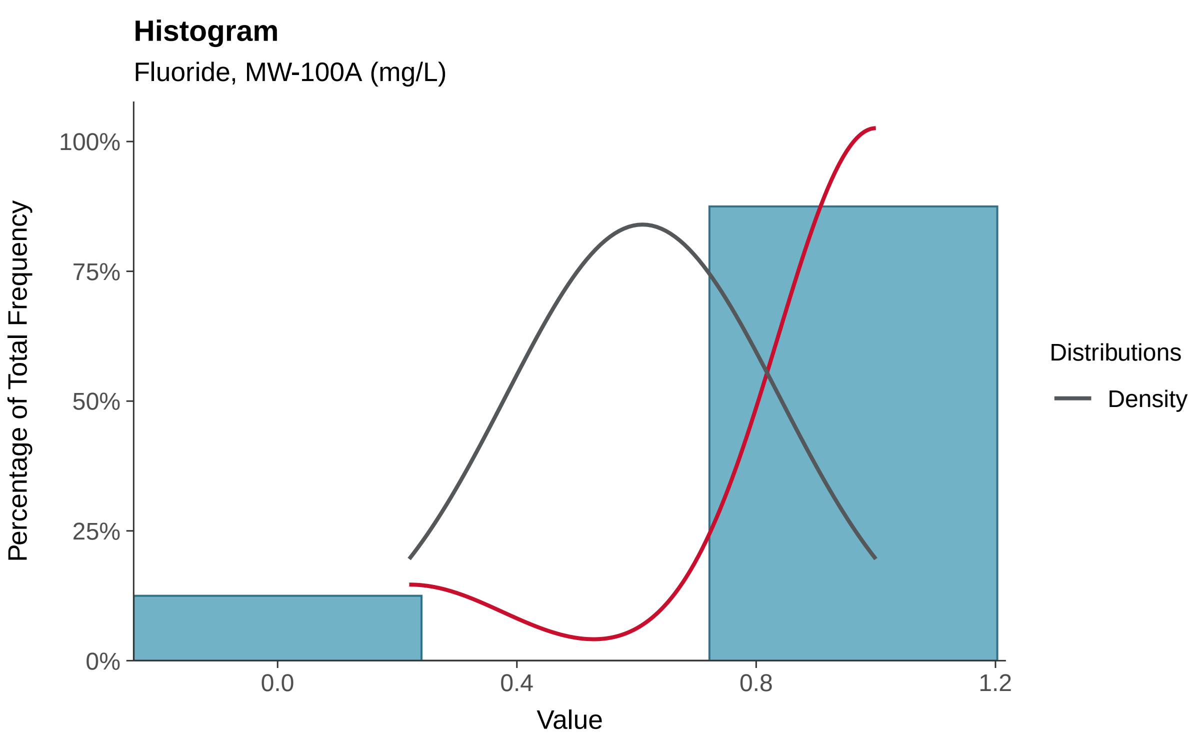
pH, Field, MW-100A (su)



Appendix IV: Fluoride, MW-100A

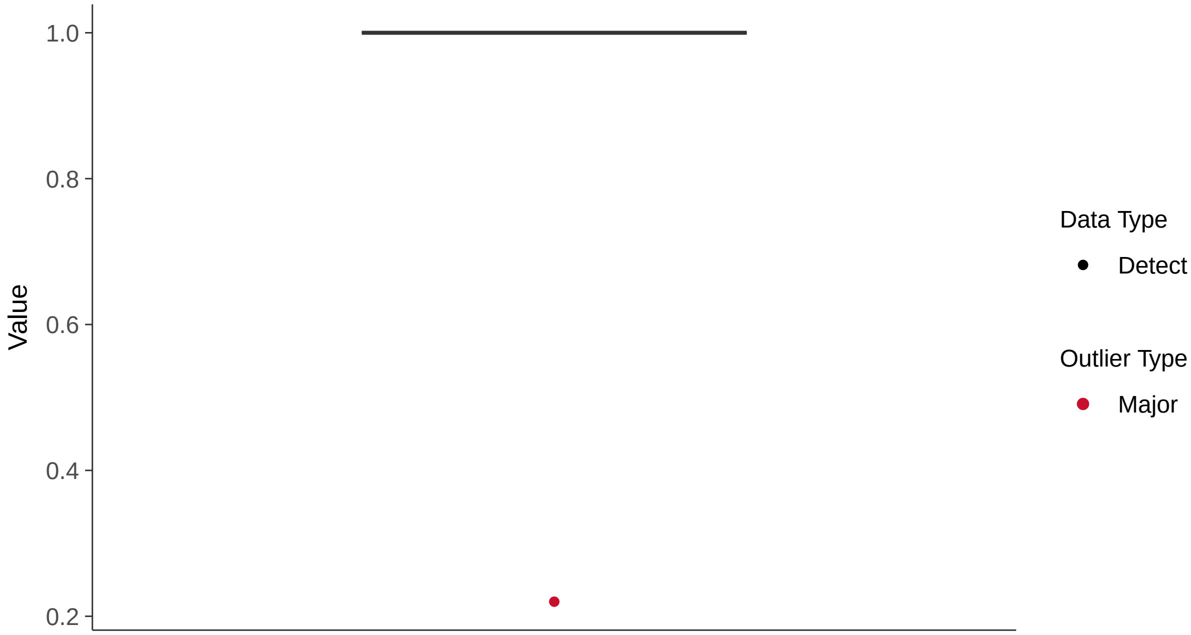
ID: 100A_2_04





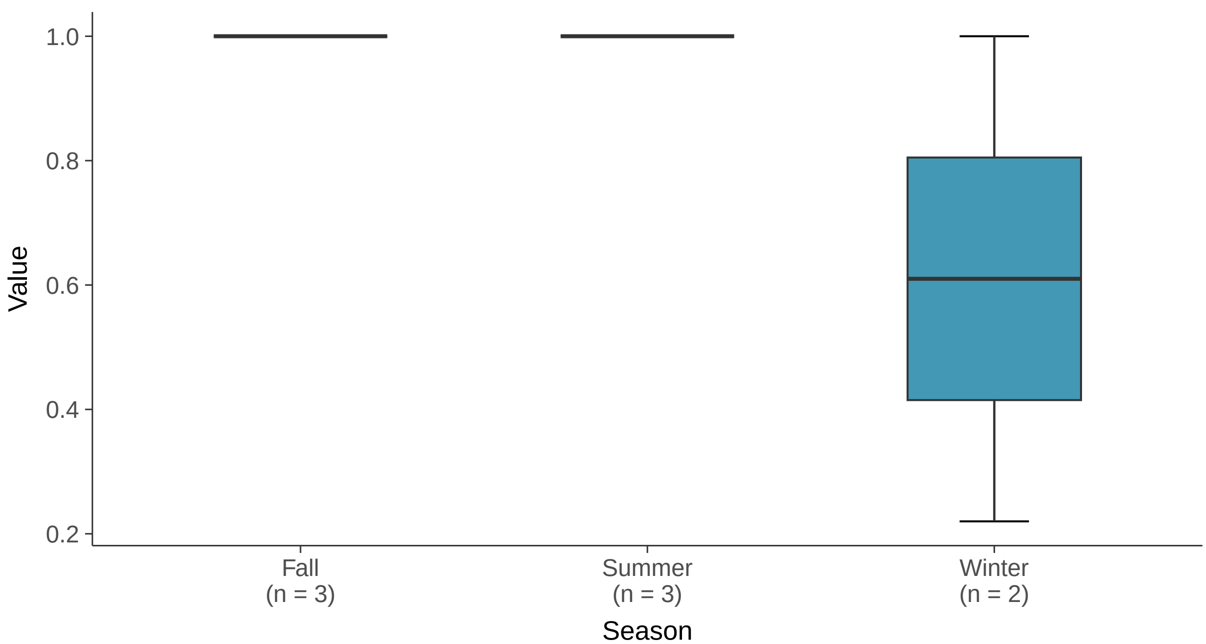
Boxplot

Fluoride, MW-100A (mg/L)



Boxplot by Season

Fluoride, MW-100A (mg/L)

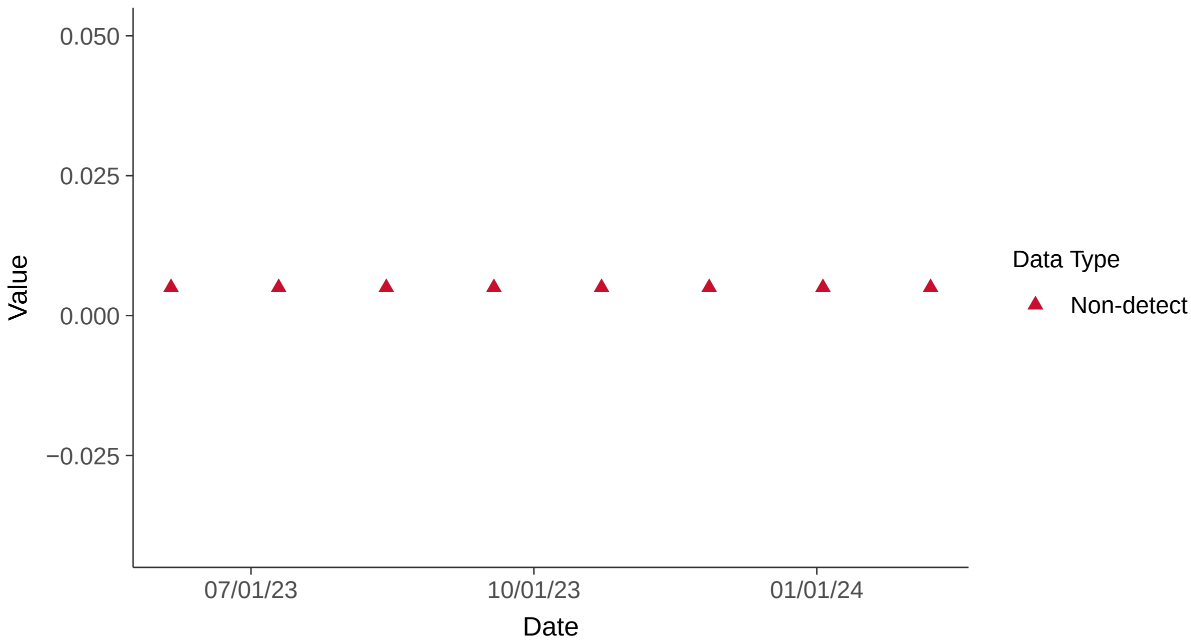


Appendix IV: Antimony, MW-100A

ID: 100A_2_08

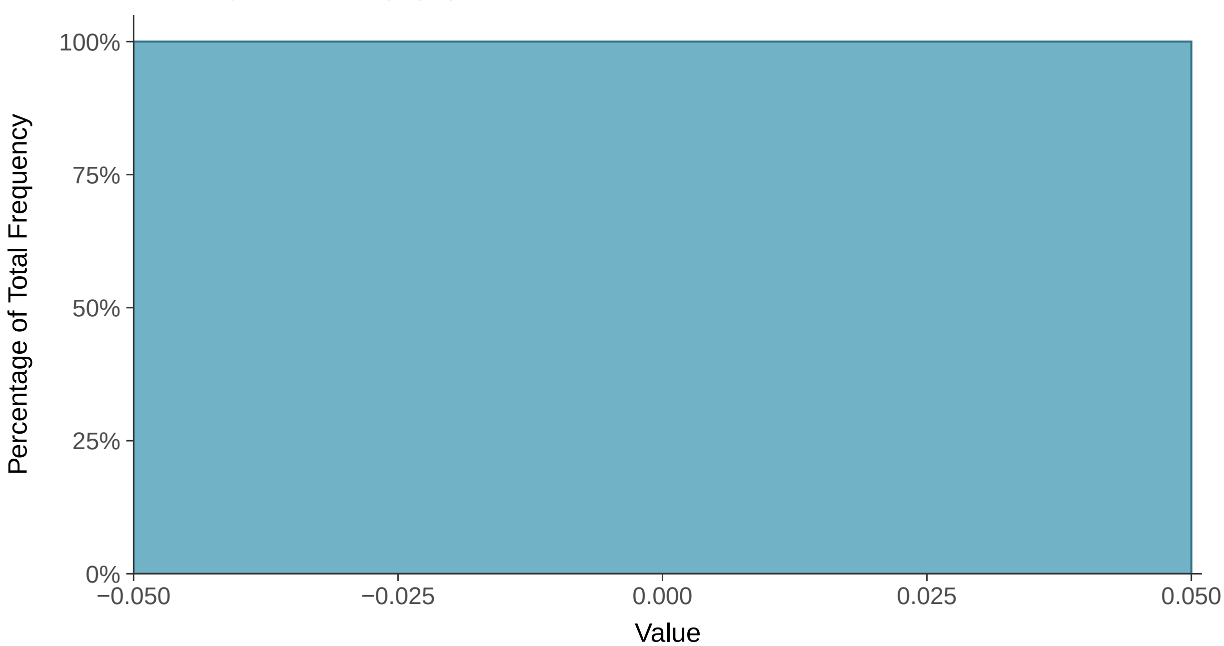
Scatter Plot

Antimony, MW-100A (mg/L)



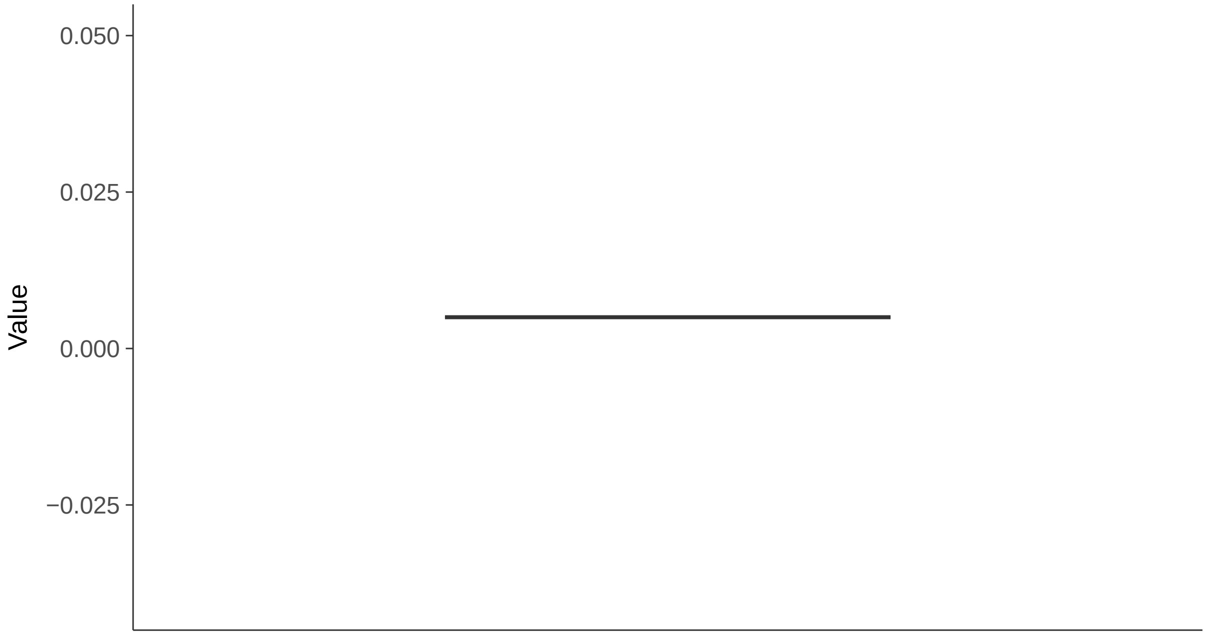
Histogram

Antimony, MW-100A (mg/L)



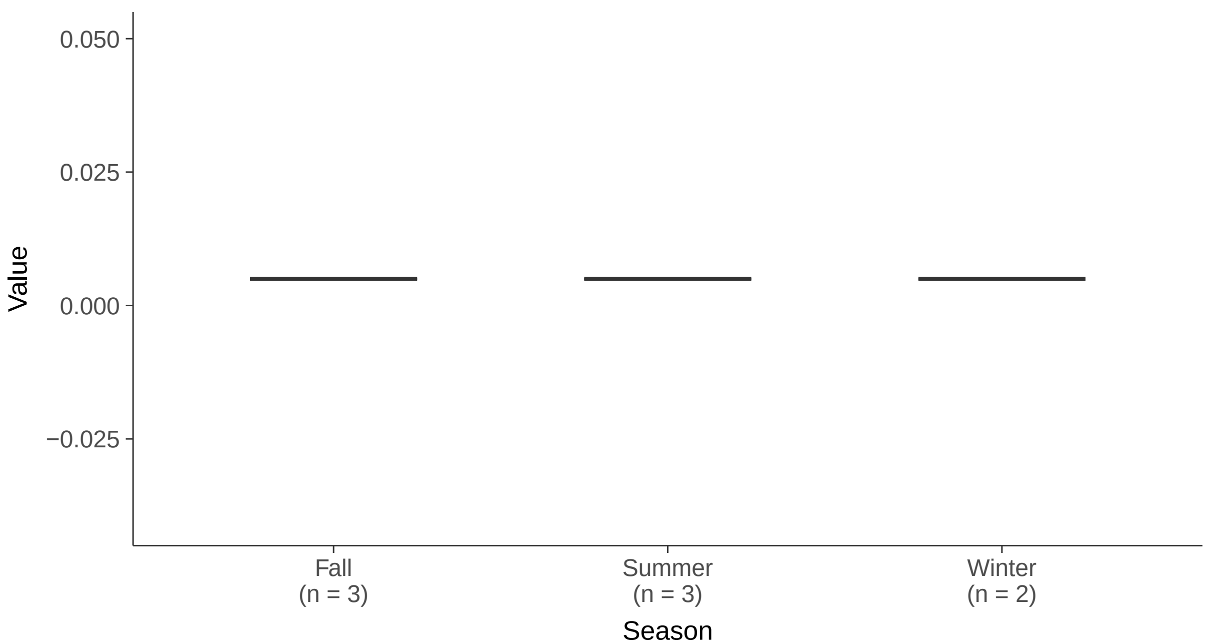
Boxplot

Antimony, MW-100A (mg/L)



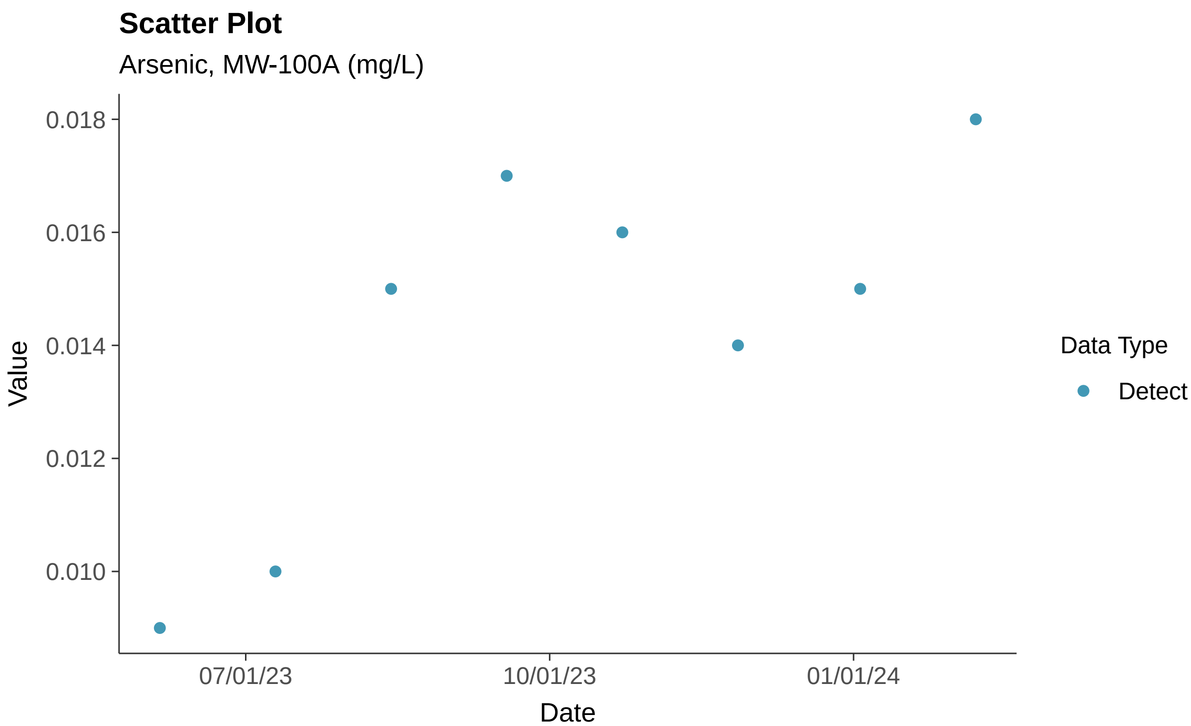
Boxplot by Season

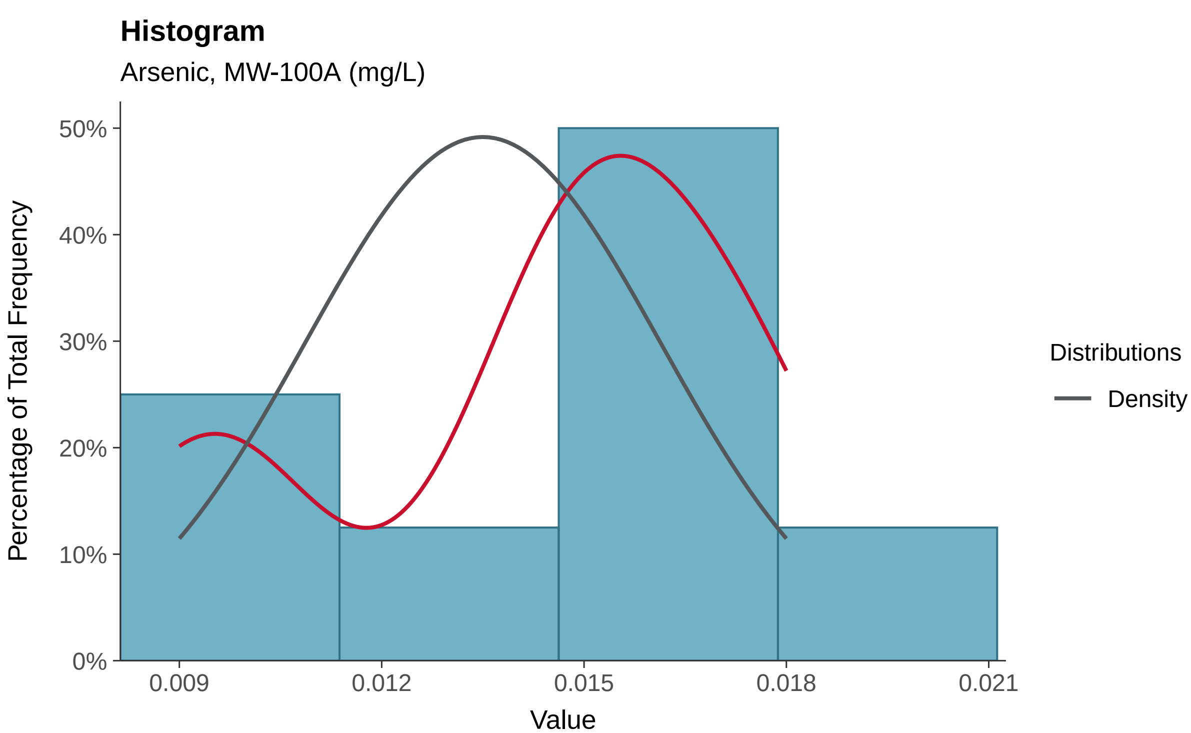
Antimony, MW-100A (mg/L)



Appendix IV: Arsenic, MW-100A

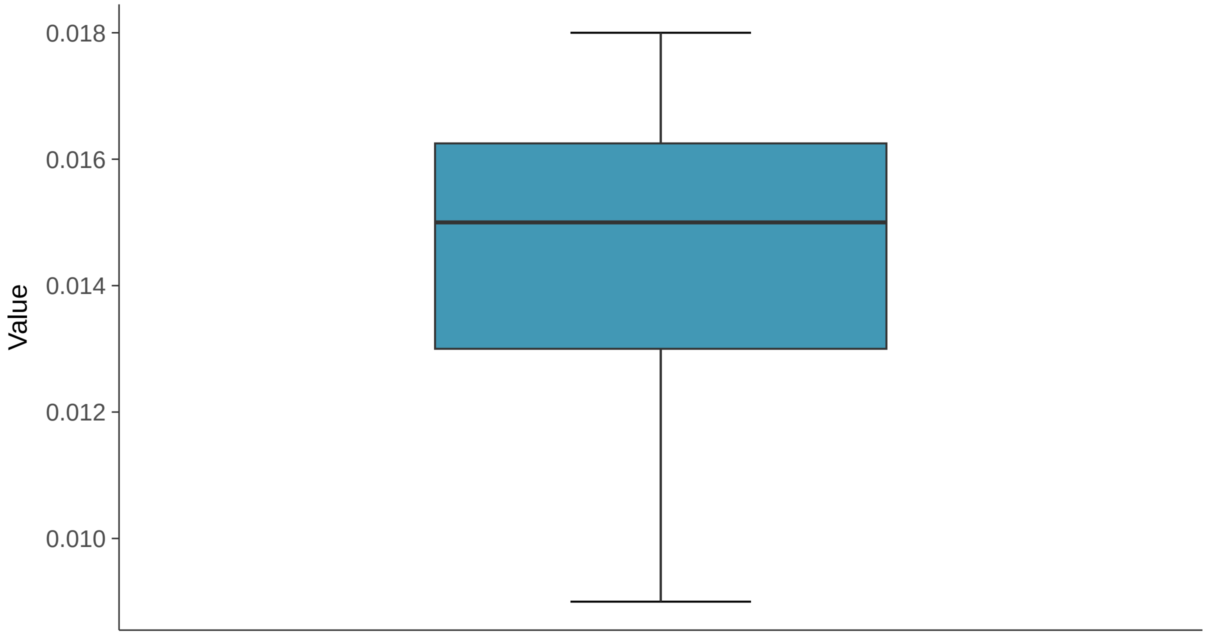
ID: 100A_2_09





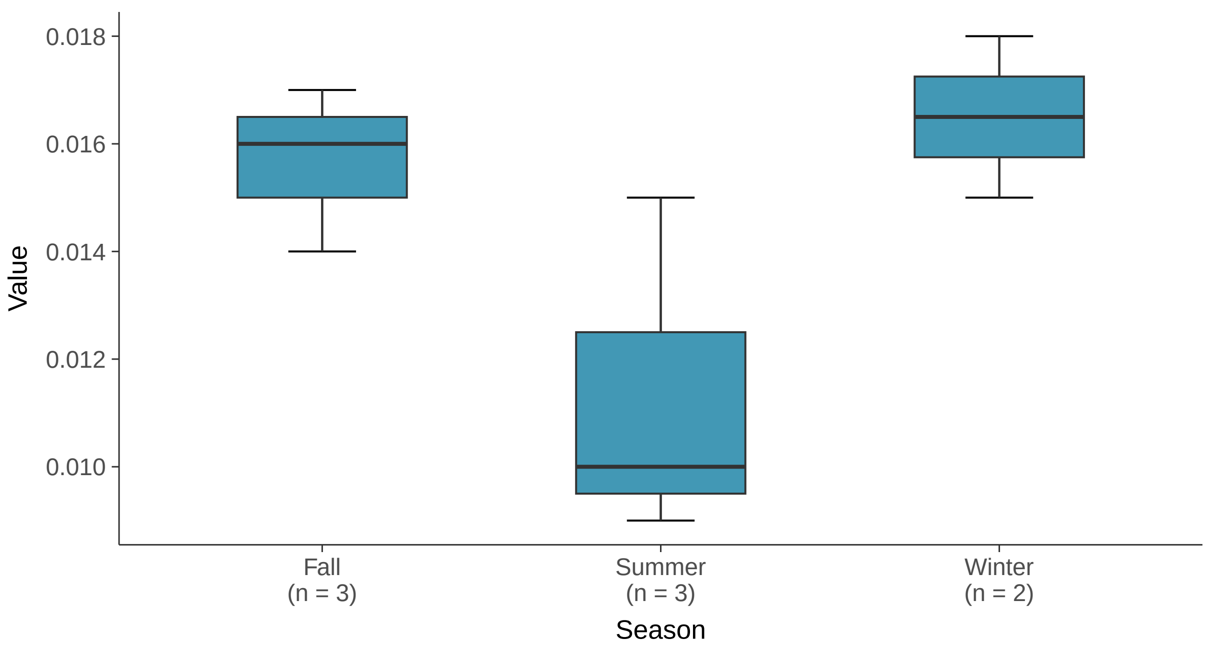
Boxplot

Arsenic, MW-100A (mg/L)



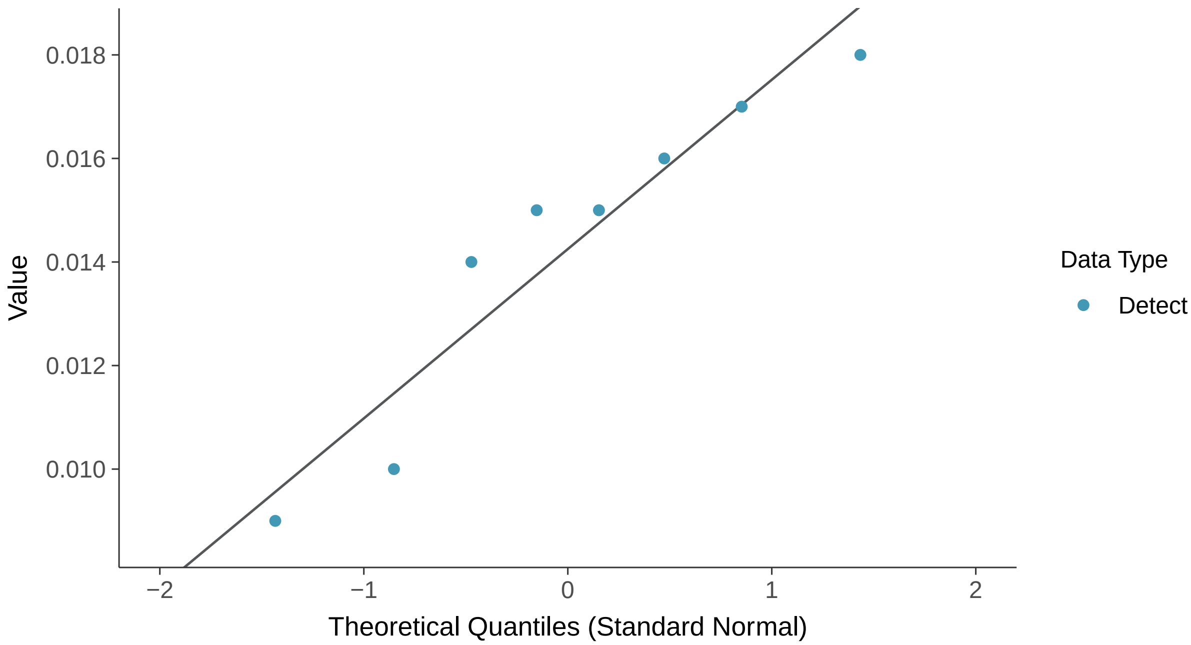
Boxplot by Season

Arsenic, MW-100A (mg/L)



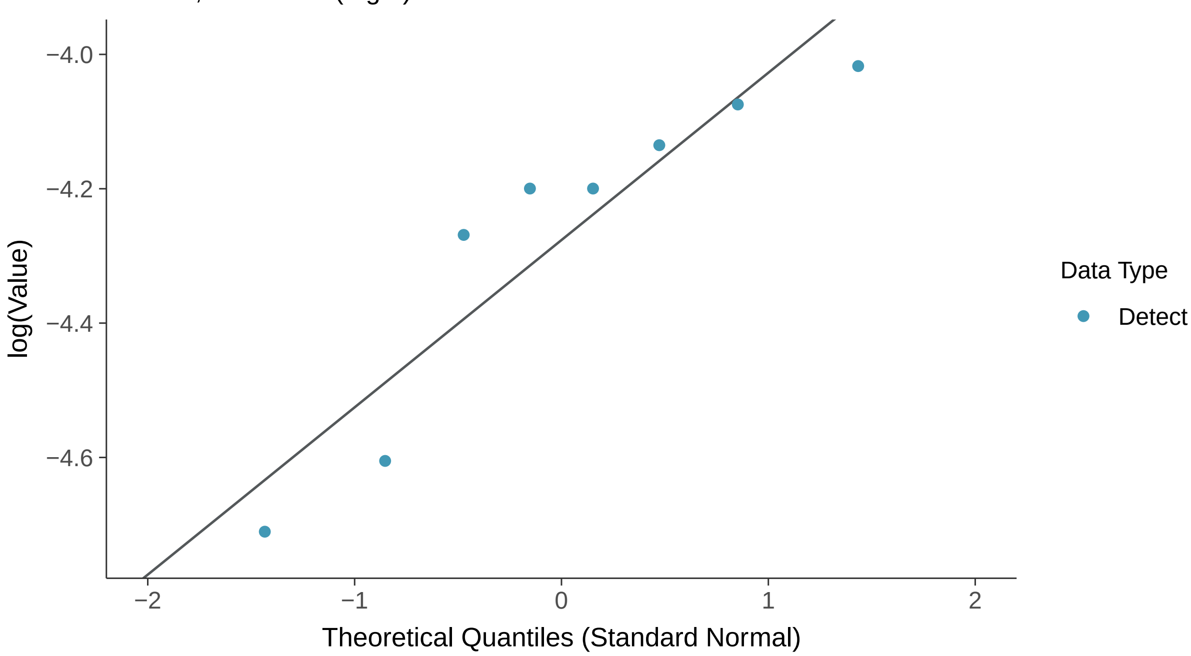
Normal Q-Q plot

Arsenic, MW-100A (mg/L)



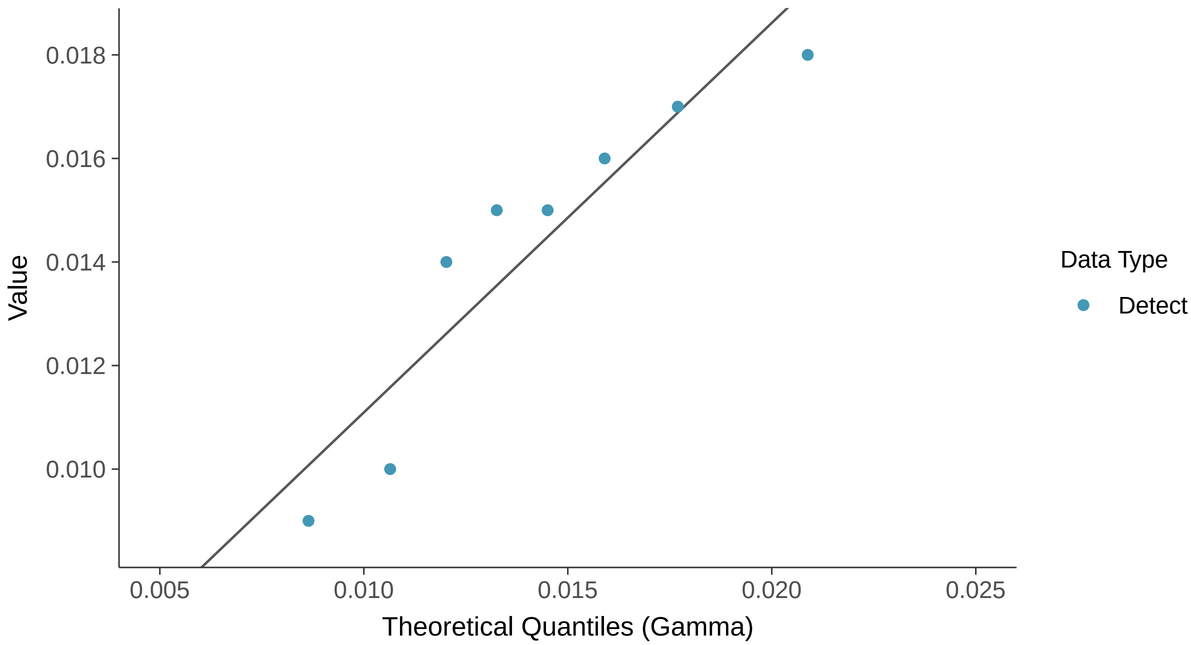
Lognormal Q-Q plot

Arsenic, MW-100A (mg/L)



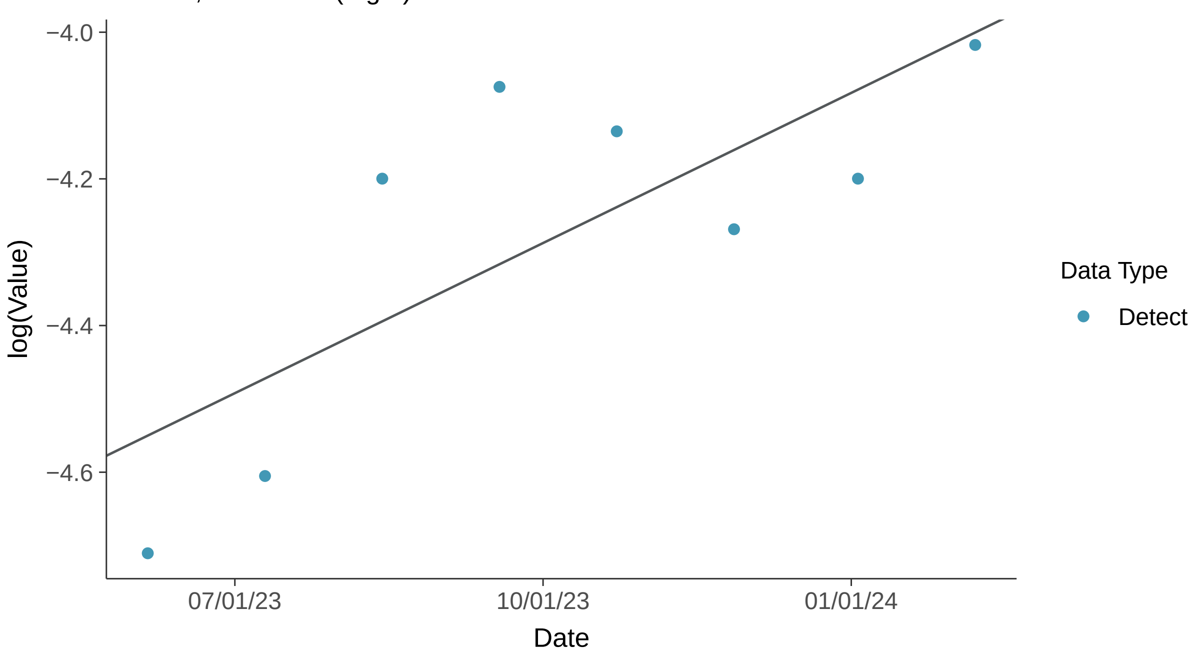
Gamma Q-Q plot

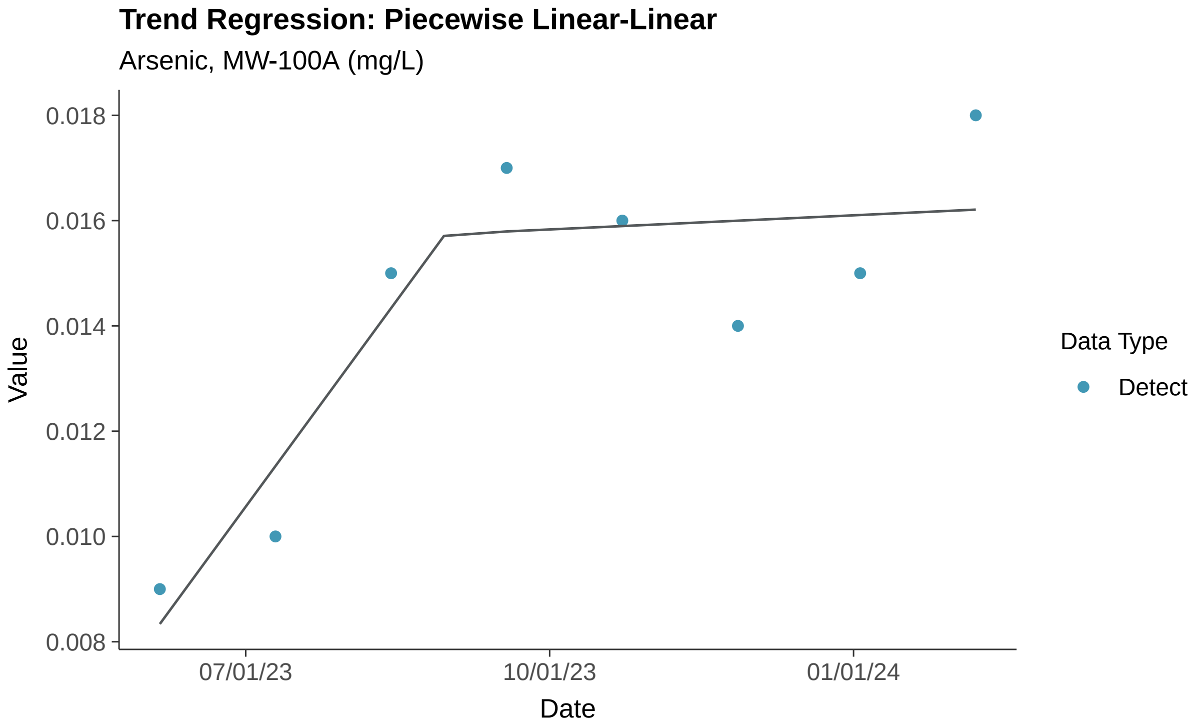
Arsenic, MW-100A (mg/L)

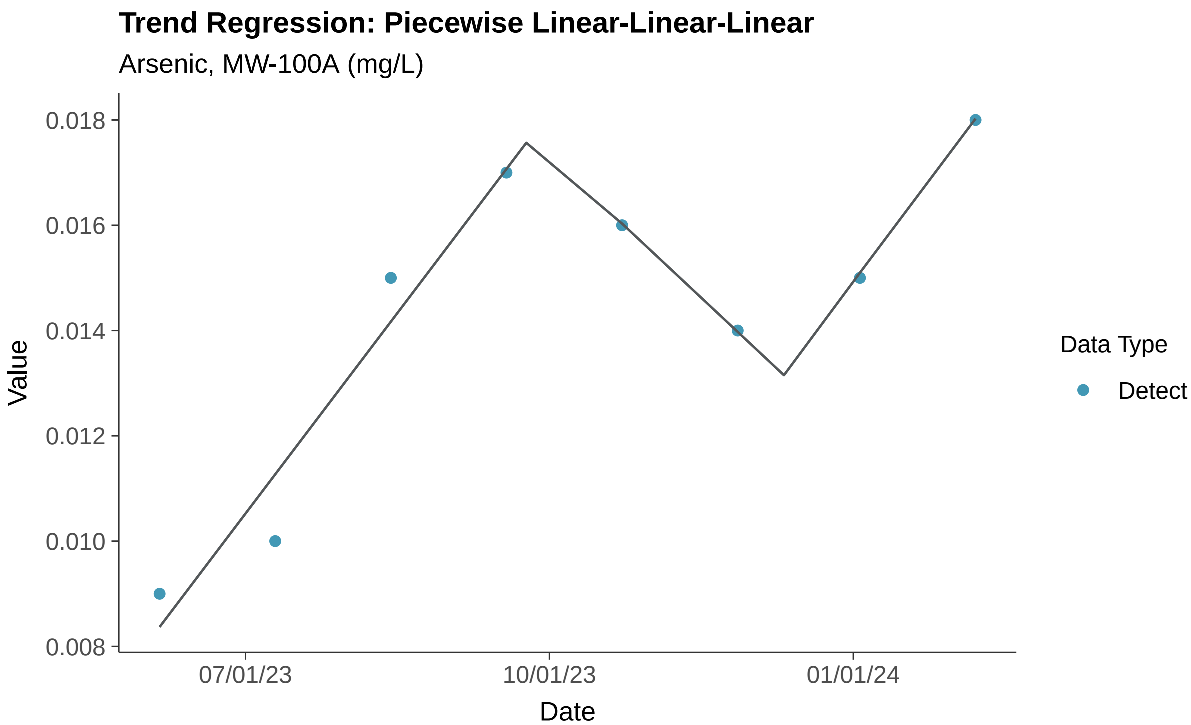


Trend Regression: Lognormal MLE

Arsenic, MW-100A (mg/L)




Trend Regression: Piecewise Linear-Linear
Arsenic, MW-100A (mg/L)
Value
0.018
0.016
0.014
0.012
0.010
0.008
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

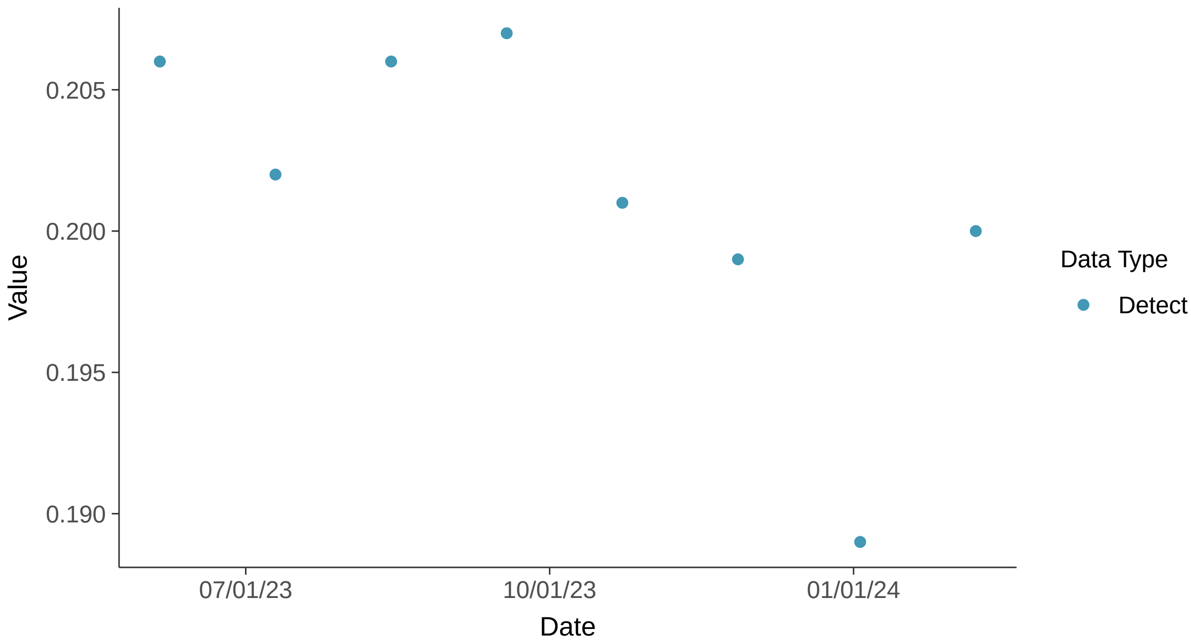

Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-100A (mg/L)
Value
0.018
0.016
0.014
0.012
0.010
0.008
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Barium, MW-100A

ID: 100A_2_10

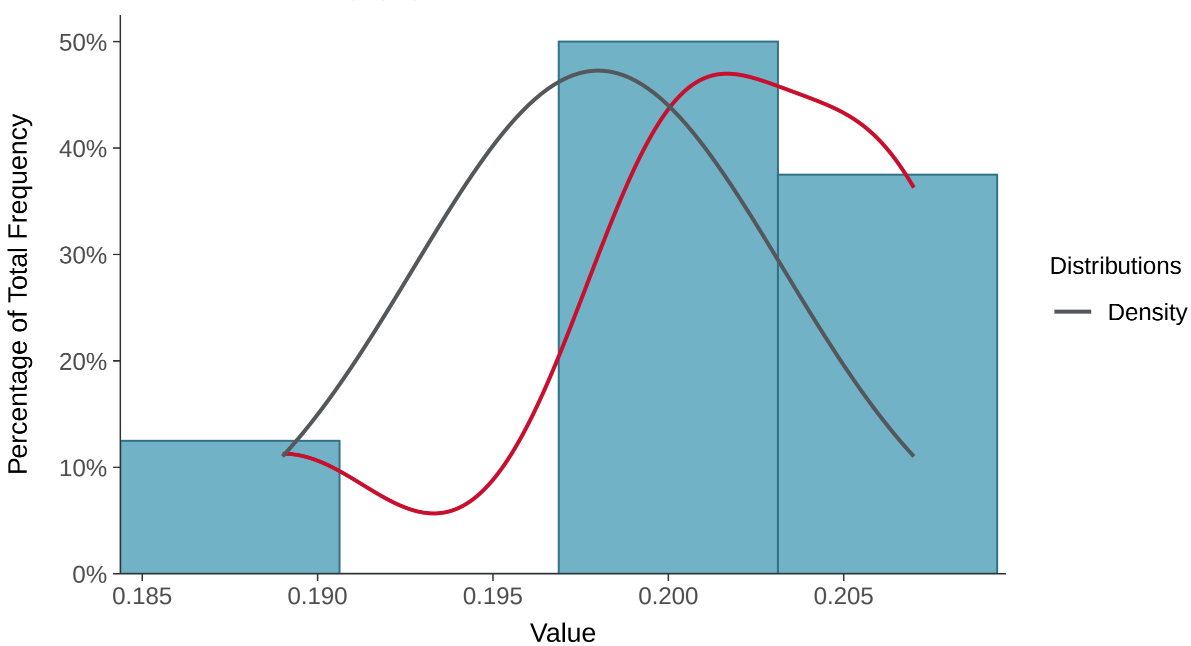
Scatter Plot

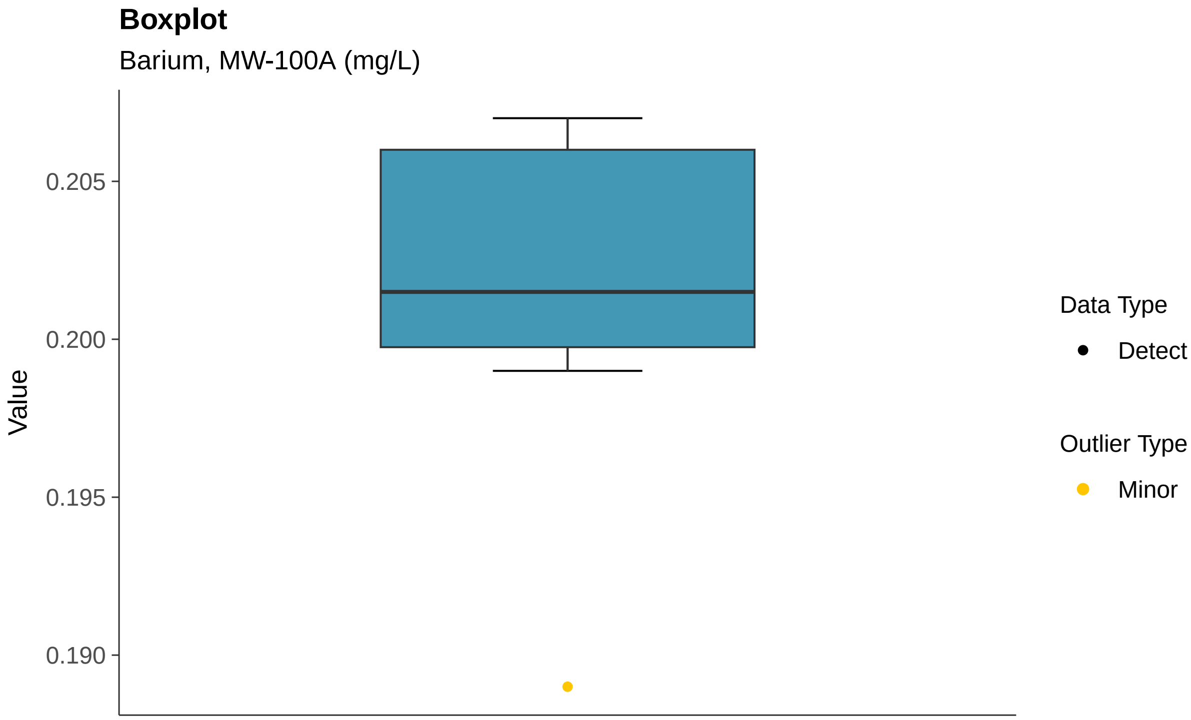
Barium, MW-100A (mg/L)

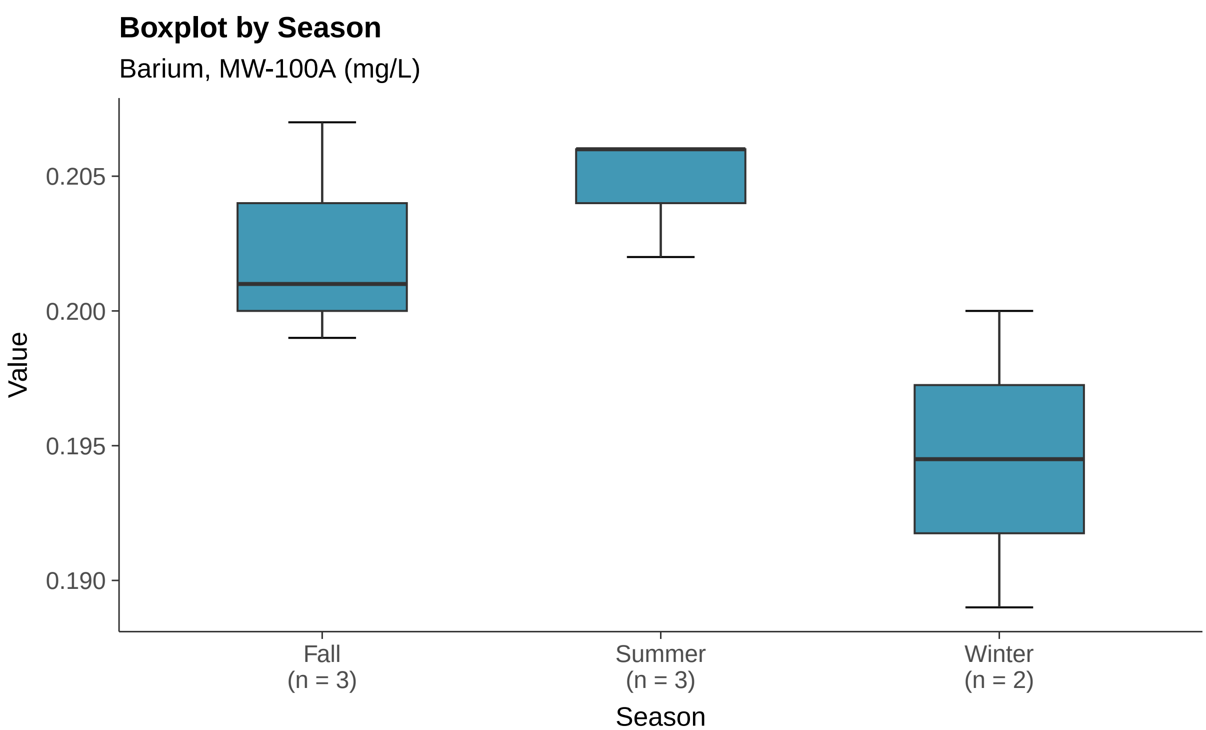


Histogram

Barium, MW-100A (mg/L)

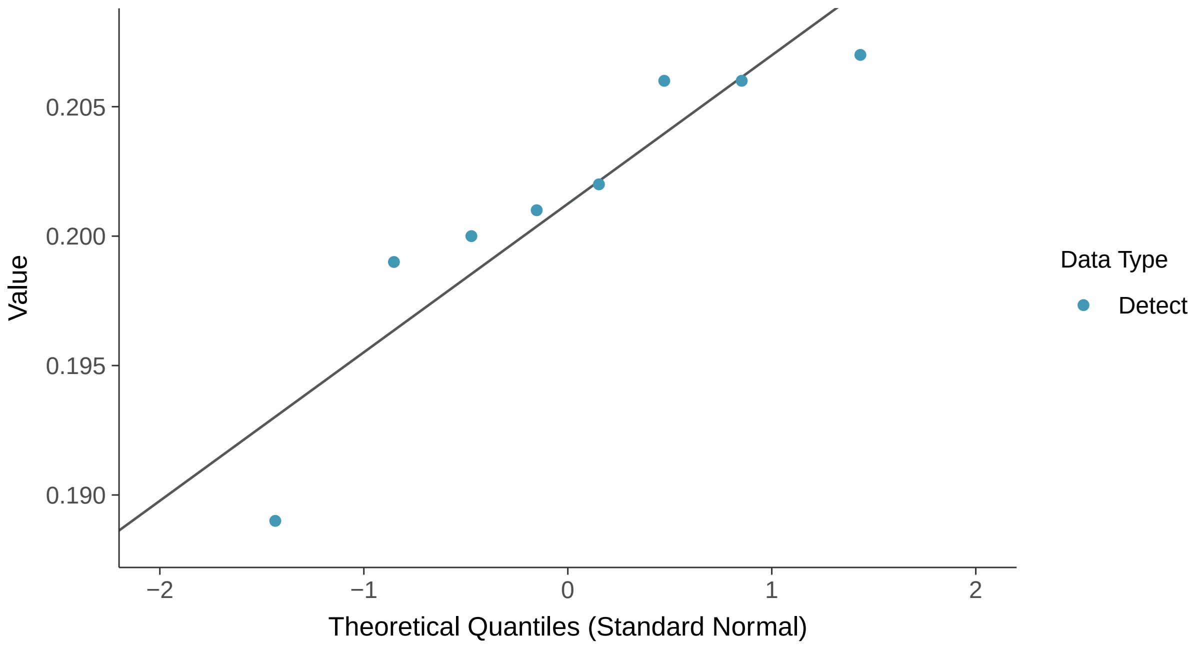



Boxplot
Barium, MW-100A (mg/L)
Value
0.205
0.200
0.195
0.190
Data Type
Detect
Outlier Type
Minor


Boxplot by Season
Barium, MW-100A (mg/L)
Value
0.205
0.200
0.195
0.190
Fall
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season

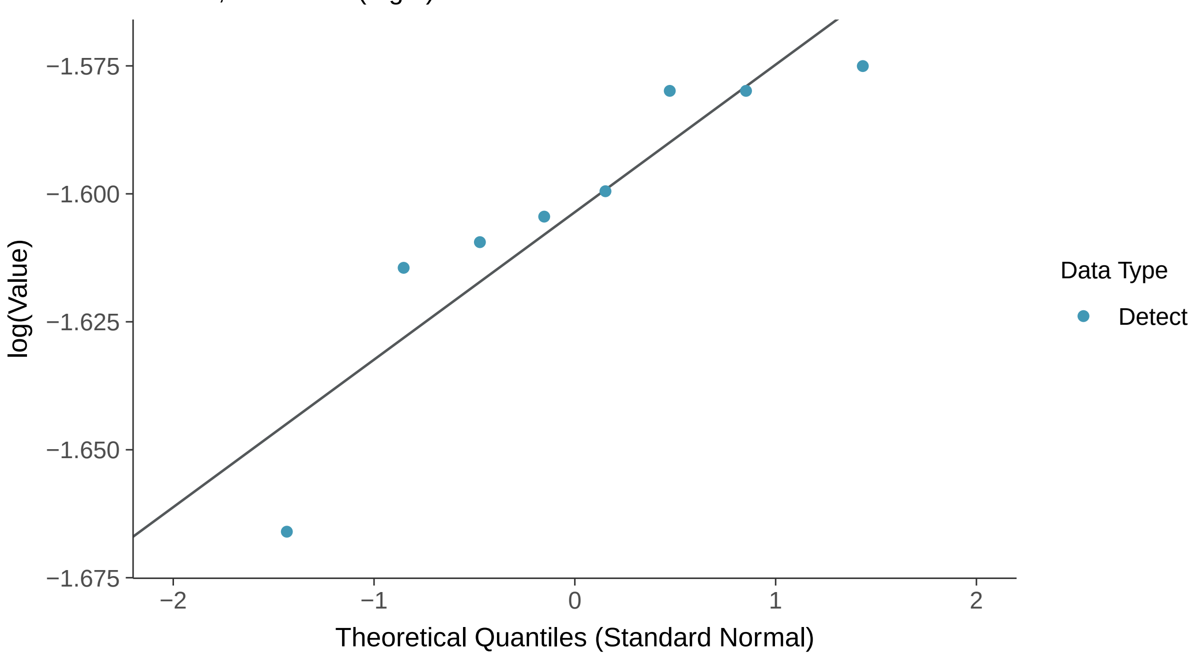
Normal Q-Q plot

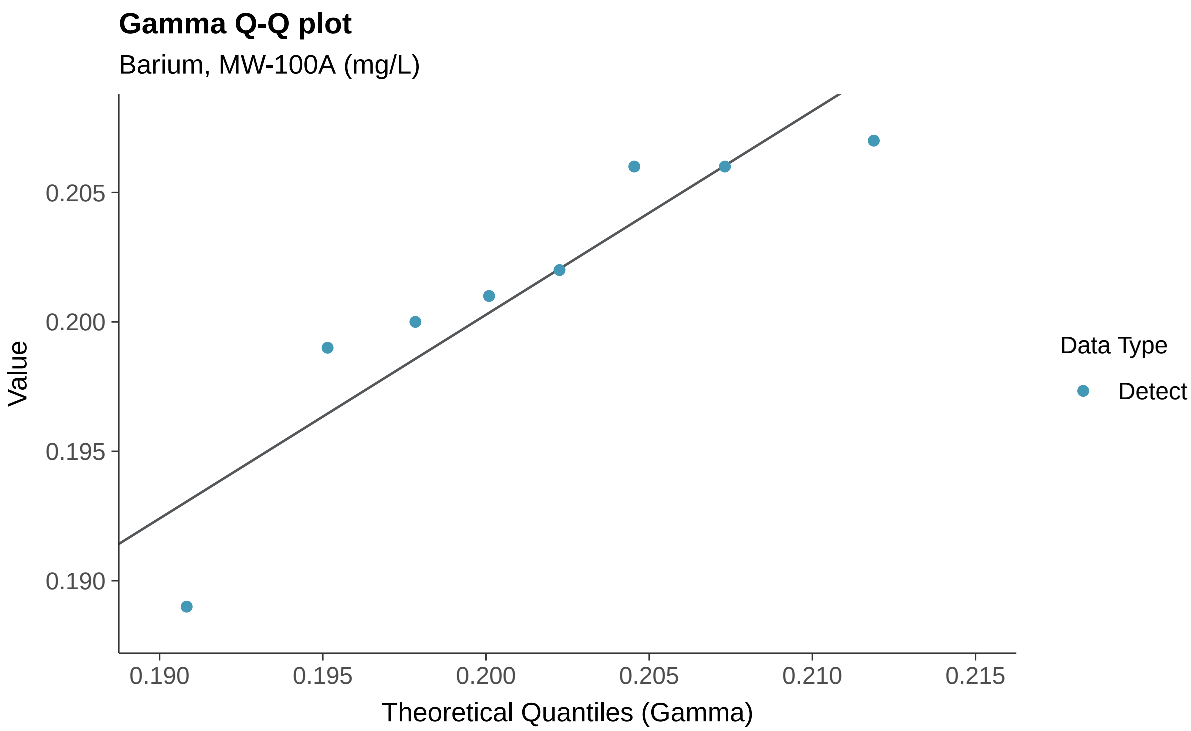
Barium, MW-100A (mg/L)

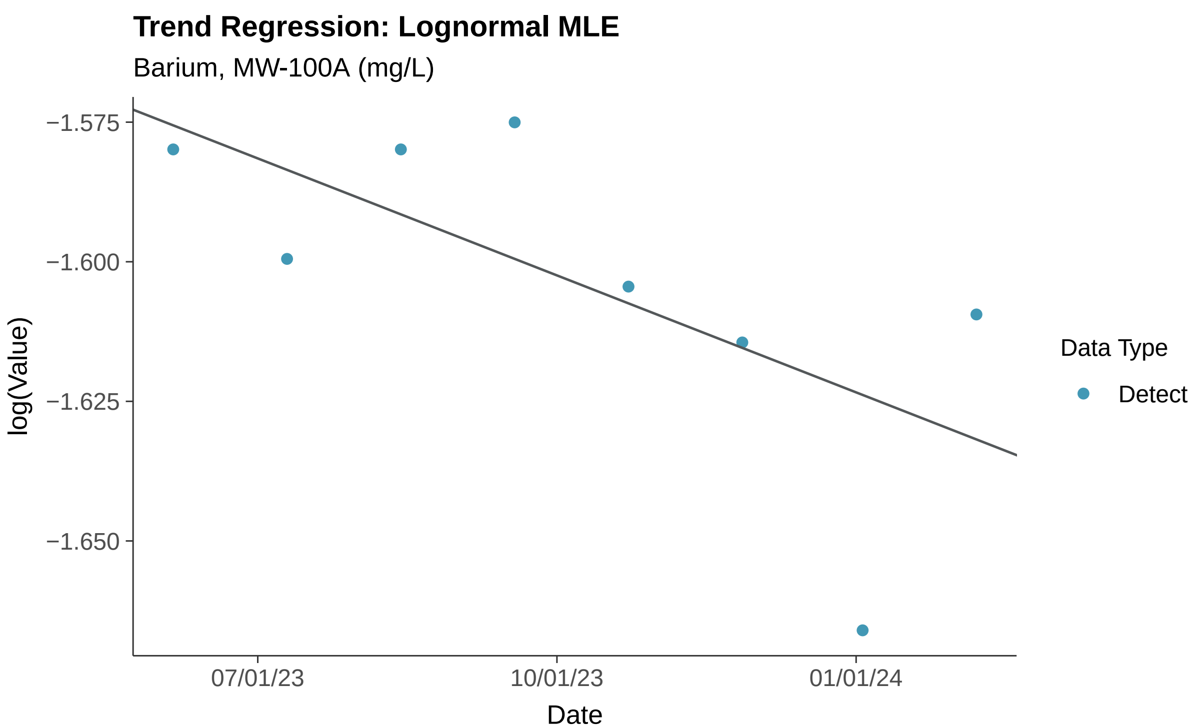


Lognormal Q-Q plot

Barium, MW-100A (mg/L)

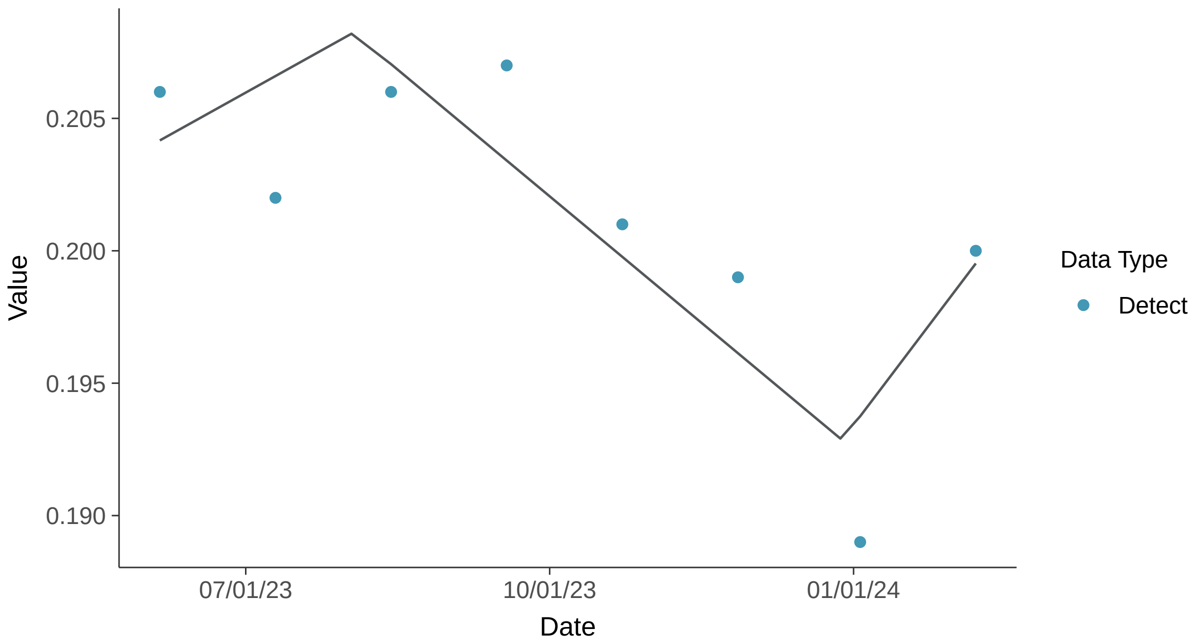



Gamma Q-Q plot
Barium, MW-100A (mg/L)
Value
0.205
0.200
0.195
0.190
0.190
0.195
0.200
0.205
0.210
0.215
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-100A (mg/L)
log(Value)
−1.575
−1.600
−1.625
−1.650
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-100A (mg/L)

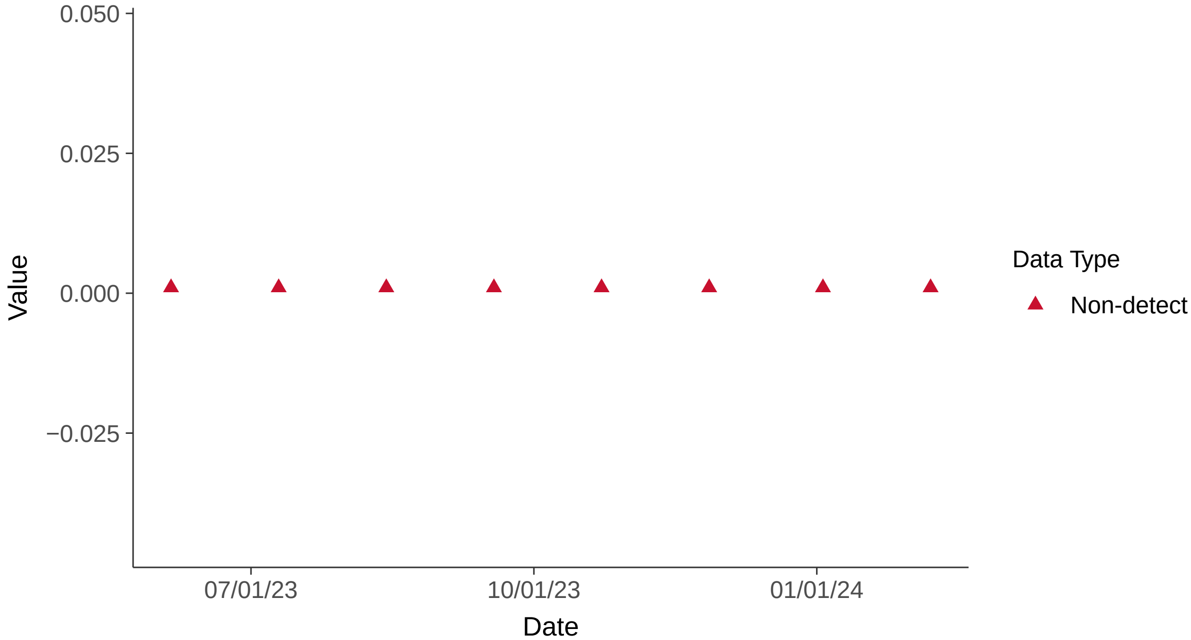


Appendix IV: Beryllium, MW-100A

ID: 100A_2_11

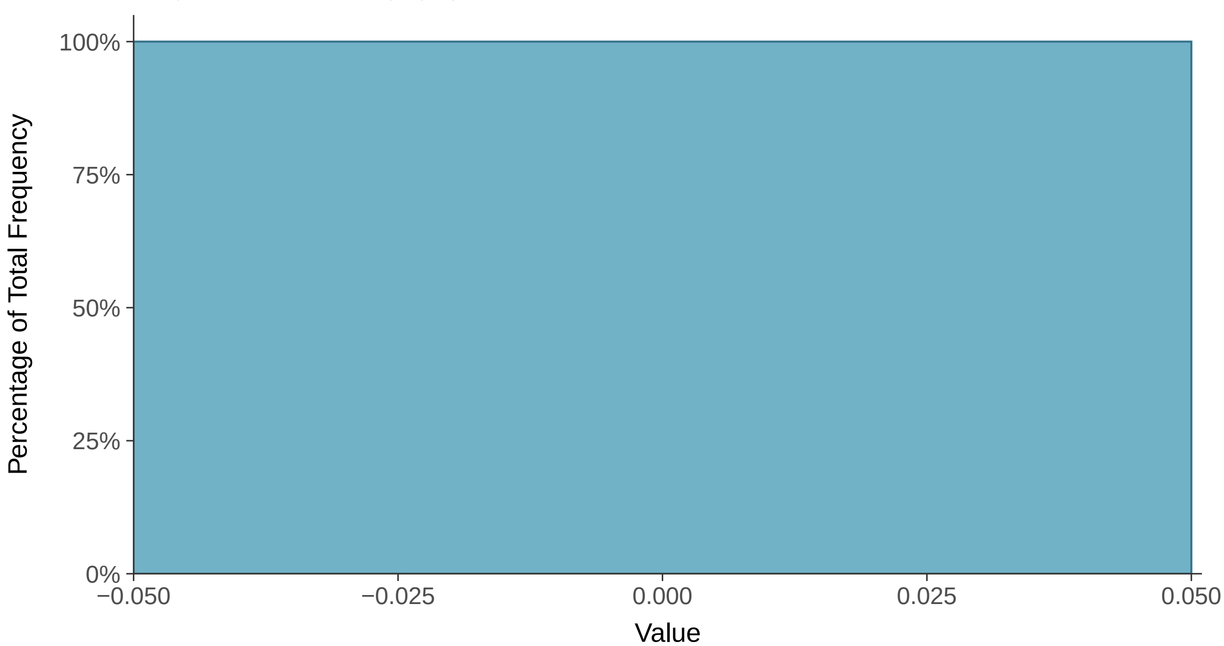
Scatter Plot

Beryllium, MW-100A (mg/L)



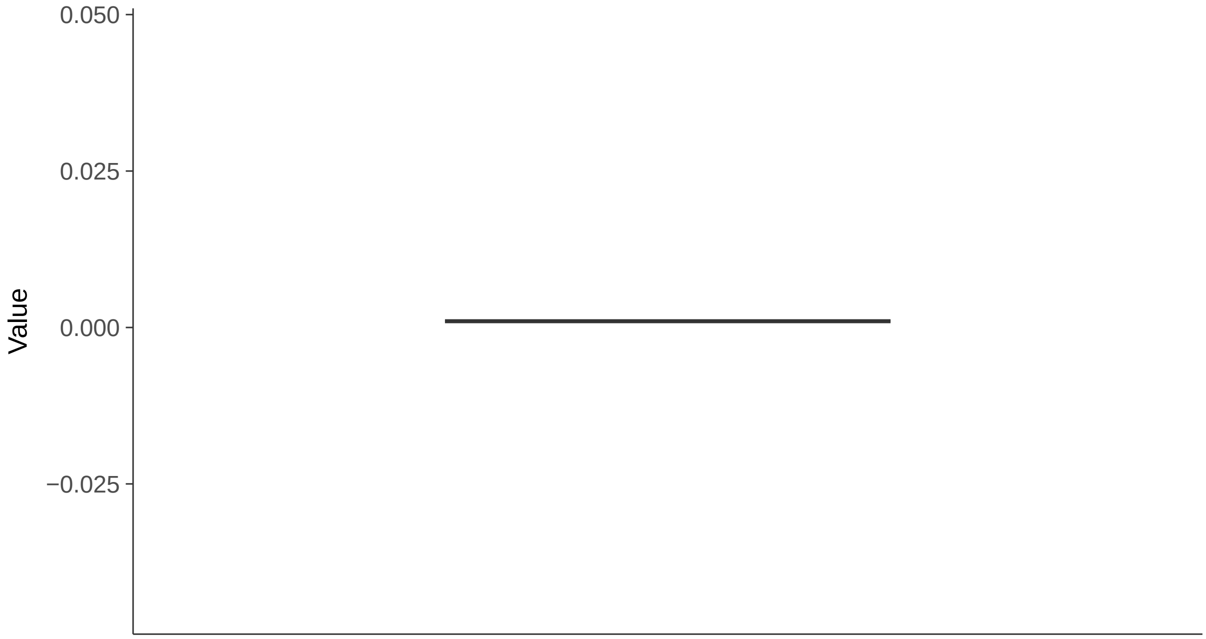
Histogram

Beryllium, MW-100A (mg/L)



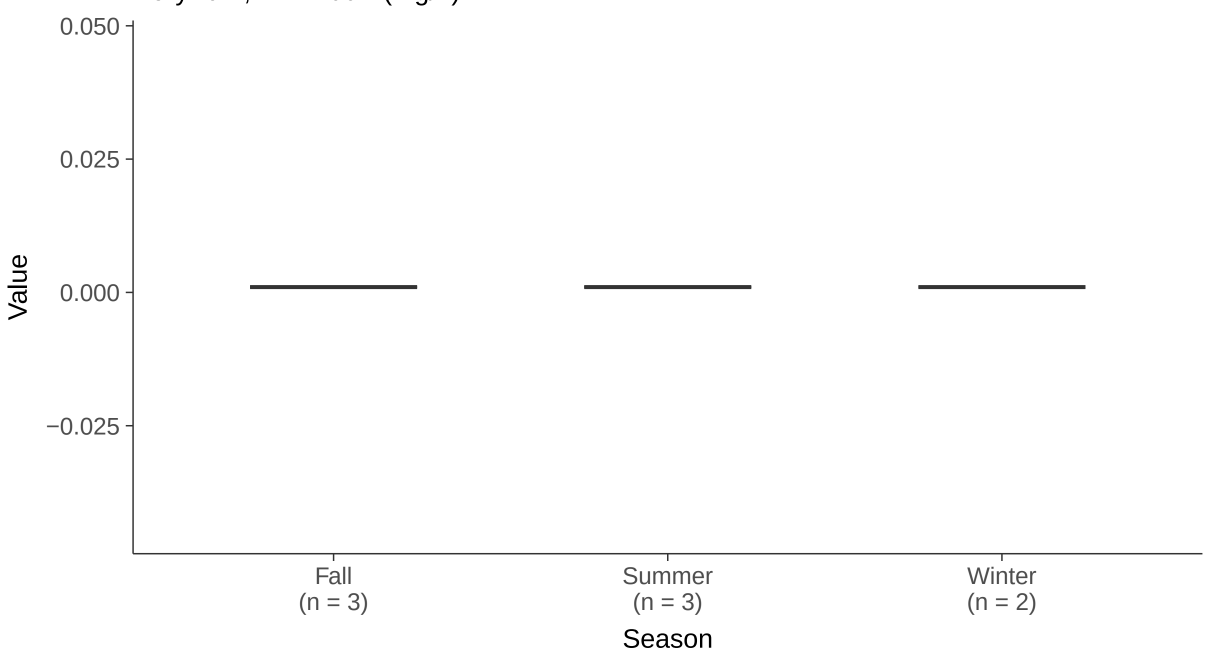
Boxplot

Beryllium, MW-100A (mg/L)



Boxplot by Season

Beryllium, MW-100A (mg/L)

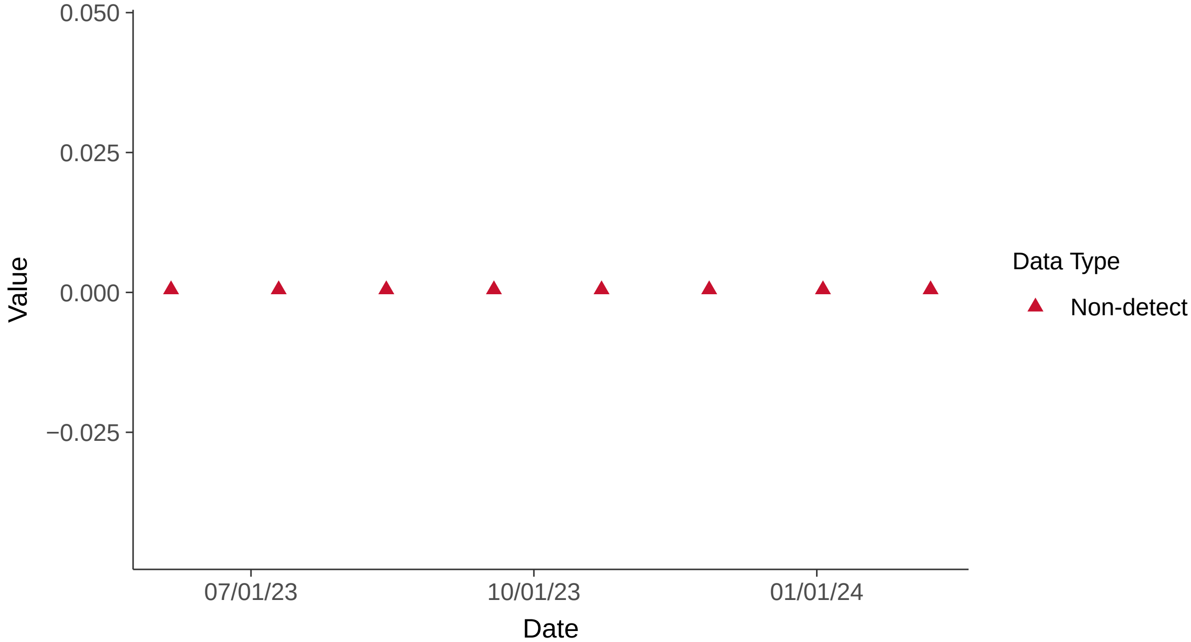


Appendix IV: Cadmium, MW-100A

ID: 100A_2_12

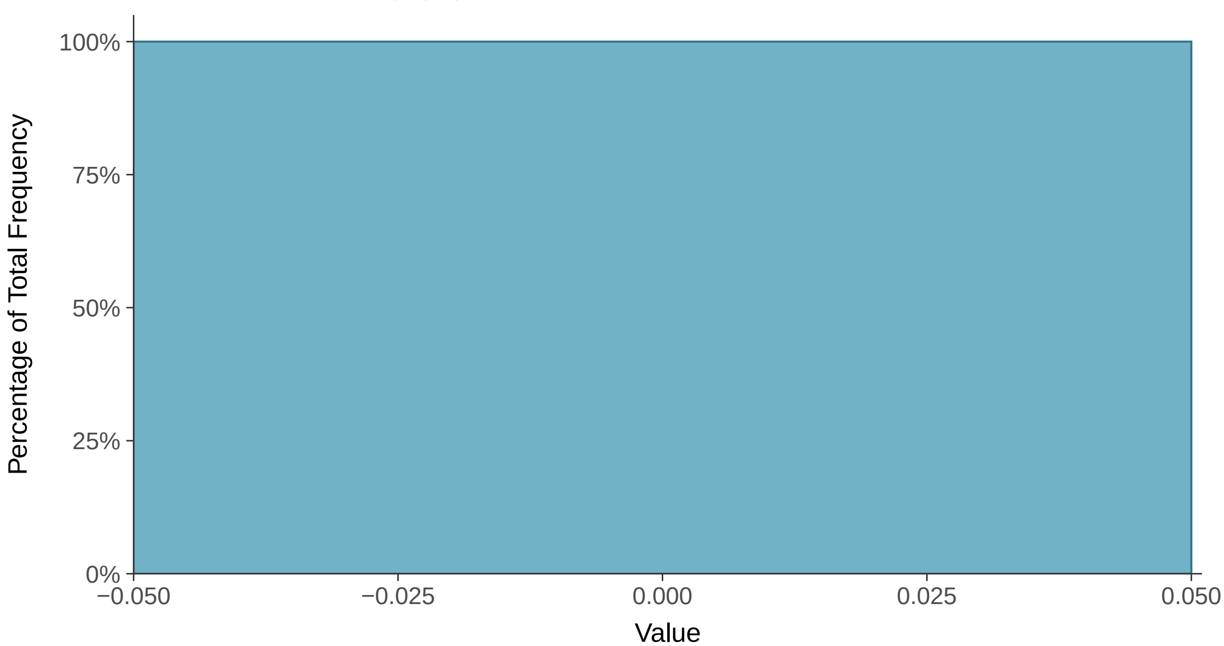
Scatter Plot

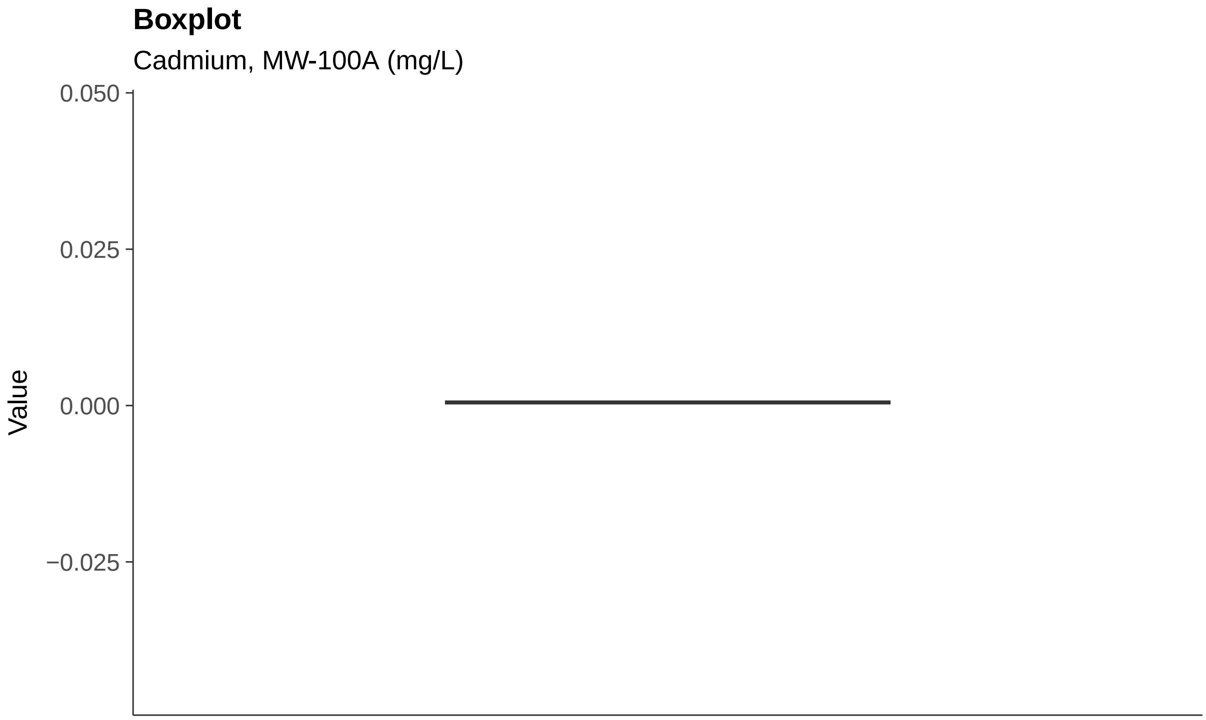
Cadmium, MW-100A (mg/L)

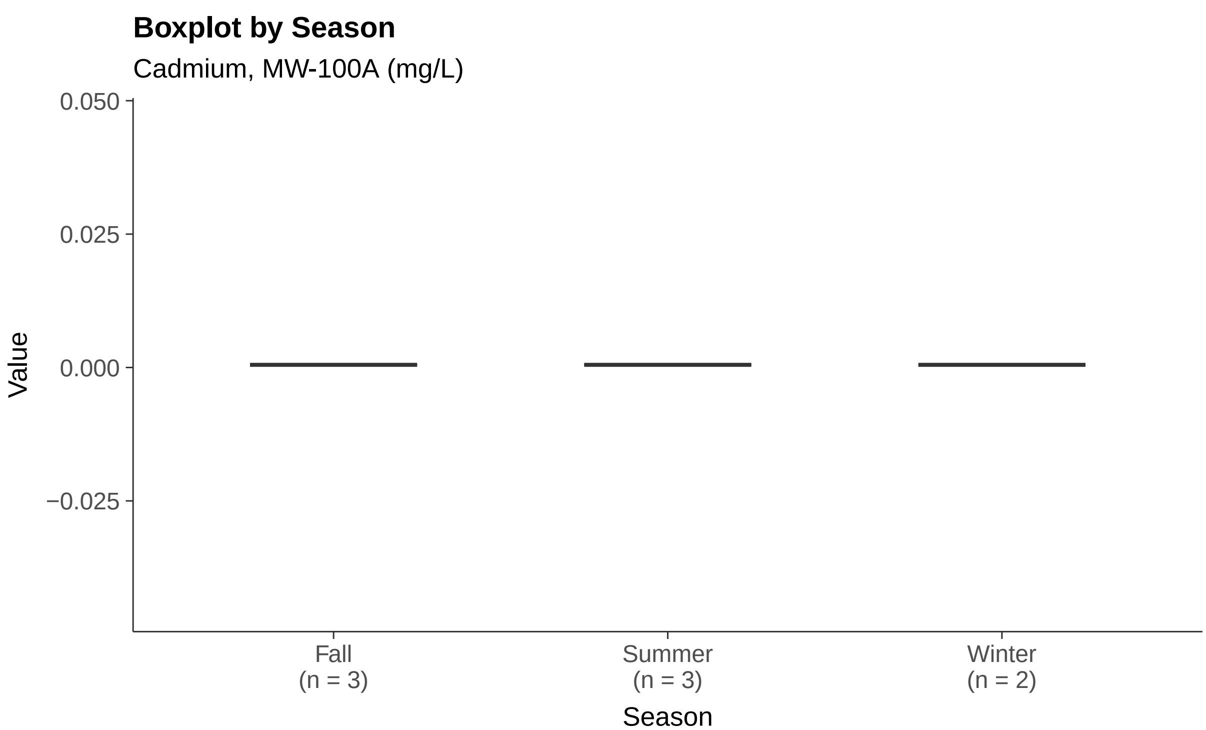


Histogram

Cadmium, MW-100A (mg/L)




Boxplot
Cadmium, MW-100A (mg/L)
0.050
0.025
0.000
−0.025
Value

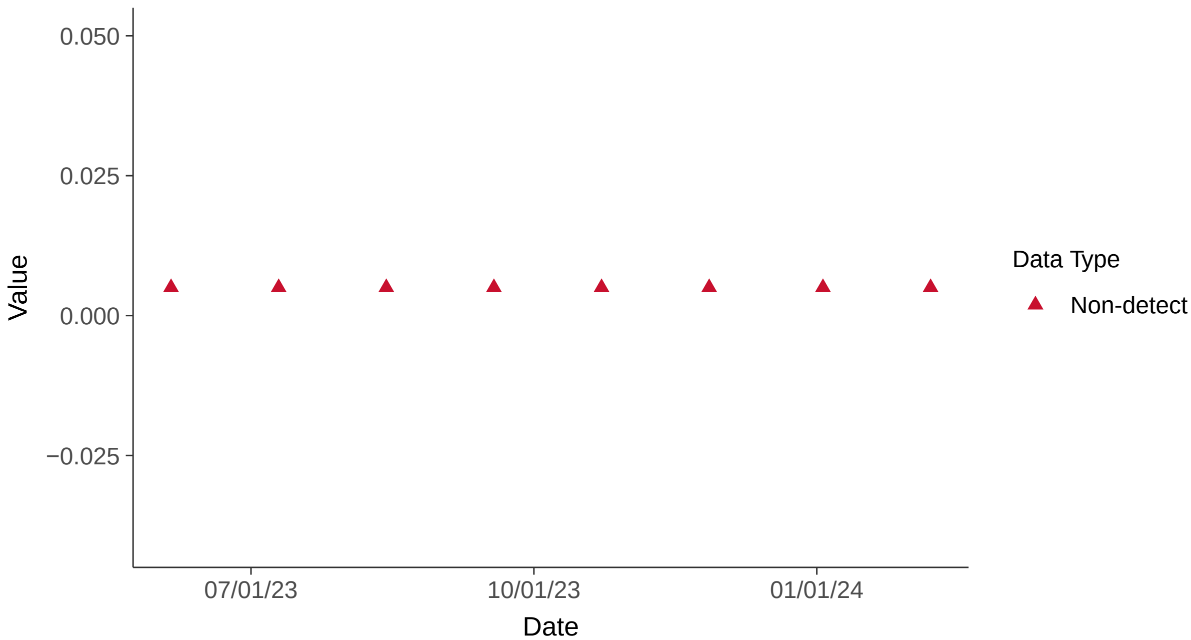

Boxplot by Season
Cadmium, MW-100A (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season

Appendix IV: Chromium, MW-100A

ID: 100A_2_13

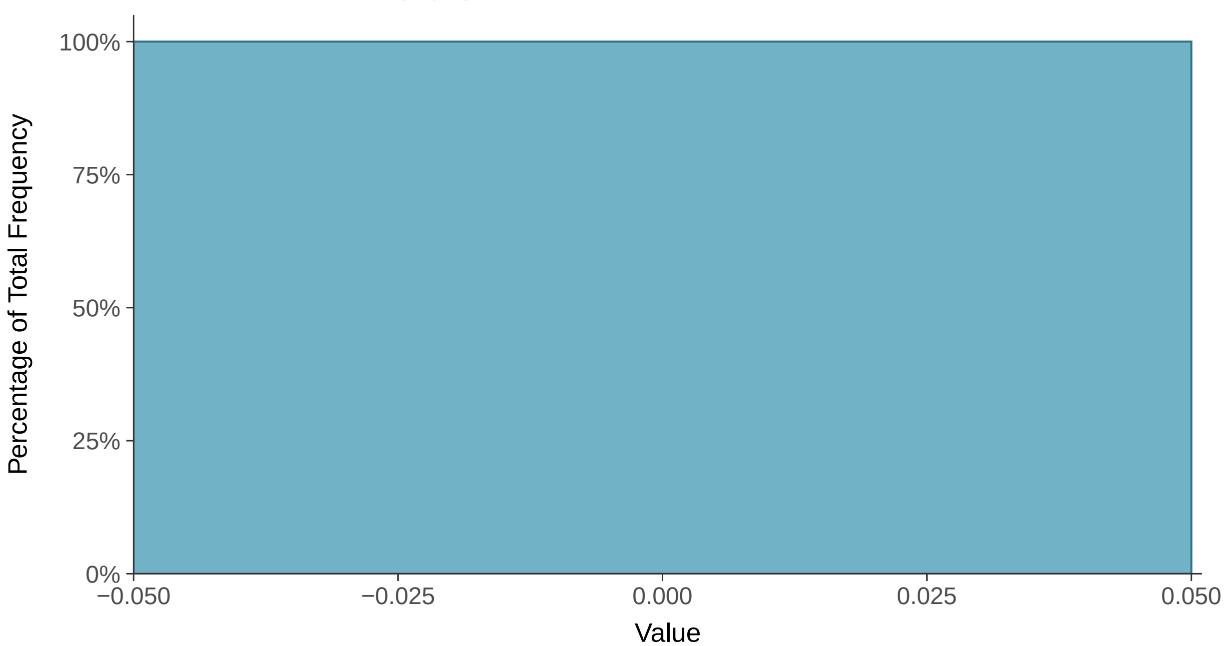
Scatter Plot

Chromium, MW-100A (mg/L)



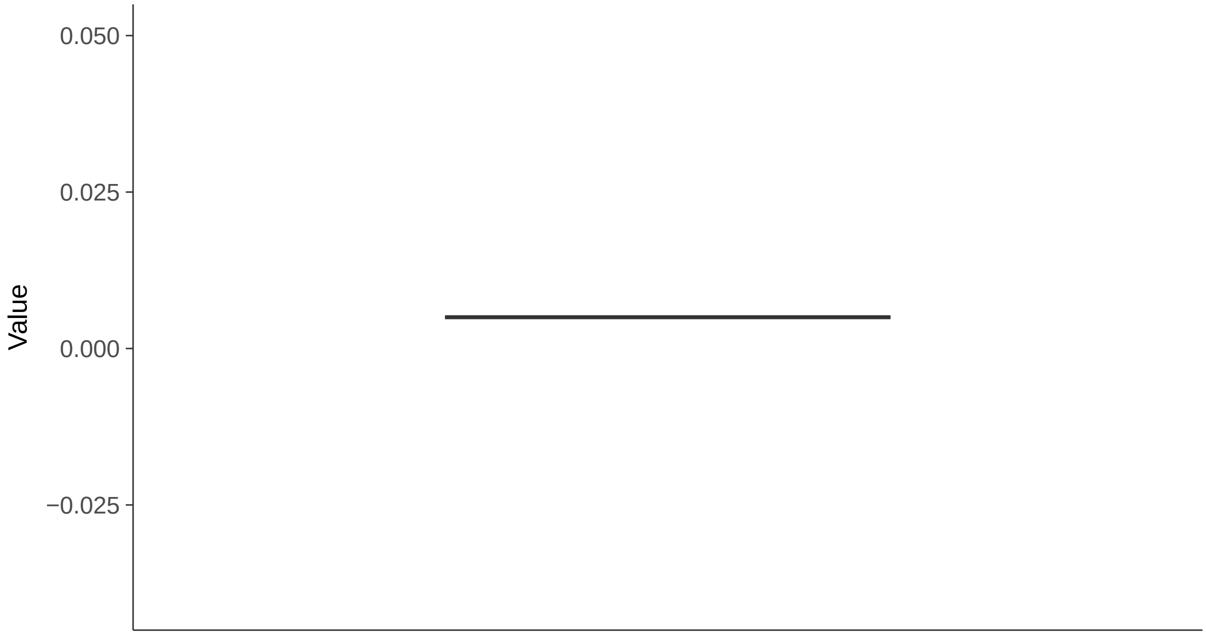
Histogram

Chromium, MW-100A (mg/L)



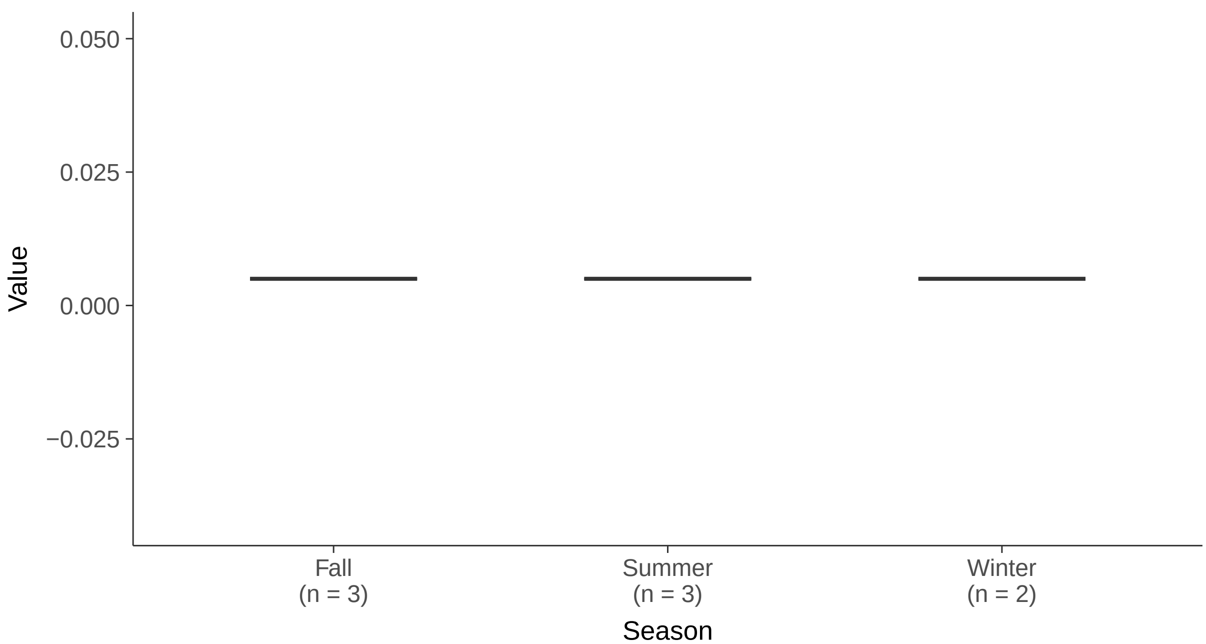
Boxplot

Chromium, MW-100A (mg/L)



Boxplot by Season

Chromium, MW-100A (mg/L)

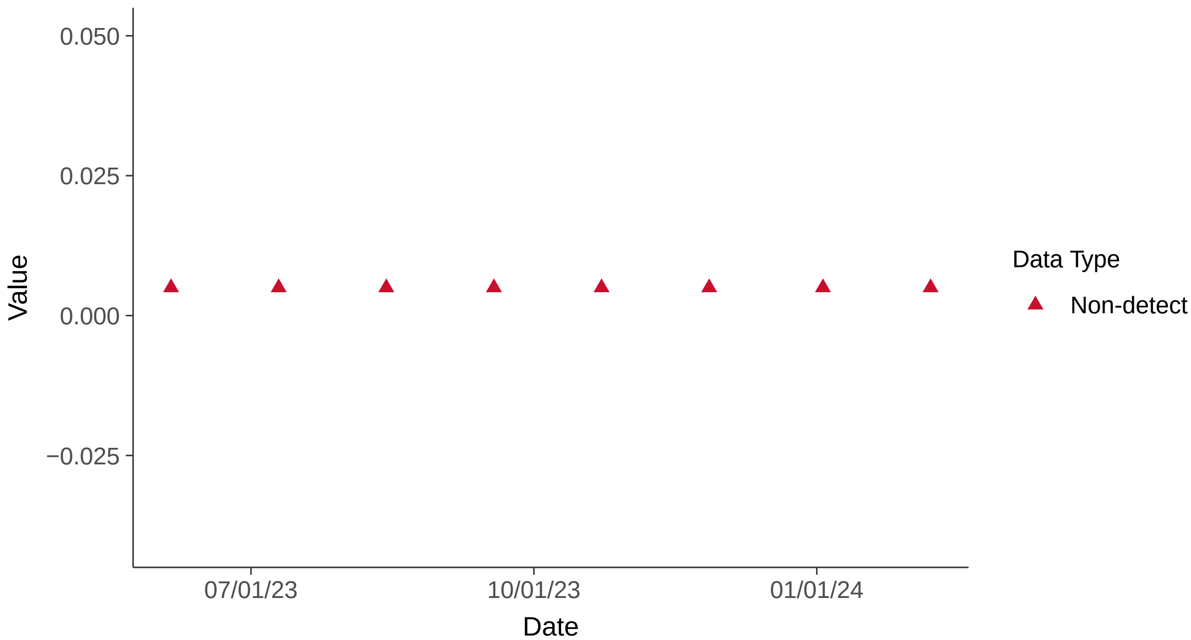


Appendix IV: Cobalt, MW-100A

ID: 100A_2_14

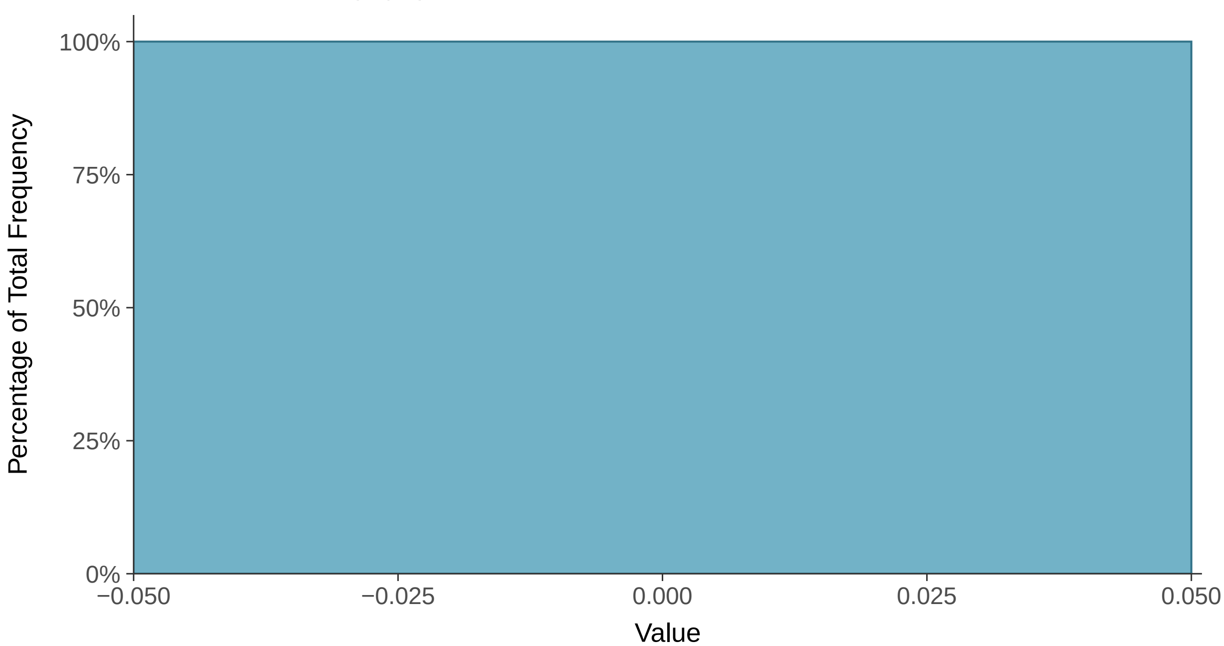
Scatter Plot

Cobalt, MW-100A (mg/L)



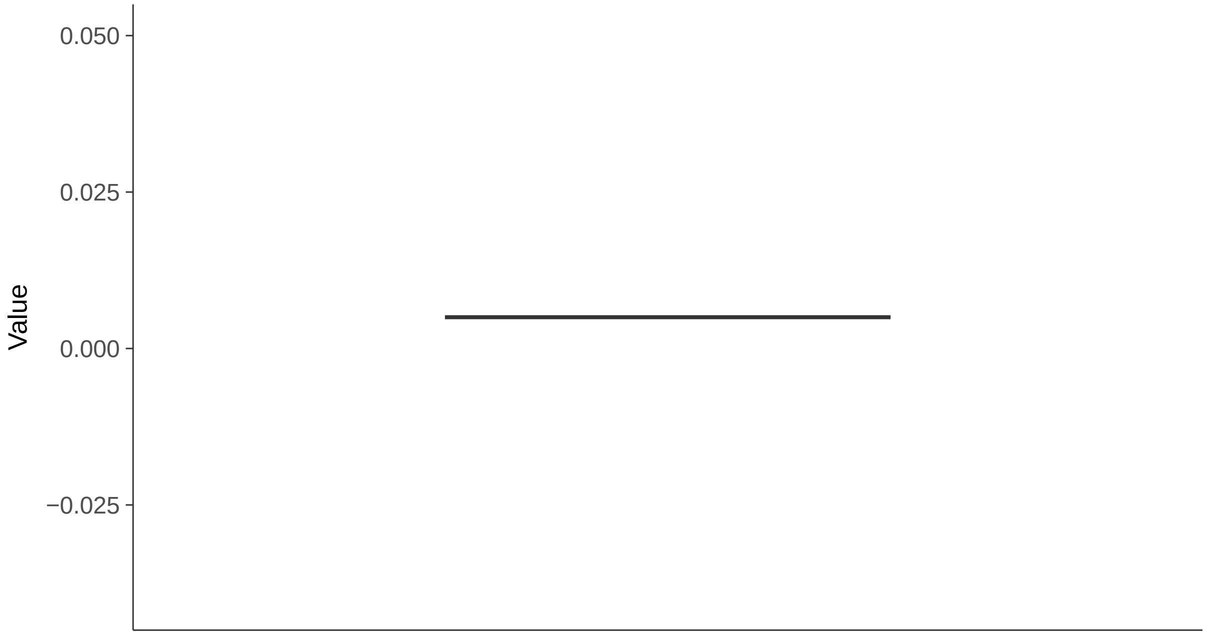
Histogram

Cobalt, MW-100A (mg/L)



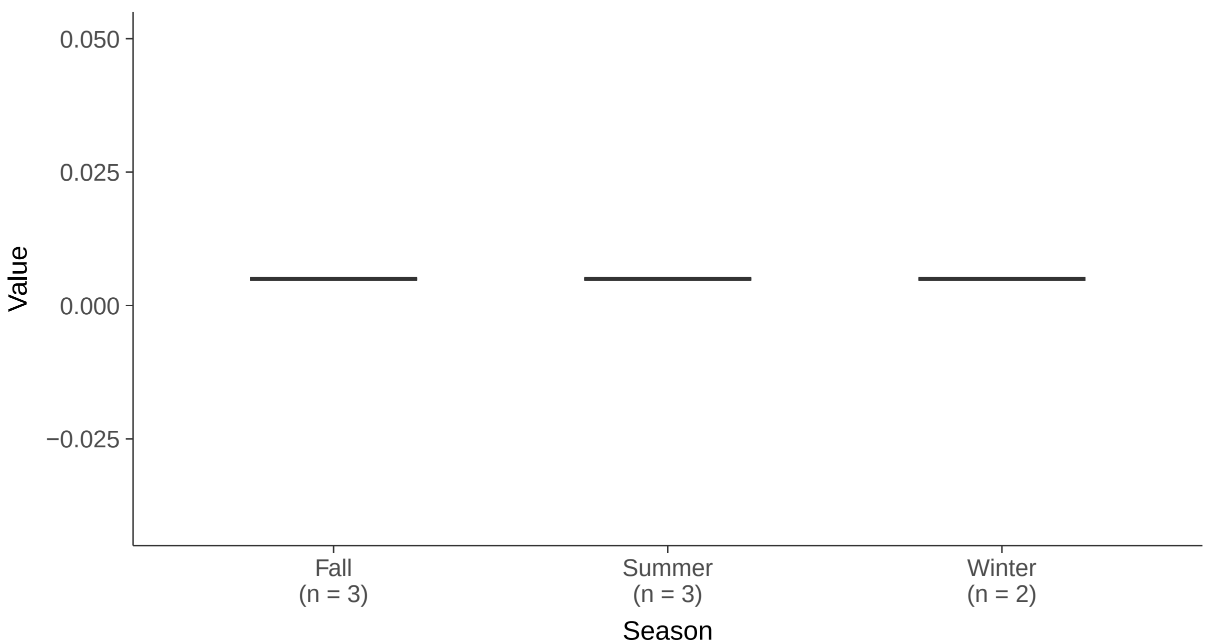
Boxplot

Cobalt, MW-100A (mg/L)



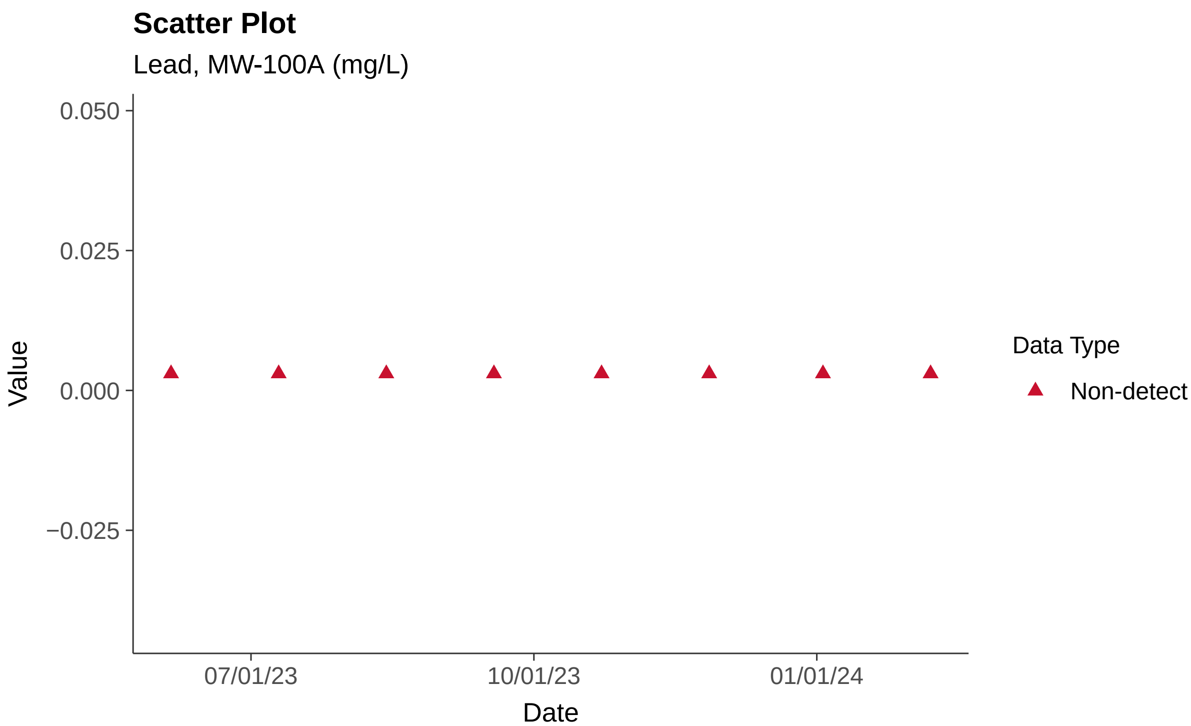
Boxplot by Season

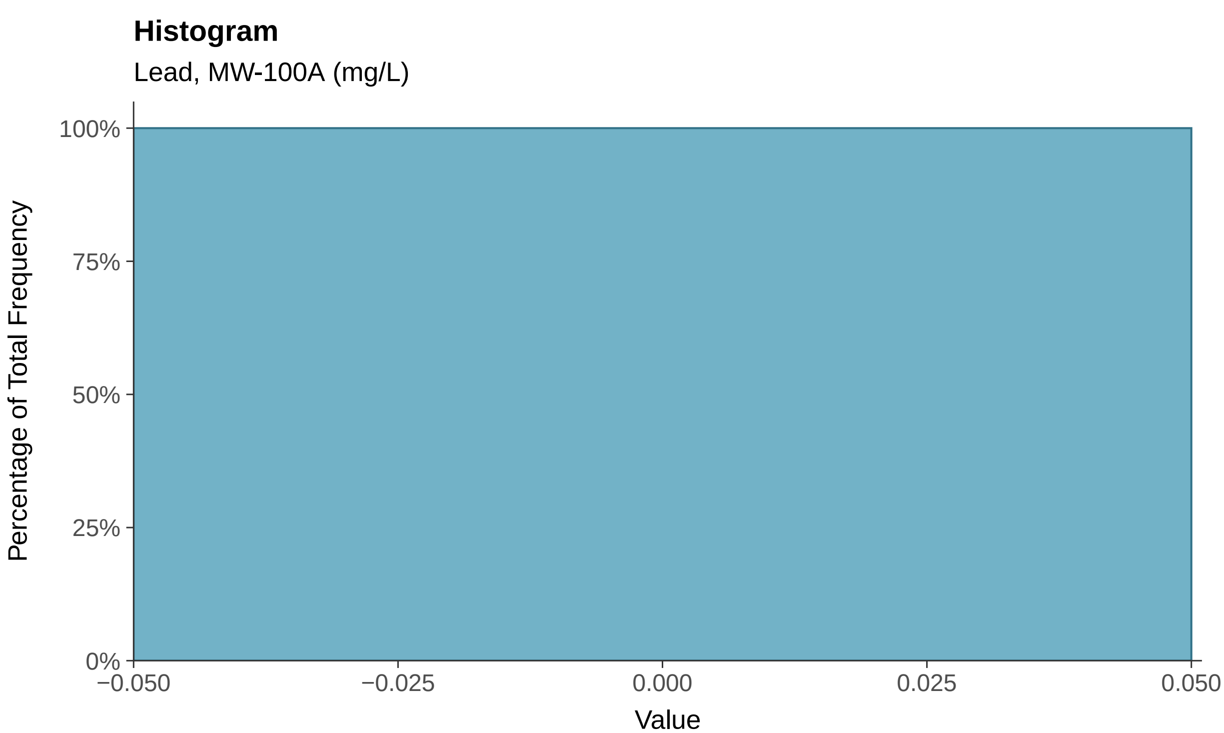
Cobalt, MW-100A (mg/L)



Appendix IV: Lead, MW-100A

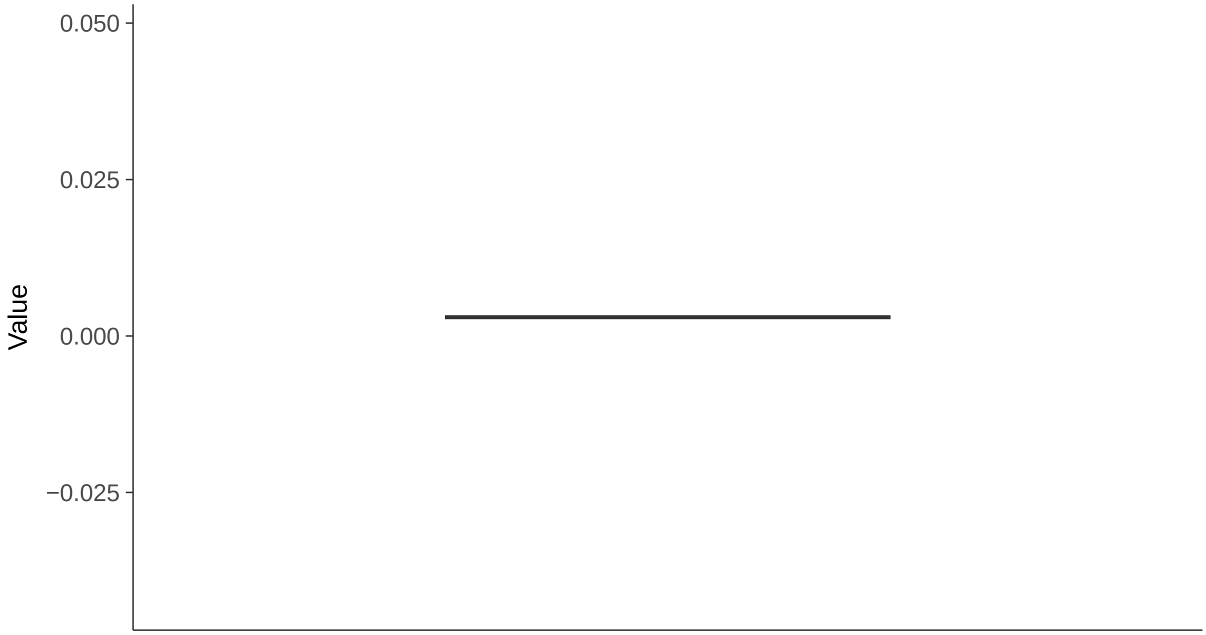
ID: 100A_2_15





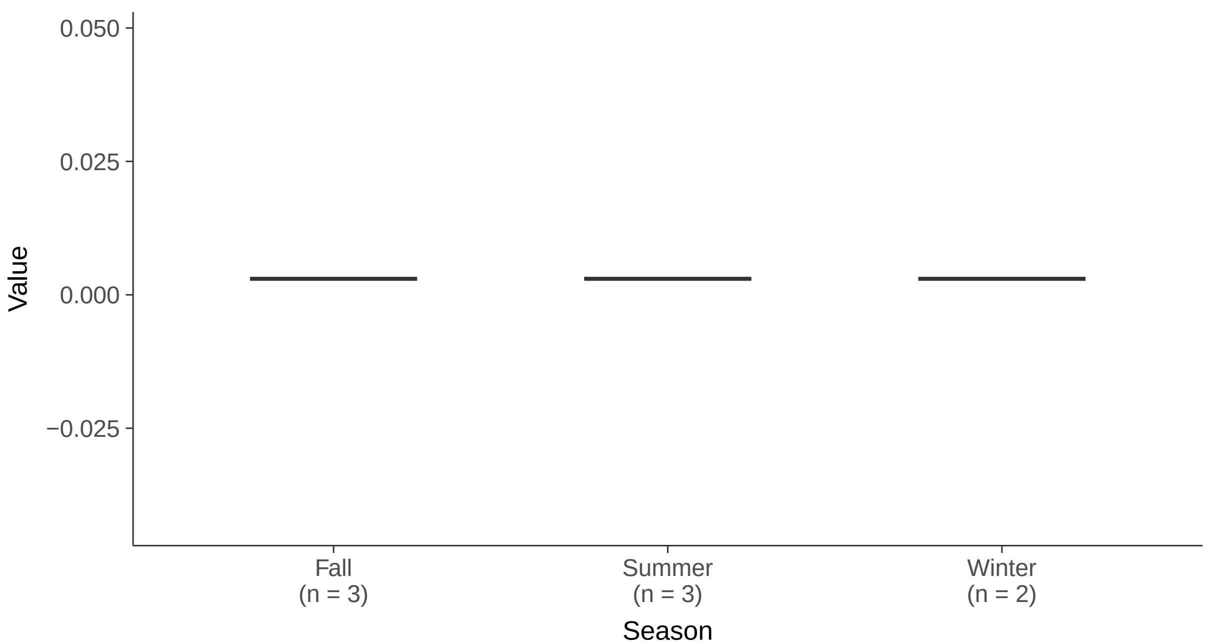
Boxplot

Lead, MW-100A (mg/L)



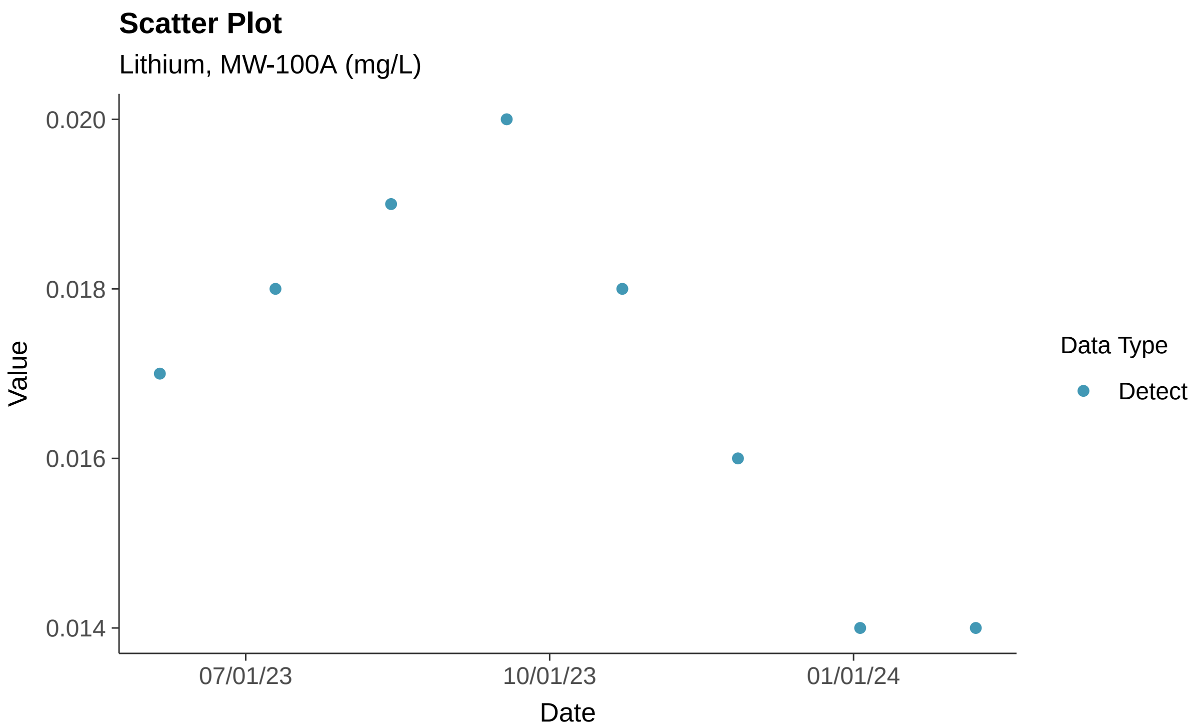
Boxplot by Season

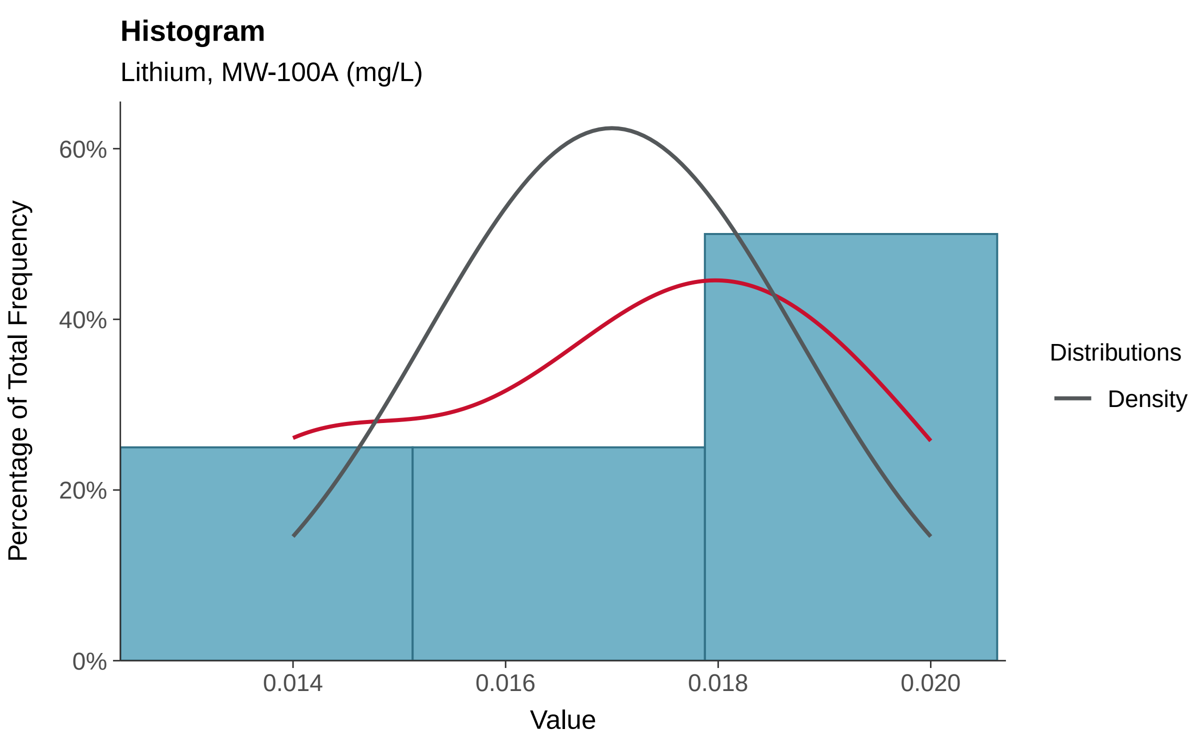
Lead, MW-100A (mg/L)



Appendix IV: Lithium, MW-100A

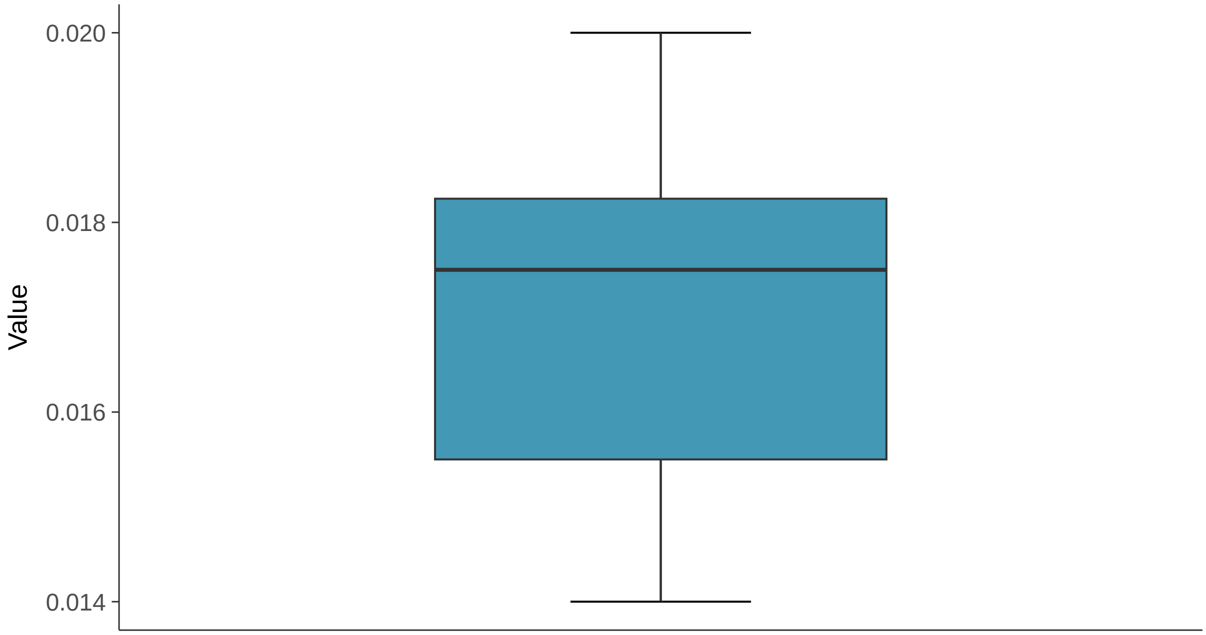
ID: 100A_2_16





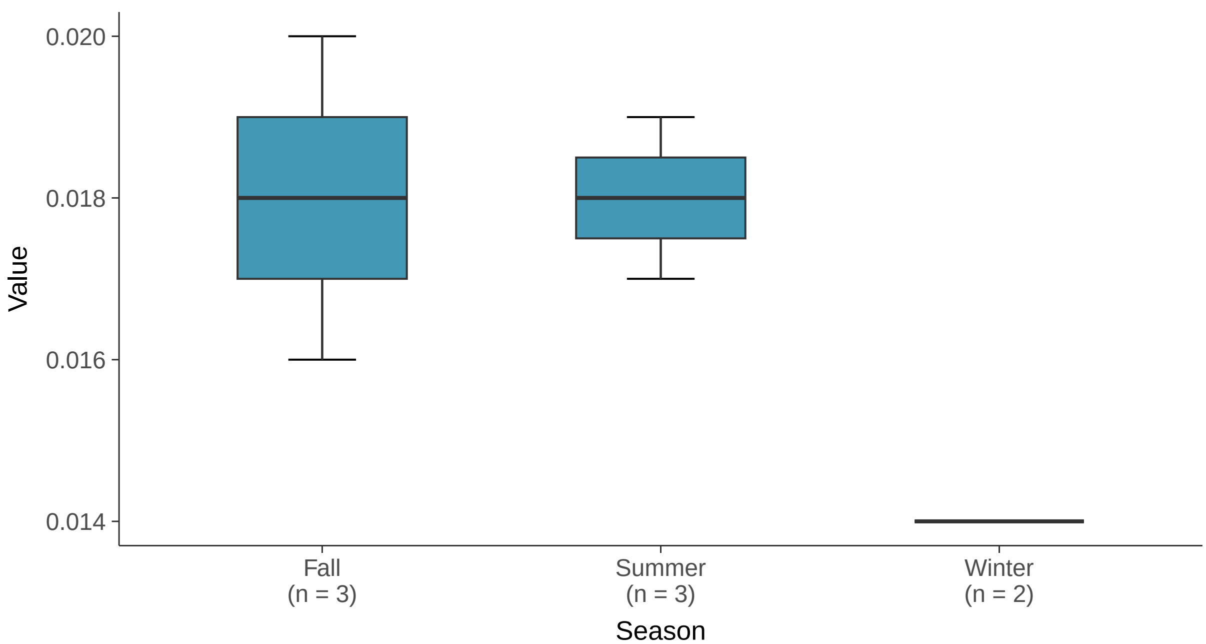
Boxplot

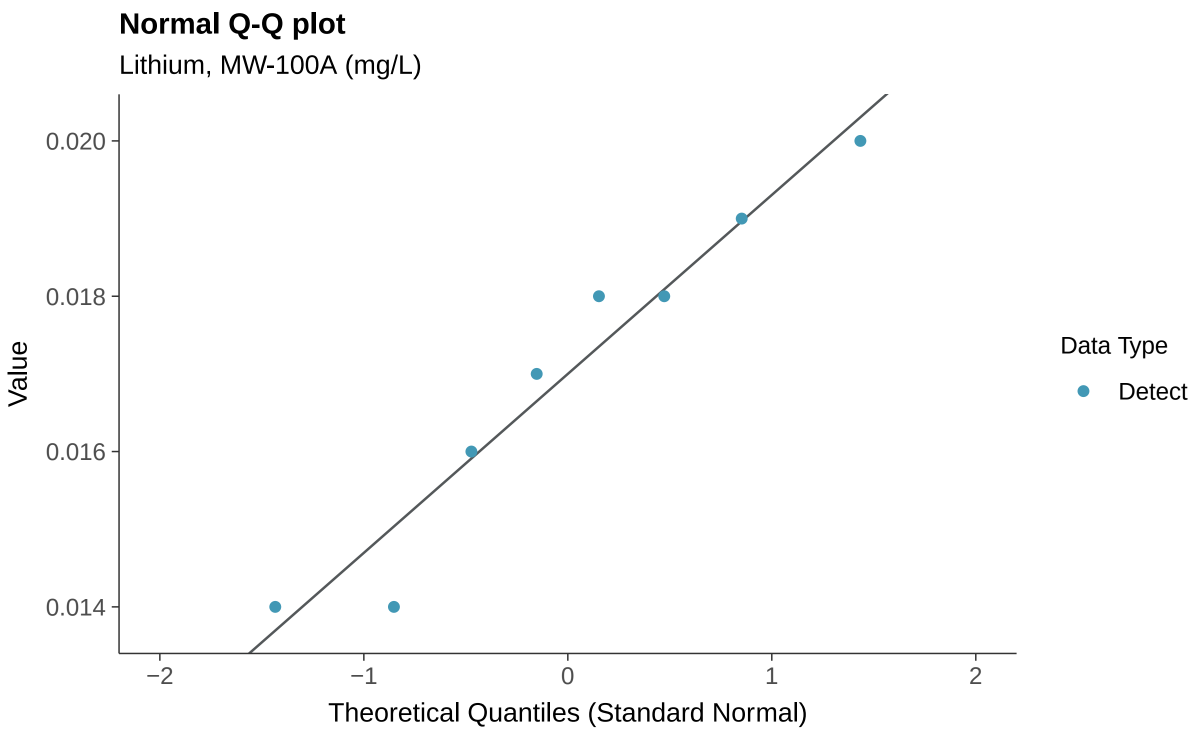
Lithium, MW-100A (mg/L)

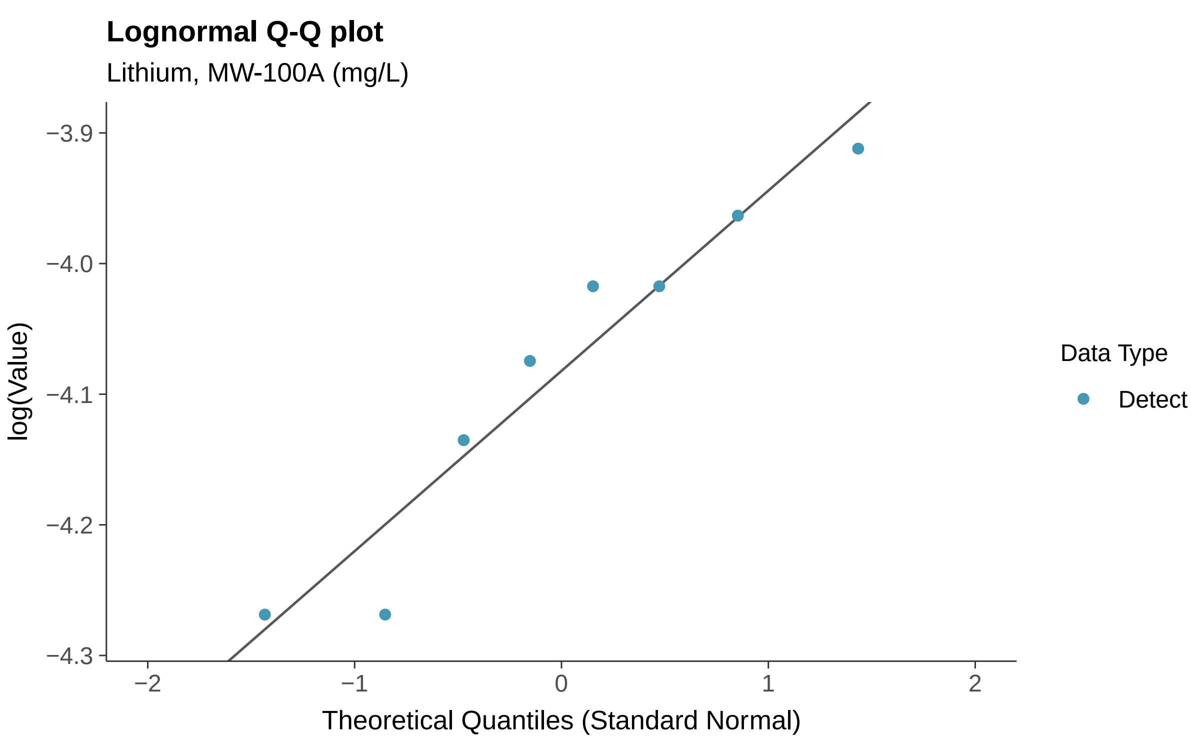


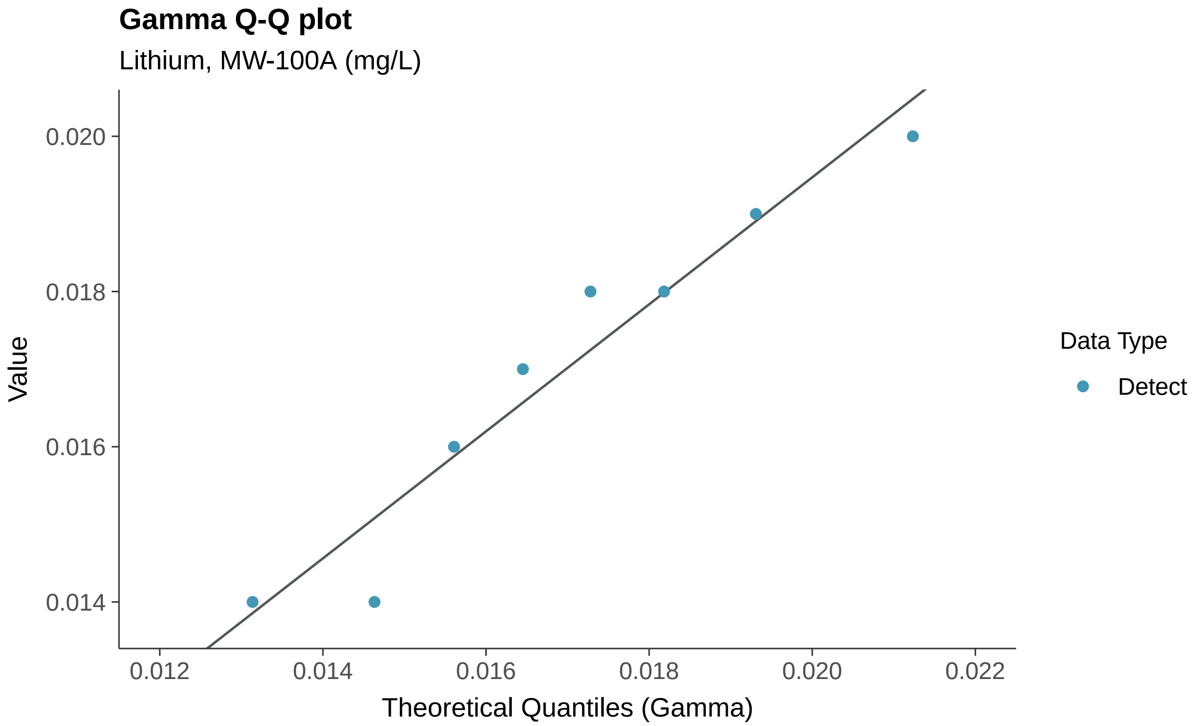
Boxplot by Season

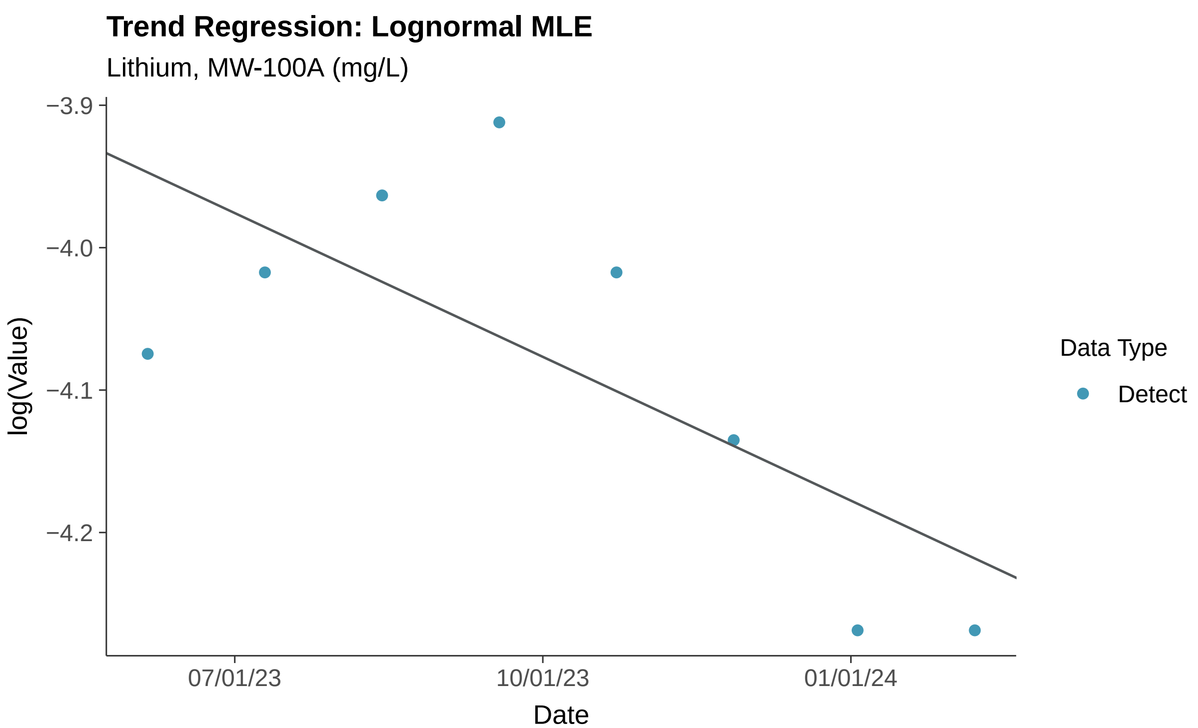
Lithium, MW-100A (mg/L)



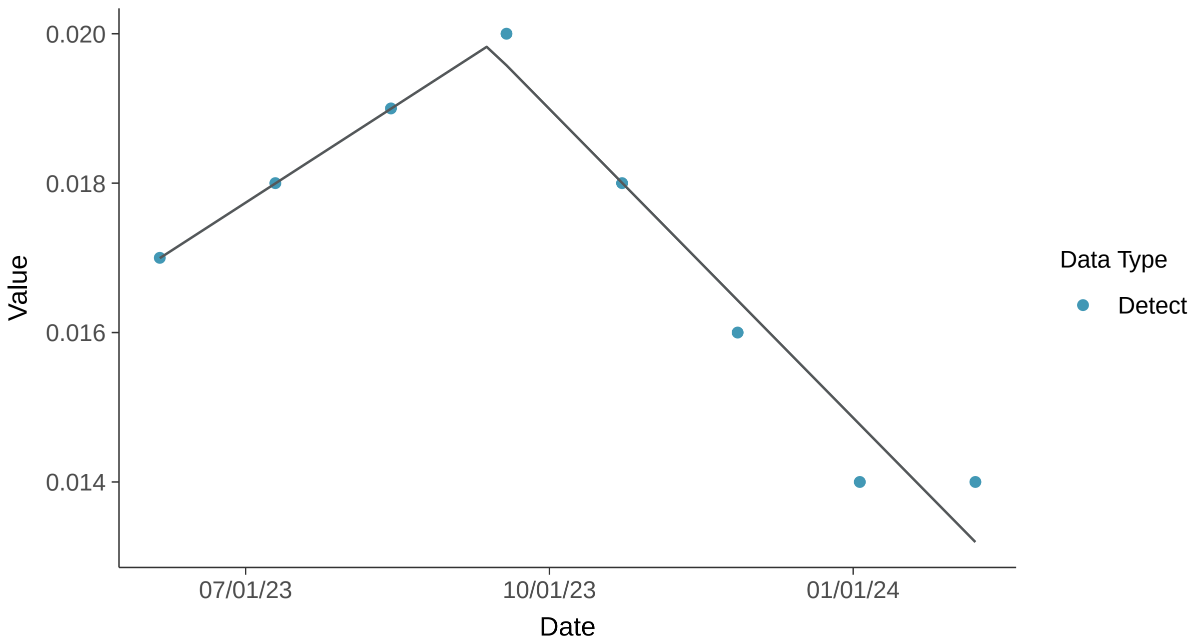

Normal Q-Q plot
Lithium, MW-100A (mg/L)
Value
0.020
0.018
0.016
0.014
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-100A (mg/L)
log(Value)
−3.9
−4.0
−4.1
−4.2
−4.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

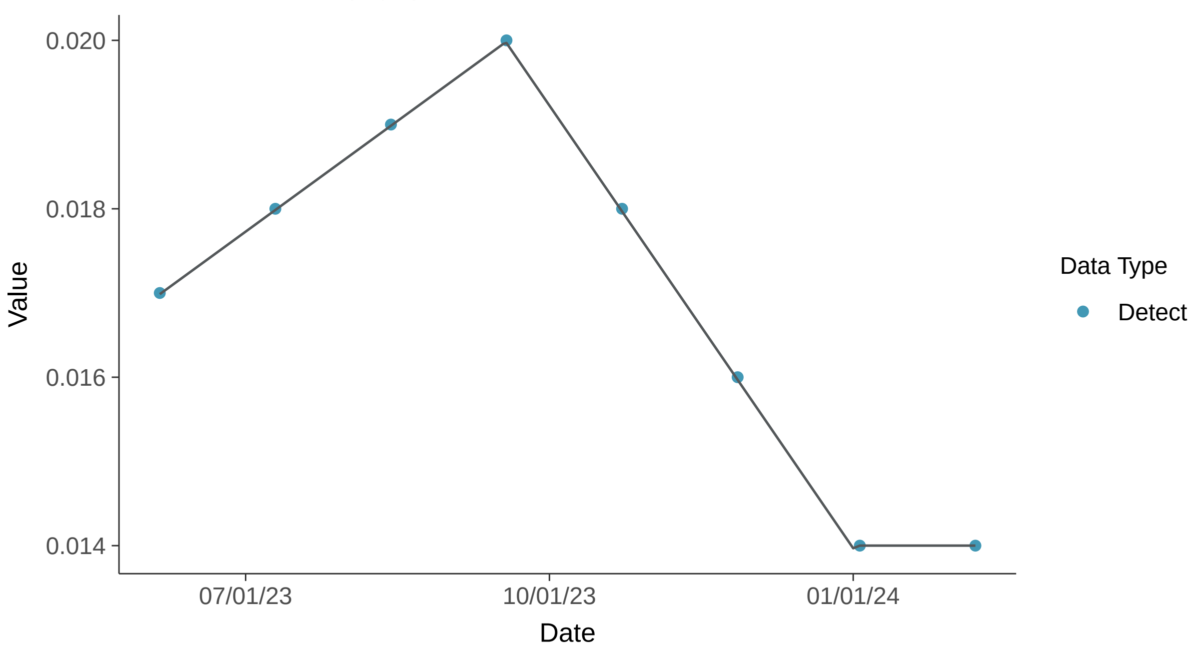

Gamma Q-Q plot
Lithium, MW-100A (mg/L)
Value
0.020
0.018
0.016
0.014
0.012
0.014
0.016
0.018
0.020
0.022
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Lithium, MW-100A (mg/L)
log(Value)
−3.9
−4.0
−4.1
−4.2
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear
Lithium, MW-100A (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear
Lithium, MW-100A (mg/L)

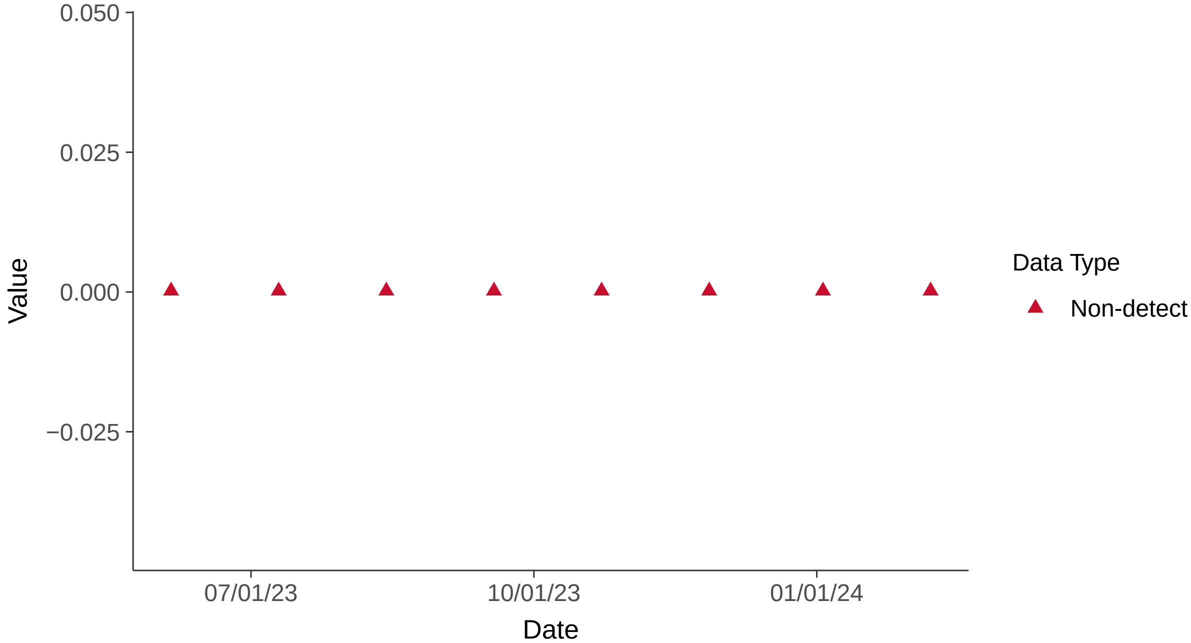


Appendix IV: Mercury, MW-100A

ID: 100A_2_17

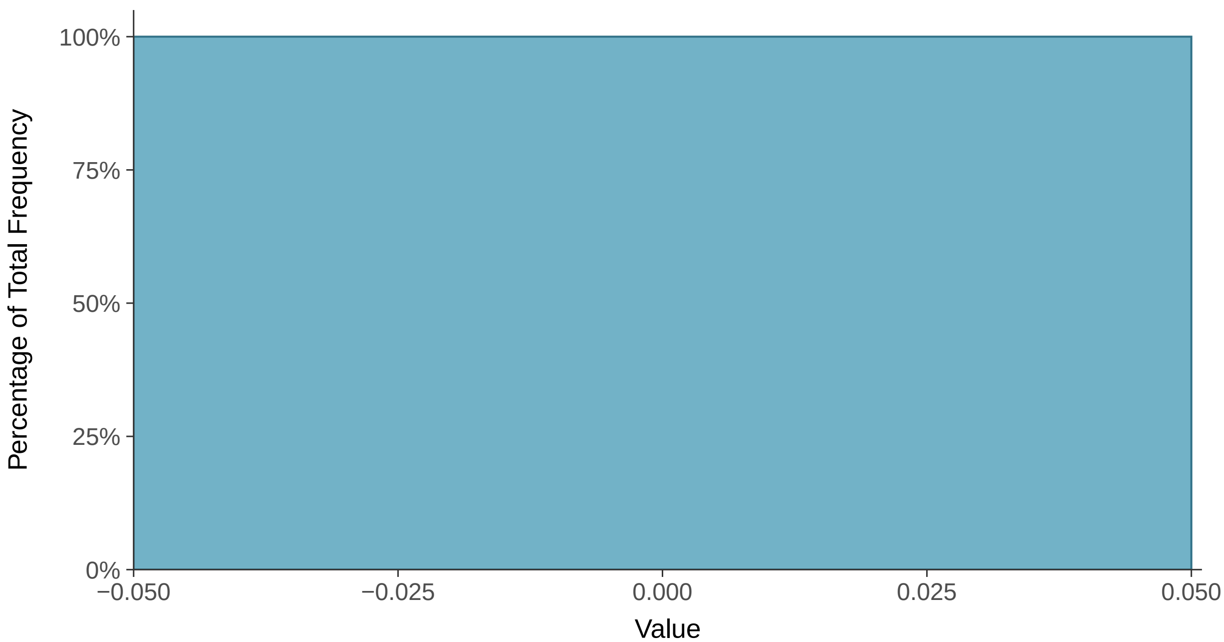
Scatter Plot

Mercury, MW-100A (mg/L)



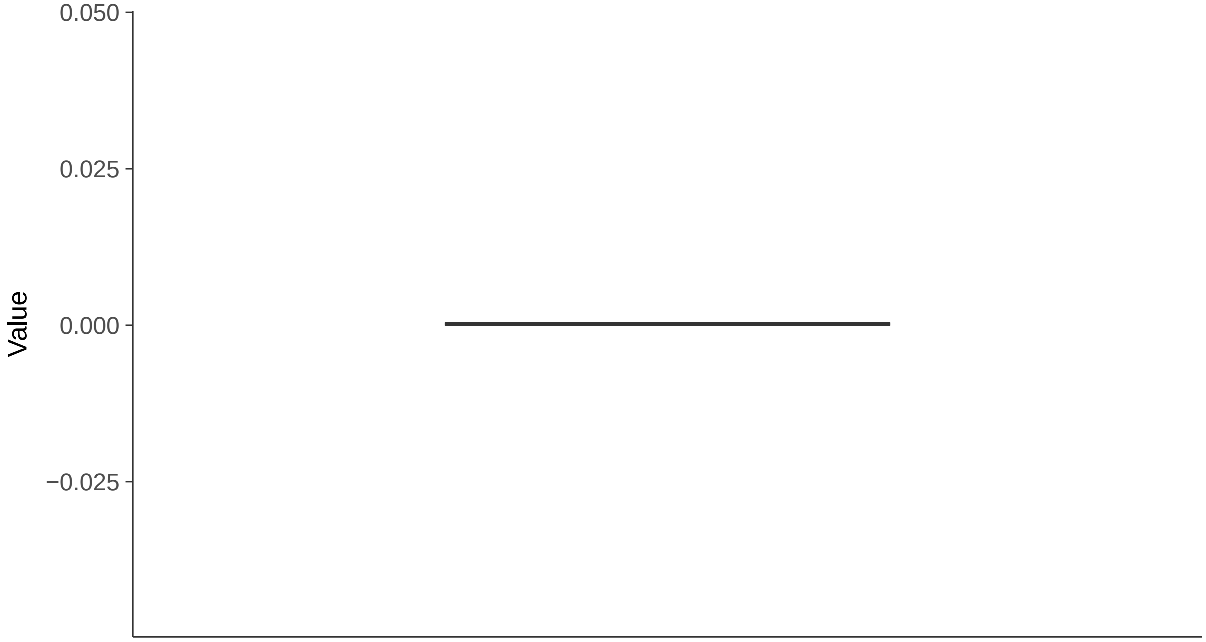
Histogram

Mercury, MW-100A (mg/L)



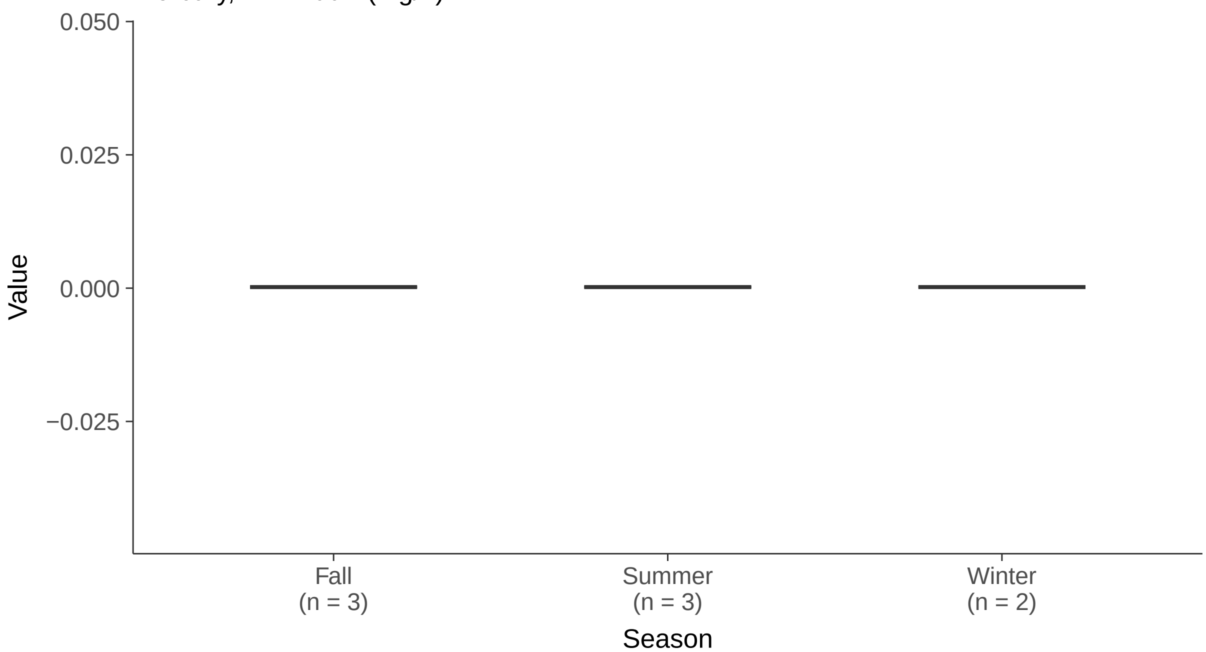
Boxplot

Mercury, MW-100A (mg/L)



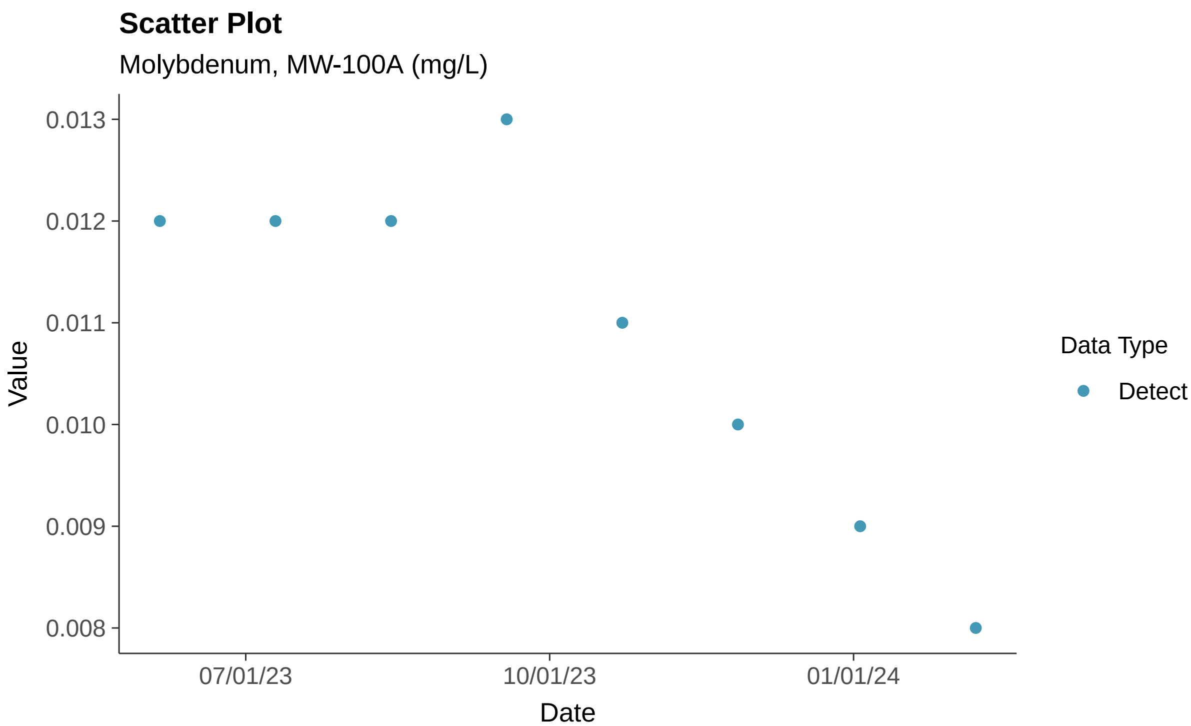
Boxplot by Season

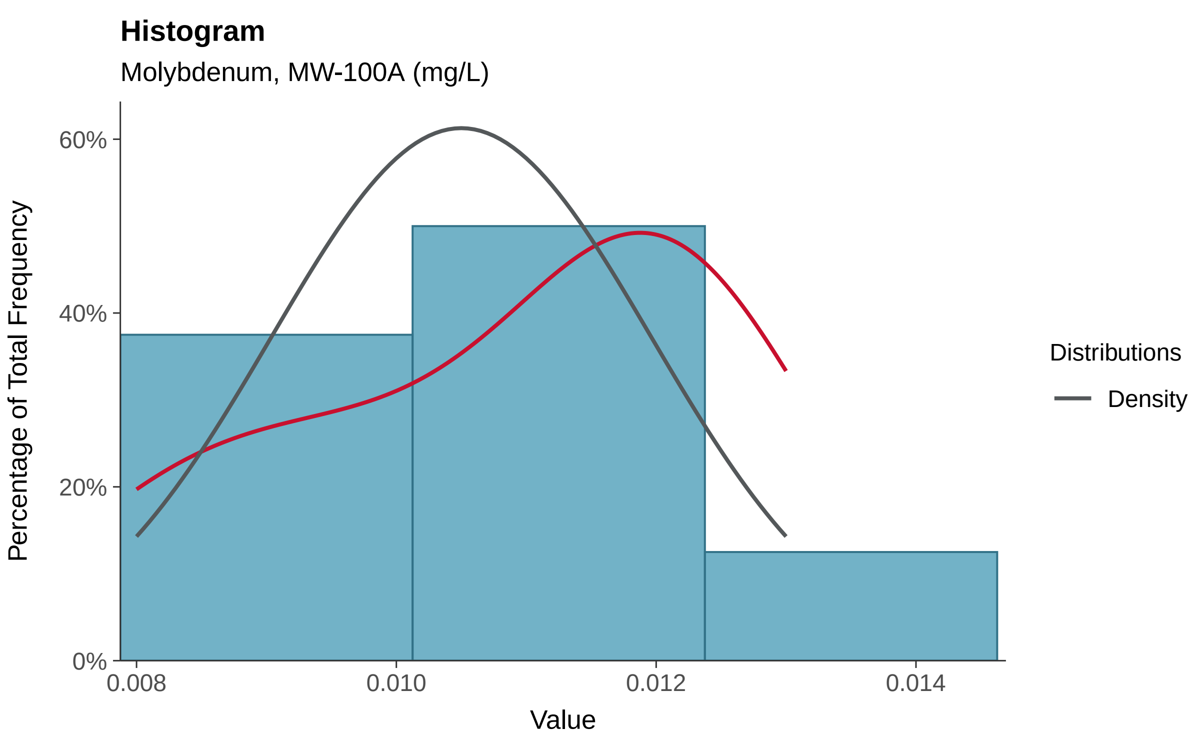
Mercury, MW-100A (mg/L)



Appendix IV: Molybdenum, MW-100A

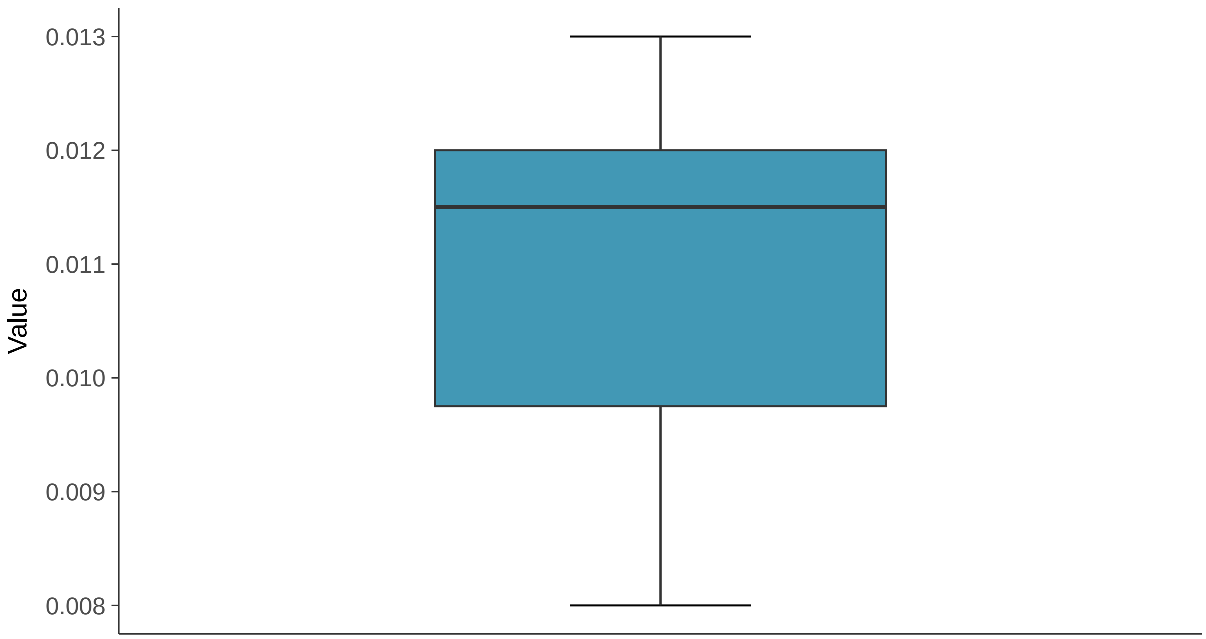
ID: 100A_2_18





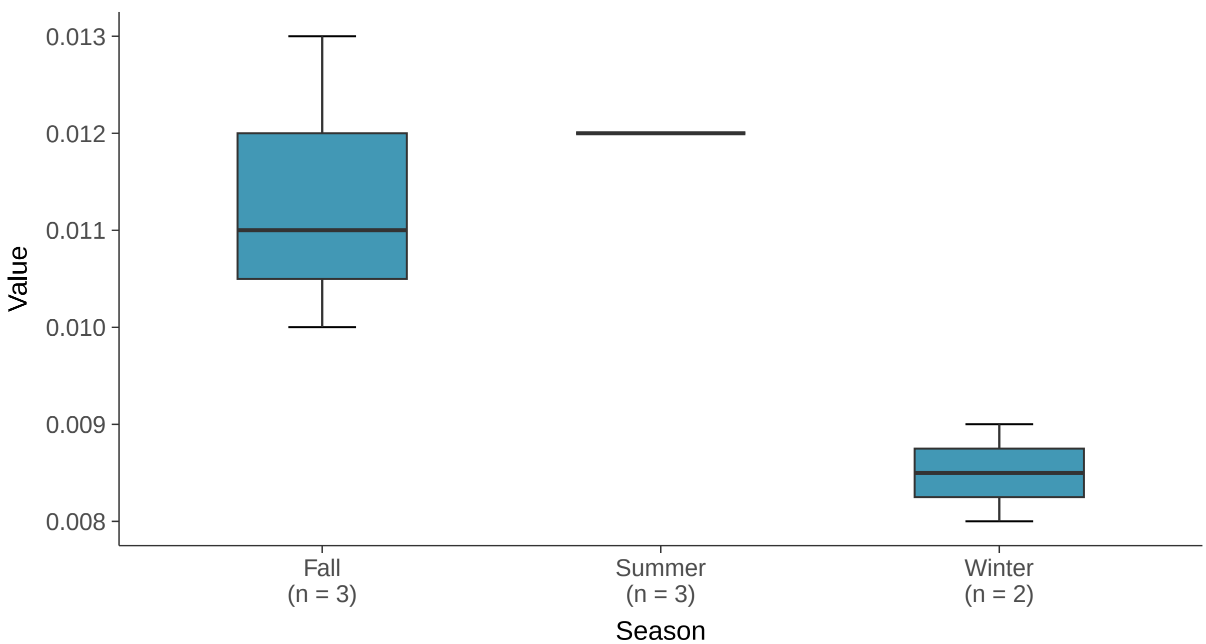
Boxplot

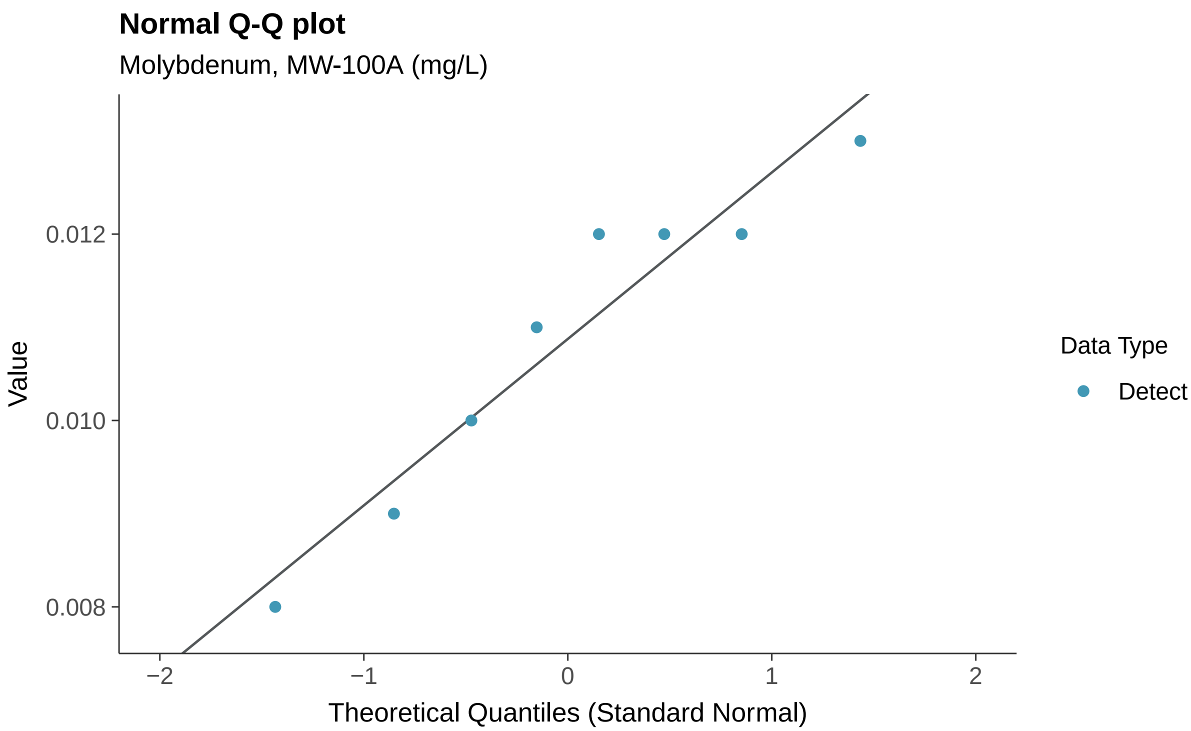
Molybdenum, MW-100A (mg/L)

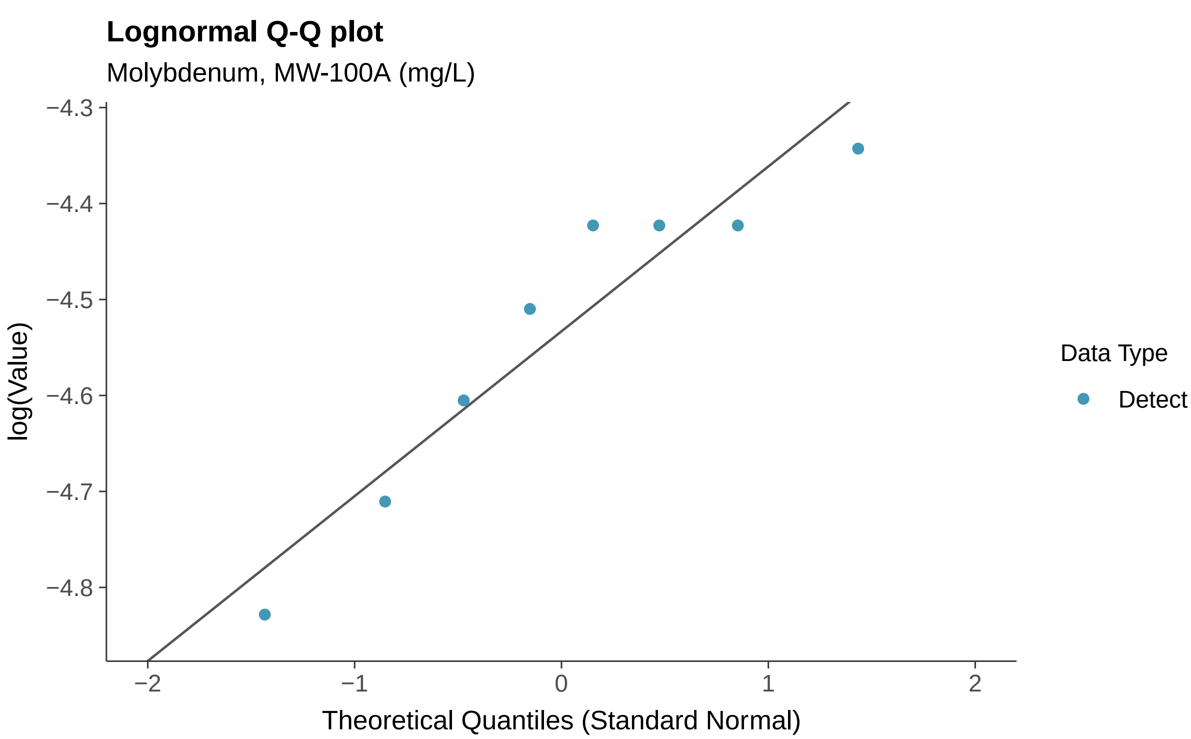


Boxplot by Season

Molybdenum, MW-100A (mg/L)

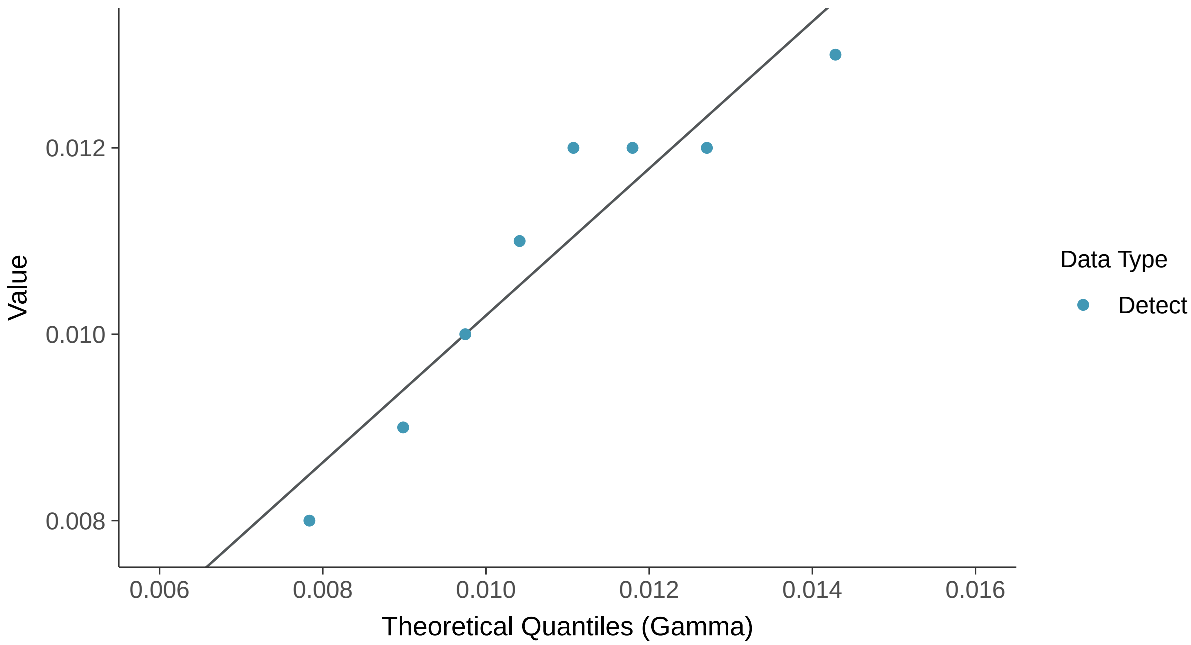



Normal Q-Q plot
Molybdenum, MW-100A (mg/L)
Value
0.012
0.010
0.008
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Molybdenum, MW-100A (mg/L)
log(Value)
−4.3
−4.4
−4.5
−4.6
−4.7
−4.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

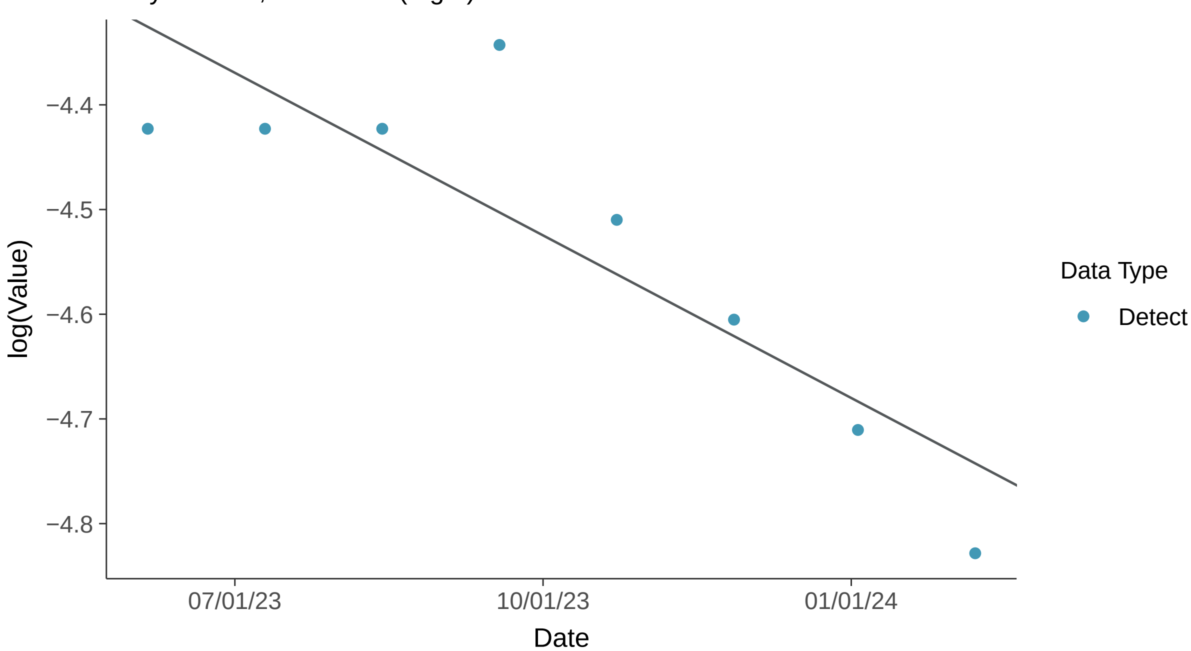
Gamma Q-Q plot

Molybdenum, MW-100A (mg/L)



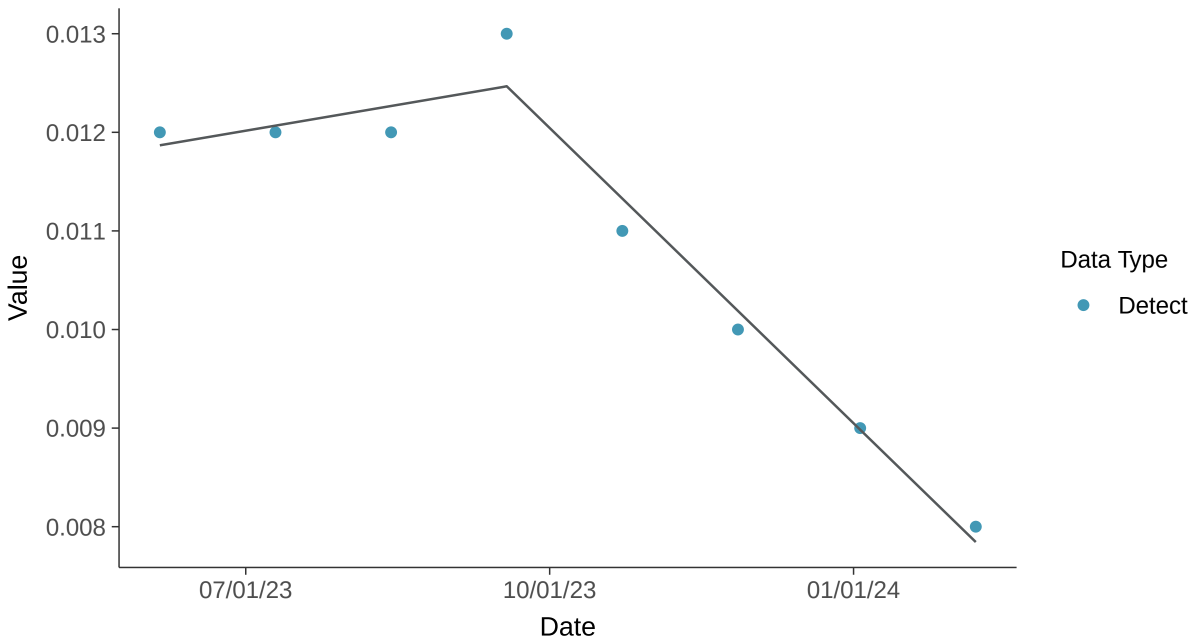
Trend Regression: Lognormal MLE

Molybdenum, MW-100A (mg/L)



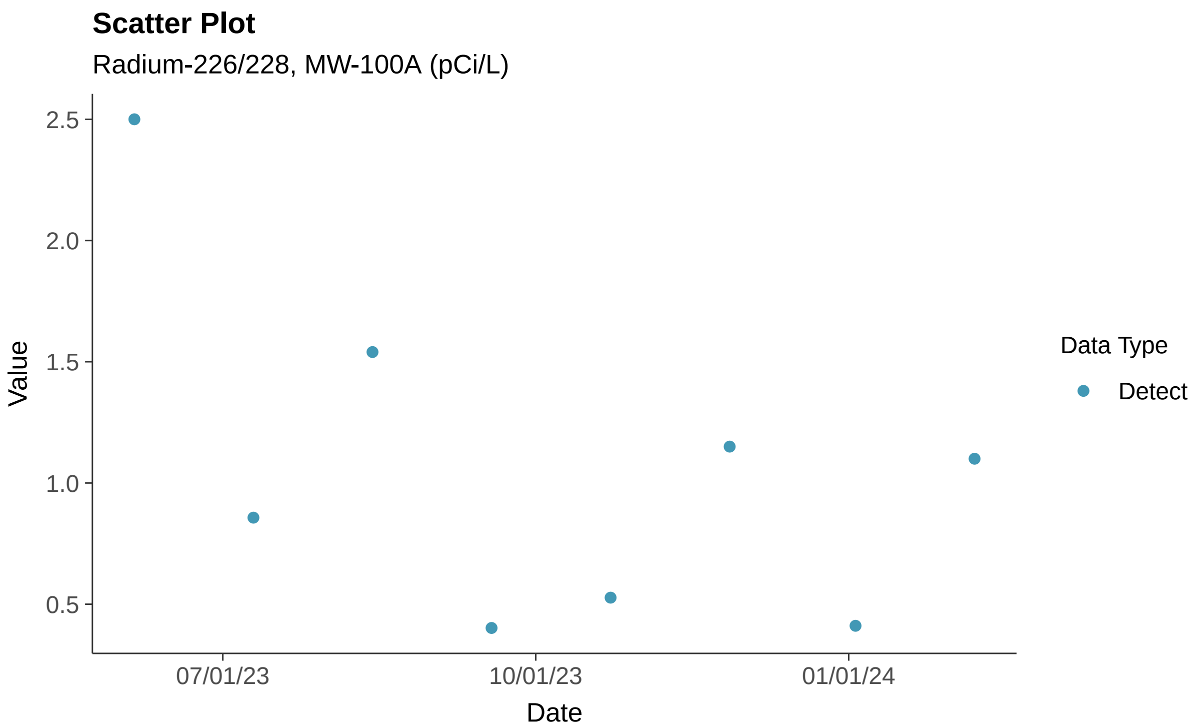
Trend Regression: Piecewise Linear-Linear

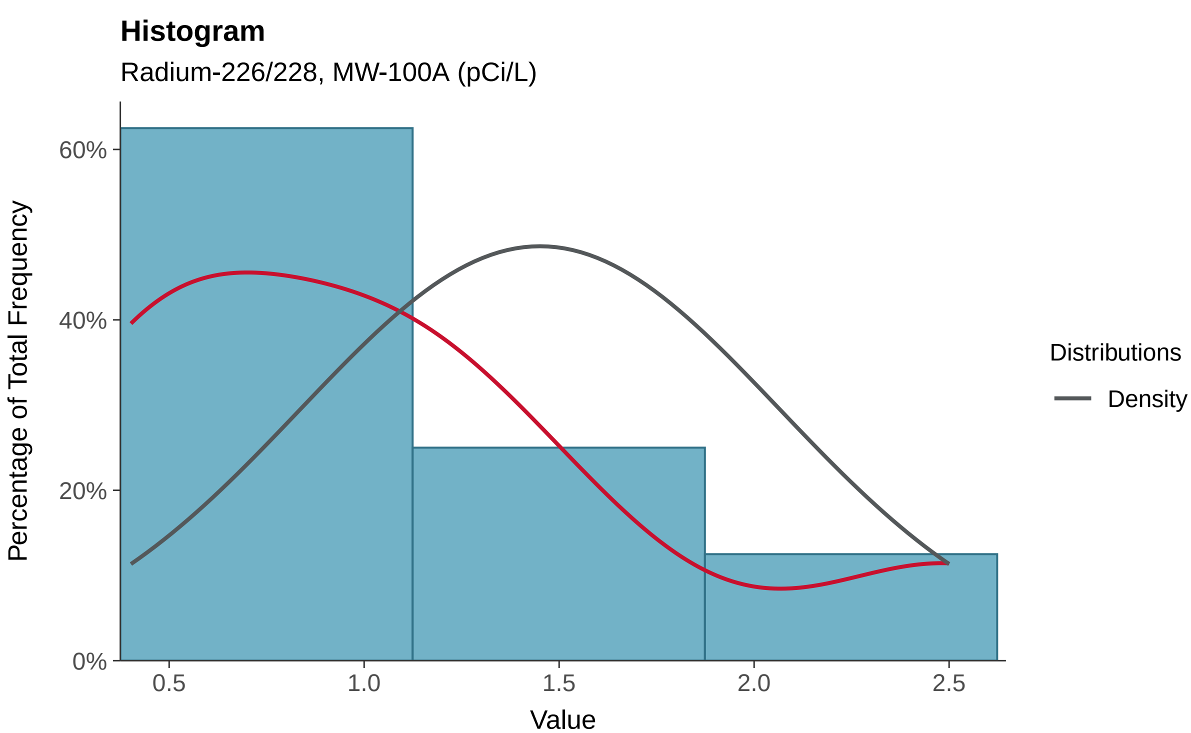
Molybdenum, MW-100A (mg/L)



Appendix IV: Radium-226/228, MW-100A

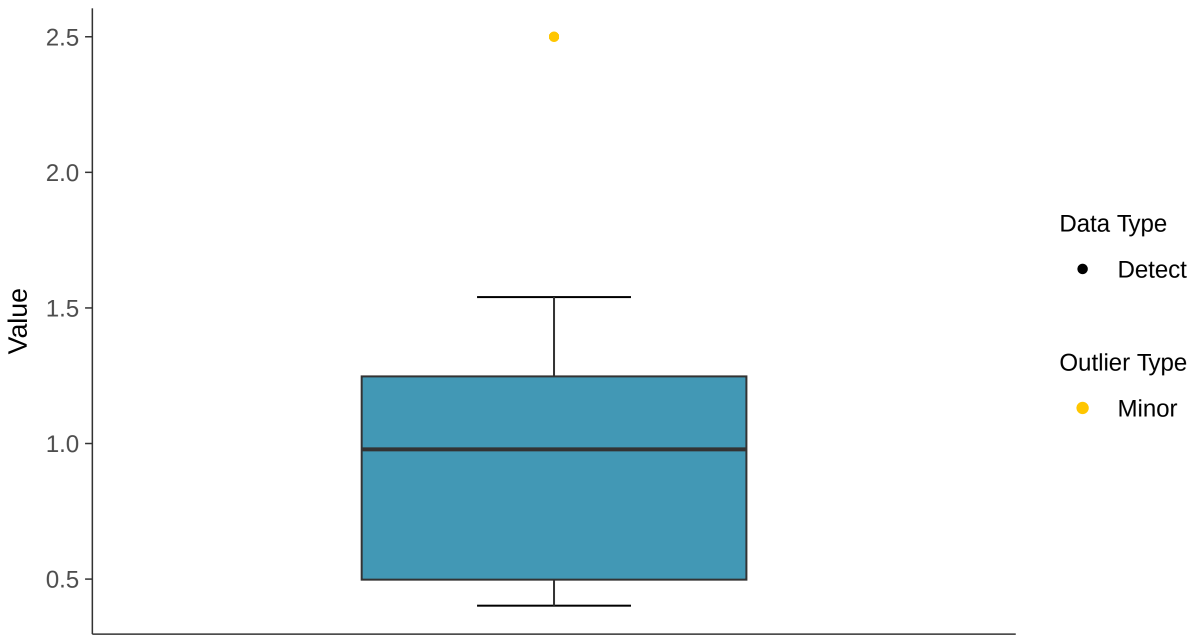
ID: 100A_2_20





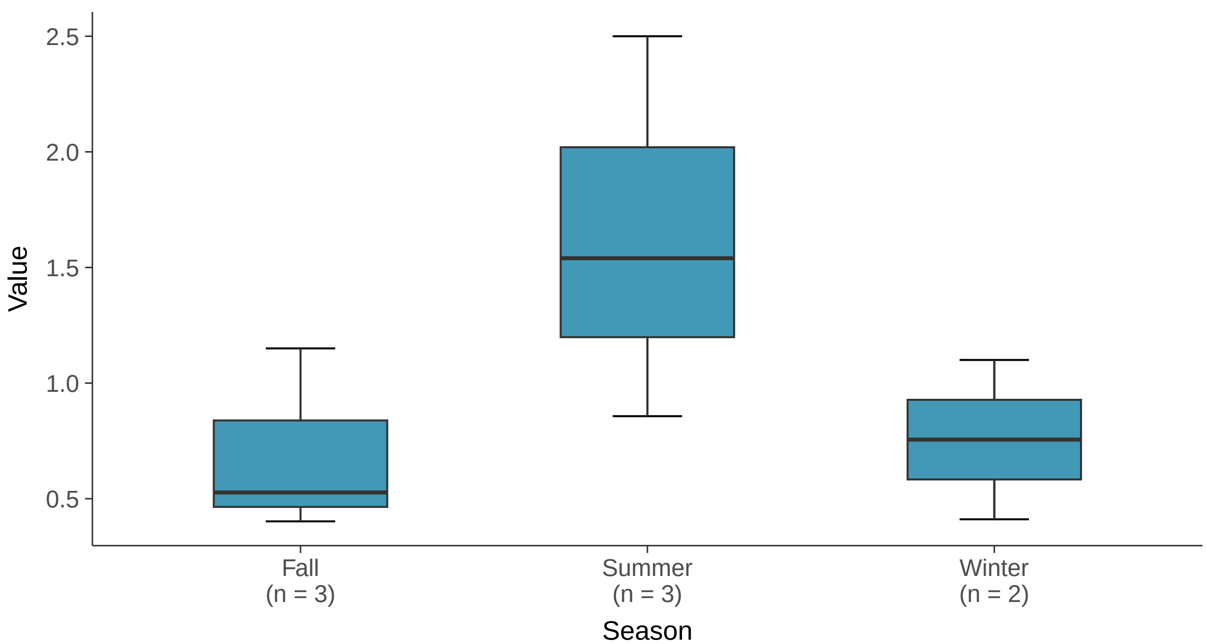
Boxplot

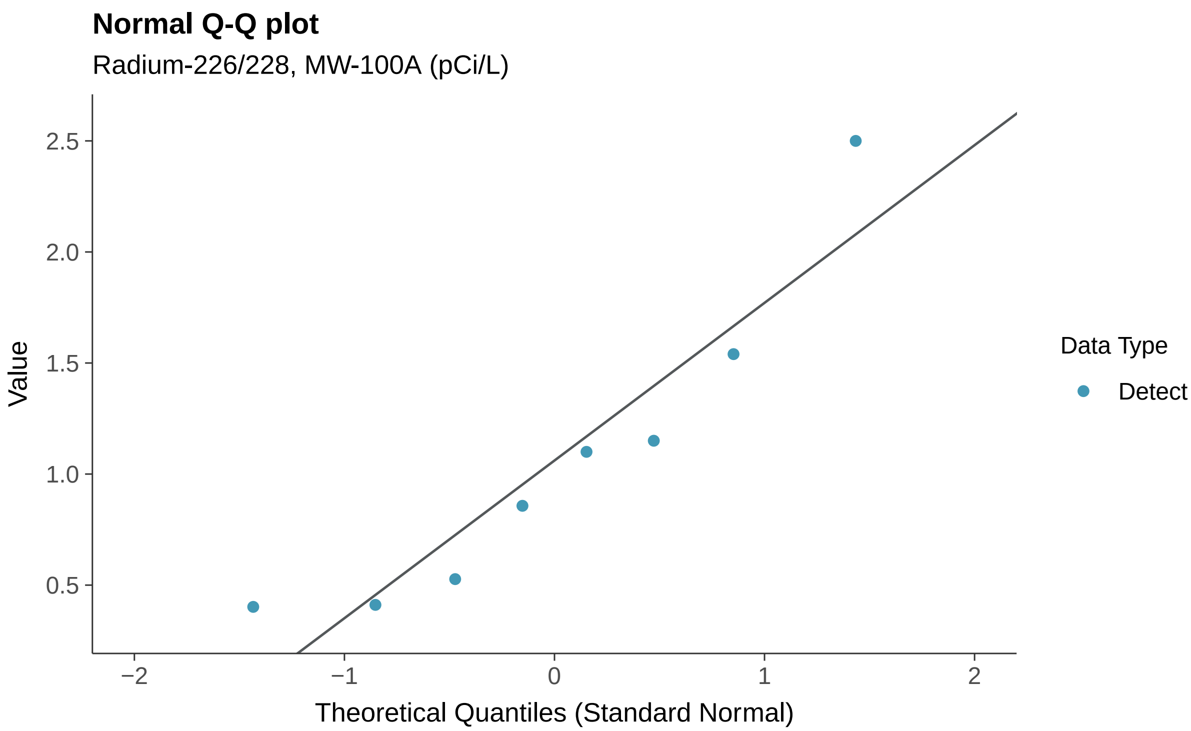
Radium-226/228, MW-100A (pCi/L)

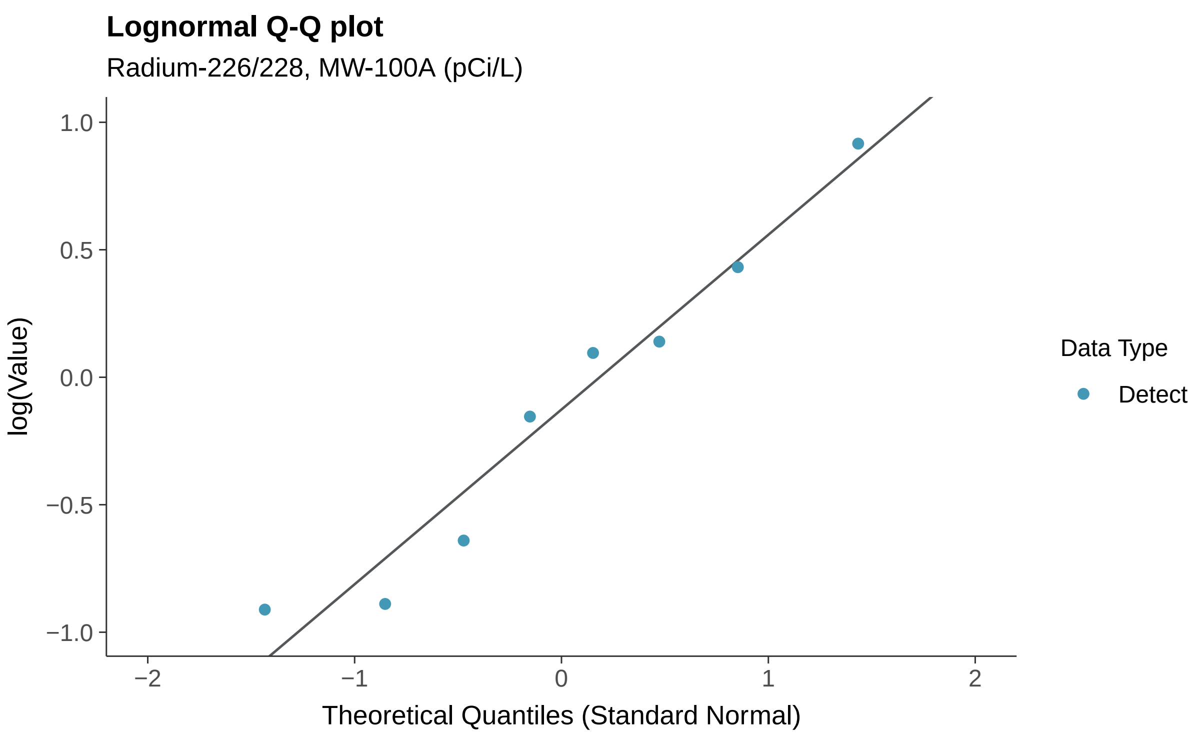


Boxplot by Season

Radium-226/228, MW-100A (pCi/L)

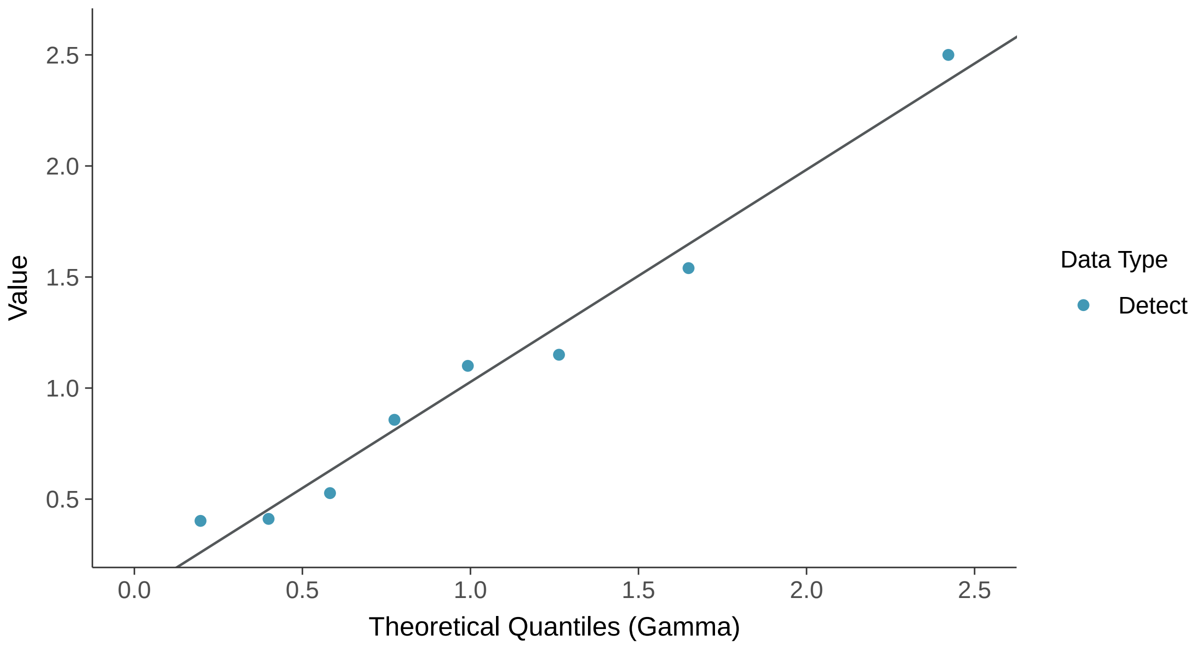



Normal Q-Q plot
Radium-226/228, MW-100A (pCi/L)
Value
2.5
2.0
1.5
1.0
0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Radium-226/228, MW-100A (pCi/L)
log(Value)
1.0
0.5
0.0
−0.5
−1.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

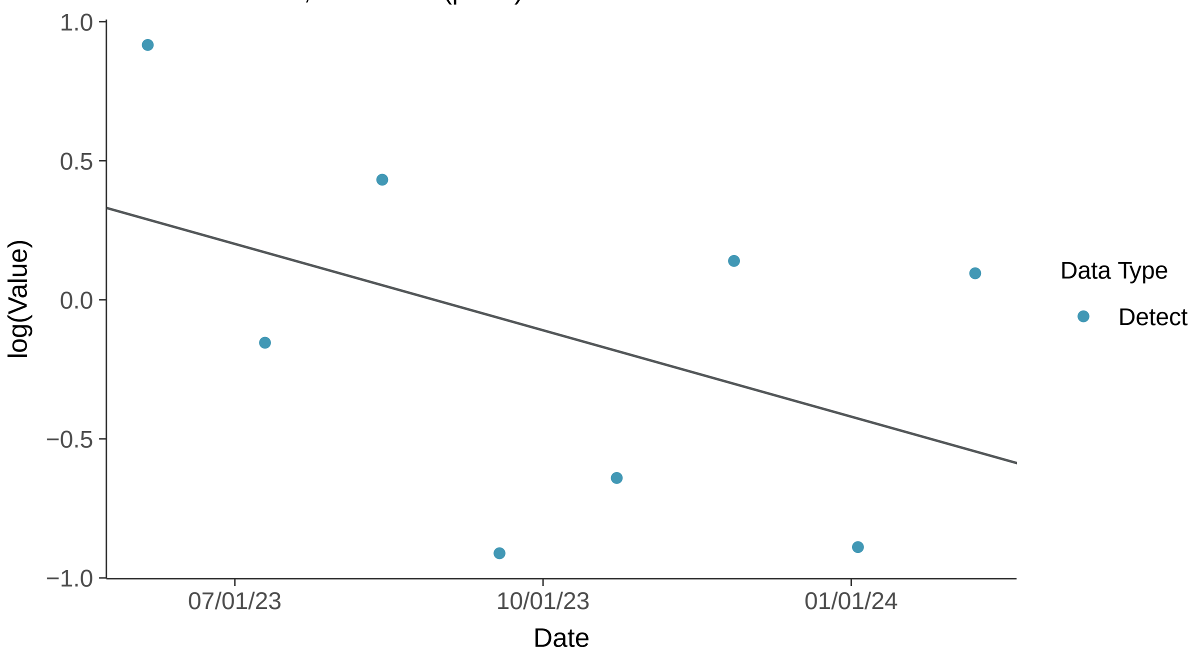
Gamma Q-Q plot

Radium-226/228, MW-100A (pCi/L)



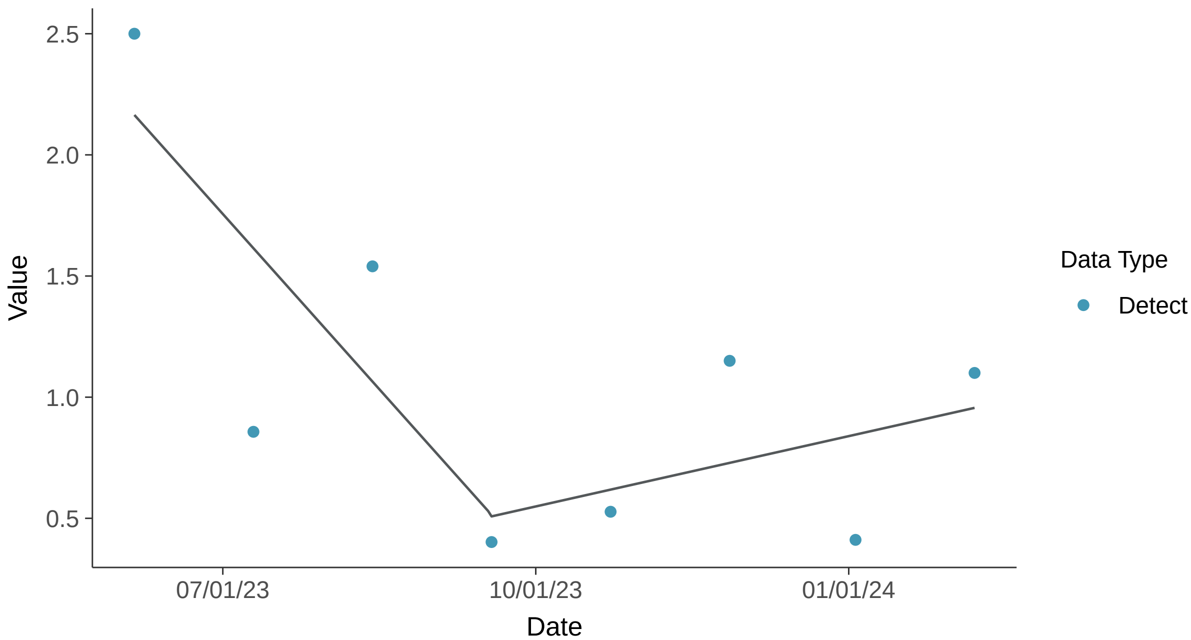
Trend Regression: Lognormal MLE

Radium-226/228, MW-100A (pCi/L)



Trend Regression: Piecewise Linear-Linear

Radium-226/228, MW-100A (pCi/L)

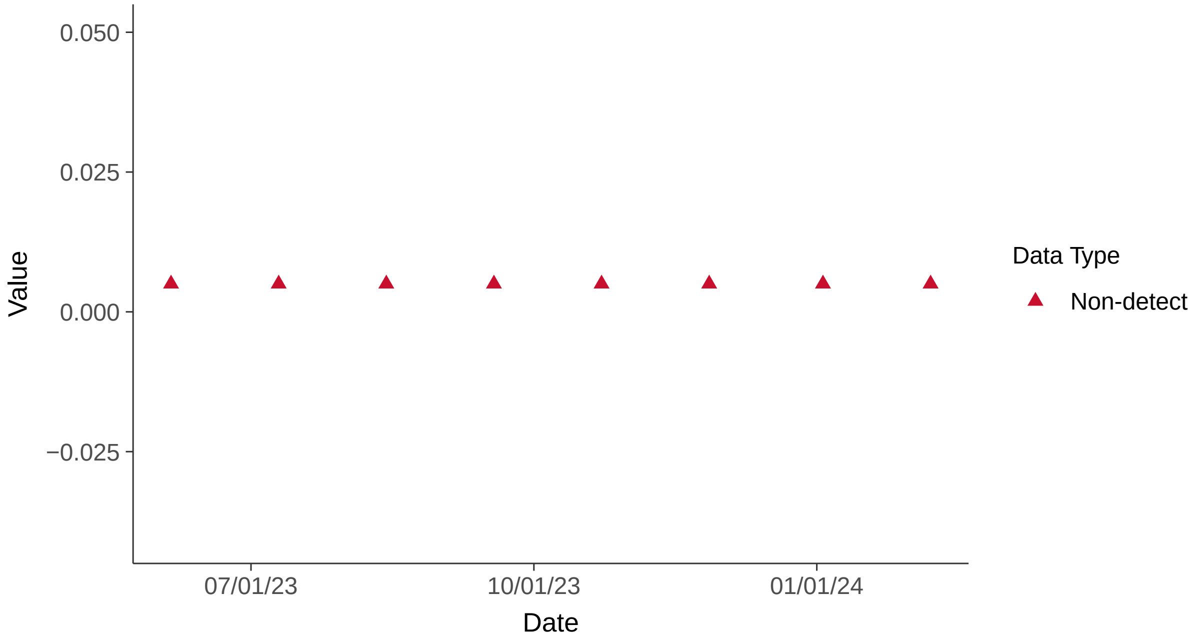


Appendix IV: Selenium, MW-100A

ID: 100A_2_22

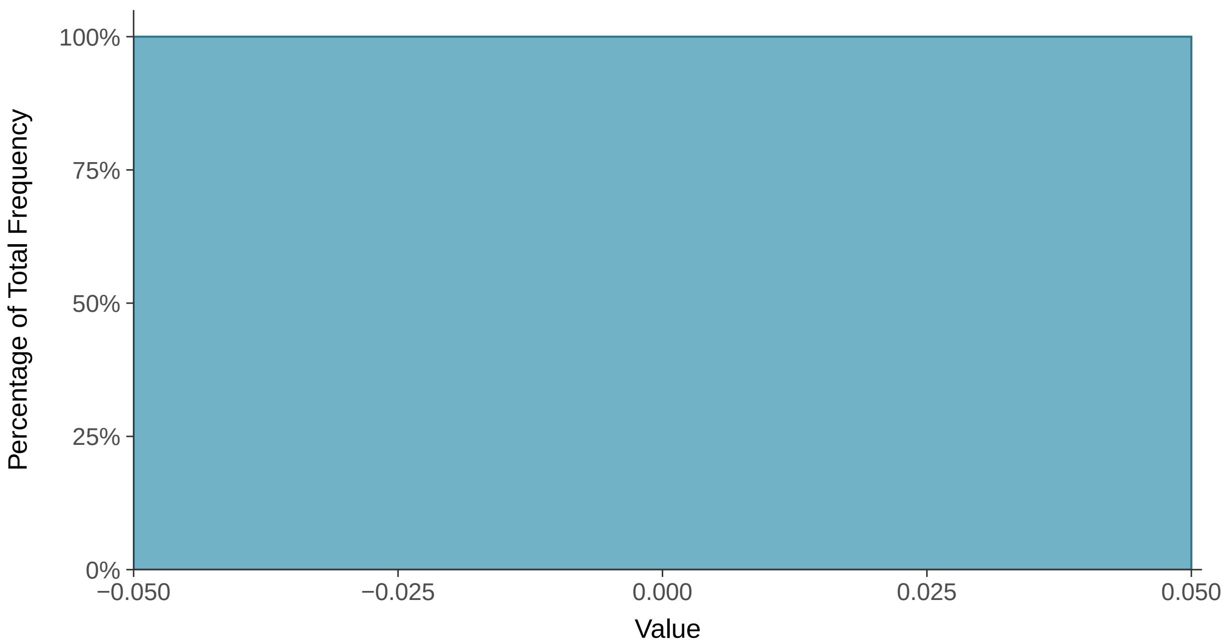
Scatter Plot

Selenium, MW-100A (mg/L)



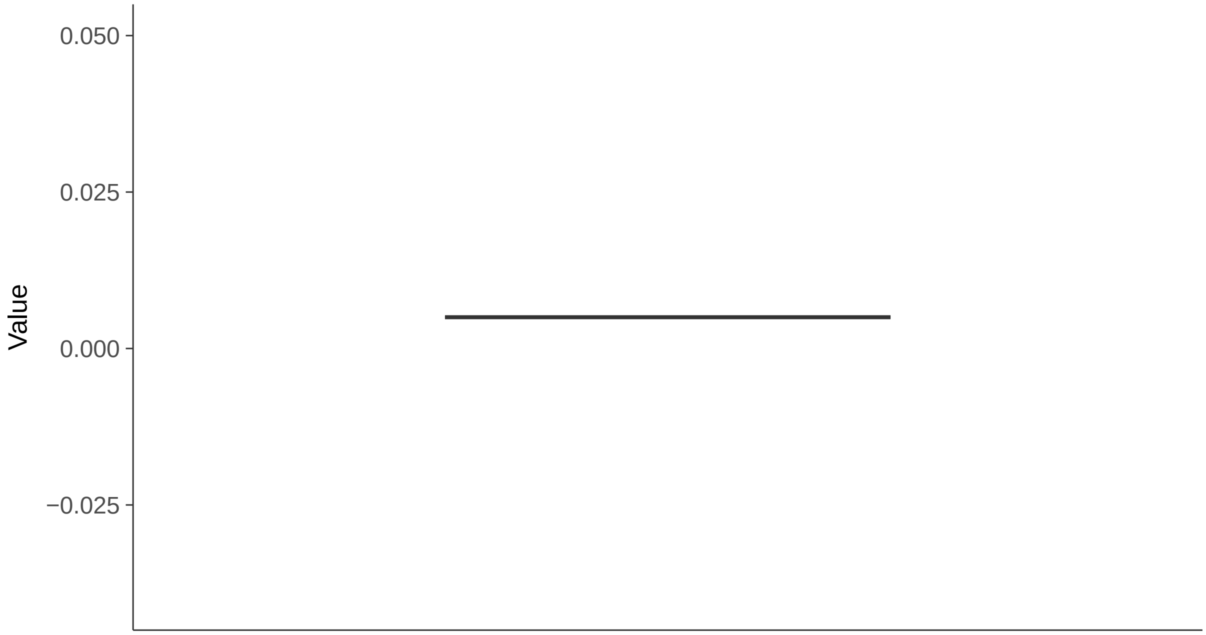
Histogram

Selenium, MW-100A (mg/L)



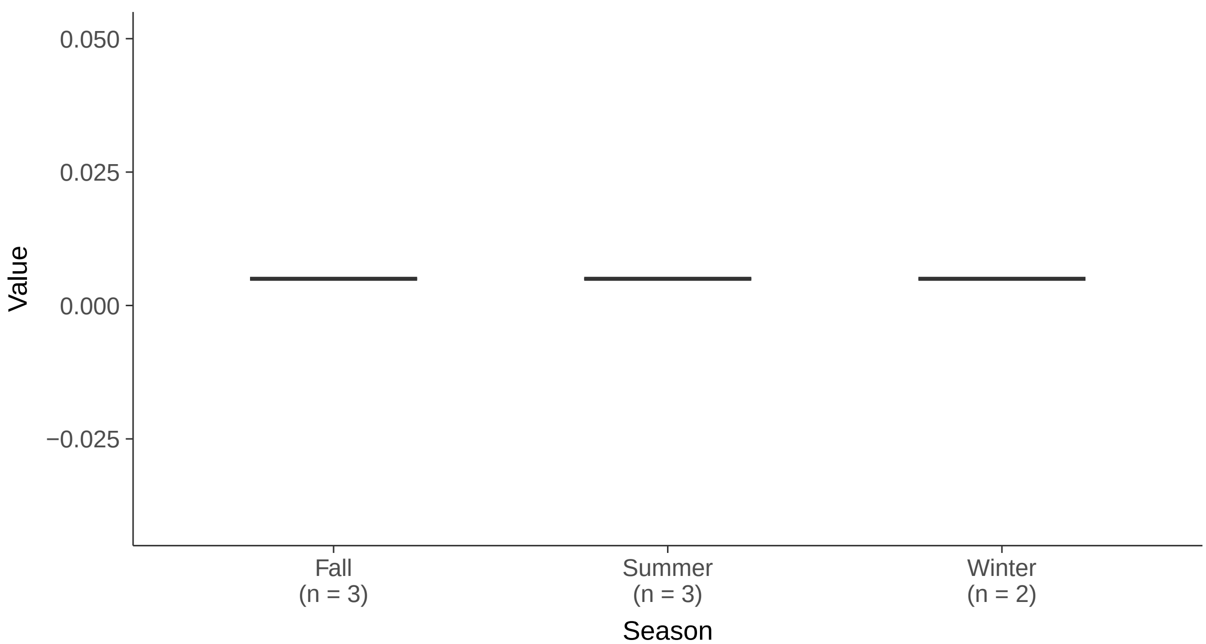
Boxplot

Selenium, MW-100A (mg/L)



Boxplot by Season

Selenium, MW-100A (mg/L)

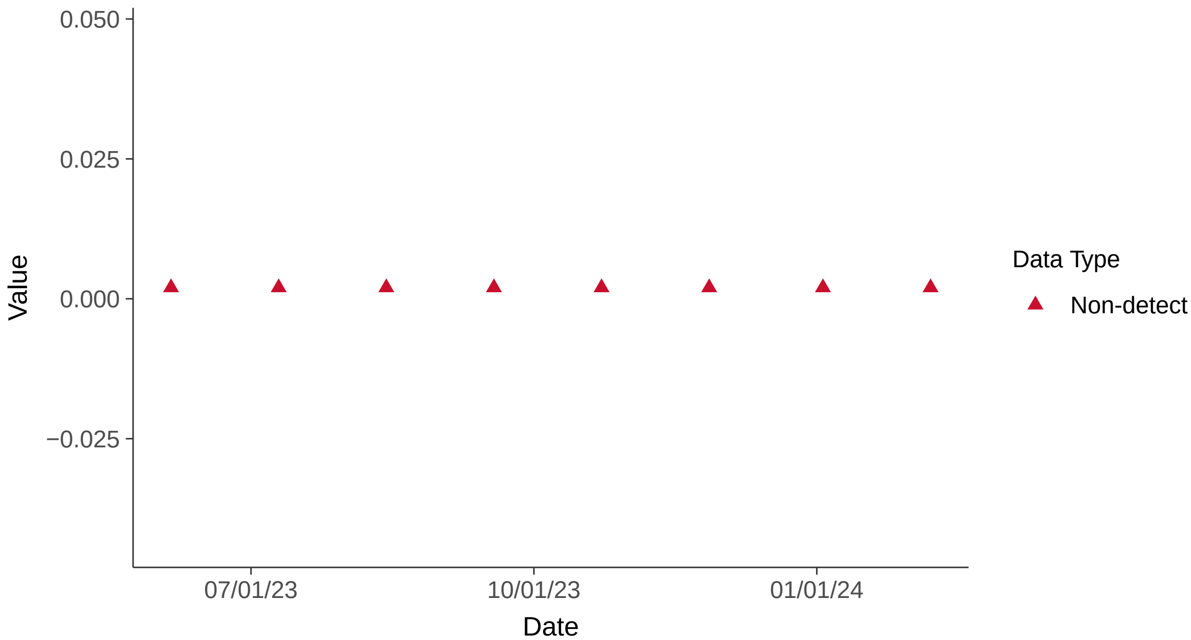


Appendix IV: Thallium, MW-100A

ID: 100A_2_23

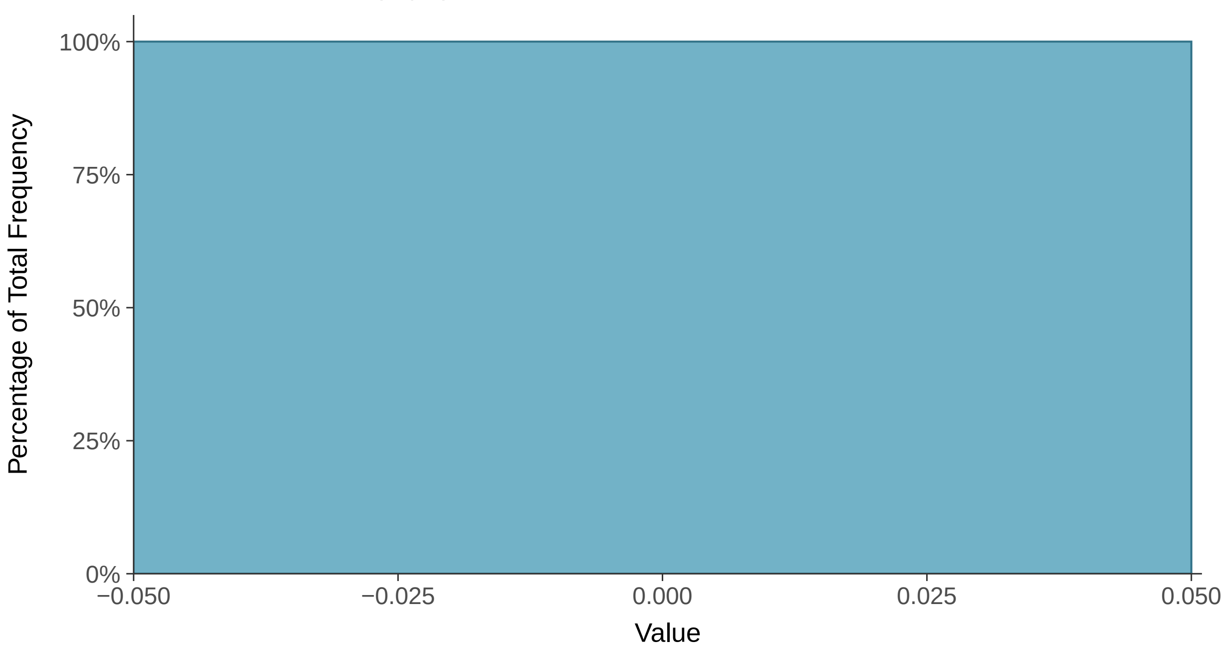
Scatter Plot

Thallium, MW-100A (mg/L)



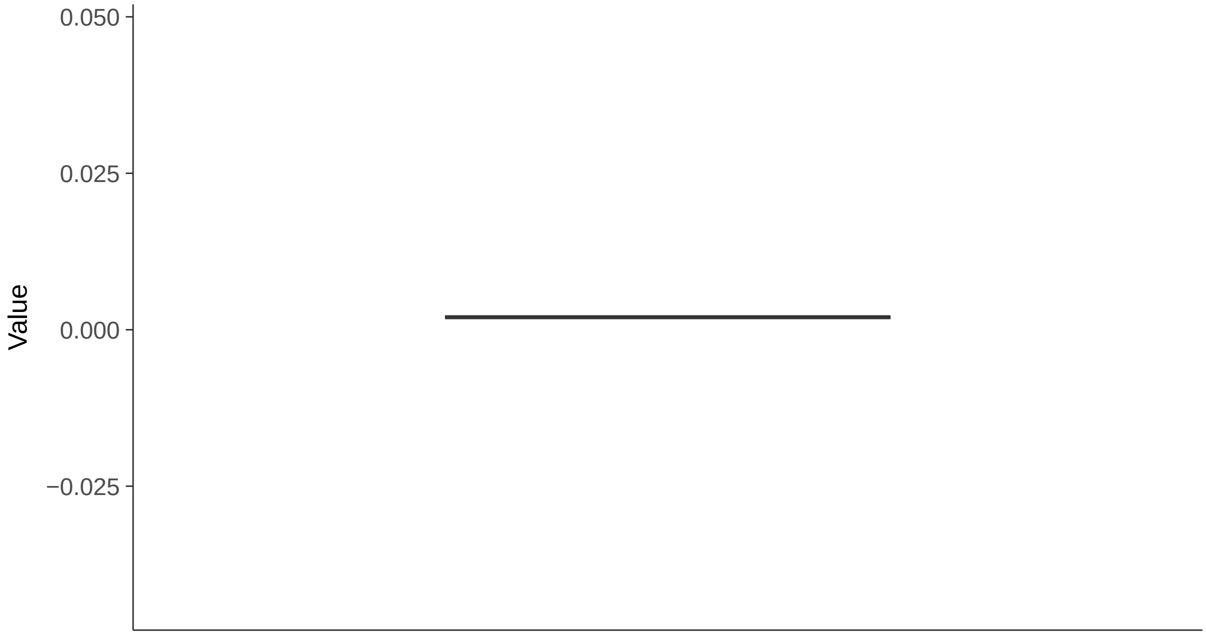
Histogram

Thallium, MW-100A (mg/L)



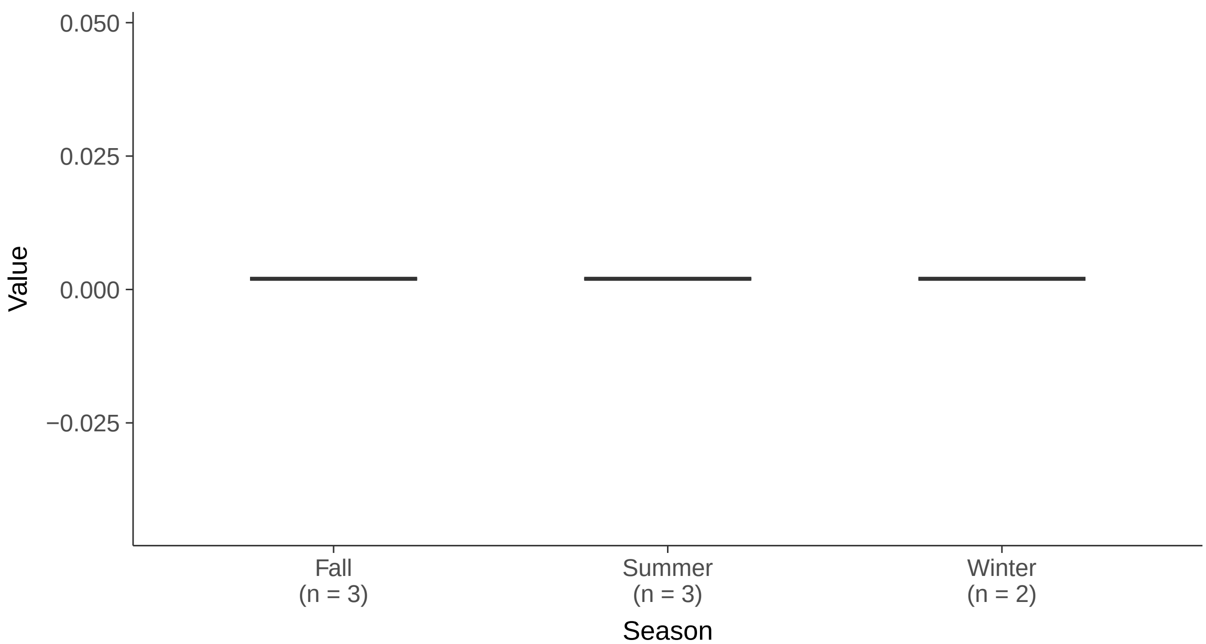
Boxplot

Thallium, MW-100A (mg/L)



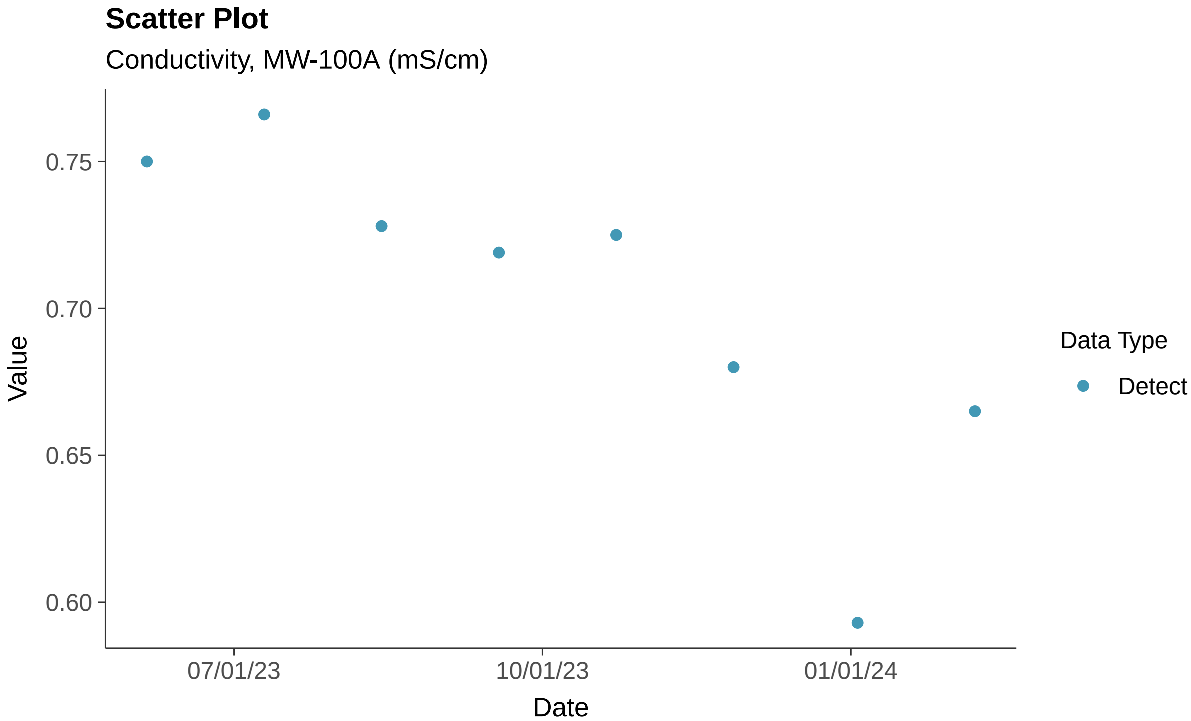
Boxplot by Season

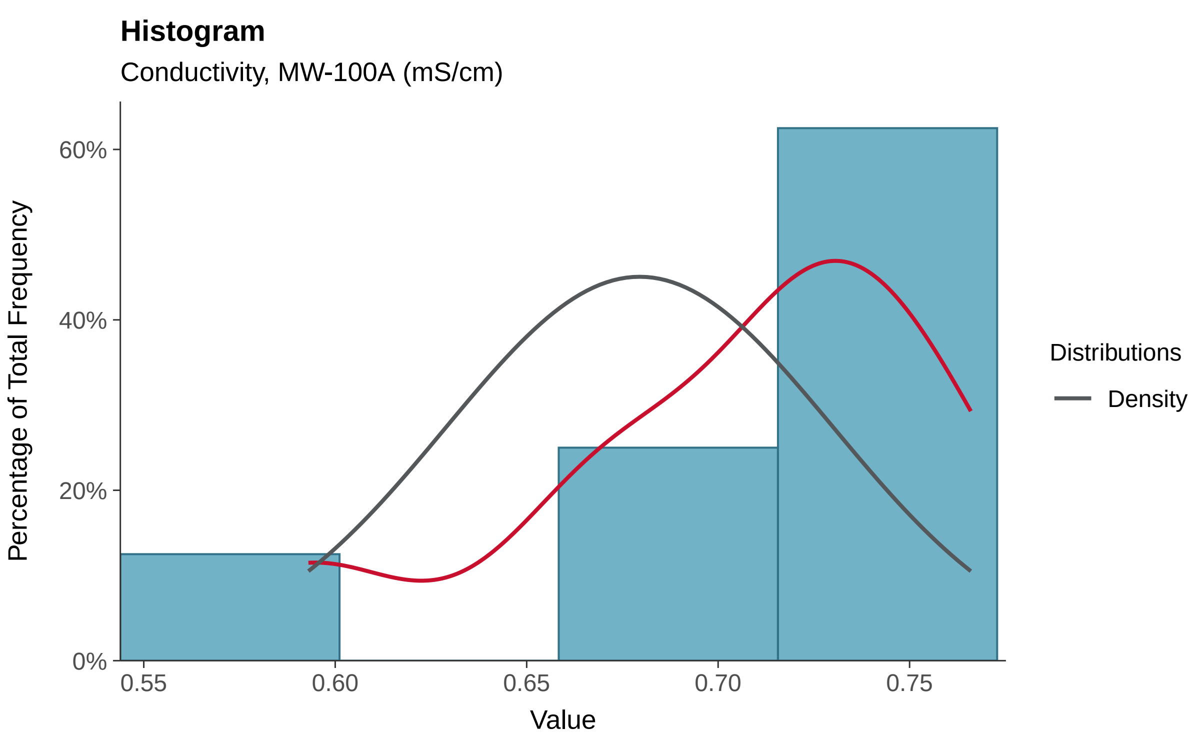
Thallium, MW-100A (mg/L)



Field Parameters: Conductivity, MW-100A

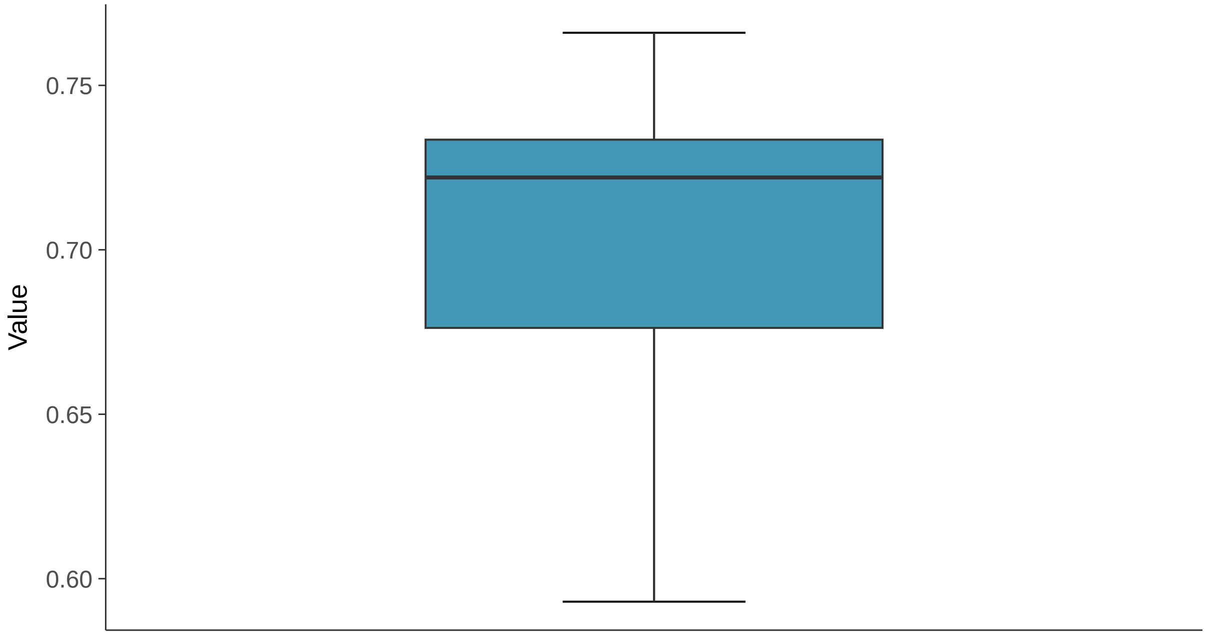
ID: 100A_3_24





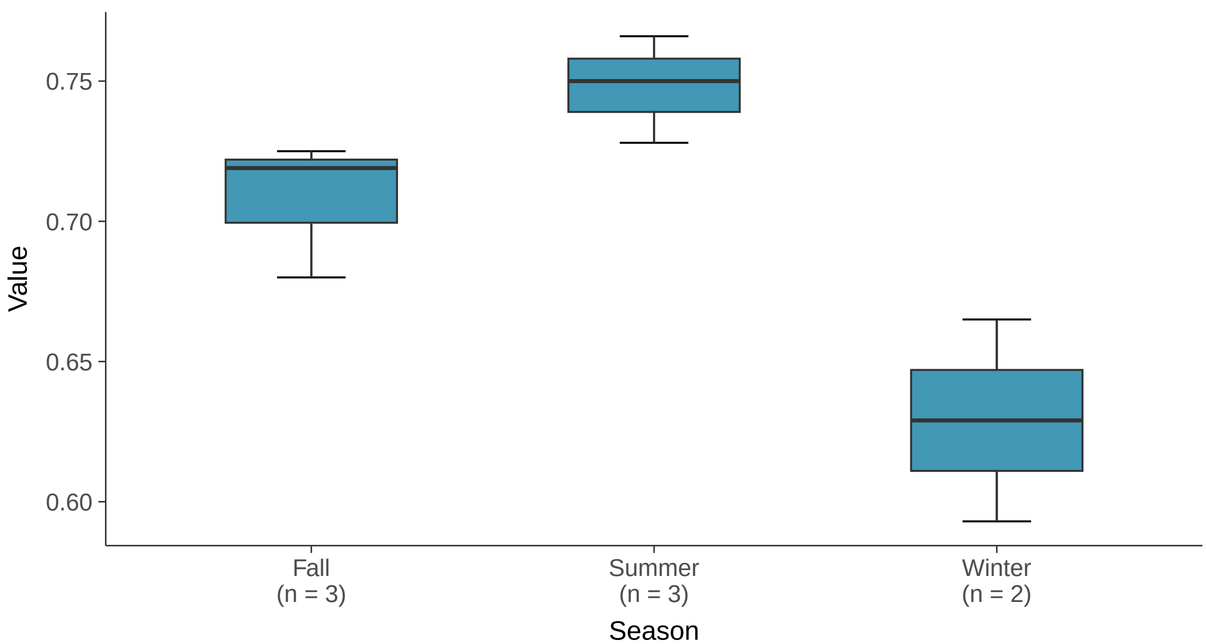
Boxplot

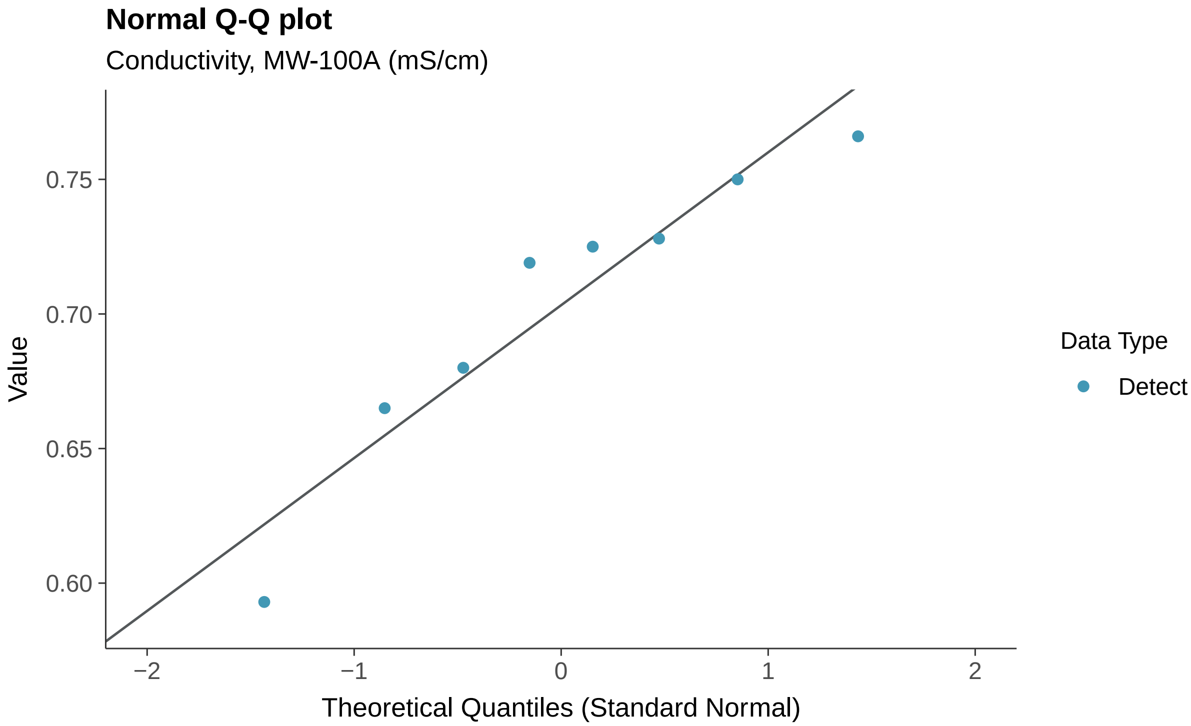
Conductivity, MW-100A (mS/cm)

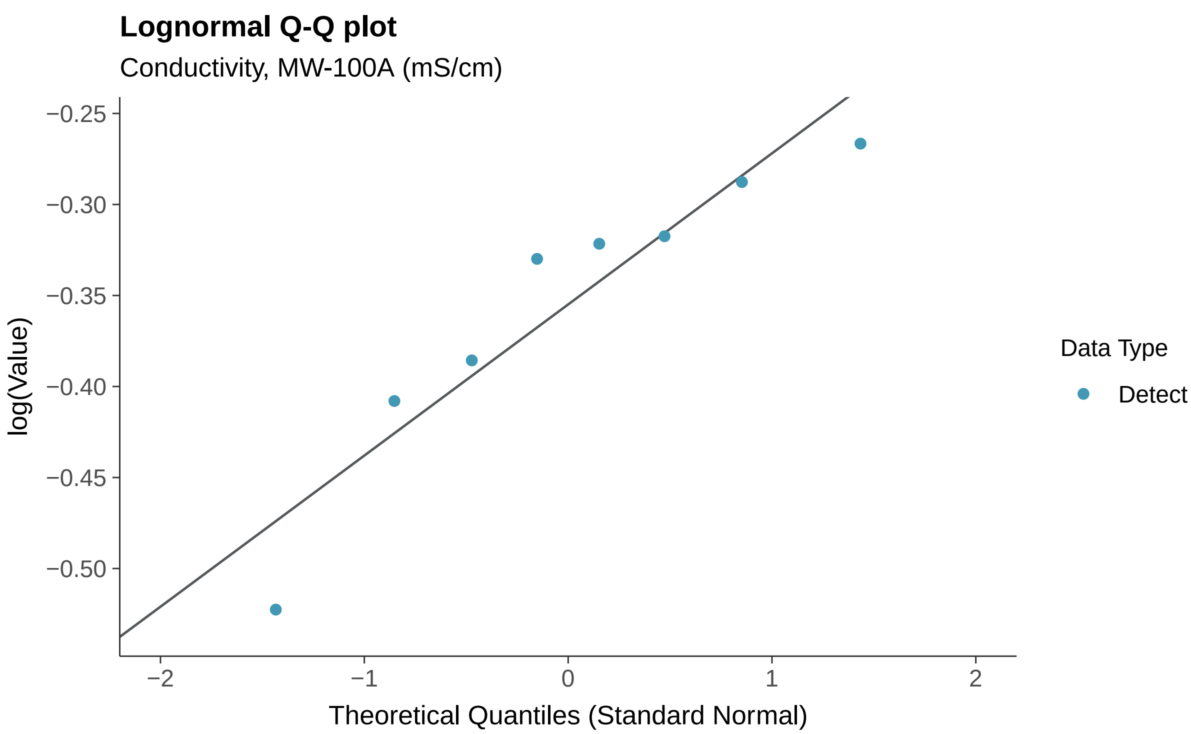


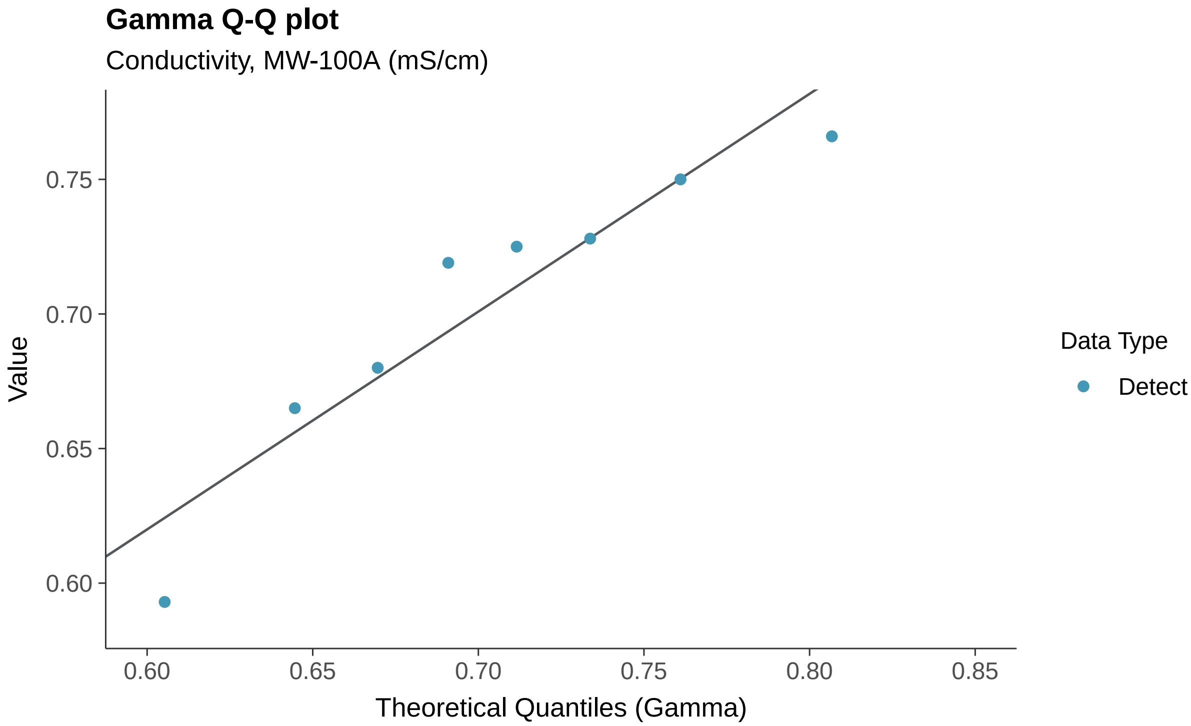
Boxplot by Season

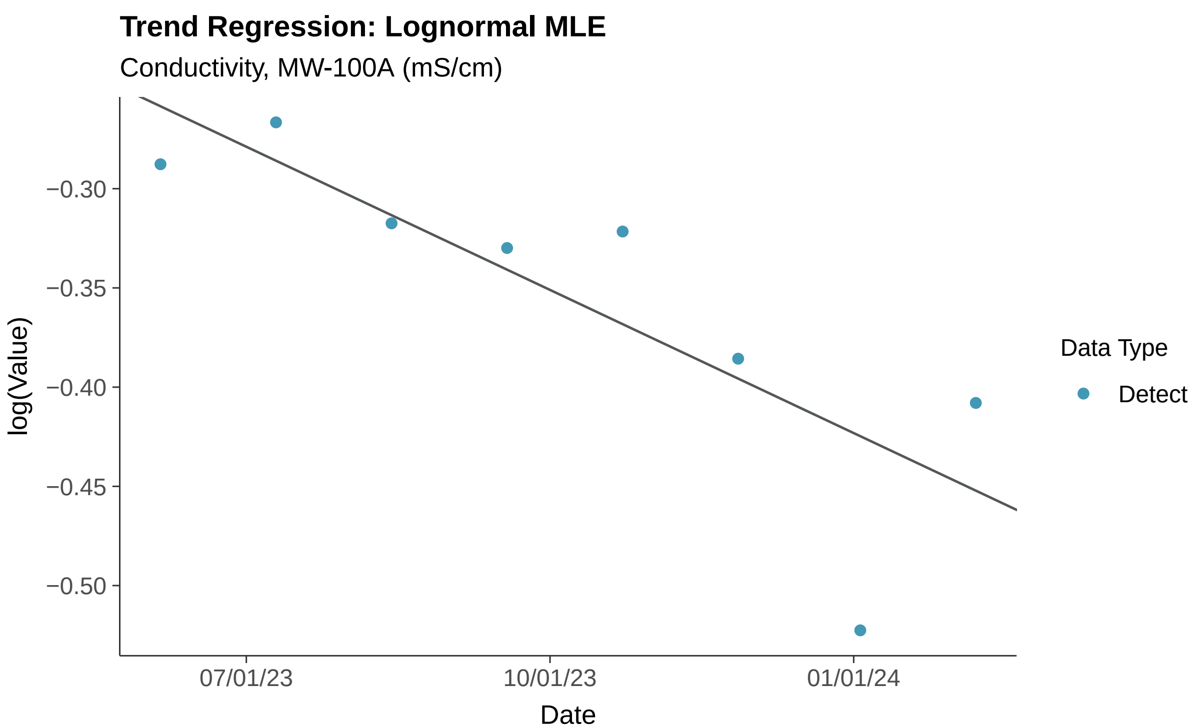
Conductivity, MW-100A (mS/cm)




Normal Q-Q plot
Conductivity, MW-100A (mS/cm)
Value
0.75
0.70
0.65
0.60
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Conductivity, MW-100A (mS/cm)
log(Value)
−0.25
−0.30
−0.35
−0.40
−0.45
−0.50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Conductivity, MW-100A (mS/cm)
Value
0.75
0.70
0.65
0.60
0.60
0.65
0.70
0.75
0.80
0.85
Theoretical Quantiles (Gamma)
Data Type
Detect

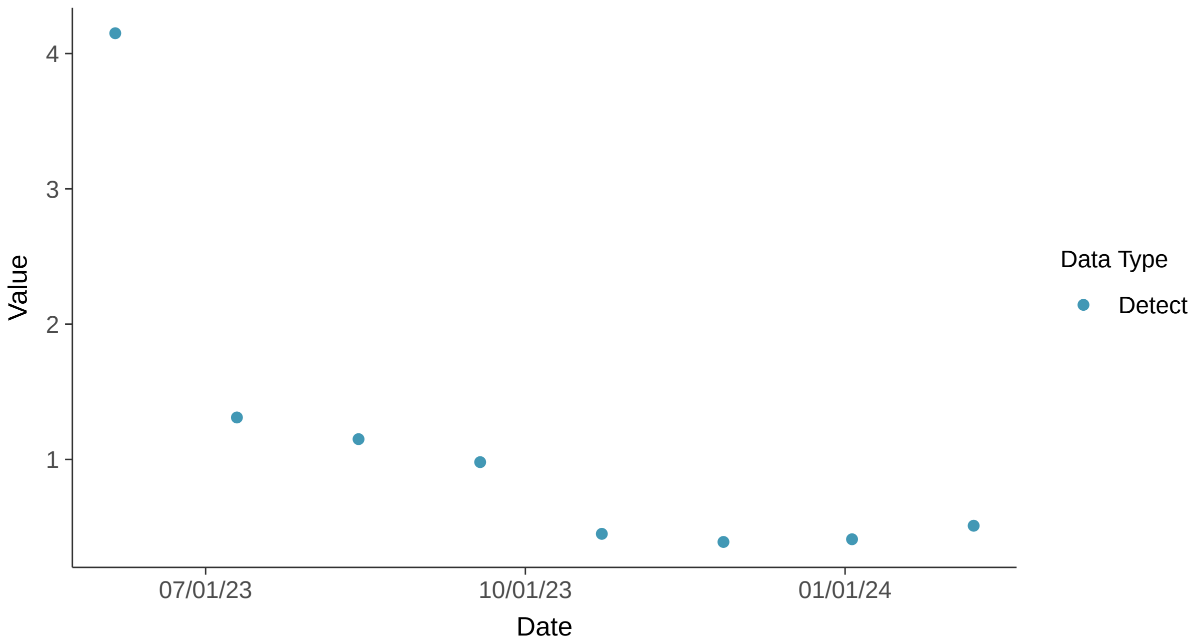

Trend Regression: Lognormal MLE
Conductivity, MW-100A (mS/cm)
log(Value)
−0.30
−0.35
−0.40
−0.45
−0.50
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Dissolved Oxygen, MW-100A

ID: 100A_3_25

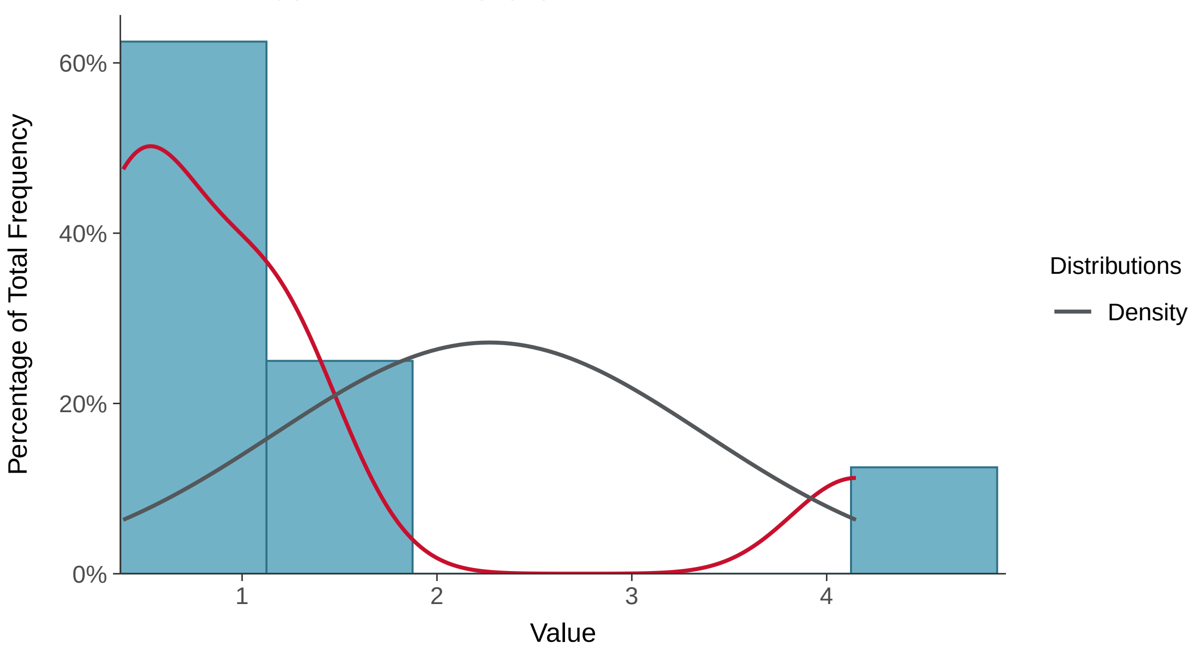
Scatter Plot

Dissolved Oxygen, MW-100A (mg/L)



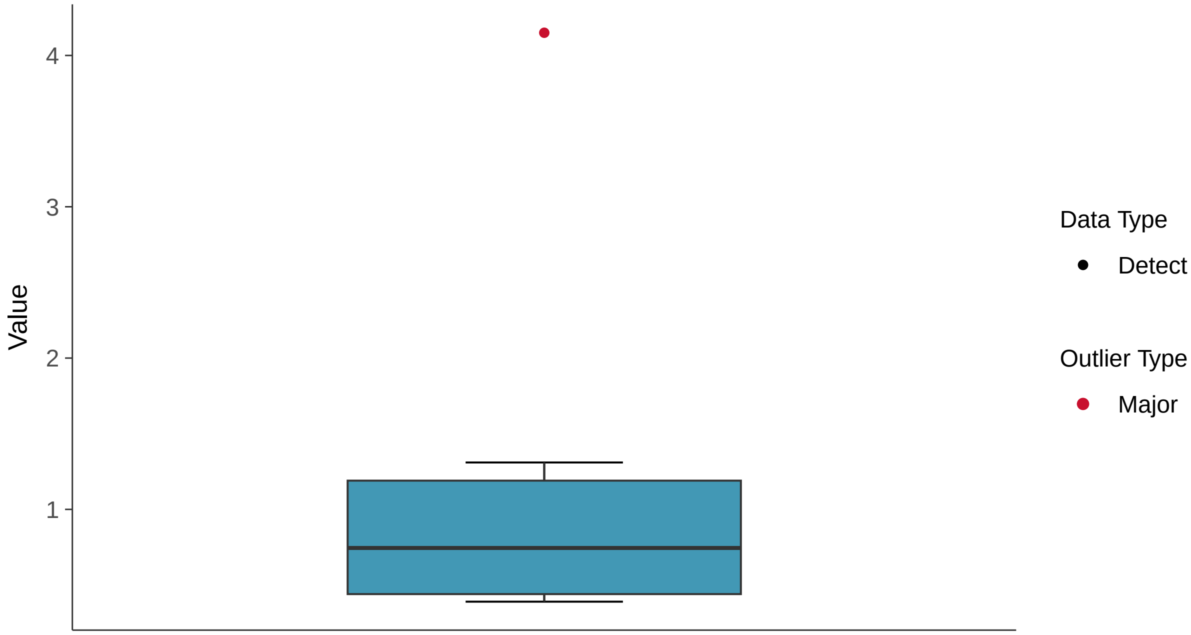
Histogram

Dissolved Oxygen, MW-100A (mg/L)



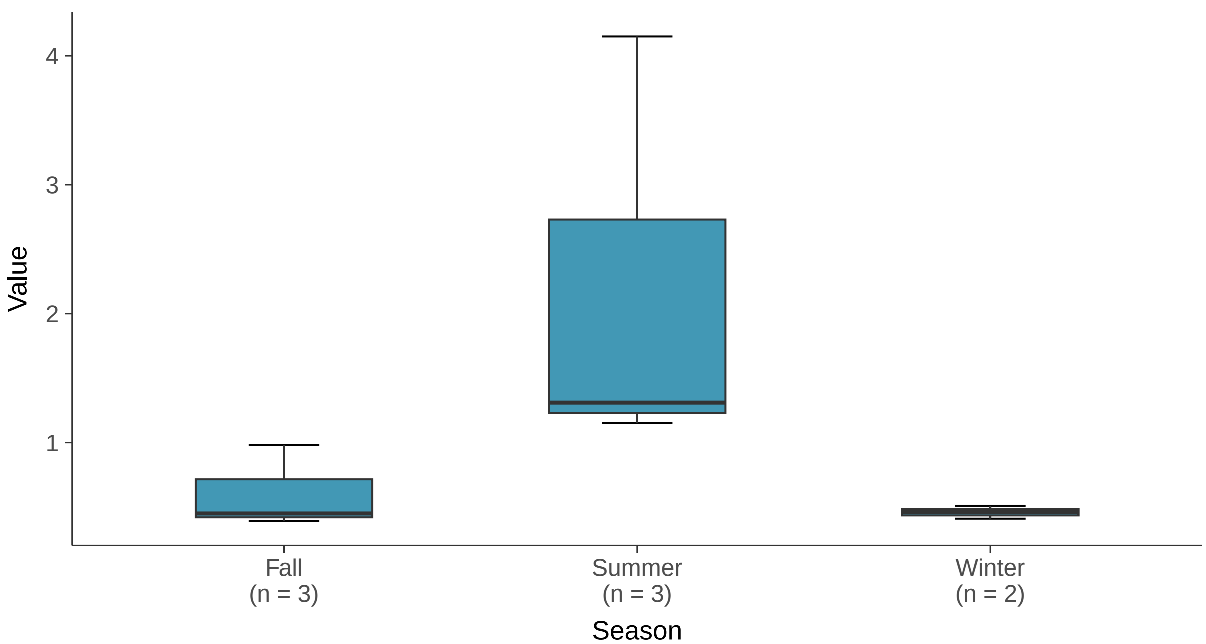
Boxplot

Dissolved Oxygen, MW-100A (mg/L)



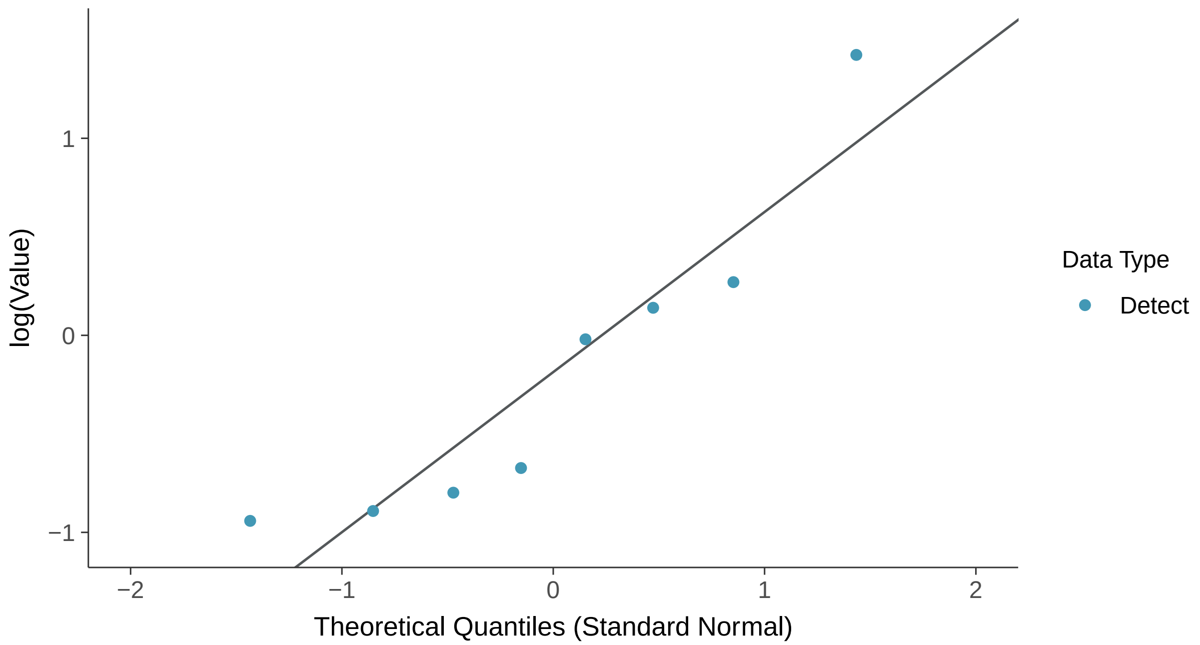
Boxplot by Season

Dissolved Oxygen, MW-100A (mg/L)



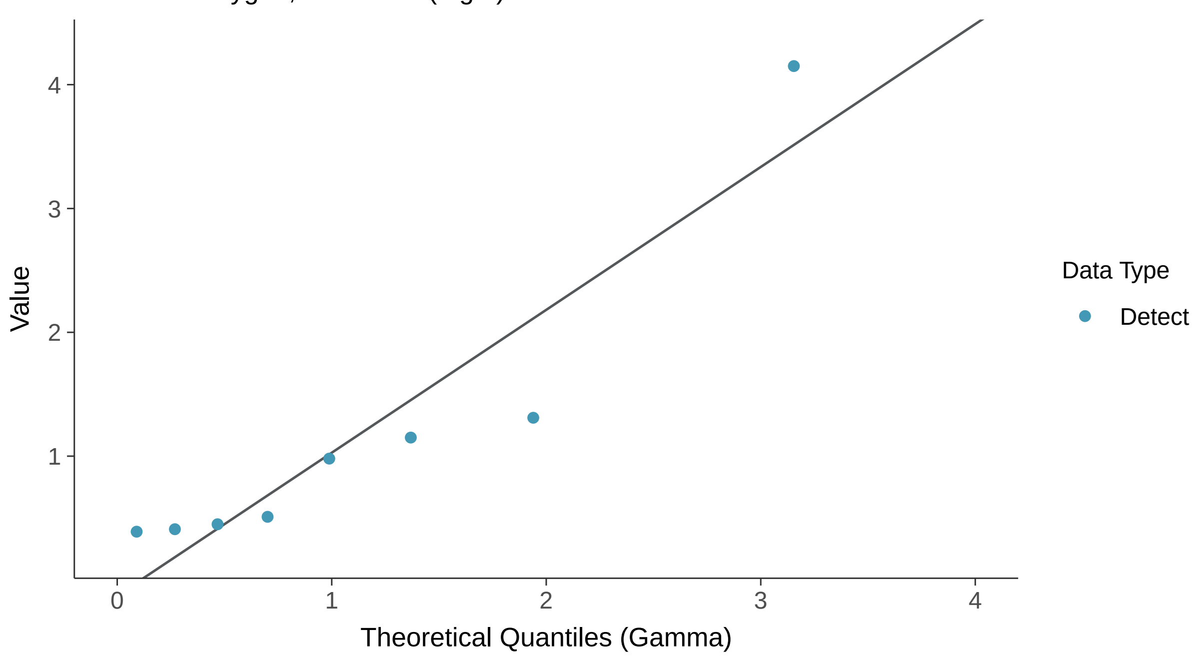
Lognormal Q-Q plot

Dissolved Oxygen, MW-100A (mg/L)



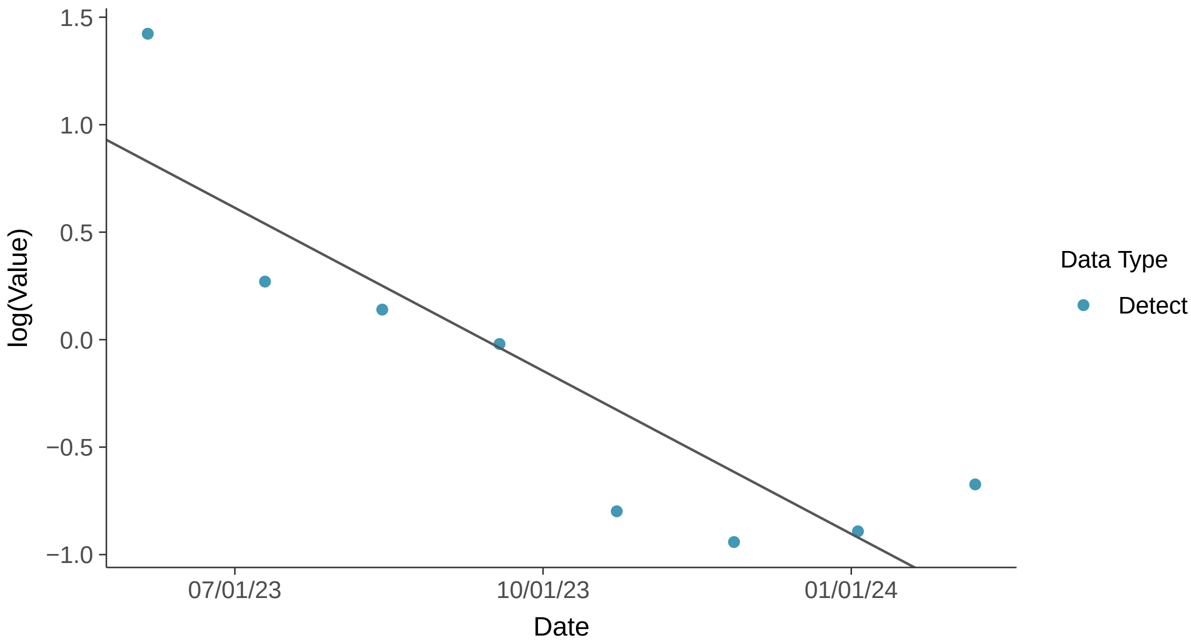
Gamma Q-Q plot

Dissolved Oxygen, MW-100A (mg/L)



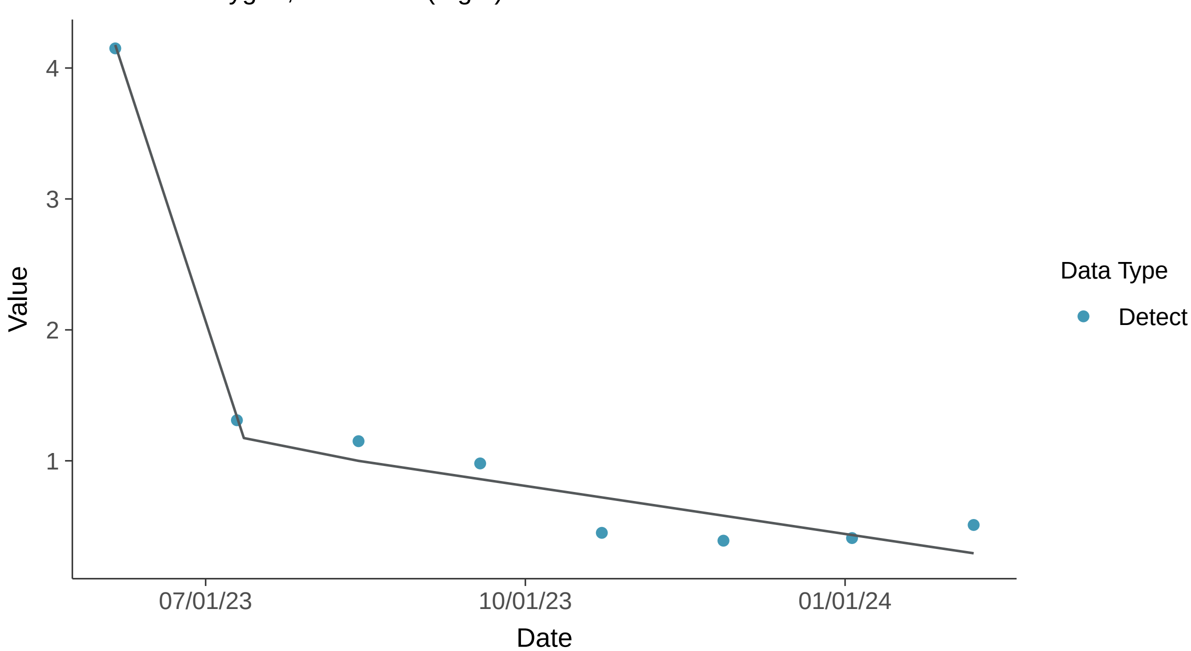
Trend Regression: Lognormal MLE

Dissolved Oxygen, MW-100A (mg/L)



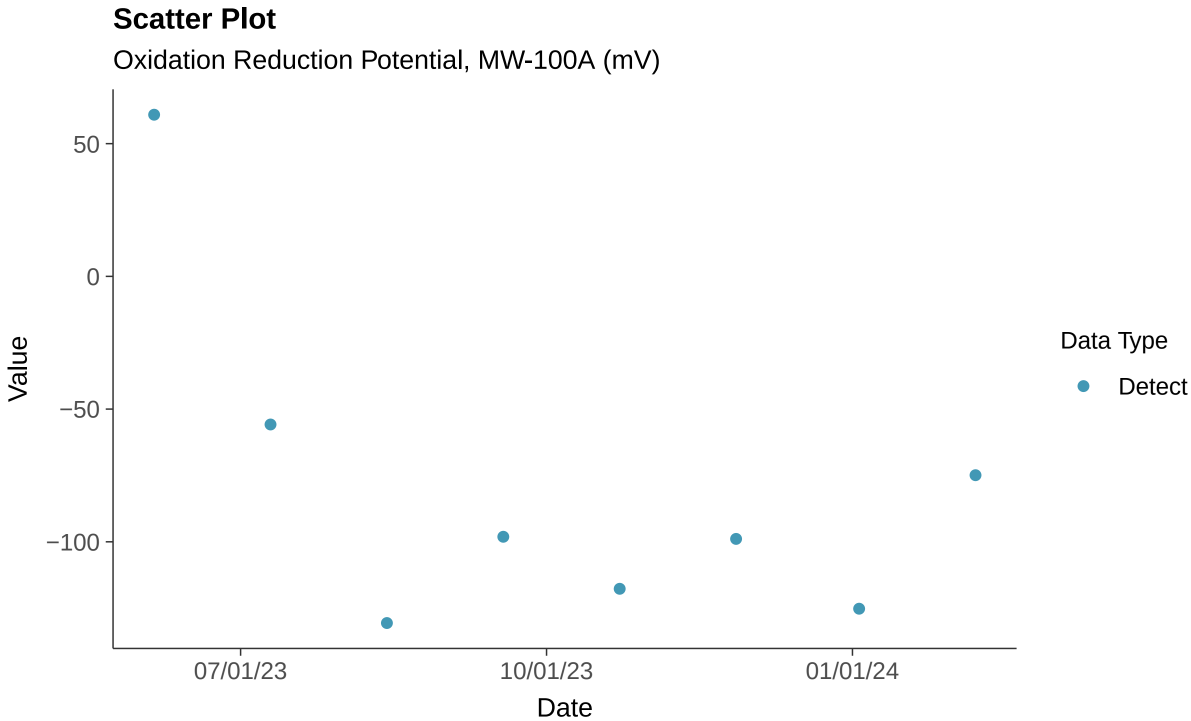
Trend Regression: Piecewise Linear-Linear

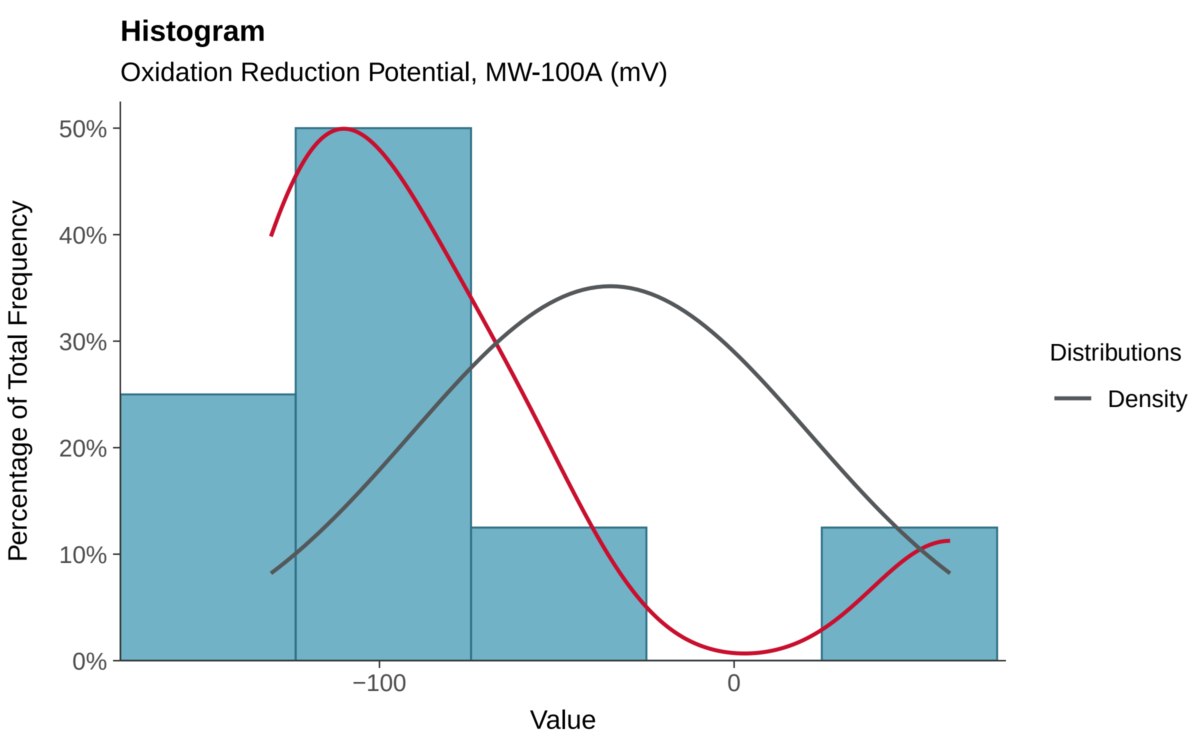
Dissolved Oxygen, MW-100A (mg/L)



Field Parameters: Oxidation Reduction Potential, MW-100A

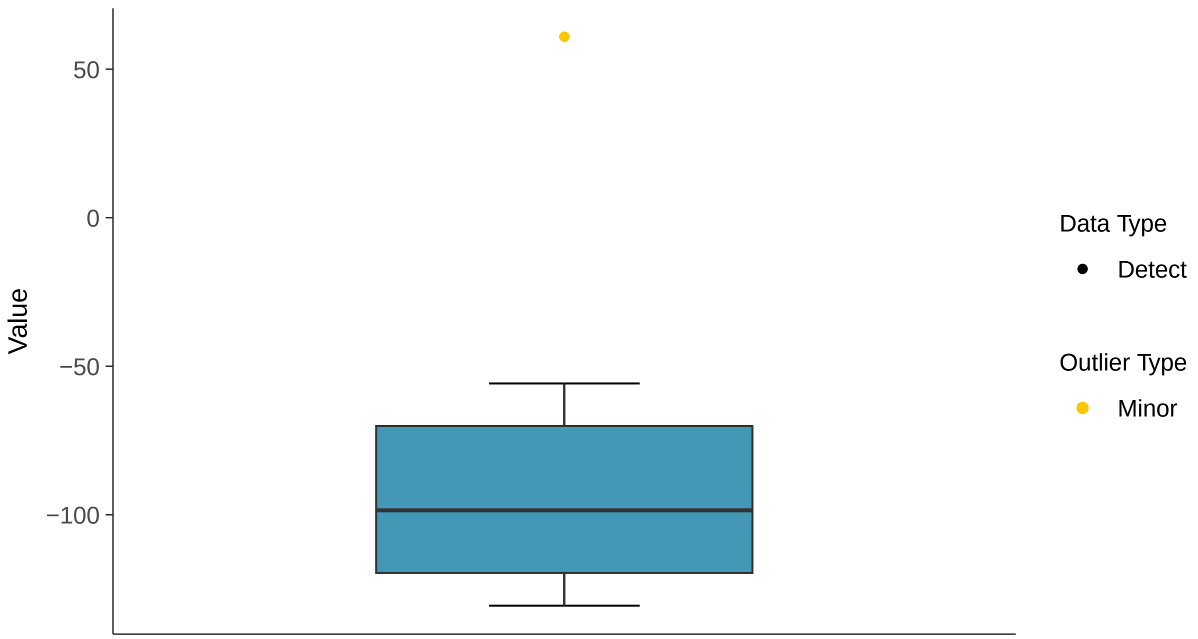
ID: 100A_3_26





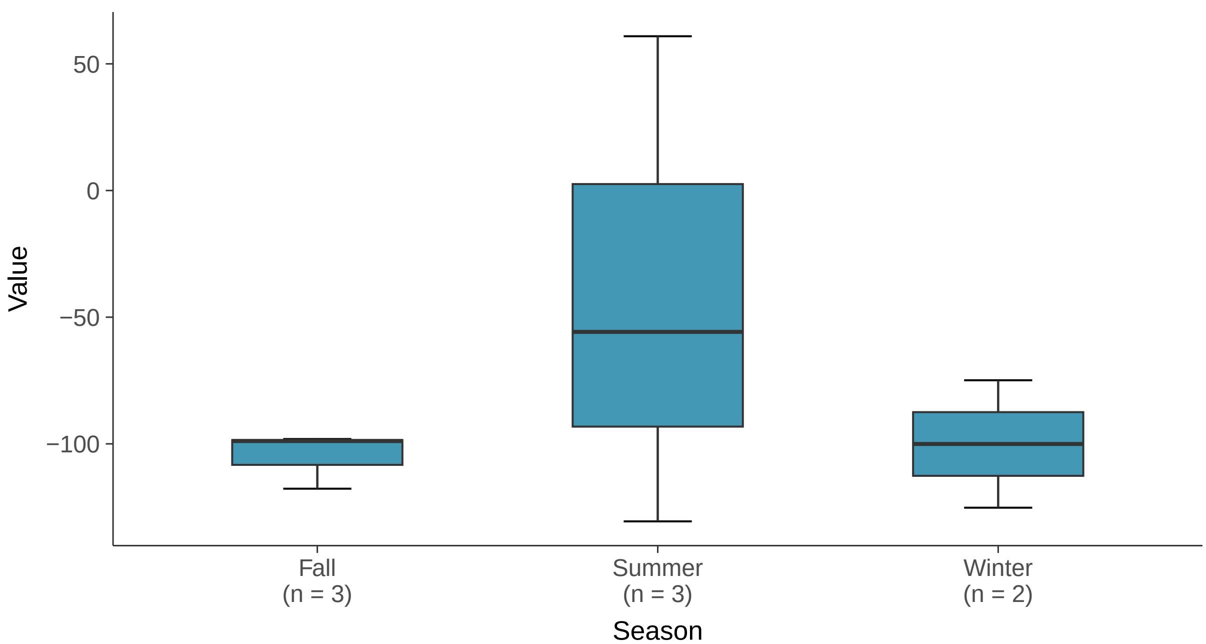
Boxplot

Oxidation Reduction Potential, MW-100A (mV)



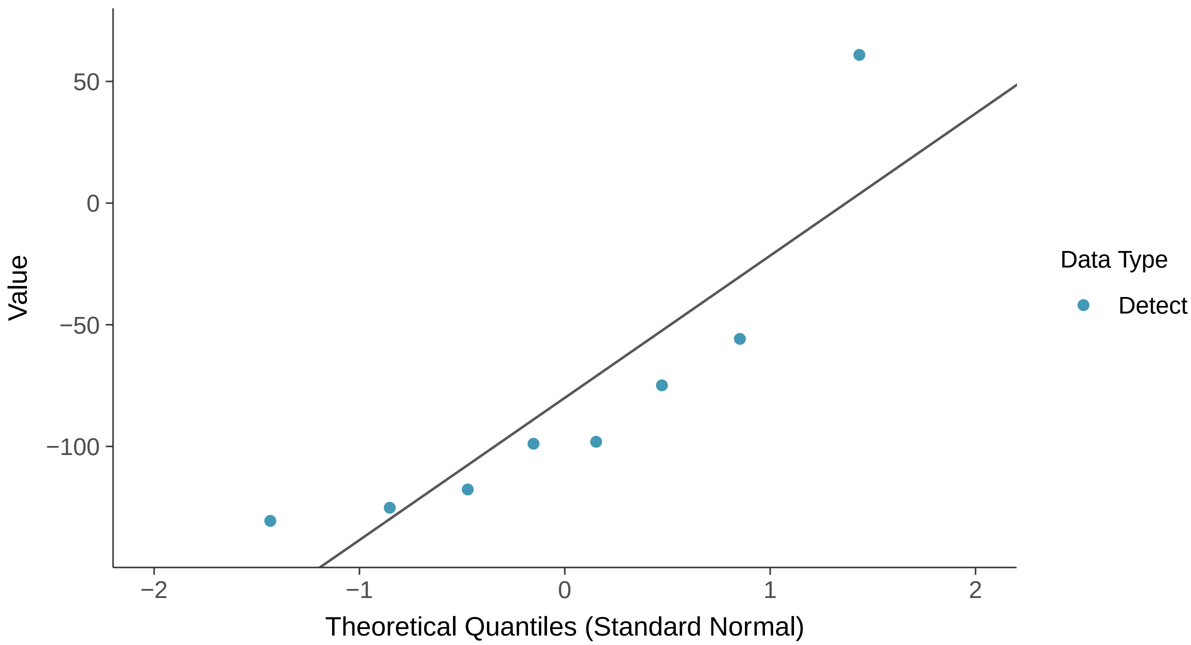
Boxplot by Season

Oxidation Reduction Potential, MW-100A (mV)



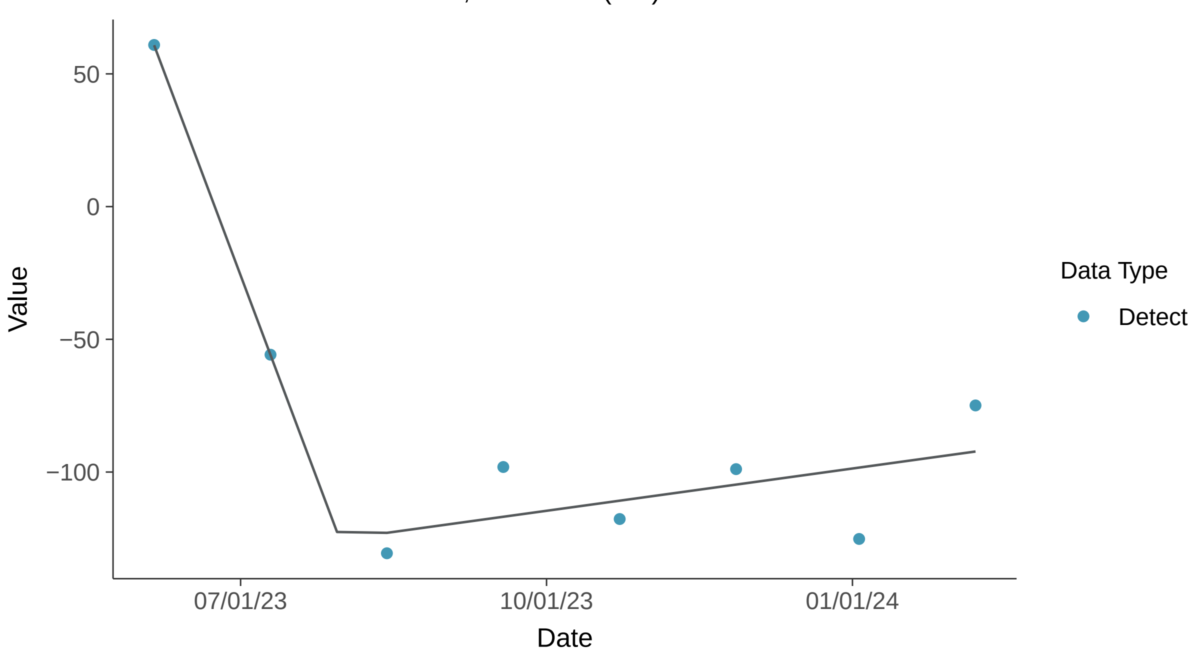
Normal Q-Q plot

Oxidation Reduction Potential, MW-100A (mV)



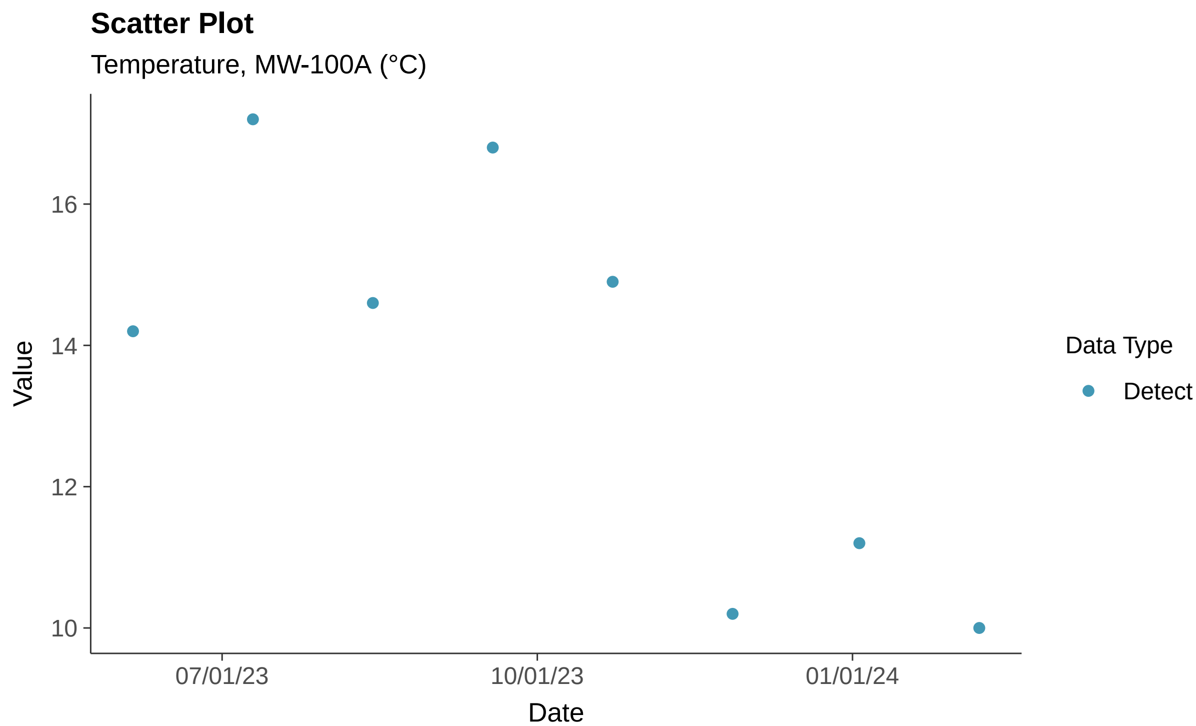
Trend Regression: Piecewise Linear-Linear

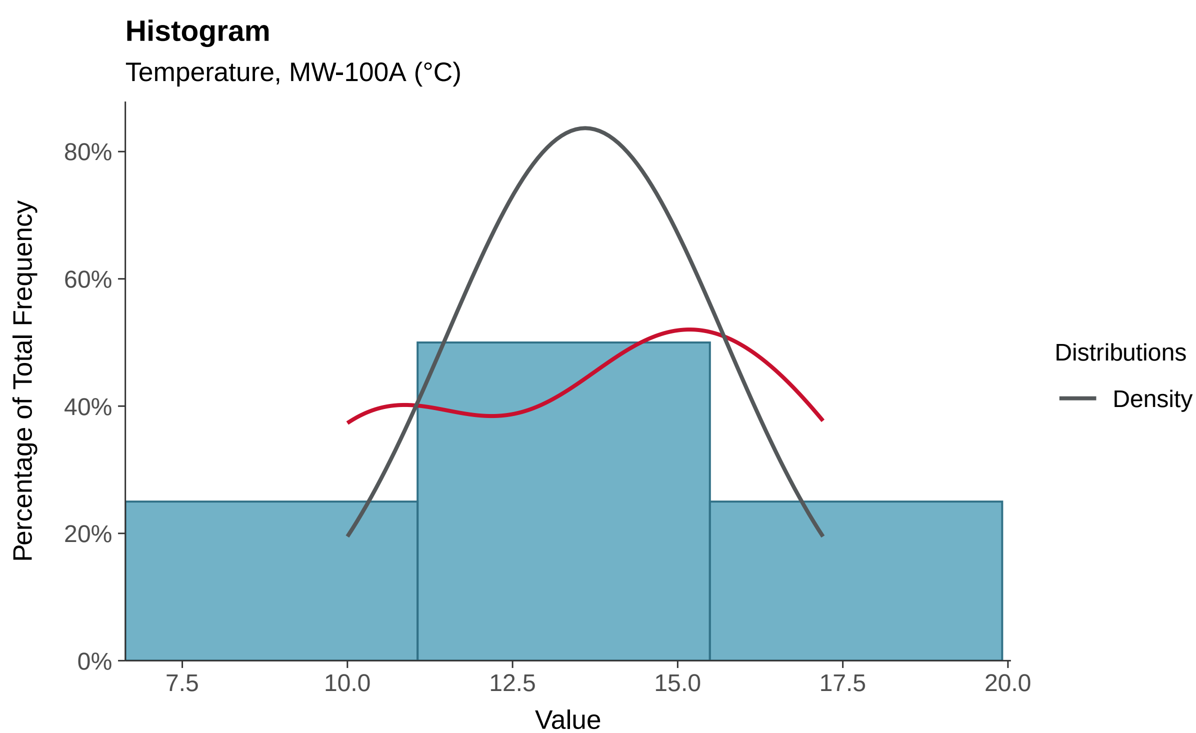
Oxidation Reduction Potential, MW-100A (mV)



Field Parameters: Temperature, MW-100A

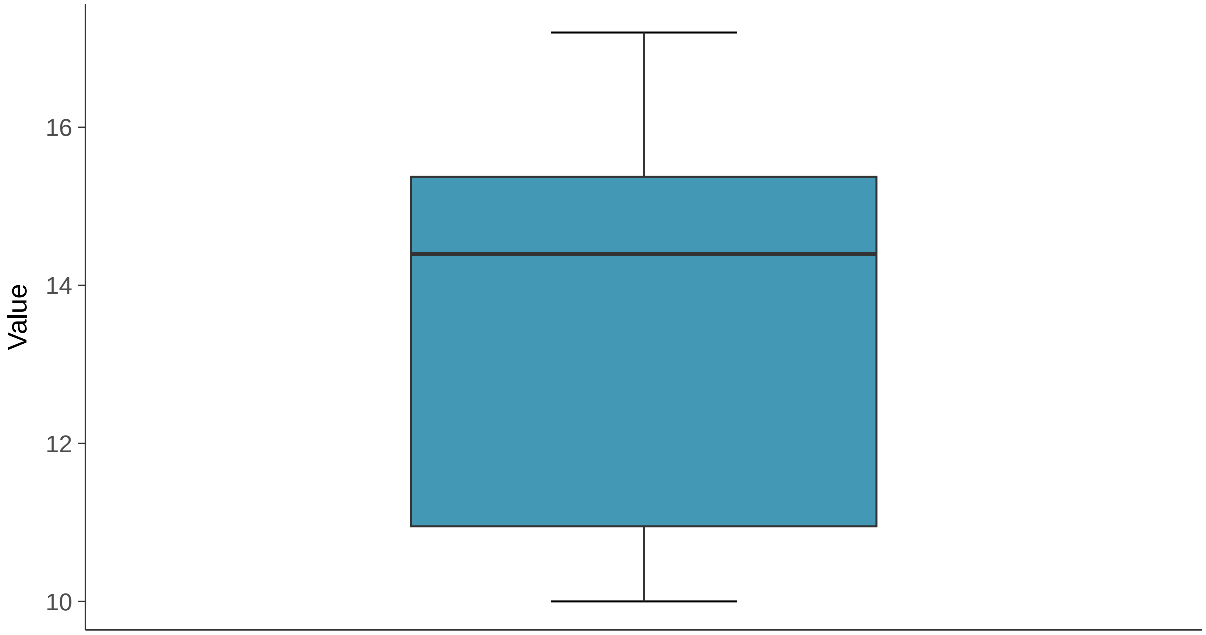
ID: 100A_3_27





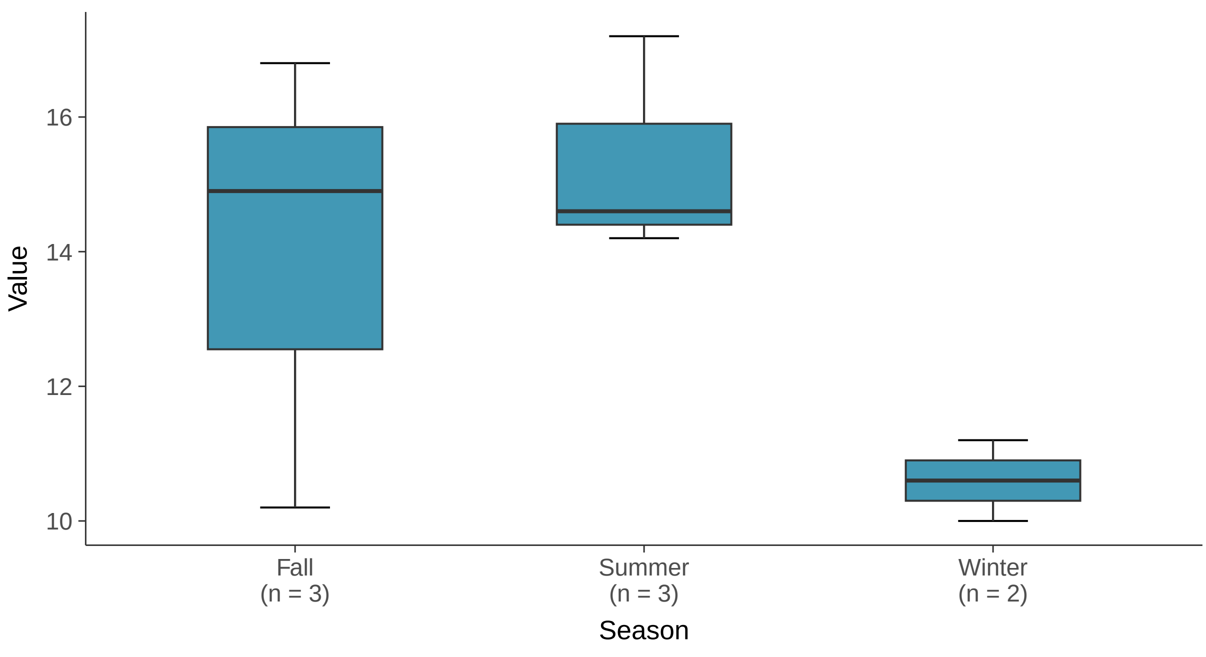
Boxplot

Temperature, MW-100A (°C)



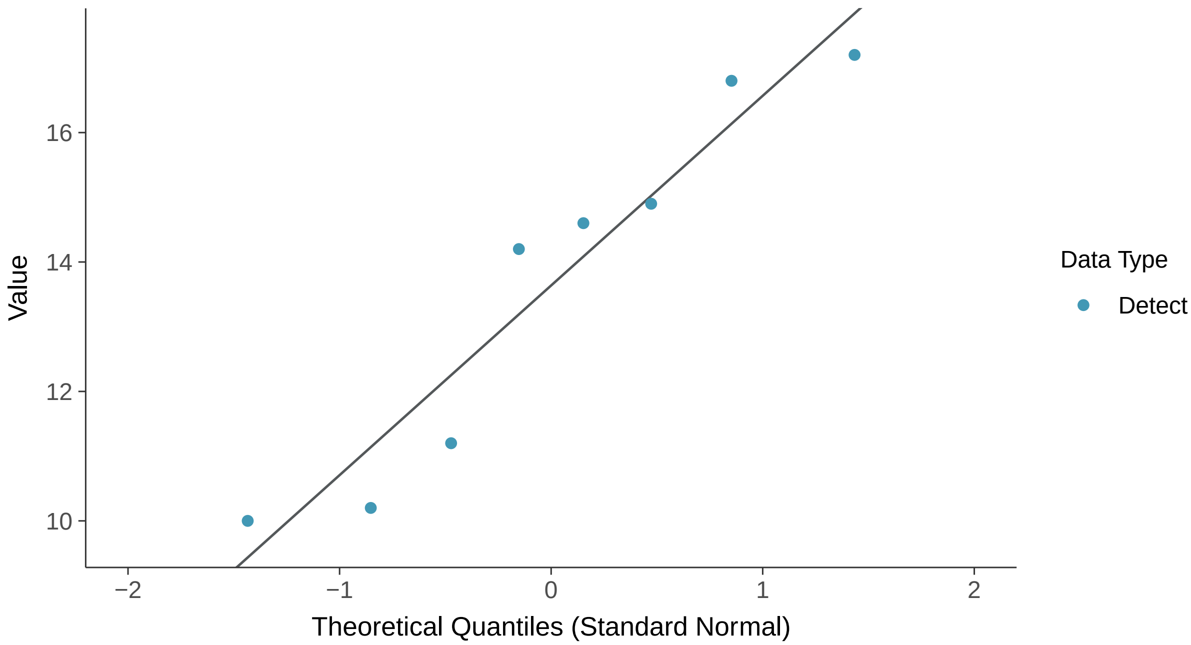
Boxplot by Season

Temperature, MW-100A (°C)



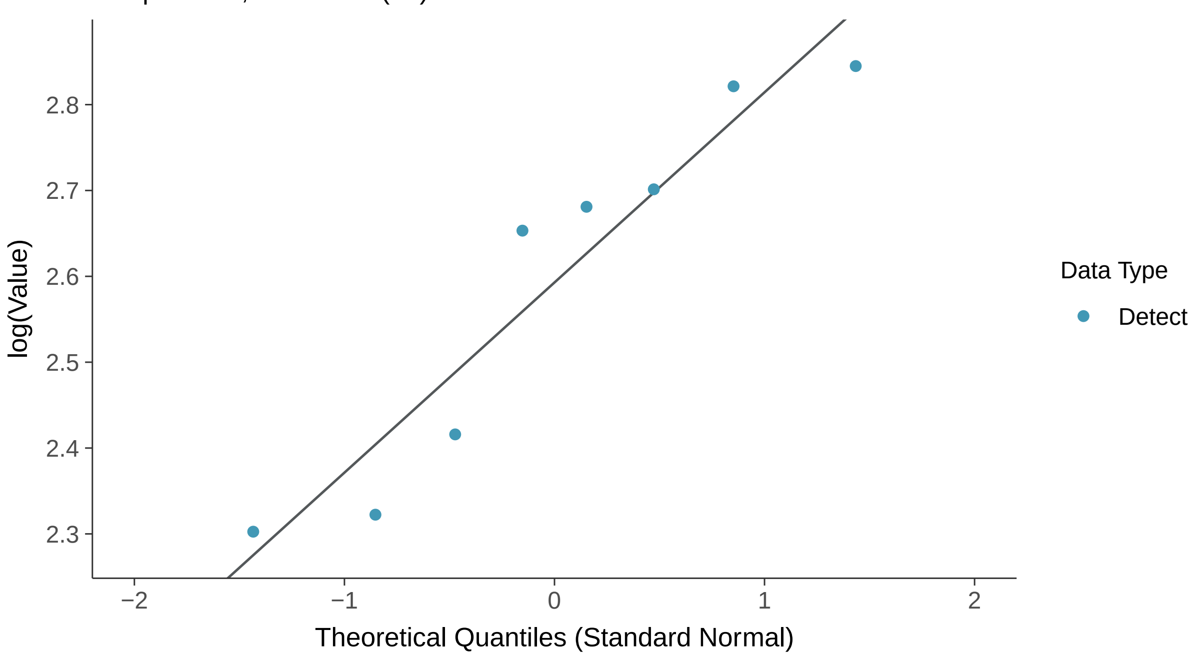
Normal Q-Q plot

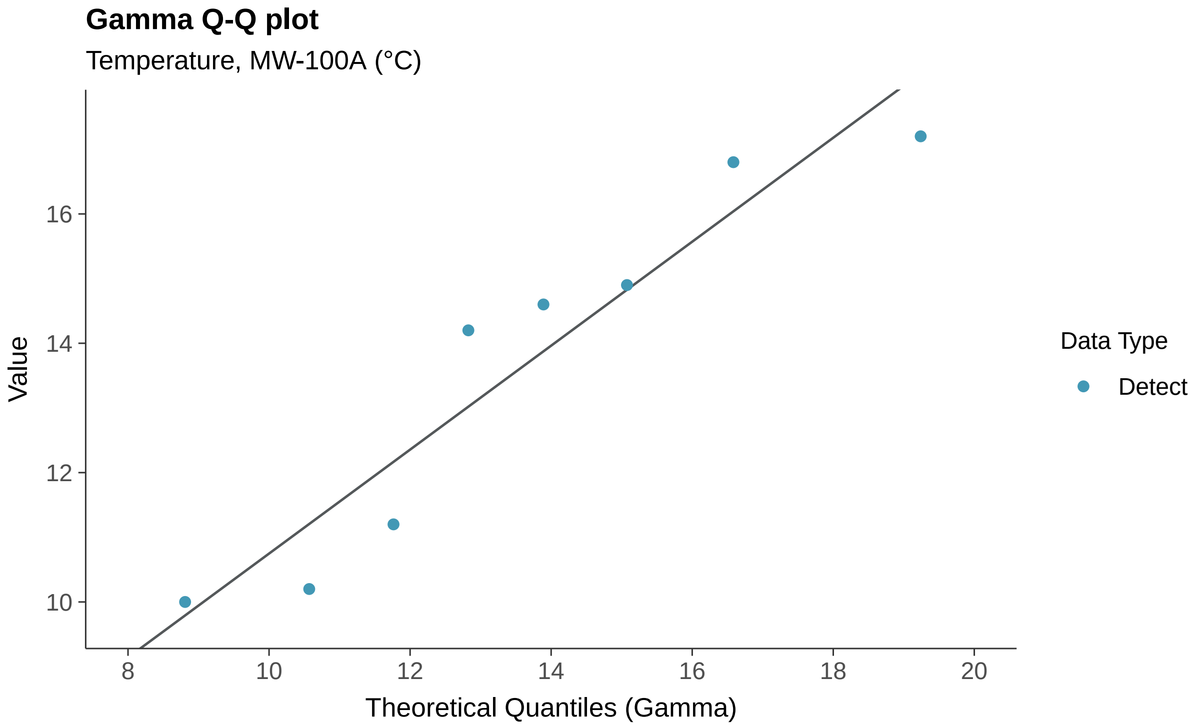
Temperature, MW-100A (°C)

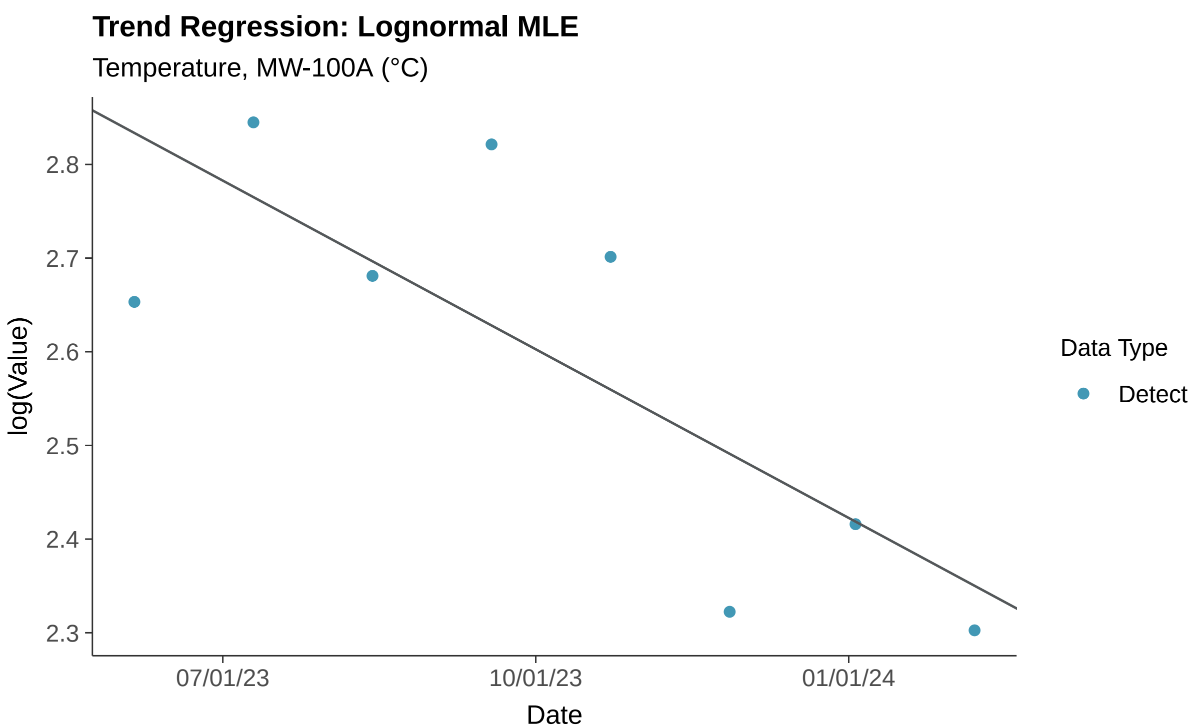


Lognormal Q-Q plot

Temperature, MW-100A (°C)

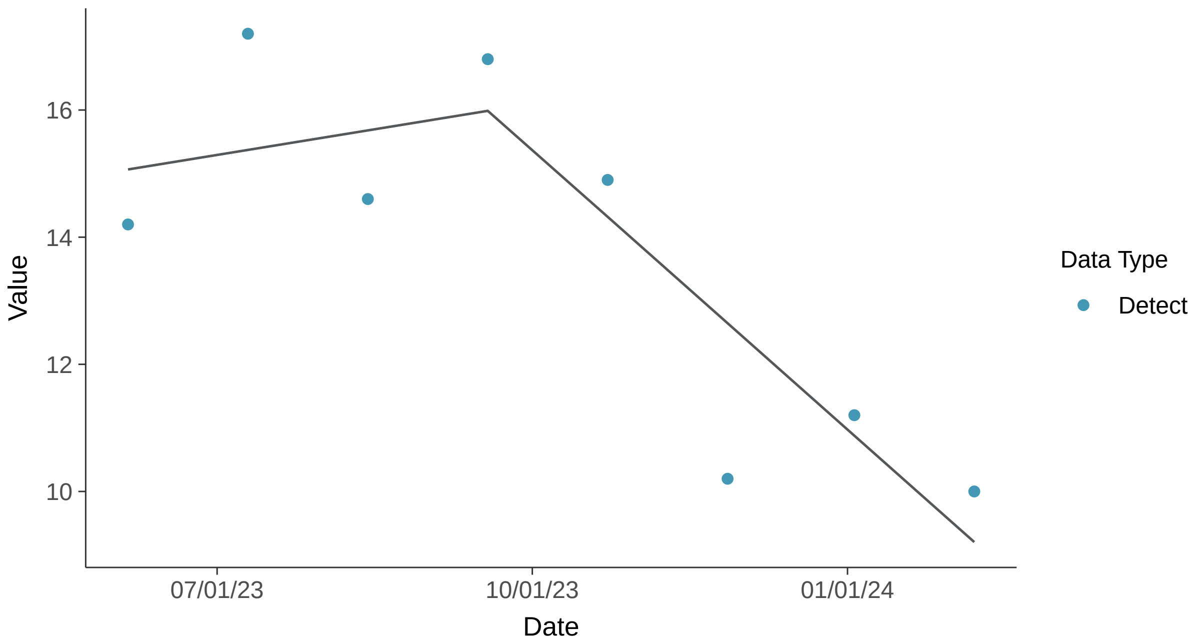



Gamma Q-Q plot
Temperature, MW-100A (°C)
Value
16
14
12
10
8
10
12
14
16
18
20
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Temperature, MW-100A (°C)
log(Value)
2.8
2.7
2.6
2.5
2.4
2.3
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

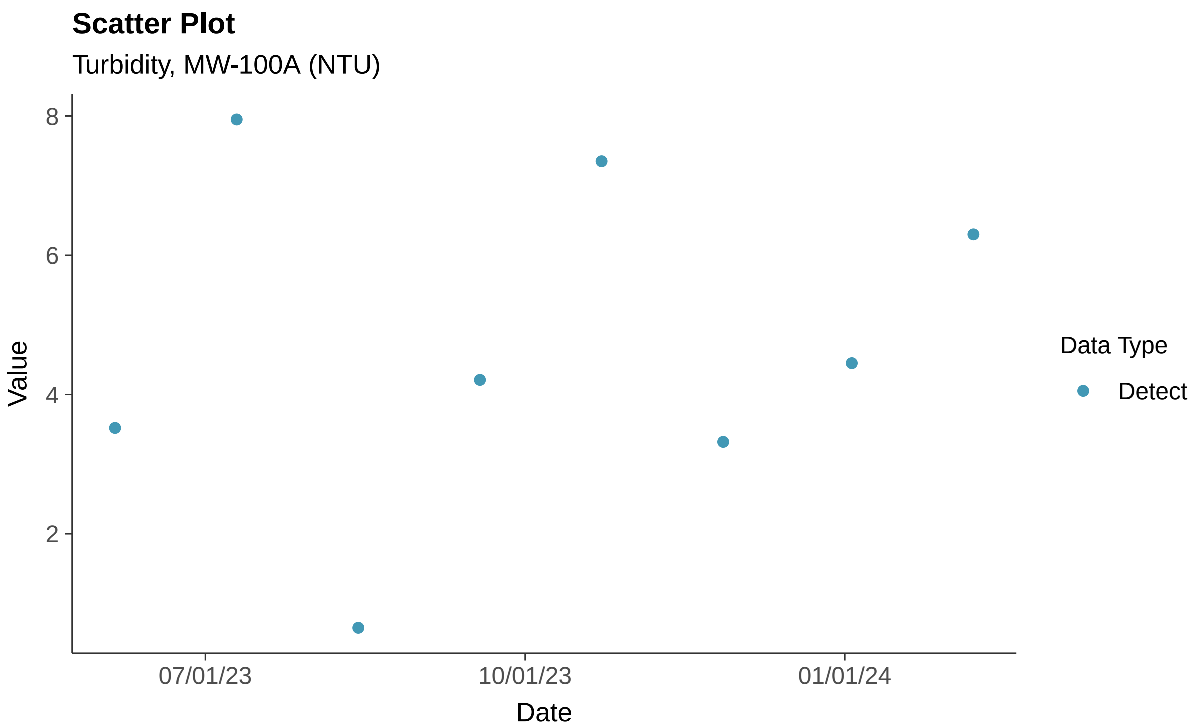
Trend Regression: Piecewise Linear-Linear

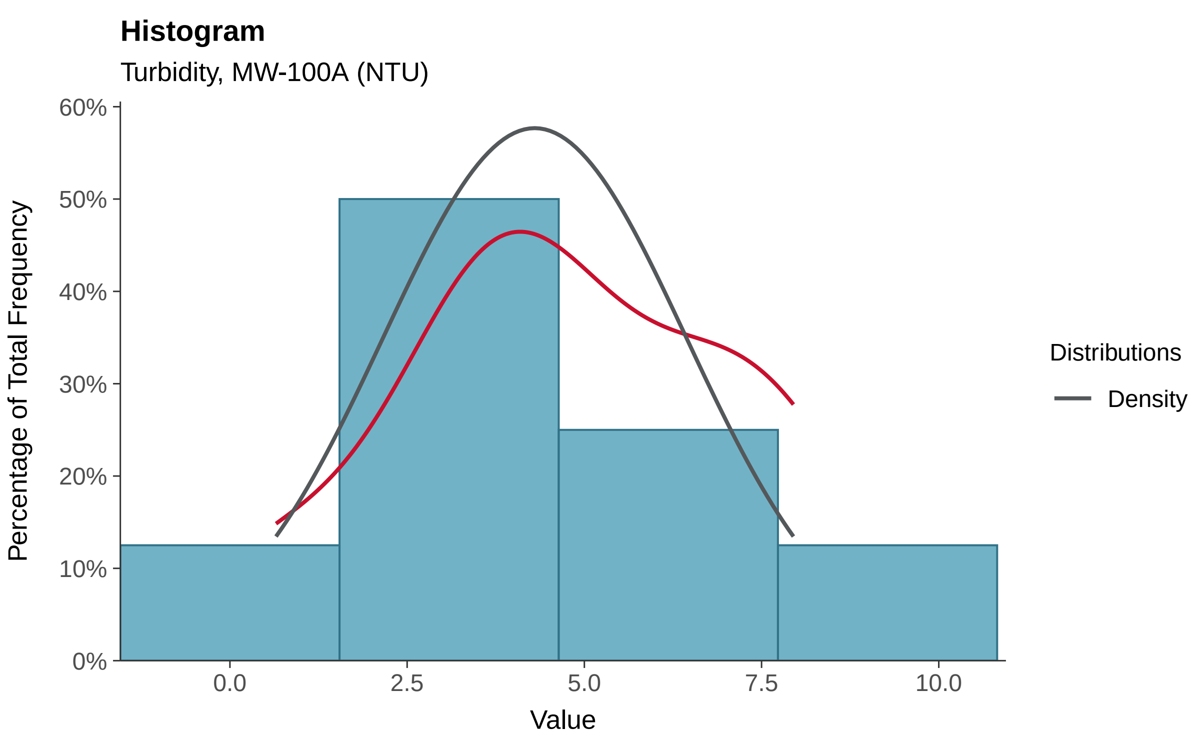
Temperature, MW-100A (°C)



Field Parameters: Turbidity, MW-100A

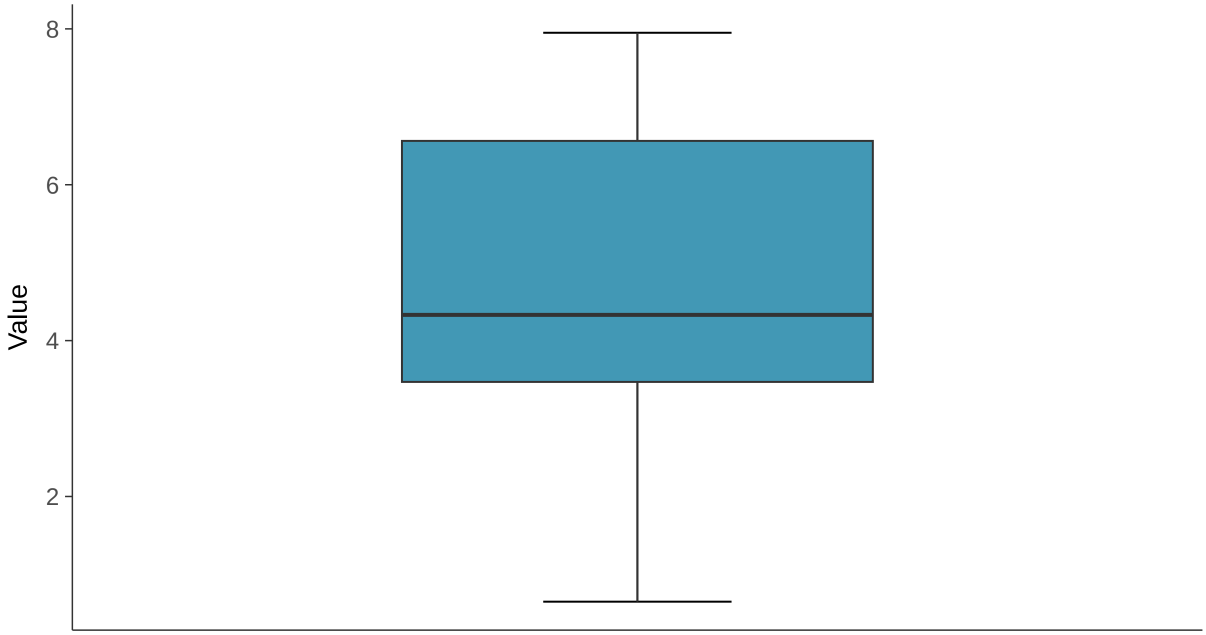
ID: 100A_3_28





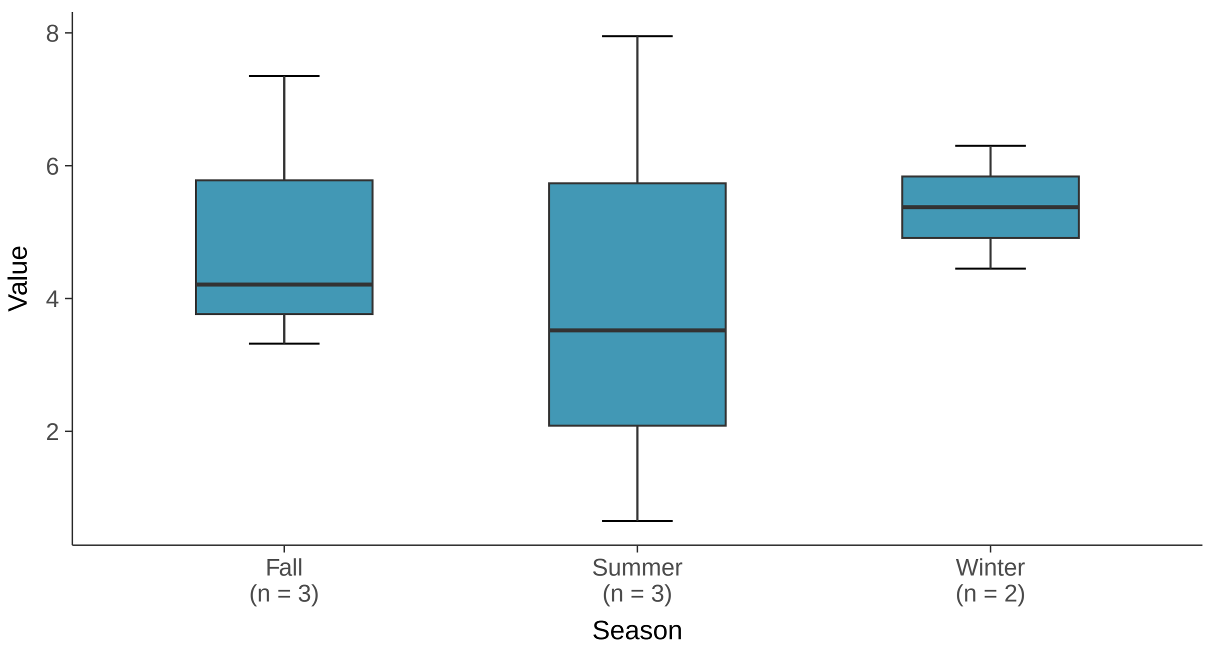
Boxplot

Turbidity, MW-100A (NTU)



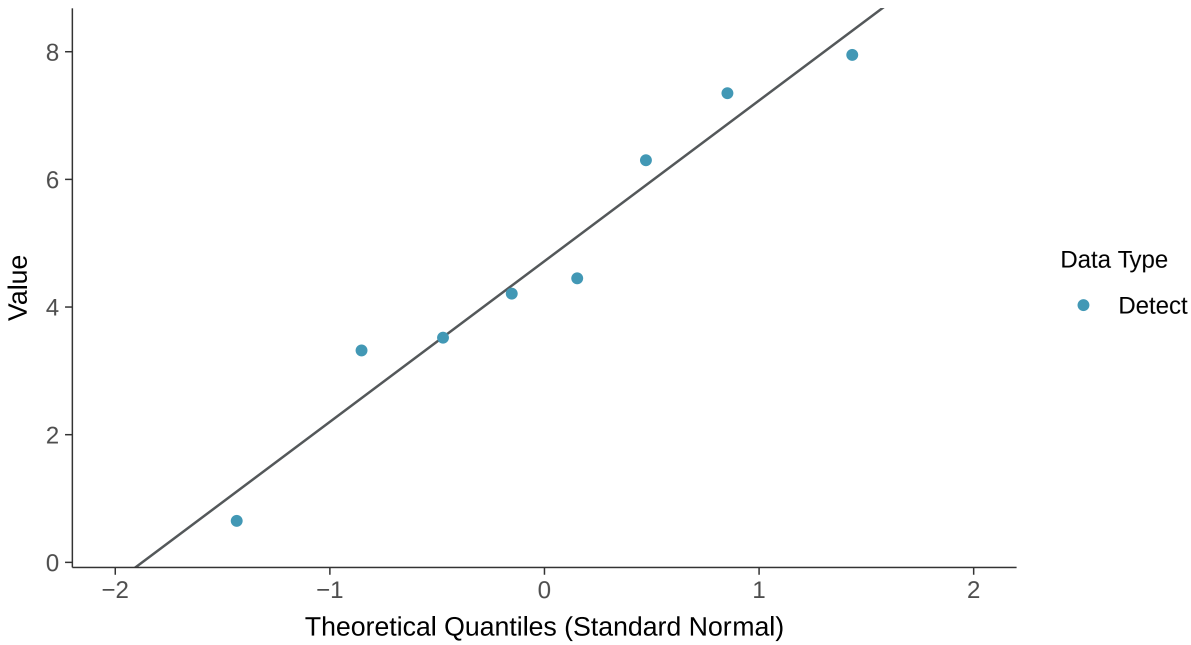
Boxplot by Season

Turbidity, MW-100A (NTU)



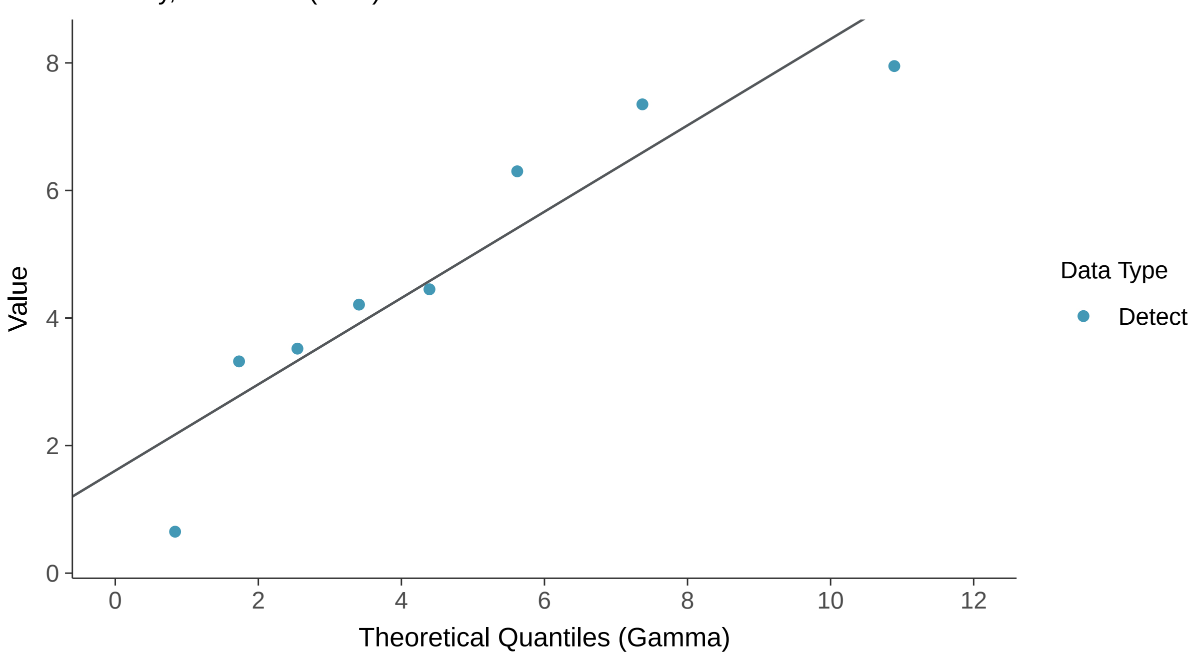
Normal Q-Q plot

Turbidity, MW-100A (NTU)



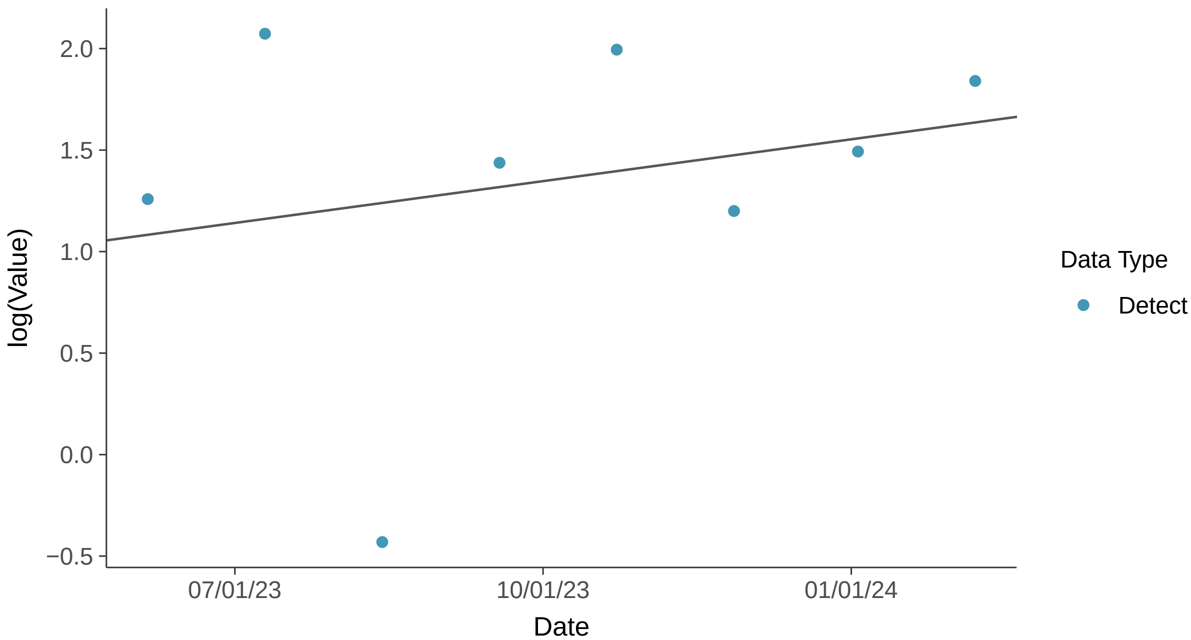
Gamma Q-Q plot

Turbidity, MW-100A (NTU)



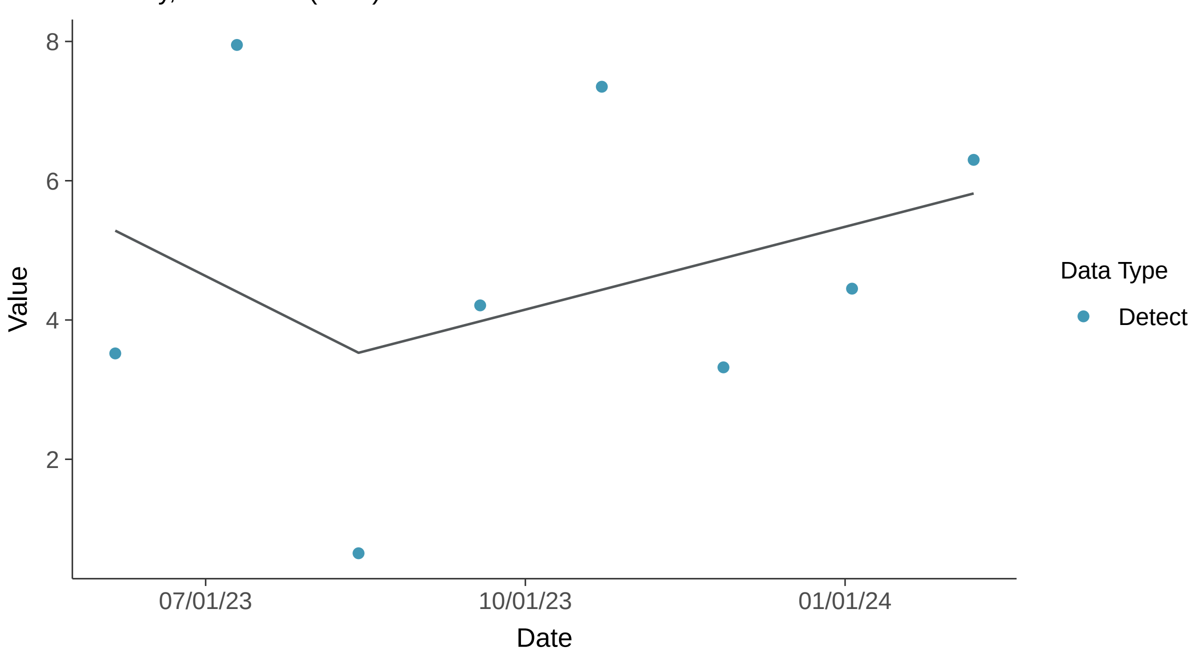
Trend Regression: Lognormal MLE

Turbidity, MW-100A (NTU)



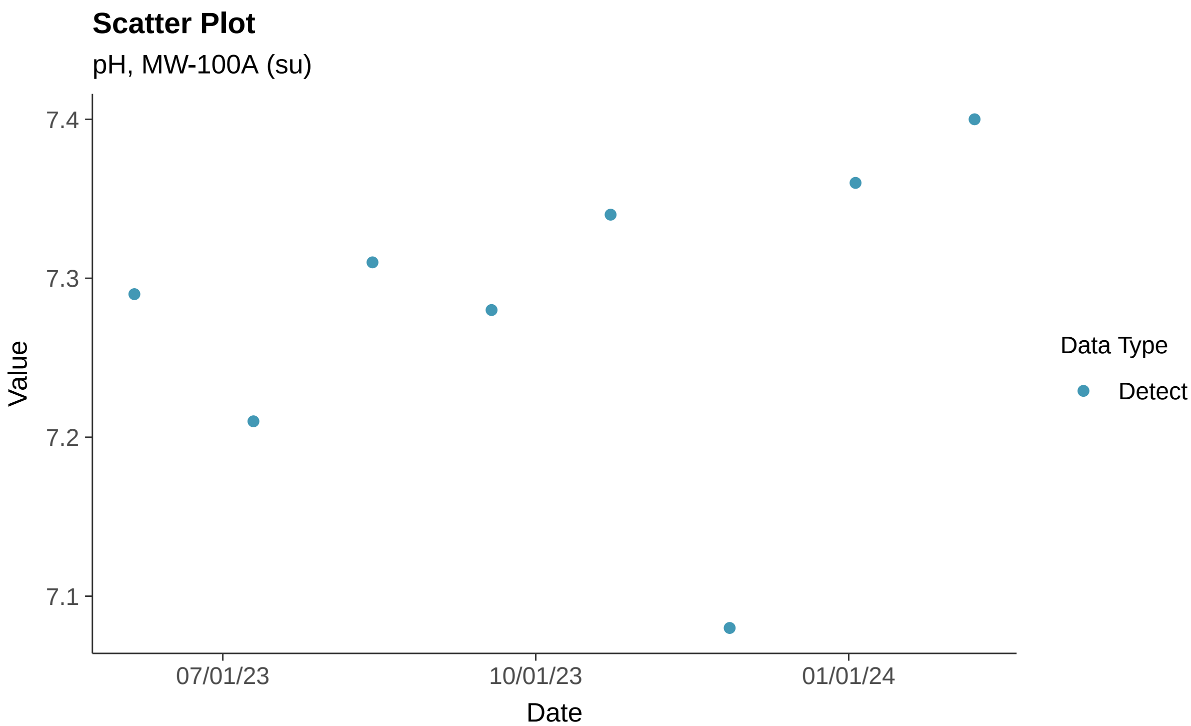
Trend Regression: Piecewise Linear-Linear

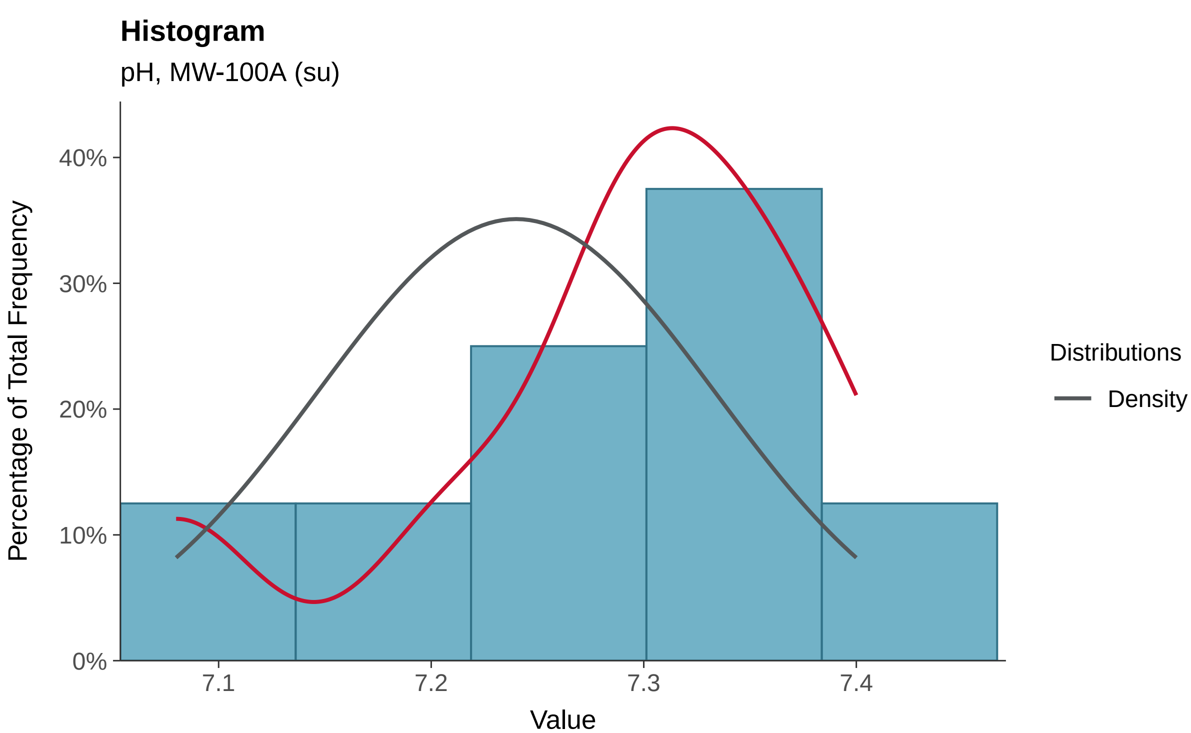
Turbidity, MW-100A (NTU)



Field Parameters: pH, MW-100A

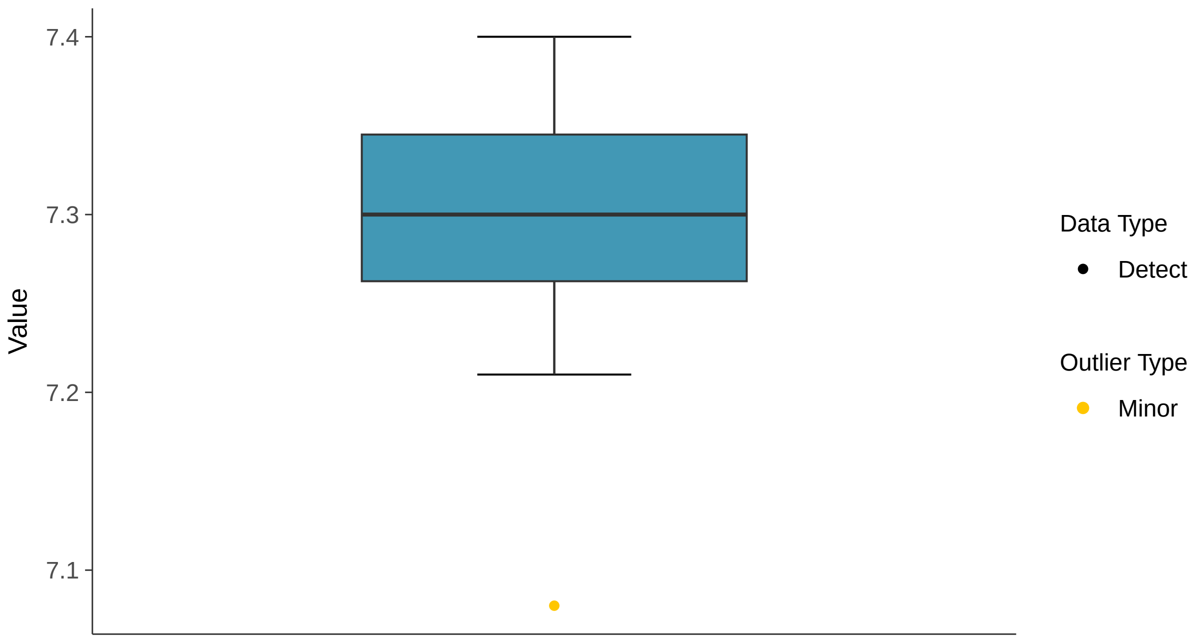
ID: 100A_3_29





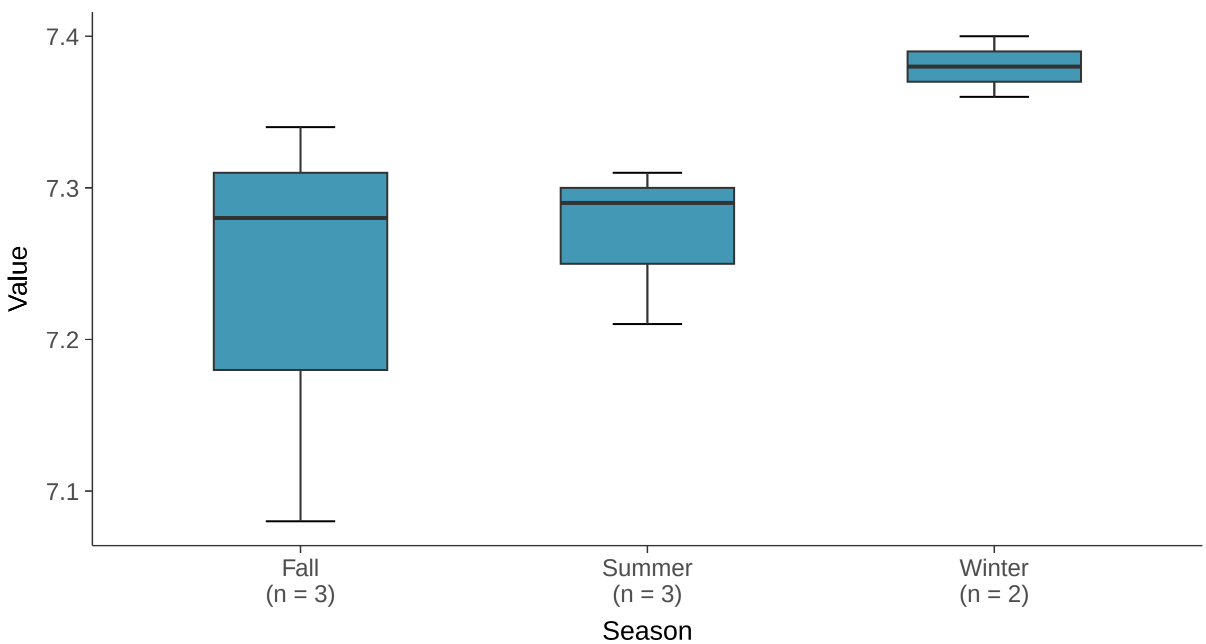
Boxplot

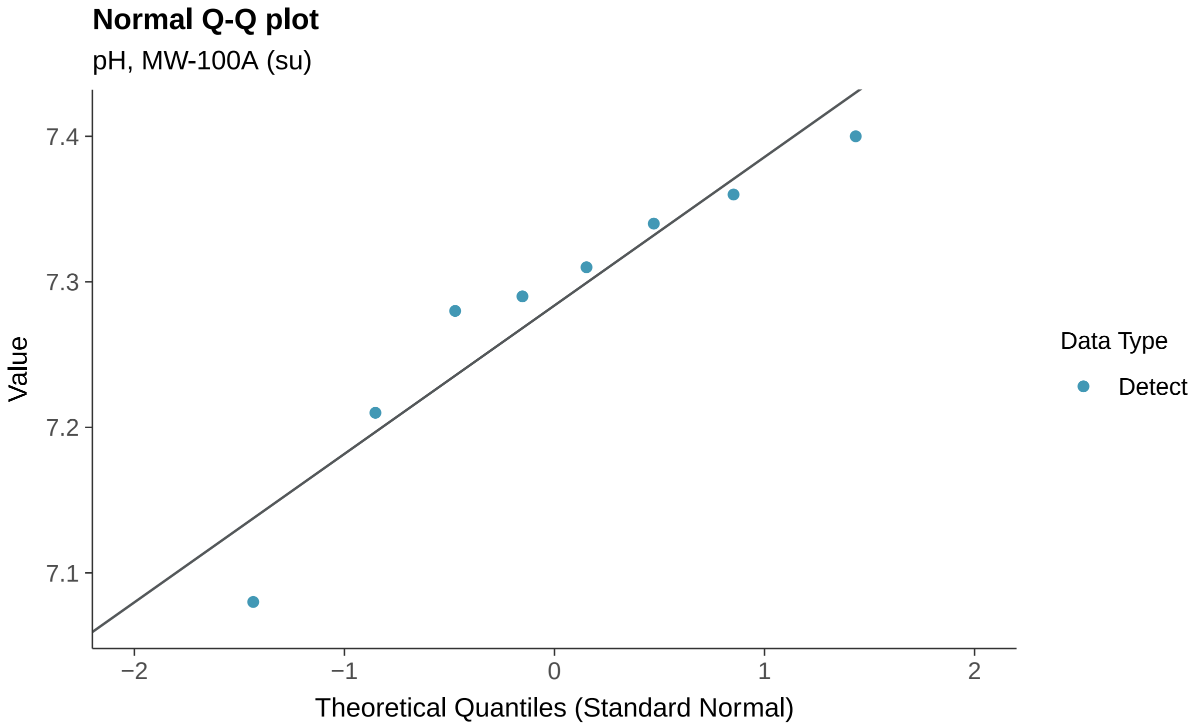
pH, MW-100A (su)

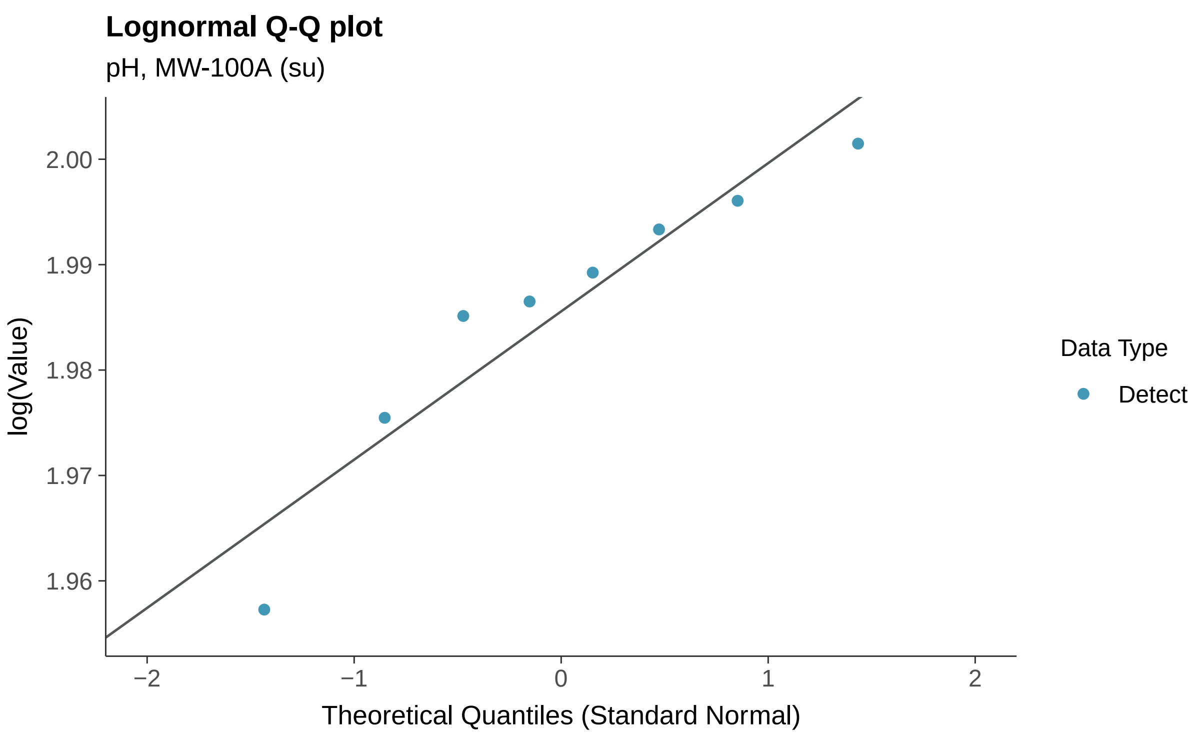


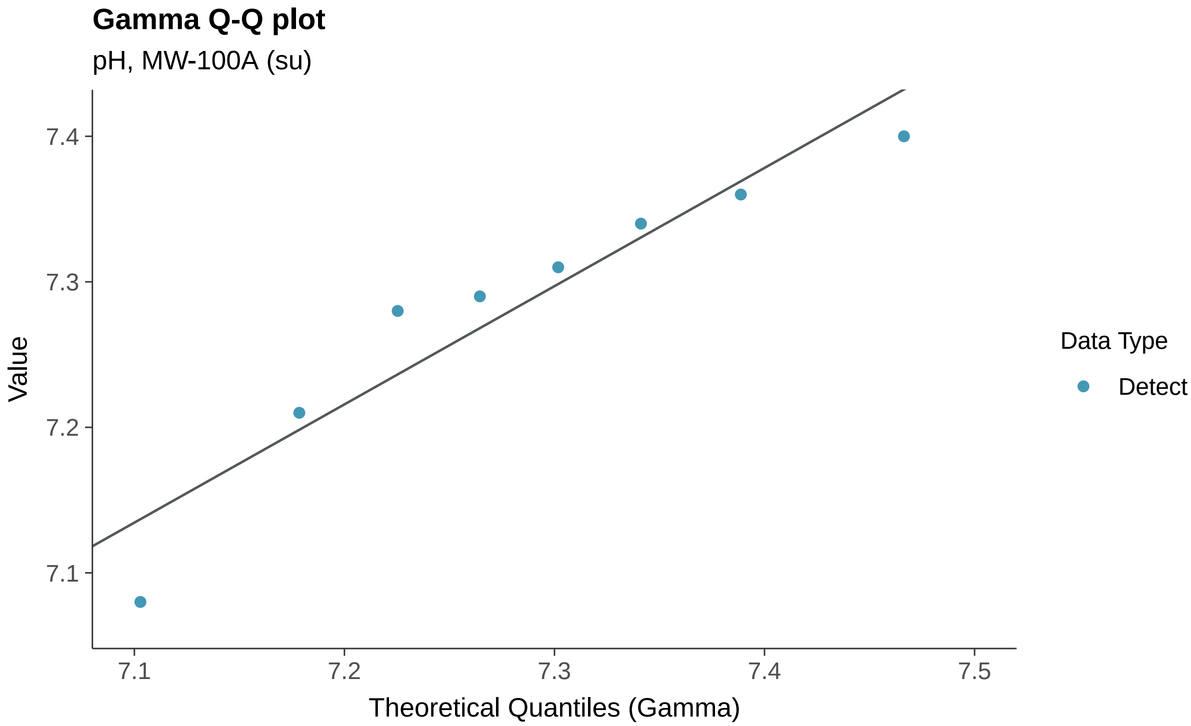
Boxplot by Season

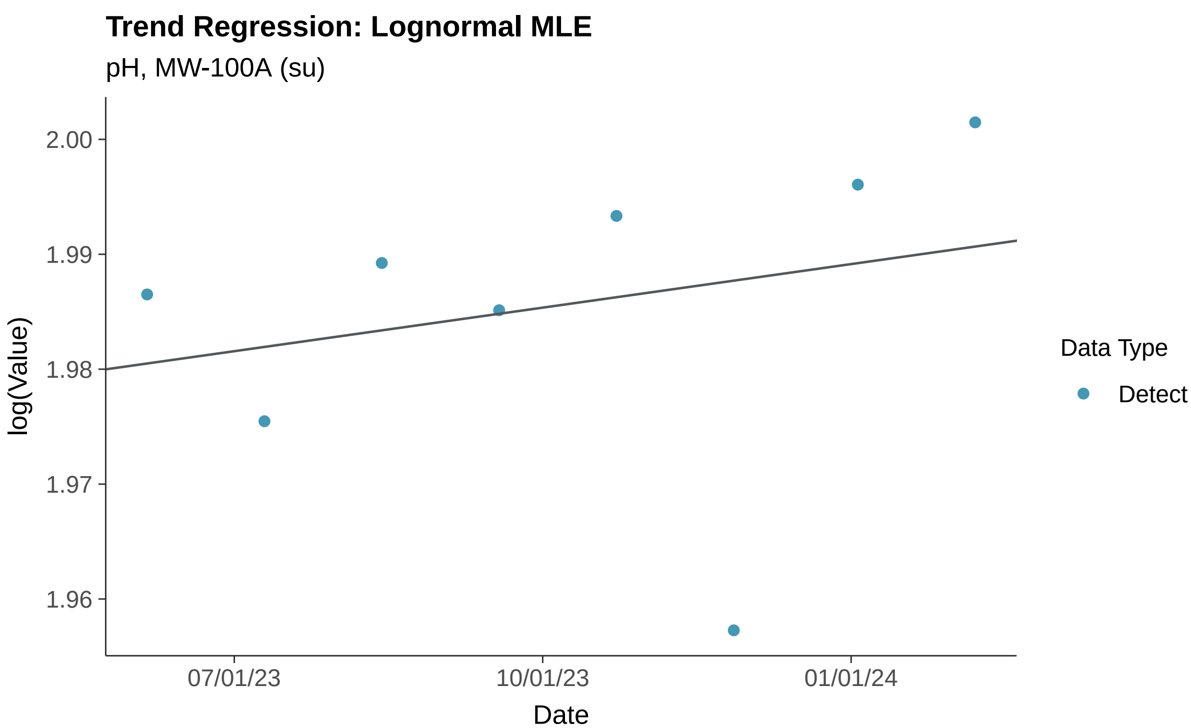
pH, MW-100A (su)




Normal Q-Q plot
pH, MW-100A (su)
Value
7.4
7.3
7.2
7.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

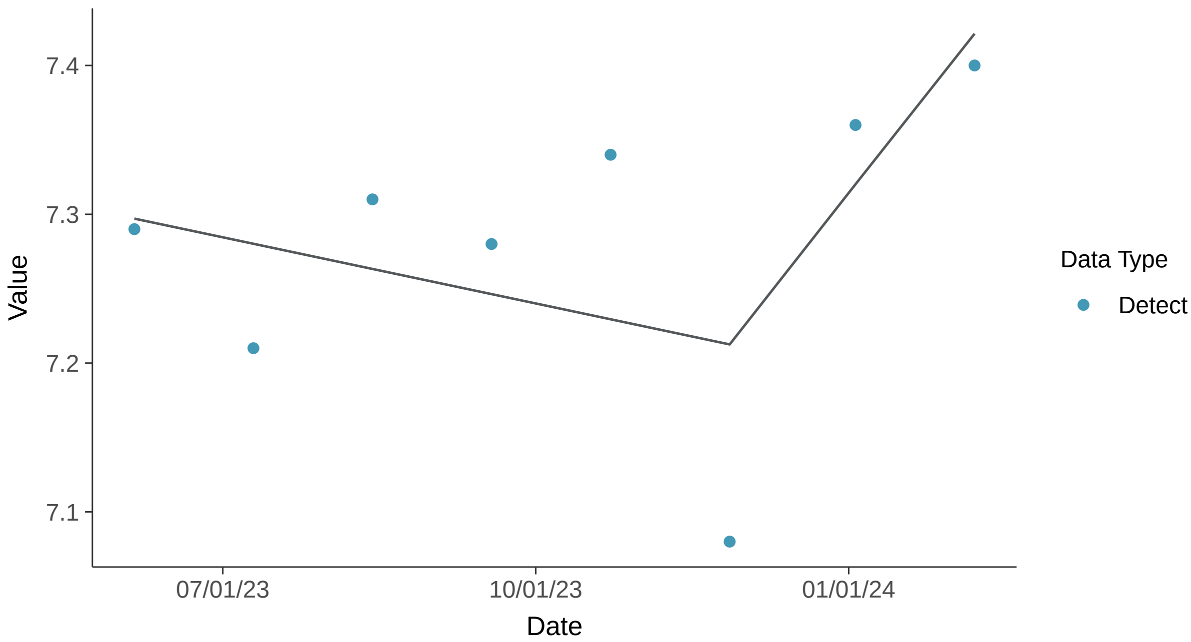

Lognormal Q-Q plot
pH, MW-100A (su)
log(Value)
2.00
1.99
1.98
1.97
1.96
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, MW-100A (su)
Value
7.4
7.3
7.2
7.1
7.1
7.2
7.3
7.4
7.5
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, MW-100A (su)
log(Value)
2.00
1.99
1.98
1.97
1.96
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

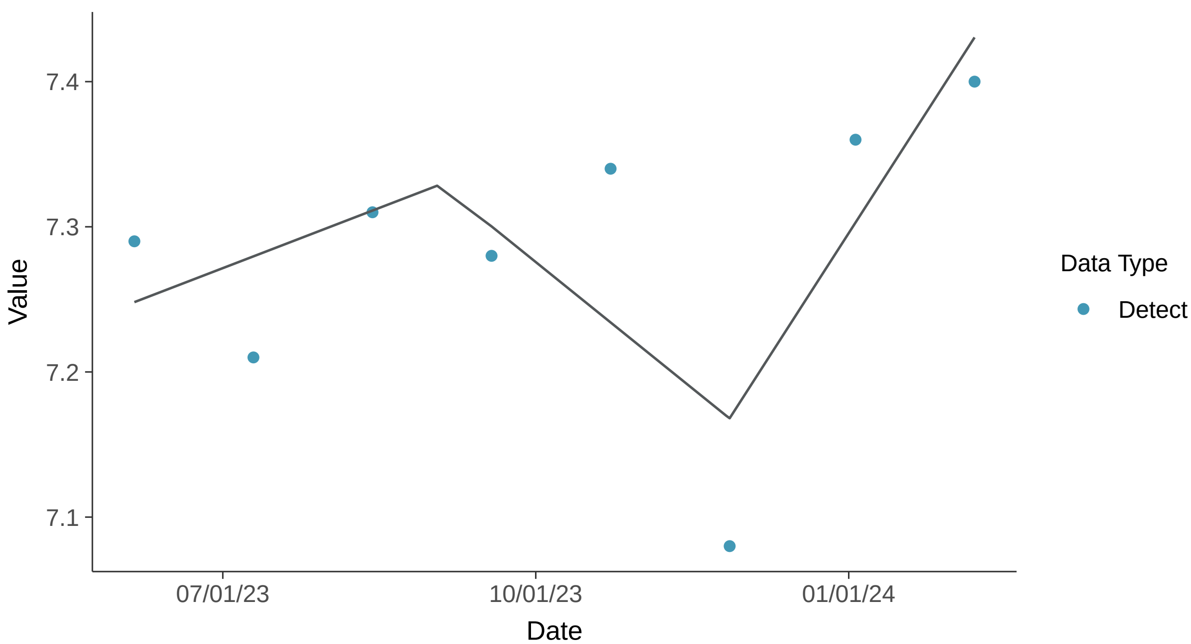
Trend Regression: Piecewise Linear-Linear

pH, MW-100A (su)



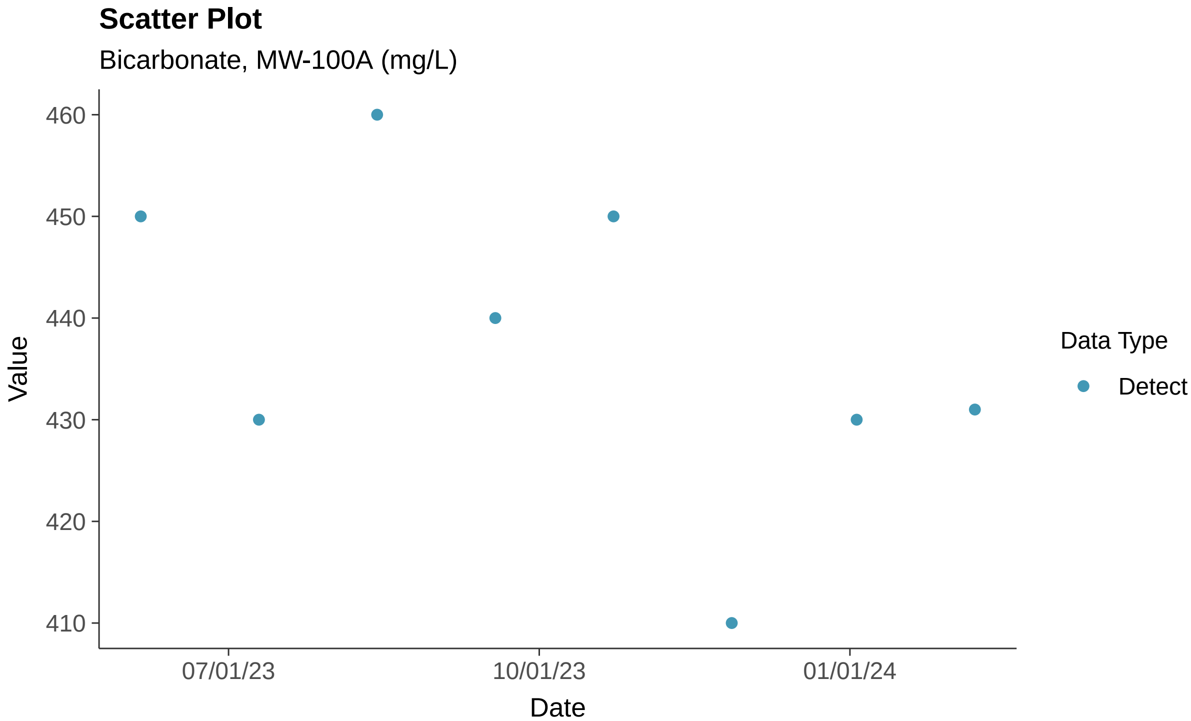
Trend Regression: Piecewise Linear-Linear-Linear

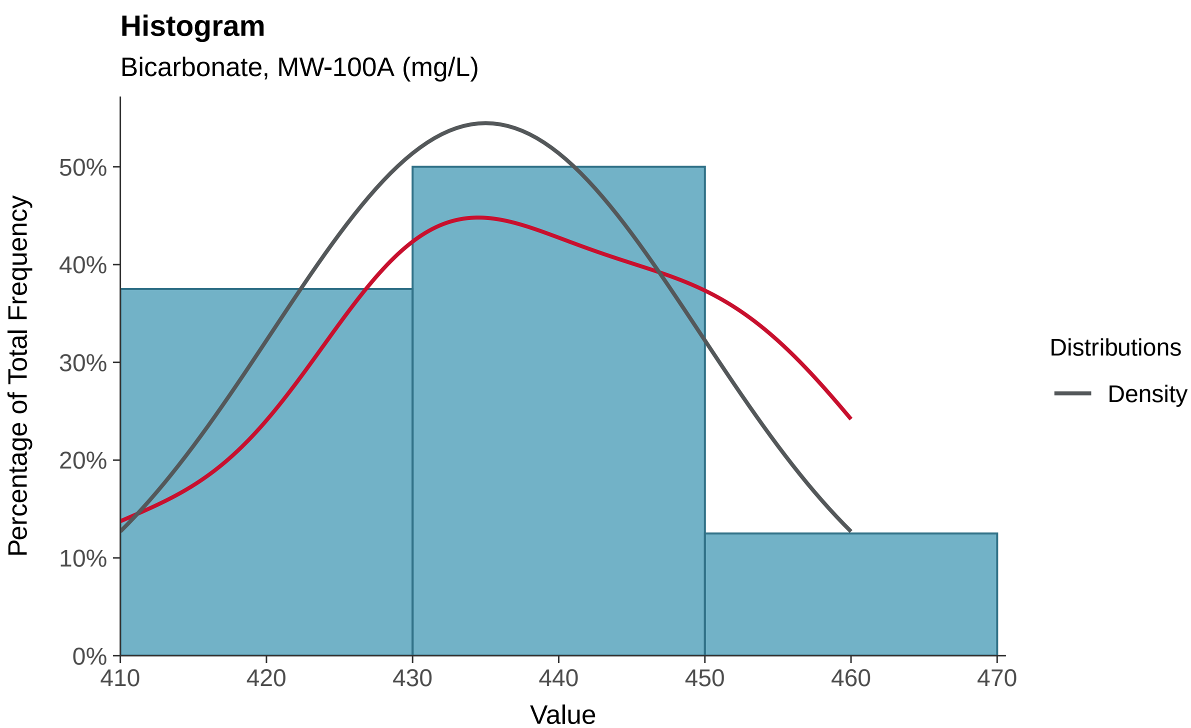
pH, MW-100A (su)



Other: Bicarbonate, MW-100A

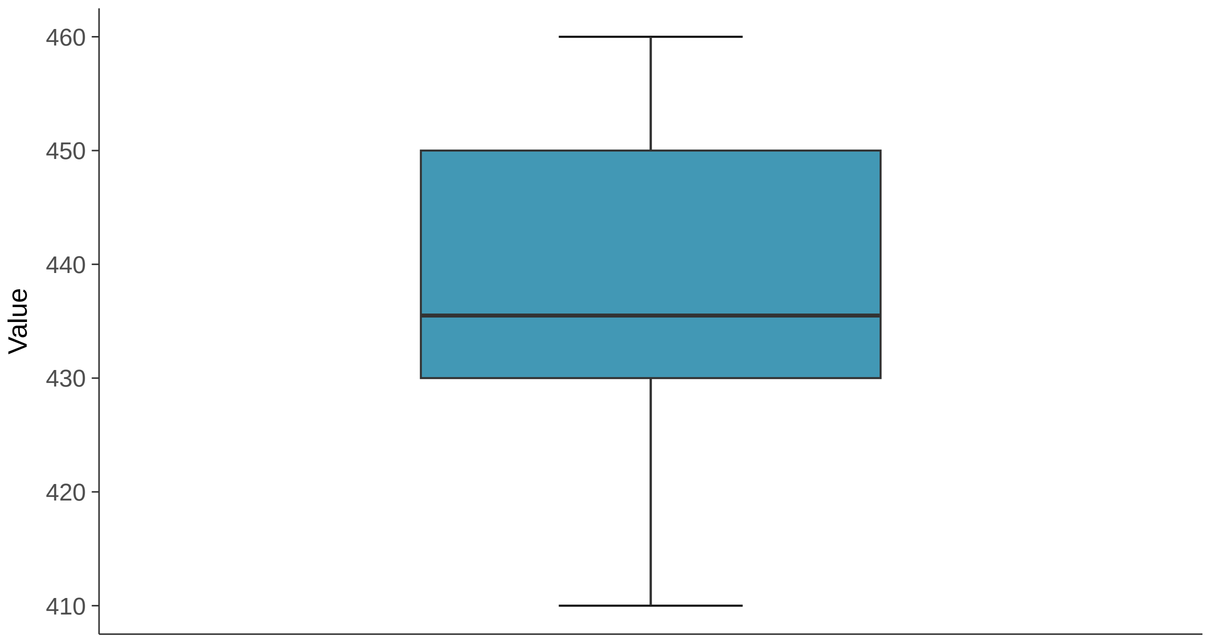
ID: 100A_4_30





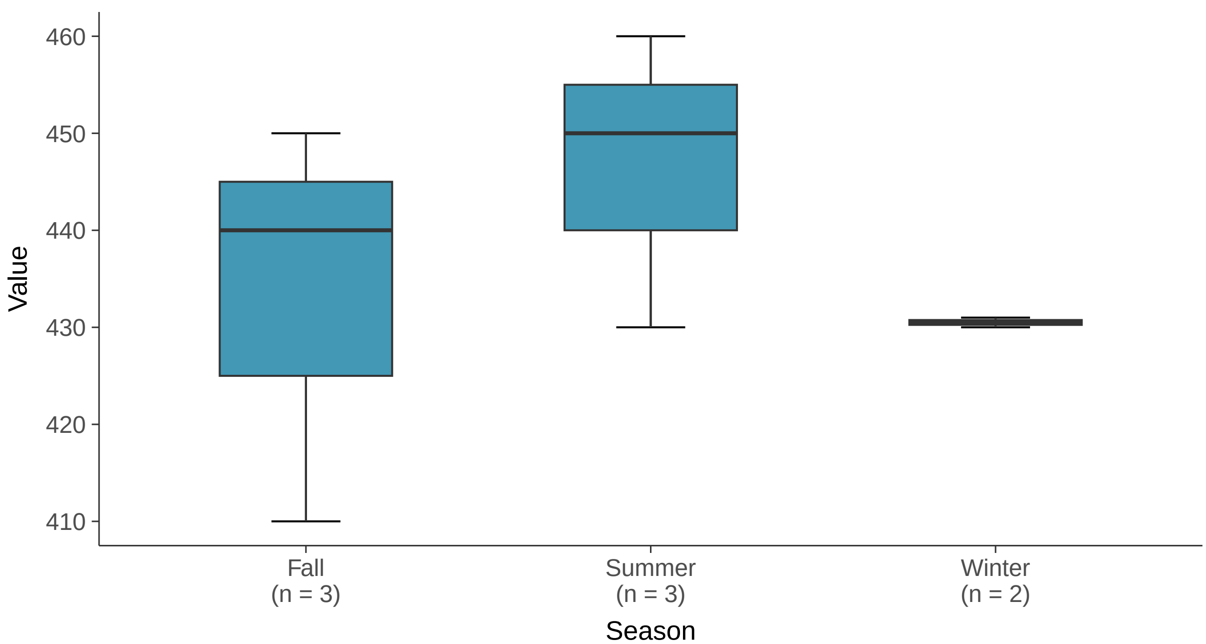
Boxplot

Bicarbonate, MW-100A (mg/L)



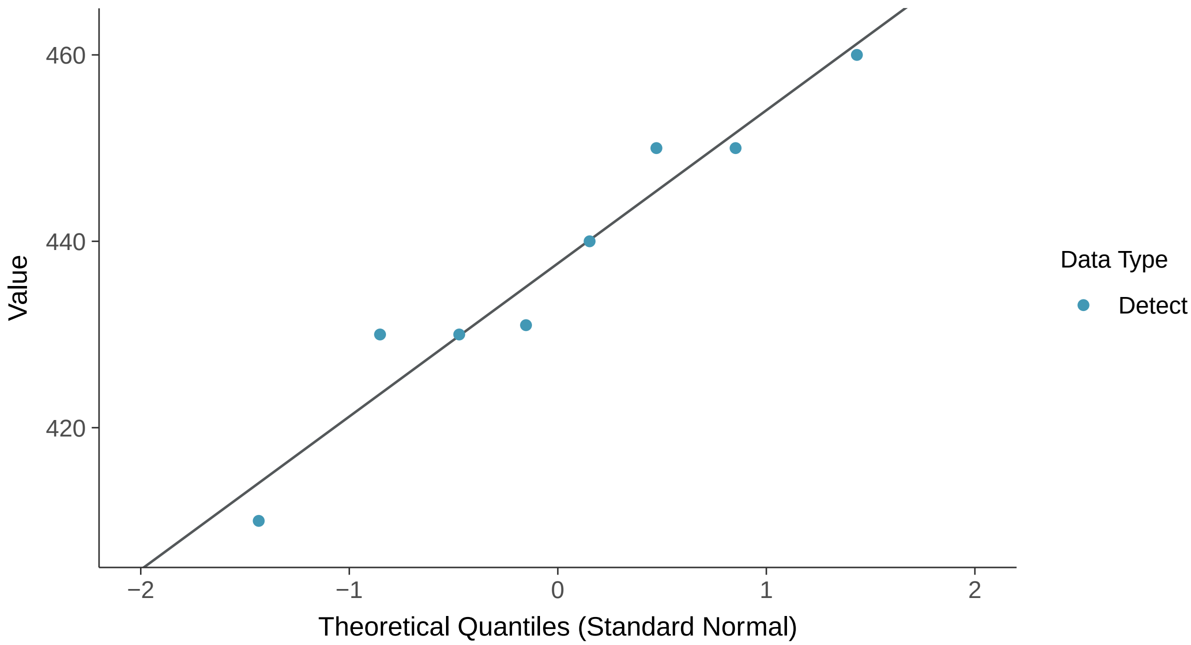
Boxplot by Season

Bicarbonate, MW-100A (mg/L)



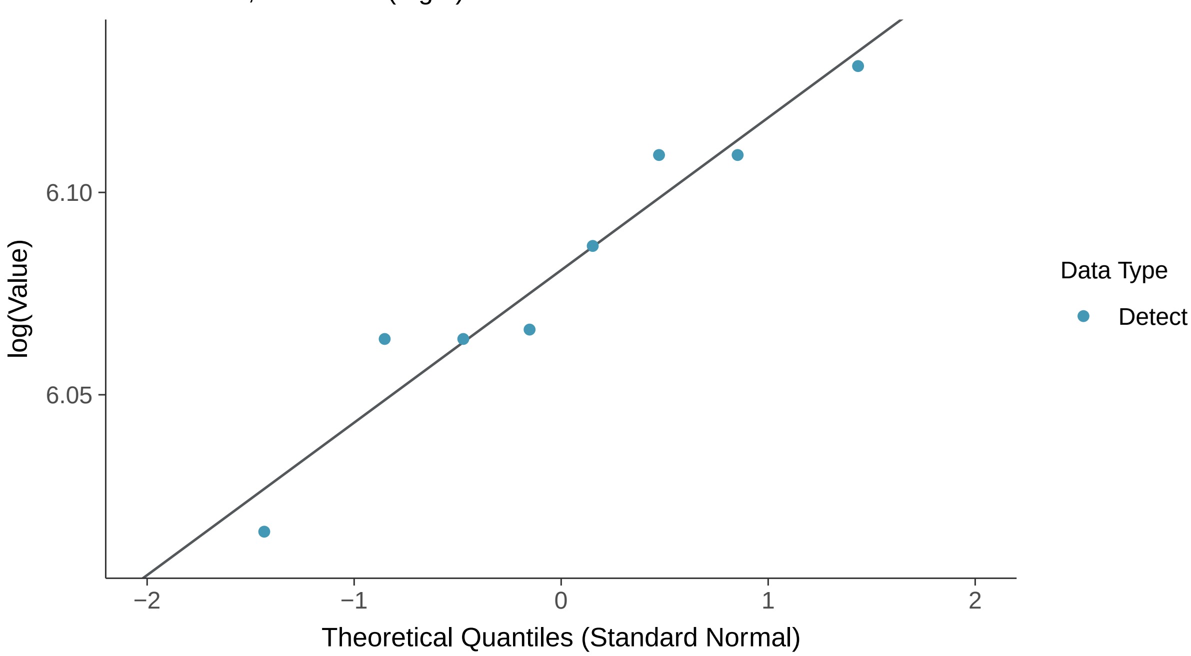
Normal Q-Q plot

Bicarbonate, MW-100A (mg/L)



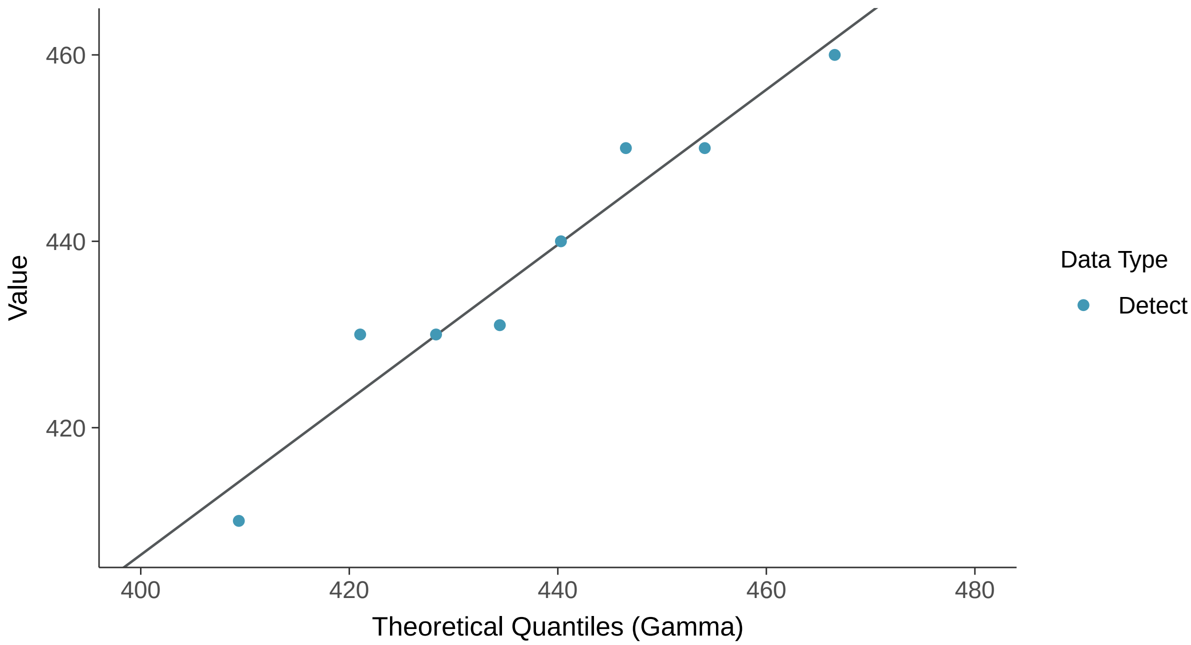
Lognormal Q-Q plot

Bicarbonate, MW-100A (mg/L)



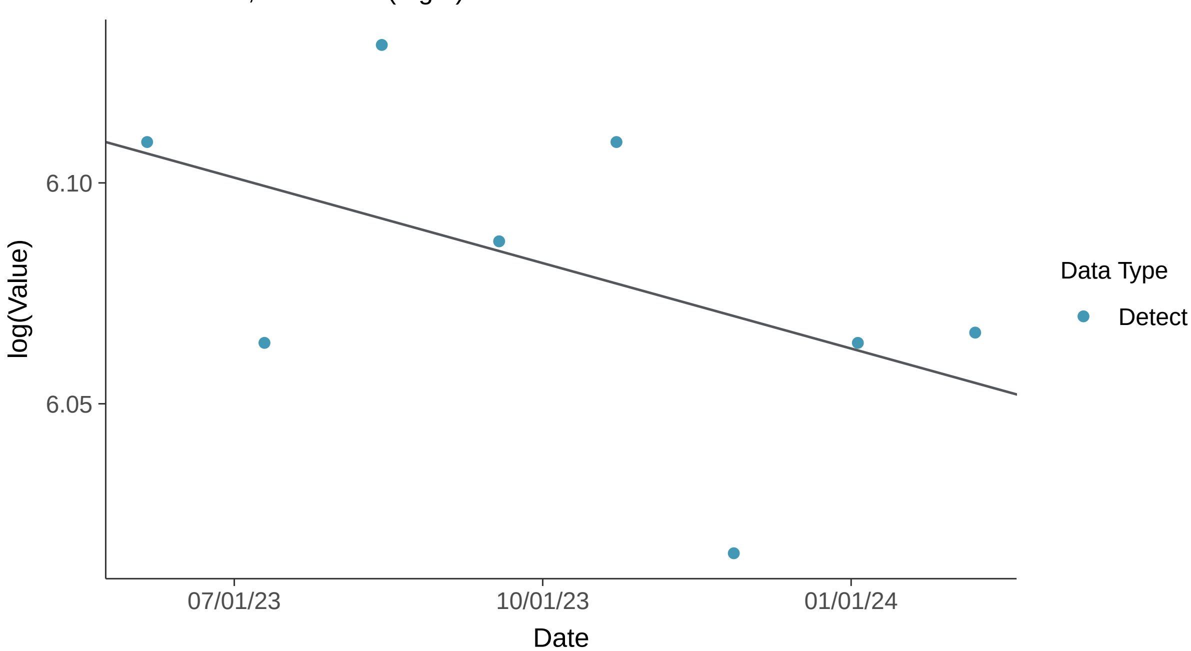
Gamma Q-Q plot

Bicarbonate, MW-100A (mg/L)



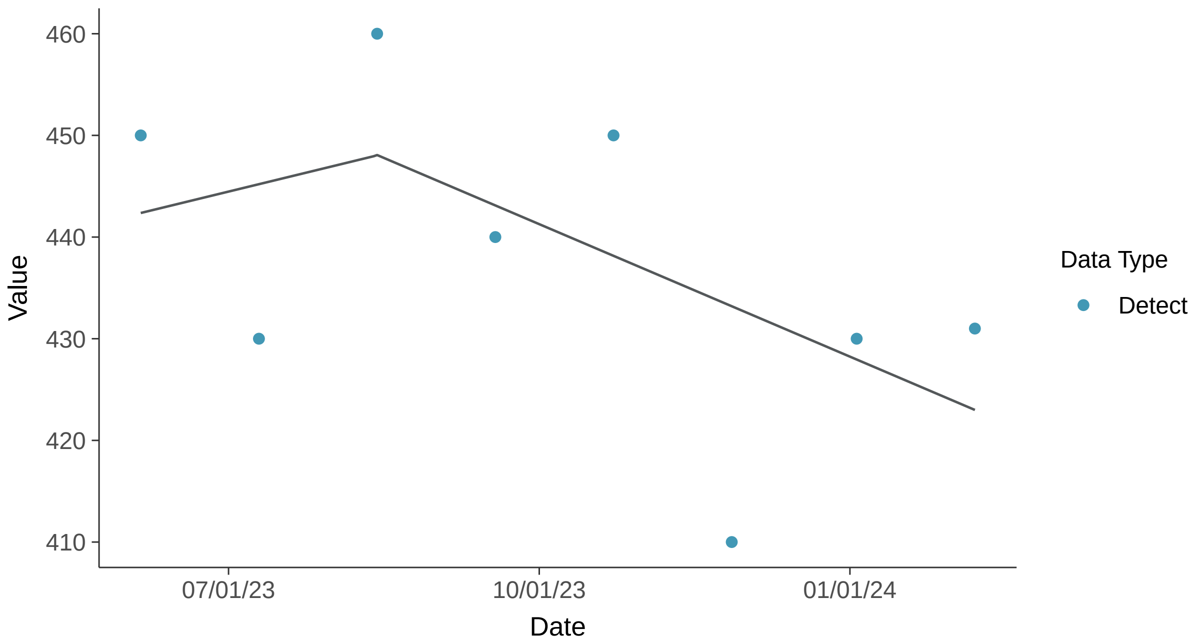
Trend Regression: Lognormal MLE

Bicarbonate, MW-100A (mg/L)



Trend Regression: Piecewise Linear-Linear

Bicarbonate, MW-100A (mg/L)

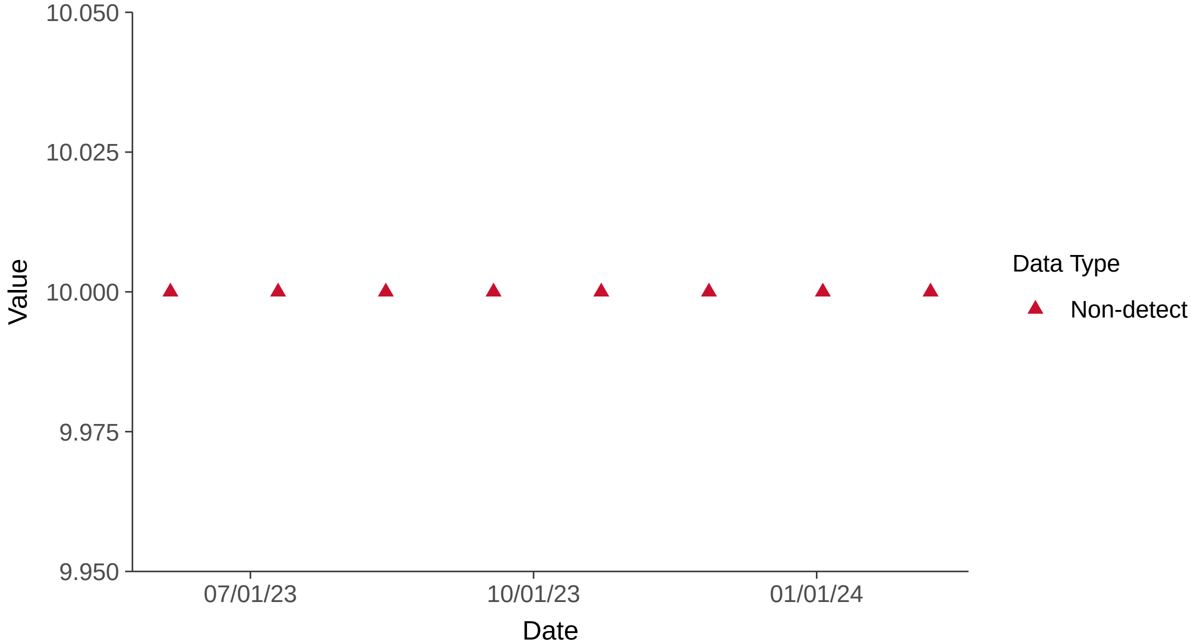


Other: Carbonate, MW-100A

ID: 100A_4_31

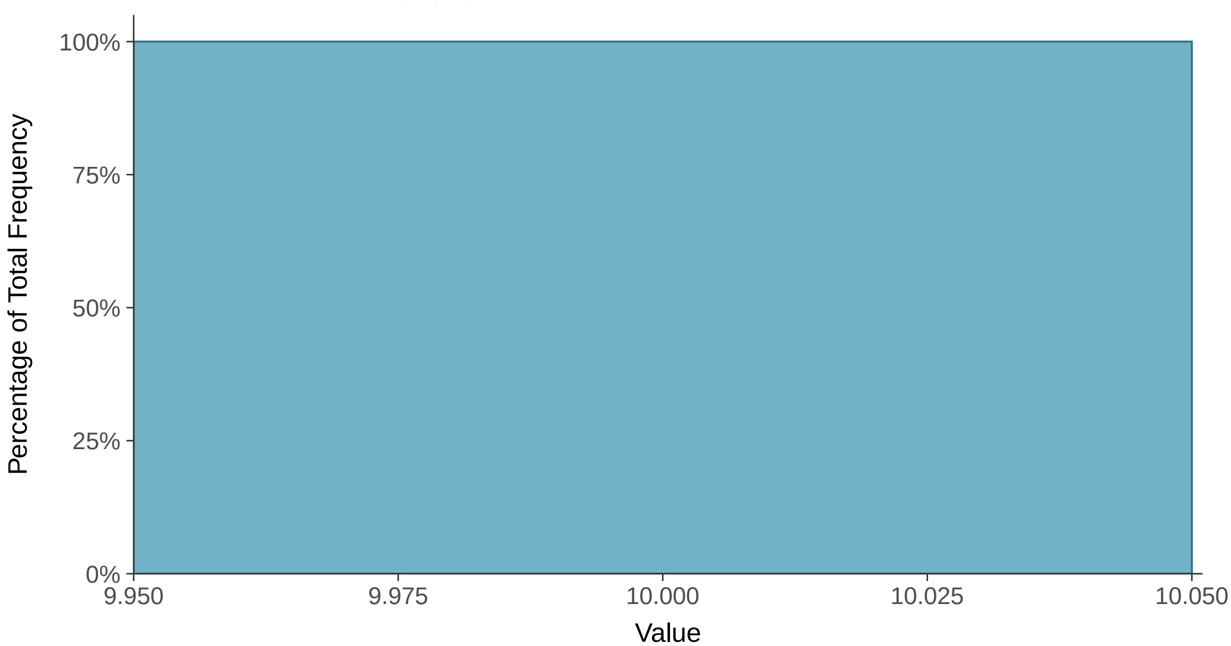
Scatter Plot

Carbonate, MW-100A (mg/L)



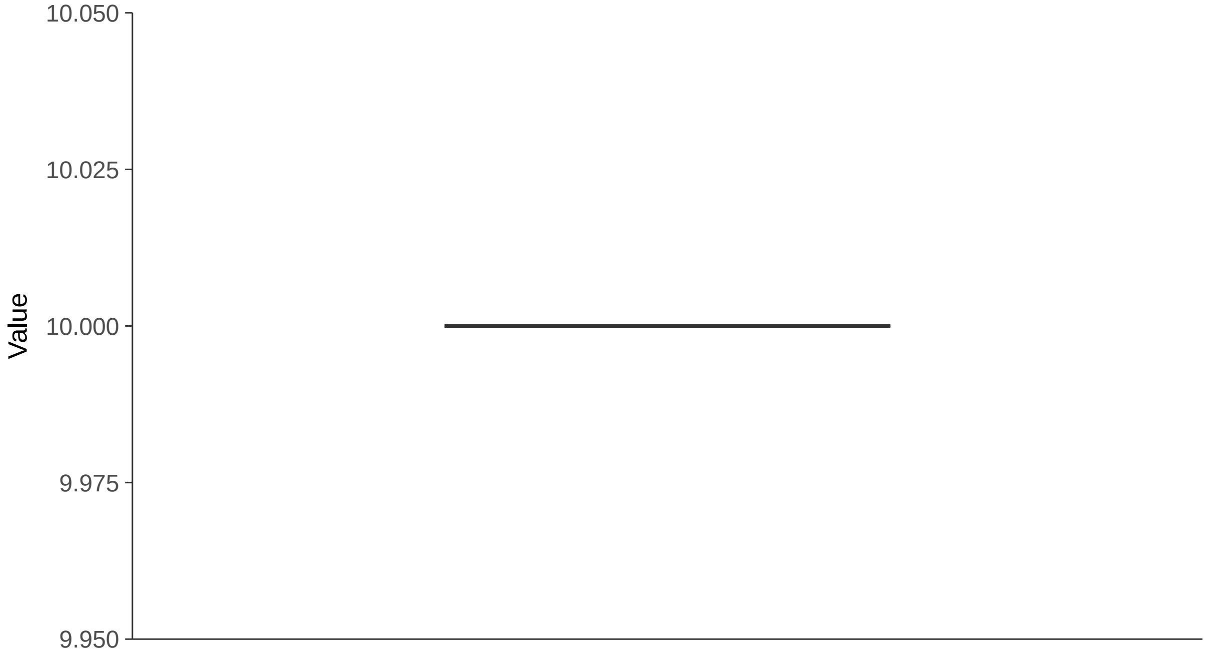
Histogram

Carbonate, MW-100A (mg/L)



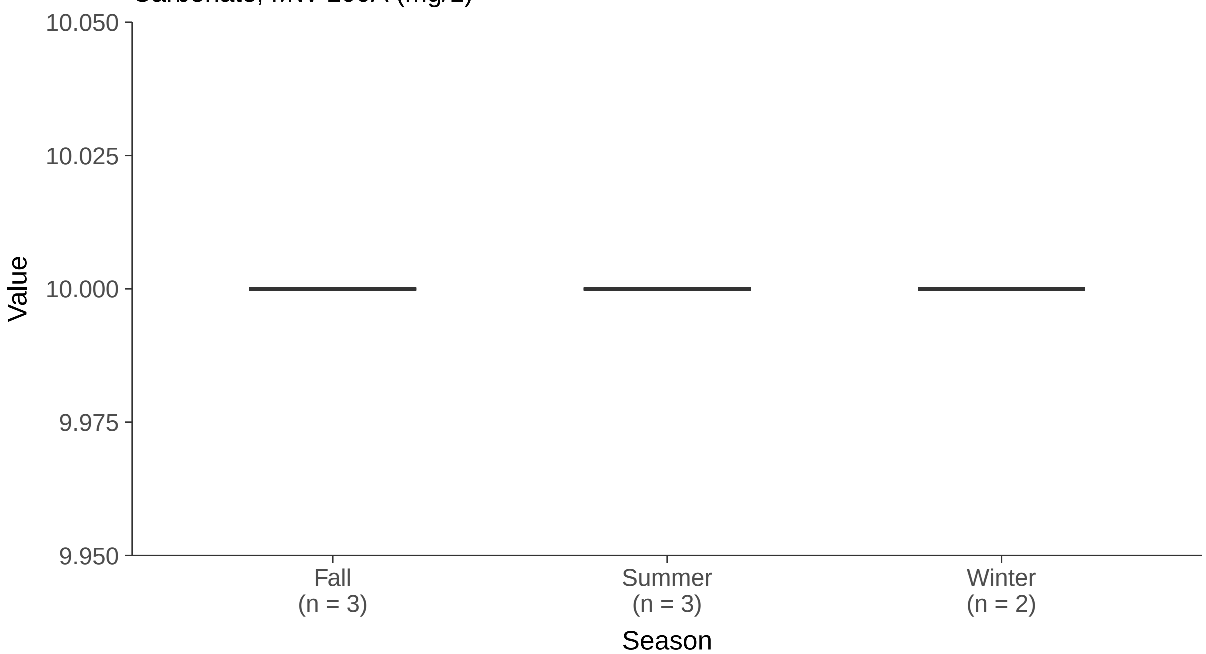
Boxplot

Carbonate, MW-100A (mg/L)



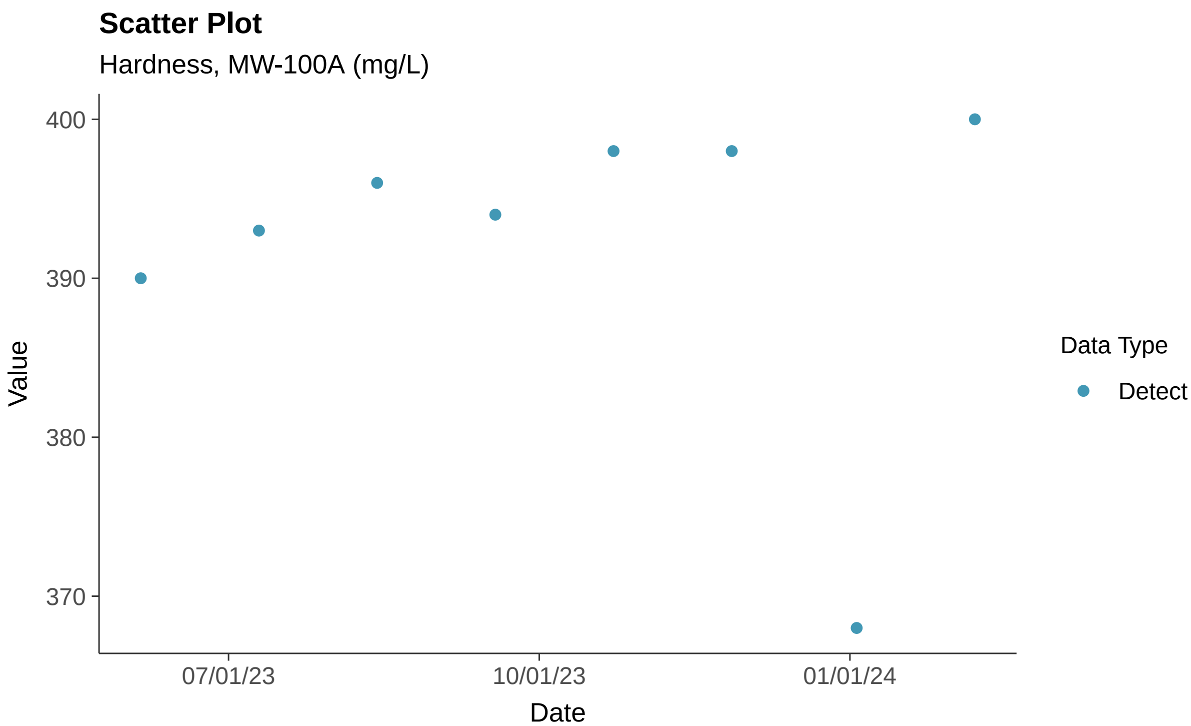
Boxplot by Season

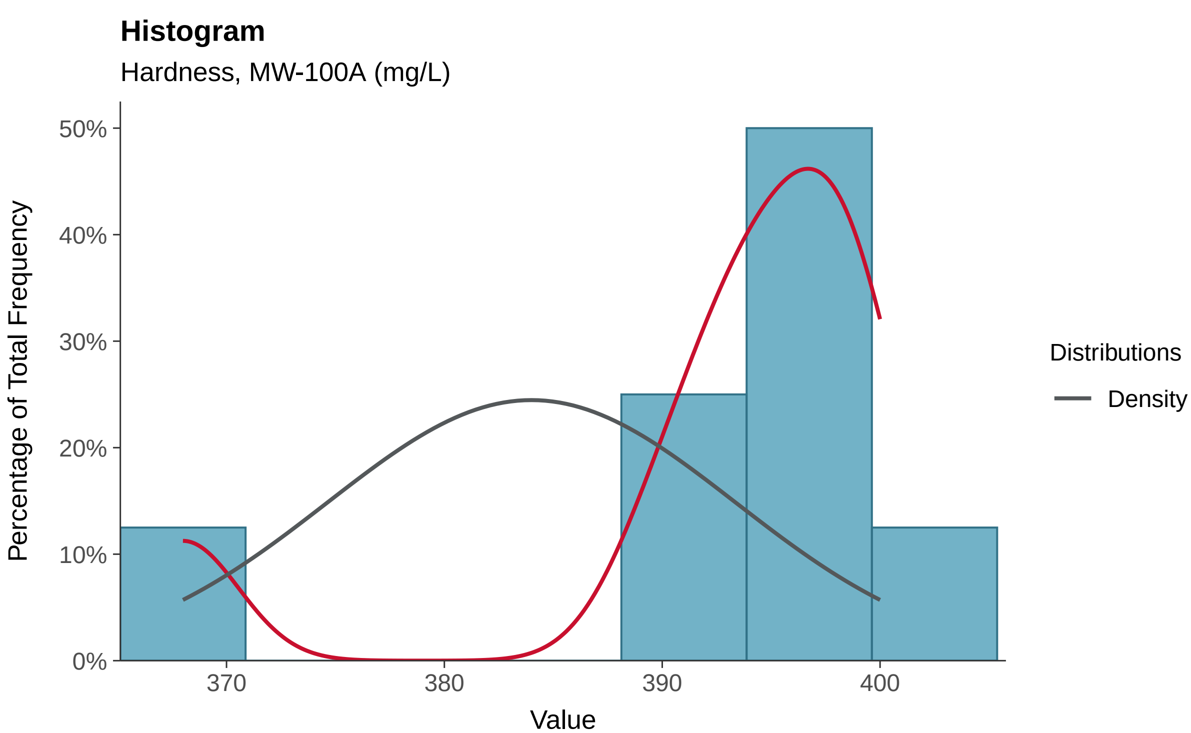
Carbonate, MW-100A (mg/L)

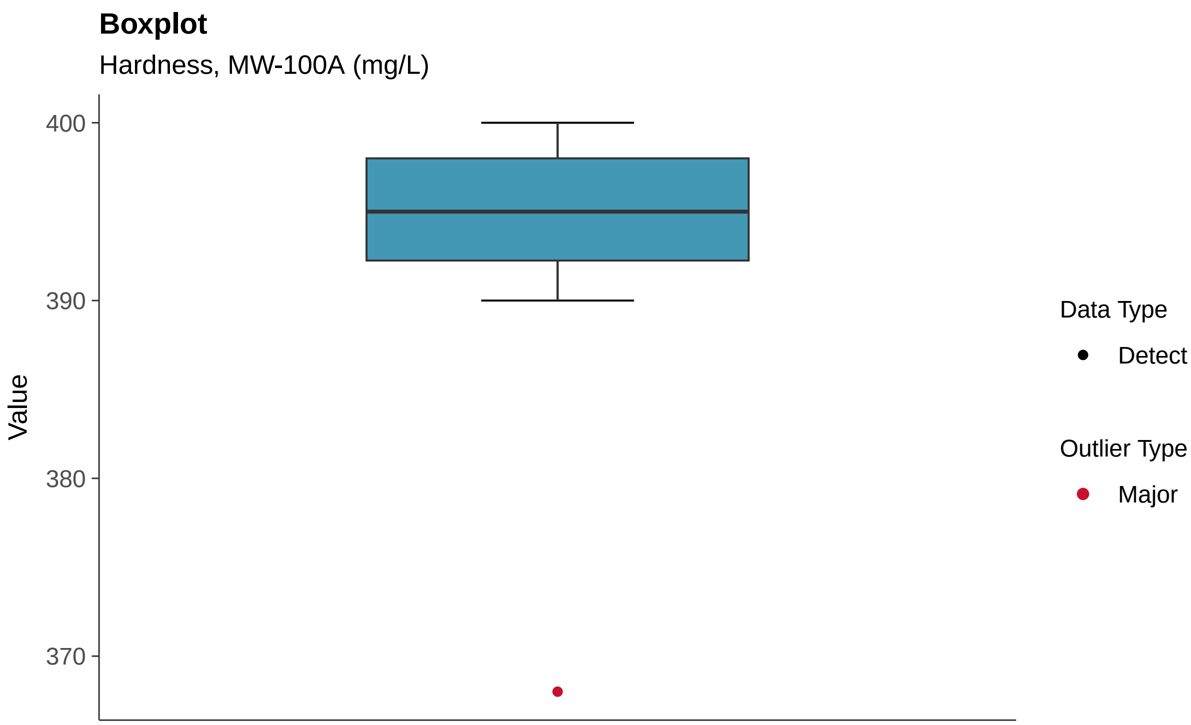


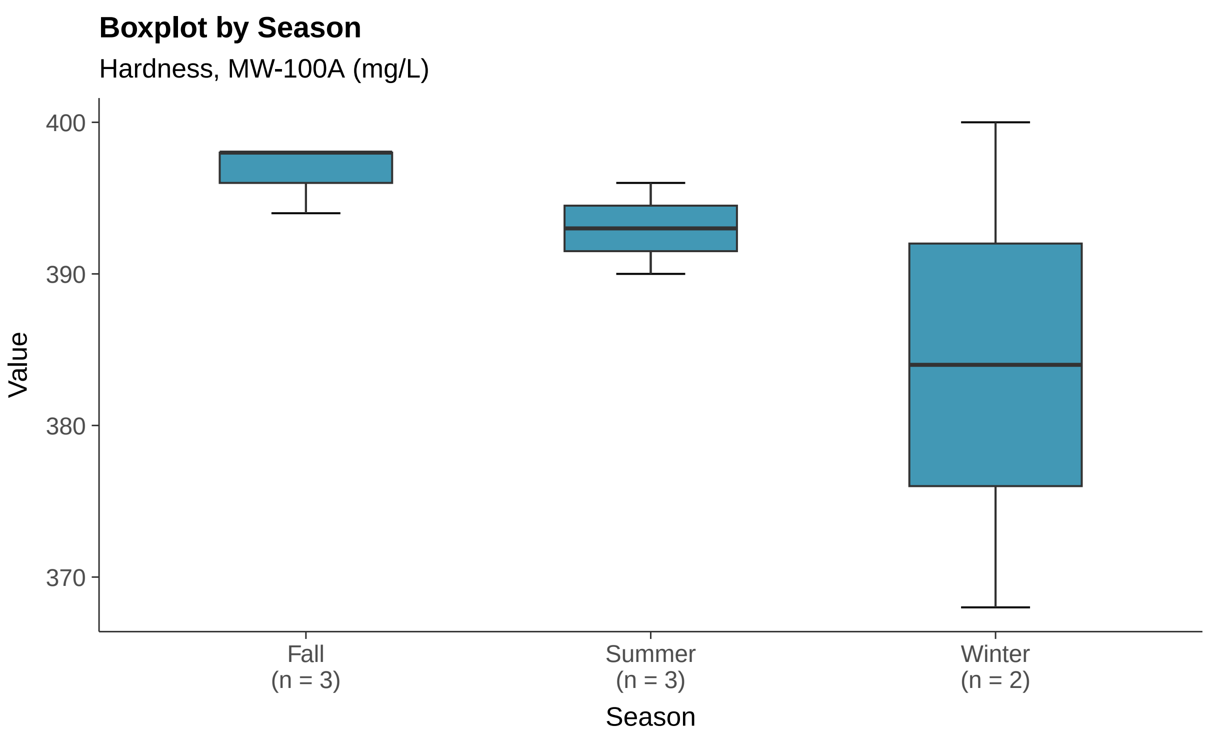
Other: Hardness, MW-100A

ID: 100A_4_32



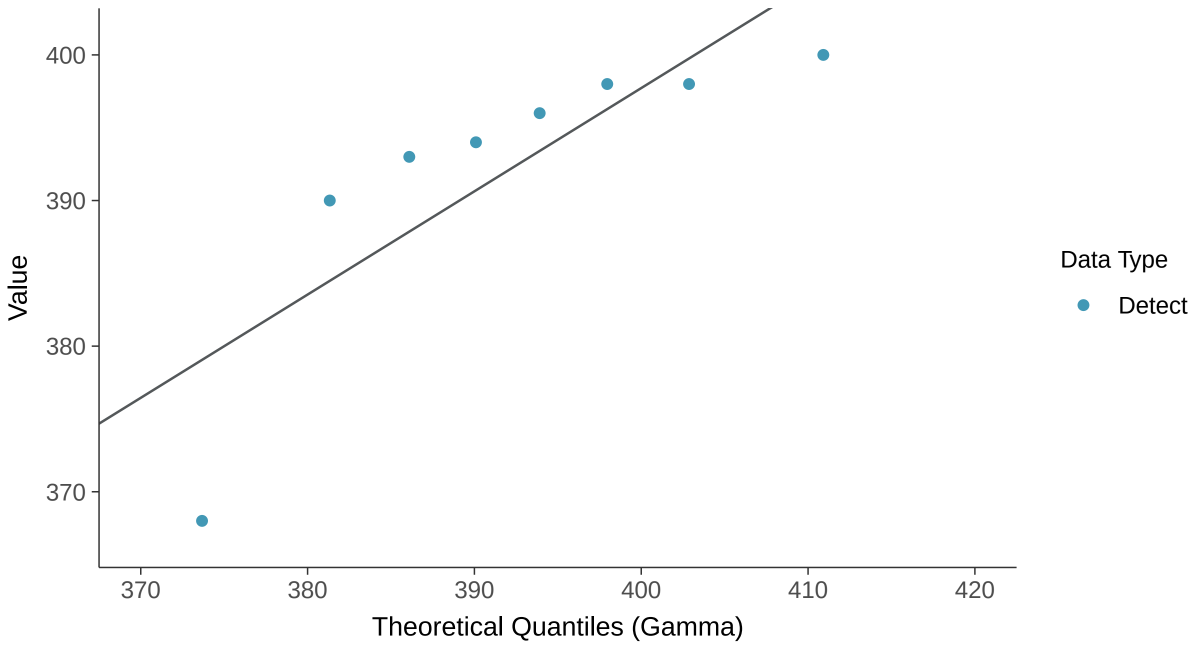



Boxplot
Hardness, MW-100A (mg/L)
Value
400
390
380
370
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Hardness, MW-100A (mg/L)
Value
400
390
380
370
Fall
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season

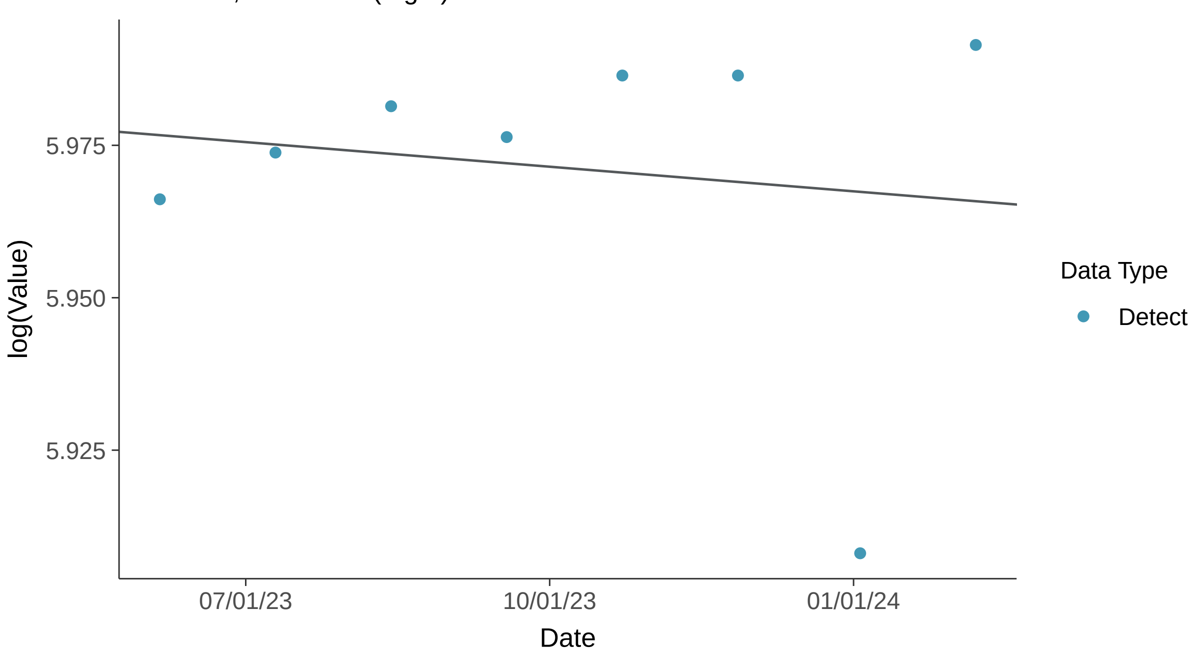
Gamma Q-Q plot

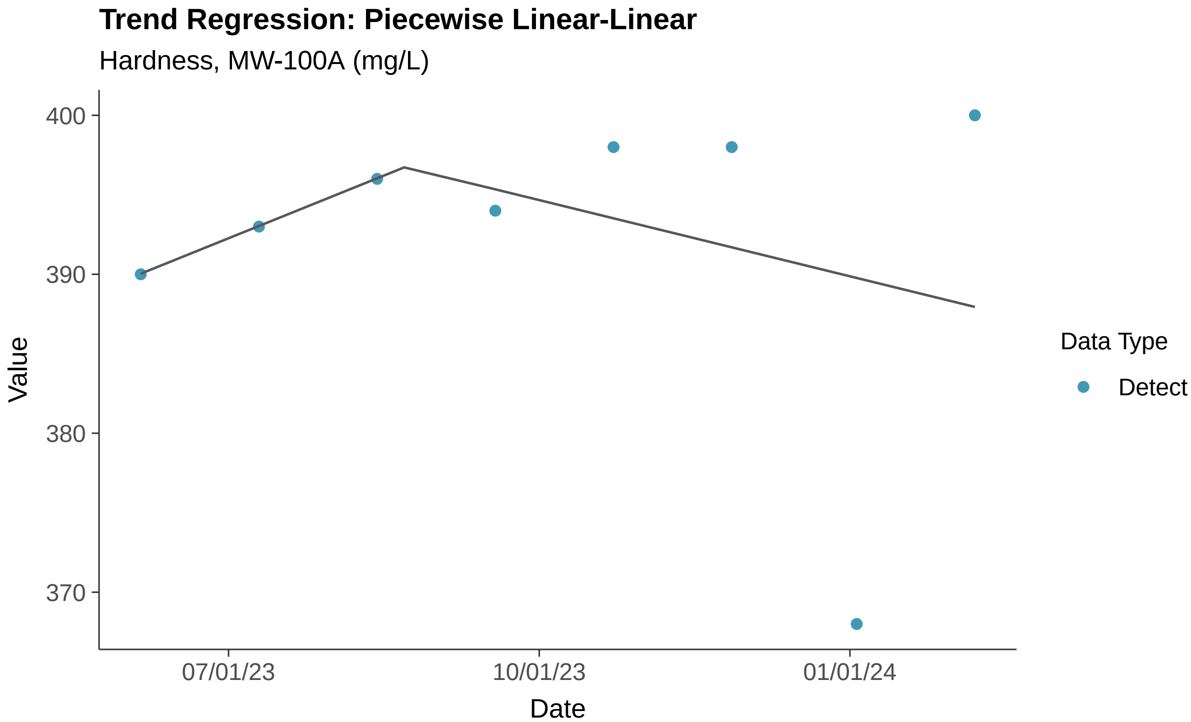
Hardness, MW-100A (mg/L)



Trend Regression: Lognormal MLE

Hardness, MW-100A (mg/L)



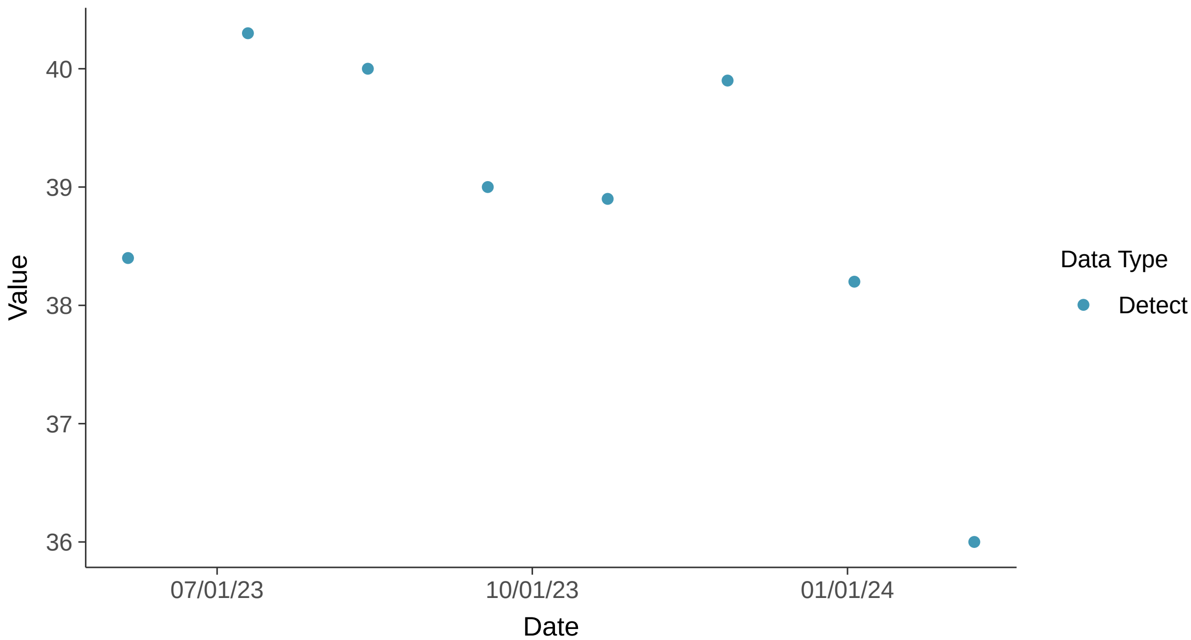

Trend Regression: Piecewise Linear-Linear
Hardness, MW-100A (mg/L)
Value
400
390
380
370
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Other: Magnesium, MW-100A

ID: 100A_4_33

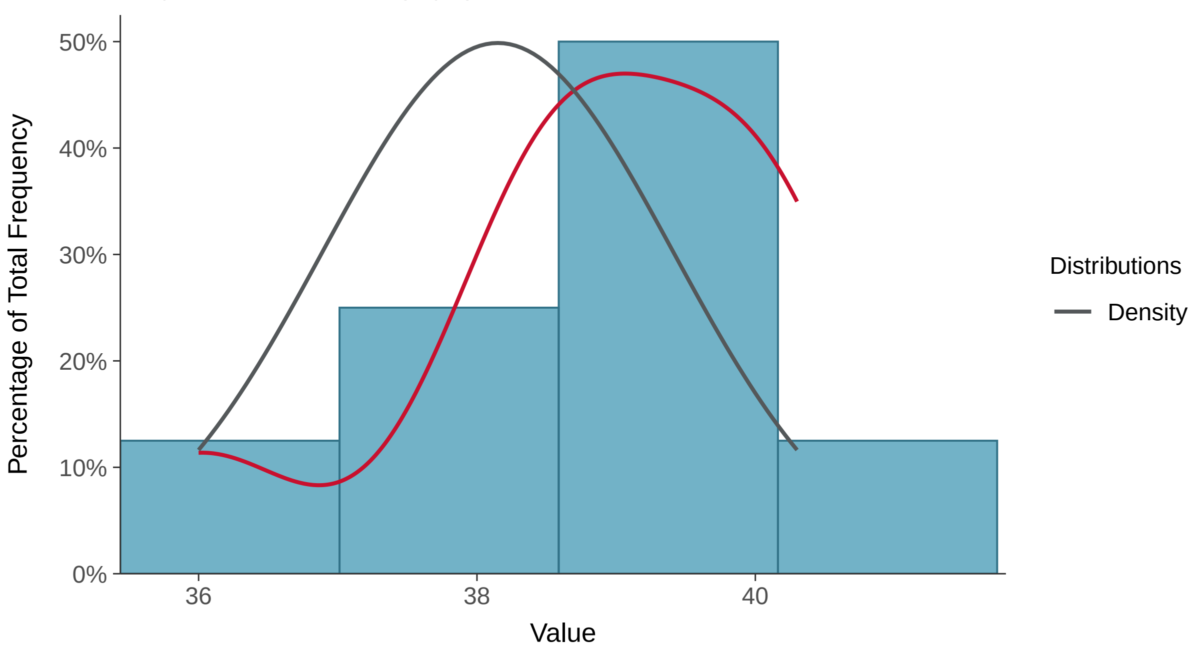
Scatter Plot

Magnesium, MW-100A (mg/L)



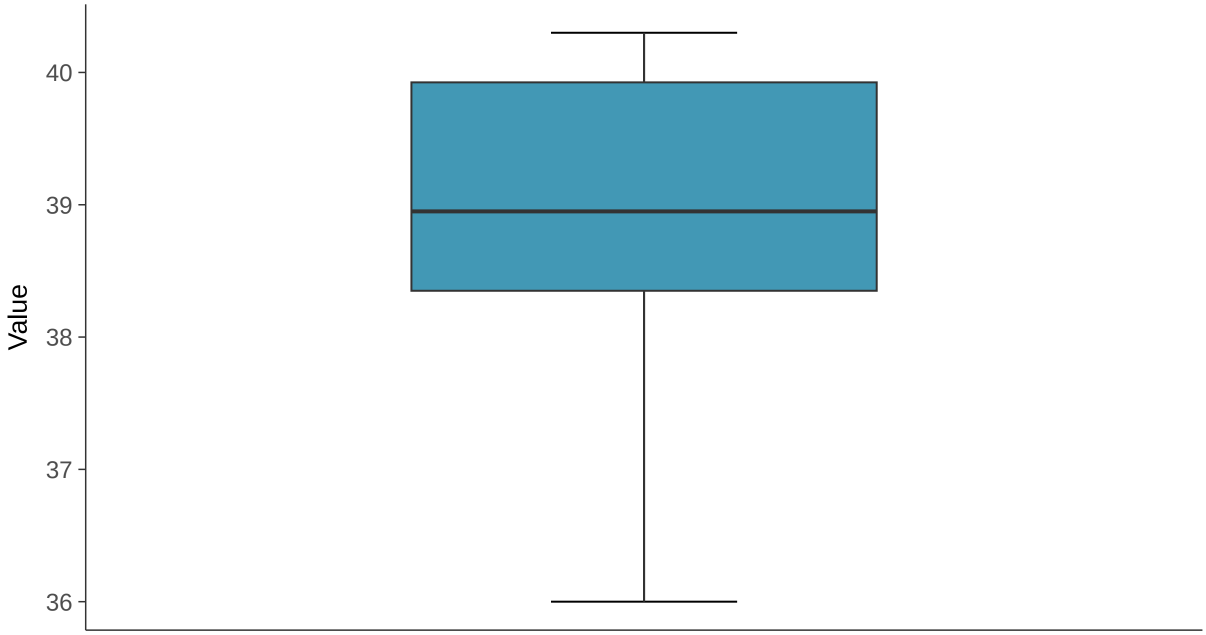
Histogram

Magnesium, MW-100A (mg/L)



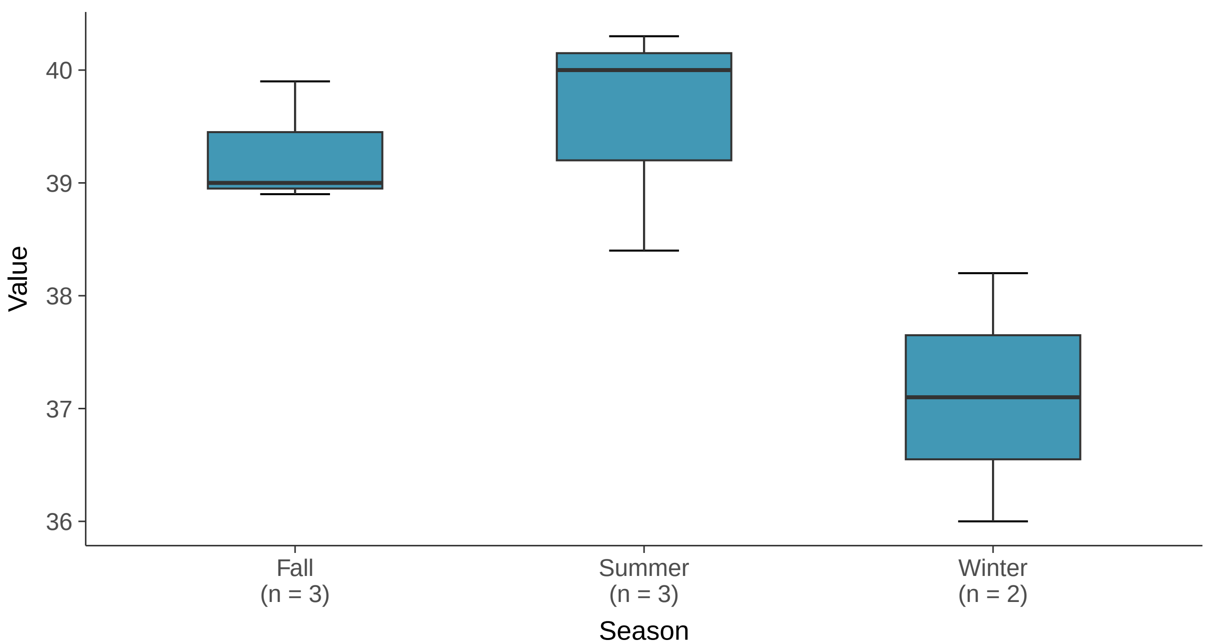
Boxplot

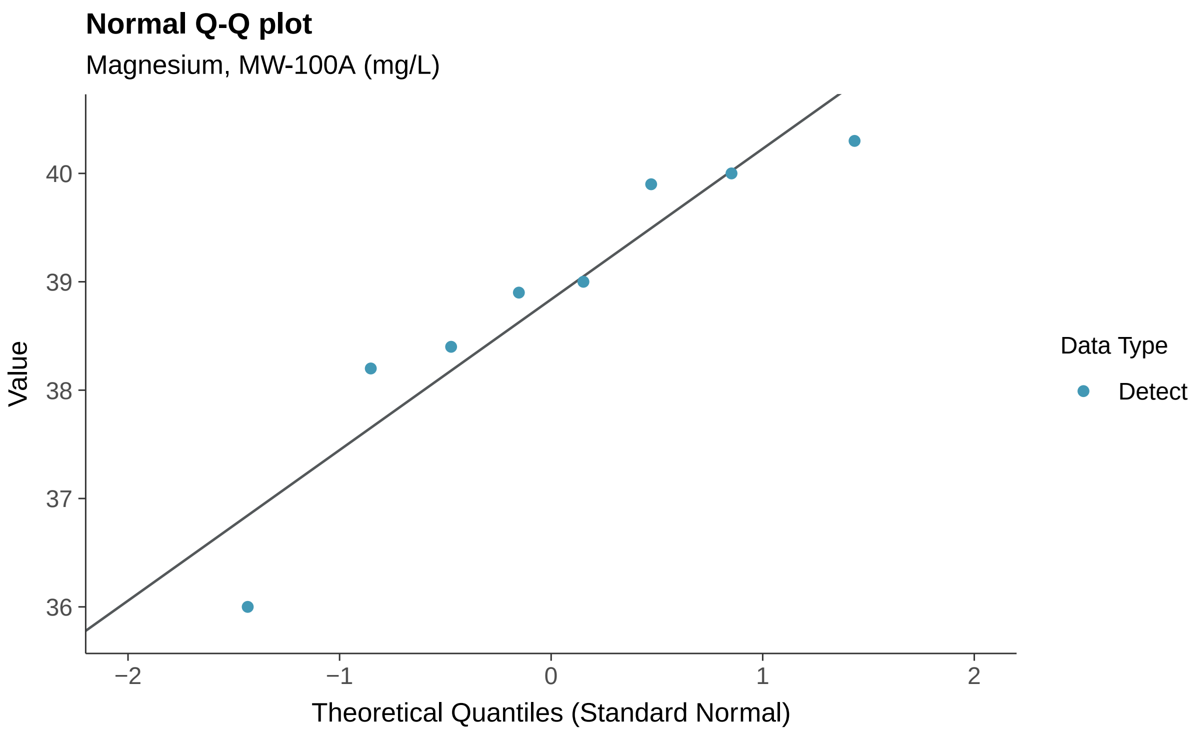
Magnesium, MW-100A (mg/L)

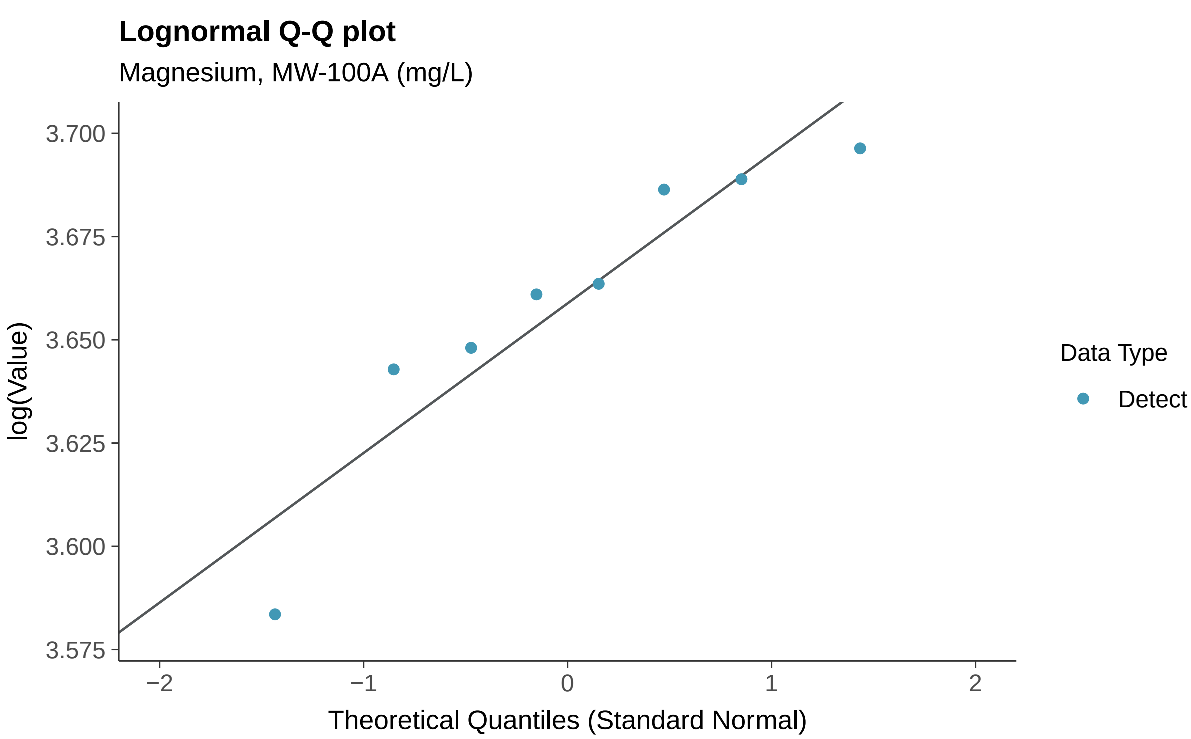


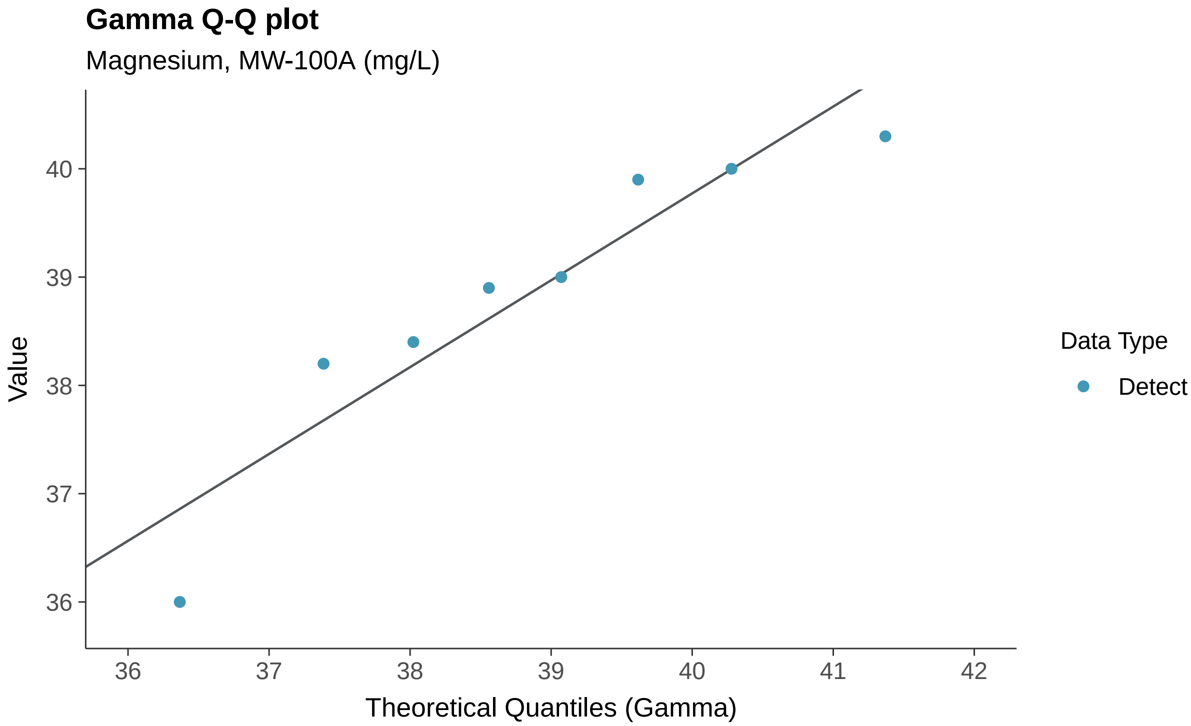
Boxplot by Season

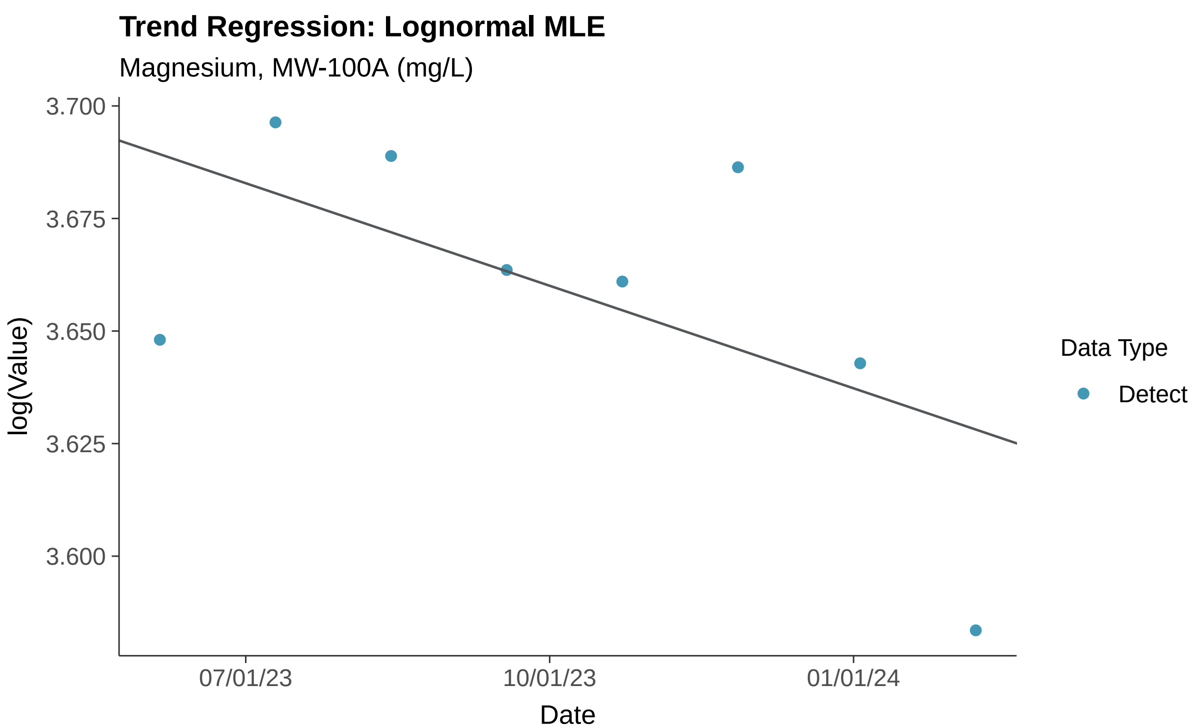
Magnesium, MW-100A (mg/L)




Normal Q-Q plot
Magnesium, MW-100A (mg/L)
Value
36
37
38
39
40
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

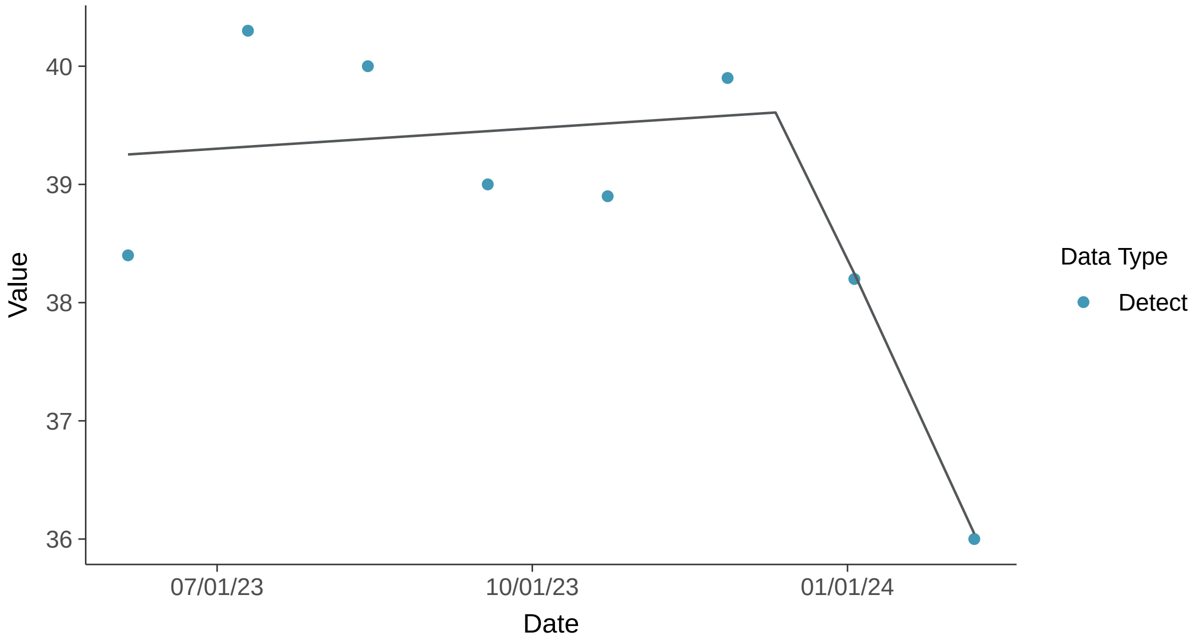

Lognormal Q-Q plot
Magnesium, MW-100A (mg/L)
log(Value)
3.575
3.600
3.625
3.650
3.675
3.700
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Magnesium, MW-100A (mg/L)
Value
40
39
38
37
36
36
37
38
39
40
41
42
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Magnesium, MW-100A (mg/L)
log(Value)
3.700
3.675
3.650
3.625
3.600
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Magnesium, MW-100A (mg/L)

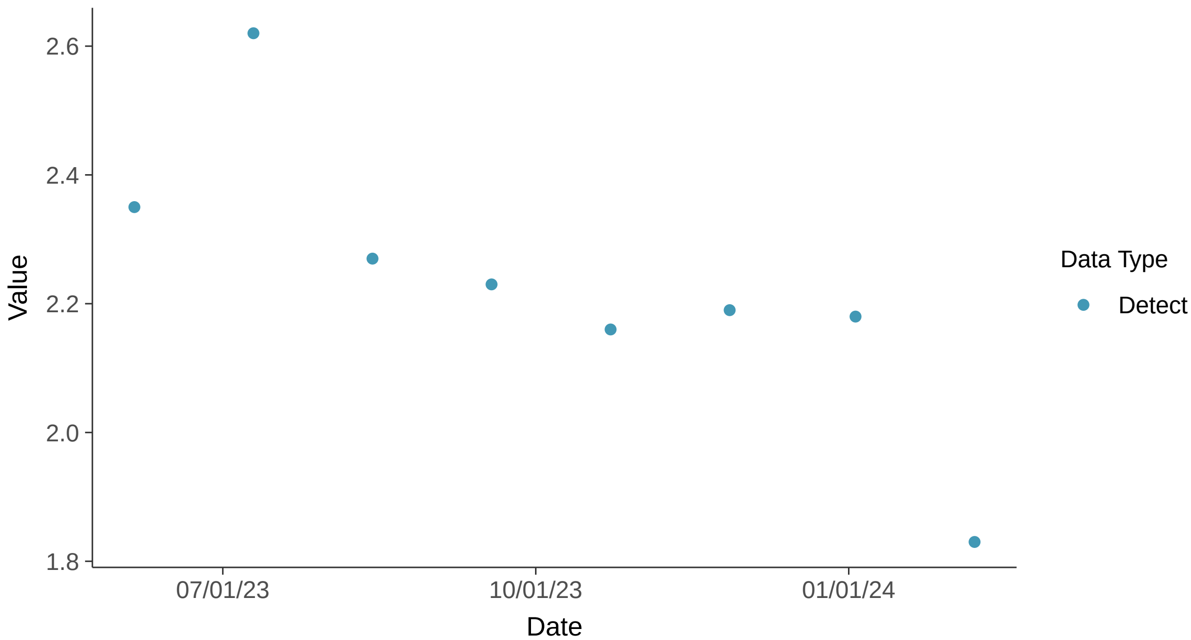


Other: Potassium, MW-100A

ID: 100A_4_34

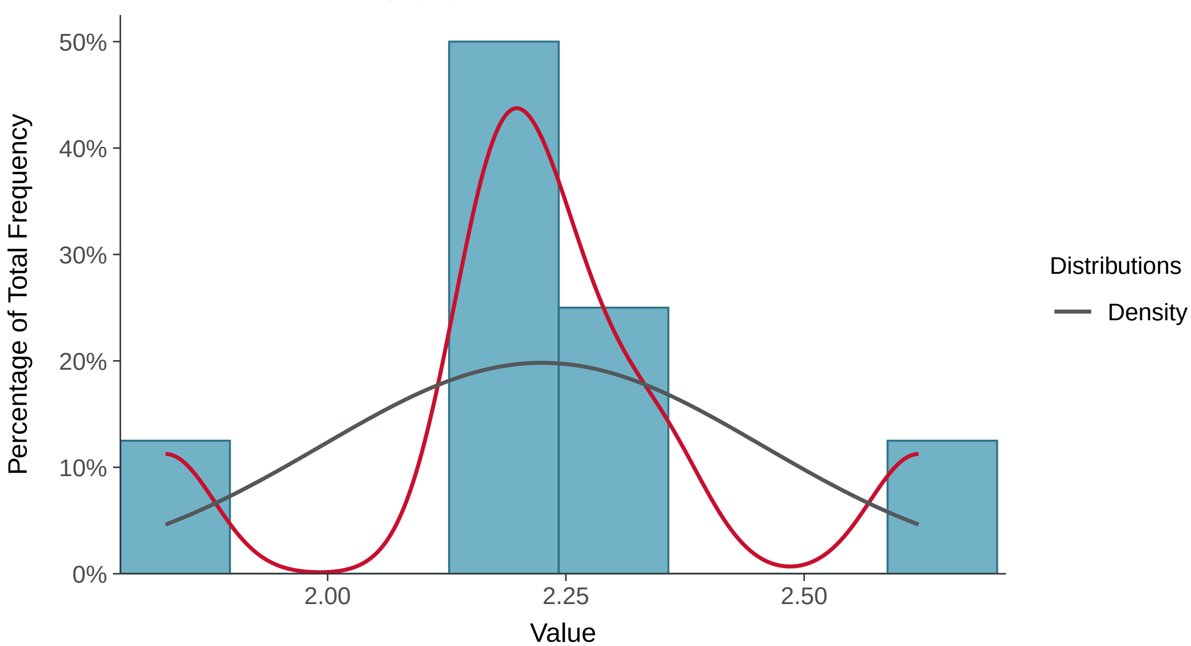
Scatter Plot

Potassium, MW-100A (mg/L)



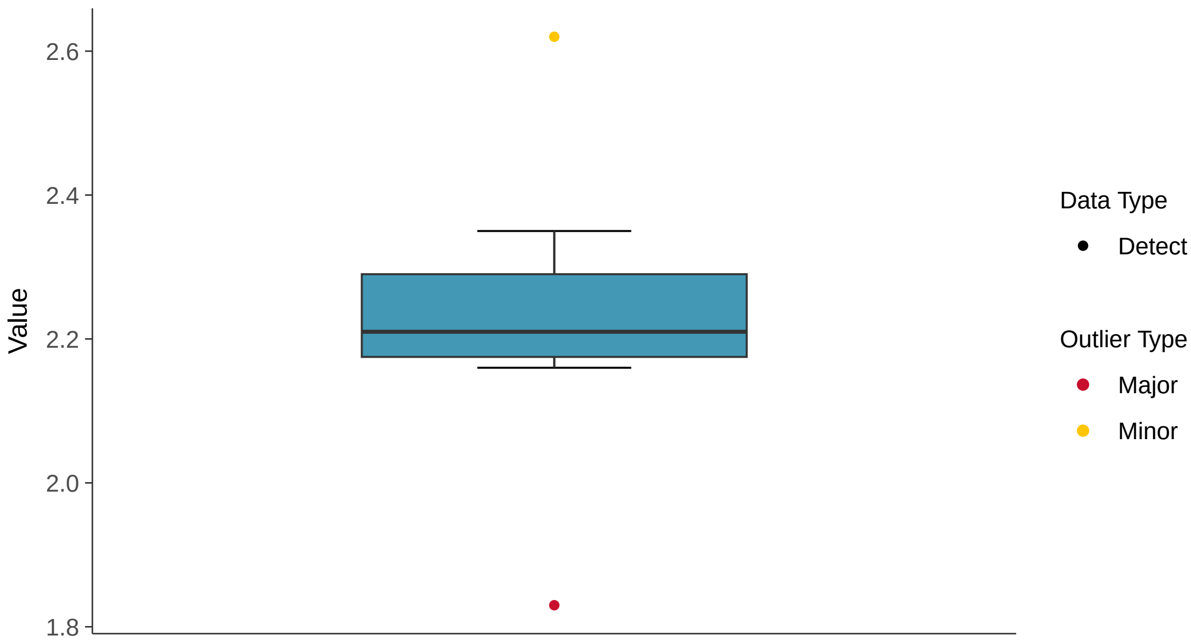
Histogram

Potassium, MW-100A (mg/L)



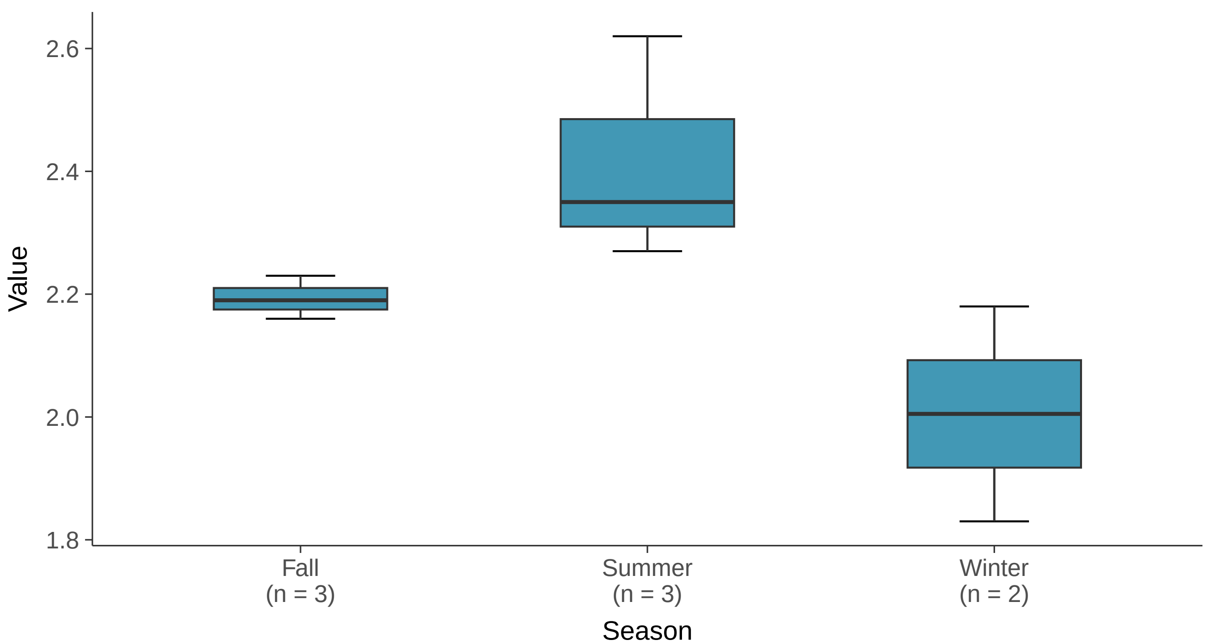
Boxplot

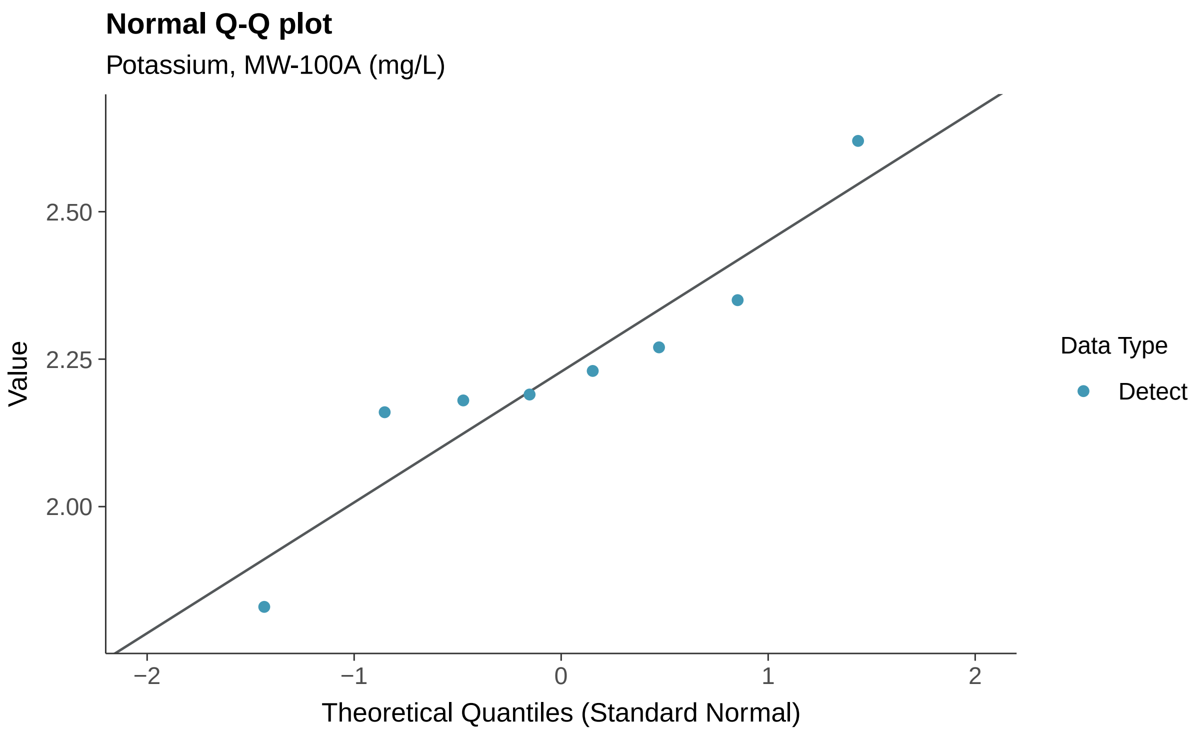
Potassium, MW-100A (mg/L)

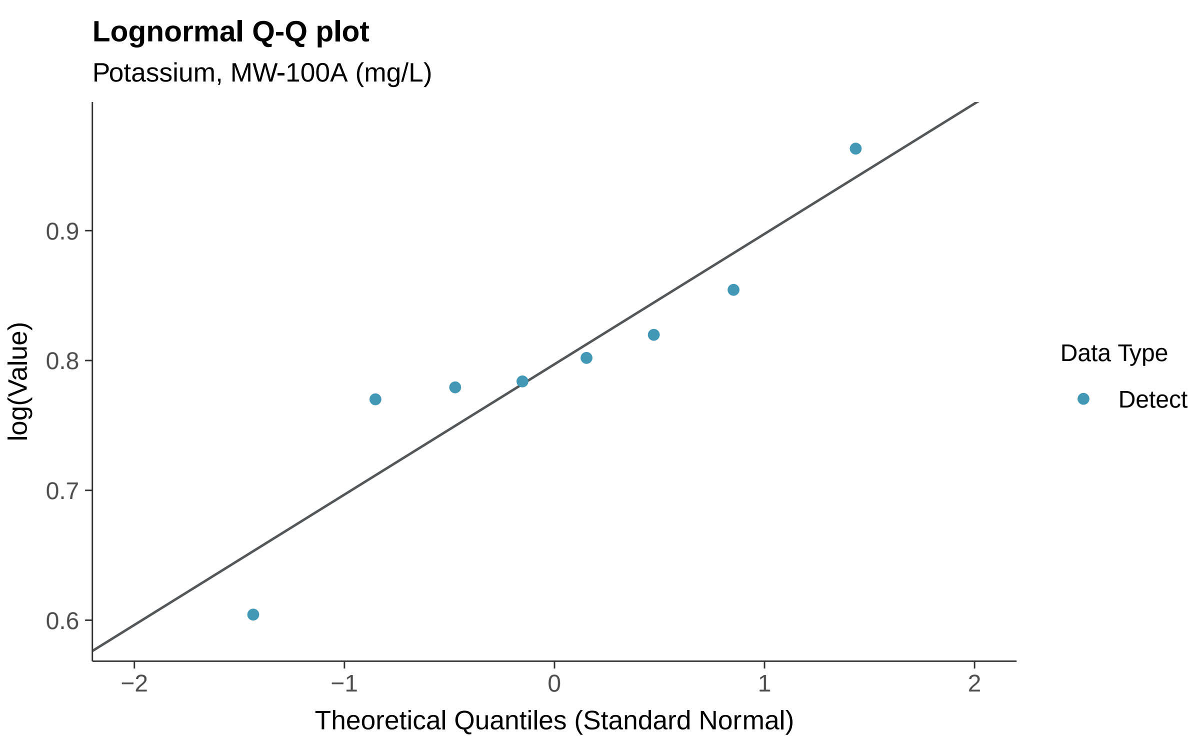


Boxplot by Season

Potassium, MW-100A (mg/L)

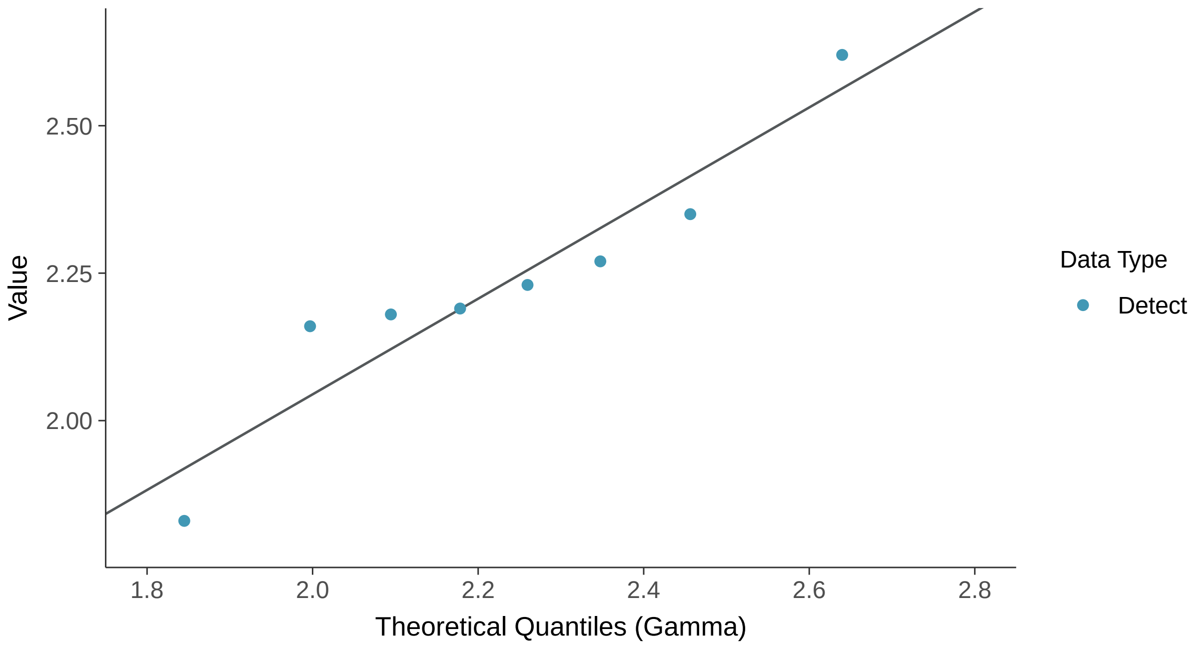



Normal Q-Q plot
Potassium, MW-100A (mg/L)
Value
2.50
2.25
2.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Potassium, MW-100A (mg/L)
log(Value)
0.9
0.8
0.7
0.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

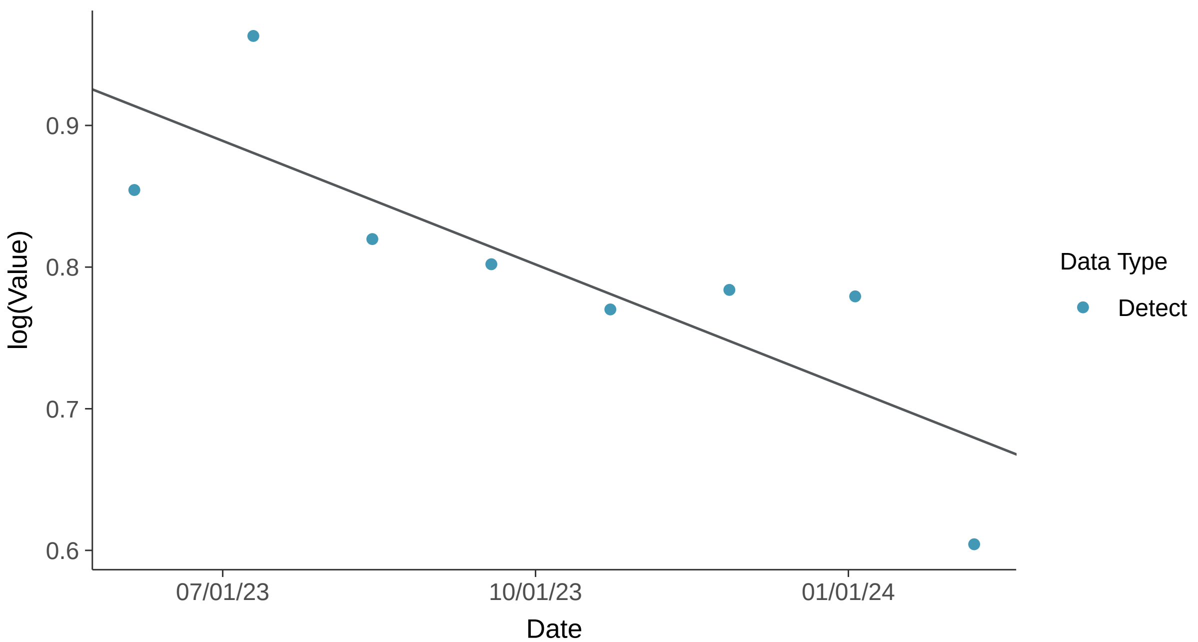
Gamma Q-Q plot

Potassium, MW-100A (mg/L)



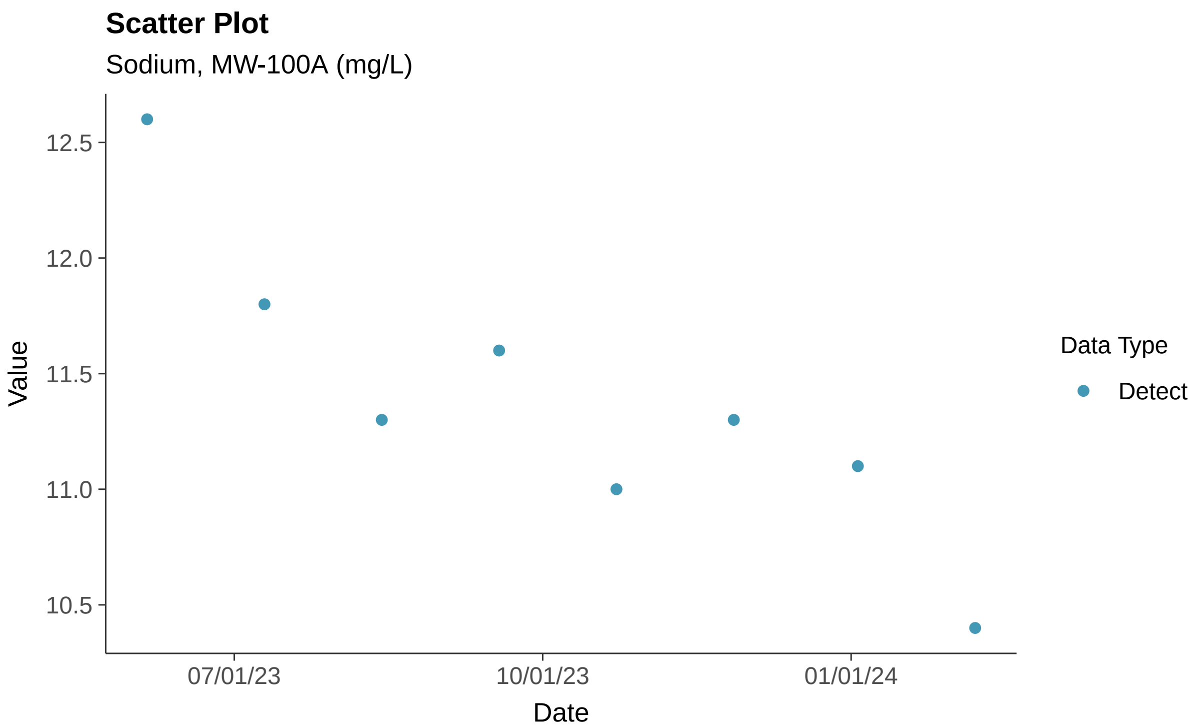
Trend Regression: Lognormal MLE

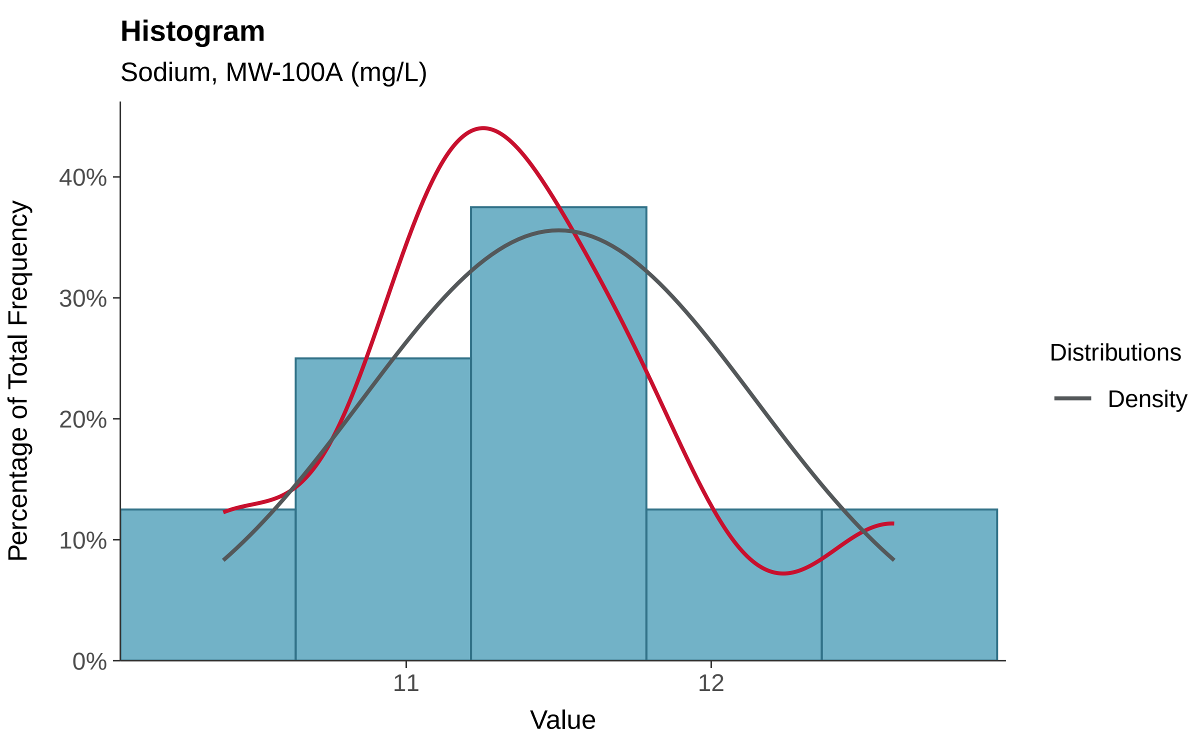
Potassium, MW-100A (mg/L)



Other: Sodium, MW-100A

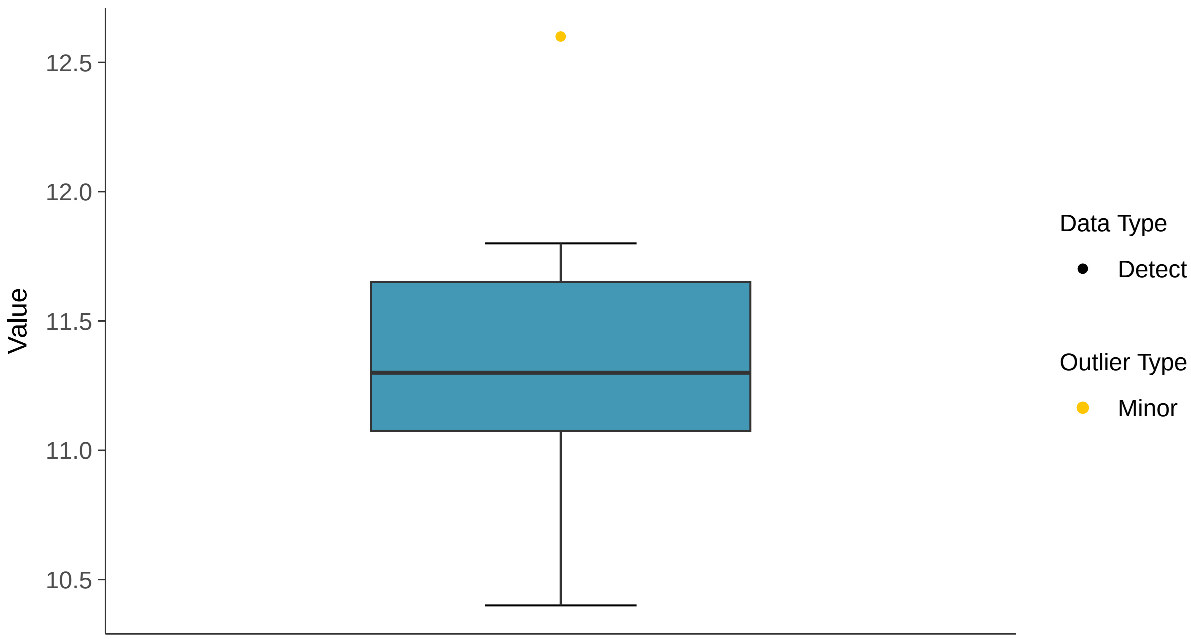
ID: 100A_4_35





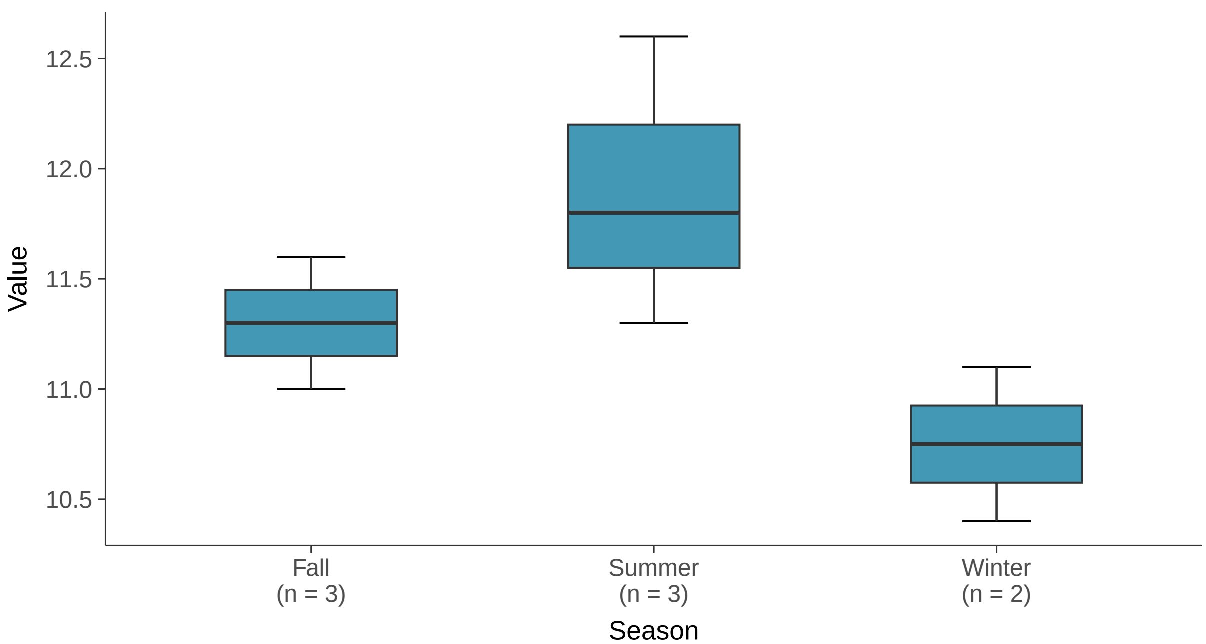
Boxplot

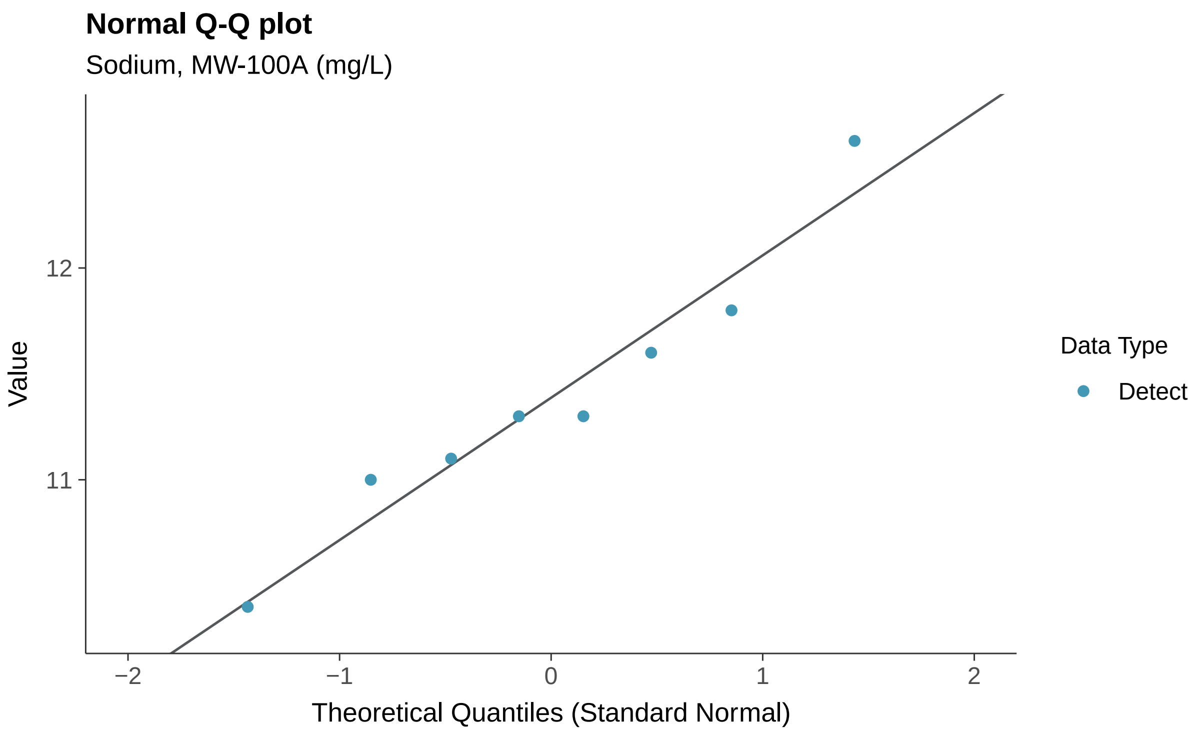
Sodium, MW-100A (mg/L)

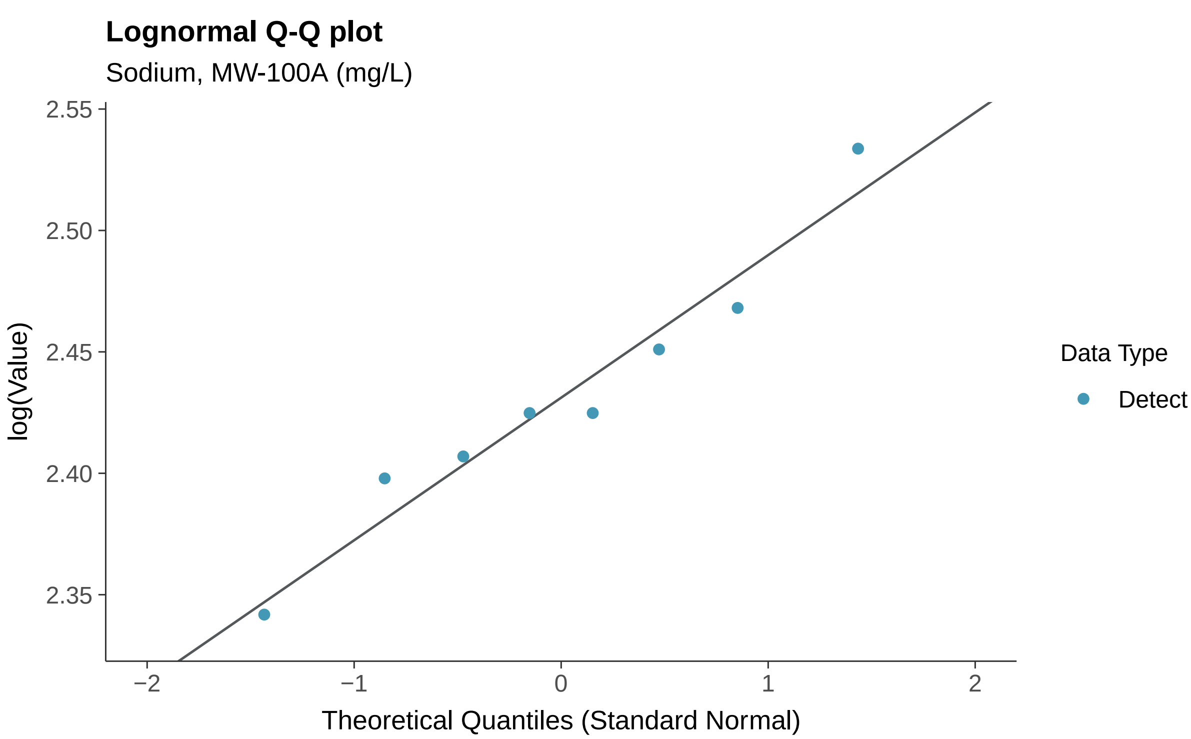


Boxplot by Season

Sodium, MW-100A (mg/L)

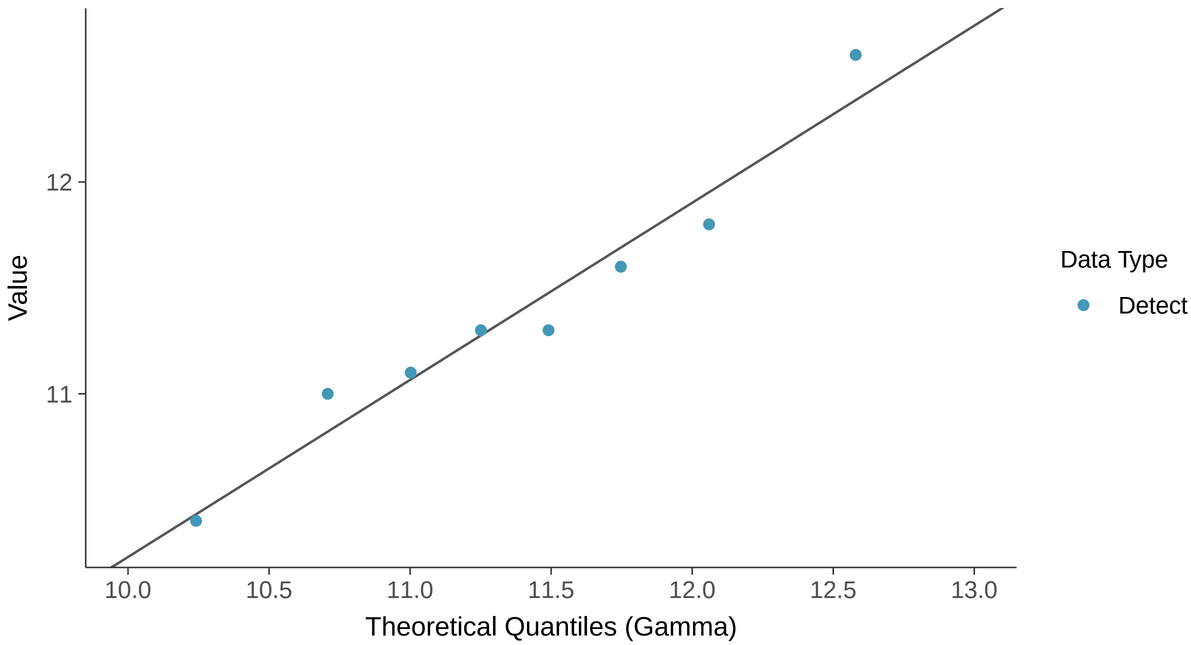



Normal Q-Q plot
Sodium, MW-100A (mg/L)
Value
12
11
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Sodium, MW-100A (mg/L)
log(Value)
2.55
2.50
2.45
2.40
2.35
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

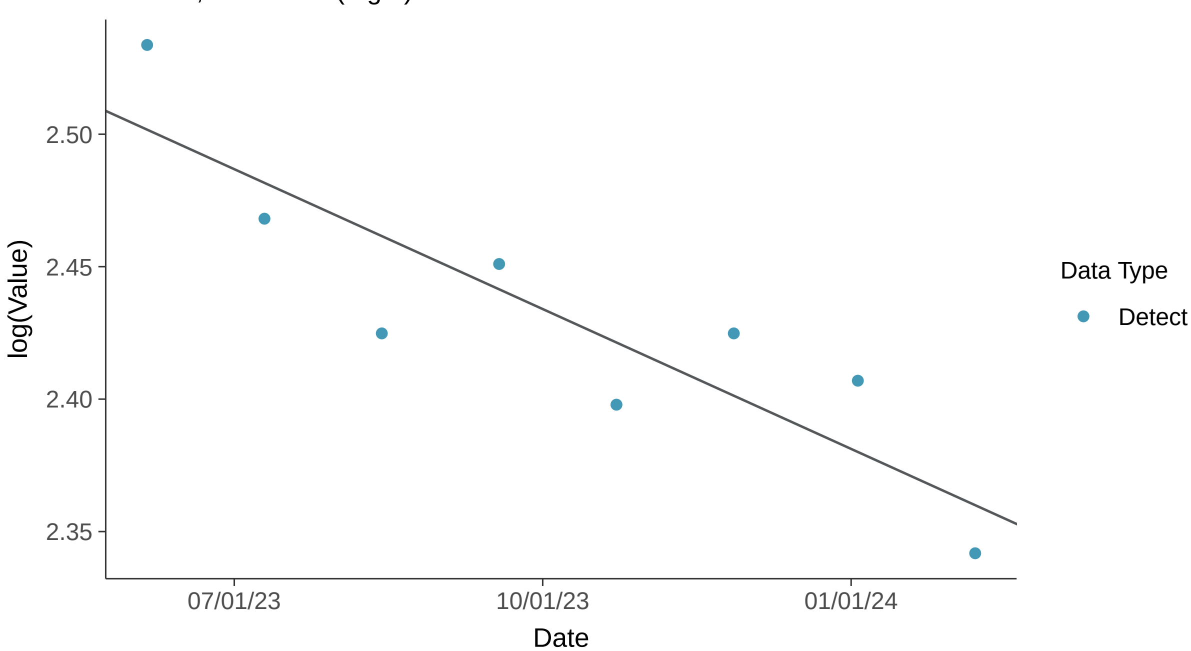
Gamma Q-Q plot

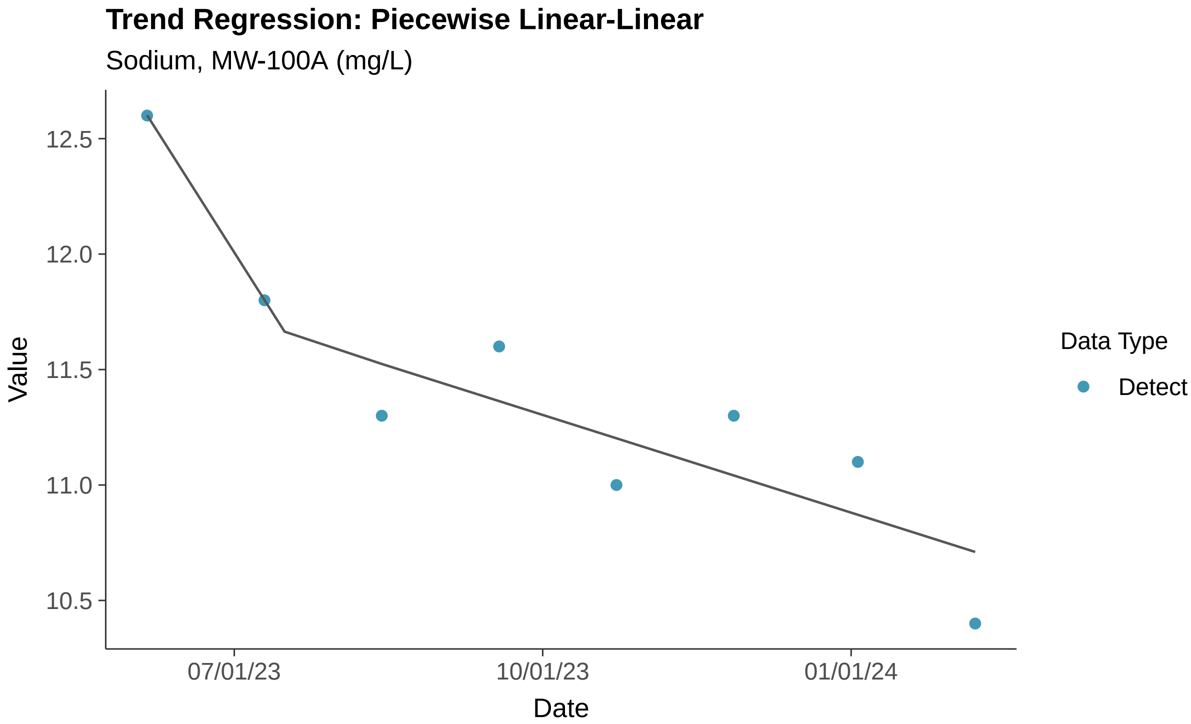
Sodium, MW-100A (mg/L)

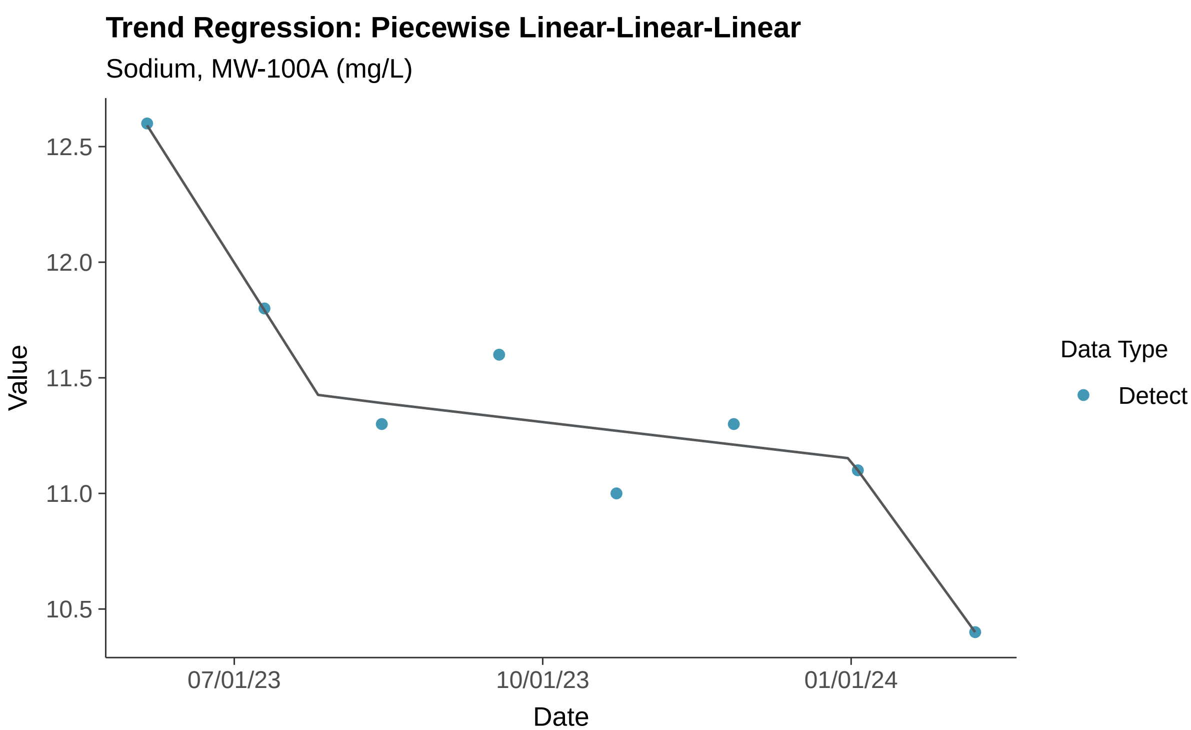


Trend Regression: Lognormal MLE

Sodium, MW-100A (mg/L)




Trend Regression: Piecewise Linear-Linear
Sodium, MW-100A (mg/L)
Value
12.5
12.0
11.5
11.0
10.5
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

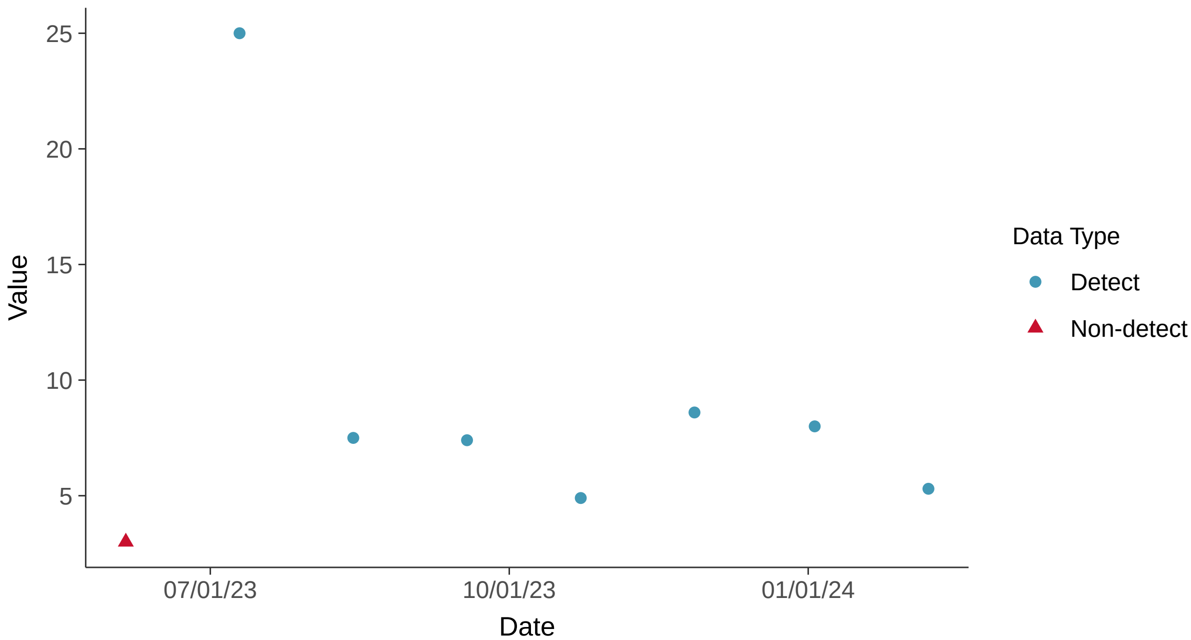

Trend Regression: Piecewise Linear-Linear-Linear
Sodium, MW-100A (mg/L)
Value
12.5
12.0
11.5
11.0
10.5
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Other: Total Suspended Solids, MW-100A

ID: 100A_4_36

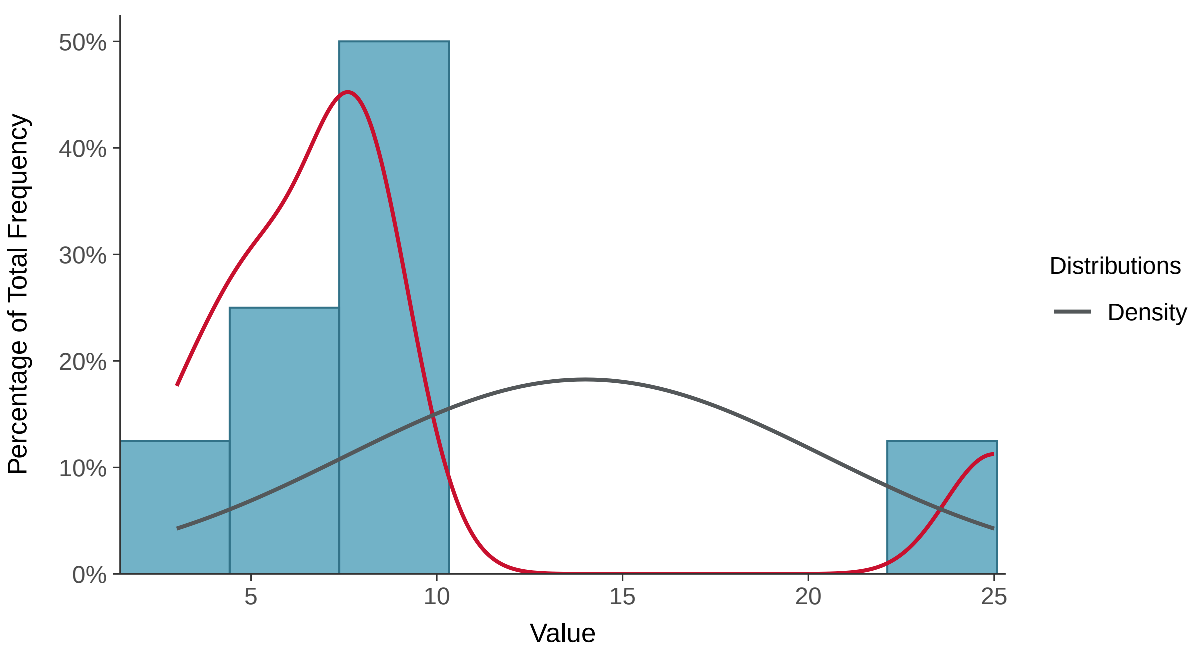
Scatter Plot

Total Suspended Solids, MW-100A (mg/L)



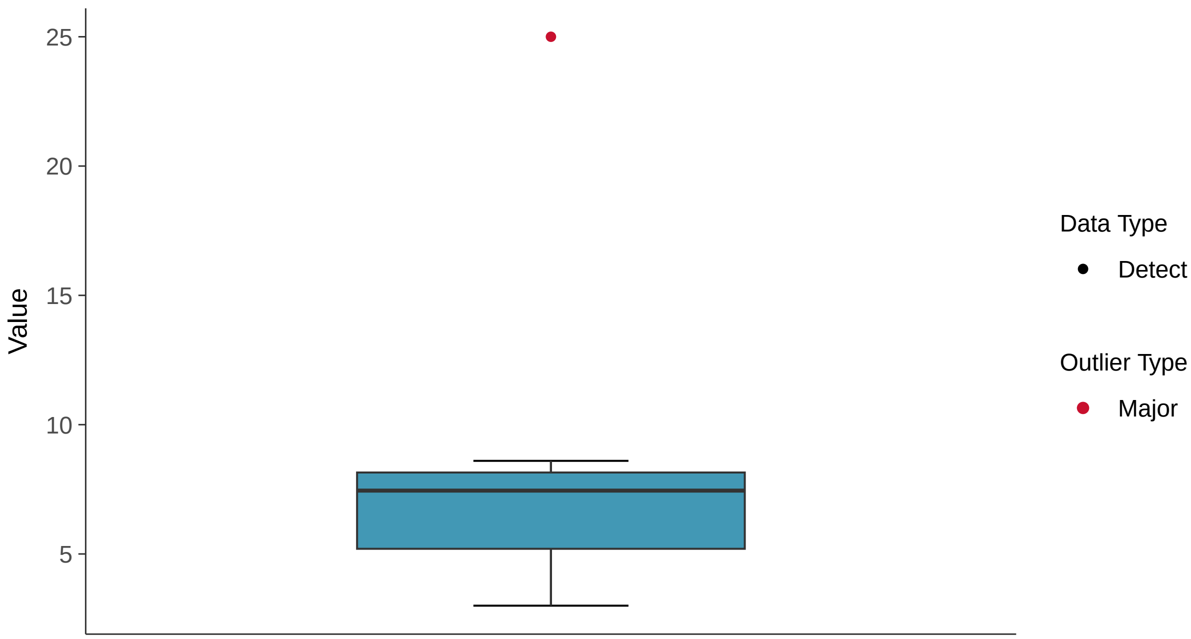
Histogram

Total Suspended Solids, MW-100A (mg/L)



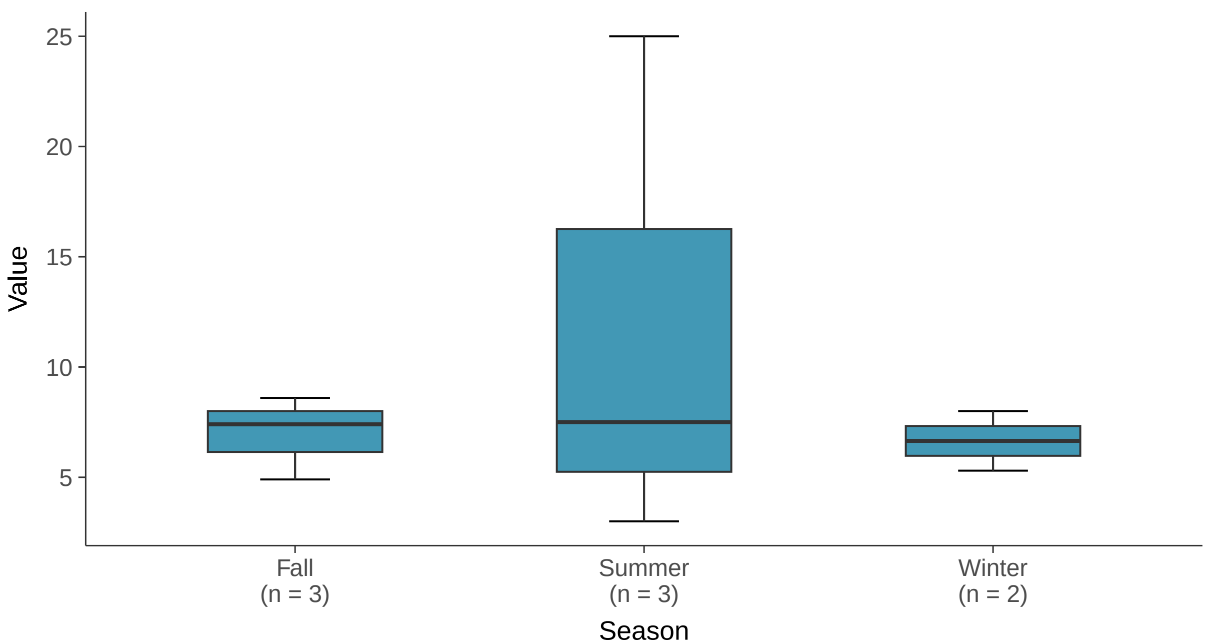
Boxplot

Total Suspended Solids, MW-100A (mg/L)



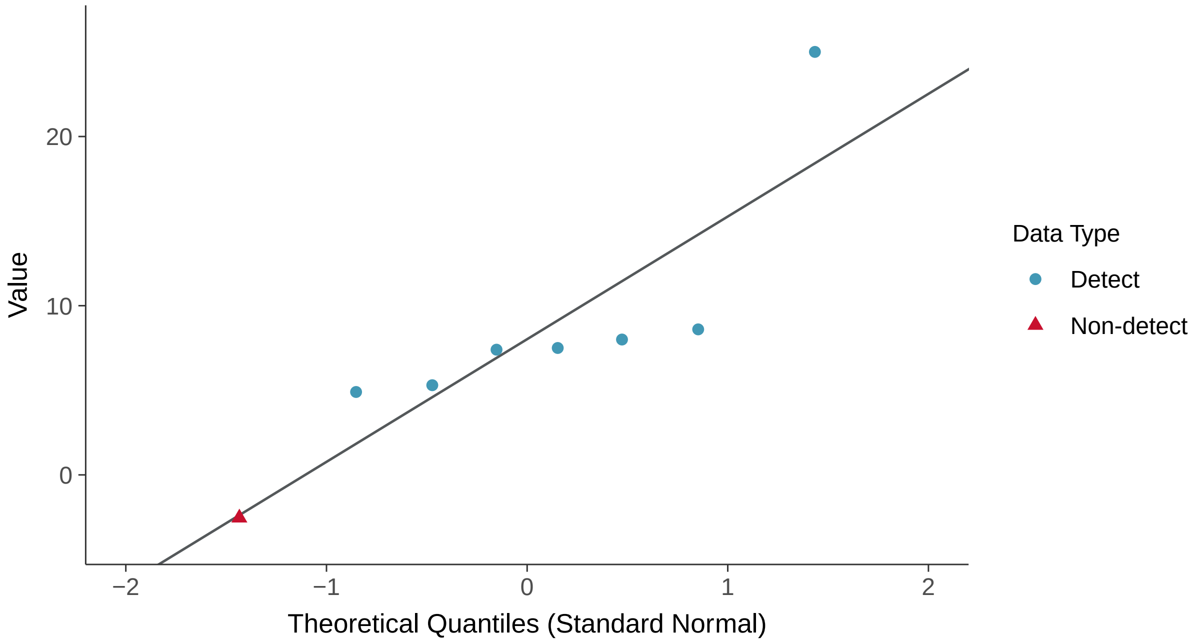
Boxplot by Season

Total Suspended Solids, MW-100A (mg/L)



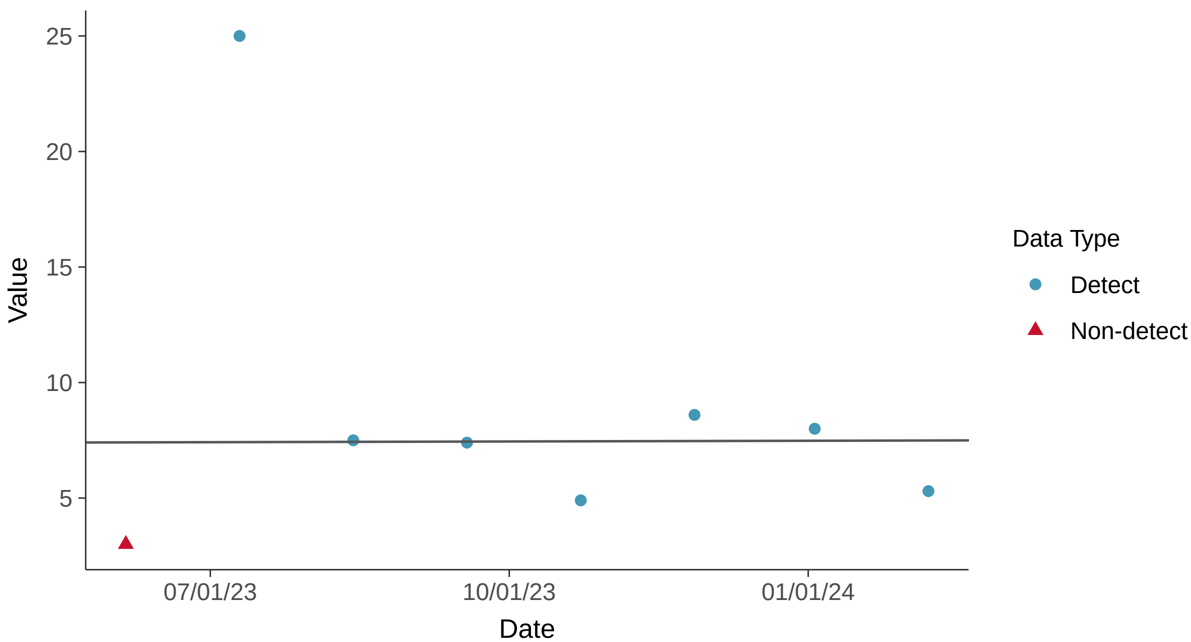
Normal Q-Q plot using ROS Imputed Estimates

Total Suspended Solids, MW-100A (mg/L)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

Total Suspended Solids, MW-100A (mg/L)

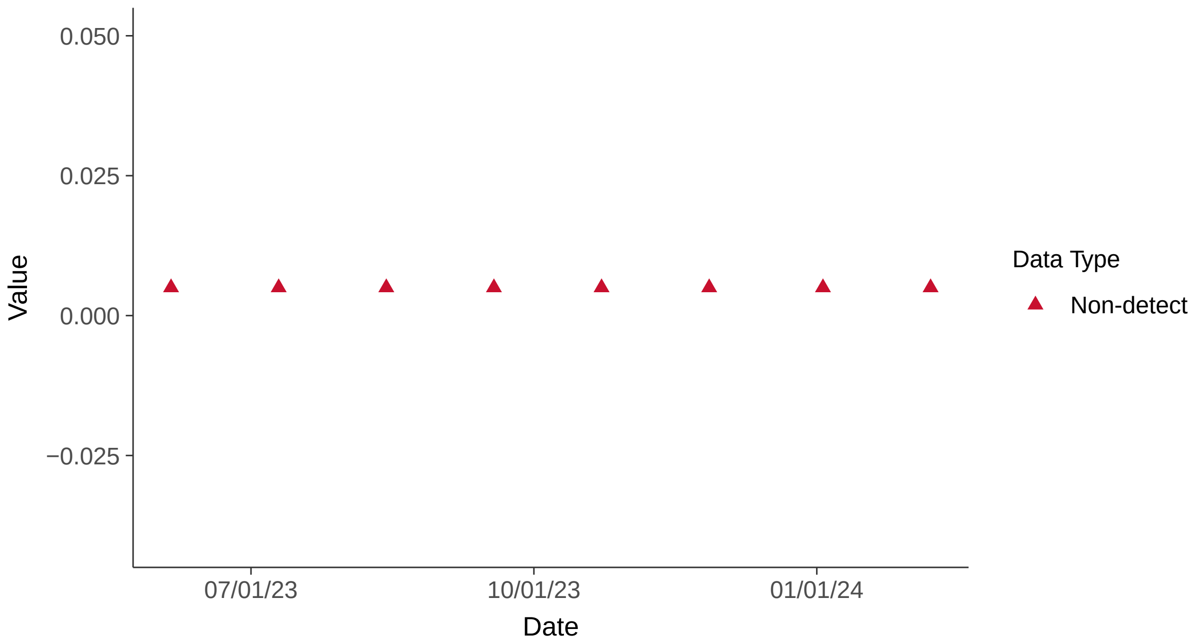


Part 115: Copper, MW-100A

ID: 100A_5_37

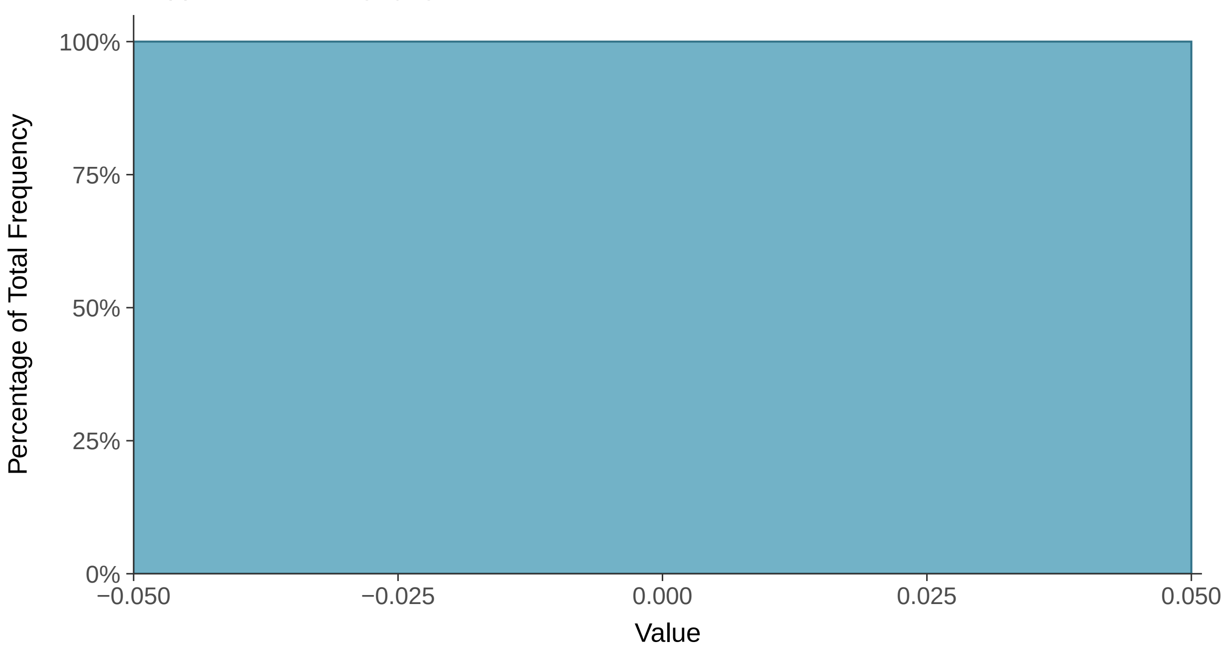
Scatter Plot

Copper, MW-100A (mg/L)



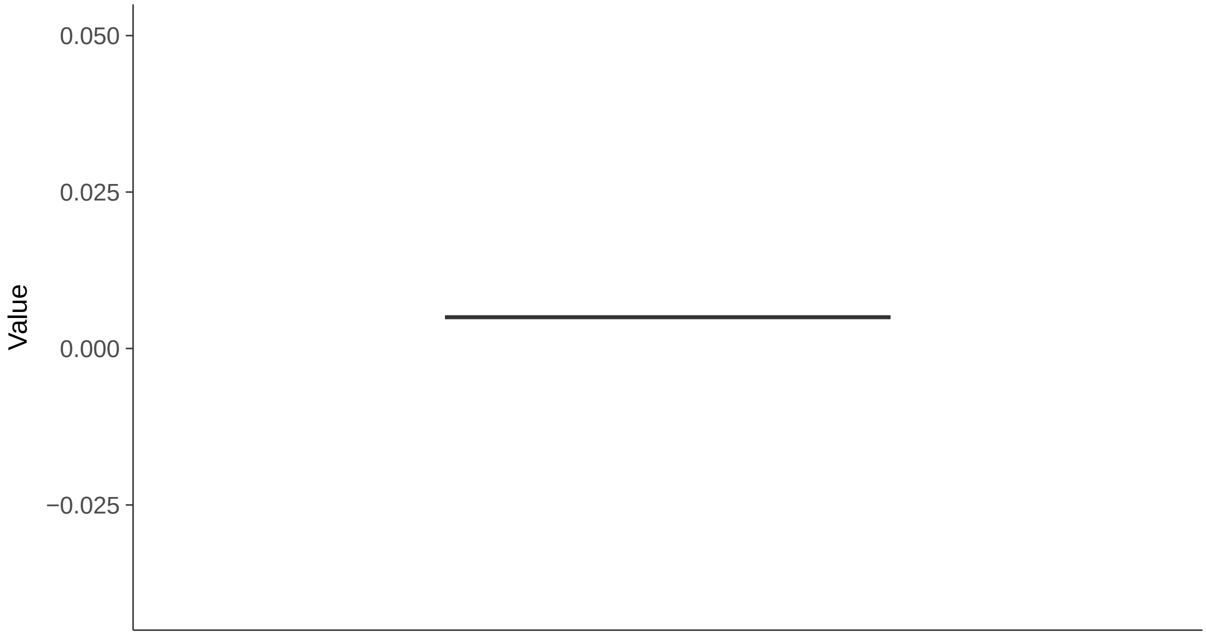
Histogram

Copper, MW-100A (mg/L)



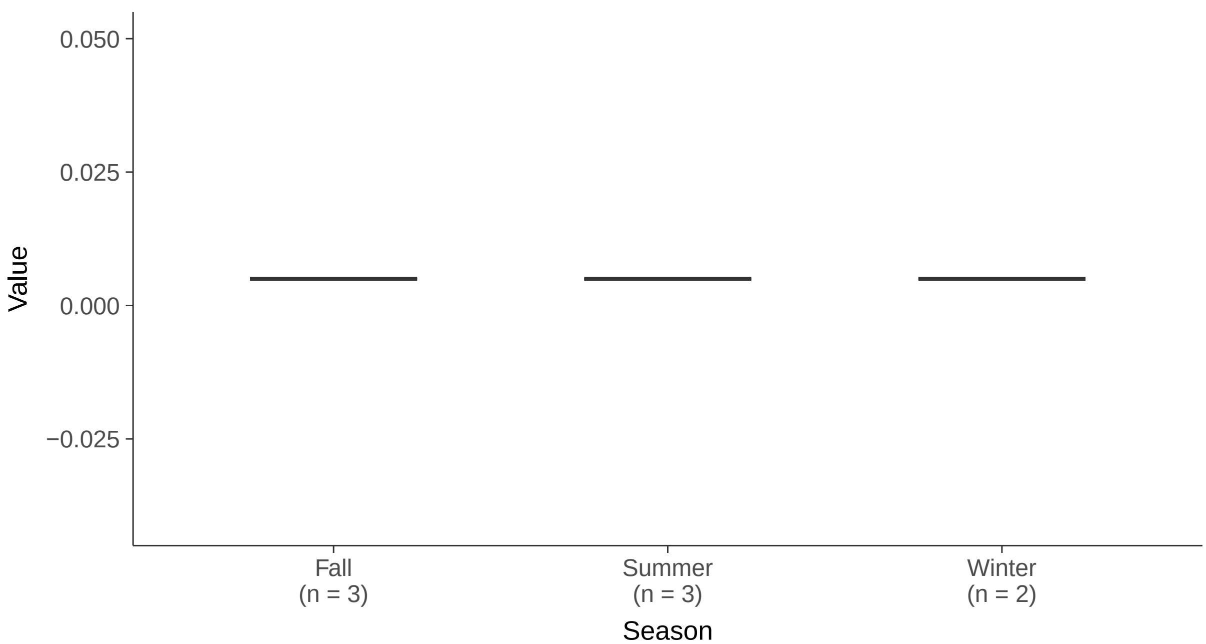
Boxplot

Copper, MW-100A (mg/L)



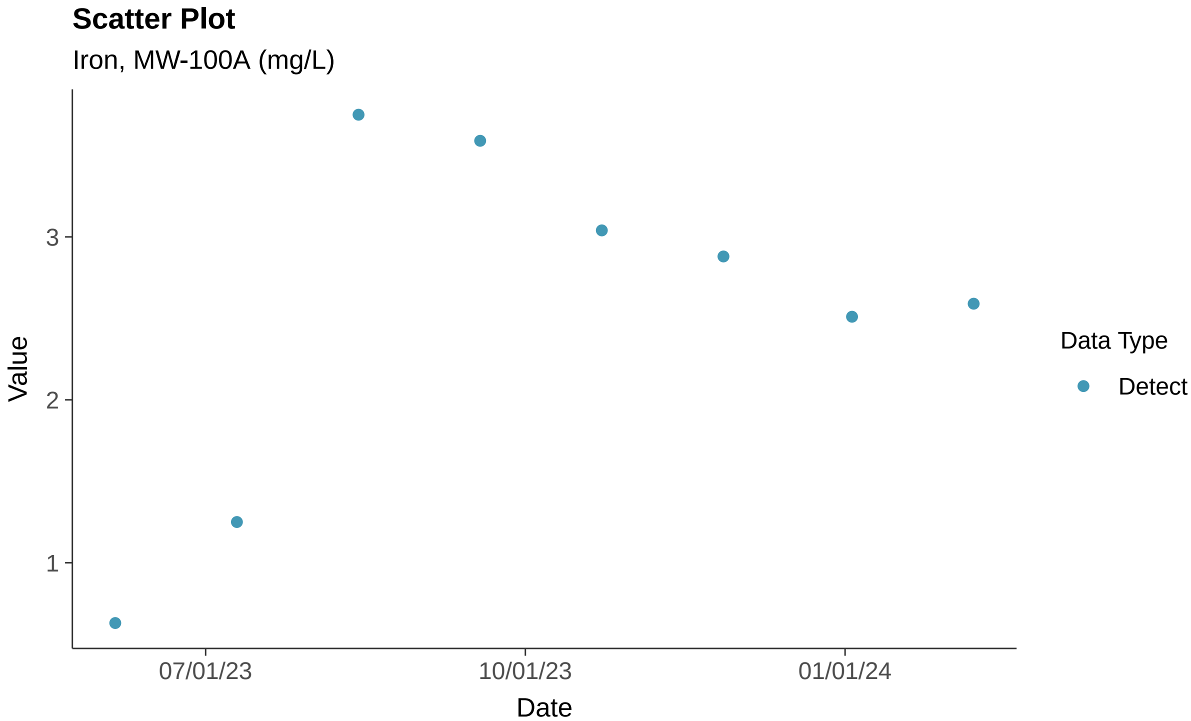
Boxplot by Season

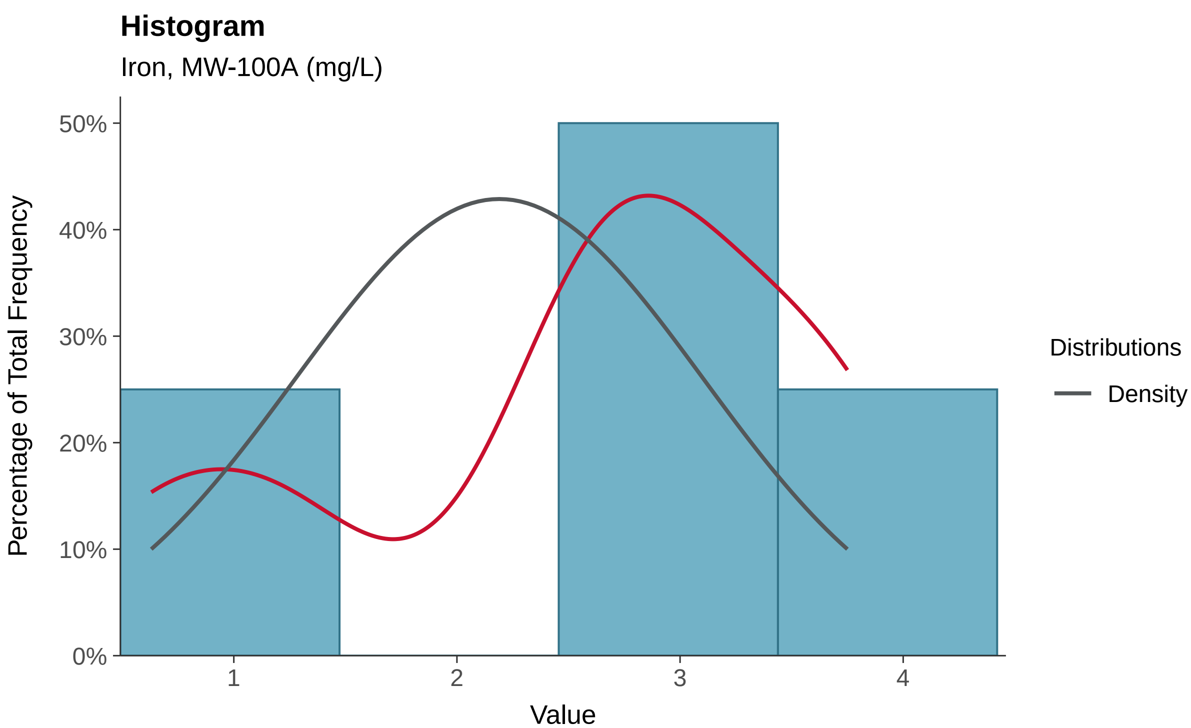
Copper, MW-100A (mg/L)



Part 115: Iron, MW-100A

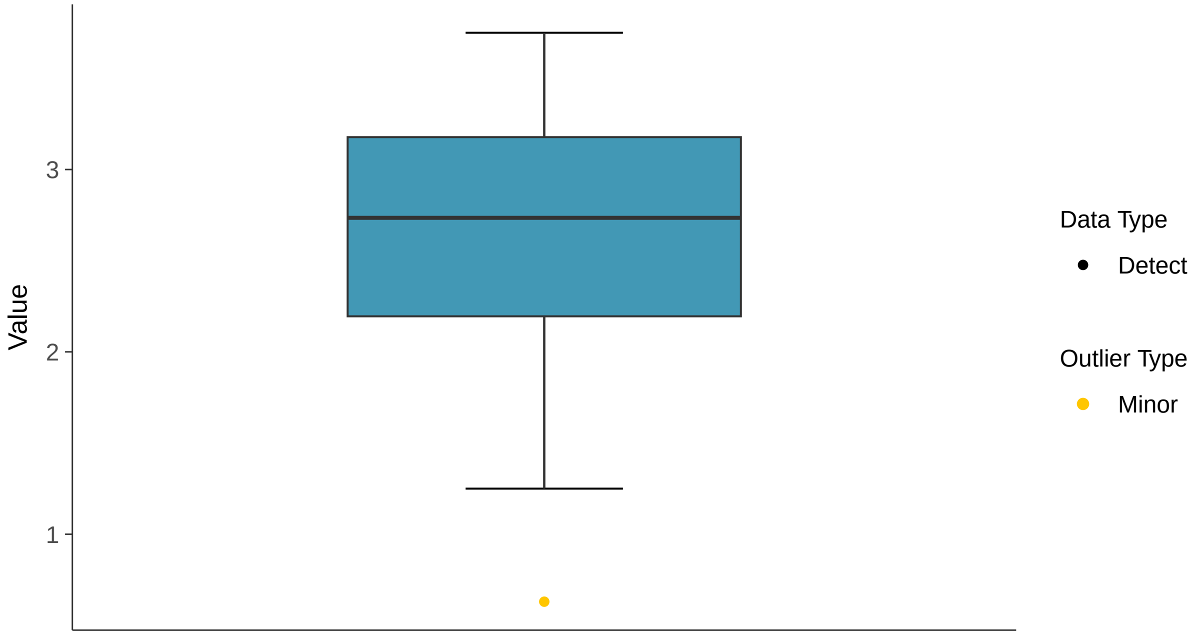
ID: 100A_5_38





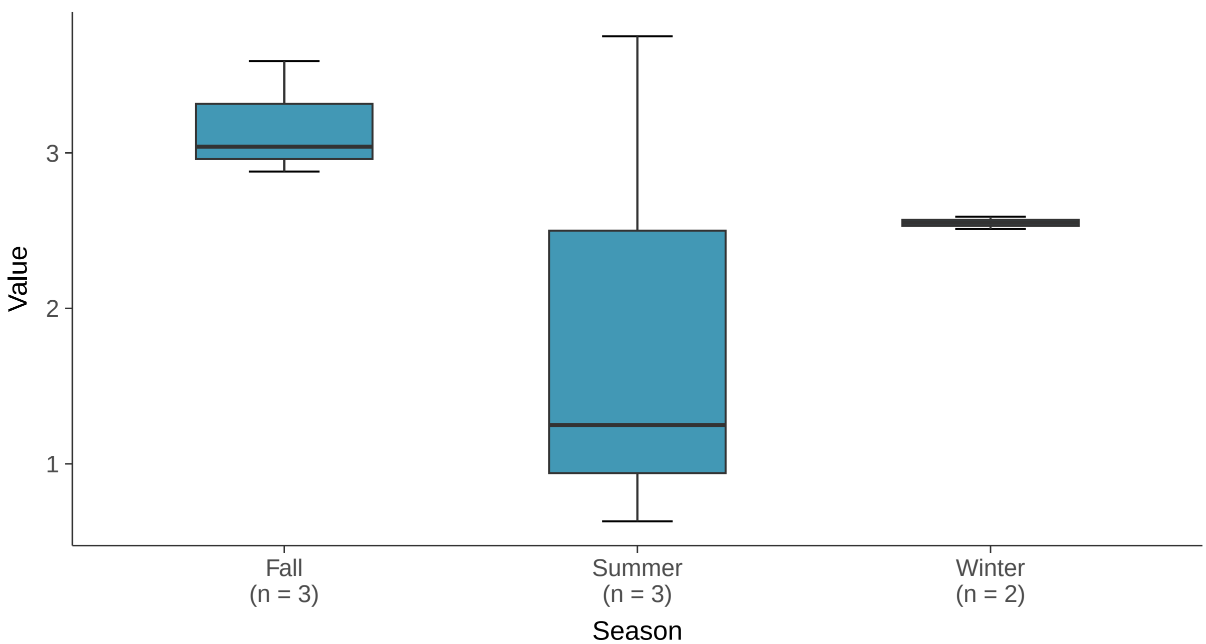
Boxplot

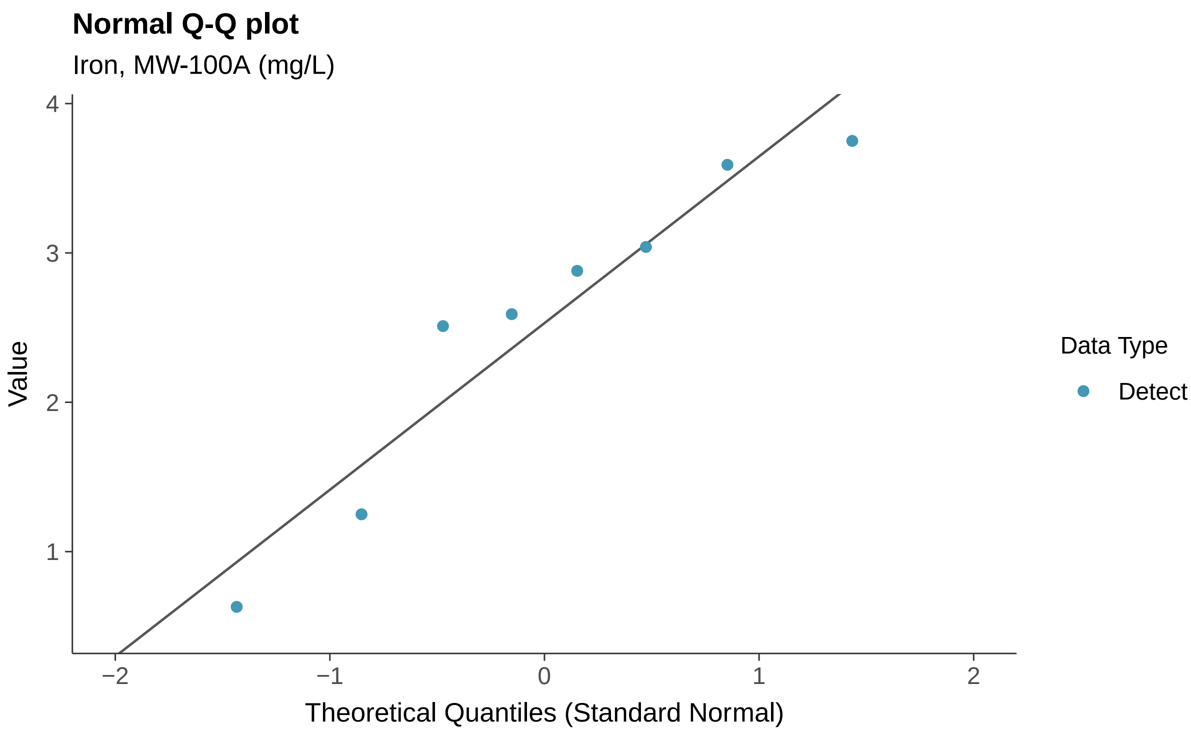
Iron, MW-100A (mg/L)

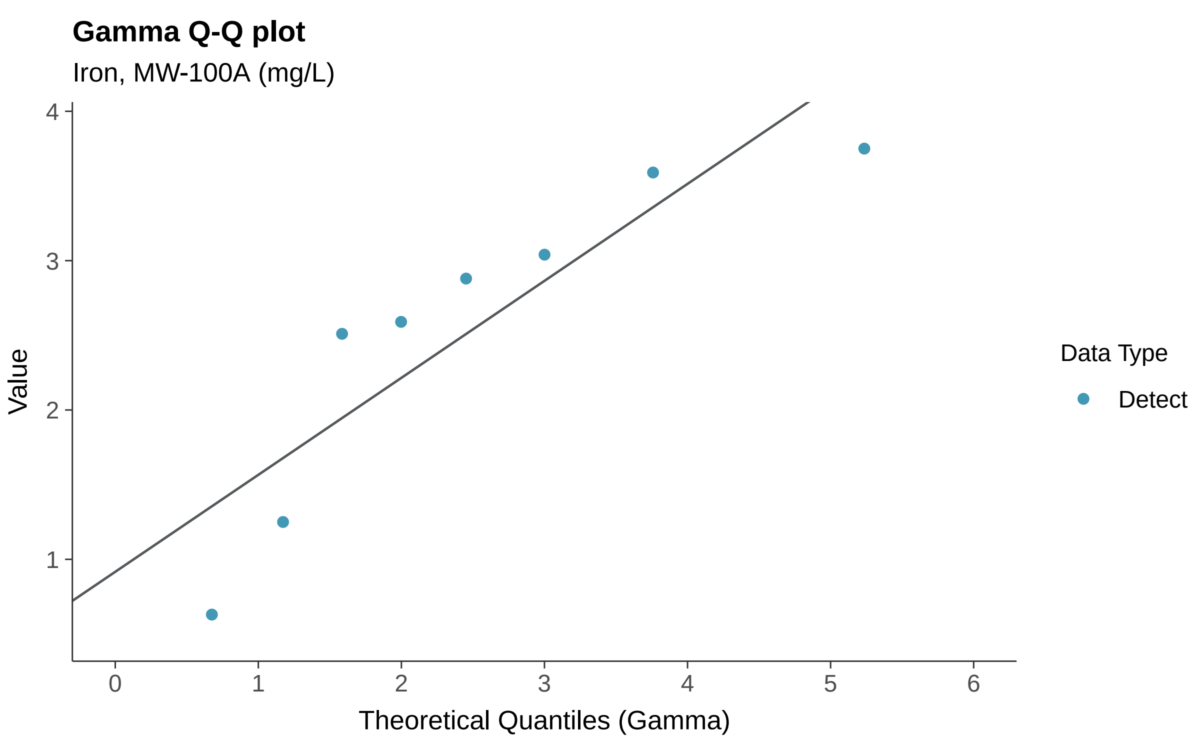


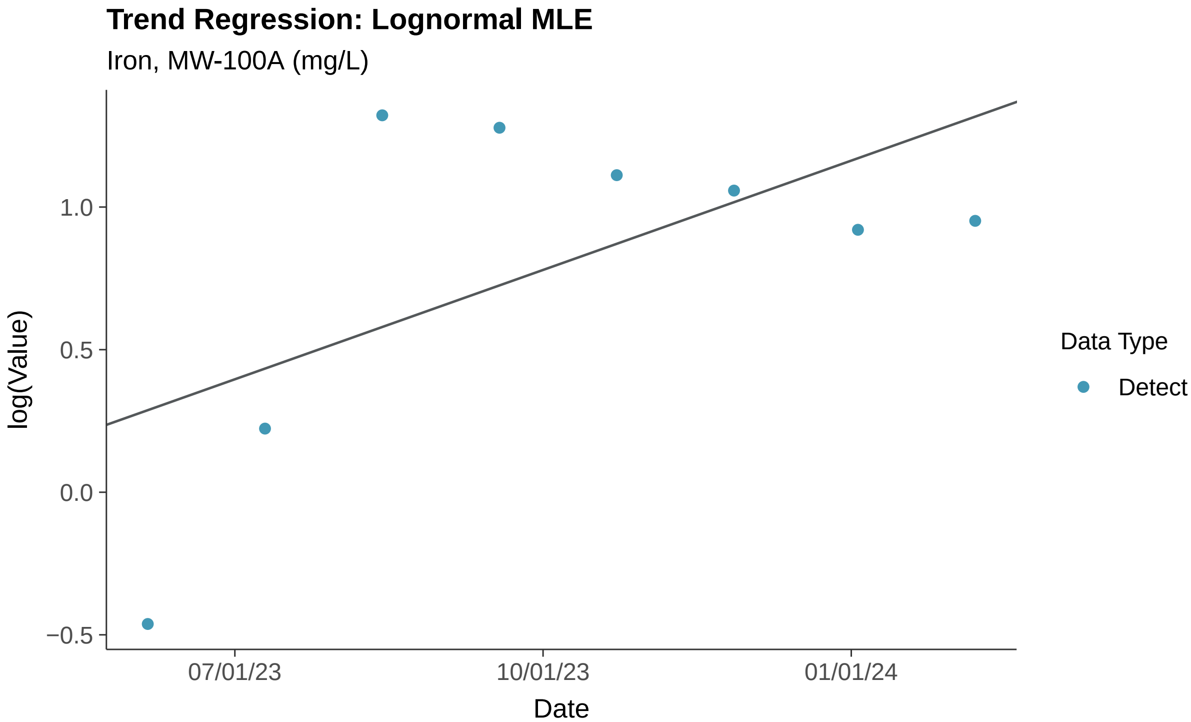
Boxplot by Season

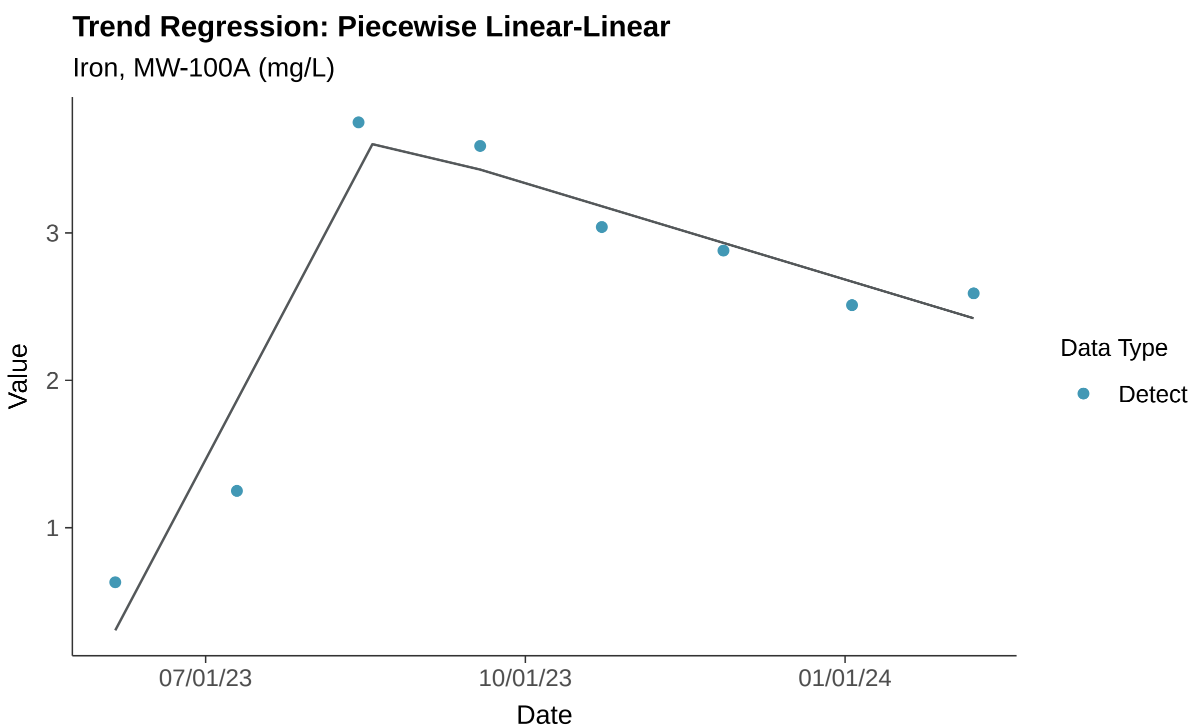
Iron, MW-100A (mg/L)




Normal Q-Q plot
Iron, MW-100A (mg/L)
Value
4
3
2
1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

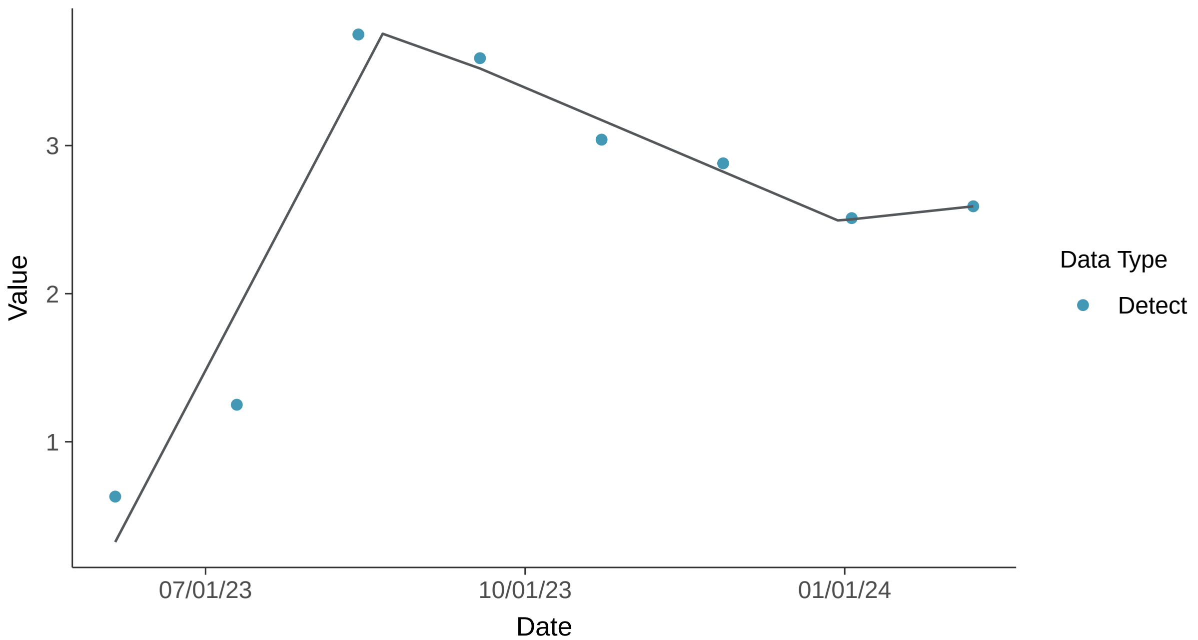

Gamma Q-Q plot
Iron, MW-100A (mg/L)
Value
4
3
2
1
0
1
2
3
4
5
6
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Iron, MW-100A (mg/L)
log(Value)
1.0
0.5
0.0
−0.5
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Iron, MW-100A (mg/L)
Value
3
2
1
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear-Linear

Iron, MW-100A (mg/L)

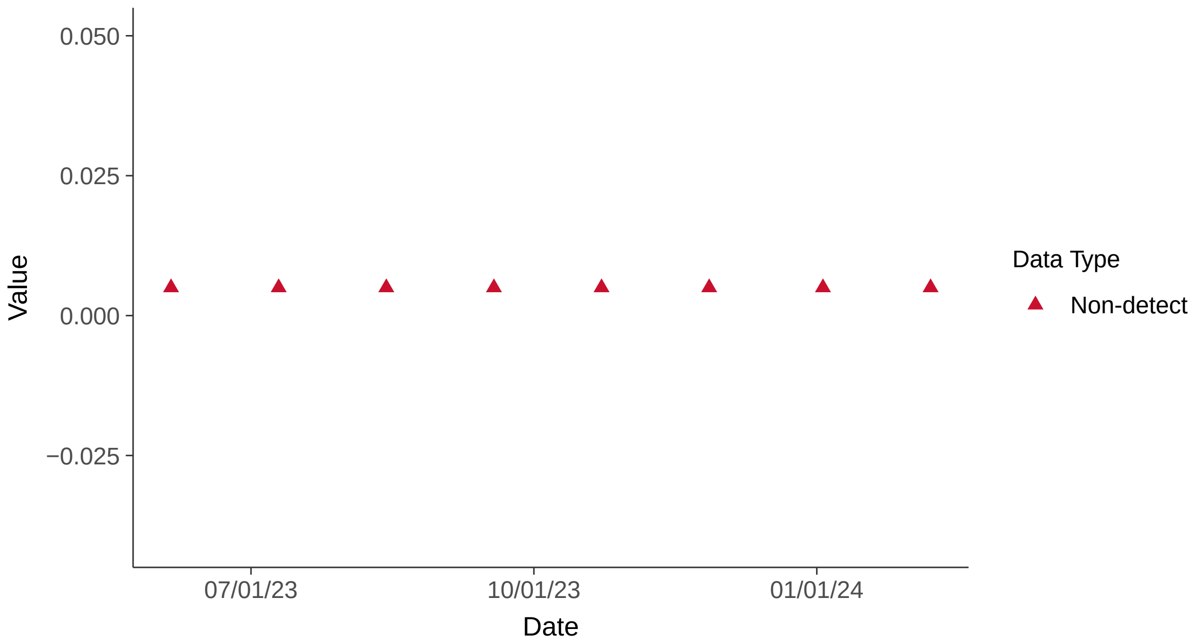


Part 115: Nickel, MW-100A

ID: 100A_5_39

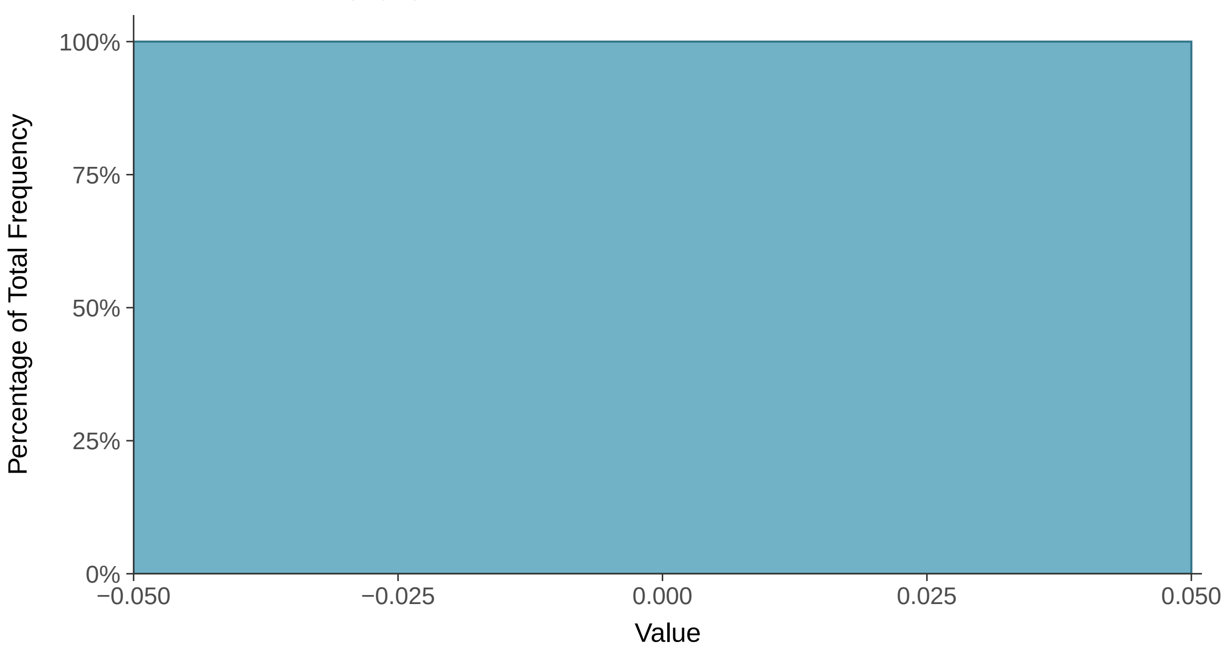
Scatter Plot

Nickel, MW-100A (mg/L)



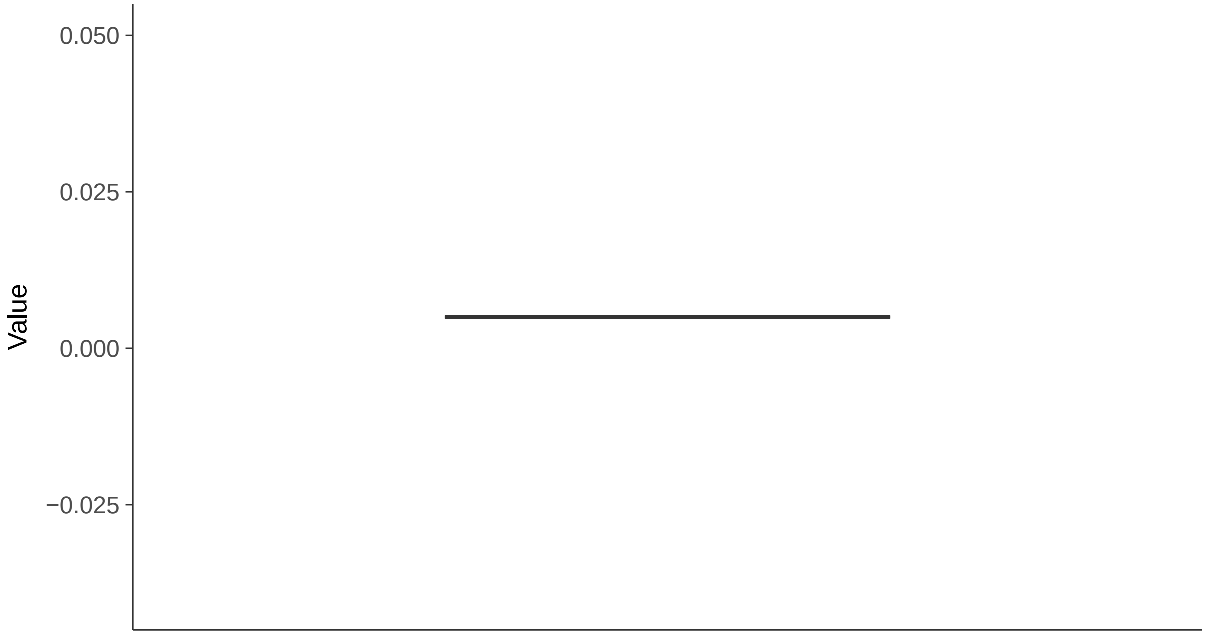
Histogram

Nickel, MW-100A (mg/L)



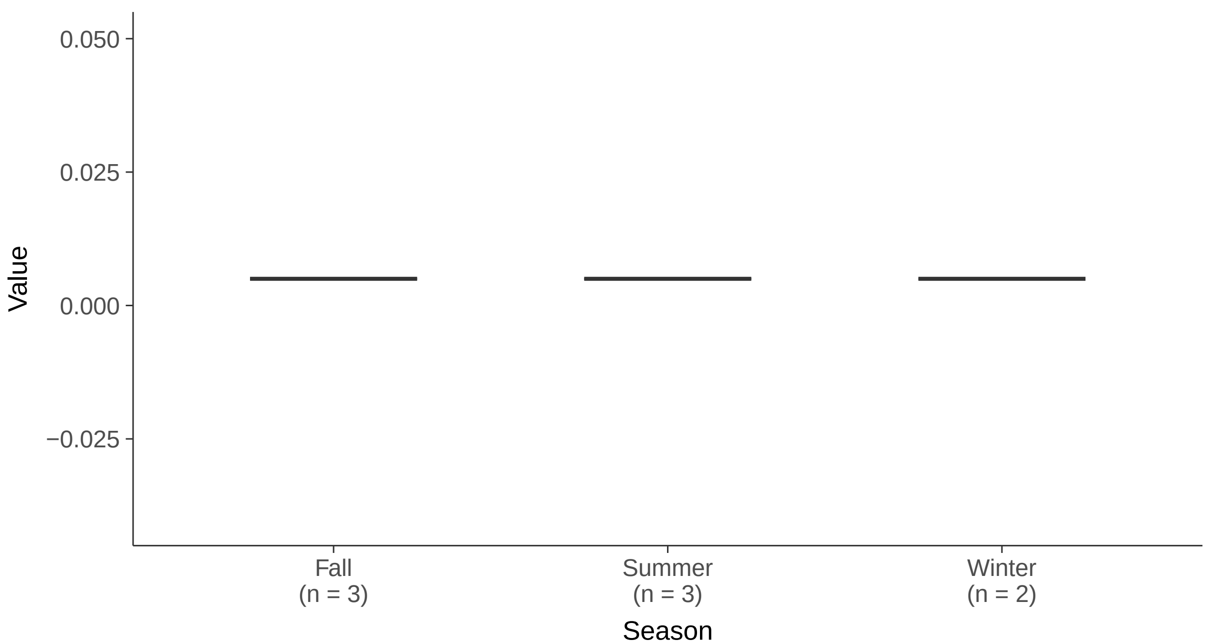
Boxplot

Nickel, MW-100A (mg/L)



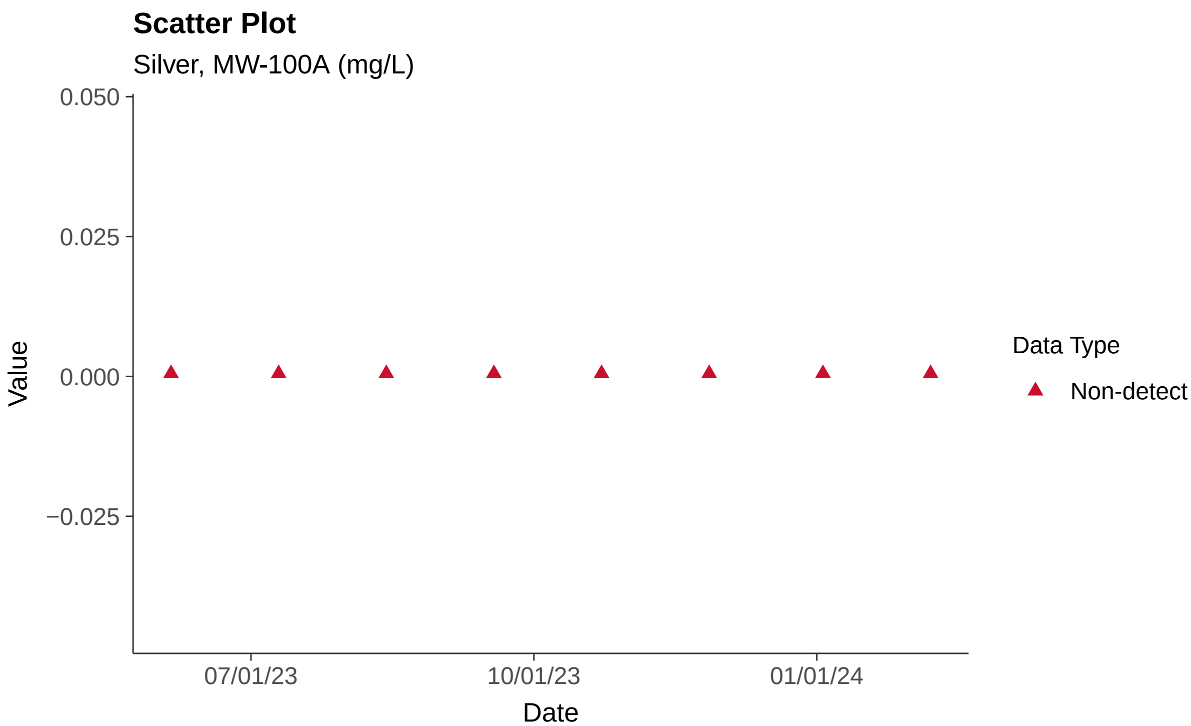
Boxplot by Season

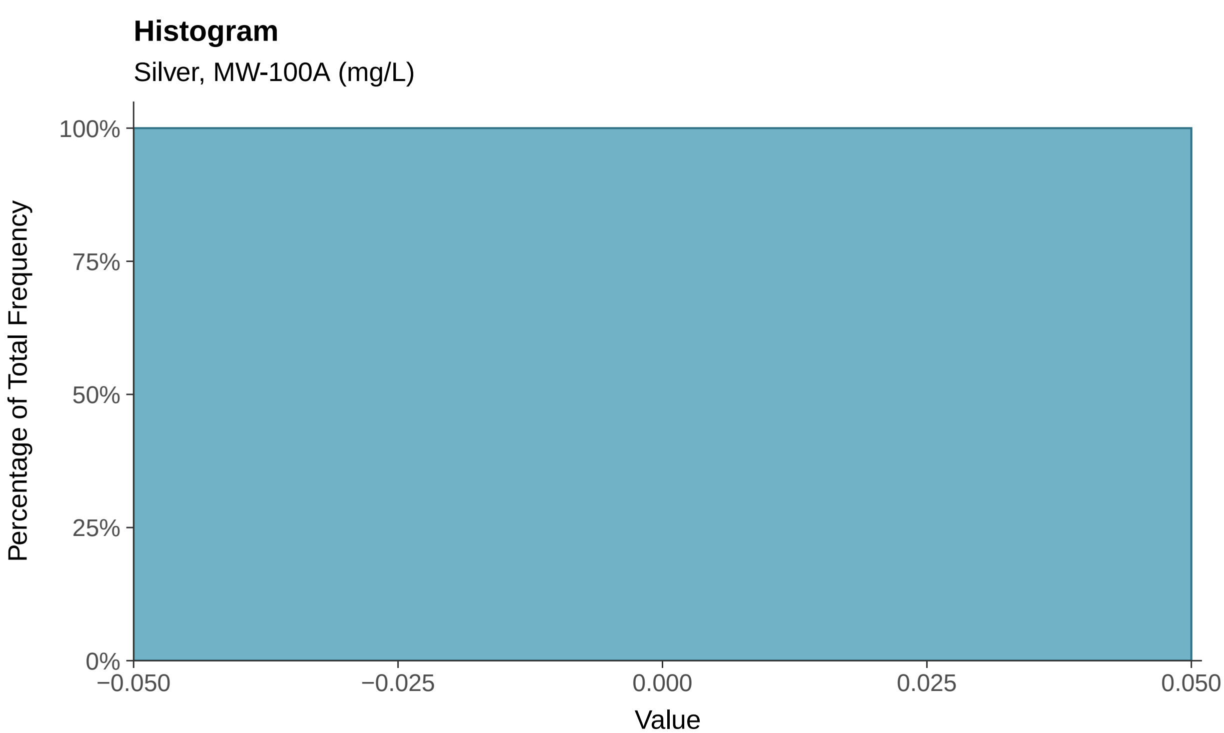
Nickel, MW-100A (mg/L)



Part 115: Silver, MW-100A

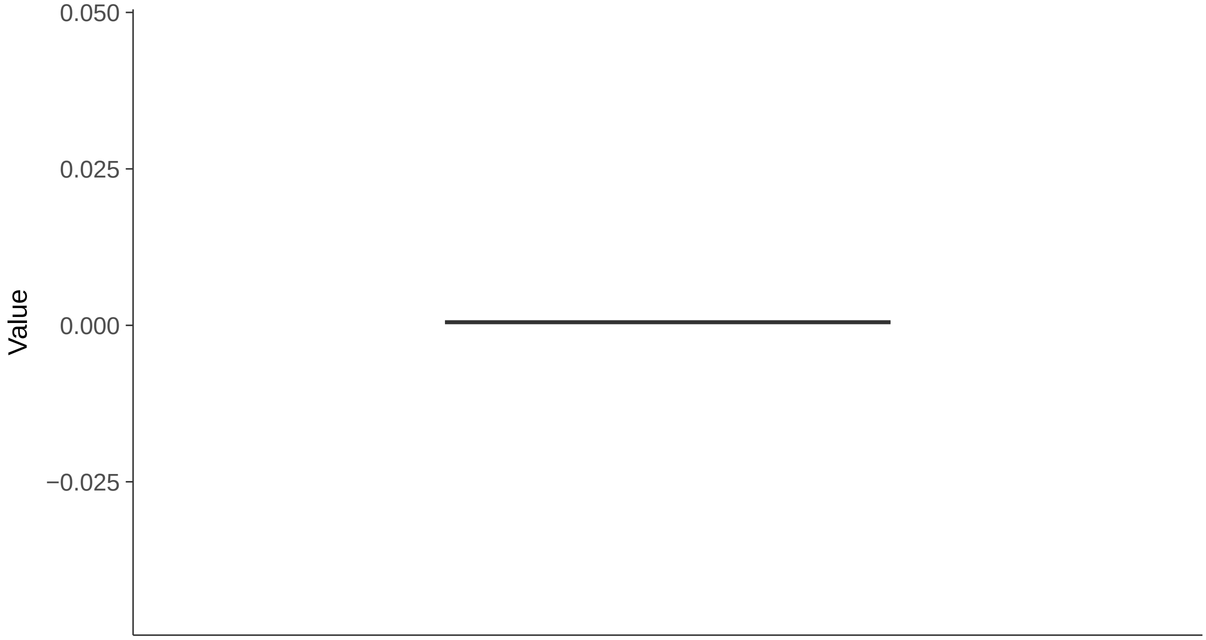
ID: 100A_5_40





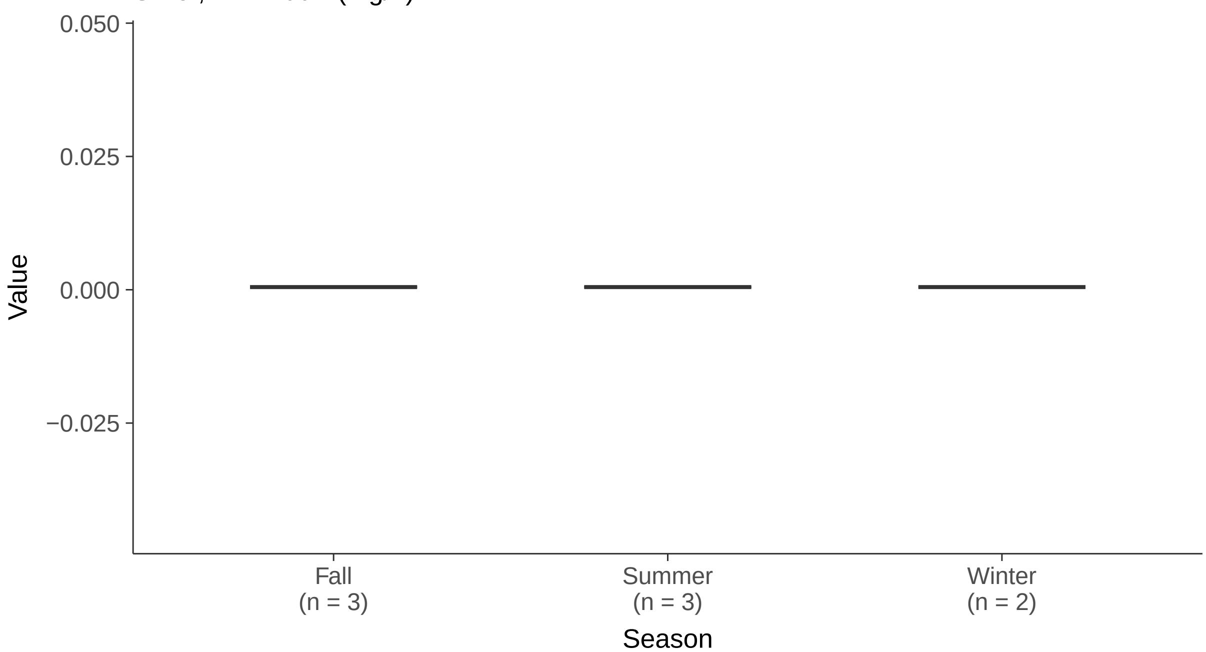
Boxplot

Silver, MW-100A (mg/L)



Boxplot by Season

Silver, MW-100A (mg/L)

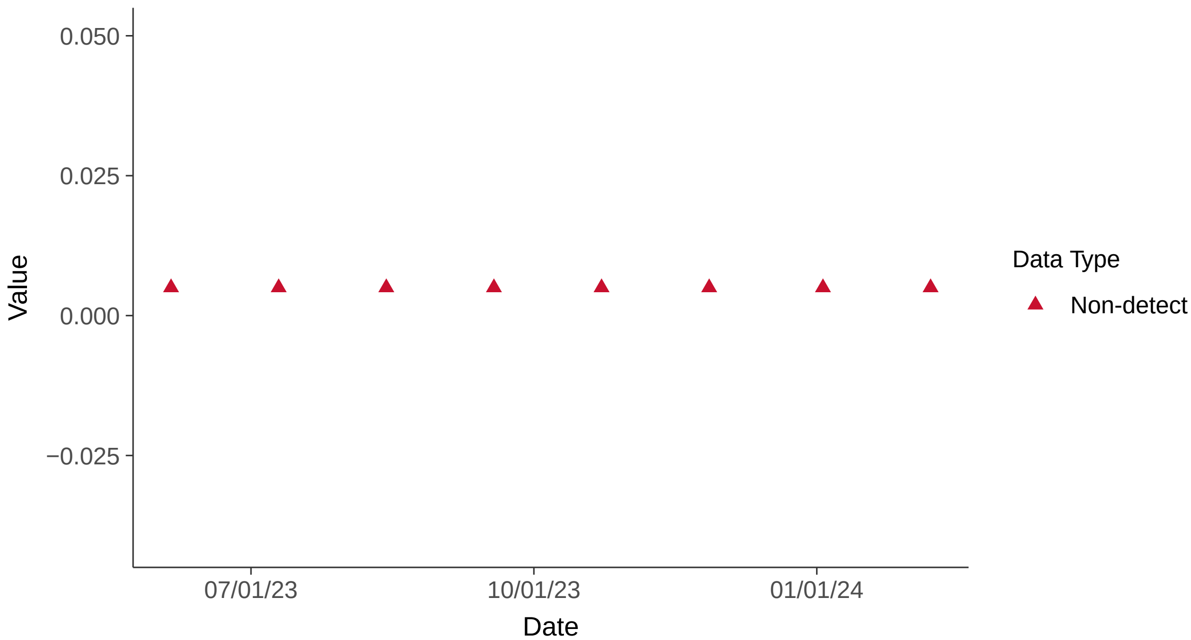


Part 115: Vanadium, MW-100A

ID: 100A_5_41

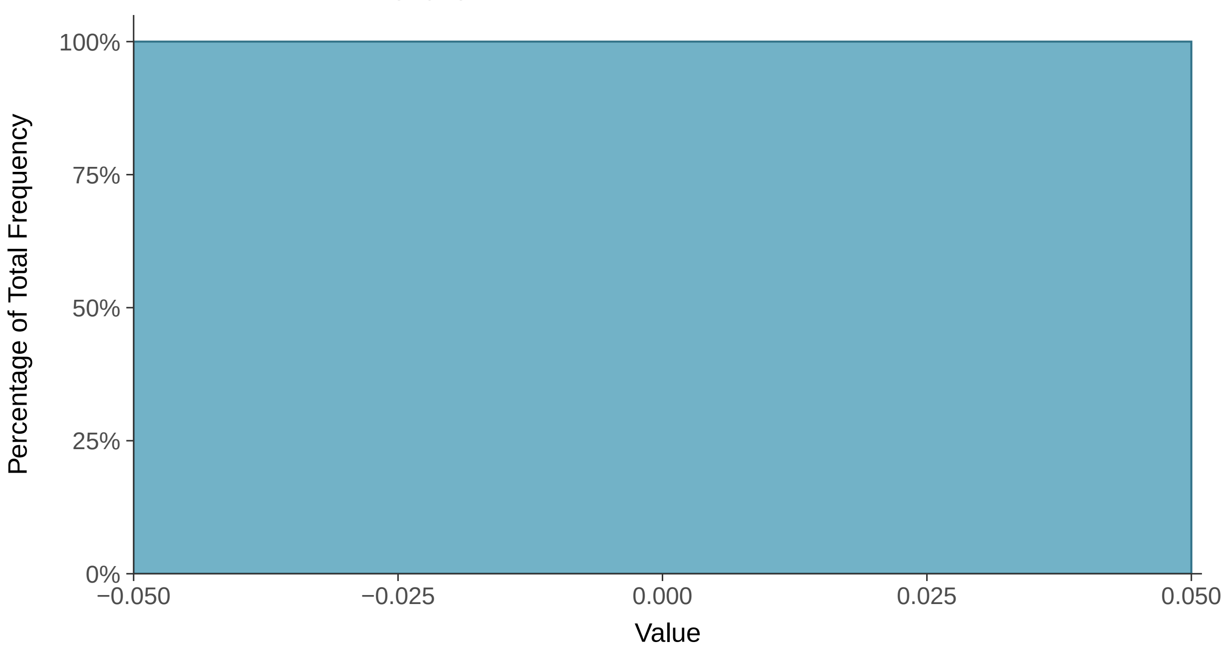
Scatter Plot

Vanadium, MW-100A (mg/L)



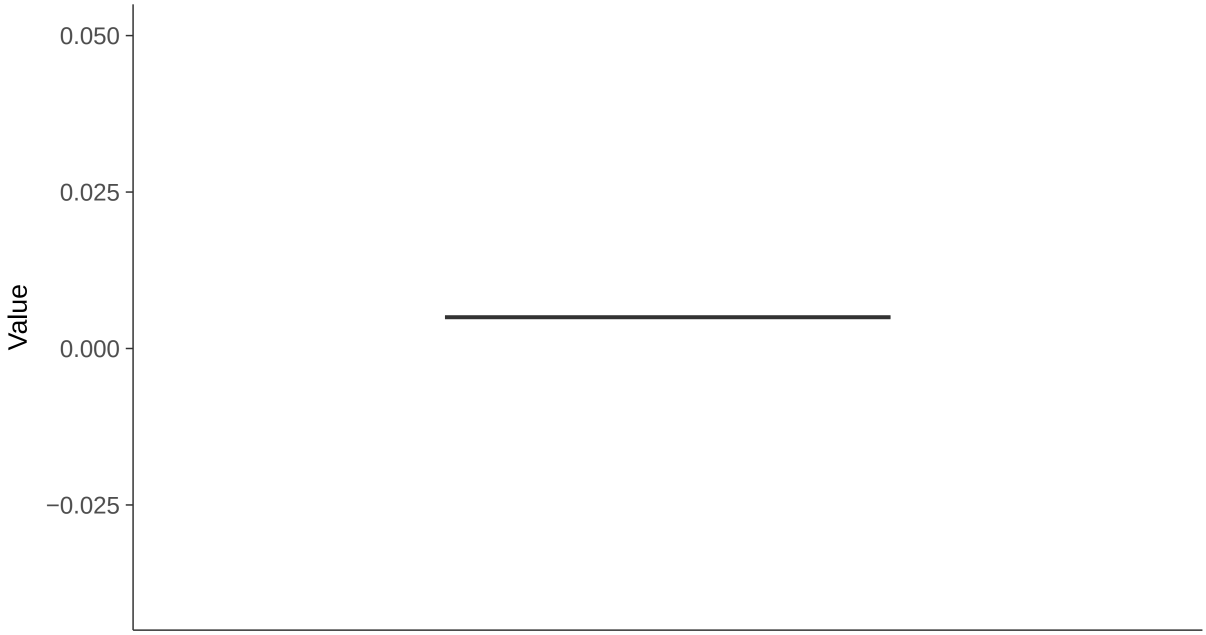
Histogram

Vanadium, MW-100A (mg/L)



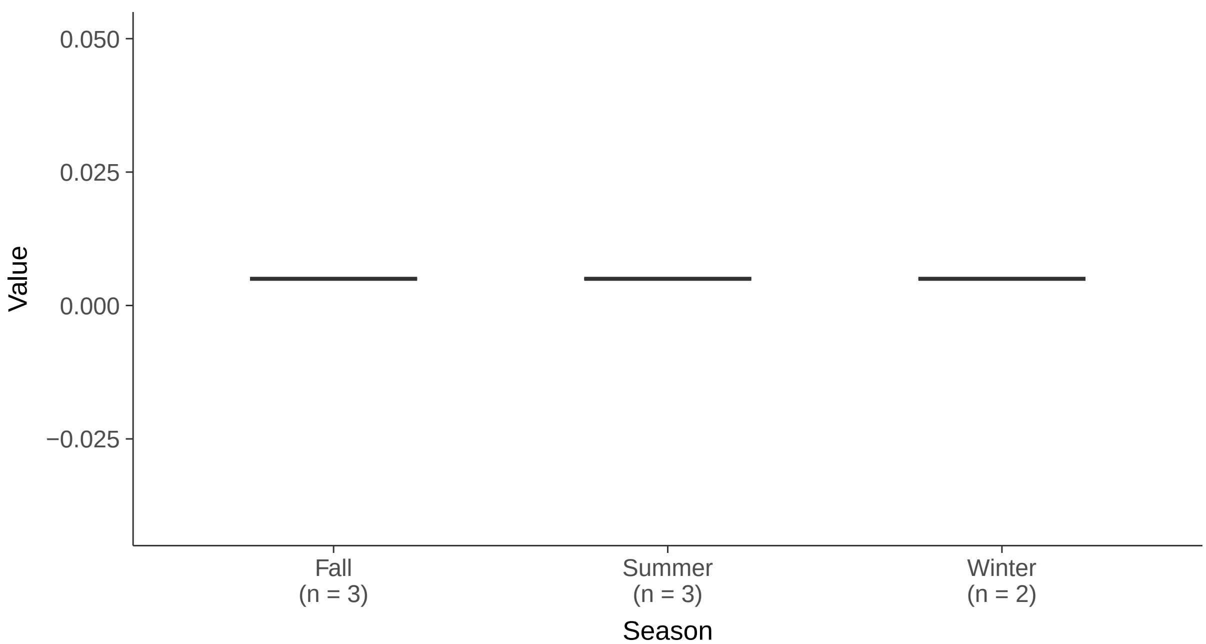
Boxplot

Vanadium, MW-100A (mg/L)



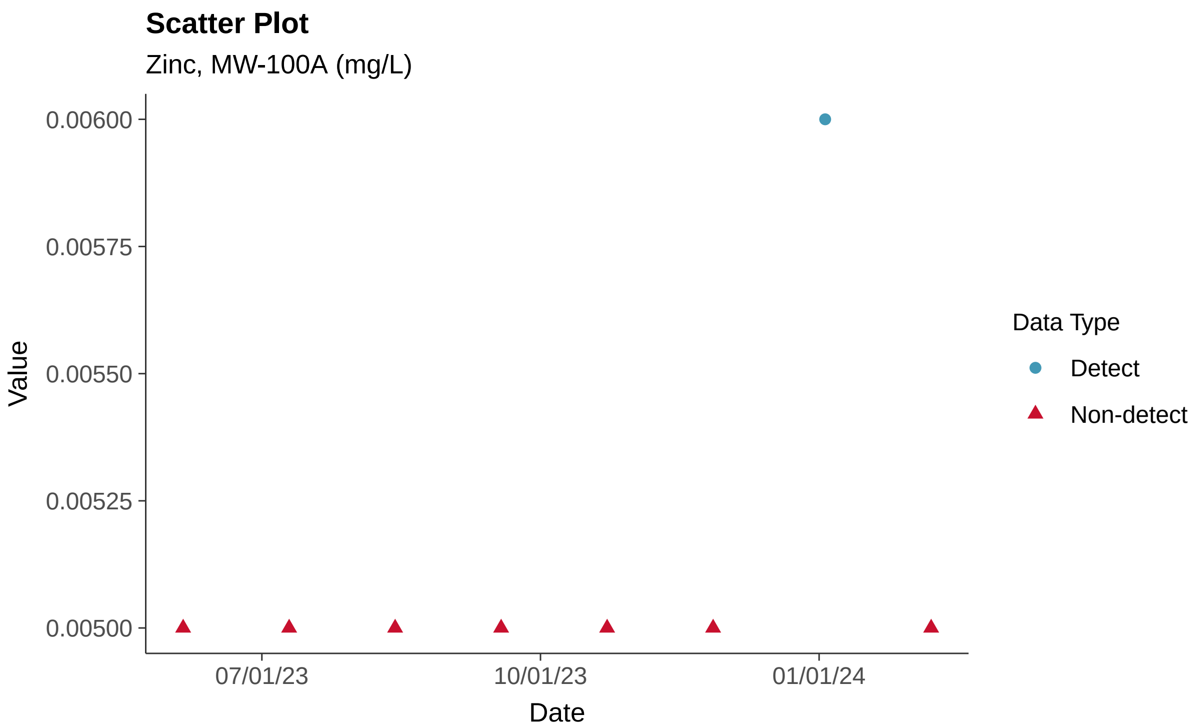
Boxplot by Season

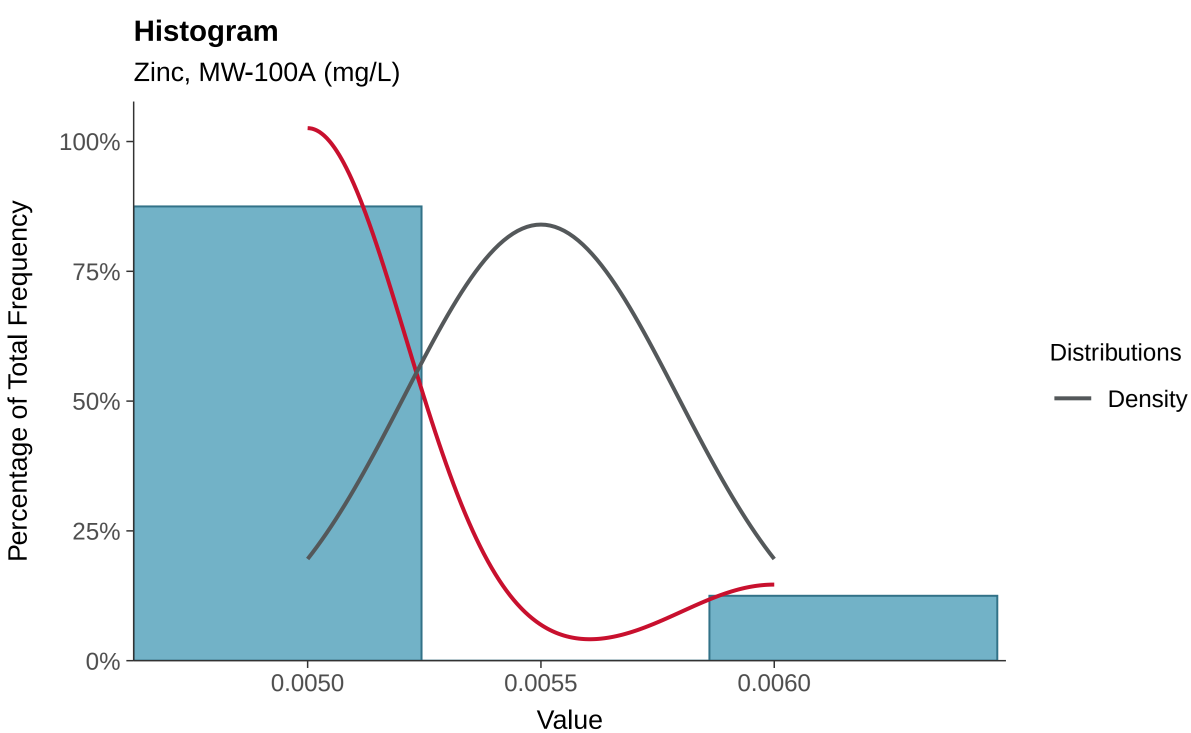
Vanadium, MW-100A (mg/L)

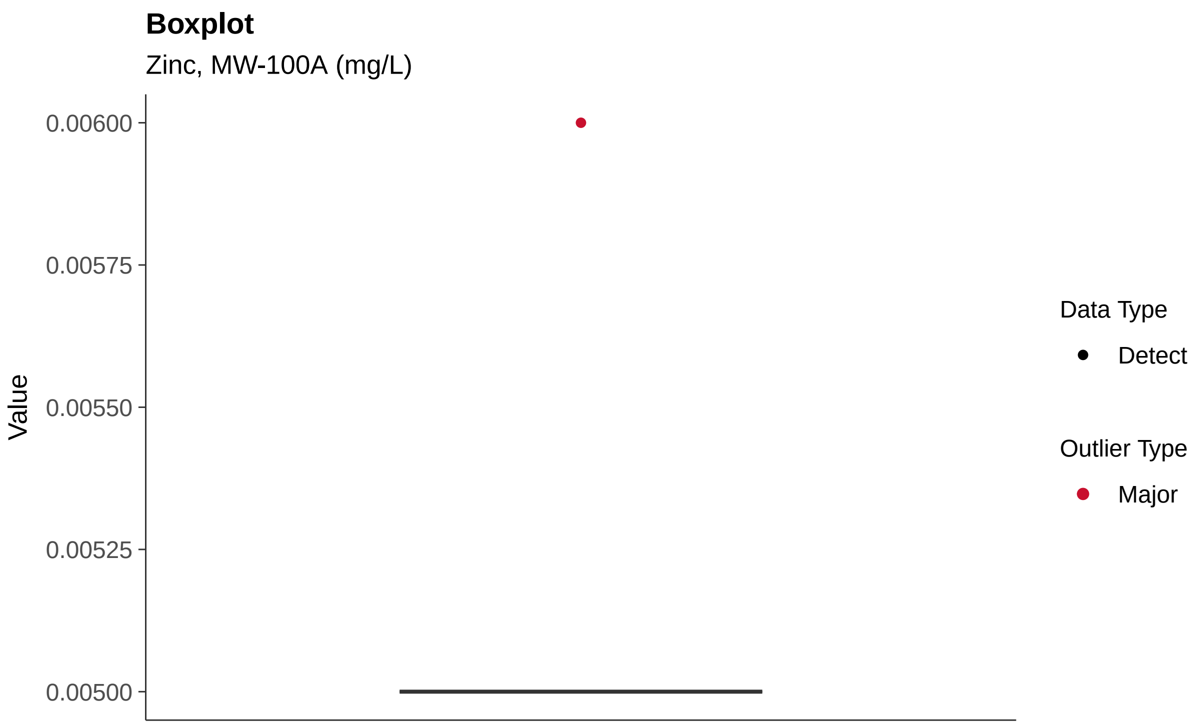


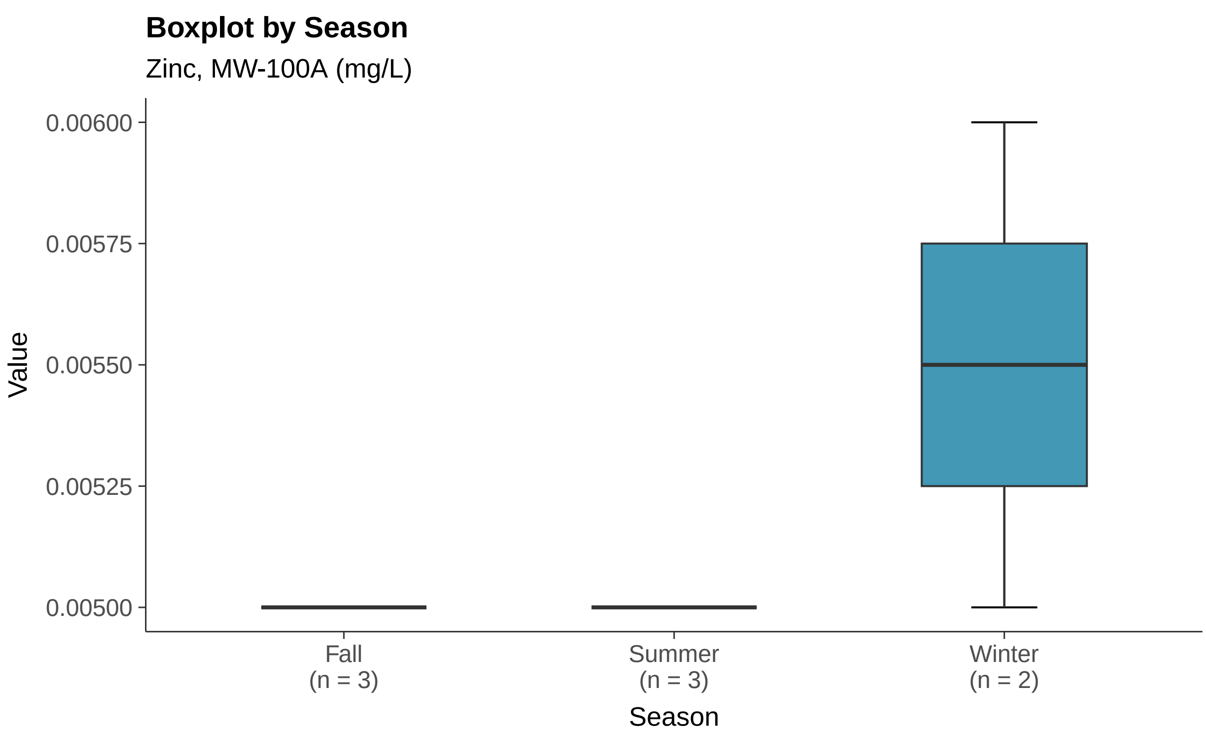
Part 115: Zinc, MW-100A

ID: 100A_5_42



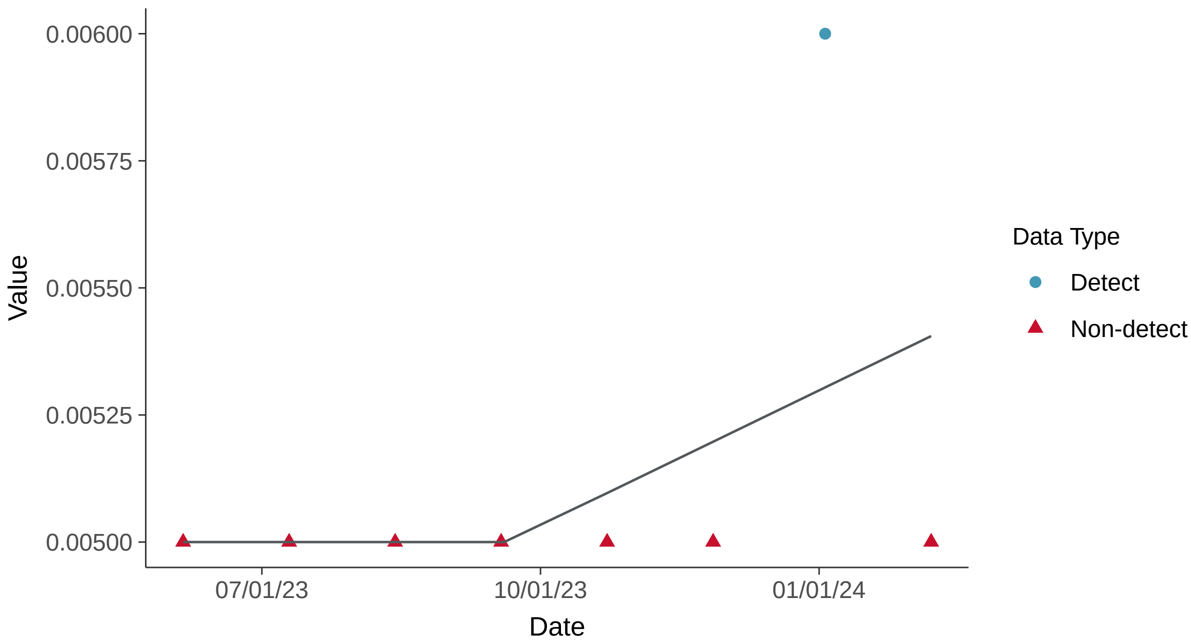



Boxplot
Zinc, MW-100A (mg/L)
Value
0.00600
0.00575
0.00550
0.00525
0.00500
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Zinc, MW-100A (mg/L)
Value
0.00600
0.00575
0.00550
0.00525
0.00500
Fall
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season

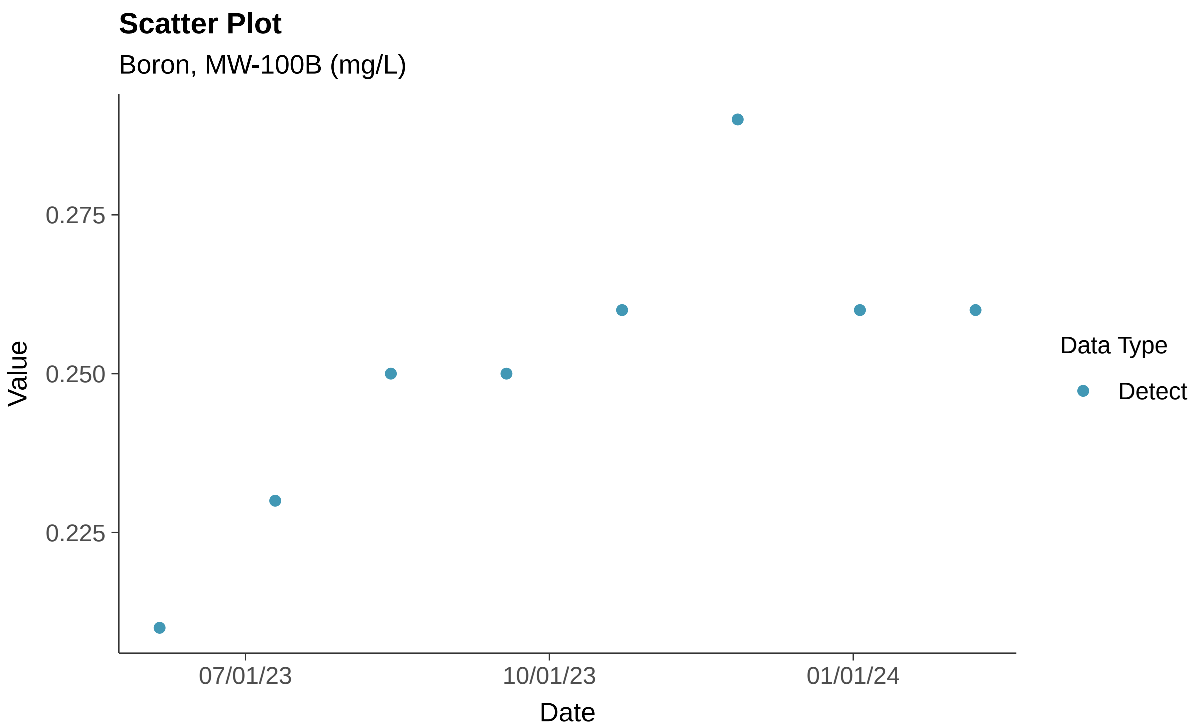
Trend Regression: Piecewise Linear-Linear

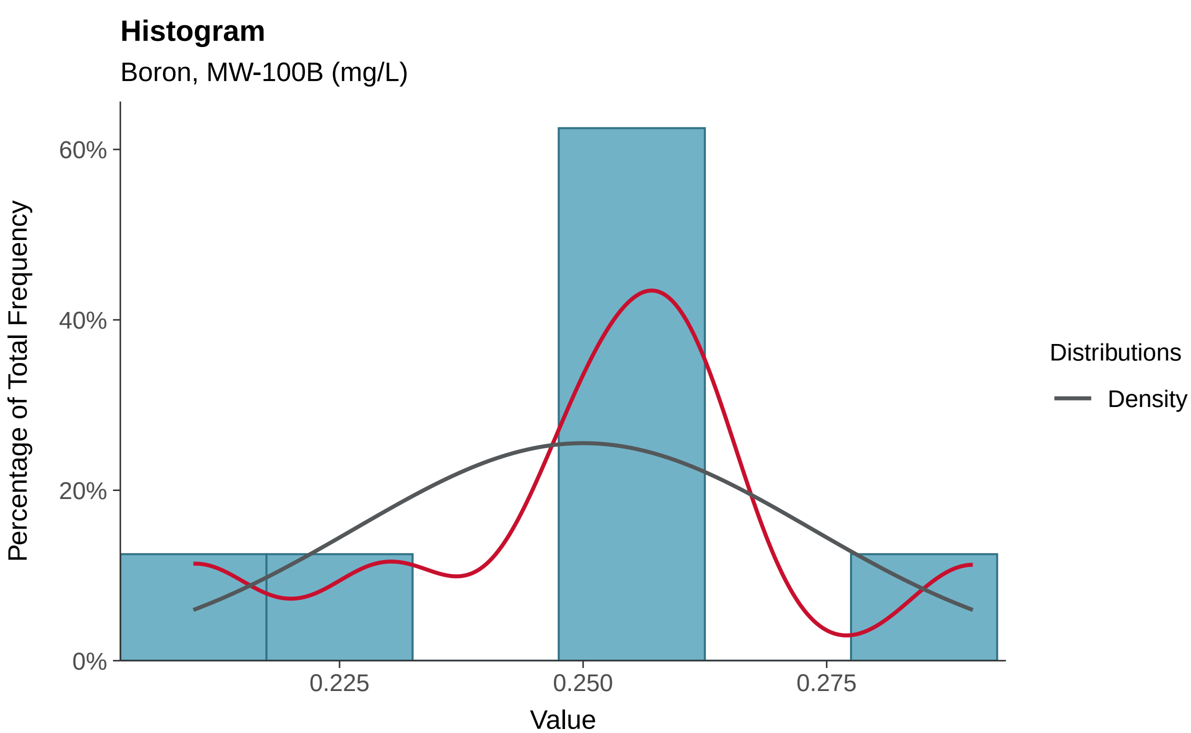
Zinc, MW-100A (mg/L)



Appendix III: Boron, MW-100B

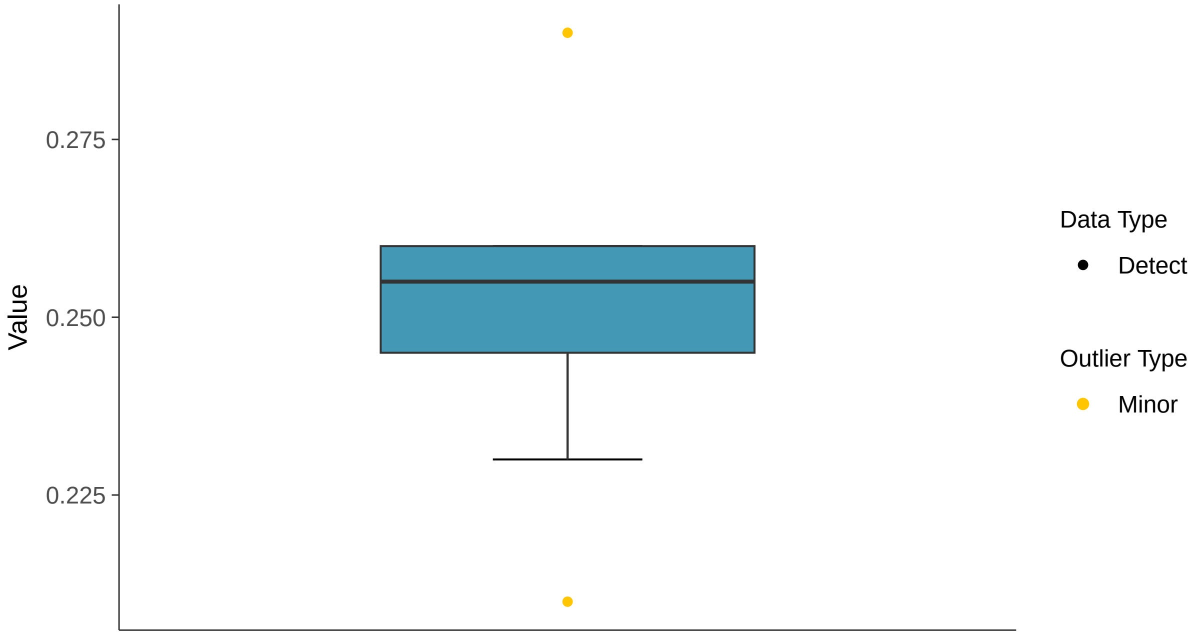
ID: 100B_1_01





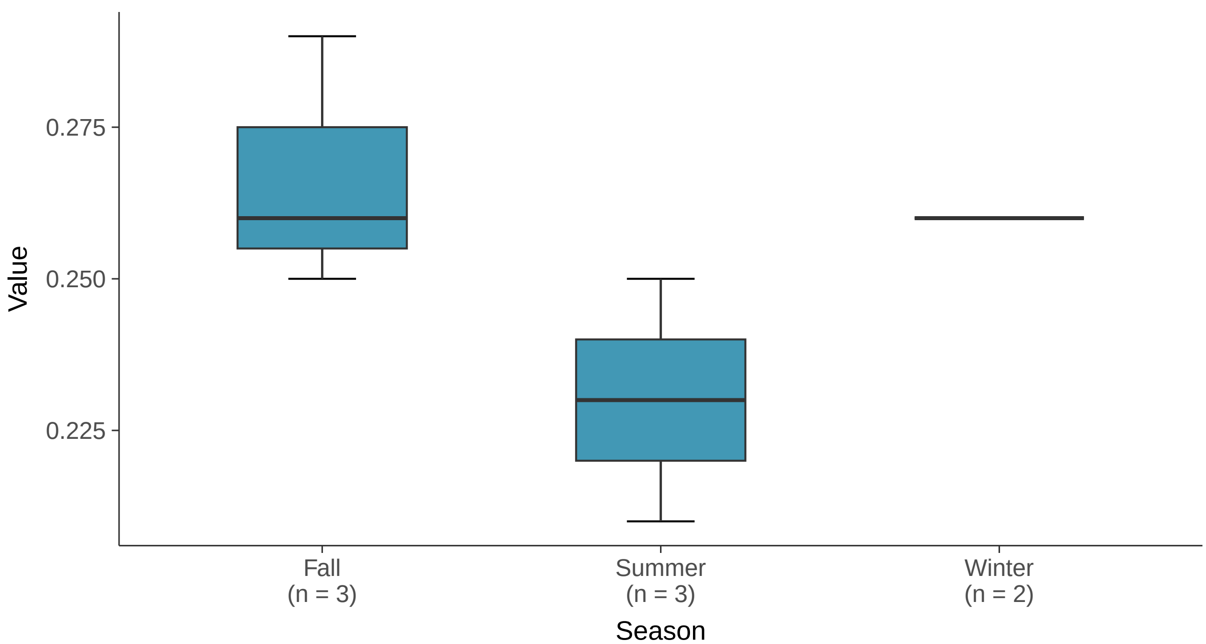
Boxplot

Boron, MW-100B (mg/L)



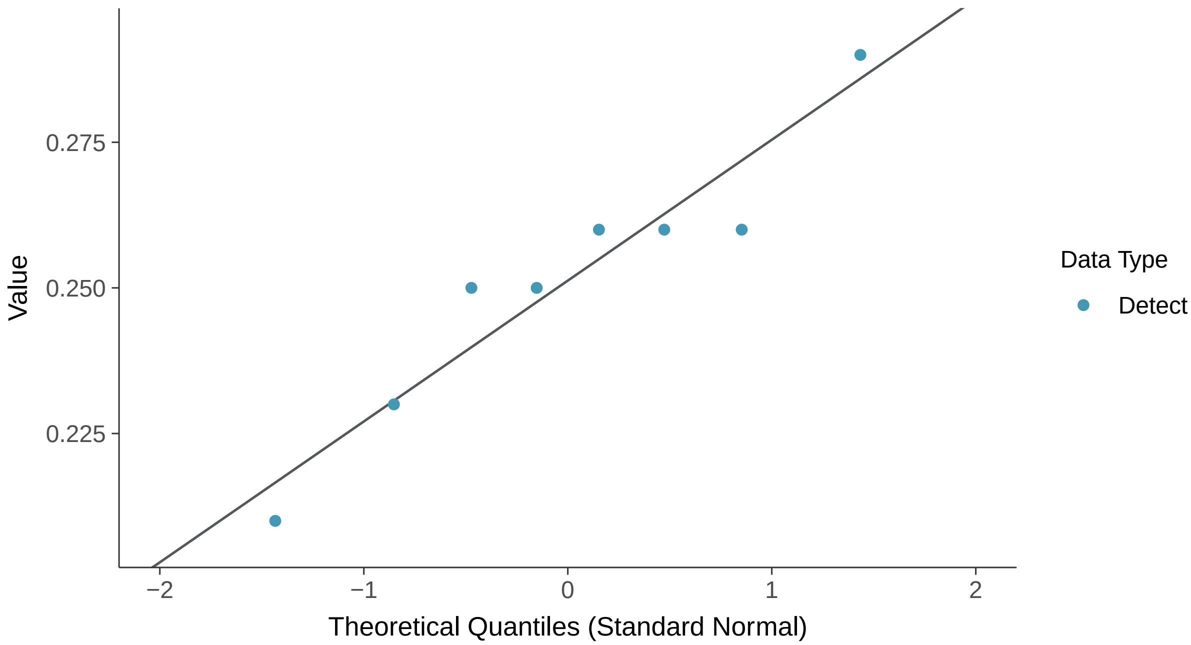
Boxplot by Season

Boron, MW-100B (mg/L)



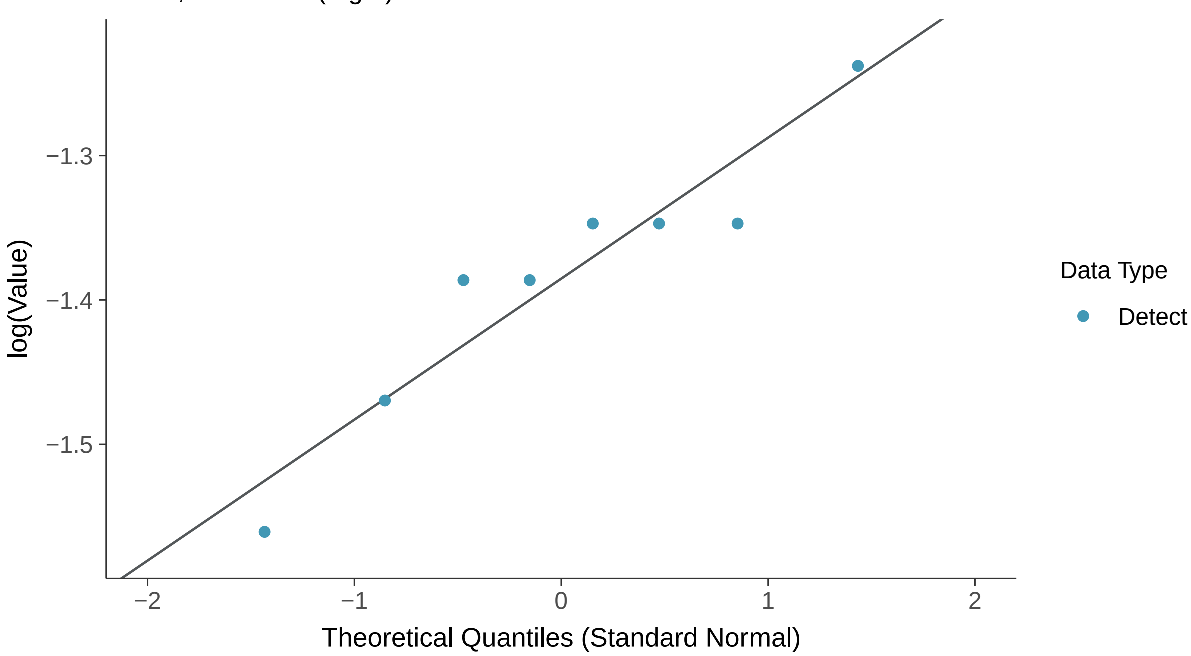
Normal Q-Q plot

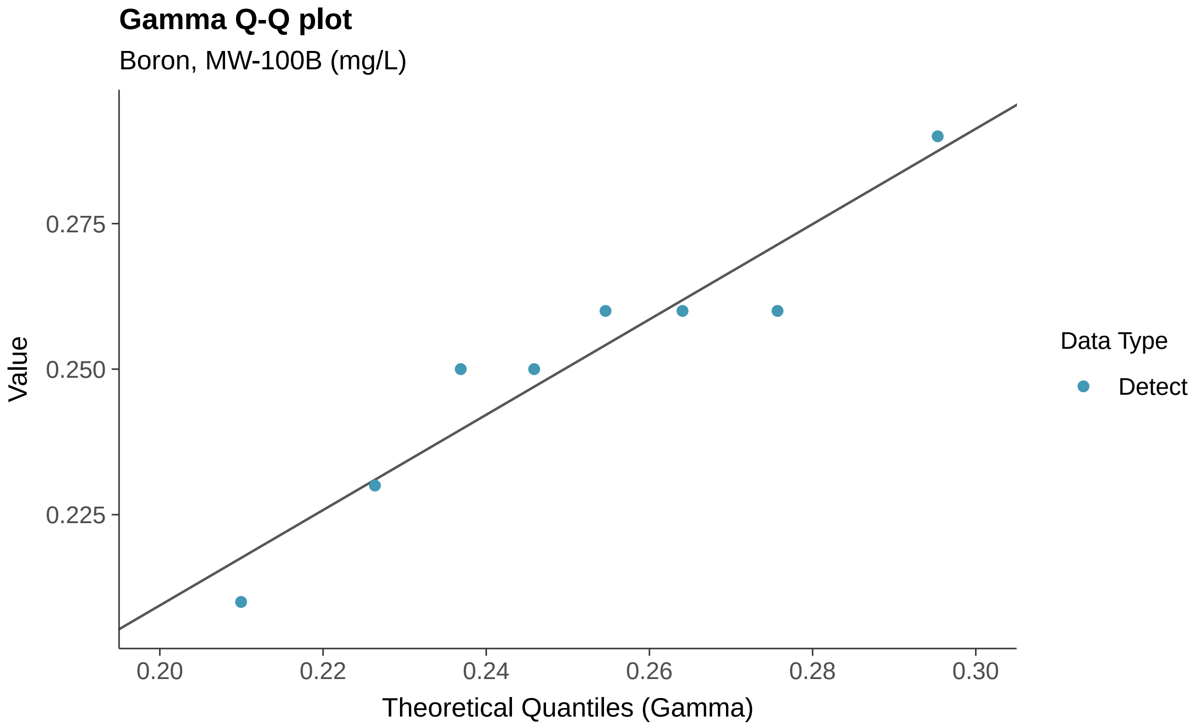
Boron, MW-100B (mg/L)

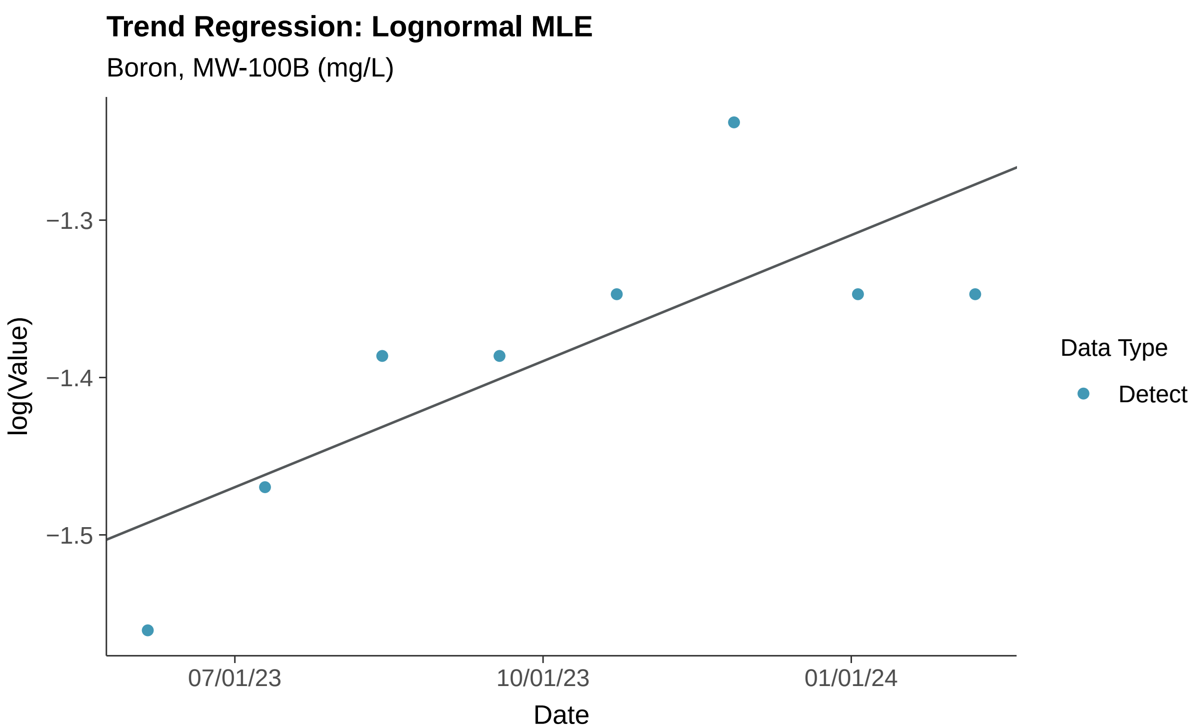


Lognormal Q-Q plot

Boron, MW-100B (mg/L)

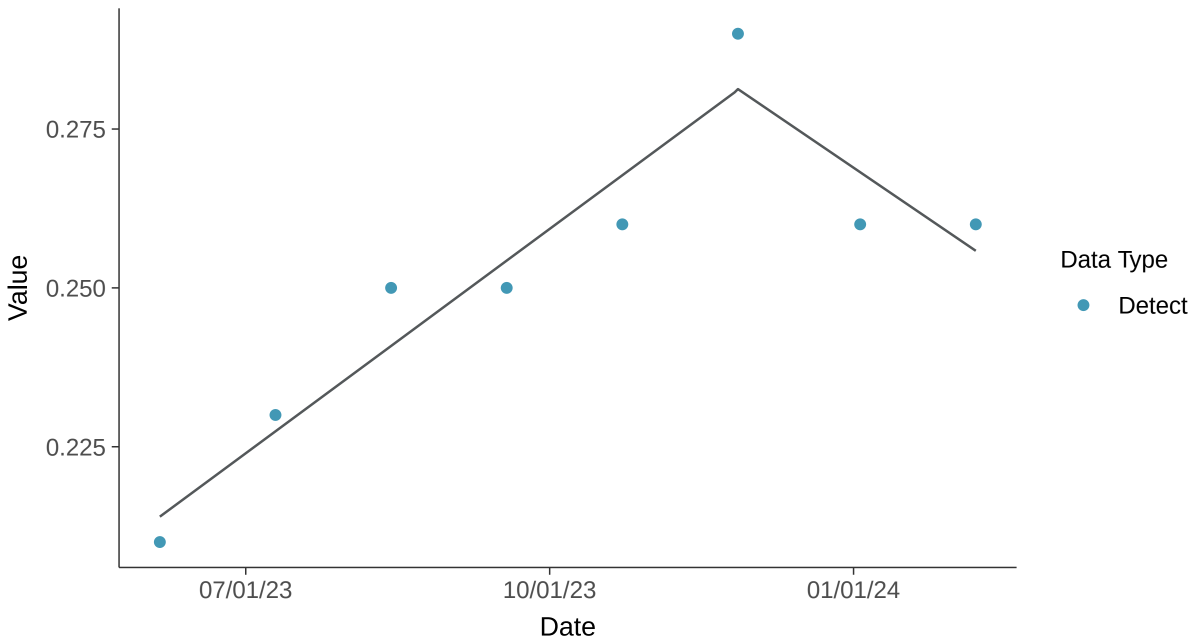



Gamma Q-Q plot
Boron, MW-100B (mg/L)
Value
0.275
0.250
0.225
0.20
0.22
0.24
0.26
0.28
0.30
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-100B (mg/L)
log(Value)
−1.3
−1.4
−1.5
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

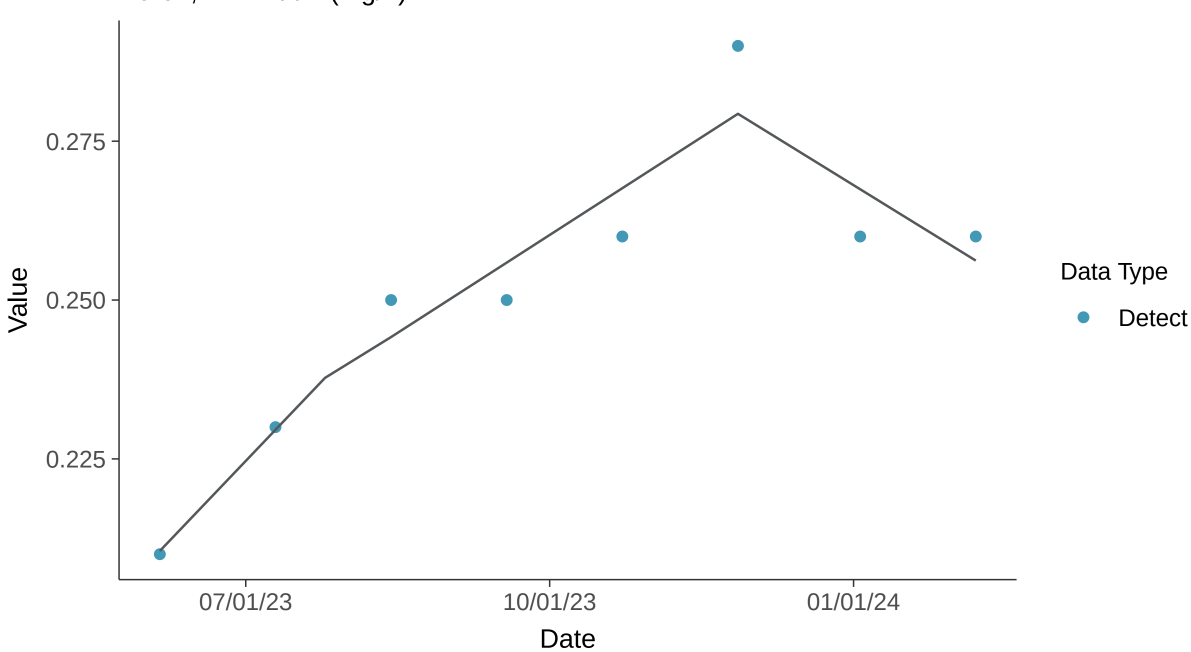
Trend Regression: Piecewise Linear-Linear

Boron, MW-100B (mg/L)



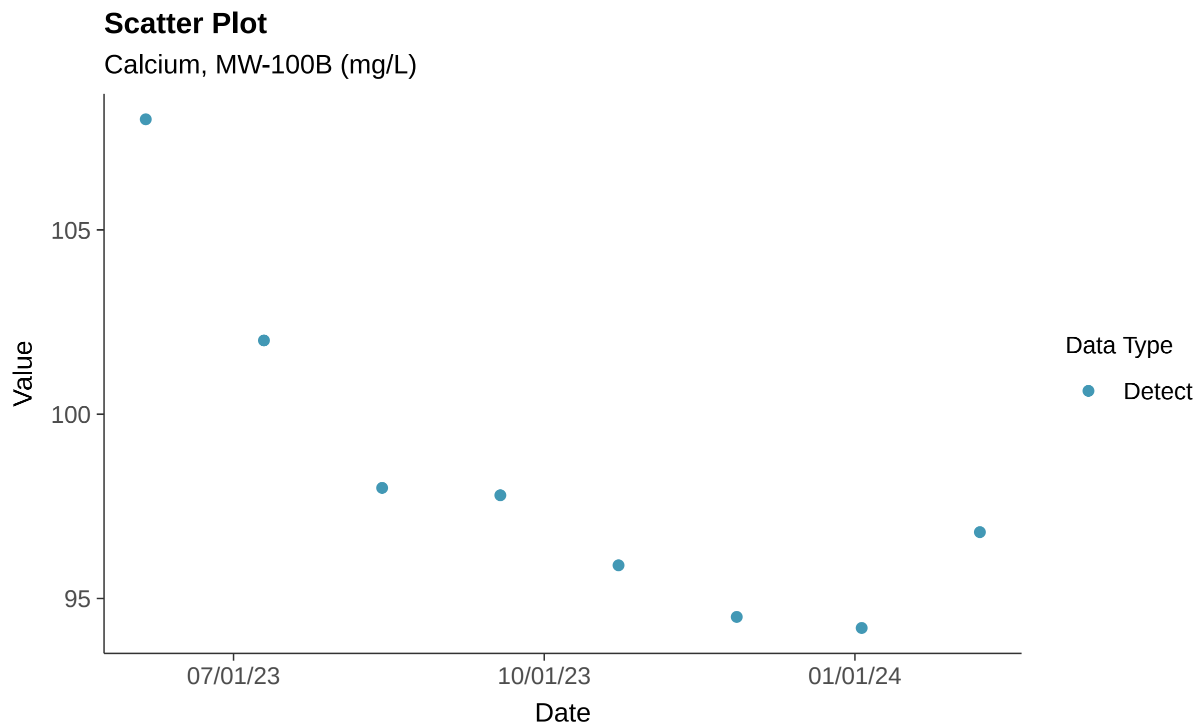
Trend Regression: Piecewise Linear-Linear-Linear

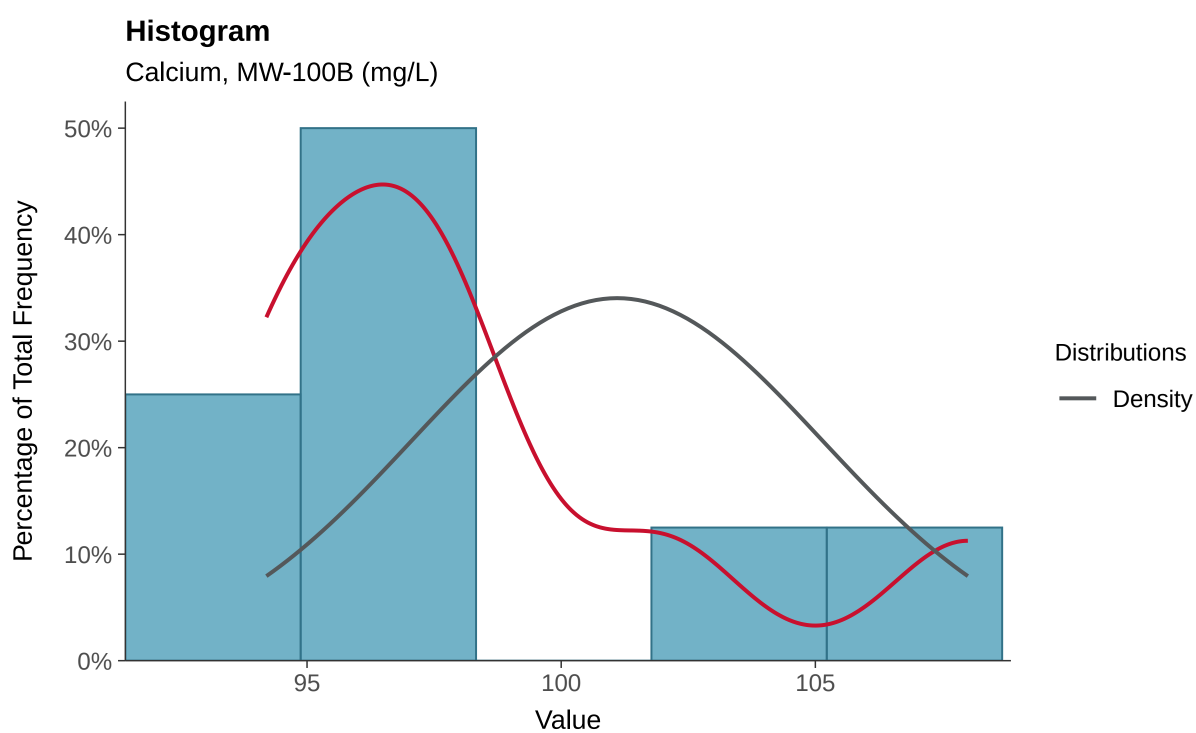
Boron, MW-100B (mg/L)



Appendix III: Calcium, MW-100B

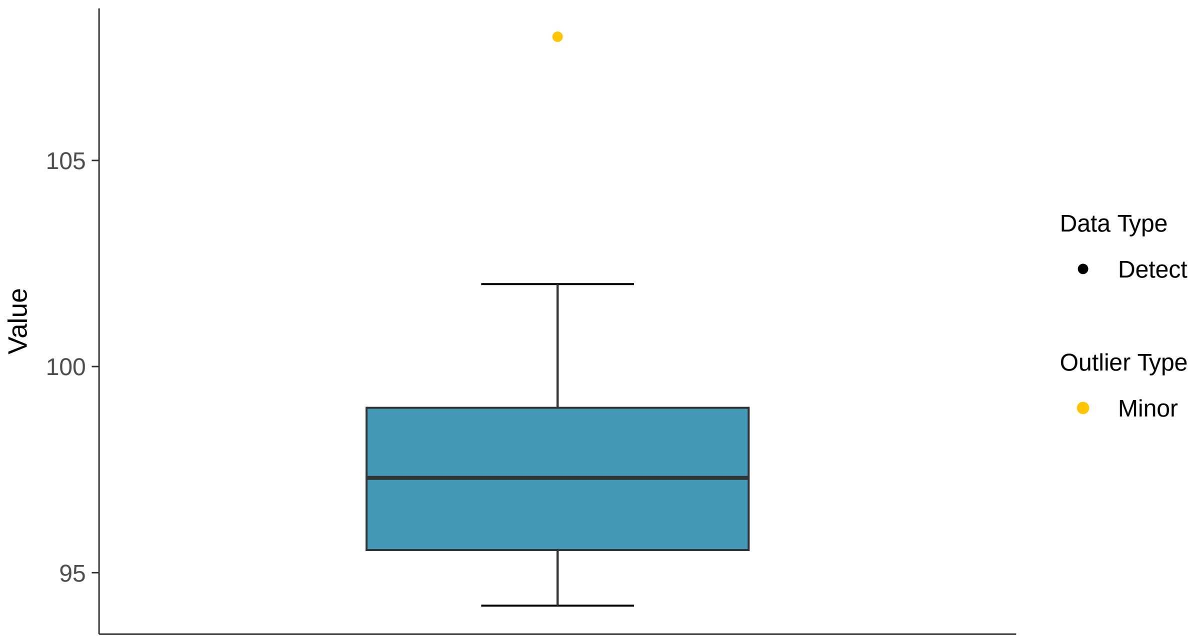
ID: 100B_1_02





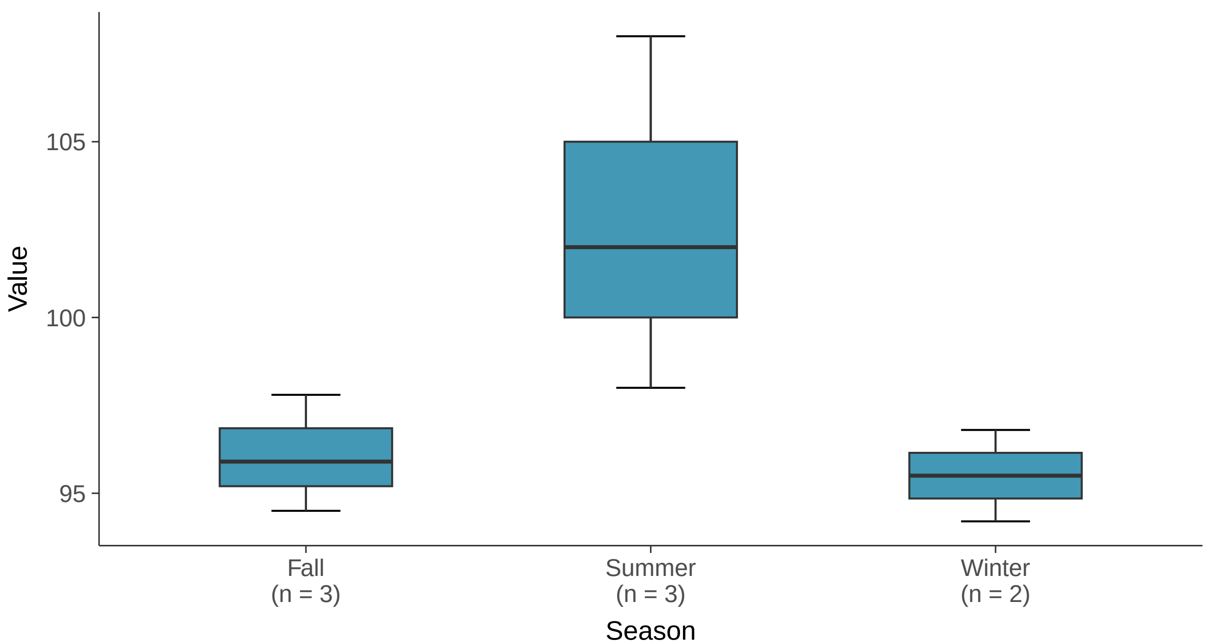
Boxplot

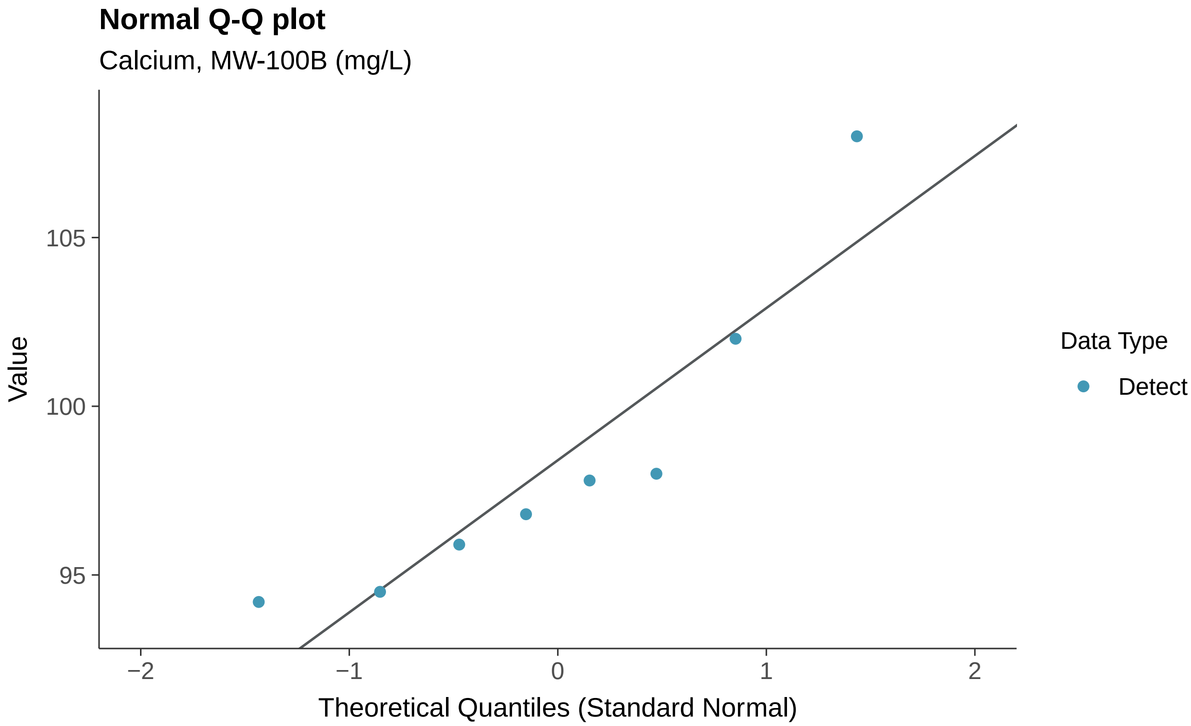
Calcium, MW-100B (mg/L)

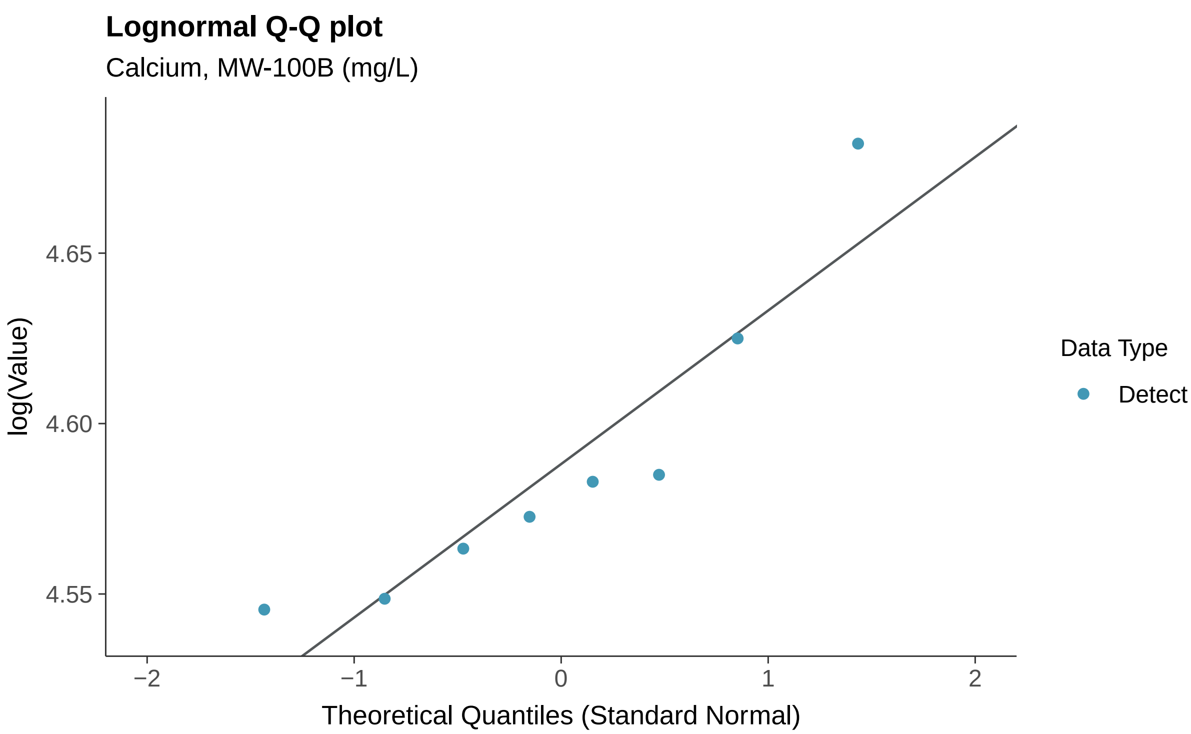


Boxplot by Season

Calcium, MW-100B (mg/L)

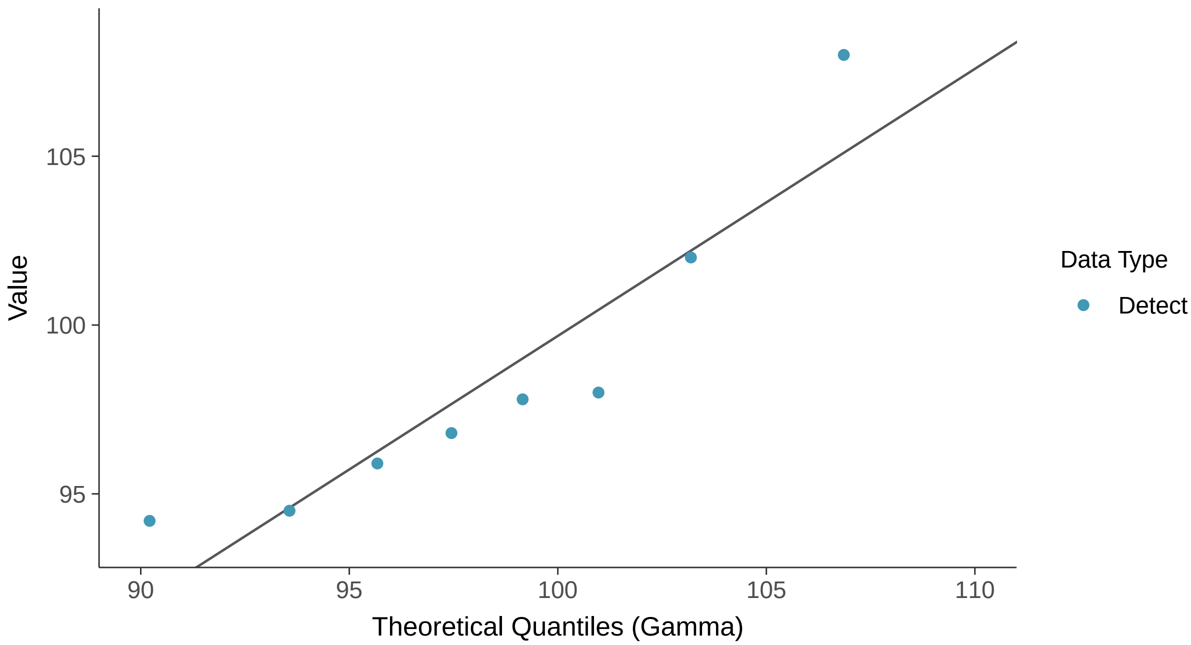



Normal Q-Q plot
Calcium, MW-100B (mg/L)
Value
105
100
95
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-100B (mg/L)
log(Value)
4.65
4.60
4.55
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

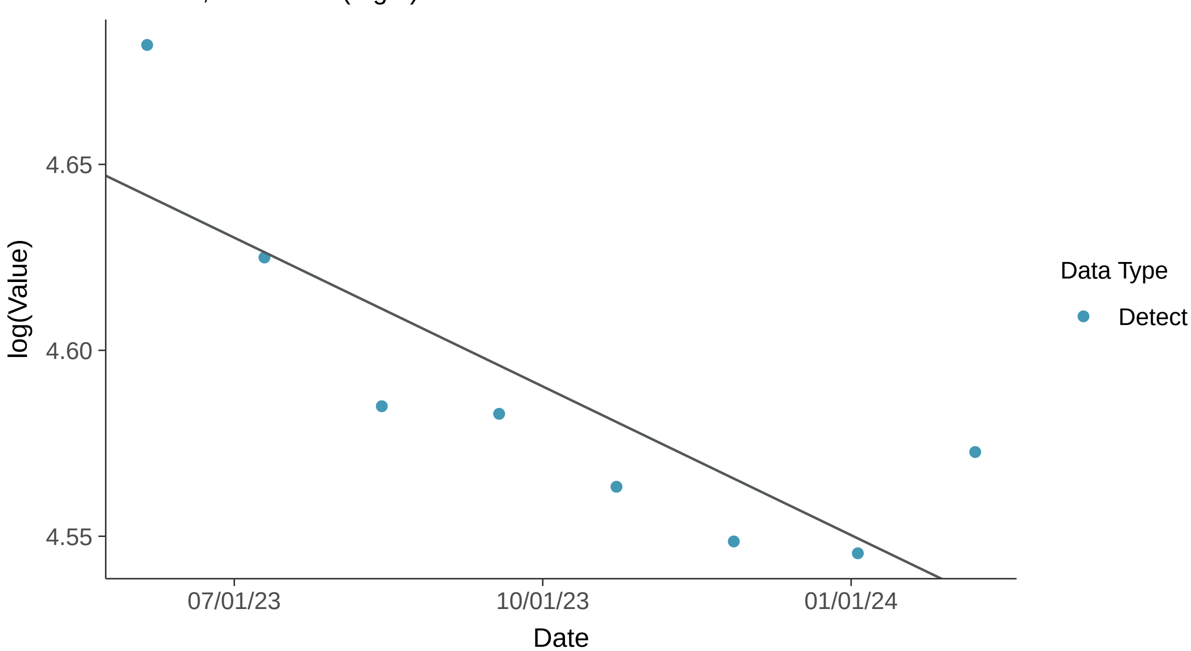
Gamma Q-Q plot

Calcium, MW-100B (mg/L)



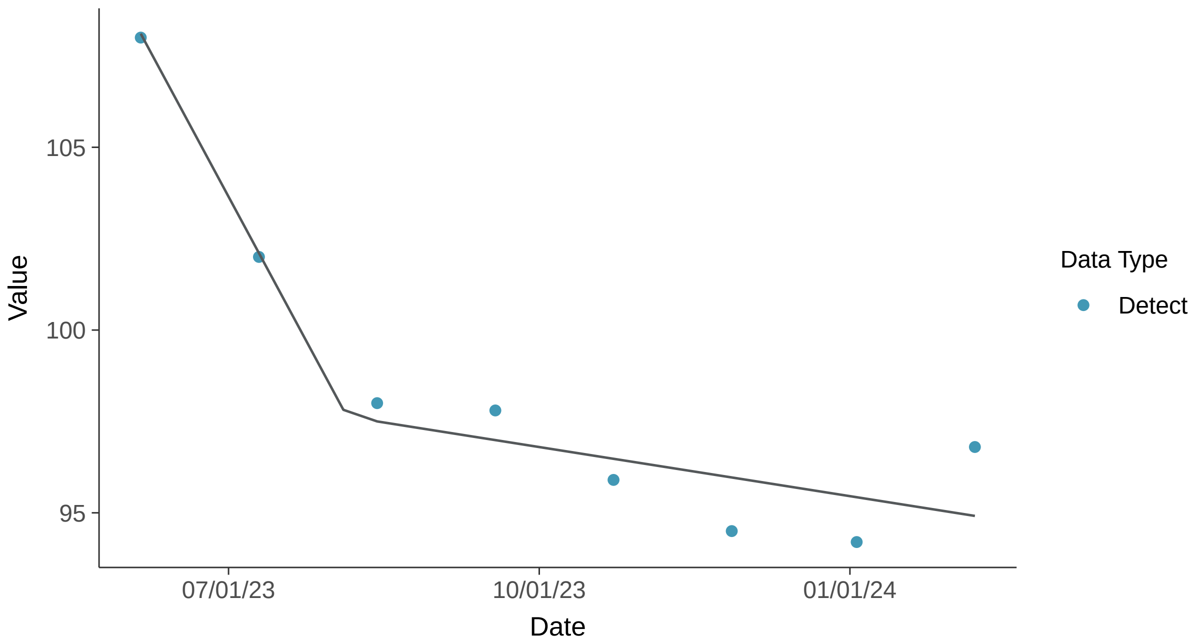
Trend Regression: Lognormal MLE

Calcium, MW-100B (mg/L)



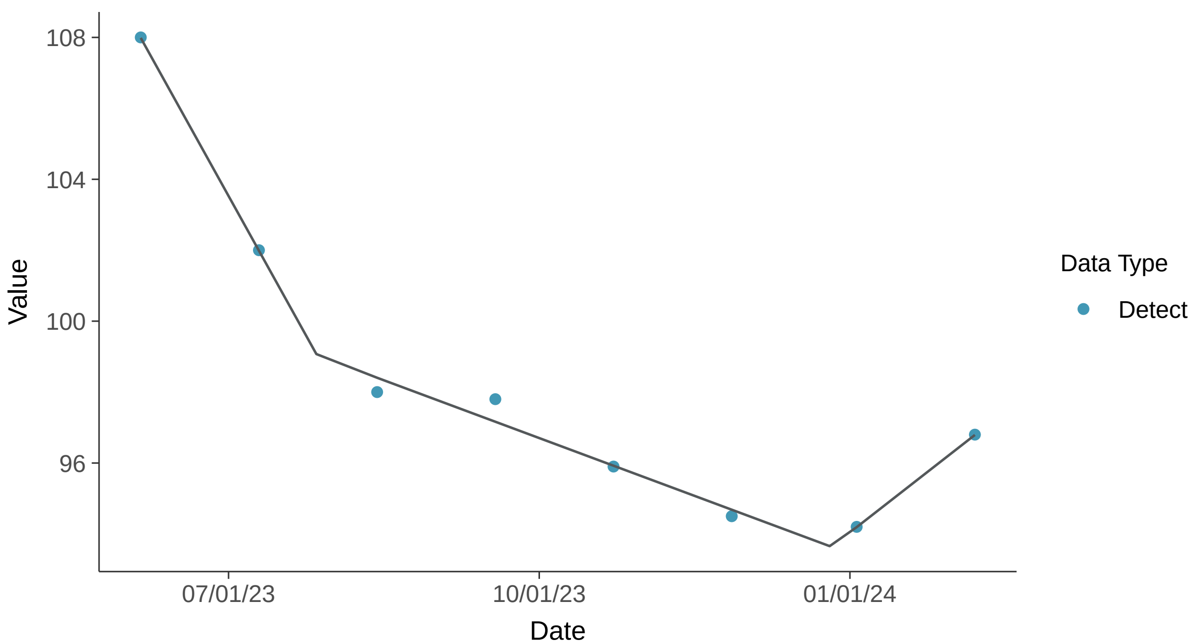
Trend Regression: Piecewise Linear-Linear

Calcium, MW-100B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Calcium, MW-100B (mg/L)

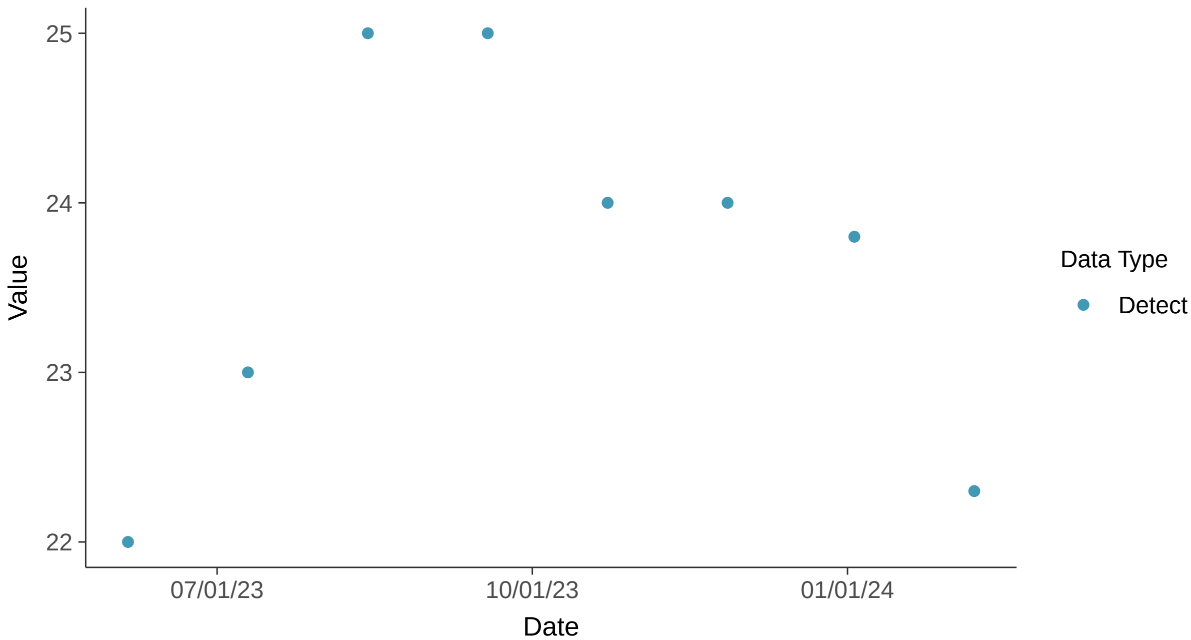


Appendix III: Chloride, MW-100B

ID: 100B_1_03

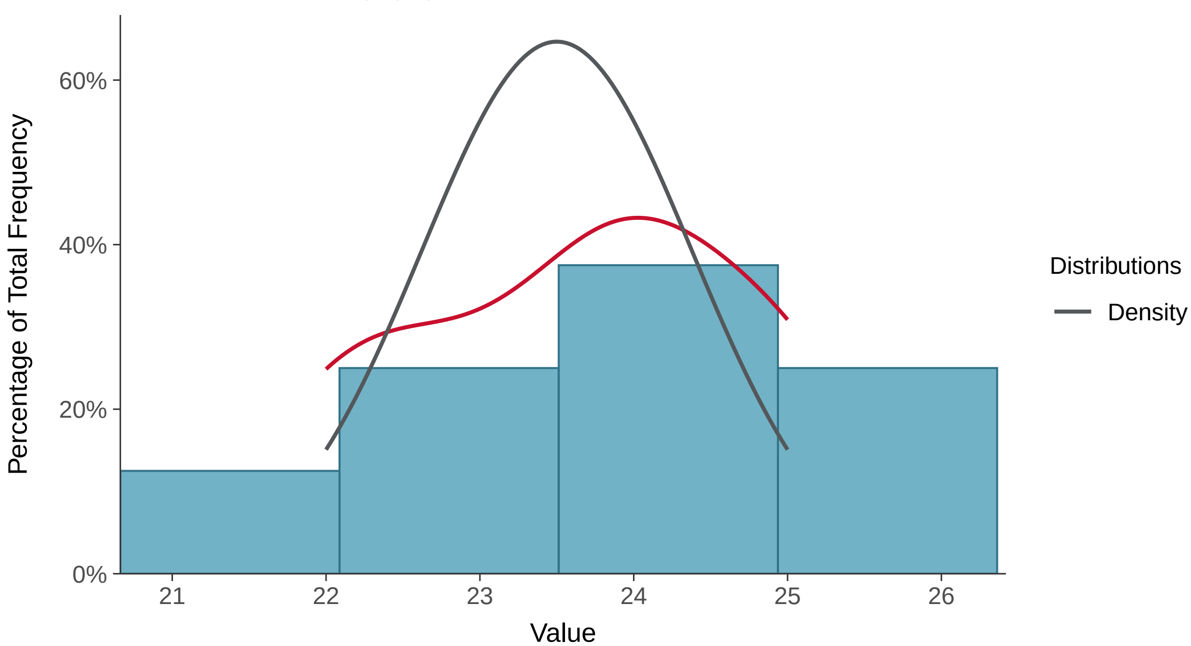
Scatter Plot

Chloride, MW-100B (mg/L)



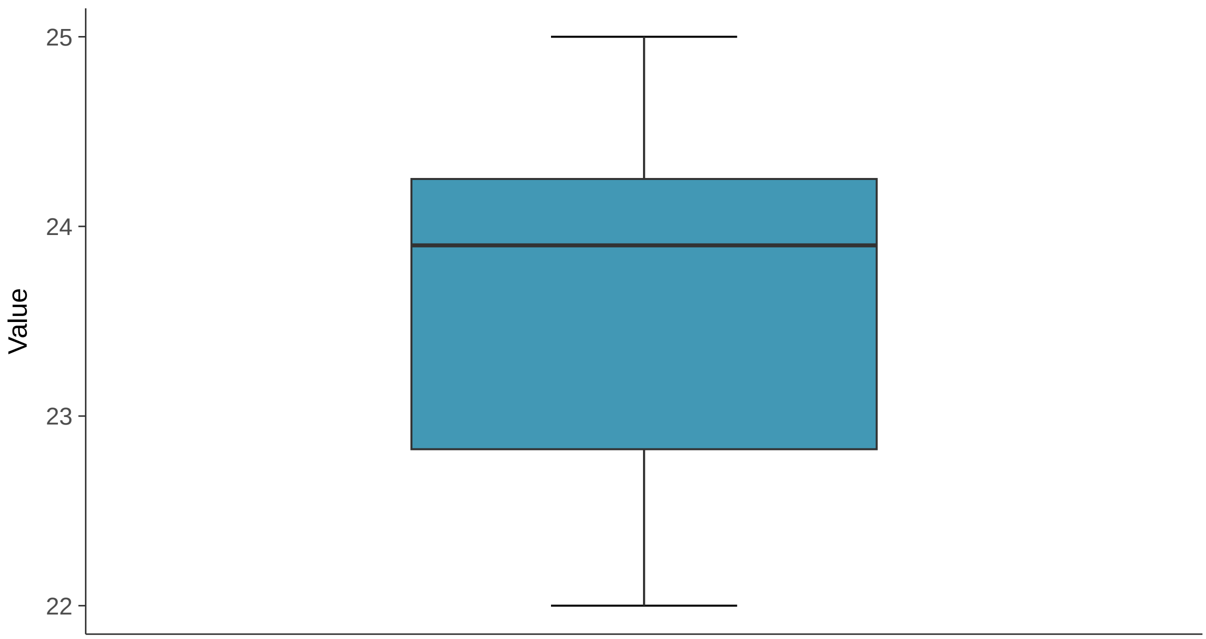
Histogram

Chloride, MW-100B (mg/L)



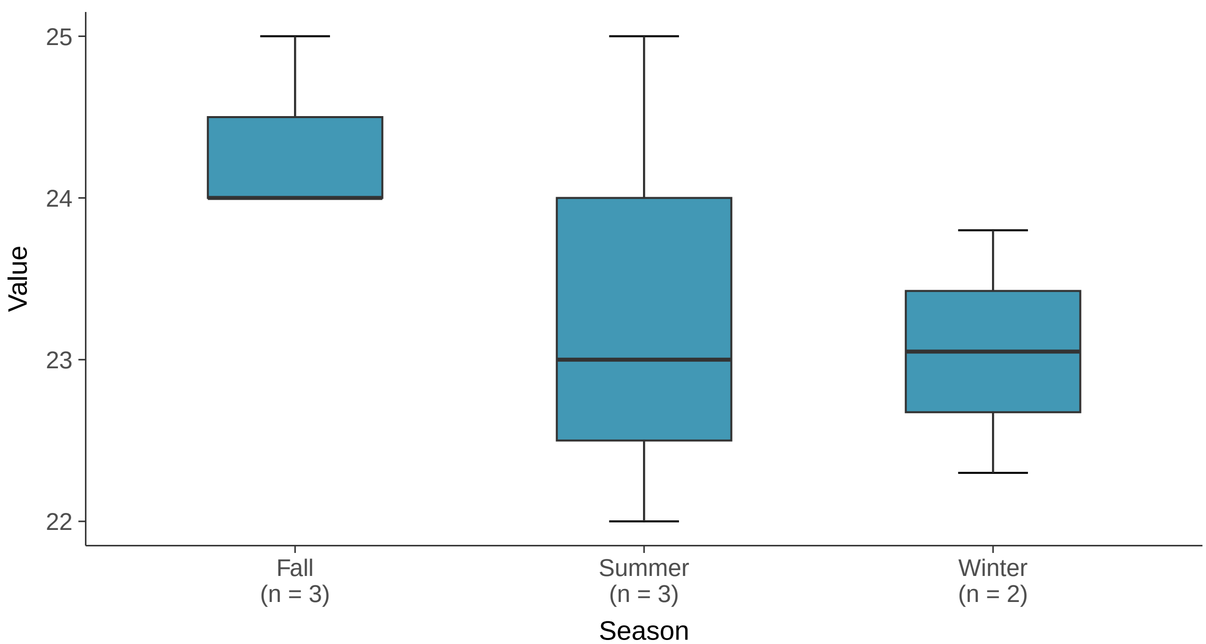
Boxplot

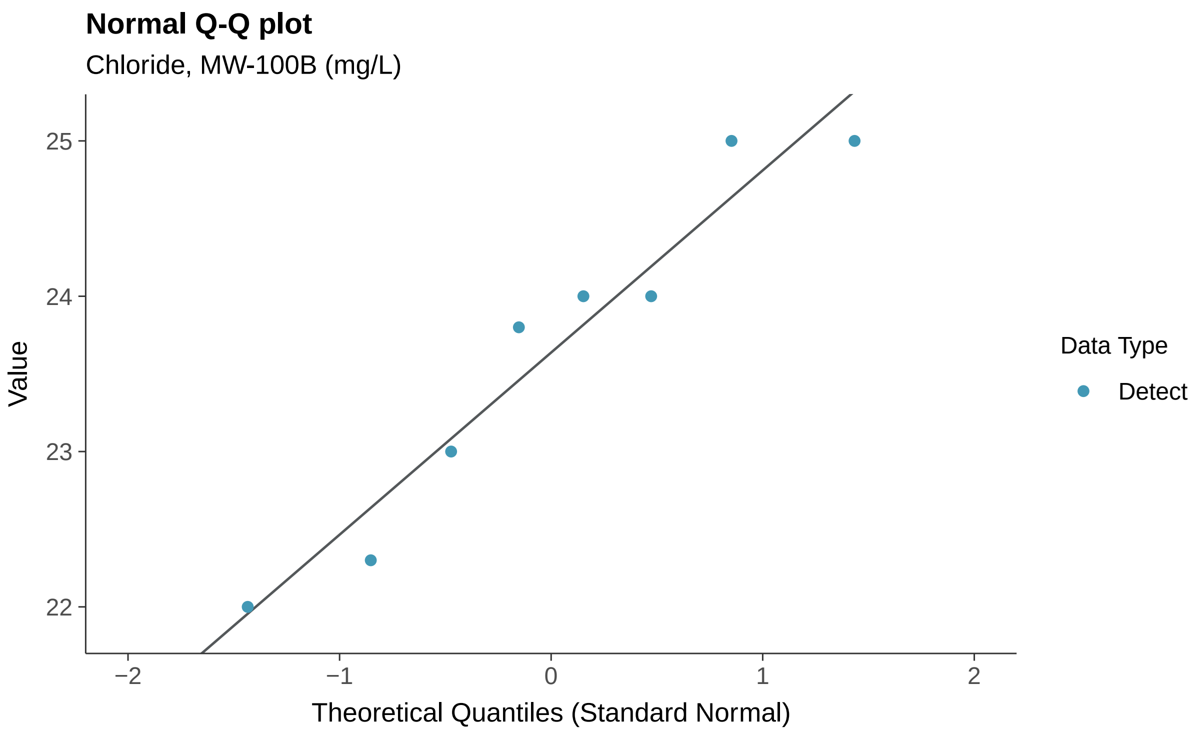
Chloride, MW-100B (mg/L)

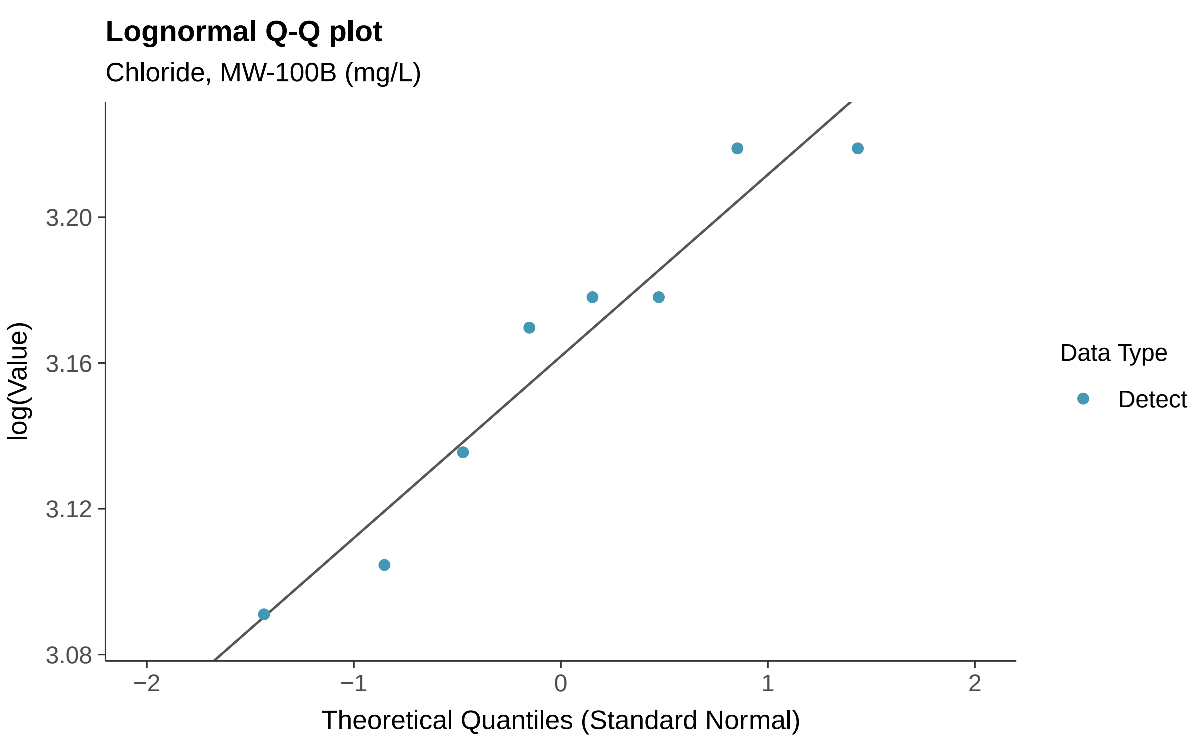


Boxplot by Season

Chloride, MW-100B (mg/L)

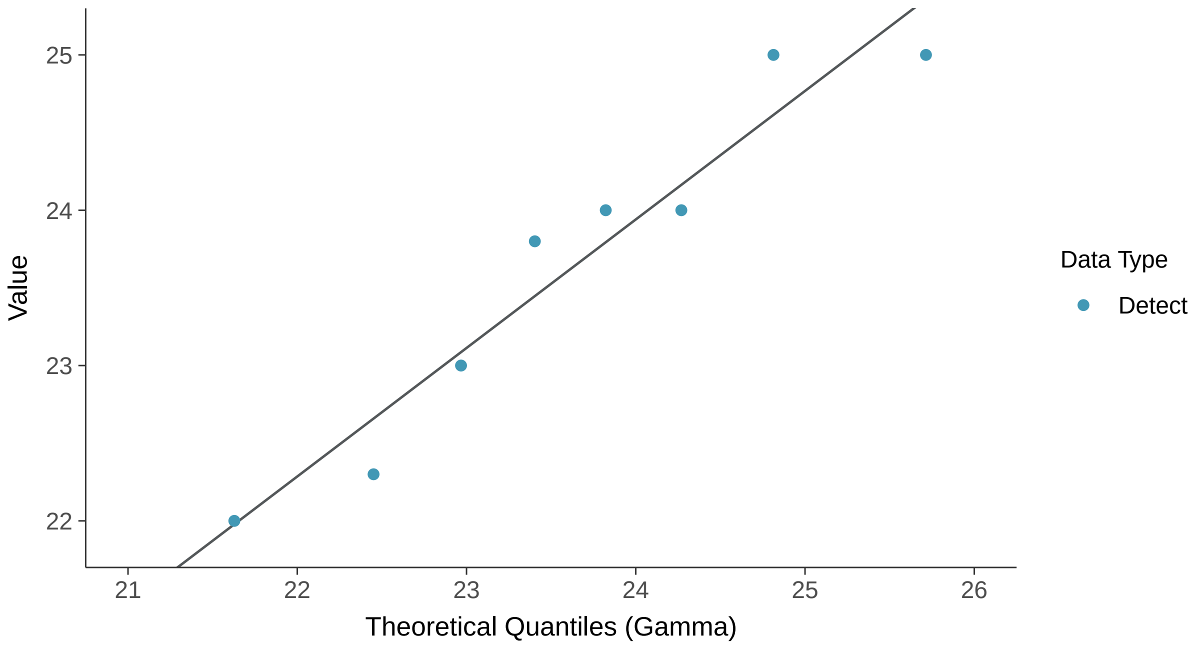



Normal Q-Q plot
Chloride, MW-100B (mg/L)
Value
25
24
23
22
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chloride, MW-100B (mg/L)
log(Value)
3.20
3.16
3.12
3.08
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

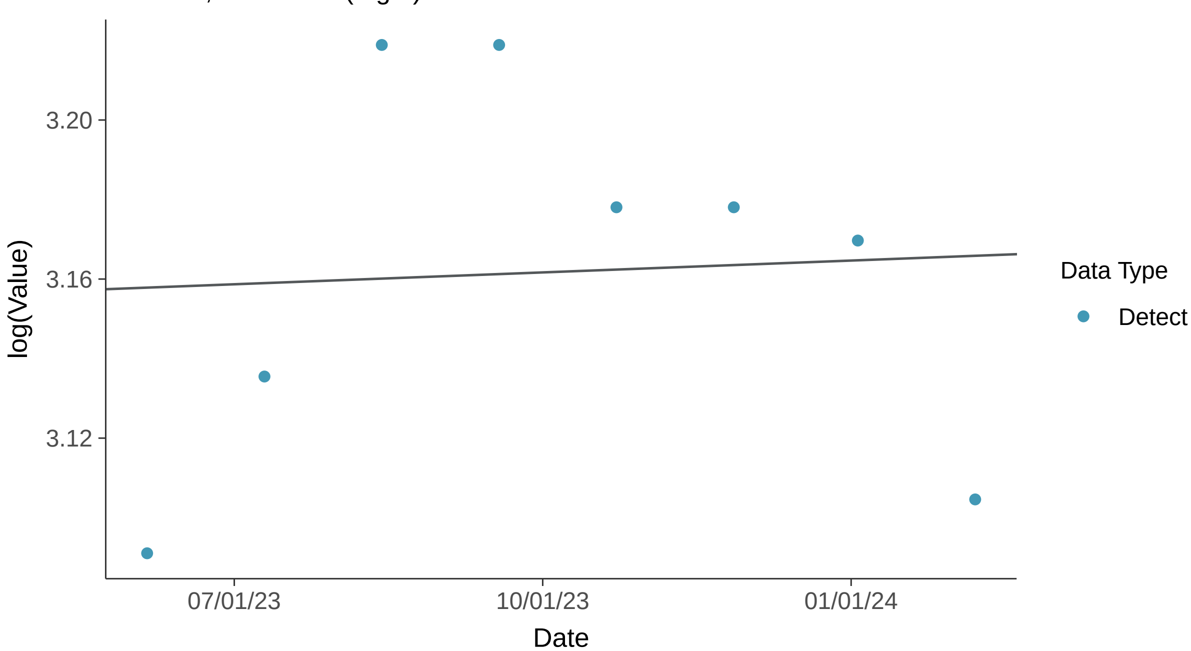
Gamma Q-Q plot

Chloride, MW-100B (mg/L)



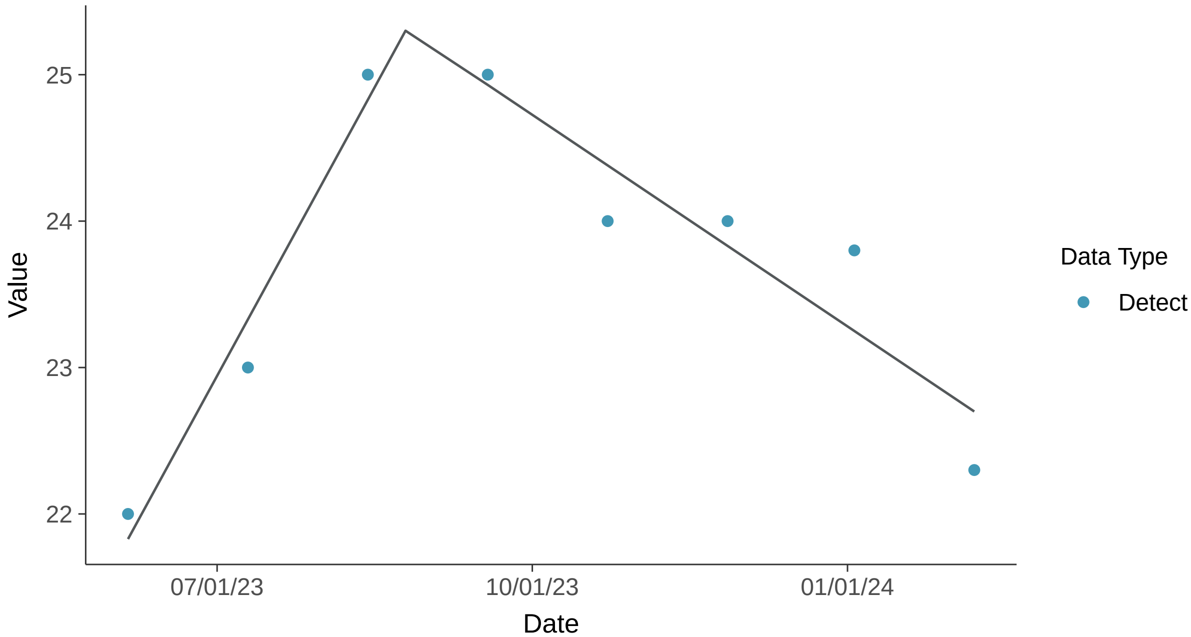
Trend Regression: Lognormal MLE

Chloride, MW-100B (mg/L)



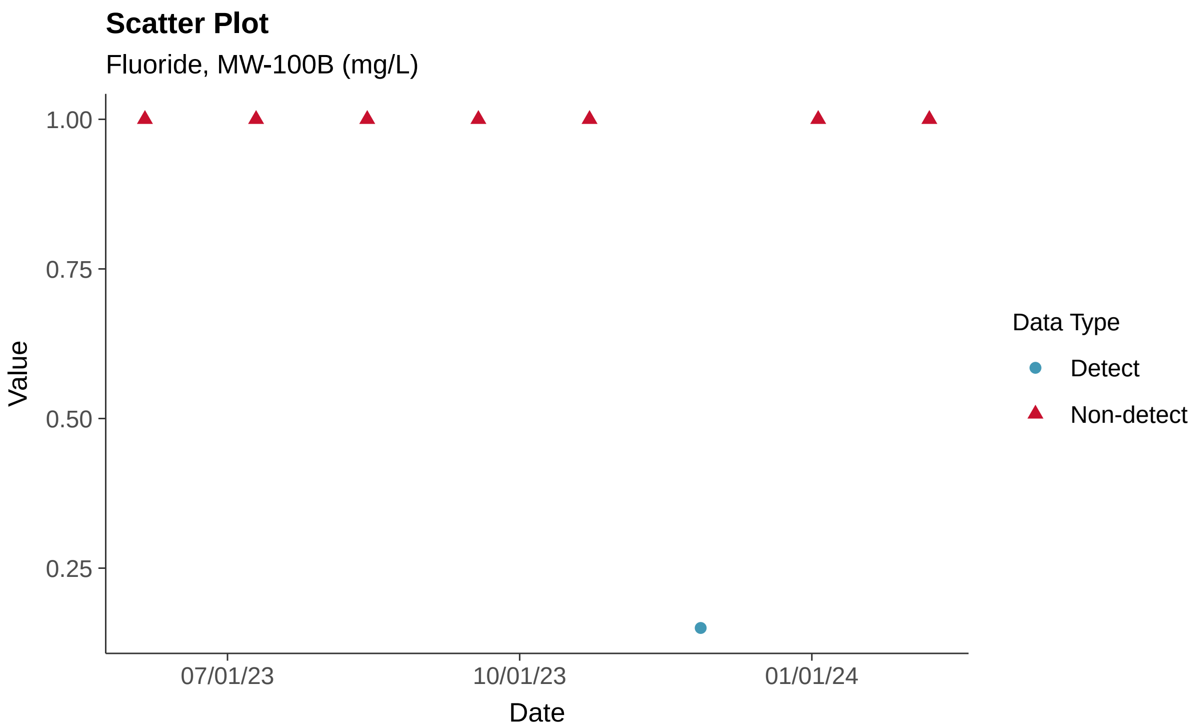
Trend Regression: Piecewise Linear-Linear

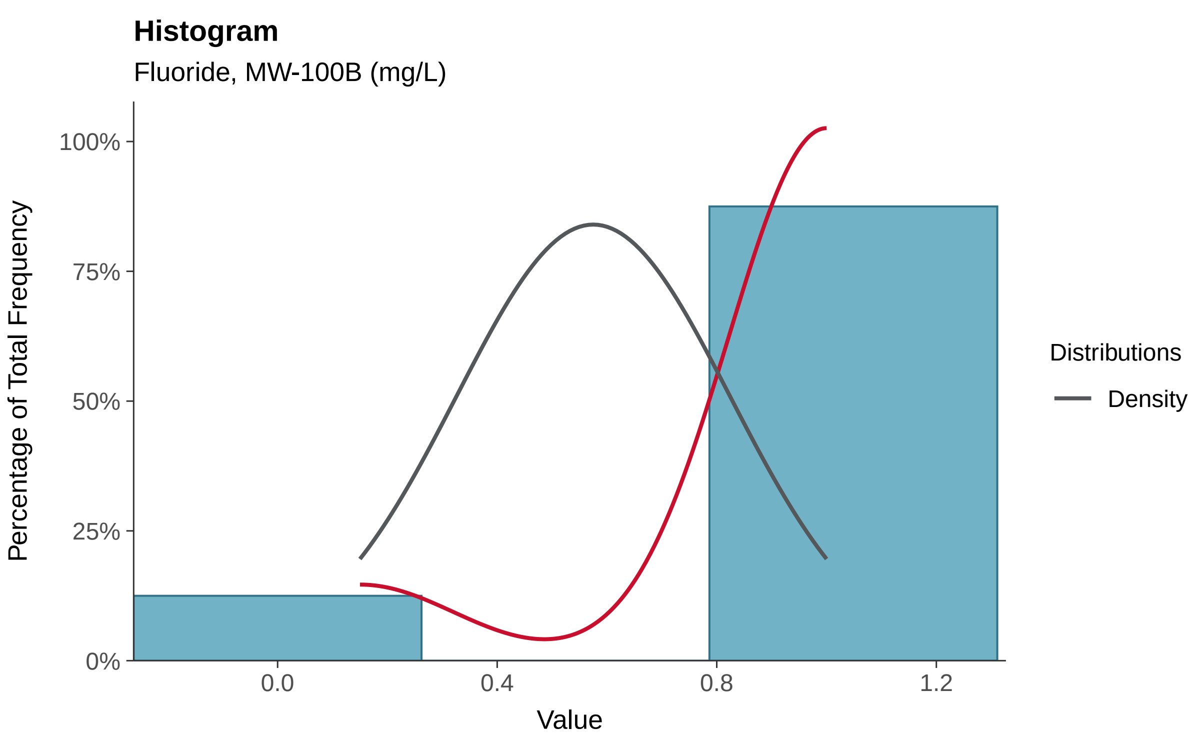
Chloride, MW-100B (mg/L)



Appendix III: Fluoride, MW-100B

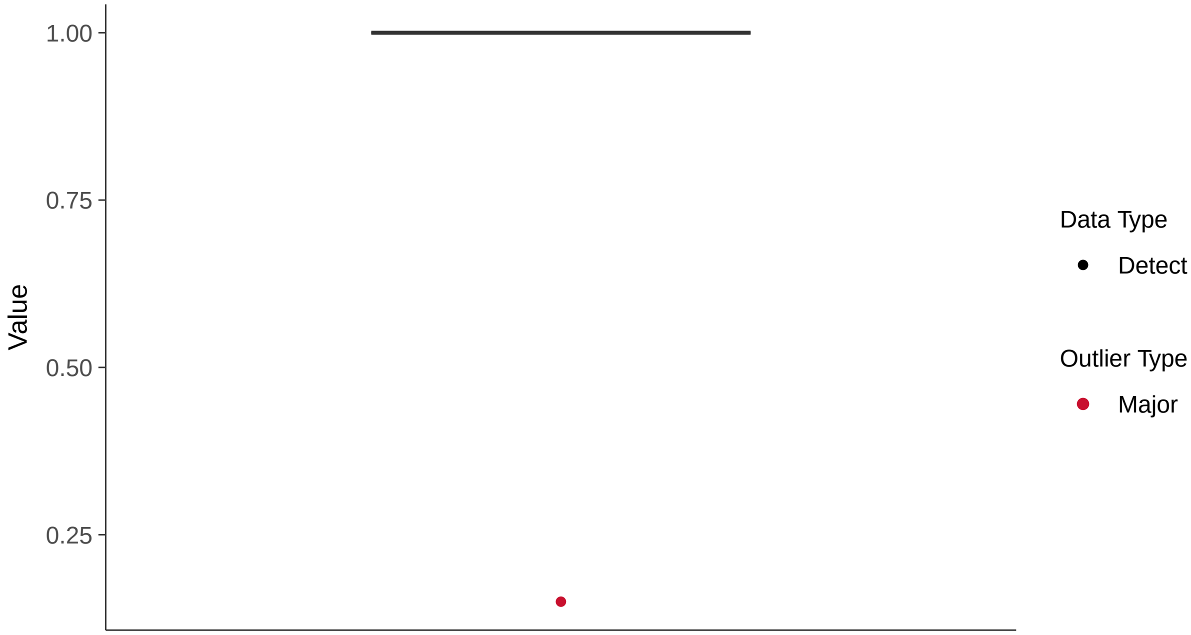
ID: 100B_1_04





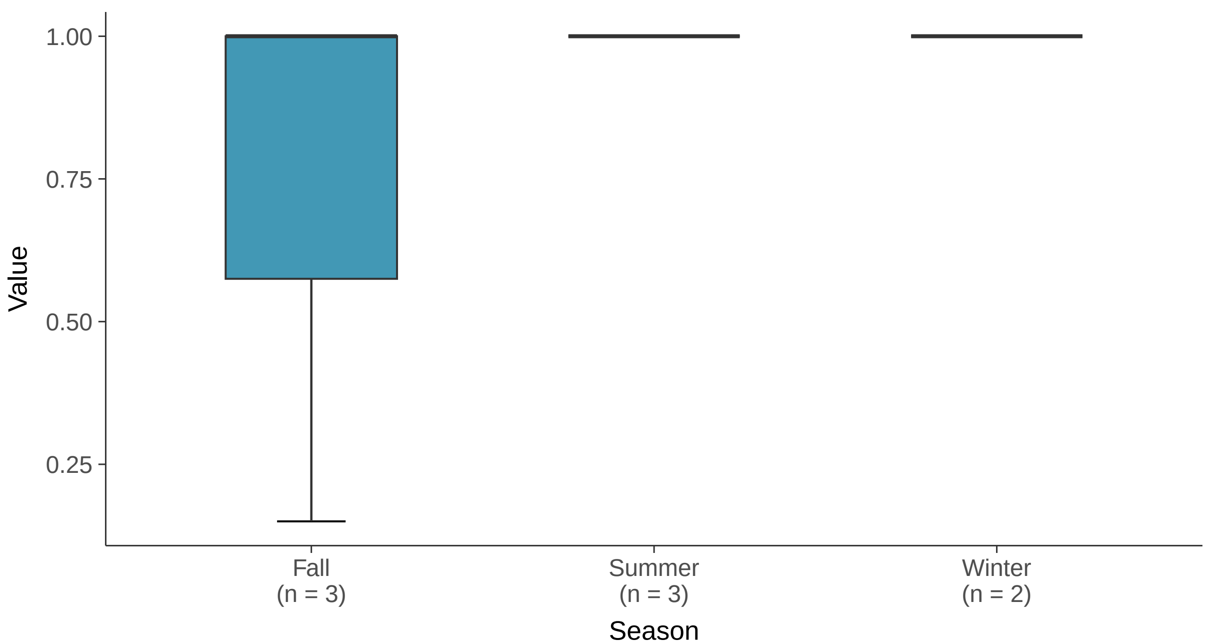
Boxplot

Fluoride, MW-100B (mg/L)



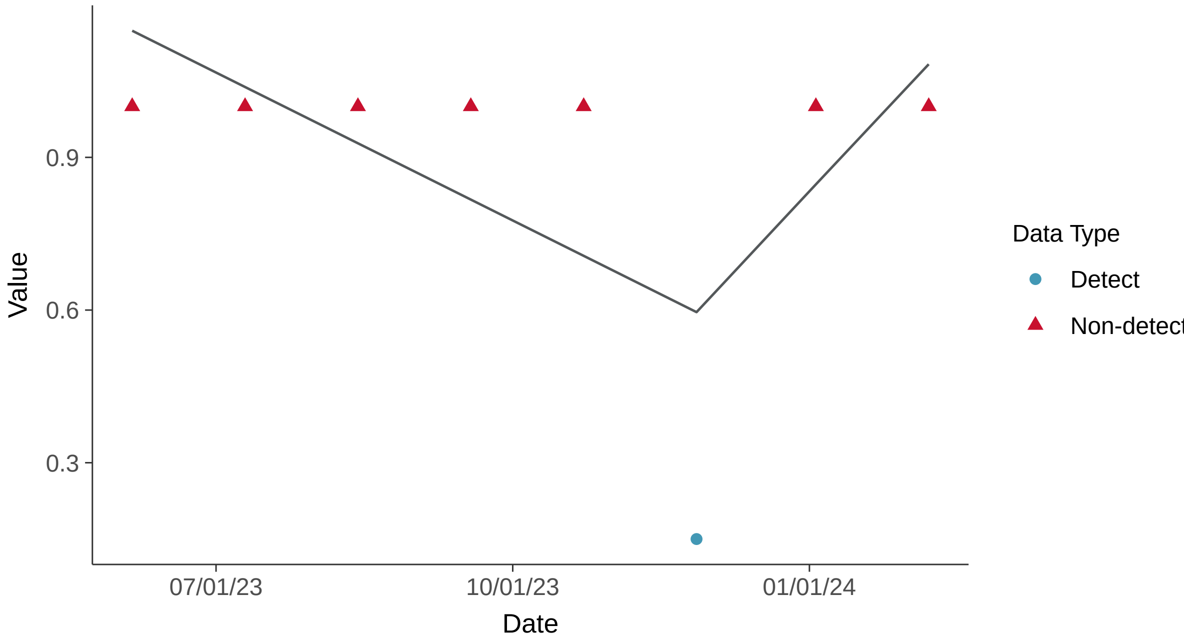
Boxplot by Season

Fluoride, MW-100B (mg/L)



Trend Regression: Piecewise Linear-Linear

Fluoride, MW-100B (mg/L)

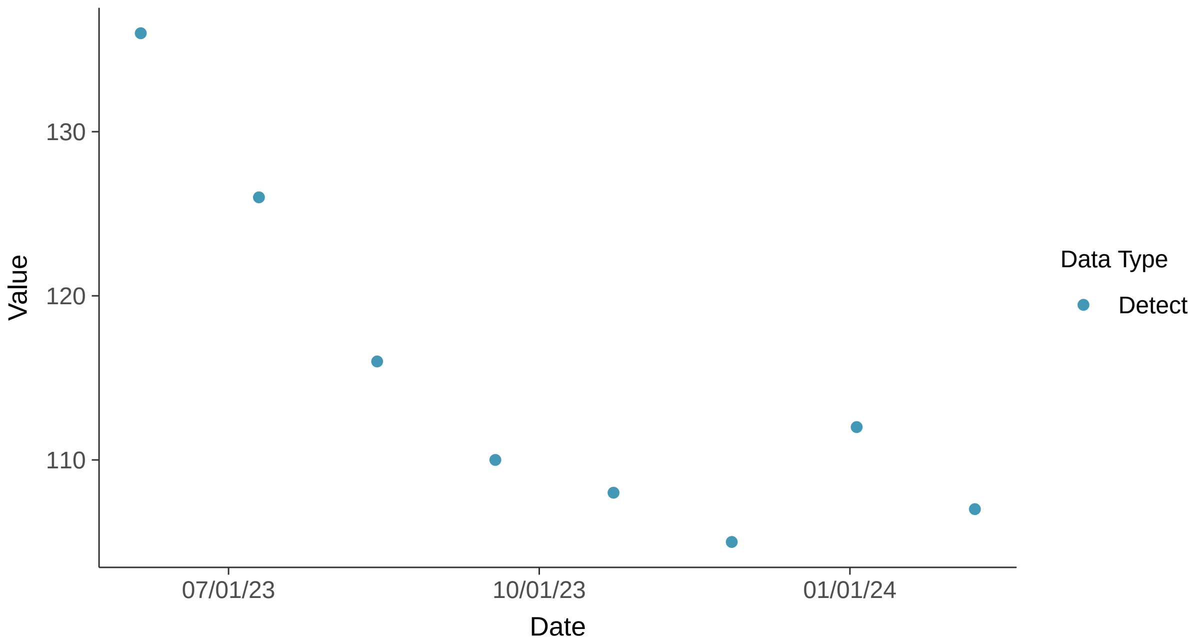


Appendix III: Sulfate, MW-100B

ID: 100B_1_05

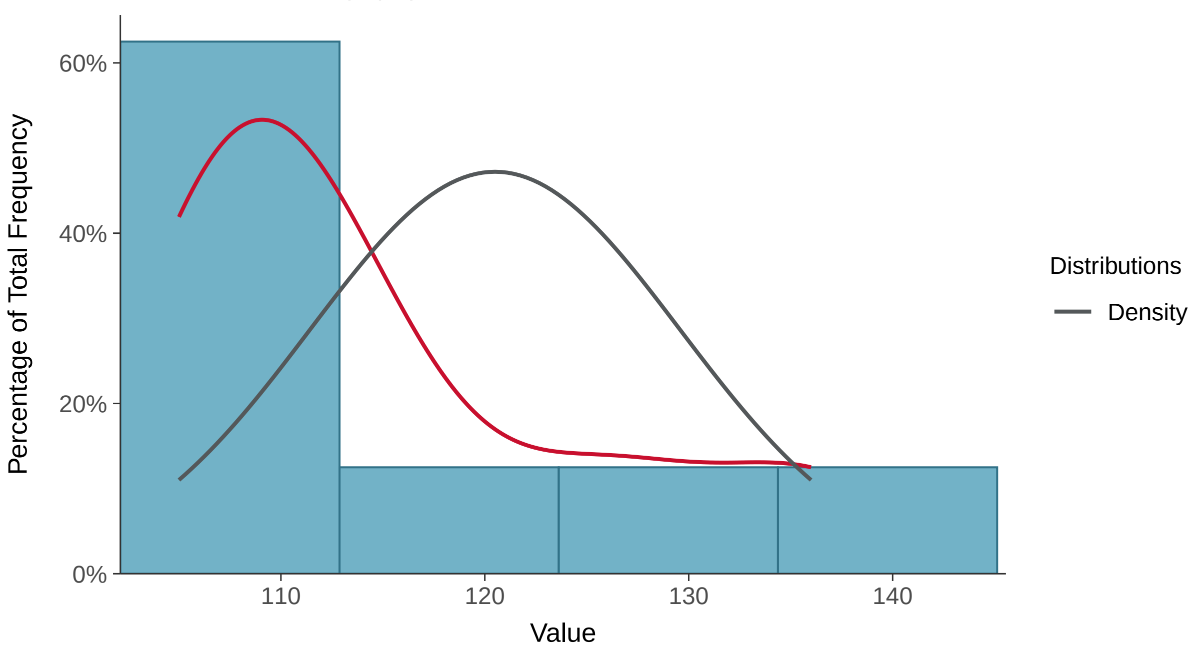
Scatter Plot

Sulfate, MW-100B (mg/L)



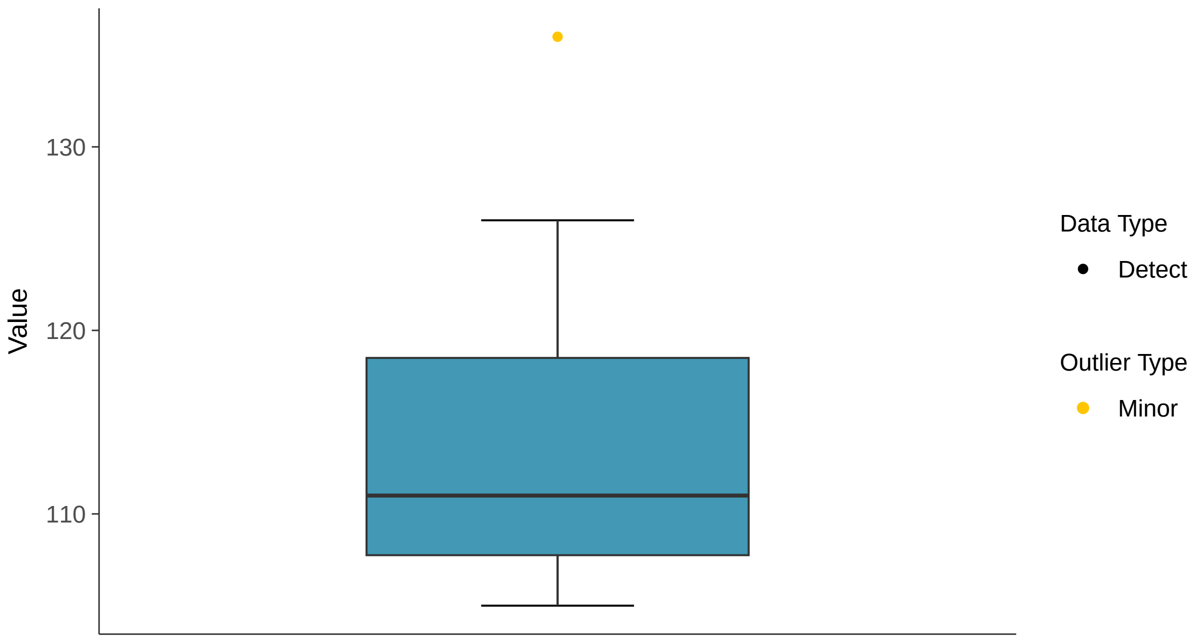
Histogram

Sulfate, MW-100B (mg/L)



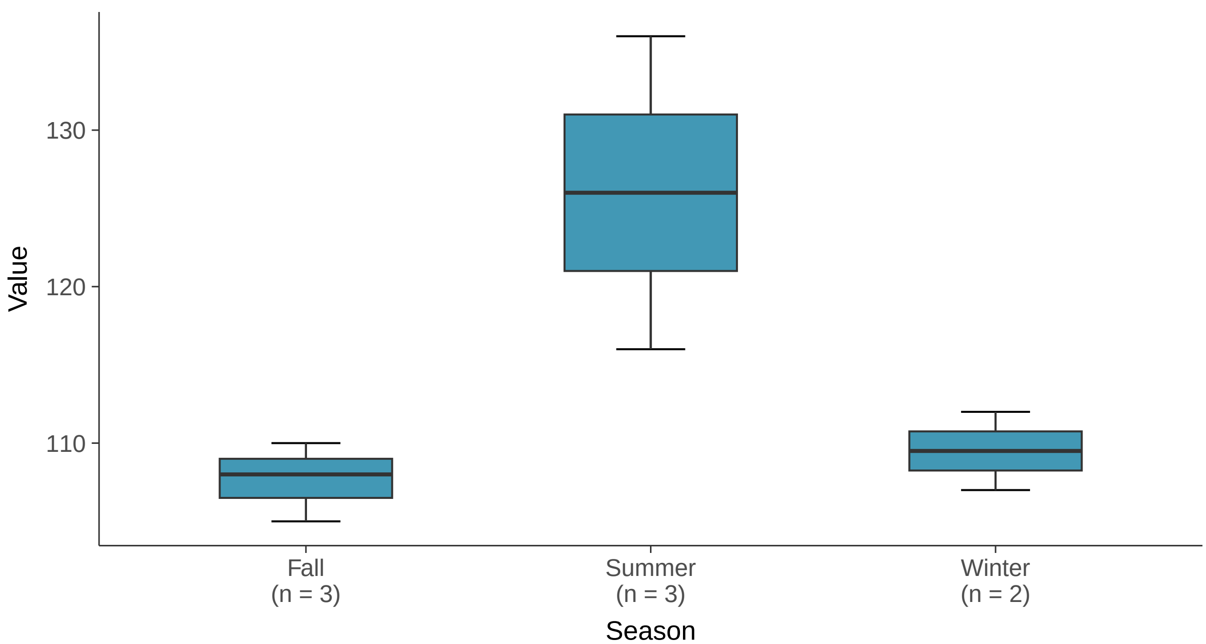
Boxplot

Sulfate, MW-100B (mg/L)



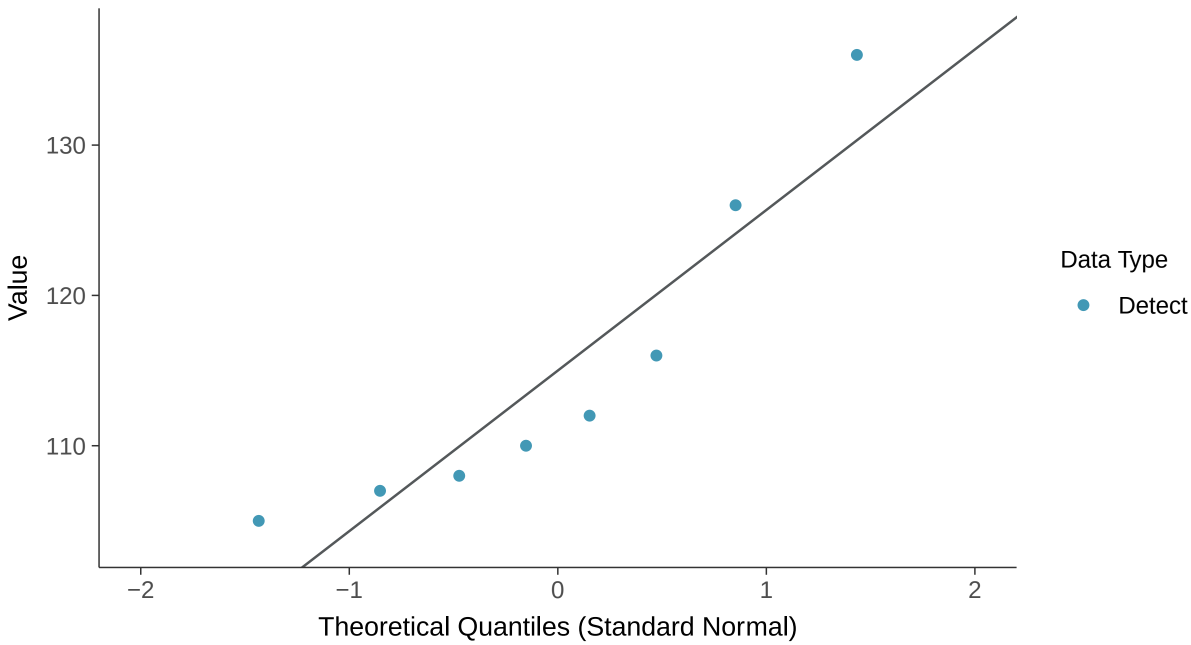
Boxplot by Season

Sulfate, MW-100B (mg/L)



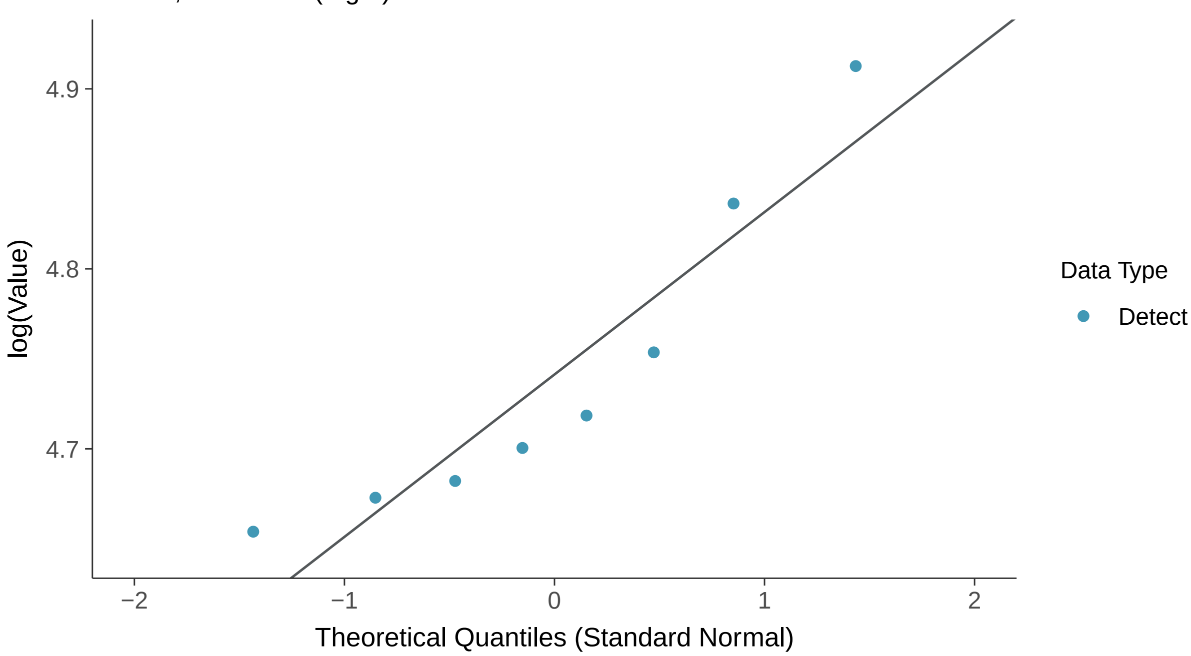
Normal Q-Q plot

Sulfate, MW-100B (mg/L)



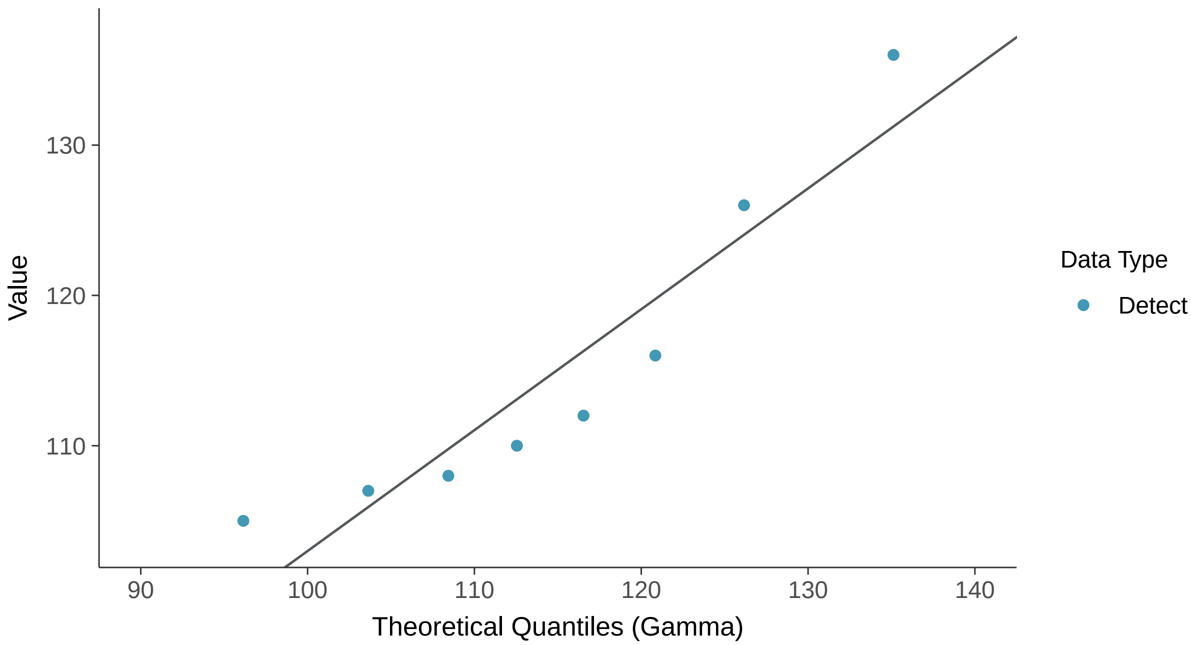
Lognormal Q-Q plot

Sulfate, MW-100B (mg/L)



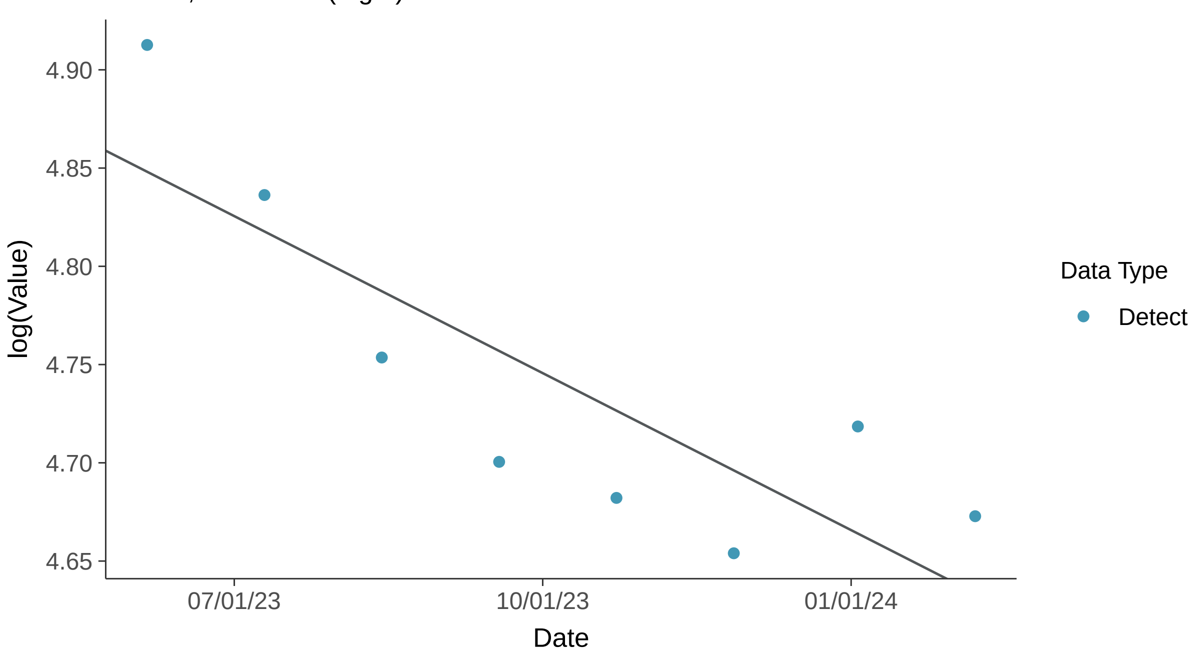
Gamma Q-Q plot

Sulfate, MW-100B (mg/L)



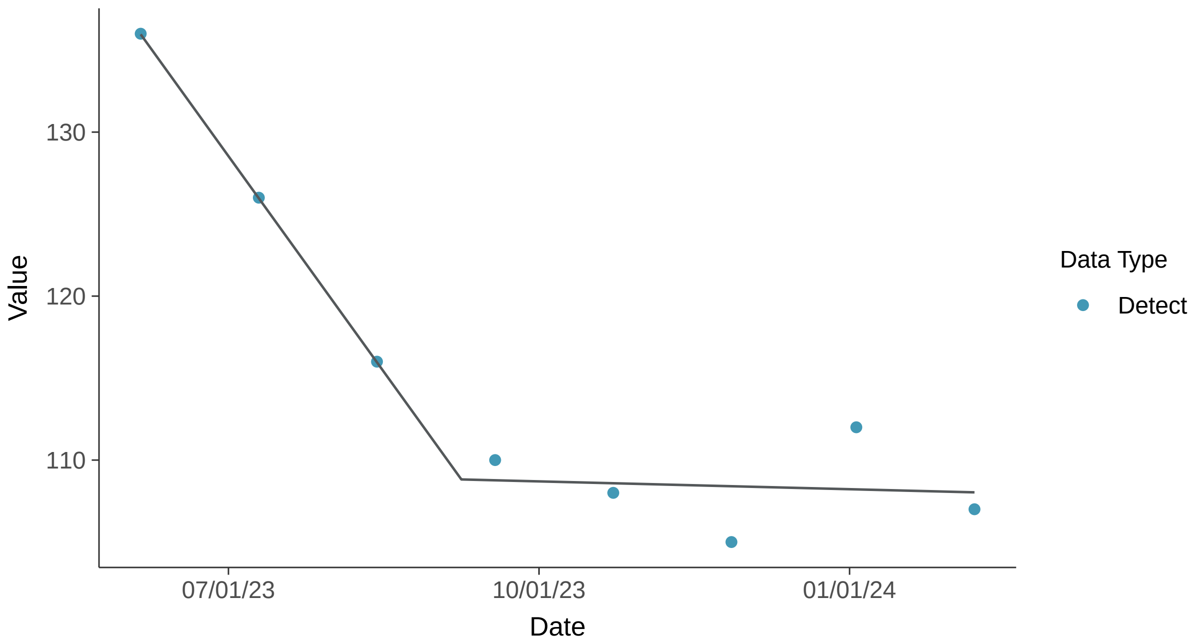
Trend Regression: Lognormal MLE

Sulfate, MW-100B (mg/L)



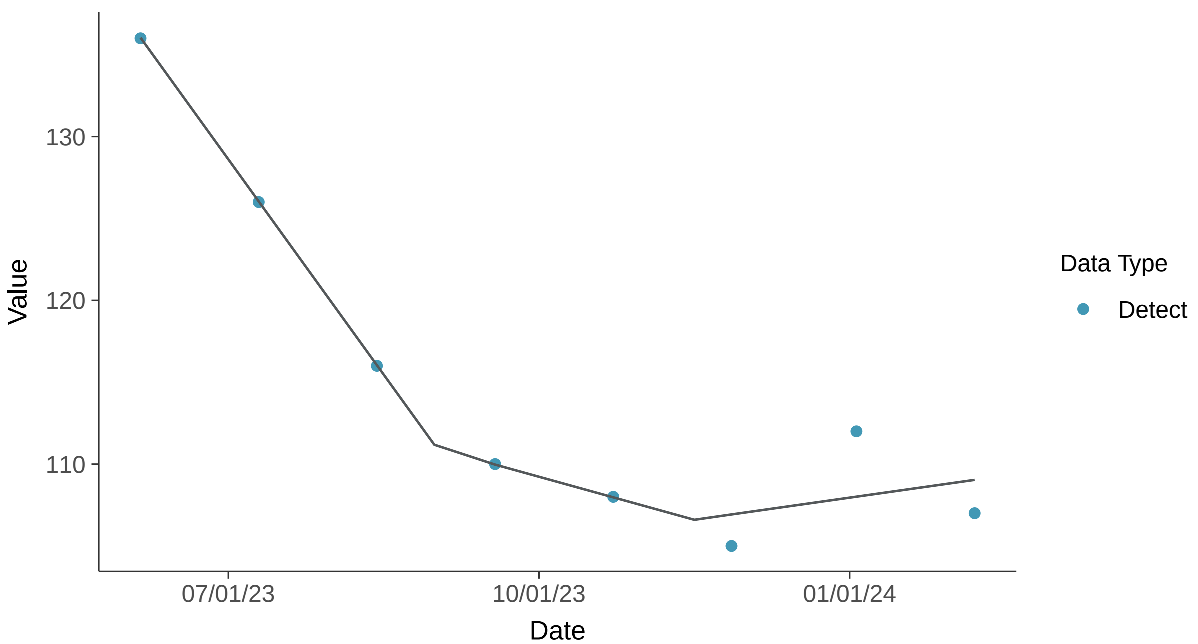
Trend Regression: Piecewise Linear-Linear

Sulfate, MW-100B (mg/L)



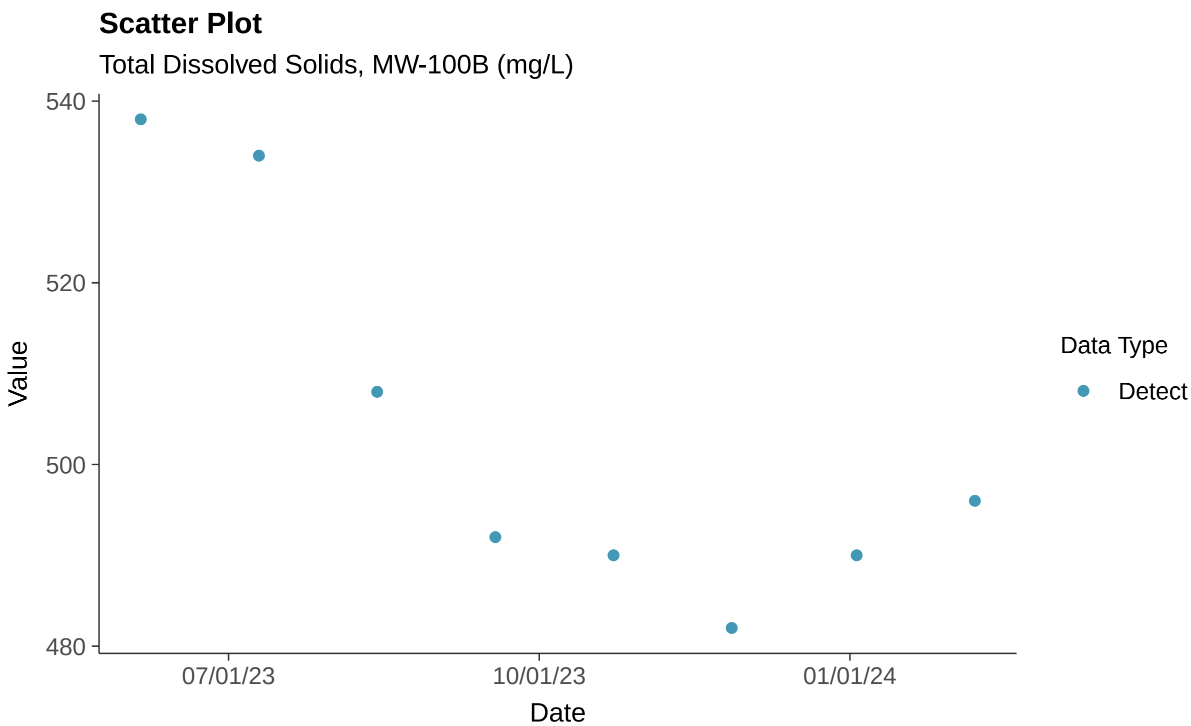
Trend Regression: Piecewise Linear-Linear-Linear

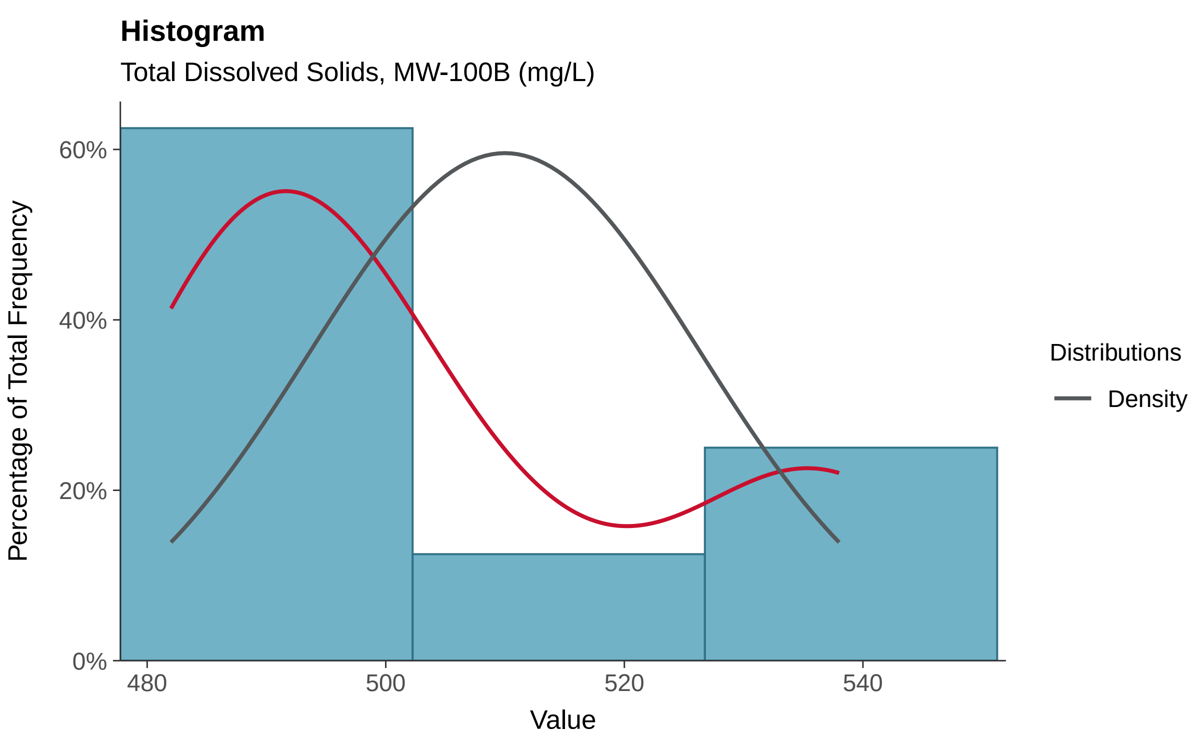
Sulfate, MW-100B (mg/L)



Appendix III: Total Dissolved Solids, MW-100B

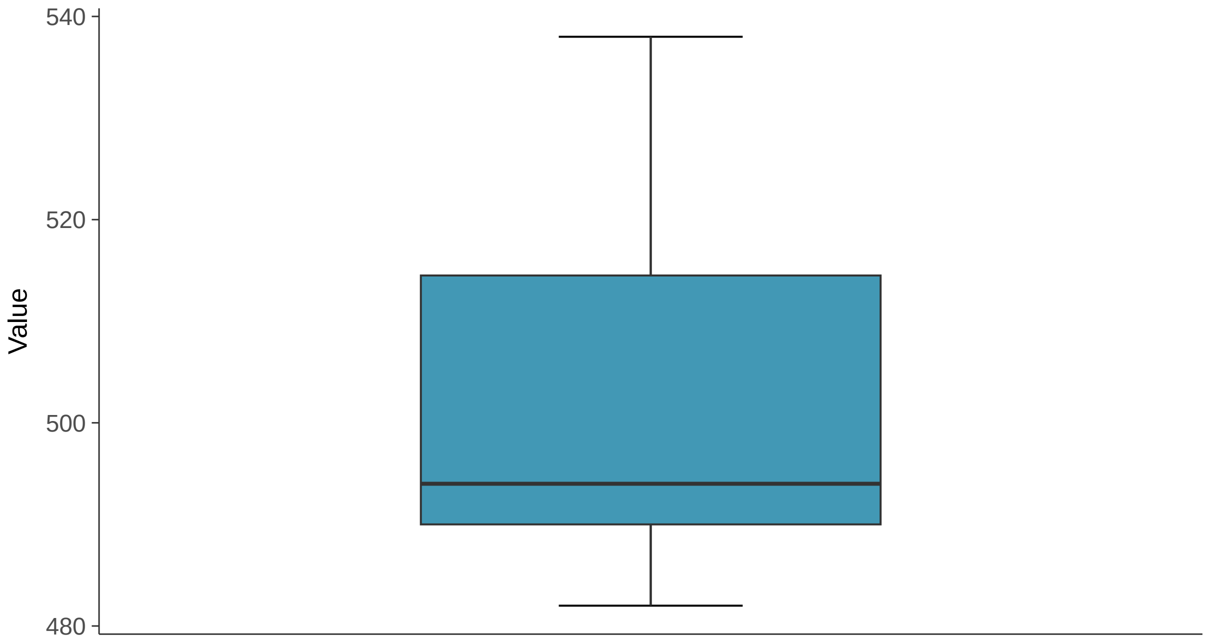
ID: 100B_1_06





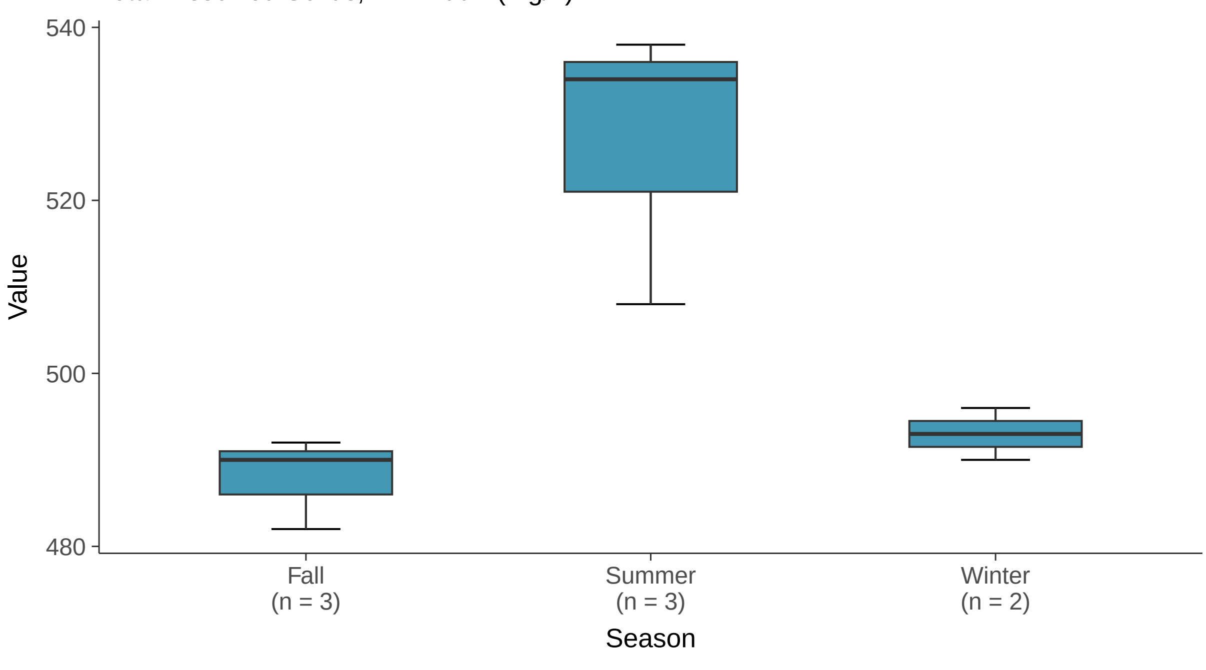
Boxplot

Total Dissolved Solids, MW-100B (mg/L)



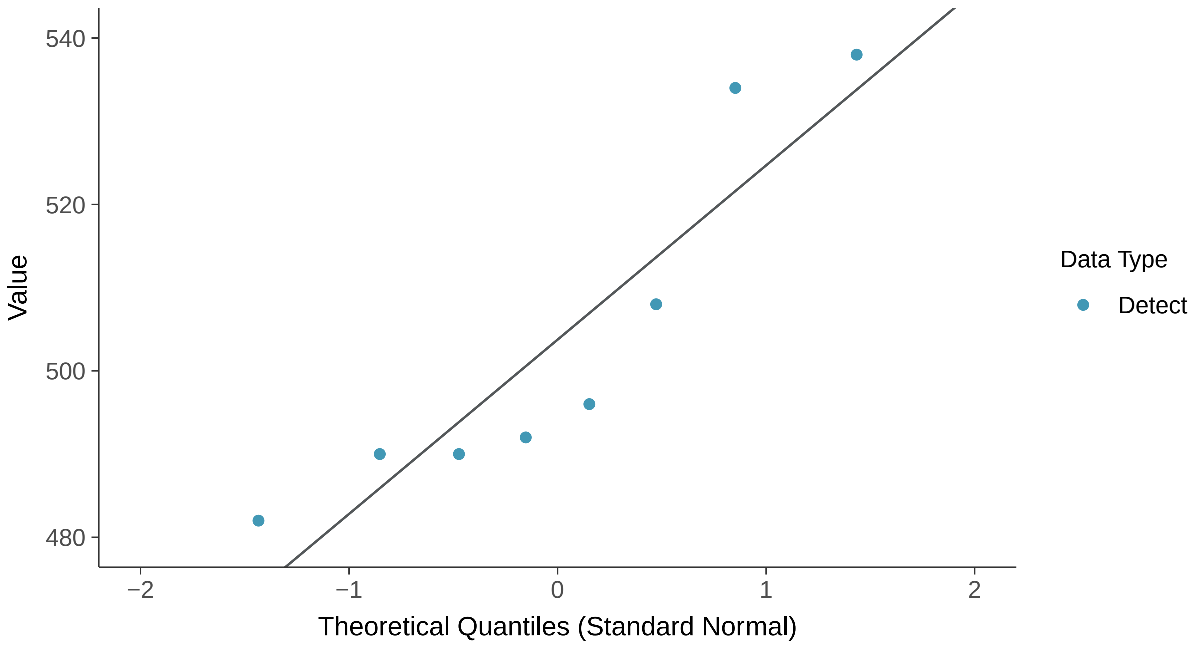
Boxplot by Season

Total Dissolved Solids, MW-100B (mg/L)



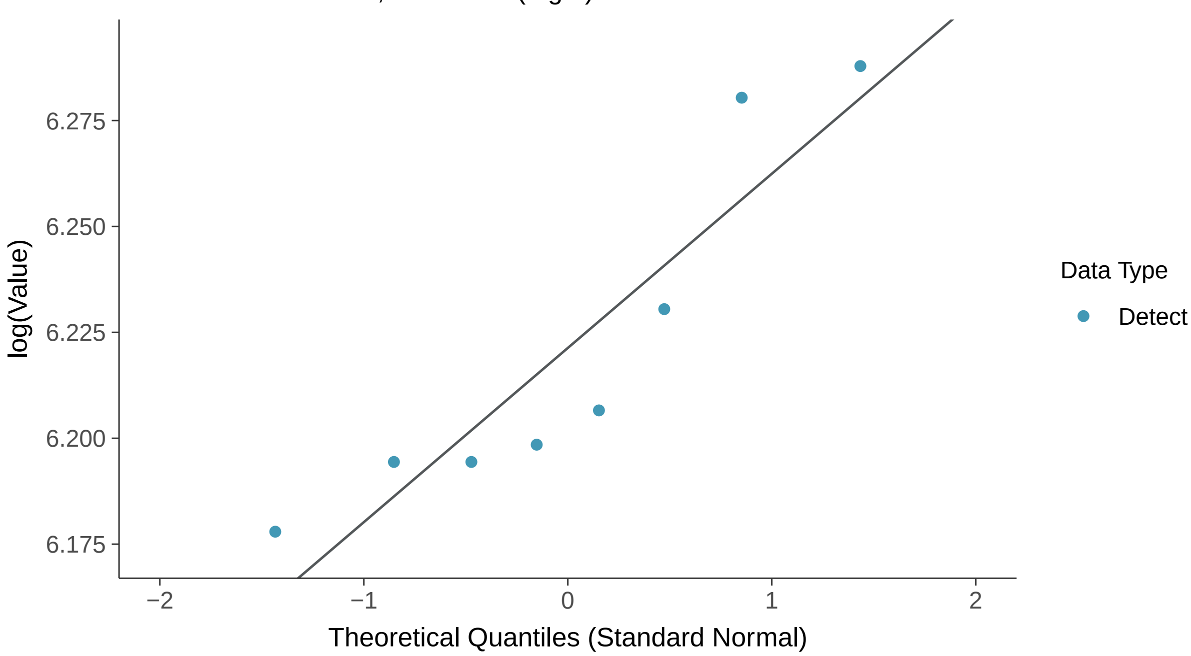
Normal Q-Q plot

Total Dissolved Solids, MW-100B (mg/L)



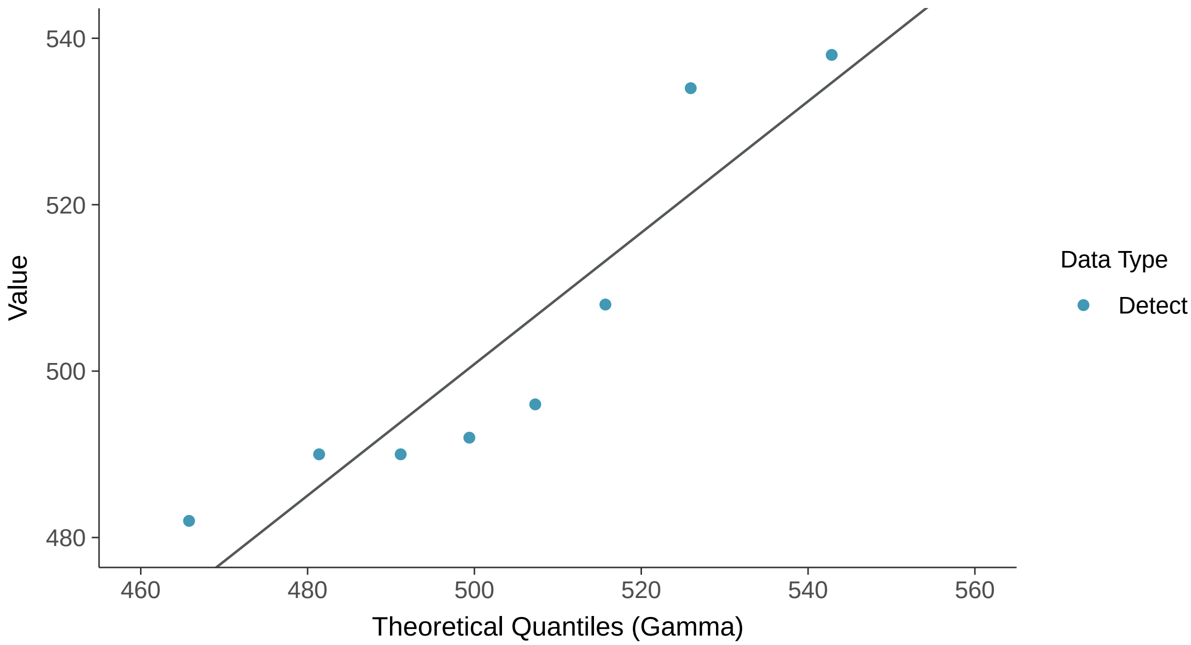
Lognormal Q-Q plot

Total Dissolved Solids, MW-100B (mg/L)



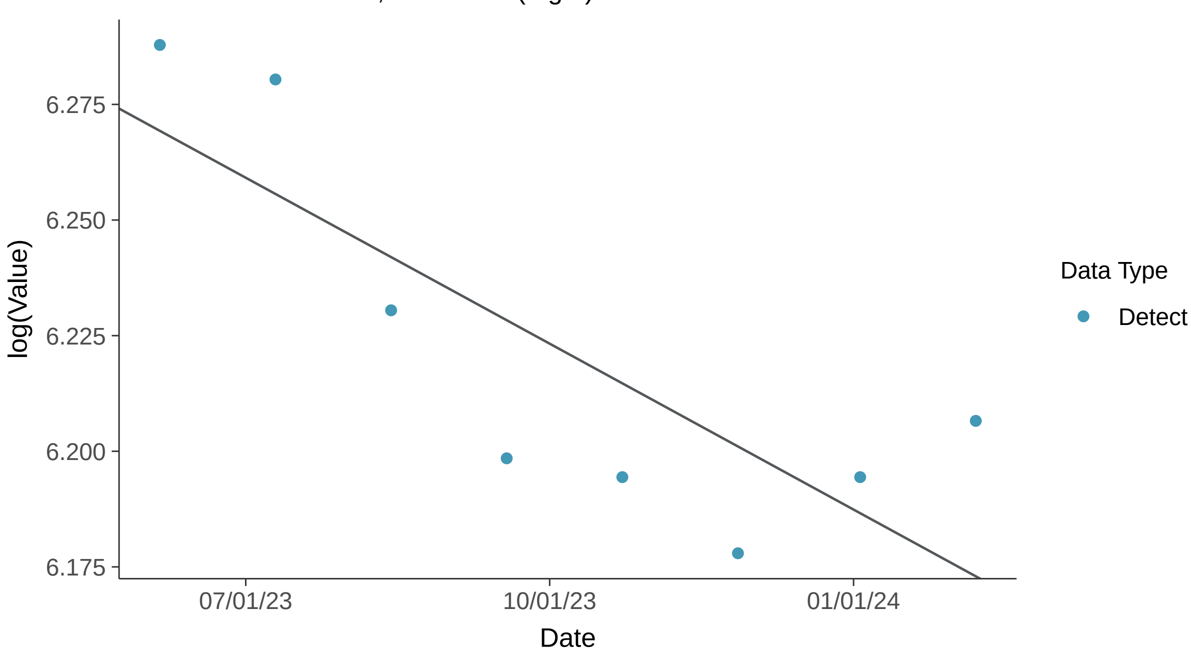
Gamma Q-Q plot

Total Dissolved Solids, MW-100B (mg/L)



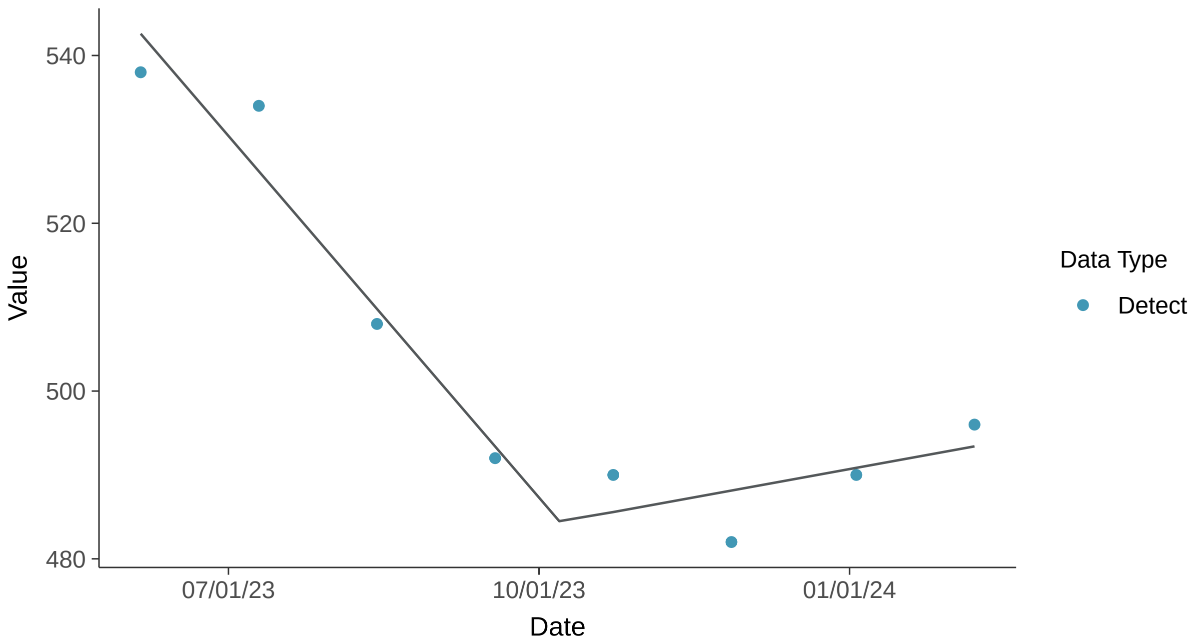
Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-100B (mg/L)



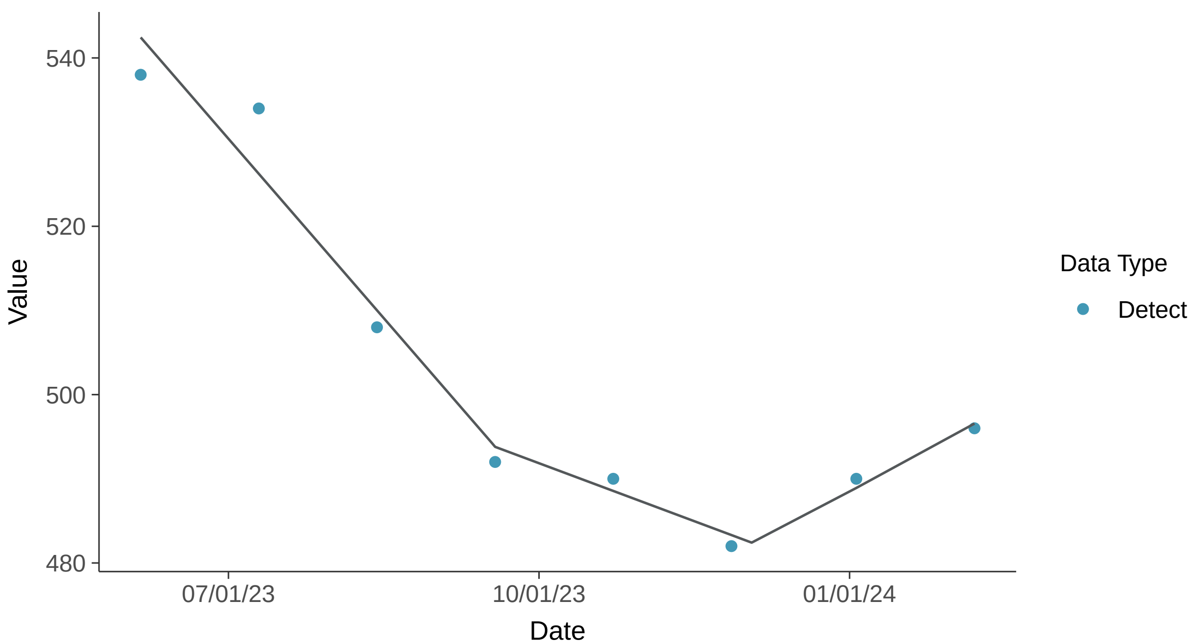
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-100B (mg/L)



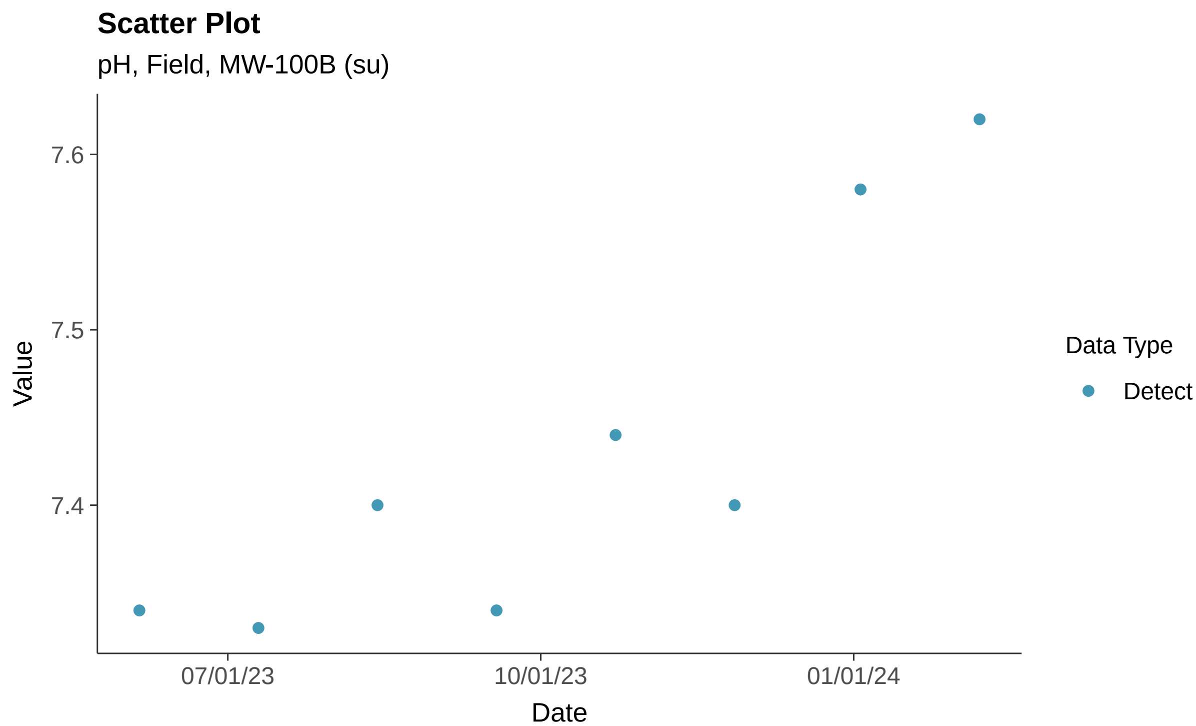
Trend Regression: Piecewise Linear-Linear-Linear

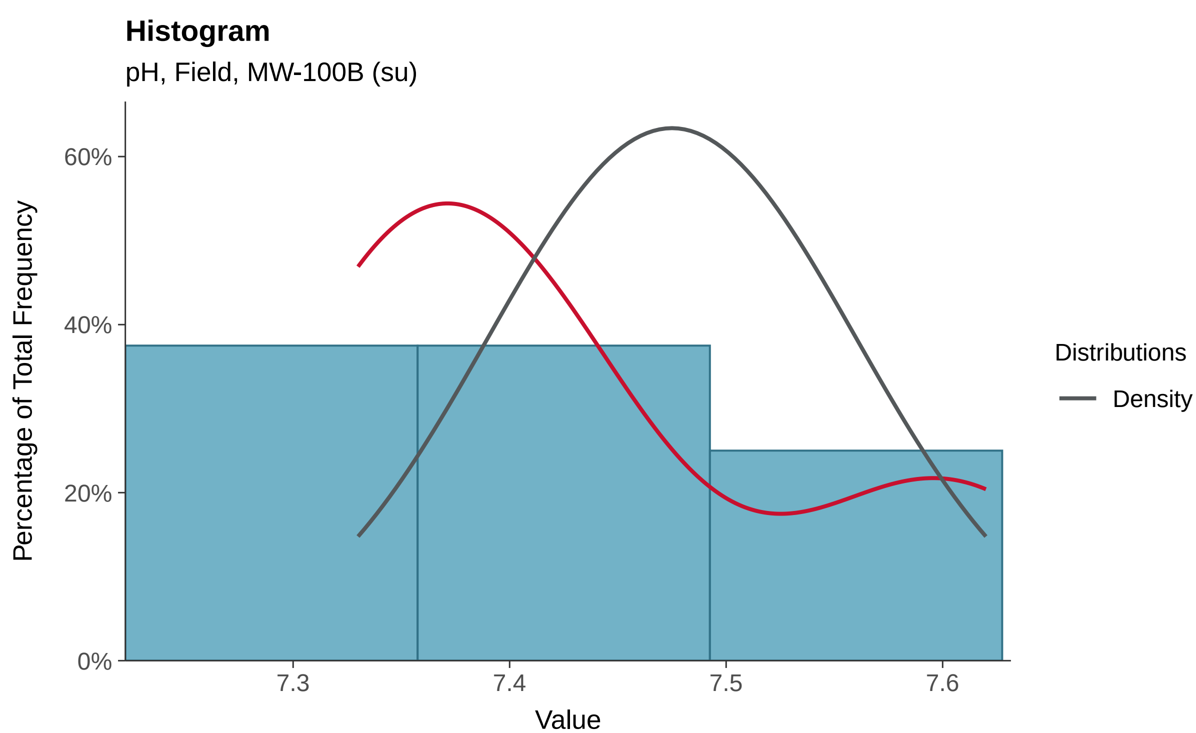
Total Dissolved Solids, MW-100B (mg/L)



Appendix III: pH, Field, MW-100B

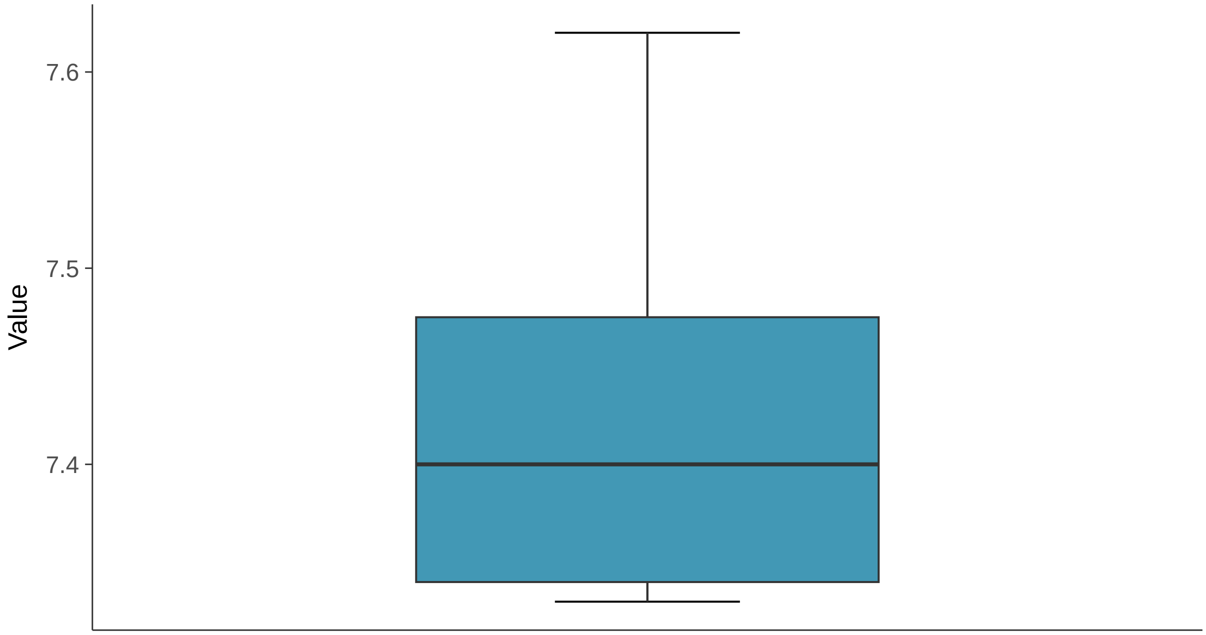
ID: 100B_1_07





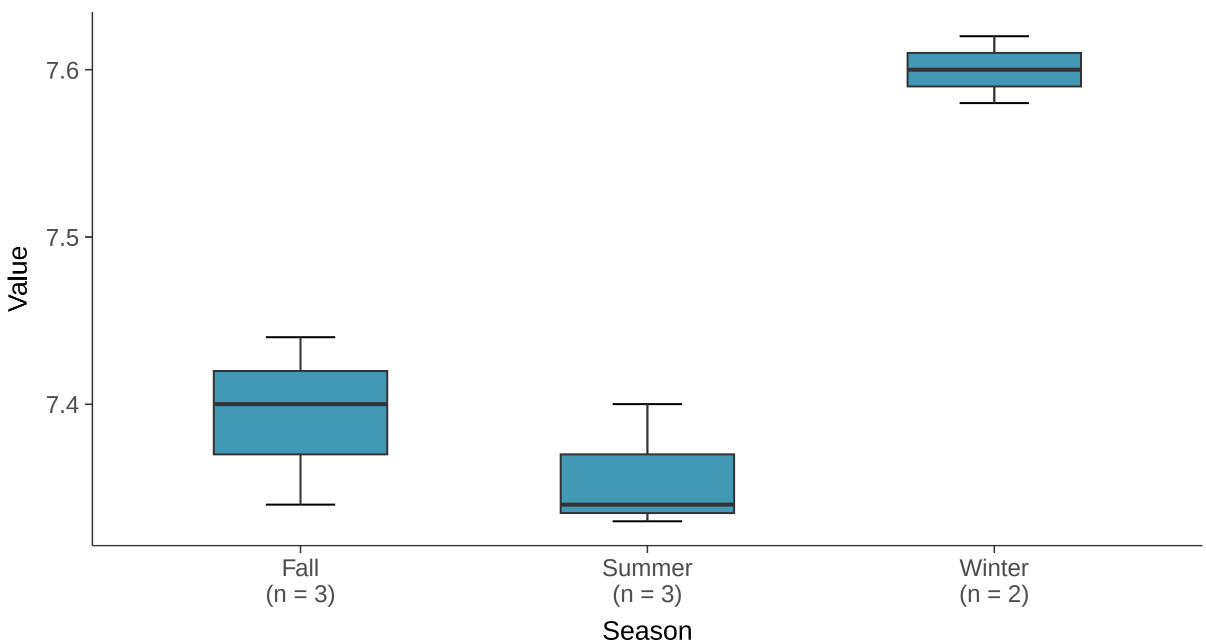
Boxplot

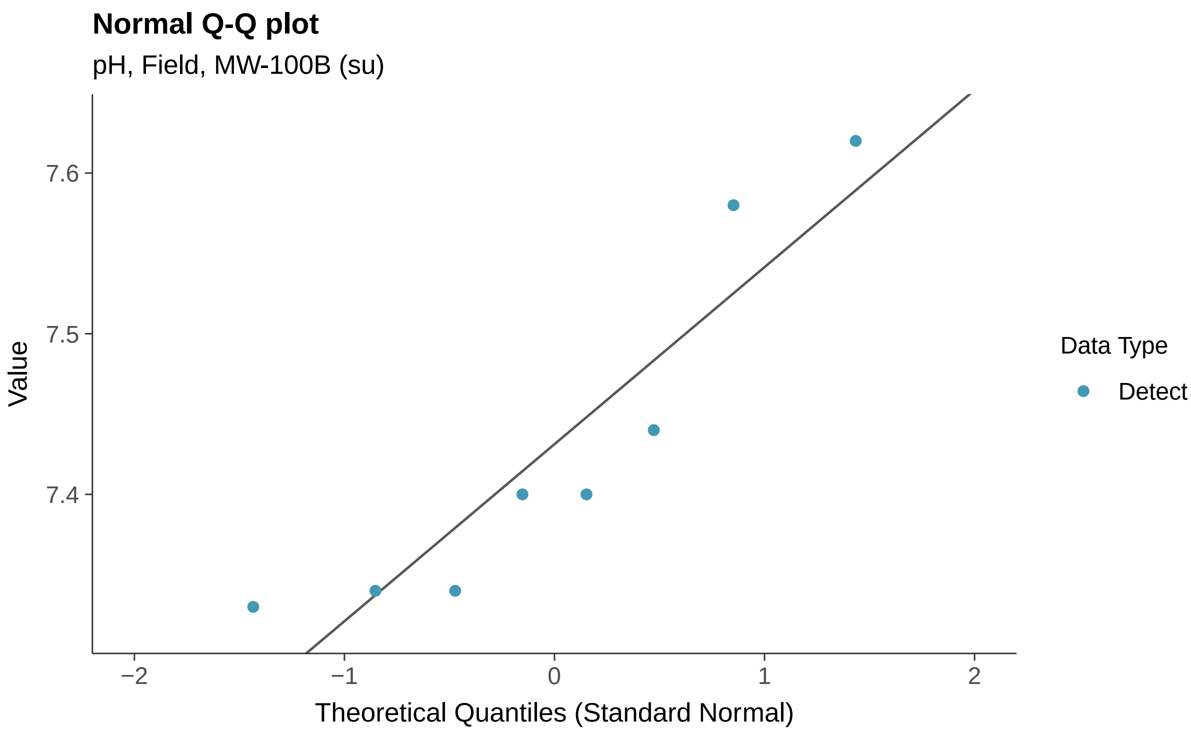
pH, Field, MW-100B (su)

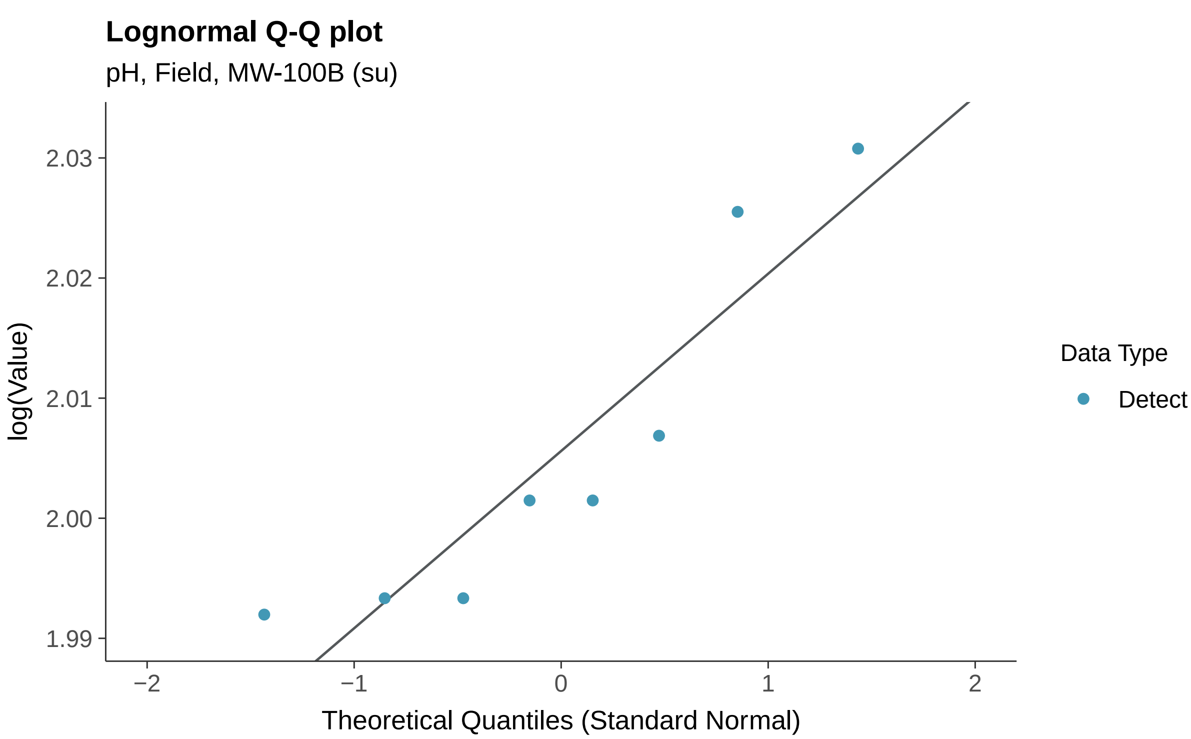


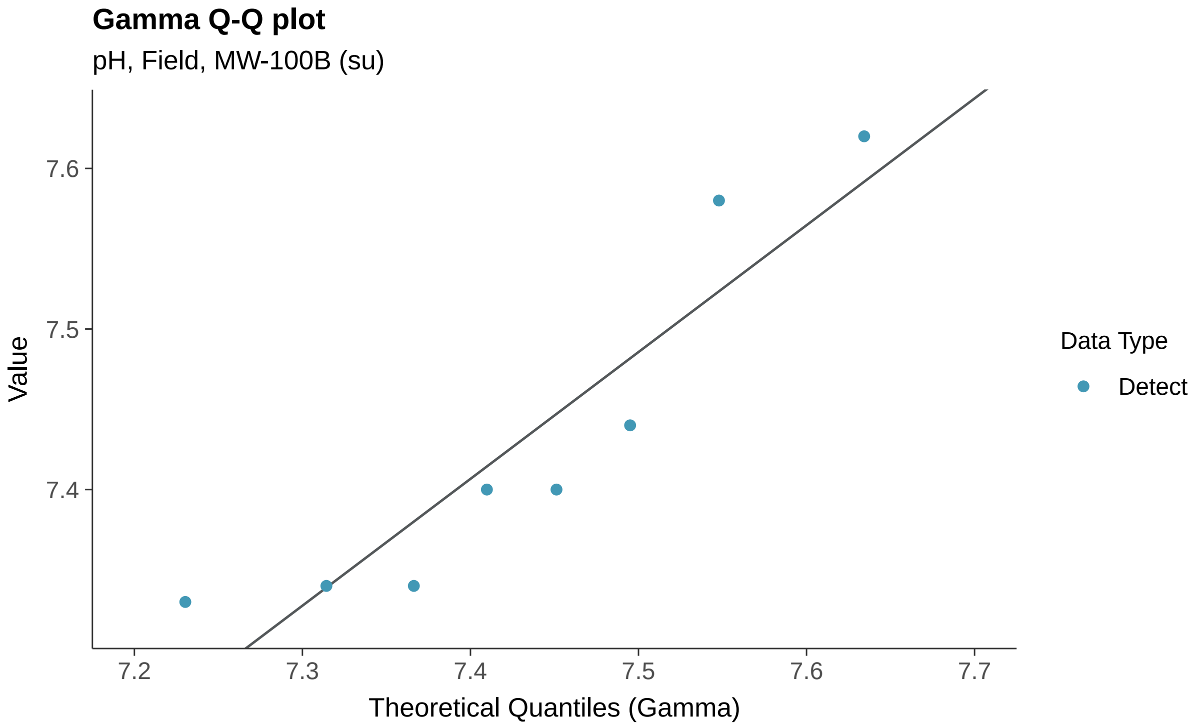
Boxplot by Season

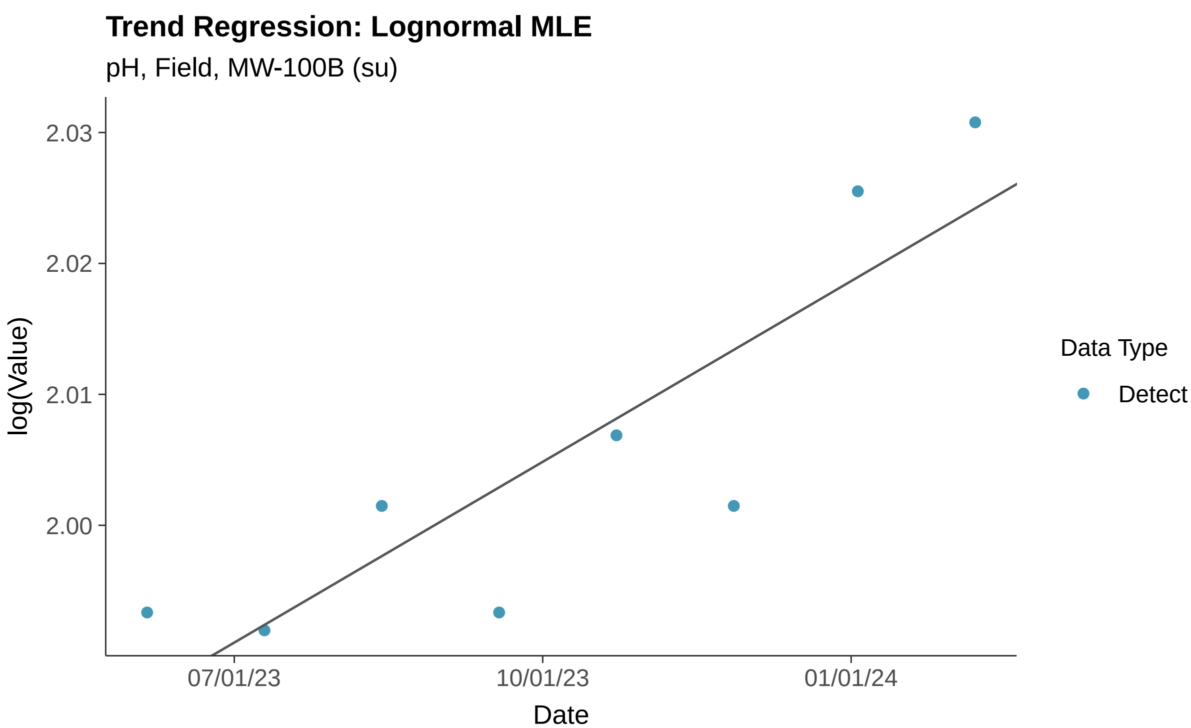
pH, Field, MW-100B (su)




Normal Q-Q plot
pH, Field, MW-100B (su)
Value
7.6
7.5
7.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

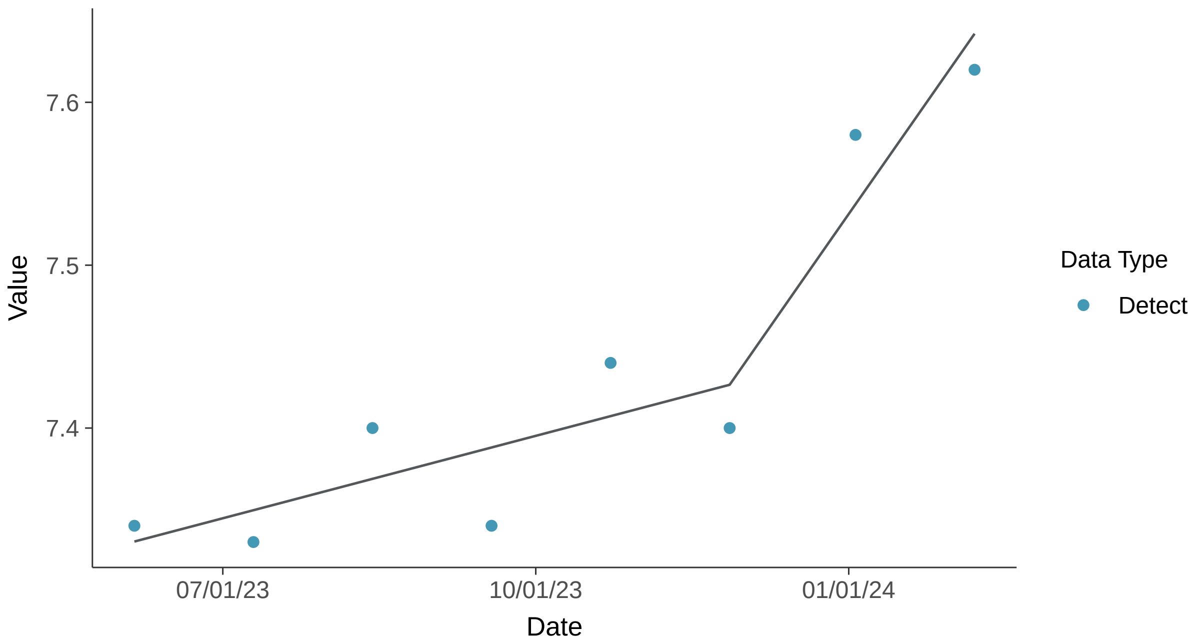

Lognormal Q-Q plot
pH, Field, MW-100B (su)
log(Value)
2.03
2.02
2.01
2.00
1.99
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, Field, MW-100B (su)
Value
7.6
7.5
7.4
7.2
7.3
7.4
7.5
7.6
7.7
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, Field, MW-100B (su)
log(Value)
2.03
2.02
2.01
2.00
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

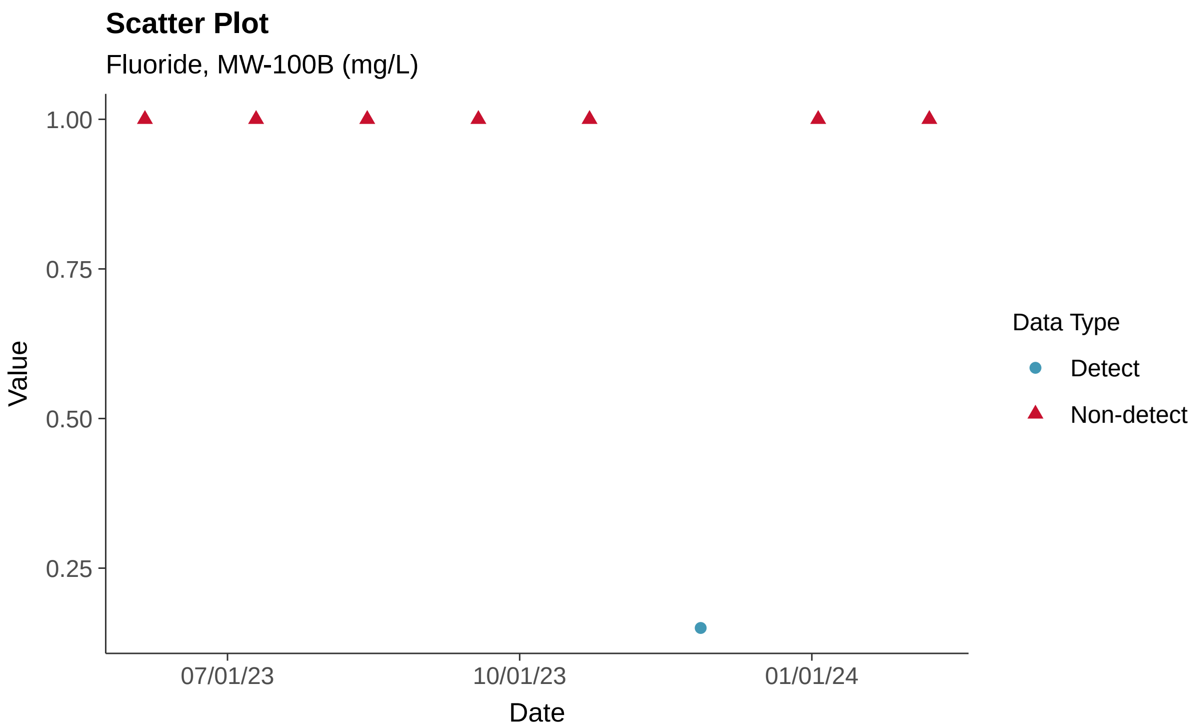
Trend Regression: Piecewise Linear-Linear

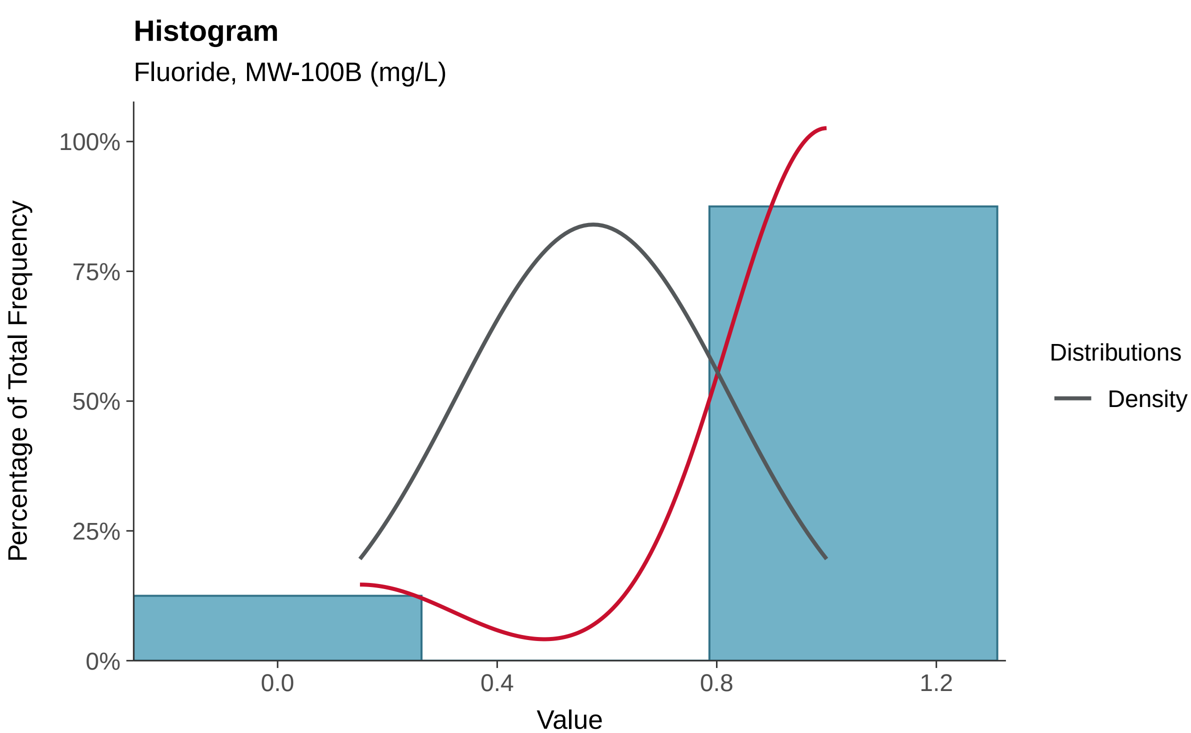
pH, Field, MW-100B (su)



Appendix IV: Fluoride, MW-100B

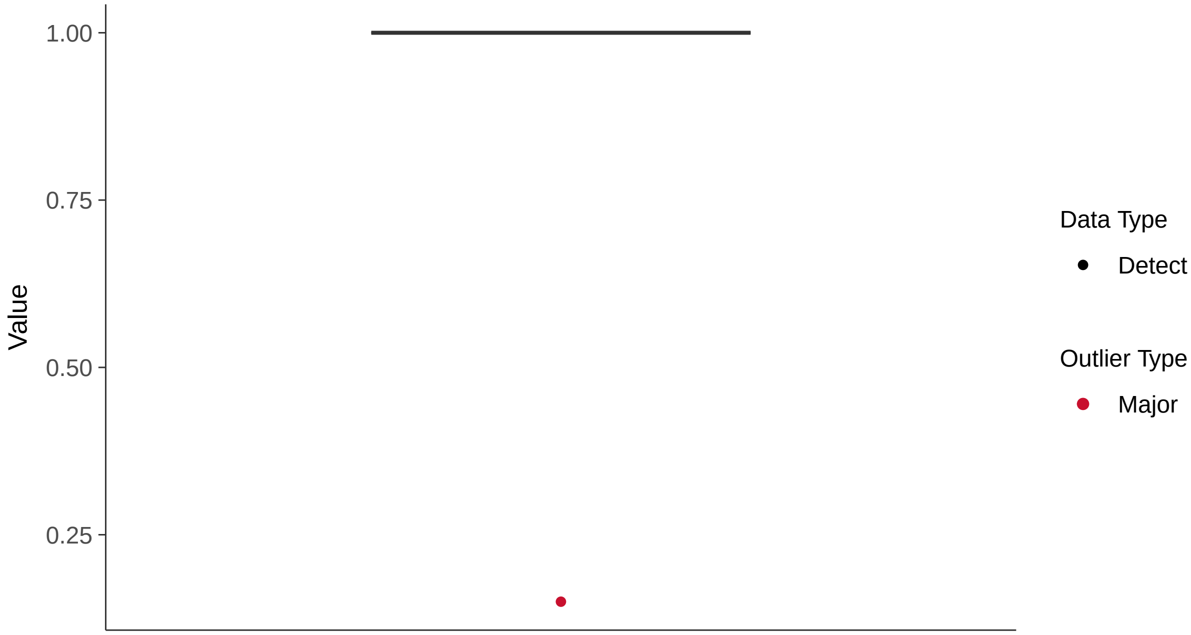
ID: 100B_2_04





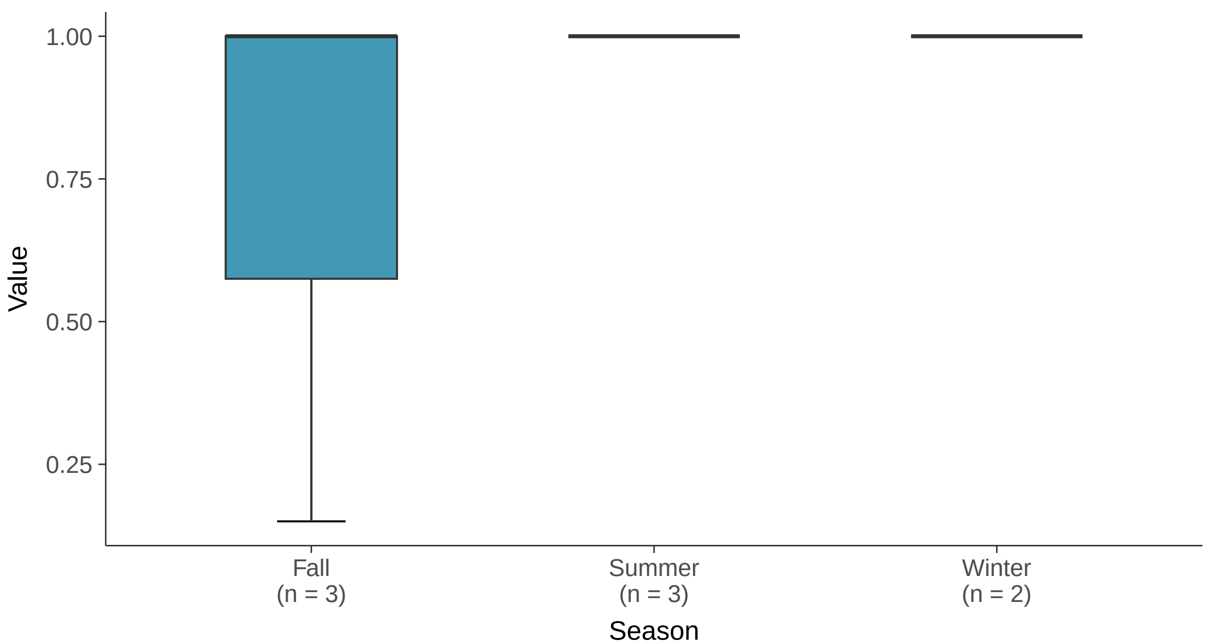
Boxplot

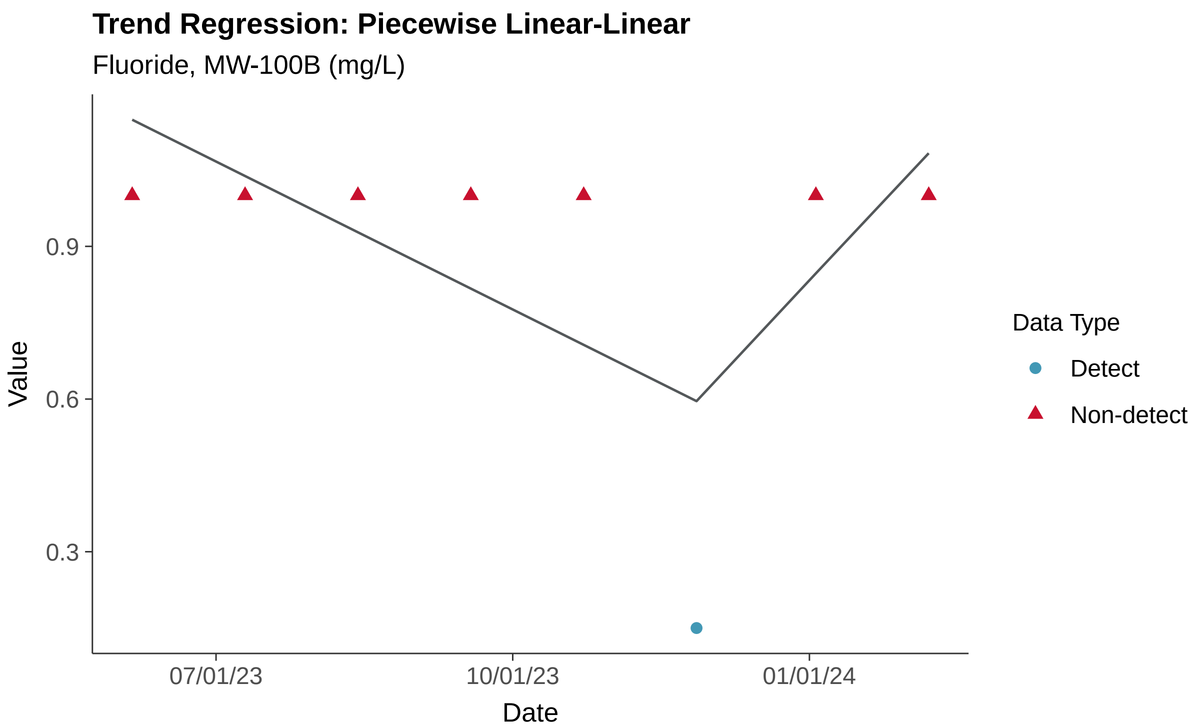
Fluoride, MW-100B (mg/L)



Boxplot by Season

Fluoride, MW-100B (mg/L)



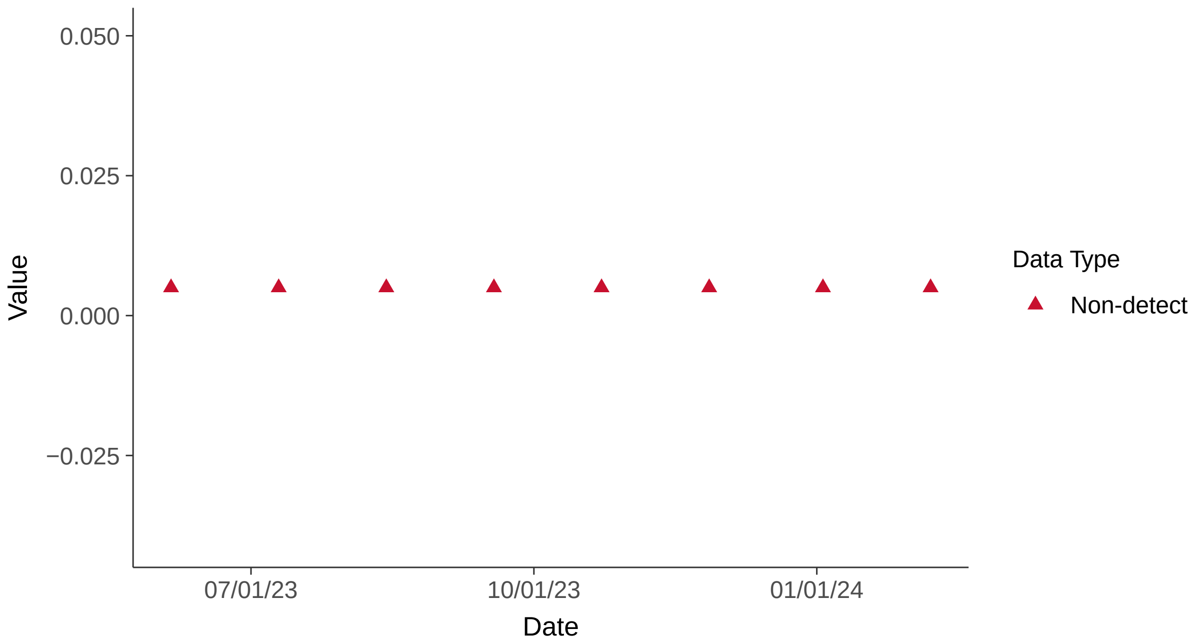

Trend Regression: Piecewise Linear-Linear
Fluoride, MW-100B (mg/L)
Value
0.9
0.6
0.3
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Appendix IV: Antimony, MW-100B

ID: 100B_2_08

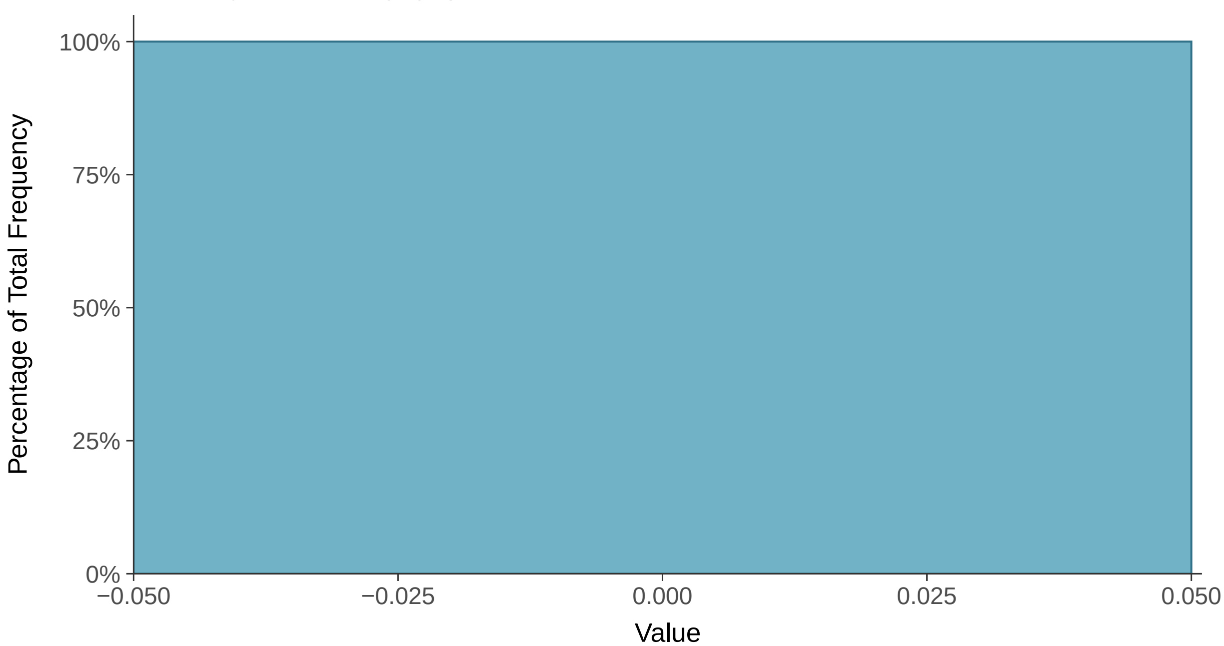
Scatter Plot

Antimony, MW-100B (mg/L)



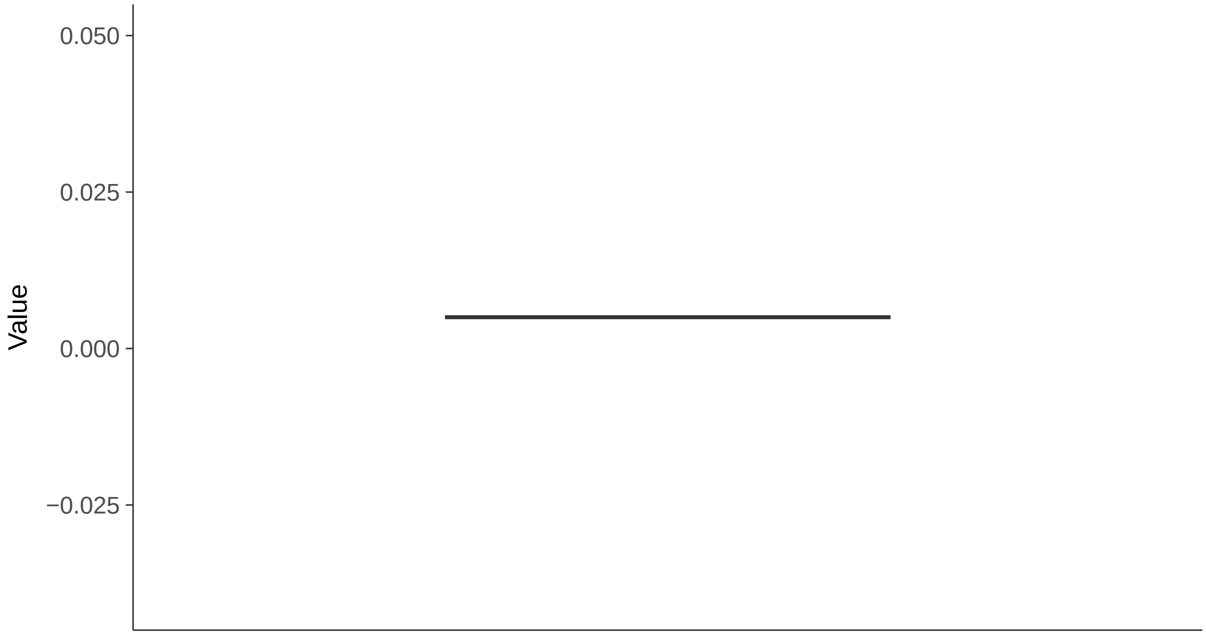
Histogram

Antimony, MW-100B (mg/L)



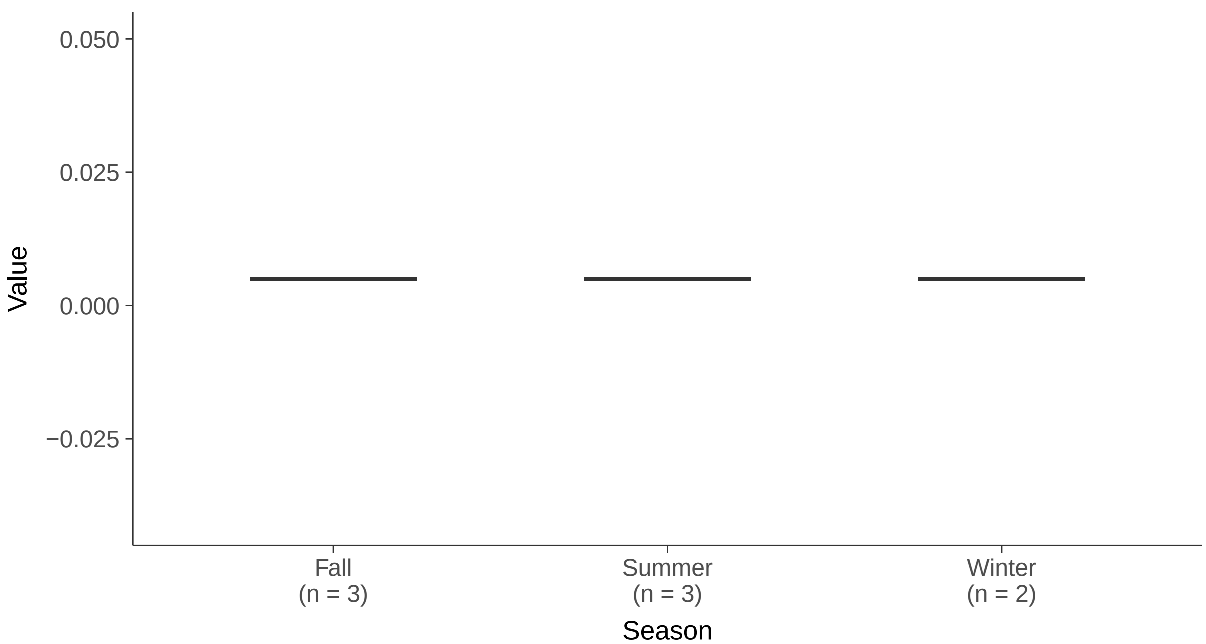
Boxplot

Antimony, MW-100B (mg/L)



Boxplot by Season

Antimony, MW-100B (mg/L)

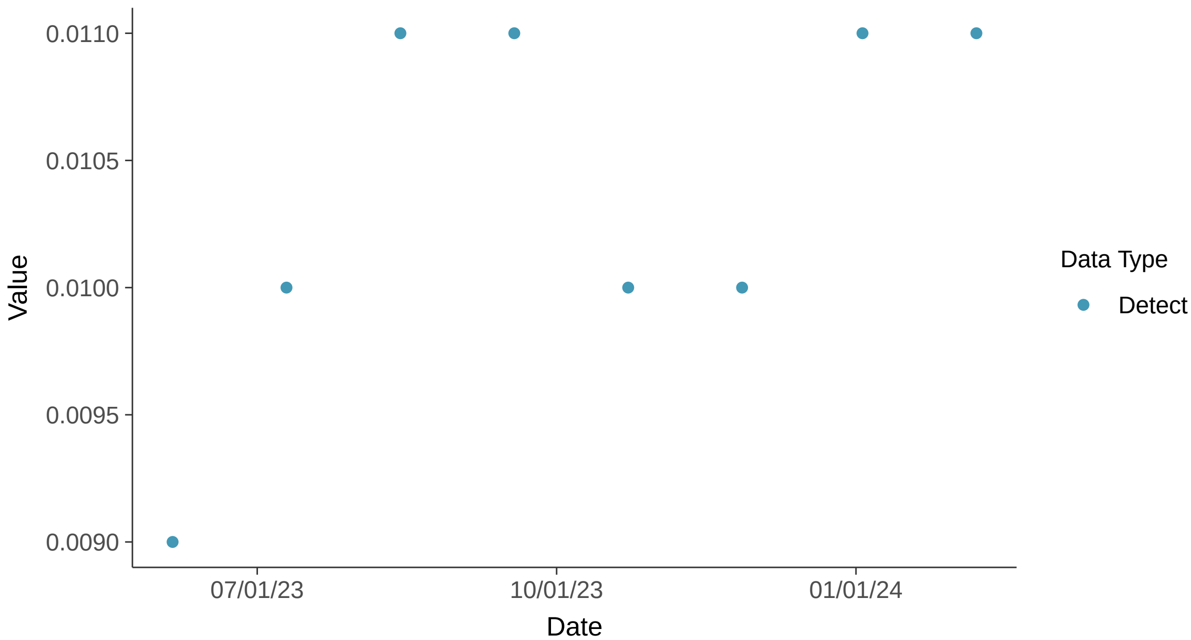


Appendix IV: Arsenic, MW-100B

ID: 100B_2_09

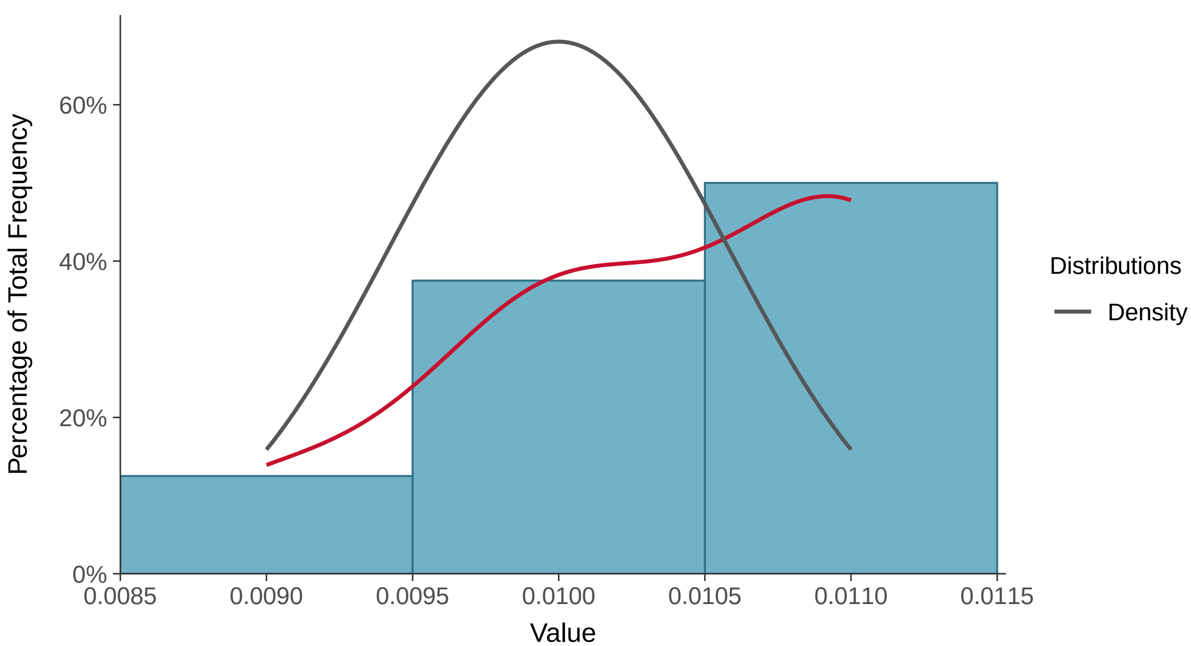
Scatter Plot

Arsenic, MW-100B (mg/L)



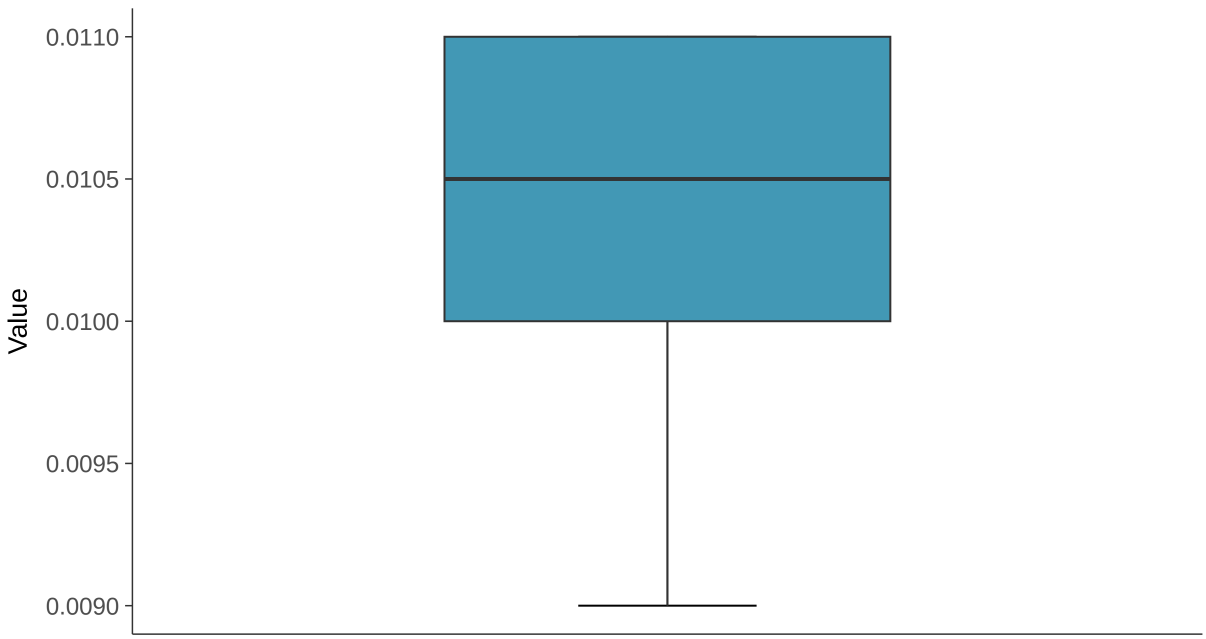
Histogram

Arsenic, MW-100B (mg/L)



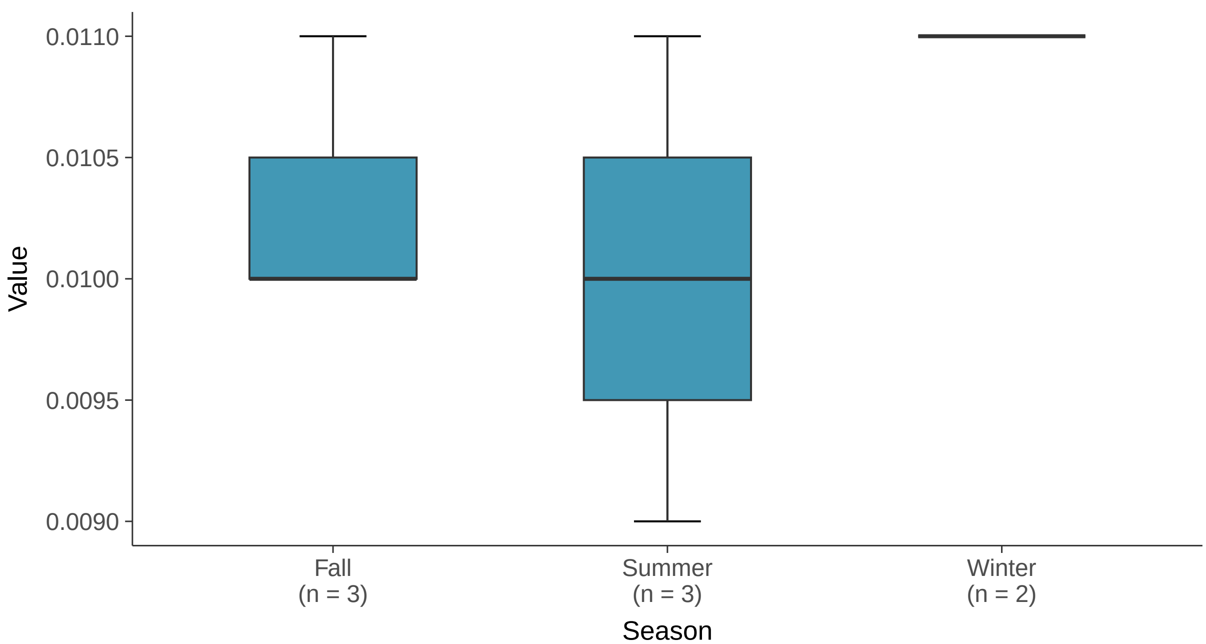
Boxplot

Arsenic, MW-100B (mg/L)



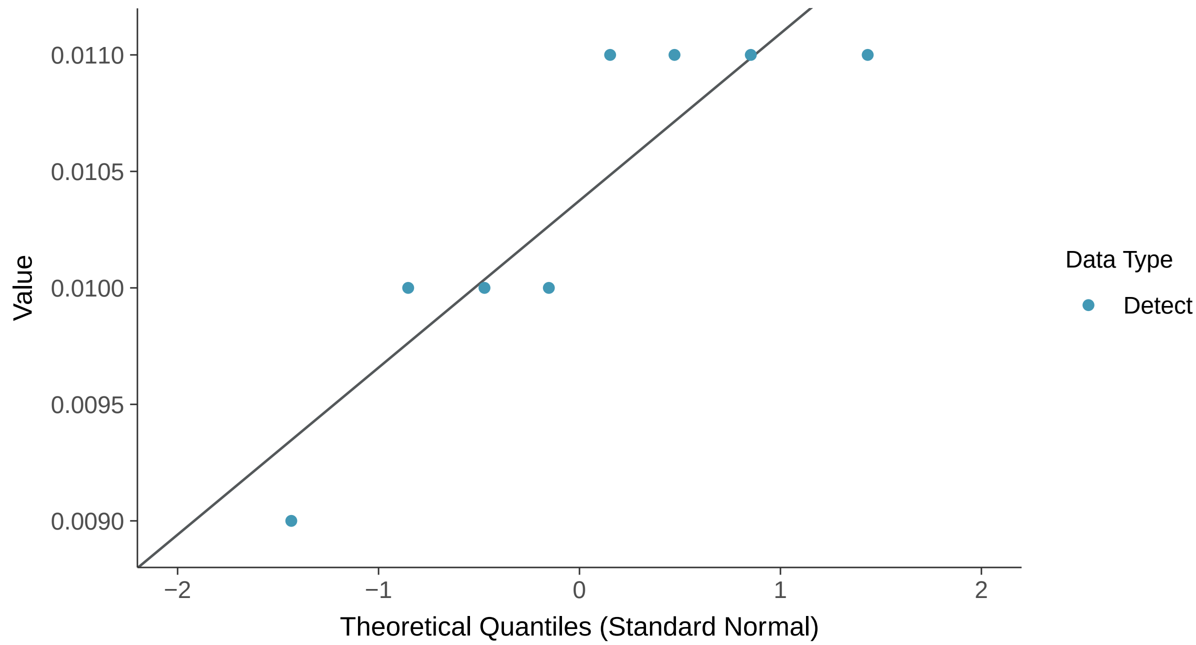
Boxplot by Season

Arsenic, MW-100B (mg/L)



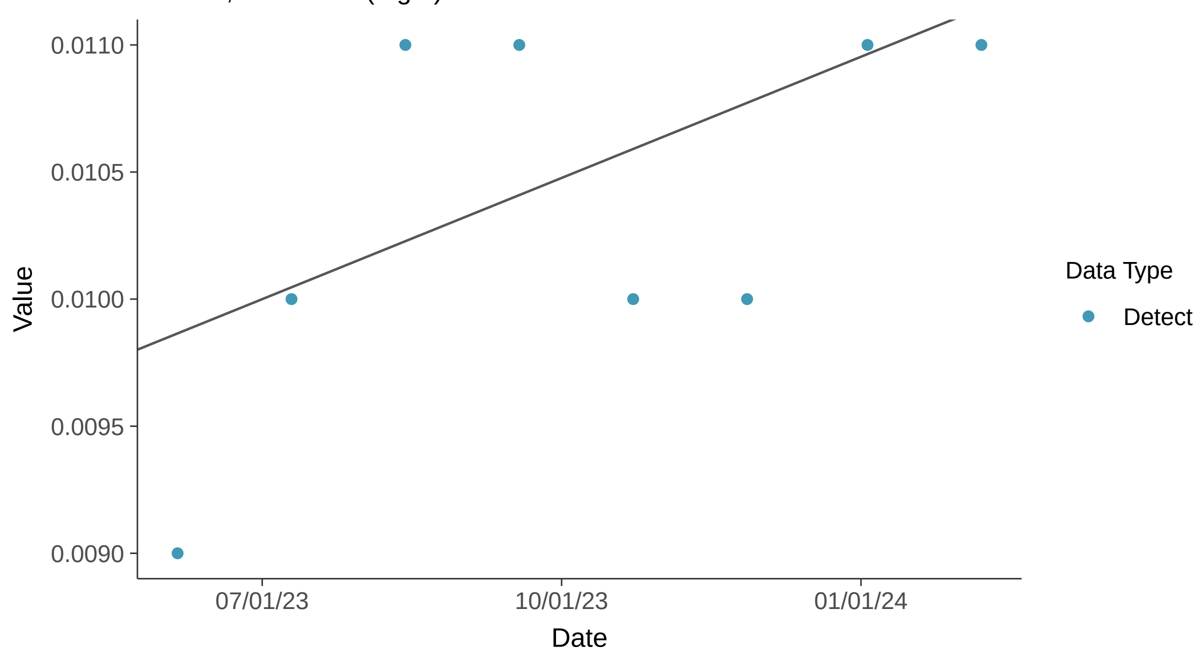
Normal Q-Q plot

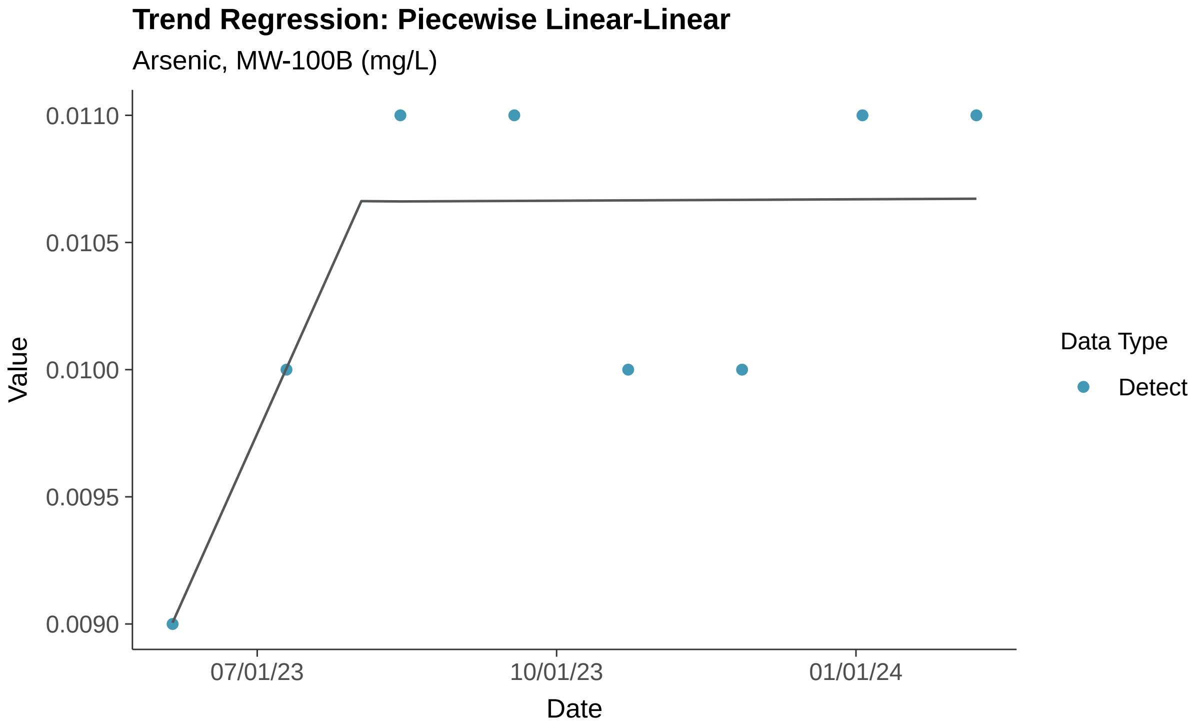
Arsenic, MW-100B (mg/L)

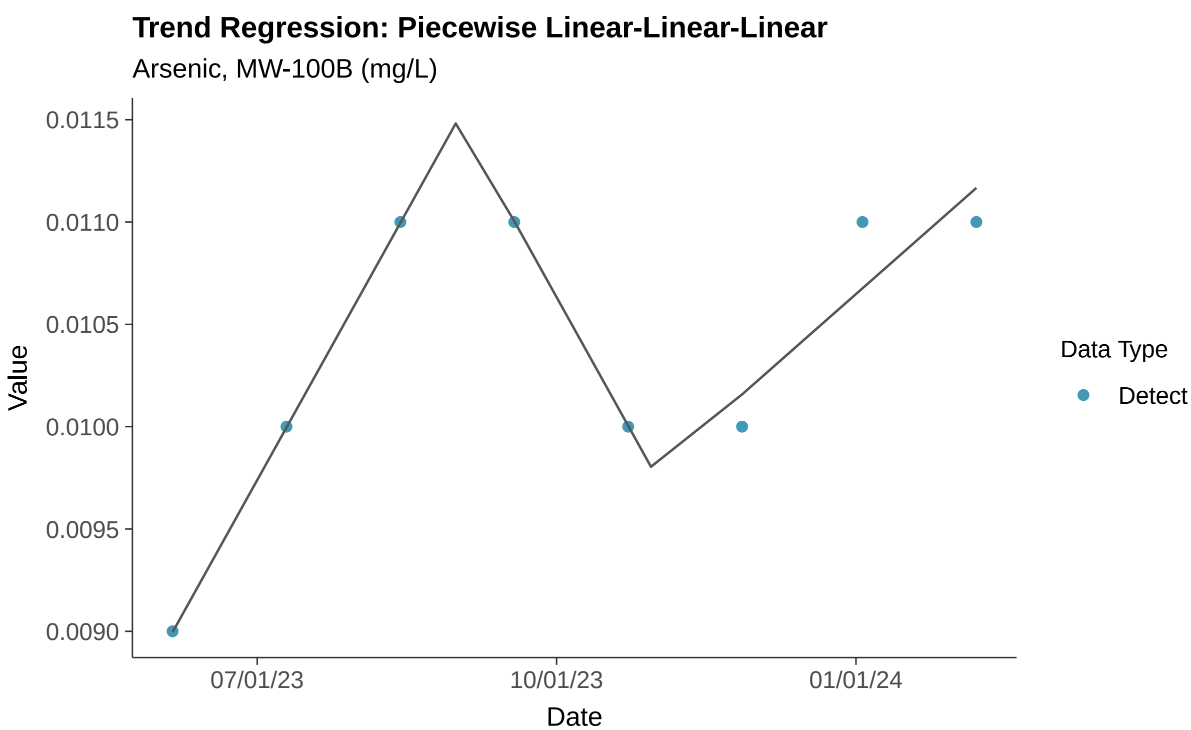


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Arsenic, MW-100B (mg/L)

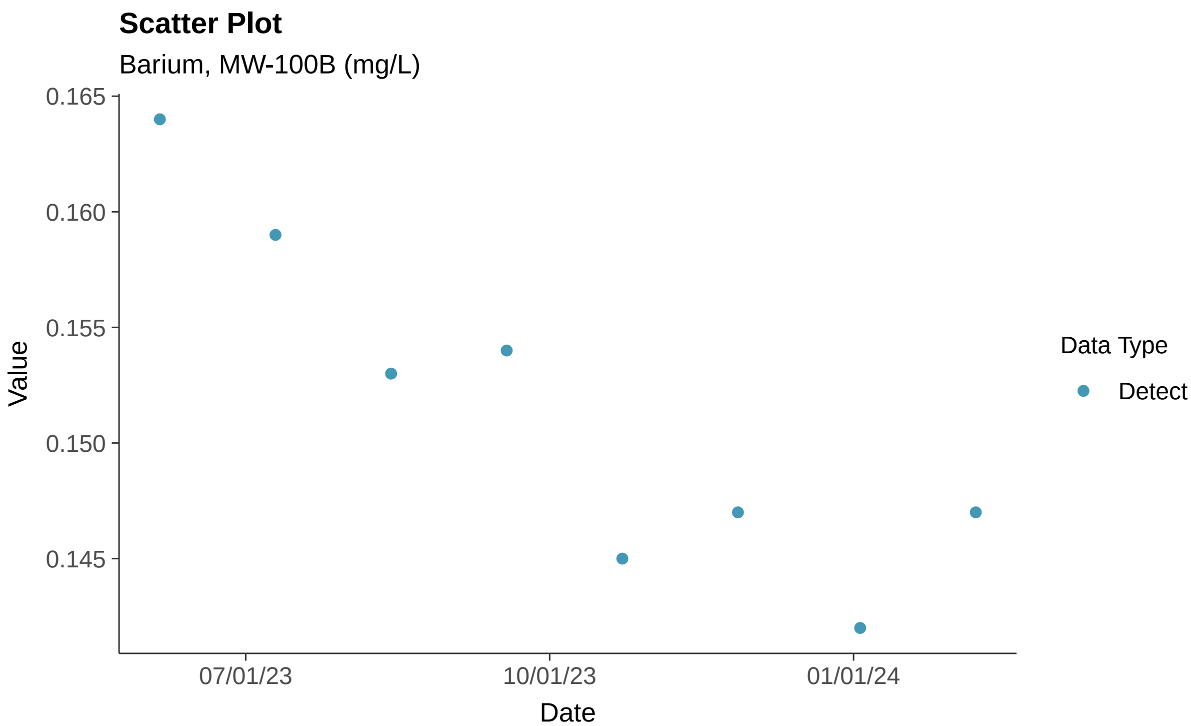


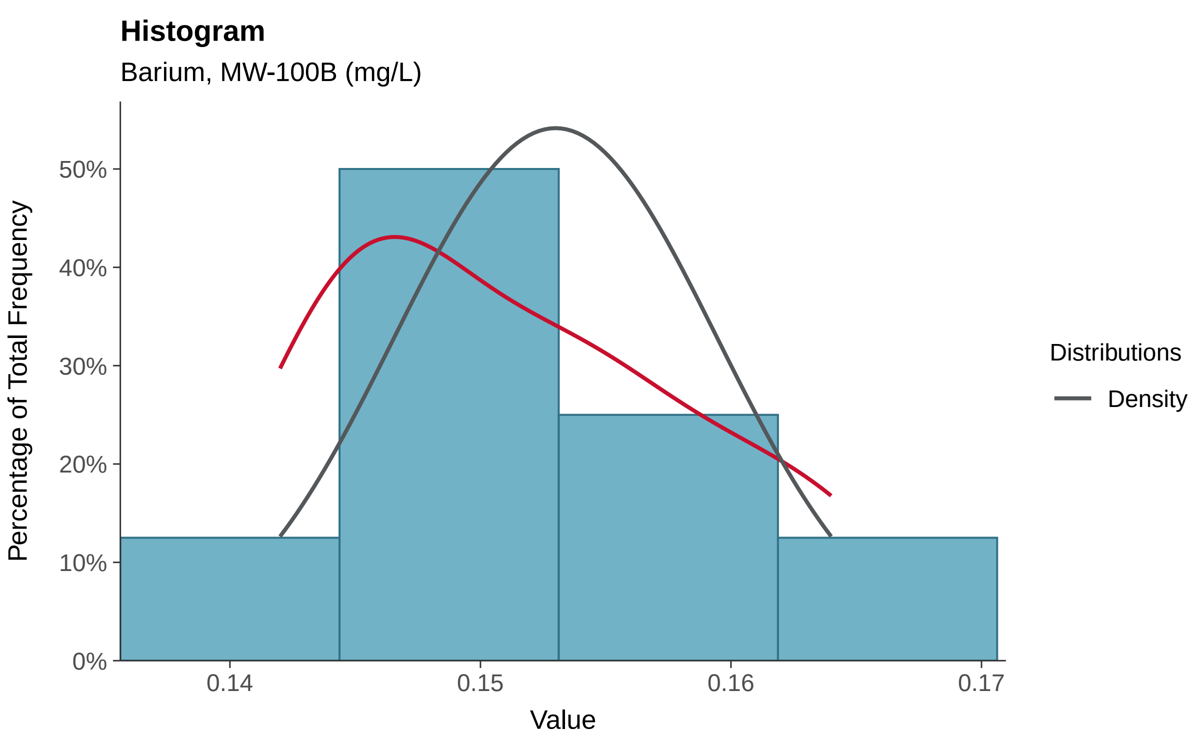

Trend Regression: Piecewise Linear-Linear
Arsenic, MW-100B (mg/L)
Value
0.0110
0.0105
0.0100
0.0095
0.0090
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-100B (mg/L)
Value
0.0115
0.0110
0.0105
0.0100
0.0095
0.0090
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Barium, MW-100B

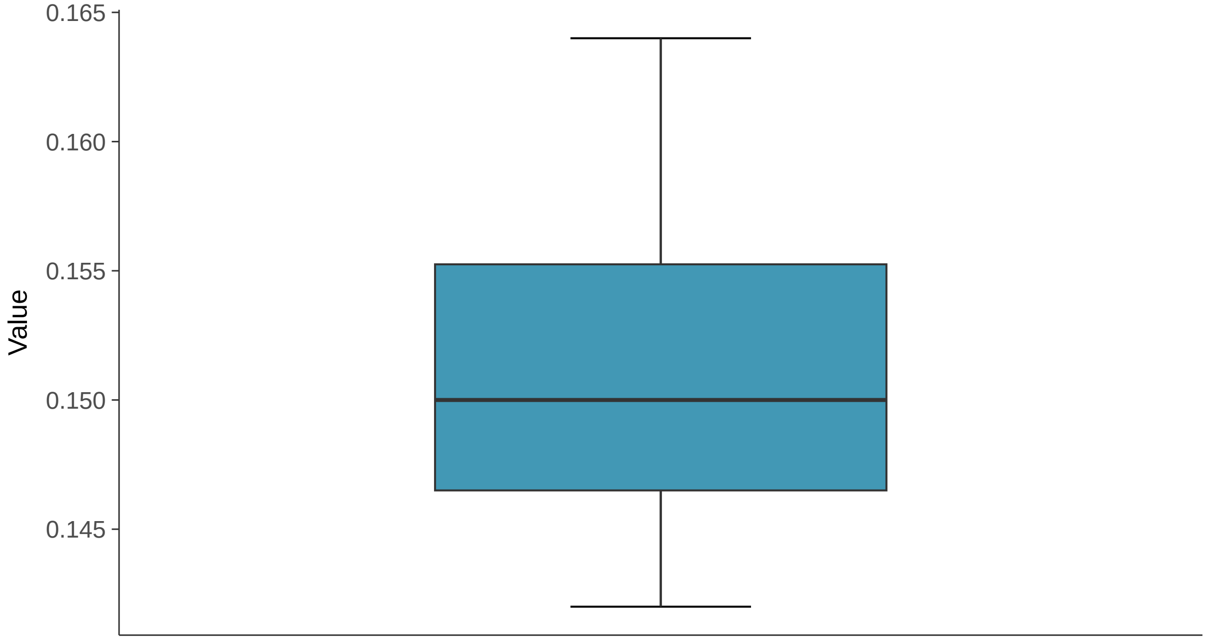
ID: 100B_2_10





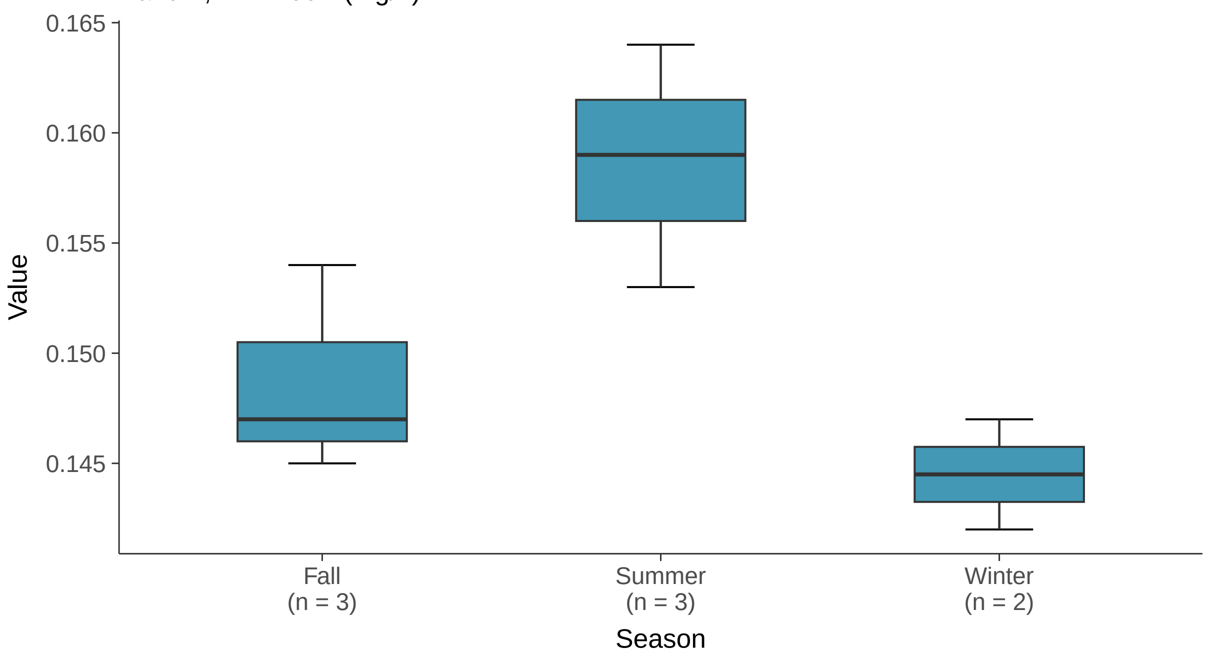
Boxplot

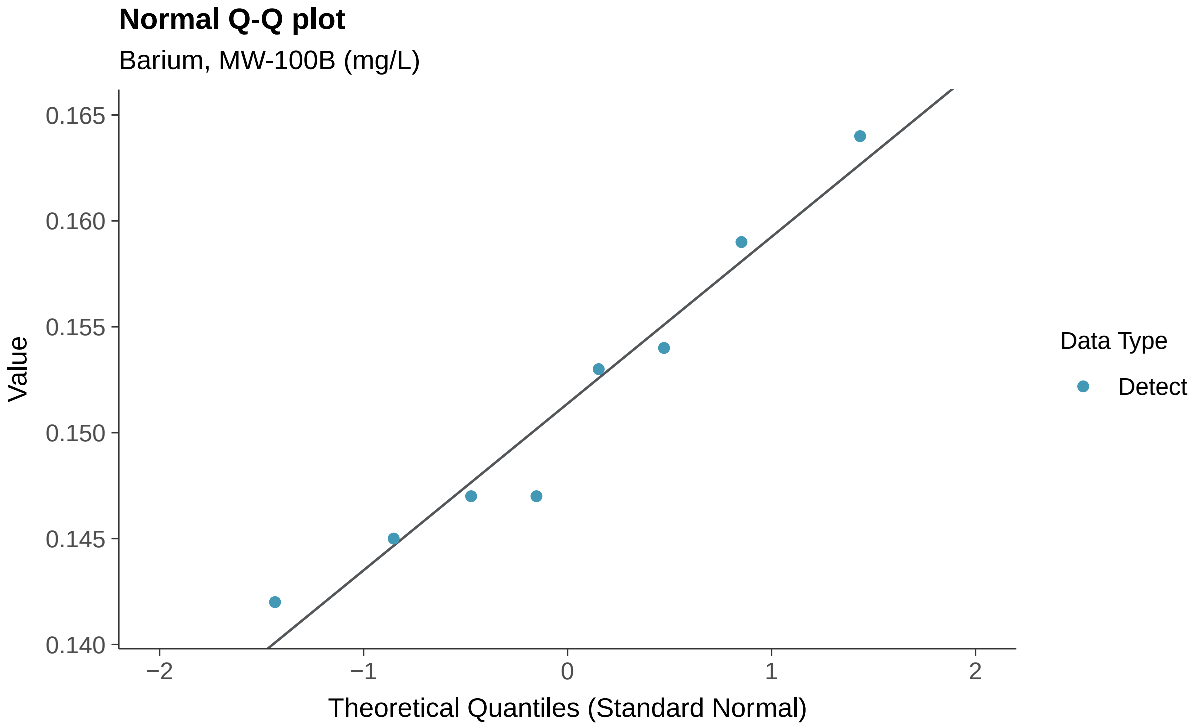
Barium, MW-100B (mg/L)

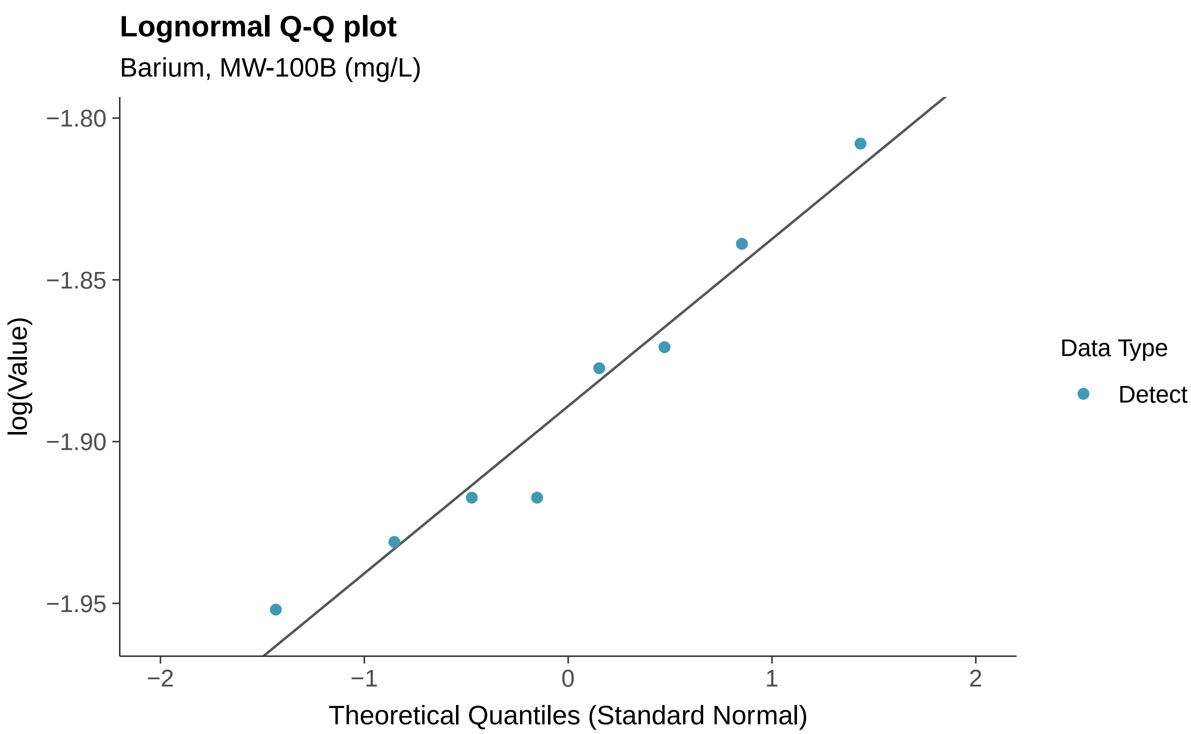


Boxplot by Season

Barium, MW-100B (mg/L)

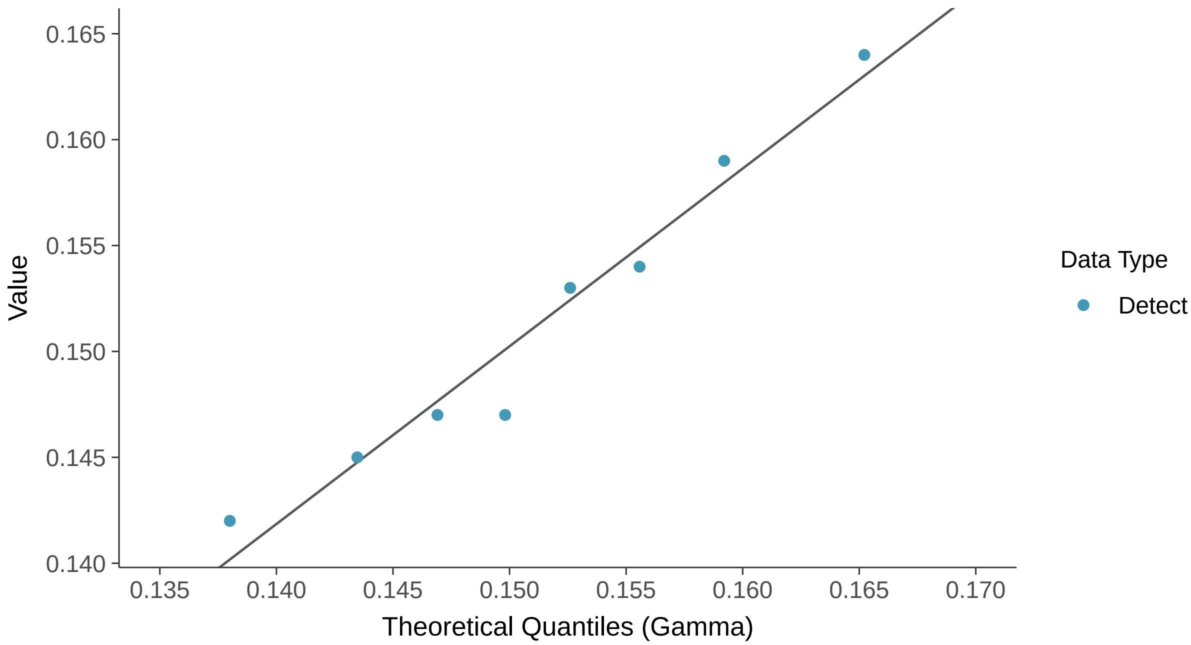



Normal Q-Q plot
Barium, MW-100B (mg/L)
Value
0.165
0.160
0.155
0.150
0.145
0.140
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-100B (mg/L)
log(Value)
−1.80
−1.85
−1.90
−1.95
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

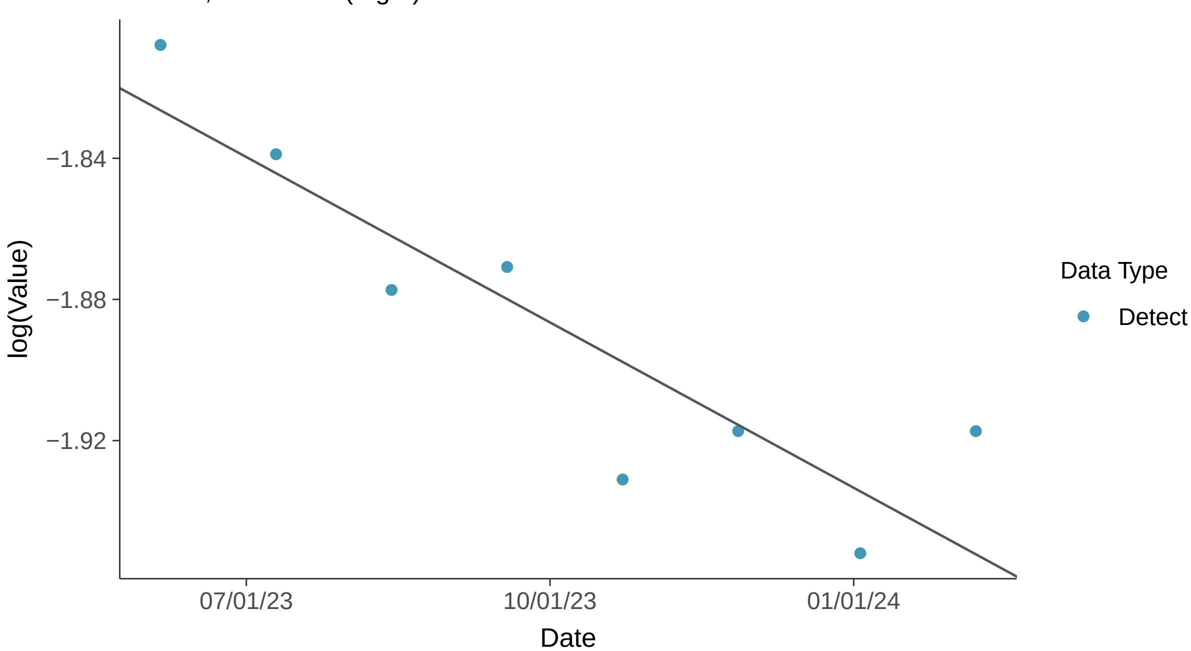
Gamma Q-Q plot

Barium, MW-100B (mg/L)



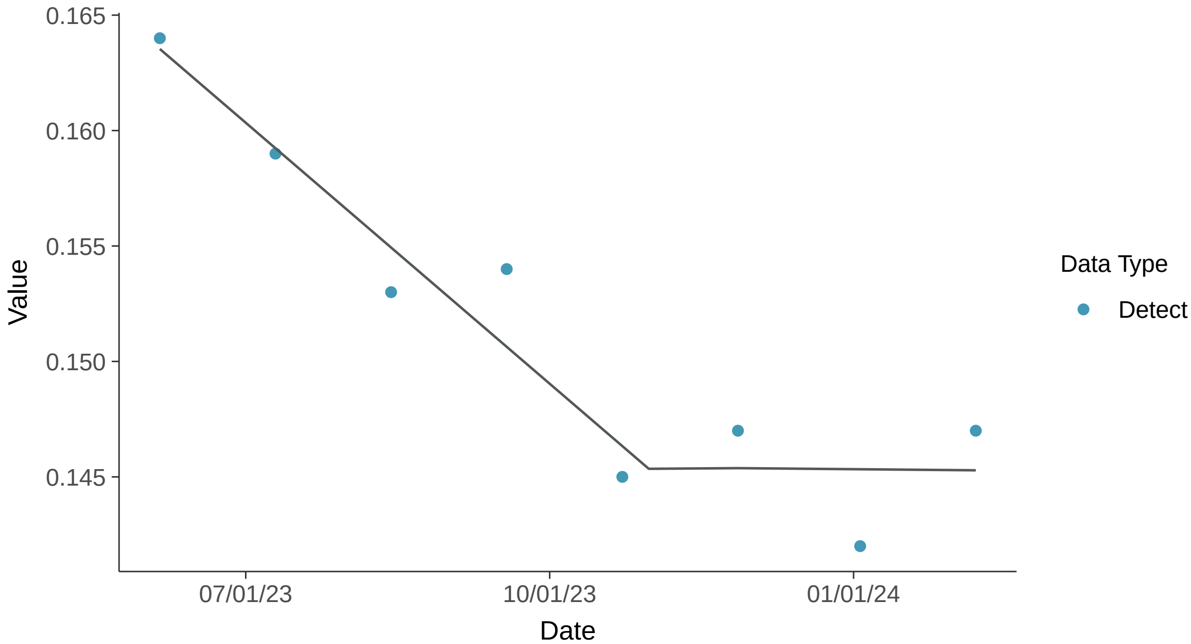
Trend Regression: Lognormal MLE

Barium, MW-100B (mg/L)



Trend Regression: Piecewise Linear-Linear

Barium, MW-100B (mg/L)

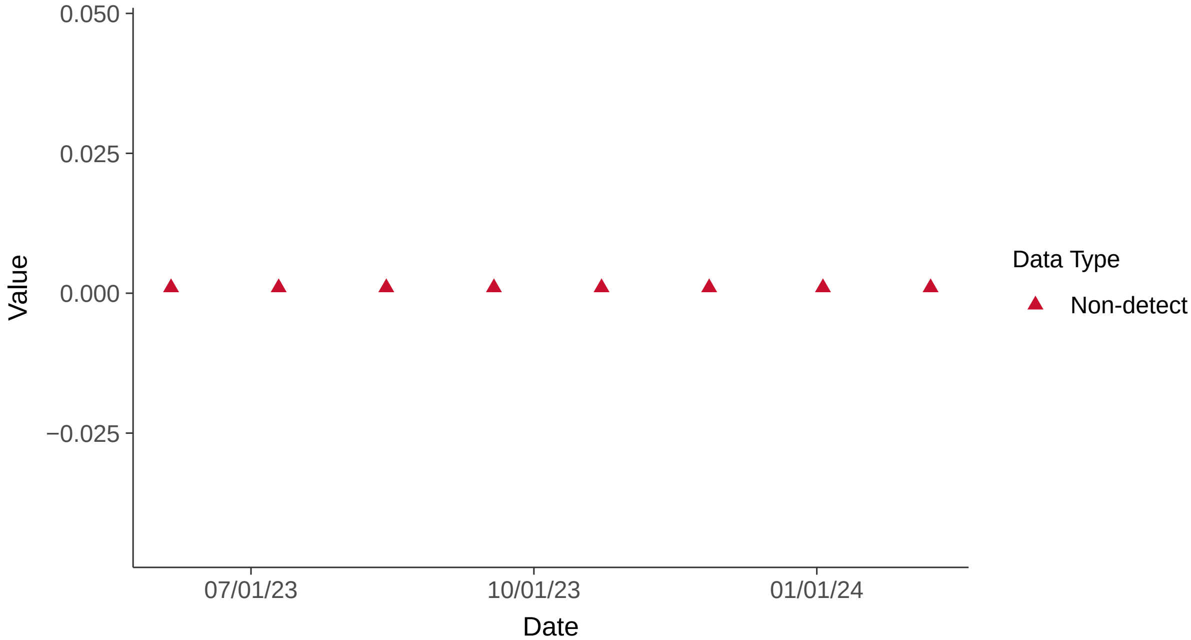


Appendix IV: Beryllium, MW-100B

ID: 100B_2_11

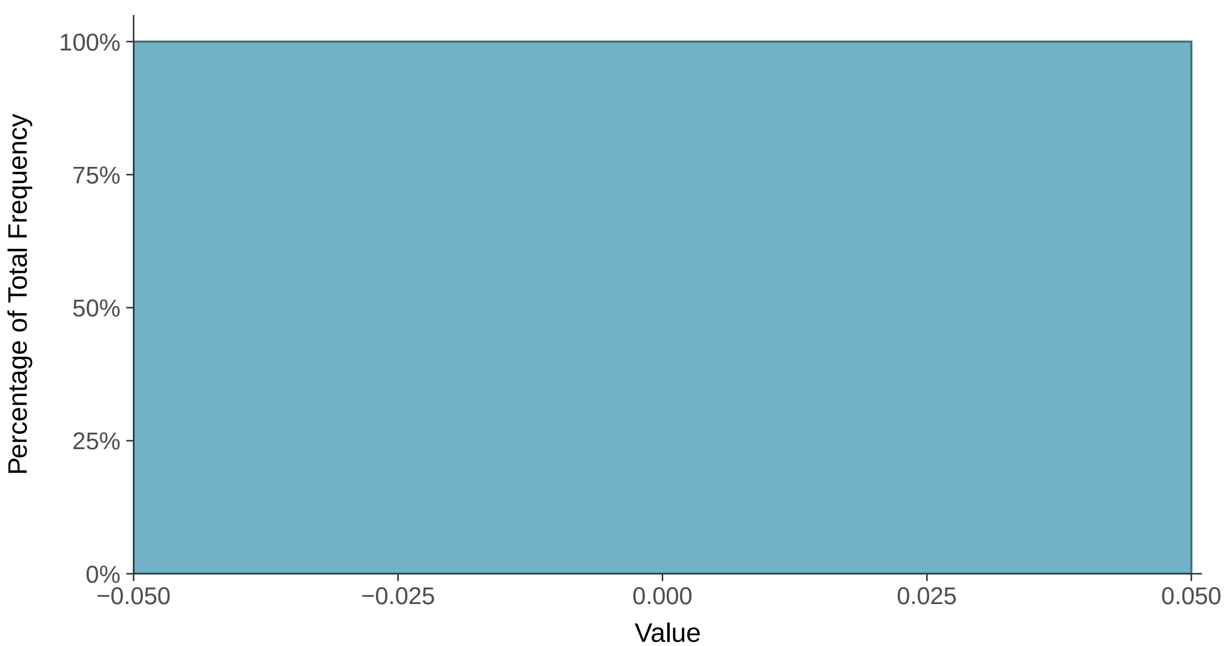
Scatter Plot

Beryllium, MW-100B (mg/L)



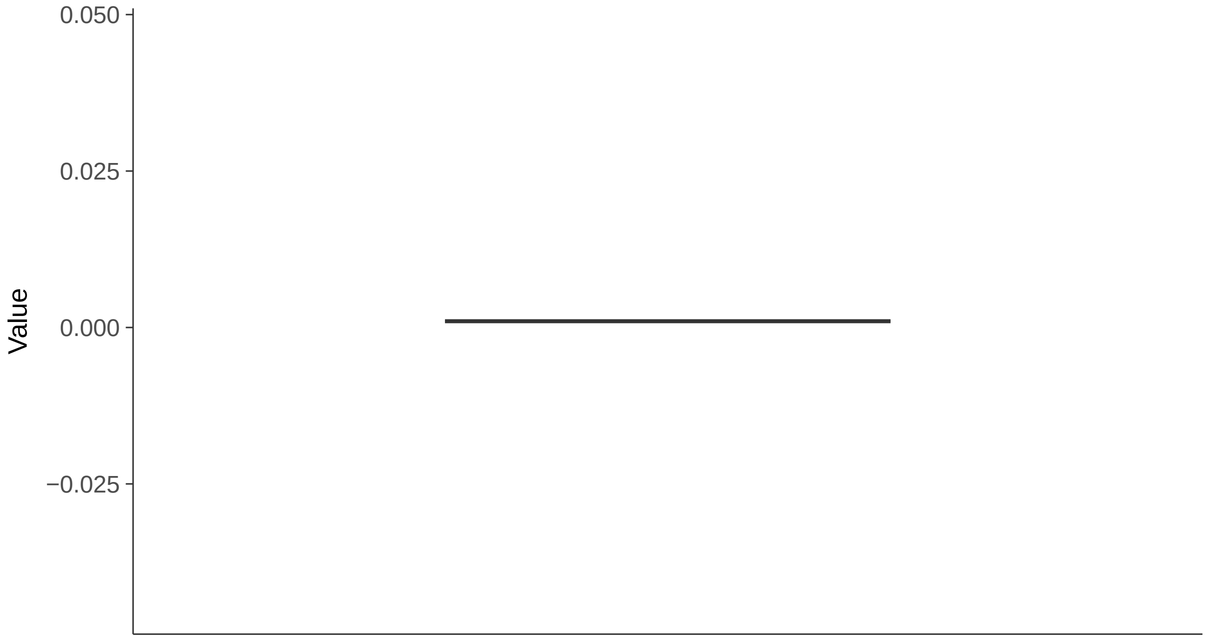
Histogram

Beryllium, MW-100B (mg/L)



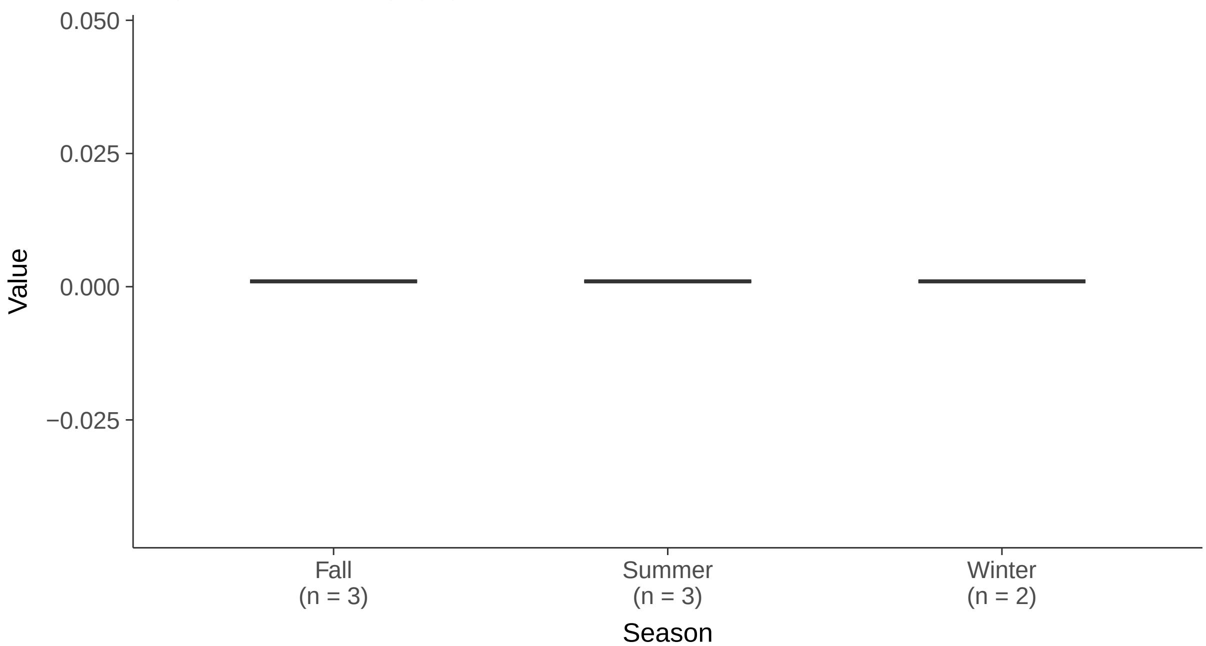
Boxplot

Beryllium, MW-100B (mg/L)



Boxplot by Season

Beryllium, MW-100B (mg/L)

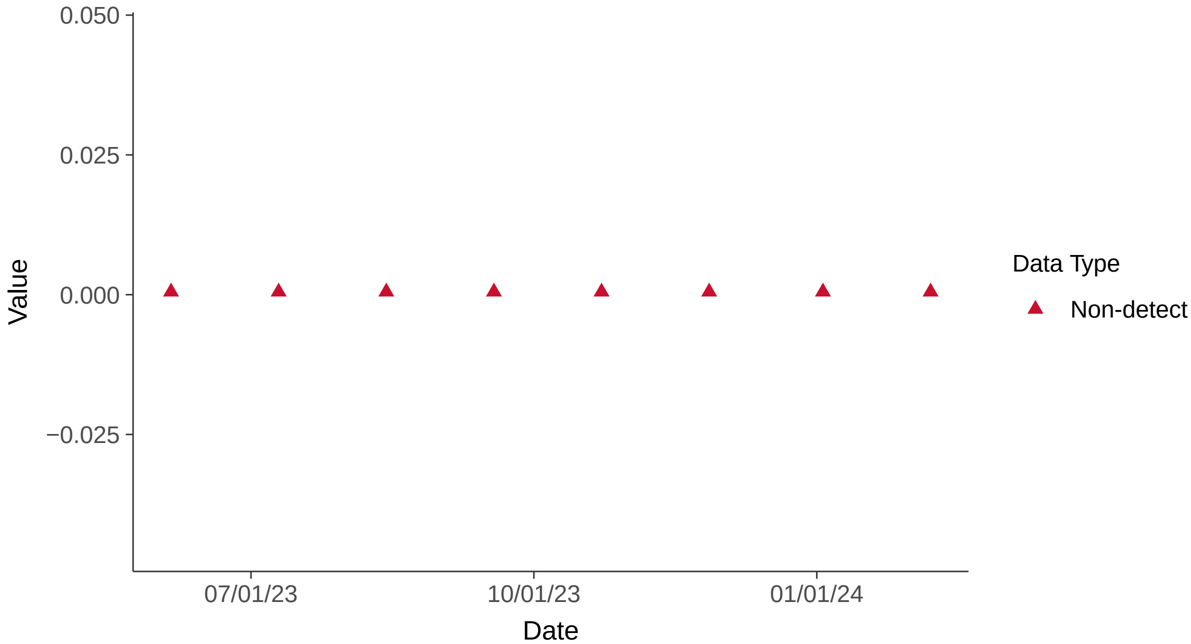


Appendix IV: Cadmium, MW-100B

ID: 100B_2_12

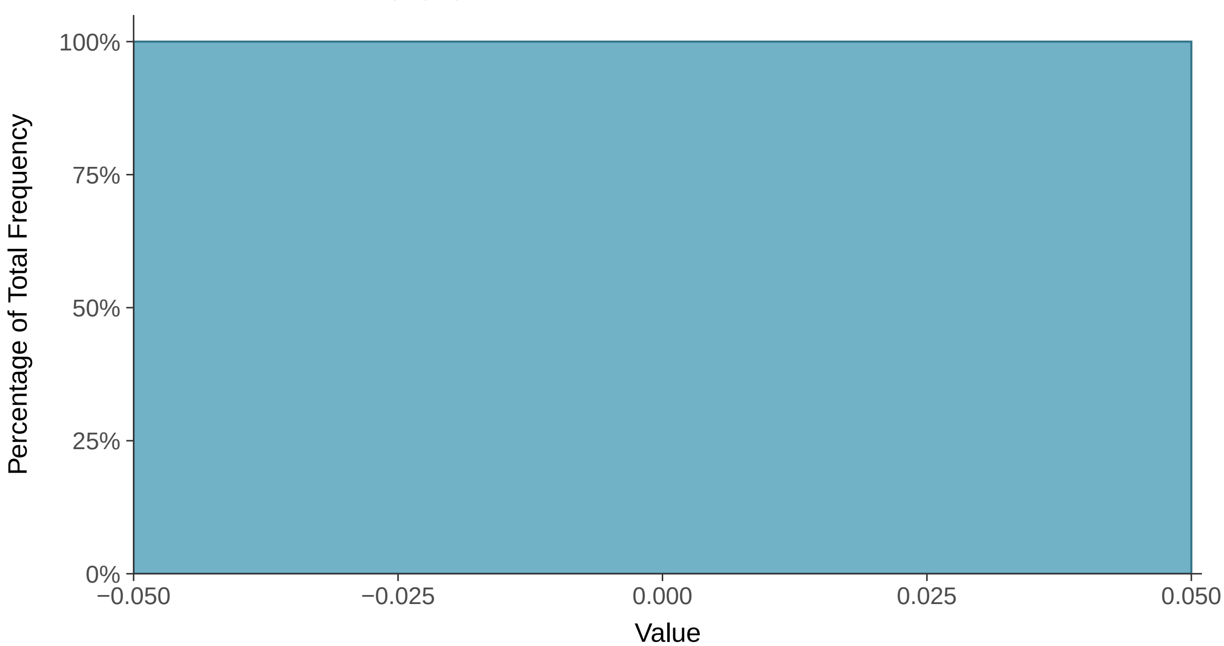
Scatter Plot

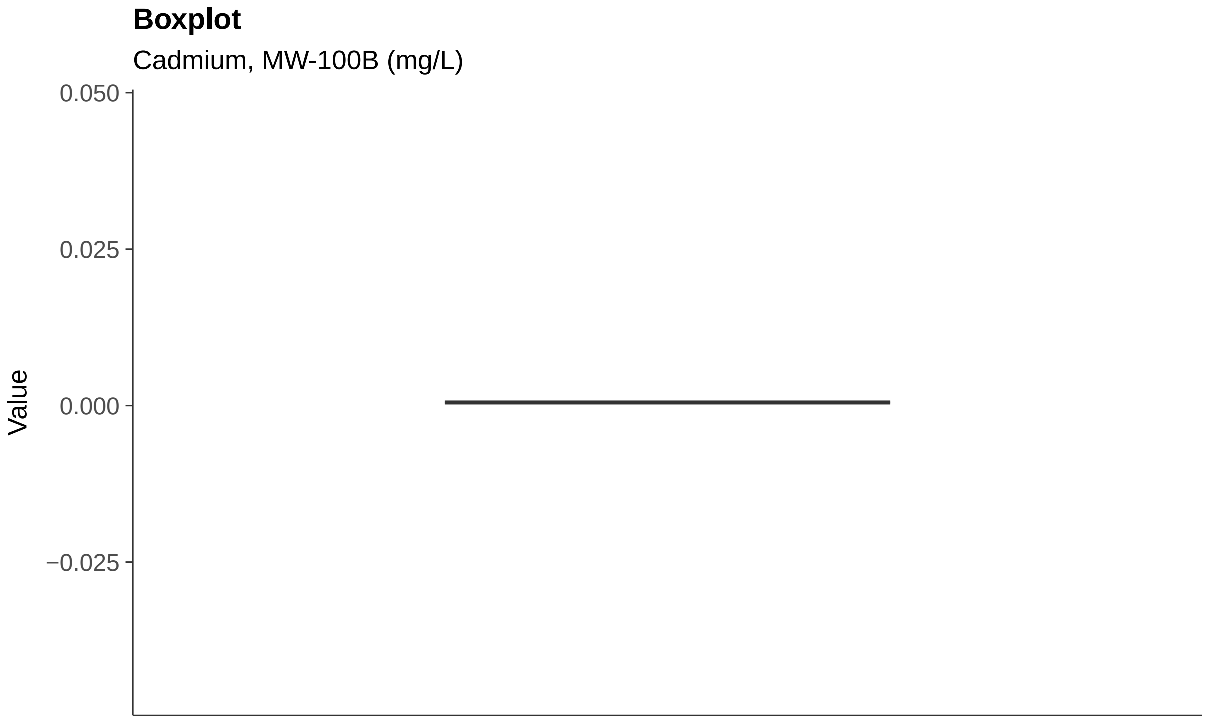
Cadmium, MW-100B (mg/L)

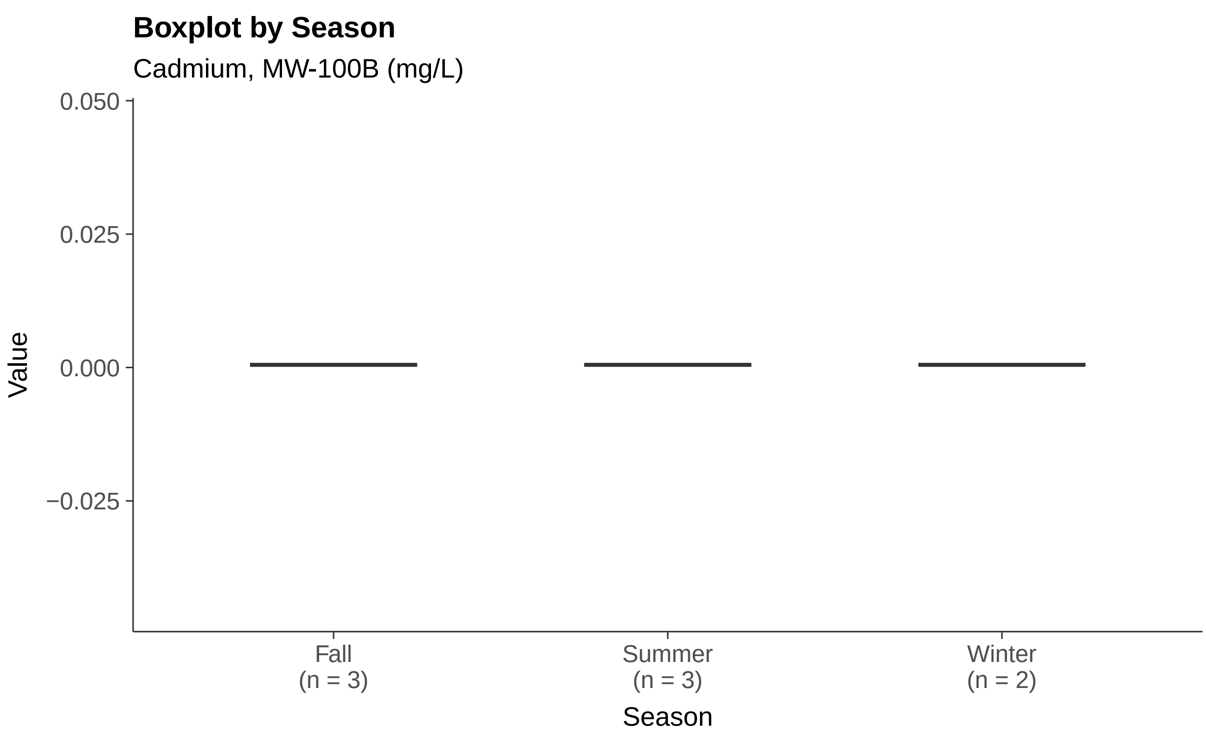


Histogram

Cadmium, MW-100B (mg/L)




Boxplot
Cadmium, MW-100B (mg/L)
0.050
0.025
0.000
−0.025
Value

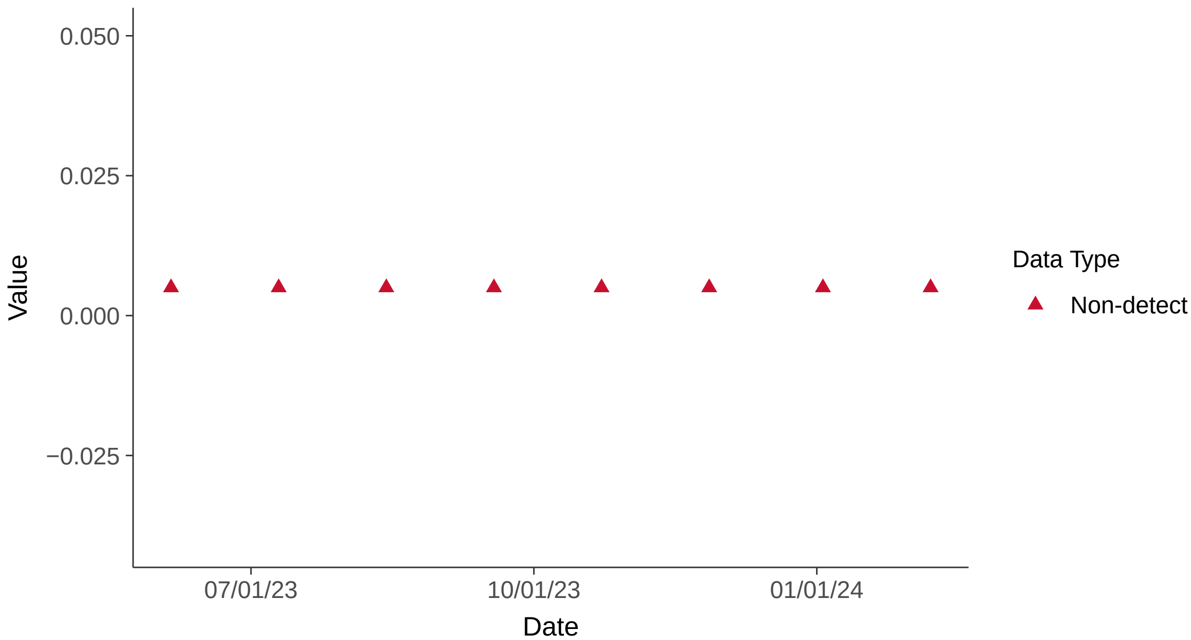

Boxplot by Season
Cadmium, MW-100B (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season

Appendix IV: Chromium, MW-100B

ID: 100B_2_13

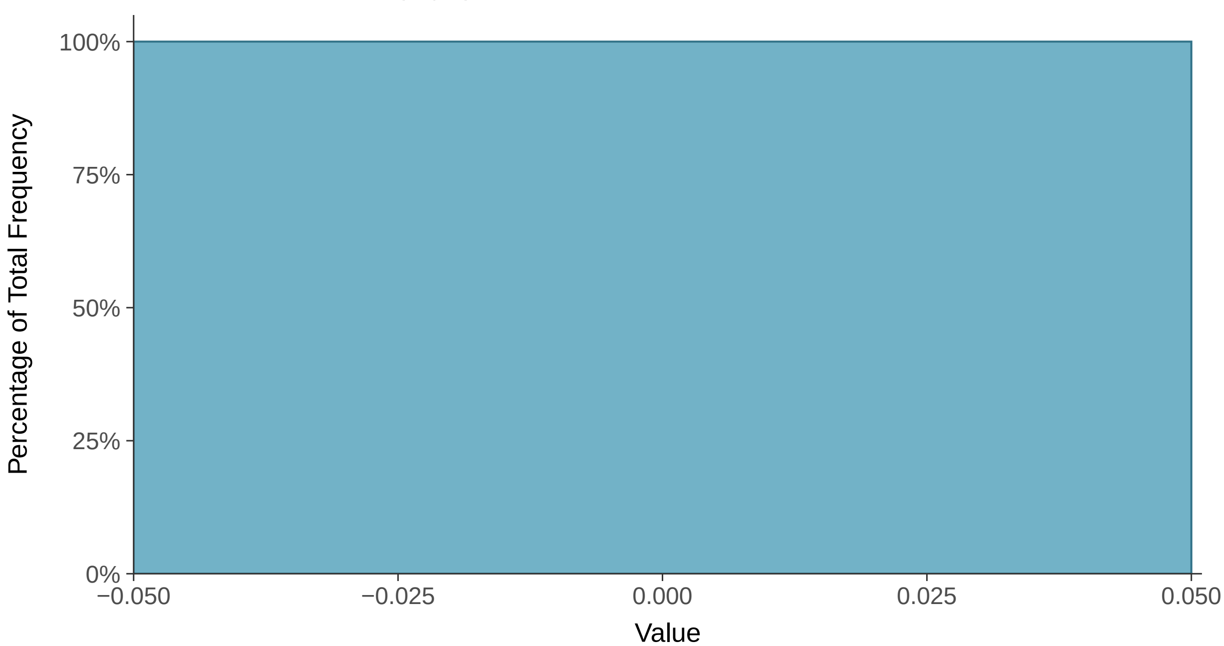
Scatter Plot

Chromium, MW-100B (mg/L)



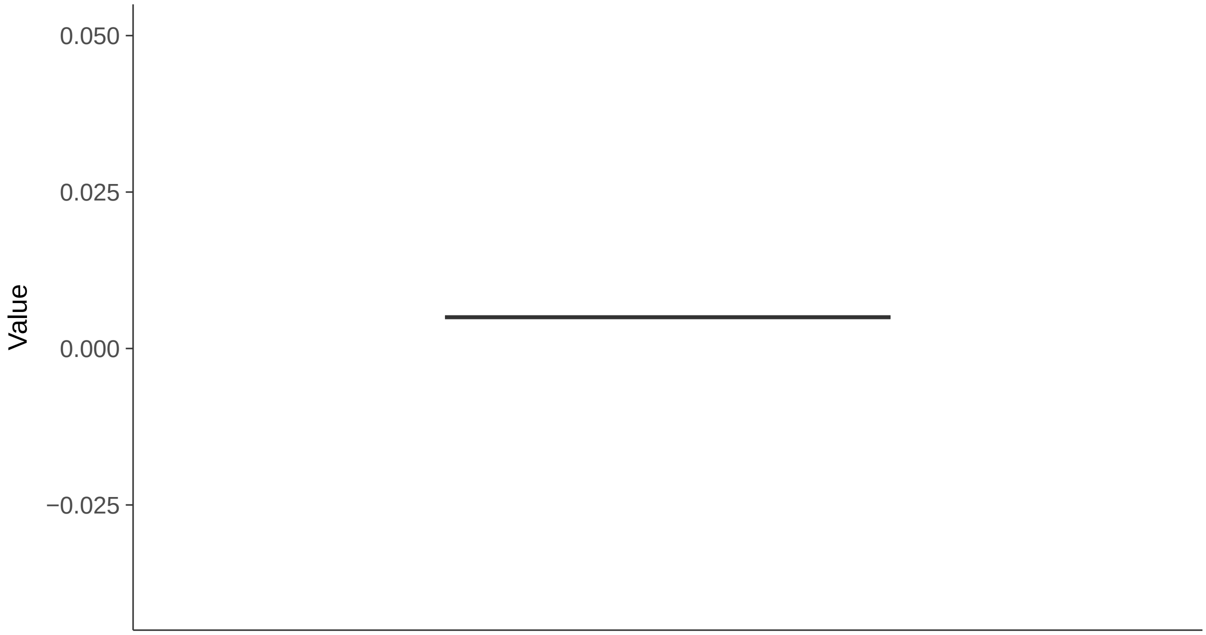
Histogram

Chromium, MW-100B (mg/L)



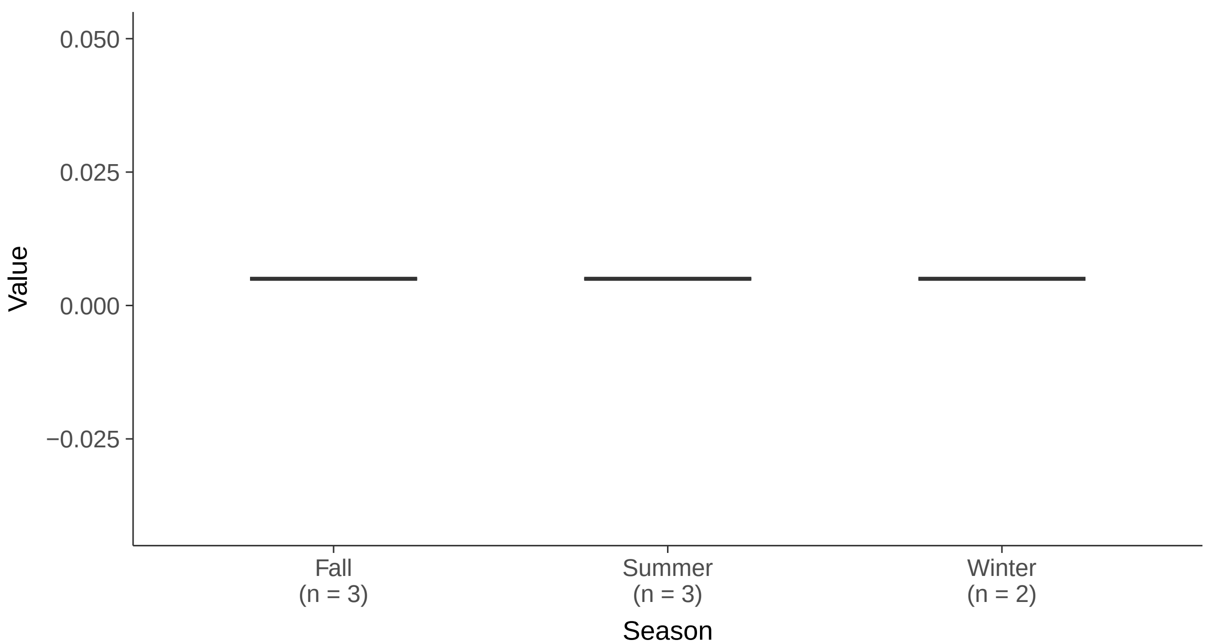
Boxplot

Chromium, MW-100B (mg/L)



Boxplot by Season

Chromium, MW-100B (mg/L)

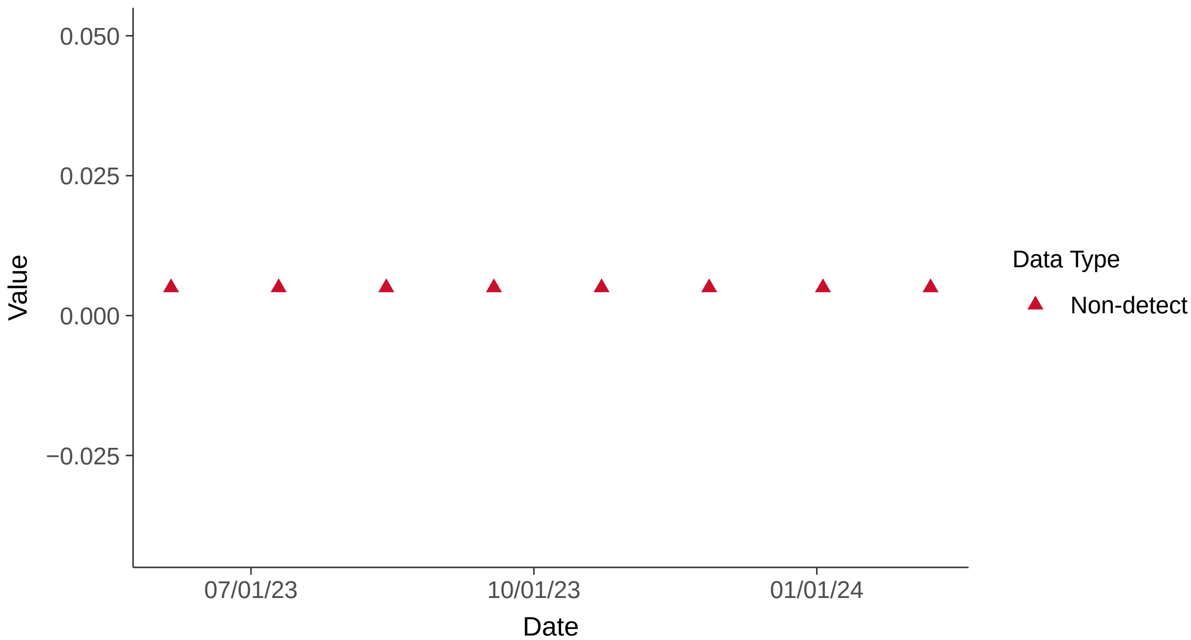


Appendix IV: Cobalt, MW-100B

ID: 100B_2_14

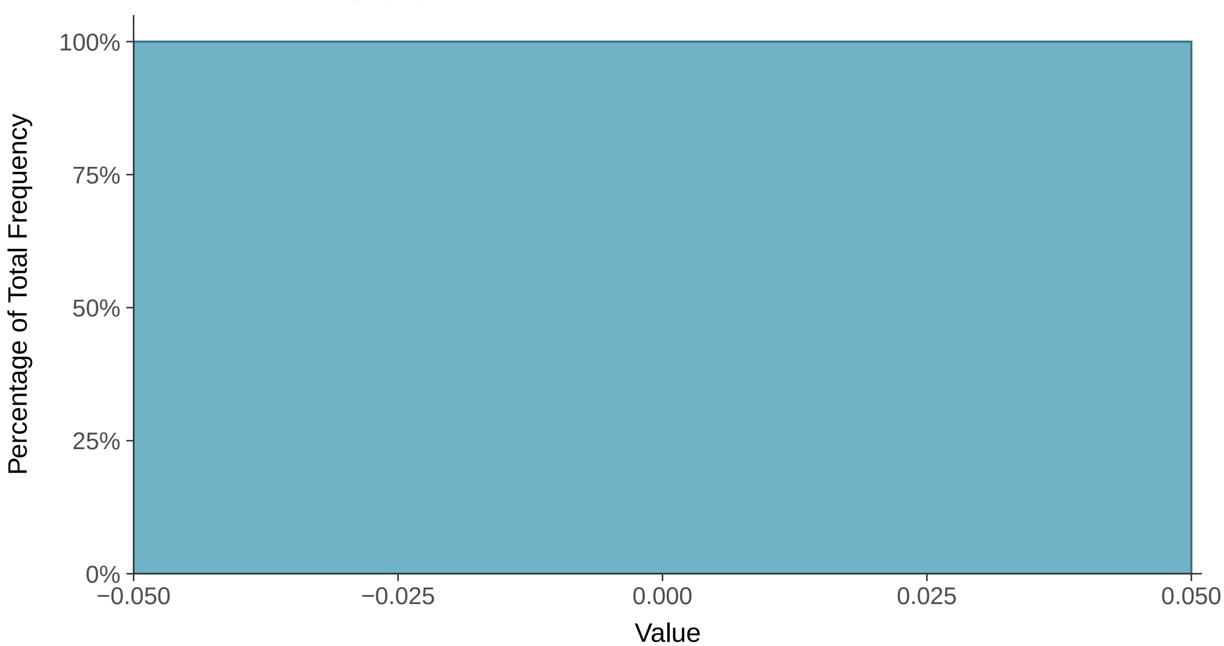
Scatter Plot

Cobalt, MW-100B (mg/L)



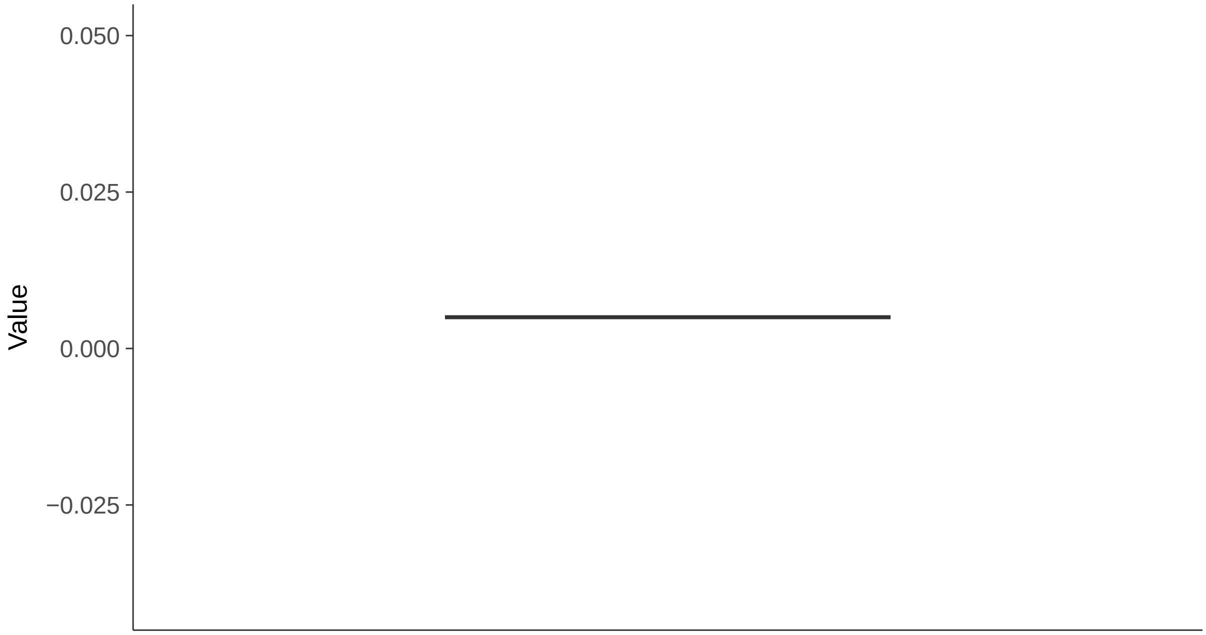
Histogram

Cobalt, MW-100B (mg/L)



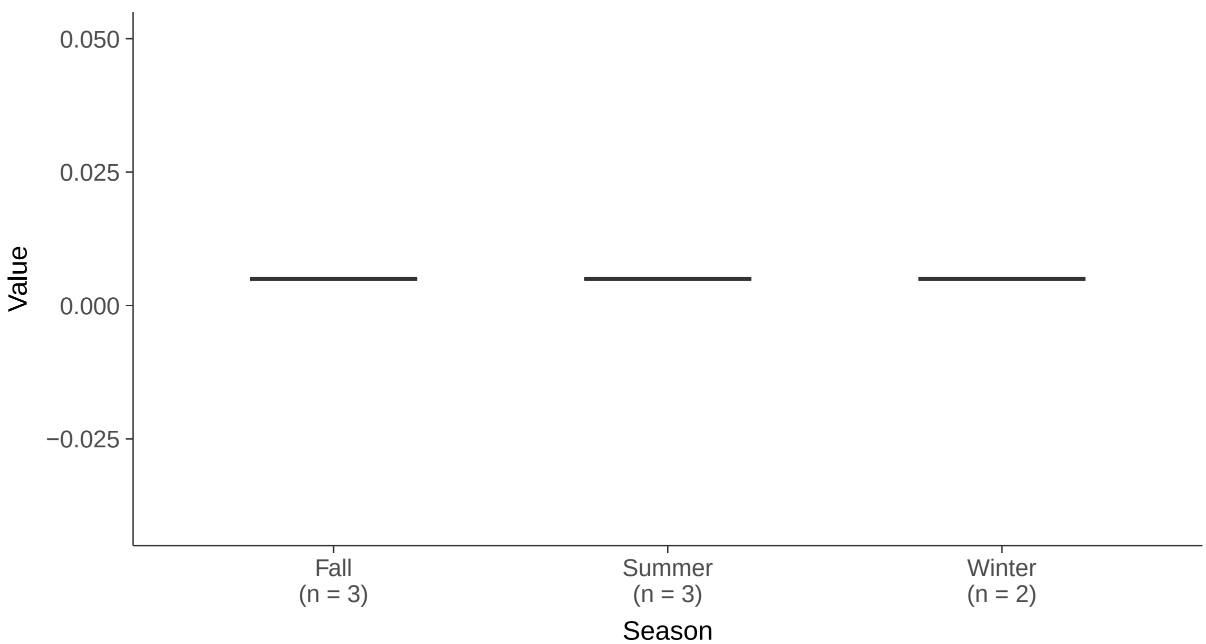
Boxplot

Cobalt, MW-100B (mg/L)



Boxplot by Season

Cobalt, MW-100B (mg/L)

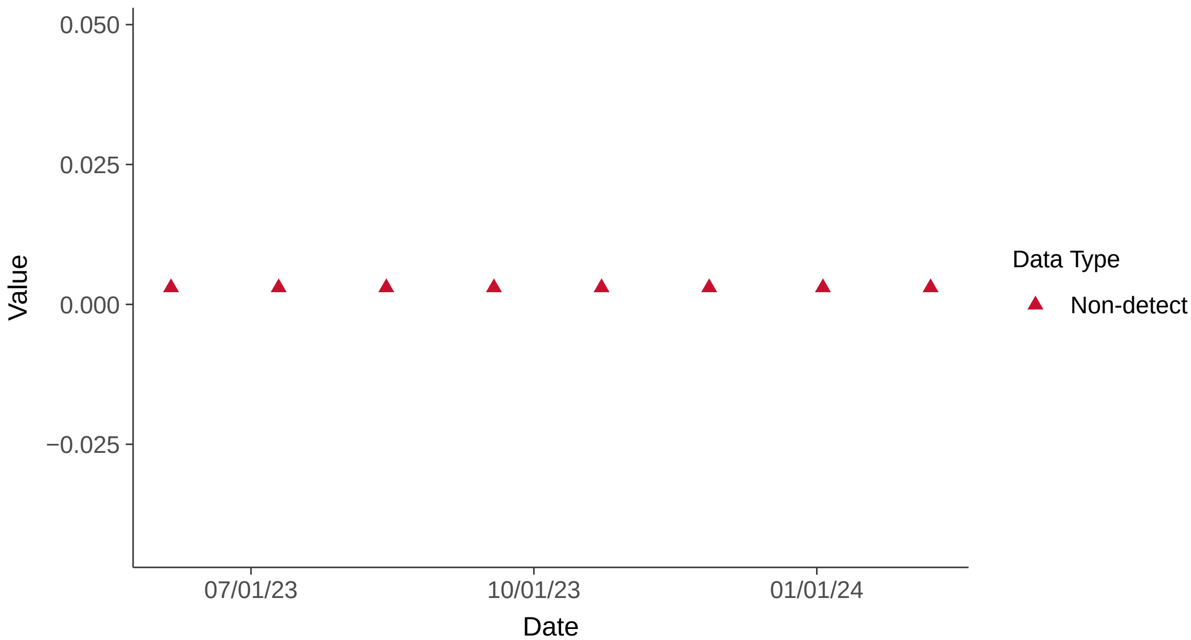


Appendix IV: Lead, MW-100B

ID: 100B_2_15

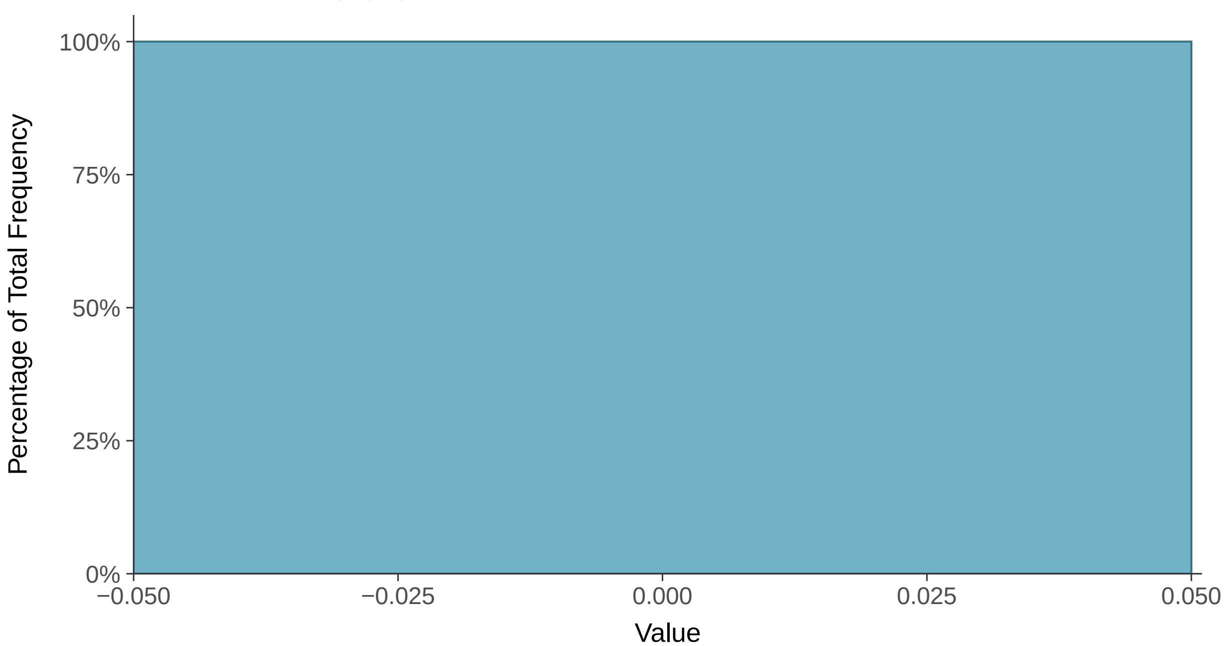
Scatter Plot

Lead, MW-100B (mg/L)



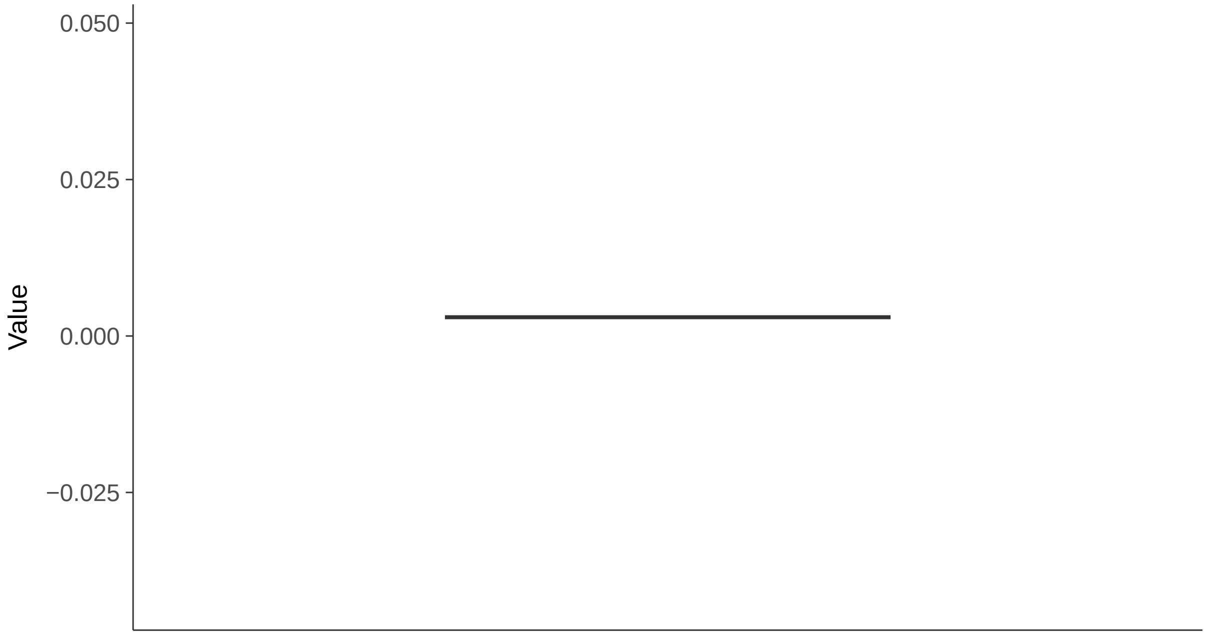
Histogram

Lead, MW-100B (mg/L)



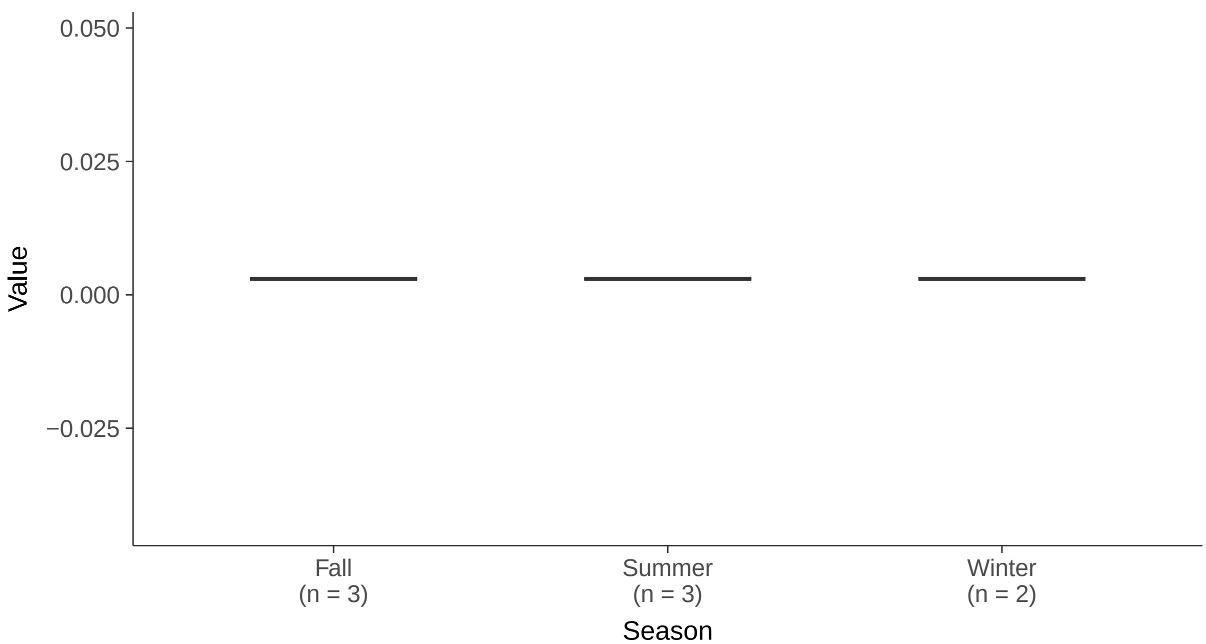
Boxplot

Lead, MW-100B (mg/L)



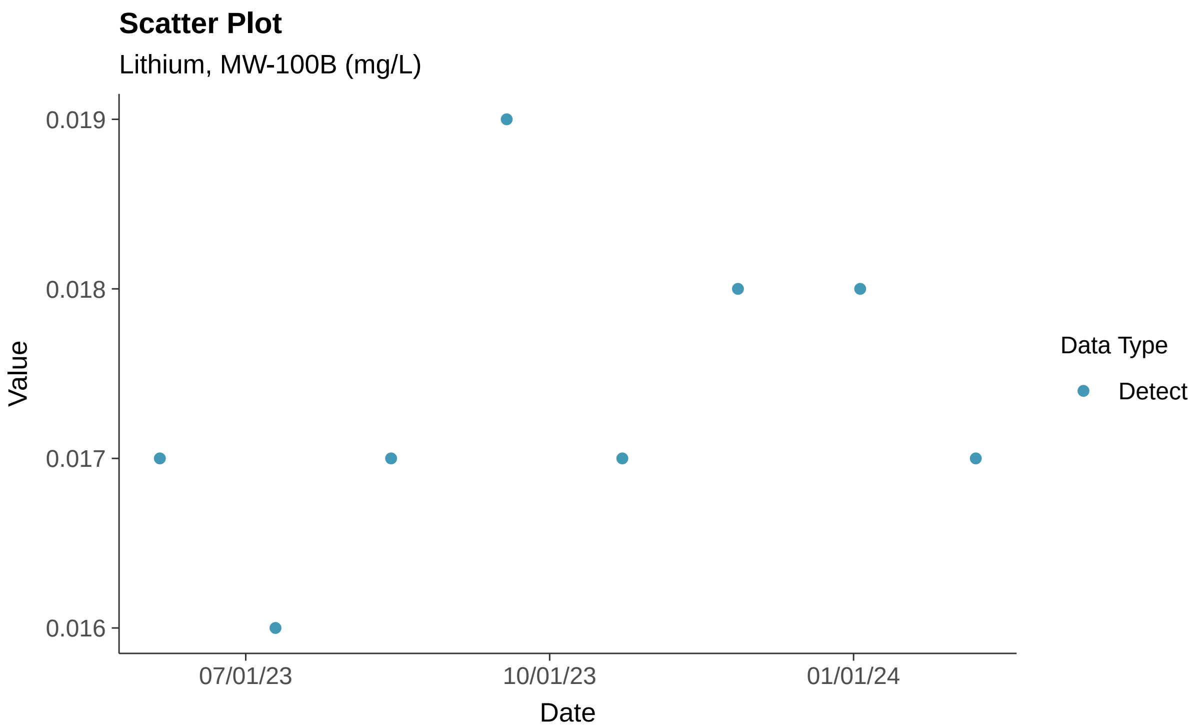
Boxplot by Season

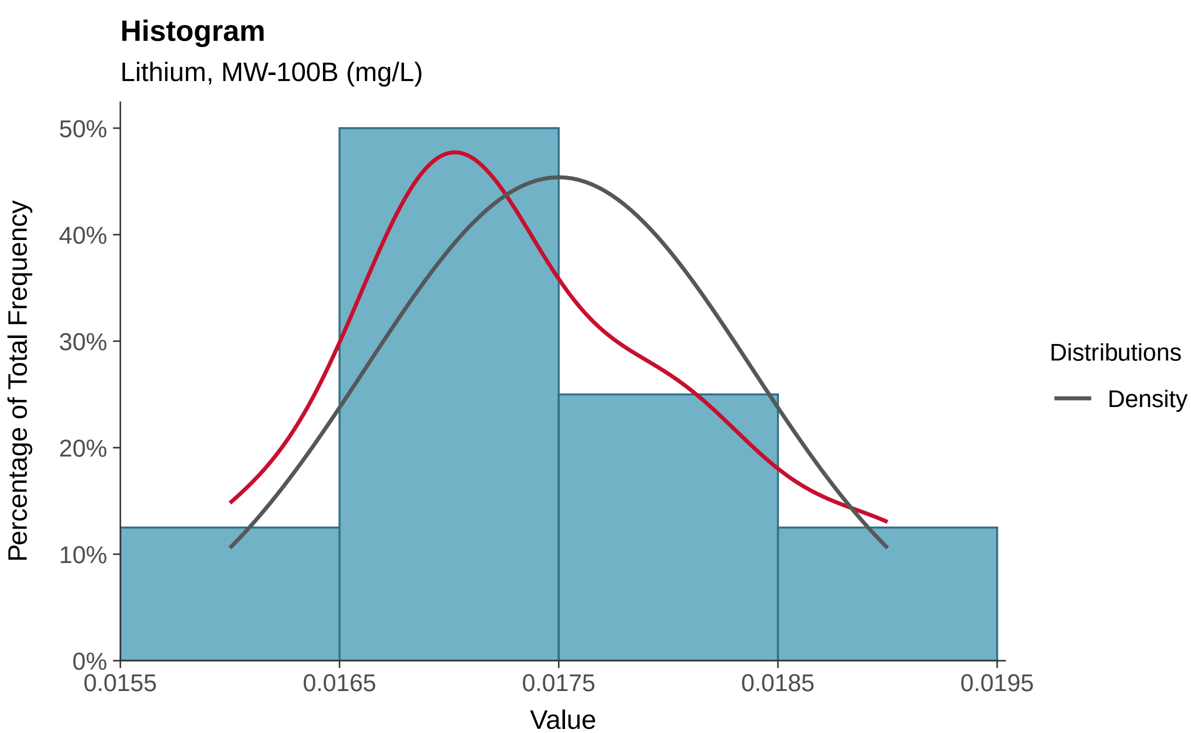
Lead, MW-100B (mg/L)



Appendix IV: Lithium, MW-100B

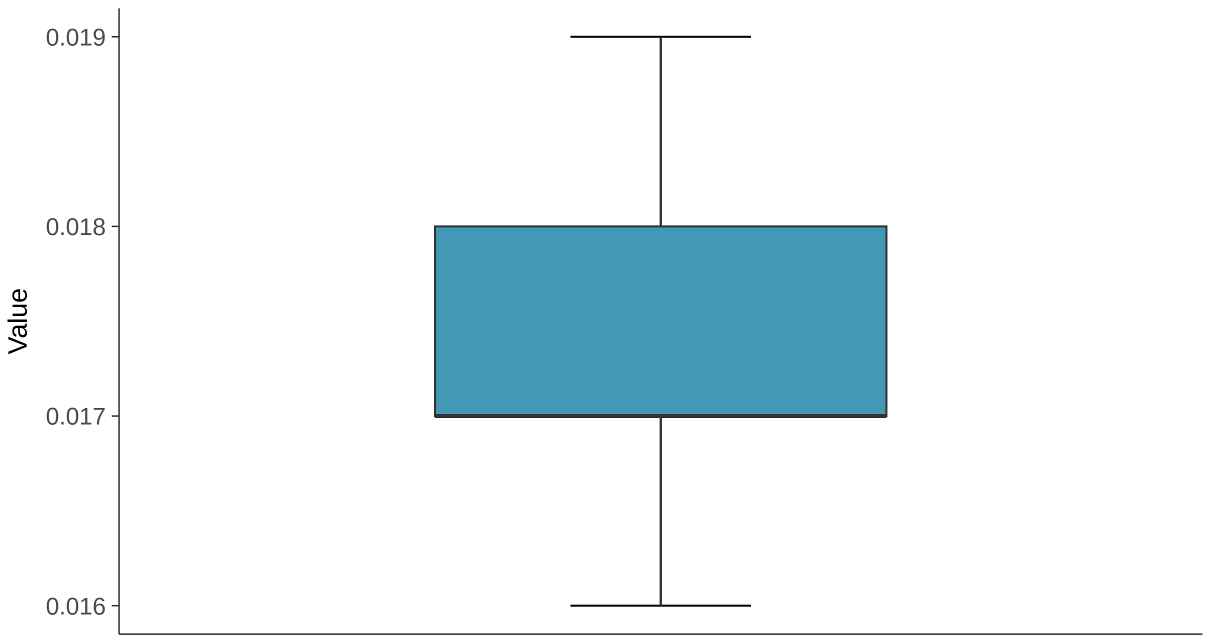
ID: 100B_2_16





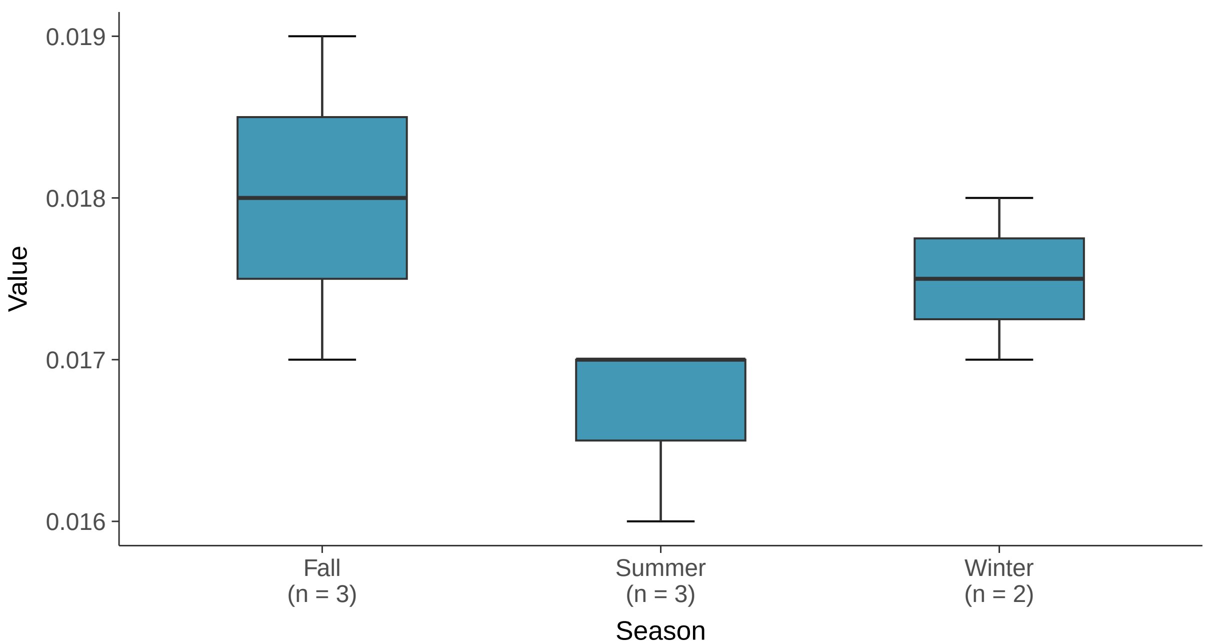
Boxplot

Lithium, MW-100B (mg/L)



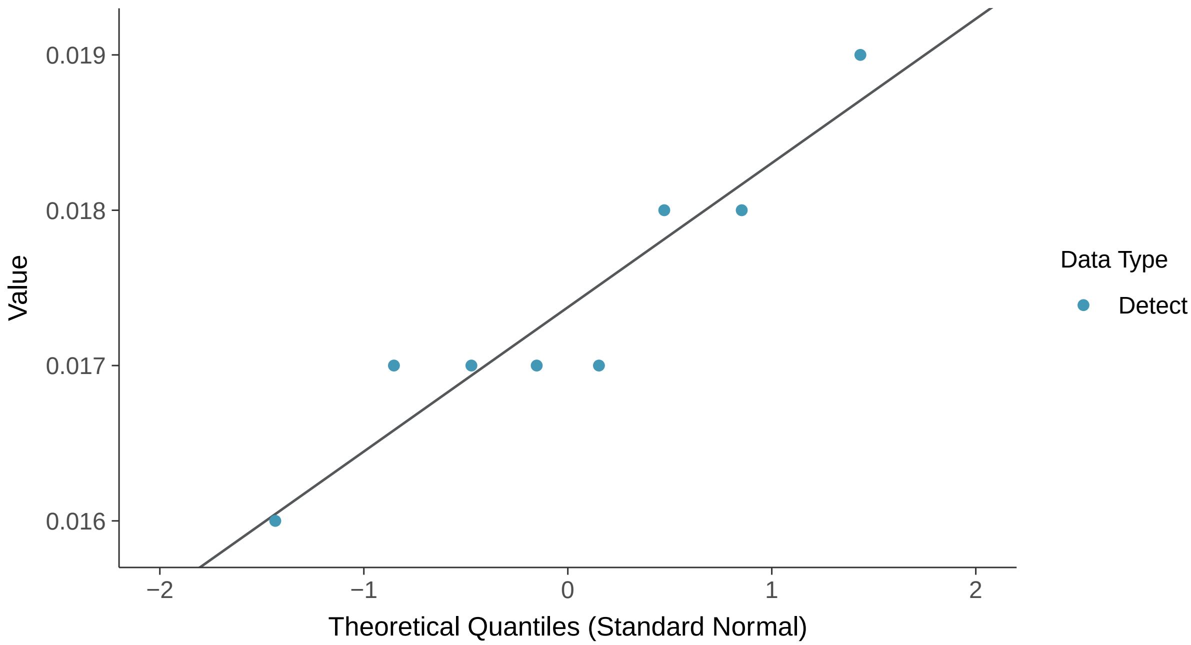
Boxplot by Season

Lithium, MW-100B (mg/L)



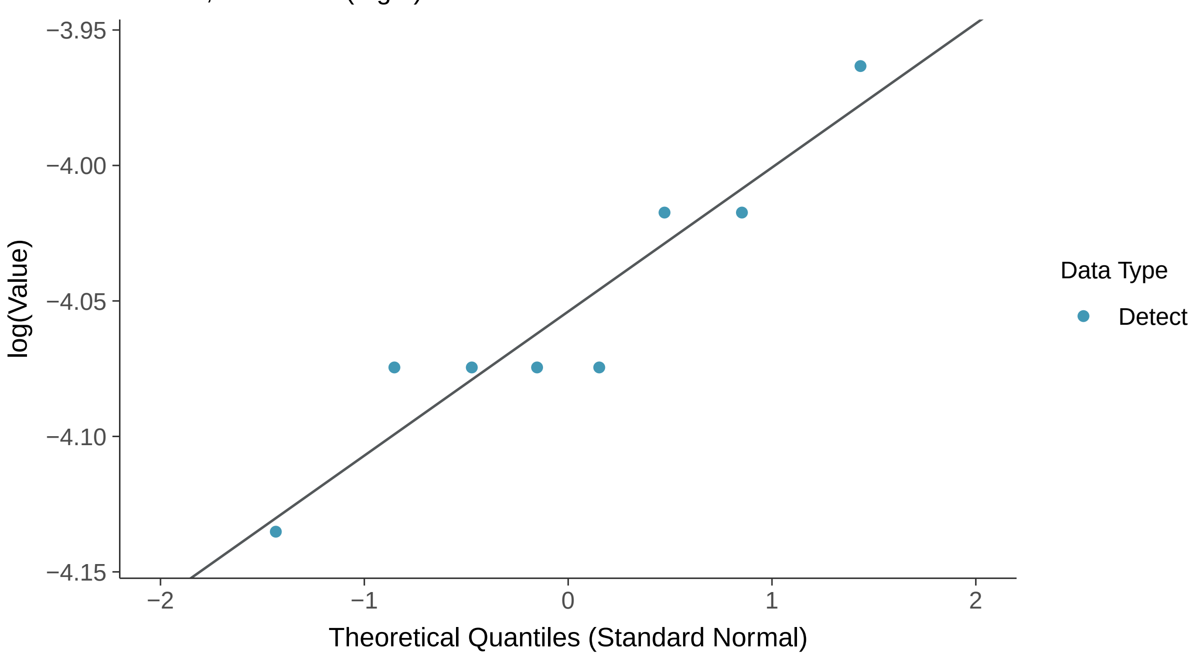
Normal Q-Q plot

Lithium, MW-100B (mg/L)



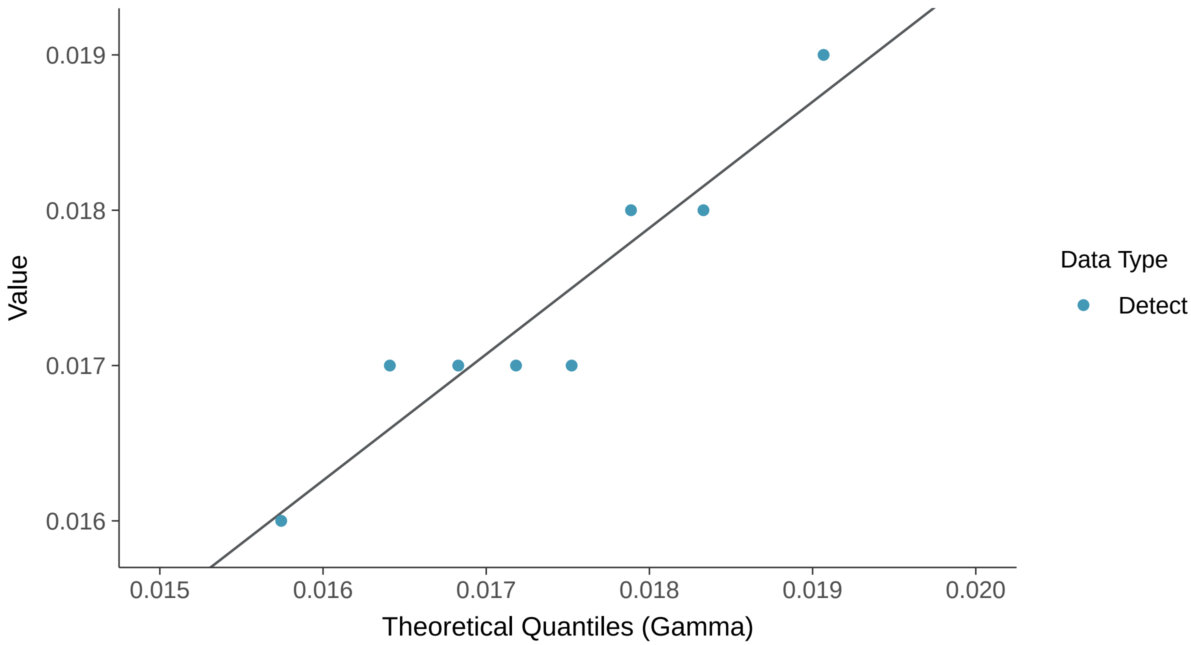
Lognormal Q-Q plot

Lithium, MW-100B (mg/L)



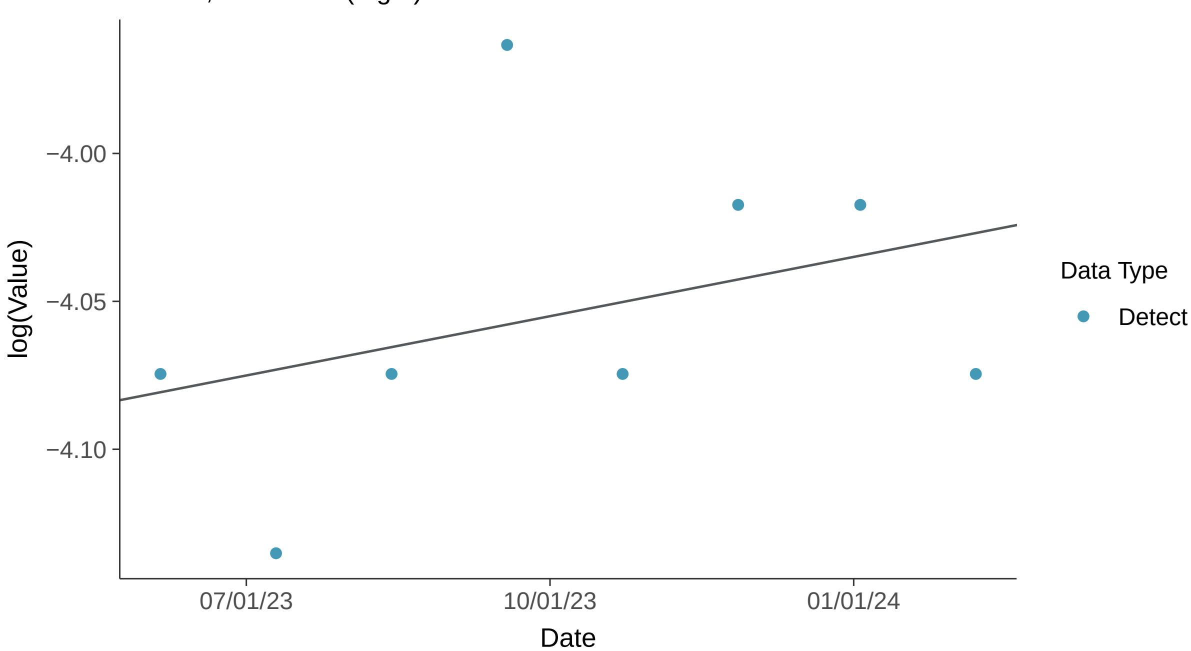
Gamma Q-Q plot

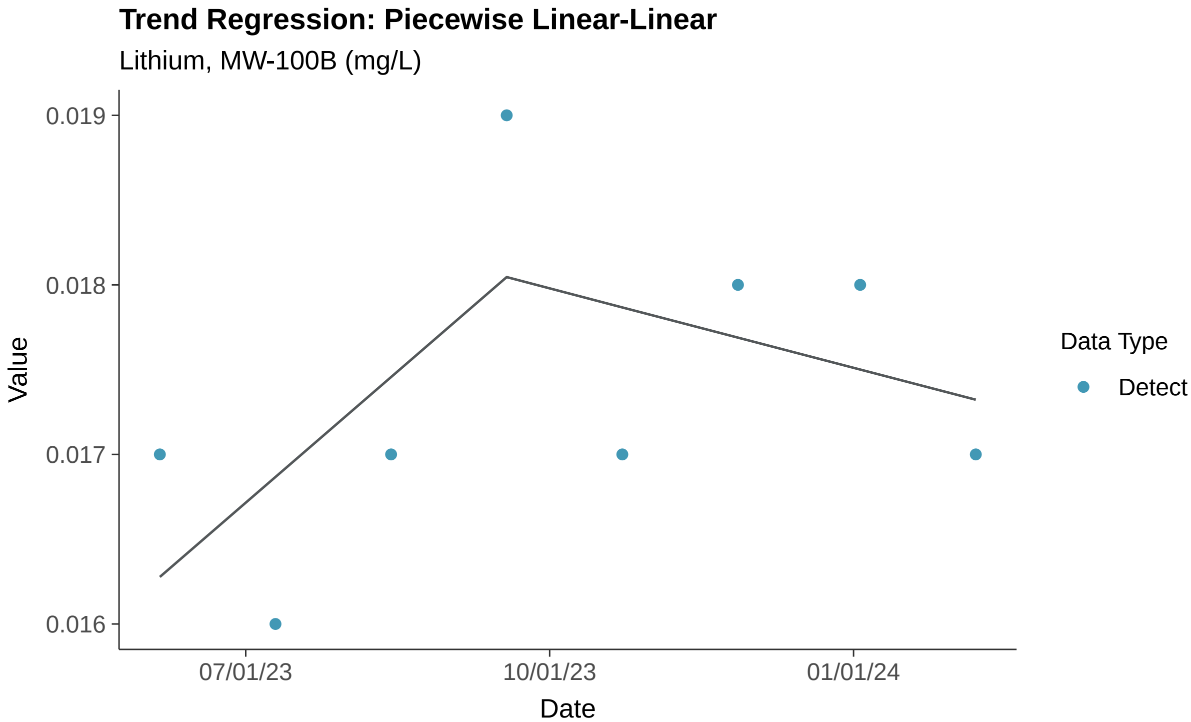
Lithium, MW-100B (mg/L)

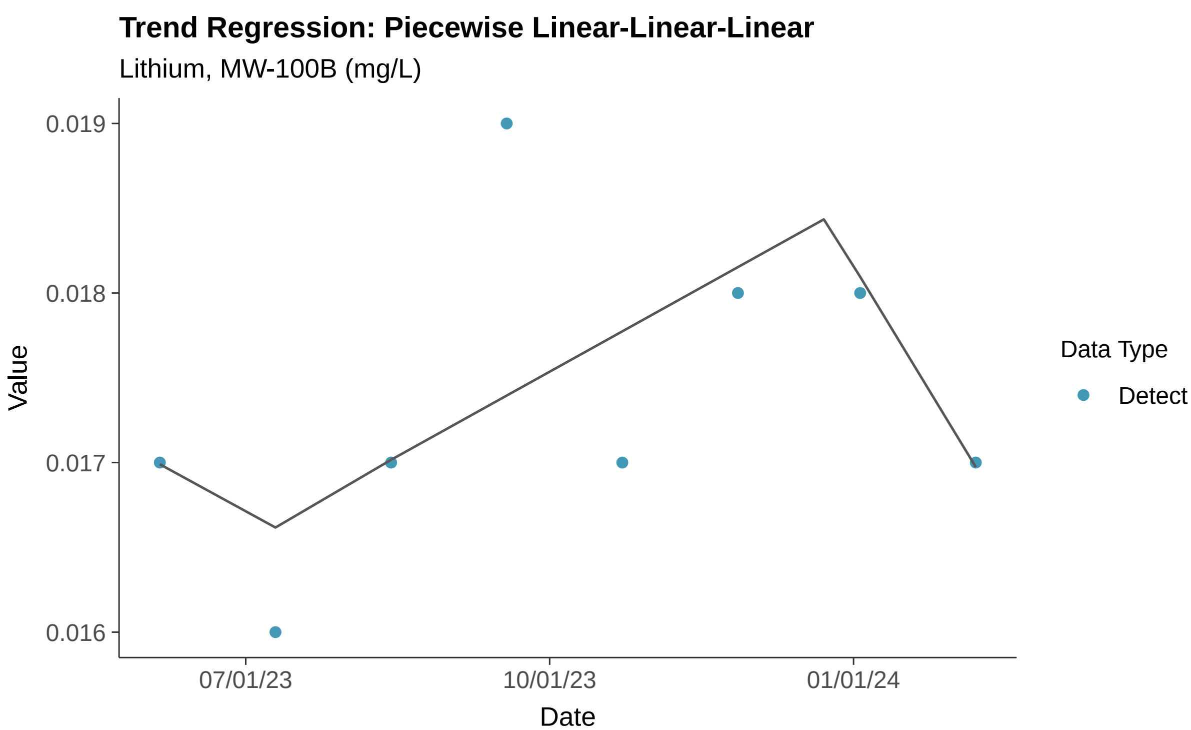


Trend Regression: Lognormal MLE

Lithium, MW-100B (mg/L)

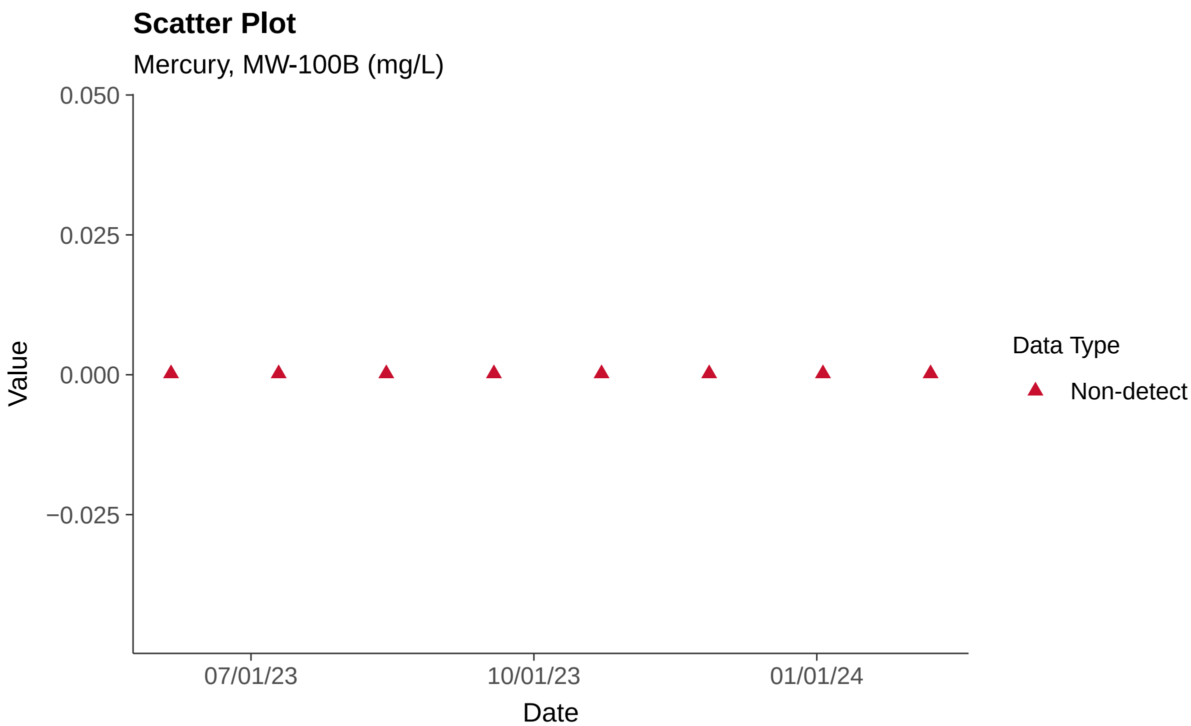


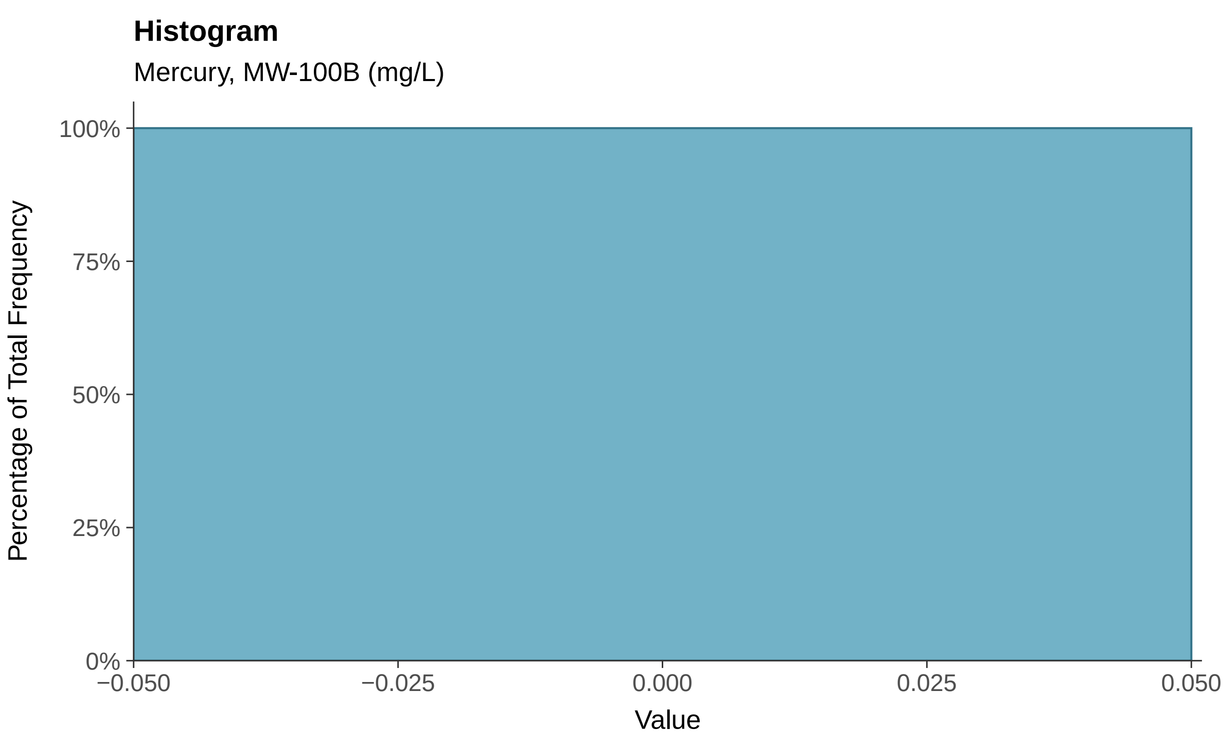

Trend Regression: Piecewise Linear-Linear
Lithium, MW-100B (mg/L)
0.019
0.018
0.017
0.016
Value
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Lithium, MW-100B (mg/L)
0.019
0.018
0.017
0.016
Value
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Mercury, MW-100B

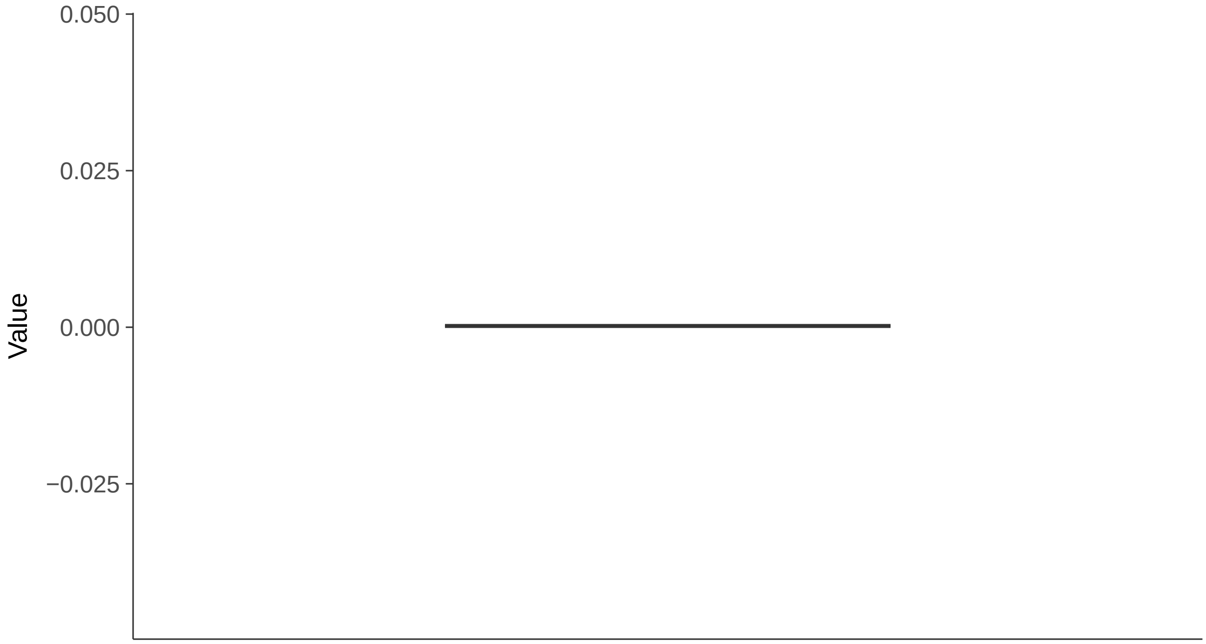
ID: 100B_2_17





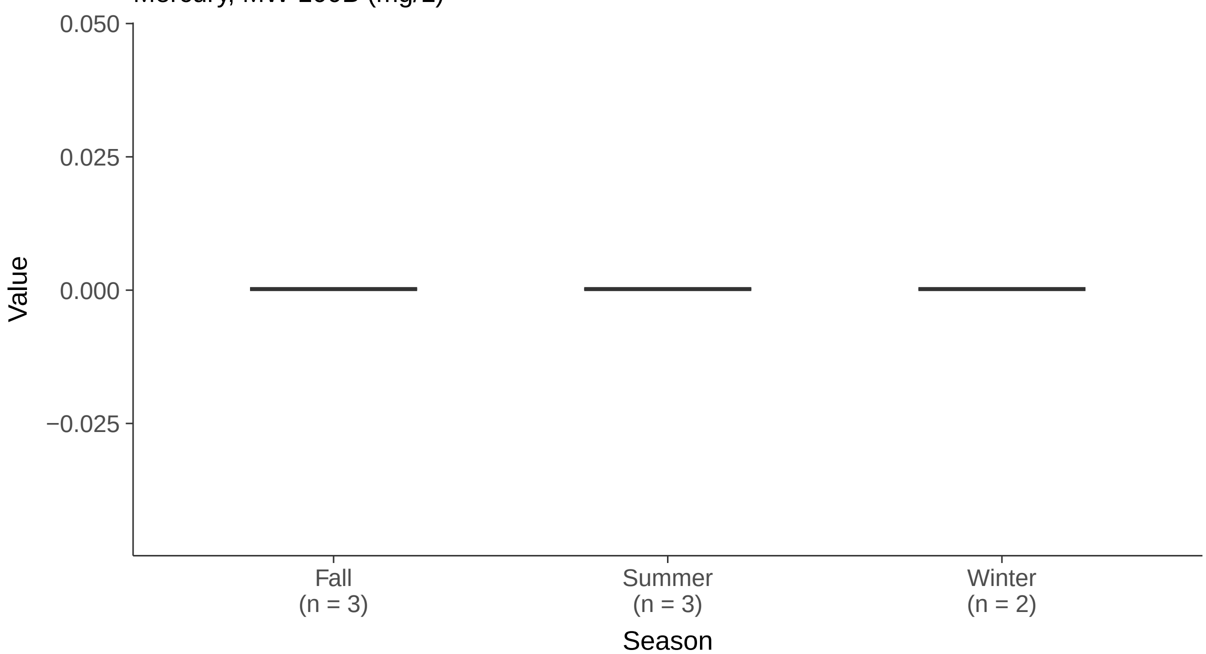
Boxplot

Mercury, MW-100B (mg/L)



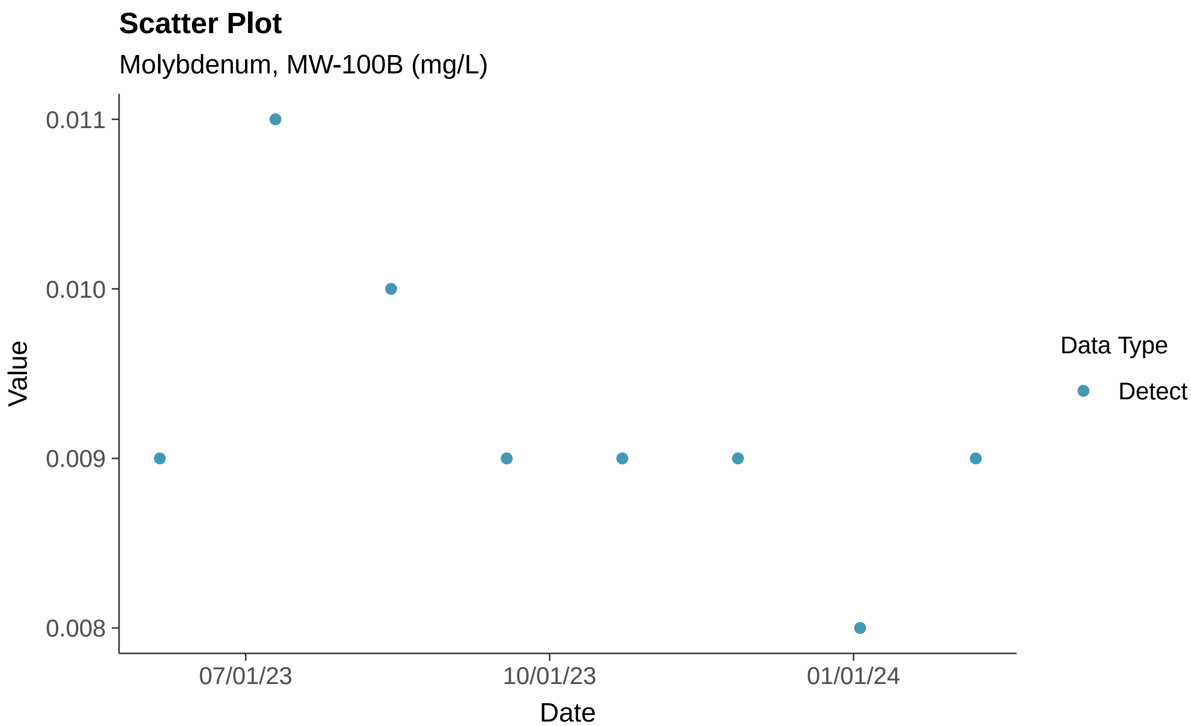
Boxplot by Season

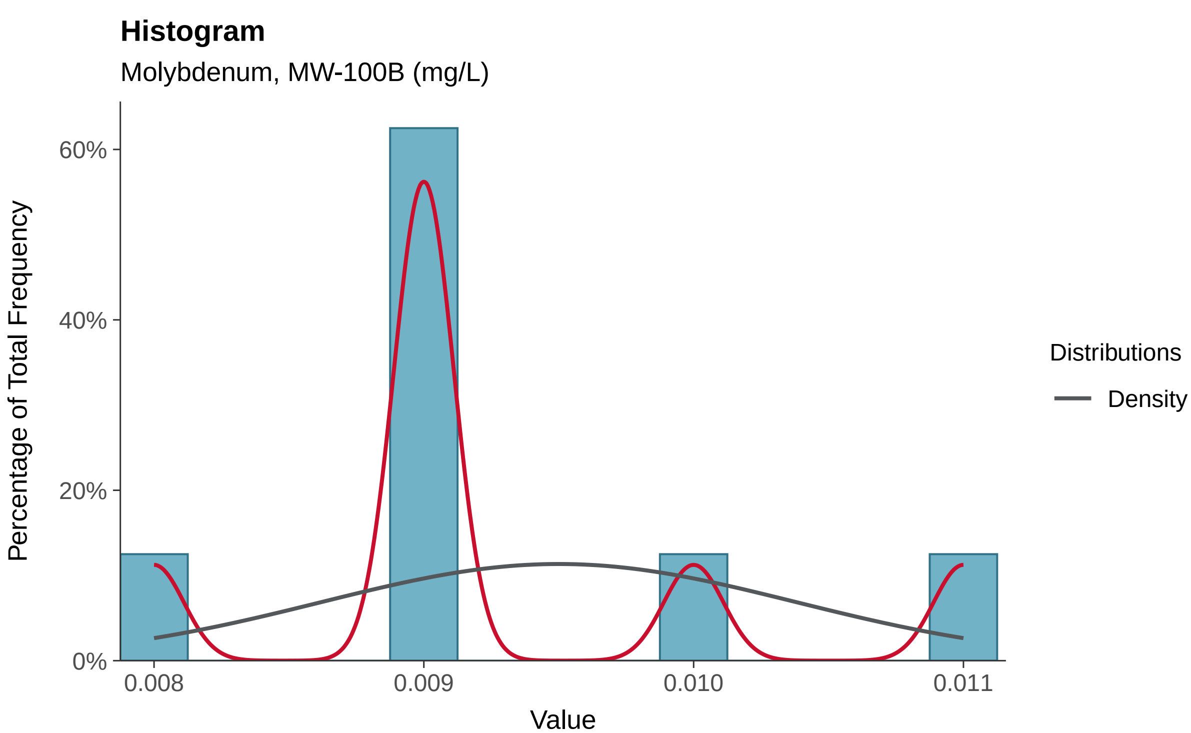
Mercury, MW-100B (mg/L)



Appendix IV: Molybdenum, MW-100B

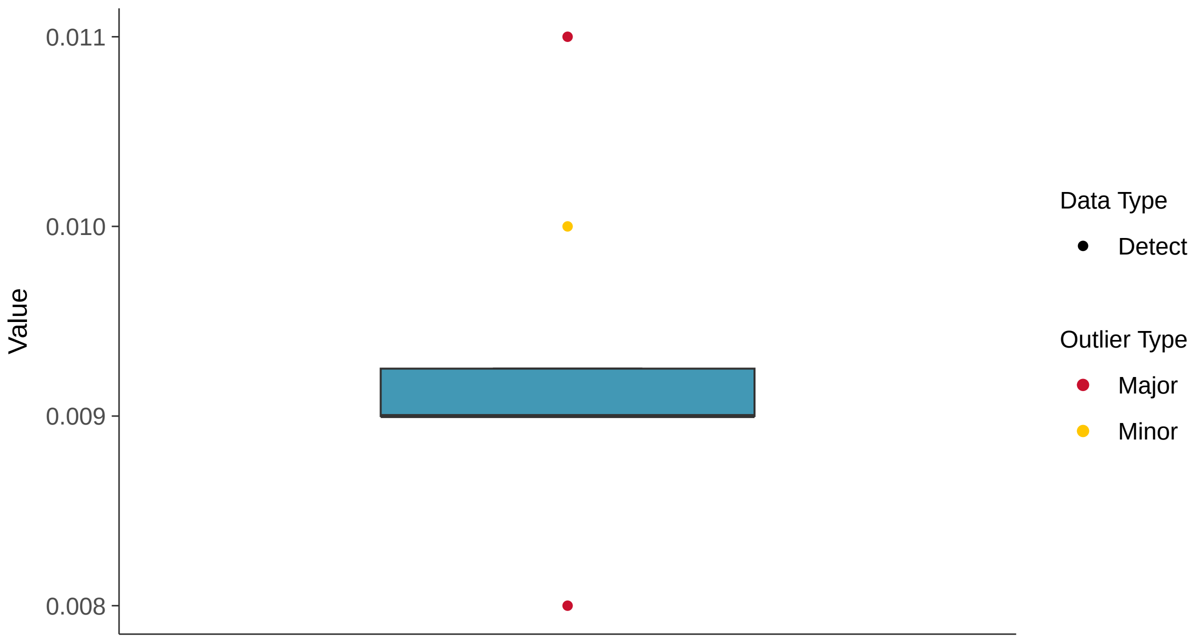
ID: 100B_2_18





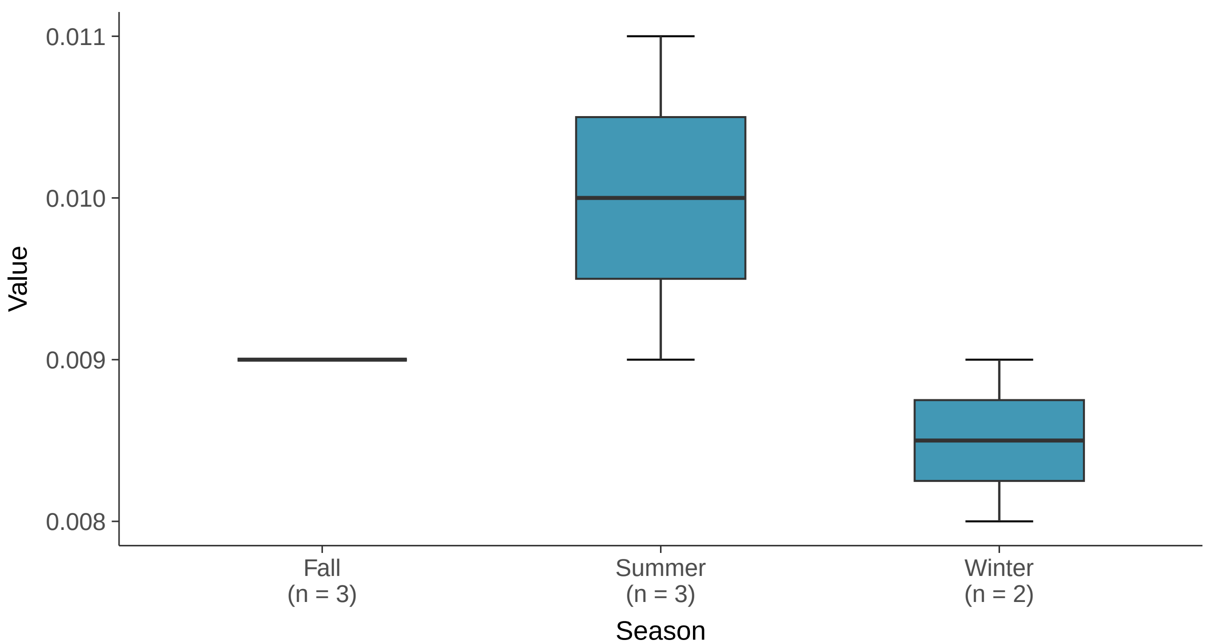
Boxplot

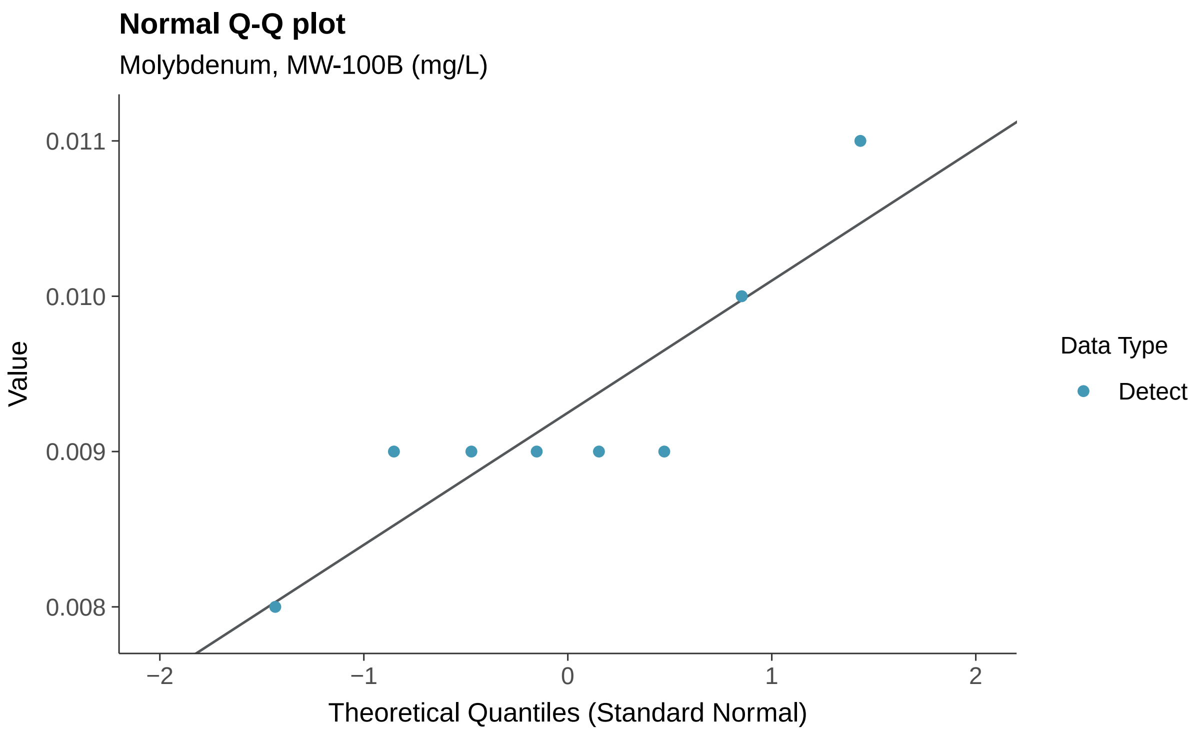
Molybdenum, MW-100B (mg/L)

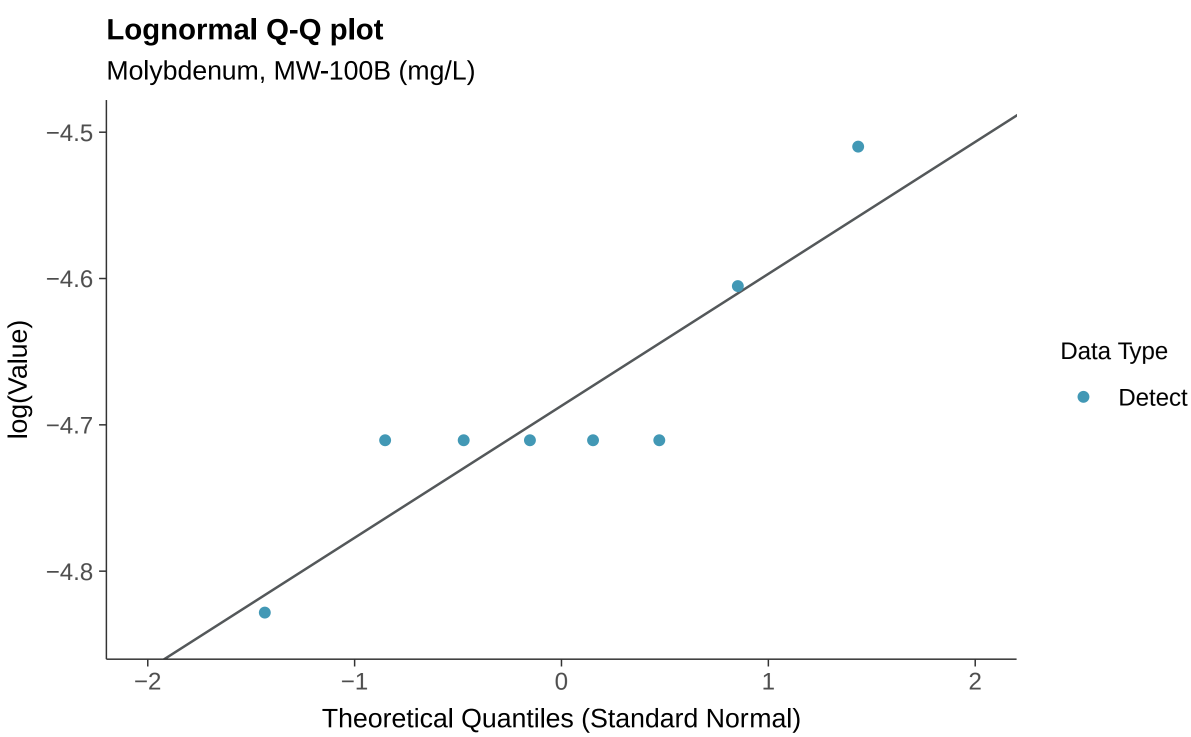


Boxplot by Season

Molybdenum, MW-100B (mg/L)

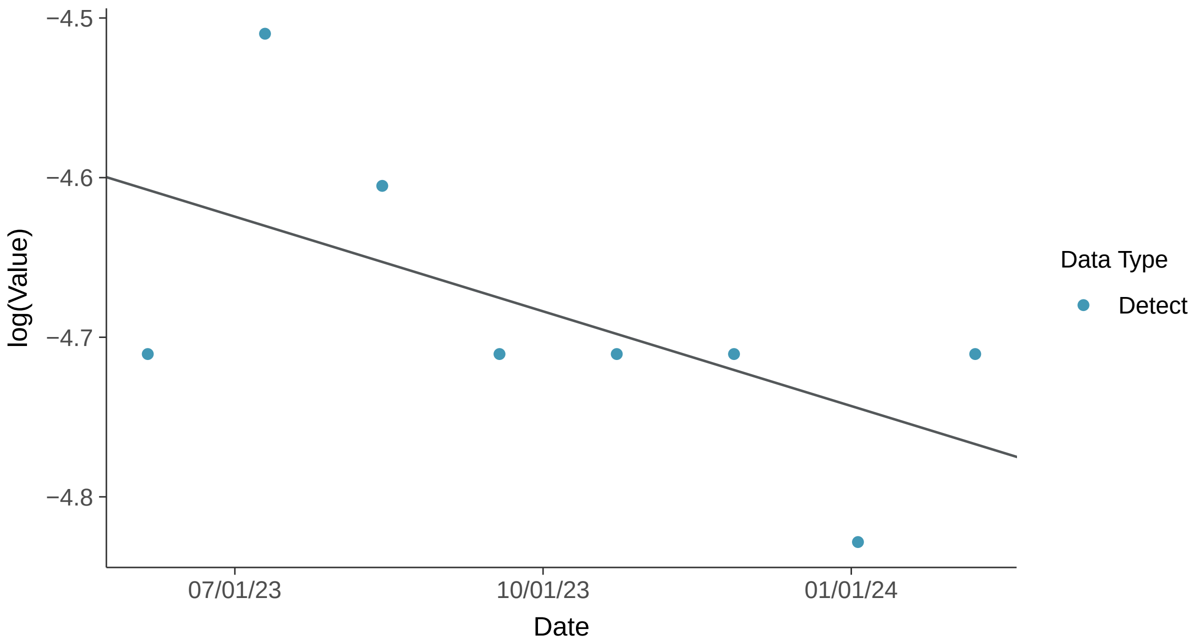



Normal Q-Q plot
Molybdenum, MW-100B (mg/L)
Value
0.011
0.010
0.009
0.008
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Molybdenum, MW-100B (mg/L)
log(Value)
−4.5
−4.6
−4.7
−4.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

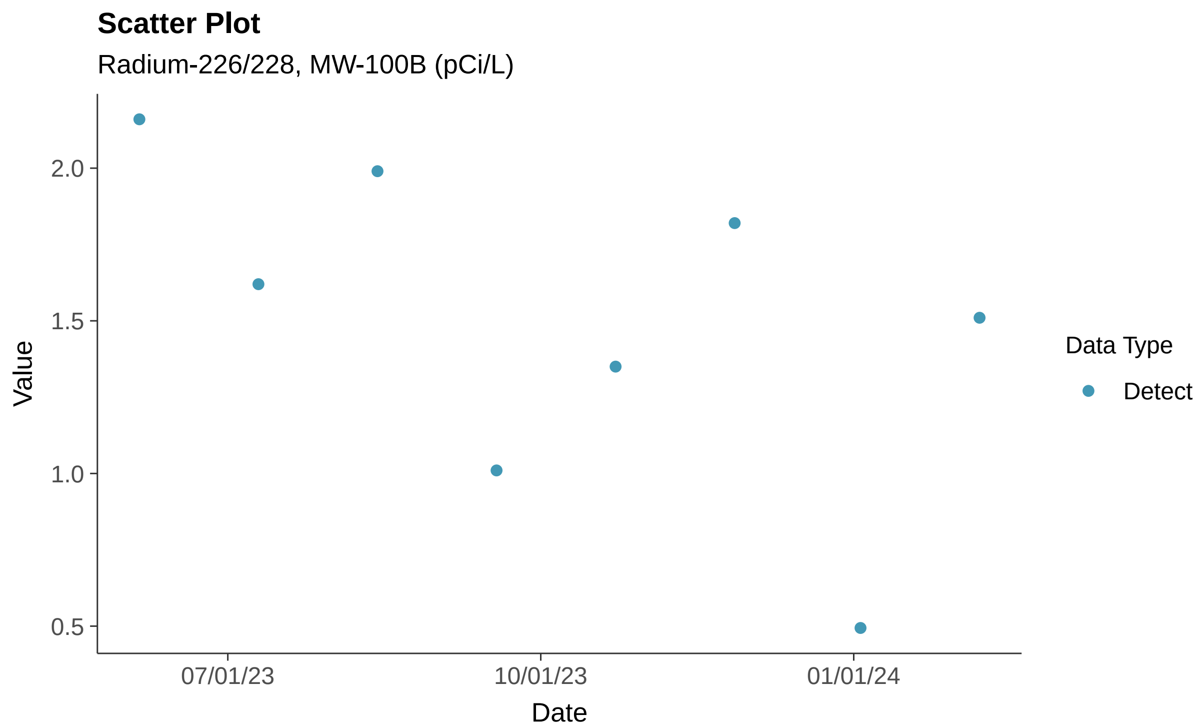
Trend Regression: Lognormal MLE

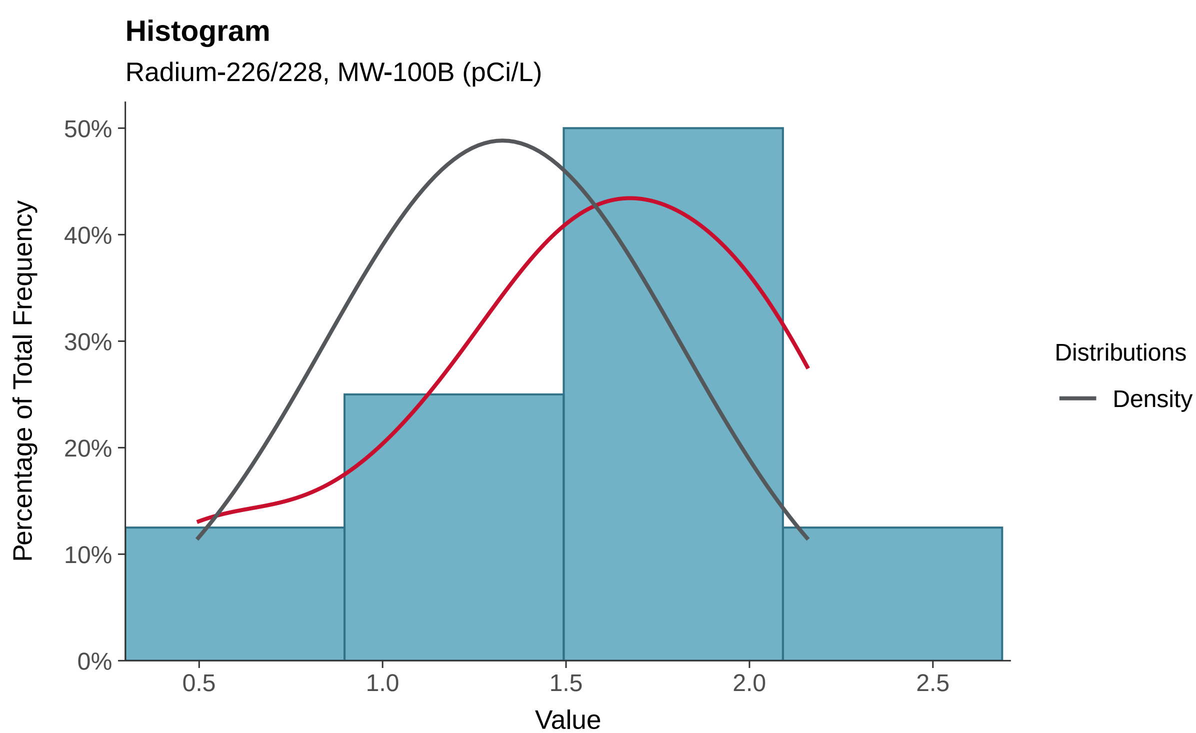
Molybdenum, MW-100B (mg/L)



Appendix IV: Radium-226/228, MW-100B

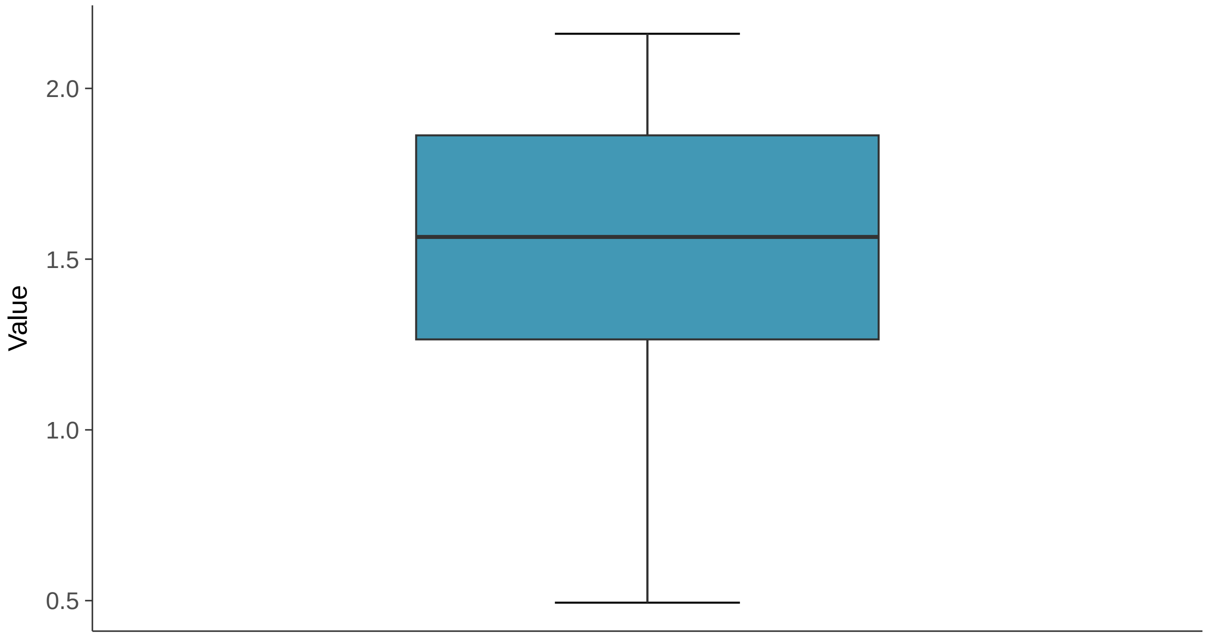
ID: 100B_2_20





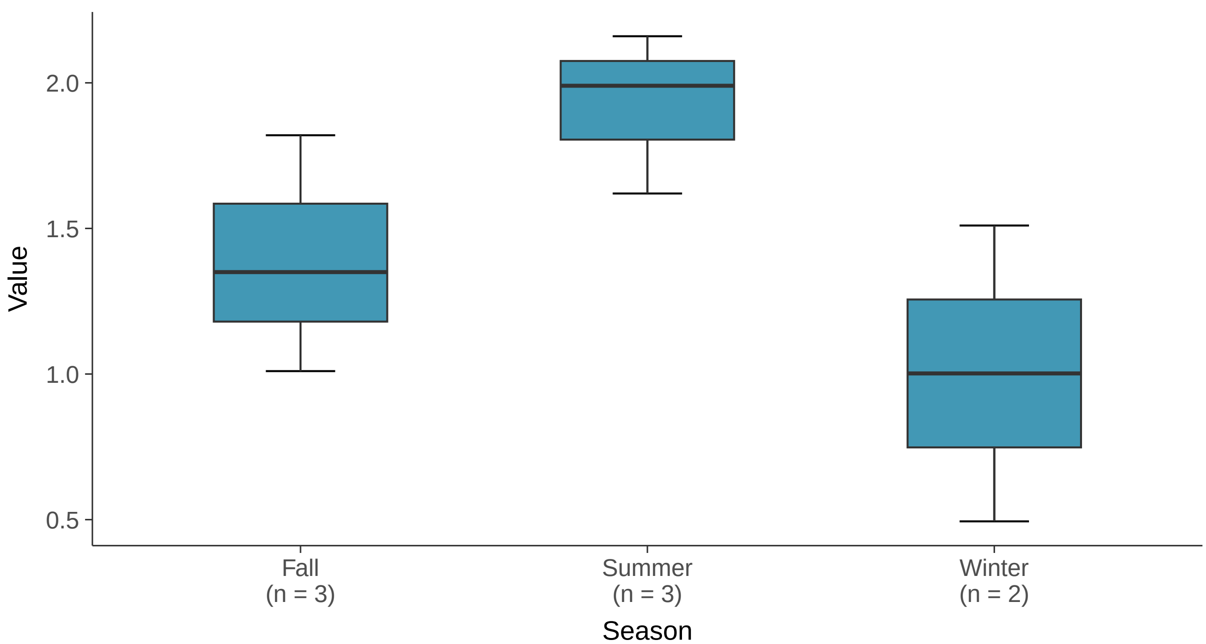
Boxplot

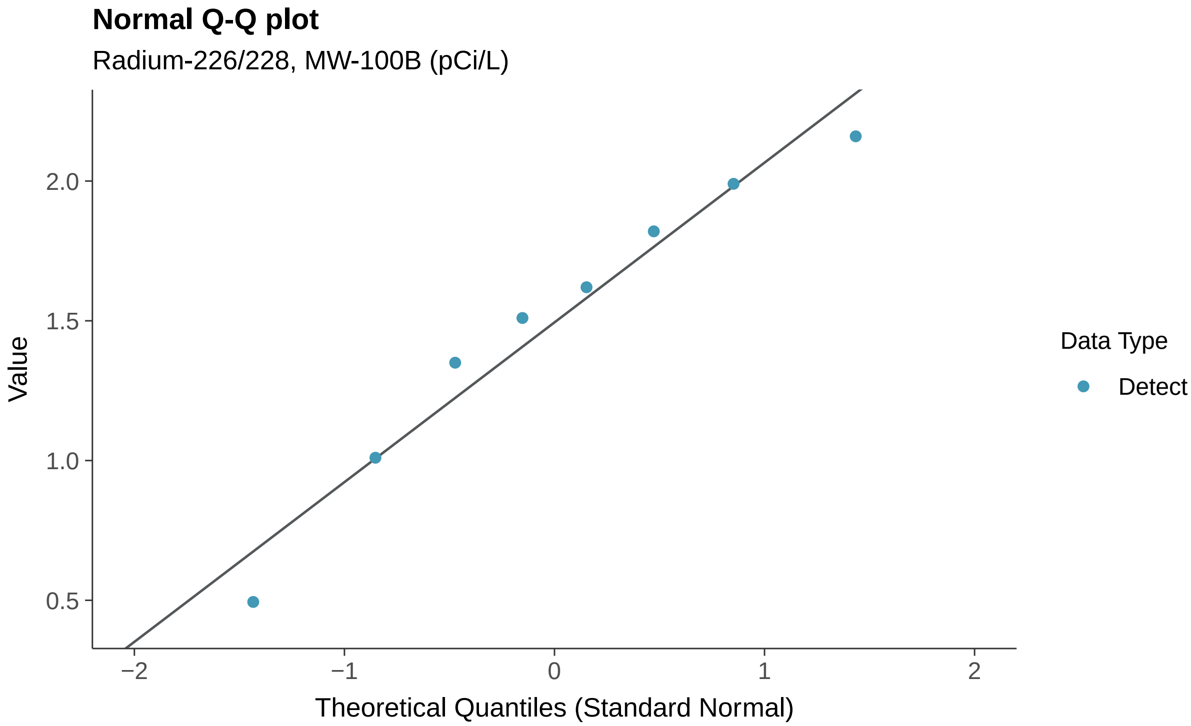
Radium-226/228, MW-100B (pCi/L)

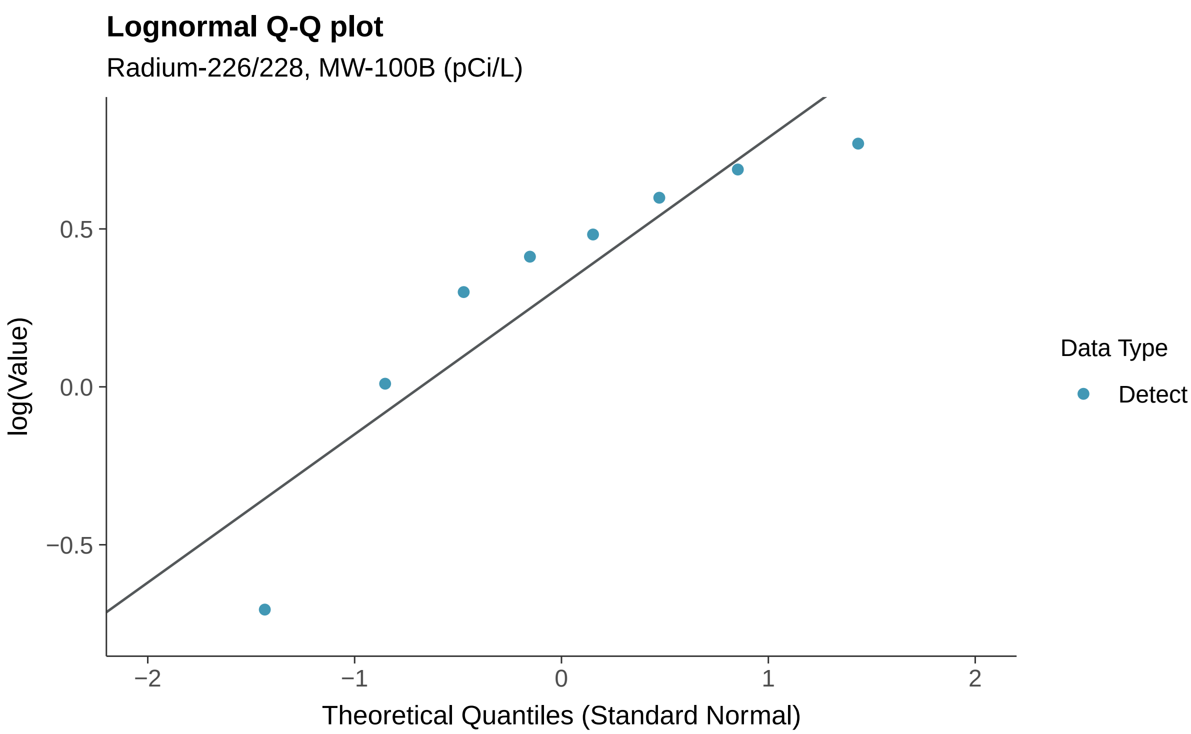


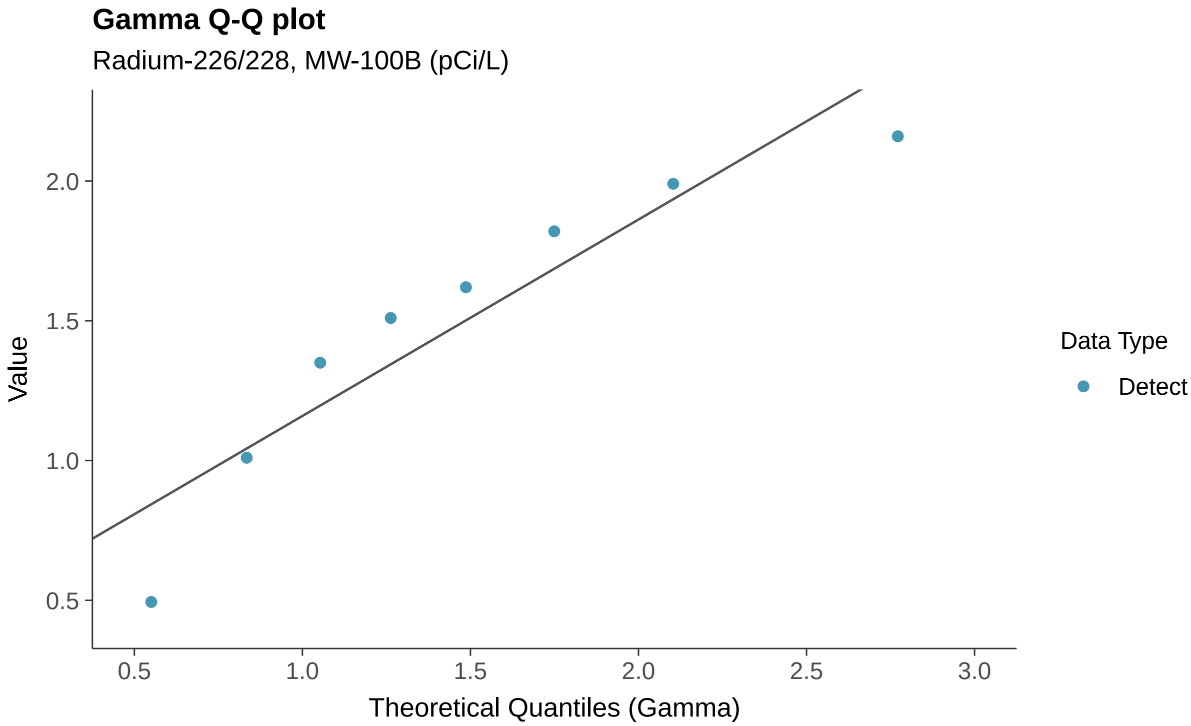
Boxplot by Season

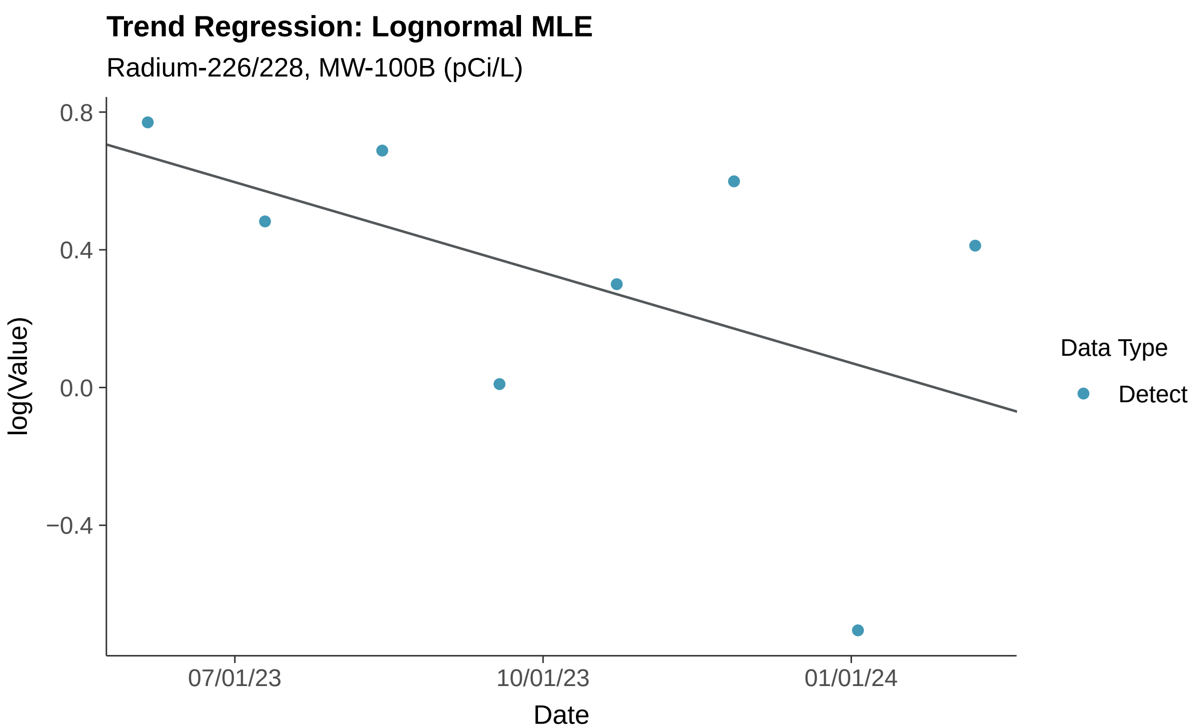
Radium-226/228, MW-100B (pCi/L)




Normal Q-Q plot
Radium-226/228, MW-100B (pCi/L)
Value
2.0
1.5
1.0
0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

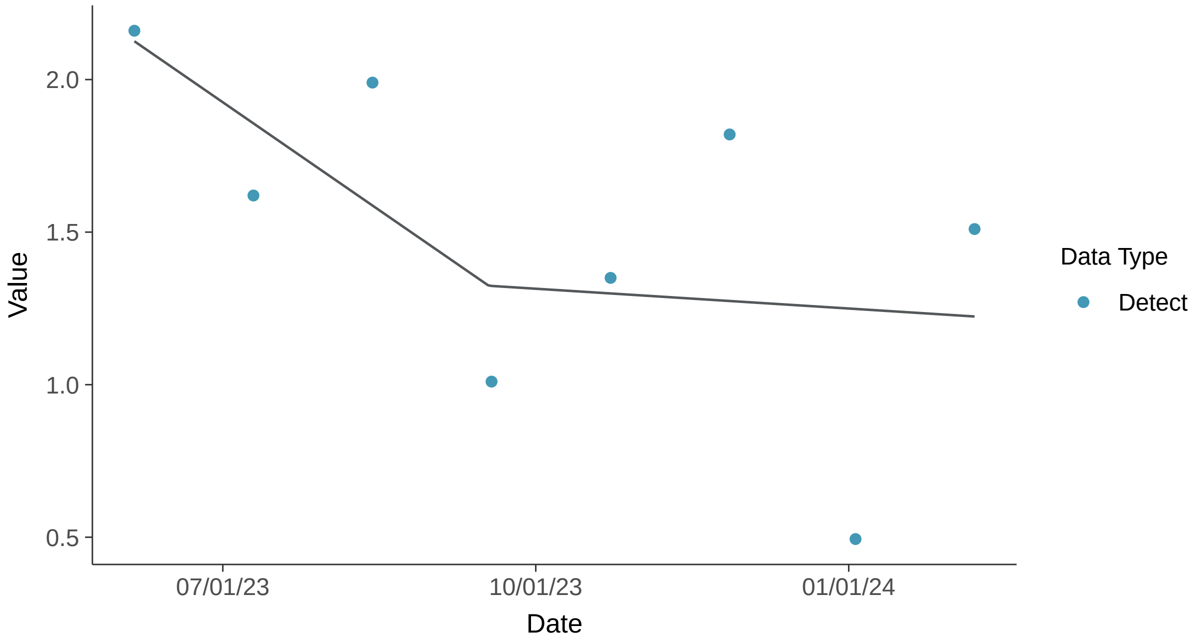

Lognormal Q-Q plot
Radium-226/228, MW-100B (pCi/L)
log(Value)
0.5
0.0
−0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Radium-226/228, MW-100B (pCi/L)
Value
2.0
1.5
1.0
0.5
0.5
1.0
1.5
2.0
2.5
3.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Radium-226/228, MW-100B (pCi/L)
log(Value)
0.8
0.4
0.0
−0.4
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Radium-226/228, MW-100B (pCi/L)

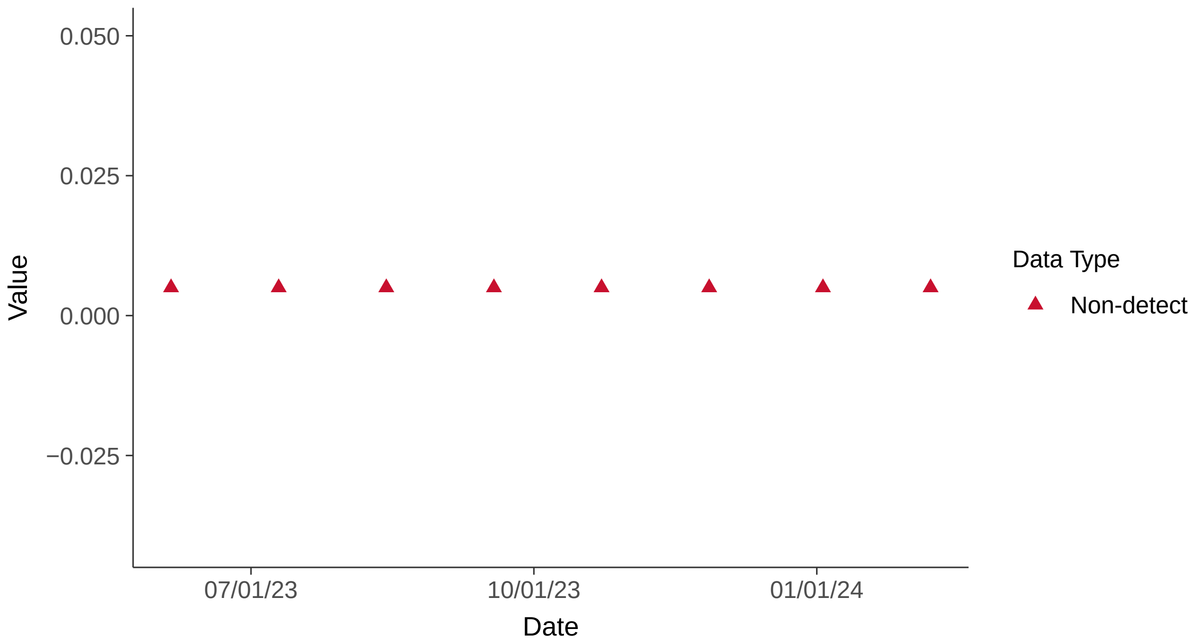


Appendix IV: Selenium, MW-100B

ID: 100B_2_22

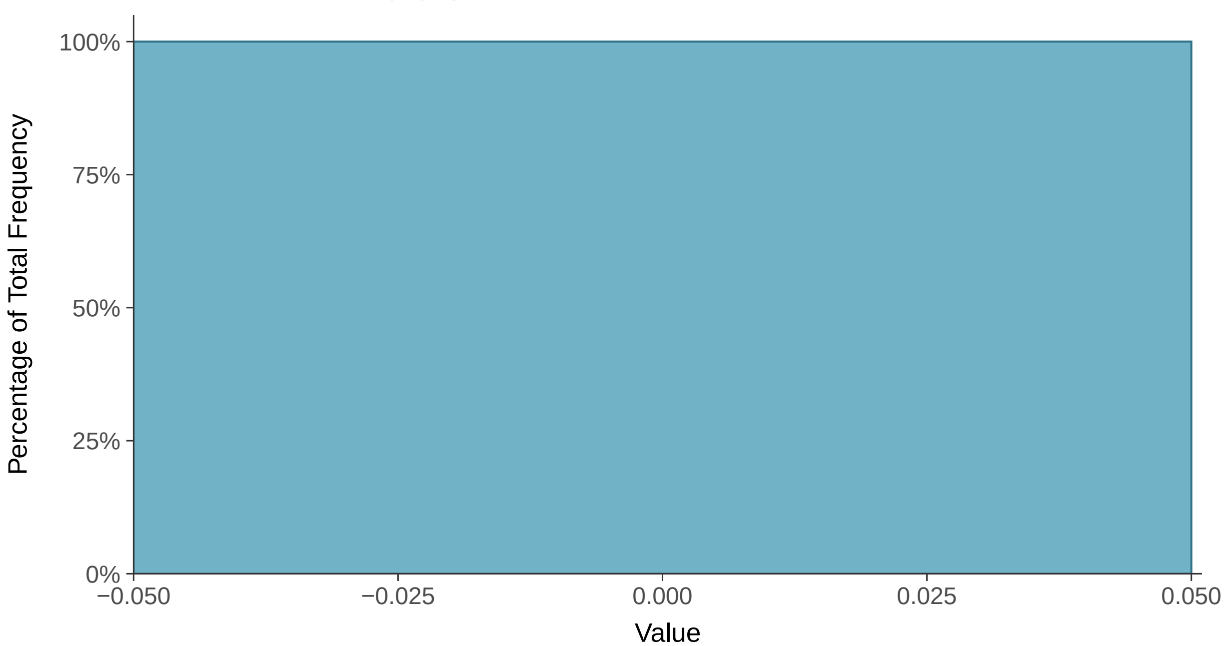
Scatter Plot

Selenium, MW-100B (mg/L)



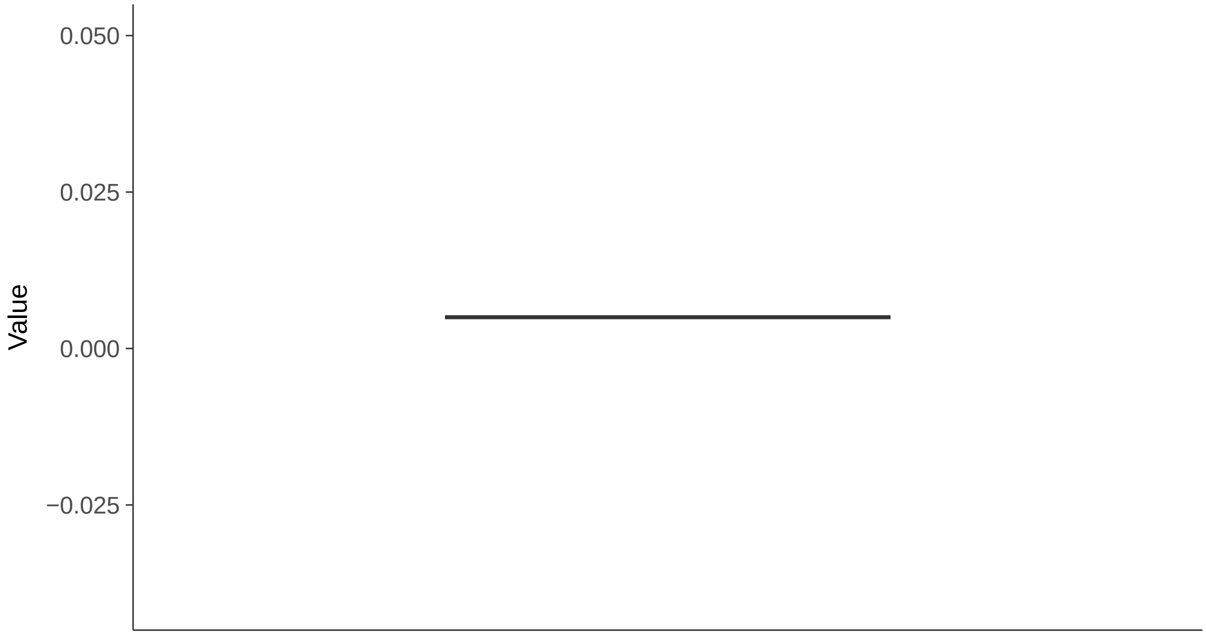
Histogram

Selenium, MW-100B (mg/L)



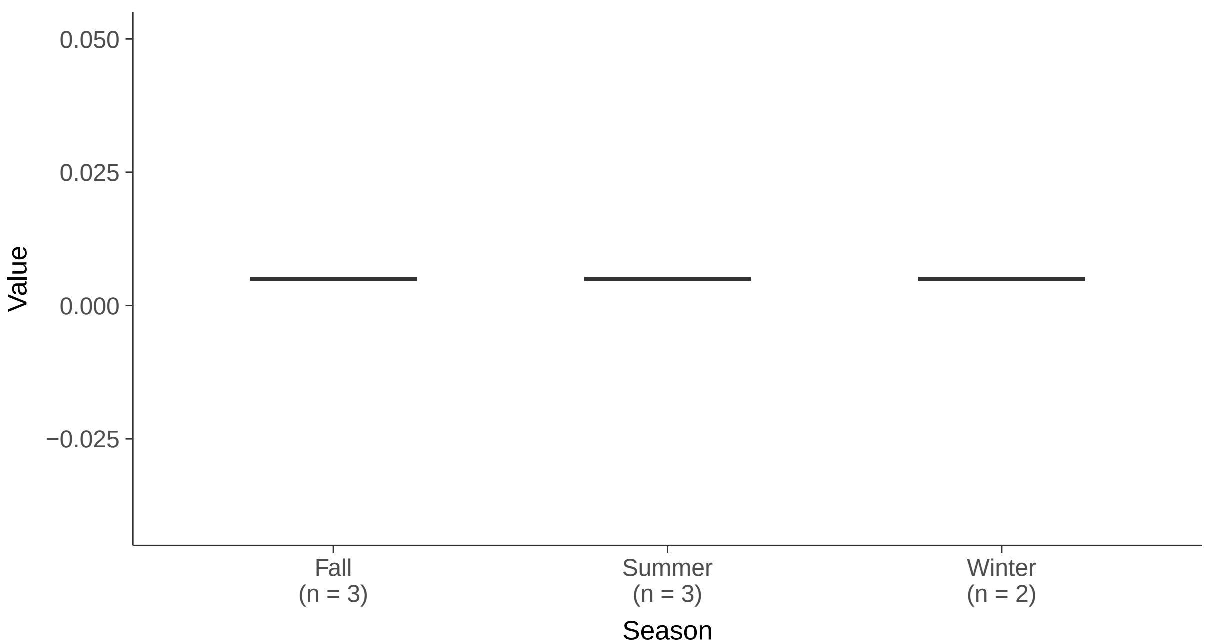
Boxplot

Selenium, MW-100B (mg/L)



Boxplot by Season

Selenium, MW-100B (mg/L)

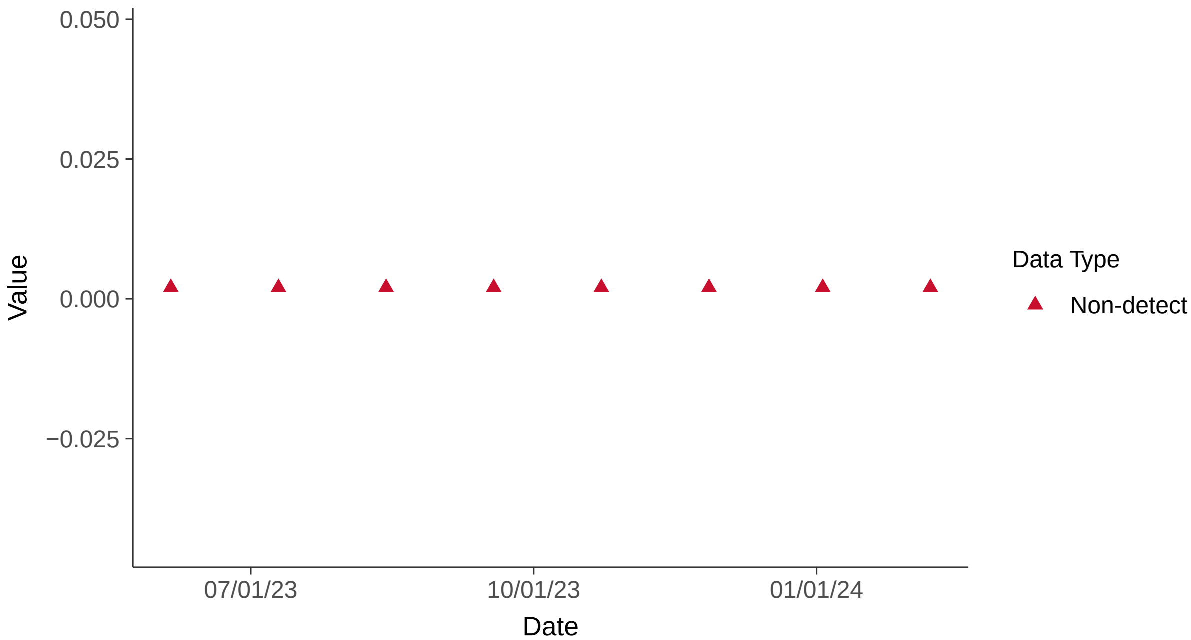


Appendix IV: Thallium, MW-100B

ID: 100B_2_23

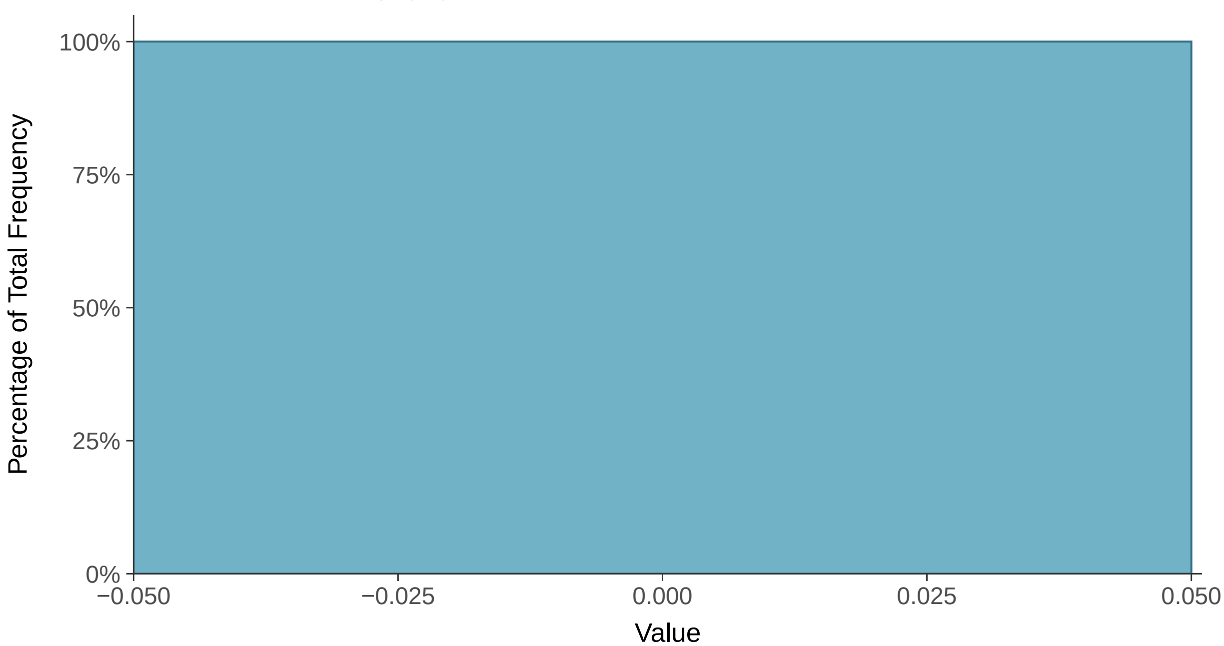
Scatter Plot

Thallium, MW-100B (mg/L)



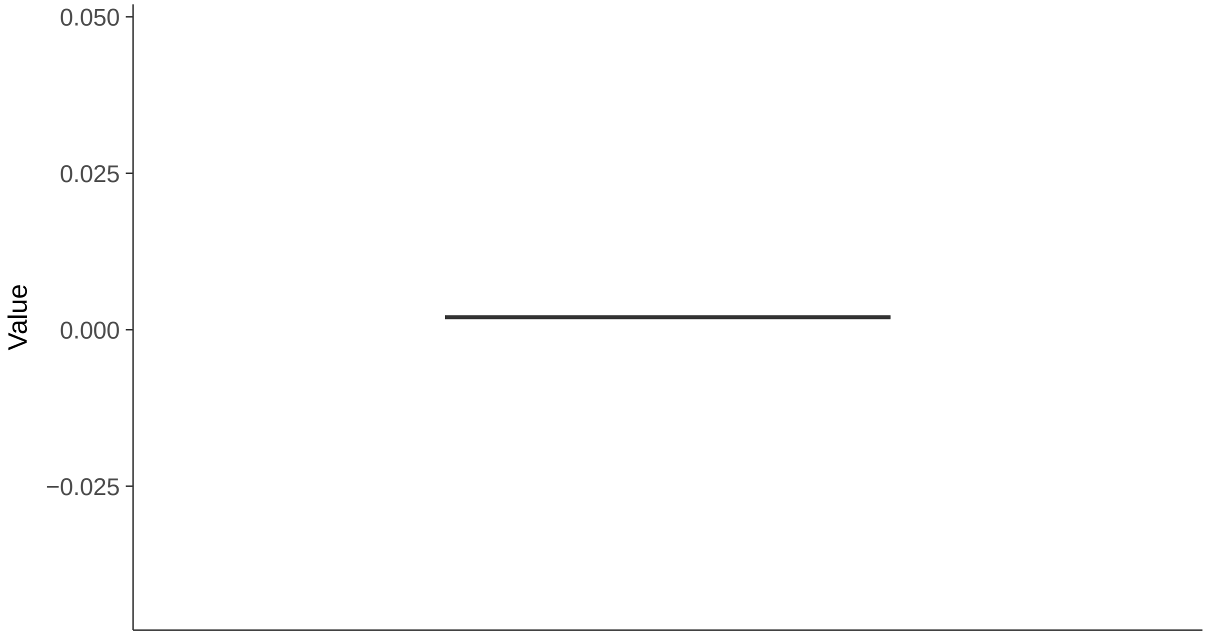
Histogram

Thallium, MW-100B (mg/L)



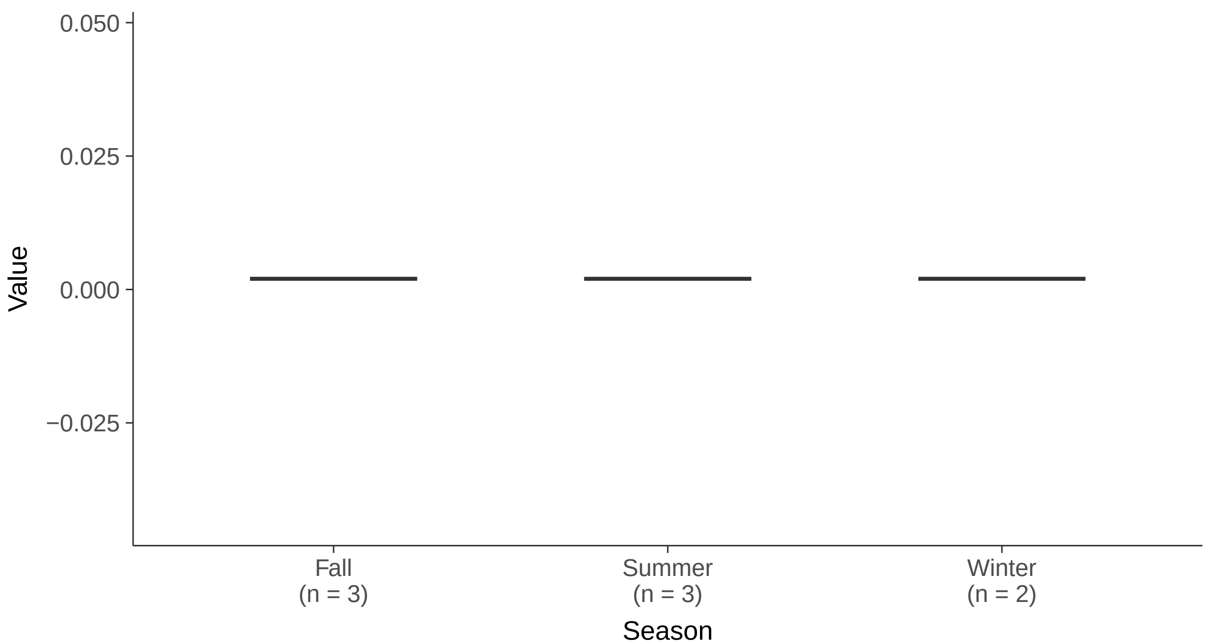
Boxplot

Thallium, MW-100B (mg/L)



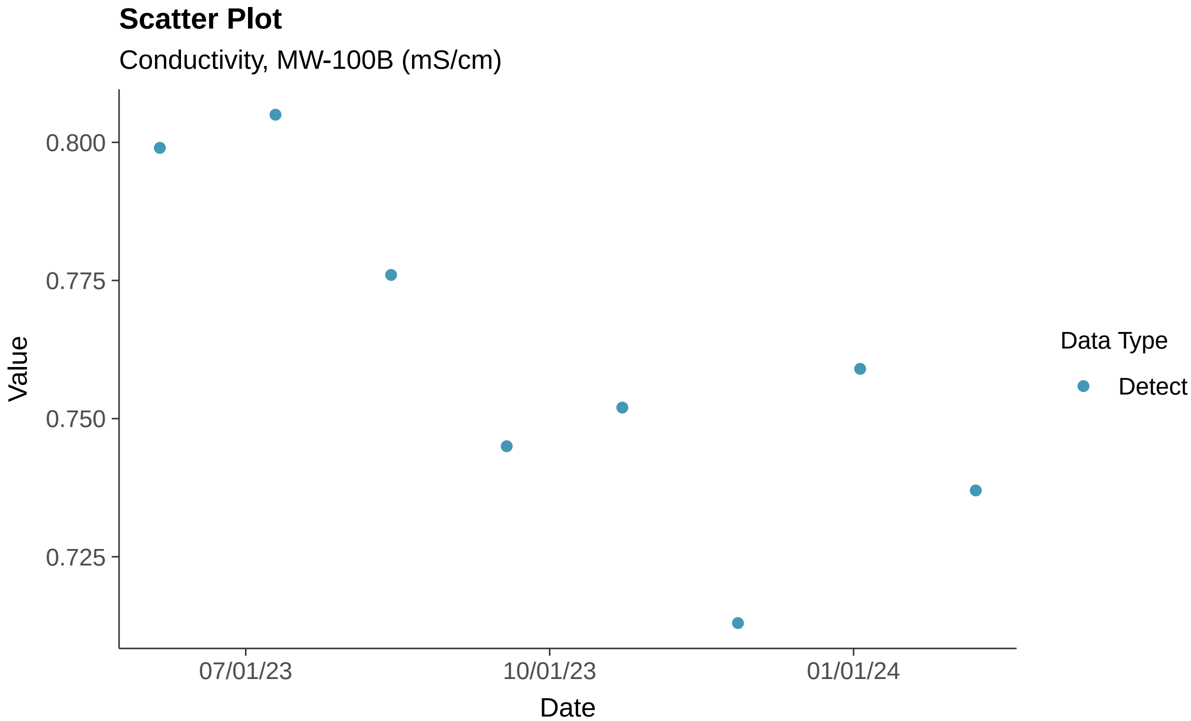
Boxplot by Season

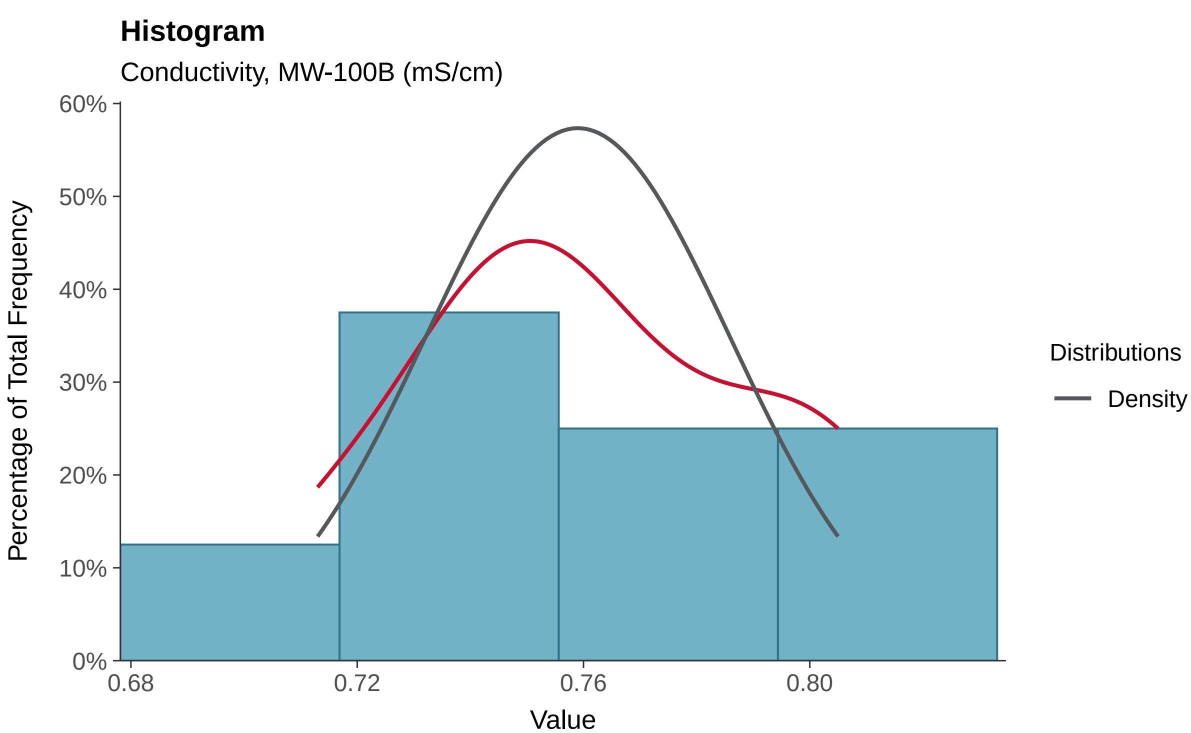
Thallium, MW-100B (mg/L)



Field Parameters: Conductivity, MW-100B

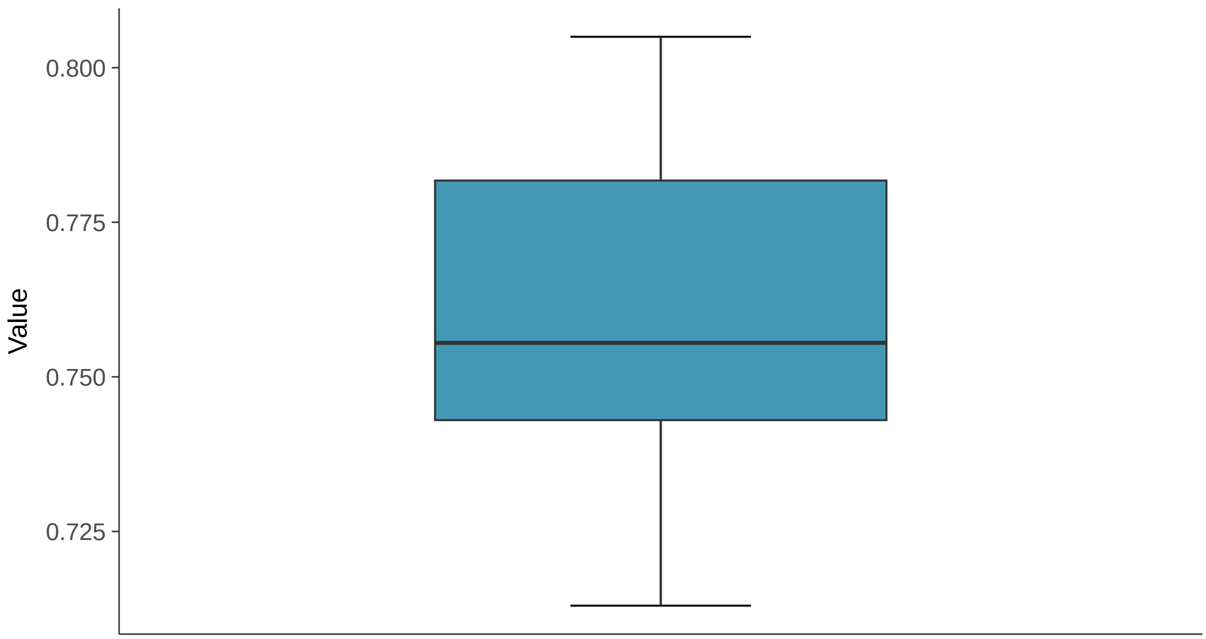
ID: 100B_3_24





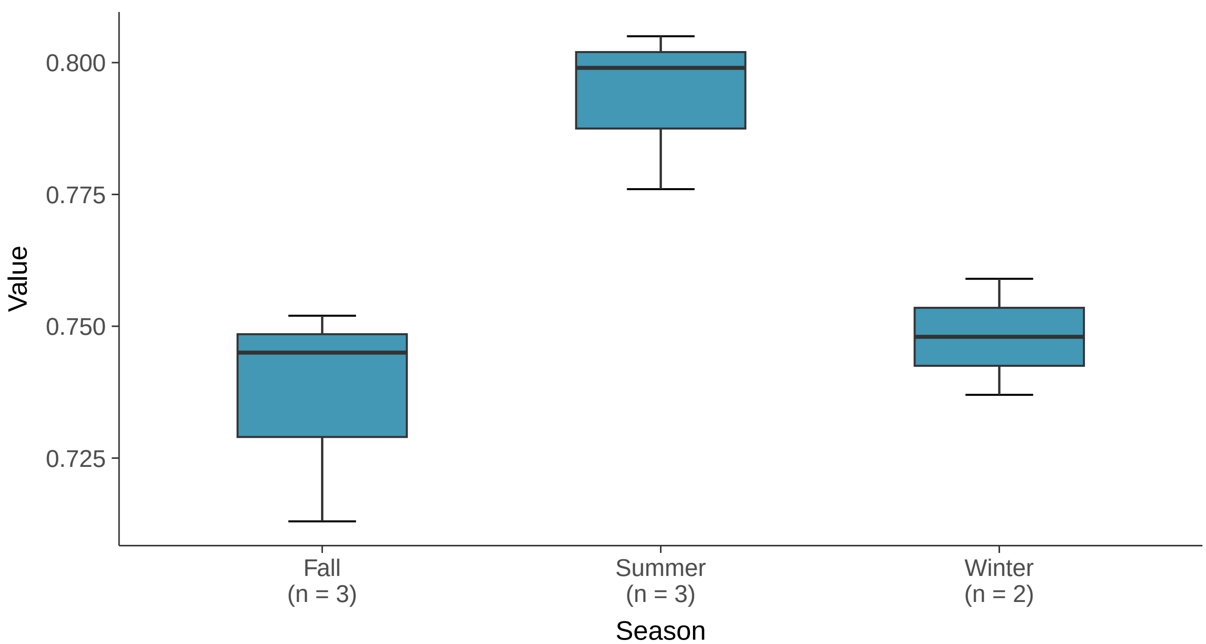
Boxplot

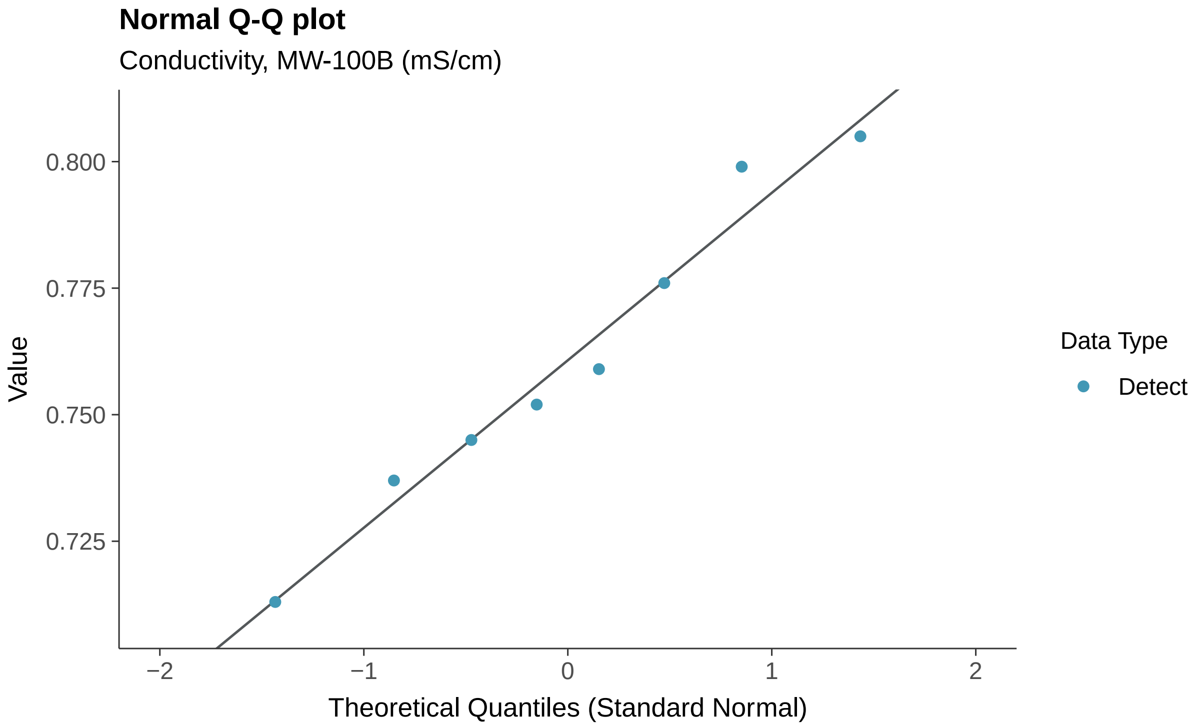
Conductivity, MW-100B (mS/cm)

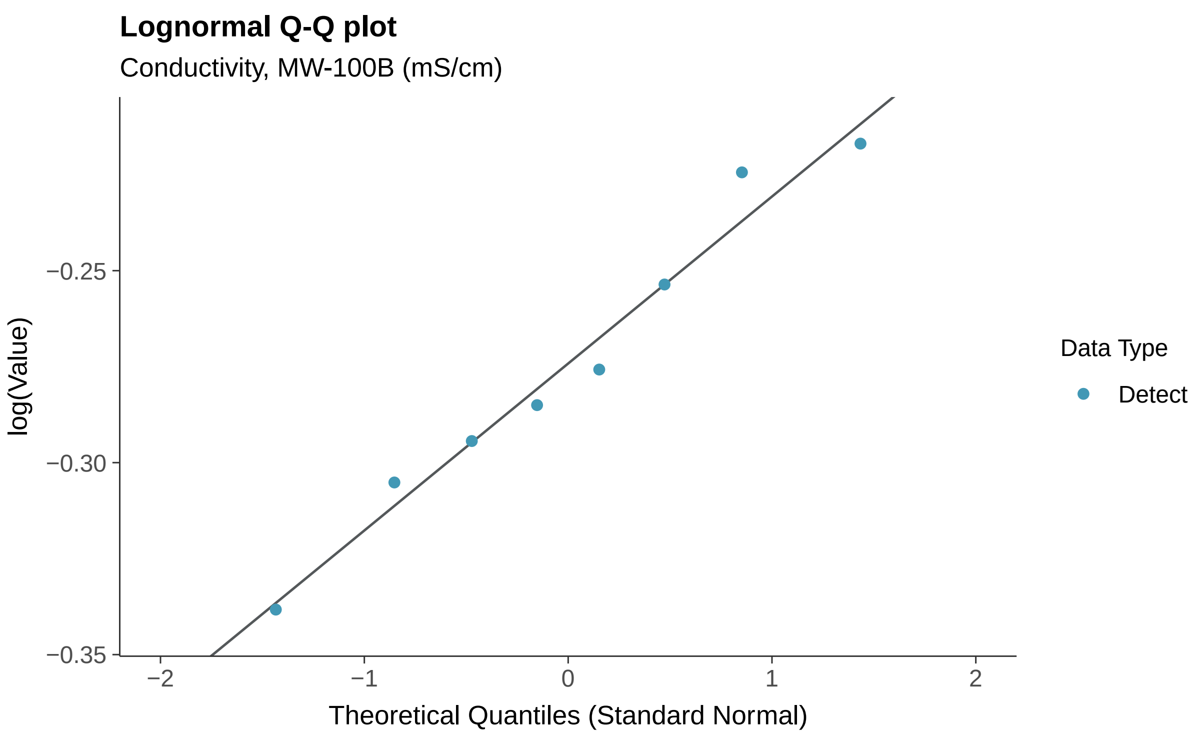


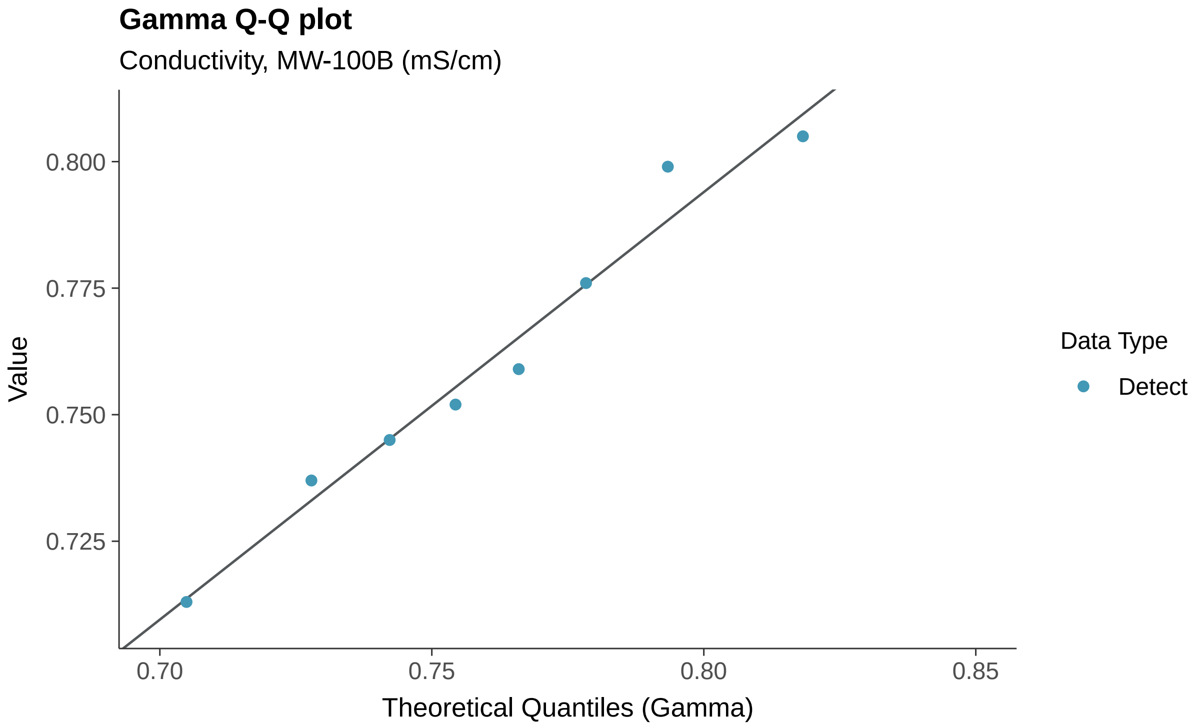
Boxplot by Season

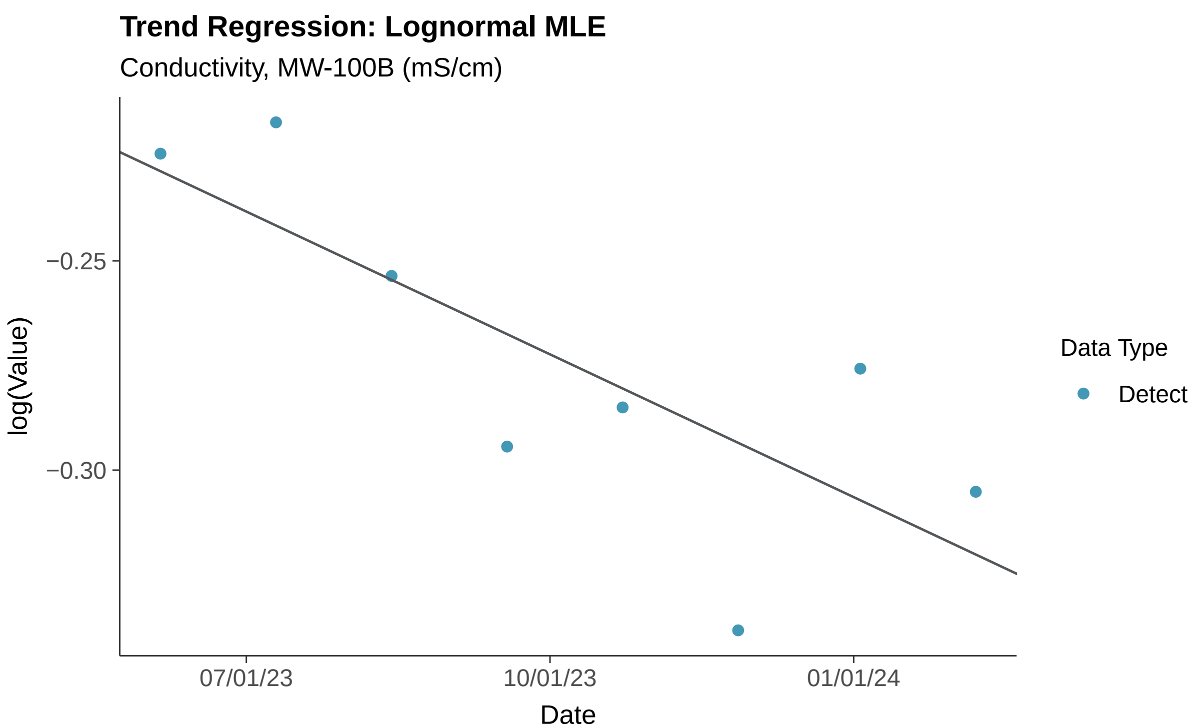
Conductivity, MW-100B (mS/cm)

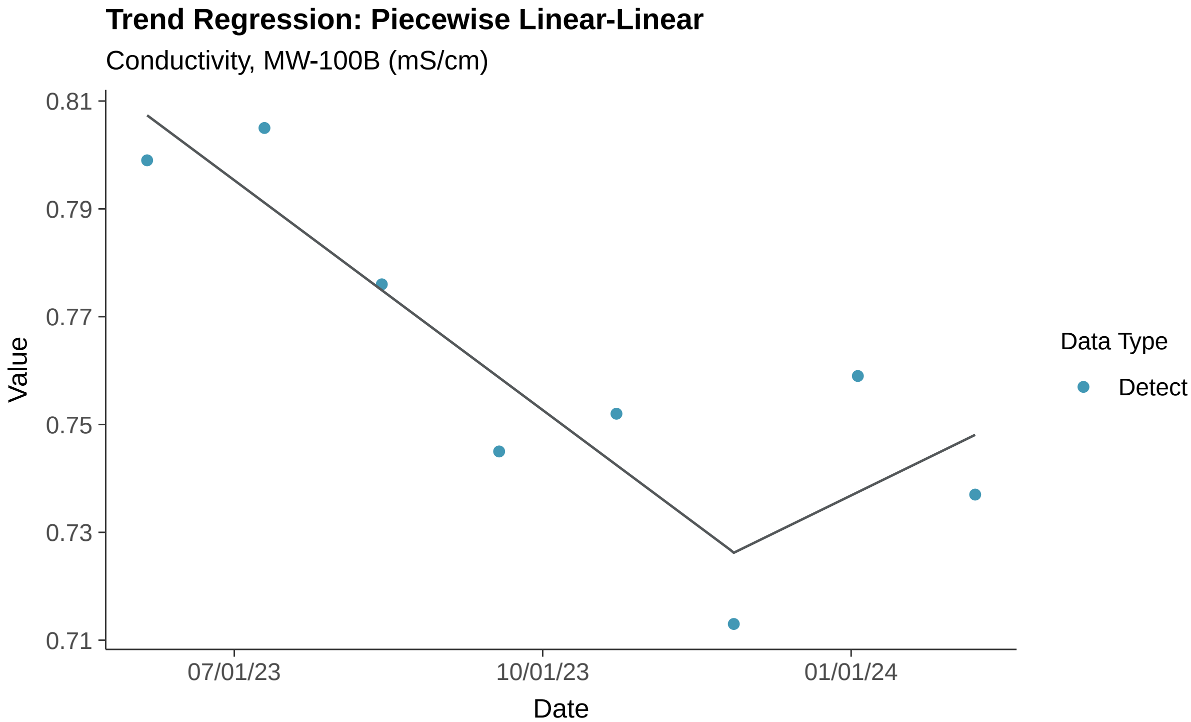


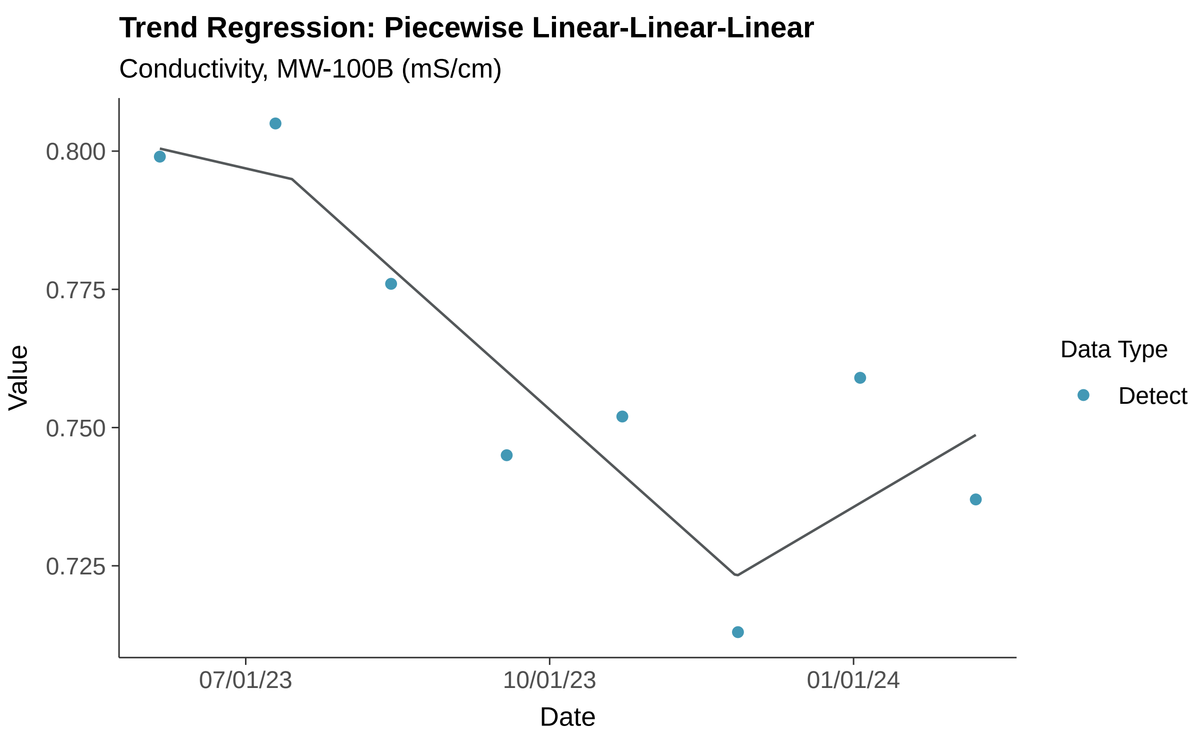

Normal Q-Q plot
Conductivity, MW-100B (mS/cm)
Value
0.800
0.775
0.750
0.725
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Conductivity, MW-100B (mS/cm)
log(Value)
−0.25
−0.30
−0.35
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Conductivity, MW-100B (mS/cm)
Value
0.800
0.775
0.750
0.725
0.70
0.75
0.80
0.85
Theoretical Quantiles (Gamma)
Data Type
Detect

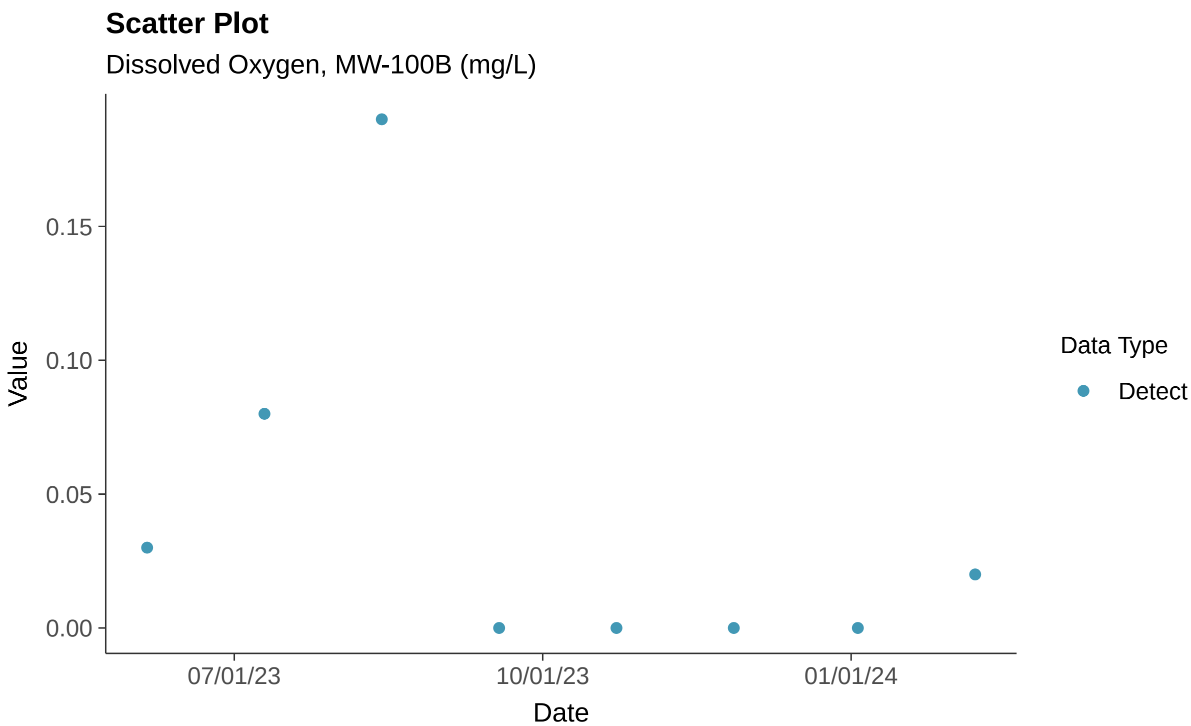

Trend Regression: Lognormal MLE
Conductivity, MW-100B (mS/cm)
log(Value)
−0.25
−0.30
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

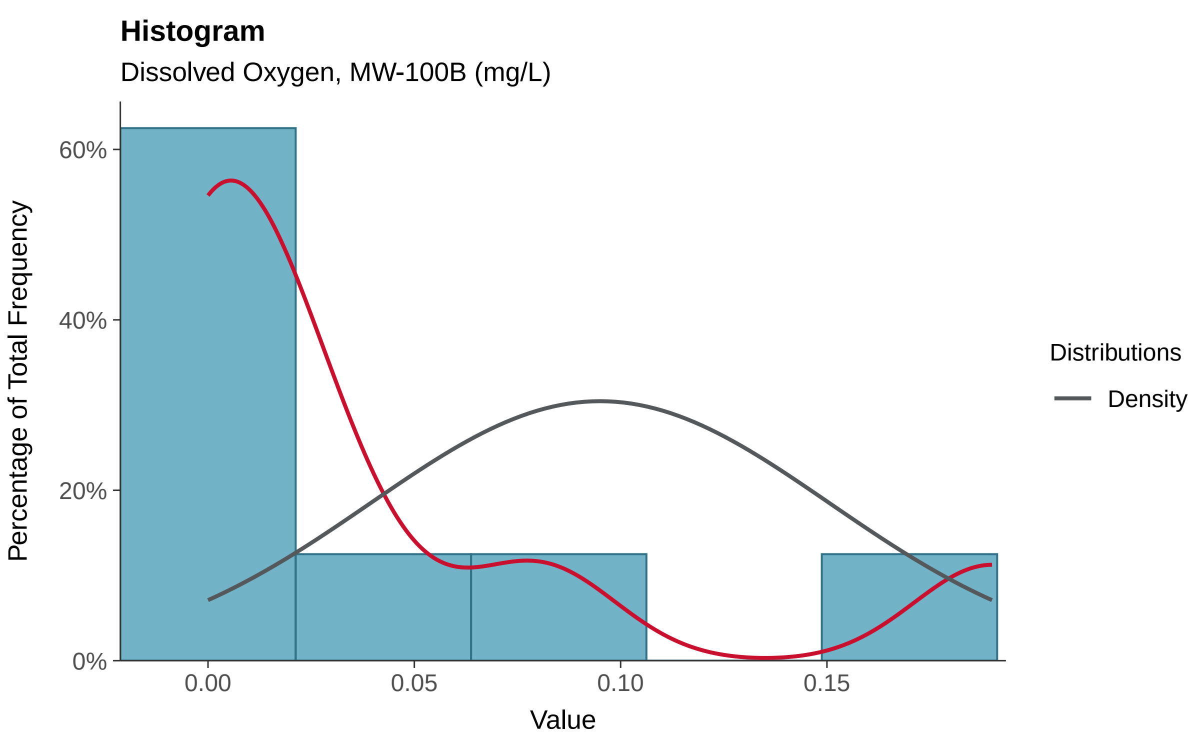

Trend Regression: Piecewise Linear-Linear
Conductivity, MW-100B (mS/cm)
0.81
0.79
0.77
0.75
0.73
0.71
Value
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Conductivity, MW-100B (mS/cm)
0.800
0.775
0.750
0.725
Value
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Dissolved Oxygen, MW-100B

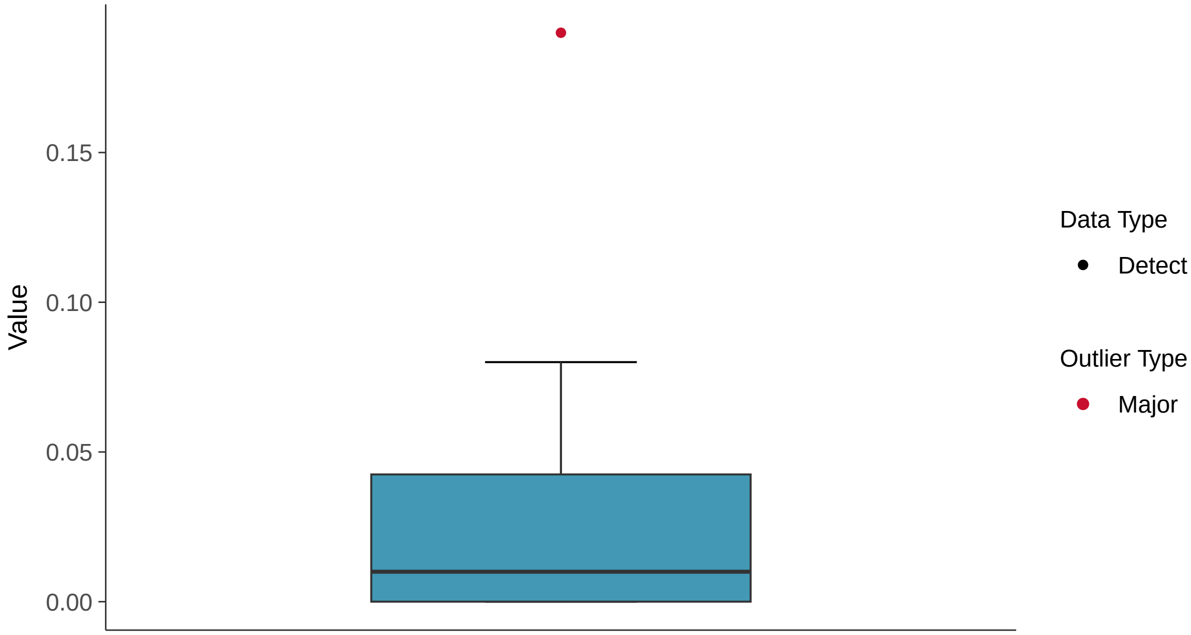
ID: 100B_3_25





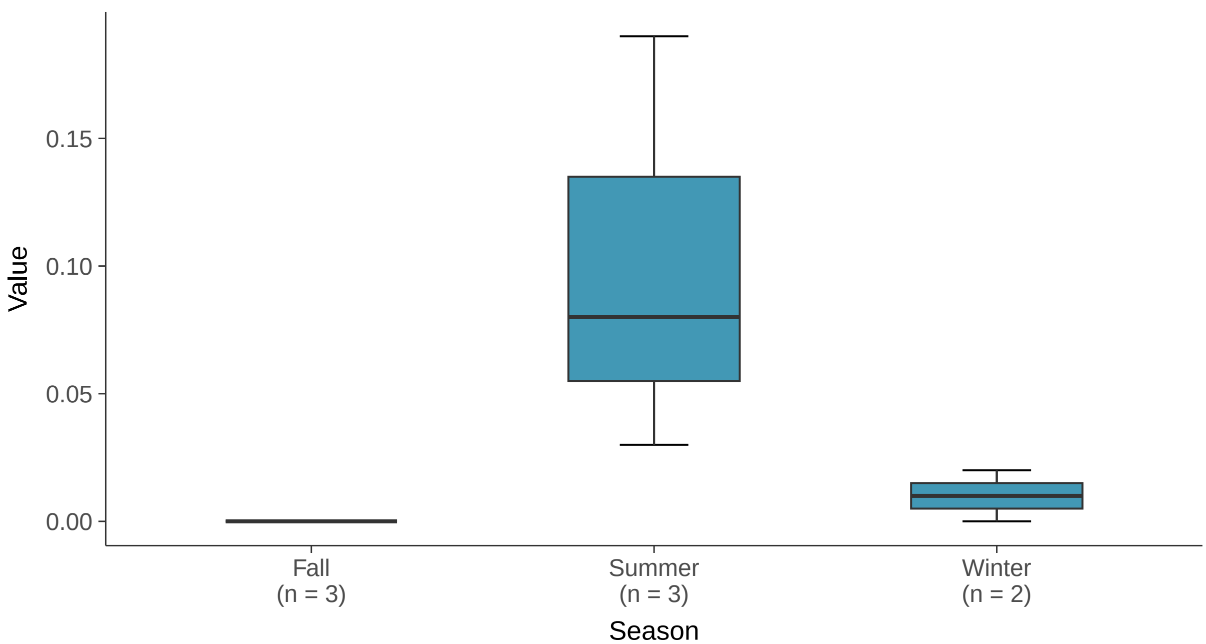
Boxplot

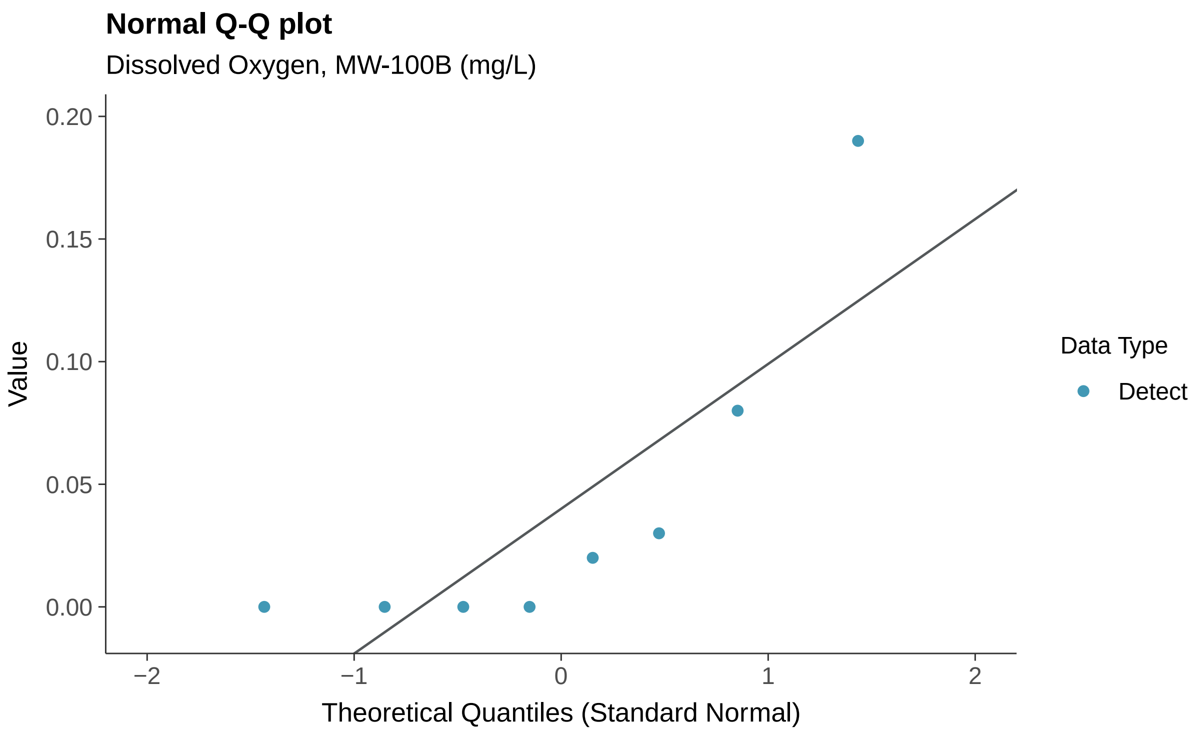
Dissolved Oxygen, MW-100B (mg/L)

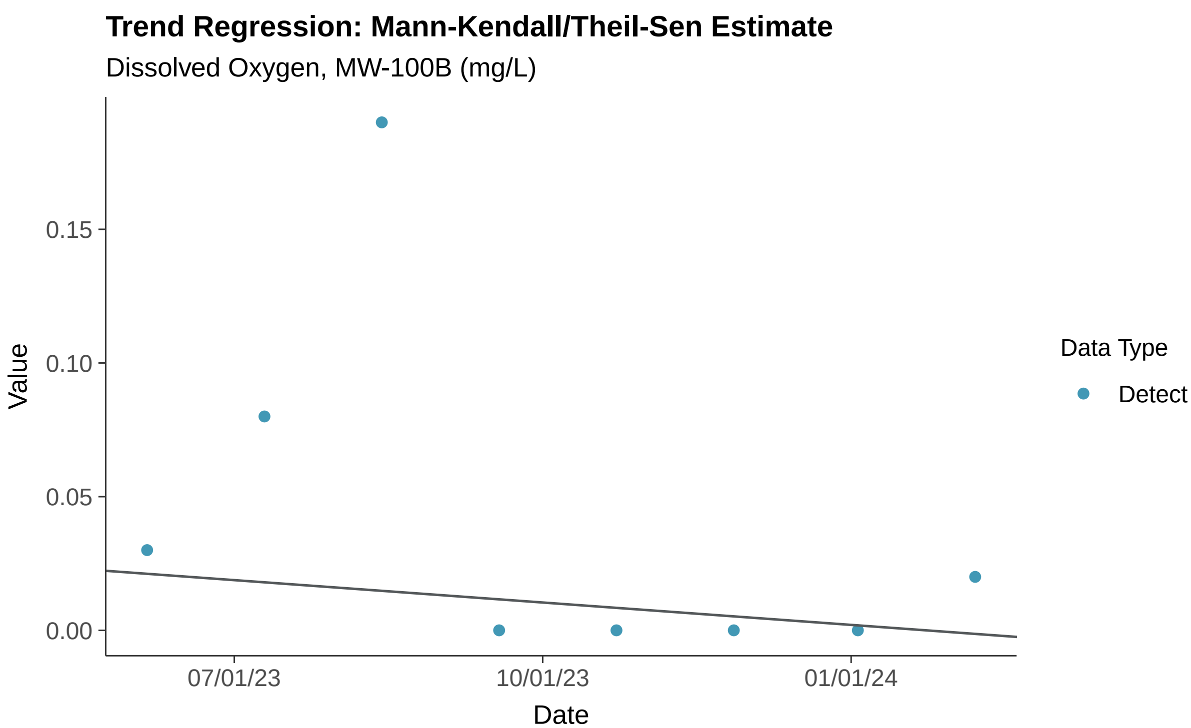


Boxplot by Season

Dissolved Oxygen, MW-100B (mg/L)

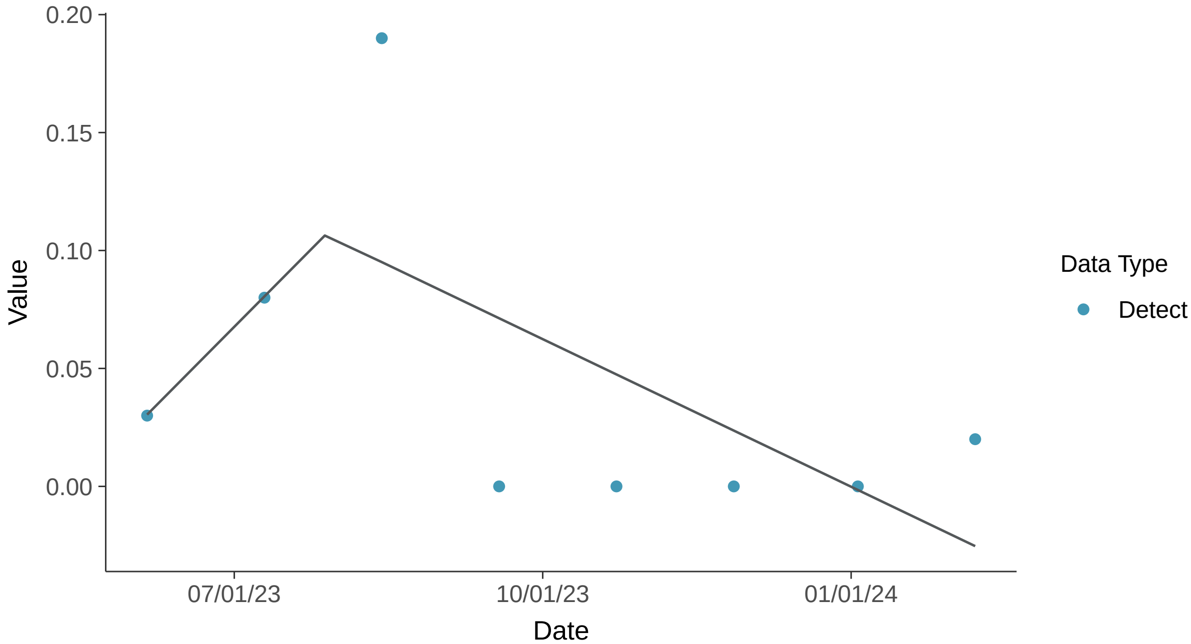



Normal Q-Q plot
Dissolved Oxygen, MW-100B (mg/L)
Value
0.20
0.15
0.10
0.05
0.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Dissolved Oxygen, MW-100B (mg/L)
Value
0.15
0.10
0.05
0.00
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Dissolved Oxygen, MW-100B (mg/L)

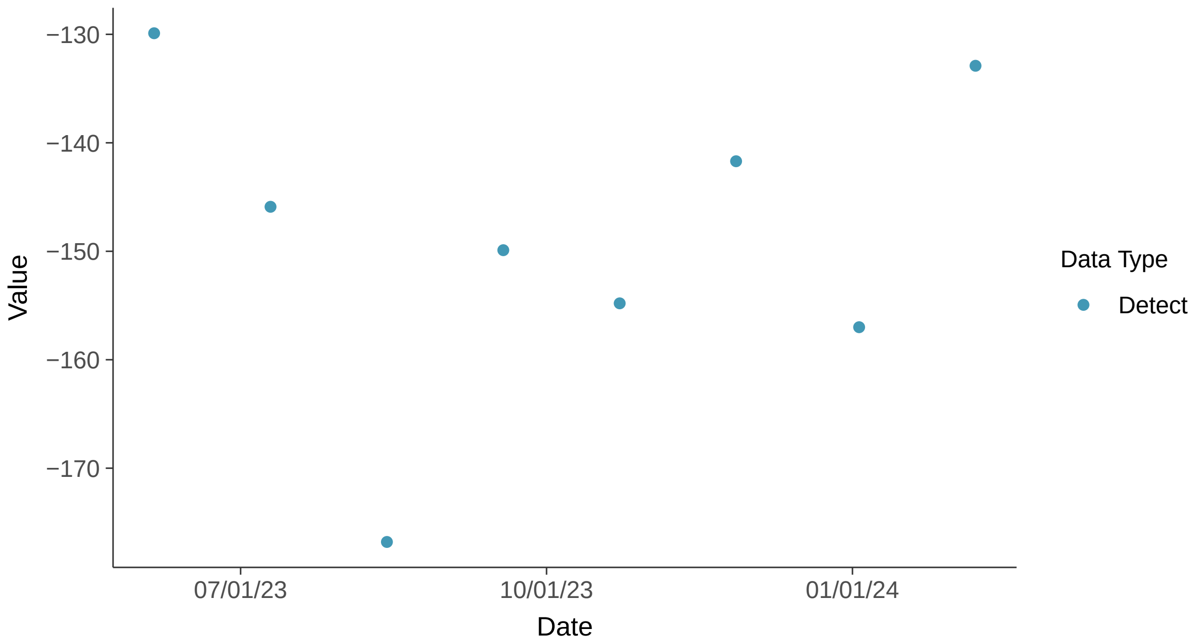


Field Parameters: Oxidation Reduction Potential, MW-100B

ID: 100B_3_26

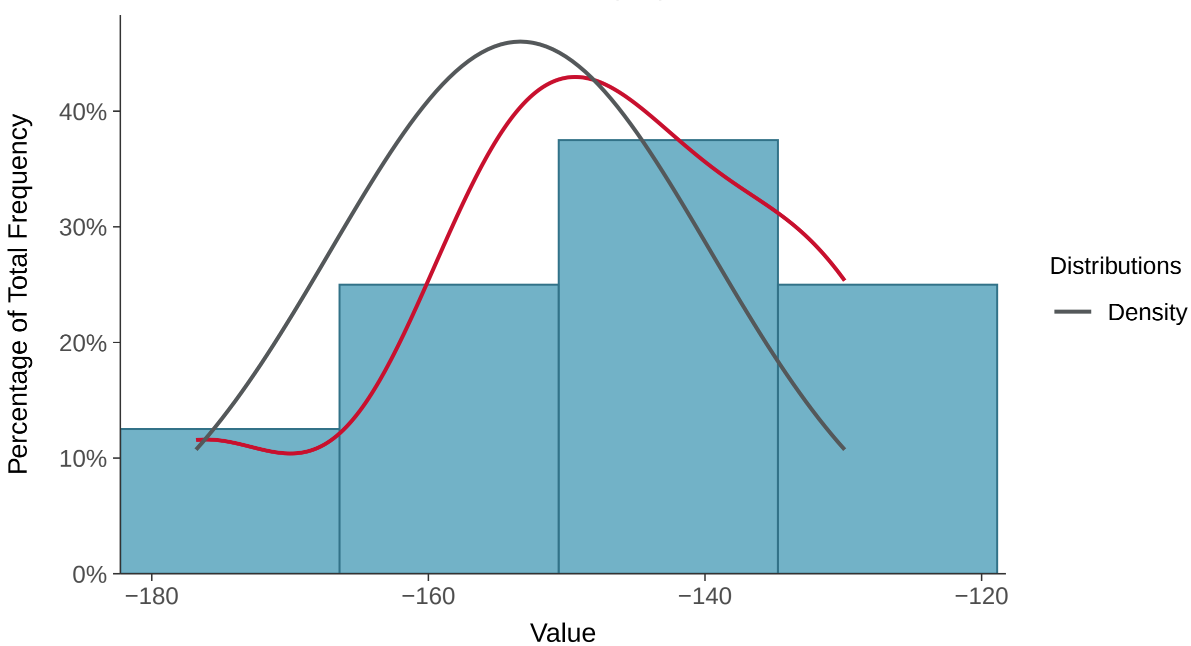
Scatter Plot

Oxidation Reduction Potential, MW-100B (mV)



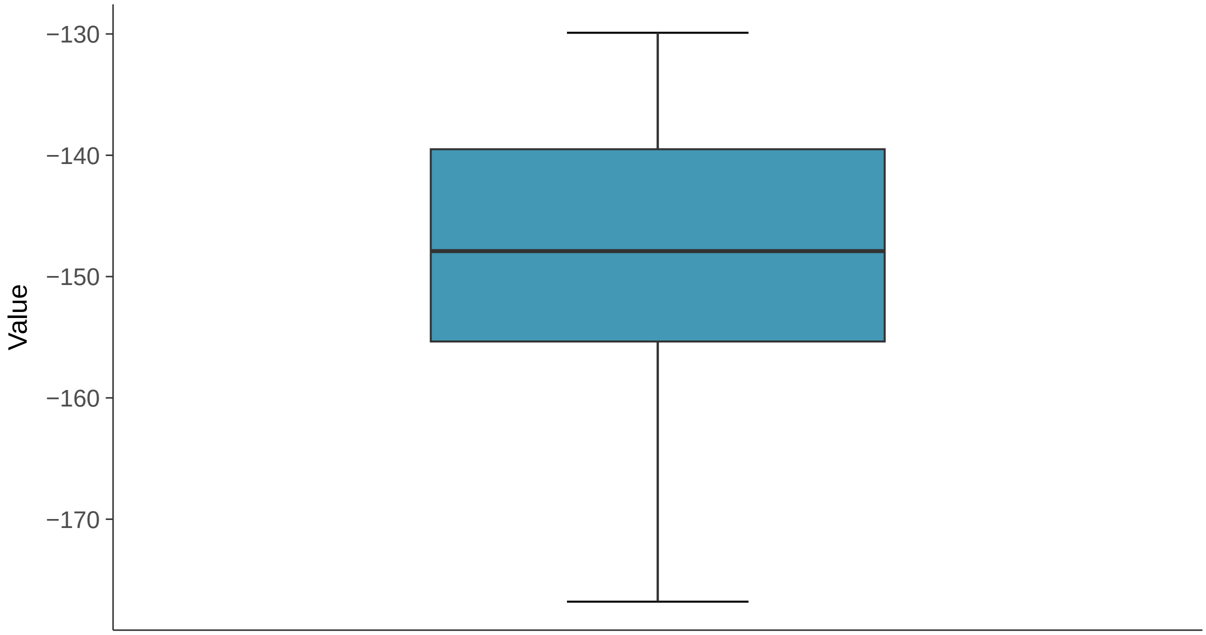
Histogram

Oxidation Reduction Potential, MW-100B (mV)



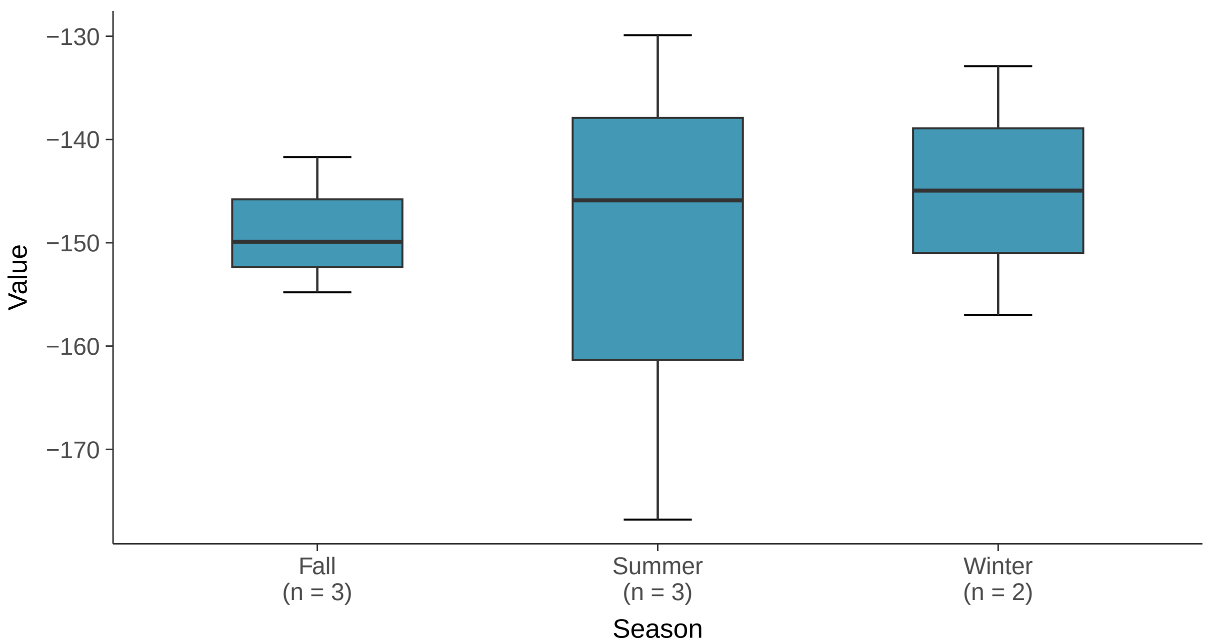
Boxplot

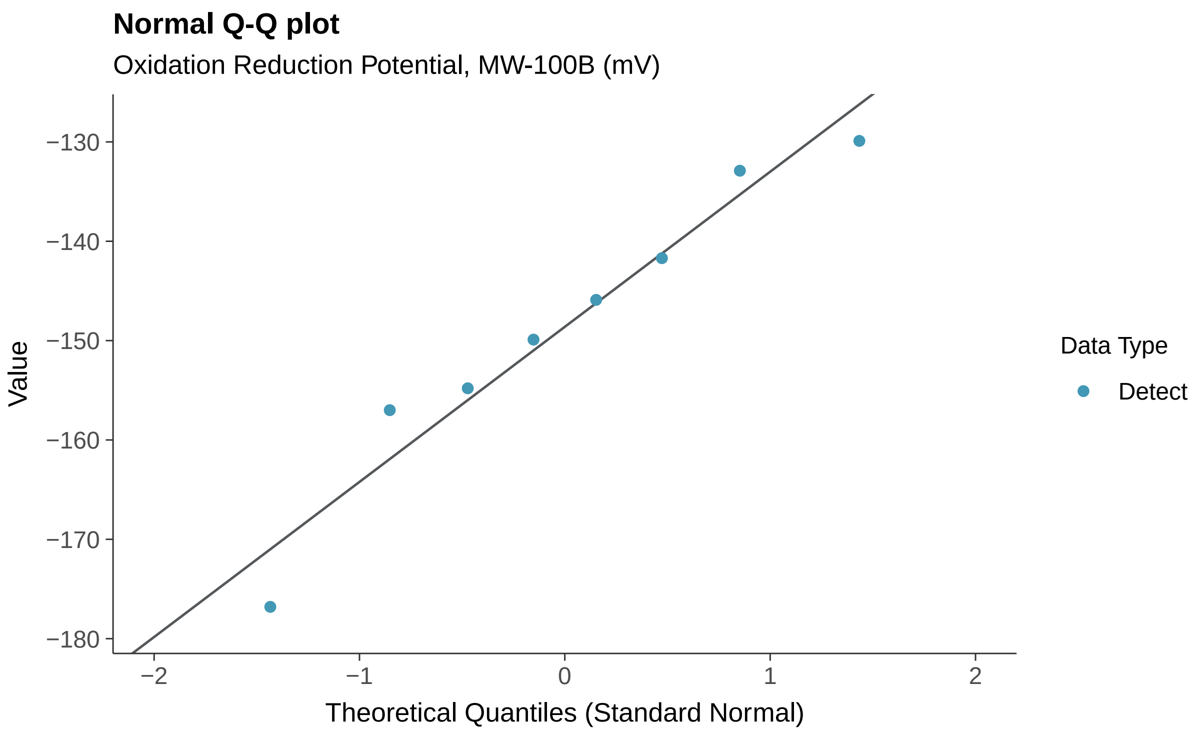
Oxidation Reduction Potential, MW-100B (mV)

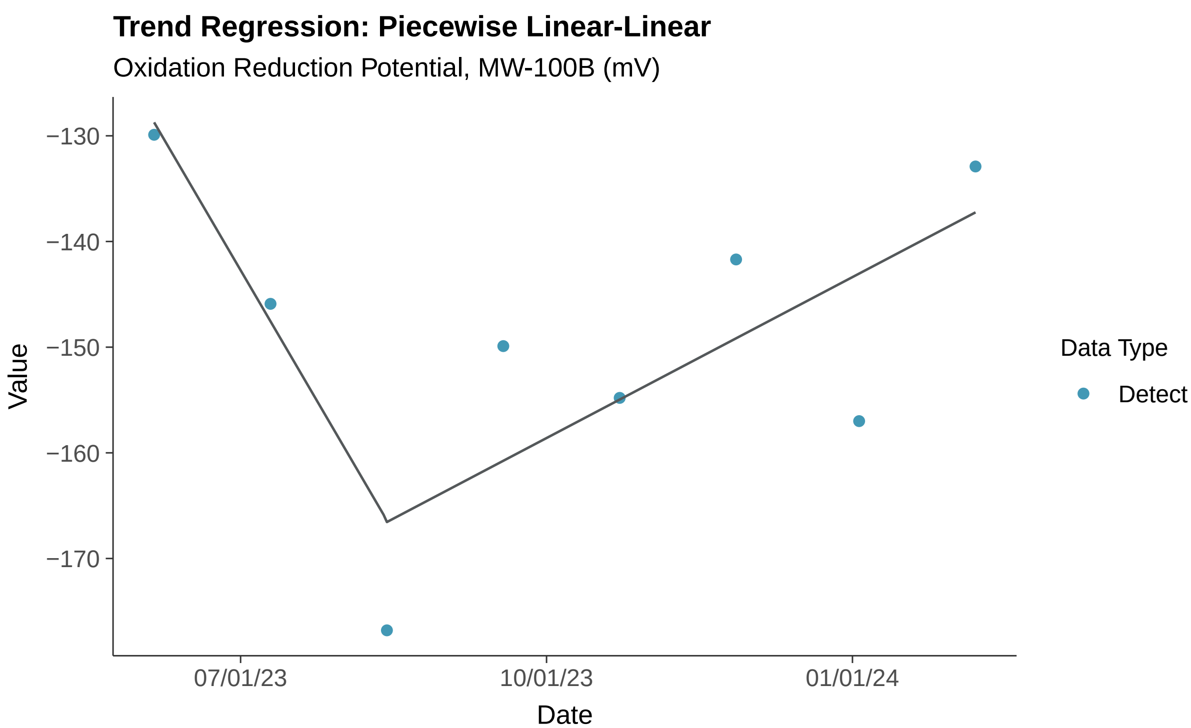


Boxplot by Season

Oxidation Reduction Potential, MW-100B (mV)

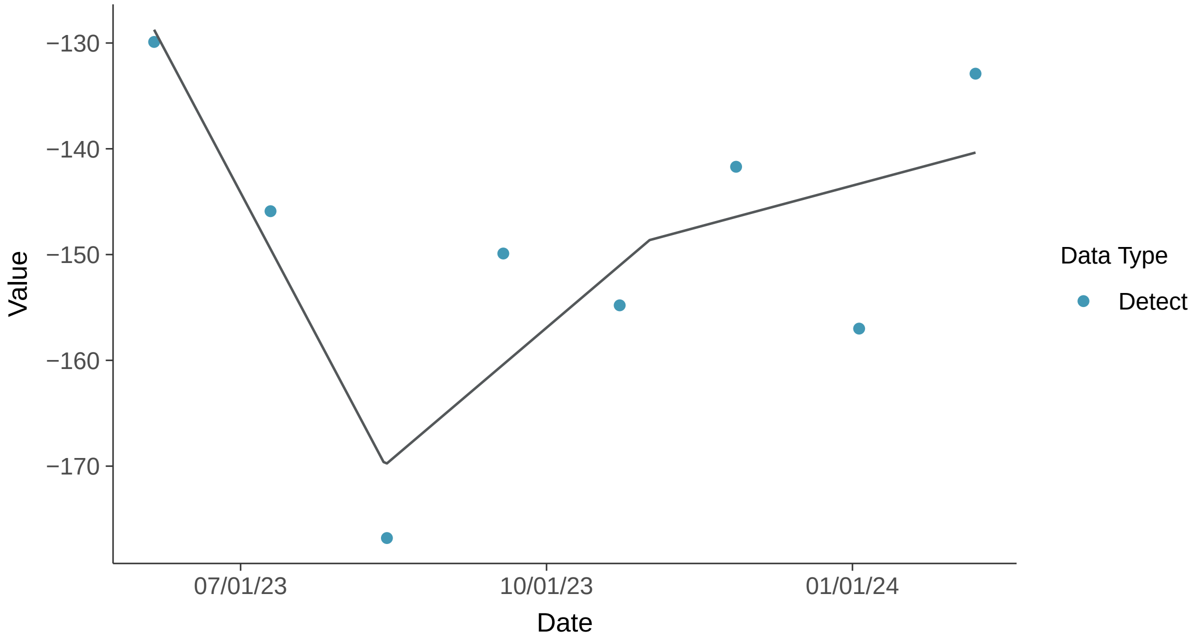



Normal Q-Q plot
Oxidation Reduction Potential, MW-100B (mV)
Value
−130
−140
−150
−160
−170
−180
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Oxidation Reduction Potential, MW-100B (mV)
Value
−130
−140
−150
−160
−170
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

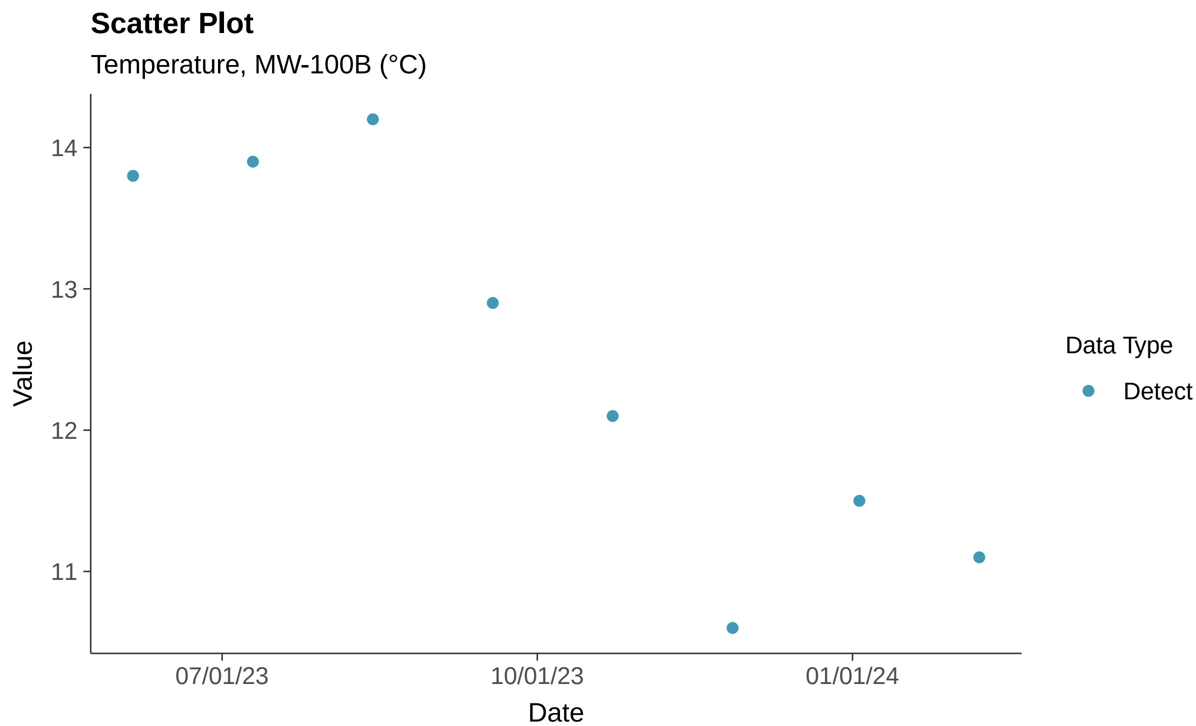
Trend Regression: Piecewise Linear-Linear-Linear

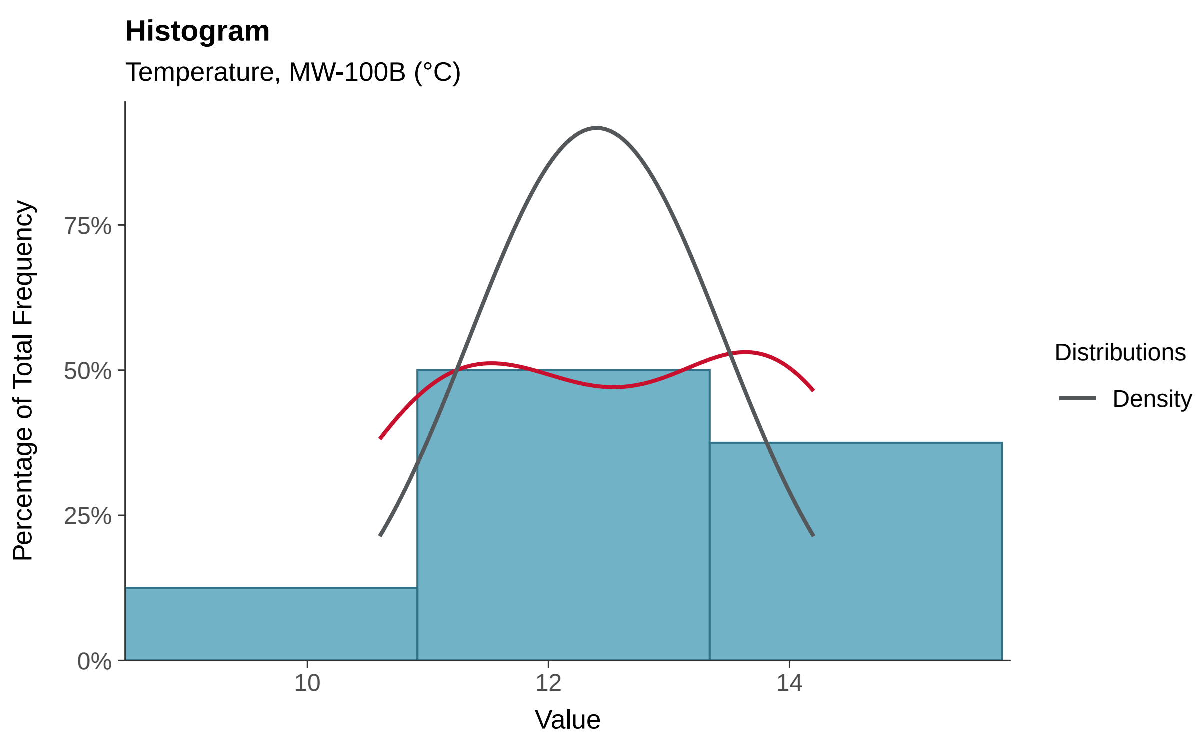
Oxidation Reduction Potential, MW-100B (mV)



Field Parameters: Temperature, MW-100B

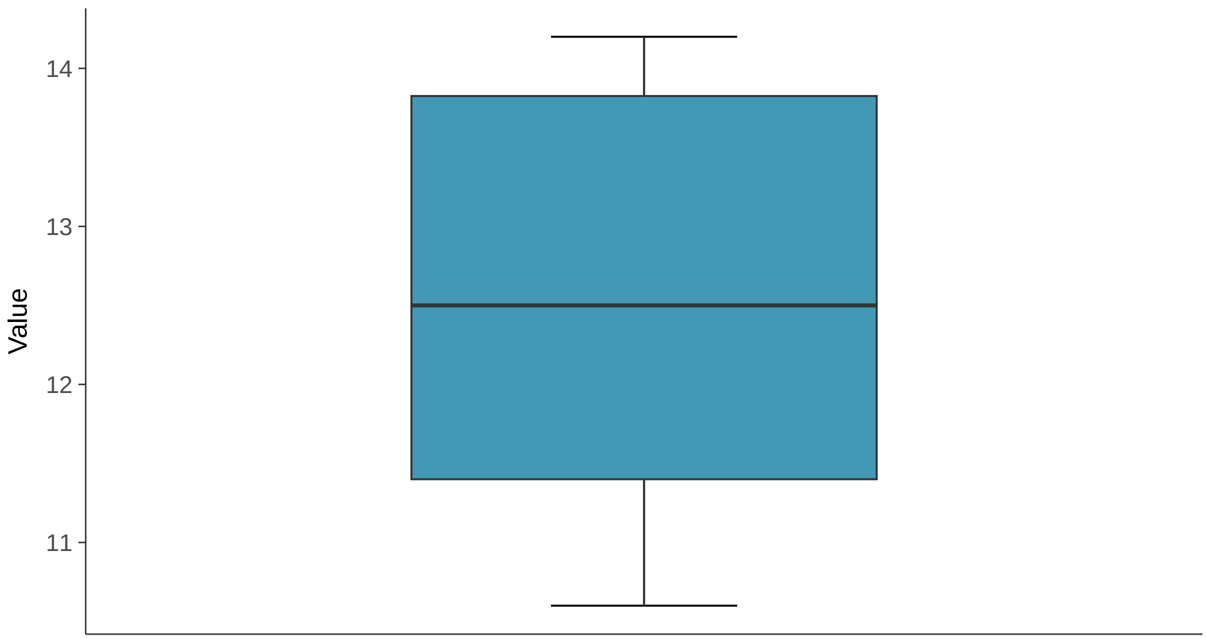
ID: 100B_3_27





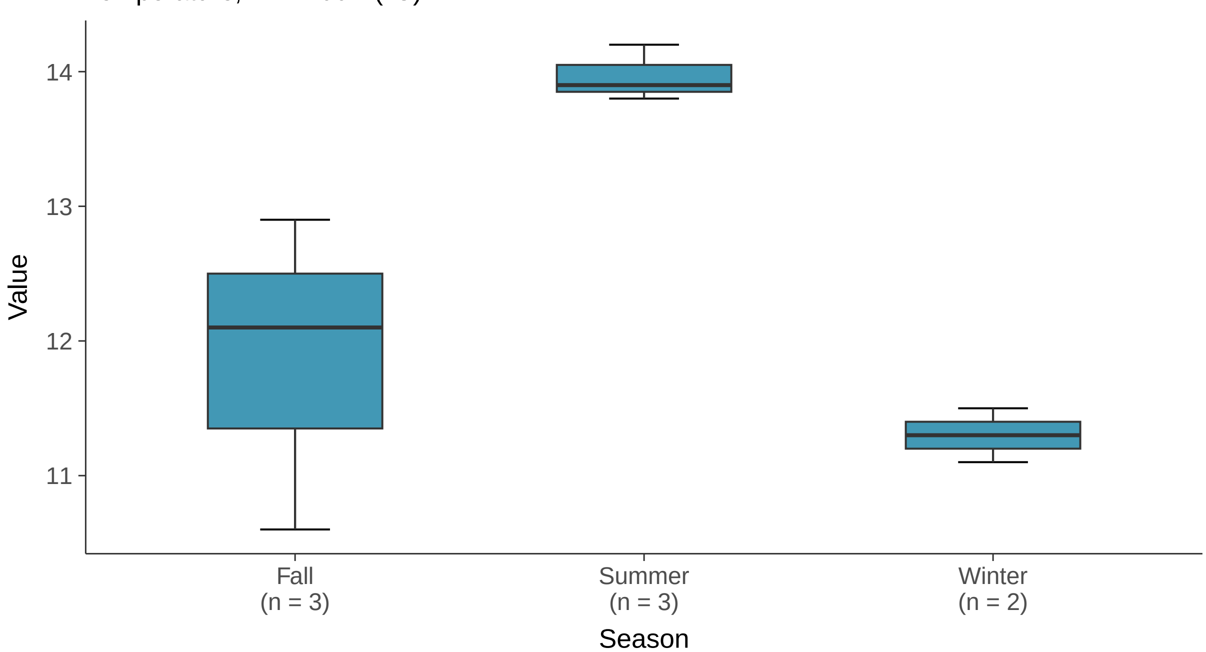
Boxplot

Temperature, MW-100B (°C)



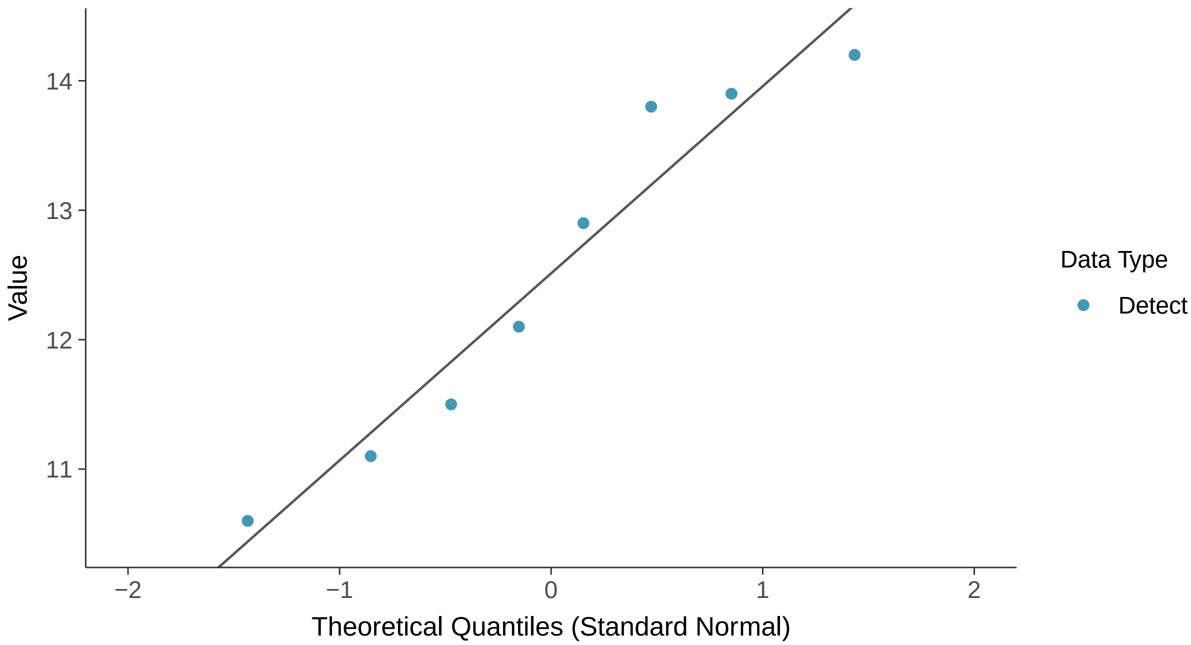
Boxplot by Season

Temperature, MW-100B (°C)



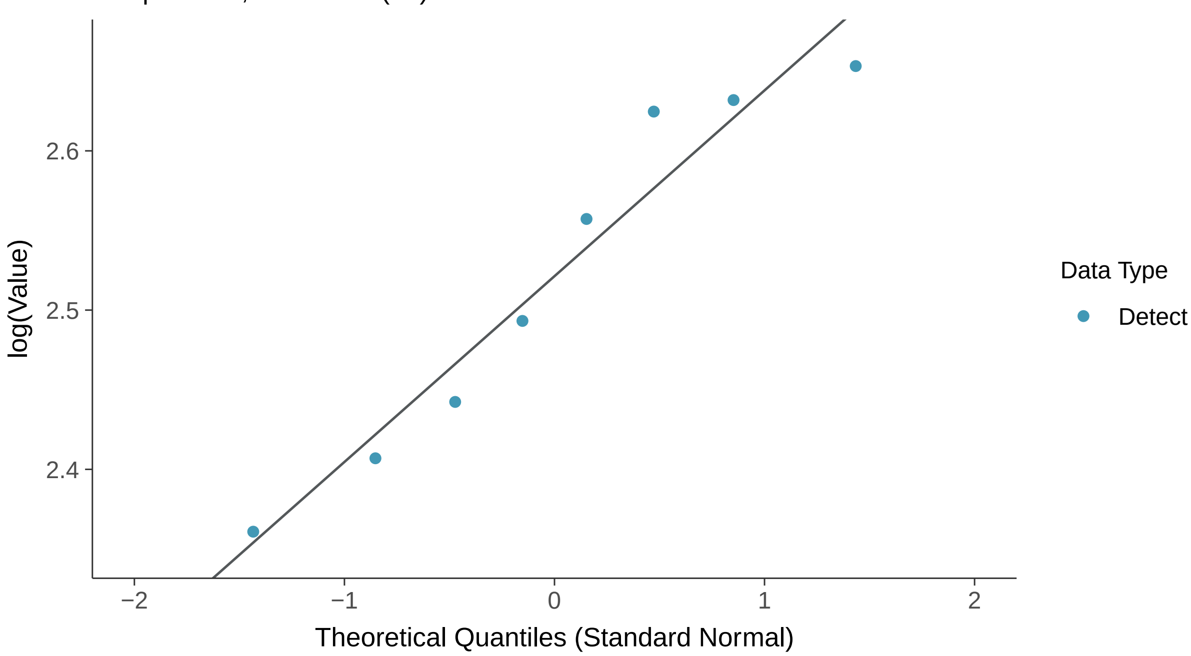
Normal Q-Q plot

Temperature, MW-100B (°C)



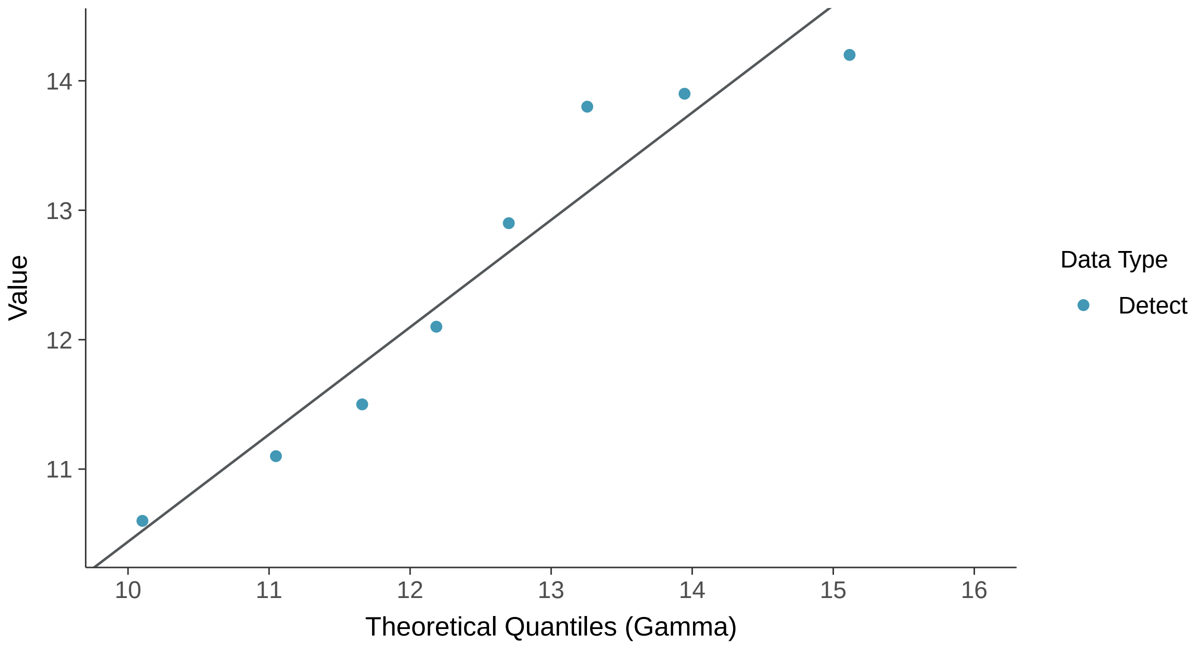
Lognormal Q-Q plot

Temperature, MW-100B (°C)



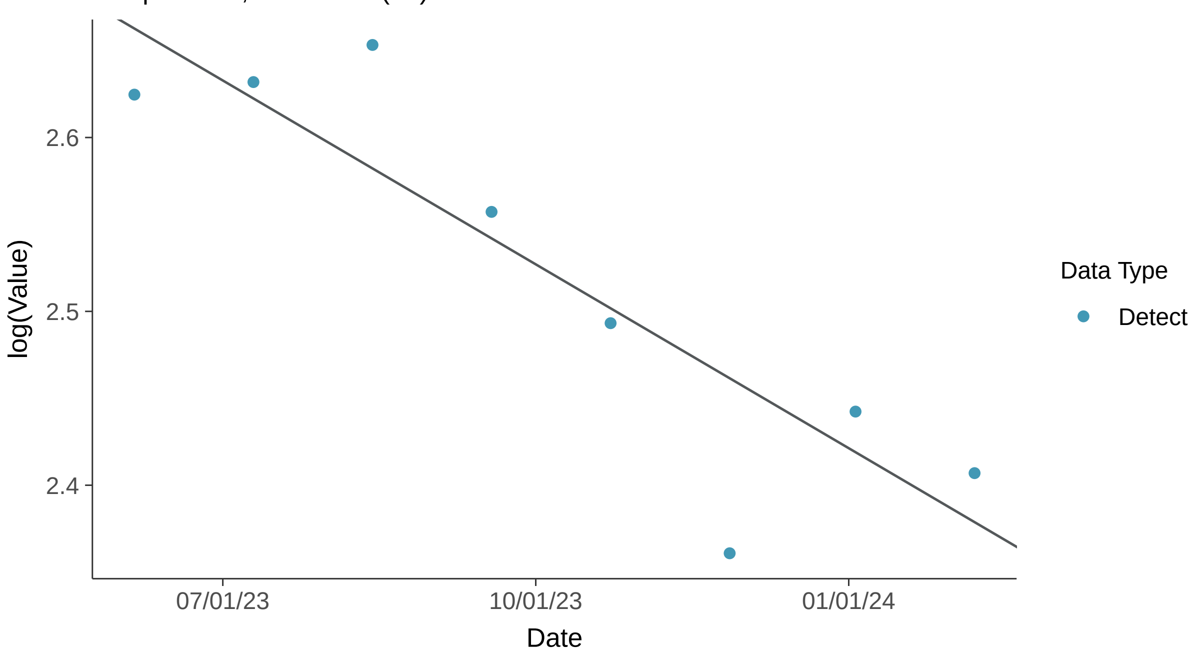
Gamma Q-Q plot

Temperature, MW-100B (°C)



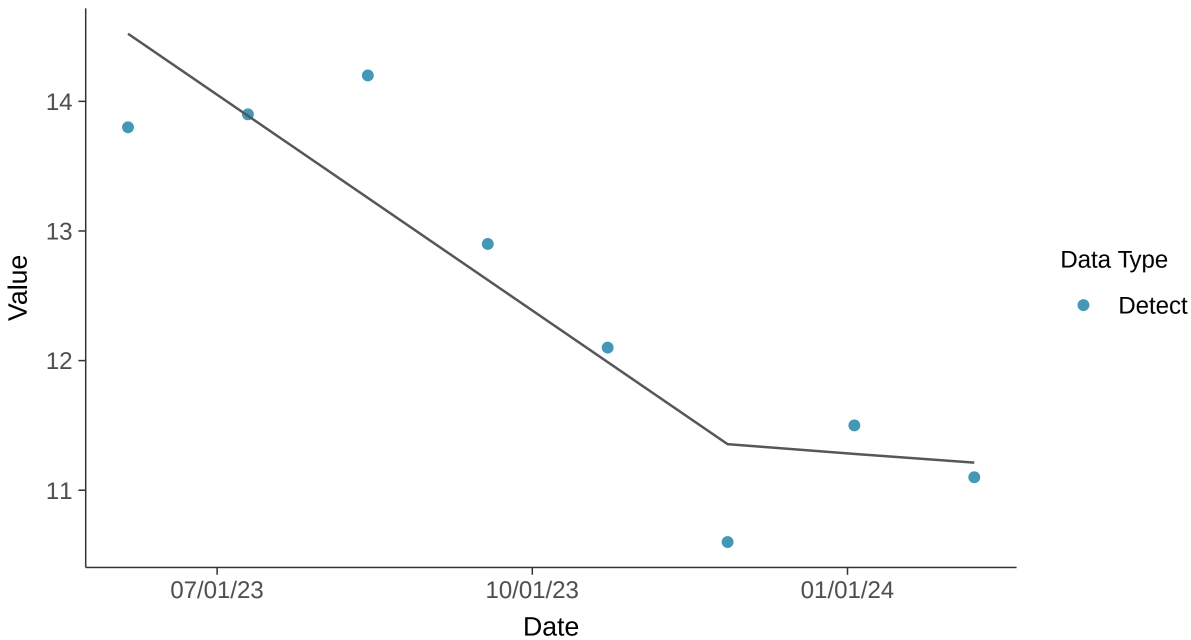
Trend Regression: Lognormal MLE

Temperature, MW-100B (°C)



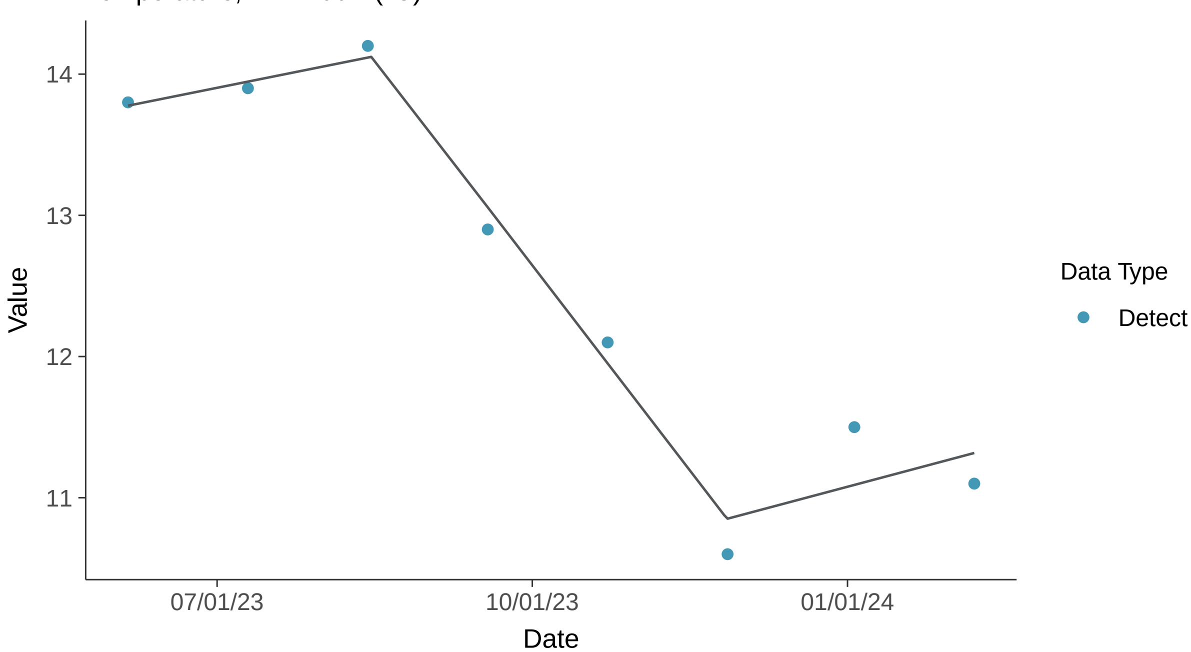
Trend Regression: Piecewise Linear-Linear

Temperature, MW-100B (°C)



Trend Regression: Piecewise Linear-Linear-Linear

Temperature, MW-100B (°C)

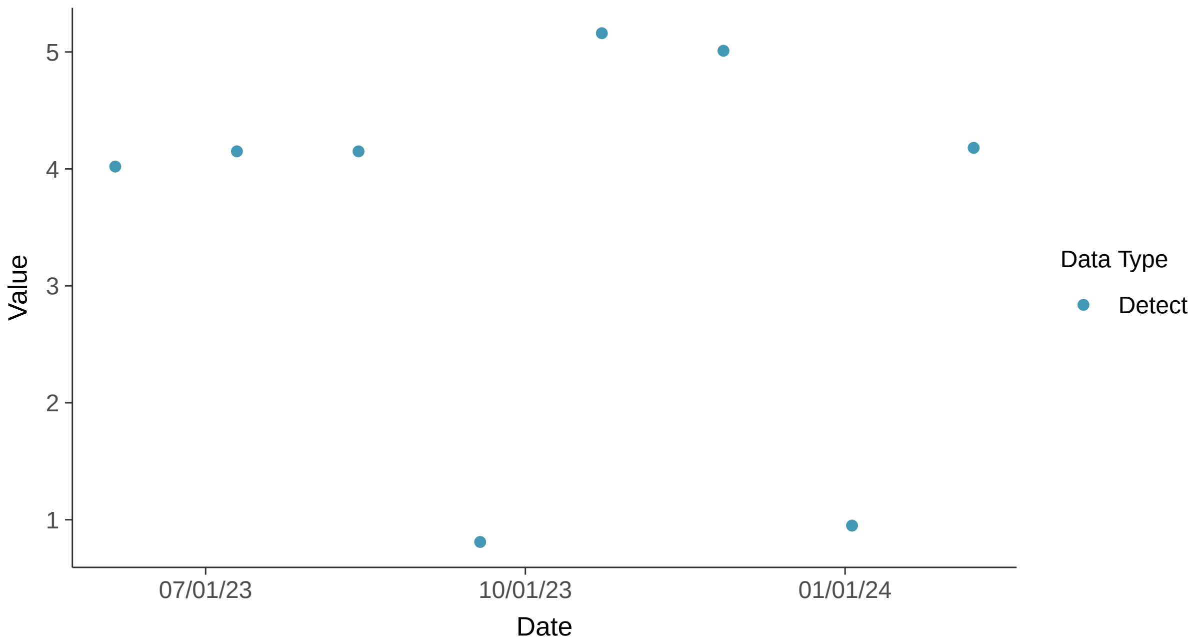


Field Parameters: Turbidity, MW-100B

ID: 100B_3_28

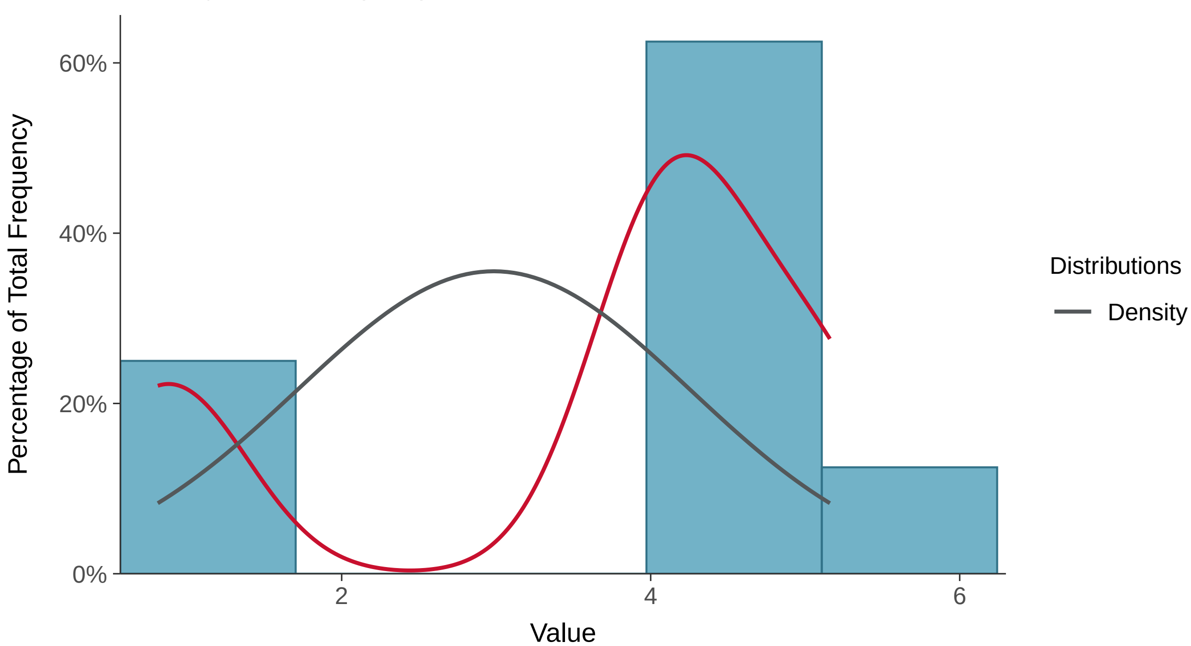
Scatter Plot

Turbidity, MW-100B (NTU)



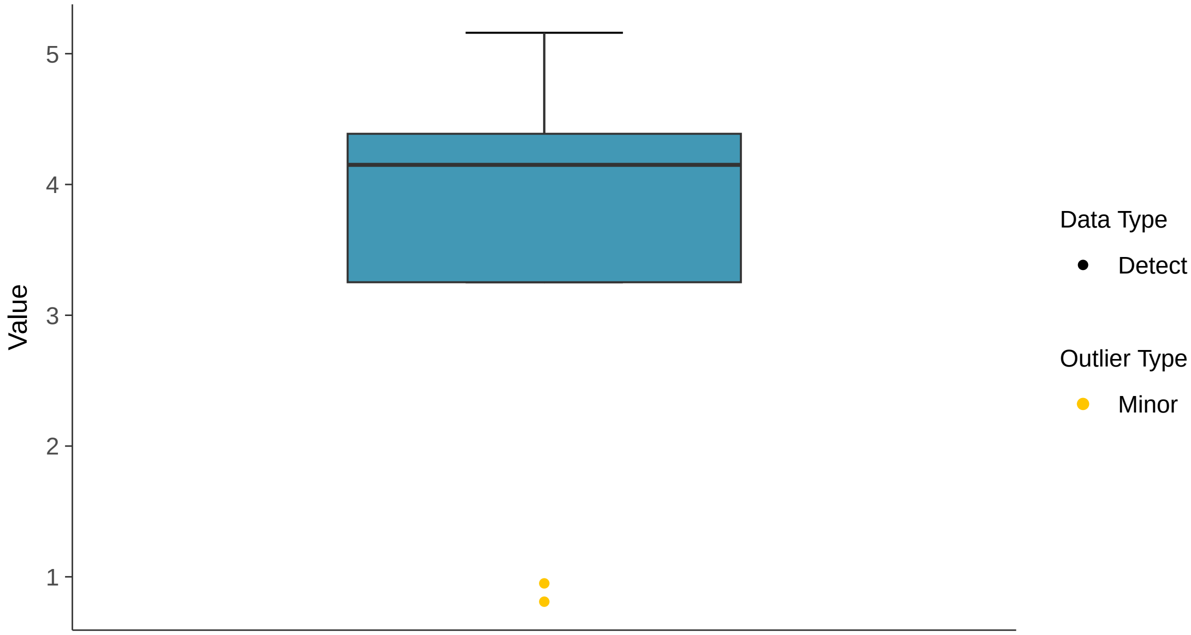
Histogram

Turbidity, MW-100B (NTU)



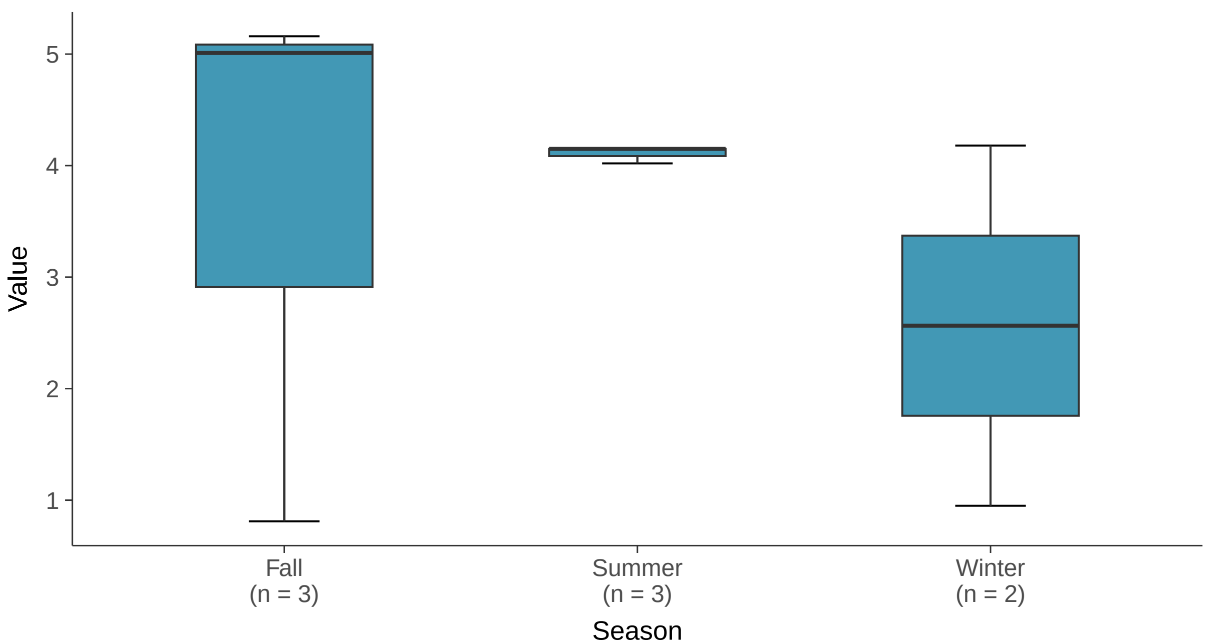
Boxplot

Turbidity, MW-100B (NTU)



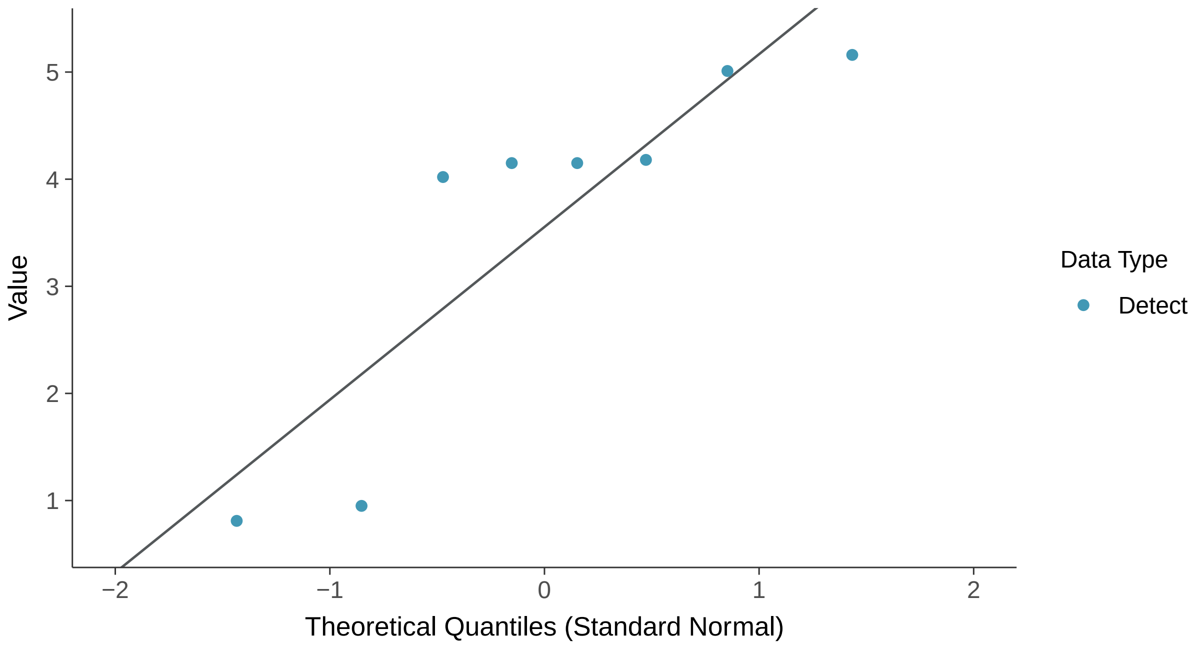
Boxplot by Season

Turbidity, MW-100B (NTU)



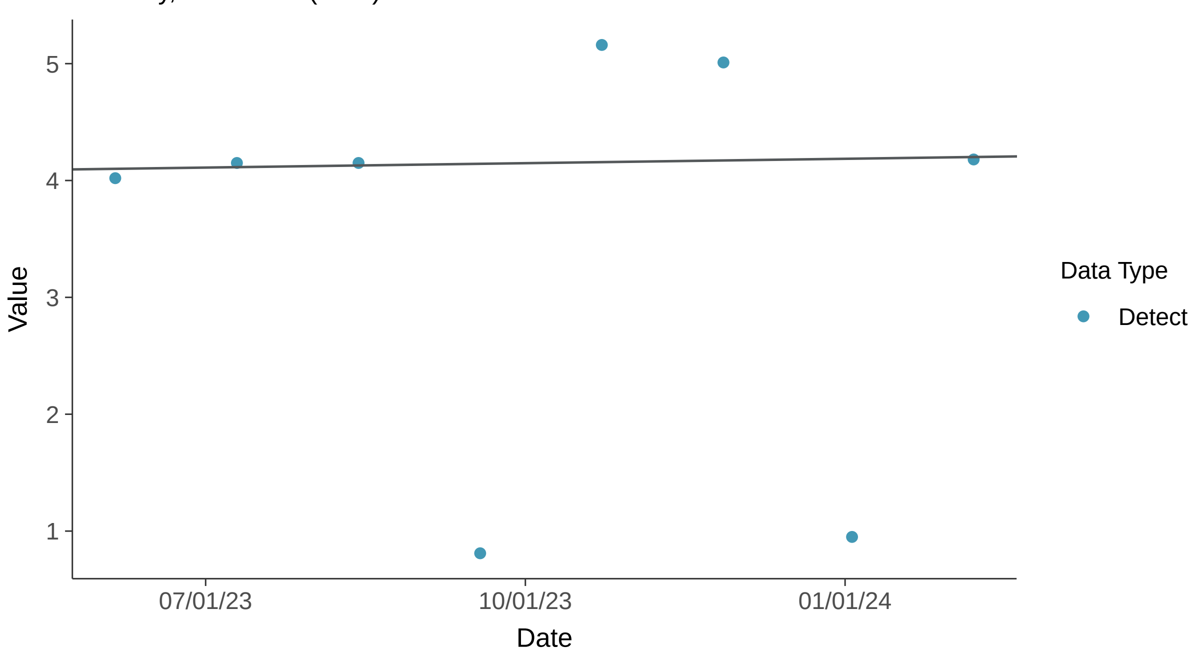
Normal Q-Q plot

Turbidity, MW-100B (NTU)



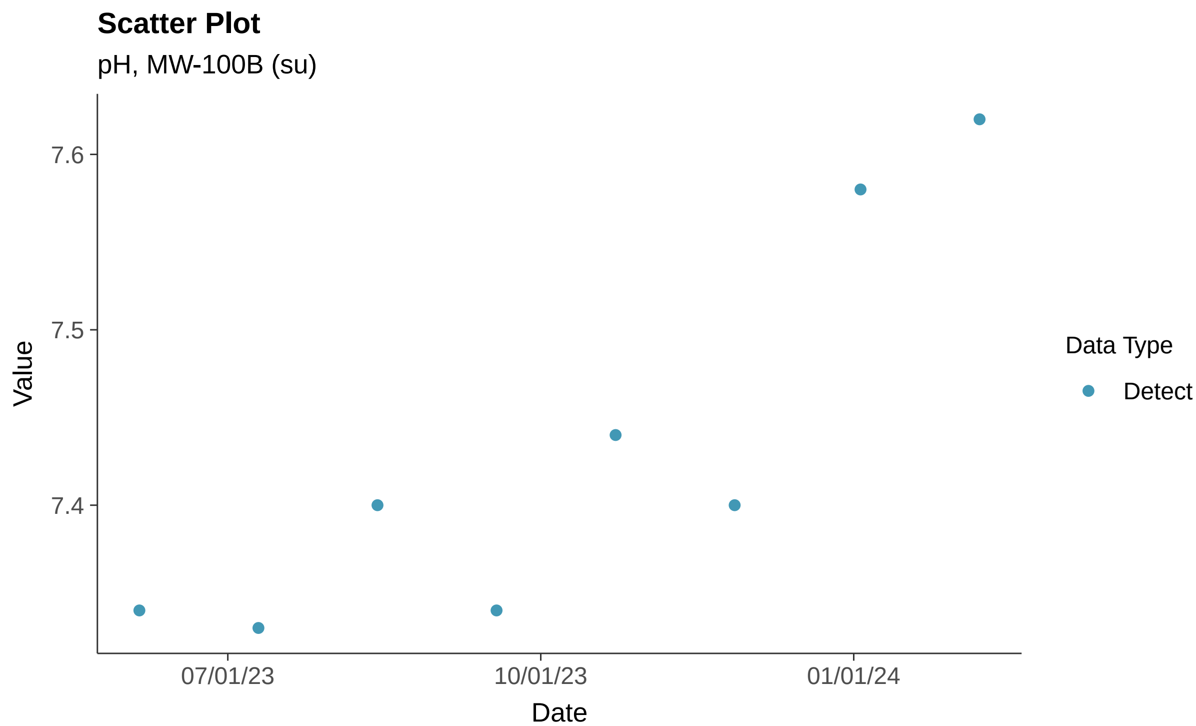
Trend Regression: Mann-Kendall/Theil-Sen Estimate

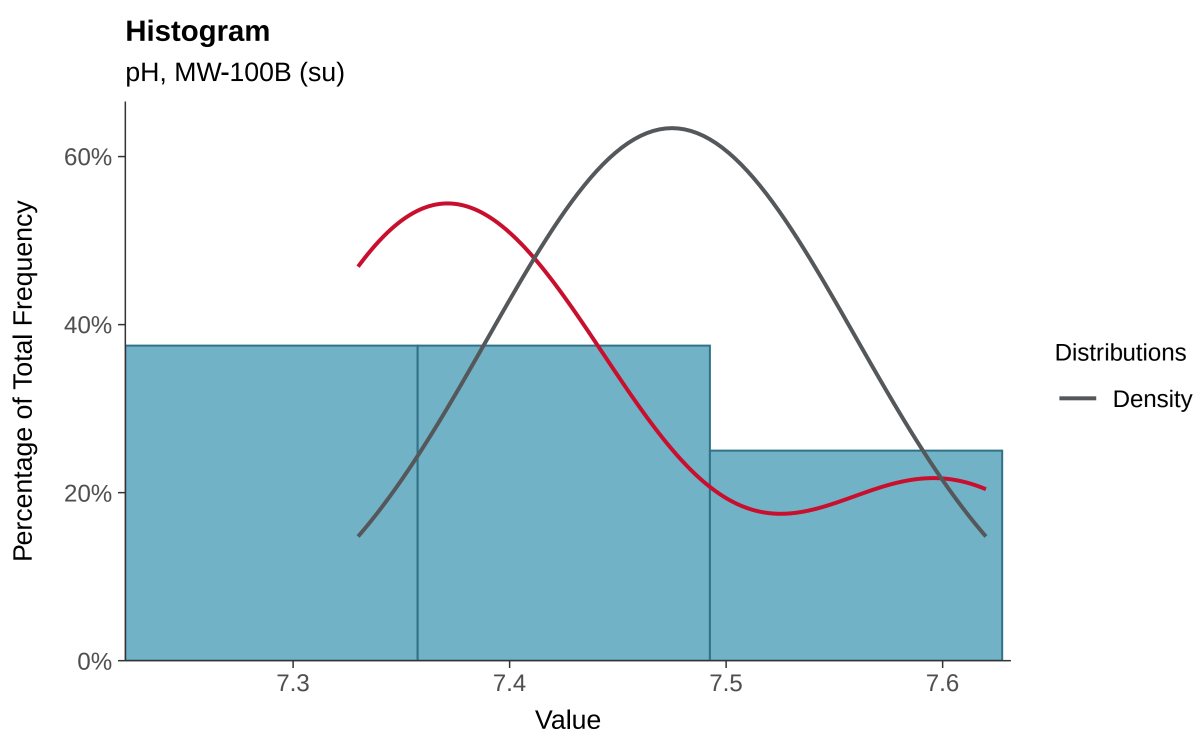
Turbidity, MW-100B (NTU)



Field Parameters: pH, MW-100B

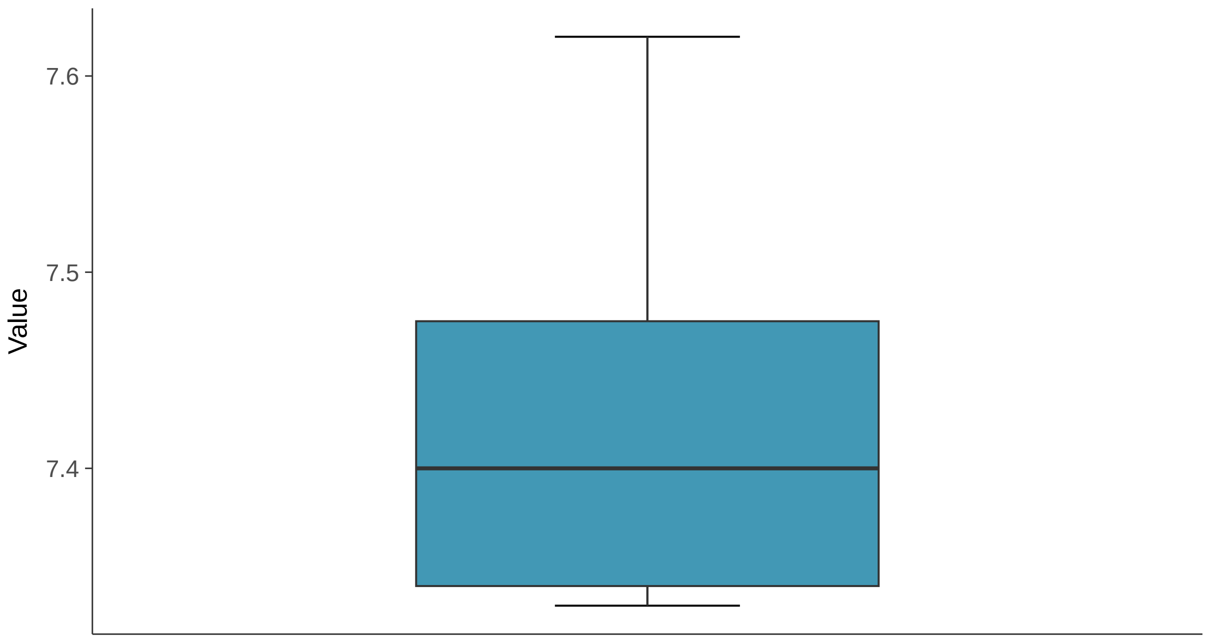
ID: 100B_3_29





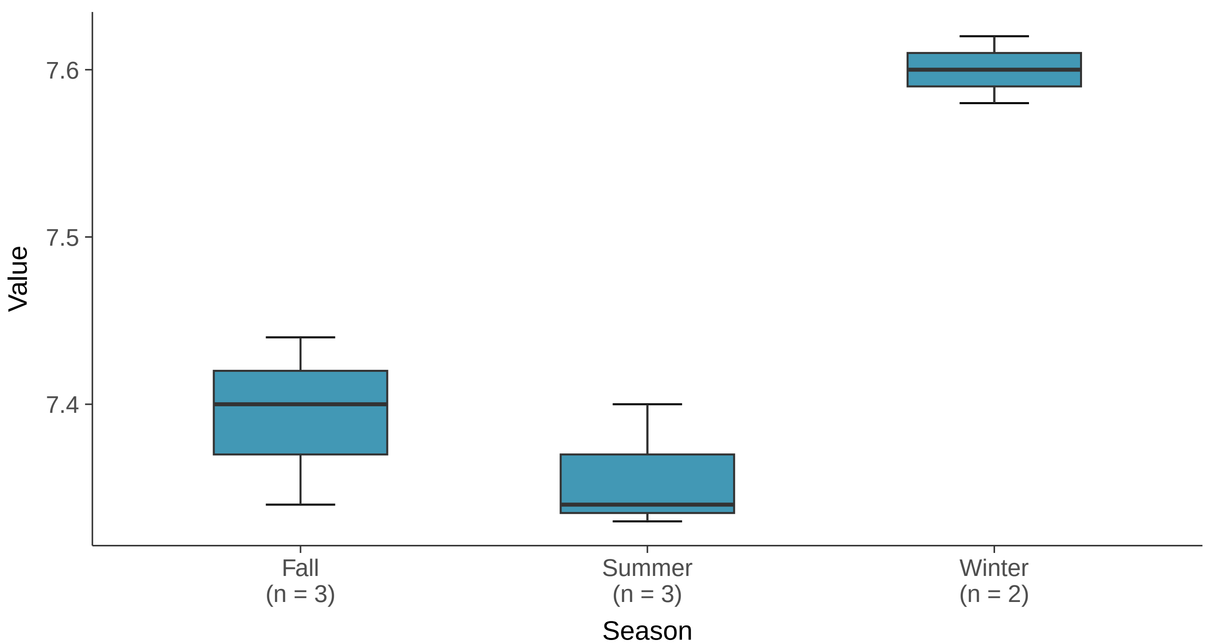
Boxplot

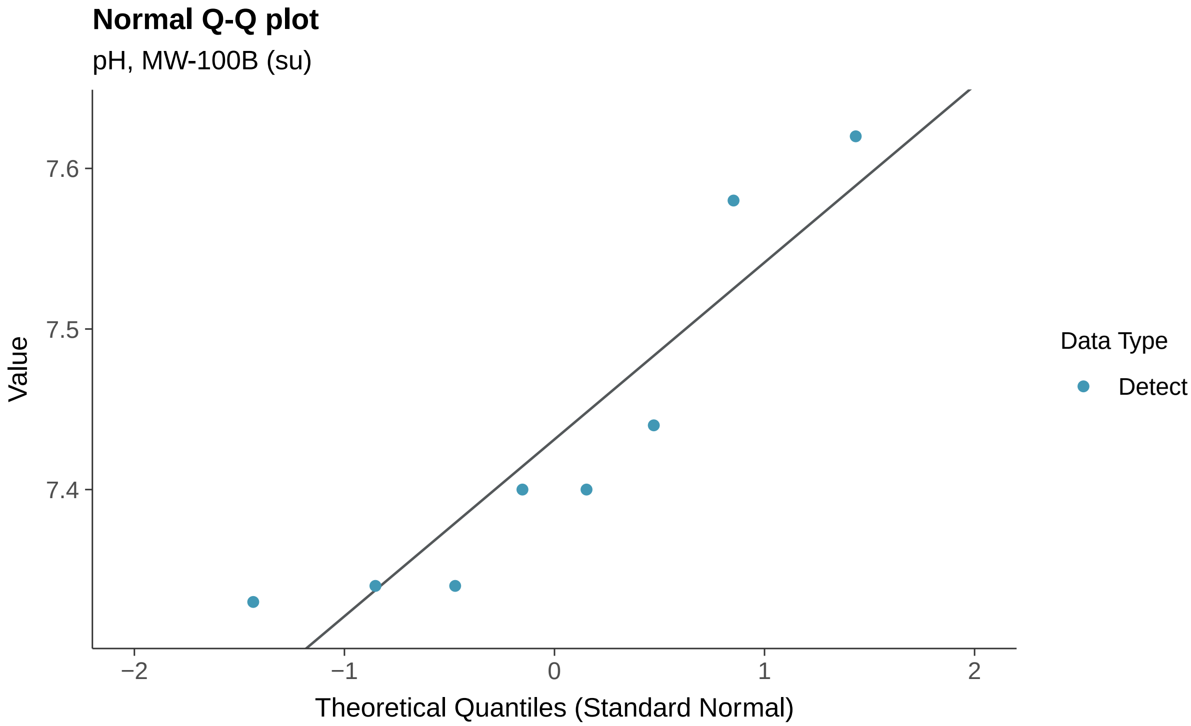
pH, MW-100B (su)

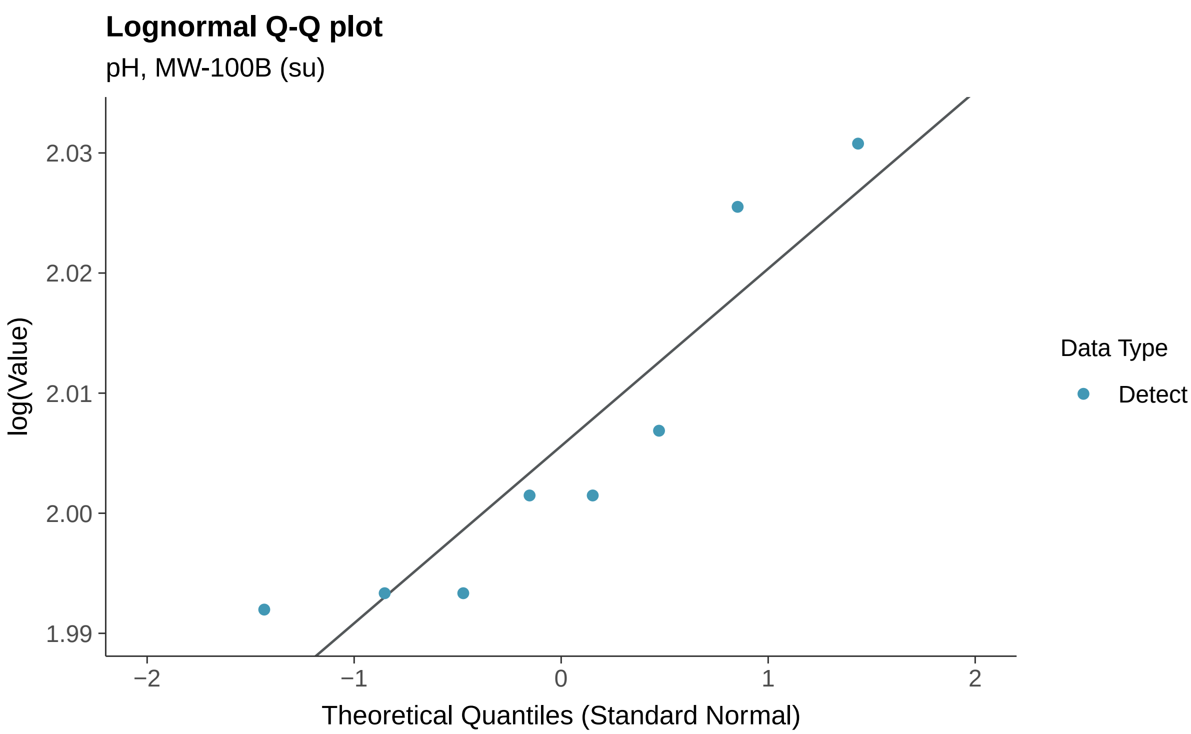


Boxplot by Season

pH, MW-100B (su)

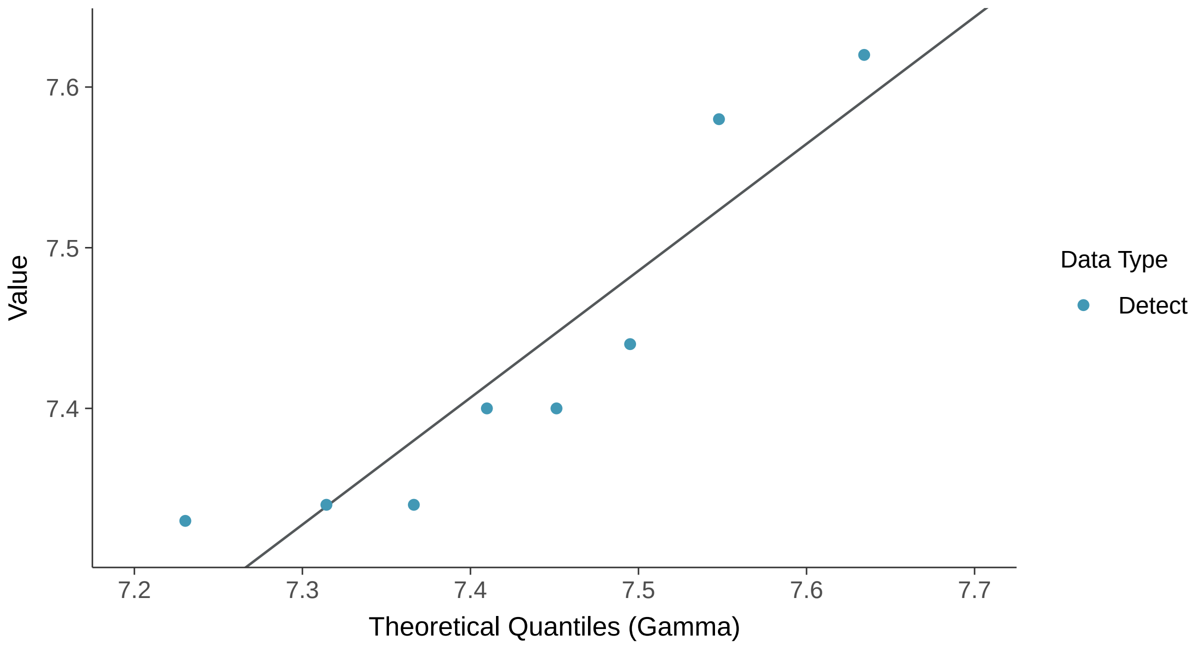



Normal Q-Q plot
pH, MW-100B (su)
Value
7.6
7.5
7.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH, MW-100B (su)
log(Value)
2.03
2.02
2.01
2.00
1.99
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

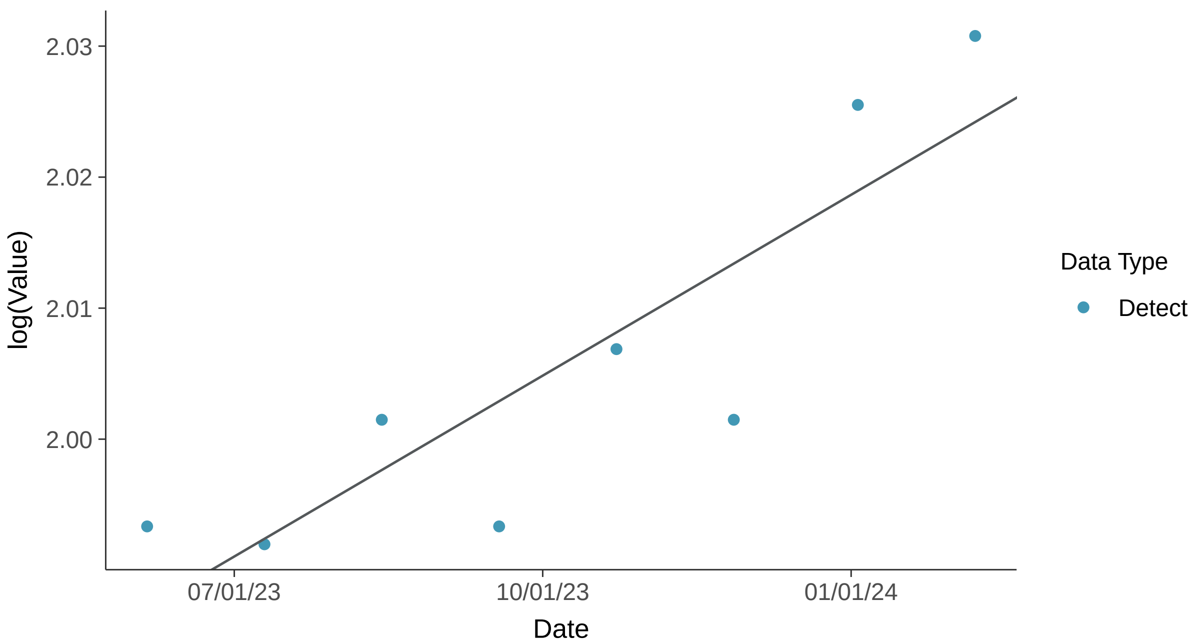
Gamma Q-Q plot

pH, MW-100B (su)



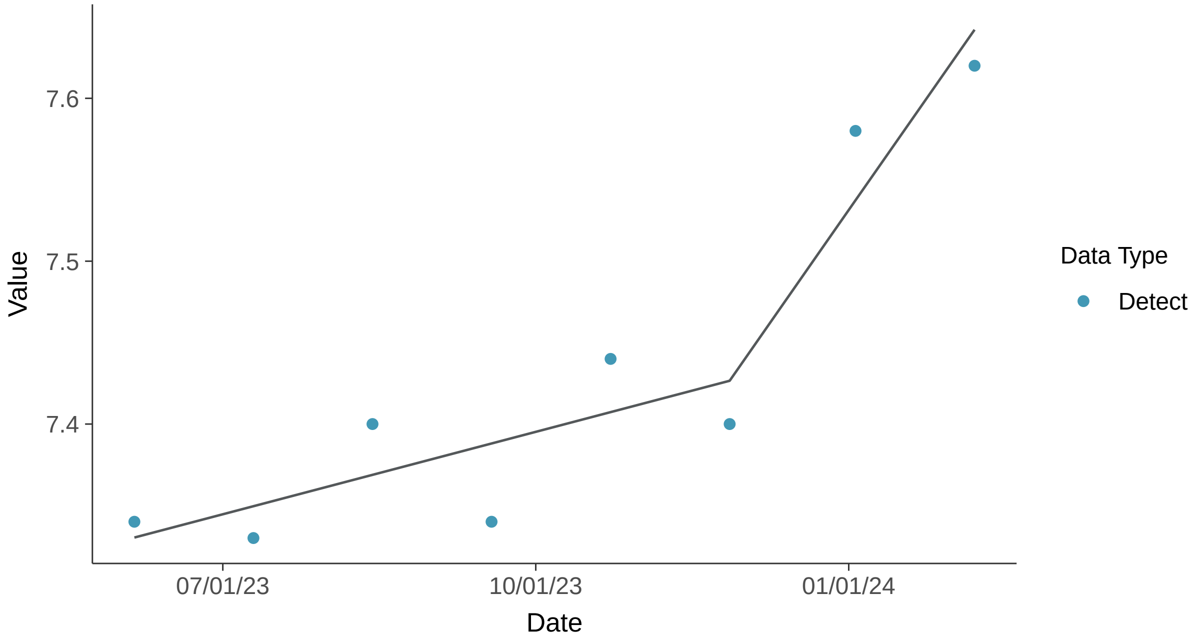
Trend Regression: Lognormal MLE

pH, MW-100B (su)



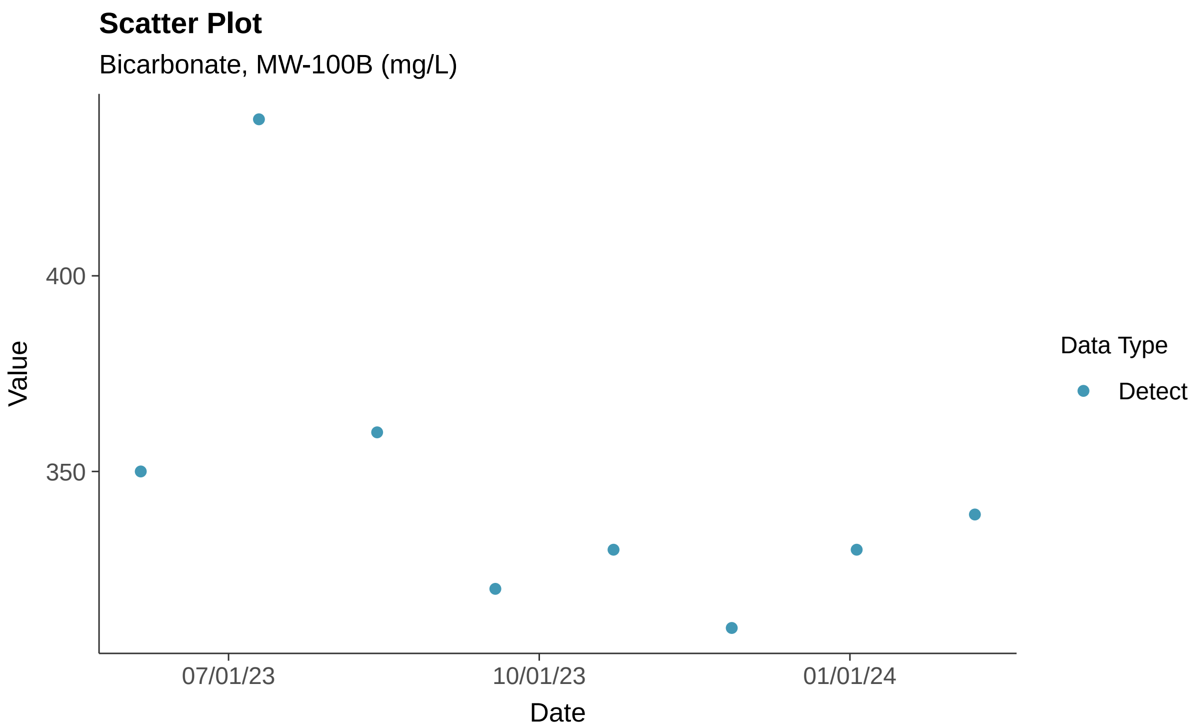
Trend Regression: Piecewise Linear-Linear

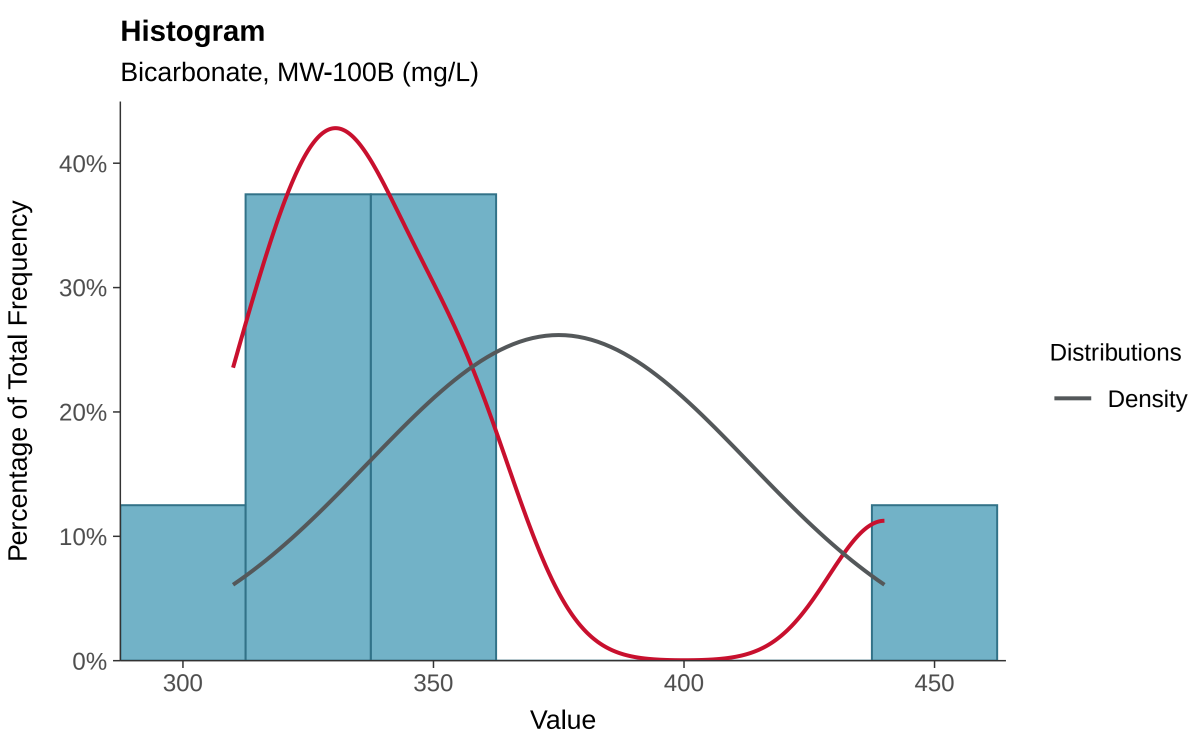
pH, MW-100B (su)



Other: Bicarbonate, MW-100B

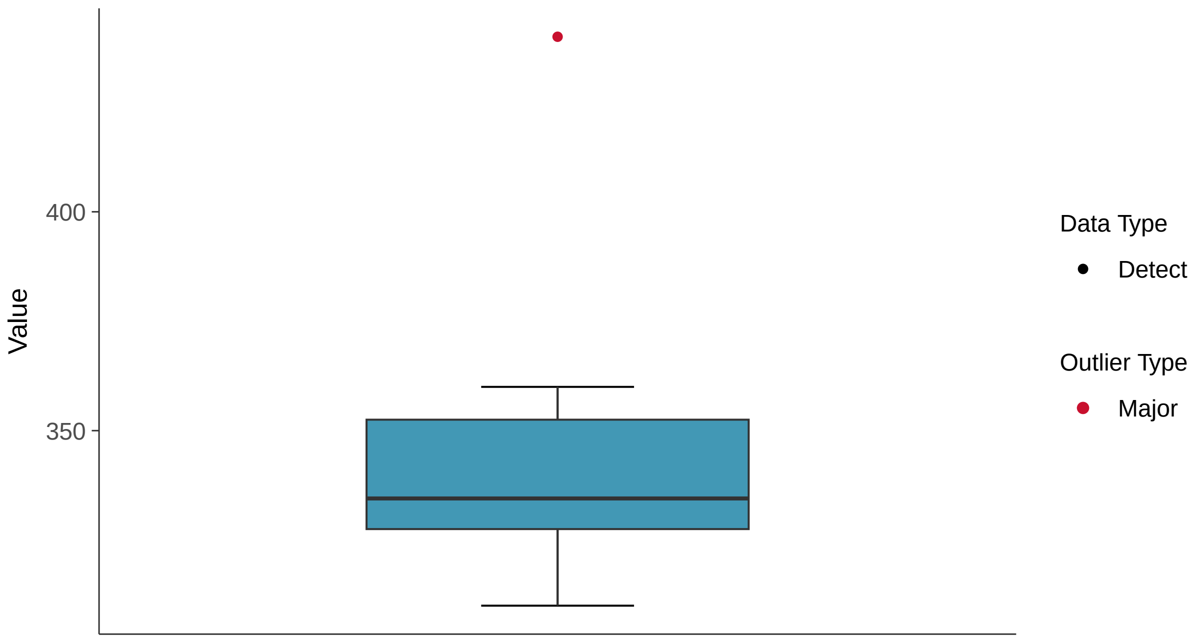
ID: 100B_4_30





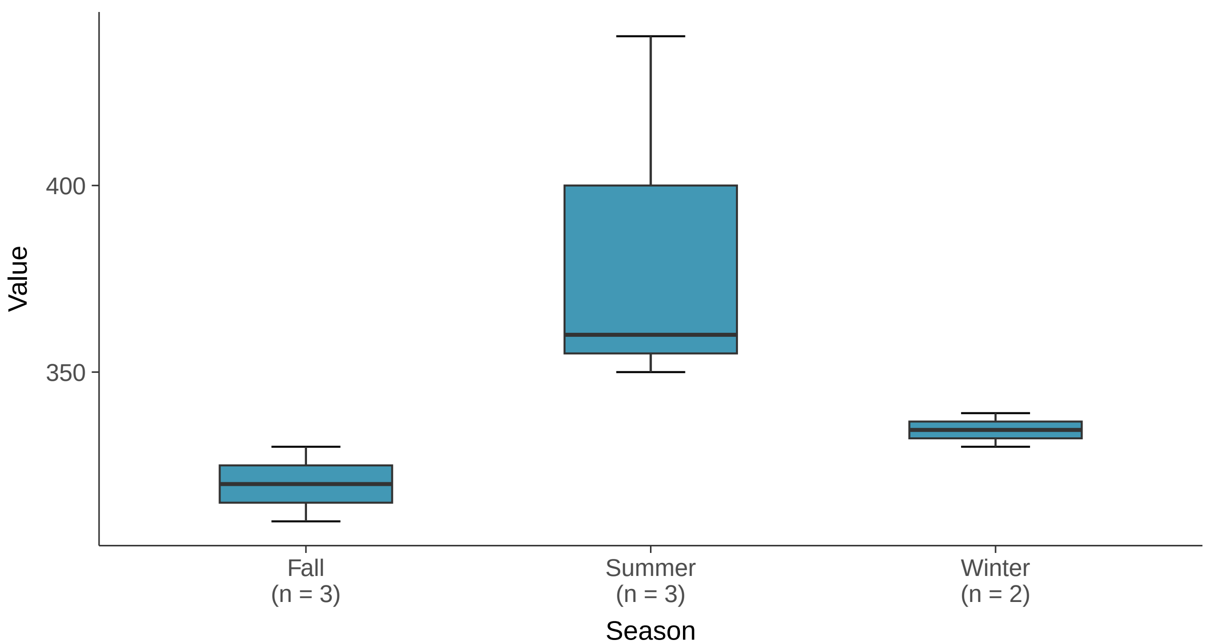
Boxplot

Bicarbonate, MW-100B (mg/L)



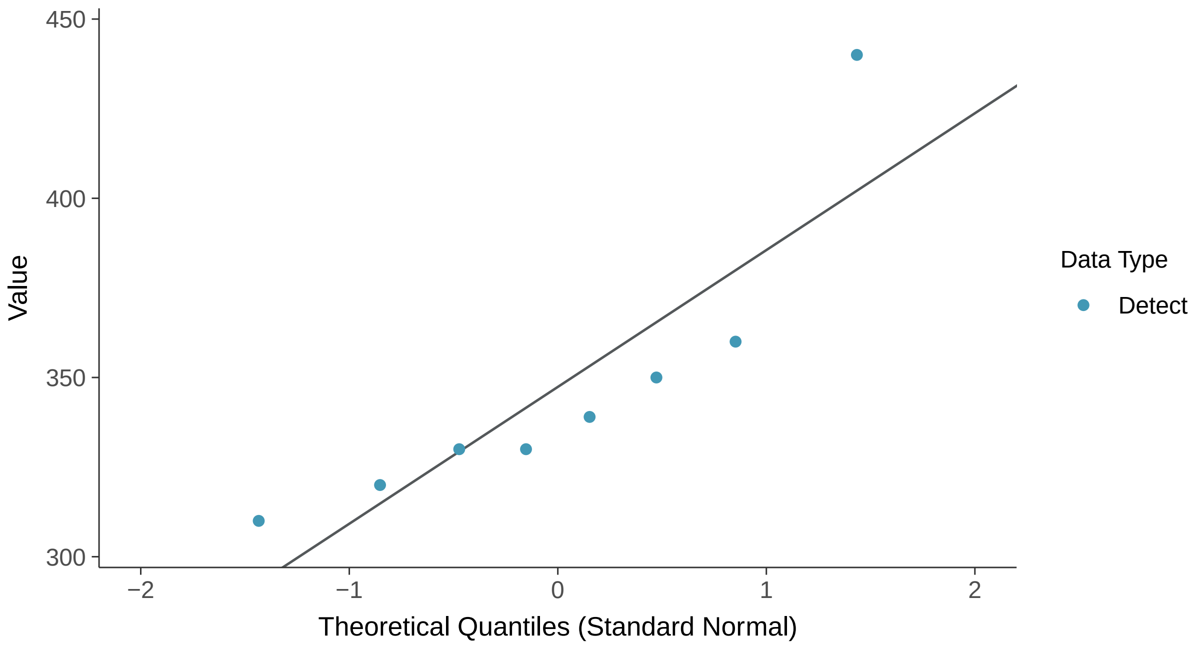
Boxplot by Season

Bicarbonate, MW-100B (mg/L)



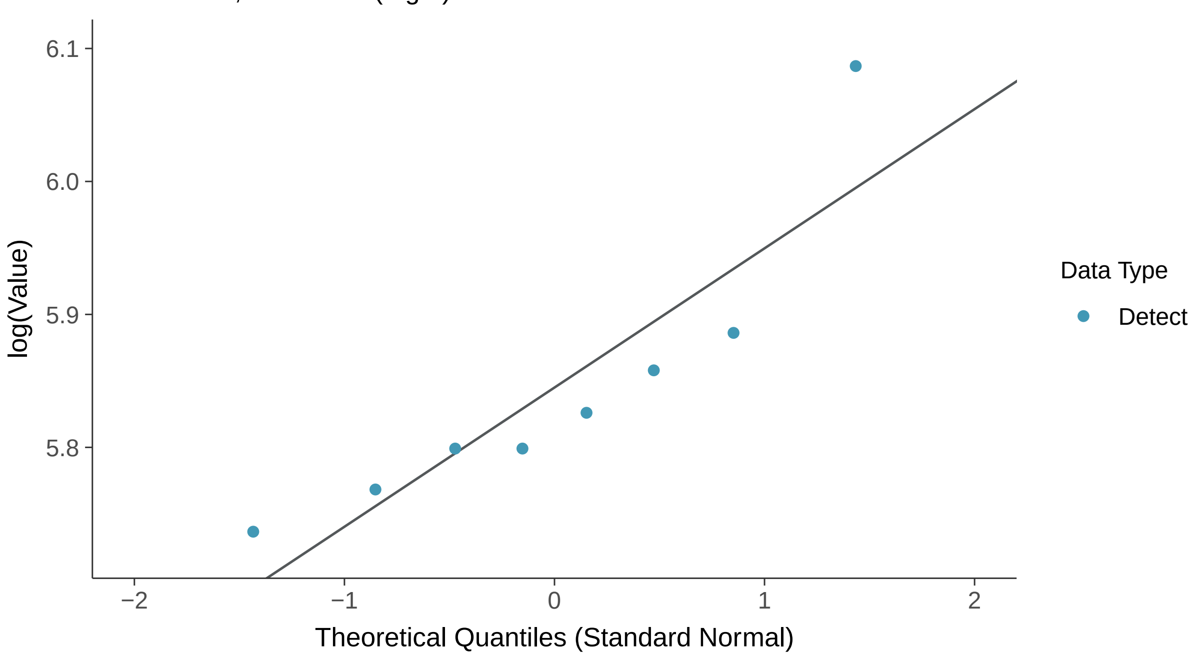
Normal Q-Q plot

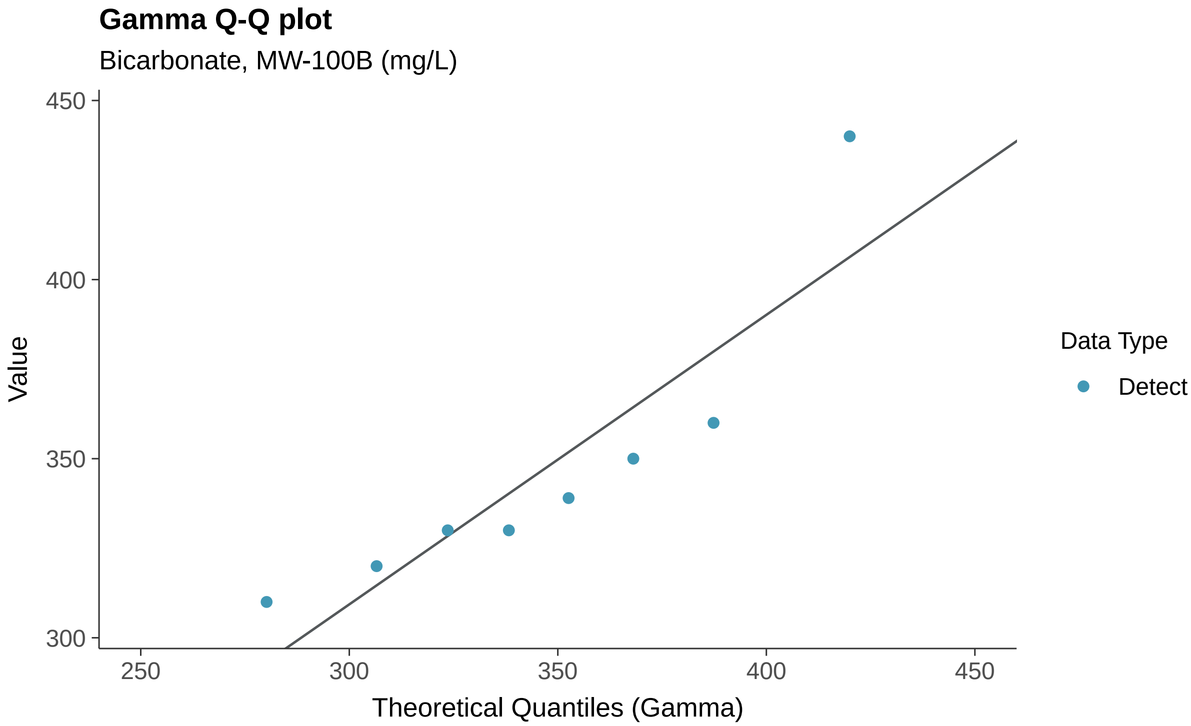
Bicarbonate, MW-100B (mg/L)

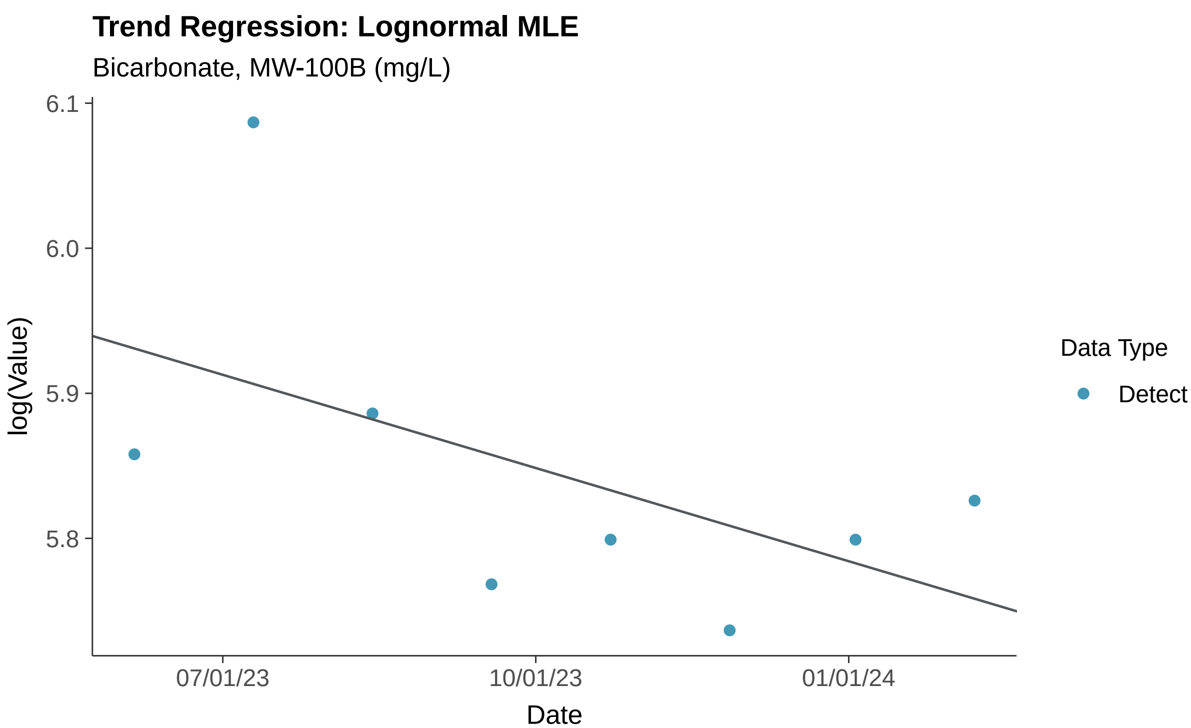


Lognormal Q-Q plot

Bicarbonate, MW-100B (mg/L)

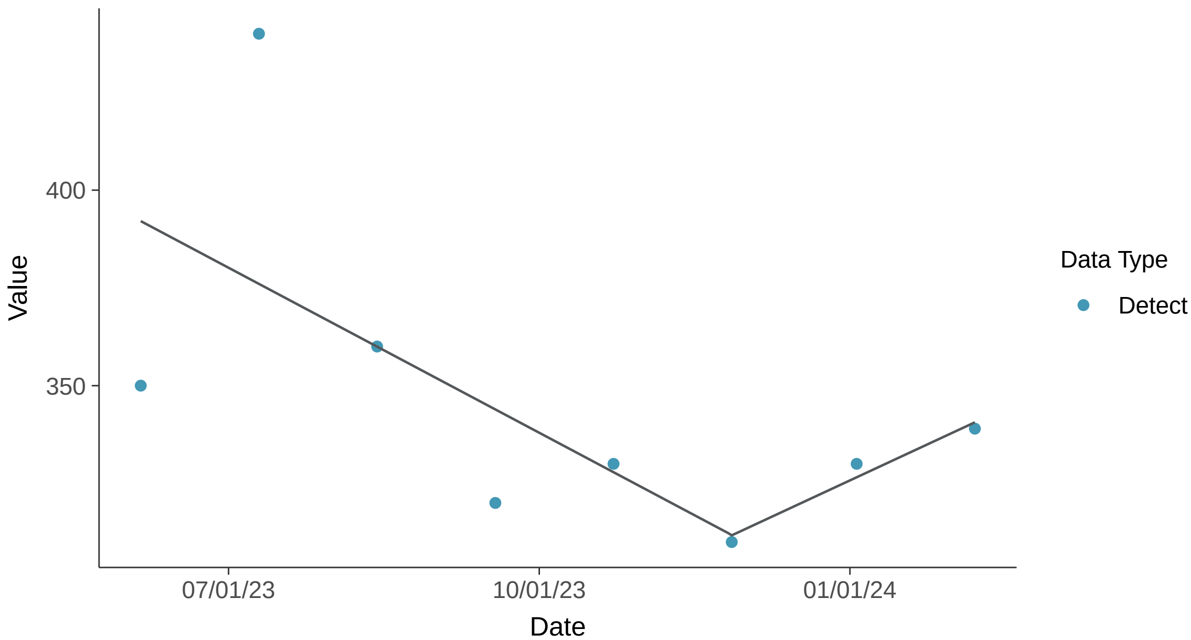



Gamma Q-Q plot
Bicarbonate, MW-100B (mg/L)
Value
450
400
350
300
250
300
350
400
450
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Bicarbonate, MW-100B (mg/L)
log(Value)
6.1
6.0
5.9
5.8
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Bicarbonate, MW-100B (mg/L)

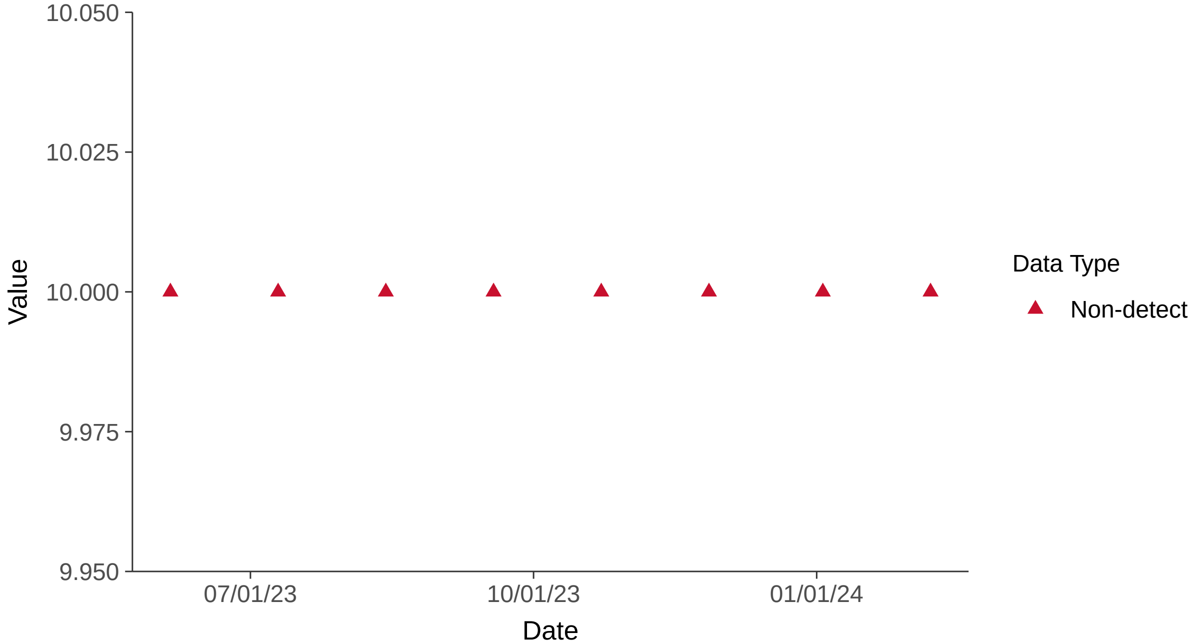


Other: Carbonate, MW-100B

ID: 100B_4_31

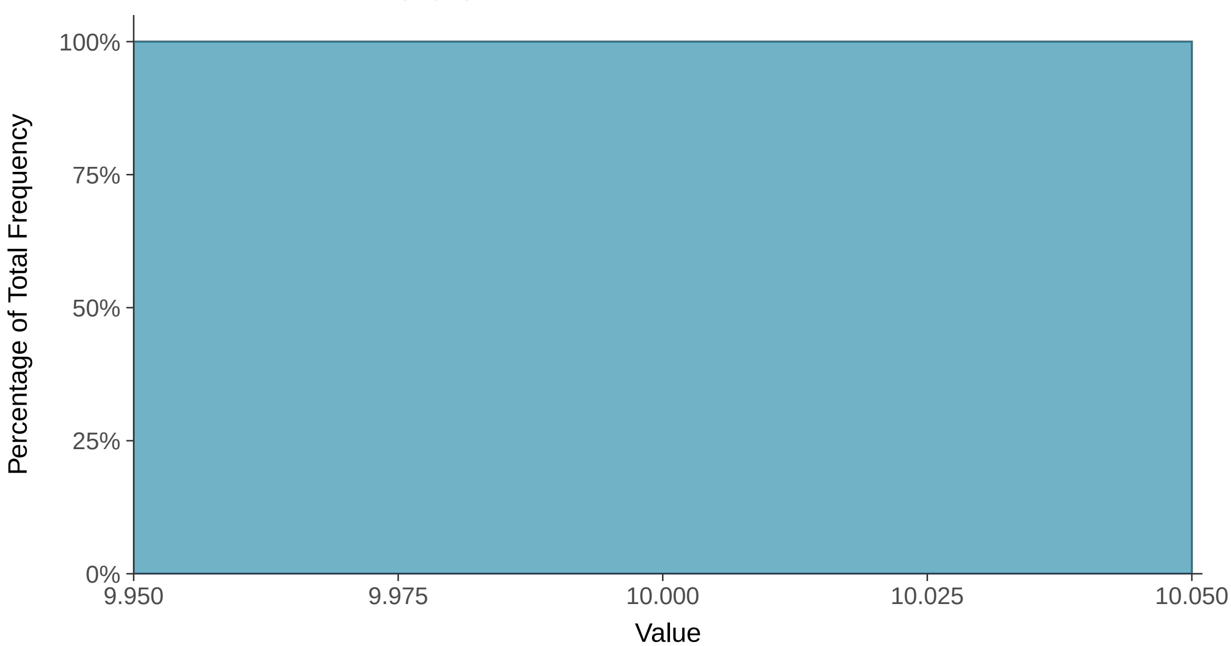
Scatter Plot

Carbonate, MW-100B (mg/L)



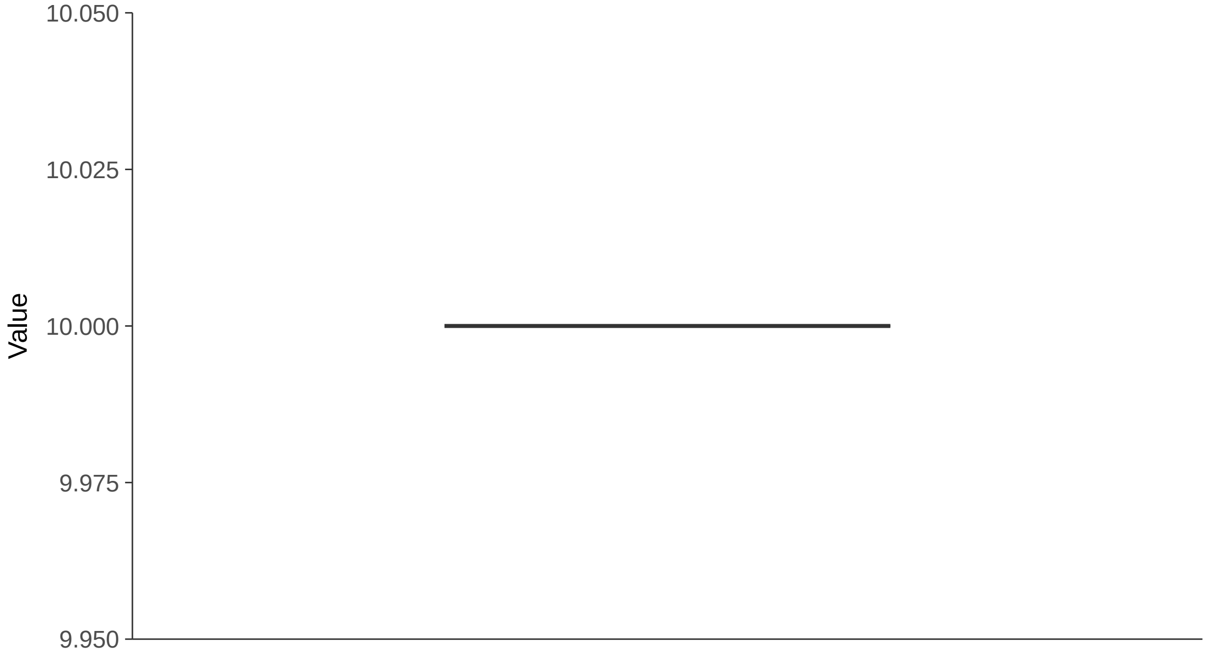
Histogram

Carbonate, MW-100B (mg/L)



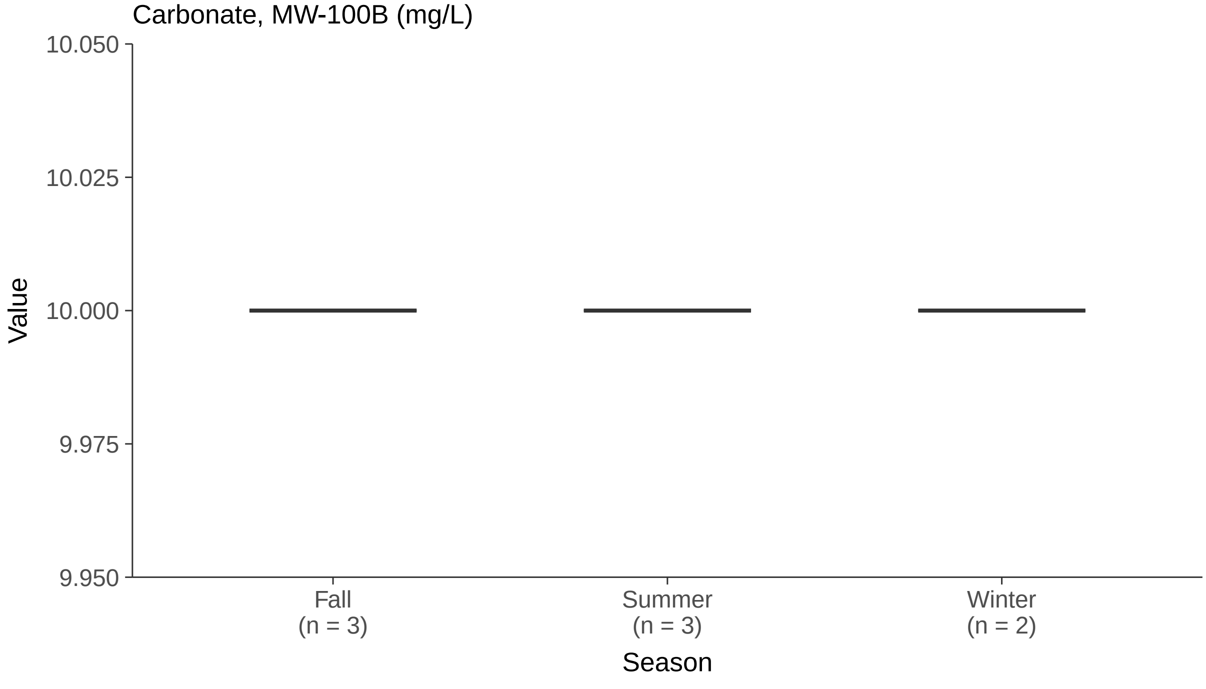
Boxplot

Carbonate, MW-100B (mg/L)



Boxplot by Season

Carbonate, MW-100B (mg/L)

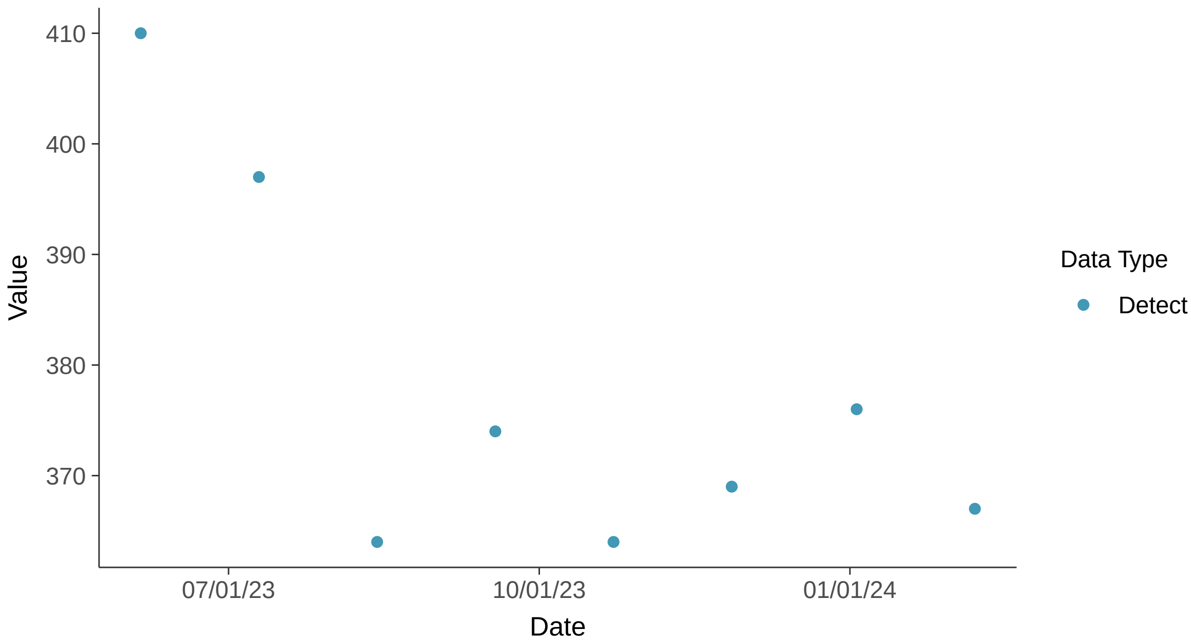


Other: Hardness, MW-100B

ID: 100B_4_32

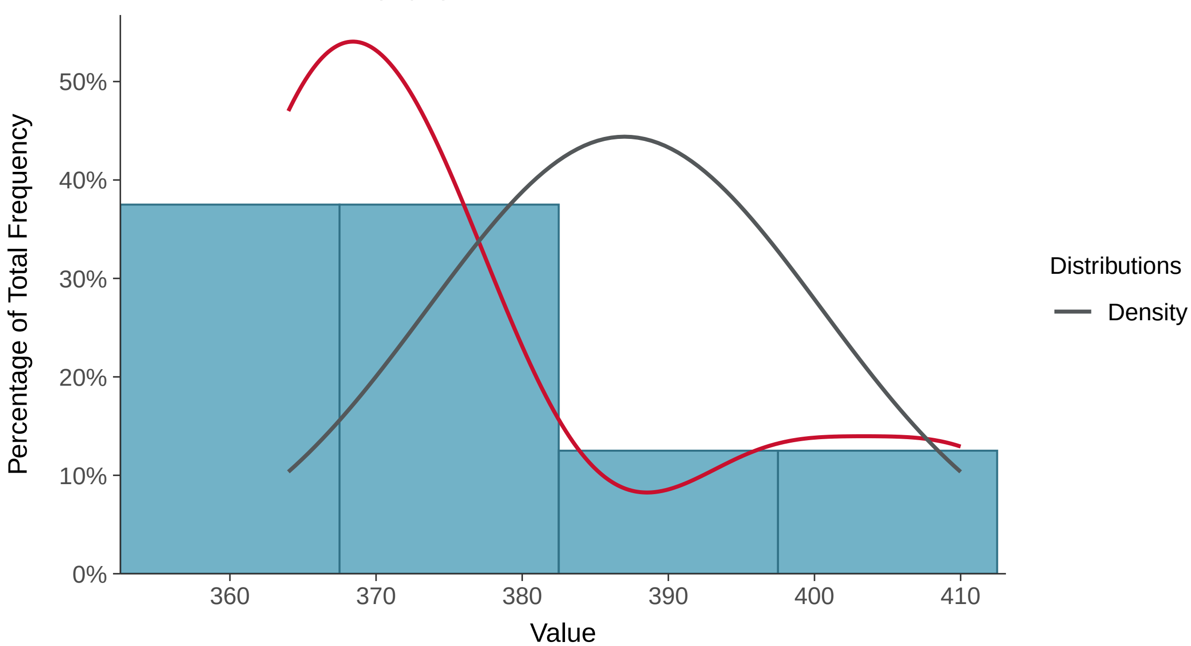
Scatter Plot

Hardness, MW-100B (mg/L)



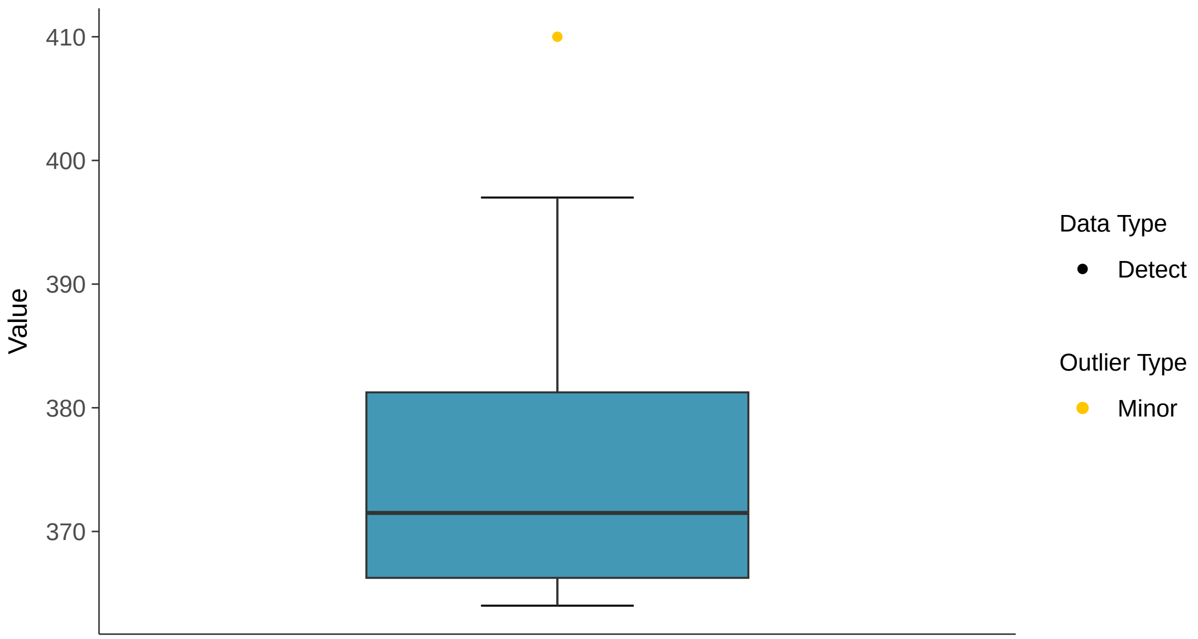
Histogram

Hardness, MW-100B (mg/L)



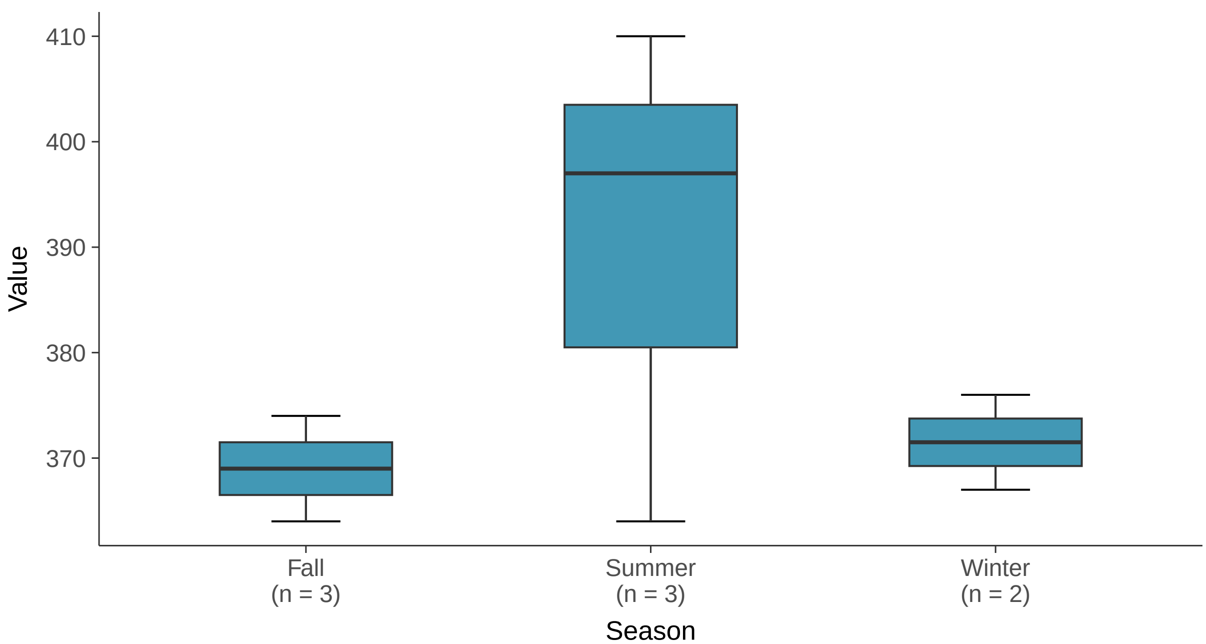
Boxplot

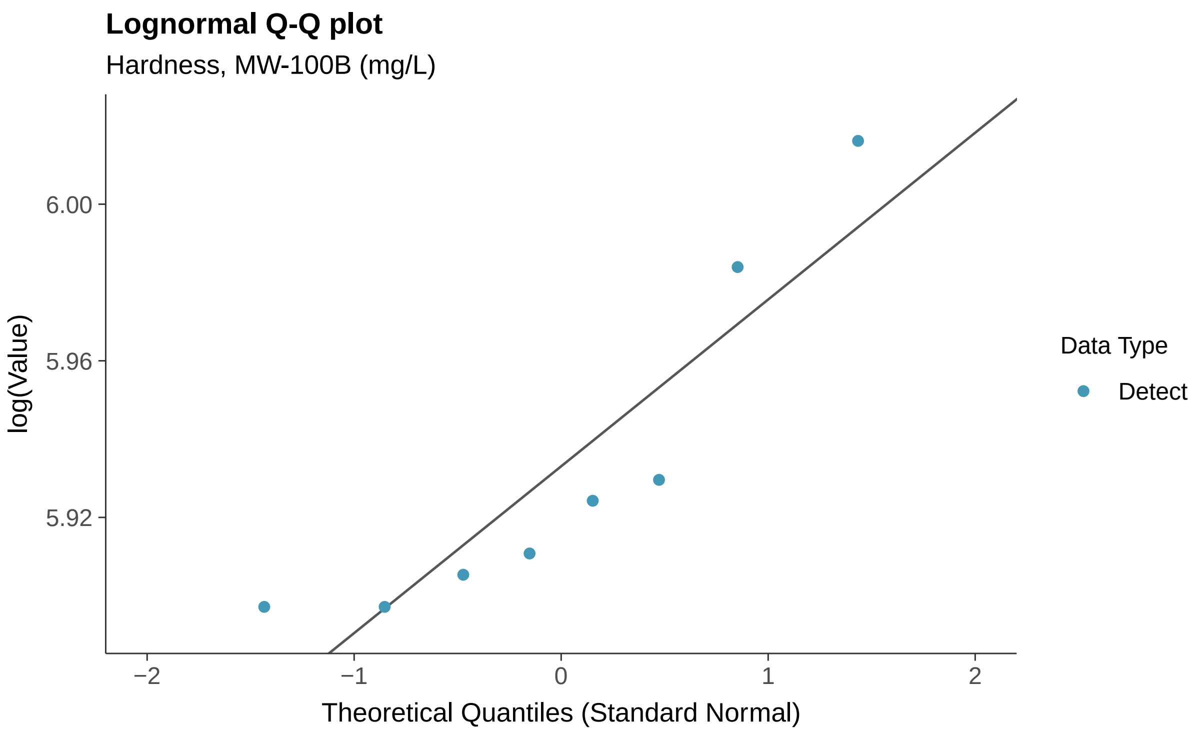
Hardness, MW-100B (mg/L)

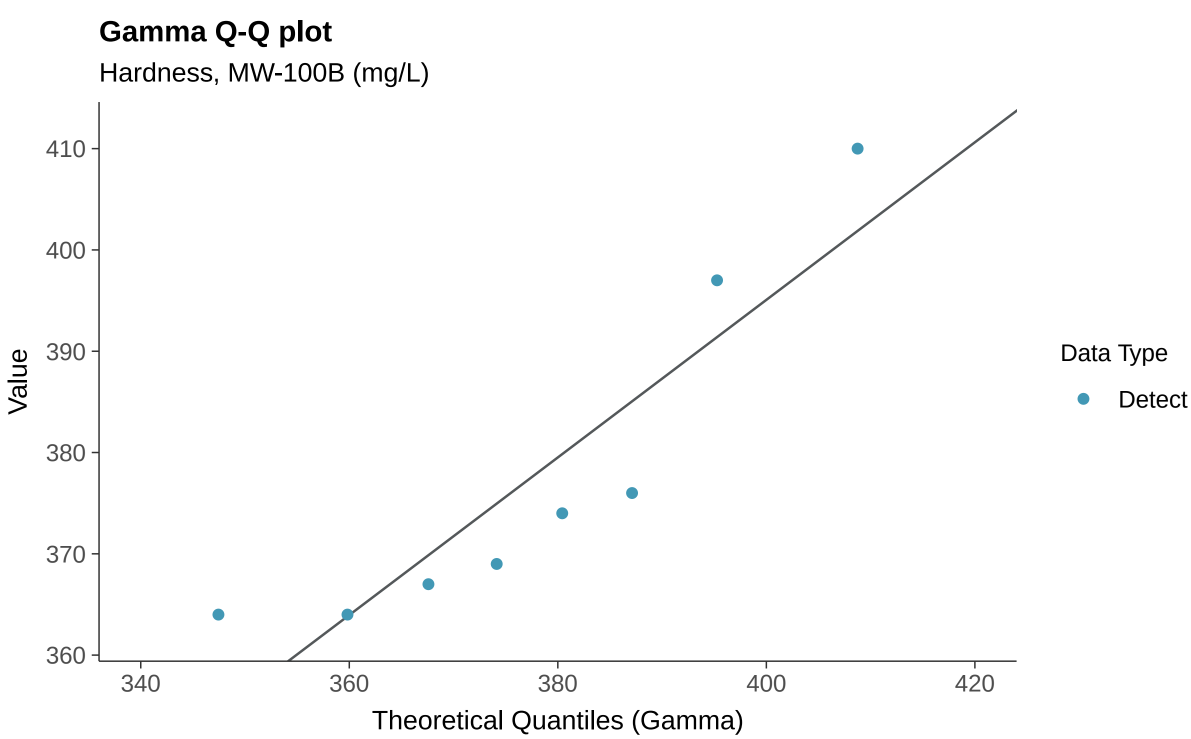


Boxplot by Season

Hardness, MW-100B (mg/L)

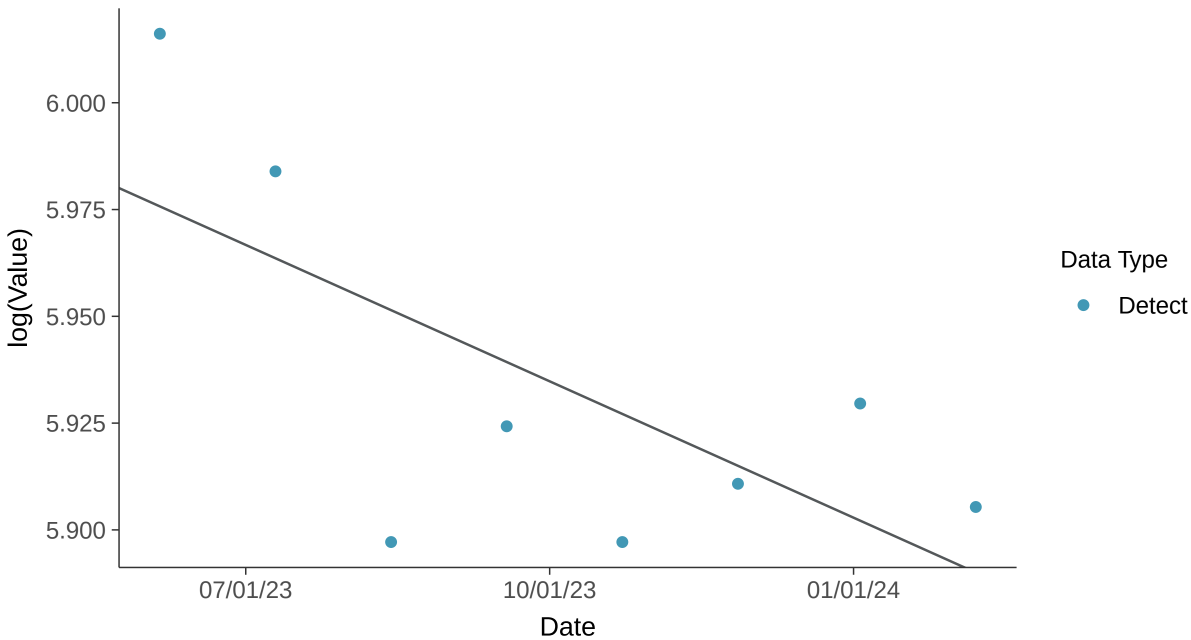



Lognormal Q-Q plot
Hardness, MW-100B (mg/L)
6.00
5.96
5.92
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Hardness, MW-100B (mg/L)
410
400
390
380
370
360
Value
340
360
380
400
420
Theoretical Quantiles (Gamma)
Data Type
Detect

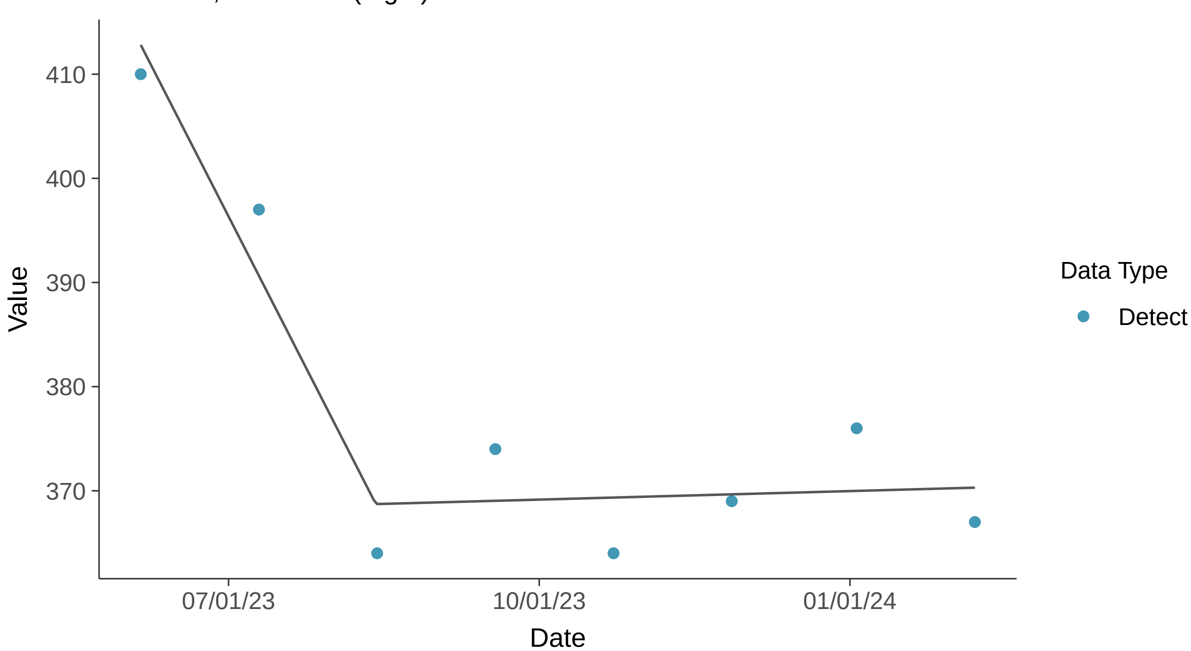
Trend Regression: Lognormal MLE

Hardness, MW-100B (mg/L)



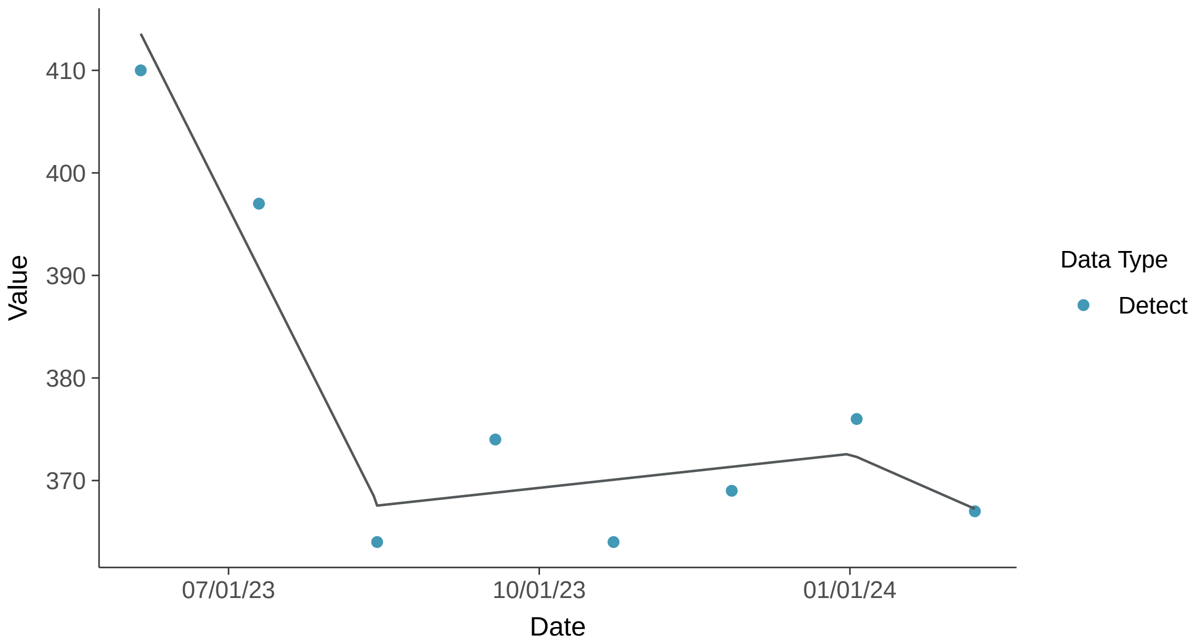
Trend Regression: Piecewise Linear-Linear

Hardness, MW-100B (mg/L)



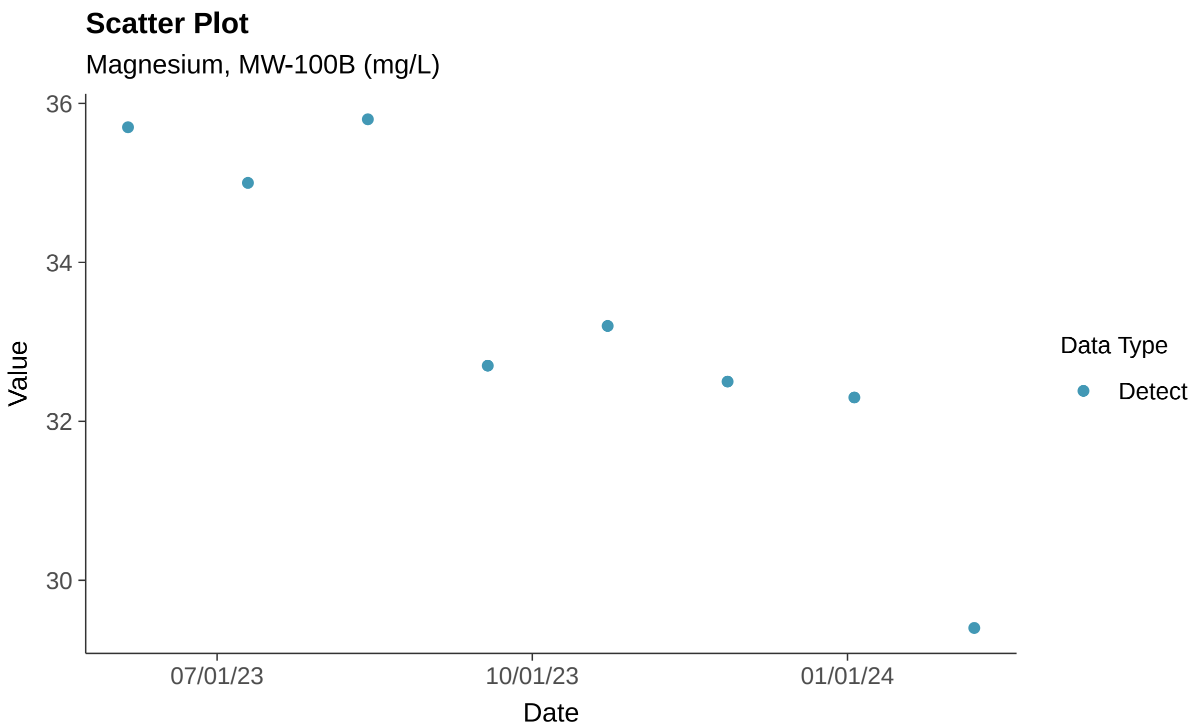
Trend Regression: Piecewise Linear-Linear-Linear

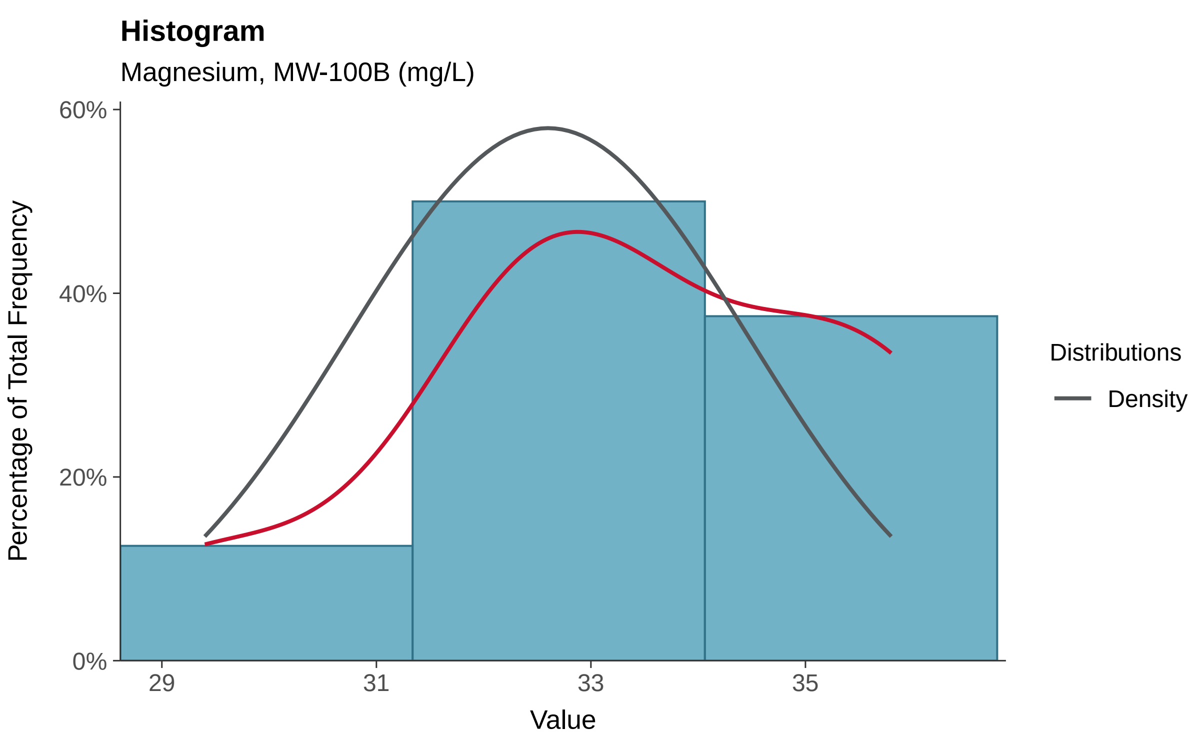
Hardness, MW-100B (mg/L)



Other: Magnesium, MW-100B

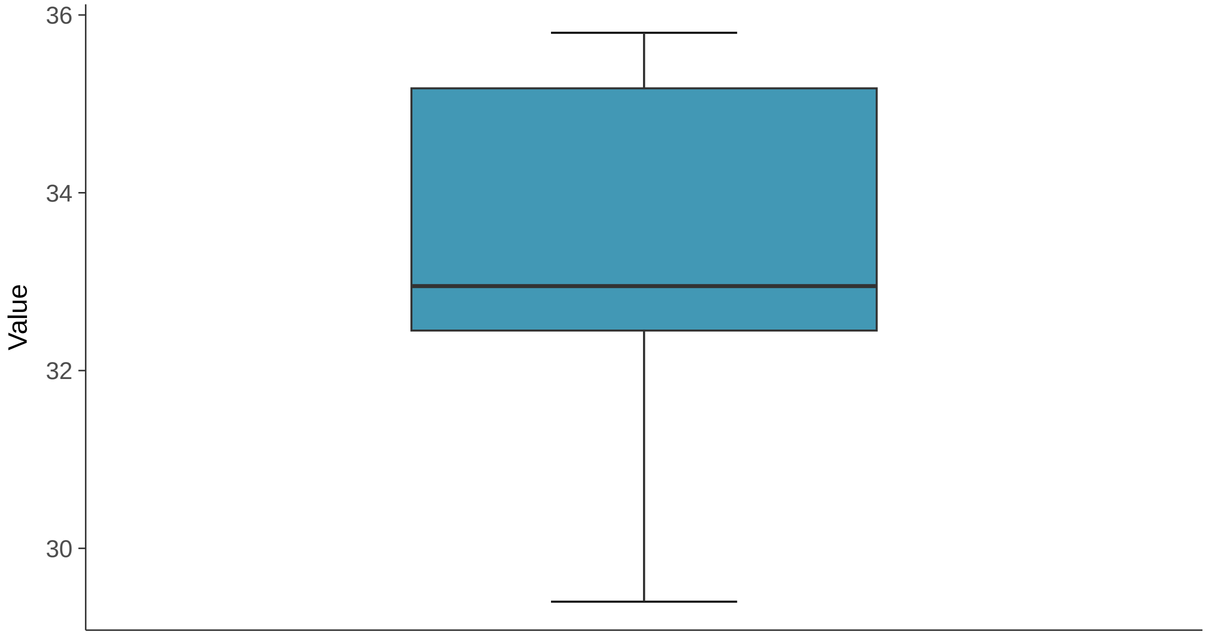
ID: 100B_4_33





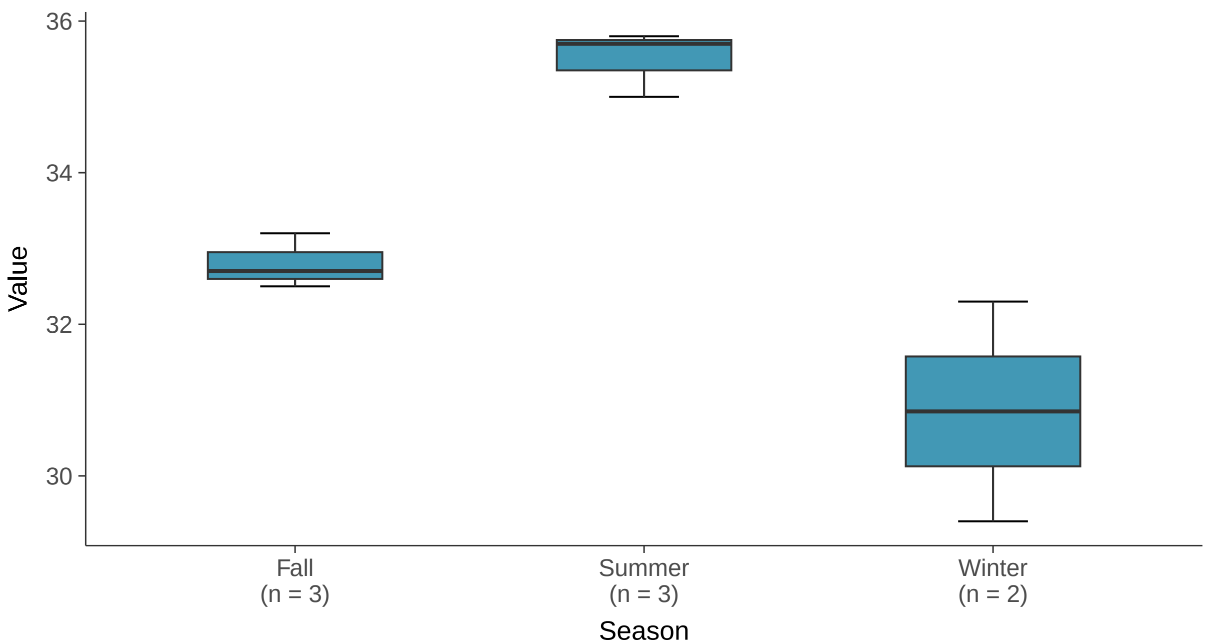
Boxplot

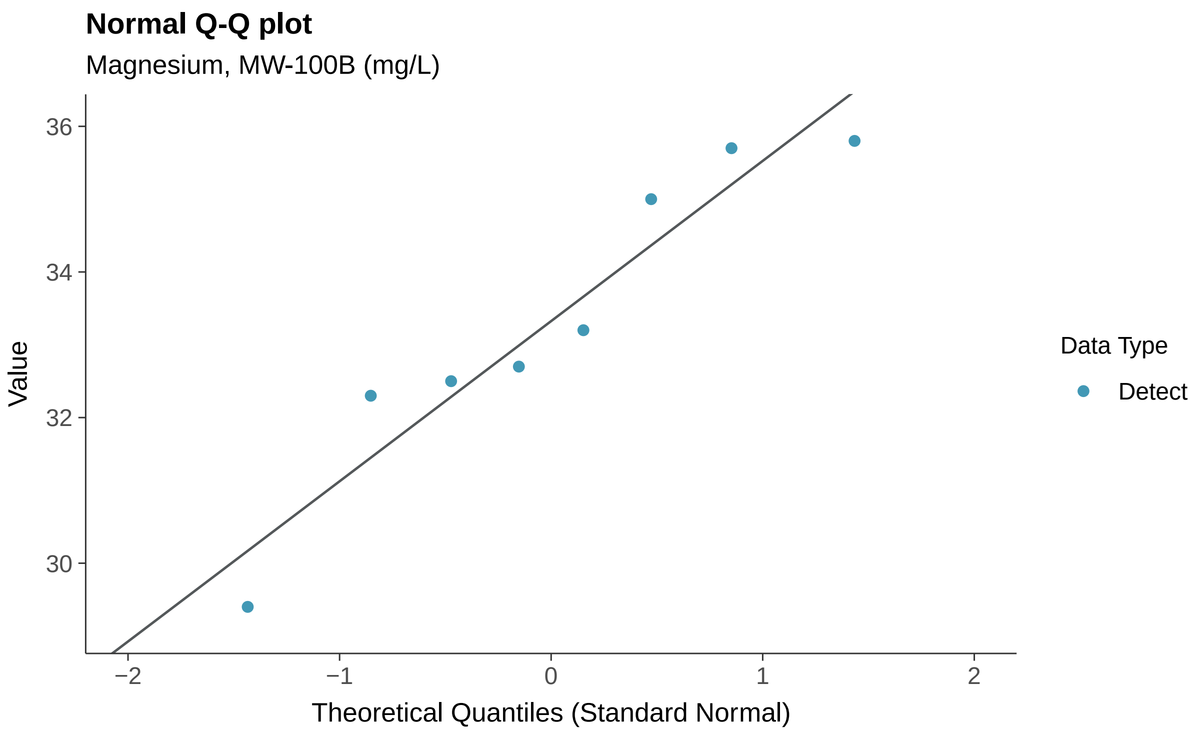
Magnesium, MW-100B (mg/L)

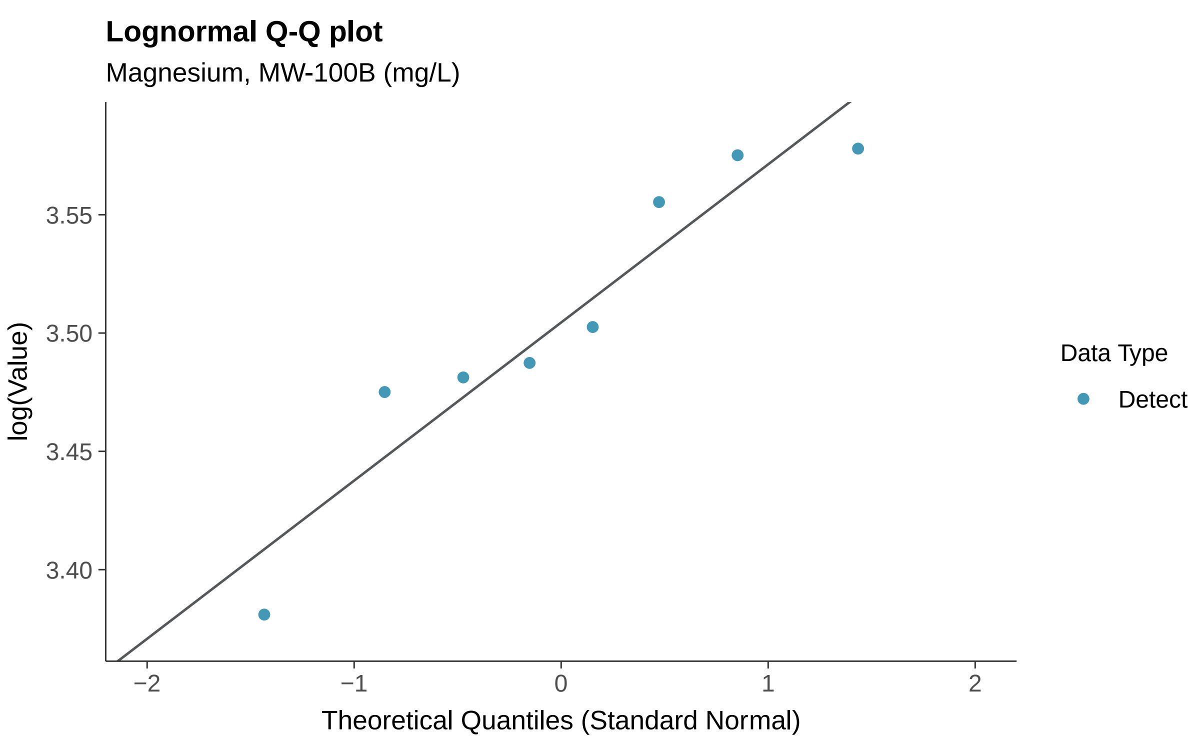


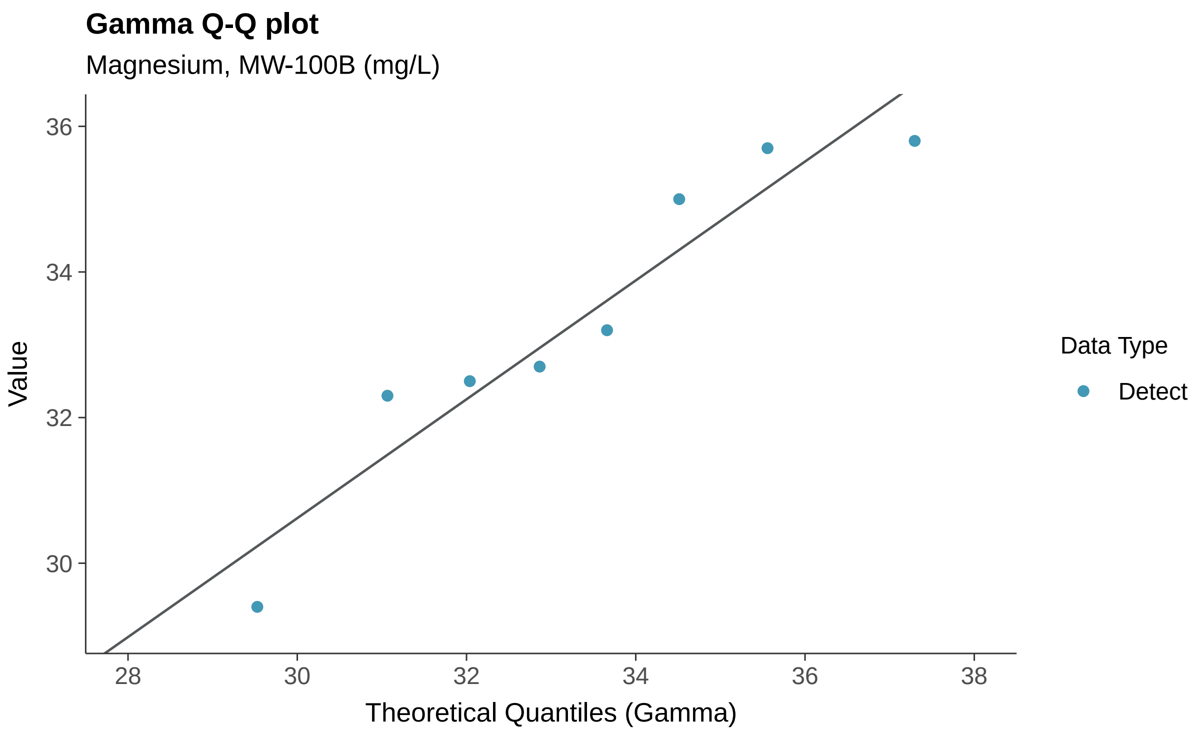
Boxplot by Season

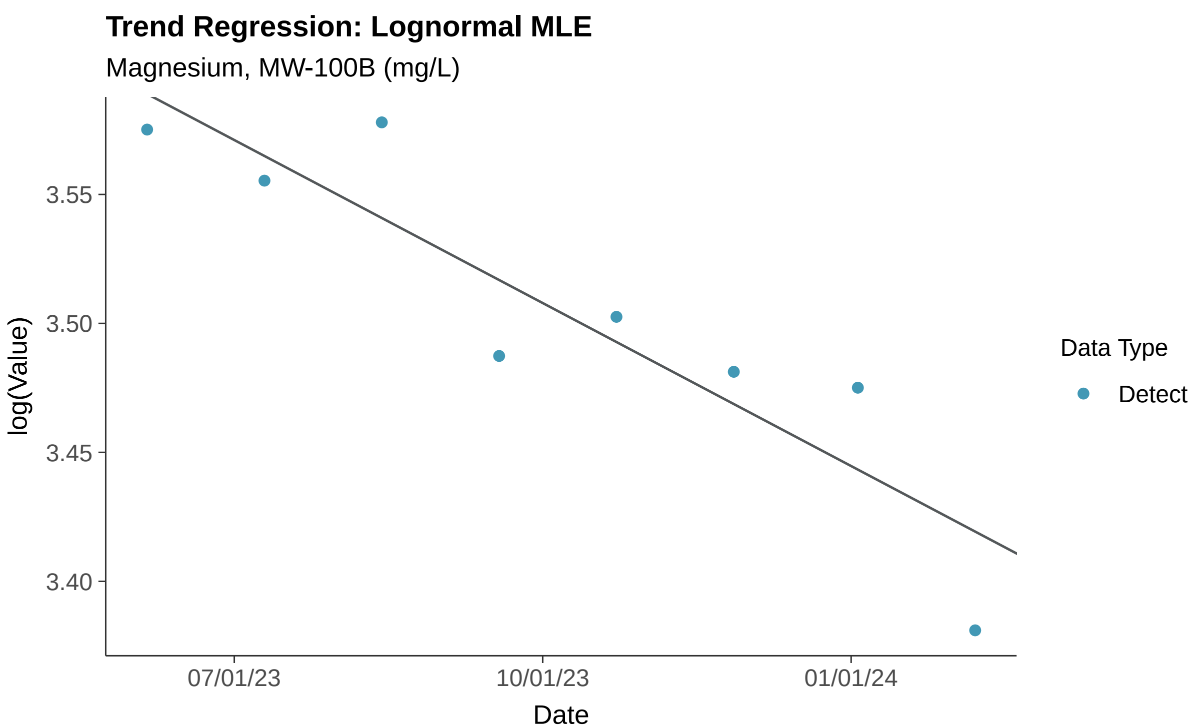
Magnesium, MW-100B (mg/L)




Normal Q-Q plot
Magnesium, MW-100B (mg/L)
Value
36
34
32
30
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

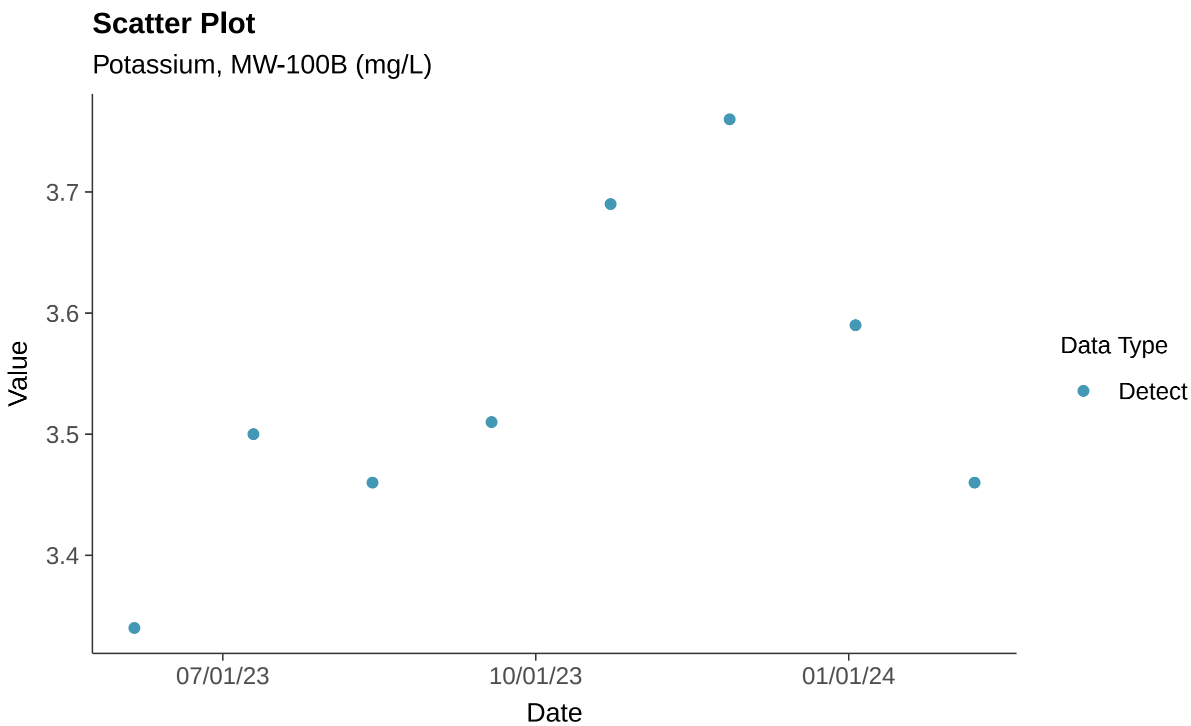

Lognormal Q-Q plot
Magnesium, MW-100B (mg/L)
log(Value)
3.55
3.50
3.45
3.40
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

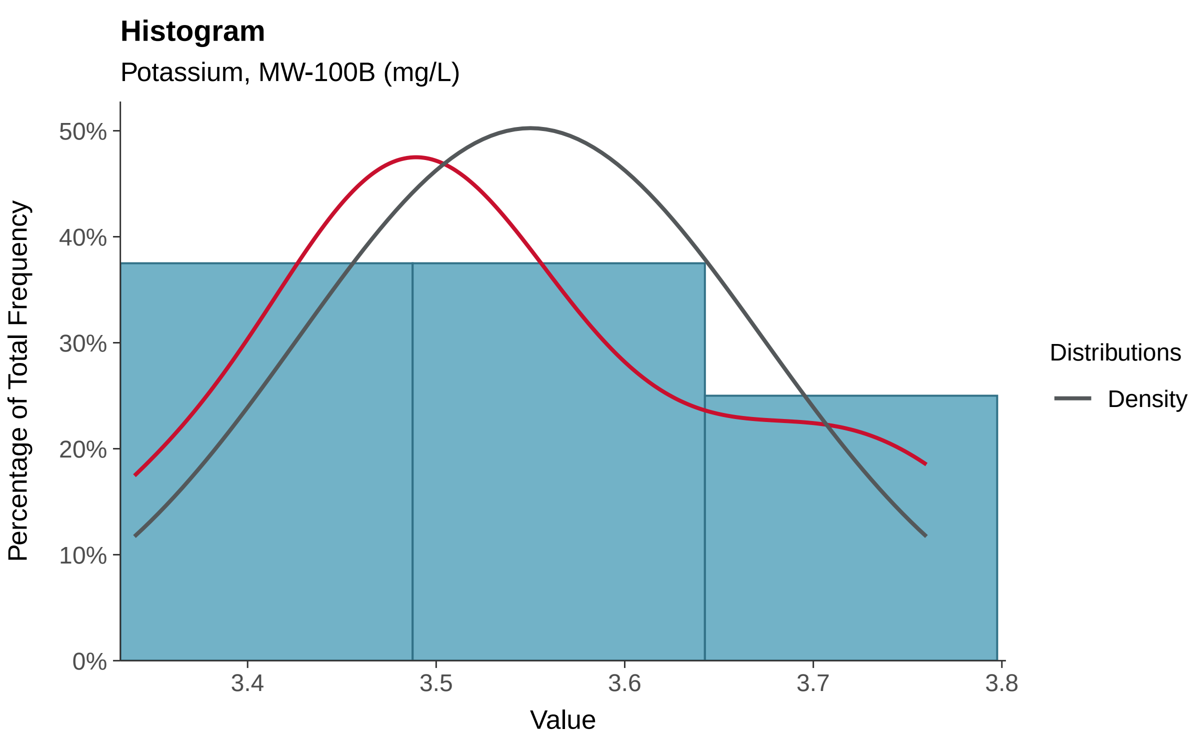

Gamma Q-Q plot
Magnesium, MW-100B (mg/L)
Value
36
34
32
30
28
30
32
34
36
38
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Magnesium, MW-100B (mg/L)
log(Value)
3.55
3.50
3.45
3.40
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Other: Potassium, MW-100B

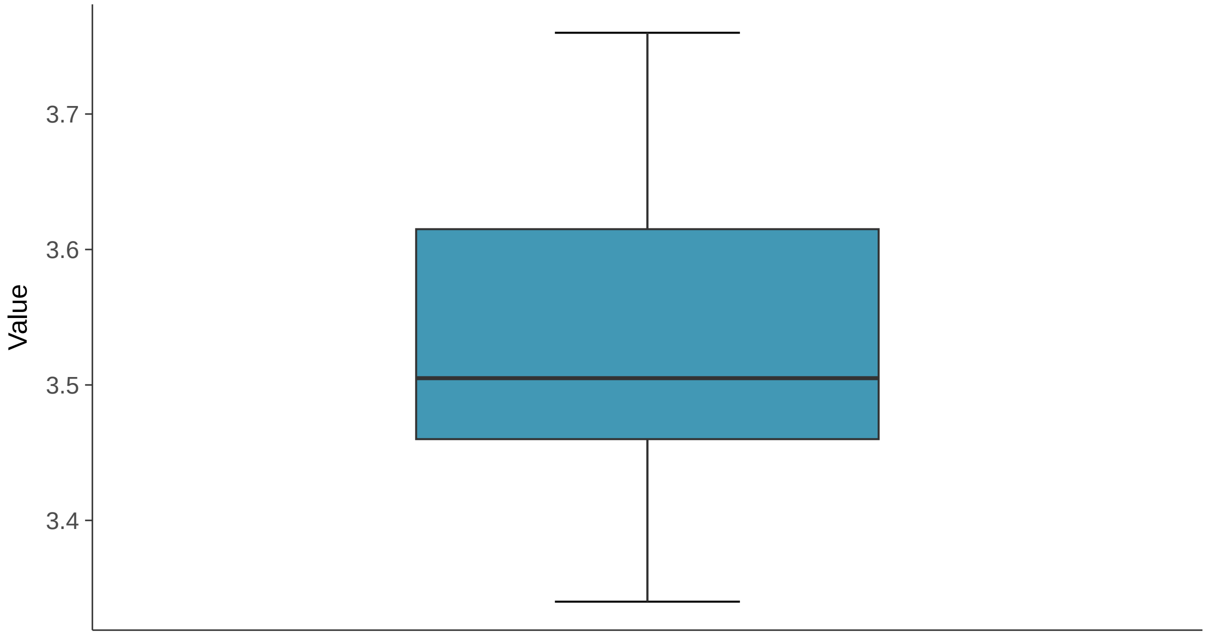
ID: 100B_4_34





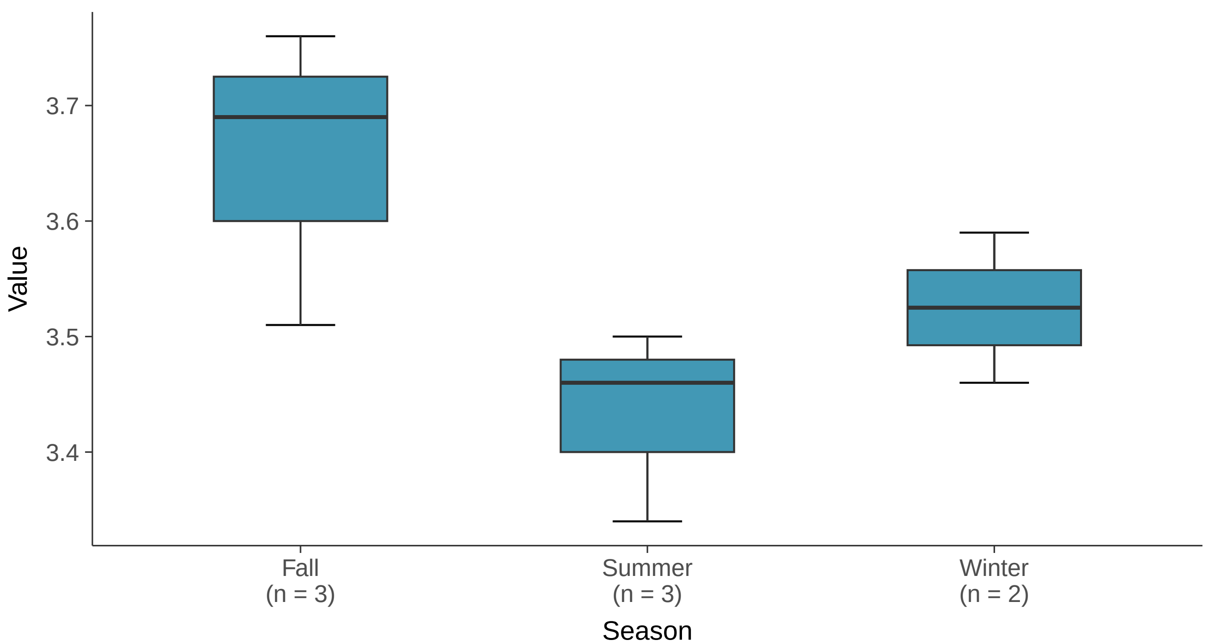
Boxplot

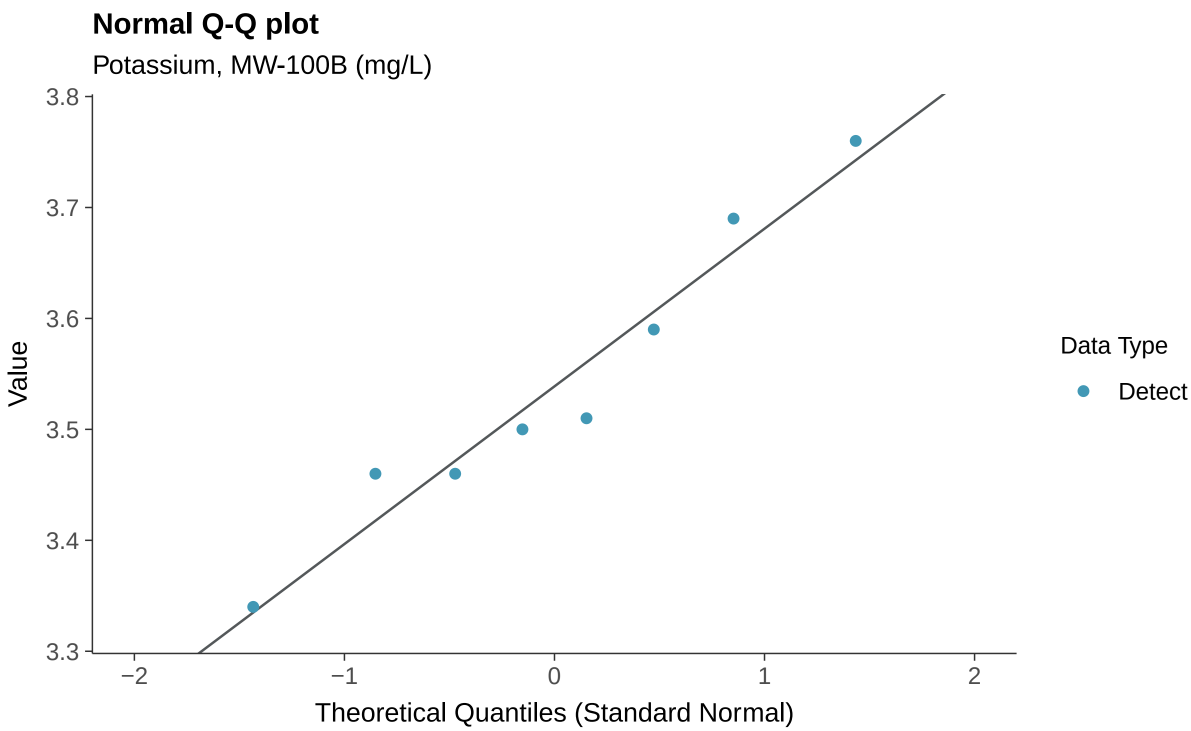
Potassium, MW-100B (mg/L)

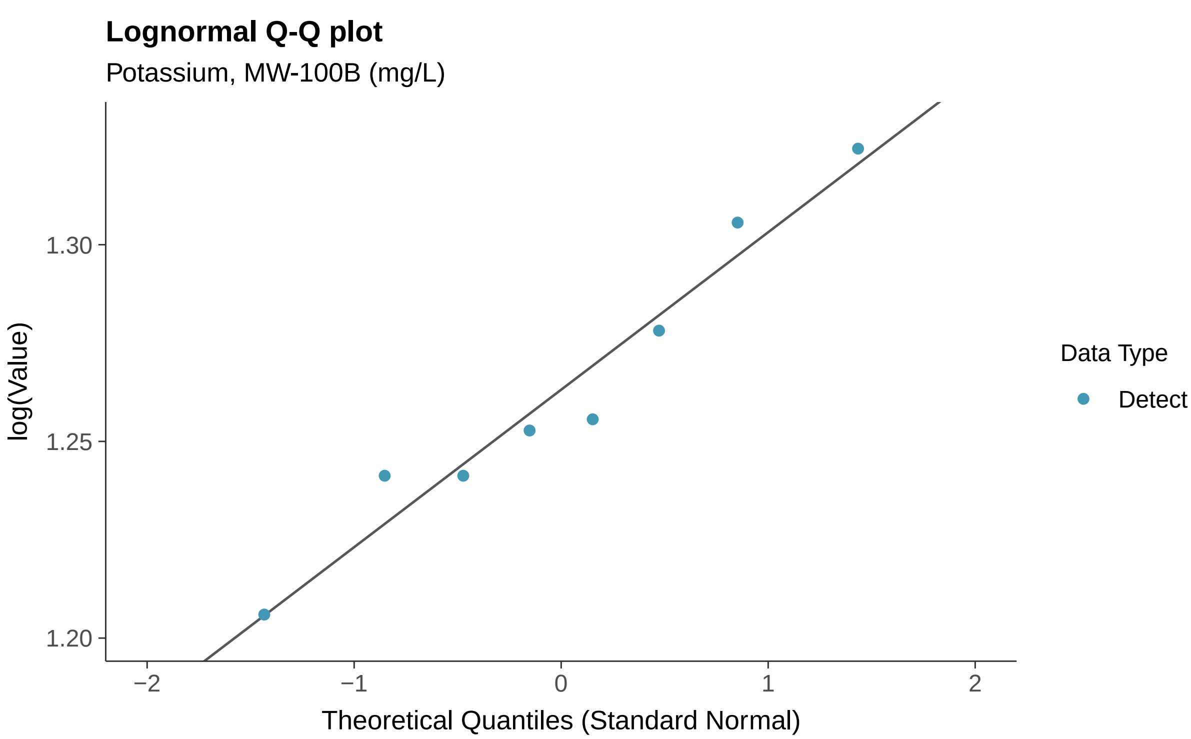


Boxplot by Season

Potassium, MW-100B (mg/L)

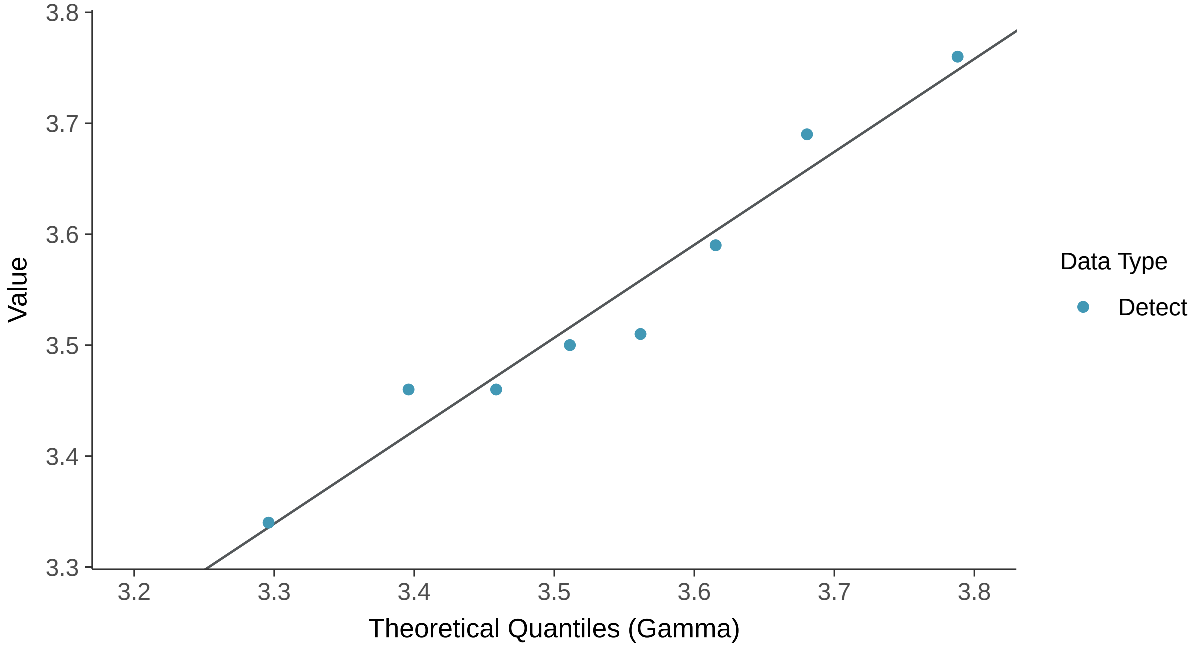



Normal Q-Q plot
Potassium, MW-100B (mg/L)
Value
3.8
3.7
3.6
3.5
3.4
3.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Potassium, MW-100B (mg/L)
log(Value)
1.30
1.25
1.20
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

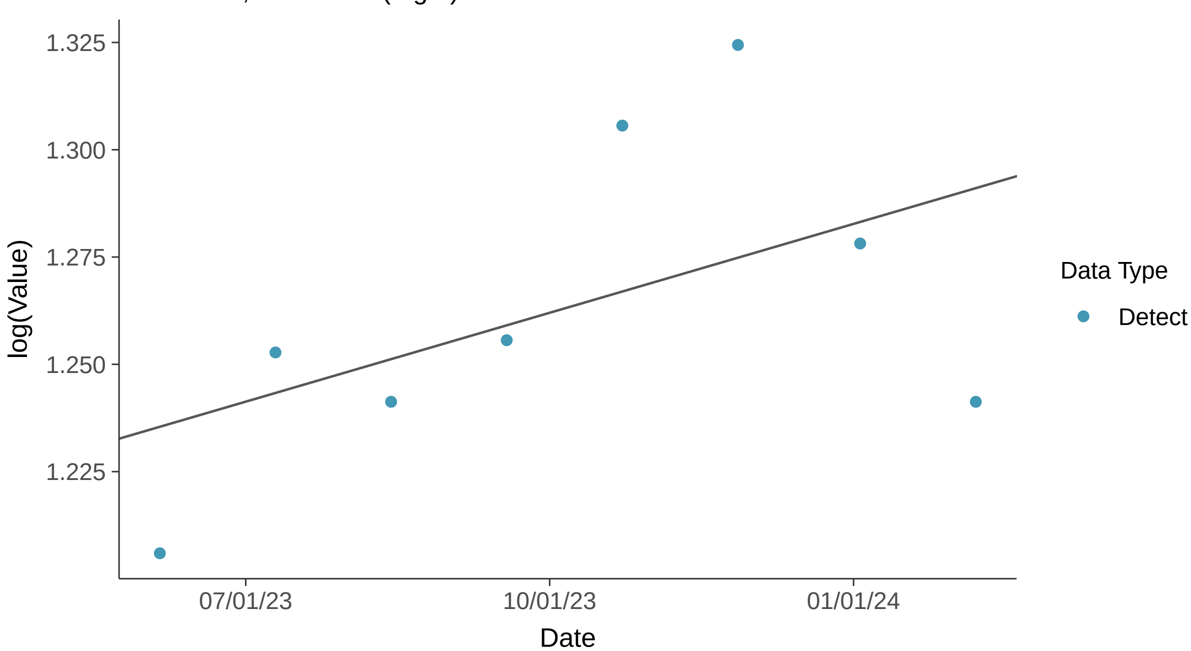
Gamma Q-Q plot

Potassium, MW-100B (mg/L)



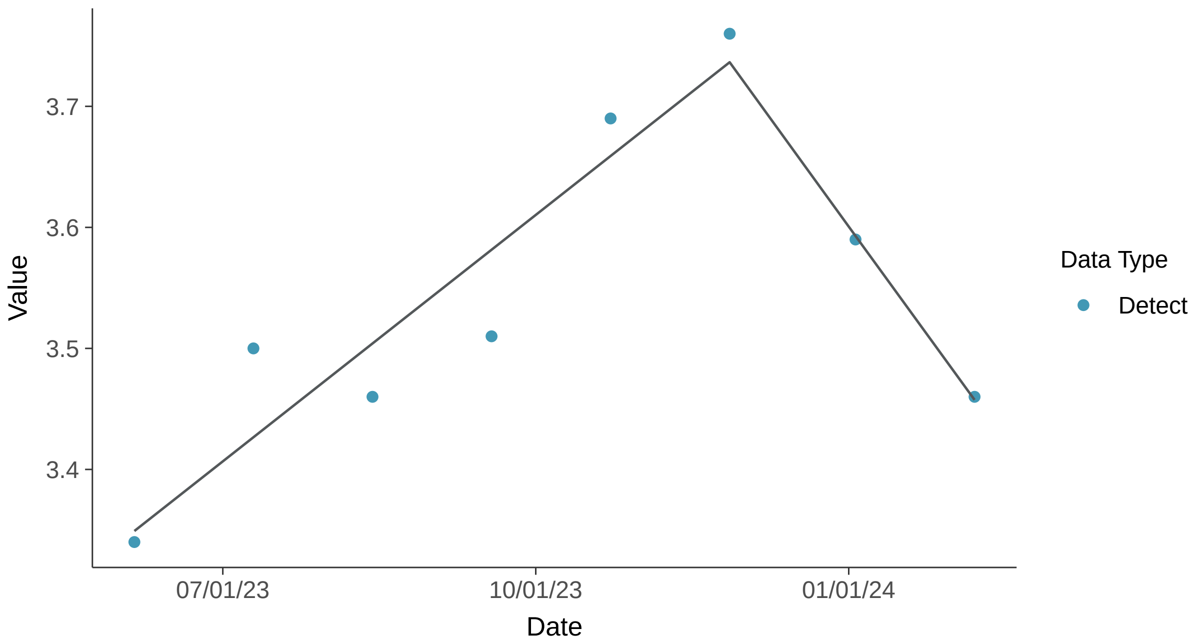
Trend Regression: Lognormal MLE

Potassium, MW-100B (mg/L)



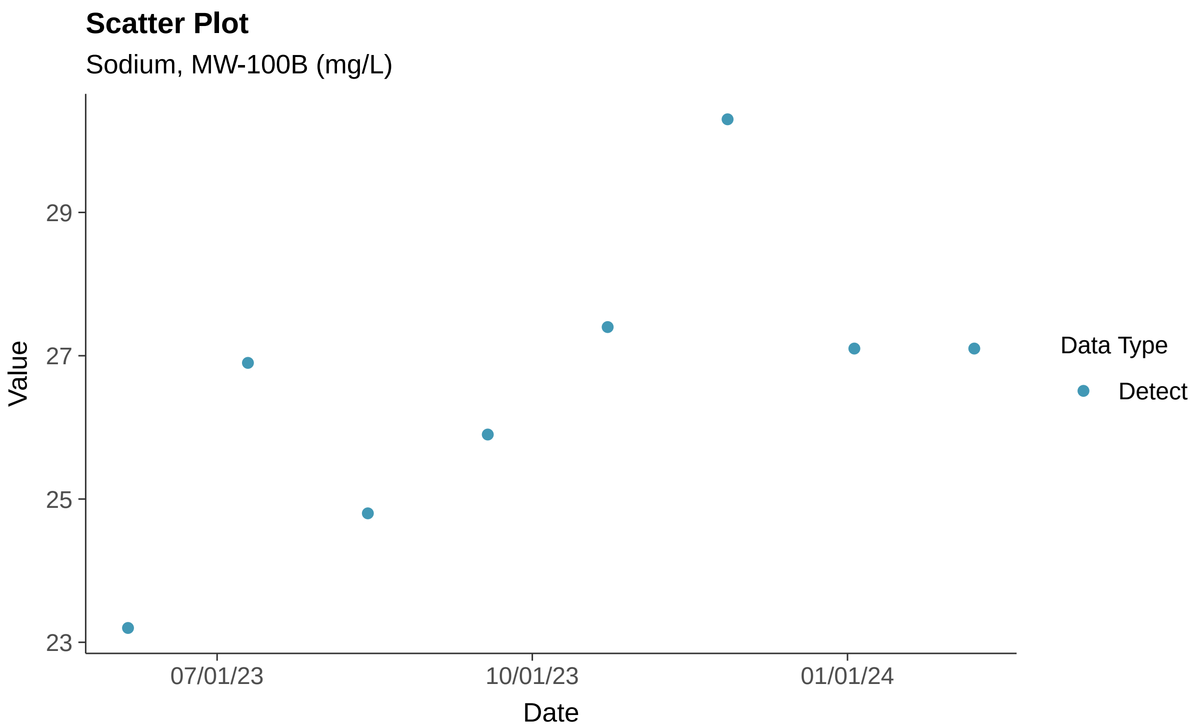
Trend Regression: Piecewise Linear-Linear

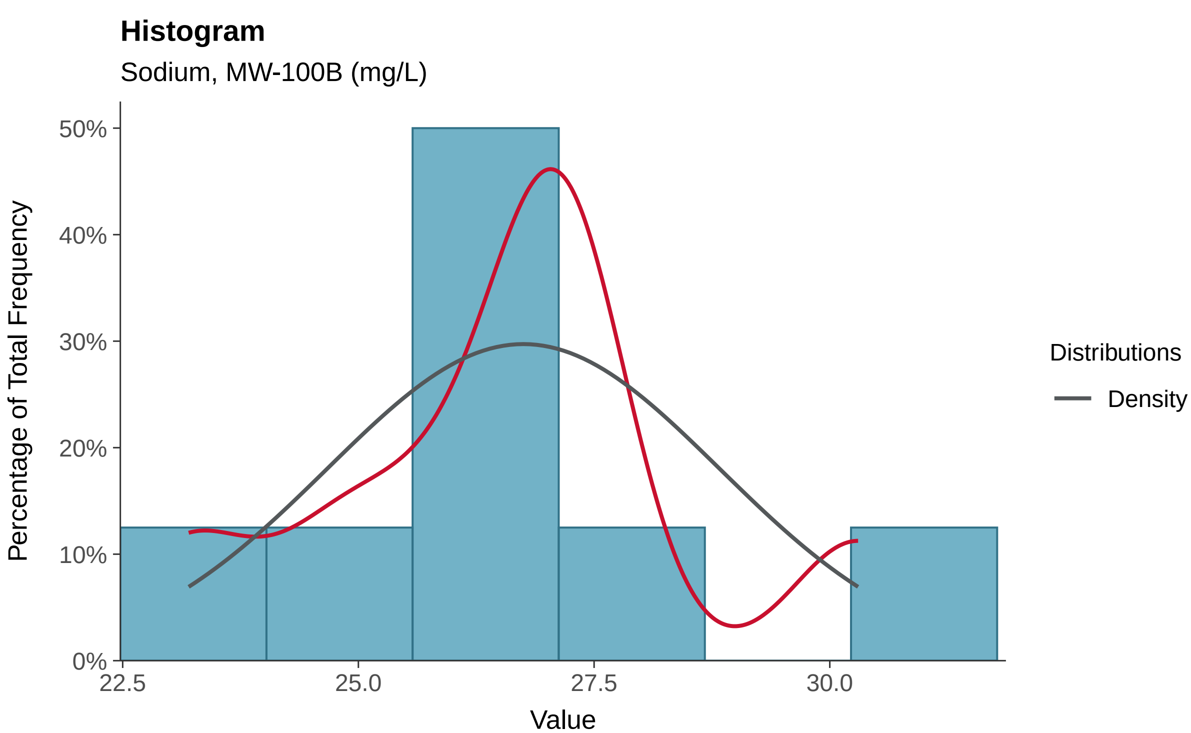
Potassium, MW-100B (mg/L)



Other: Sodium, MW-100B

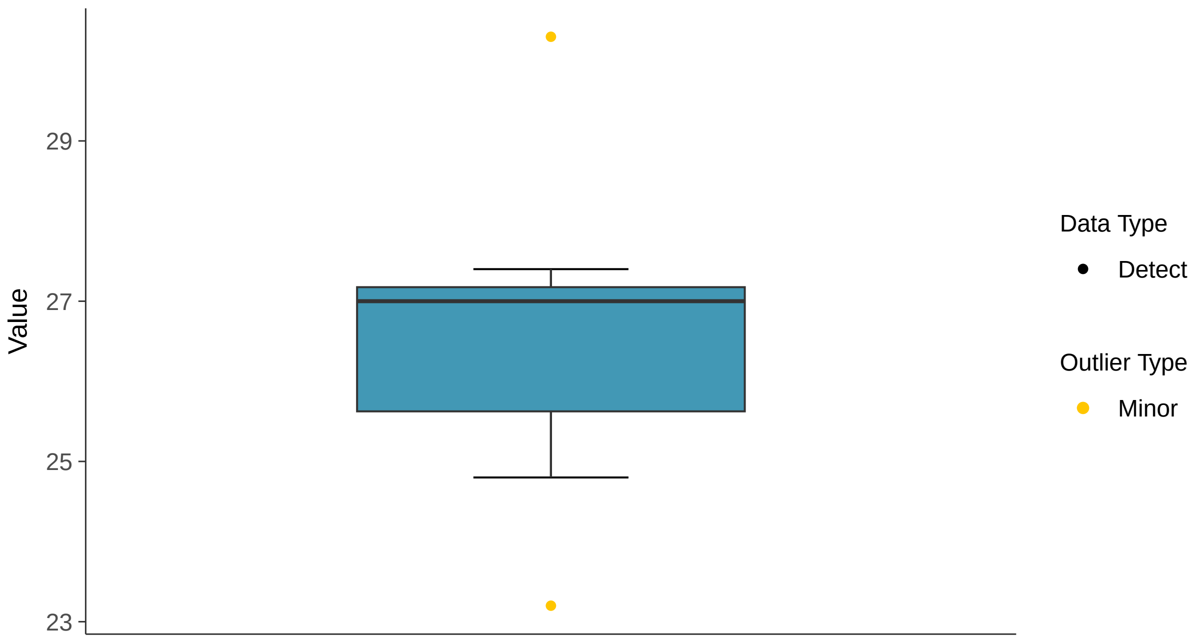
ID: 100B_4_35





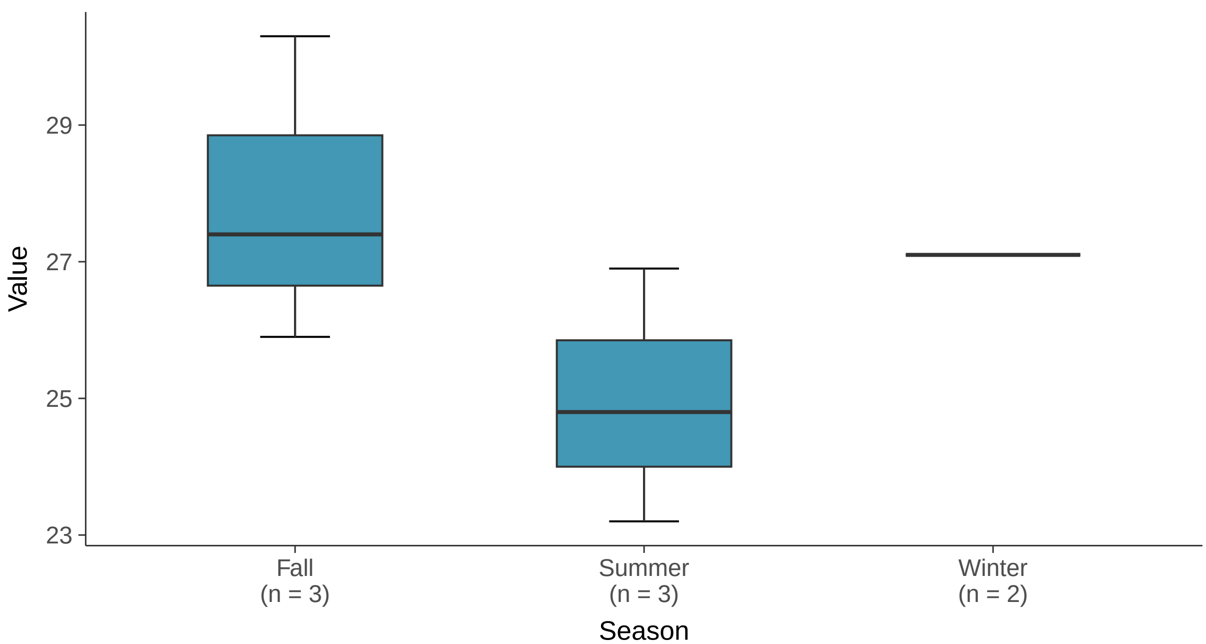
Boxplot

Sodium, MW-100B (mg/L)



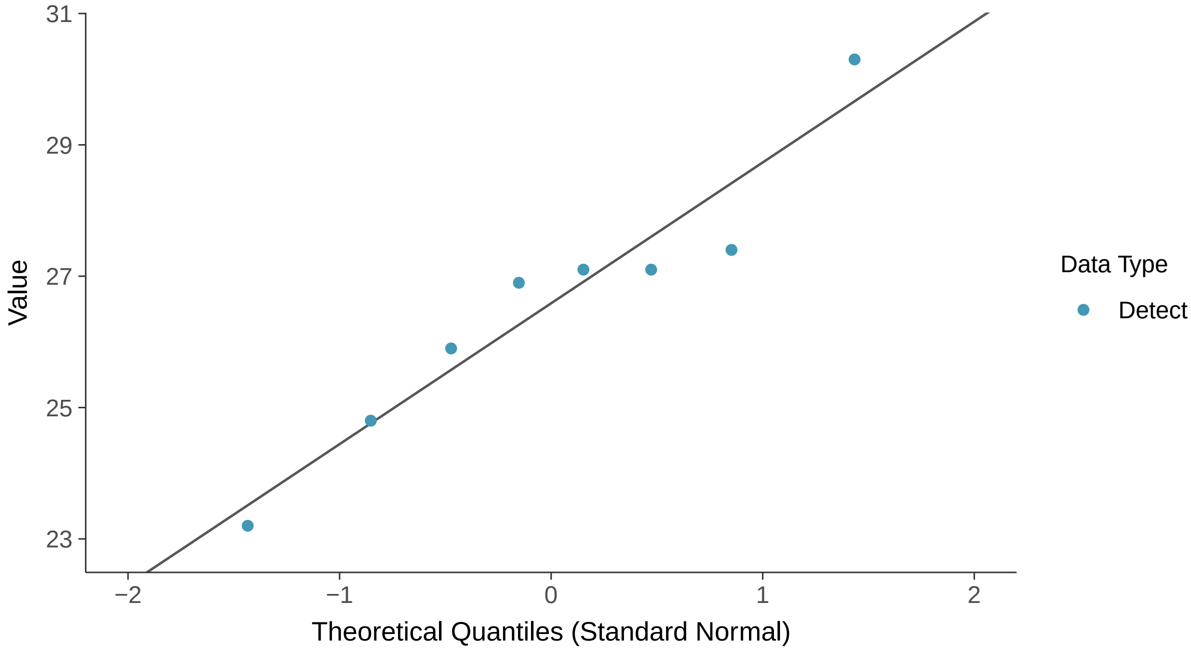
Boxplot by Season

Sodium, MW-100B (mg/L)



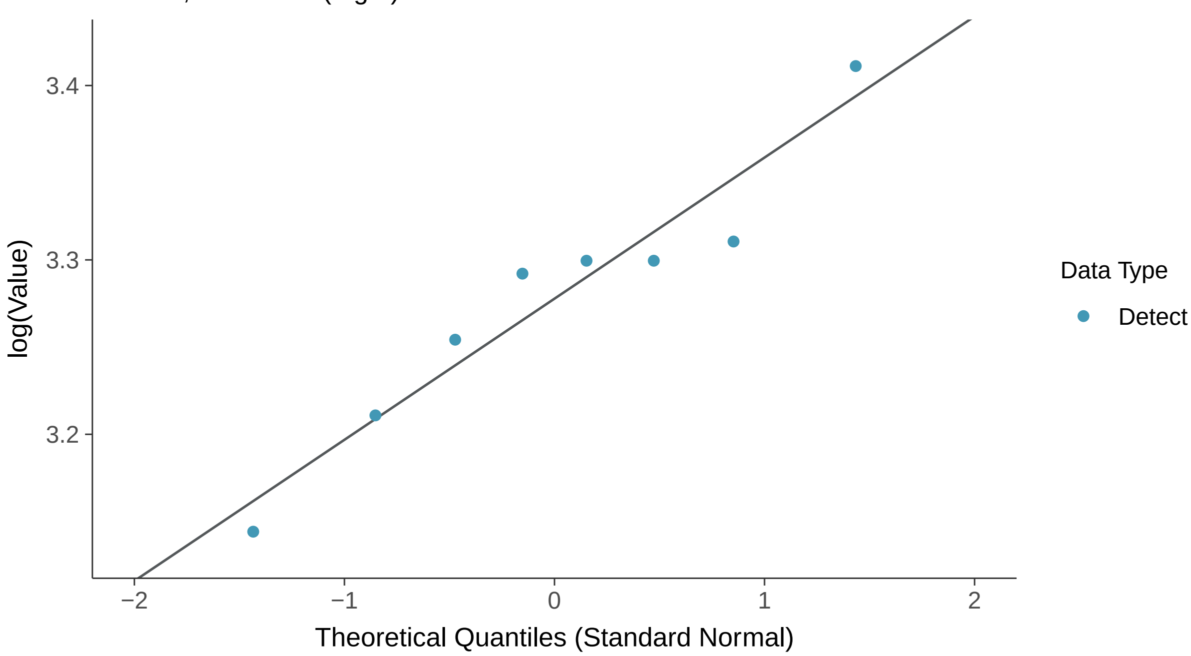
Normal Q-Q plot

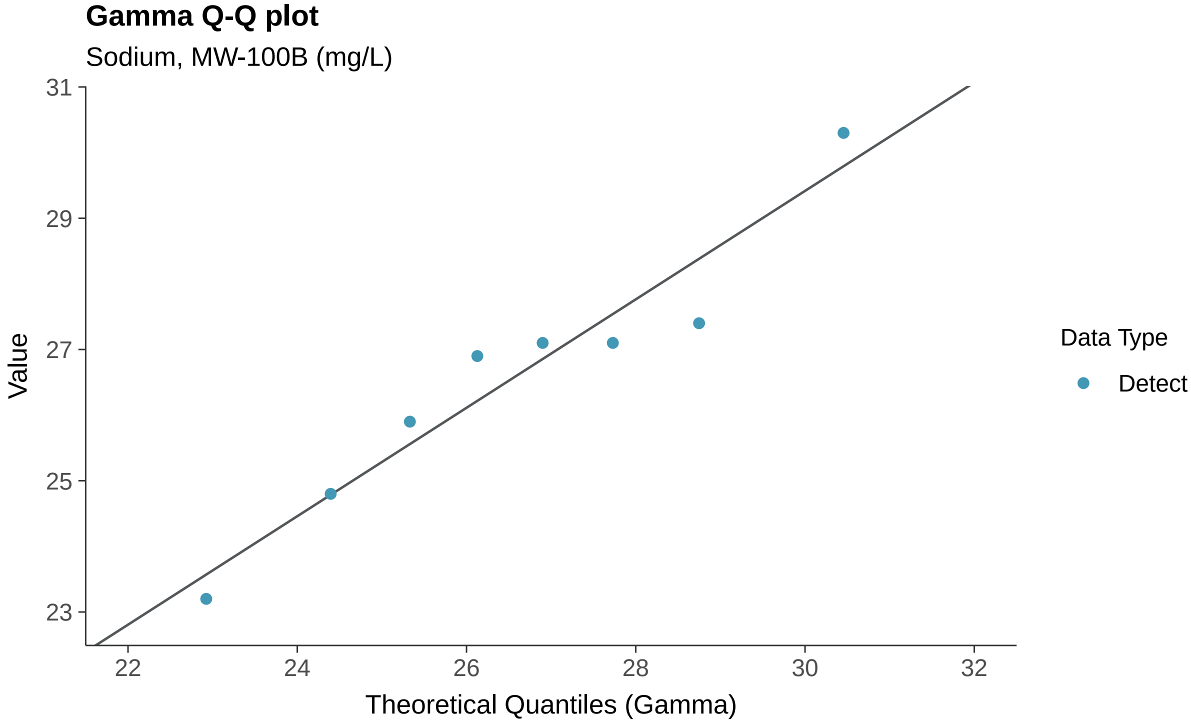
Sodium, MW-100B (mg/L)

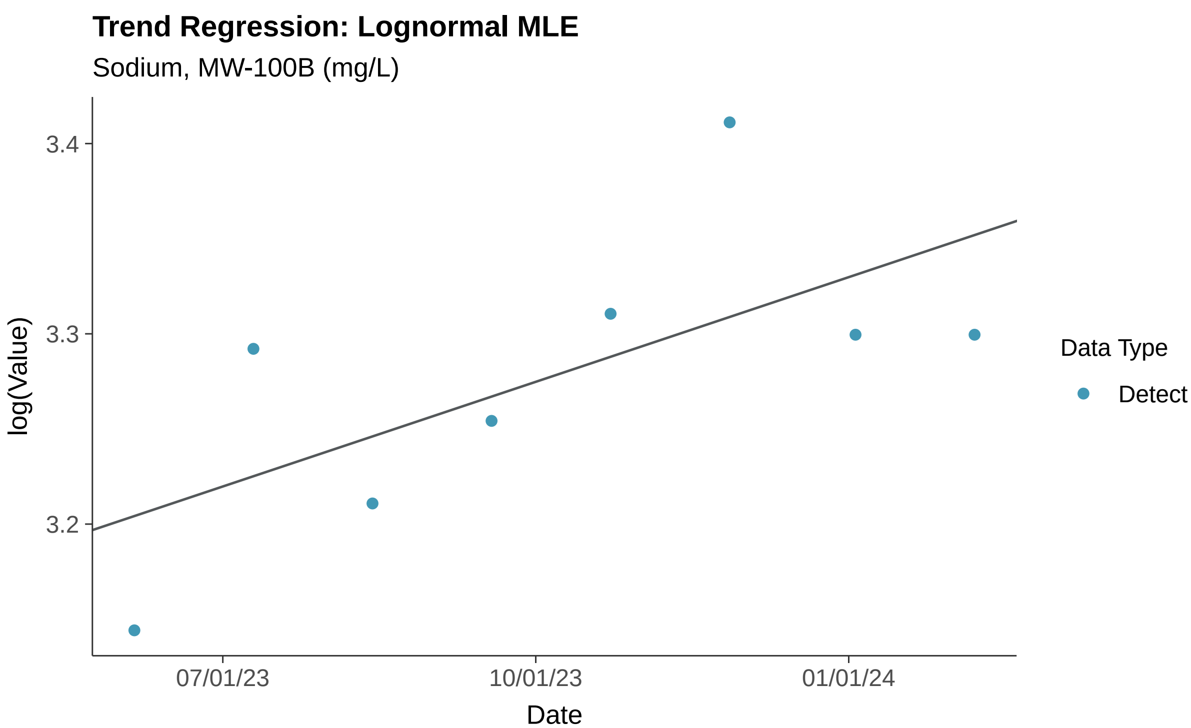


Lognormal Q-Q plot

Sodium, MW-100B (mg/L)

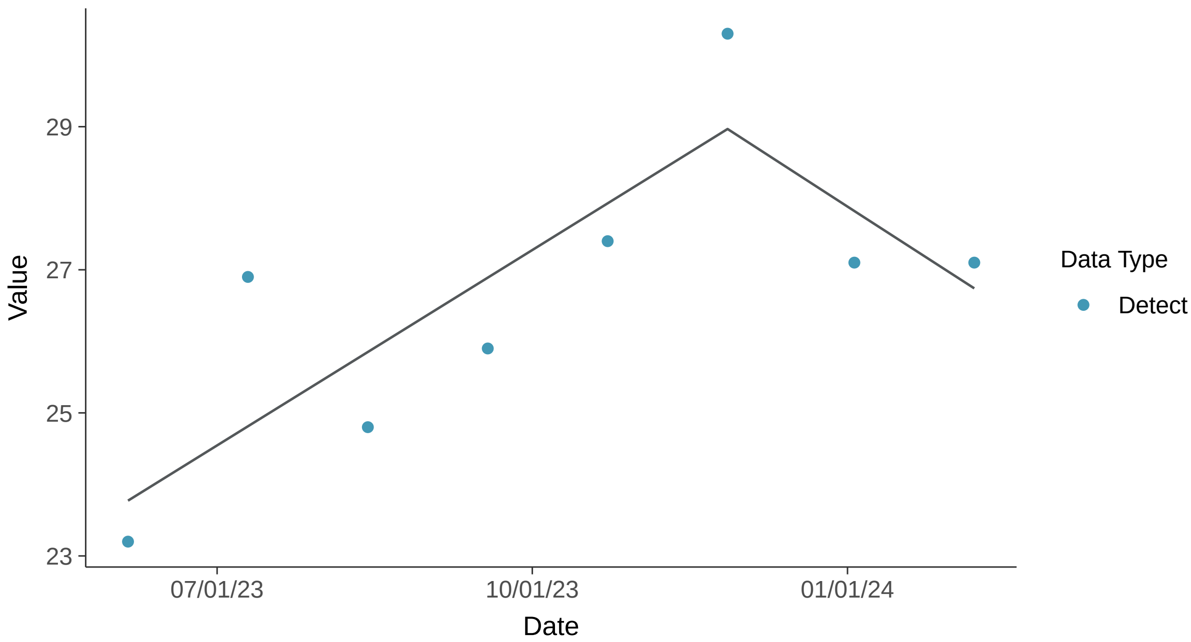



Gamma Q-Q plot
Sodium, MW-100B (mg/L)
Value
31
29
27
25
23
22
24
26
28
30
32
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Sodium, MW-100B (mg/L)
log(Value)
3.4
3.3
3.2
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

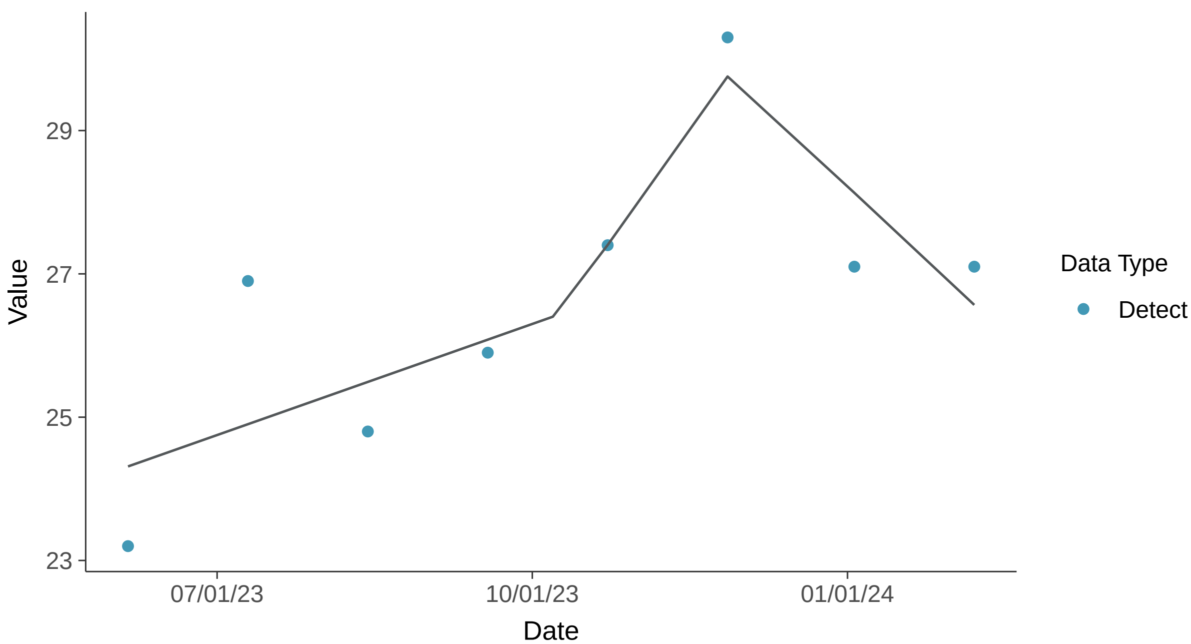
Trend Regression: Piecewise Linear-Linear

Sodium, MW-100B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Sodium, MW-100B (mg/L)

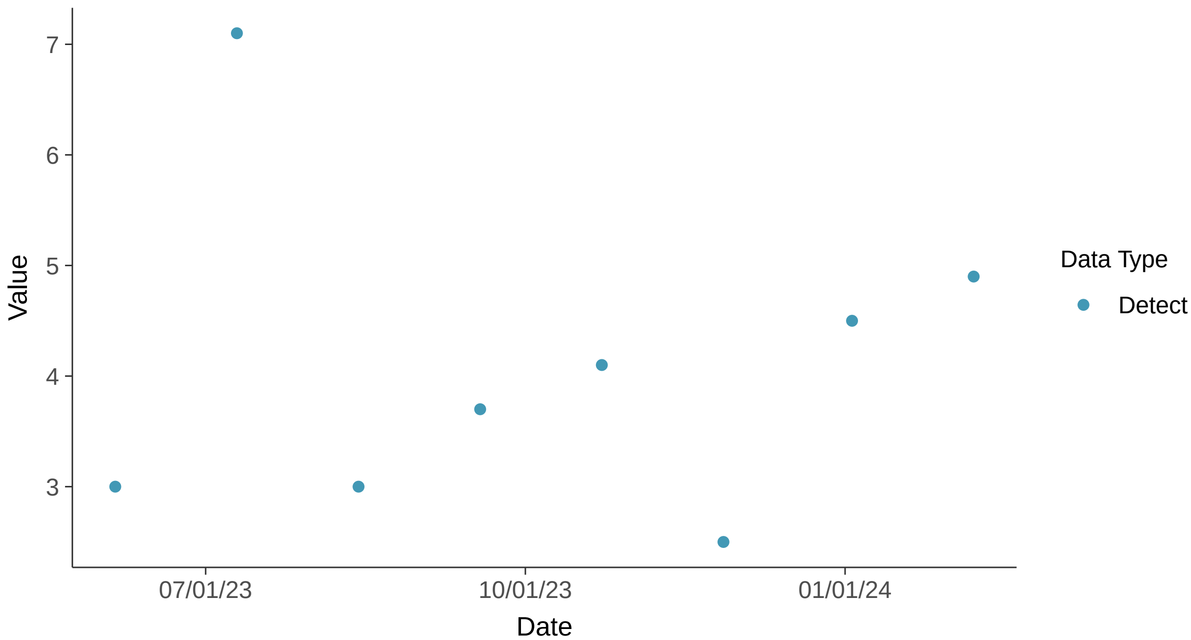


Other: Total Suspended Solids, MW-100B

ID: 100B_4_36

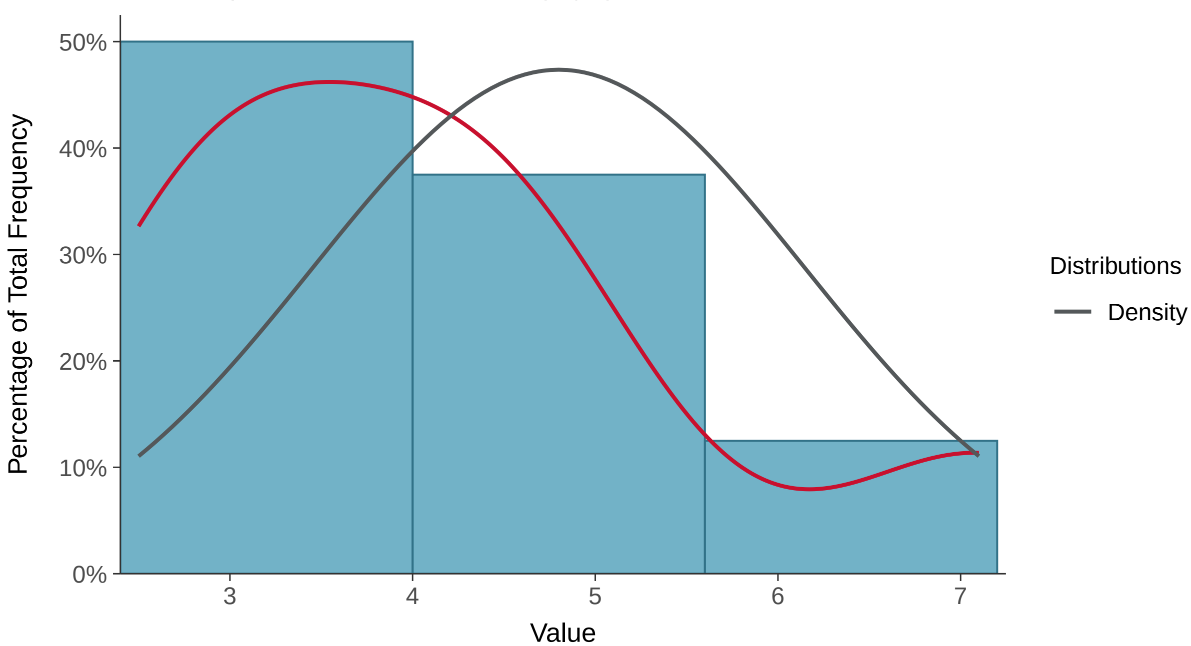
Scatter Plot

Total Suspended Solids, MW-100B (mg/L)



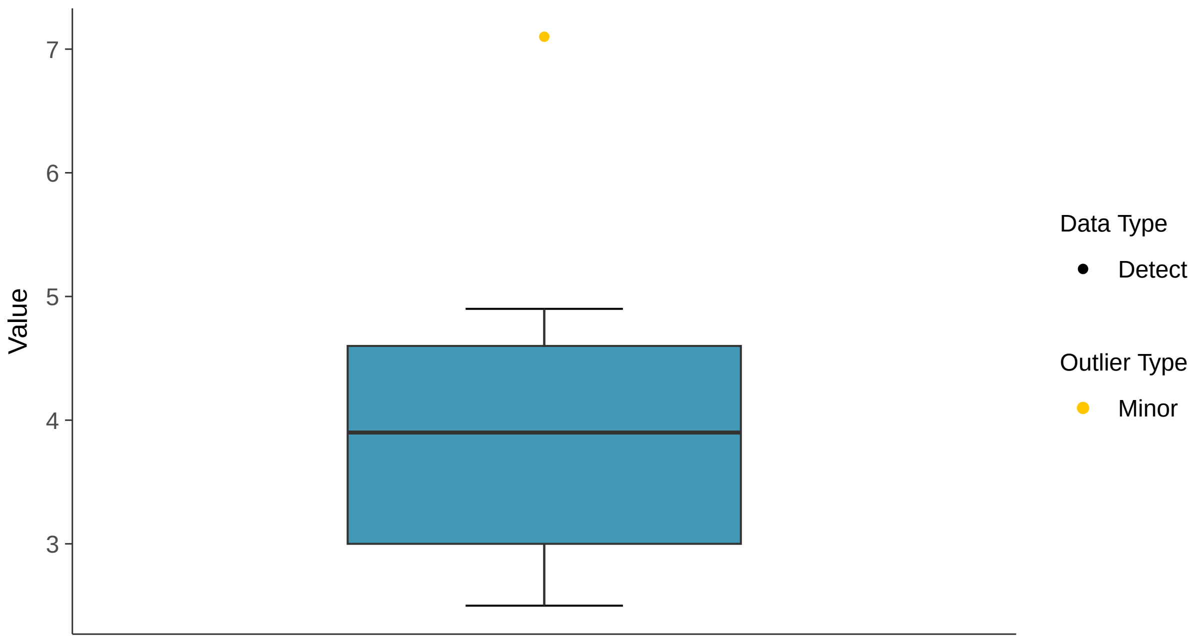
Histogram

Total Suspended Solids, MW-100B (mg/L)



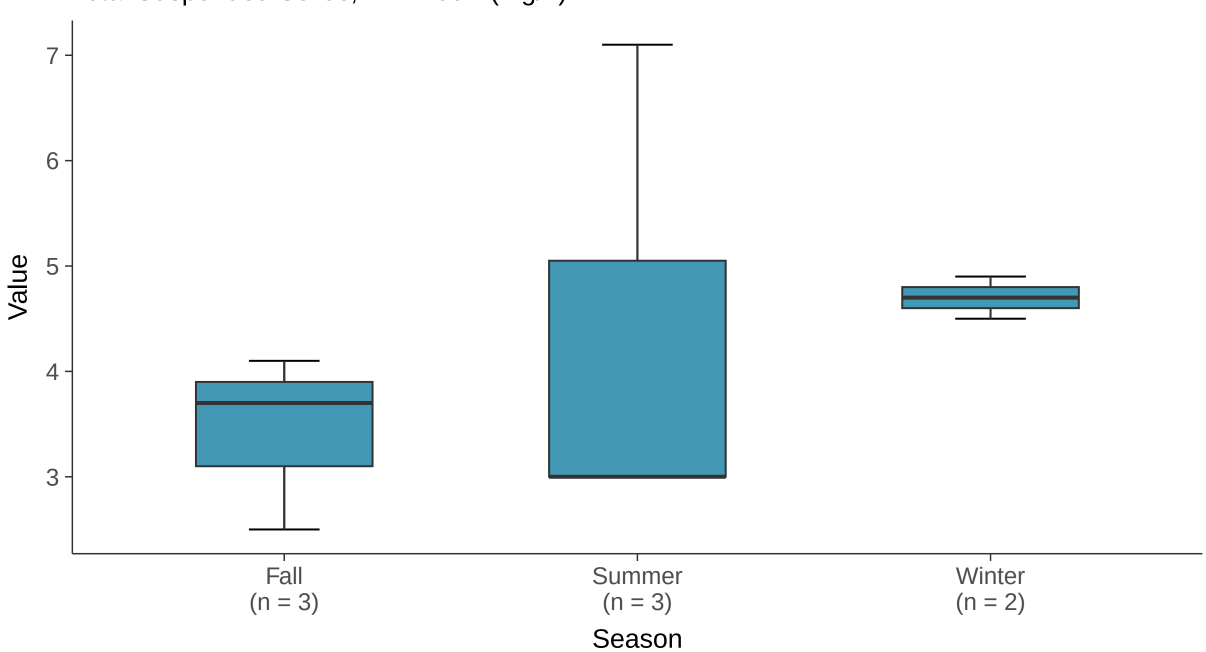
Boxplot

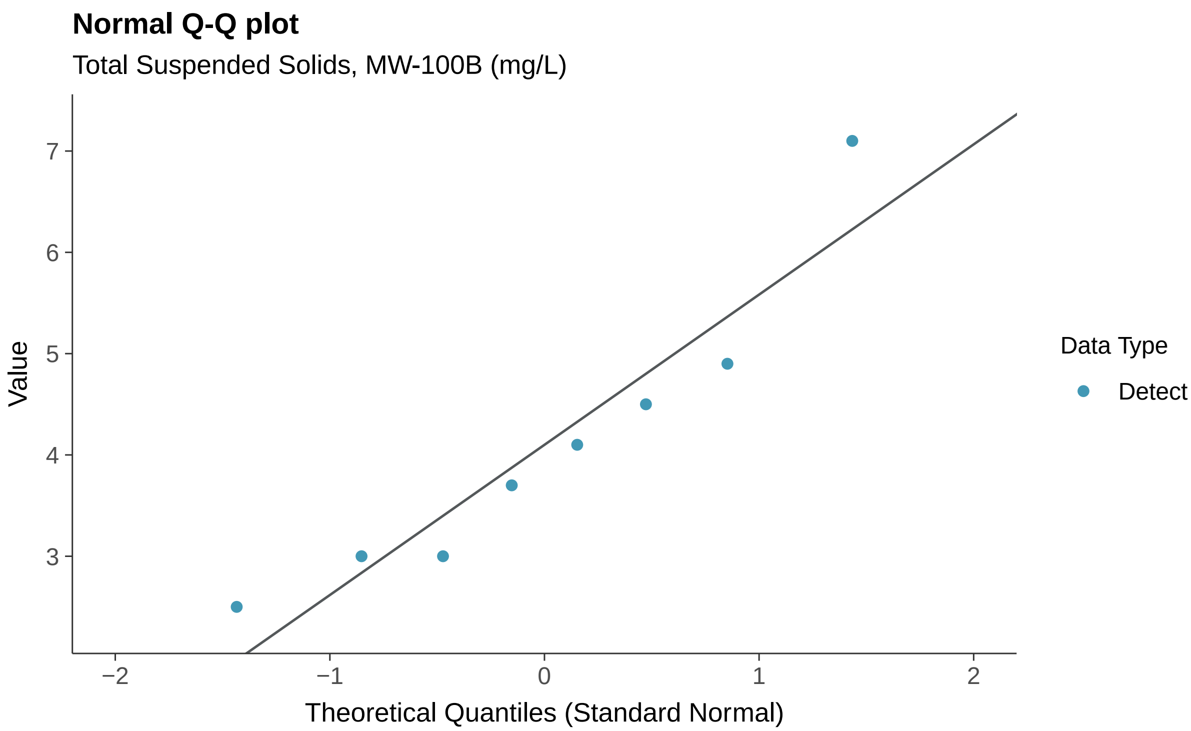
Total Suspended Solids, MW-100B (mg/L)

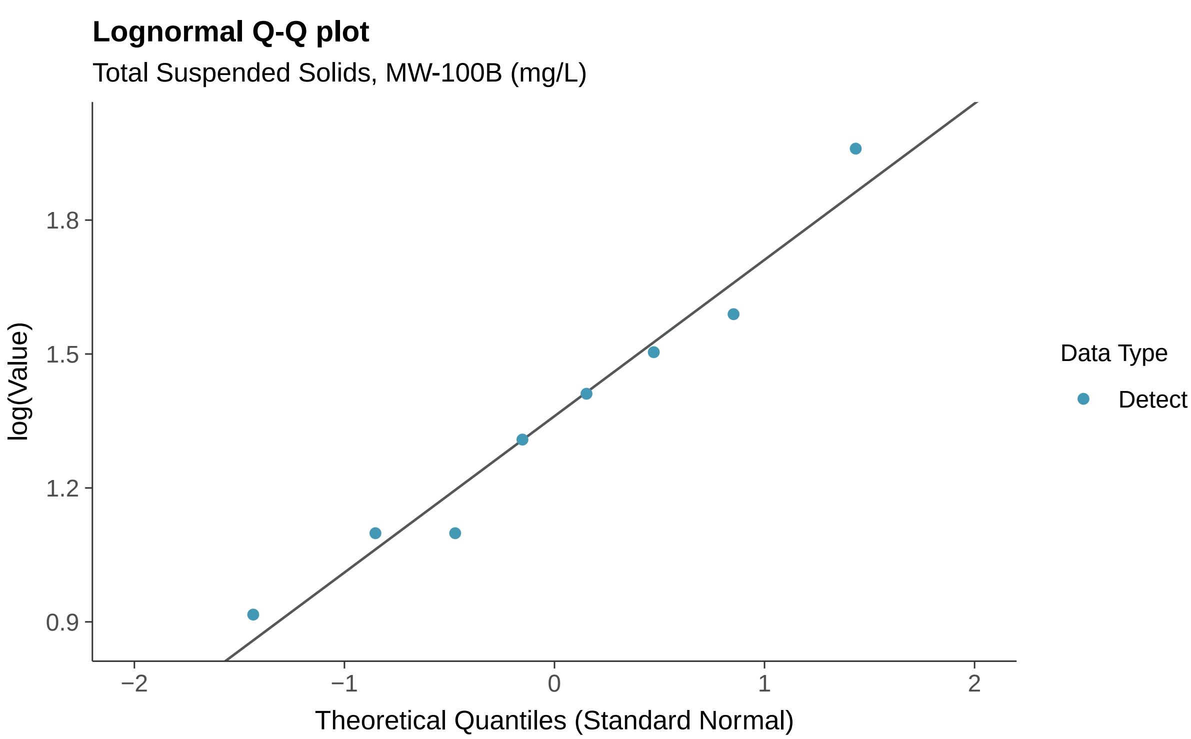


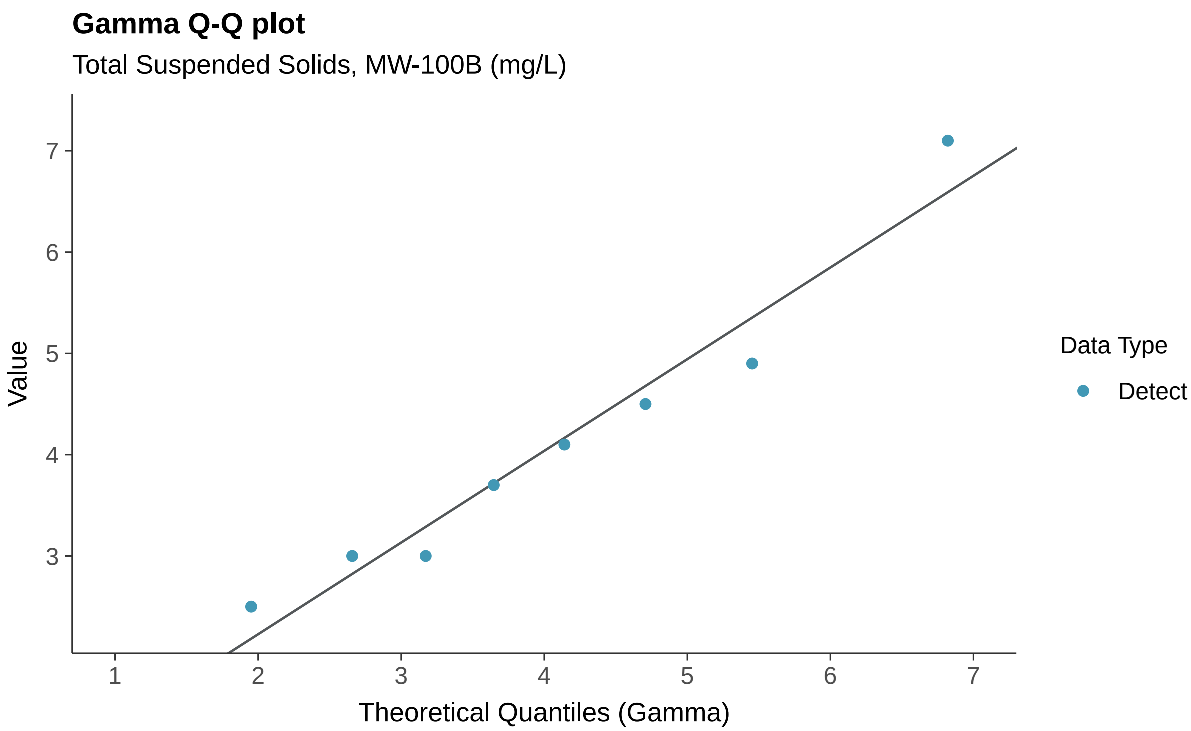
Boxplot by Season

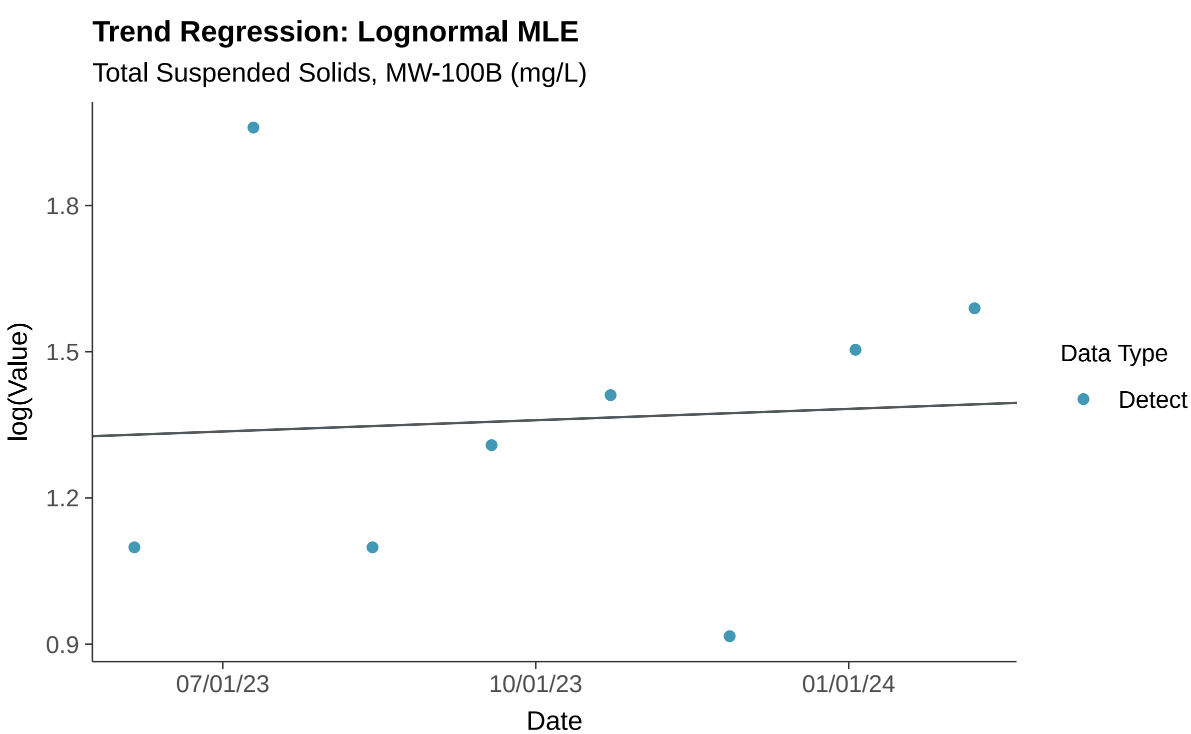
Total Suspended Solids, MW-100B (mg/L)




Normal Q-Q plot
Total Suspended Solids, MW-100B (mg/L)
Value
7
6
5
4
3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

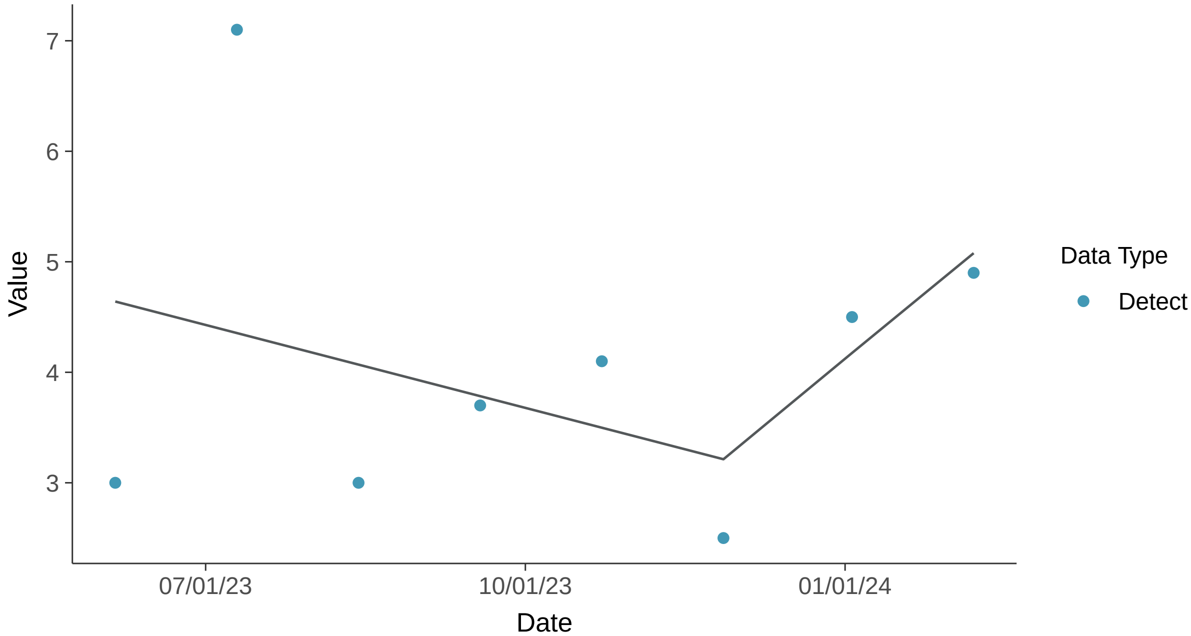

Lognormal Q-Q plot
Total Suspended Solids, MW-100B (mg/L)
log(Value)
1.8
1.5
1.2
0.9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Suspended Solids, MW-100B (mg/L)
Value
7
6
5
4
3
1
2
3
4
5
6
7
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Suspended Solids, MW-100B (mg/L)
log(Value)
1.8
1.5
1.2
0.9
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Total Suspended Solids, MW-100B (mg/L)

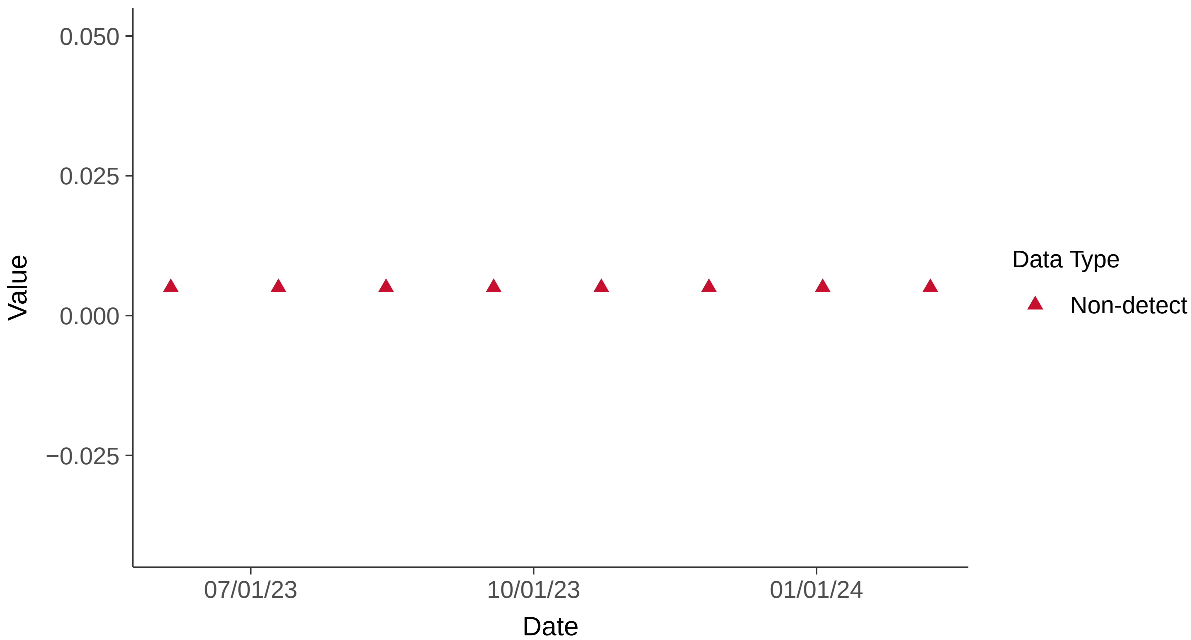


Part 115: Copper, MW-100B

ID: 100B_5_37

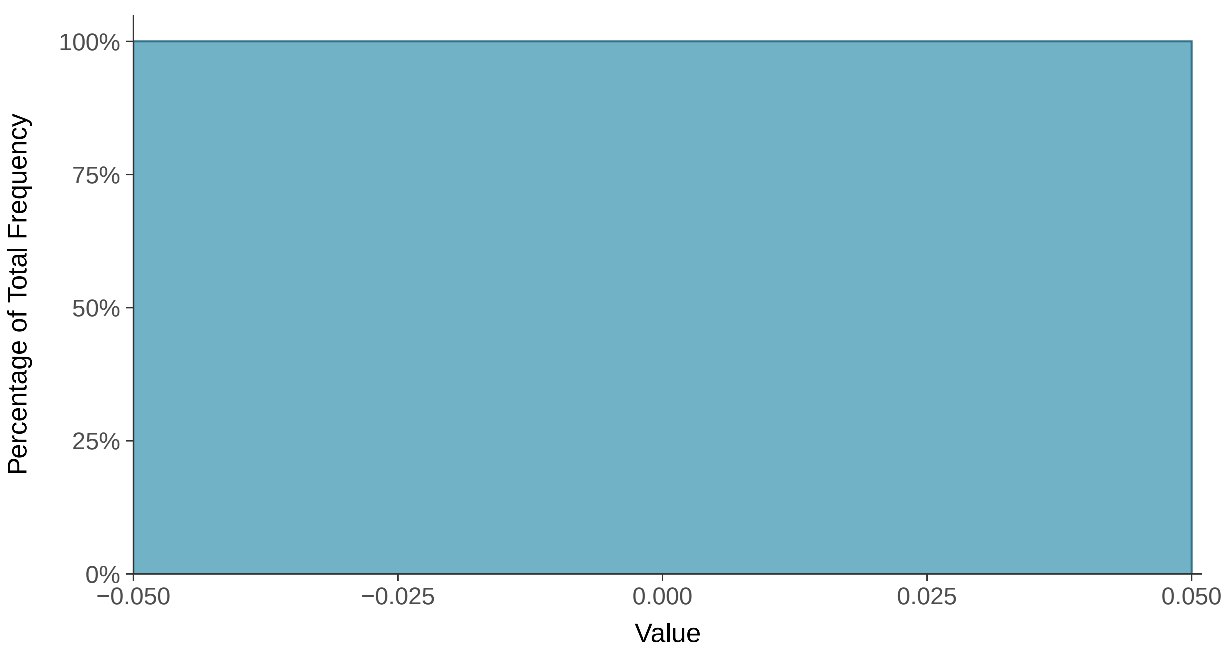
Scatter Plot

Copper, MW-100B (mg/L)



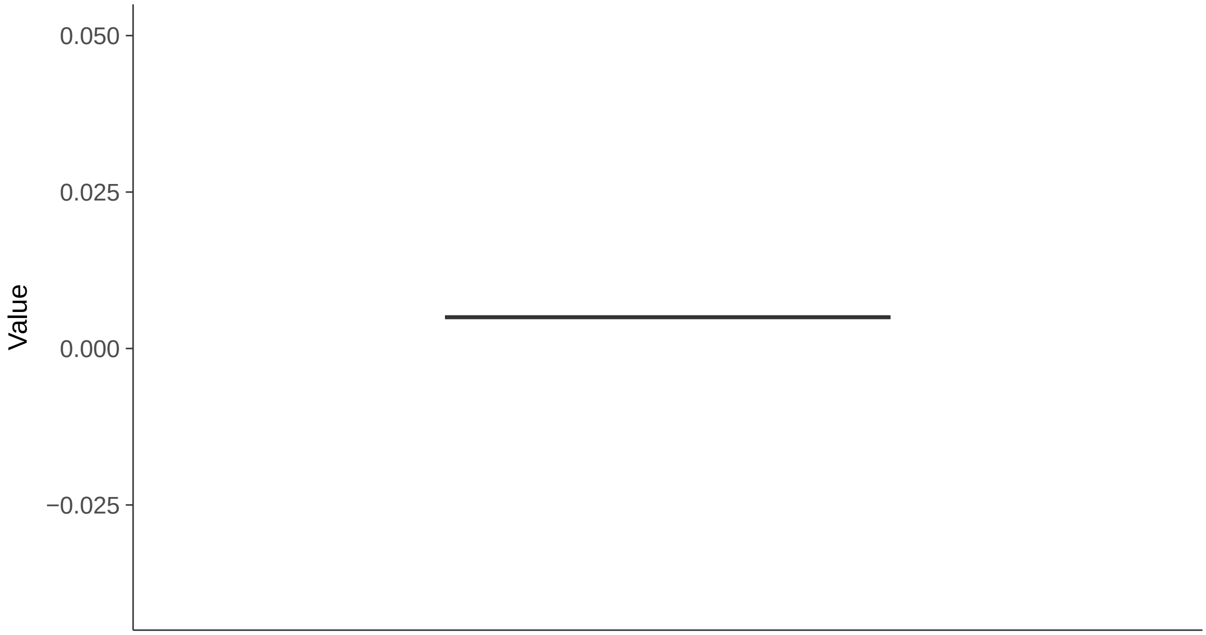
Histogram

Copper, MW-100B (mg/L)



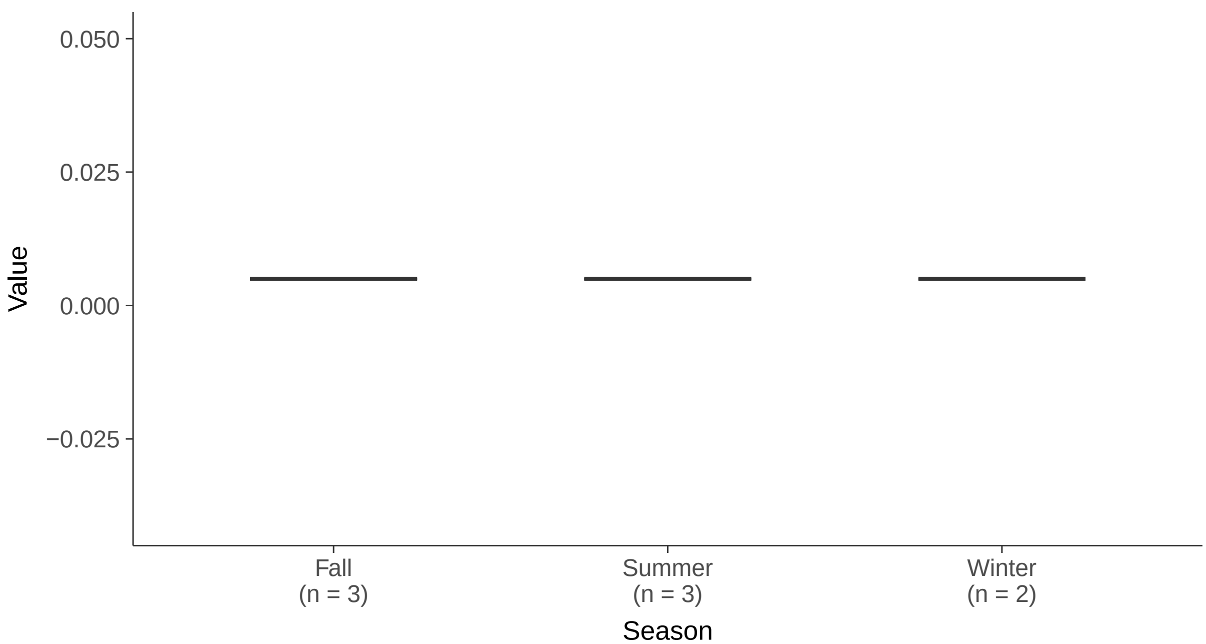
Boxplot

Copper, MW-100B (mg/L)



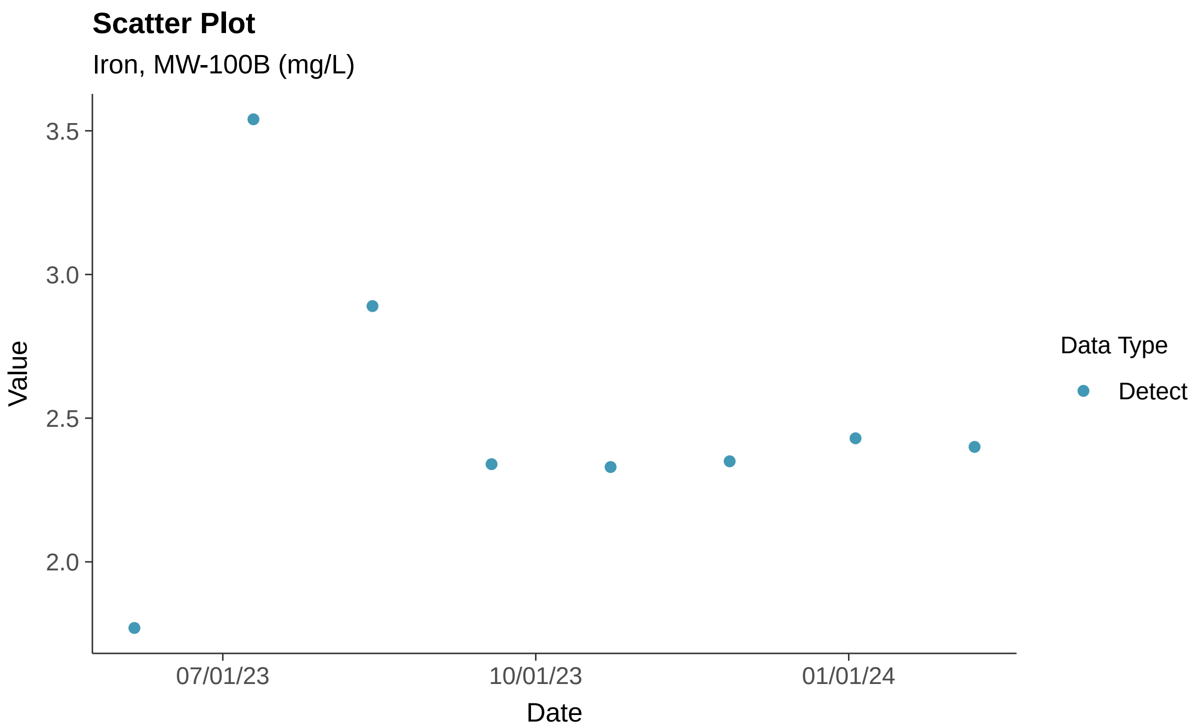
Boxplot by Season

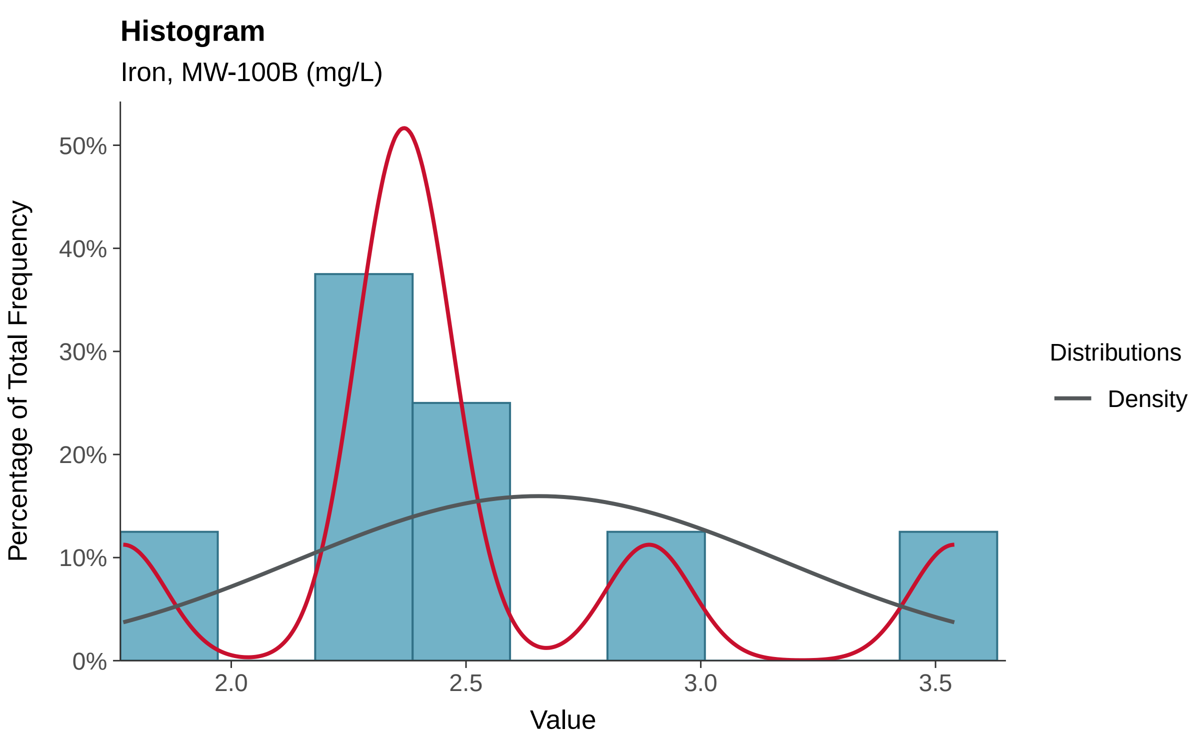
Copper, MW-100B (mg/L)



Part 115: Iron, MW-100B

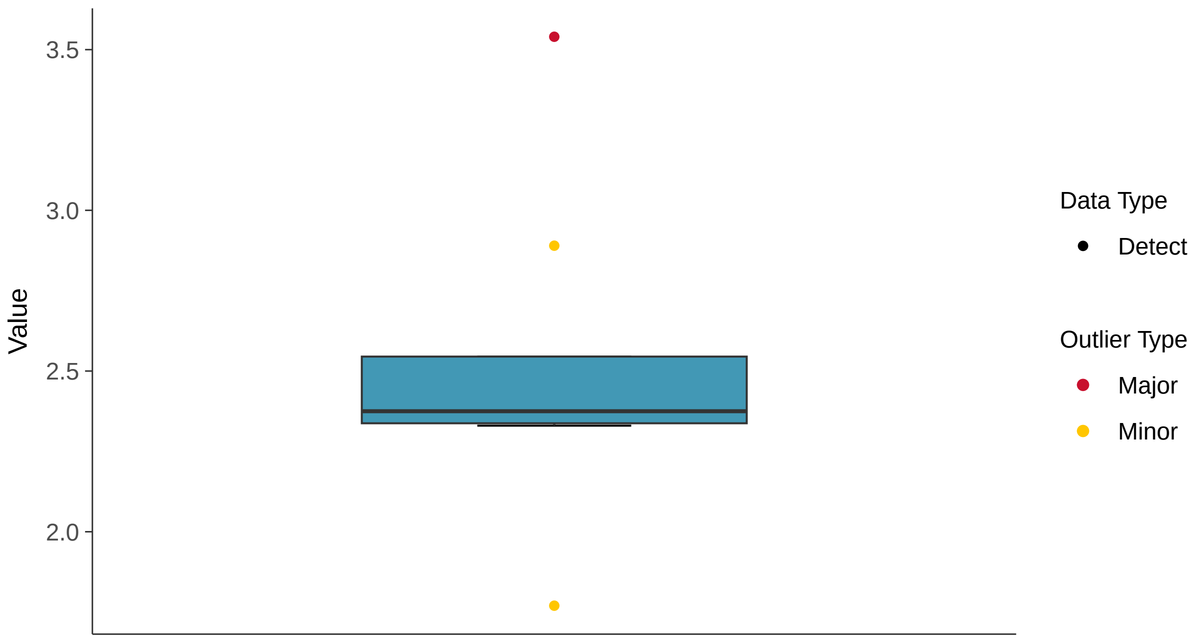
ID: 100B_5_38





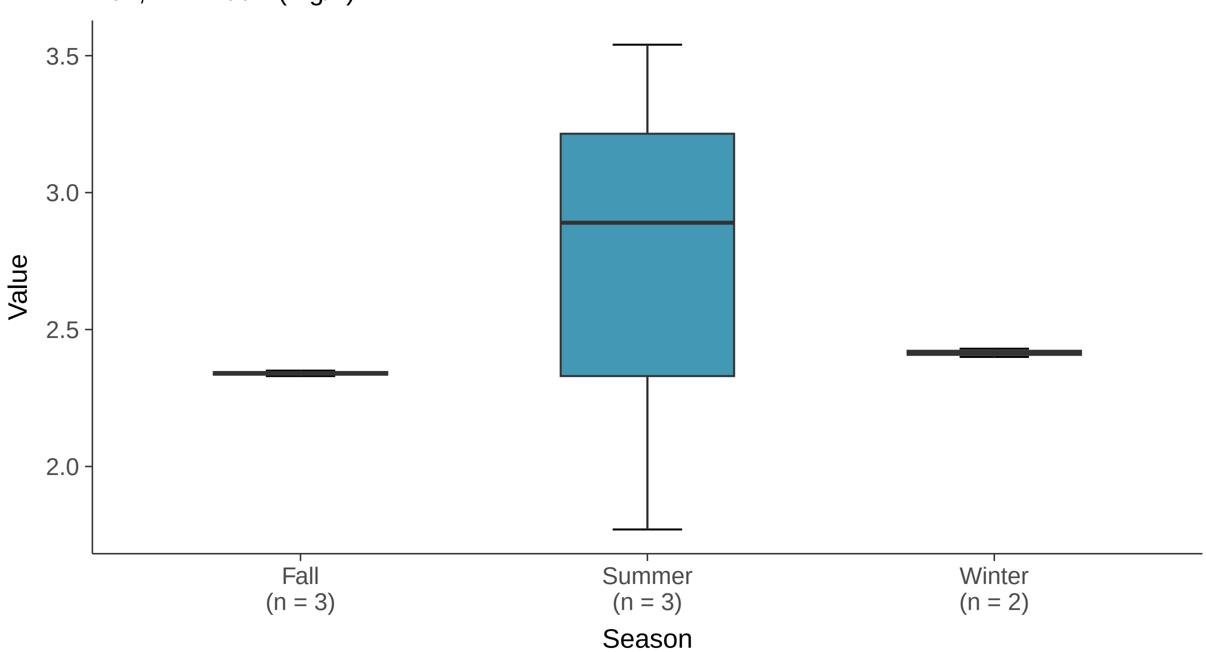
Boxplot

Iron, MW-100B (mg/L)



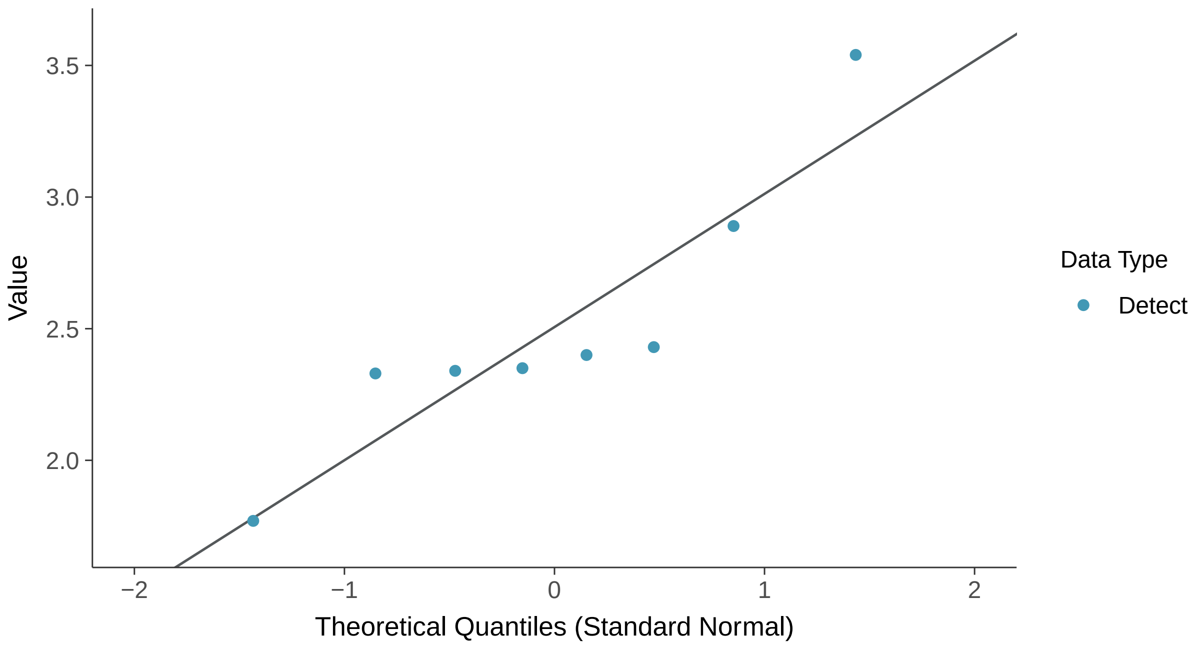
Boxplot by Season

Iron, MW-100B (mg/L)



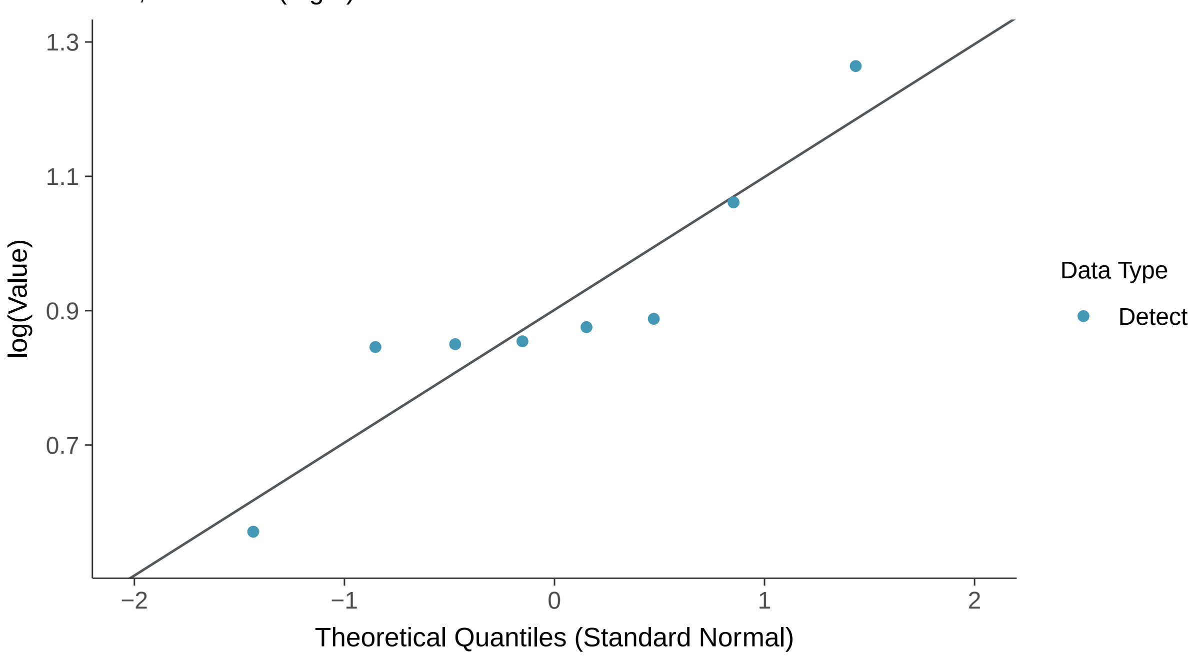
Normal Q-Q plot

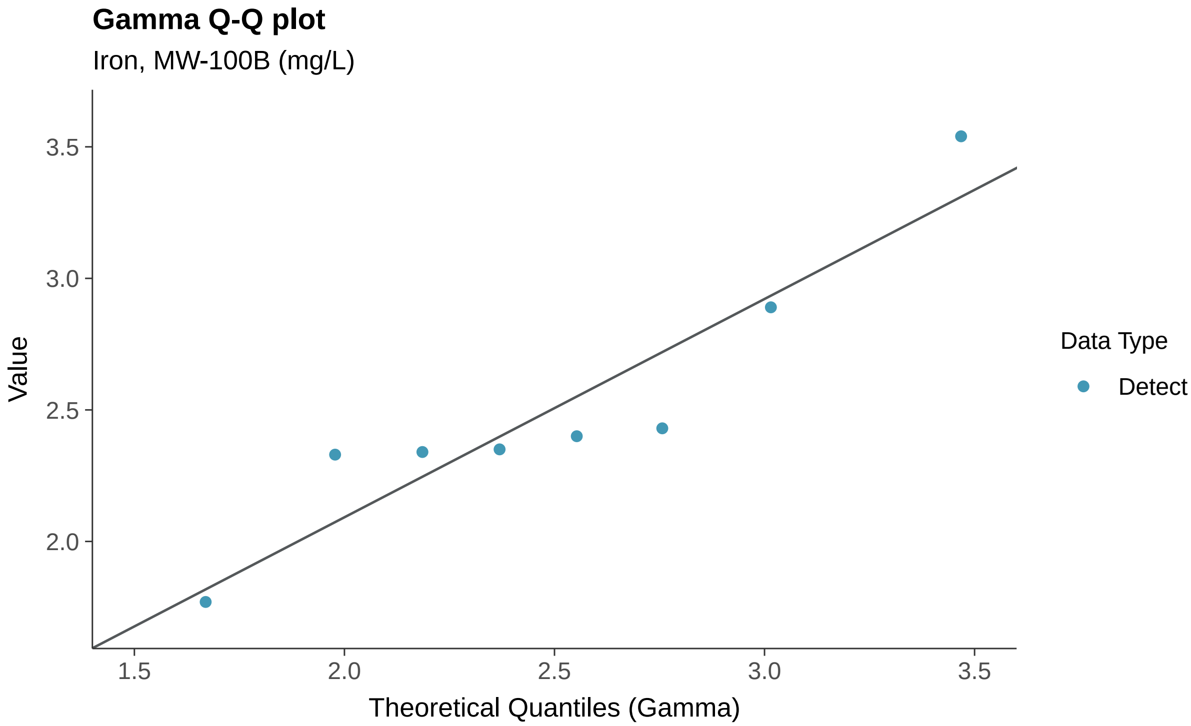
Iron, MW-100B (mg/L)

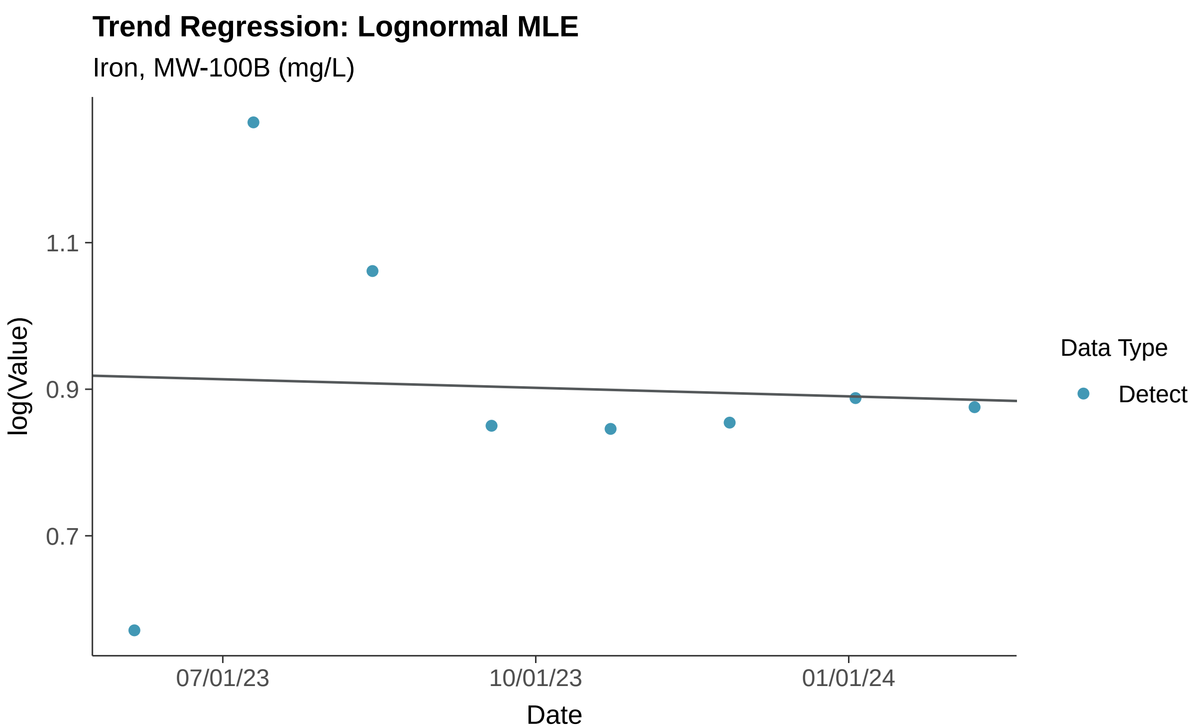


Lognormal Q-Q plot

Iron, MW-100B (mg/L)




Gamma Q-Q plot
Iron, MW-100B (mg/L)
Value
3.5
3.0
2.5
2.0
1.5
2.0
2.5
3.0
3.5
Theoretical Quantiles (Gamma)
Data Type
Detect

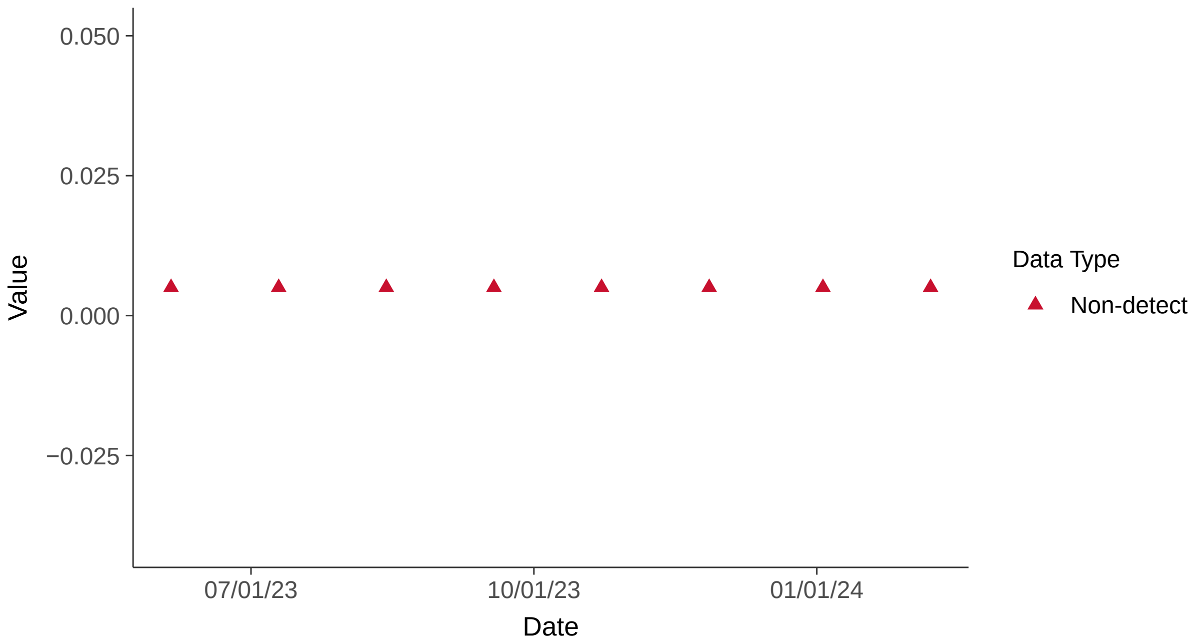

Trend Regression: Lognormal MLE
Iron, MW-100B (mg/L)
log(Value)
1.1
0.9
0.7
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Part 115: Nickel, MW-100B

ID: 100B_5_39

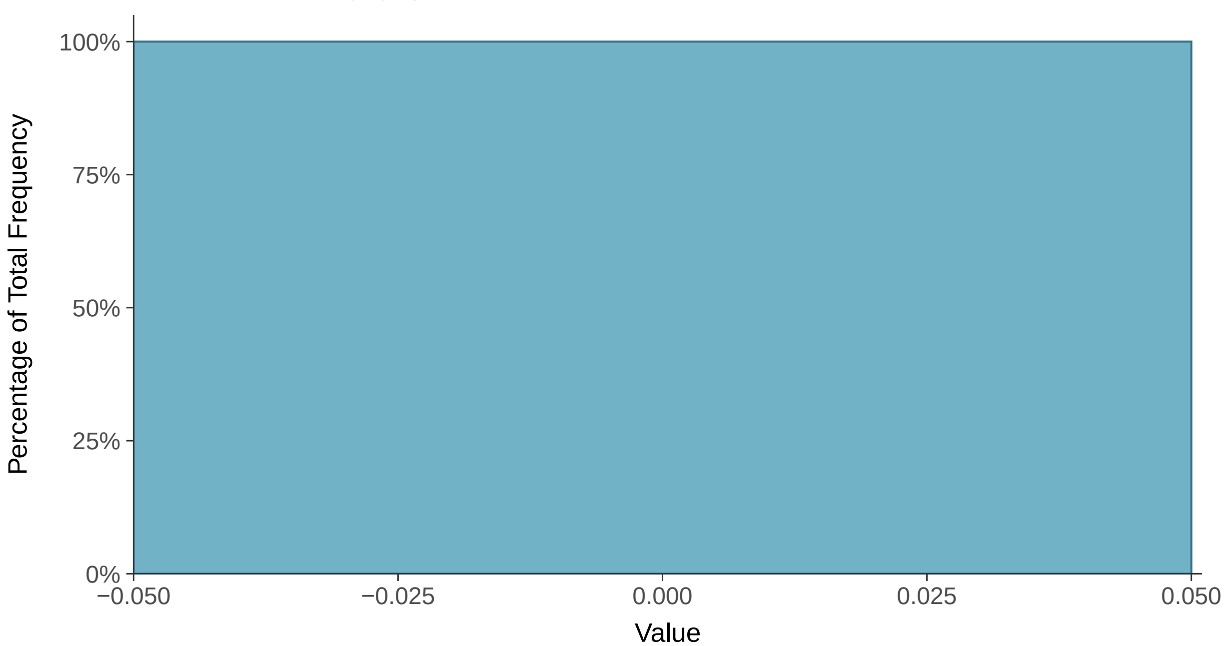
Scatter Plot

Nickel, MW-100B (mg/L)



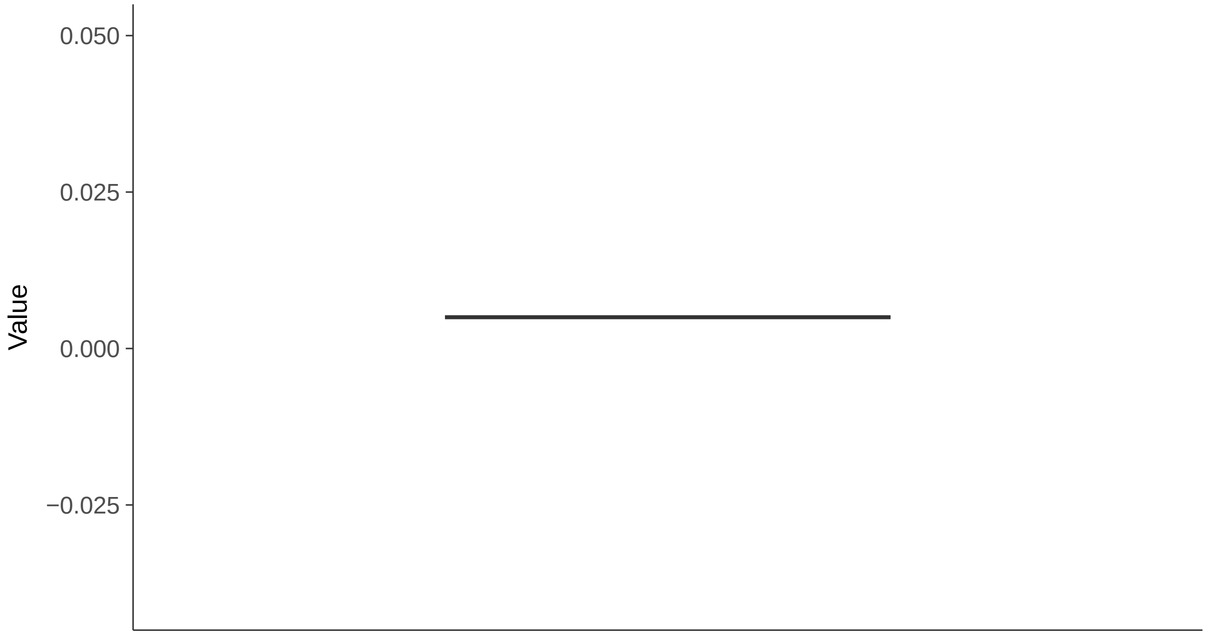
Histogram

Nickel, MW-100B (mg/L)



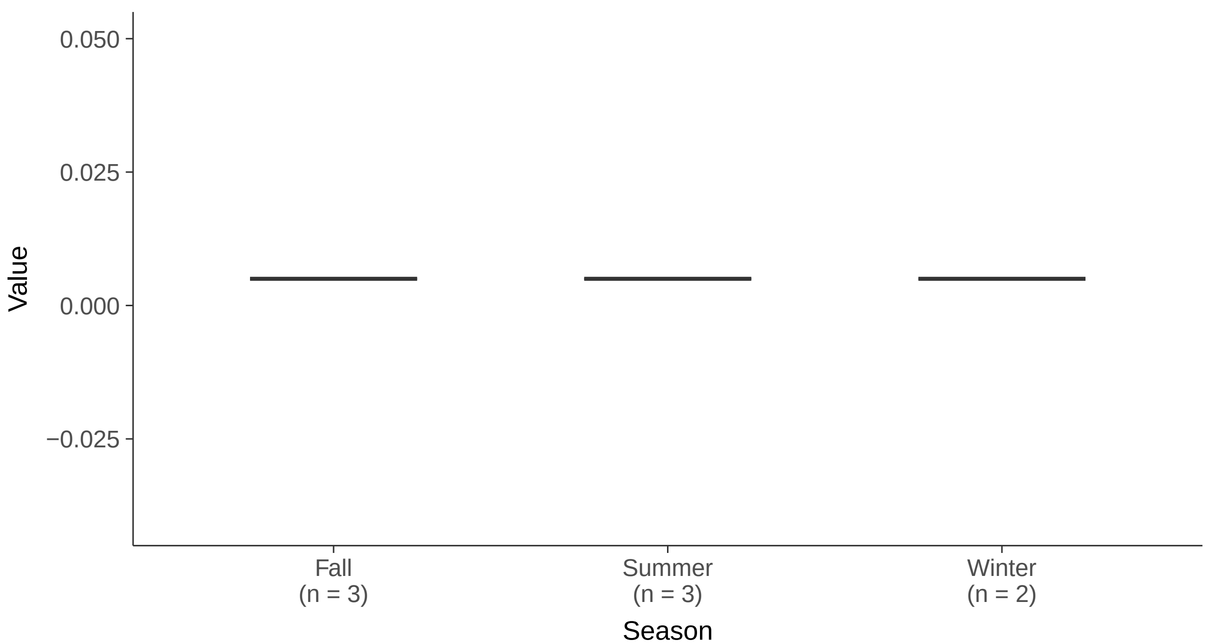
Boxplot

Nickel, MW-100B (mg/L)



Boxplot by Season

Nickel, MW-100B (mg/L)

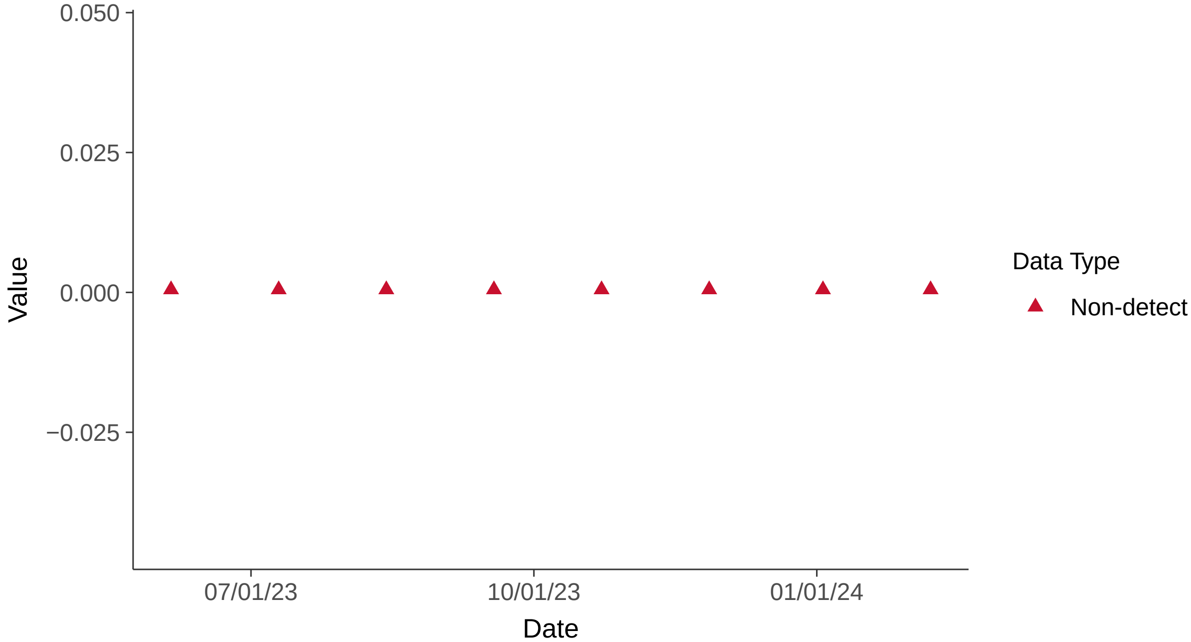


Part 115: Silver, MW-100B

ID: 100B_5_40

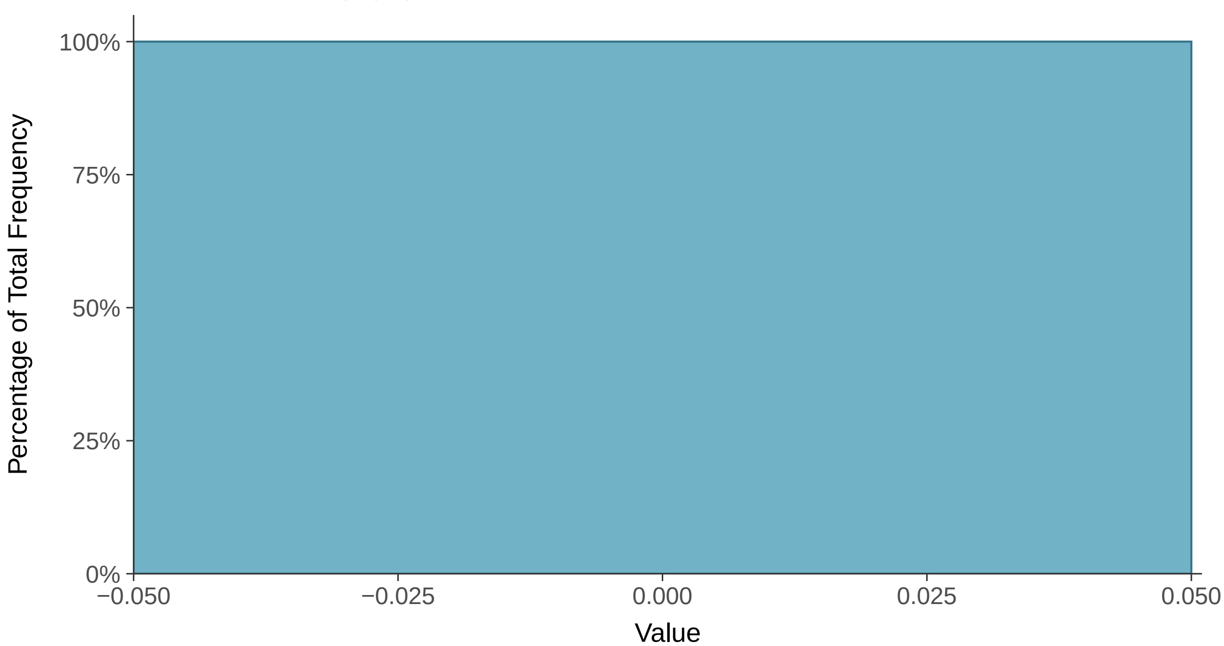
Scatter Plot

Silver, MW-100B (mg/L)



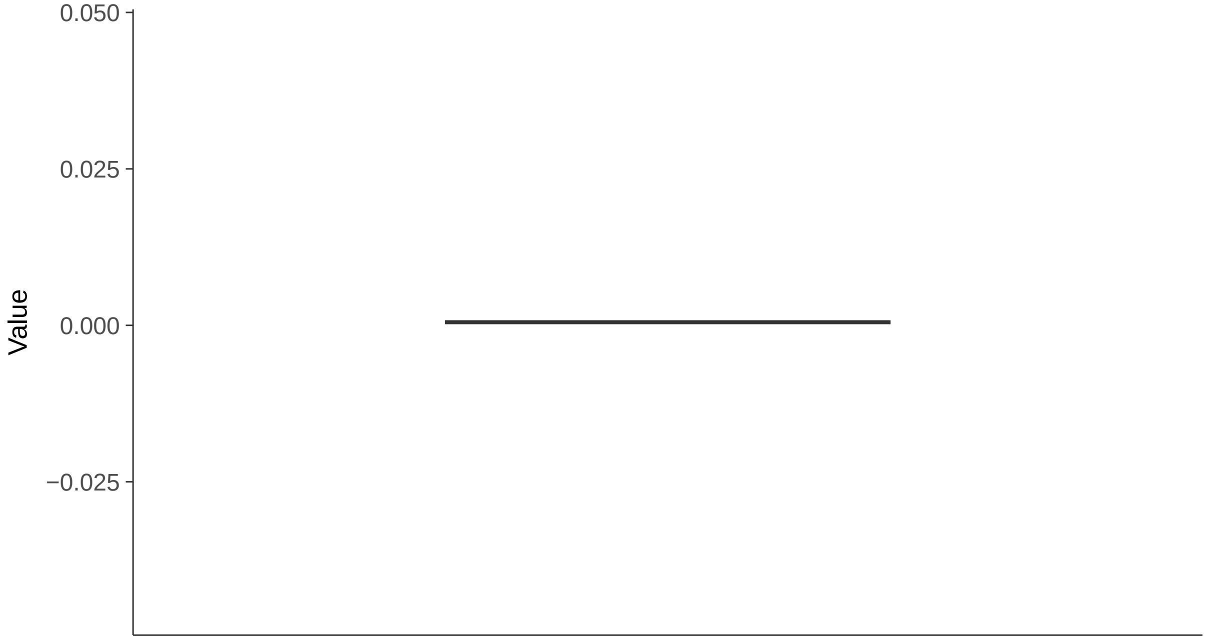
Histogram

Silver, MW-100B (mg/L)



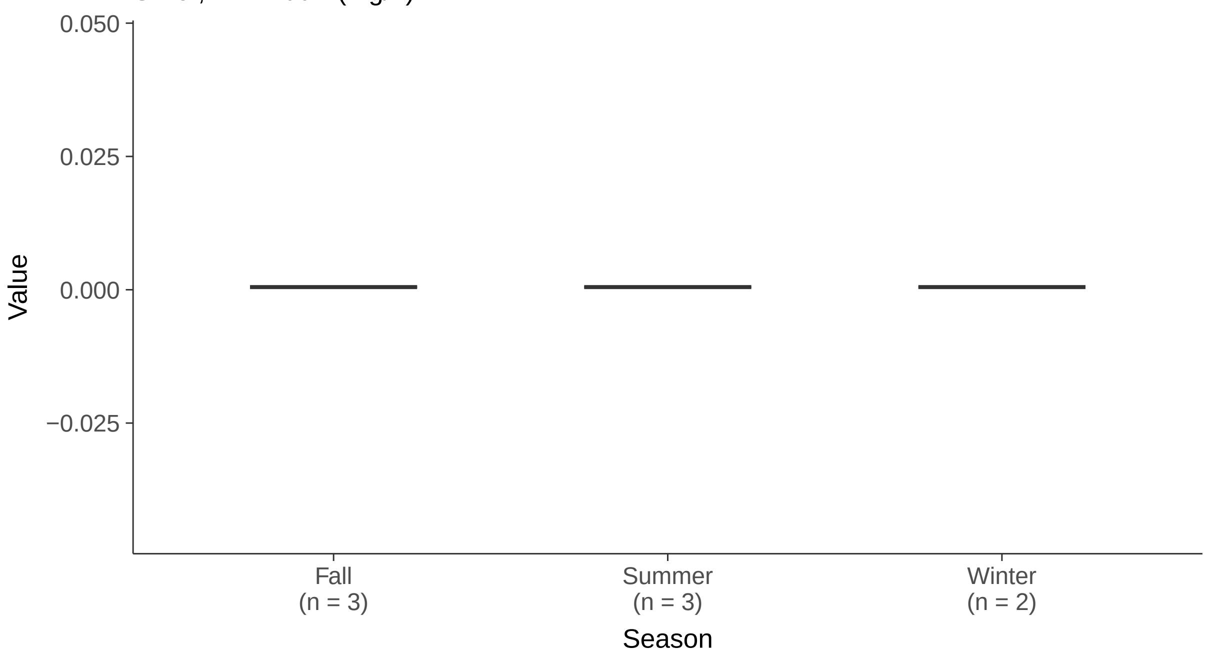
Boxplot

Silver, MW-100B (mg/L)



Boxplot by Season

Silver, MW-100B (mg/L)

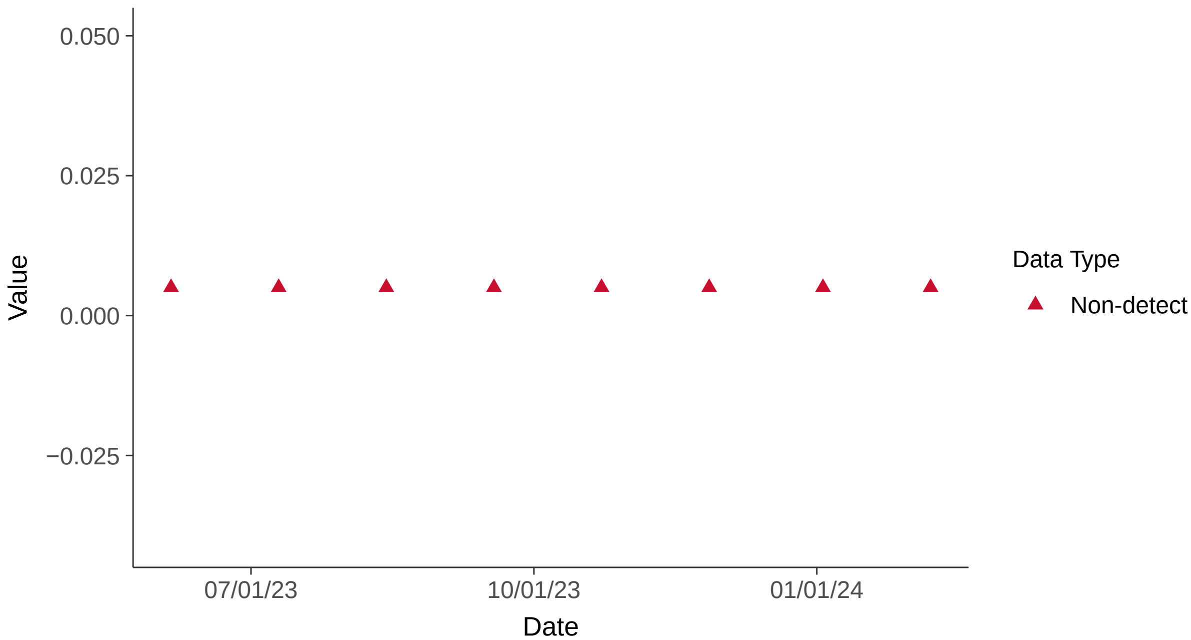


Part 115: Vanadium, MW-100B

ID: 100B_5_41

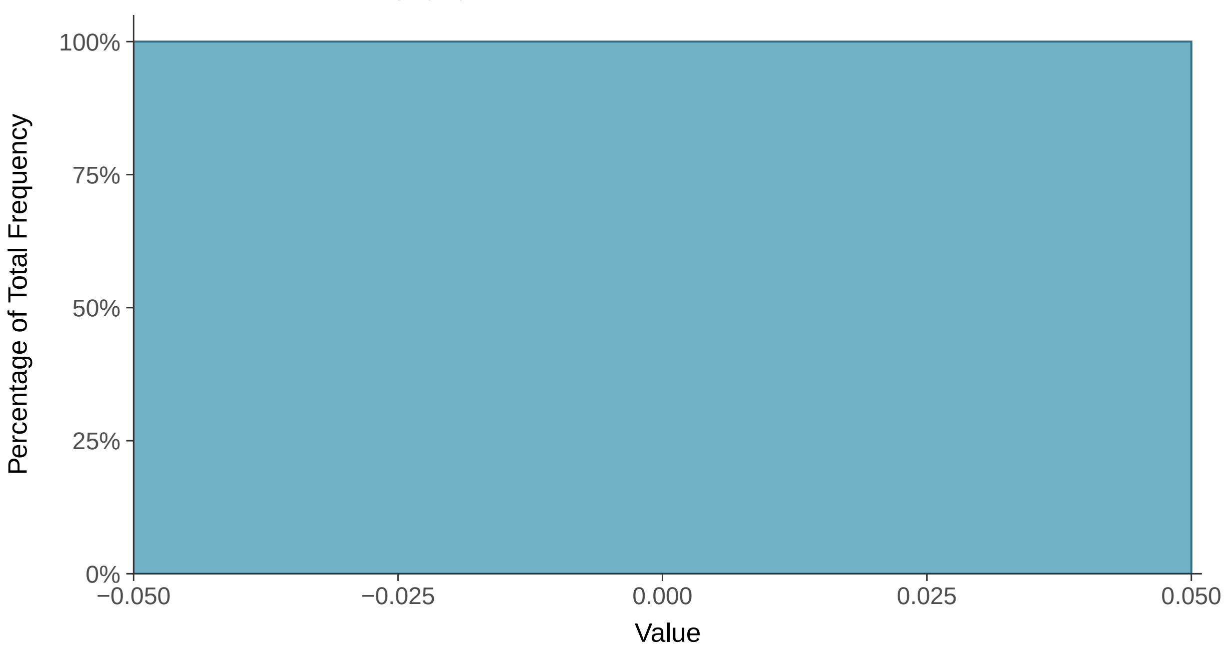
Scatter Plot

Vanadium, MW-100B (mg/L)



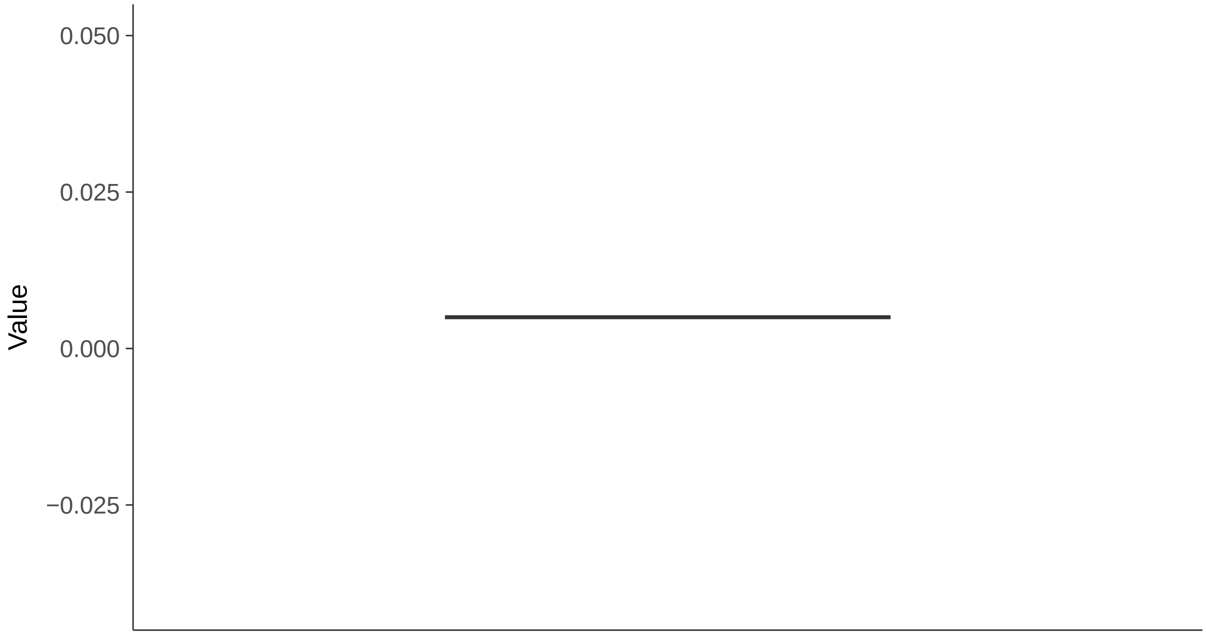
Histogram

Vanadium, MW-100B (mg/L)



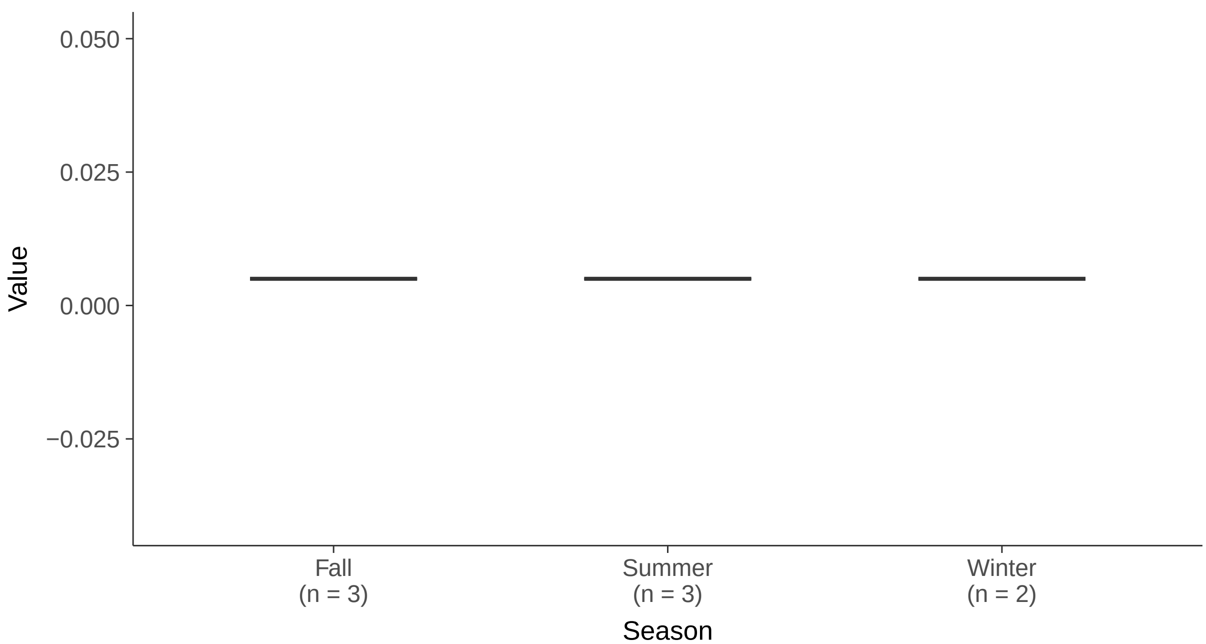
Boxplot

Vanadium, MW-100B (mg/L)



Boxplot by Season

Vanadium, MW-100B (mg/L)

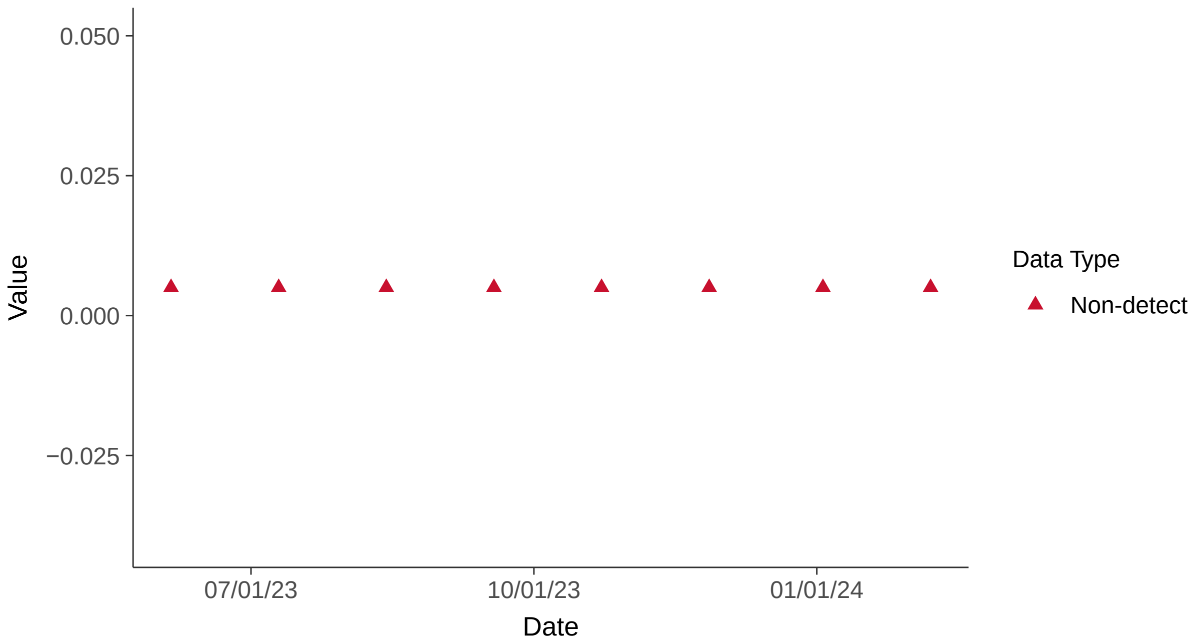


Part 115: Zinc, MW-100B

ID: 100B_5_42

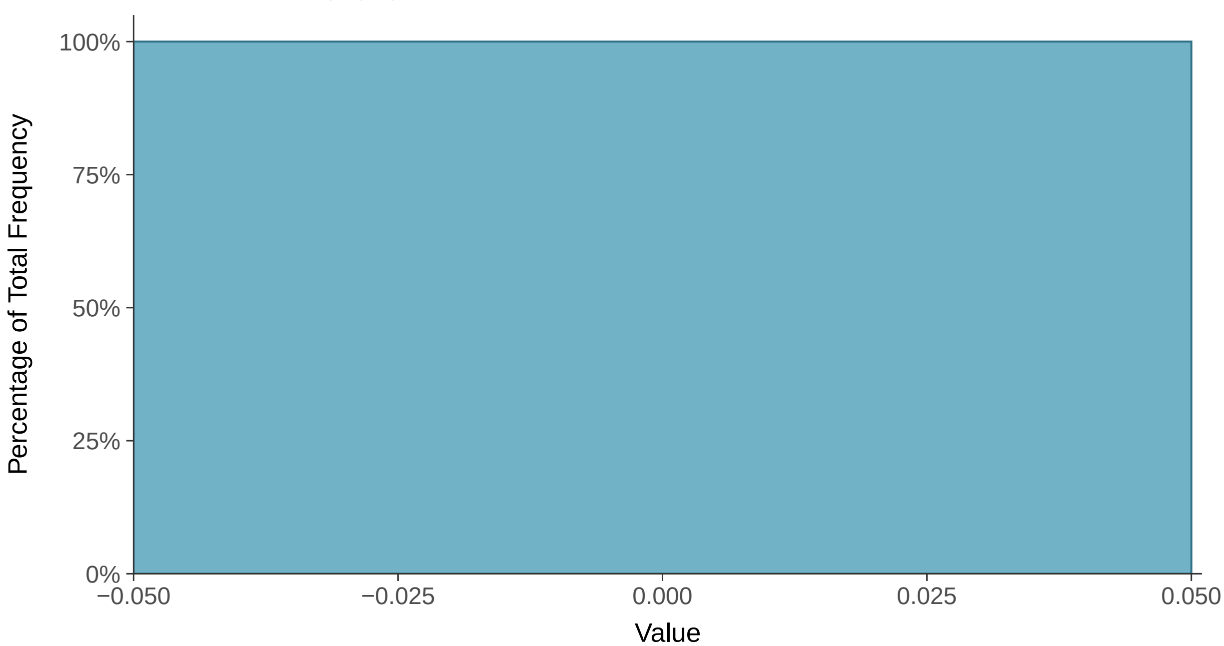
Scatter Plot

Zinc, MW-100B (mg/L)



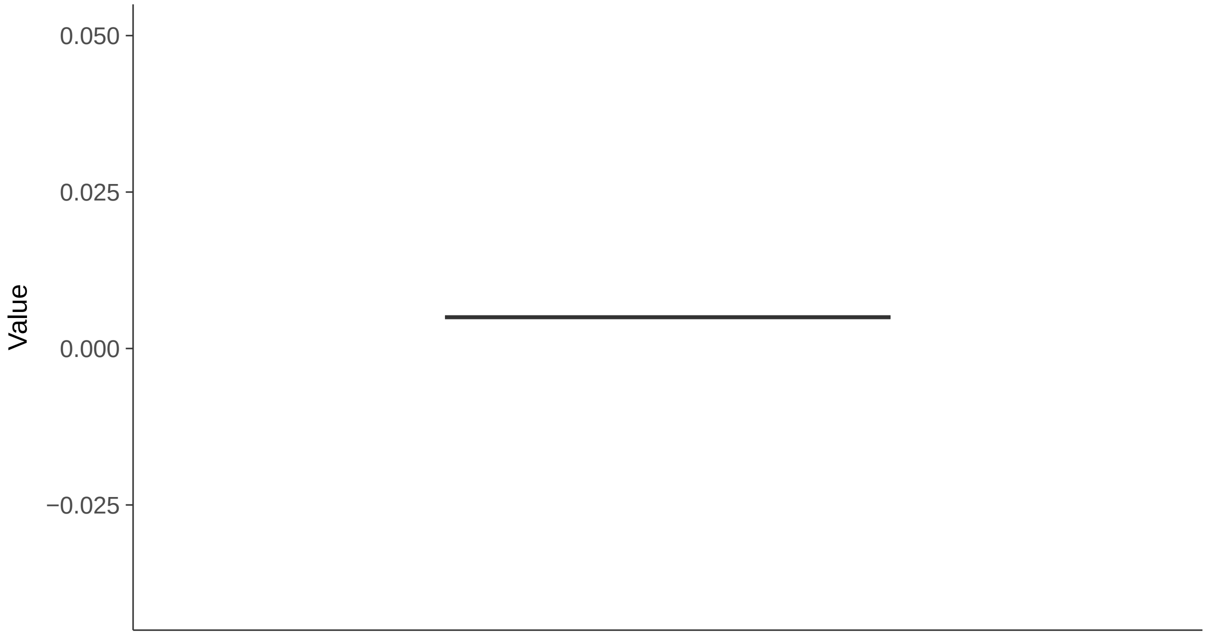
Histogram

Zinc, MW-100B (mg/L)



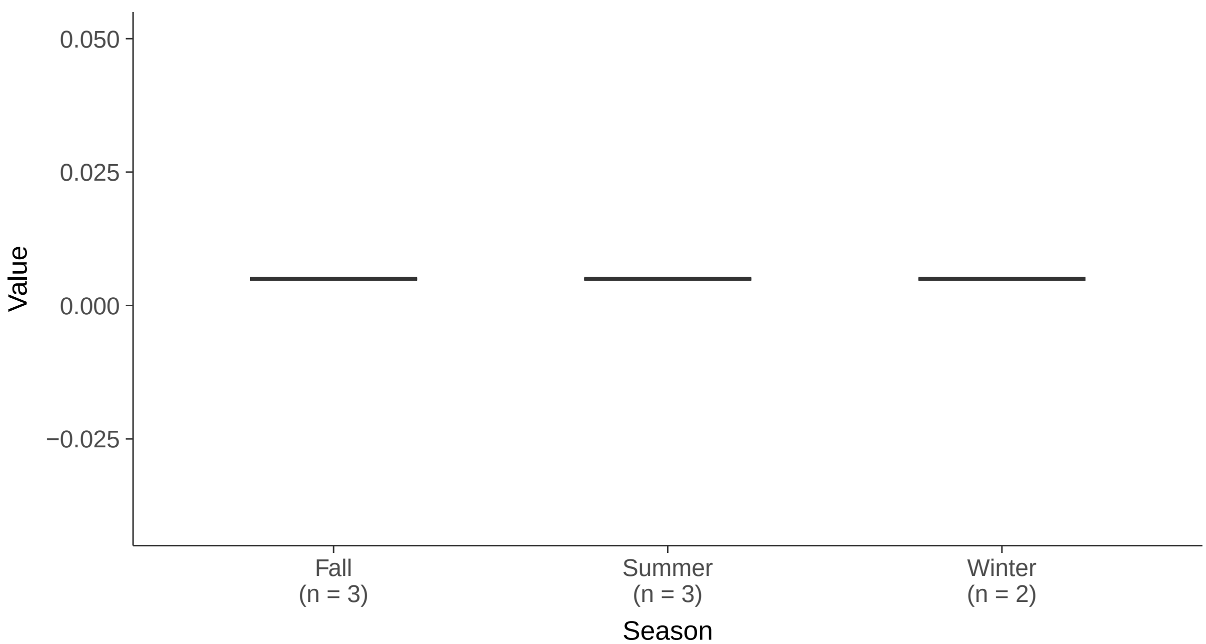
Boxplot

Zinc, MW-100B (mg/L)



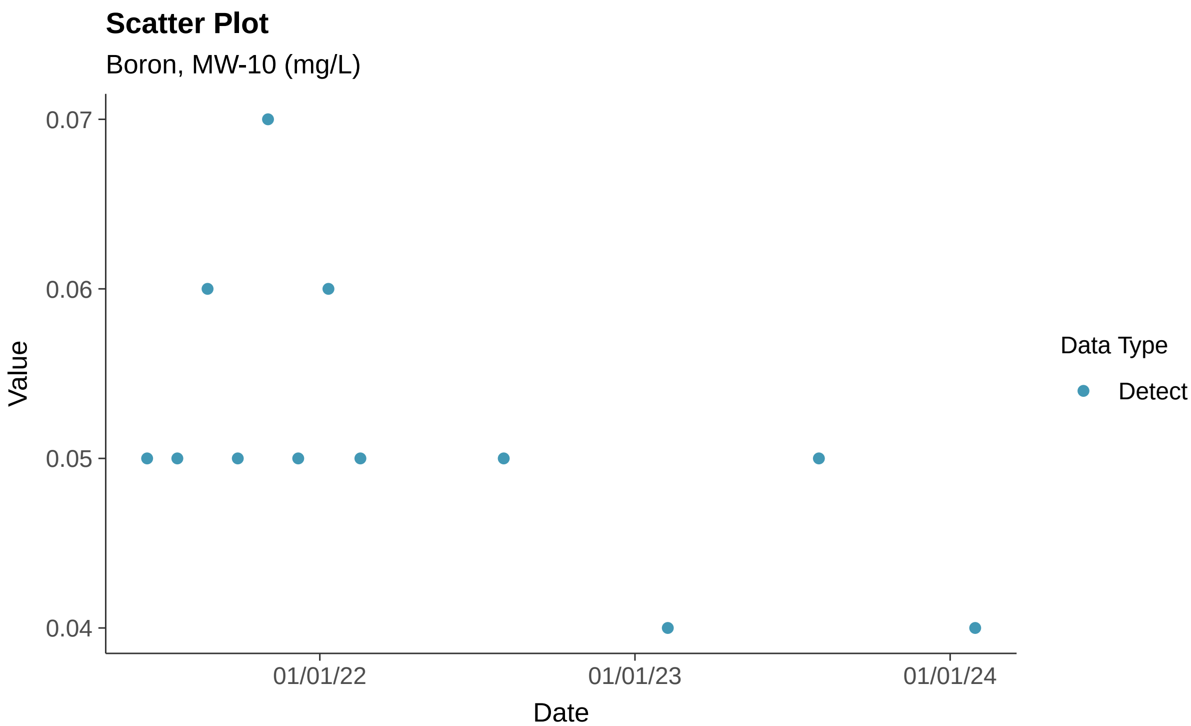
Boxplot by Season

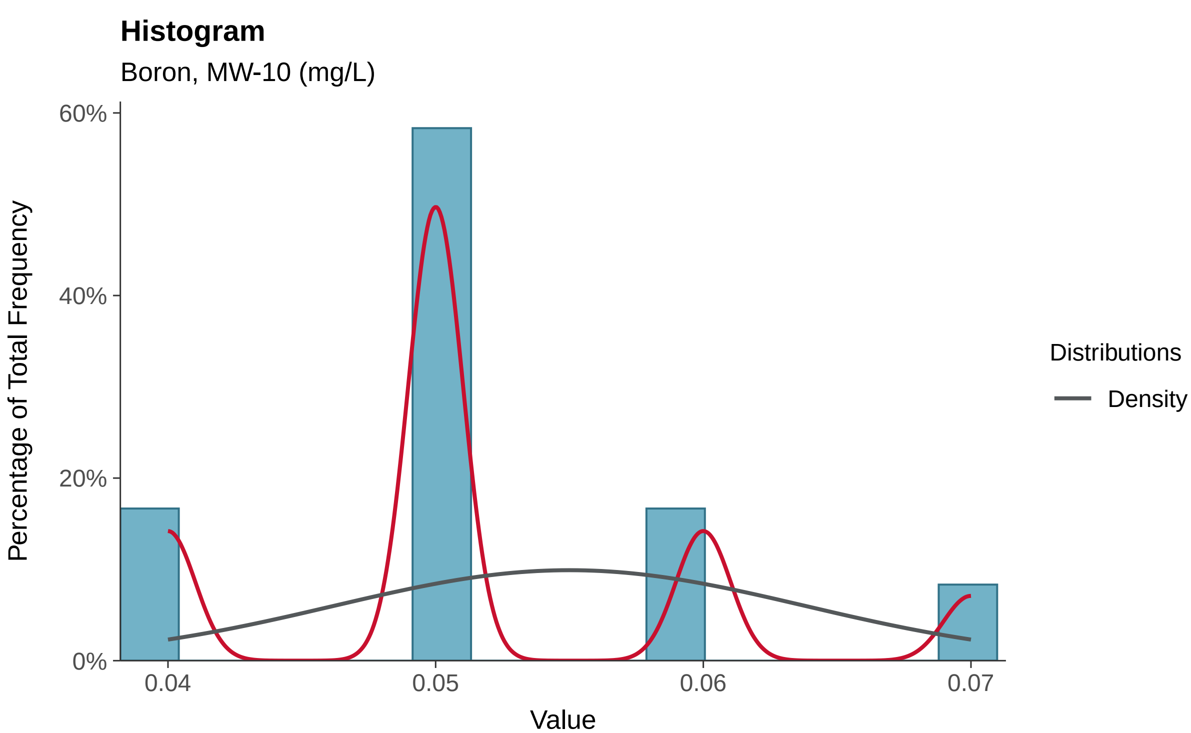
Zinc, MW-100B (mg/L)



Appendix III: Boron, MW-10

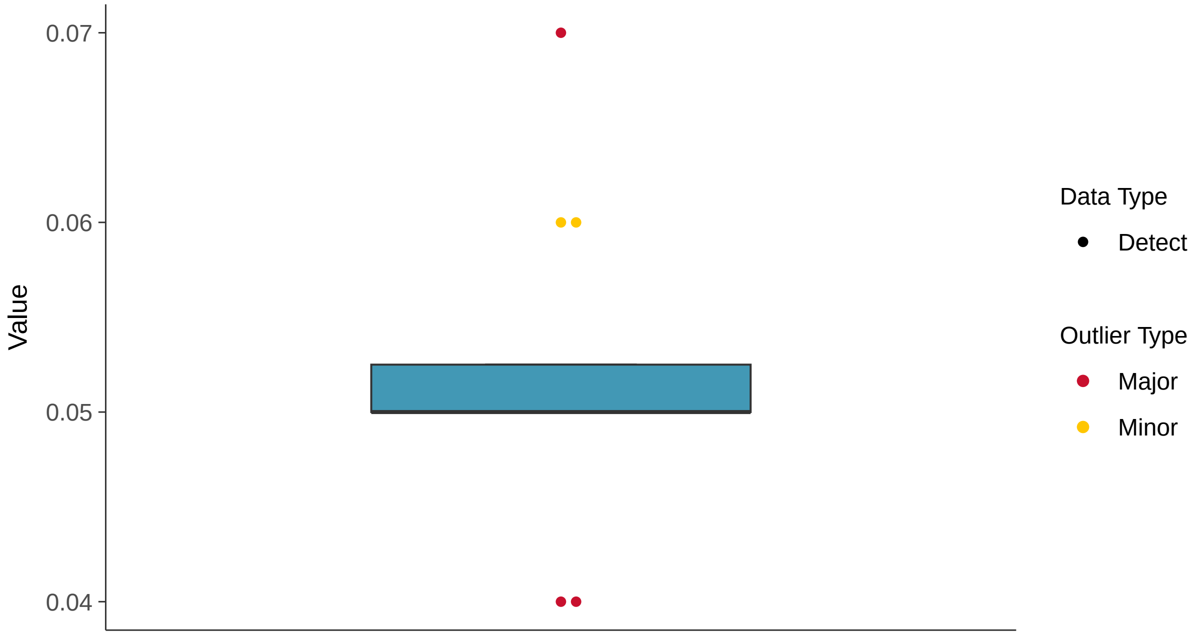
ID: 10_1_01





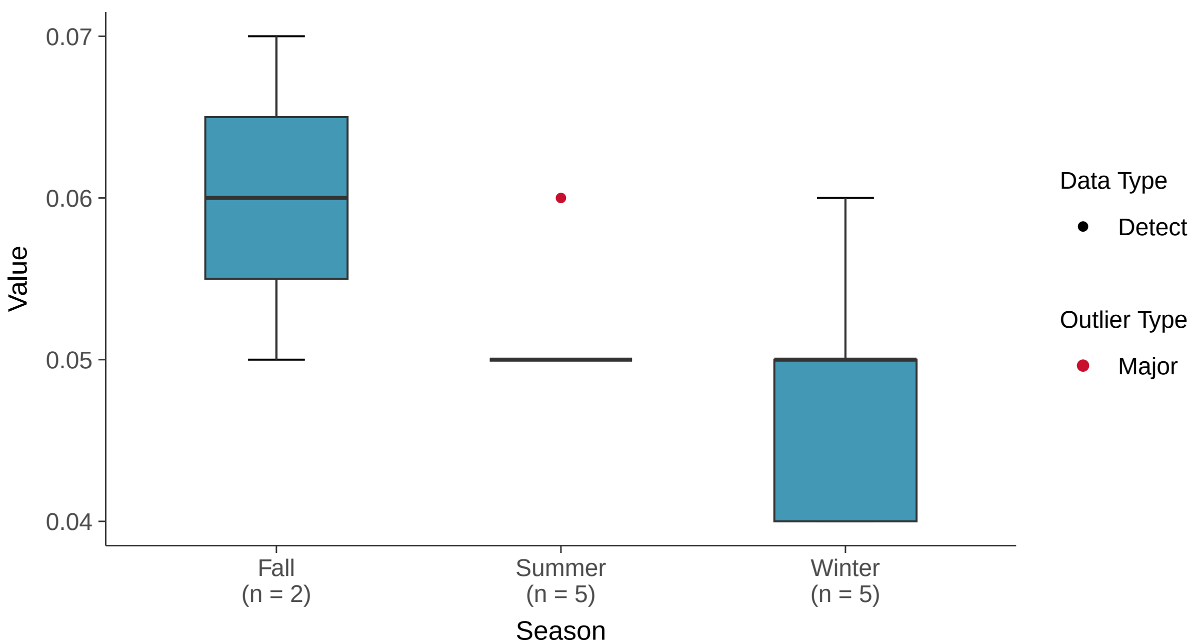
Boxplot

Boron, MW-10 (mg/L)



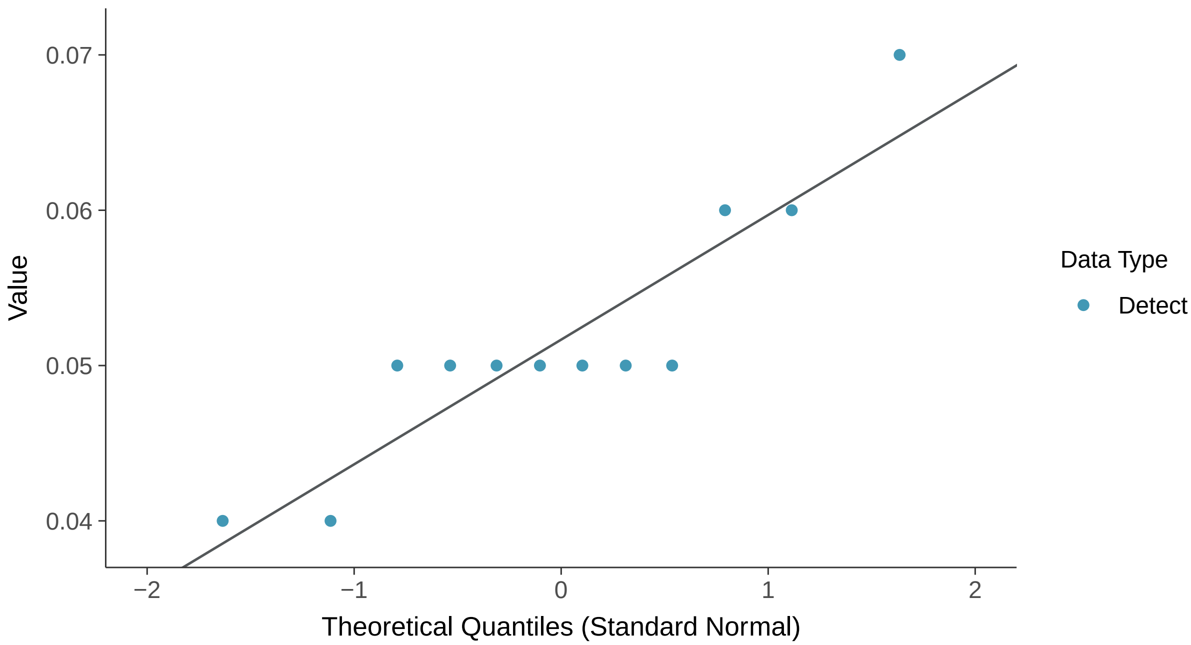
Boxplot by Season

Boron, MW-10 (mg/L)



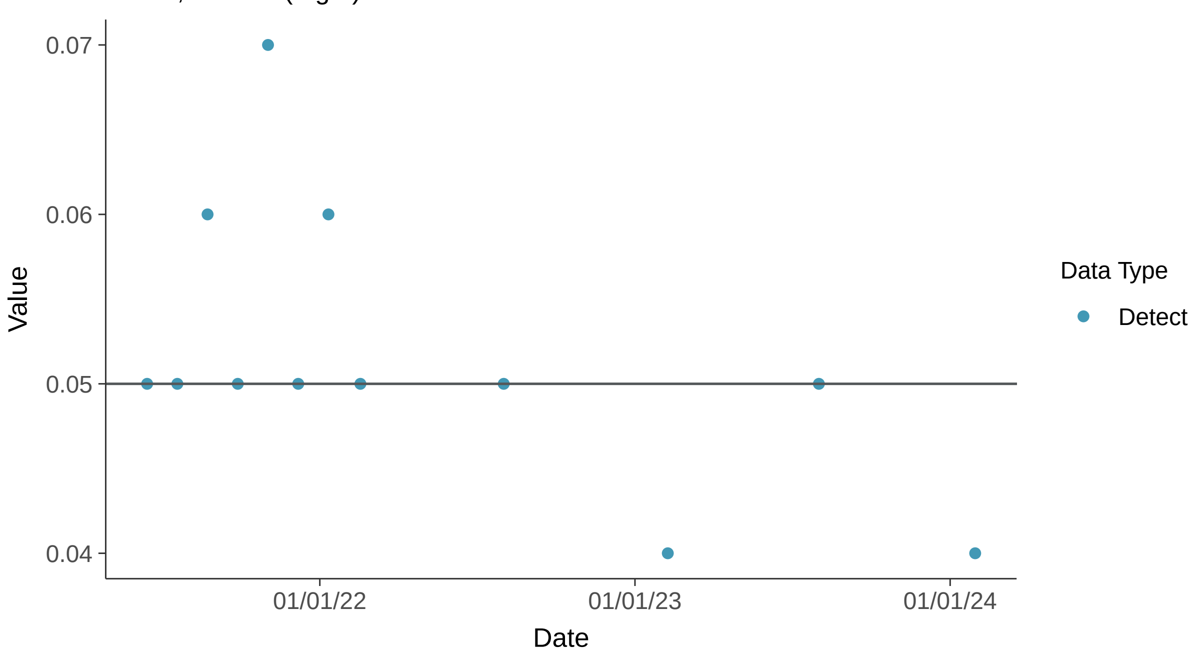
Normal Q-Q plot

Boron, MW-10 (mg/L)



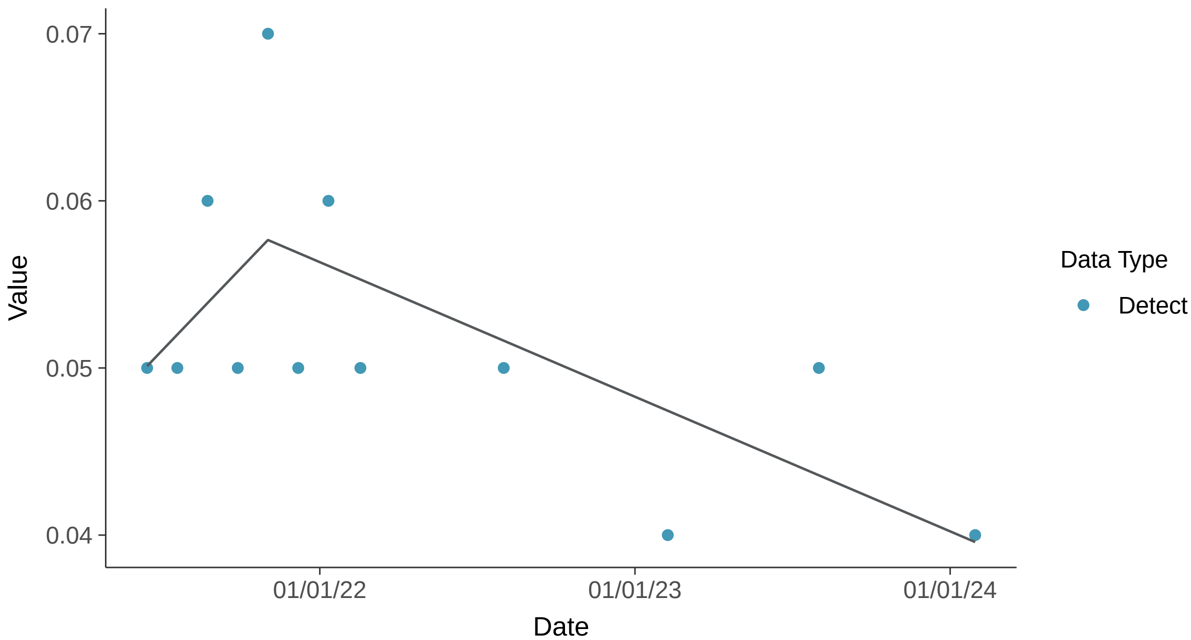
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Boron, MW-10 (mg/L)



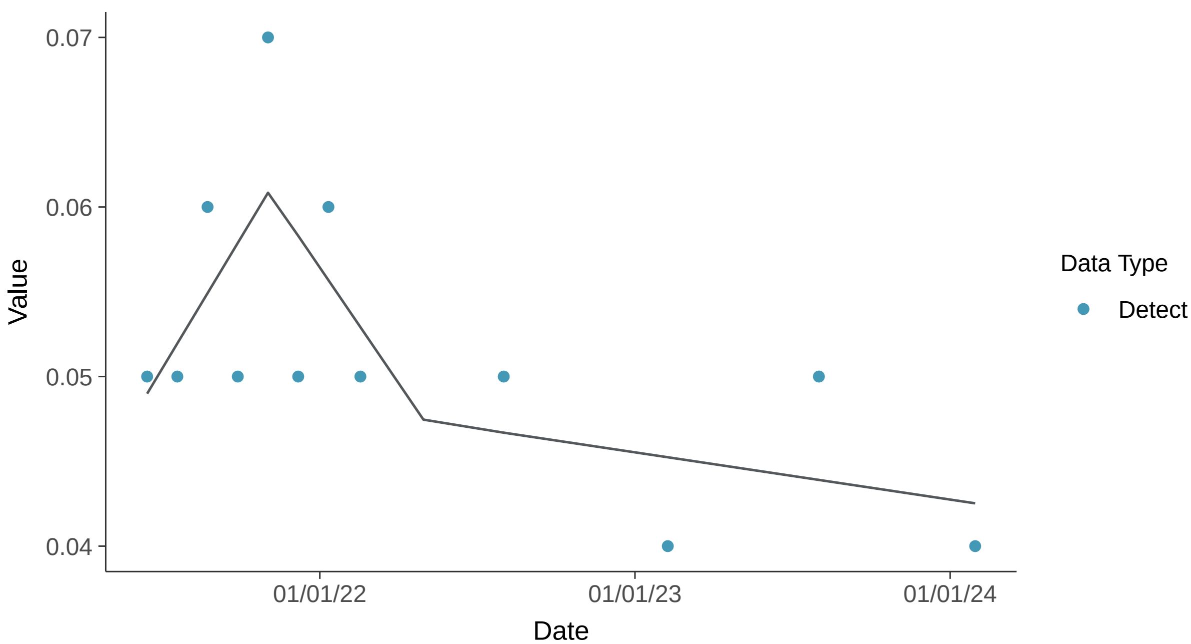
Trend Regression: Piecewise Linear-Linear

Boron, MW-10 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Boron, MW-10 (mg/L)

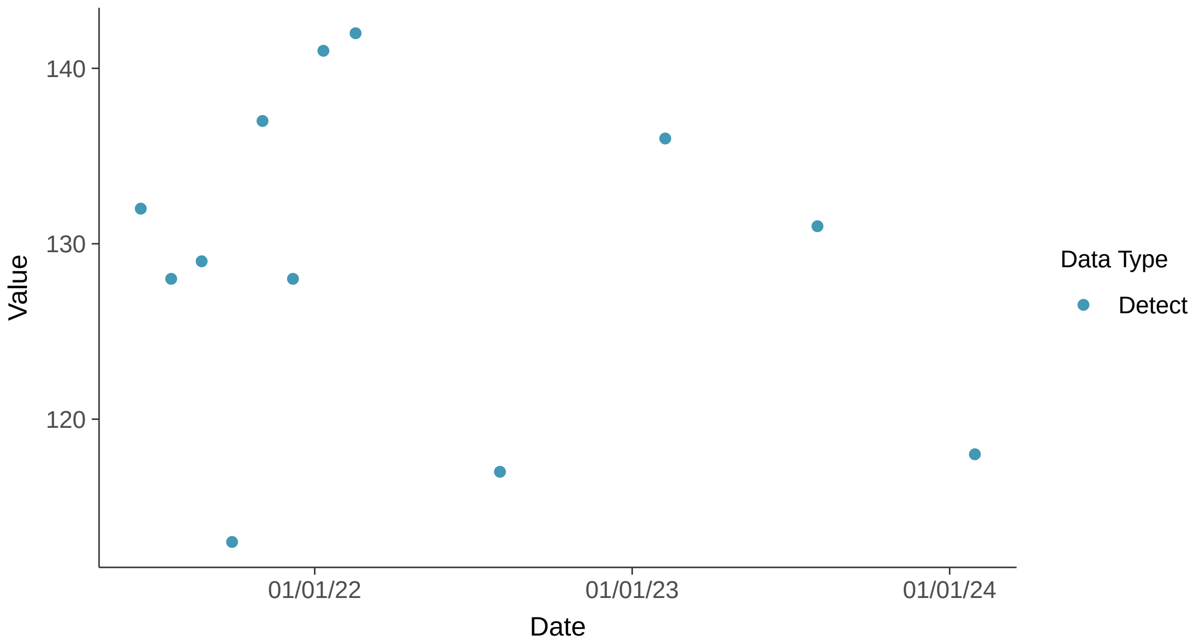


Appendix III: Calcium, MW-10

ID: 10_1_02

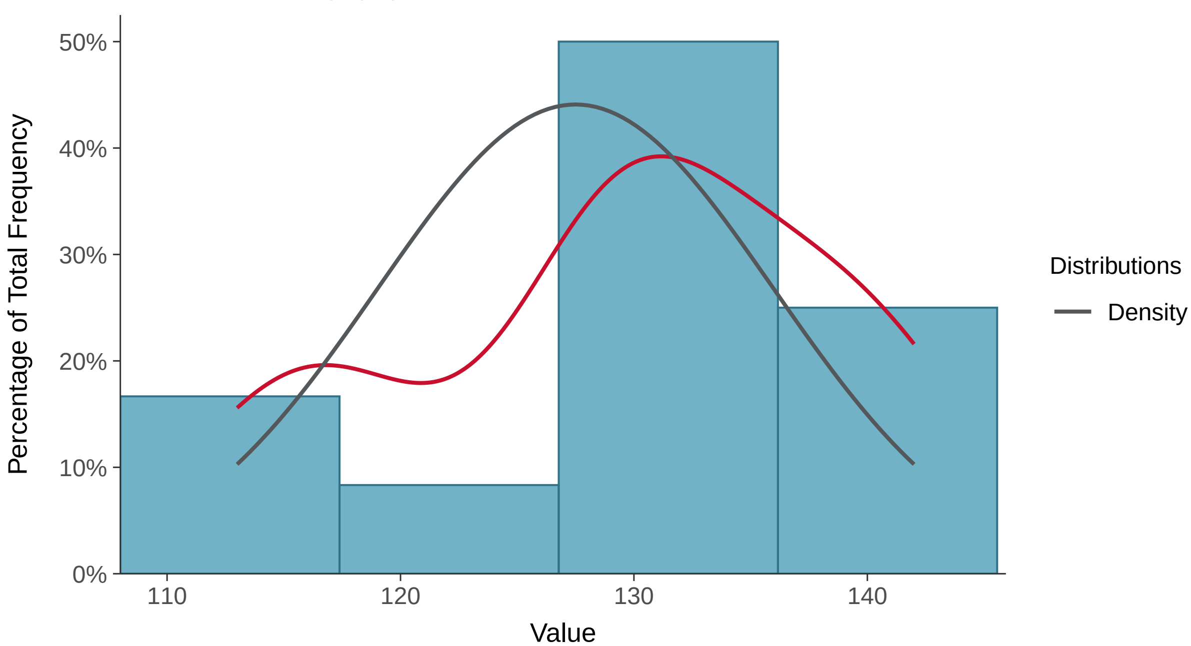
Scatter Plot

Calcium, MW-10 (mg/L)



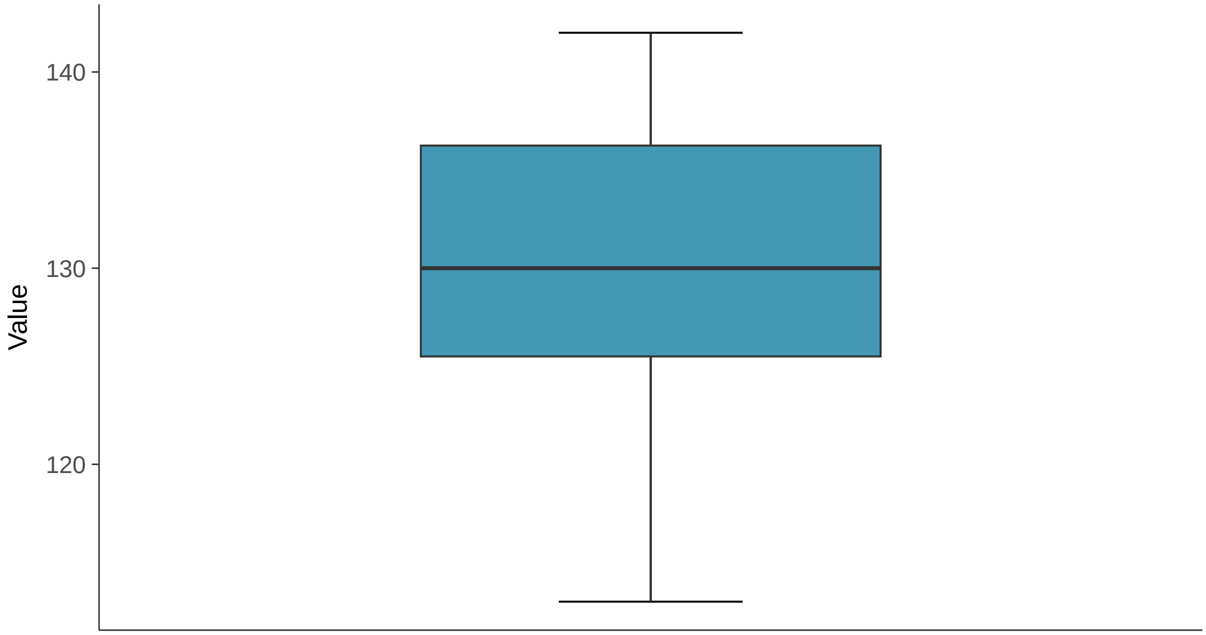
Histogram

Calcium, MW-10 (mg/L)



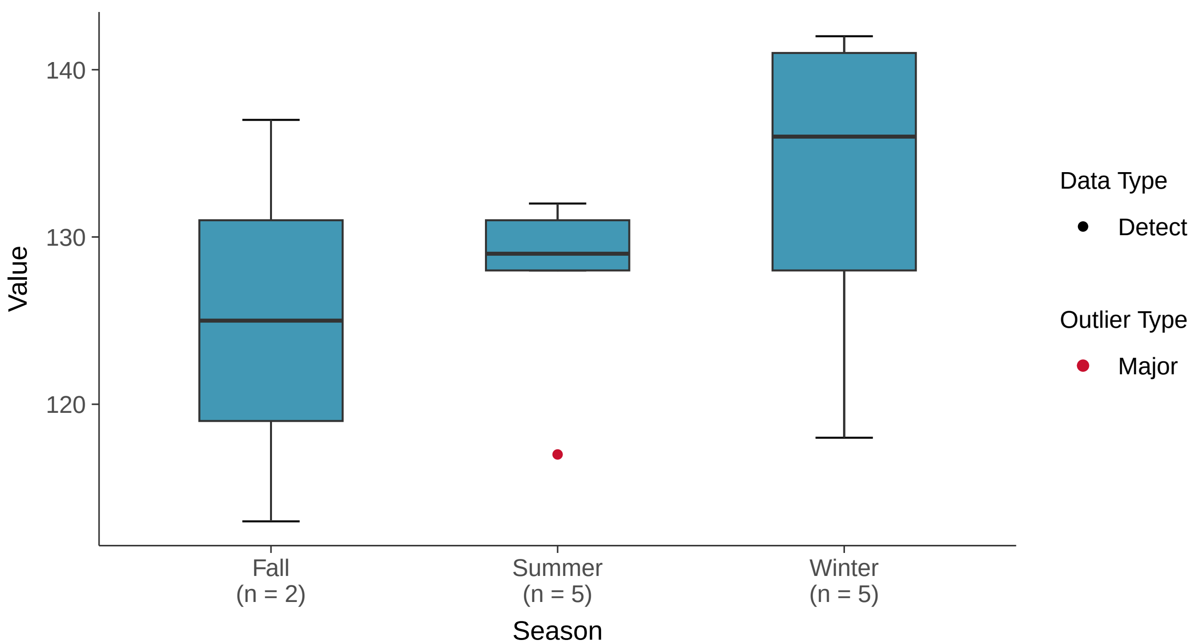
Boxplot

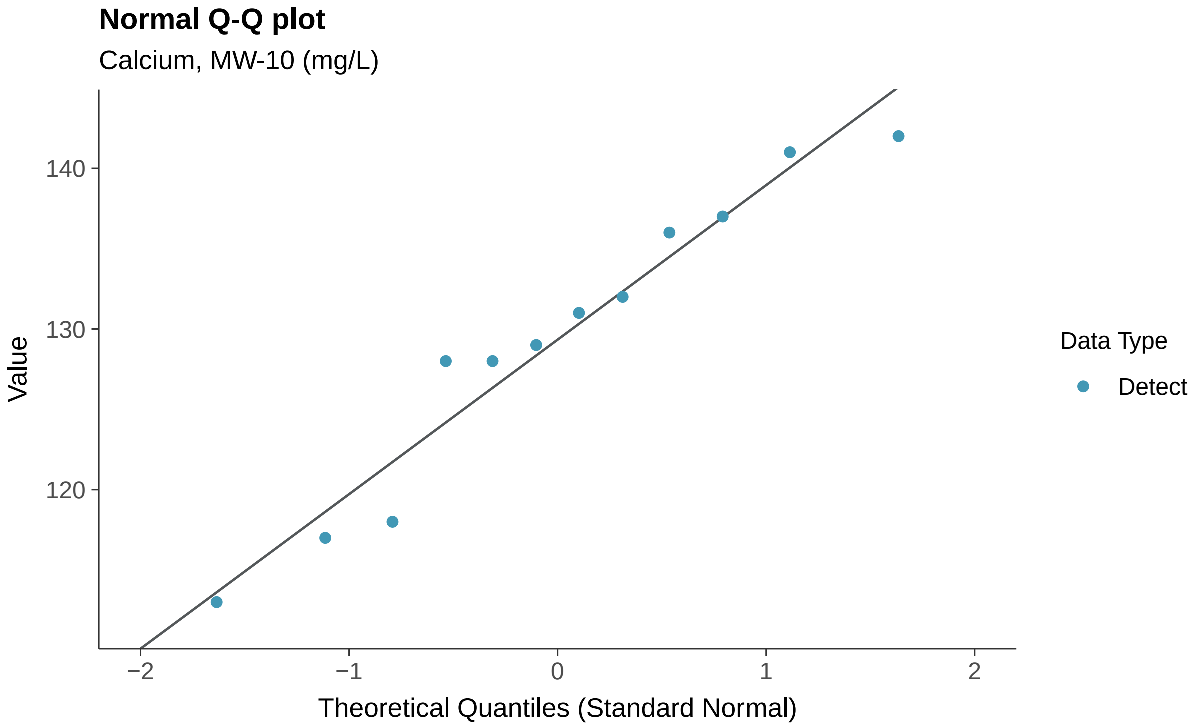
Calcium, MW-10 (mg/L)

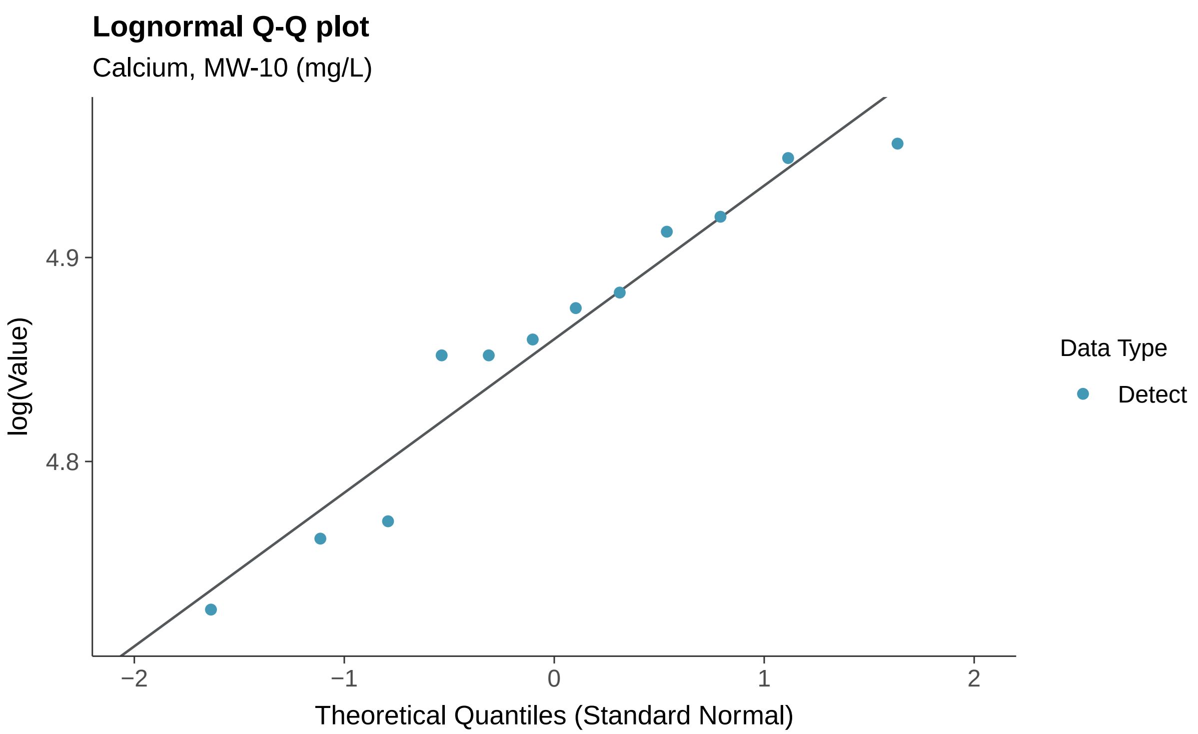


Boxplot by Season

Calcium, MW-10 (mg/L)

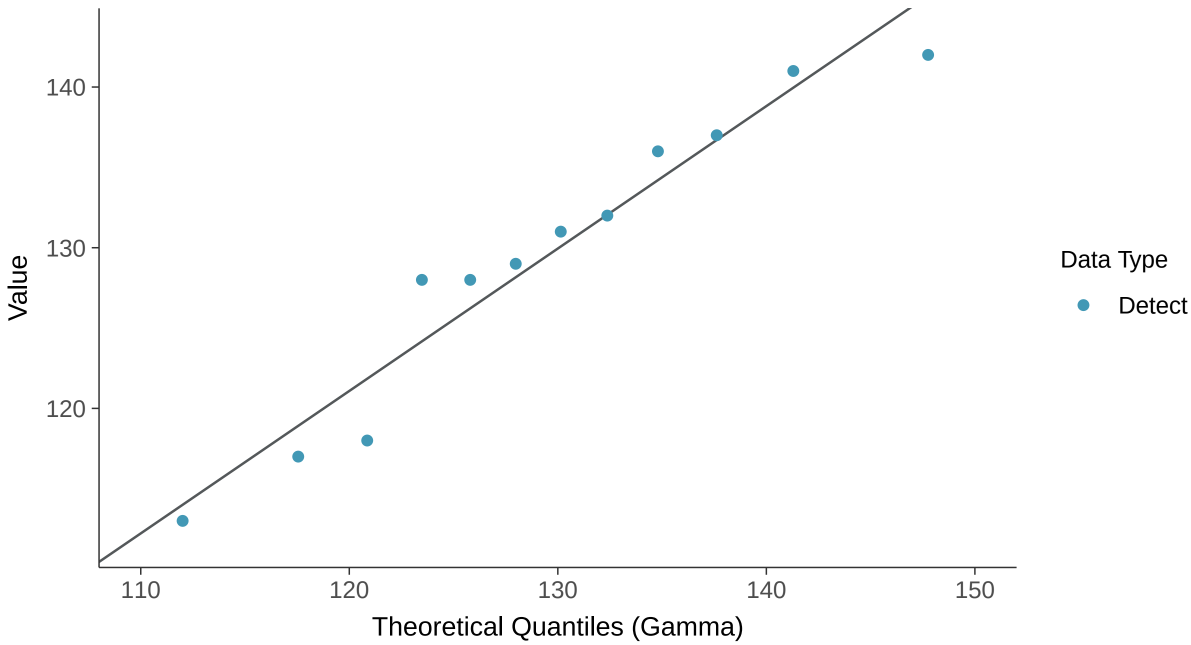



Normal Q-Q plot
Calcium, MW-10 (mg/L)
Value
140
130
120
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-10 (mg/L)
log(Value)
4.9
4.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

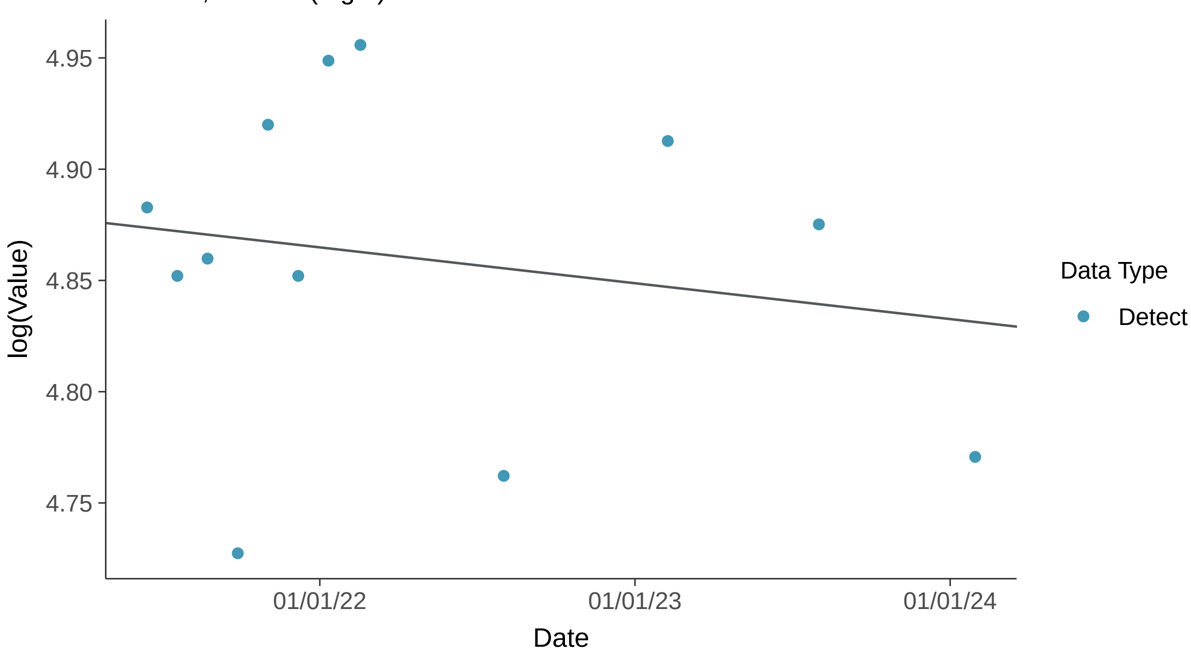
Gamma Q-Q plot

Calcium, MW-10 (mg/L)



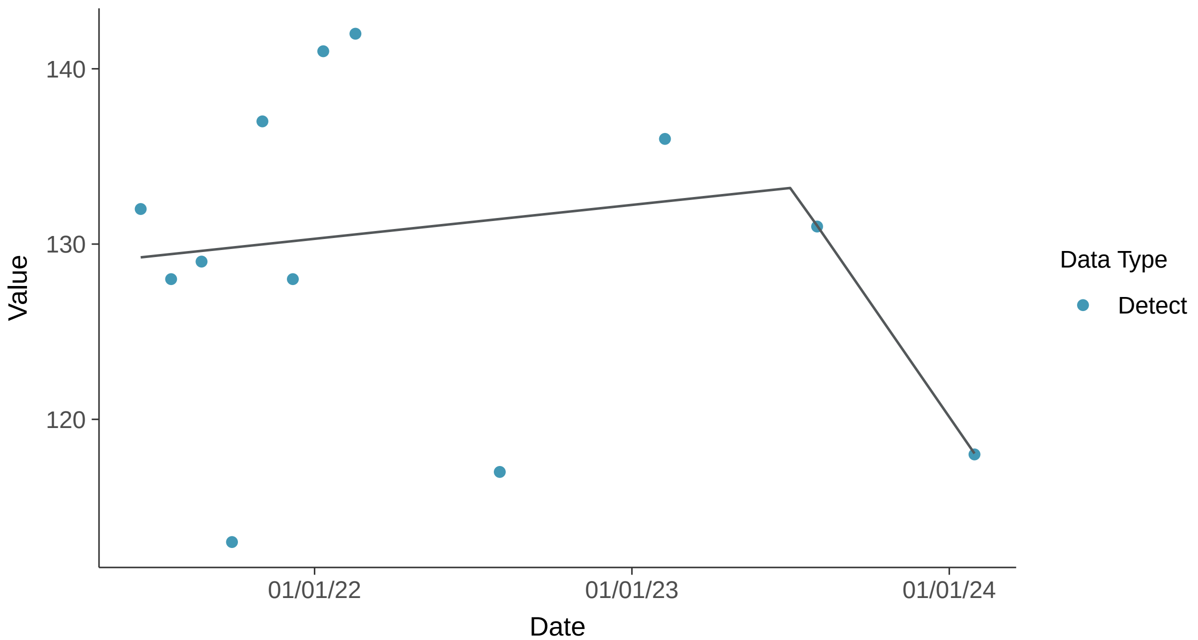
Trend Regression: Lognormal MLE

Calcium, MW-10 (mg/L)



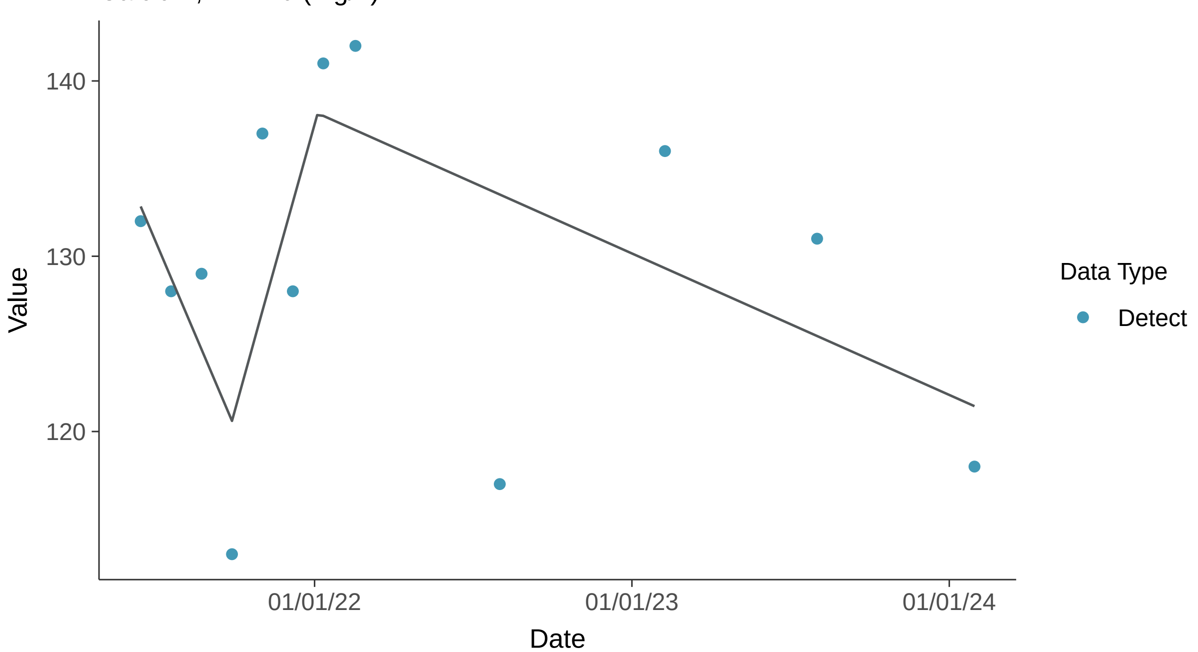
Trend Regression: Piecewise Linear-Linear

Calcium, MW-10 (mg/L)



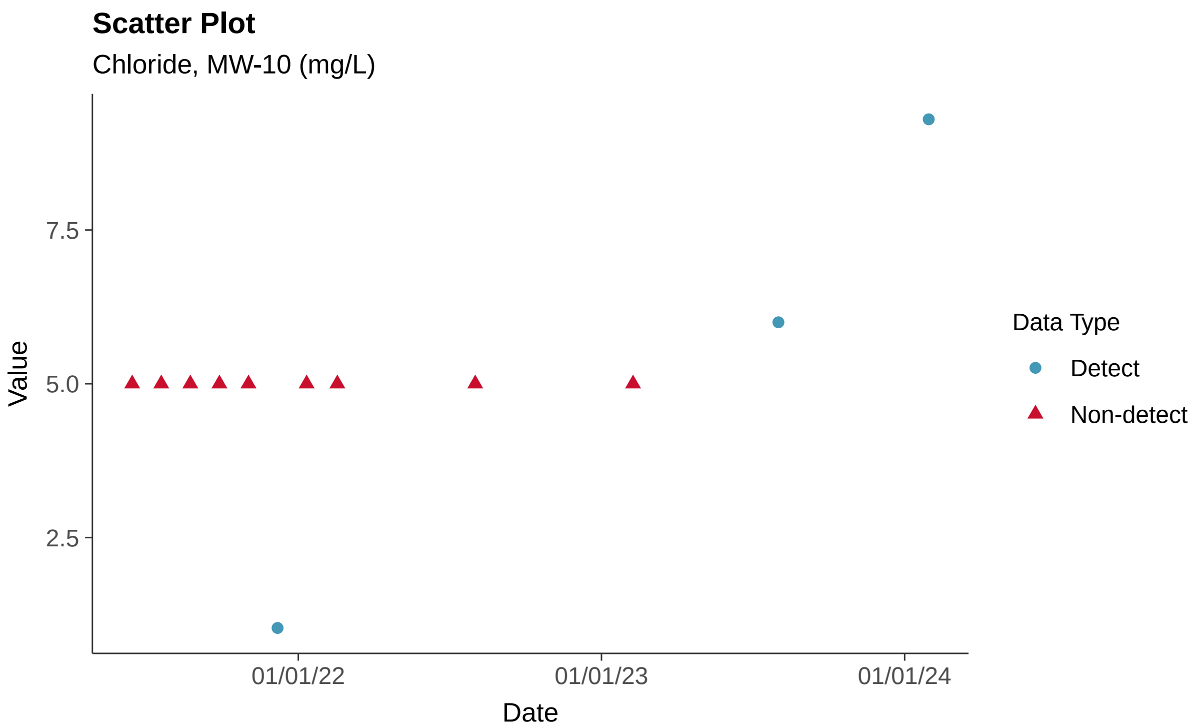
Trend Regression: Piecewise Linear-Linear-Linear

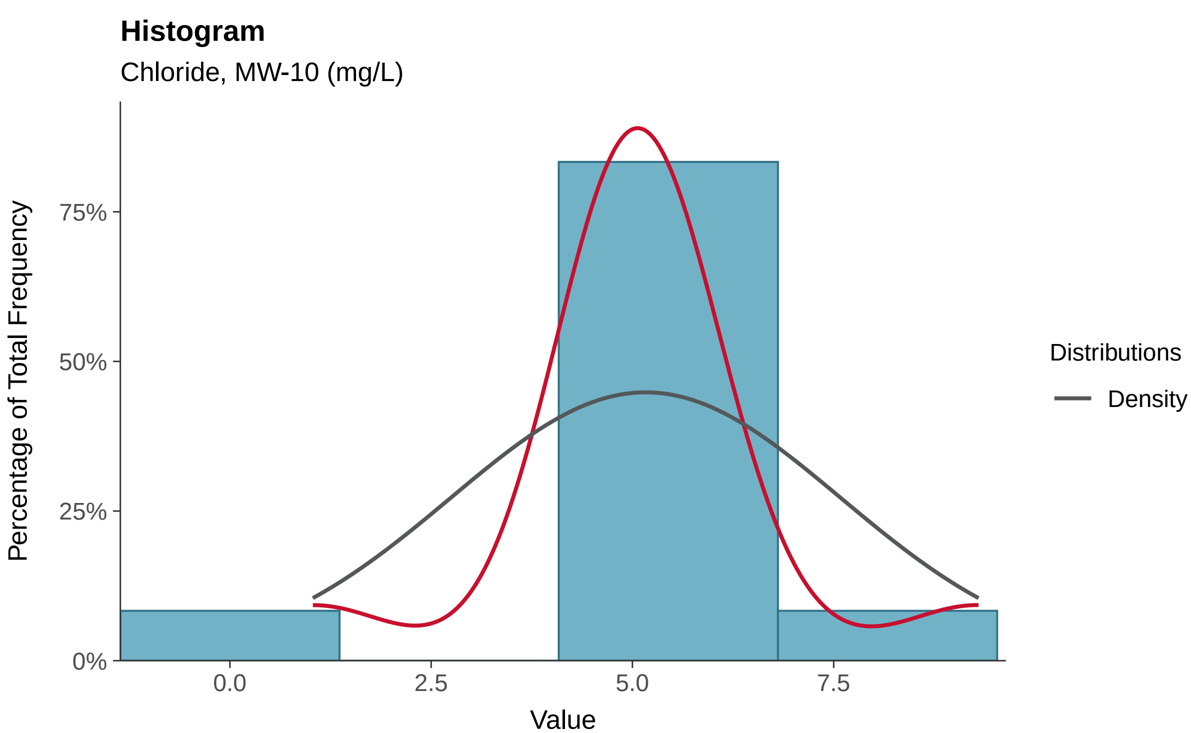
Calcium, MW-10 (mg/L)

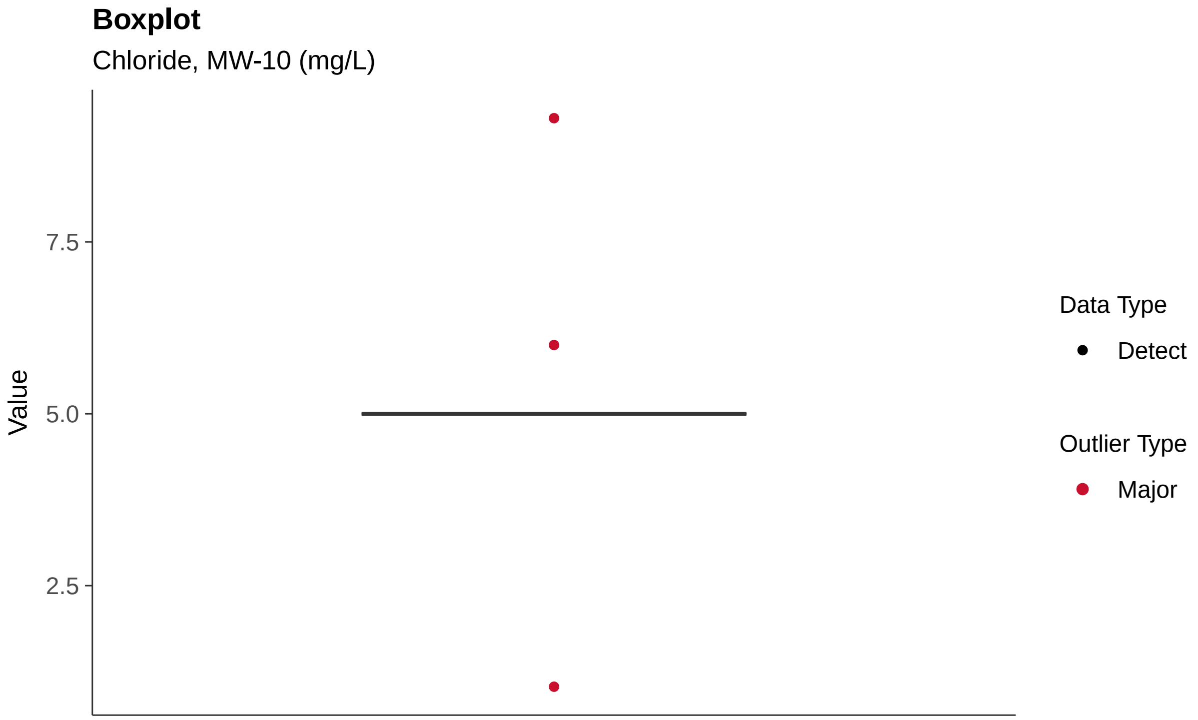


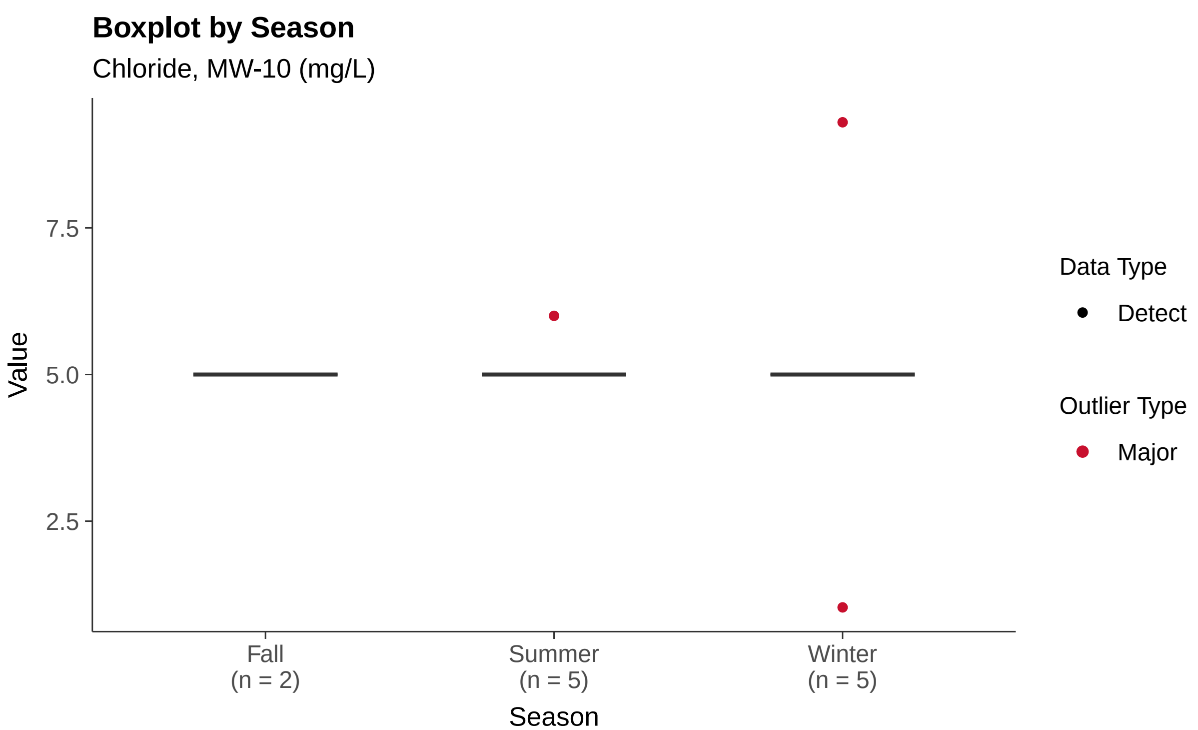
Appendix III: Chloride, MW-10

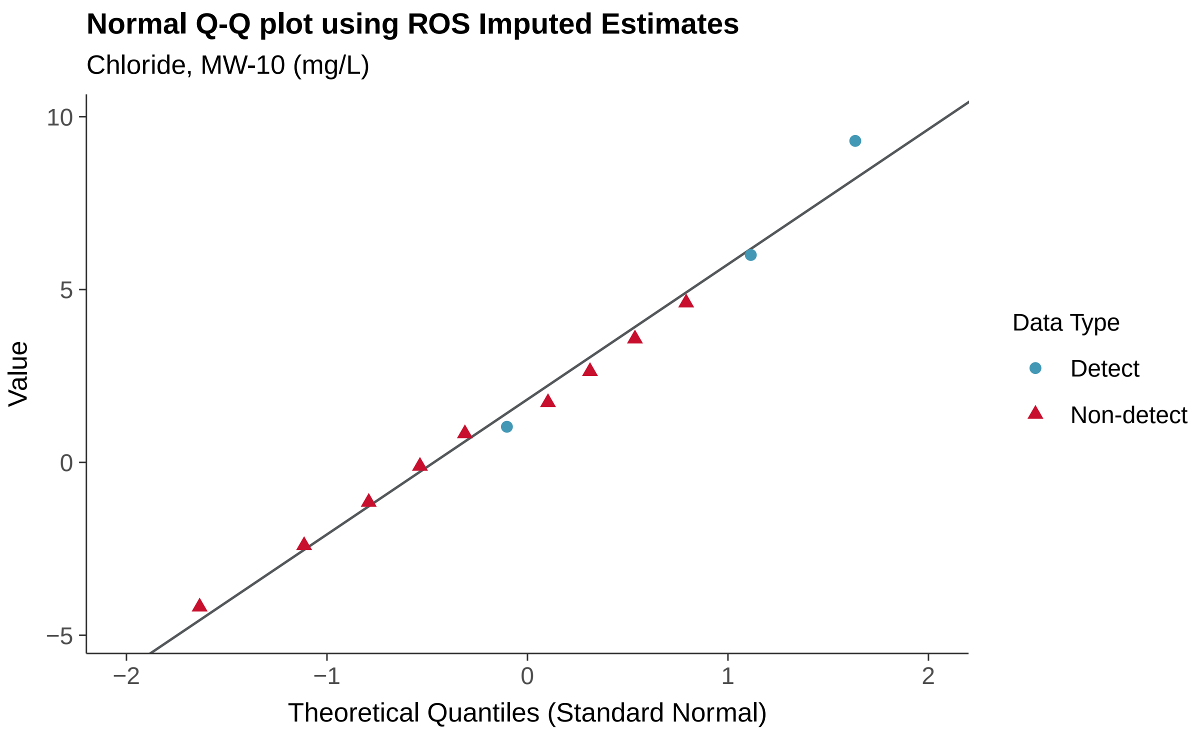
ID: 10_1_03

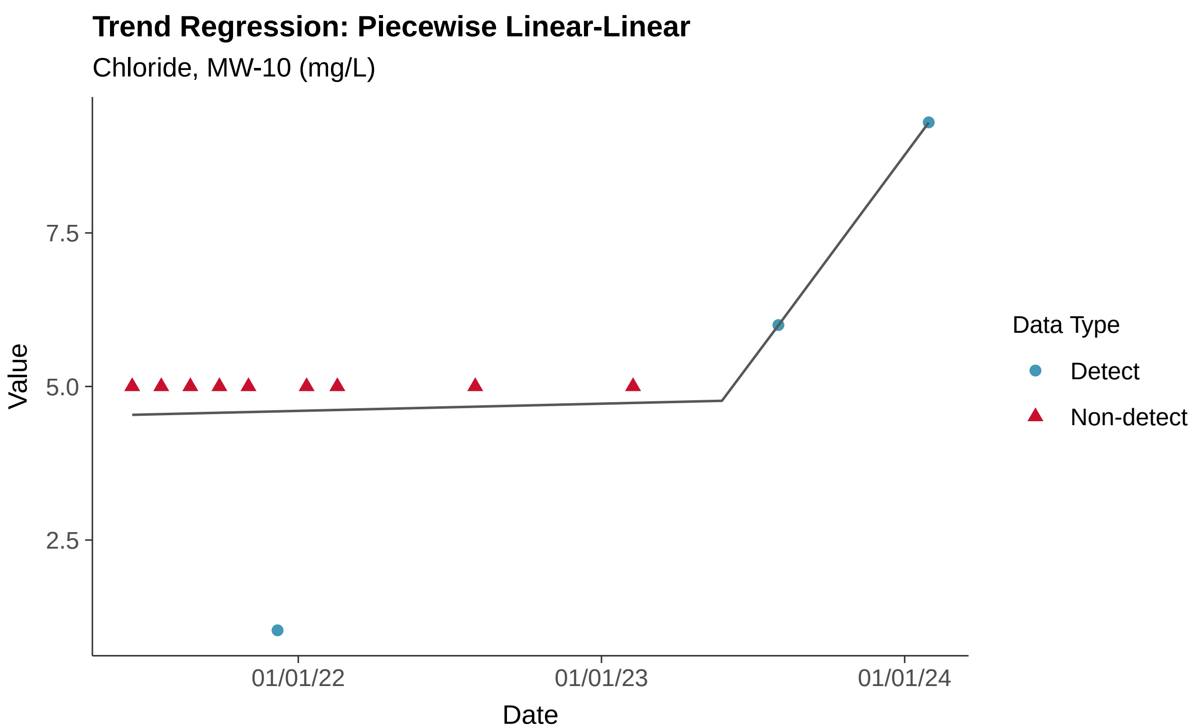





Boxplot
Chloride, MW-10 (mg/L)
Value
7.5
5.0
2.5
Data Type
Detect
Outlier Type
Major

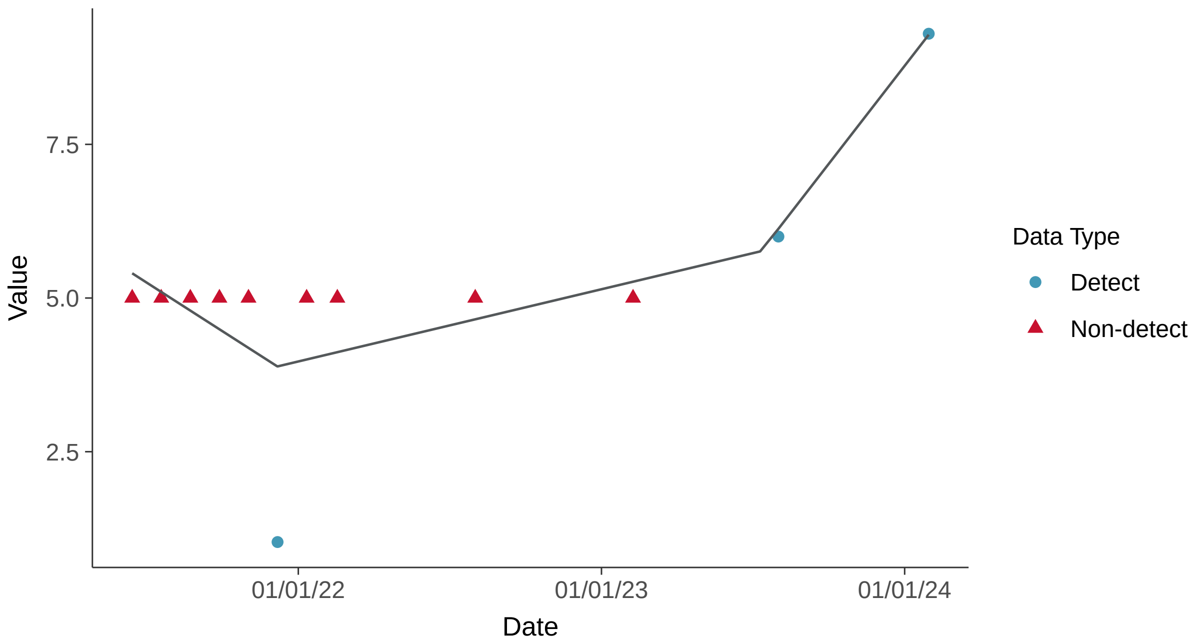

Boxplot by Season
Chloride, MW-10 (mg/L)
Value
7.5
5.0
2.5
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major


Normal Q-Q plot using ROS Imputed Estimates
Chloride, MW-10 (mg/L)
Value
10
5
0
−5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Chloride, MW-10 (mg/L)
Value
7.5
5.0
2.5
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect
Non-detect

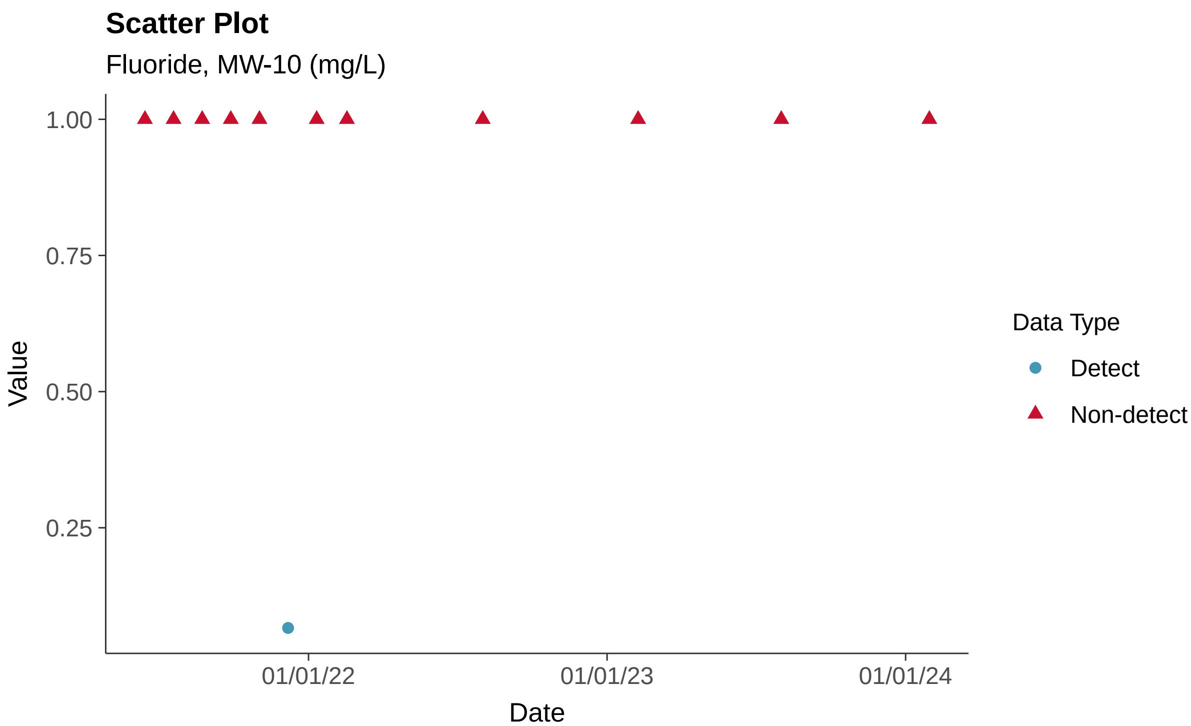
Trend Regression: Piecewise Linear-Linear-Linear

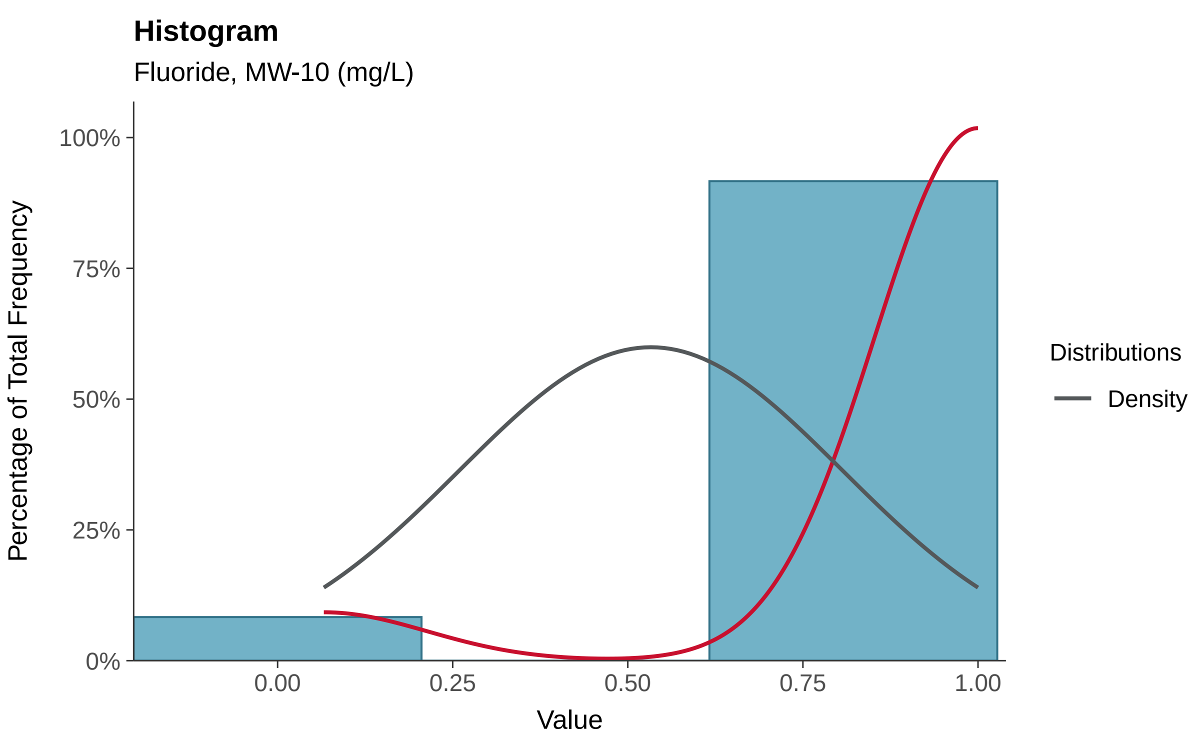
Chloride, MW-10 (mg/L)

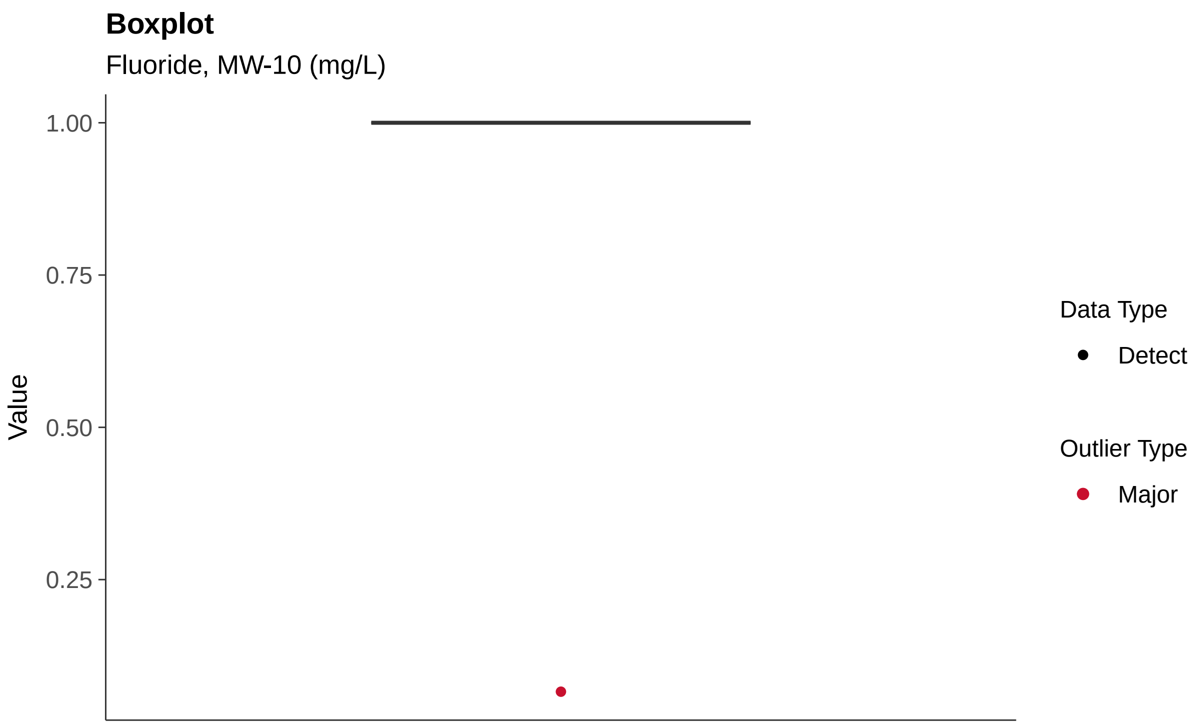


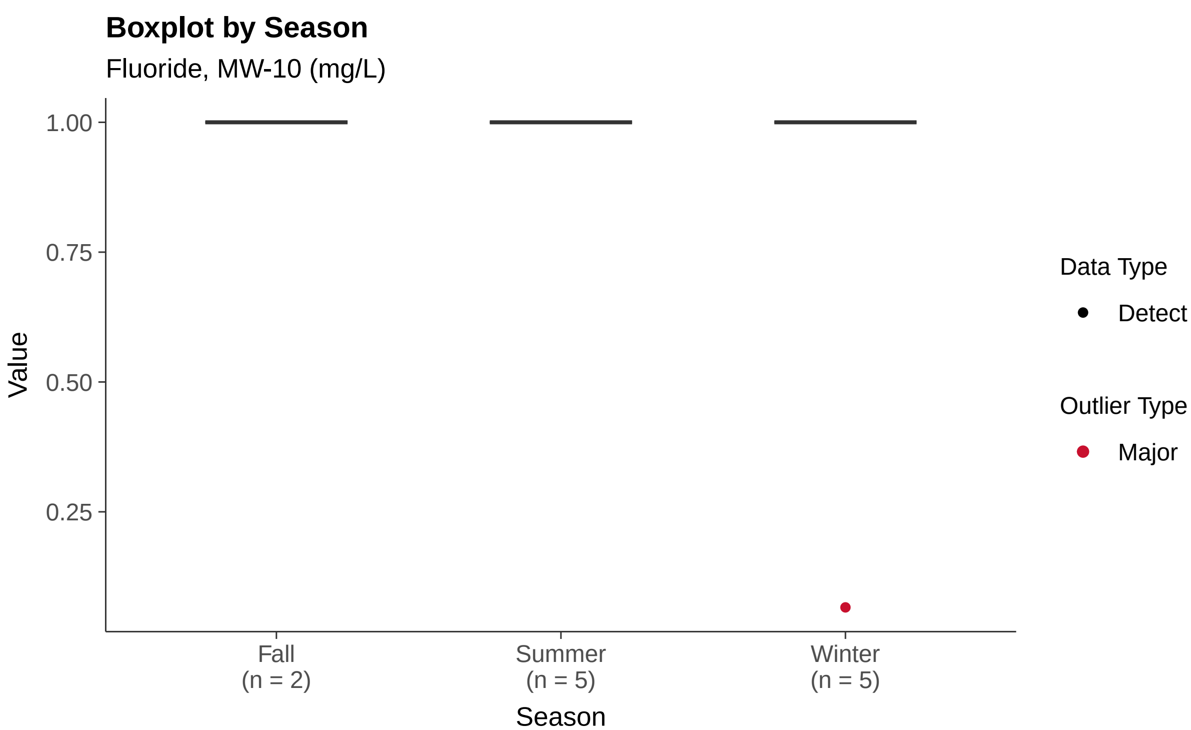
Appendix III: Fluoride, MW-10

ID: 10_1_04



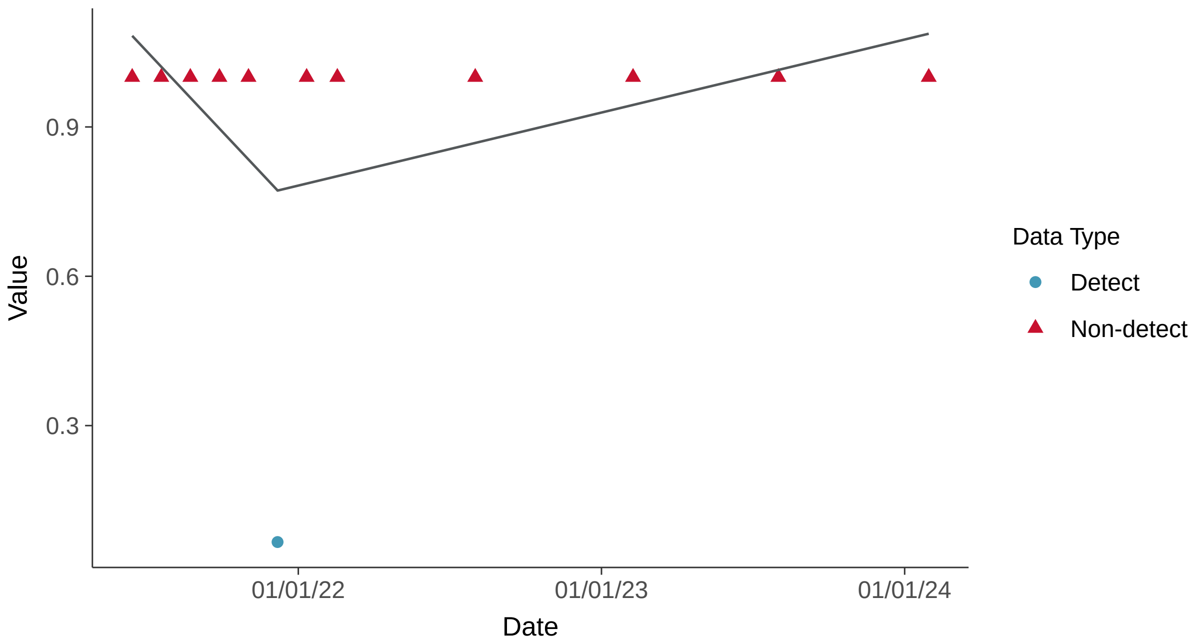



Boxplot
Fluoride, MW-10 (mg/L)
1.00
0.75
0.50
0.25
Value
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Fluoride, MW-10 (mg/L)
1.00
0.75
0.50
0.25
Value
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major

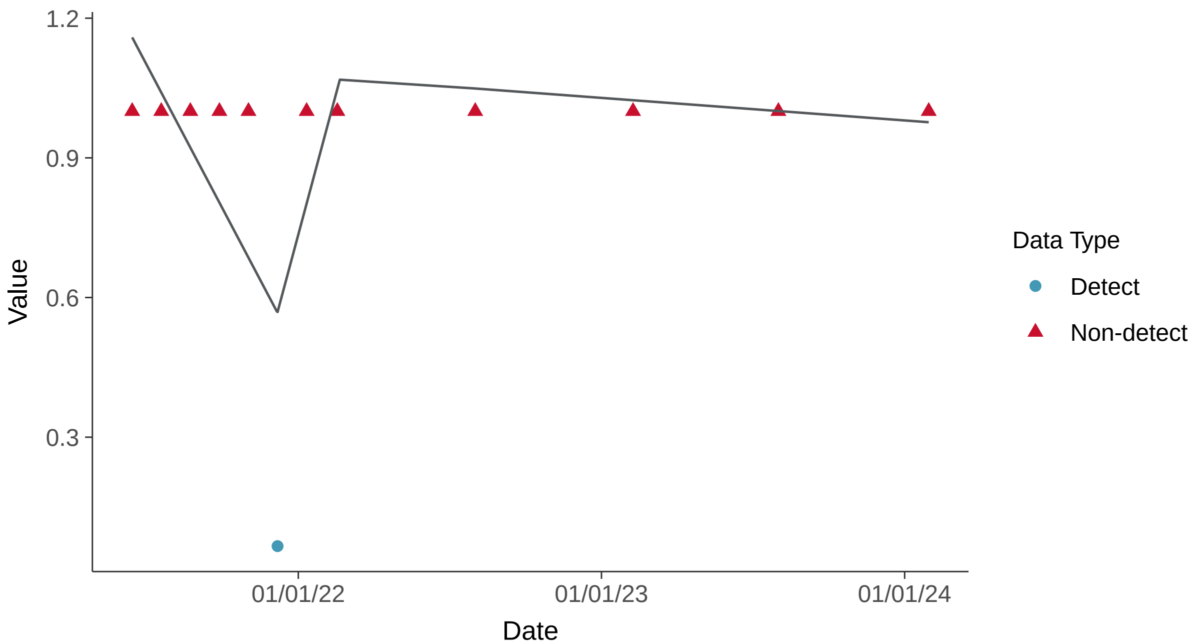
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-10 (mg/L)



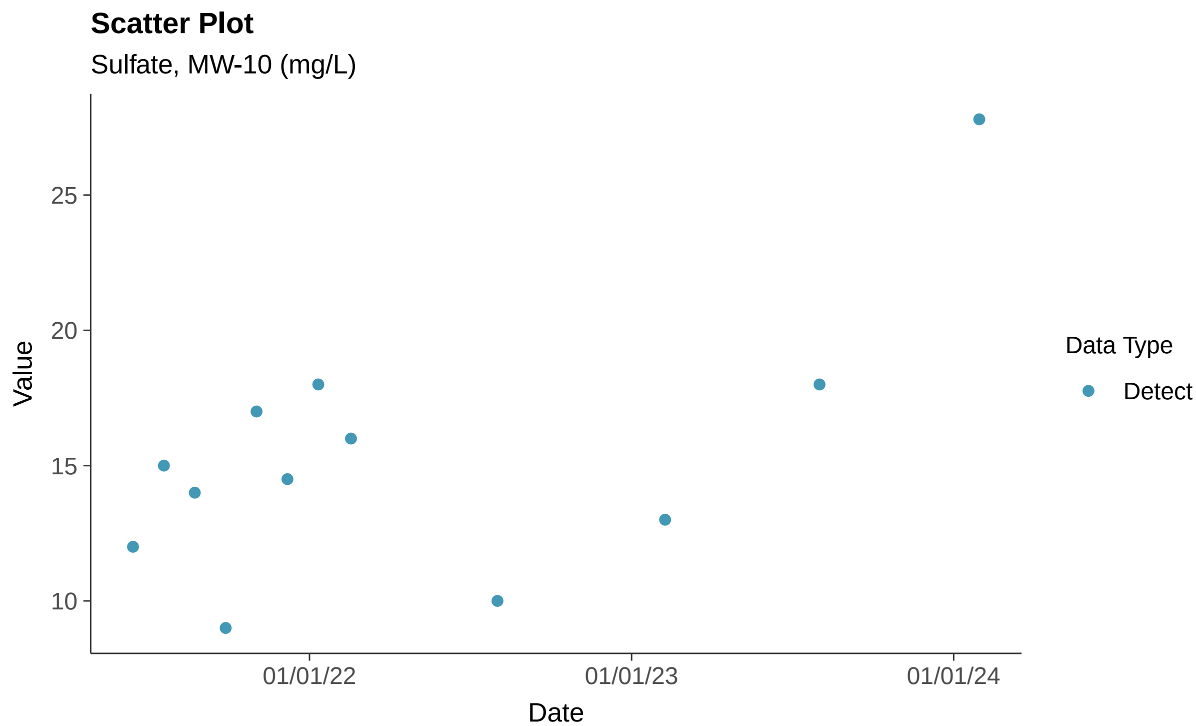
Trend Regression: Piecewise Linear-Linear-Linear

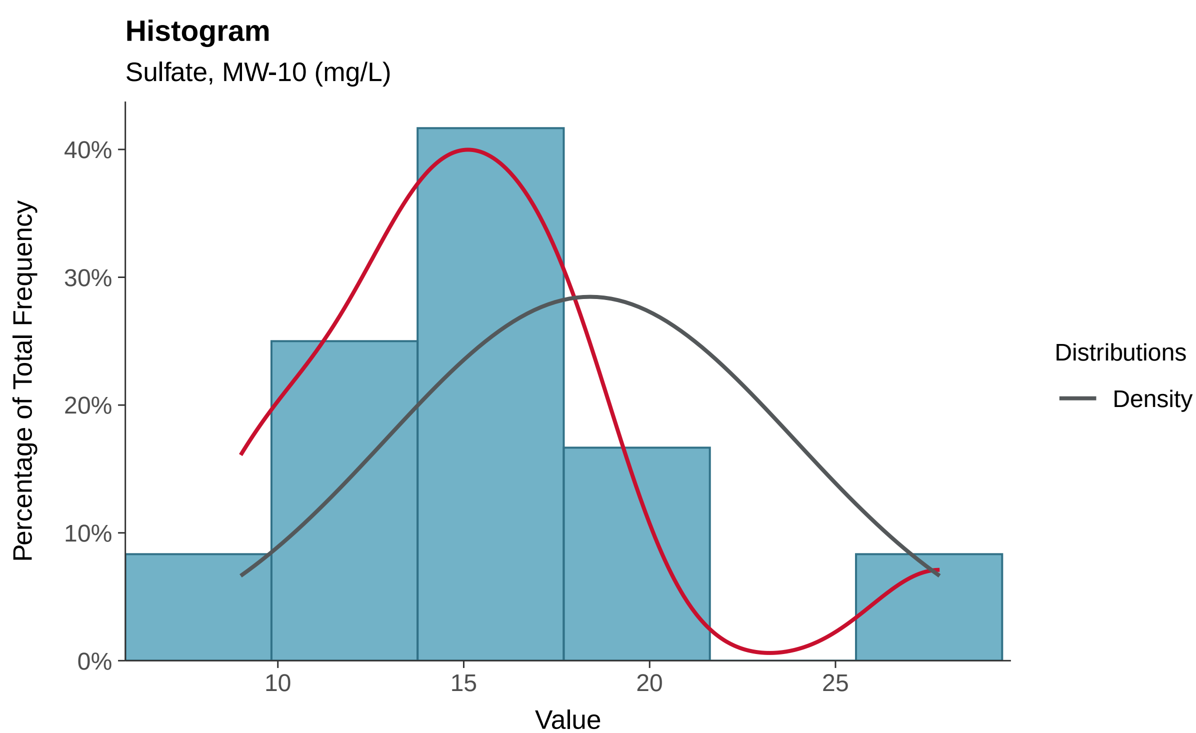
Fluoride, MW-10 (mg/L)



Appendix III: Sulfate, MW-10

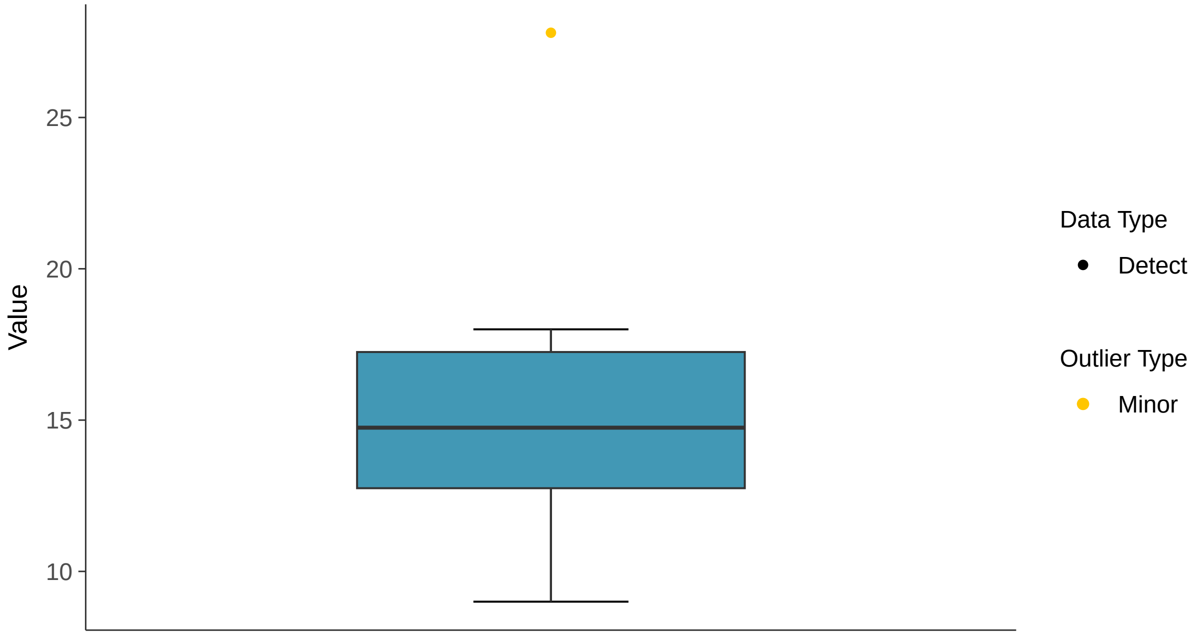
ID: 10_1_05





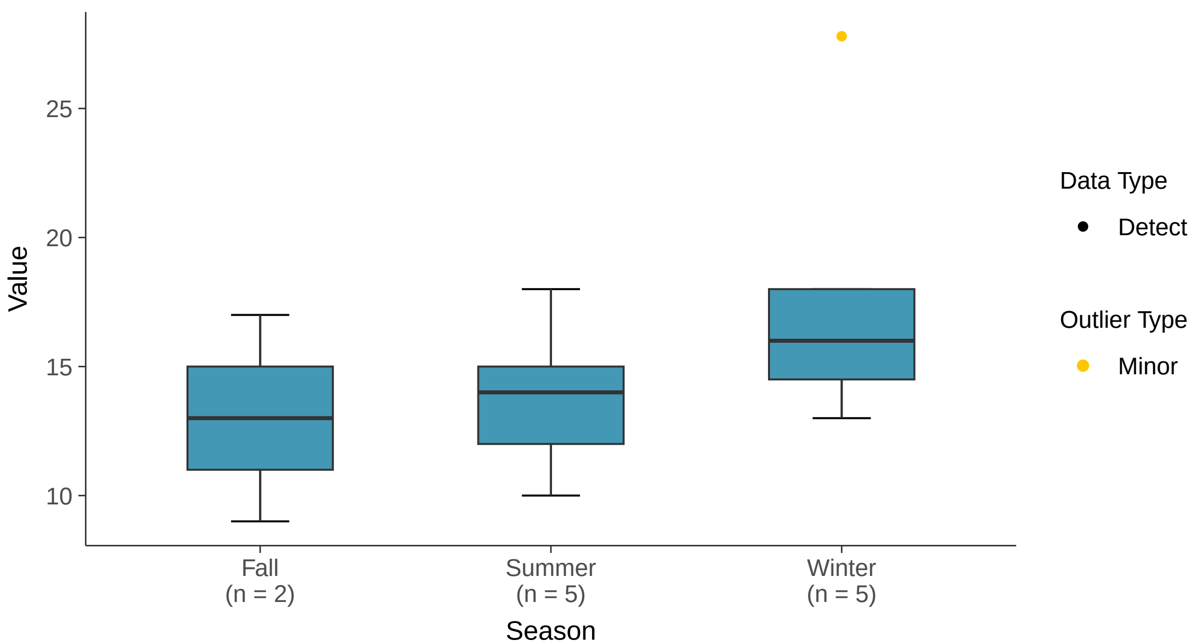
Boxplot

Sulfate, MW-10 (mg/L)



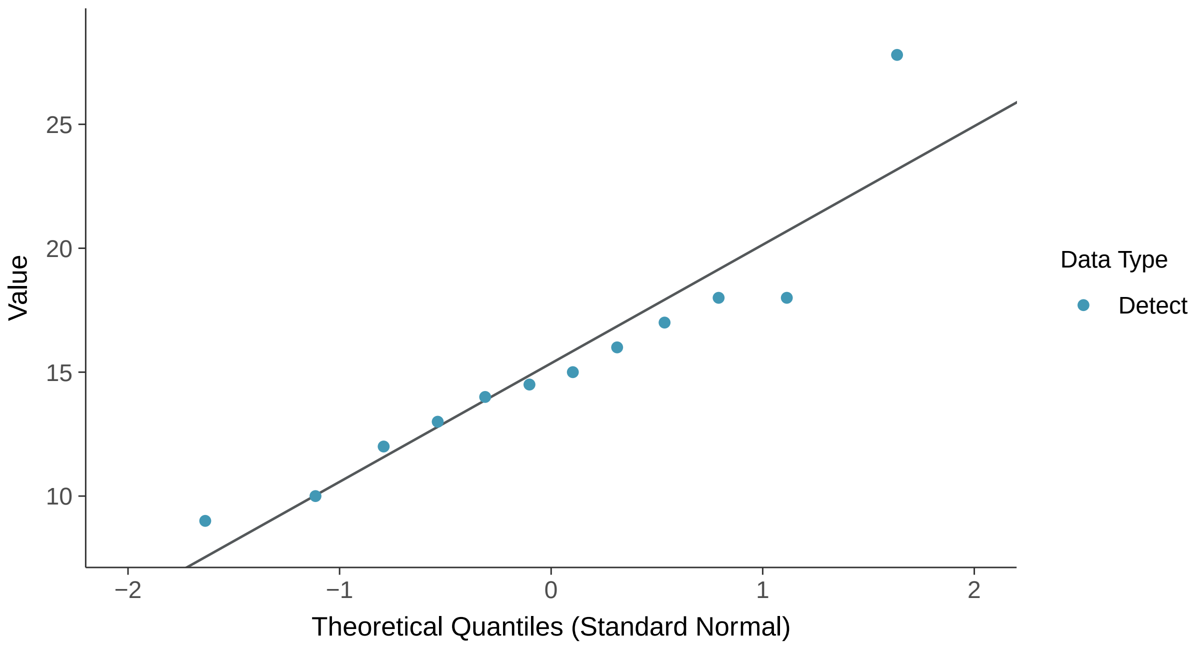
Boxplot by Season

Sulfate, MW-10 (mg/L)



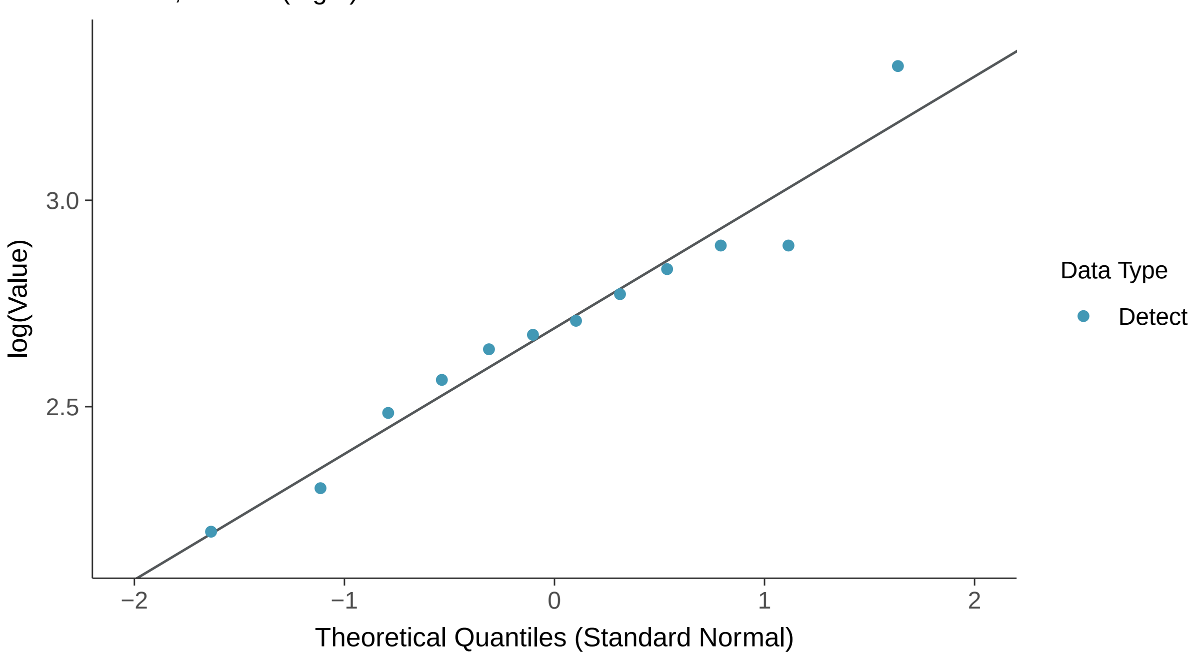
Normal Q-Q plot

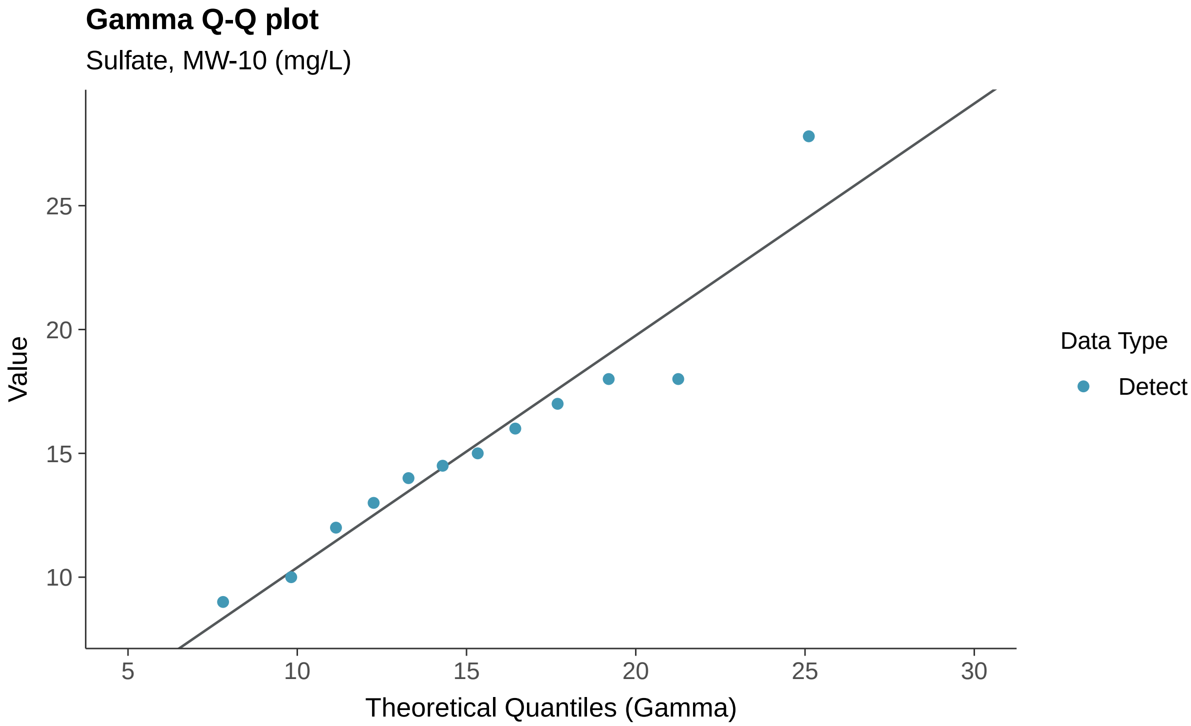
Sulfate, MW-10 (mg/L)

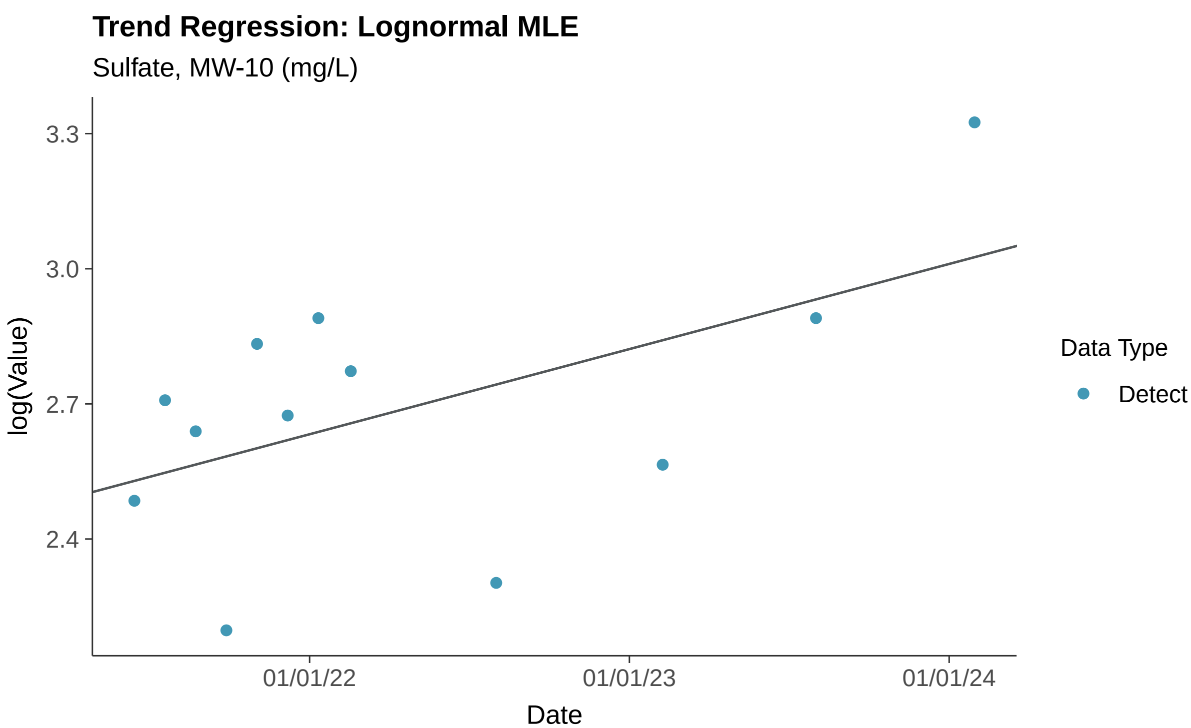


Lognormal Q-Q plot

Sulfate, MW-10 (mg/L)

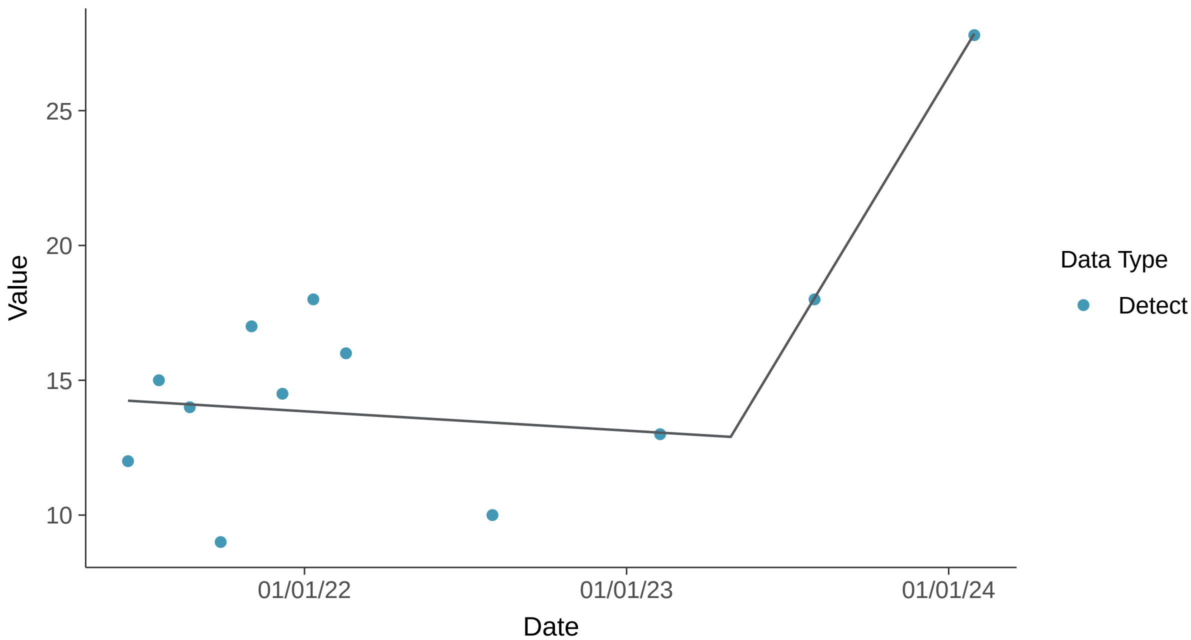



Gamma Q-Q plot
Sulfate, MW-10 (mg/L)
Value
25
20
15
10
5
10
15
20
25
30
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Sulfate, MW-10 (mg/L)
log(Value)
3.3
3.0
2.7
2.4
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

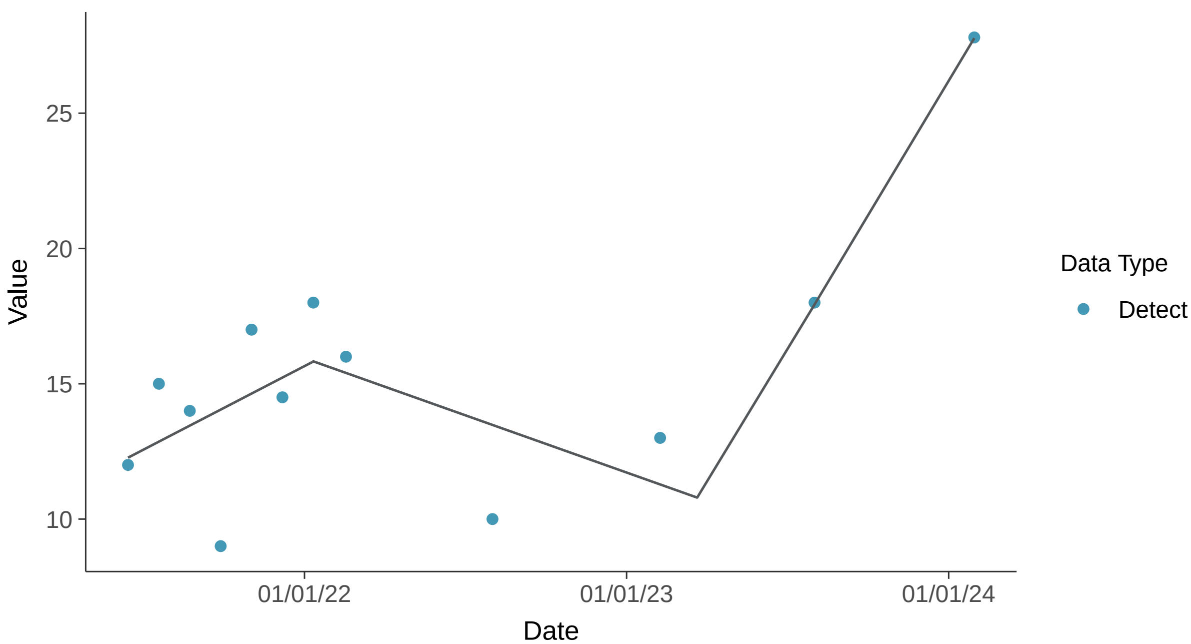
Trend Regression: Piecewise Linear-Linear

Sulfate, MW-10 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Sulfate, MW-10 (mg/L)

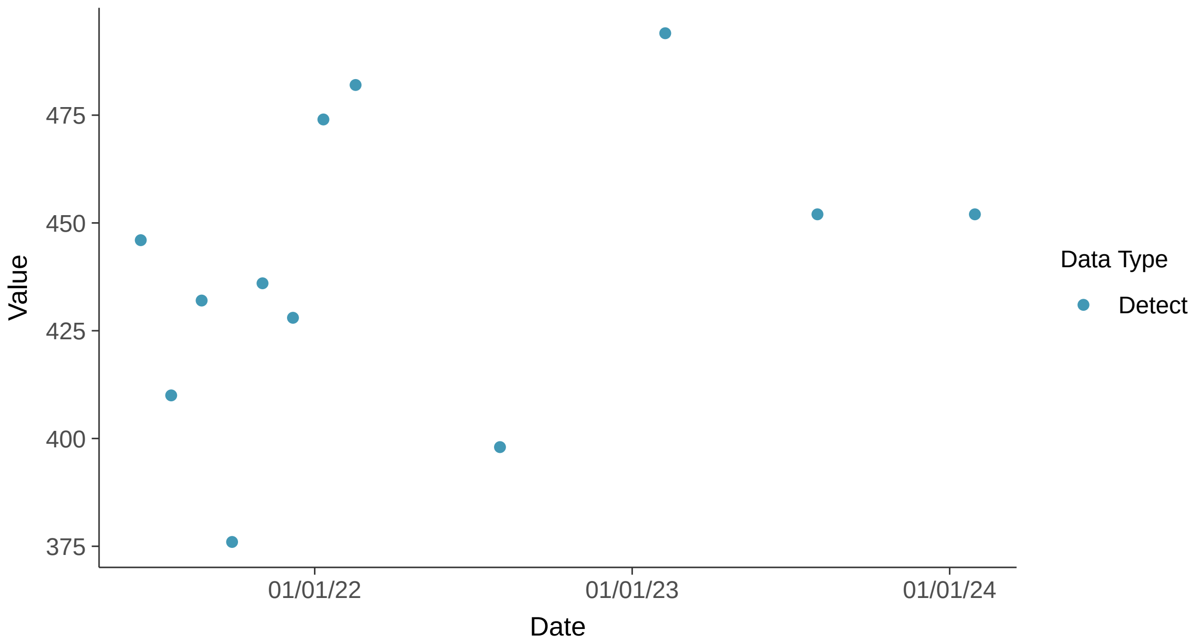


Appendix III: Total Dissolved Solids, MW-10

ID: 10_1_06

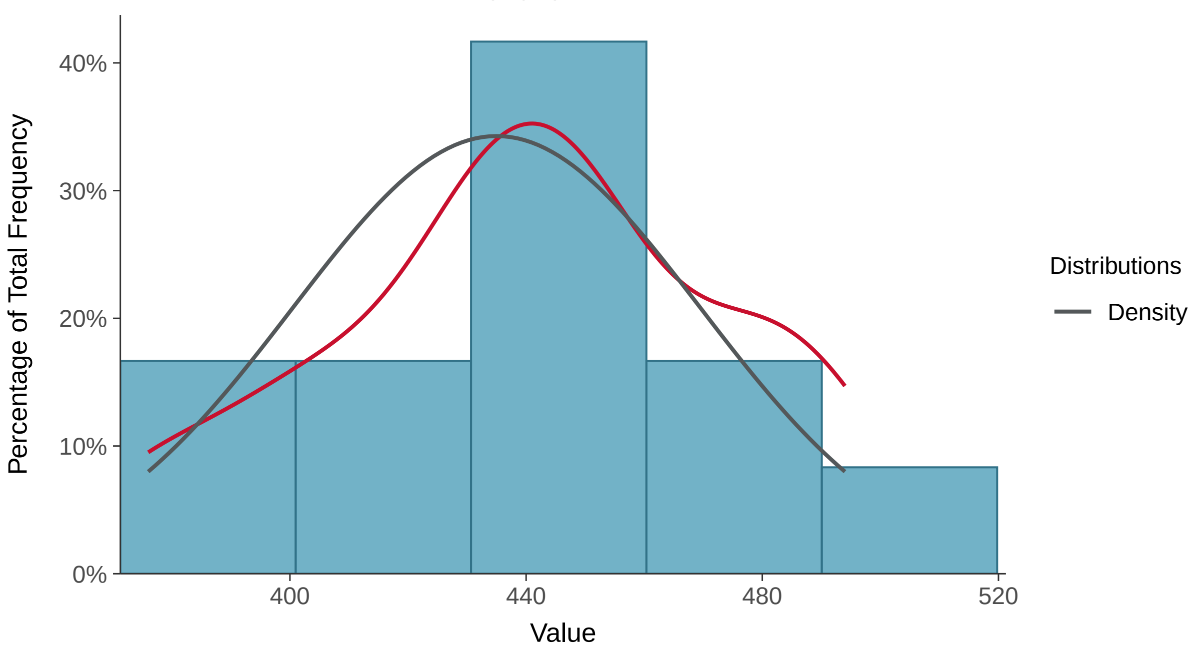
Scatter Plot

Total Dissolved Solids, MW-10 (mg/L)



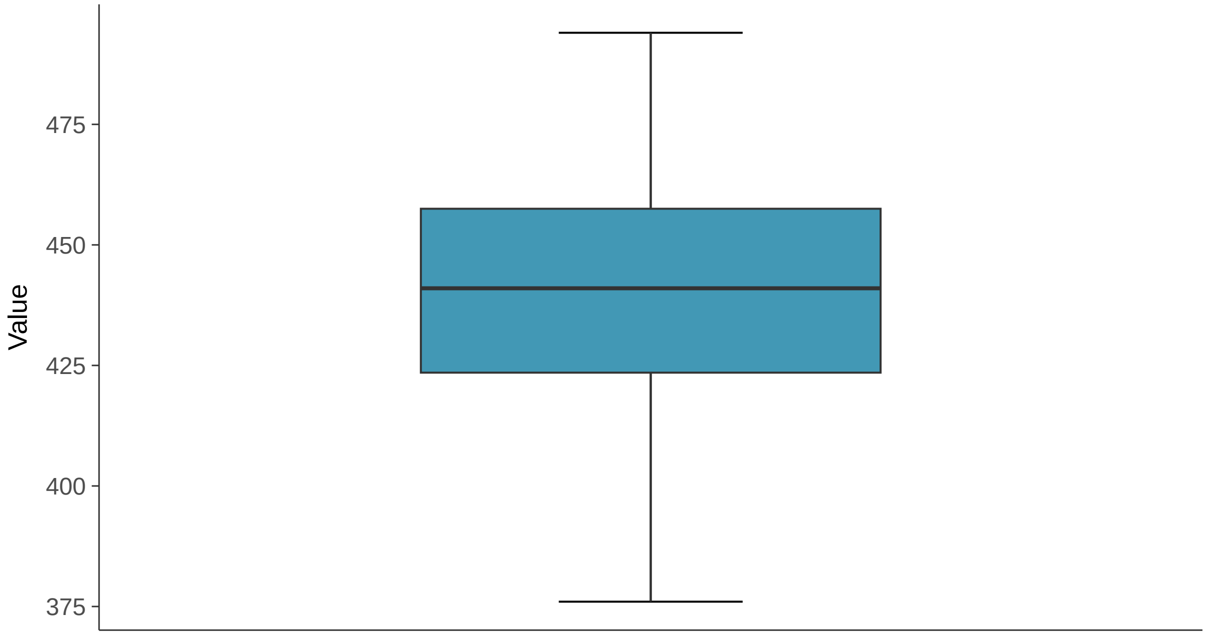
Histogram

Total Dissolved Solids, MW-10 (mg/L)



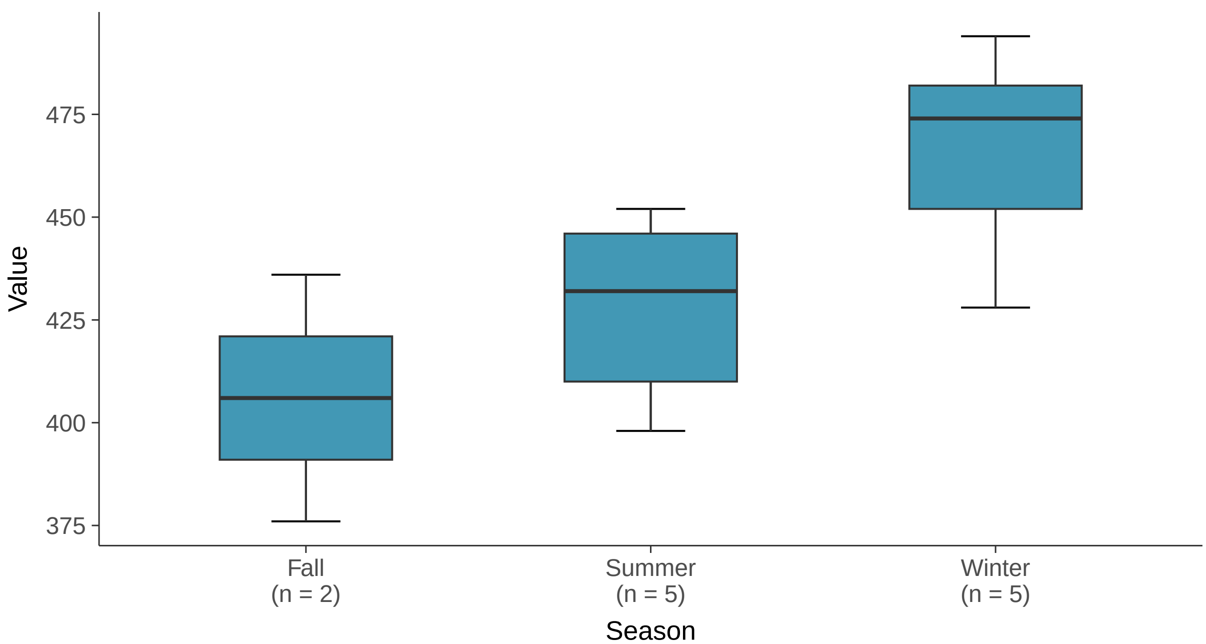
Boxplot

Total Dissolved Solids, MW-10 (mg/L)



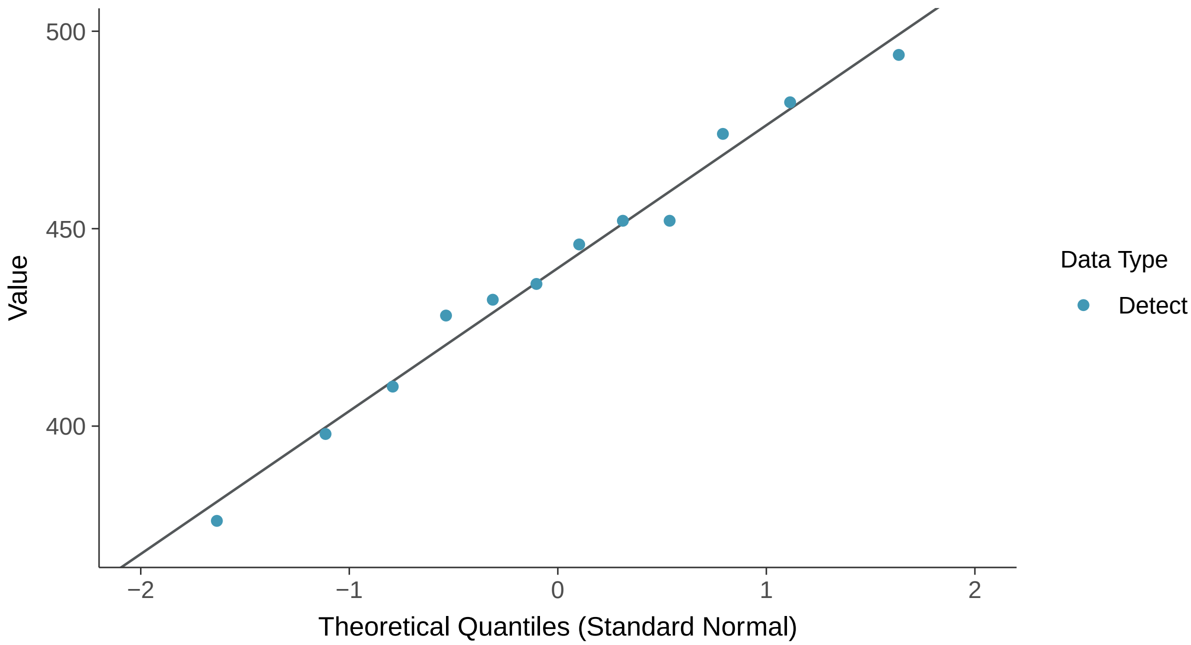
Boxplot by Season

Total Dissolved Solids, MW-10 (mg/L)



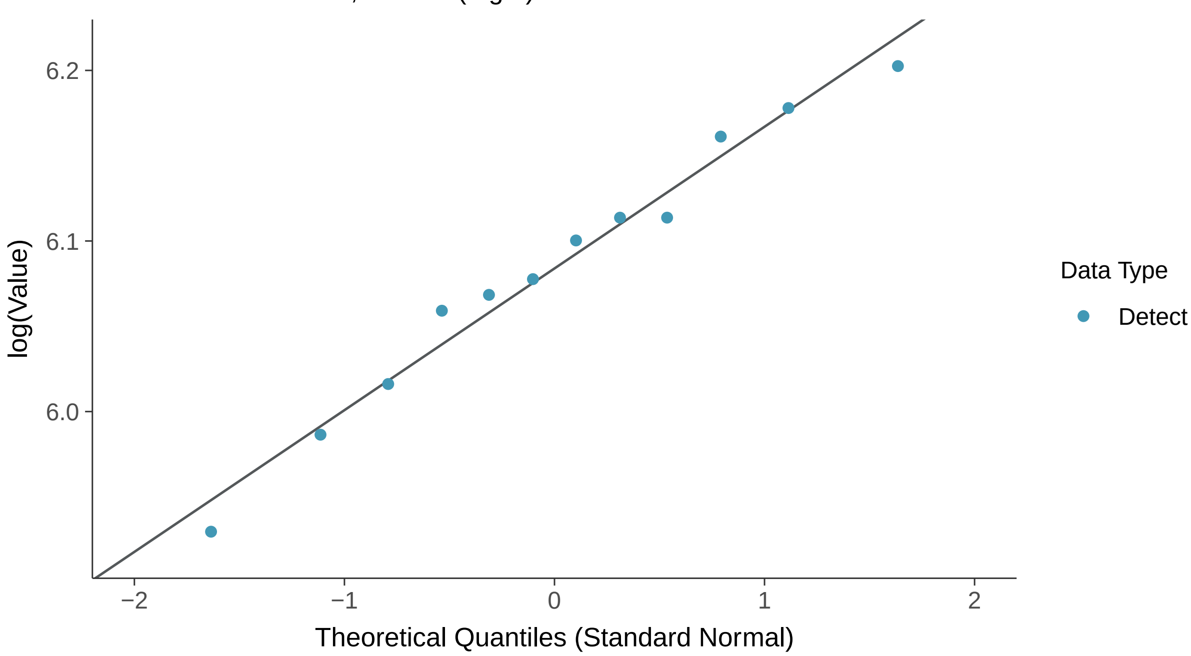
Normal Q-Q plot

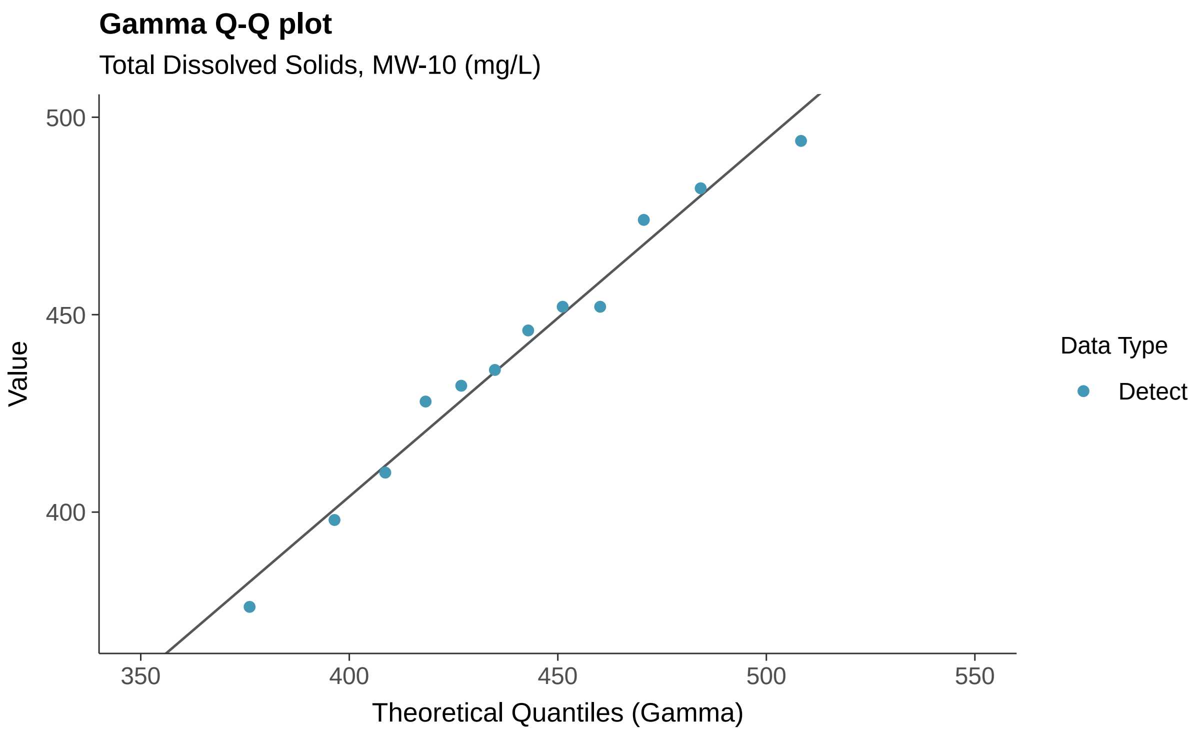
Total Dissolved Solids, MW-10 (mg/L)

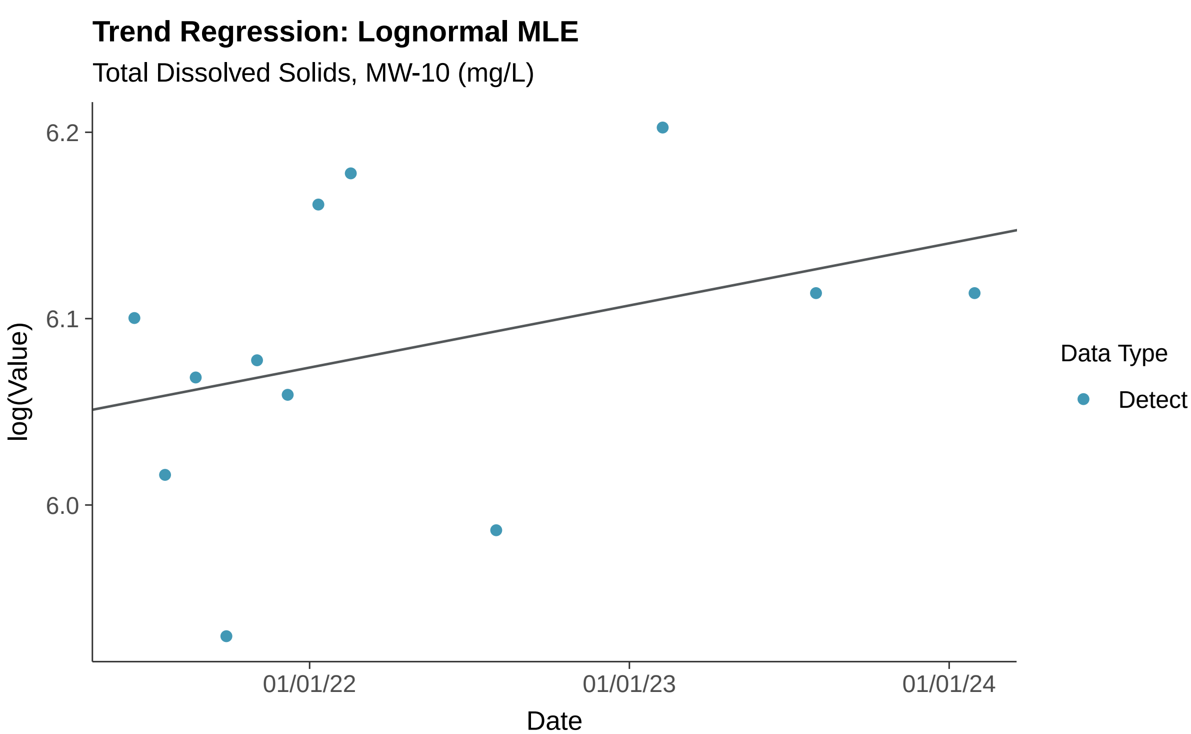


Lognormal Q-Q plot

Total Dissolved Solids, MW-10 (mg/L)

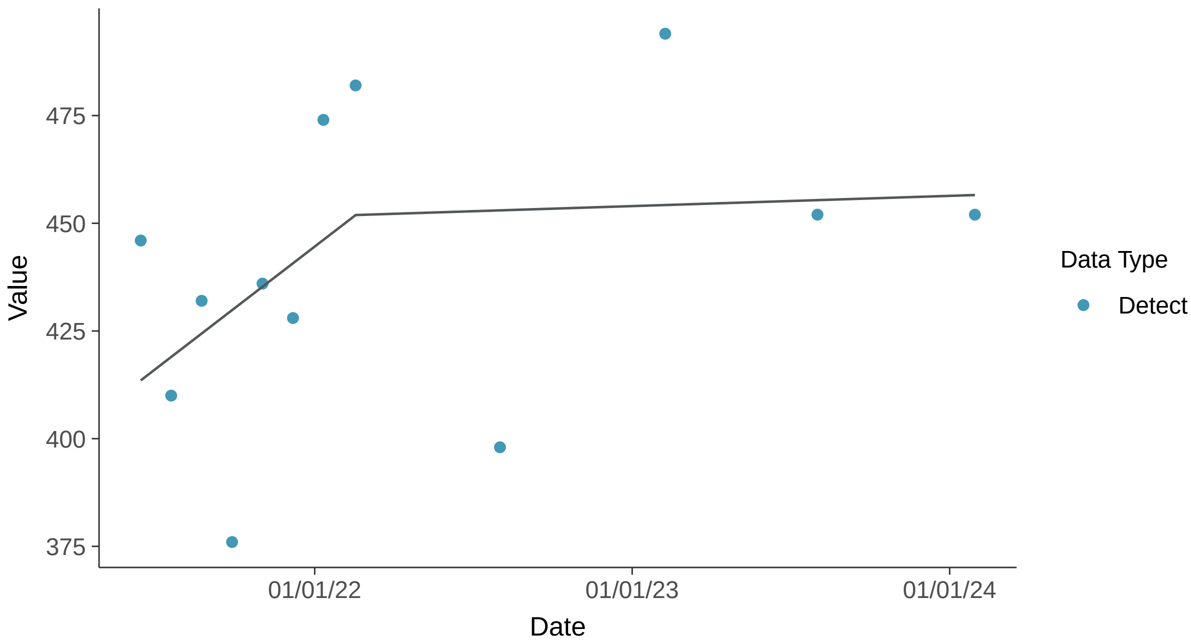



Gamma Q-Q plot
Total Dissolved Solids, MW-10 (mg/L)
Value
500
450
400
350
400
450
500
550
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-10 (mg/L)
log(Value)
6.2
6.1
6.0
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

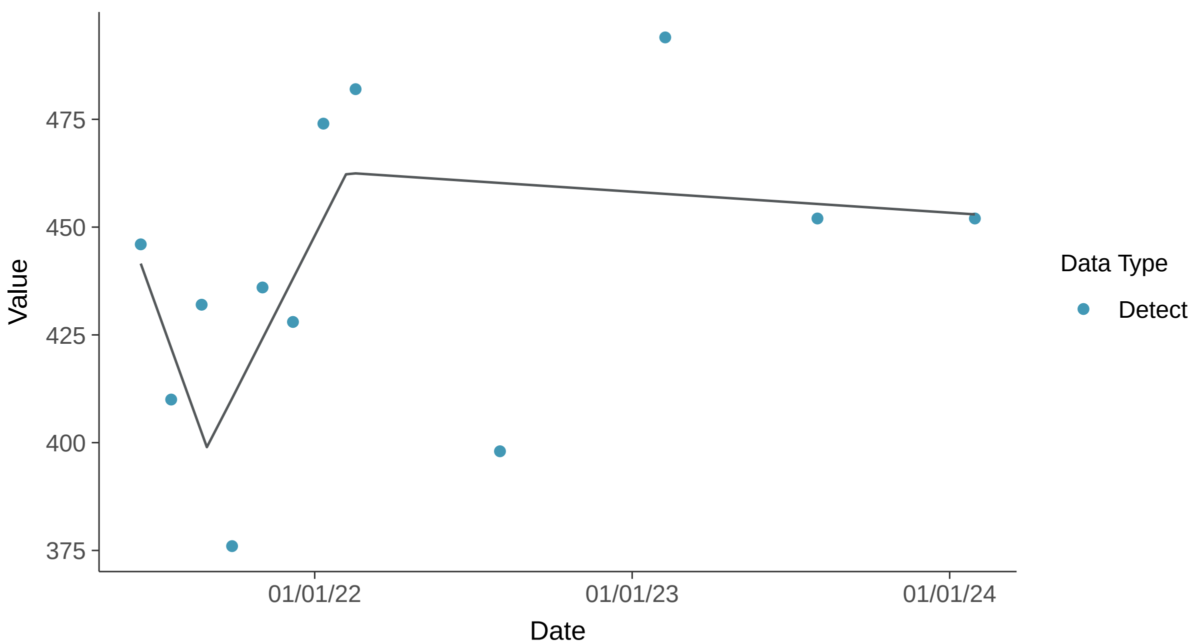
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-10 (mg/L)



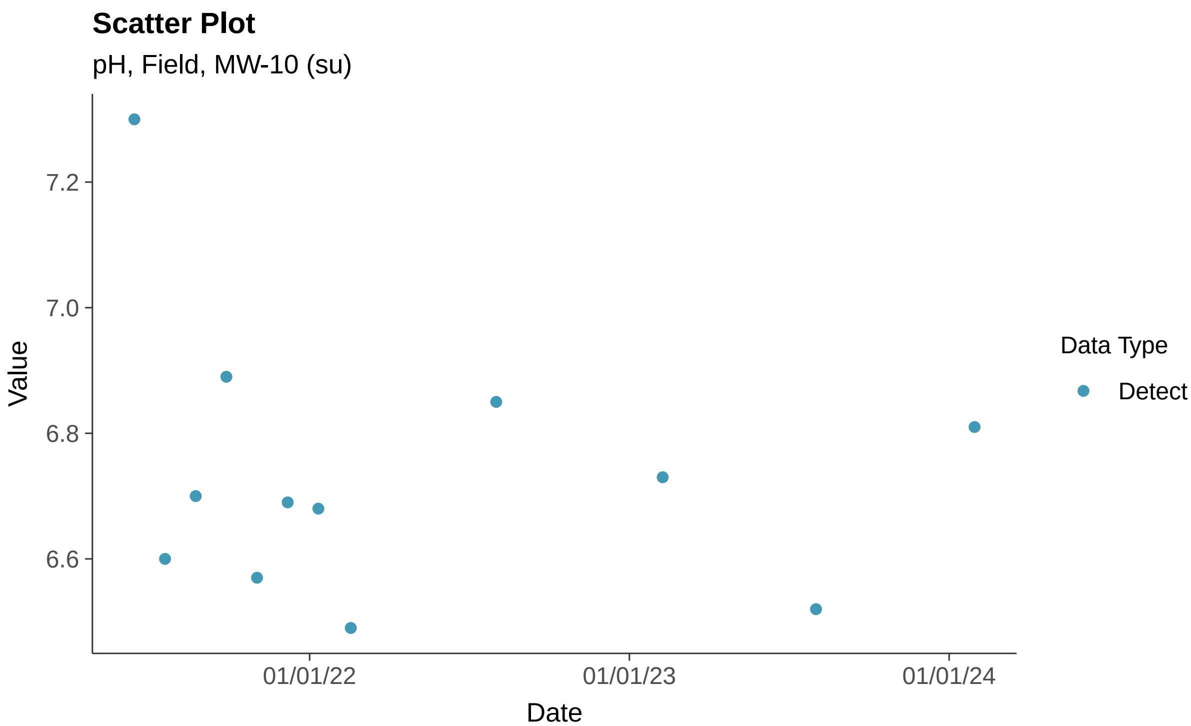
Trend Regression: Piecewise Linear-Linear-Linear

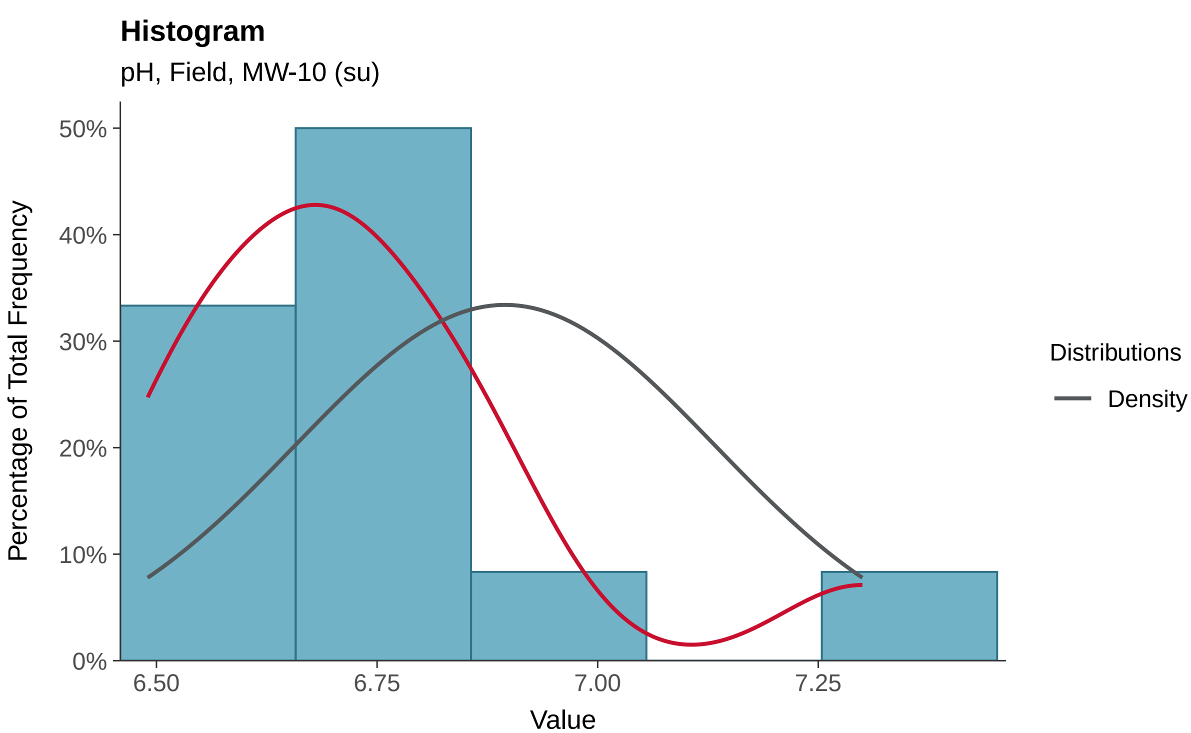
Total Dissolved Solids, MW-10 (mg/L)



Appendix III: pH, Field, MW-10

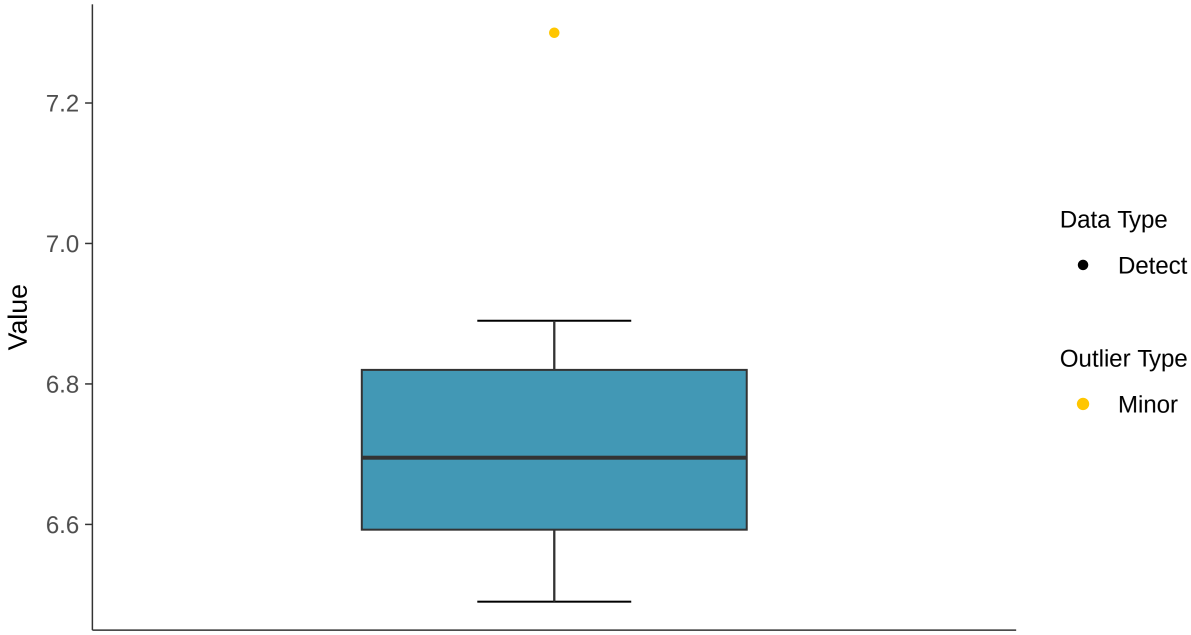
ID: 10_1_07





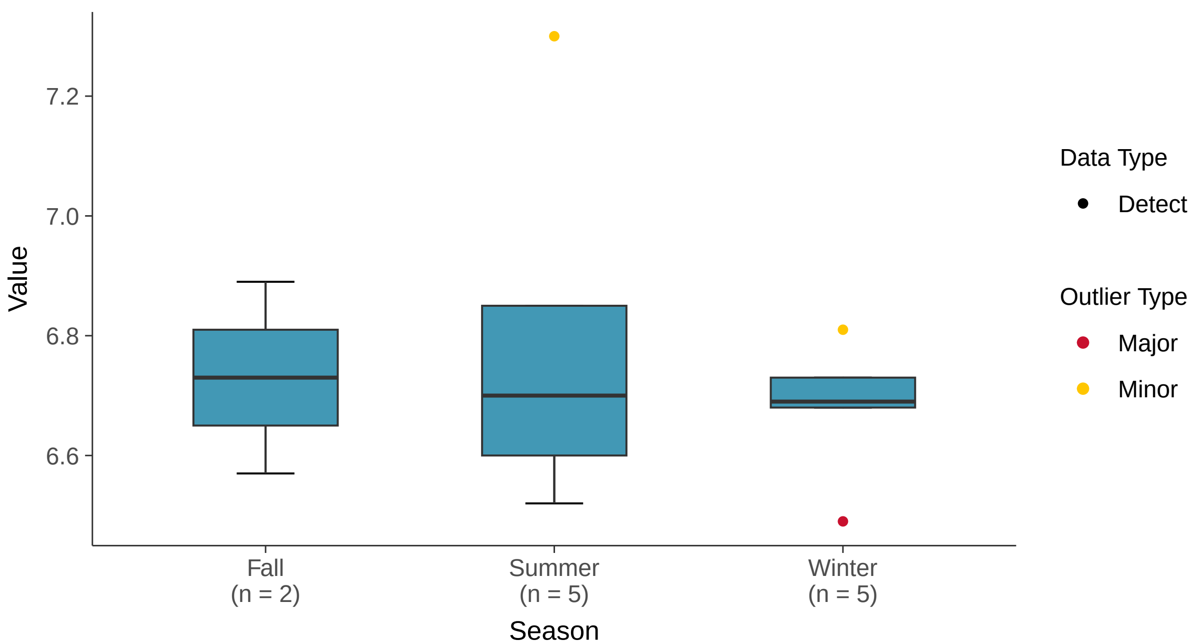
Boxplot

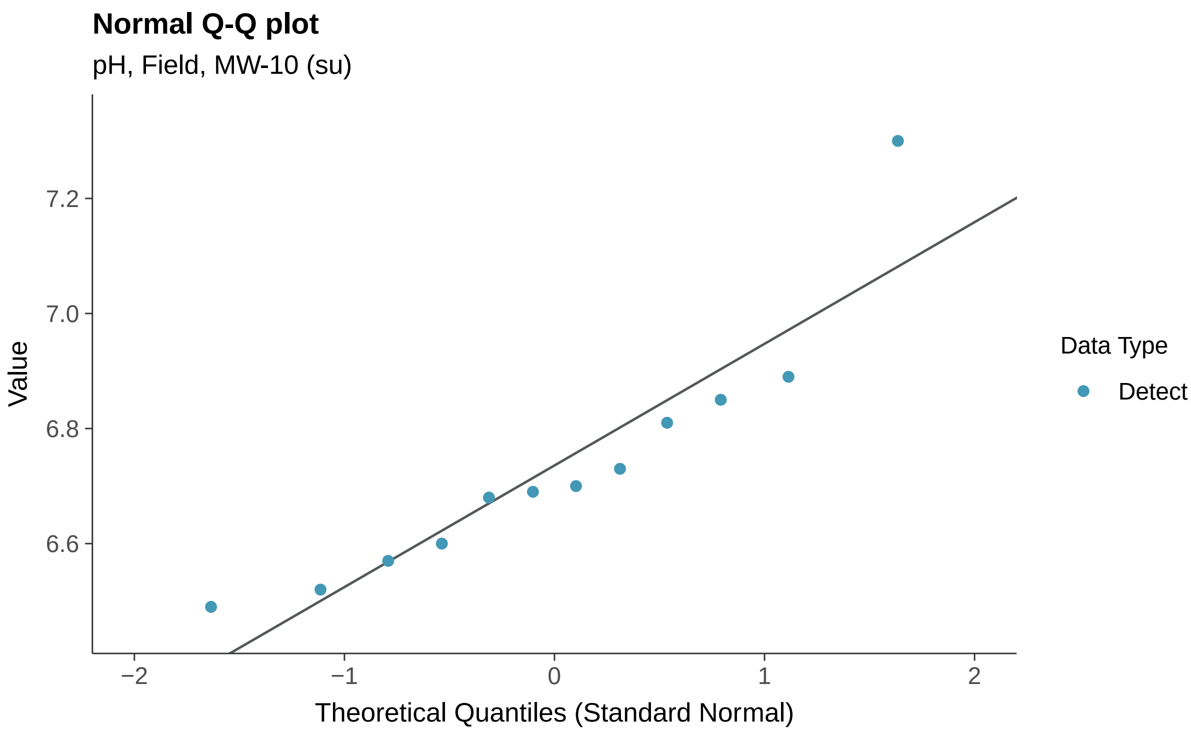
pH, Field, MW-10 (su)

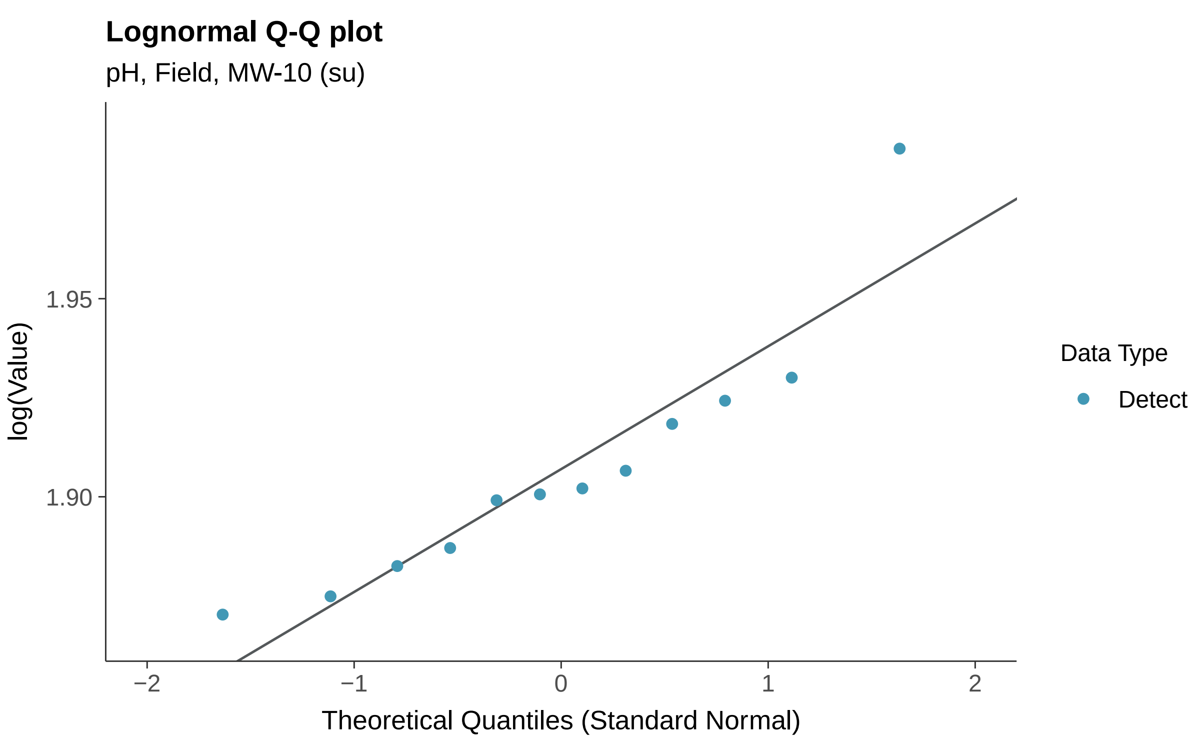


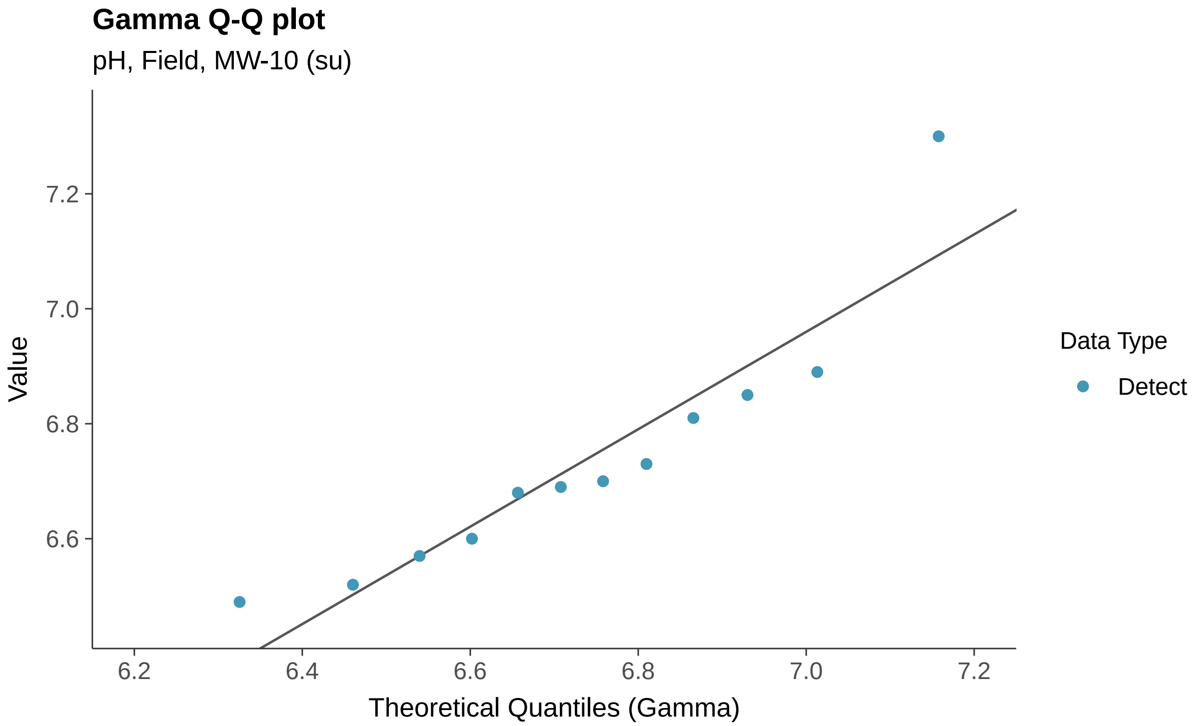
Boxplot by Season

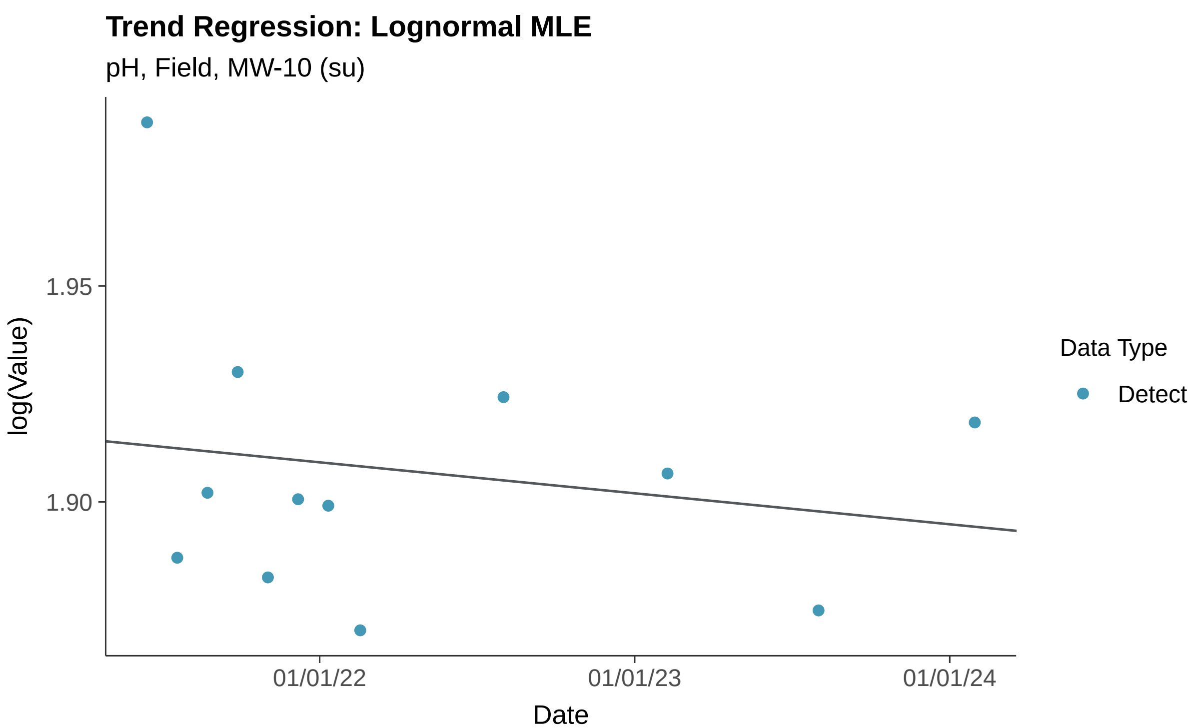
pH, Field, MW-10 (su)




Normal Q-Q plot
pH, Field, MW-10 (su)
Value
7.2
7.0
6.8
6.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

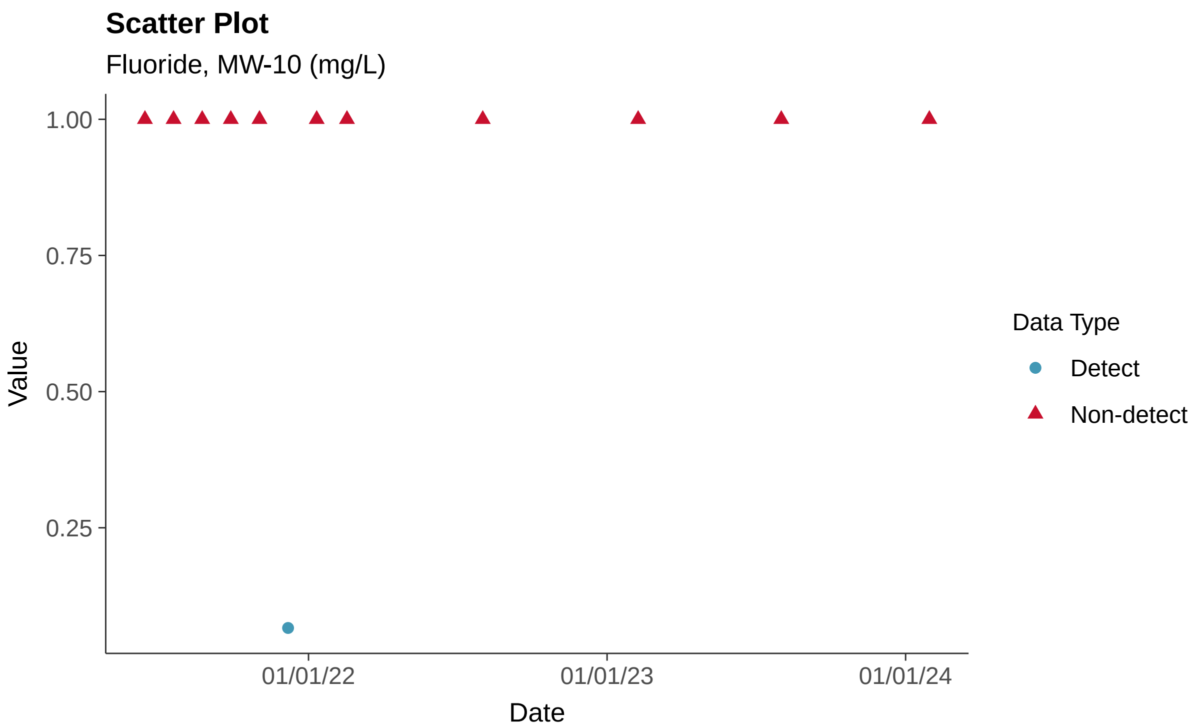

Lognormal Q-Q plot
pH, Field, MW-10 (su)
log(Value)
1.95
1.90
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

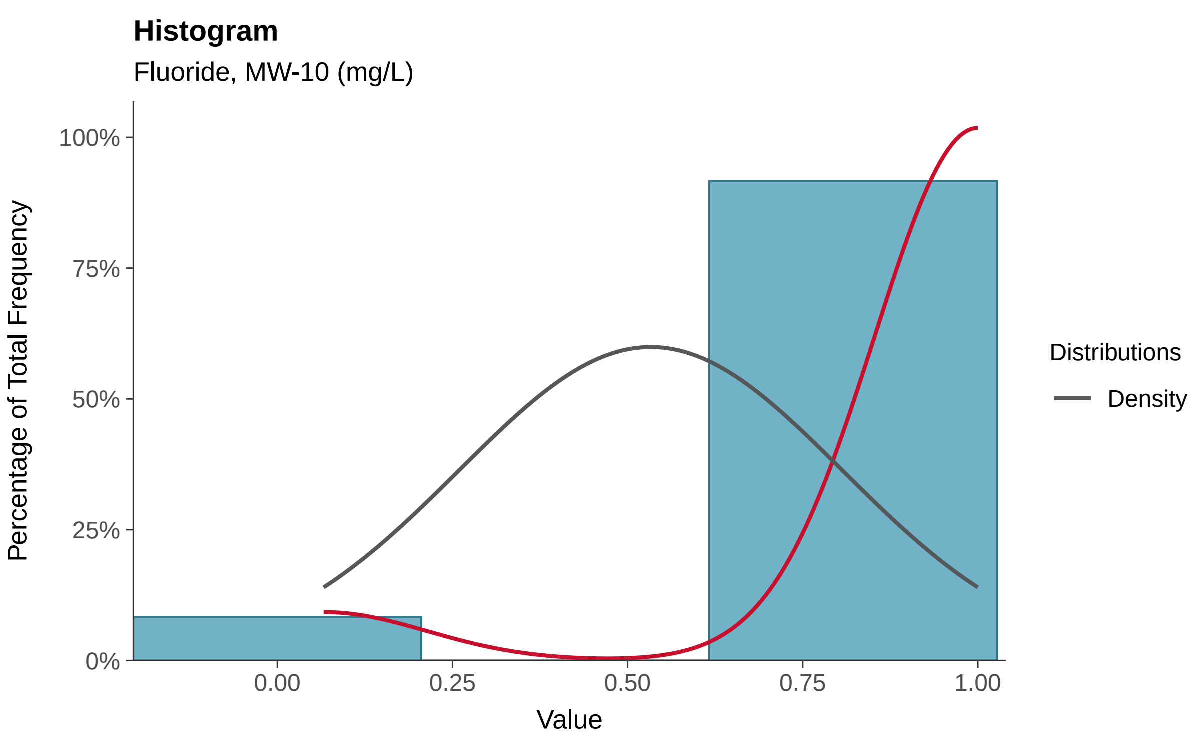

Gamma Q-Q plot
pH, Field, MW-10 (su)
Value
7.2
7.0
6.8
6.6
6.2
6.4
6.6
6.8
7.0
7.2
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, Field, MW-10 (su)
log(Value)
1.95
1.90
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Fluoride, MW-10

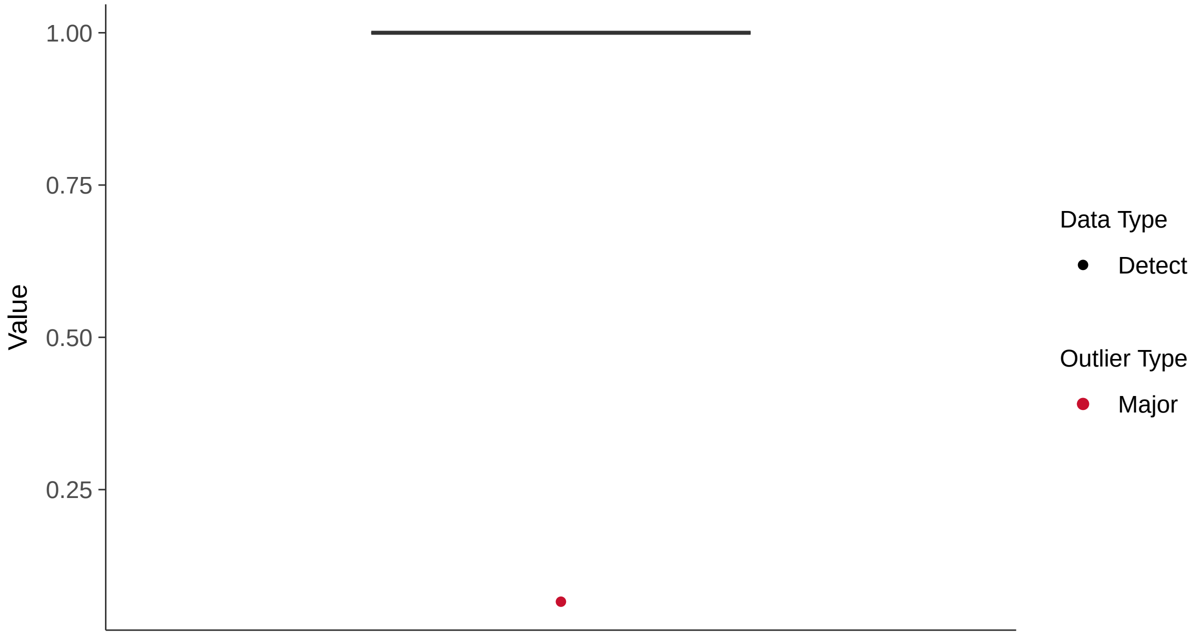
ID: 10_2_04





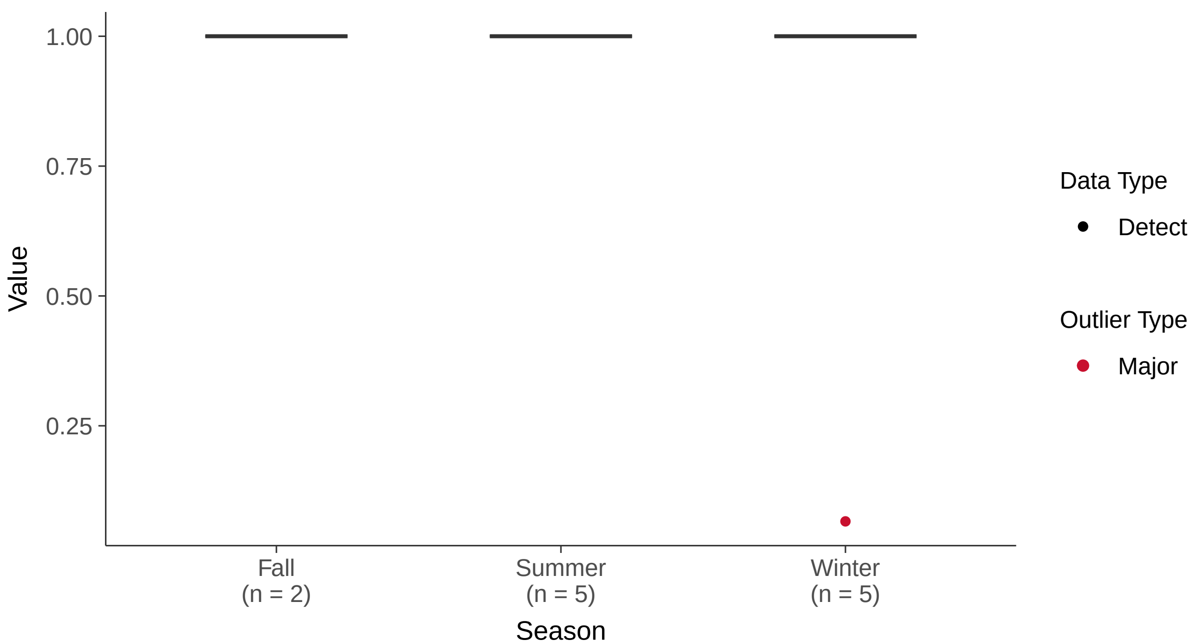
Boxplot

Fluoride, MW-10 (mg/L)



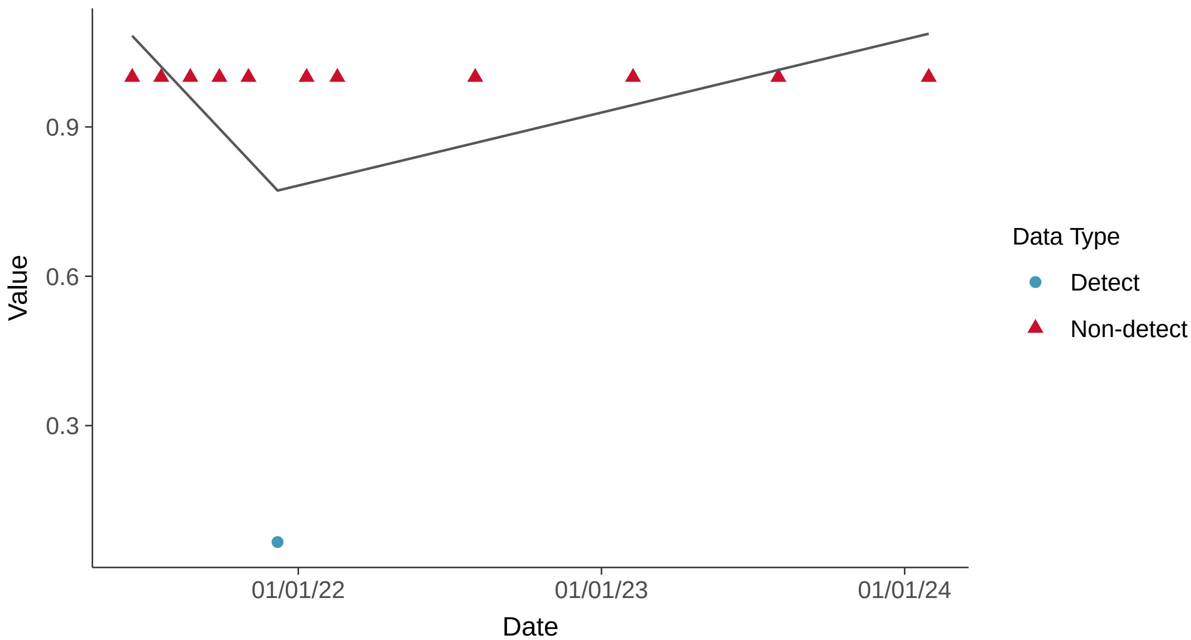
Boxplot by Season

Fluoride, MW-10 (mg/L)



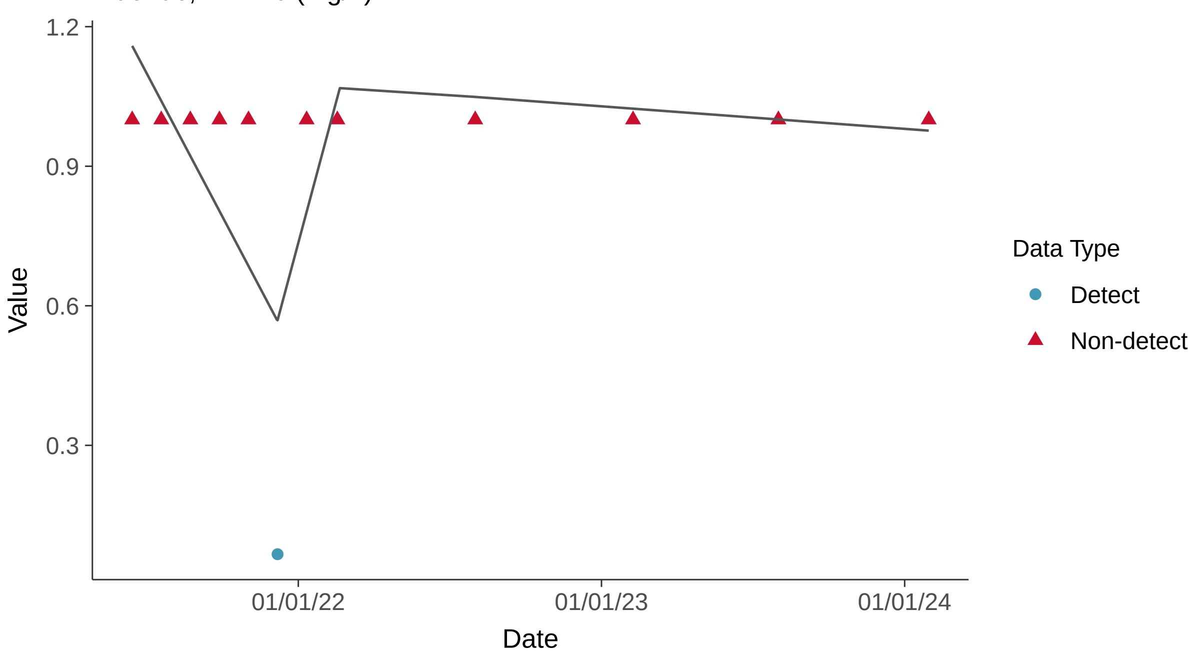
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-10 (mg/L)



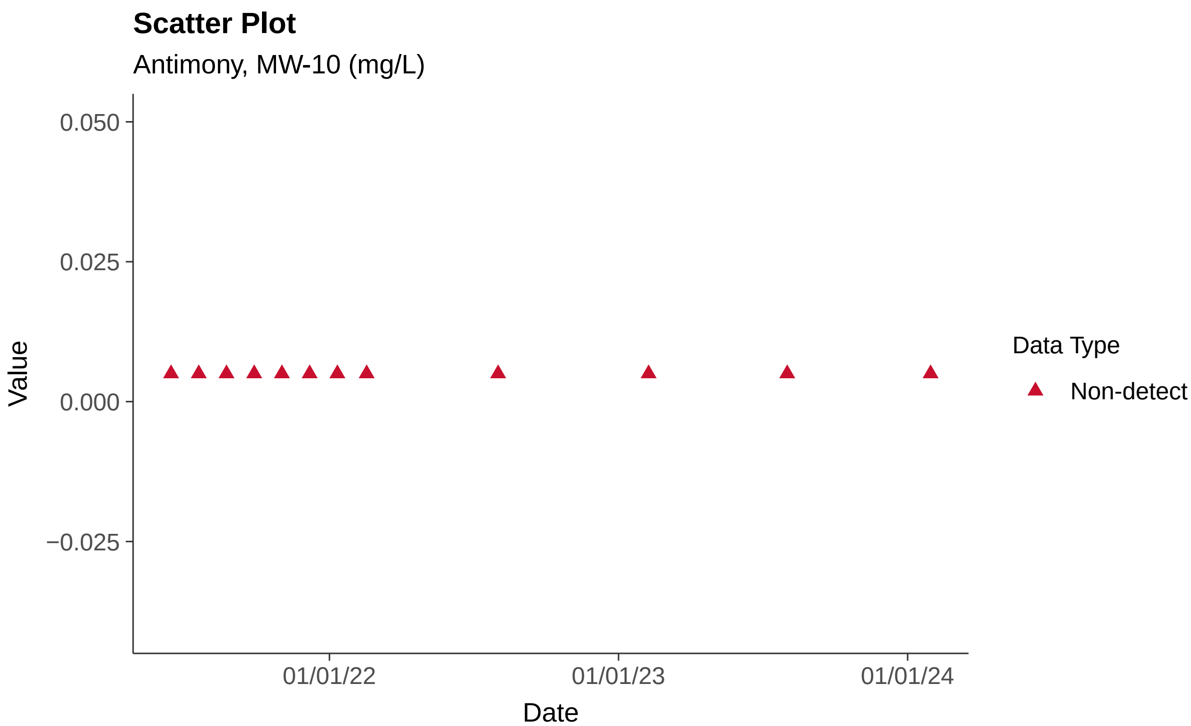
Trend Regression: Piecewise Linear-Linear-Linear

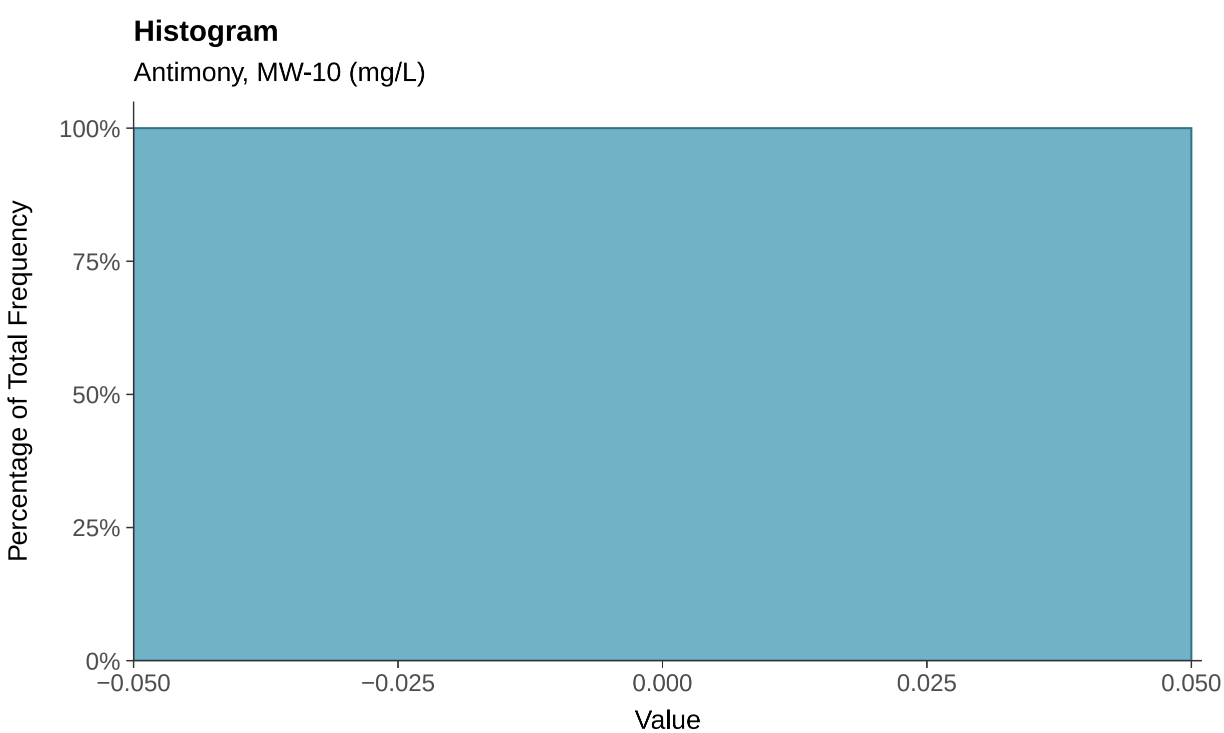
Fluoride, MW-10 (mg/L)



Appendix IV: Antimony, MW-10

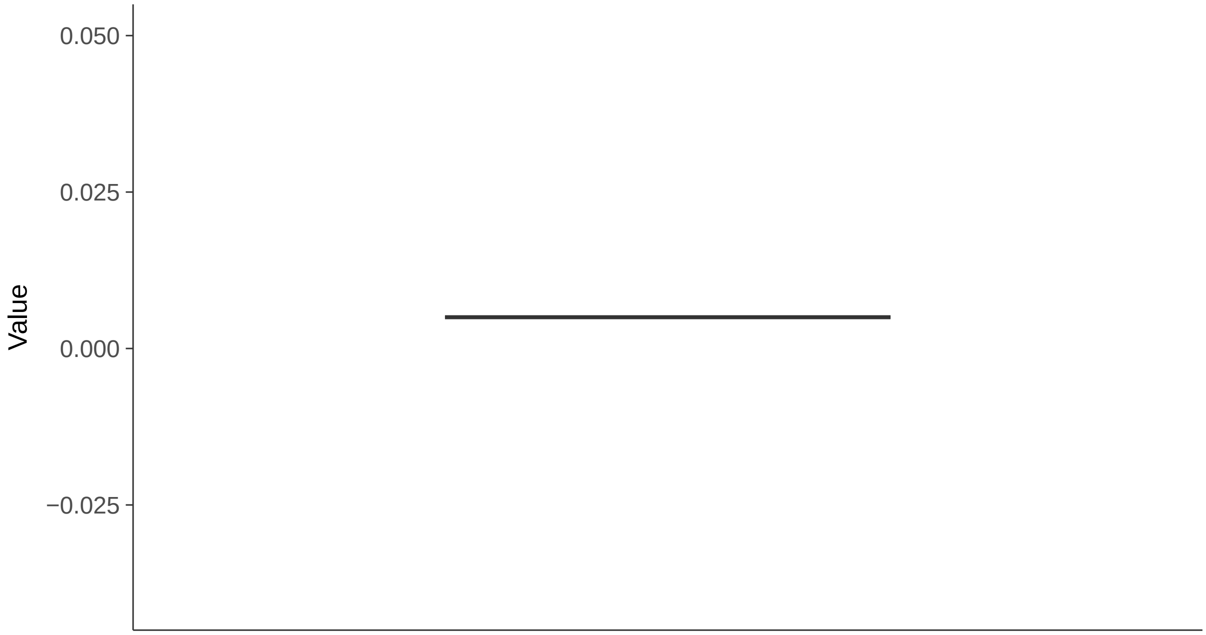
ID: 10_2_08





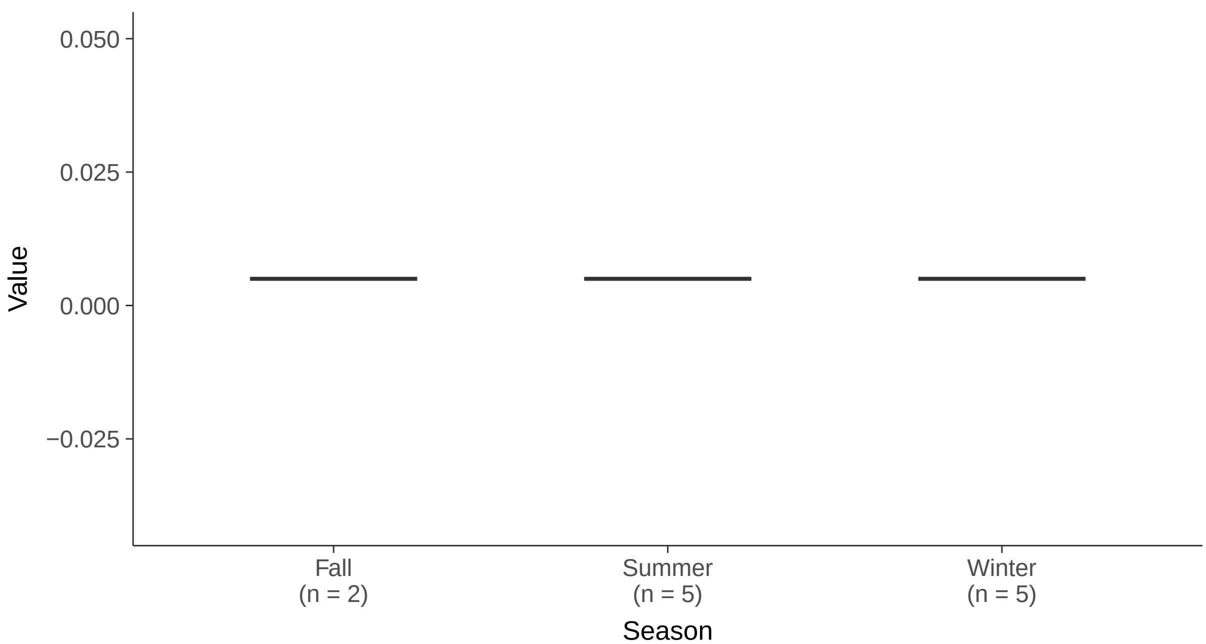
Boxplot

Antimony, MW-10 (mg/L)



Boxplot by Season

Antimony, MW-10 (mg/L)

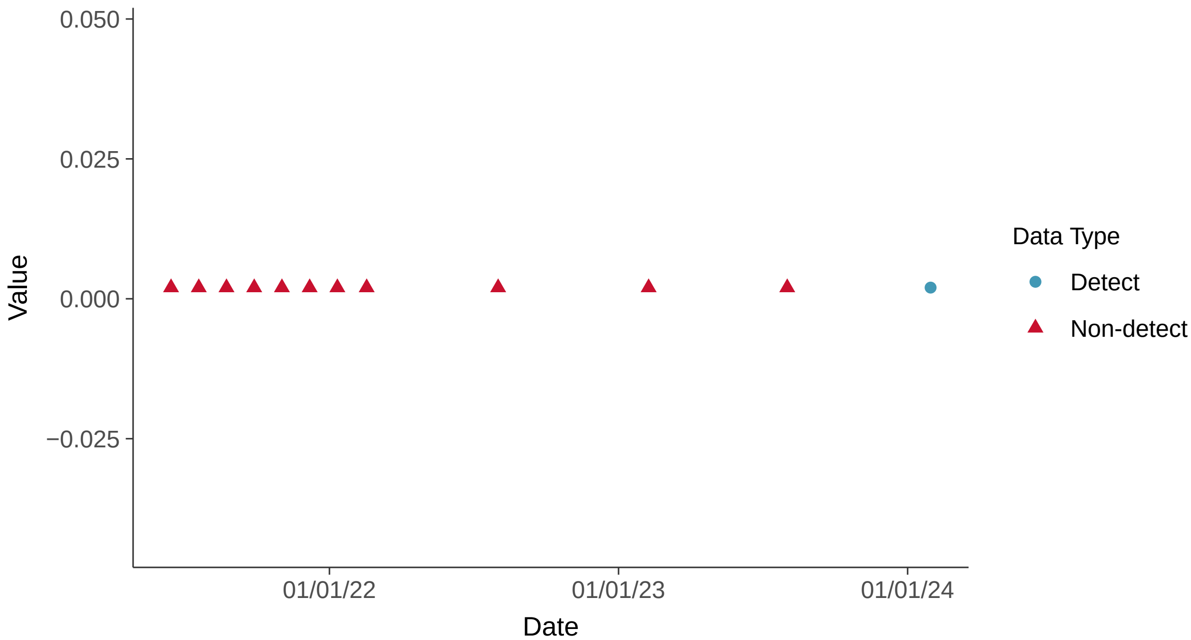


Appendix IV: Arsenic, MW-10

ID: 10_2_09

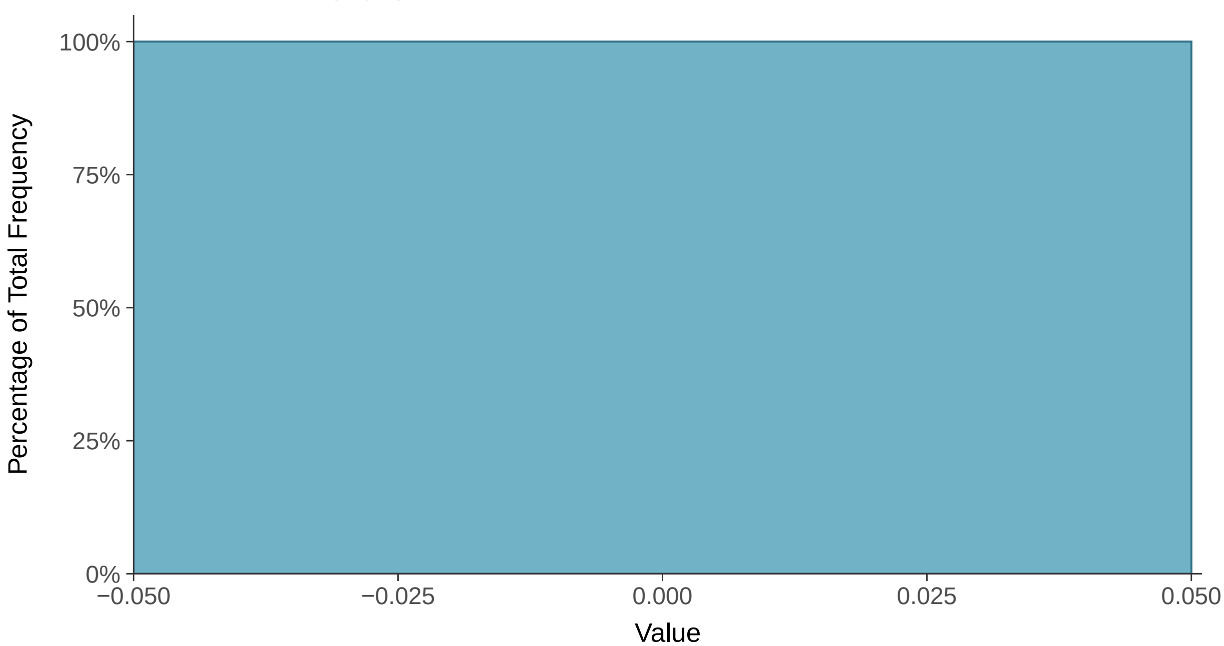
Scatter Plot

Arsenic, MW-10 (mg/L)



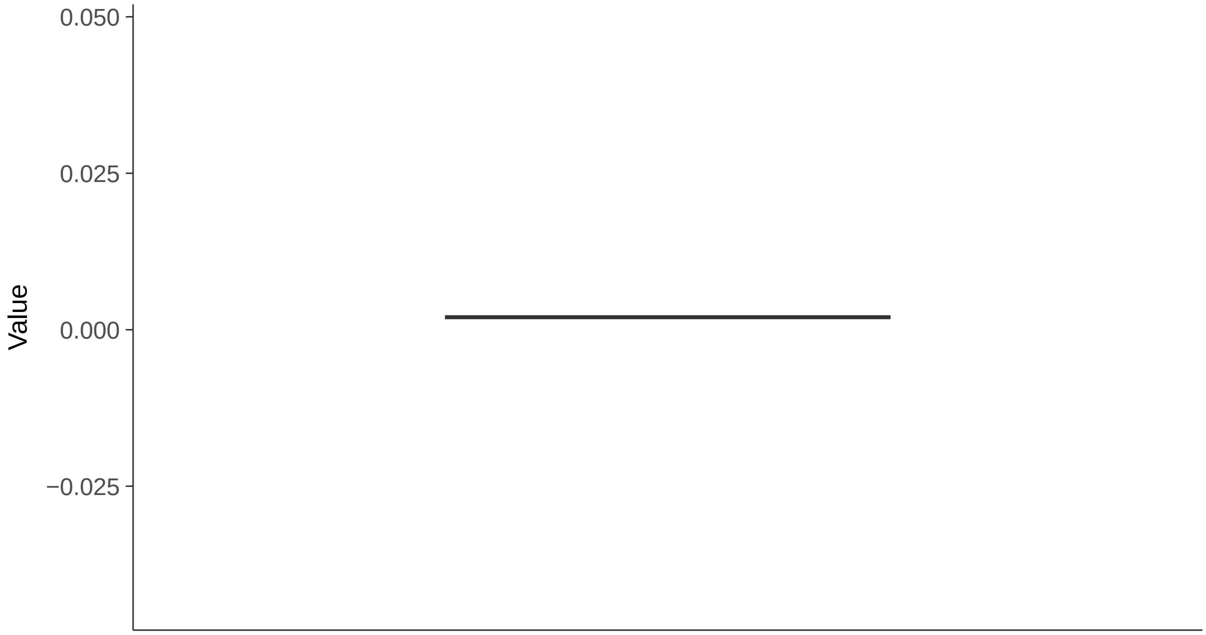
Histogram

Arsenic, MW-10 (mg/L)



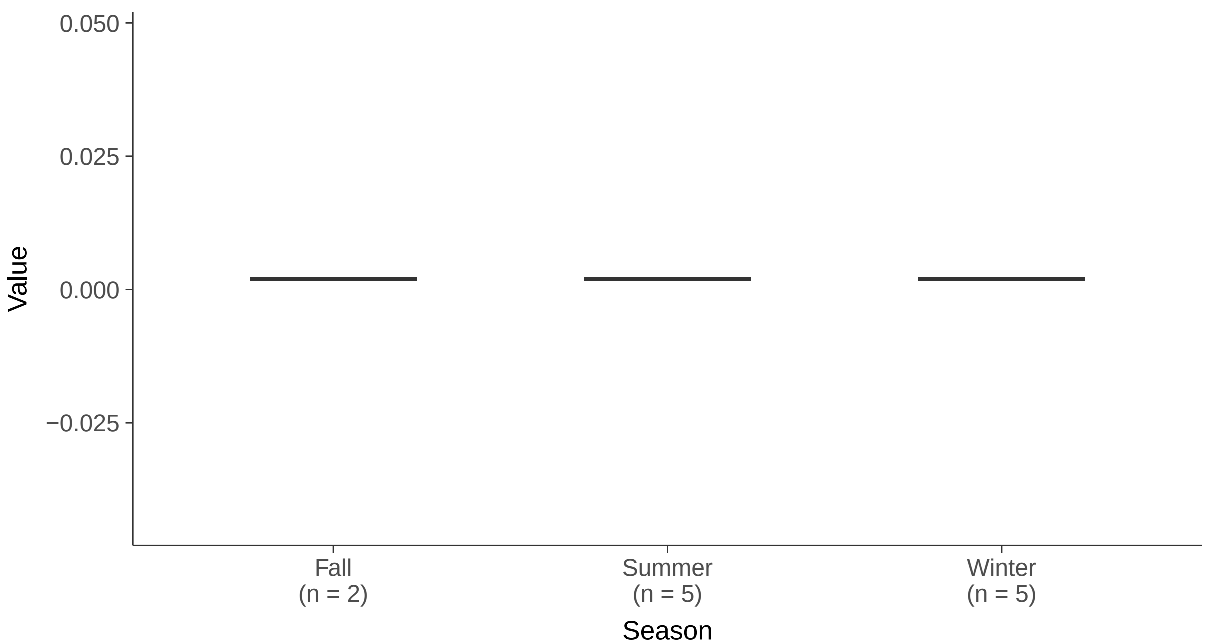
Boxplot

Arsenic, MW-10 (mg/L)



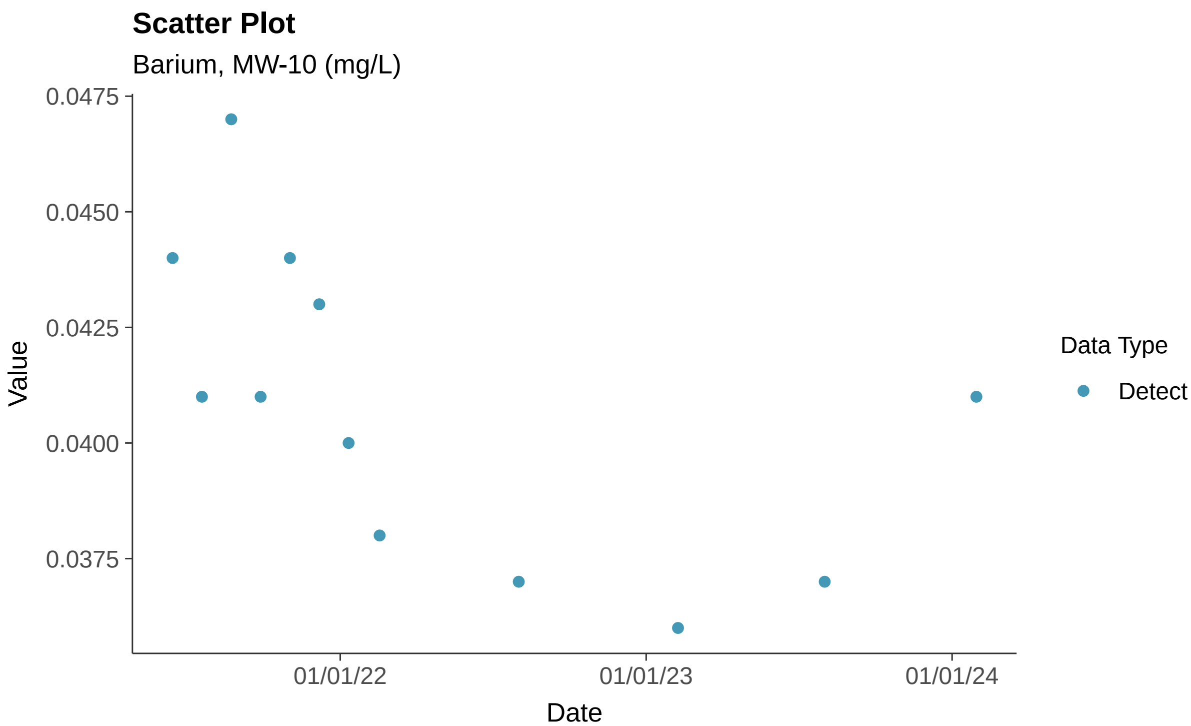
Boxplot by Season

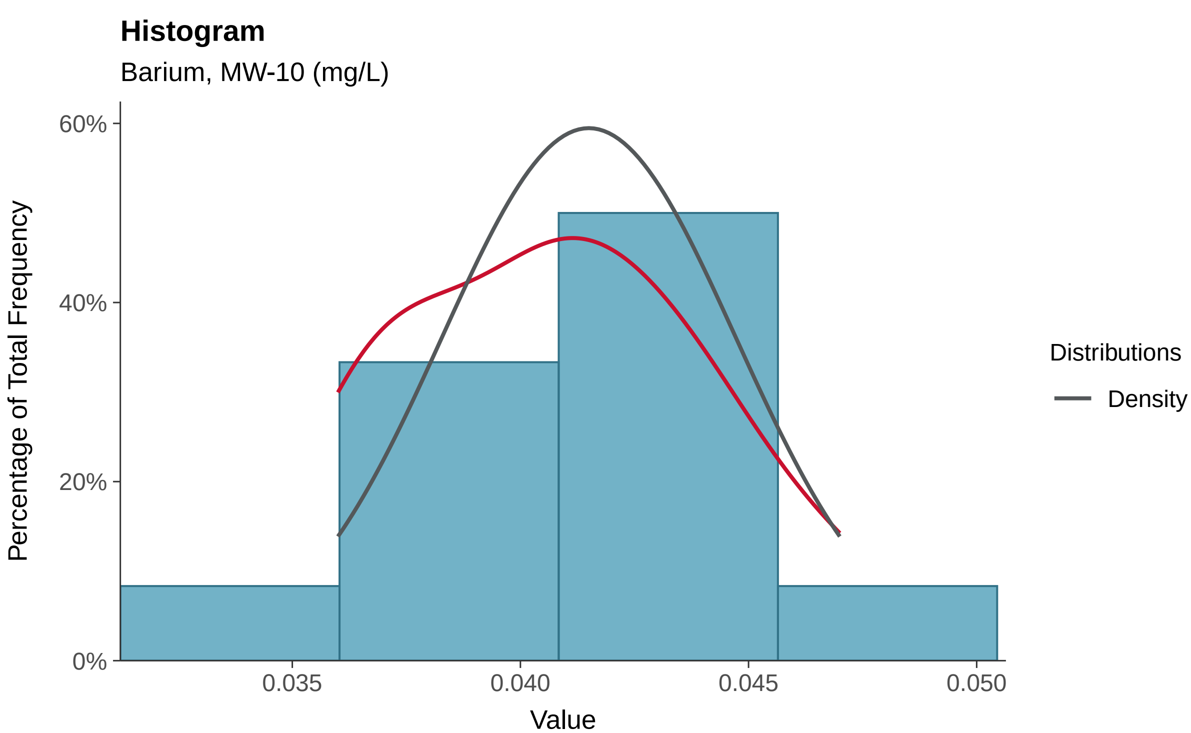
Arsenic, MW-10 (mg/L)



Appendix IV: Barium, MW-10

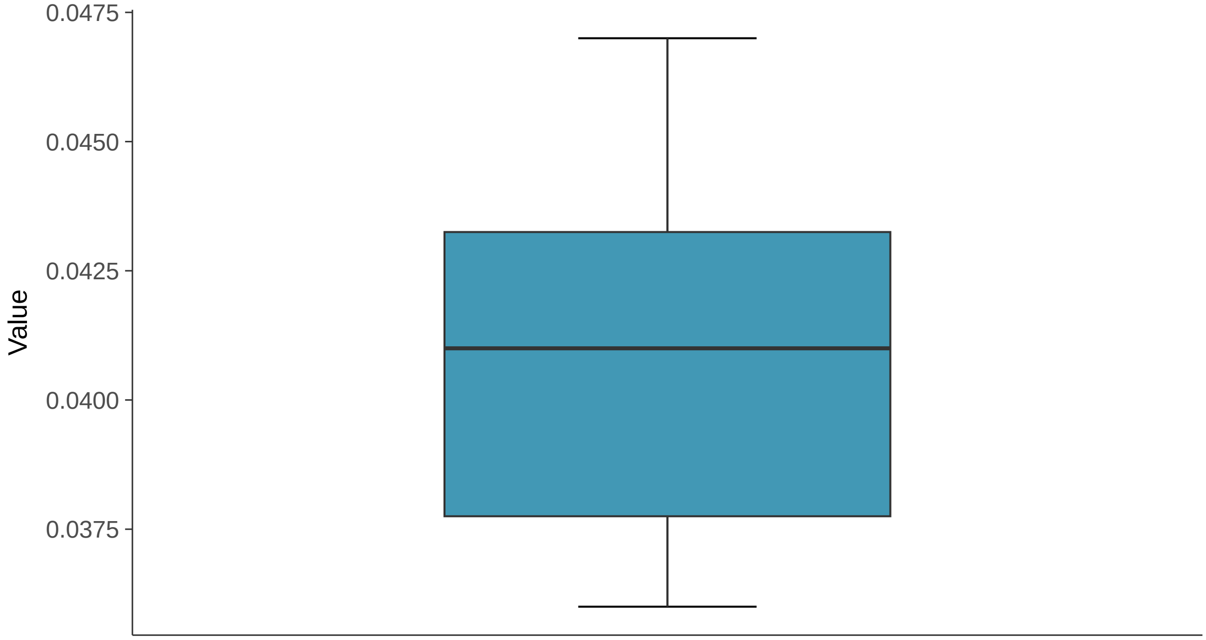
ID: 10_2_10





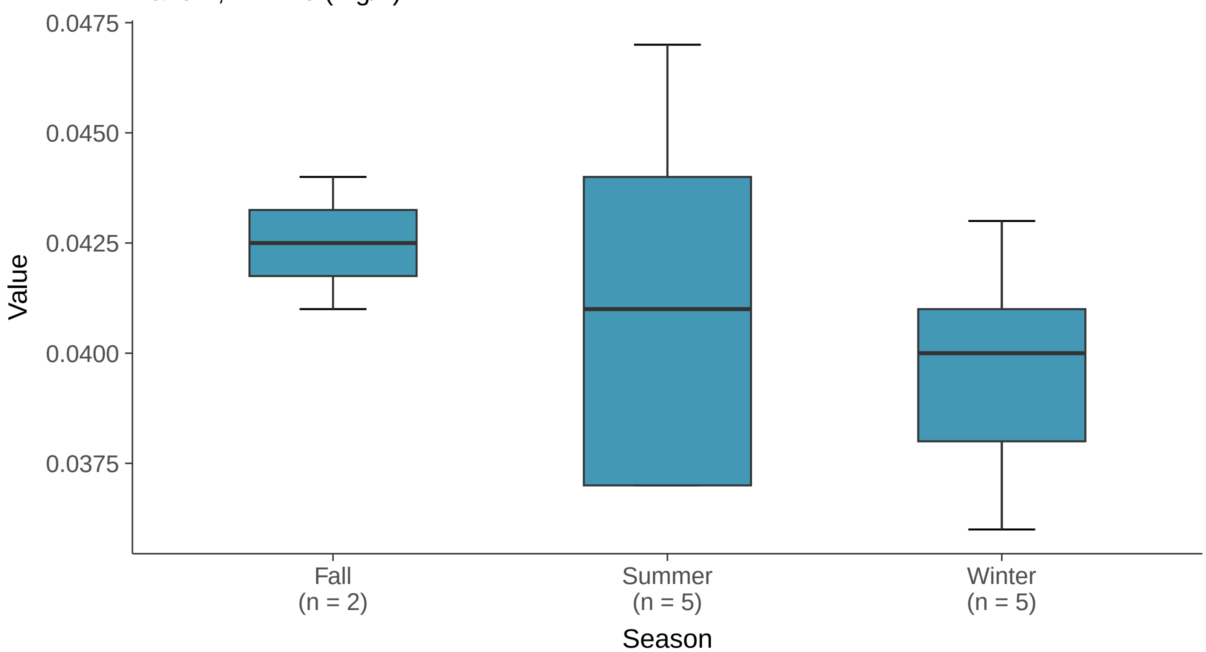
Boxplot

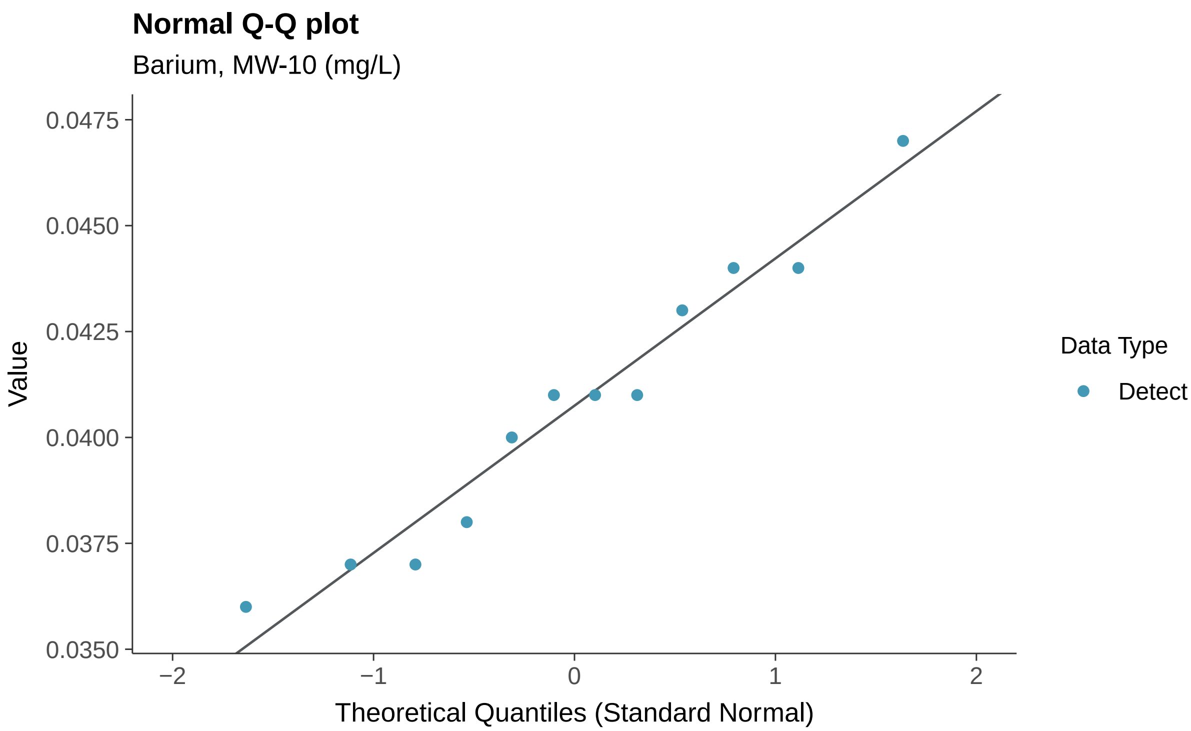
Barium, MW-10 (mg/L)

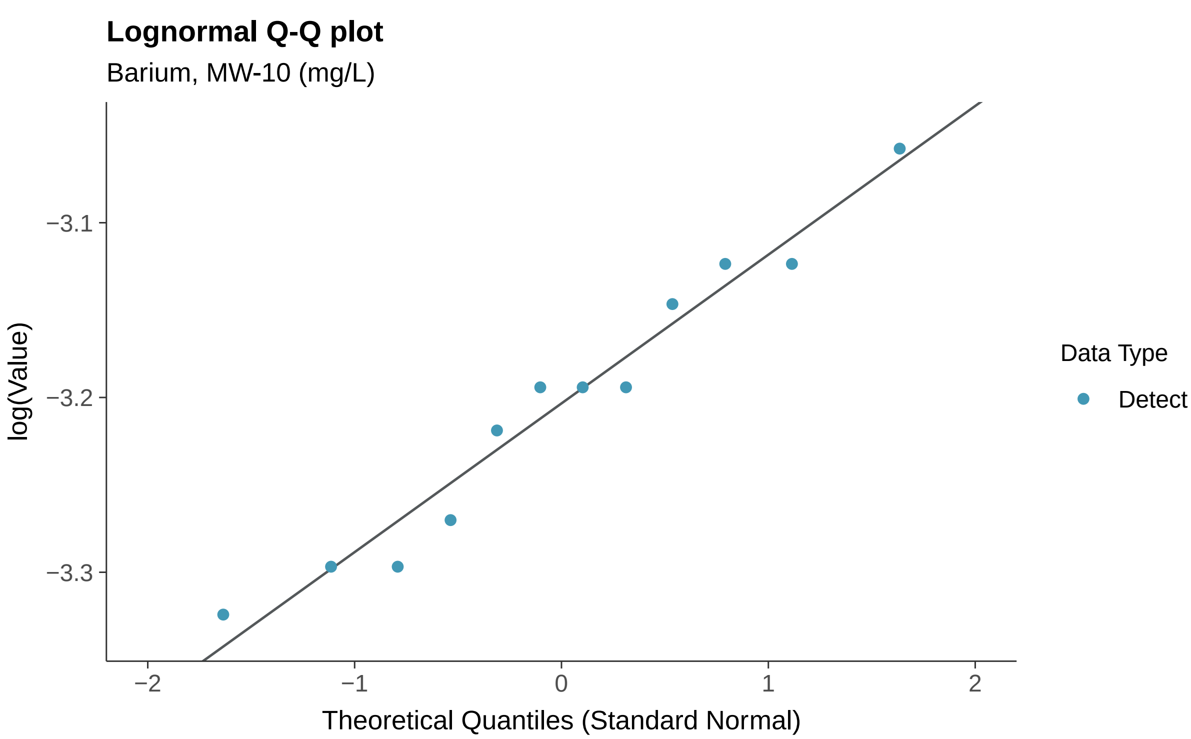


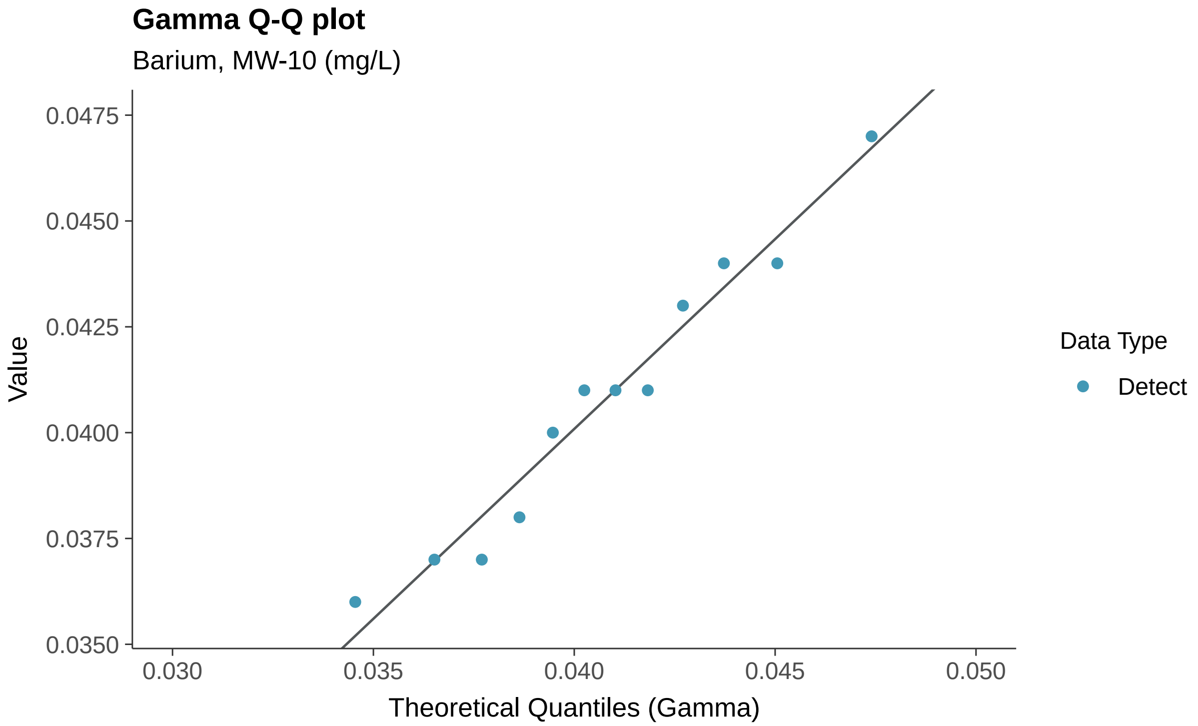
Boxplot by Season

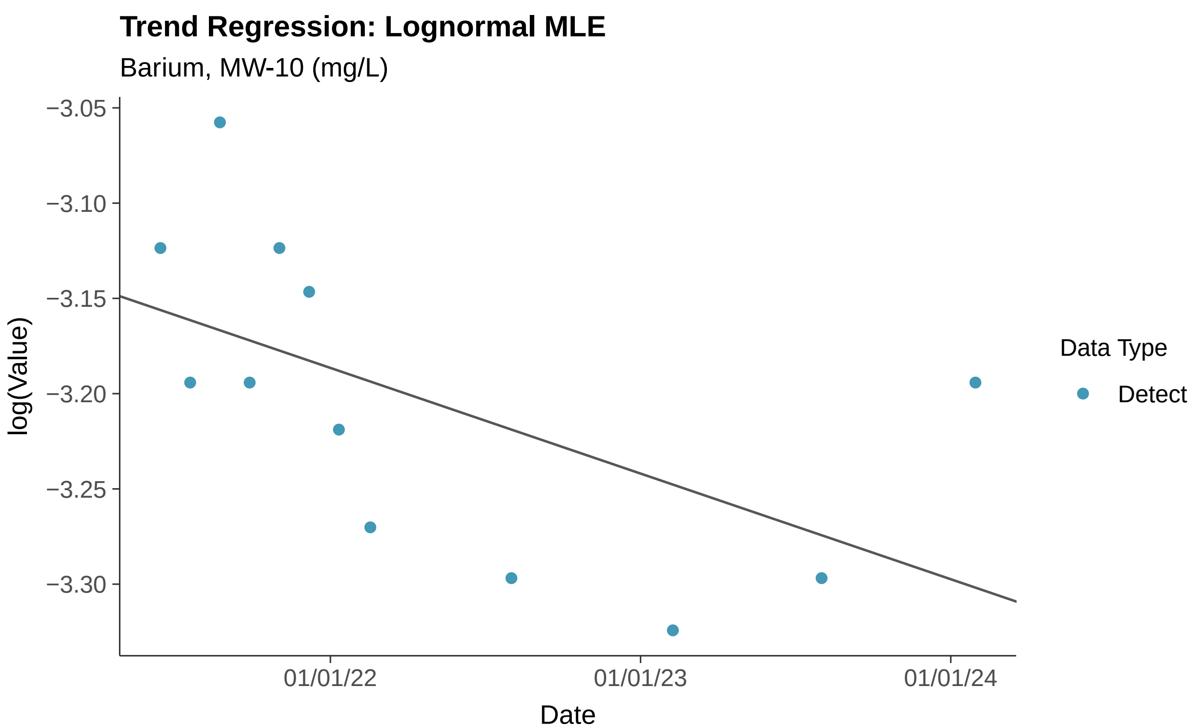
Barium, MW-10 (mg/L)

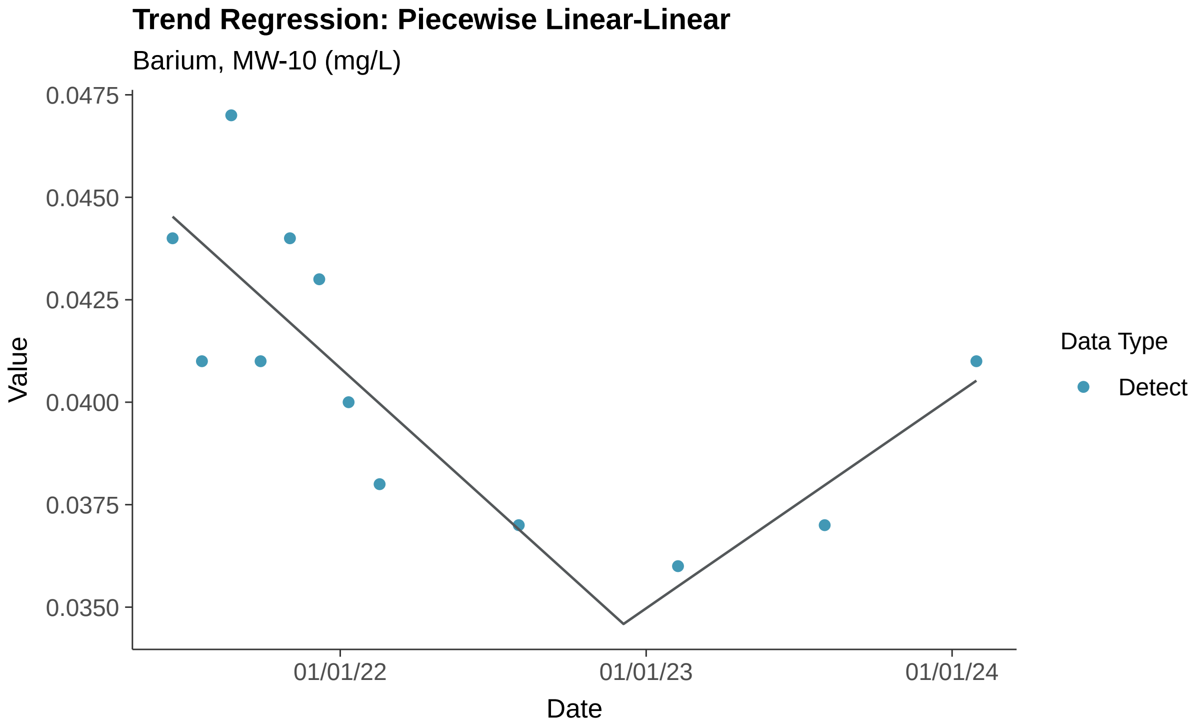


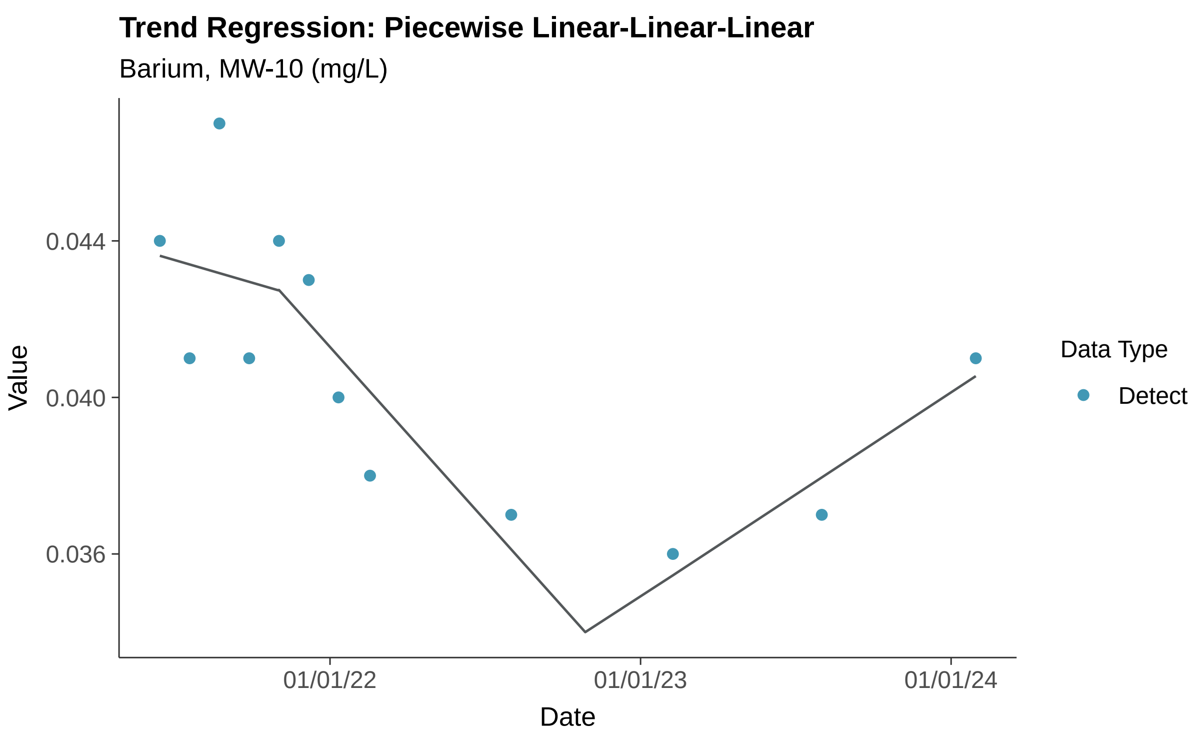

Normal Q-Q plot
Barium, MW-10 (mg/L)
Value
0.0475
0.0450
0.0425
0.0400
0.0375
0.0350
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-10 (mg/L)
log(Value)
−3.1
−3.2
−3.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Barium, MW-10 (mg/L)
Value
0.0475
0.0450
0.0425
0.0400
0.0375
0.0350
0.030
0.035
0.040
0.045
0.050
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-10 (mg/L)
log(Value)
−3.05
−3.10
−3.15
−3.20
−3.25
−3.30
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Barium, MW-10 (mg/L)
Value
0.0475
0.0450
0.0425
0.0400
0.0375
0.0350
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

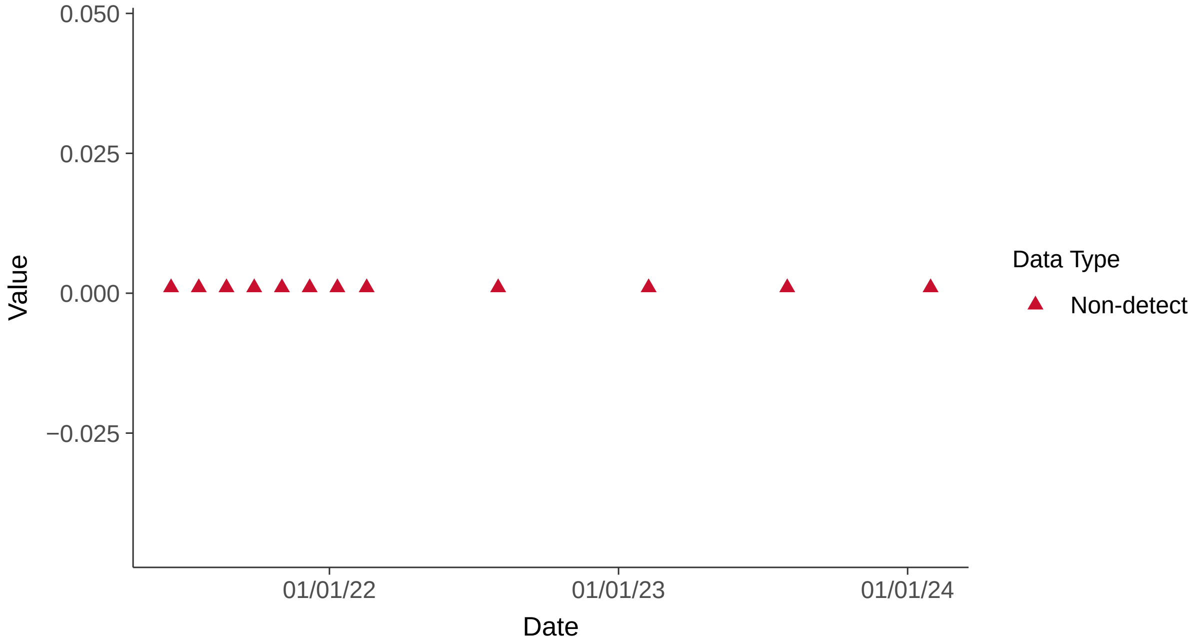

Trend Regression: Piecewise Linear-Linear-Linear
Barium, MW-10 (mg/L)
Value
0.044
0.040
0.036
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Beryllium, MW-10

ID: 10_2_11

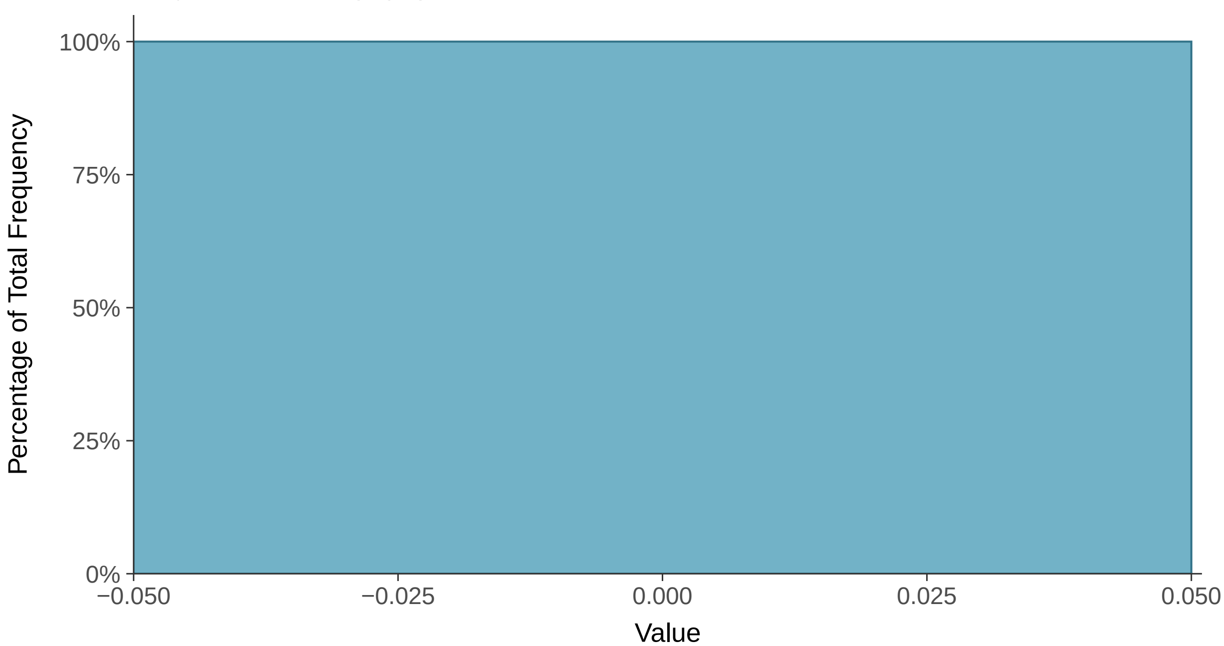
Scatter Plot

Beryllium, MW-10 (mg/L)



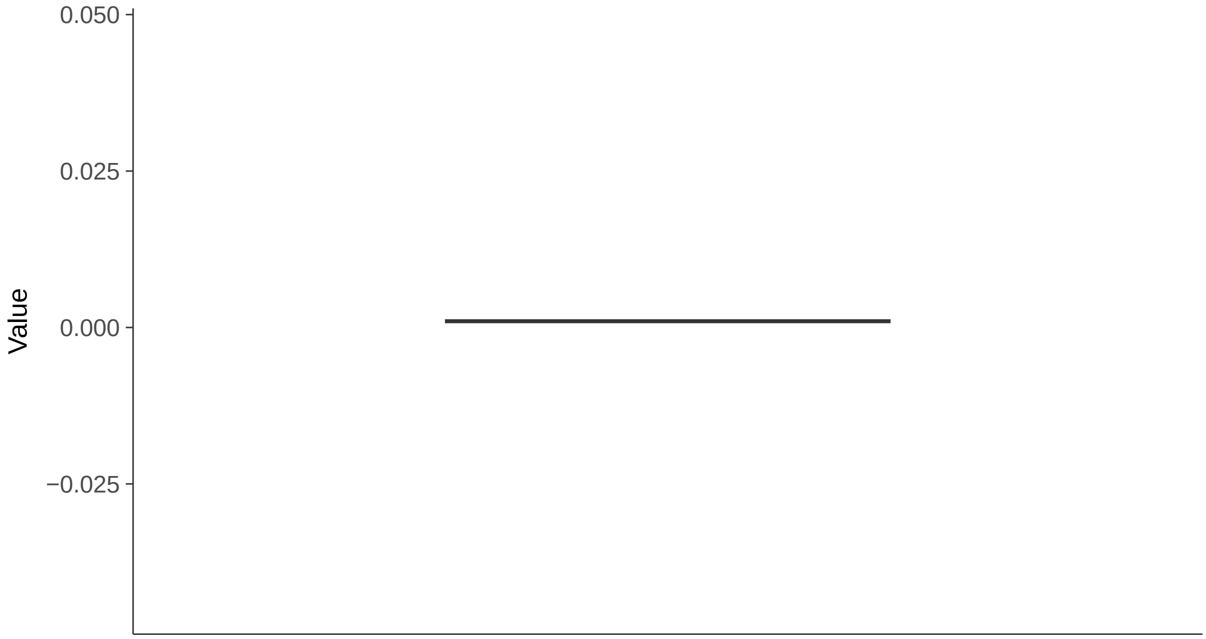
Histogram

Beryllium, MW-10 (mg/L)



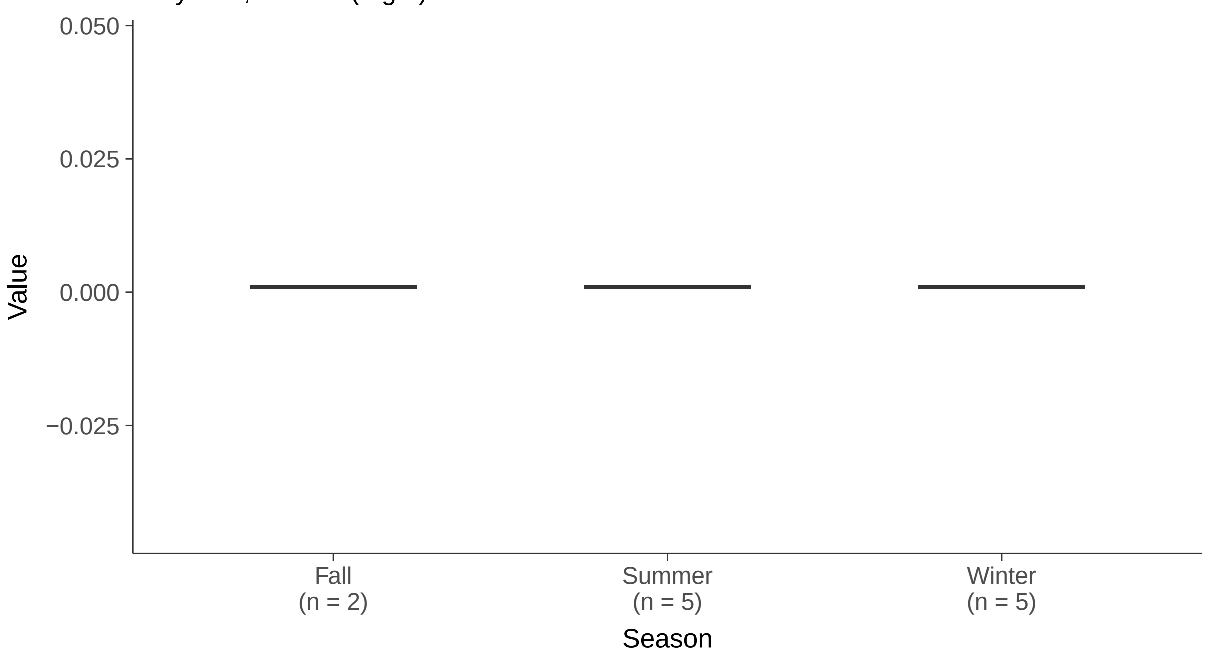
Boxplot

Beryllium, MW-10 (mg/L)



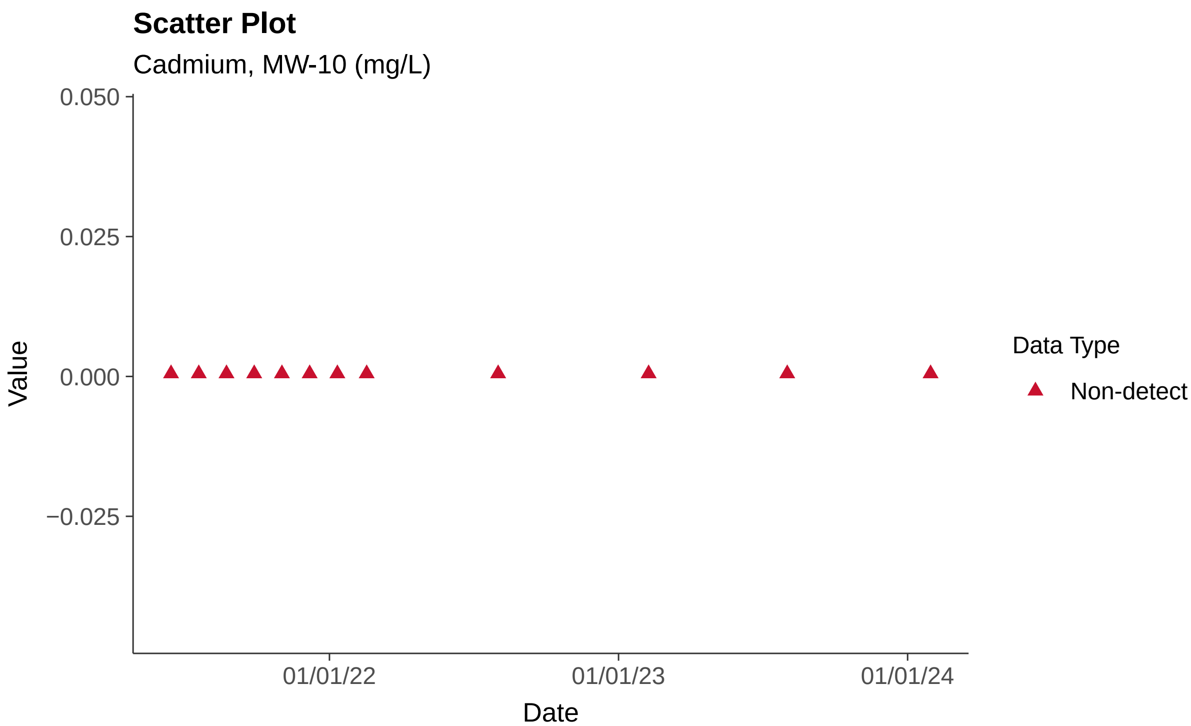
Boxplot by Season

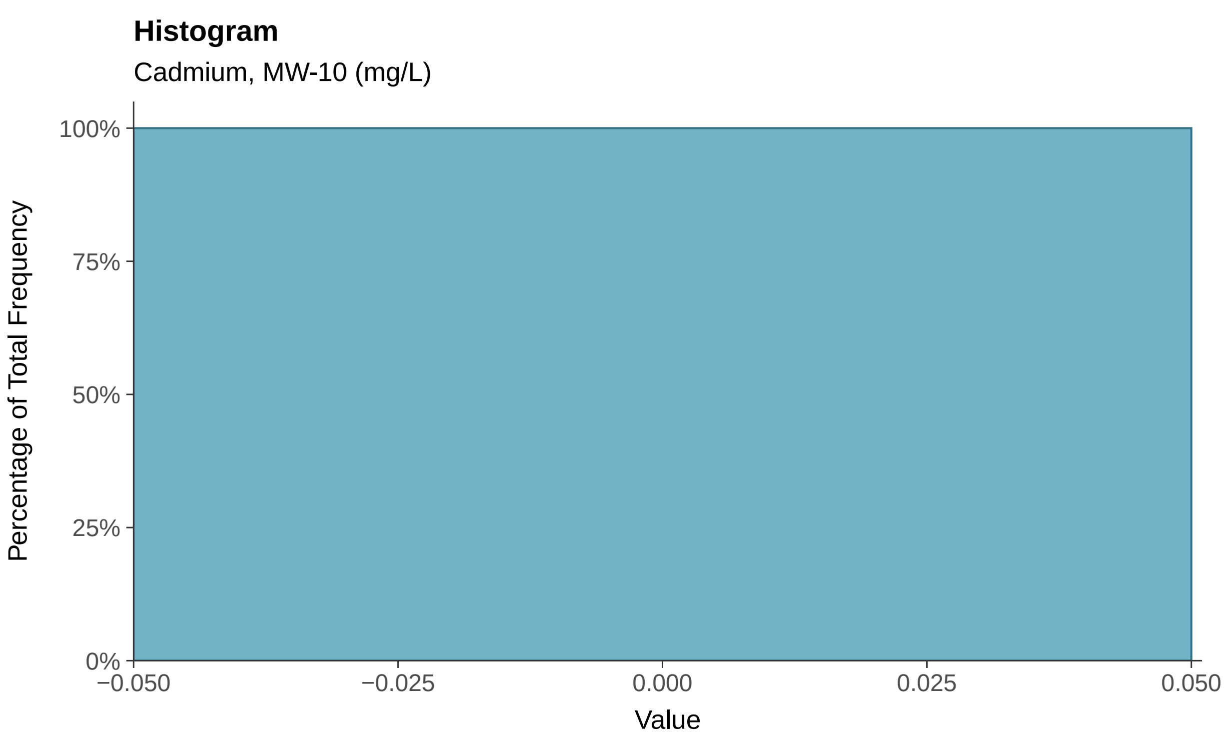
Beryllium, MW-10 (mg/L)

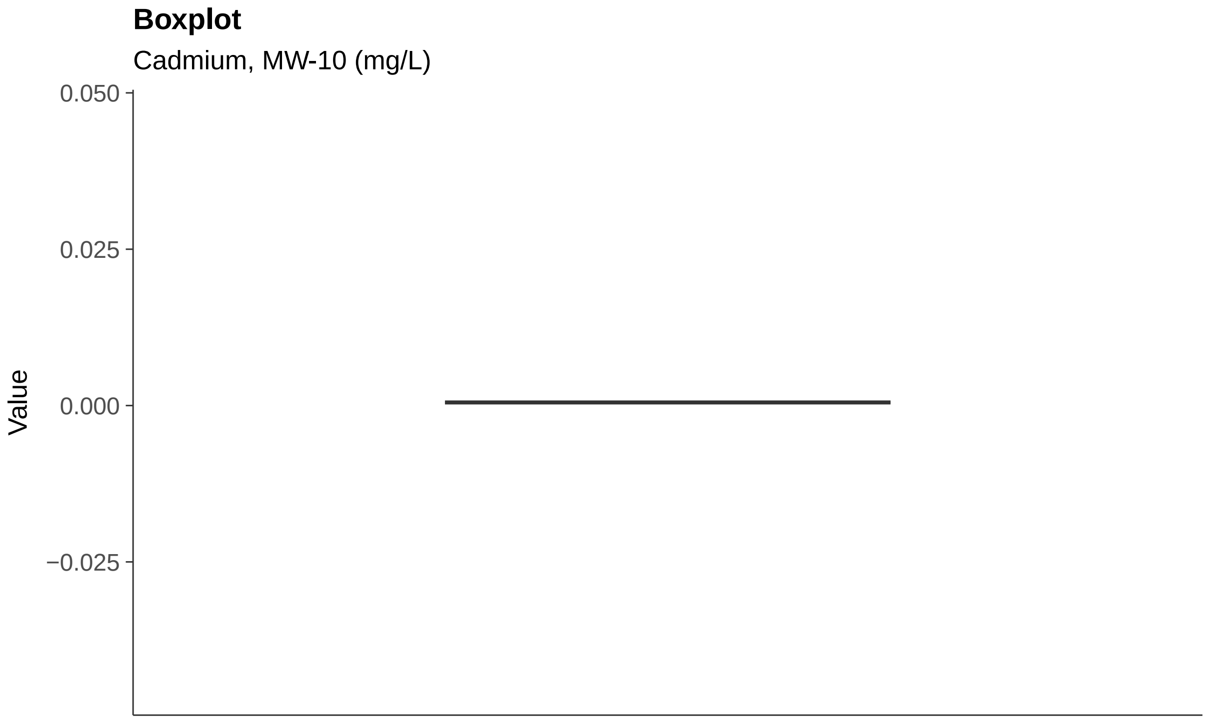


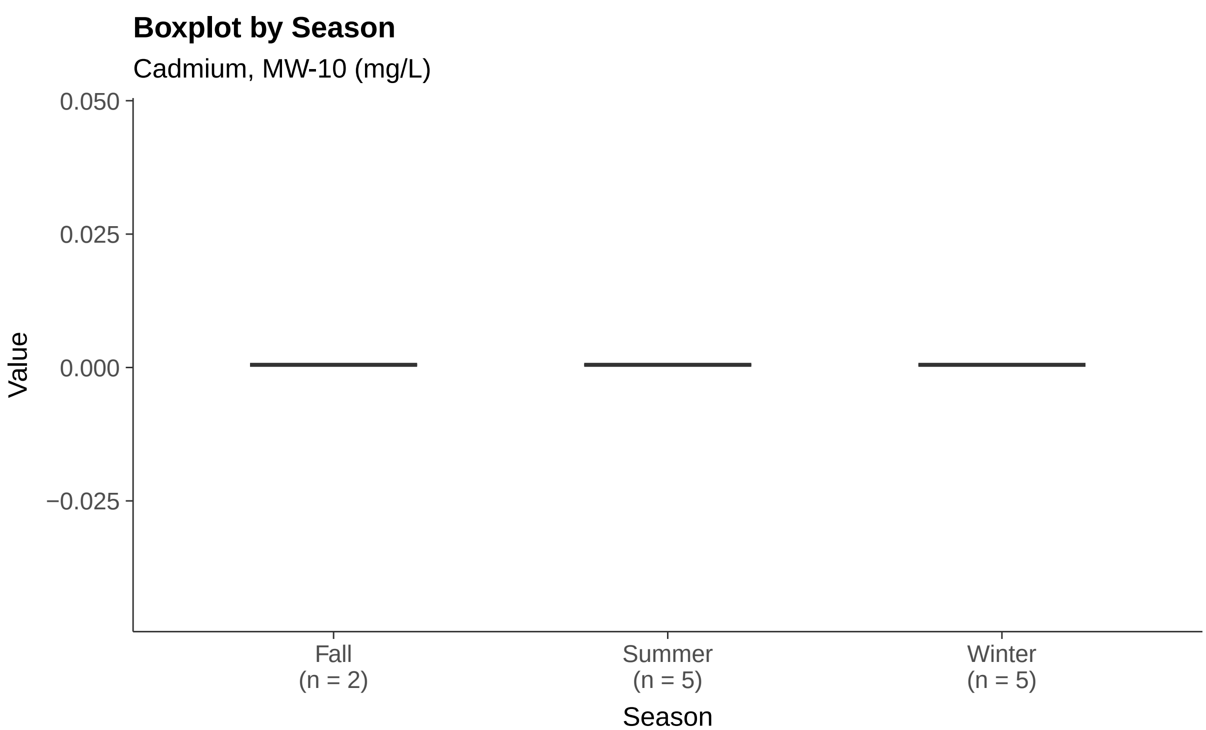
Appendix IV: Cadmium, MW-10

ID: 10_2_12






Boxplot
Cadmium, MW-10 (mg/L)
0.050
0.025
0.000
−0.025
Value

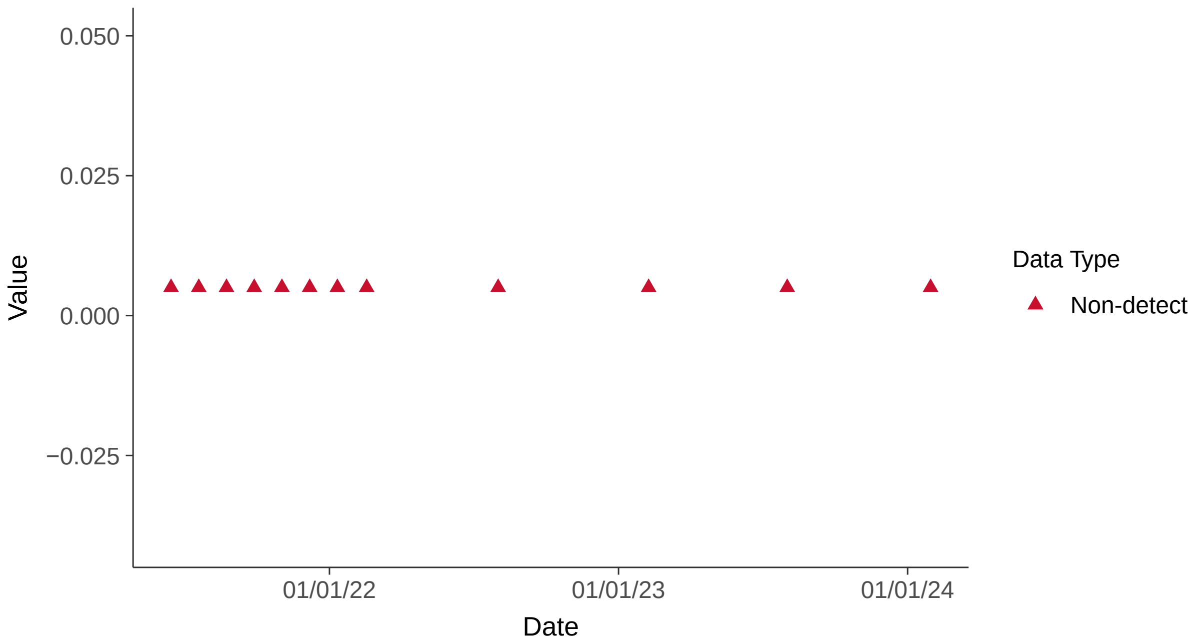

Boxplot by Season
Cadmium, MW-10 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season

Appendix IV: Chromium, MW-10

ID: 10_2_13

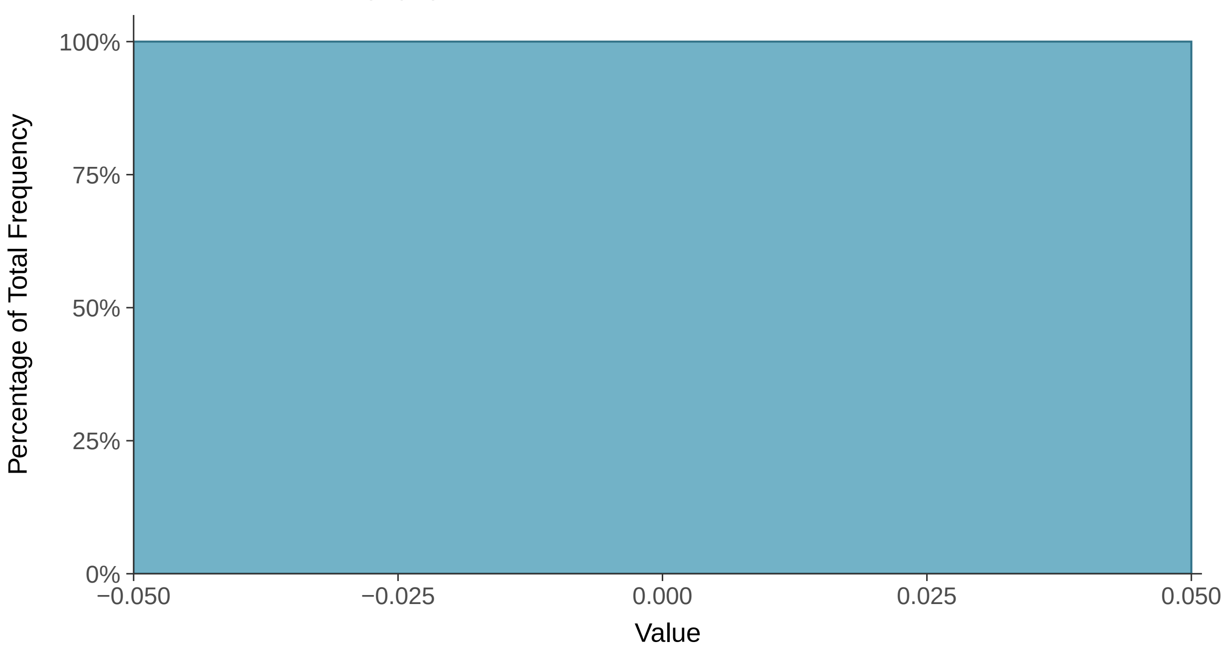
Scatter Plot

Chromium, MW-10 (mg/L)



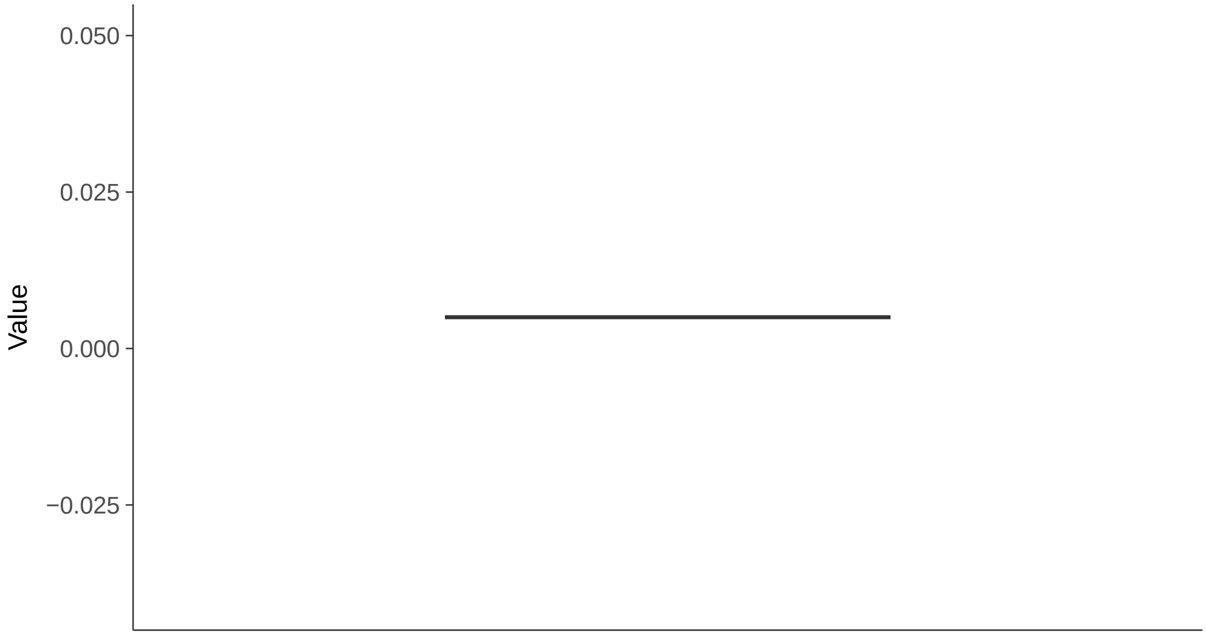
Histogram

Chromium, MW-10 (mg/L)



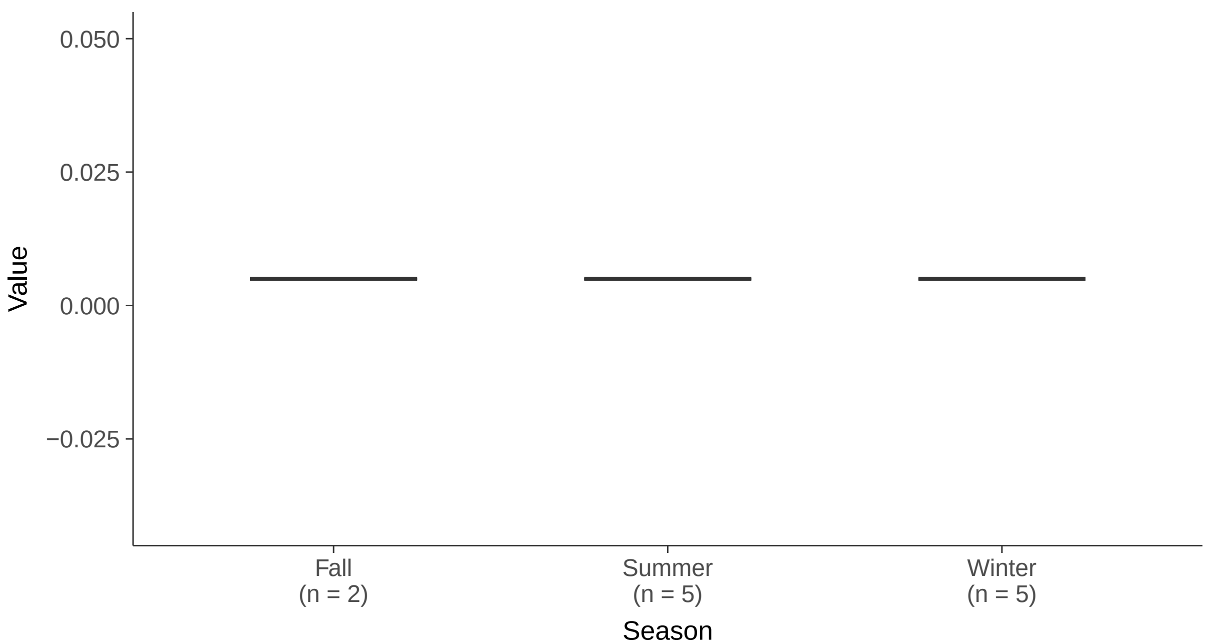
Boxplot

Chromium, MW-10 (mg/L)



Boxplot by Season

Chromium, MW-10 (mg/L)

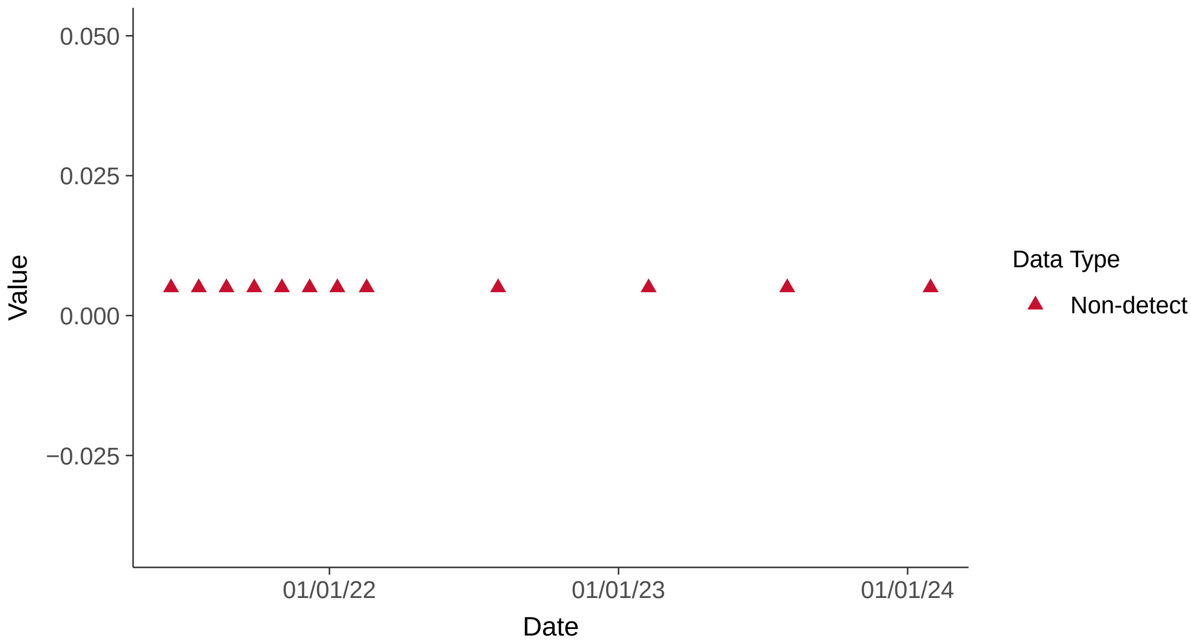


Appendix IV: Cobalt, MW-10

ID: 10_2_14

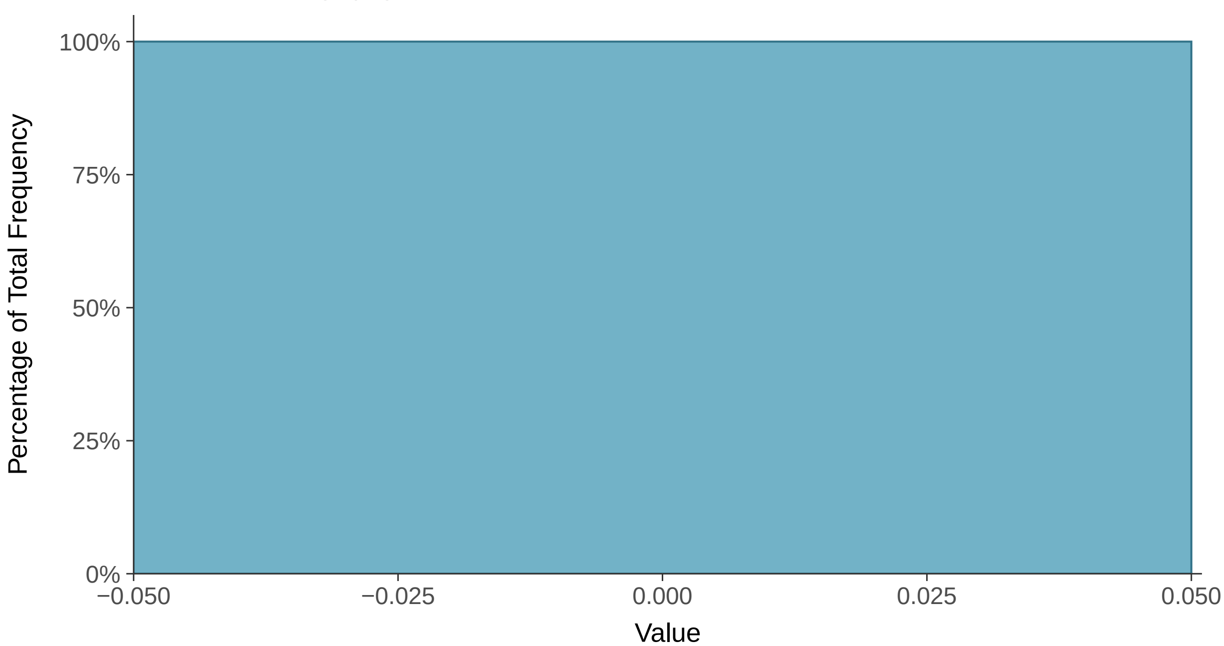
Scatter Plot

Cobalt, MW-10 (mg/L)



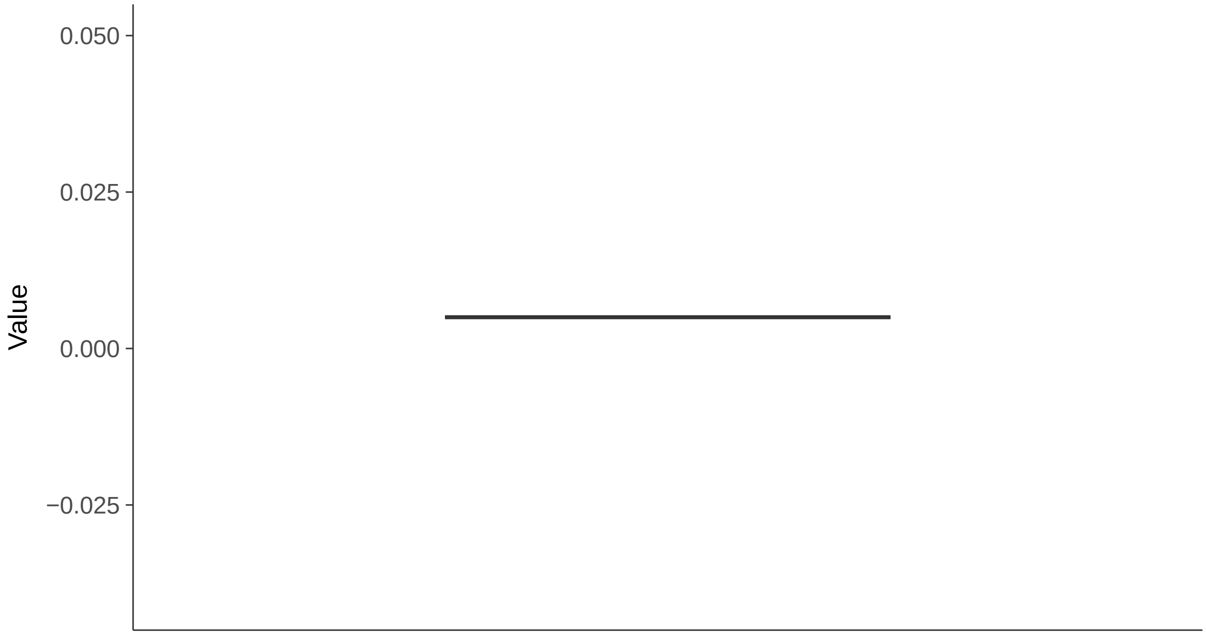
Histogram

Cobalt, MW-10 (mg/L)



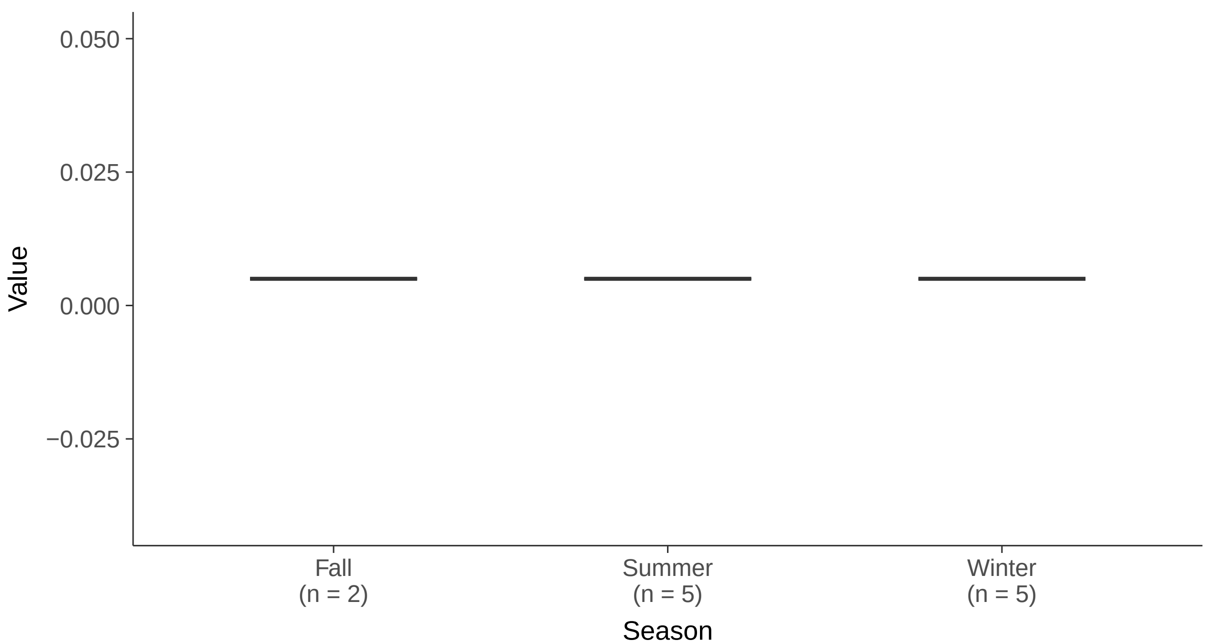
Boxplot

Cobalt, MW-10 (mg/L)



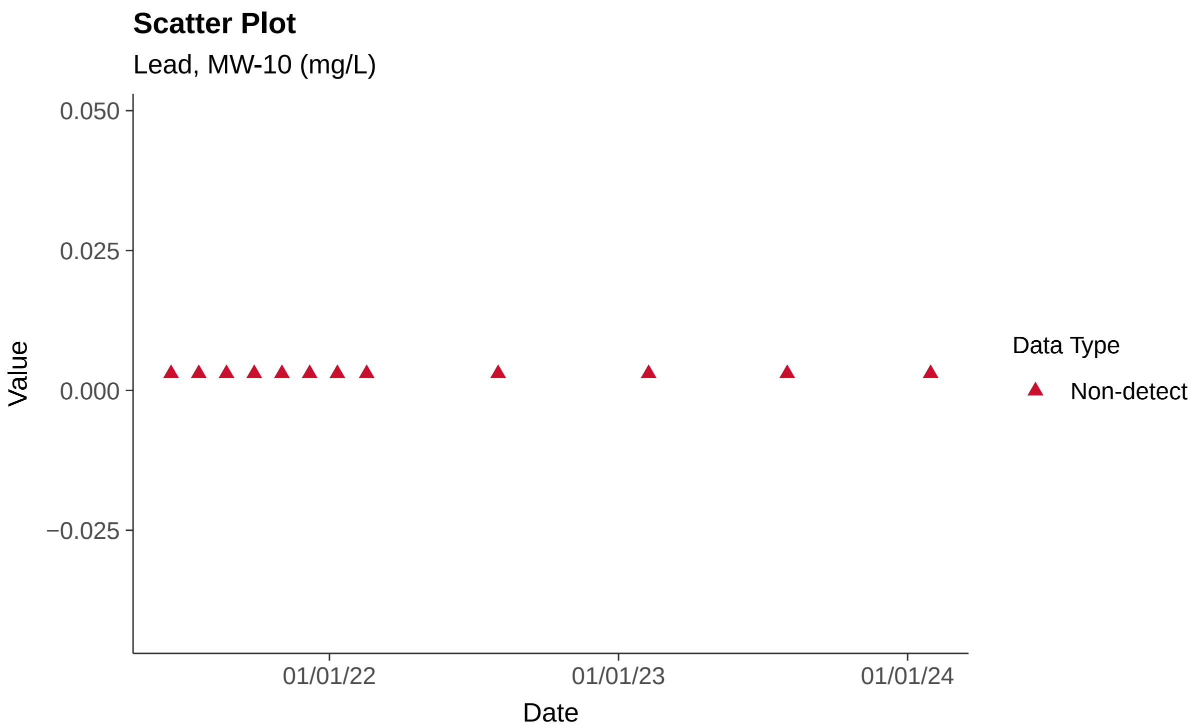
Boxplot by Season

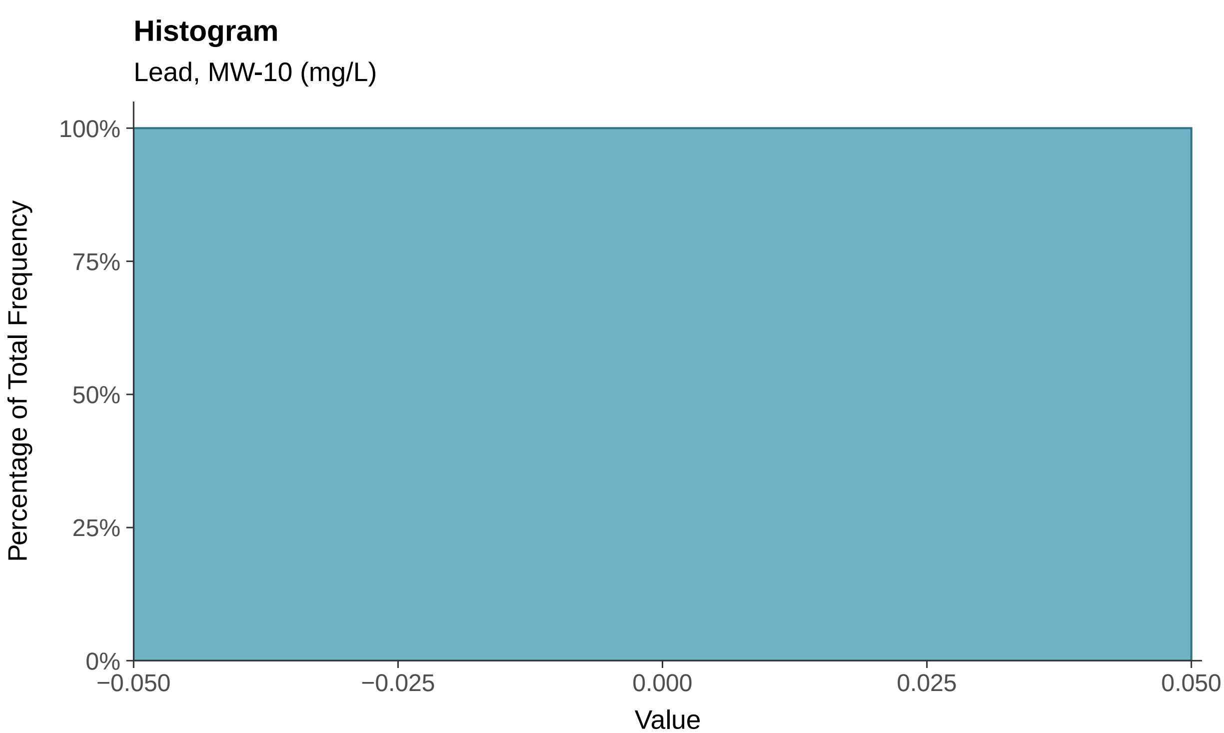
Cobalt, MW-10 (mg/L)



Appendix IV: Lead, MW-10

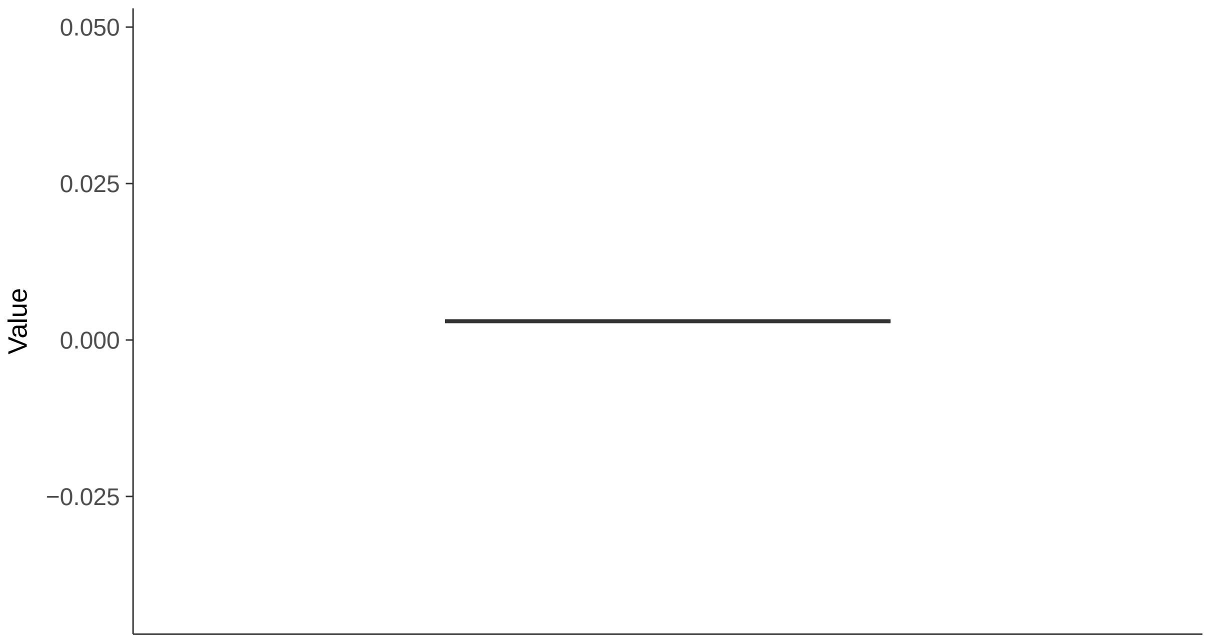
ID: 10_2_15





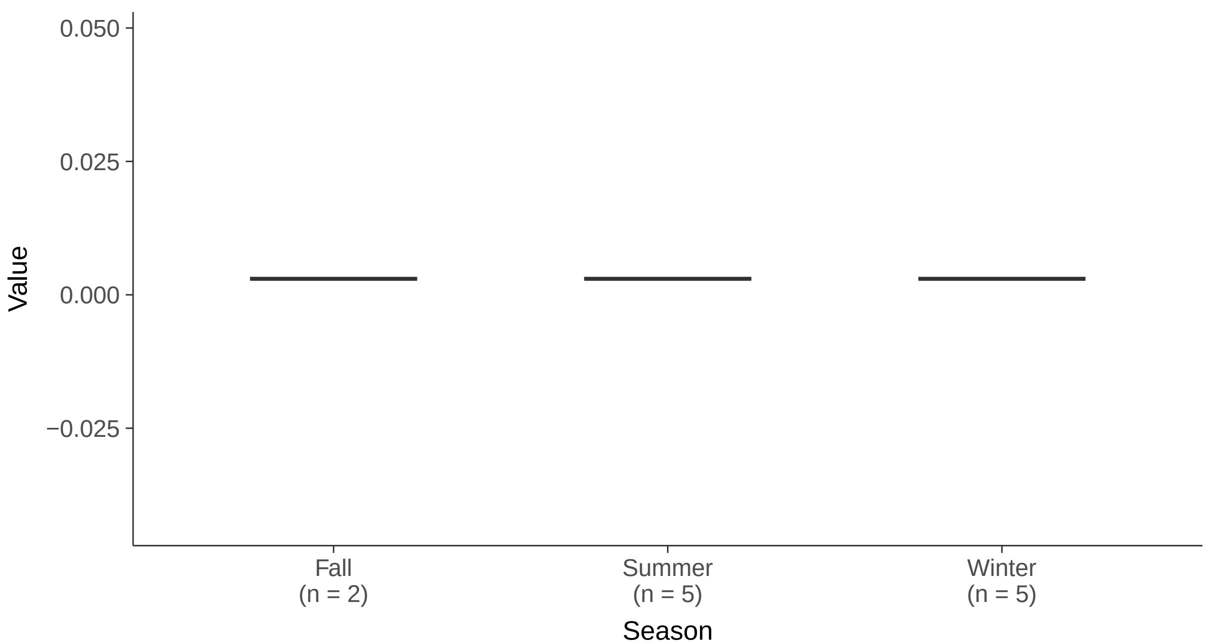
Boxplot

Lead, MW-10 (mg/L)



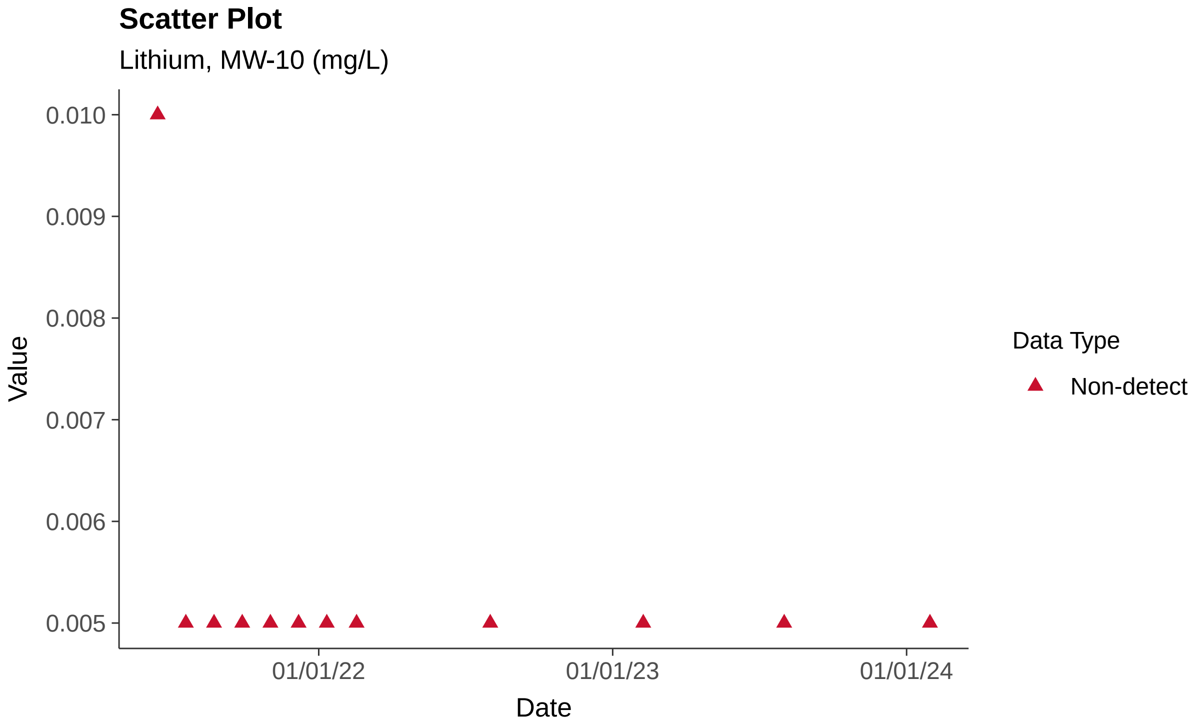
Boxplot by Season

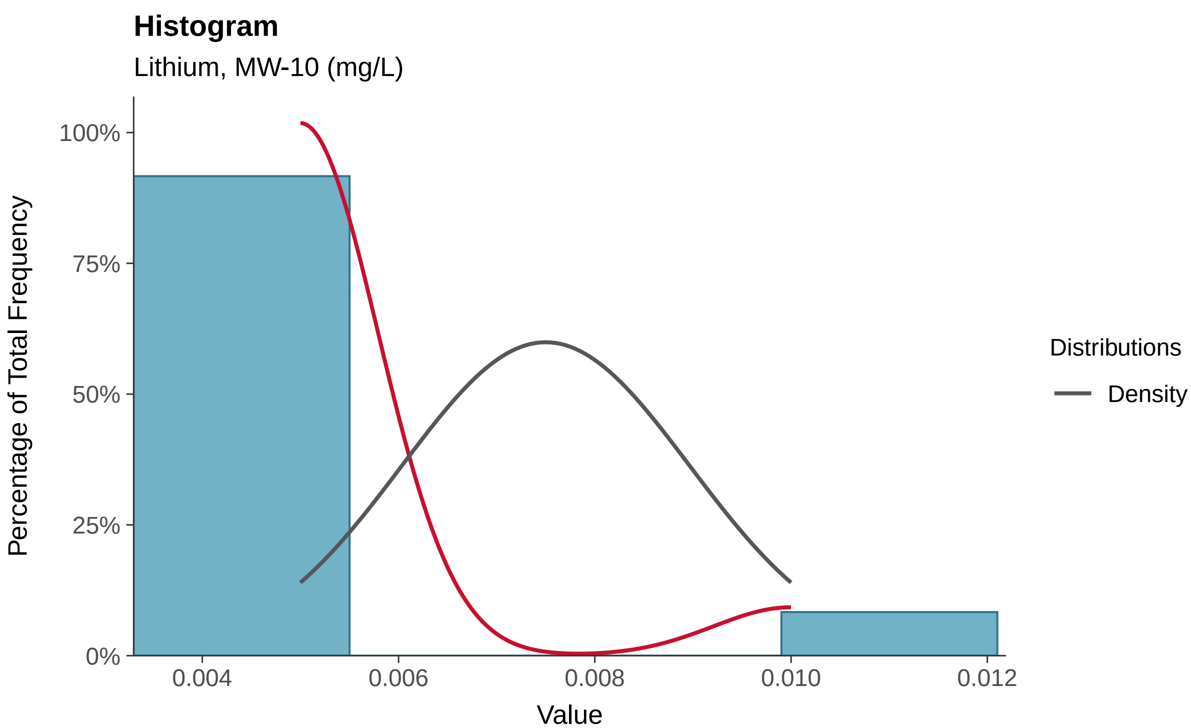
Lead, MW-10 (mg/L)



Appendix IV: Lithium, MW-10

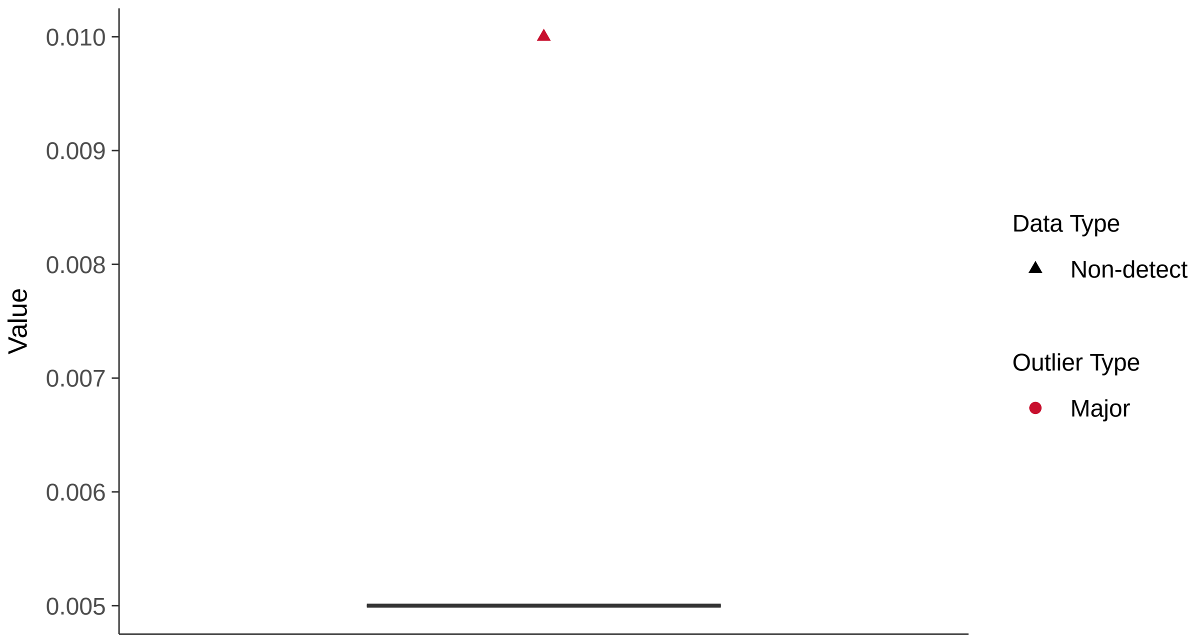
ID: 10_2_16





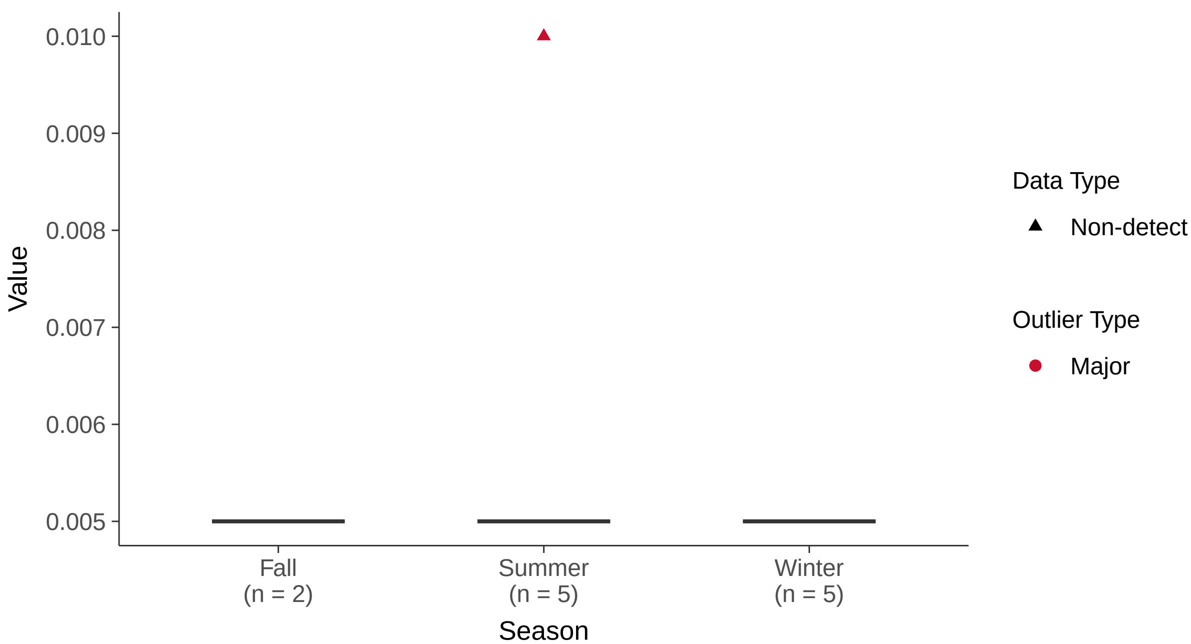
Boxplot

Lithium, MW-10 (mg/L)



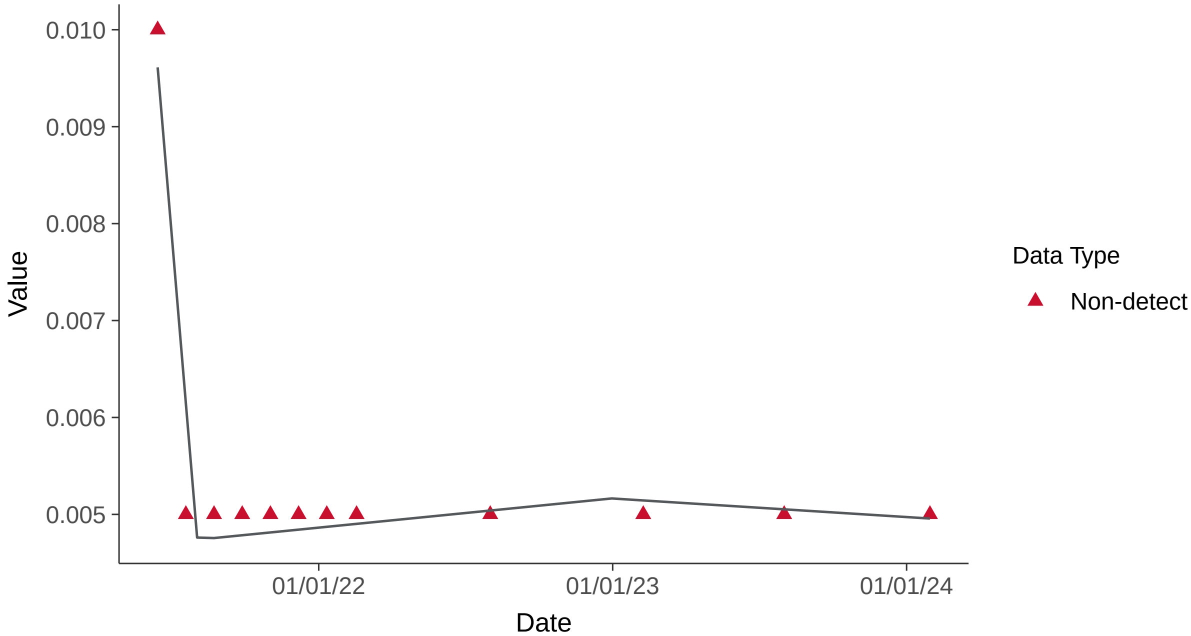
Boxplot by Season

Lithium, MW-10 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lithium, MW-10 (mg/L)

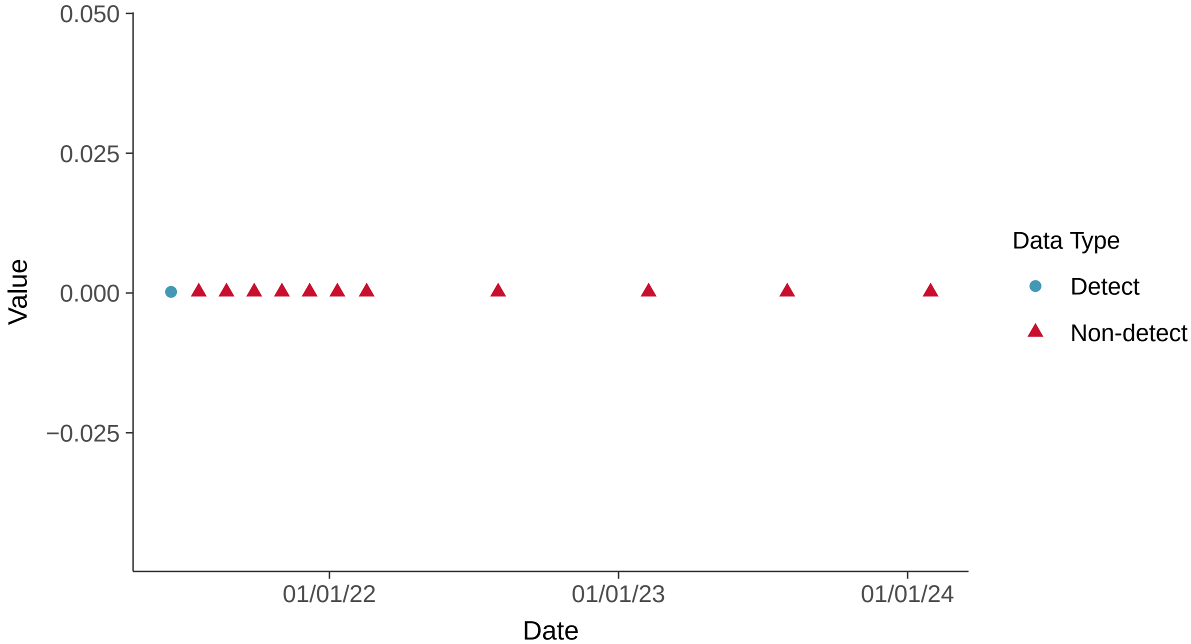


Appendix IV: Mercury, MW-10

ID: 10_2_17

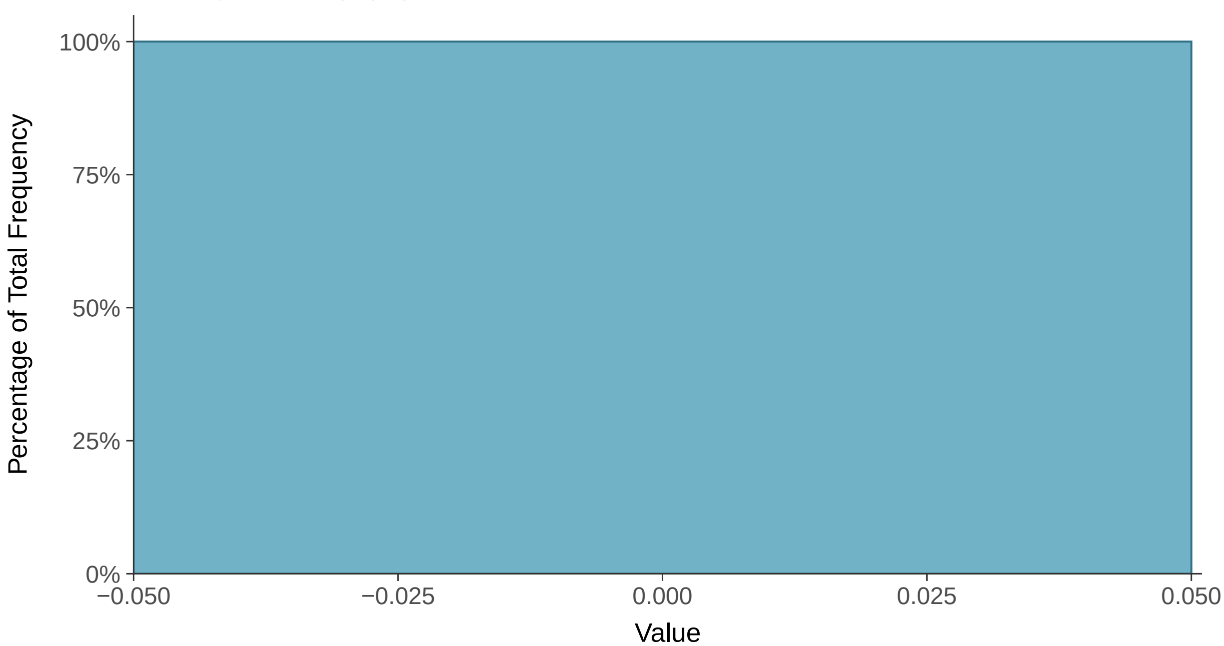
Scatter Plot

Mercury, MW-10 (mg/L)



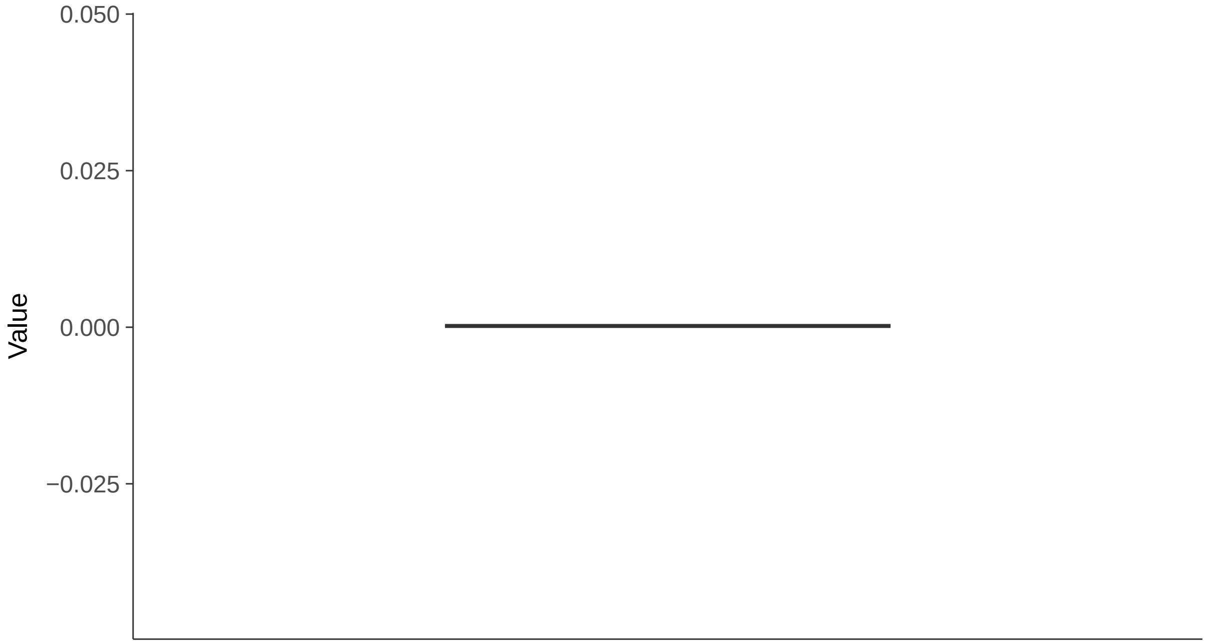
Histogram

Mercury, MW-10 (mg/L)



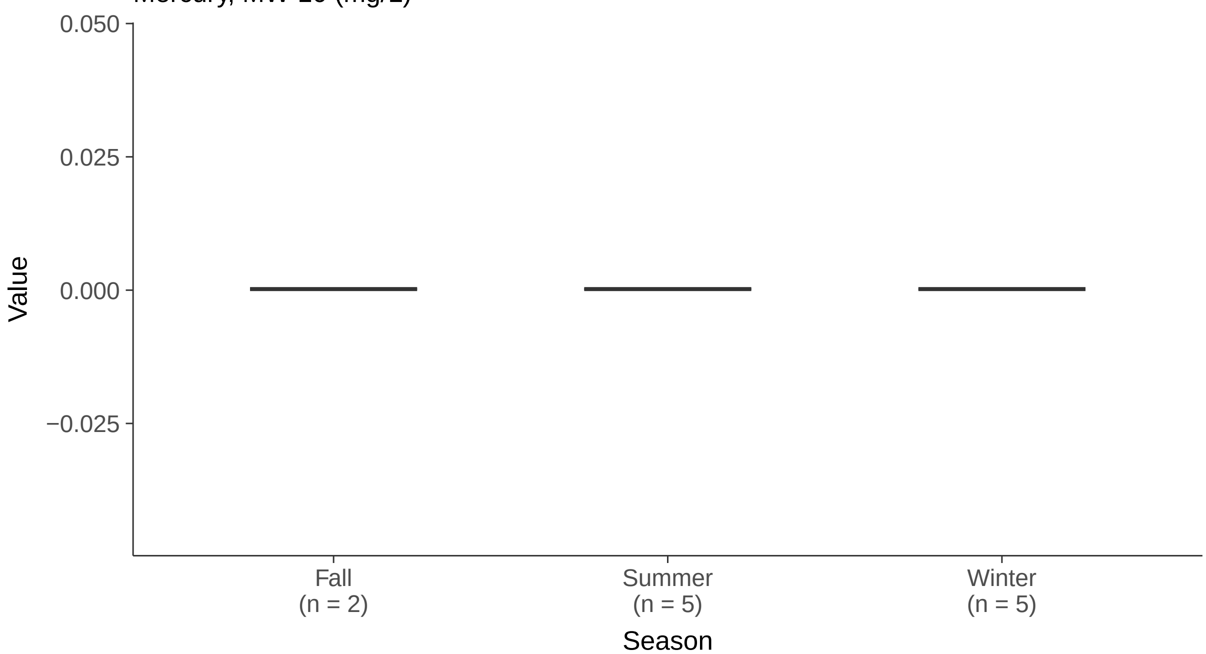
Boxplot

Mercury, MW-10 (mg/L)



Boxplot by Season

Mercury, MW-10 (mg/L)

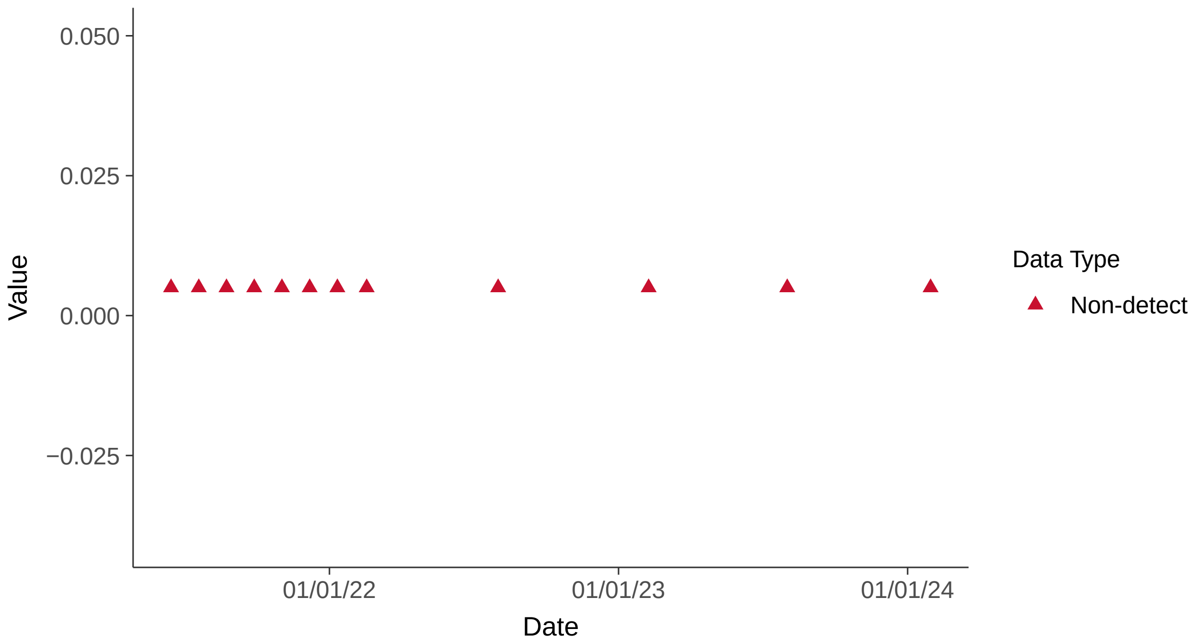


Appendix IV: Molybdenum, MW-10

ID: 10_2_18

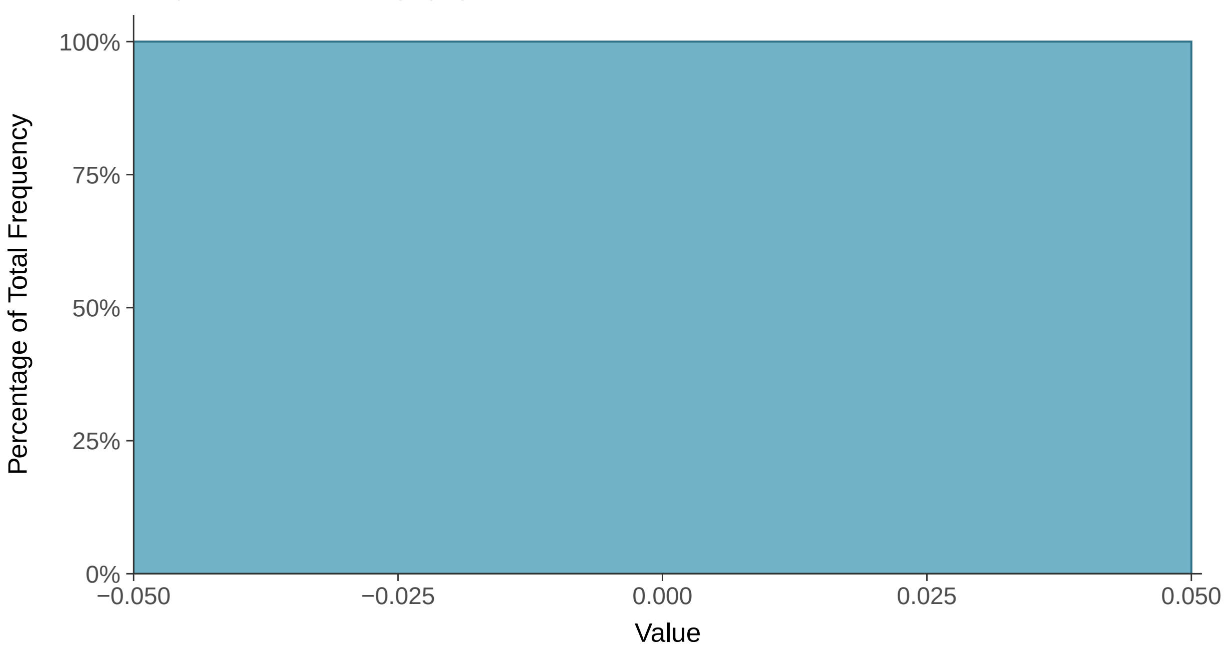
Scatter Plot

Molybdenum, MW-10 (mg/L)



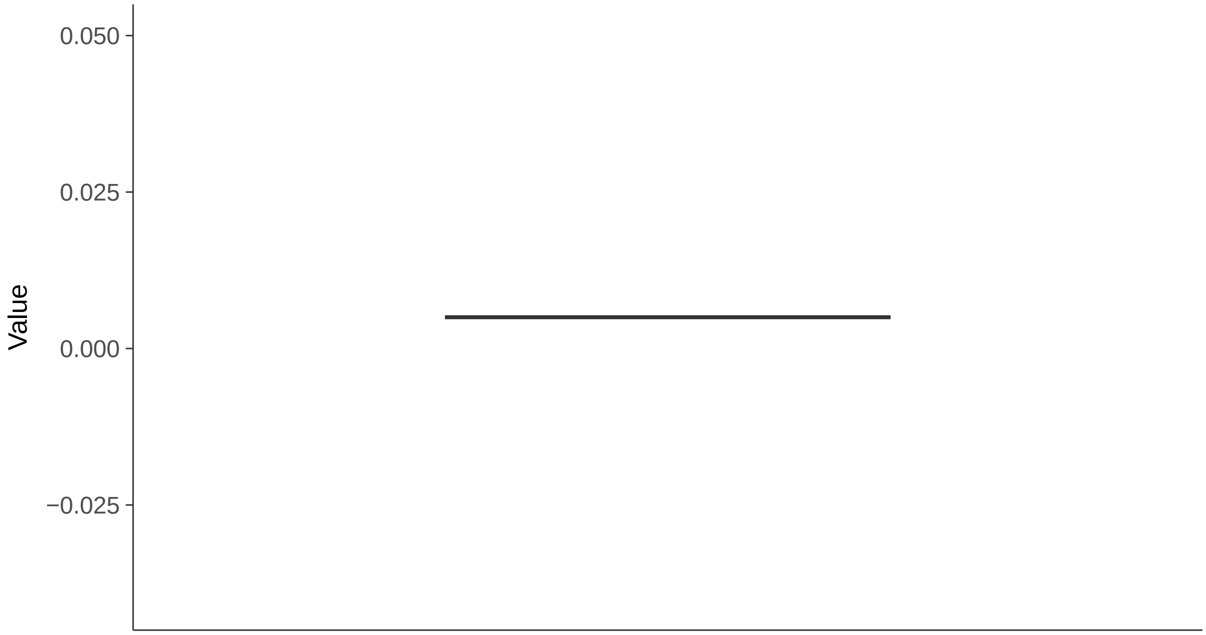
Histogram

Molybdenum, MW-10 (mg/L)



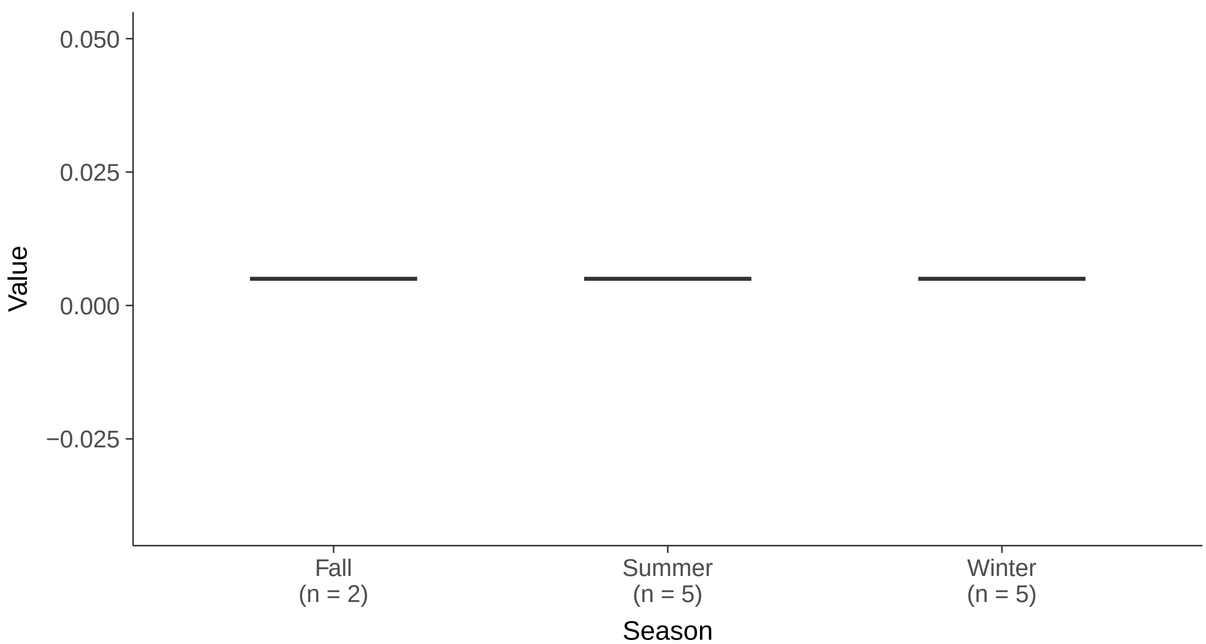
Boxplot

Molybdenum, MW-10 (mg/L)



Boxplot by Season

Molybdenum, MW-10 (mg/L)

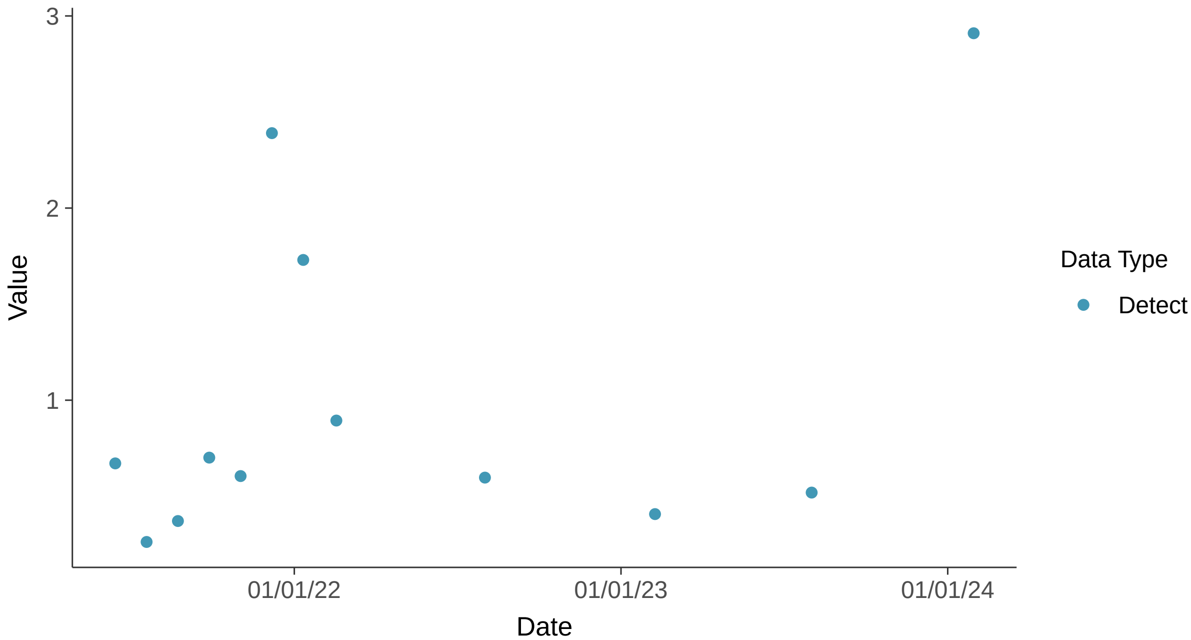


Appendix IV: Radium-226/228, MW-10

ID: 10_2_20

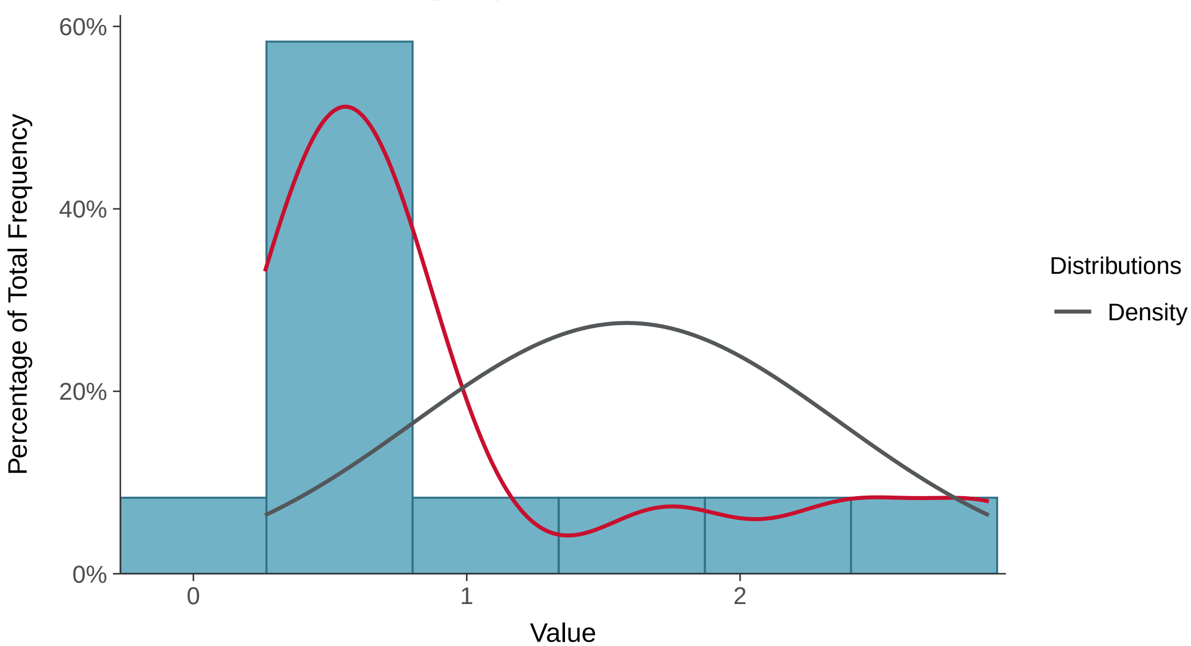
Scatter Plot

Radium-226/228, MW-10 (pCi/L)



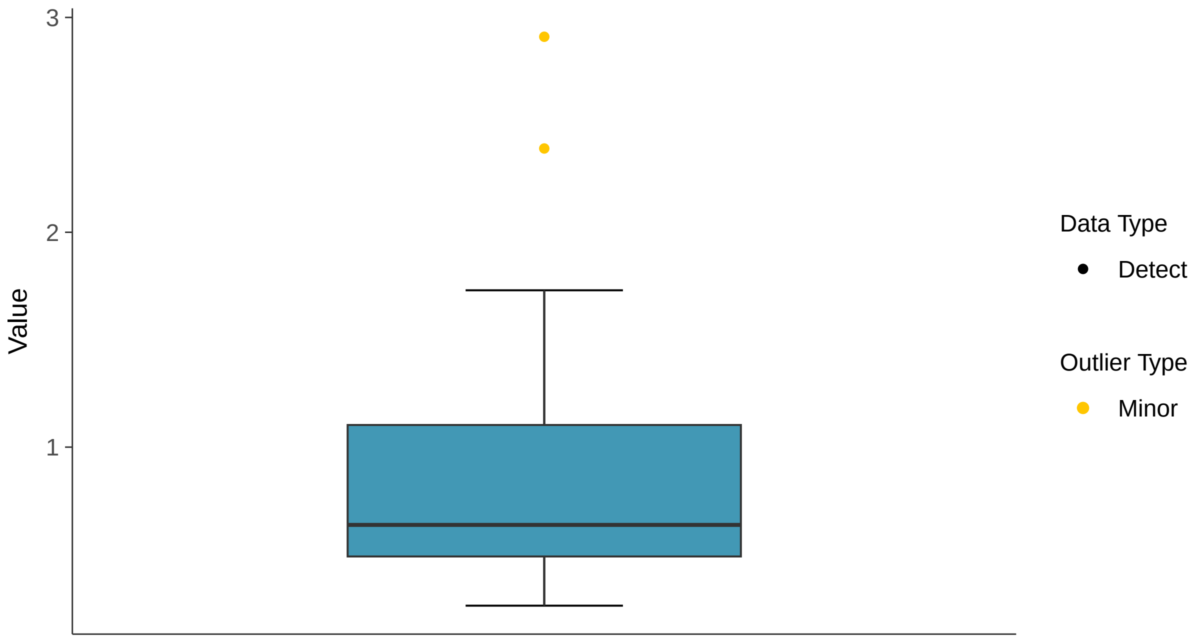
Histogram

Radium-226/228, MW-10 (pCi/L)



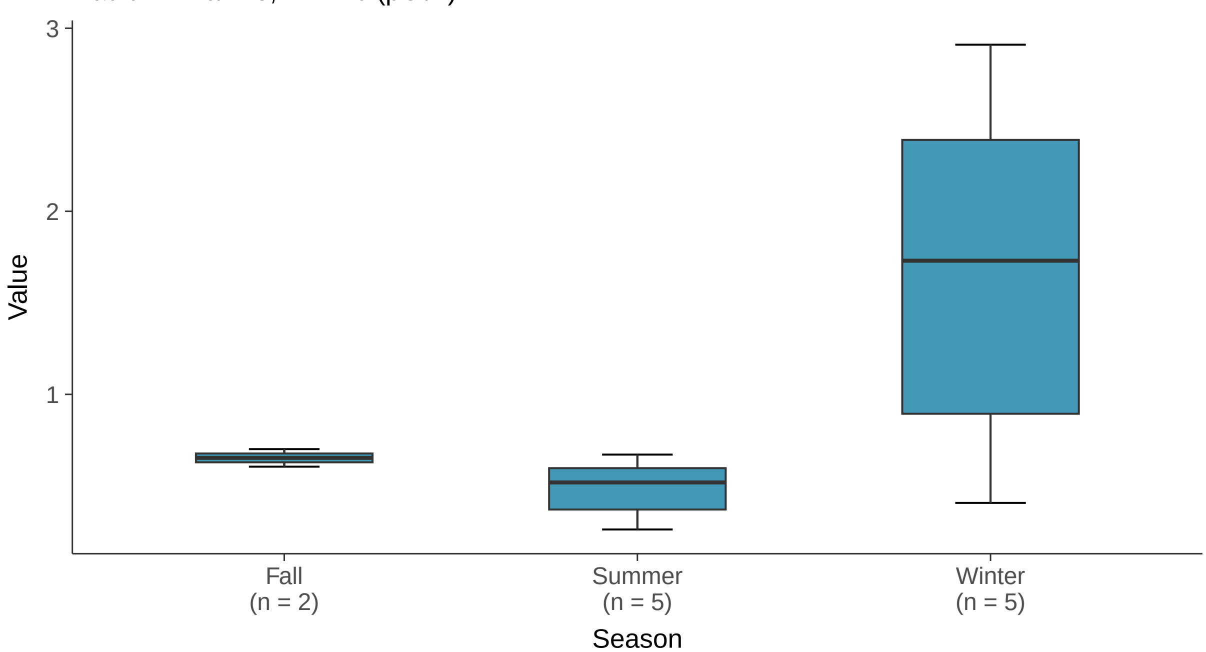
Boxplot

Radium-226/228, MW-10 (pCi/L)



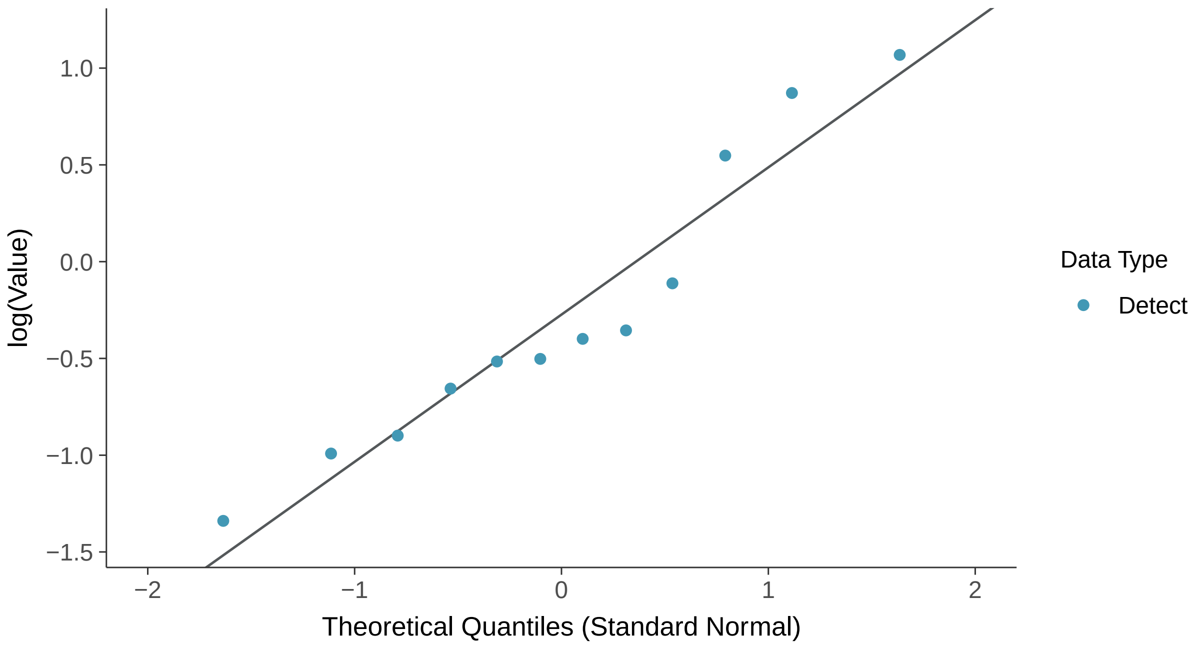
Boxplot by Season

Radium-226/228, MW-10 (pCi/L)



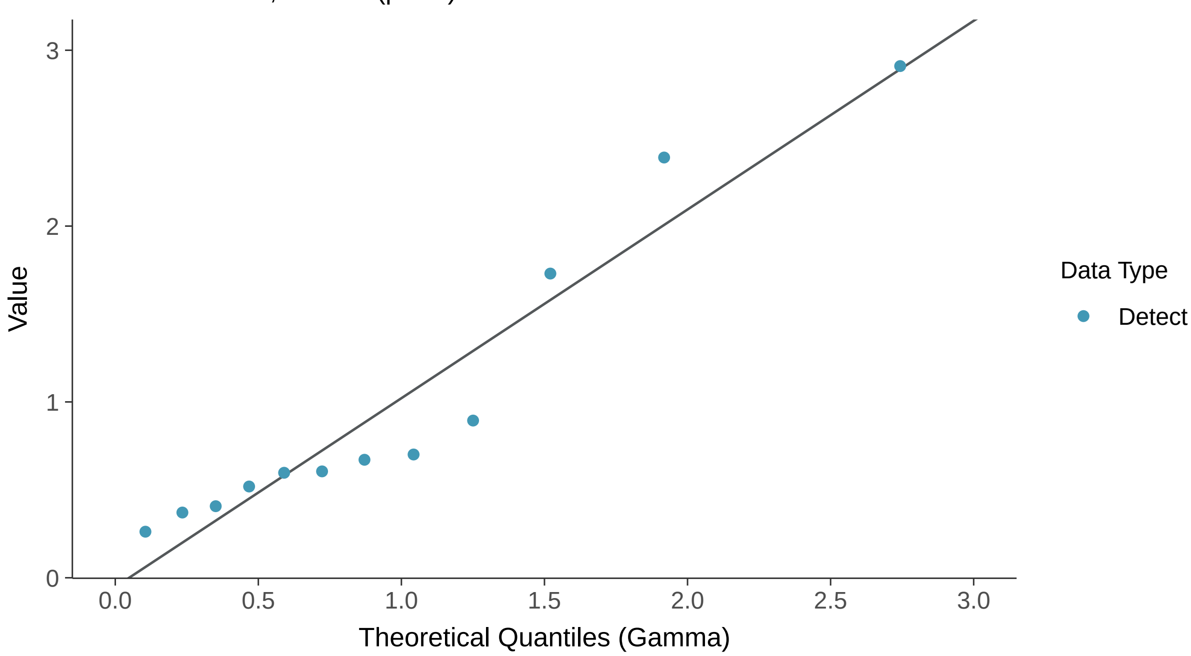
Lognormal Q-Q plot

Radium-226/228, MW-10 (pCi/L)



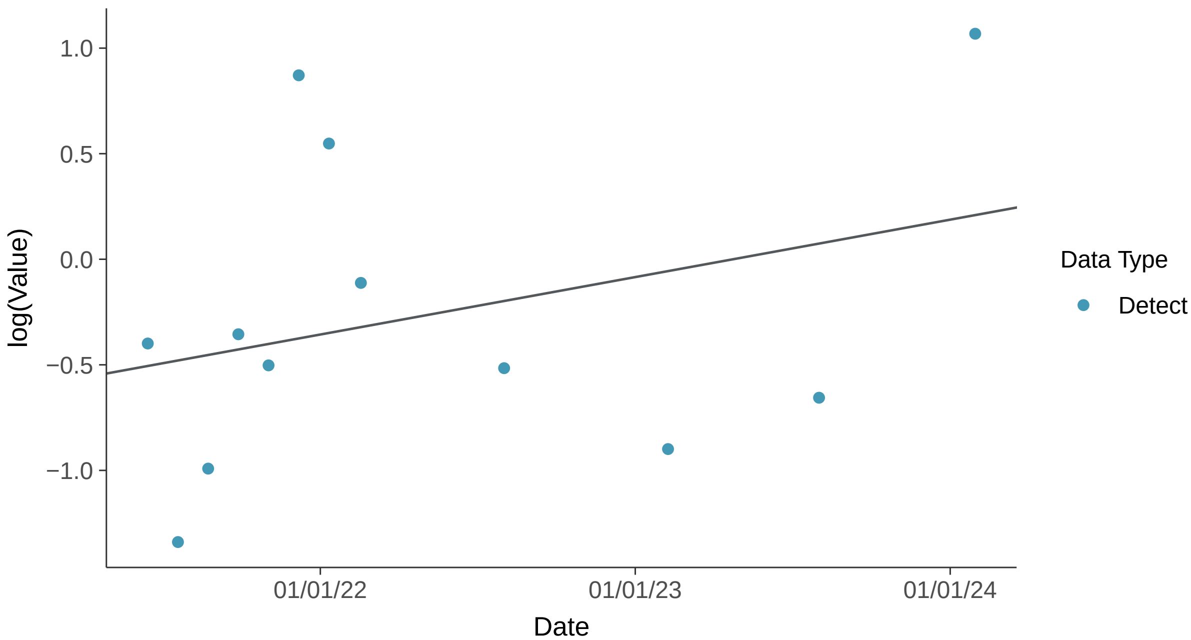
Gamma Q-Q plot

Radium-226/228, MW-10 (pCi/L)



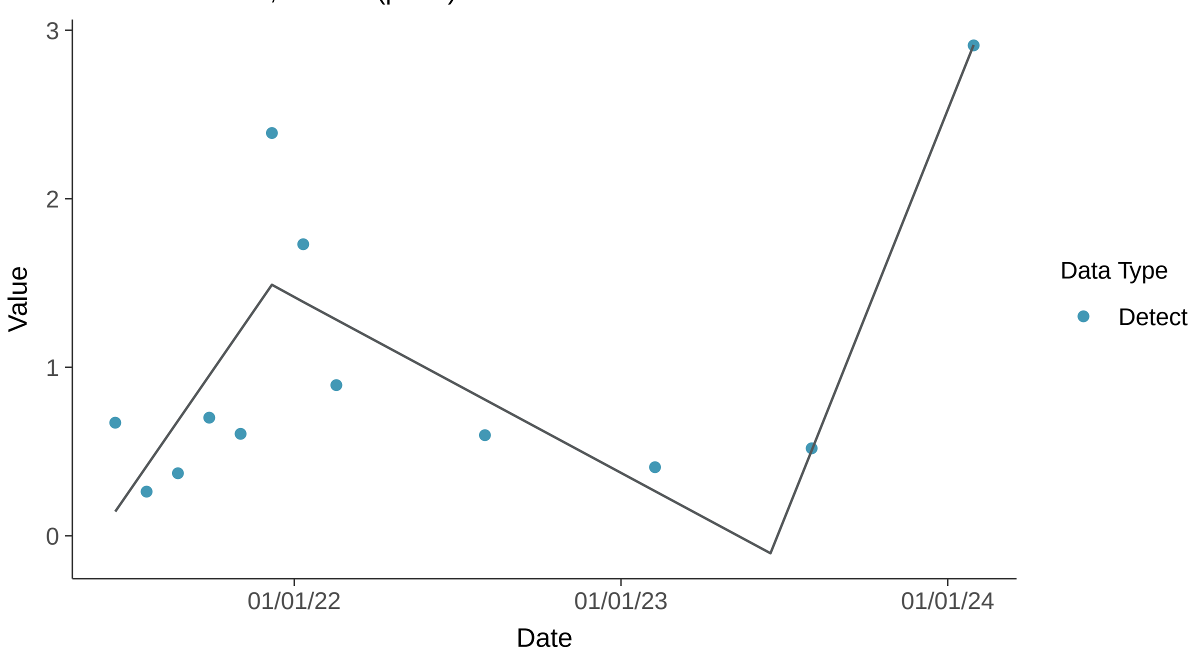
Trend Regression: Lognormal MLE

Radium-226/228, MW-10 (pCi/L)



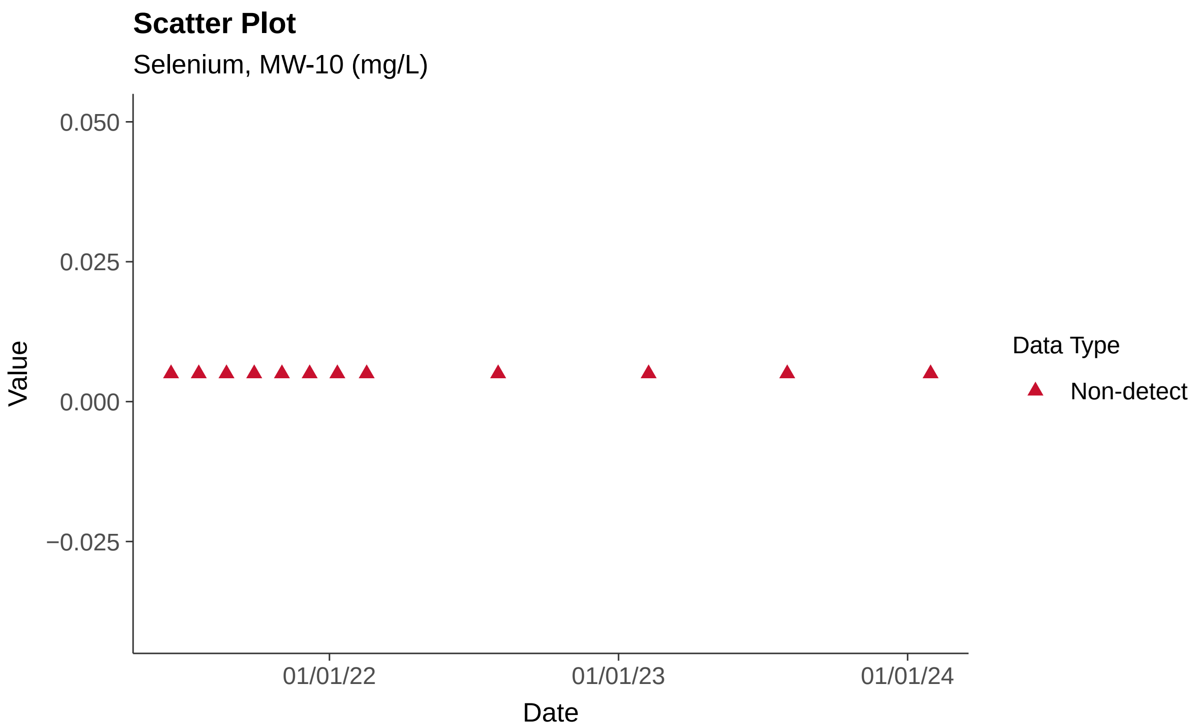
Trend Regression: Piecewise Linear-Linear-Linear

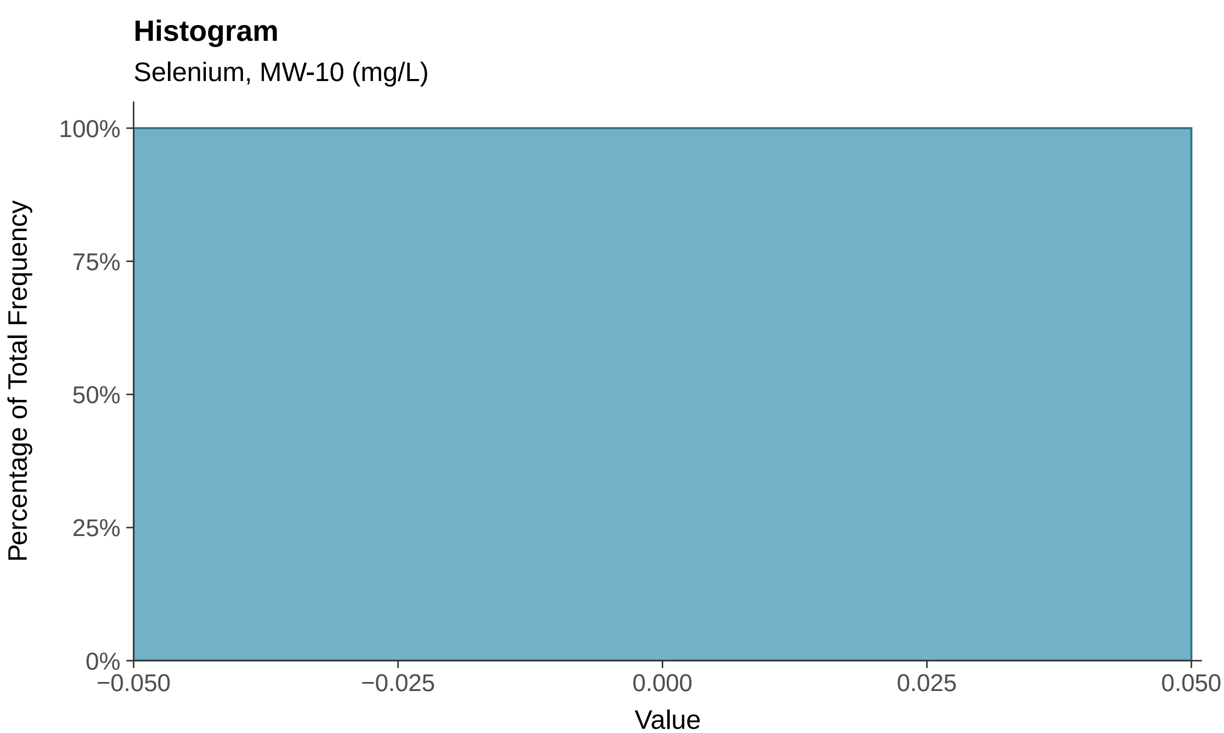
Radium-226/228, MW-10 (pCi/L)

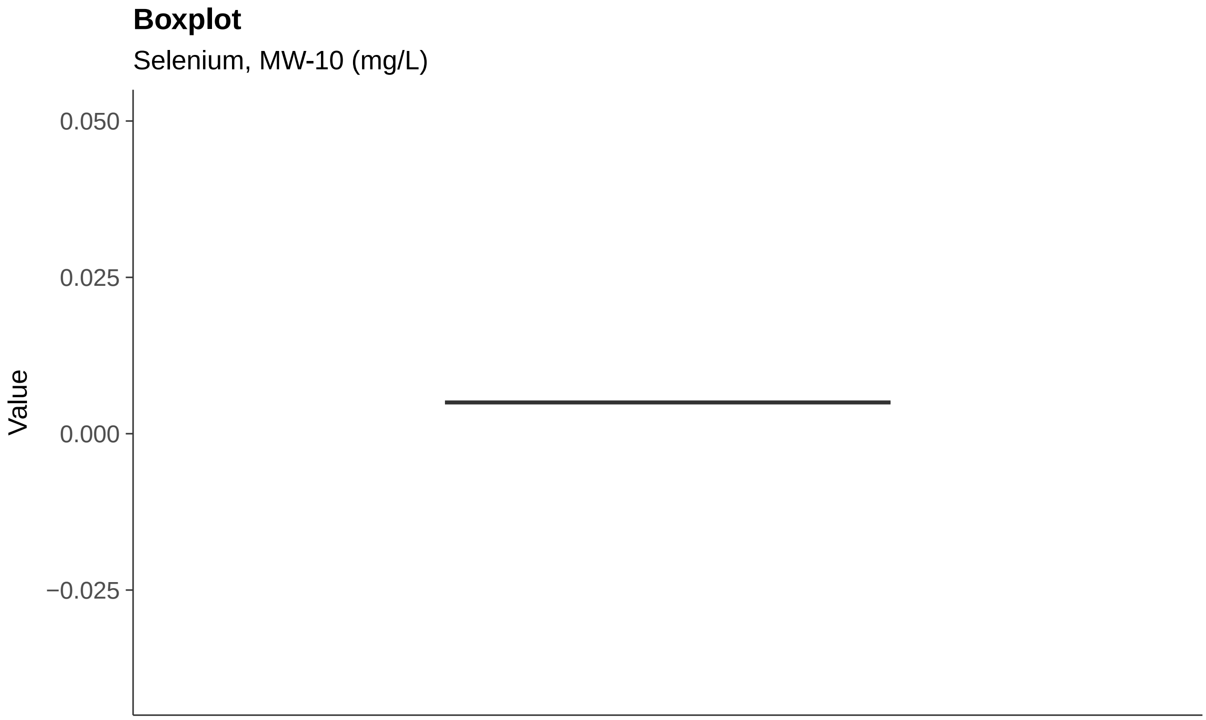


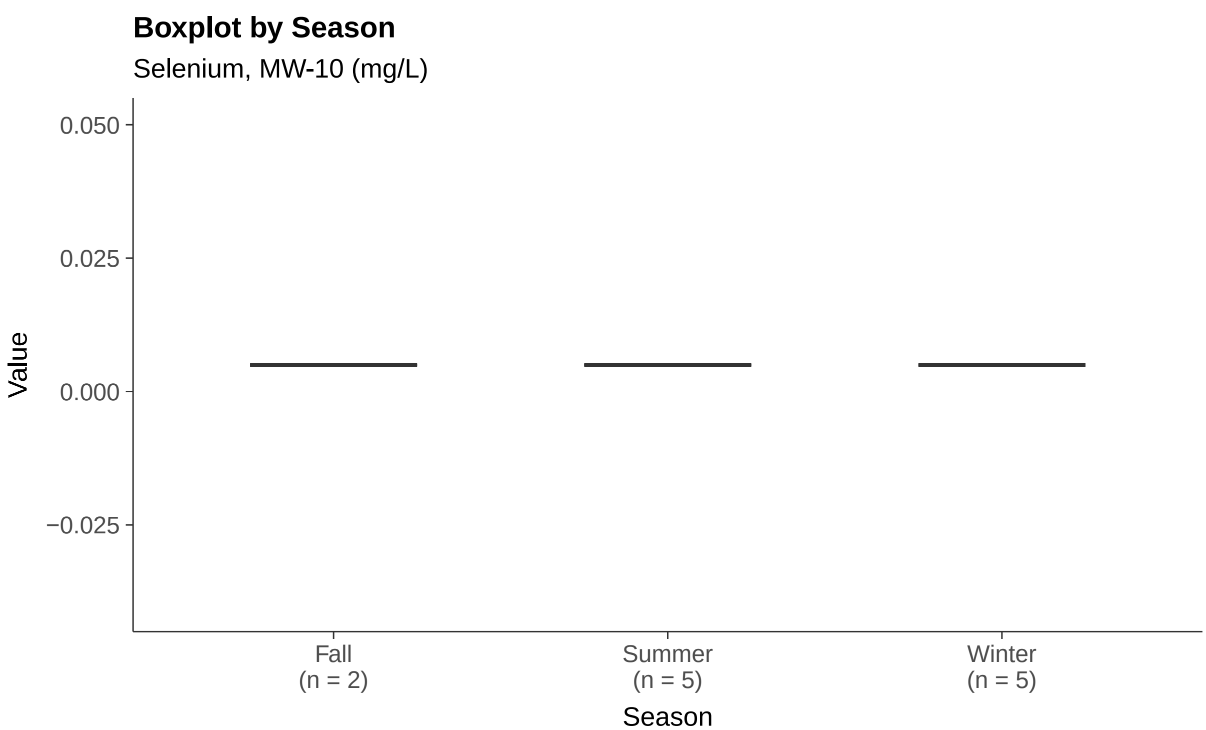
Appendix IV: Selenium, MW-10

ID: 10_2_22



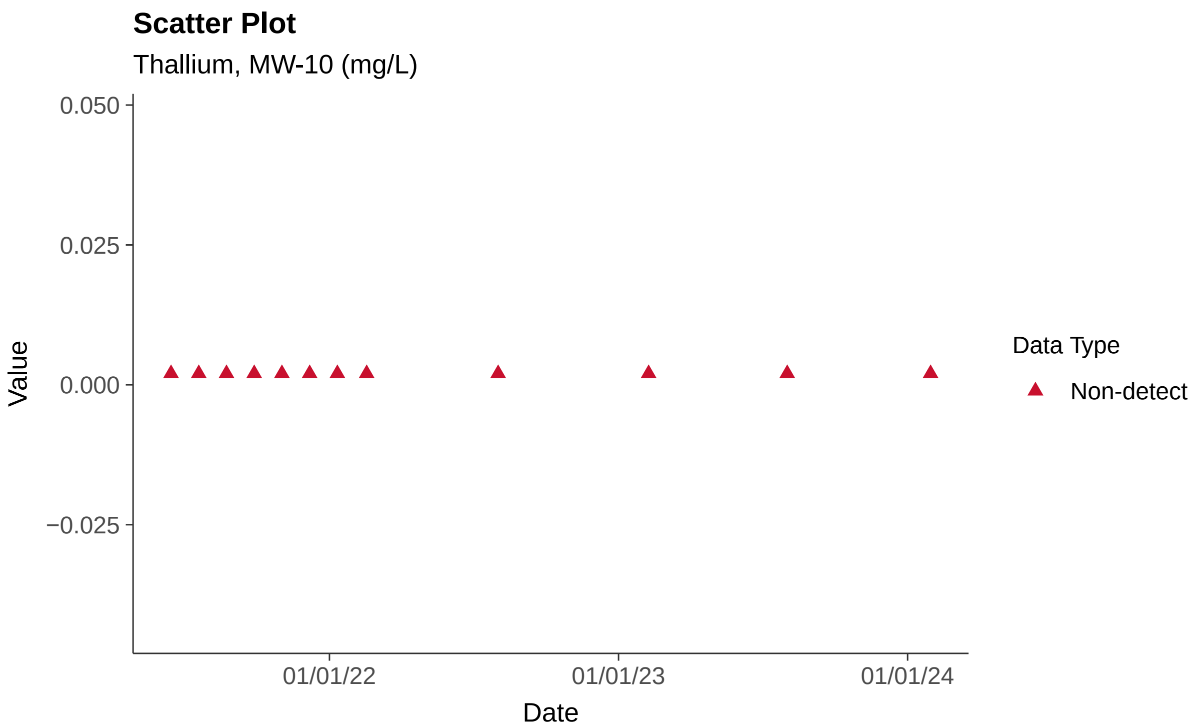


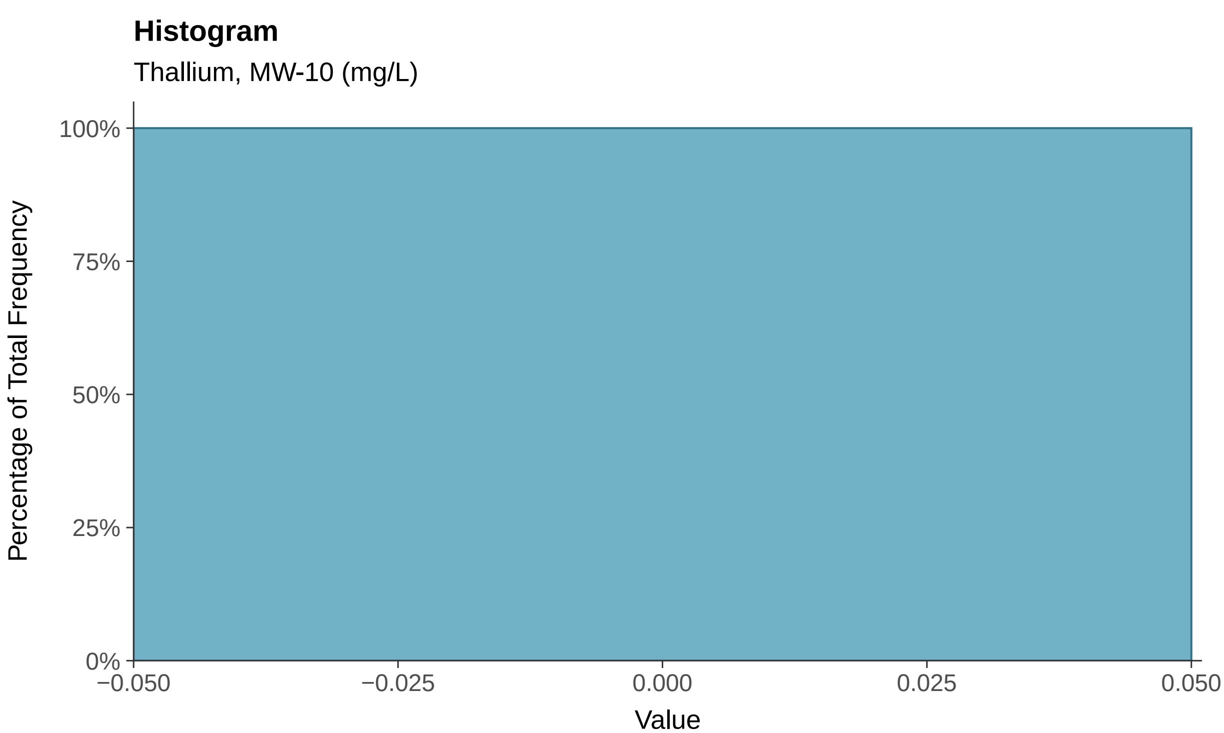

Boxplot
Selenium, MW-10 (mg/L)
Value
0.050
0.025
0.000
−0.025

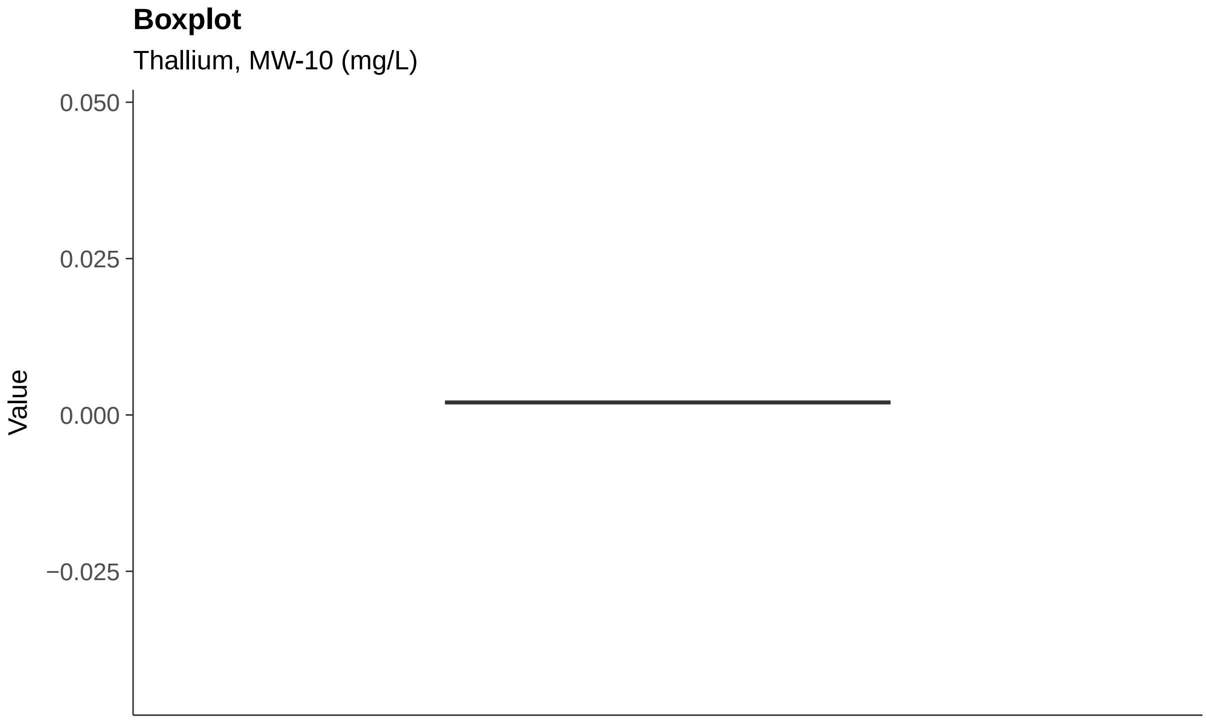

Boxplot by Season
Selenium, MW-10 (mg/L)
Value
0.050
0.025
0.000
−0.025
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season

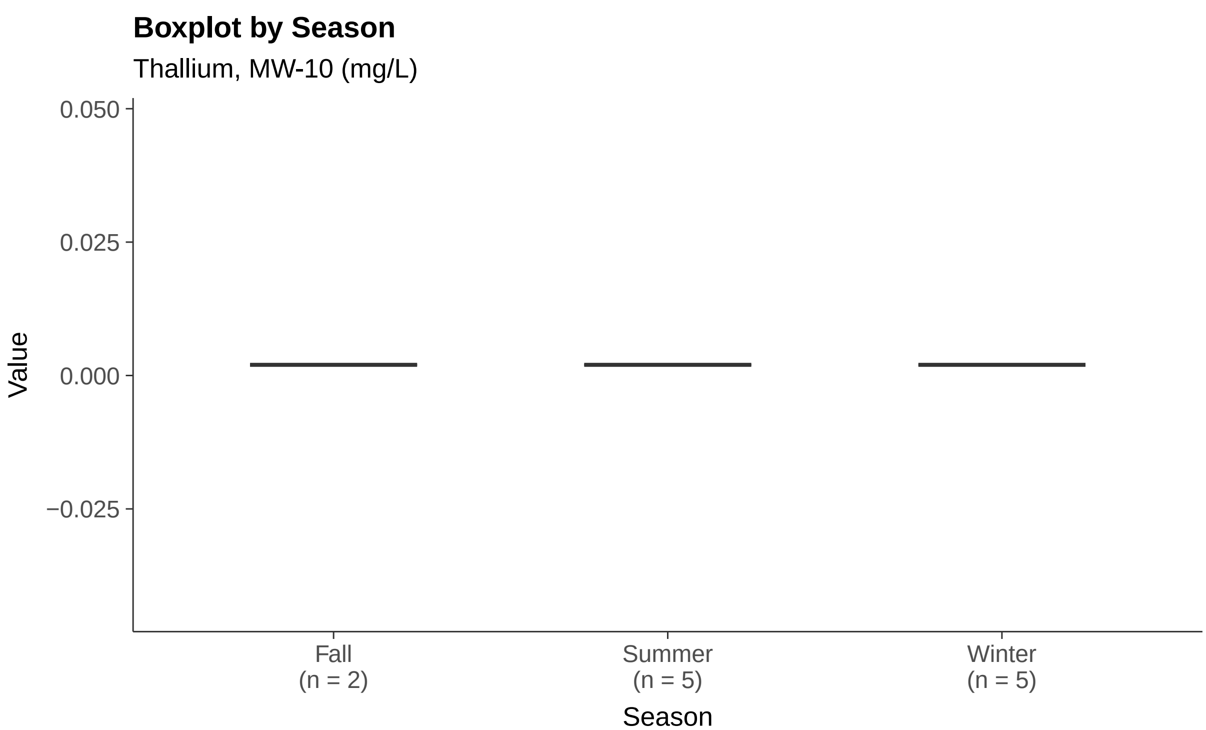
Appendix IV: Thallium, MW-10

ID: 10_2_23



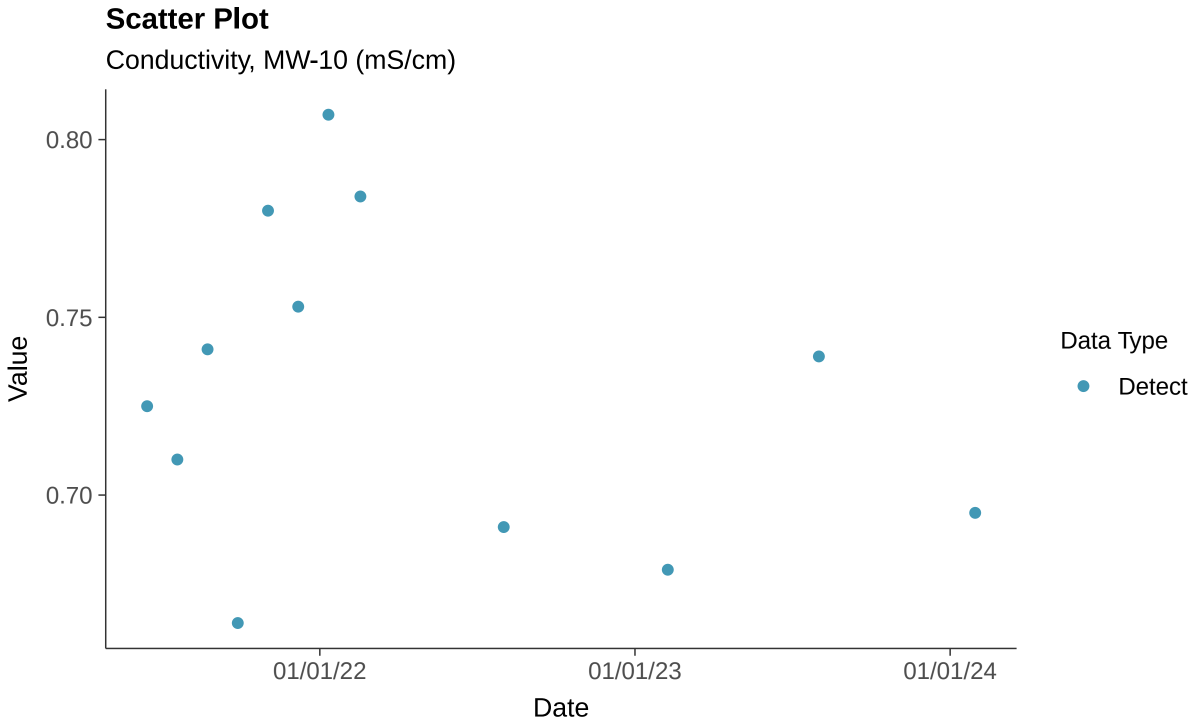


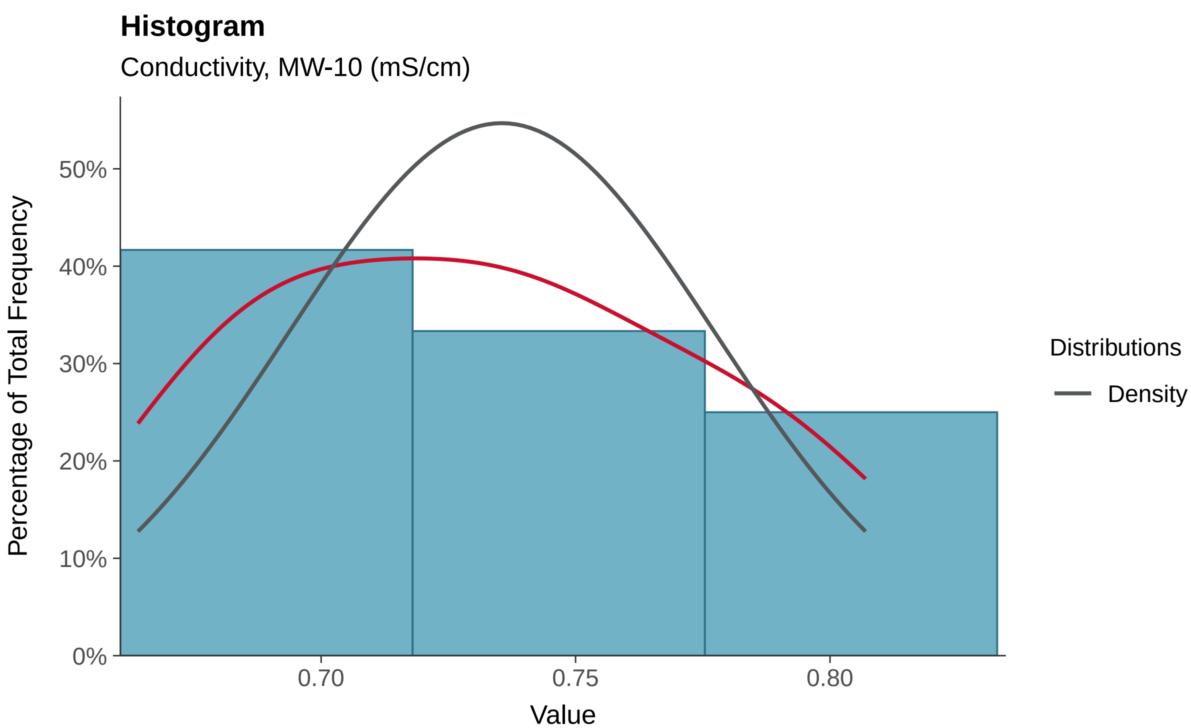

Boxplot
Thallium, MW-10 (mg/L)
0.050
0.025
0.000
−0.025
Value


Boxplot by Season
Thallium, MW-10 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season

Field Parameters: Conductivity, MW-10

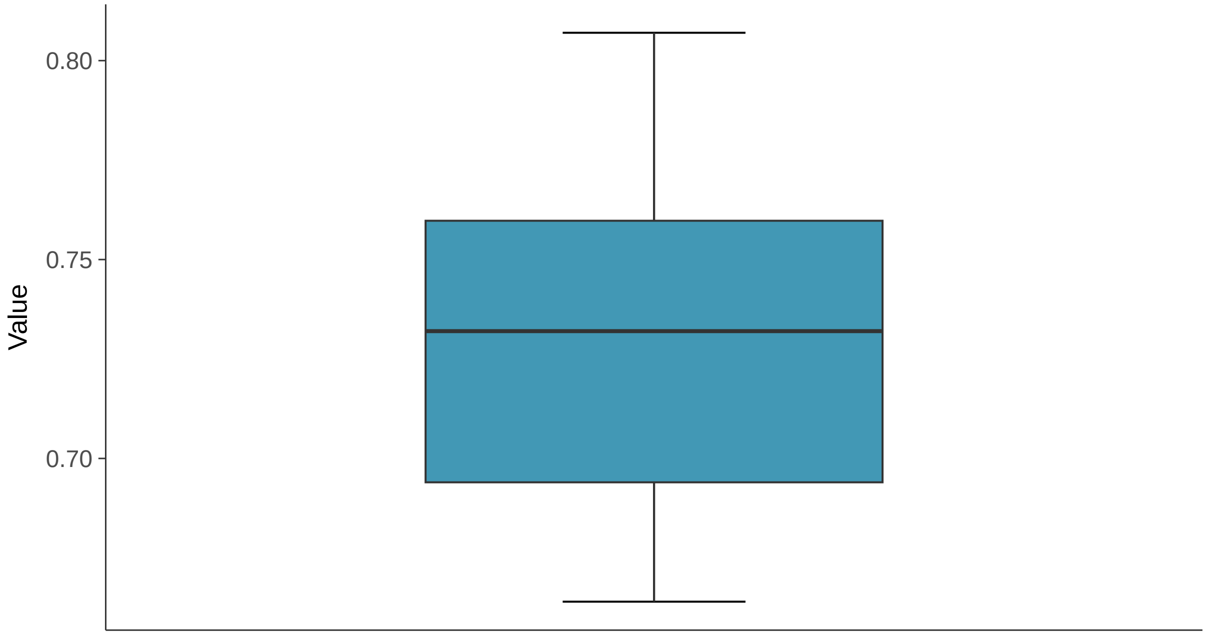
ID: 10_3_24





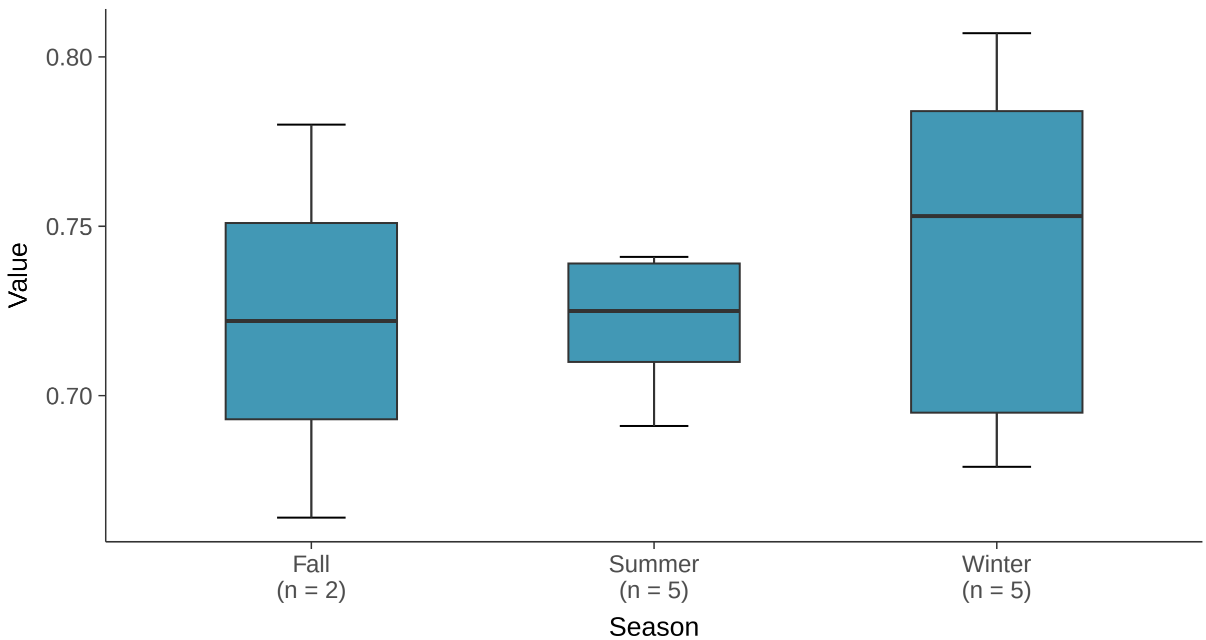
Boxplot

Conductivity, MW-10 (mS/cm)



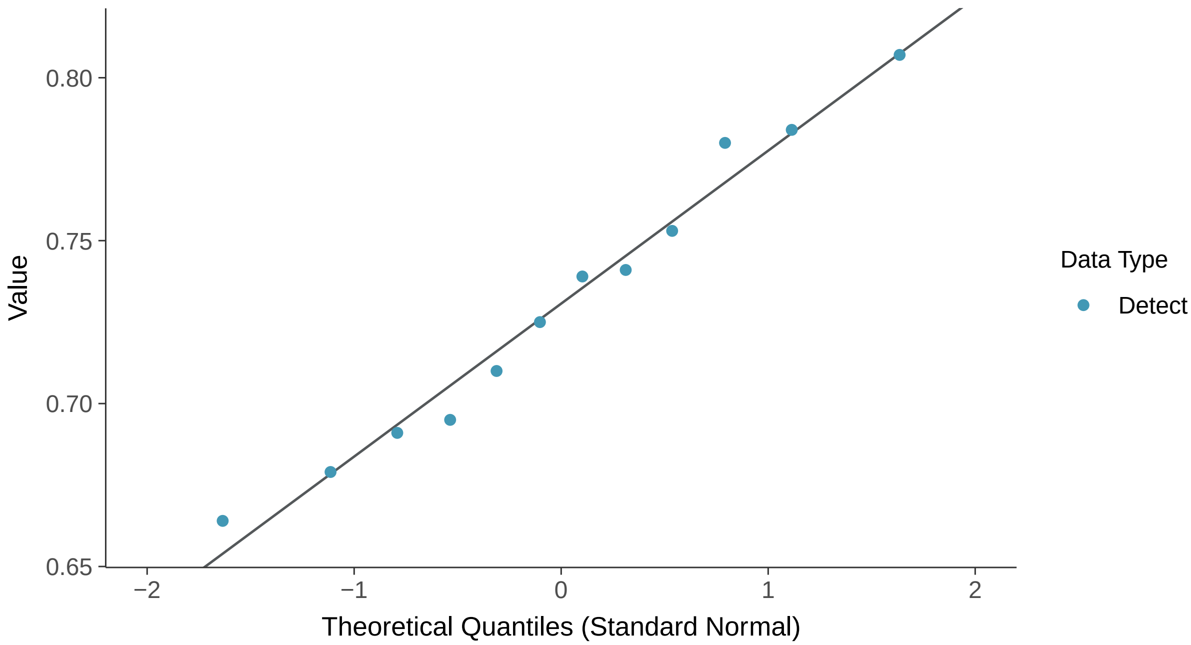
Boxplot by Season

Conductivity, MW-10 (mS/cm)



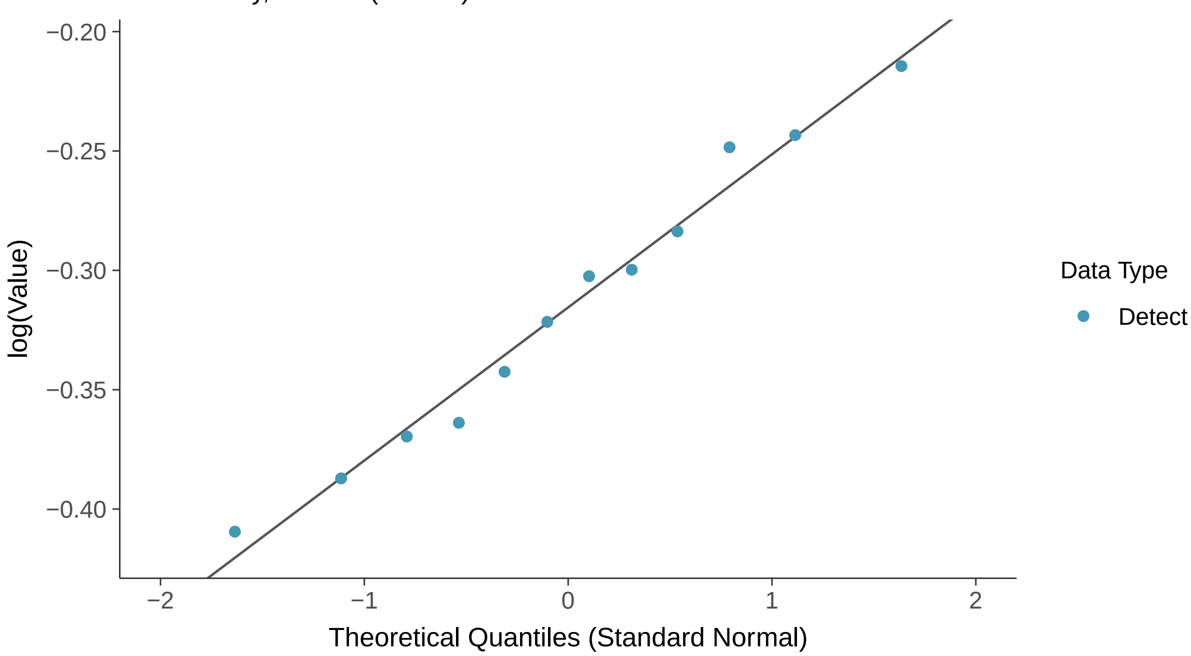
Normal Q-Q plot

Conductivity, MW-10 (mS/cm)



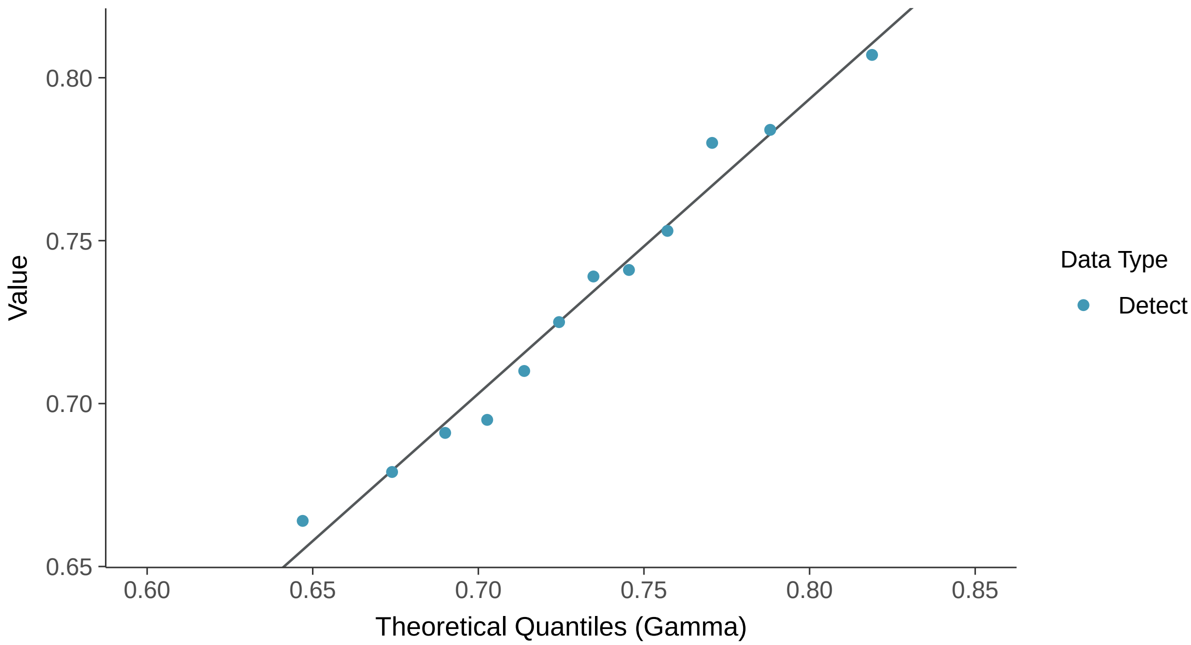
Lognormal Q-Q plot

Conductivity, MW-10 (mS/cm)



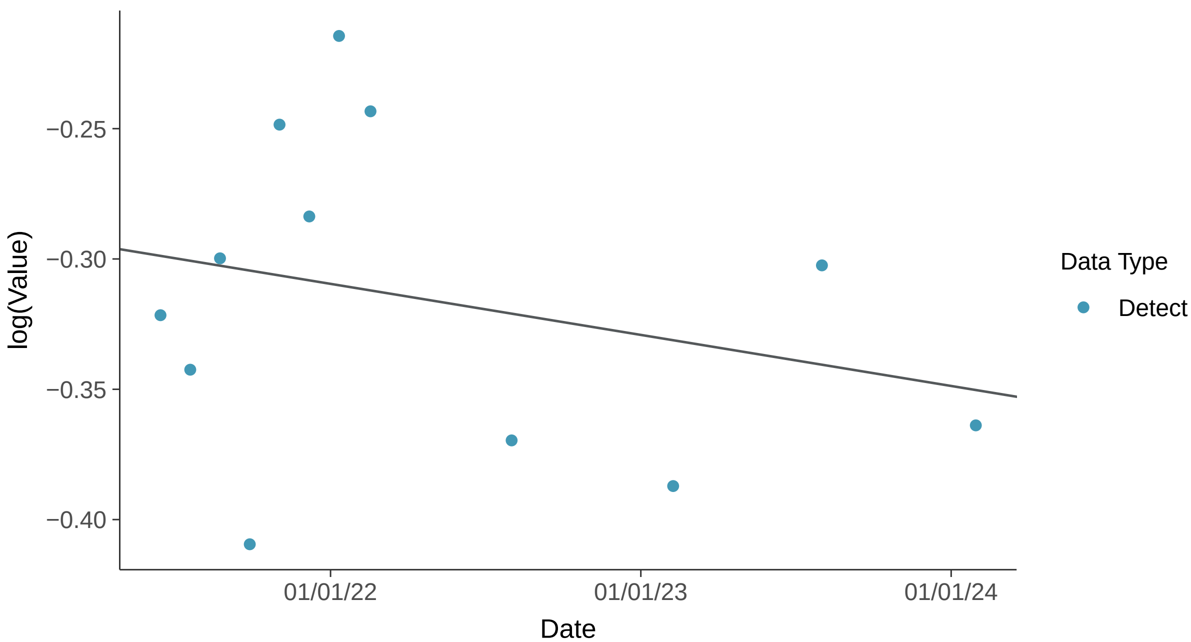
Gamma Q-Q plot

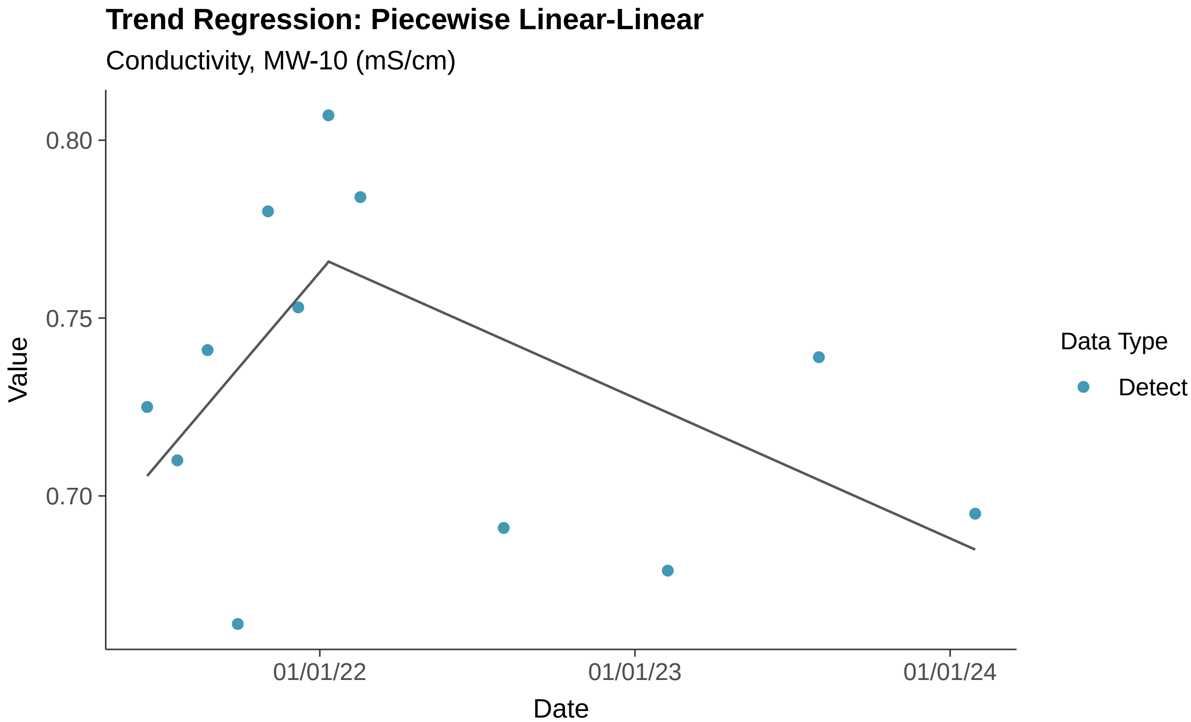
Conductivity, MW-10 (mS/cm)

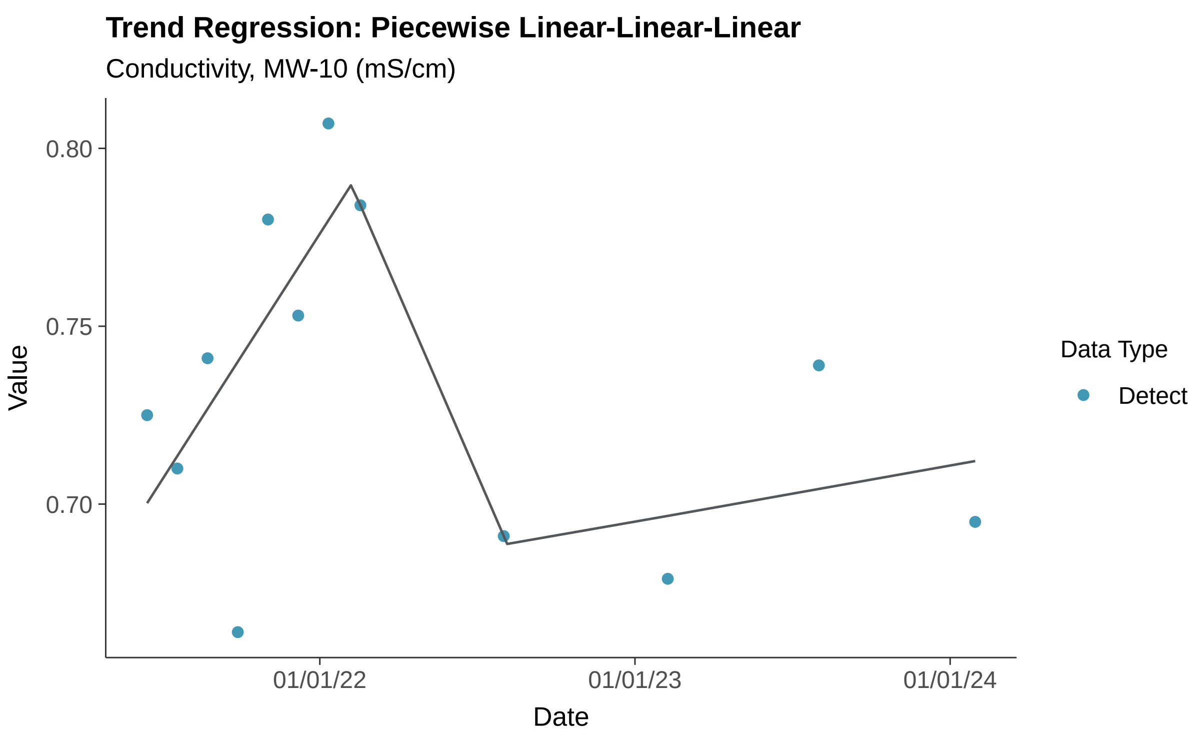


Trend Regression: Lognormal MLE

Conductivity, MW-10 (mS/cm)

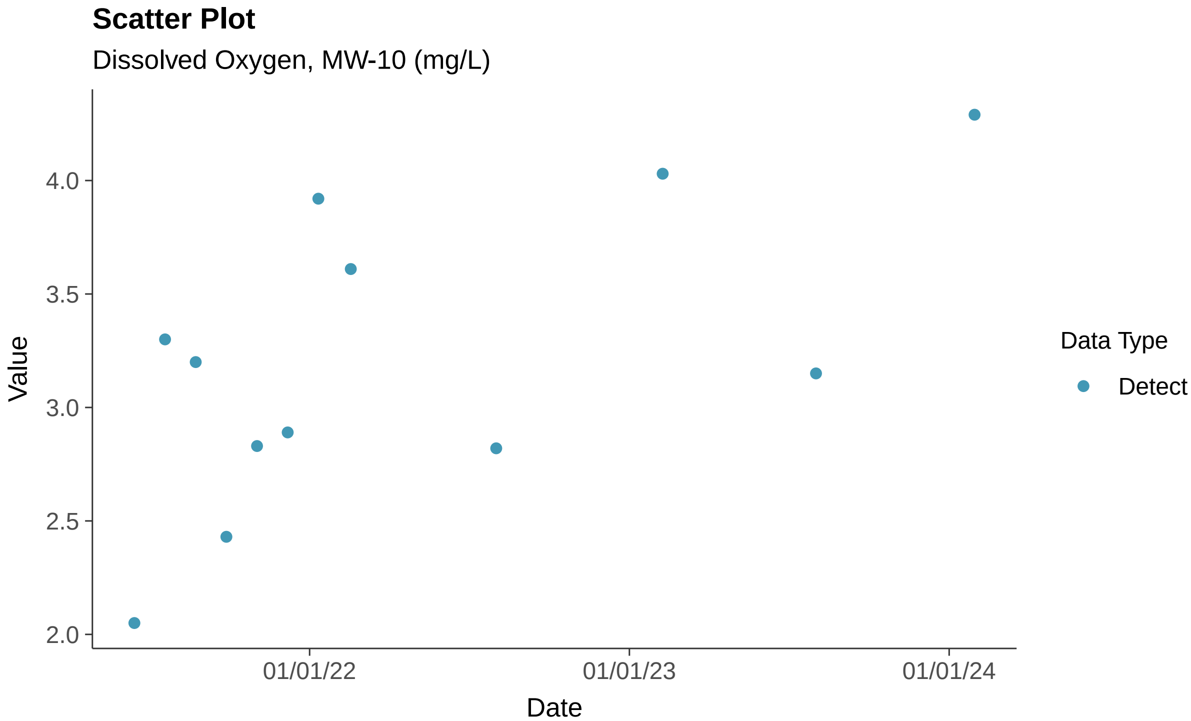


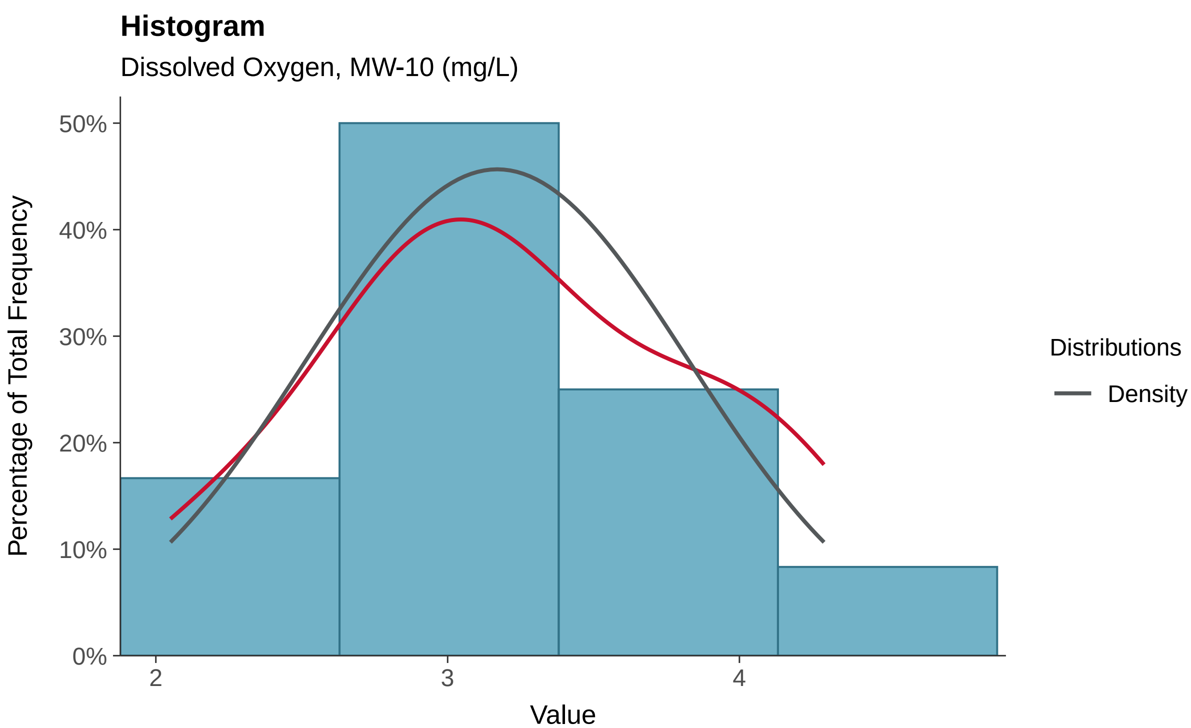

Trend Regression: Piecewise Linear-Linear
Conductivity, MW-10 (mS/cm)
Value
0.80
0.75
0.70
Date
01/01/22
01/01/23
01/01/24
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Conductivity, MW-10 (mS/cm)
Value
0.80
0.75
0.70
Date
01/01/22
01/01/23
01/01/24
Data Type
Detect

Field Parameters: Dissolved Oxygen, MW-10

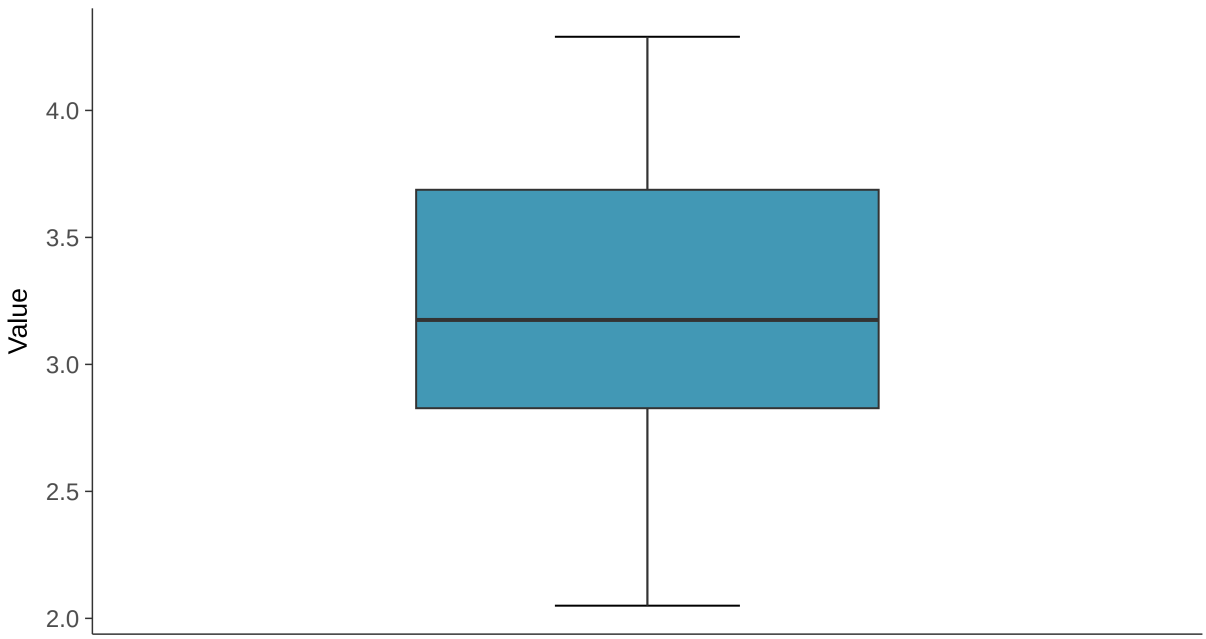
ID: 10_3_25





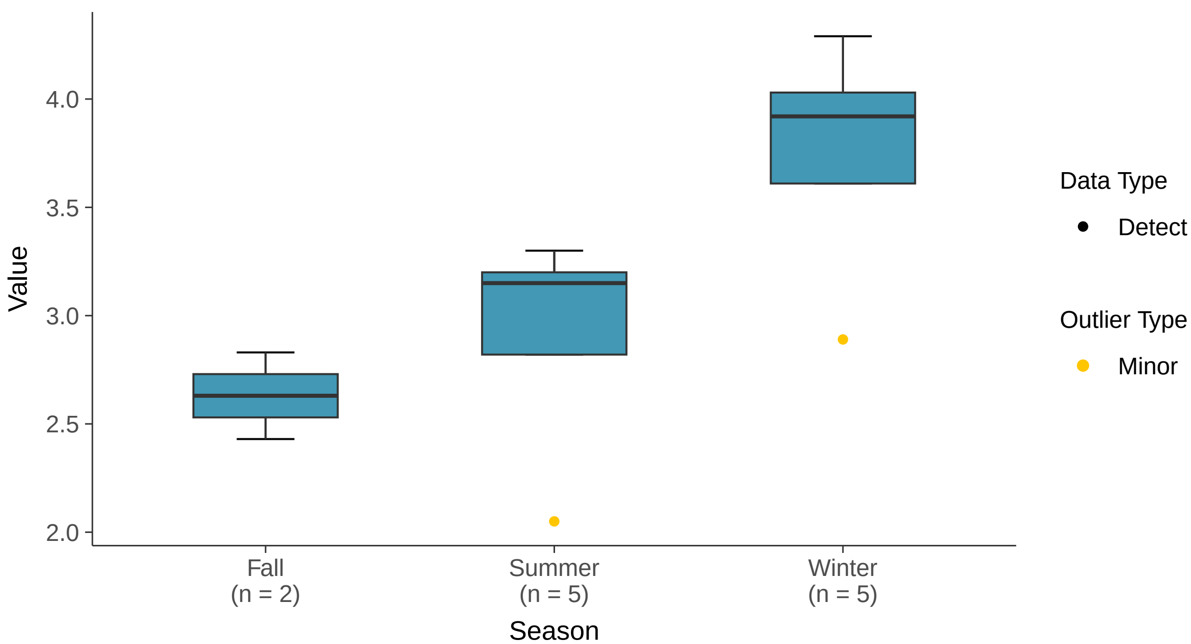
Boxplot

Dissolved Oxygen, MW-10 (mg/L)



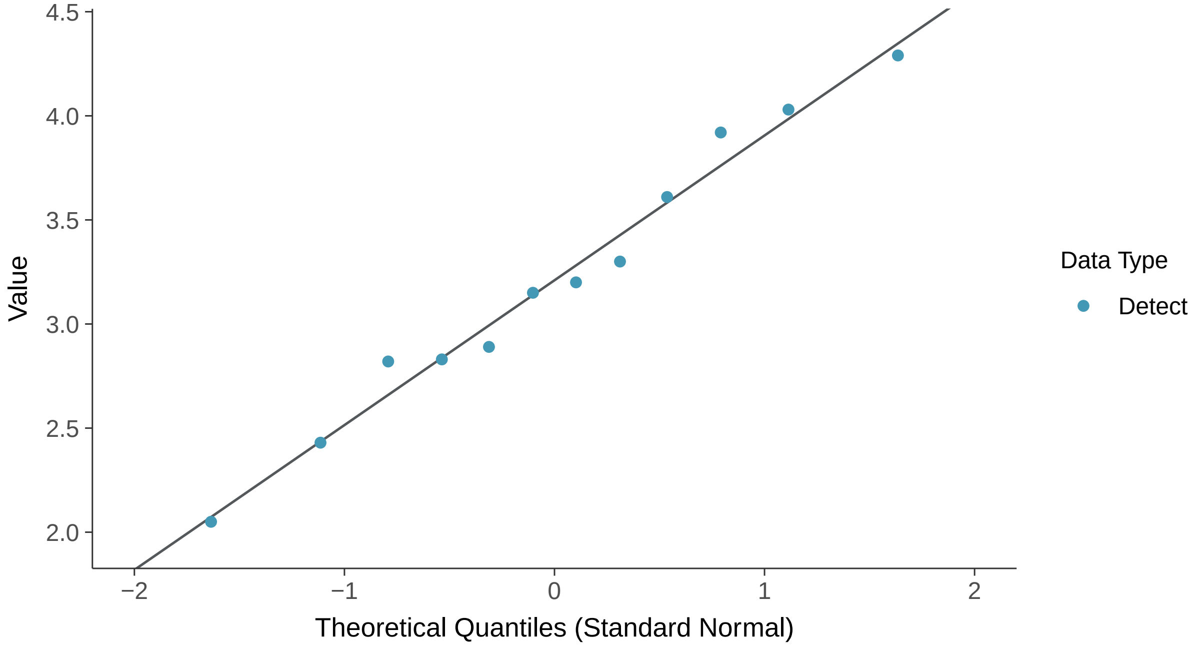
Boxplot by Season

Dissolved Oxygen, MW-10 (mg/L)



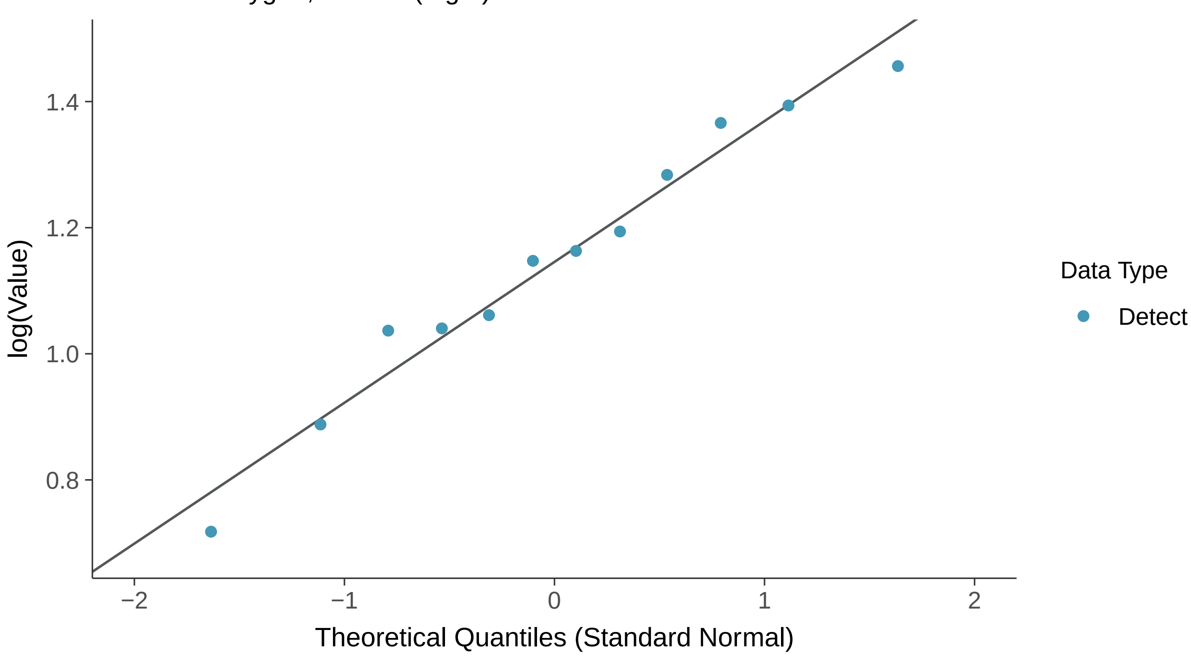
Normal Q-Q plot

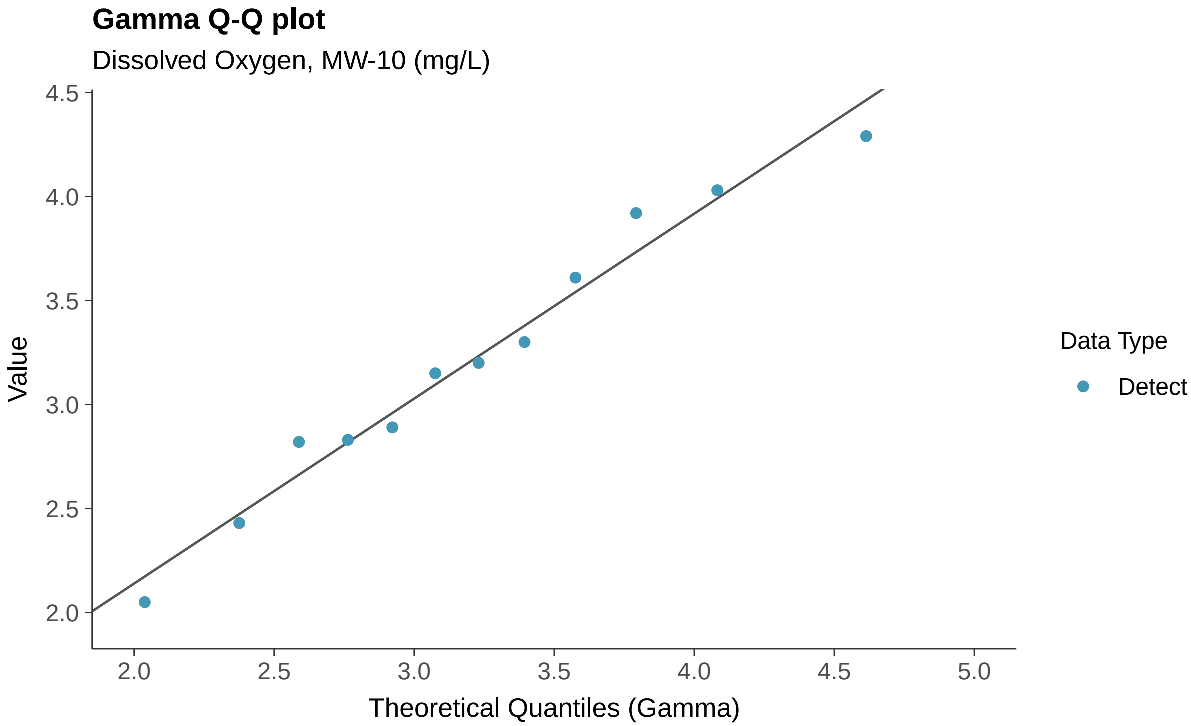
Dissolved Oxygen, MW-10 (mg/L)

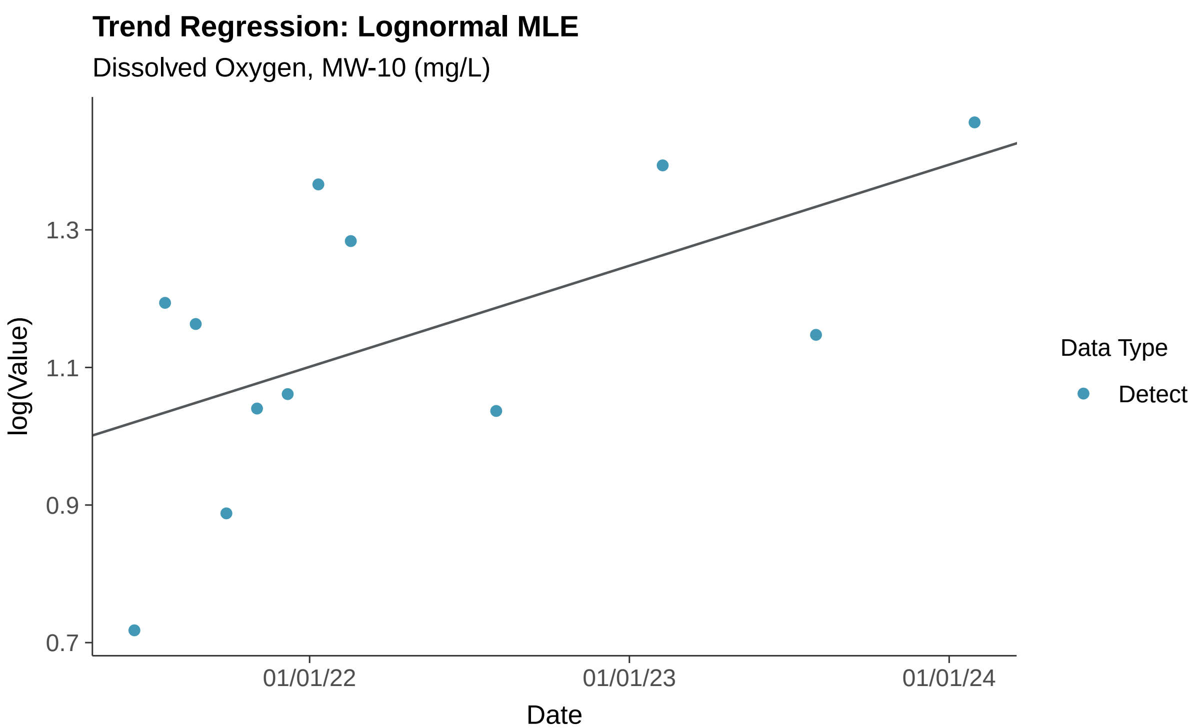


Lognormal Q-Q plot

Dissolved Oxygen, MW-10 (mg/L)

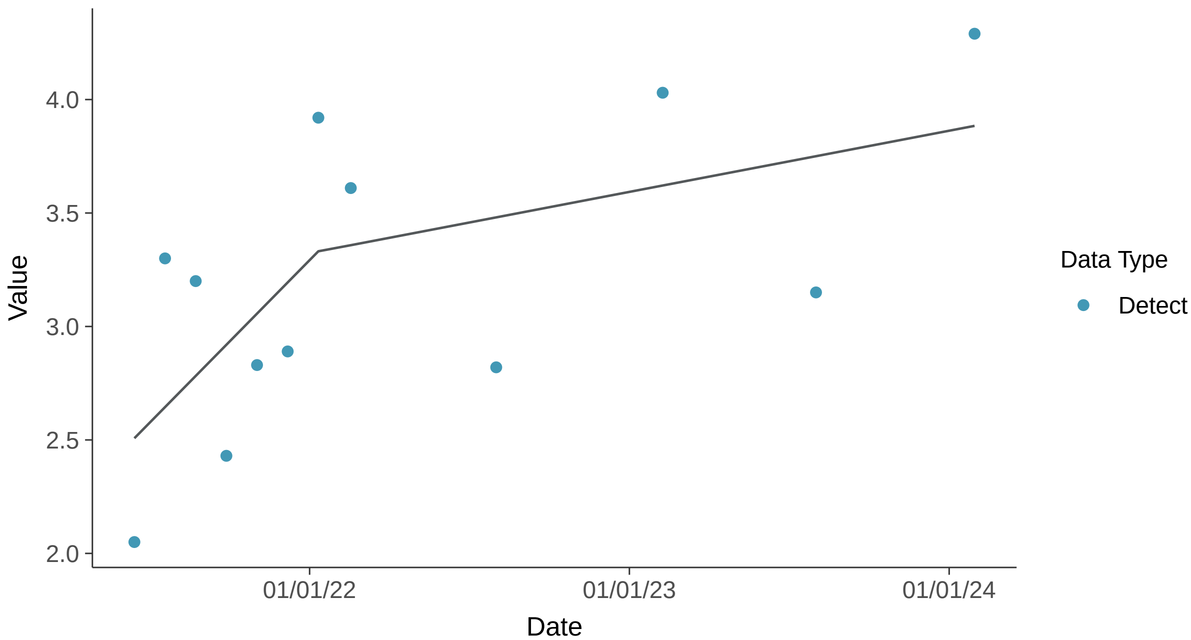



Gamma Q-Q plot
Dissolved Oxygen, MW-10 (mg/L)
Value
4.5
4.0
3.5
3.0
2.5
2.0
2.0
2.5
3.0
3.5
4.0
4.5
5.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Dissolved Oxygen, MW-10 (mg/L)
log(Value)
1.3
1.1
0.9
0.7
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

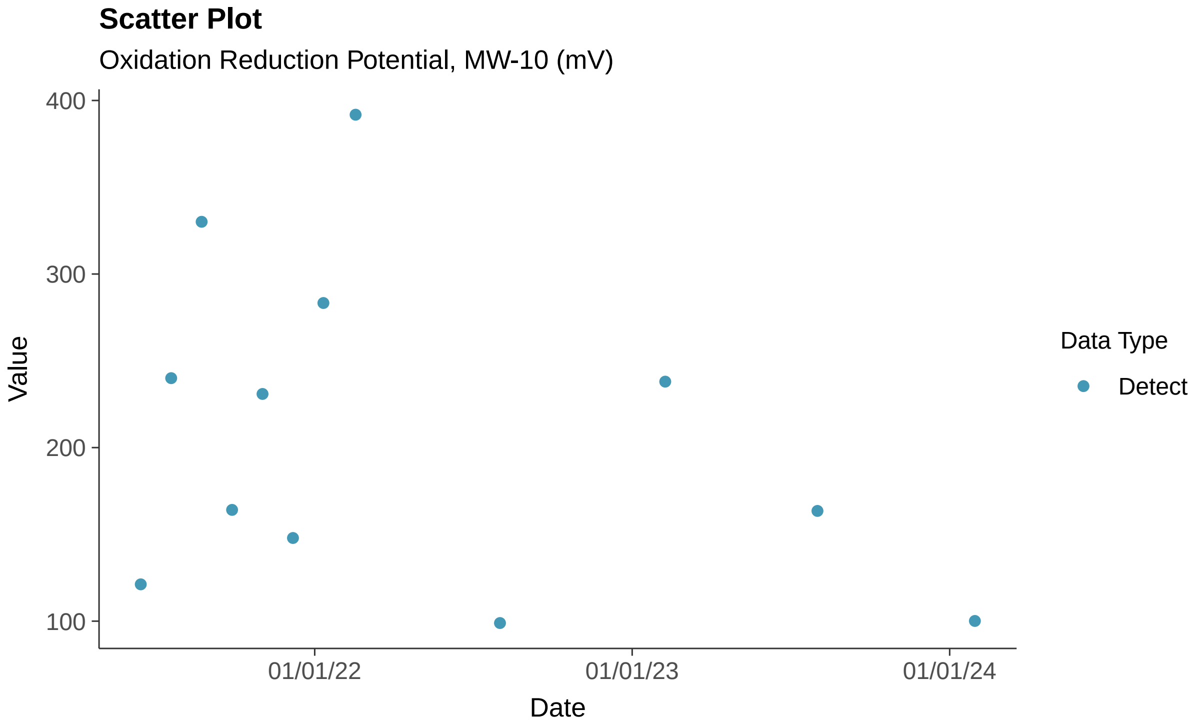
Trend Regression: Piecewise Linear-Linear

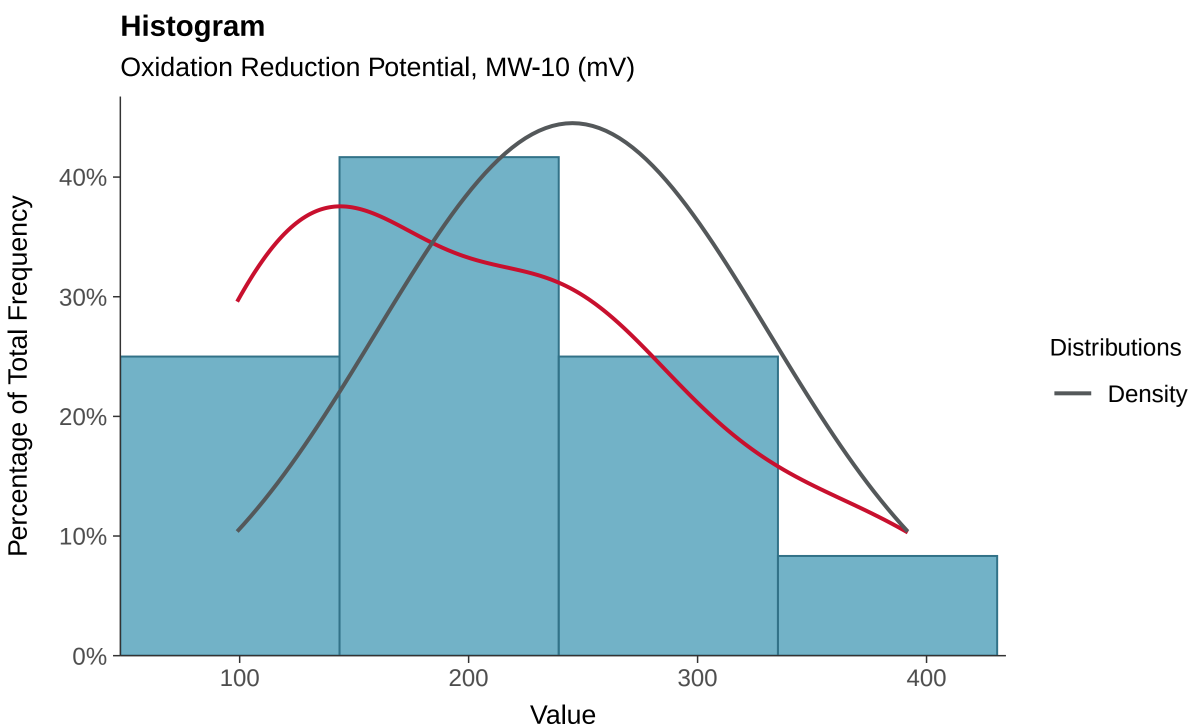
Dissolved Oxygen, MW-10 (mg/L)



Field Parameters: Oxidation Reduction Potential, MW-10

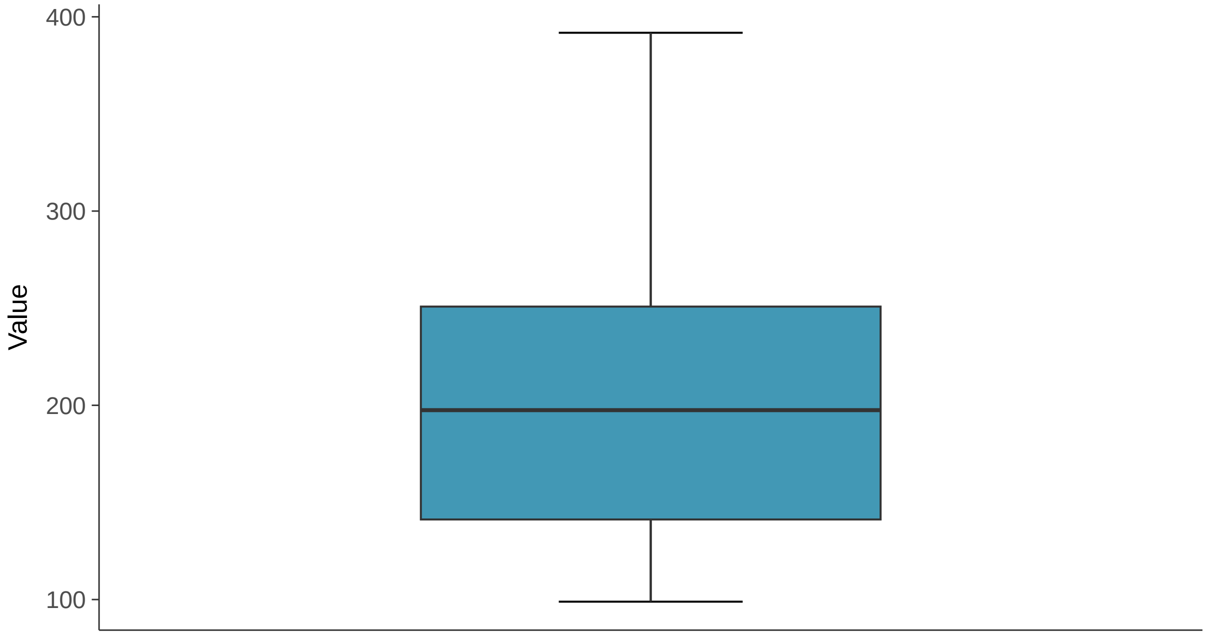
ID: 10_3_26





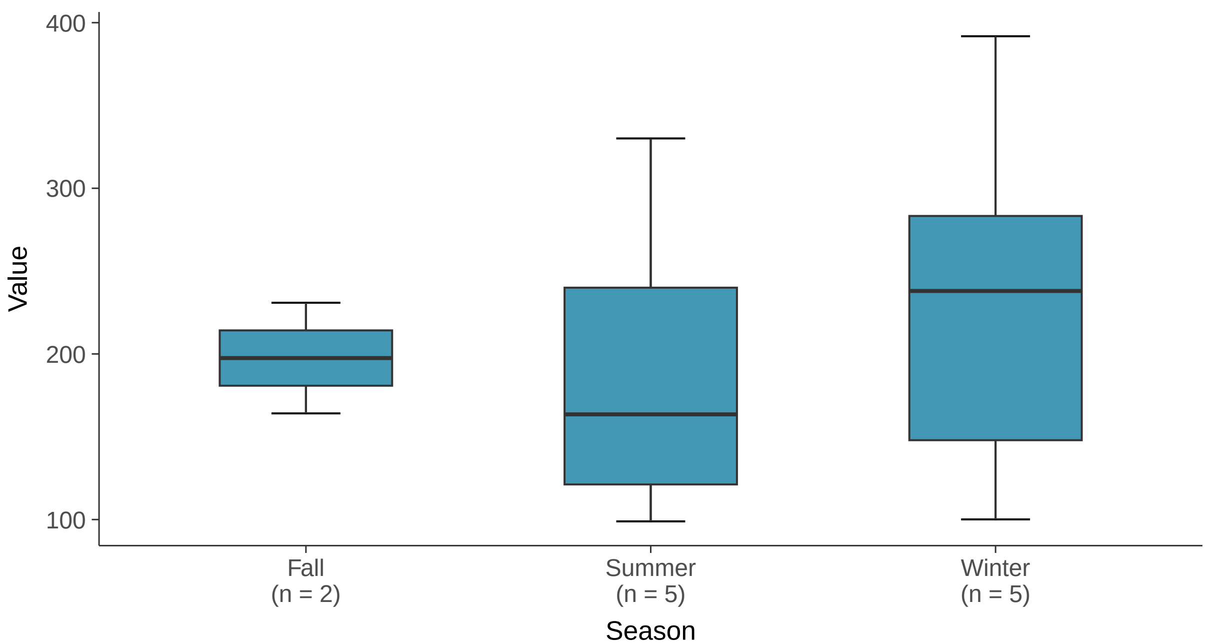
Boxplot

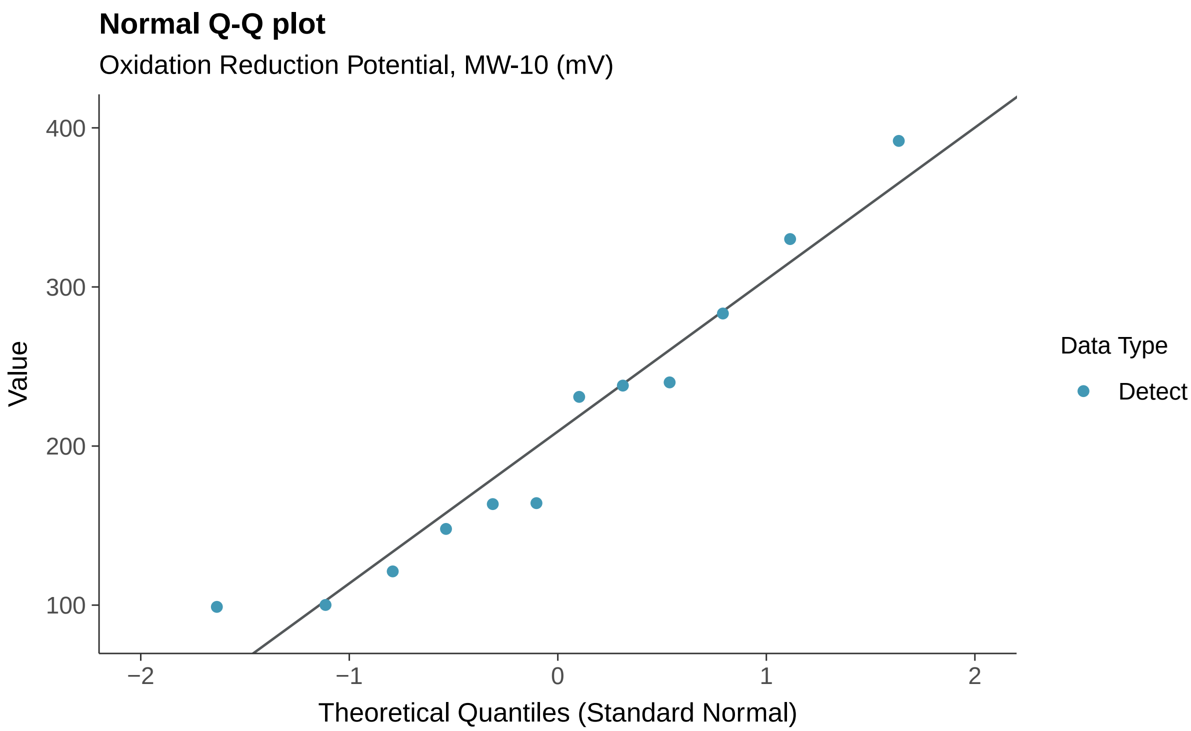
Oxidation Reduction Potential, MW-10 (mV)

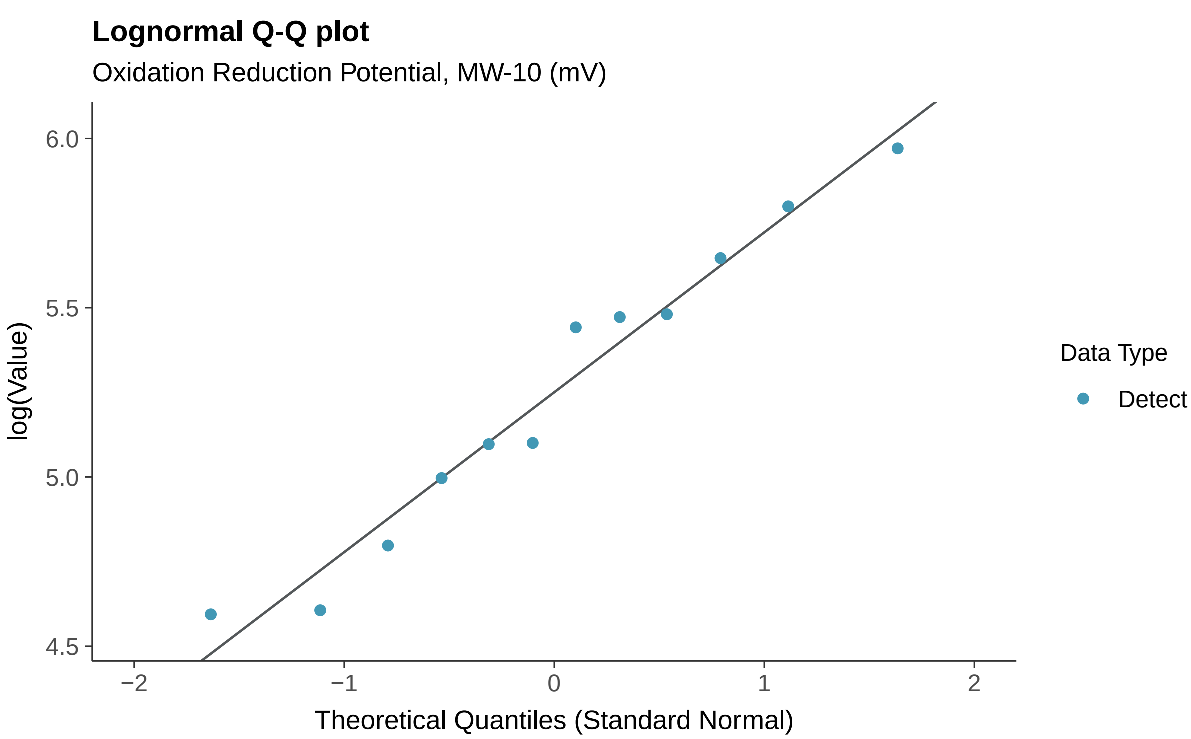


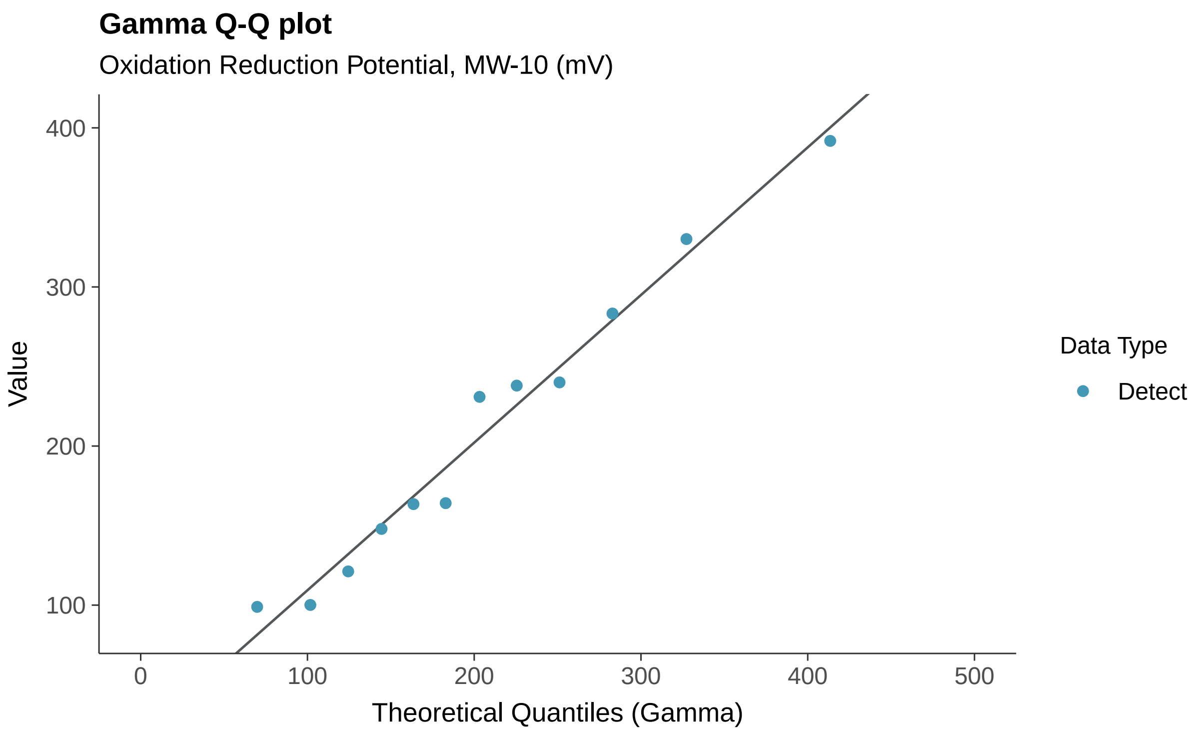
Boxplot by Season

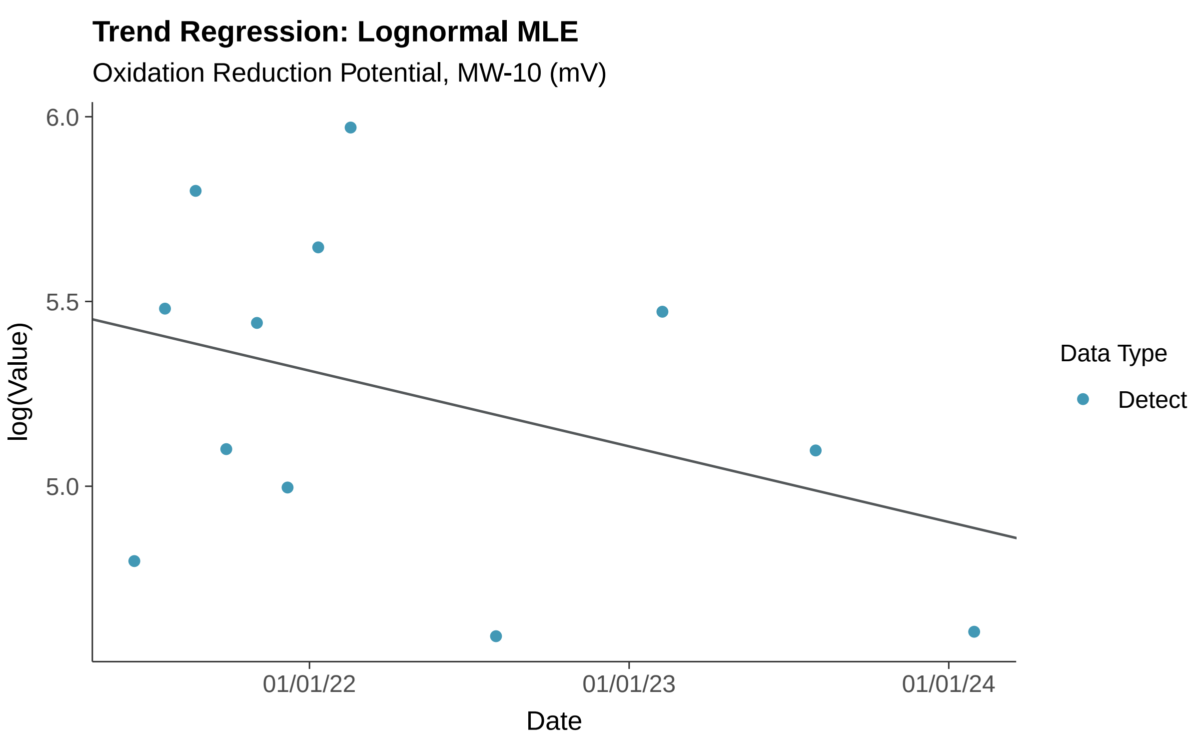
Oxidation Reduction Potential, MW-10 (mV)




Normal Q-Q plot
Oxidation Reduction Potential, MW-10 (mV)
Value
400
300
200
100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

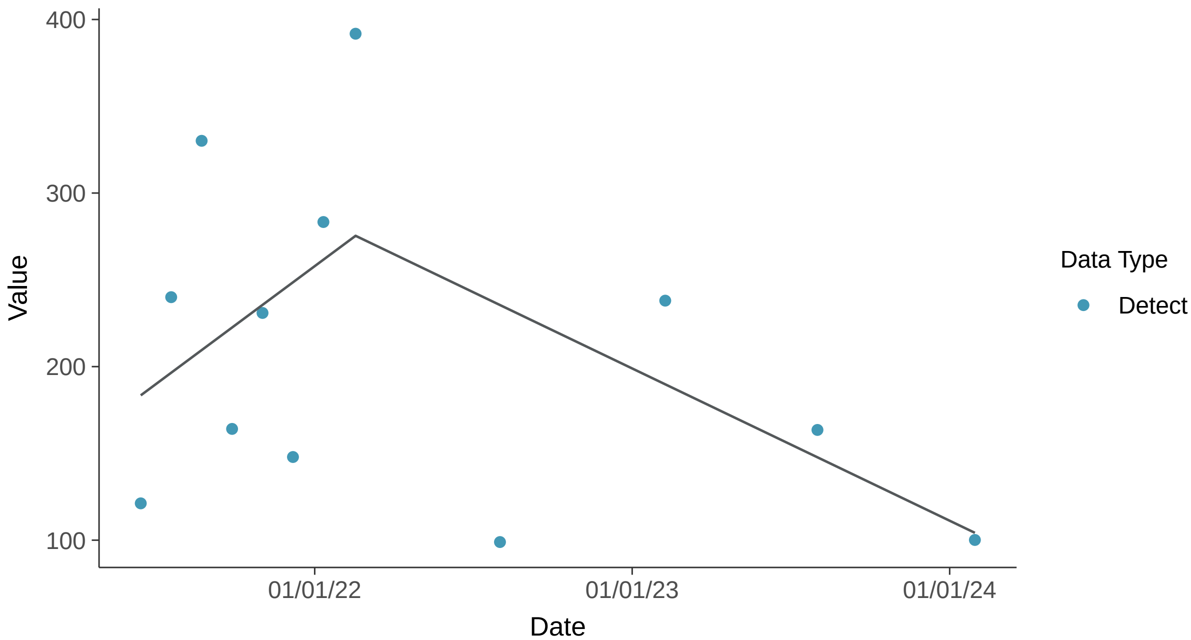

Lognormal Q-Q plot
Oxidation Reduction Potential, MW-10 (mV)
log(Value)
6.0
5.5
5.0
4.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Oxidation Reduction Potential, MW-10 (mV)
Value
400
300
200
100
0
100
200
300
400
500
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Oxidation Reduction Potential, MW-10 (mV)
log(Value)
6.0
5.5
5.0
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

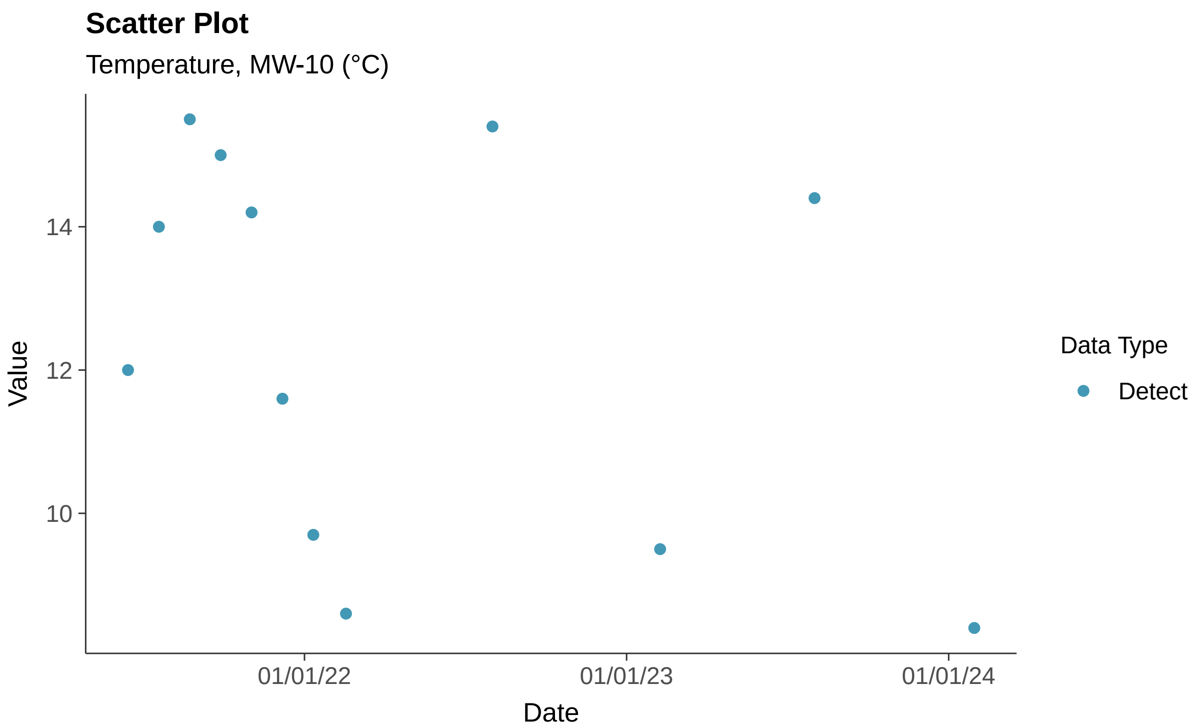
Trend Regression: Piecewise Linear-Linear

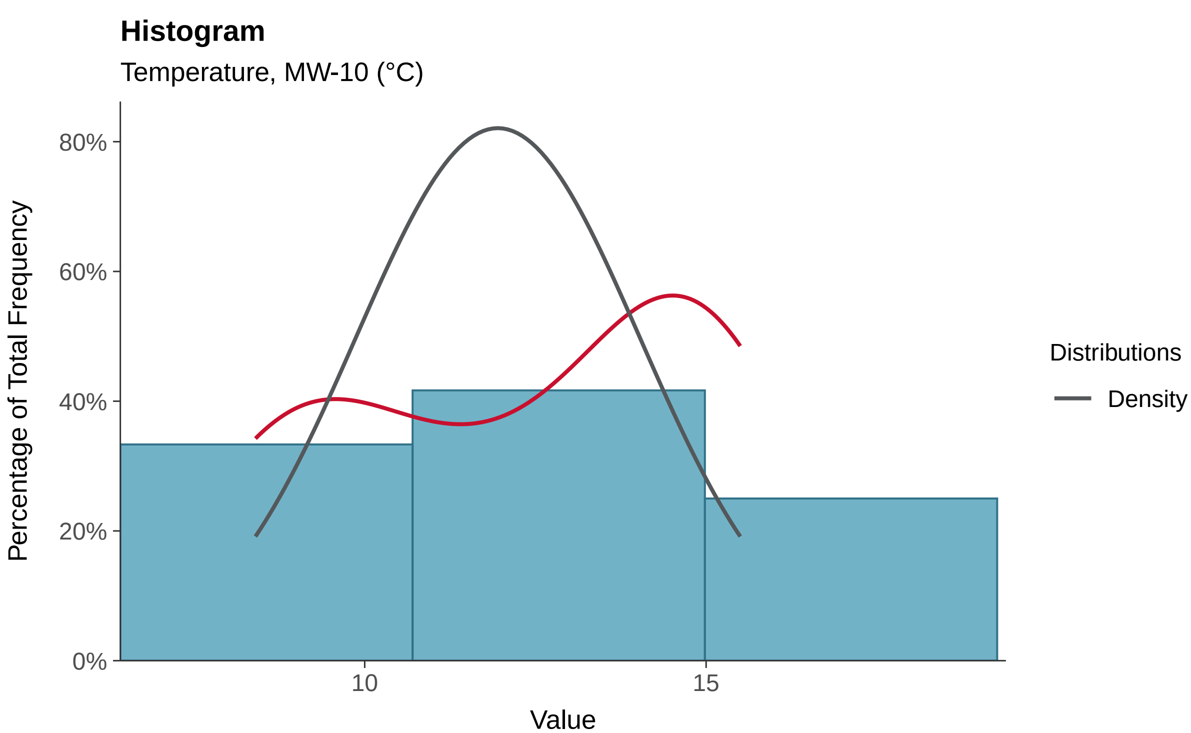
Oxidation Reduction Potential, MW-10 (mV)



Field Parameters: Temperature, MW-10

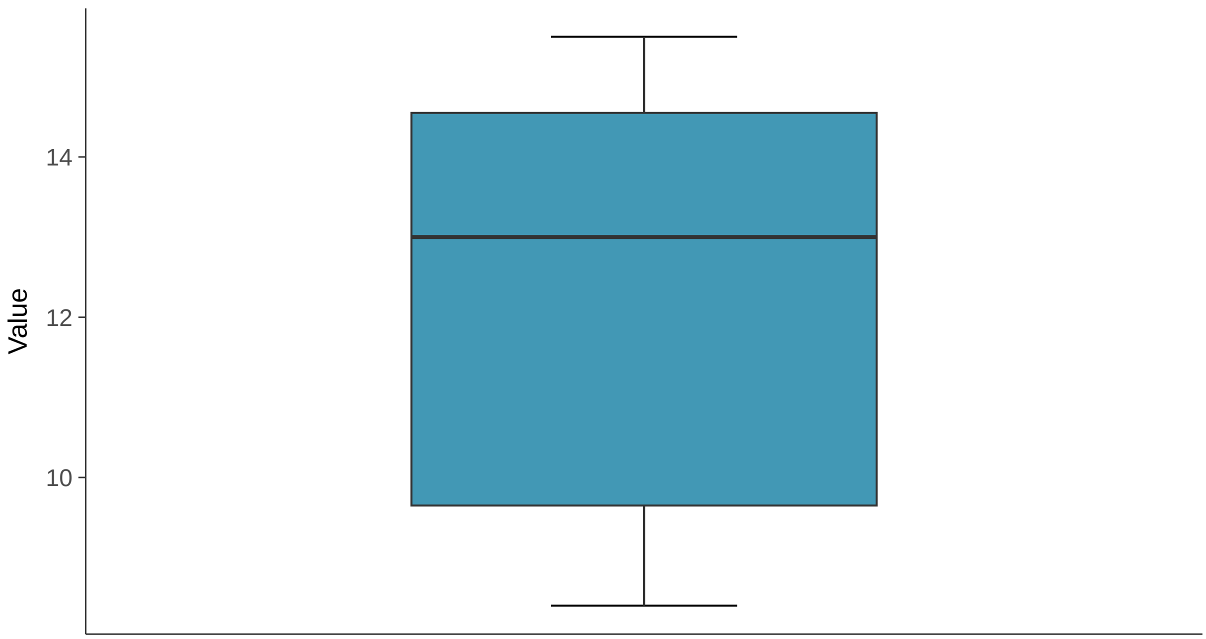
ID: 10_3_27





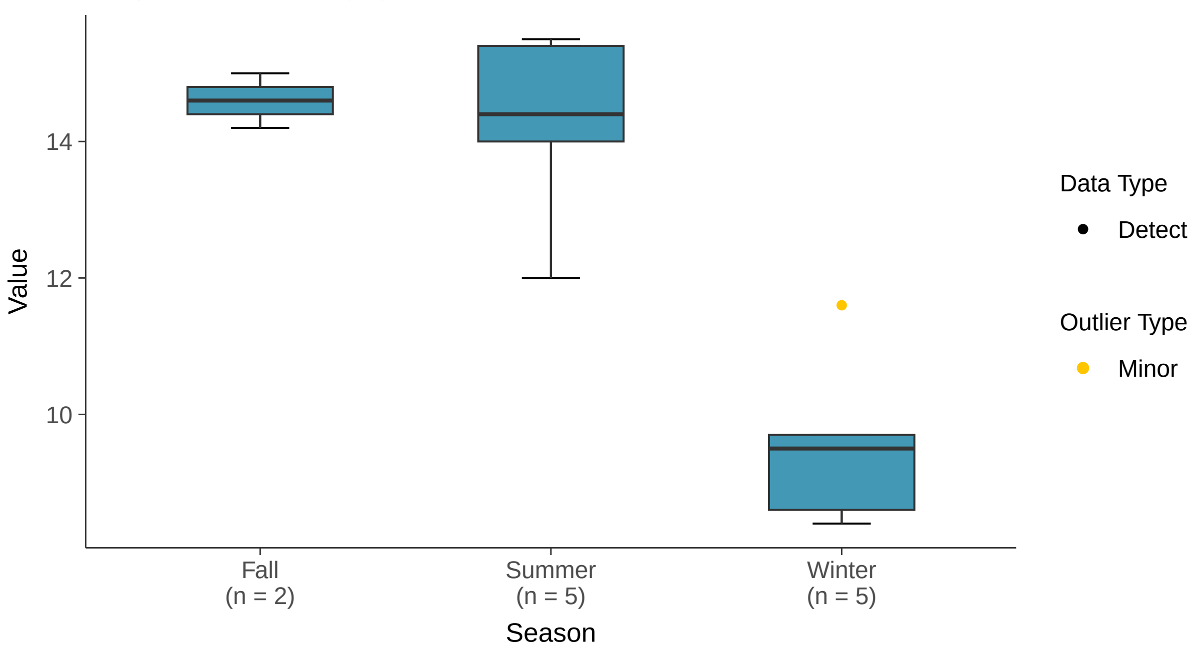
Boxplot

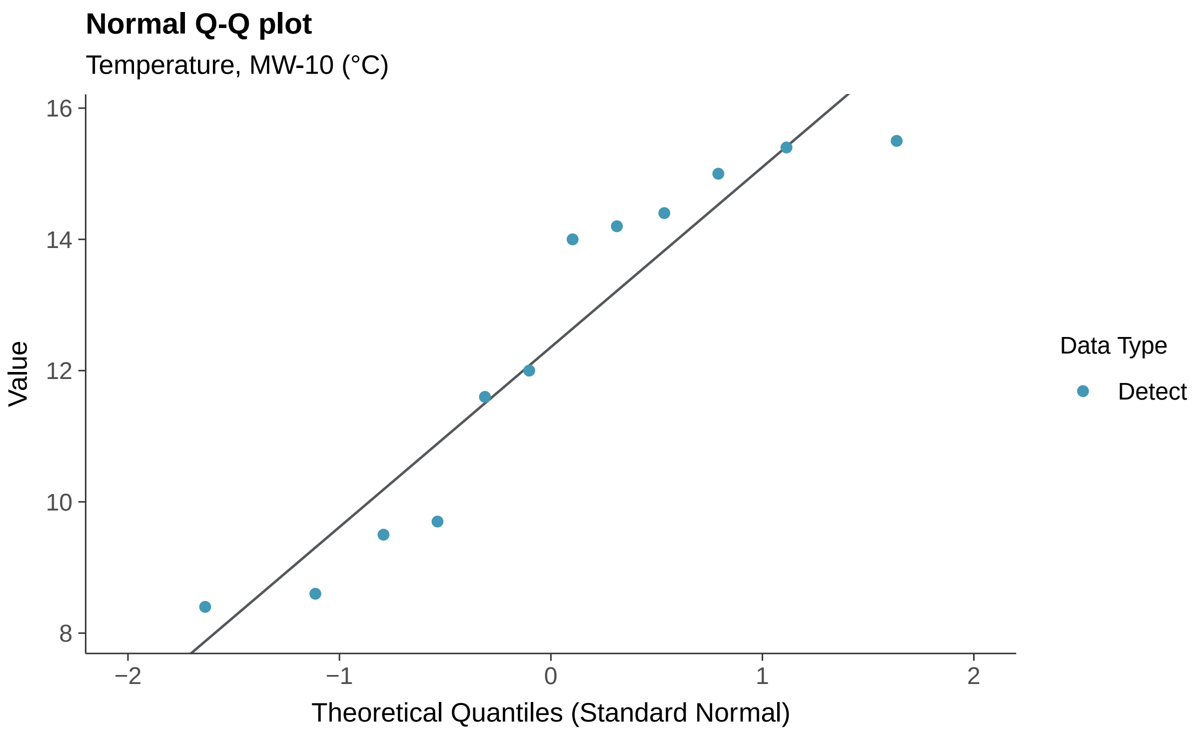
Temperature, MW-10 (°C)

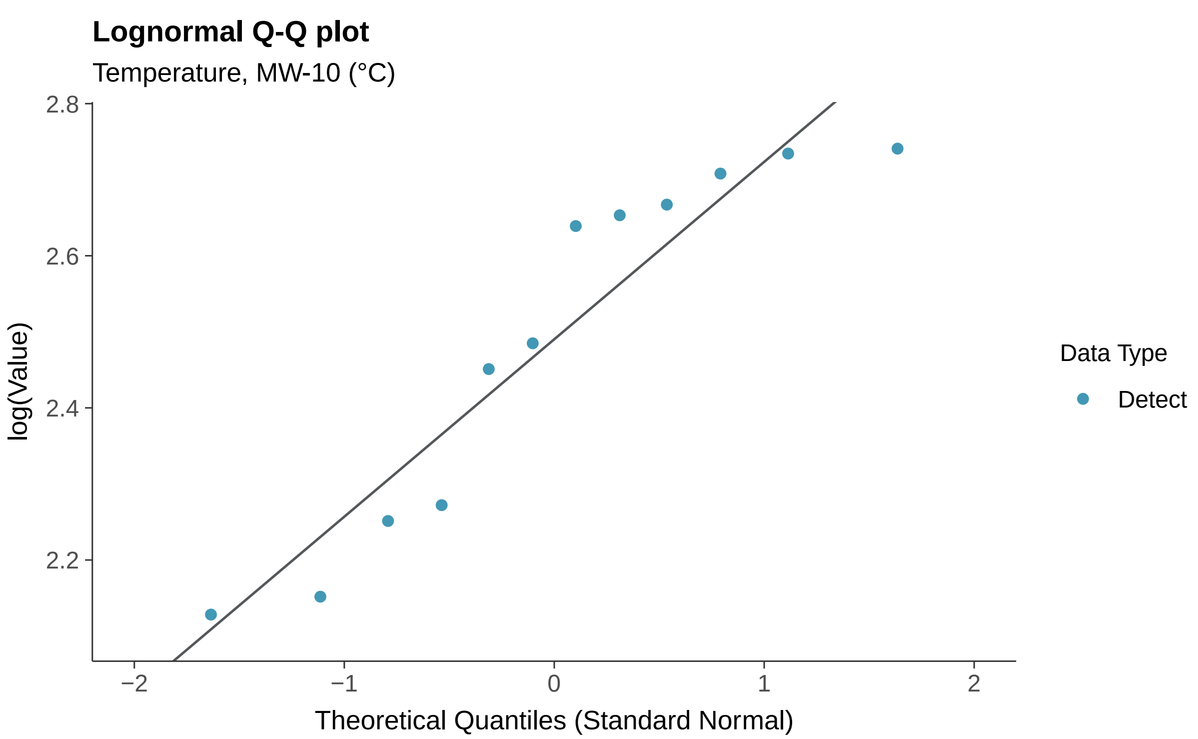


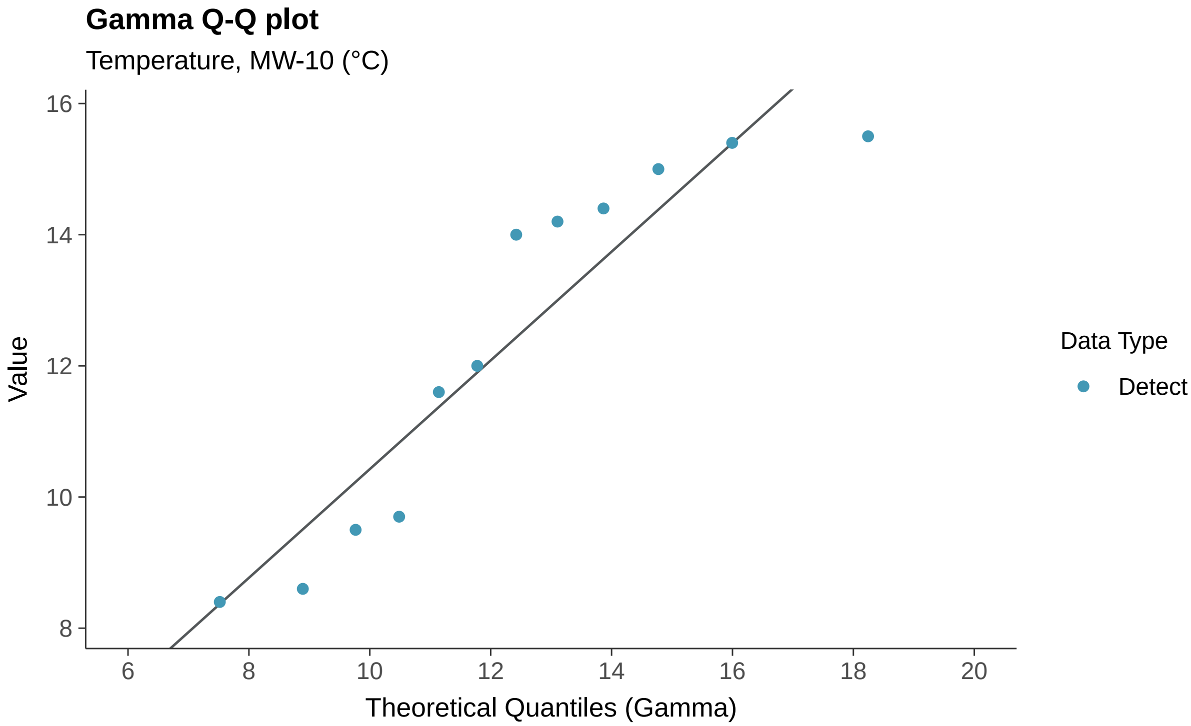
Boxplot by Season

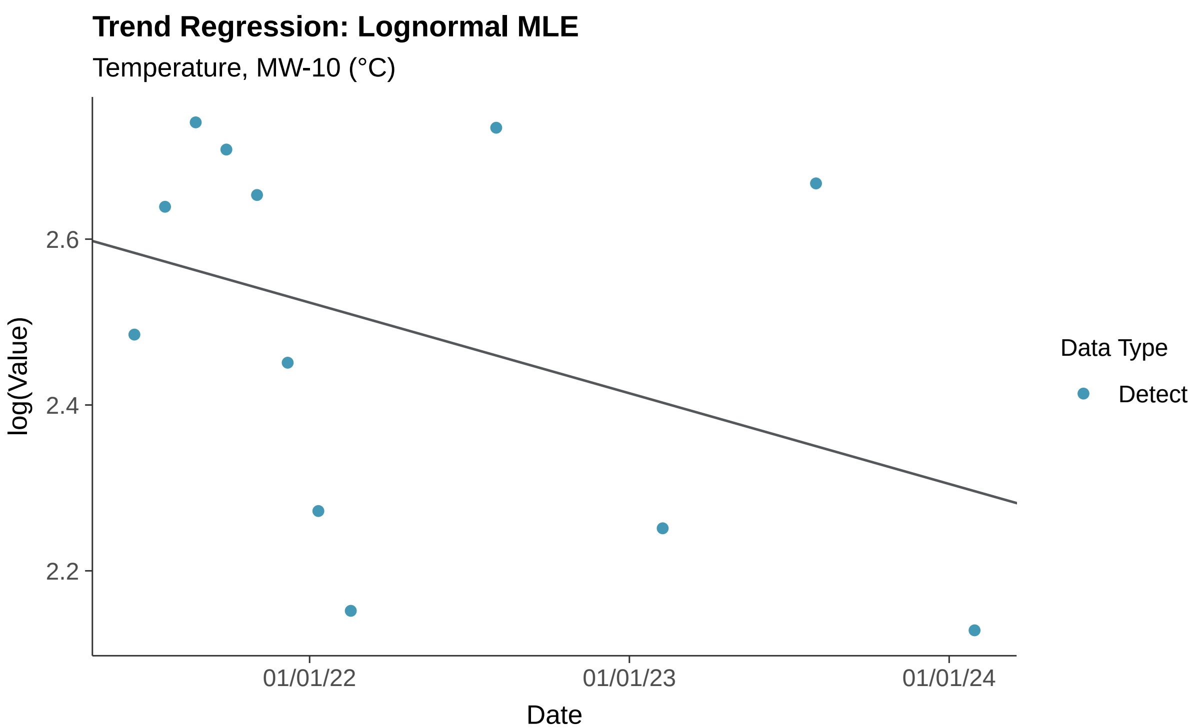
Temperature, MW-10 (°C)




Normal Q-Q plot
Temperature, MW-10 (°C)
Value
16
14
12
10
8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

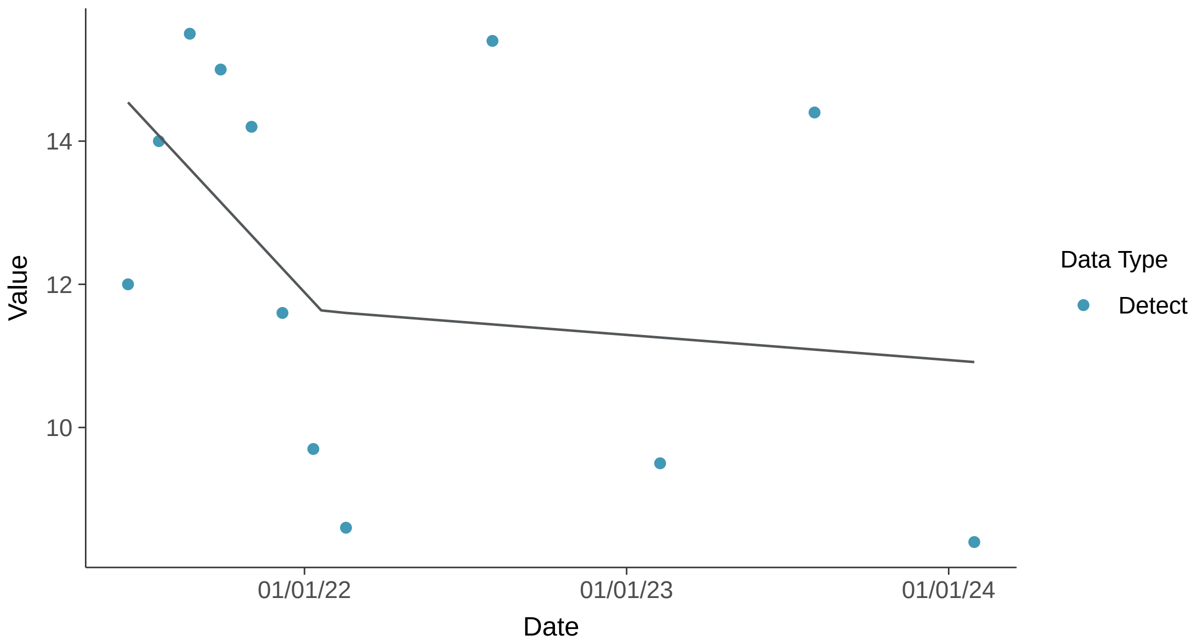

Lognormal Q-Q plot
Temperature, MW-10 (°C)
log(Value)
2.8
2.6
2.4
2.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Temperature, MW-10 (°C)
Value
16
14
12
10
8
6
8
10
12
14
16
18
20
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Temperature, MW-10 (°C)
log(Value)
2.6
2.4
2.2
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

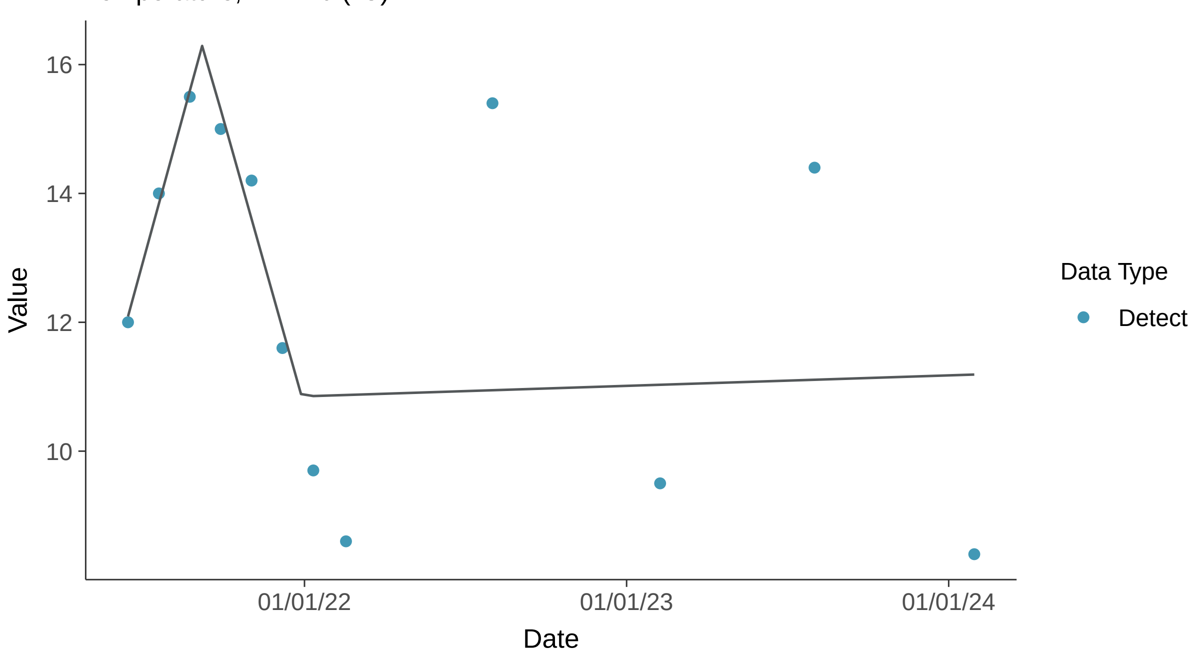
Trend Regression: Piecewise Linear-Linear

Temperature, MW-10 (°C)



Trend Regression: Piecewise Linear-Linear-Linear

Temperature, MW-10 (°C)

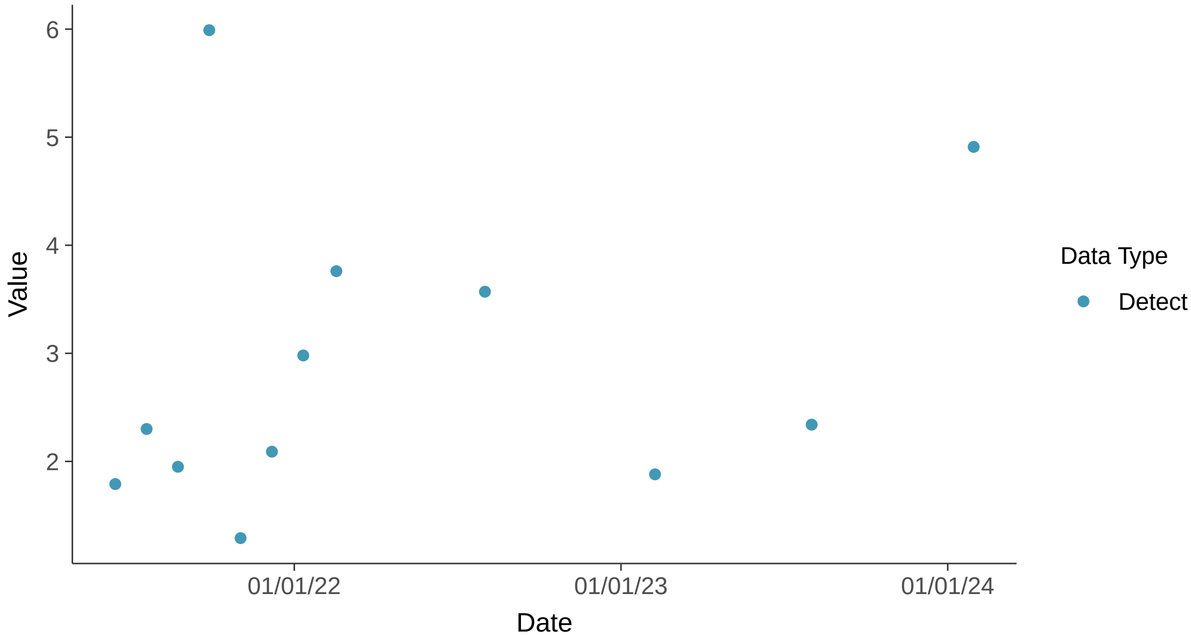


Field Parameters: Turbidity, MW-10

ID: 10_3_28

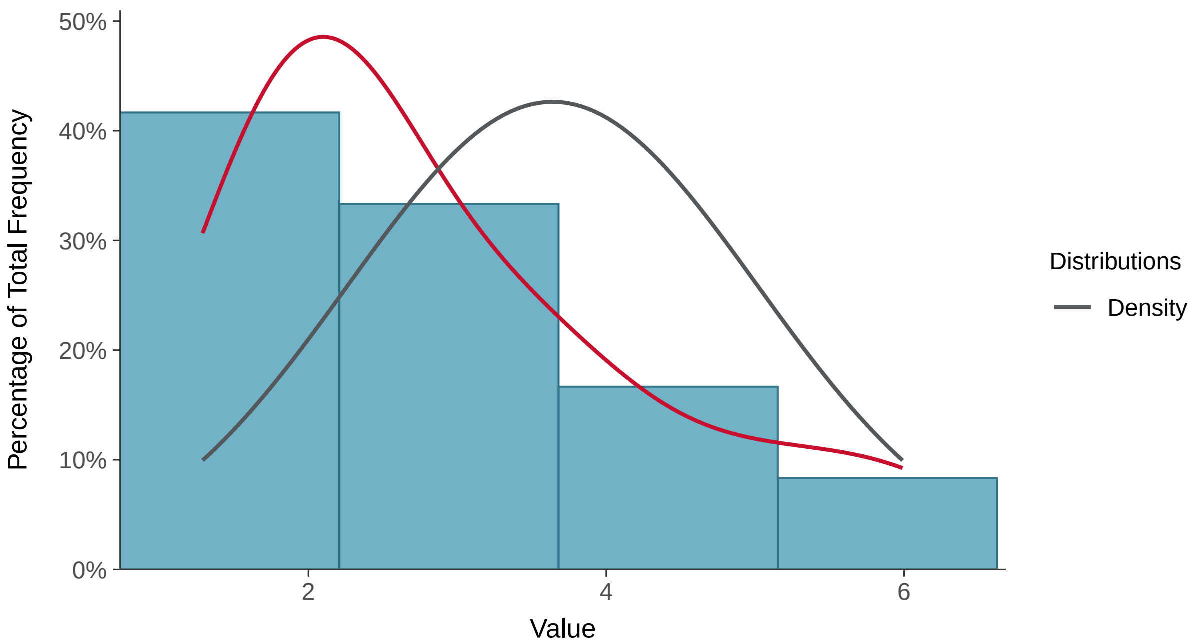
Scatter Plot

Turbidity, MW-10 (NTU)



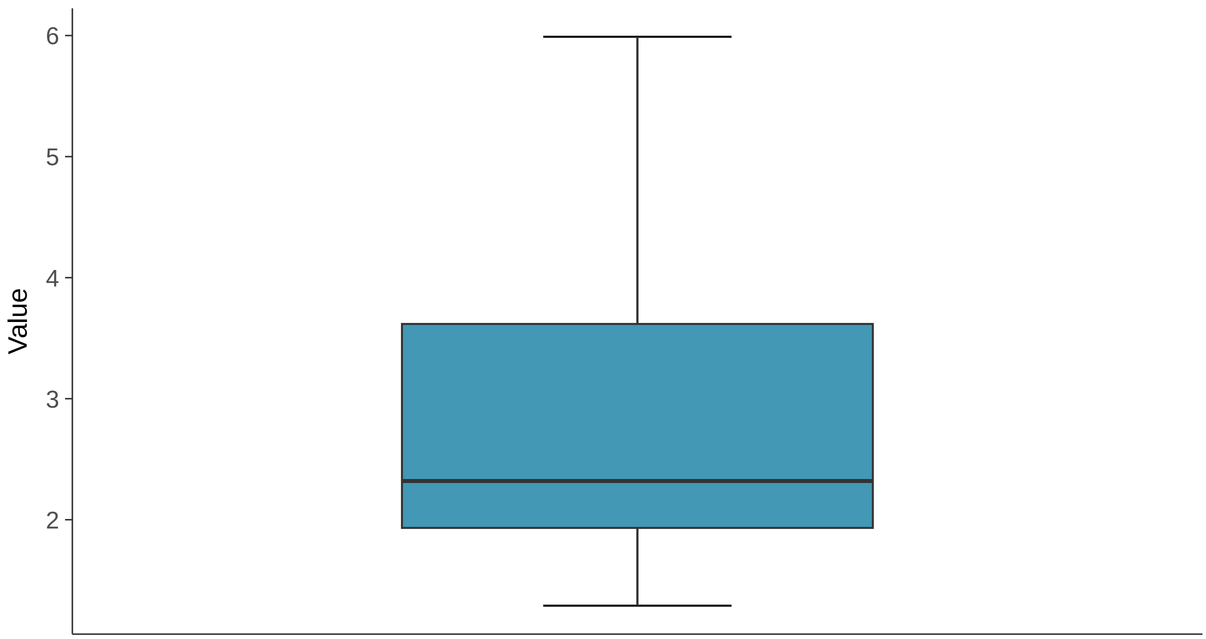
Histogram

Turbidity, MW-10 (NTU)



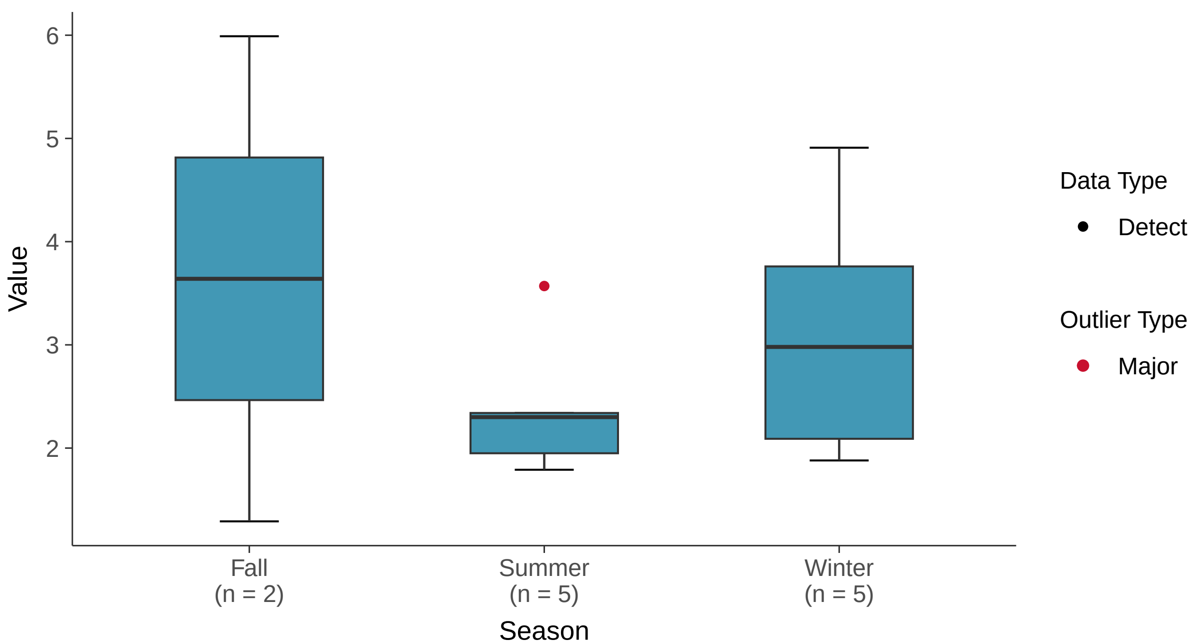
Boxplot

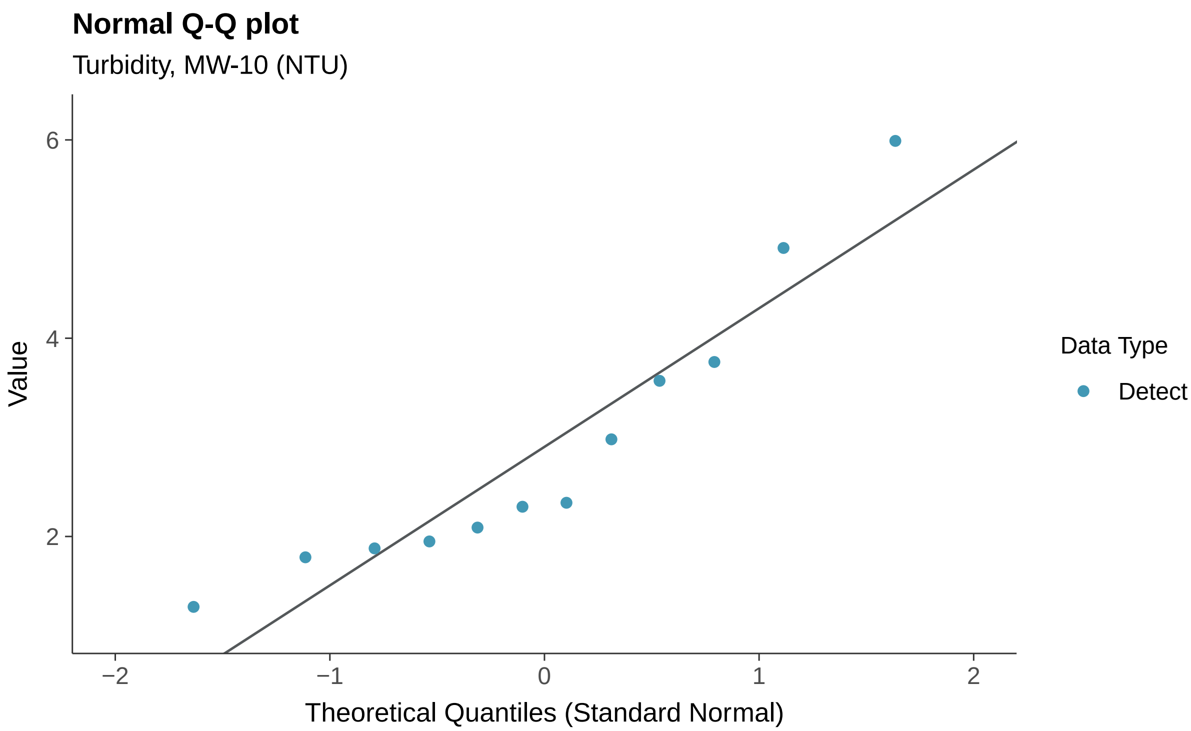
Turbidity, MW-10 (NTU)

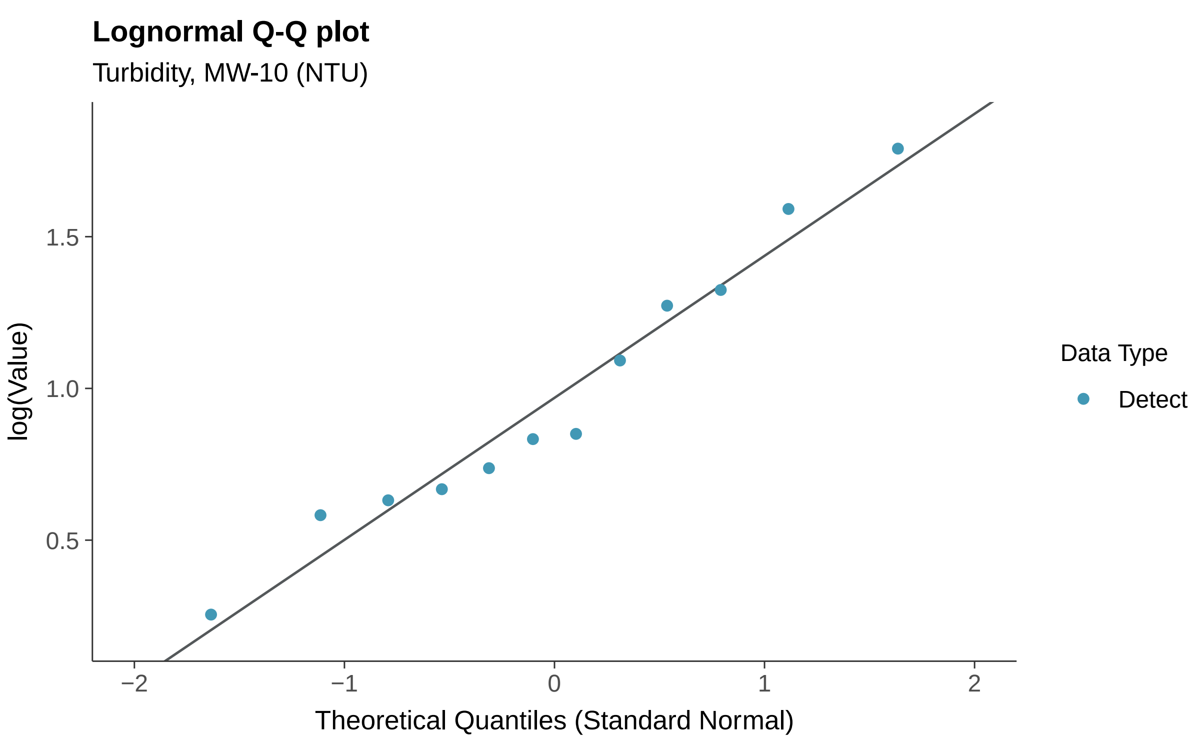


Boxplot by Season

Turbidity, MW-10 (NTU)

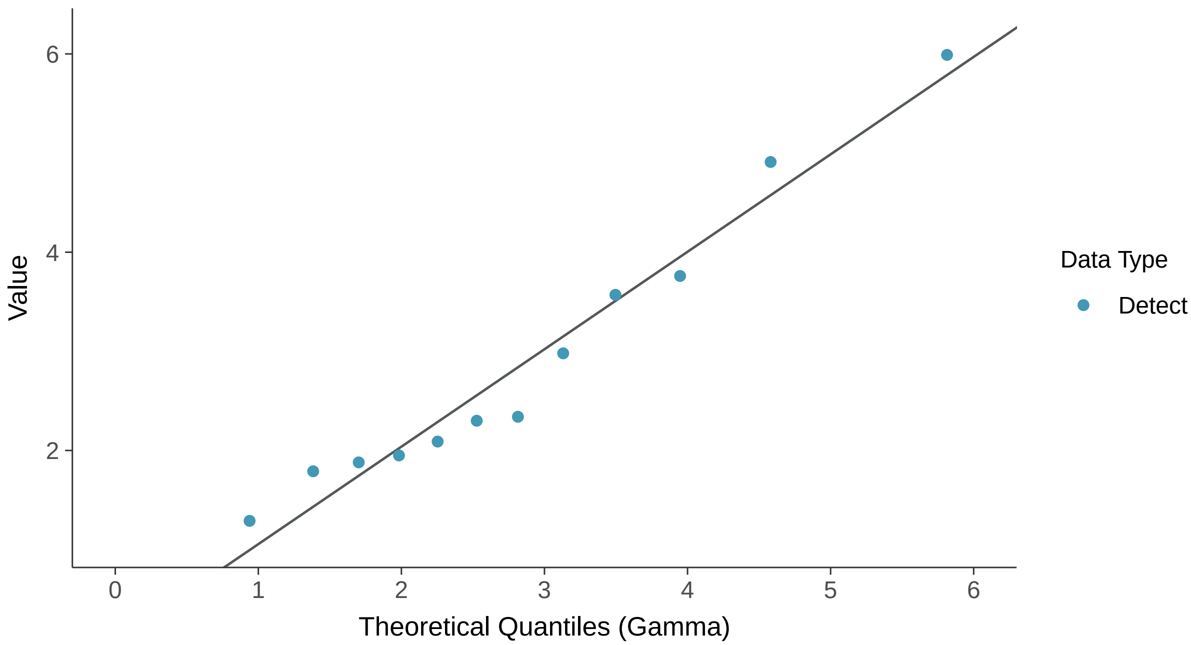



Normal Q-Q plot
Turbidity, MW-10 (NTU)
Value
6
4
2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Turbidity, MW-10 (NTU)
log(Value)
1.5
1.0
0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

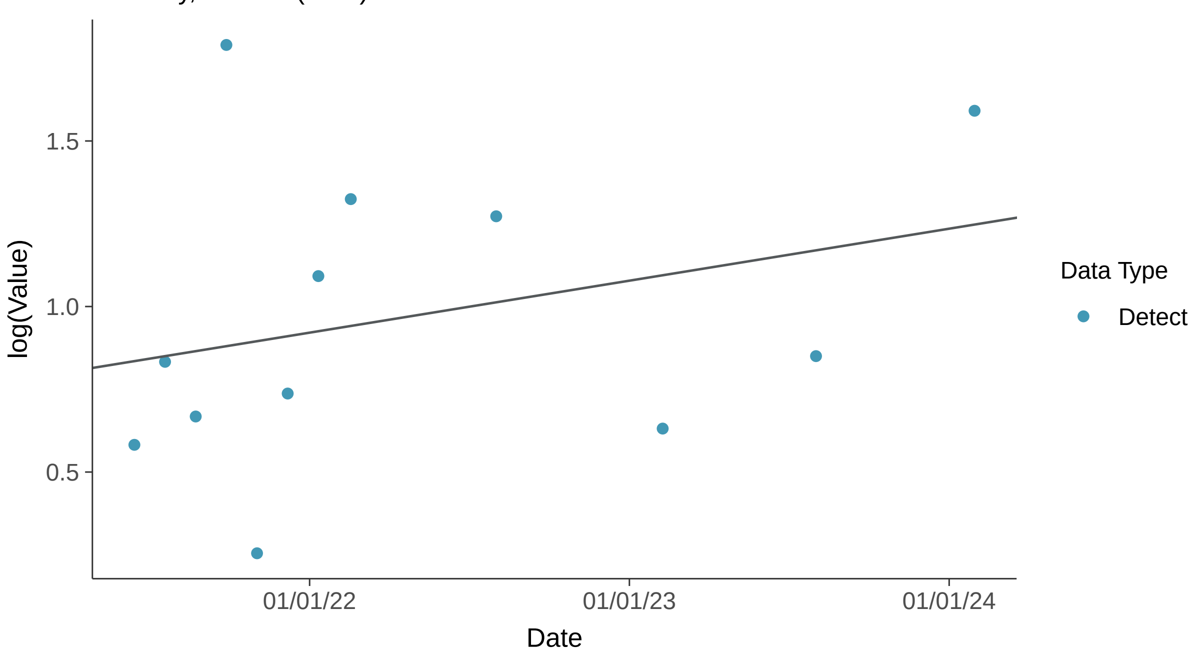
Gamma Q-Q plot

Turbidity, MW-10 (NTU)



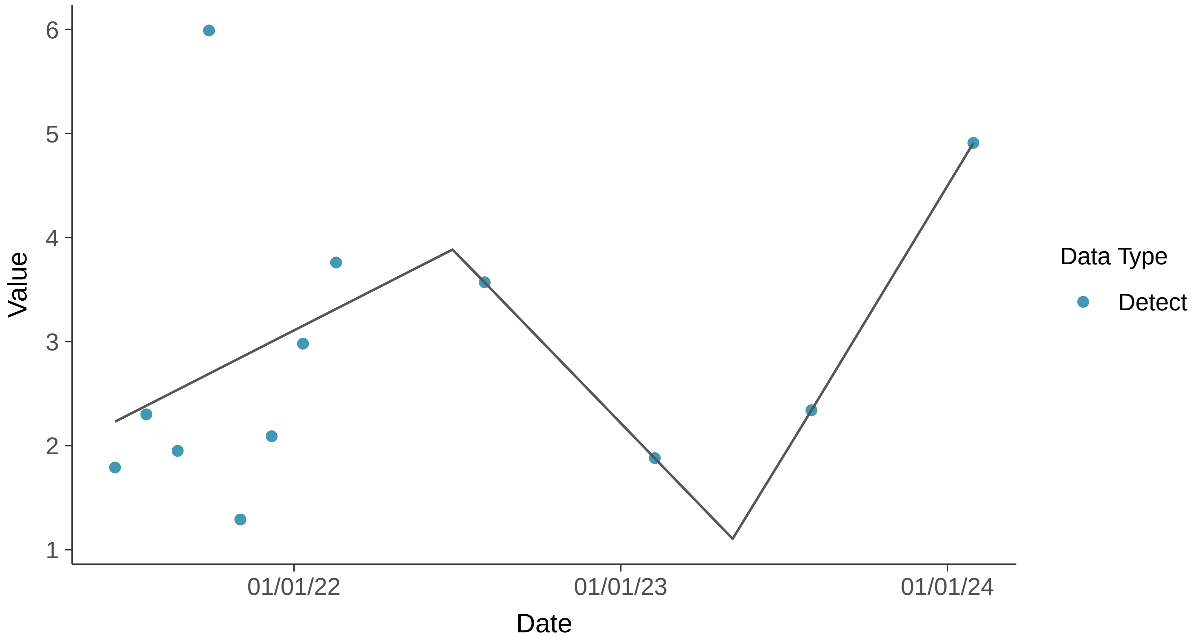
Trend Regression: Lognormal MLE

Turbidity, MW-10 (NTU)



Trend Regression: Piecewise Linear-Linear-Linear

Turbidity, MW-10 (NTU)

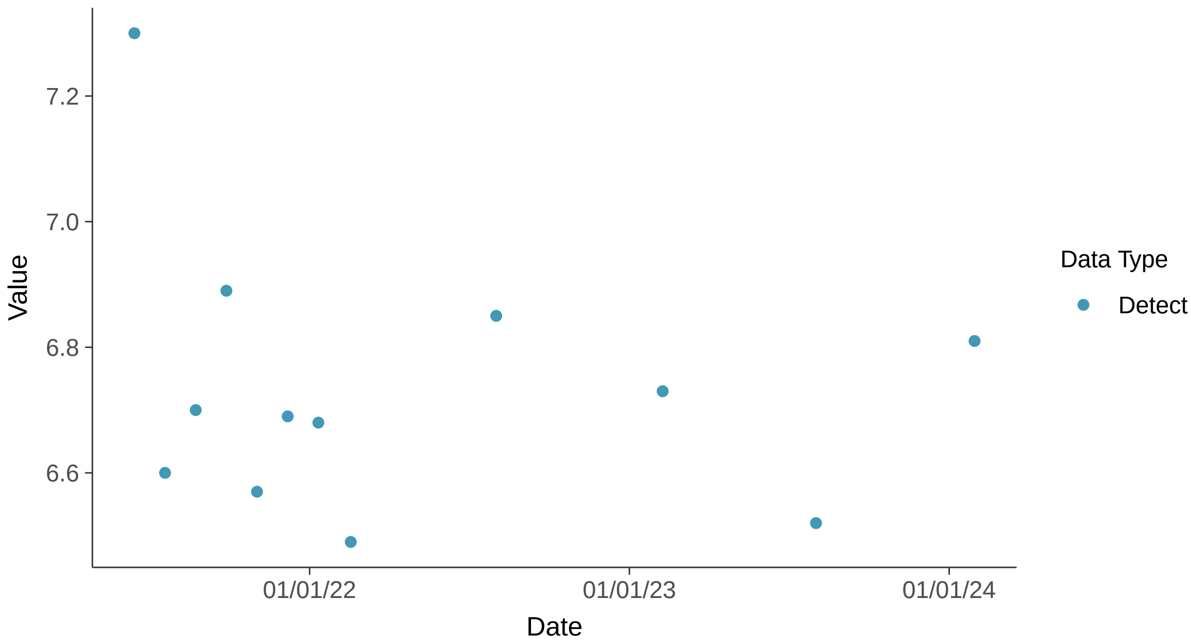


Field Parameters: pH, MW-10

ID: 10_3_29

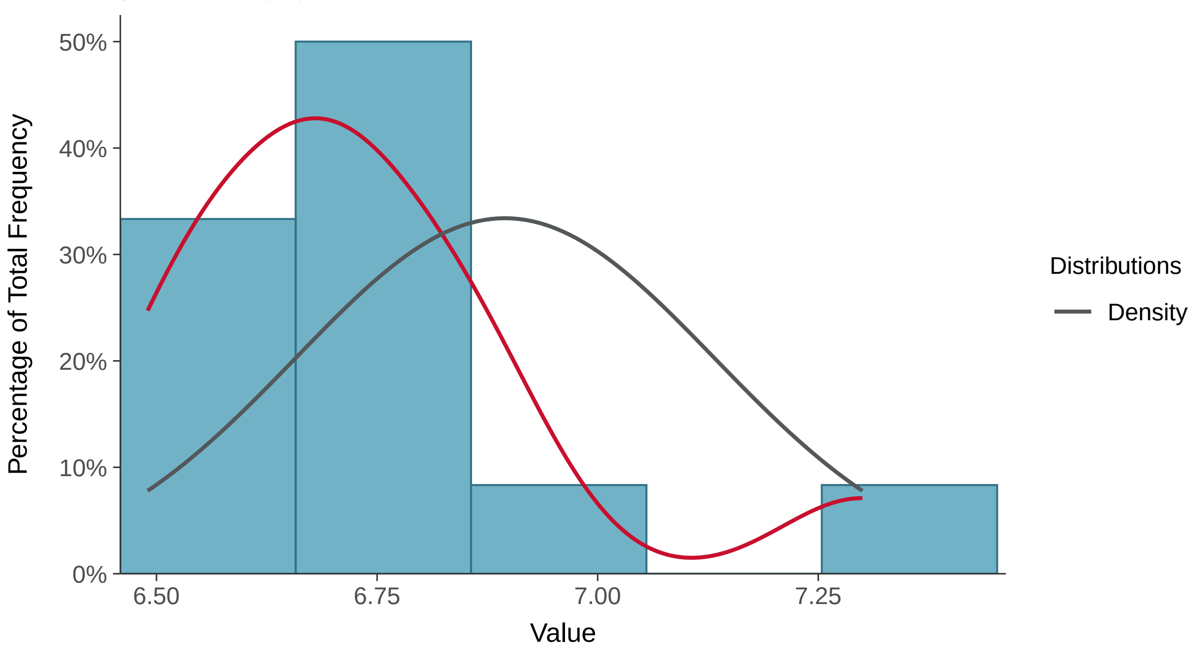
Scatter Plot

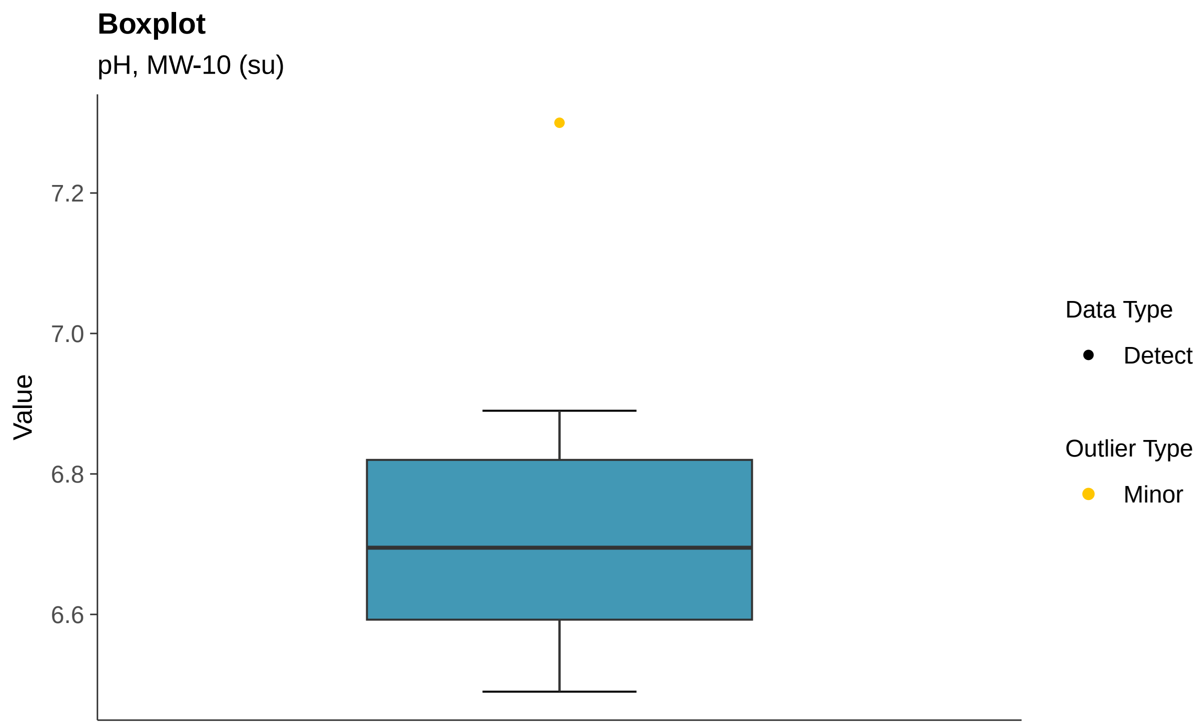
pH, MW-10 (su)

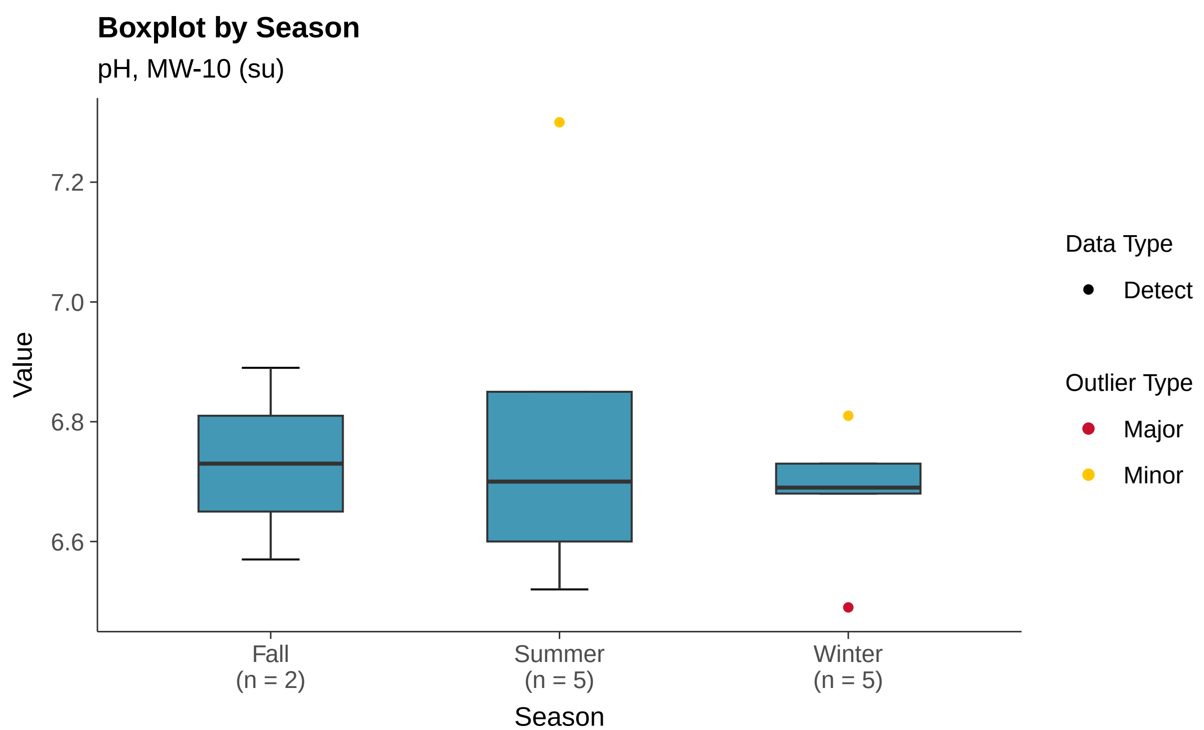


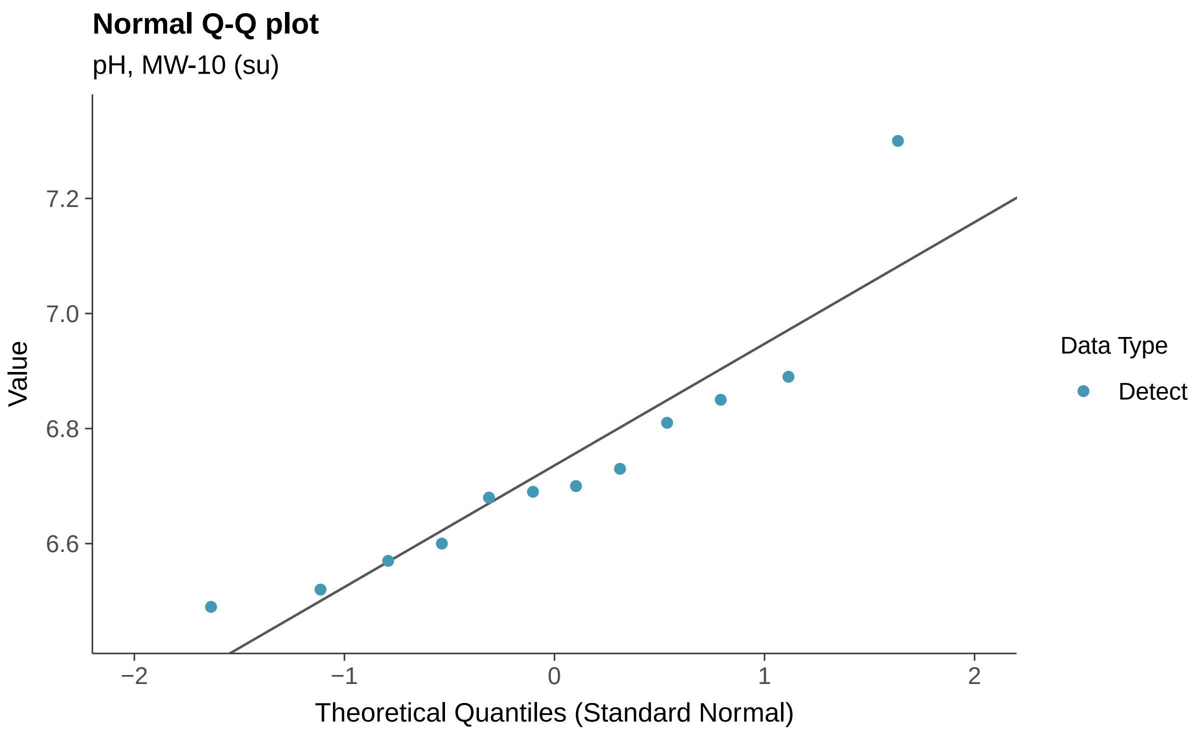
Histogram

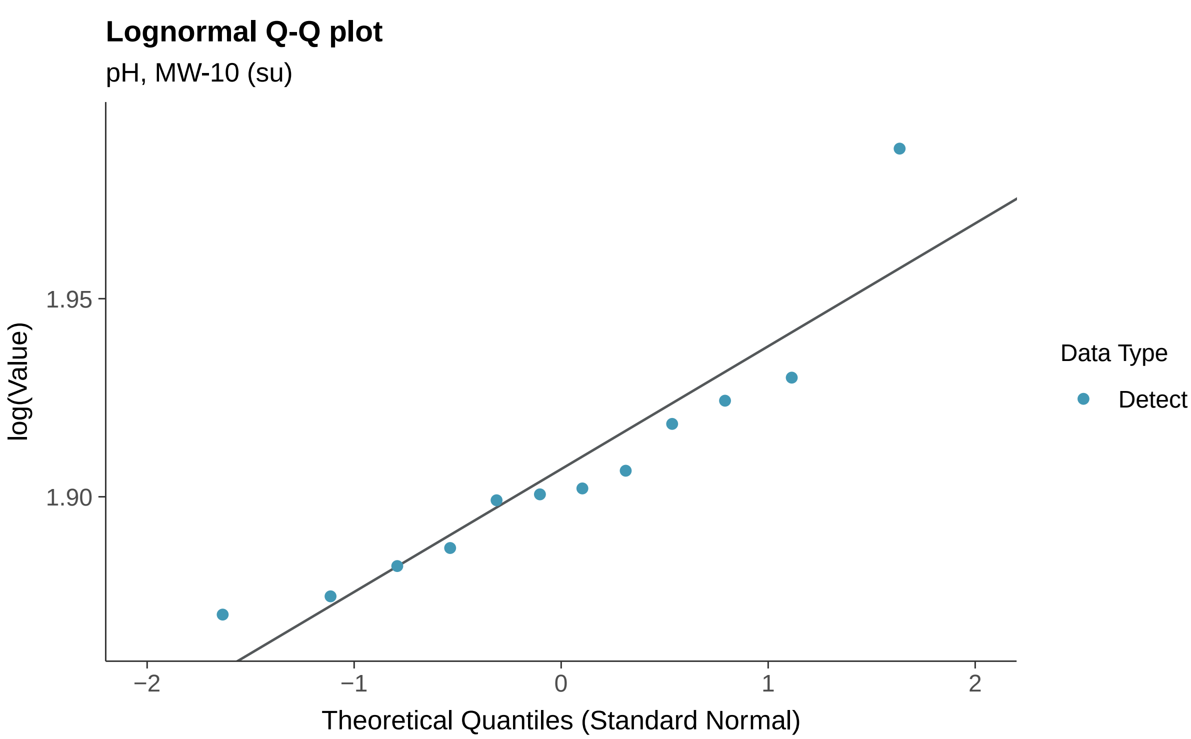
pH, MW-10 (su)

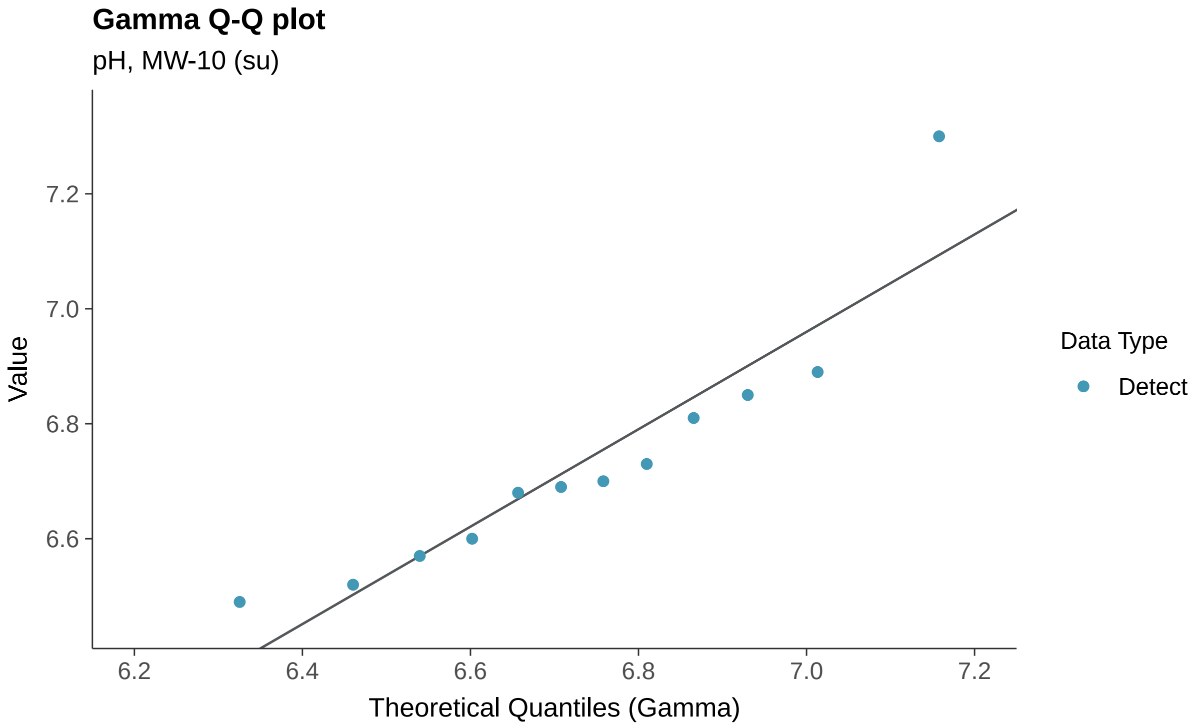


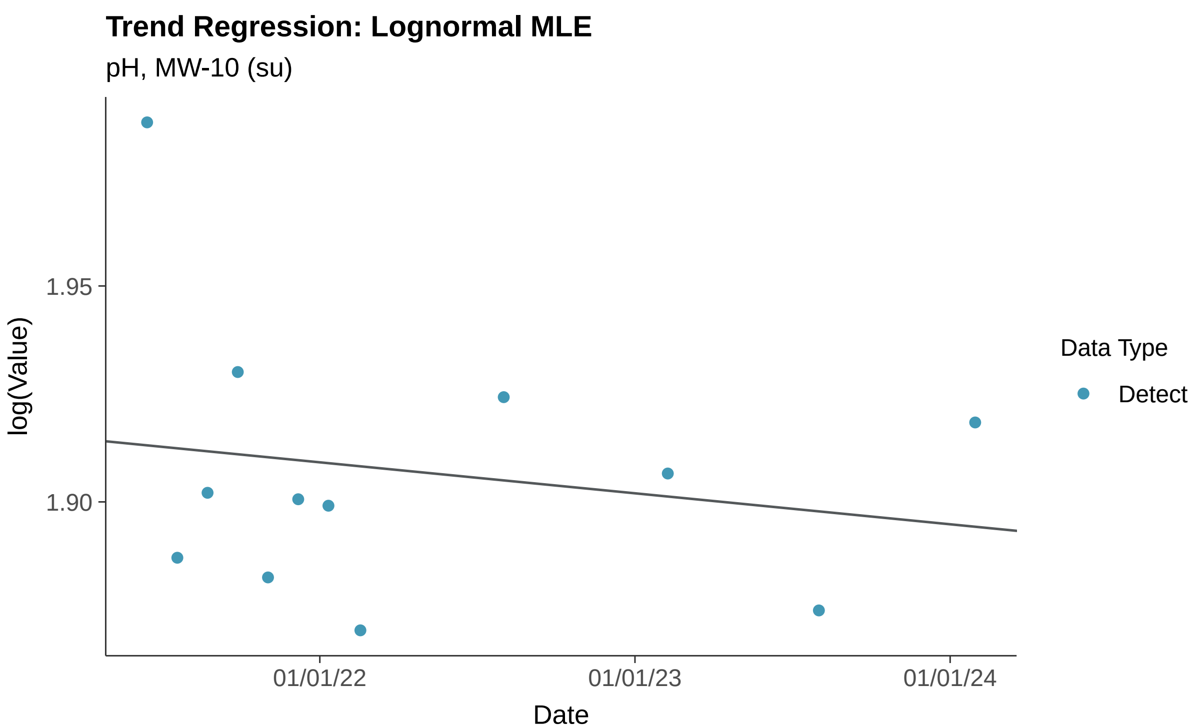

Boxplot
pH, MW-10 (su)
Value
7.2
7.0
6.8
6.6
Data Type
Detect
Outlier Type
Minor


Boxplot by Season
pH, MW-10 (su)
Value
7.2
7.0
6.8
6.6
Fall
(n = 2)
Summer
(n = 5)
Winter
(n = 5)
Season
Data Type
Detect
Outlier Type
Major
Minor


Normal Q-Q plot
pH, MW-10 (su)
Value
7.2
7.0
6.8
6.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

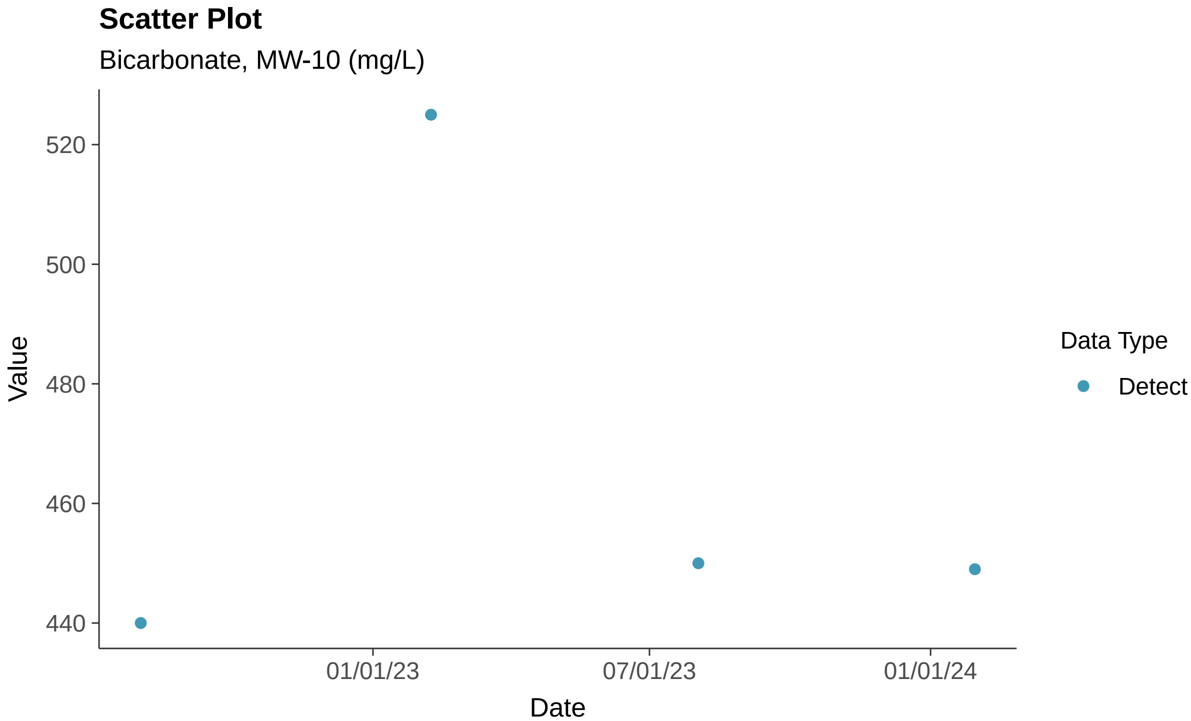

Lognormal Q-Q plot
pH, MW-10 (su)
log(Value)
1.95
1.90
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

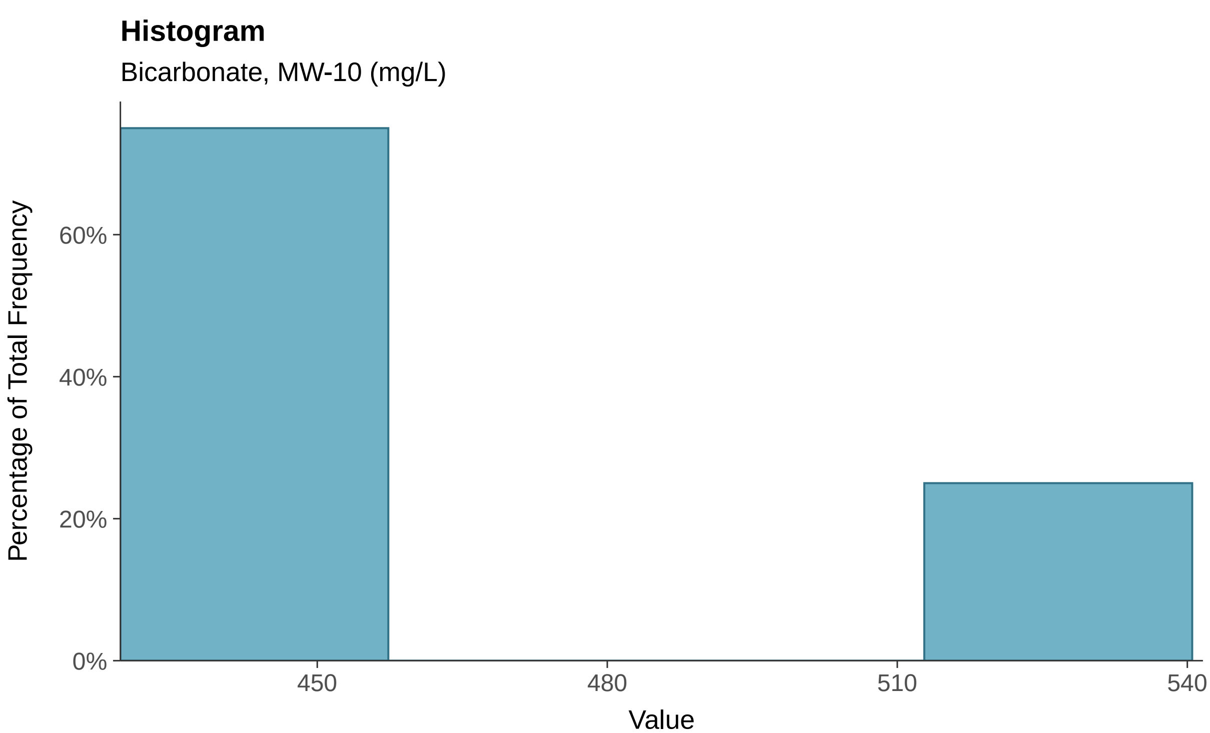

Gamma Q-Q plot
pH, MW-10 (su)
Value
7.2
7.0
6.8
6.6
6.2
6.4
6.6
6.8
7.0
7.2
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, MW-10 (su)
log(Value)
1.95
1.90
01/01/22
01/01/23
01/01/24
Date
Data Type
Detect

Other: Bicarbonate, MW-10

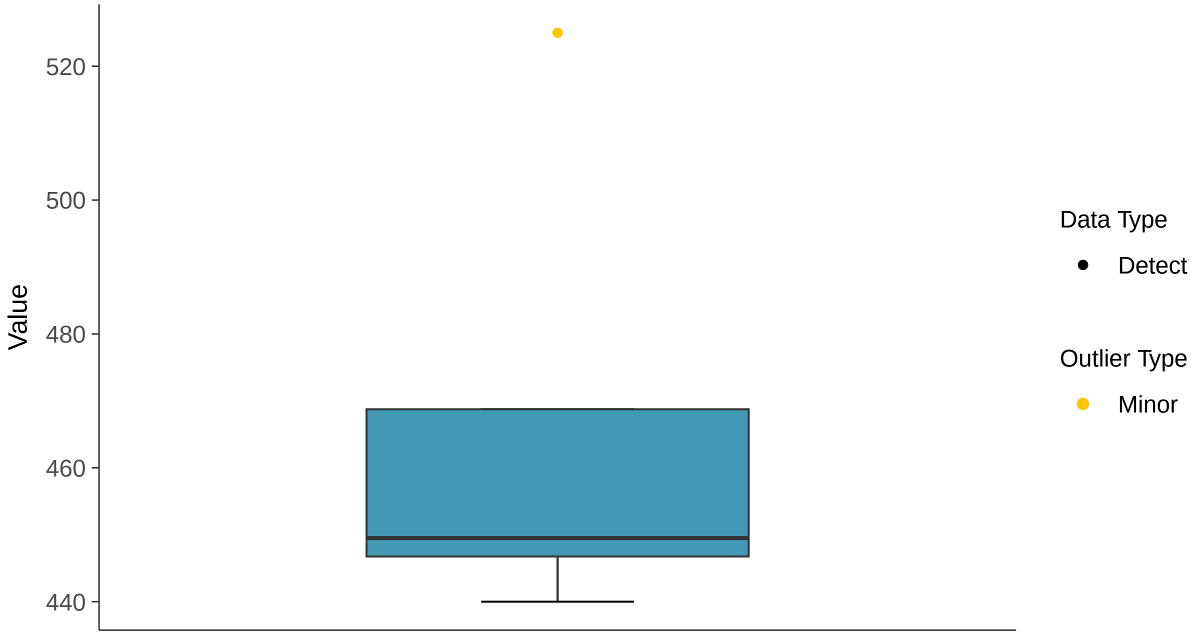
ID: 10_4_30





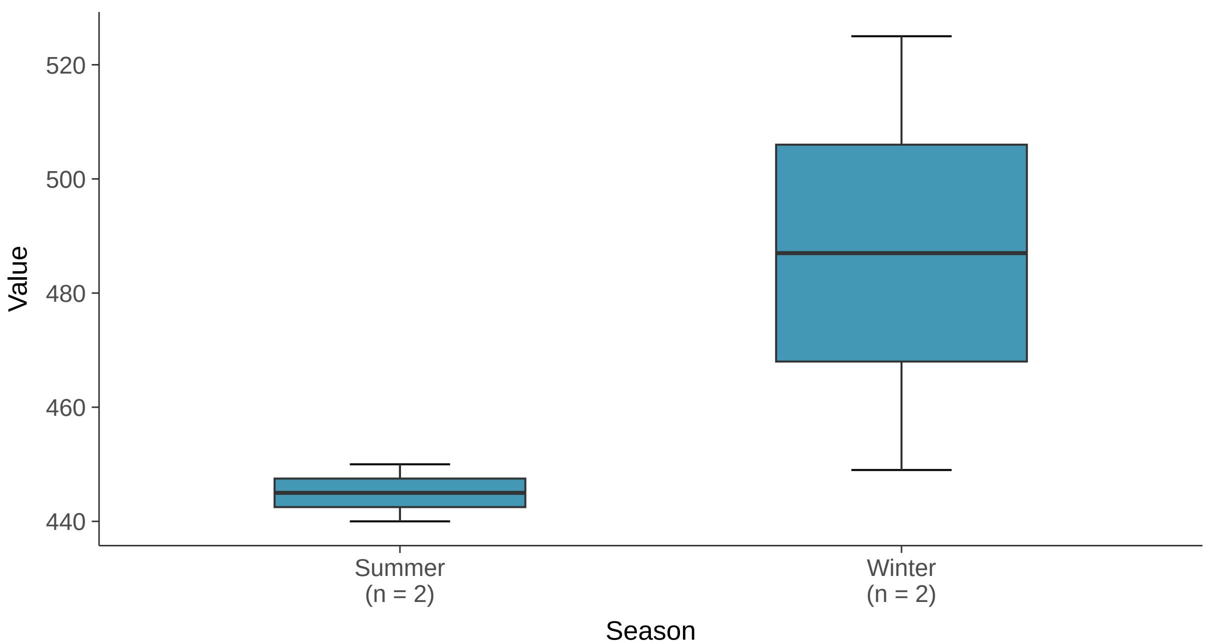
Boxplot

Bicarbonate, MW-10 (mg/L)



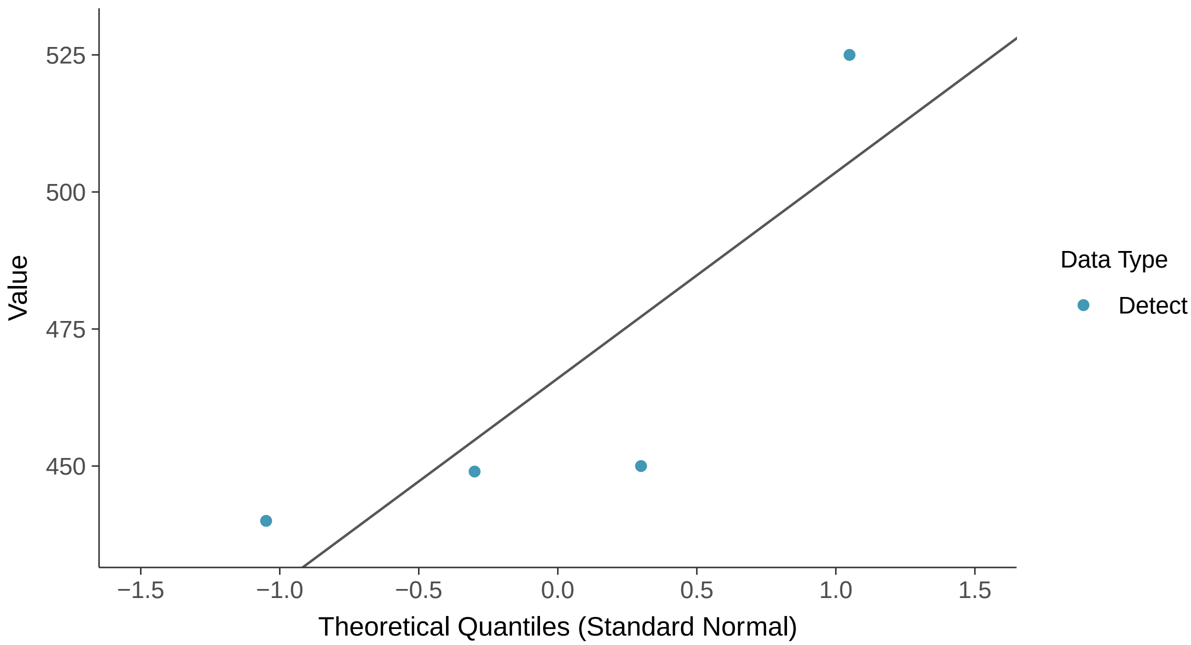
Boxplot by Season

Bicarbonate, MW-10 (mg/L)



Normal Q-Q plot

Bicarbonate, MW-10 (mg/L)

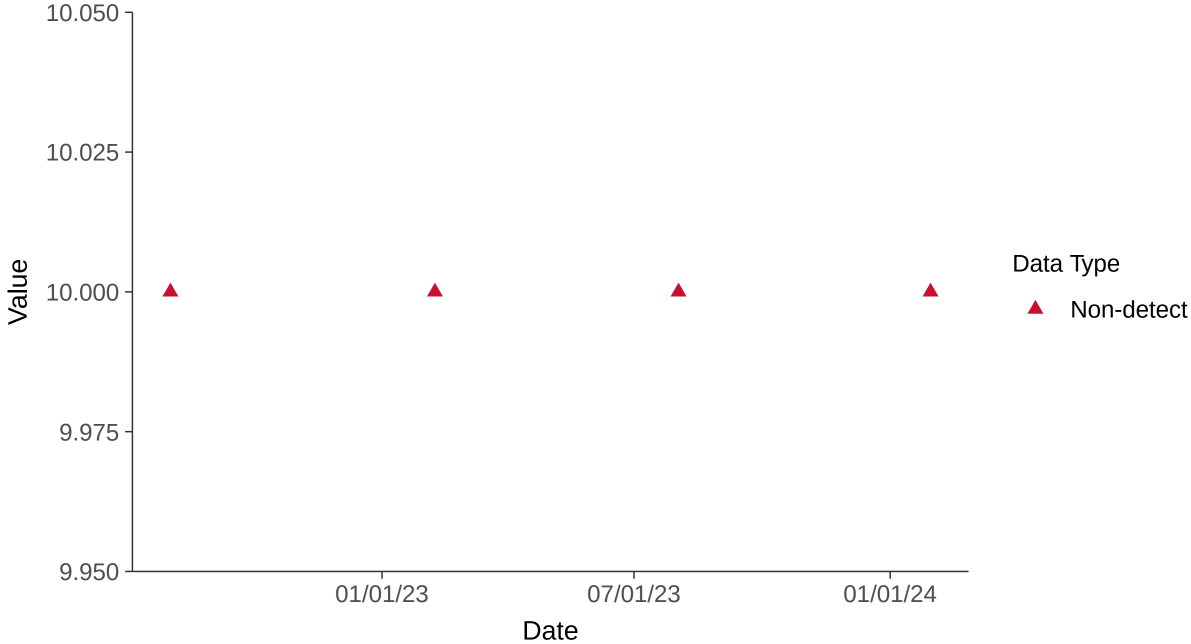


Other: Carbonate, MW-10

ID: 10_4_31

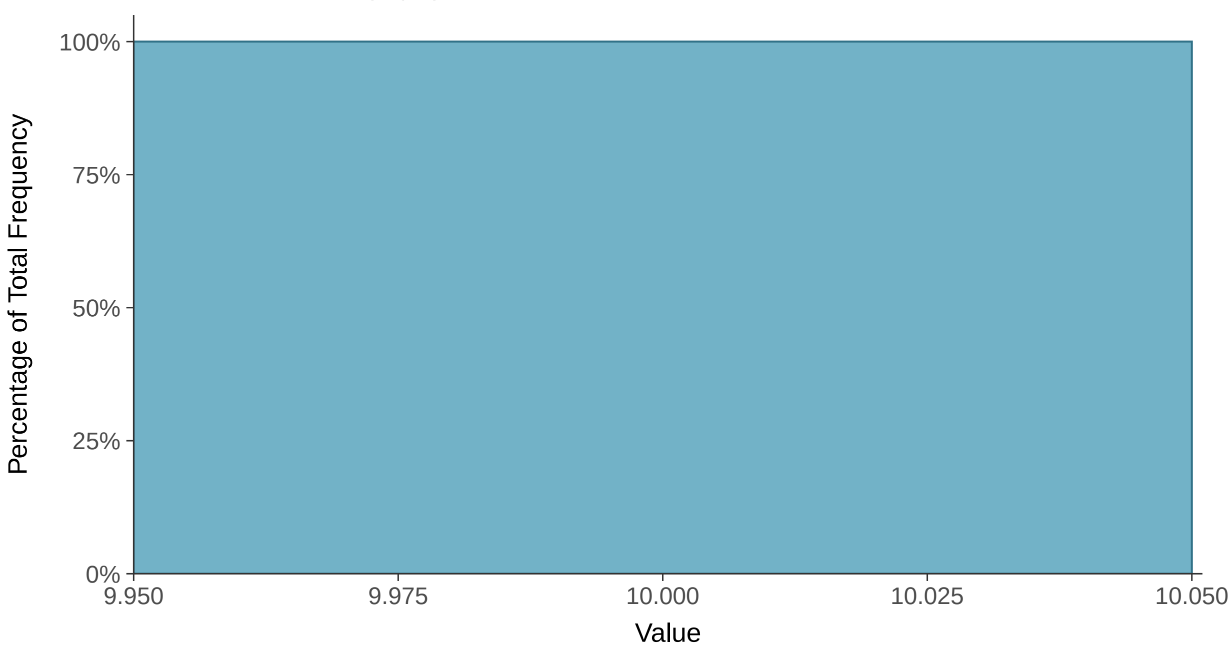
Scatter Plot

Carbonate, MW-10 (mg/L)



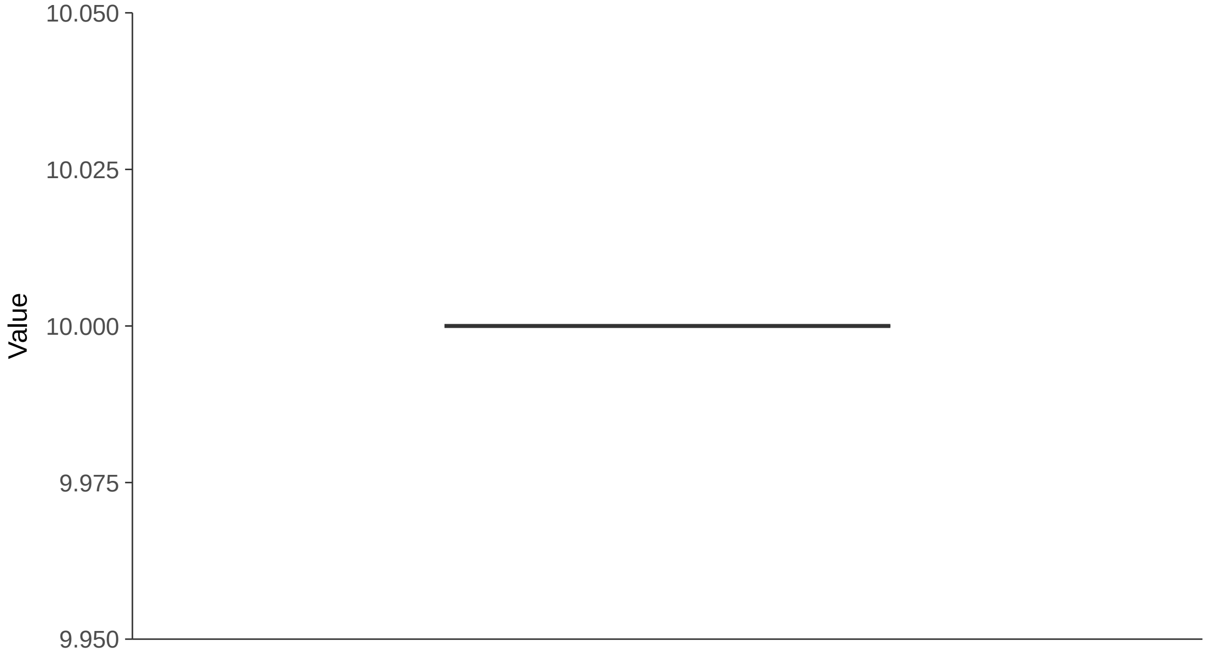
Histogram

Carbonate, MW-10 (mg/L)



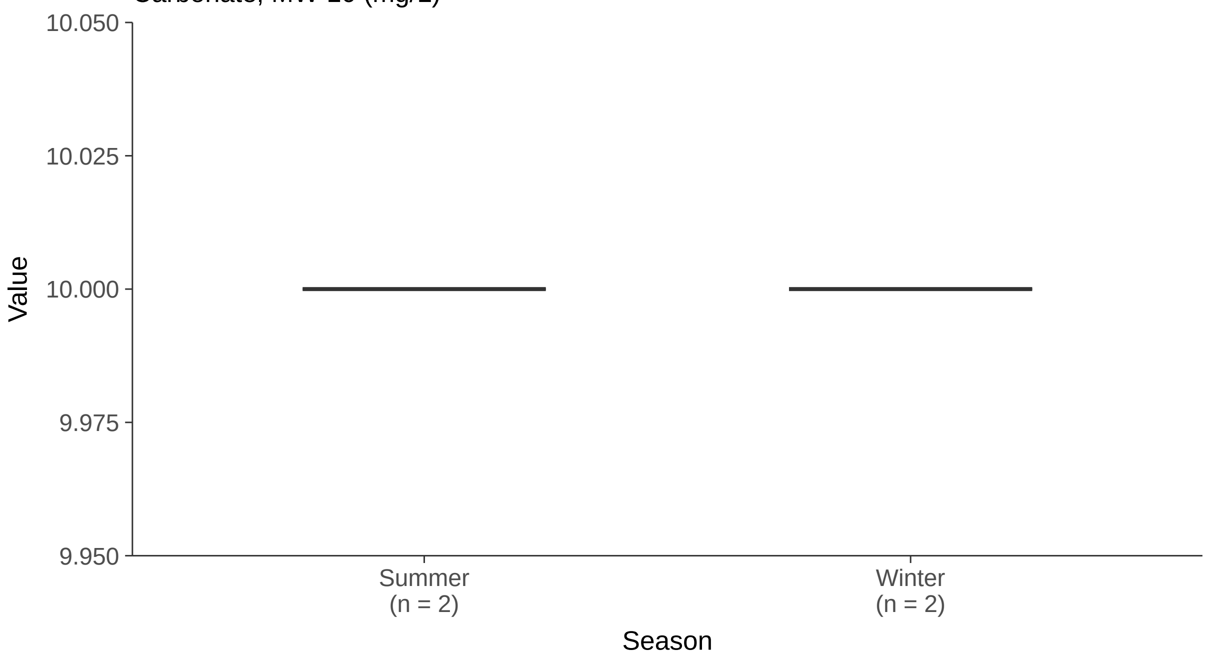
Boxplot

Carbonate, MW-10 (mg/L)



Boxplot by Season

Carbonate, MW-10 (mg/L)

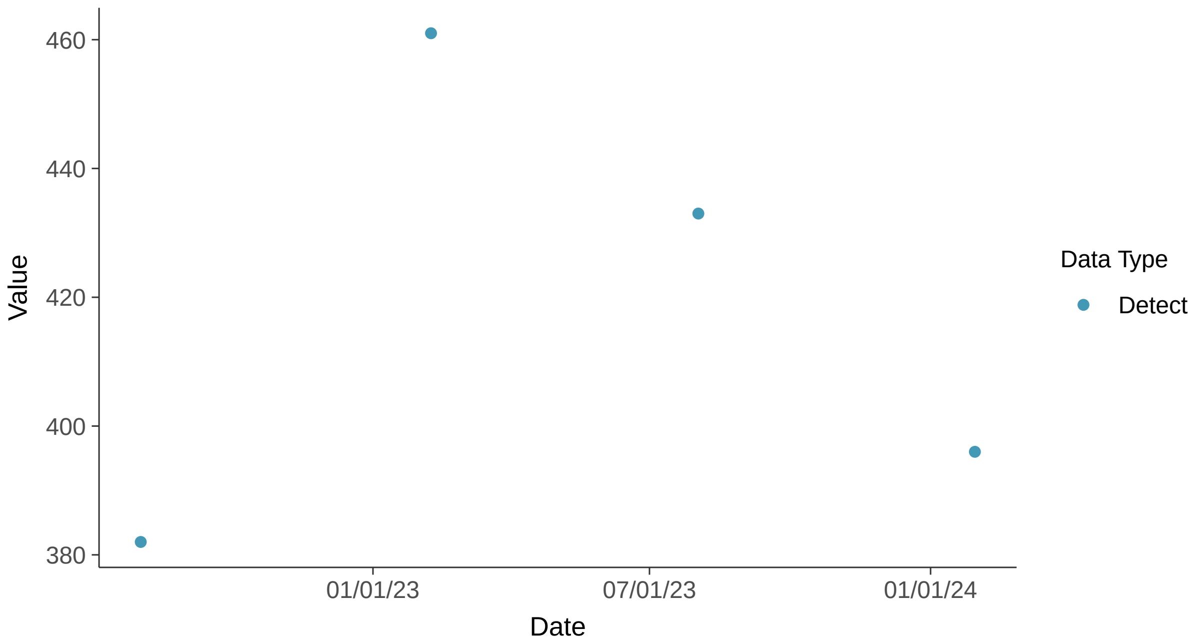


Other: Hardness, MW-10

ID: 10_4_32

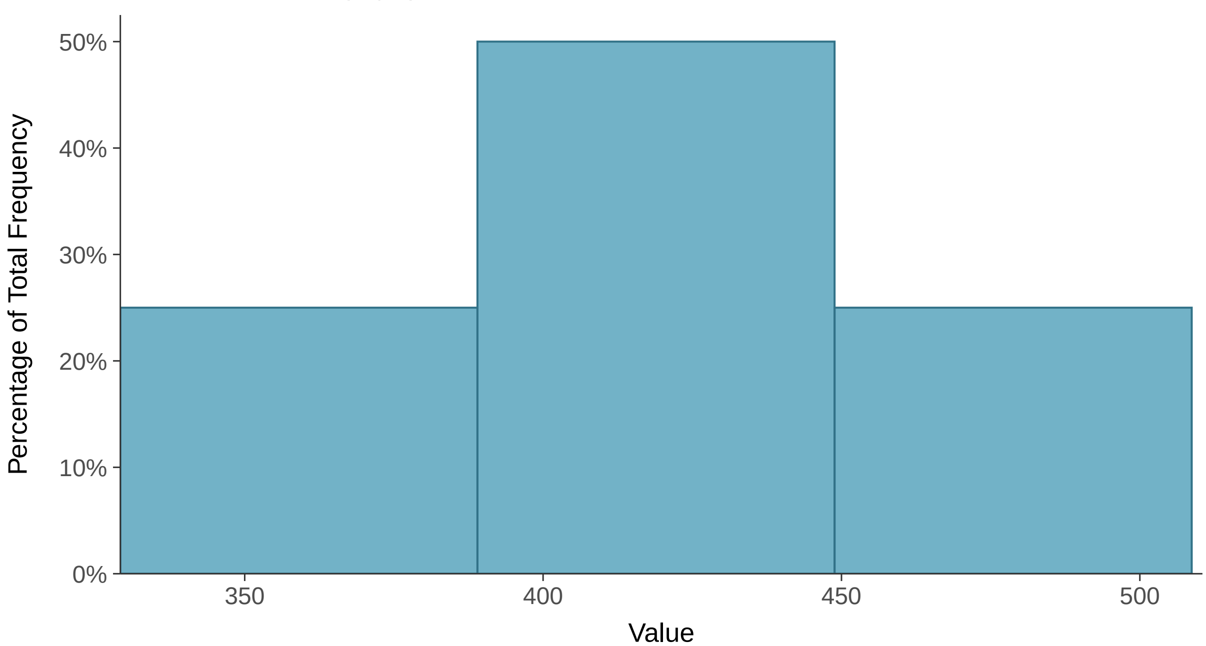
Scatter Plot

Hardness, MW-10 (mg/L)



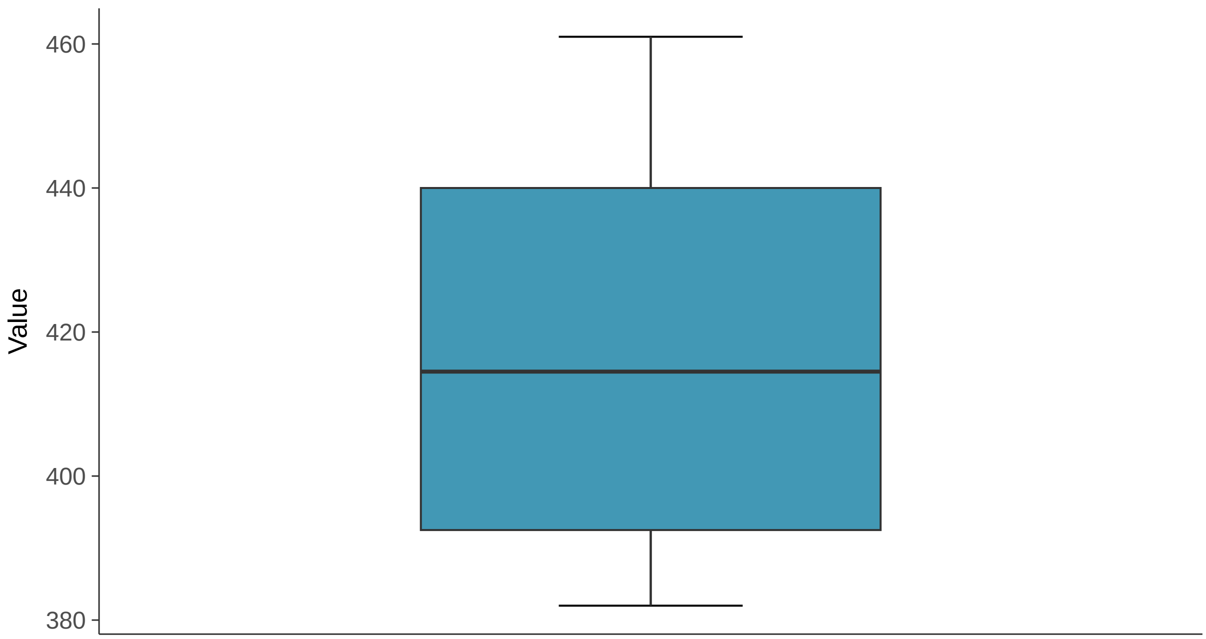
Histogram

Hardness, MW-10 (mg/L)



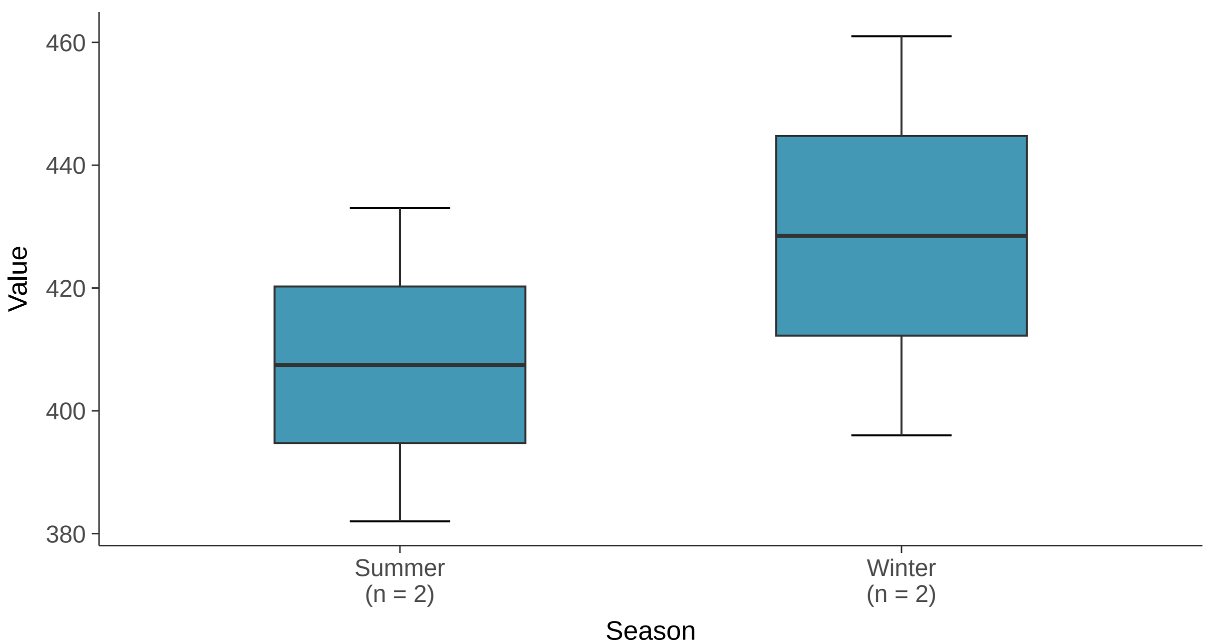
Boxplot

Hardness, MW-10 (mg/L)



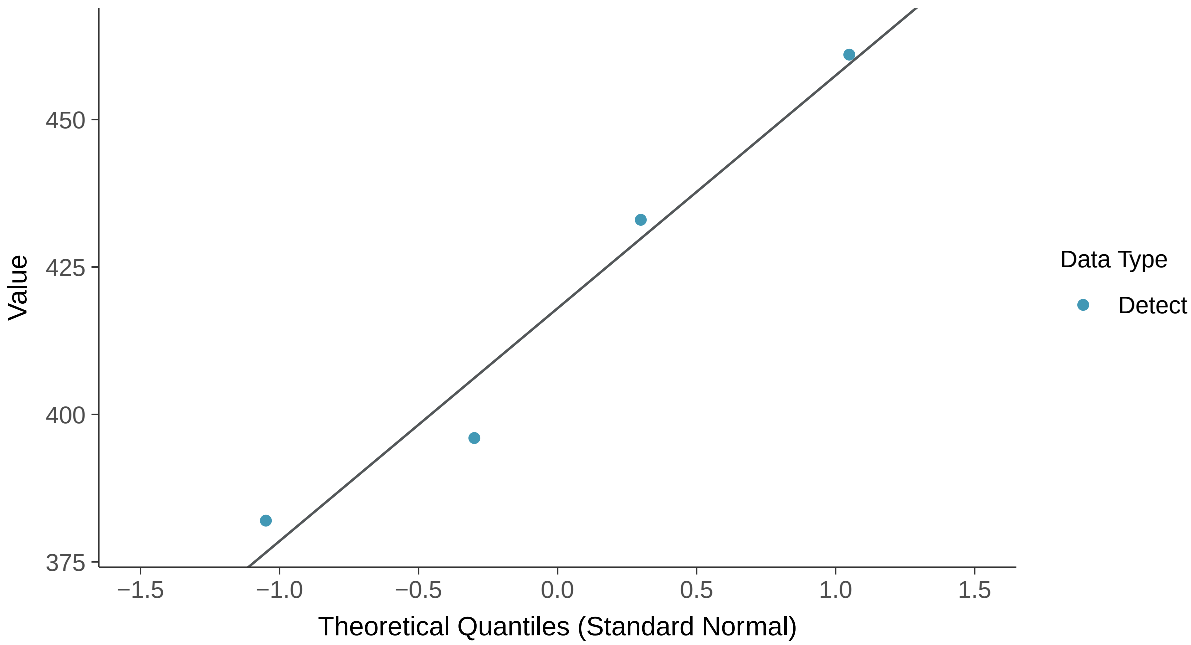
Boxplot by Season

Hardness, MW-10 (mg/L)



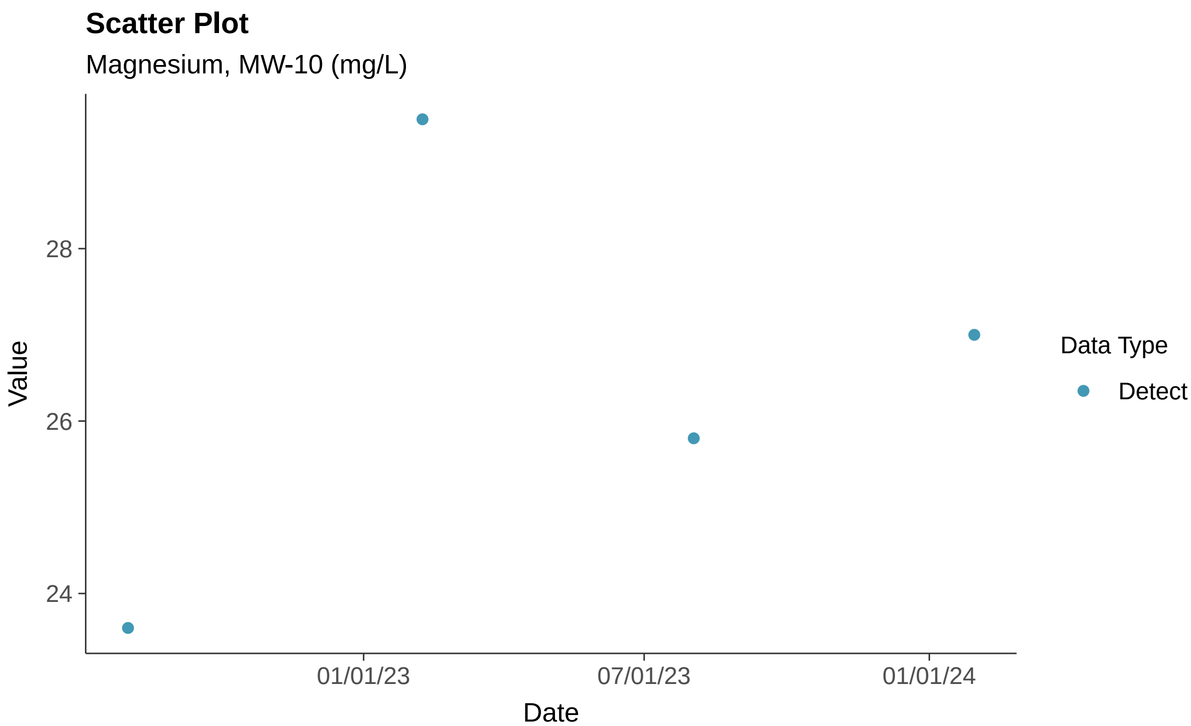
Normal Q-Q plot

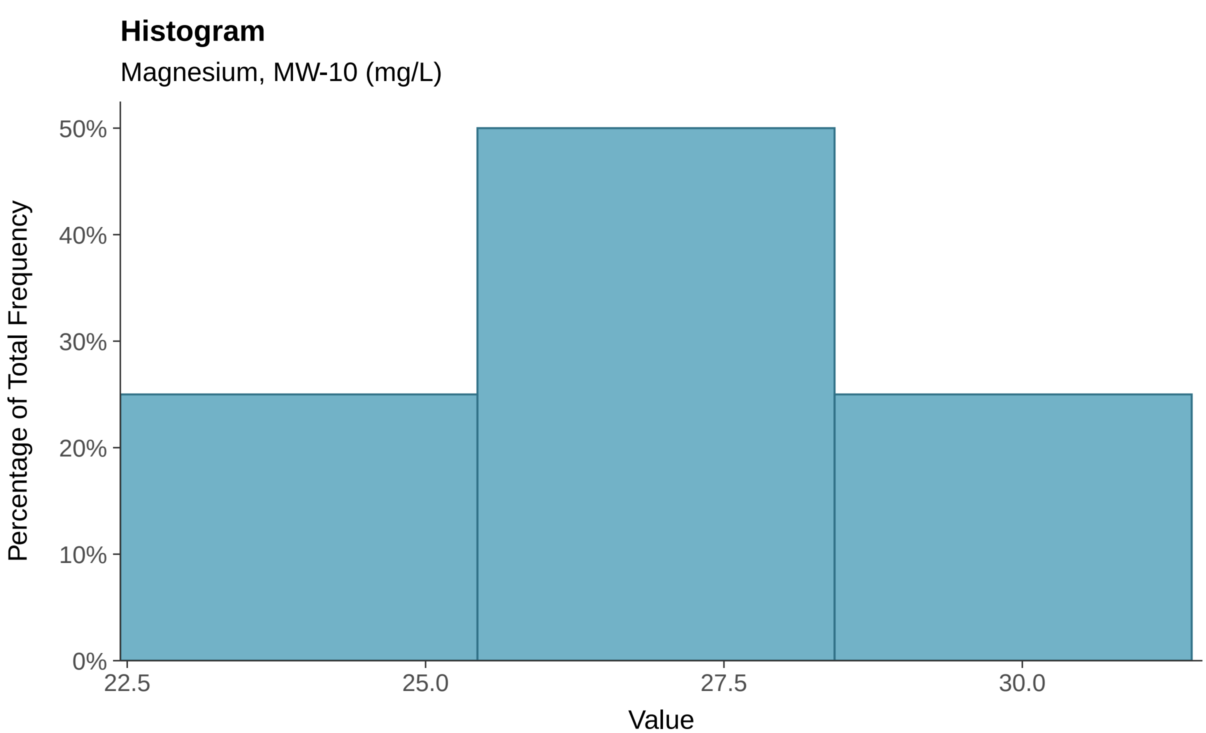
Hardness, MW-10 (mg/L)



Other: Magnesium, MW-10

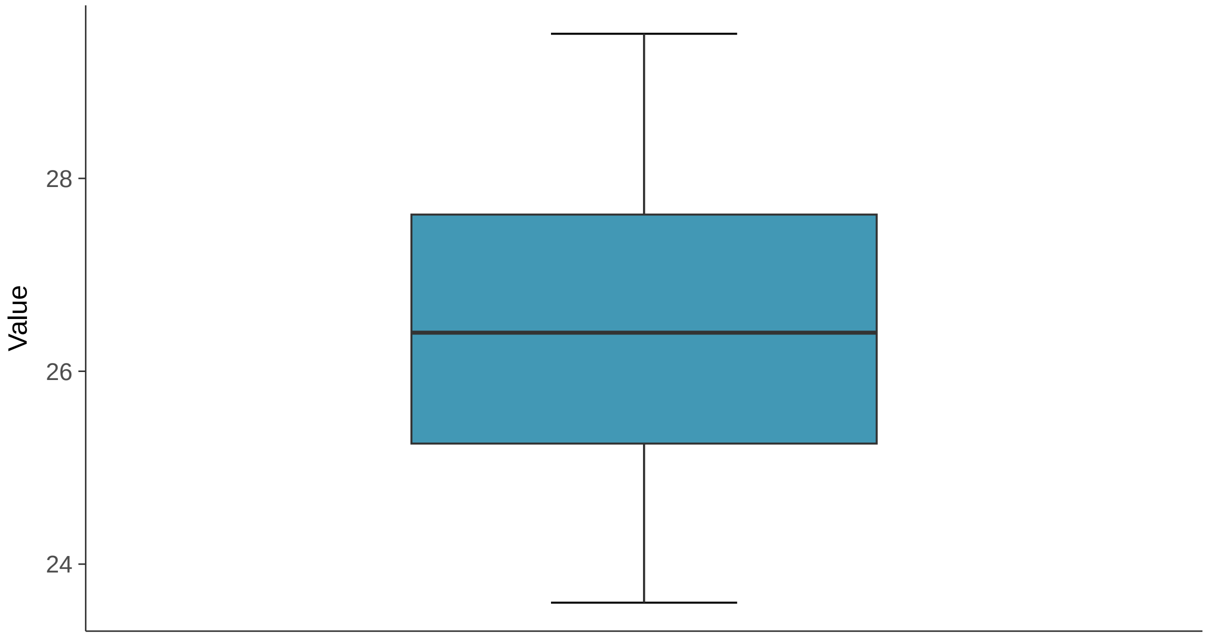
ID: 10_4_33





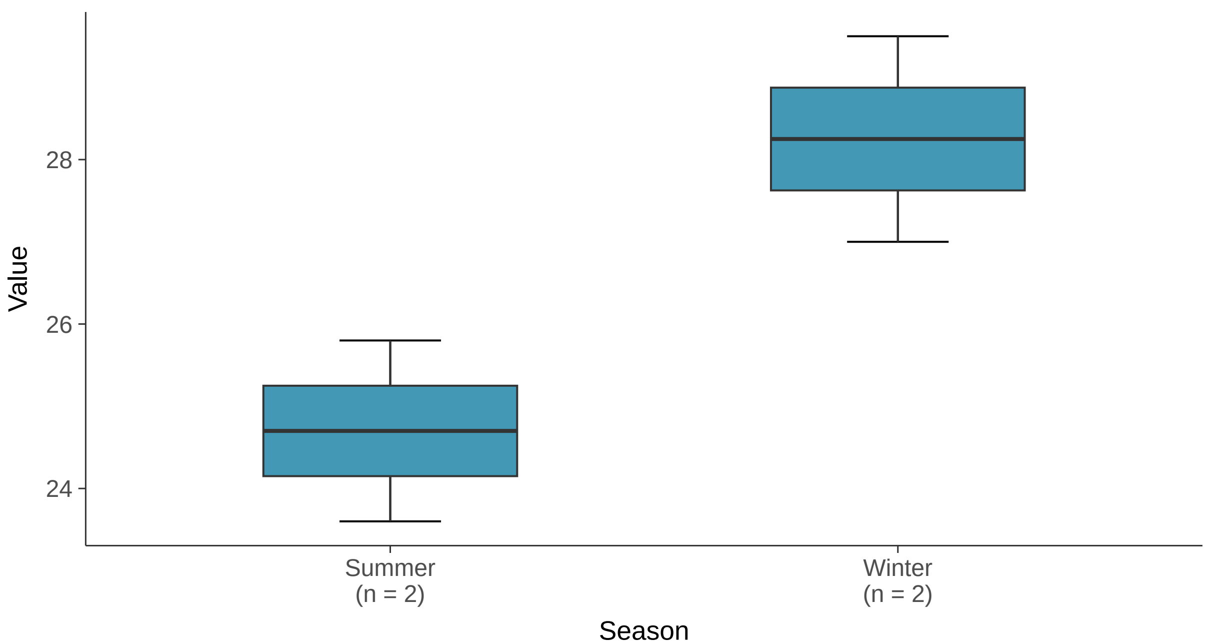
Boxplot

Magnesium, MW-10 (mg/L)



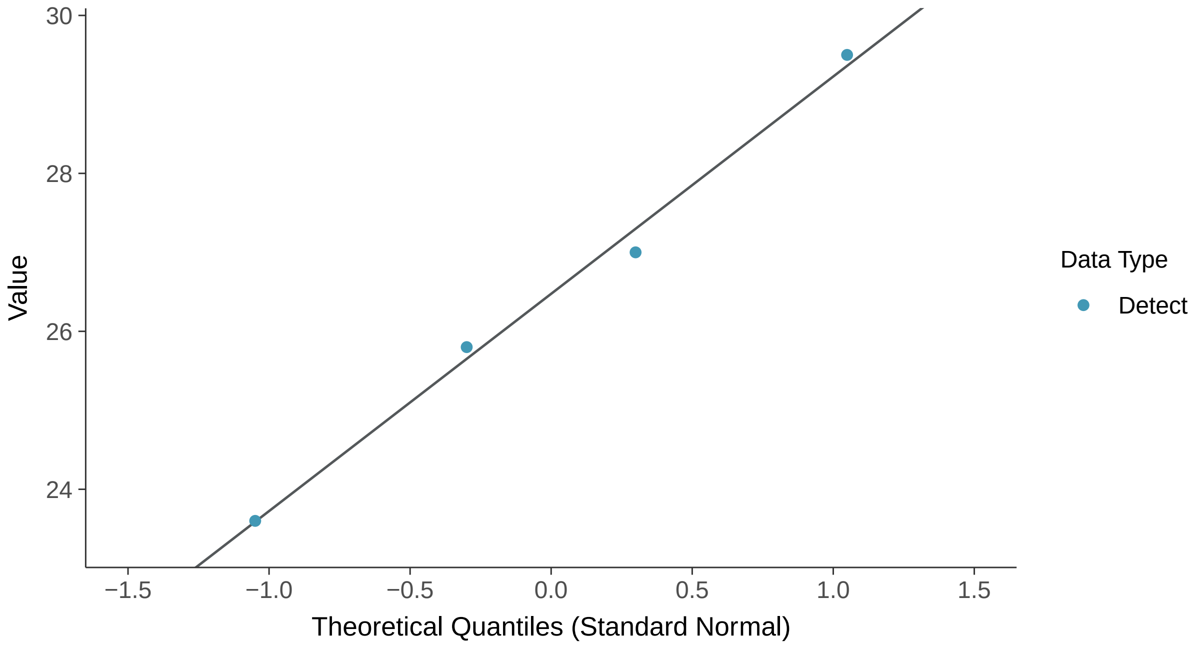
Boxplot by Season

Magnesium, MW-10 (mg/L)



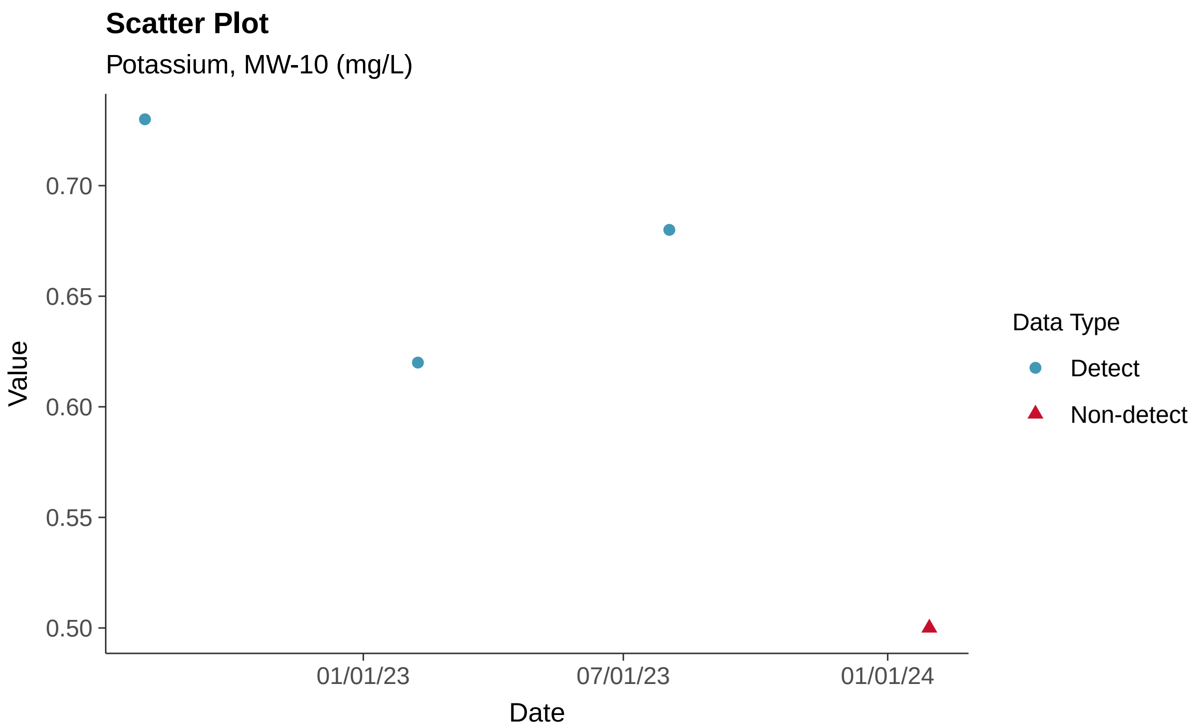
Normal Q-Q plot

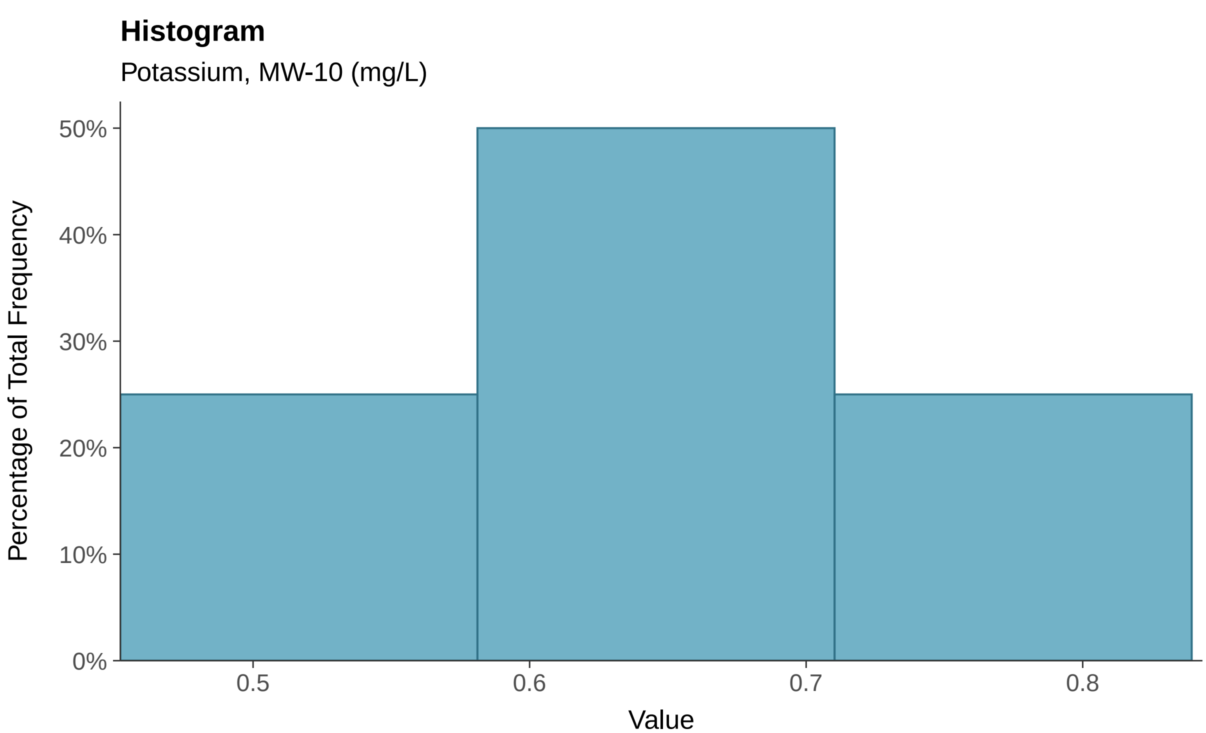
Magnesium, MW-10 (mg/L)



Other: Potassium, MW-10

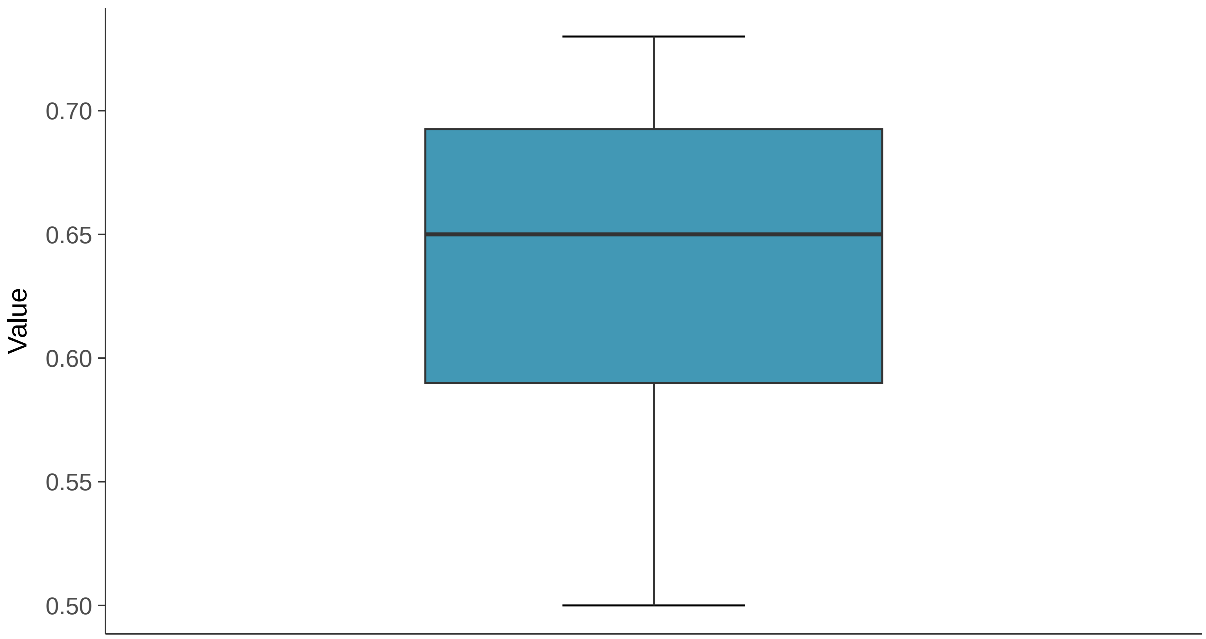
ID: 10_4_34





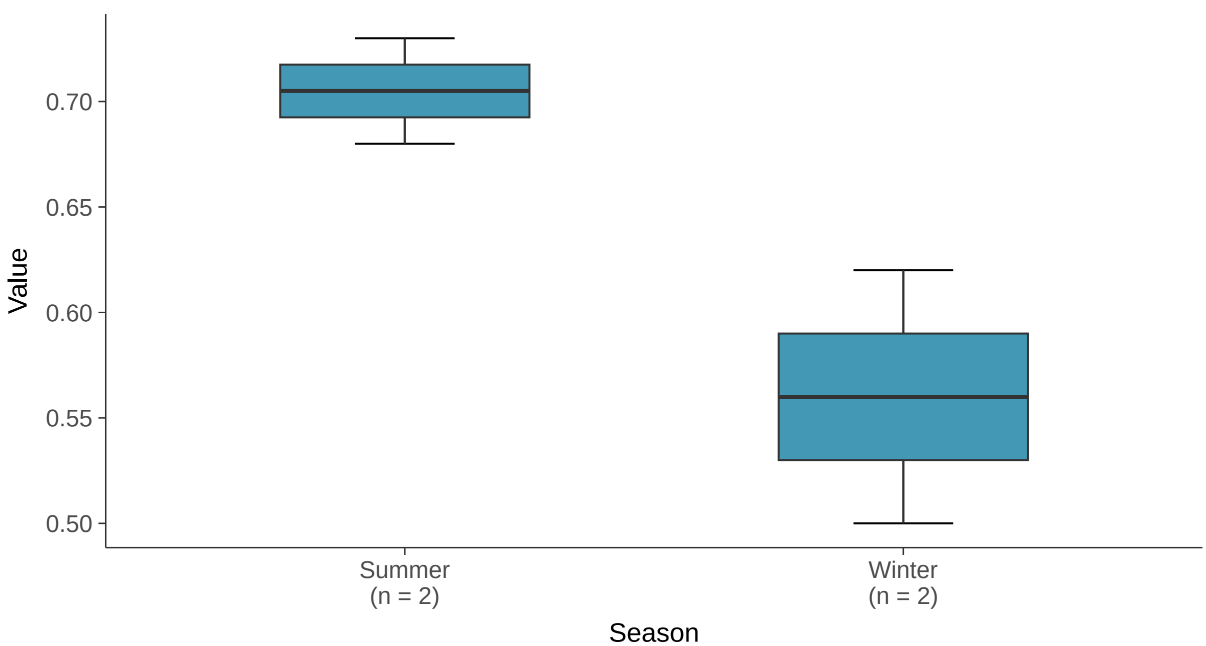
Boxplot

Potassium, MW-10 (mg/L)



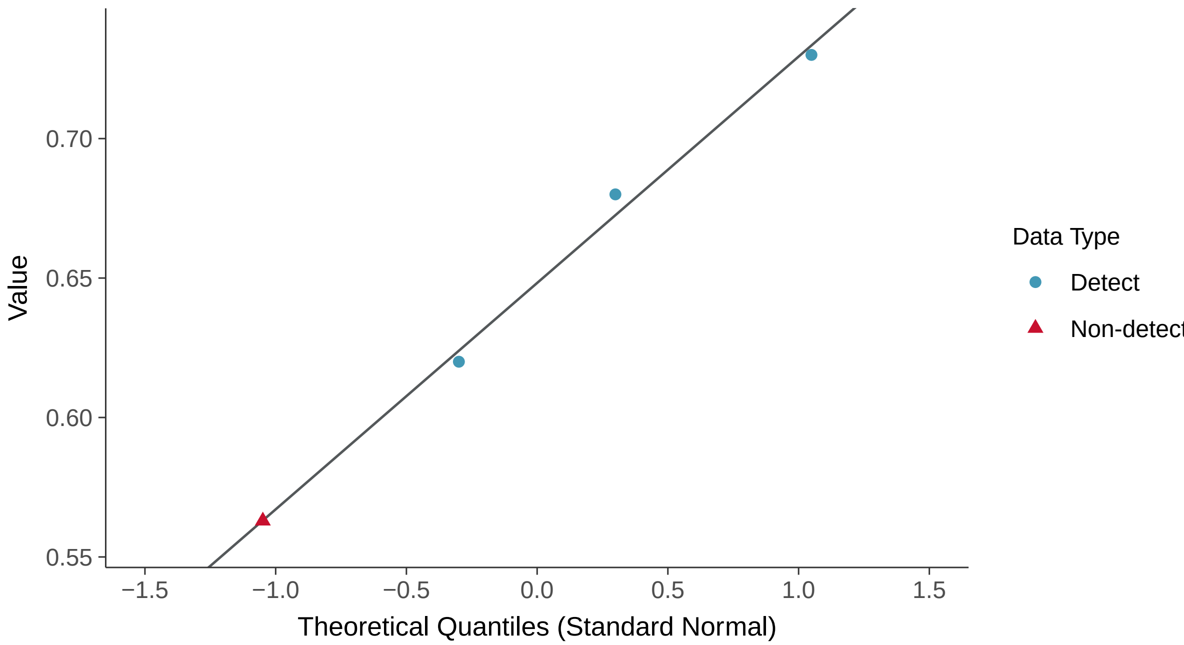
Boxplot by Season

Potassium, MW-10 (mg/L)



Normal Q-Q plot using ROS Imputed Estimates

Potassium, MW-10 (mg/L)

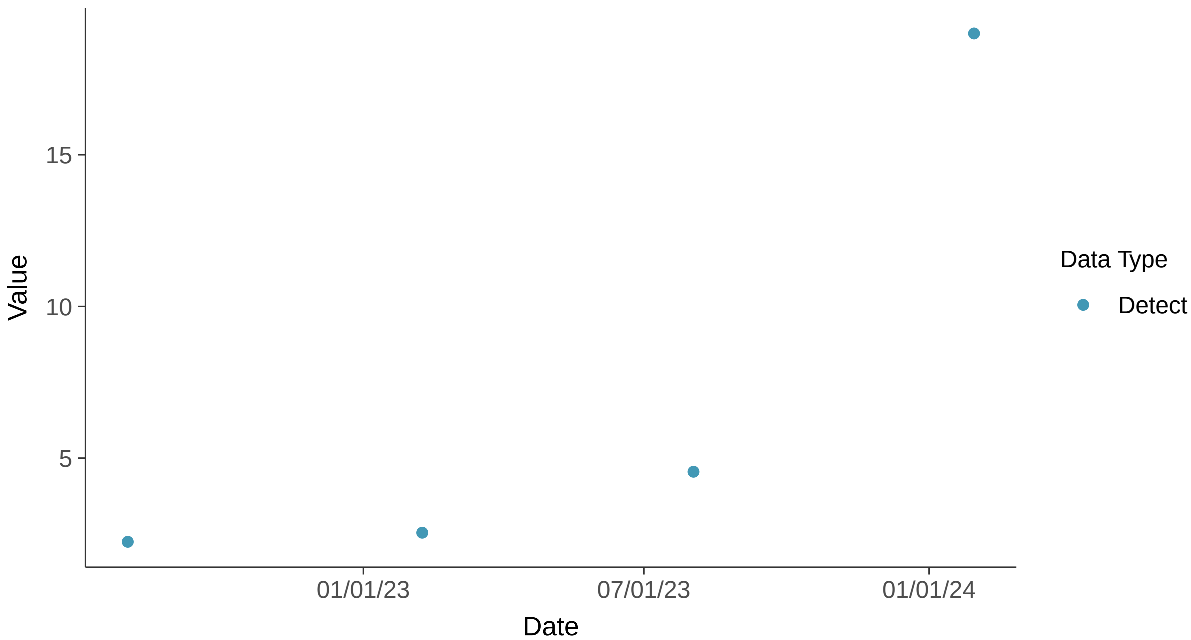


Other: Sodium, MW-10

ID: 10_4_35

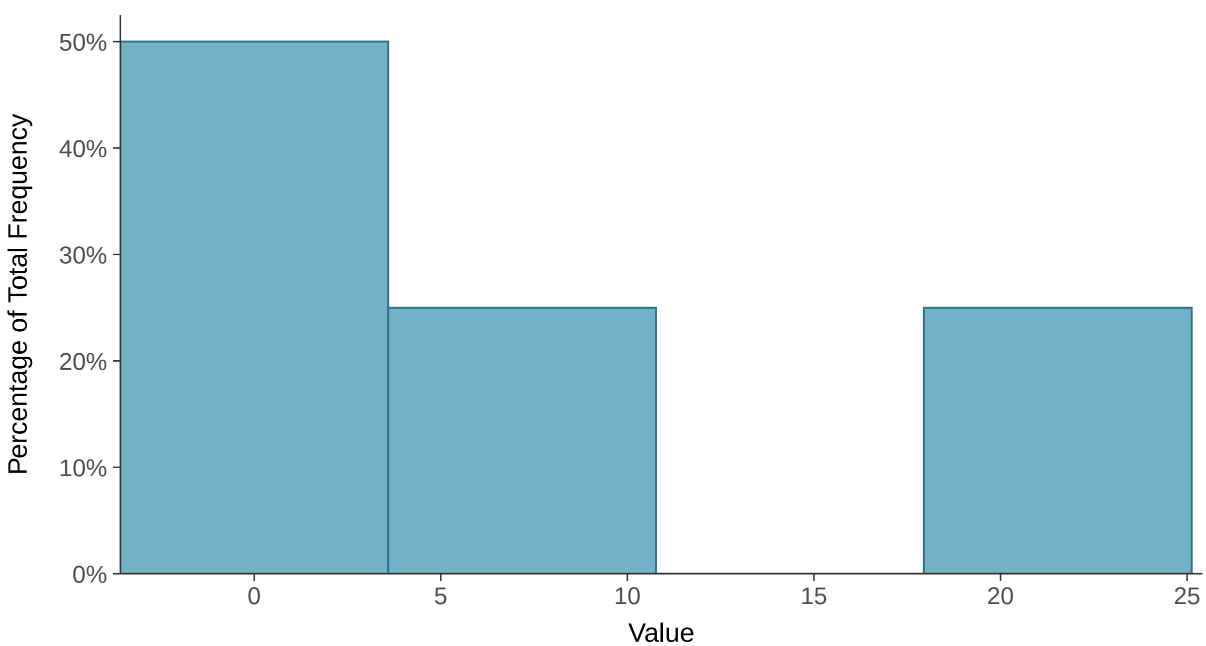
Scatter Plot

Sodium, MW-10 (mg/L)



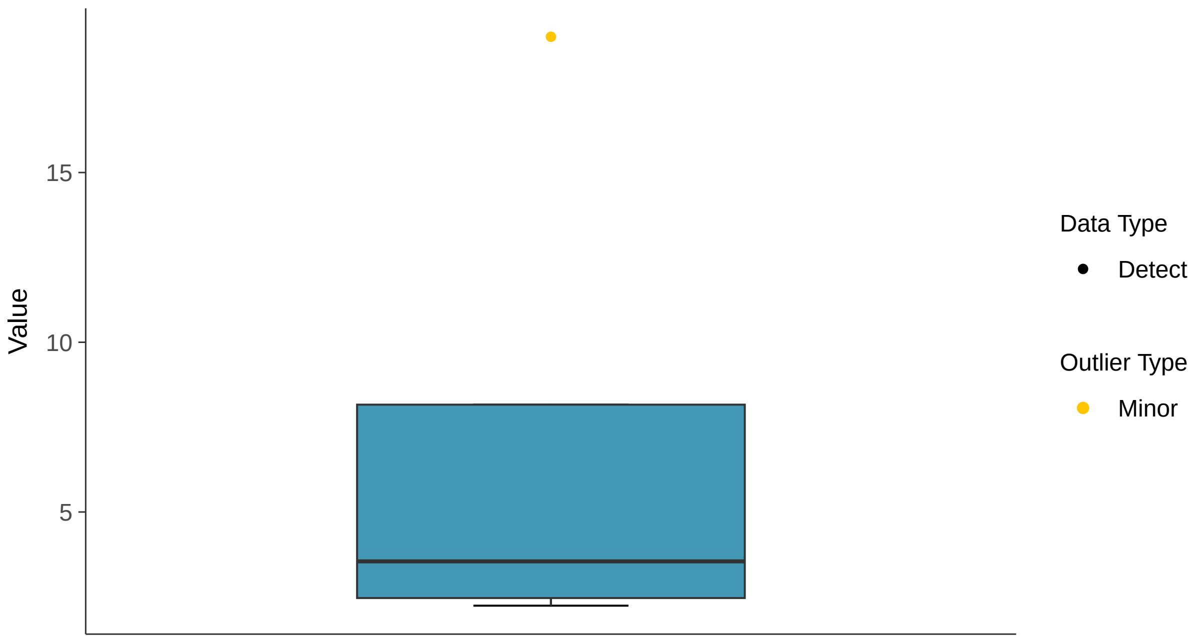
Histogram

Sodium, MW-10 (mg/L)



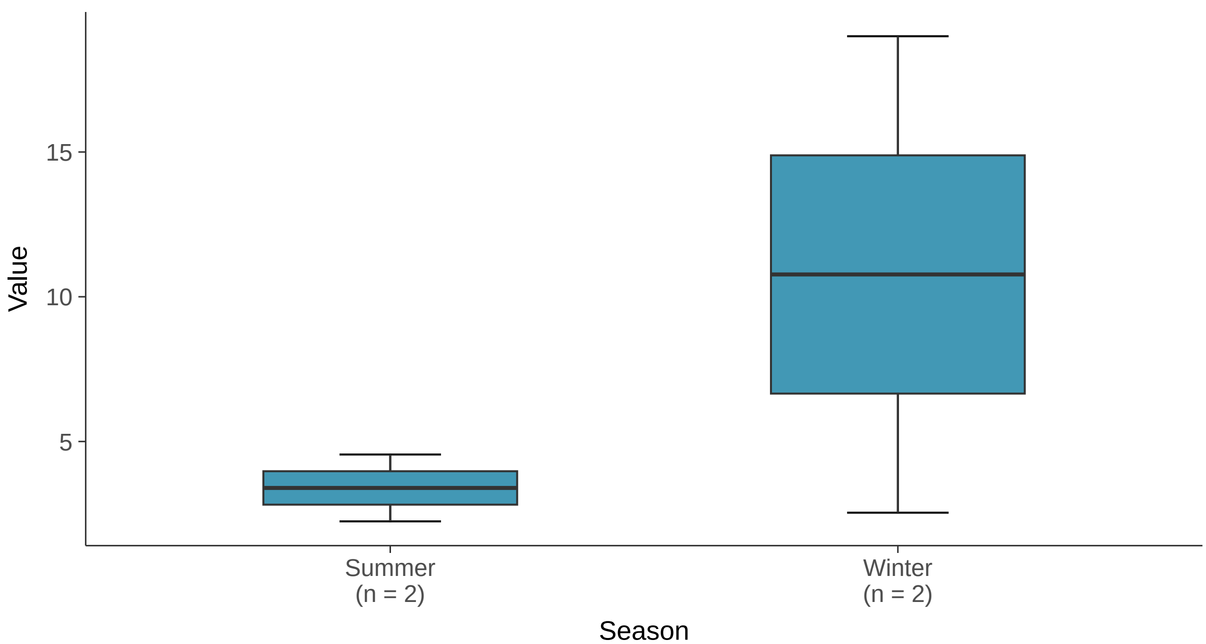
Boxplot

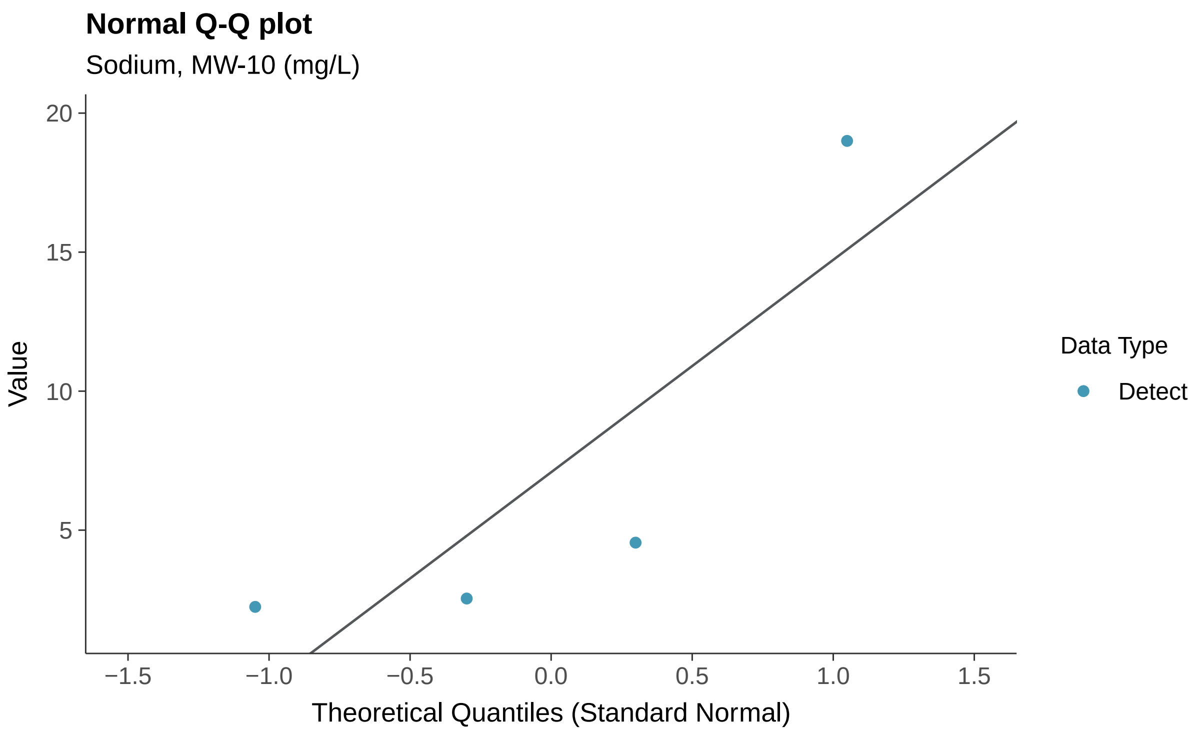
Sodium, MW-10 (mg/L)



Boxplot by Season

Sodium, MW-10 (mg/L)



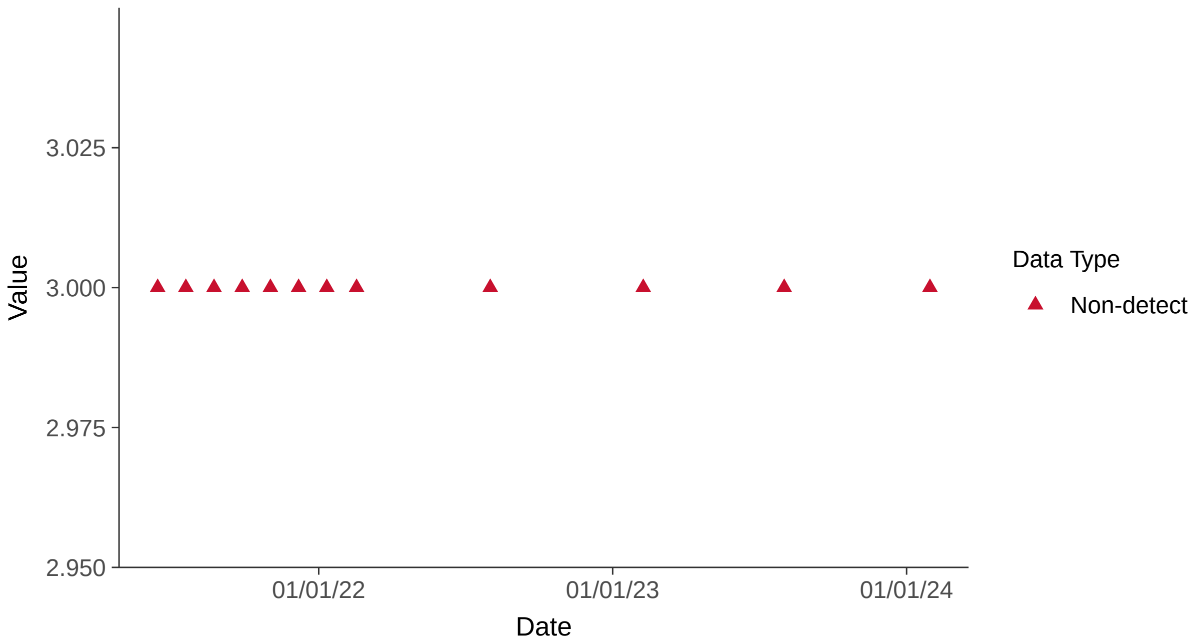

Normal Q-Q plot
Sodium, MW-10 (mg/L)
20
15
10
5
Value
−1.5
−1.0
−0.5
0.0
0.5
1.0
1.5
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Other: Total Suspended Solids, MW-10

ID: 10_4_36

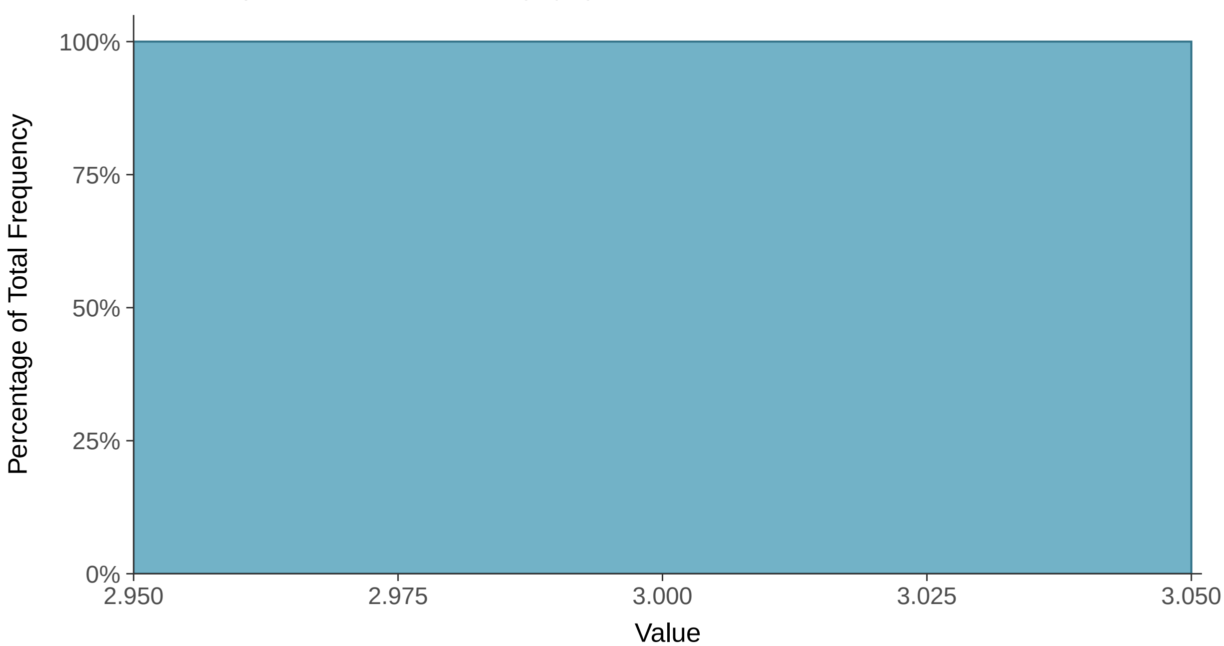
Scatter Plot

Total Suspended Solids, MW-10 (mg/L)



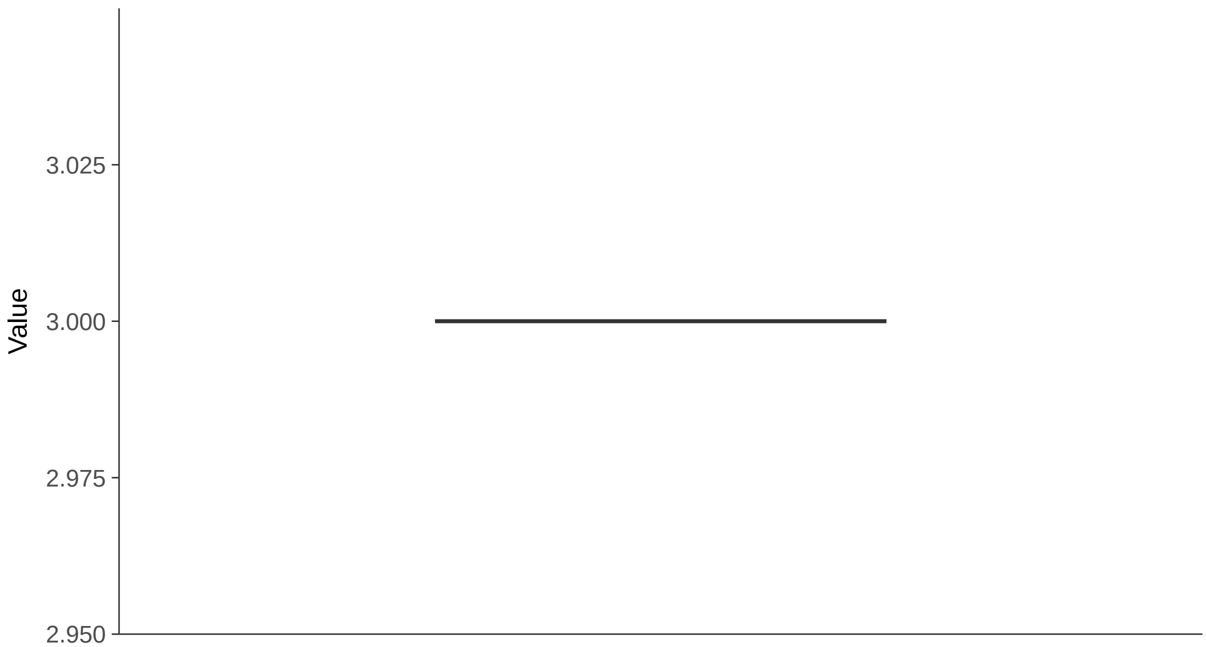
Histogram

Total Suspended Solids, MW-10 (mg/L)



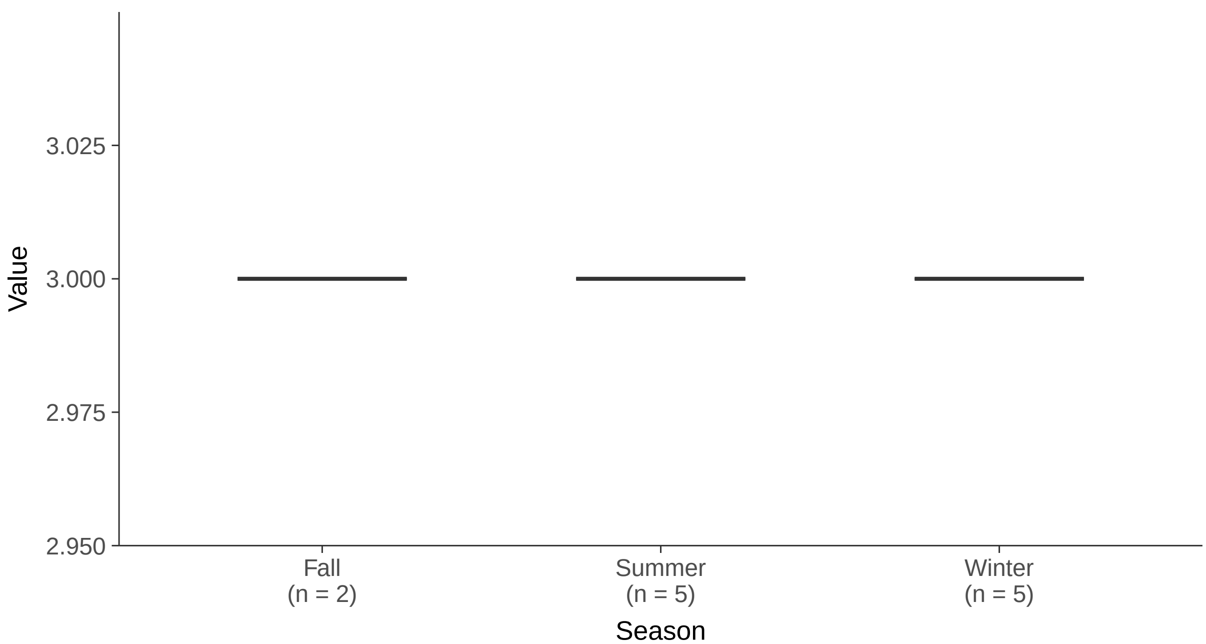
Boxplot

Total Suspended Solids, MW-10 (mg/L)



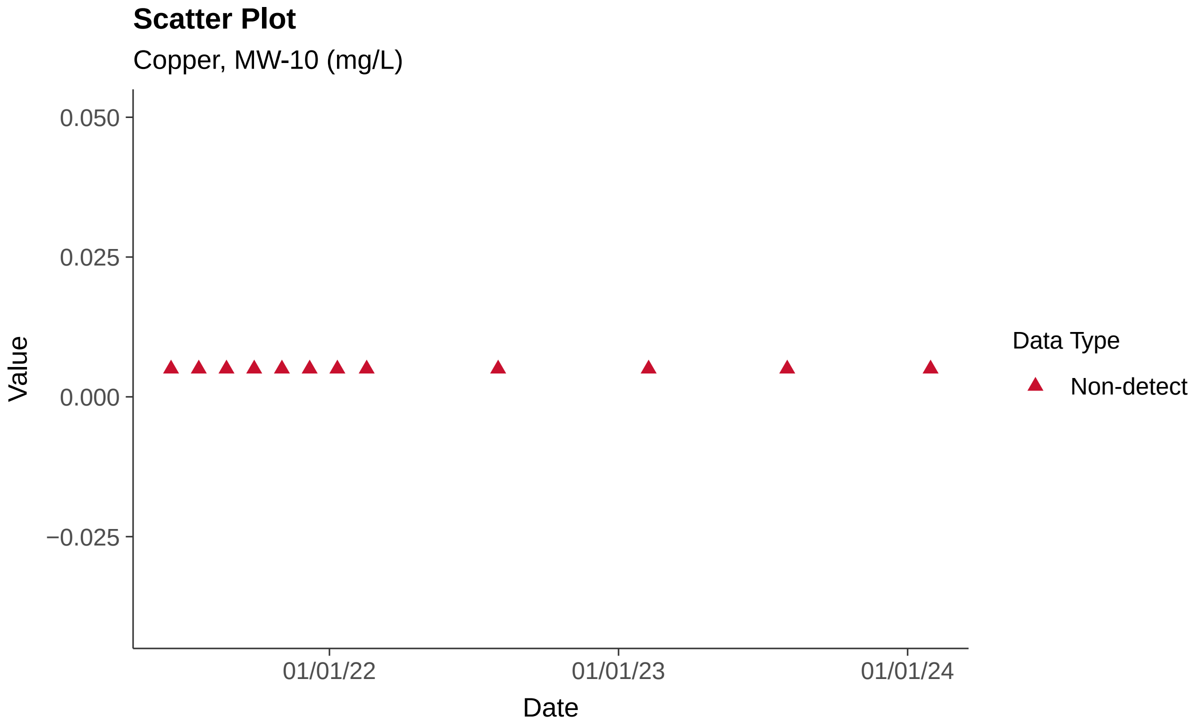
Boxplot by Season

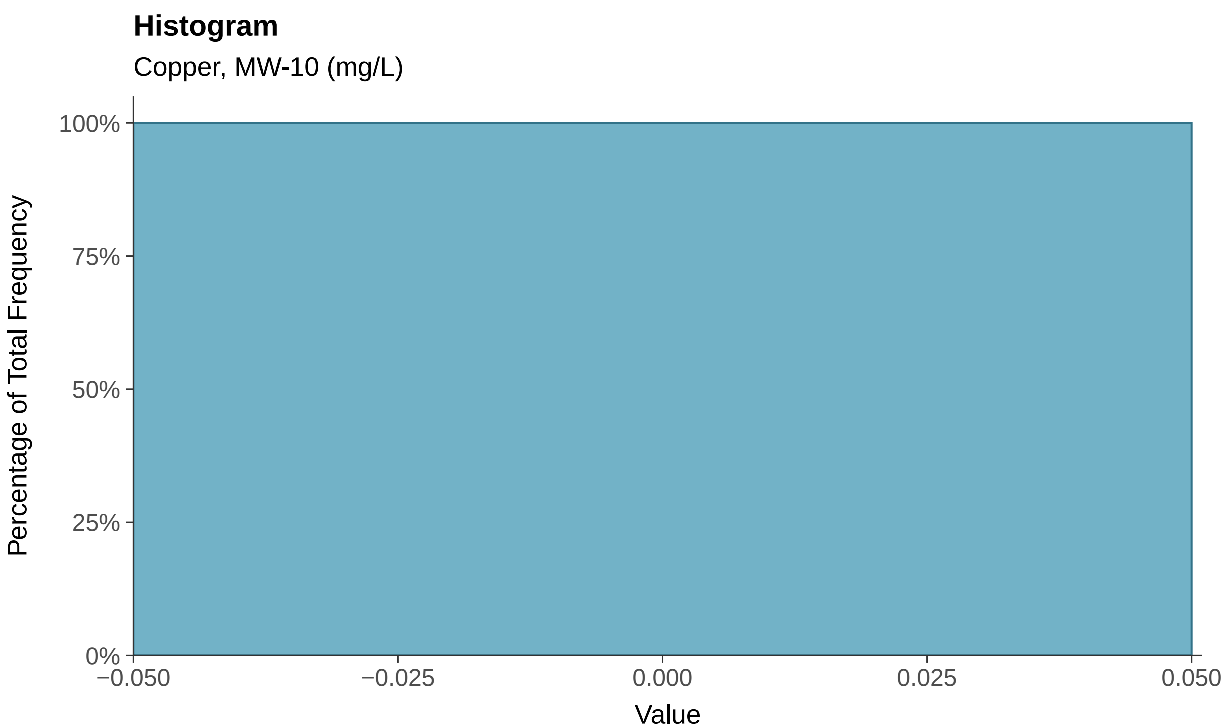
Total Suspended Solids, MW-10 (mg/L)



Part 115: Copper, MW-10

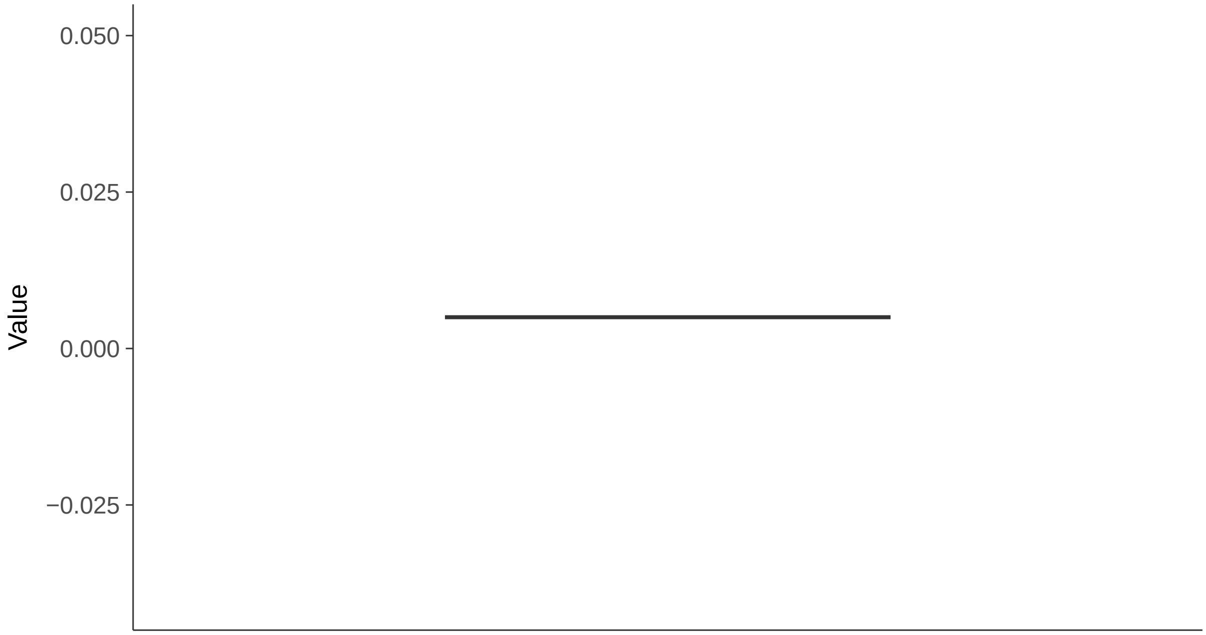
ID: 10_5_37





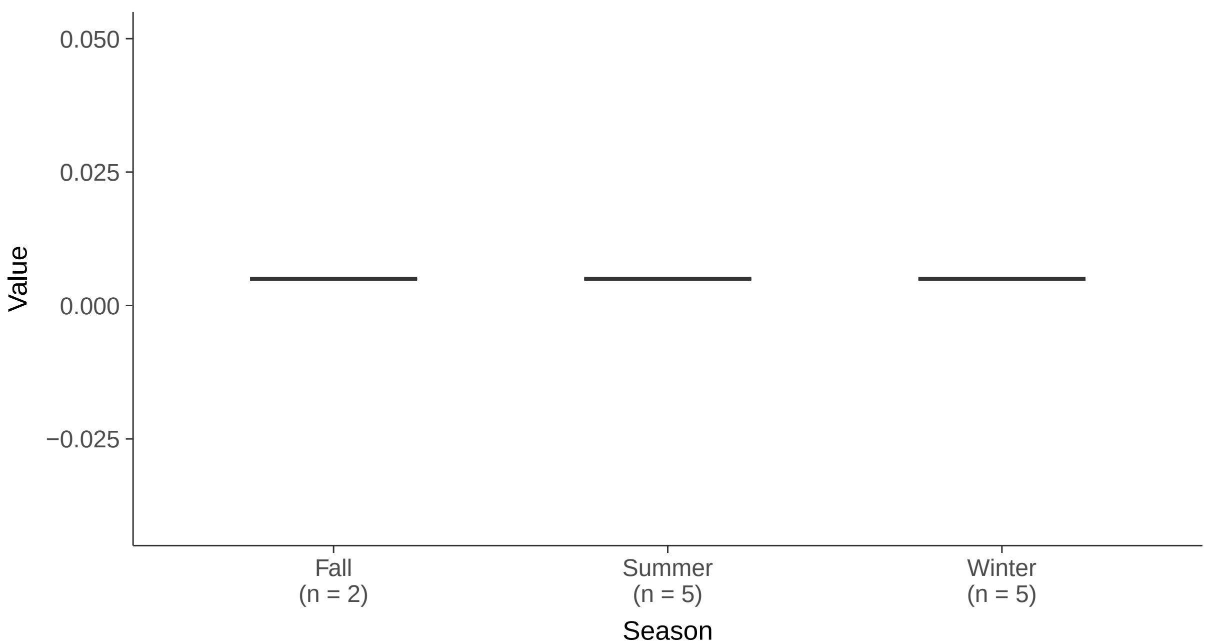
Boxplot

Copper, MW-10 (mg/L)



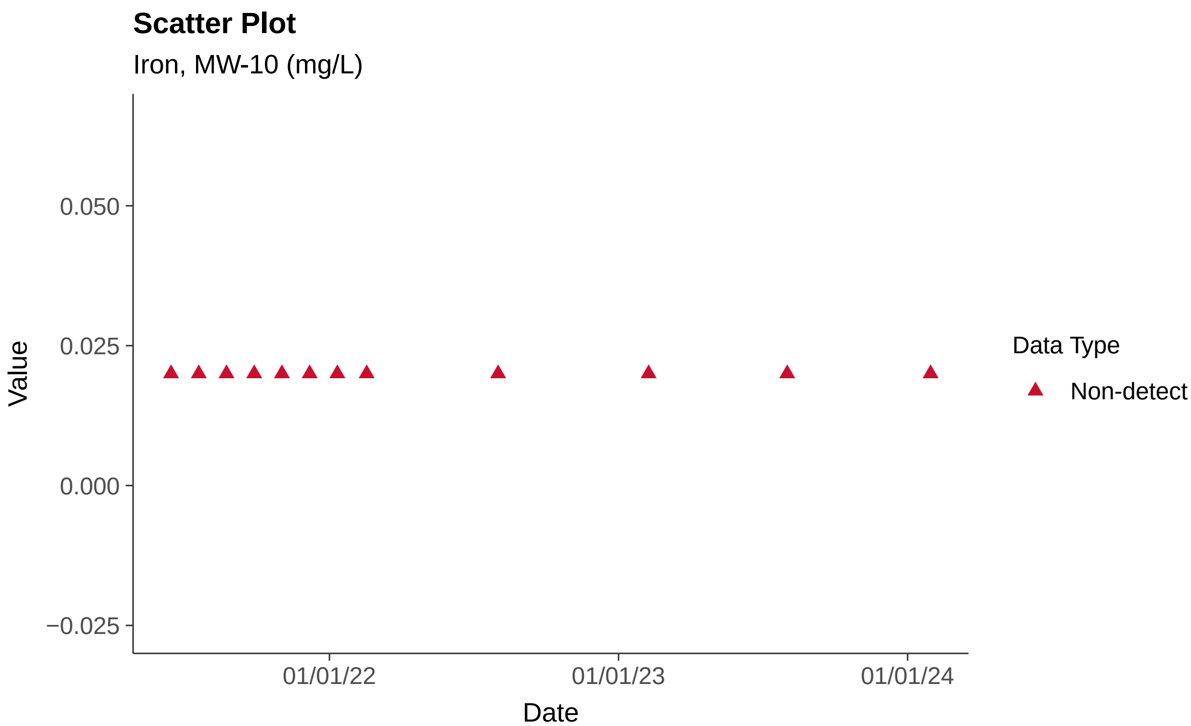
Boxplot by Season

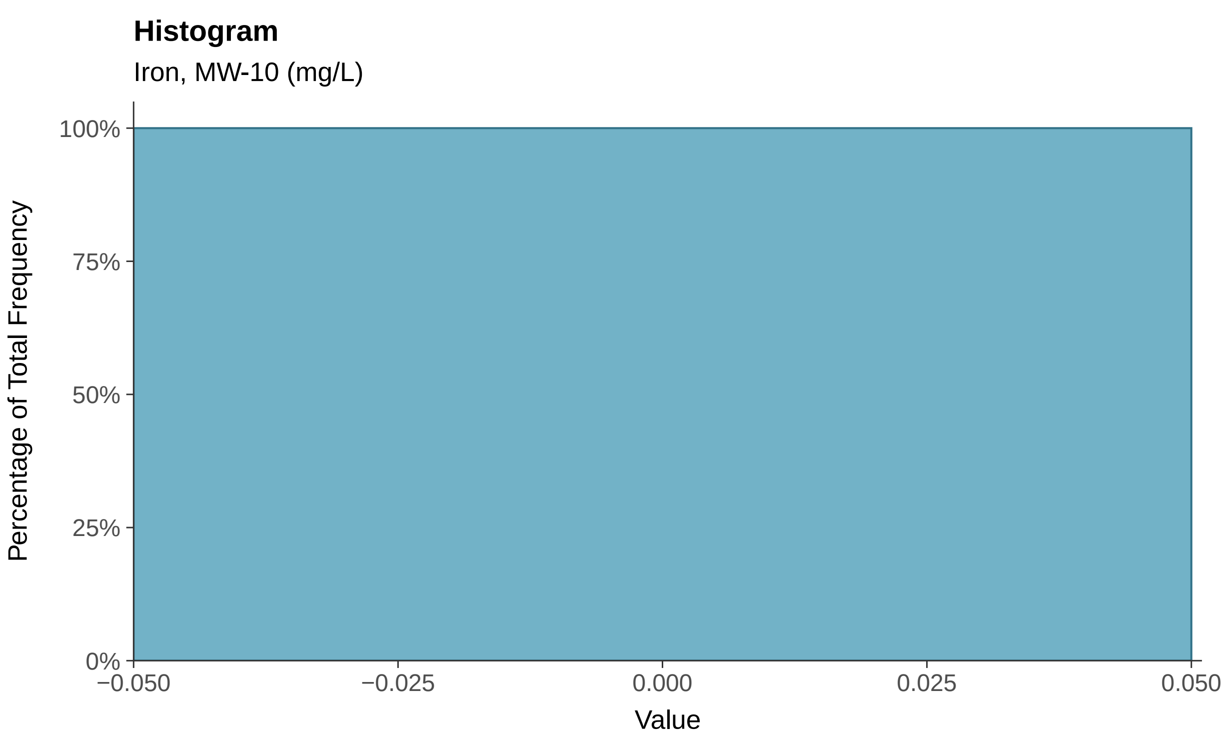
Copper, MW-10 (mg/L)



Part 115: Iron, MW-10

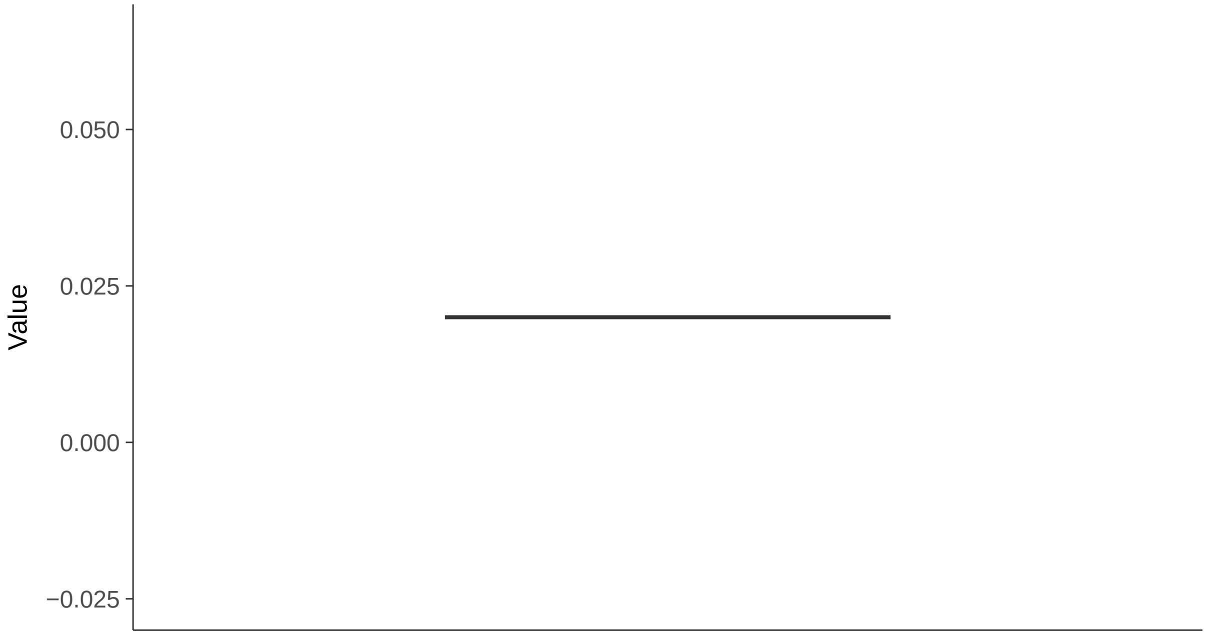
ID: 10_5_38





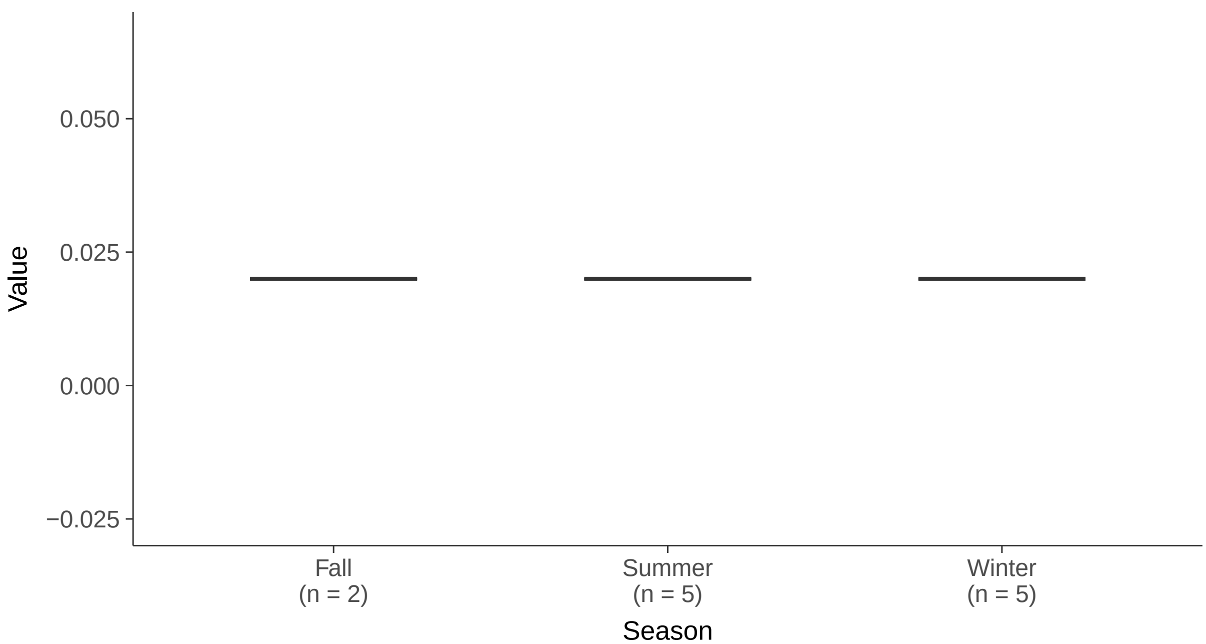
Boxplot

Iron, MW-10 (mg/L)



Boxplot by Season

Iron, MW-10 (mg/L)

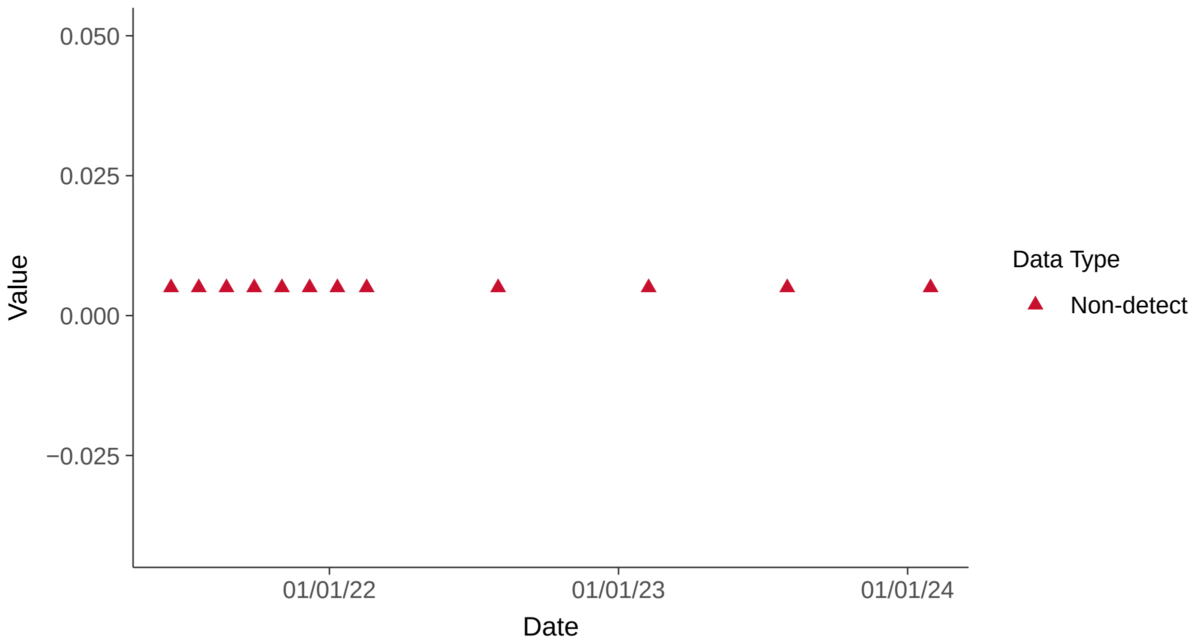


Part 115: Nickel, MW-10

ID: 10_5_39

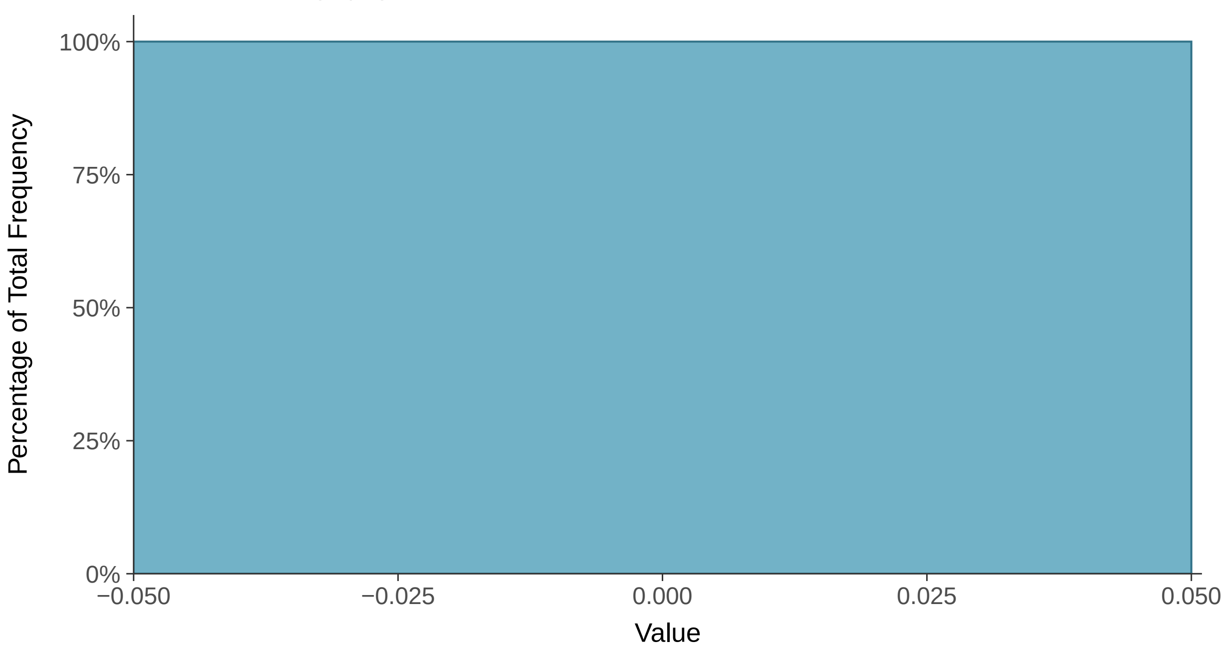
Scatter Plot

Nickel, MW-10 (mg/L)



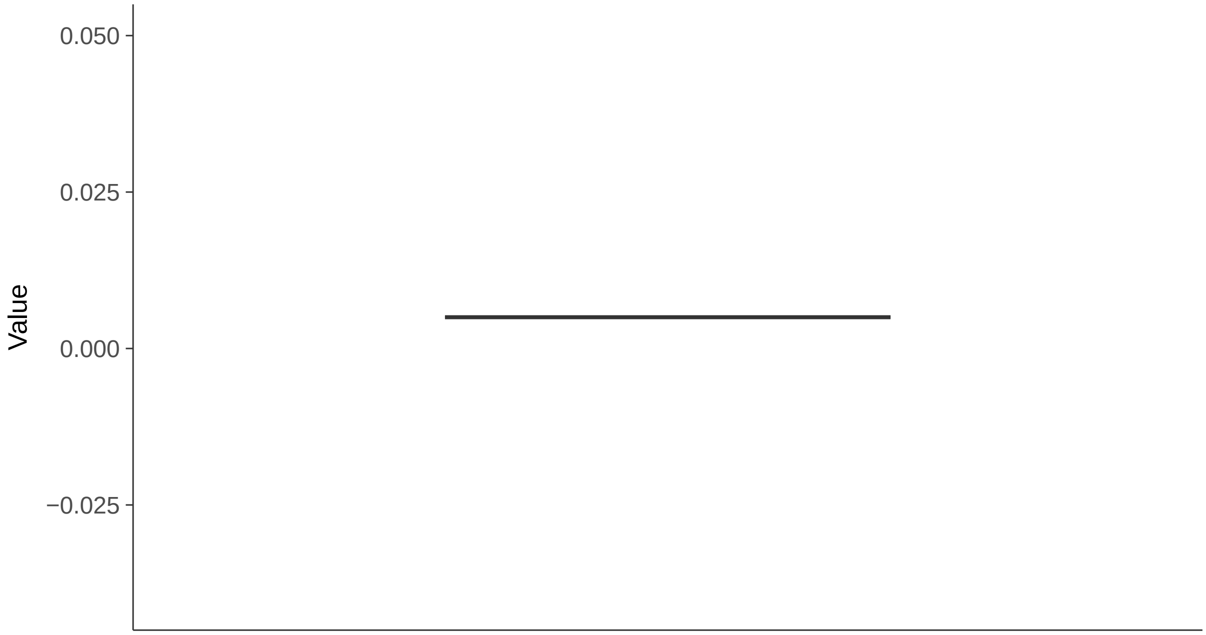
Histogram

Nickel, MW-10 (mg/L)



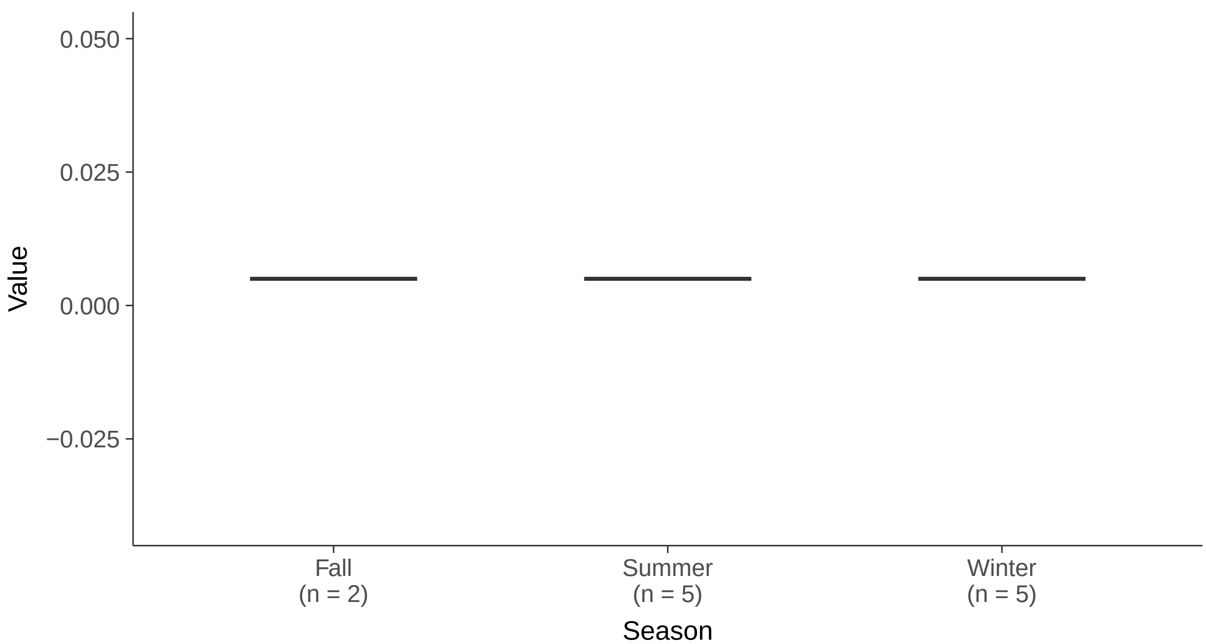
Boxplot

Nickel, MW-10 (mg/L)



Boxplot by Season

Nickel, MW-10 (mg/L)

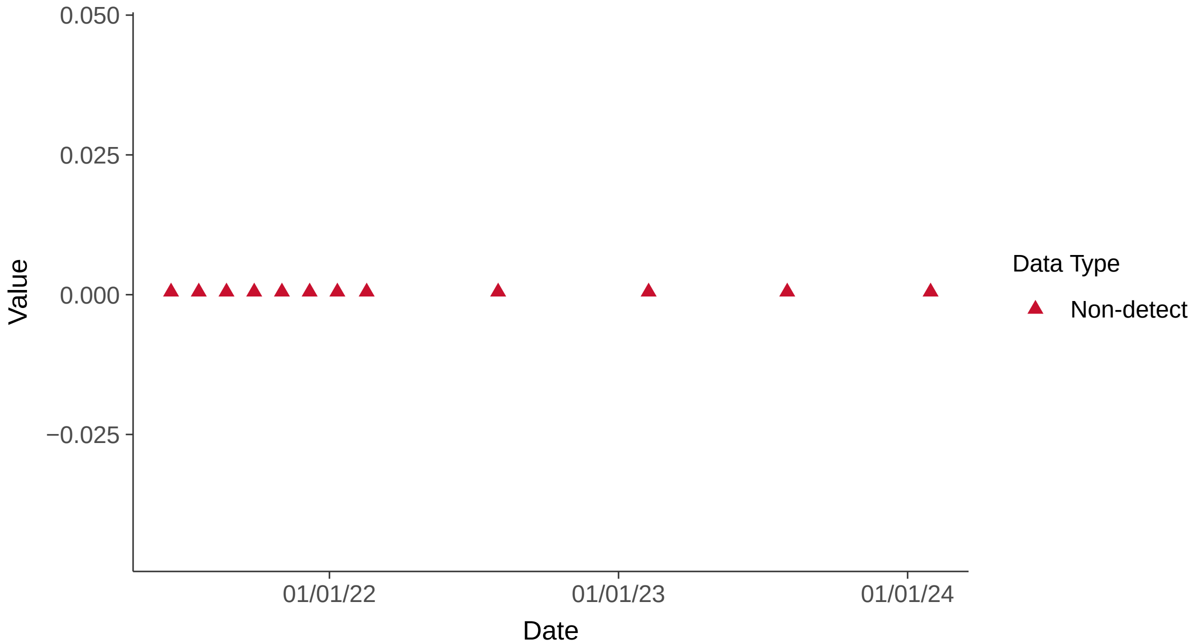


Part 115: Silver, MW-10

ID: 10_5_40

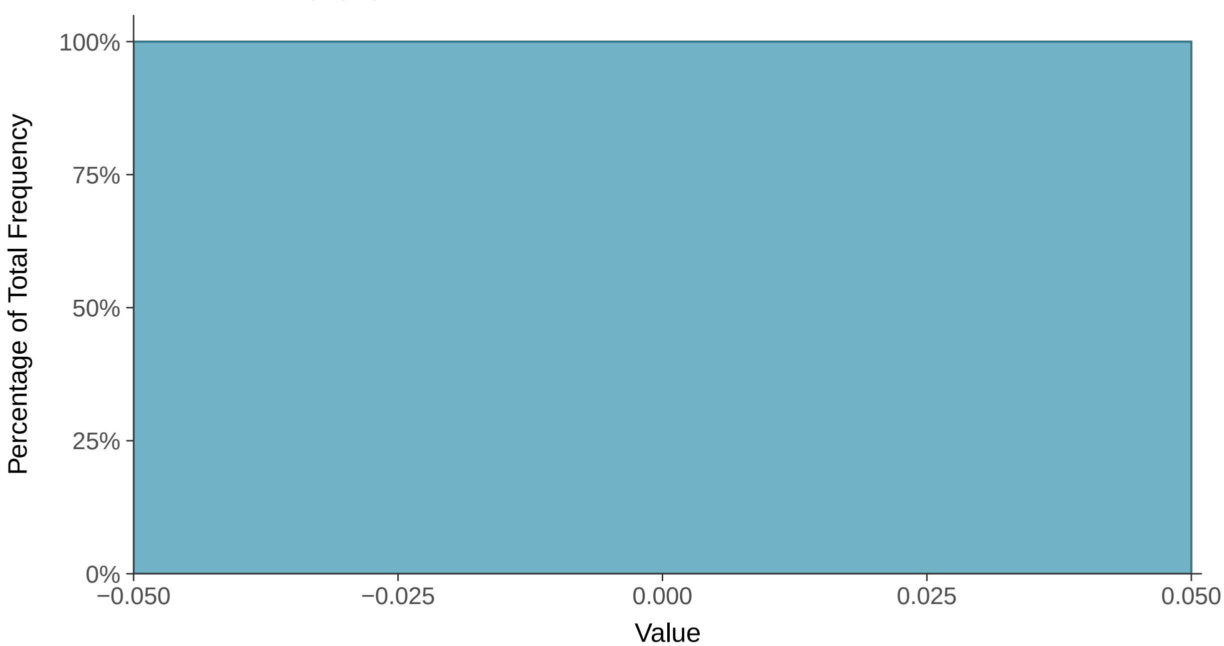
Scatter Plot

Silver, MW-10 (mg/L)



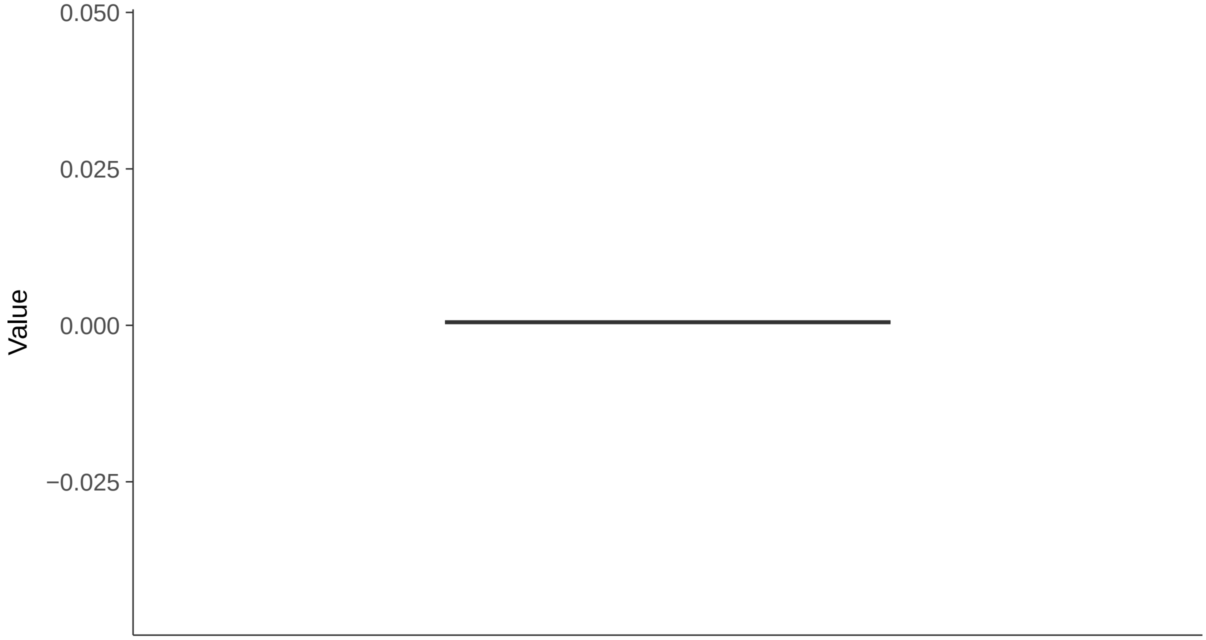
Histogram

Silver, MW-10 (mg/L)



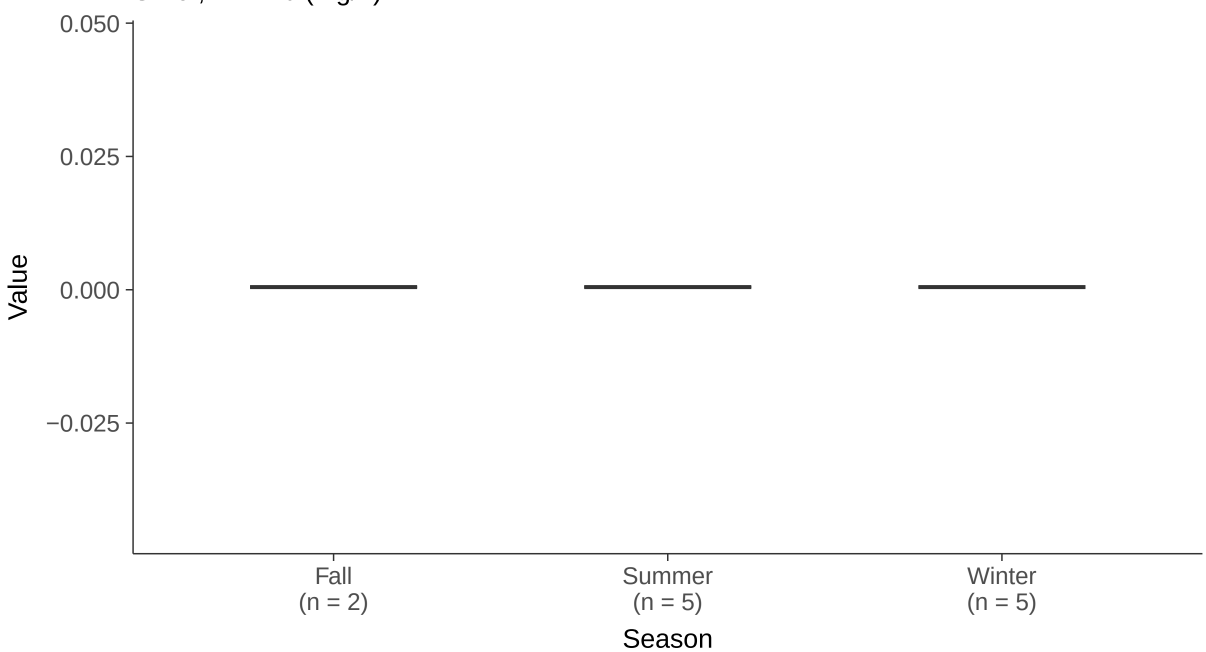
Boxplot

Silver, MW-10 (mg/L)



Boxplot by Season

Silver, MW-10 (mg/L)

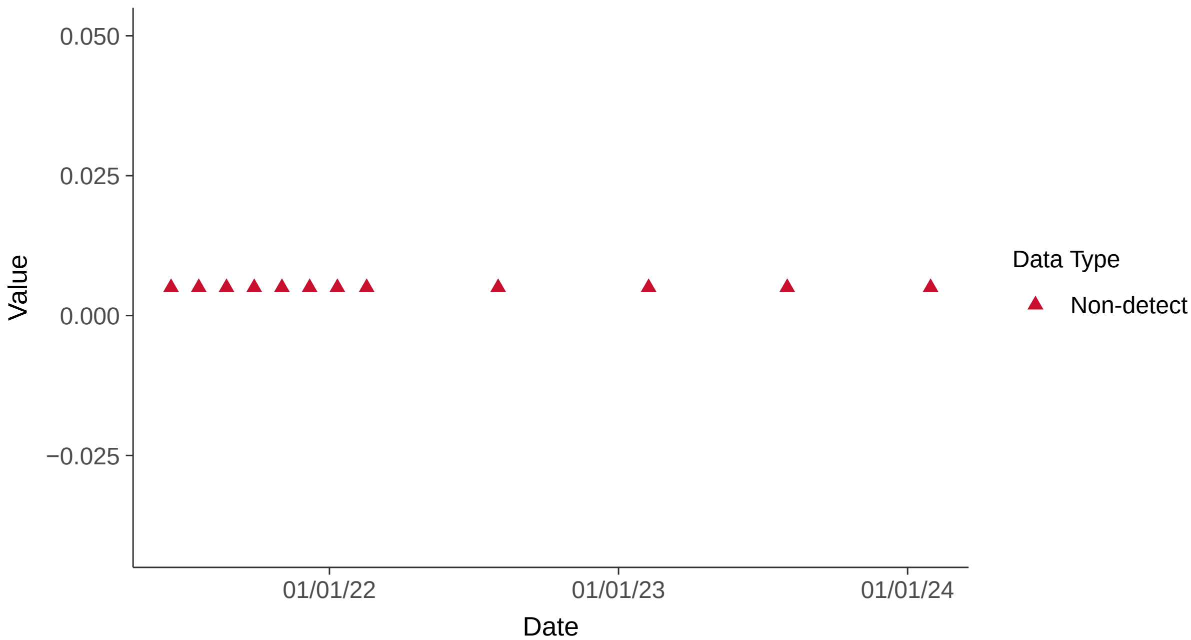


Part 115: Vanadium, MW-10

ID: 10_5_41

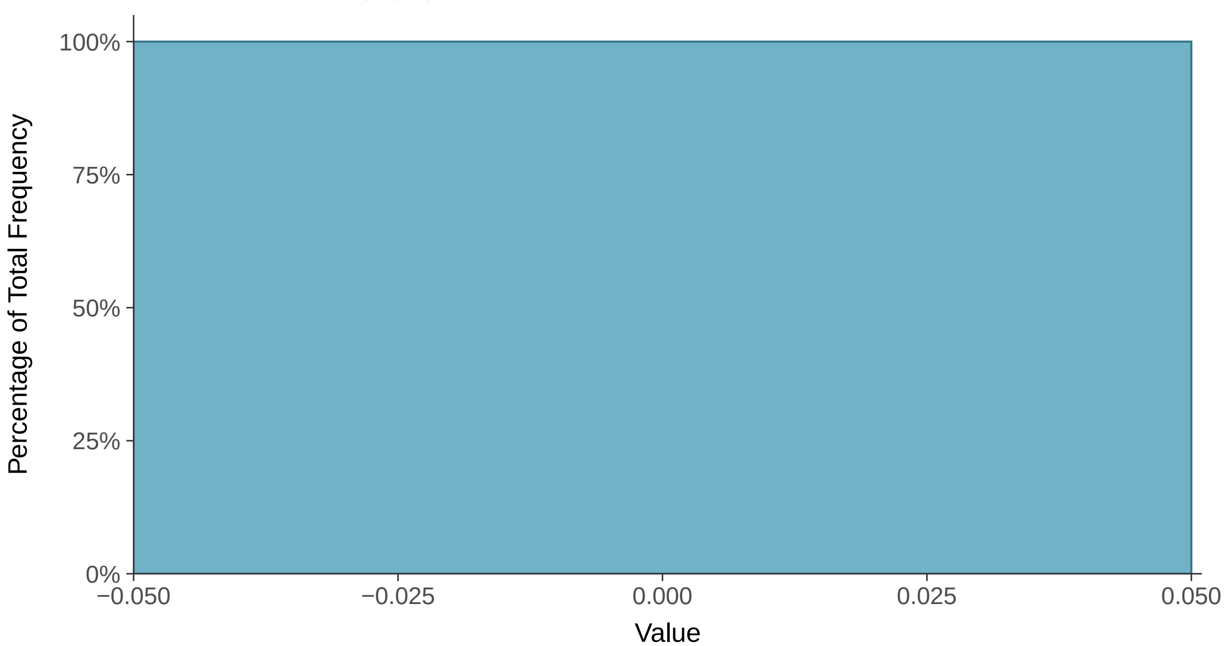
Scatter Plot

Vanadium, MW-10 (mg/L)



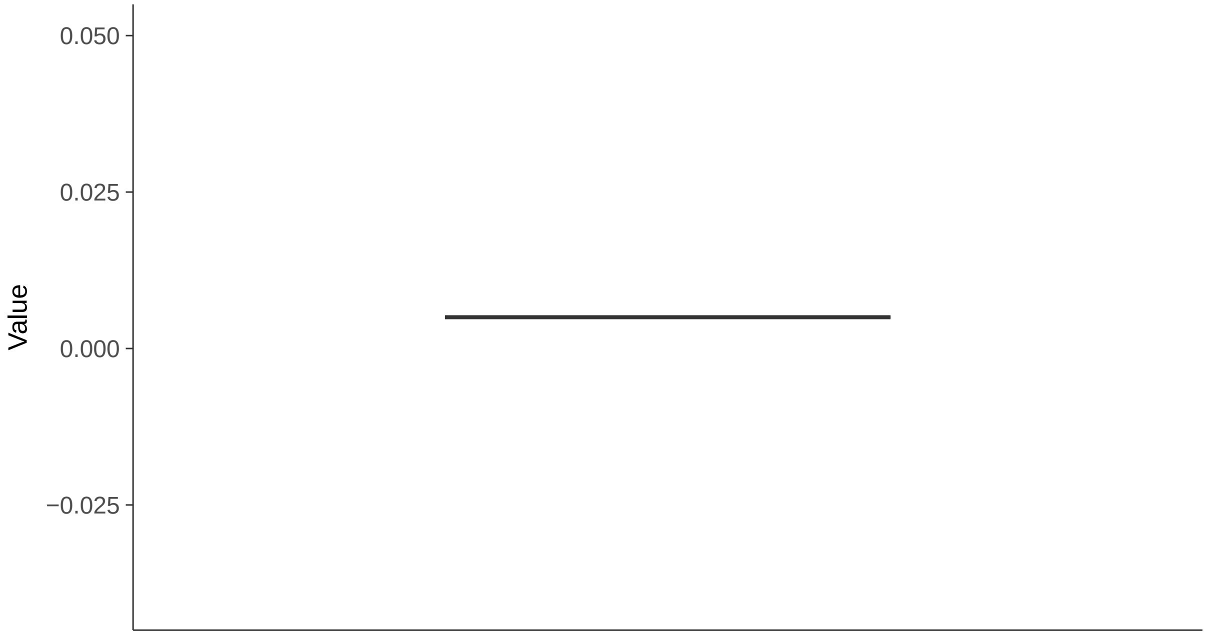
Histogram

Vanadium, MW-10 (mg/L)



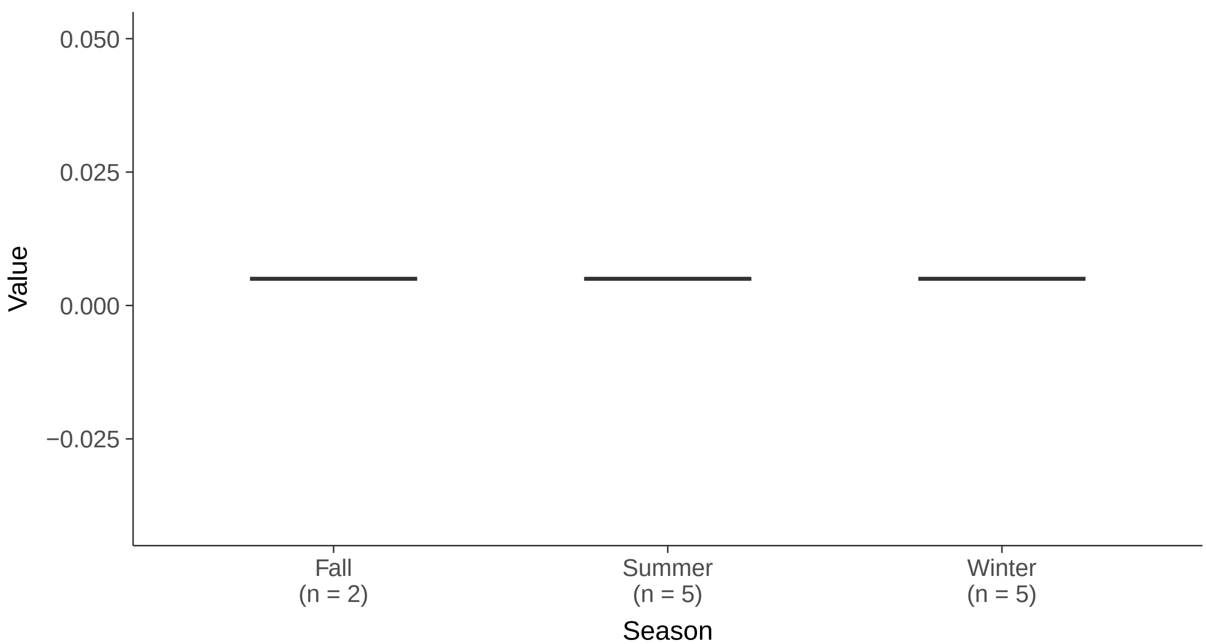
Boxplot

Vanadium, MW-10 (mg/L)



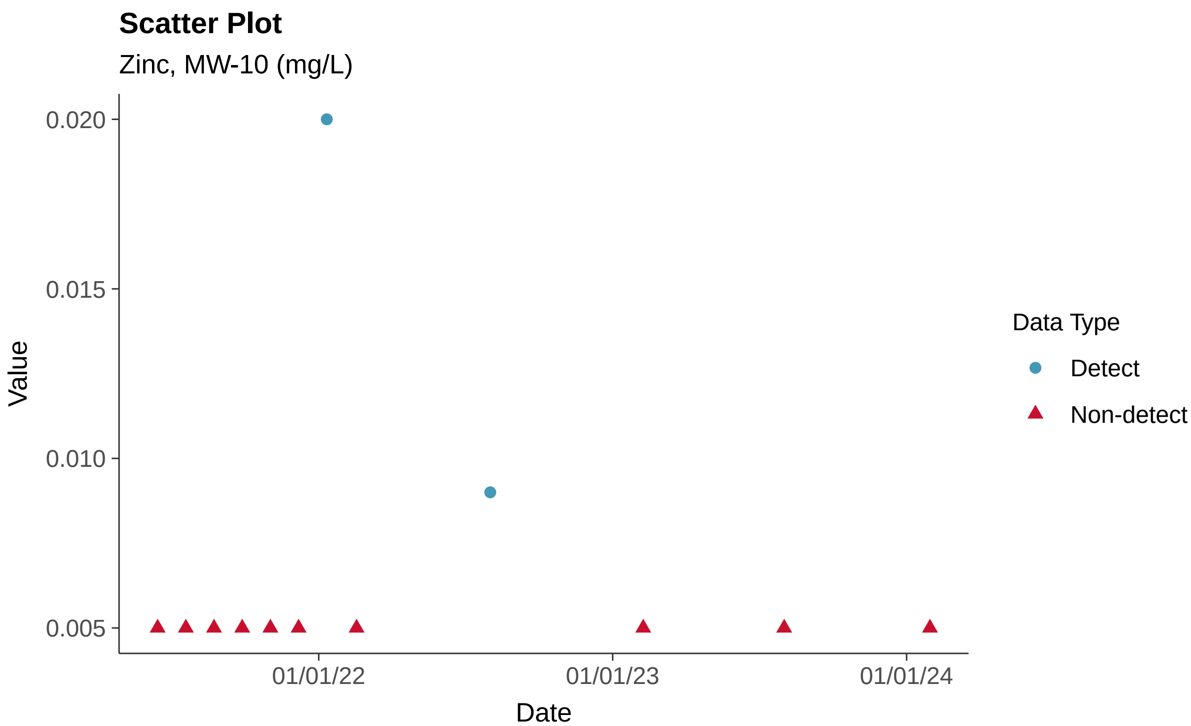
Boxplot by Season

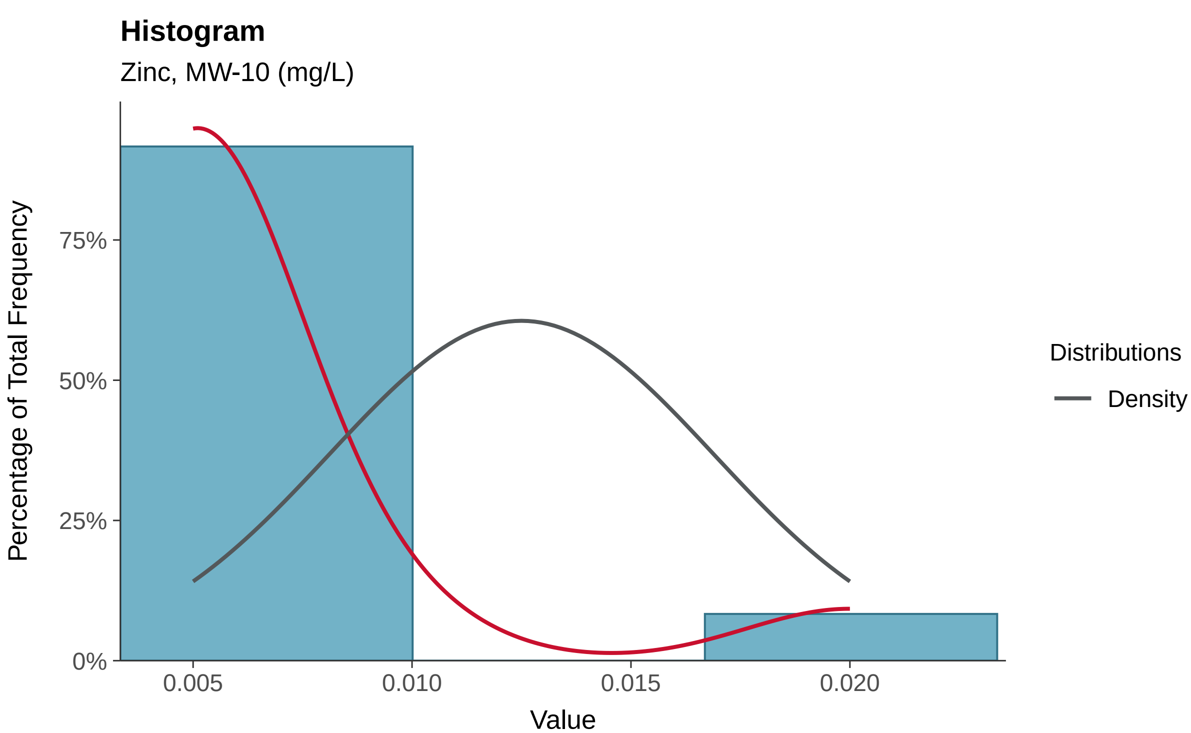
Vanadium, MW-10 (mg/L)



Part 115: Zinc, MW-10

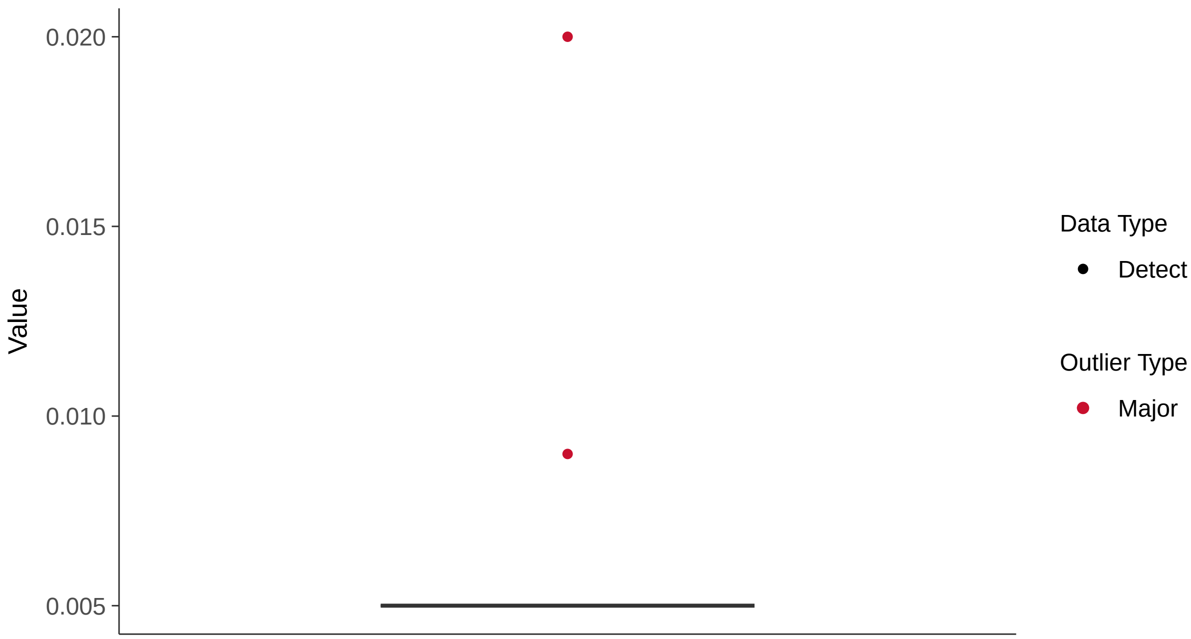
ID: 10_5_42





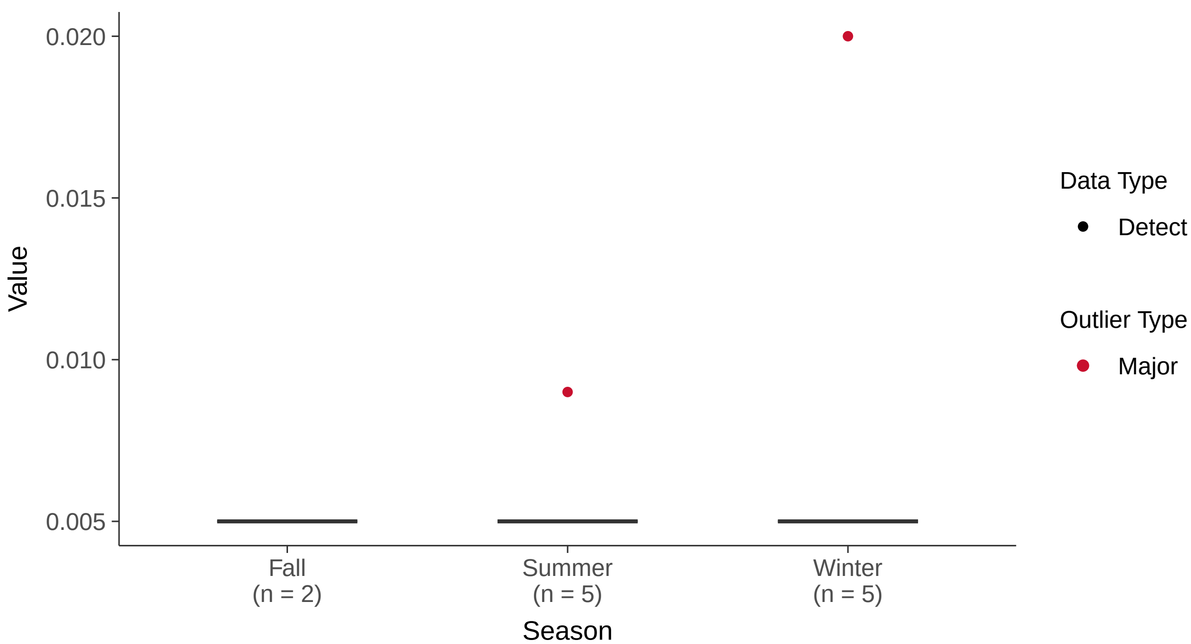
Boxplot

Zinc, MW-10 (mg/L)



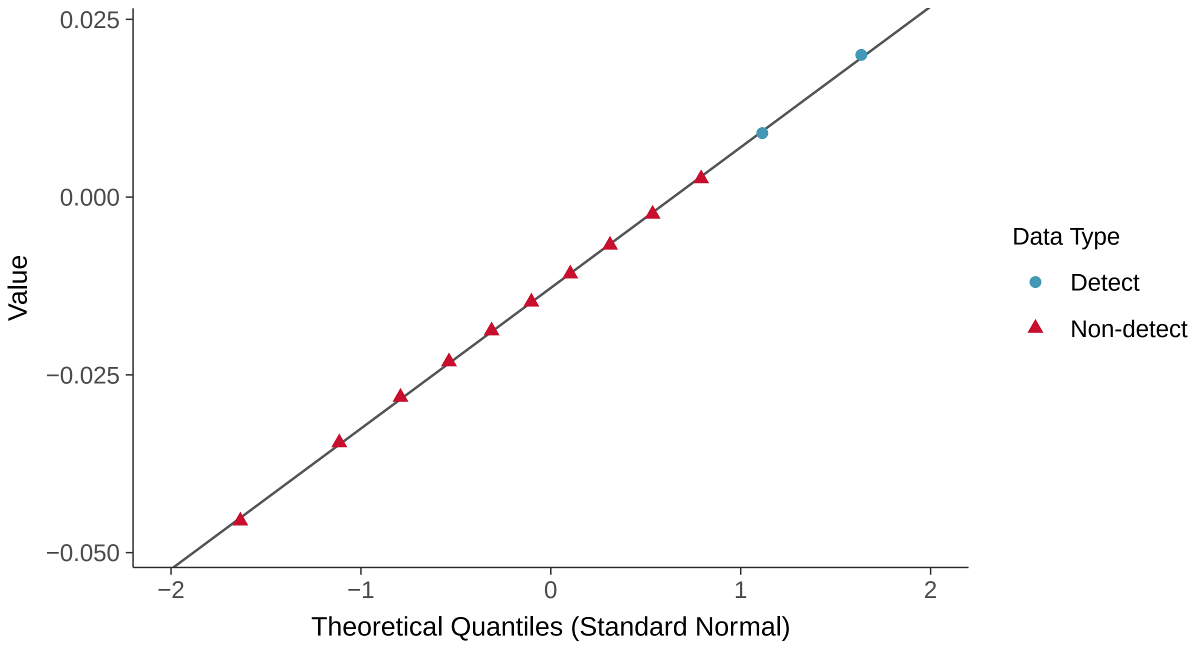
Boxplot by Season

Zinc, MW-10 (mg/L)



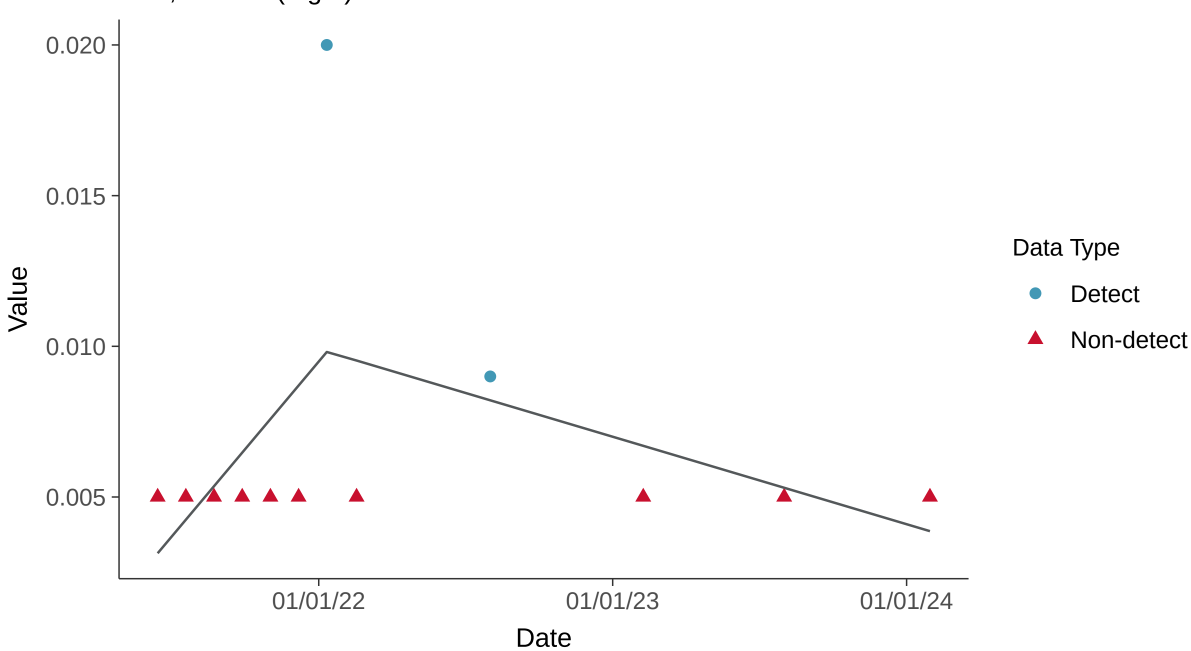
Normal Q-Q plot using ROS Imputed Estimates

Zinc, MW-10 (mg/L)



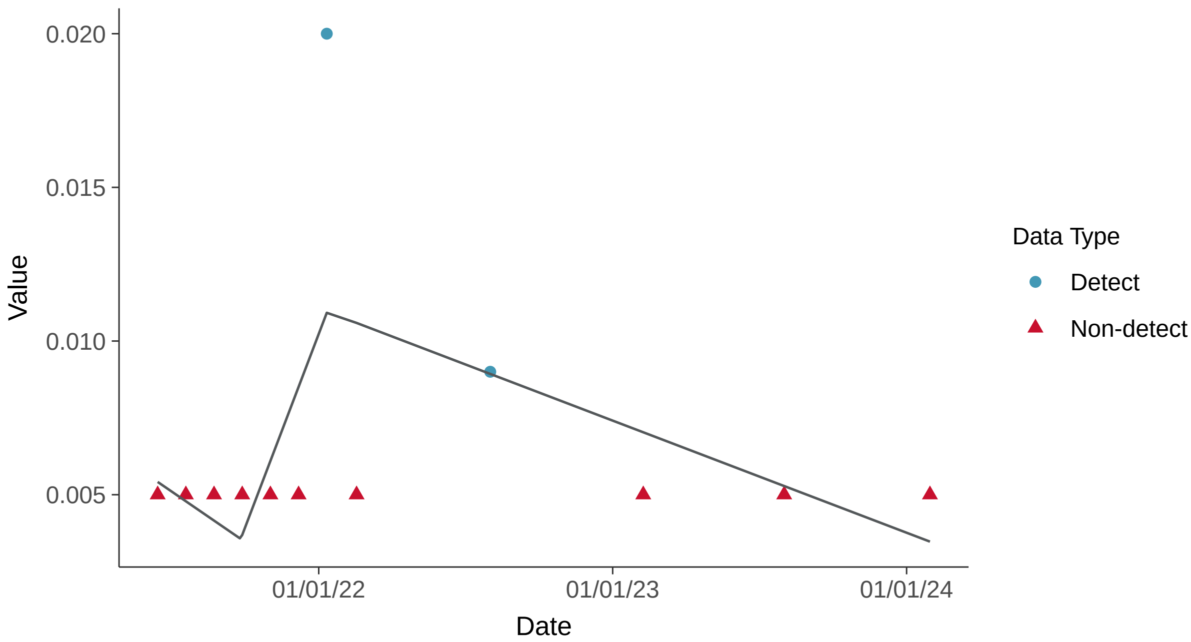
Trend Regression: Piecewise Linear-Linear

Zinc, MW-10 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Zinc, MW-10 (mg/L)

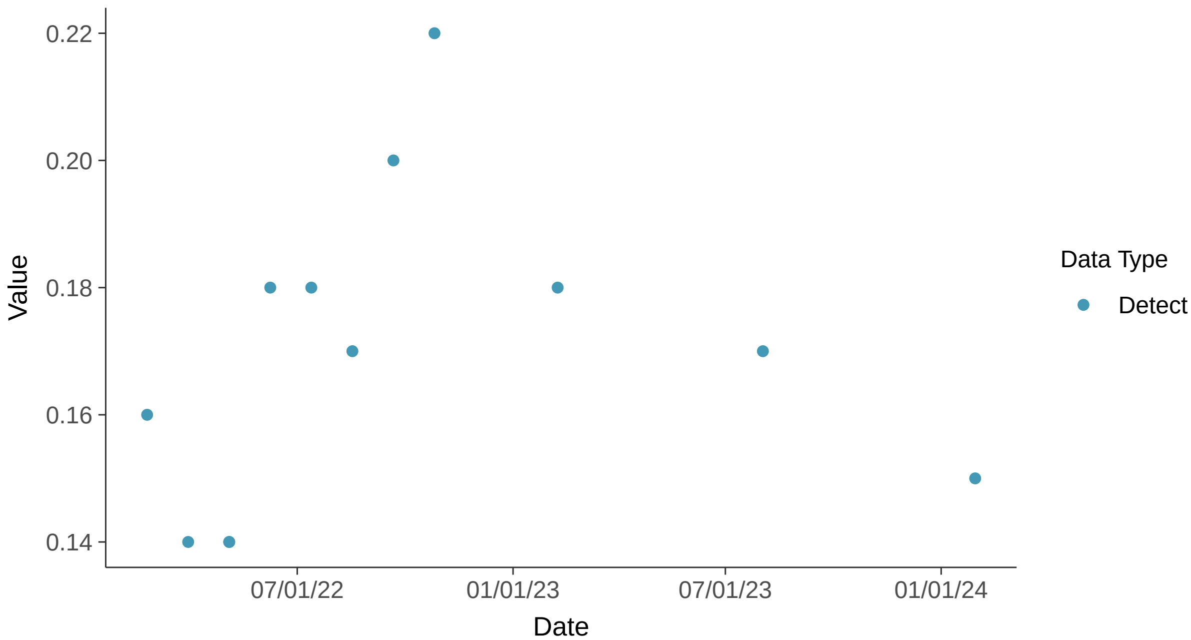


Appendix III: Boron, MW-13

ID: 13_1_01

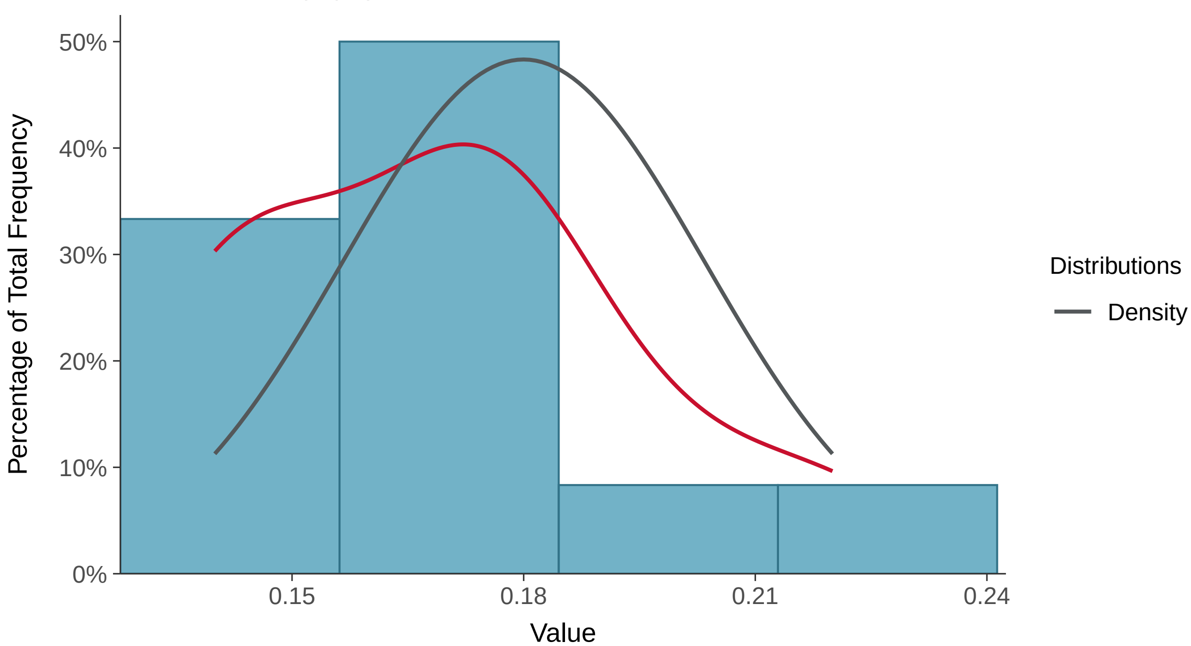
Scatter Plot

Boron, MW-13 (mg/L)



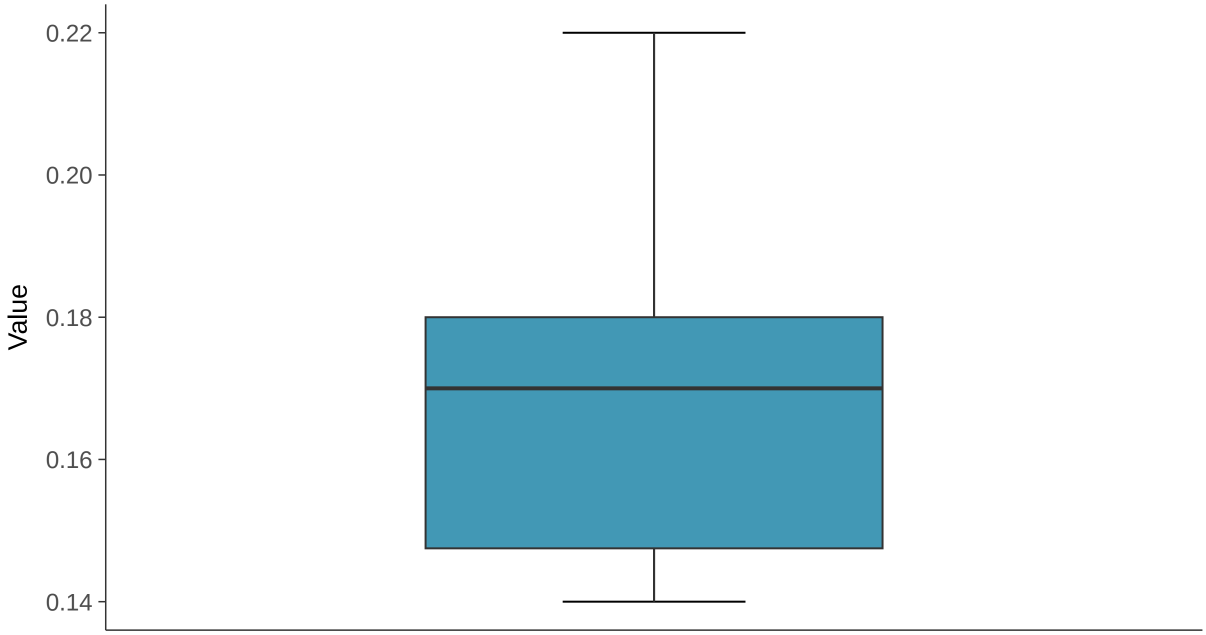
Histogram

Boron, MW-13 (mg/L)



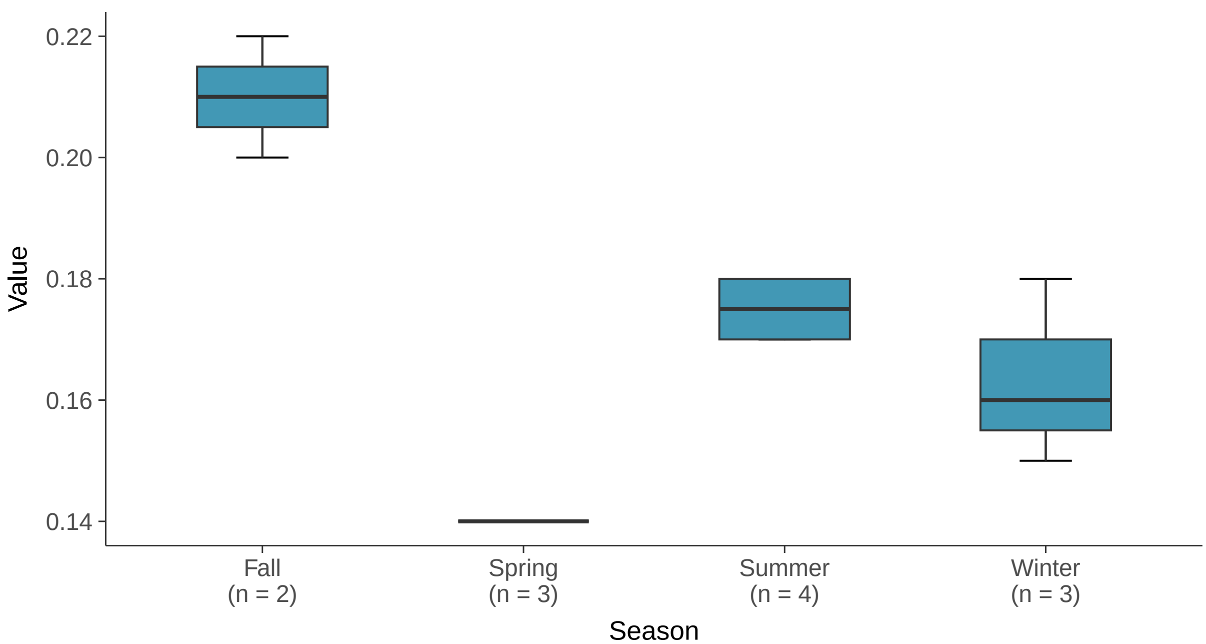
Boxplot

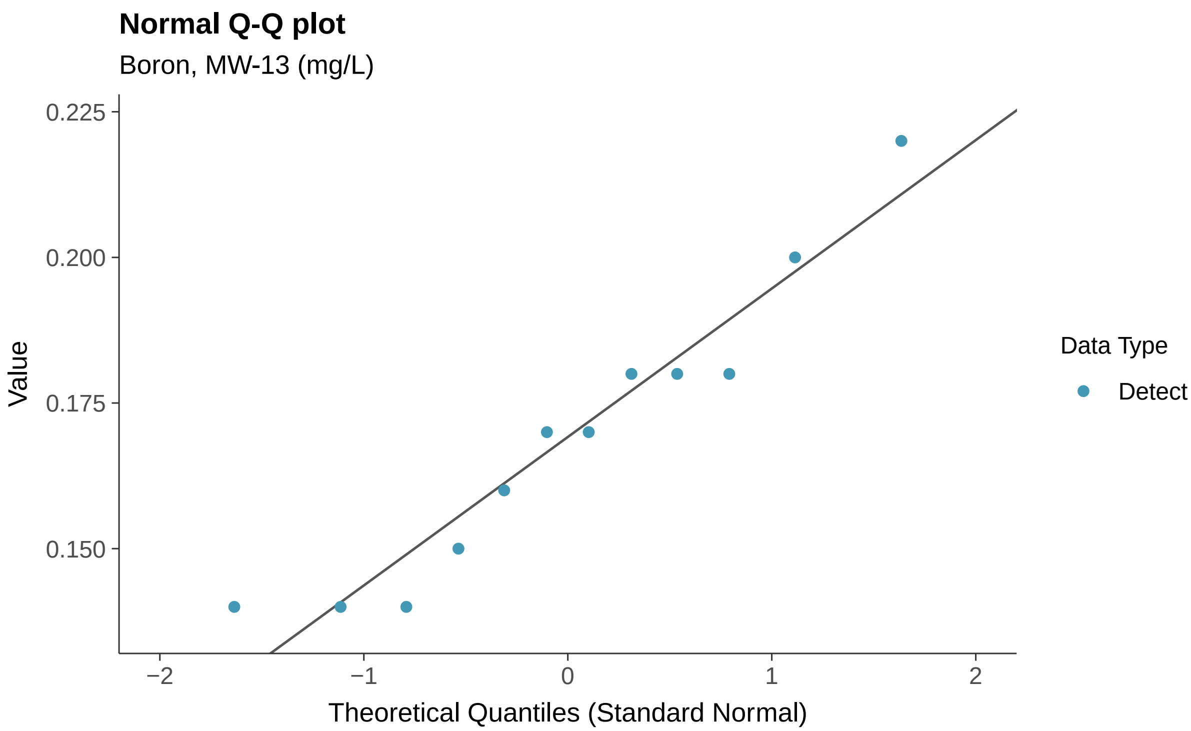
Boron, MW-13 (mg/L)

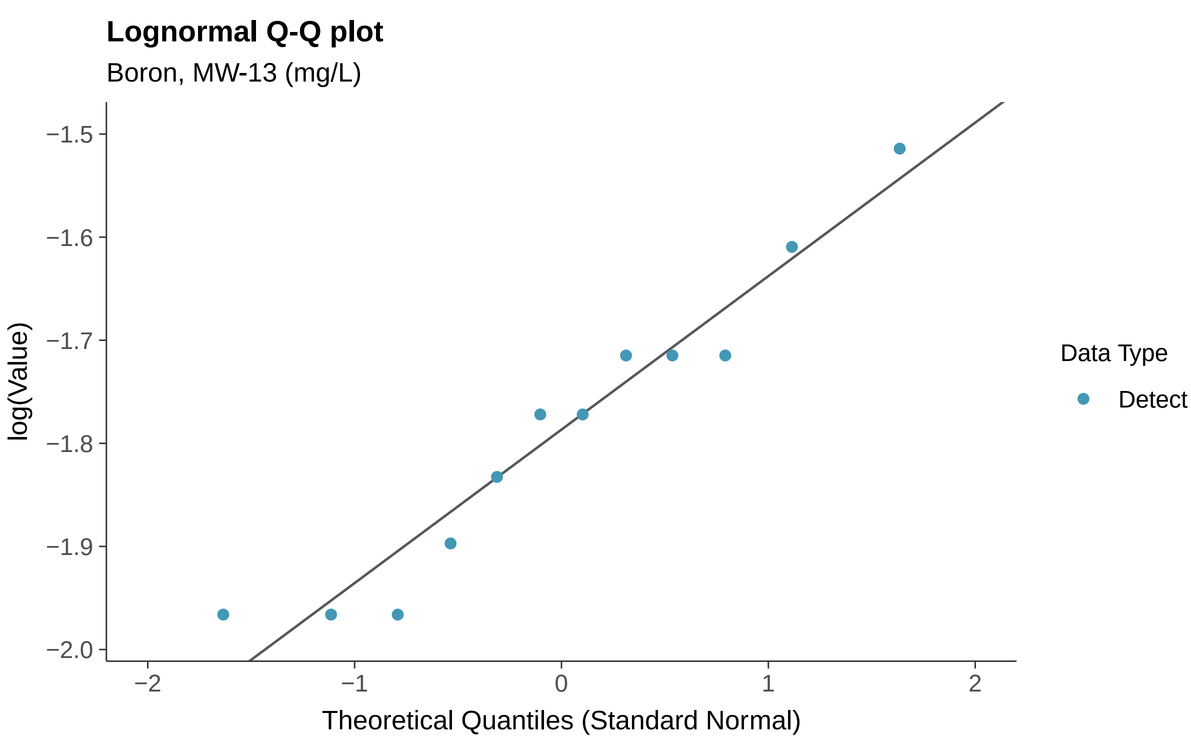


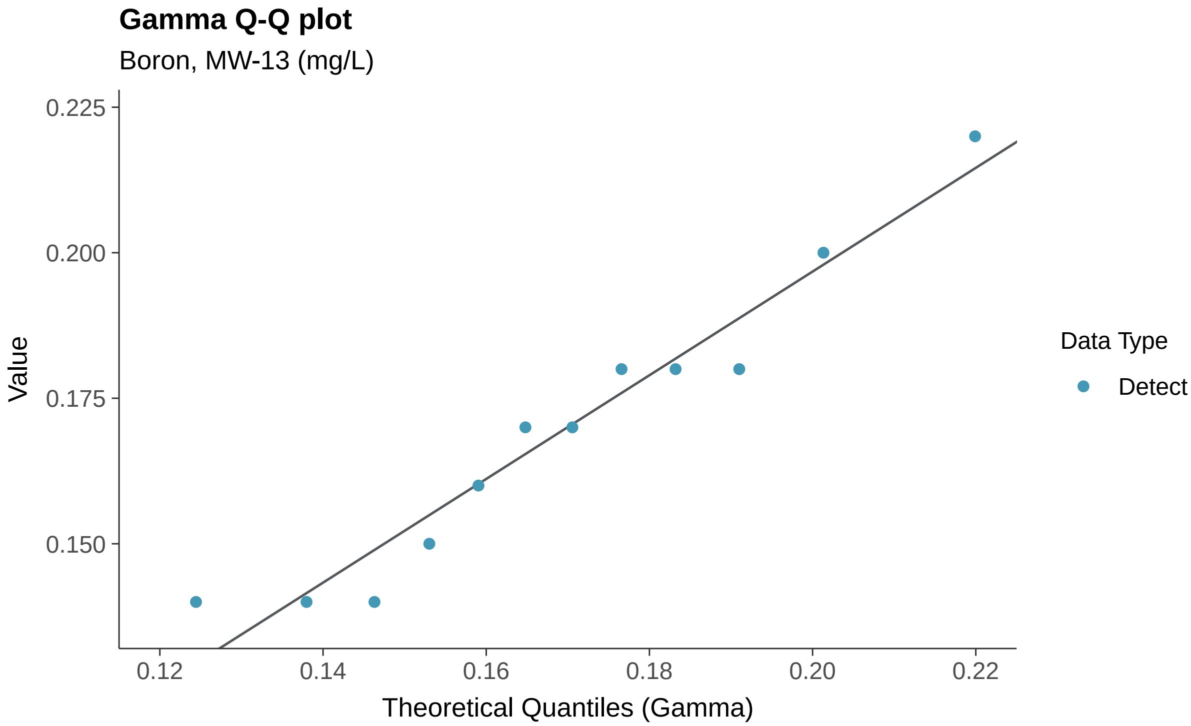
Boxplot by Season

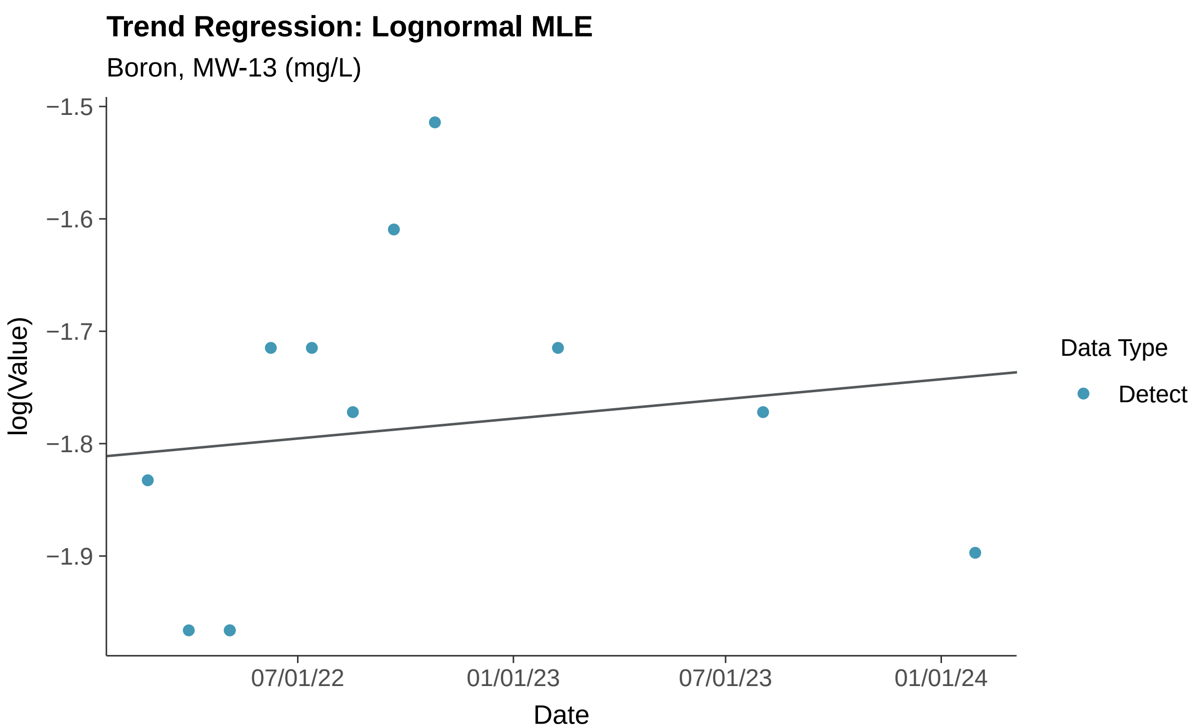
Boron, MW-13 (mg/L)




Normal Q-Q plot
Boron, MW-13 (mg/L)
Value
0.225
0.200
0.175
0.150
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

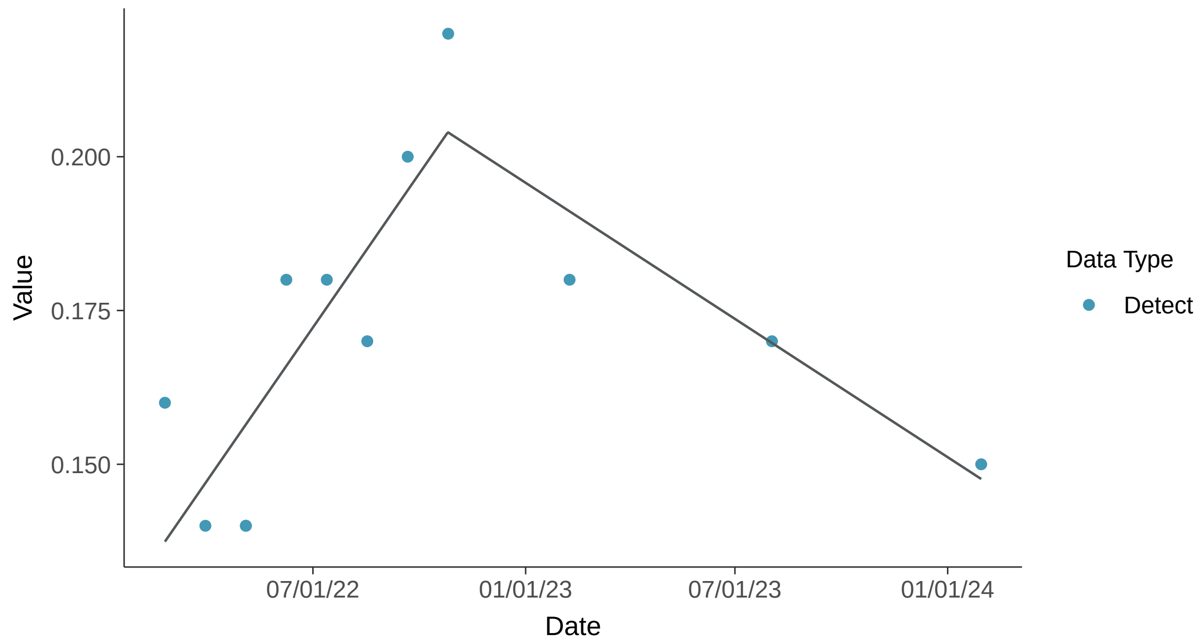

Lognormal Q-Q plot
Boron, MW-13 (mg/L)
log(Value)
−1.5
−1.6
−1.7
−1.8
−1.9
−2.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Boron, MW-13 (mg/L)
Value
0.225
0.200
0.175
0.150
0.12
0.14
0.16
0.18
0.20
0.22
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-13 (mg/L)
log(Value)
−1.5
−1.6
−1.7
−1.8
−1.9
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

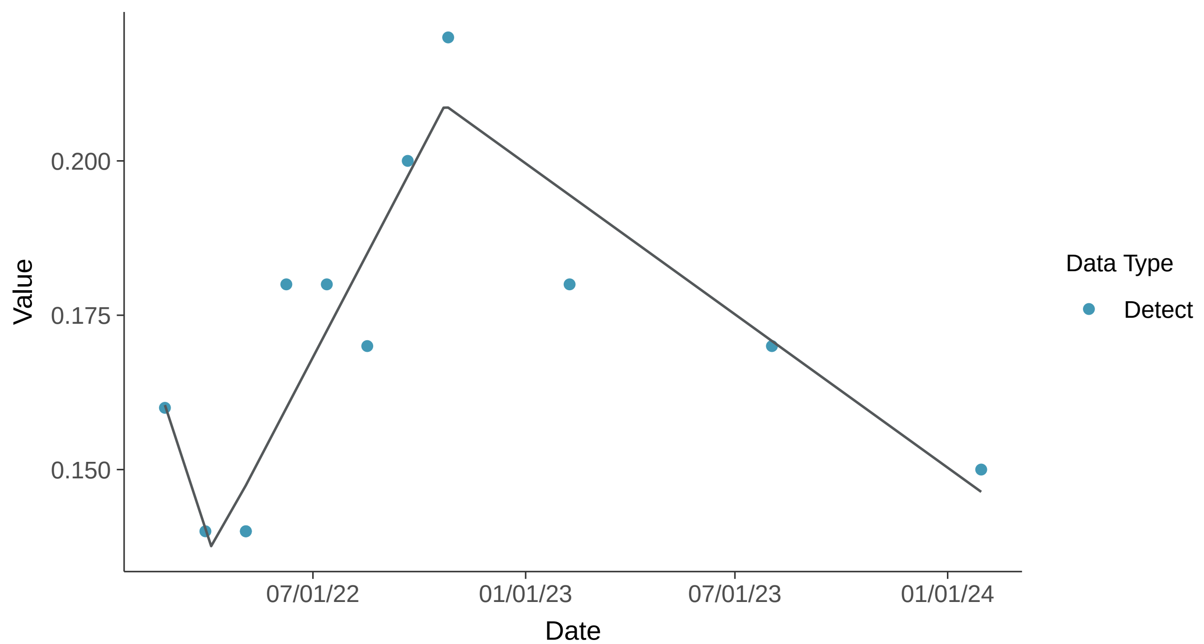
Trend Regression: Piecewise Linear-Linear

Boron, MW-13 (mg/L)



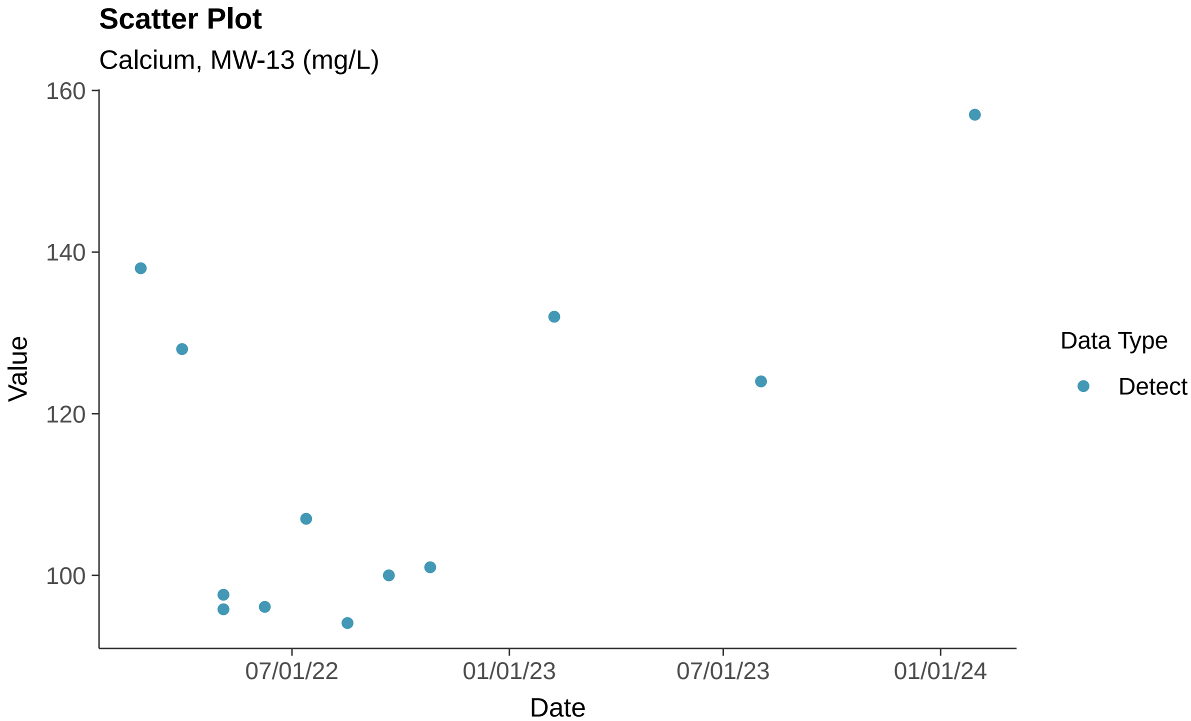
Trend Regression: Piecewise Linear-Linear-Linear

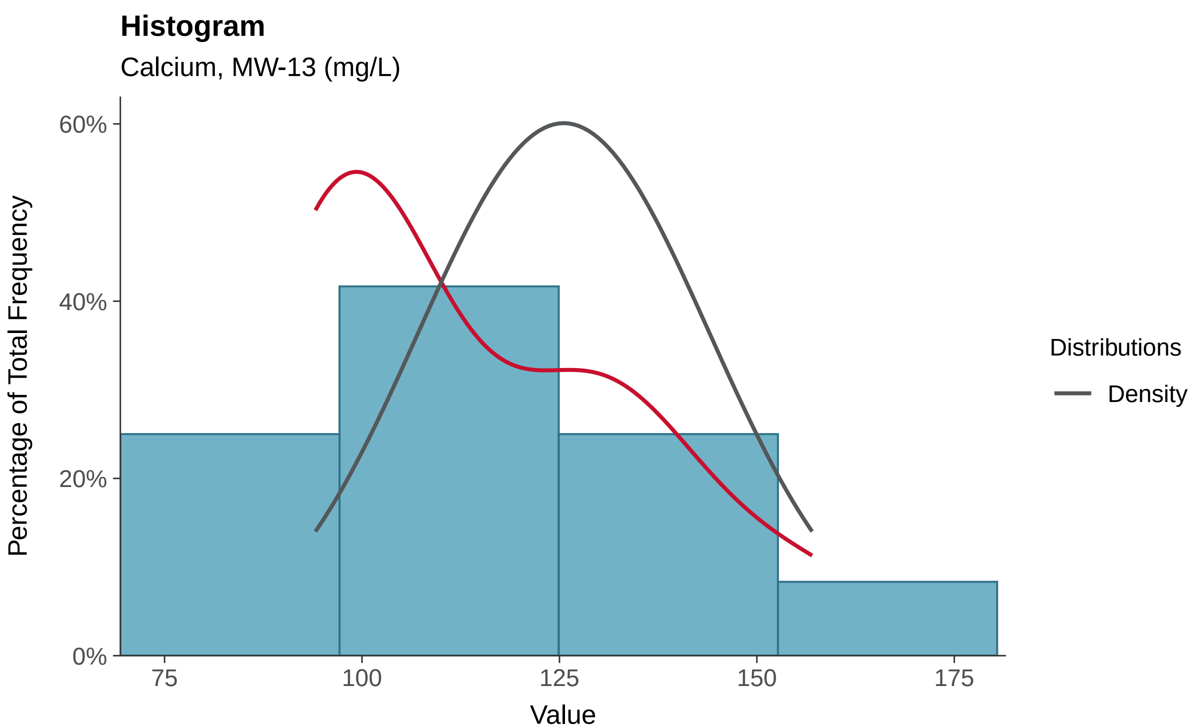
Boron, MW-13 (mg/L)



Appendix III: Calcium, MW-13

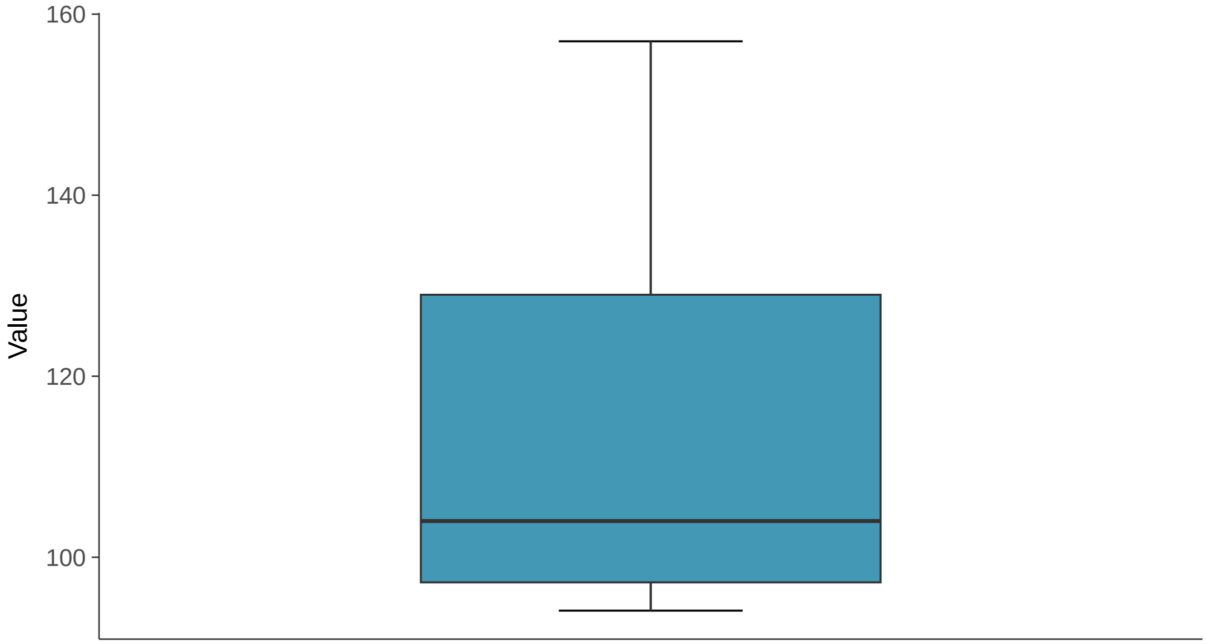
ID: 13_1_02





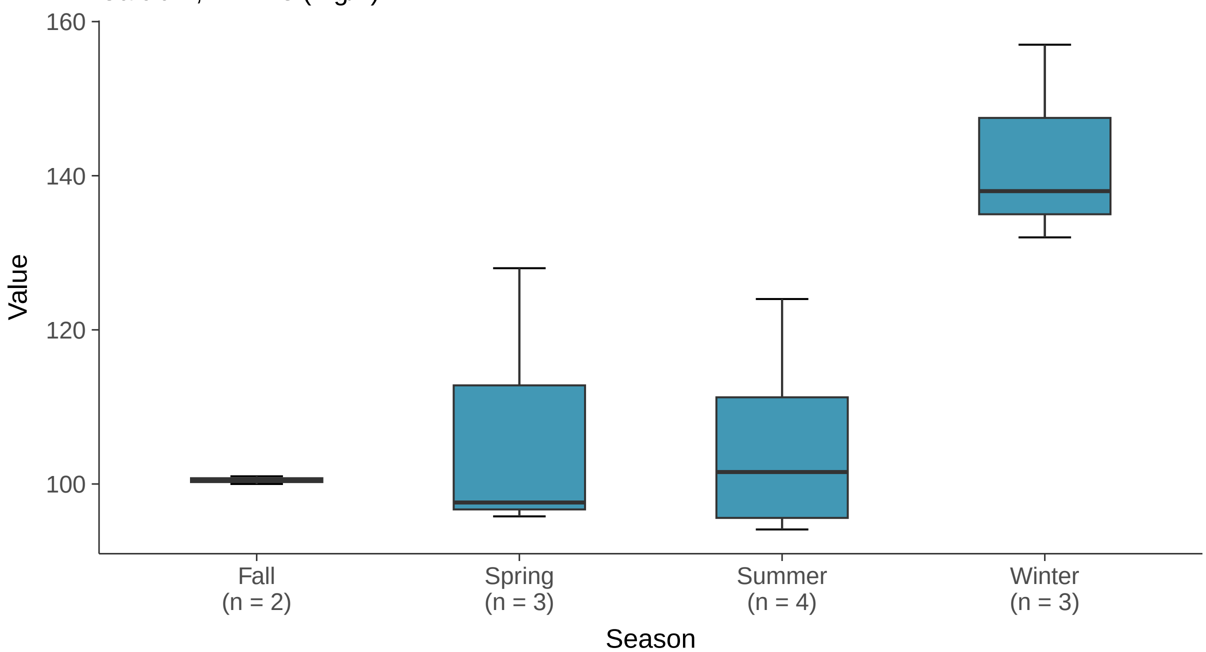
Boxplot

Calcium, MW-13 (mg/L)



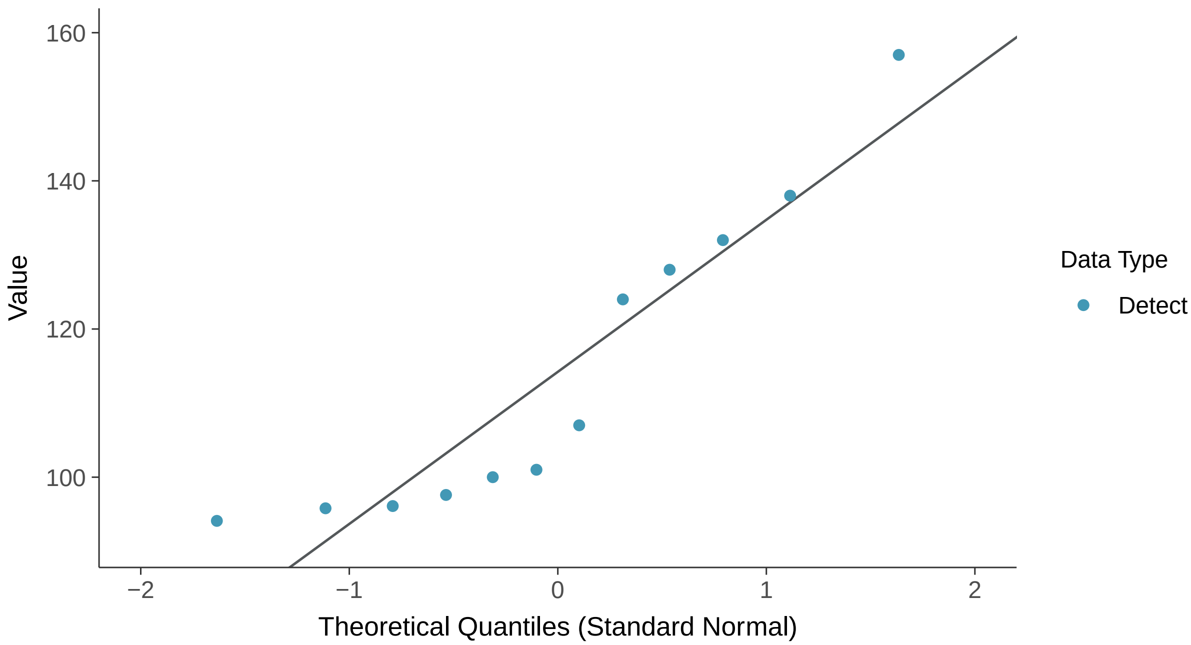
Boxplot by Season

Calcium, MW-13 (mg/L)



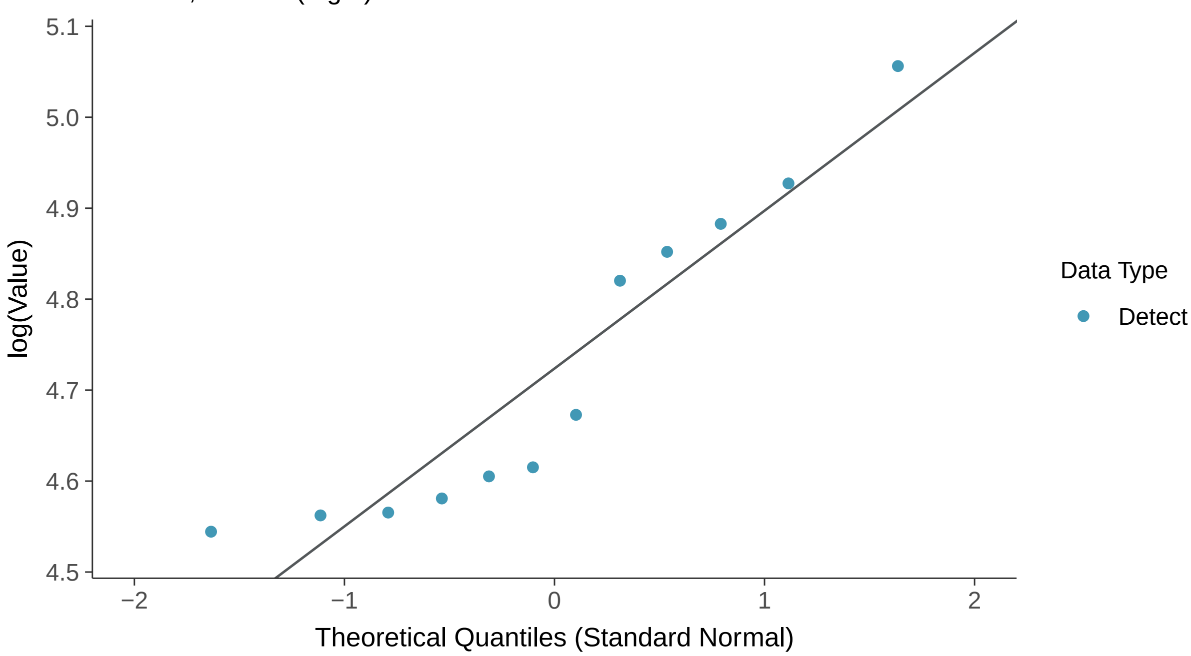
Normal Q-Q plot

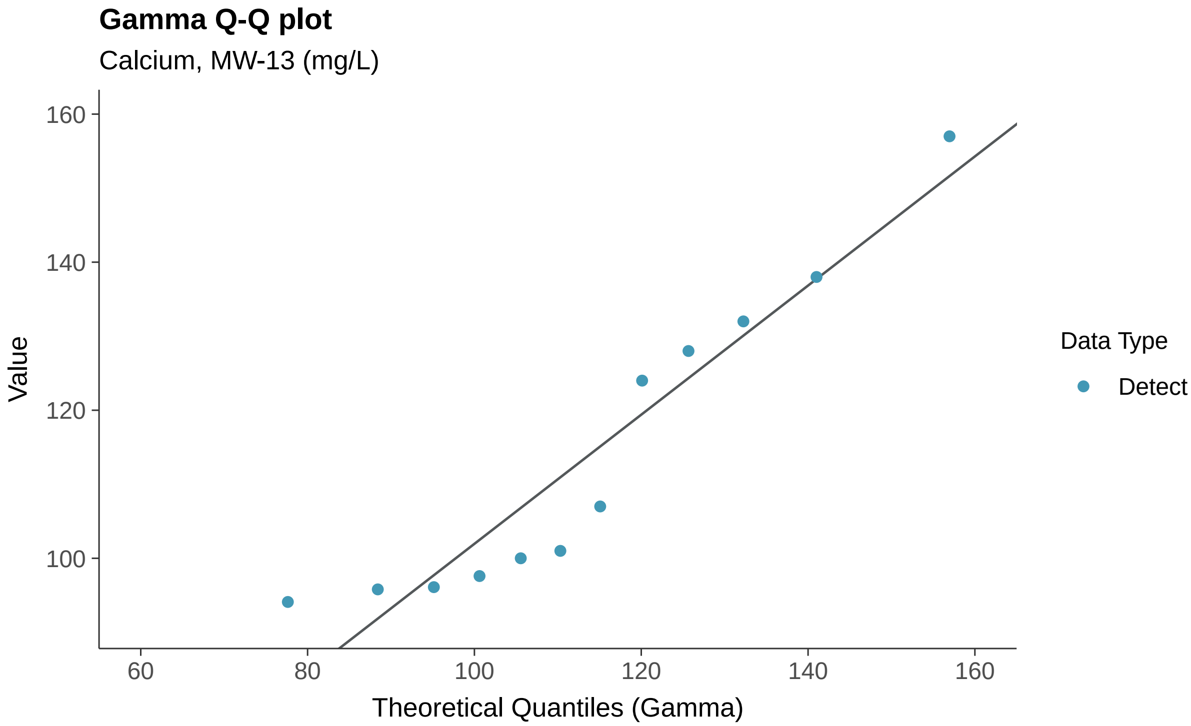
Calcium, MW-13 (mg/L)

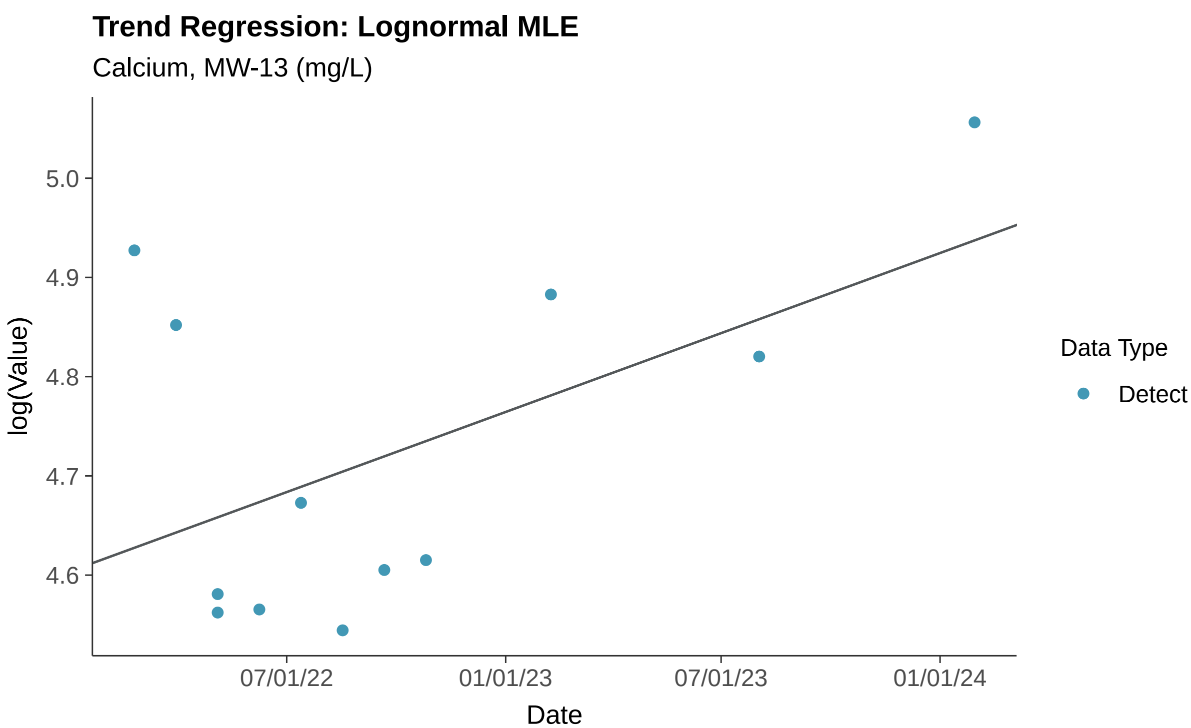


Lognormal Q-Q plot

Calcium, MW-13 (mg/L)

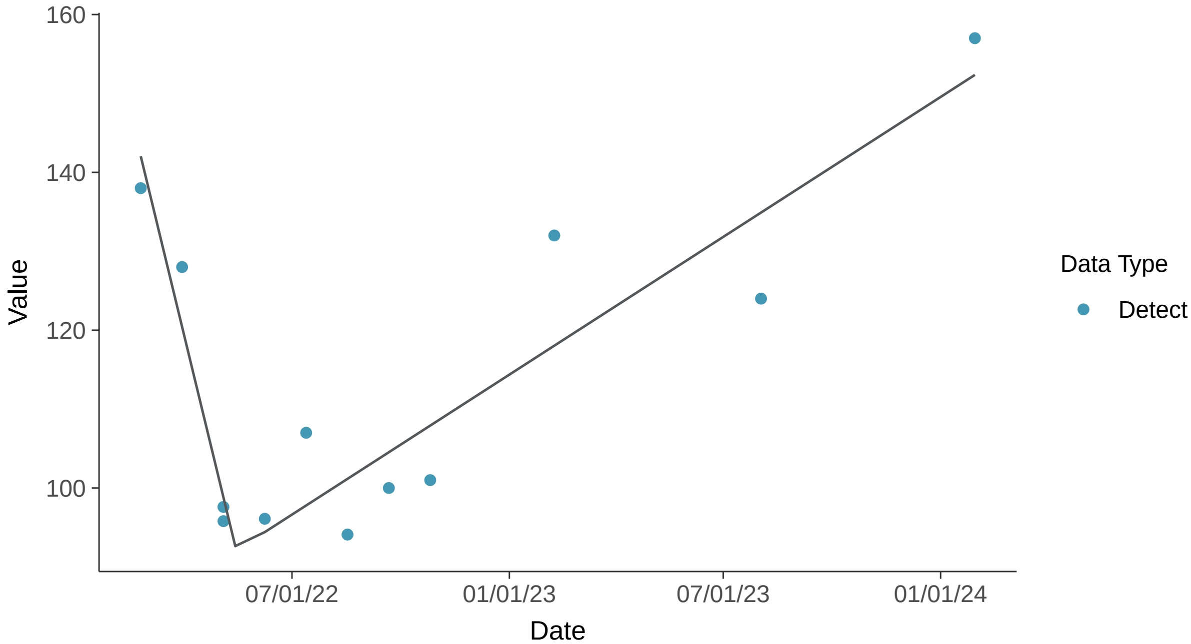



Gamma Q-Q plot
Calcium, MW-13 (mg/L)
Value
160
140
120
100
60
80
100
120
140
160
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Calcium, MW-13 (mg/L)
log(Value)
5.0
4.9
4.8
4.7
4.6
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

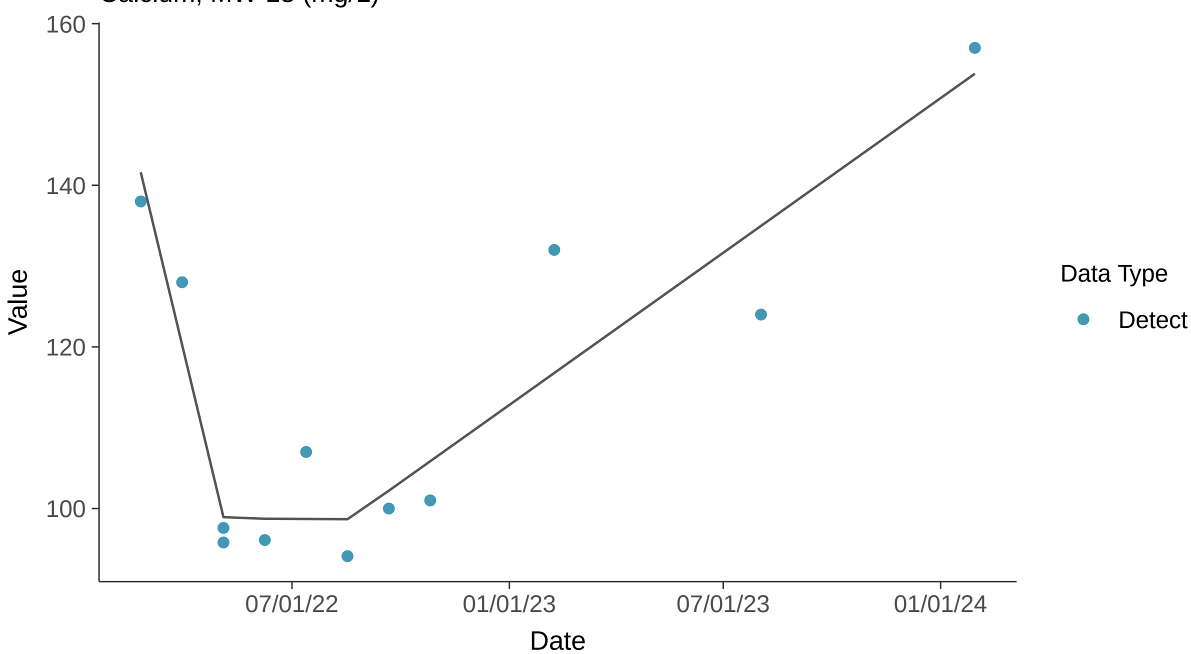
Trend Regression: Piecewise Linear-Linear

Calcium, MW-13 (mg/L)



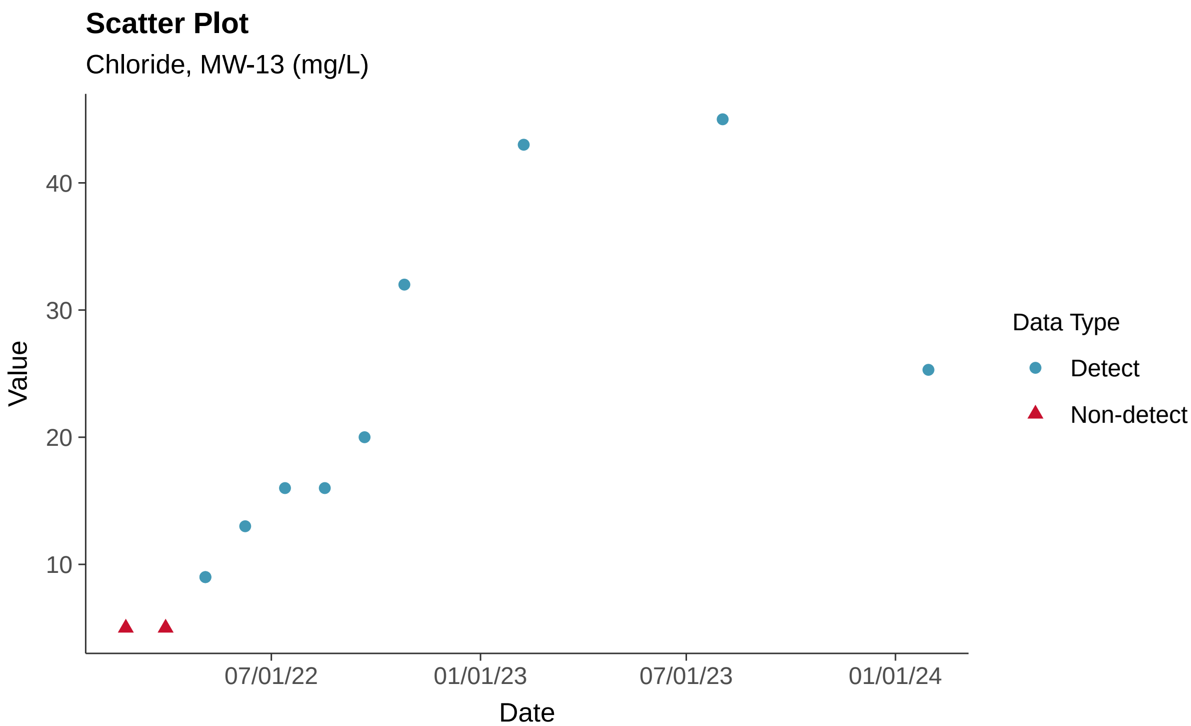
Trend Regression: Piecewise Linear-Linear-Linear

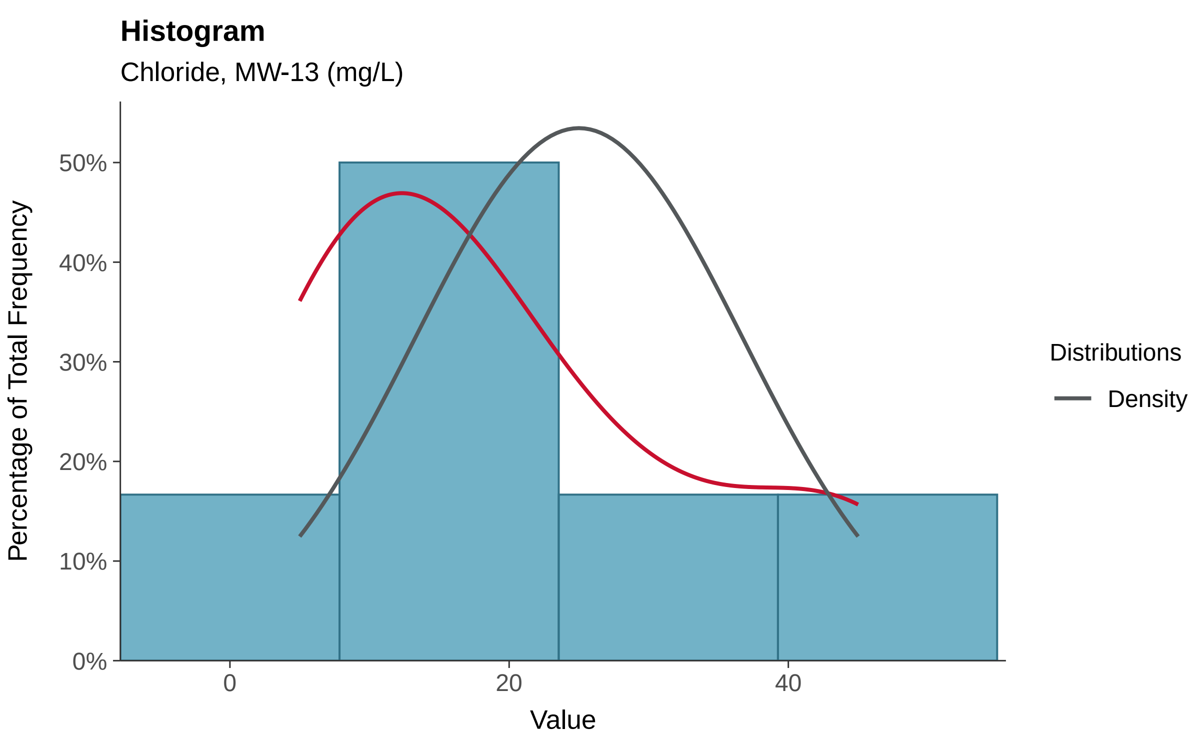
Calcium, MW-13 (mg/L)



Appendix III: Chloride, MW-13

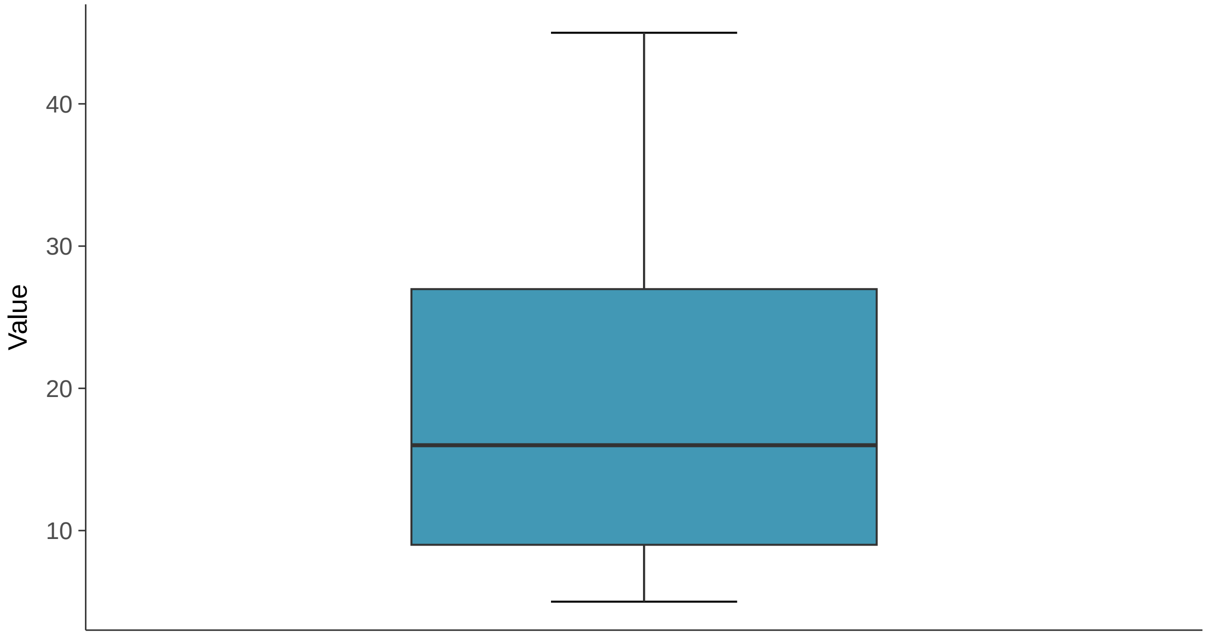
ID: 13_1_03





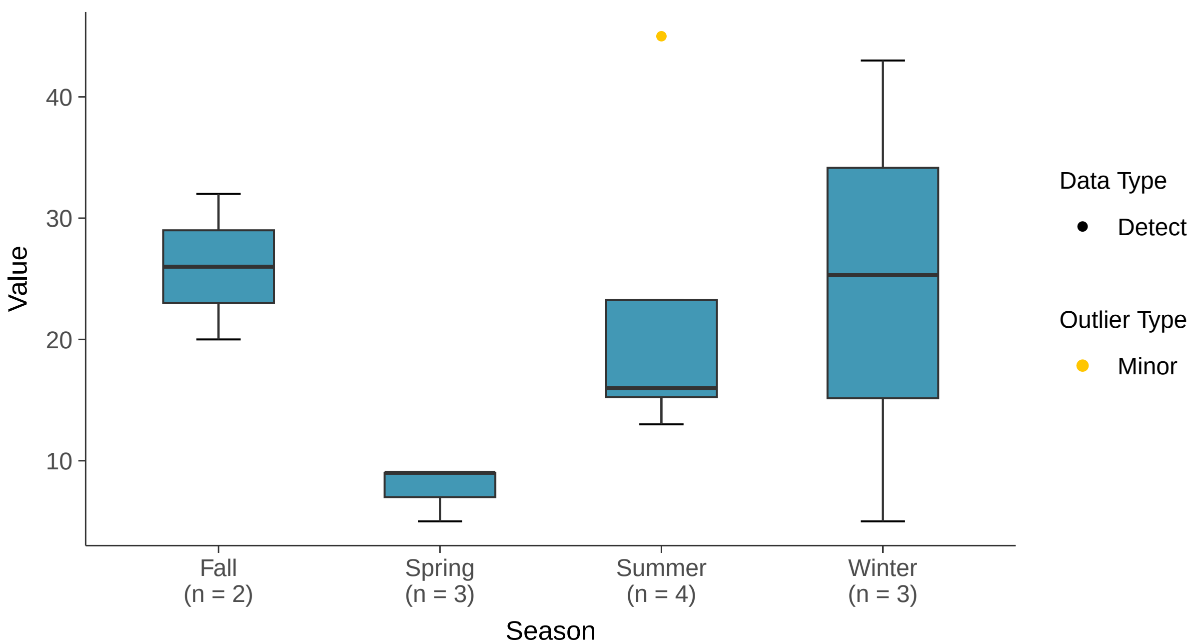
Boxplot

Chloride, MW-13 (mg/L)



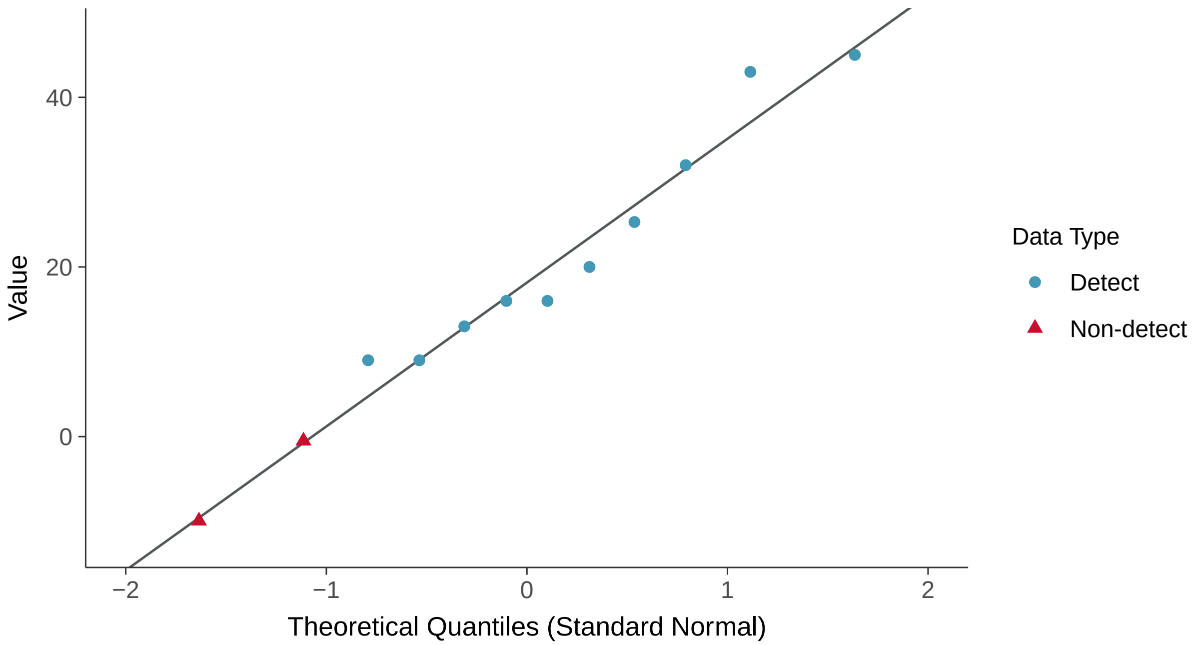
Boxplot by Season

Chloride, MW-13 (mg/L)



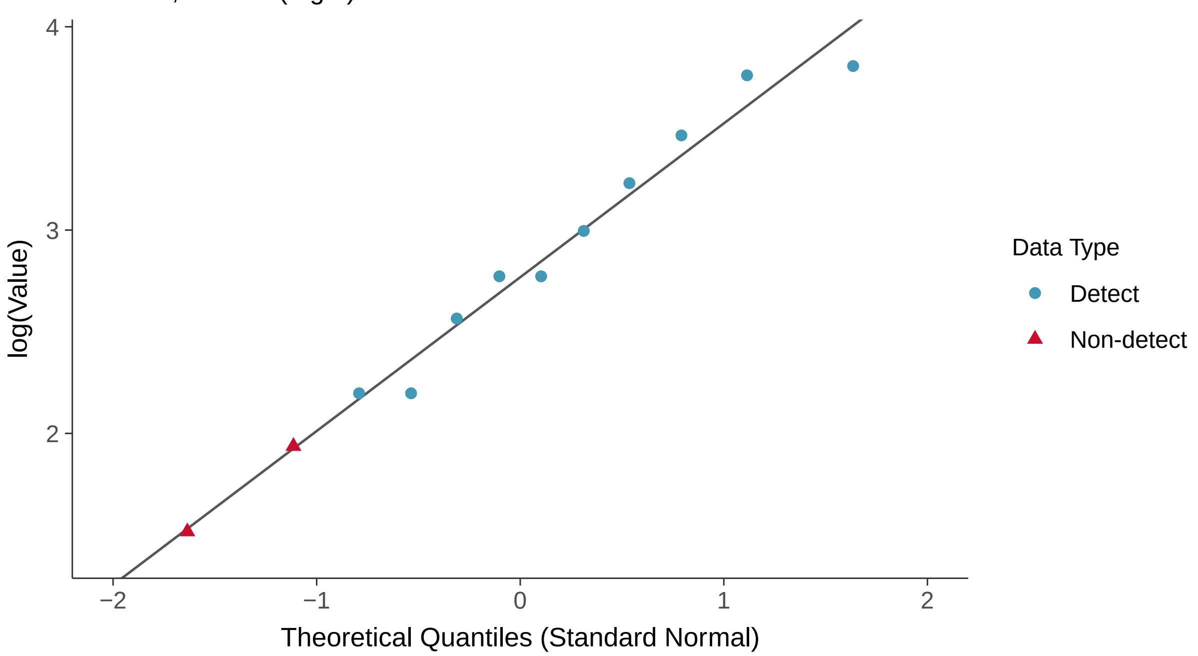
Normal Q-Q plot using ROS Imputed Estimates

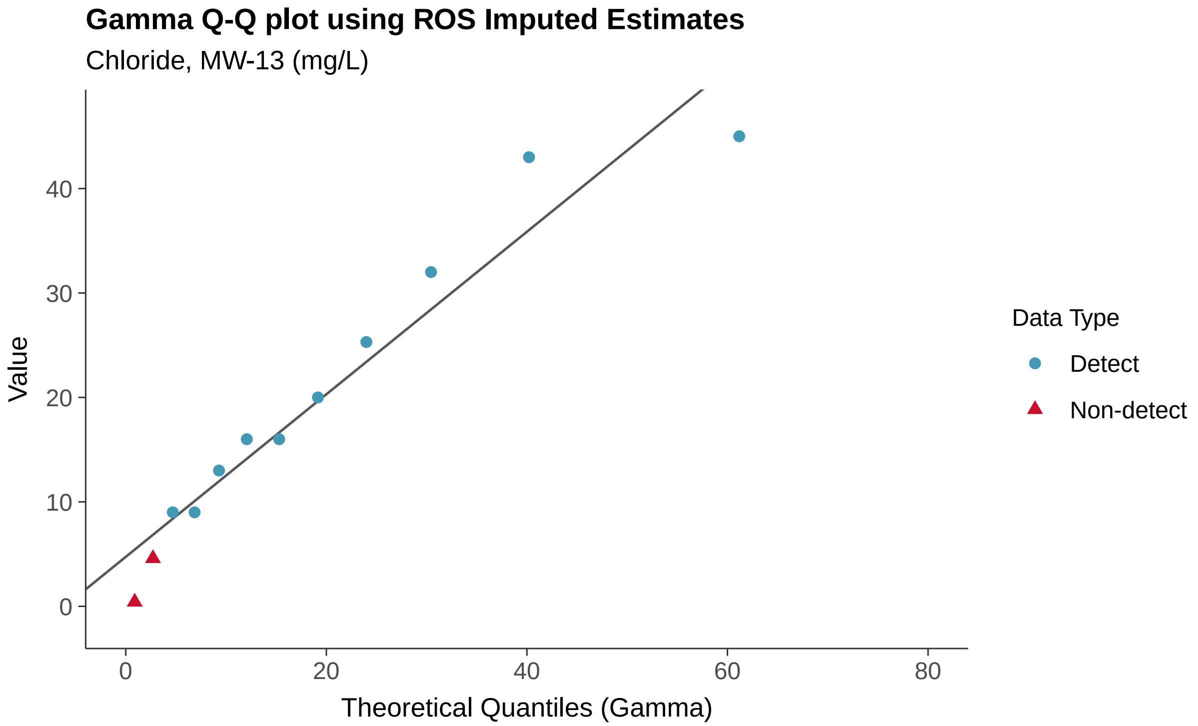
Chloride, MW-13 (mg/L)

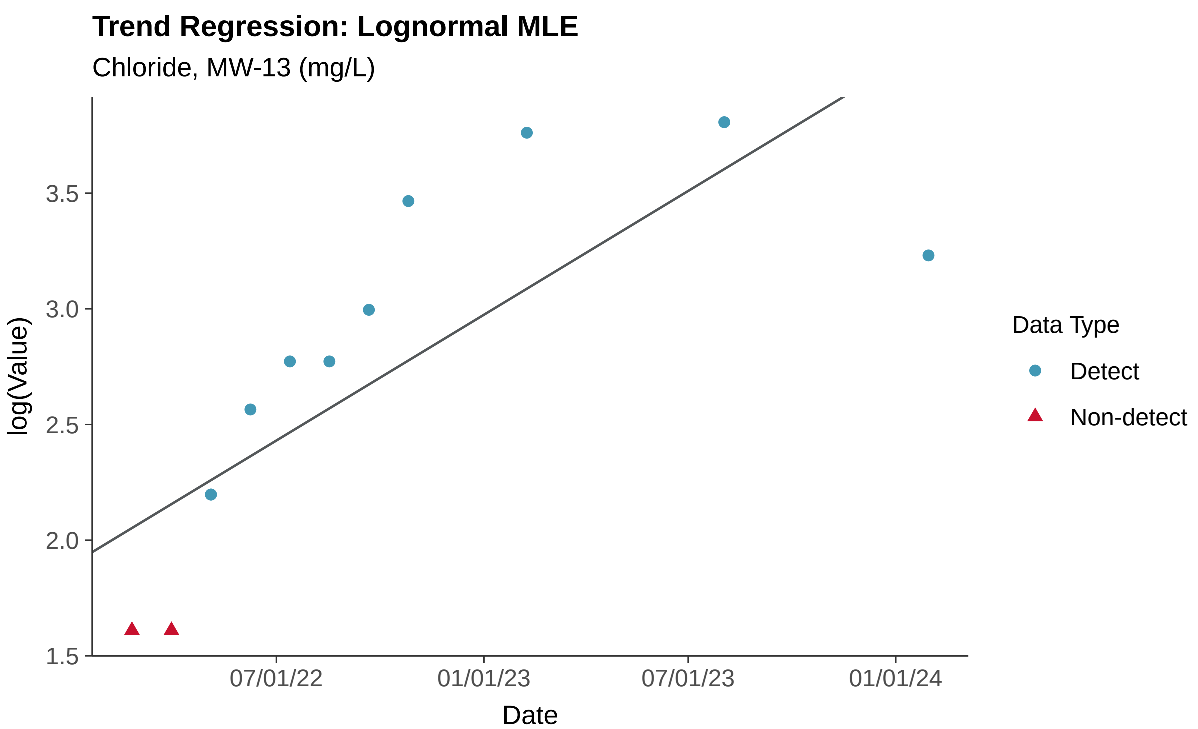


Lognormal Q-Q plot using ROS Imputed Estimates

Chloride, MW-13 (mg/L)

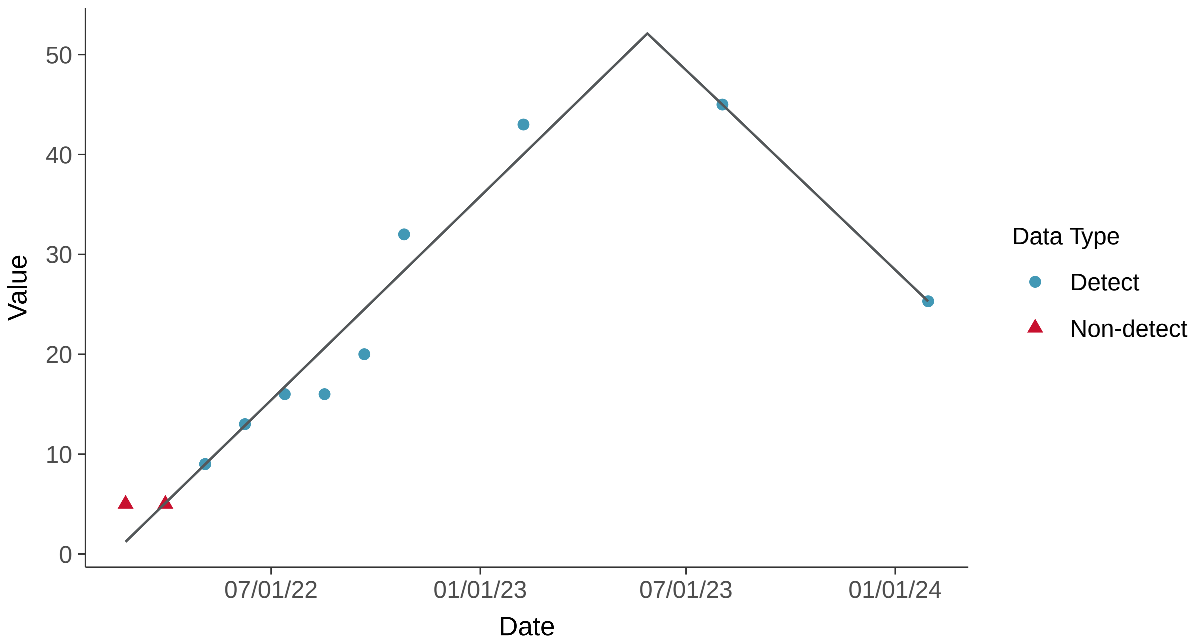



Gamma Q-Q plot using ROS Imputed Estimates
Chloride, MW-13 (mg/L)
Value
0
10
20
30
40
0
20
40
60
80
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Chloride, MW-13 (mg/L)
log(Value)
1.5
2.0
2.5
3.0
3.5
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect
Non-detect

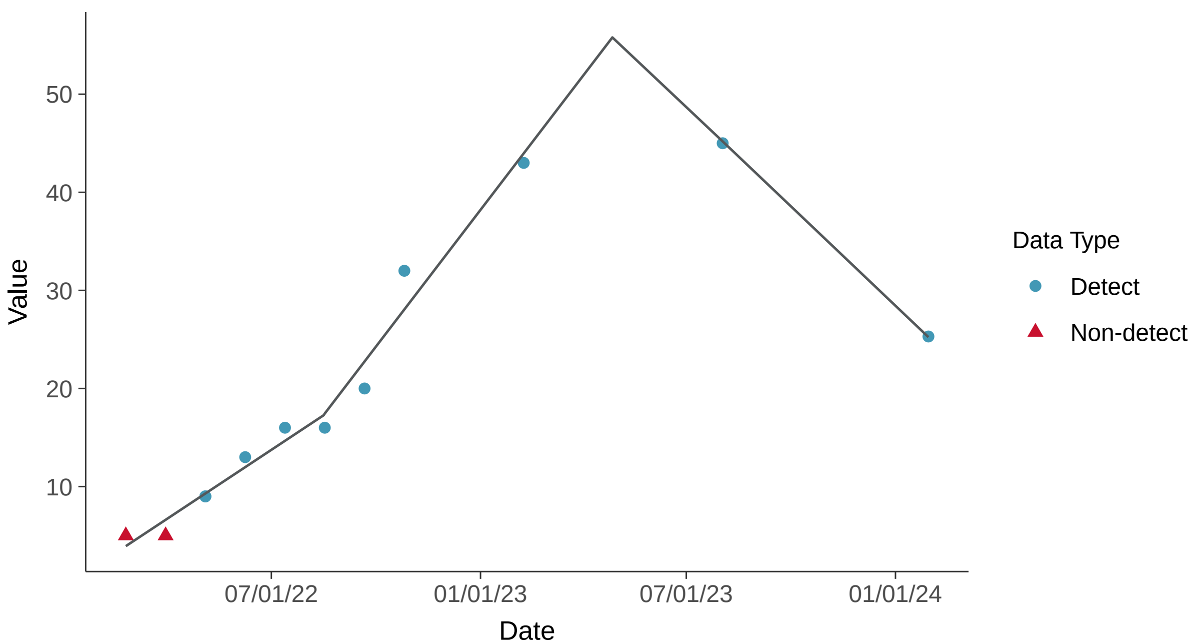
Trend Regression: Piecewise Linear-Linear

Chloride, MW-13 (mg/L)



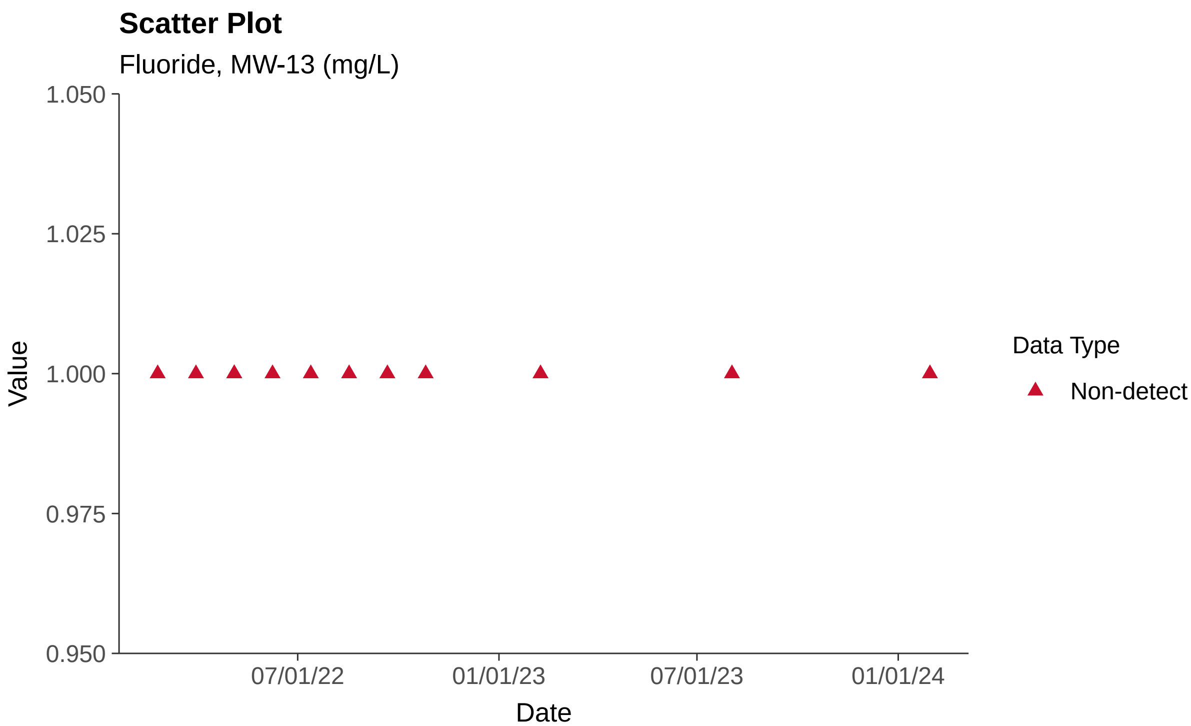
Trend Regression: Piecewise Linear-Linear-Linear

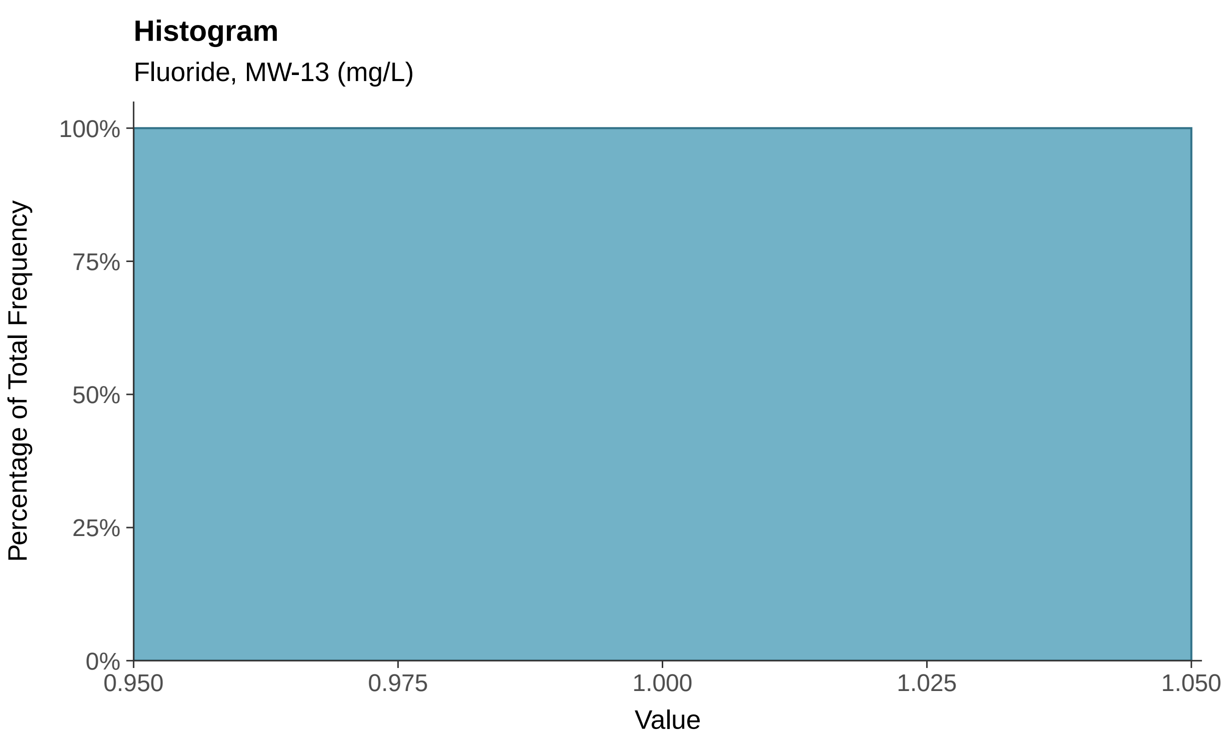
Chloride, MW-13 (mg/L)

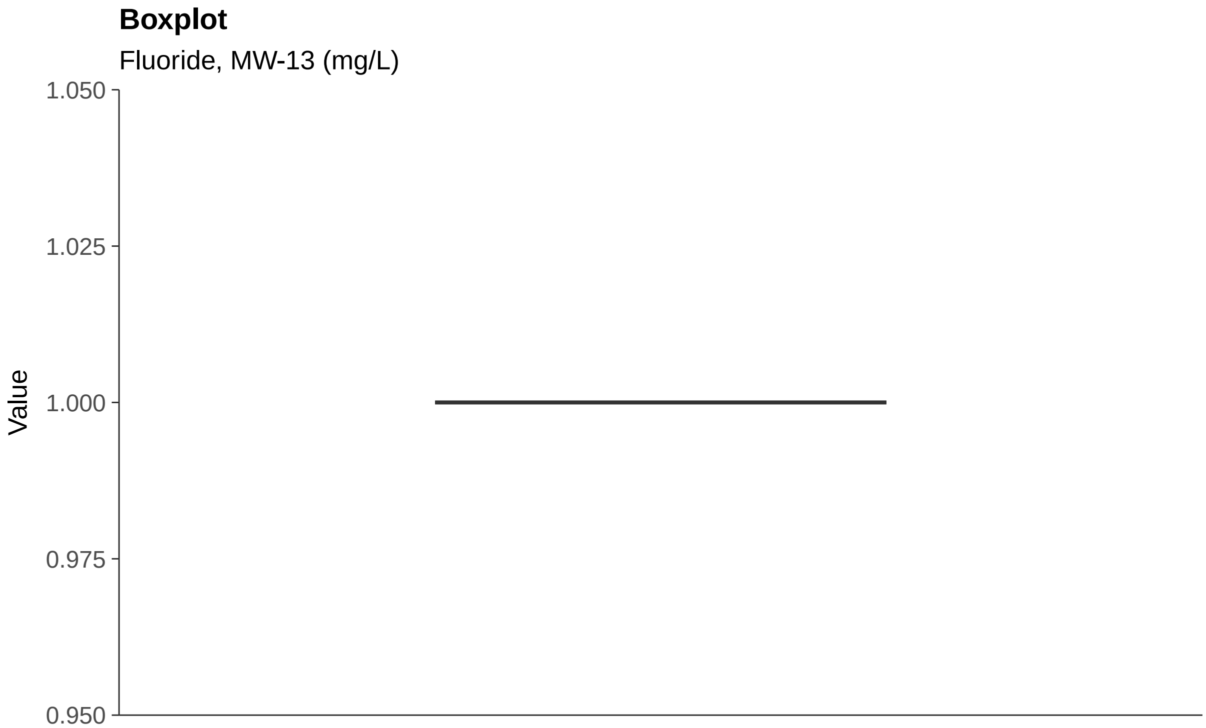


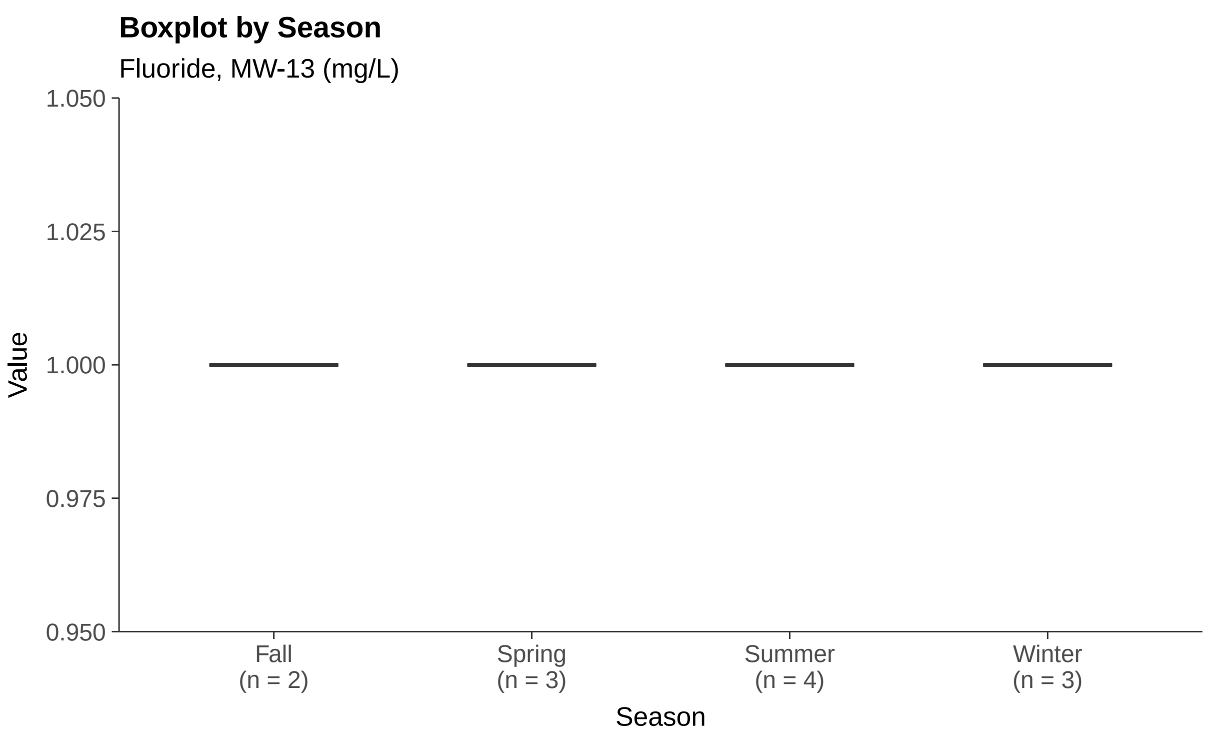
Appendix III: Fluoride, MW-13

ID: 13_1_04



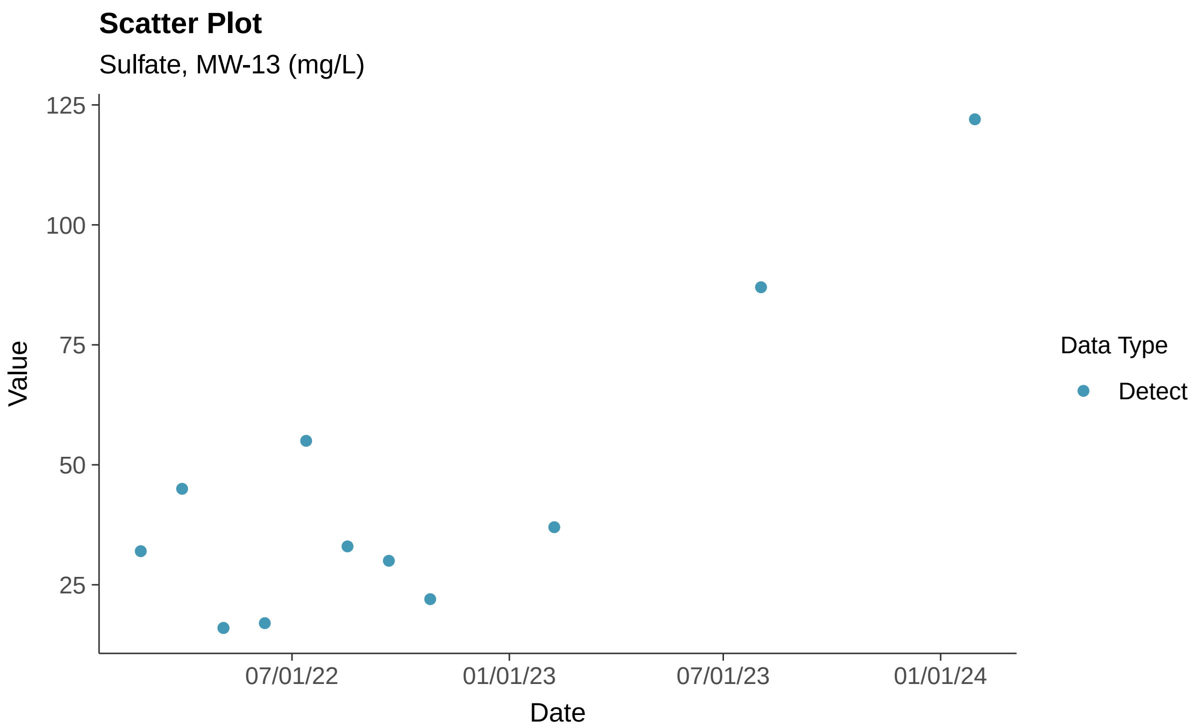


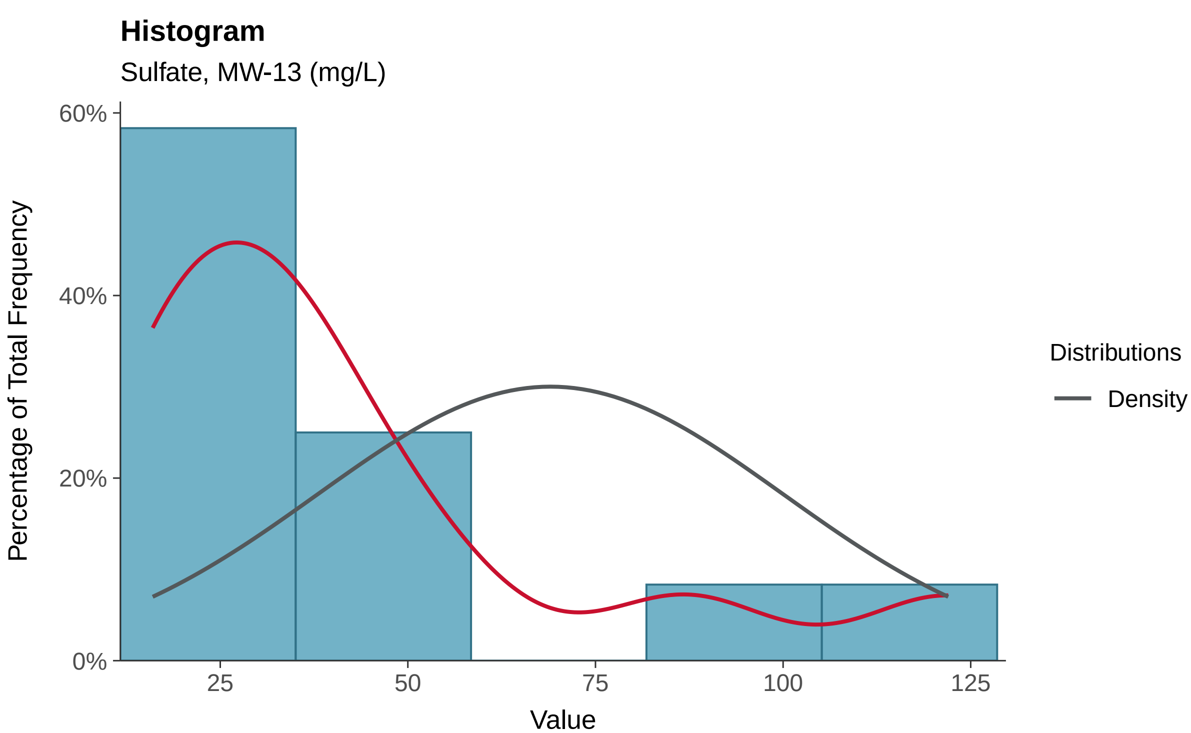

Boxplot
Fluoride, MW-13 (mg/L)
1.050
1.025
1.000
0.975
0.950
Value


Boxplot by Season
Fluoride, MW-13 (mg/L)
1.050
1.025
1.000
0.975
0.950
Value
Fall
(n = 2)
Spring
(n = 3)
Summer
(n = 4)
Winter
(n = 3)
Season

Appendix III: Sulfate, MW-13

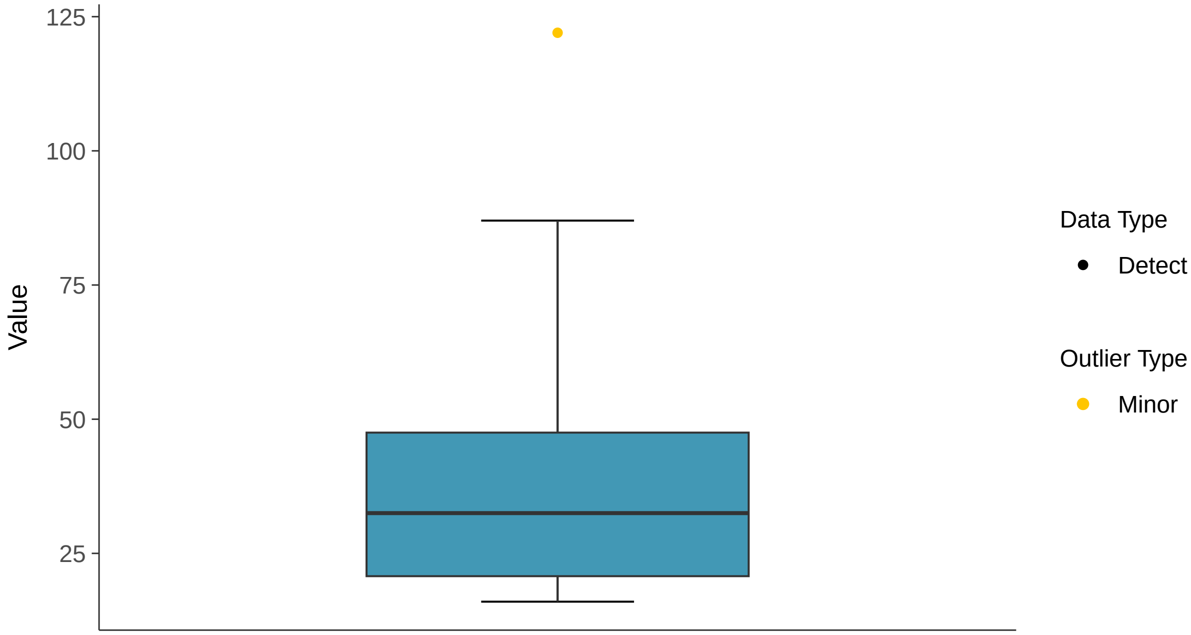
ID: 13_1_05





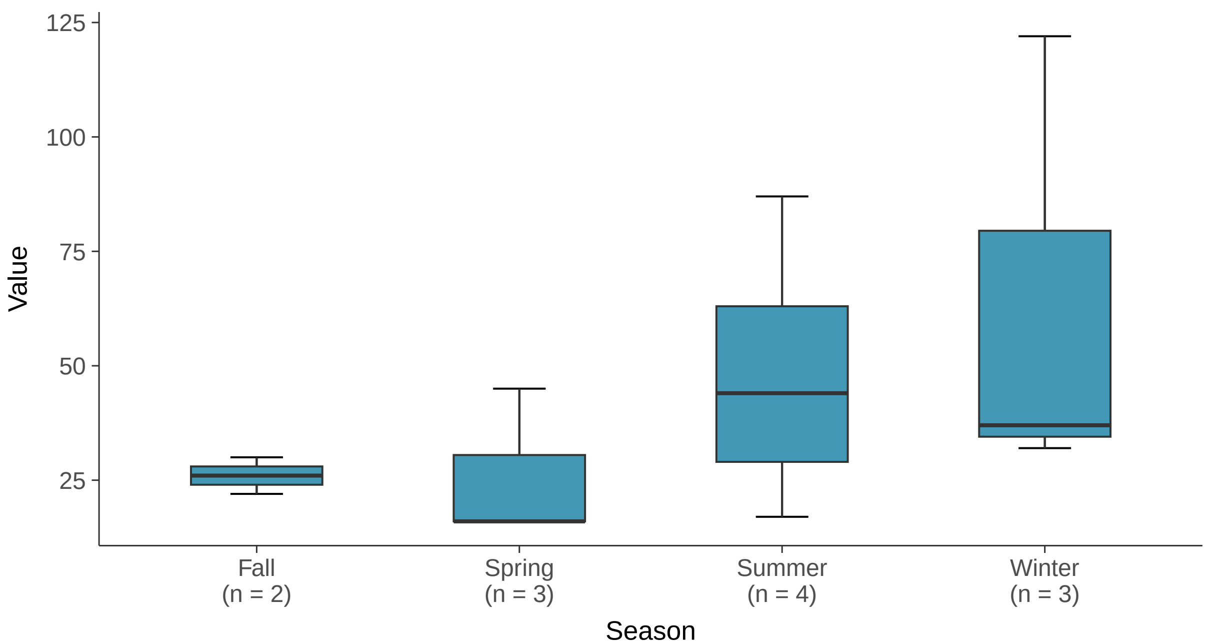
Boxplot

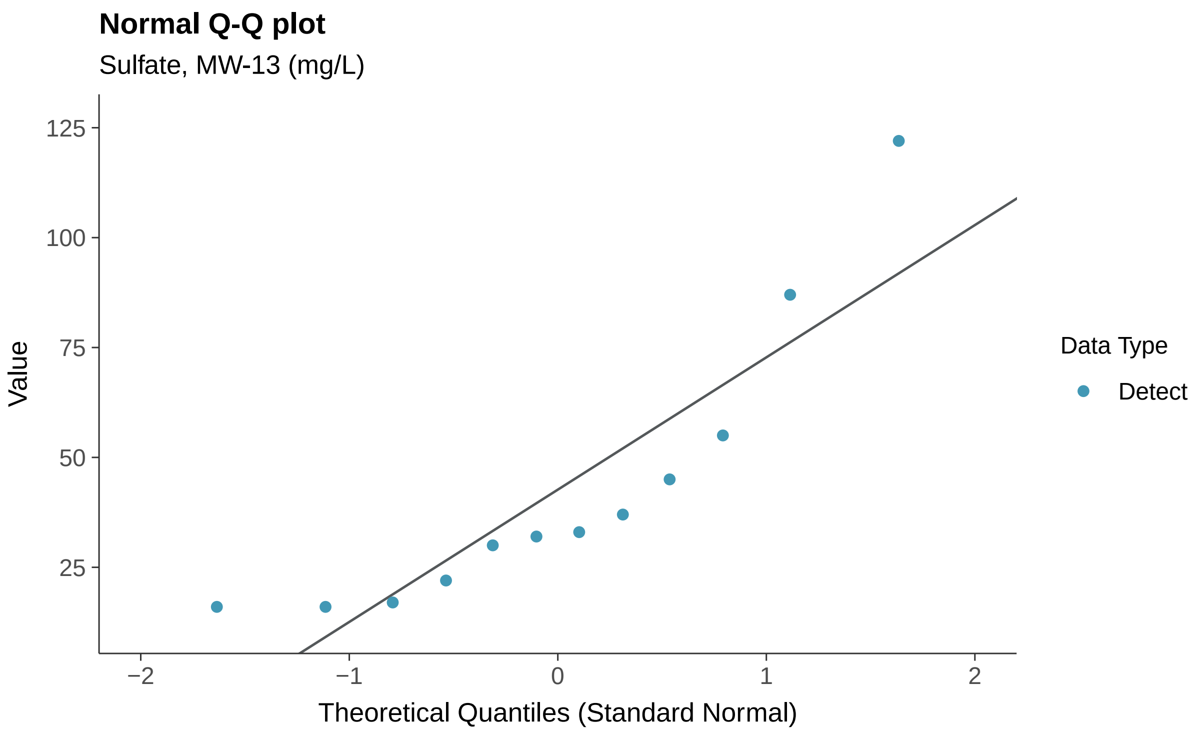
Sulfate, MW-13 (mg/L)

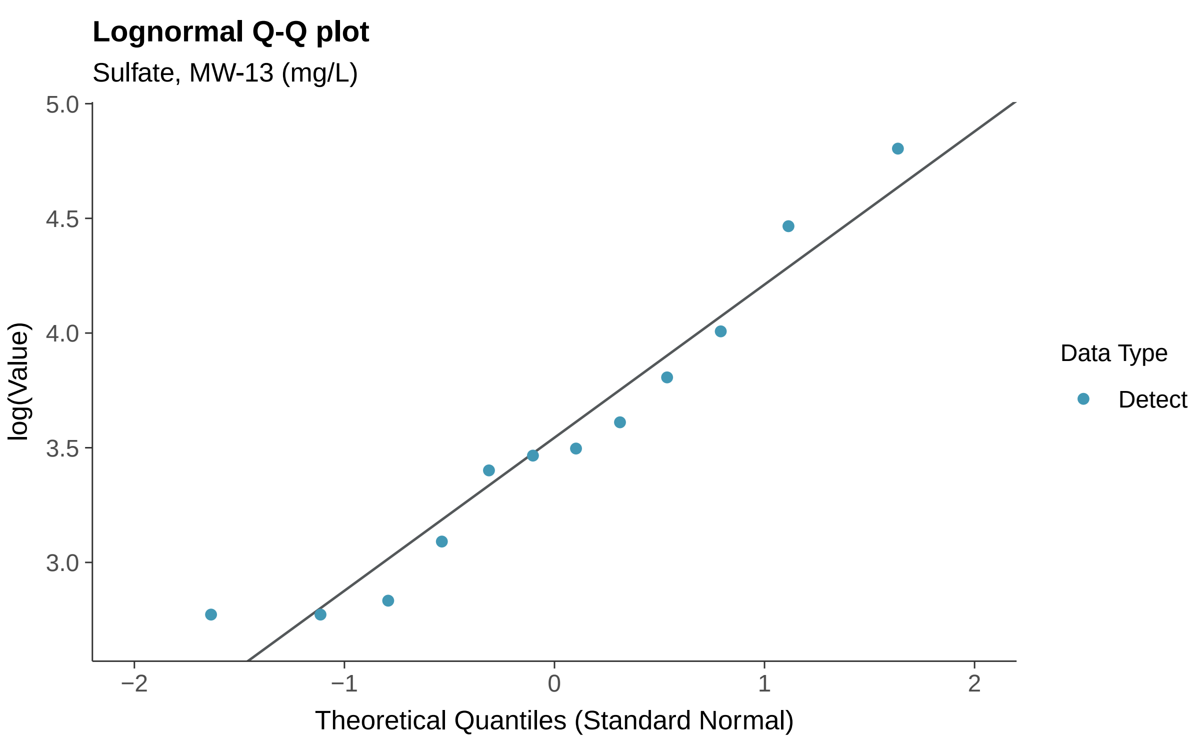


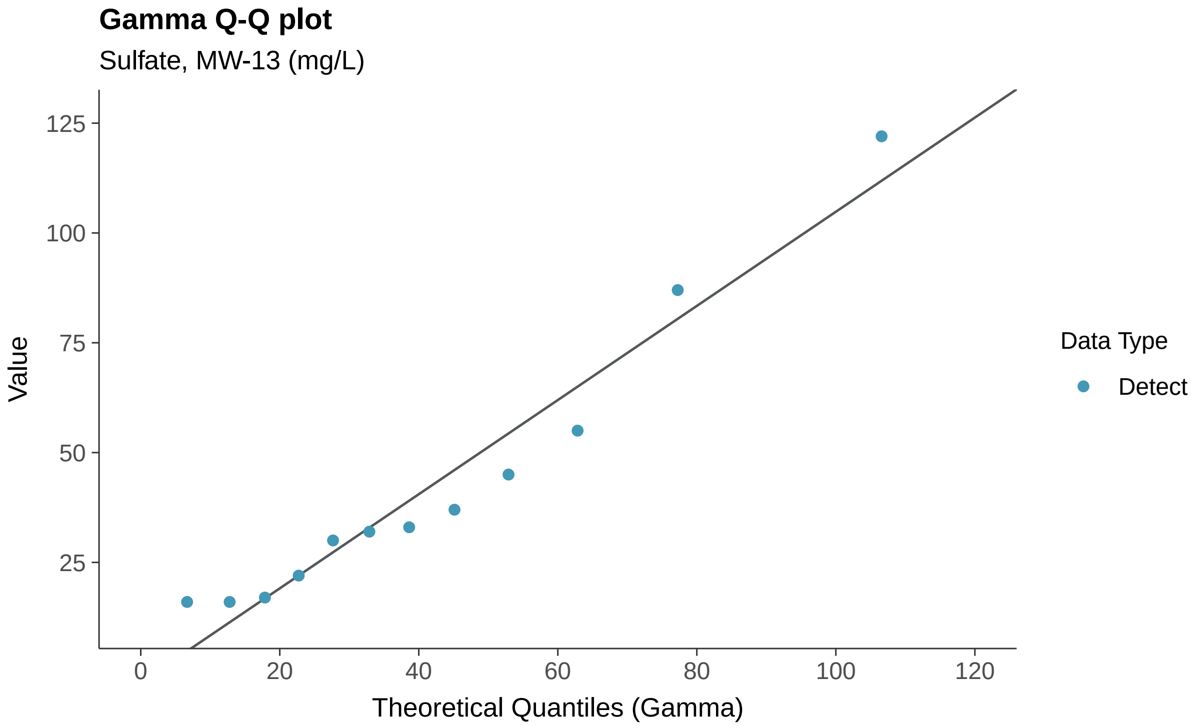
Boxplot by Season

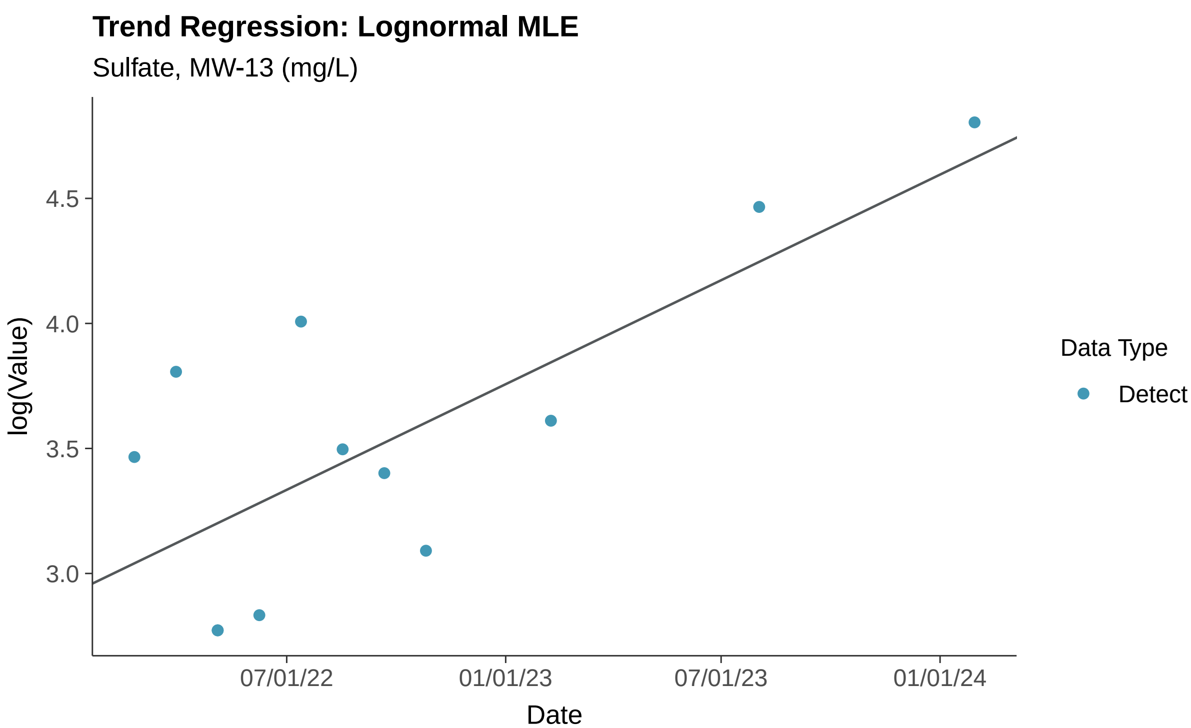
Sulfate, MW-13 (mg/L)




Normal Q-Q plot
Sulfate, MW-13 (mg/L)
Value
125
100
75
50
25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

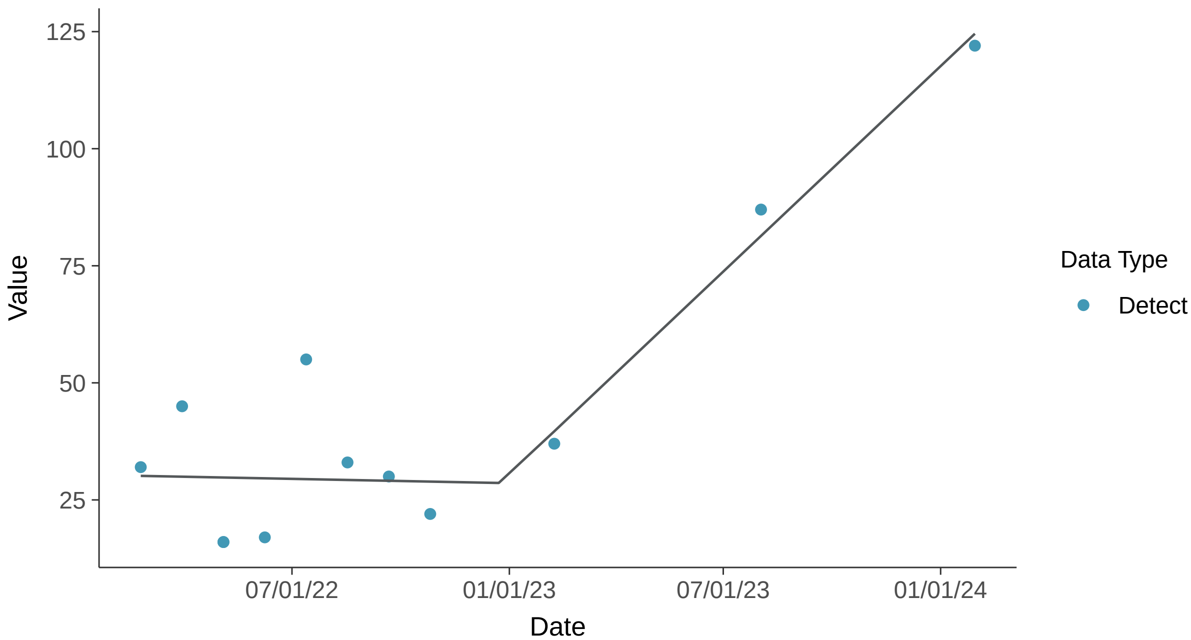

Lognormal Q-Q plot
Sulfate, MW-13 (mg/L)
log(Value)
5.0
4.5
4.0
3.5
3.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Sulfate, MW-13 (mg/L)
Value
125
100
75
50
25
0
20
40
60
80
100
120
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Sulfate, MW-13 (mg/L)
log(Value)
4.5
4.0
3.5
3.0
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

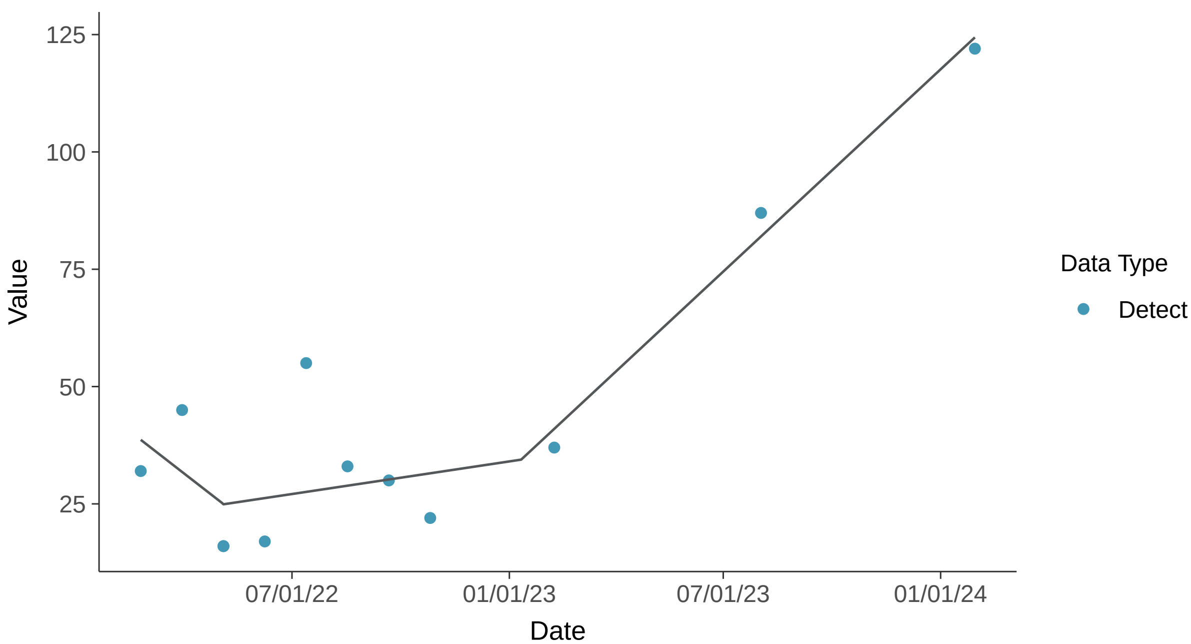
Trend Regression: Piecewise Linear-Linear

Sulfate, MW-13 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Sulfate, MW-13 (mg/L)

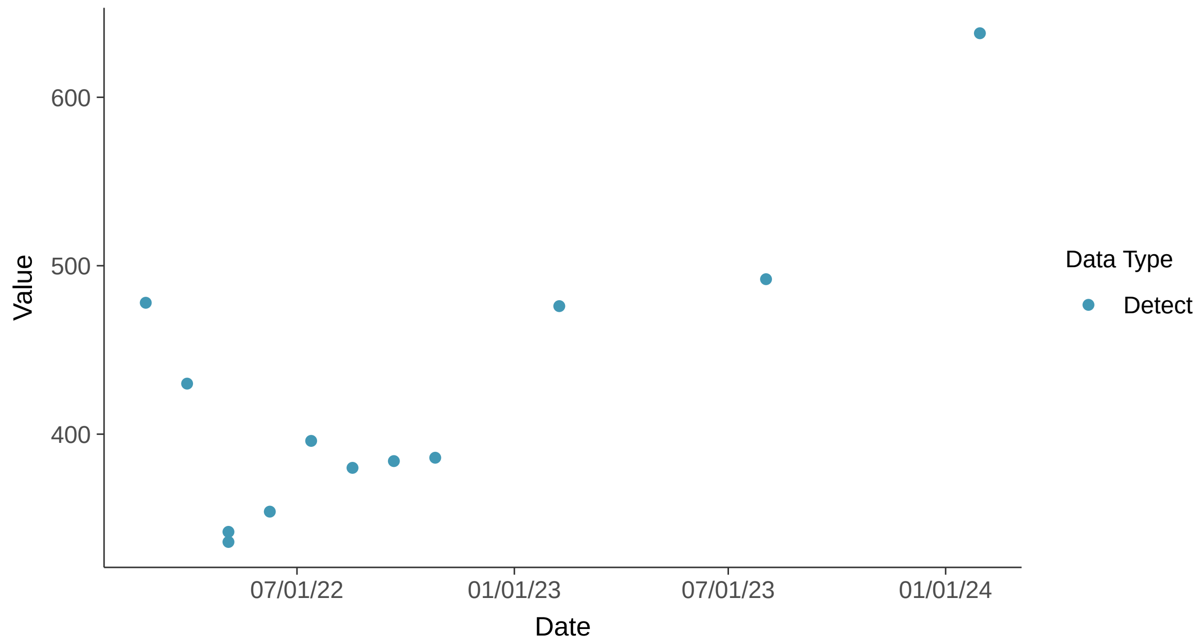


Appendix III: Total Dissolved Solids, MW-13

ID: 13_1_06

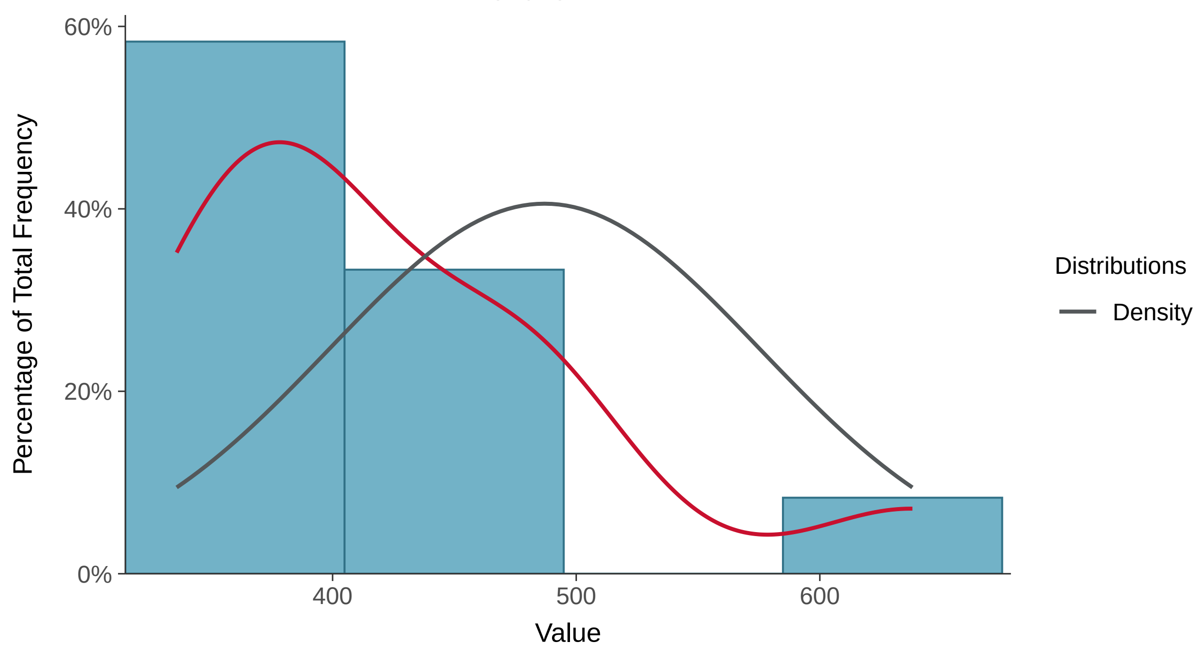
Scatter Plot

Total Dissolved Solids, MW-13 (mg/L)



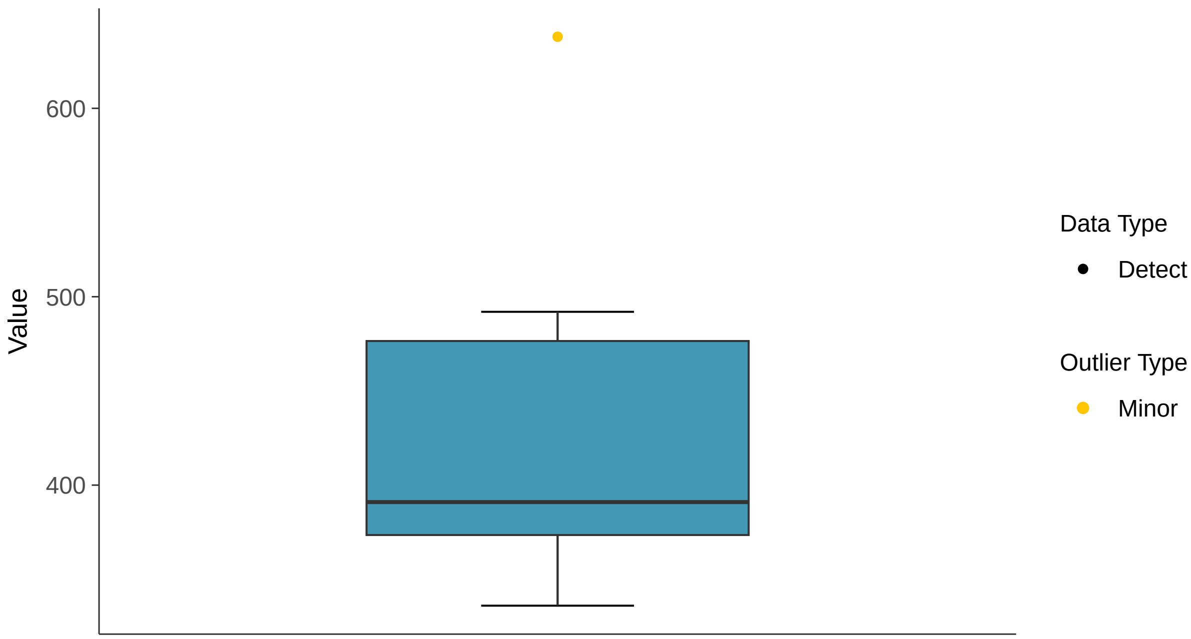
Histogram

Total Dissolved Solids, MW-13 (mg/L)



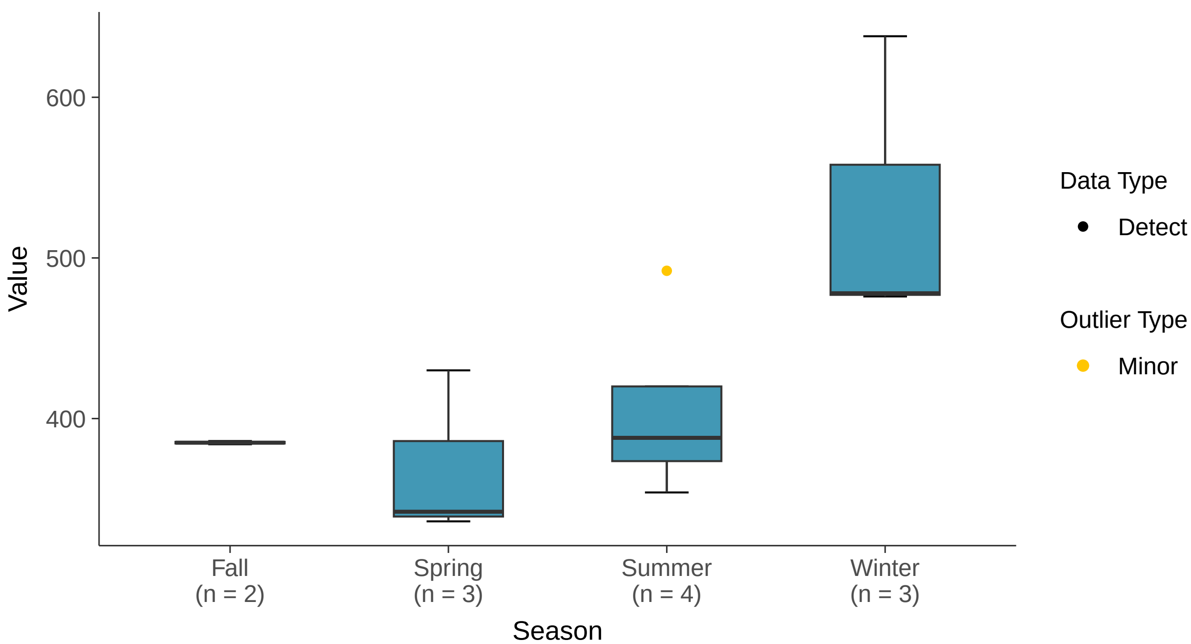
Boxplot

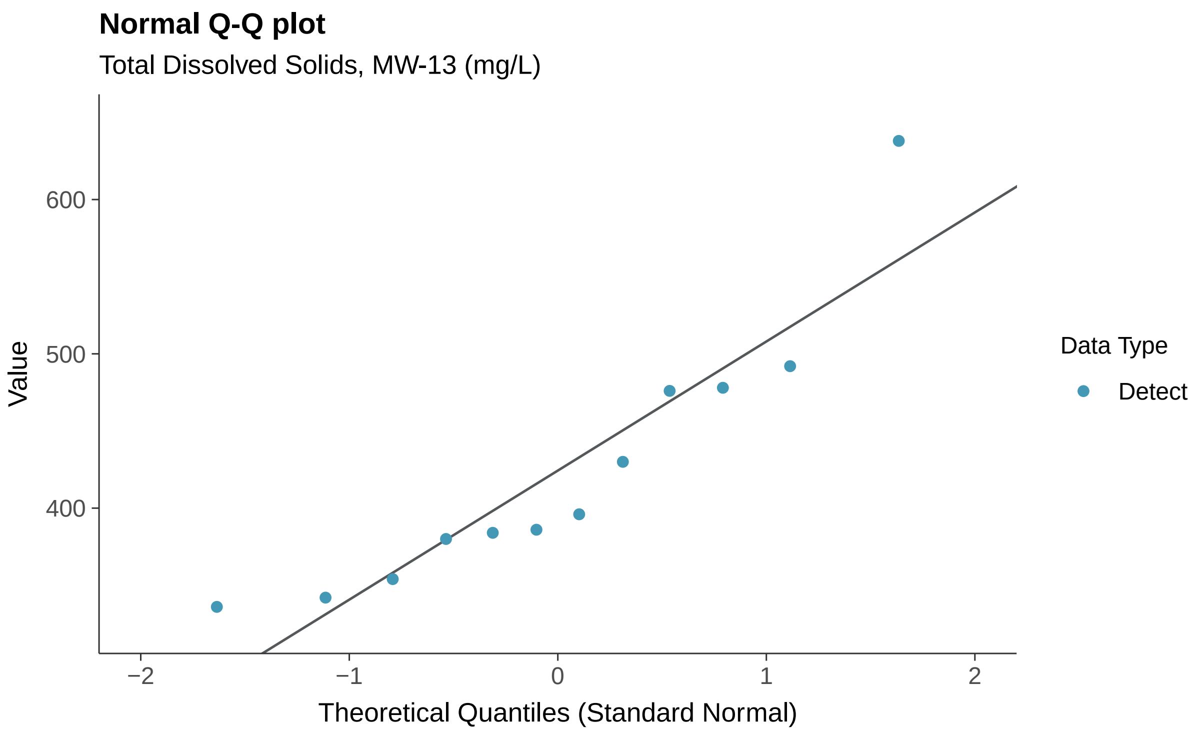
Total Dissolved Solids, MW-13 (mg/L)

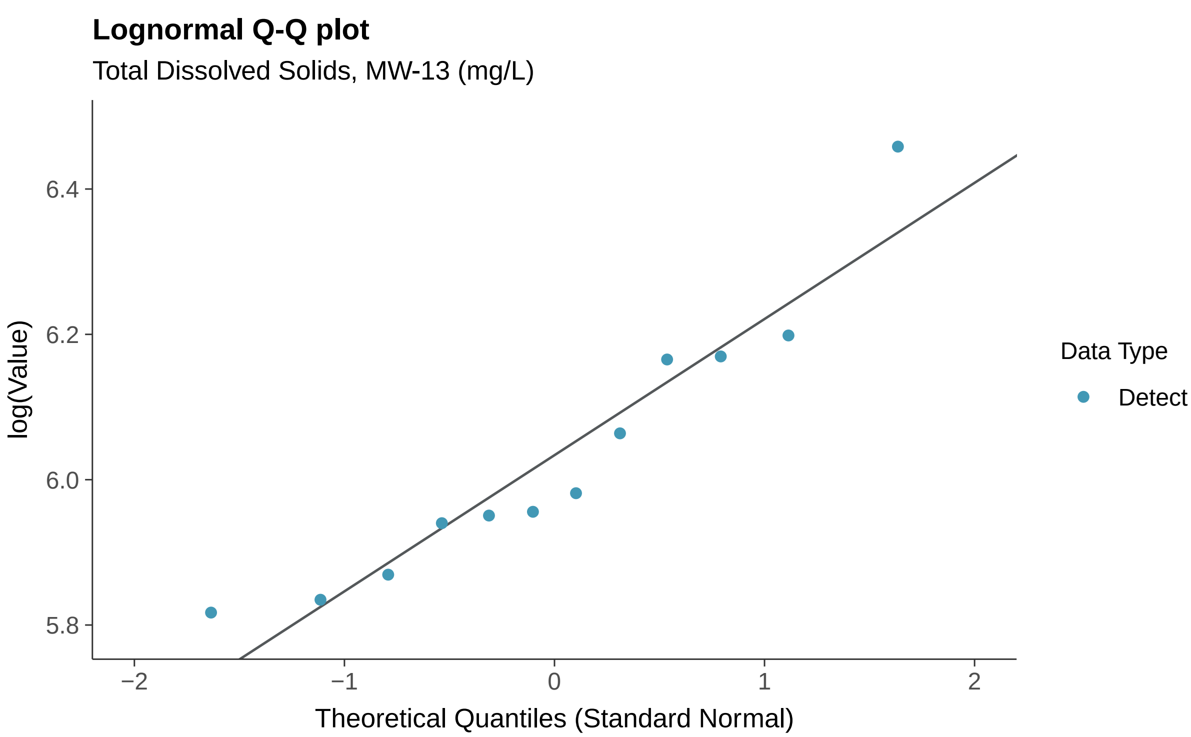


Boxplot by Season

Total Dissolved Solids, MW-13 (mg/L)

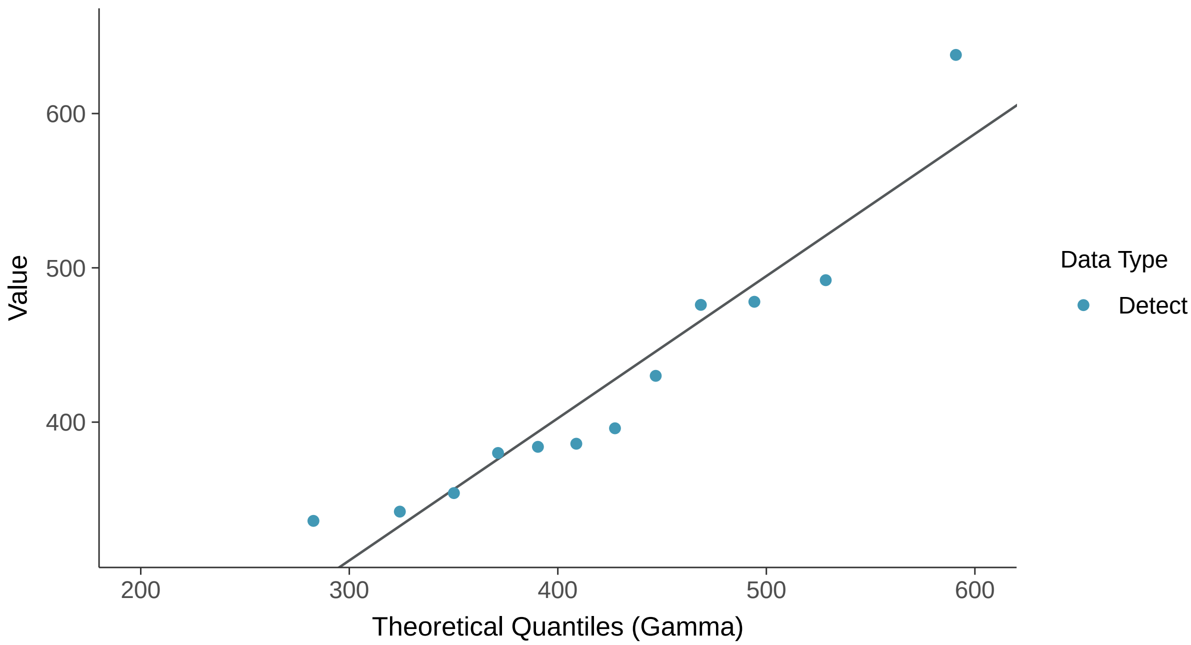



Normal Q-Q plot
Total Dissolved Solids, MW-13 (mg/L)
Value
600
500
400
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Total Dissolved Solids, MW-13 (mg/L)
log(Value)
6.4
6.2
6.0
5.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

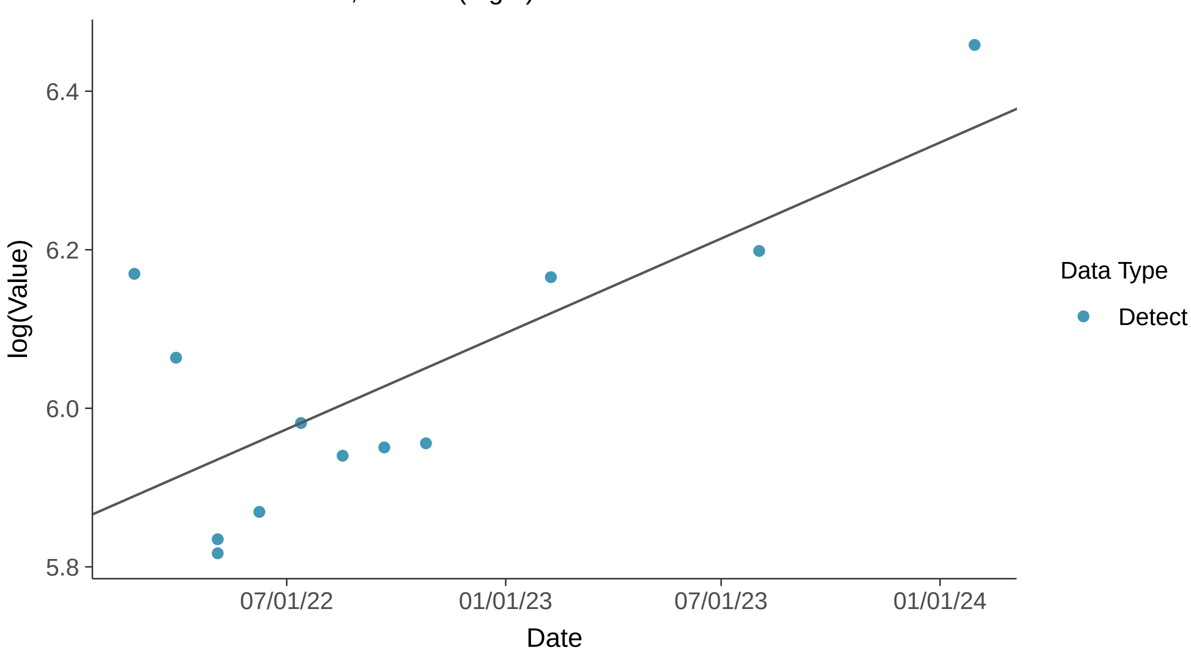
Gamma Q-Q plot

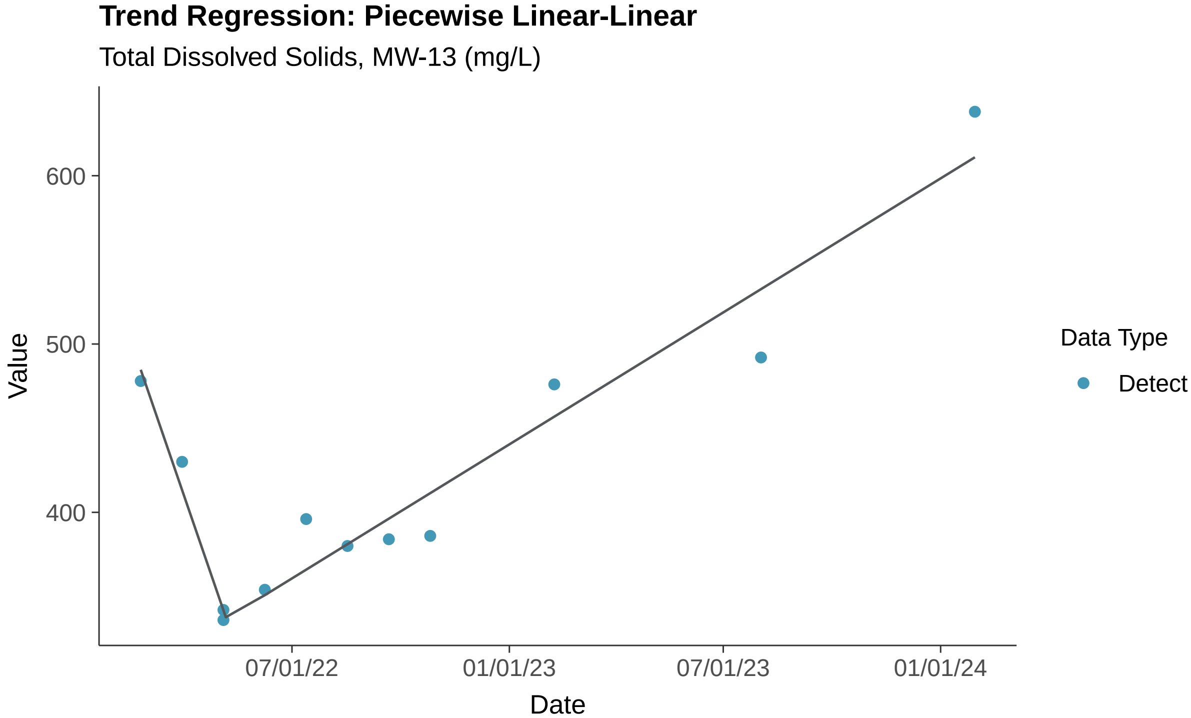
Total Dissolved Solids, MW-13 (mg/L)

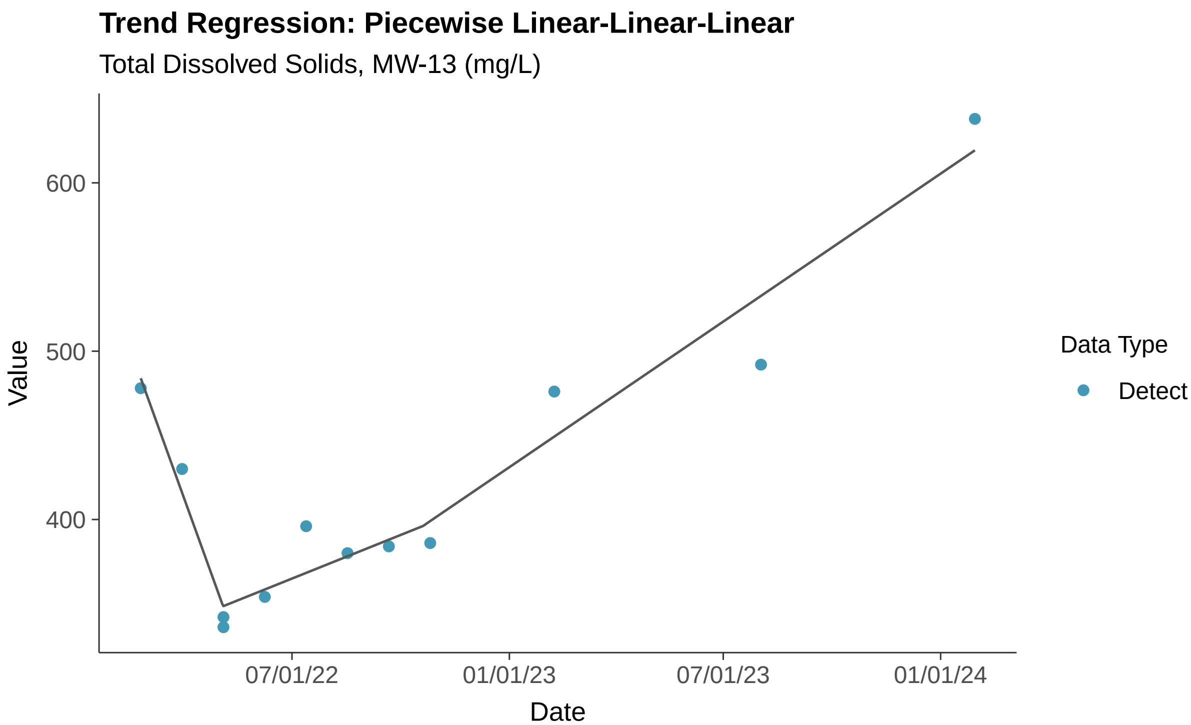


Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-13 (mg/L)

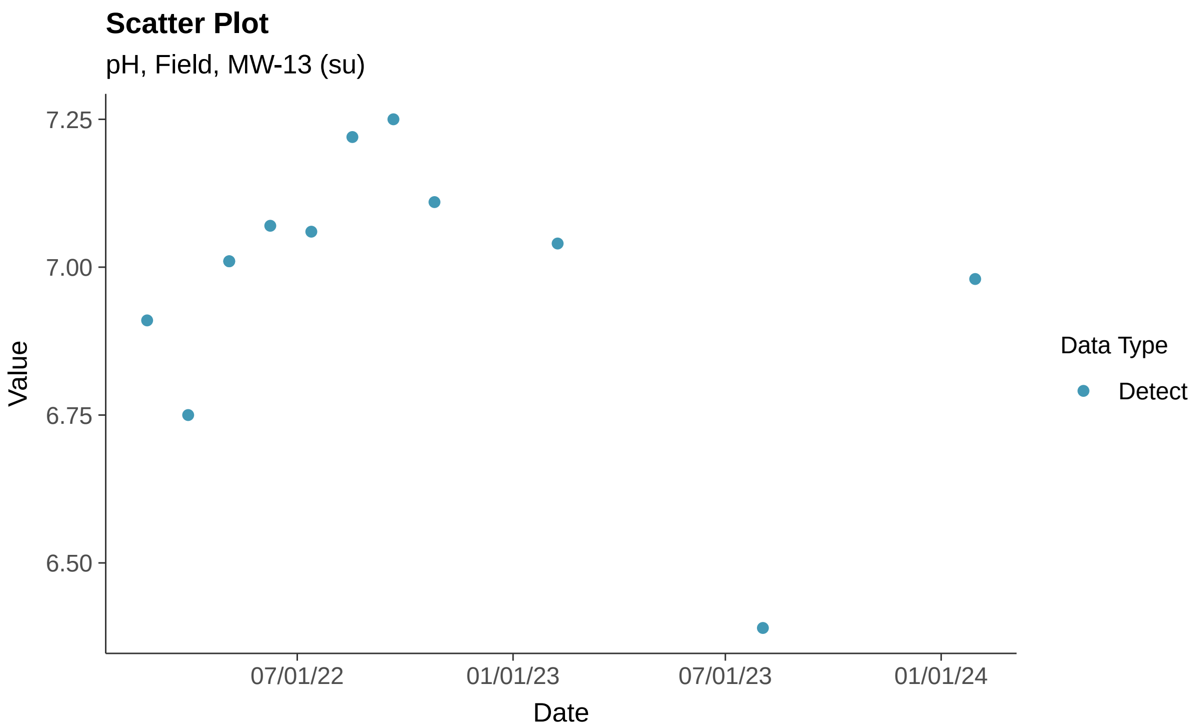


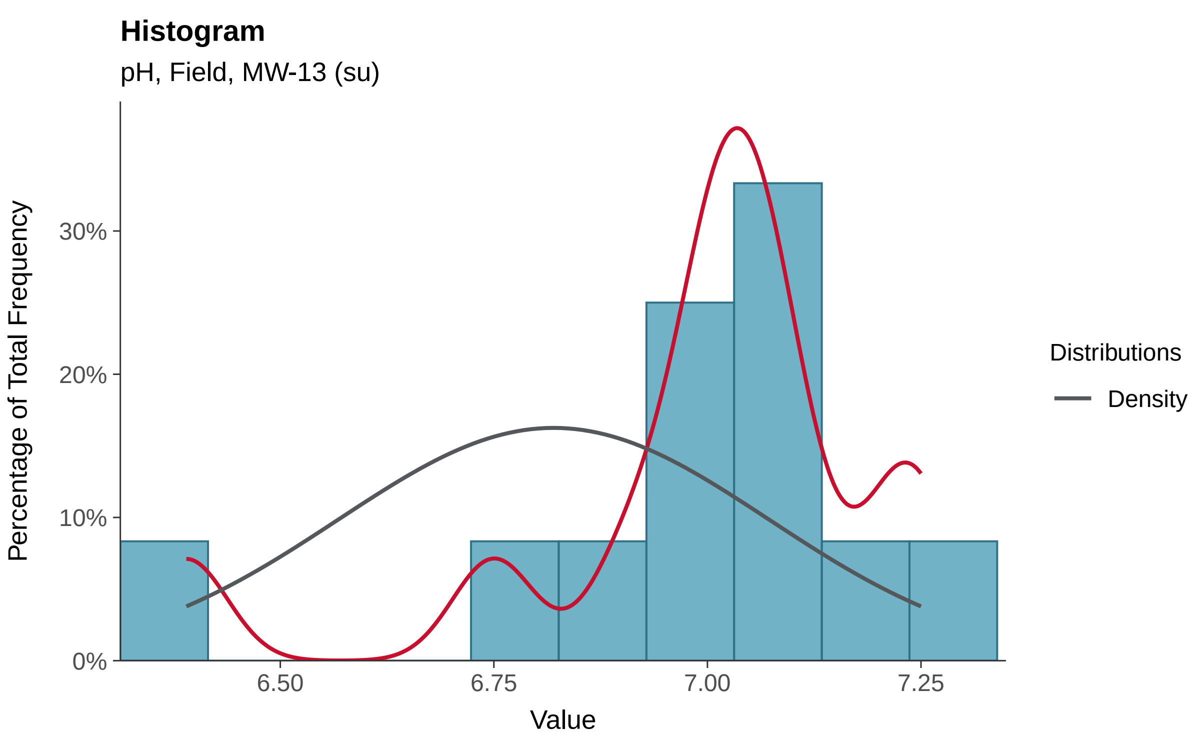

Trend Regression: Piecewise Linear-Linear
Total Dissolved Solids, MW-13 (mg/L)
Value
600
500
400
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Total Dissolved Solids, MW-13 (mg/L)
Value
600
500
400
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Appendix III: pH, Field, MW-13

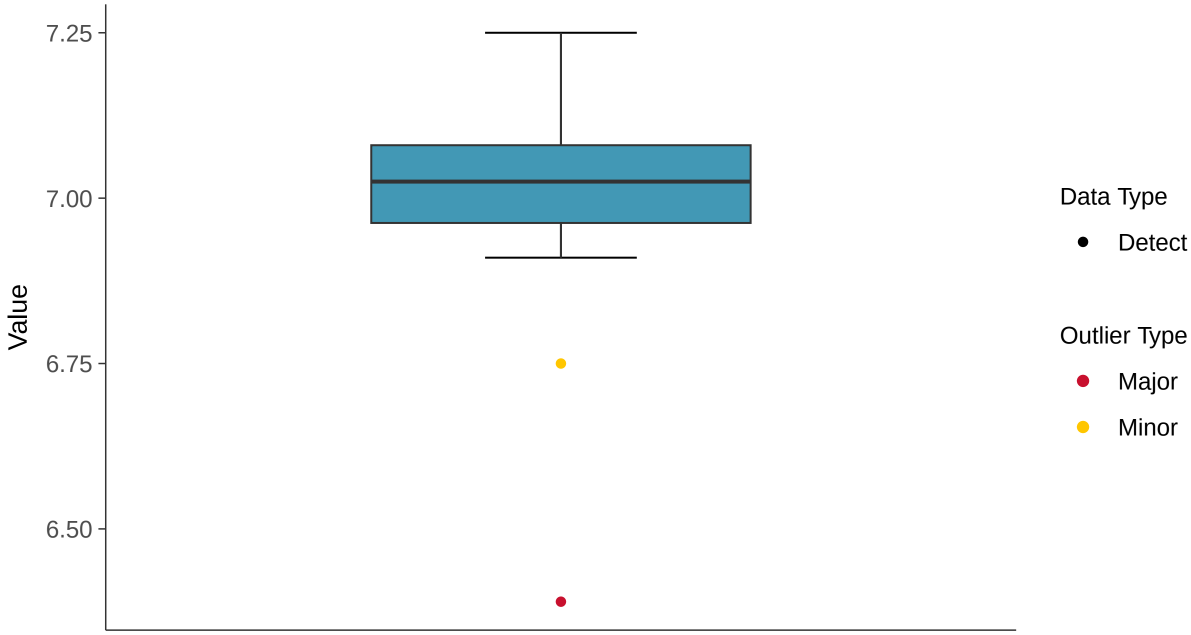
ID: 13_1_07





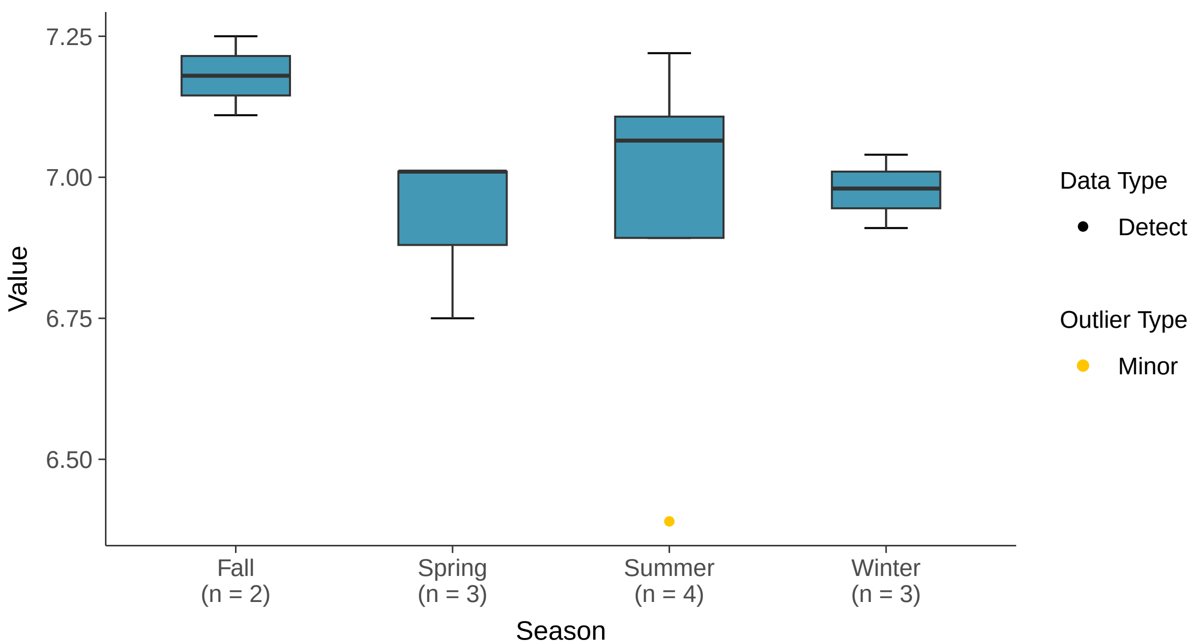
Boxplot

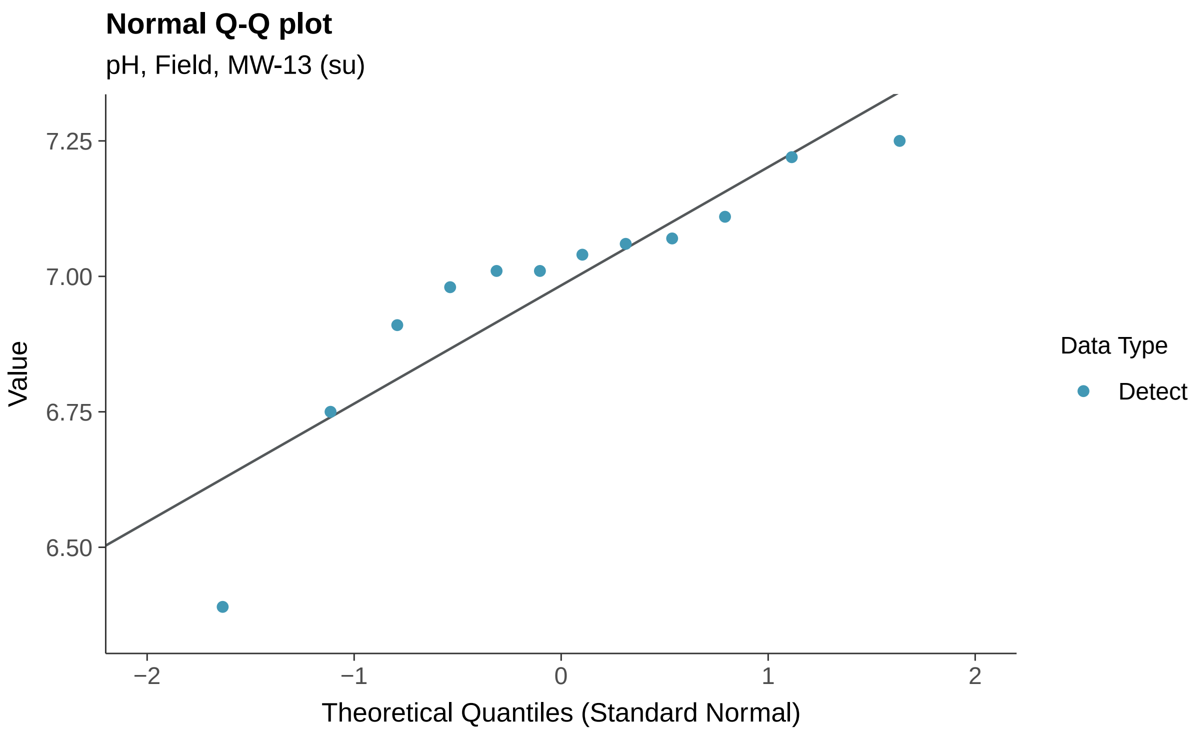
pH, Field, MW-13 (su)

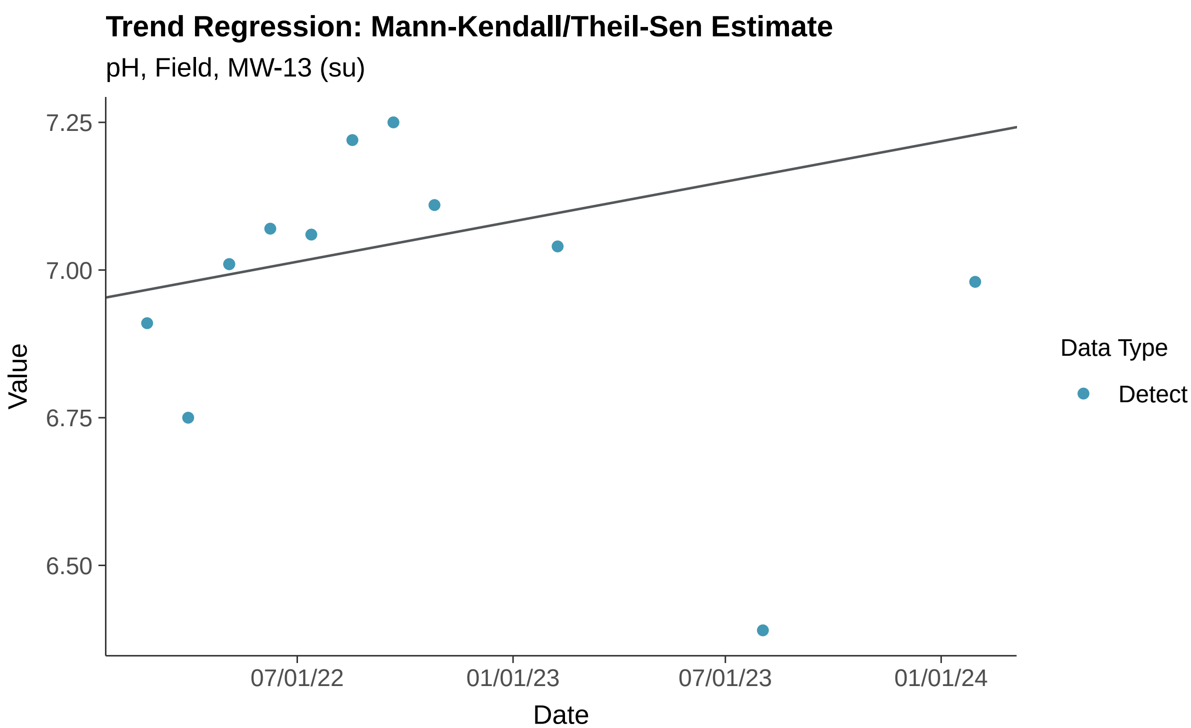


Boxplot by Season

pH, Field, MW-13 (su)

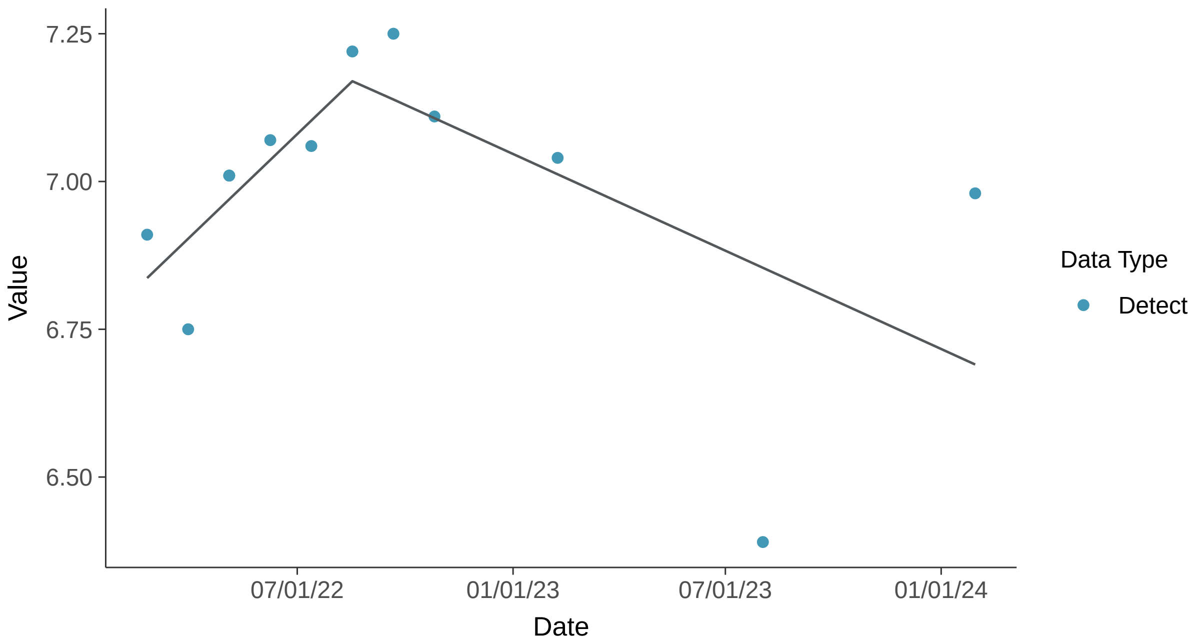



Normal Q-Q plot
pH, Field, MW-13 (su)
Value
7.25
7.00
6.75
6.50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
pH, Field, MW-13 (su)
Value
7.25
7.00
6.75
6.50
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

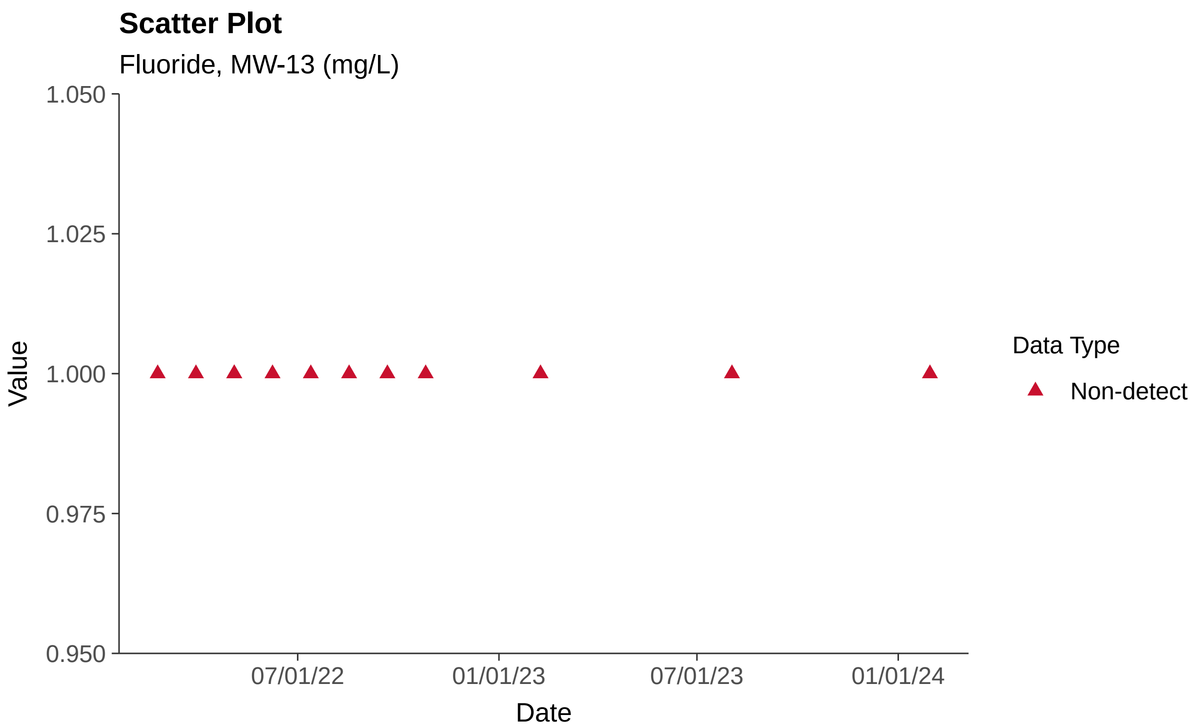
Trend Regression: Piecewise Linear-Linear

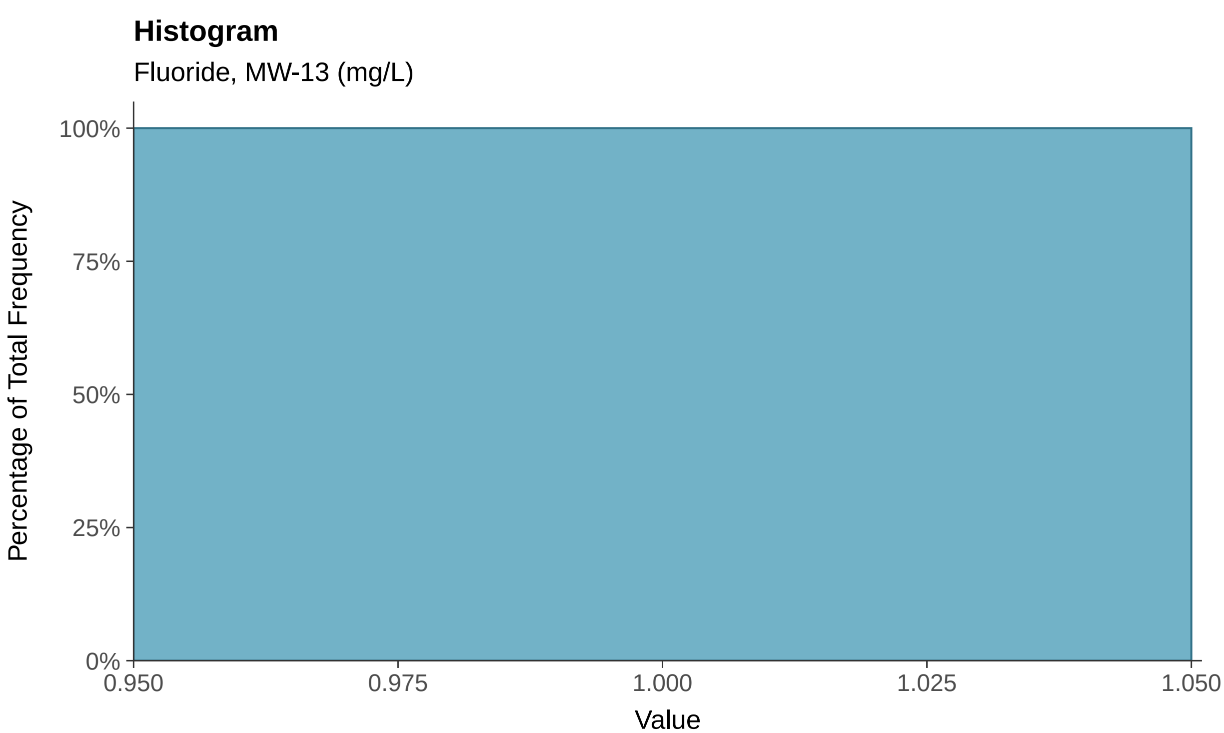
pH, Field, MW-13 (su)



Appendix IV: Fluoride, MW-13

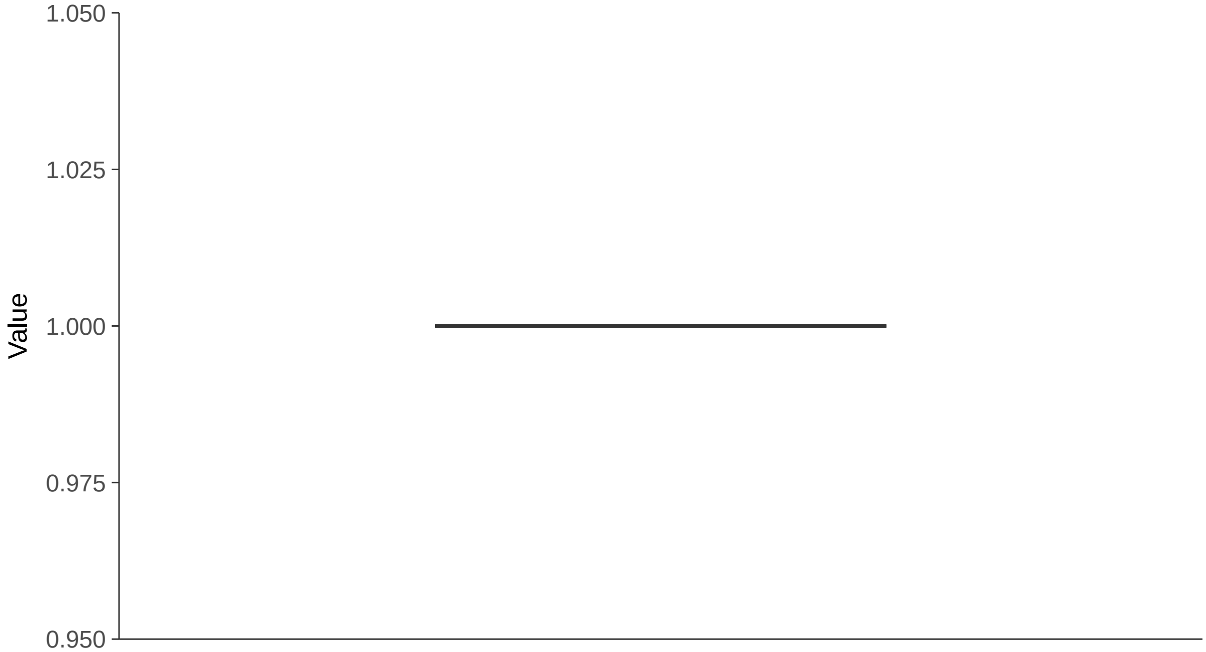
ID: 13_2_04





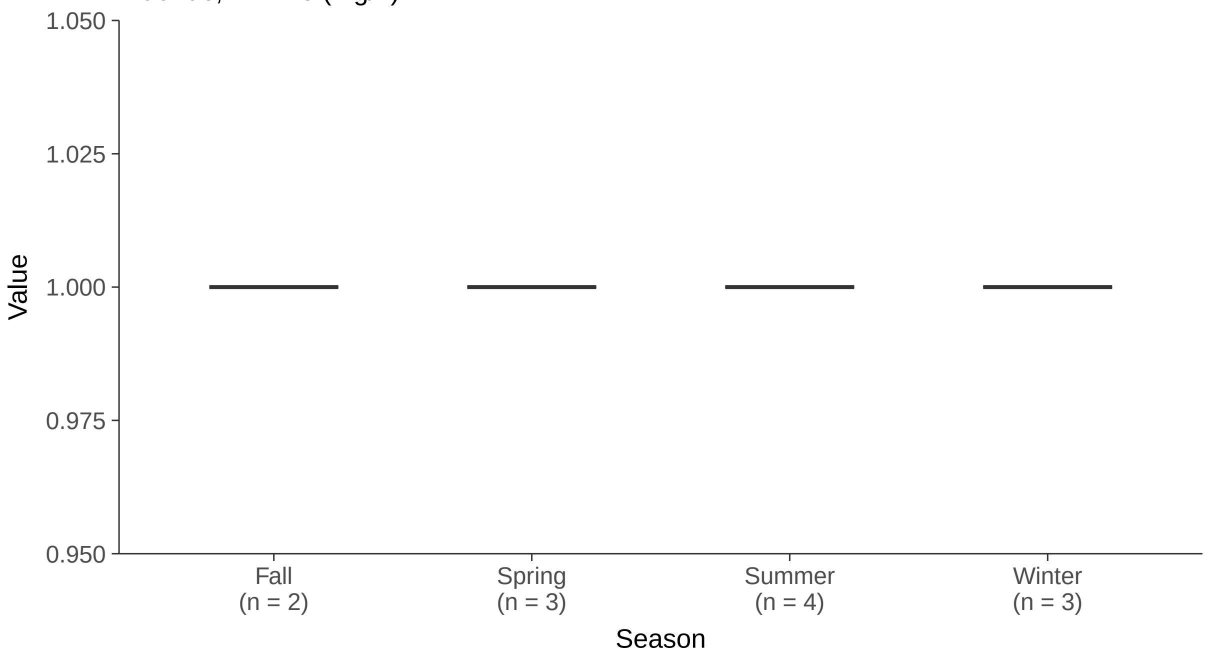
Boxplot

Fluoride, MW-13 (mg/L)



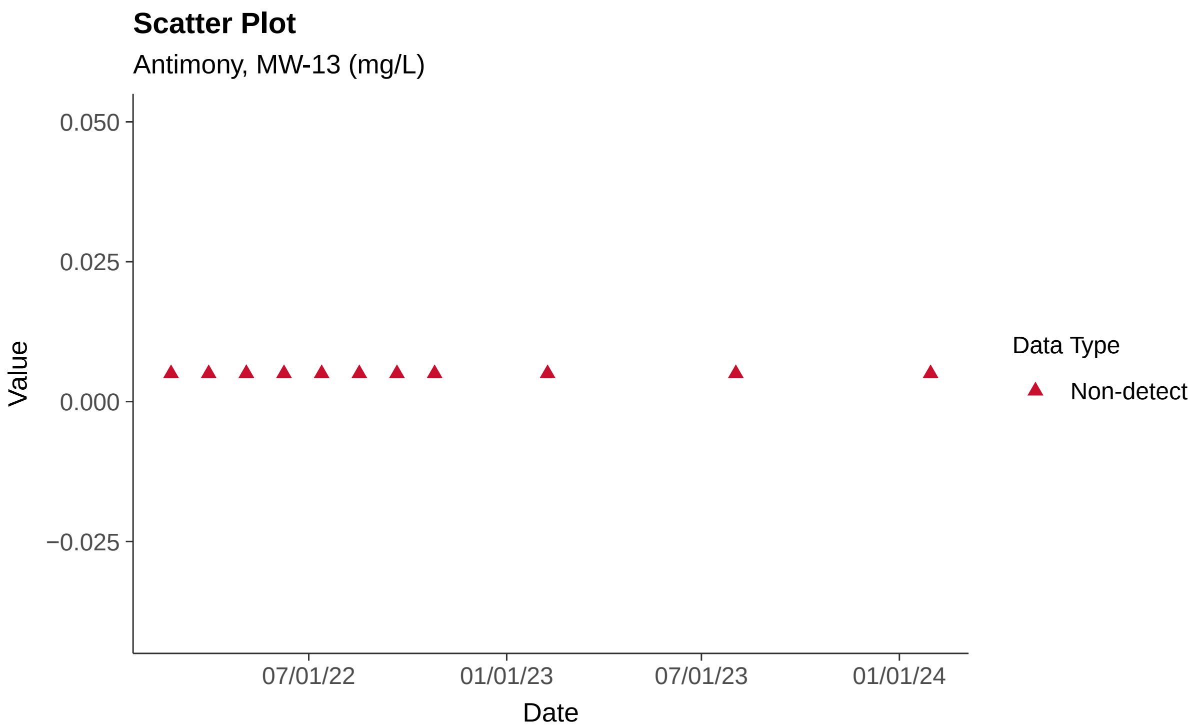
Boxplot by Season

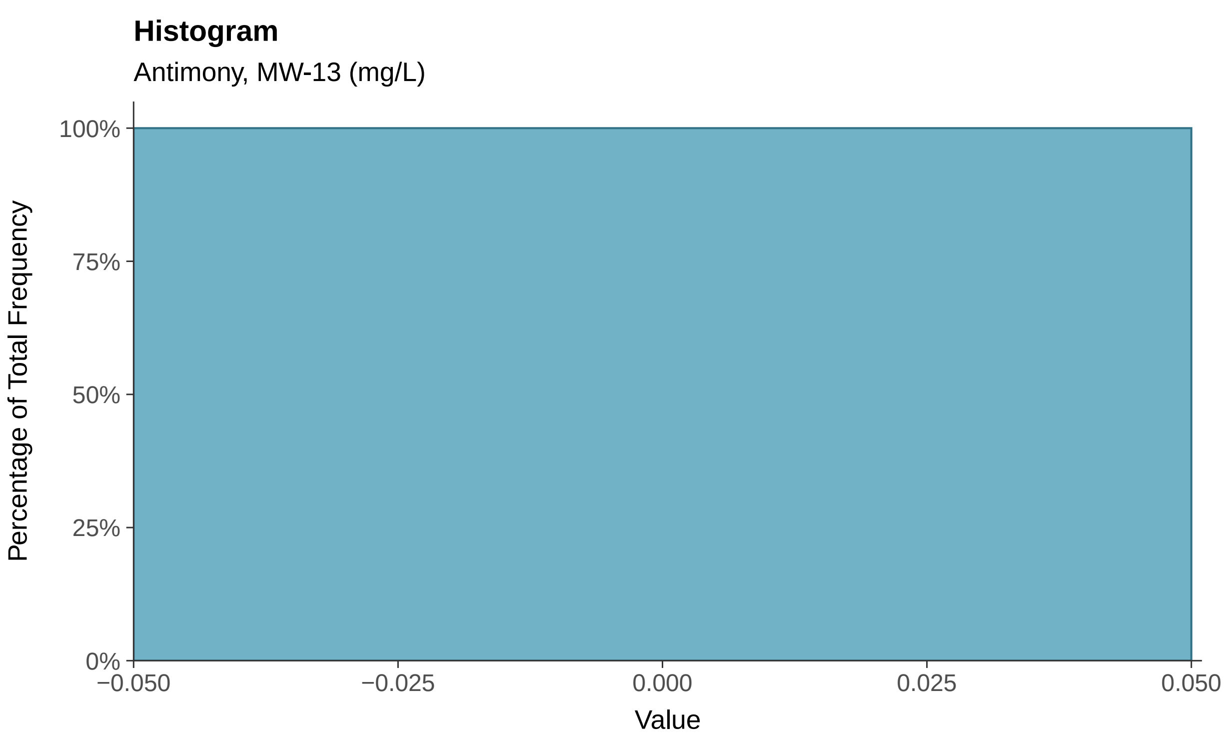
Fluoride, MW-13 (mg/L)



Appendix IV: Antimony, MW-13

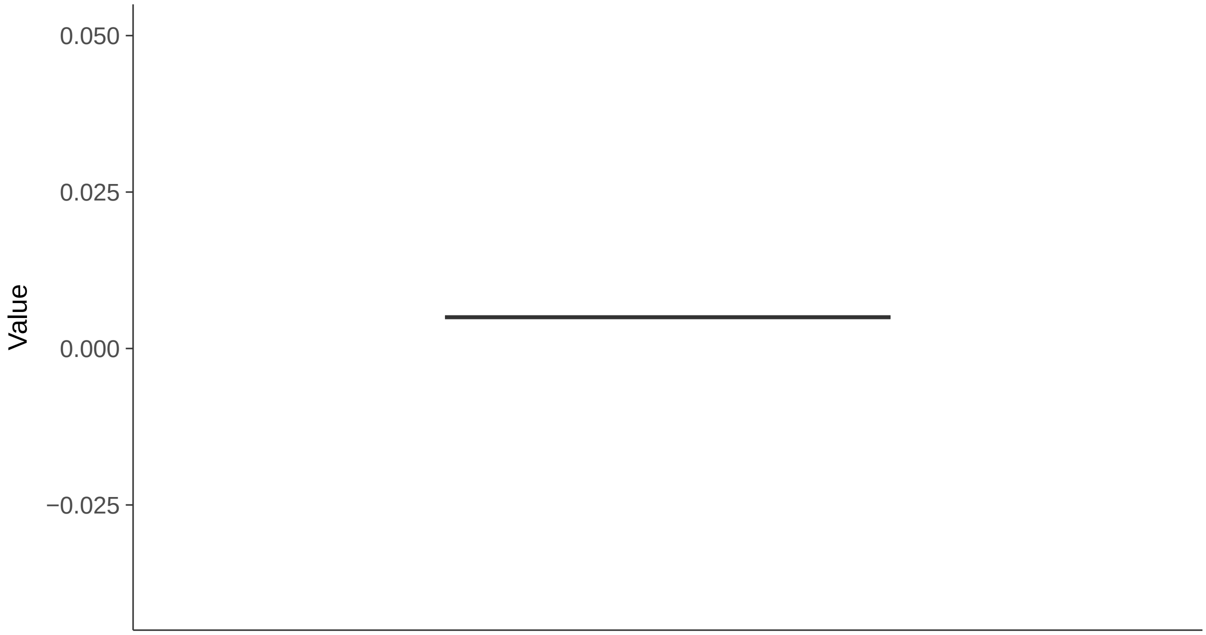
ID: 13_2_08





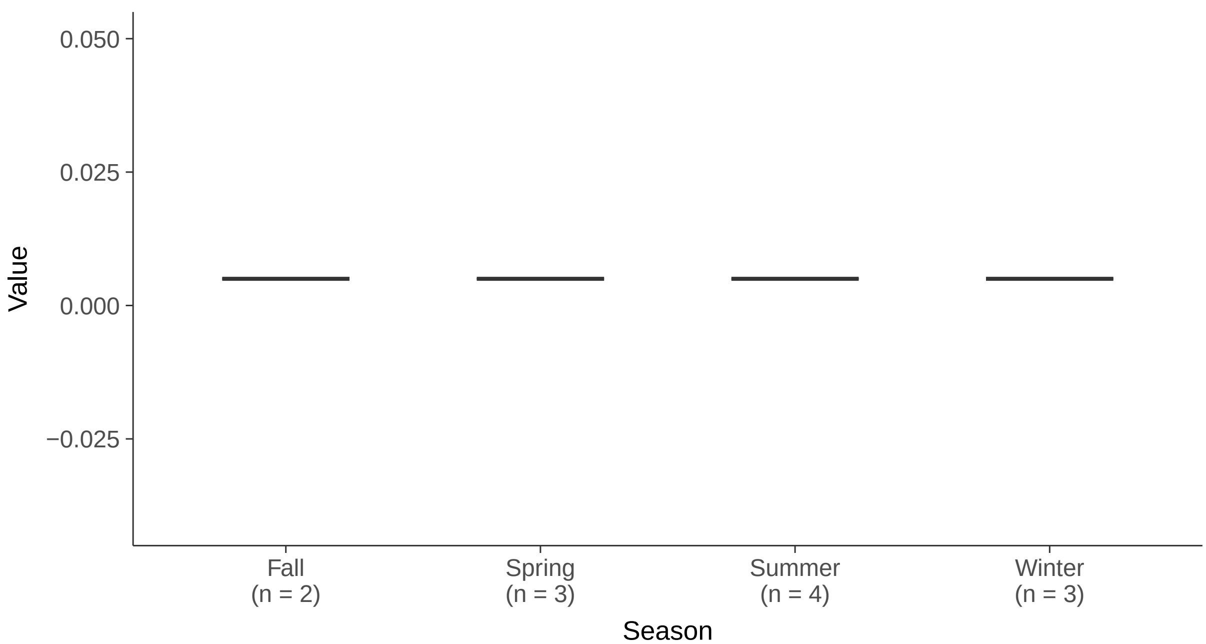
Boxplot

Antimony, MW-13 (mg/L)



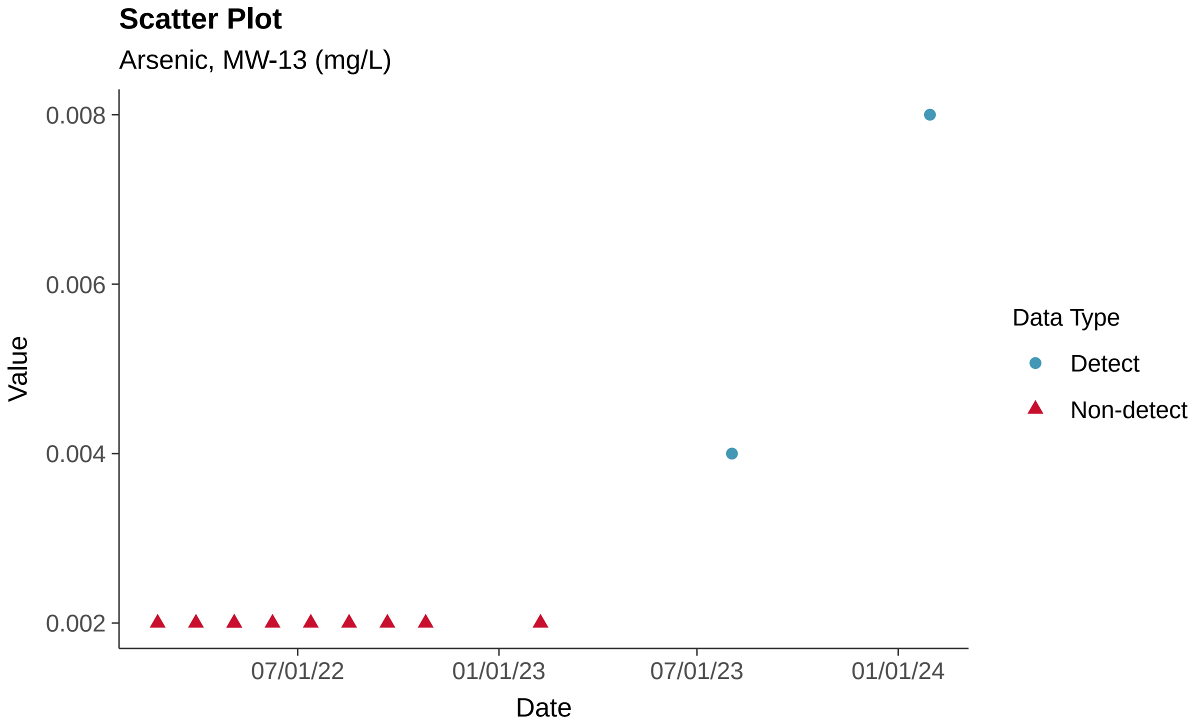
Boxplot by Season

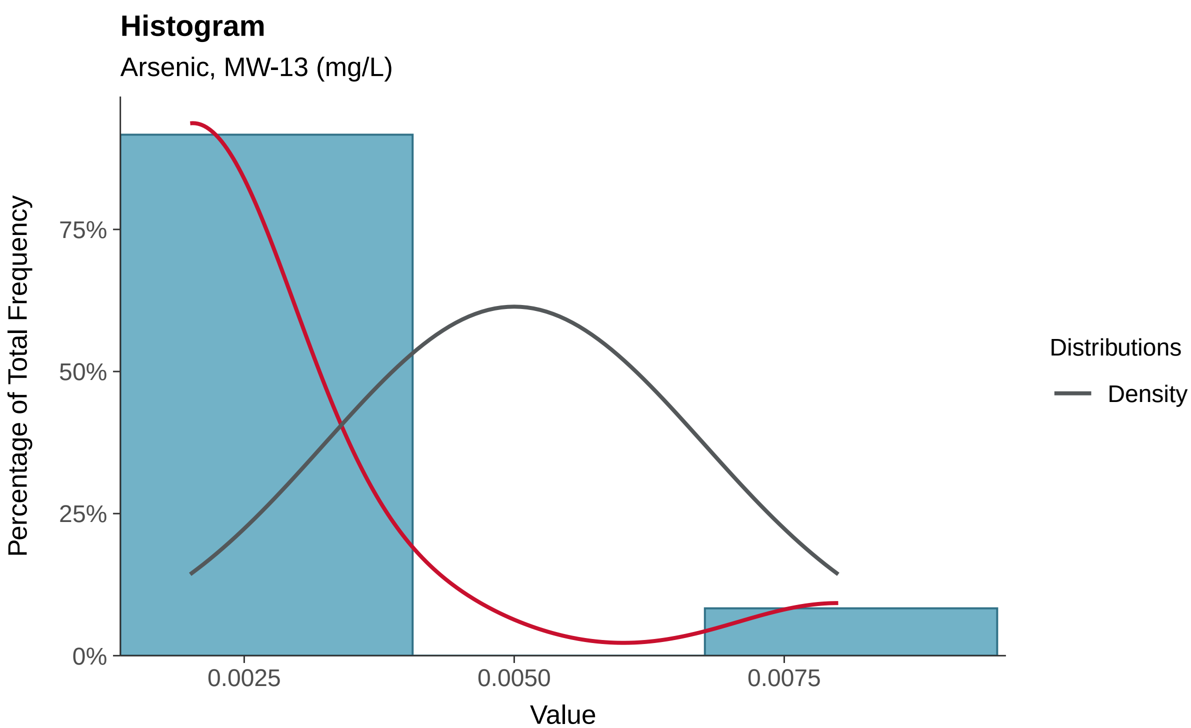
Antimony, MW-13 (mg/L)



Appendix IV: Arsenic, MW-13

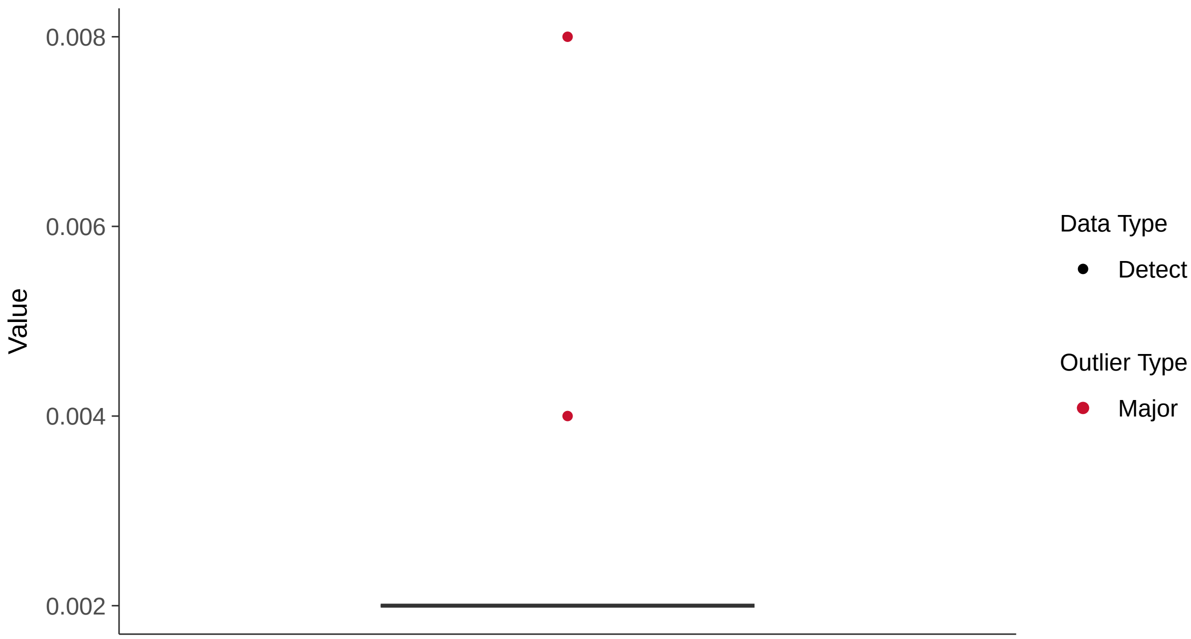
ID: 13_2_09





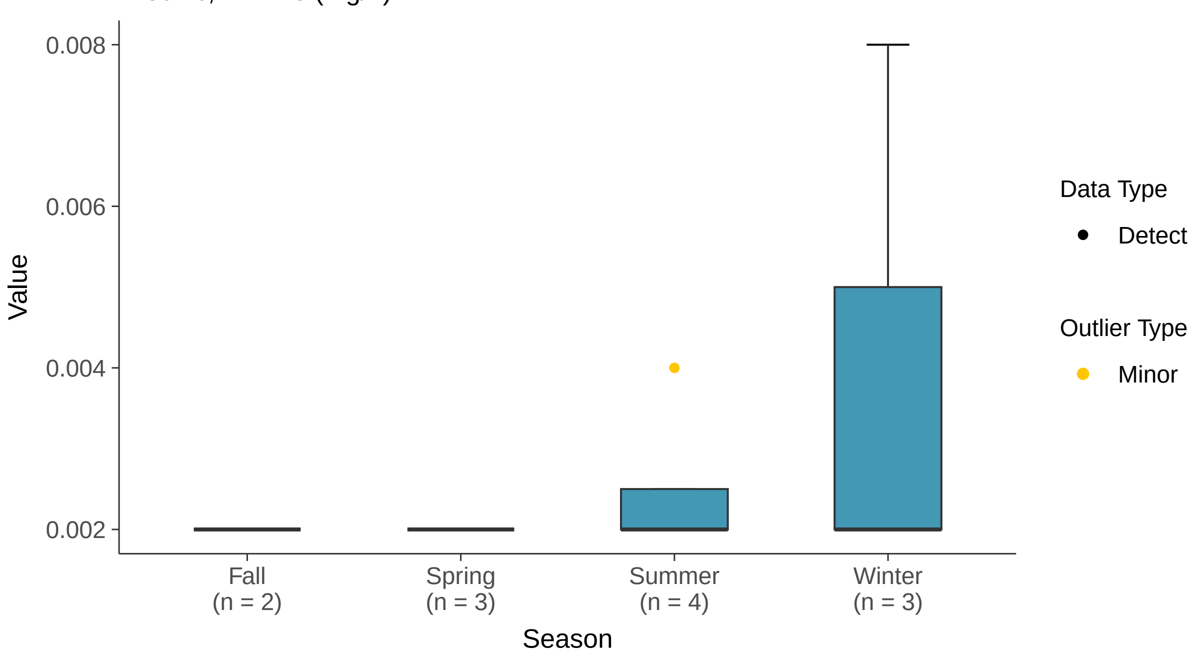
Boxplot

Arsenic, MW-13 (mg/L)



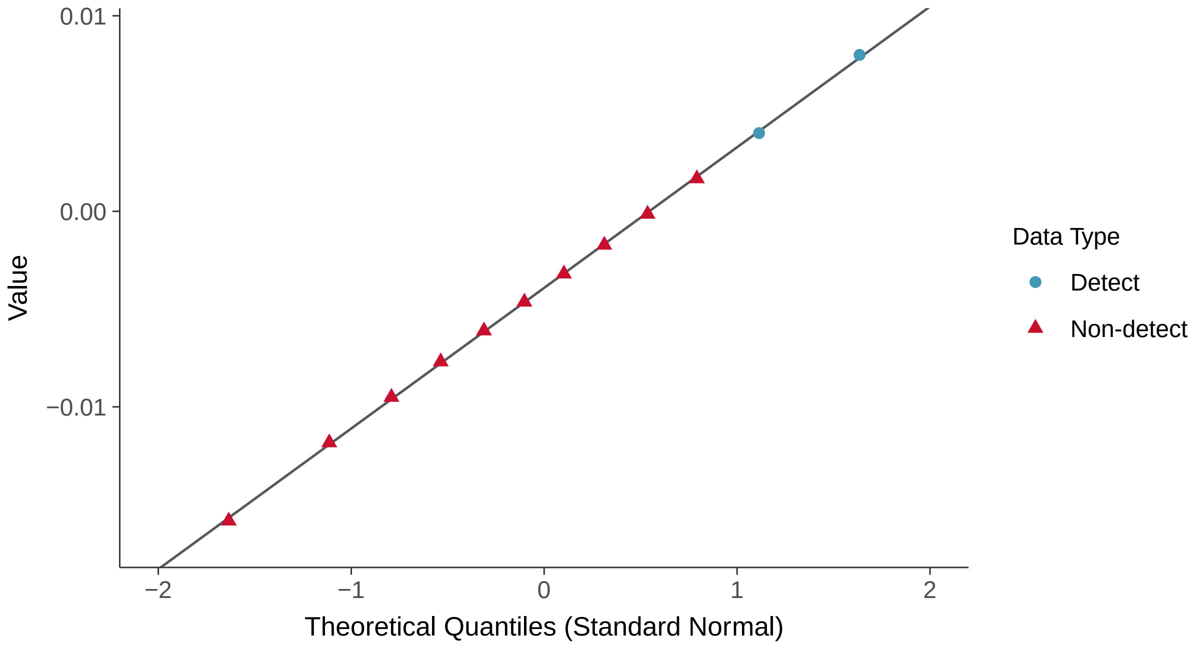
Boxplot by Season

Arsenic, MW-13 (mg/L)



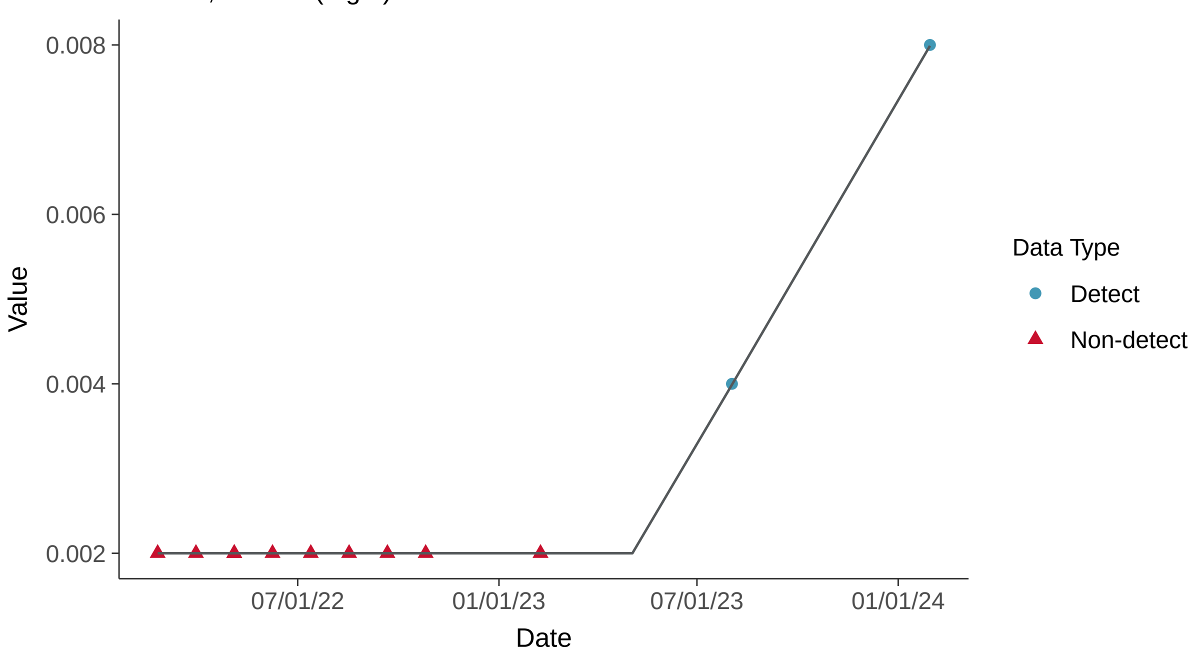
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-13 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-13 (mg/L)

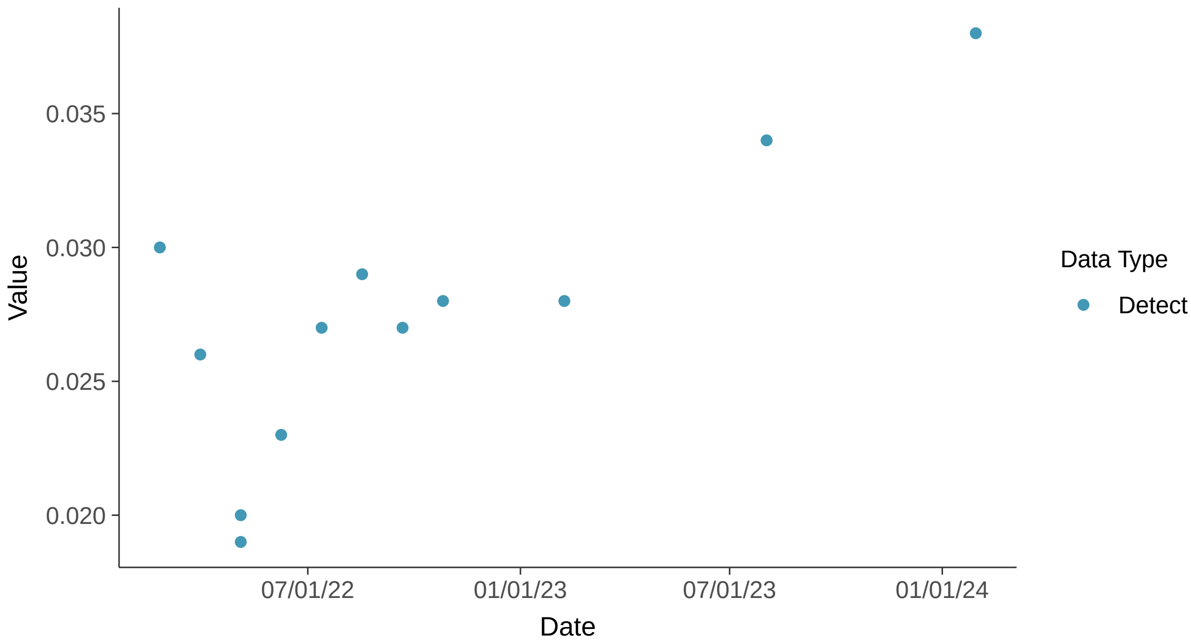


Appendix IV: Barium, MW-13

ID: 13_2_10

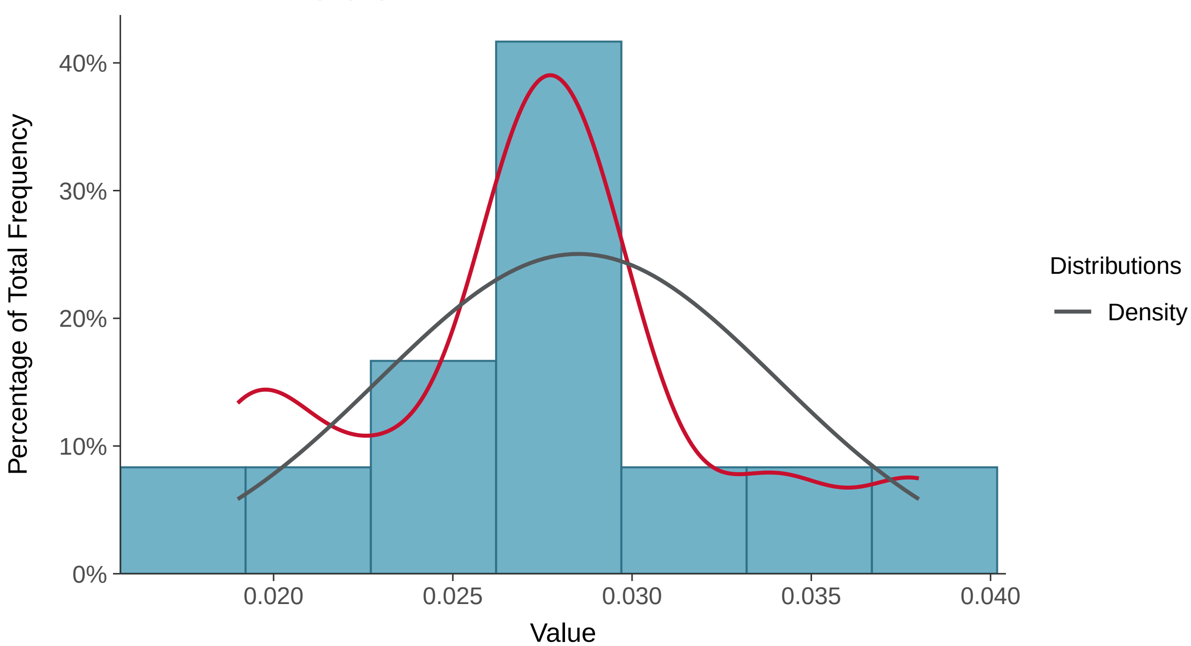
Scatter Plot

Barium, MW-13 (mg/L)



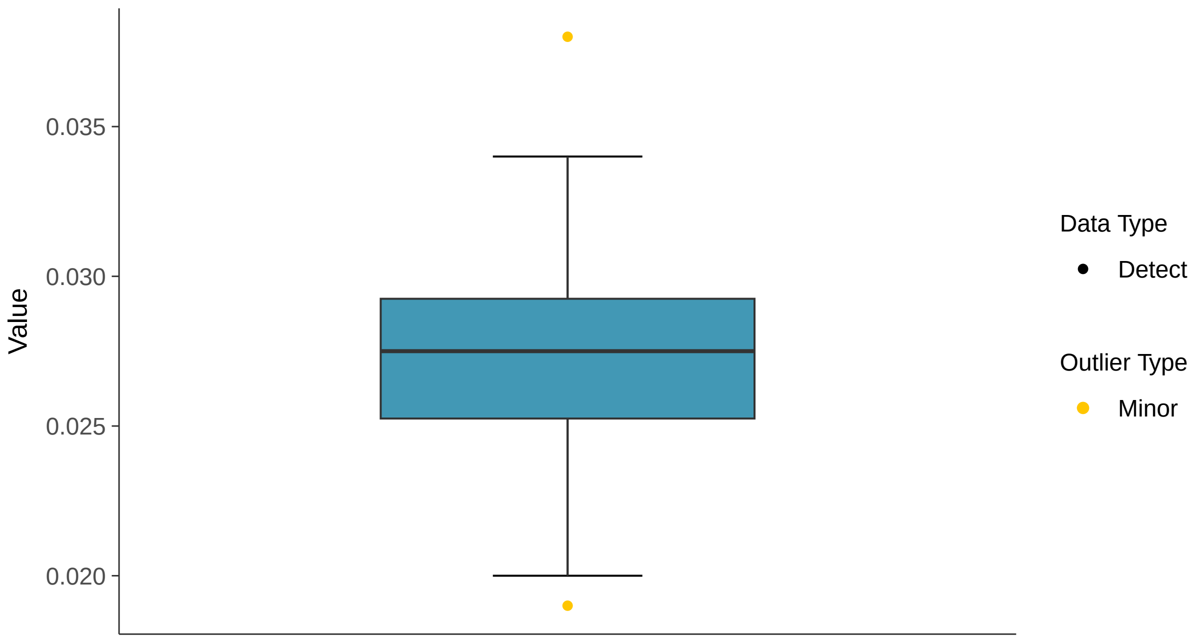
Histogram

Barium, MW-13 (mg/L)



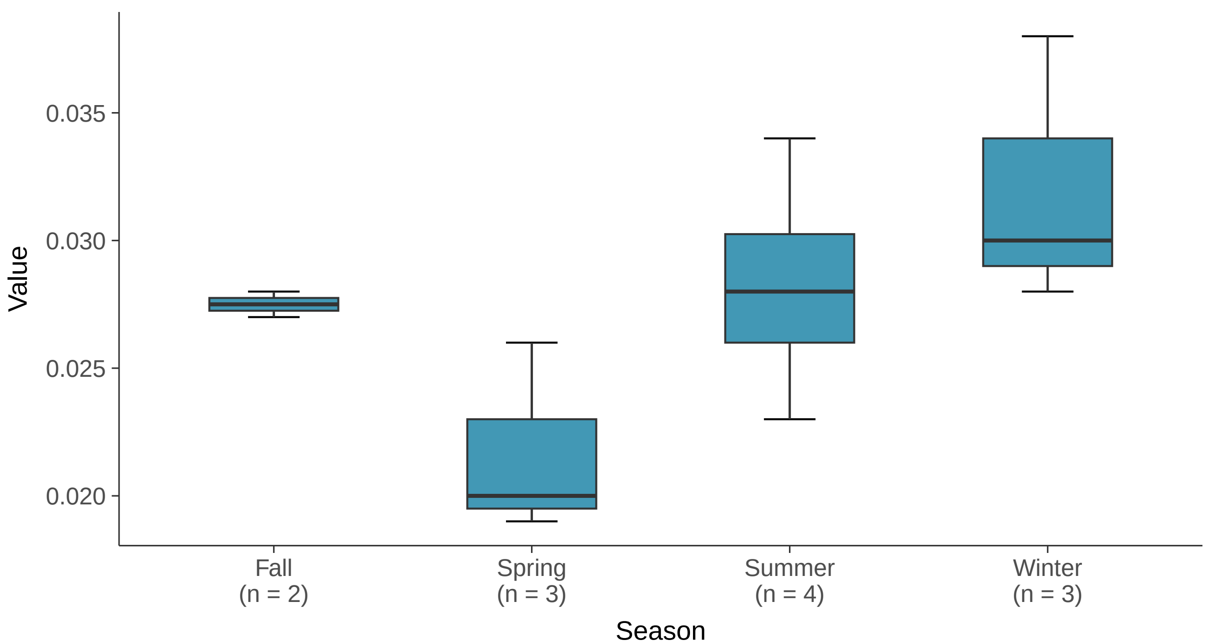
Boxplot

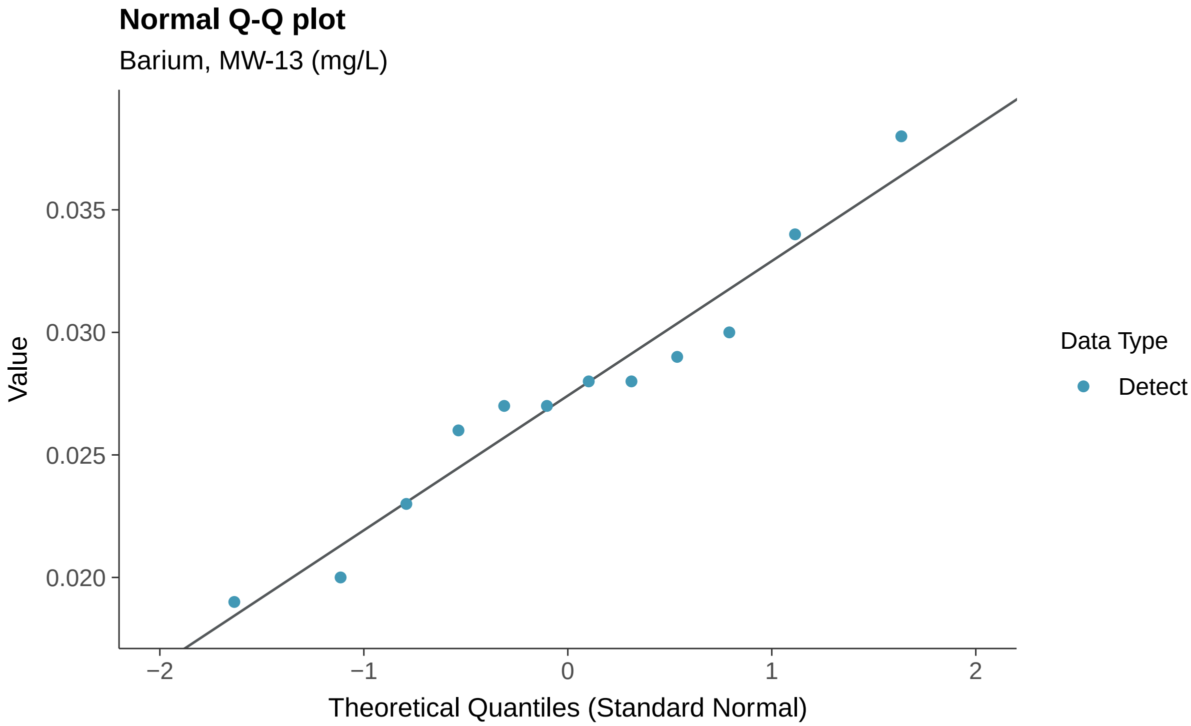
Barium, MW-13 (mg/L)

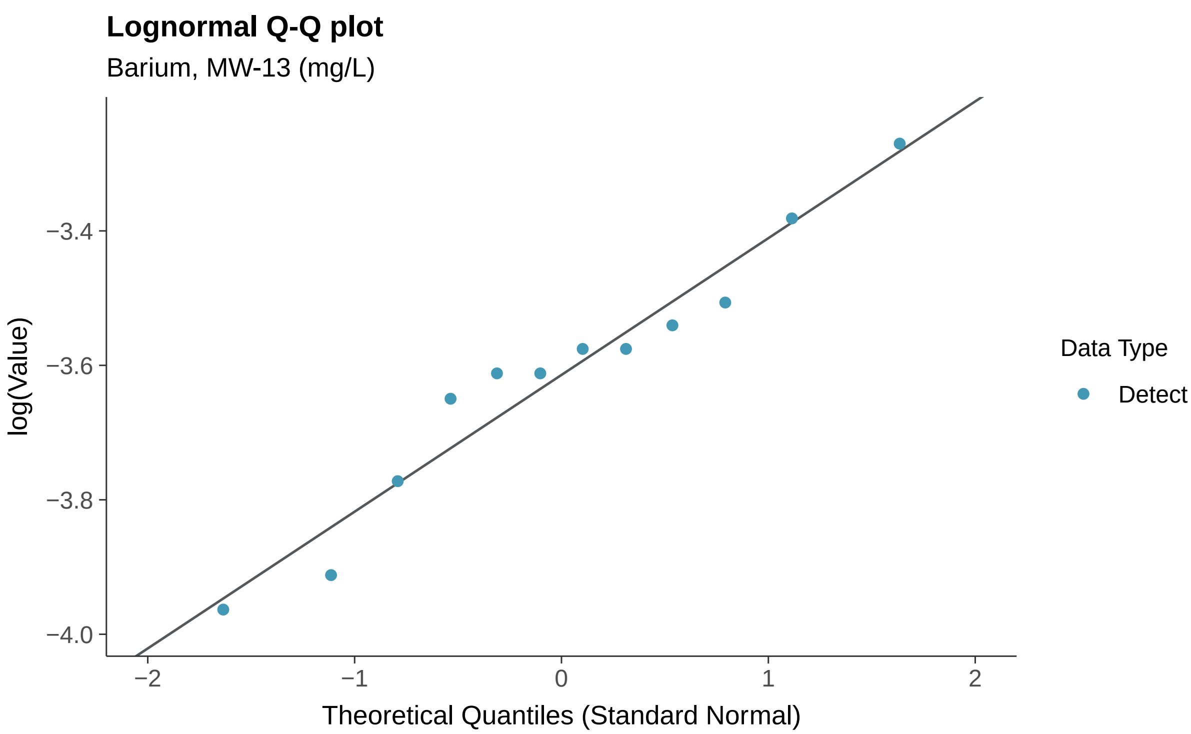


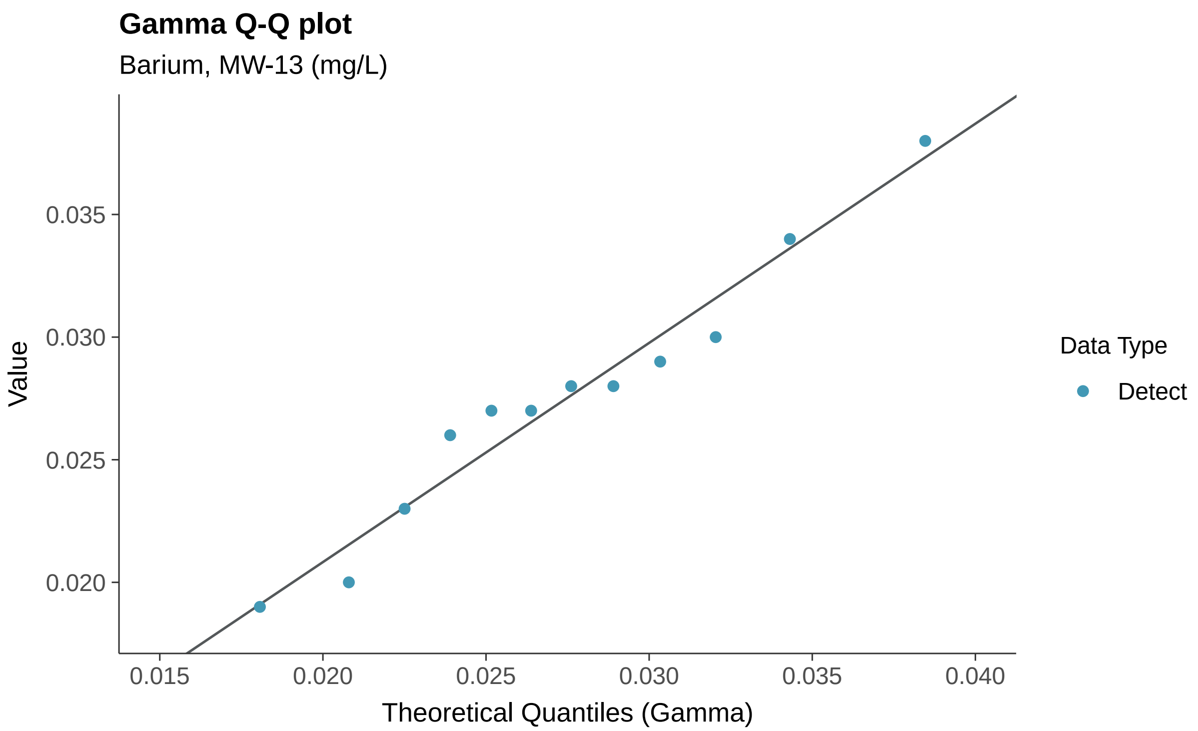
Boxplot by Season

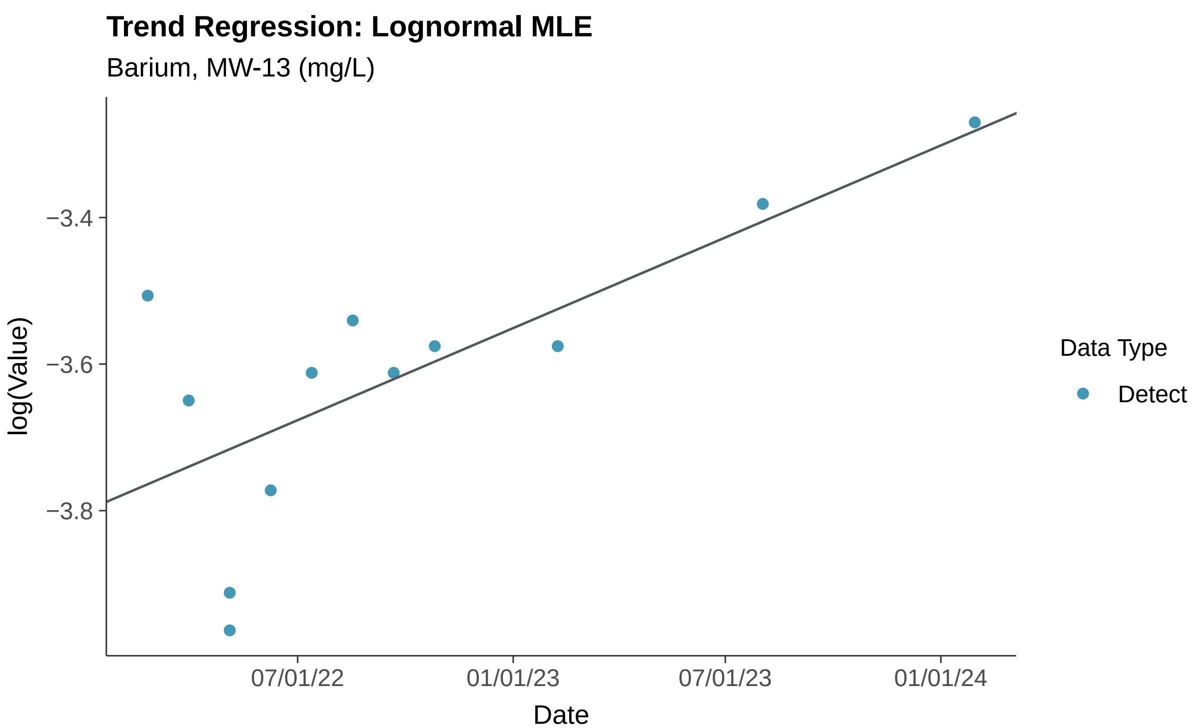
Barium, MW-13 (mg/L)




Normal Q-Q plot
Barium, MW-13 (mg/L)
Value
0.035
0.030
0.025
0.020
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

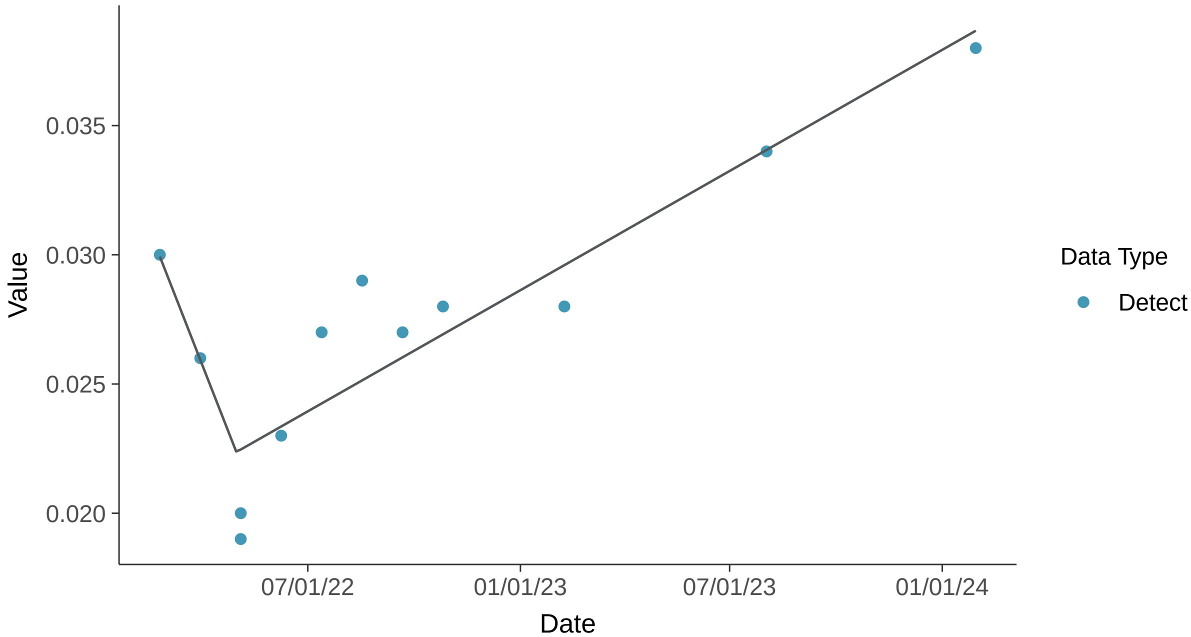

Lognormal Q-Q plot
Barium, MW-13 (mg/L)
log(Value)
−3.4
−3.6
−3.8
−4.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Barium, MW-13 (mg/L)
Value
0.035
0.030
0.025
0.020
0.015
0.020
0.025
0.030
0.035
0.040
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-13 (mg/L)
log(Value)
−3.4
−3.6
−3.8
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Barium, MW-13 (mg/L)

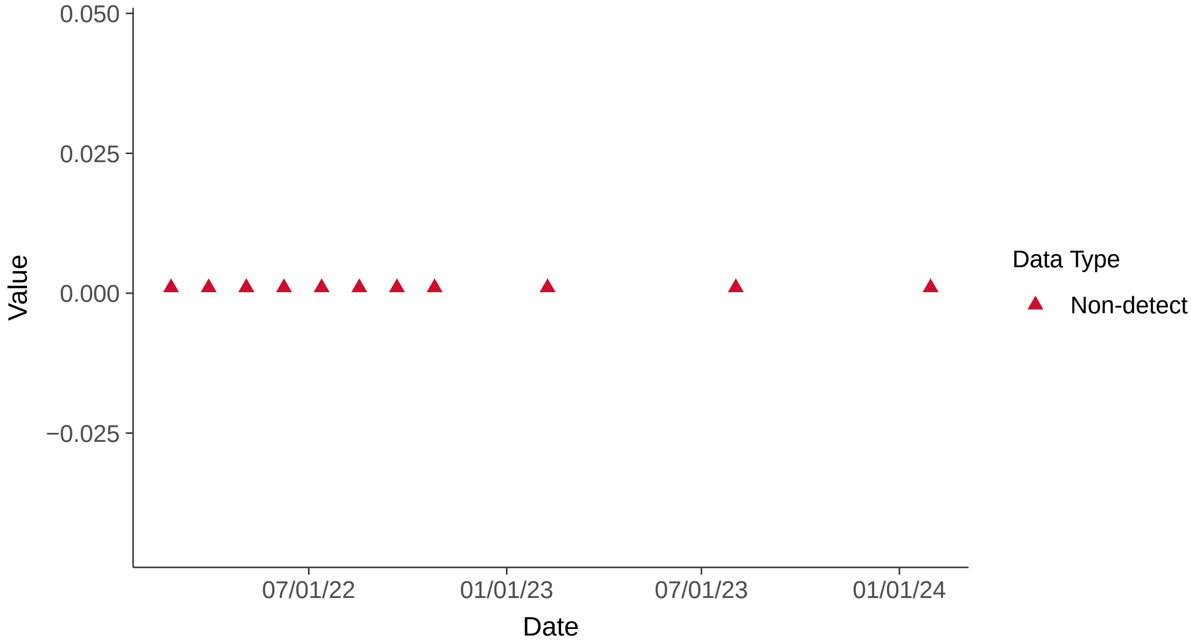


Appendix IV: Beryllium, MW-13

ID: 13_2_11

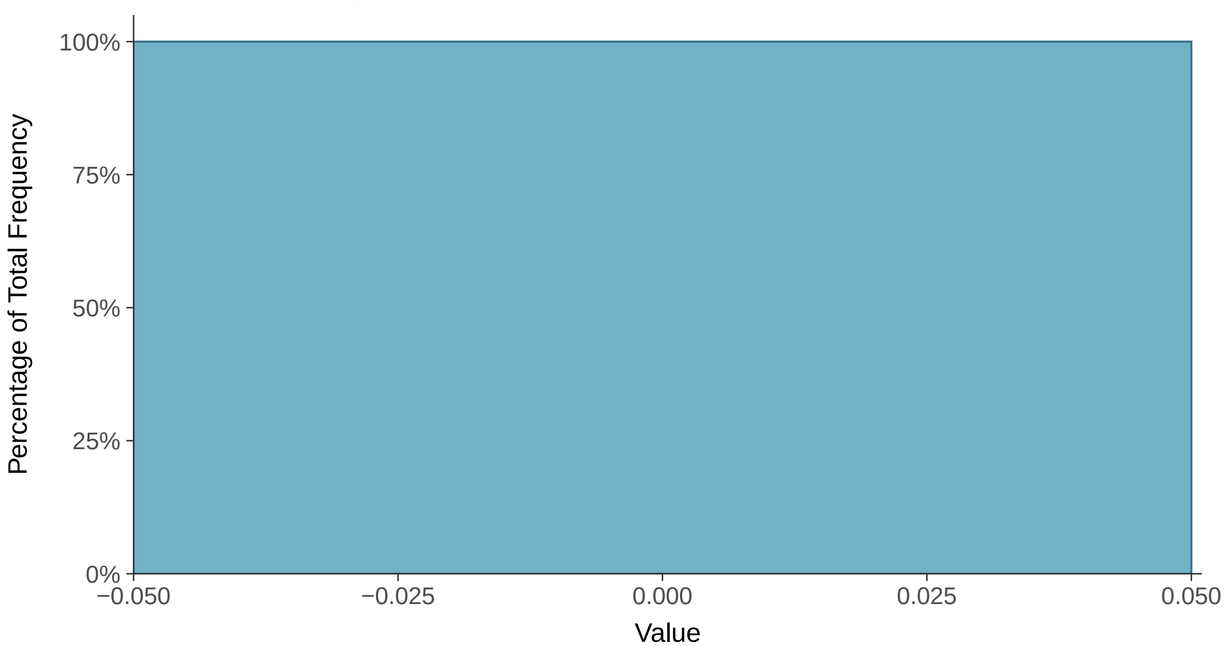
Scatter Plot

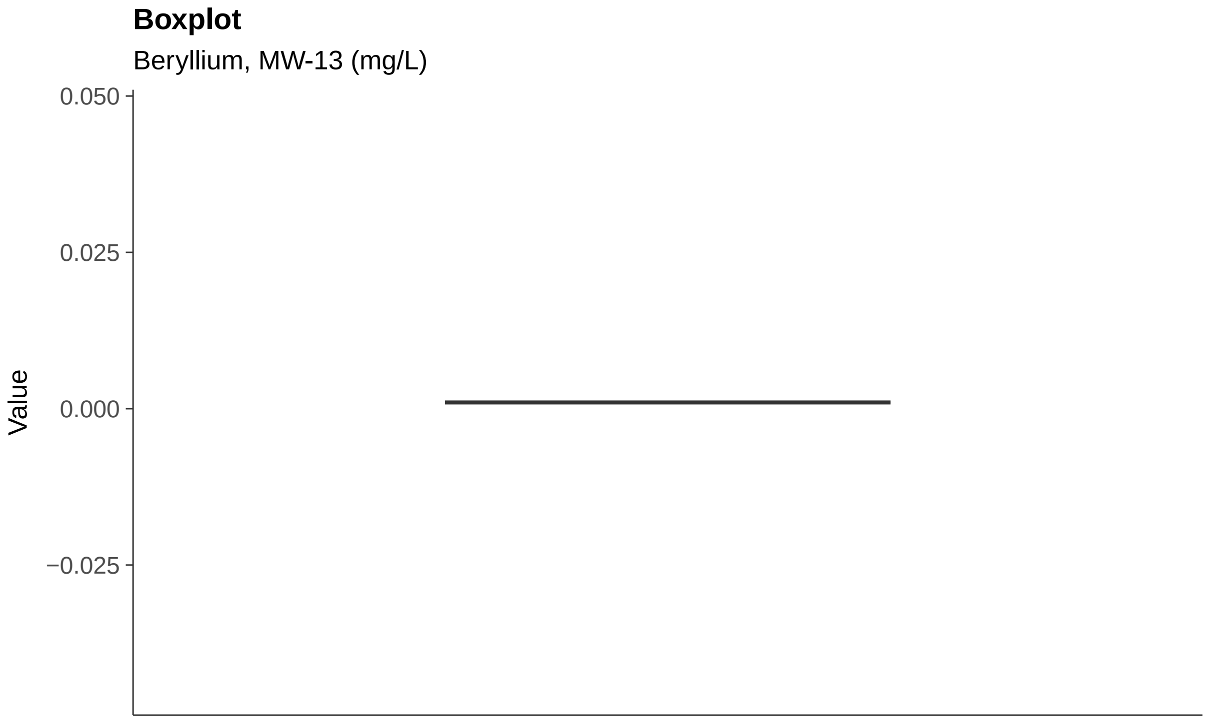
Beryllium, MW-13 (mg/L)

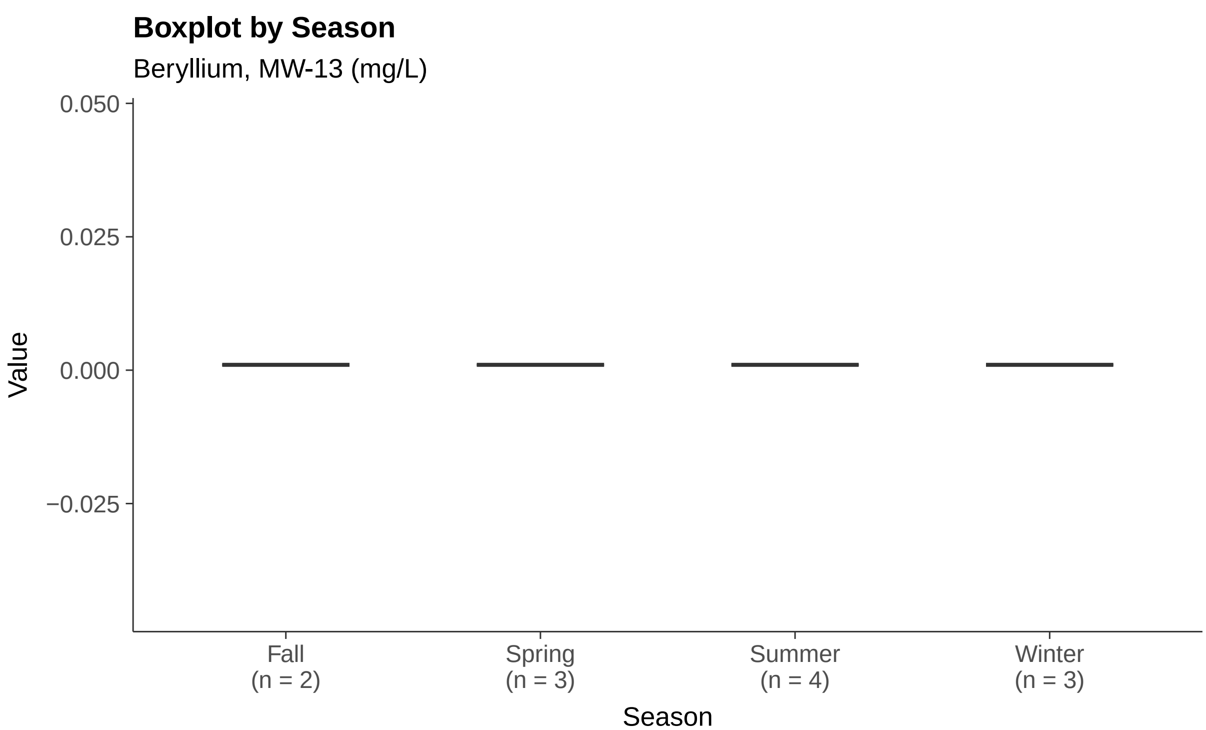


Histogram

Beryllium, MW-13 (mg/L)




Boxplot
Beryllium, MW-13 (mg/L)
0.050
0.025
0.000
−0.025
Value

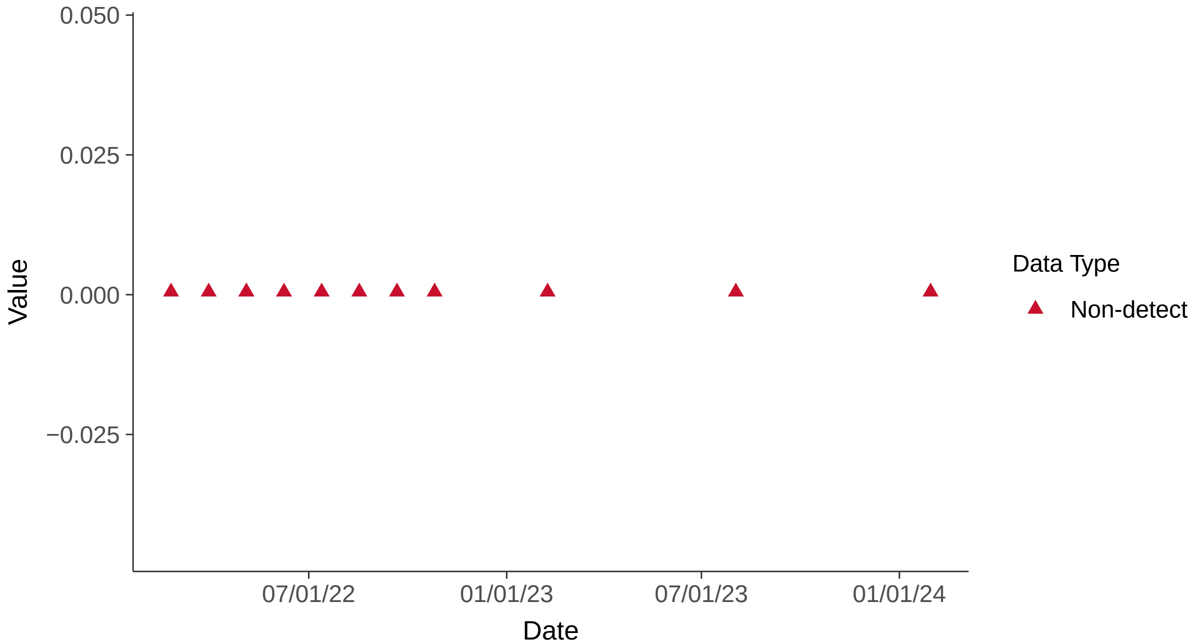

Boxplot by Season
Beryllium, MW-13 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 2)
Spring
(n = 3)
Summer
(n = 4)
Winter
(n = 3)
Season

Appendix IV: Cadmium, MW-13

ID: 13_2_12

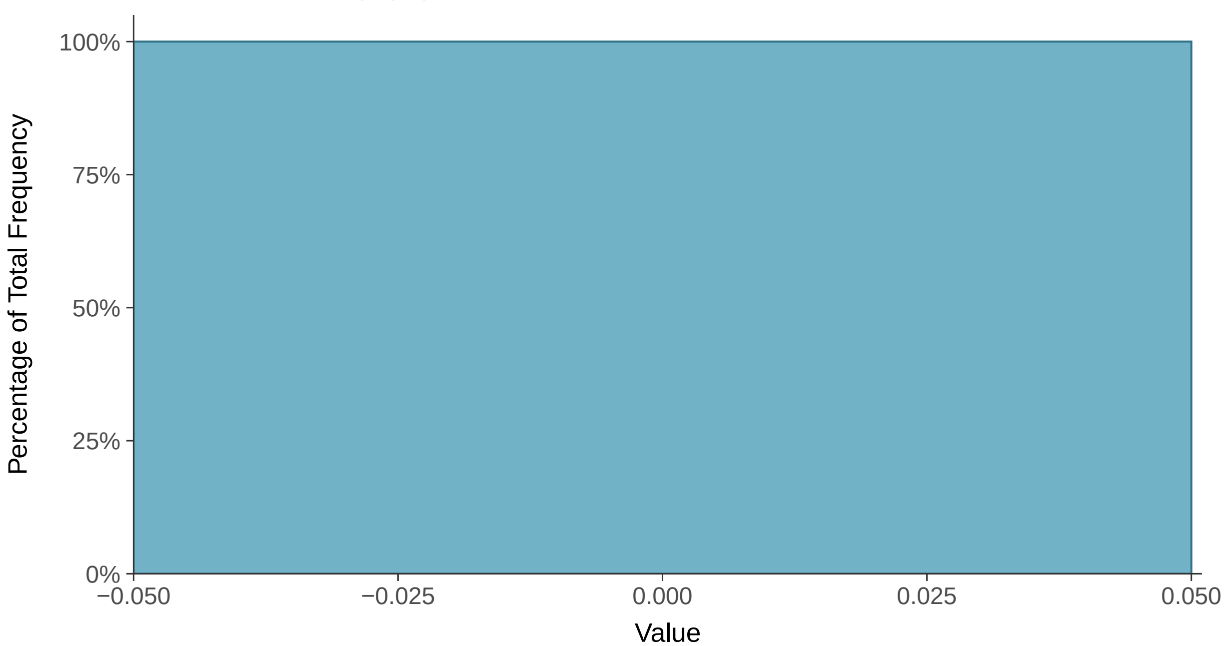
Scatter Plot

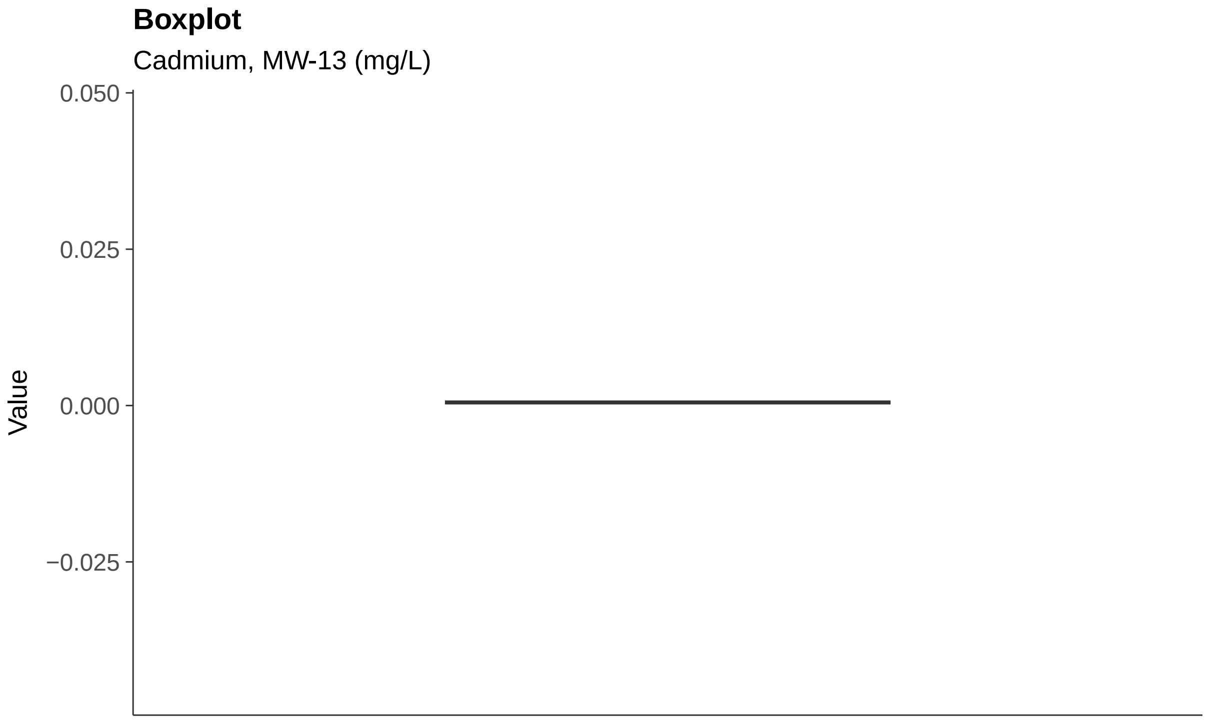
Cadmium, MW-13 (mg/L)

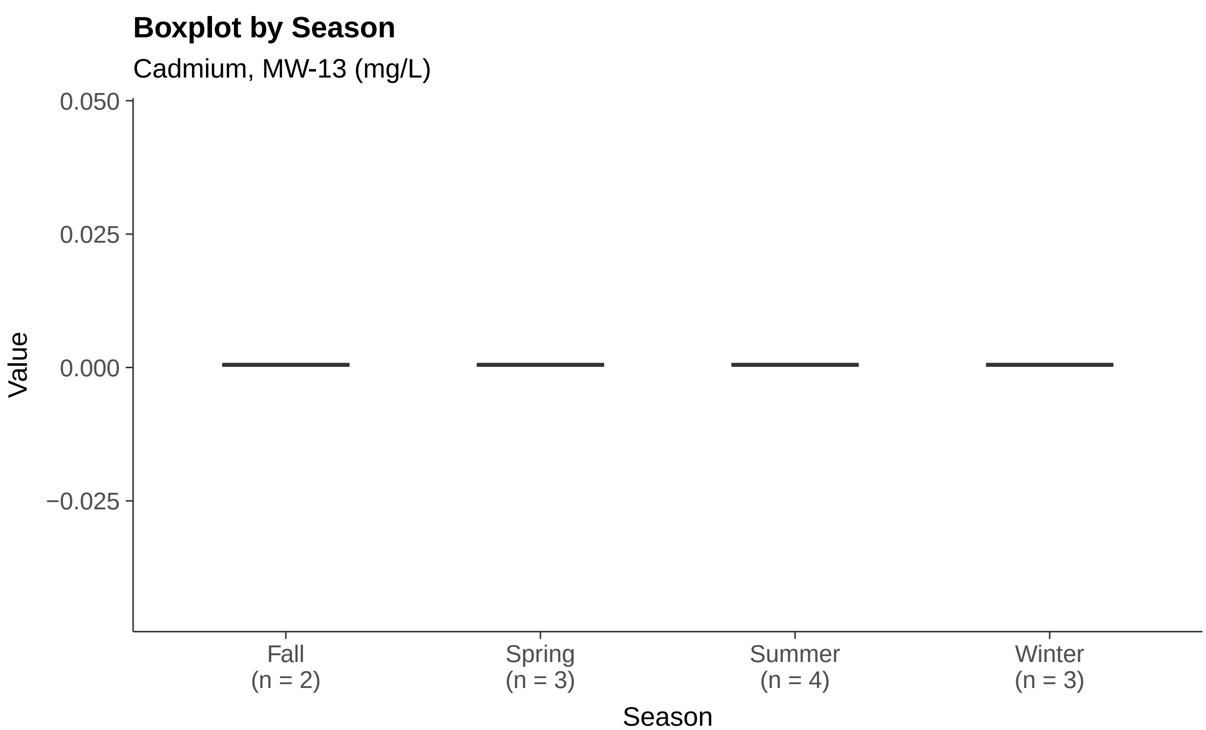


Histogram

Cadmium, MW-13 (mg/L)




Boxplot
Cadmium, MW-13 (mg/L)
0.050
0.025
0.000
−0.025
Value

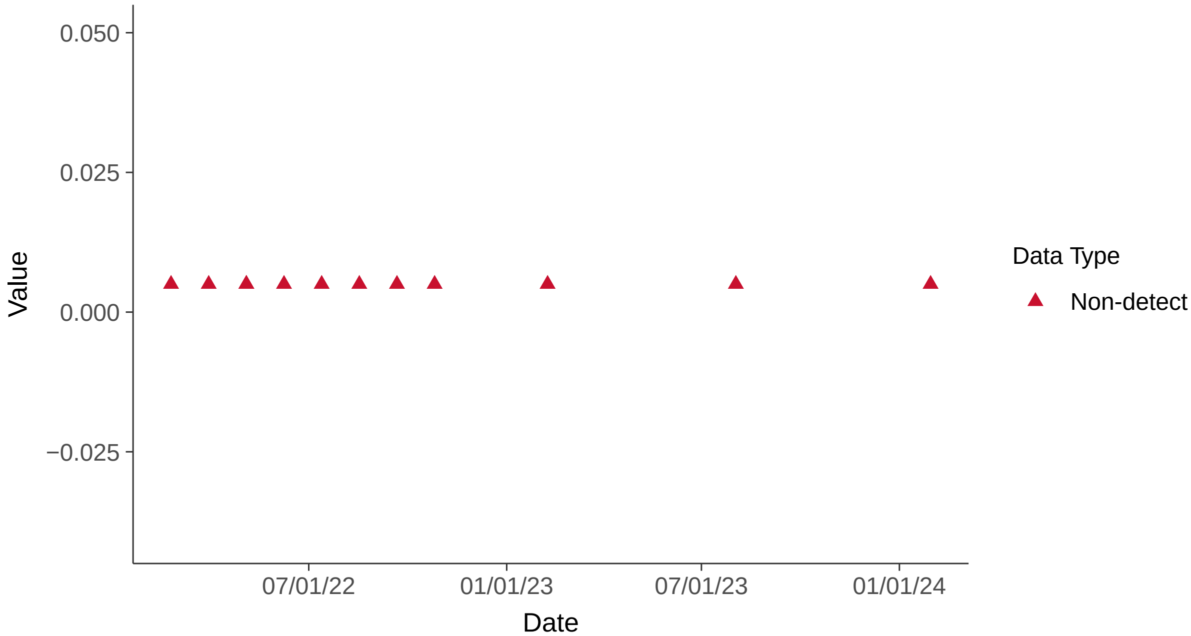

Boxplot by Season
Cadmium, MW-13 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall (n = 2)
Spring (n = 3)
Summer (n = 4)
Winter (n = 3)
Season

Appendix IV: Chromium, MW-13

ID: 13_2_13

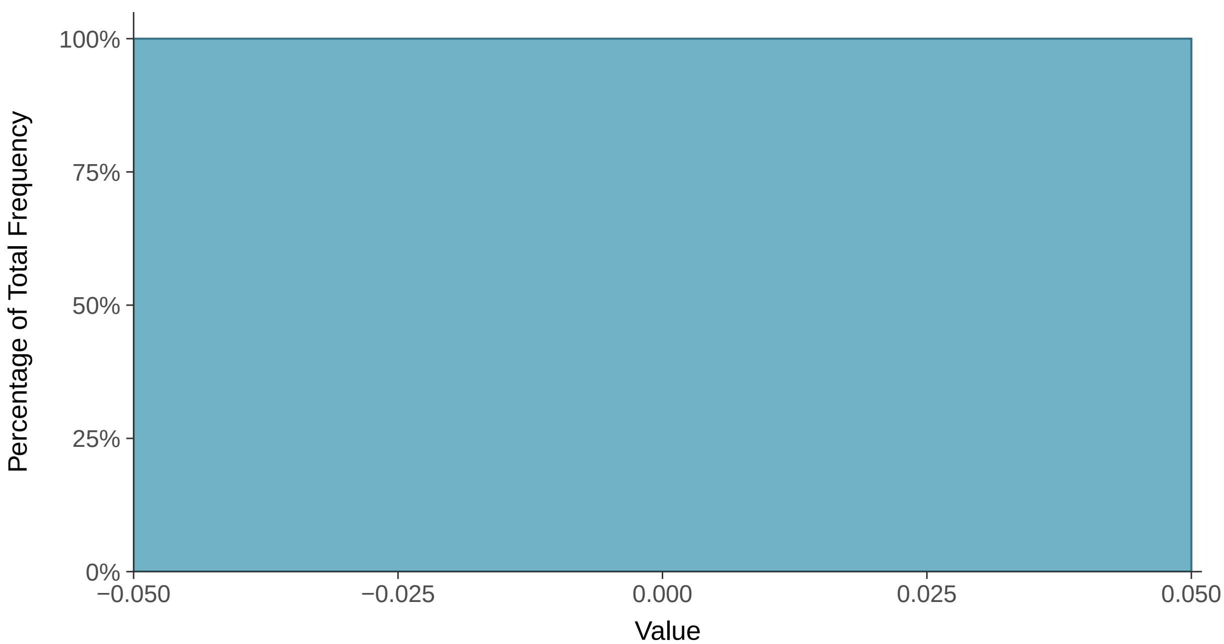
Scatter Plot

Chromium, MW-13 (mg/L)



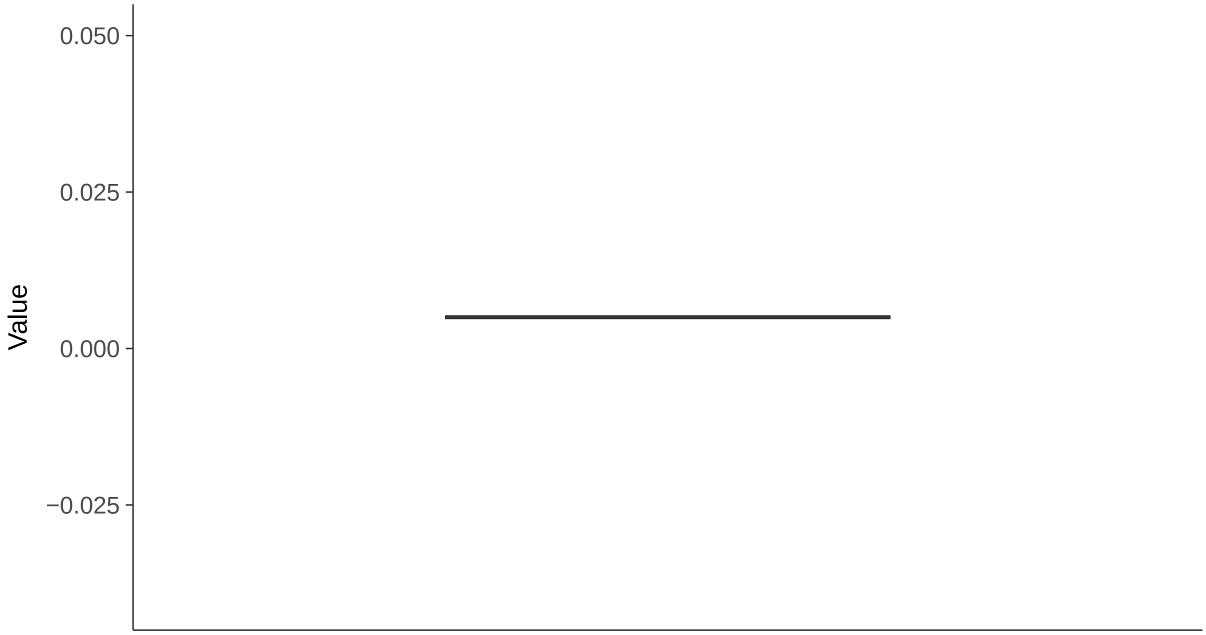
Histogram

Chromium, MW-13 (mg/L)



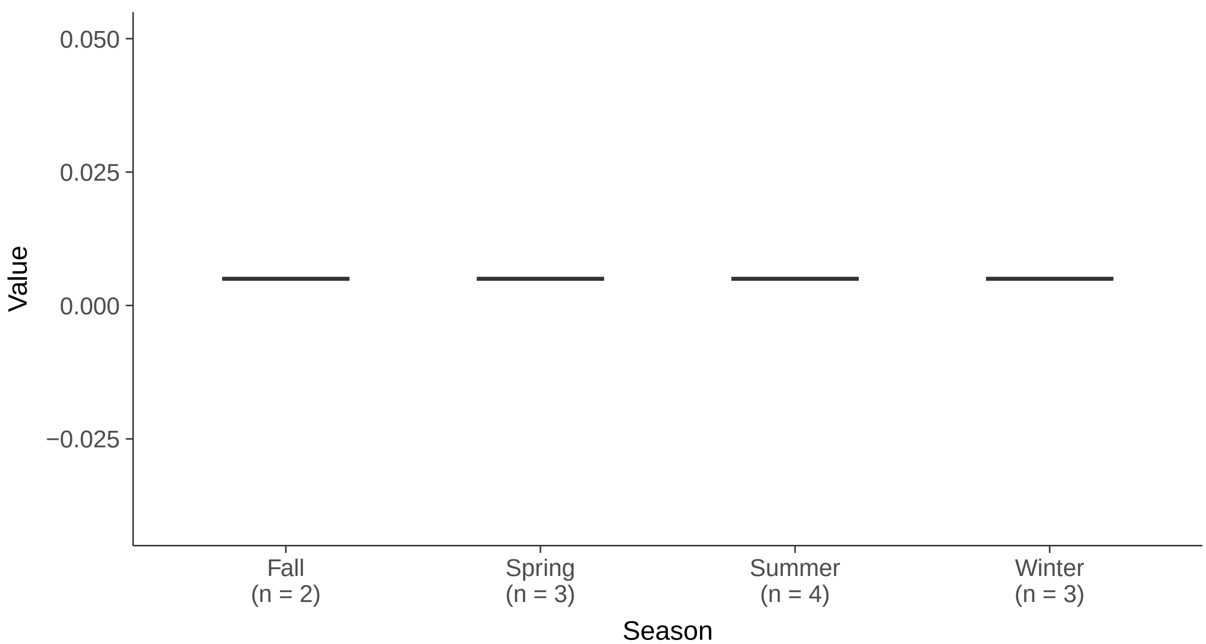
Boxplot

Chromium, MW-13 (mg/L)



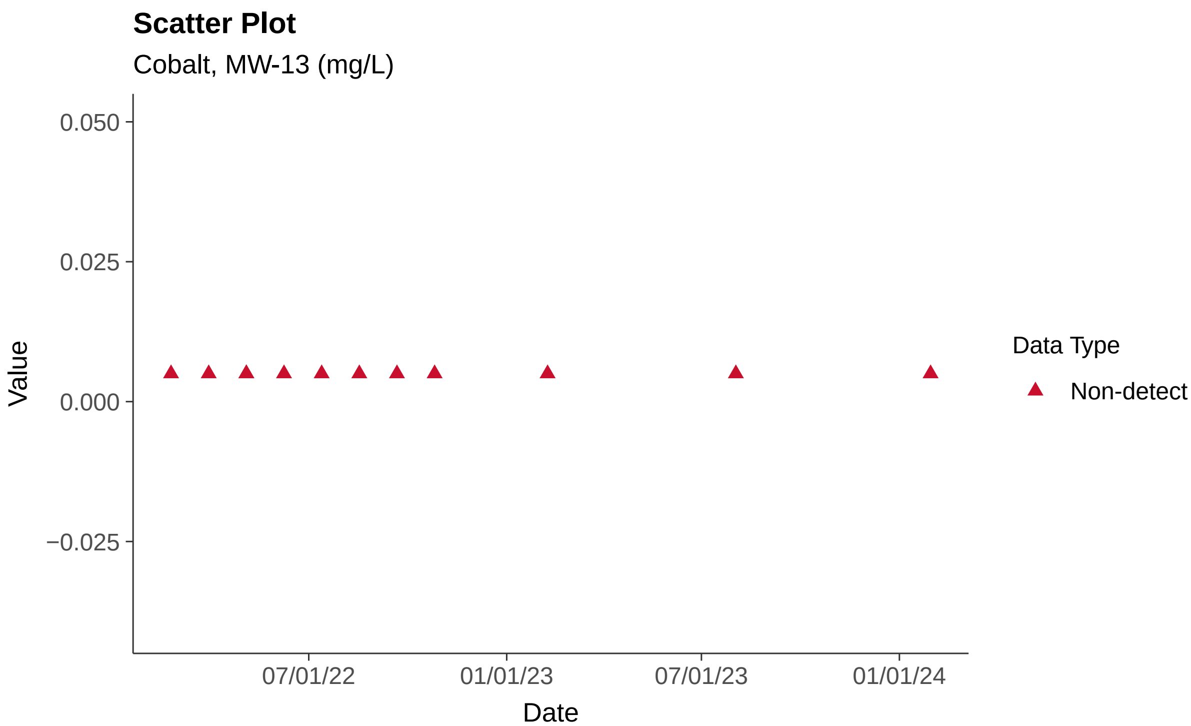
Boxplot by Season

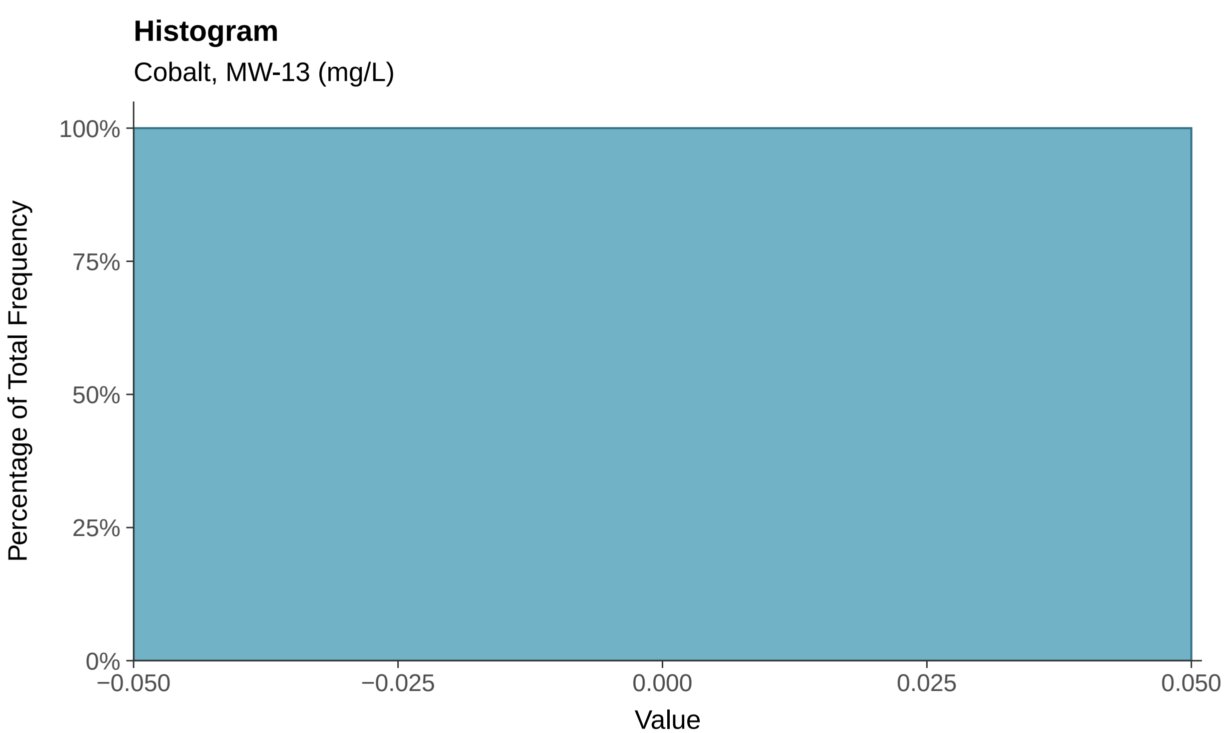
Chromium, MW-13 (mg/L)



Appendix IV: Cobalt, MW-13

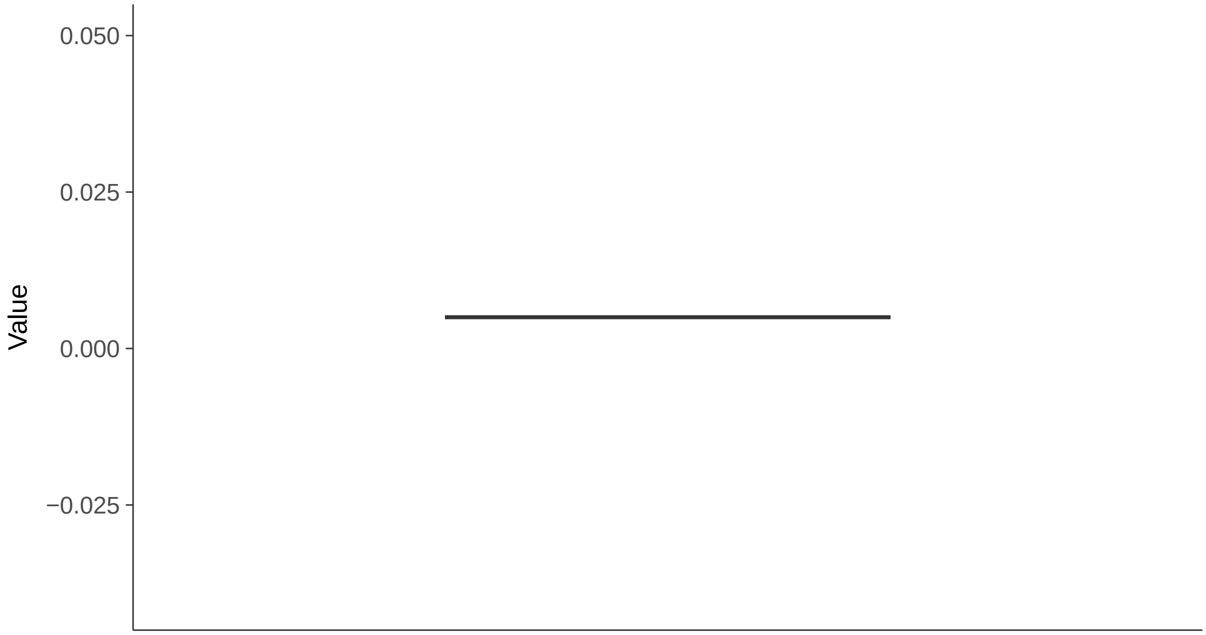
ID: 13_2_14





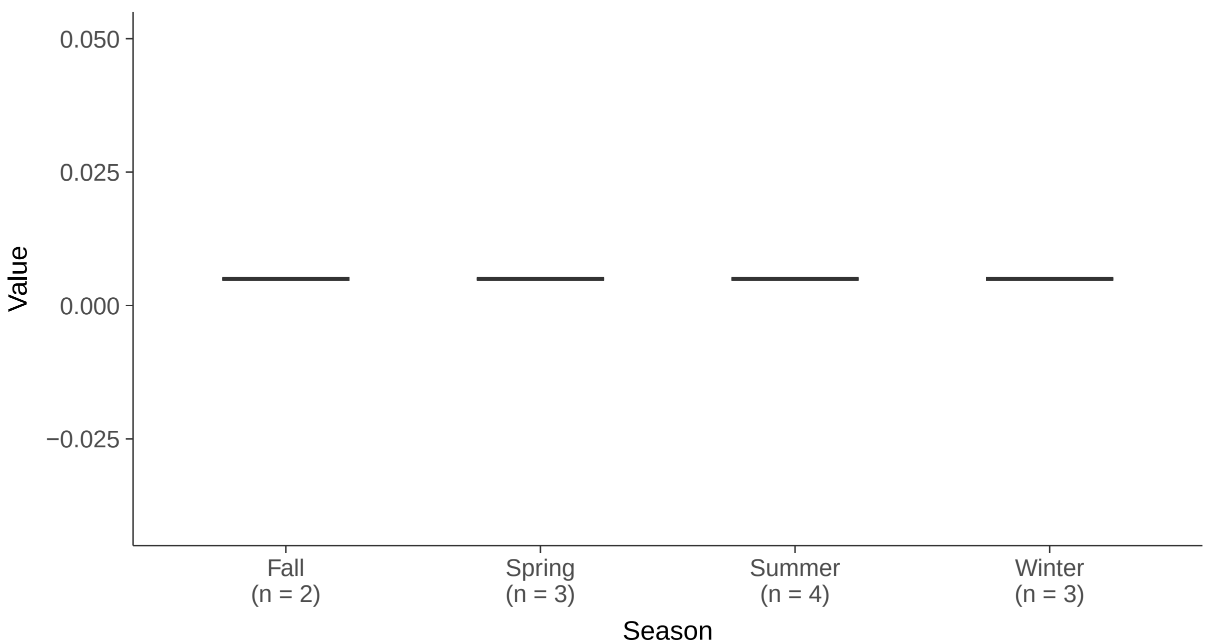
Boxplot

Cobalt, MW-13 (mg/L)



Boxplot by Season

Cobalt, MW-13 (mg/L)

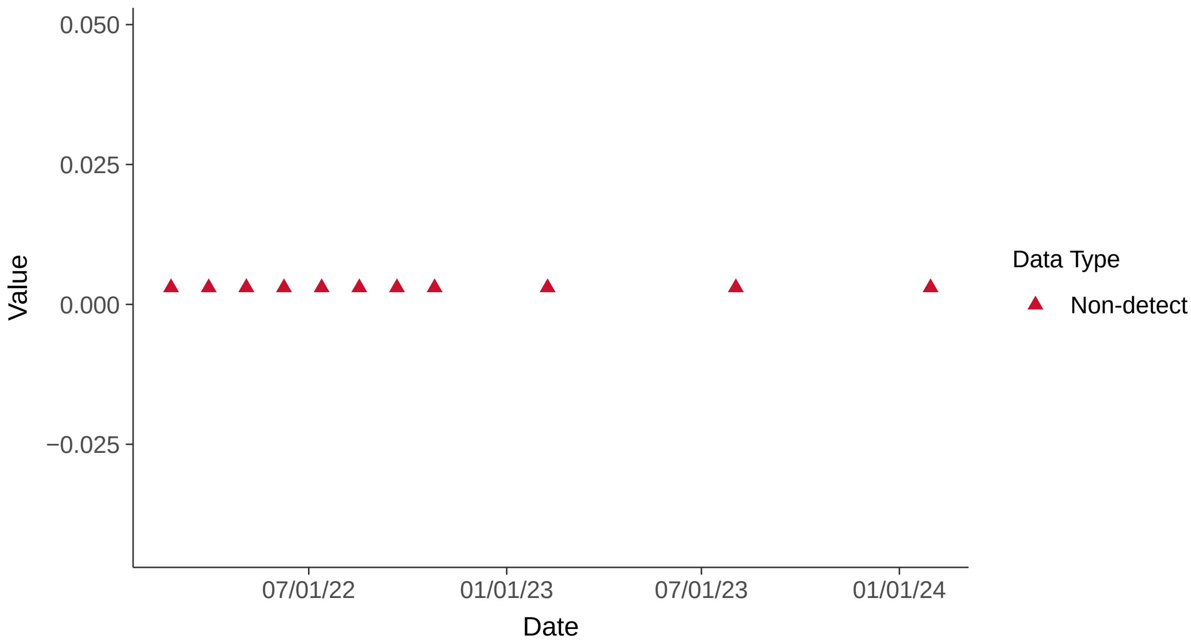


Appendix IV: Lead, MW-13

ID: 13_2_15

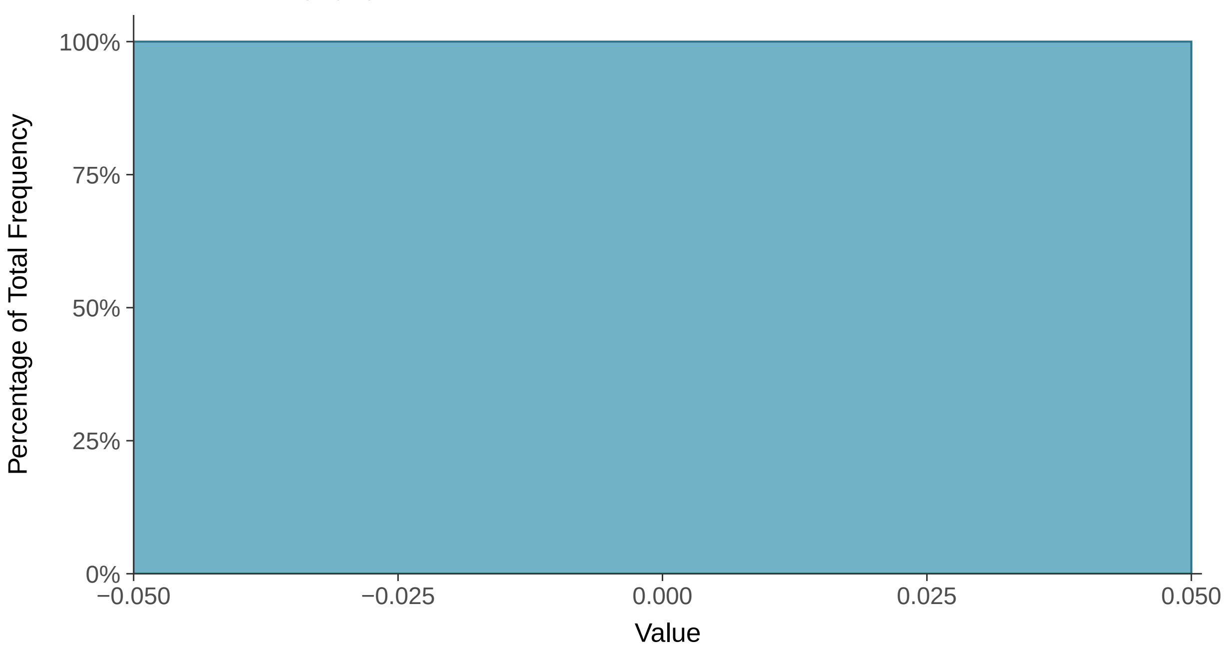
Scatter Plot

Lead, MW-13 (mg/L)



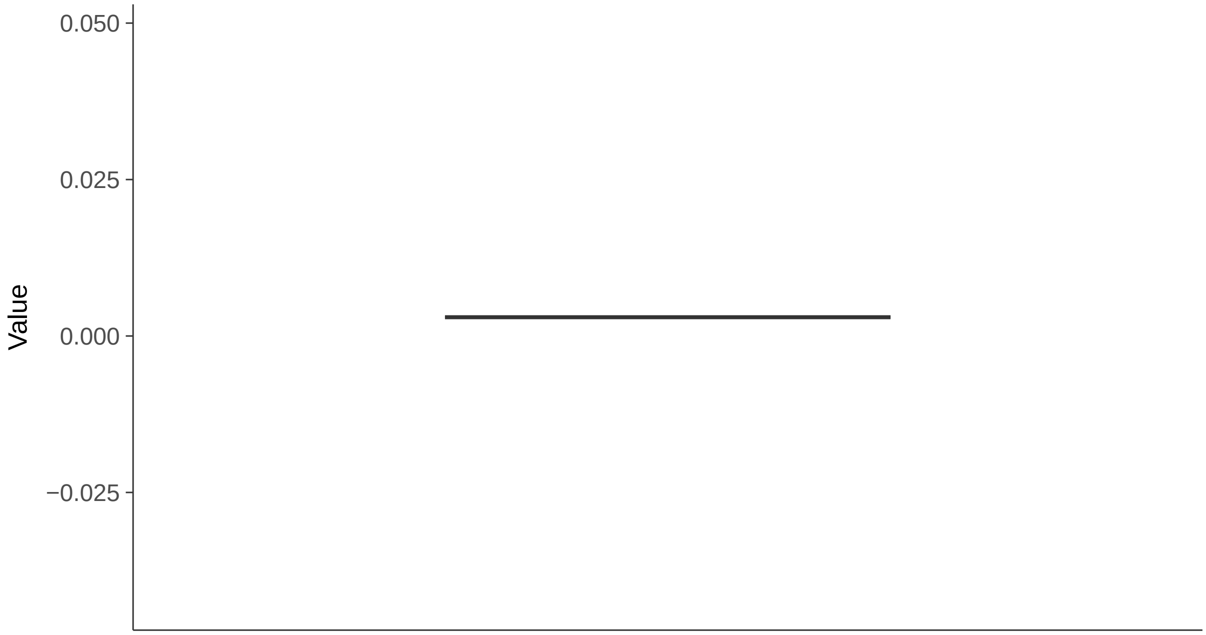
Histogram

Lead, MW-13 (mg/L)



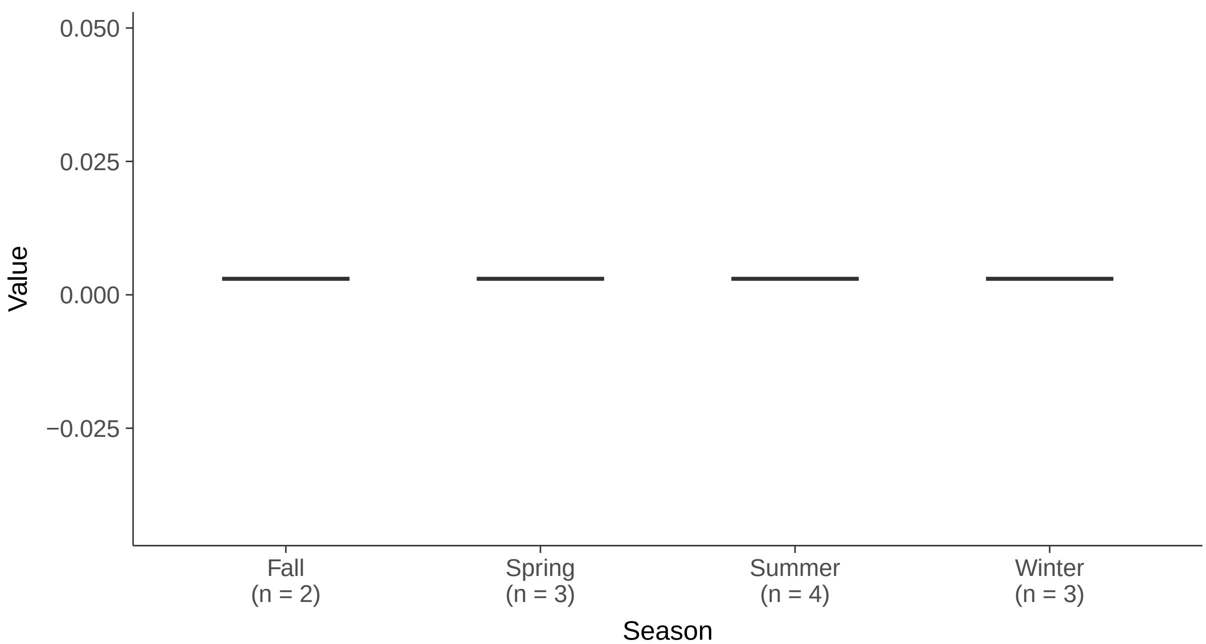
Boxplot

Lead, MW-13 (mg/L)



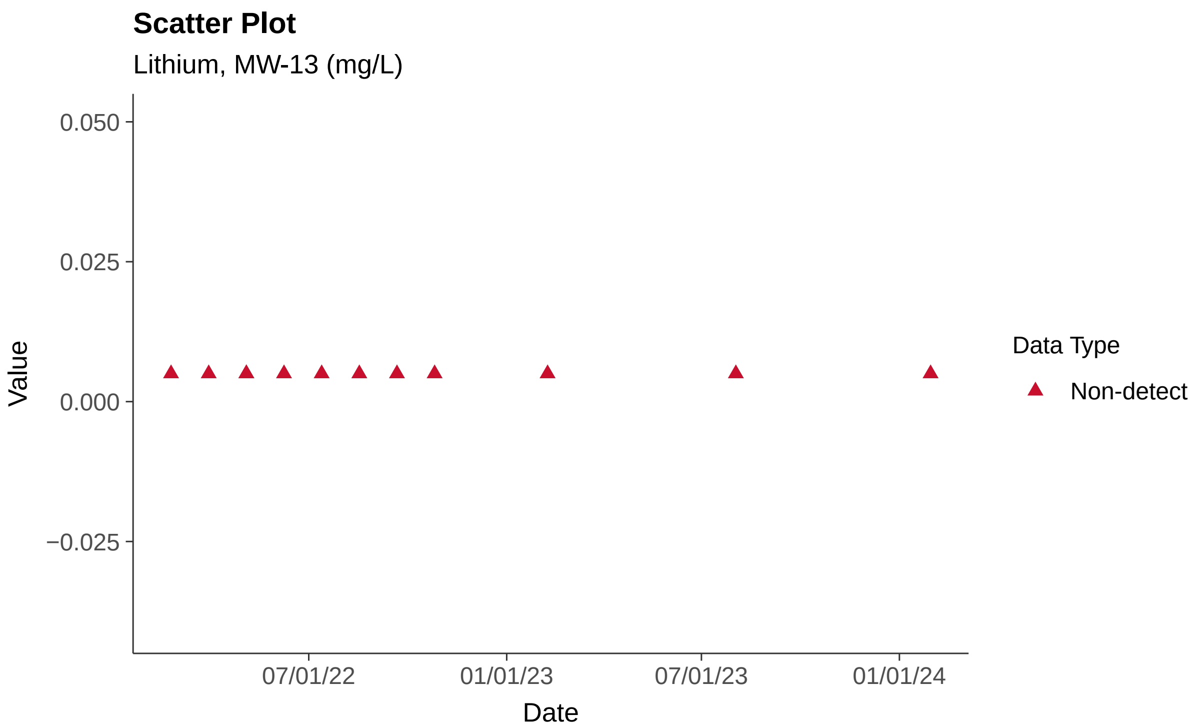
Boxplot by Season

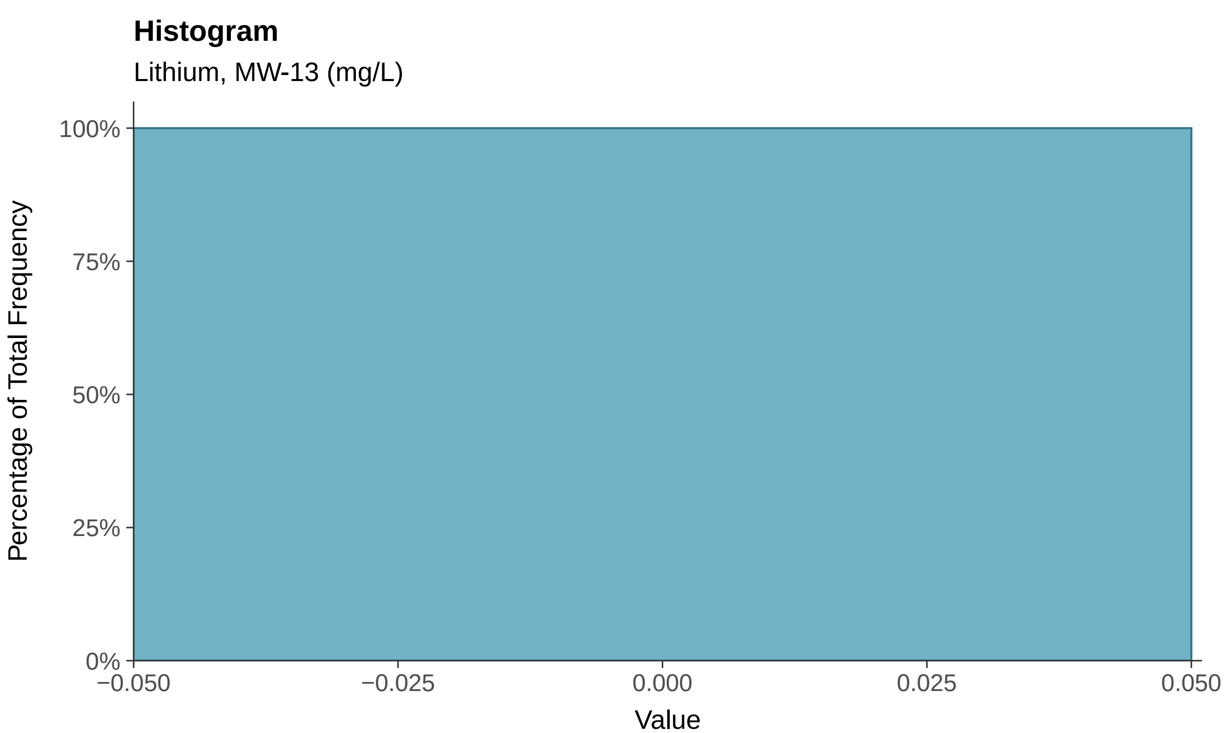
Lead, MW-13 (mg/L)



Appendix IV: Lithium, MW-13

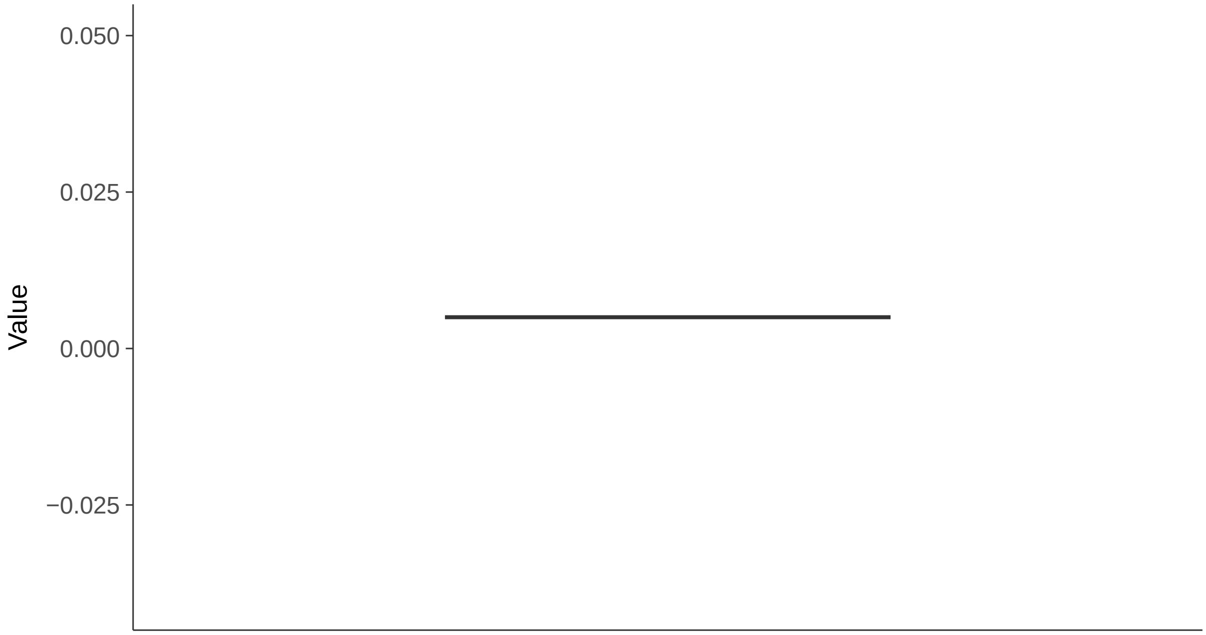
ID: 13_2_16





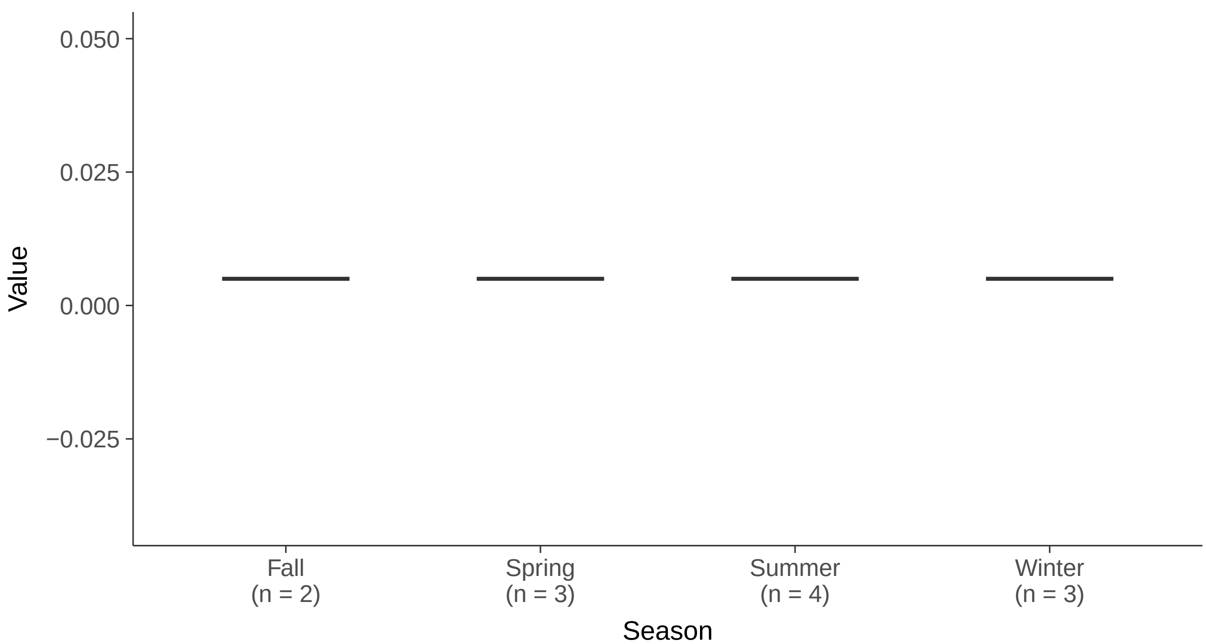
Boxplot

Lithium, MW-13 (mg/L)



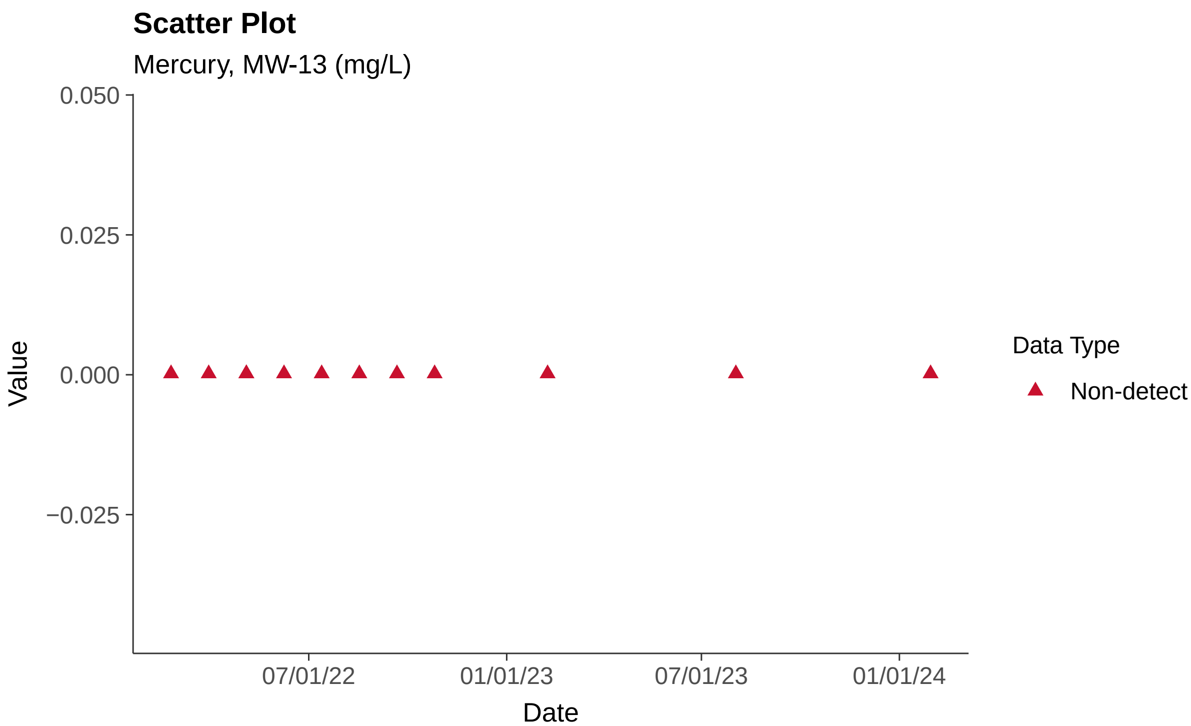
Boxplot by Season

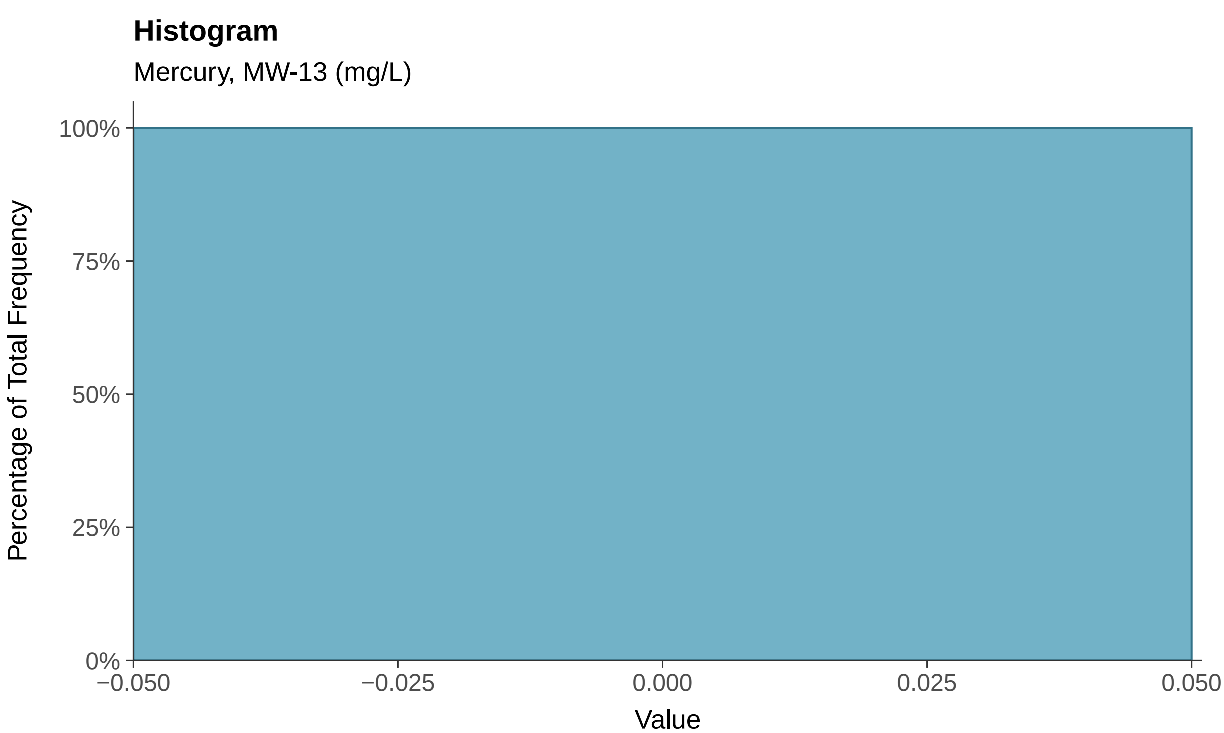
Lithium, MW-13 (mg/L)

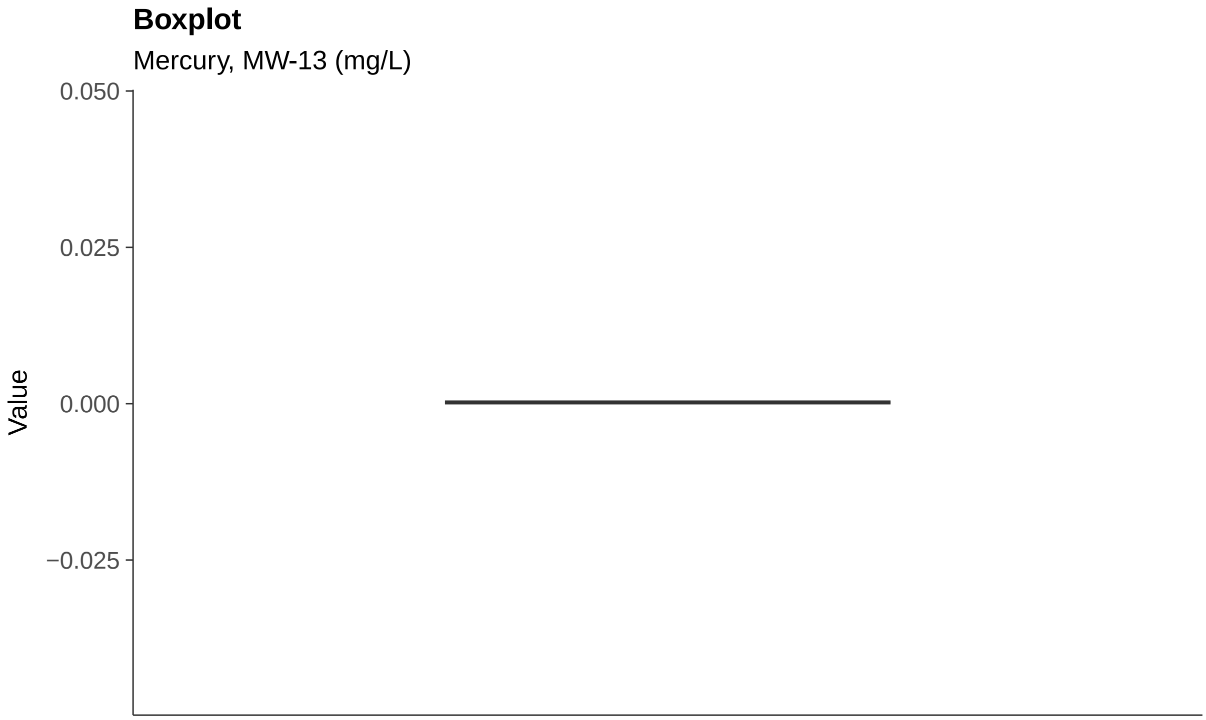


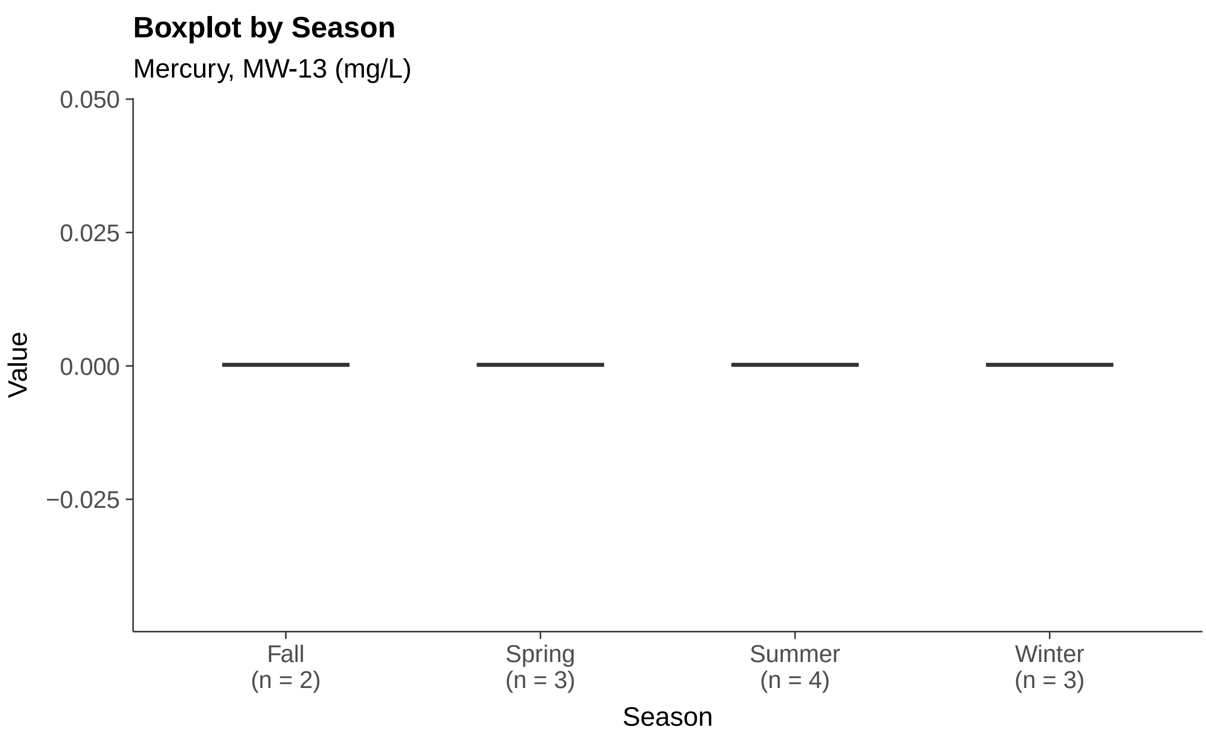
Appendix IV: Mercury, MW-13

ID: 13_2_17



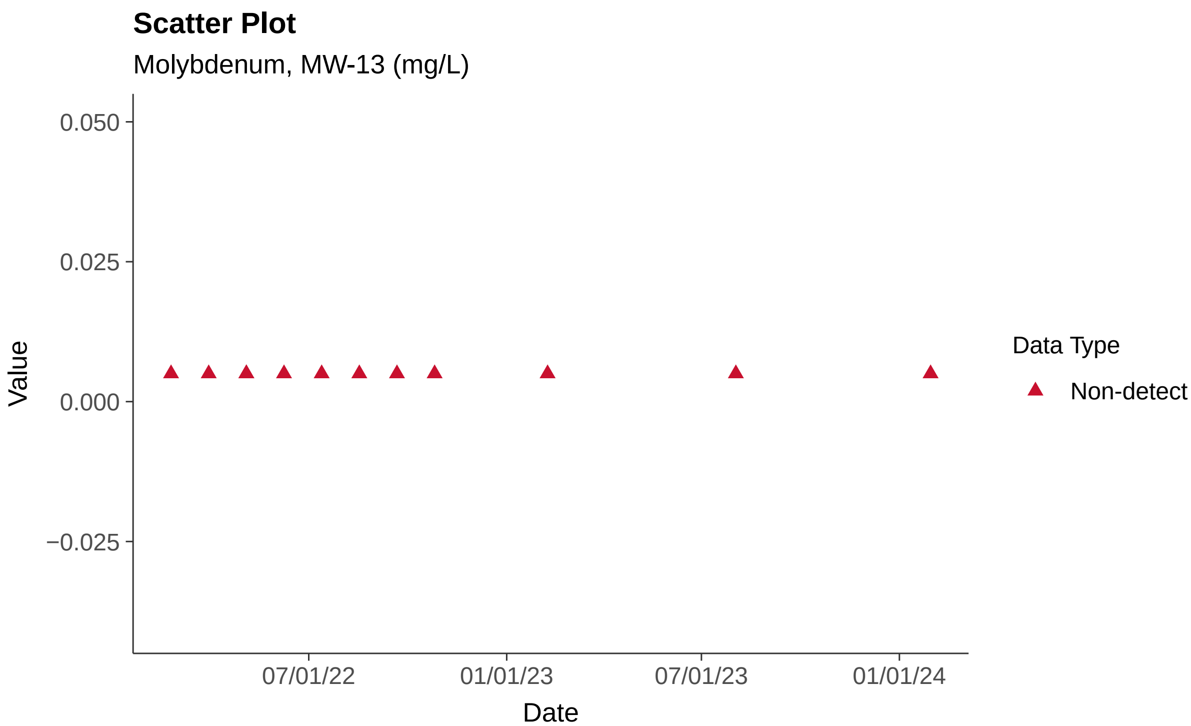


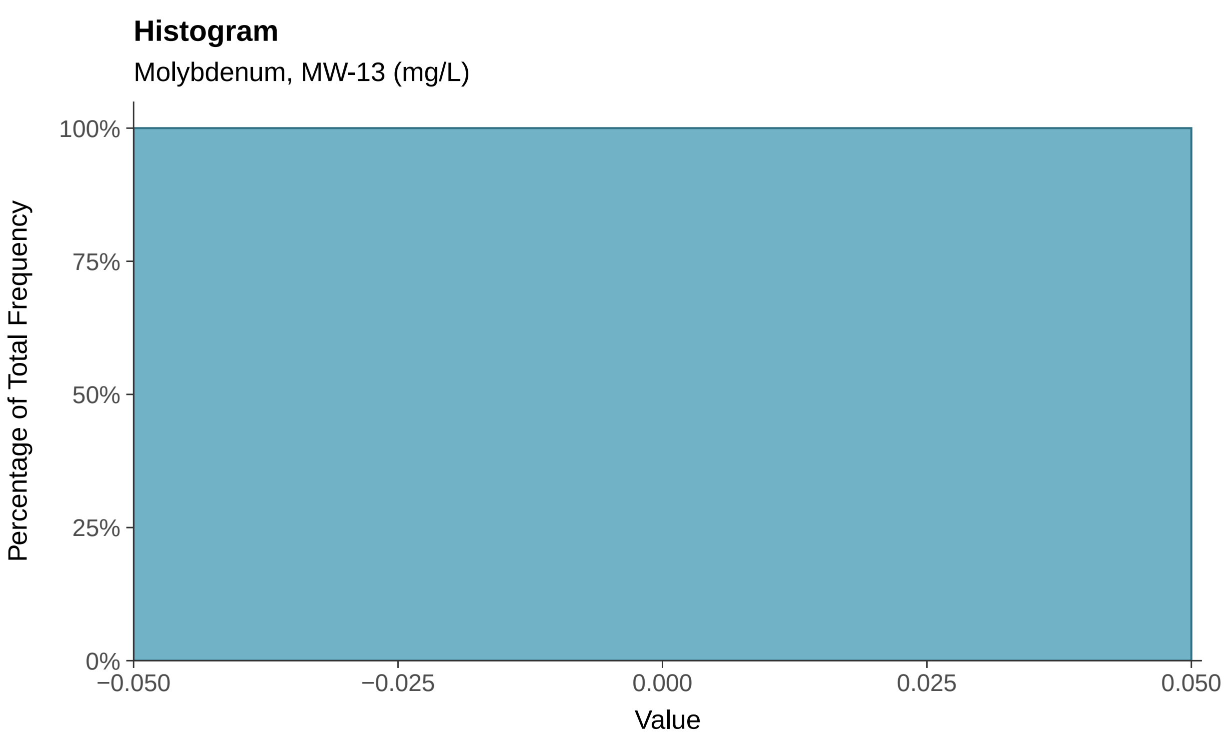

Boxplot
Mercury, MW-13 (mg/L)
Value
0.050
0.025
0.000
−0.025


Boxplot by Season
Mercury, MW-13 (mg/L)
Value
0.050
0.025
0.000
−0.025
Fall
(n = 2)
Spring
(n = 3)
Summer
(n = 4)
Winter
(n = 3)
Season

Appendix IV: Molybdenum, MW-13

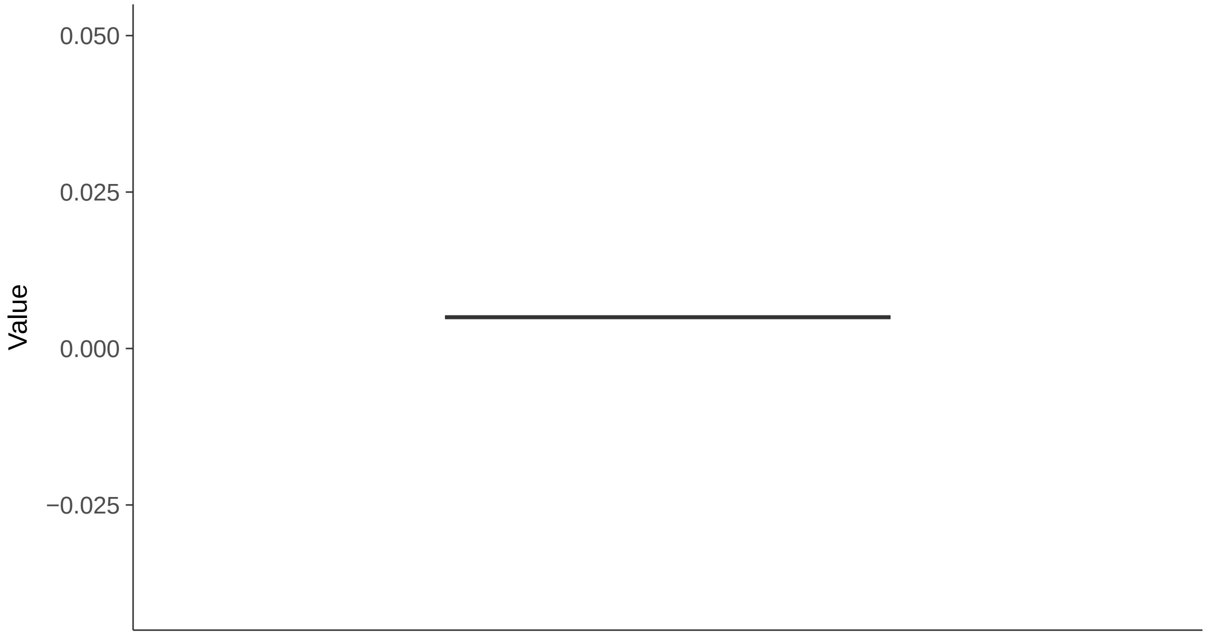
ID: 13_2_18





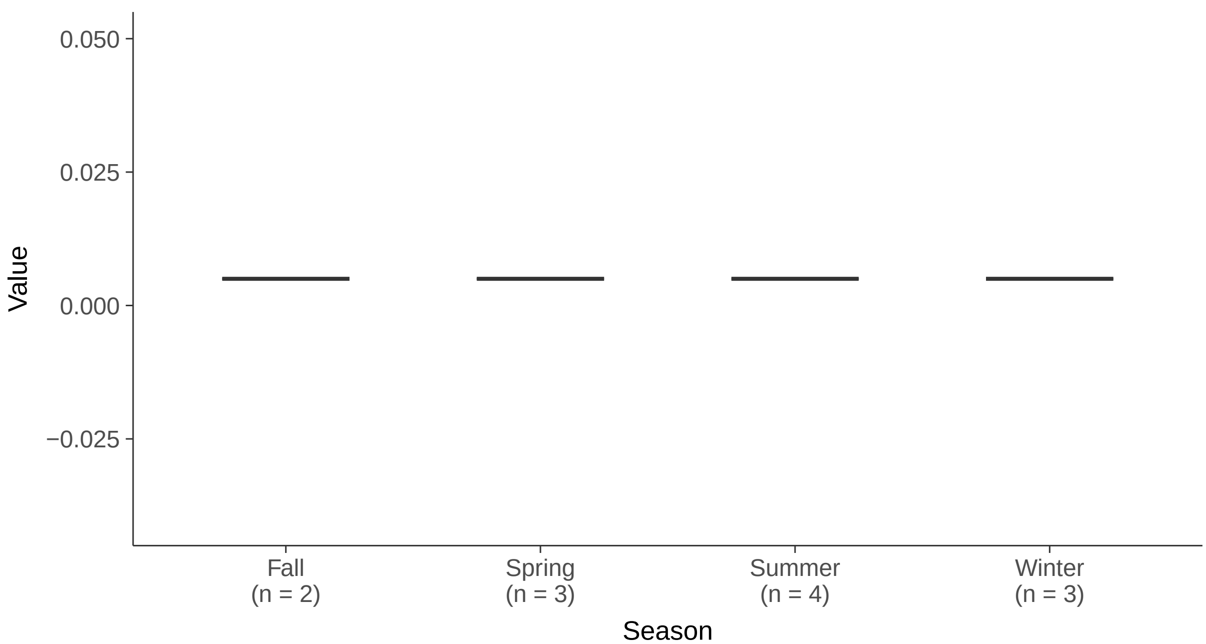
Boxplot

Molybdenum, MW-13 (mg/L)



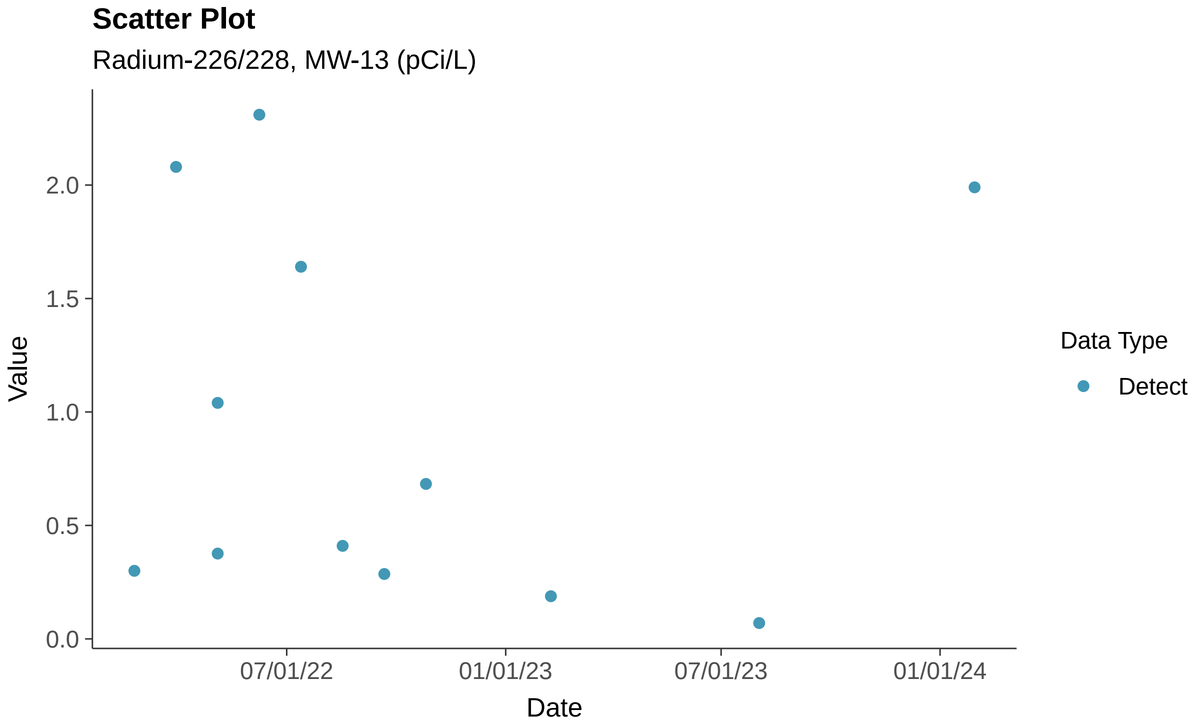
Boxplot by Season

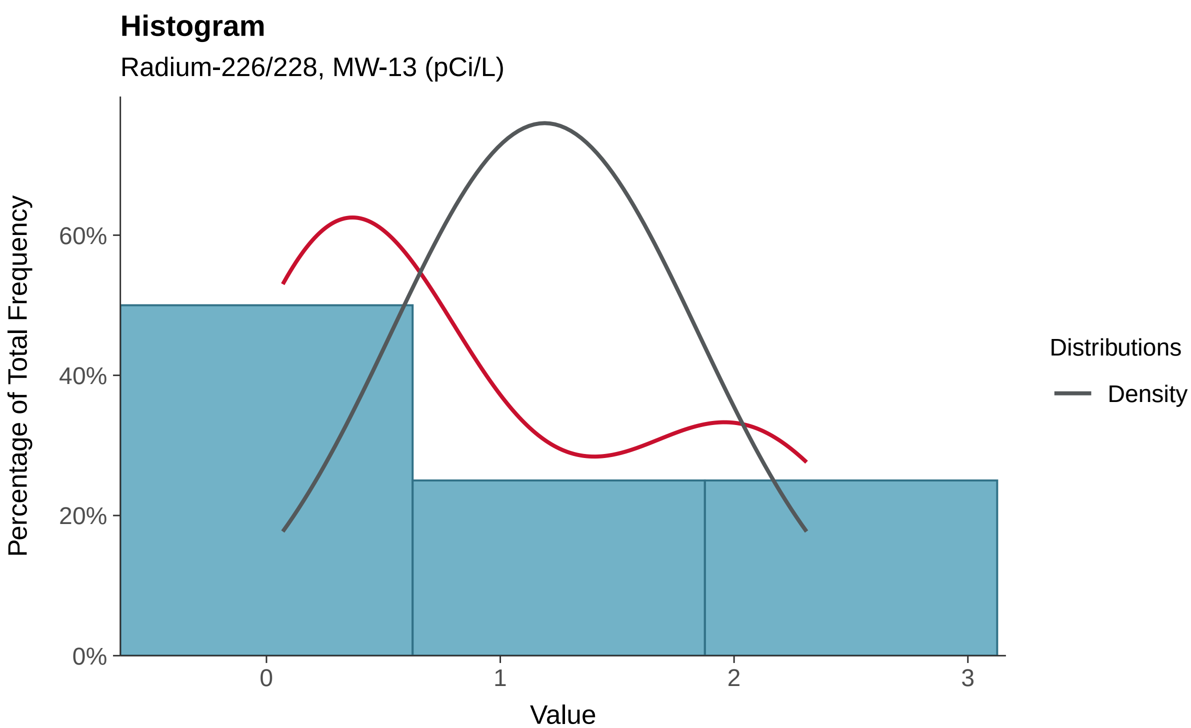
Molybdenum, MW-13 (mg/L)



Appendix IV: Radium-226/228, MW-13

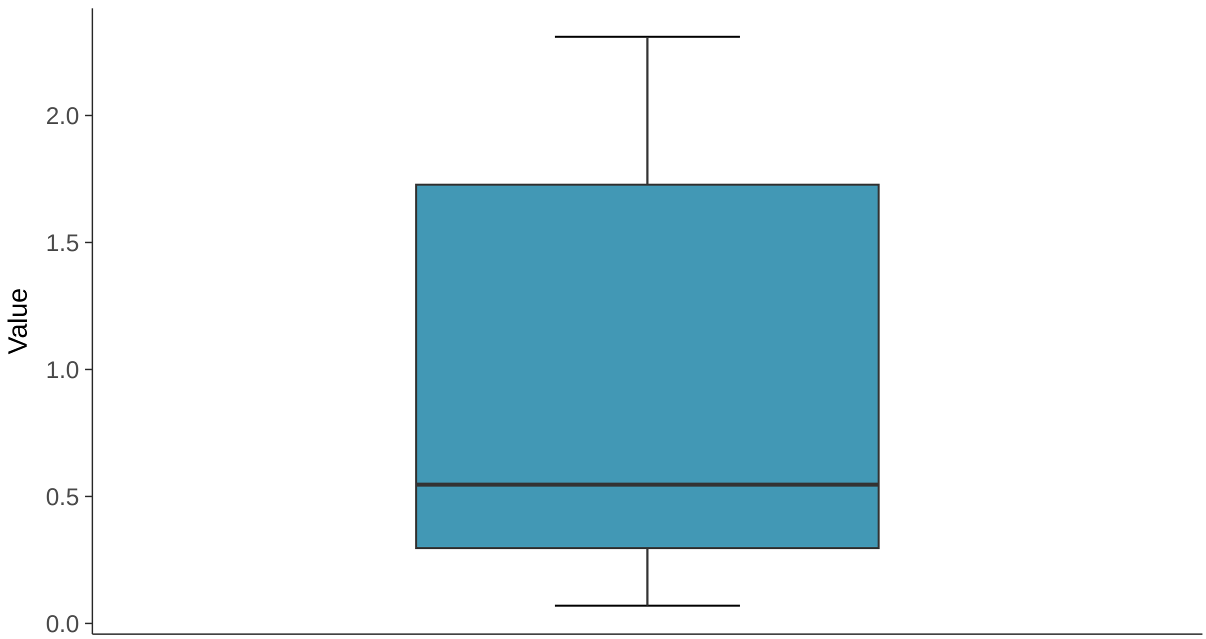
ID: 13_2_20





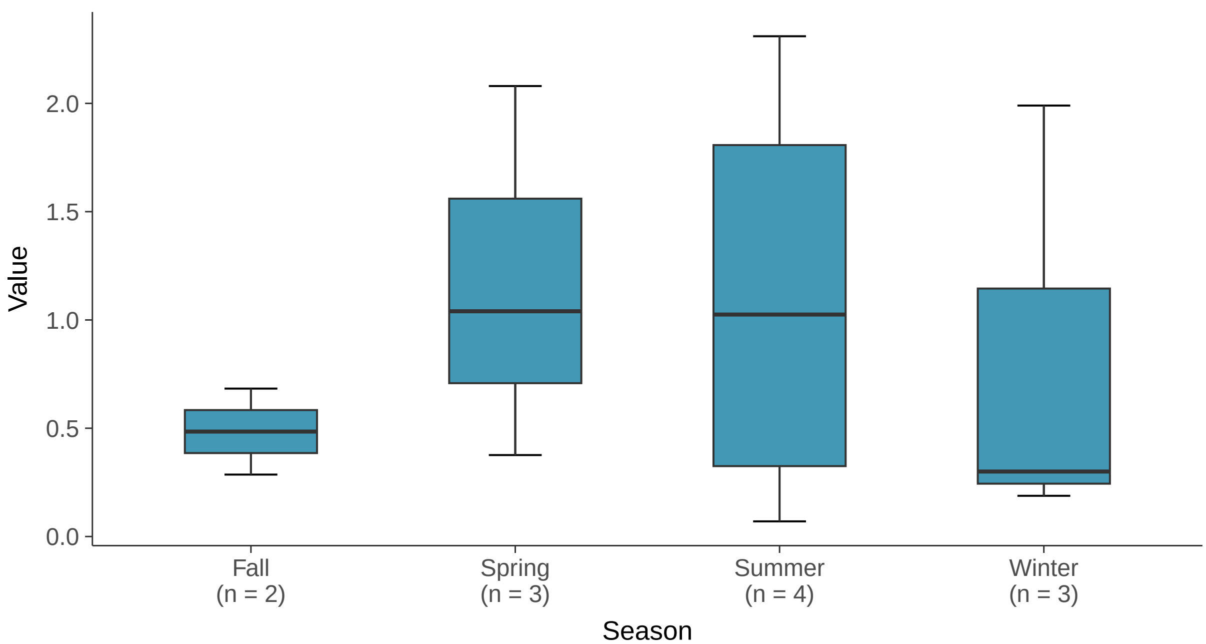
Boxplot

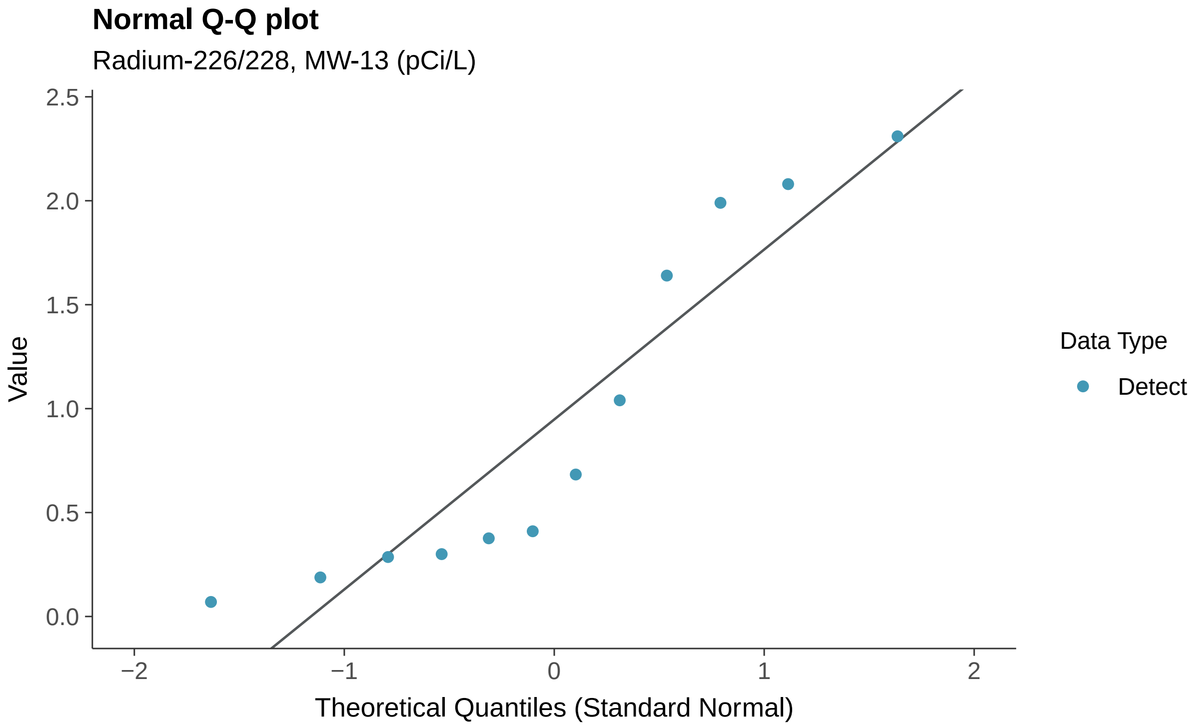
Radium-226/228, MW-13 (pCi/L)

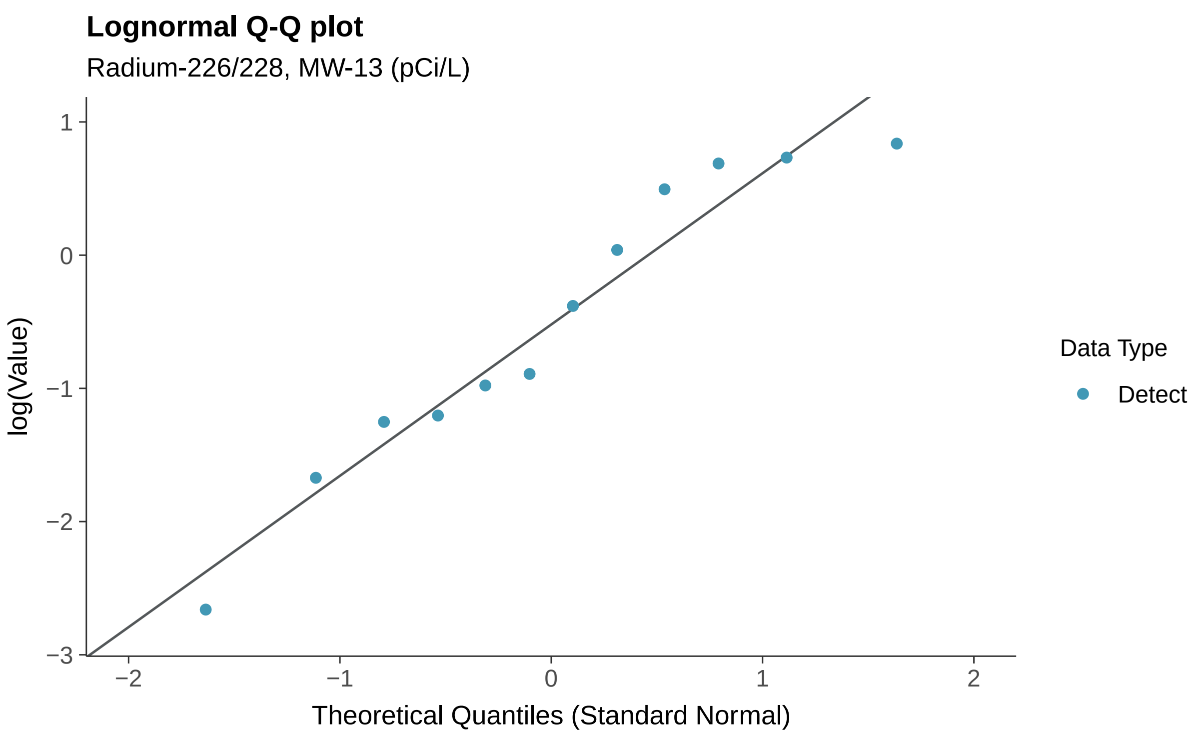


Boxplot by Season

Radium-226/228, MW-13 (pCi/L)

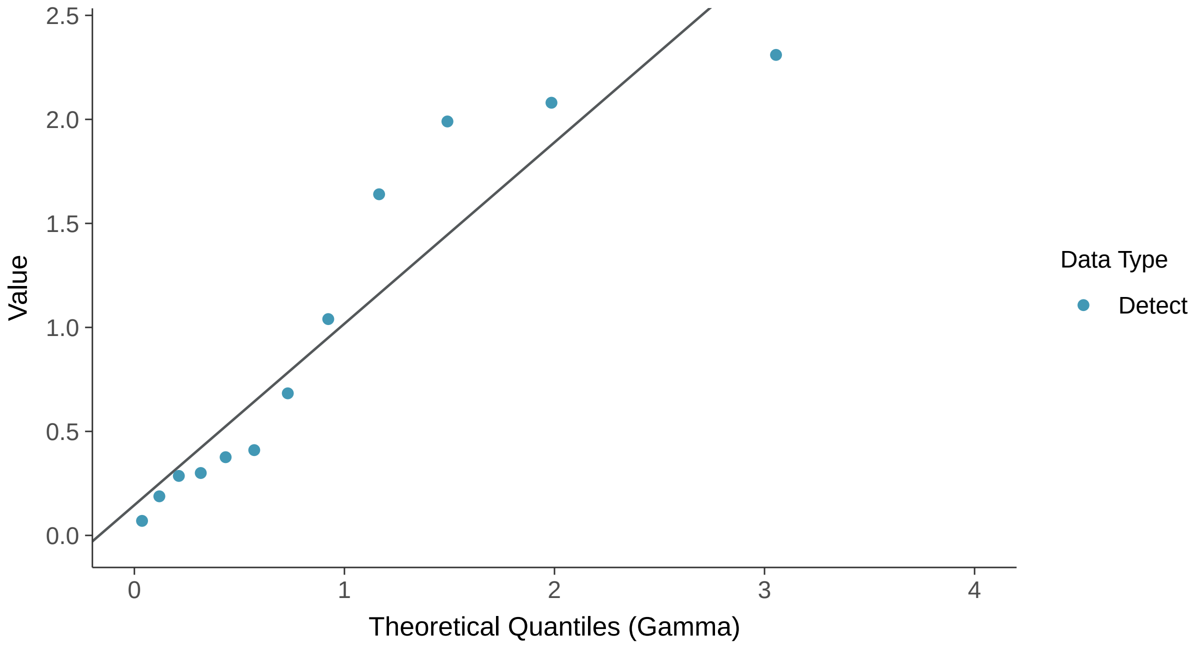



Normal Q-Q plot
Radium-226/228, MW-13 (pCi/L)
Value
2.5
2.0
1.5
1.0
0.5
0.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Radium-226/228, MW-13 (pCi/L)
log(Value)
1
0
−1
−2
−3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

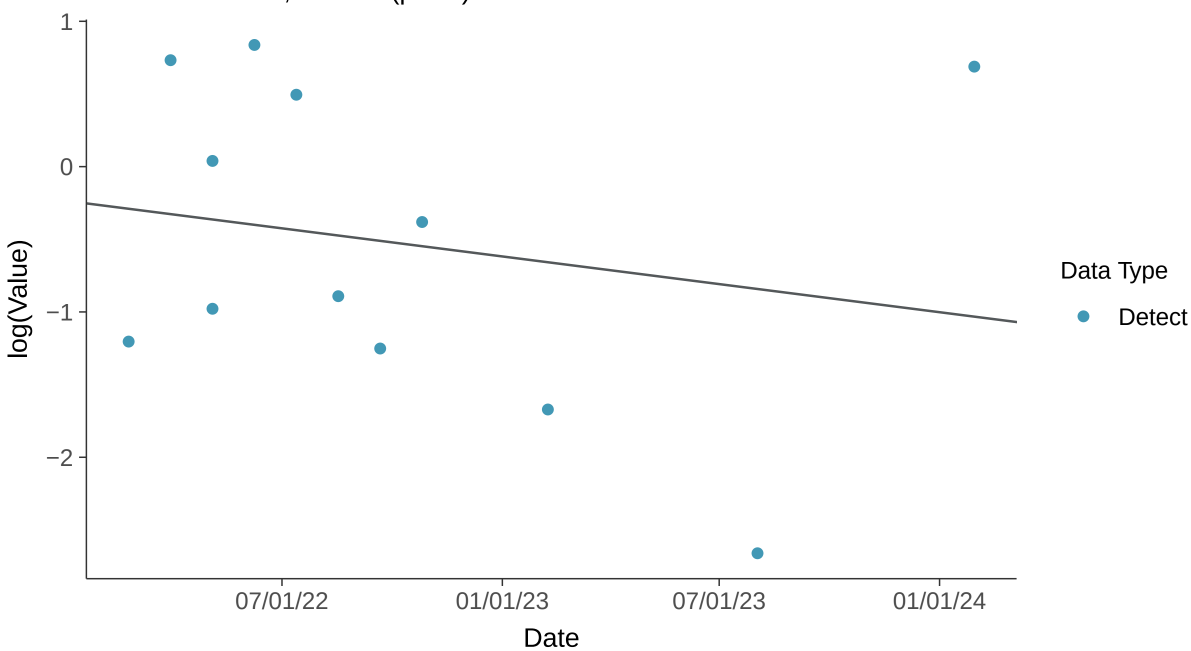
Gamma Q-Q plot

Radium-226/228, MW-13 (pCi/L)



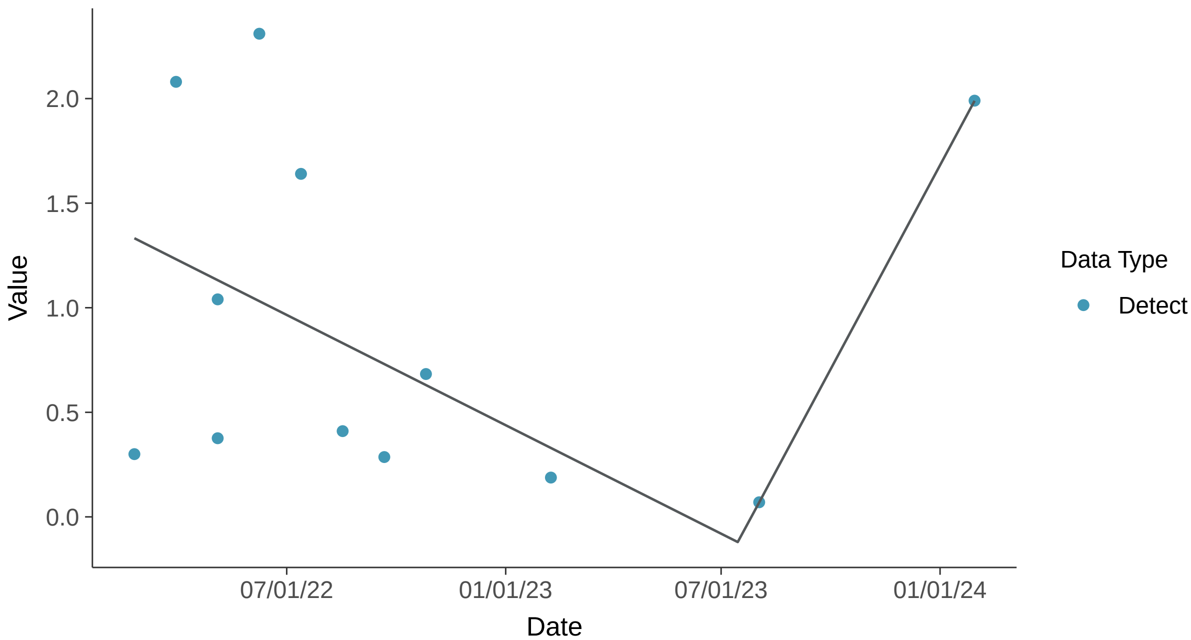
Trend Regression: Lognormal MLE

Radium-226/228, MW-13 (pCi/L)



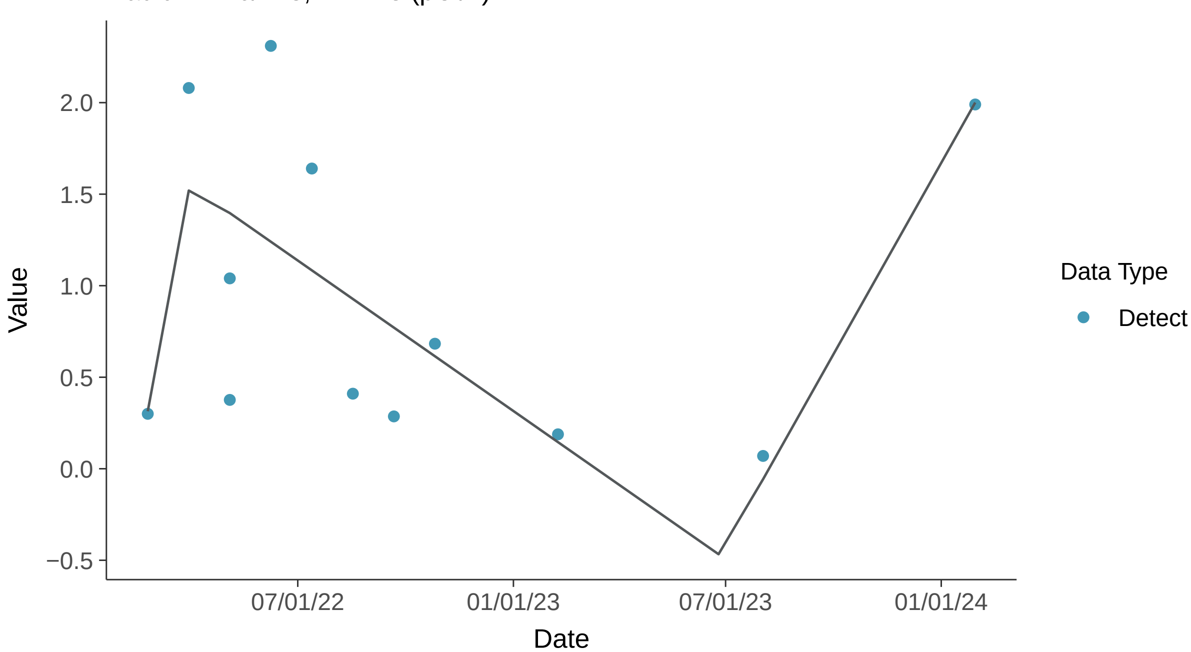
Trend Regression: Piecewise Linear-Linear

Radium-226/228, MW-13 (pCi/L)



Trend Regression: Piecewise Linear-Linear-Linear

Radium-226/228, MW-13 (pCi/L)

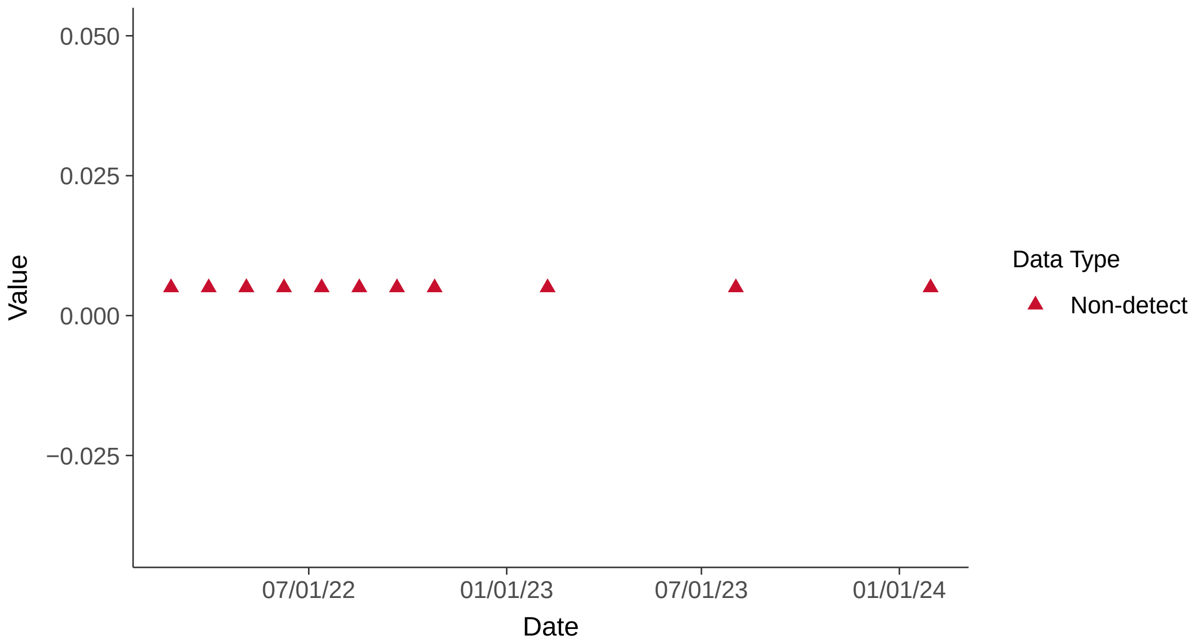


Appendix IV: Selenium, MW-13

ID: 13_2_22

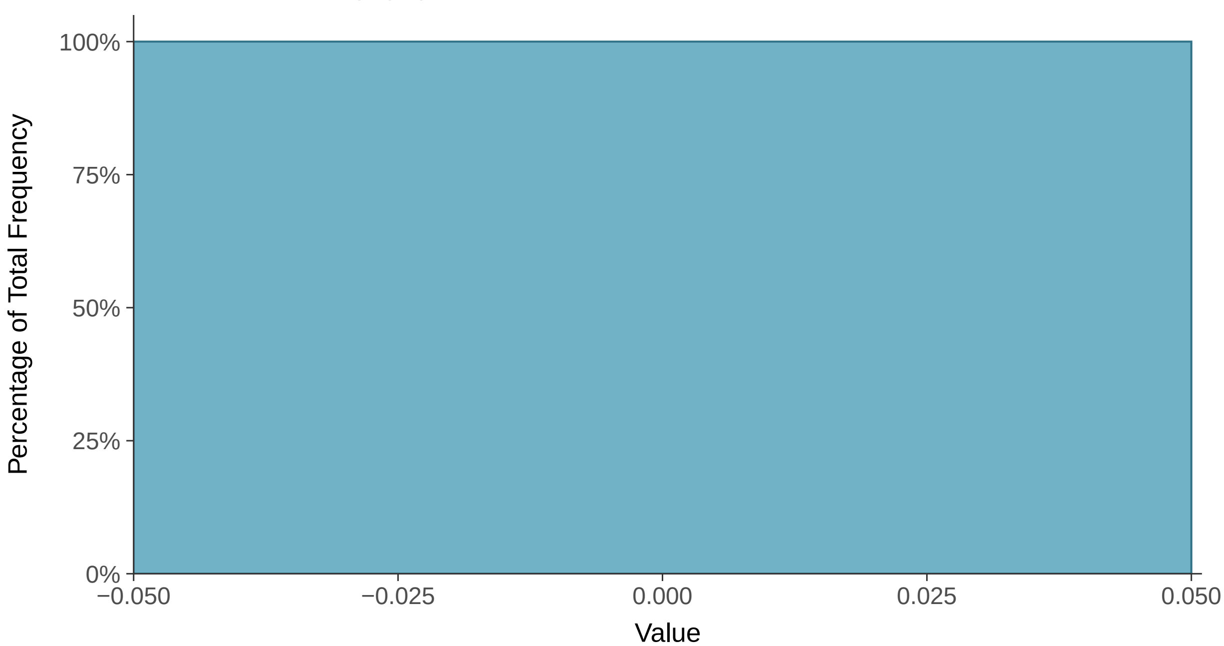
Scatter Plot

Selenium, MW-13 (mg/L)



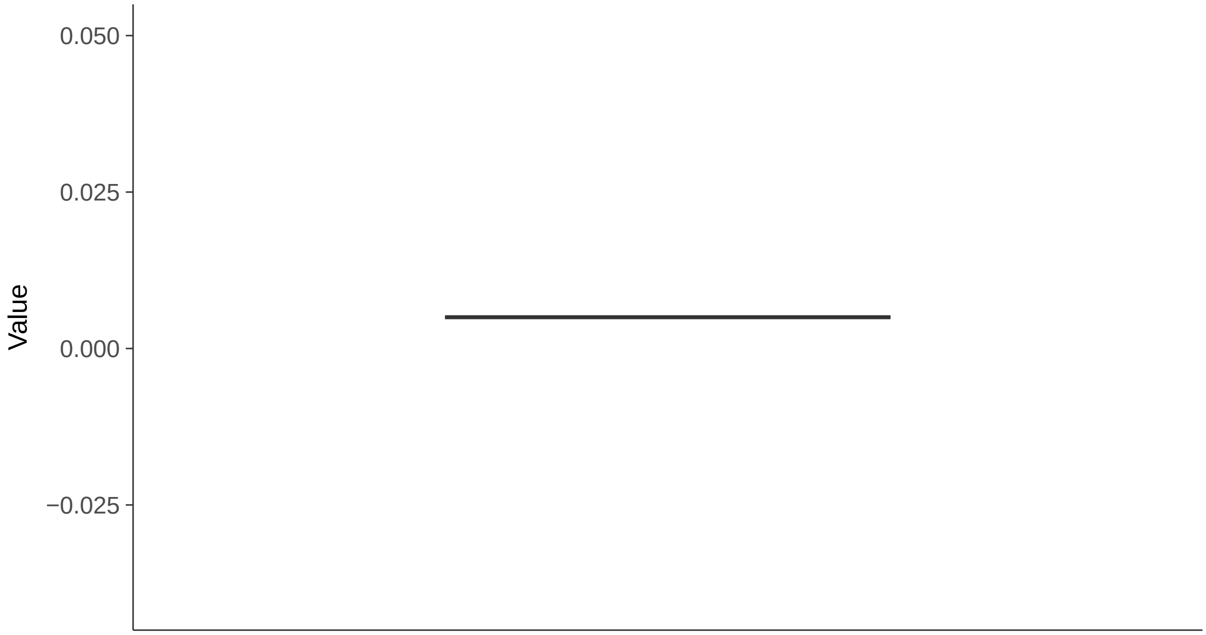
Histogram

Selenium, MW-13 (mg/L)



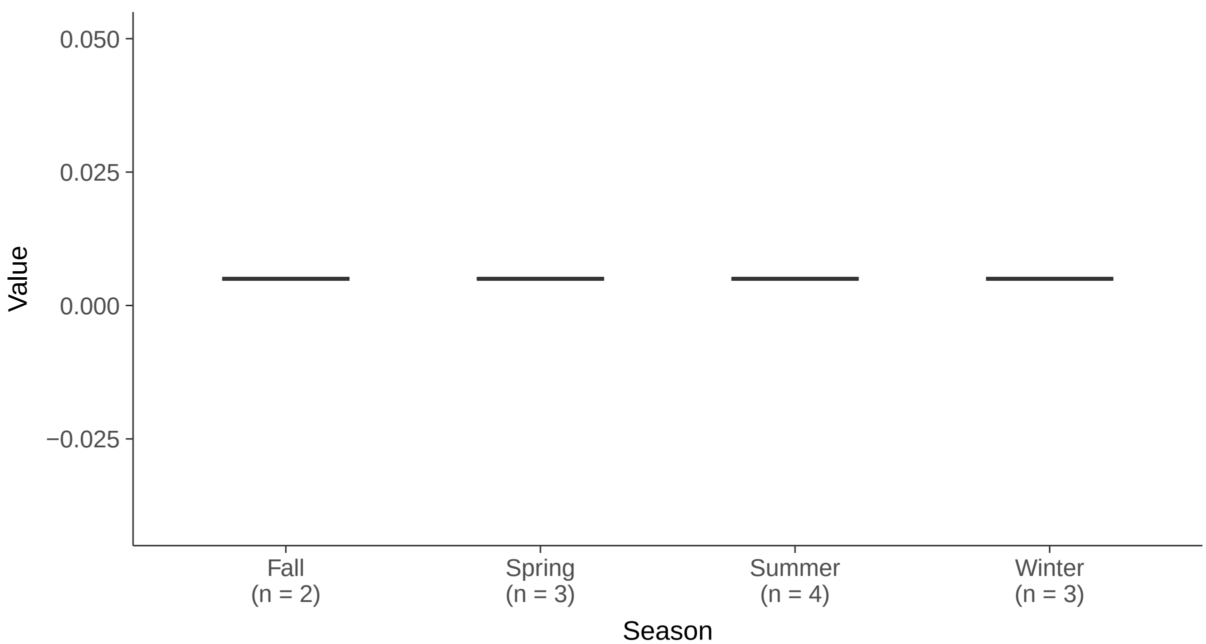
Boxplot

Selenium, MW-13 (mg/L)



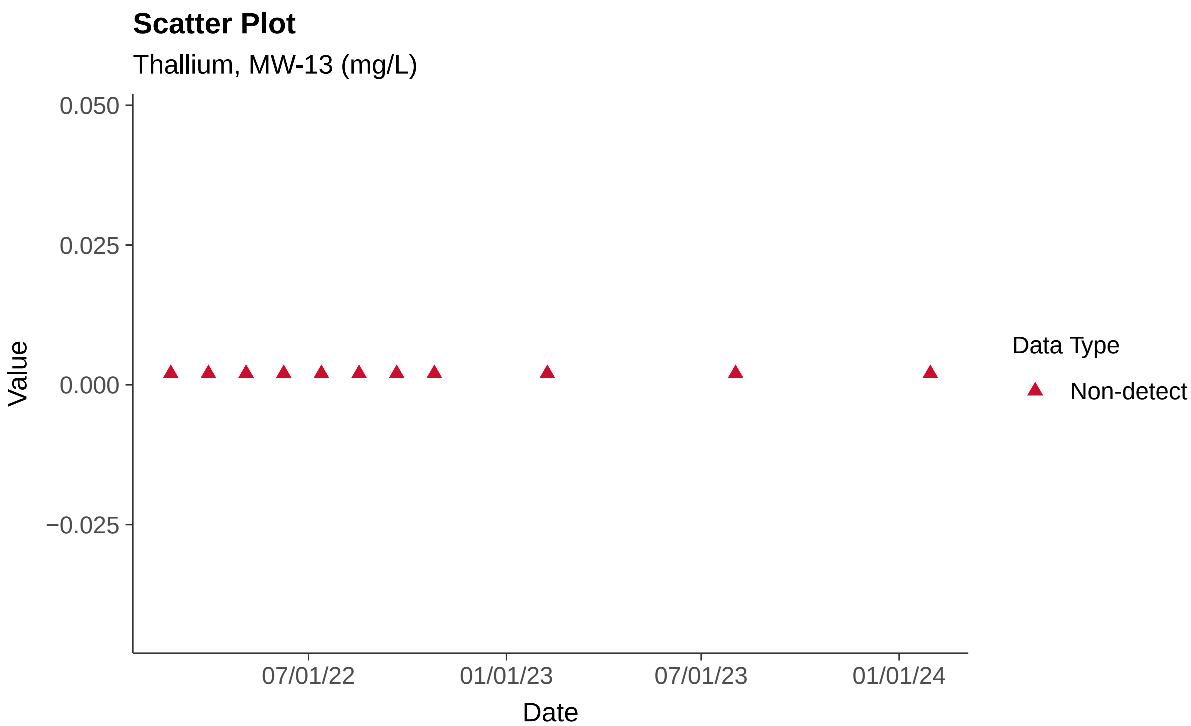
Boxplot by Season

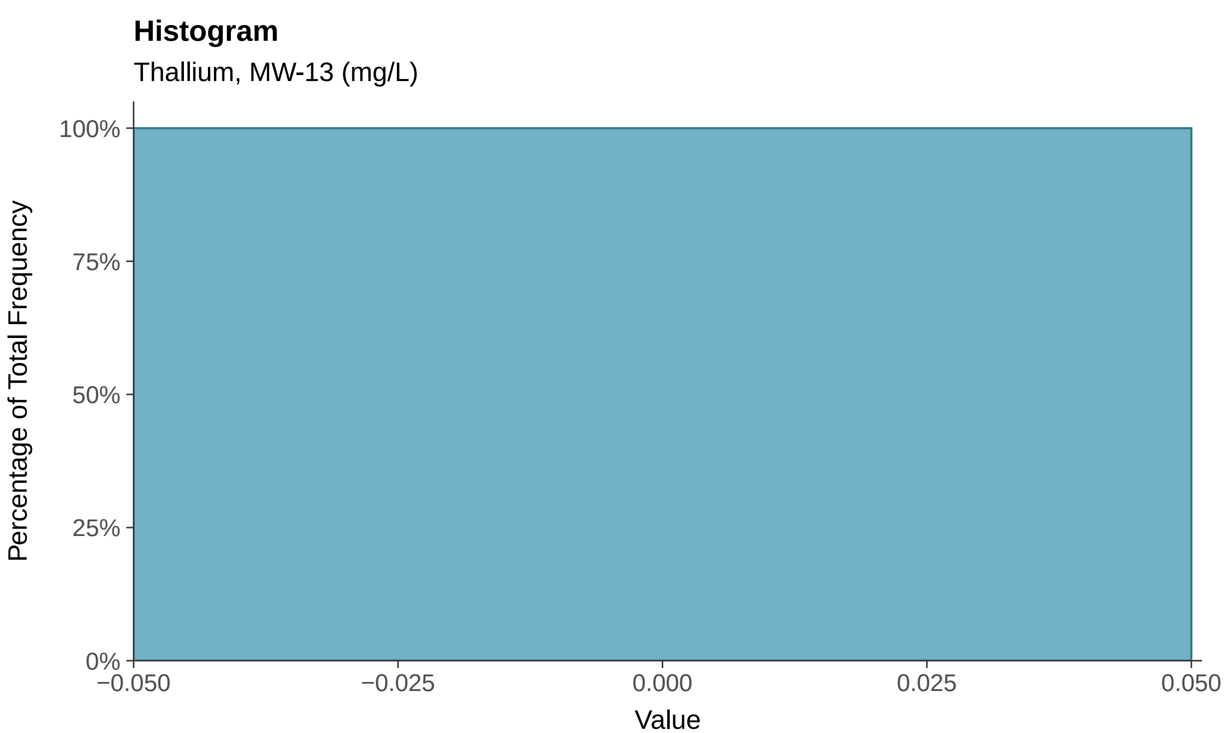
Selenium, MW-13 (mg/L)



Appendix IV: Thallium, MW-13

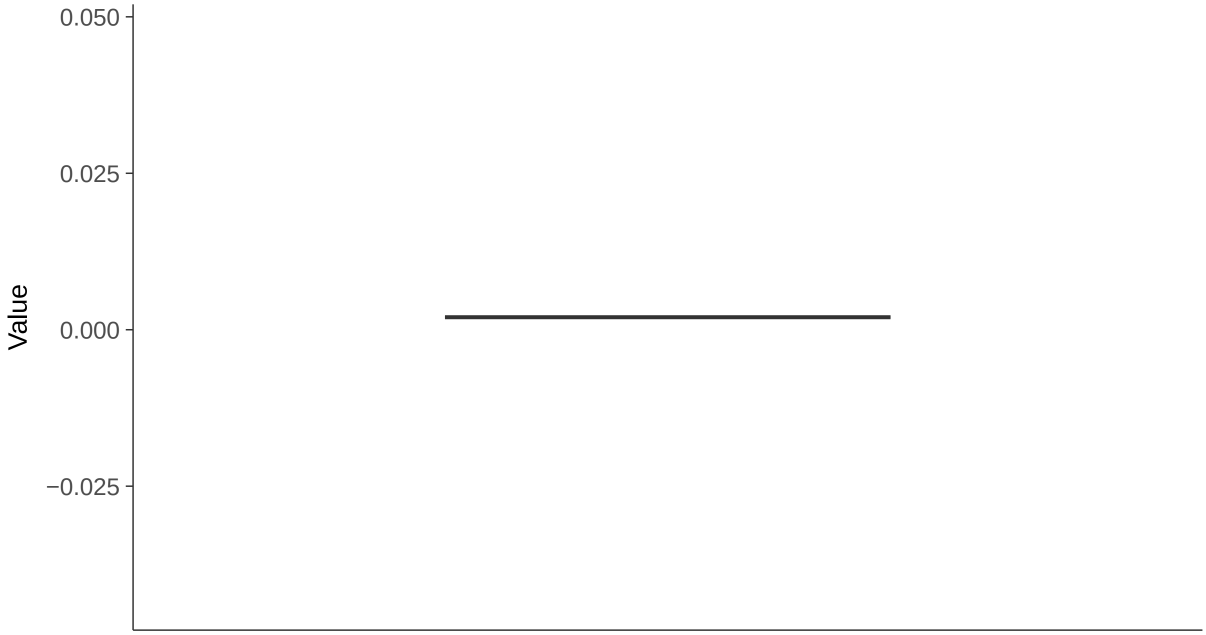
ID: 13_2_23





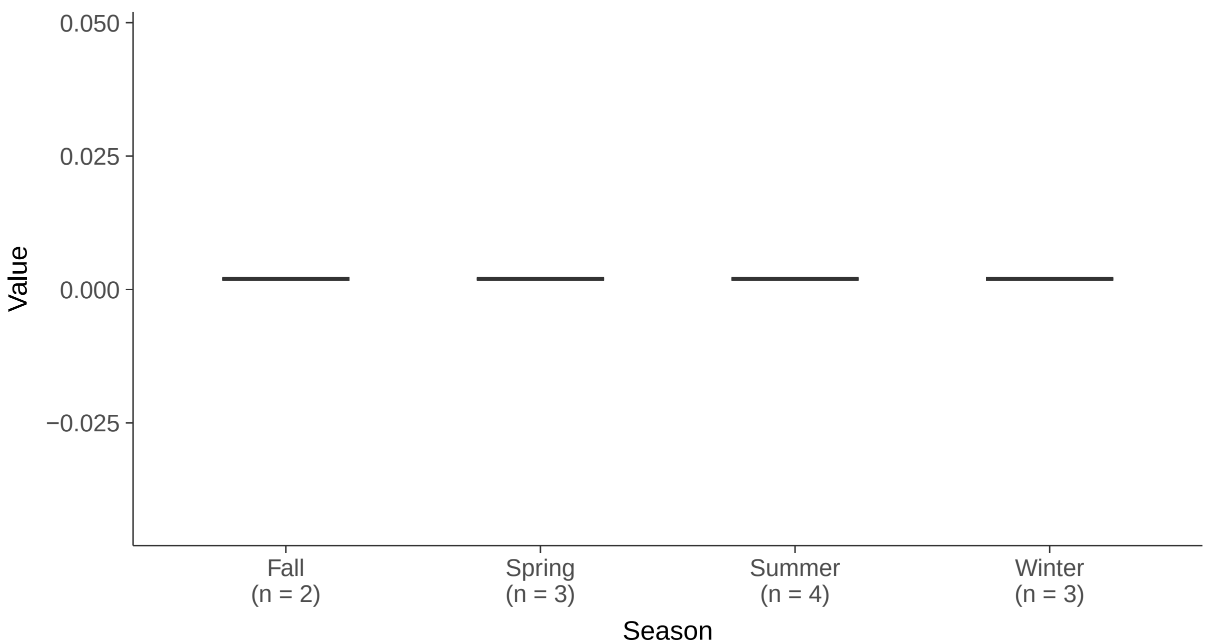
Boxplot

Thallium, MW-13 (mg/L)



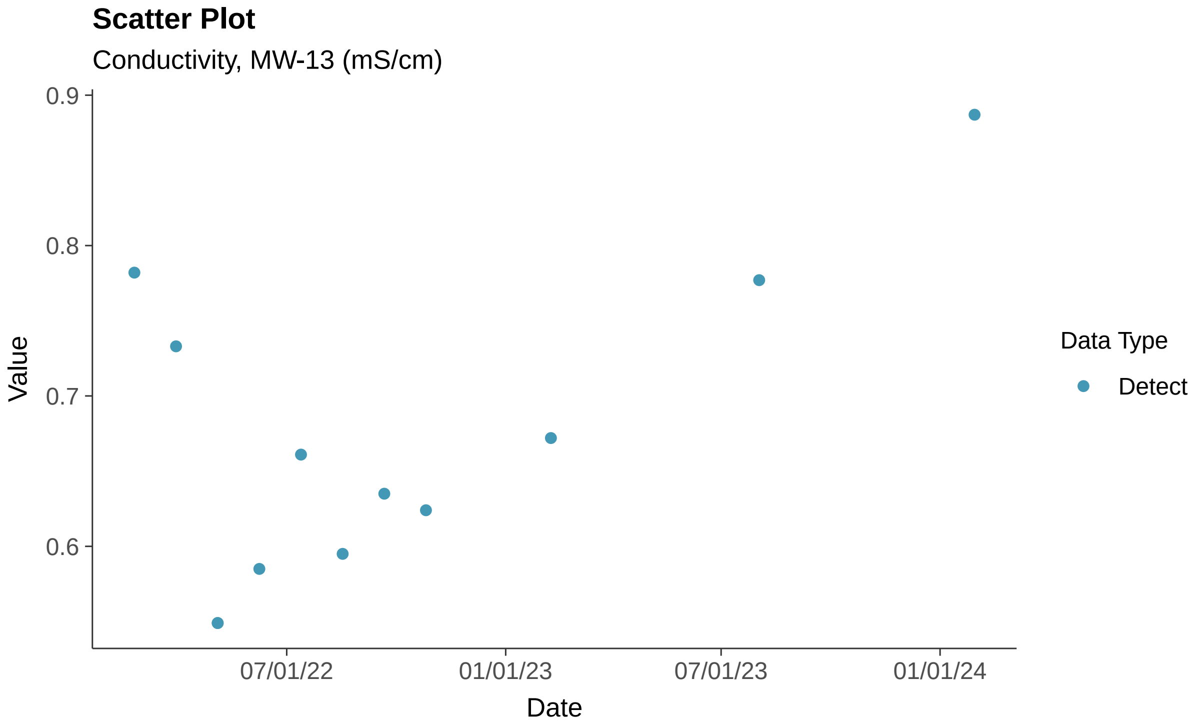
Boxplot by Season

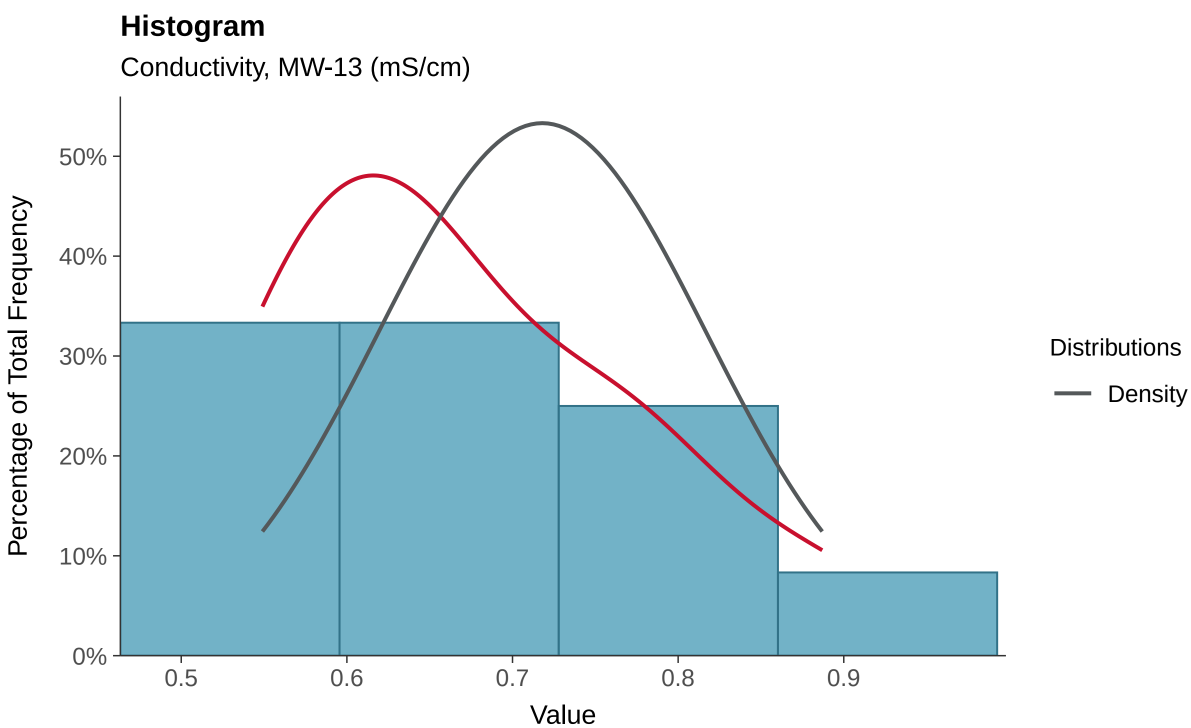
Thallium, MW-13 (mg/L)



Field Parameters: Conductivity, MW-13

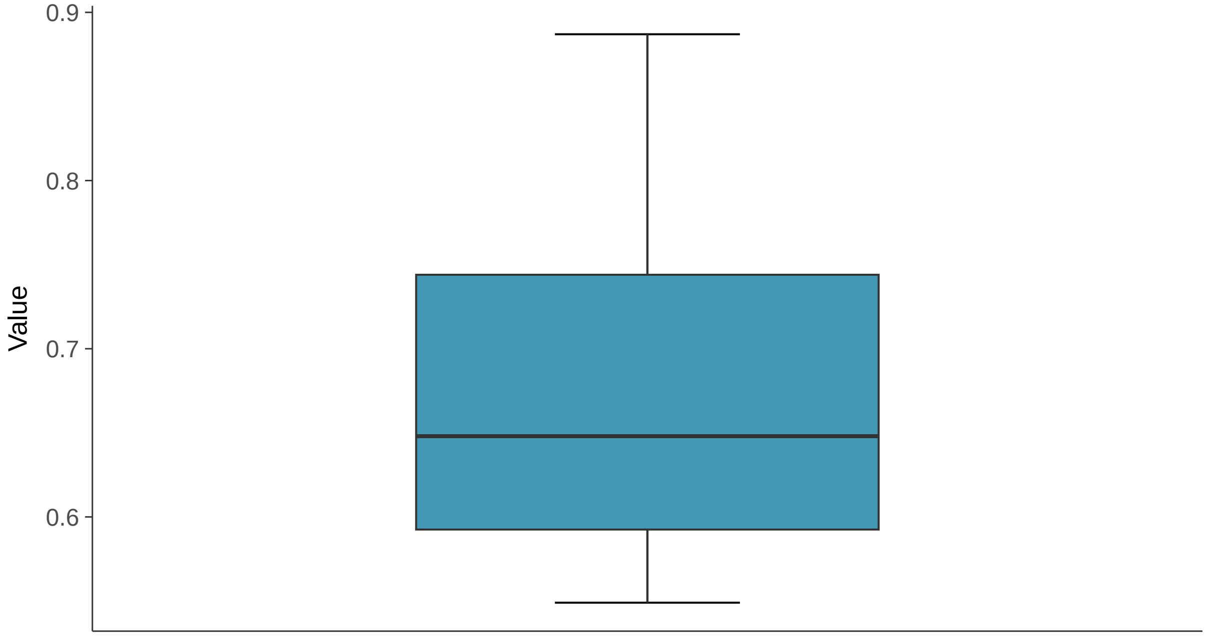
ID: 13_3_24





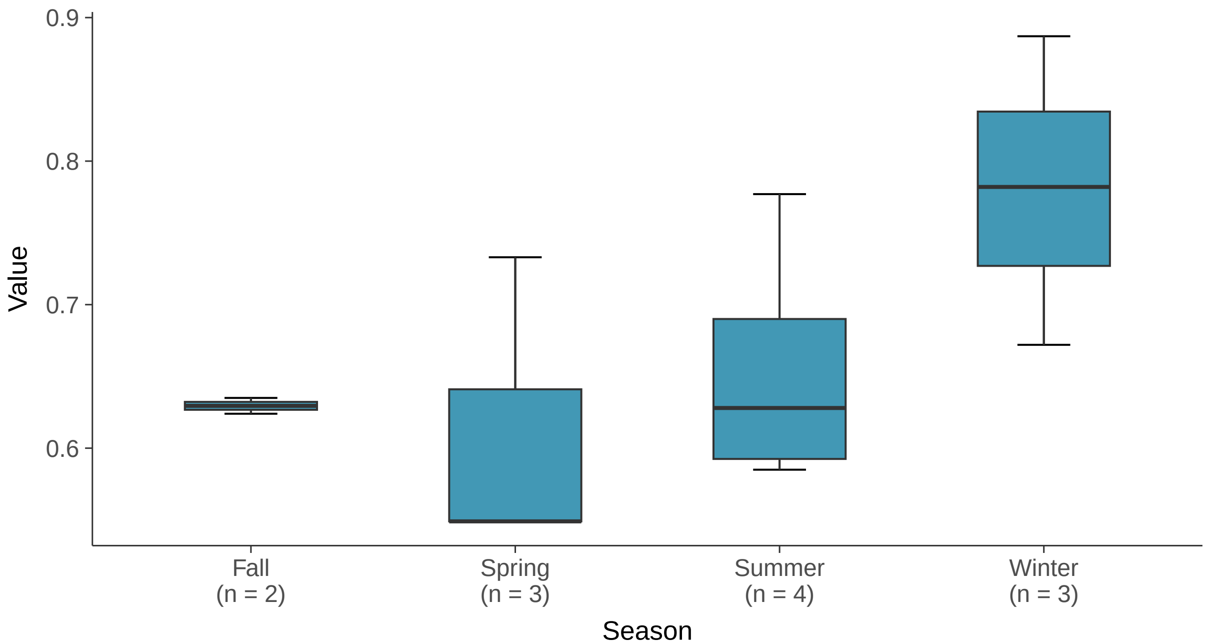
Boxplot

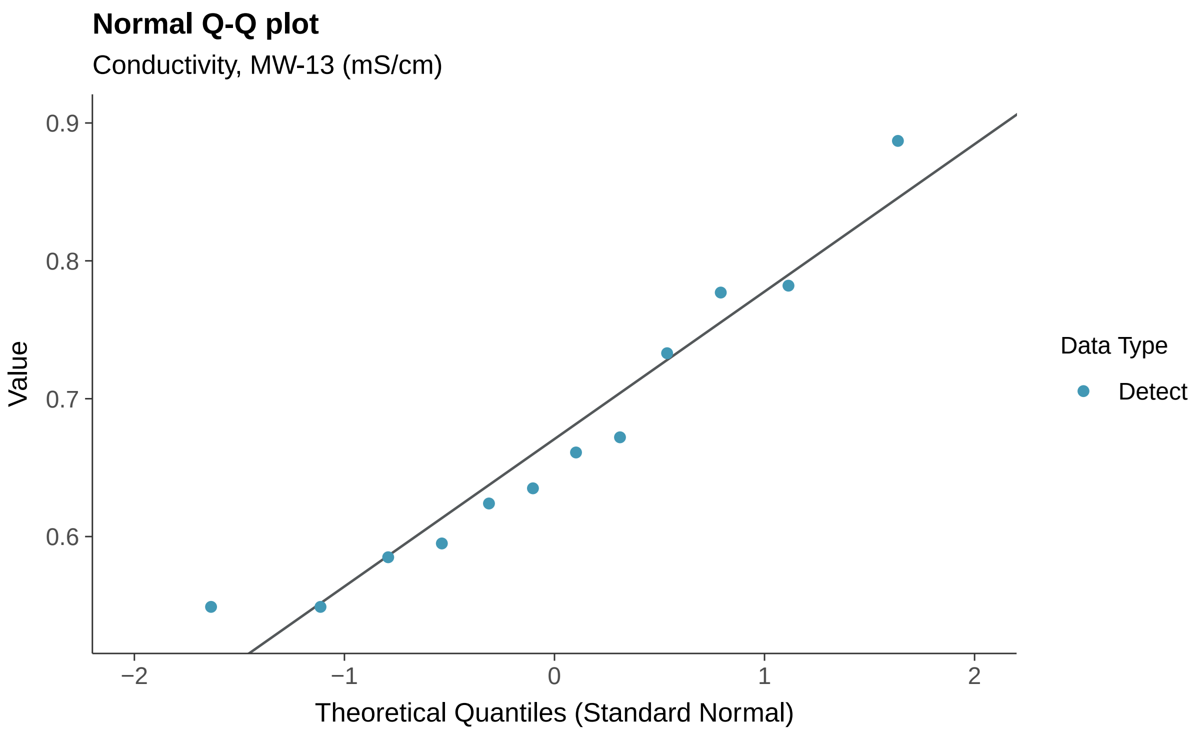
Conductivity, MW-13 (mS/cm)

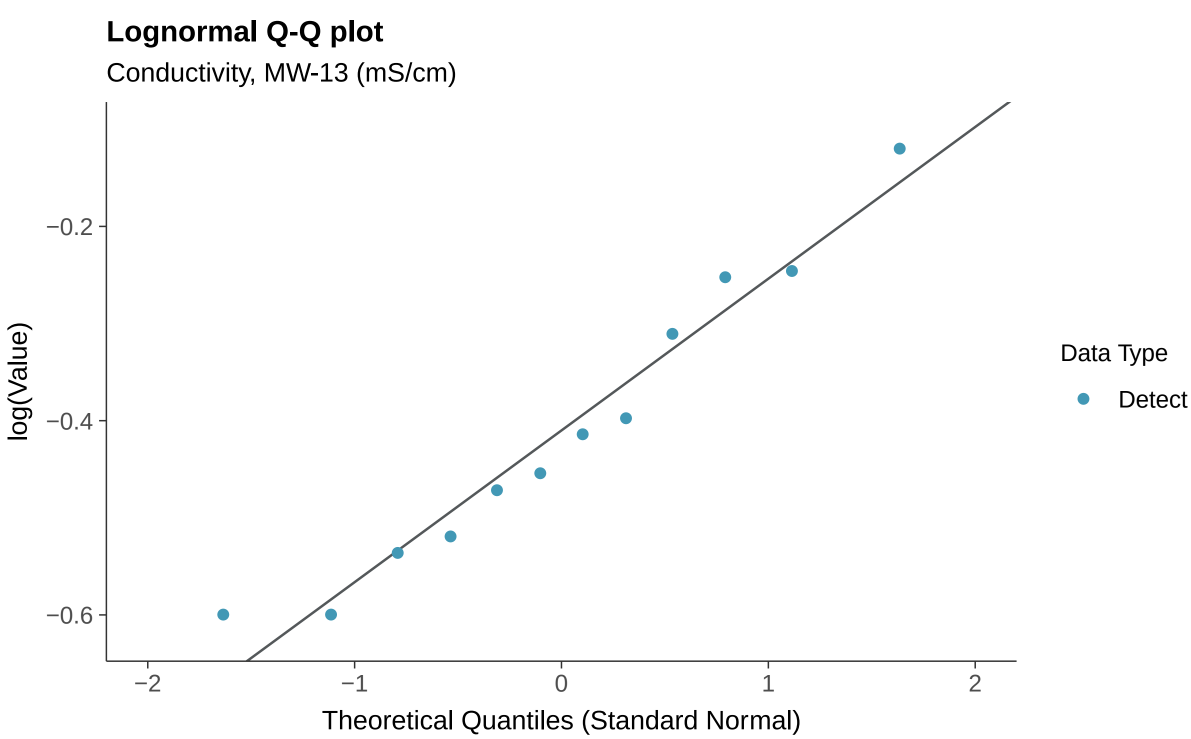


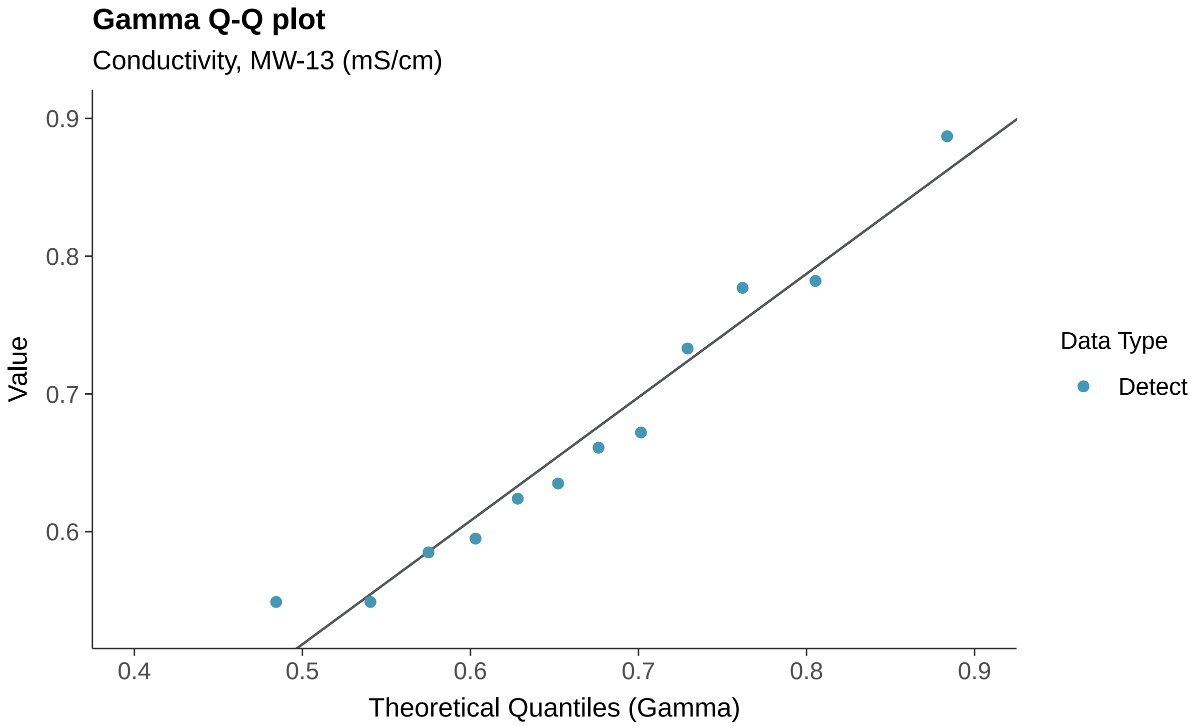
Boxplot by Season

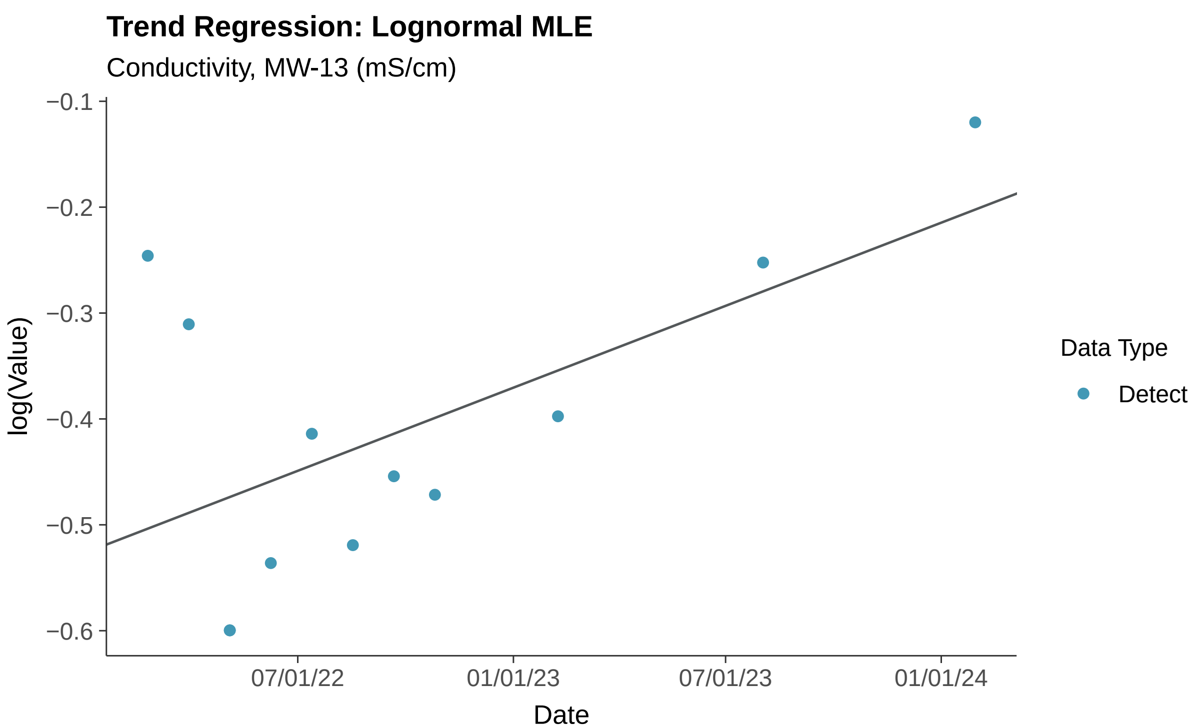
Conductivity, MW-13 (mS/cm)




Normal Q-Q plot
Conductivity, MW-13 (mS/cm)
Value
0.9
0.8
0.7
0.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

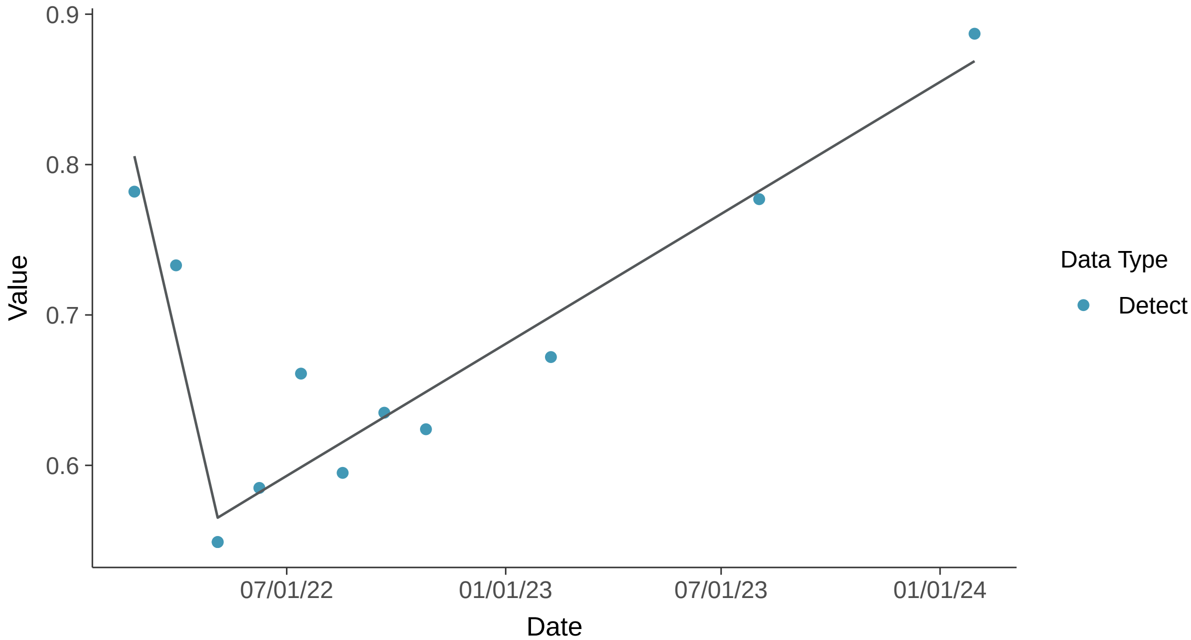

Lognormal Q-Q plot
Conductivity, MW-13 (mS/cm)
log(Value)
−0.2
−0.4
−0.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Conductivity, MW-13 (mS/cm)
Value
0.9
0.8
0.7
0.6
0.4
0.5
0.6
0.7
0.8
0.9
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Conductivity, MW-13 (mS/cm)
log(Value)
−0.1
−0.2
−0.3
−0.4
−0.5
−0.6
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

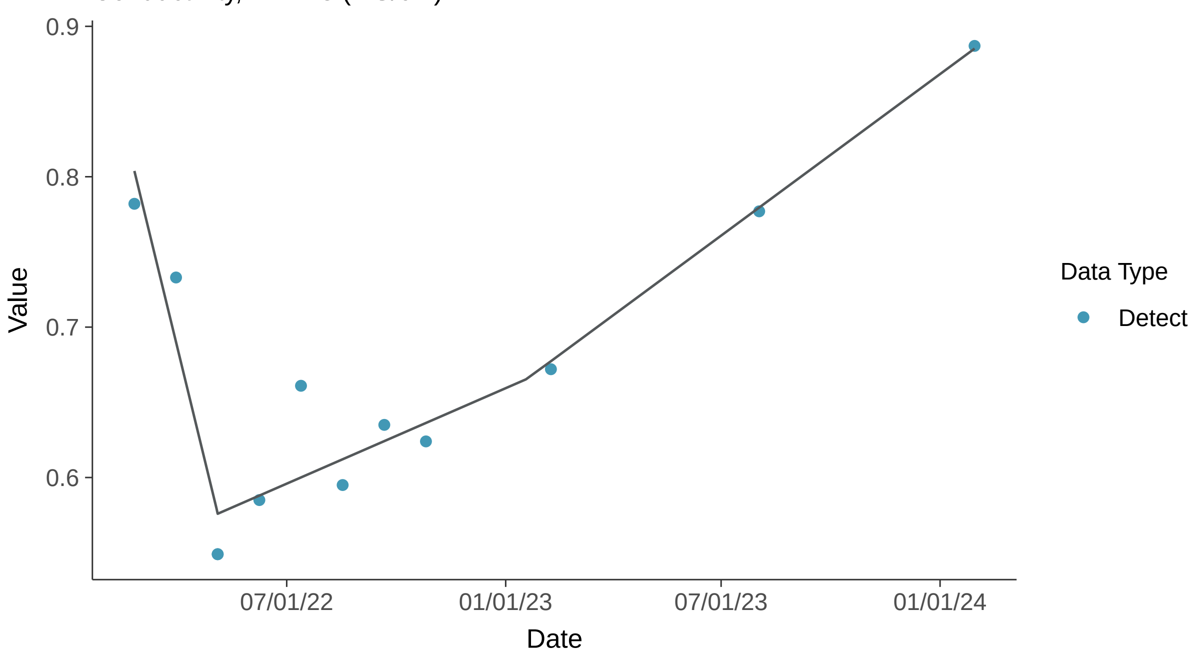
Trend Regression: Piecewise Linear-Linear

Conductivity, MW-13 (mS/cm)



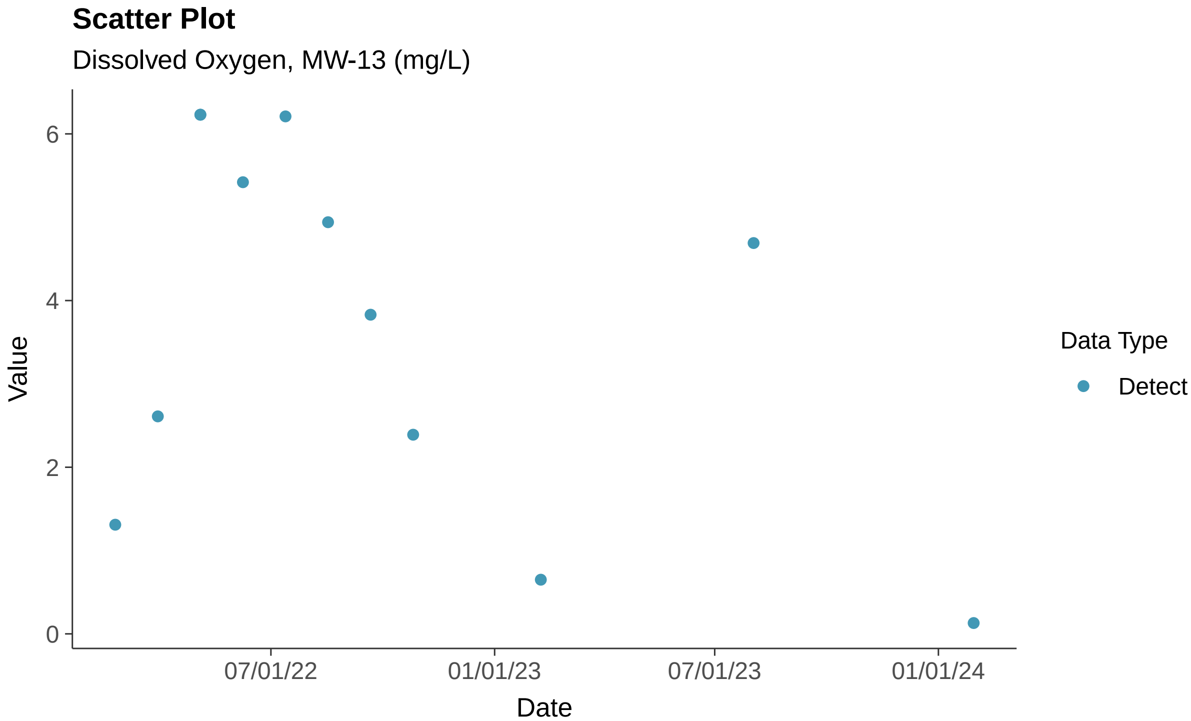
Trend Regression: Piecewise Linear-Linear-Linear

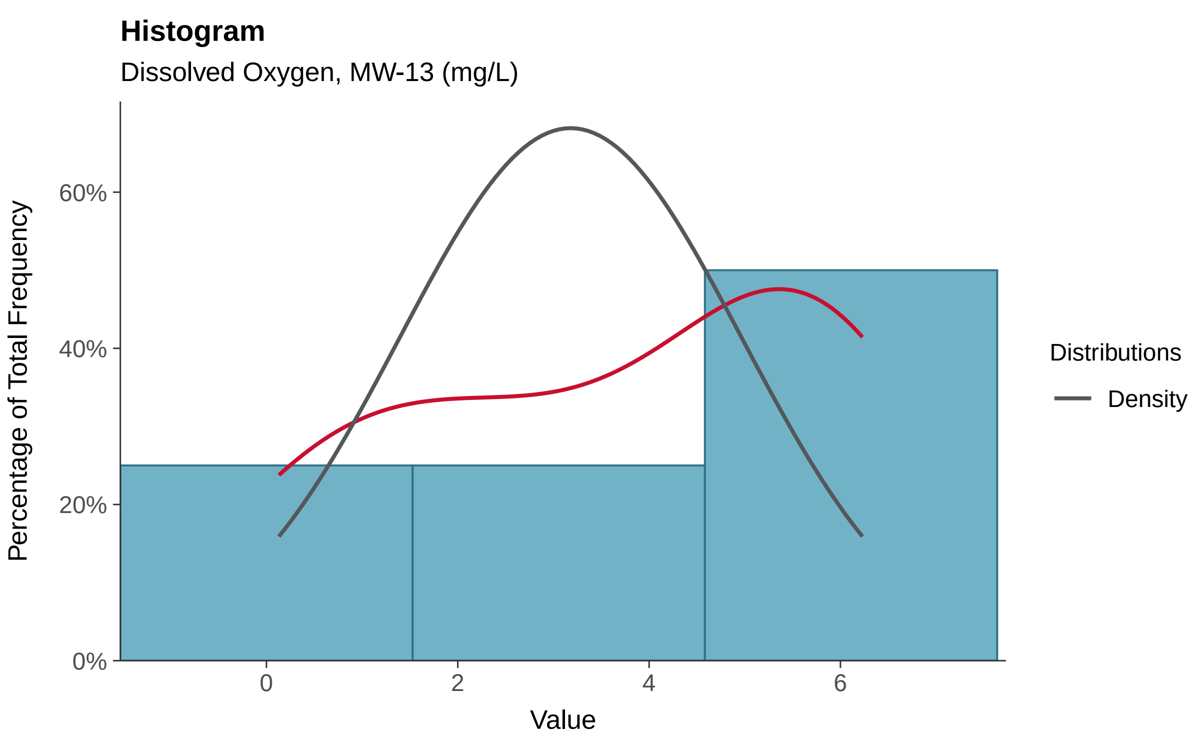
Conductivity, MW-13 (mS/cm)



Field Parameters: Dissolved Oxygen, MW-13

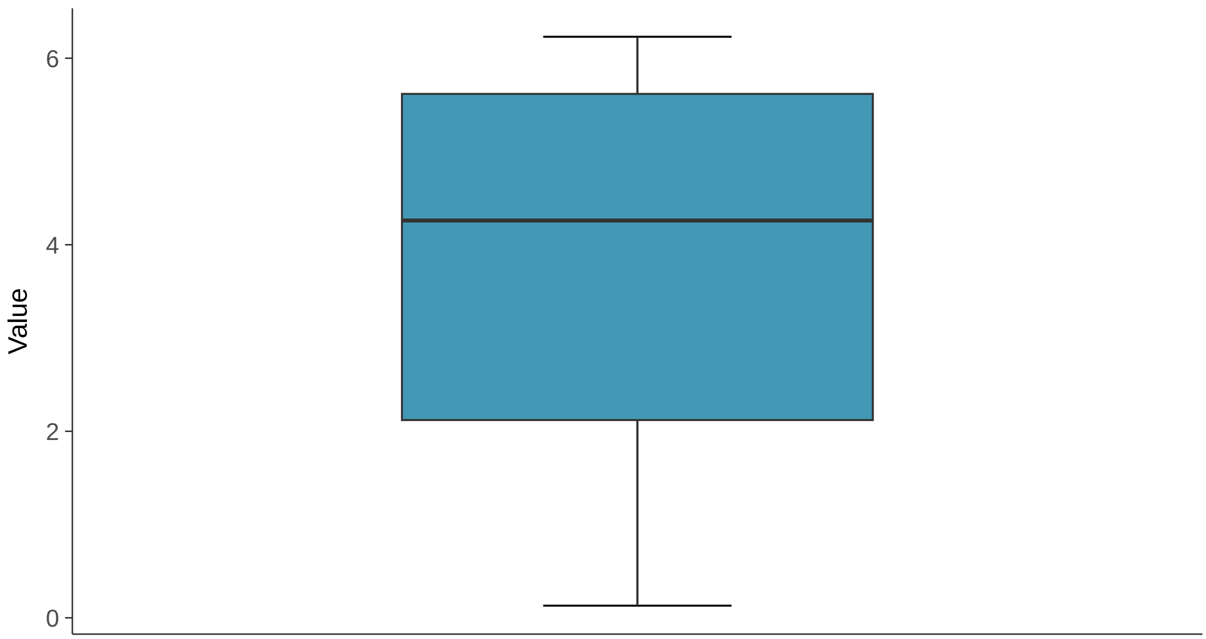
ID: 13_3_25





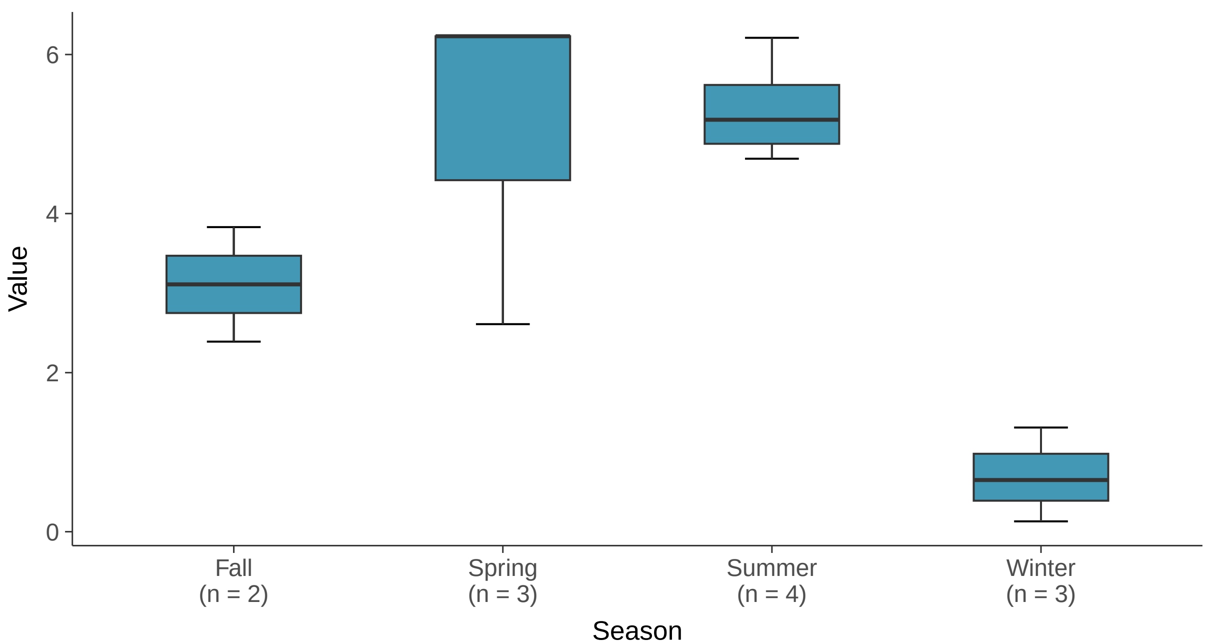
Boxplot

Dissolved Oxygen, MW-13 (mg/L)



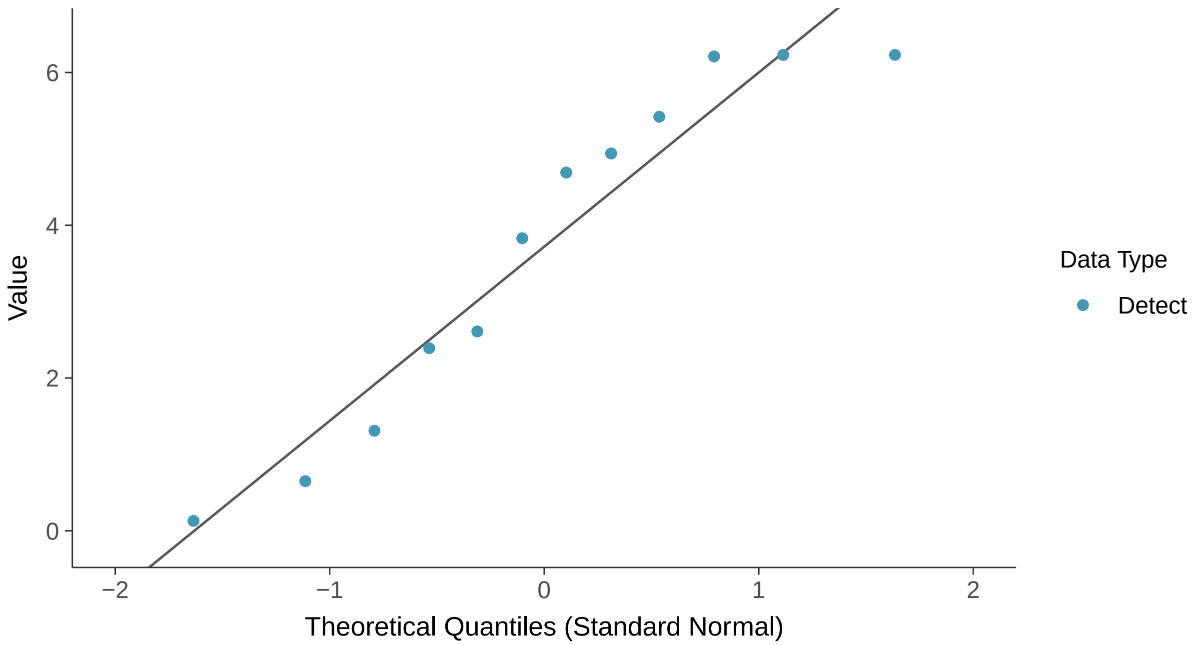
Boxplot by Season

Dissolved Oxygen, MW-13 (mg/L)



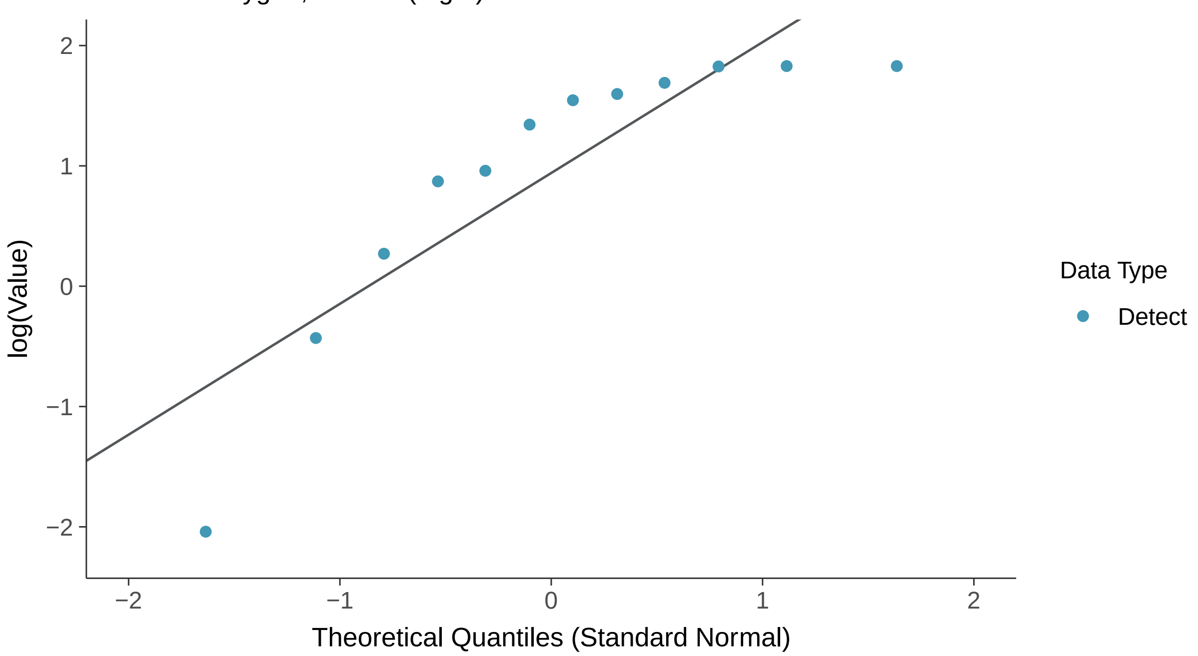
Normal Q-Q plot

Dissolved Oxygen, MW-13 (mg/L)



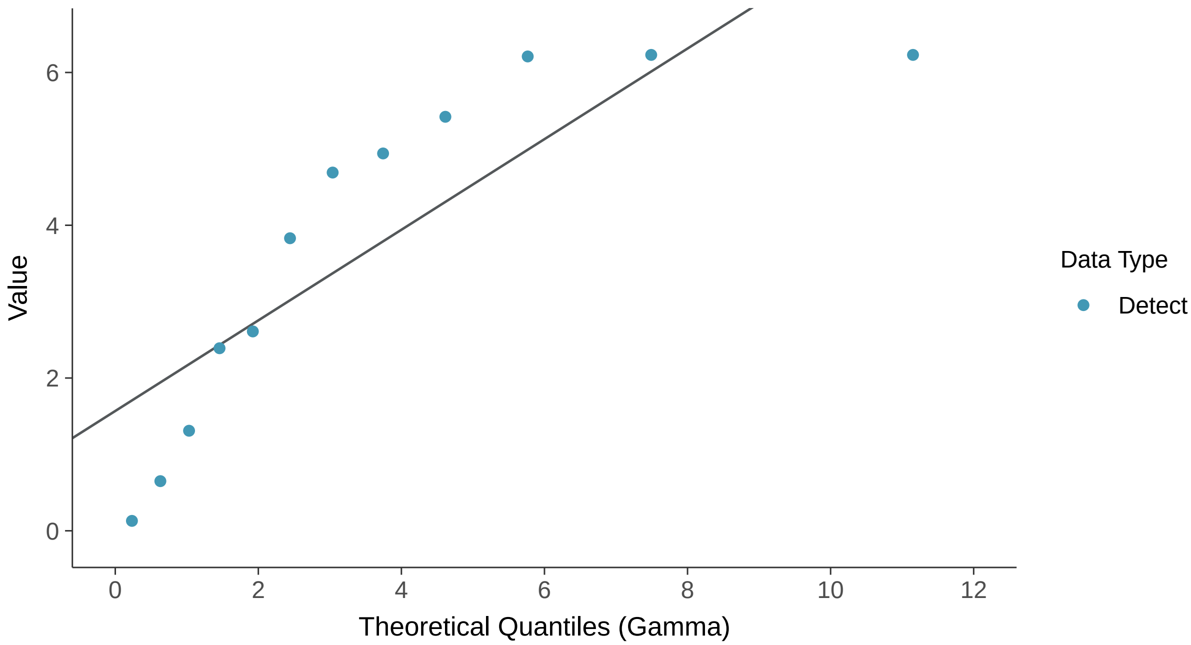
Lognormal Q-Q plot

Dissolved Oxygen, MW-13 (mg/L)



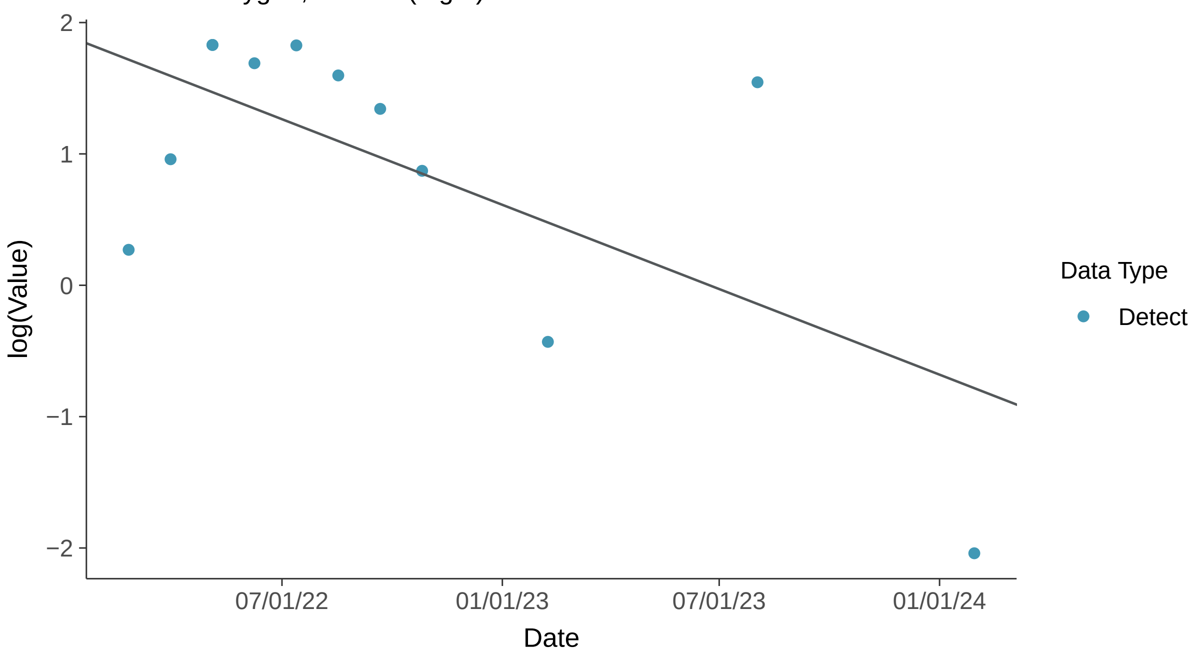
Gamma Q-Q plot

Dissolved Oxygen, MW-13 (mg/L)



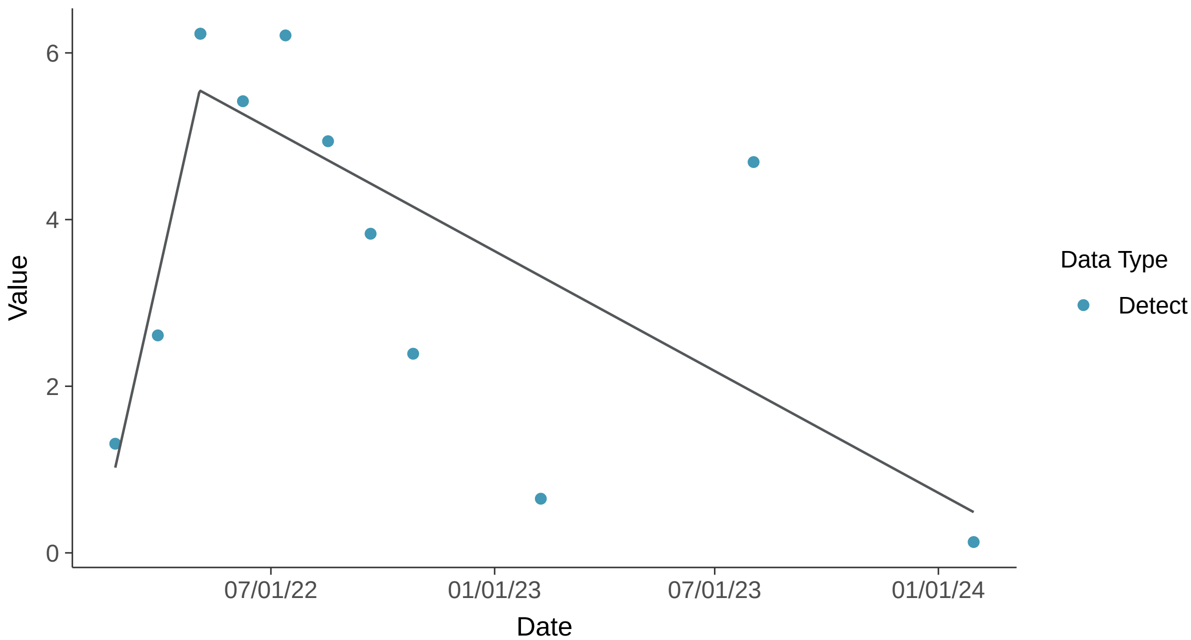
Trend Regression: Lognormal MLE

Dissolved Oxygen, MW-13 (mg/L)



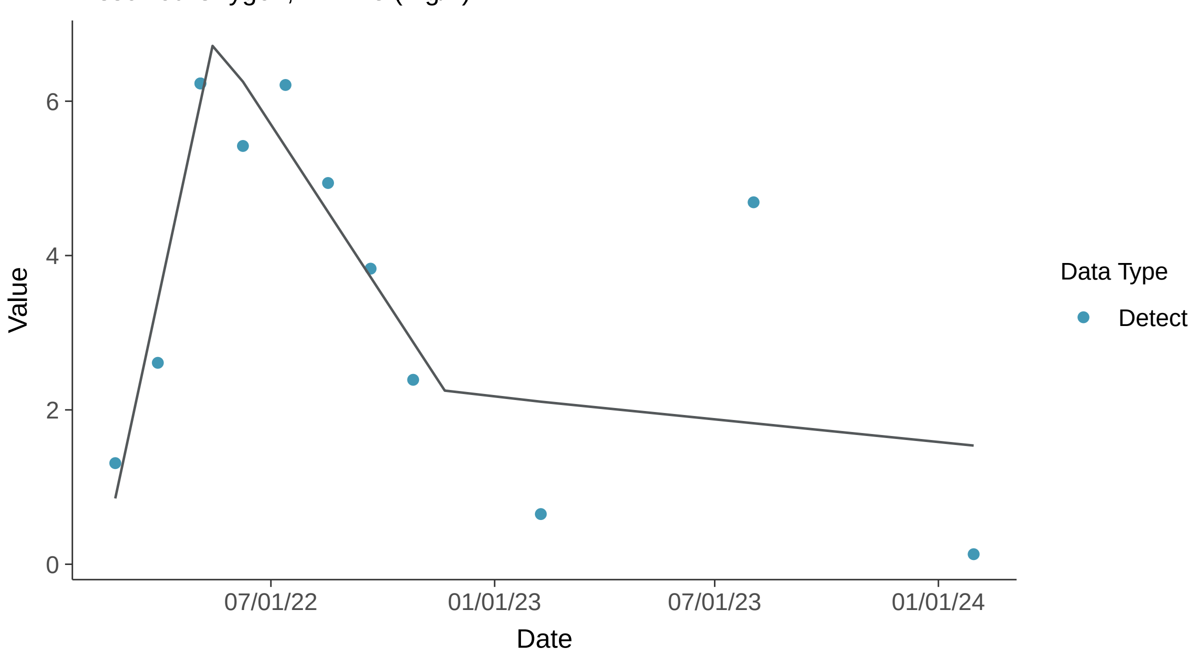
Trend Regression: Piecewise Linear-Linear

Dissolved Oxygen, MW-13 (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Dissolved Oxygen, MW-13 (mg/L)

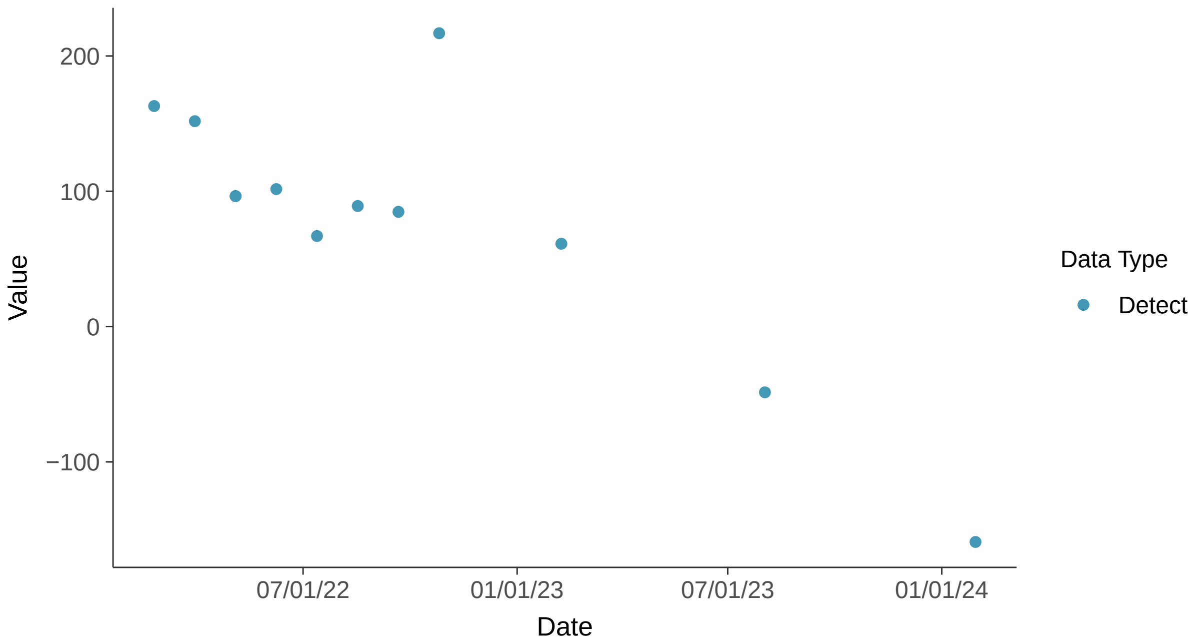


Field Parameters: Oxidation Reduction Potential, MW-13

ID: 13_3_26

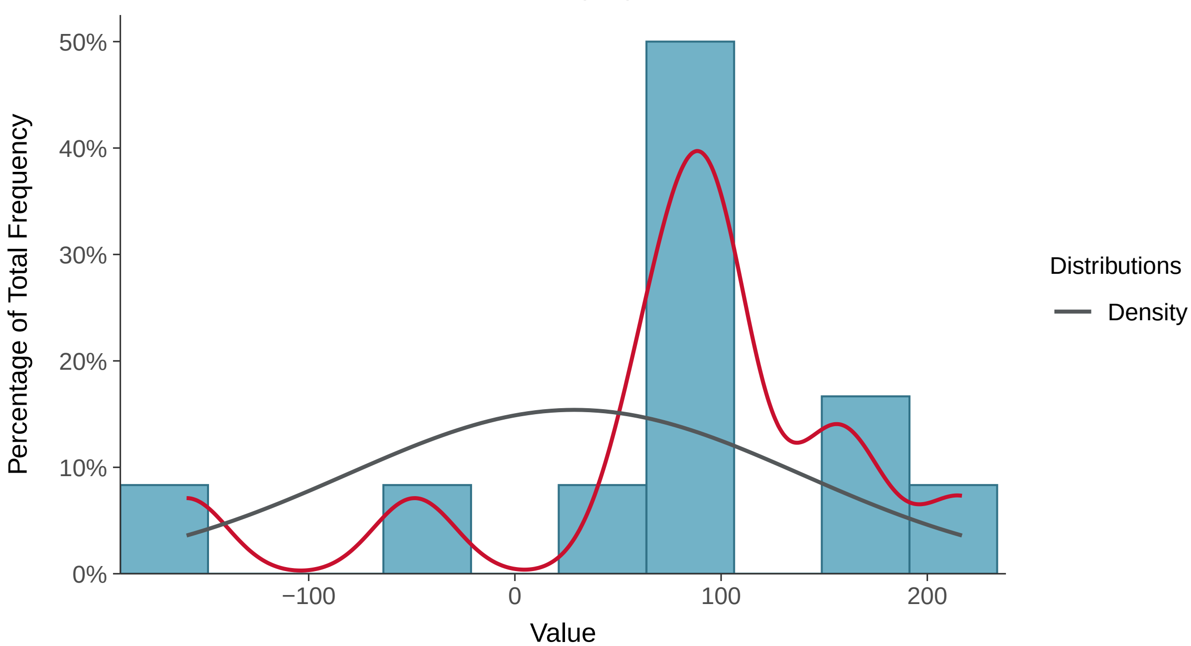
Scatter Plot

Oxidation Reduction Potential, MW-13 (mV)



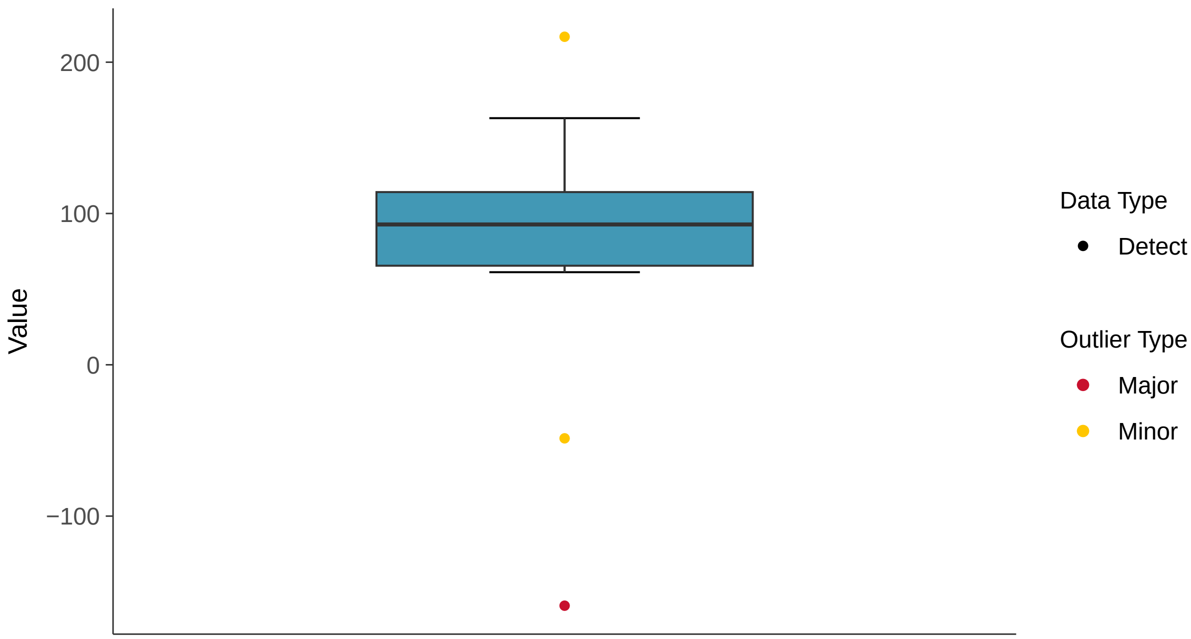
Histogram

Oxidation Reduction Potential, MW-13 (mV)



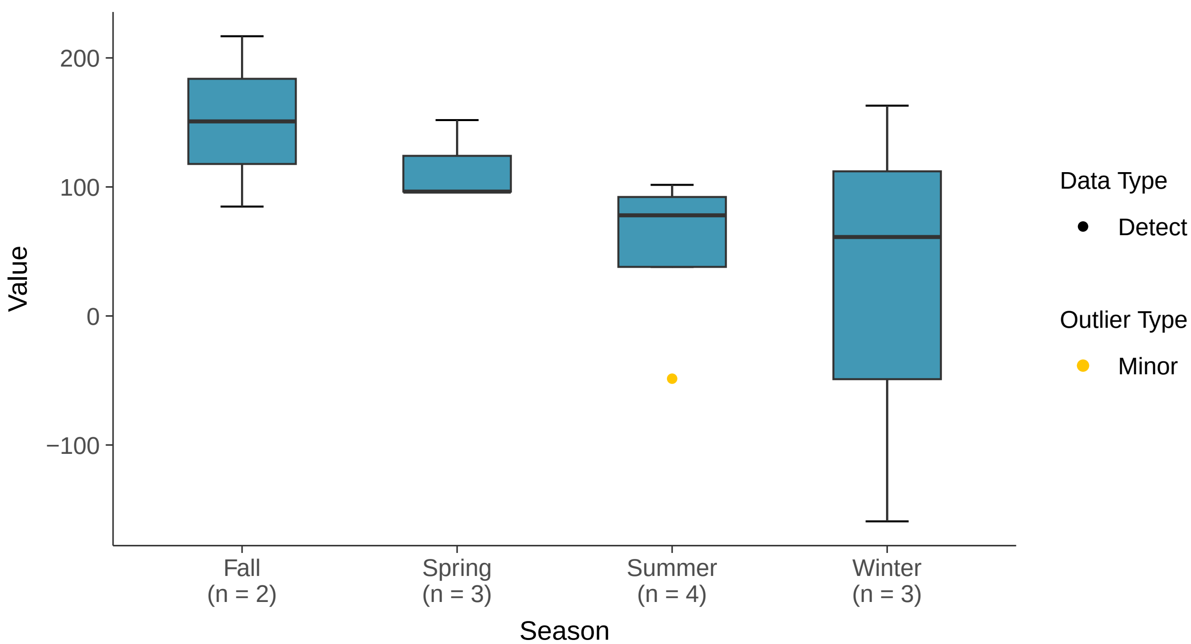
Boxplot

Oxidation Reduction Potential, MW-13 (mV)



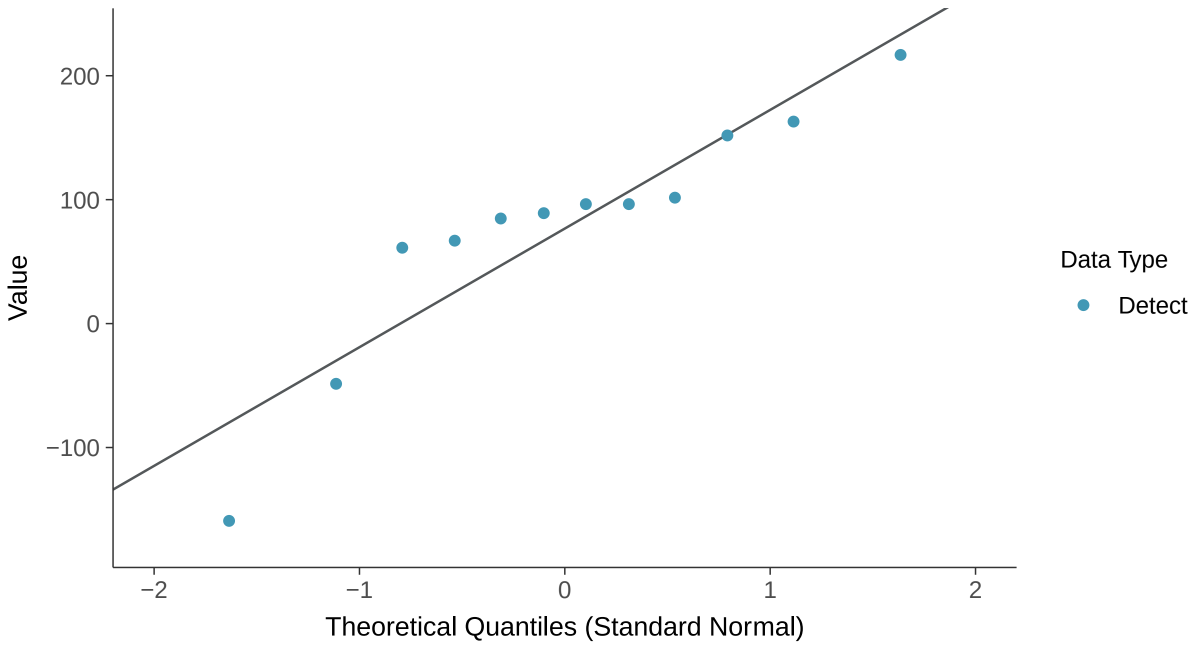
Boxplot by Season

Oxidation Reduction Potential, MW-13 (mV)



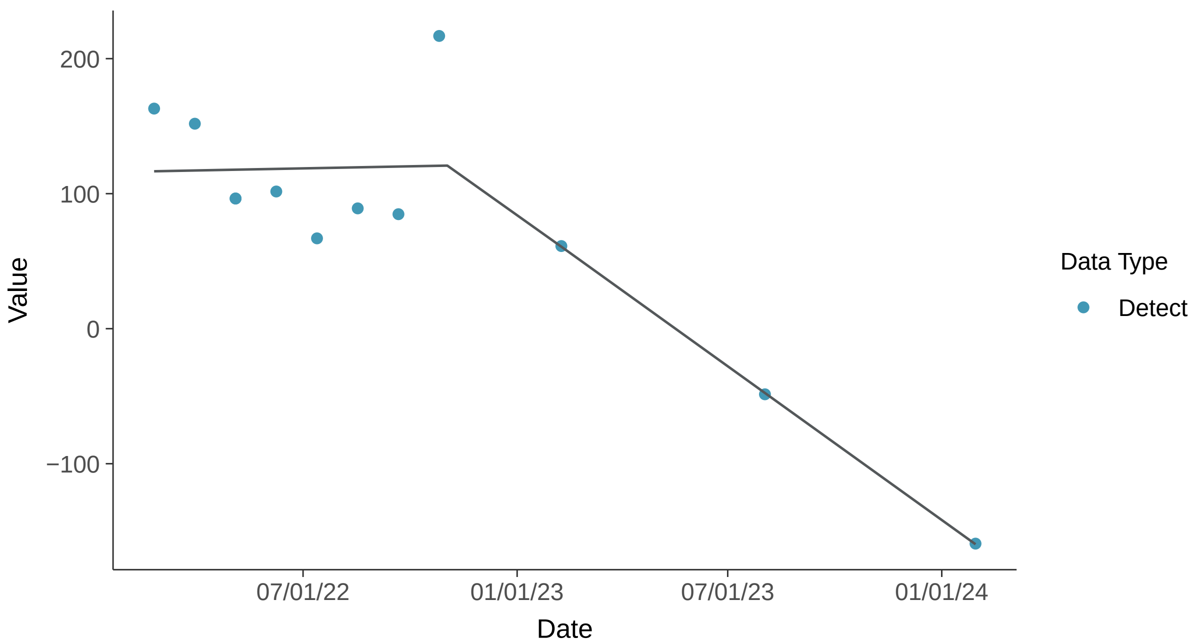
Normal Q-Q plot

Oxidation Reduction Potential, MW-13 (mV)



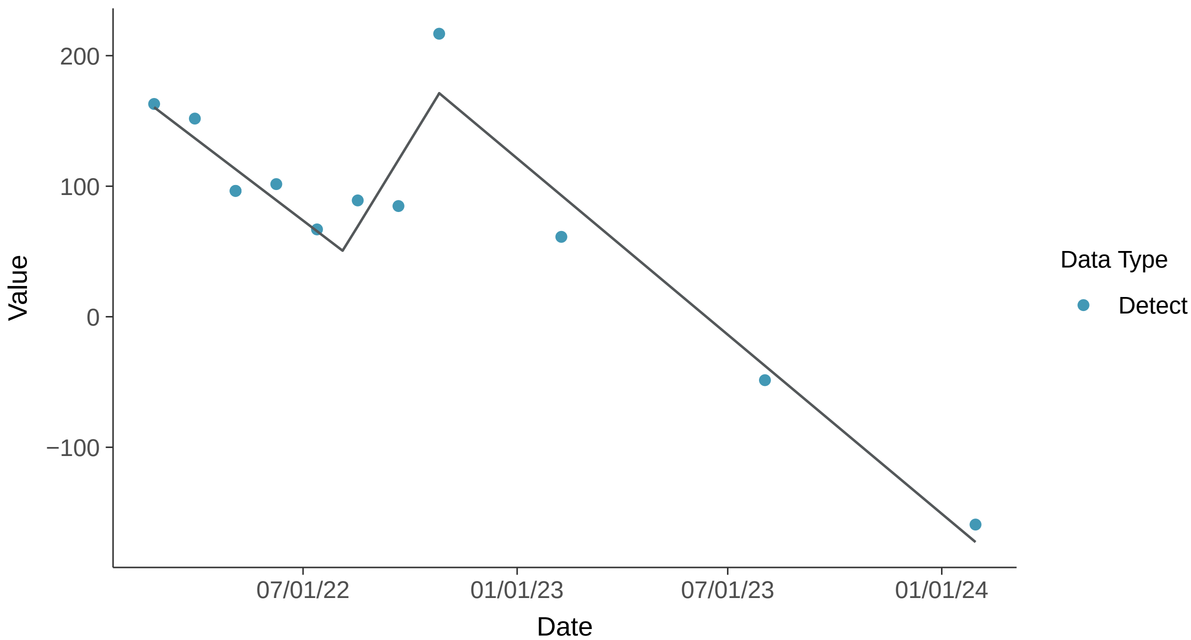
Trend Regression: Piecewise Linear-Linear

Oxidation Reduction Potential, MW-13 (mV)



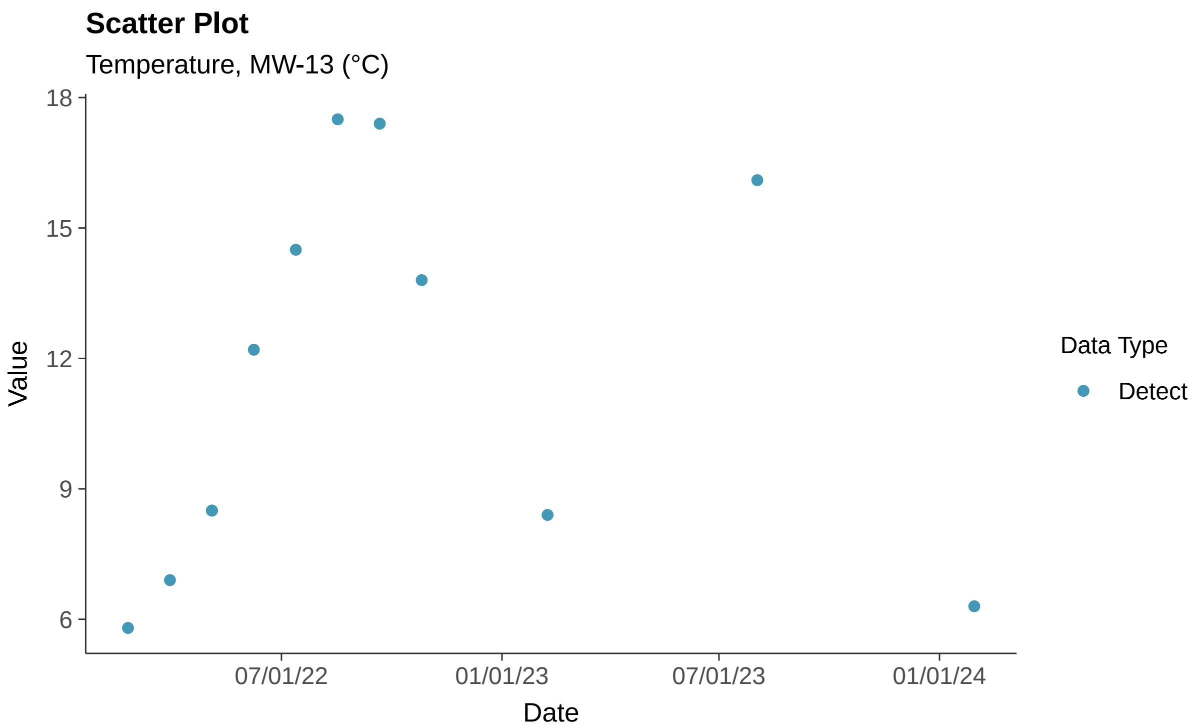
Trend Regression: Piecewise Linear-Linear-Linear

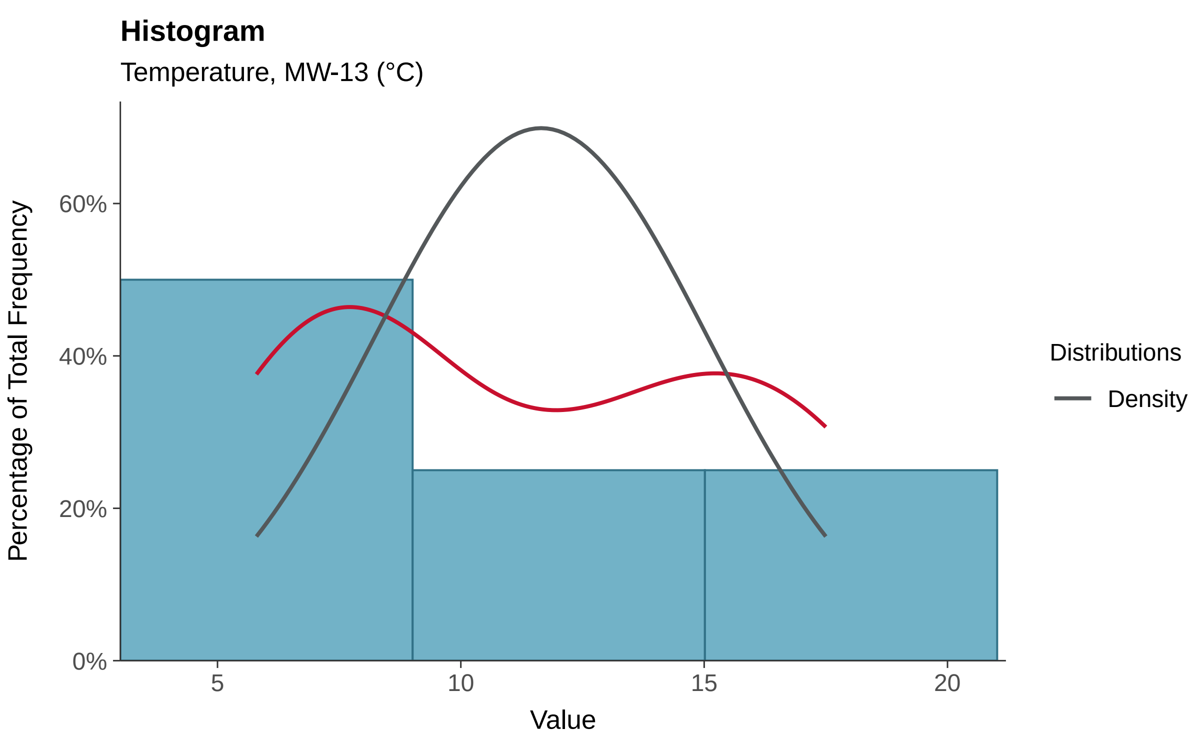
Oxidation Reduction Potential, MW-13 (mV)



Field Parameters: Temperature, MW-13

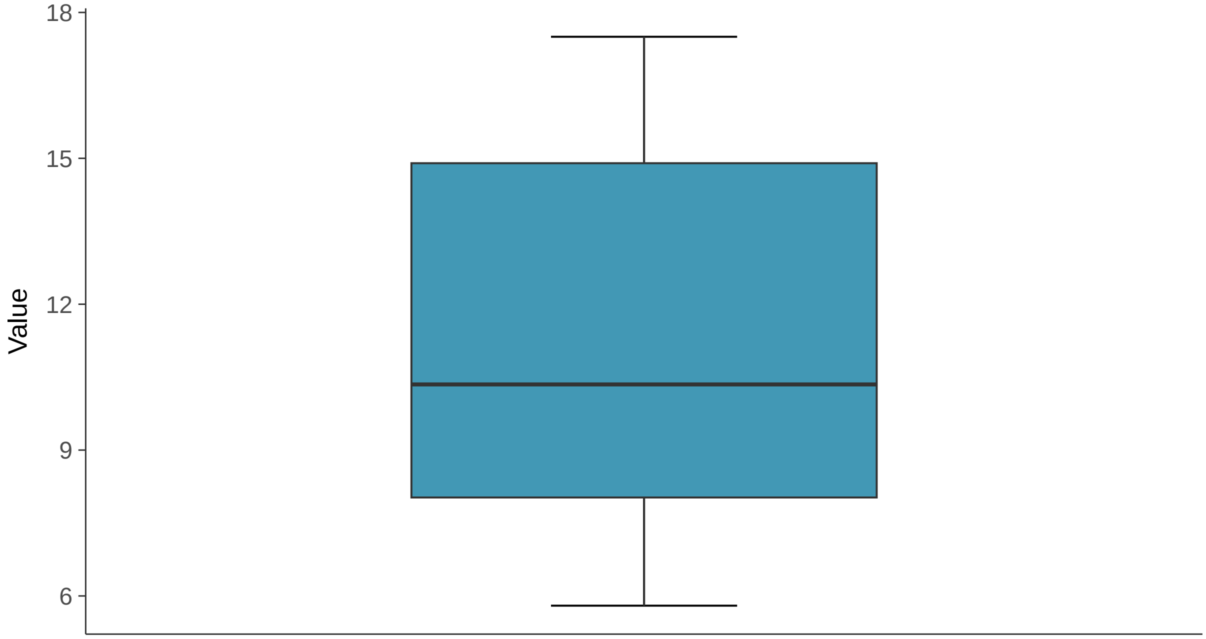
ID: 13_3_27





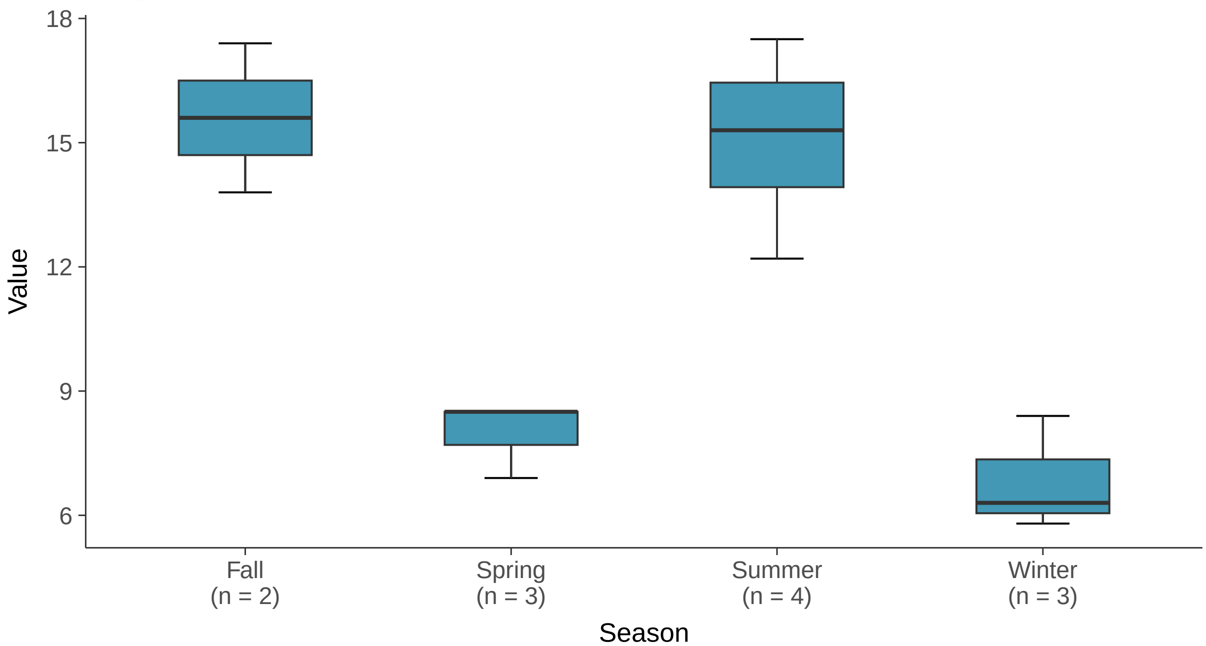
Boxplot

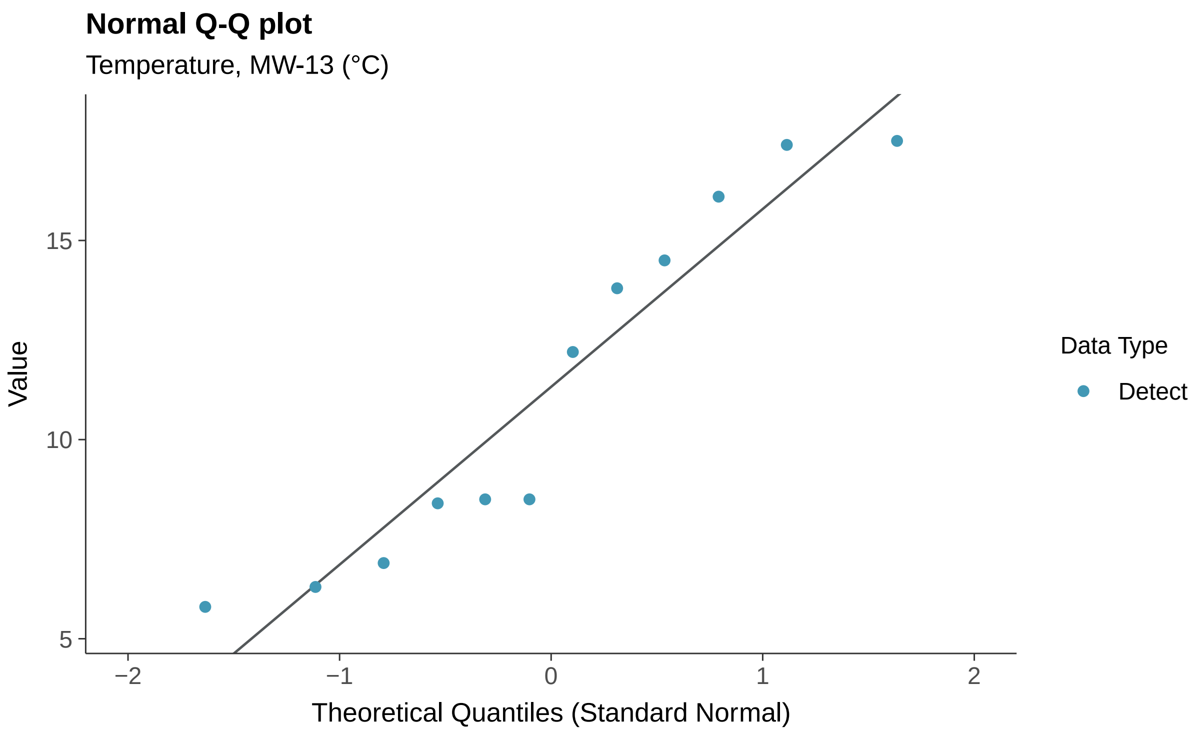
Temperature, MW-13 (°C)

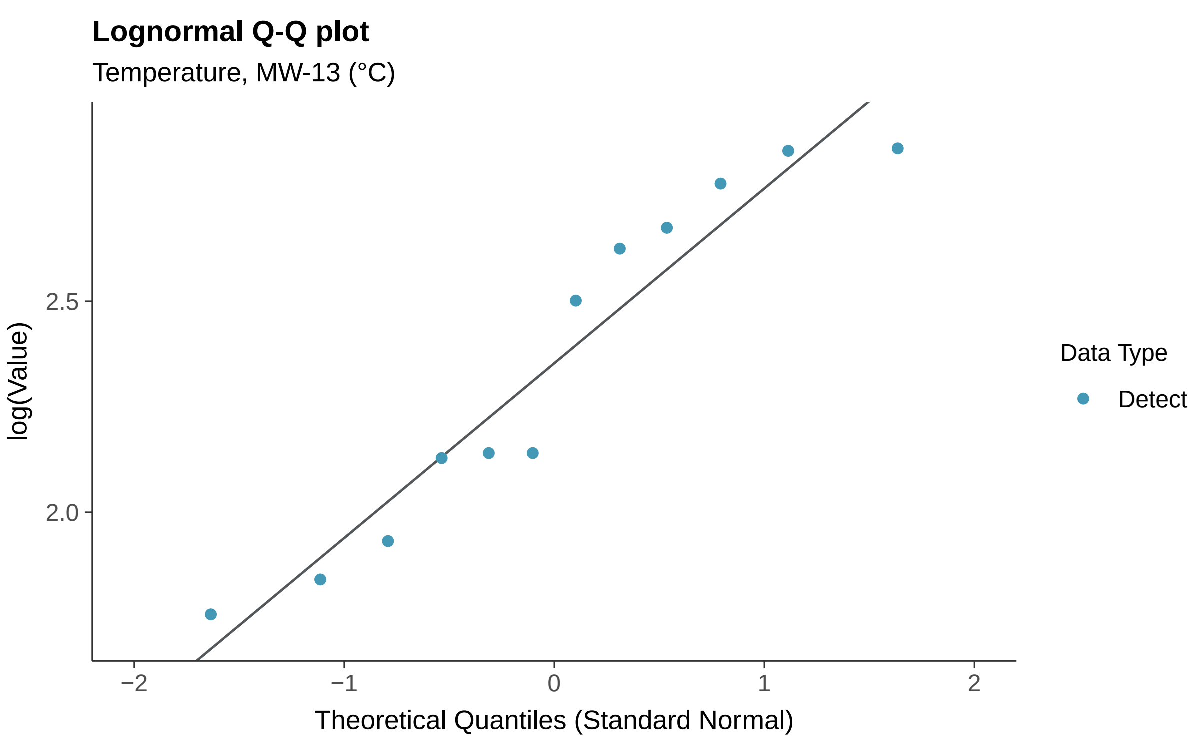


Boxplot by Season

Temperature, MW-13 (°C)

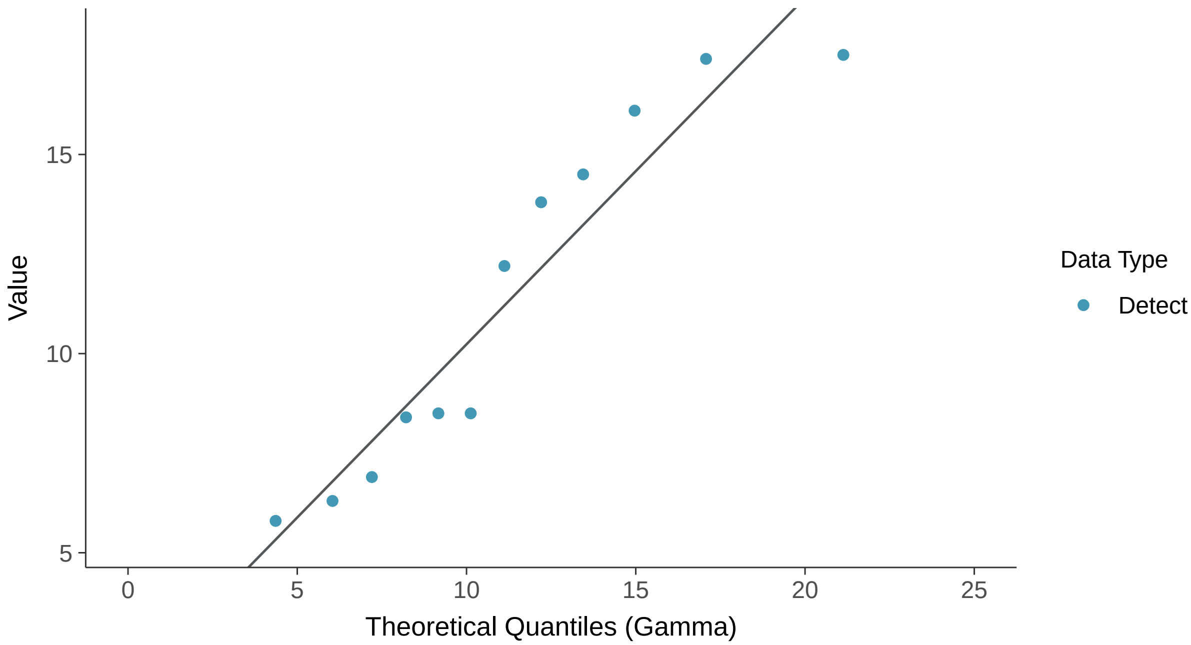



Normal Q-Q plot
Temperature, MW-13 (°C)
Value
15
10
5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Temperature, MW-13 (°C)
log(Value)
2.5
2.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

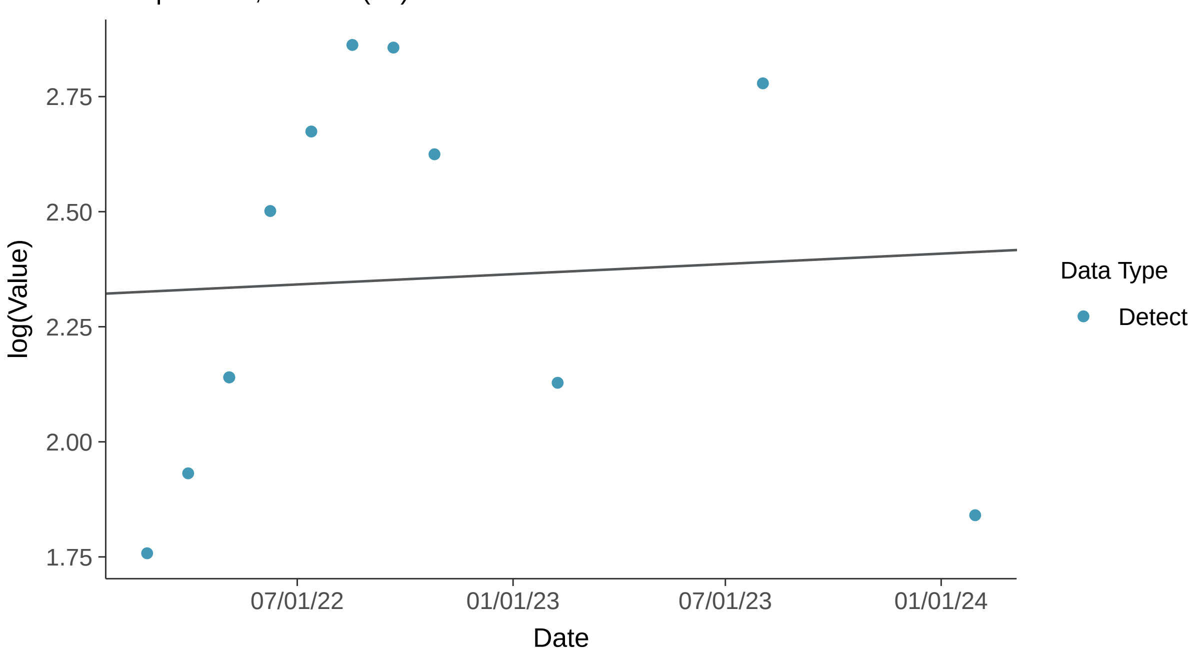
Gamma Q-Q plot

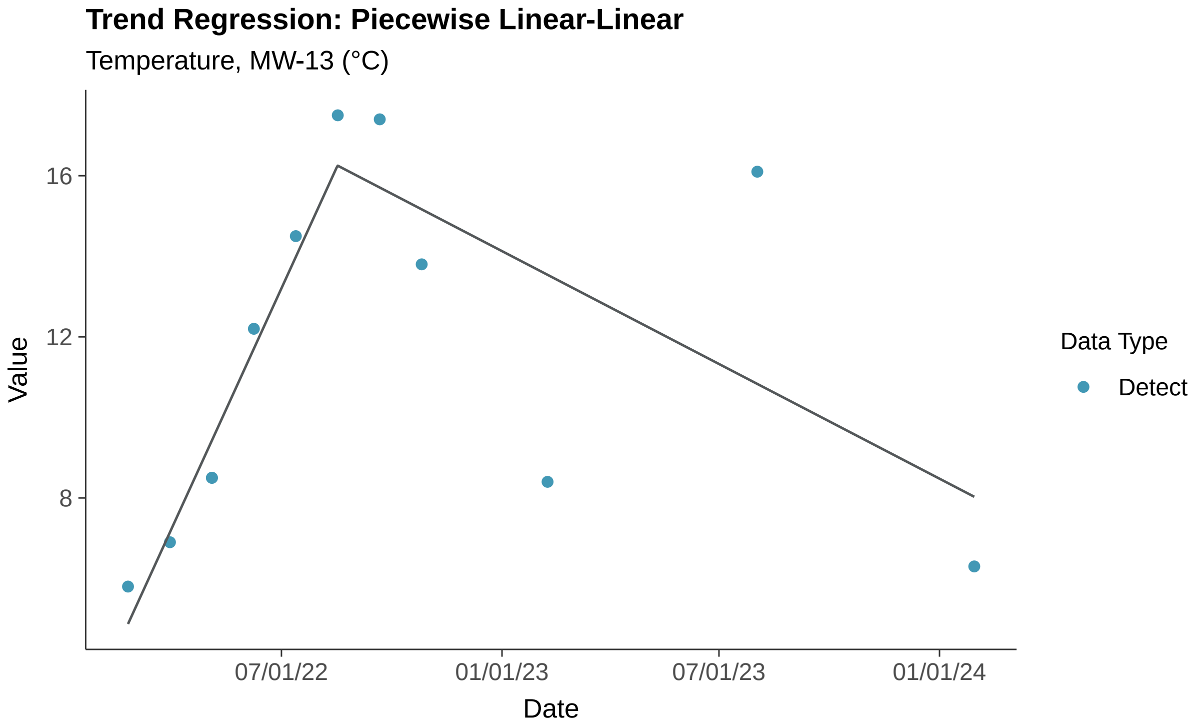
Temperature, MW-13 (°C)



Trend Regression: Lognormal MLE

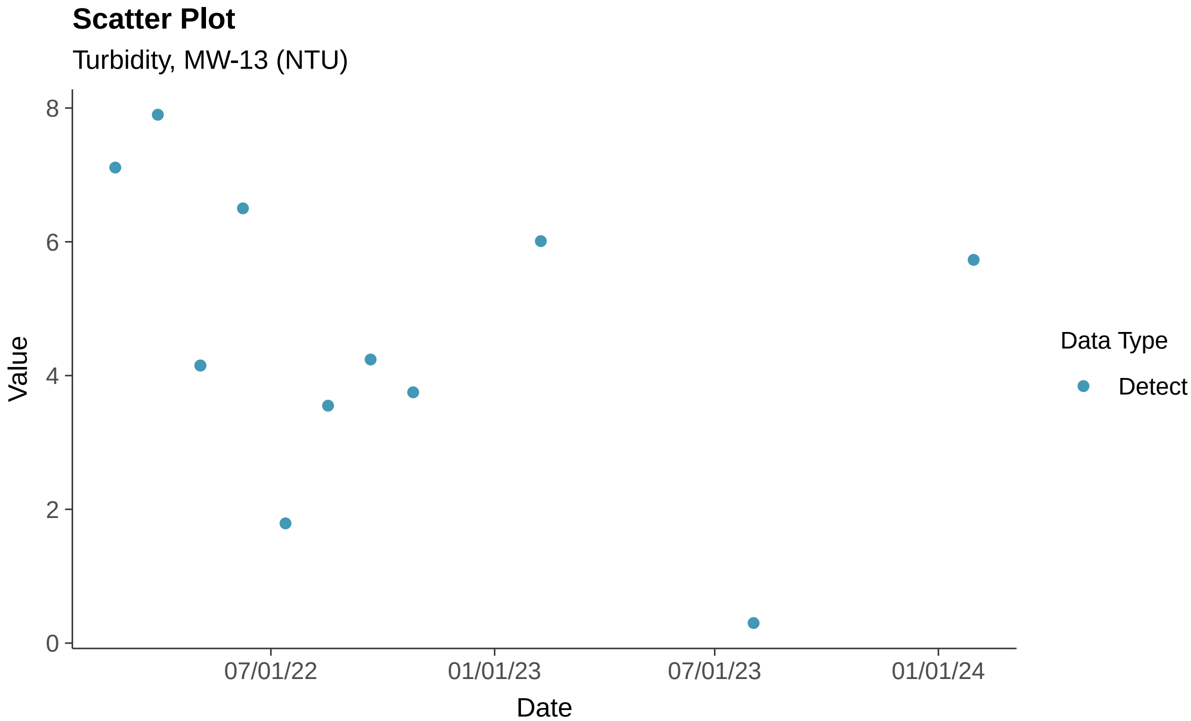
Temperature, MW-13 (°C)

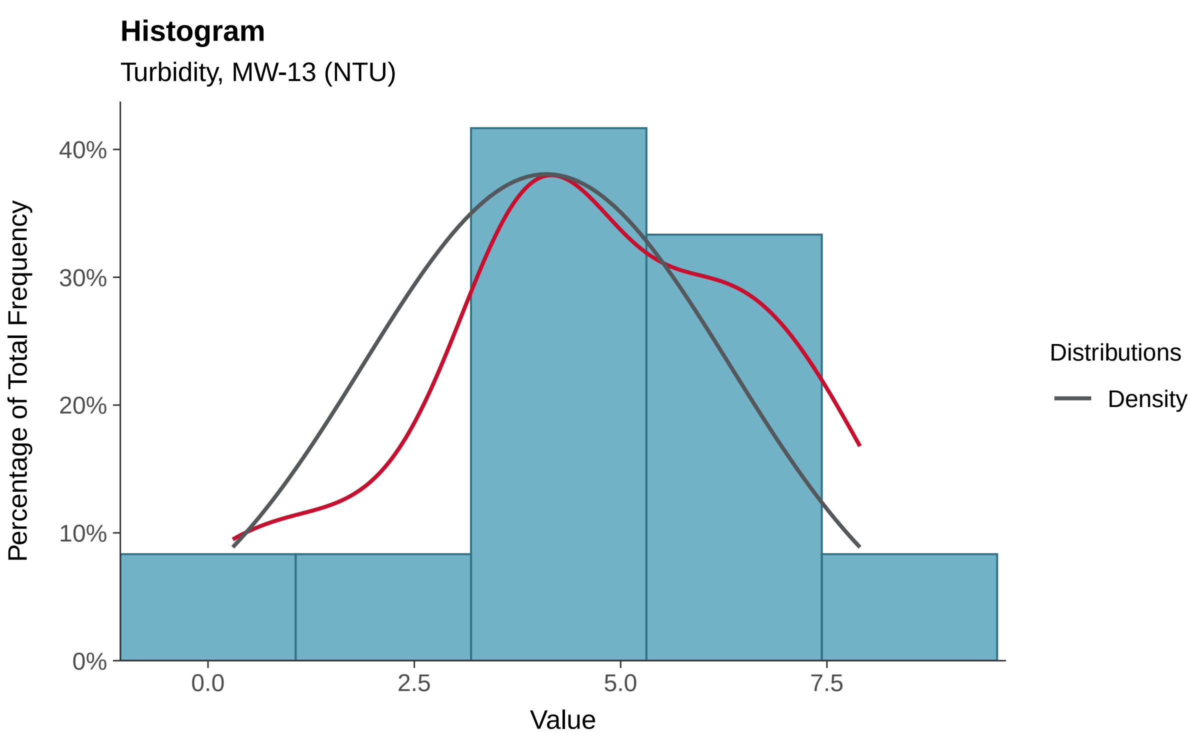


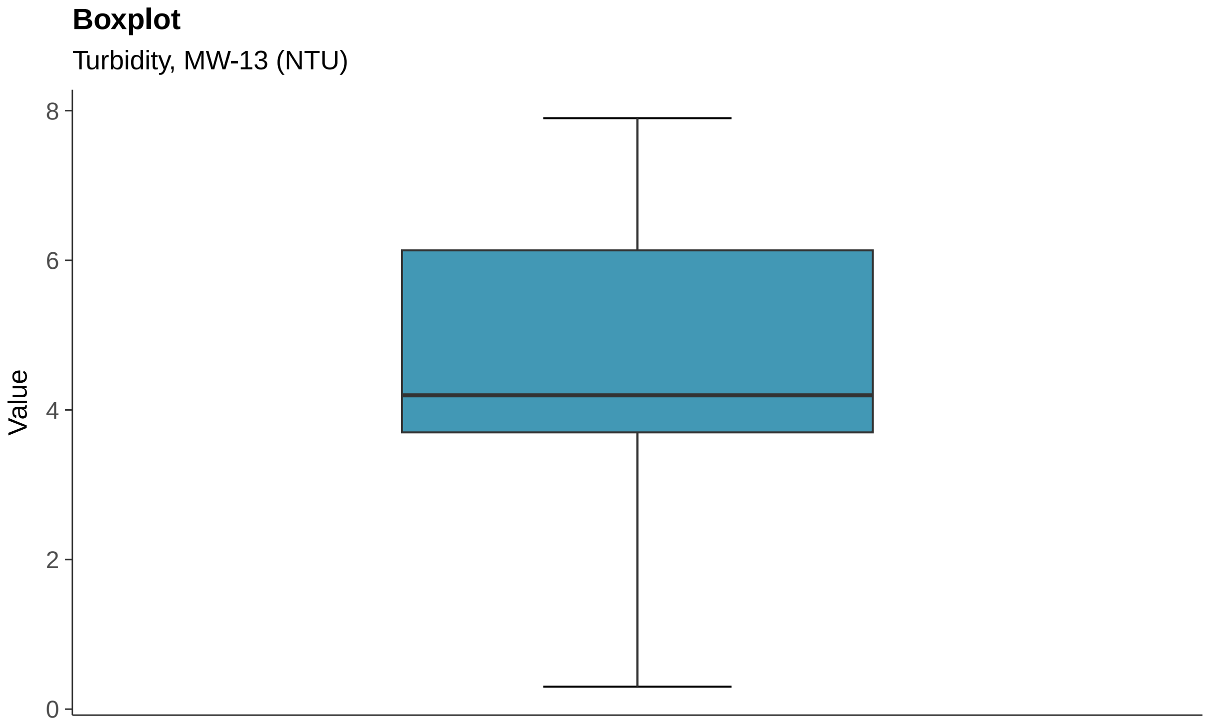

Trend Regression: Piecewise Linear-Linear
Temperature, MW-13 (°C)
Value
16
12
8
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

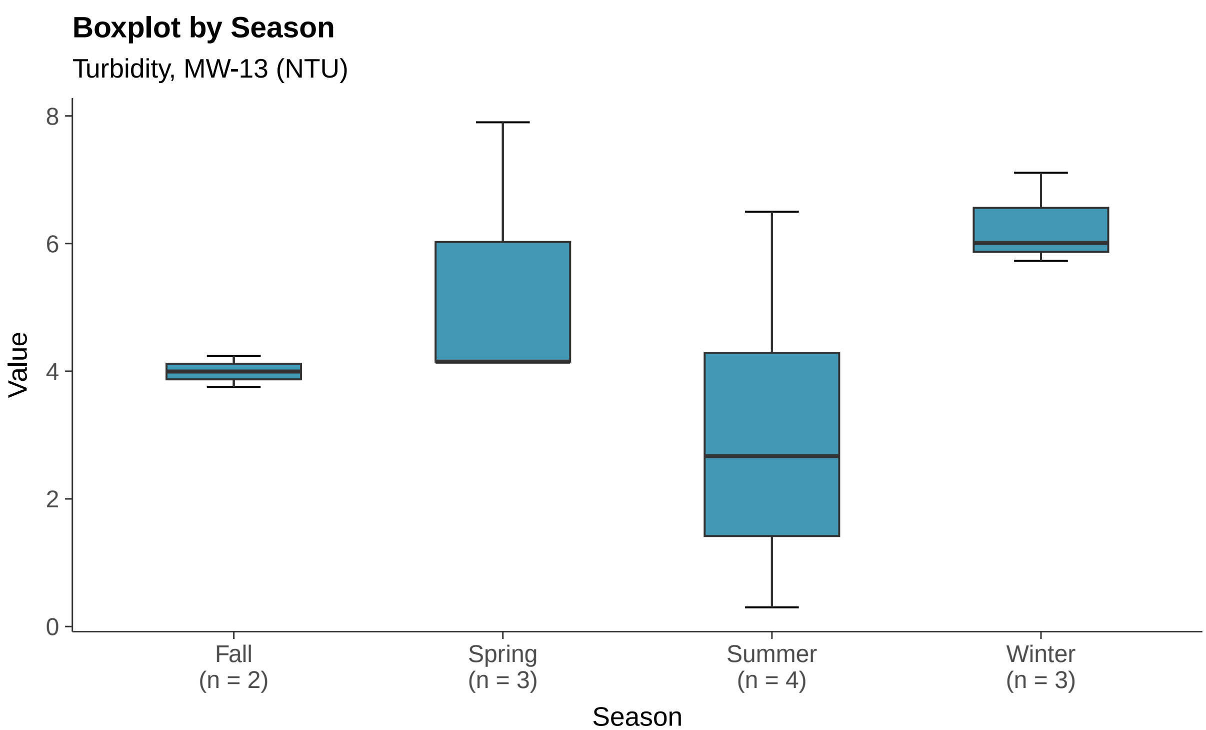
Field Parameters: Turbidity, MW-13

ID: 13_3_28



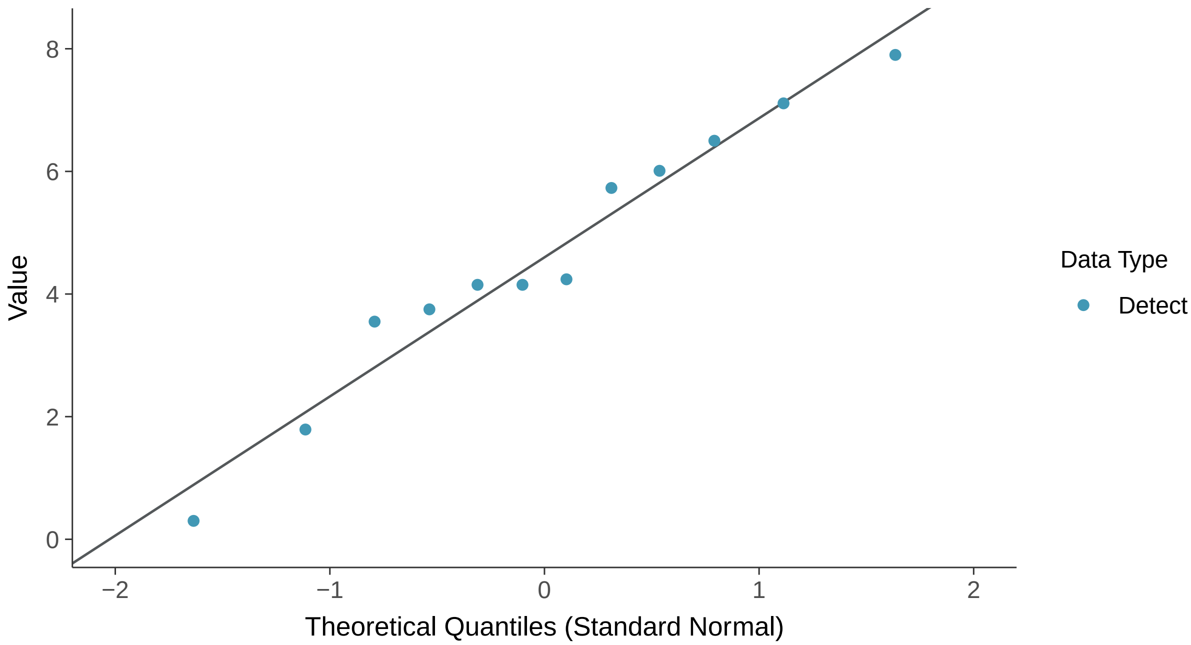



Boxplot
Turbidity, MW-13 (NTU)
Value
0
2
4
6
8


Boxplot by Season
Turbidity, MW-13 (NTU)
Value
0
2
4
6
8
Fall
(n = 2)
Spring
(n = 3)
Summer
(n = 4)
Winter
(n = 3)
Season

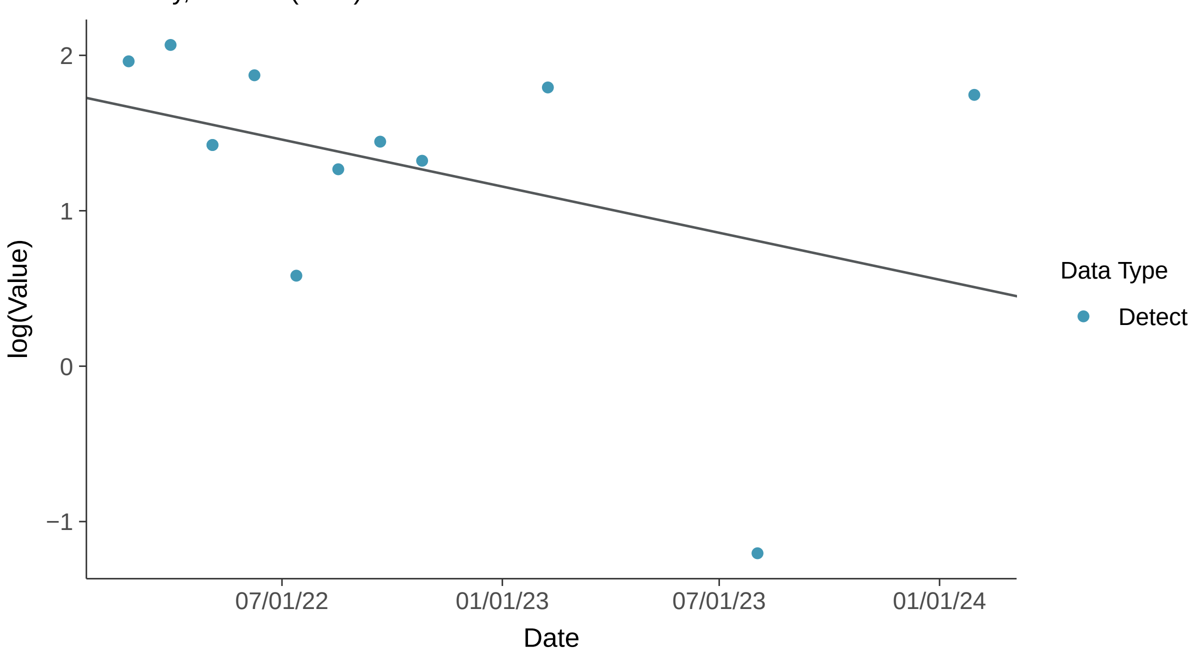
Normal Q-Q plot

Turbidity, MW-13 (NTU)



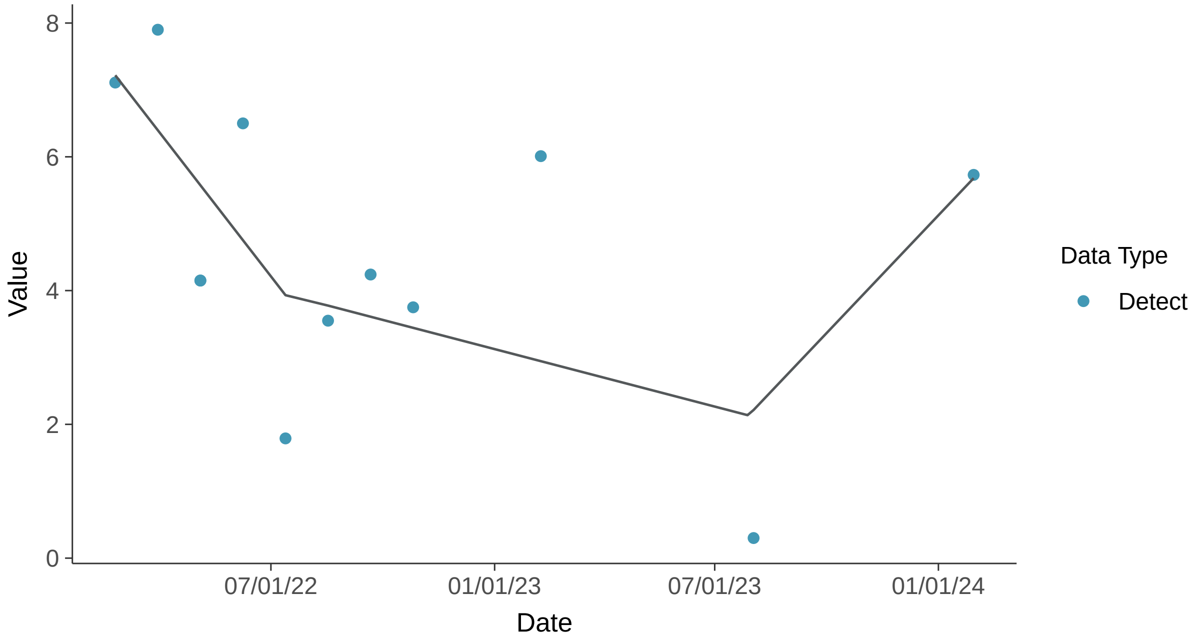
Trend Regression: Lognormal MLE

Turbidity, MW-13 (NTU)



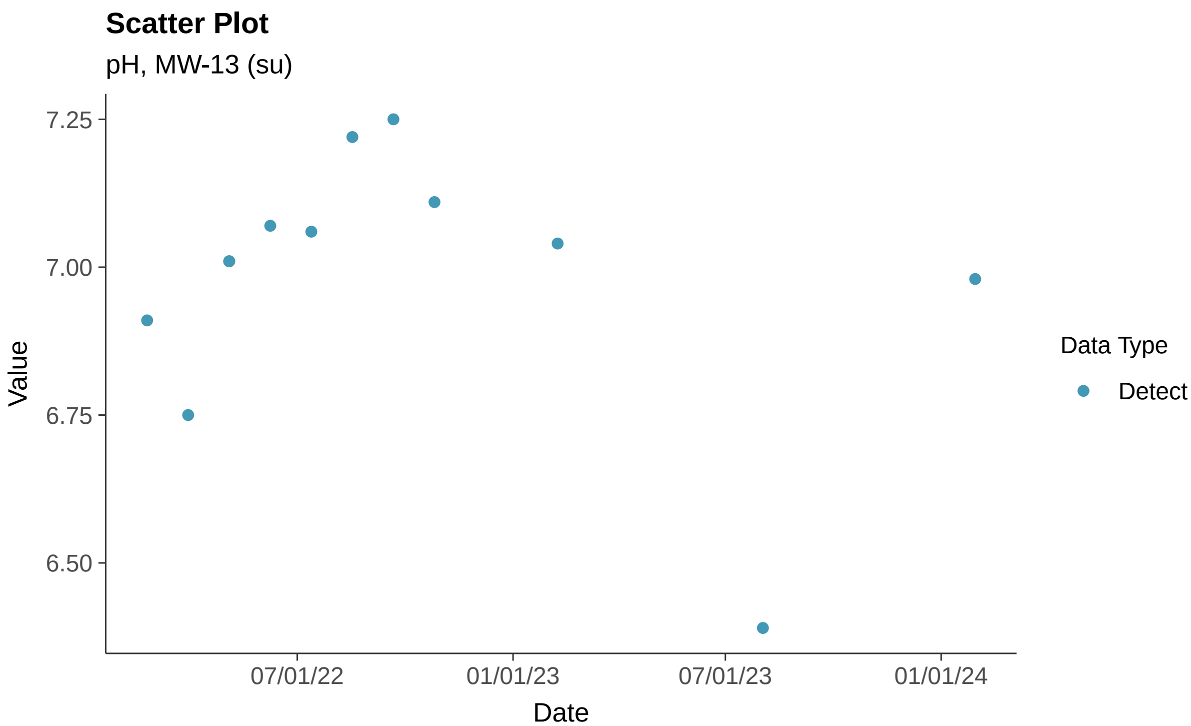
Trend Regression: Piecewise Linear-Linear-Linear

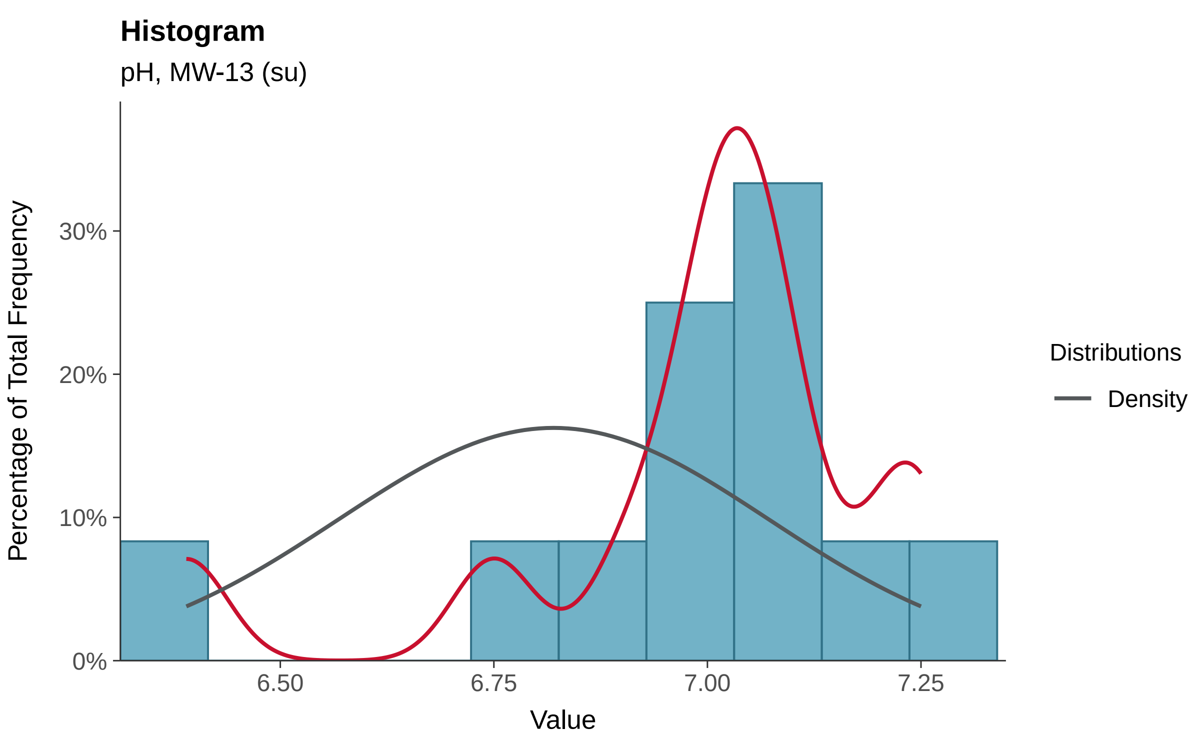
Turbidity, MW-13 (NTU)



Field Parameters: pH, MW-13

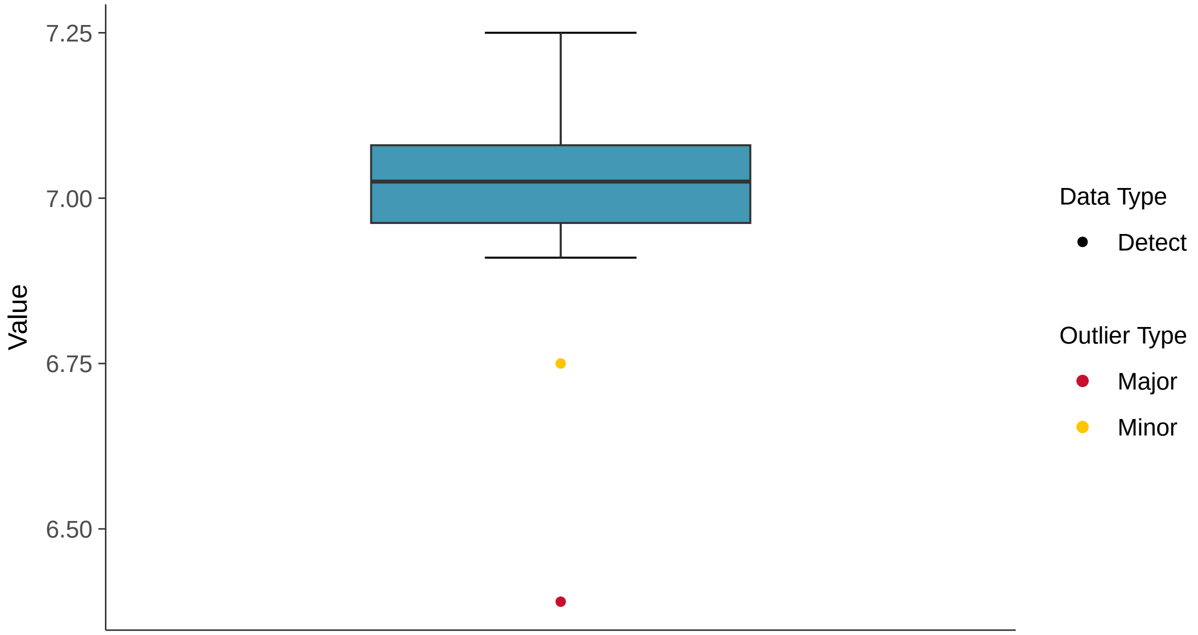
ID: 13_3_29





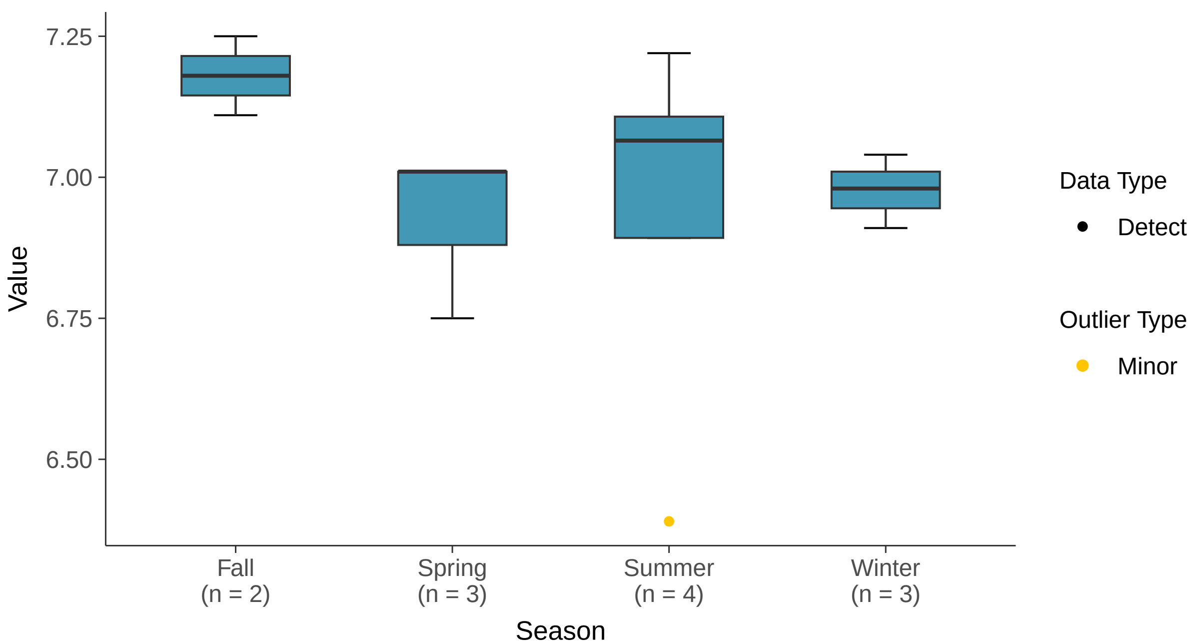
Boxplot

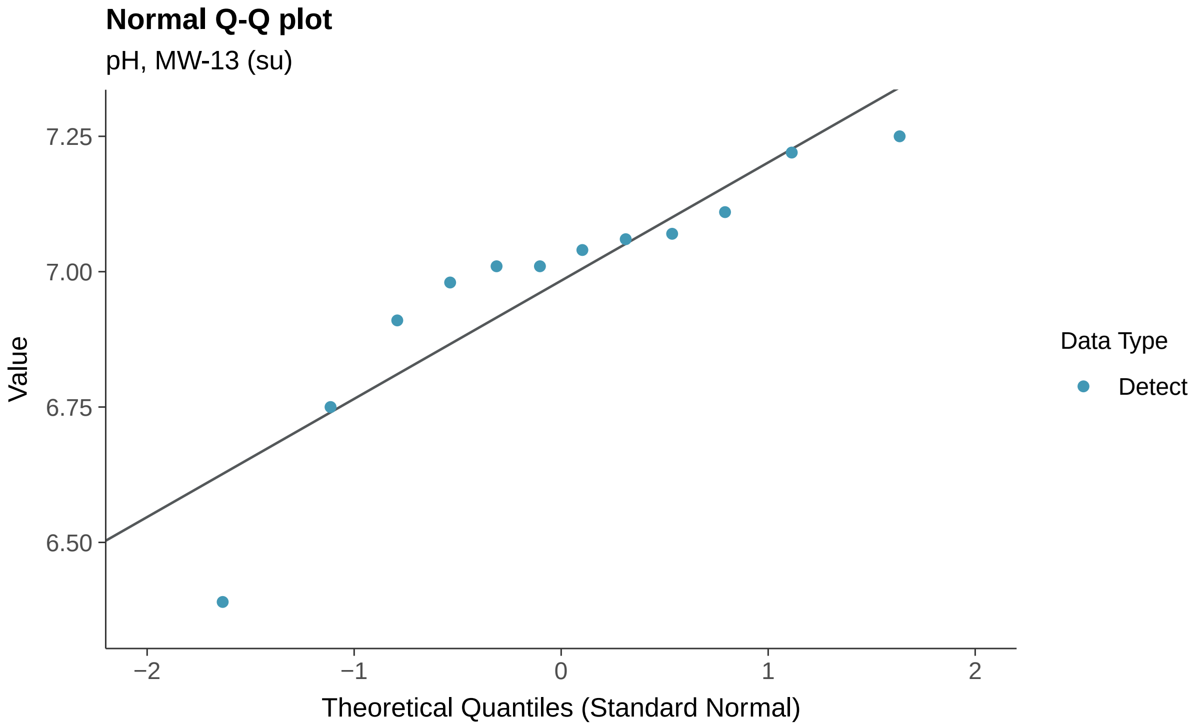
pH, MW-13 (su)

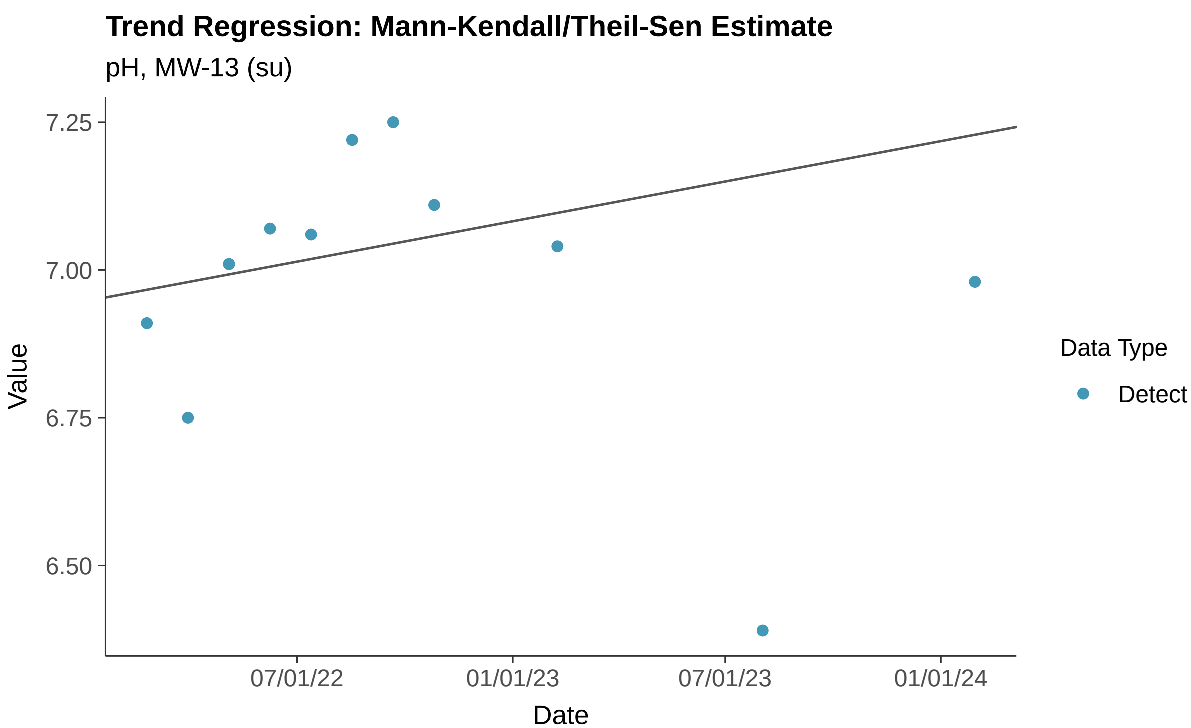


Boxplot by Season

pH, MW-13 (su)

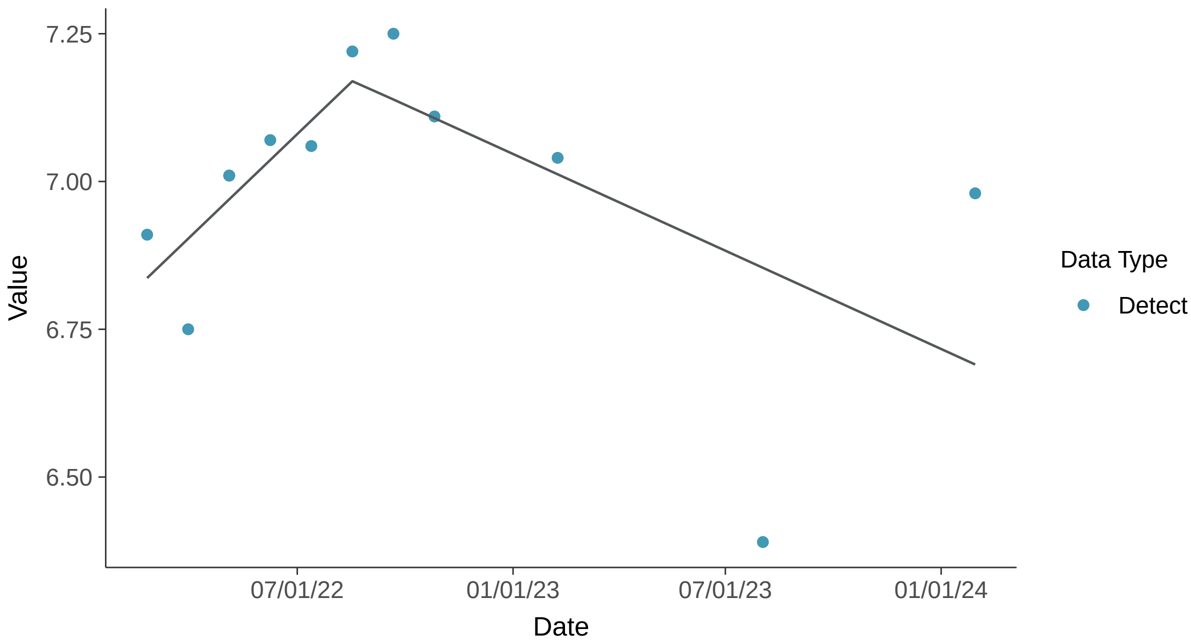



Normal Q-Q plot
pH, MW-13 (su)
Value
7.25
7.00
6.75
6.50
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
pH, MW-13 (su)
Value
7.25
7.00
6.75
6.50
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

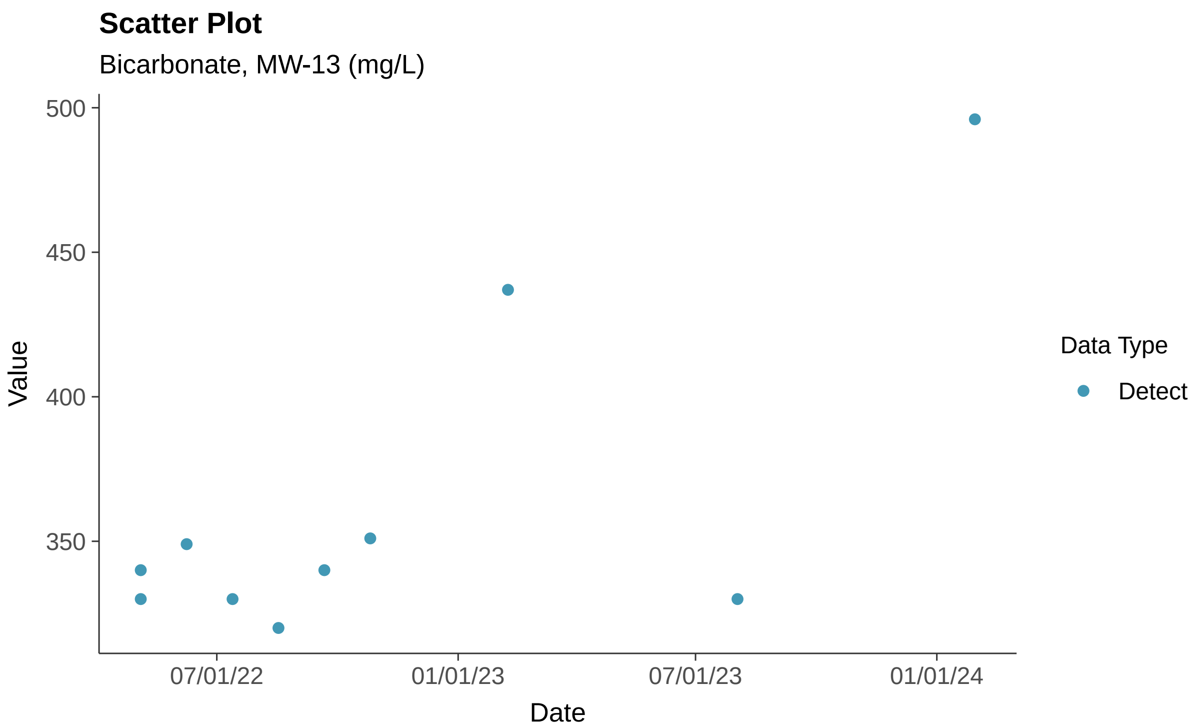
Trend Regression: Piecewise Linear-Linear

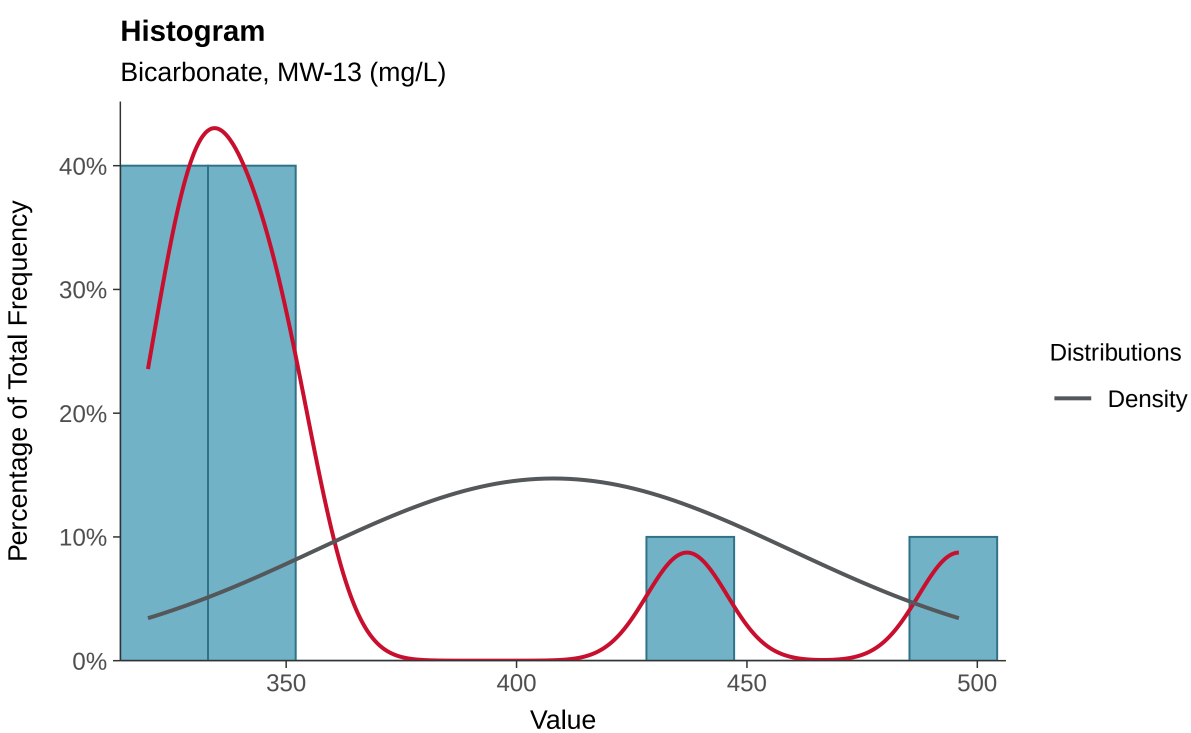
pH, MW-13 (su)



Other: Bicarbonate, MW-13

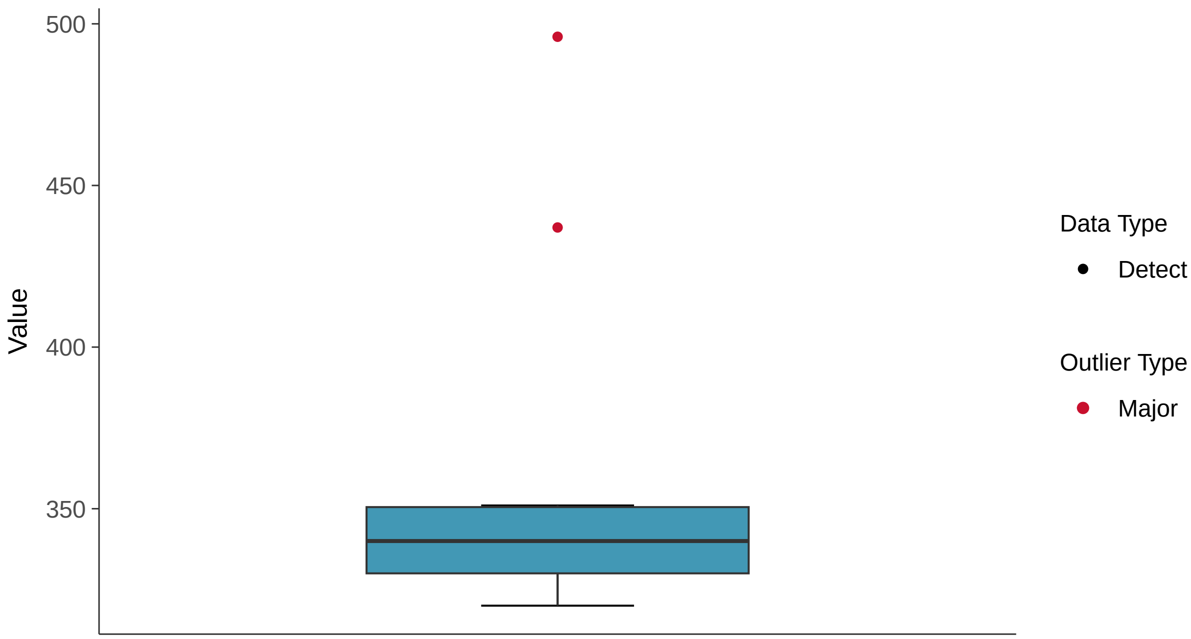
ID: 13_4_30





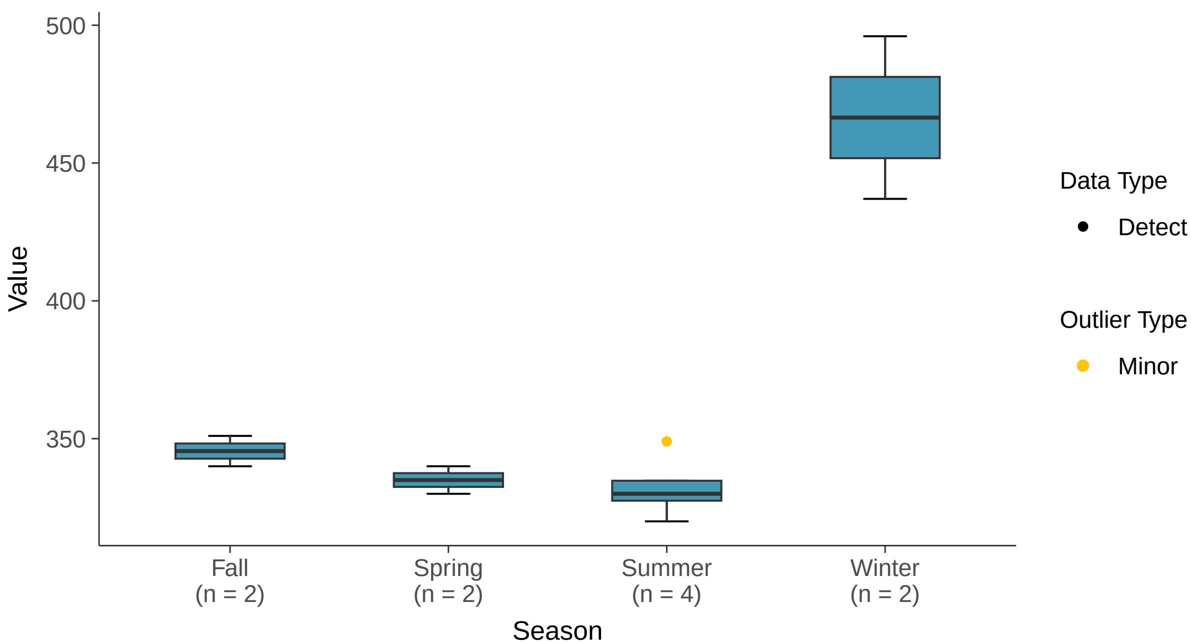
Boxplot

Bicarbonate, MW-13 (mg/L)



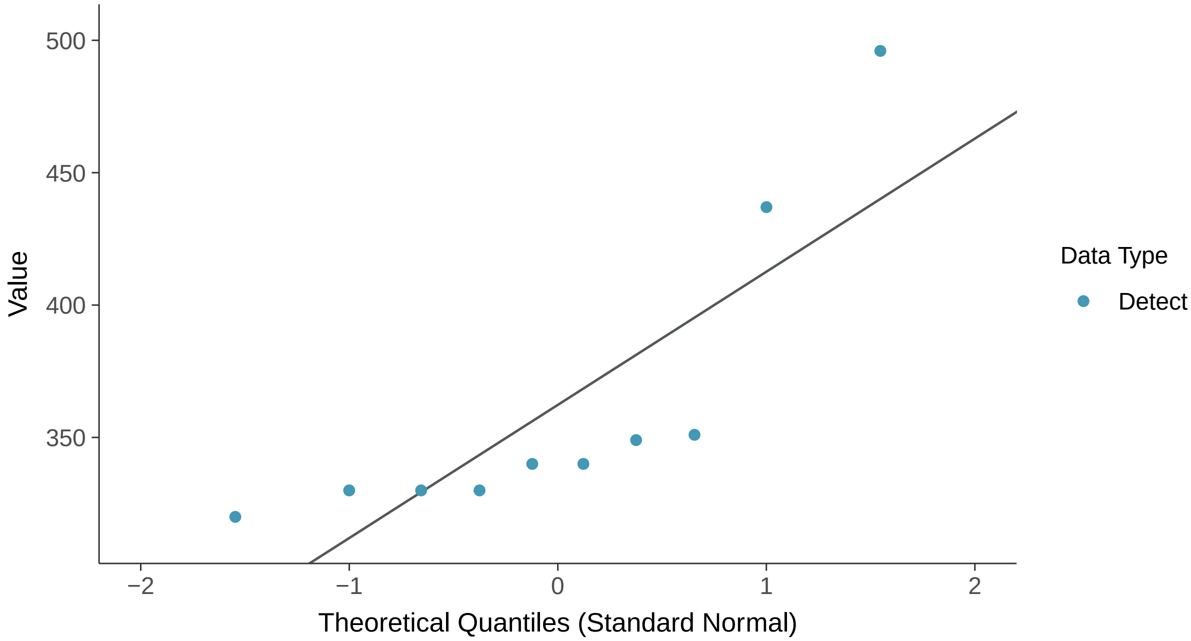
Boxplot by Season

Bicarbonate, MW-13 (mg/L)



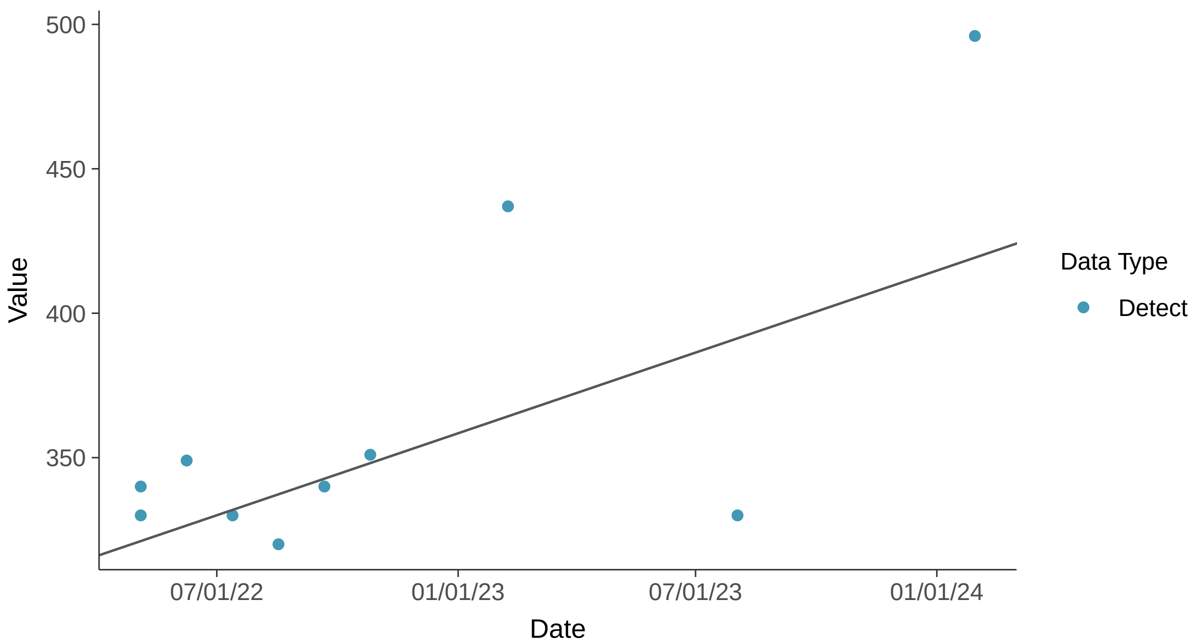
Normal Q-Q plot

Bicarbonate, MW-13 (mg/L)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

Bicarbonate, MW-13 (mg/L)

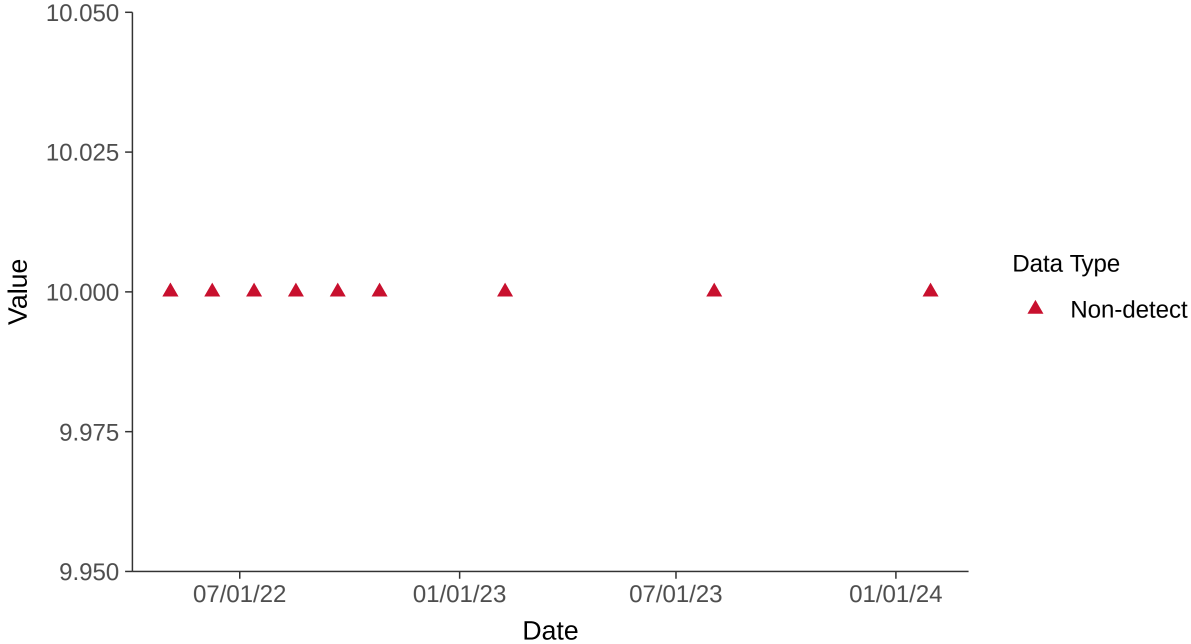


Other: Carbonate, MW-13

ID: 13_4_31

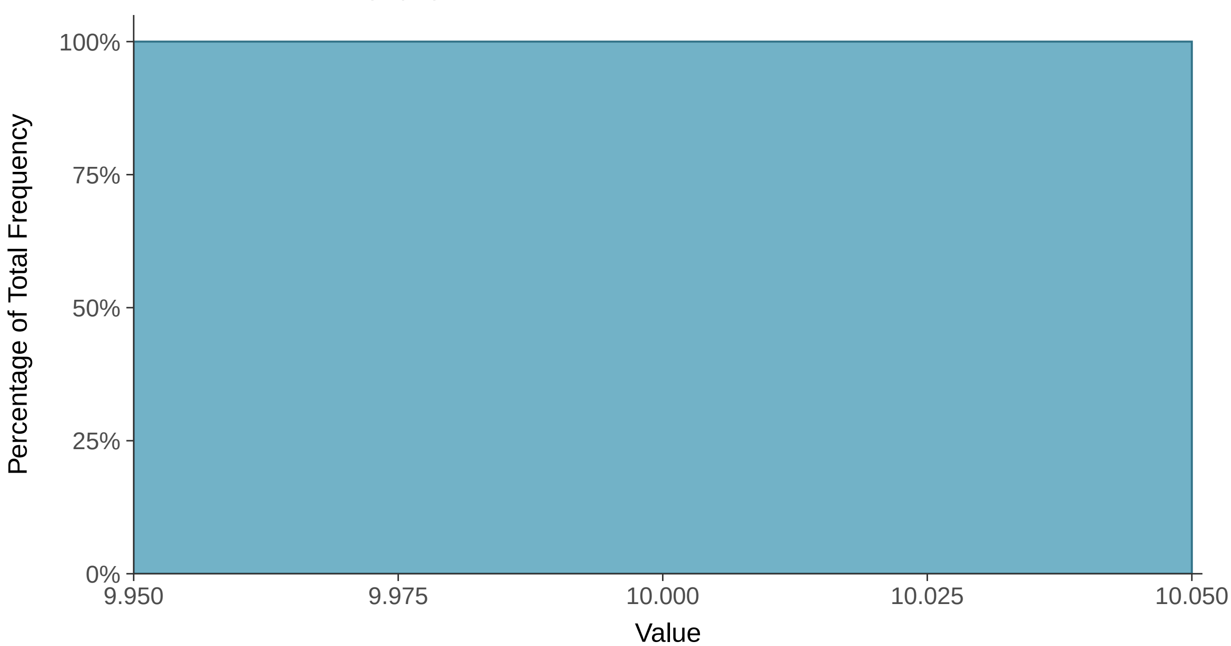
Scatter Plot

Carbonate, MW-13 (mg/L)



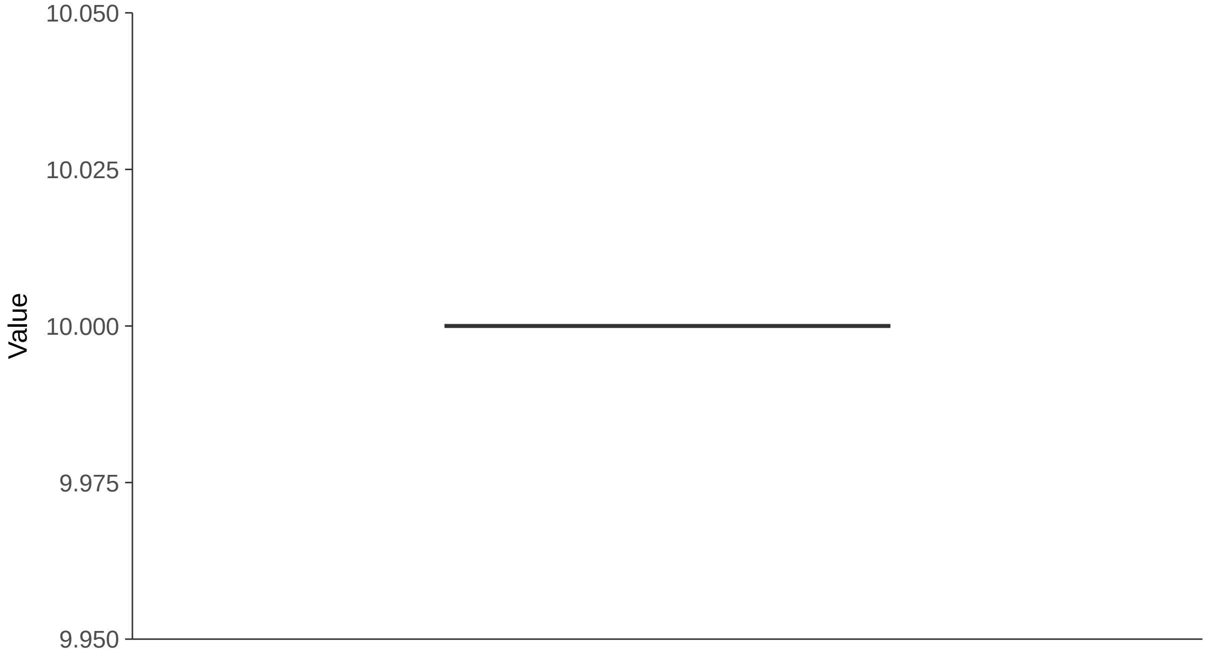
Histogram

Carbonate, MW-13 (mg/L)



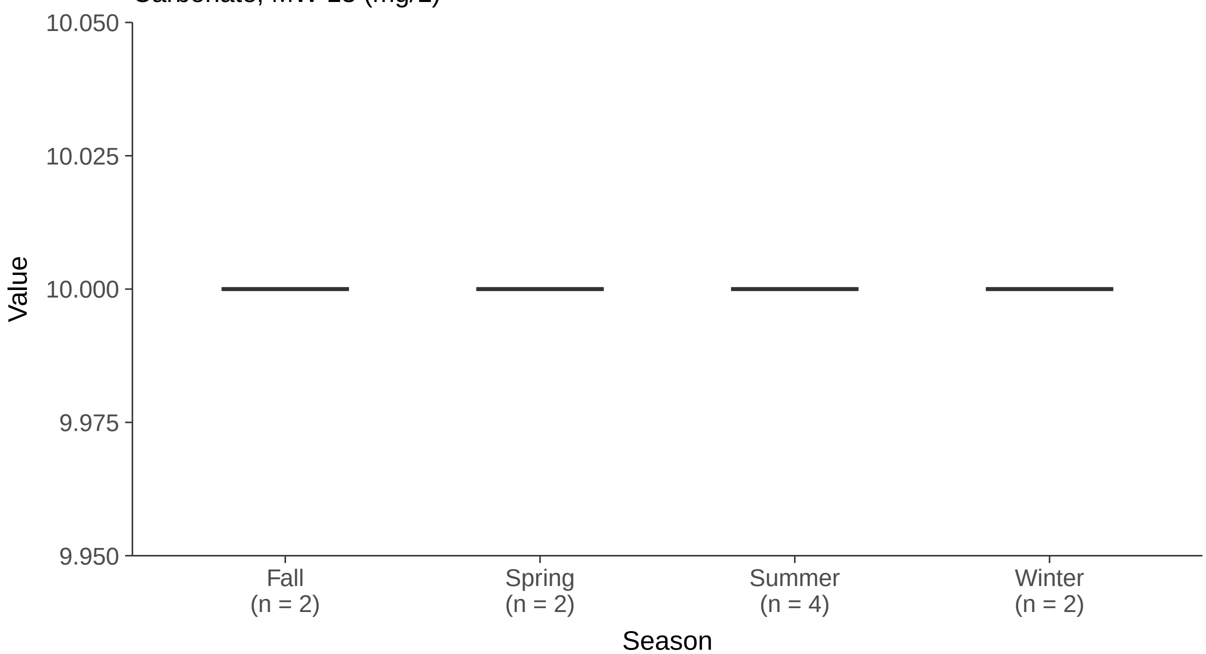
Boxplot

Carbonate, MW-13 (mg/L)



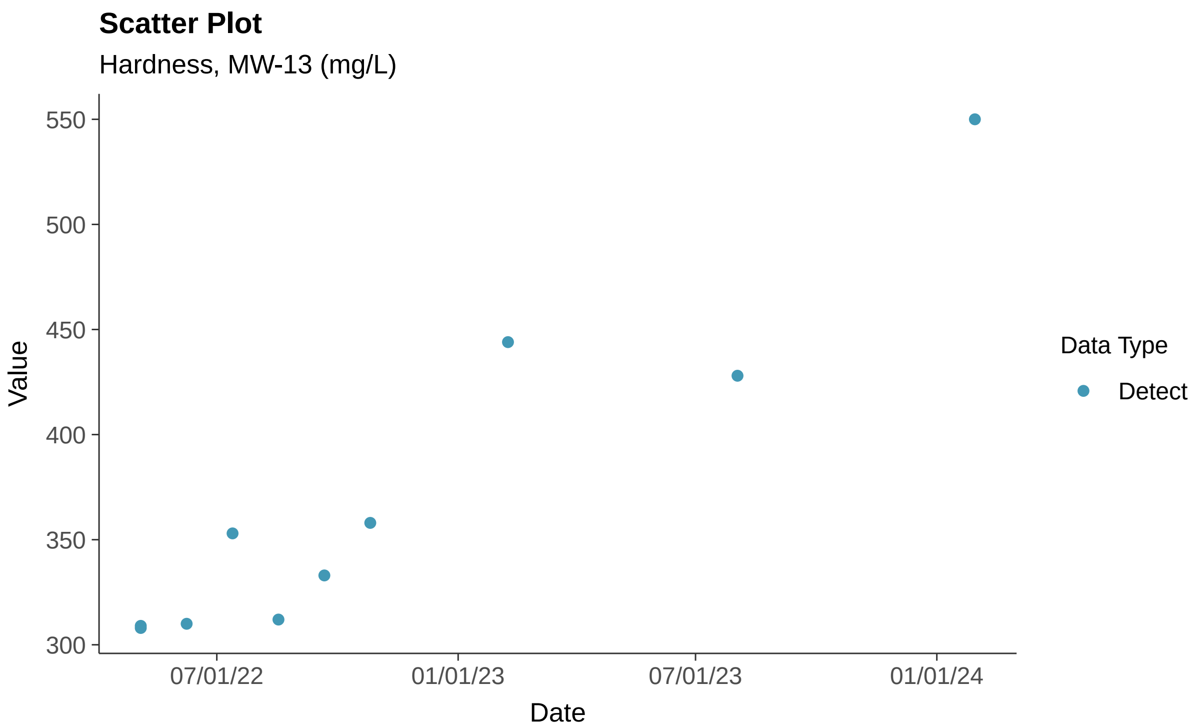
Boxplot by Season

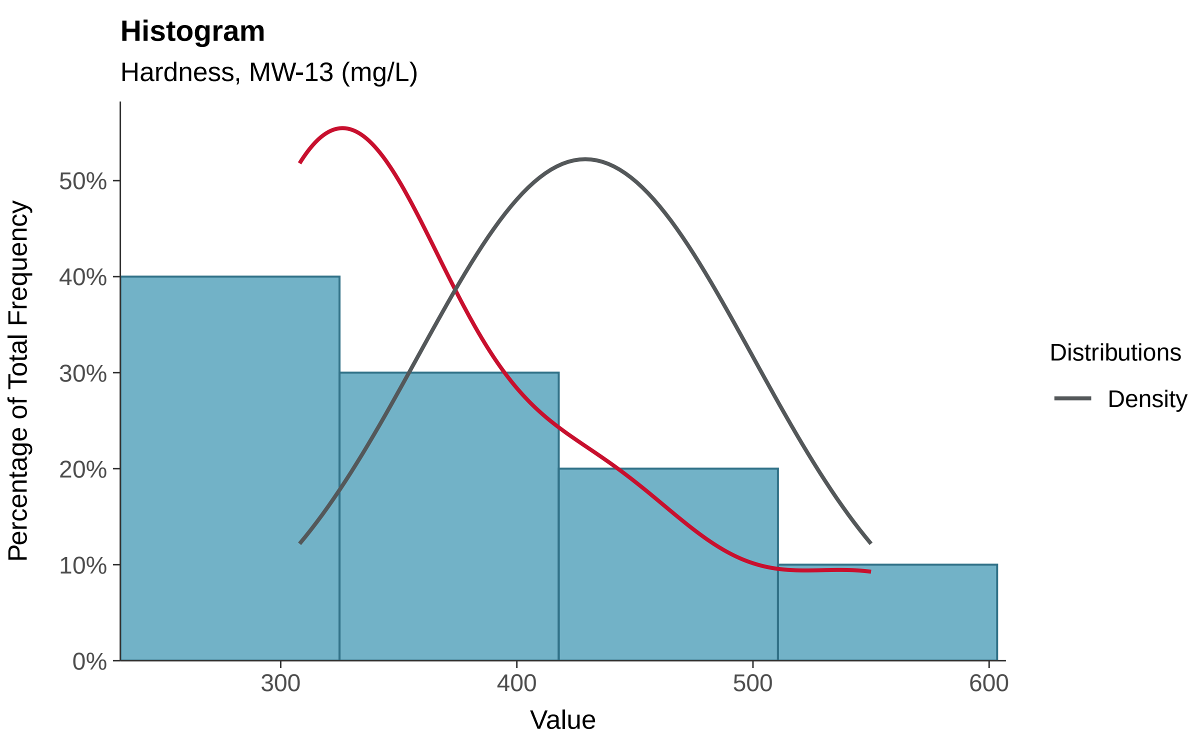
Carbonate, MW-13 (mg/L)



Other: Hardness, MW-13

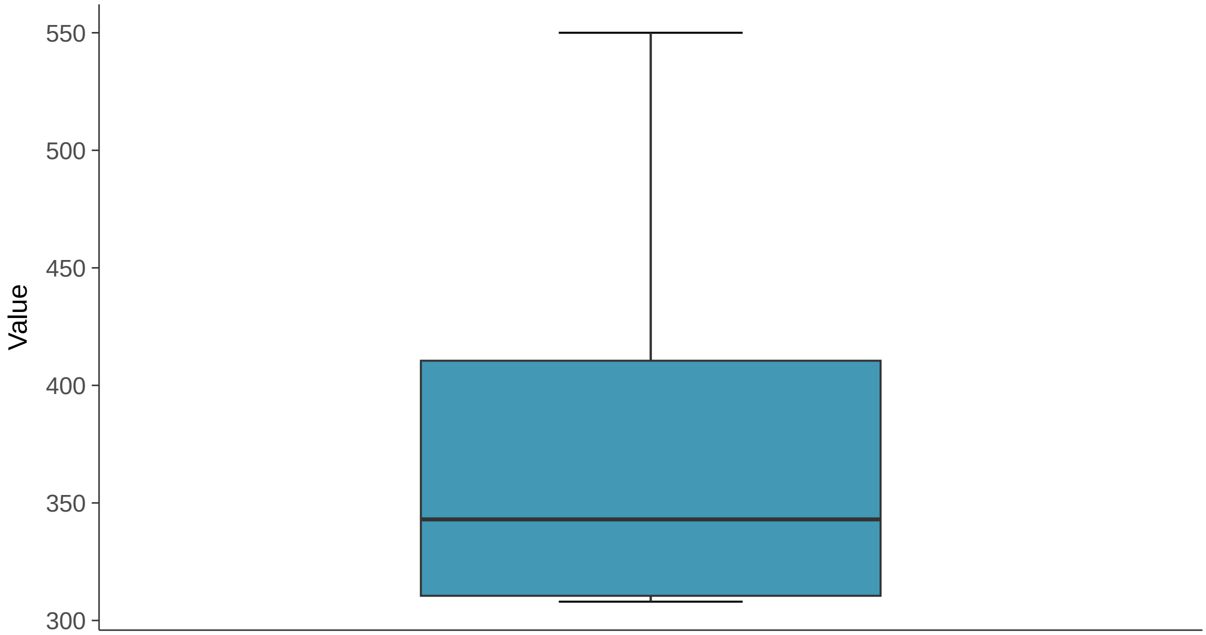
ID: 13_4_32





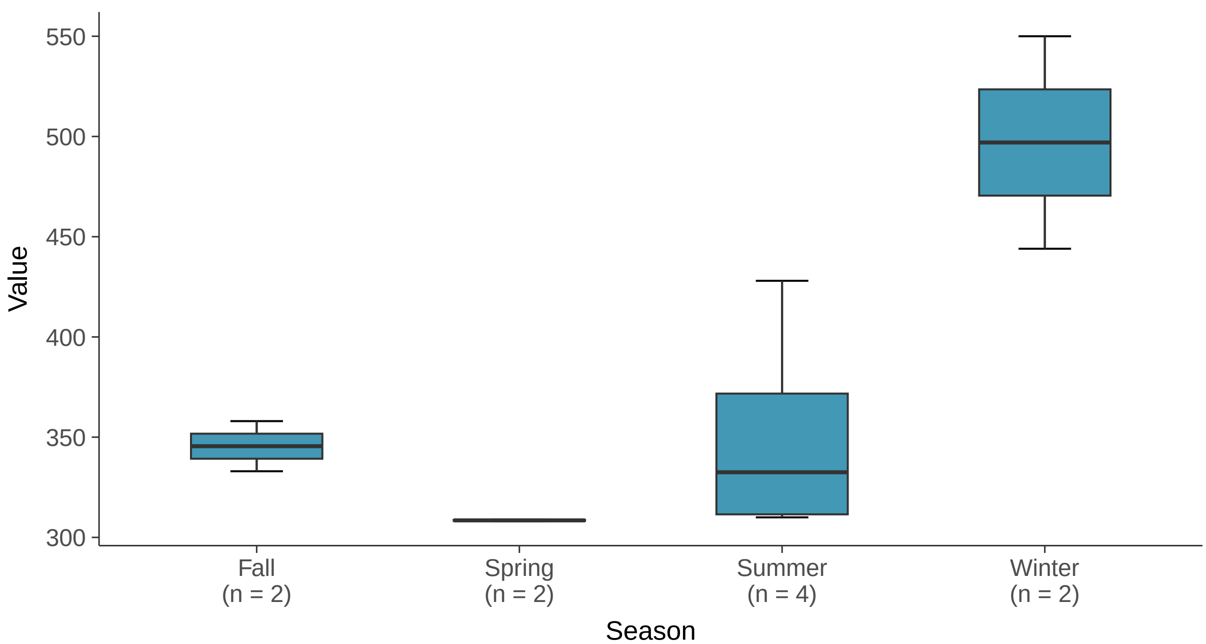
Boxplot

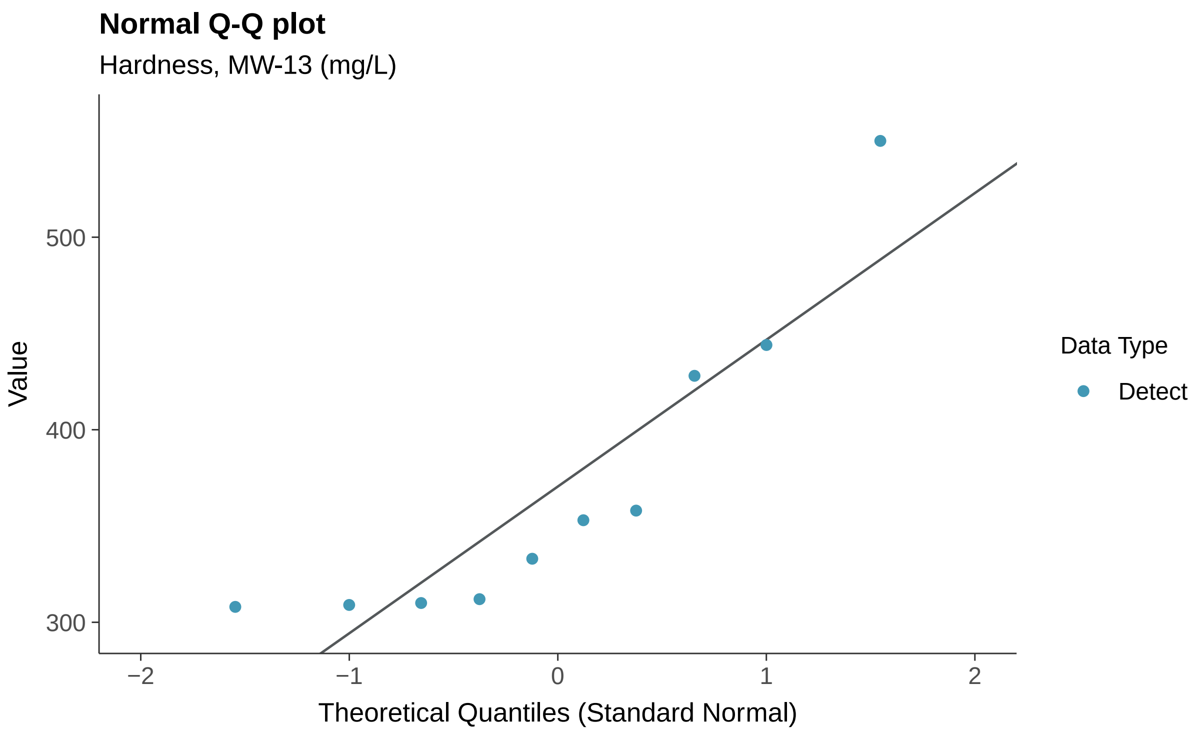
Hardness, MW-13 (mg/L)

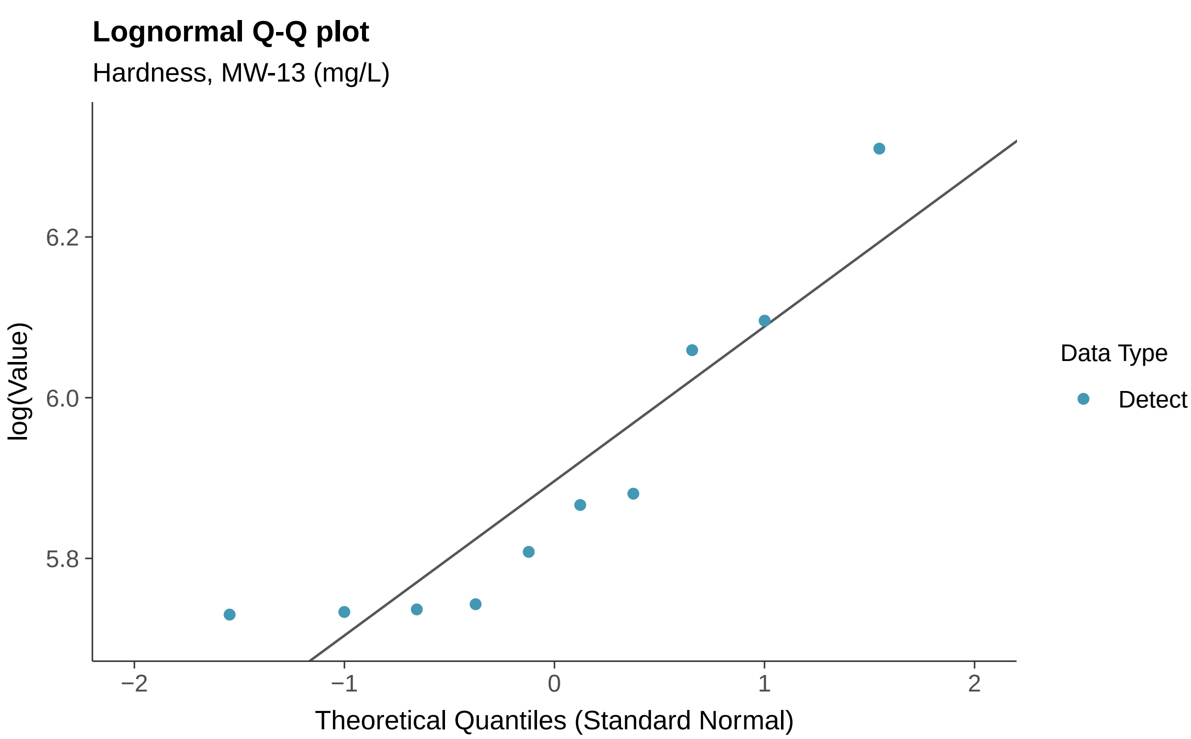


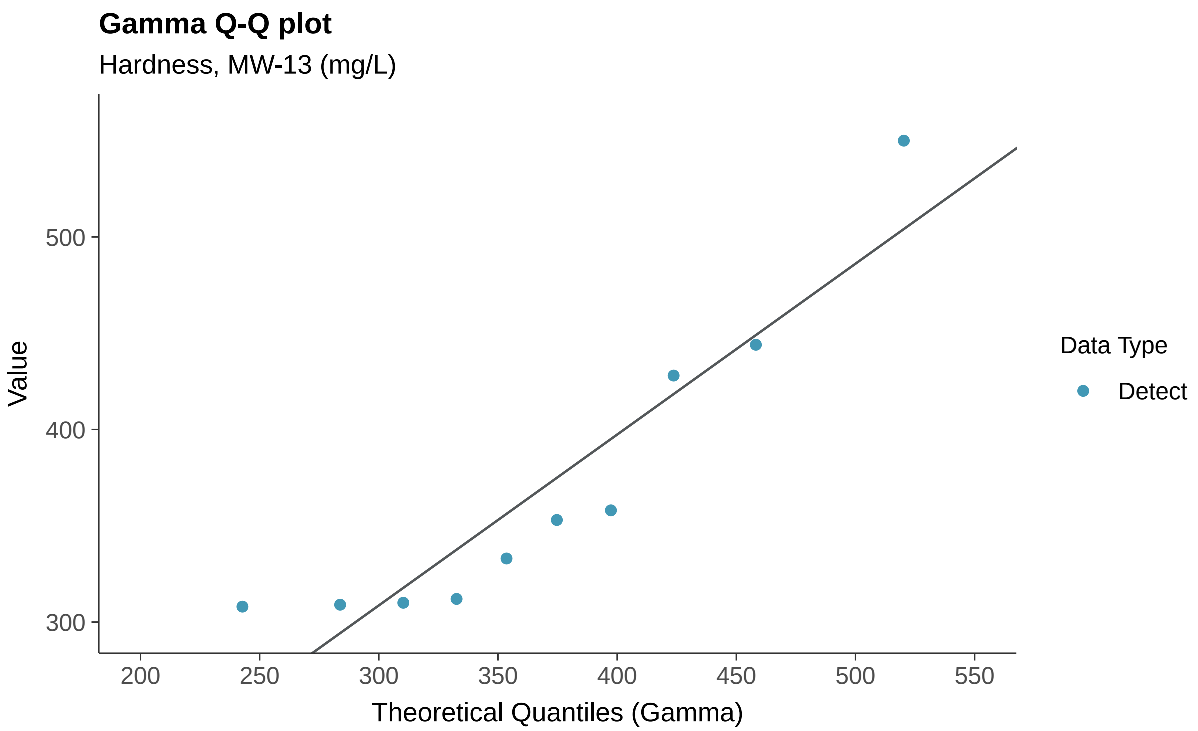
Boxplot by Season

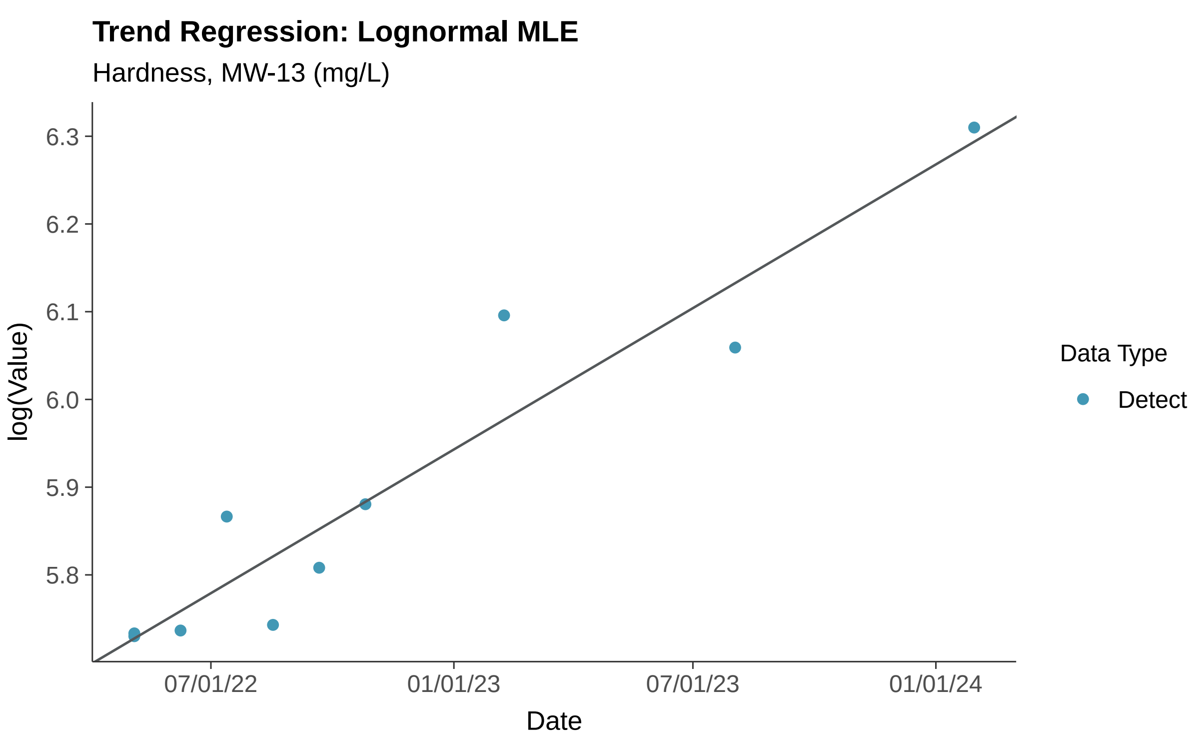
Hardness, MW-13 (mg/L)




Normal Q-Q plot
Hardness, MW-13 (mg/L)
Value
500
400
300
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

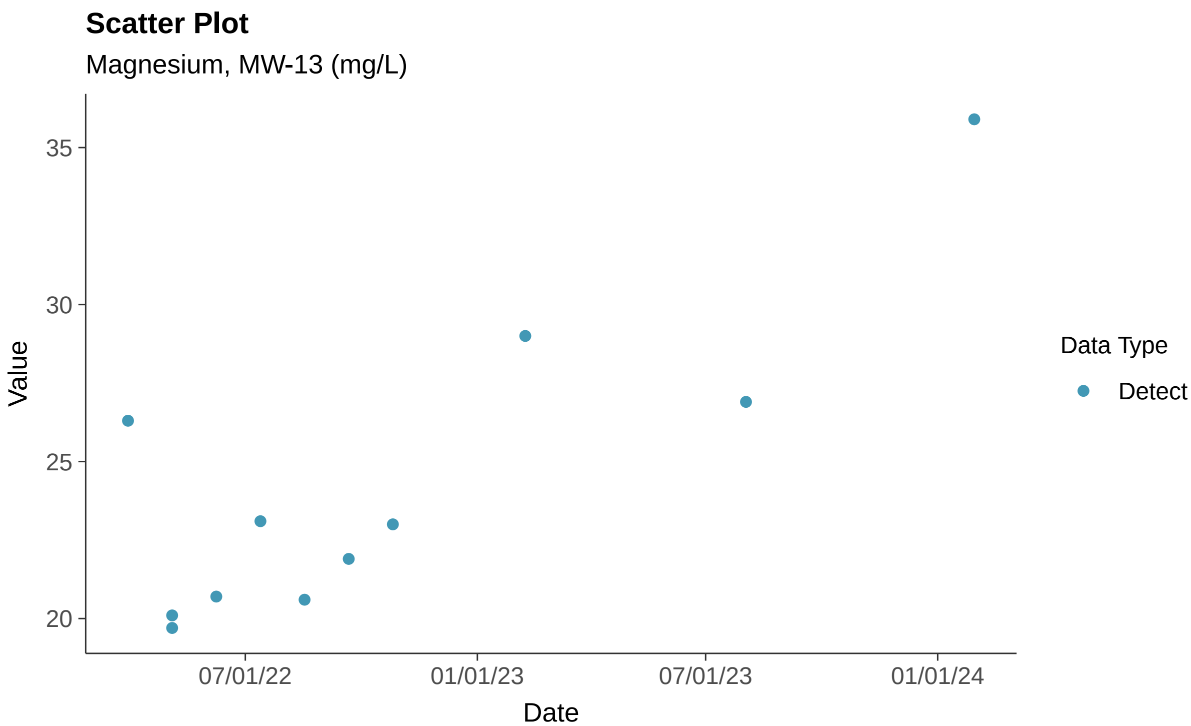

Lognormal Q-Q plot
Hardness, MW-13 (mg/L)
log(Value)
6.2
6.0
5.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

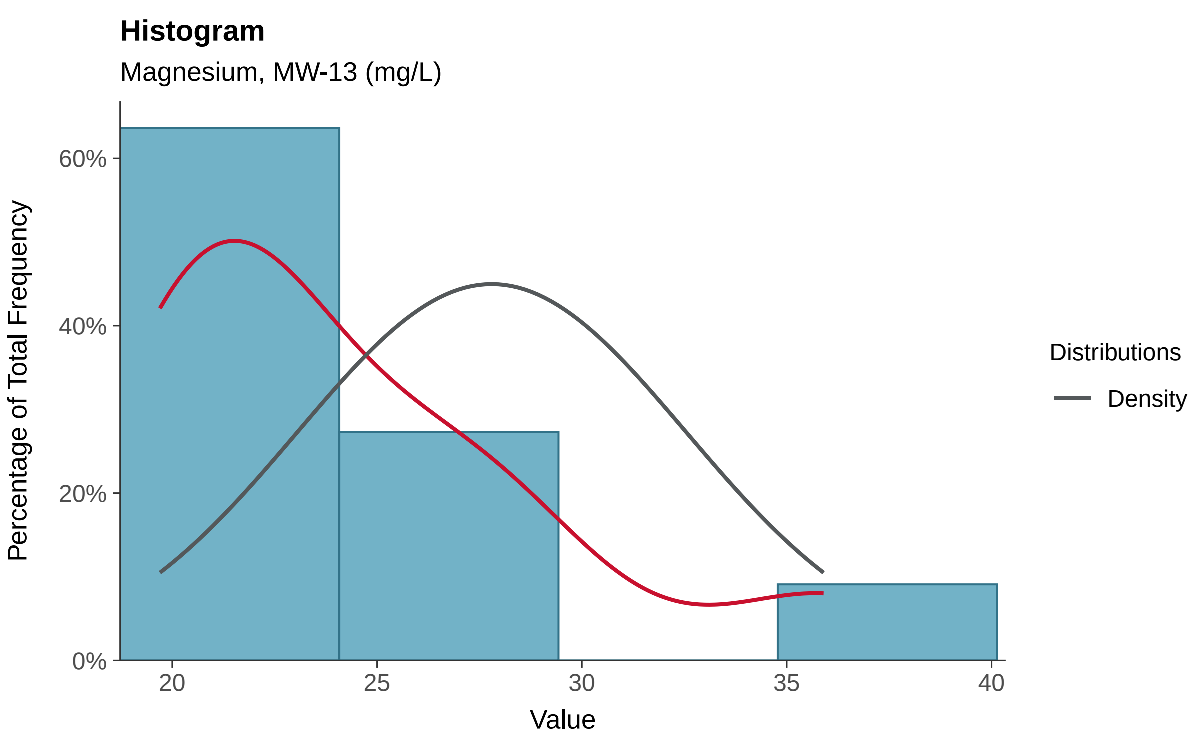

Gamma Q-Q plot
Hardness, MW-13 (mg/L)
Value
500
400
300
200
250
300
350
400
450
500
550
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Hardness, MW-13 (mg/L)
log(Value)
6.3
6.2
6.1
6.0
5.9
5.8
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Other: Magnesium, MW-13

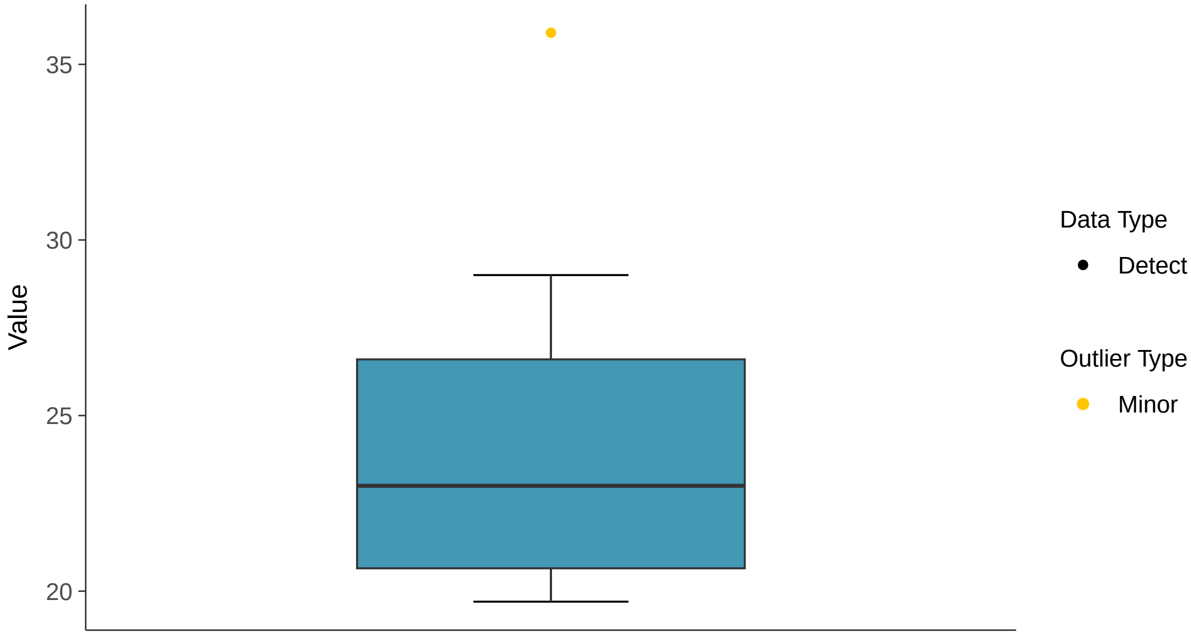
ID: 13_4_33





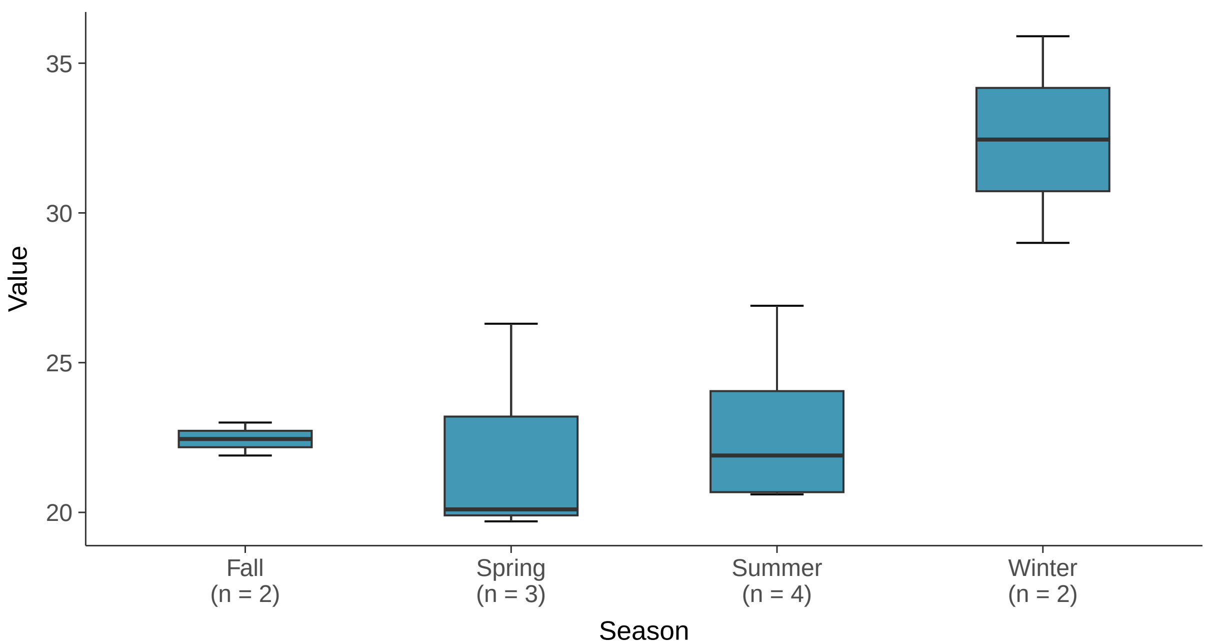
Boxplot

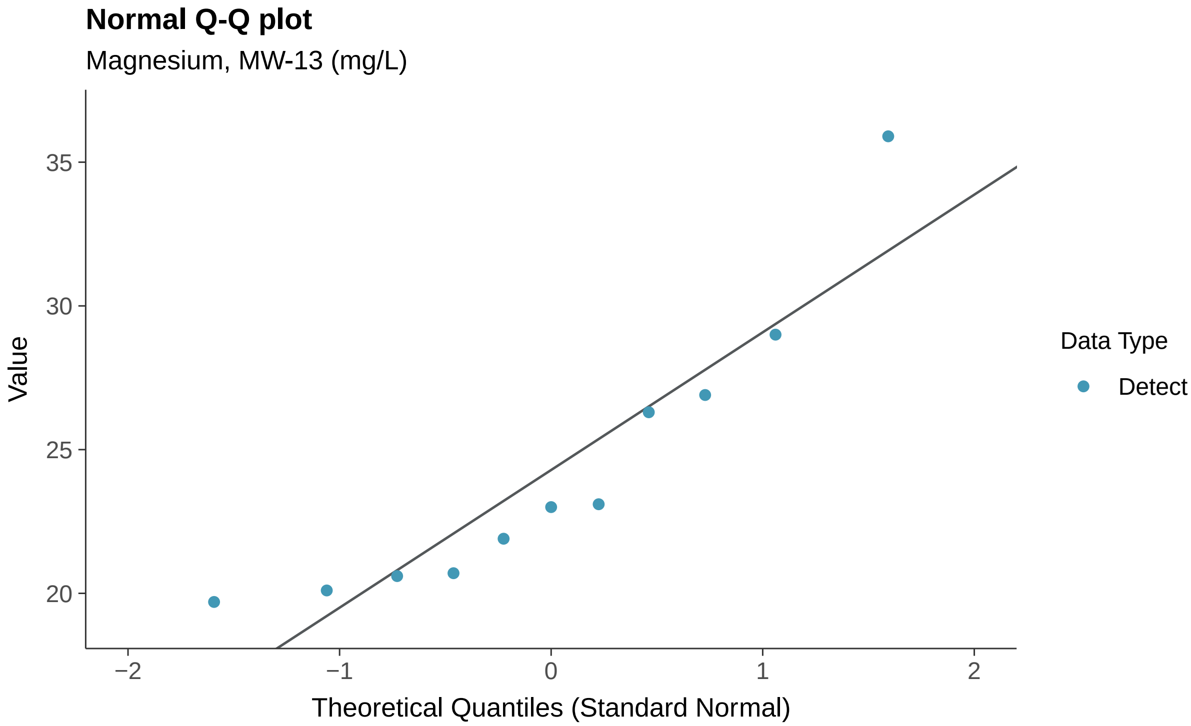
Magnesium, MW-13 (mg/L)

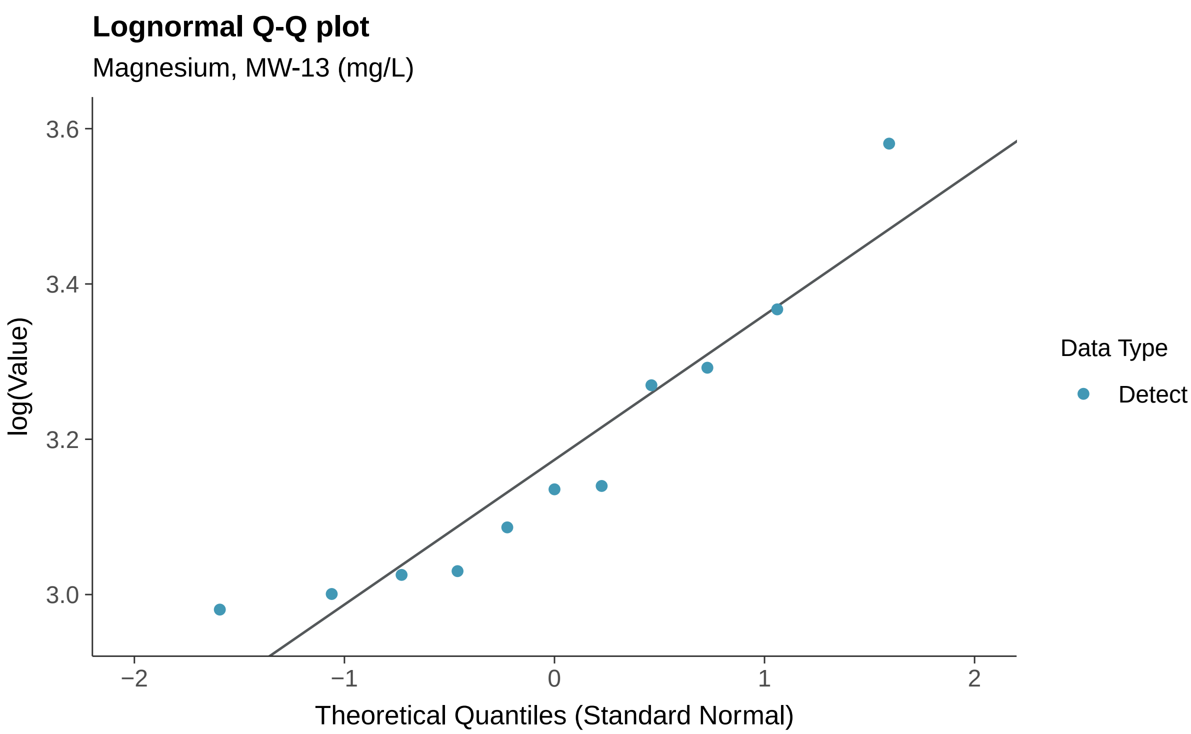


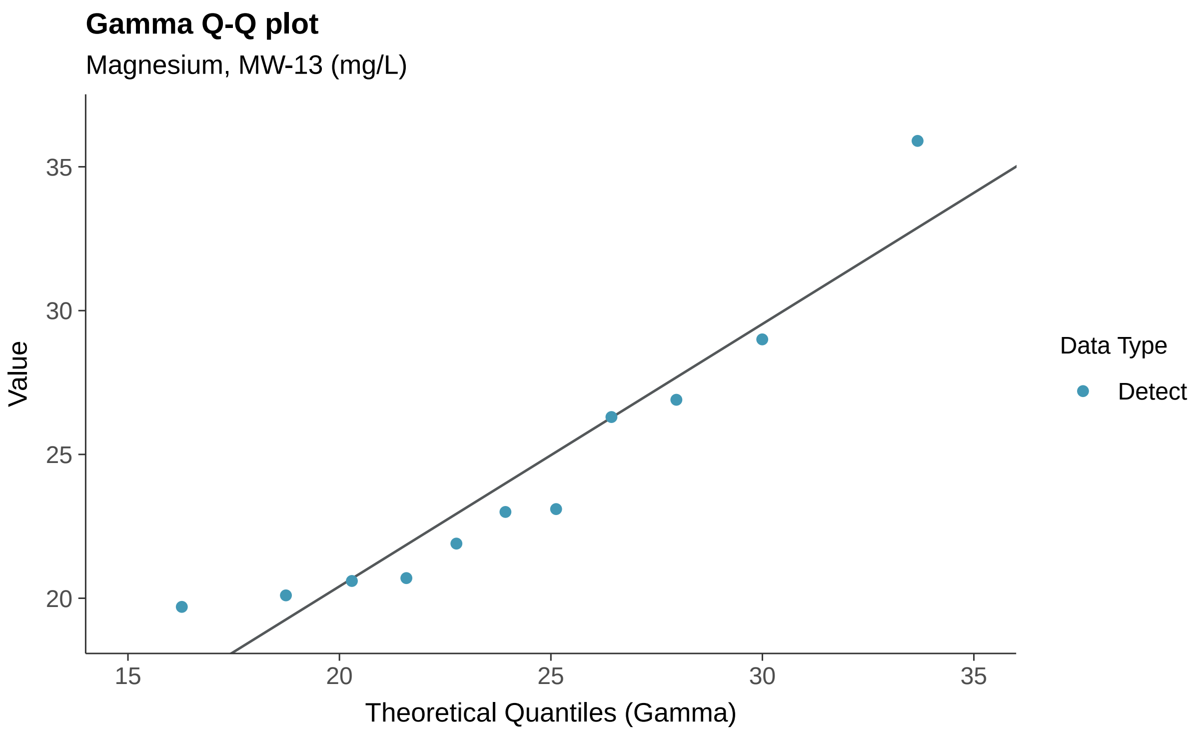
Boxplot by Season

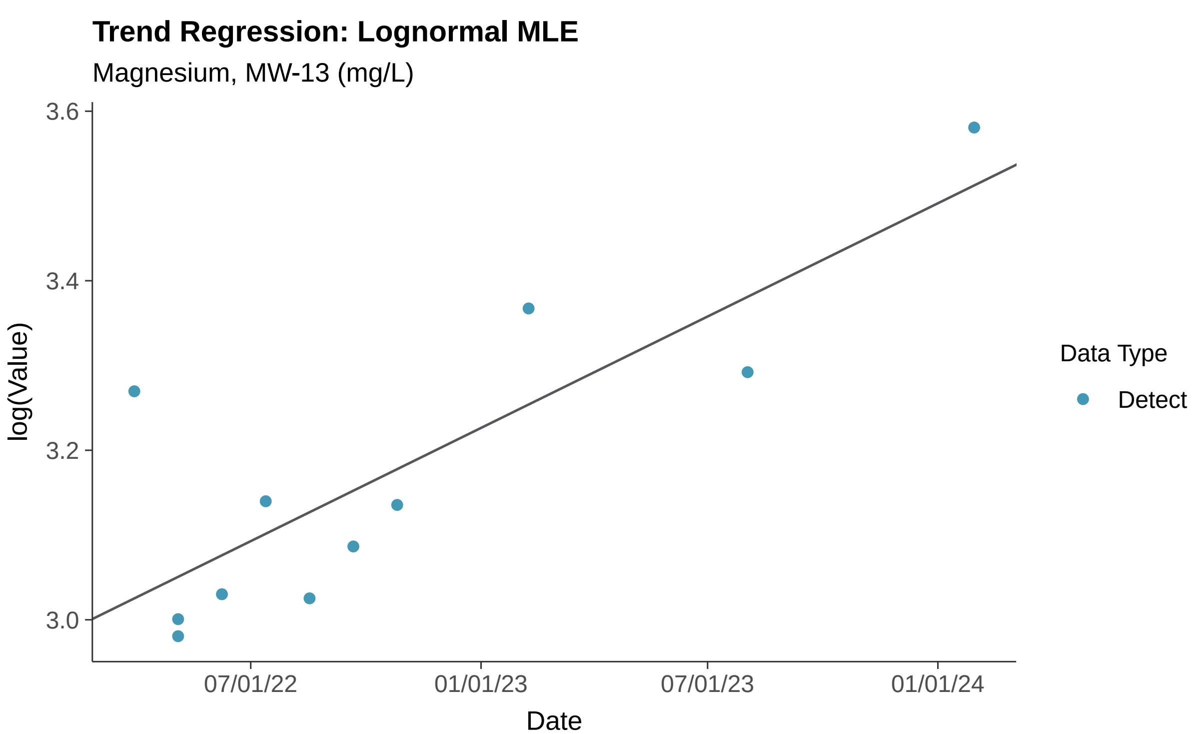
Magnesium, MW-13 (mg/L)




Normal Q-Q plot
Magnesium, MW-13 (mg/L)
Value
35
30
25
20
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

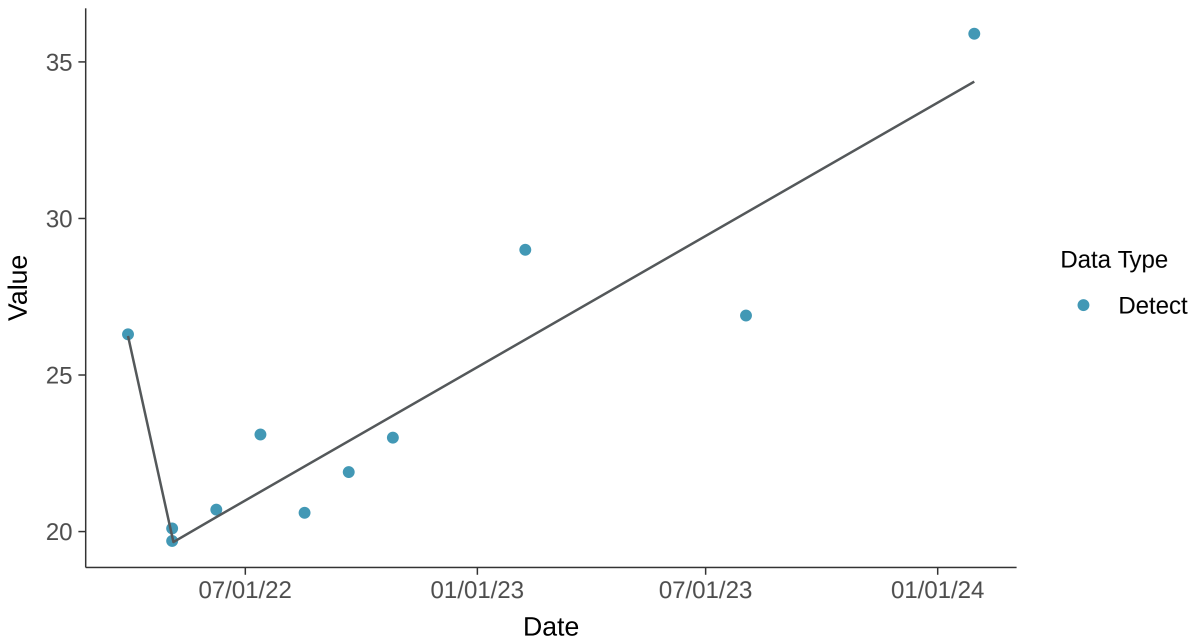

Lognormal Q-Q plot
Magnesium, MW-13 (mg/L)
log(Value)
3.6
3.4
3.2
3.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Magnesium, MW-13 (mg/L)
Value
35
30
25
20
15
20
25
30
35
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Magnesium, MW-13 (mg/L)
log(Value)
3.6
3.4
3.2
3.0
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

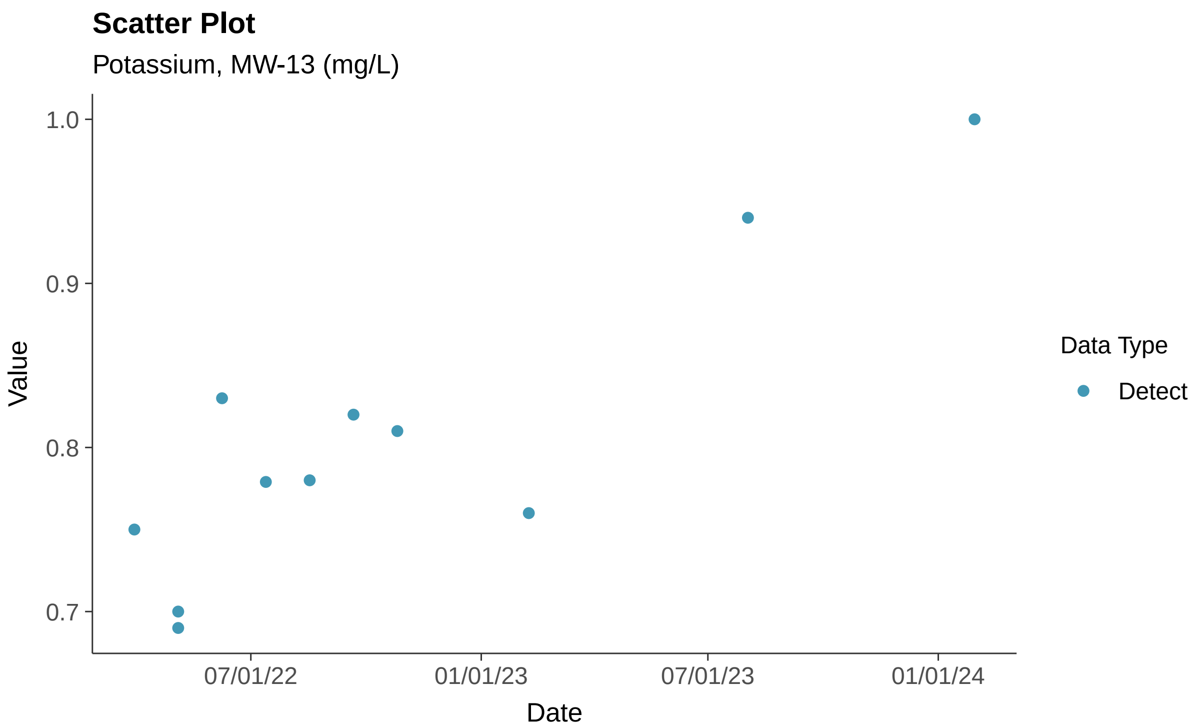
Trend Regression: Piecewise Linear-Linear

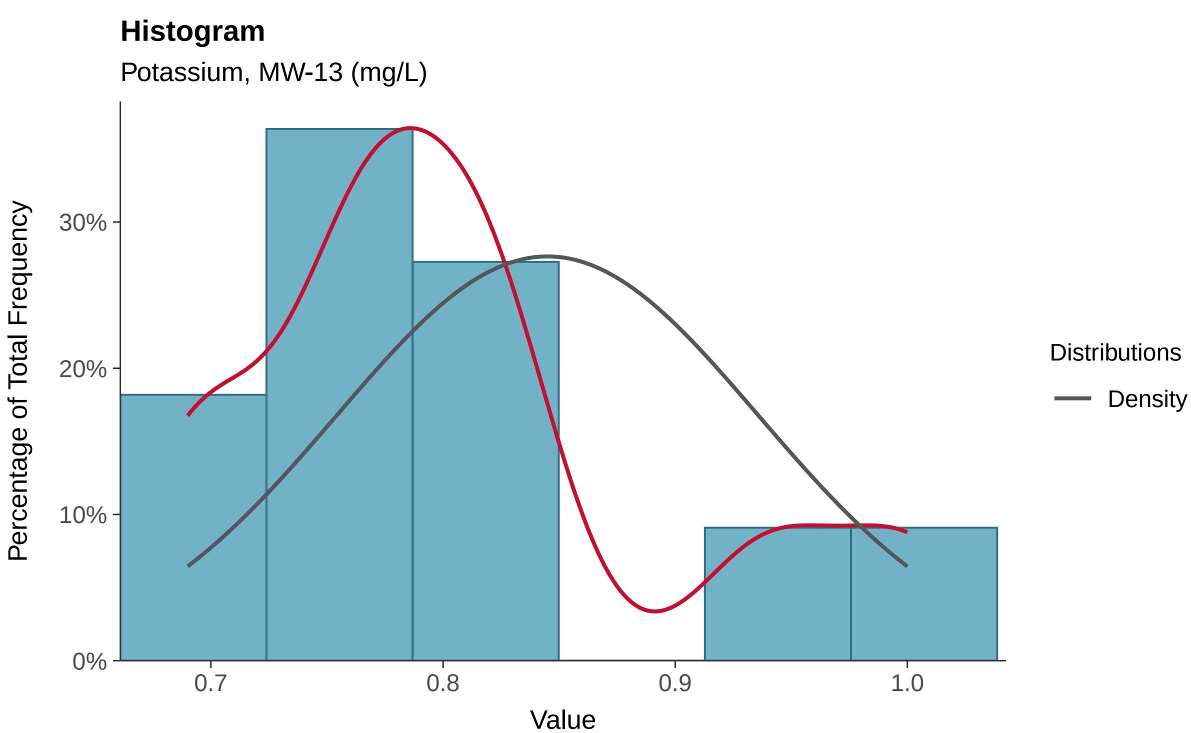
Magnesium, MW-13 (mg/L)



Other: Potassium, MW-13

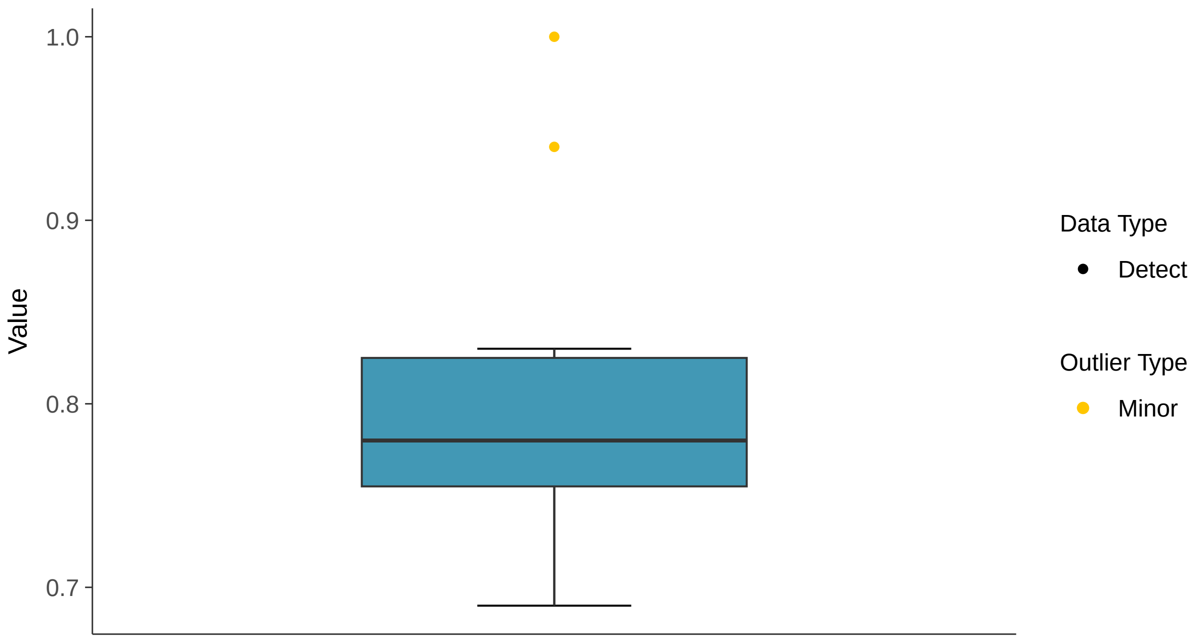
ID: 13_4_34





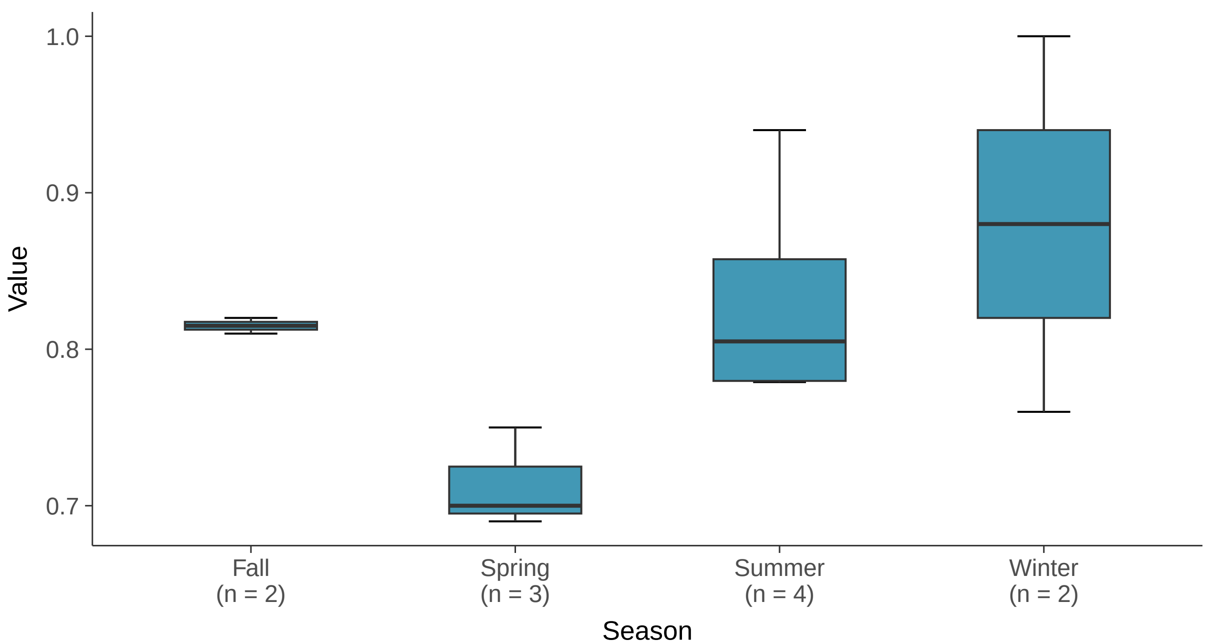
Boxplot

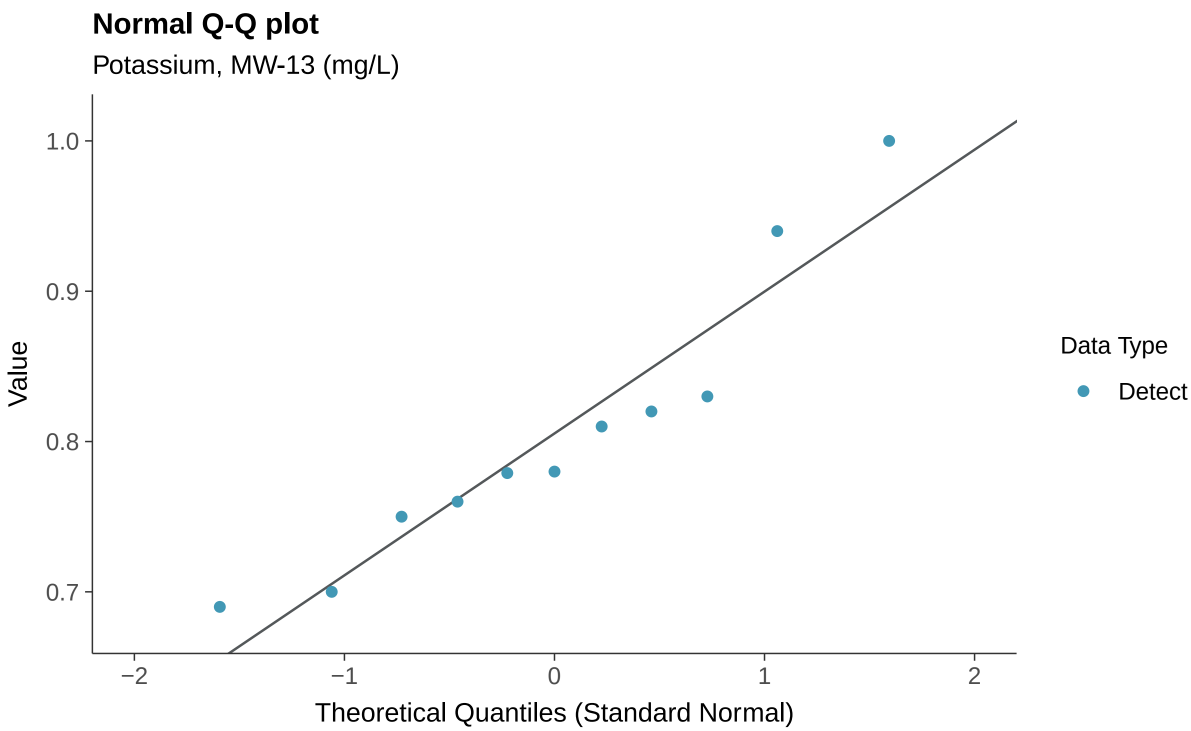
Potassium, MW-13 (mg/L)

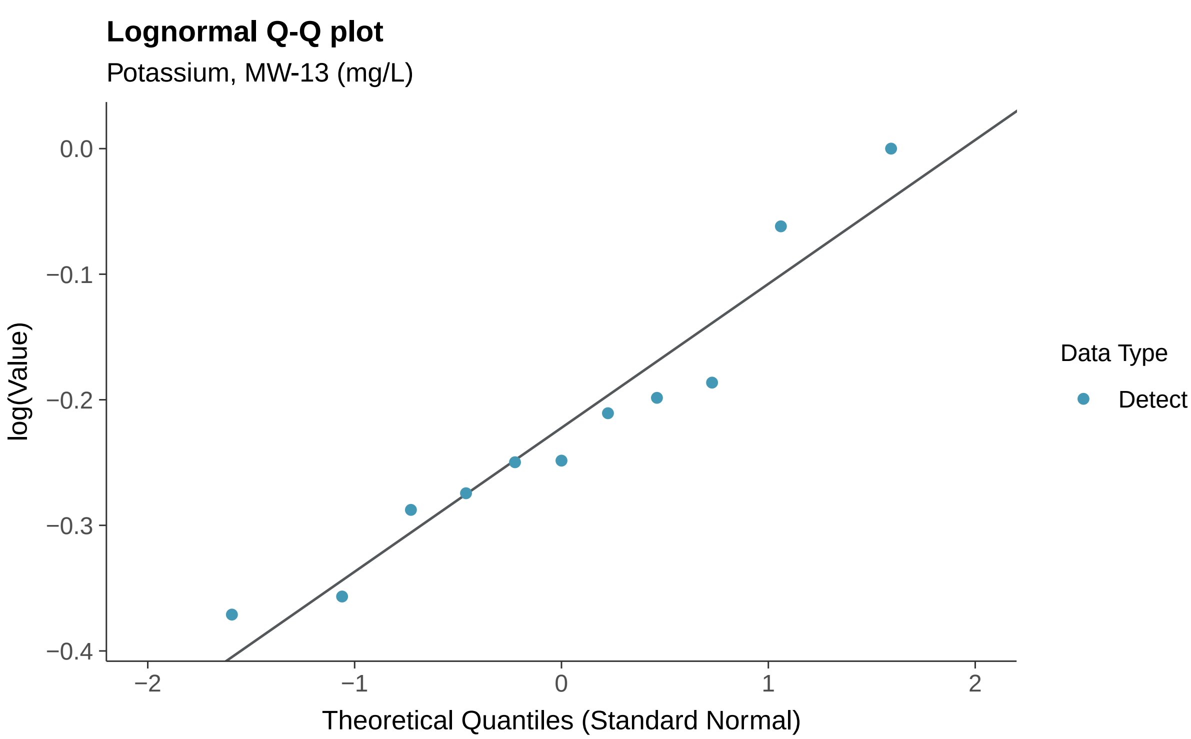


Boxplot by Season

Potassium, MW-13 (mg/L)

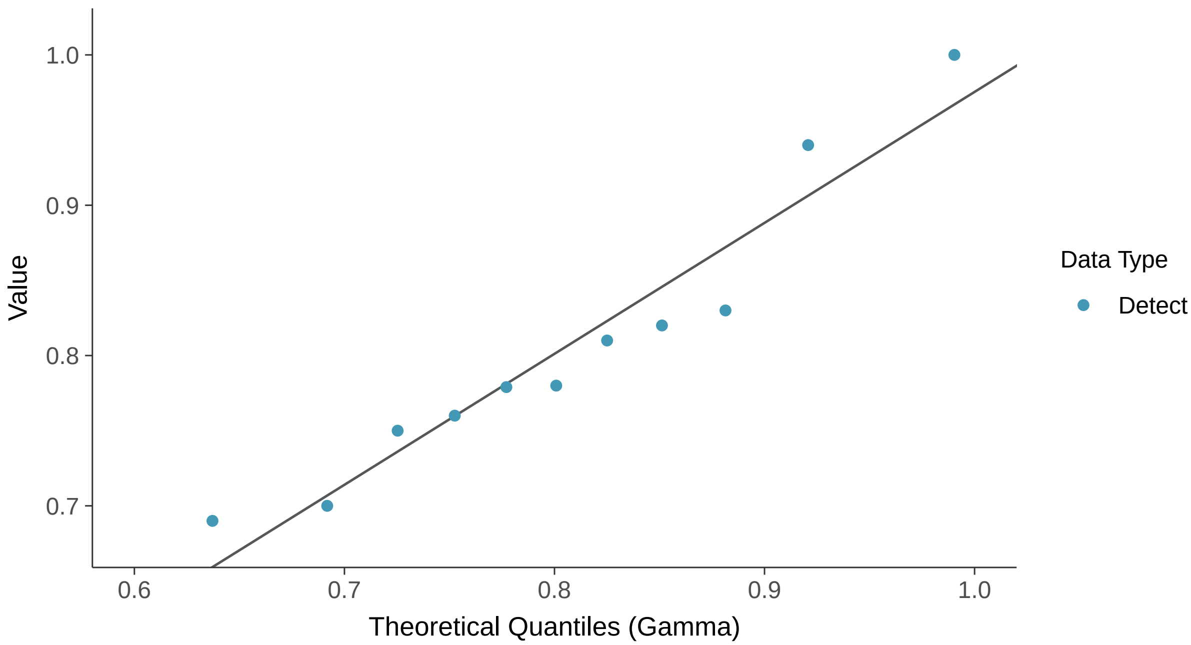



Normal Q-Q plot
Potassium, MW-13 (mg/L)
Value
1.0
0.9
0.8
0.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Potassium, MW-13 (mg/L)
log(Value)
0.0
−0.1
−0.2
−0.3
−0.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

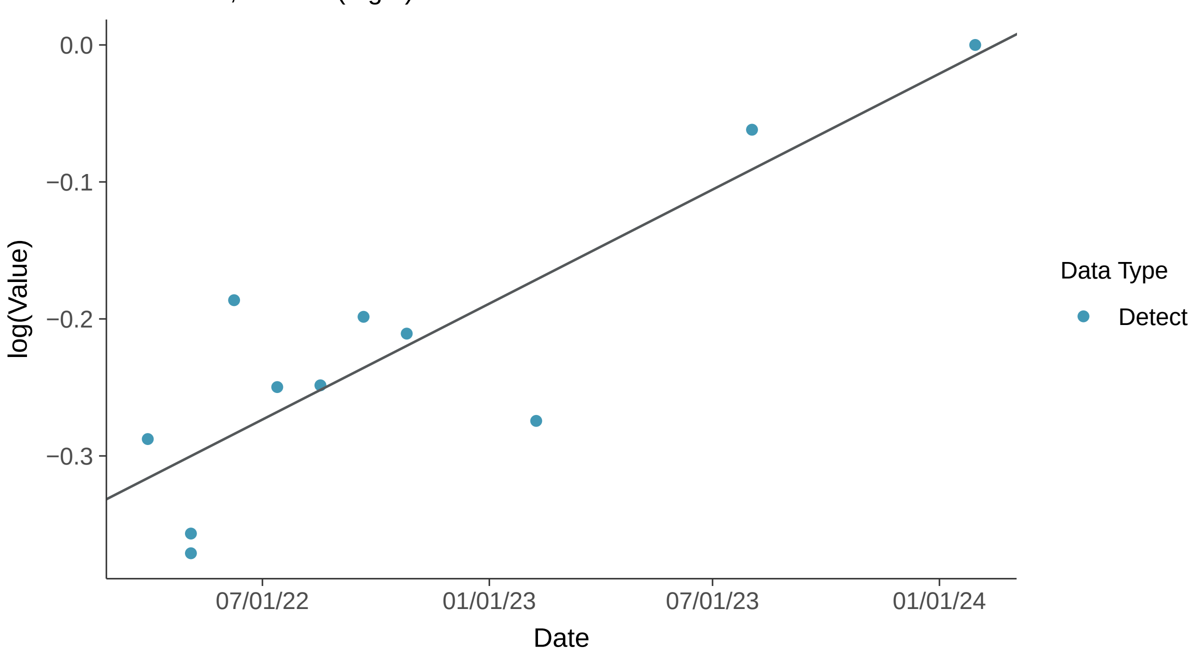
Gamma Q-Q plot

Potassium, MW-13 (mg/L)



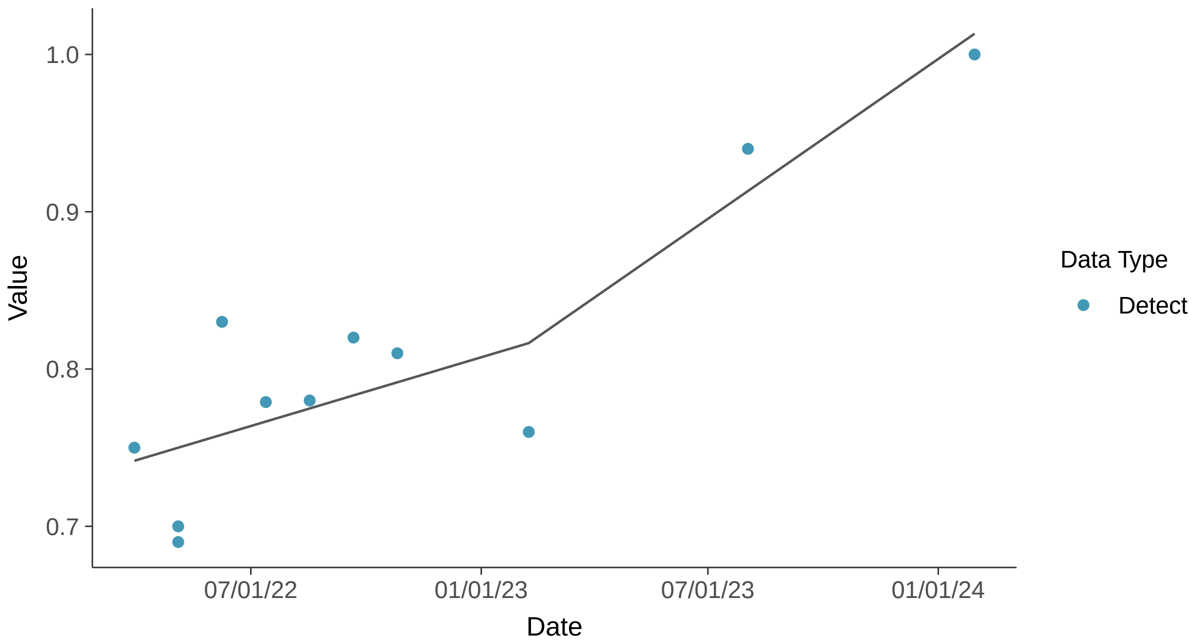
Trend Regression: Lognormal MLE

Potassium, MW-13 (mg/L)



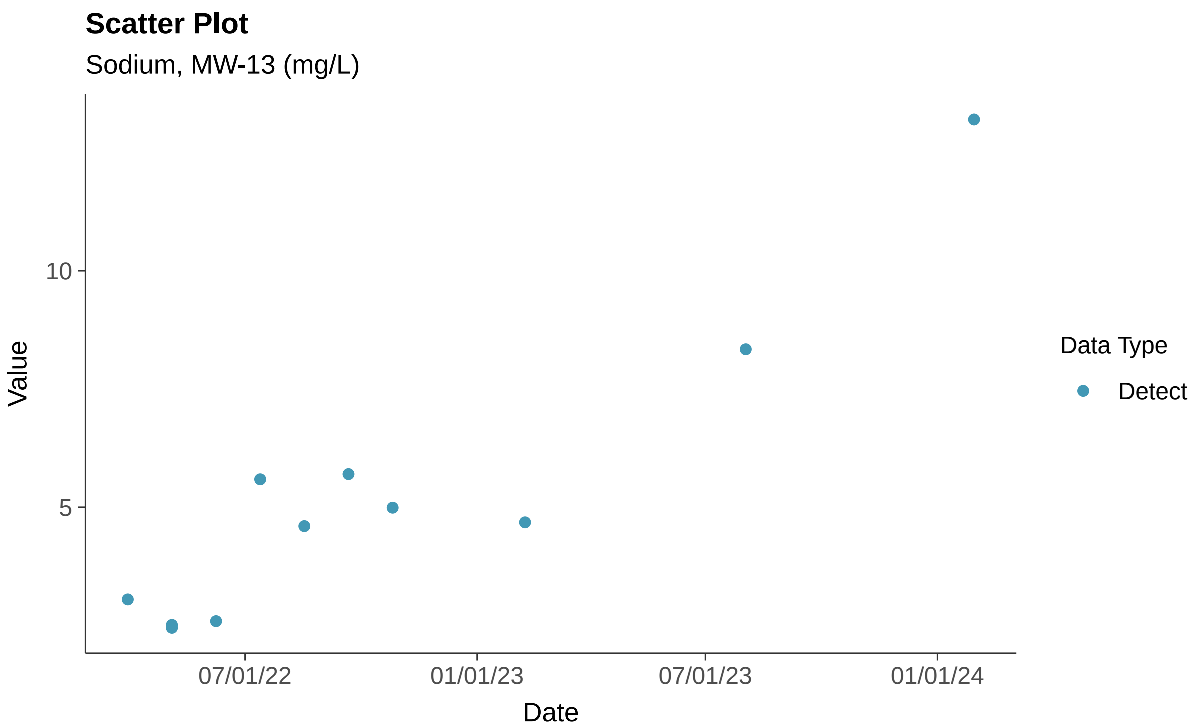
Trend Regression: Piecewise Linear-Linear

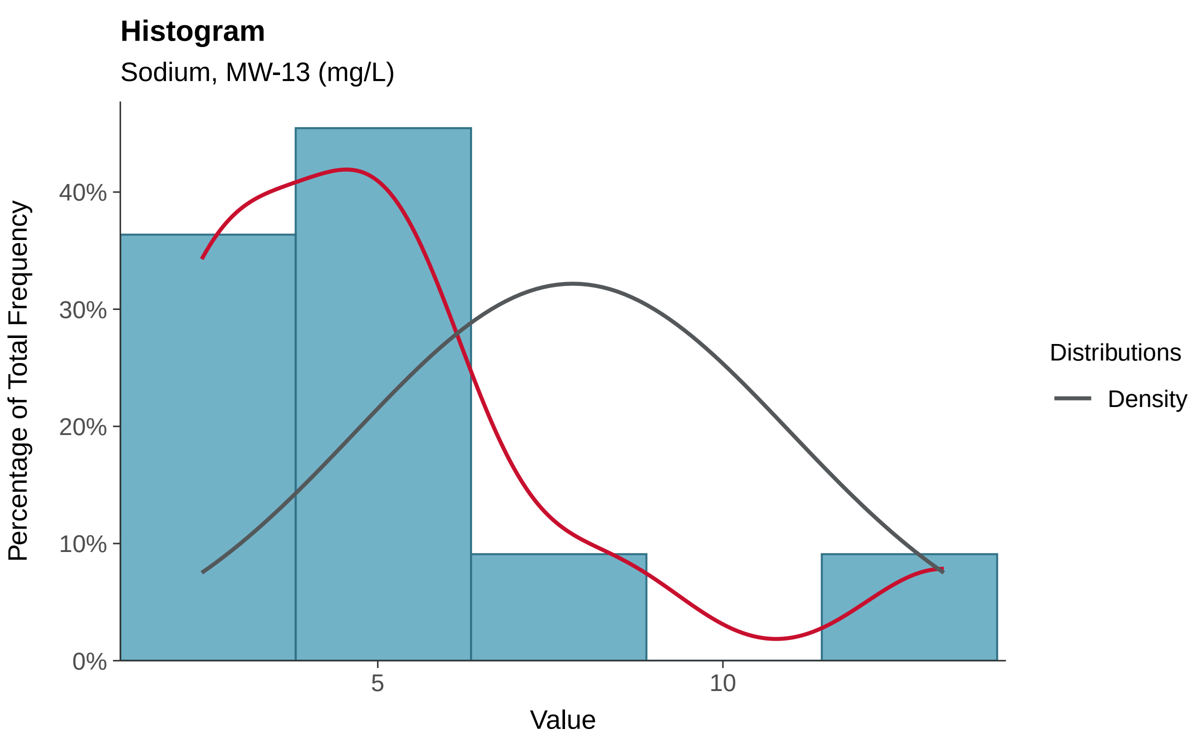
Potassium, MW-13 (mg/L)



Other: Sodium, MW-13

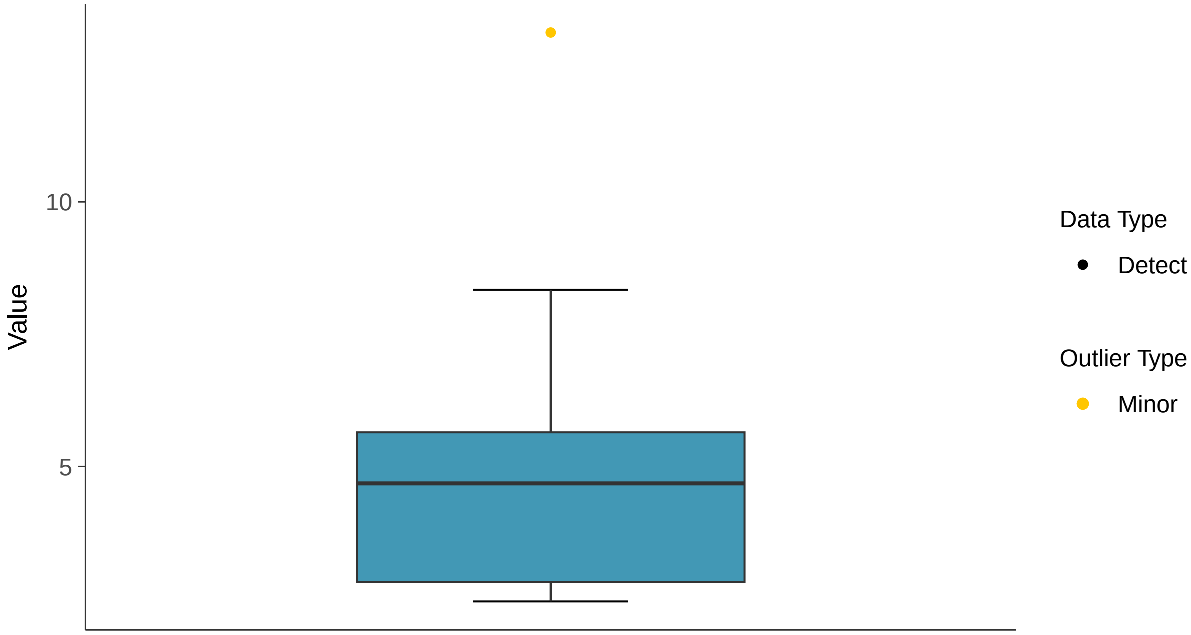
ID: 13_4_35





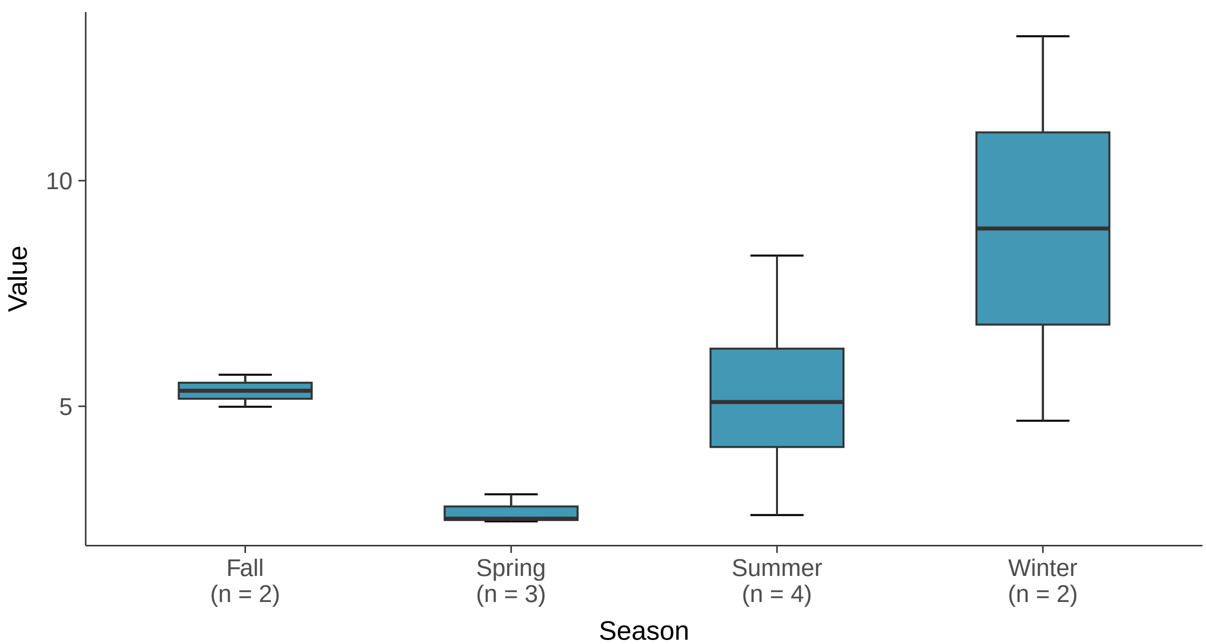
Boxplot

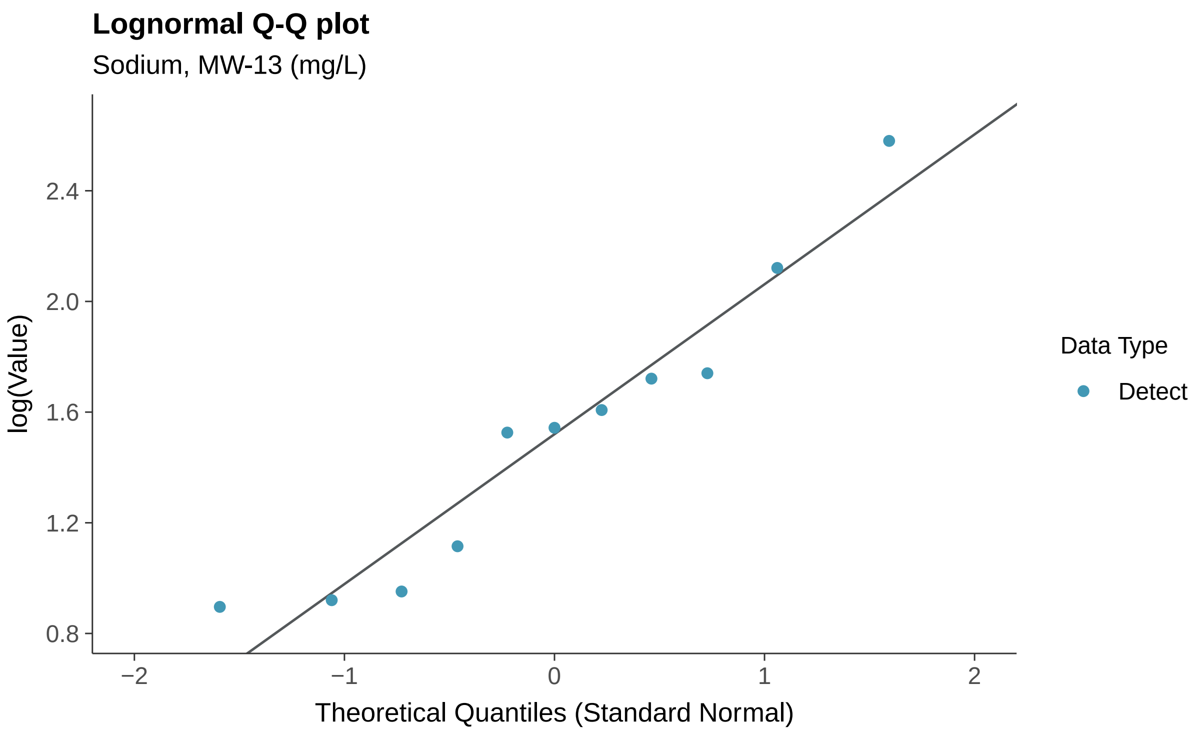
Sodium, MW-13 (mg/L)

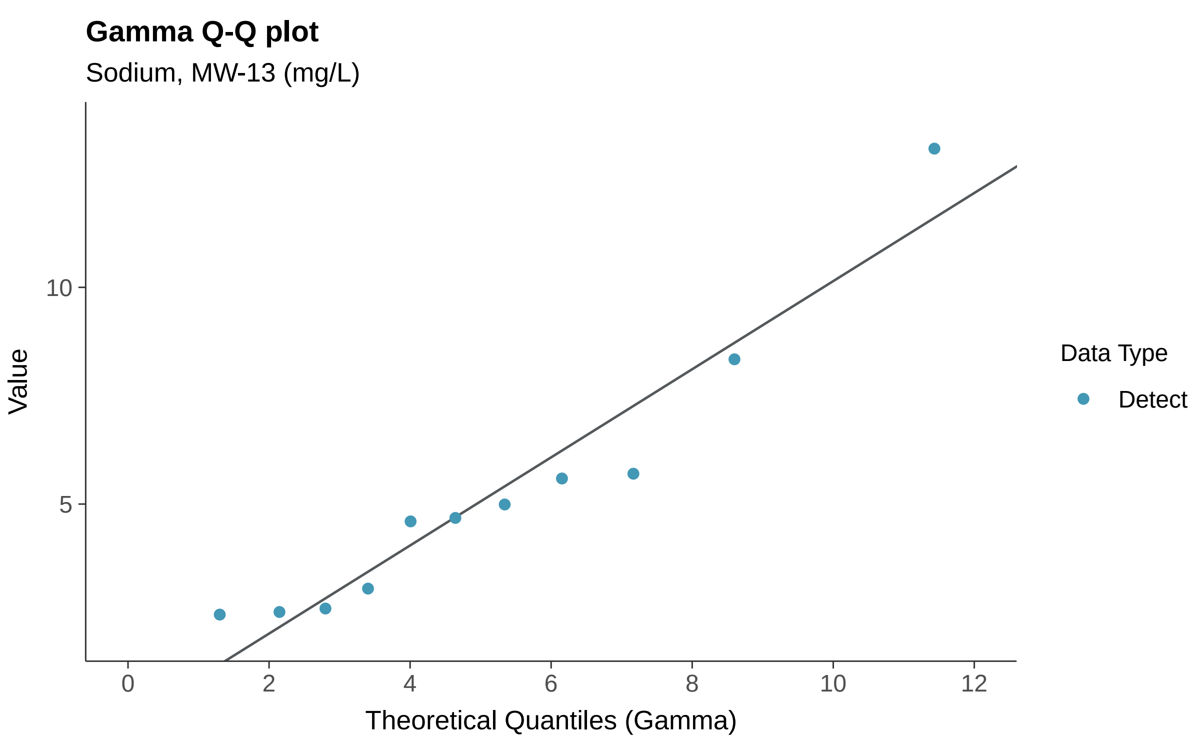


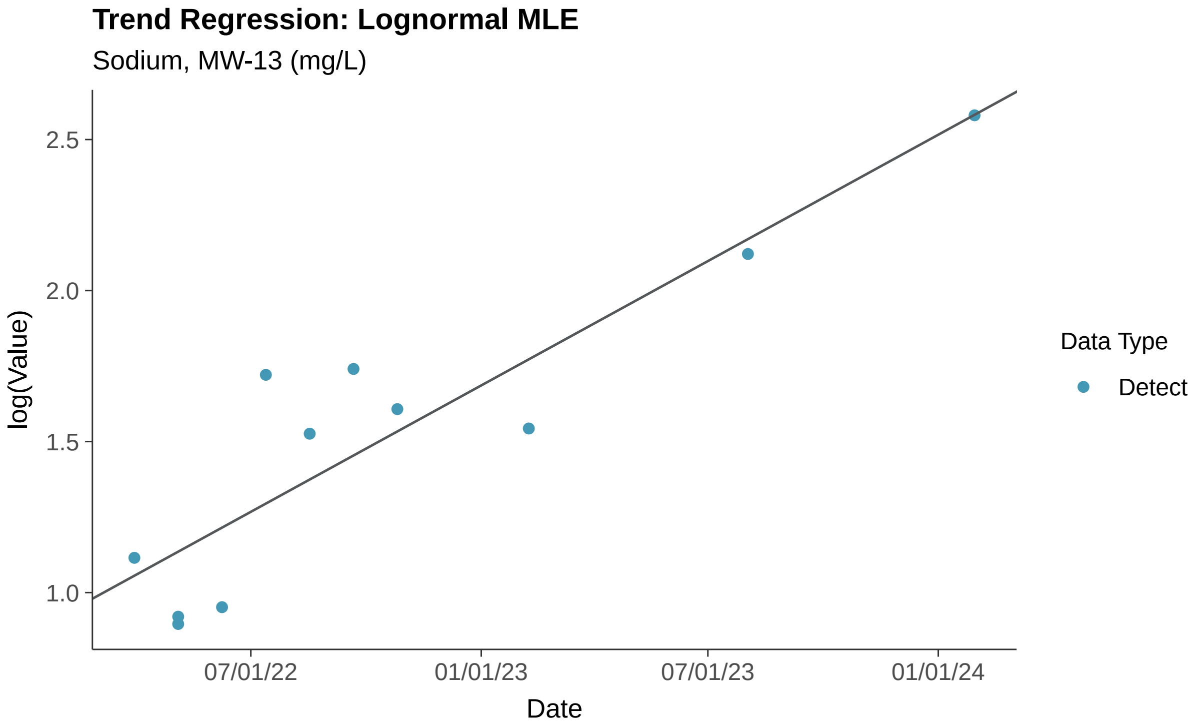
Boxplot by Season

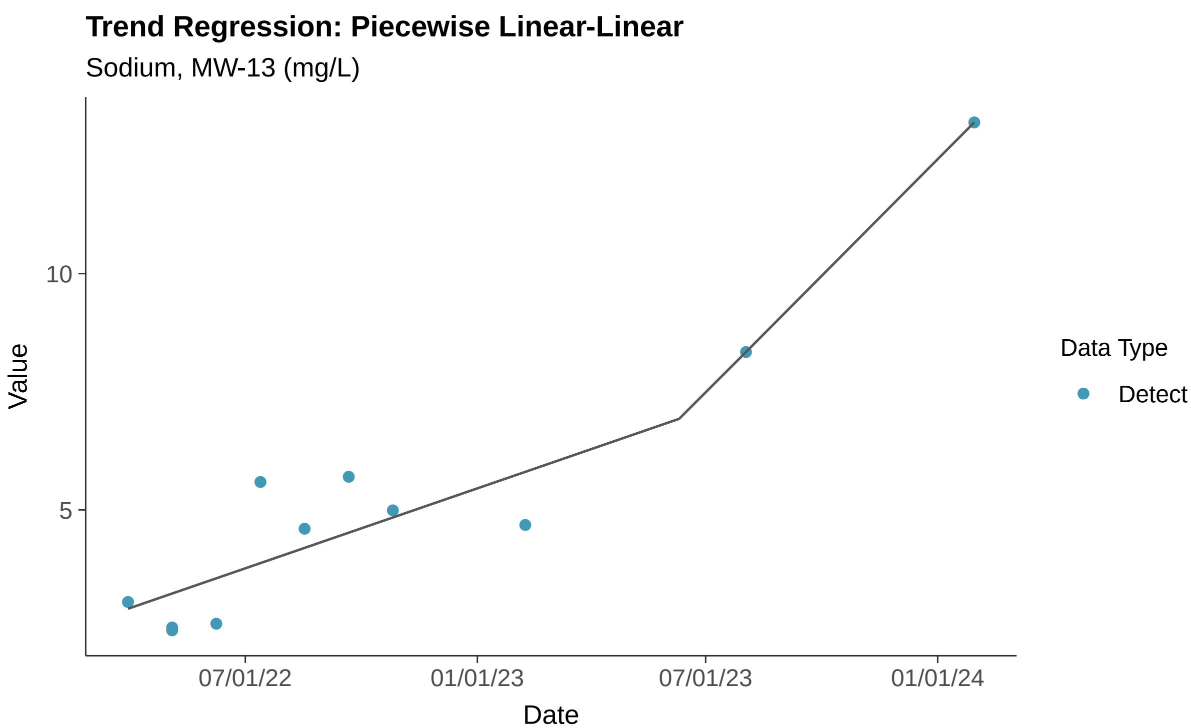
Sodium, MW-13 (mg/L)




Lognormal Q-Q plot
Sodium, MW-13 (mg/L)
log(Value)
2.4
2.0
1.6
1.2
0.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Sodium, MW-13 (mg/L)
Value
10
5
0
2
4
6
8
10
12
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Sodium, MW-13 (mg/L)
log(Value)
2.5
2.0
1.5
1.0
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

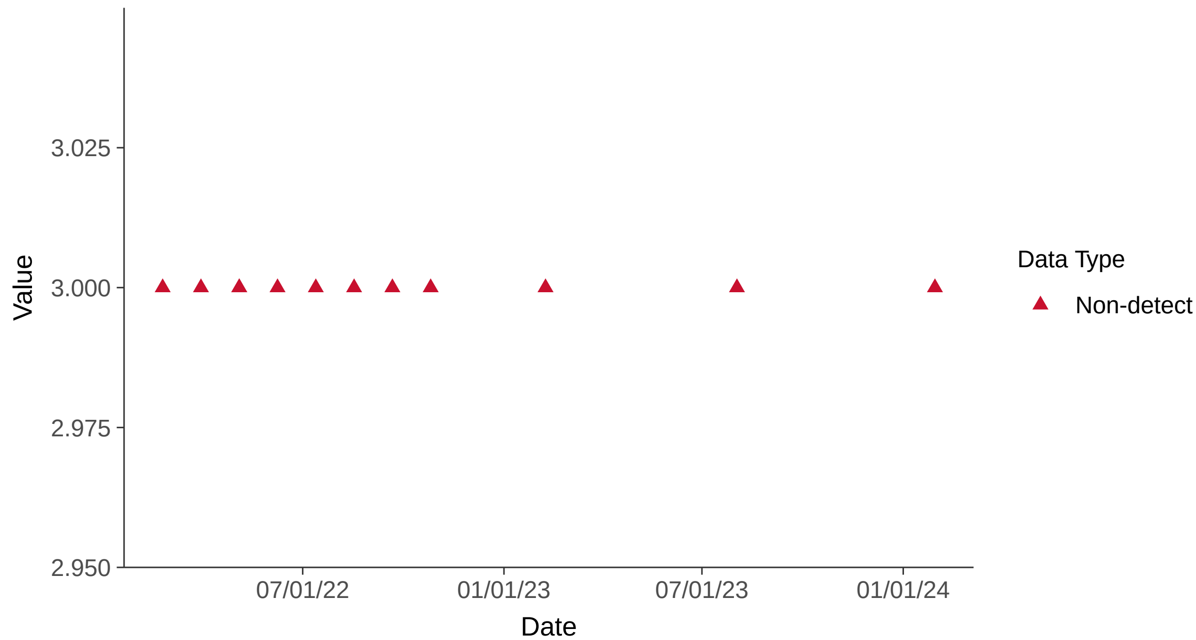

Trend Regression: Piecewise Linear-Linear
Sodium, MW-13 (mg/L)
Value
10
5
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Other: Total Suspended Solids, MW-13

ID: 13_4_36

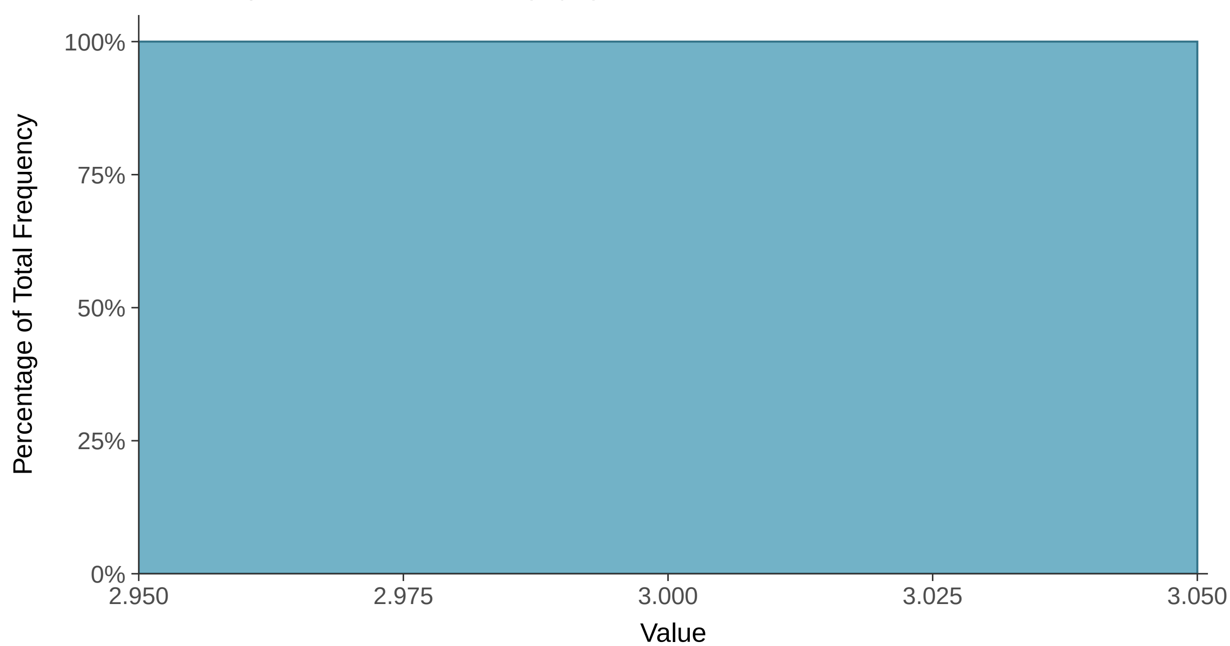
Scatter Plot

Total Suspended Solids, MW-13 (mg/L)



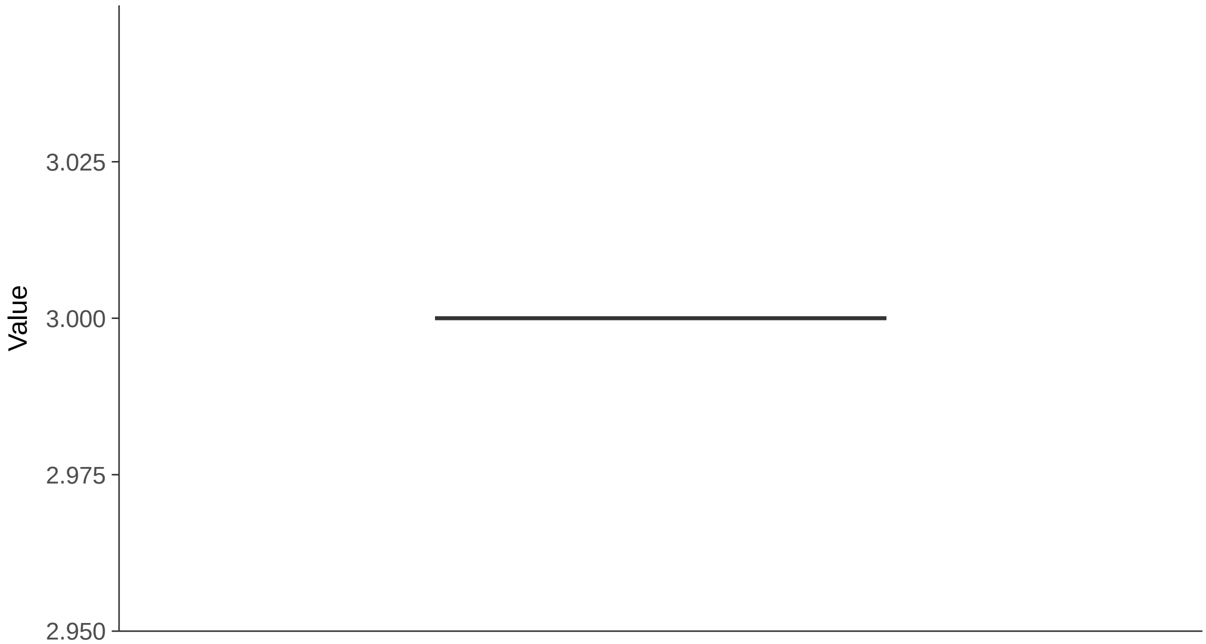
Histogram

Total Suspended Solids, MW-13 (mg/L)



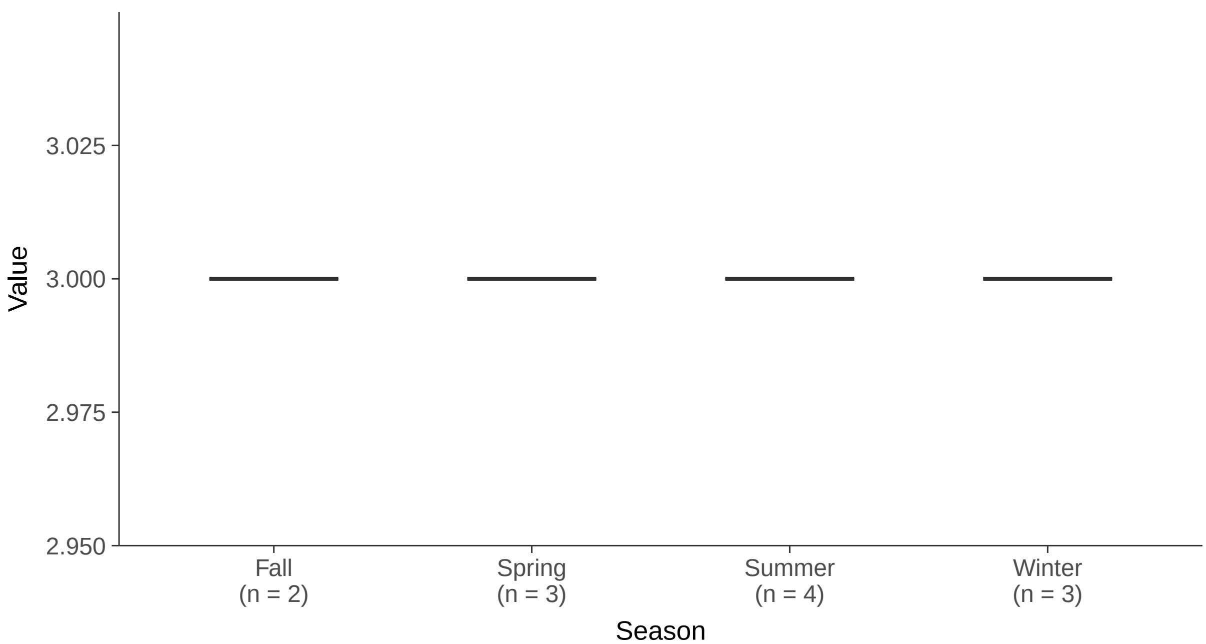
Boxplot

Total Suspended Solids, MW-13 (mg/L)



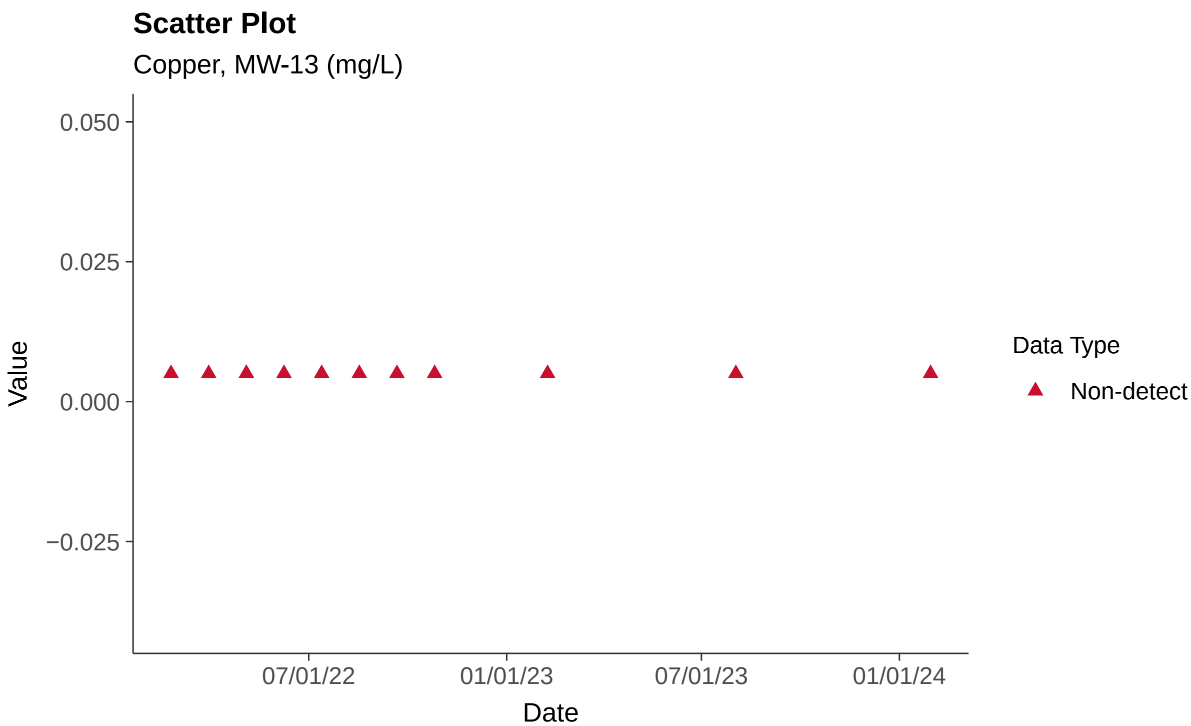
Boxplot by Season

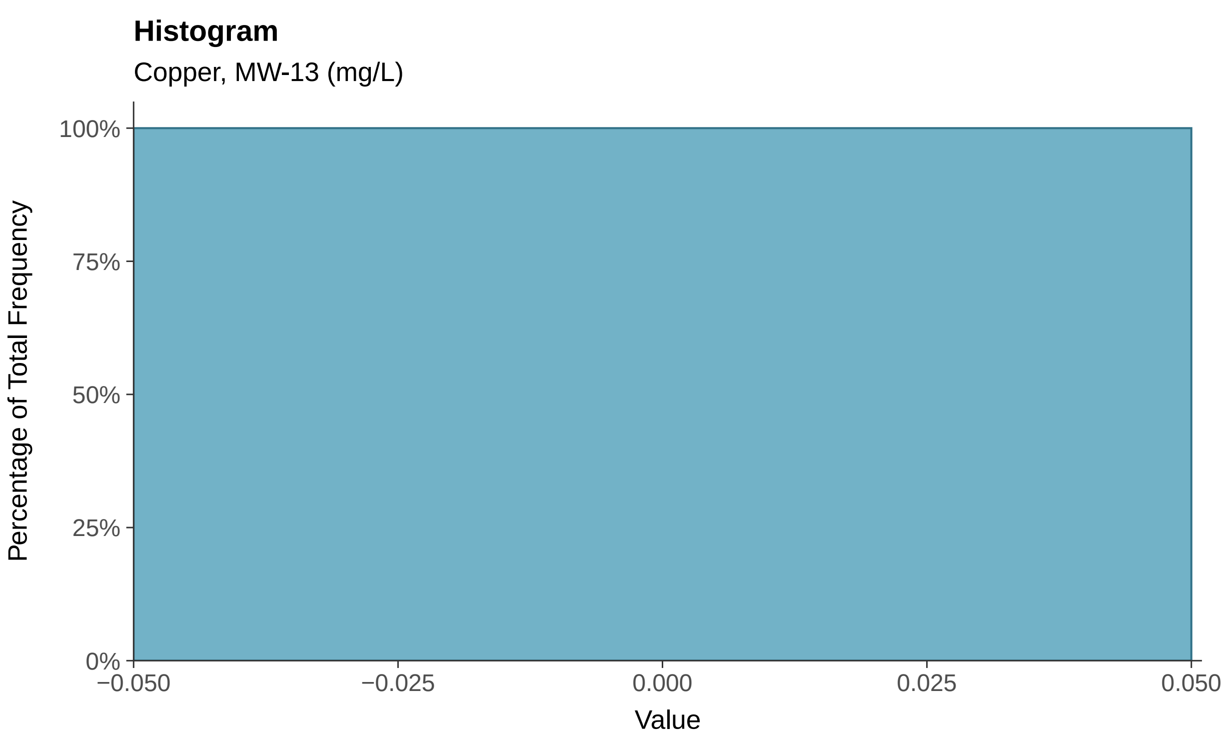
Total Suspended Solids, MW-13 (mg/L)

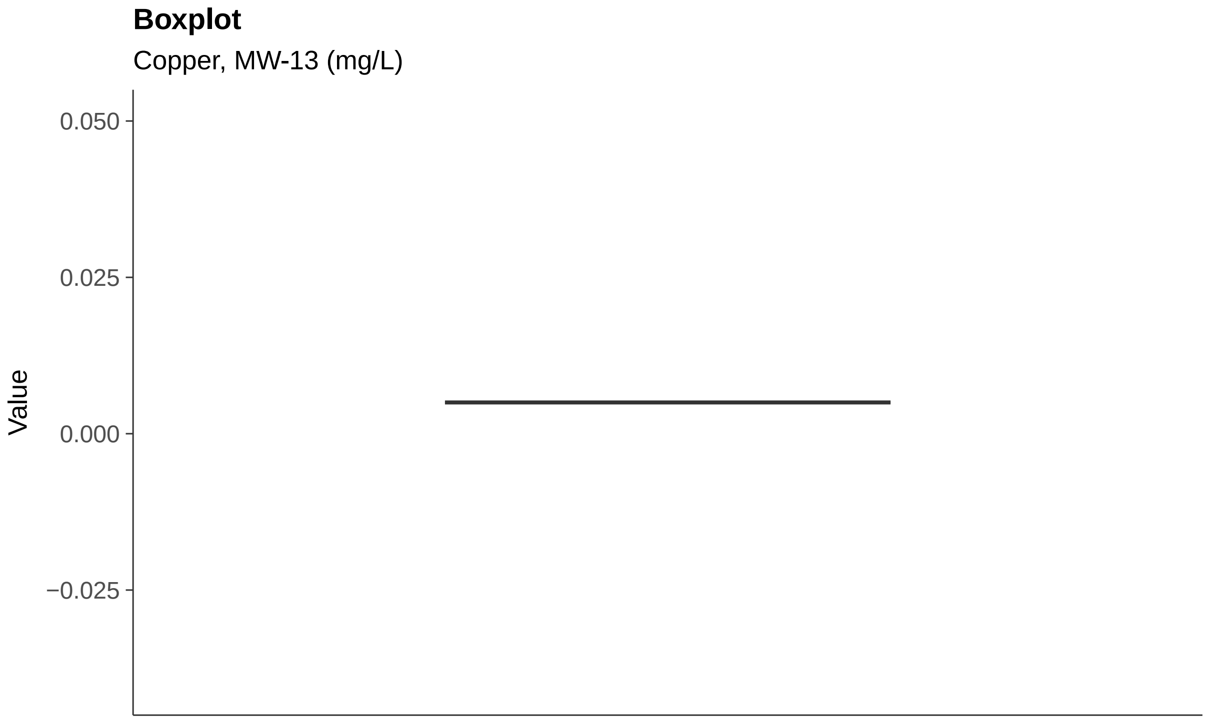


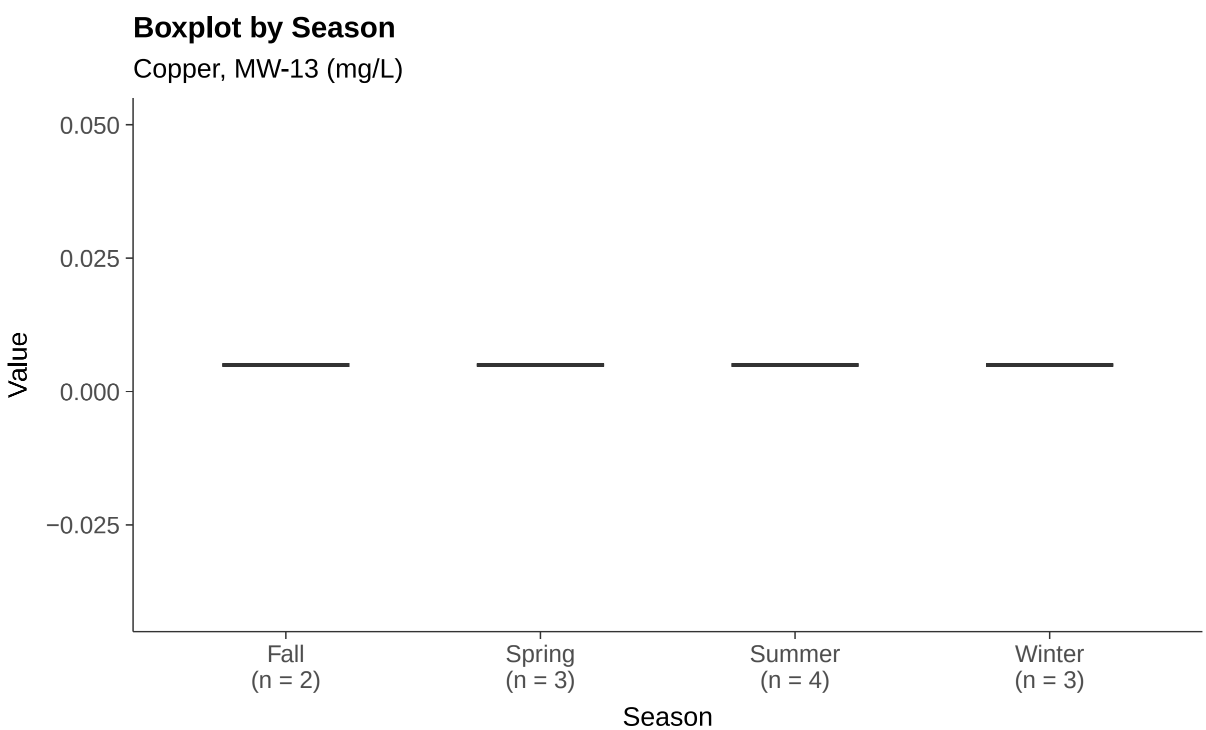
Part 115: Copper, MW-13

ID: 13_5_37



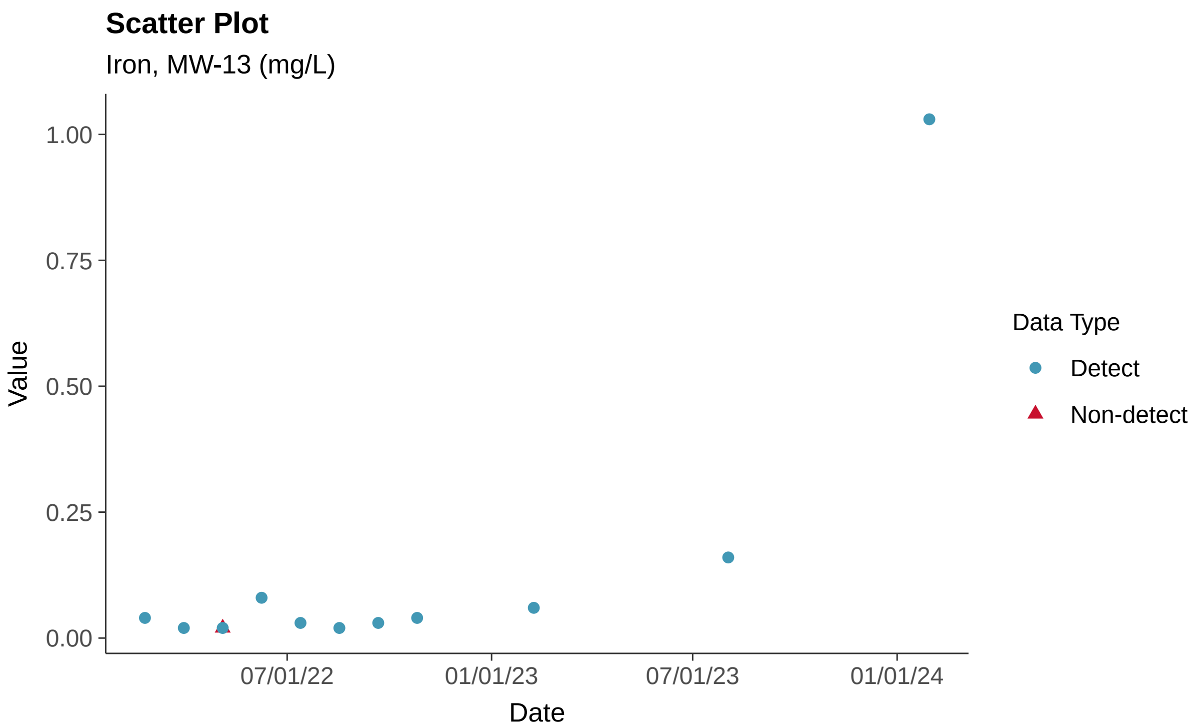


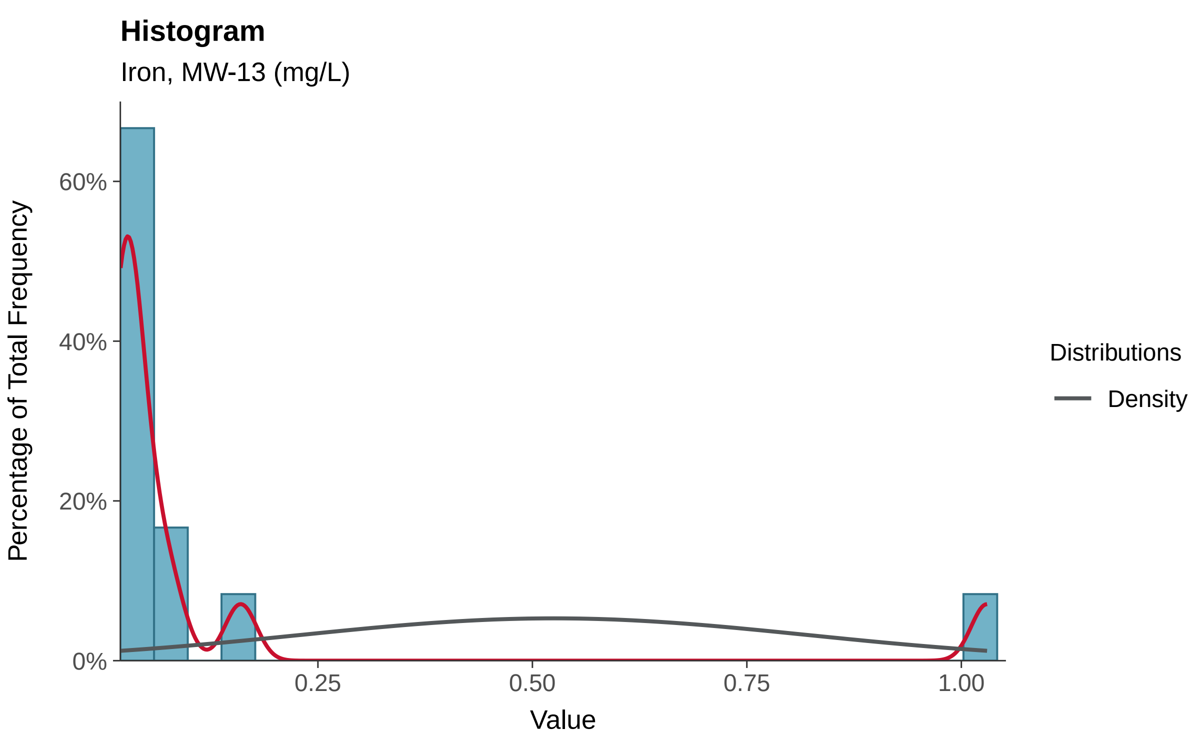

Boxplot
Copper, MW-13 (mg/L)
Value
0.050
0.025
0.000
−0.025


Boxplot by Season
Copper, MW-13 (mg/L)
Value
0.050
0.025
0.000
−0.025
Fall
(n = 2)
Spring
(n = 3)
Summer
(n = 4)
Winter
(n = 3)
Season

Part 115: Iron, MW-13

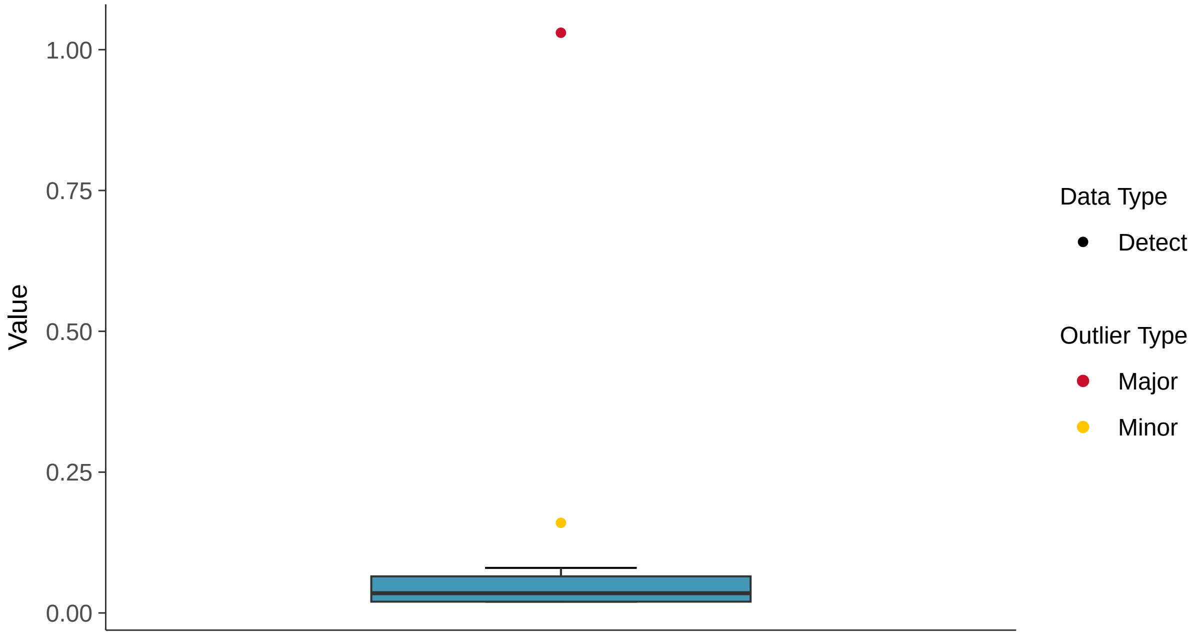
ID: 13_5_38





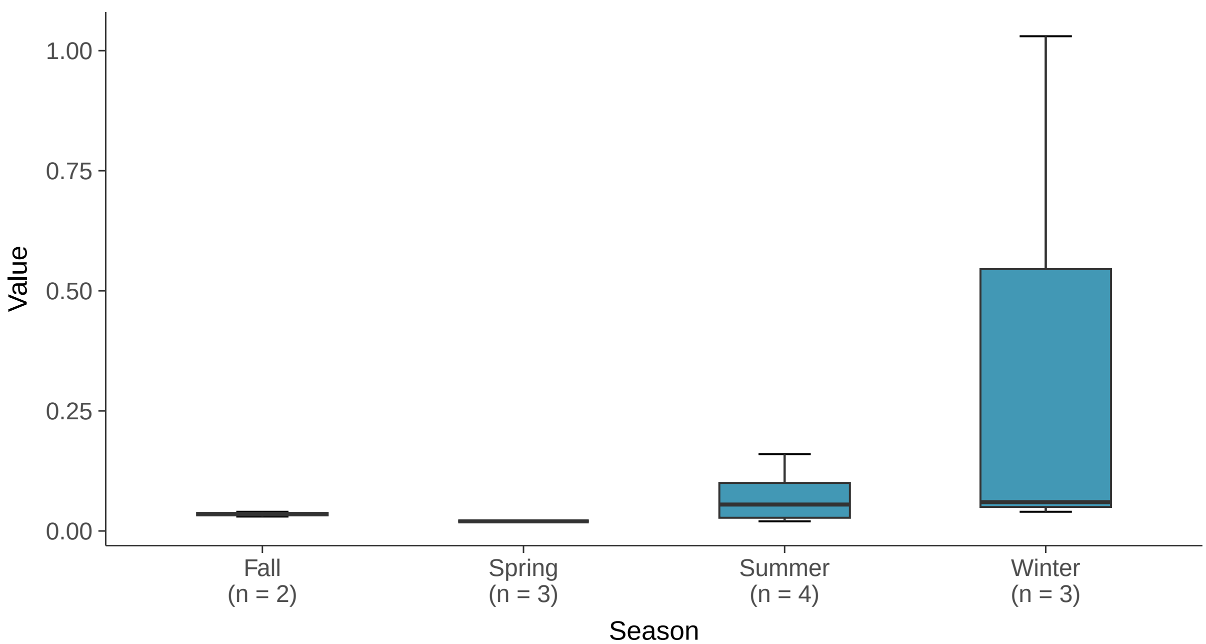
Boxplot

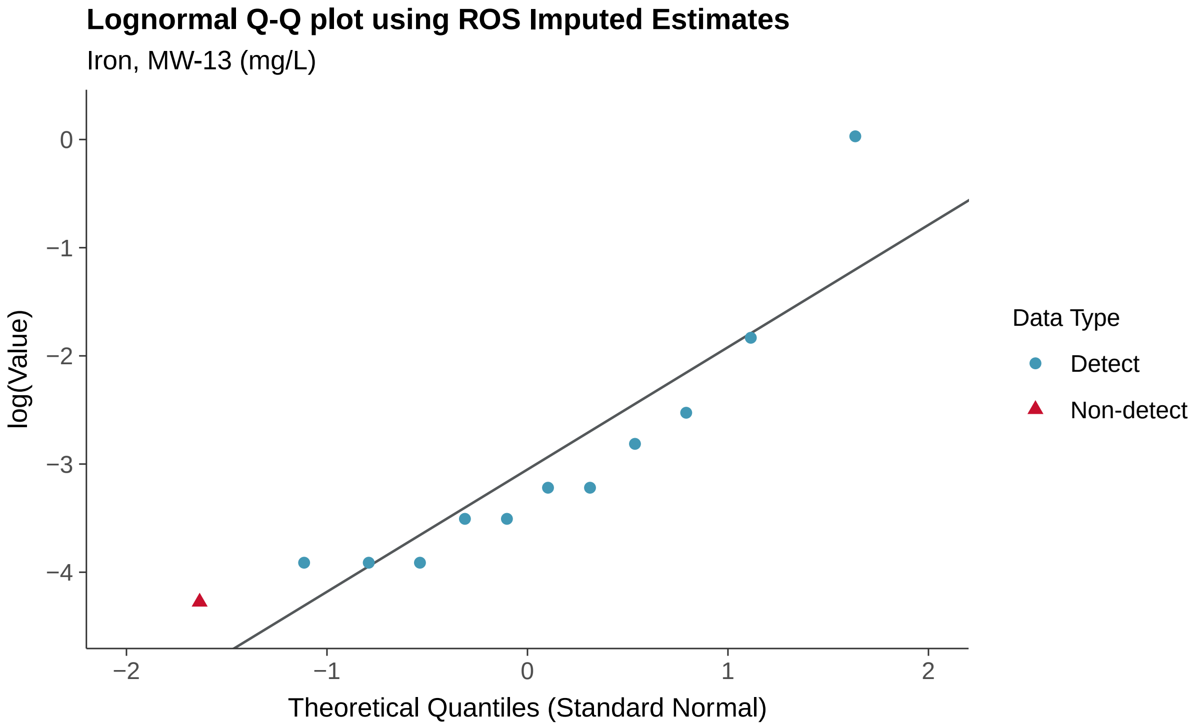
Iron, MW-13 (mg/L)

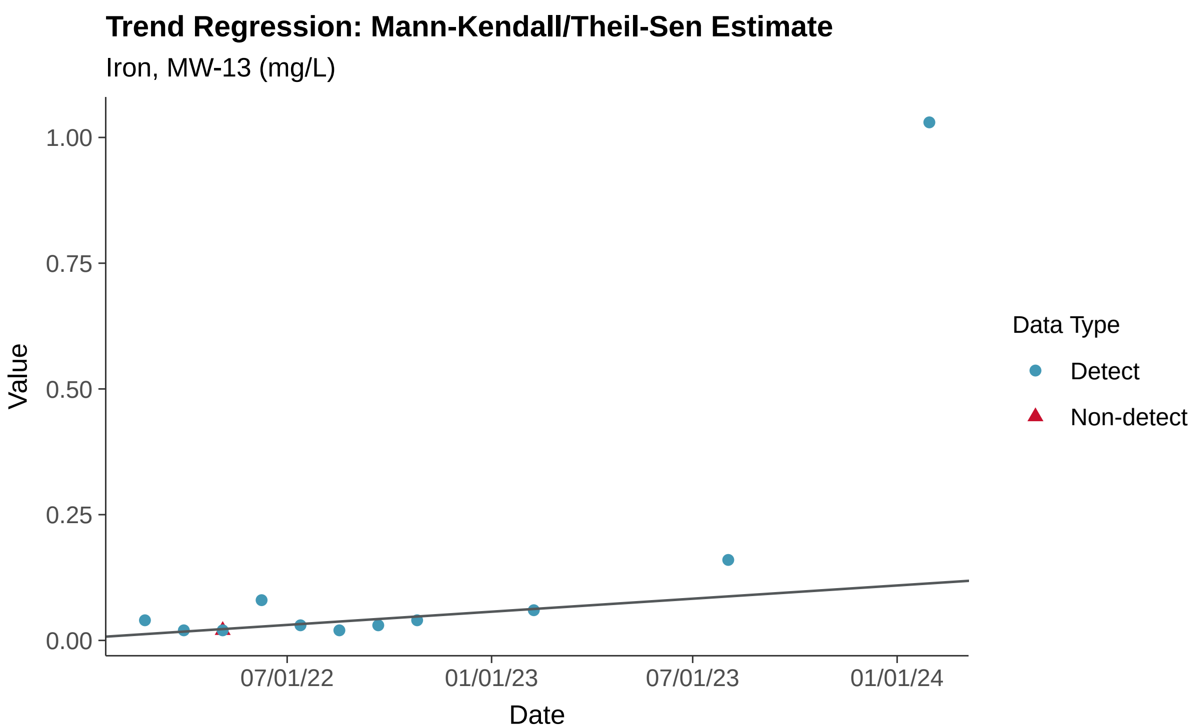


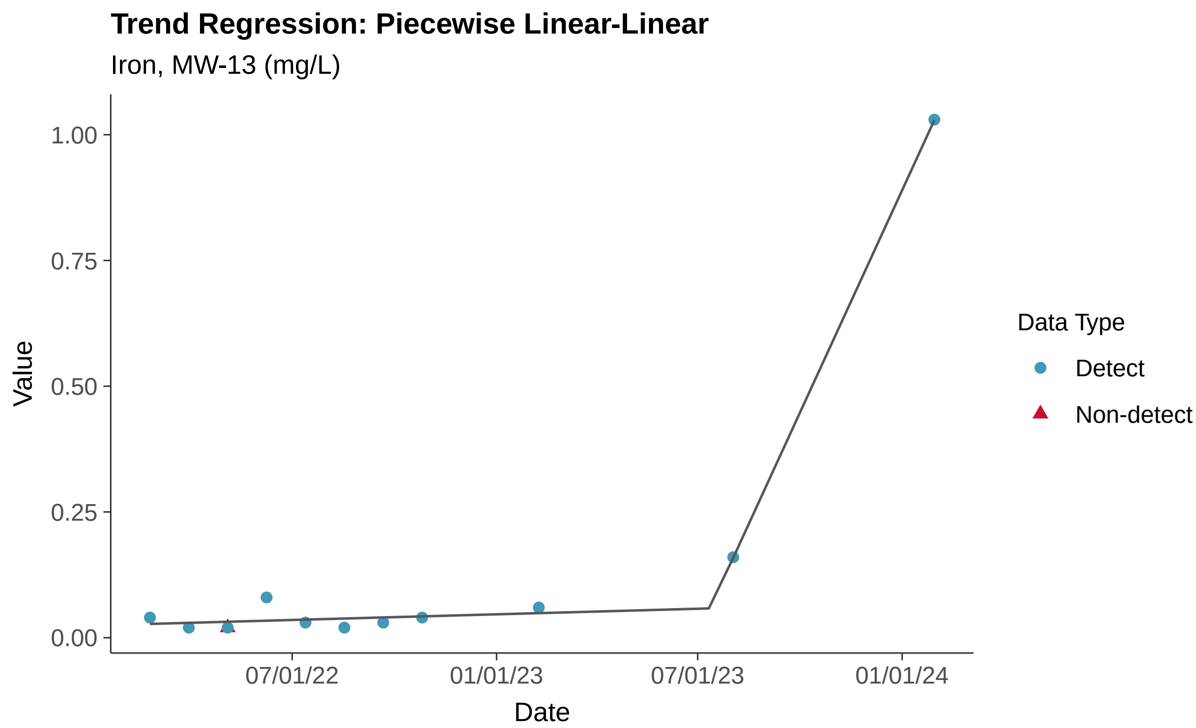
Boxplot by Season

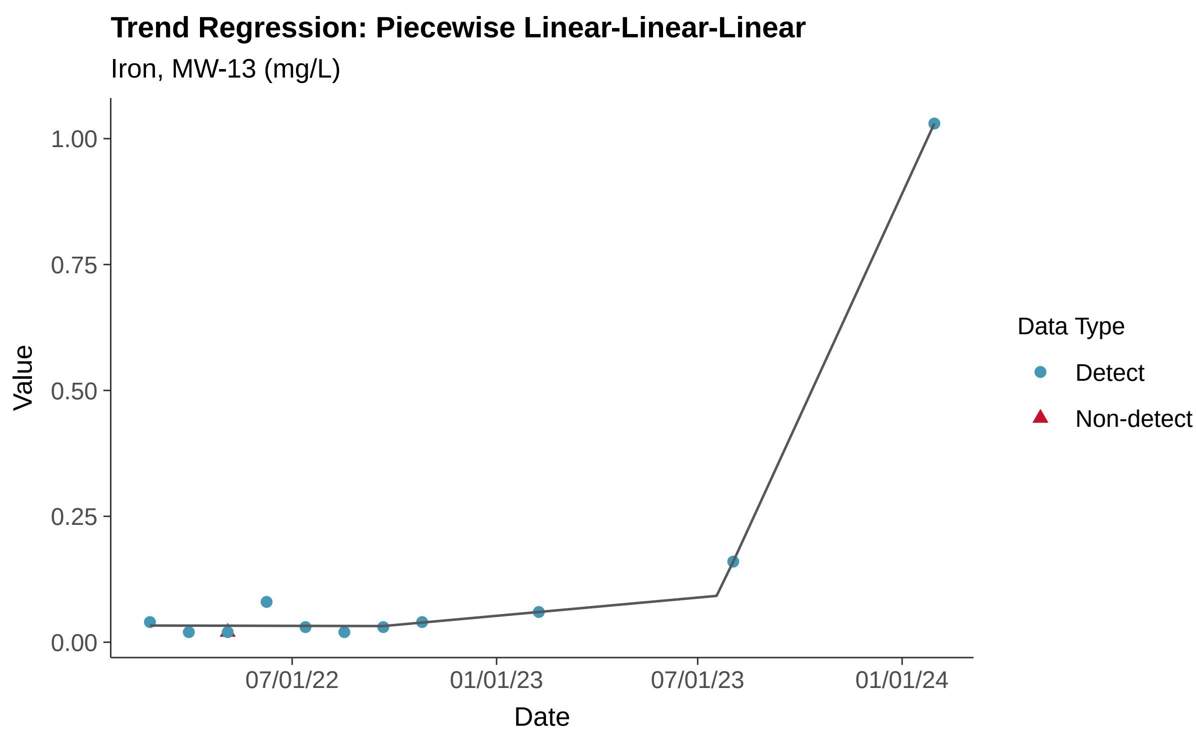
Iron, MW-13 (mg/L)




Lognormal Q-Q plot using ROS Imputed Estimates
Iron, MW-13 (mg/L)
log(Value)
0
−1
−2
−3
−4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Iron, MW-13 (mg/L)
Value
1.00
0.75
0.50
0.25
0.00
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Iron, MW-13 (mg/L)
Value
1.00
0.75
0.50
0.25
0.00
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect
Non-detect

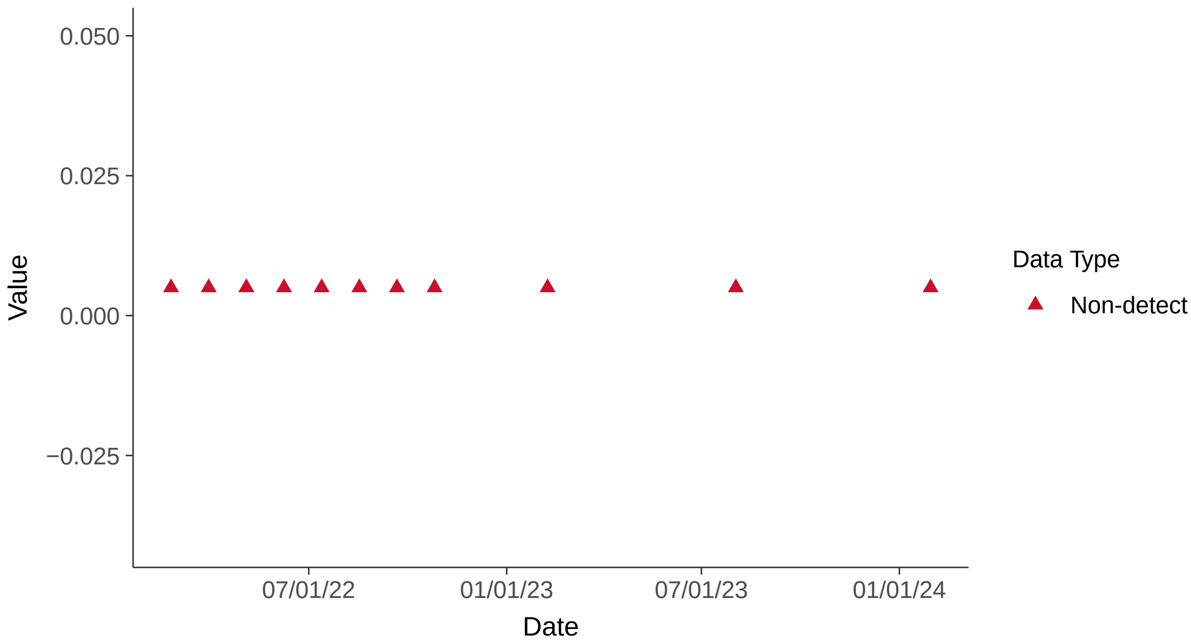

Trend Regression: Piecewise Linear-Linear-Linear
Iron, MW-13 (mg/L)
Value
1.00
0.75
0.50
0.25
0.00
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Part 115: Nickel, MW-13

ID: 13_5_39

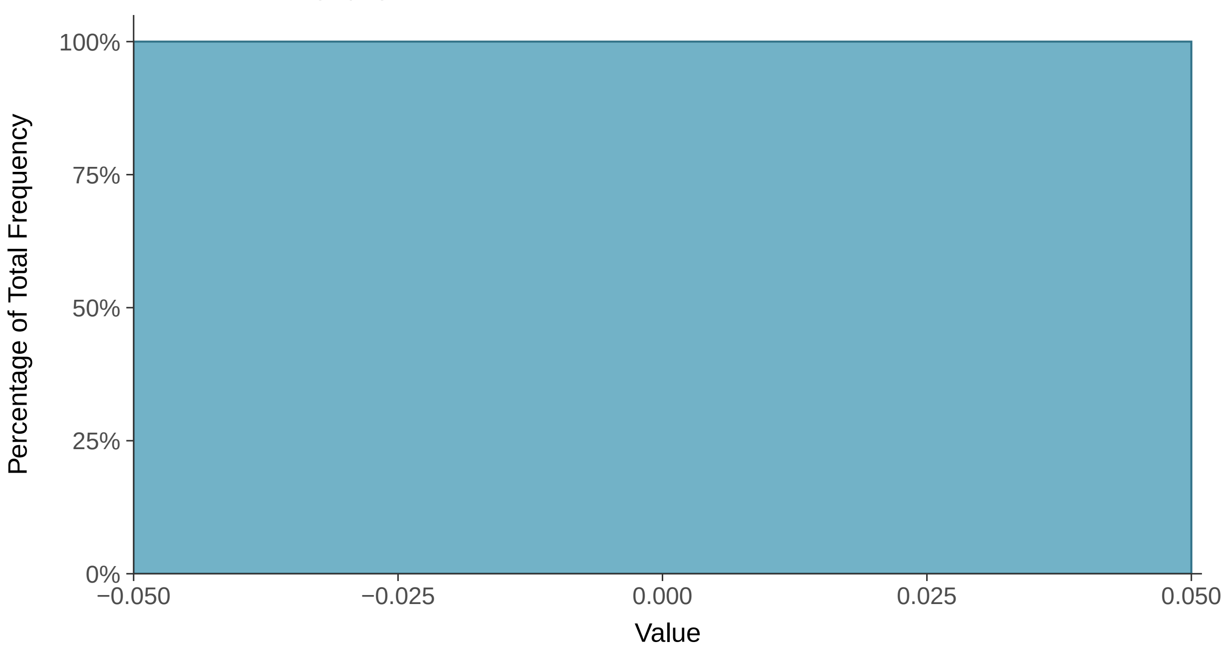
Scatter Plot

Nickel, MW-13 (mg/L)



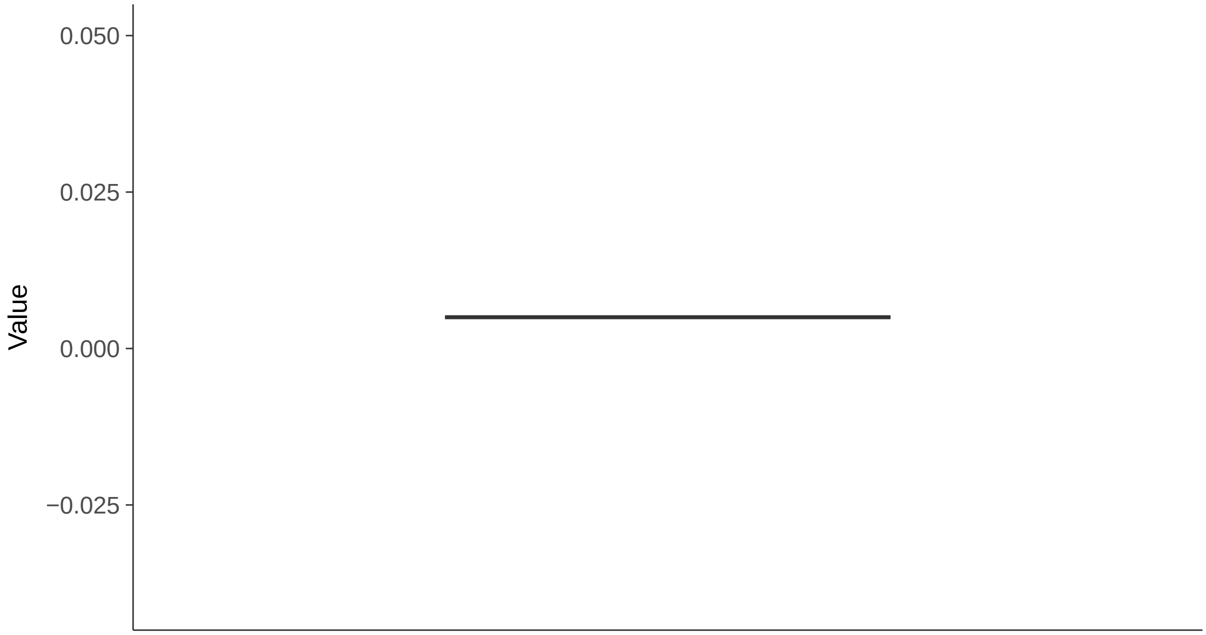
Histogram

Nickel, MW-13 (mg/L)



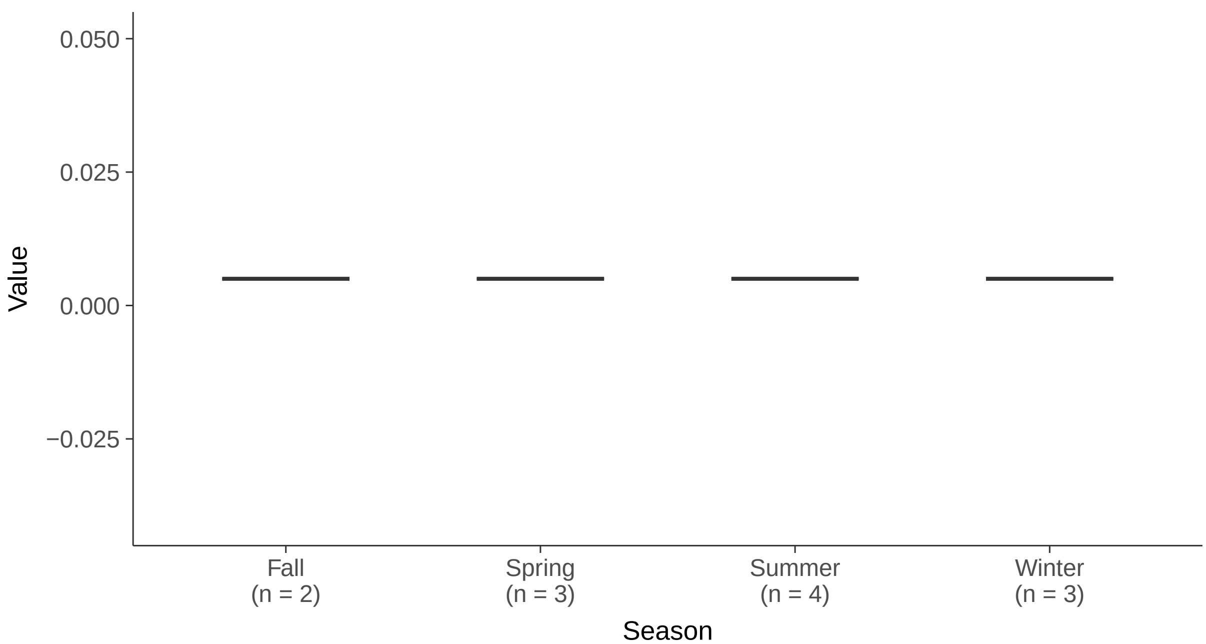
Boxplot

Nickel, MW-13 (mg/L)



Boxplot by Season

Nickel, MW-13 (mg/L)

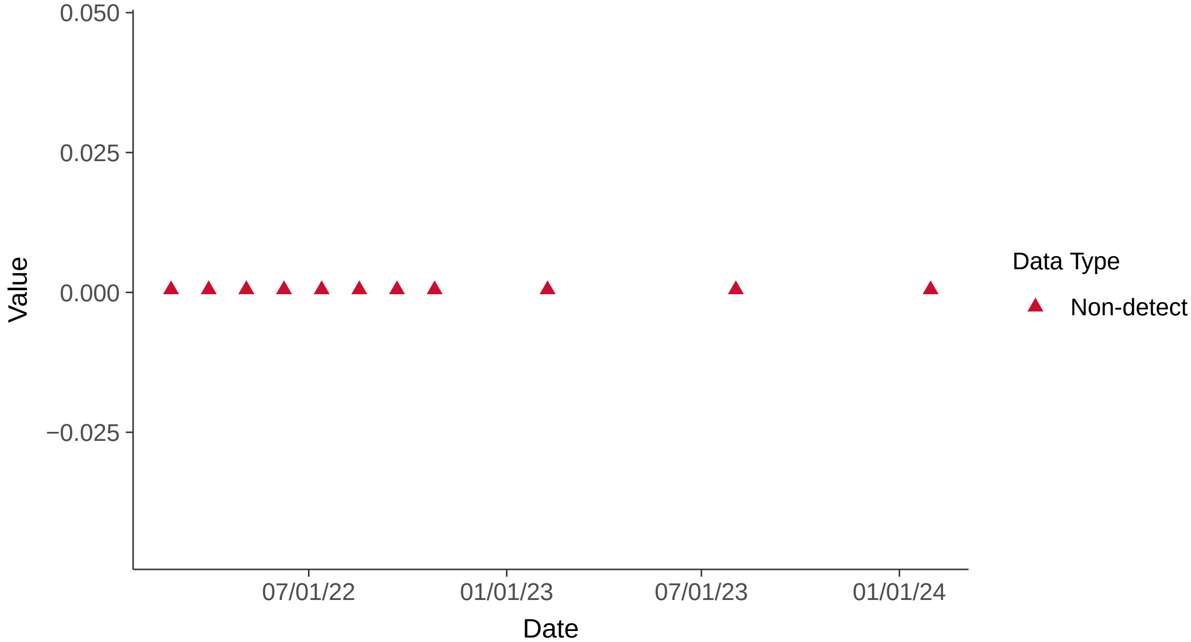


Part 115: Silver, MW-13

ID: 13_5_40

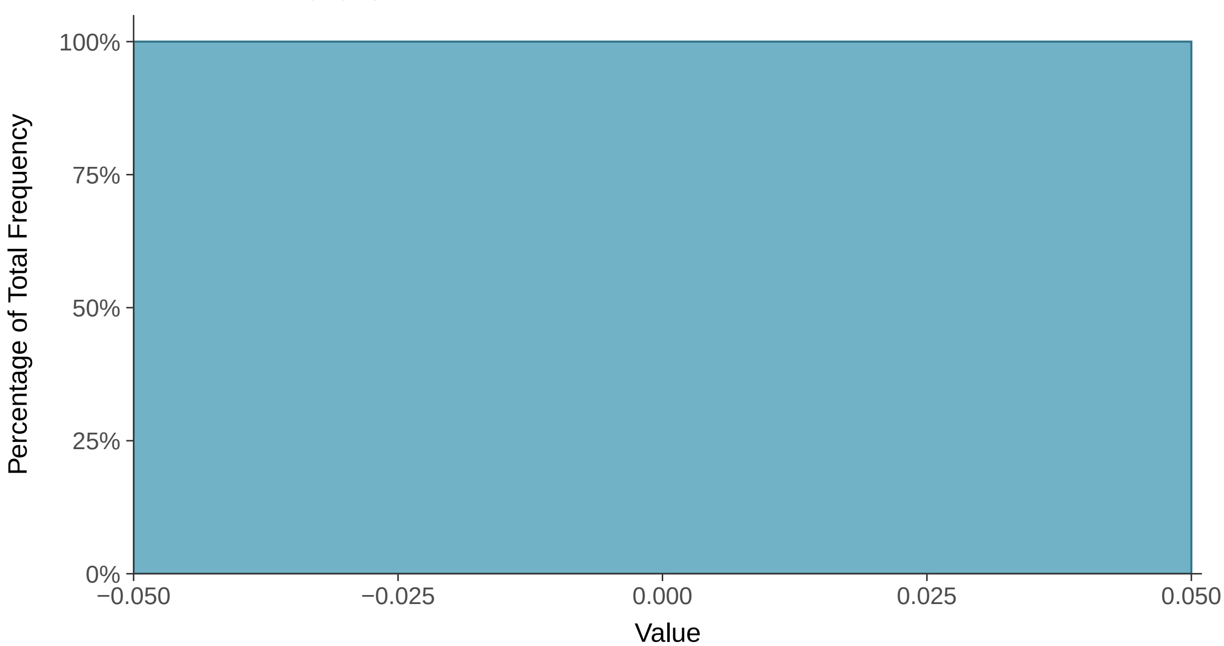
Scatter Plot

Silver, MW-13 (mg/L)



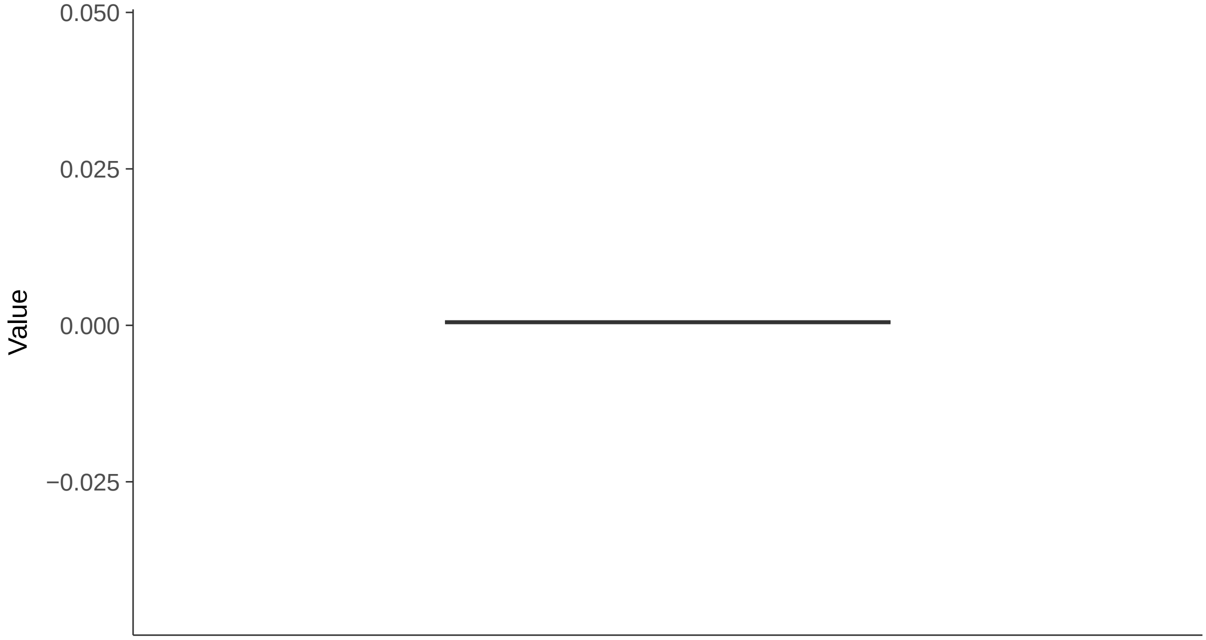
Histogram

Silver, MW-13 (mg/L)



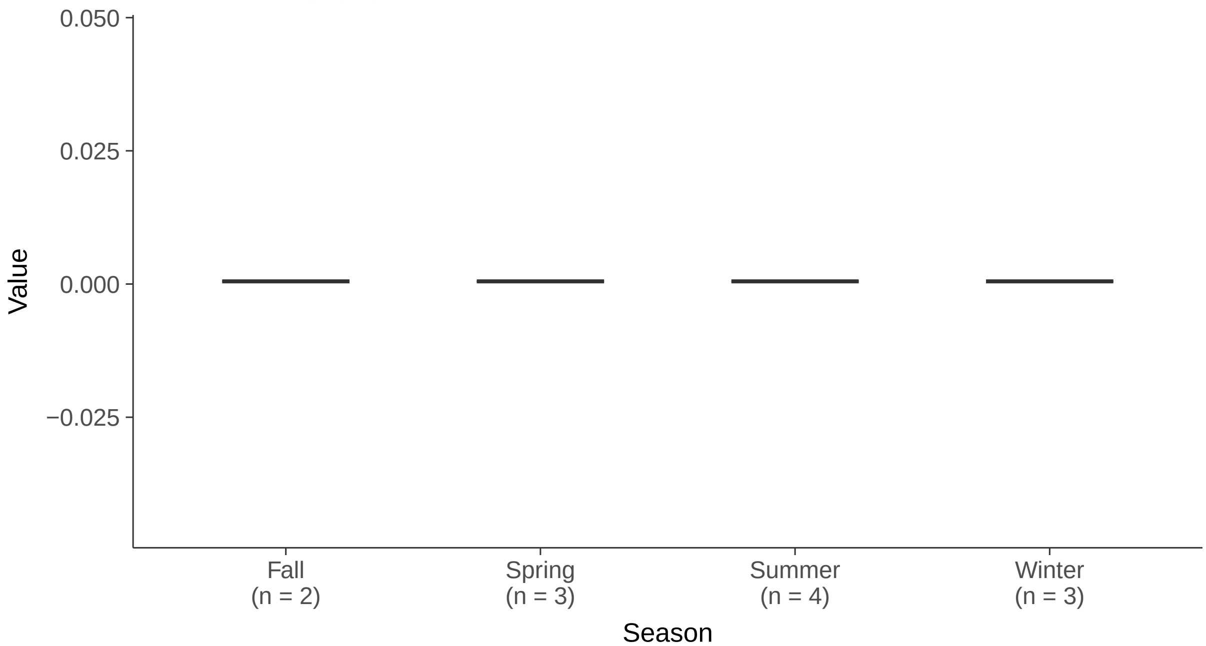
Boxplot

Silver, MW-13 (mg/L)



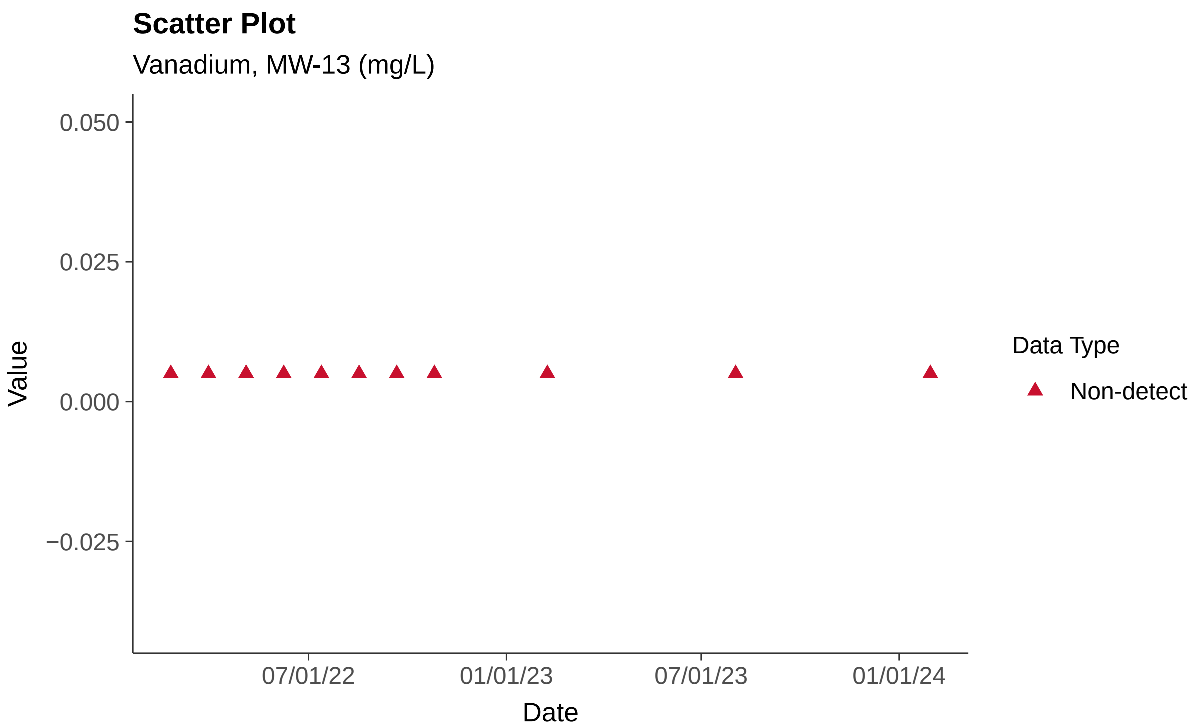
Boxplot by Season

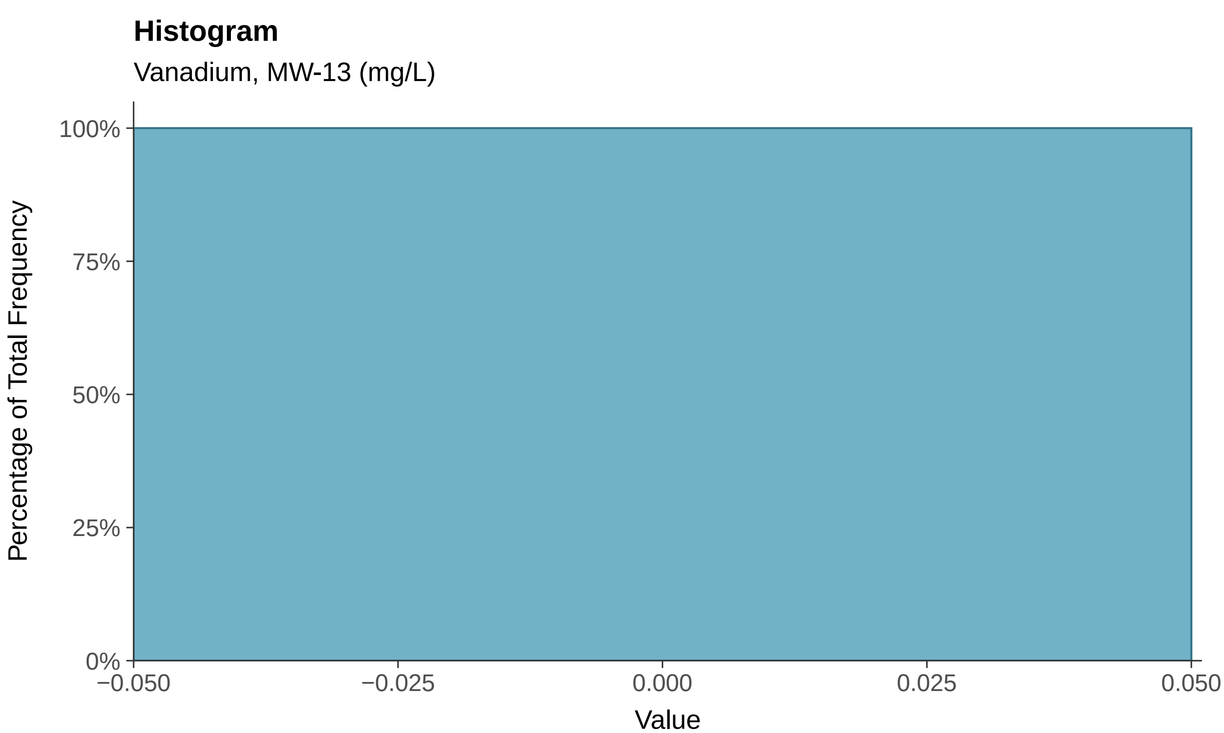
Silver, MW-13 (mg/L)



Part 115: Vanadium, MW-13

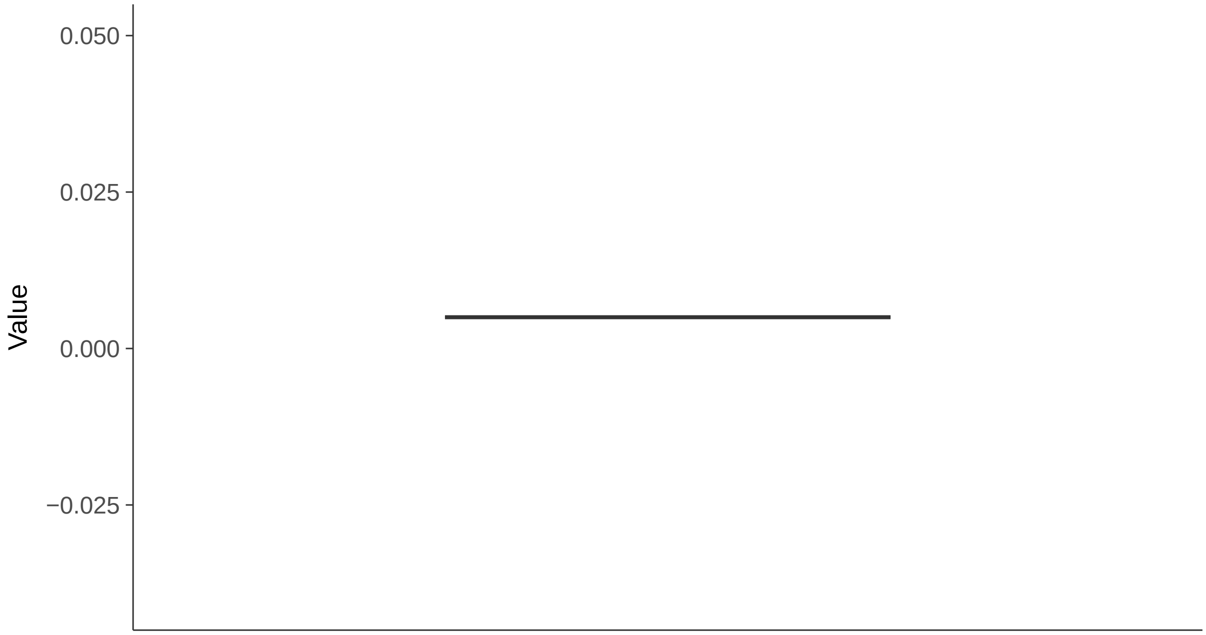
ID: 13_5_41





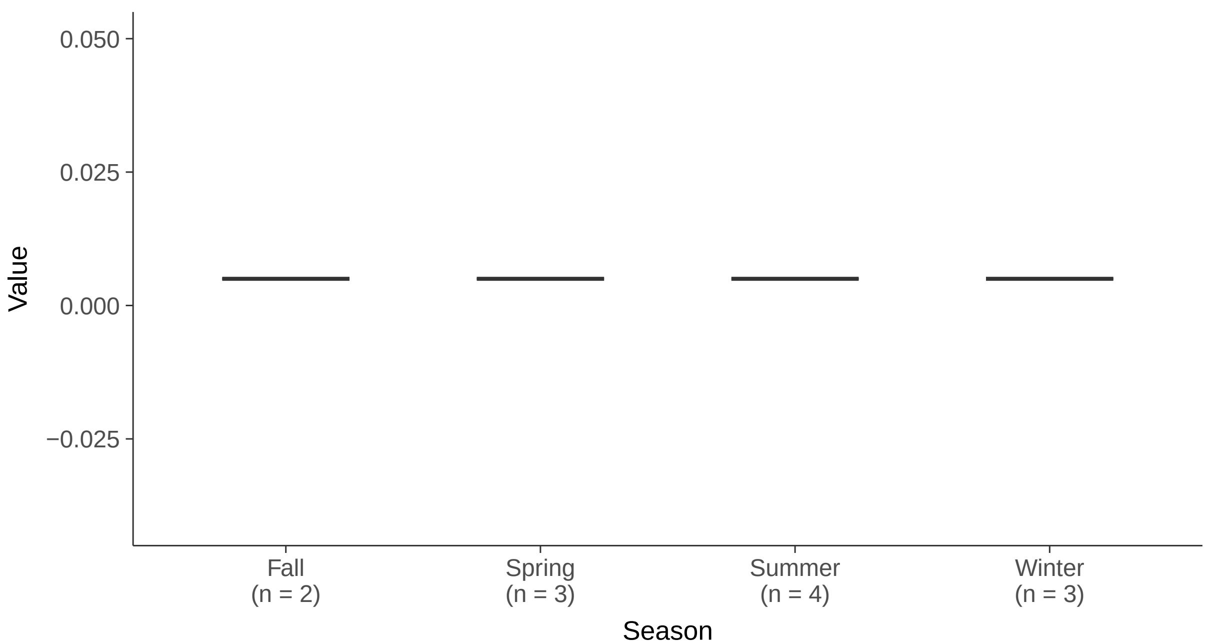
Boxplot

Vanadium, MW-13 (mg/L)



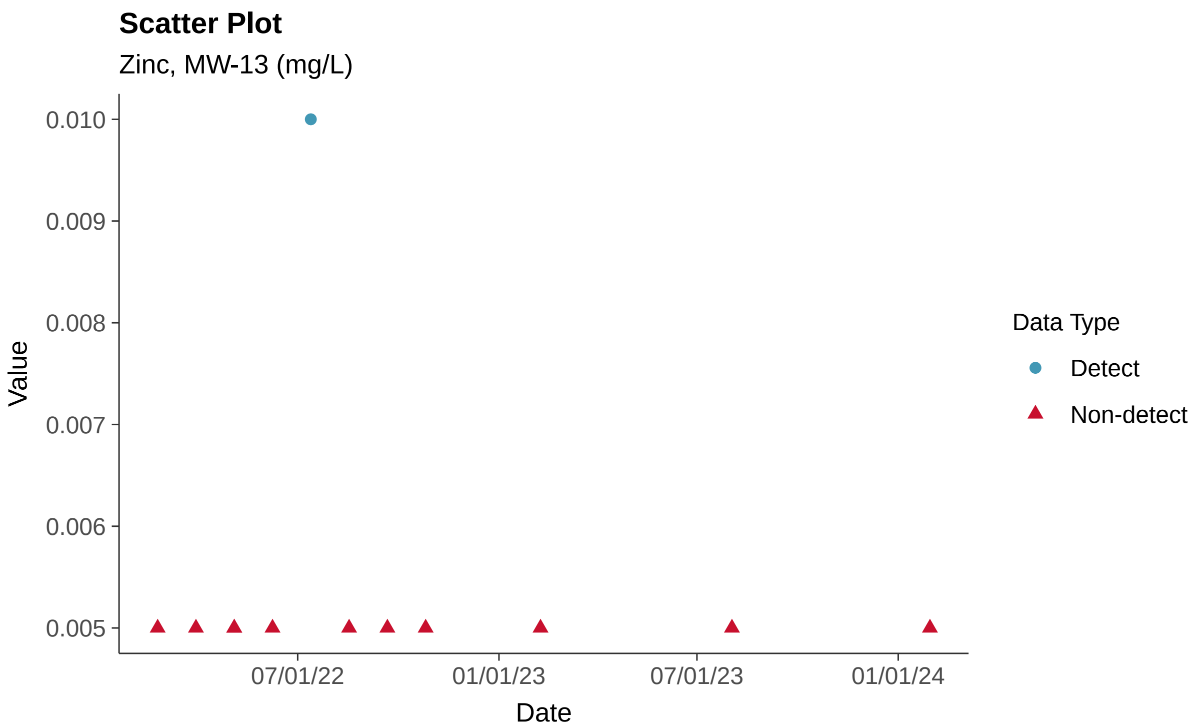
Boxplot by Season

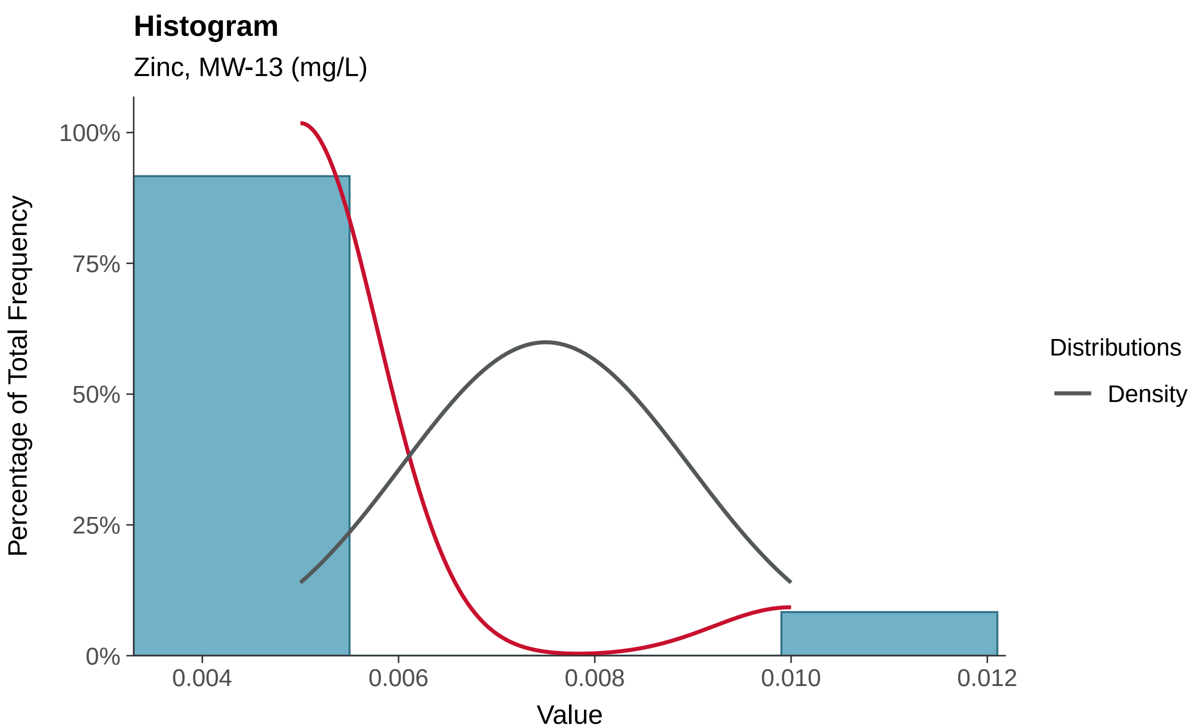
Vanadium, MW-13 (mg/L)



Part 115: Zinc, MW-13

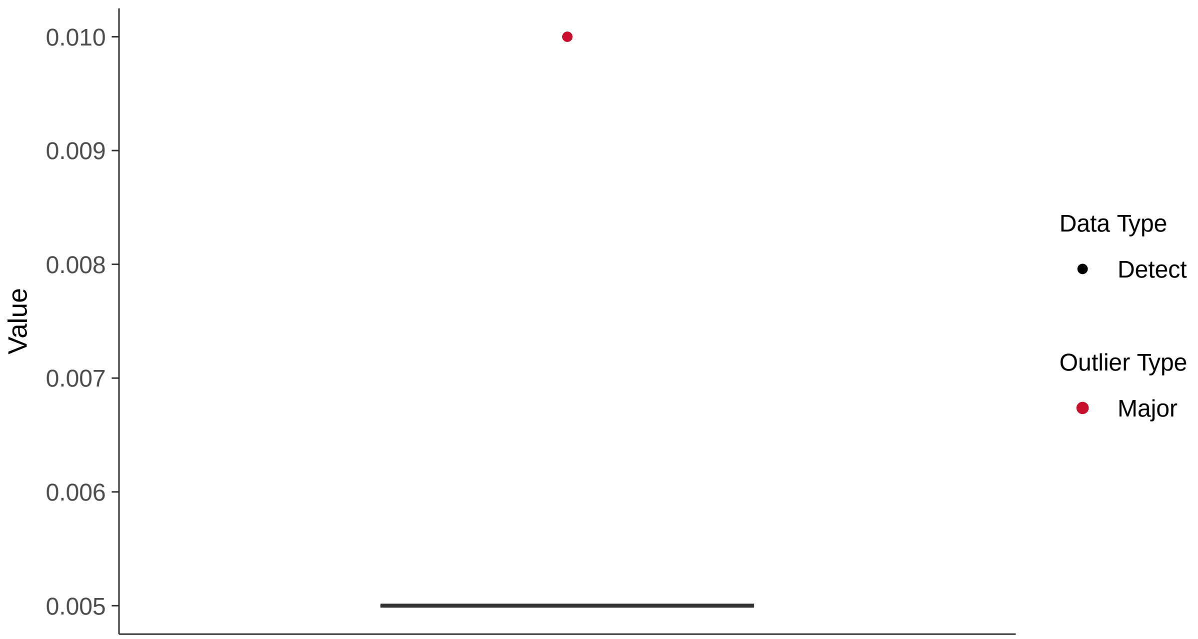
ID: 13_5_42





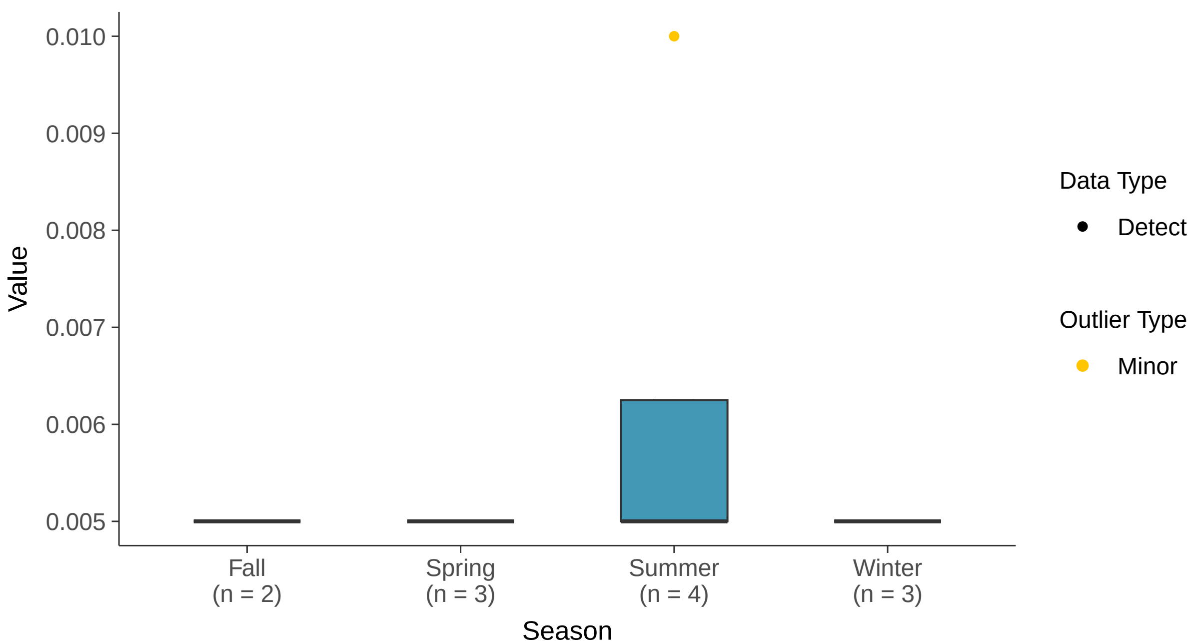
Boxplot

Zinc, MW-13 (mg/L)



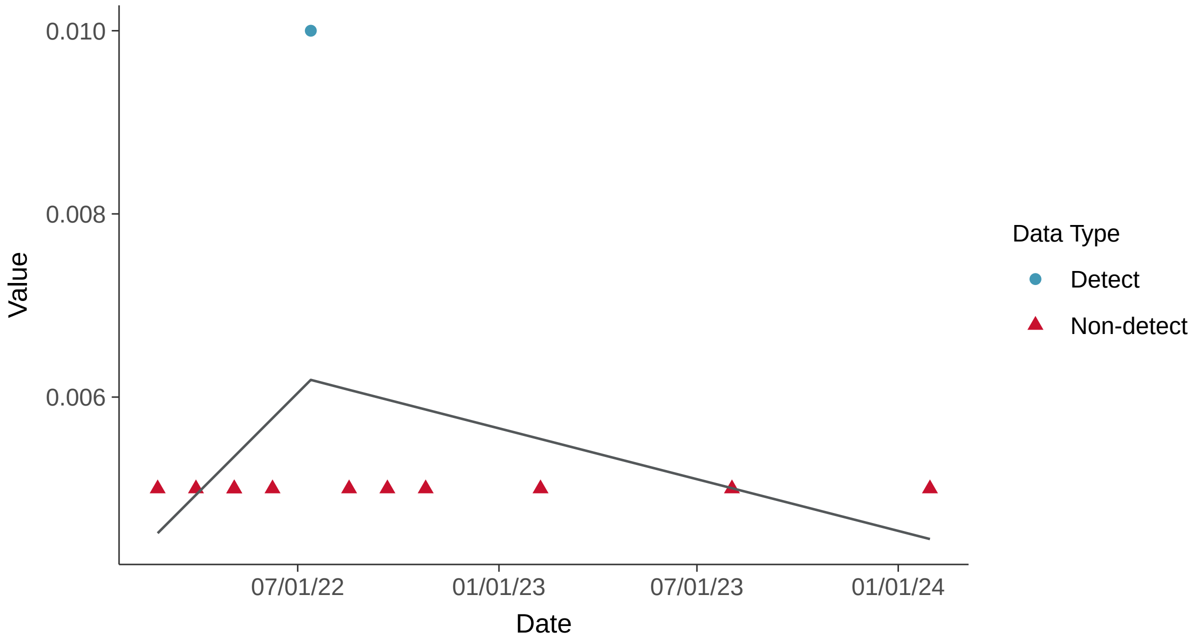
Boxplot by Season

Zinc, MW-13 (mg/L)



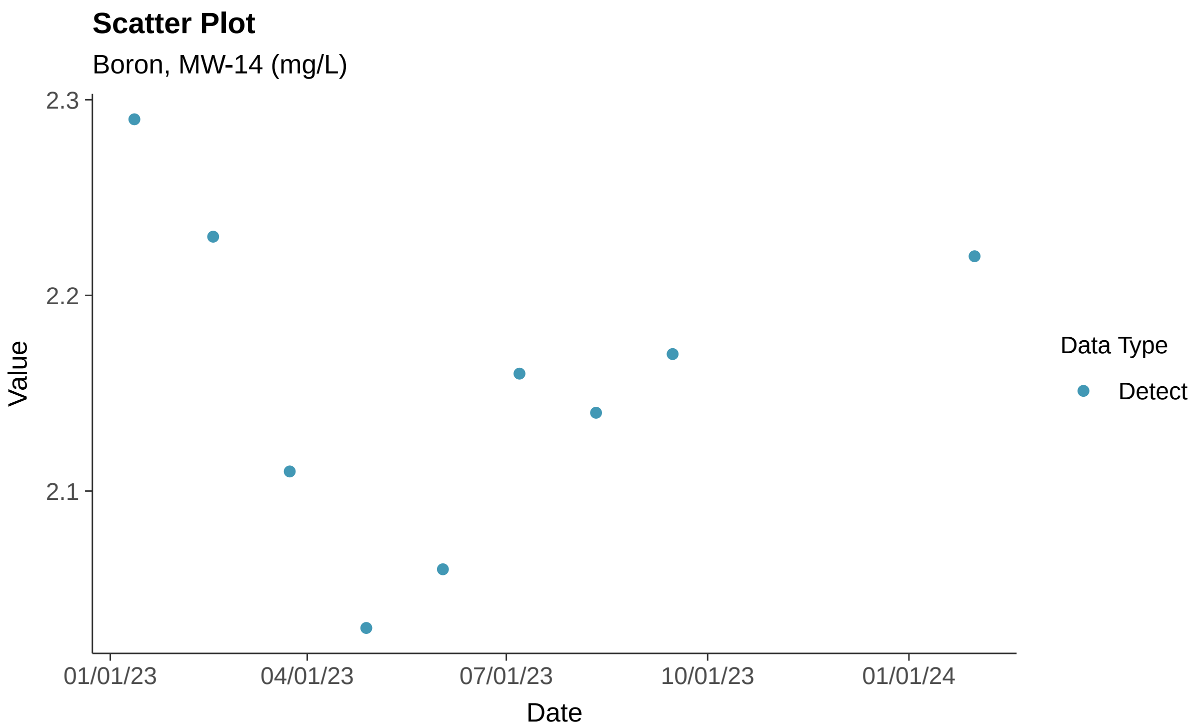
Trend Regression: Piecewise Linear-Linear

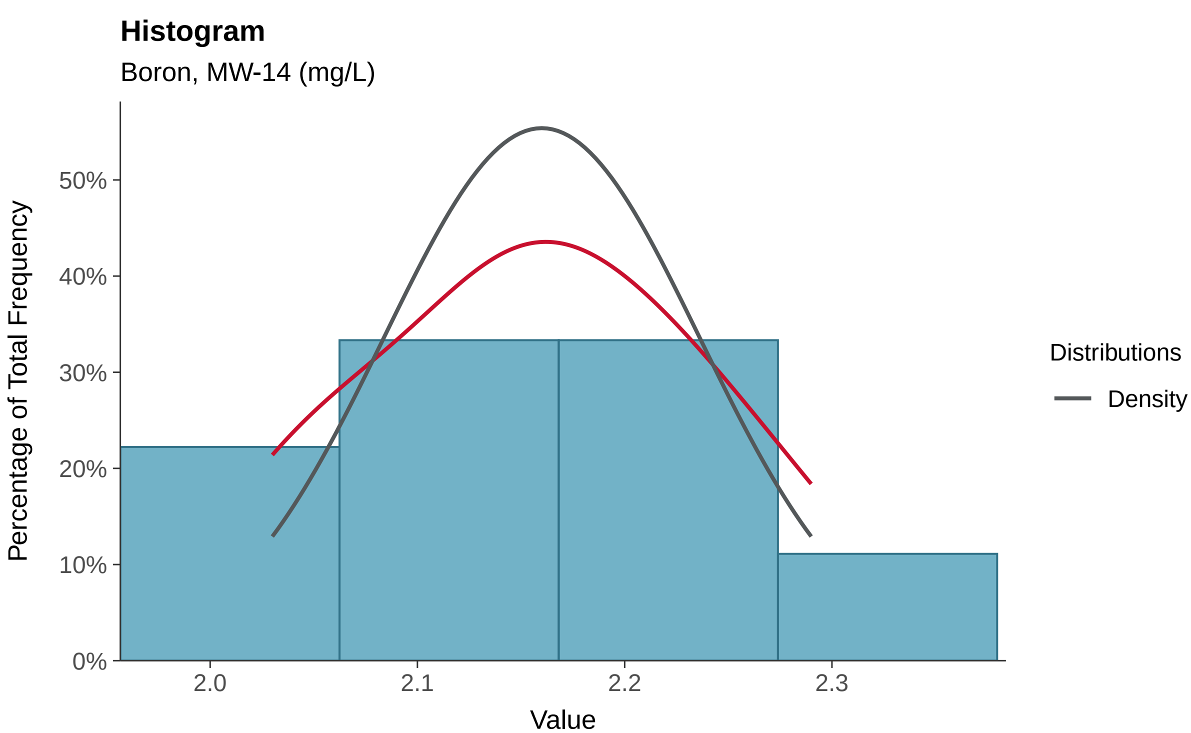
Zinc, MW-13 (mg/L)



Appendix III: Boron, MW-14

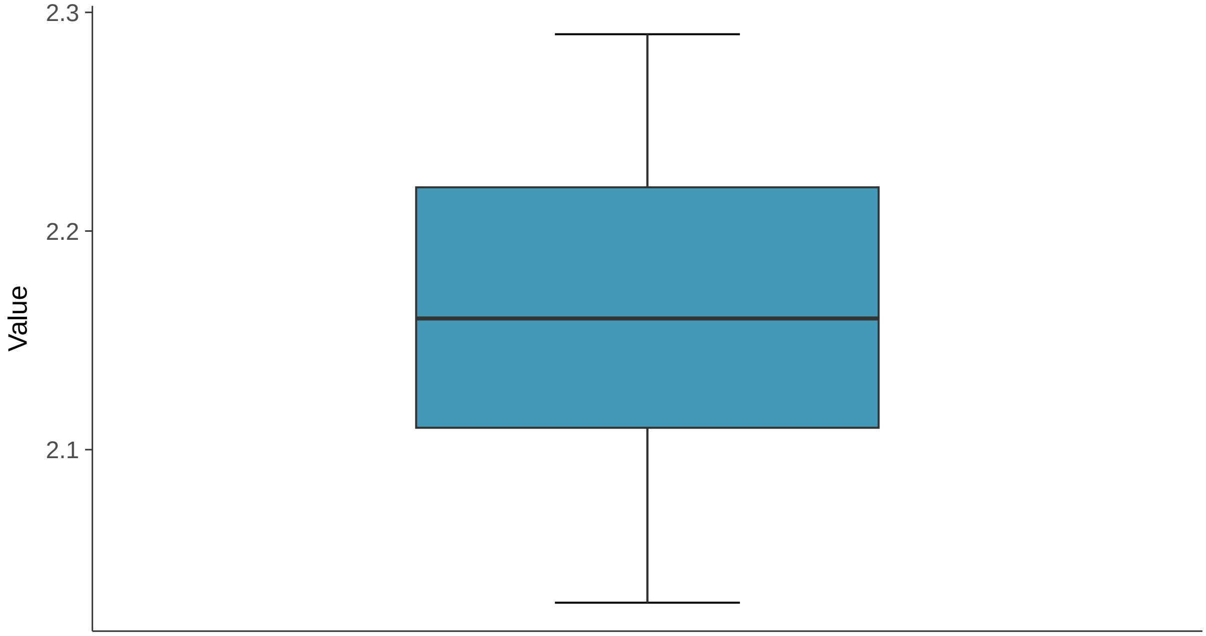
ID: 14_1_01





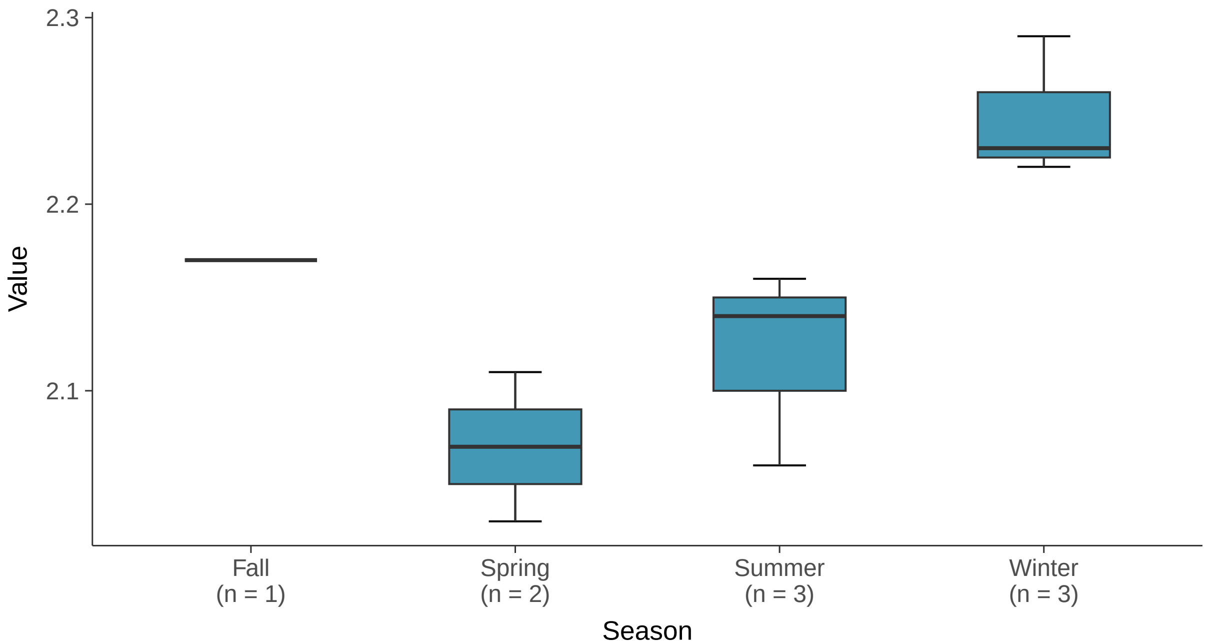
Boxplot

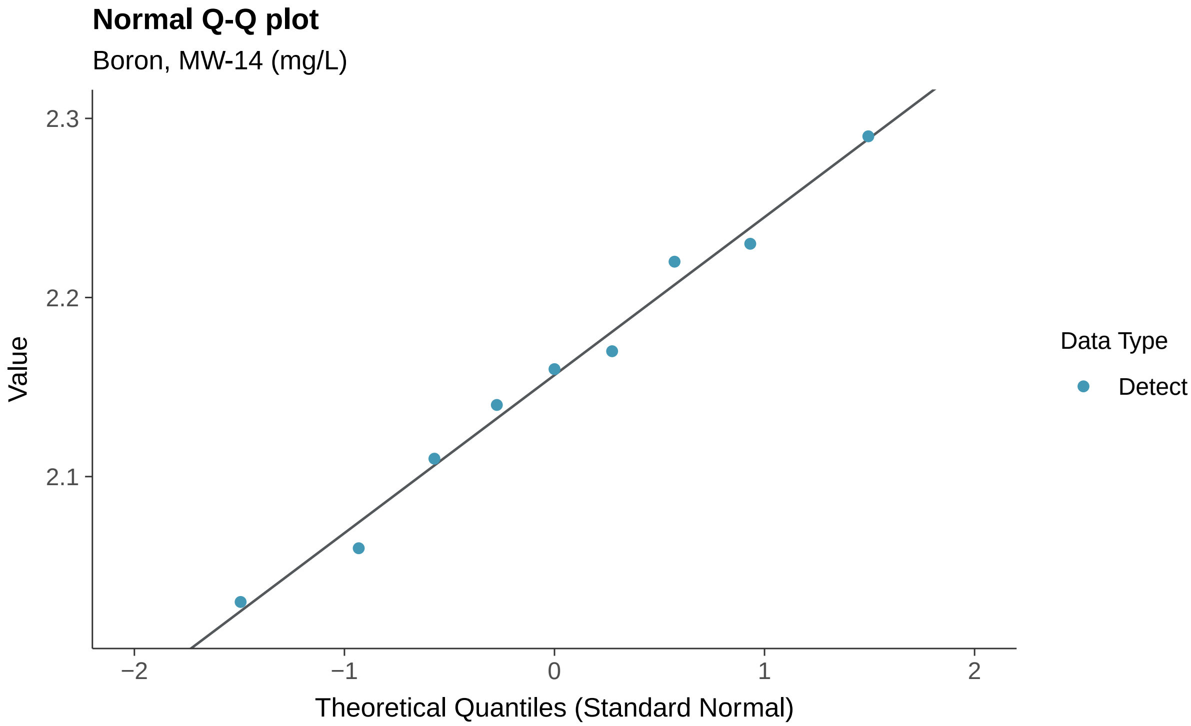
Boron, MW-14 (mg/L)

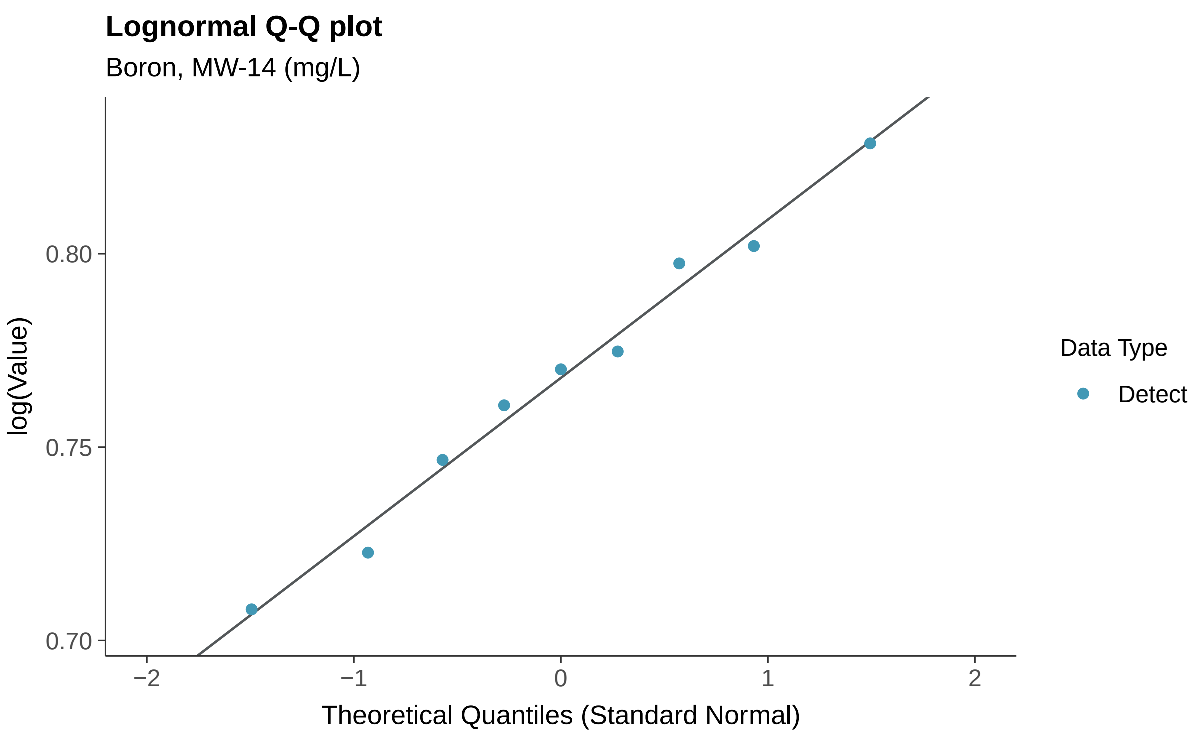


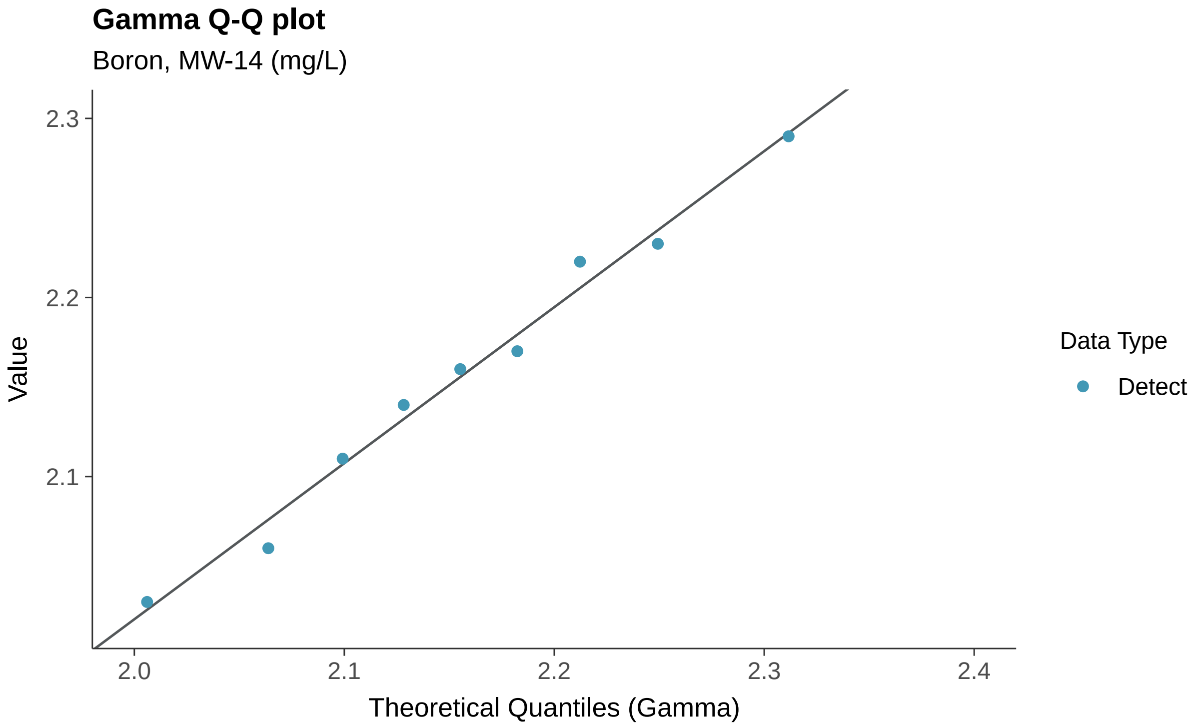
Boxplot by Season

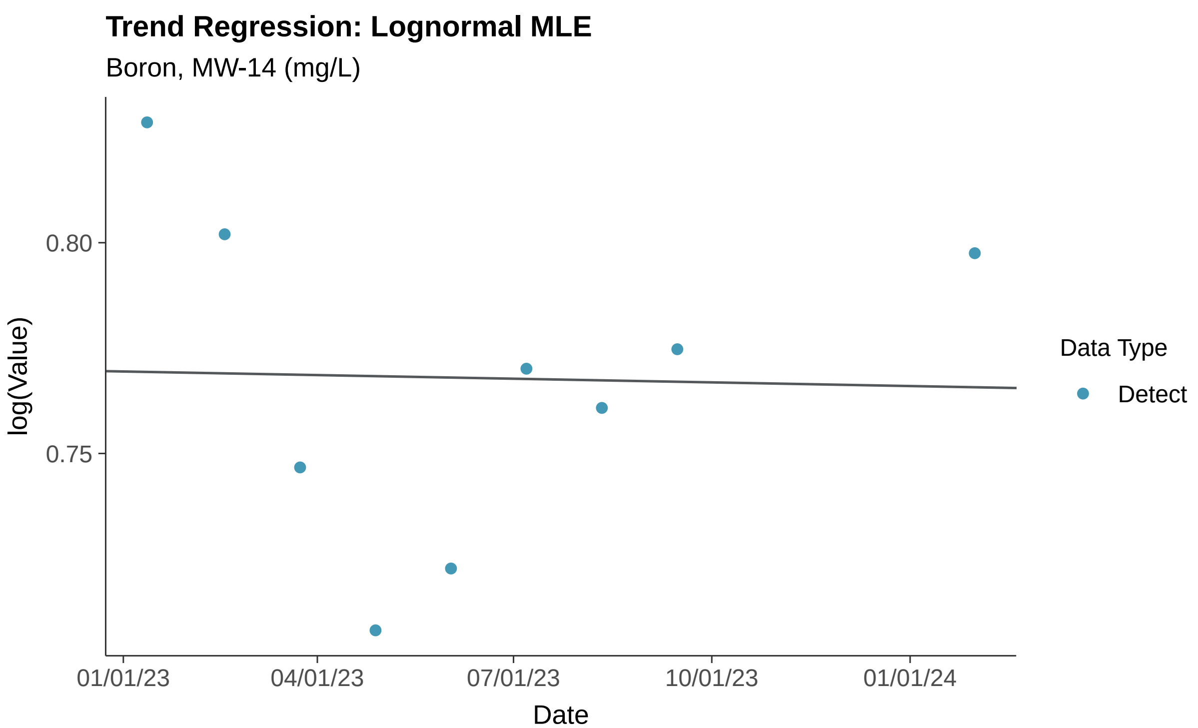
Boron, MW-14 (mg/L)




Normal Q-Q plot
Boron, MW-14 (mg/L)
Value
2.3
2.2
2.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

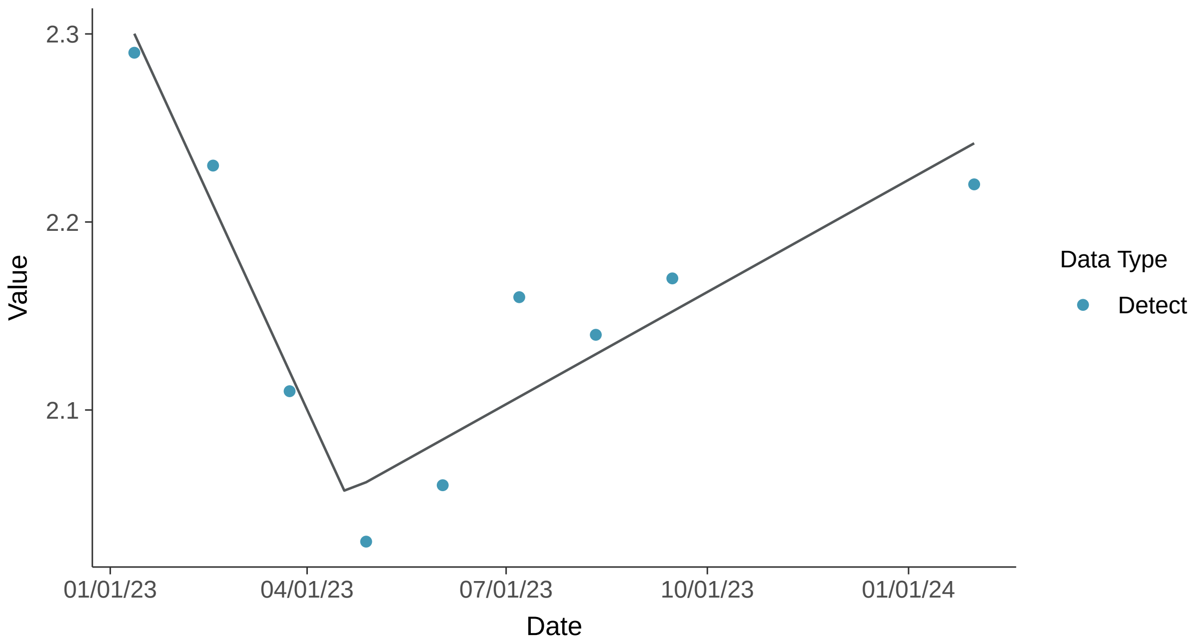

Lognormal Q-Q plot
Boron, MW-14 (mg/L)
log(Value)
0.80
0.75
0.70
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Boron, MW-14 (mg/L)
Value
2.3
2.2
2.1
2.0
2.1
2.2
2.3
2.4
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-14 (mg/L)
log(Value)
0.80
0.75
01/01/23
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Boron, MW-14 (mg/L)

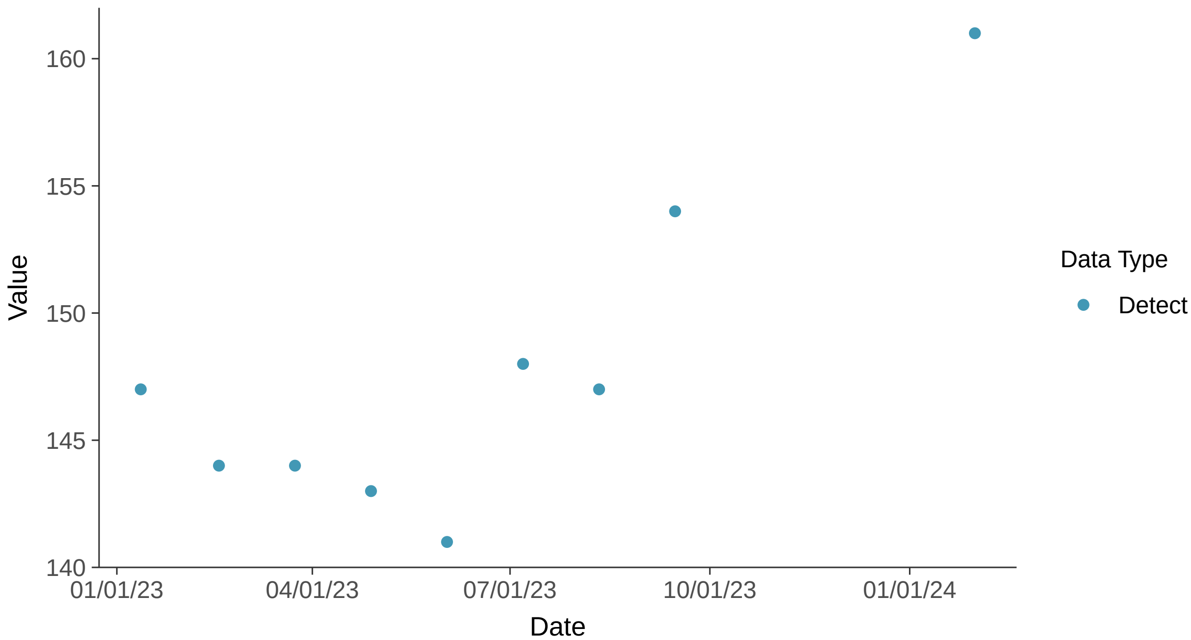


Appendix III: Calcium, MW-14

ID: 14_1_02

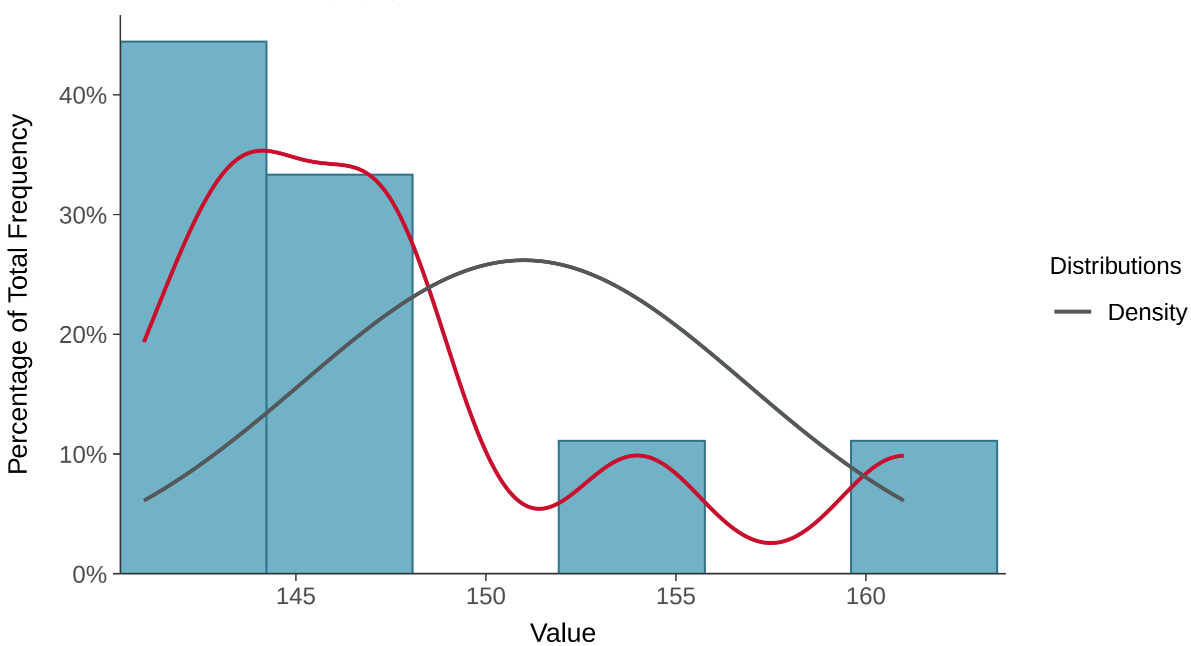
Scatter Plot

Calcium, MW-14 (mg/L)



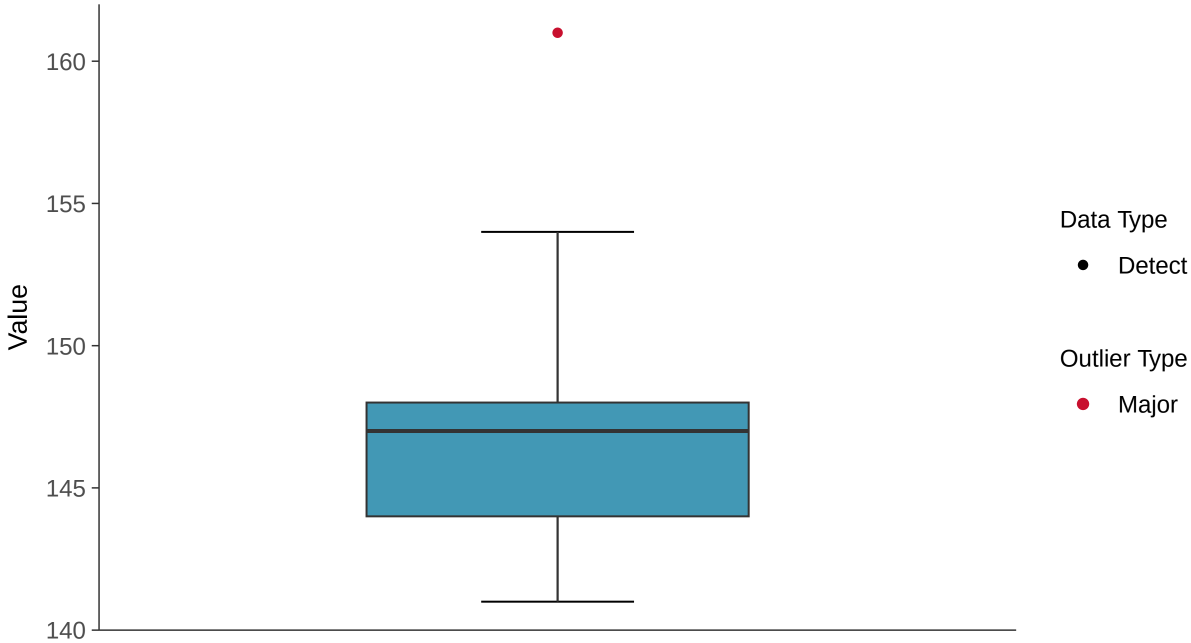
Histogram

Calcium, MW-14 (mg/L)



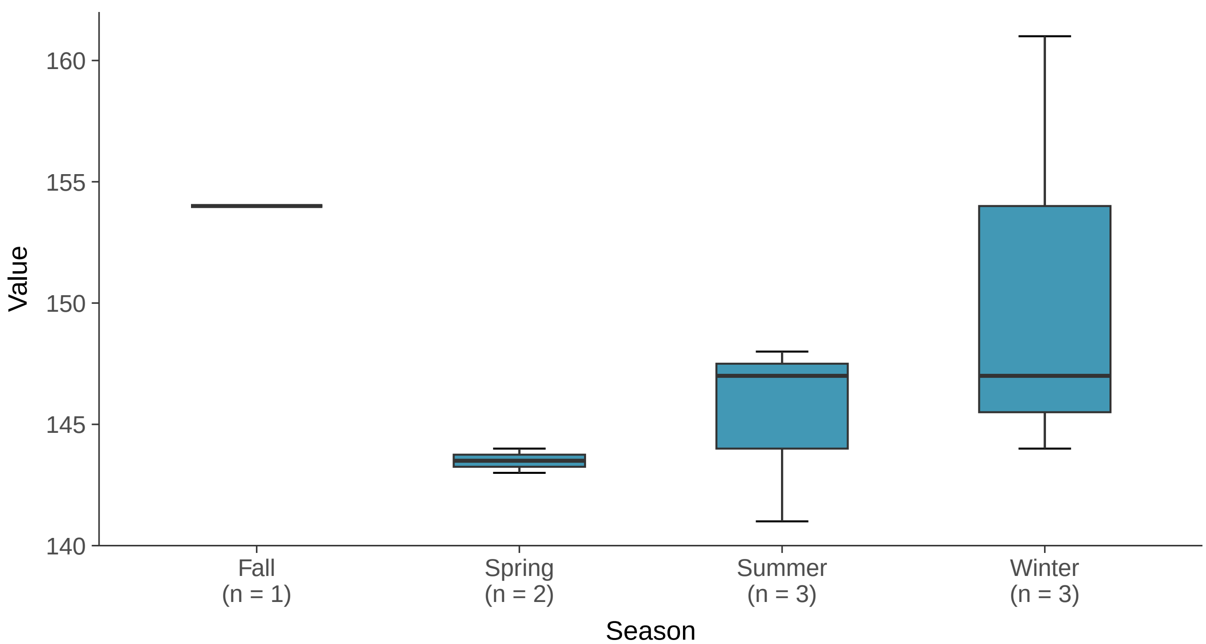
Boxplot

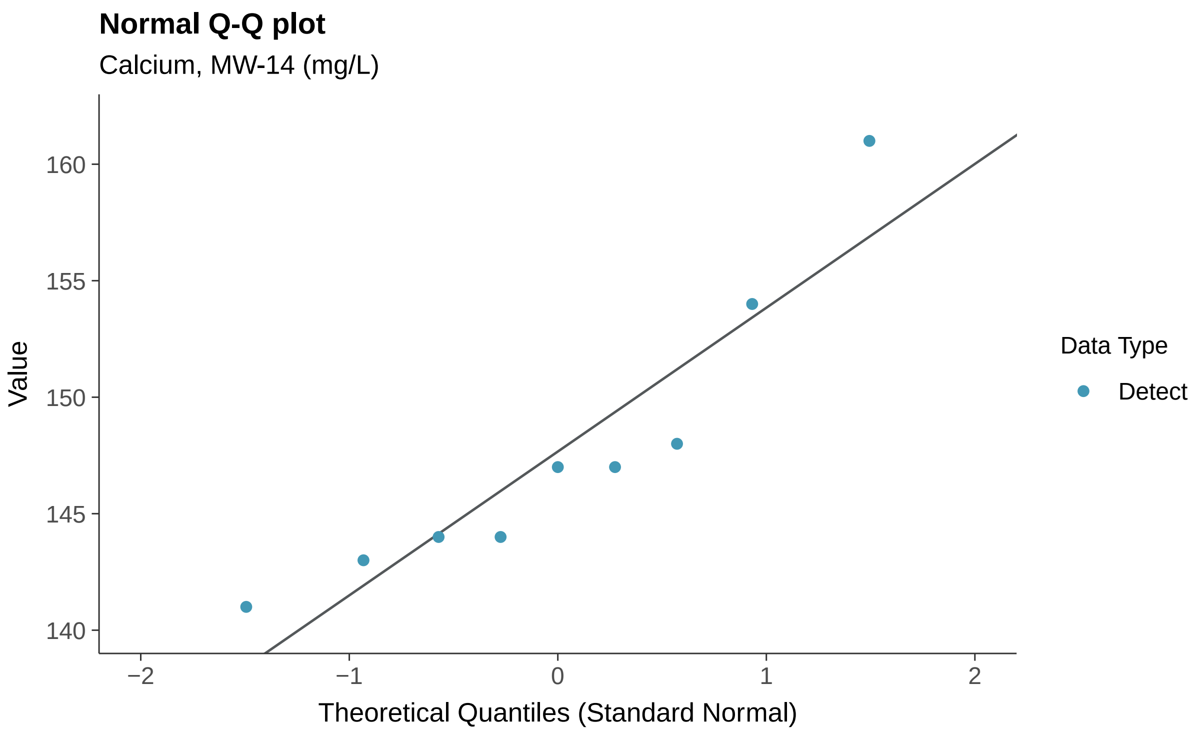
Calcium, MW-14 (mg/L)

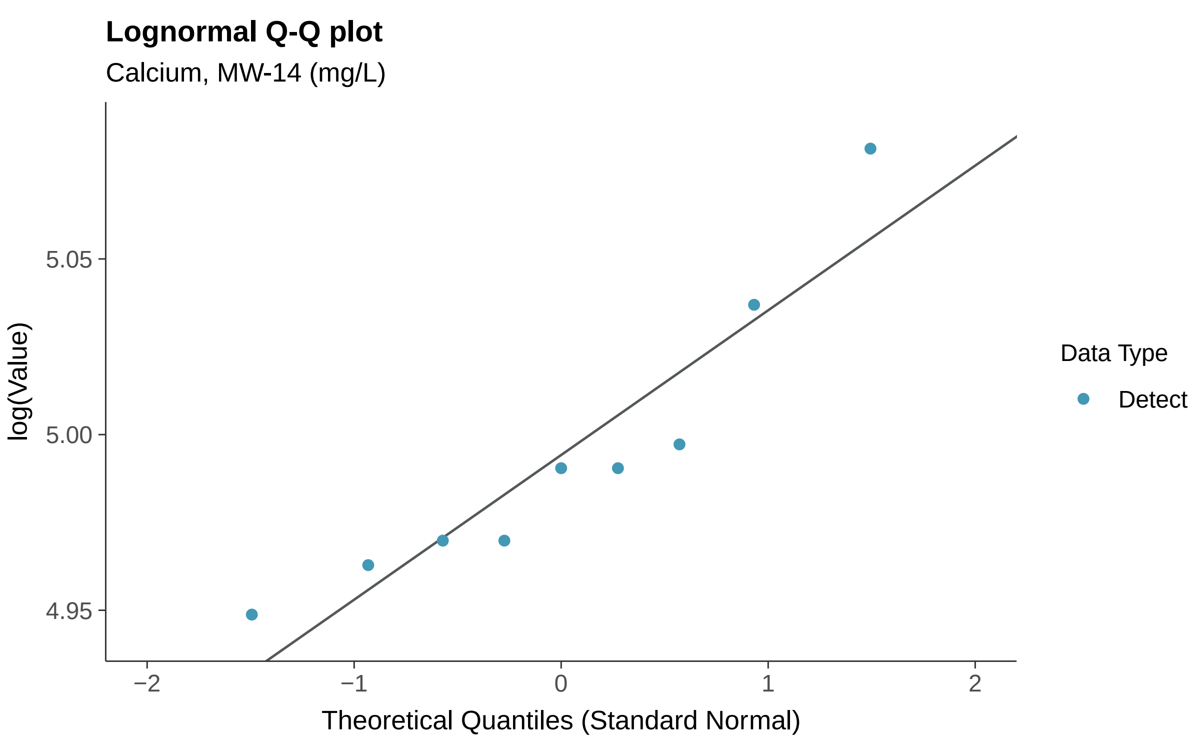


Boxplot by Season

Calcium, MW-14 (mg/L)

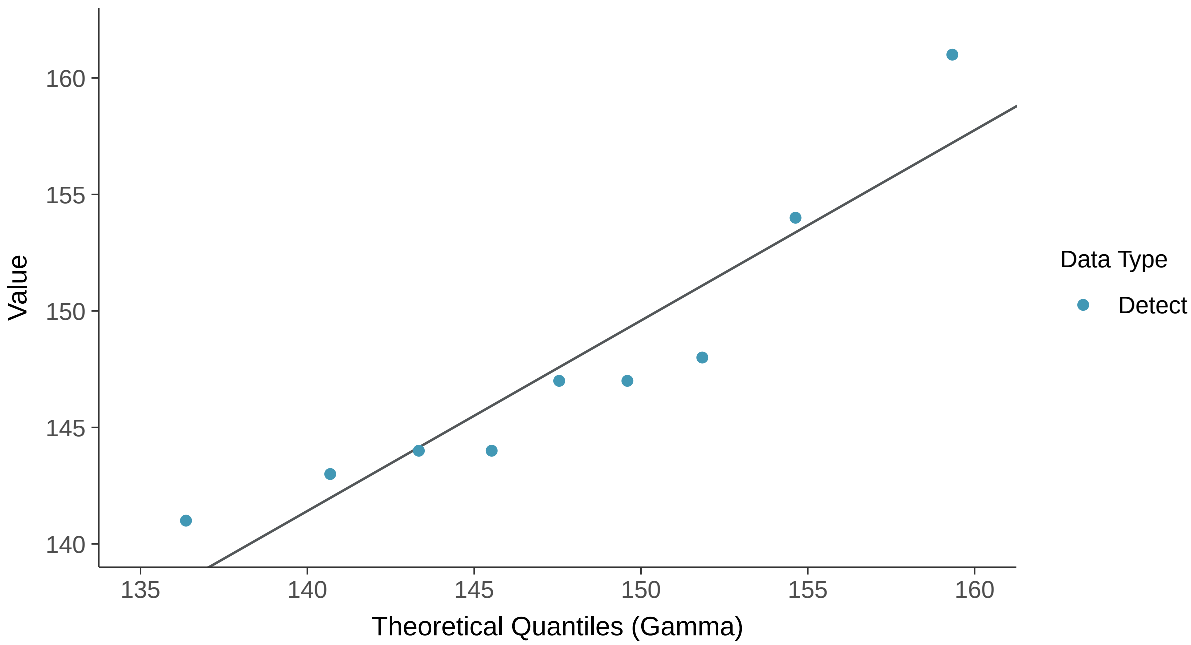



Normal Q-Q plot
Calcium, MW-14 (mg/L)
Value
160
155
150
145
140
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-14 (mg/L)
log(Value)
5.05
5.00
4.95
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

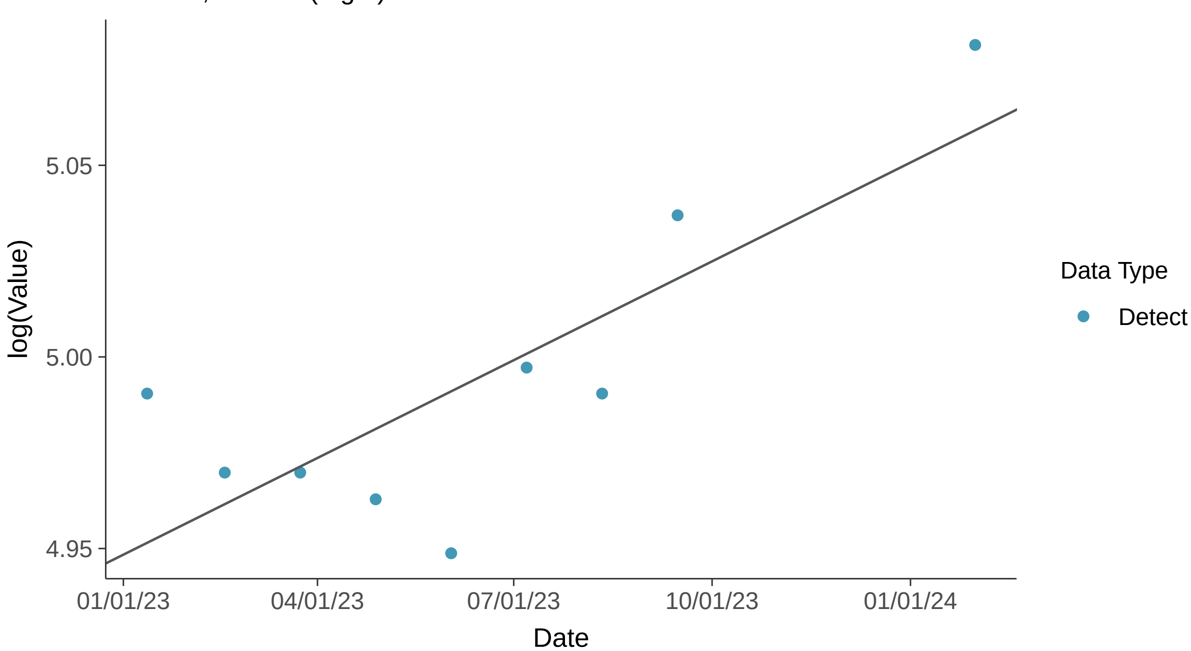
Gamma Q-Q plot

Calcium, MW-14 (mg/L)



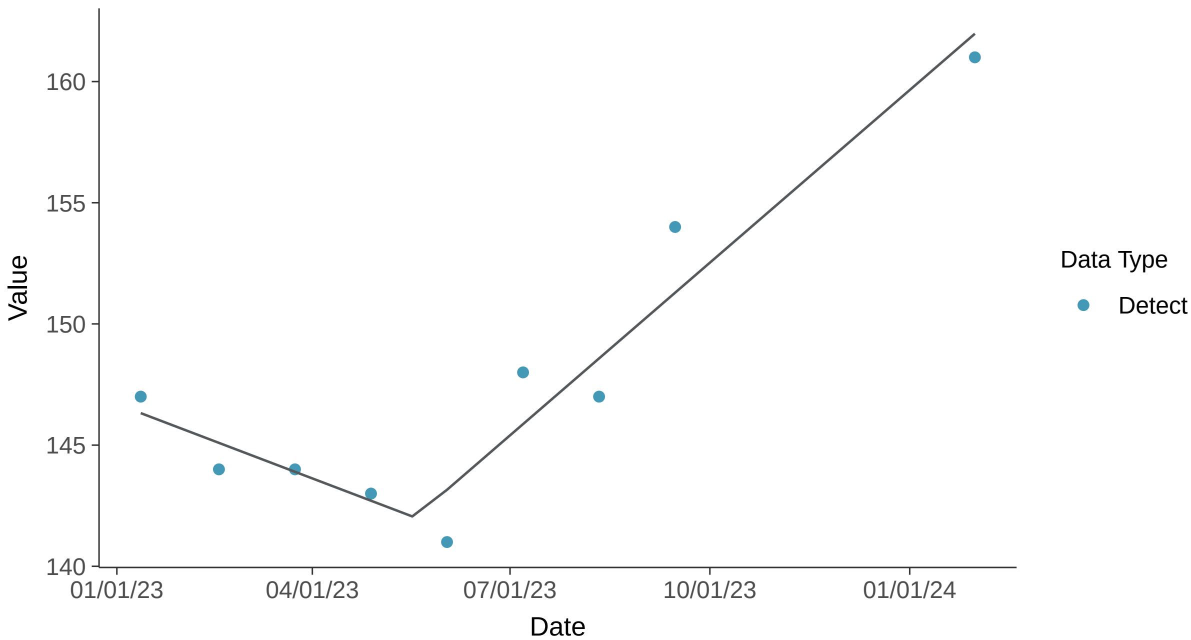
Trend Regression: Lognormal MLE

Calcium, MW-14 (mg/L)



Trend Regression: Piecewise Linear-Linear

Calcium, MW-14 (mg/L)

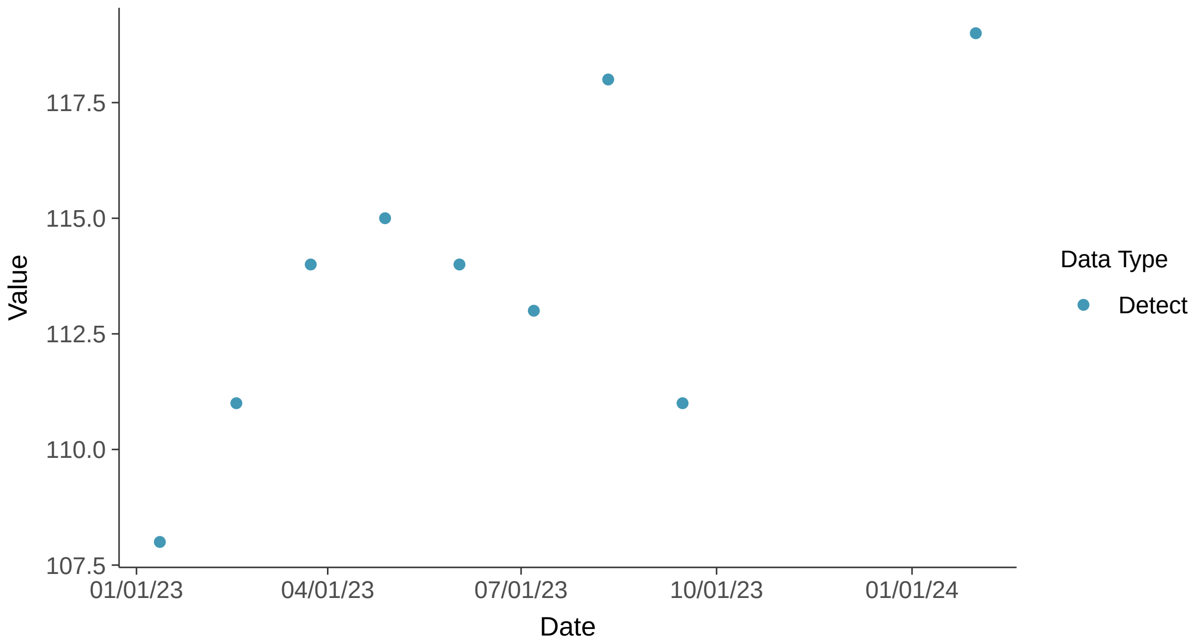


Appendix III: Chloride, MW-14

ID: 14_1_03

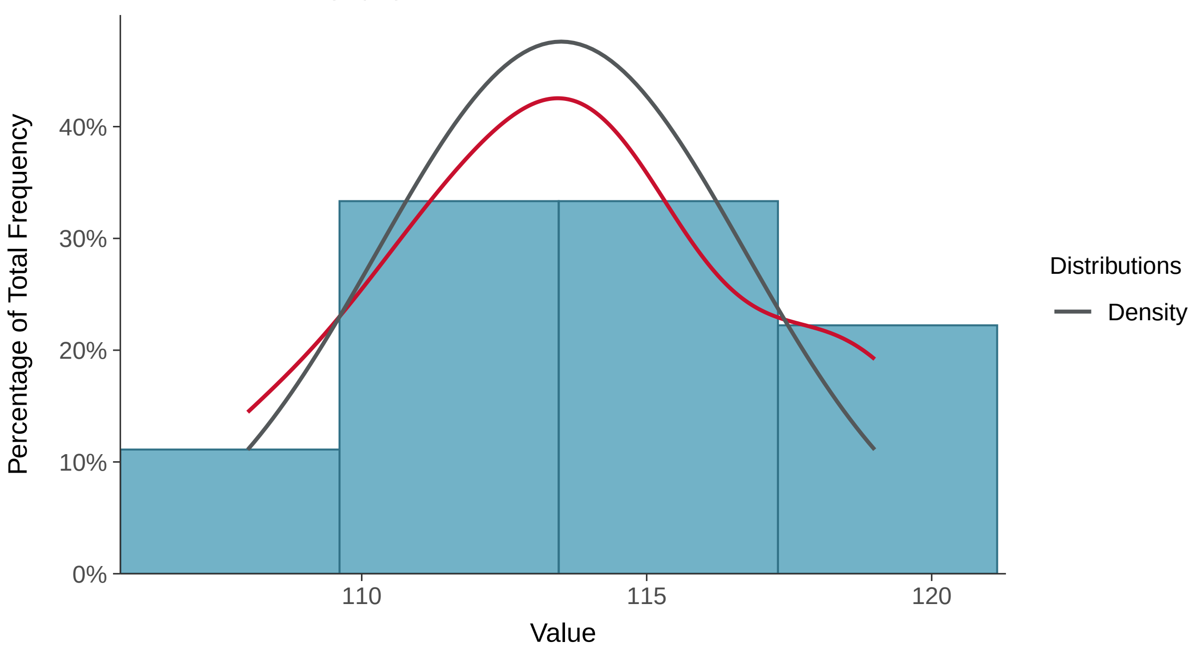
Scatter Plot

Chloride, MW-14 (mg/L)



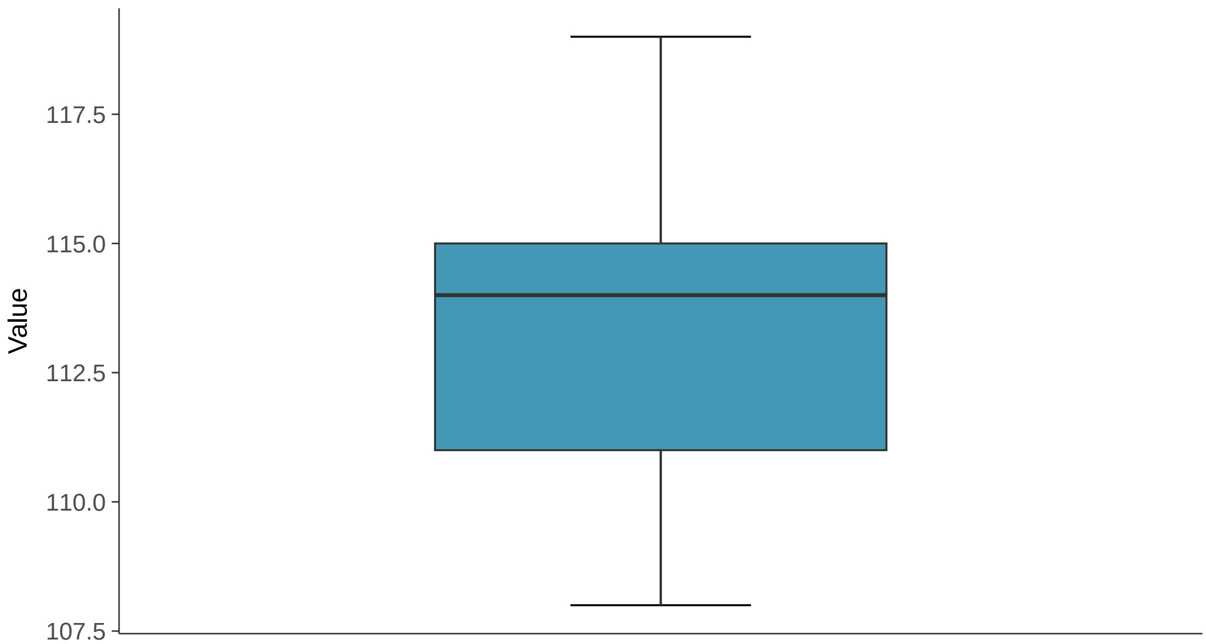
Histogram

Chloride, MW-14 (mg/L)



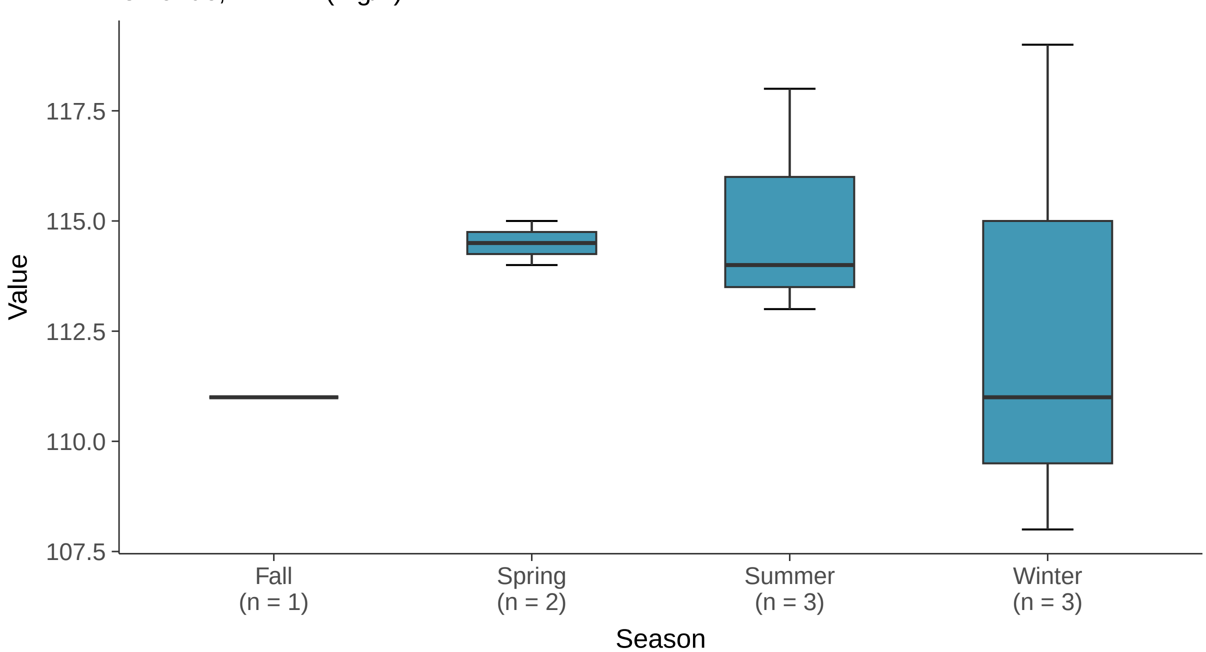
Boxplot

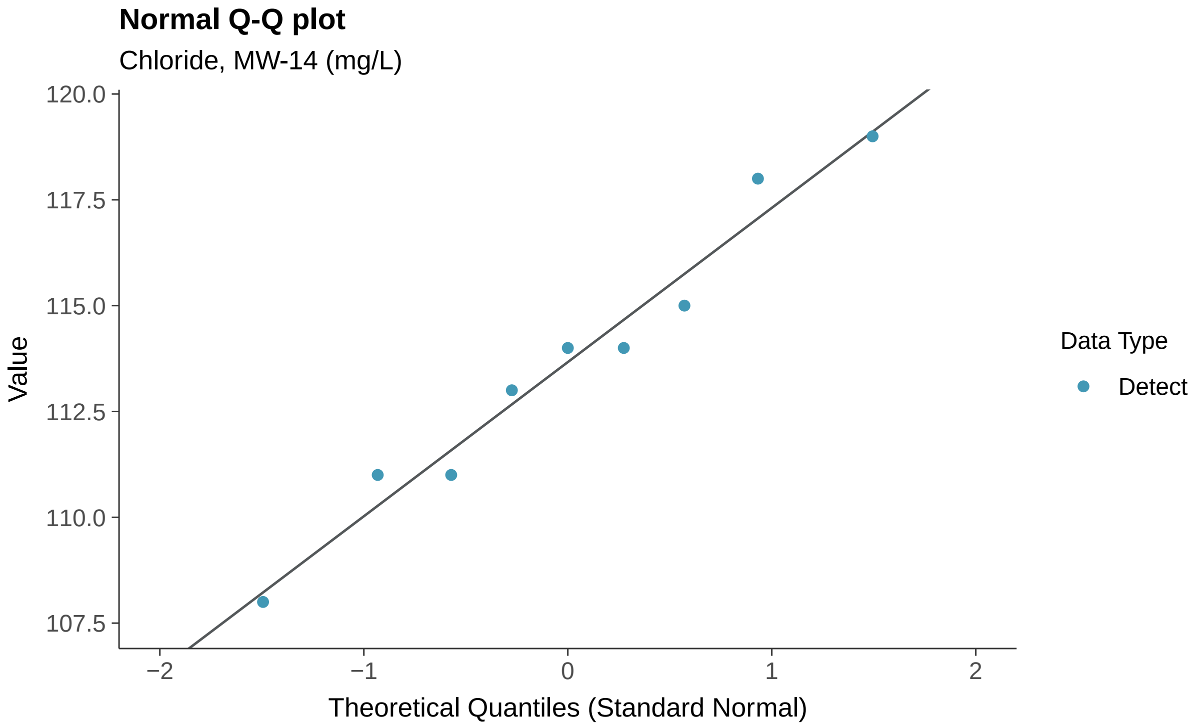
Chloride, MW-14 (mg/L)

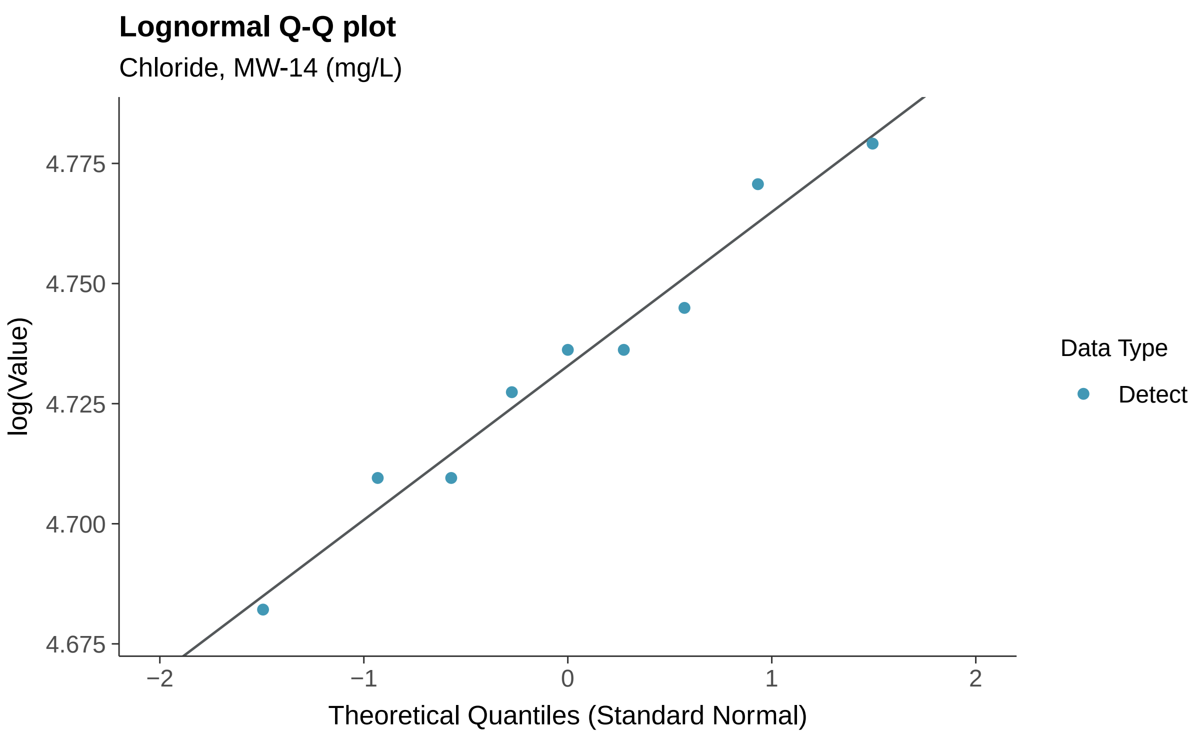


Boxplot by Season

Chloride, MW-14 (mg/L)

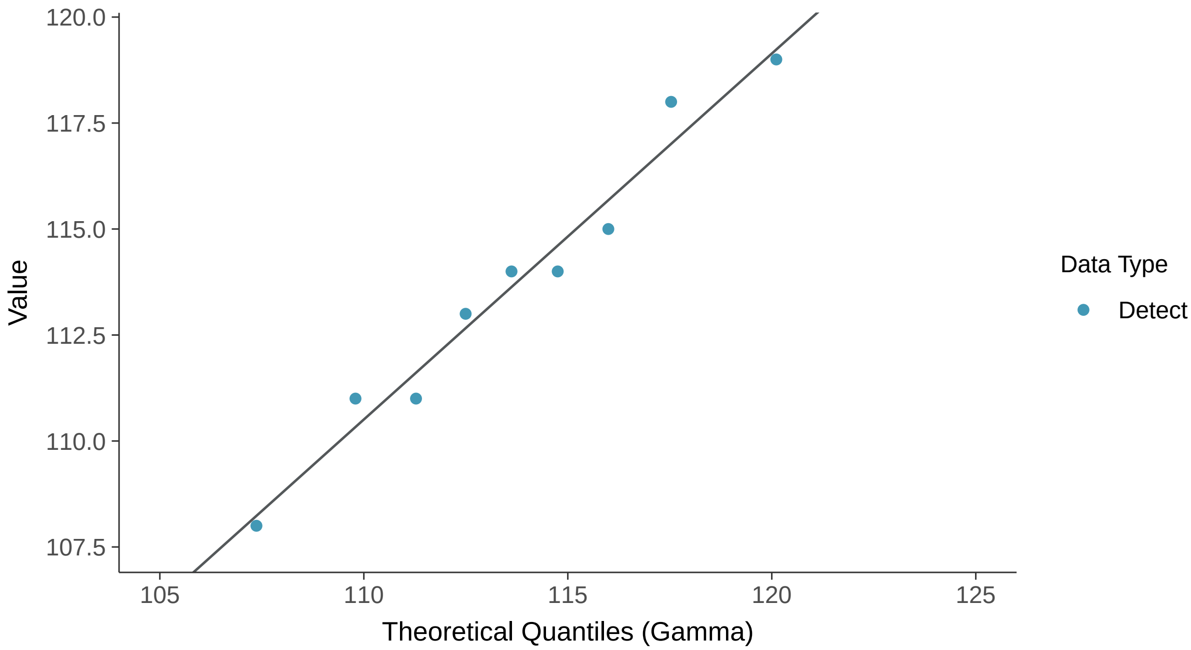



Normal Q-Q plot
Chloride, MW-14 (mg/L)
Value
120.0
117.5
115.0
112.5
110.0
107.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Chloride, MW-14 (mg/L)
log(Value)
4.775
4.750
4.725
4.700
4.675
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

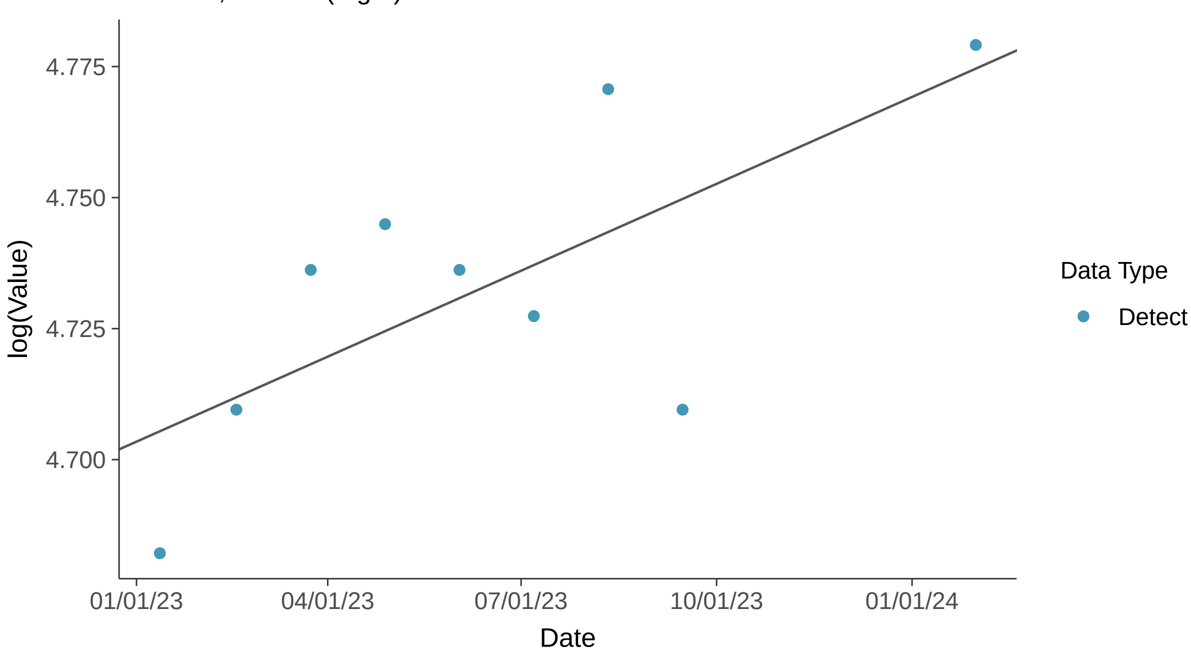
Gamma Q-Q plot

Chloride, MW-14 (mg/L)



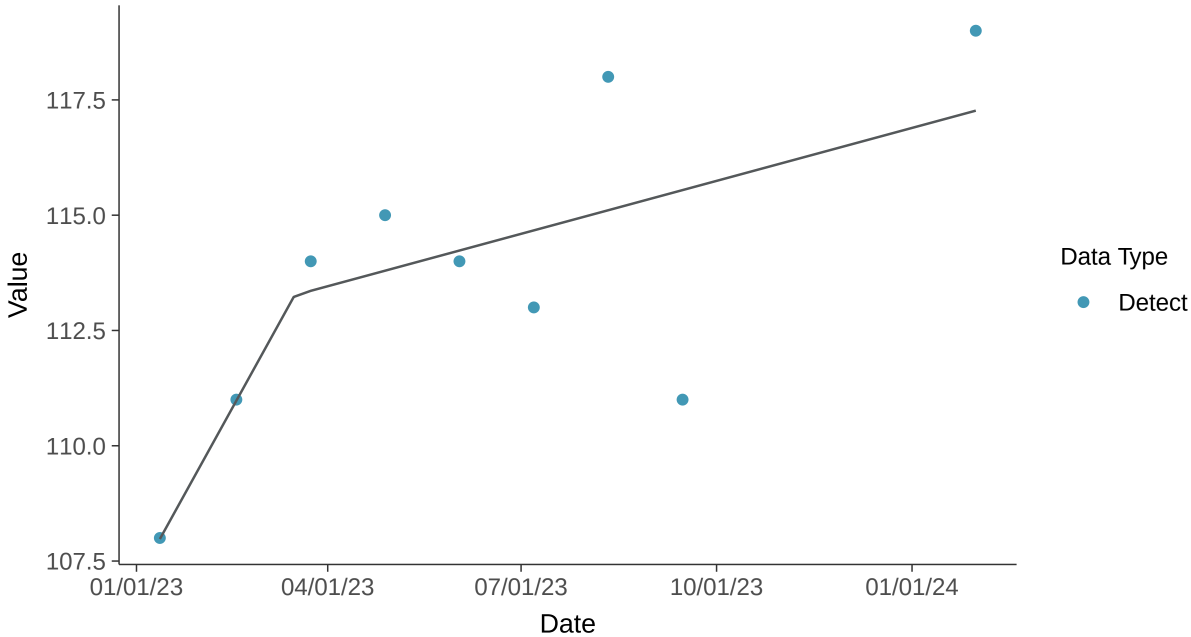
Trend Regression: Lognormal MLE

Chloride, MW-14 (mg/L)



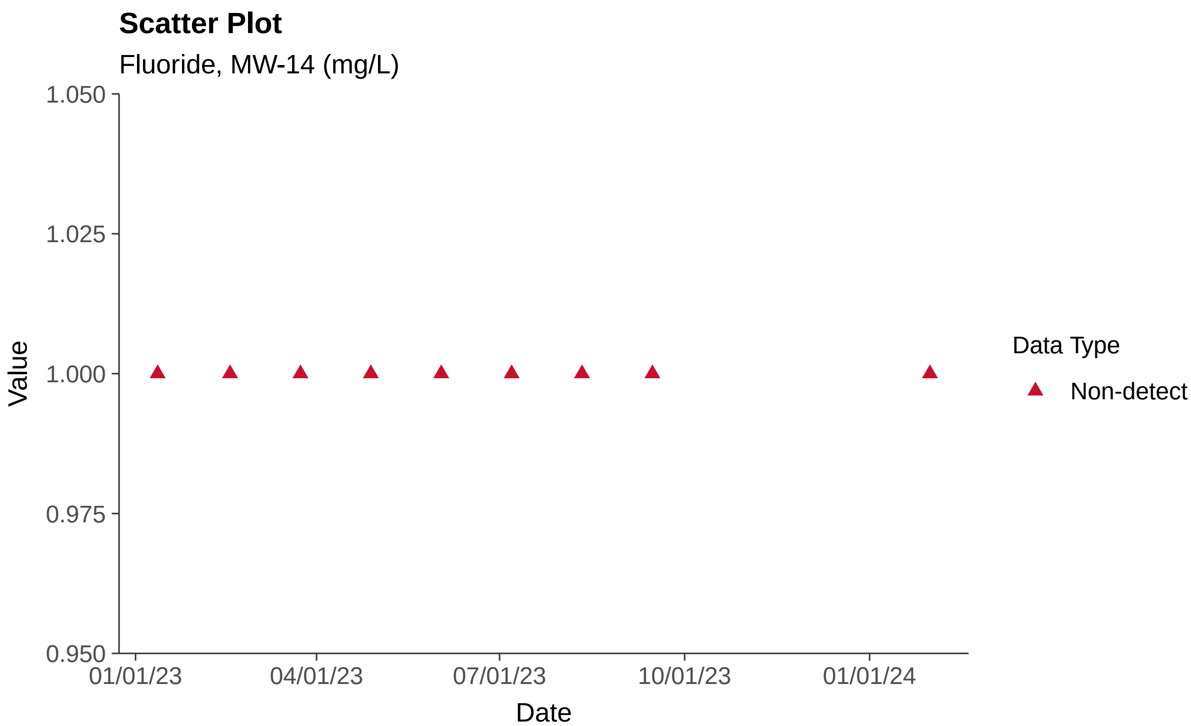
Trend Regression: Piecewise Linear-Linear

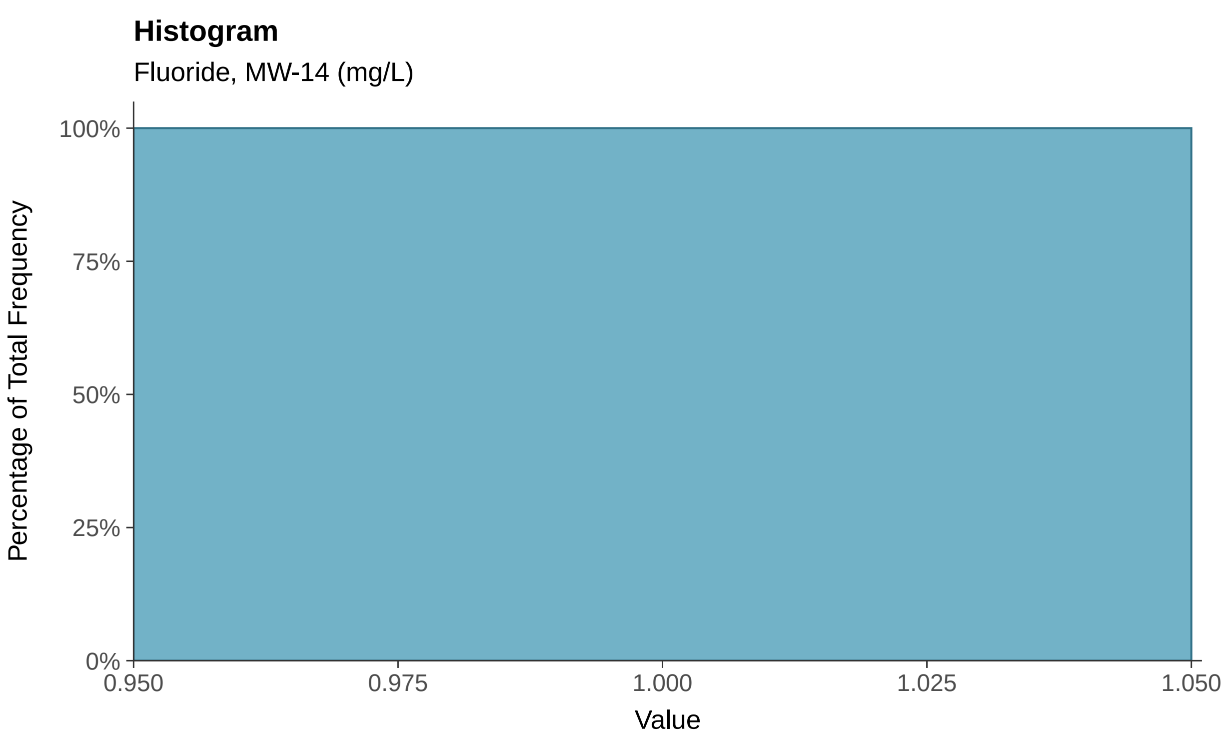
Chloride, MW-14 (mg/L)



Appendix III: Fluoride, MW-14

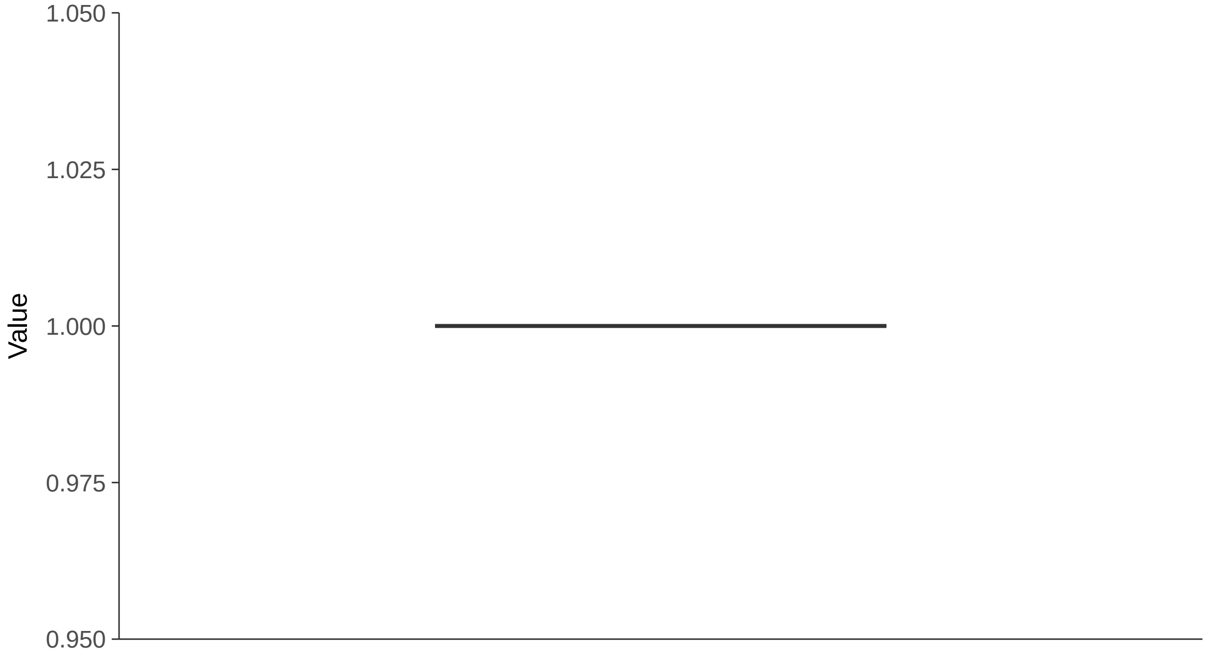
ID: 14_1_04





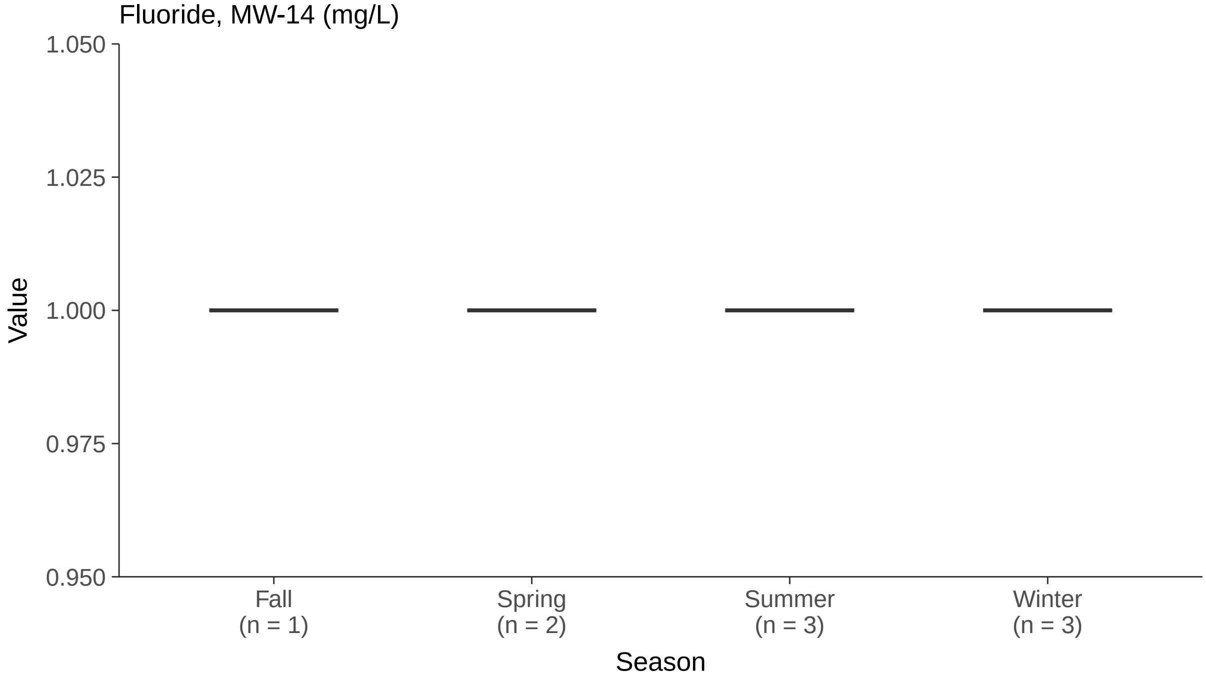
Boxplot

Fluoride, MW-14 (mg/L)



Boxplot by Season

Fluoride, MW-14 (mg/L)

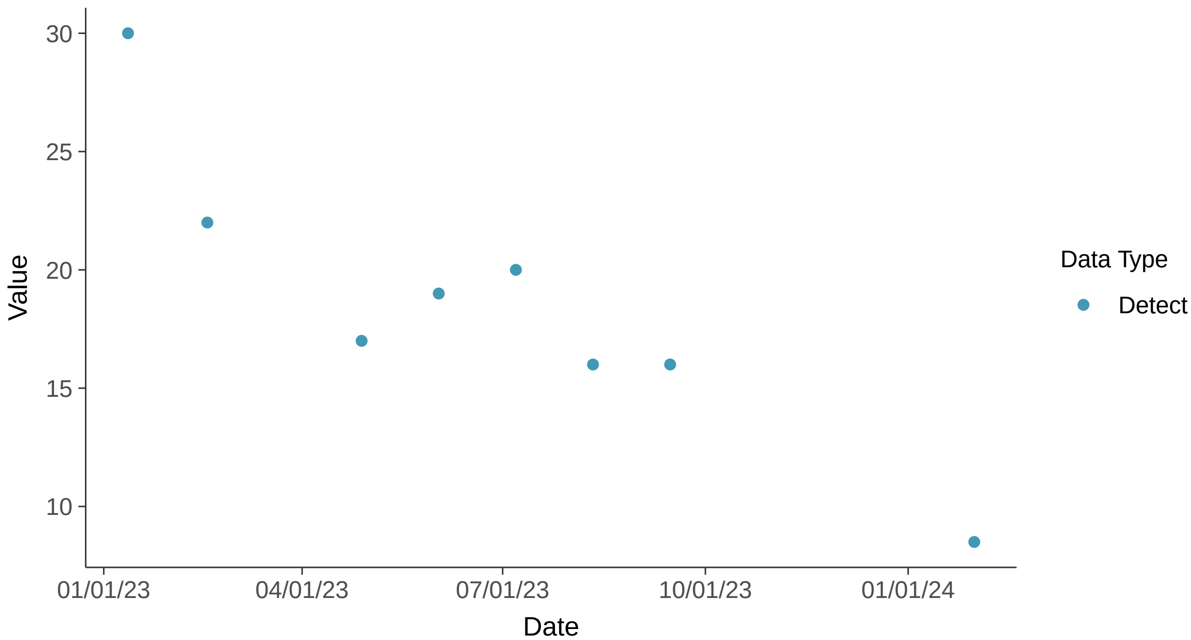


Appendix III: Sulfate, MW-14

ID: 14_1_05

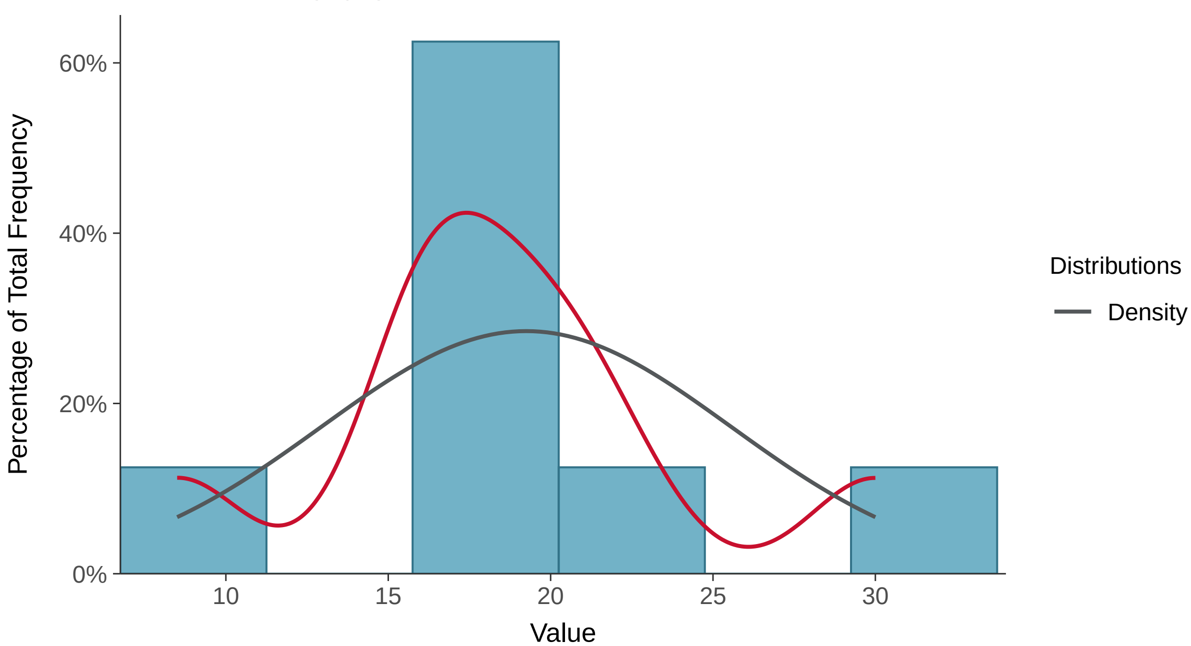
Scatter Plot

Sulfate, MW-14 (mg/L)



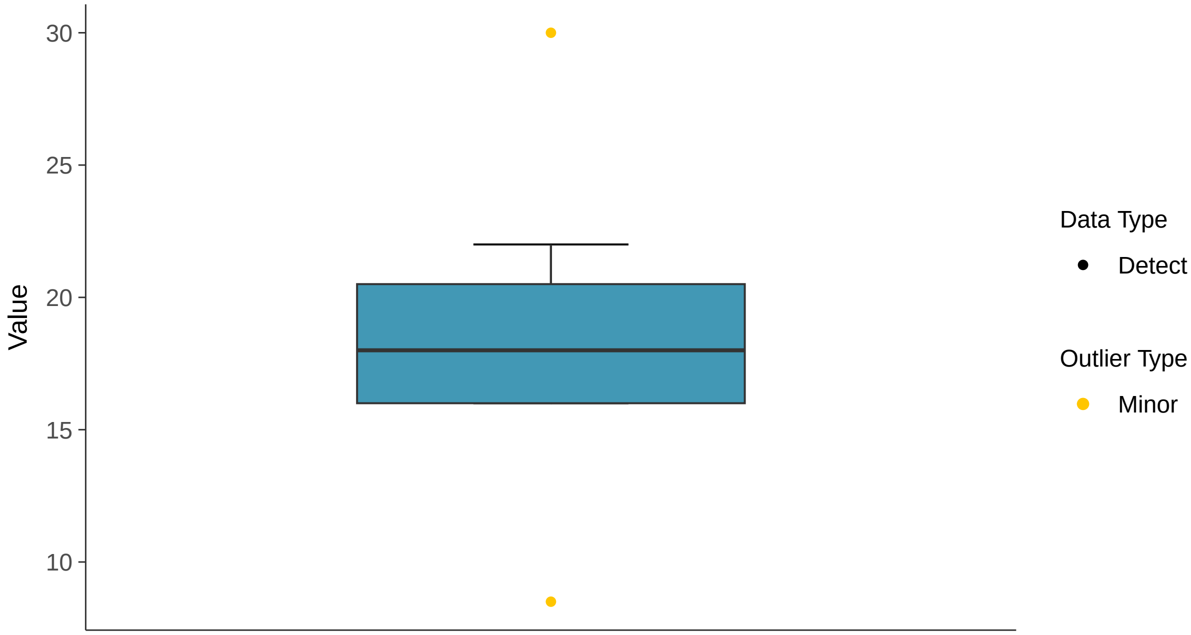
Histogram

Sulfate, MW-14 (mg/L)



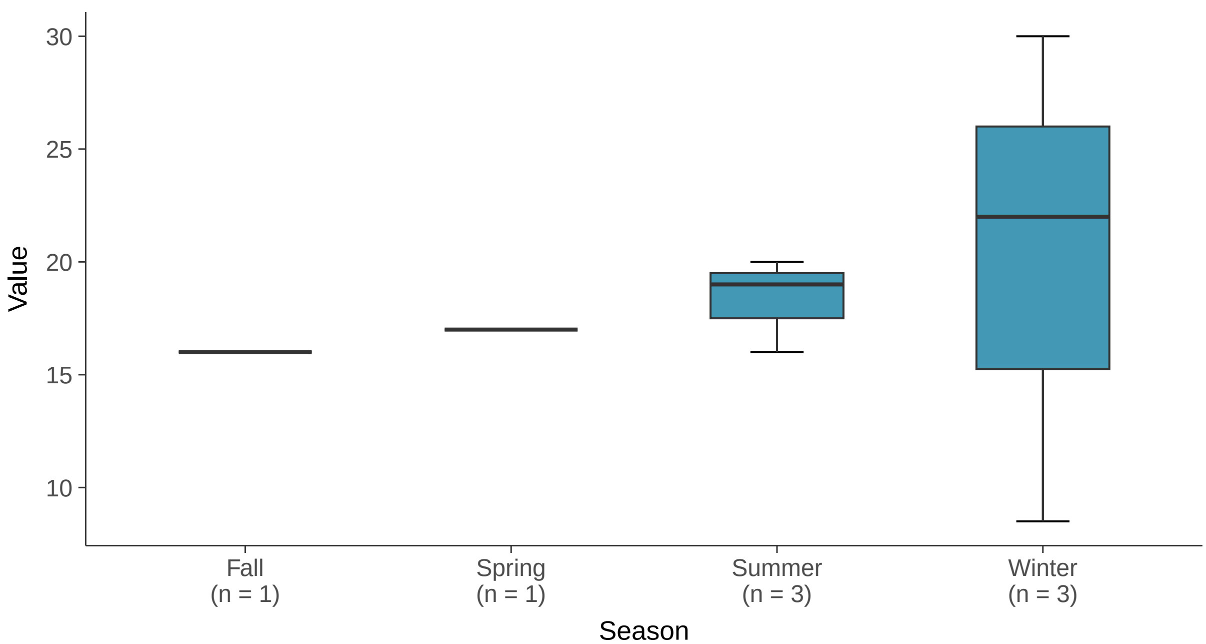
Boxplot

Sulfate, MW-14 (mg/L)



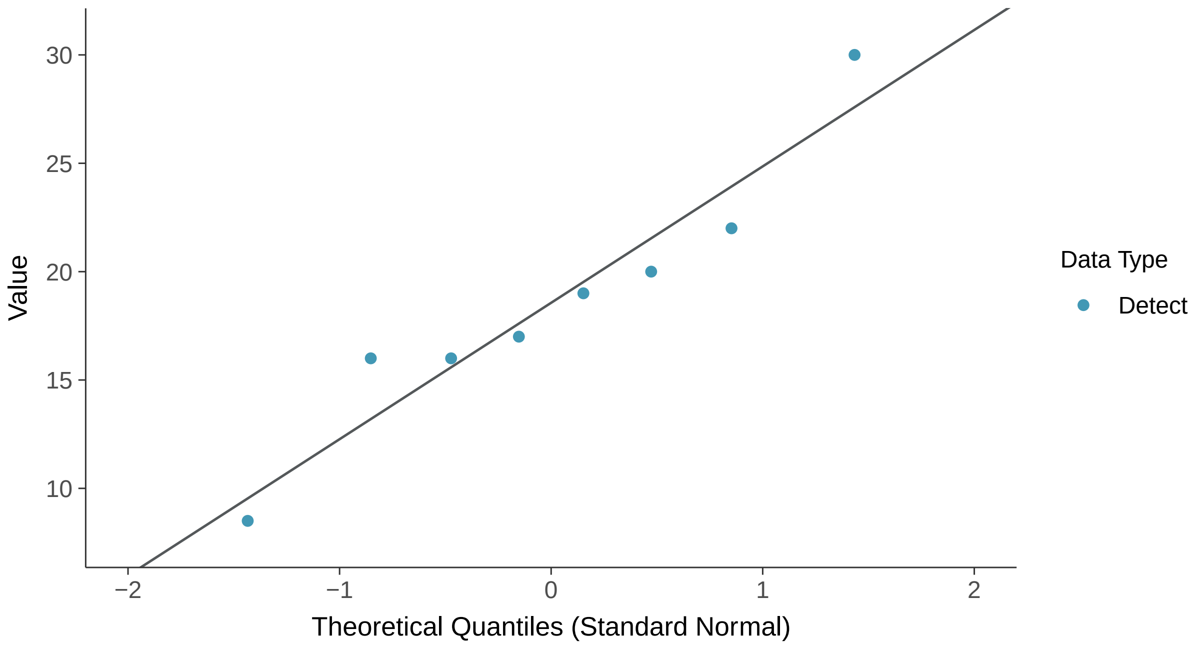
Boxplot by Season

Sulfate, MW-14 (mg/L)



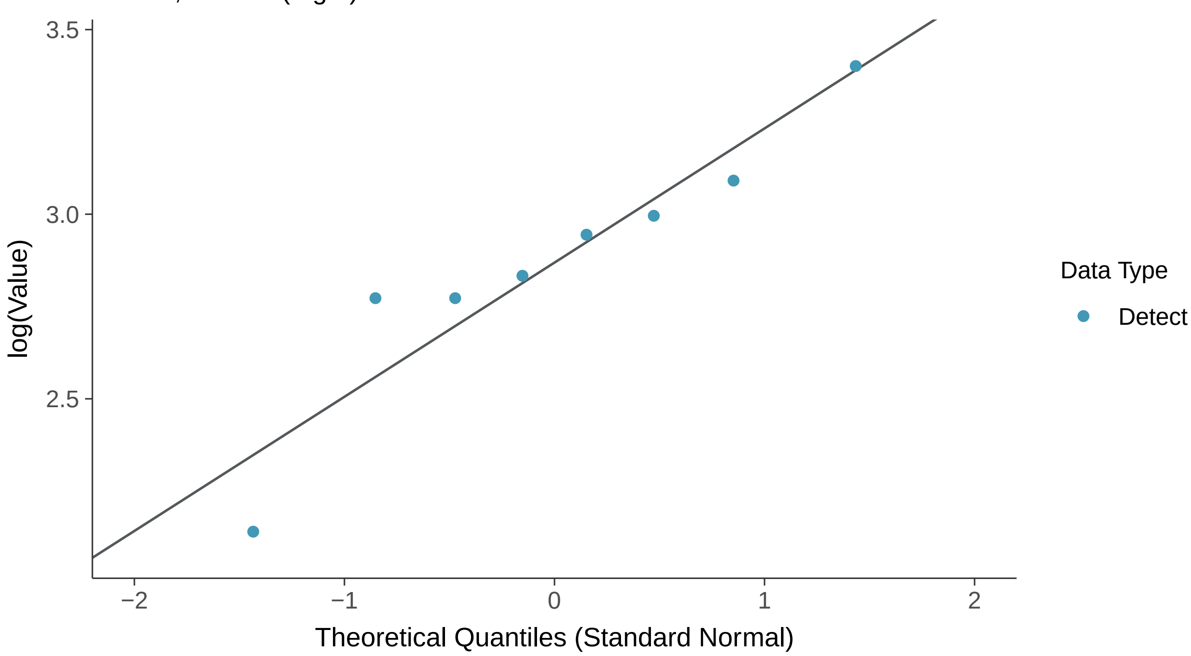
Normal Q-Q plot

Sulfate, MW-14 (mg/L)



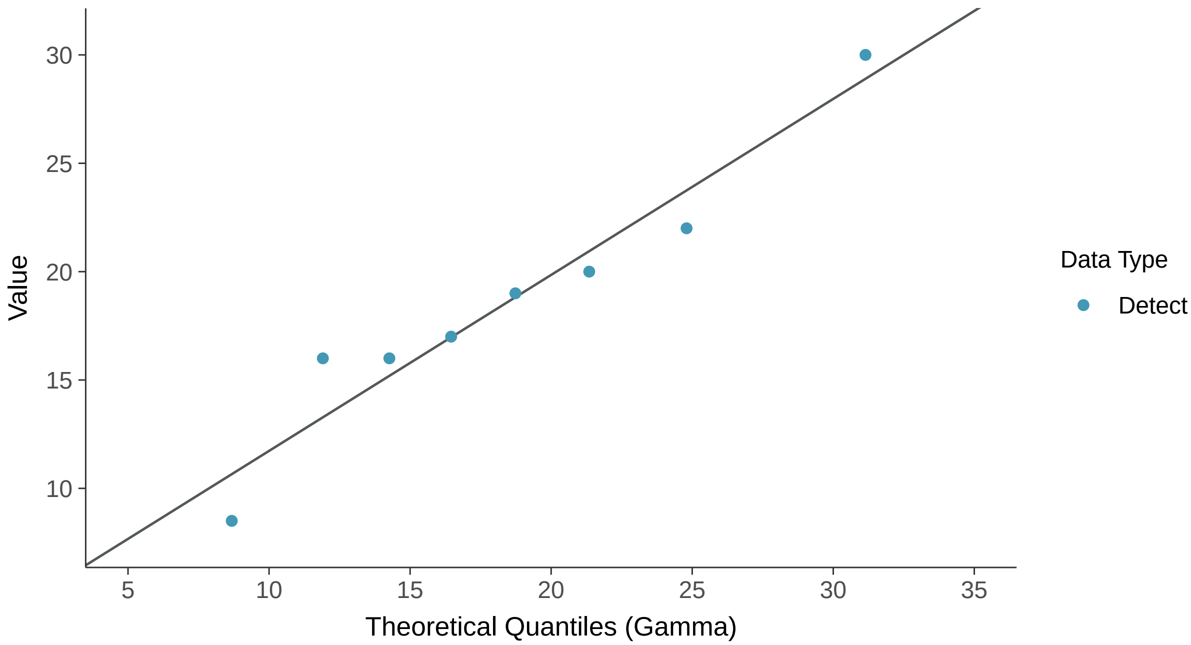
Lognormal Q-Q plot

Sulfate, MW-14 (mg/L)



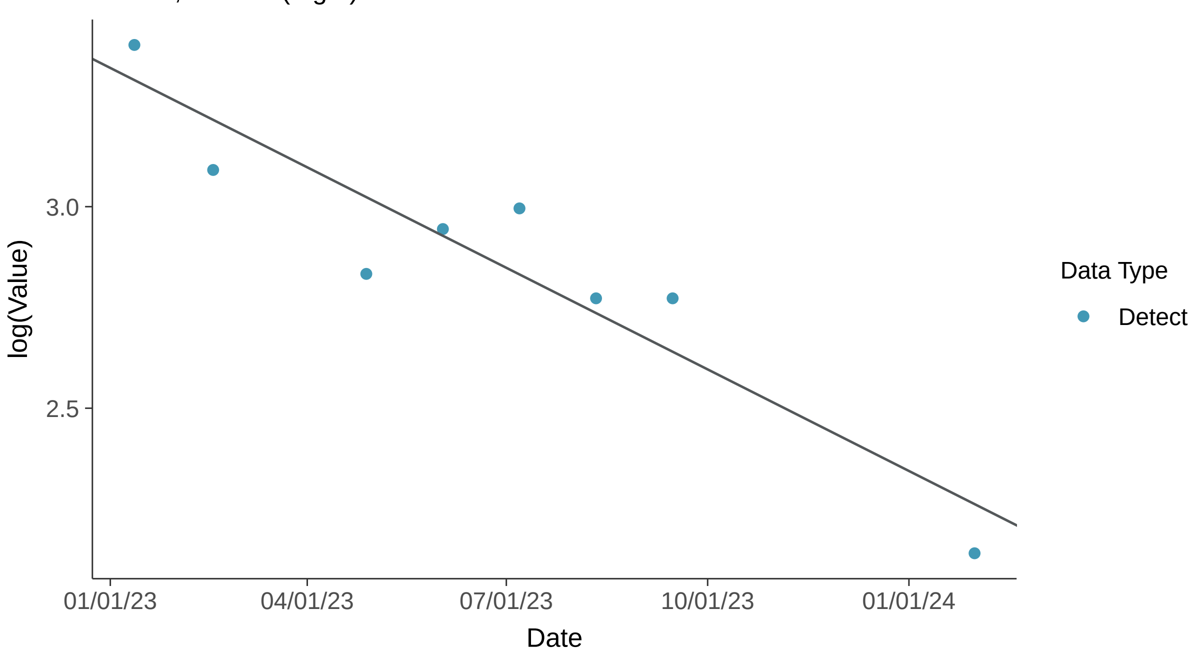
Gamma Q-Q plot

Sulfate, MW-14 (mg/L)



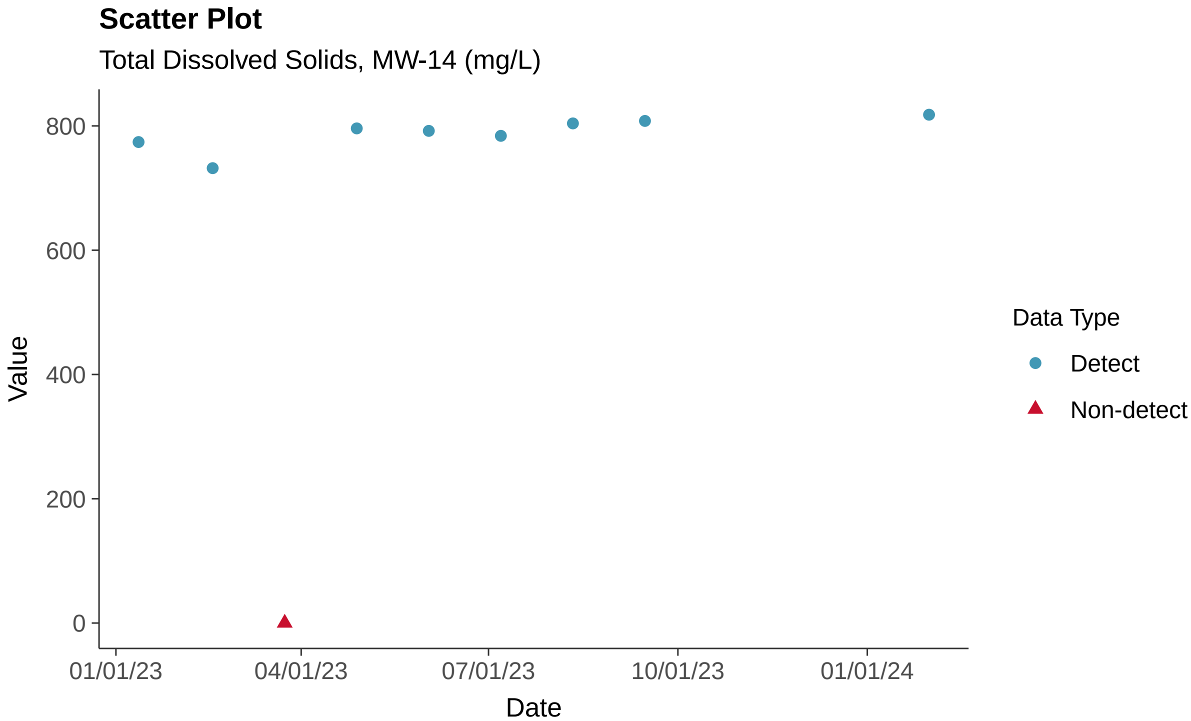
Trend Regression: Lognormal MLE

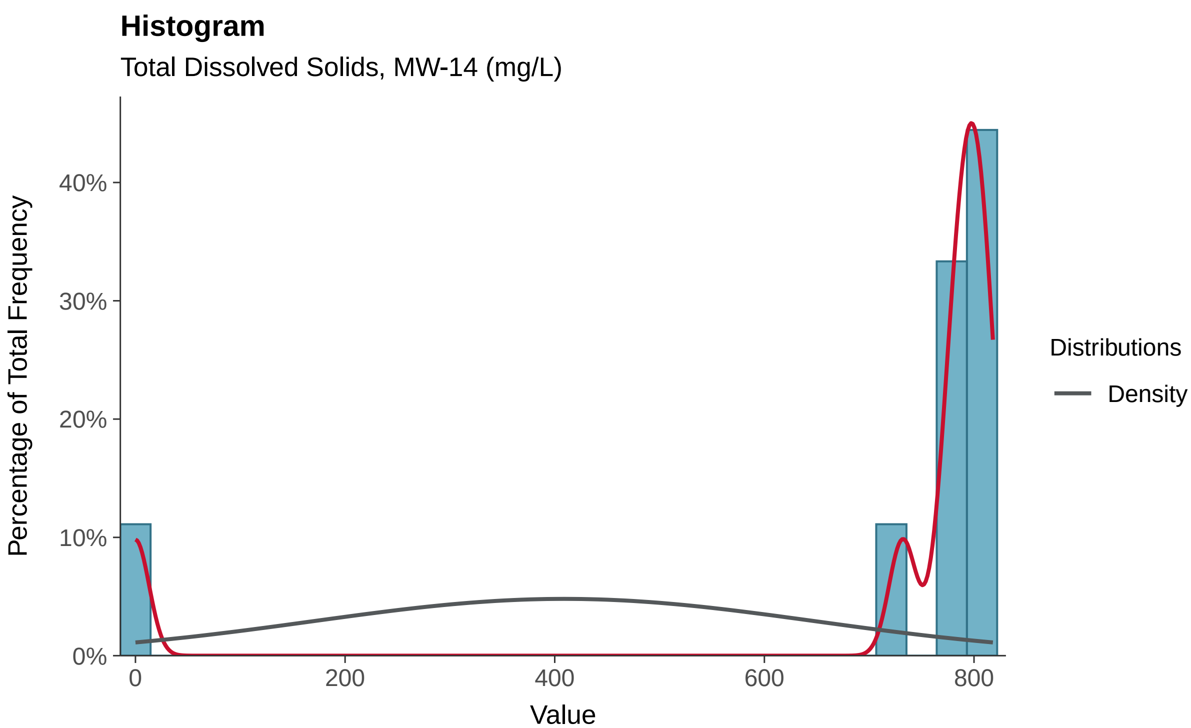
Sulfate, MW-14 (mg/L)



Appendix III: Total Dissolved Solids, MW-14

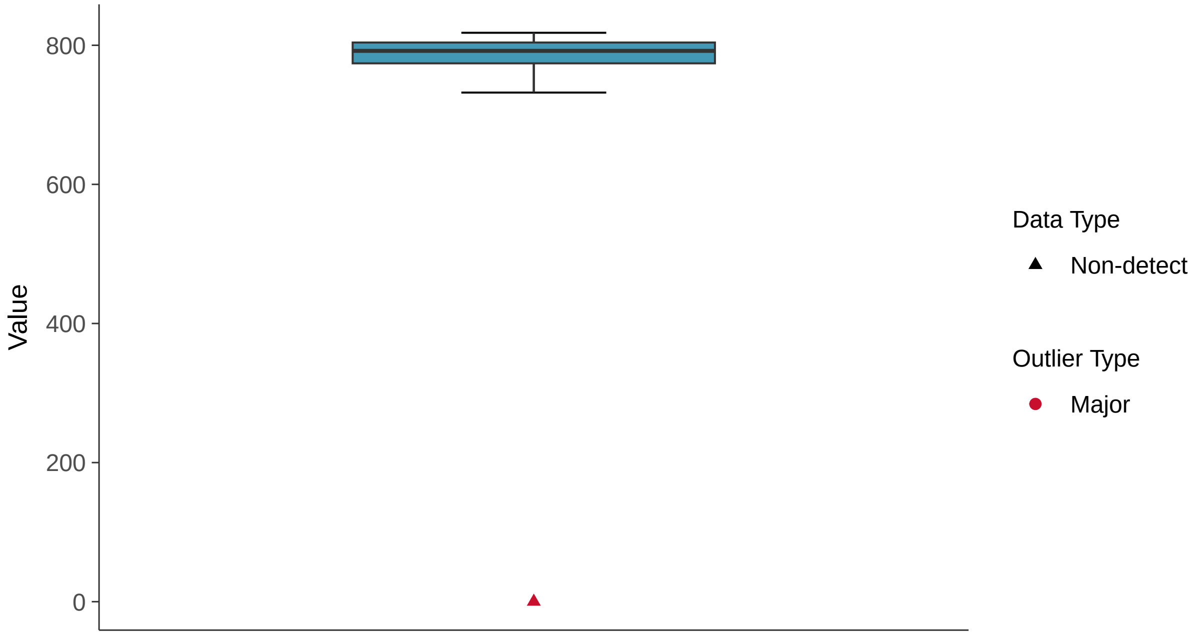
ID: 14_1_06





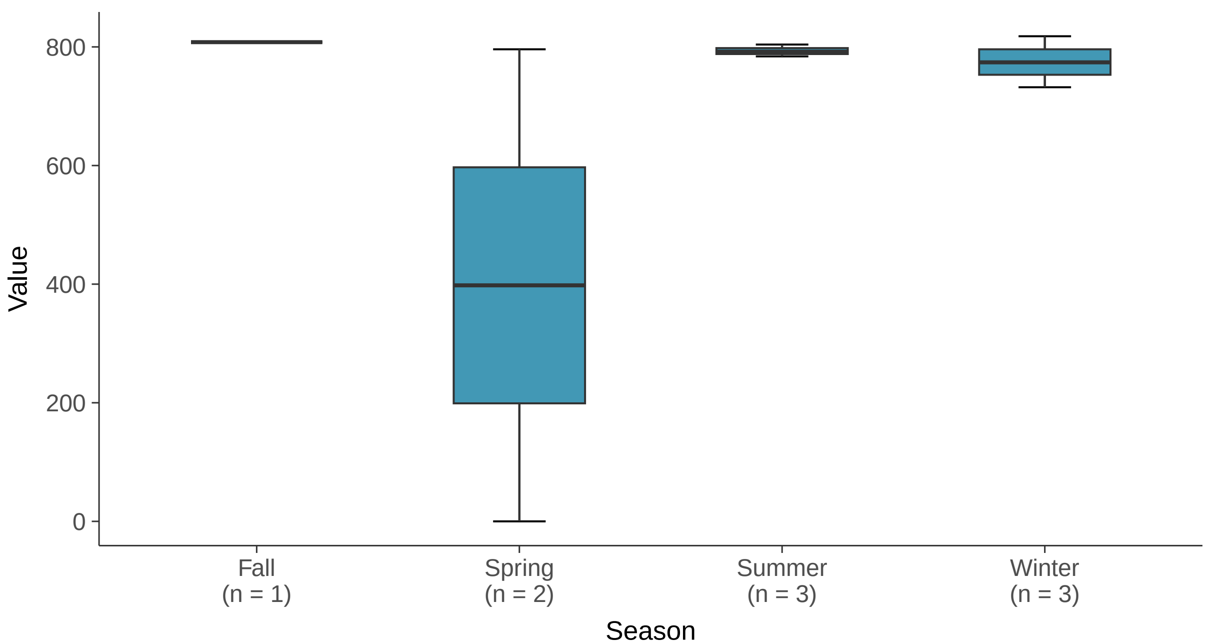
Boxplot

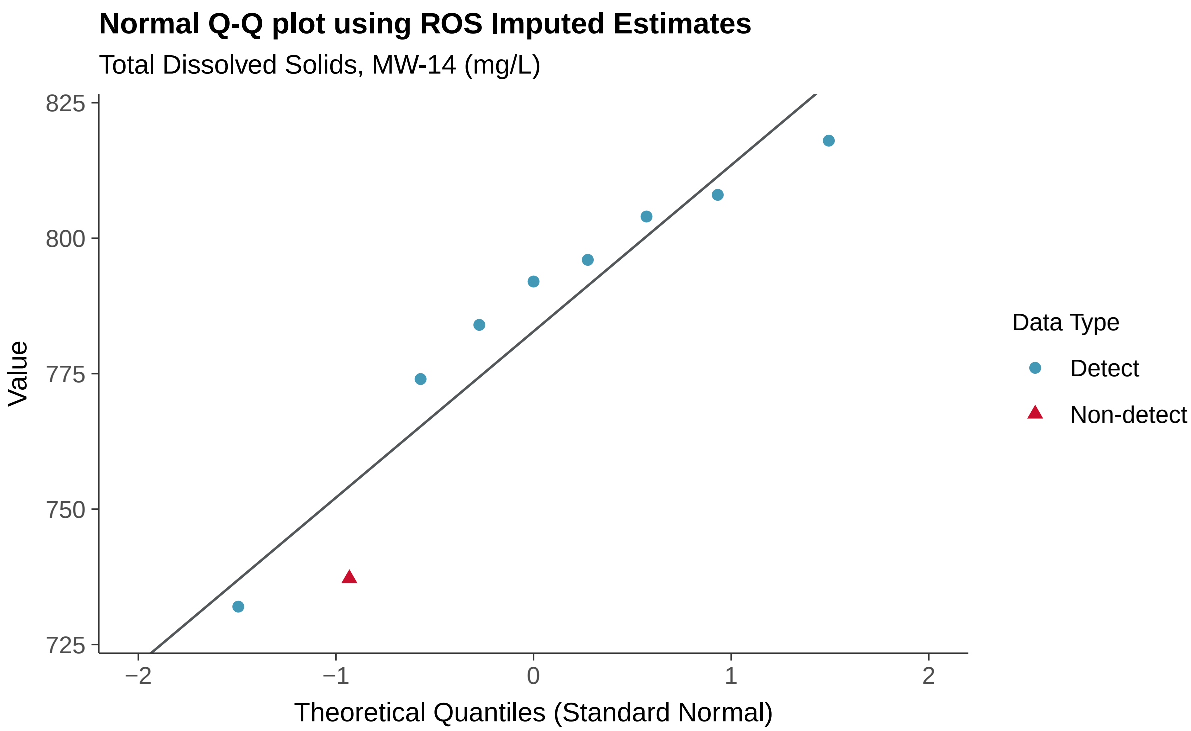
Total Dissolved Solids, MW-14 (mg/L)

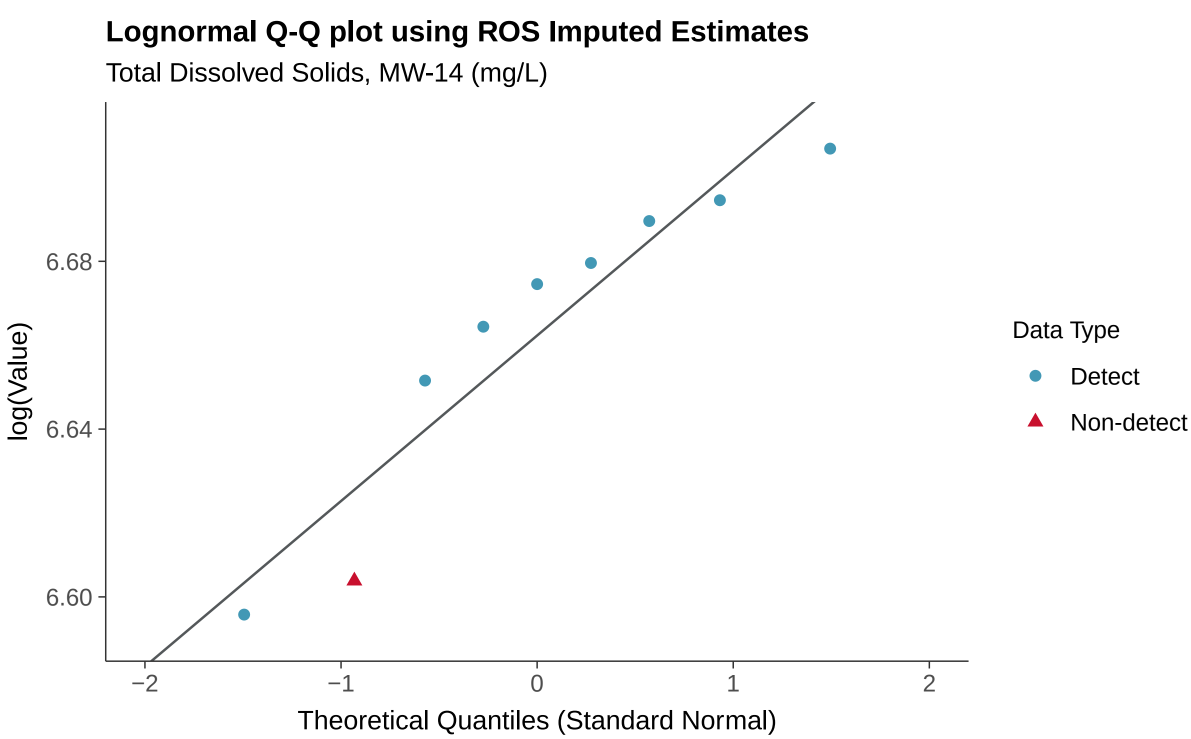


Boxplot by Season

Total Dissolved Solids, MW-14 (mg/L)

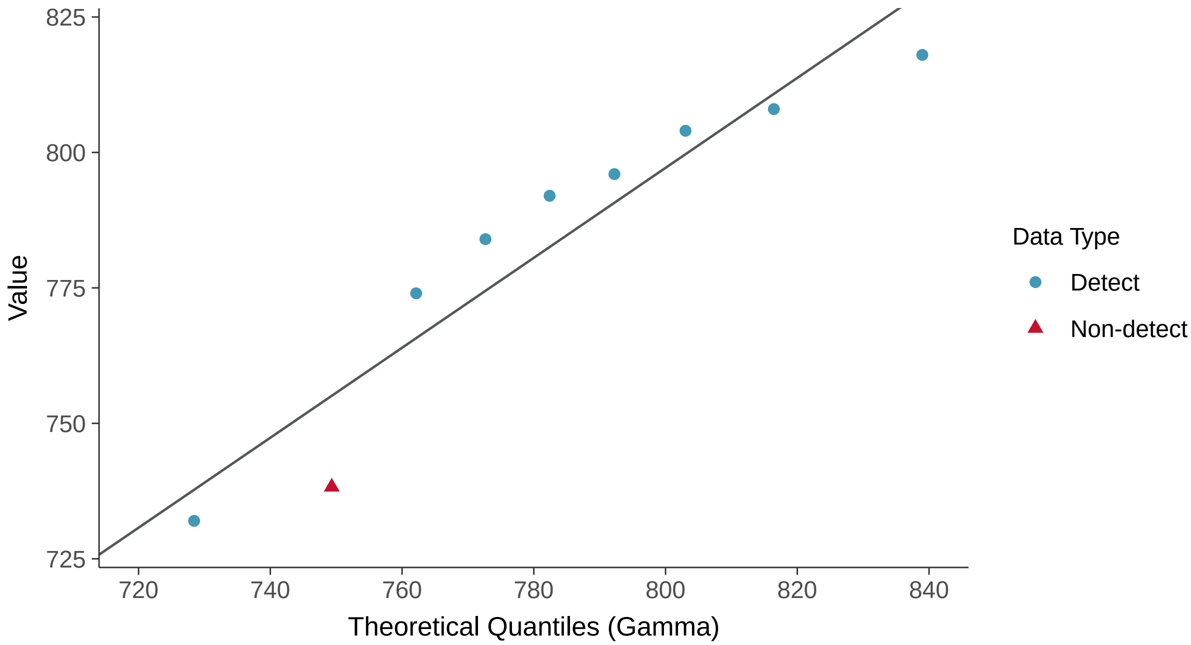



Normal Q-Q plot using ROS Imputed Estimates
Total Dissolved Solids, MW-14 (mg/L)
Value
825
800
775
750
725
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Total Dissolved Solids, MW-14 (mg/L)
log(Value)
6.68
6.64
6.60
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

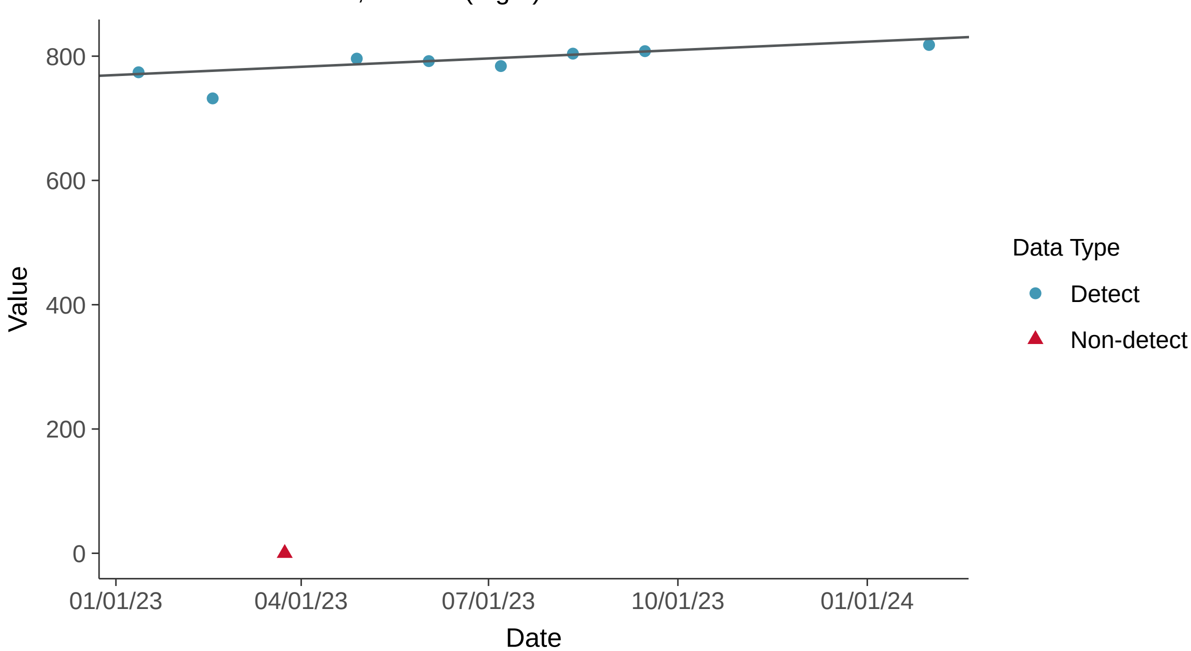
Gamma Q-Q plot using ROS Imputed Estimates

Total Dissolved Solids, MW-14 (mg/L)



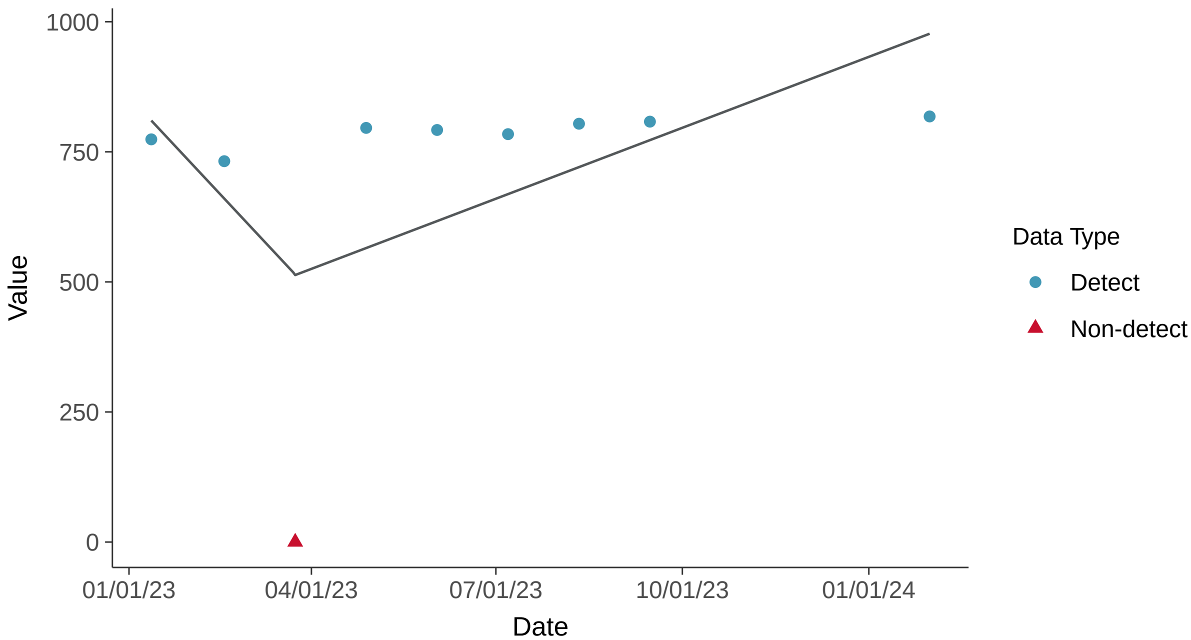
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Total Dissolved Solids, MW-14 (mg/L)



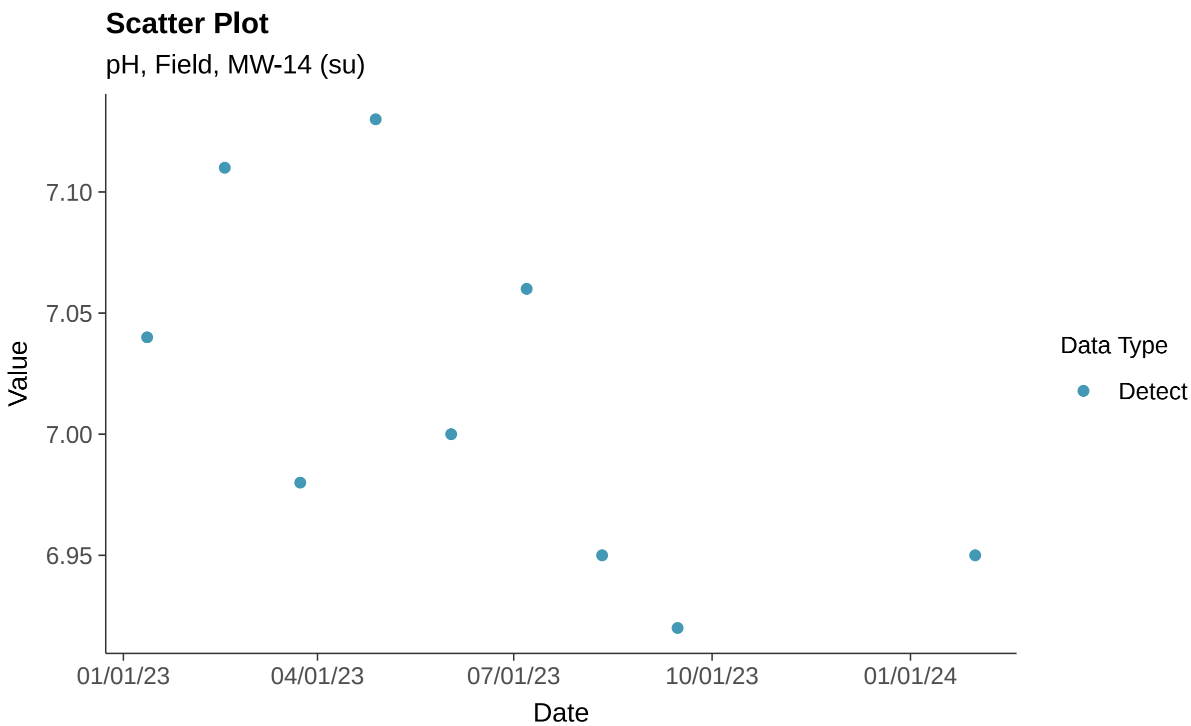
Trend Regression: Piecewise Linear-Linear

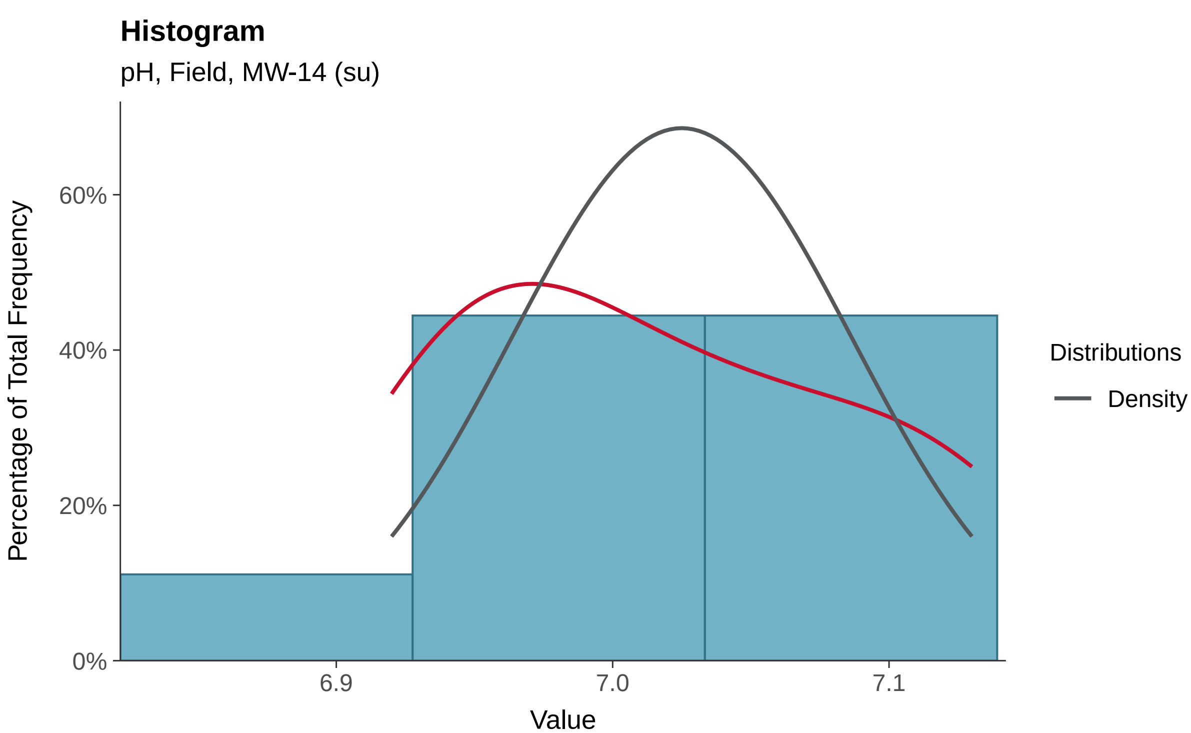
Total Dissolved Solids, MW-14 (mg/L)



Appendix III: pH, Field, MW-14

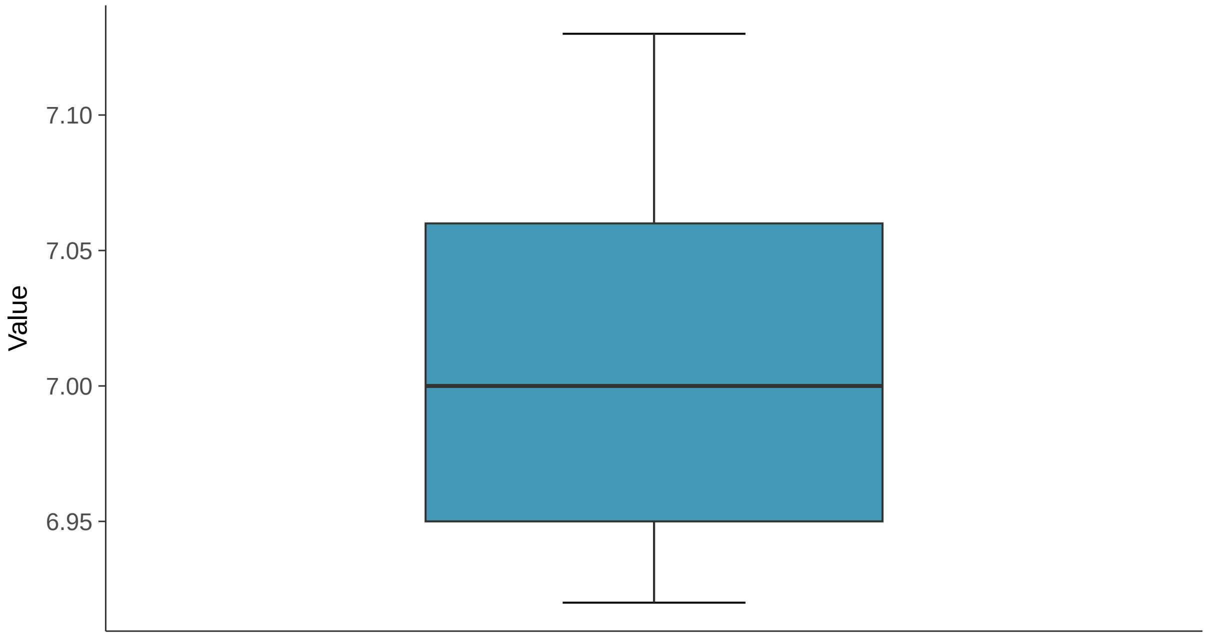
ID: 14_1_07





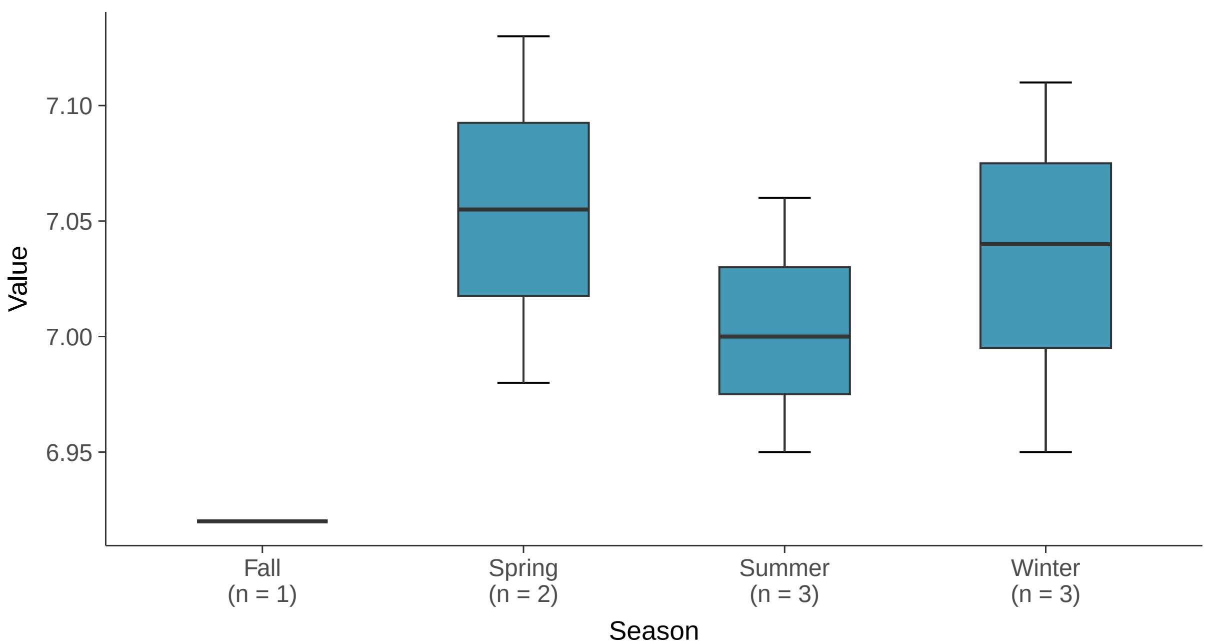
Boxplot

pH, Field, MW-14 (su)



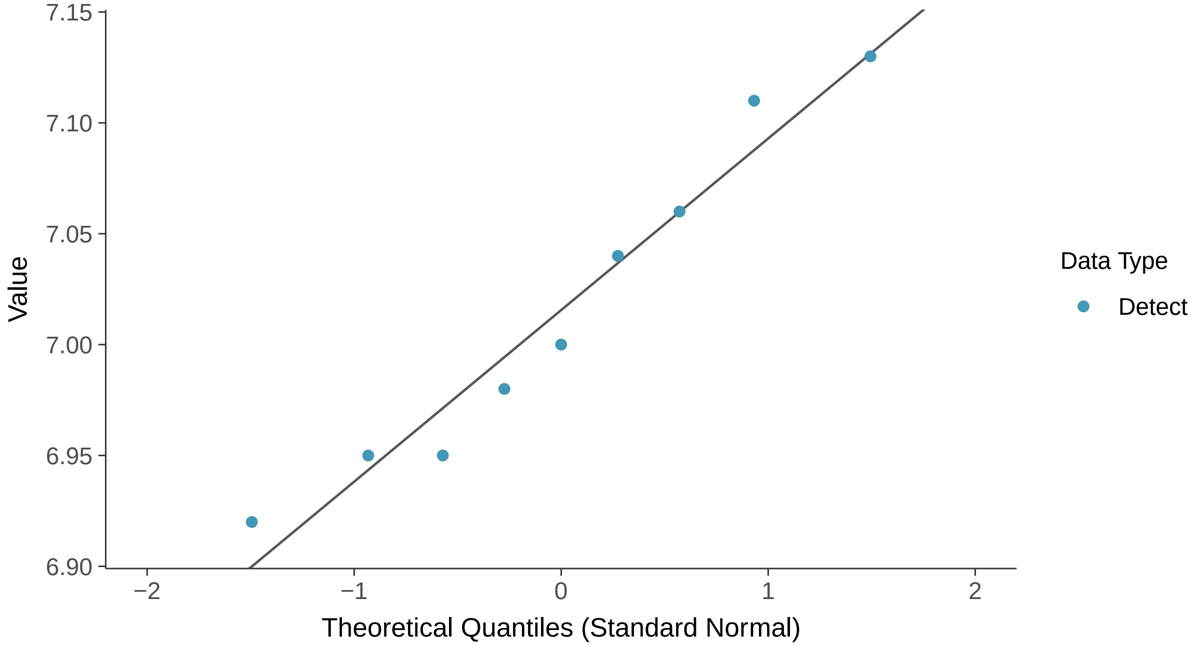
Boxplot by Season

pH, Field, MW-14 (su)



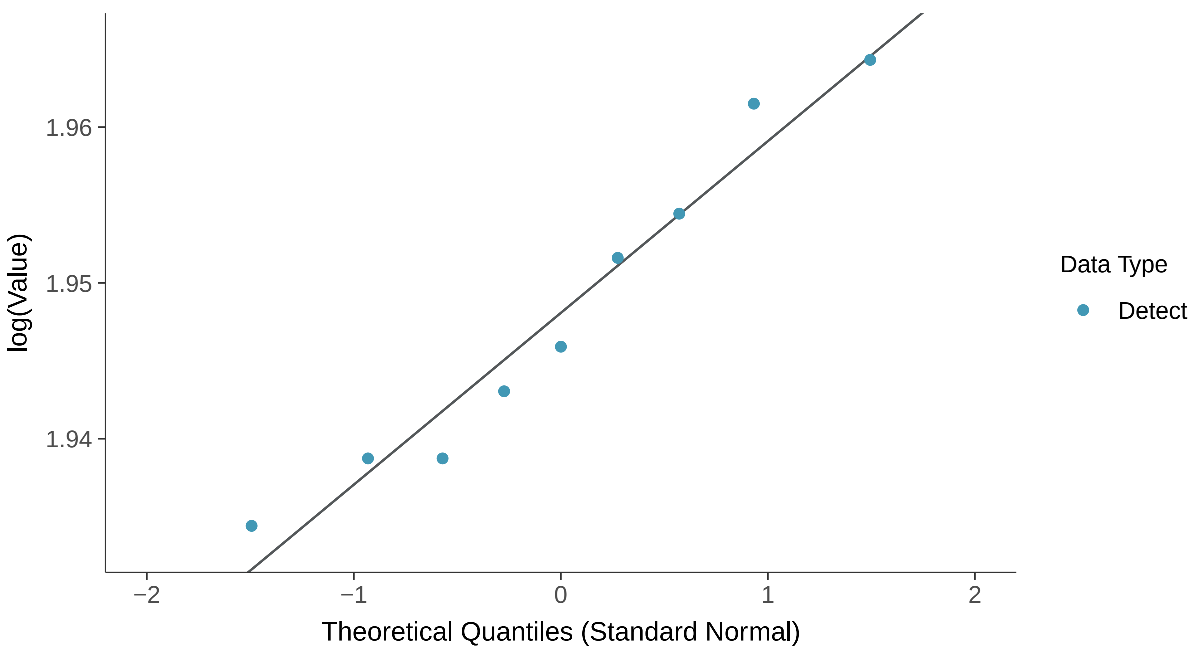
Normal Q-Q plot

pH, Field, MW-14 (su)



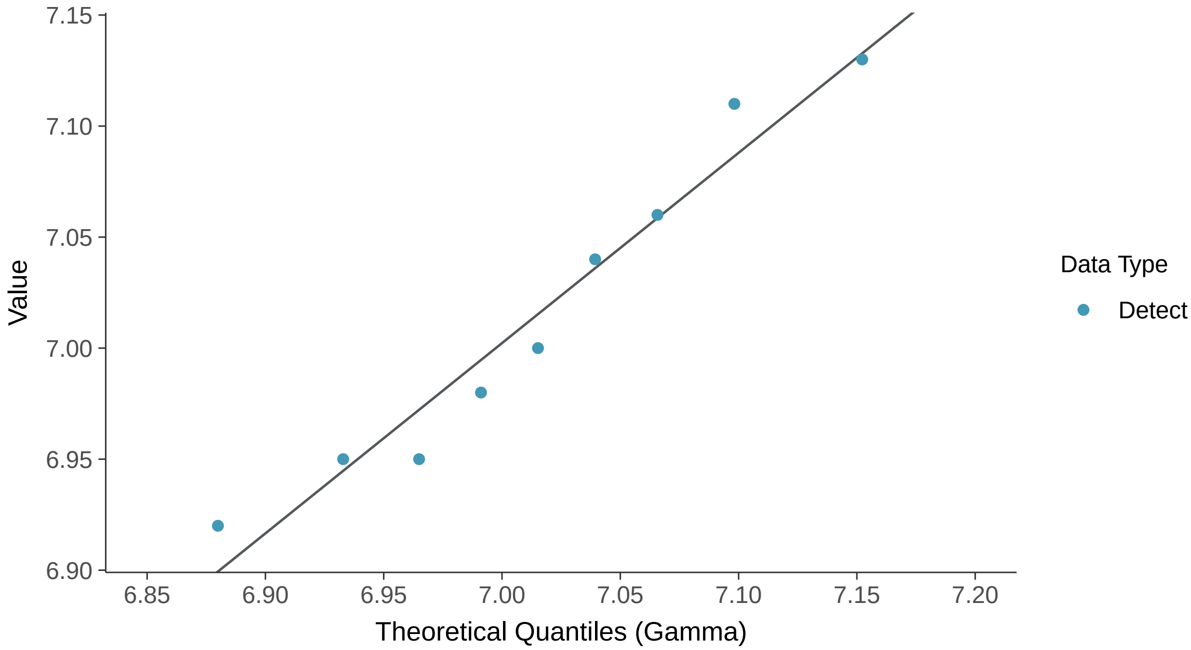
Lognormal Q-Q plot

pH, Field, MW-14 (su)



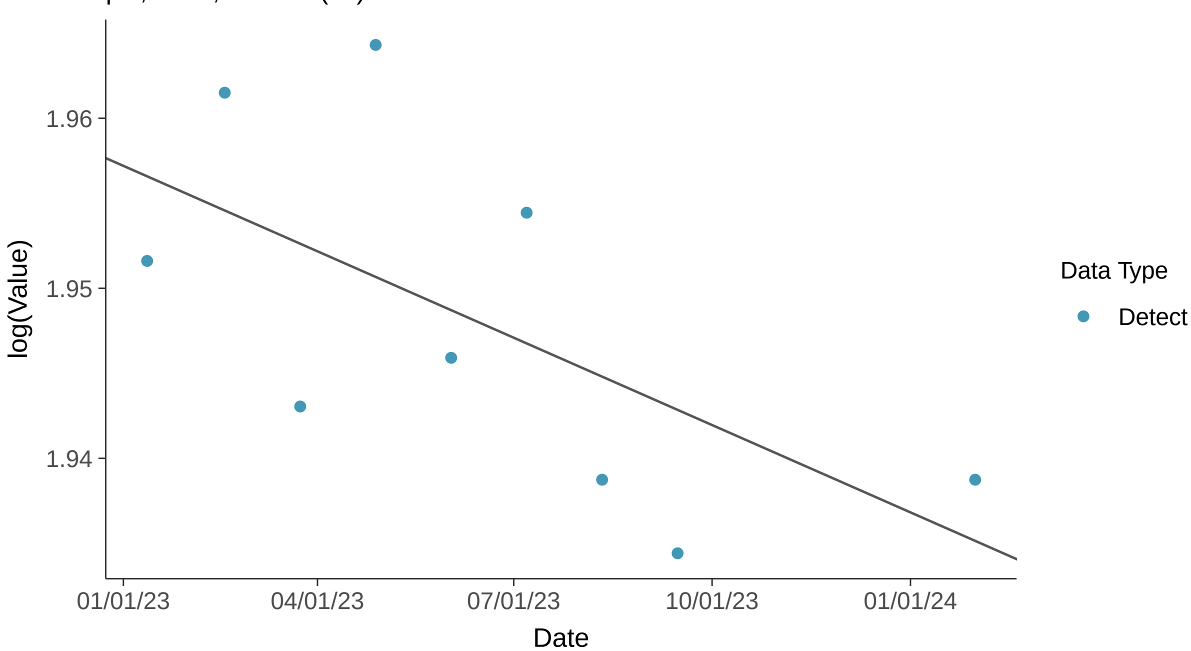
Gamma Q-Q plot

pH, Field, MW-14 (su)



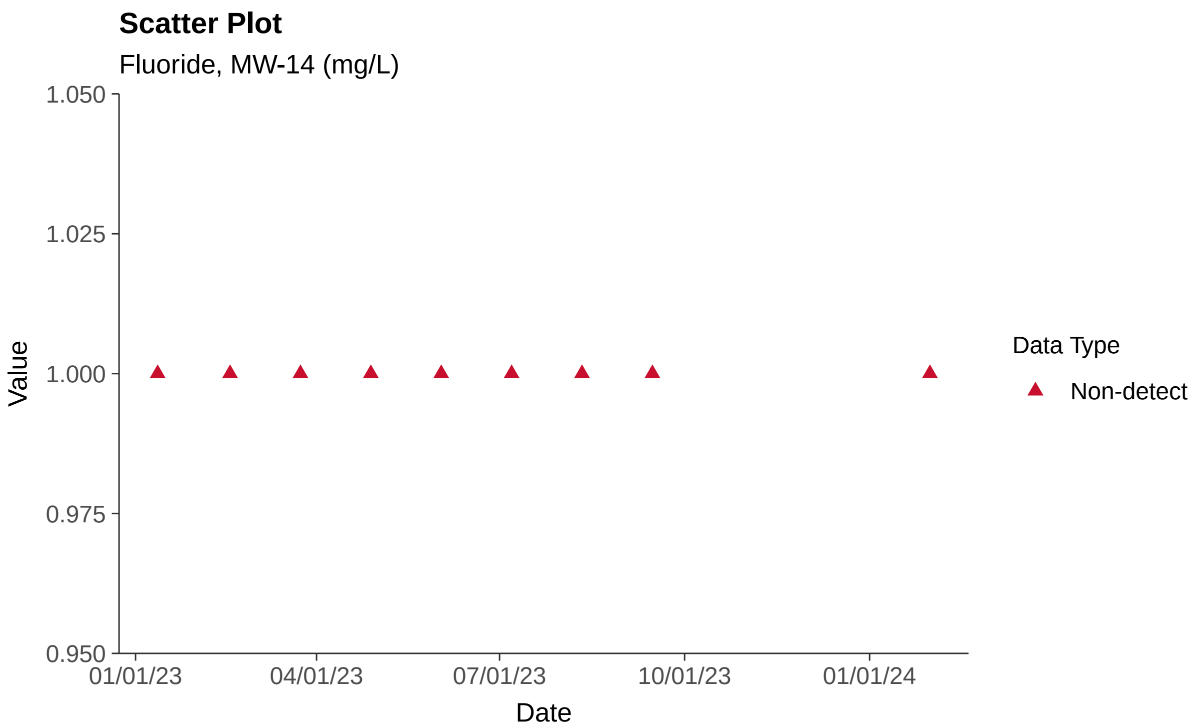
Trend Regression: Lognormal MLE

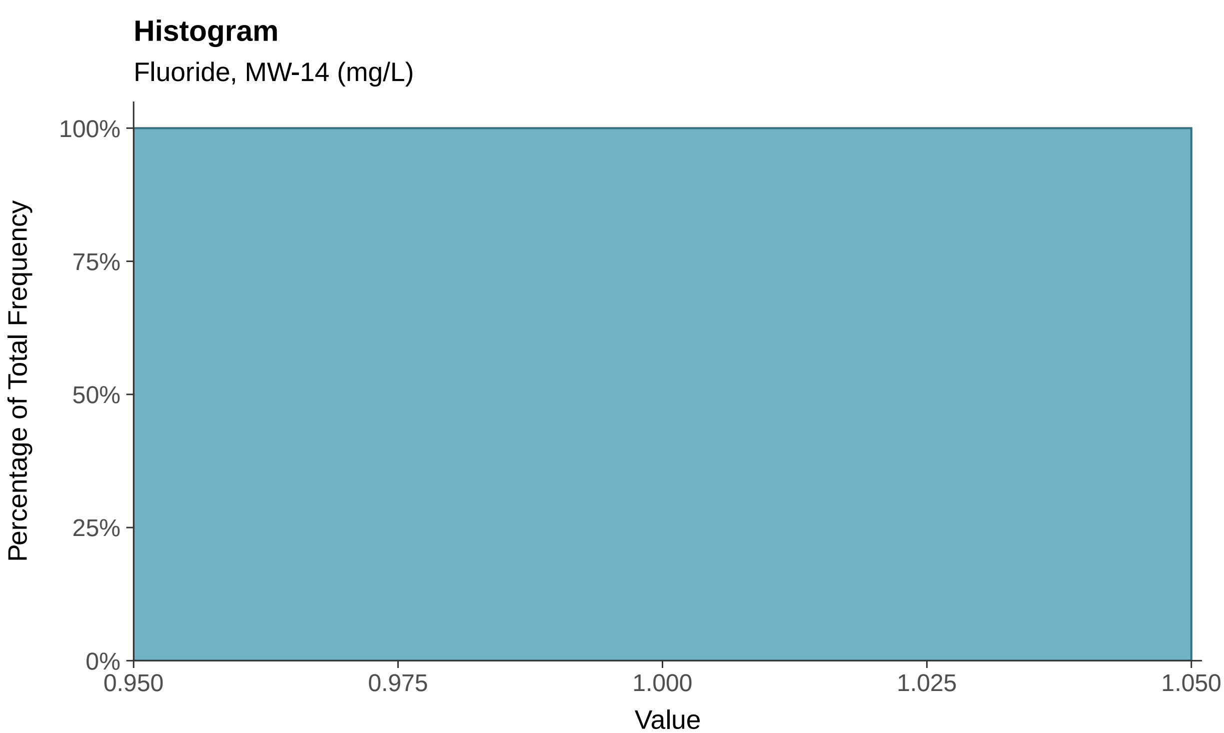
pH, Field, MW-14 (su)



Appendix IV: Fluoride, MW-14

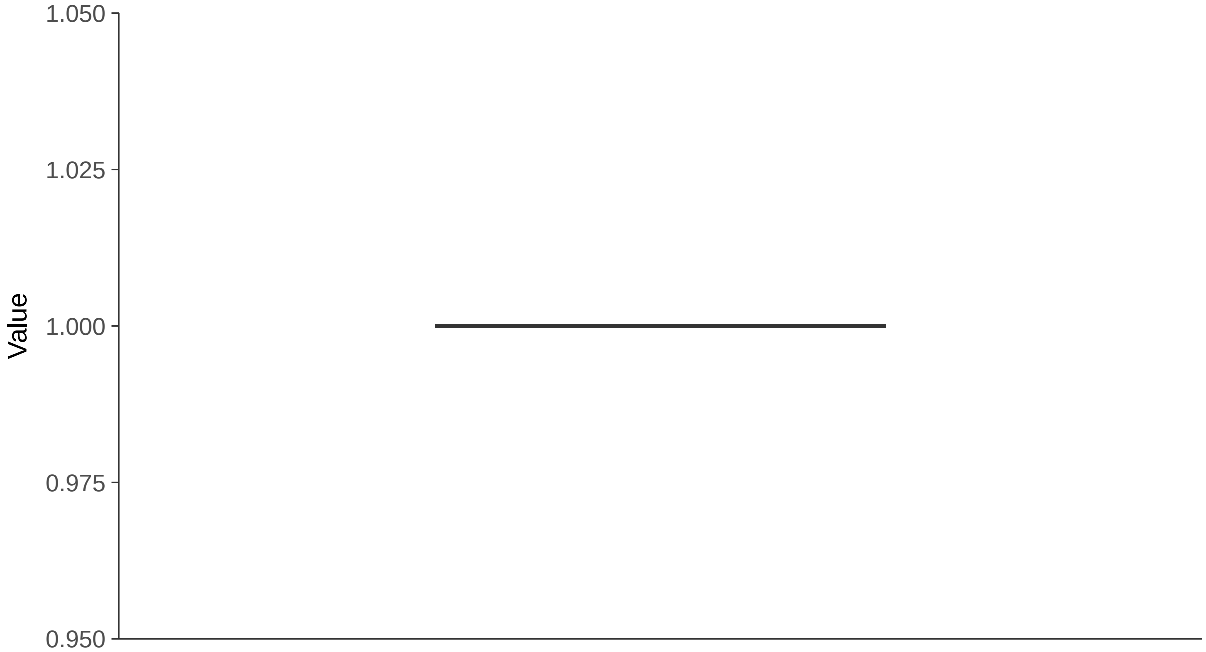
ID: 14_2_04





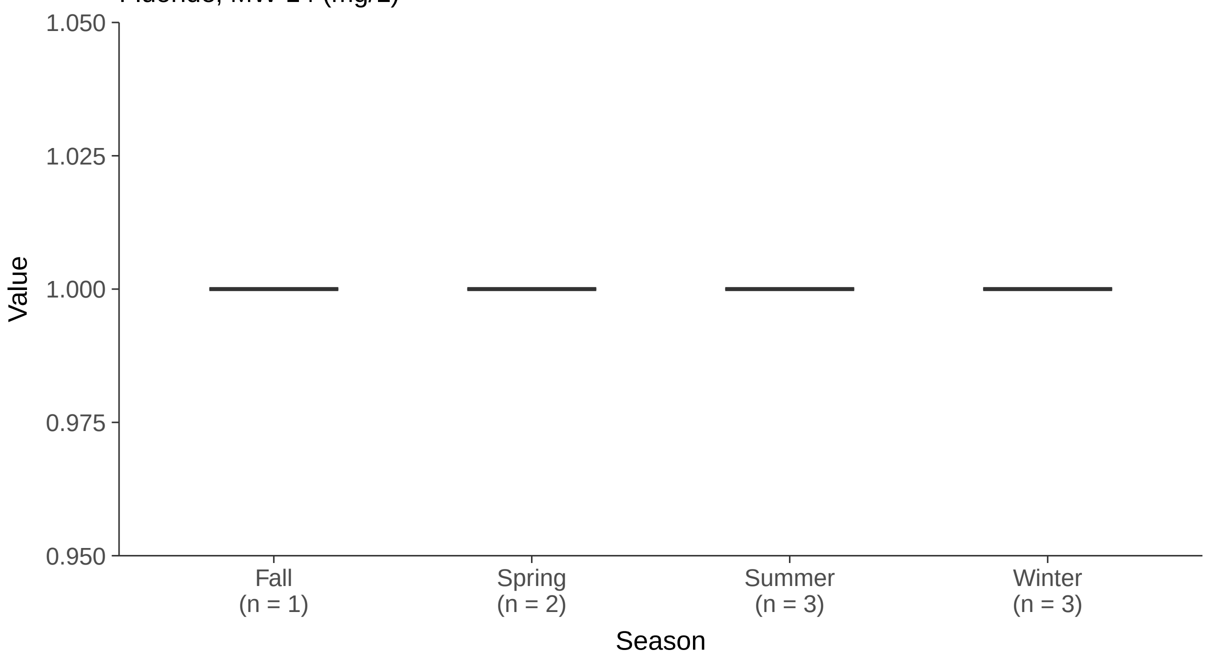
Boxplot

Fluoride, MW-14 (mg/L)



Boxplot by Season

Fluoride, MW-14 (mg/L)

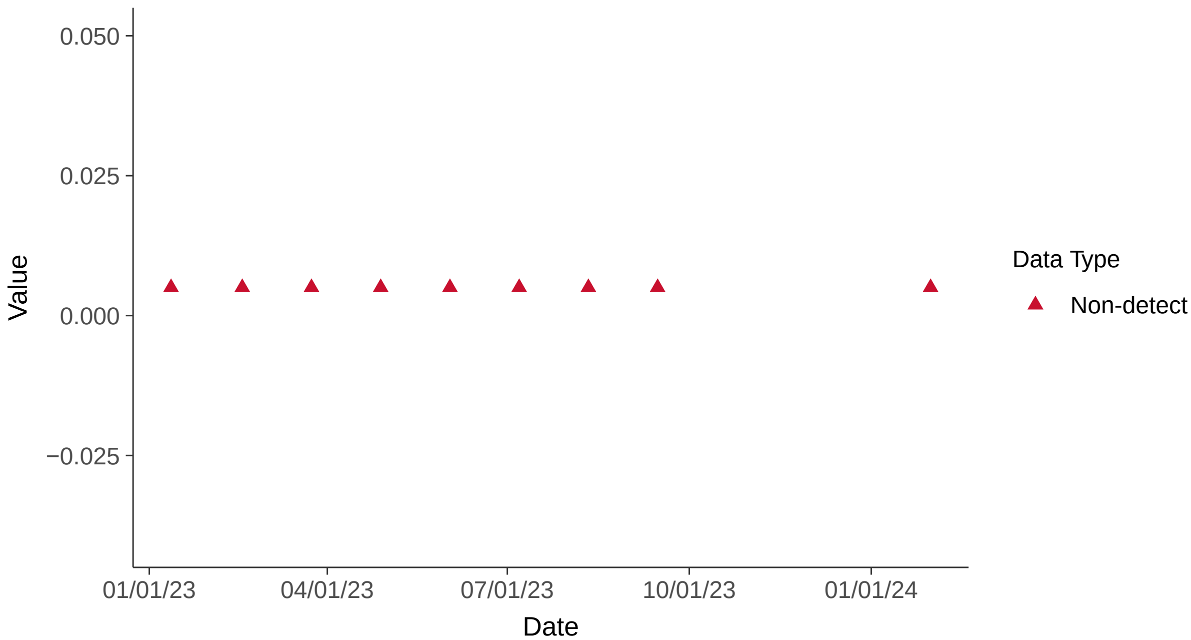


Appendix IV: Antimony, MW-14

ID: 14_2_08

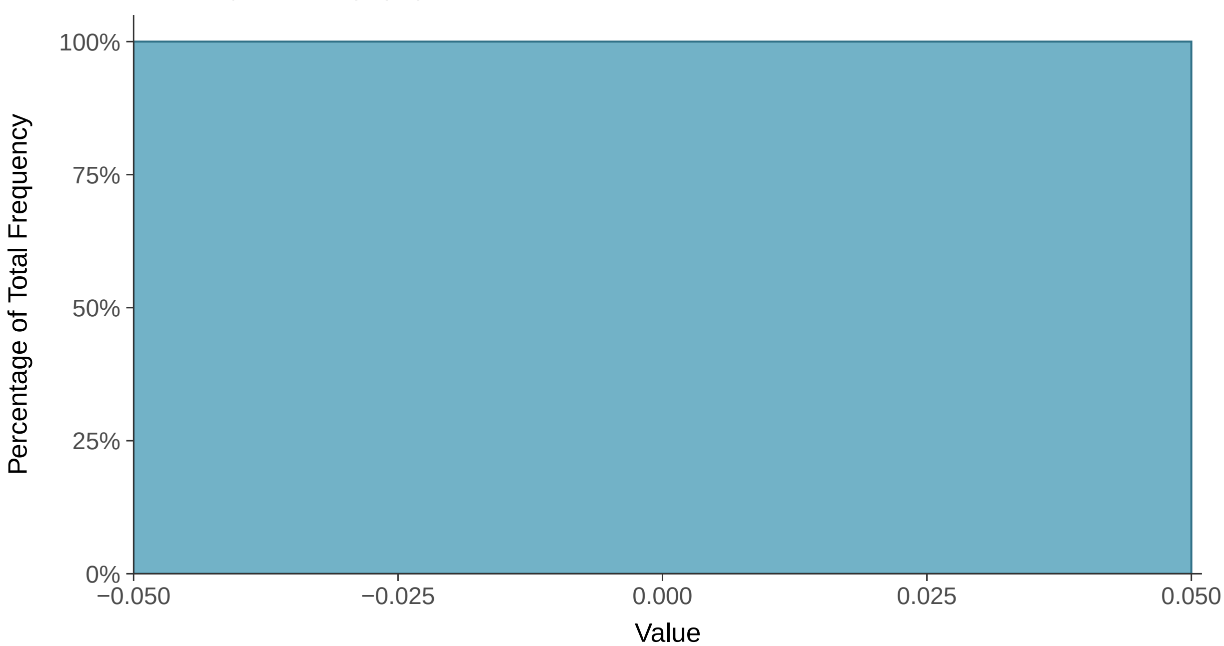
Scatter Plot

Antimony, MW-14 (mg/L)



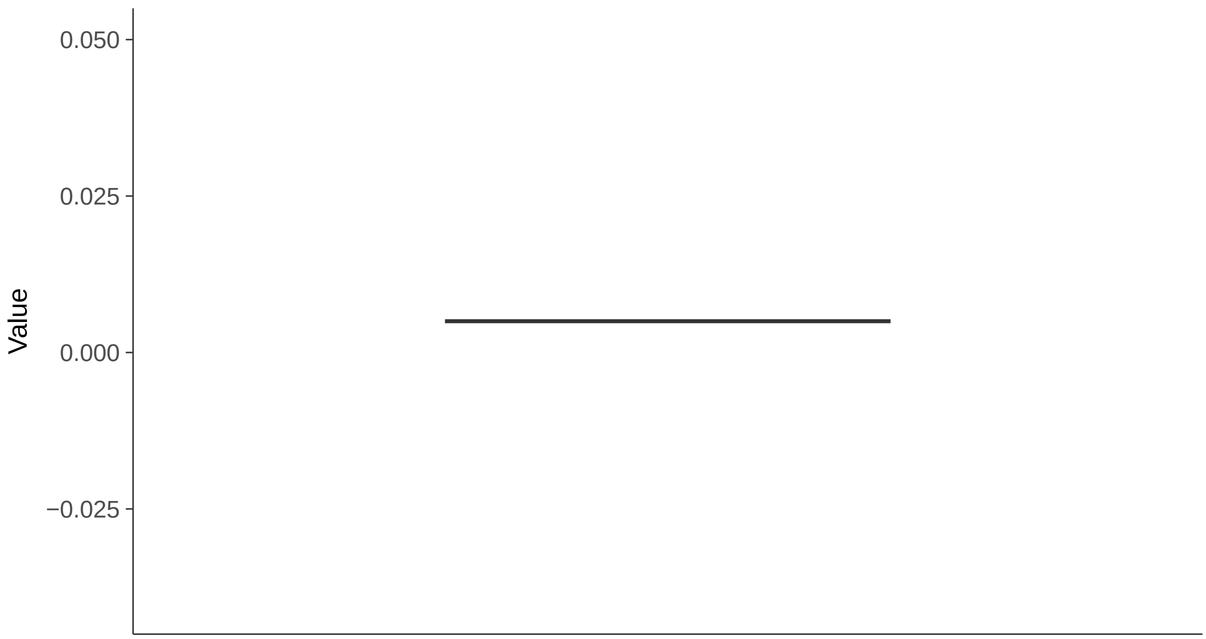
Histogram

Antimony, MW-14 (mg/L)



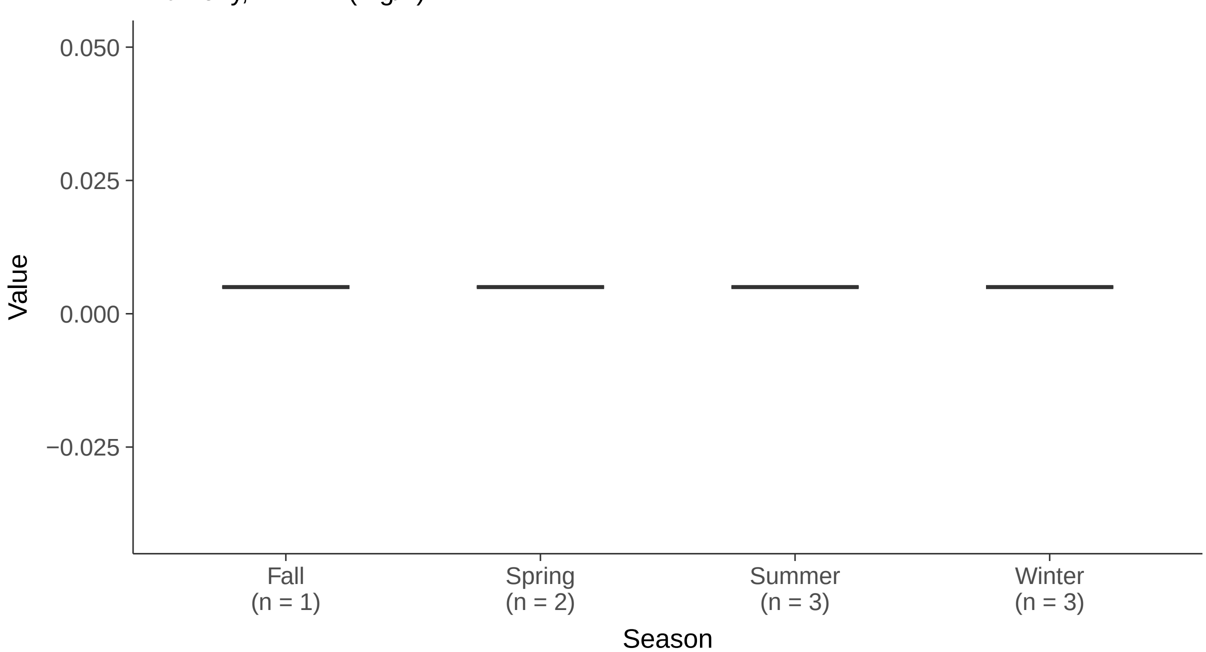
Boxplot

Antimony, MW-14 (mg/L)



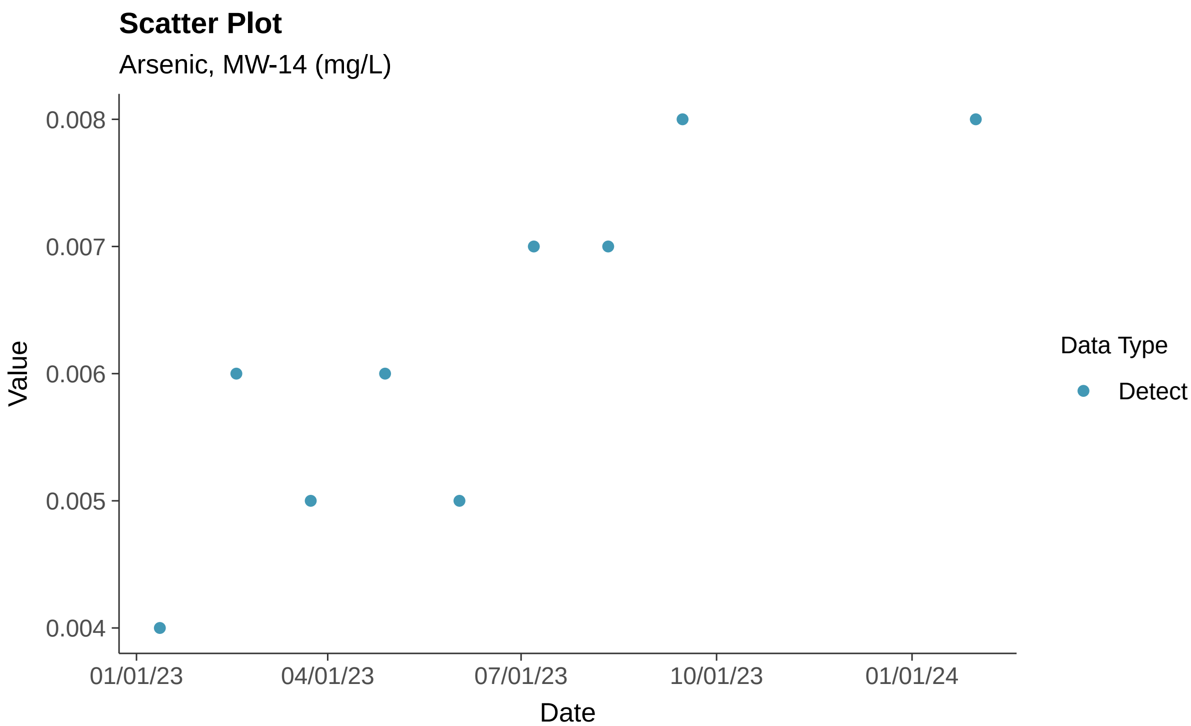
Boxplot by Season

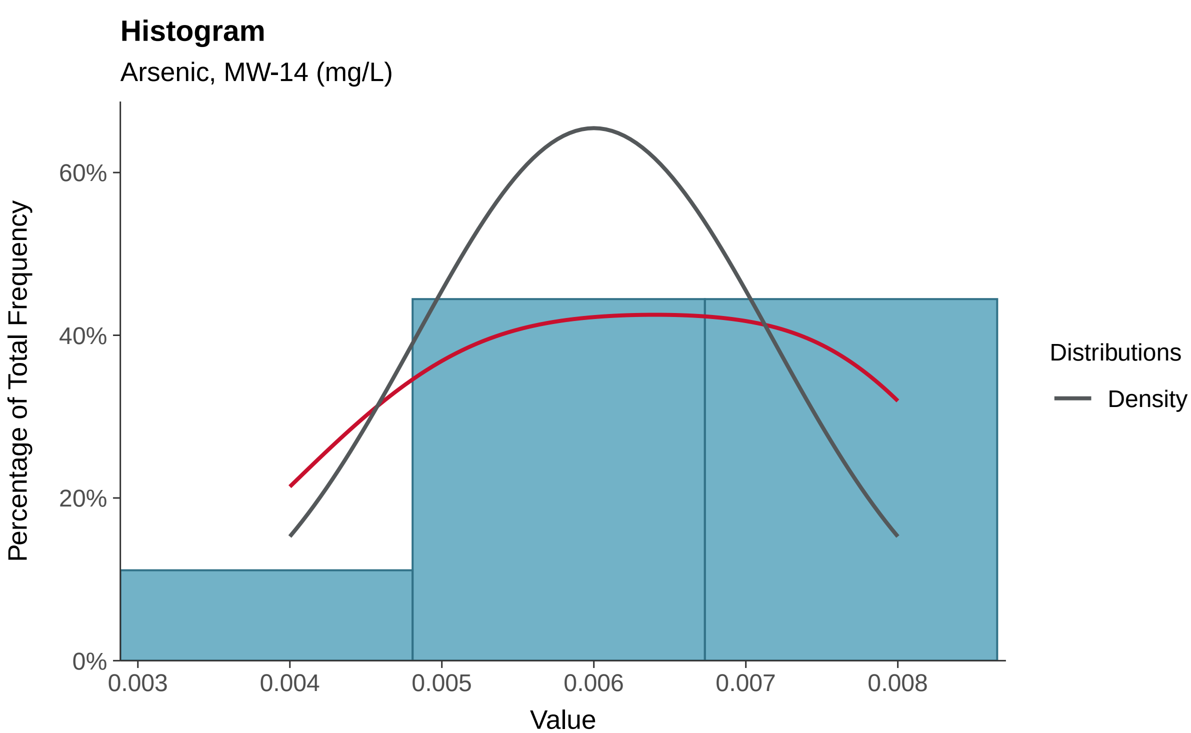
Antimony, MW-14 (mg/L)



Appendix IV: Arsenic, MW-14

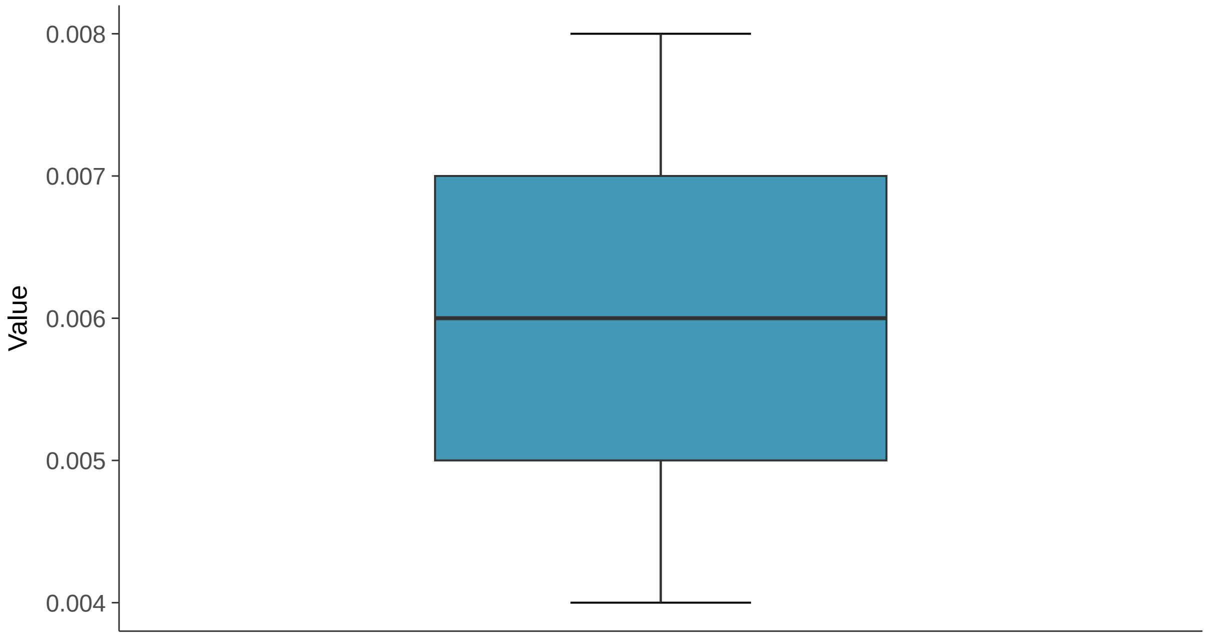
ID: 14_2_09





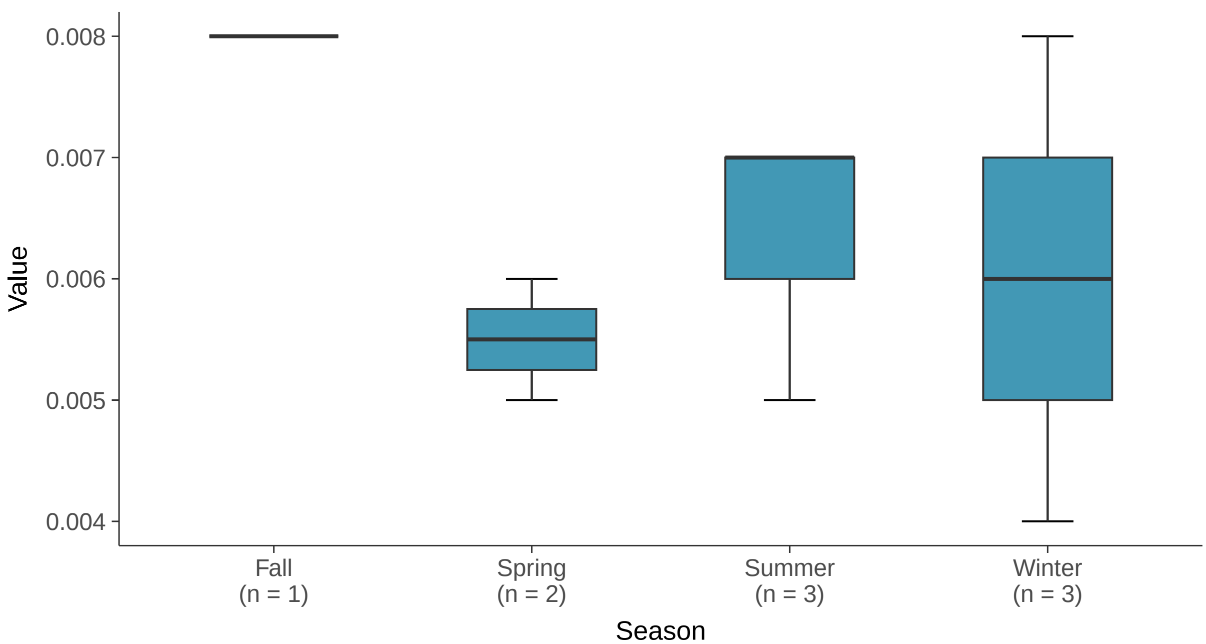
Boxplot

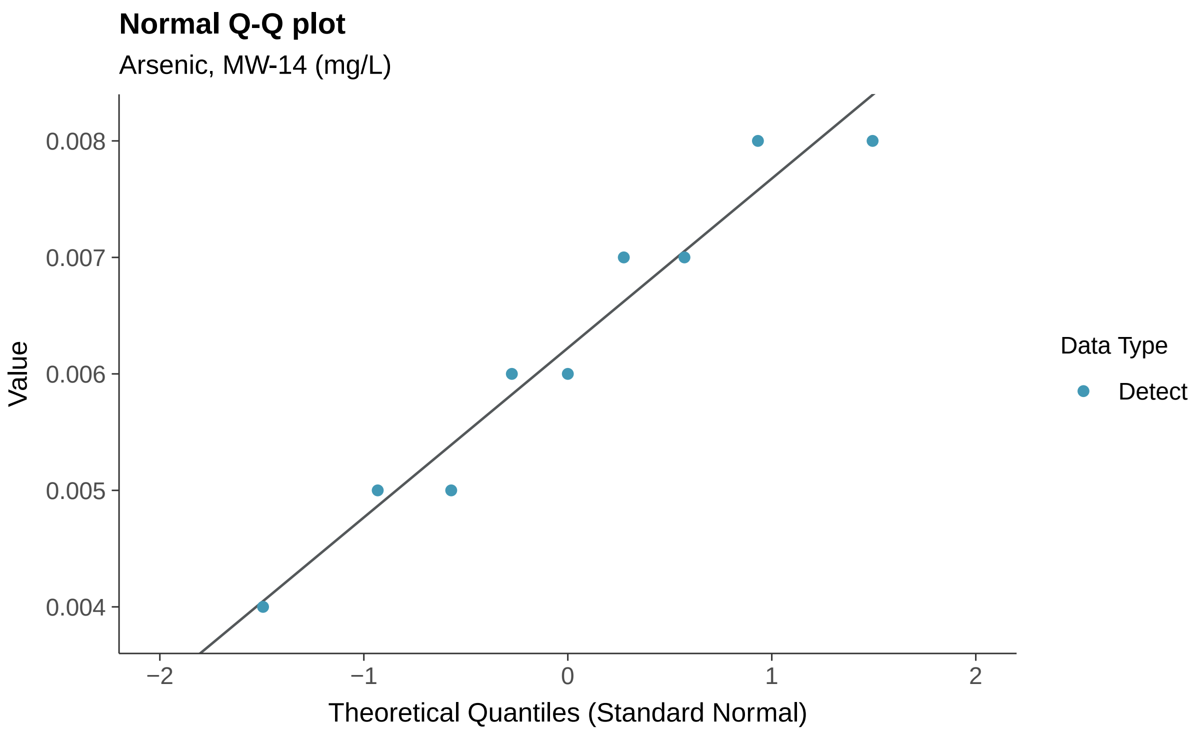
Arsenic, MW-14 (mg/L)

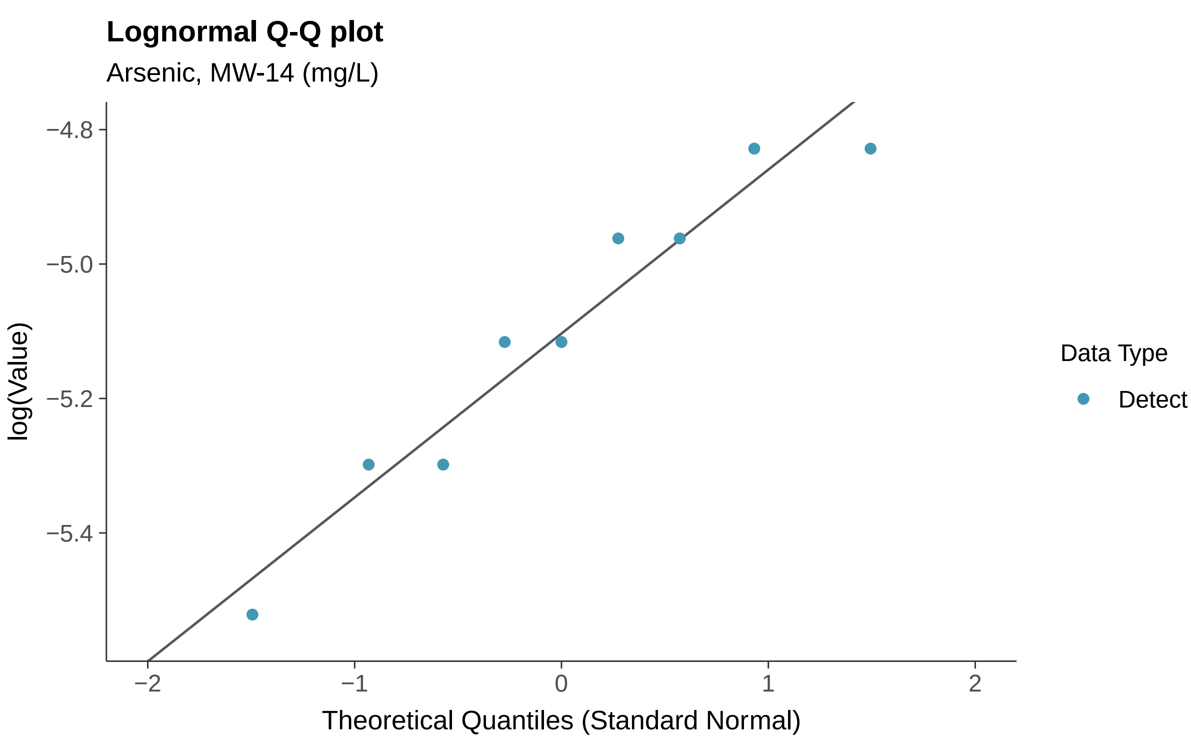


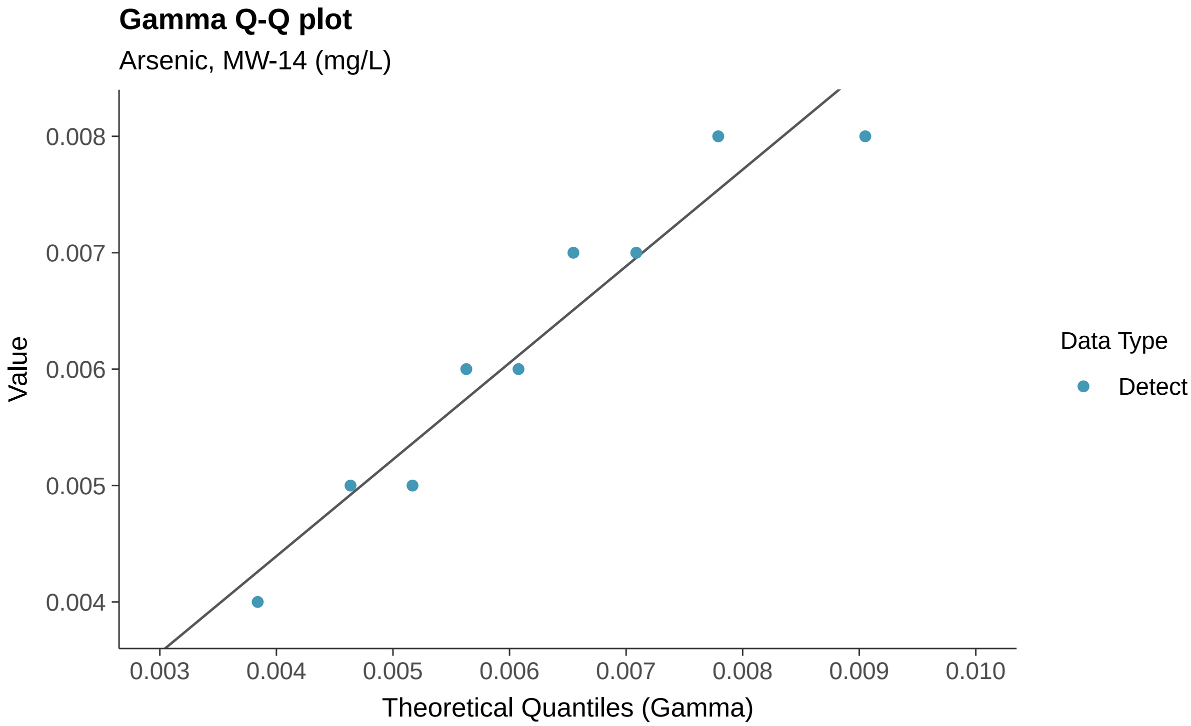
Boxplot by Season

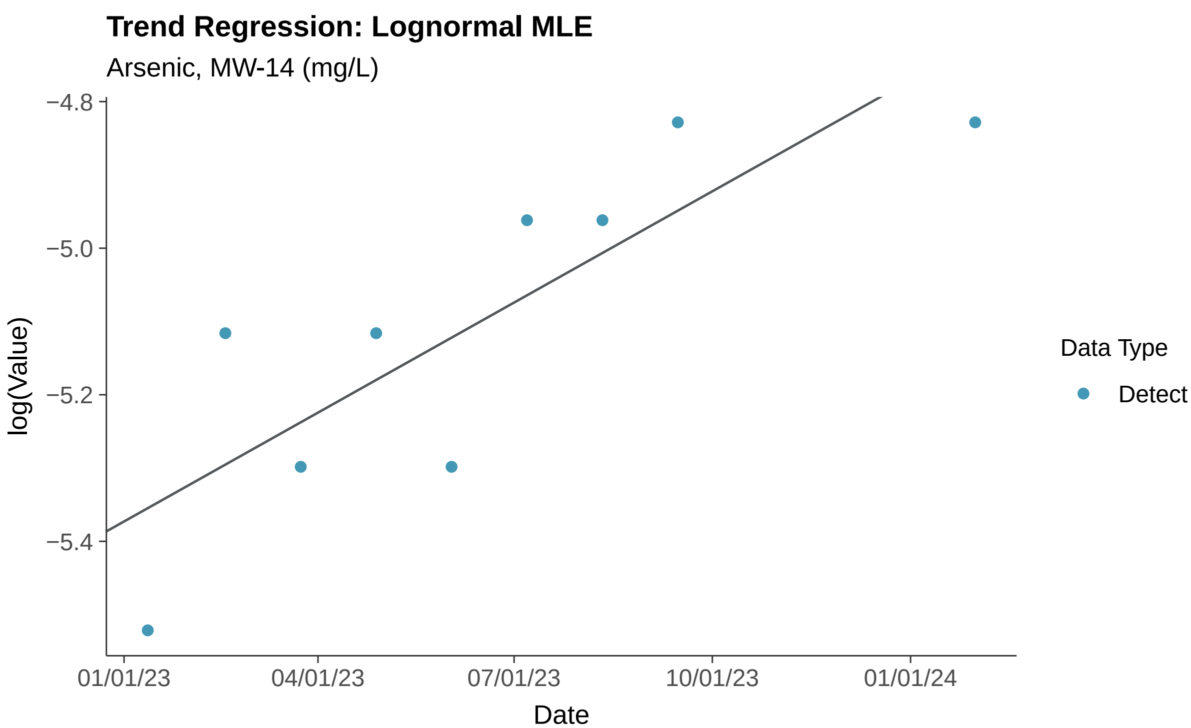
Arsenic, MW-14 (mg/L)

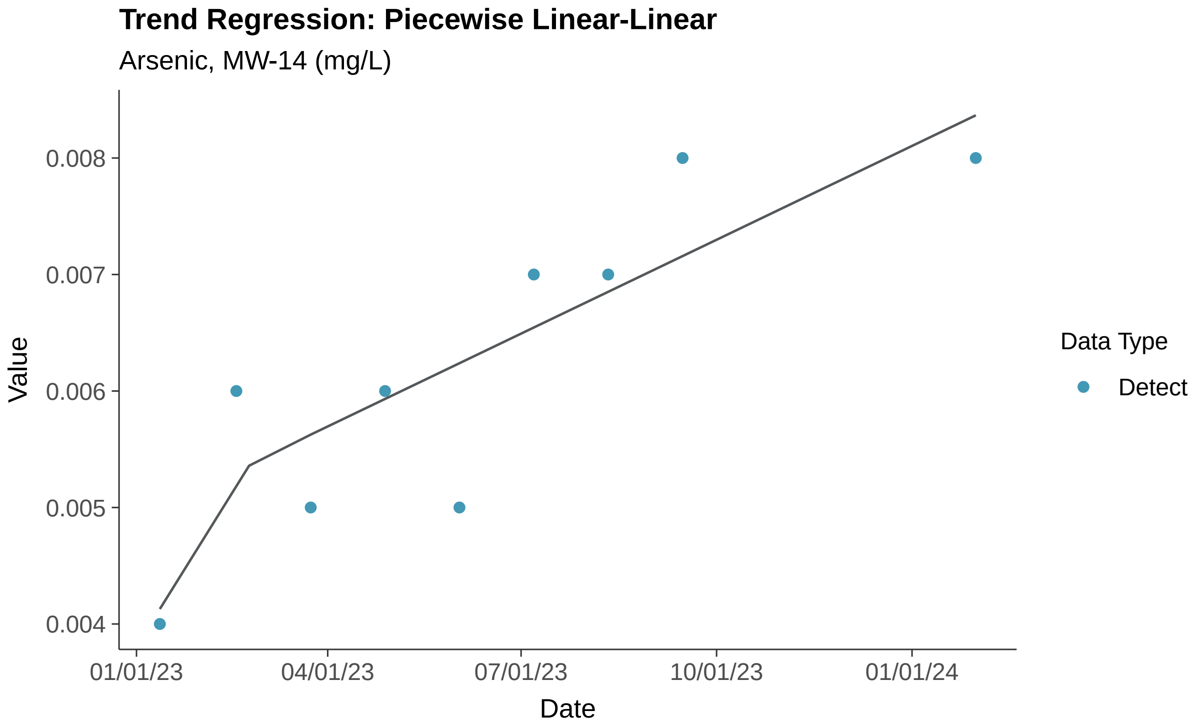



Normal Q-Q plot
Arsenic, MW-14 (mg/L)
Value
0.008
0.007
0.006
0.005
0.004
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Arsenic, MW-14 (mg/L)
log(Value)
−4.8
−5.0
−5.2
−5.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Arsenic, MW-14 (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
0.010
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Arsenic, MW-14 (mg/L)
log(Value)
−4.8
−5.0
−5.2
−5.4
01/01/23
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

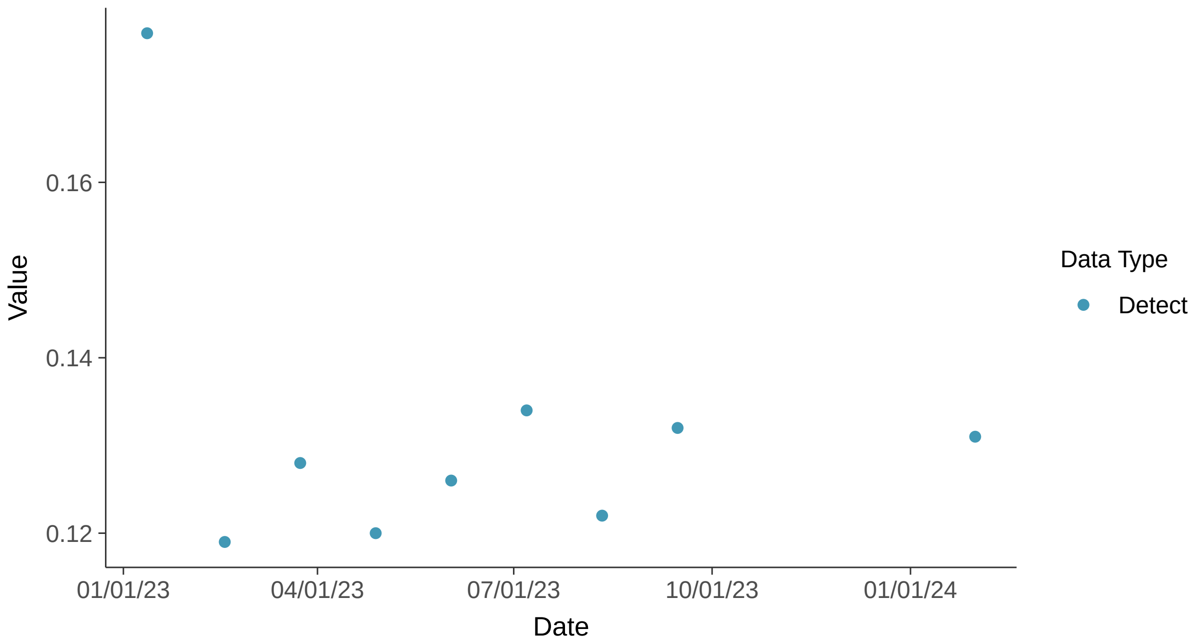

Trend Regression: Piecewise Linear-Linear
Arsenic, MW-14 (mg/L)
Value
0.008
0.007
0.006
0.005
0.004
Date
01/01/23
04/01/23
07/01/23
10/01/23
01/01/24
Data Type
Detect

Appendix IV: Barium, MW-14

ID: 14_2_10

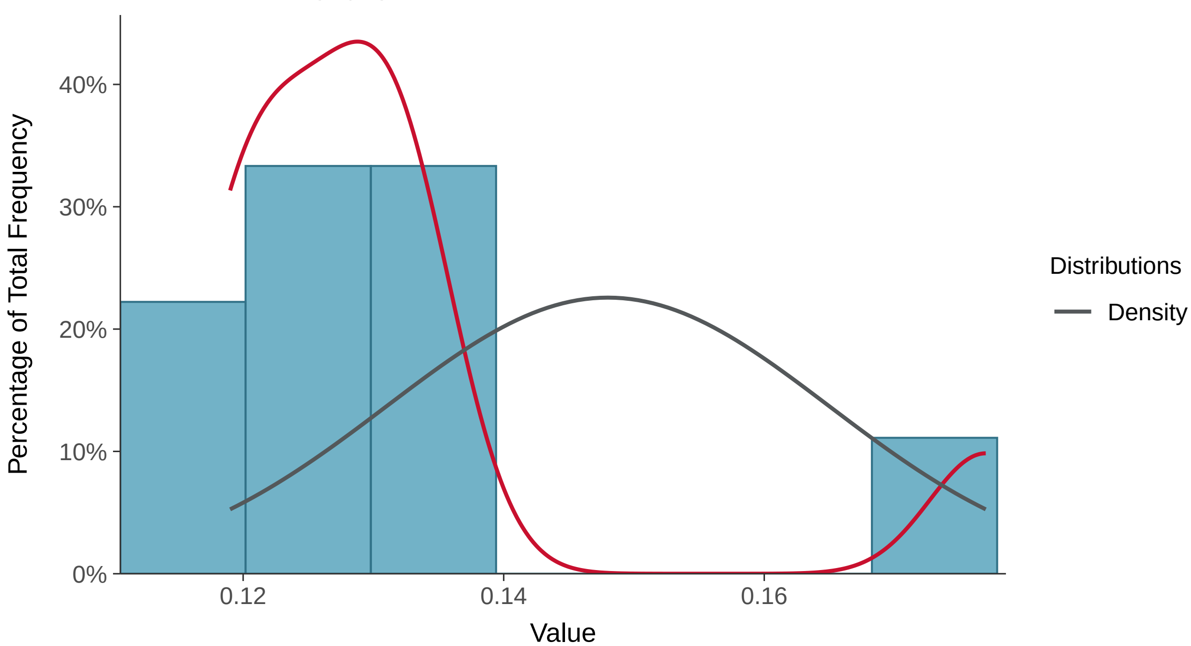
Scatter Plot

Barium, MW-14 (mg/L)



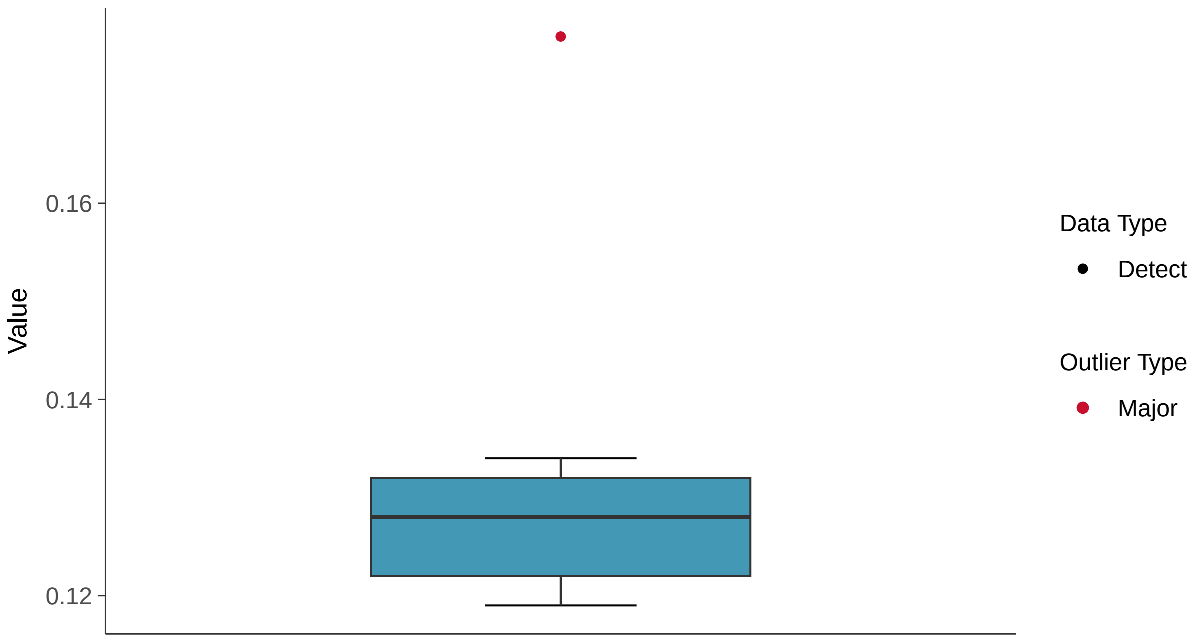
Histogram

Barium, MW-14 (mg/L)



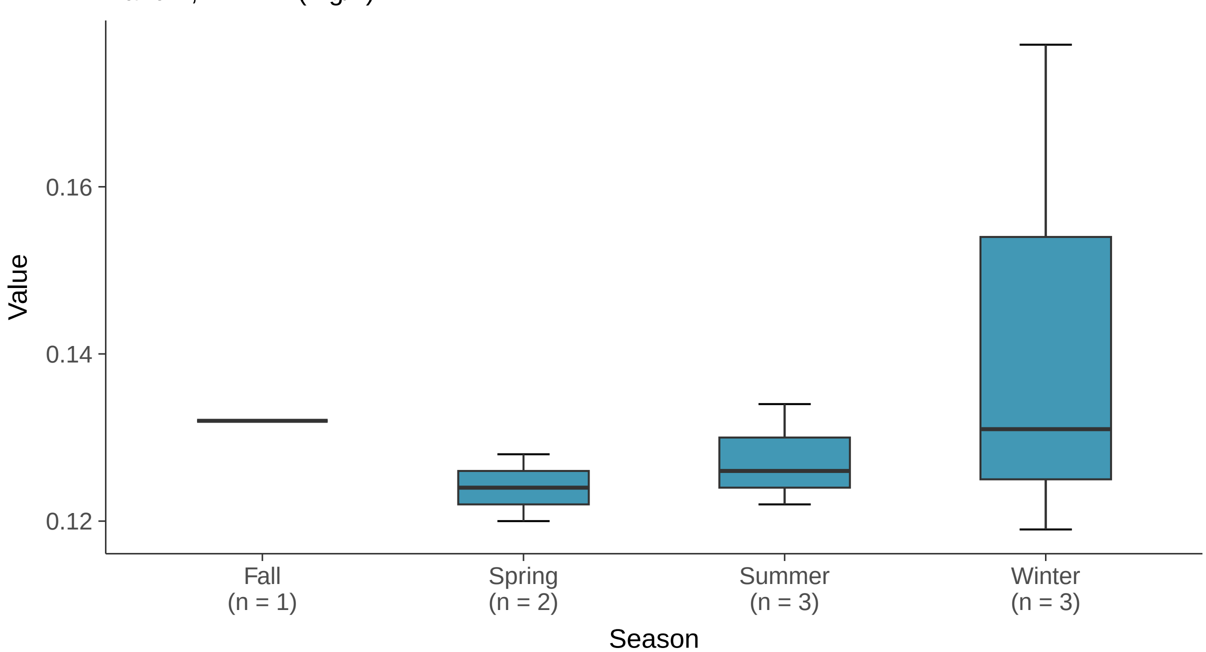
Boxplot

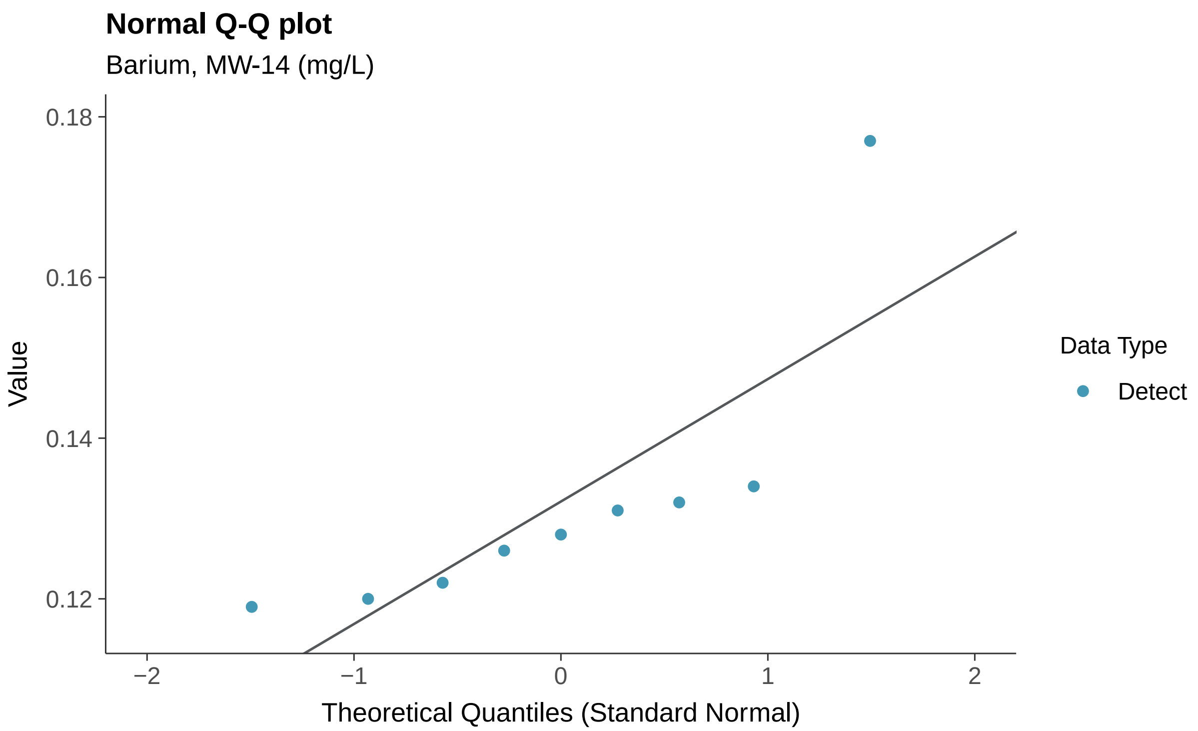
Barium, MW-14 (mg/L)

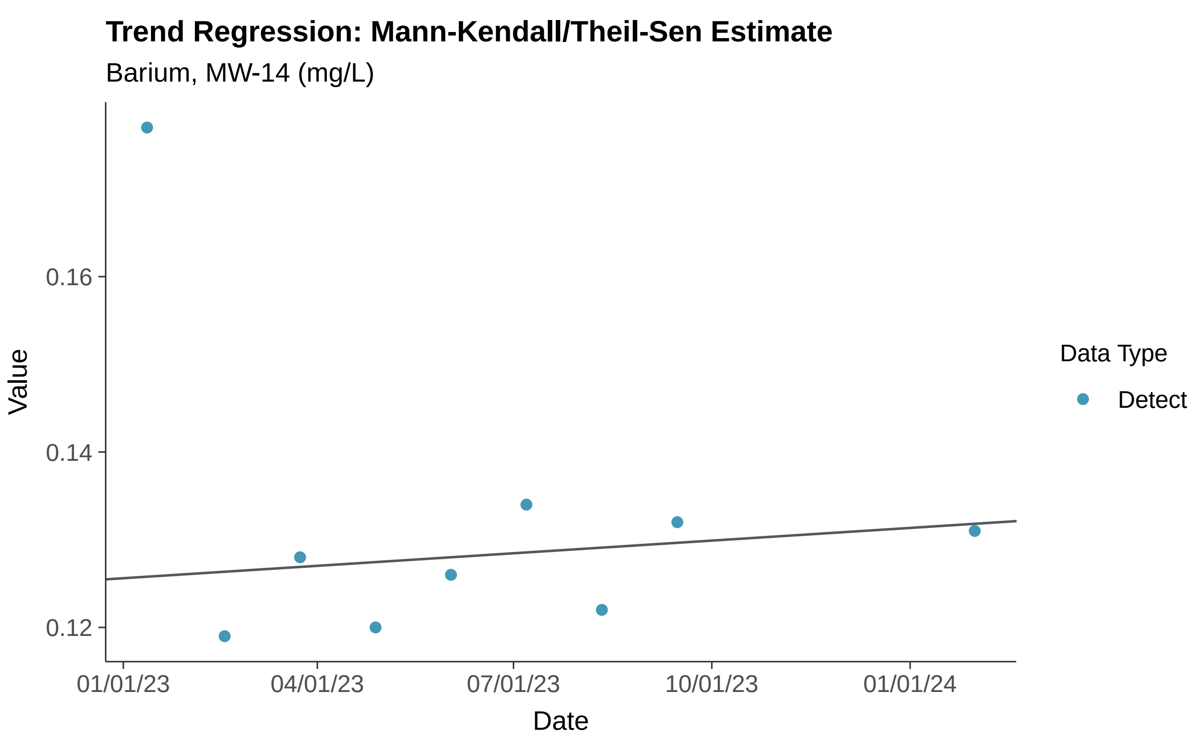


Boxplot by Season

Barium, MW-14 (mg/L)




Normal Q-Q plot
Barium, MW-14 (mg/L)
Value
0.18
0.16
0.14
0.12
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

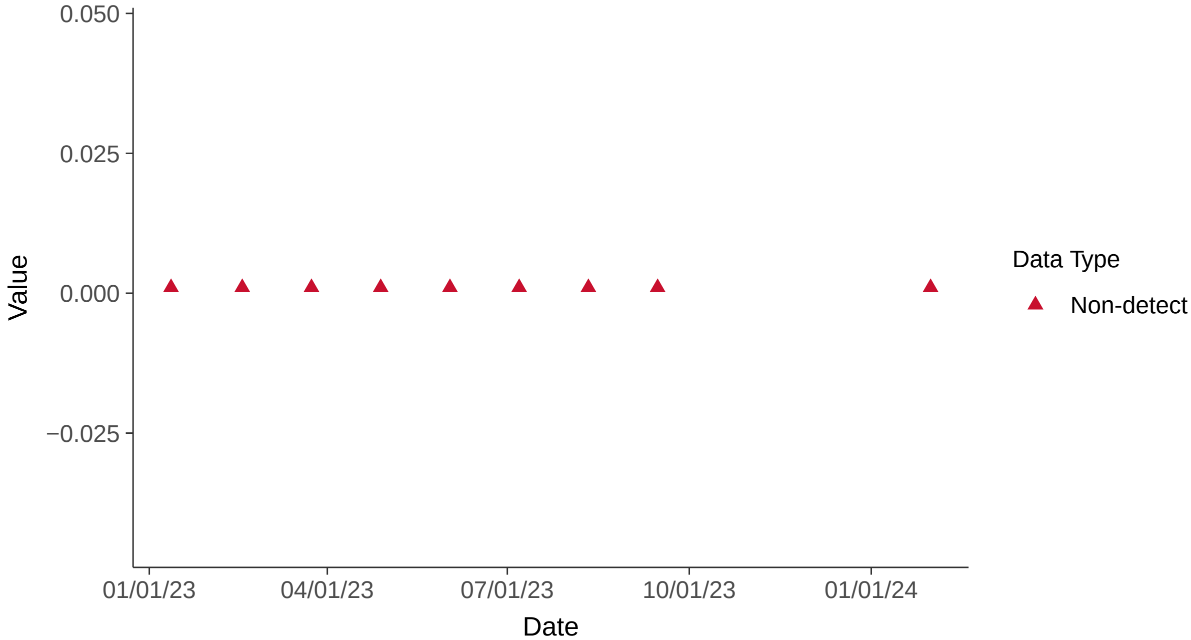

Trend Regression: Mann-Kendall/Theil-Sen Estimate
Barium, MW-14 (mg/L)
Value
0.16
0.14
0.12
01/01/23
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Beryllium, MW-14

ID: 14_2_11

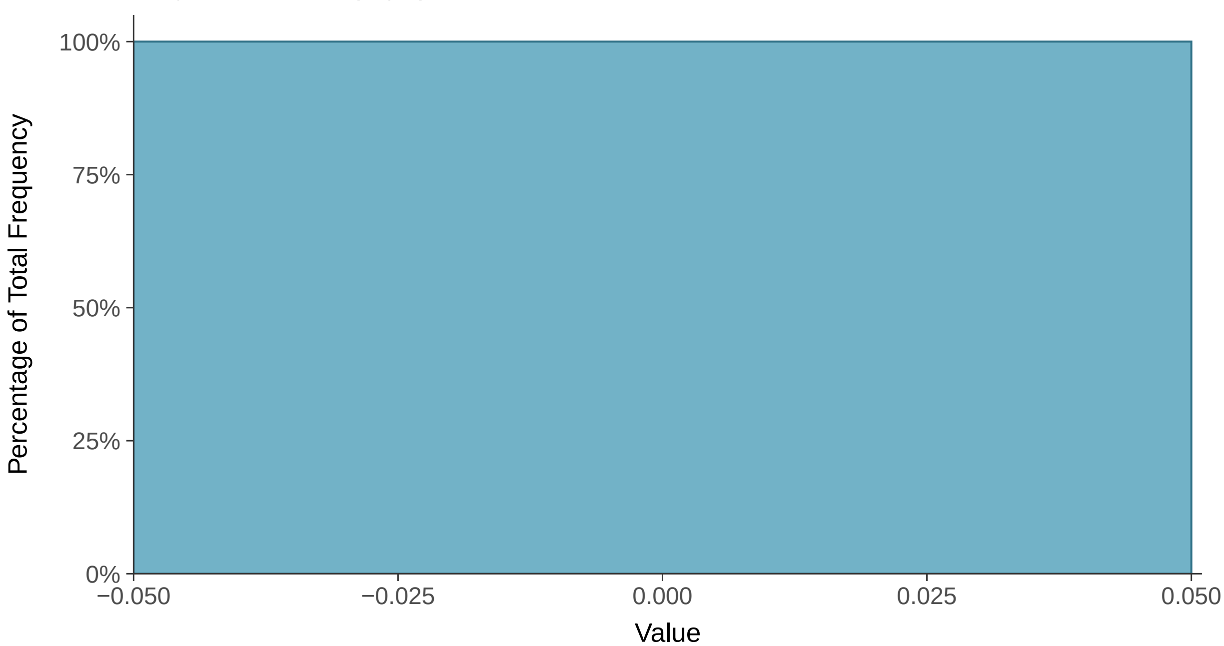
Scatter Plot

Beryllium, MW-14 (mg/L)



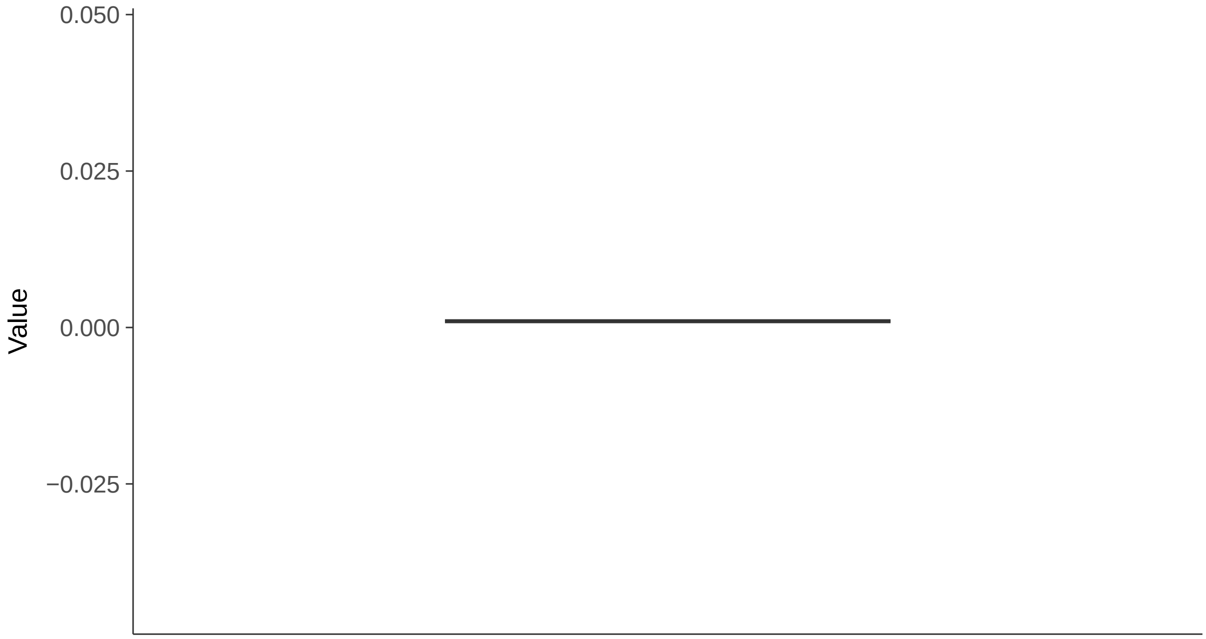
Histogram

Beryllium, MW-14 (mg/L)



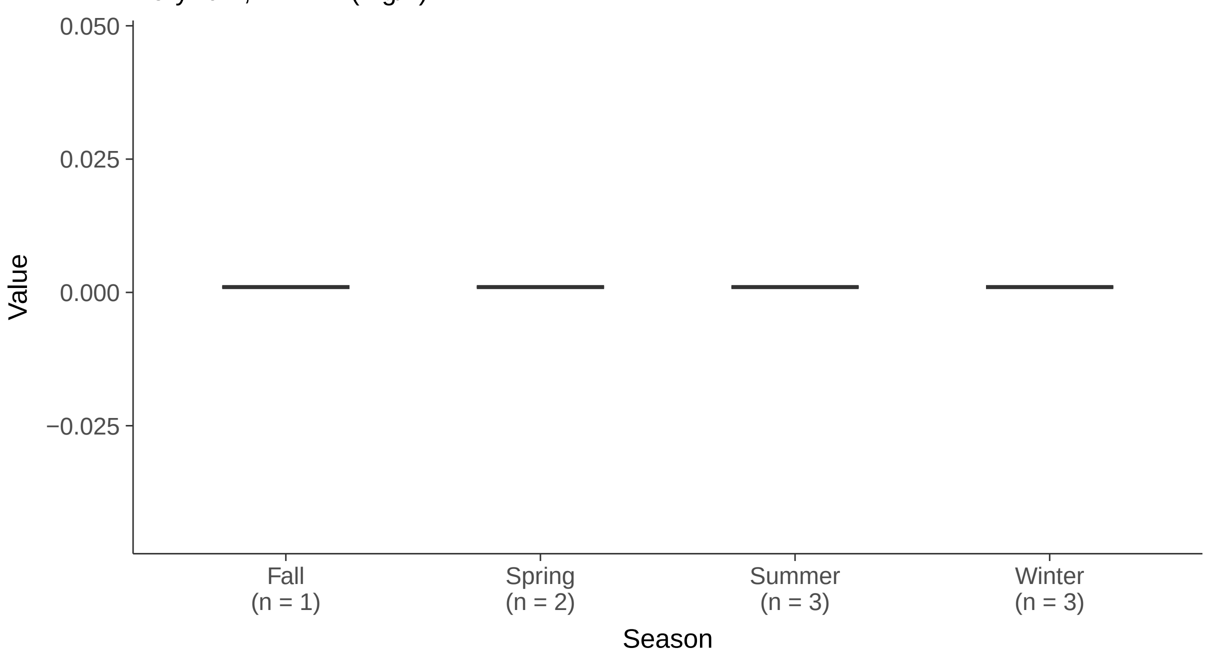
Boxplot

Beryllium, MW-14 (mg/L)



Boxplot by Season

Beryllium, MW-14 (mg/L)

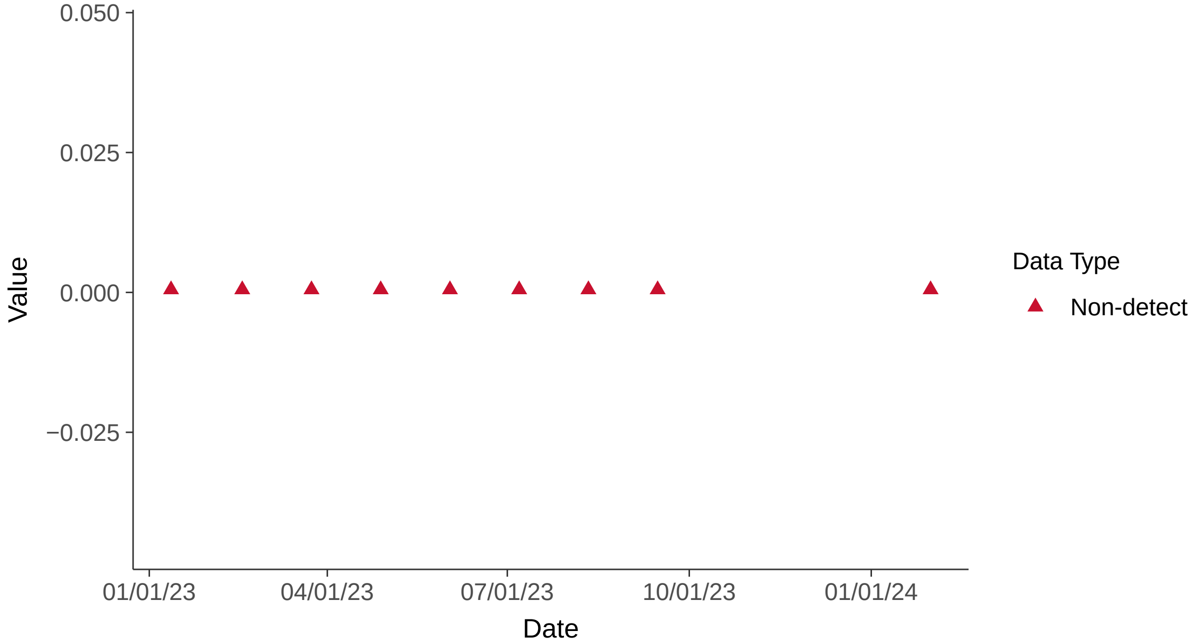


Appendix IV: Cadmium, MW-14

ID: 14_2_12

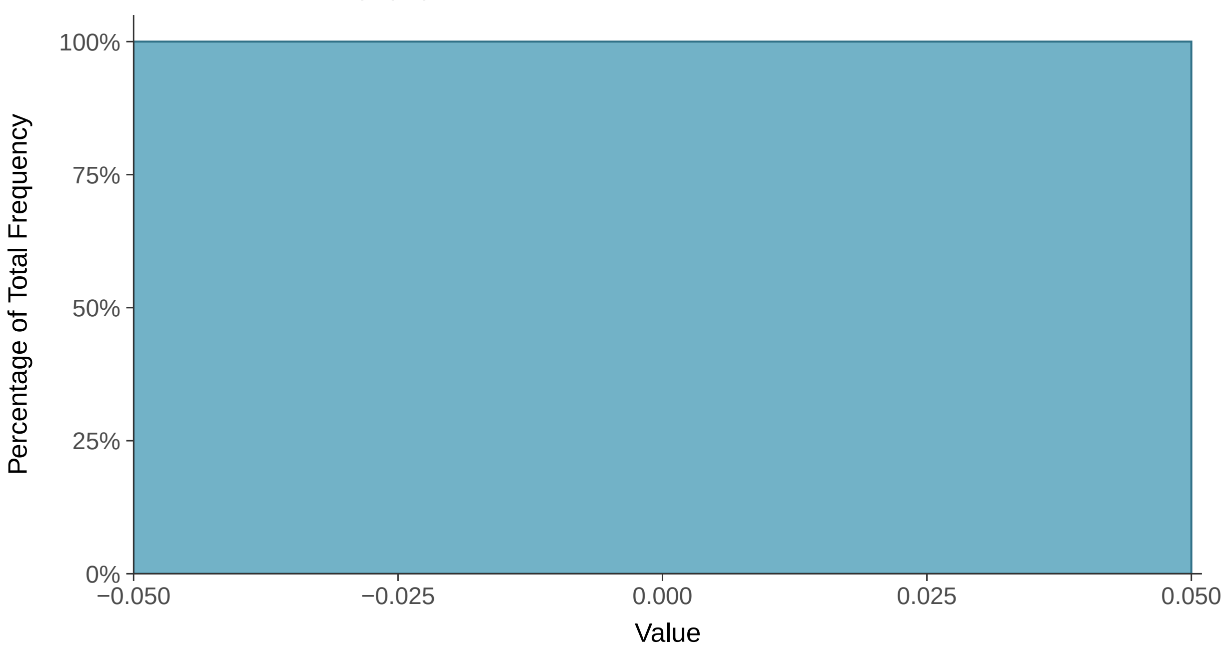
Scatter Plot

Cadmium, MW-14 (mg/L)



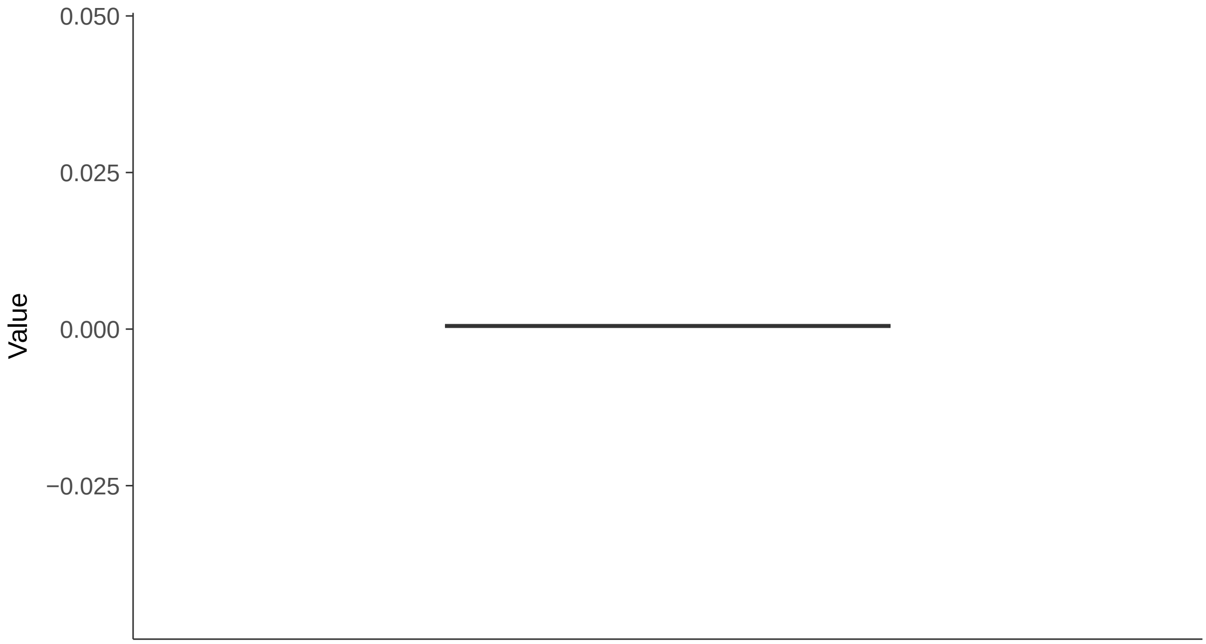
Histogram

Cadmium, MW-14 (mg/L)



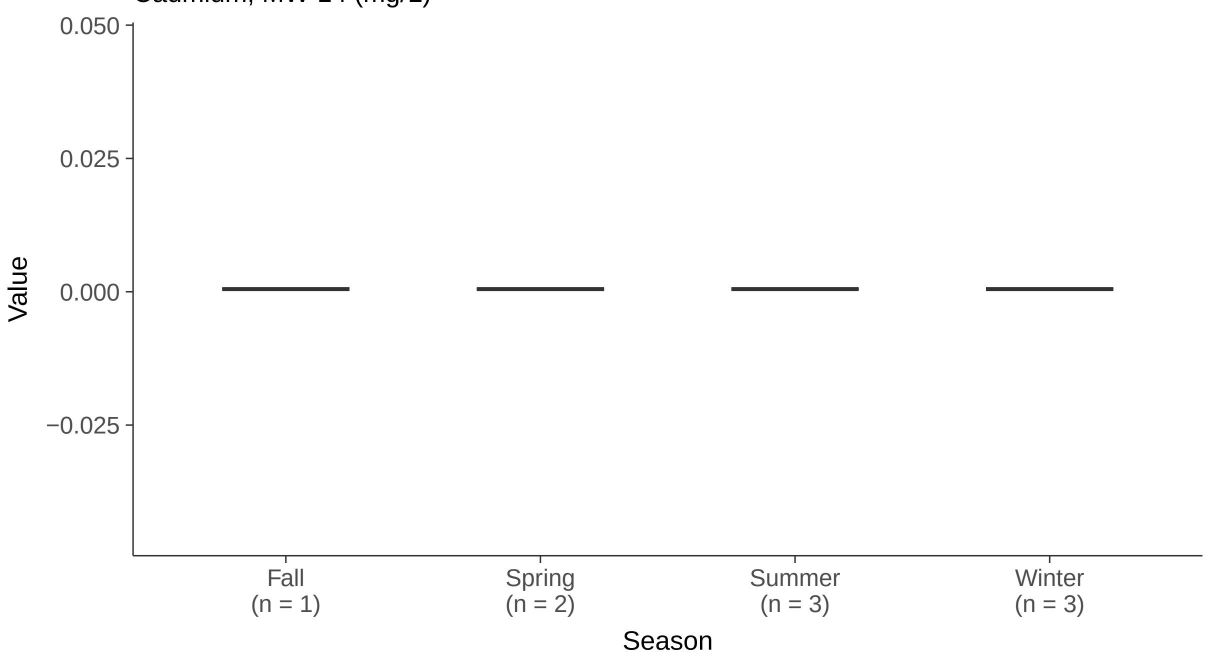
Boxplot

Cadmium, MW-14 (mg/L)



Boxplot by Season

Cadmium, MW-14 (mg/L)

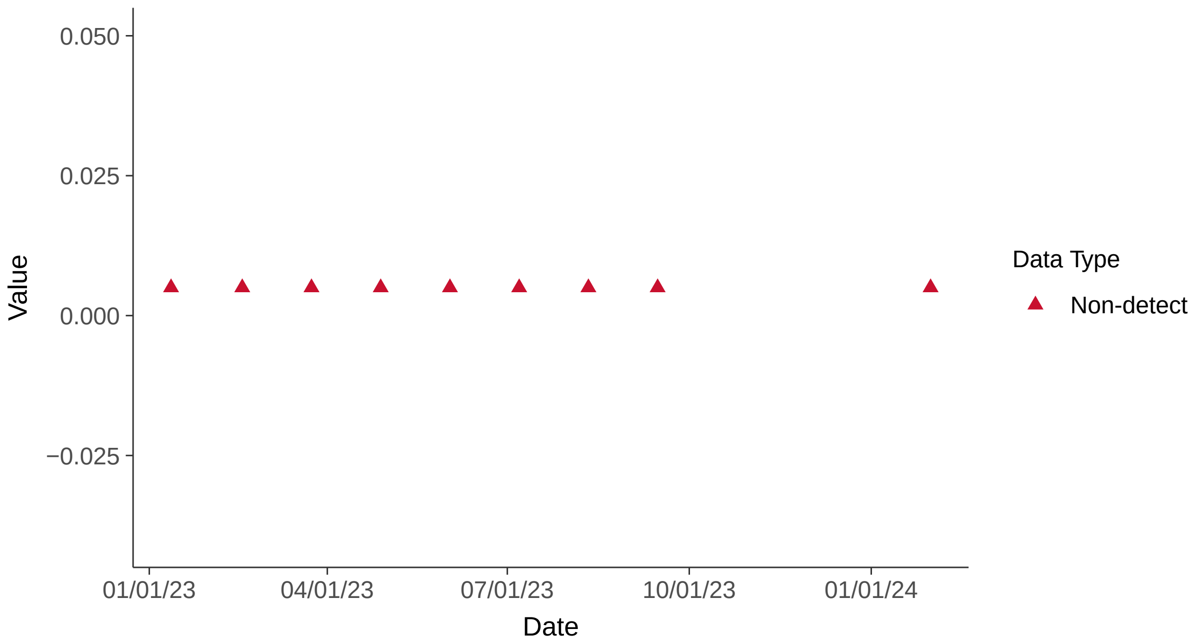


Appendix IV: Chromium, MW-14

ID: 14_2_13

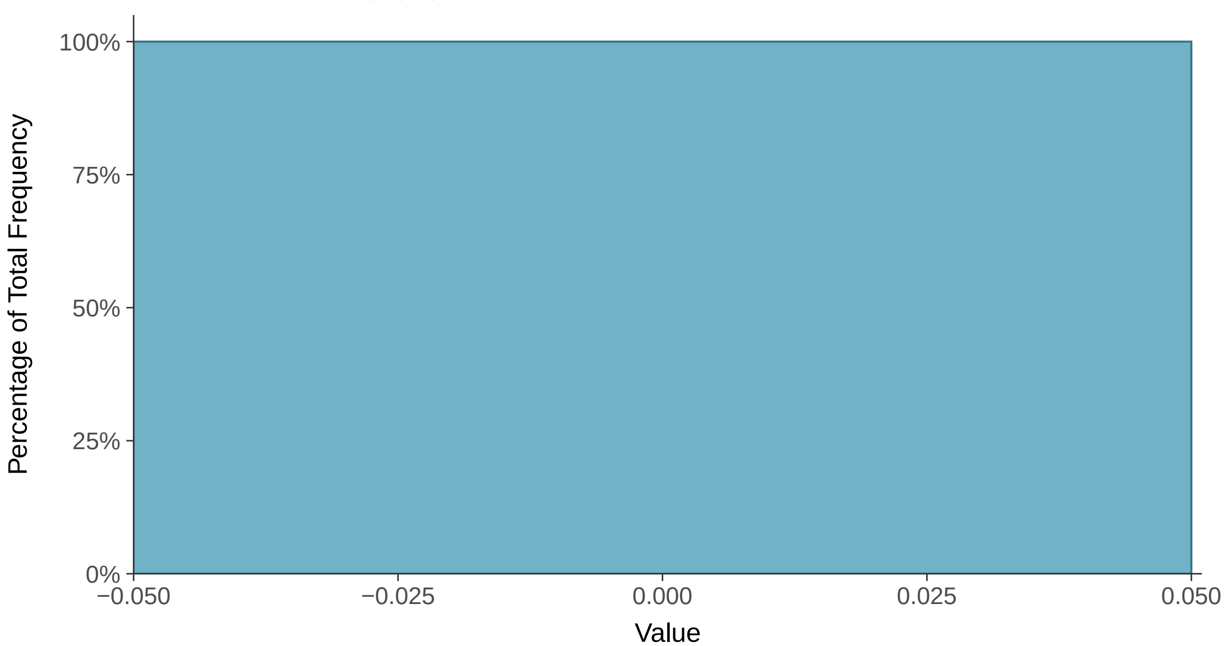
Scatter Plot

Chromium, MW-14 (mg/L)



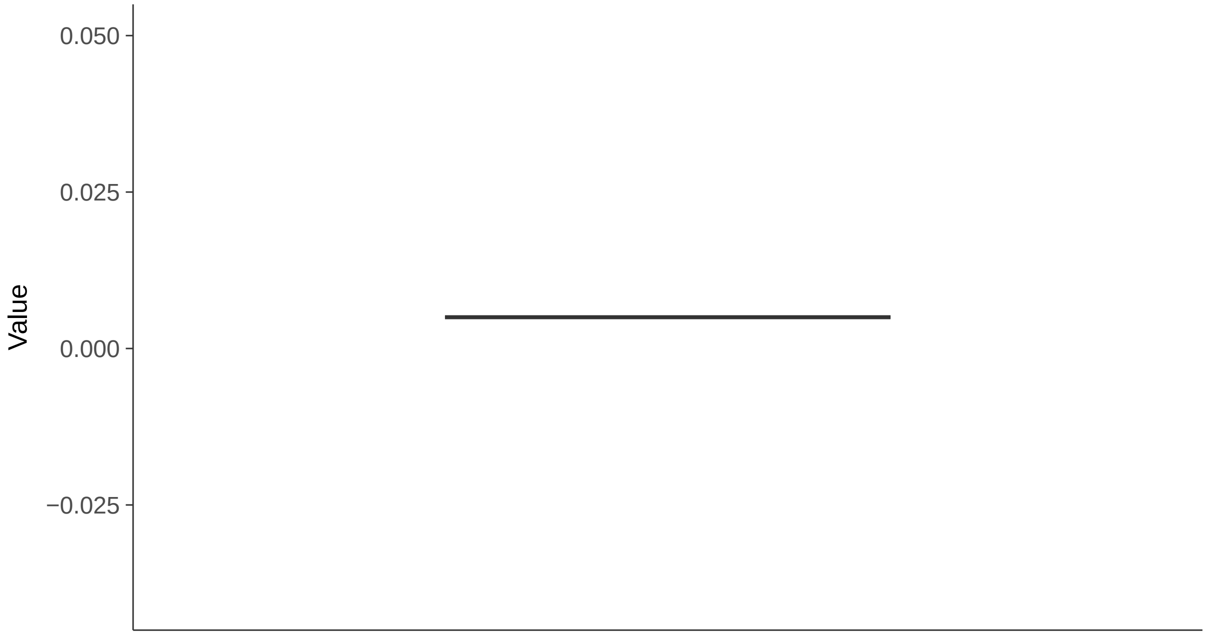
Histogram

Chromium, MW-14 (mg/L)



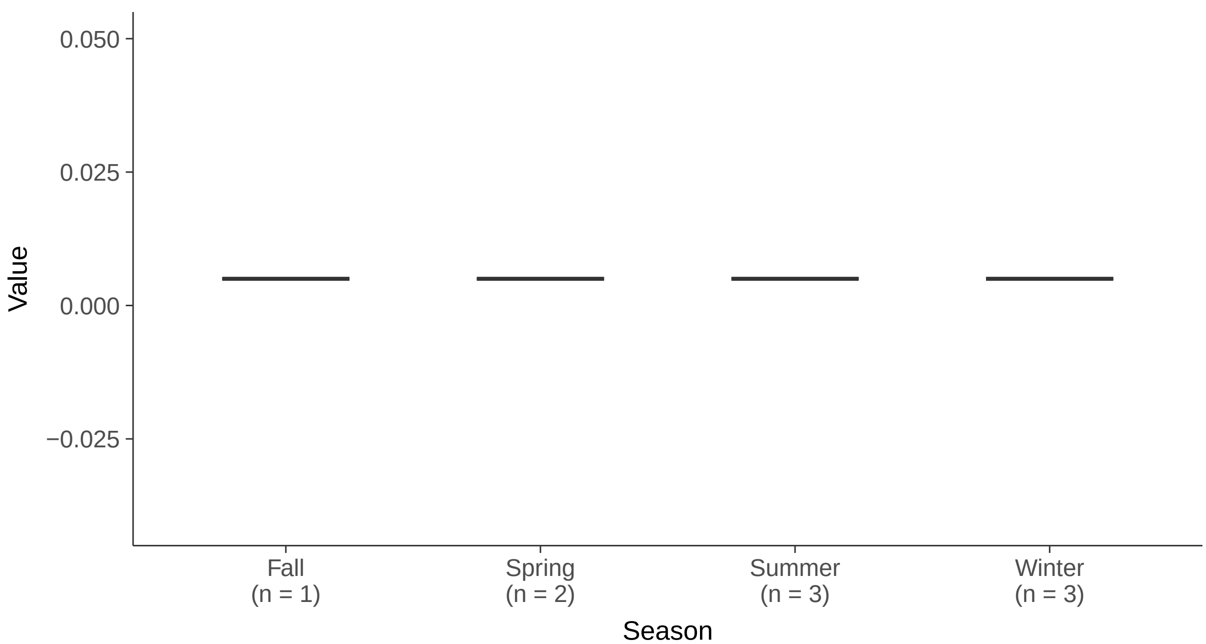
Boxplot

Chromium, MW-14 (mg/L)



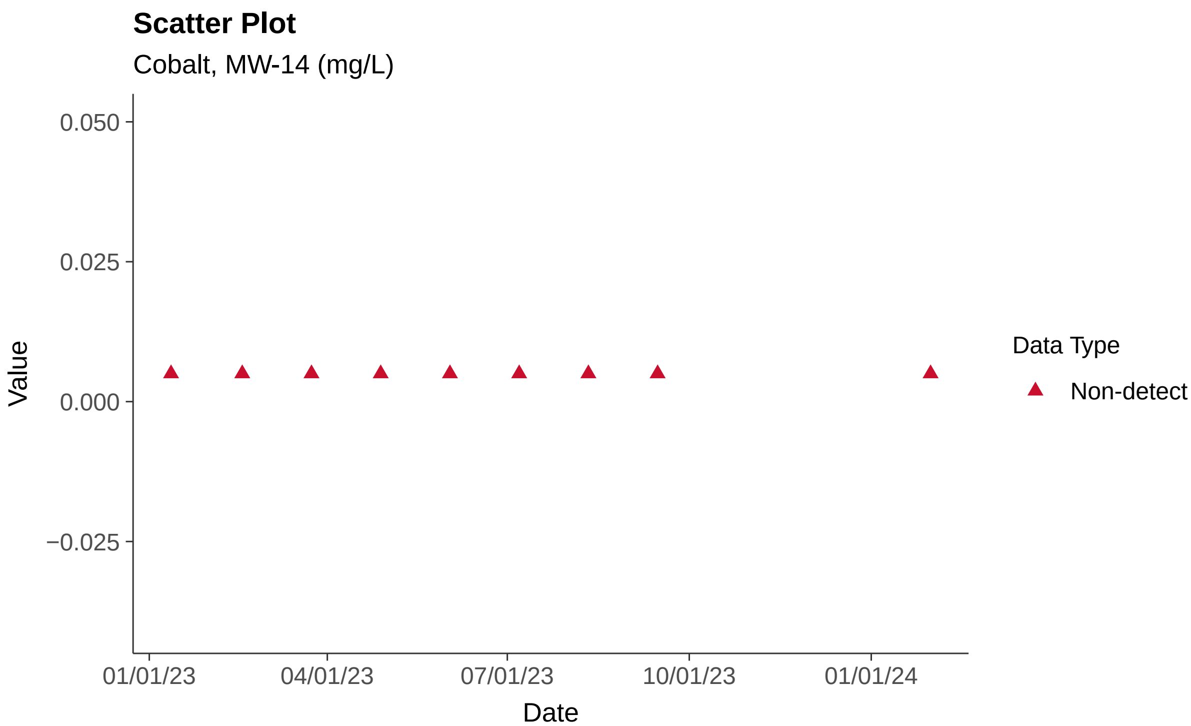
Boxplot by Season

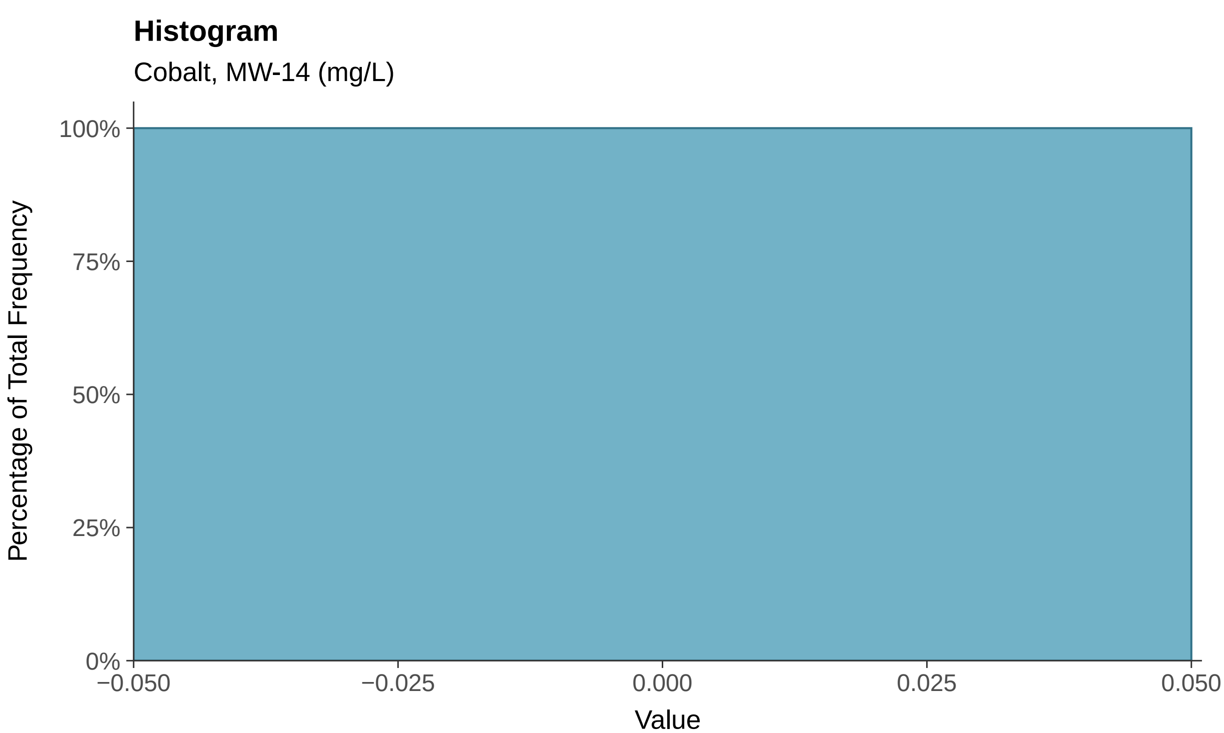
Chromium, MW-14 (mg/L)



Appendix IV: Cobalt, MW-14

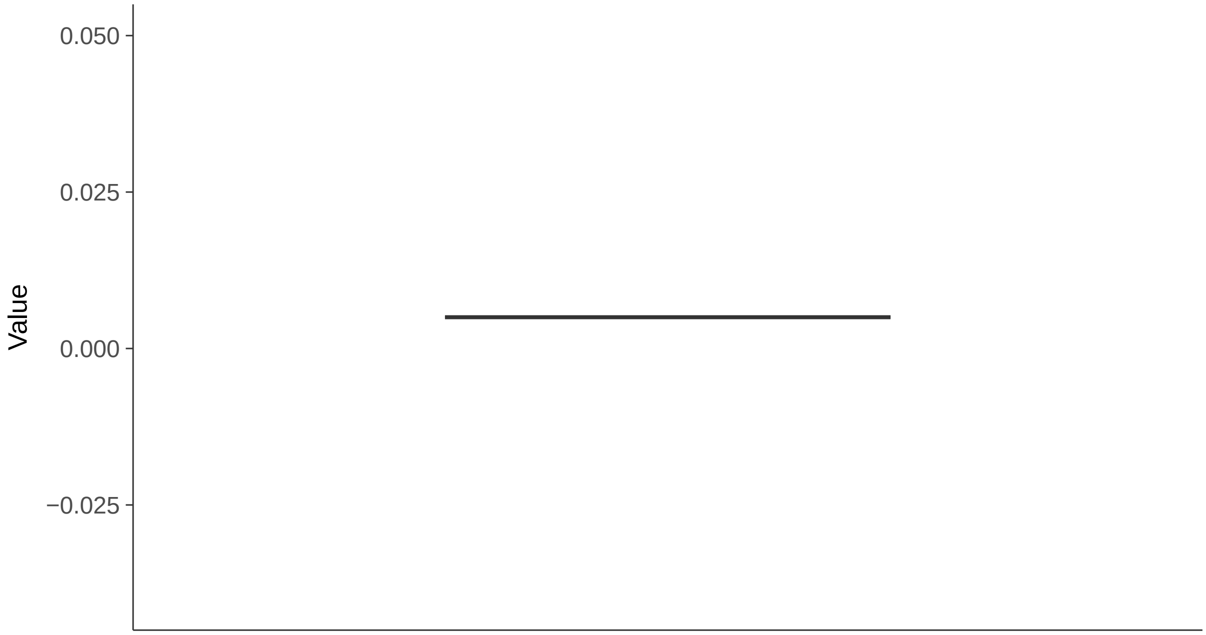
ID: 14_2_14





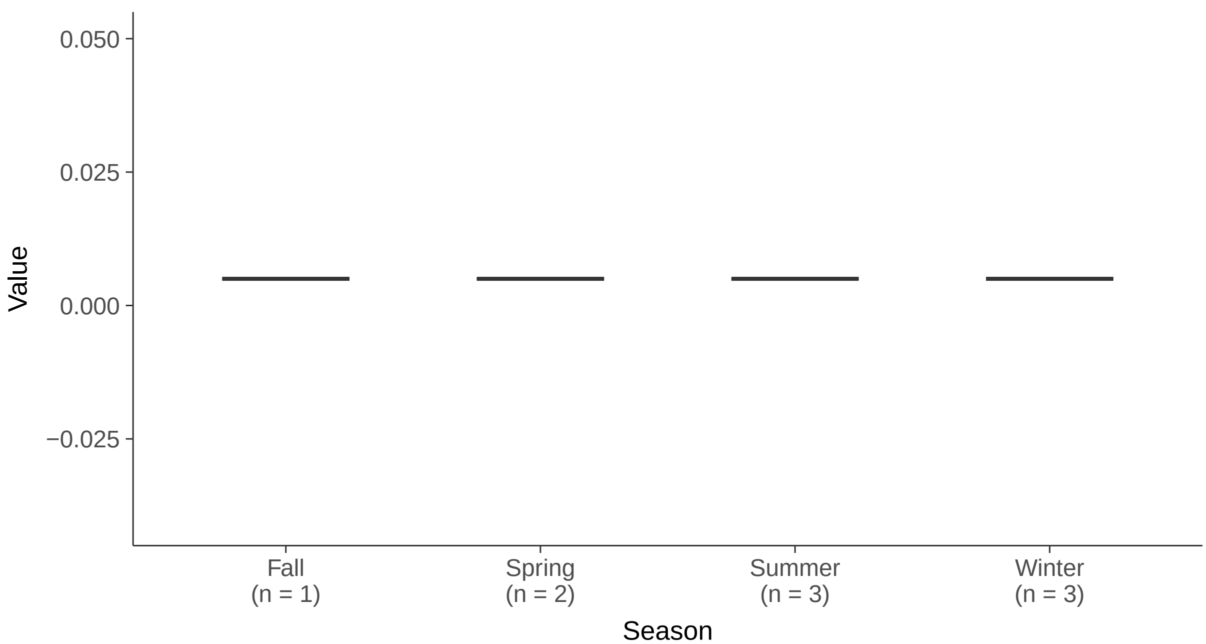
Boxplot

Cobalt, MW-14 (mg/L)



Boxplot by Season

Cobalt, MW-14 (mg/L)

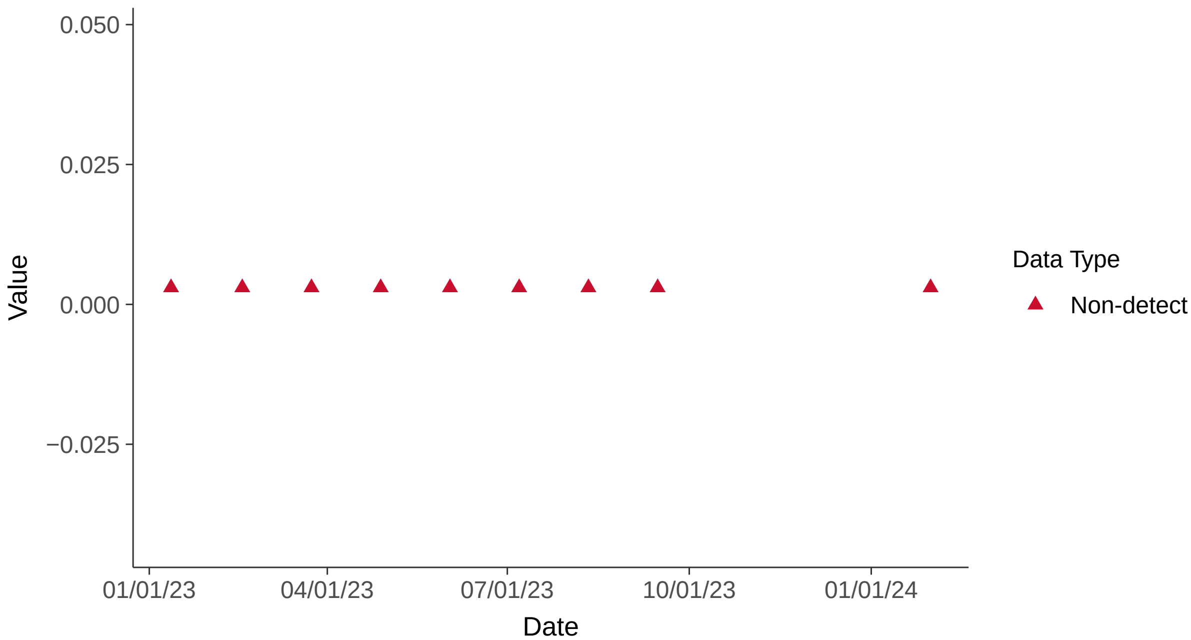


Appendix IV: Lead, MW-14

ID: 14_2_15

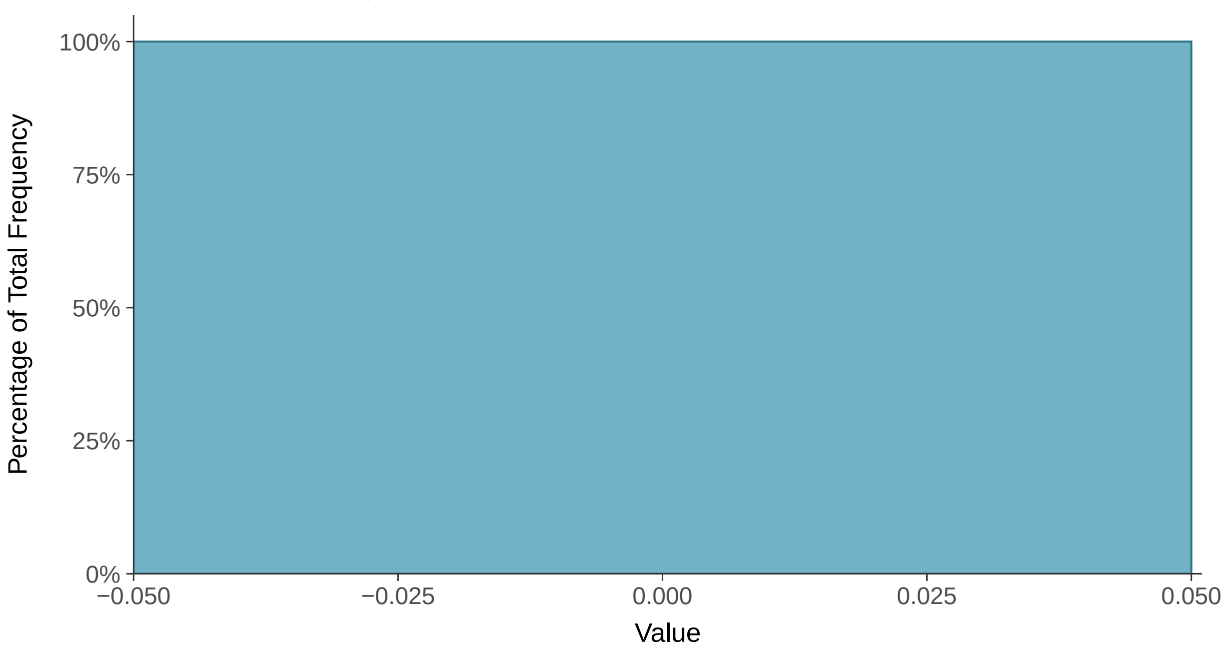
Scatter Plot

Lead, MW-14 (mg/L)



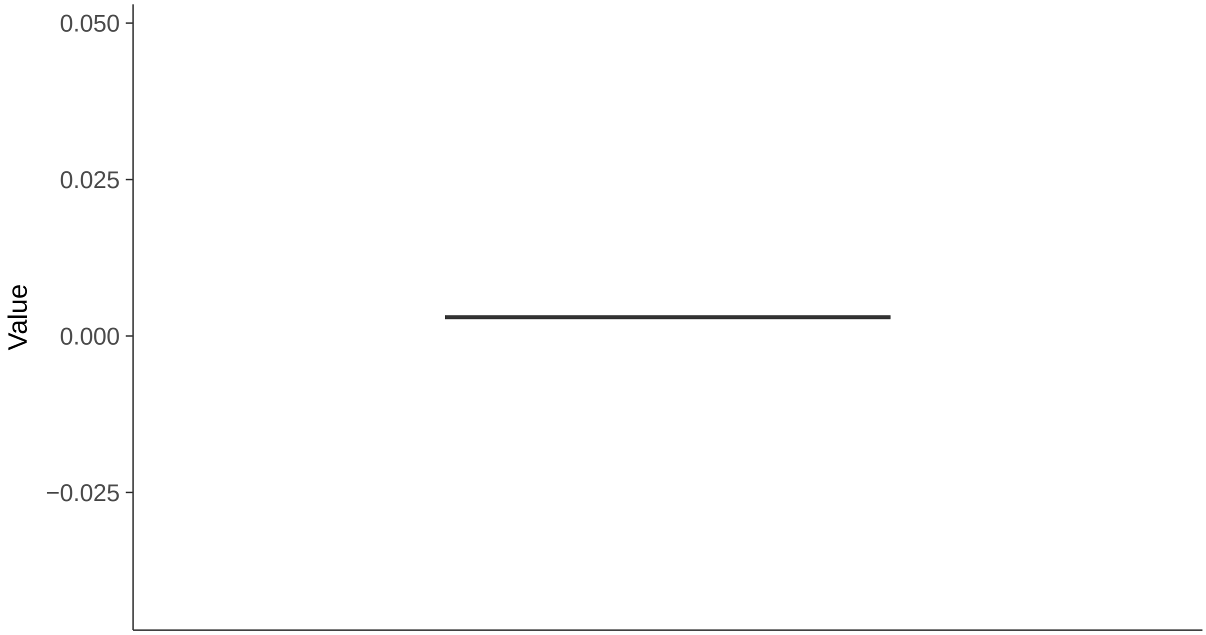
Histogram

Lead, MW-14 (mg/L)



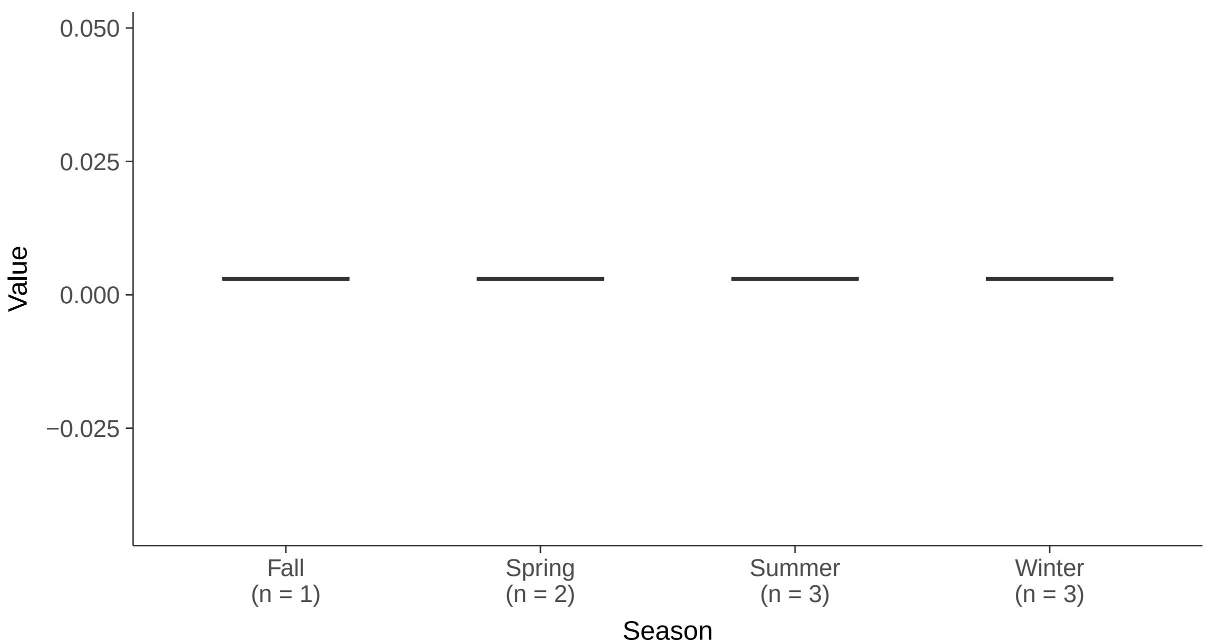
Boxplot

Lead, MW-14 (mg/L)



Boxplot by Season

Lead, MW-14 (mg/L)

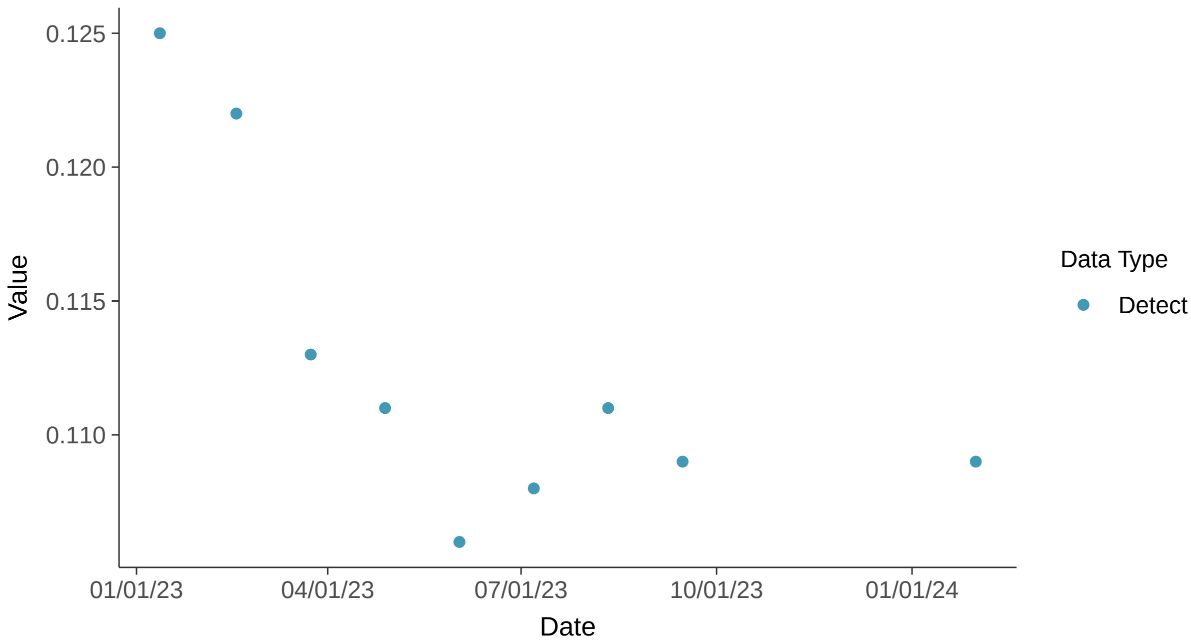


Appendix IV: Lithium, MW-14

ID: 14_2_16

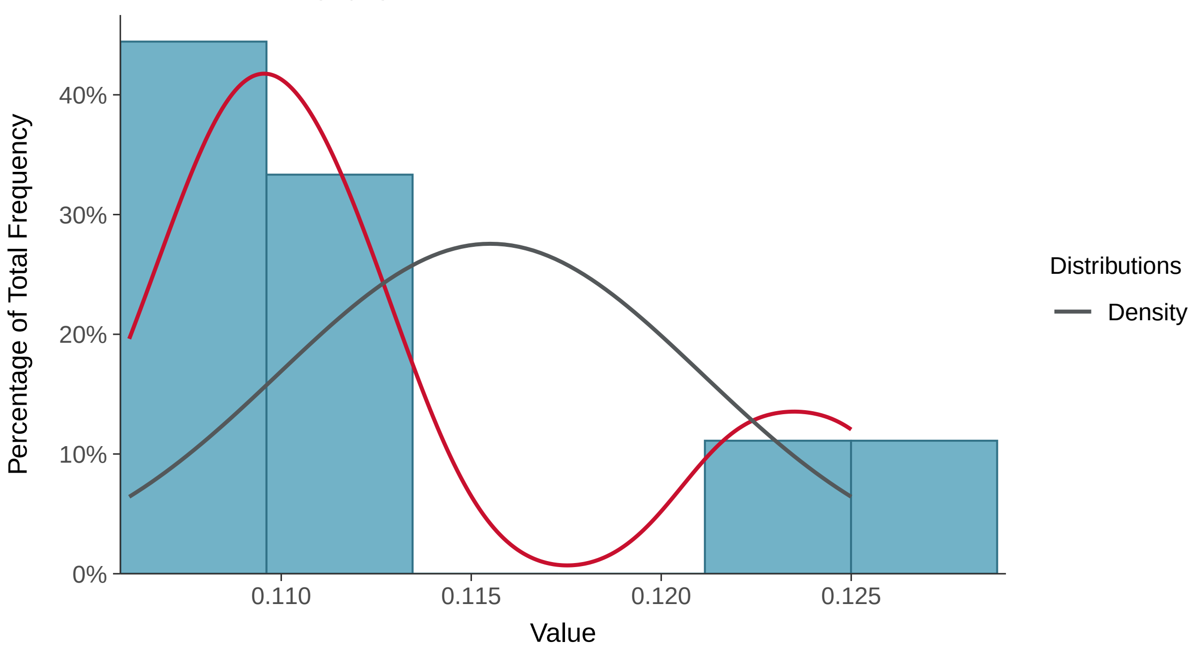
Scatter Plot

Lithium, MW-14 (mg/L)



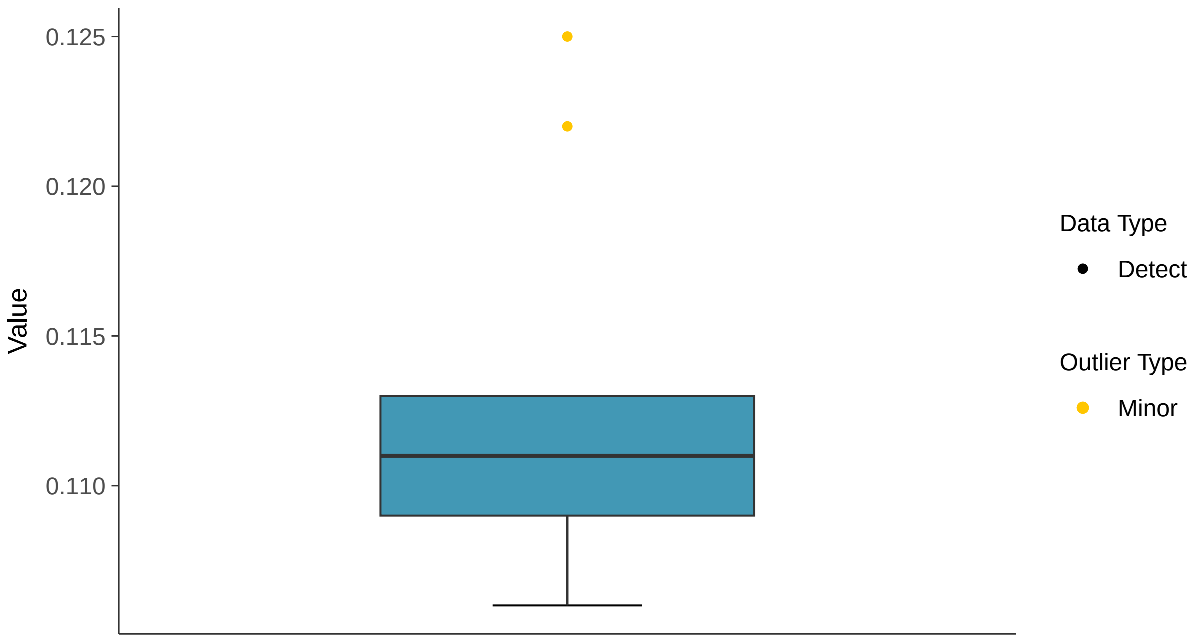
Histogram

Lithium, MW-14 (mg/L)



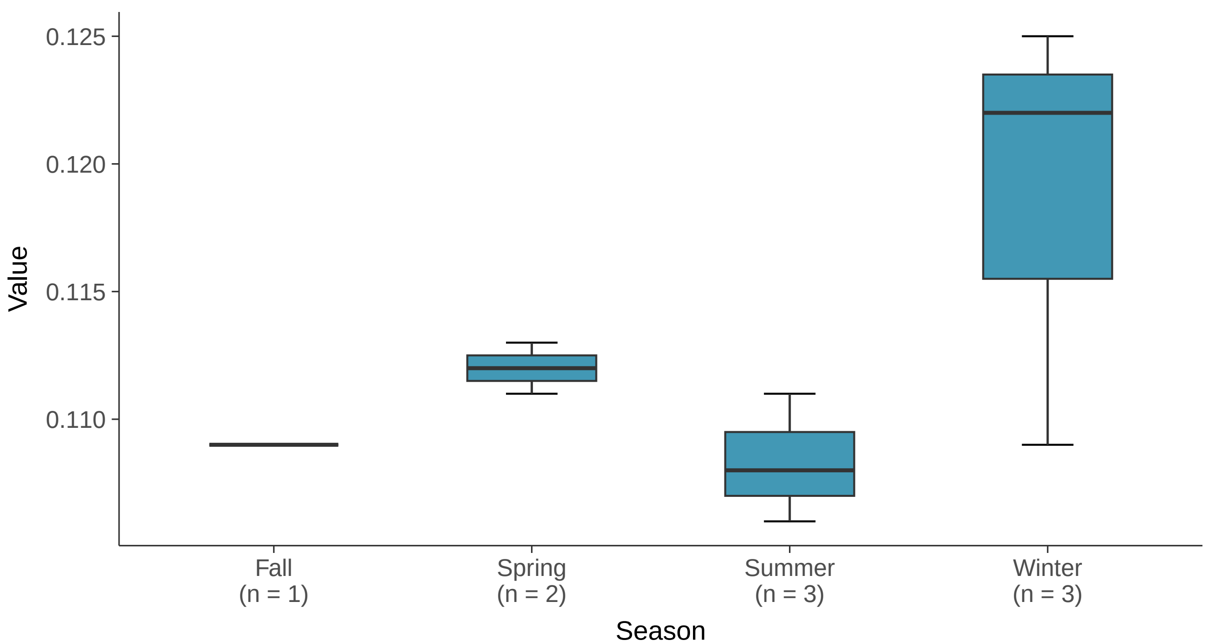
Boxplot

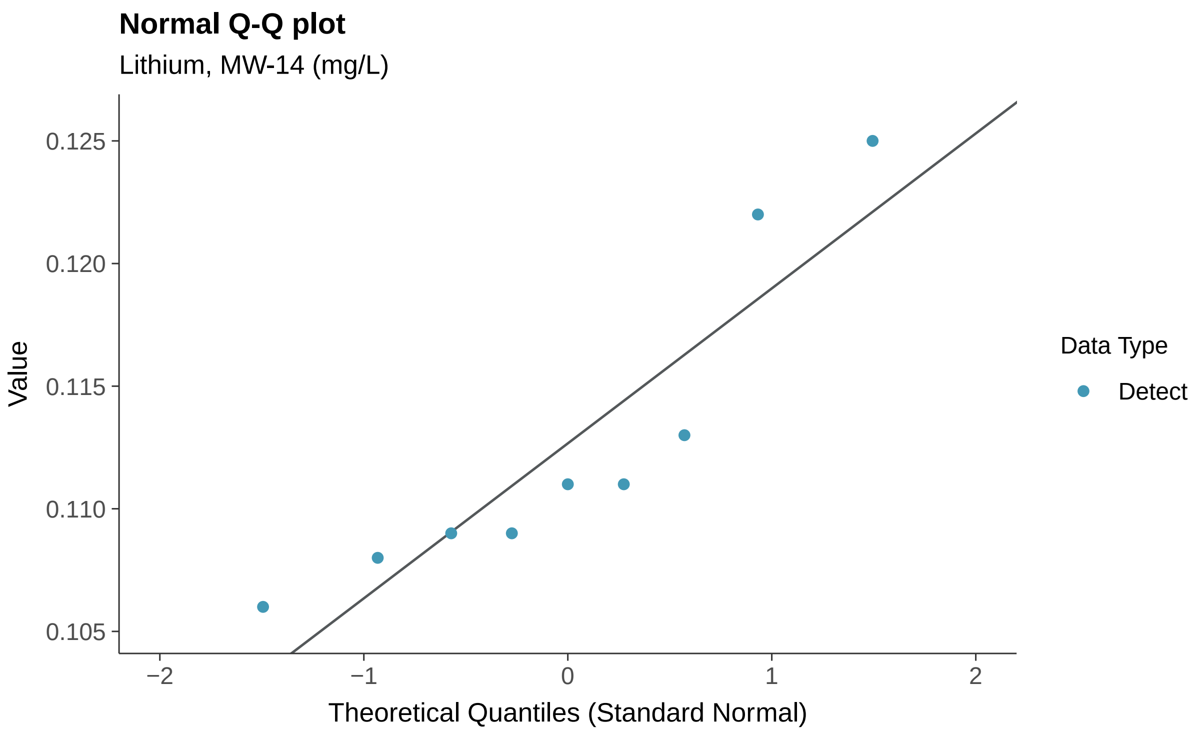
Lithium, MW-14 (mg/L)

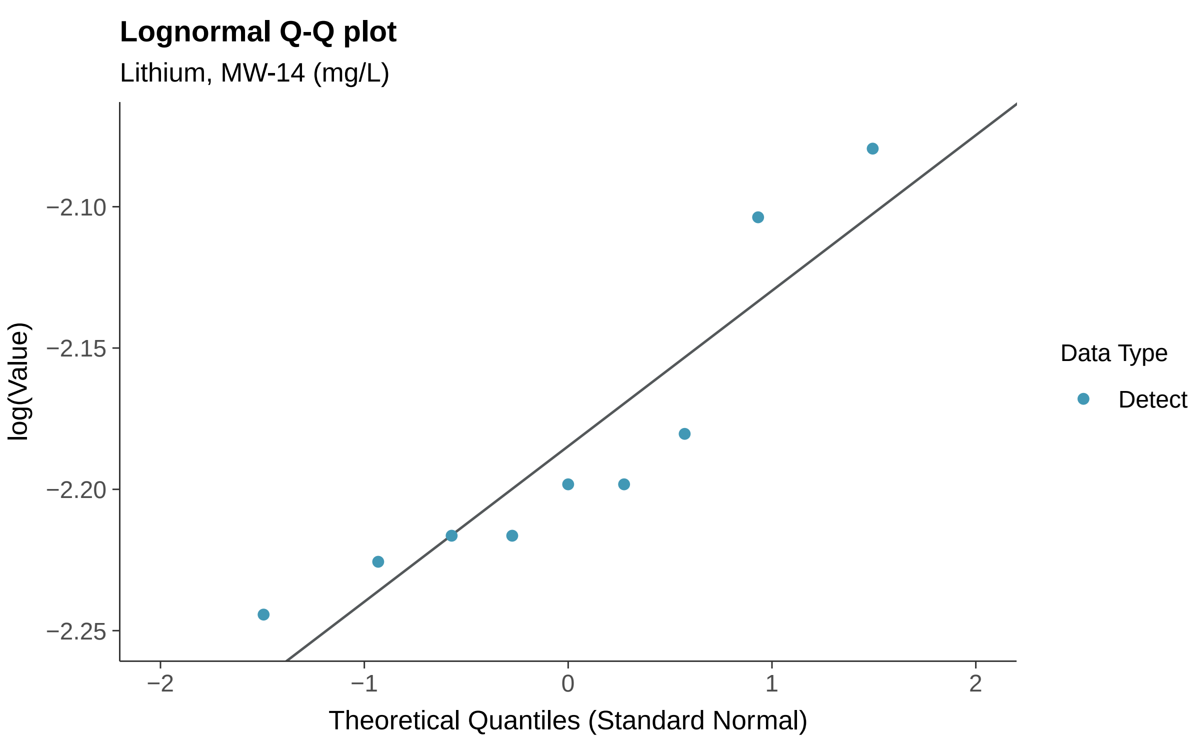


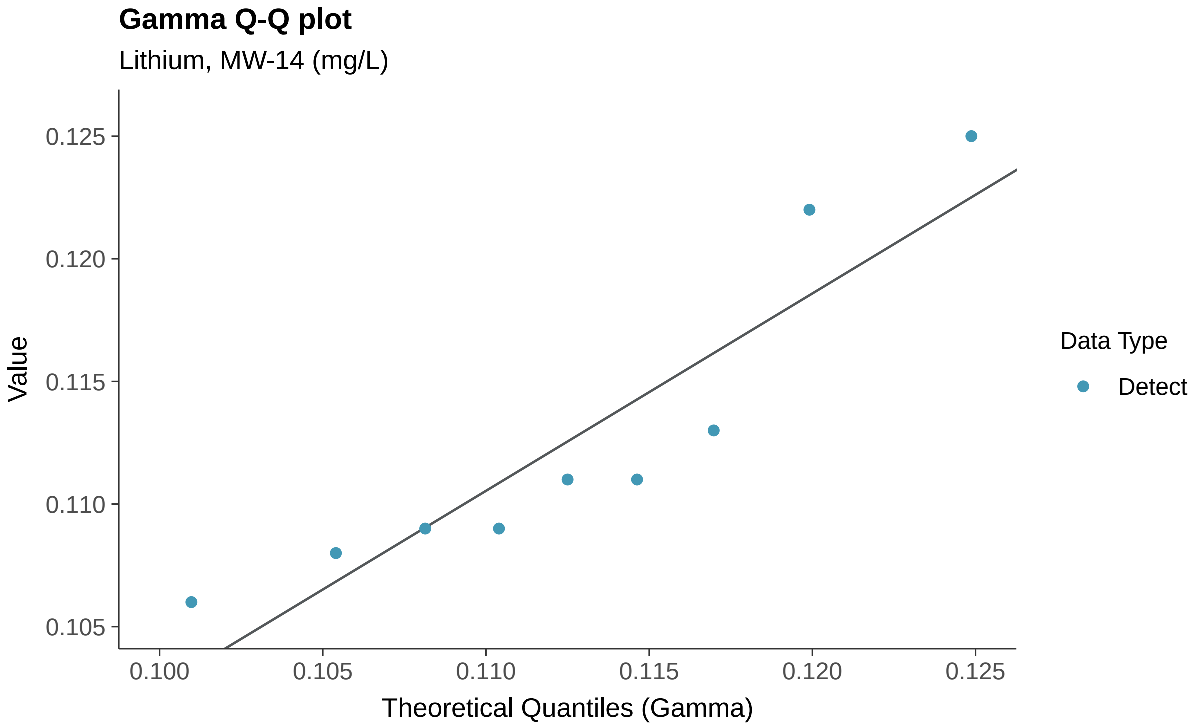
Boxplot by Season

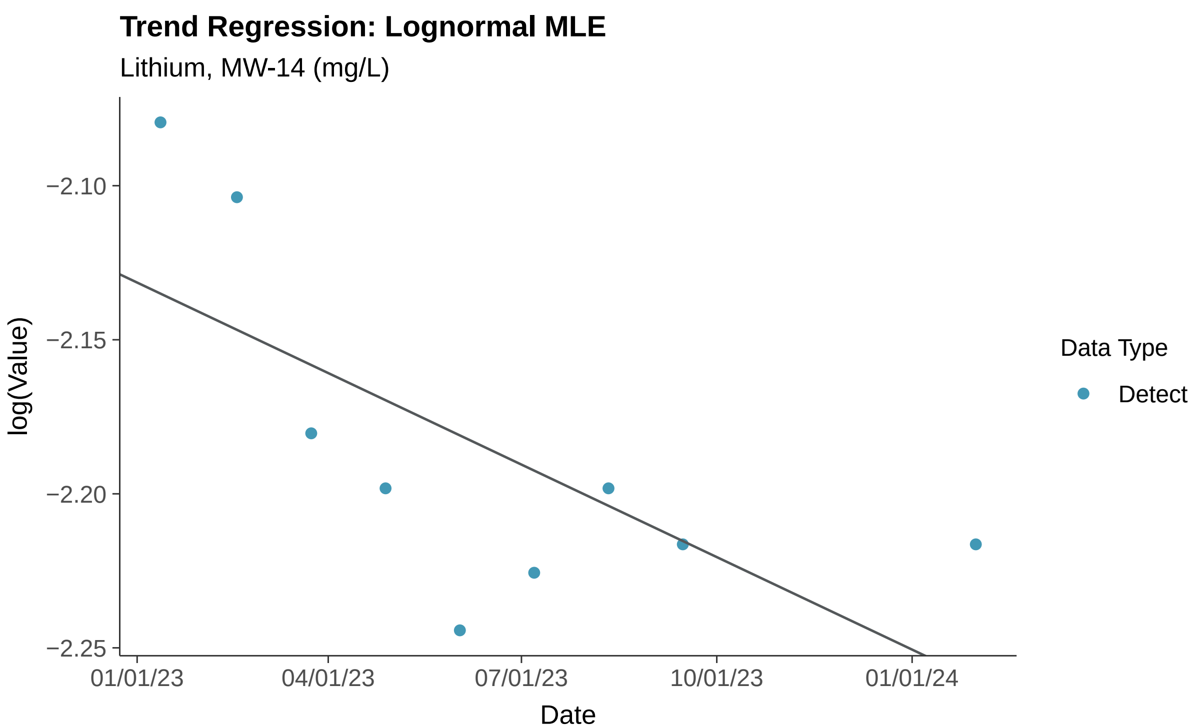
Lithium, MW-14 (mg/L)




Normal Q-Q plot
Lithium, MW-14 (mg/L)
Value
0.125
0.120
0.115
0.110
0.105
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

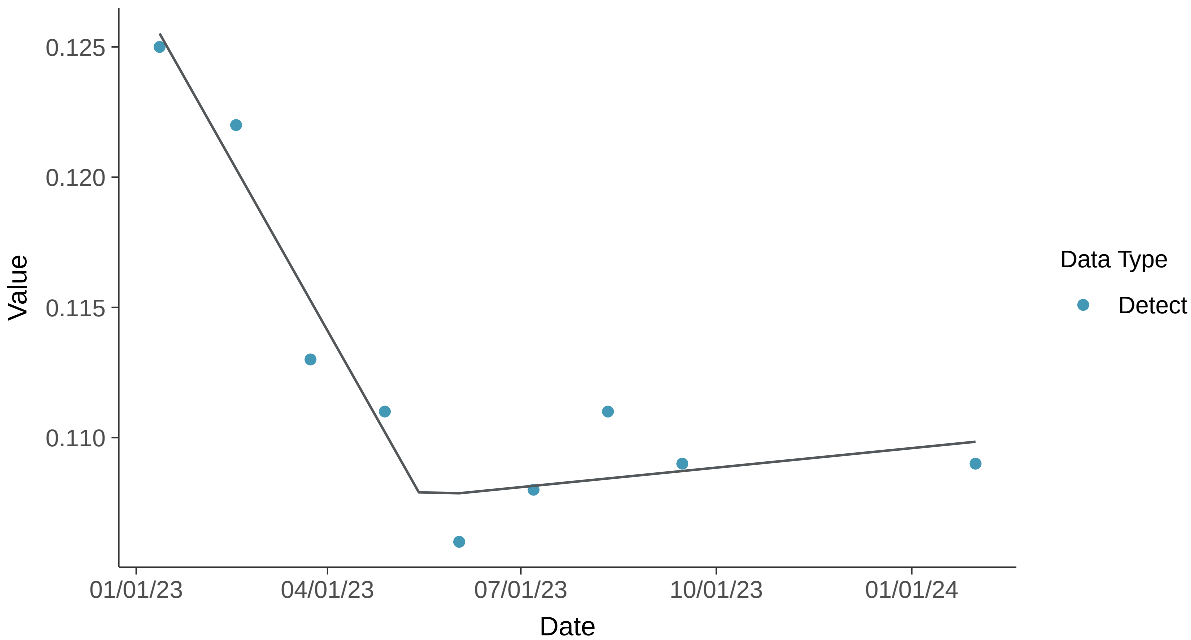

Lognormal Q-Q plot
Lithium, MW-14 (mg/L)
log(Value)
−2.10
−2.15
−2.20
−2.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Lithium, MW-14 (mg/L)
Value
0.125
0.120
0.115
0.110
0.105
0.100
0.105
0.110
0.115
0.120
0.125
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Lithium, MW-14 (mg/L)
log(Value)
−2.10
−2.15
−2.20
−2.25
01/01/23
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Lithium, MW-14 (mg/L)

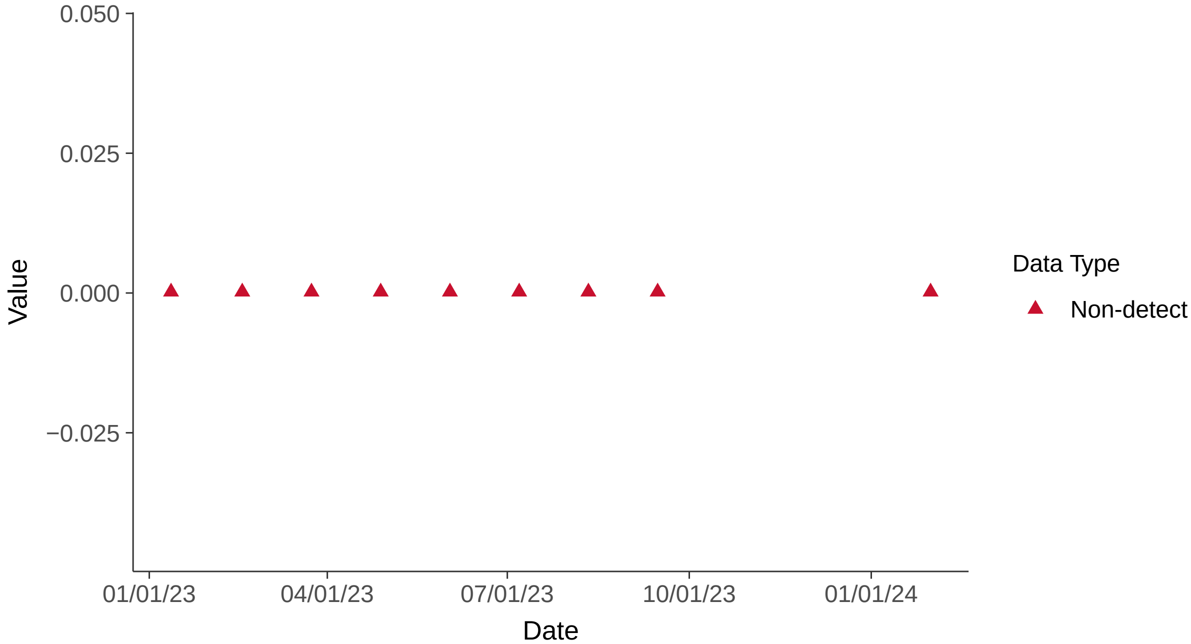


Appendix IV: Mercury, MW-14

ID: 14_2_17

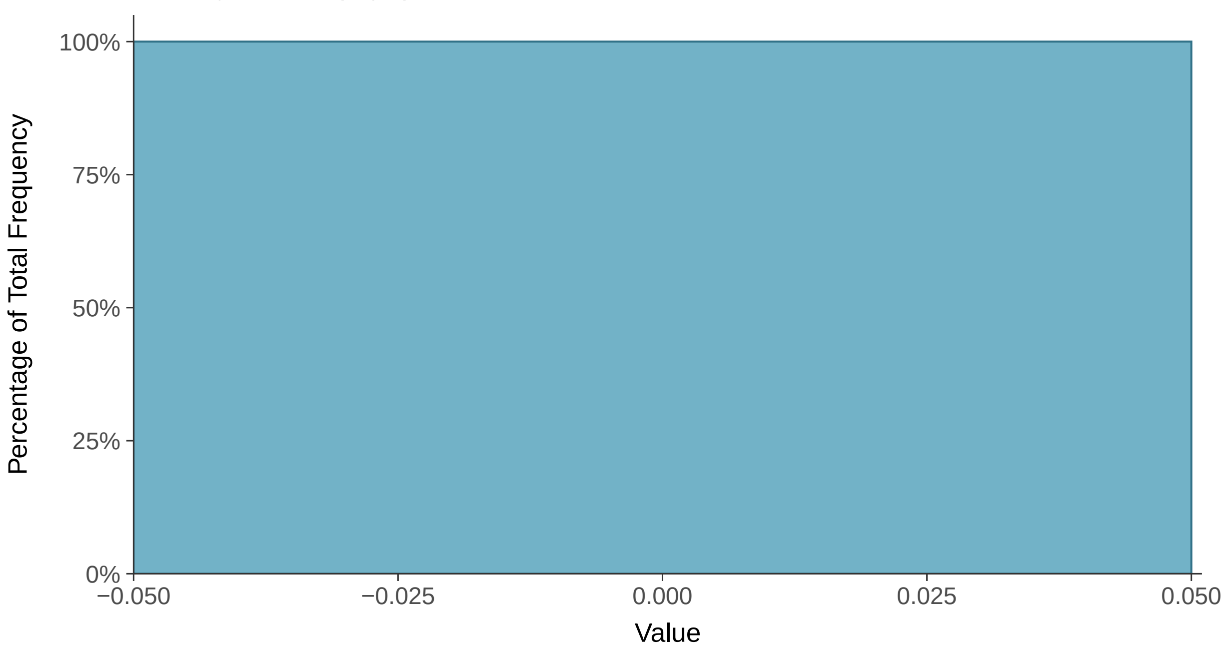
Scatter Plot

Mercury, MW-14 (mg/L)



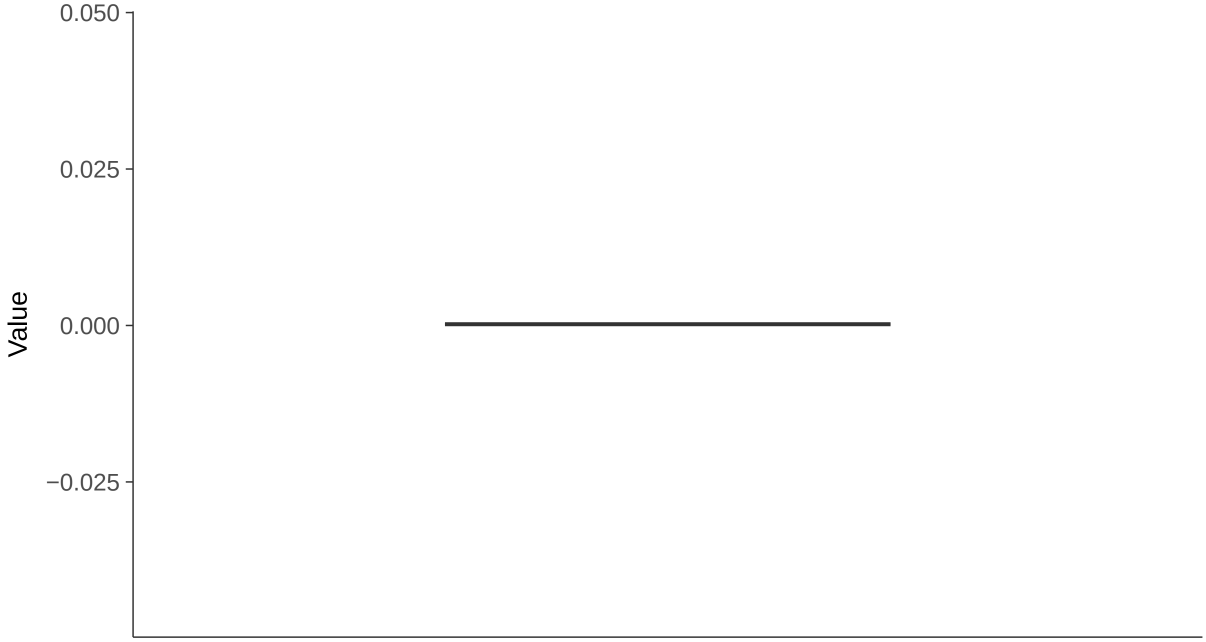
Histogram

Mercury, MW-14 (mg/L)



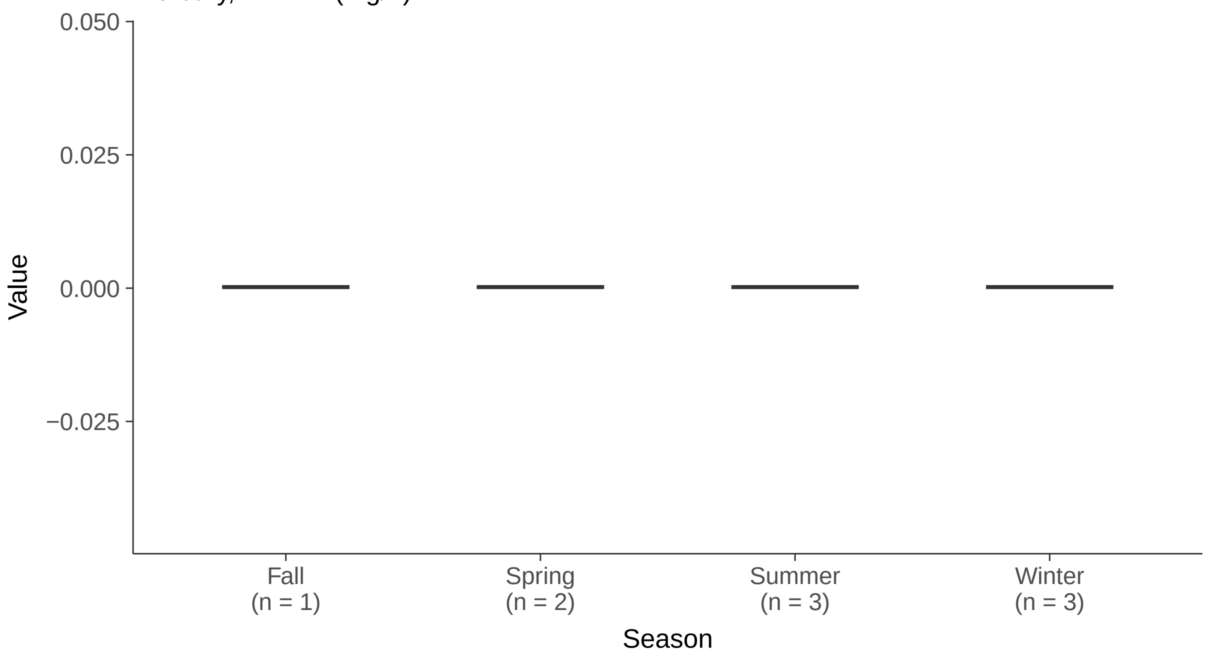
Boxplot

Mercury, MW-14 (mg/L)



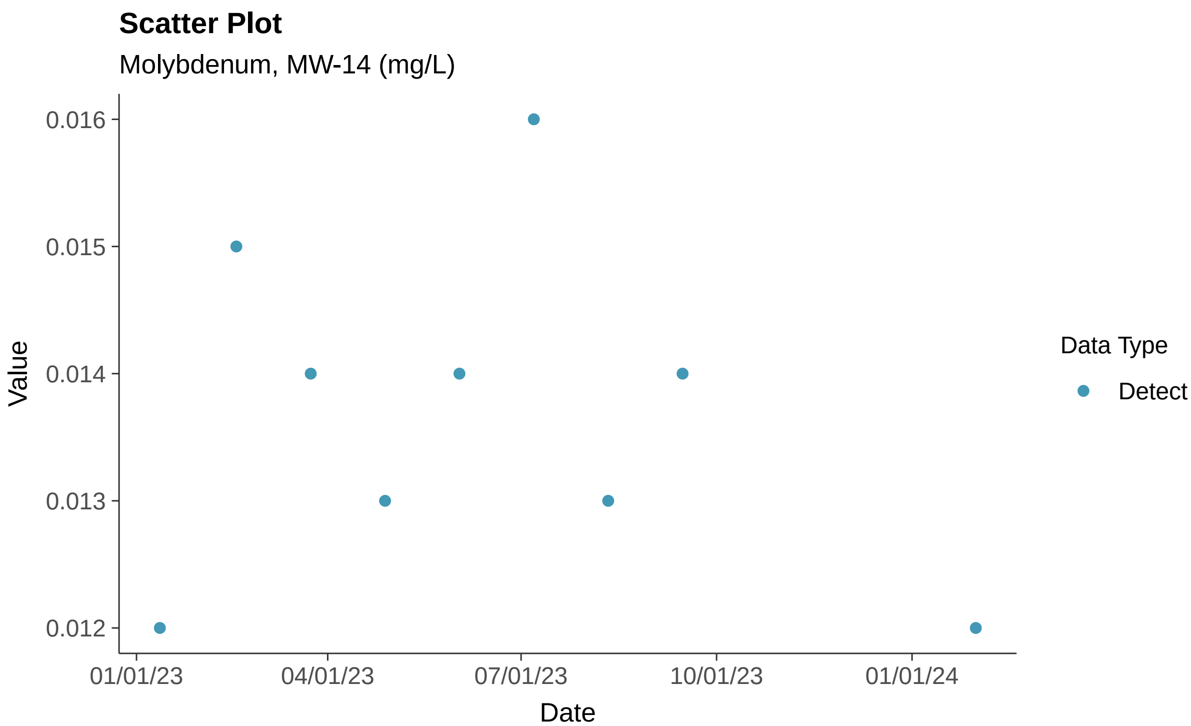
Boxplot by Season

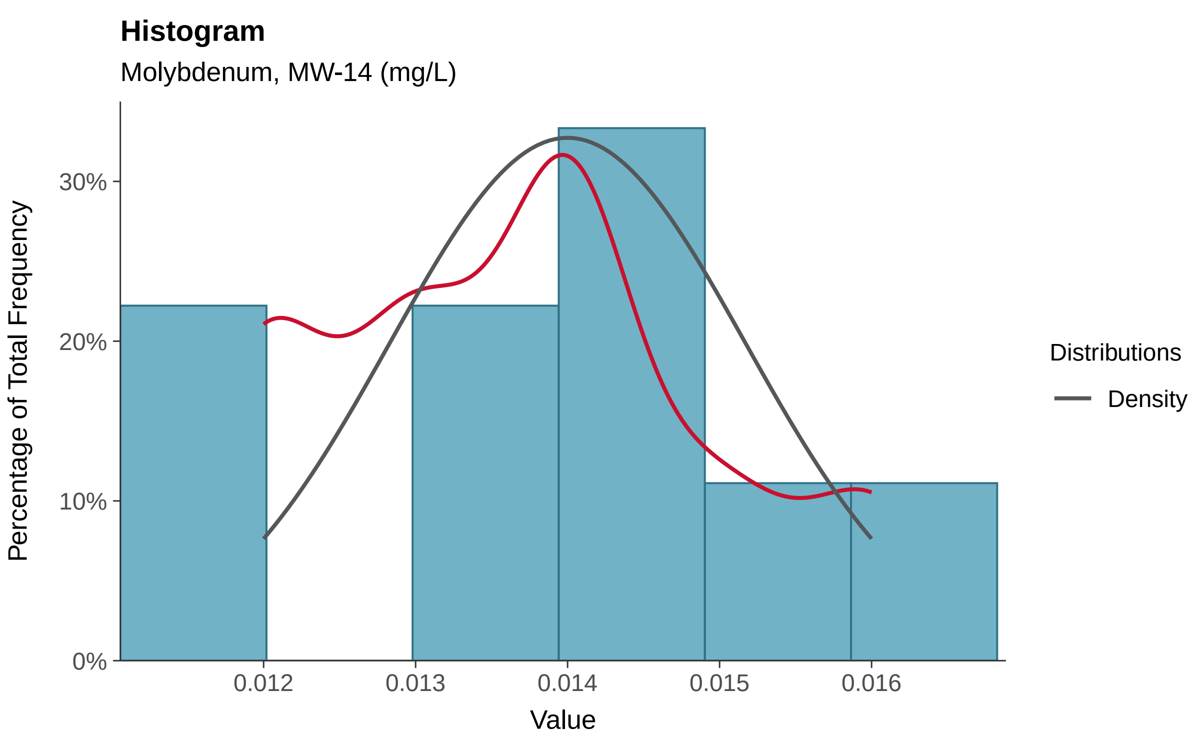
Mercury, MW-14 (mg/L)



Appendix IV: Molybdenum, MW-14

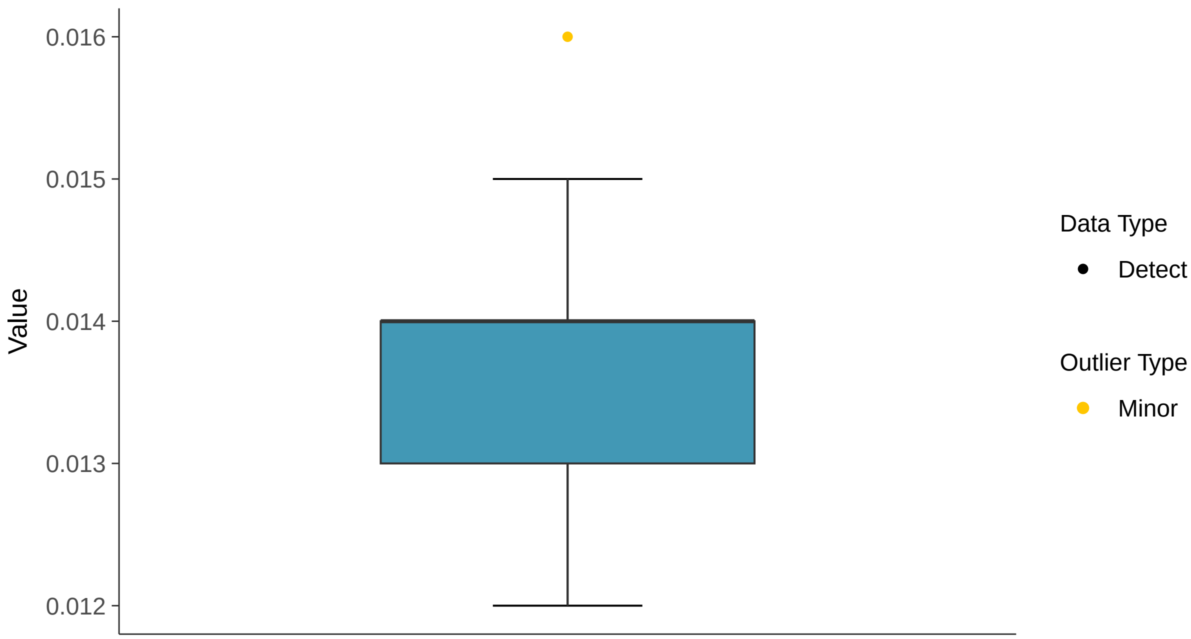
ID: 14_2_18





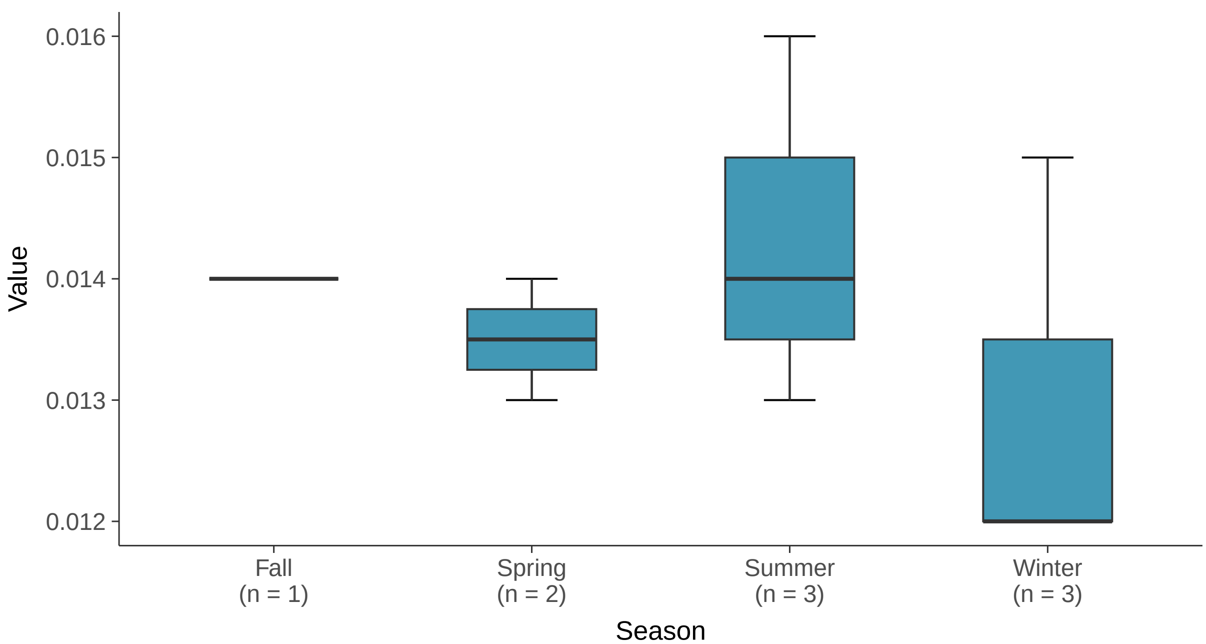
Boxplot

Molybdenum, MW-14 (mg/L)



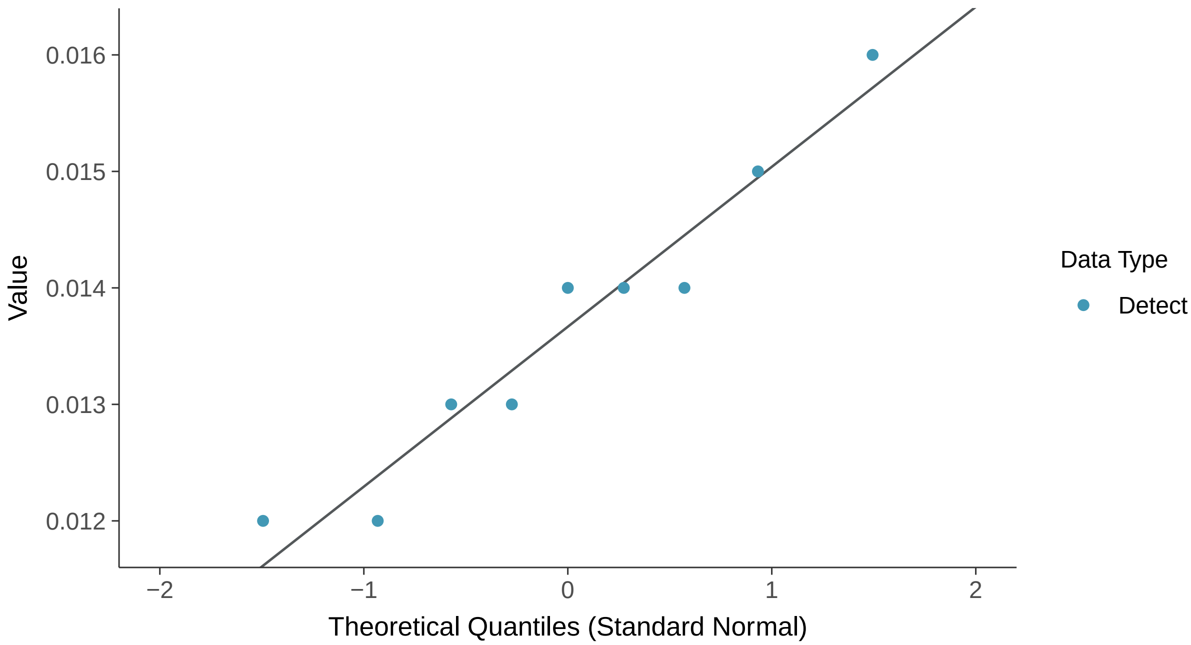
Boxplot by Season

Molybdenum, MW-14 (mg/L)



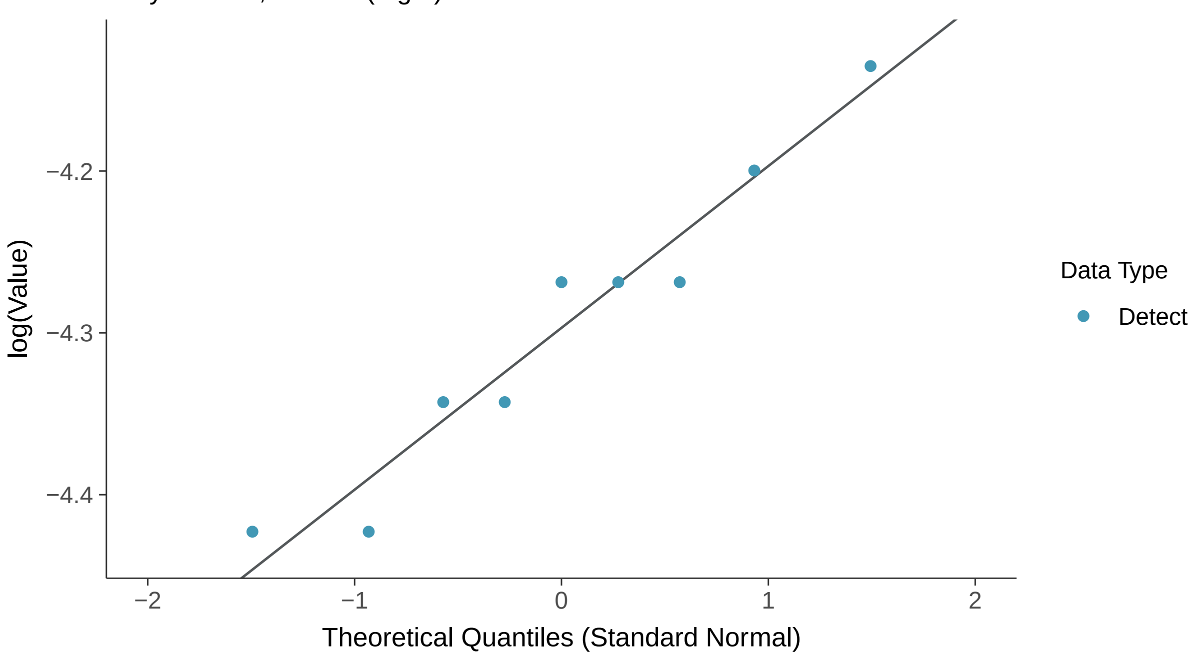
Normal Q-Q plot

Molybdenum, MW-14 (mg/L)



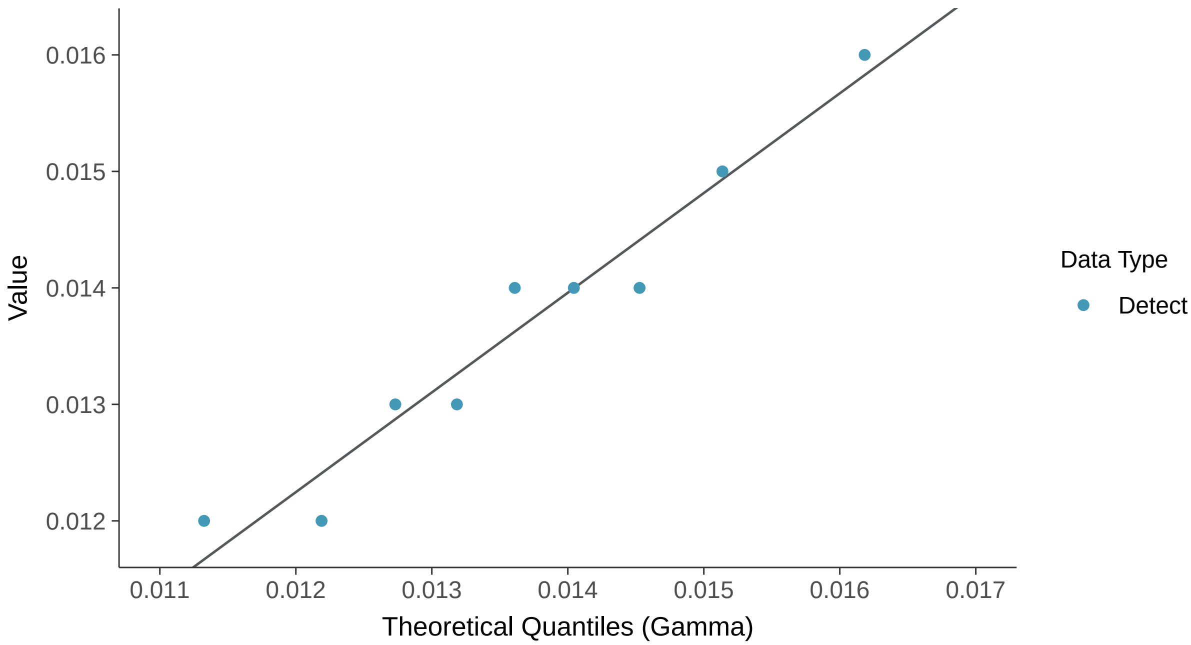
Lognormal Q-Q plot

Molybdenum, MW-14 (mg/L)



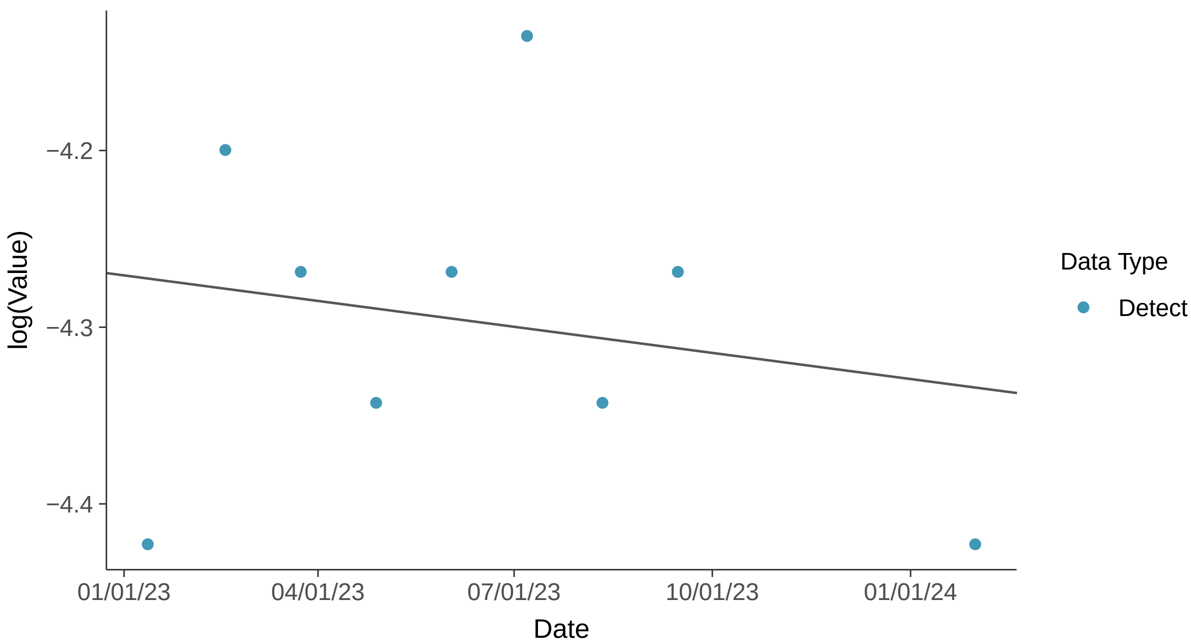
Gamma Q-Q plot

Molybdenum, MW-14 (mg/L)



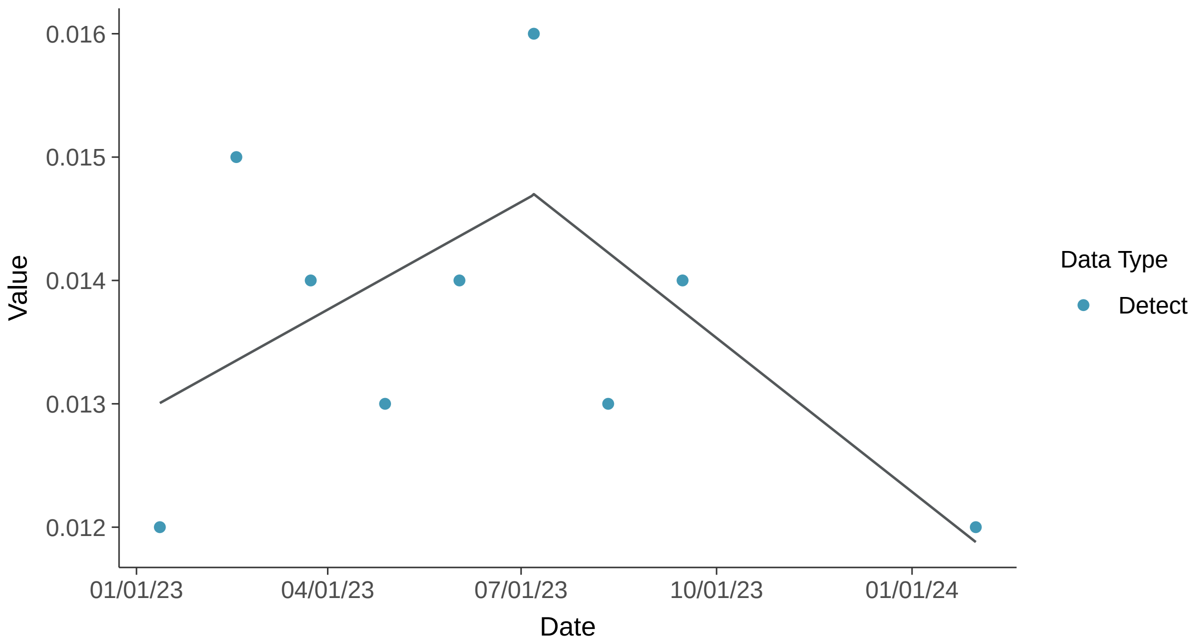
Trend Regression: Lognormal MLE

Molybdenum, MW-14 (mg/L)



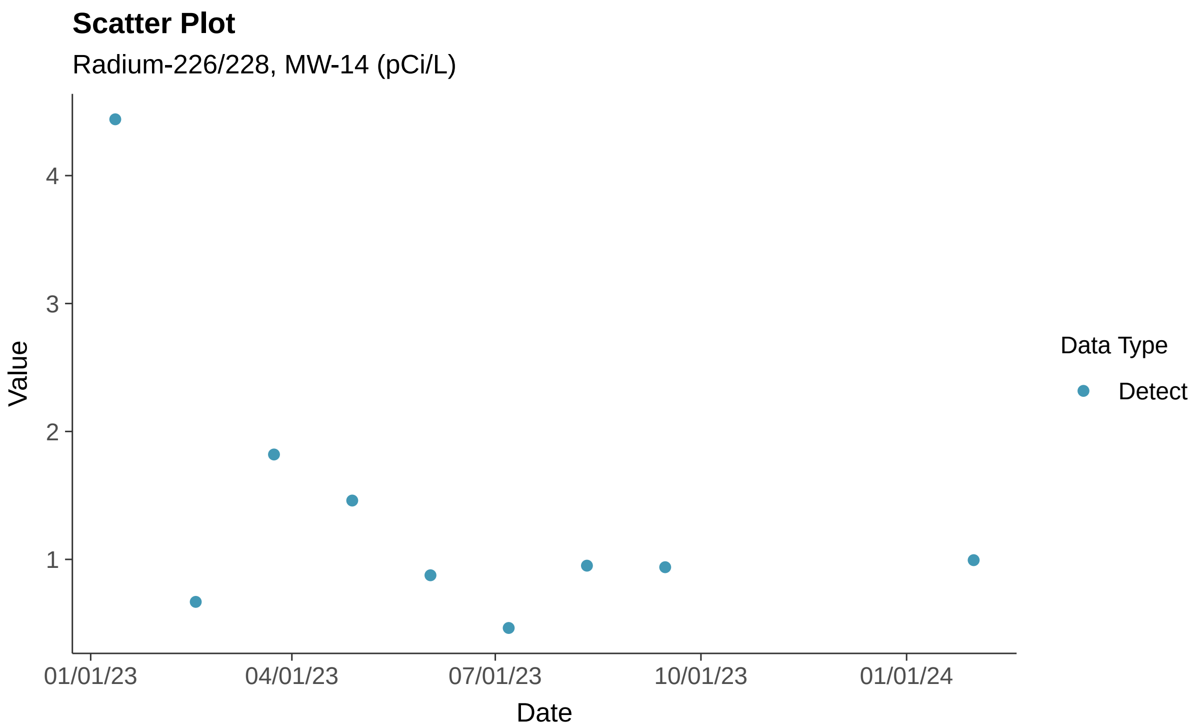
Trend Regression: Piecewise Linear-Linear

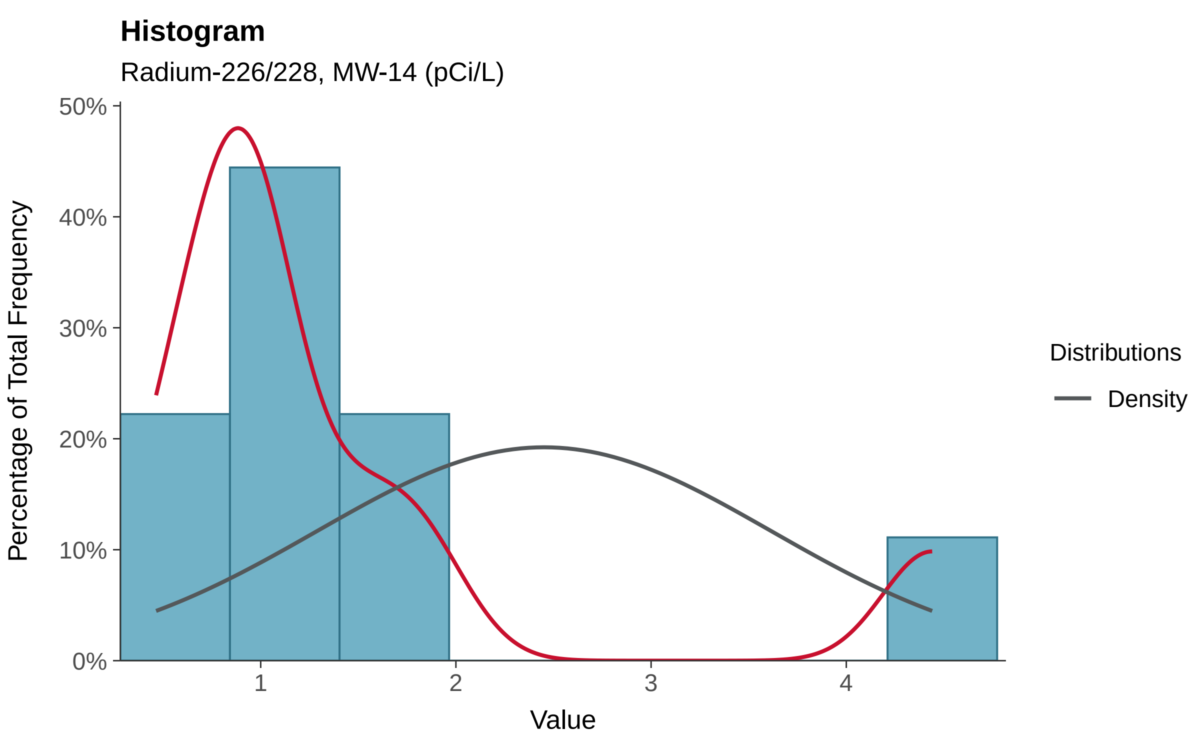
Molybdenum, MW-14 (mg/L)



Appendix IV: Radium-226/228, MW-14

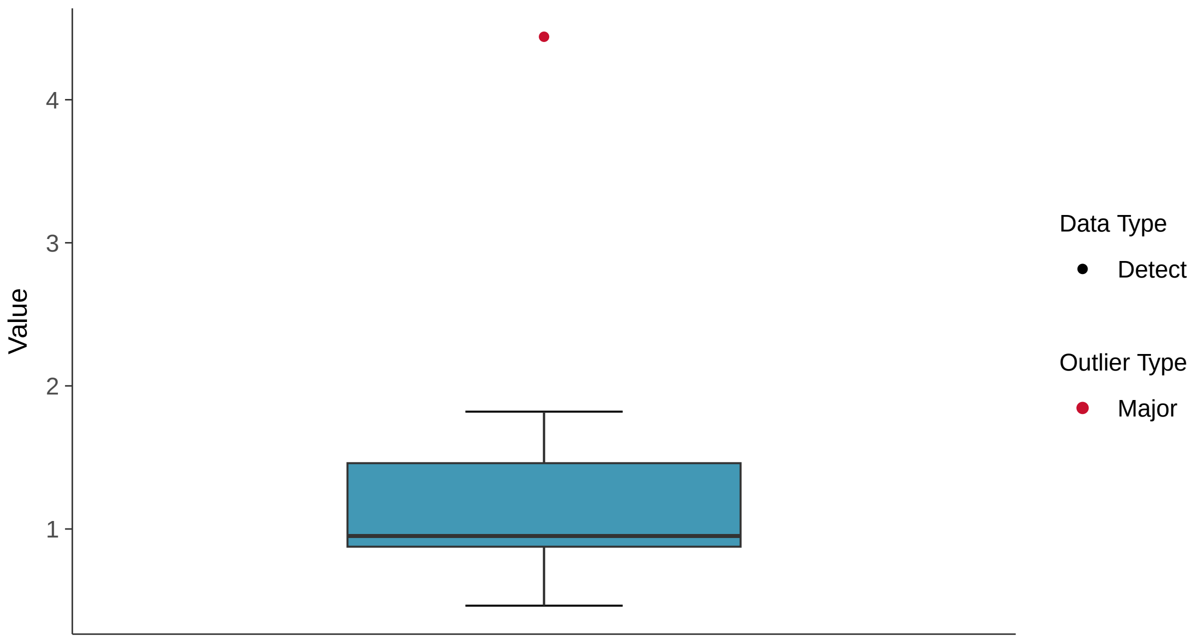
ID: 14_2_20





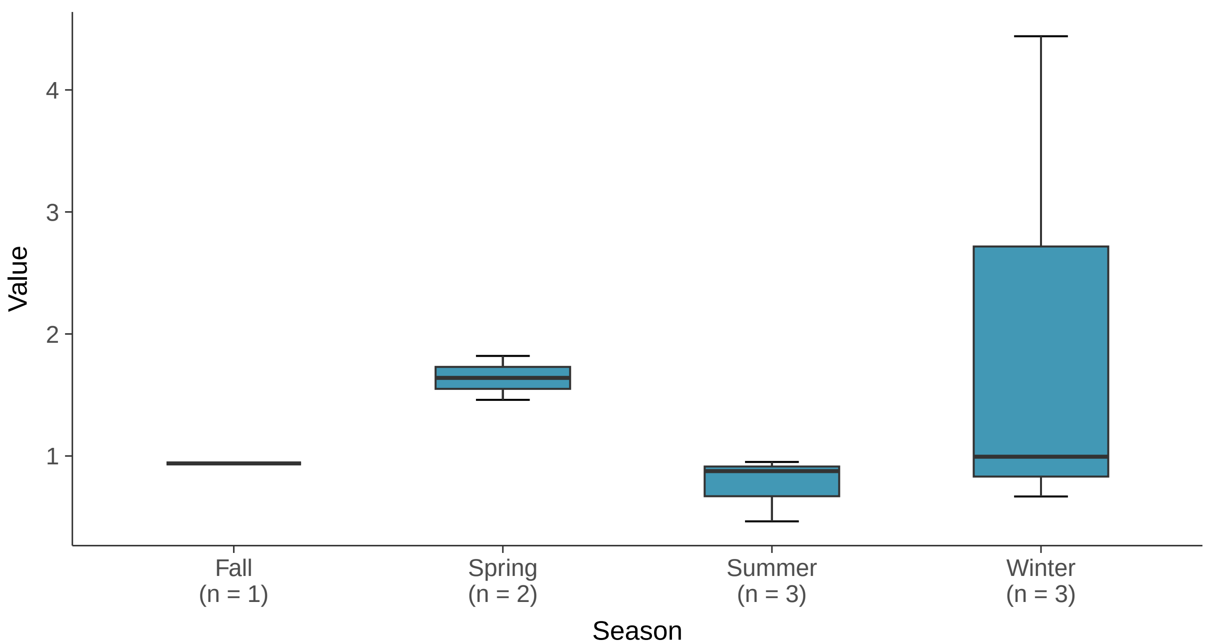
Boxplot

Radium-226/228, MW-14 (pCi/L)



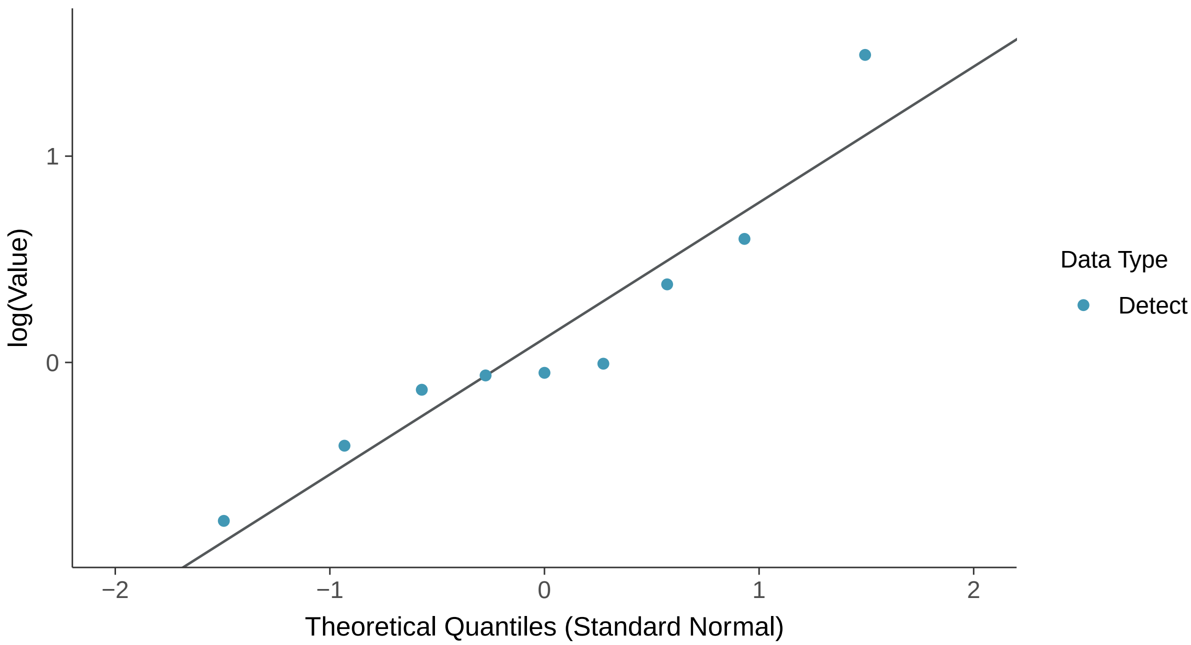
Boxplot by Season

Radium-226/228, MW-14 (pCi/L)



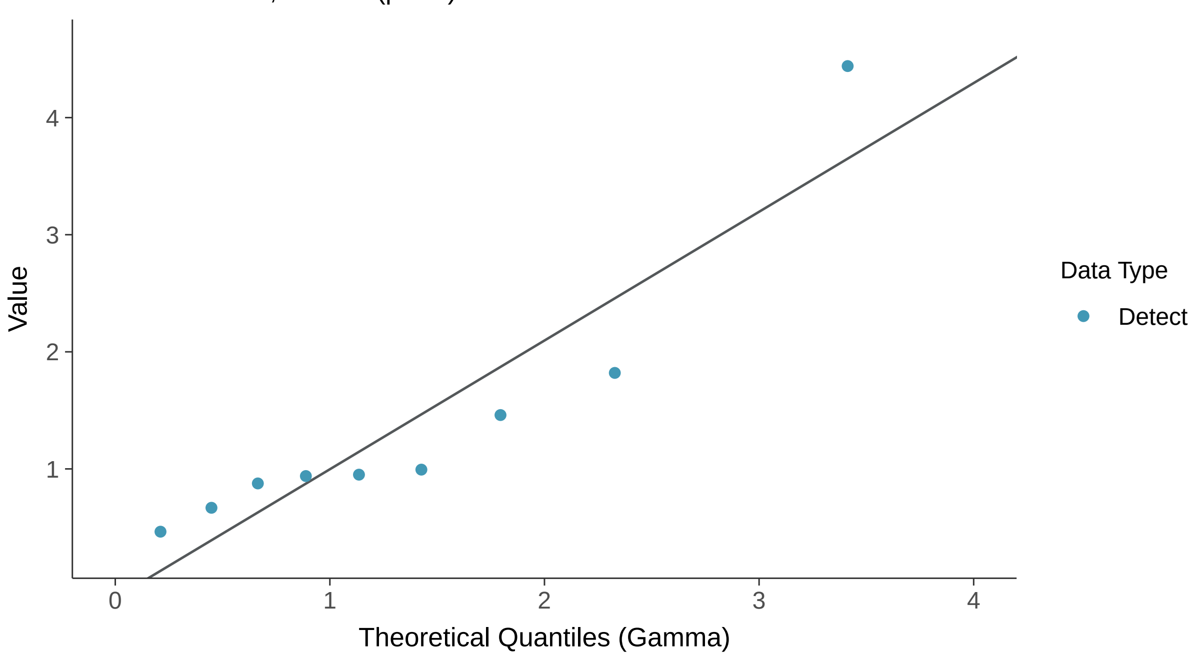
Lognormal Q-Q plot

Radium-226/228, MW-14 (pCi/L)



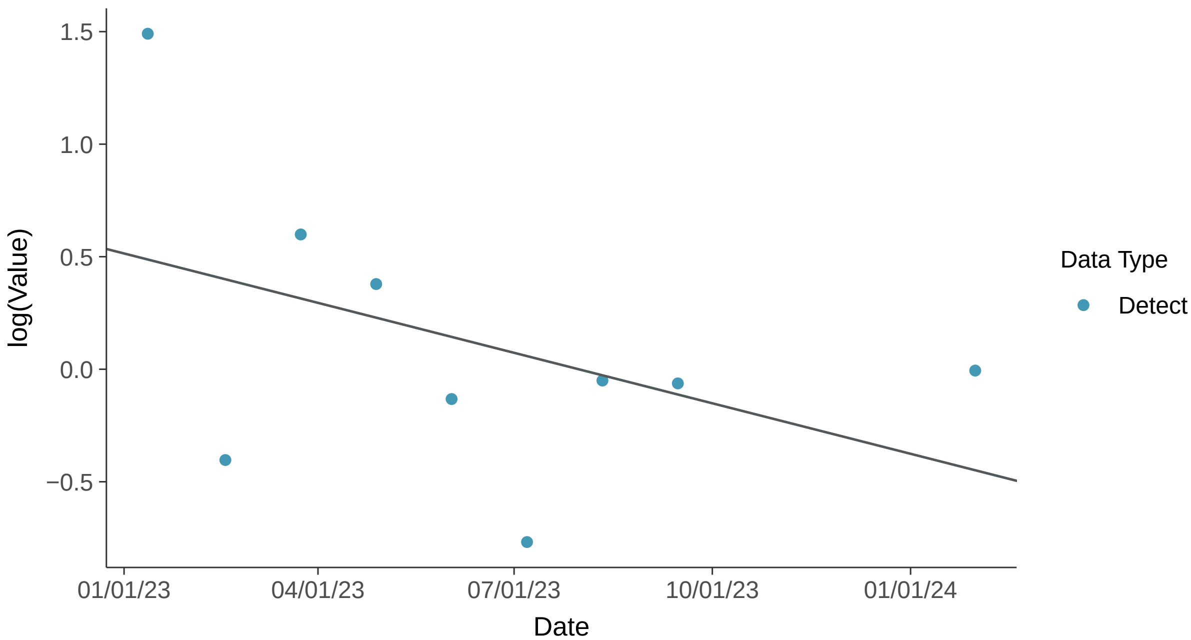
Gamma Q-Q plot

Radium-226/228, MW-14 (pCi/L)



Trend Regression: Lognormal MLE

Radium-226/228, MW-14 (pCi/L)

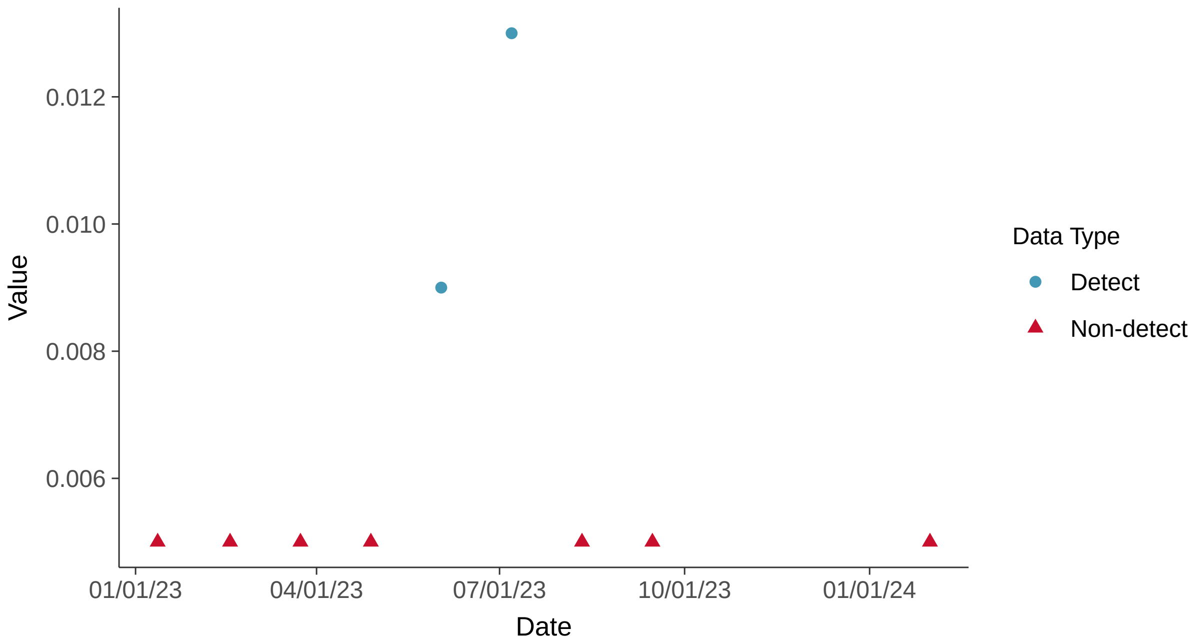


Appendix IV: Selenium, MW-14

ID: 14_2_22

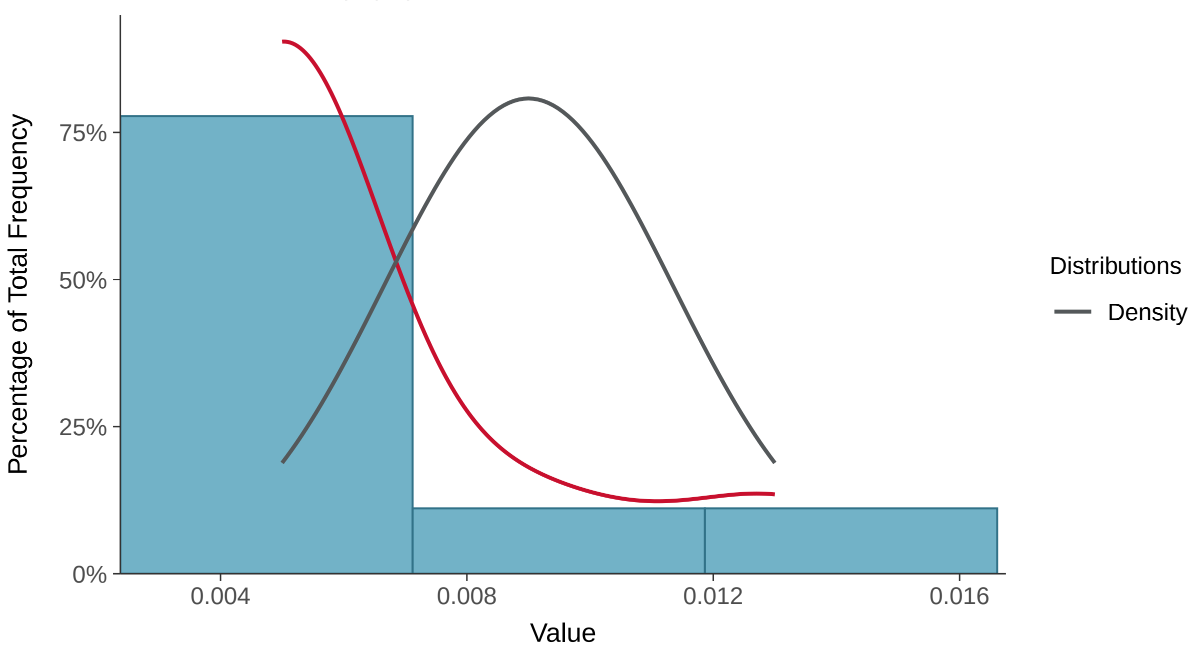
Scatter Plot

Selenium, MW-14 (mg/L)



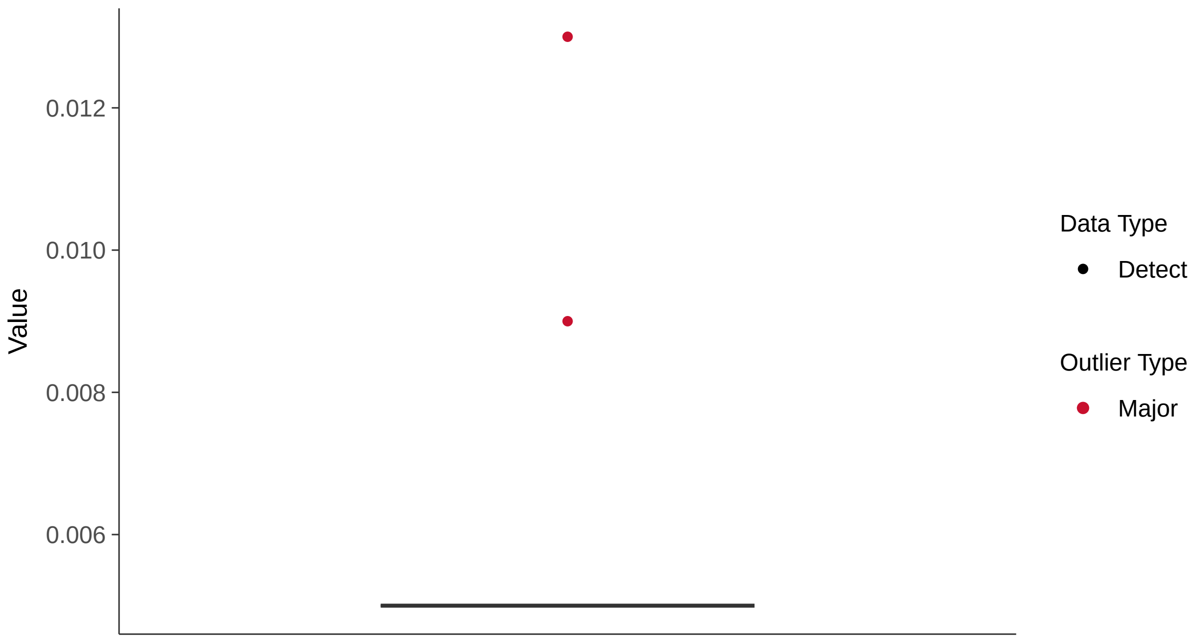
Histogram

Selenium, MW-14 (mg/L)



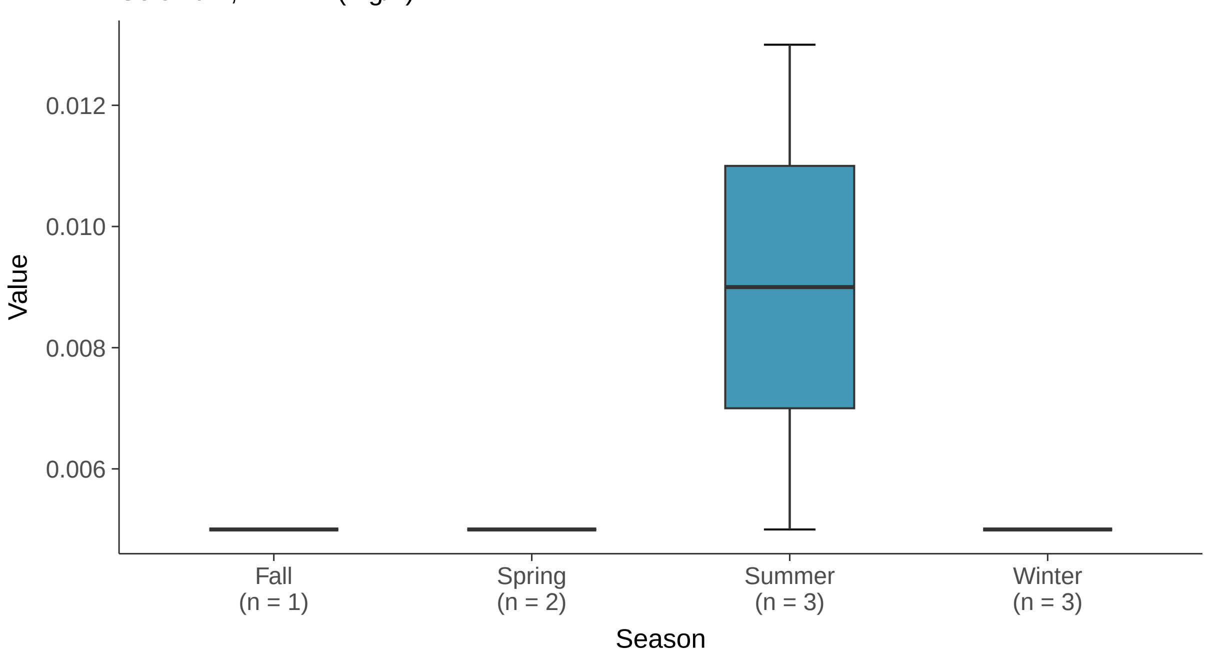
Boxplot

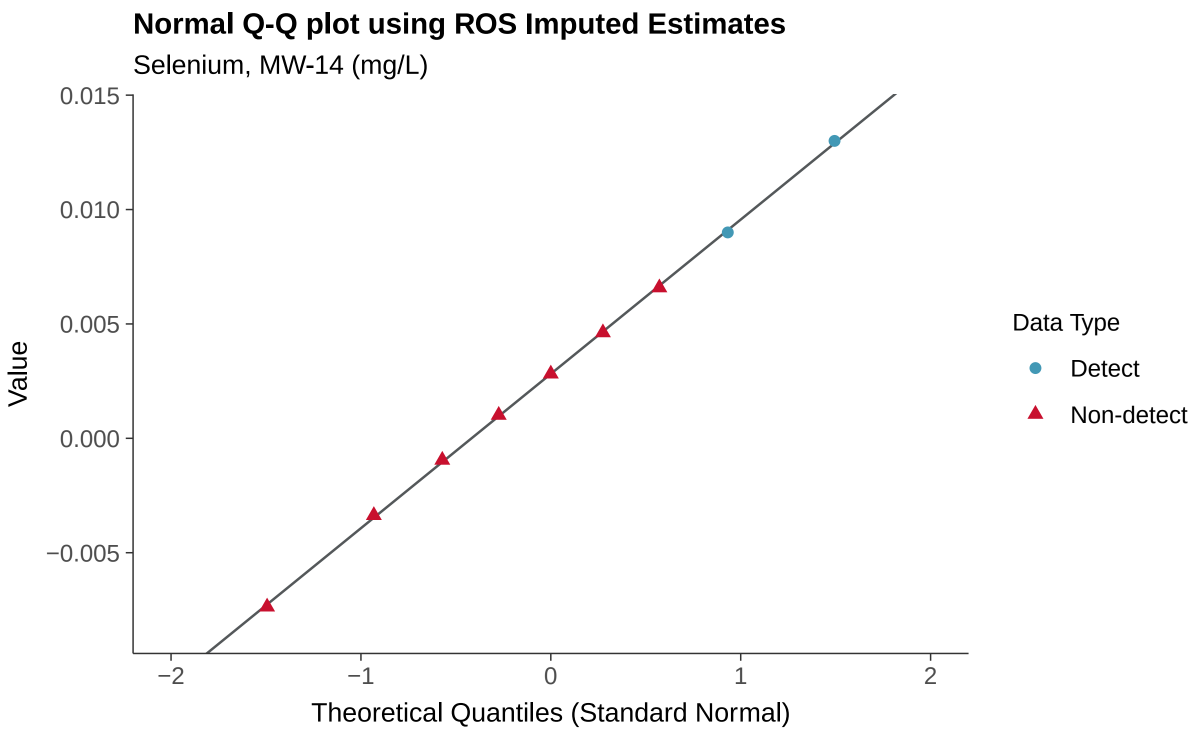
Selenium, MW-14 (mg/L)

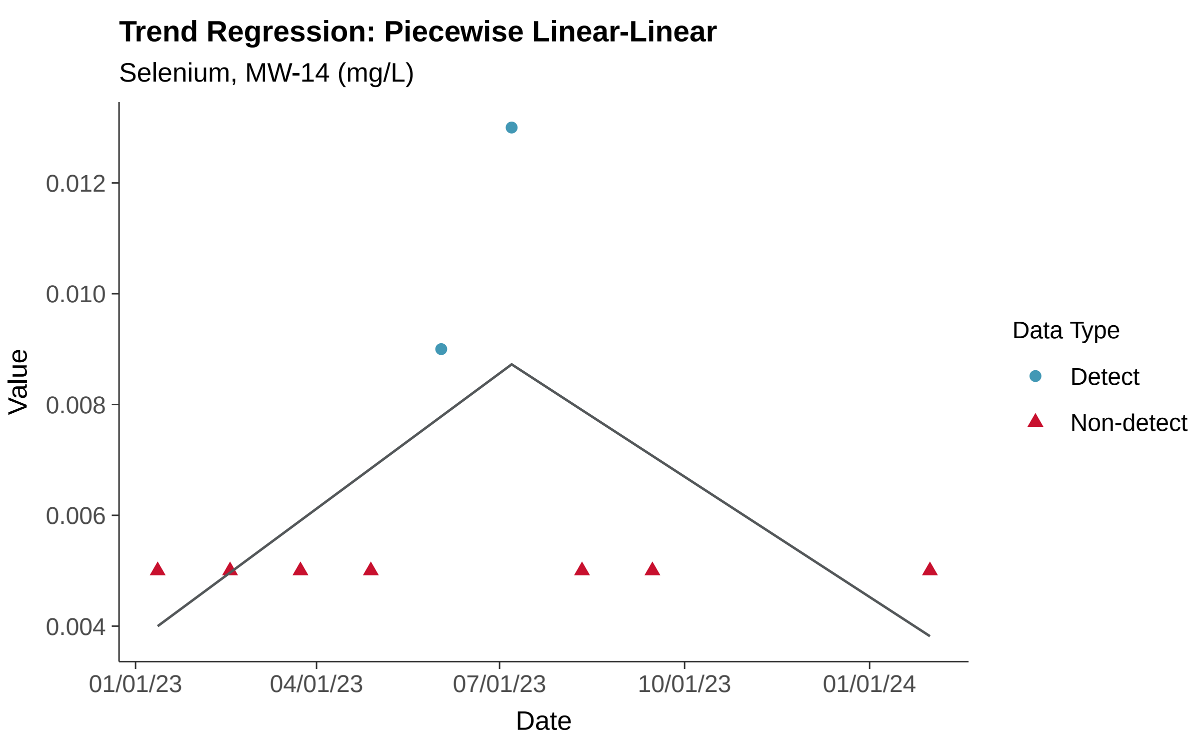


Boxplot by Season

Selenium, MW-14 (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Selenium, MW-14 (mg/L)
Value
0.015
0.010
0.005
0.000
−0.005
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

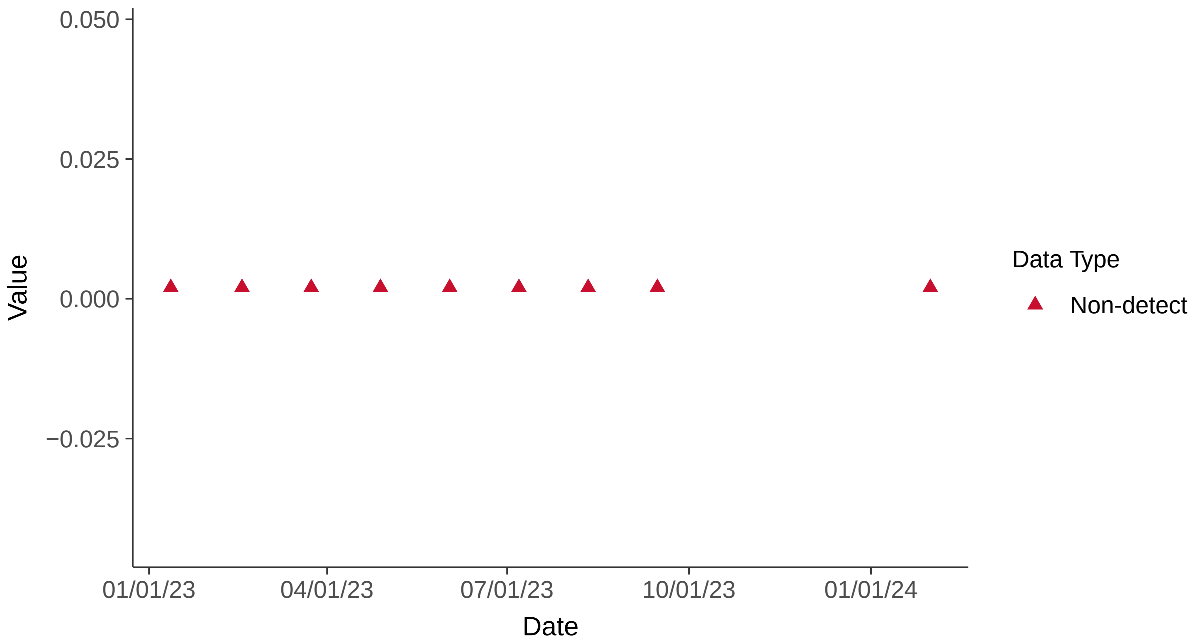

Trend Regression: Piecewise Linear-Linear
Selenium, MW-14 (mg/L)
Value
0.012
0.010
0.008
0.006
0.004
01/01/23
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Appendix IV: Thallium, MW-14

ID: 14_2_23

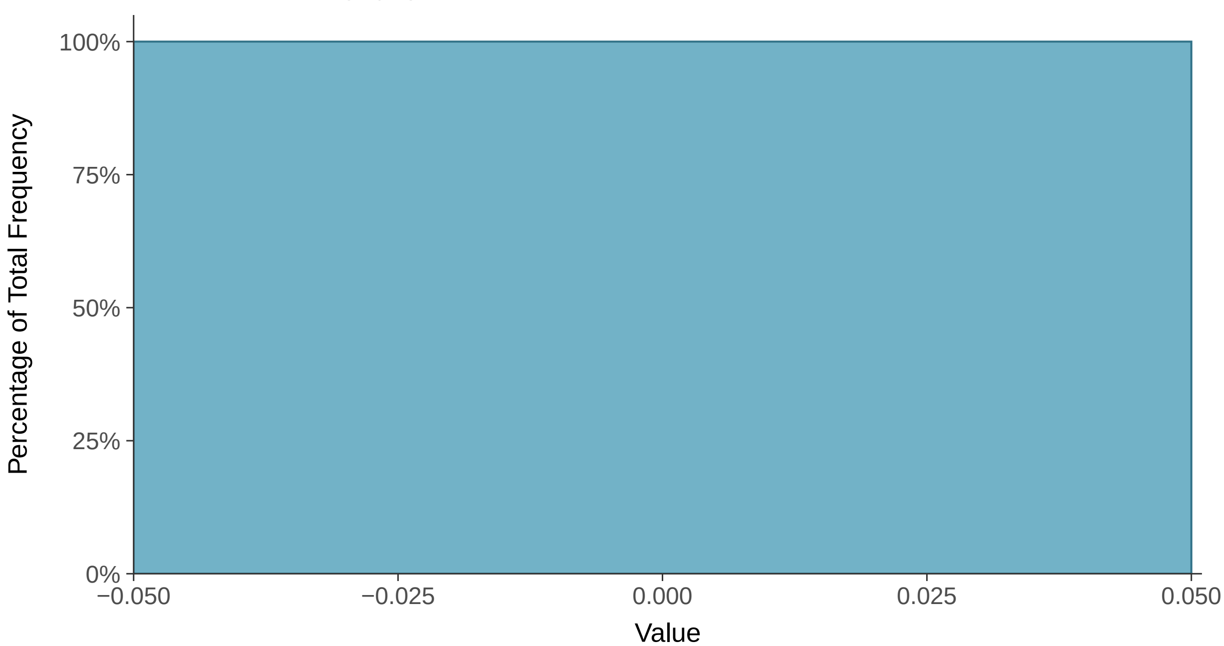
Scatter Plot

Thallium, MW-14 (mg/L)



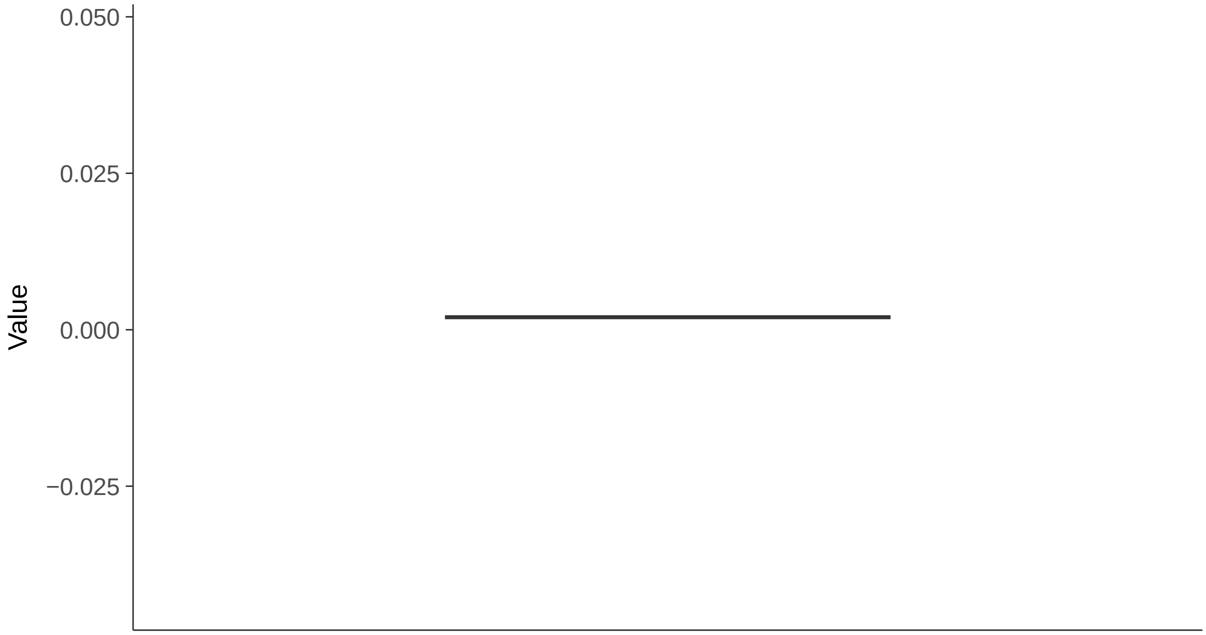
Histogram

Thallium, MW-14 (mg/L)



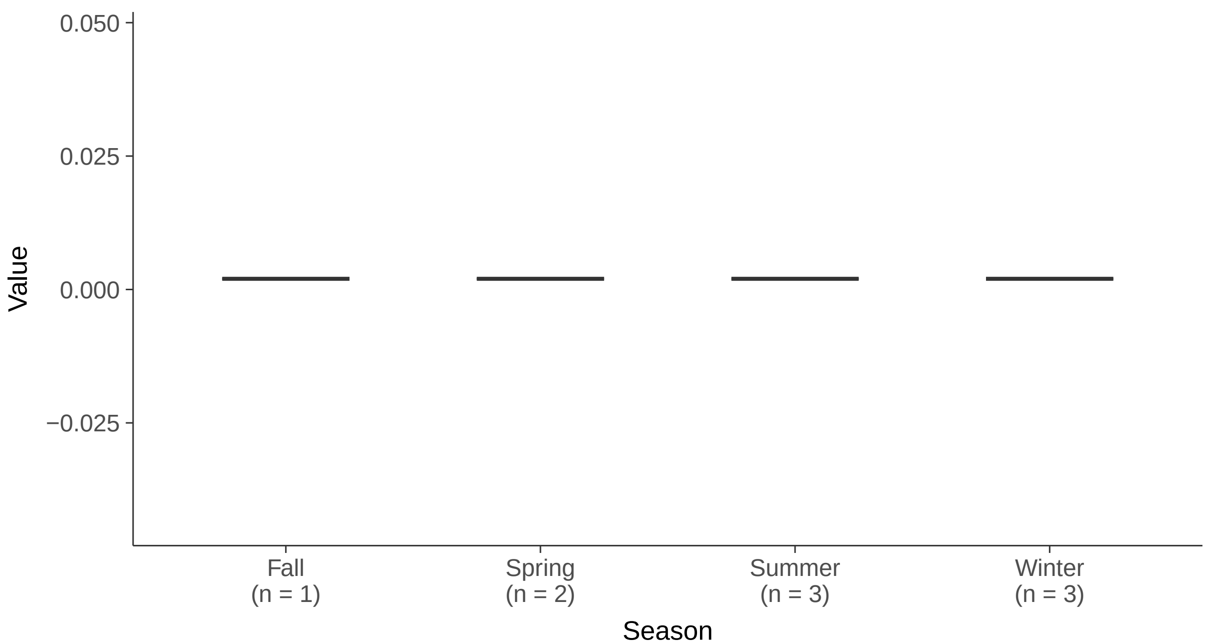
Boxplot

Thallium, MW-14 (mg/L)



Boxplot by Season

Thallium, MW-14 (mg/L)

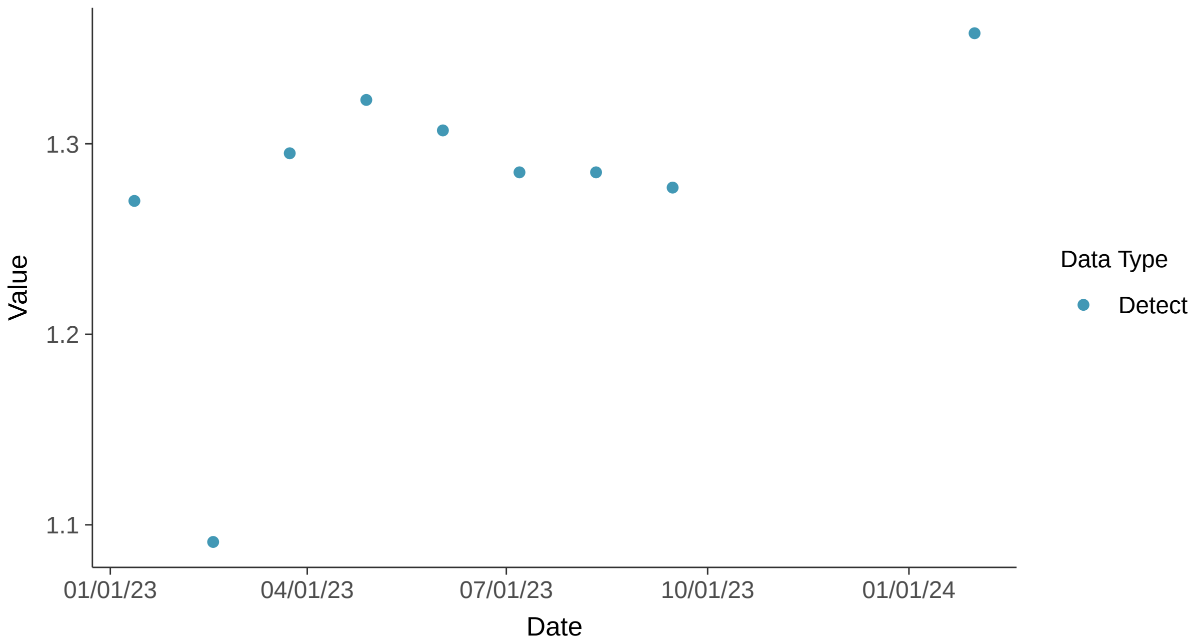


Field Parameters: Conductivity, MW-14

ID: 14_3_24

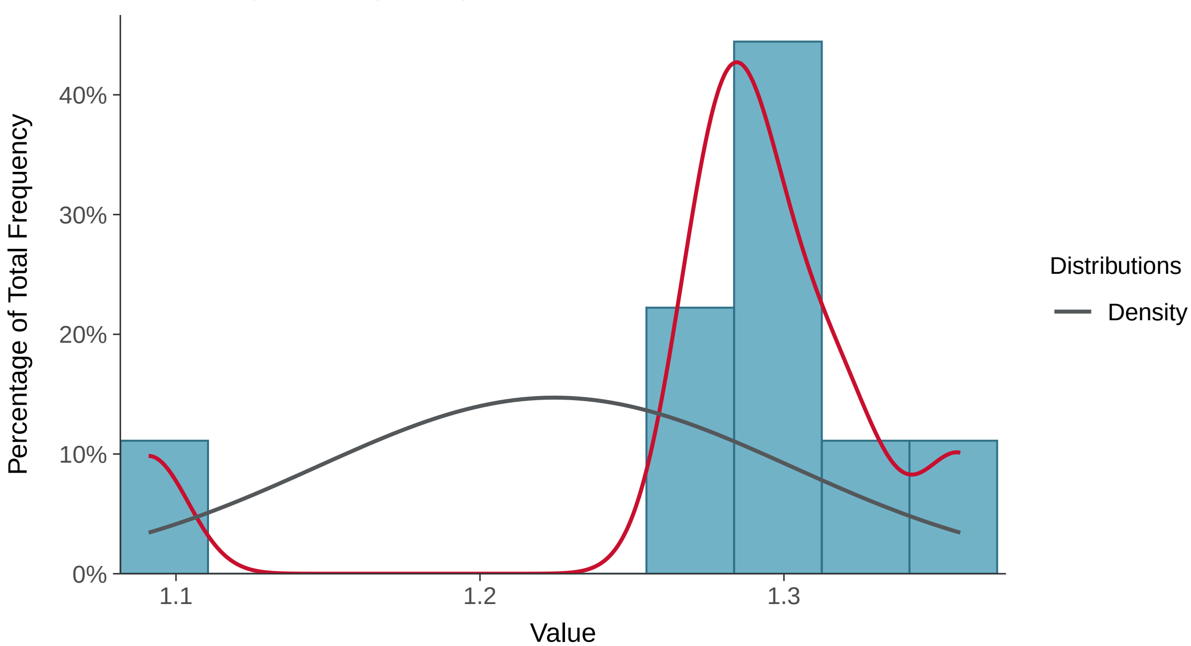
Scatter Plot

Conductivity, MW-14 (mS/cm)



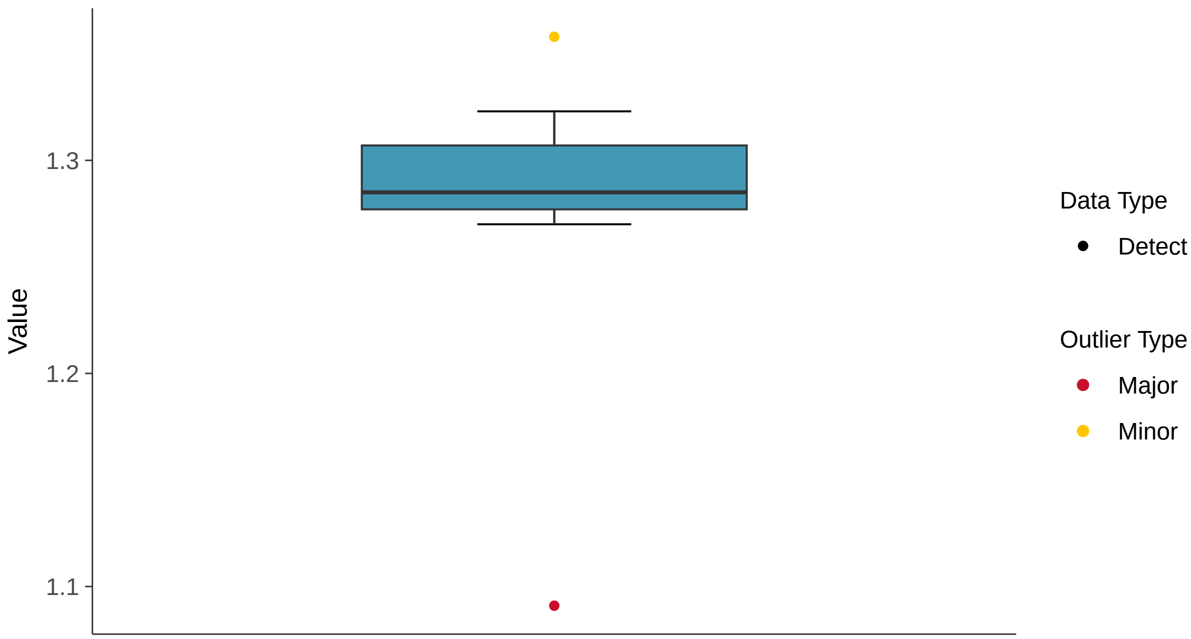
Histogram

Conductivity, MW-14 (mS/cm)



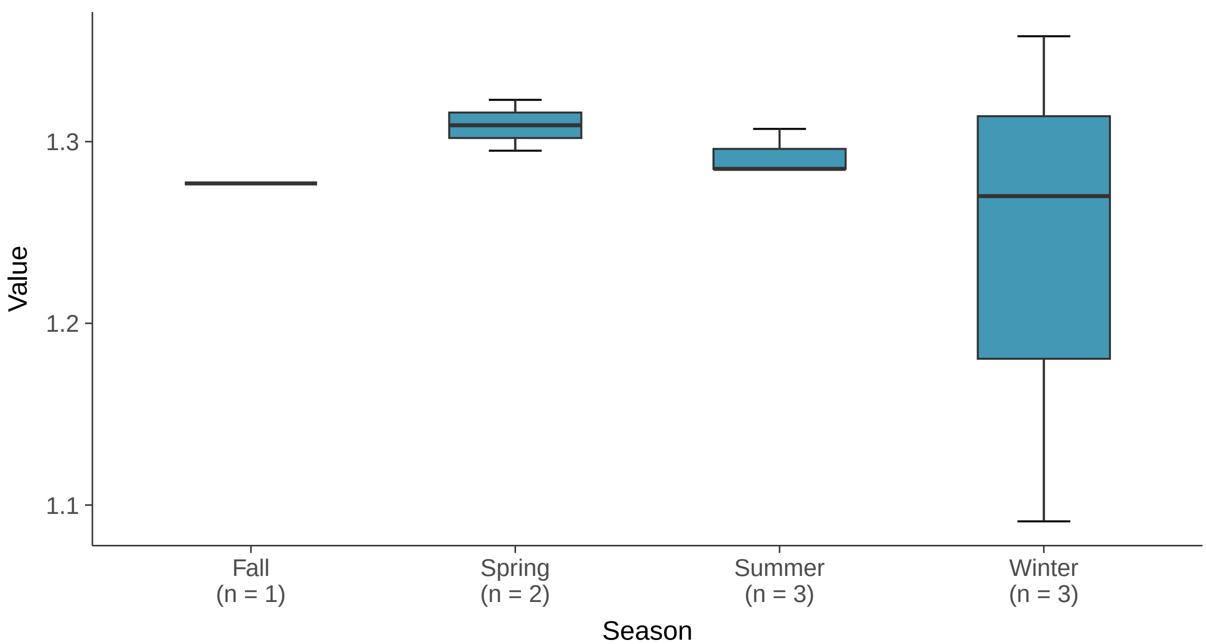
Boxplot

Conductivity, MW-14 (mS/cm)



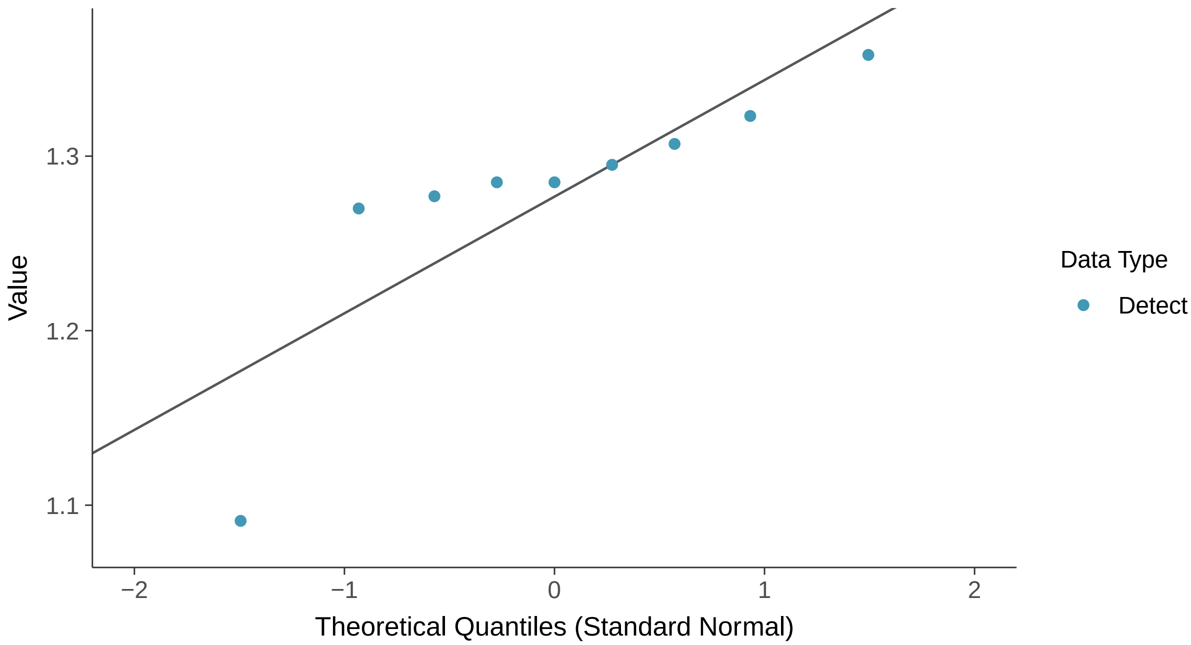
Boxplot by Season

Conductivity, MW-14 (mS/cm)



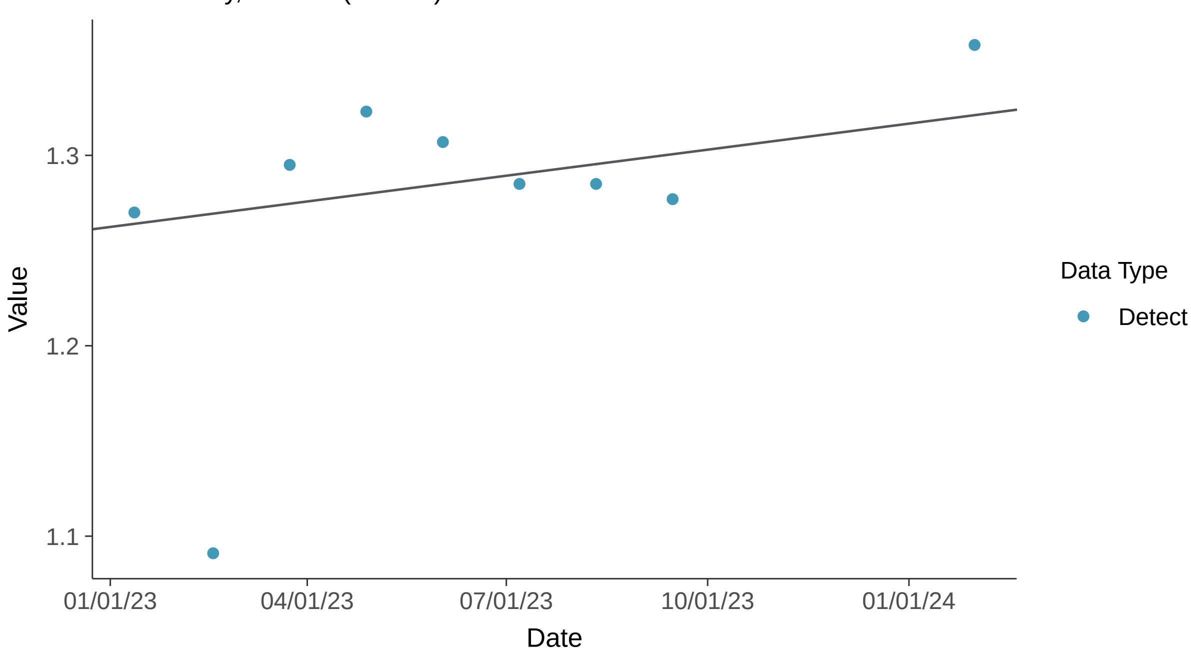
Normal Q-Q plot

Conductivity, MW-14 (mS/cm)



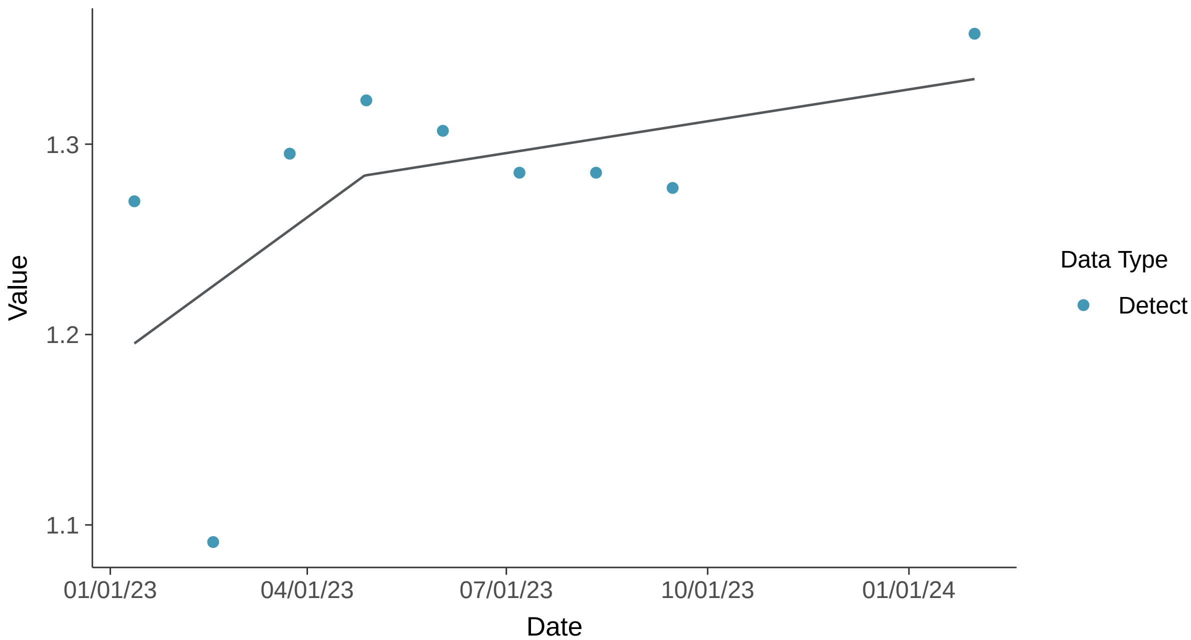
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Conductivity, MW-14 (mS/cm)



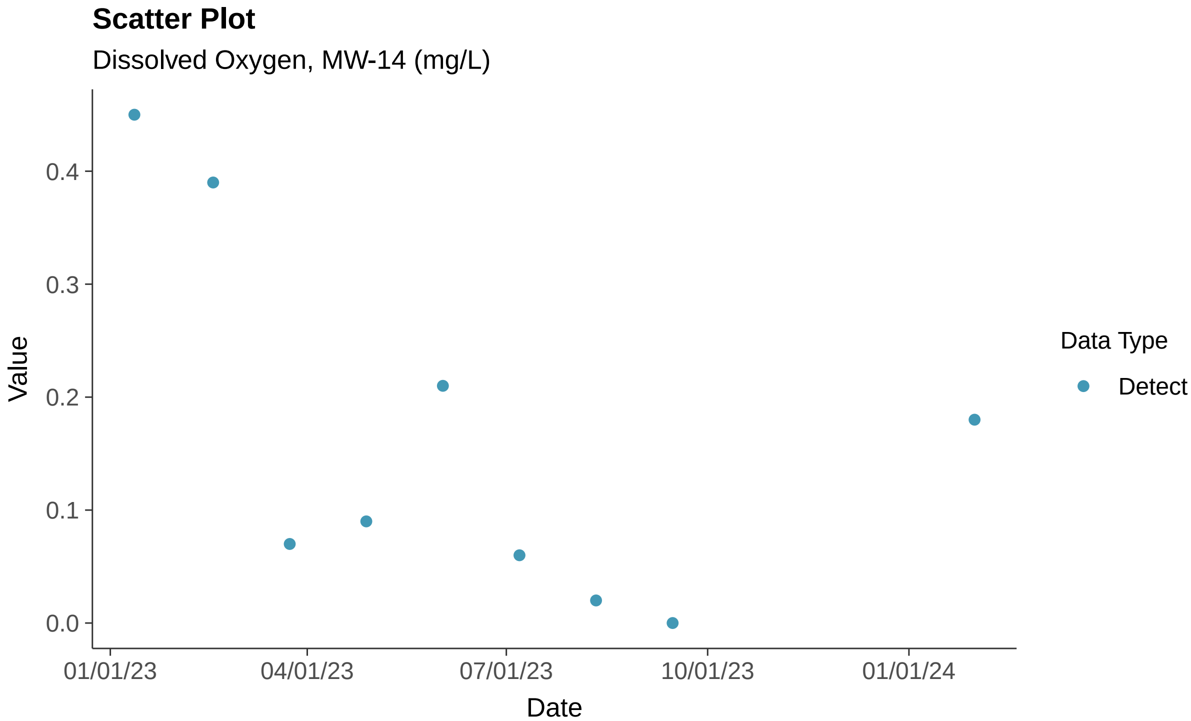
Trend Regression: Piecewise Linear-Linear

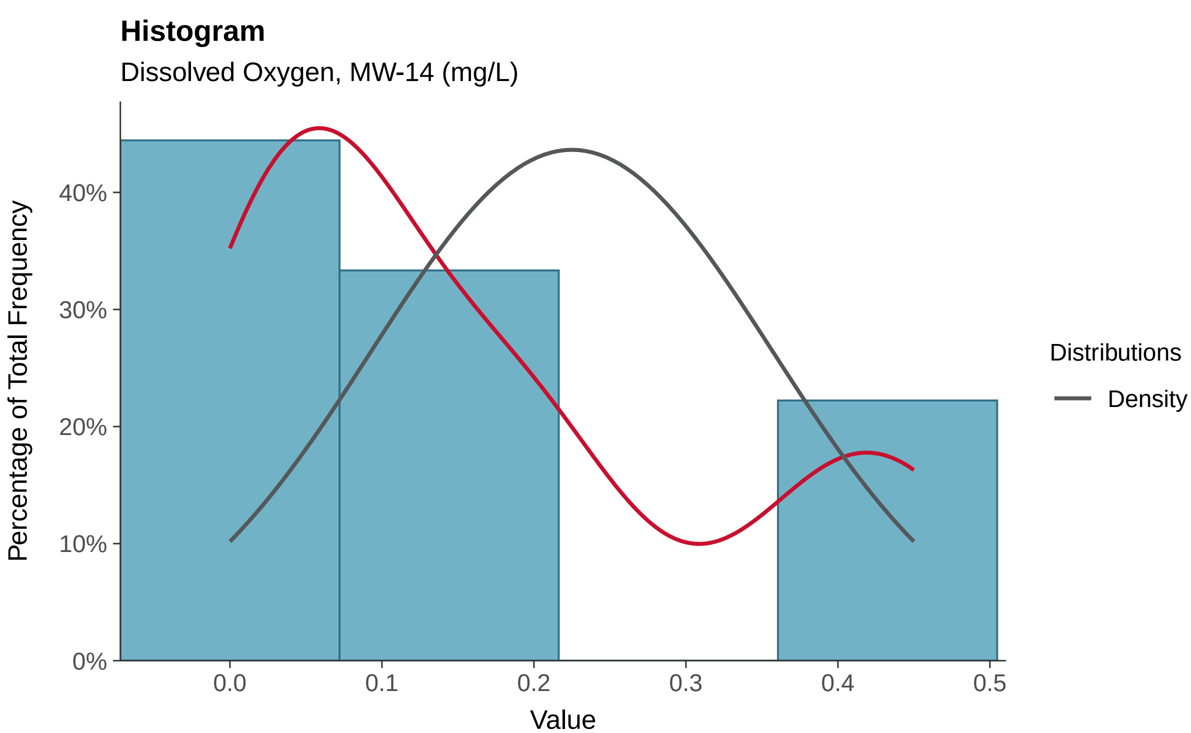
Conductivity, MW-14 (mS/cm)



Field Parameters: Dissolved Oxygen, MW-14

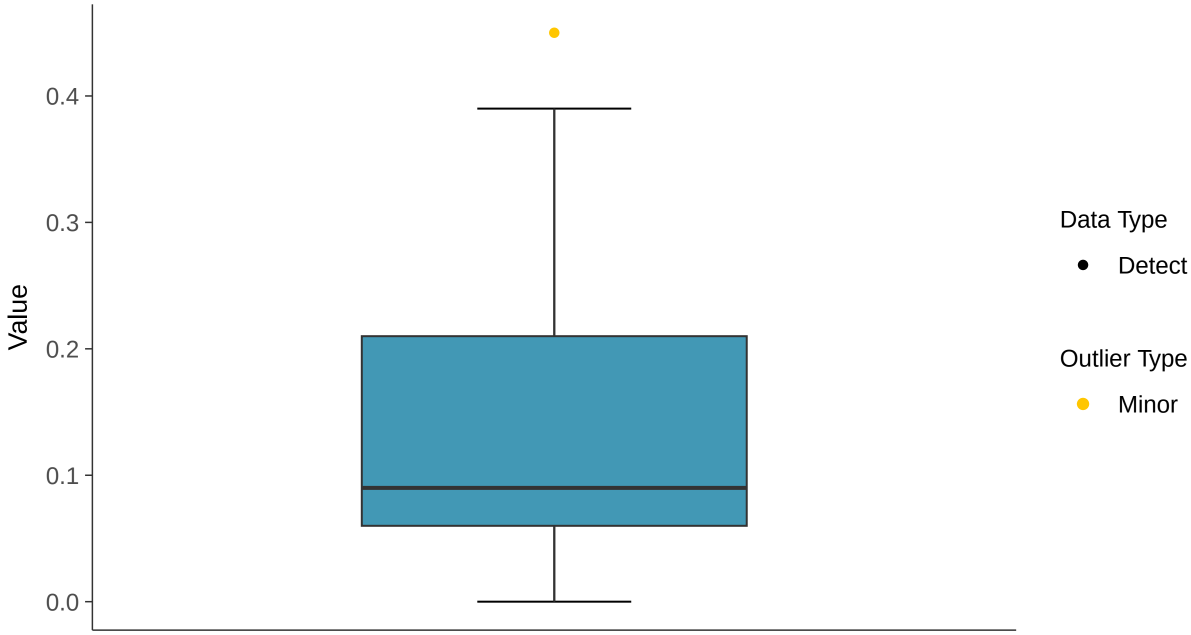
ID: 14_3_25





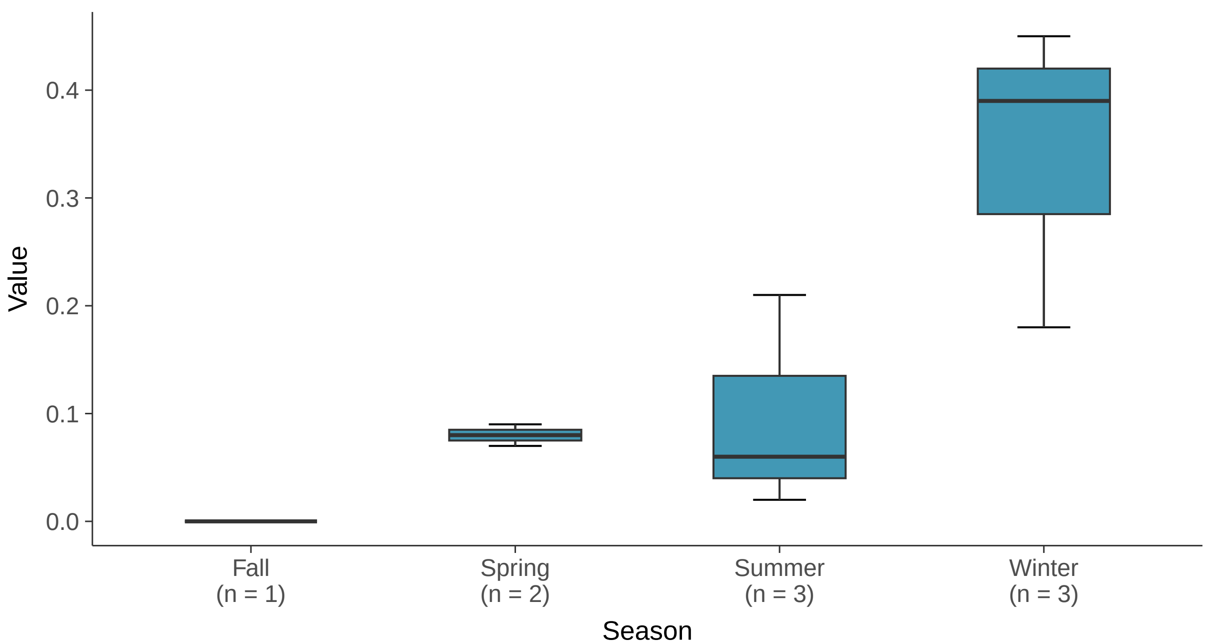
Boxplot

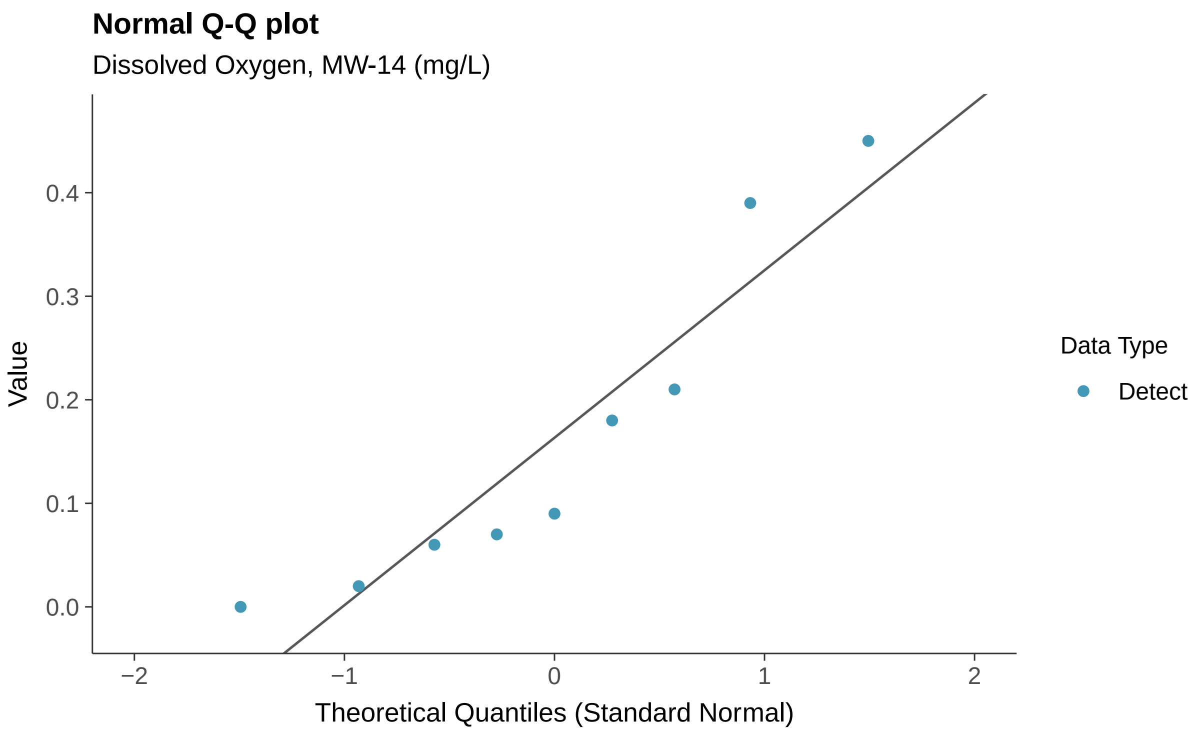
Dissolved Oxygen, MW-14 (mg/L)

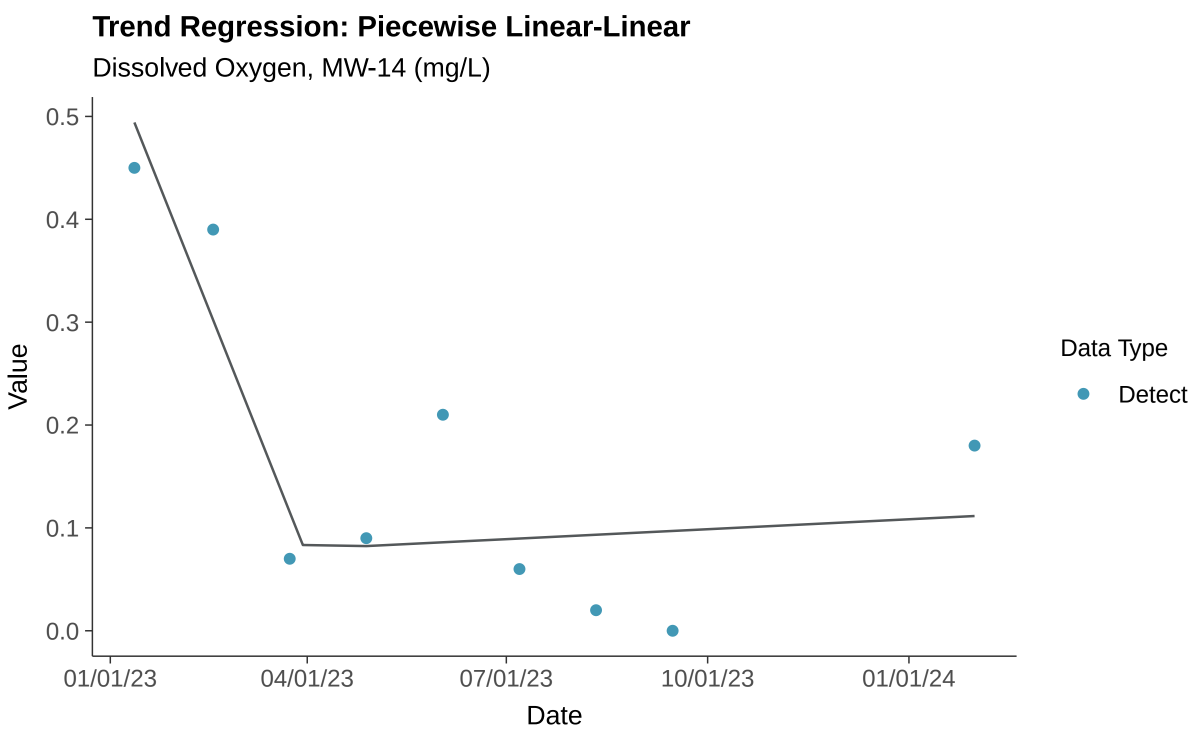


Boxplot by Season

Dissolved Oxygen, MW-14 (mg/L)

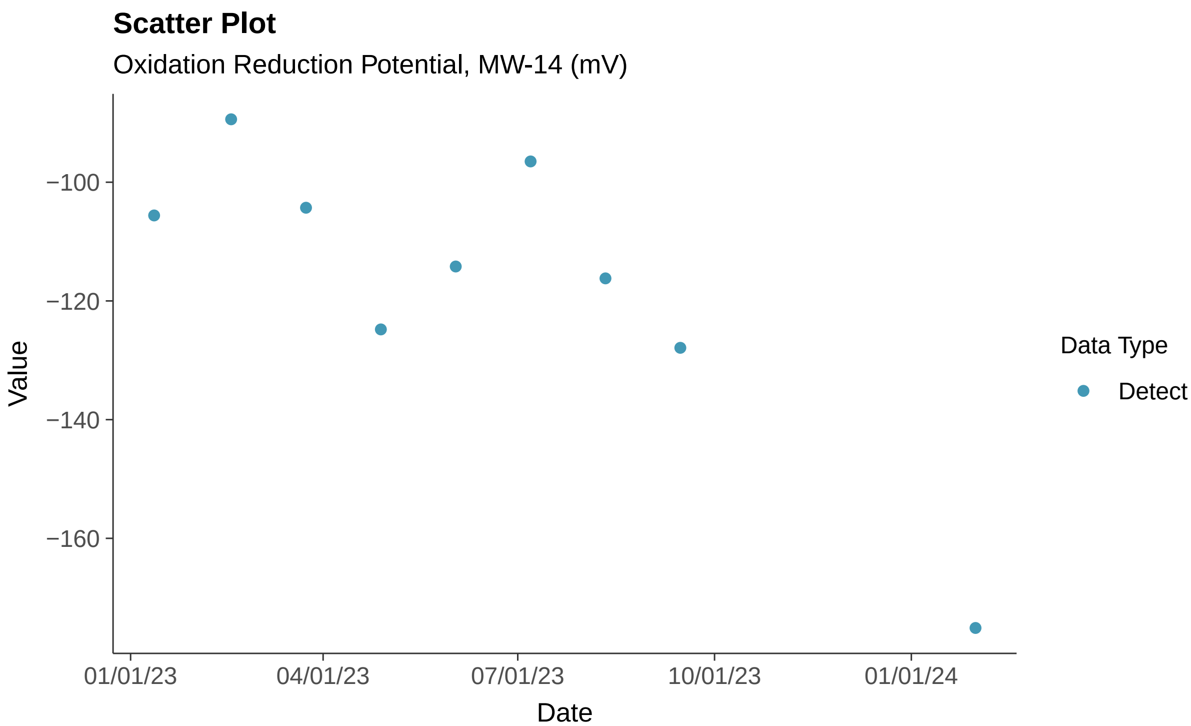


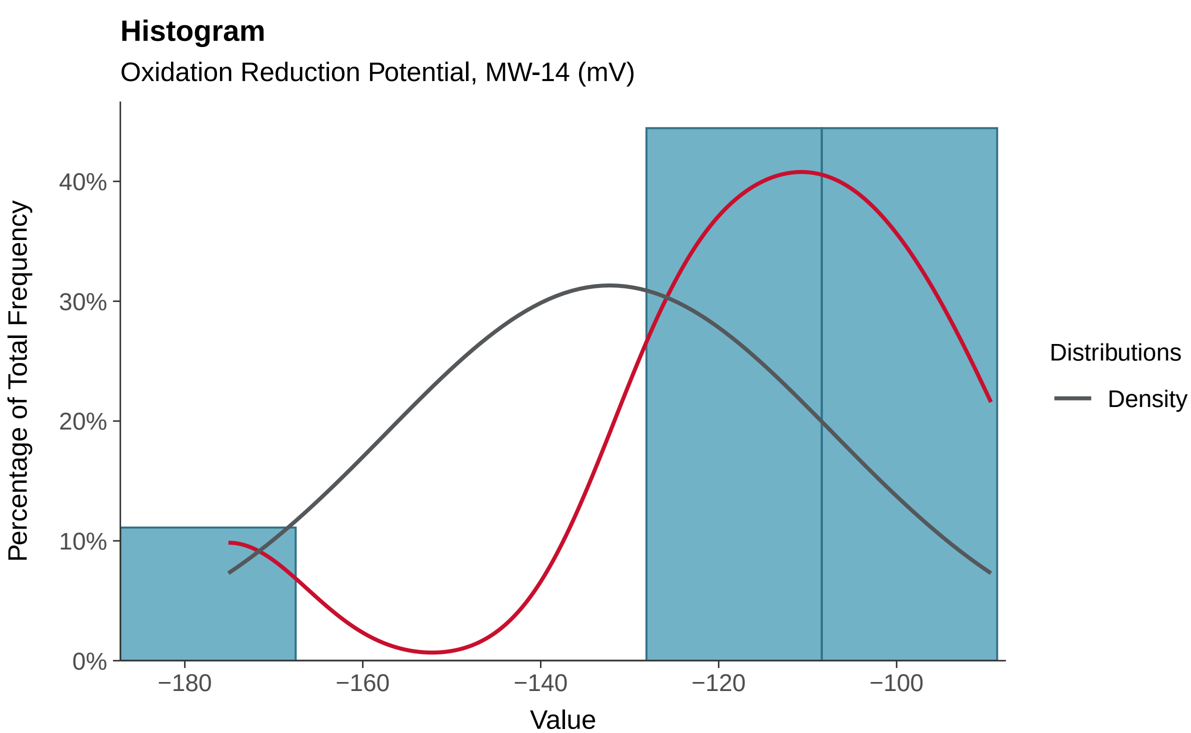

Normal Q-Q plot
Dissolved Oxygen, MW-14 (mg/L)
Value
0.4
0.3
0.2
0.1
0.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Dissolved Oxygen, MW-14 (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
0.0
01/01/23
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Oxidation Reduction Potential, MW-14

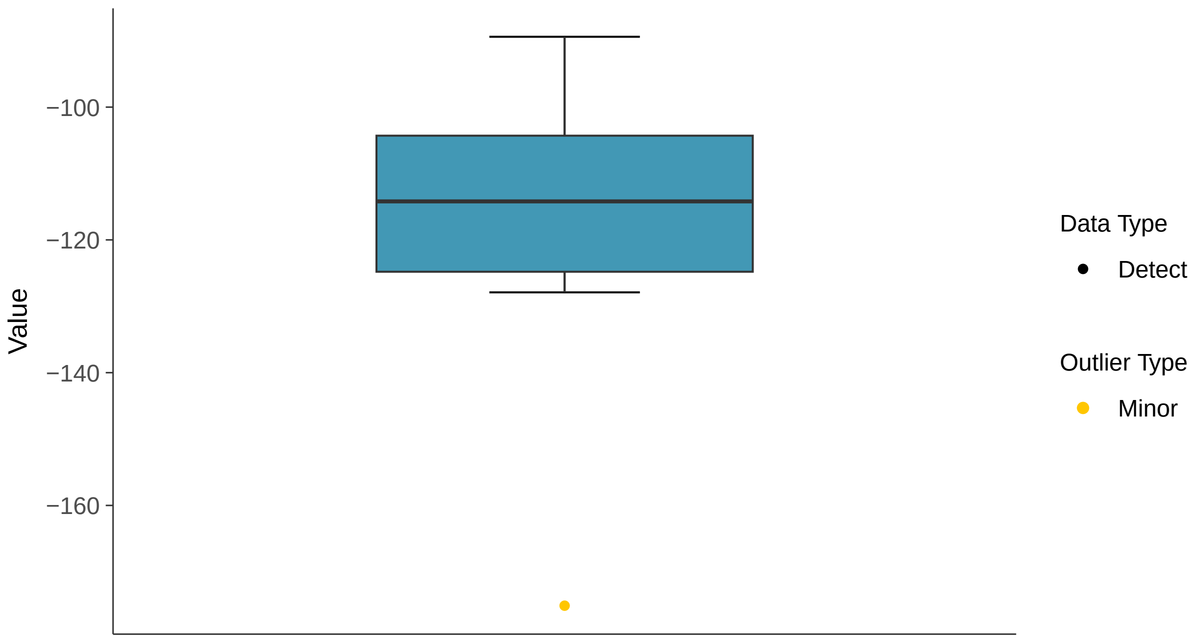
ID: 14_3_26





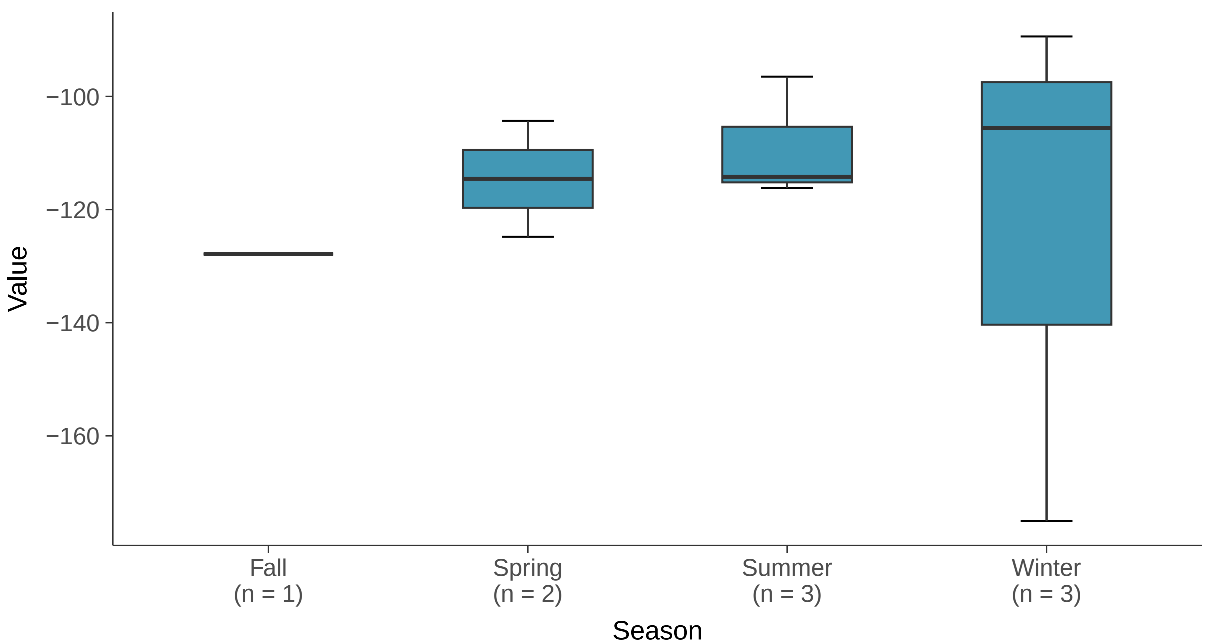
Boxplot

Oxidation Reduction Potential, MW-14 (mV)



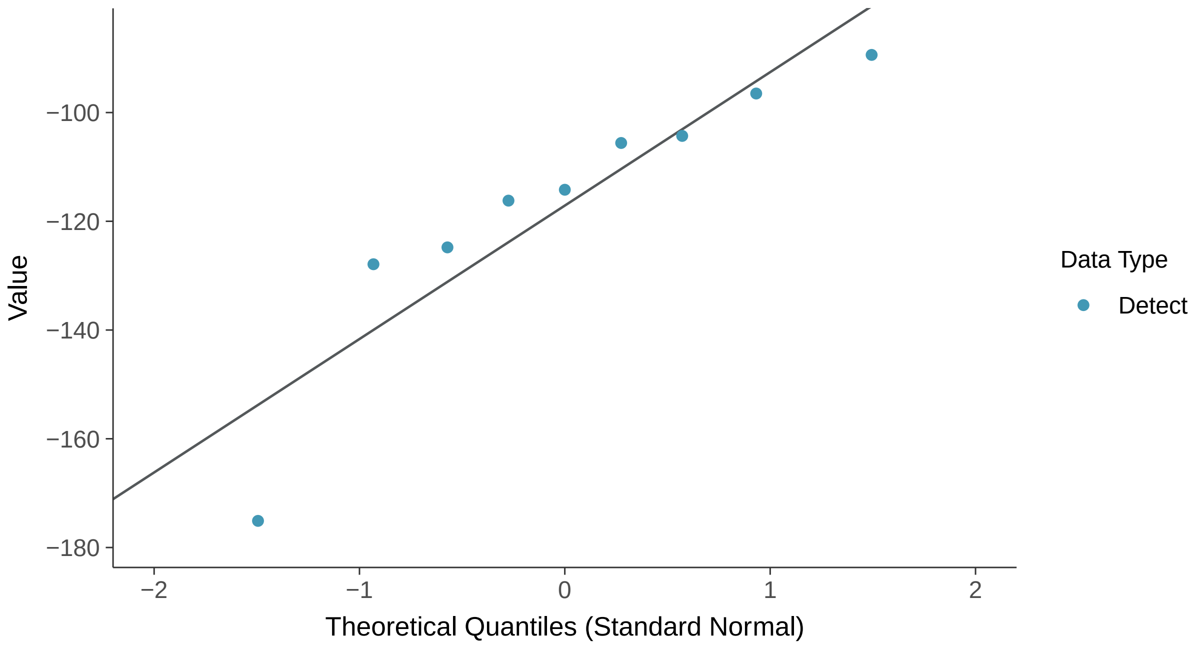
Boxplot by Season

Oxidation Reduction Potential, MW-14 (mV)



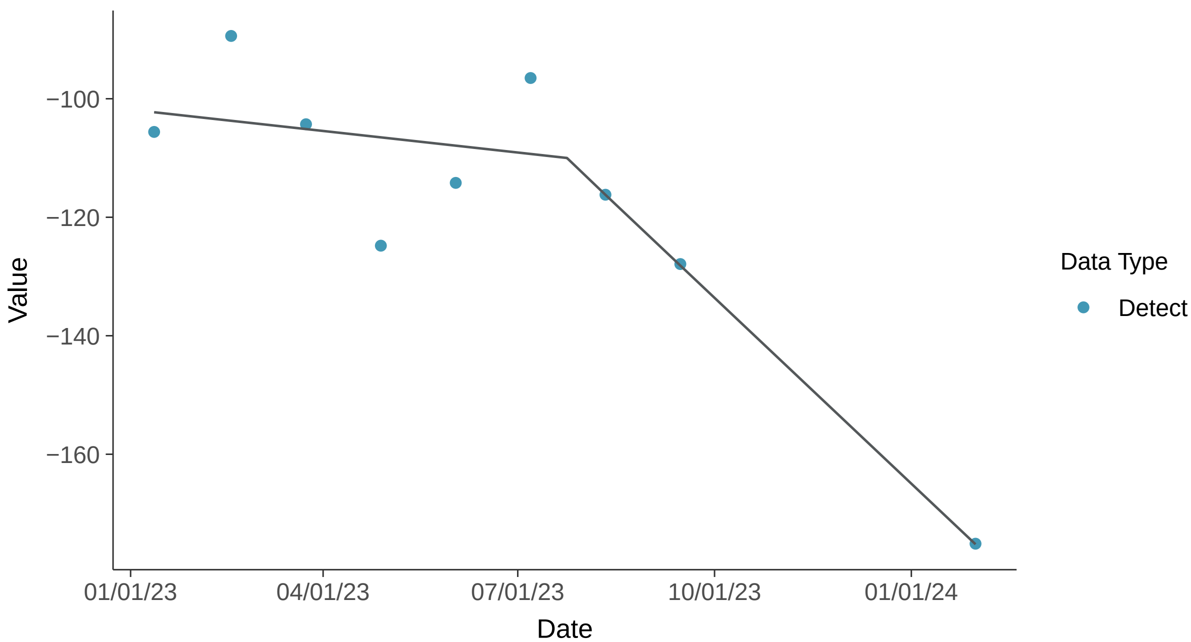
Normal Q-Q plot

Oxidation Reduction Potential, MW-14 (mV)



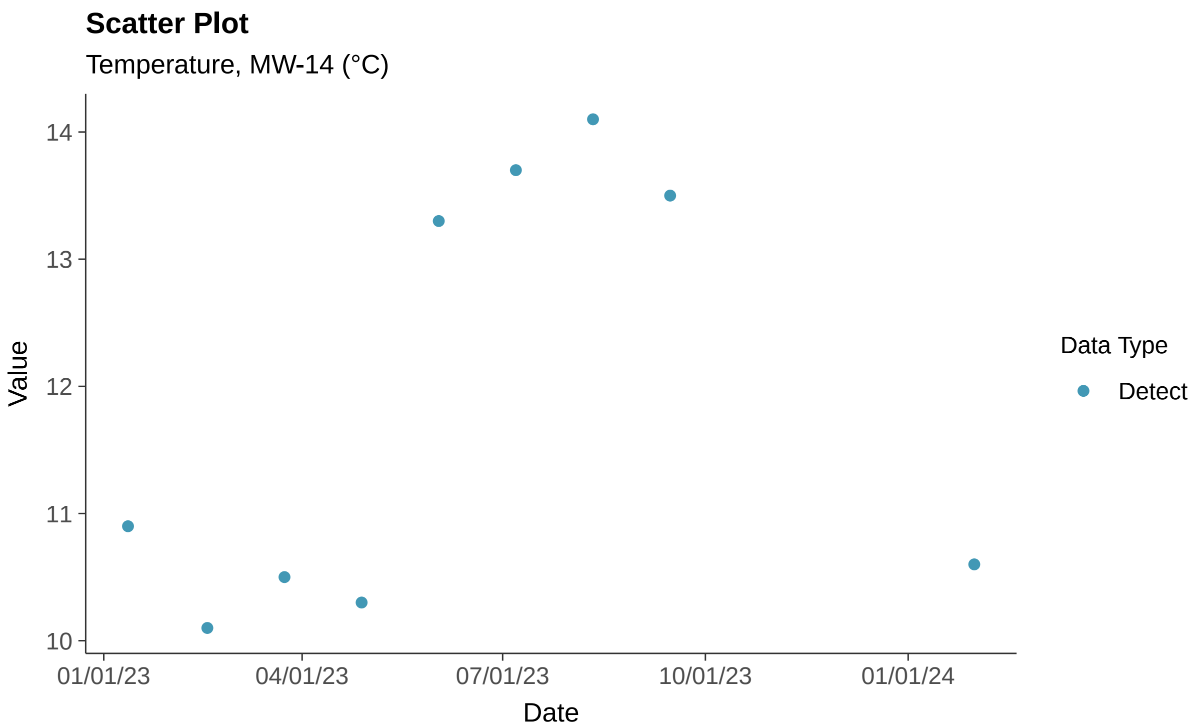
Trend Regression: Piecewise Linear-Linear

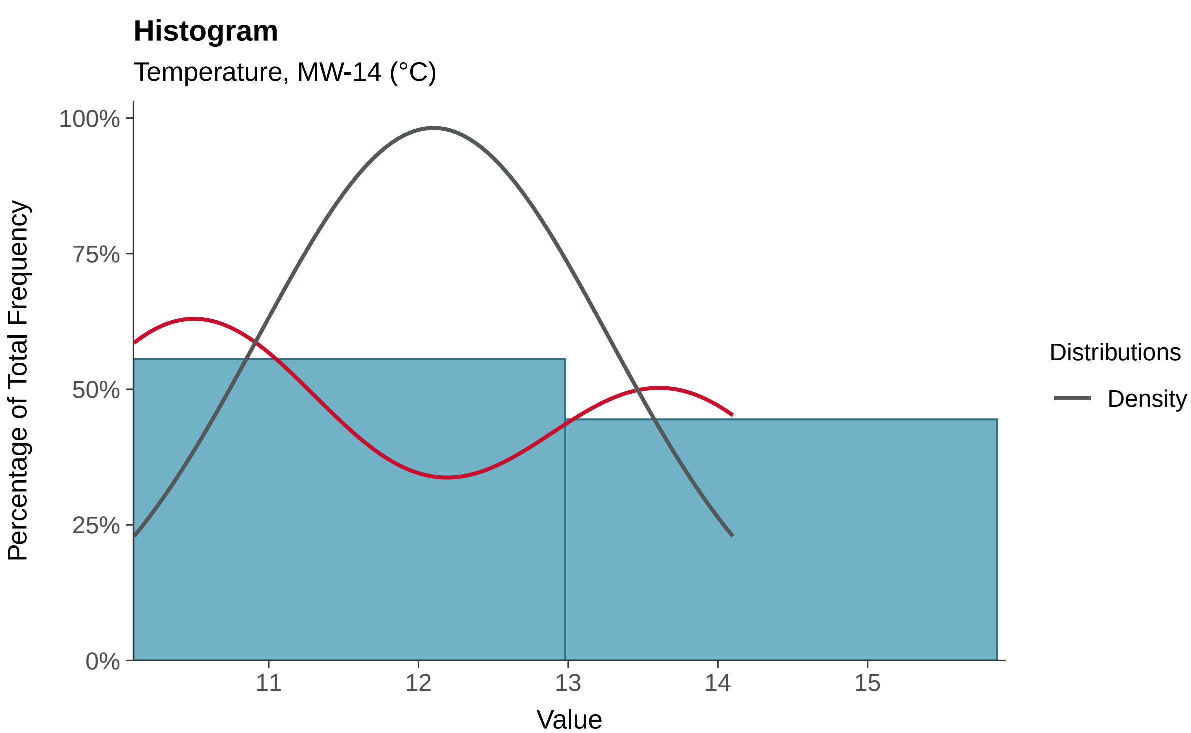
Oxidation Reduction Potential, MW-14 (mV)



Field Parameters: Temperature, MW-14

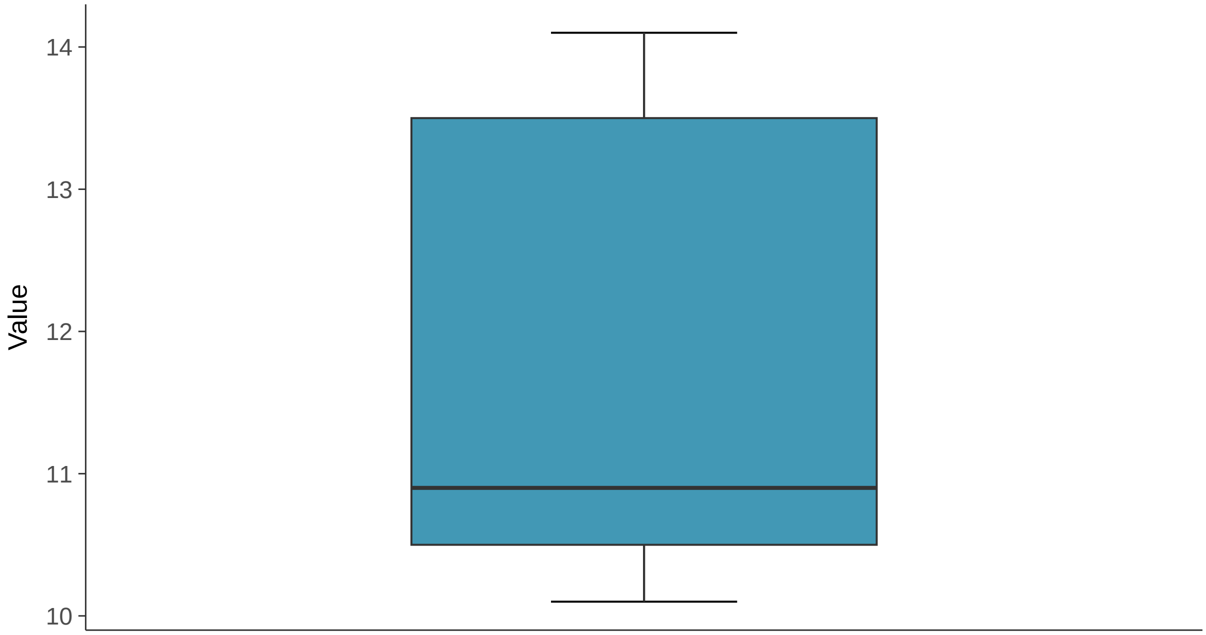
ID: 14_3_27





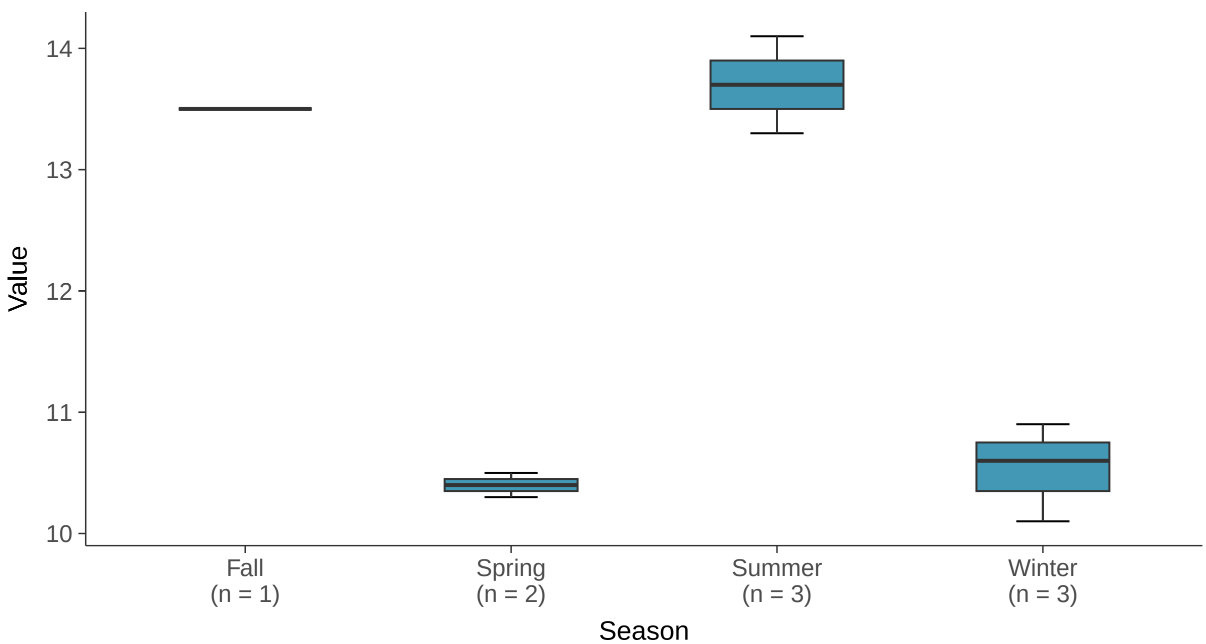
Boxplot

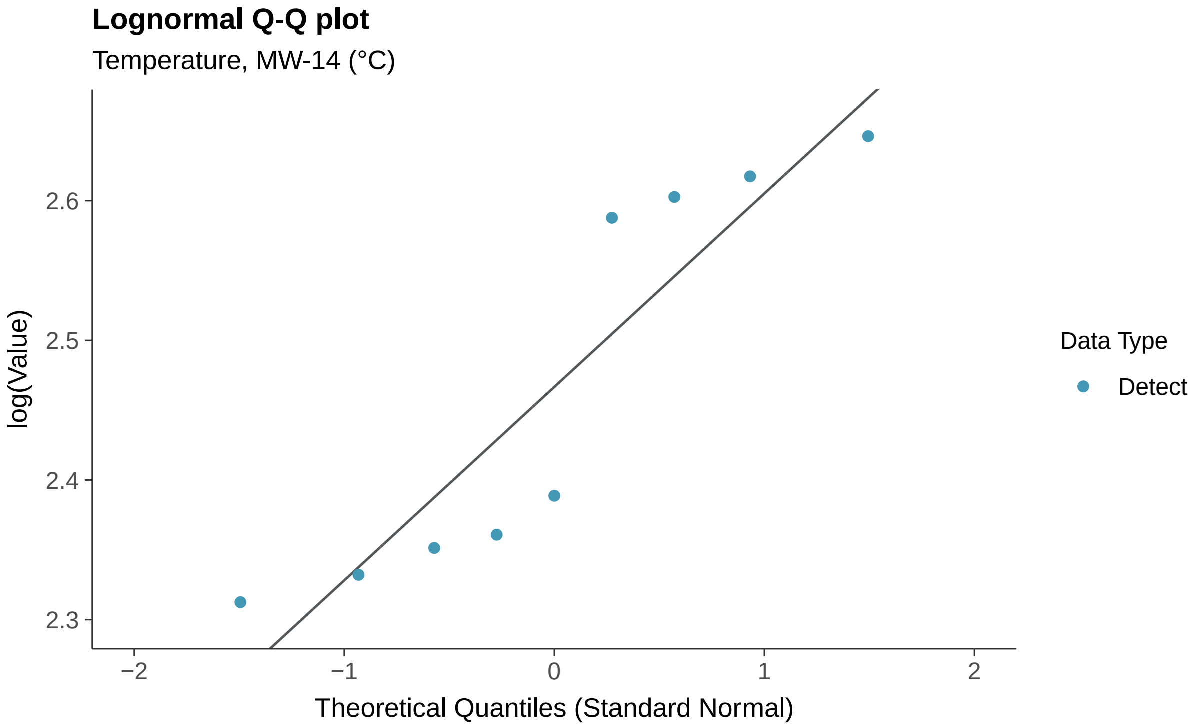
Temperature, MW-14 (°C)

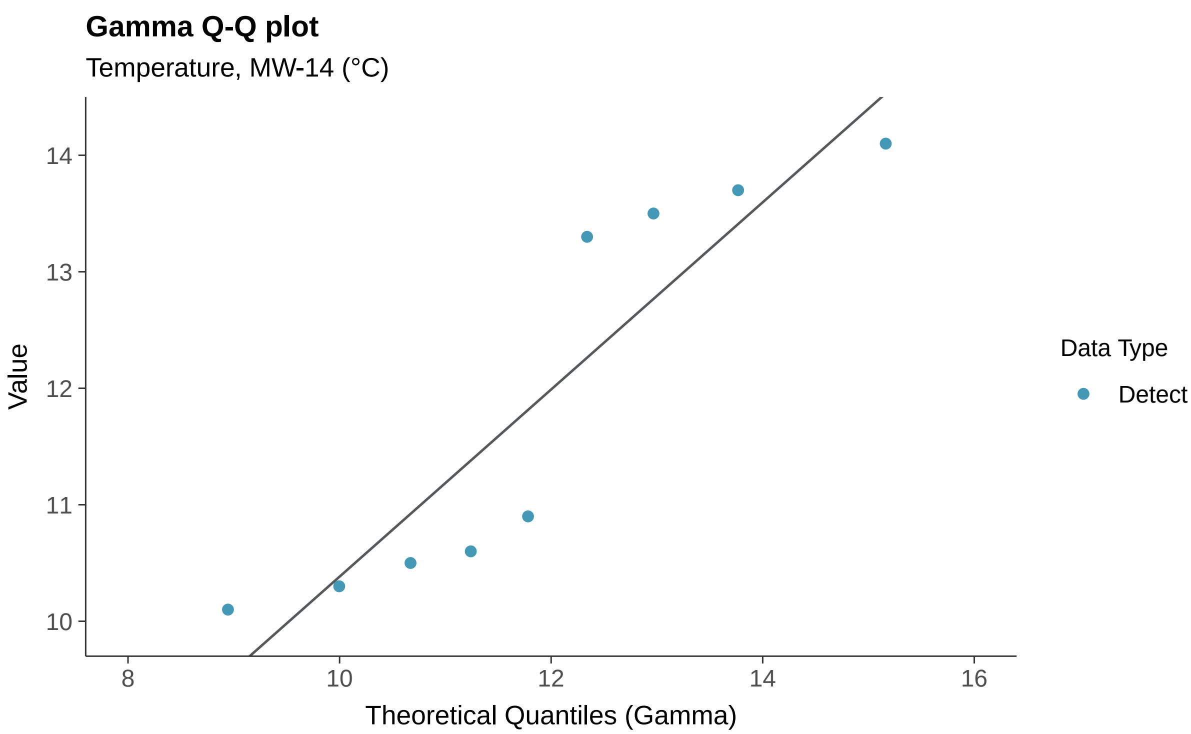


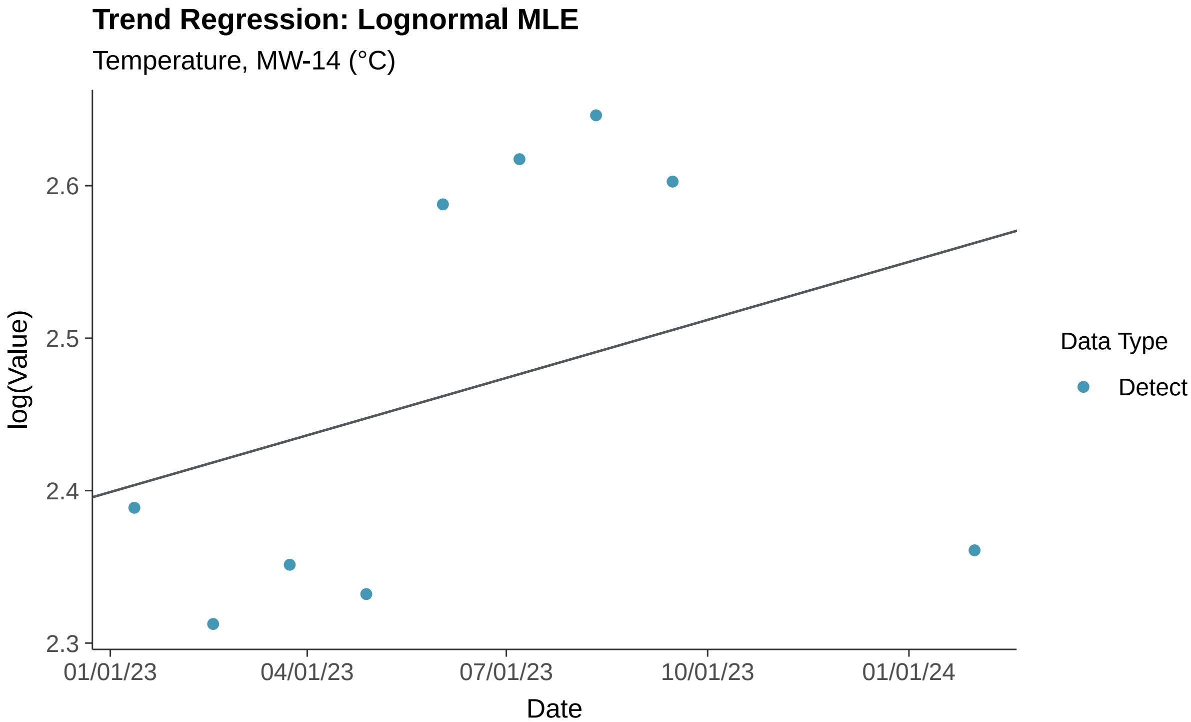
Boxplot by Season

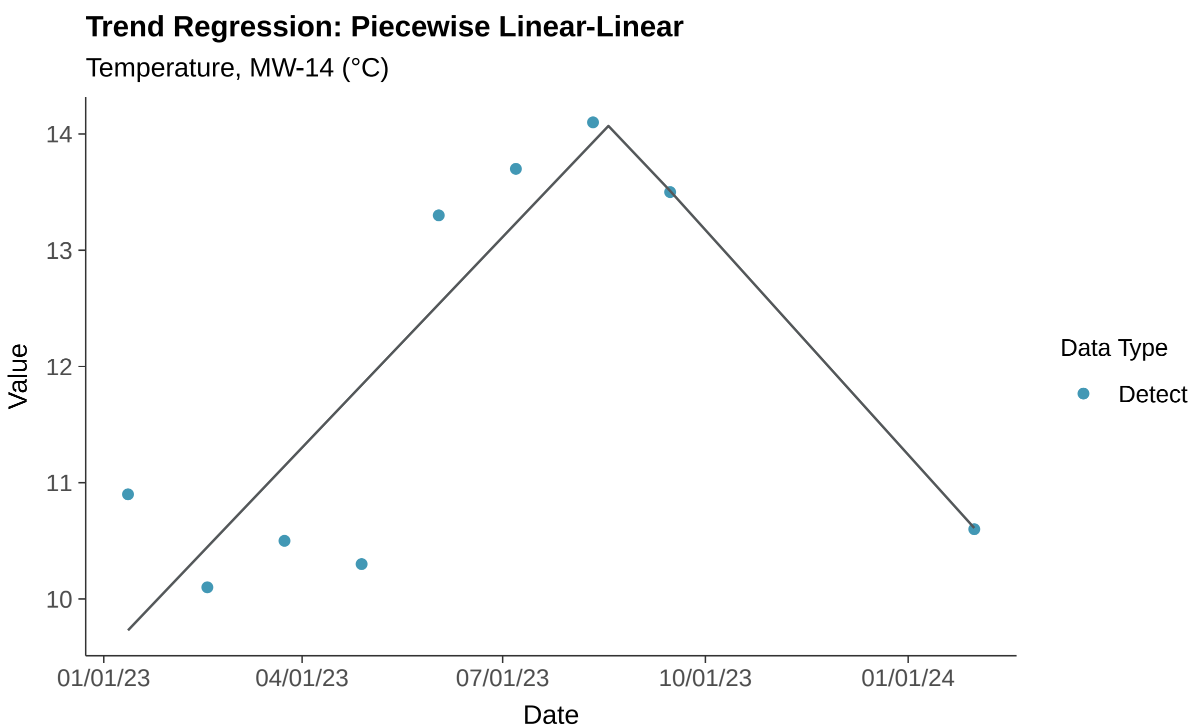
Temperature, MW-14 (°C)




Lognormal Q-Q plot
Temperature, MW-14 (°C)
log(Value)
2.3
2.4
2.5
2.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Temperature, MW-14 (°C)
Value
10
11
12
13
14
8
10
12
14
16
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Temperature, MW-14 (°C)
log(Value)
2.6
2.5
2.4
2.3
01/01/23
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

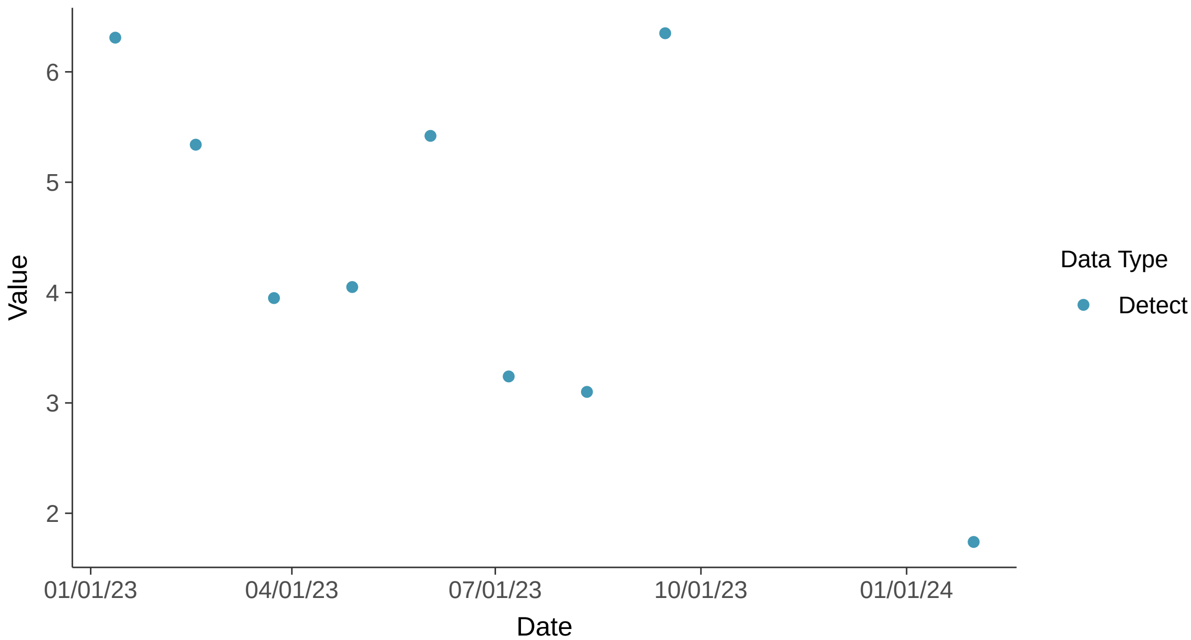

Trend Regression: Piecewise Linear-Linear
Temperature, MW-14 (°C)
Value
14
13
12
11
10
01/01/23
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Turbidity, MW-14

ID: 14_3_28

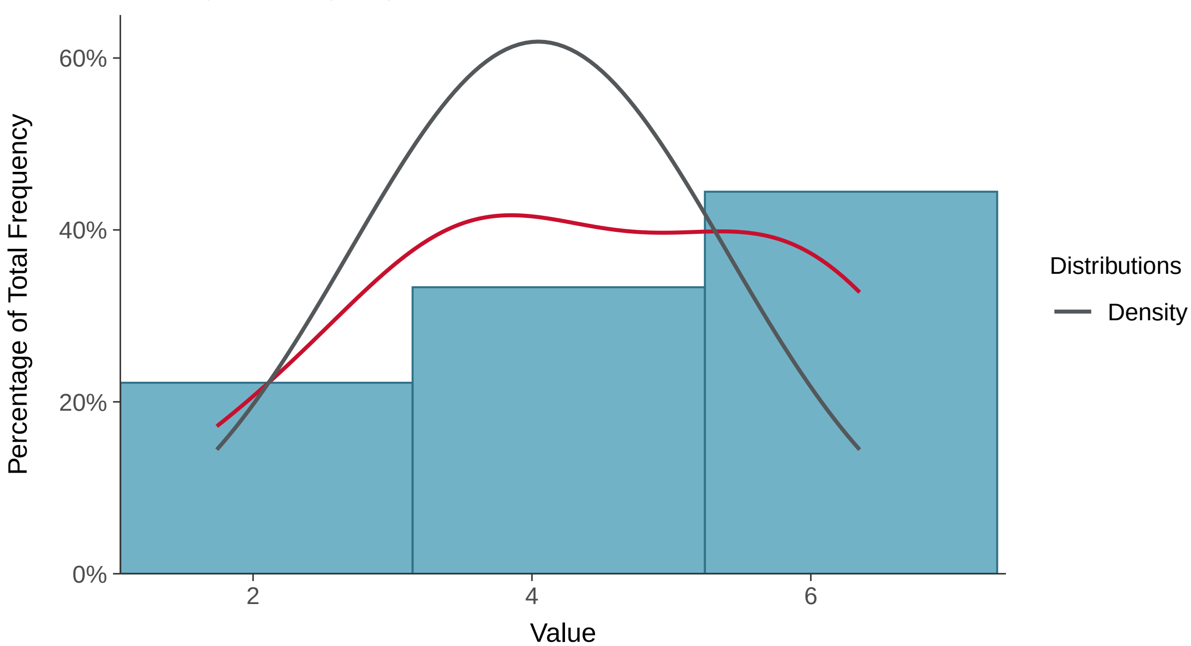
Scatter Plot

Turbidity, MW-14 (NTU)



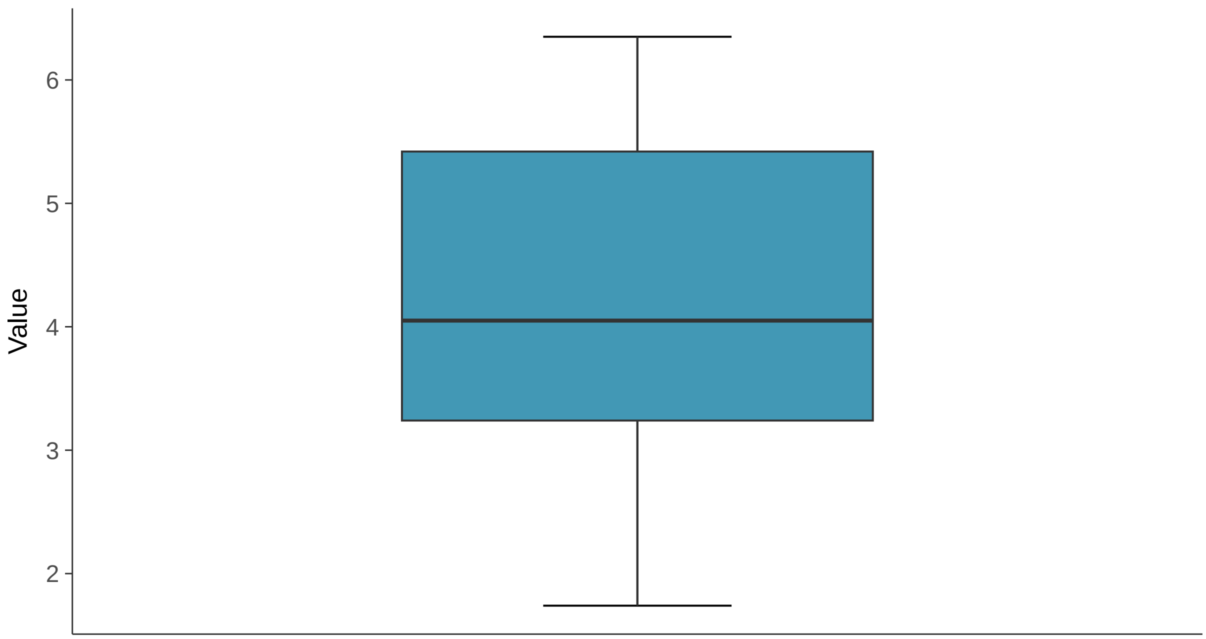
Histogram

Turbidity, MW-14 (NTU)



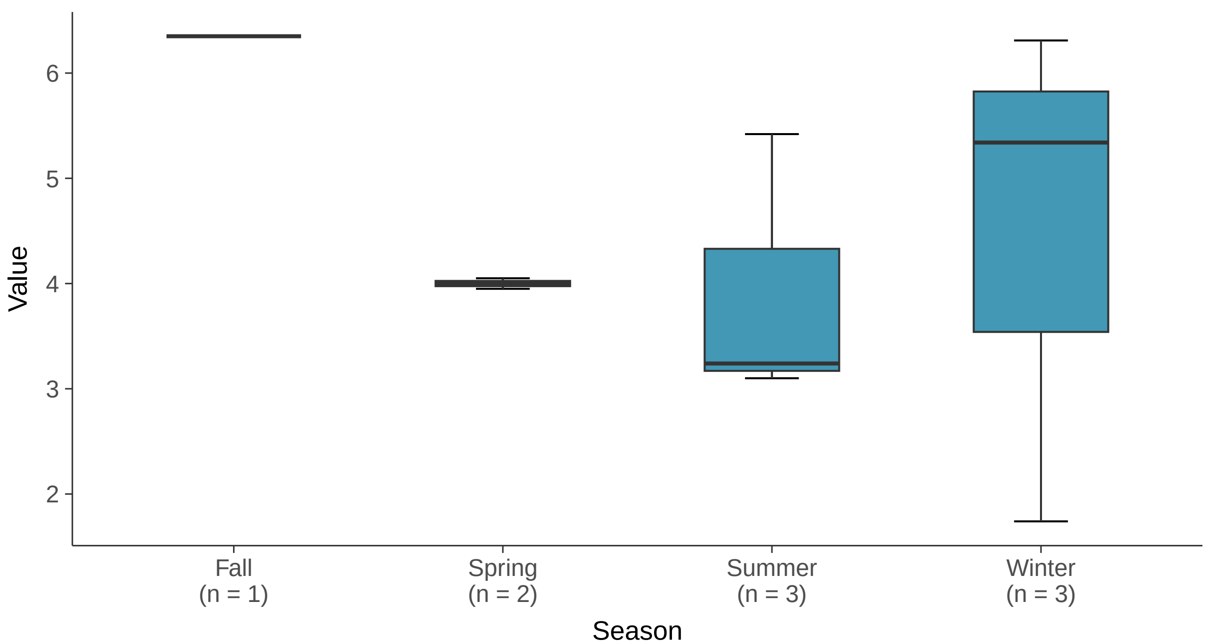
Boxplot

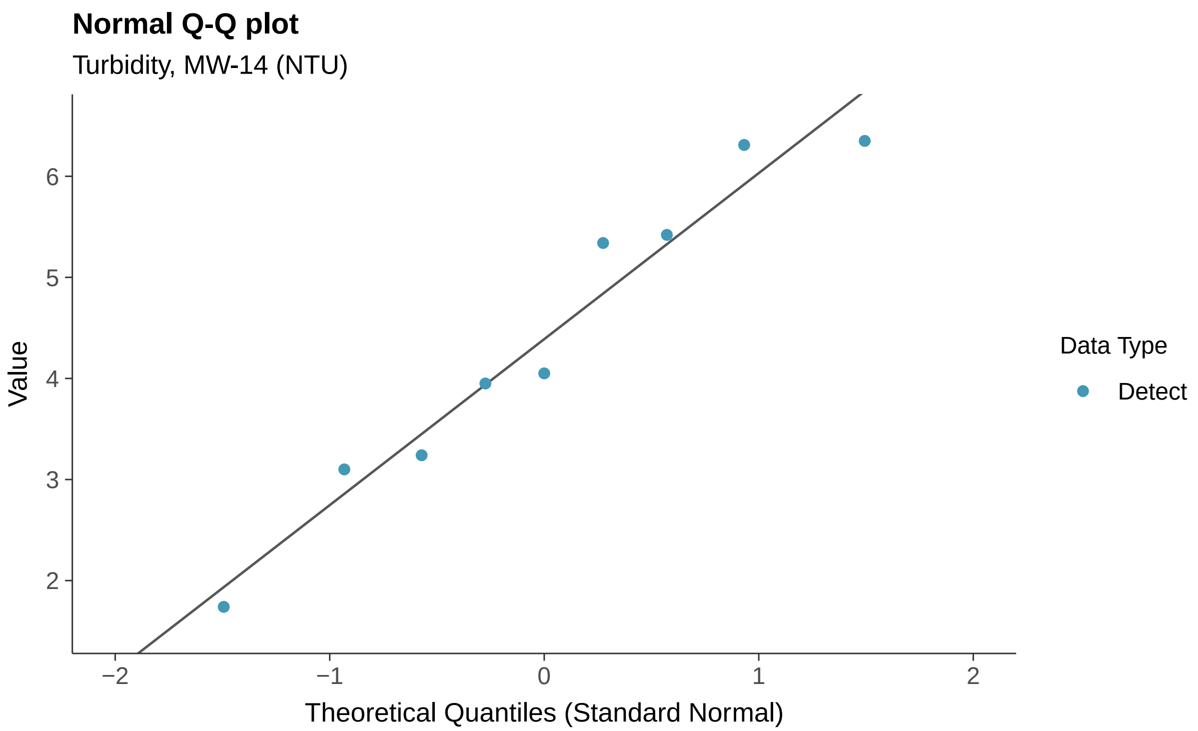
Turbidity, MW-14 (NTU)

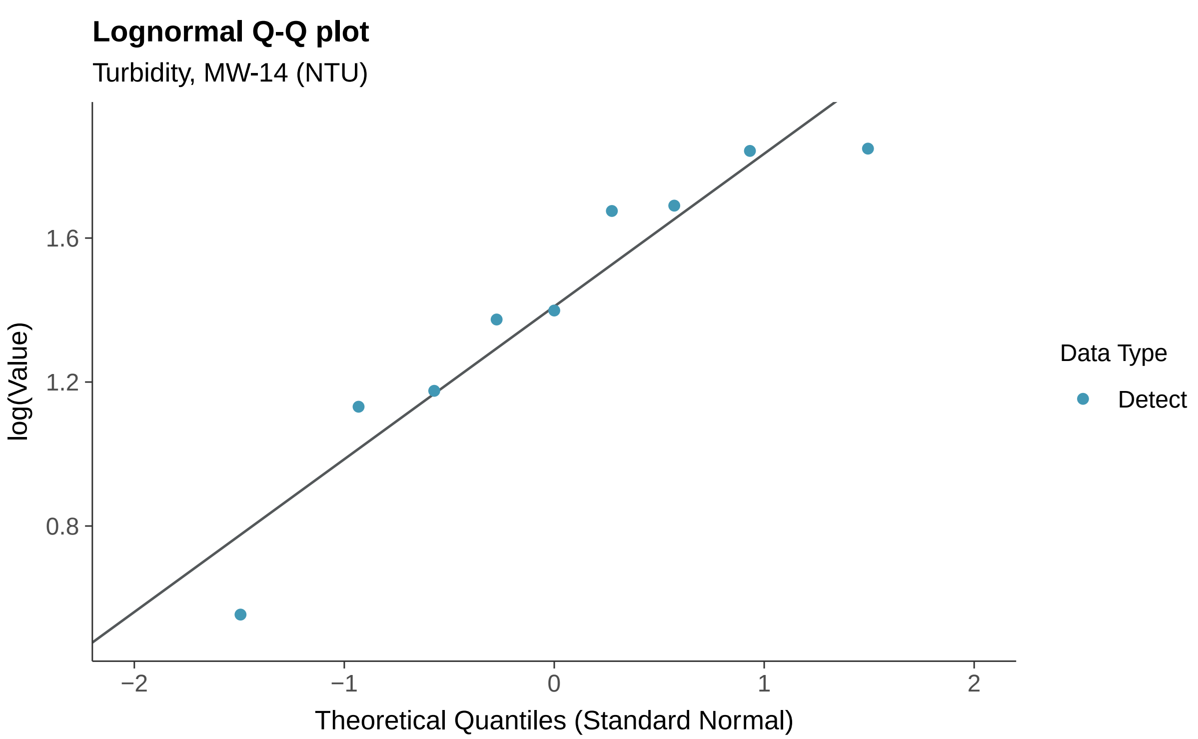


Boxplot by Season

Turbidity, MW-14 (NTU)

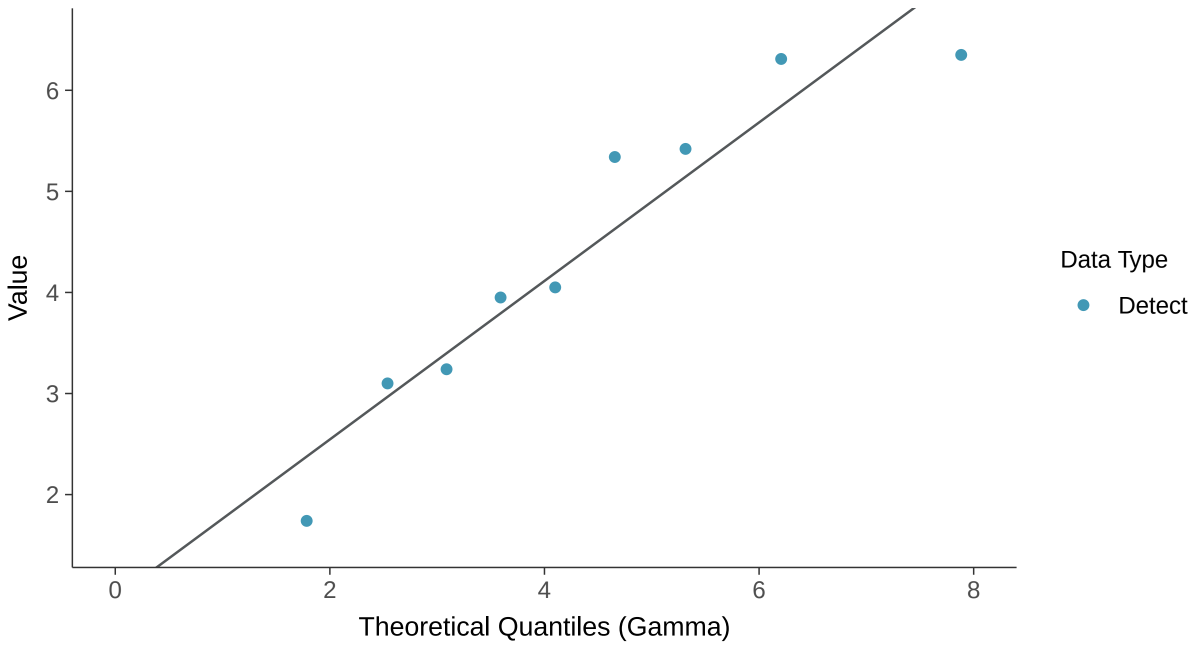



Normal Q-Q plot
Turbidity, MW-14 (NTU)
Value
6
5
4
3
2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Turbidity, MW-14 (NTU)
log(Value)
1.6
1.2
0.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

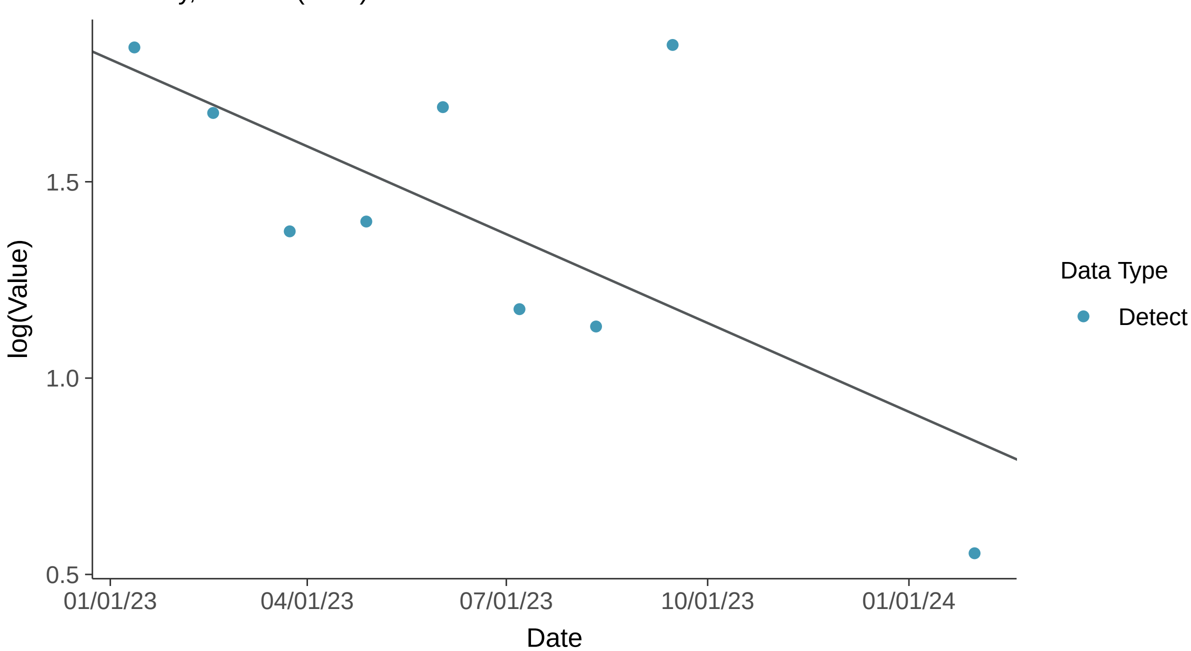
Gamma Q-Q plot

Turbidity, MW-14 (NTU)



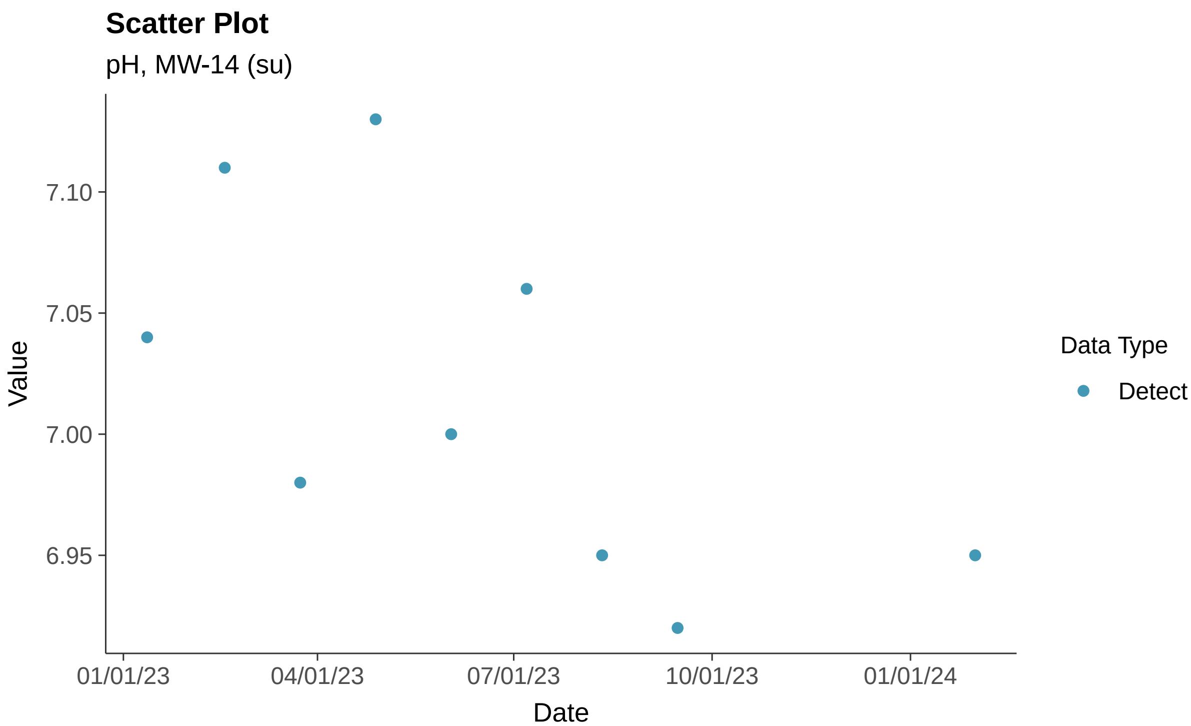
Trend Regression: Lognormal MLE

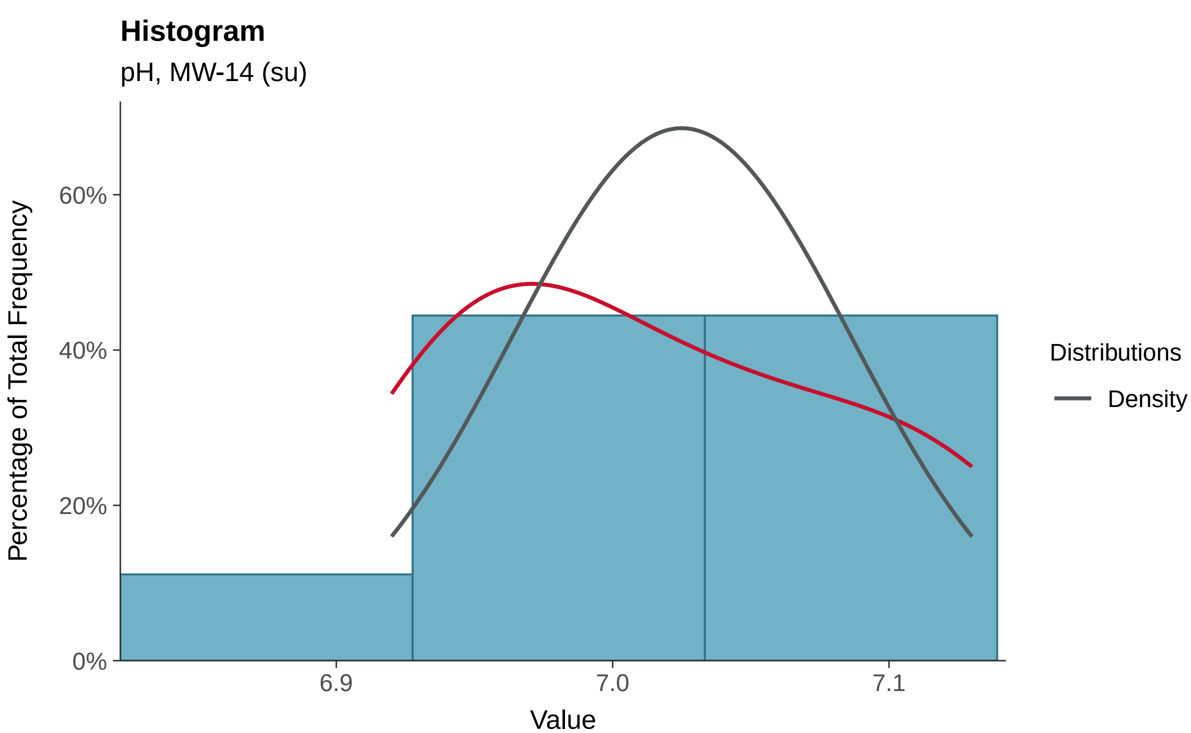
Turbidity, MW-14 (NTU)



Field Parameters: pH, MW-14

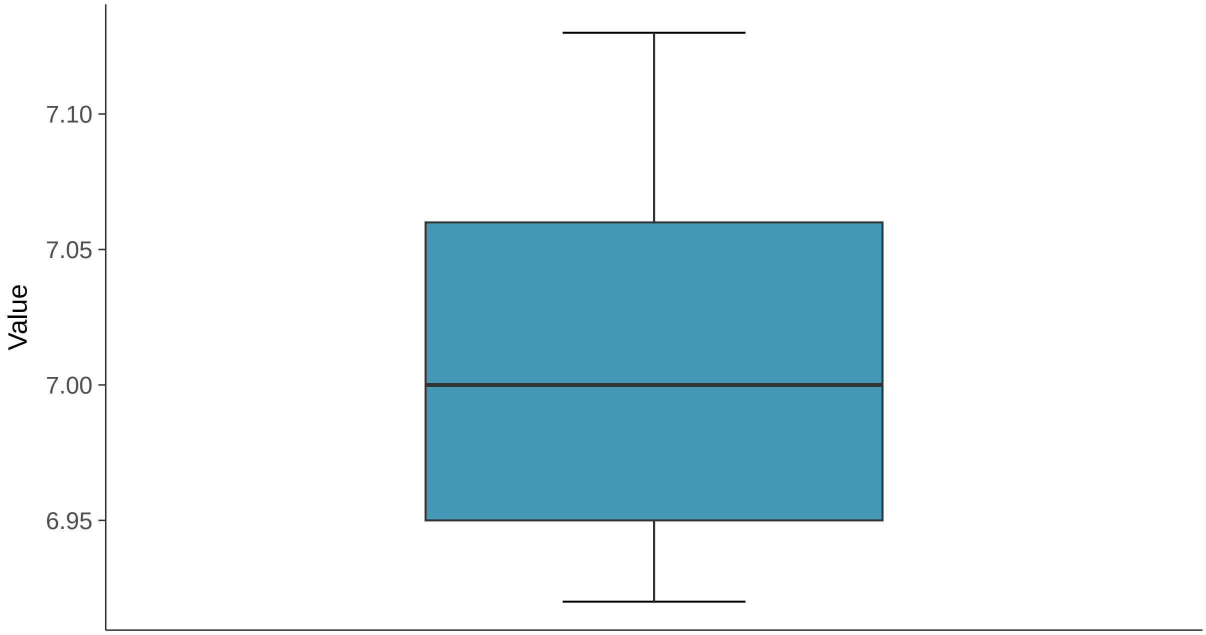
ID: 14_3_29





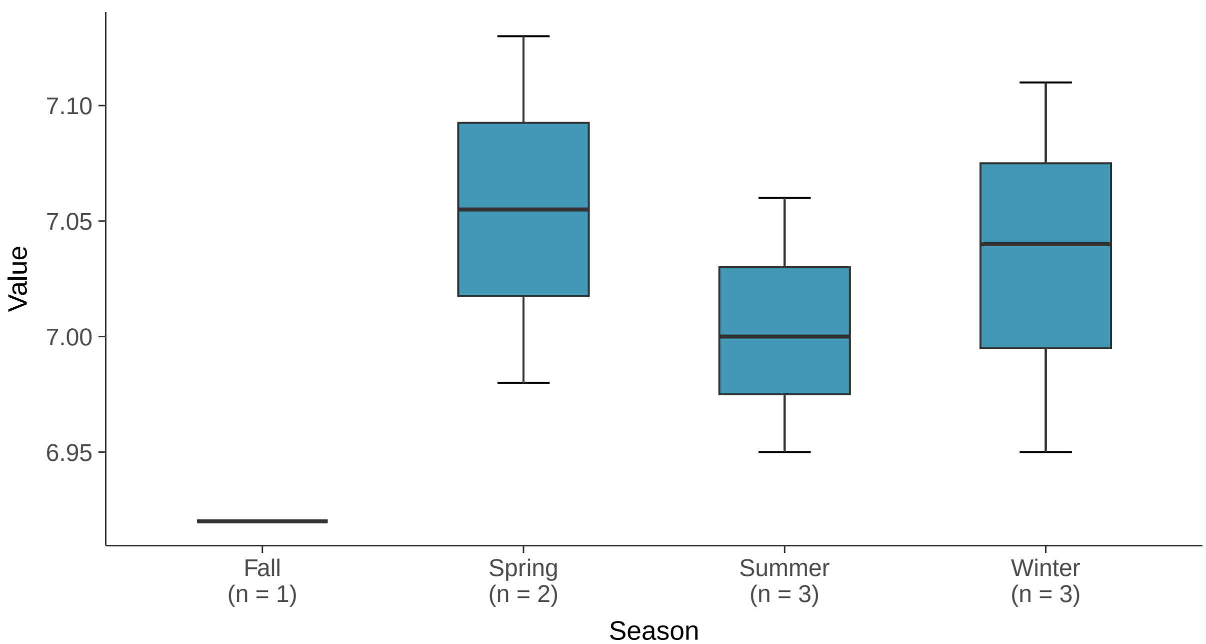
Boxplot

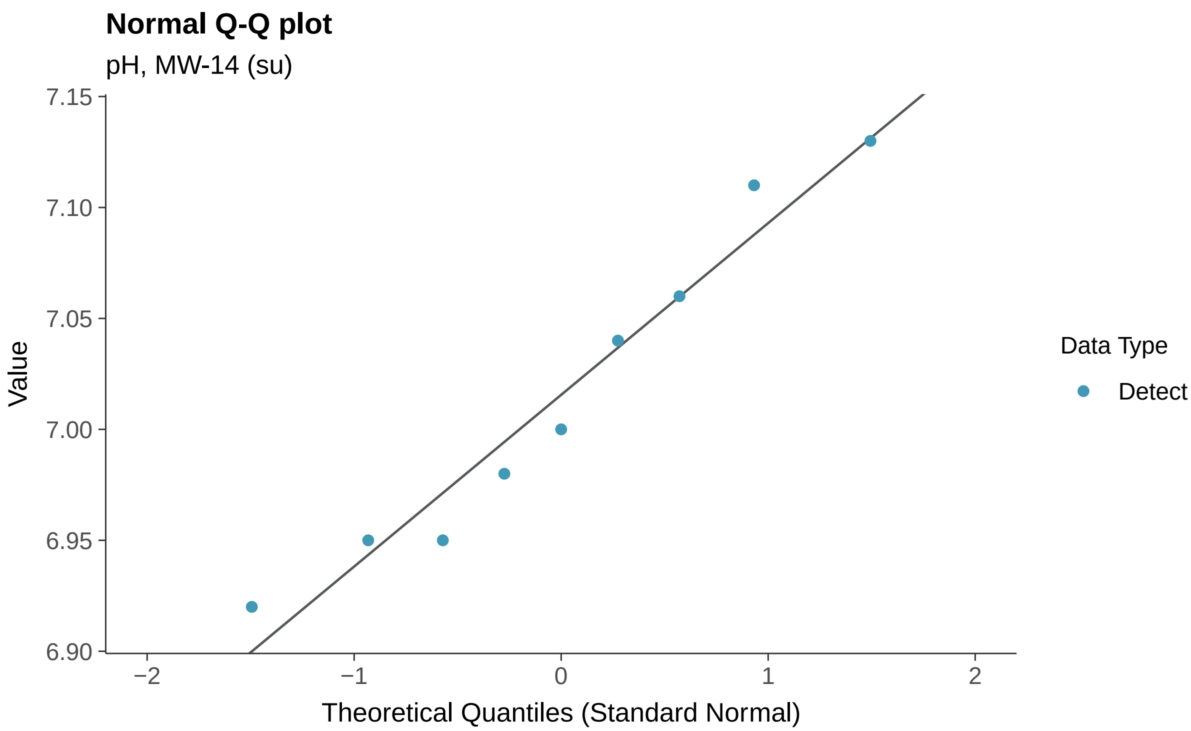
pH, MW-14 (su)

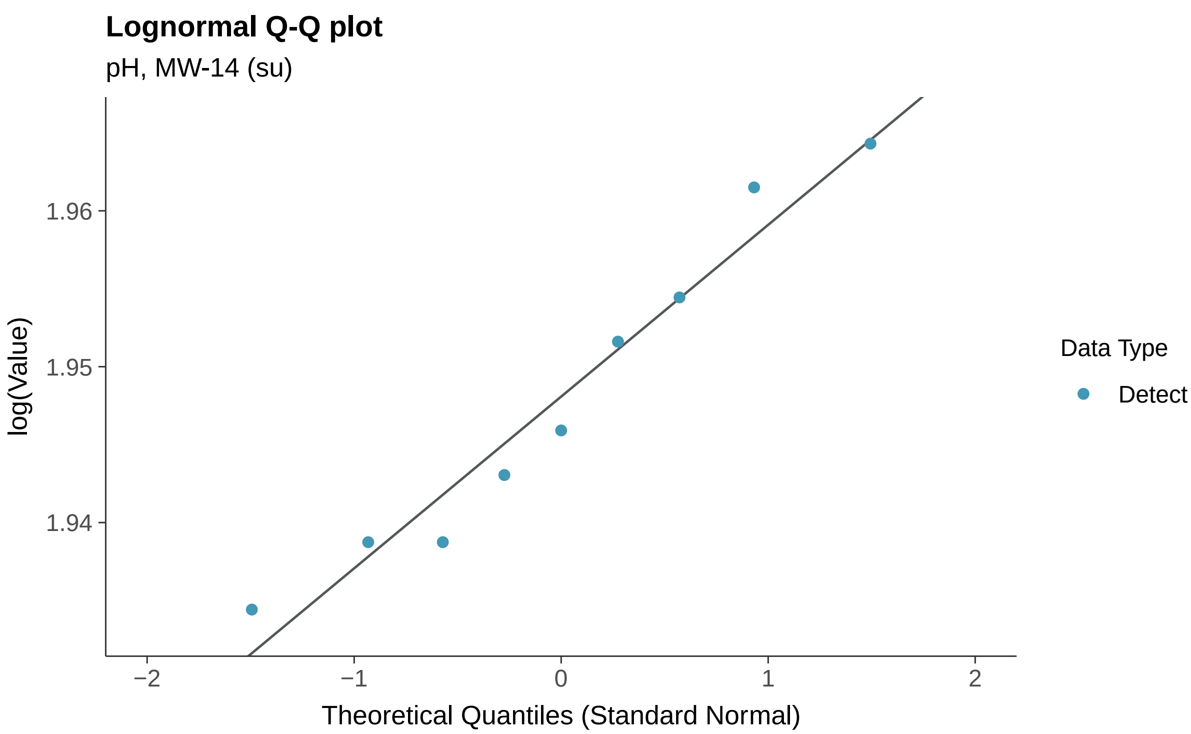


Boxplot by Season

pH, MW-14 (su)

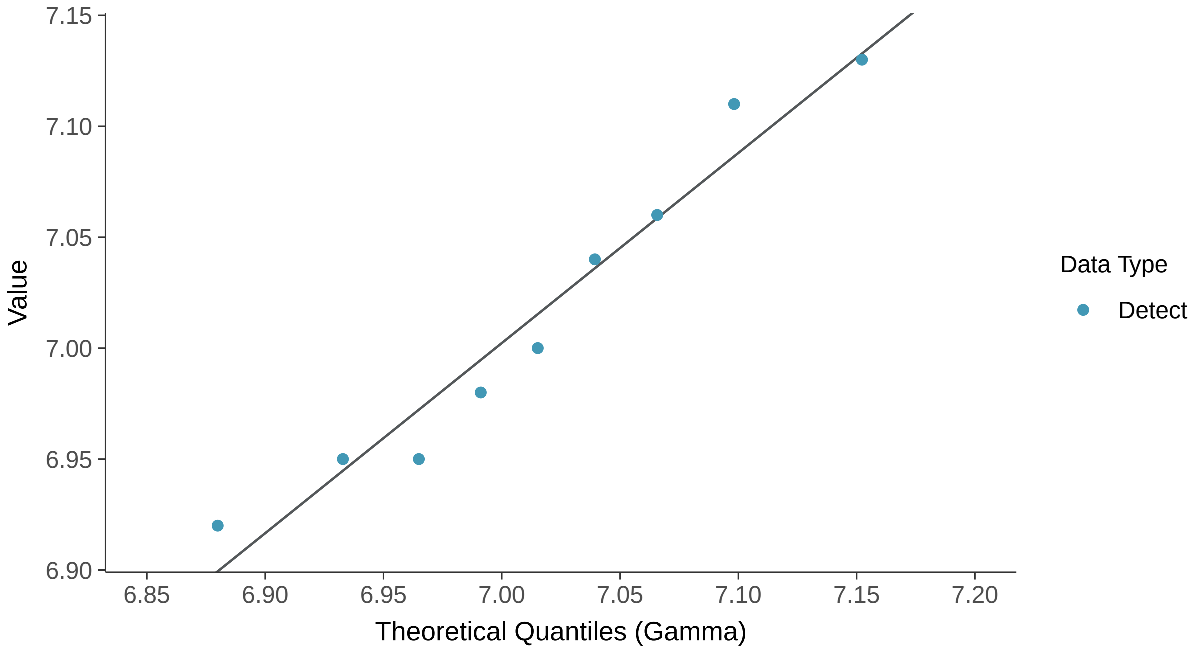



Normal Q-Q plot
pH, MW-14 (su)
Value
7.15
7.10
7.05
7.00
6.95
6.90
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH, MW-14 (su)
log(Value)
1.96
1.95
1.94
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

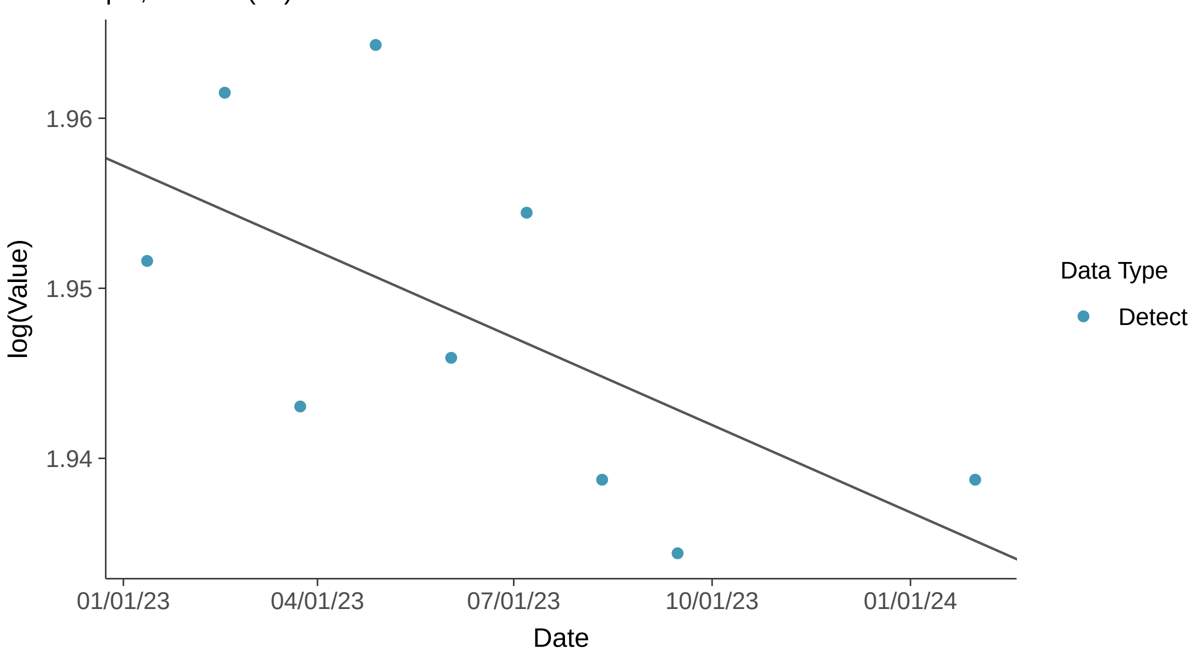
Gamma Q-Q plot

pH, MW-14 (su)



Trend Regression: Lognormal MLE

pH, MW-14 (su)

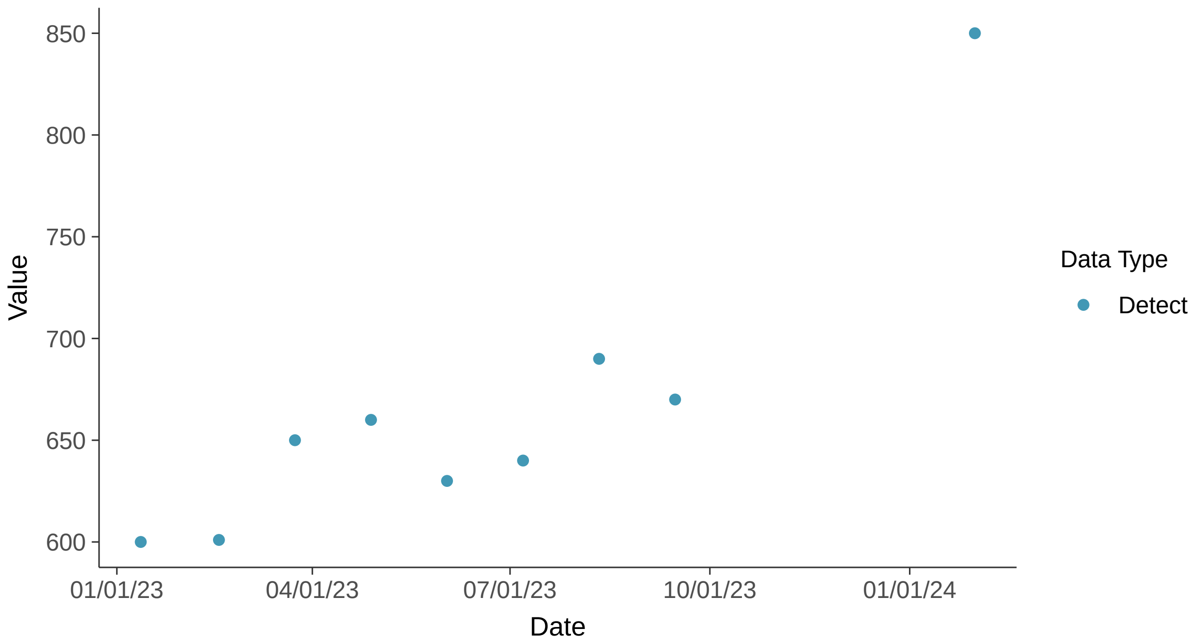


Other: Bicarbonate, MW-14

ID: 14_4_30

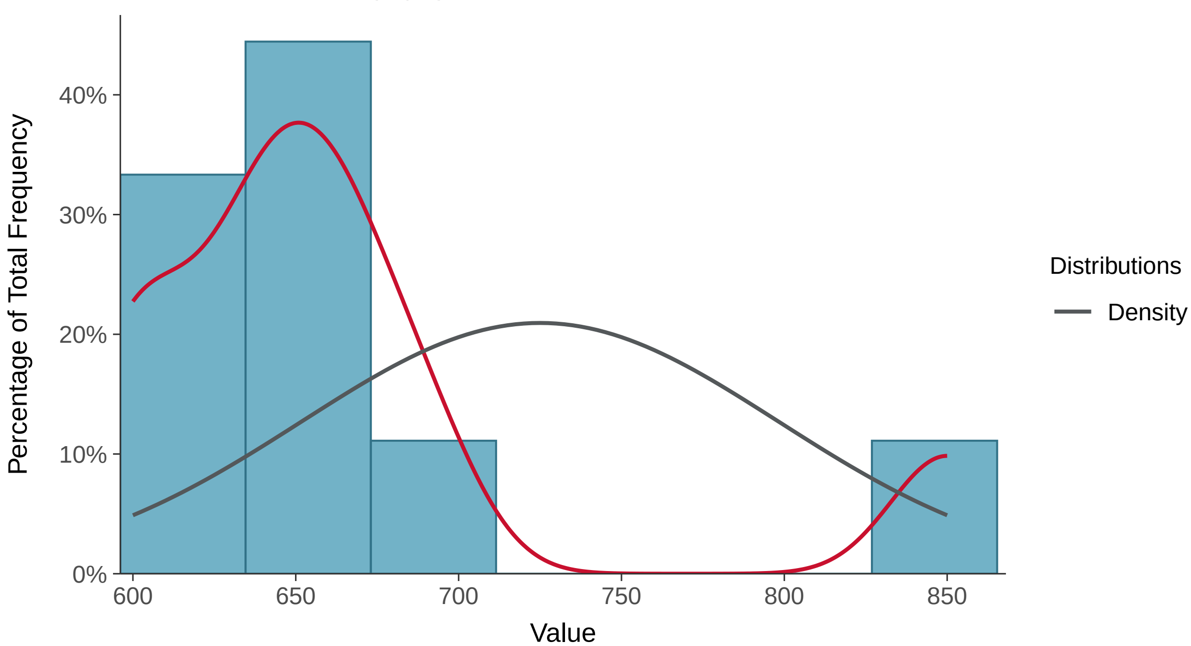
Scatter Plot

Bicarbonate, MW-14 (mg/L)



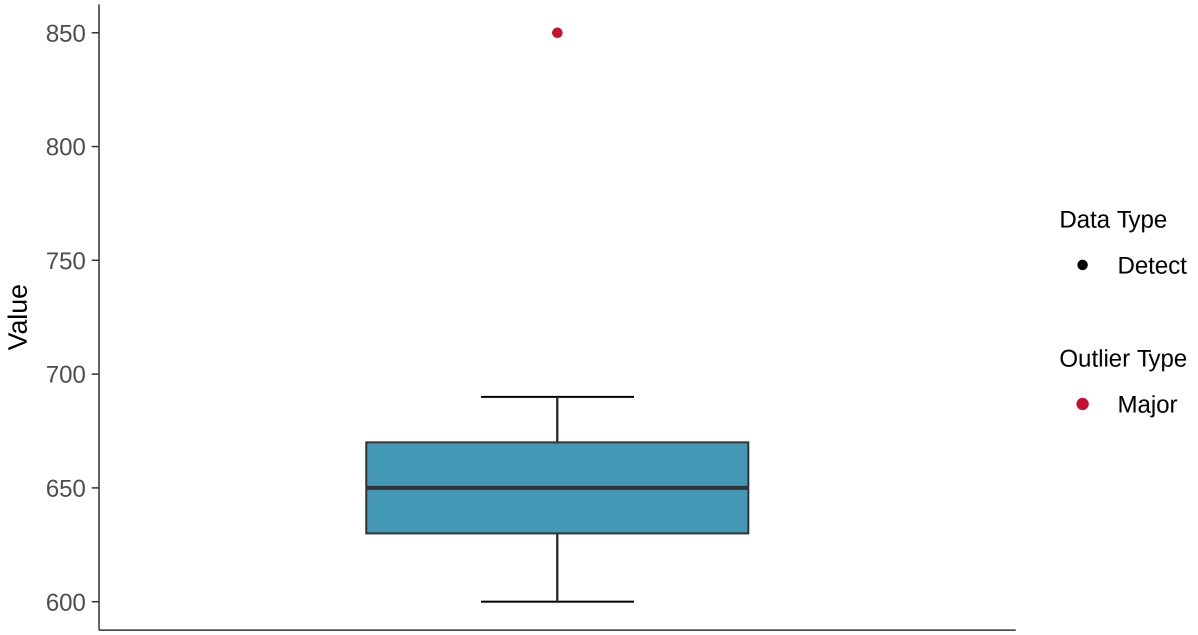
Histogram

Bicarbonate, MW-14 (mg/L)



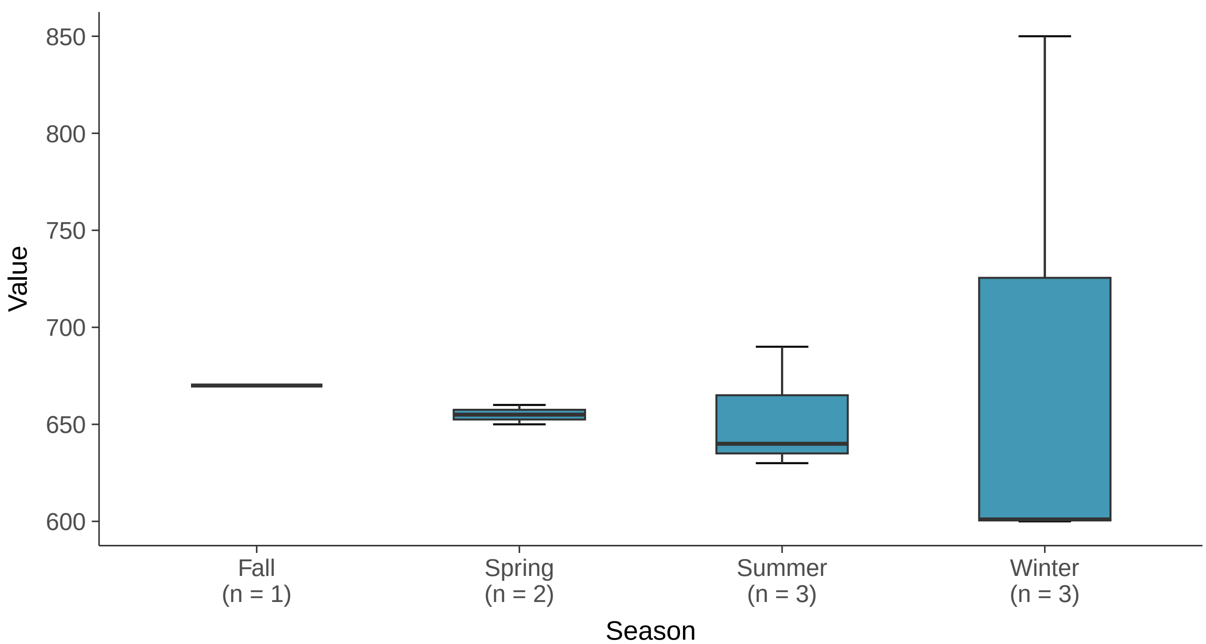
Boxplot

Bicarbonate, MW-14 (mg/L)



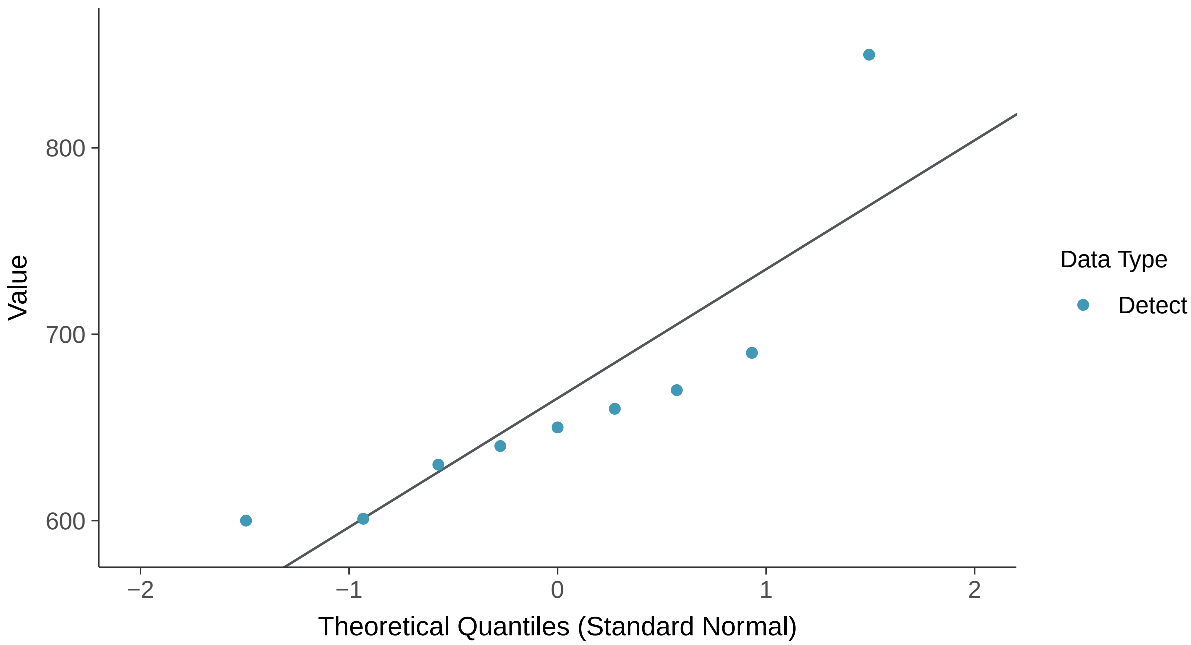
Boxplot by Season

Bicarbonate, MW-14 (mg/L)



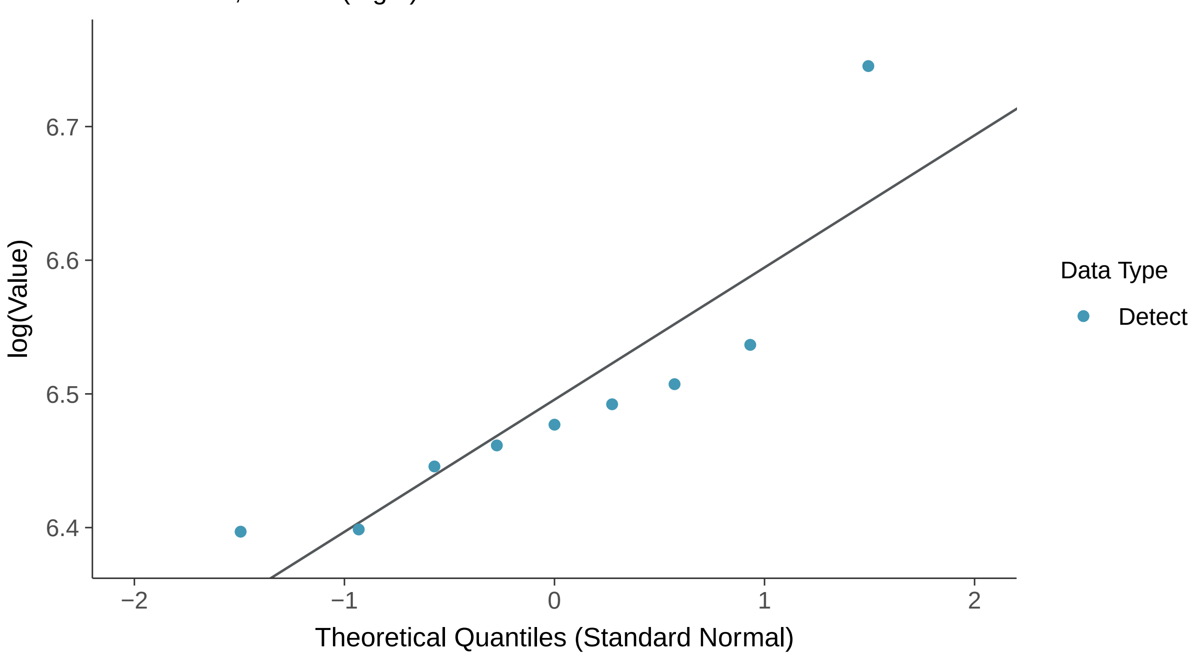
Normal Q-Q plot

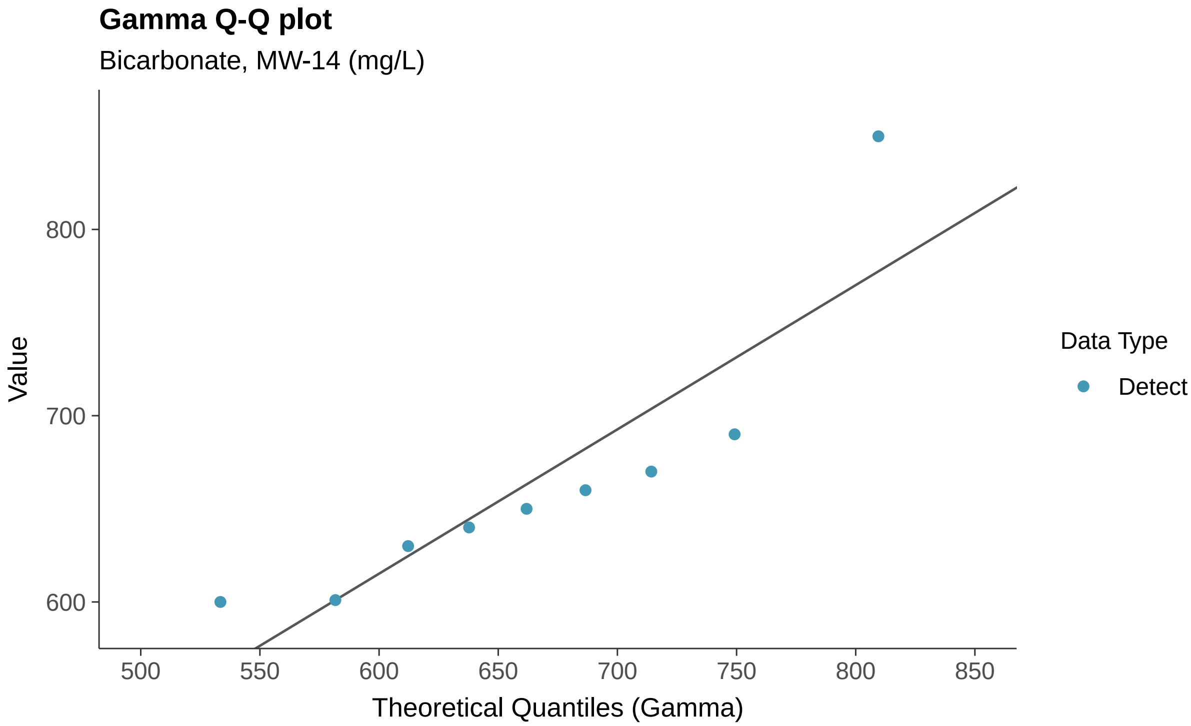
Bicarbonate, MW-14 (mg/L)

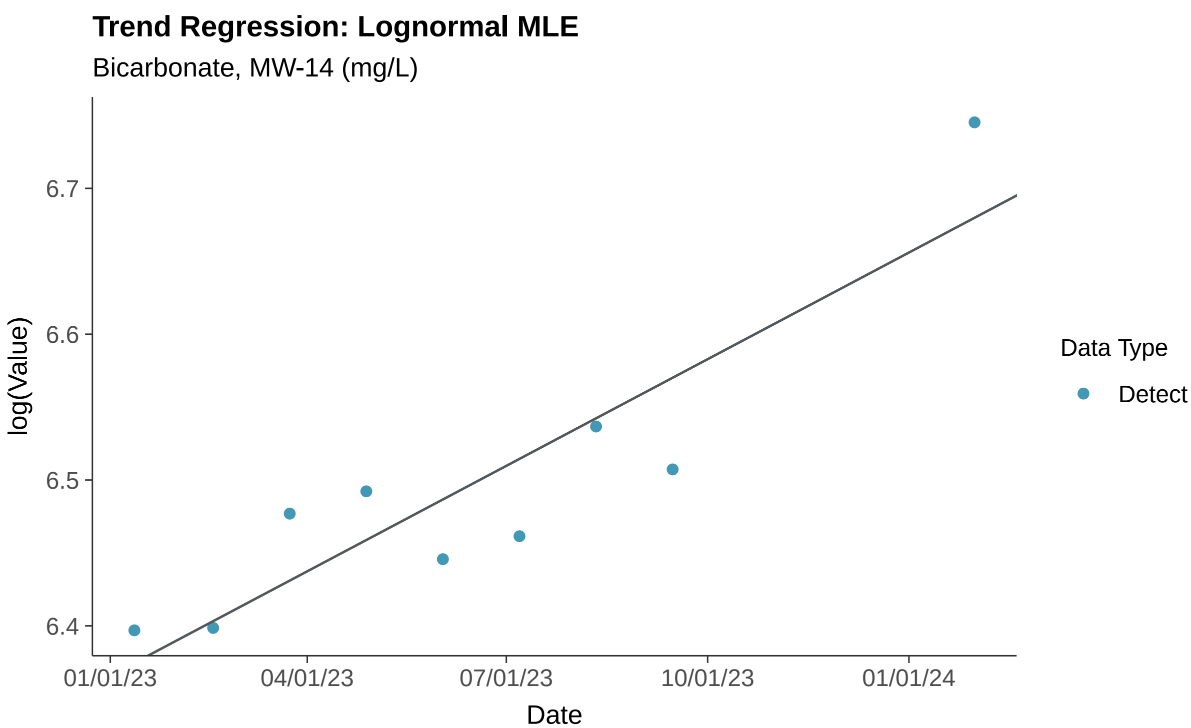


Lognormal Q-Q plot

Bicarbonate, MW-14 (mg/L)

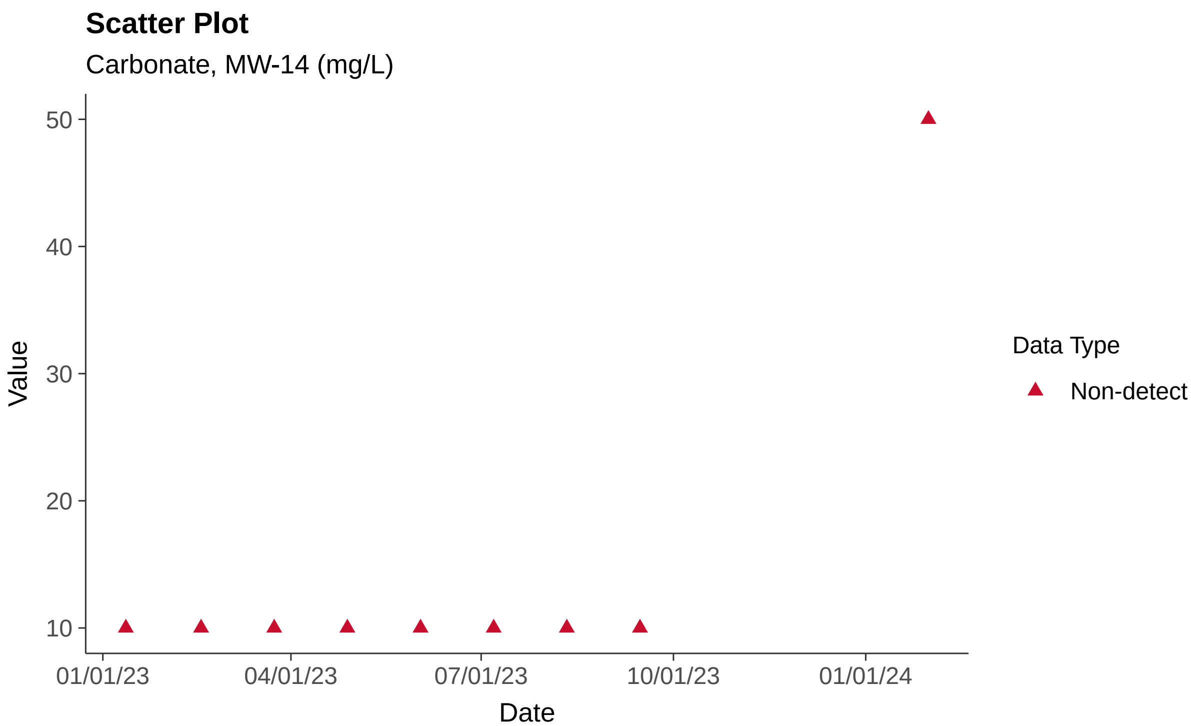


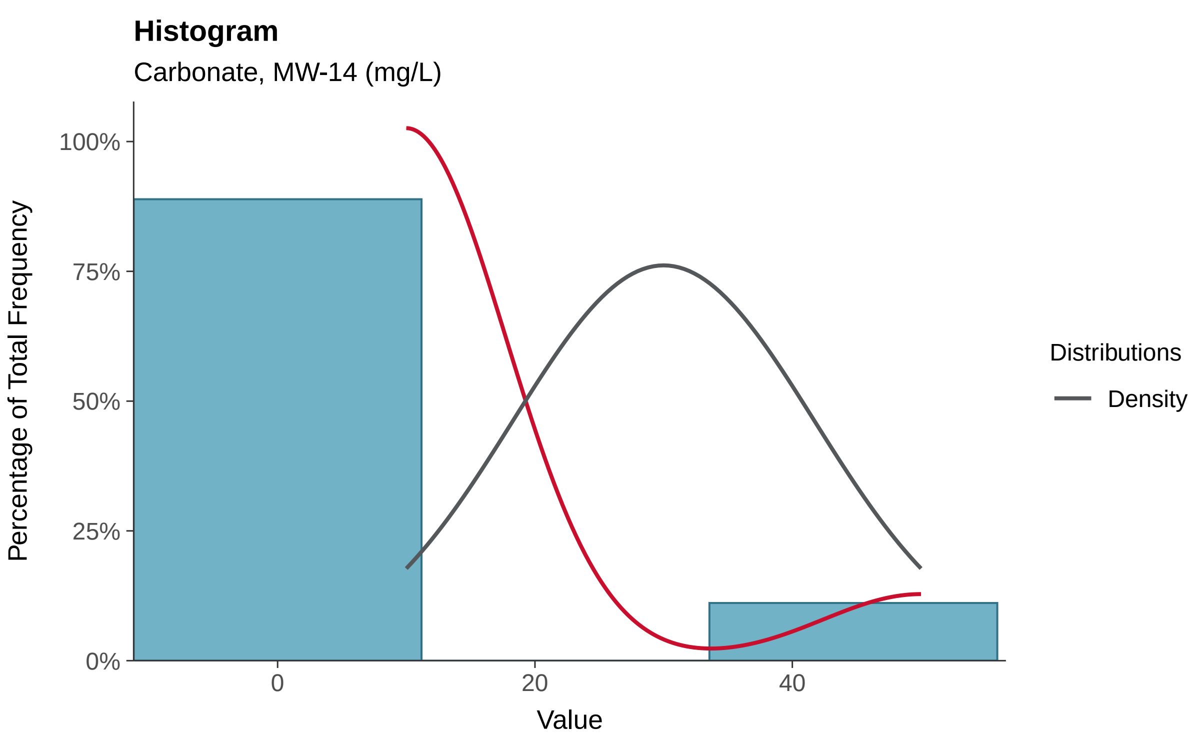

Gamma Q-Q plot
Bicarbonate, MW-14 (mg/L)
Value
800
700
600
500
550
600
650
700
750
800
850
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Bicarbonate, MW-14 (mg/L)
log(Value)
6.7
6.6
6.5
6.4
01/01/23
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Other: Carbonate, MW-14

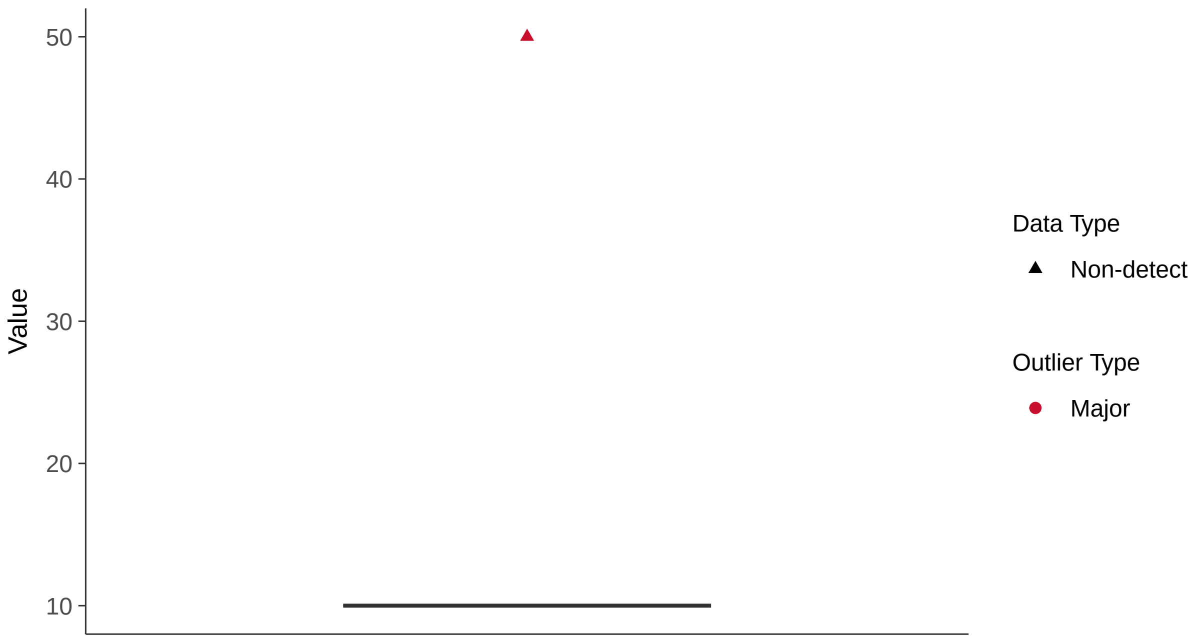
ID: 14_4_31





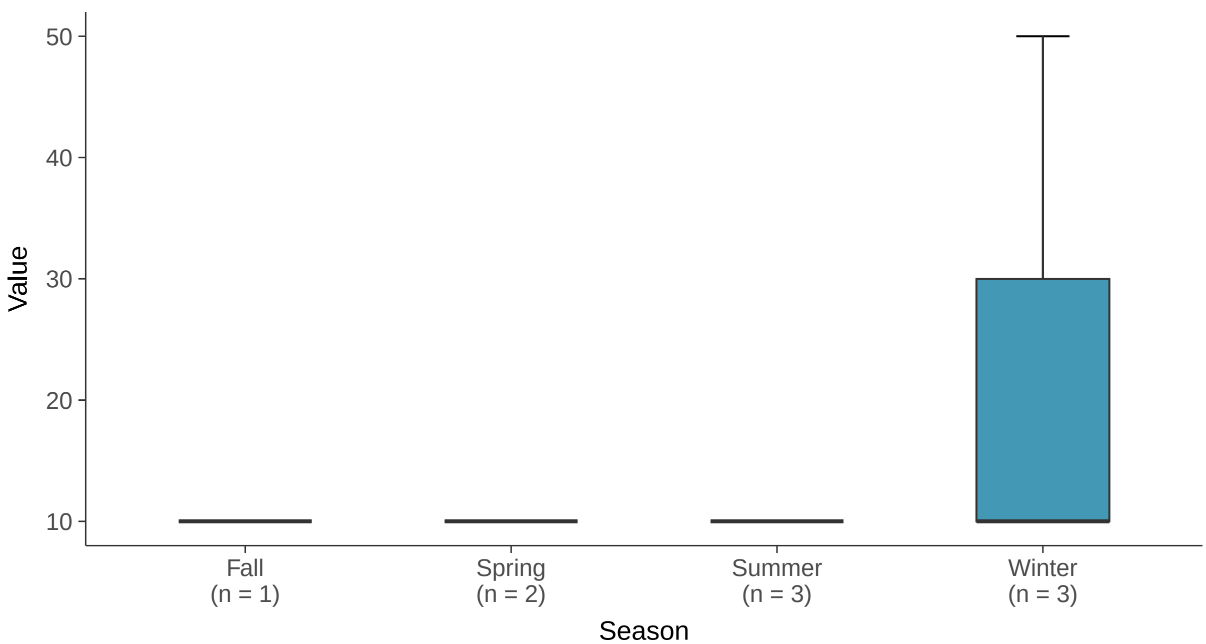
Boxplot

Carbonate, MW-14 (mg/L)



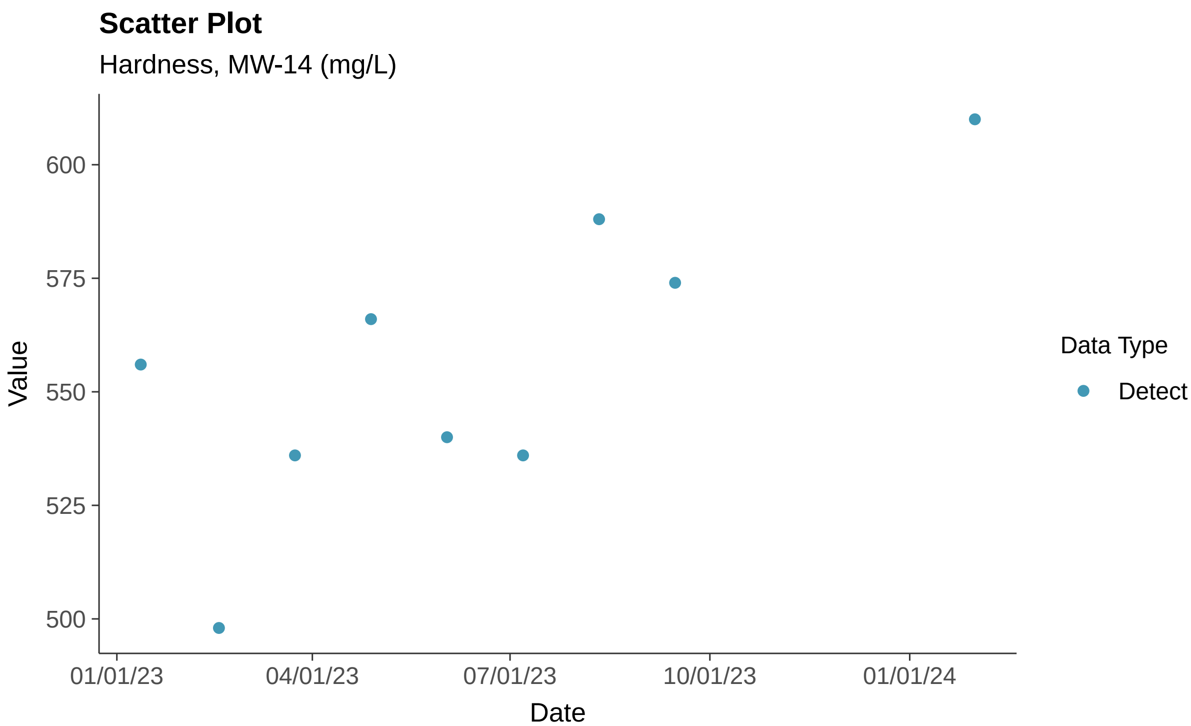
Boxplot by Season

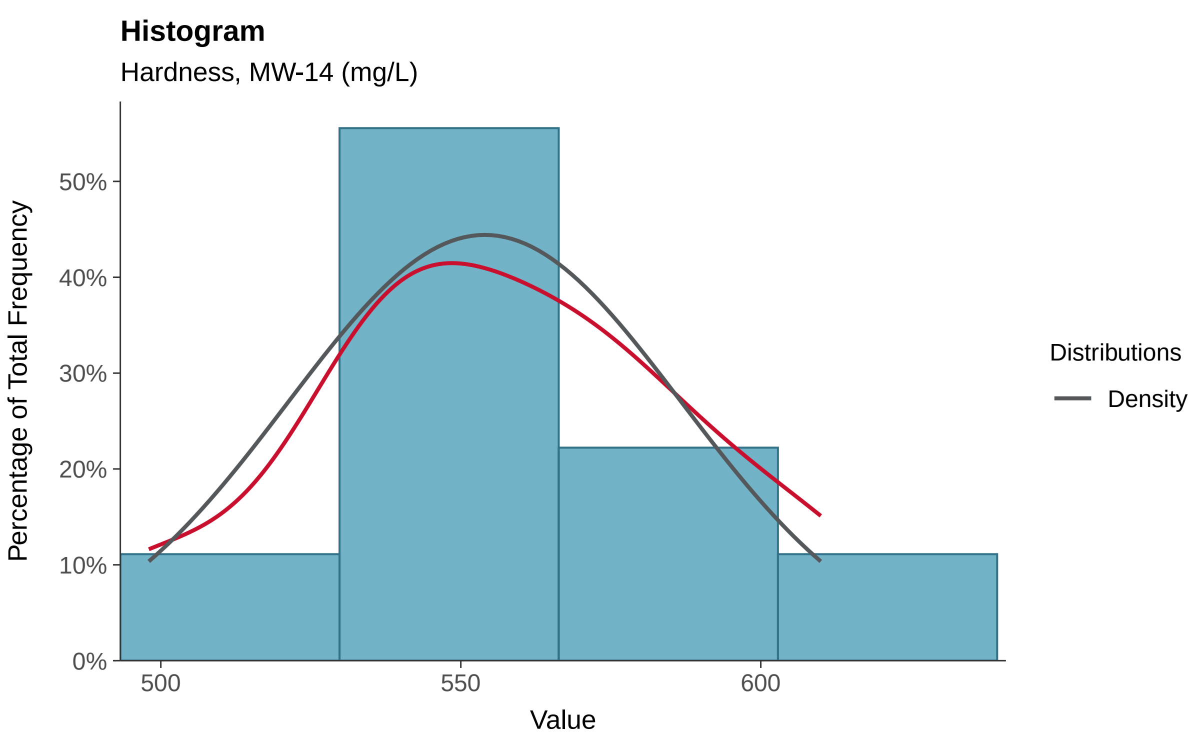
Carbonate, MW-14 (mg/L)



Other: Hardness, MW-14

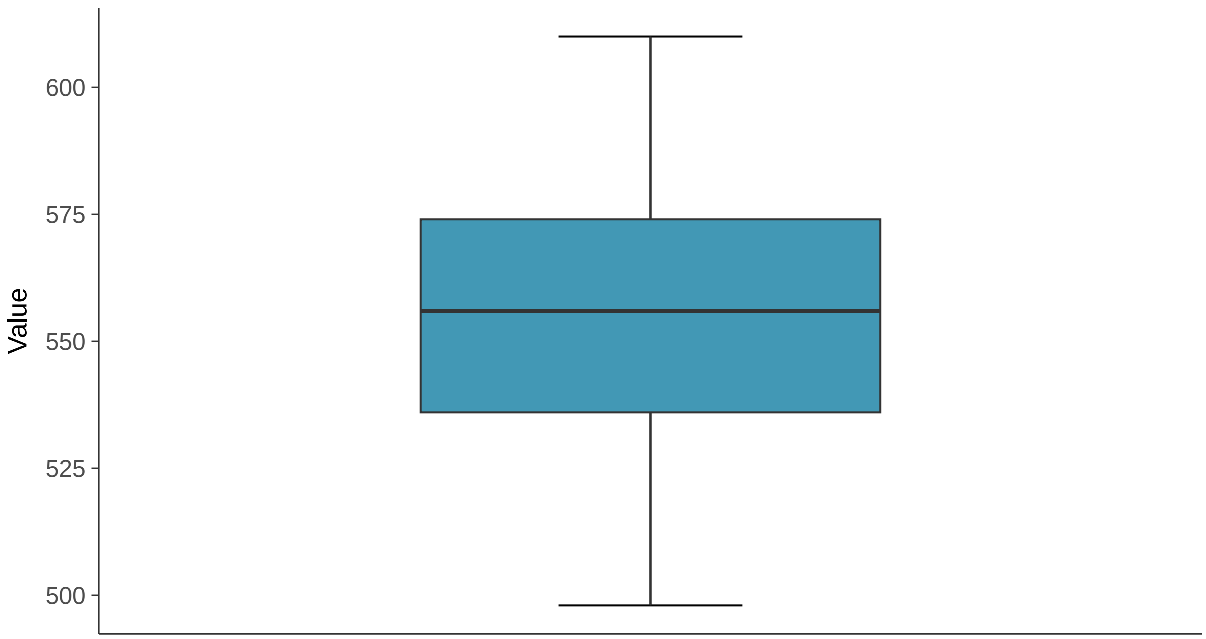
ID: 14_4_32





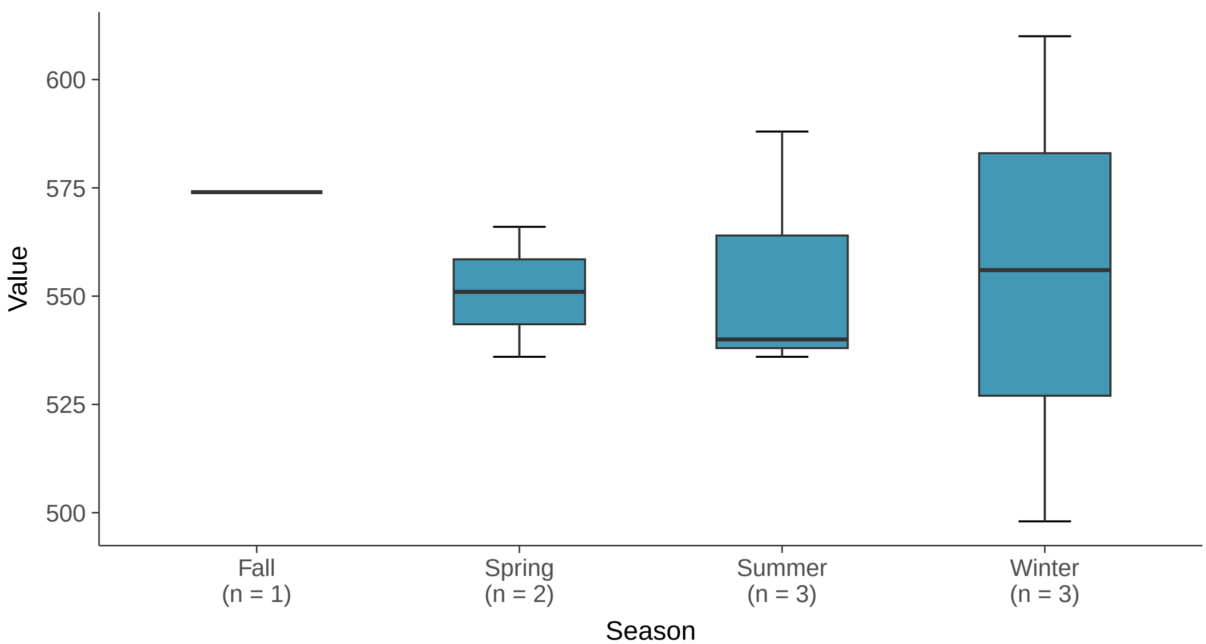
Boxplot

Hardness, MW-14 (mg/L)



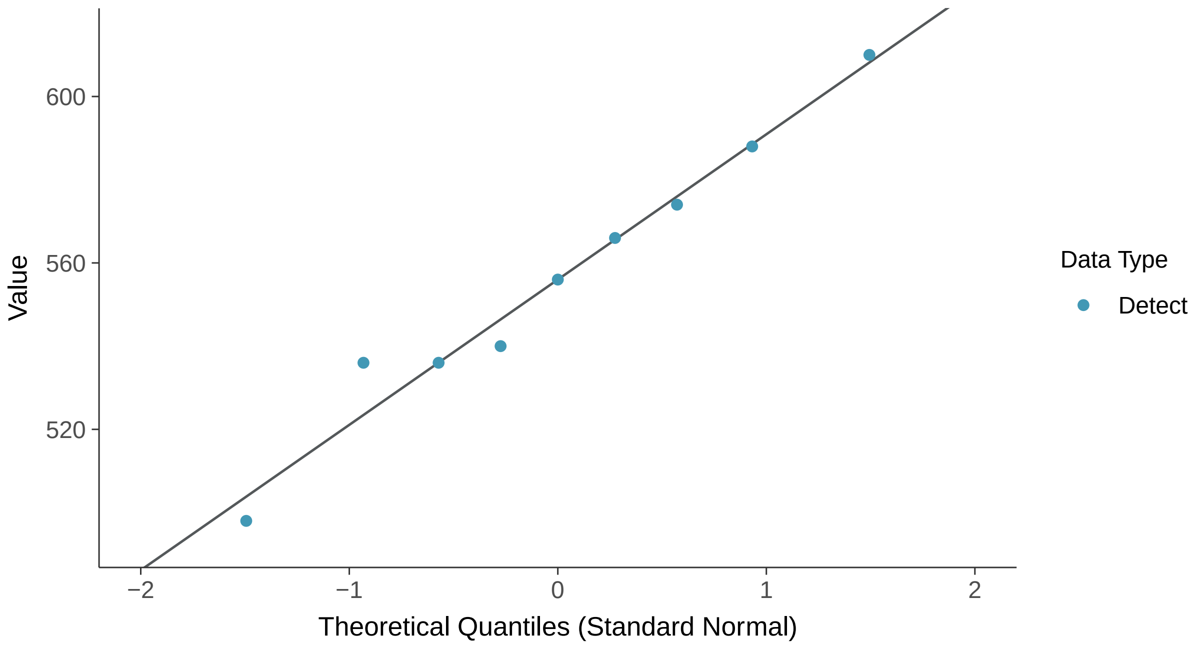
Boxplot by Season

Hardness, MW-14 (mg/L)



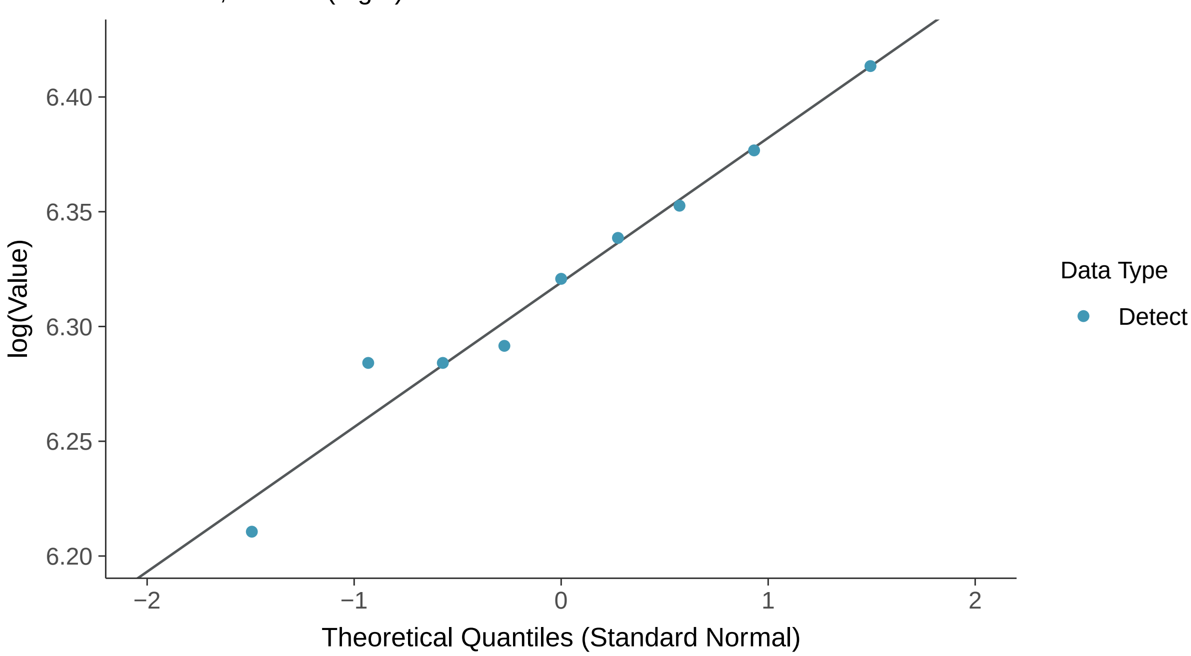
Normal Q-Q plot

Hardness, MW-14 (mg/L)



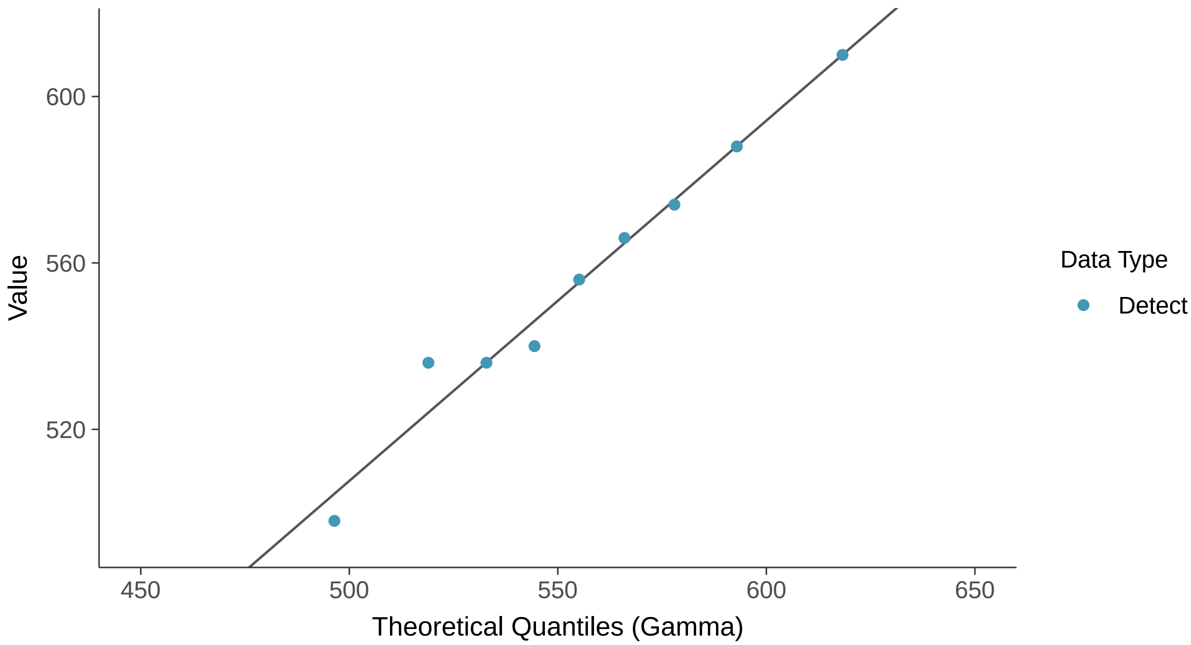
Lognormal Q-Q plot

Hardness, MW-14 (mg/L)



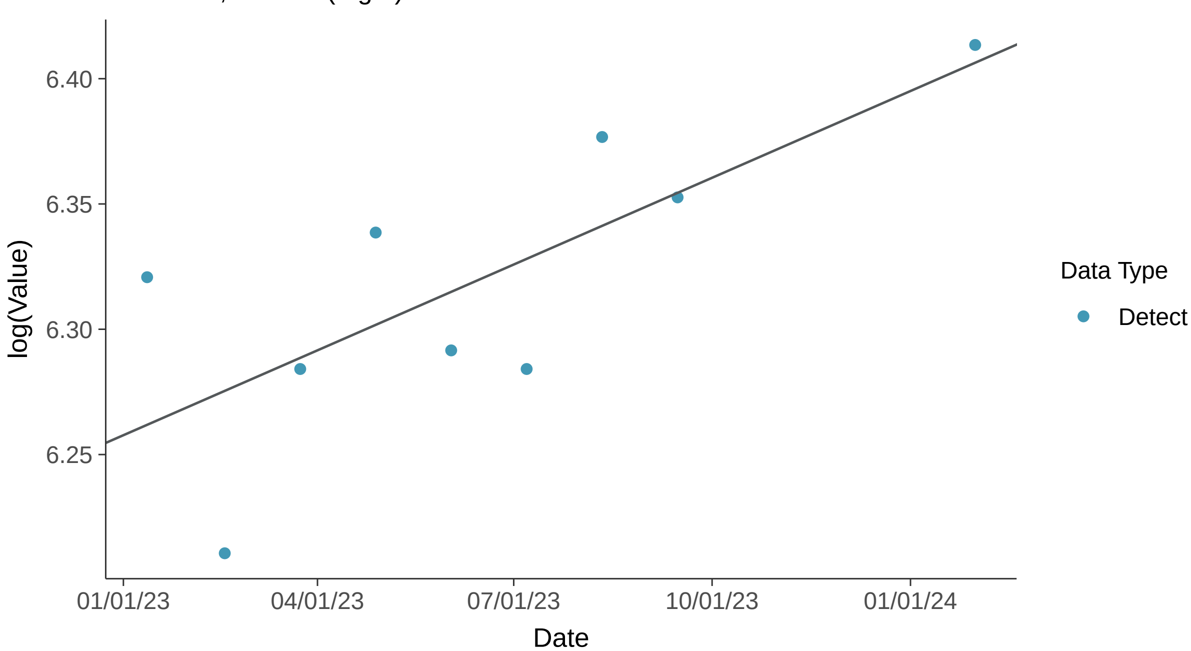
Gamma Q-Q plot

Hardness, MW-14 (mg/L)



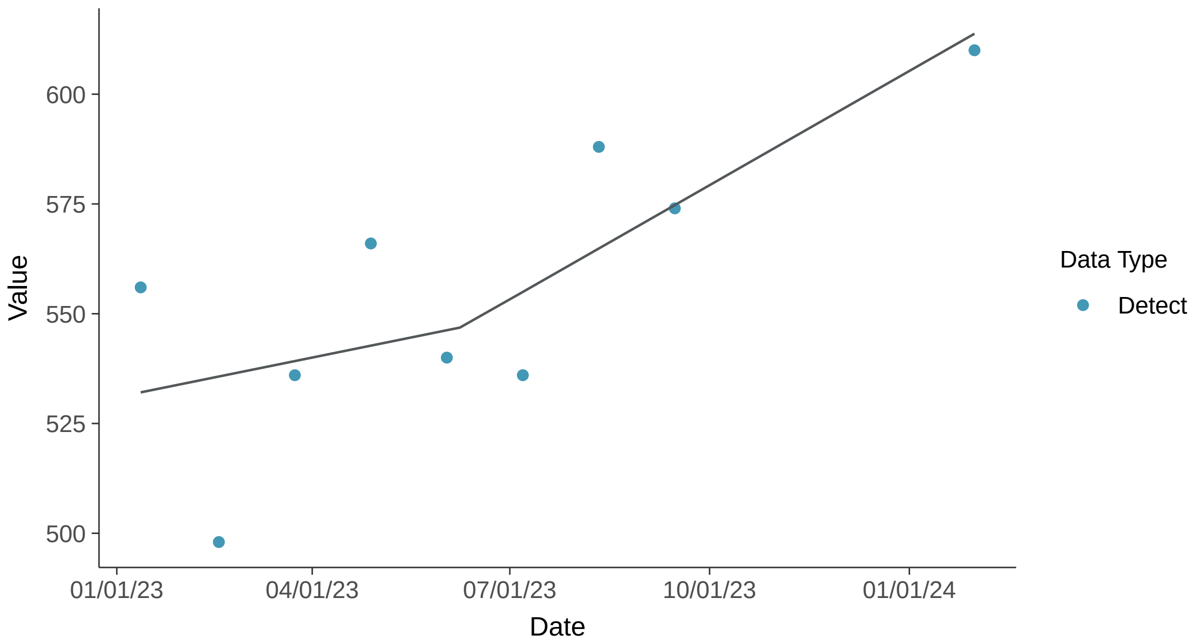
Trend Regression: Lognormal MLE

Hardness, MW-14 (mg/L)



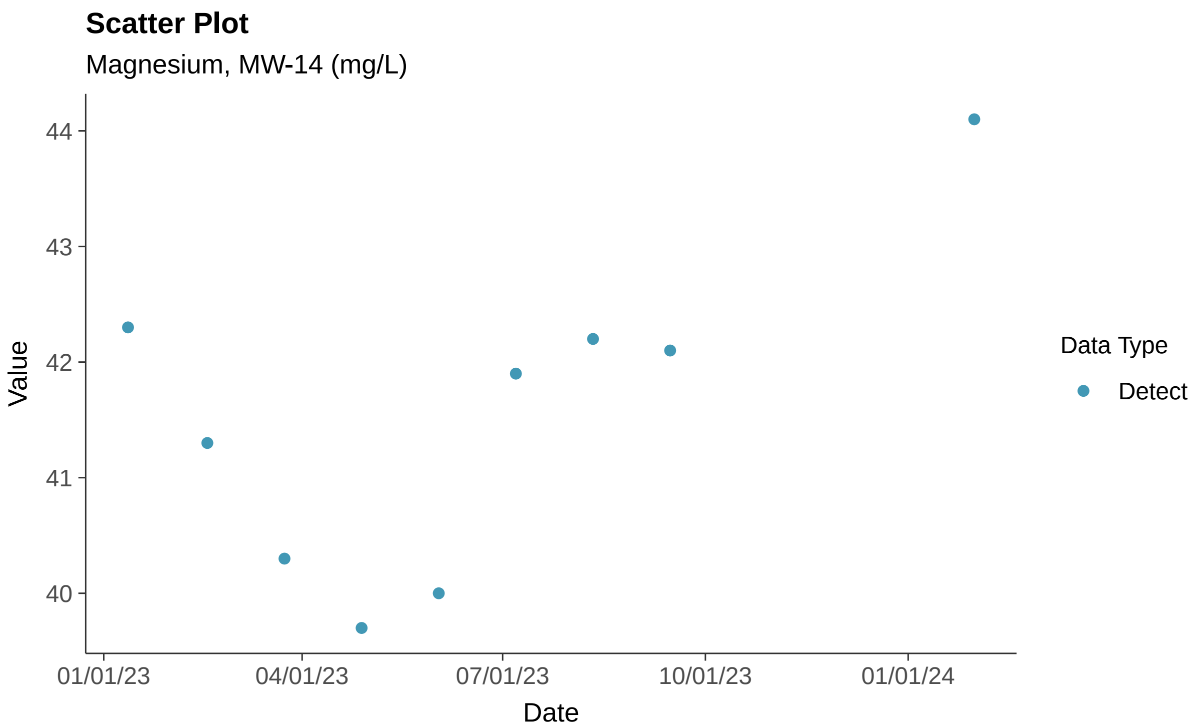
Trend Regression: Piecewise Linear-Linear

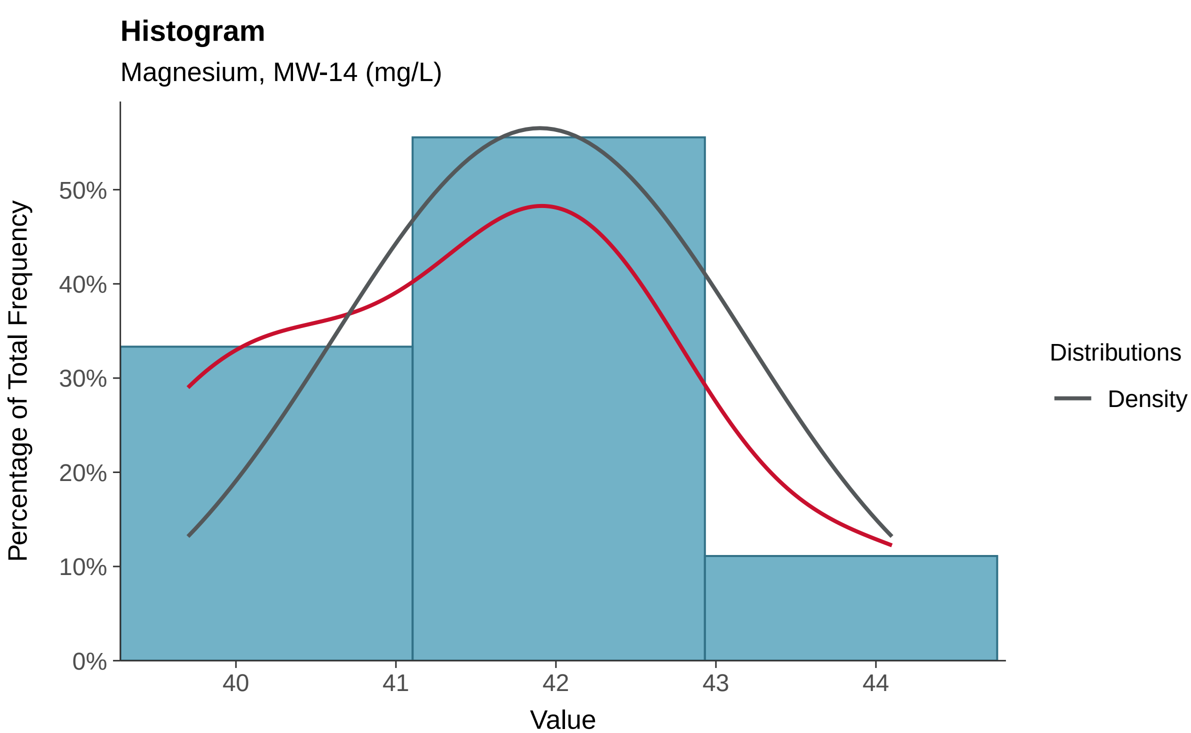
Hardness, MW-14 (mg/L)



Other: Magnesium, MW-14

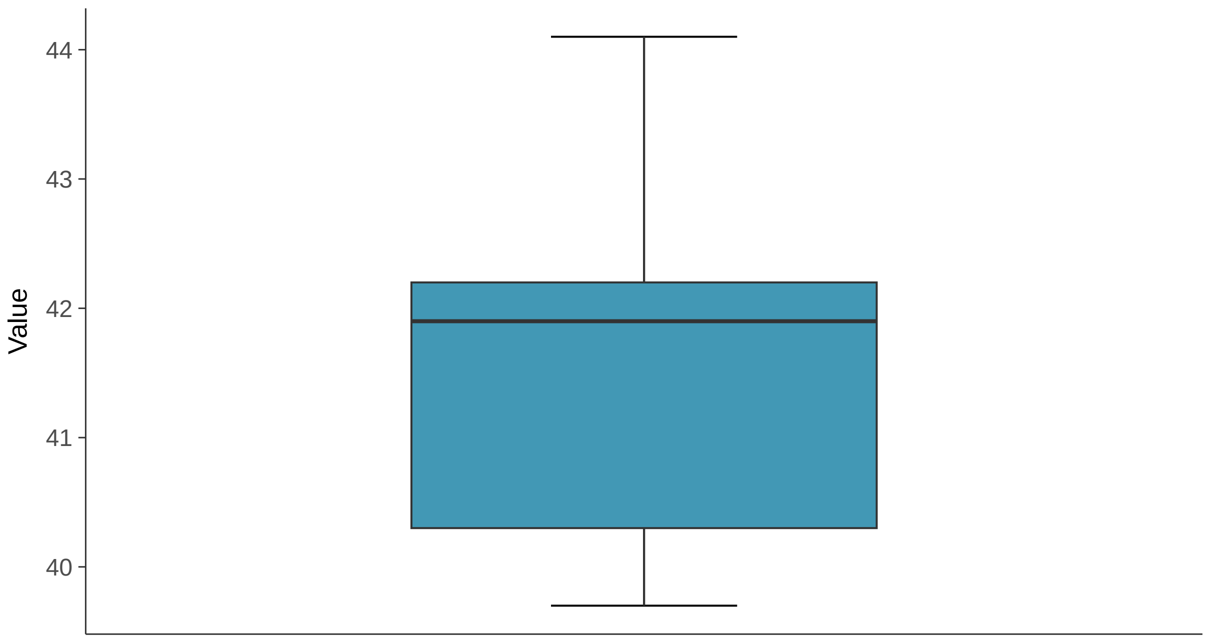
ID: 14_4_33





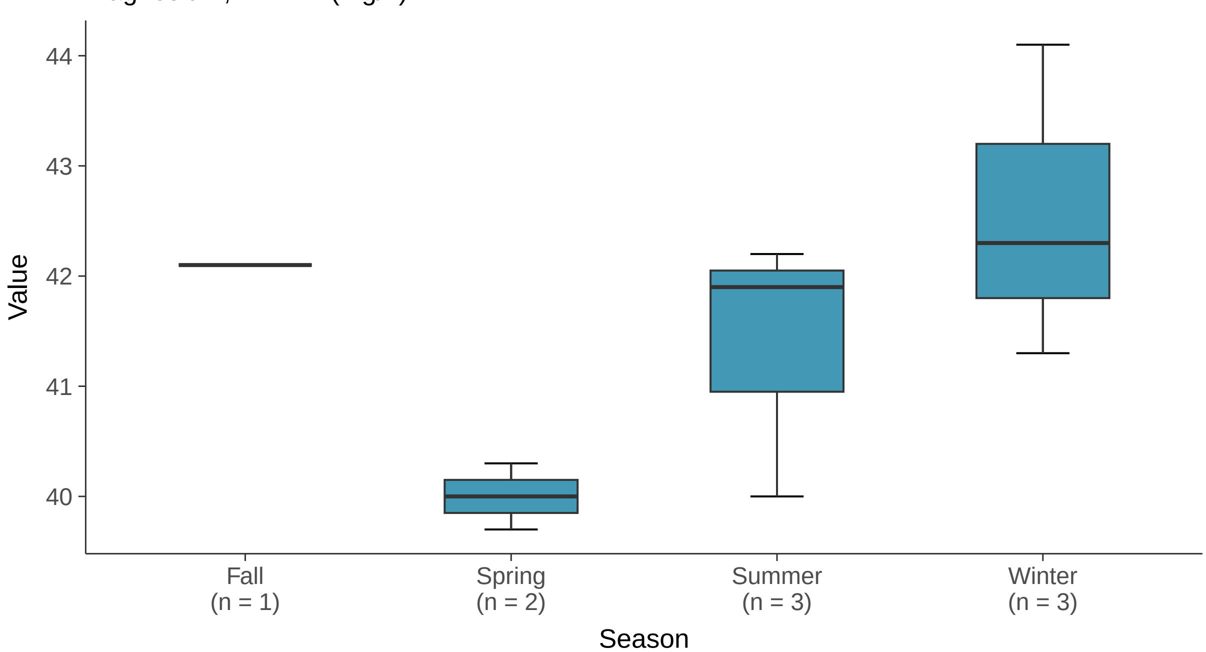
Boxplot

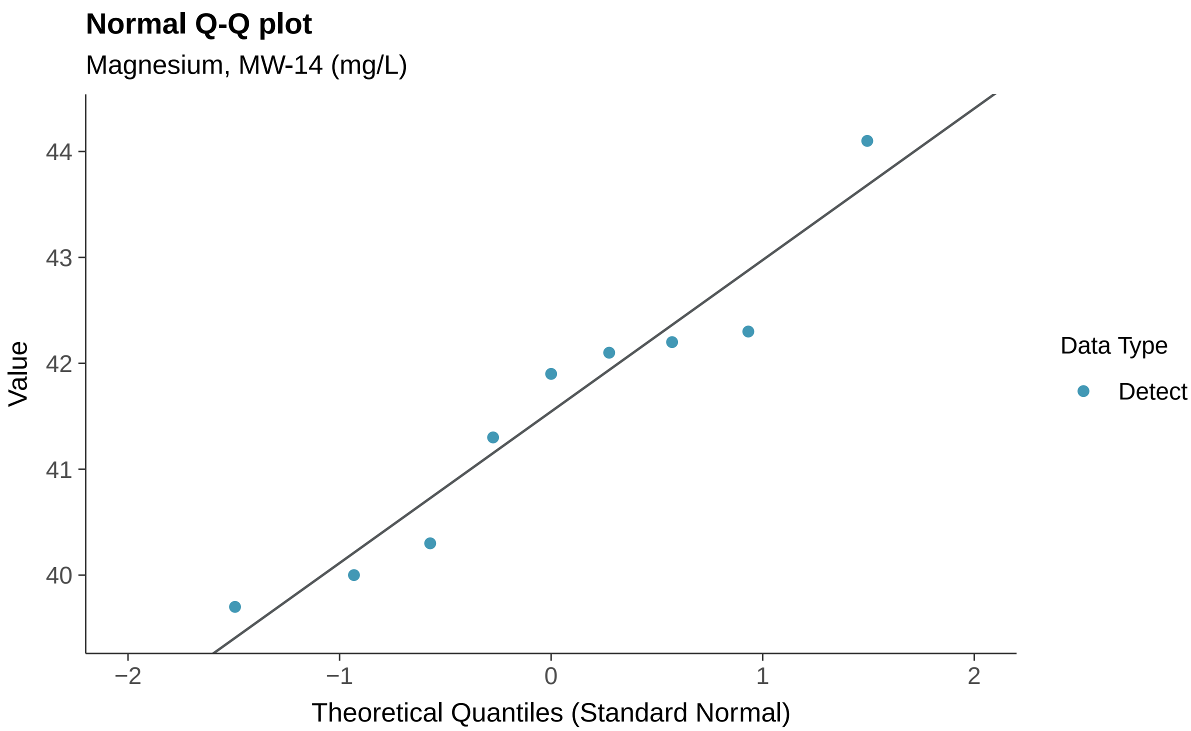
Magnesium, MW-14 (mg/L)

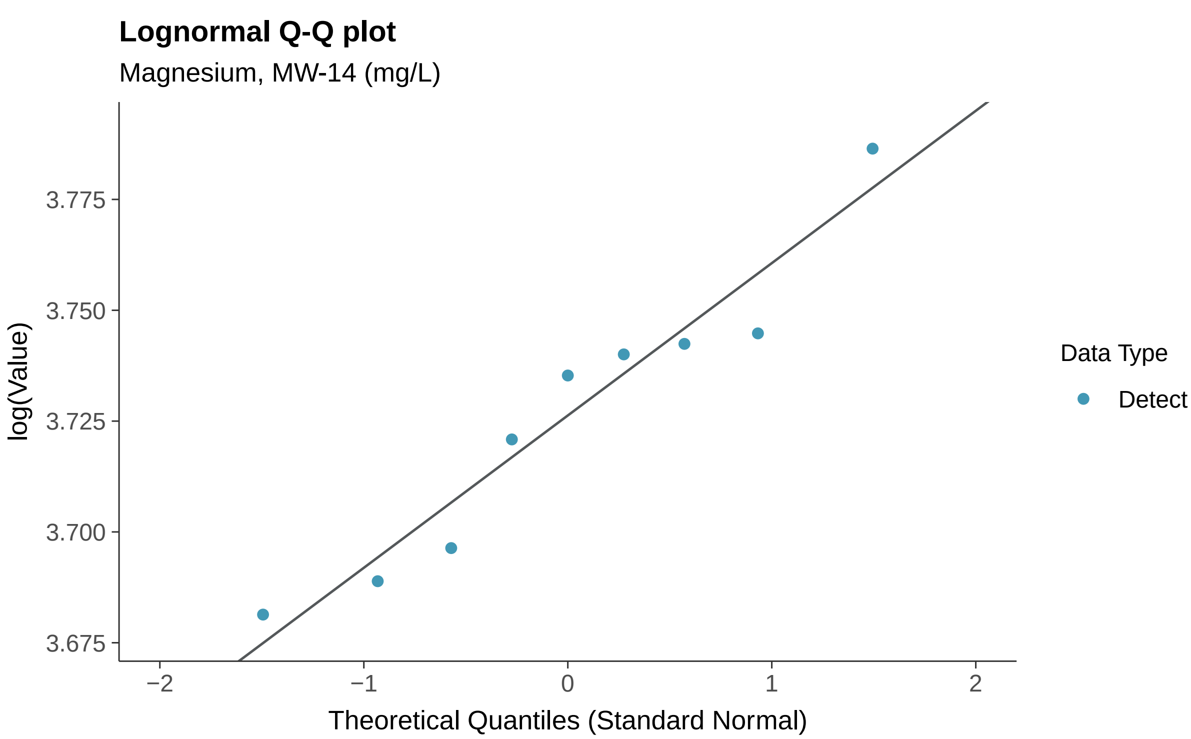


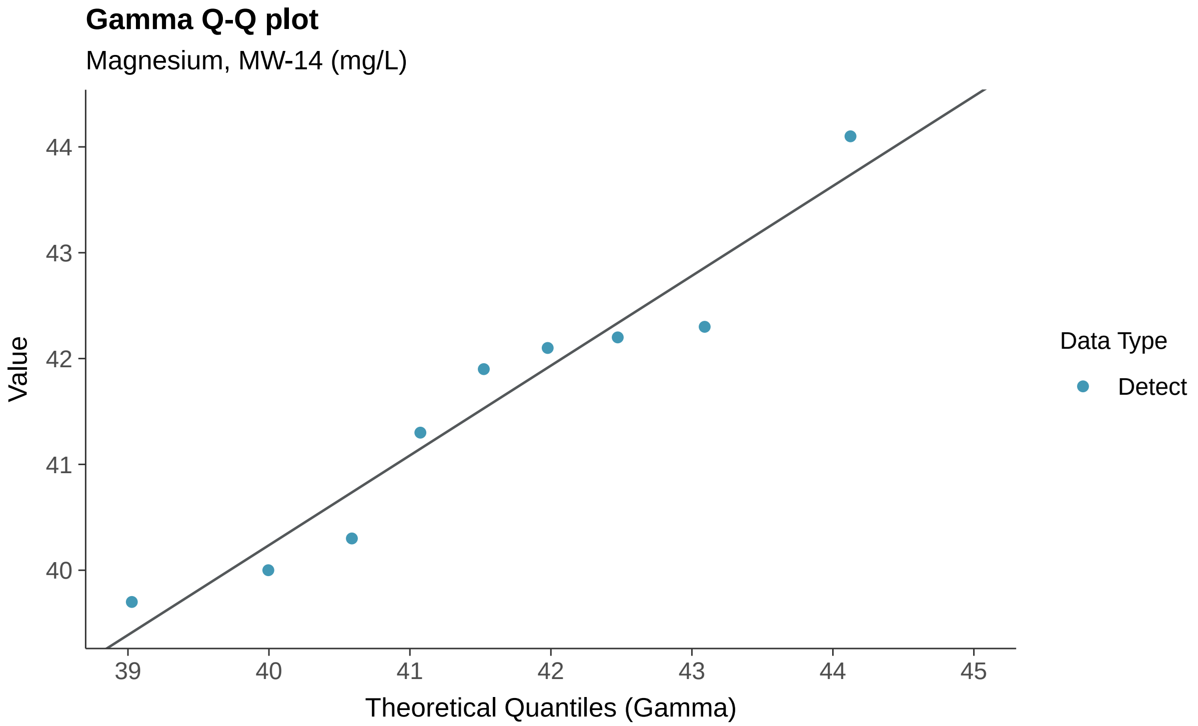
Boxplot by Season

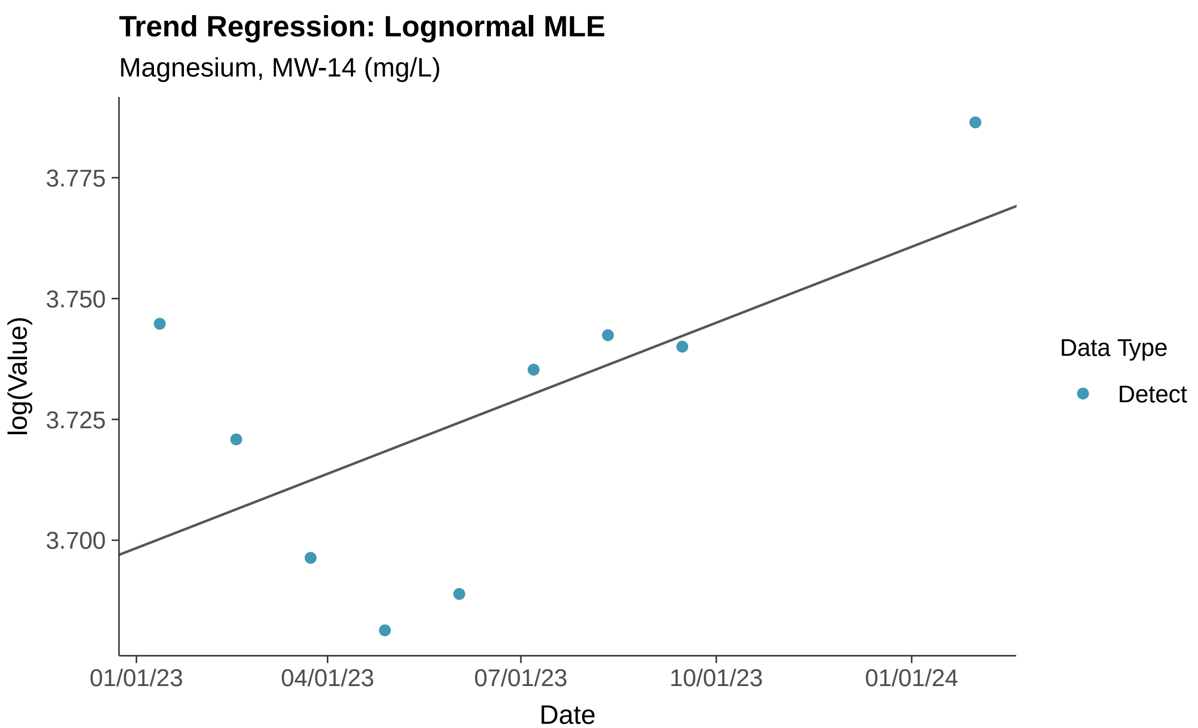
Magnesium, MW-14 (mg/L)




Normal Q-Q plot
Magnesium, MW-14 (mg/L)
Value
44
43
42
41
40
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

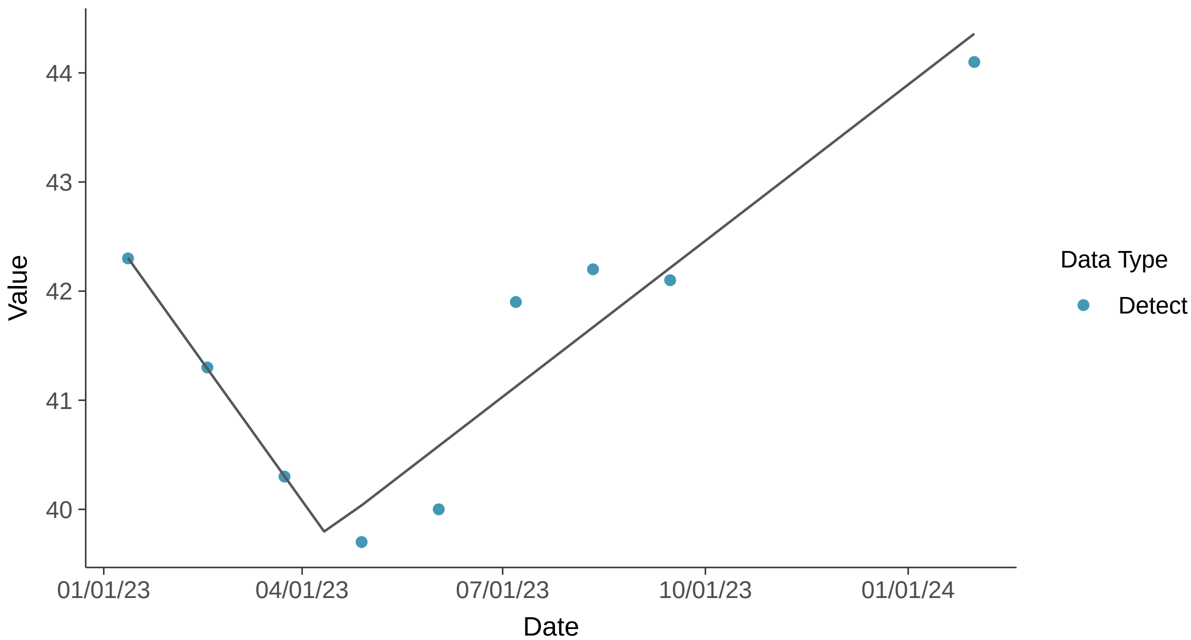

Lognormal Q-Q plot
Magnesium, MW-14 (mg/L)
log(Value)
3.775
3.750
3.725
3.700
3.675
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Magnesium, MW-14 (mg/L)
Value
44
43
42
41
40
39
40
41
42
43
44
45
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Magnesium, MW-14 (mg/L)
log(Value)
3.775
3.750
3.725
3.700
01/01/23
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

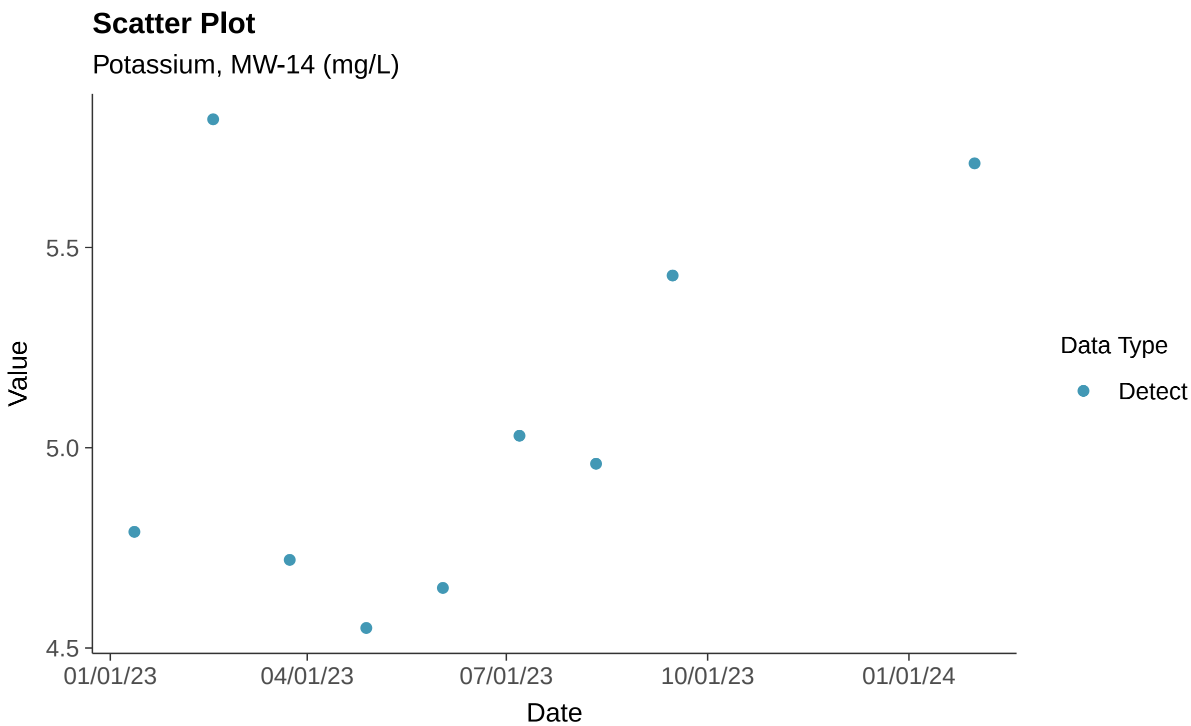
Trend Regression: Piecewise Linear-Linear

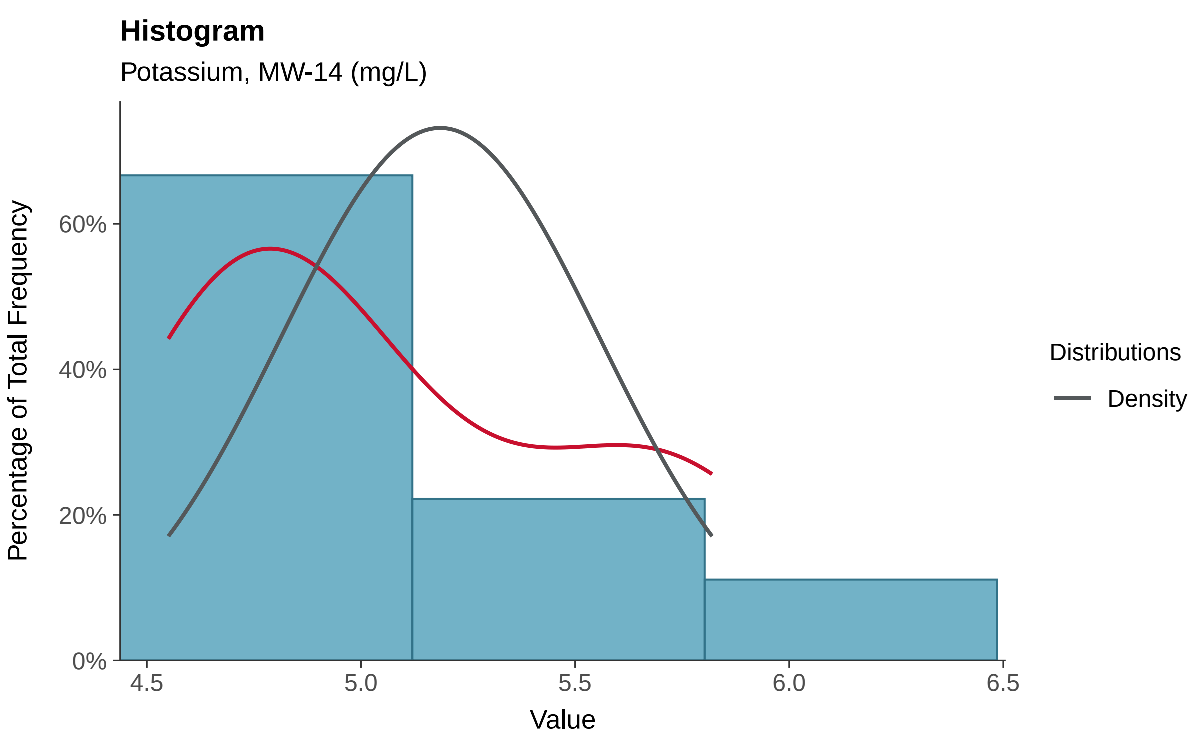
Magnesium, MW-14 (mg/L)



Other: Potassium, MW-14

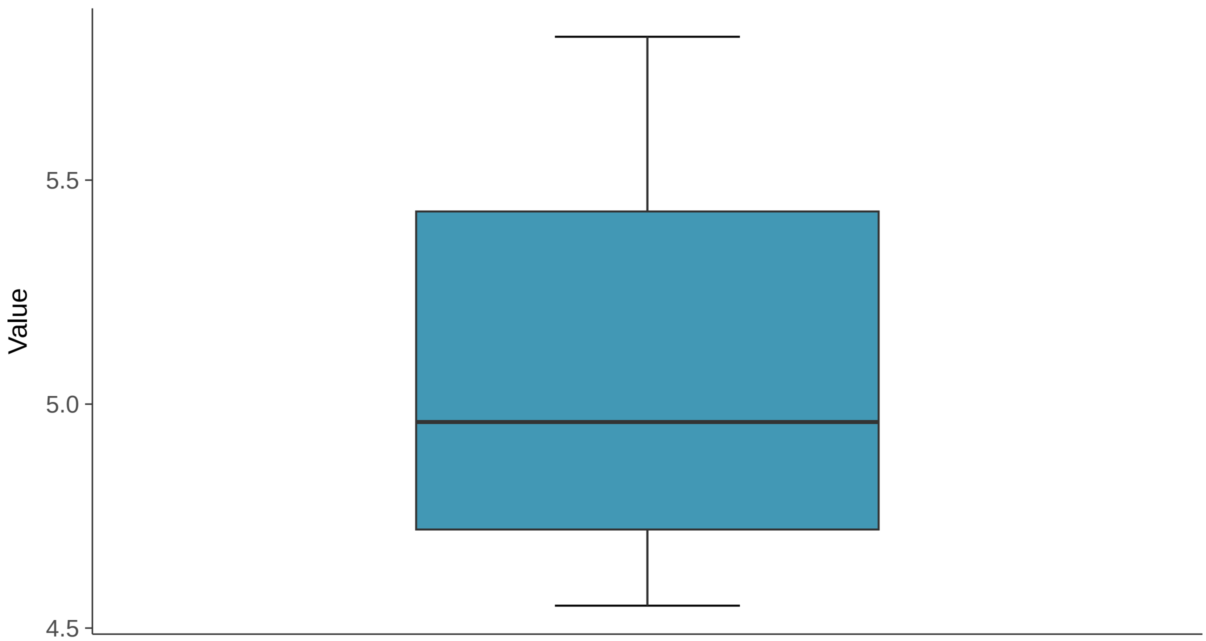
ID: 14_4_34





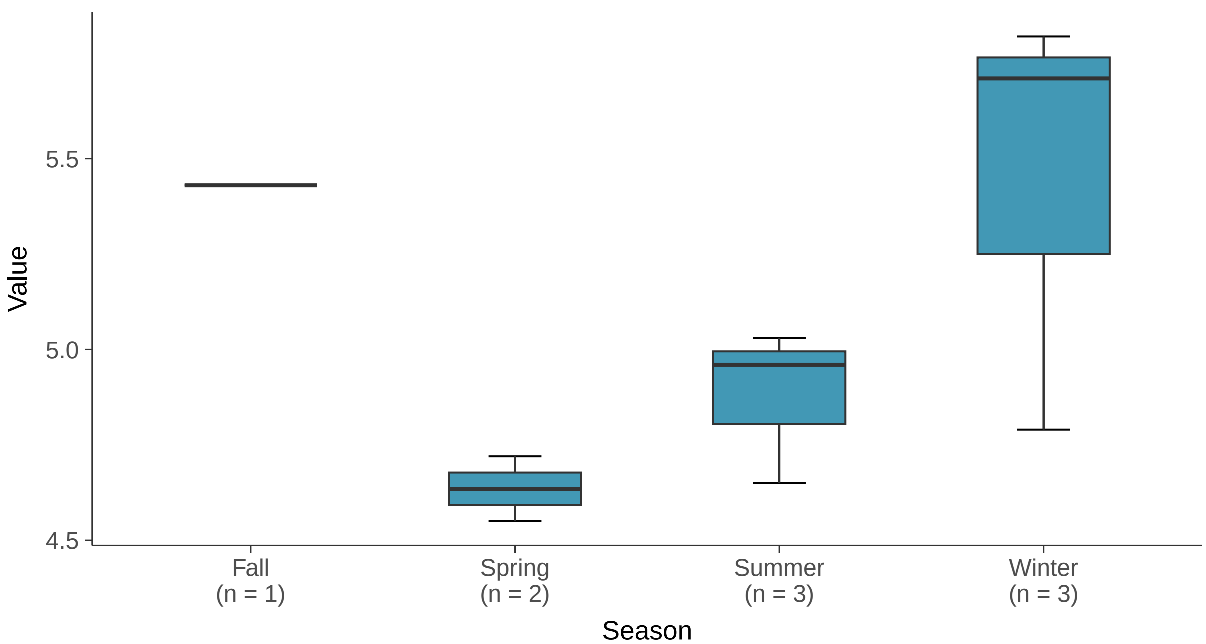
Boxplot

Potassium, MW-14 (mg/L)



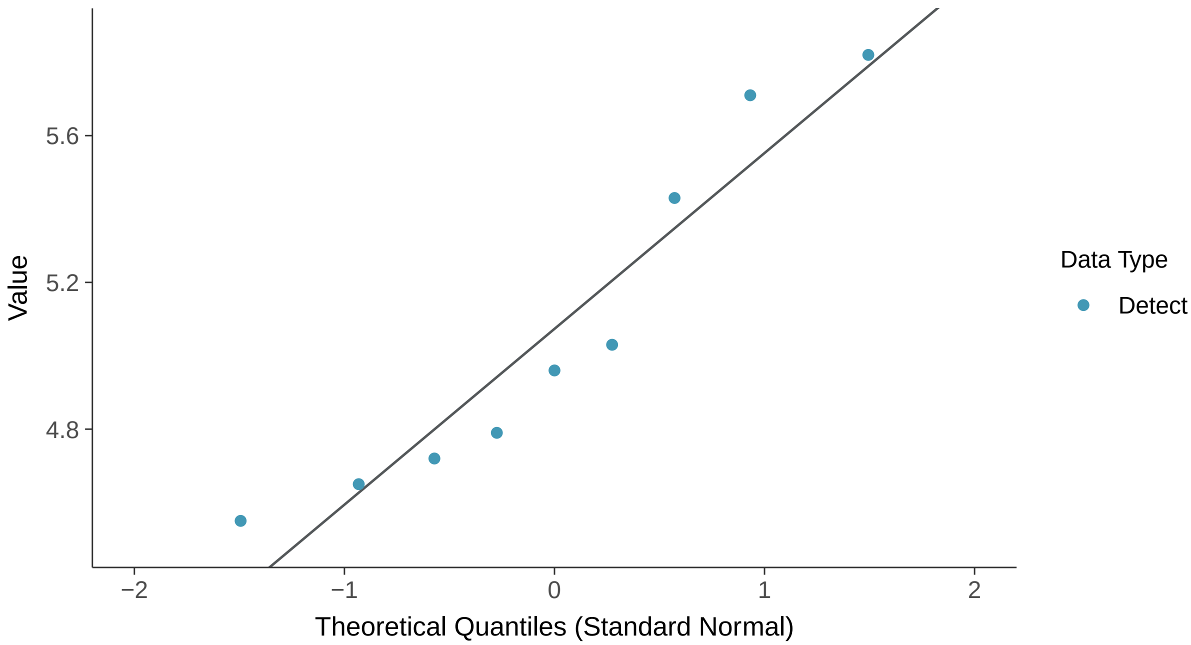
Boxplot by Season

Potassium, MW-14 (mg/L)



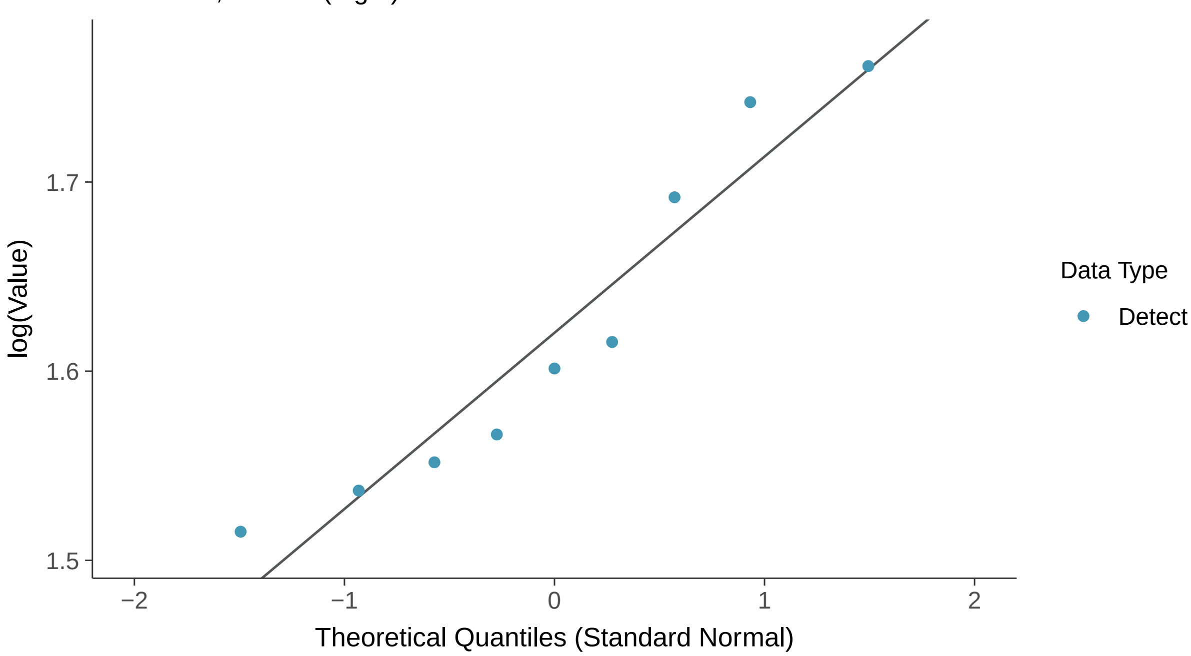
Normal Q-Q plot

Potassium, MW-14 (mg/L)



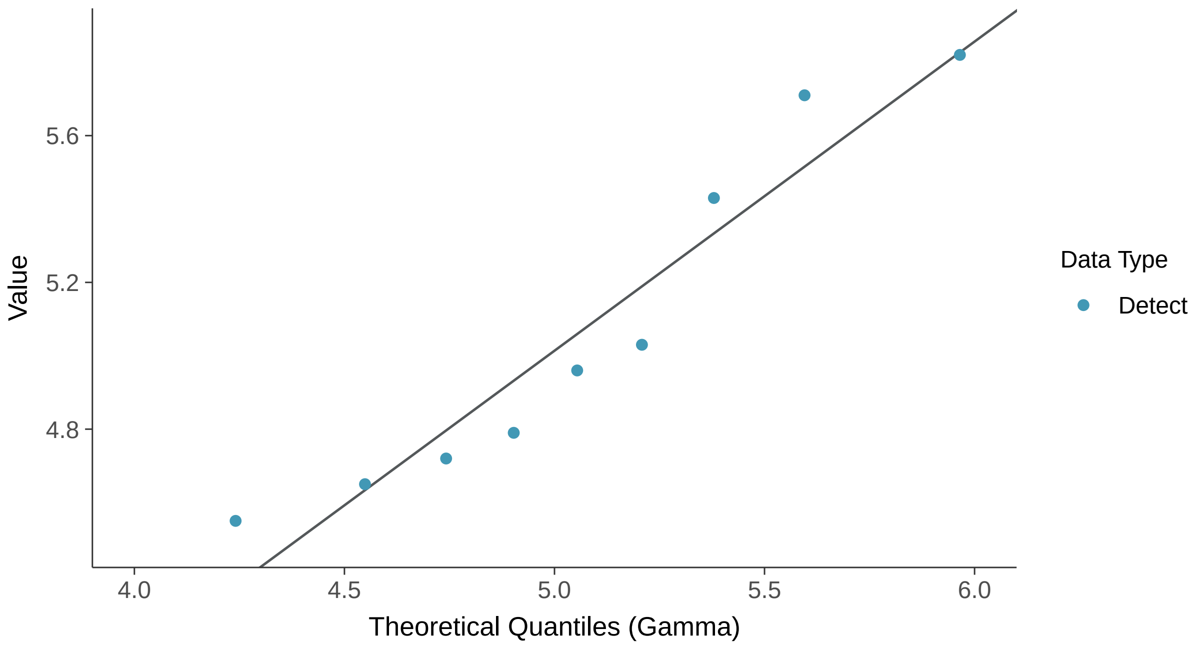
Lognormal Q-Q plot

Potassium, MW-14 (mg/L)



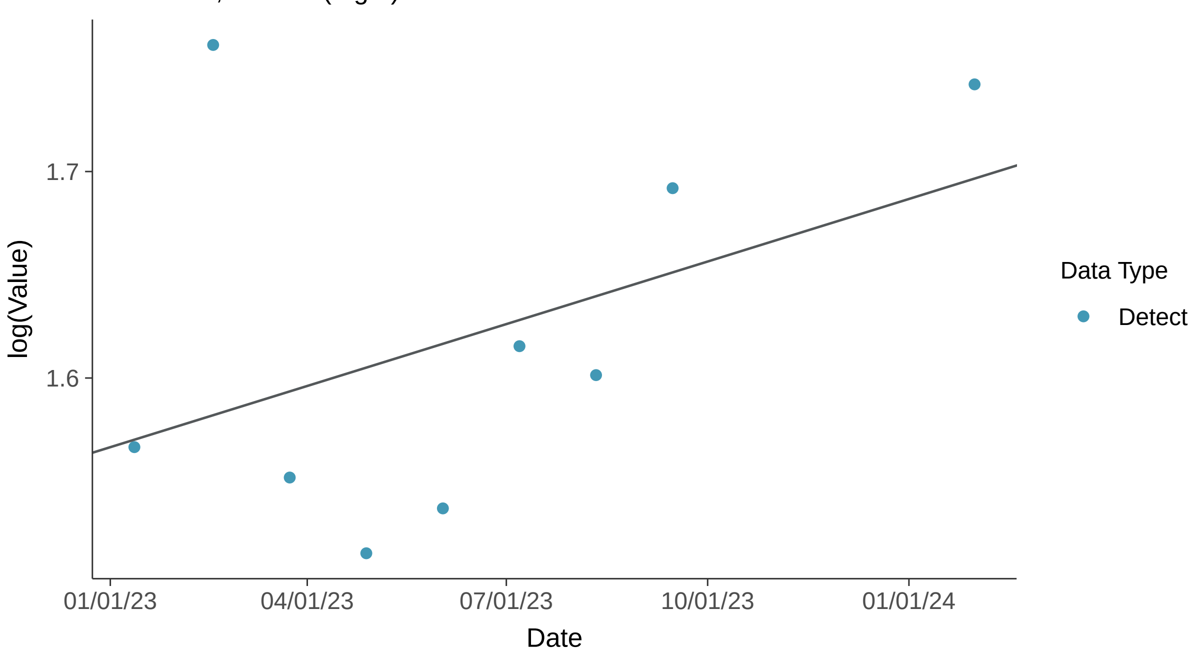
Gamma Q-Q plot

Potassium, MW-14 (mg/L)



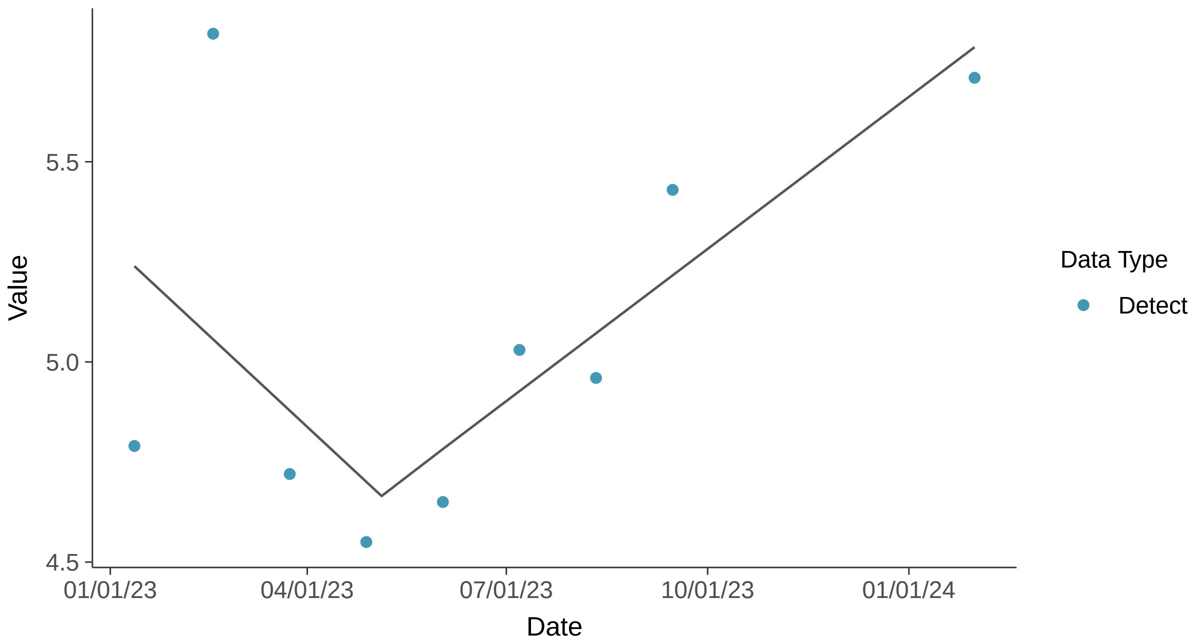
Trend Regression: Lognormal MLE

Potassium, MW-14 (mg/L)



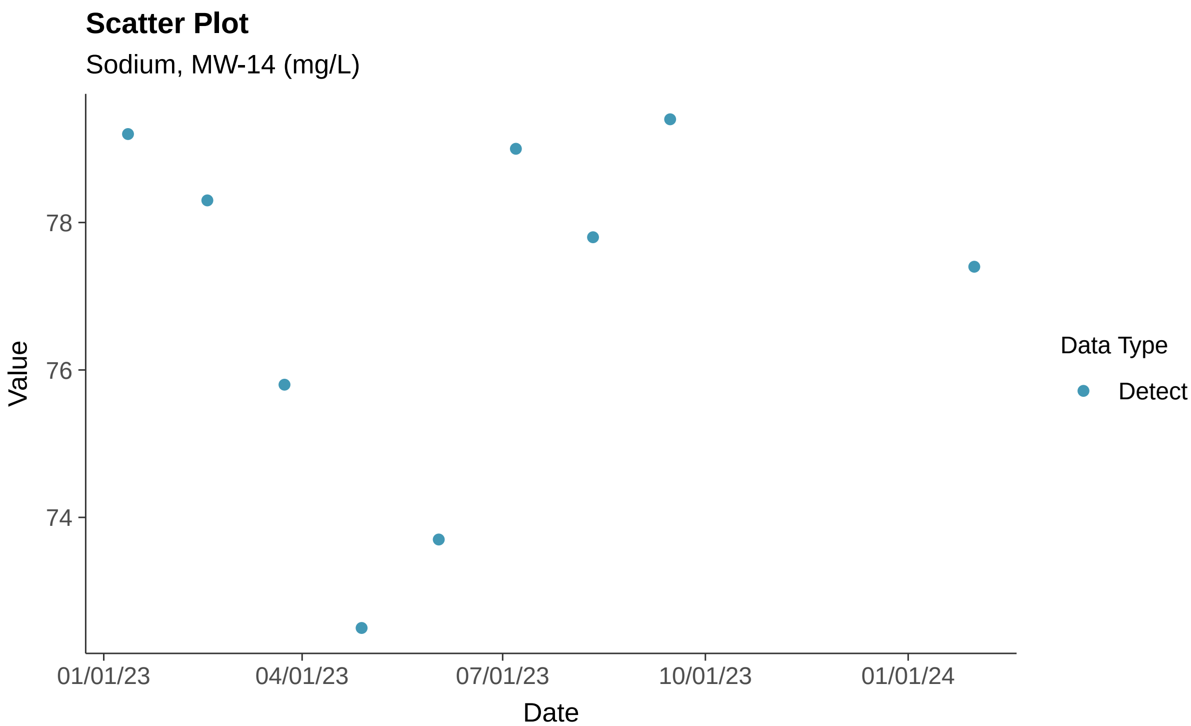
Trend Regression: Piecewise Linear-Linear

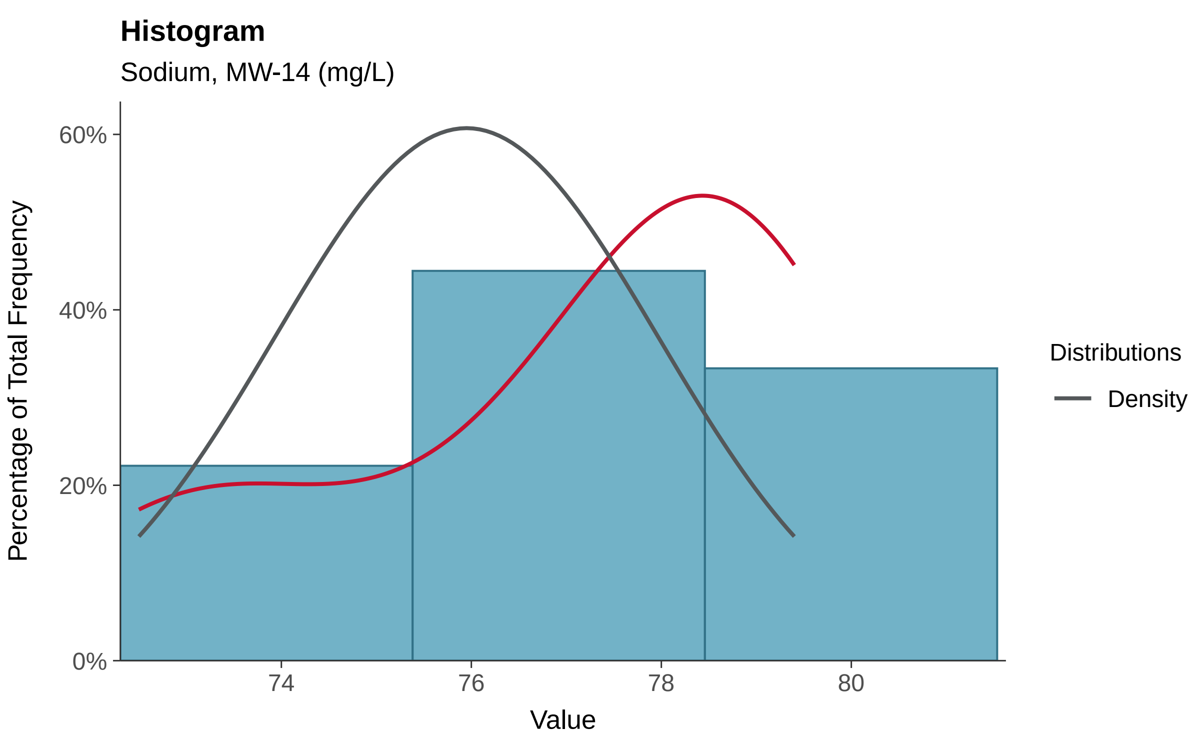
Potassium, MW-14 (mg/L)



Other: Sodium, MW-14

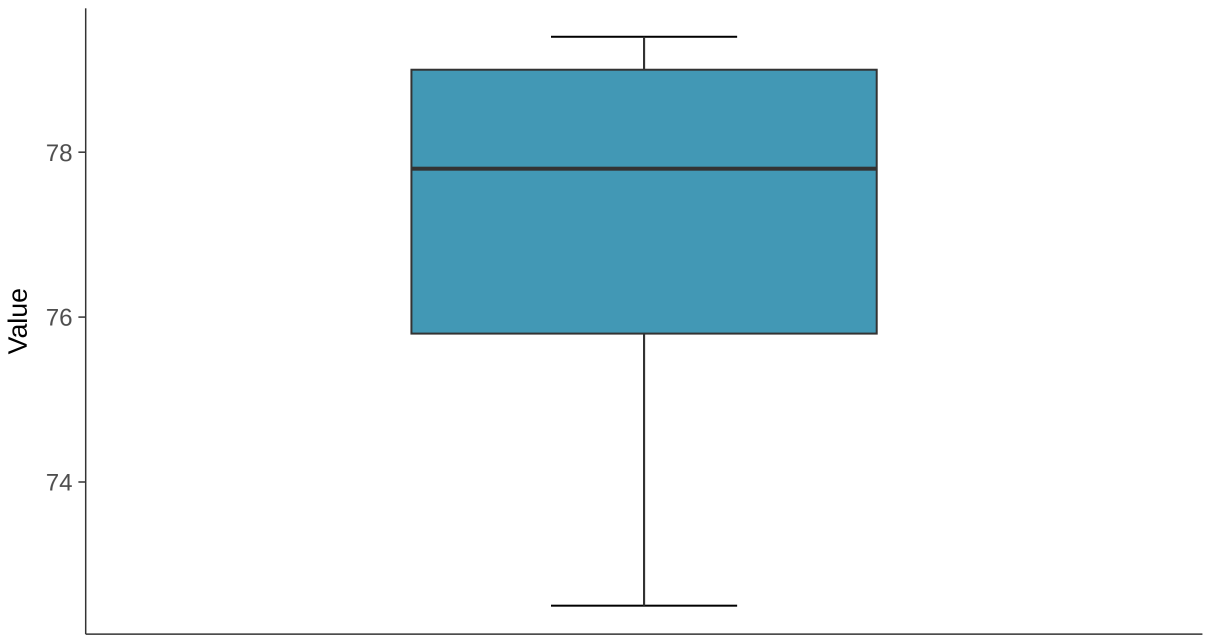
ID: 14_4_35





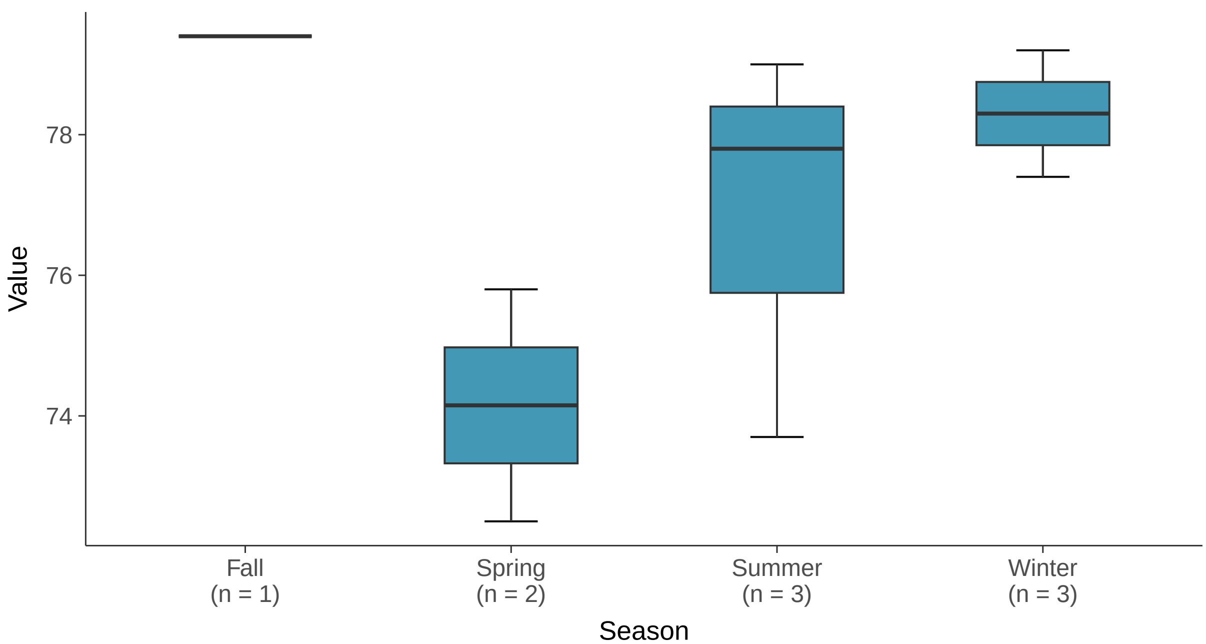
Boxplot

Sodium, MW-14 (mg/L)



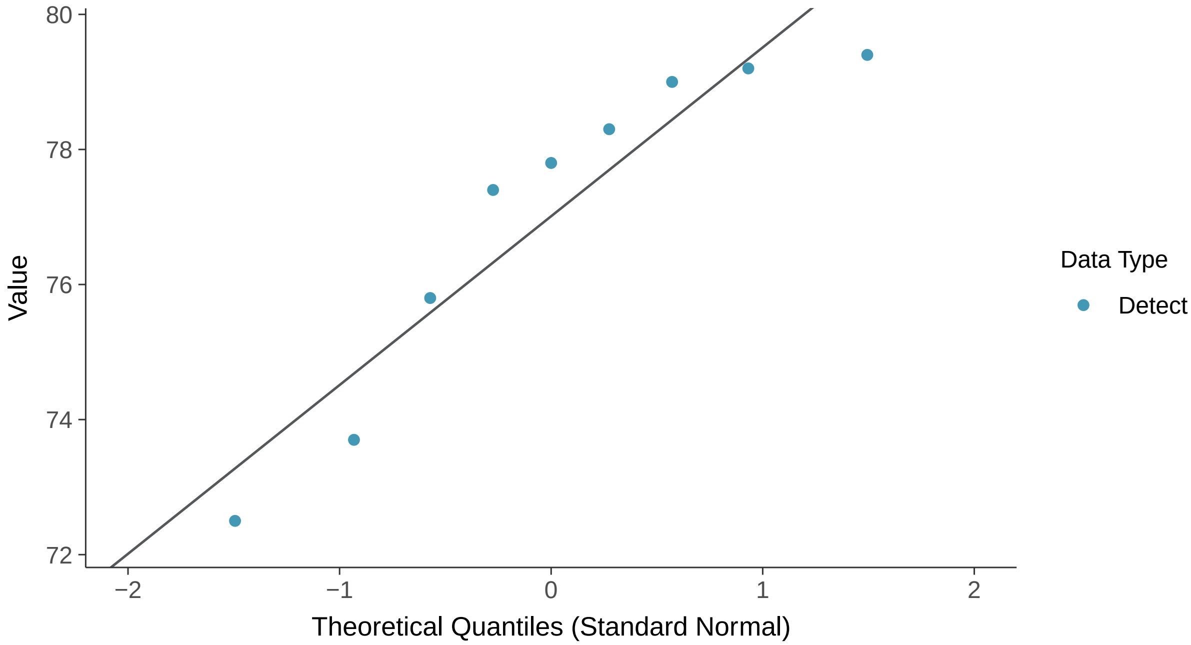
Boxplot by Season

Sodium, MW-14 (mg/L)



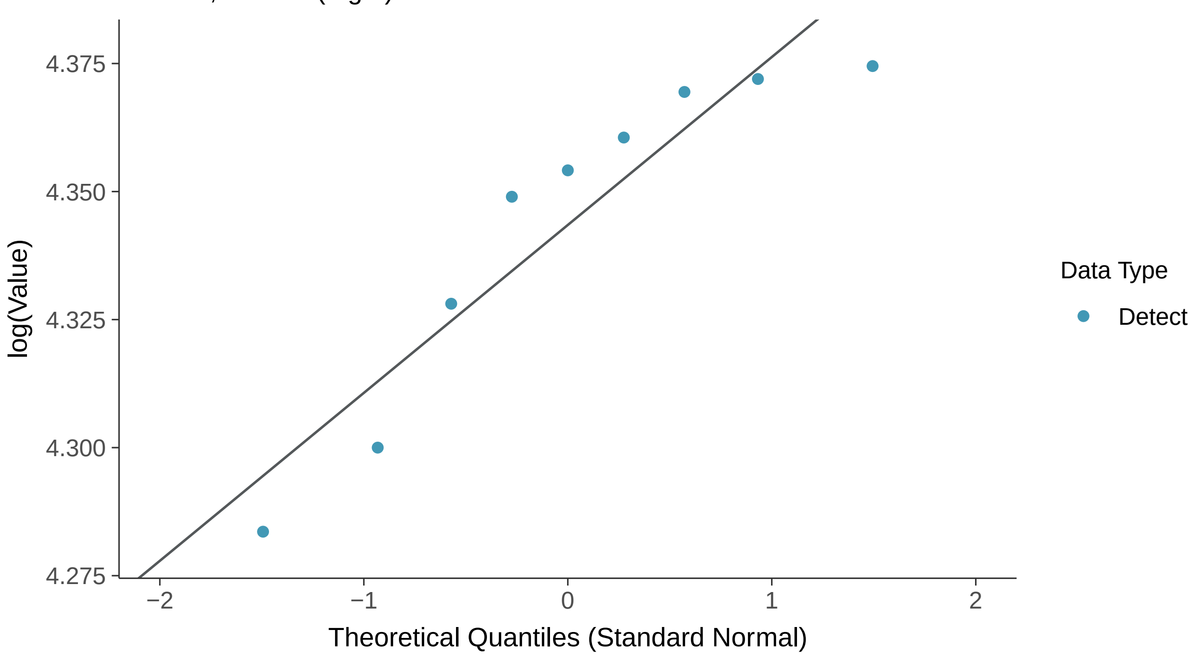
Normal Q-Q plot

Sodium, MW-14 (mg/L)



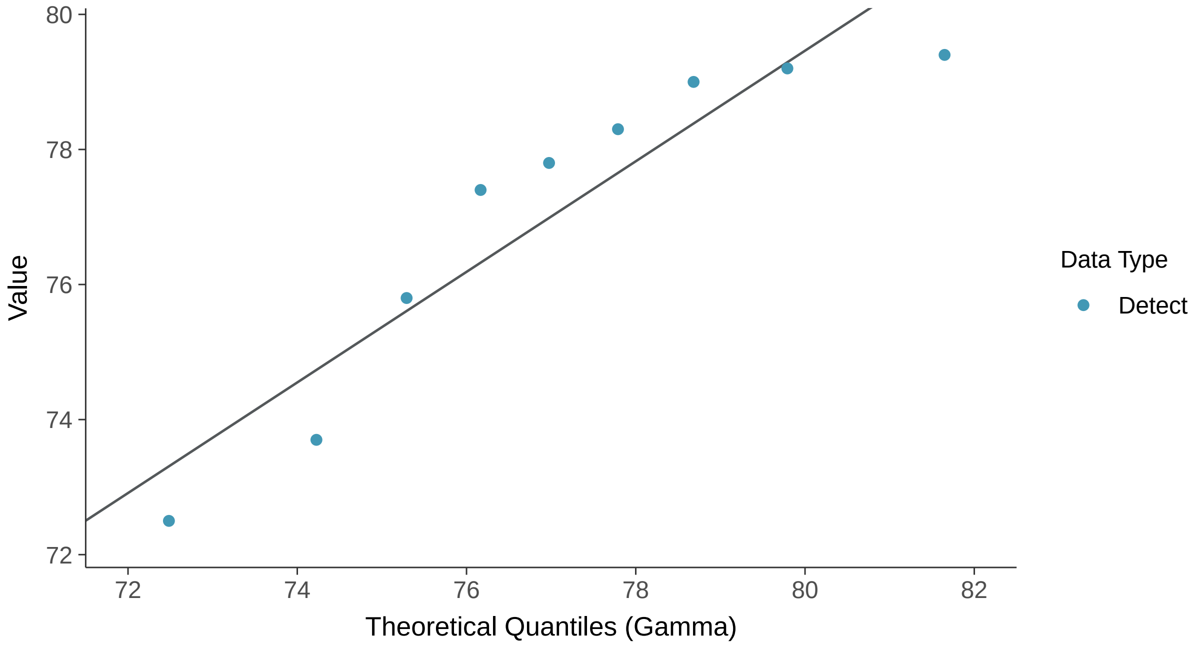
Lognormal Q-Q plot

Sodium, MW-14 (mg/L)



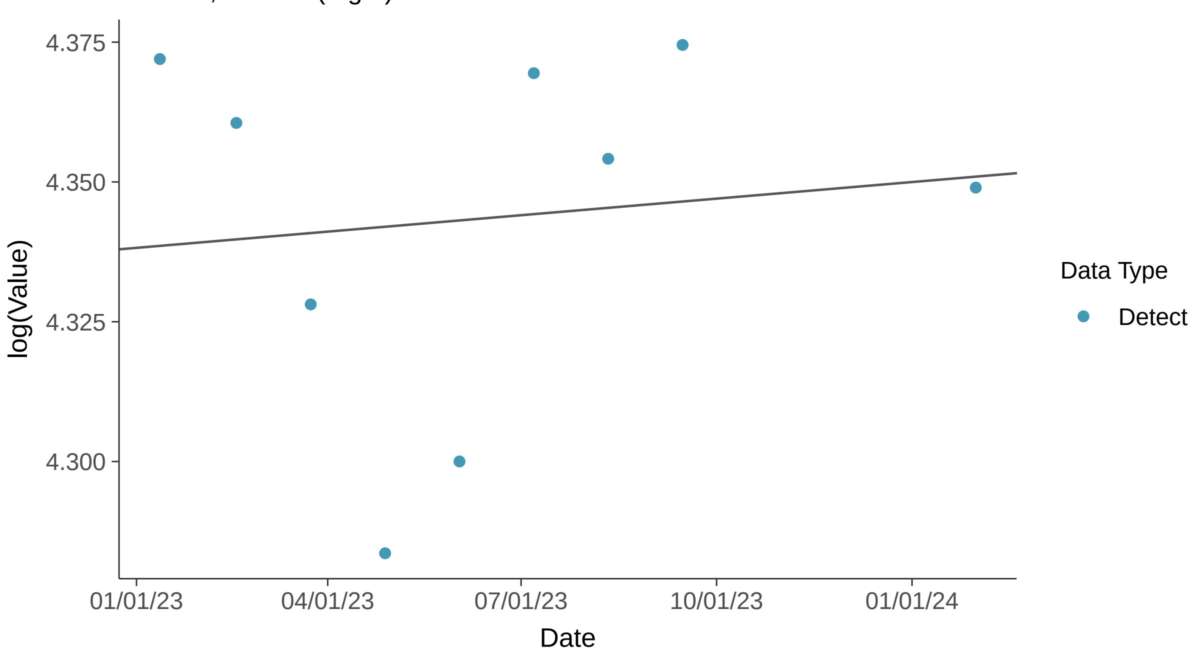
Gamma Q-Q plot

Sodium, MW-14 (mg/L)



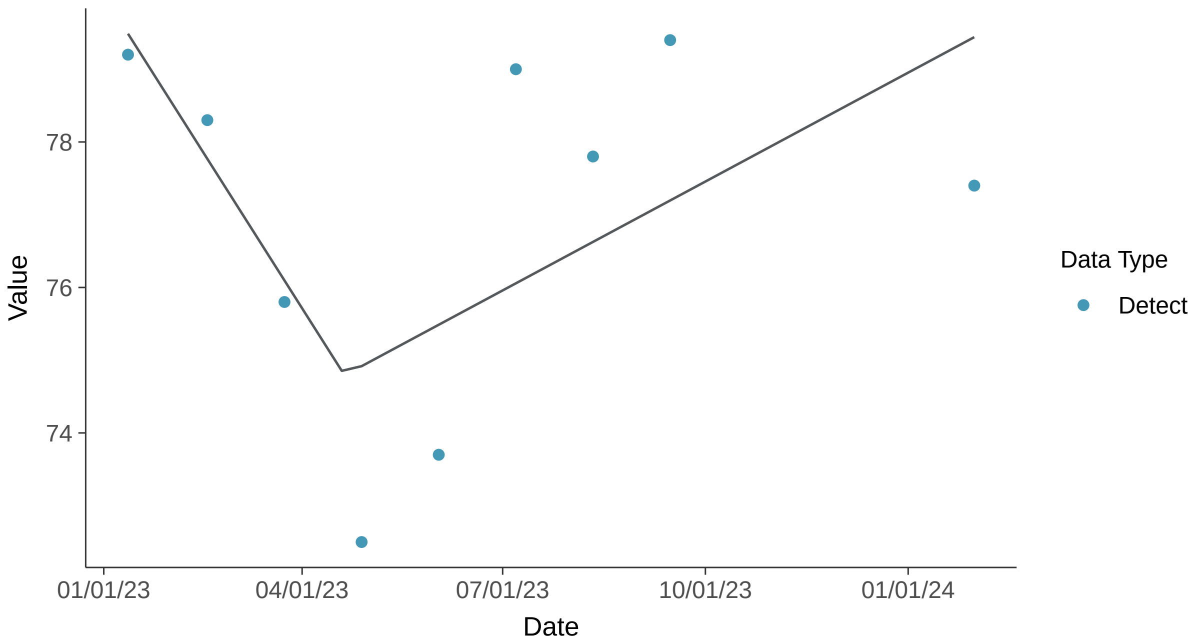
Trend Regression: Lognormal MLE

Sodium, MW-14 (mg/L)



Trend Regression: Piecewise Linear-Linear

Sodium, MW-14 (mg/L)

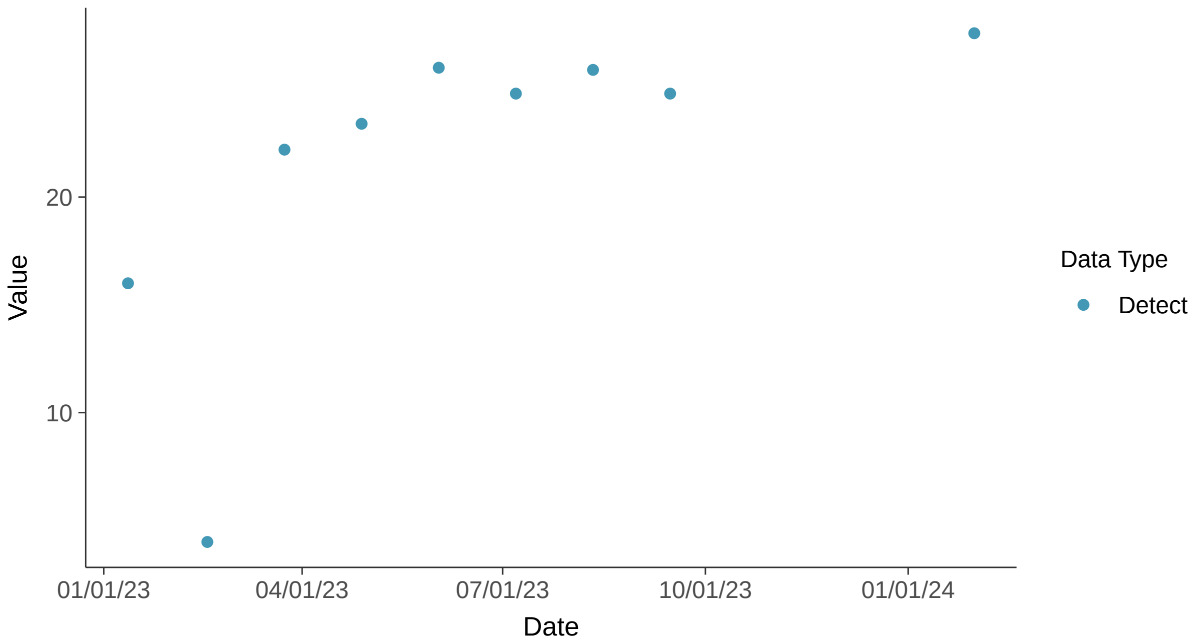


Other: Total Suspended Solids, MW-14

ID: 14_4_36

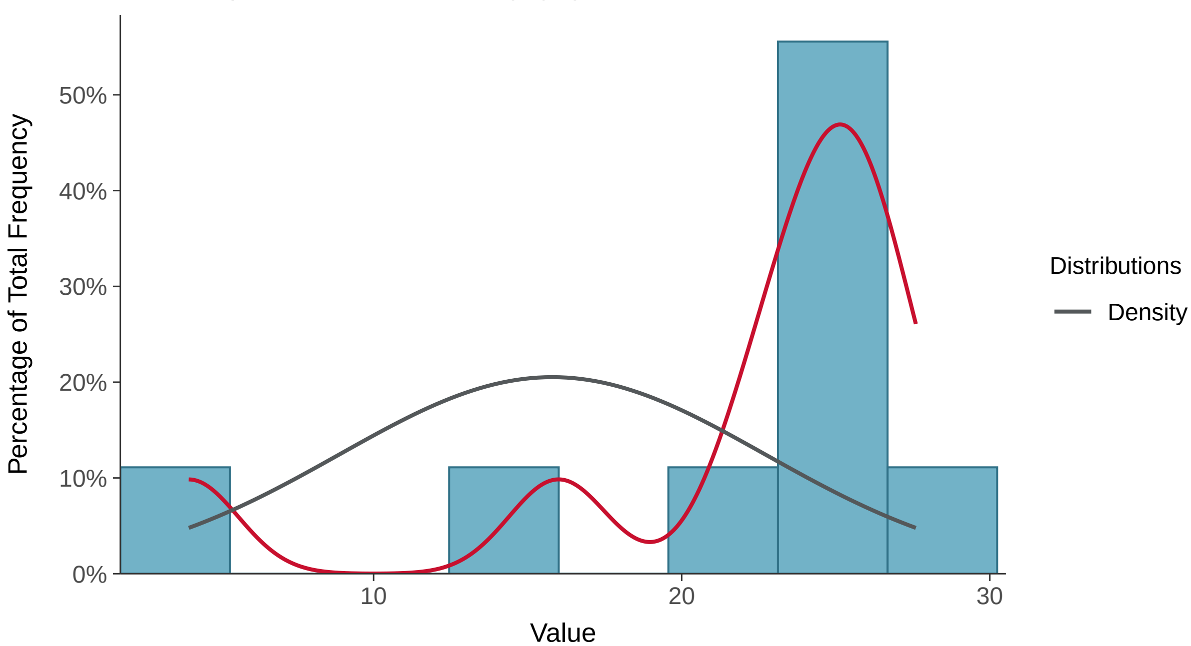
Scatter Plot

Total Suspended Solids, MW-14 (mg/L)



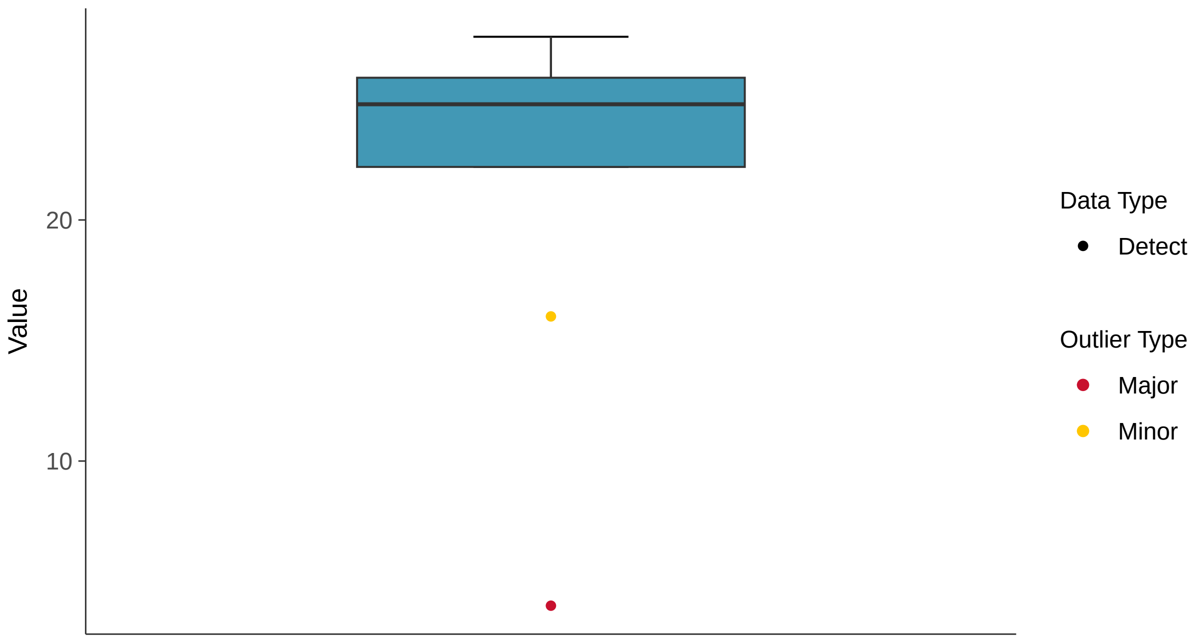
Histogram

Total Suspended Solids, MW-14 (mg/L)



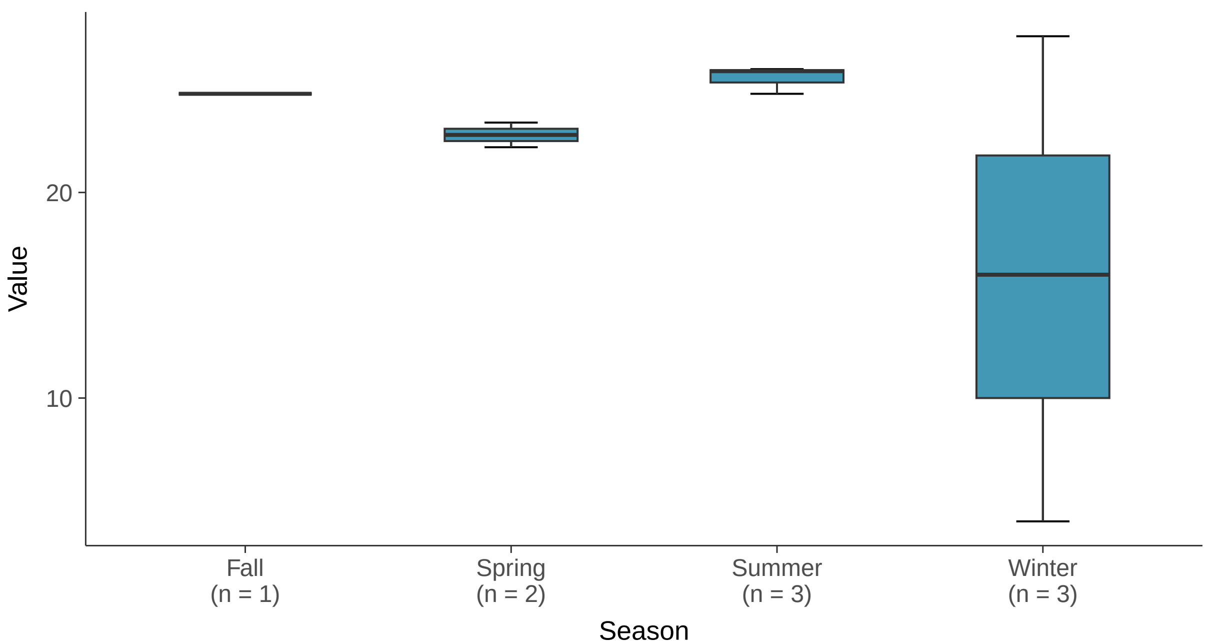
Boxplot

Total Suspended Solids, MW-14 (mg/L)



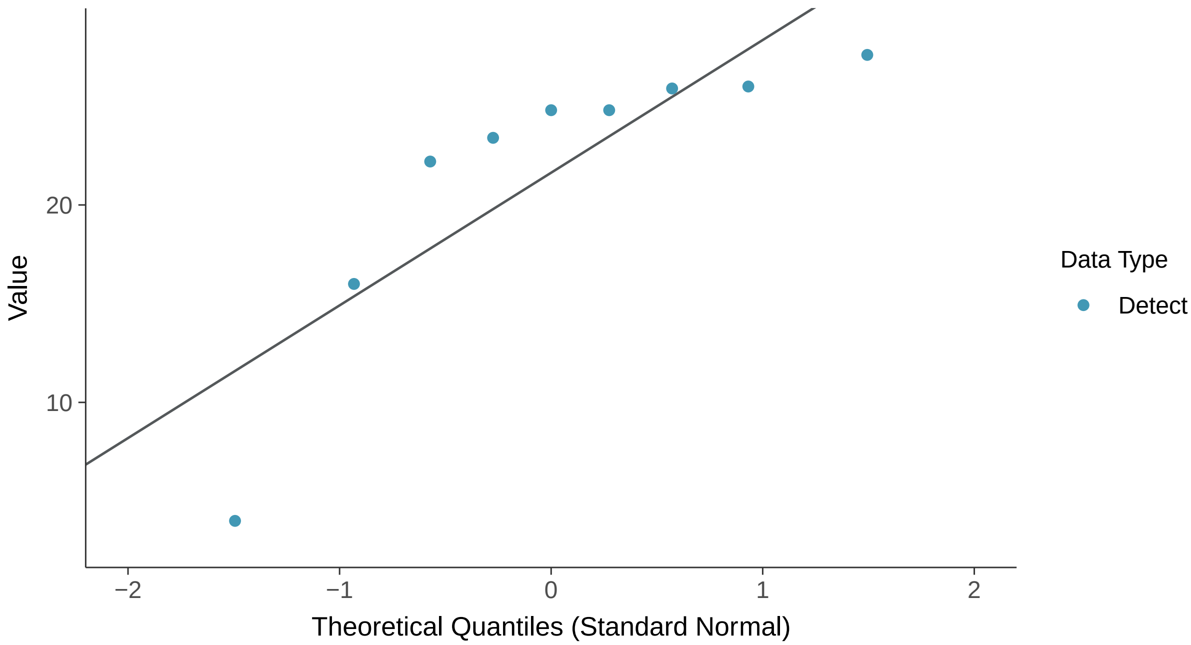
Boxplot by Season

Total Suspended Solids, MW-14 (mg/L)



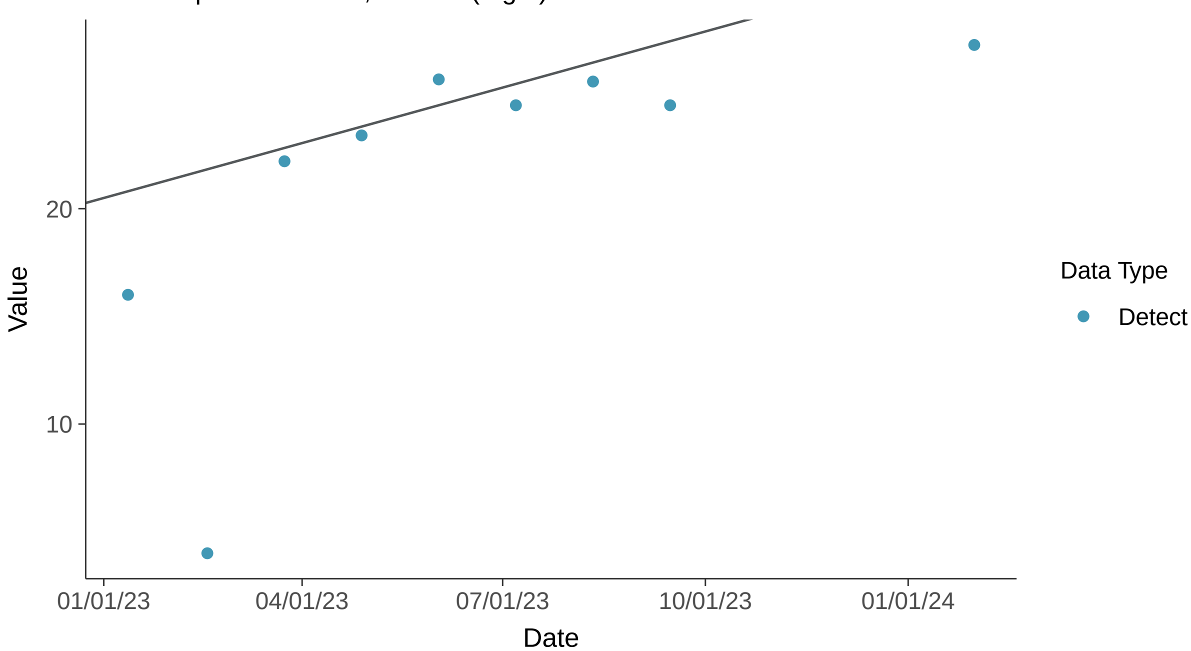
Normal Q-Q plot

Total Suspended Solids, MW-14 (mg/L)



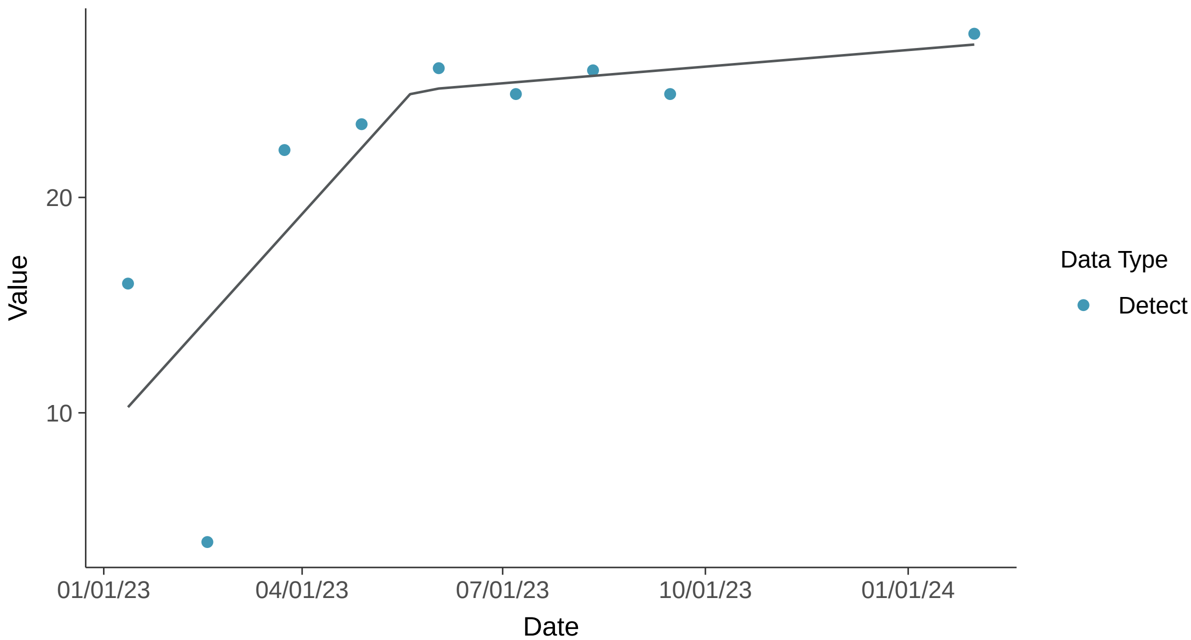
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Total Suspended Solids, MW-14 (mg/L)



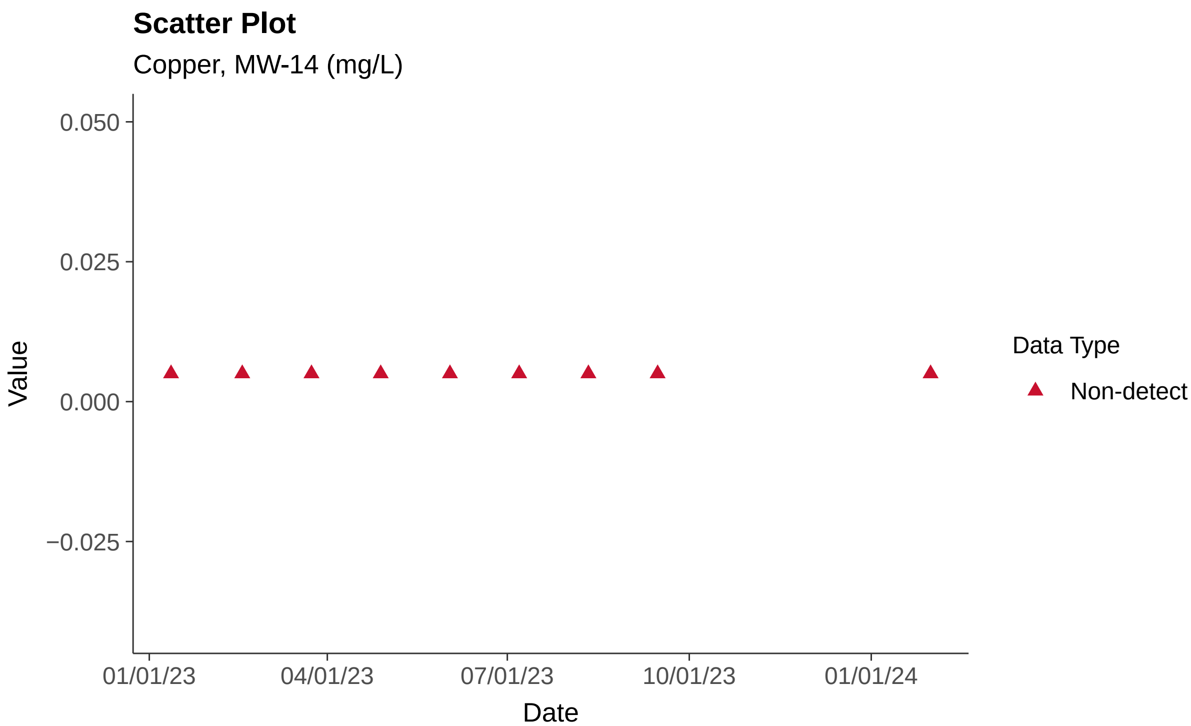
Trend Regression: Piecewise Linear-Linear

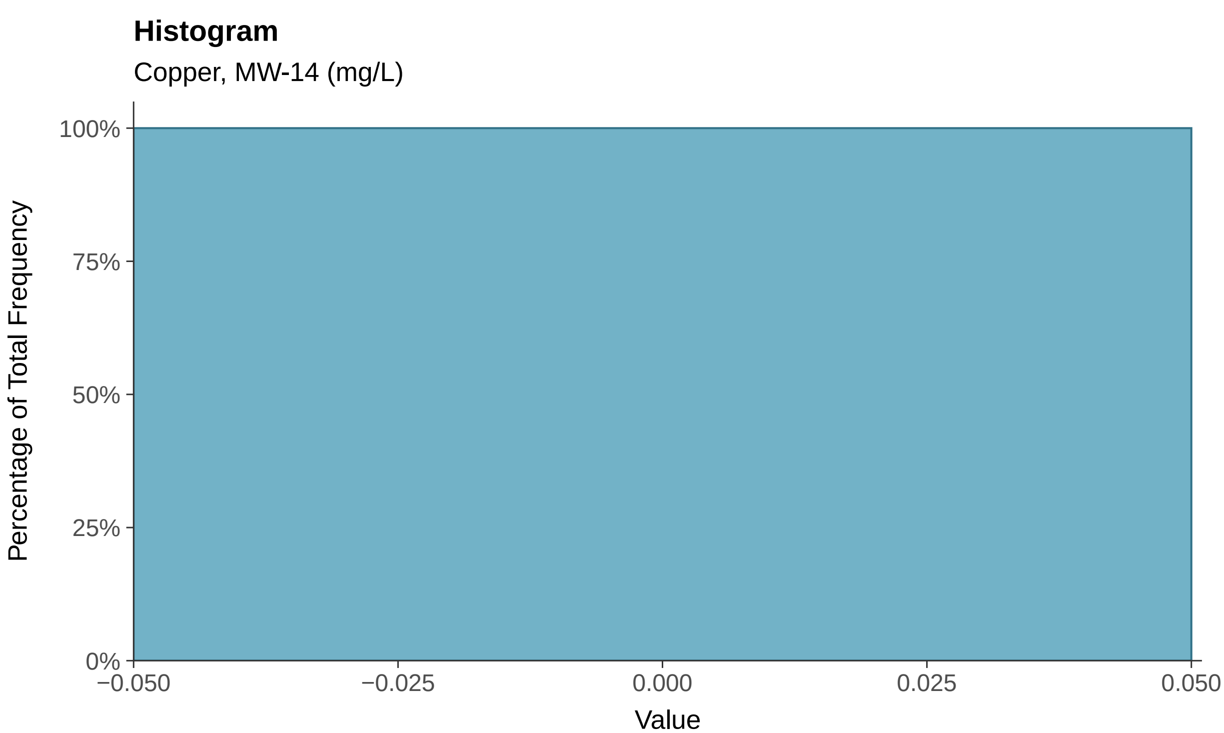
Total Suspended Solids, MW-14 (mg/L)



Part 115: Copper, MW-14

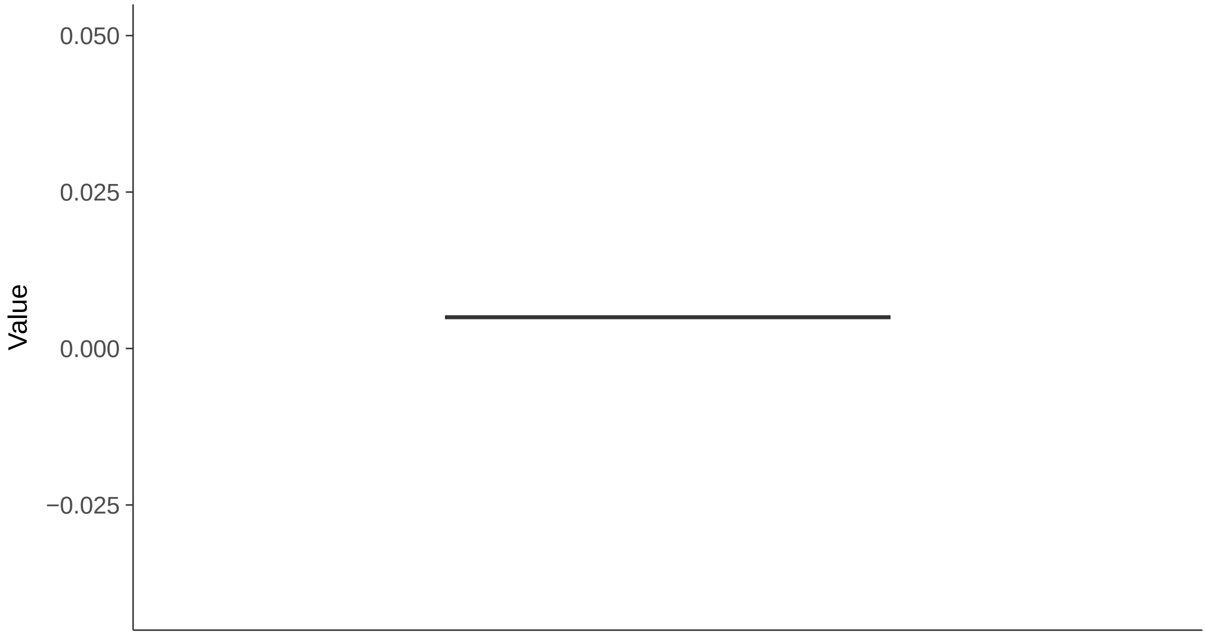
ID: 14_5_37





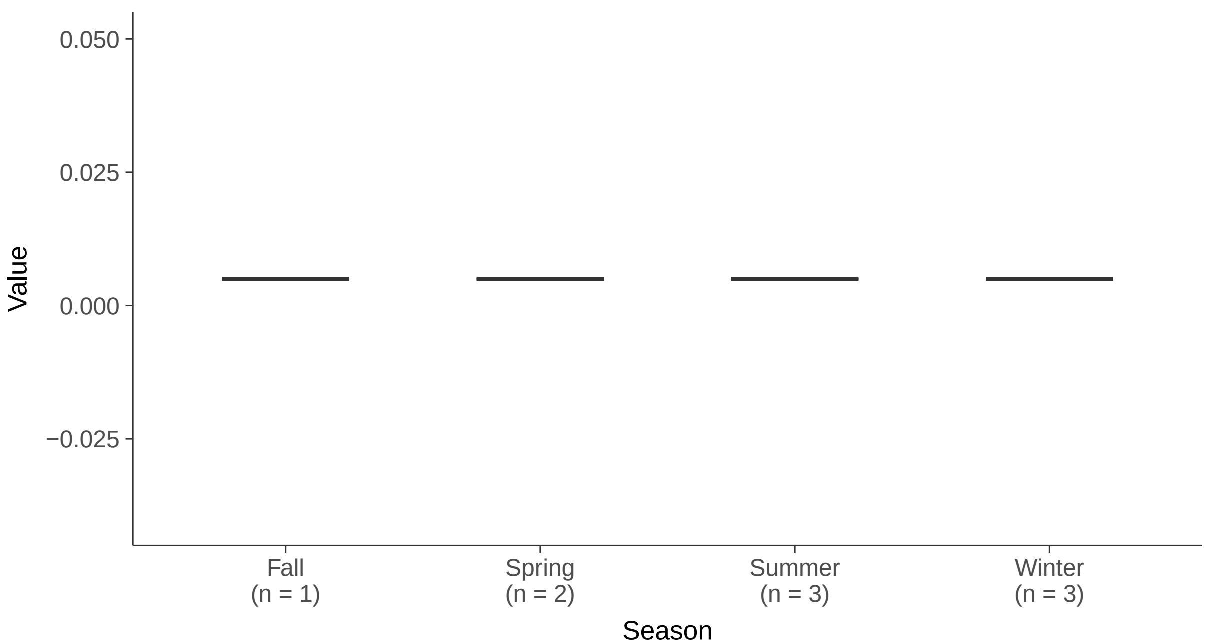
Boxplot

Copper, MW-14 (mg/L)



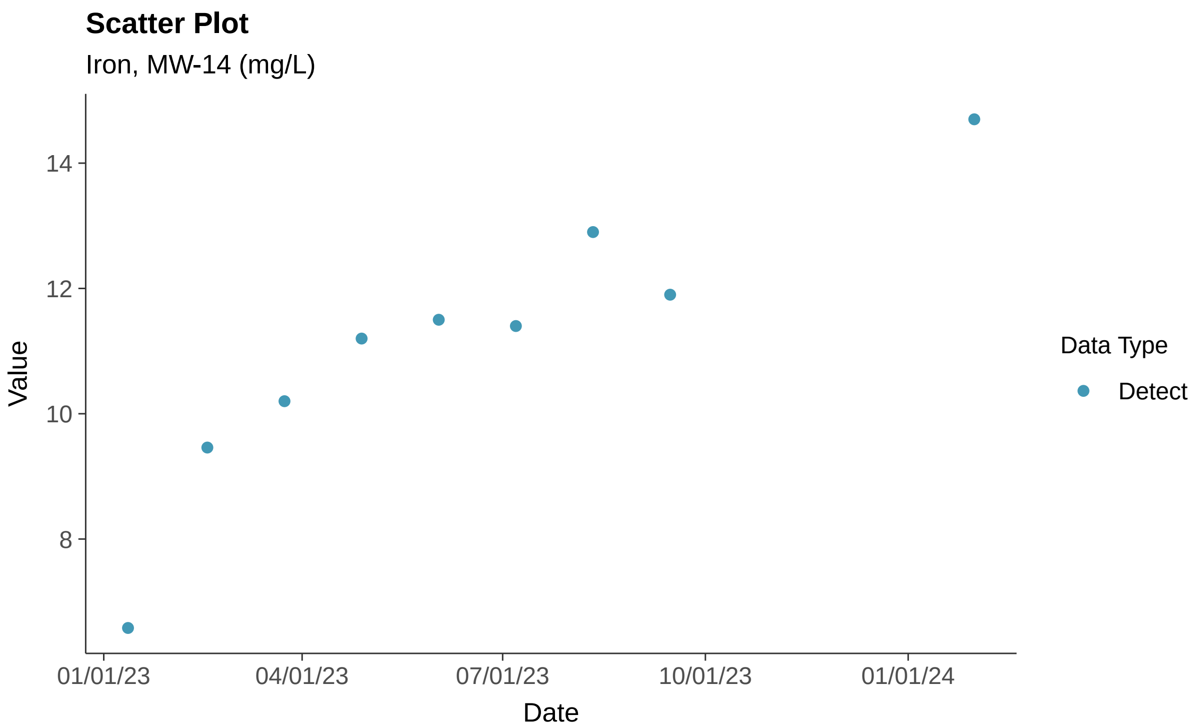
Boxplot by Season

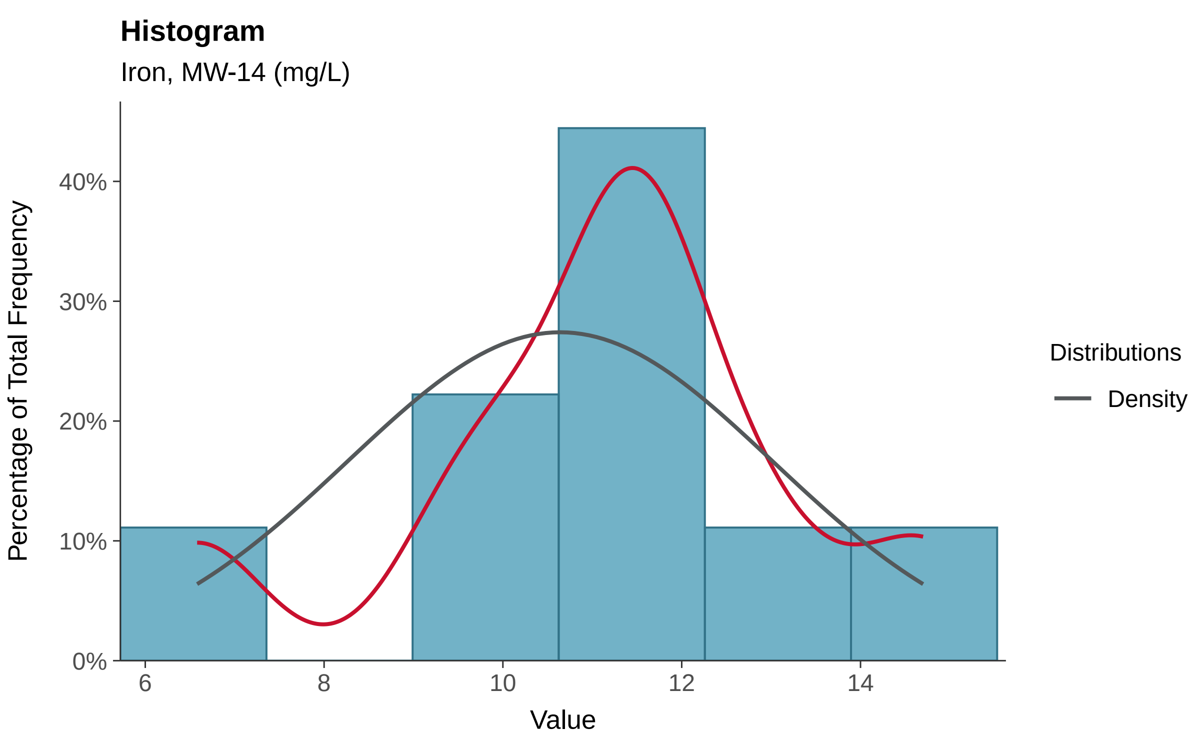
Copper, MW-14 (mg/L)



Part 115: Iron, MW-14

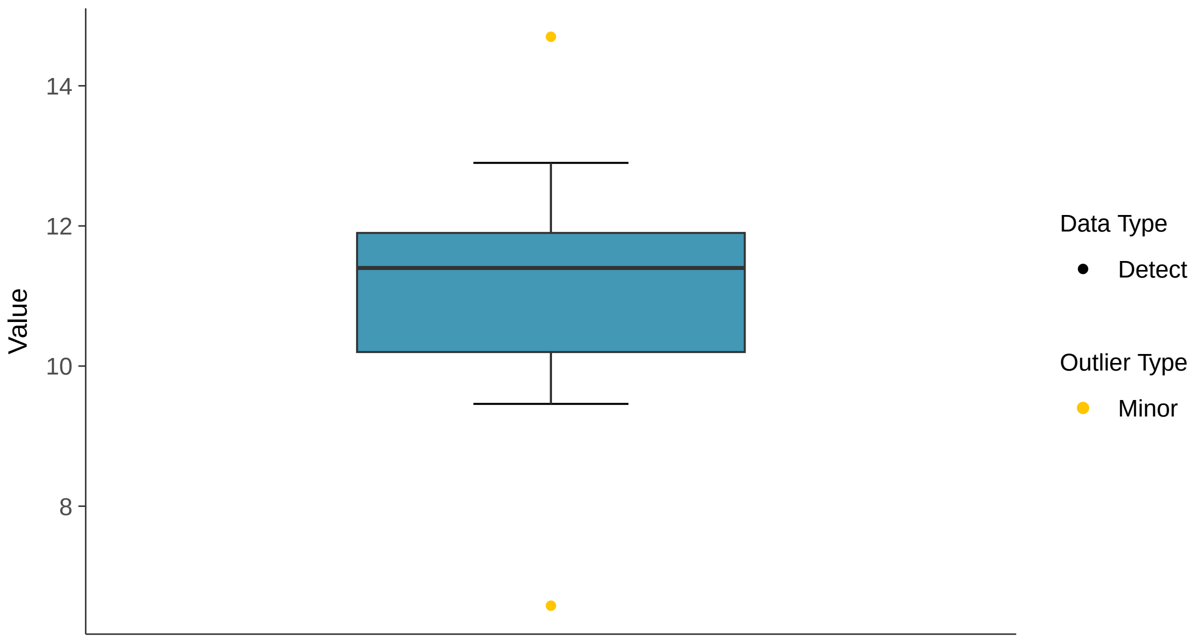
ID: 14_5_38





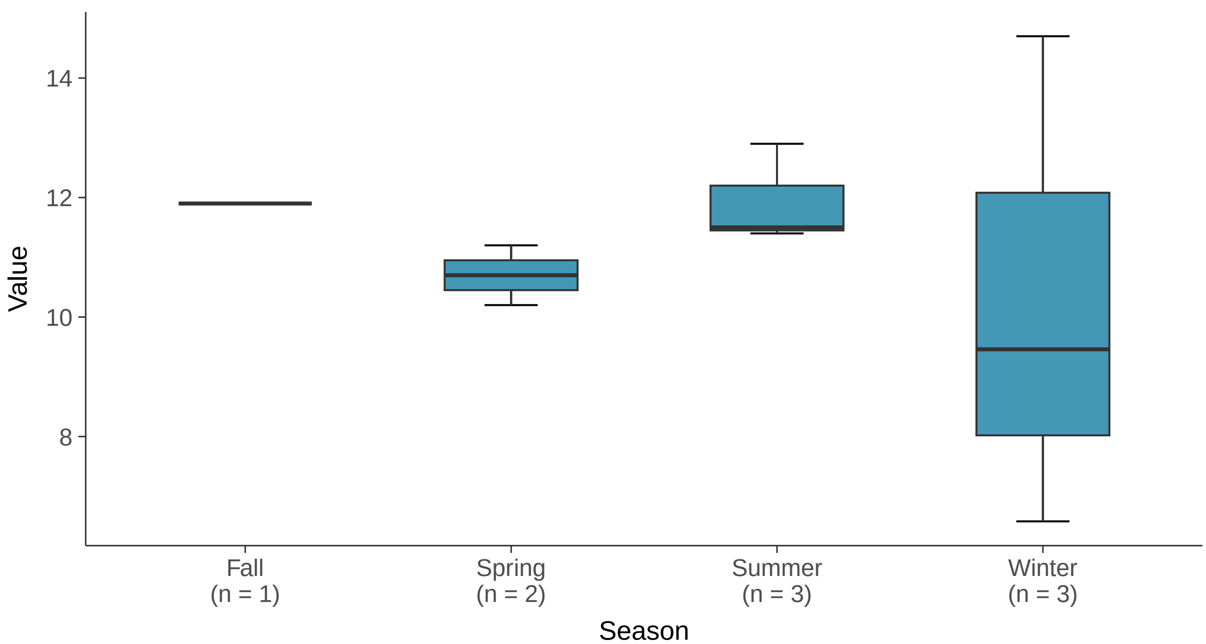
Boxplot

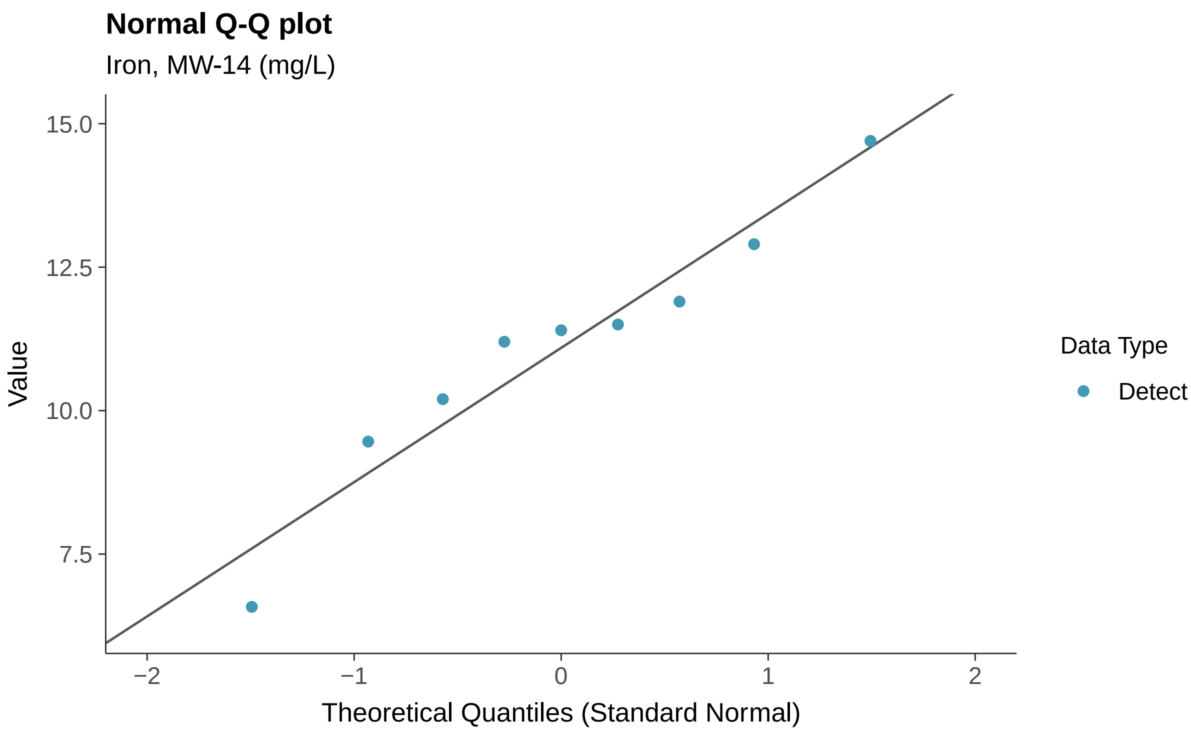
Iron, MW-14 (mg/L)

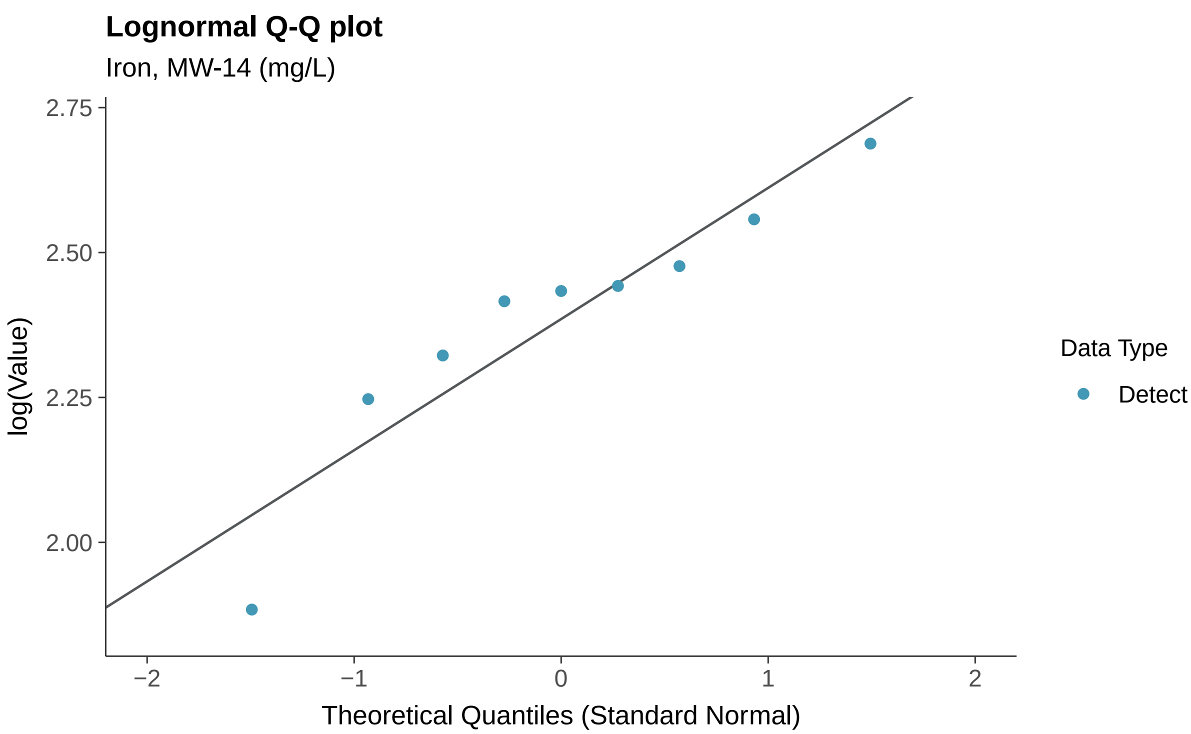


Boxplot by Season

Iron, MW-14 (mg/L)

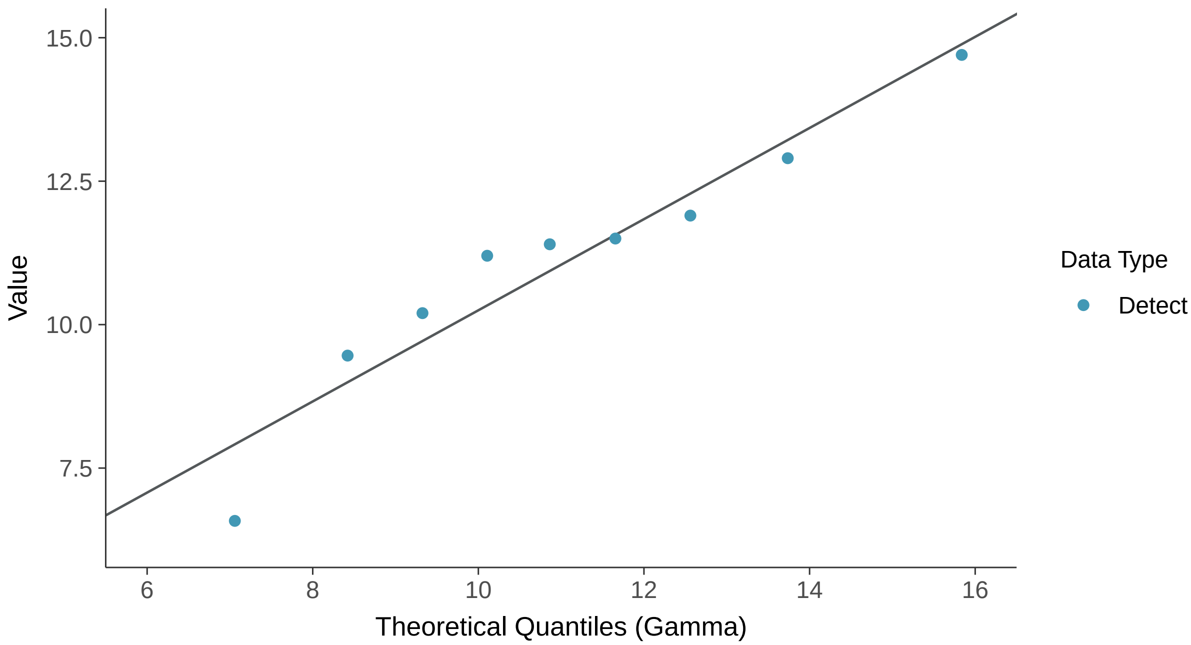



Normal Q-Q plot
Iron, MW-14 (mg/L)
Value
15.0
12.5
10.0
7.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Iron, MW-14 (mg/L)
log(Value)
2.75
2.50
2.25
2.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

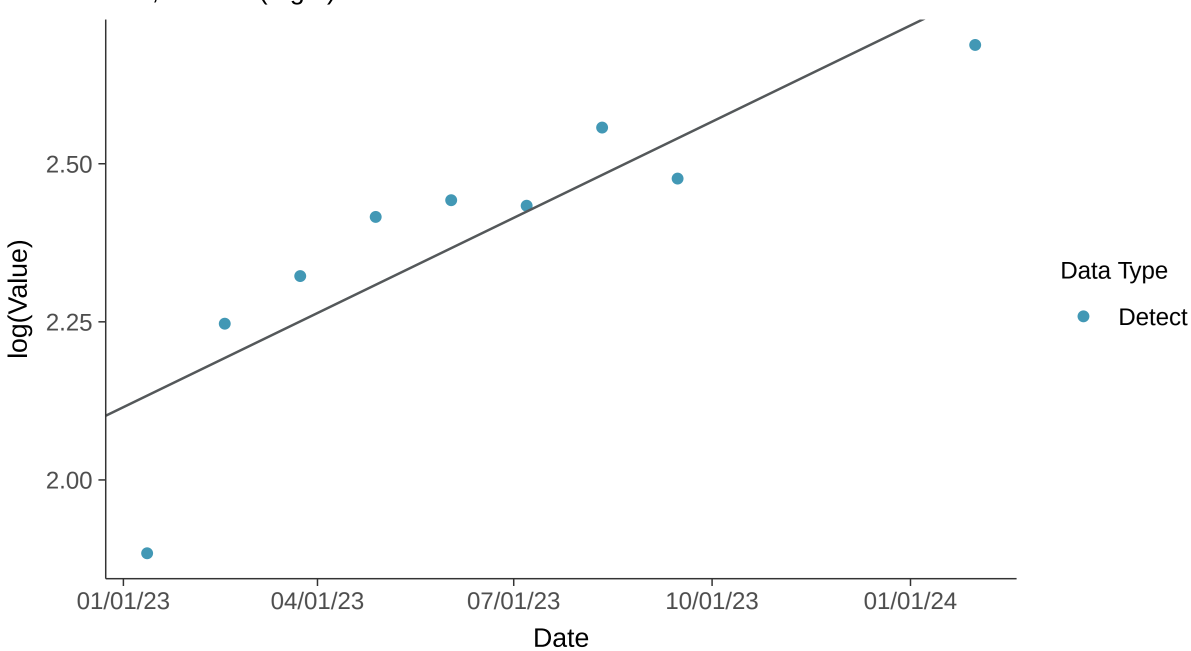
Gamma Q-Q plot

Iron, MW-14 (mg/L)



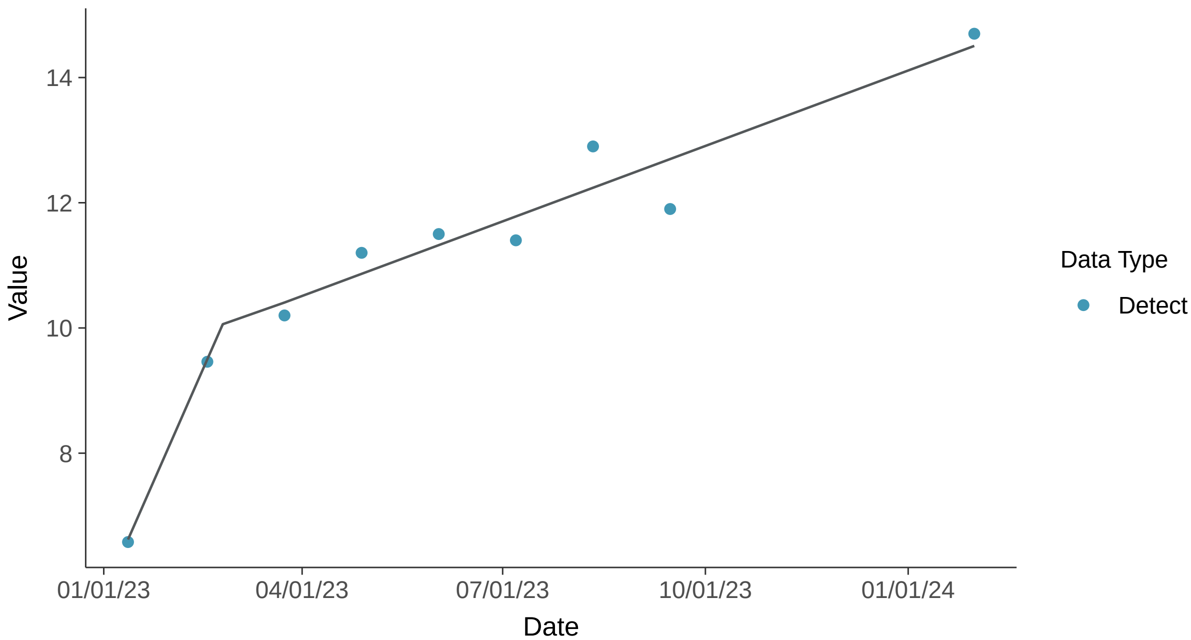
Trend Regression: Lognormal MLE

Iron, MW-14 (mg/L)



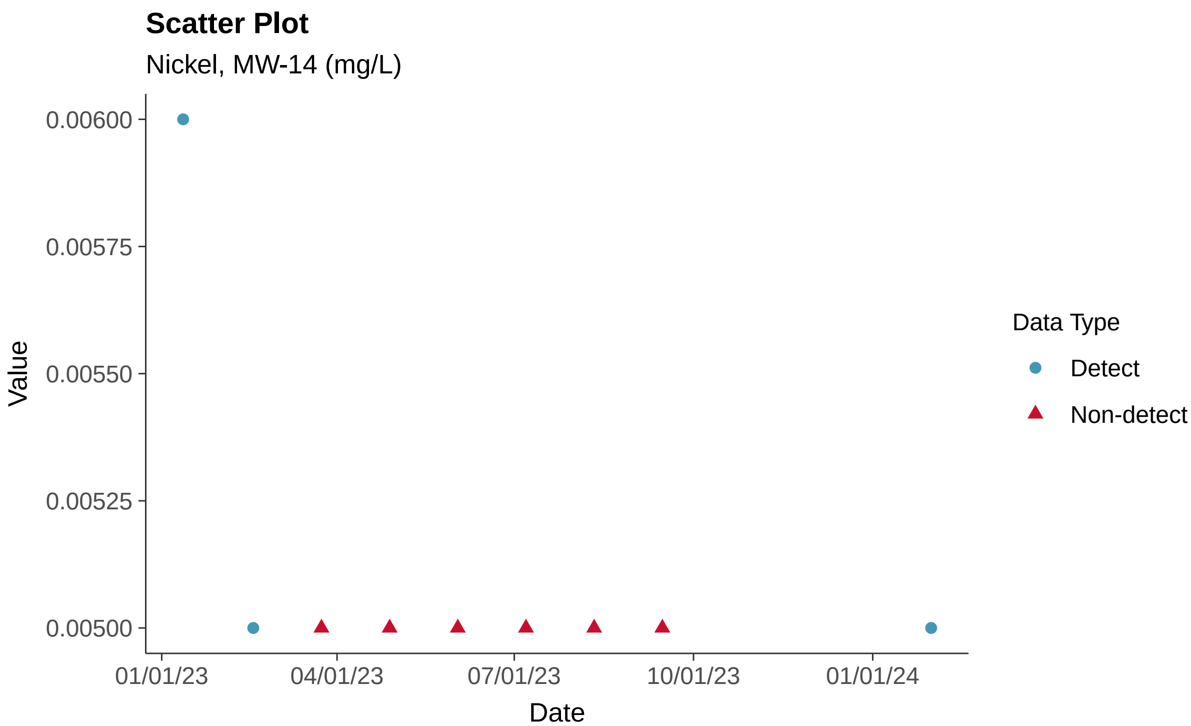
Trend Regression: Piecewise Linear-Linear

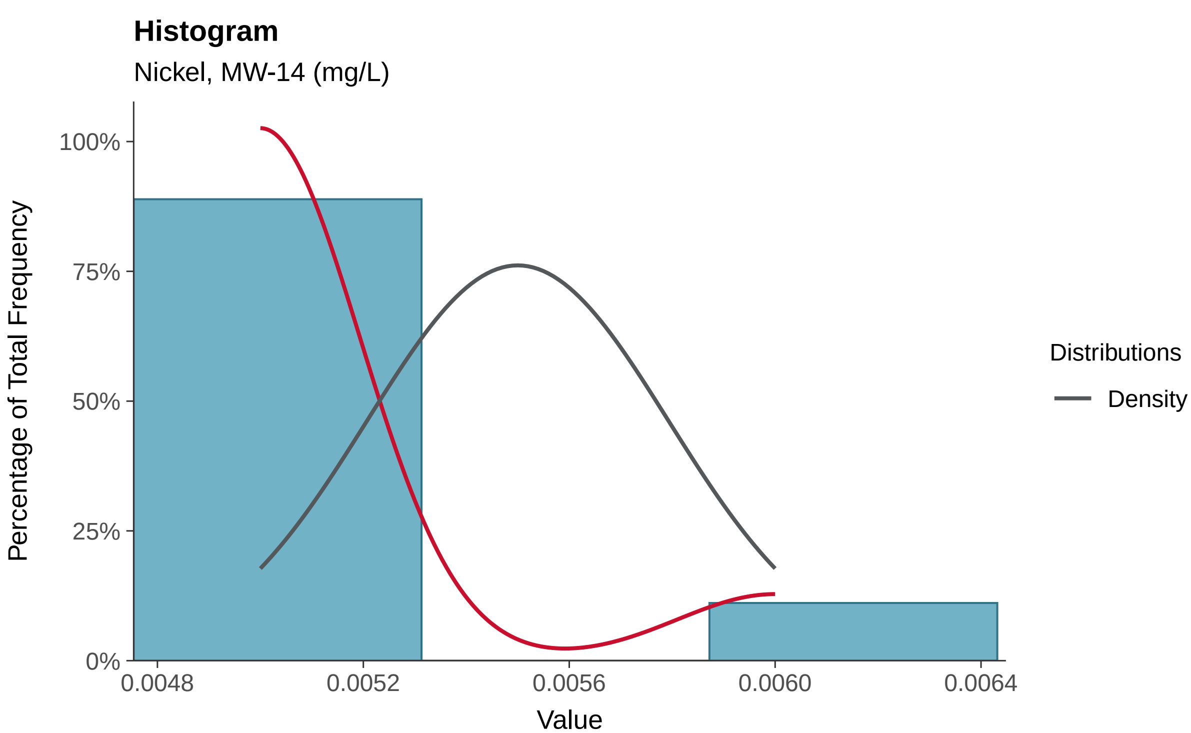
Iron, MW-14 (mg/L)



Part 115: Nickel, MW-14

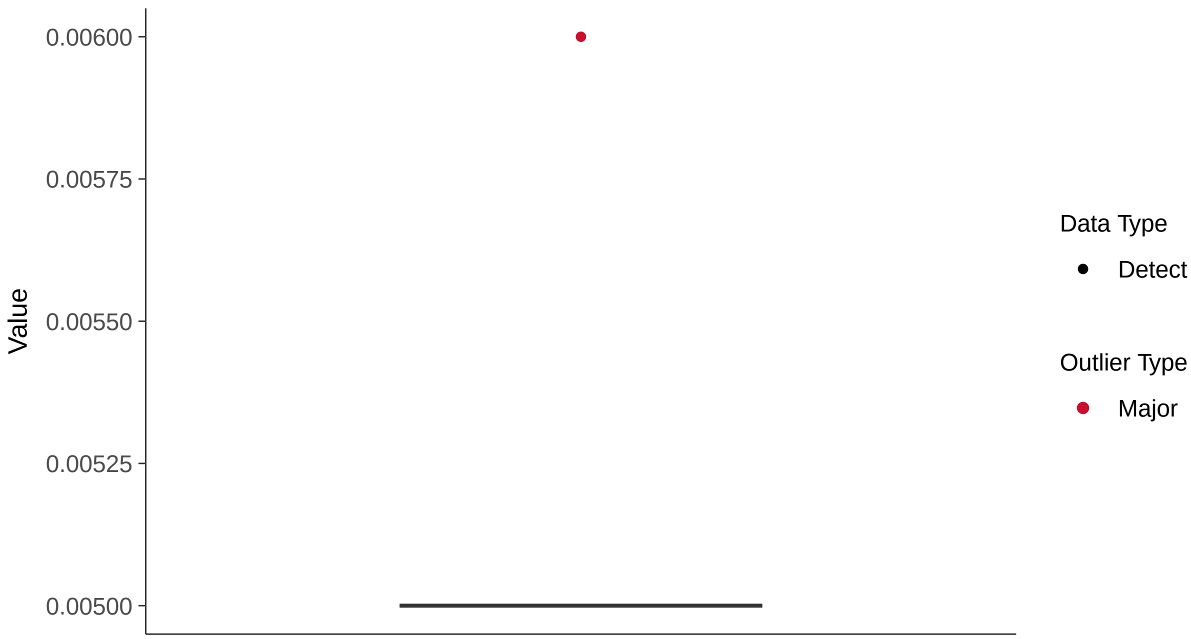
ID: 14_5_39





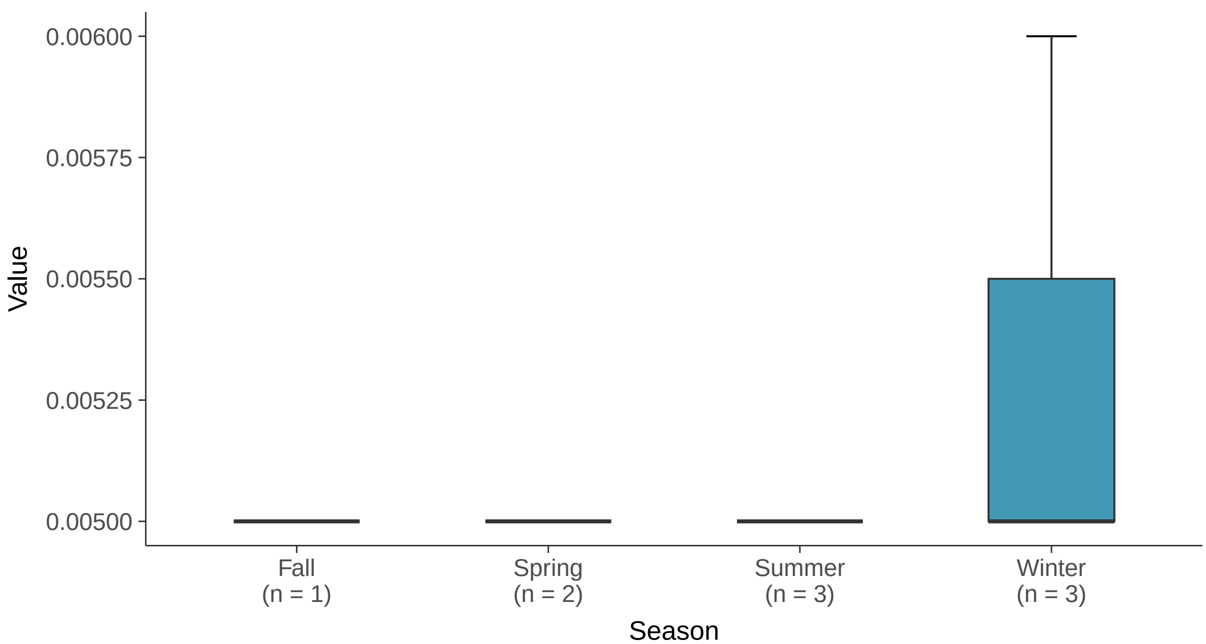
Boxplot

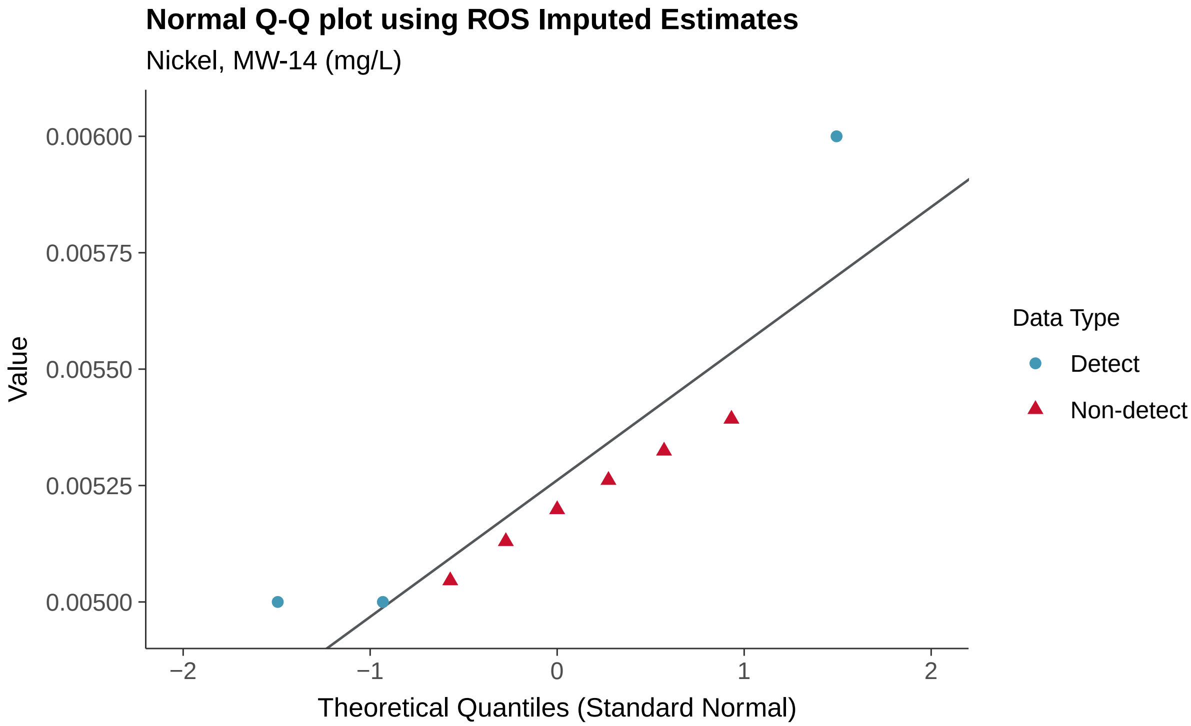
Nickel, MW-14 (mg/L)

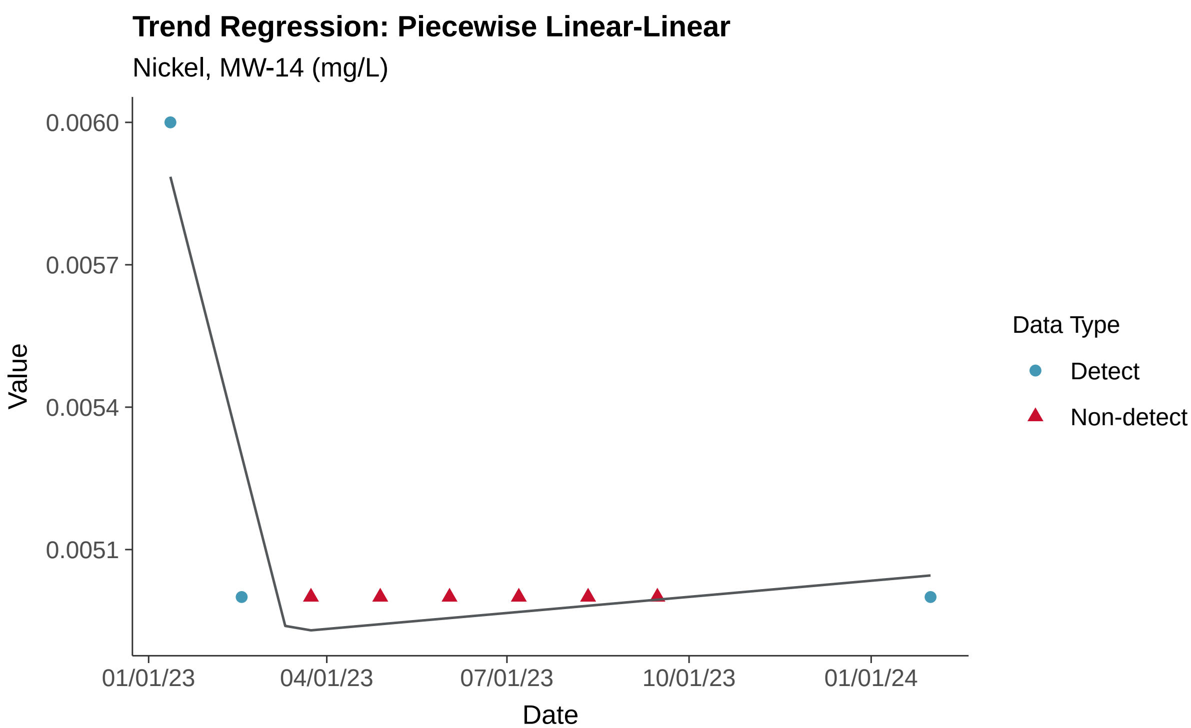


Boxplot by Season

Nickel, MW-14 (mg/L)

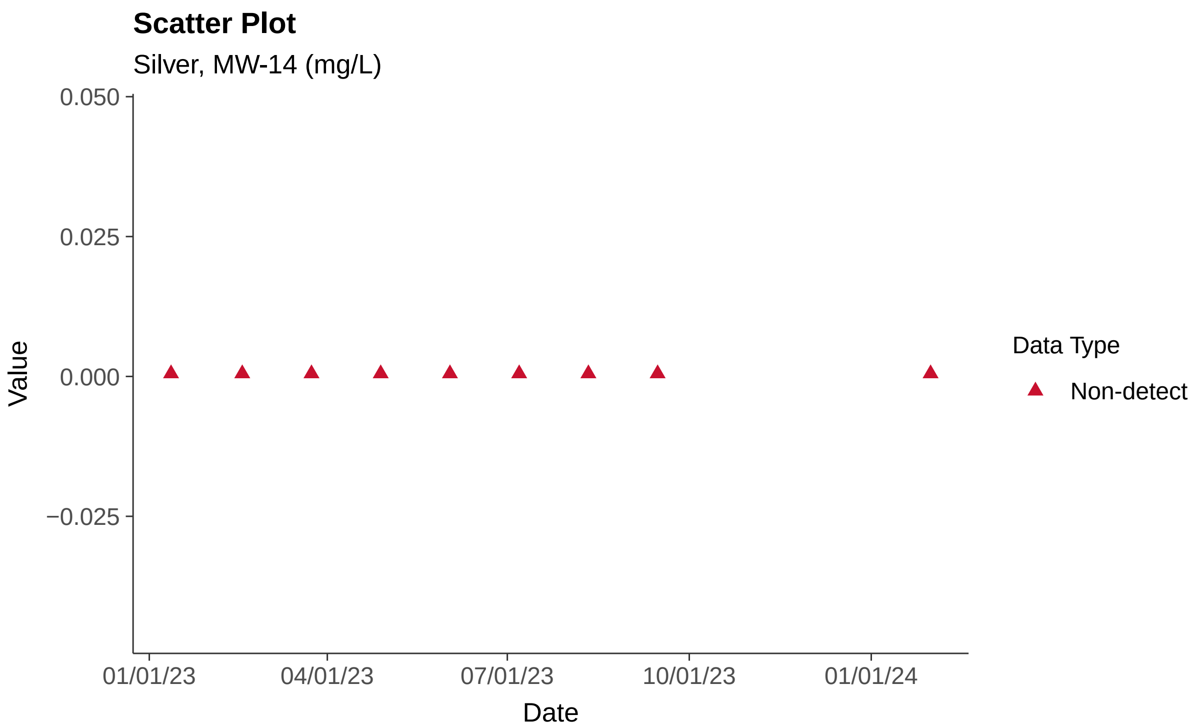


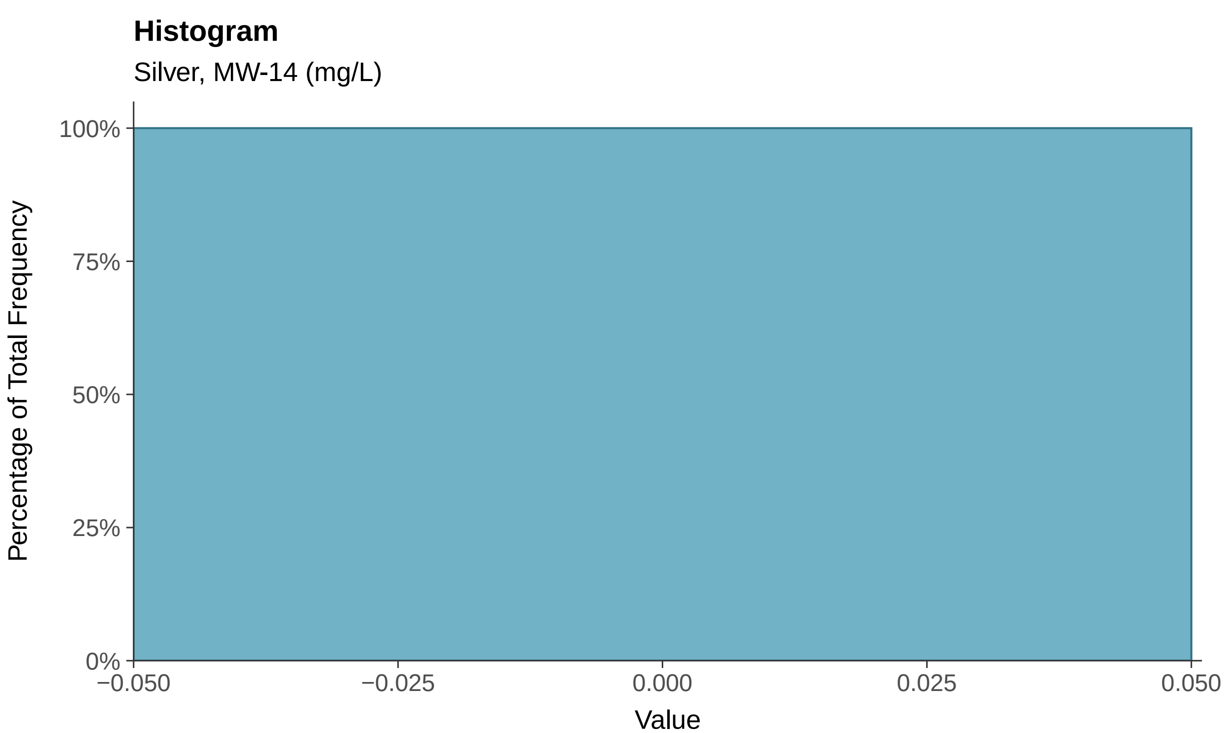

Normal Q-Q plot using ROS Imputed Estimates
Nickel, MW-14 (mg/L)
Value
0.00600
0.00575
0.00550
0.00525
0.00500
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Nickel, MW-14 (mg/L)
Value
0.0060
0.0057
0.0054
0.0051
01/01/23
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Part 115: Silver, MW-14

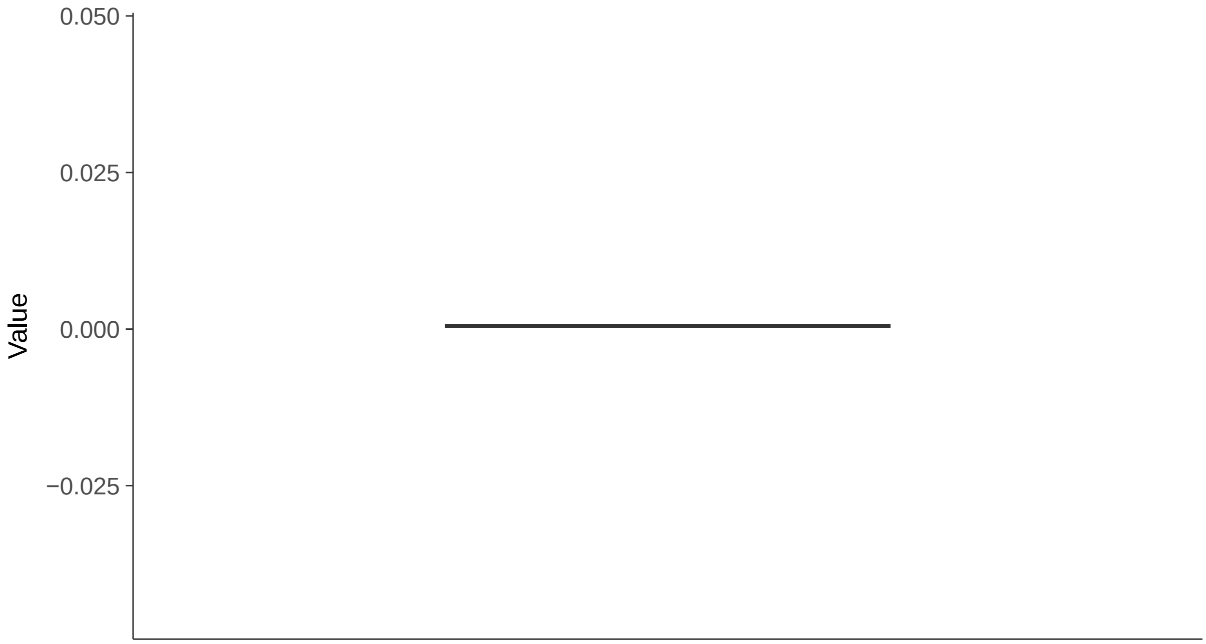
ID: 14_5_40





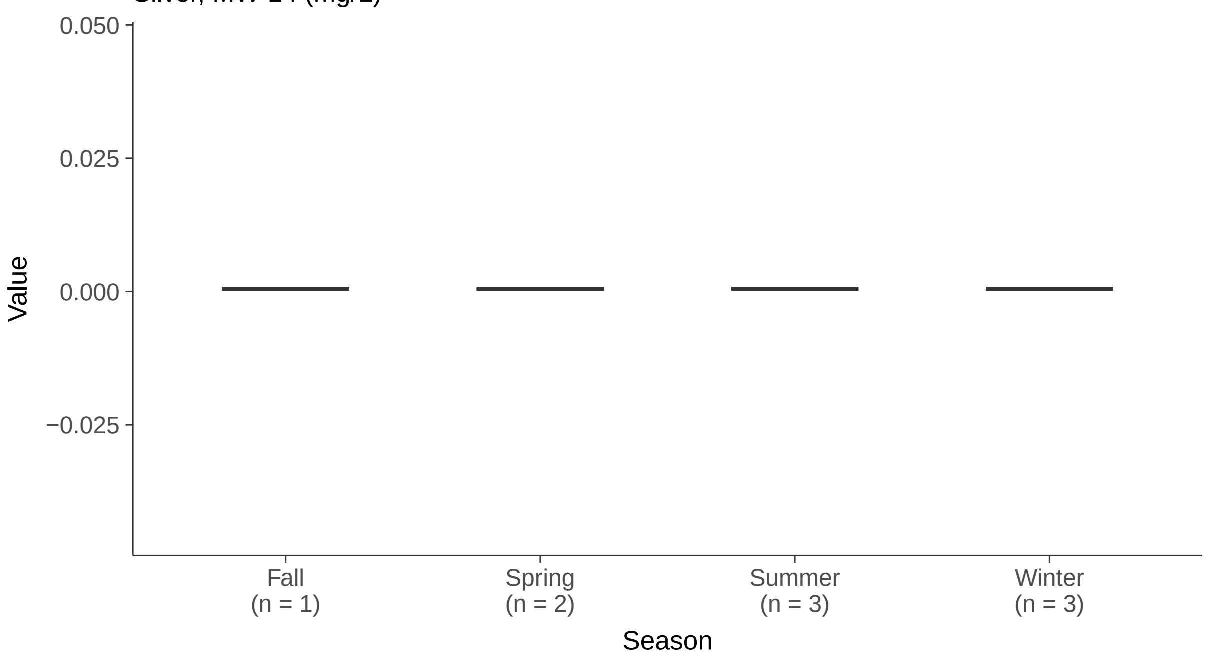
Boxplot

Silver, MW-14 (mg/L)



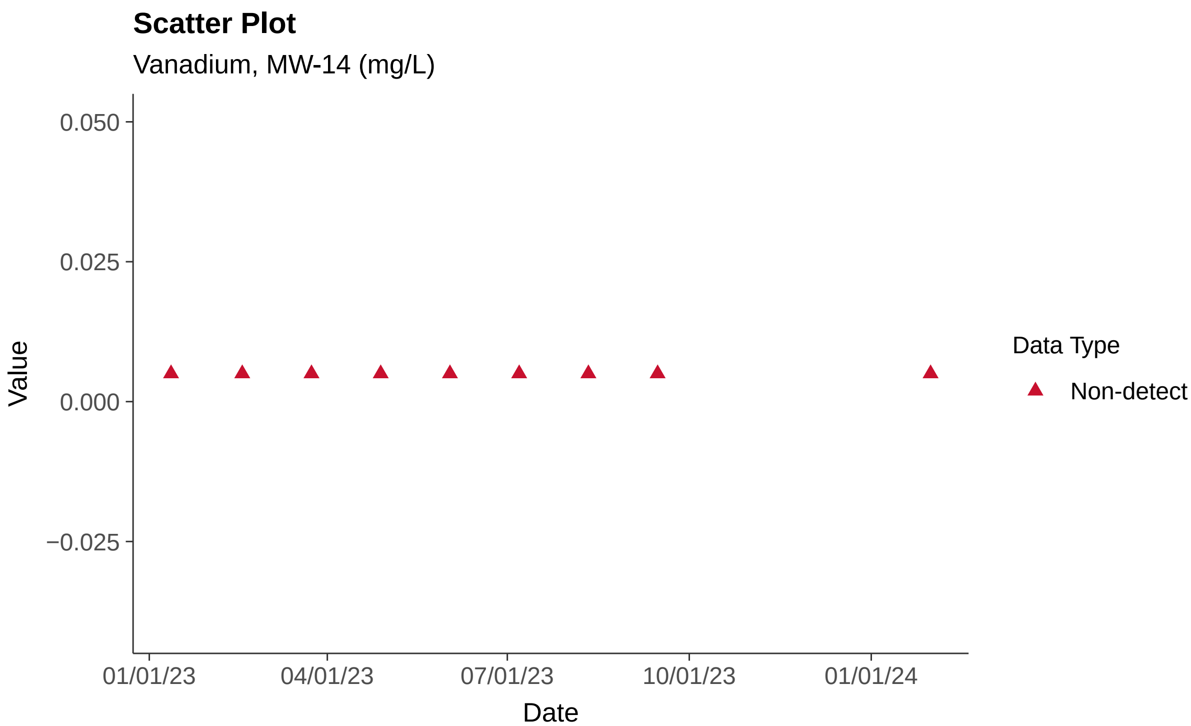
Boxplot by Season

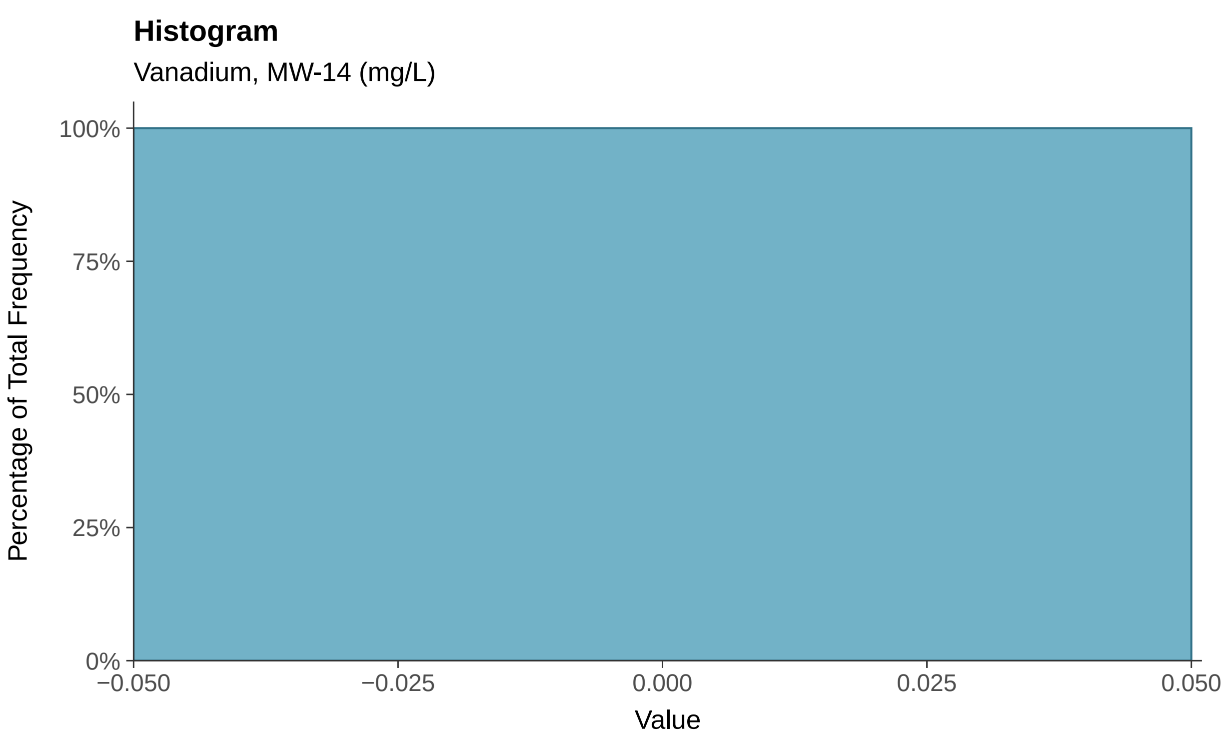
Silver, MW-14 (mg/L)



Part 115: Vanadium, MW-14

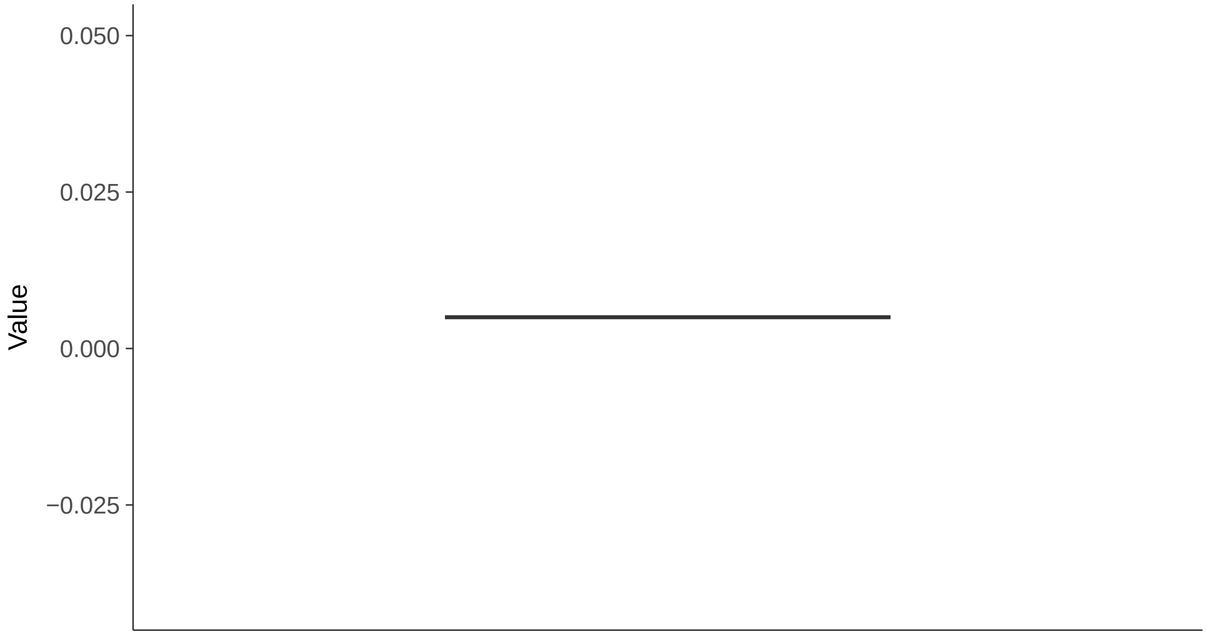
ID: 14_5_41





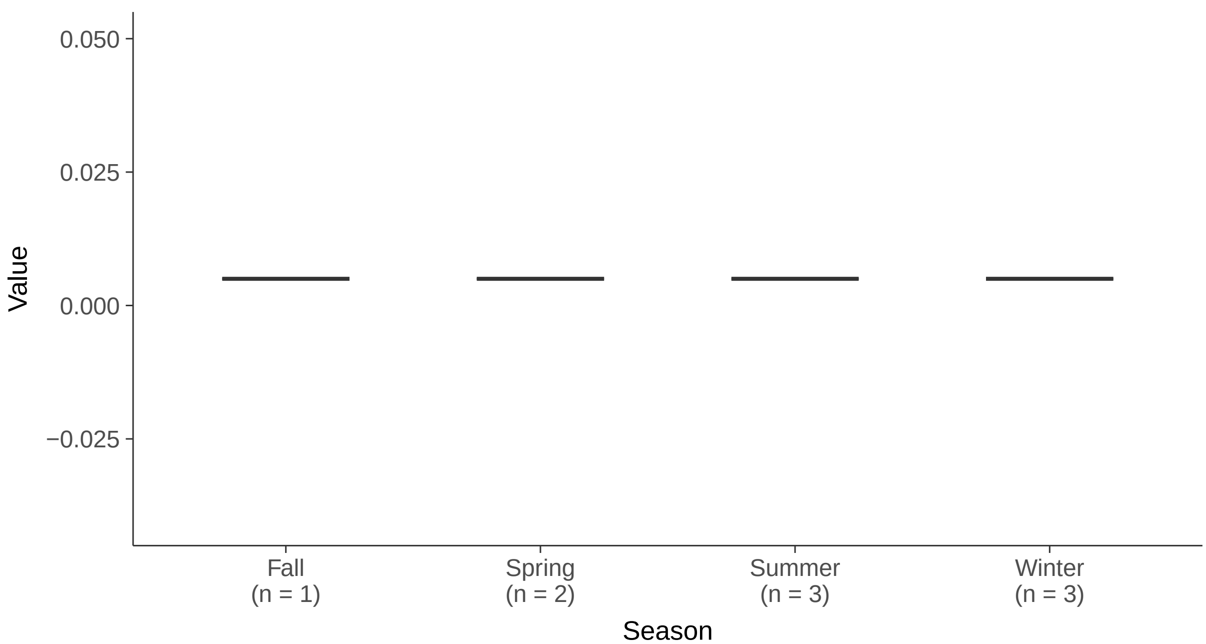
Boxplot

Vanadium, MW-14 (mg/L)



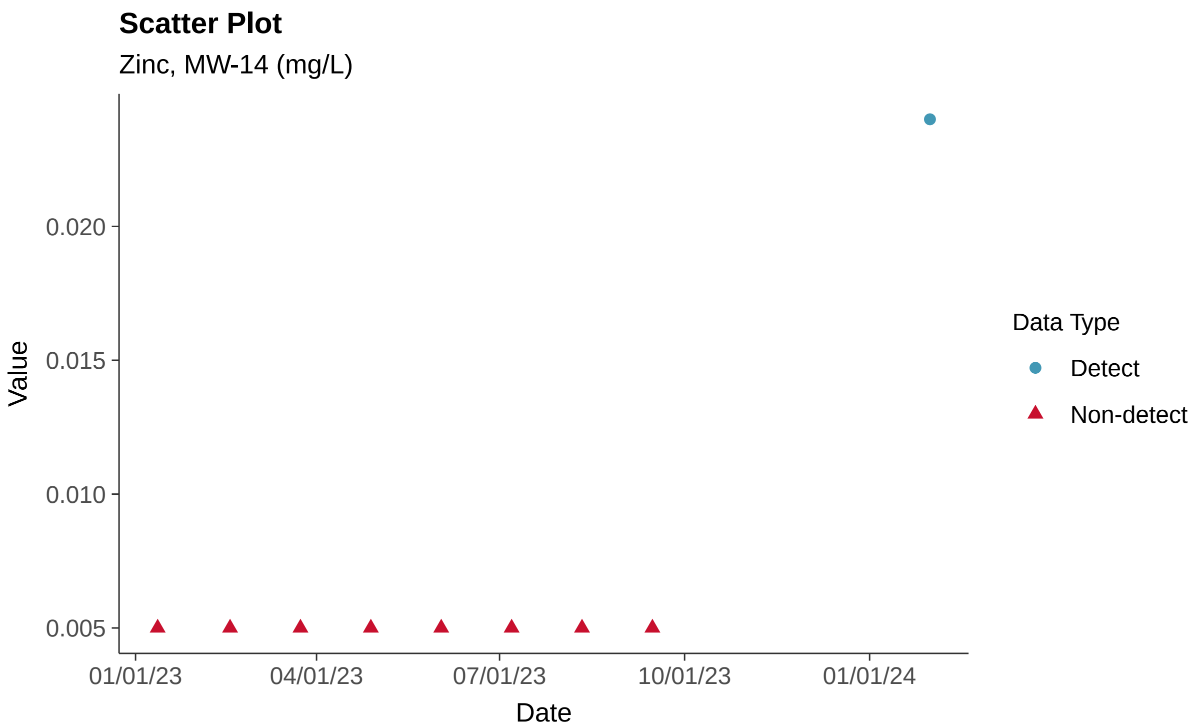
Boxplot by Season

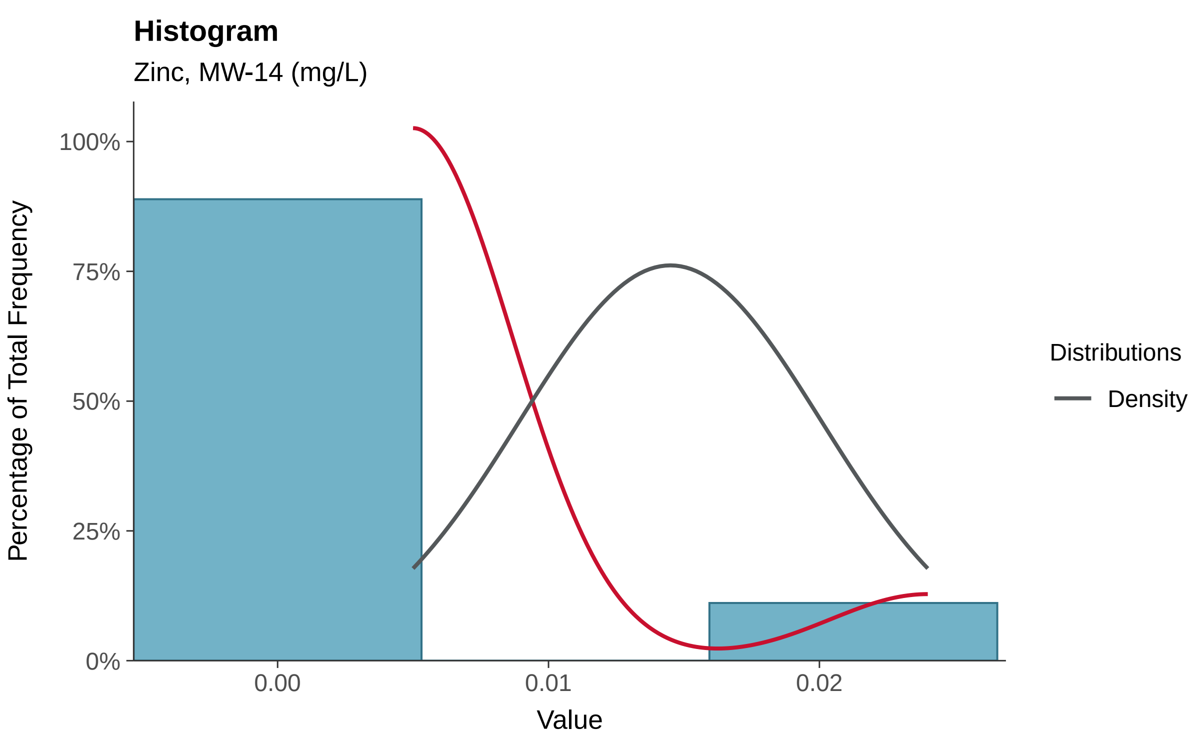
Vanadium, MW-14 (mg/L)



Part 115: Zinc, MW-14

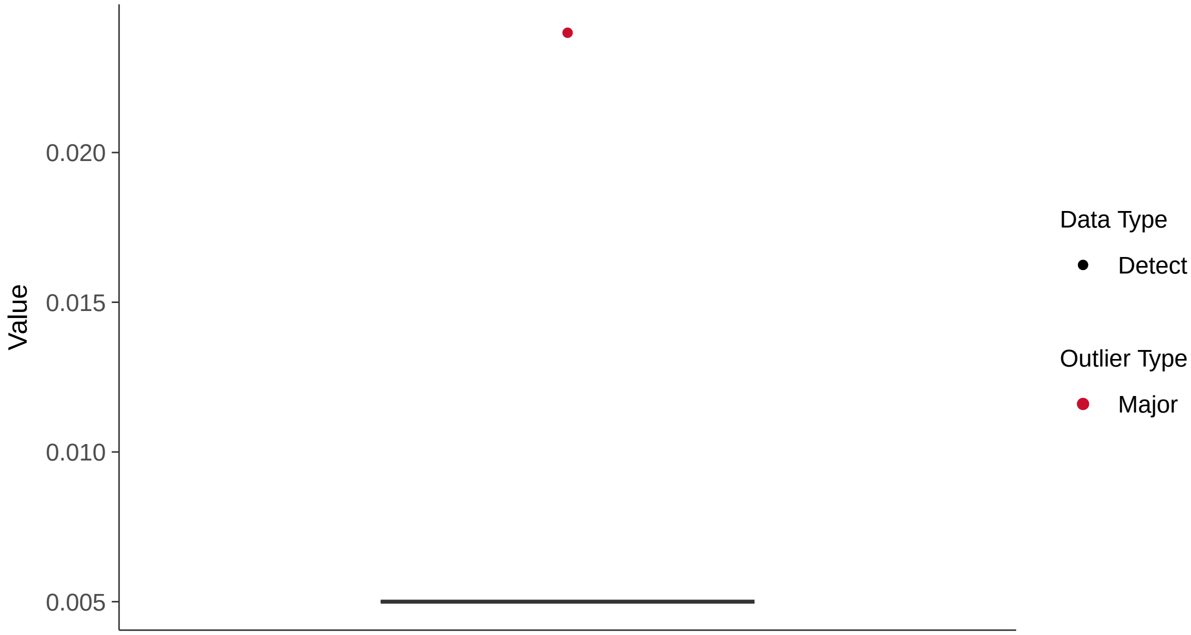
ID: 14_5_42





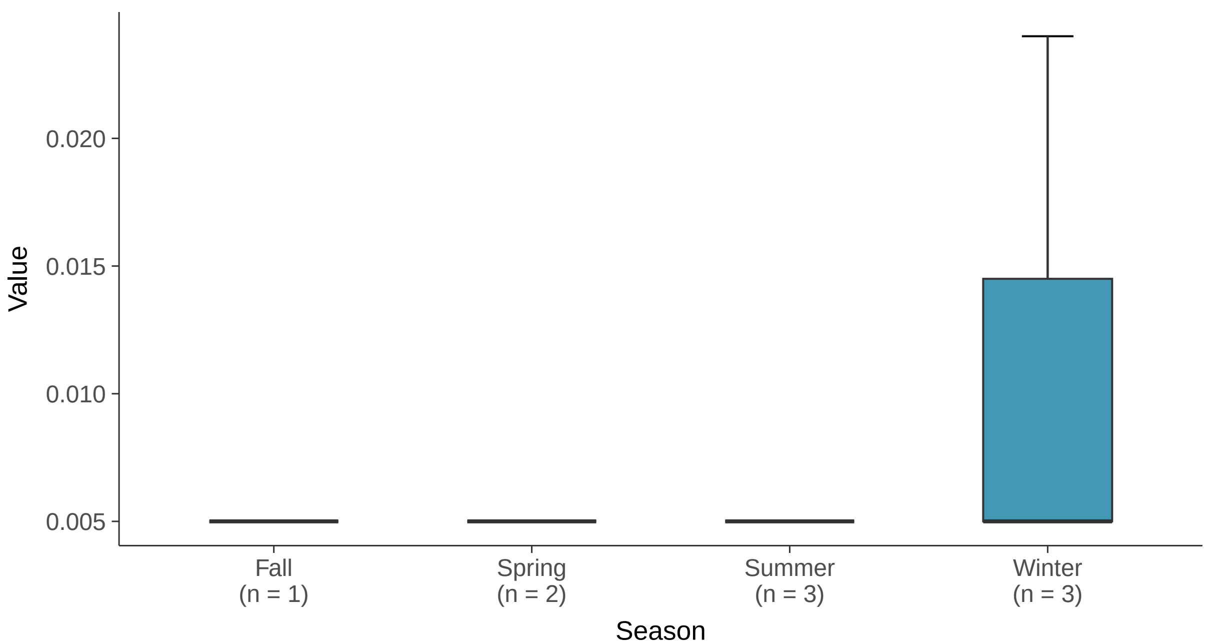
Boxplot

Zinc, MW-14 (mg/L)



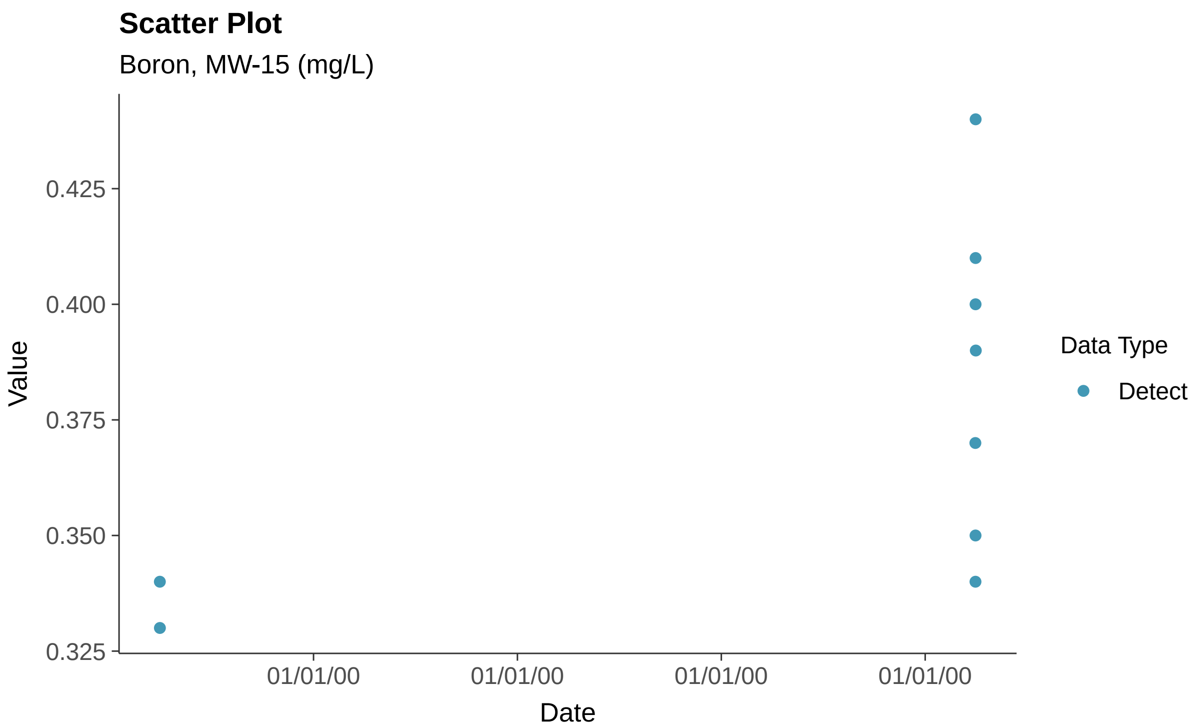
Boxplot by Season

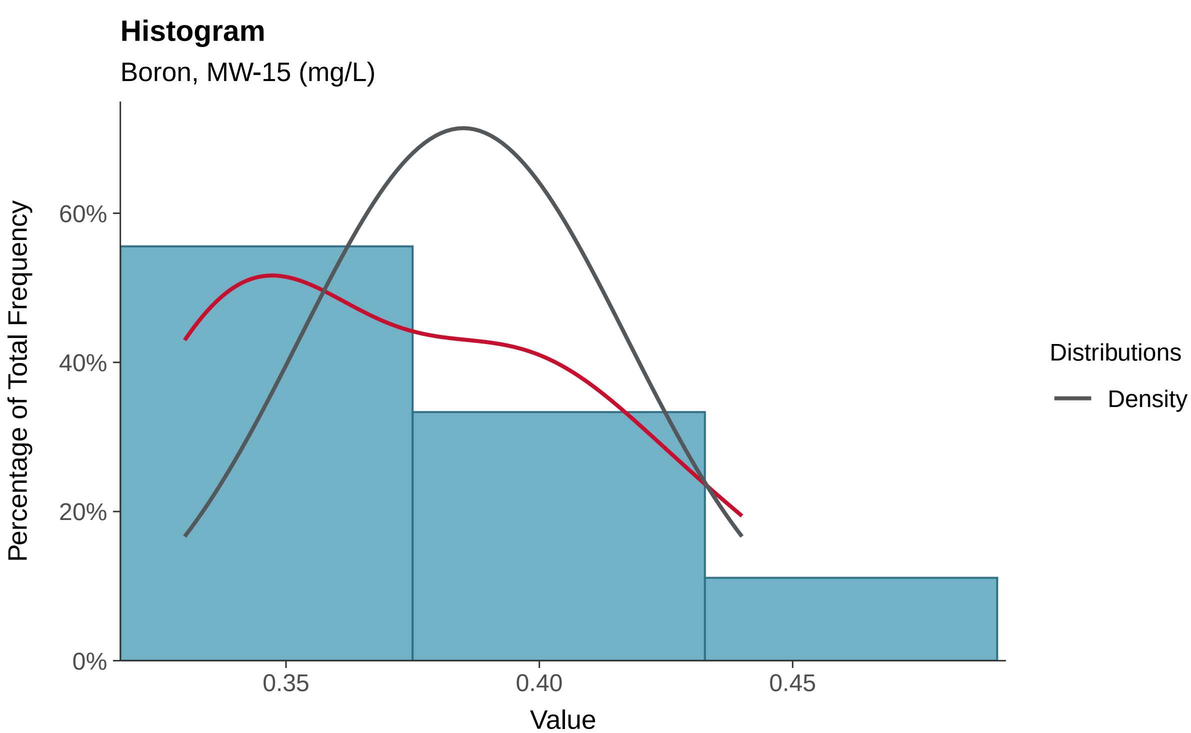
Zinc, MW-14 (mg/L)



Appendix III: Boron, MW-15

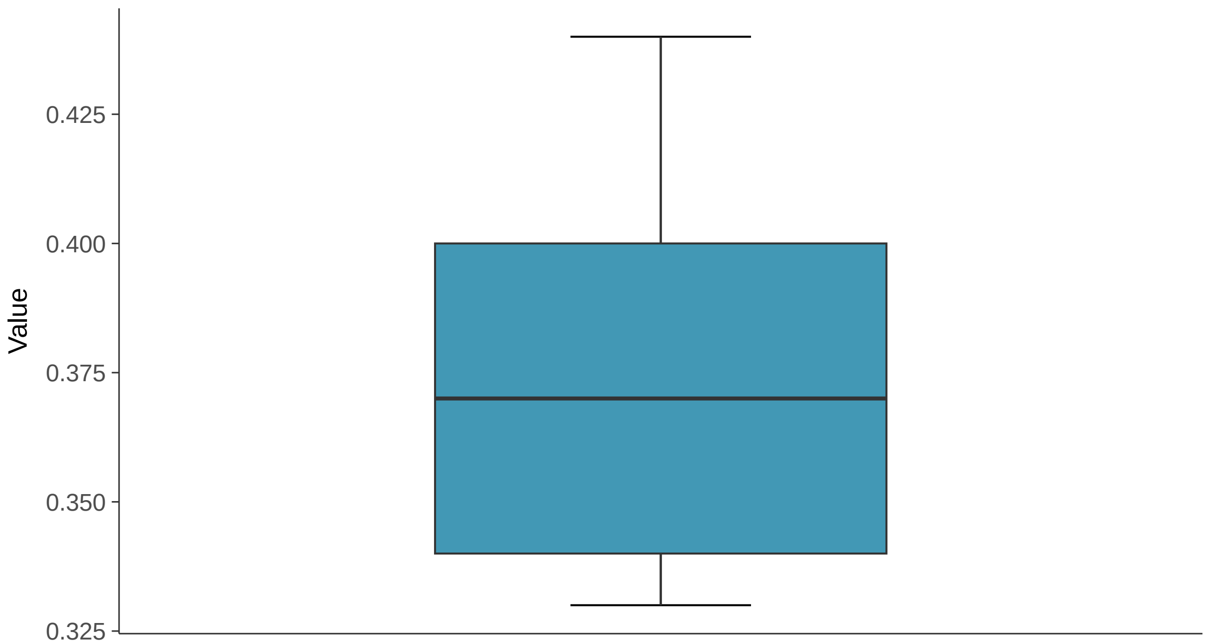
ID: 15_1_01





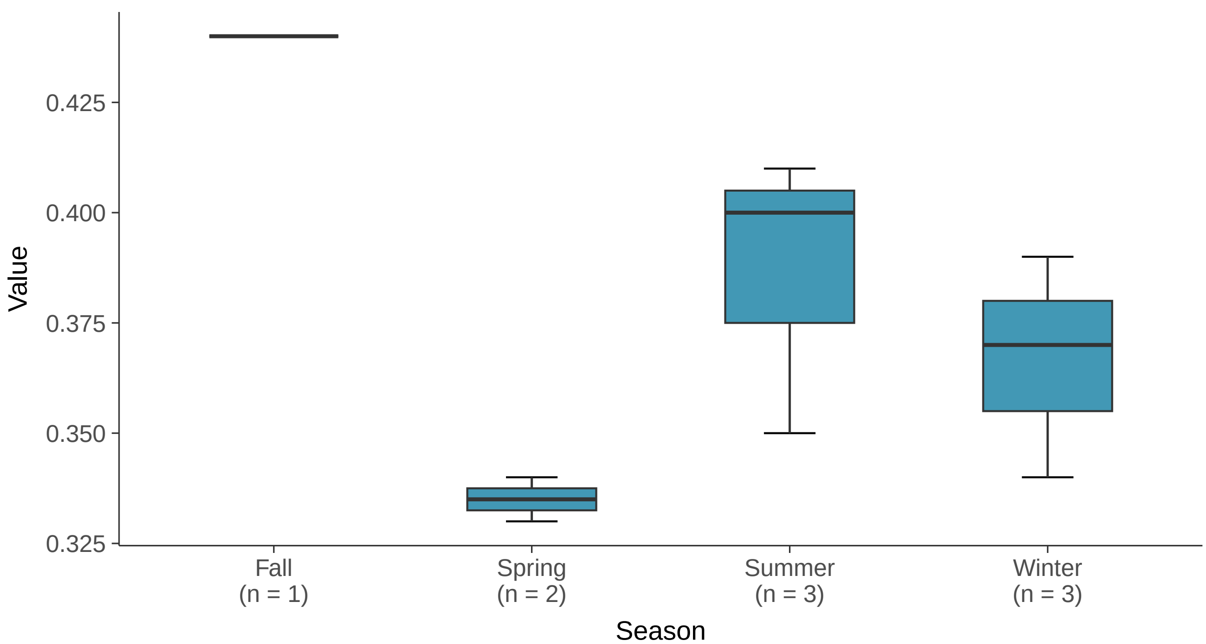
Boxplot

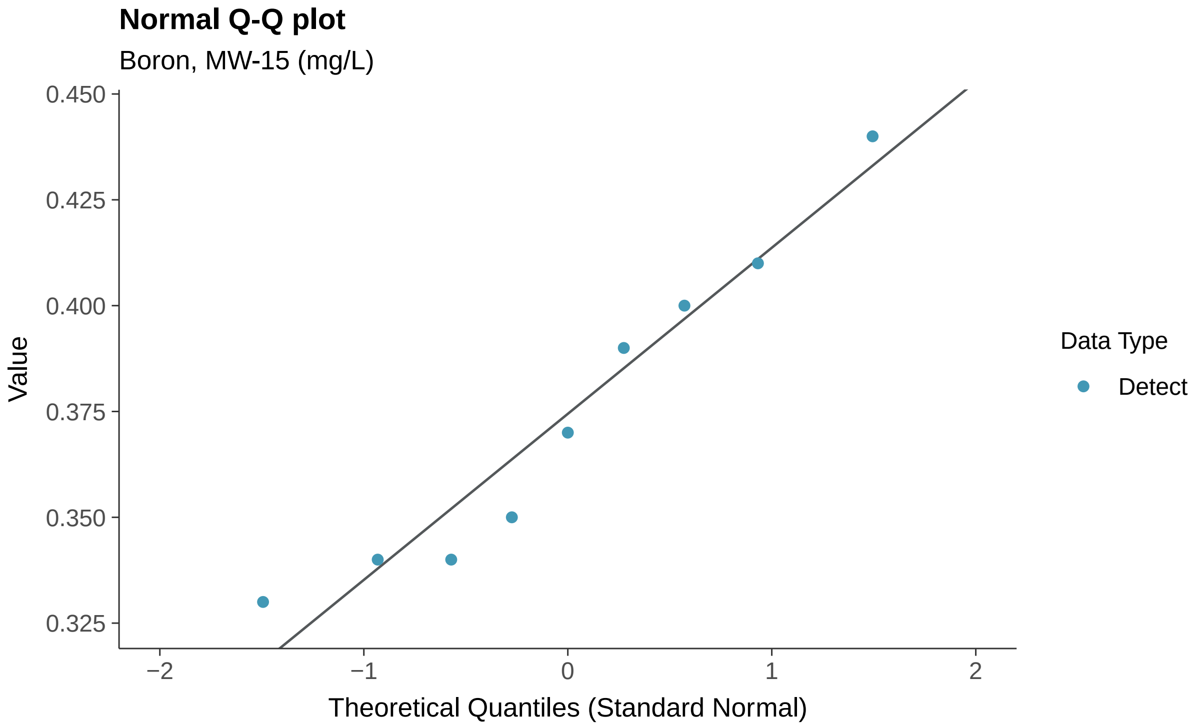
Boron, MW-15 (mg/L)

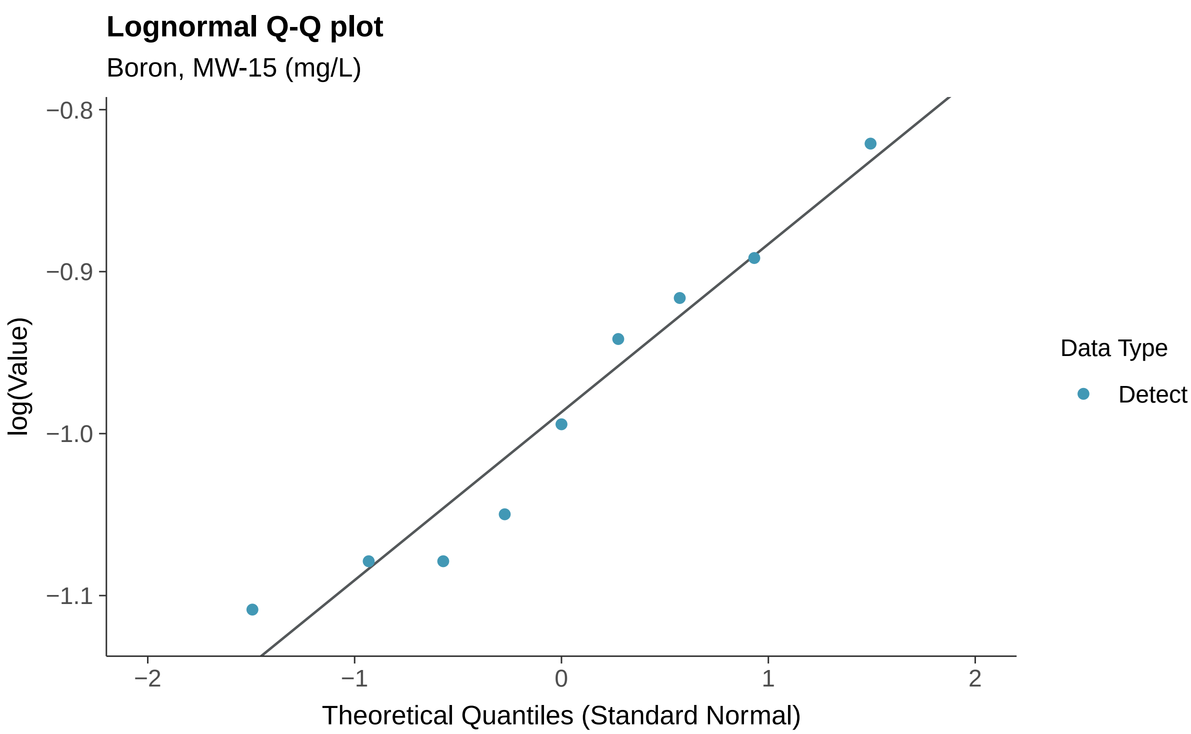


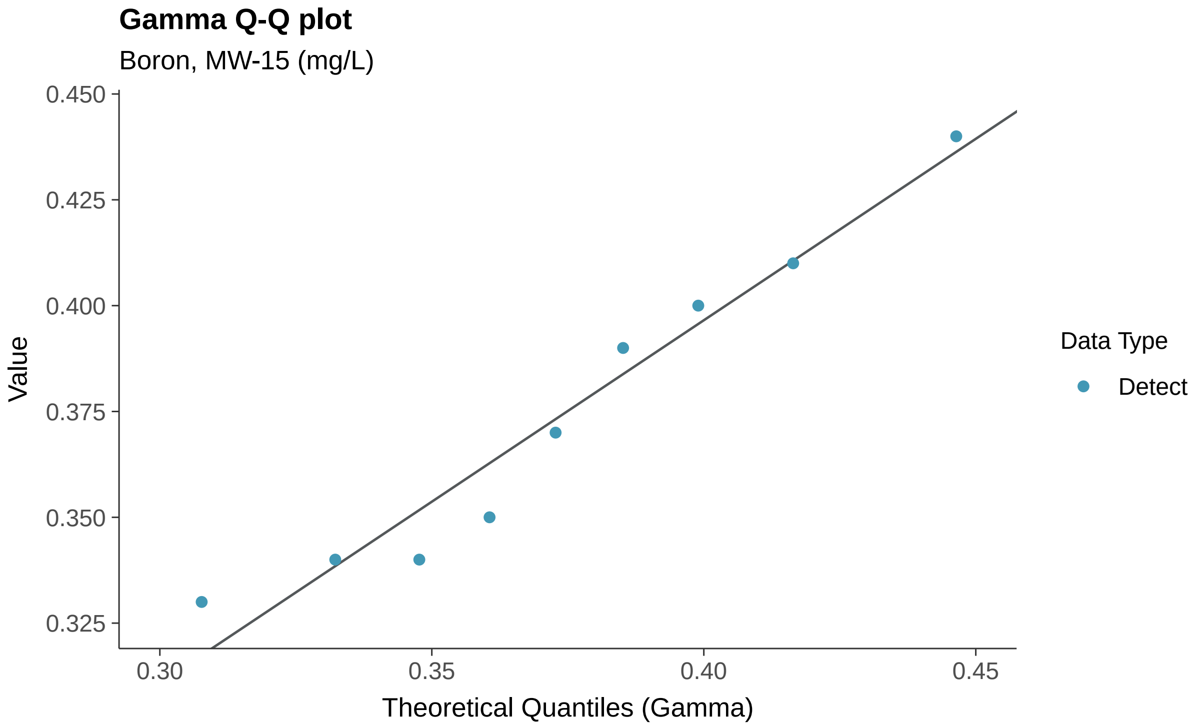
Boxplot by Season

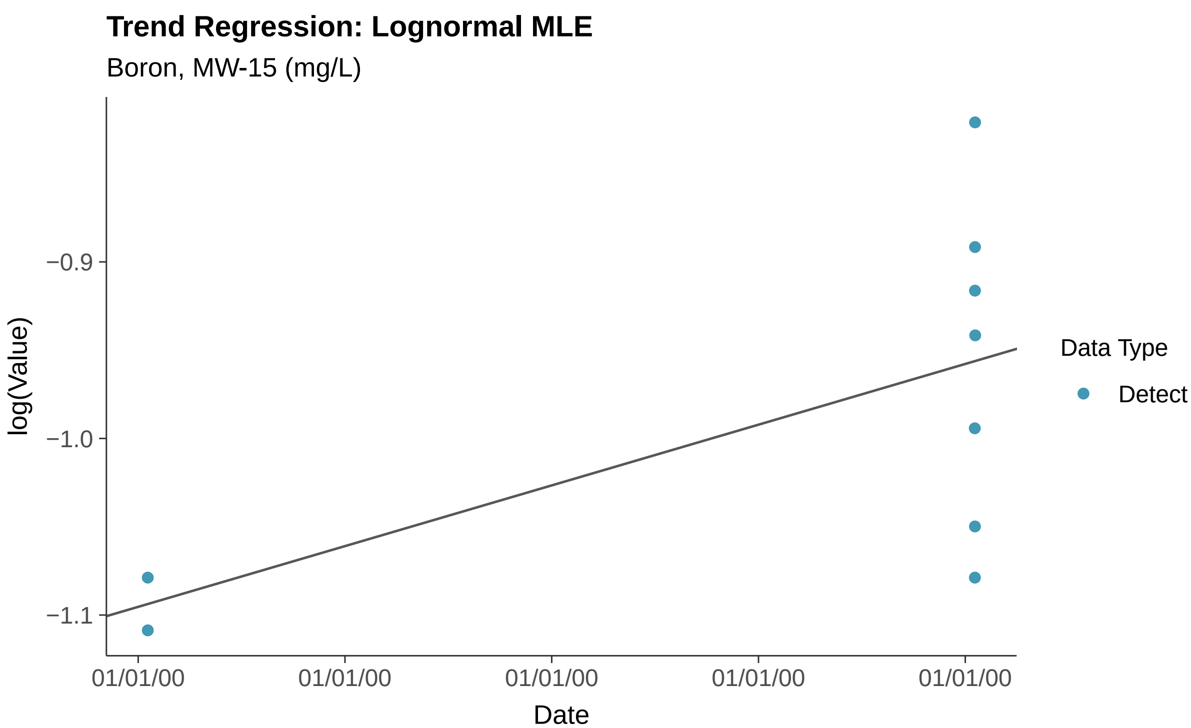
Boron, MW-15 (mg/L)




Normal Q-Q plot
Boron, MW-15 (mg/L)
Value
0.450
0.425
0.400
0.375
0.350
0.325
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

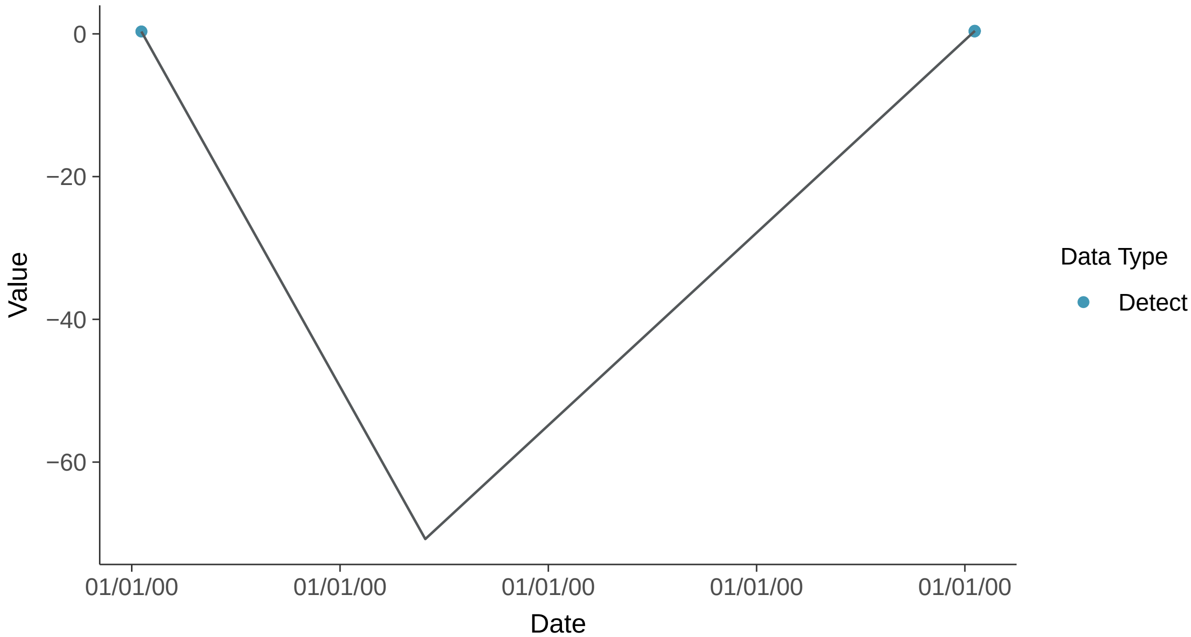

Lognormal Q-Q plot
Boron, MW-15 (mg/L)
log(Value)
−0.8
−0.9
−1.0
−1.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Boron, MW-15 (mg/L)
0.450
0.425
0.400
0.375
0.350
0.325
Value
0.30
0.35
0.40
0.45
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-15 (mg/L)
−0.9
−1.0
−1.1
log(Value)
01/01/00
01/01/00
01/01/00
01/01/00
01/01/00
Date
Data Type
Detect

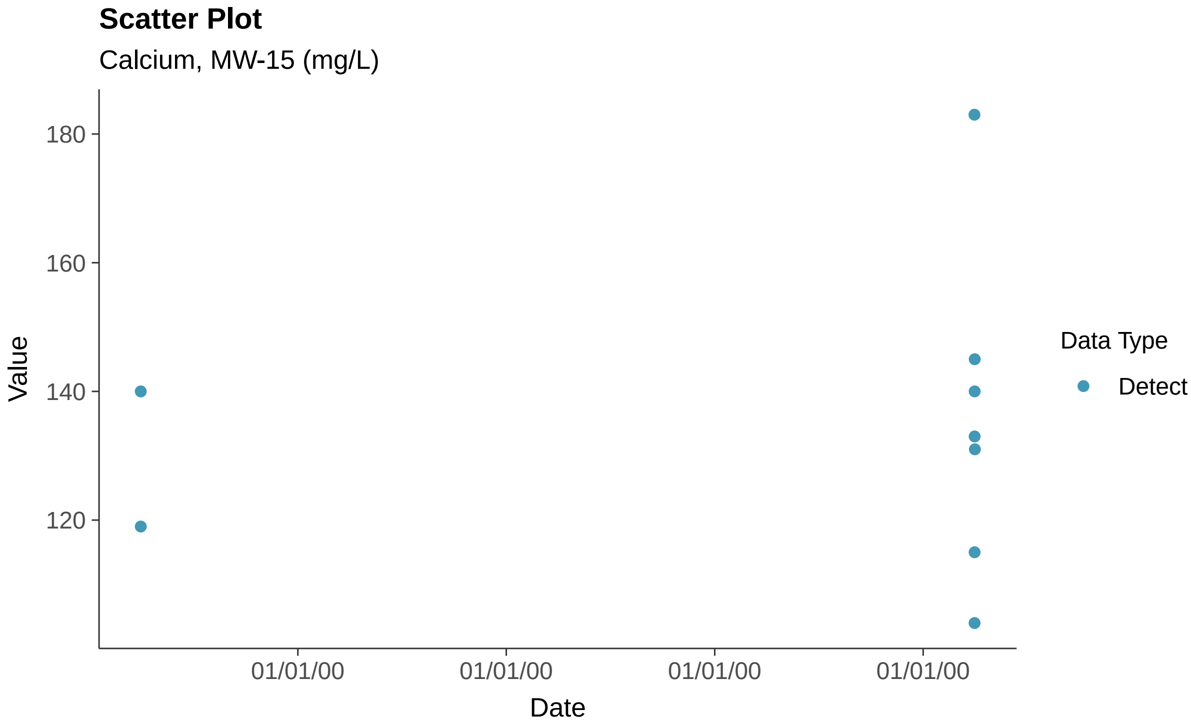
Trend Regression: Piecewise Linear-Linear

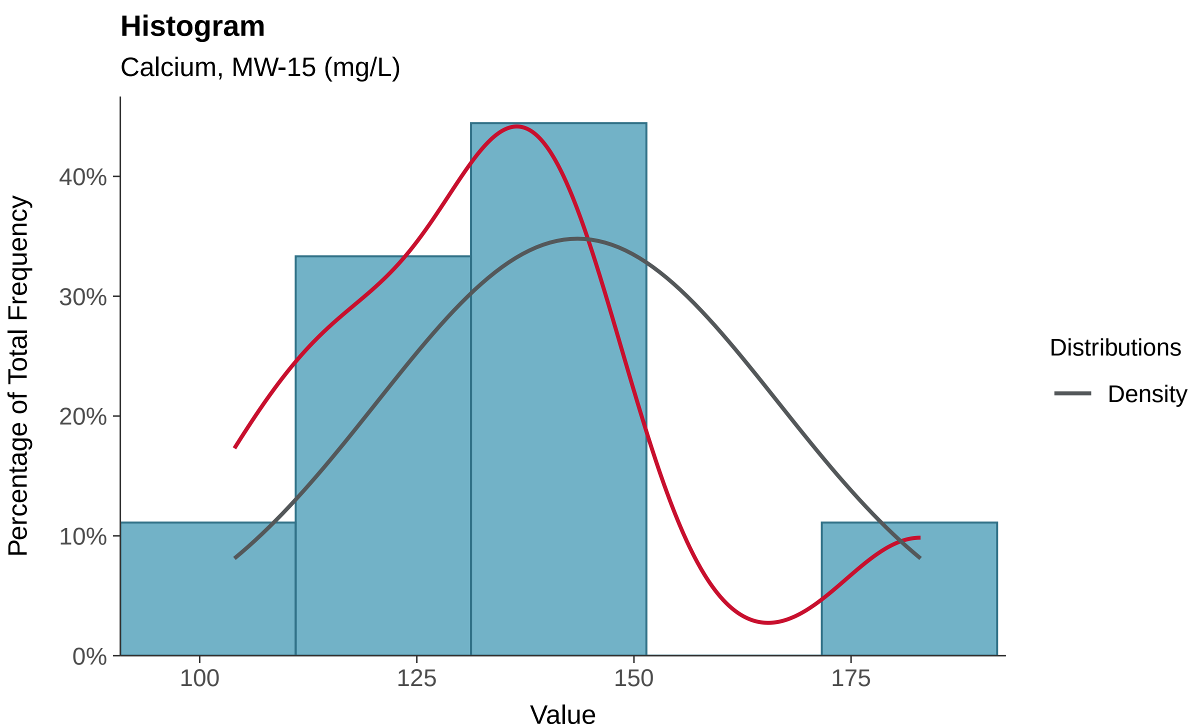
Boron, MW-15 (mg/L)



Appendix III: Calcium, MW-15

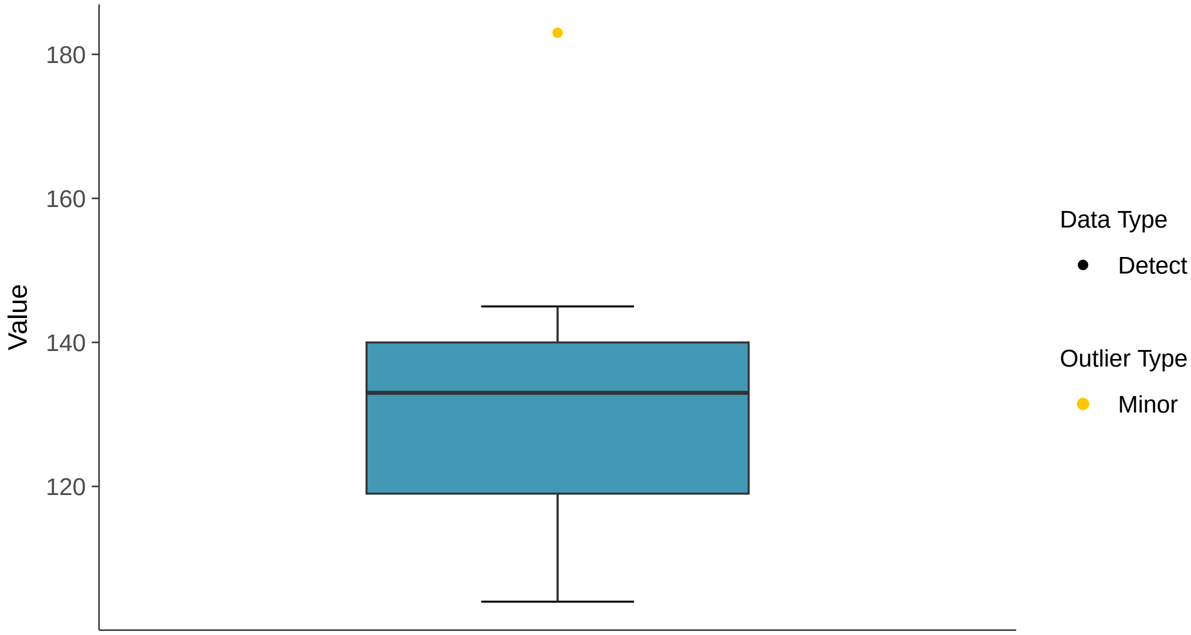
ID: 15_1_02





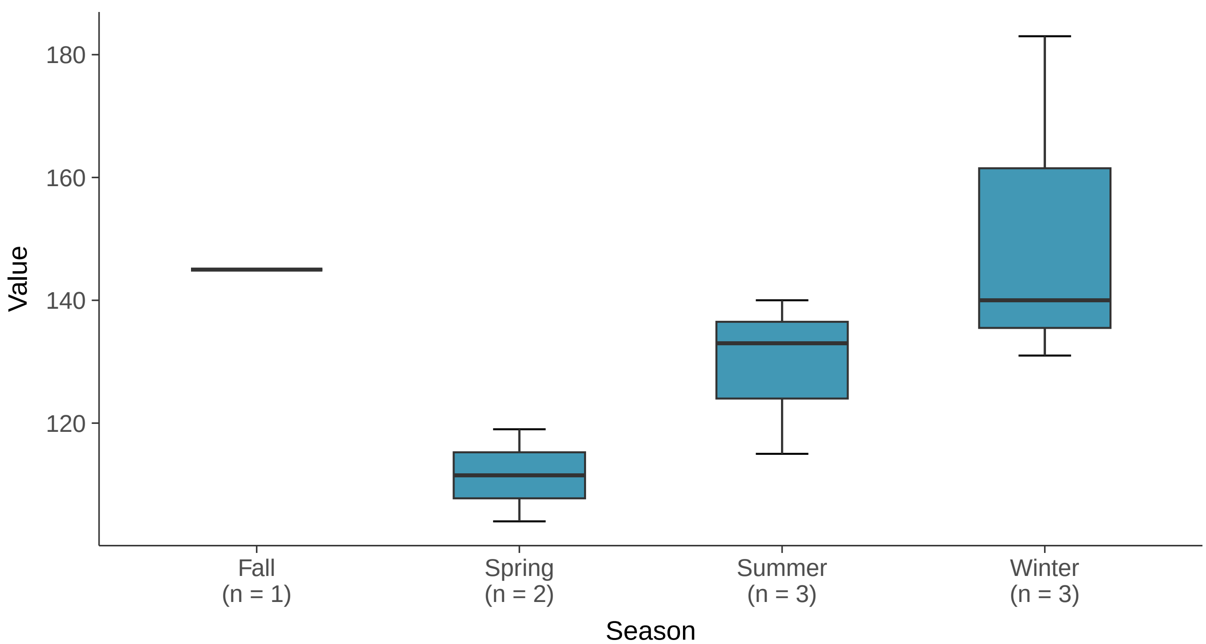
Boxplot

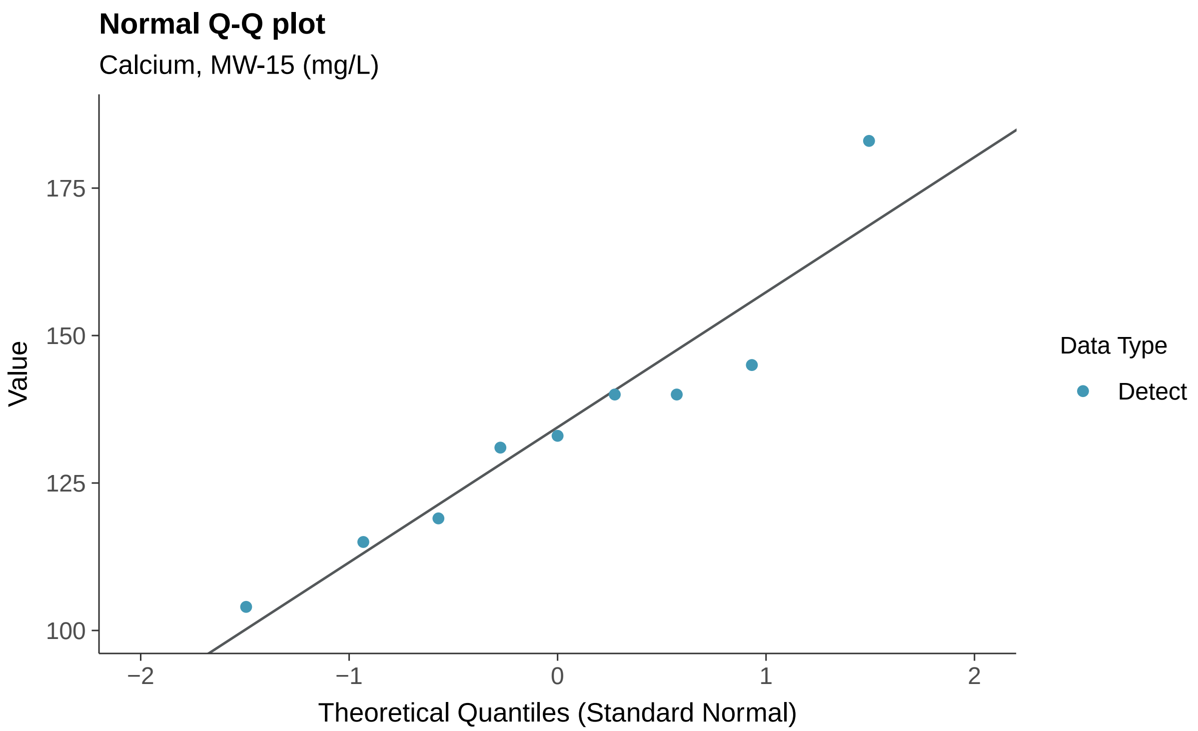
Calcium, MW-15 (mg/L)

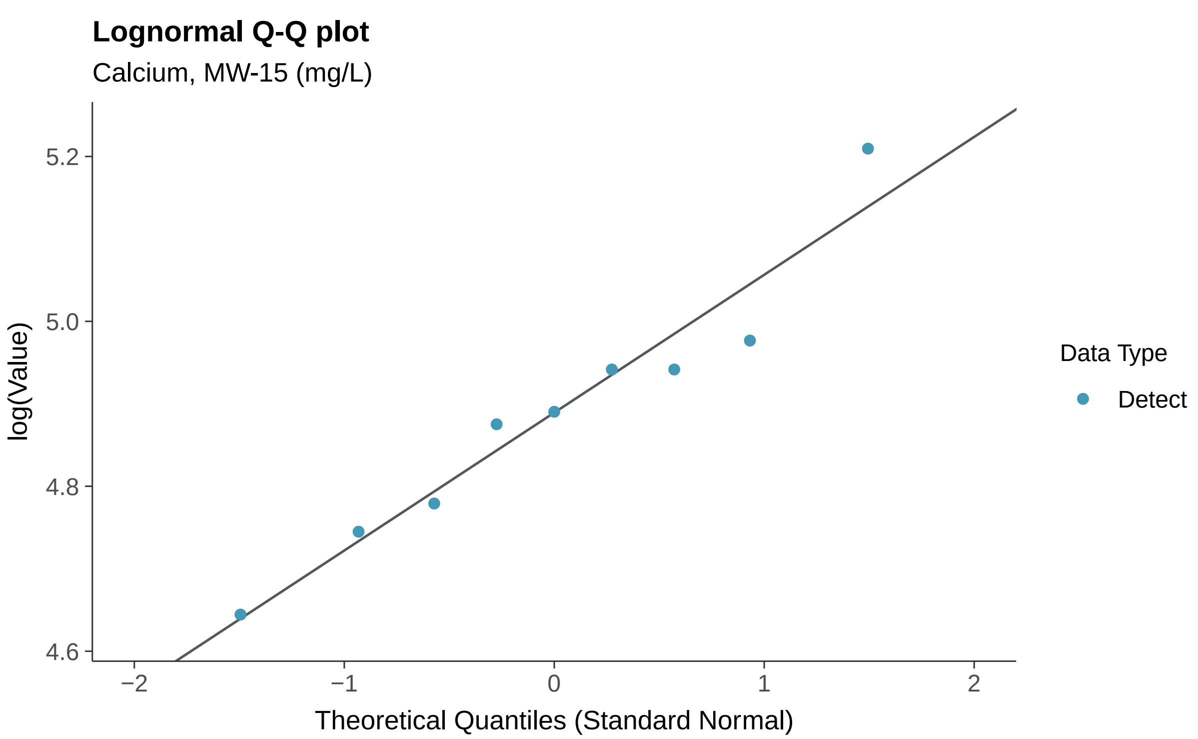


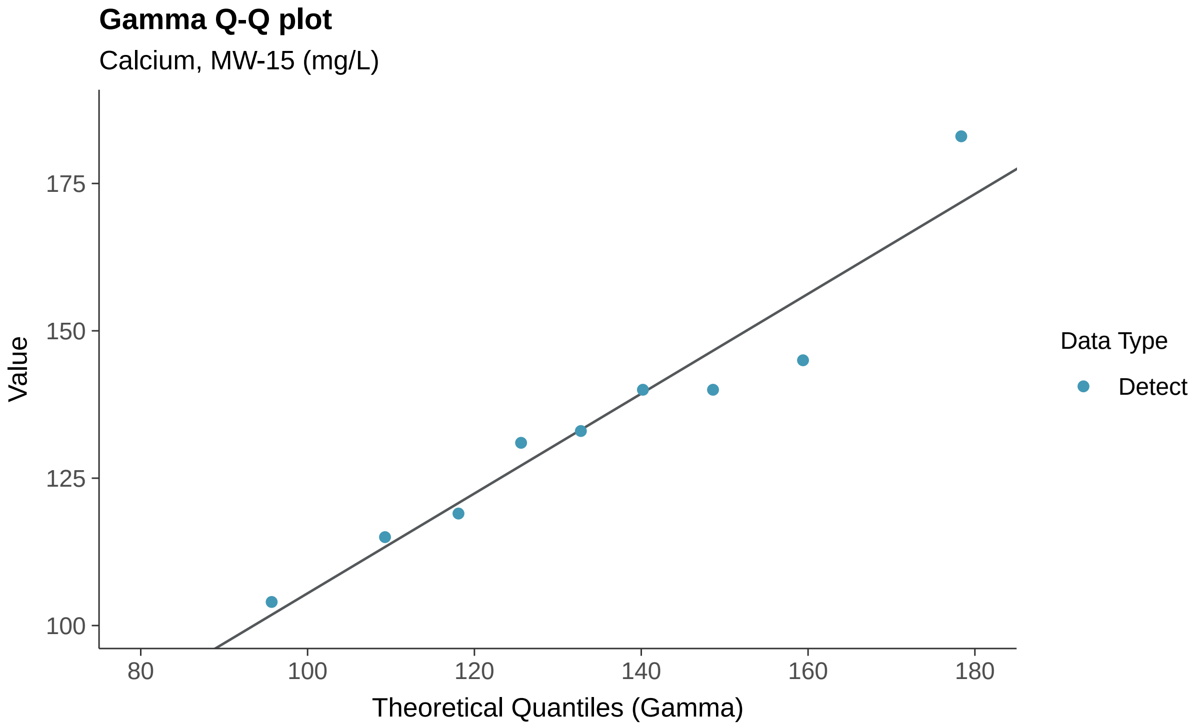
Boxplot by Season

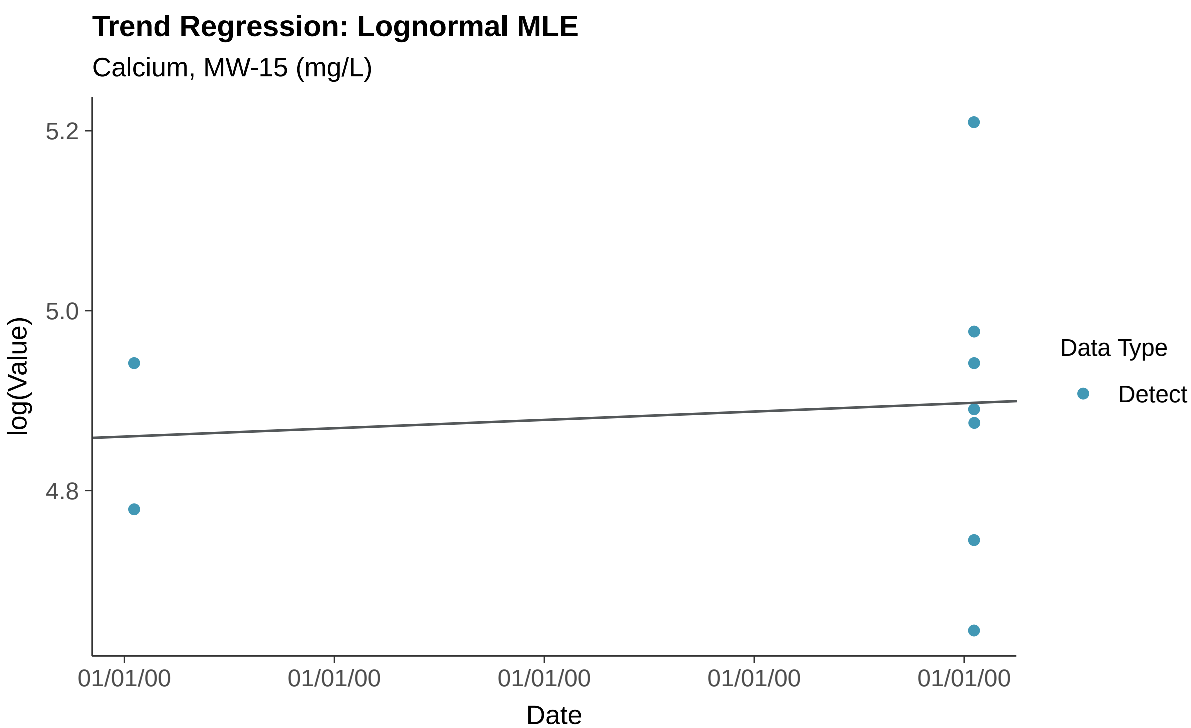
Calcium, MW-15 (mg/L)




Normal Q-Q plot
Calcium, MW-15 (mg/L)
Value
175
150
125
100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

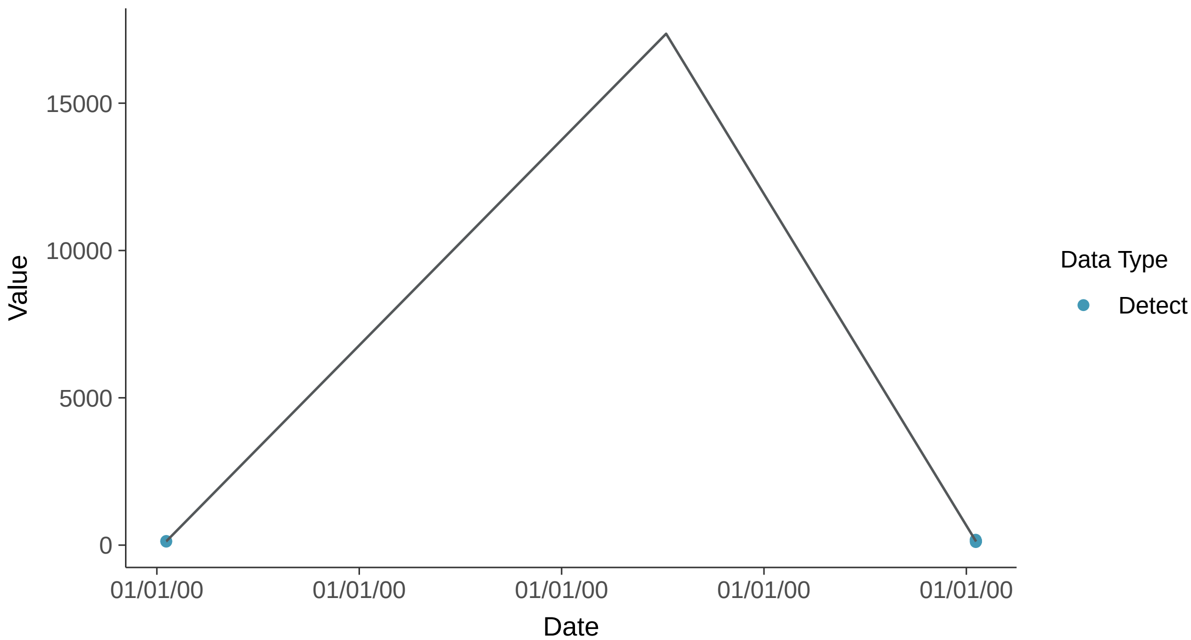

Lognormal Q-Q plot
Calcium, MW-15 (mg/L)
log(Value)
5.2
5.0
4.8
4.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Calcium, MW-15 (mg/L)
Value
175
150
125
100
80
100
120
140
160
180
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Calcium, MW-15 (mg/L)
log(Value)
5.2
5.0
4.8
01/01/00
01/01/00
01/01/00
01/01/00
01/01/00
Date
Data Type
Detect

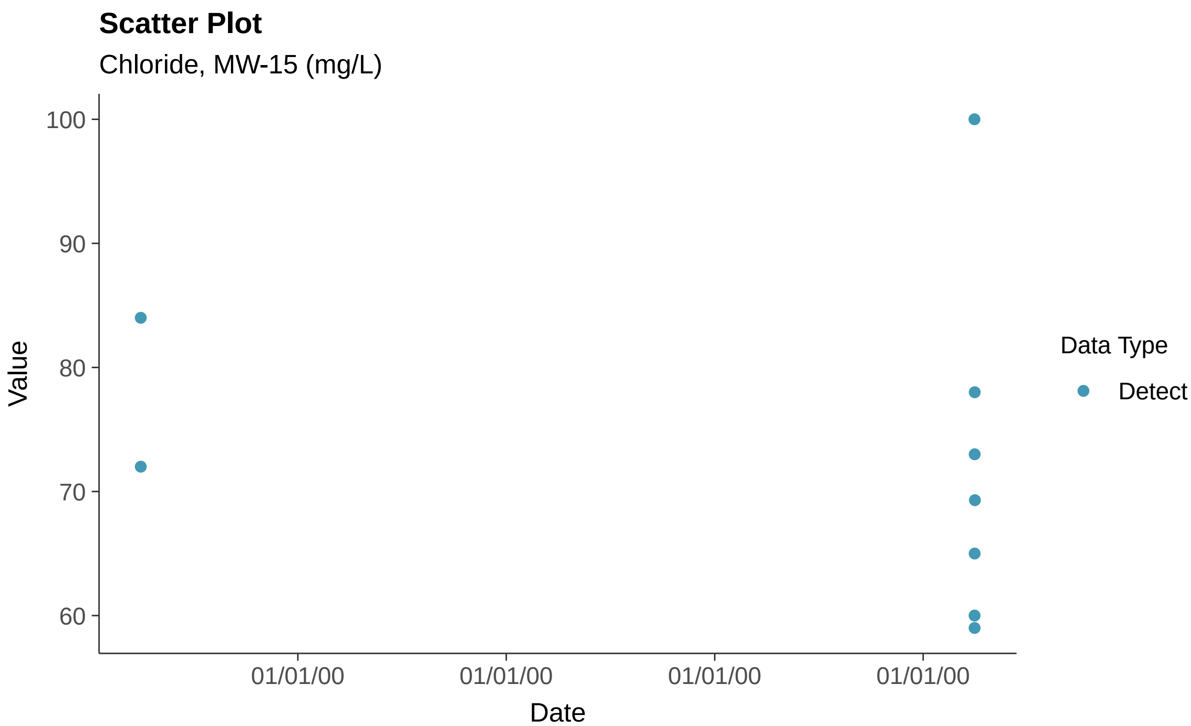
Trend Regression: Piecewise Linear-Linear

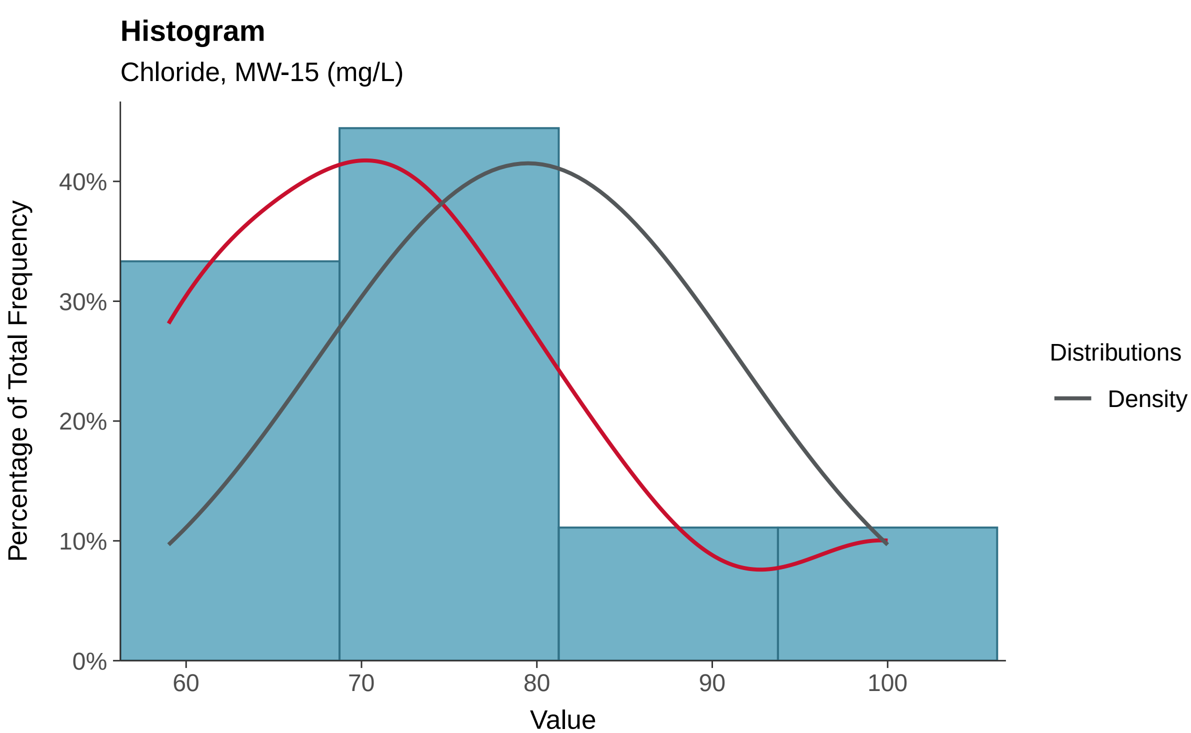
Calcium, MW-15 (mg/L)



Appendix III: Chloride, MW-15

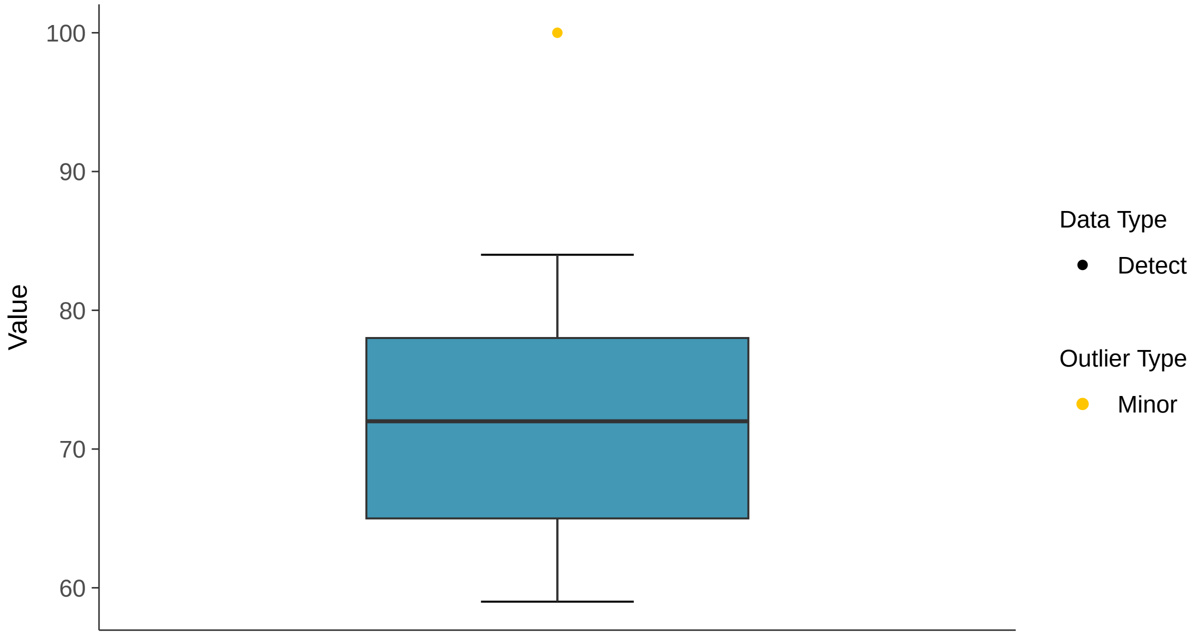
ID: 15_1_03





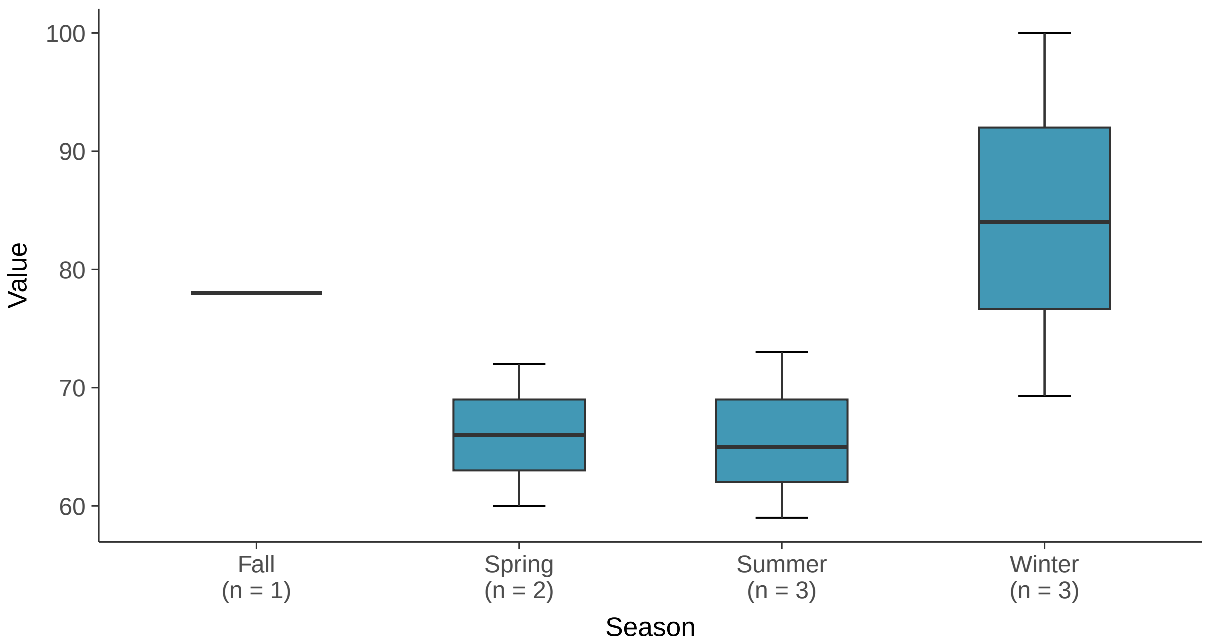
Boxplot

Chloride, MW-15 (mg/L)



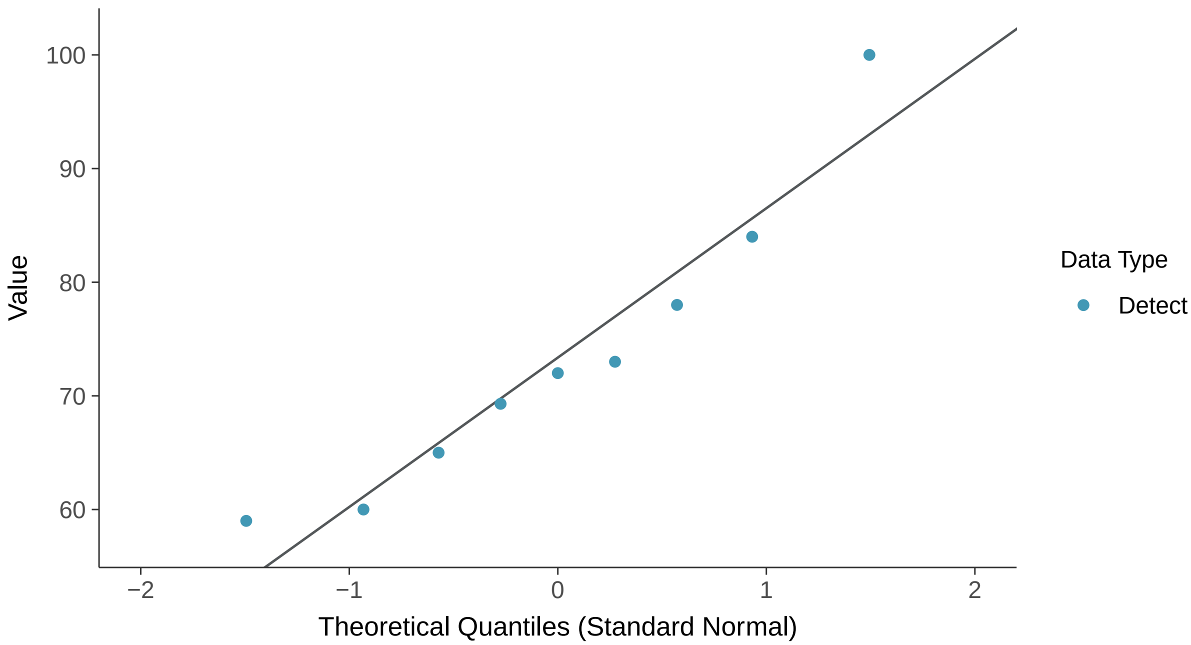
Boxplot by Season

Chloride, MW-15 (mg/L)



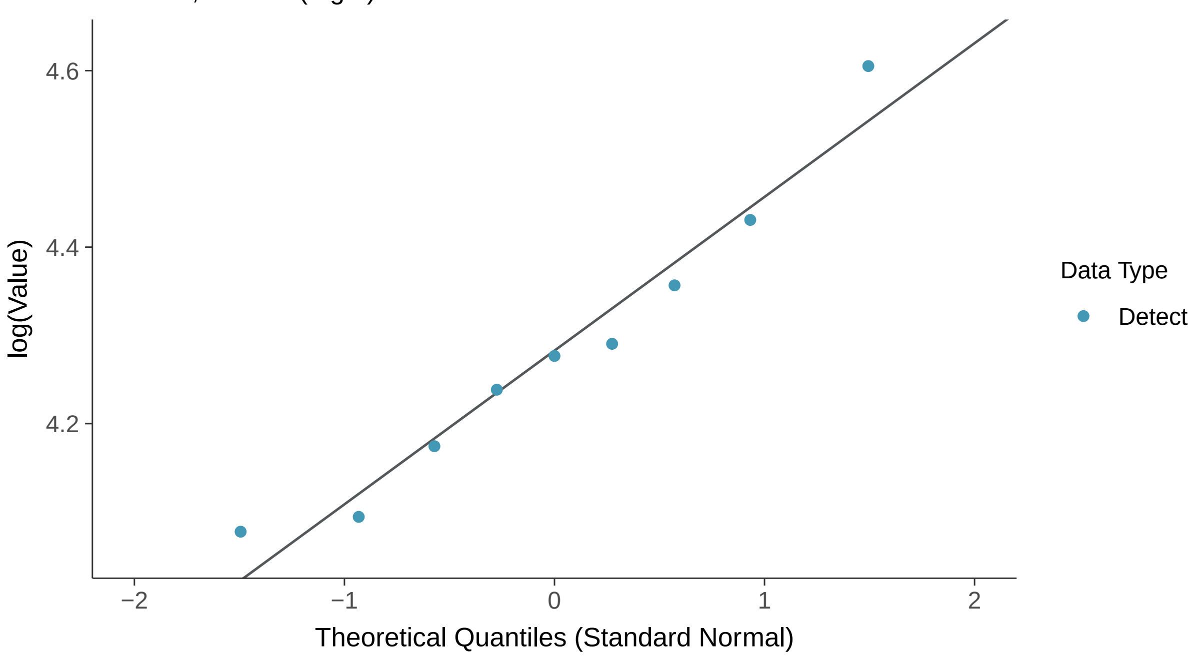
Normal Q-Q plot

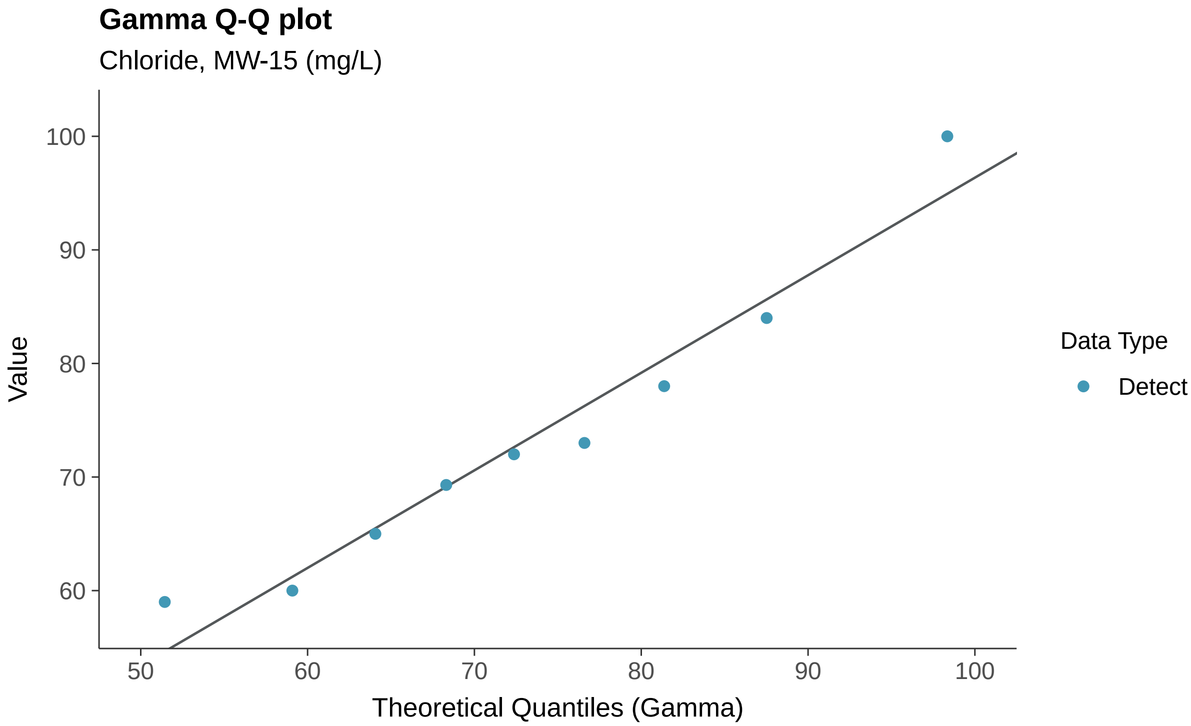
Chloride, MW-15 (mg/L)

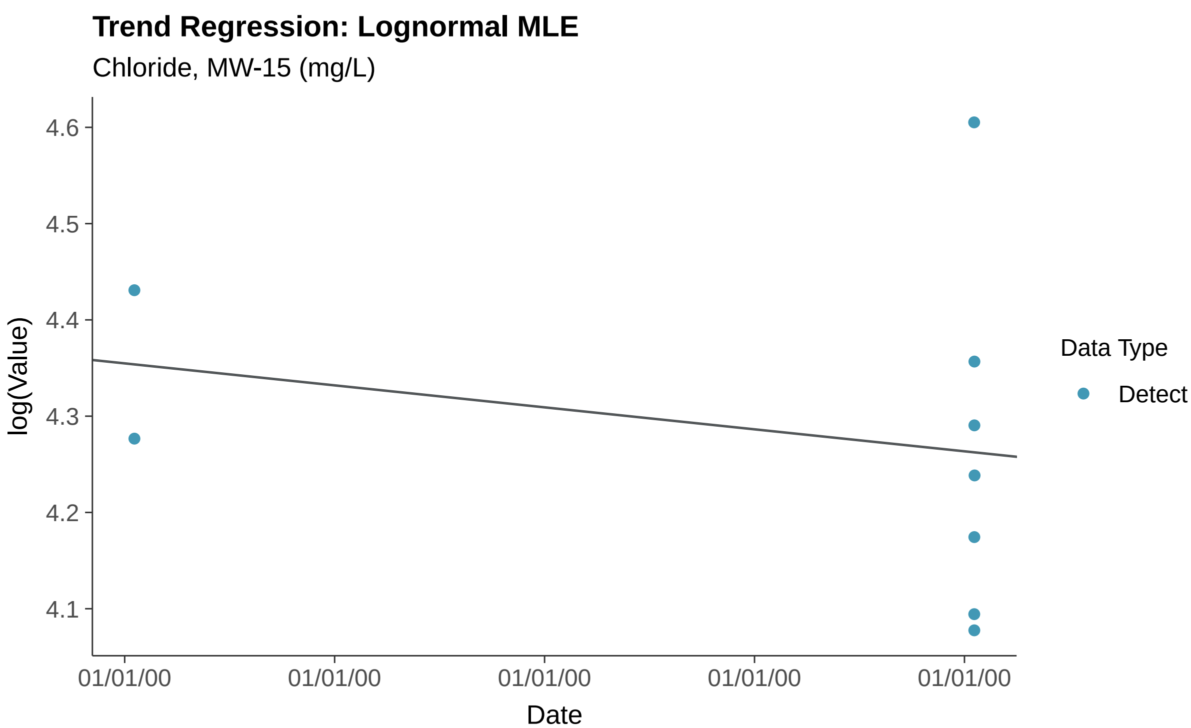


Lognormal Q-Q plot

Chloride, MW-15 (mg/L)

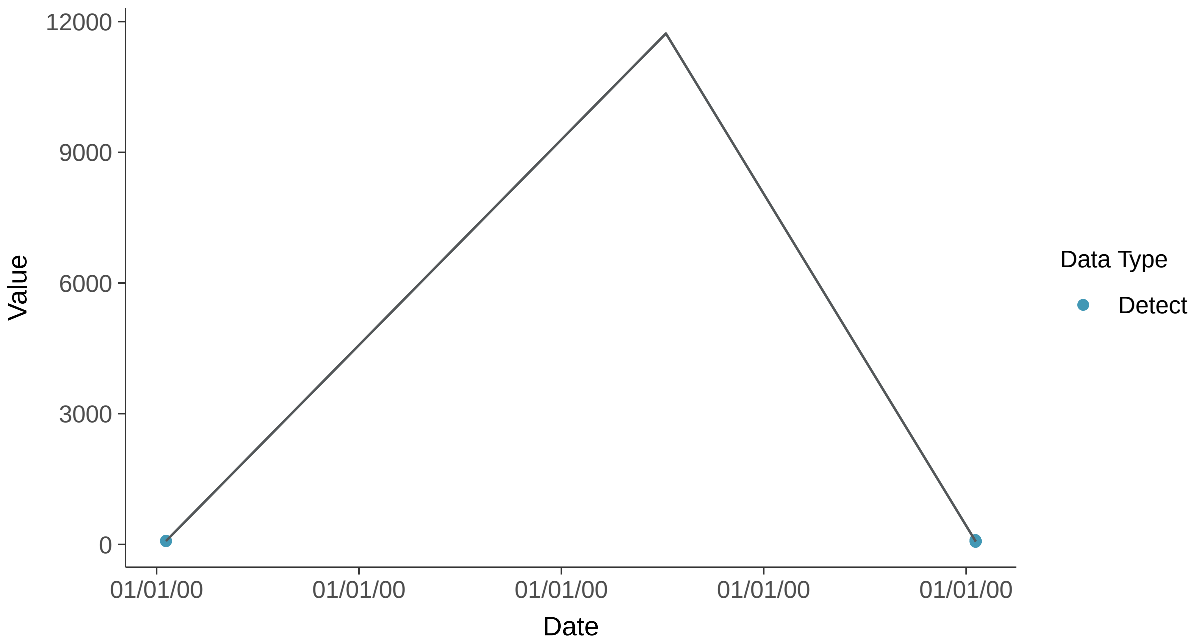



Gamma Q-Q plot
Chloride, MW-15 (mg/L)
Value
100
90
80
70
60
50
60
70
80
90
100
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Chloride, MW-15 (mg/L)
log(Value)
4.6
4.5
4.4
4.3
4.2
4.1
01/01/00
01/01/00
01/01/00
01/01/00
01/01/00
Date
Data Type
Detect

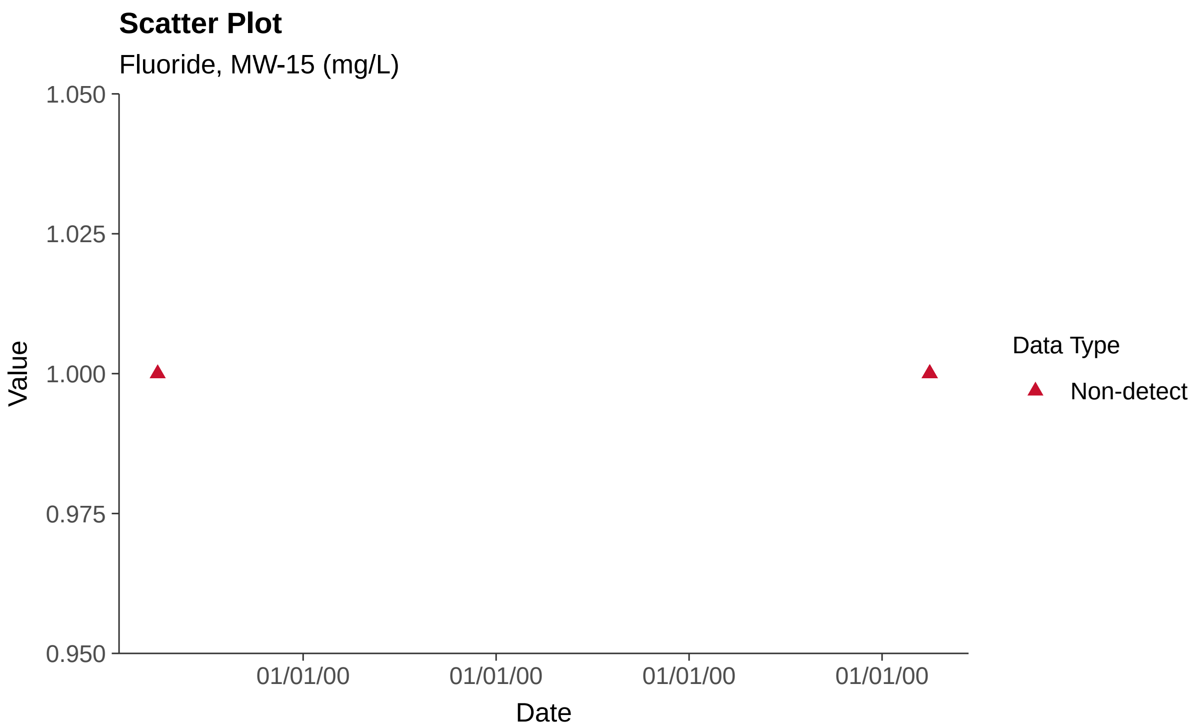
Trend Regression: Piecewise Linear-Linear

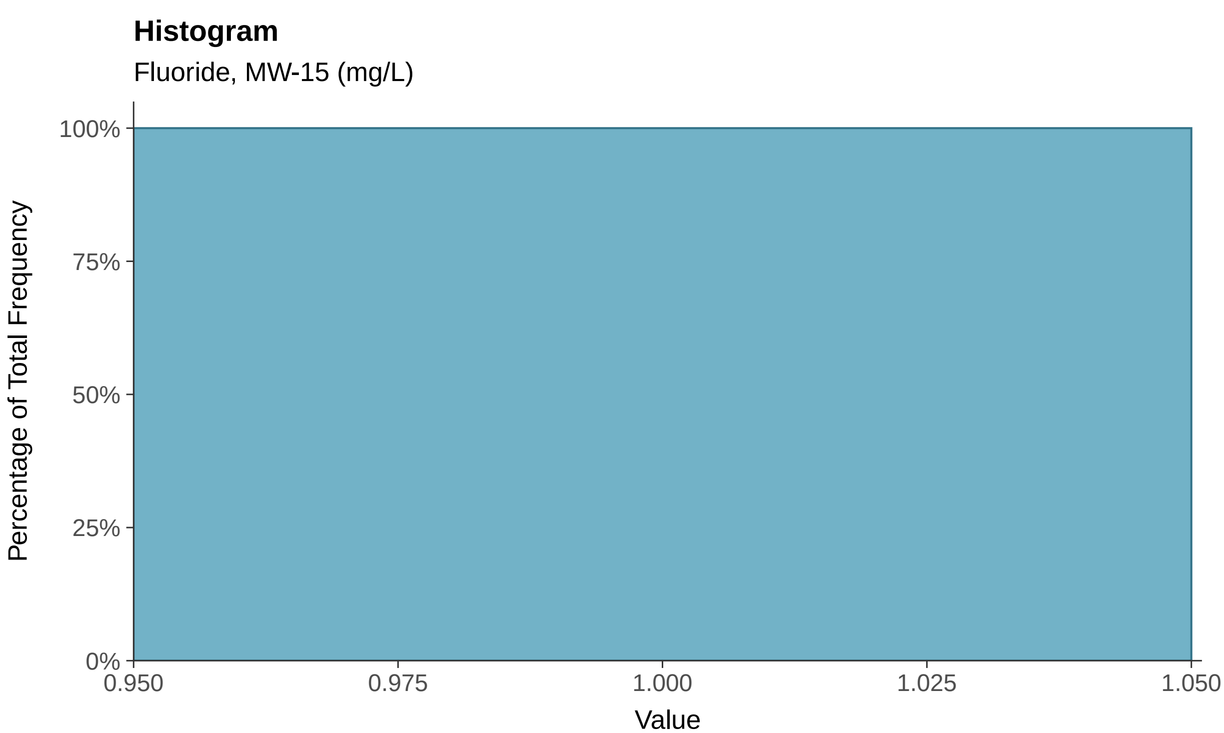
Chloride, MW-15 (mg/L)



Appendix III: Fluoride, MW-15

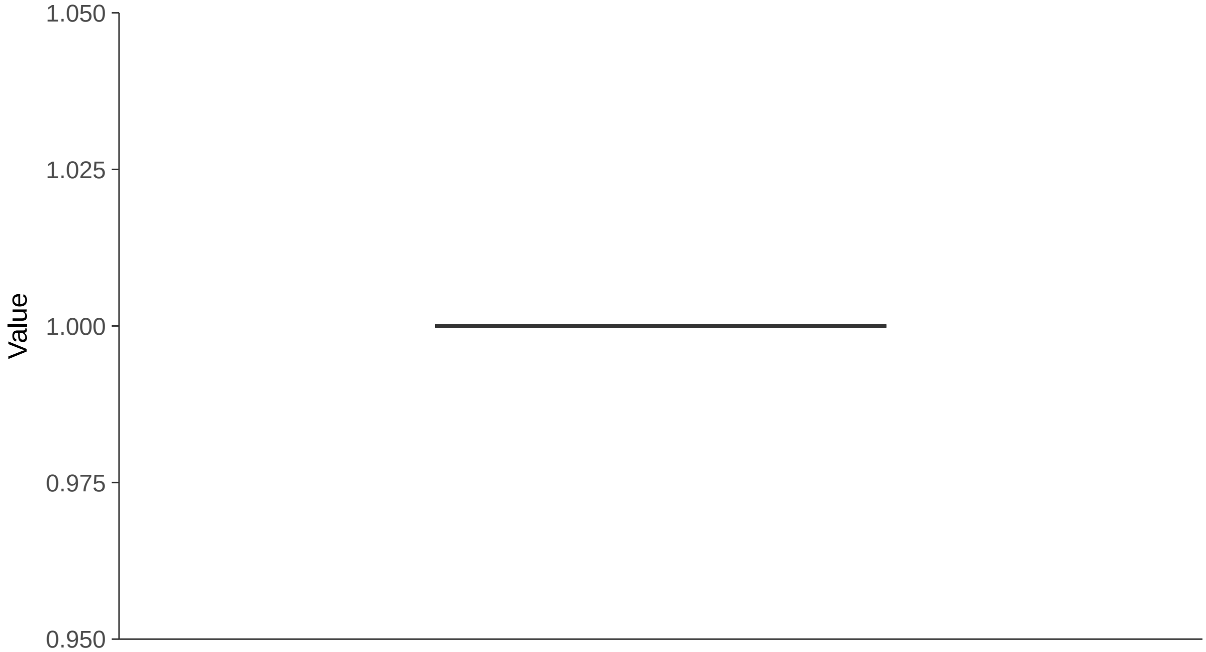
ID: 15_1_04





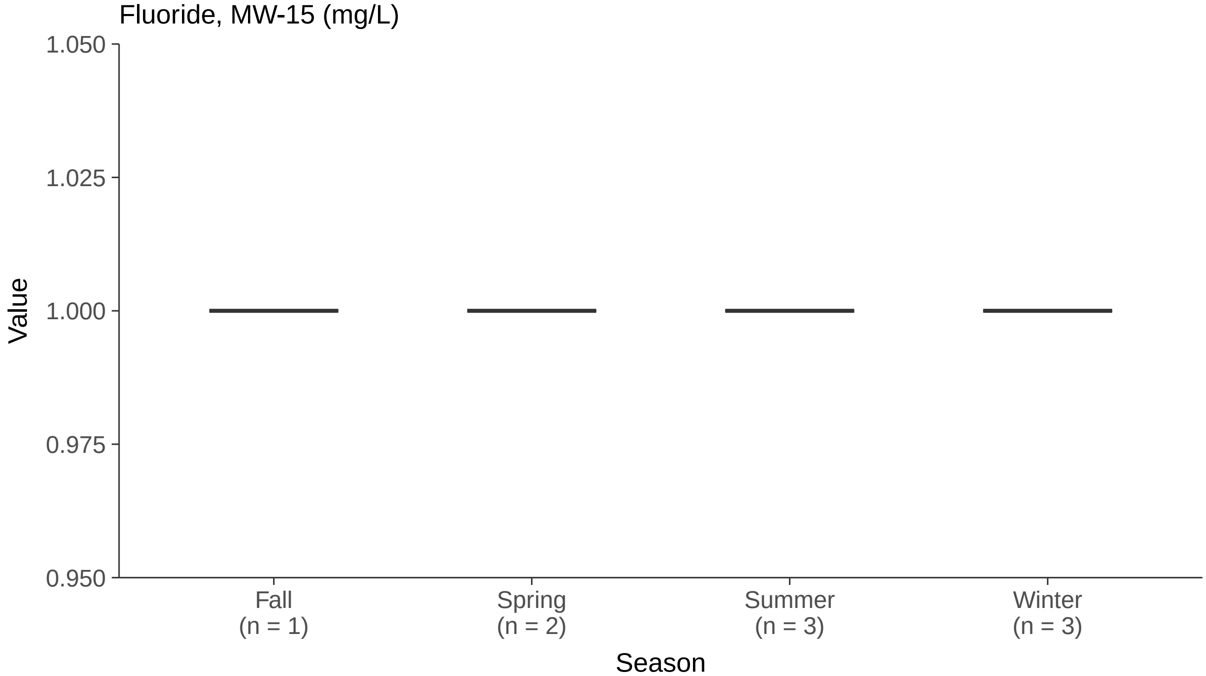
Boxplot

Fluoride, MW-15 (mg/L)



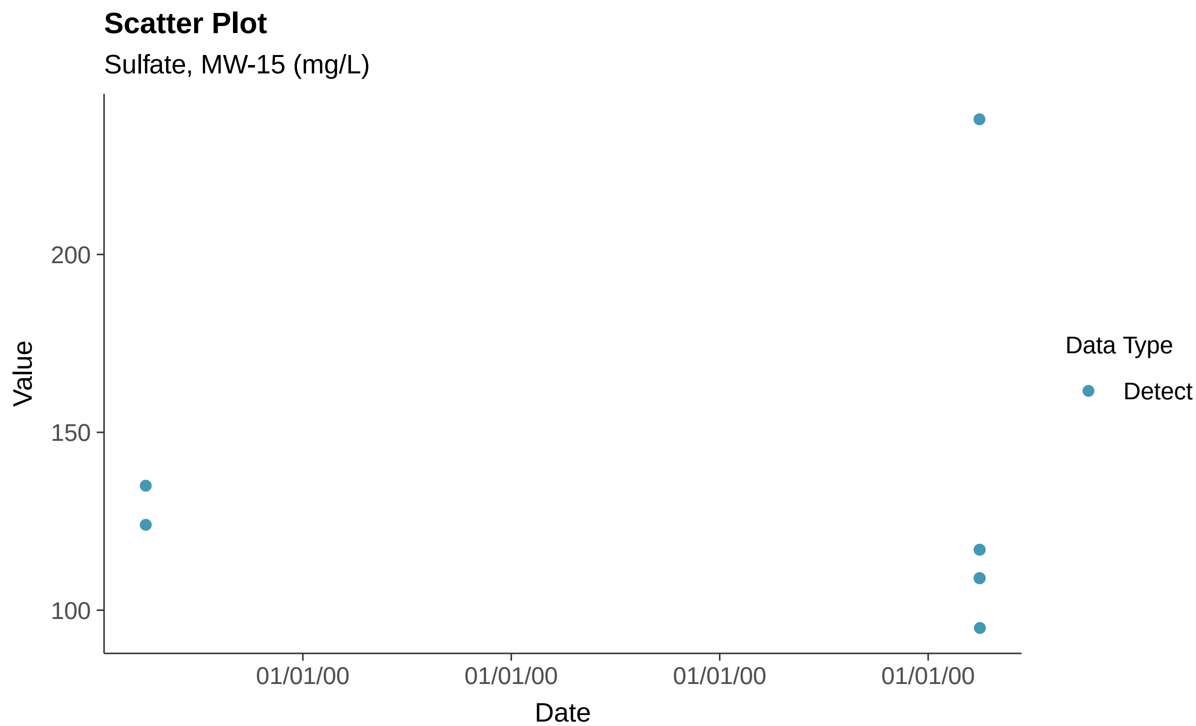
Boxplot by Season

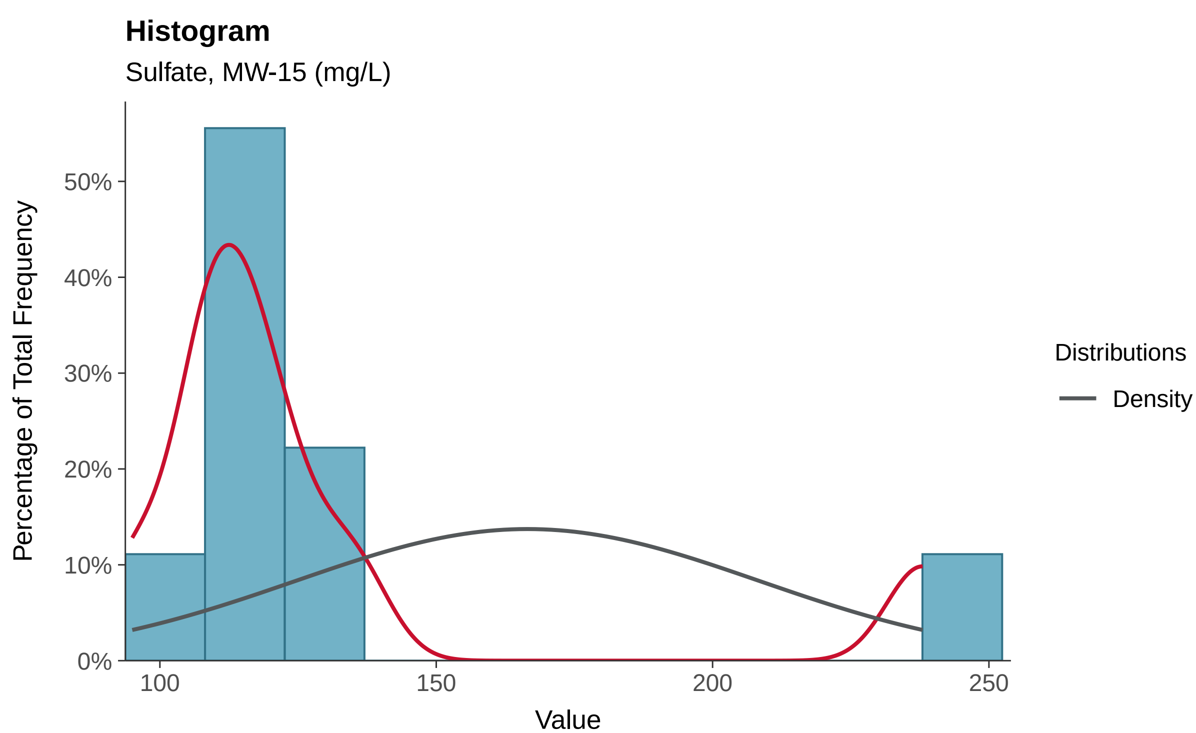
Fluoride, MW-15 (mg/L)



Appendix III: Sulfate, MW-15

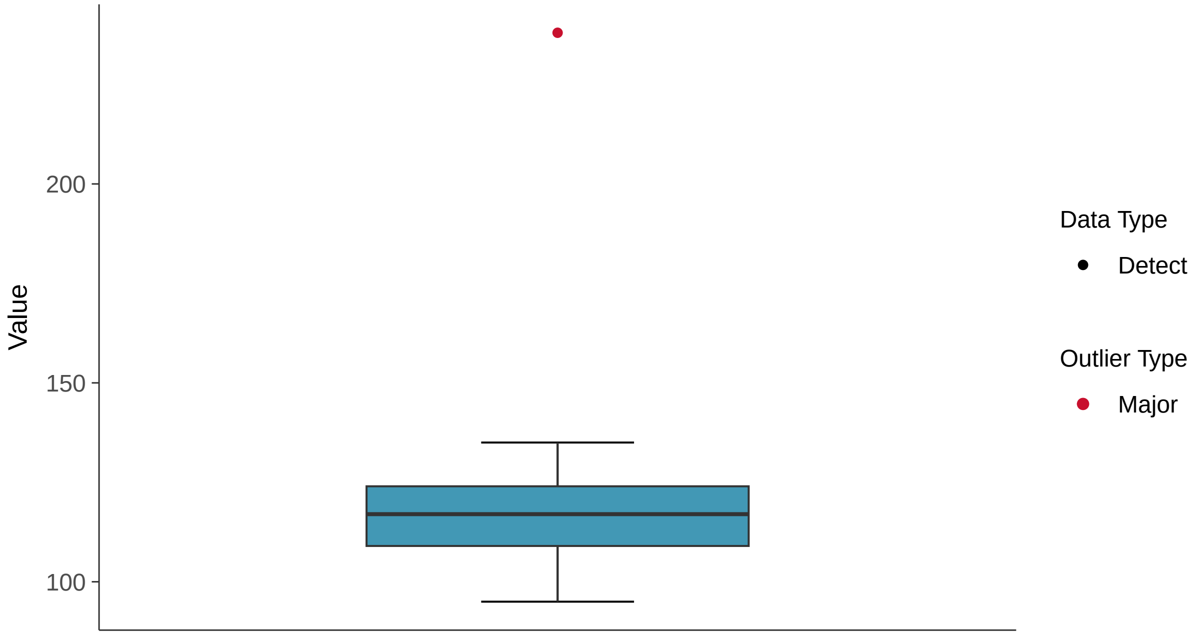
ID: 15_1_05





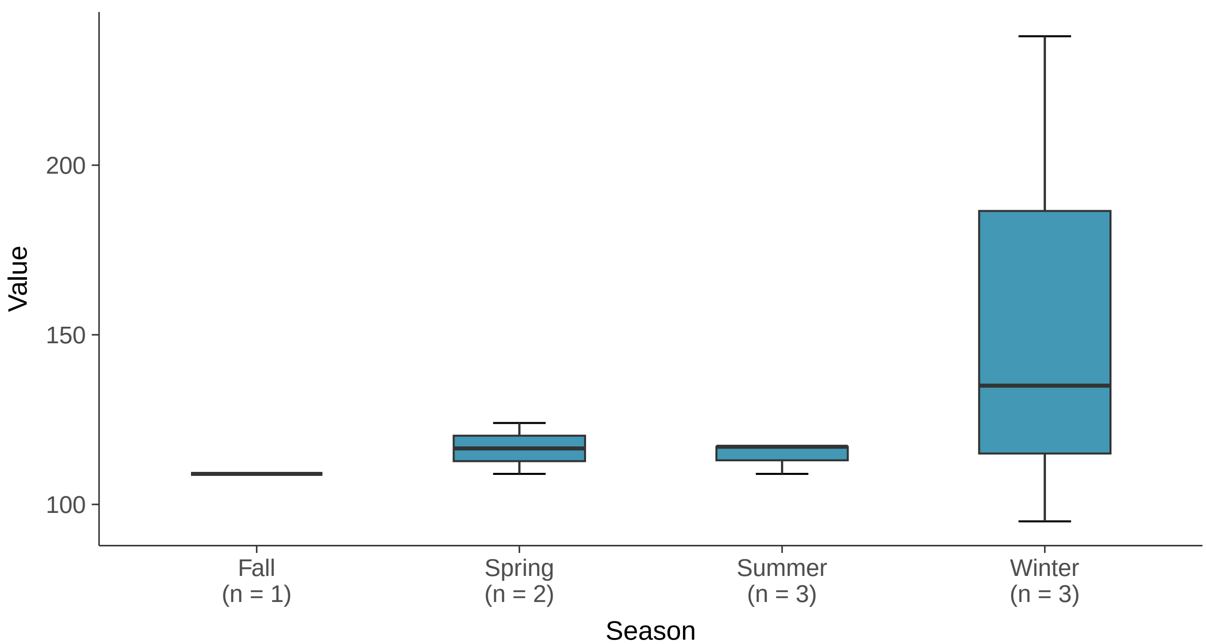
Boxplot

Sulfate, MW-15 (mg/L)



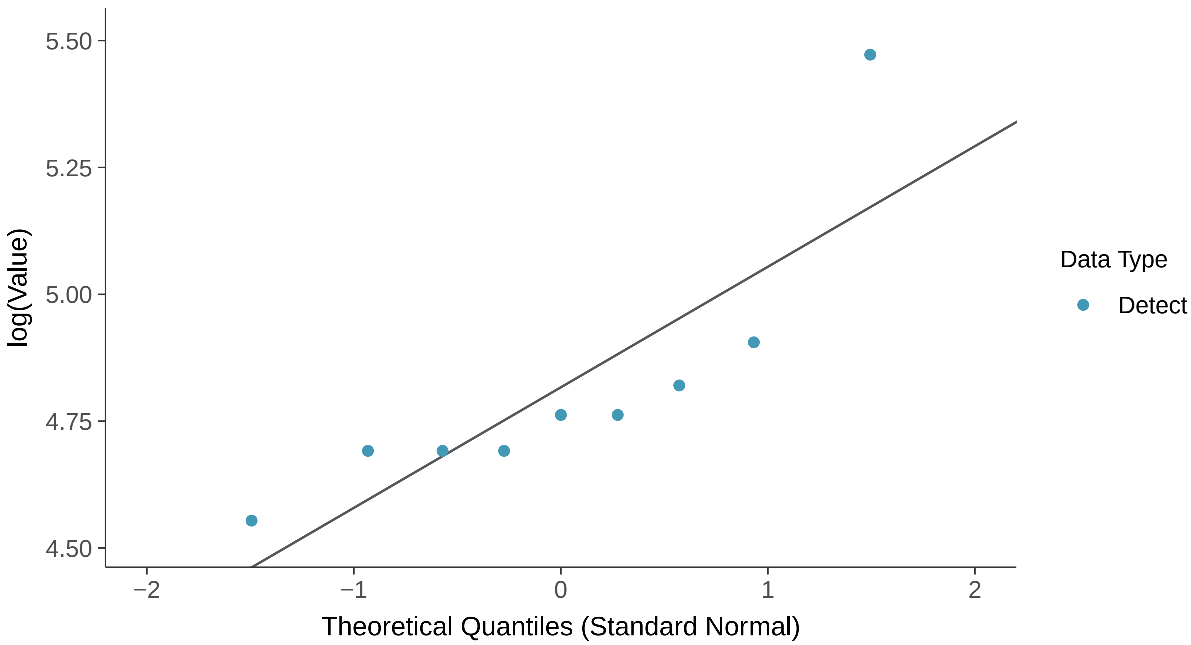
Boxplot by Season

Sulfate, MW-15 (mg/L)



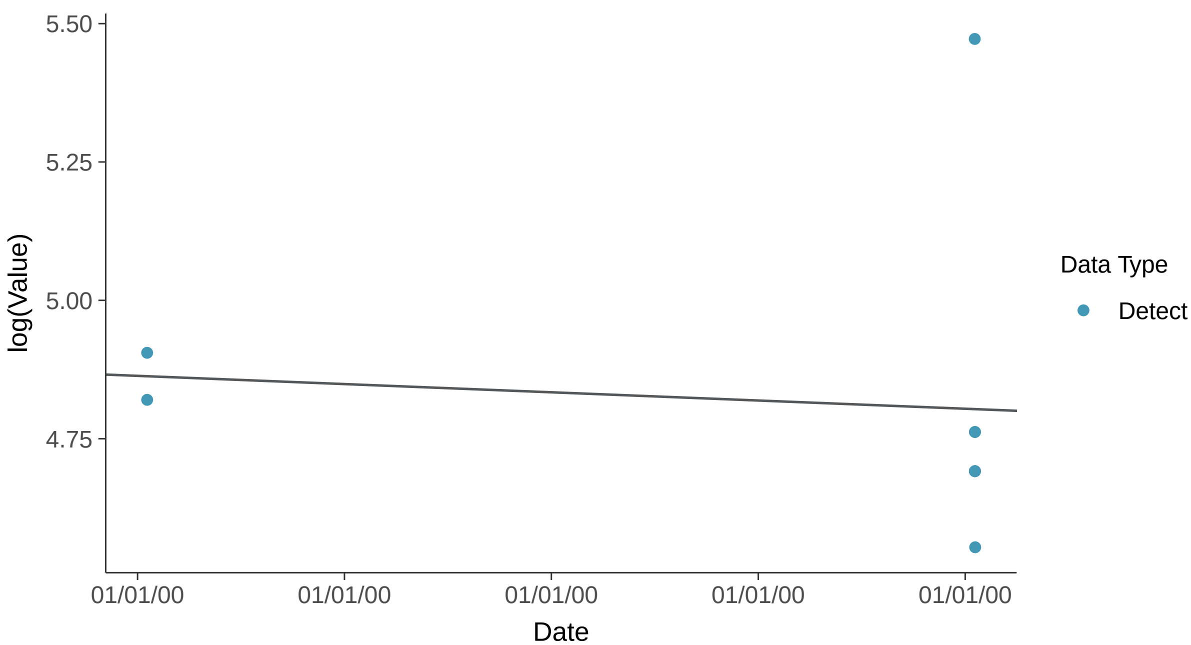
Lognormal Q-Q plot

Sulfate, MW-15 (mg/L)



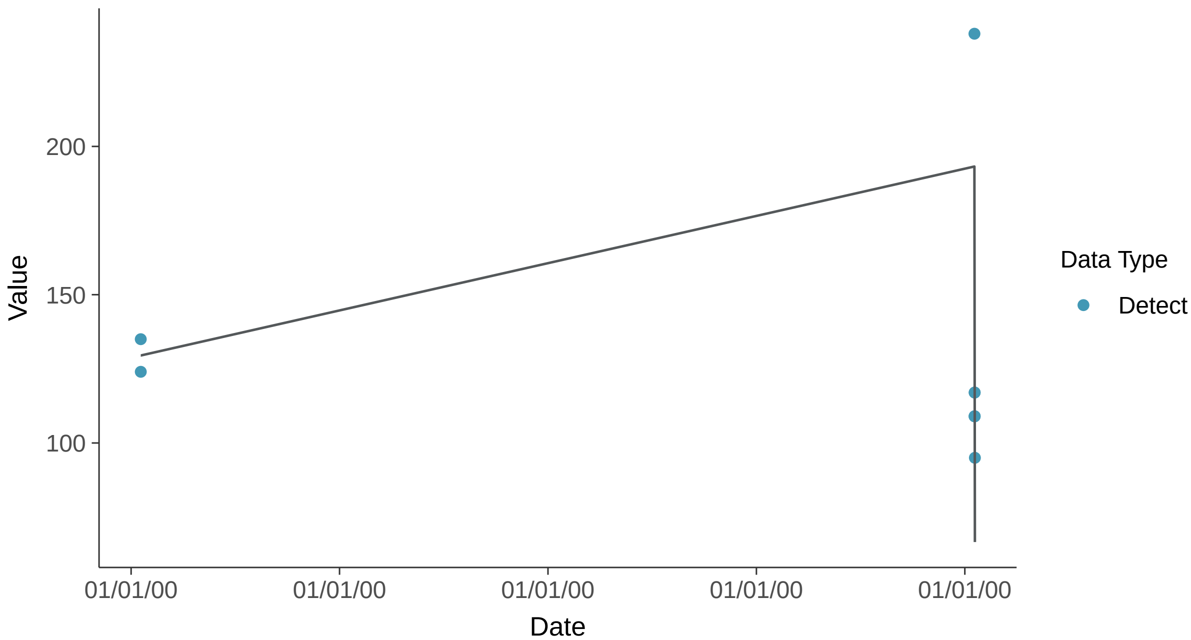
Trend Regression: Lognormal MLE

Sulfate, MW-15 (mg/L)



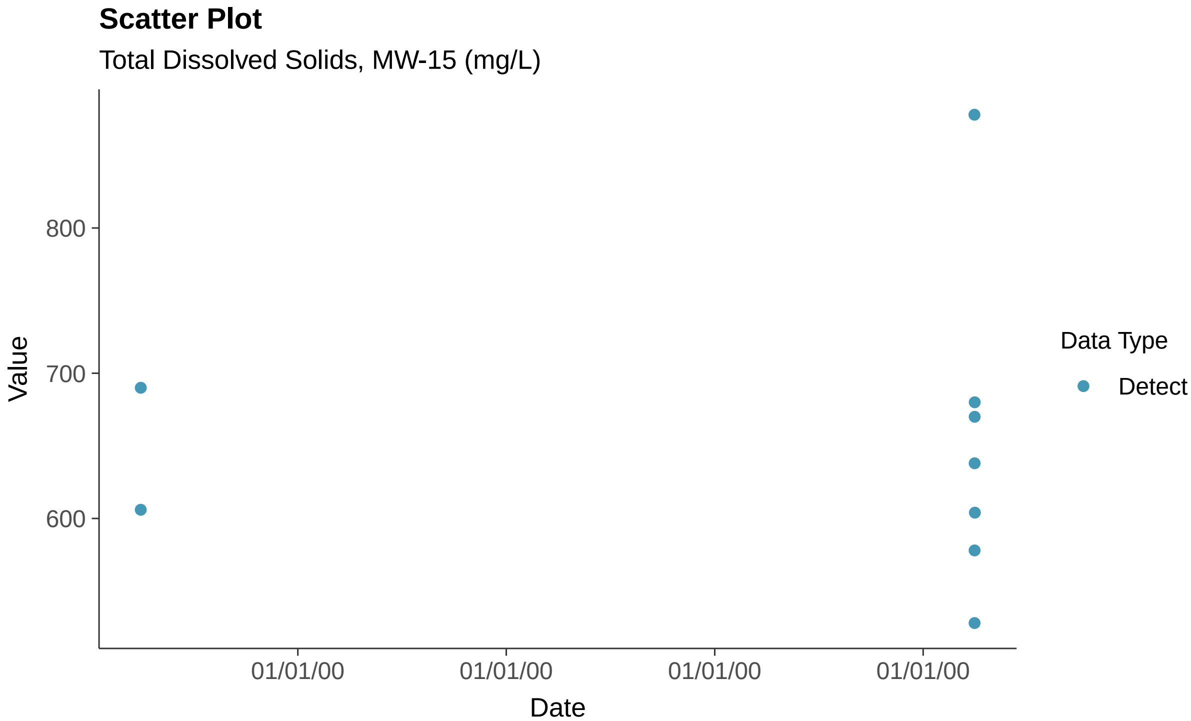
Trend Regression: Piecewise Linear-Linear

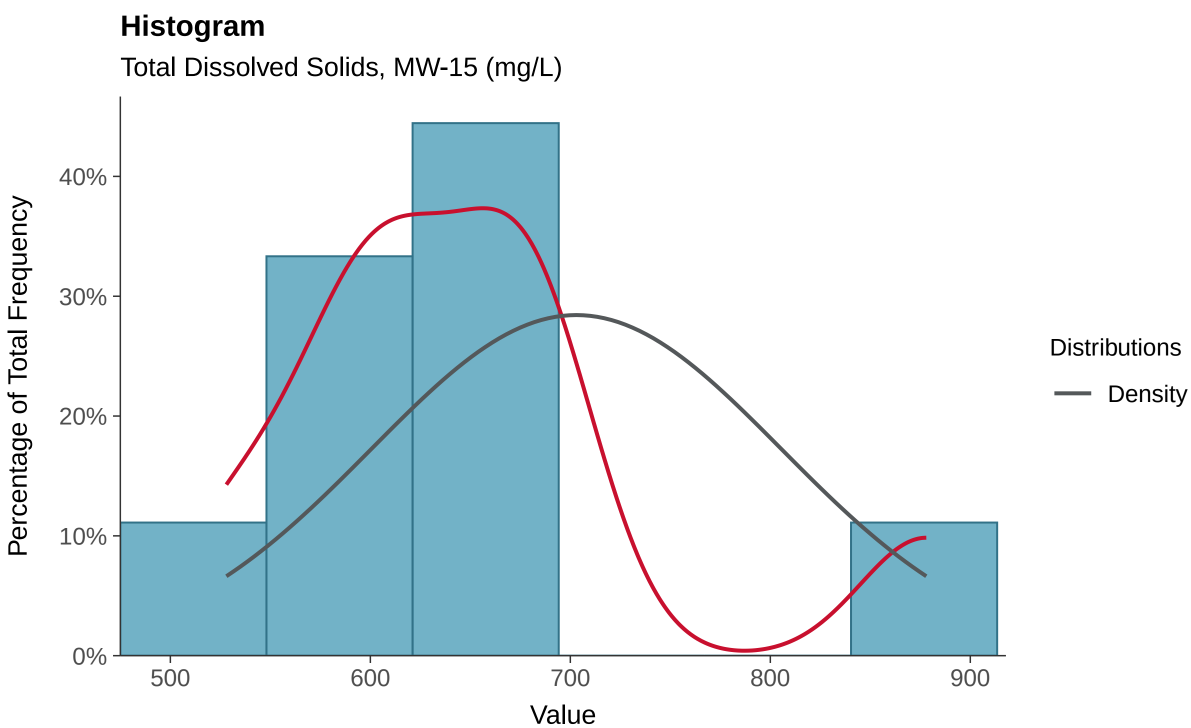
Sulfate, MW-15 (mg/L)



Appendix III: Total Dissolved Solids, MW-15

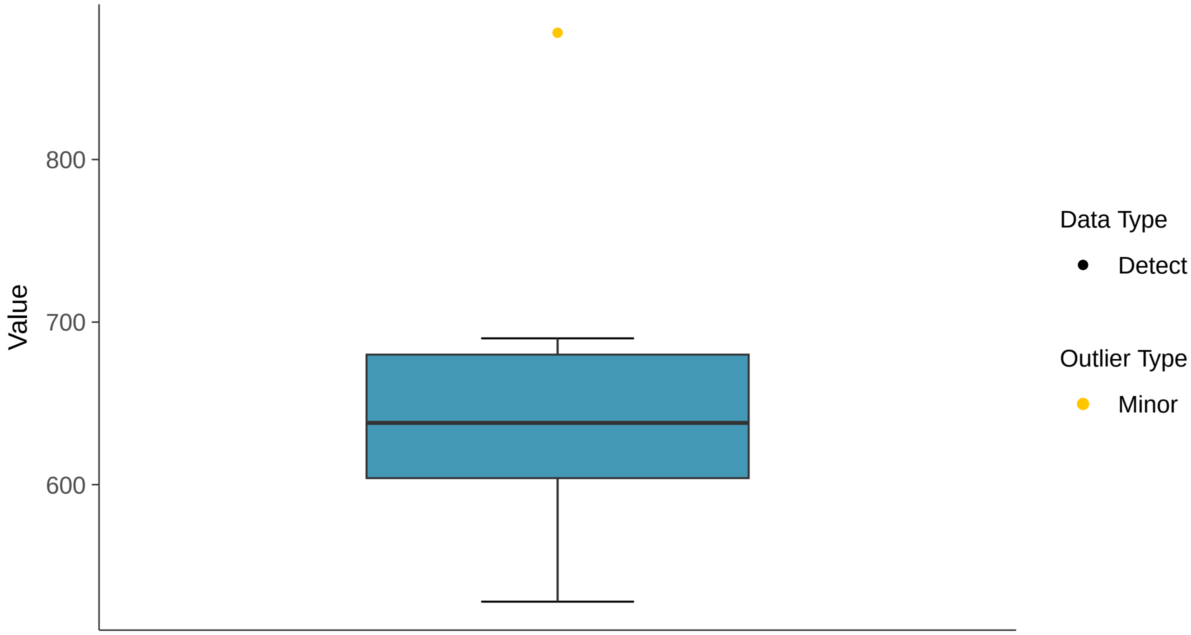
ID: 15_1_06





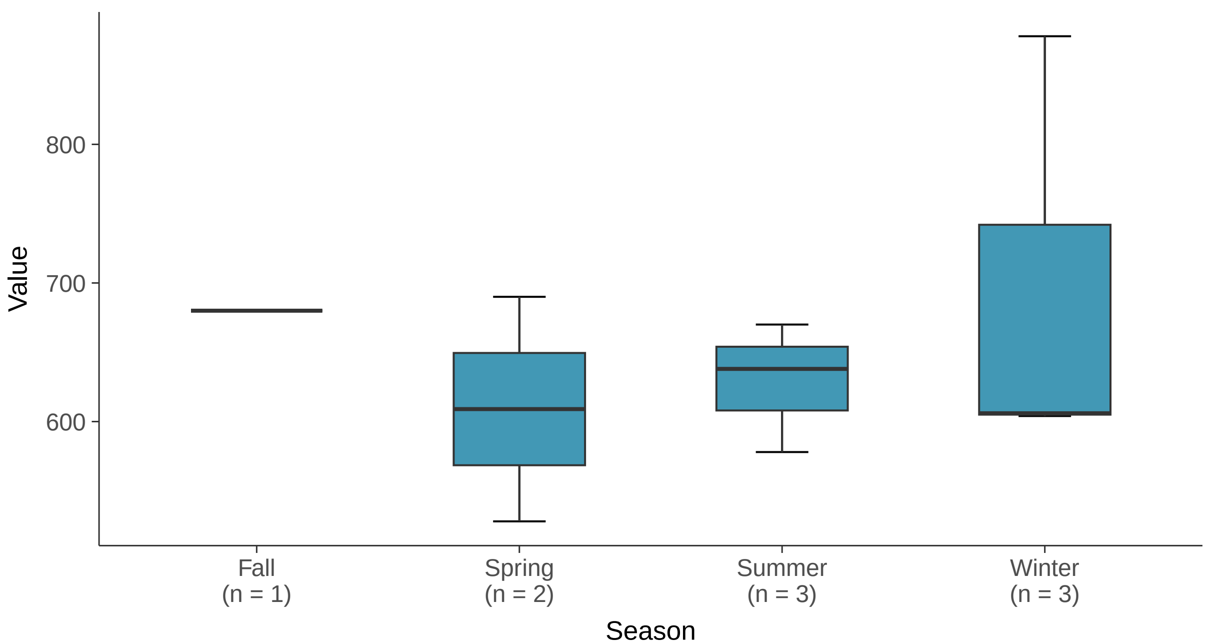
Boxplot

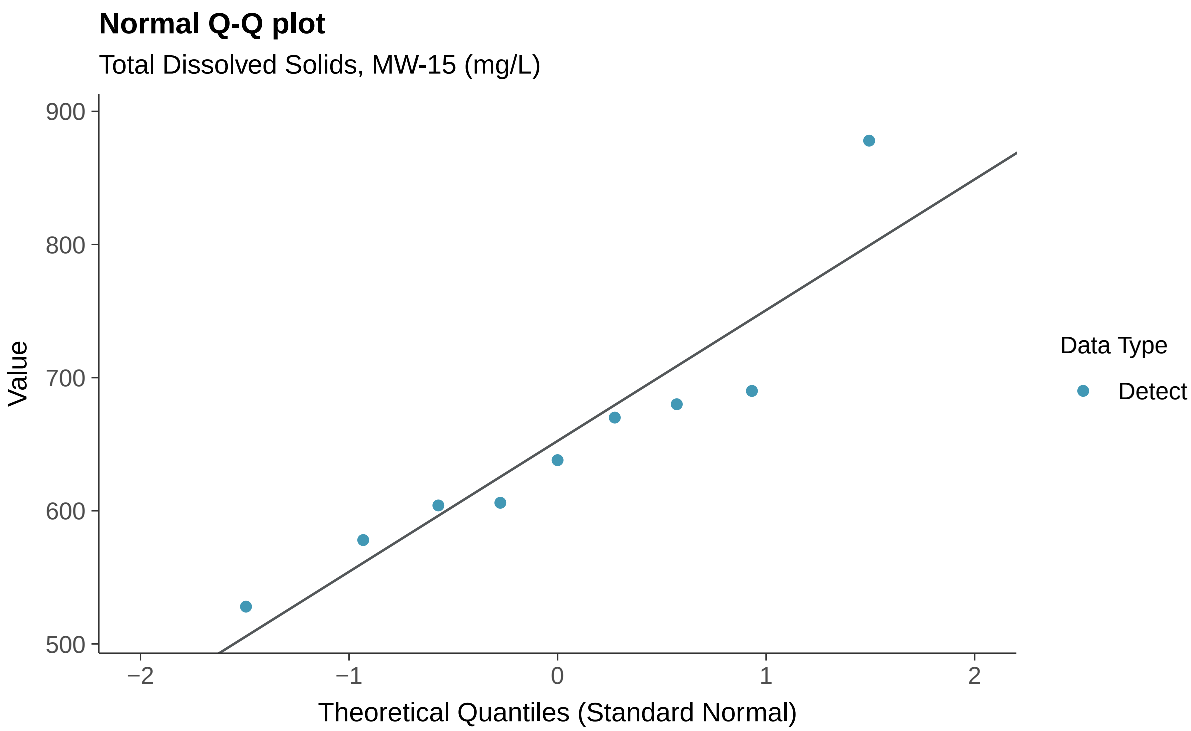
Total Dissolved Solids, MW-15 (mg/L)

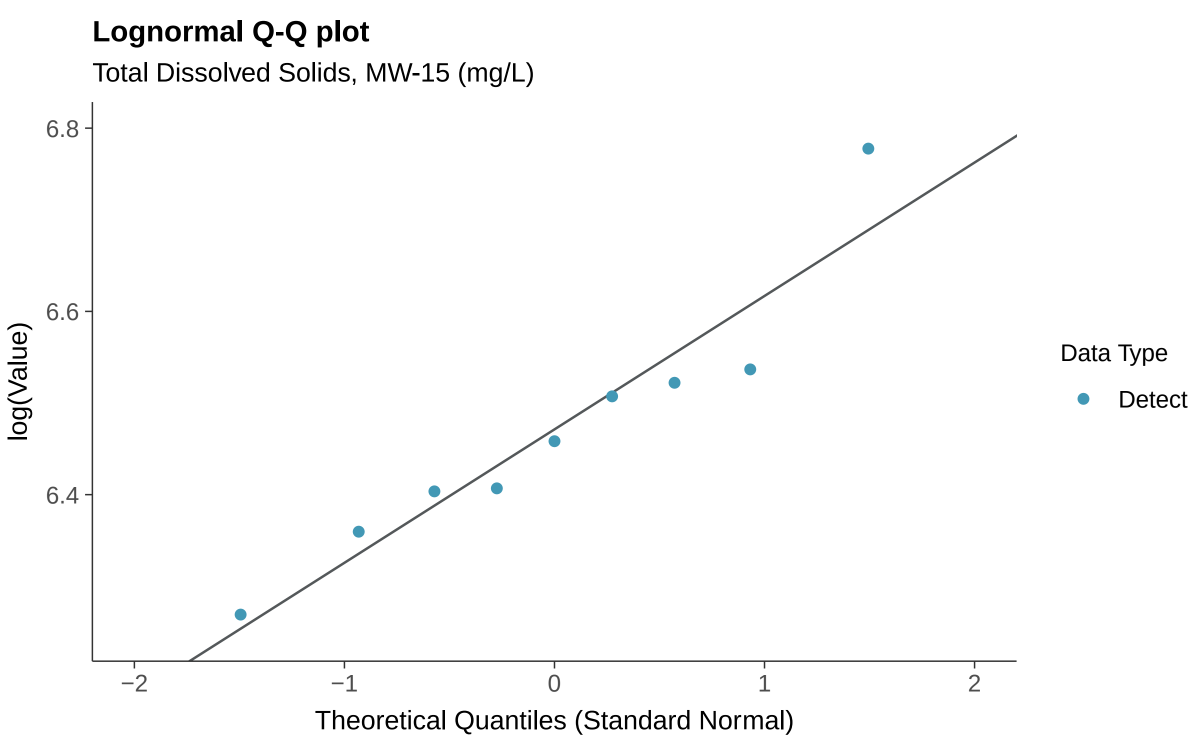


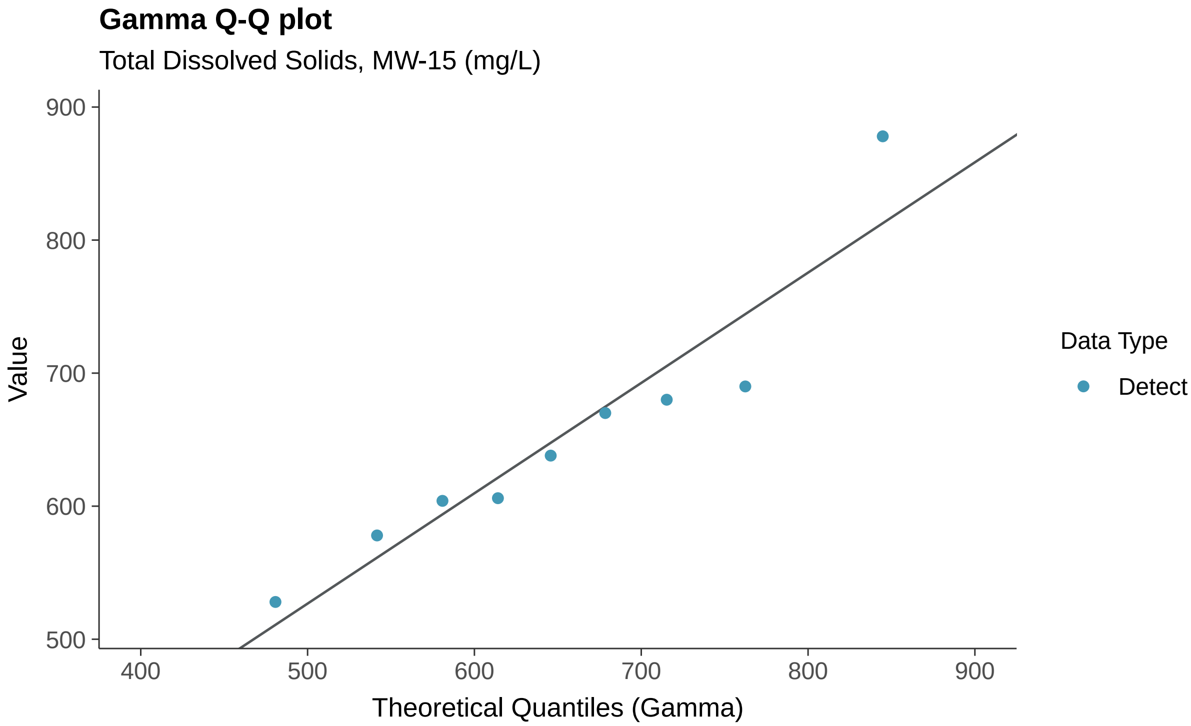
Boxplot by Season

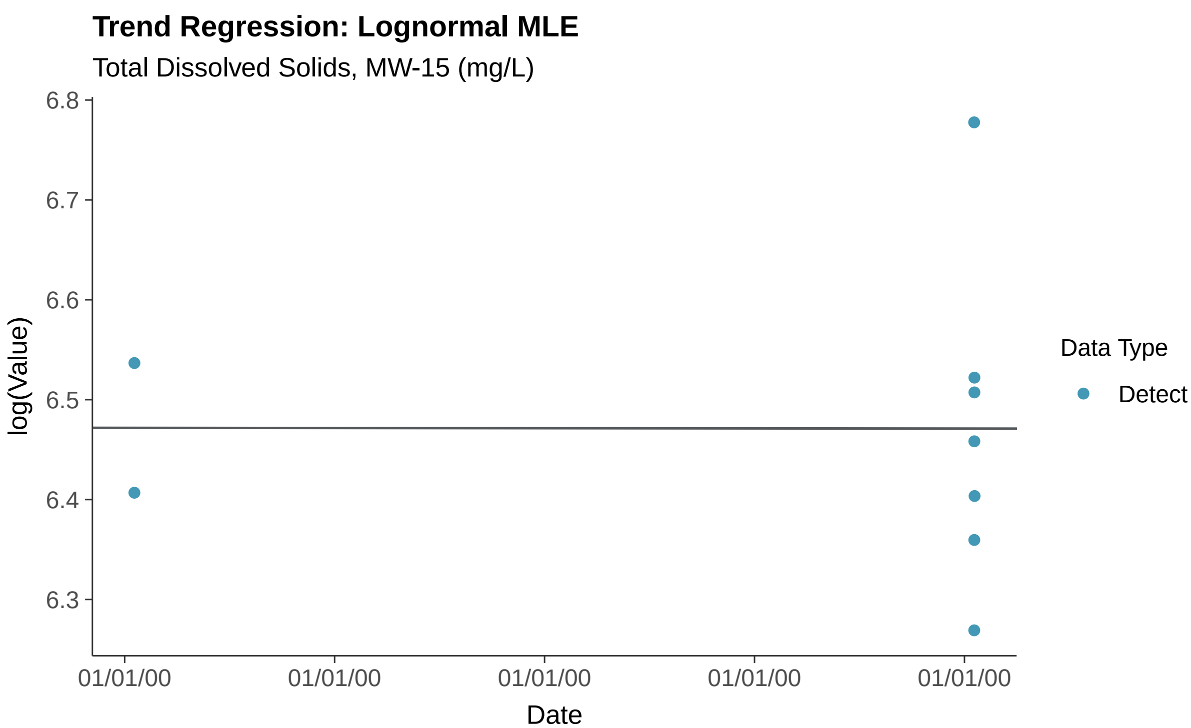
Total Dissolved Solids, MW-15 (mg/L)




Normal Q-Q plot
Total Dissolved Solids, MW-15 (mg/L)
900
800
700
600
500
Value
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

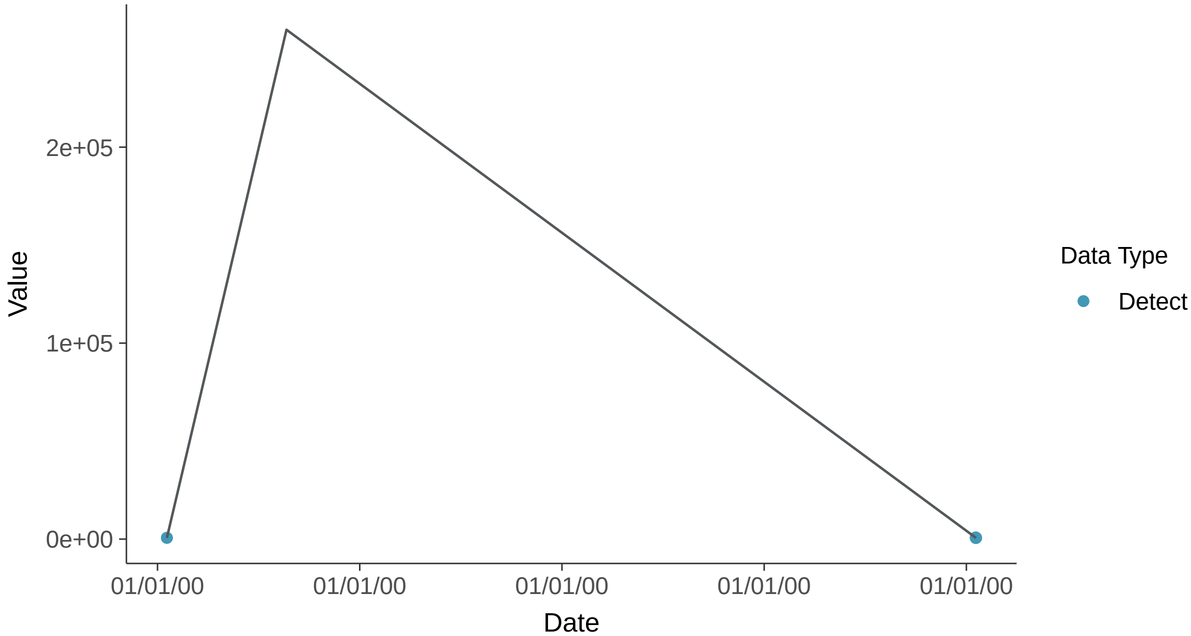

Lognormal Q-Q plot
Total Dissolved Solids, MW-15 (mg/L)
6.8
6.6
6.4
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Total Dissolved Solids, MW-15 (mg/L)
Value
900
800
700
600
500
400
500
600
700
800
900
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-15 (mg/L)
log(Value)
6.8
6.7
6.6
6.5
6.4
6.3
01/01/00
01/01/00
01/01/00
01/01/00
01/01/00
Date
Data Type
Detect

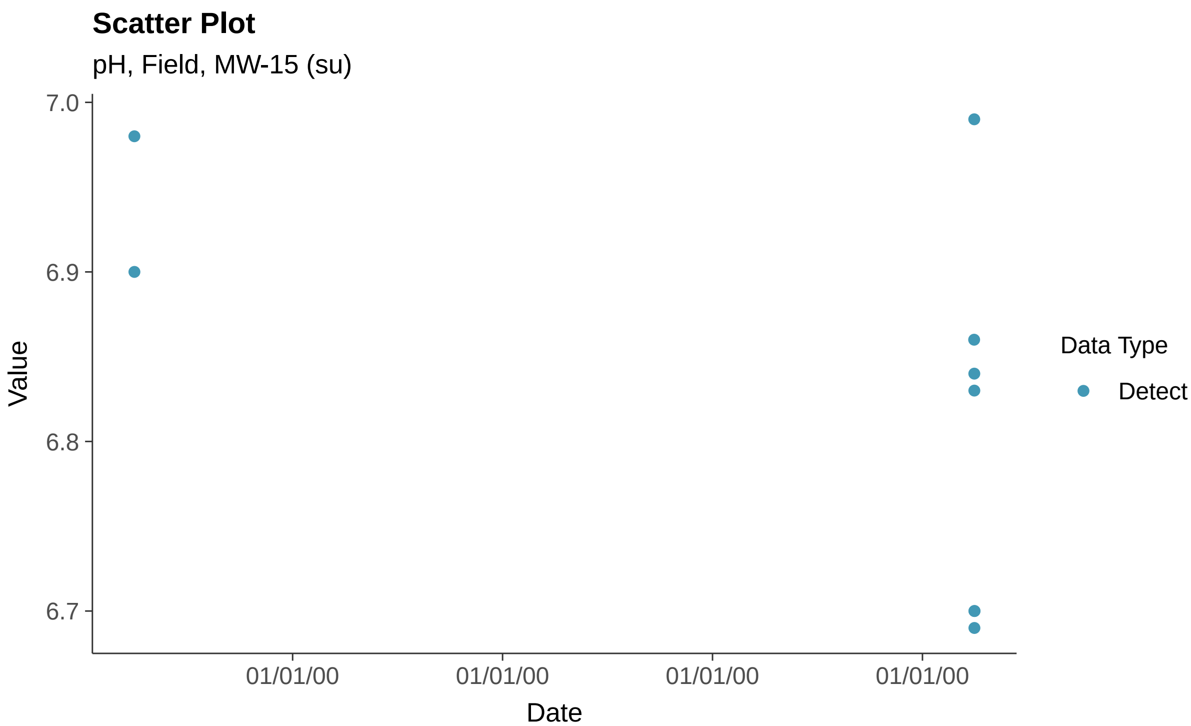
Trend Regression: Piecewise Linear-Linear

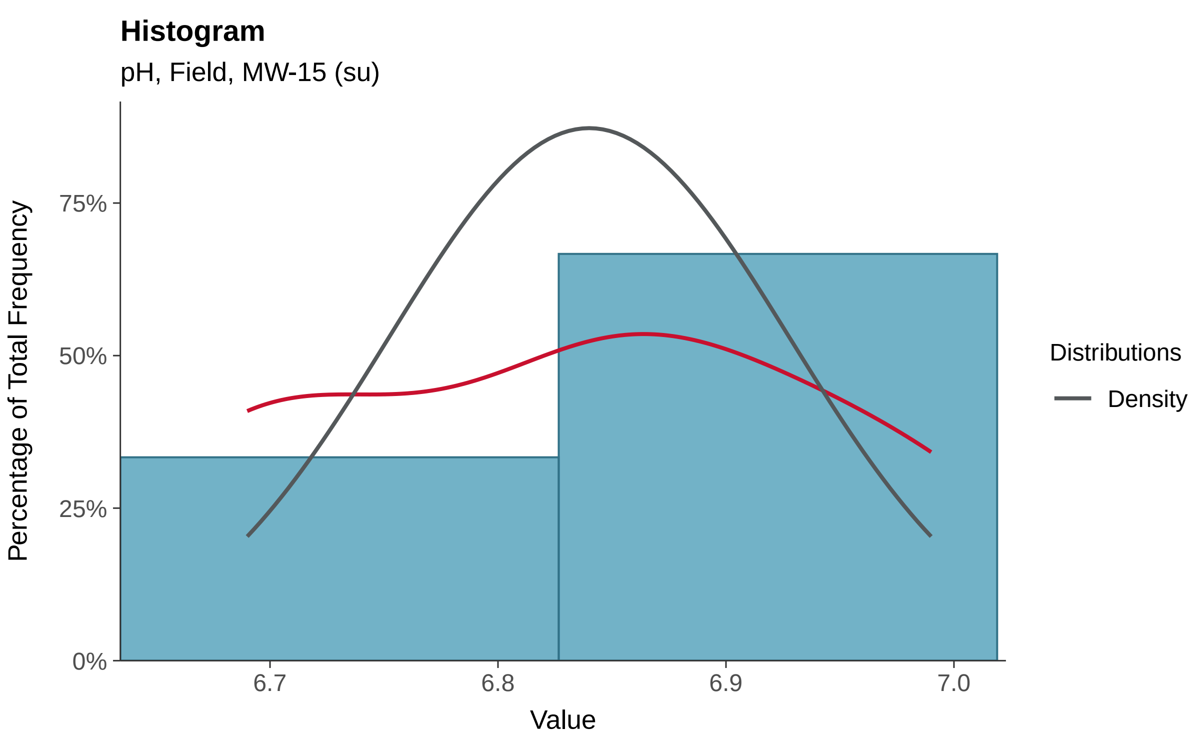
Total Dissolved Solids, MW-15 (mg/L)



Appendix III: pH, Field, MW-15

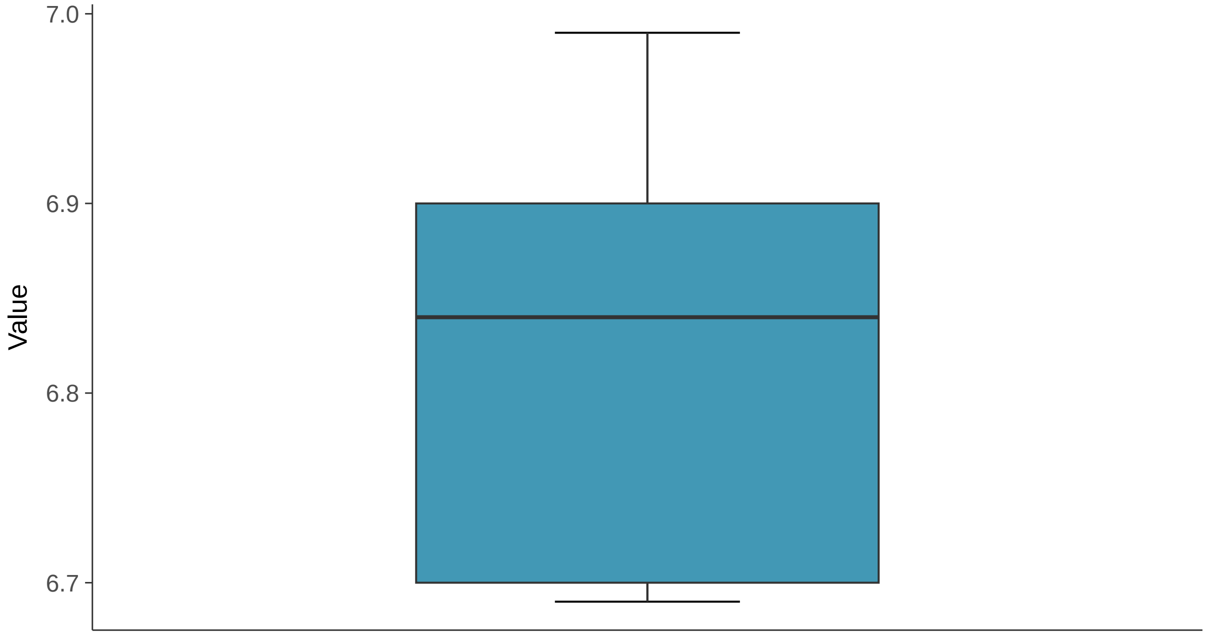
ID: 15_1_07





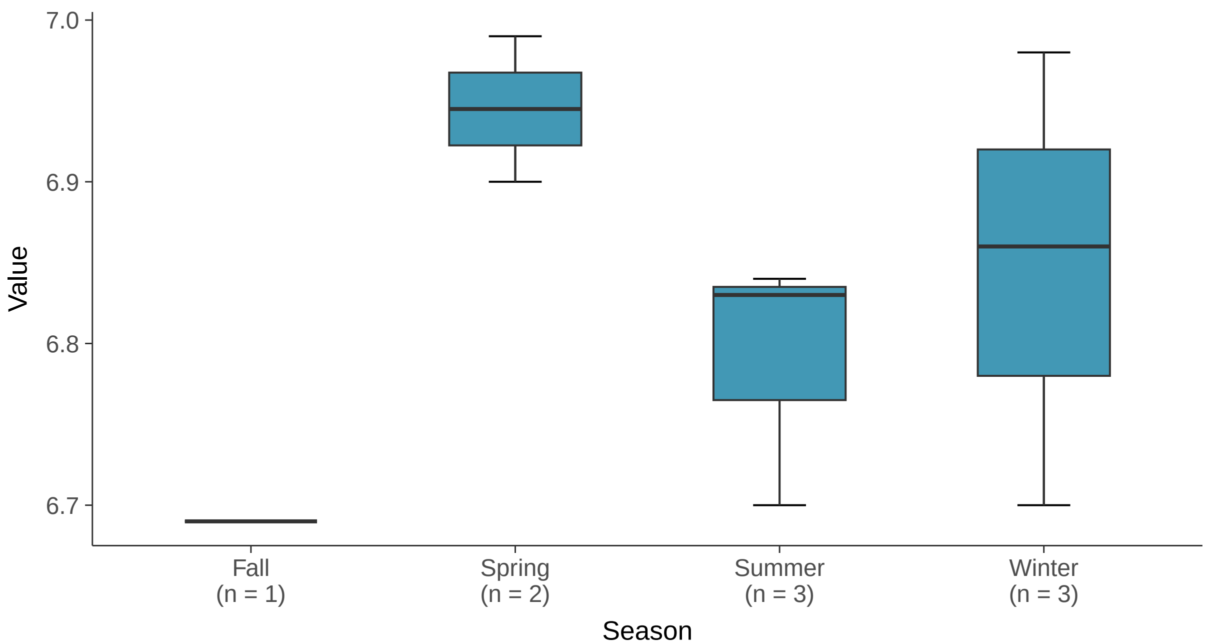
Boxplot

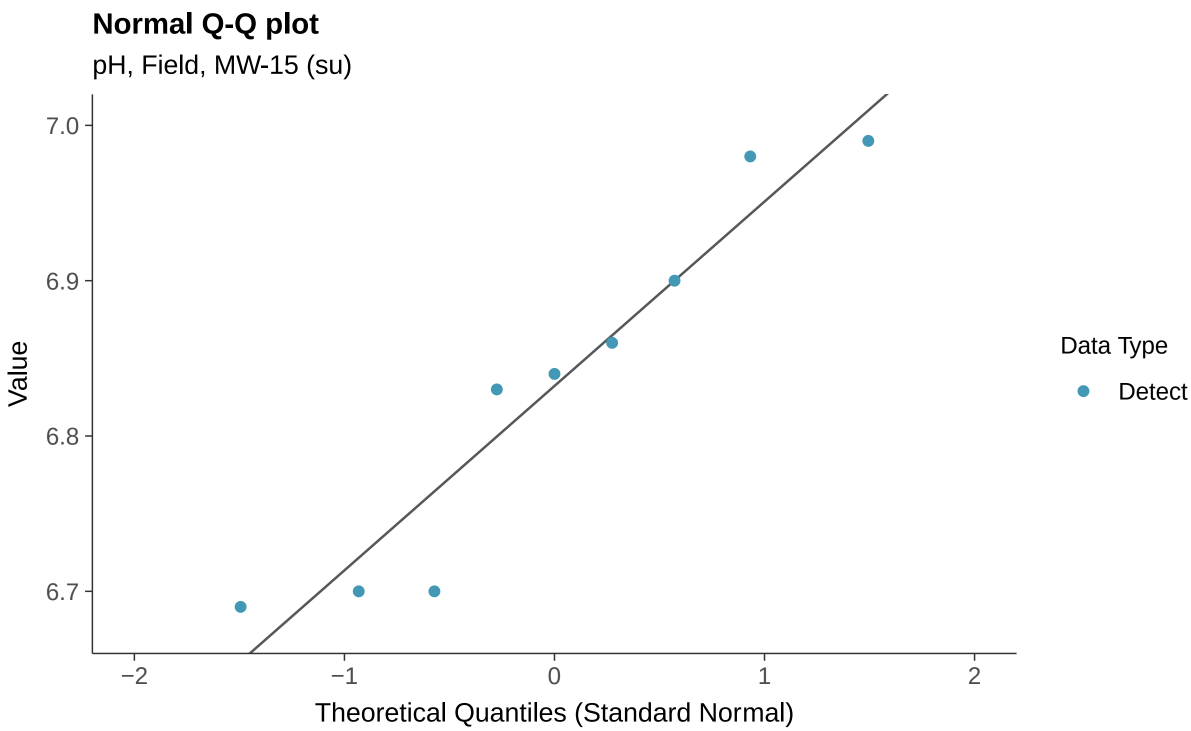
pH, Field, MW-15 (su)

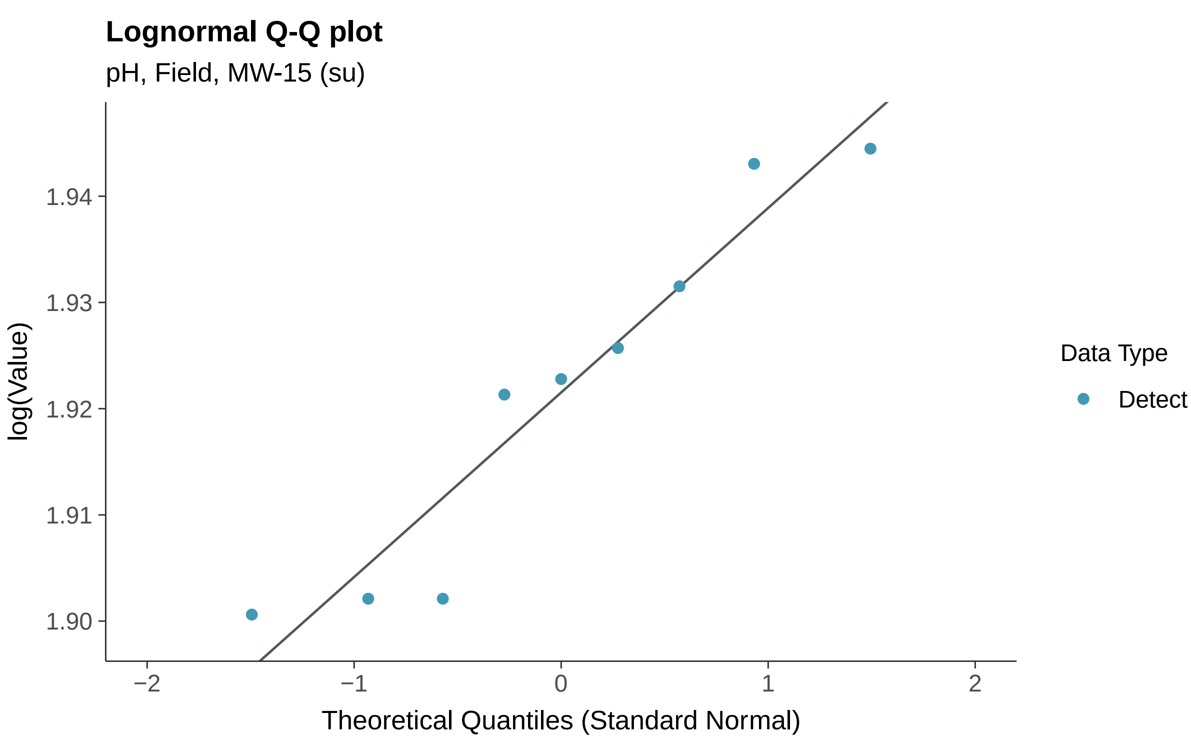


Boxplot by Season

pH, Field, MW-15 (su)

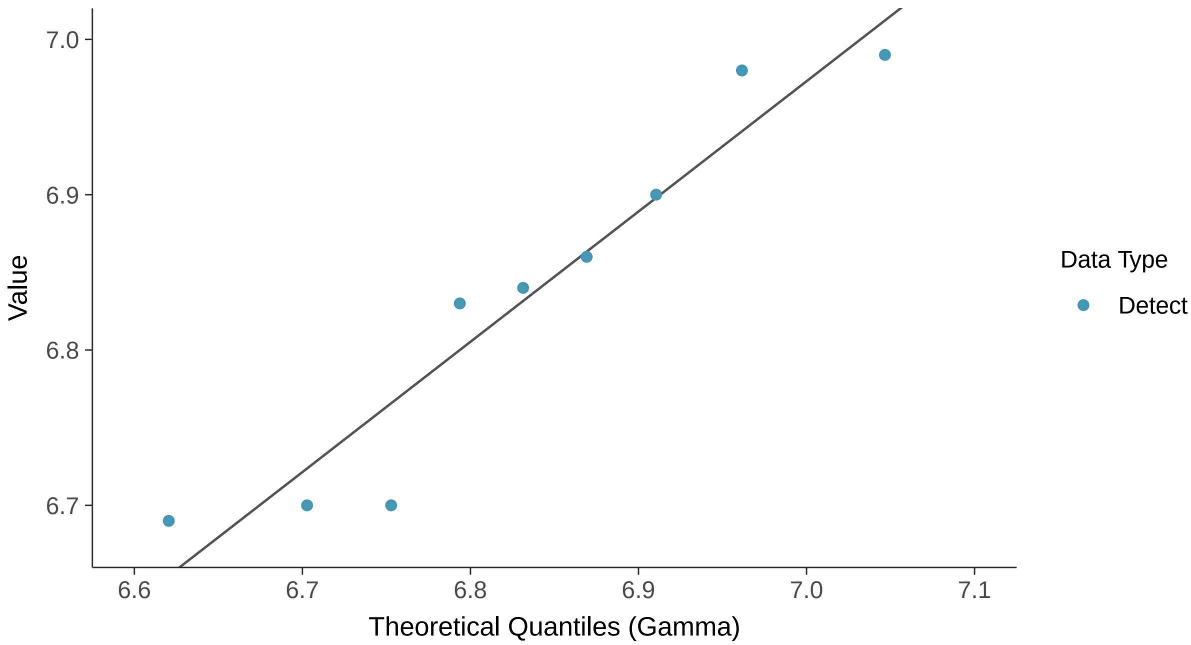



Normal Q-Q plot
pH, Field, MW-15 (su)
Value
7.0
6.9
6.8
6.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH, Field, MW-15 (su)
log(Value)
1.94
1.93
1.92
1.91
1.90
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

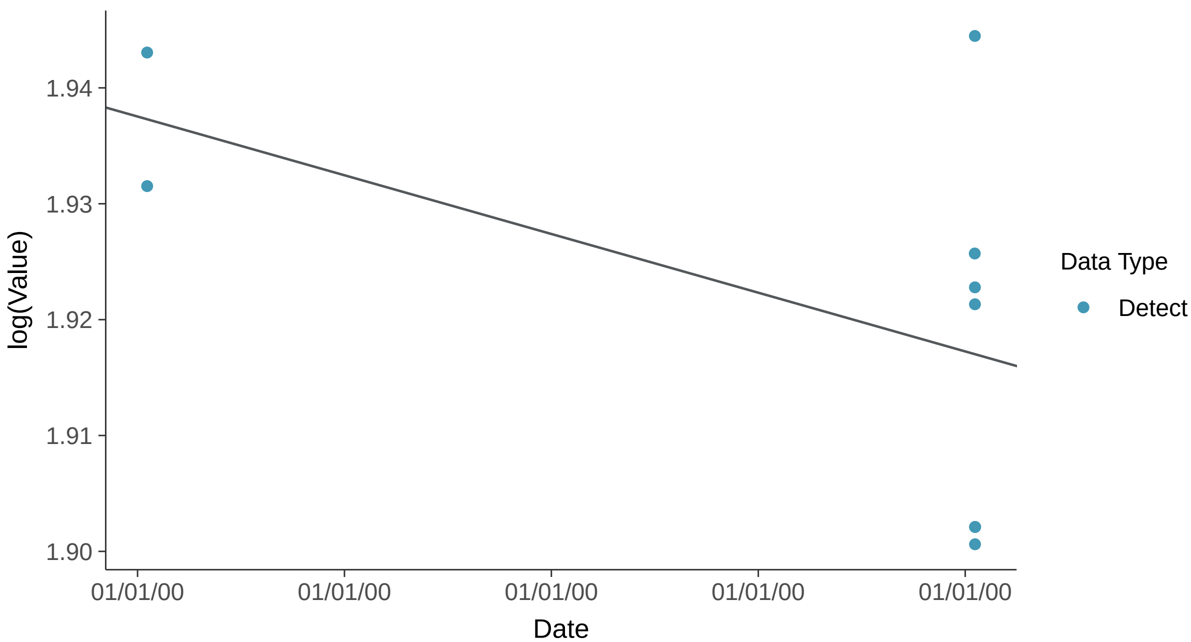
Gamma Q-Q plot

pH, Field, MW-15 (su)



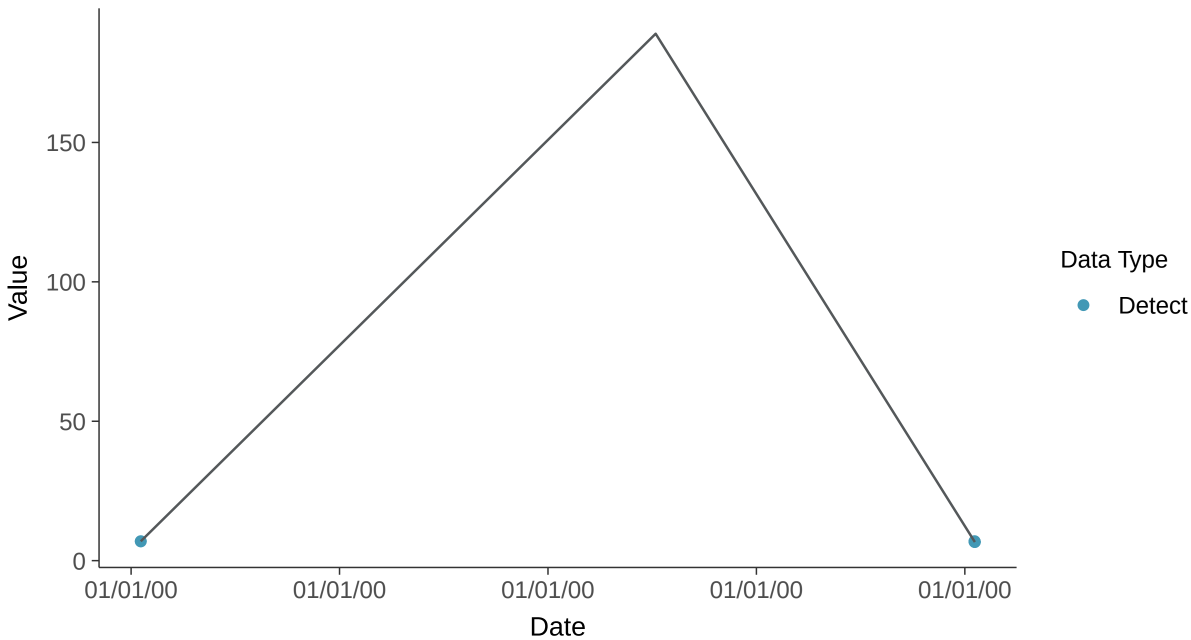
Trend Regression: Lognormal MLE

pH, Field, MW-15 (su)



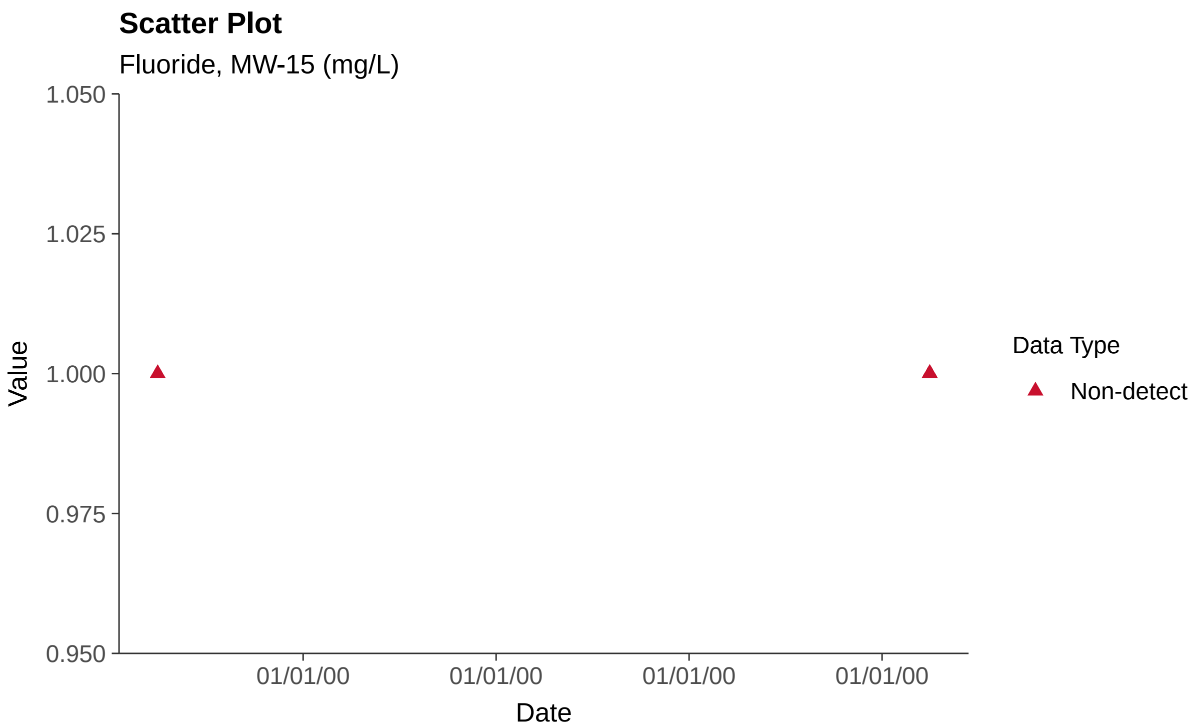
Trend Regression: Piecewise Linear-Linear

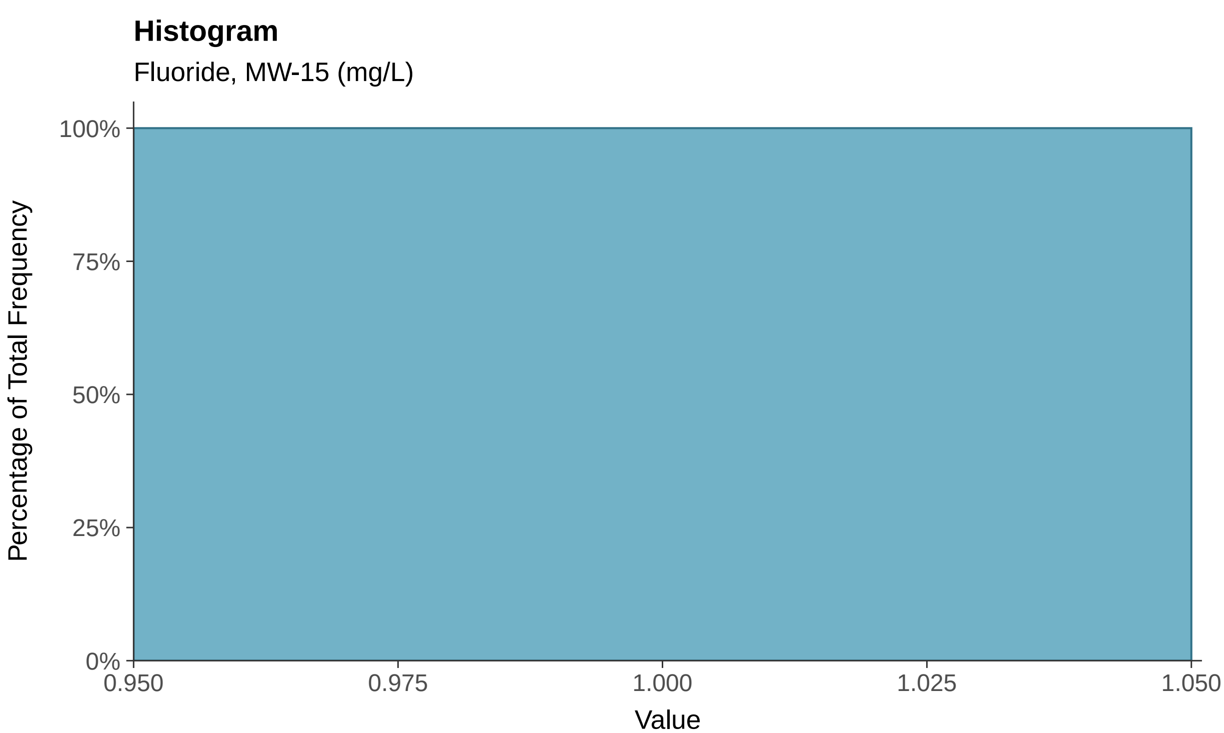
pH, Field, MW-15 (su)



Appendix IV: Fluoride, MW-15

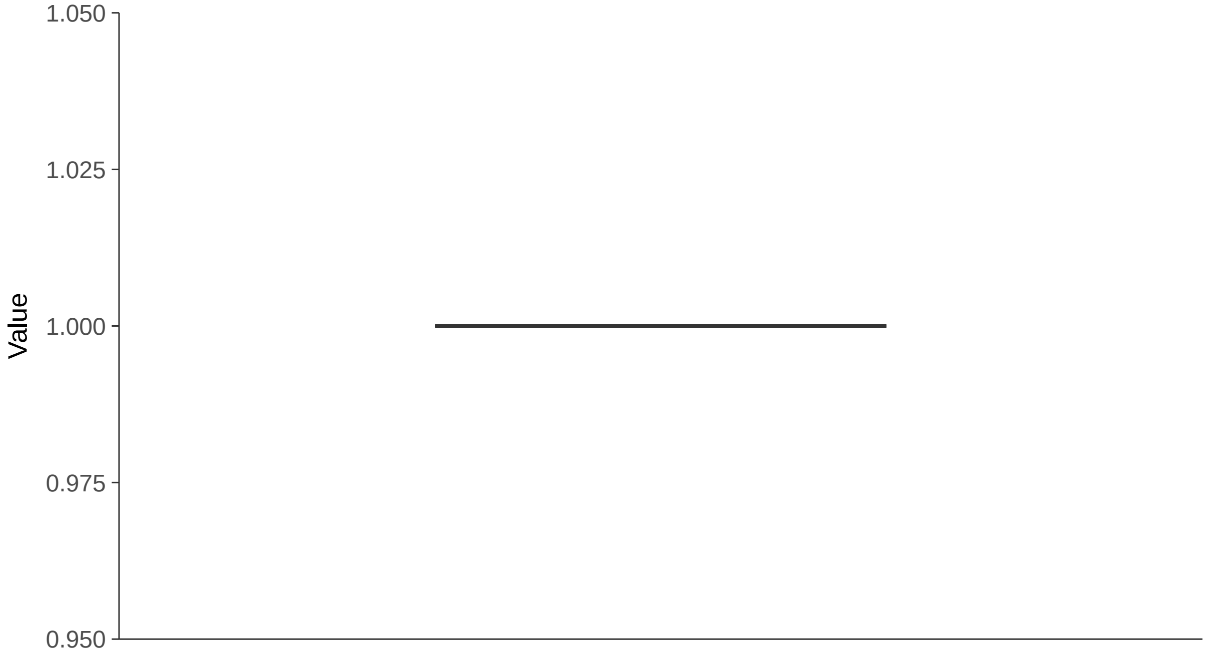
ID: 15_2_04





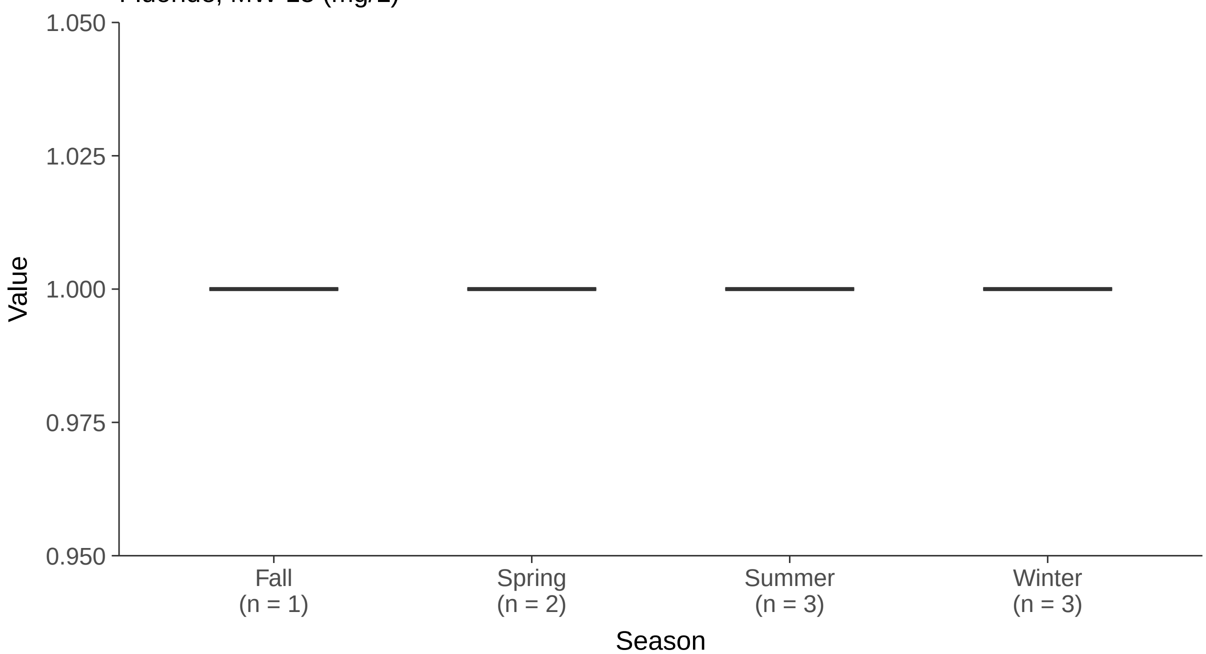
Boxplot

Fluoride, MW-15 (mg/L)



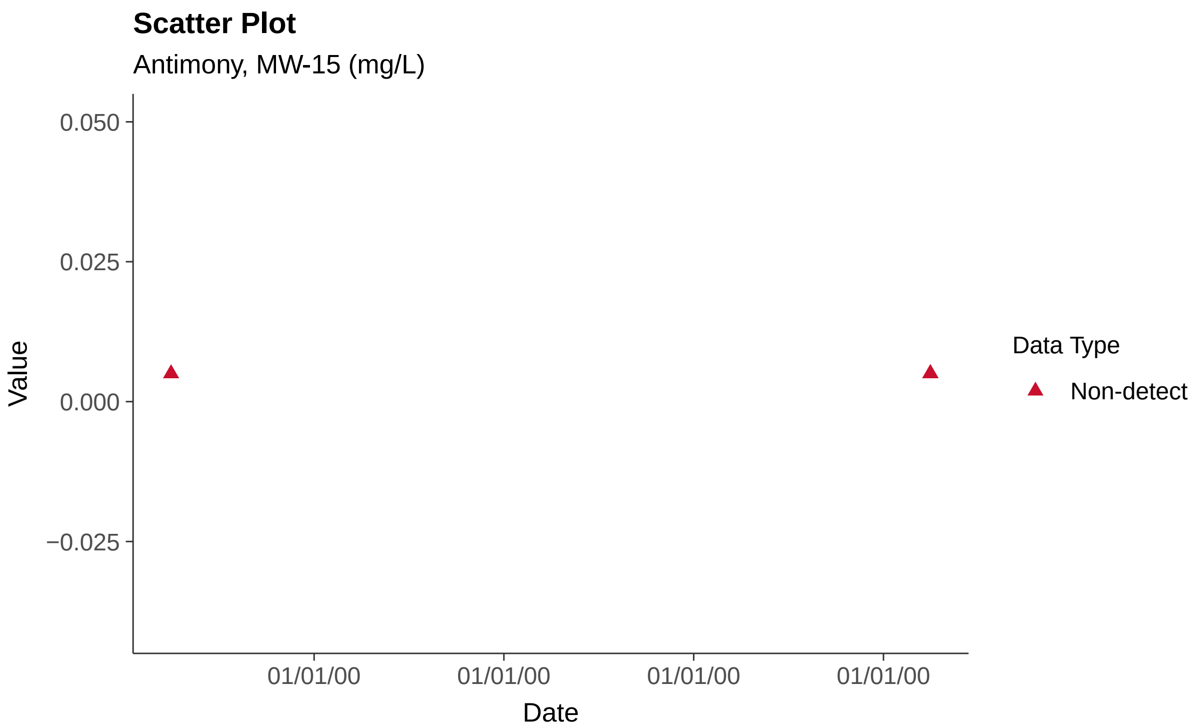
Boxplot by Season

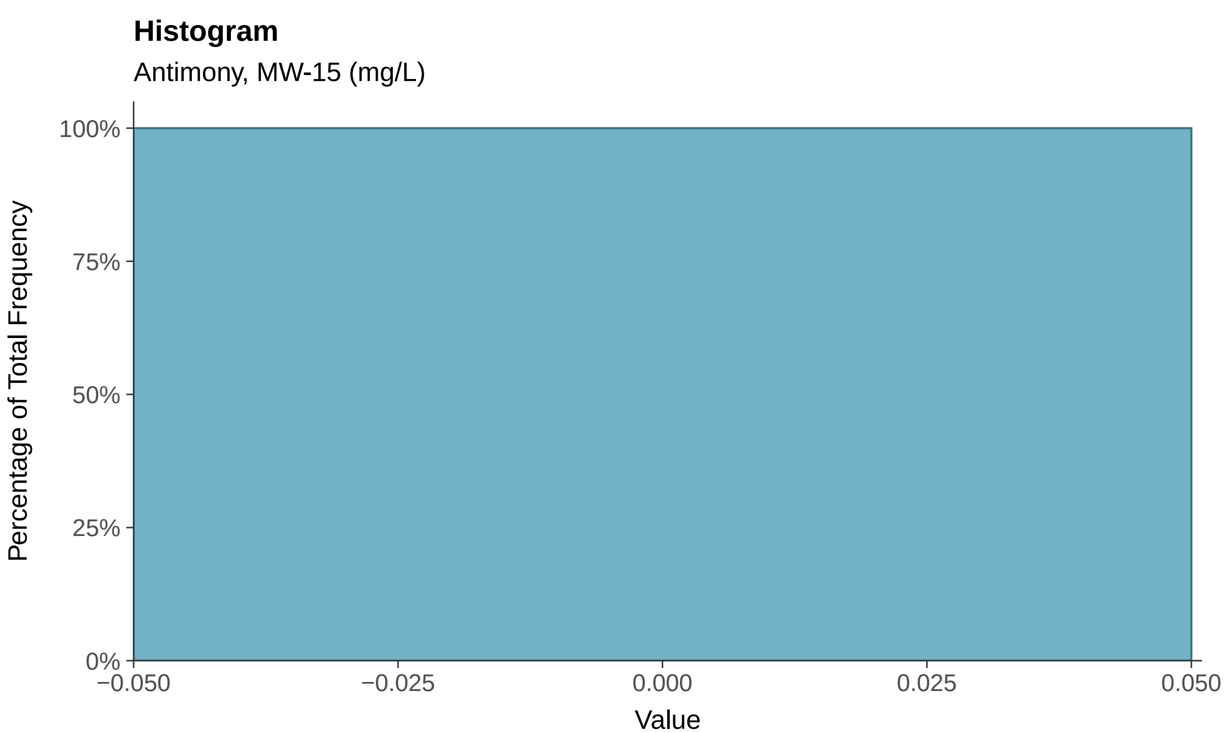
Fluoride, MW-15 (mg/L)



Appendix IV: Antimony, MW-15

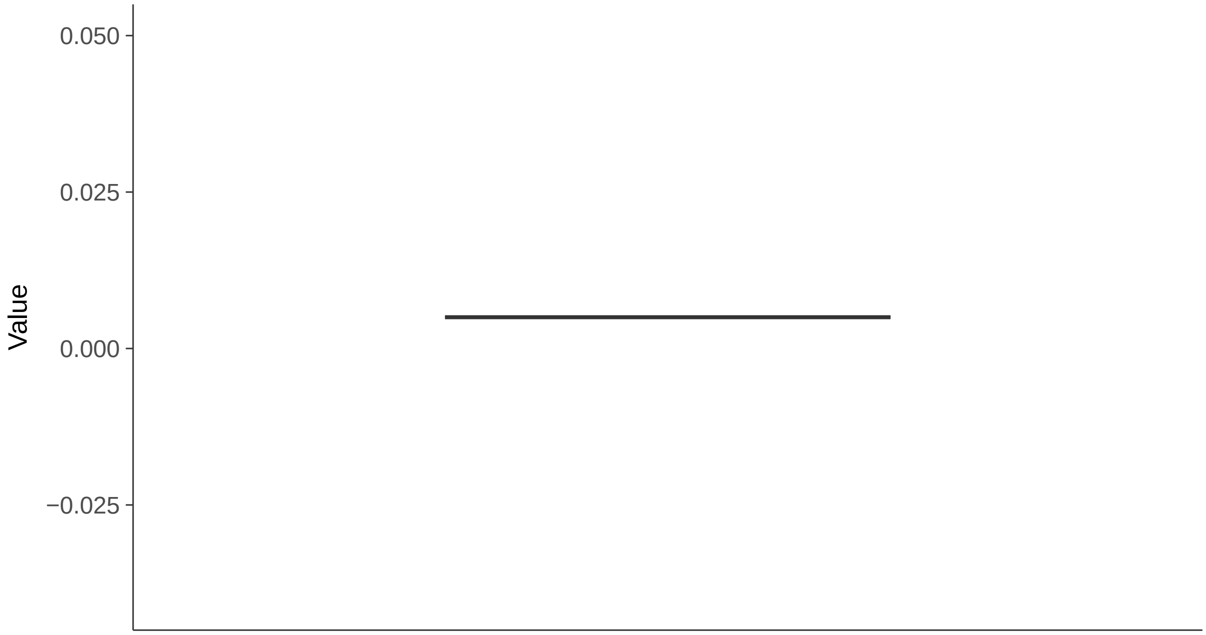
ID: 15_2_08





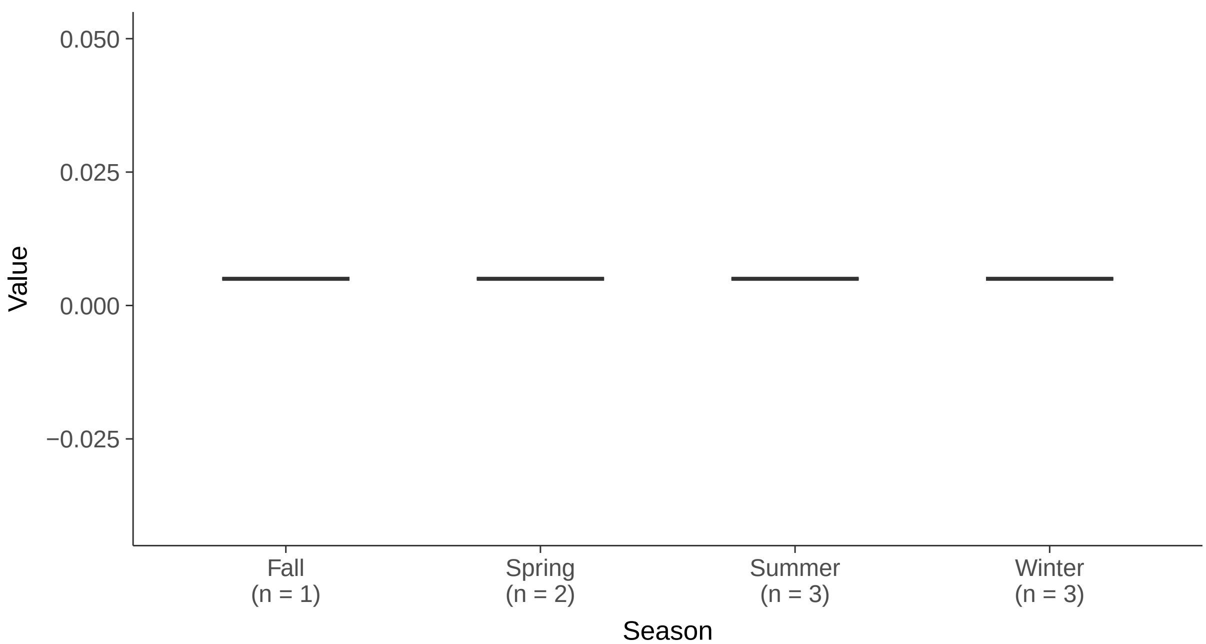
Boxplot

Antimony, MW-15 (mg/L)



Boxplot by Season

Antimony, MW-15 (mg/L)

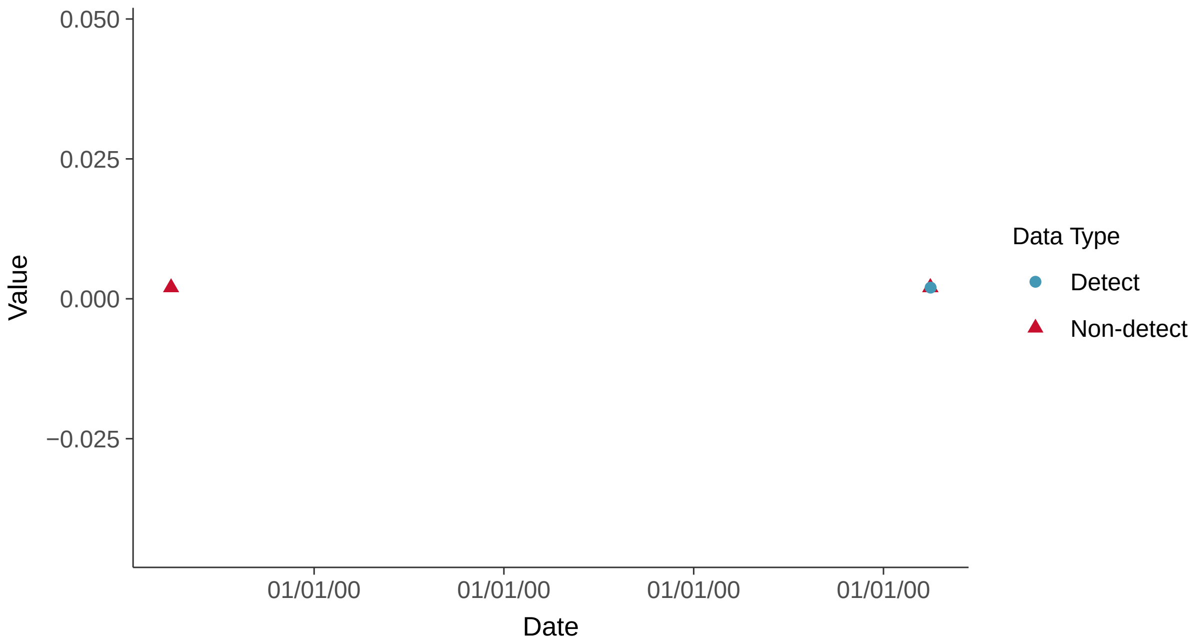


Appendix IV: Arsenic, MW-15

ID: 15_2_09

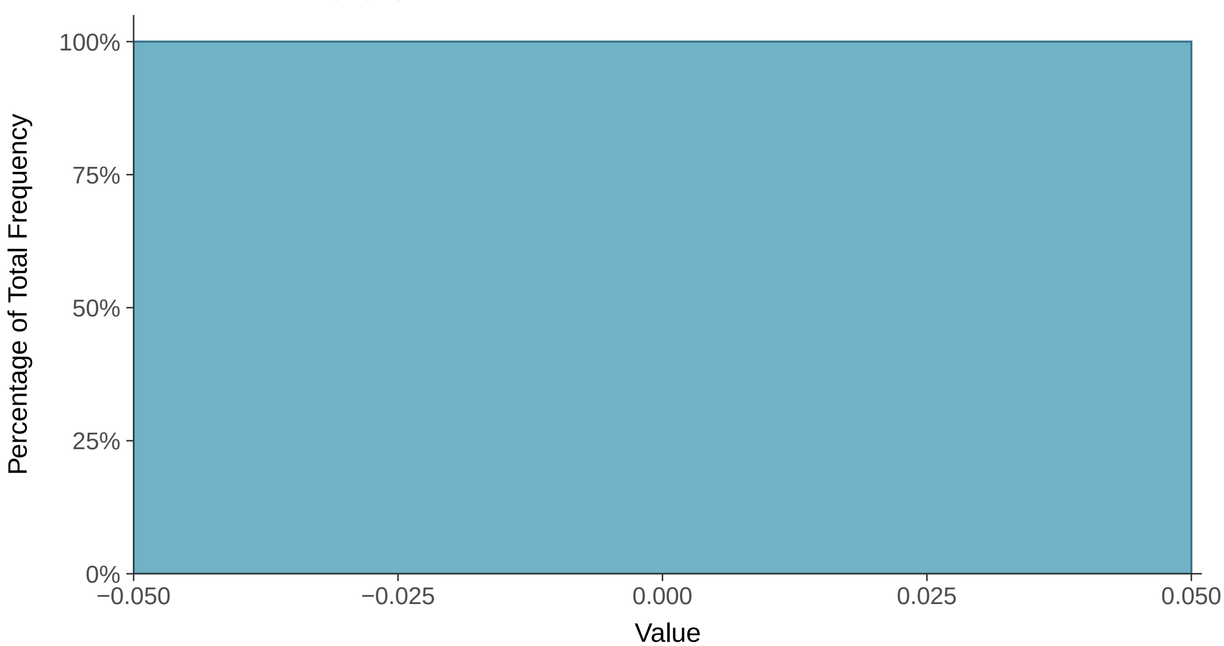
Scatter Plot

Arsenic, MW-15 (mg/L)



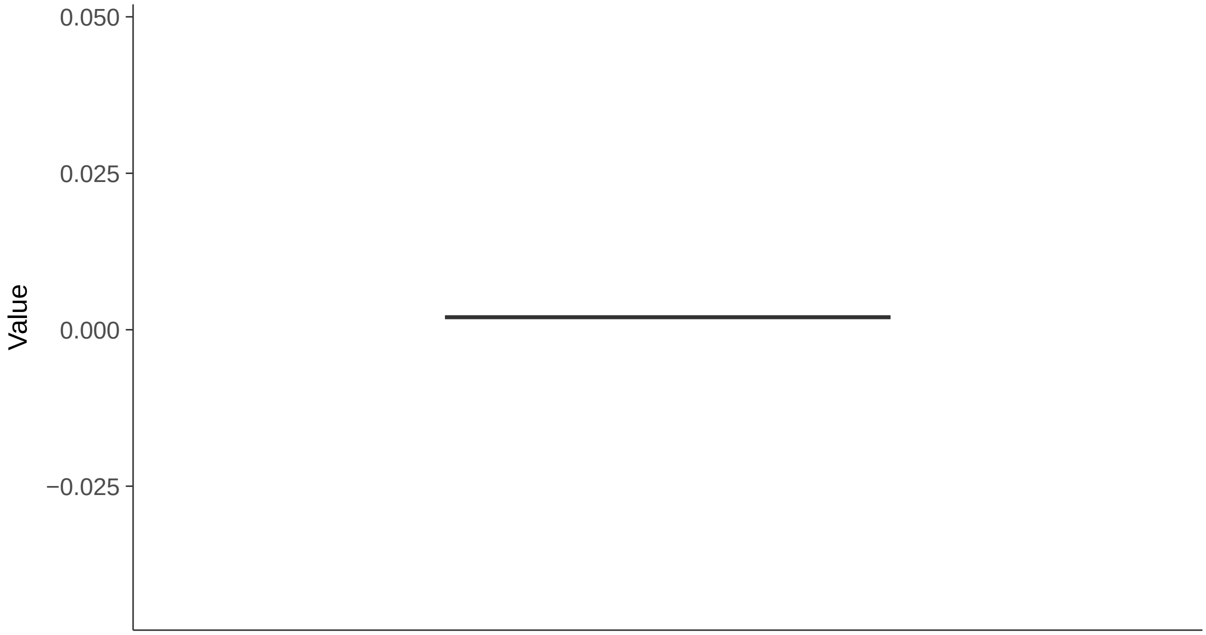
Histogram

Arsenic, MW-15 (mg/L)



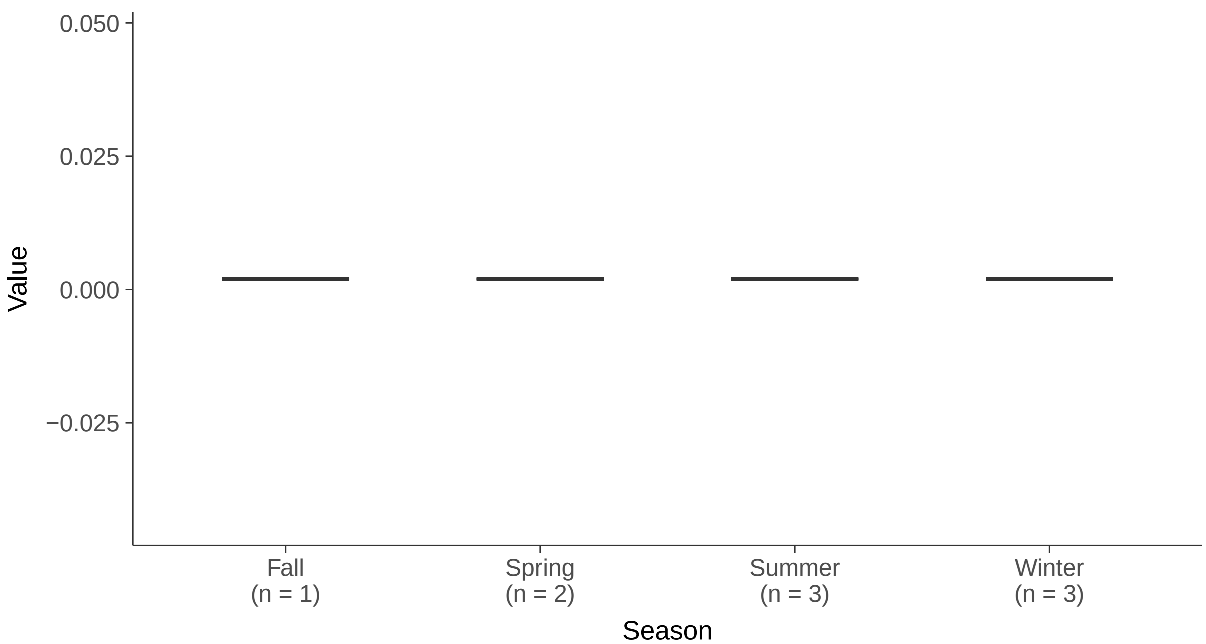
Boxplot

Arsenic, MW-15 (mg/L)



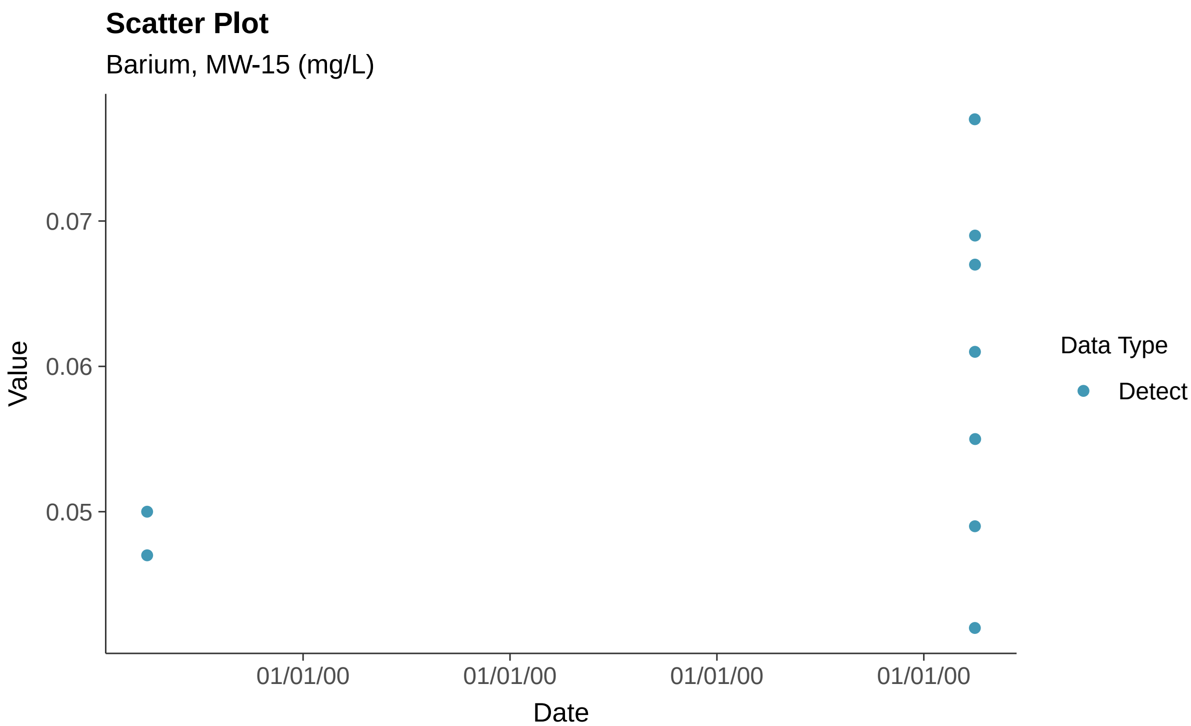
Boxplot by Season

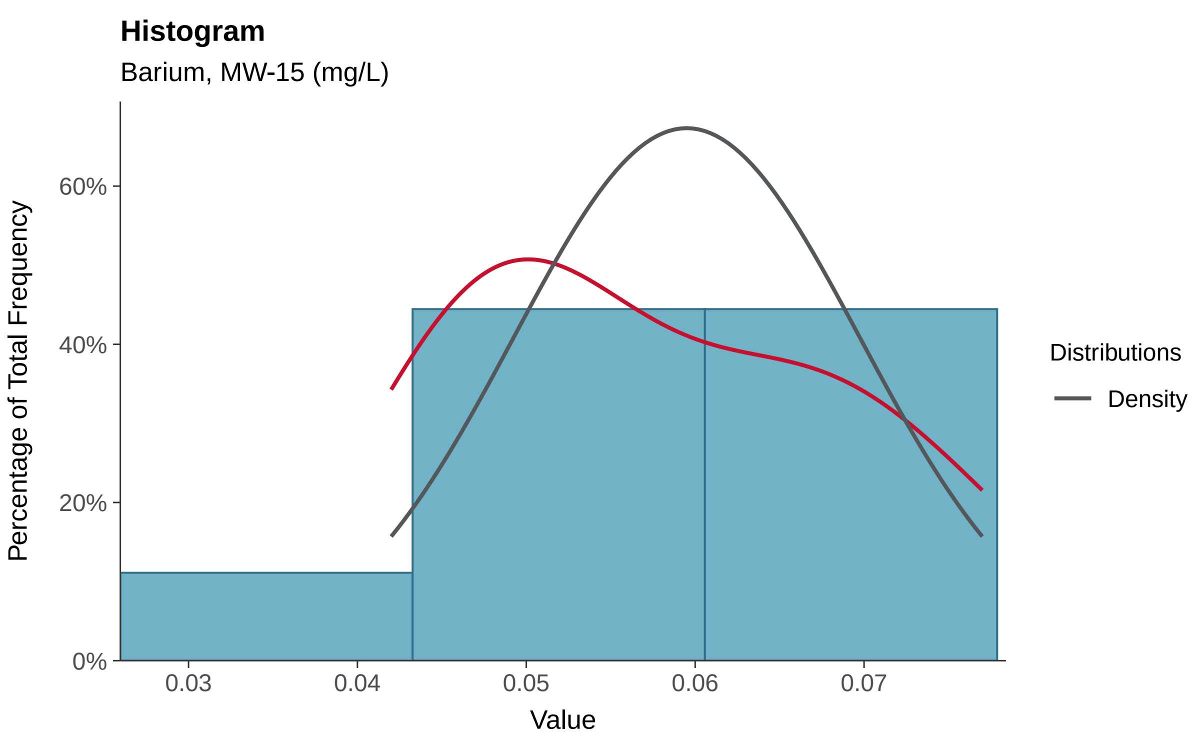
Arsenic, MW-15 (mg/L)



Appendix IV: Barium, MW-15

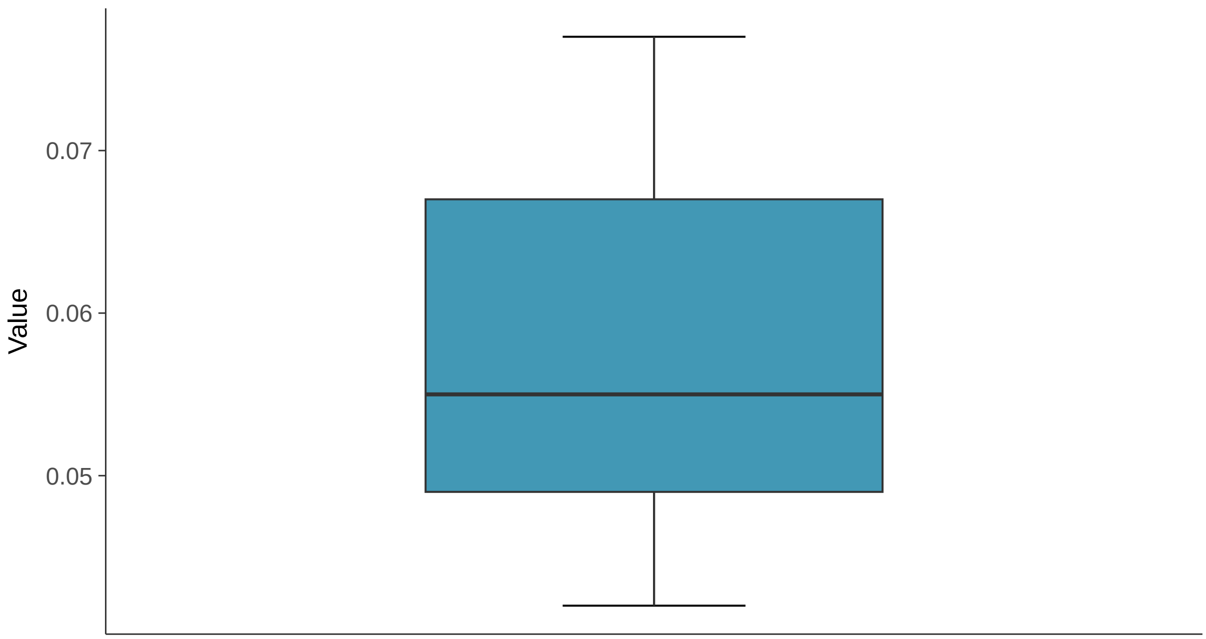
ID: 15_2_10





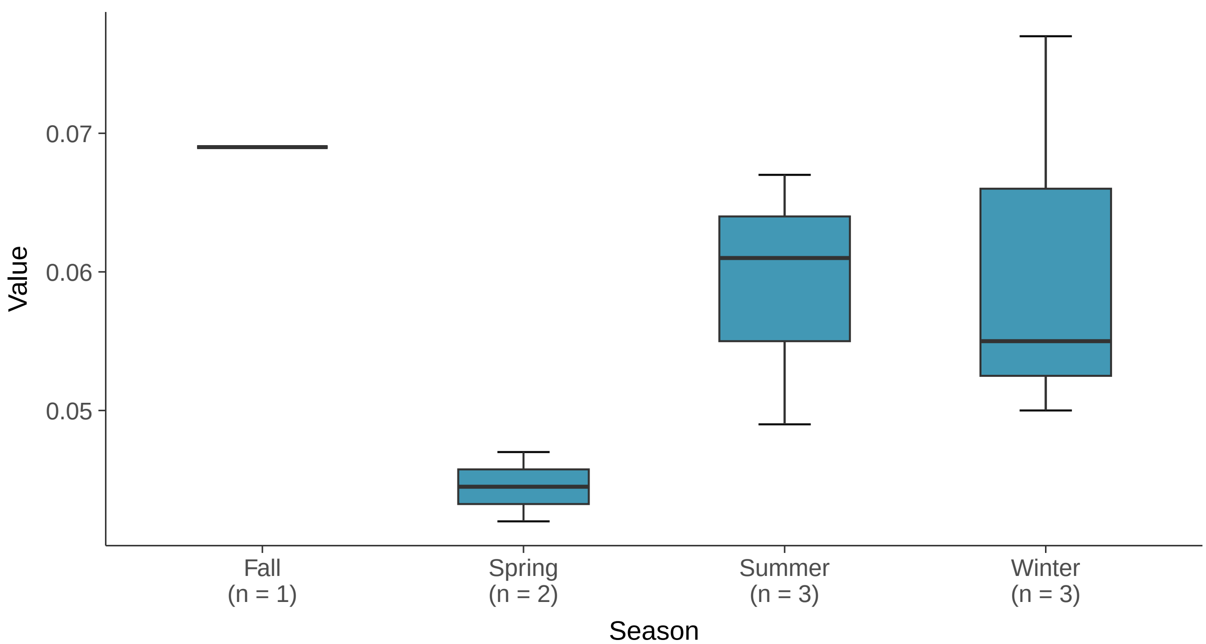
Boxplot

Barium, MW-15 (mg/L)



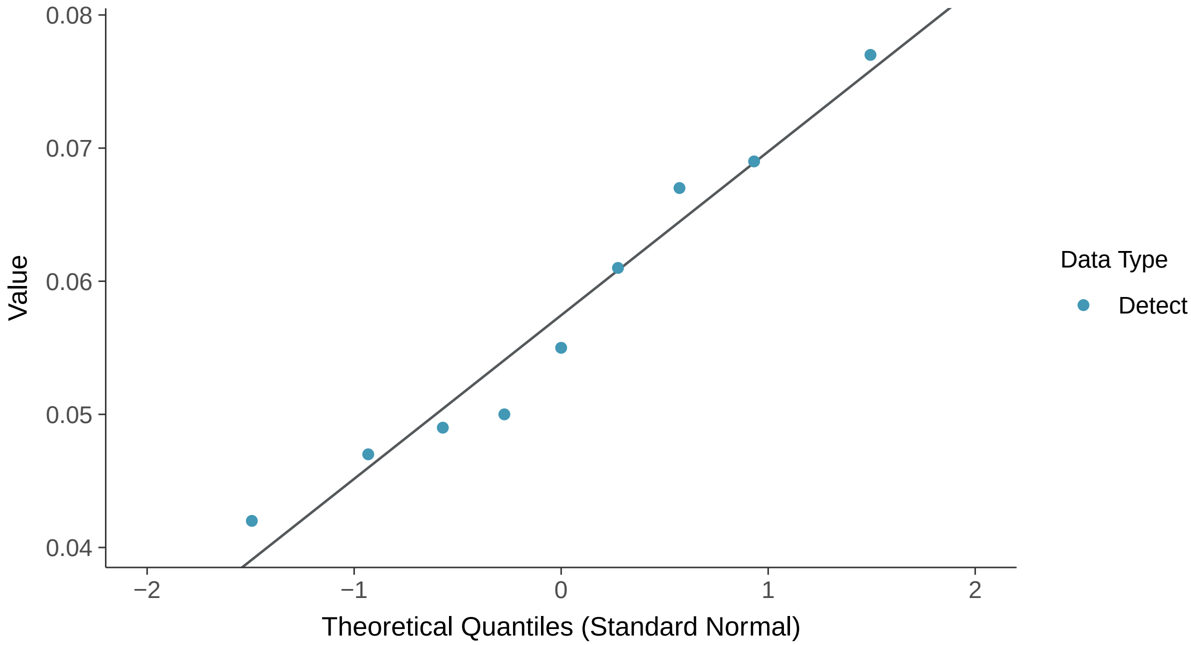
Boxplot by Season

Barium, MW-15 (mg/L)



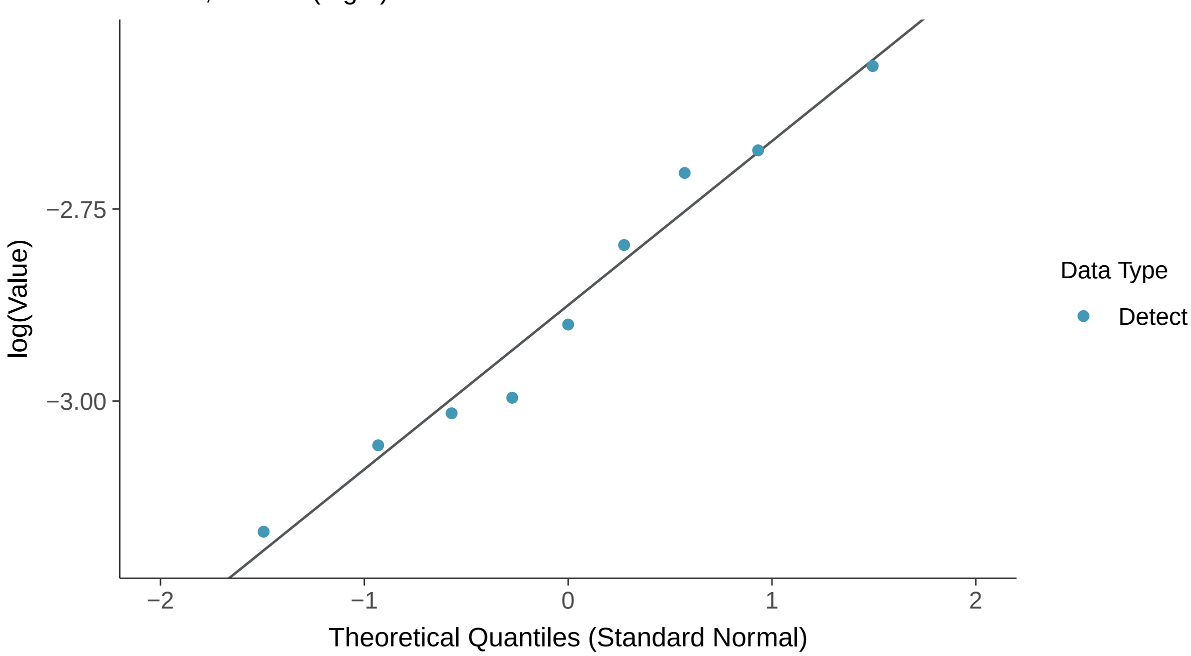
Normal Q-Q plot

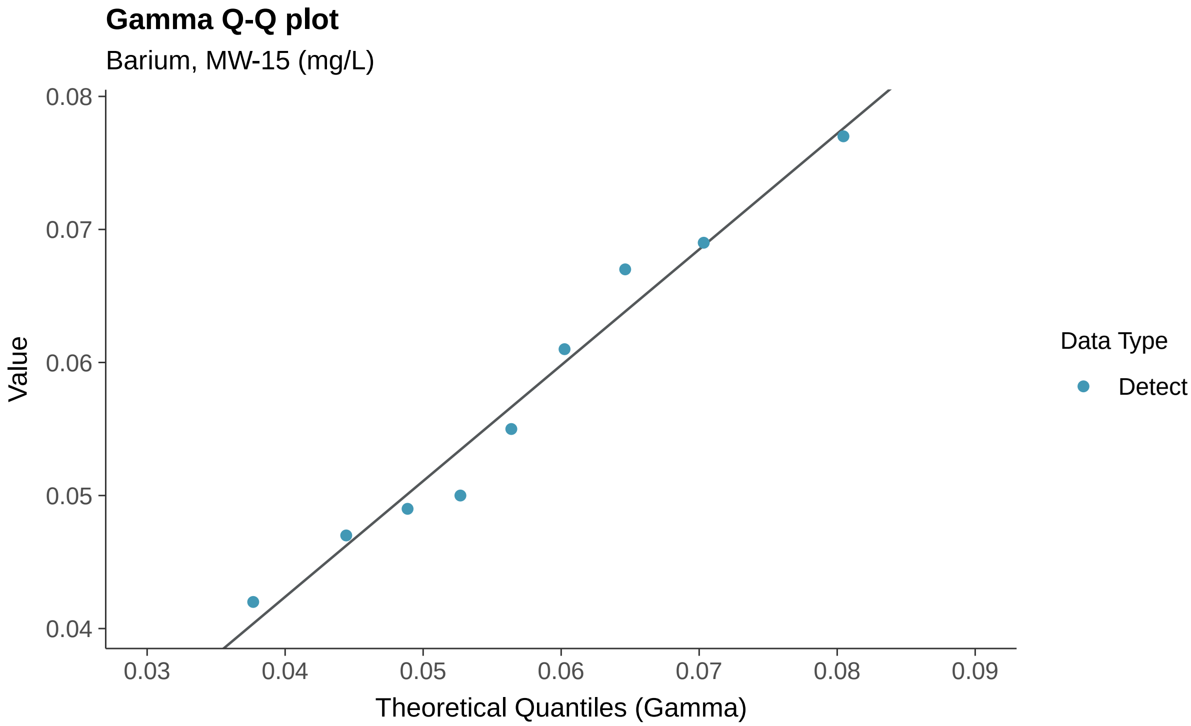
Barium, MW-15 (mg/L)

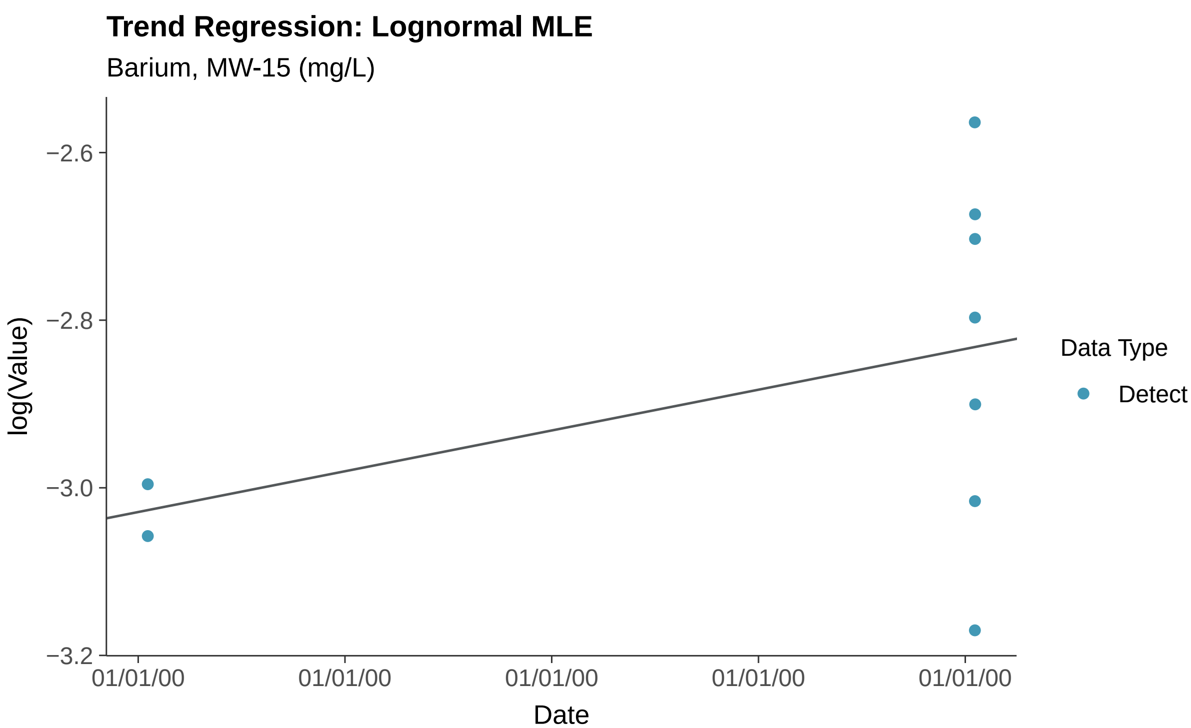


Lognormal Q-Q plot

Barium, MW-15 (mg/L)

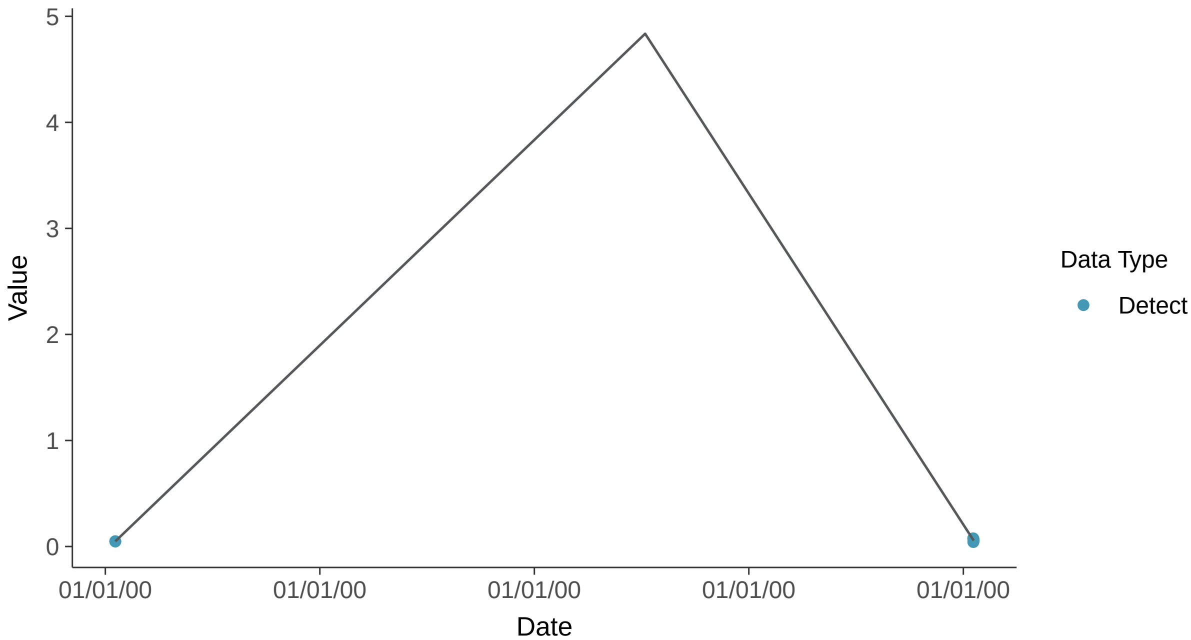



Gamma Q-Q plot
Barium, MW-15 (mg/L)
Value
0.08
0.07
0.06
0.05
0.04
0.03
0.04
0.05
0.06
0.07
0.08
0.09
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-15 (mg/L)
log(Value)
−2.6
−2.8
−3.0
−3.2
01/01/00
01/01/00
01/01/00
01/01/00
01/01/00
Date
Data Type
Detect

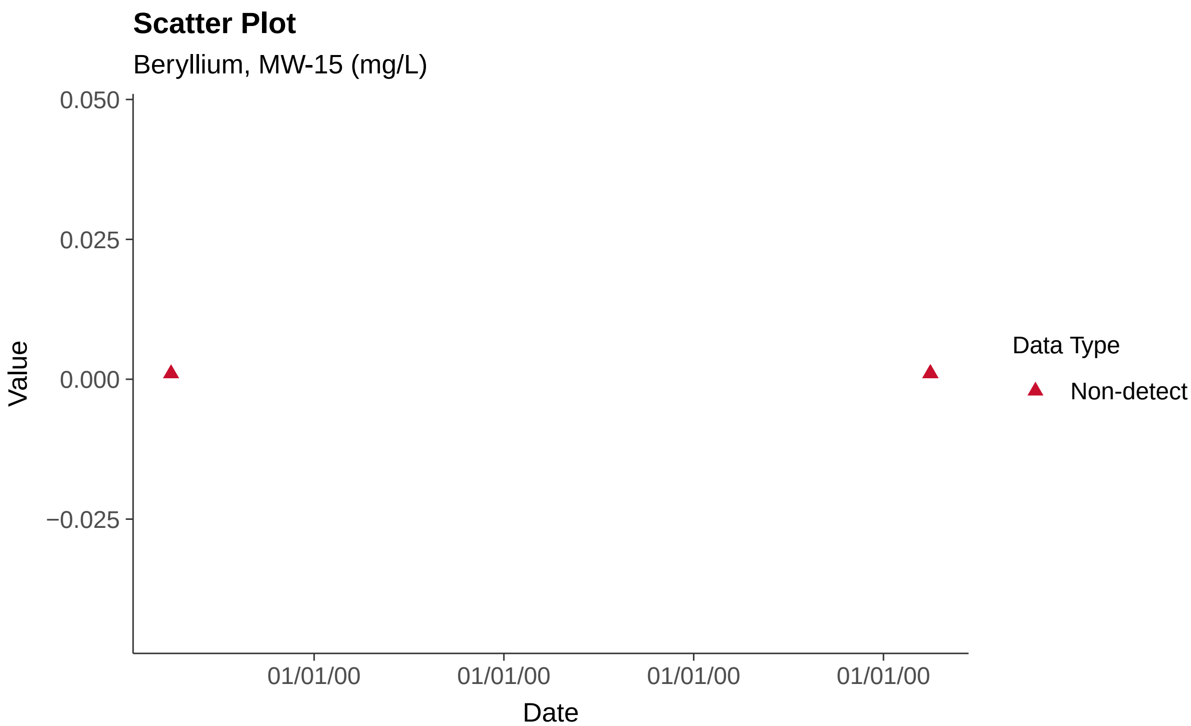
Trend Regression: Piecewise Linear-Linear

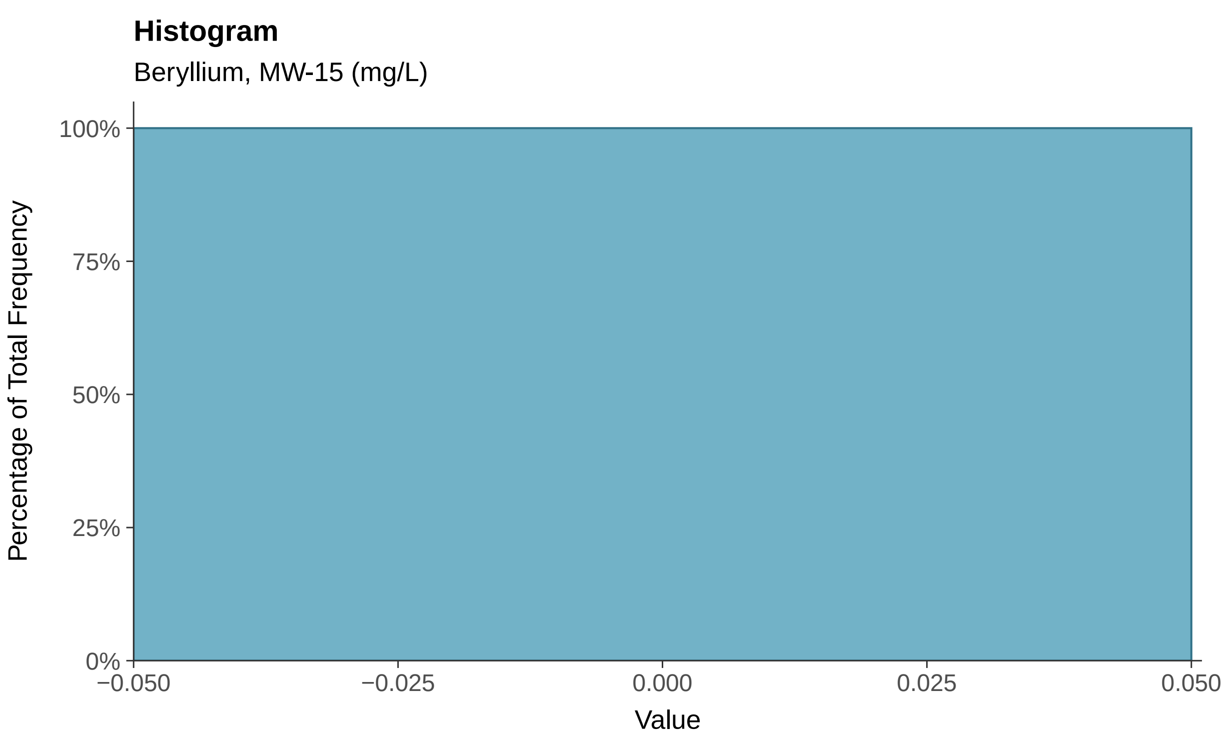
Barium, MW-15 (mg/L)



Appendix IV: Beryllium, MW-15

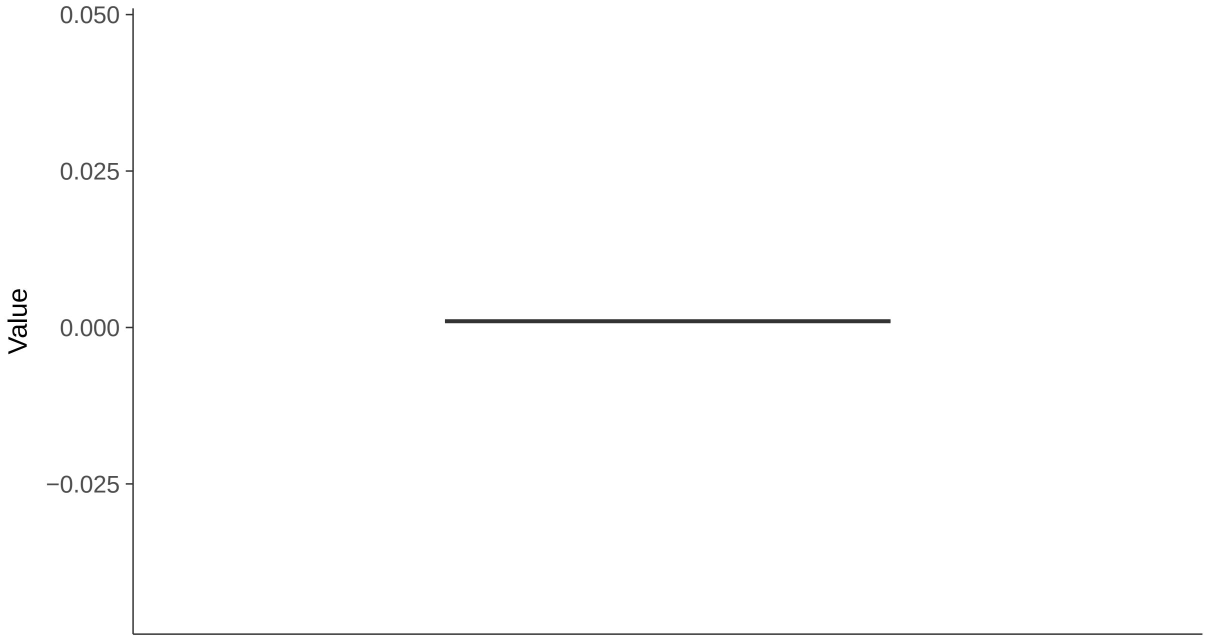
ID: 15_2_11





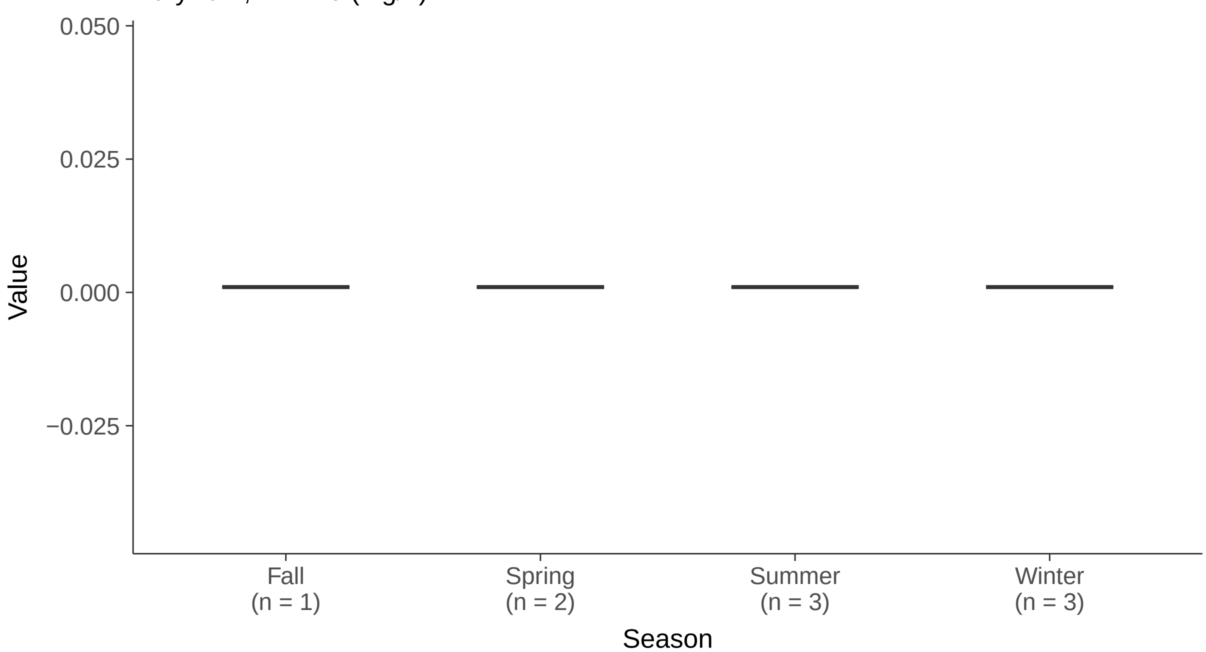
Boxplot

Beryllium, MW-15 (mg/L)



Boxplot by Season

Beryllium, MW-15 (mg/L)

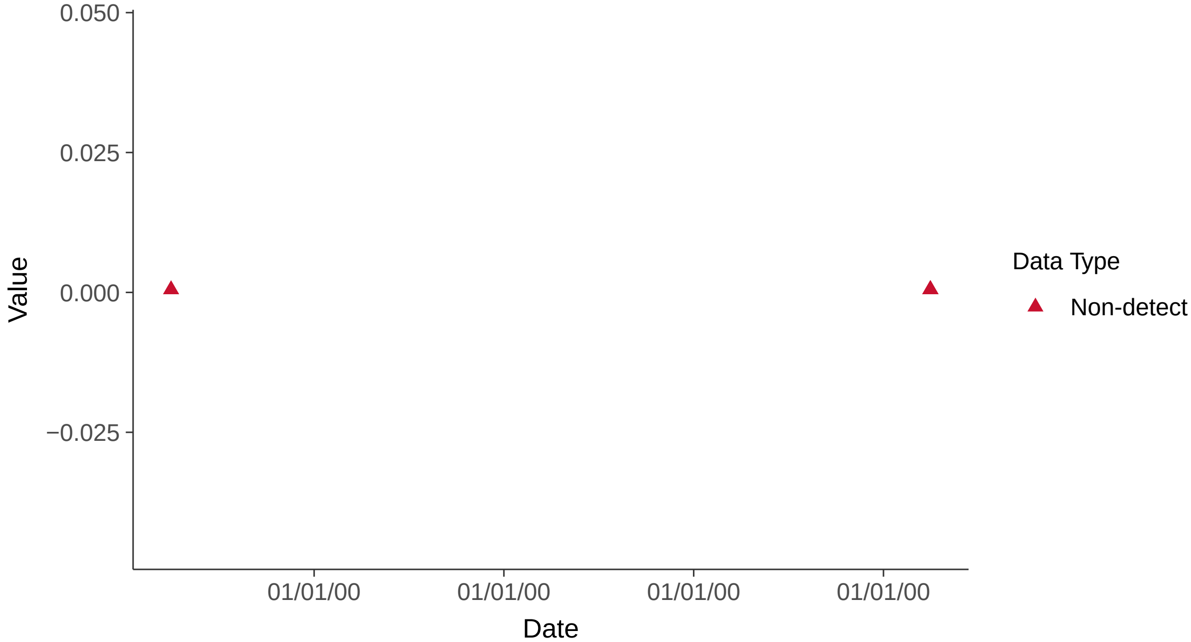


Appendix IV: Cadmium, MW-15

ID: 15_2_12

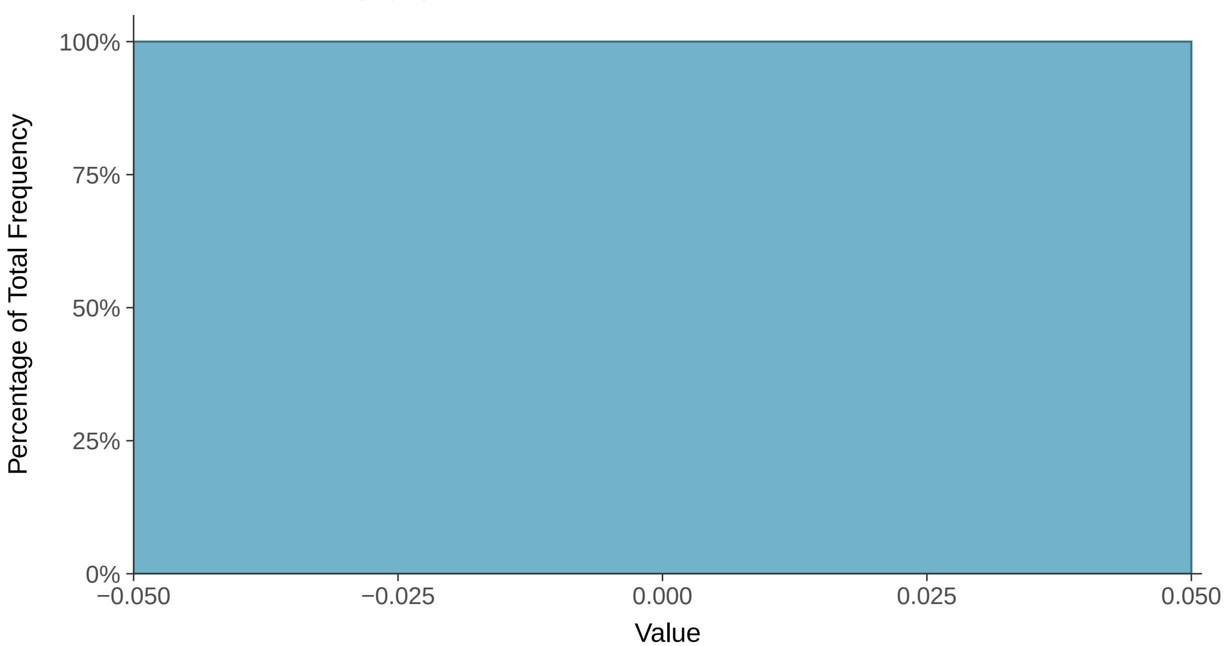
Scatter Plot

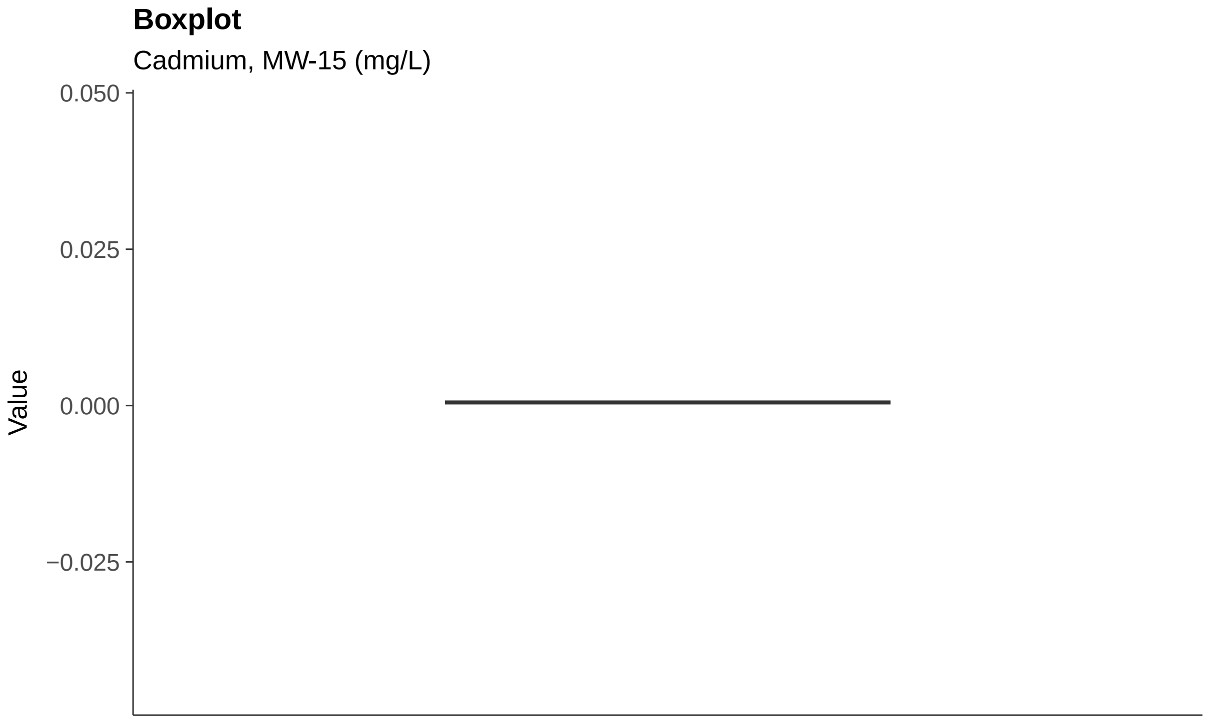
Cadmium, MW-15 (mg/L)

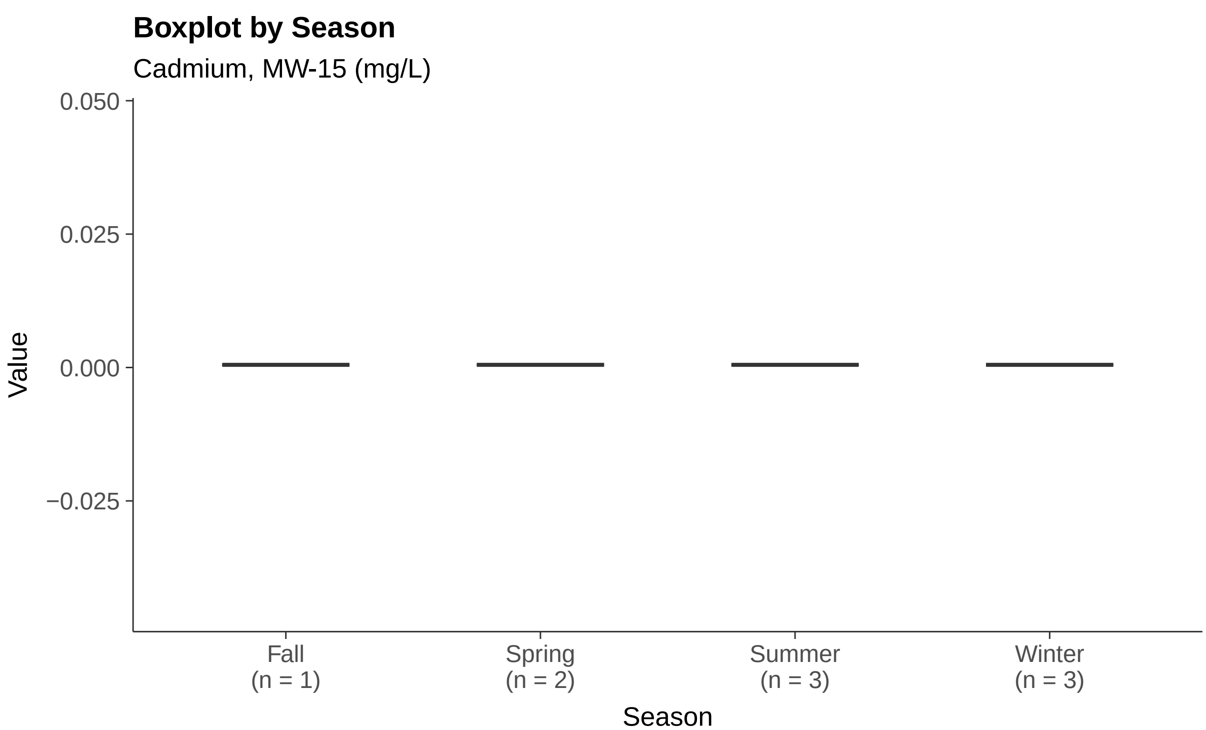


Histogram

Cadmium, MW-15 (mg/L)




Boxplot
Cadmium, MW-15 (mg/L)
0.050
0.025
0.000
−0.025
Value

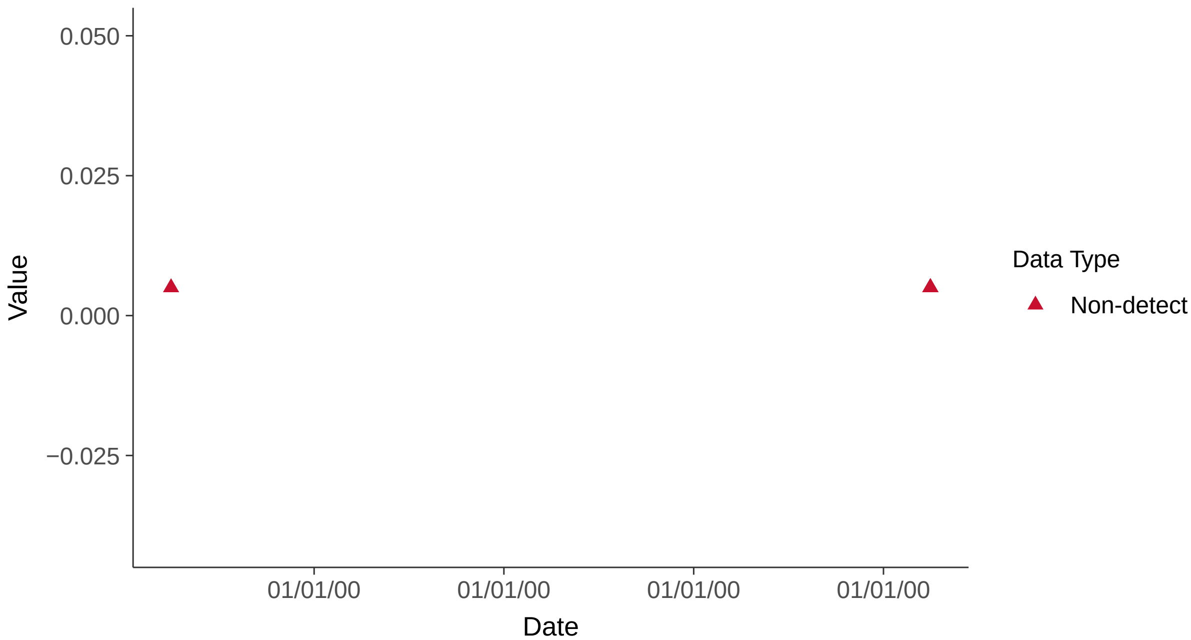

Boxplot by Season
Cadmium, MW-15 (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 1)
Spring
(n = 2)
Summer
(n = 3)
Winter
(n = 3)
Season

Appendix IV: Chromium, MW-15

ID: 15_2_13

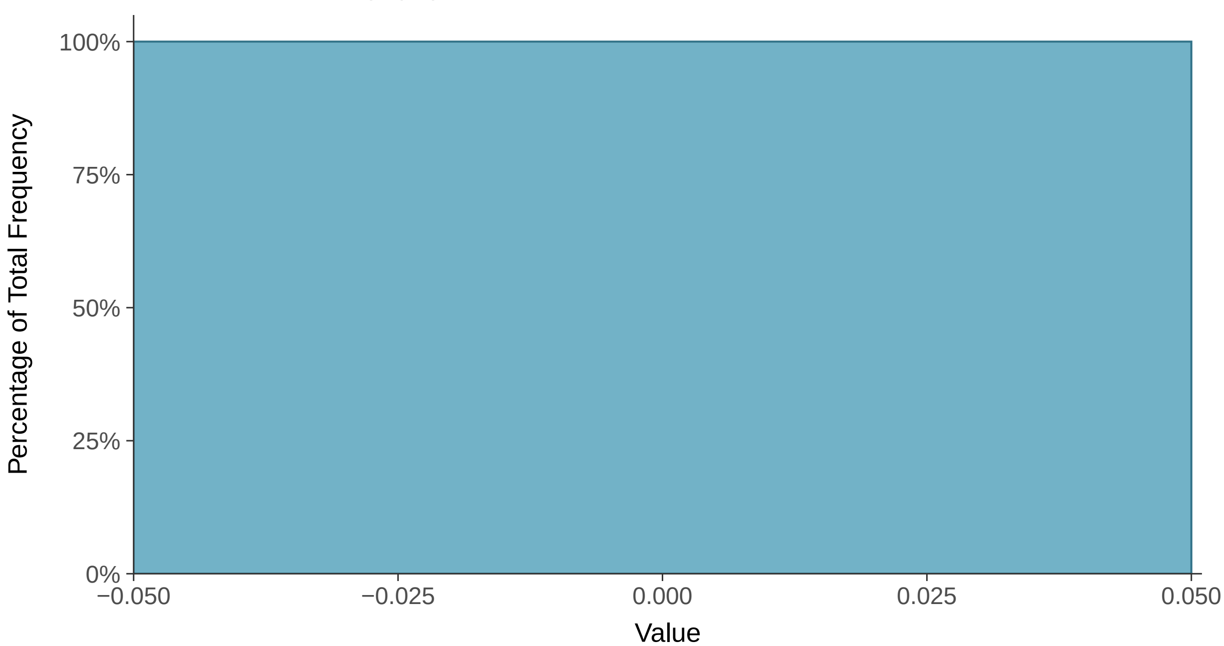
Scatter Plot

Chromium, MW-15 (mg/L)



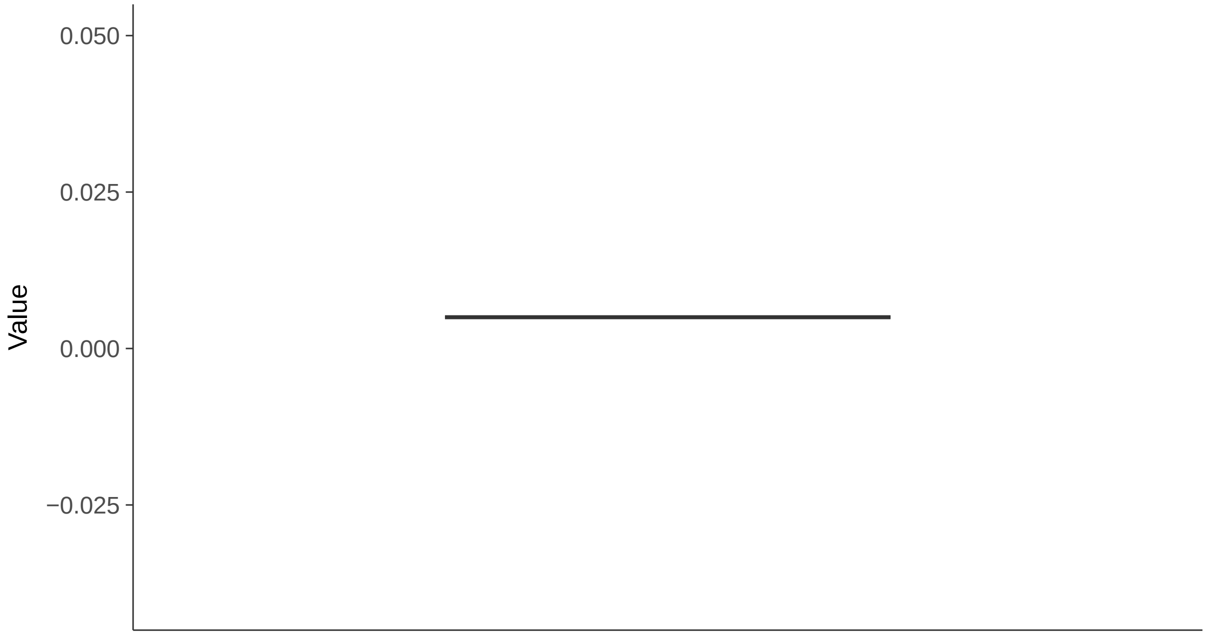
Histogram

Chromium, MW-15 (mg/L)



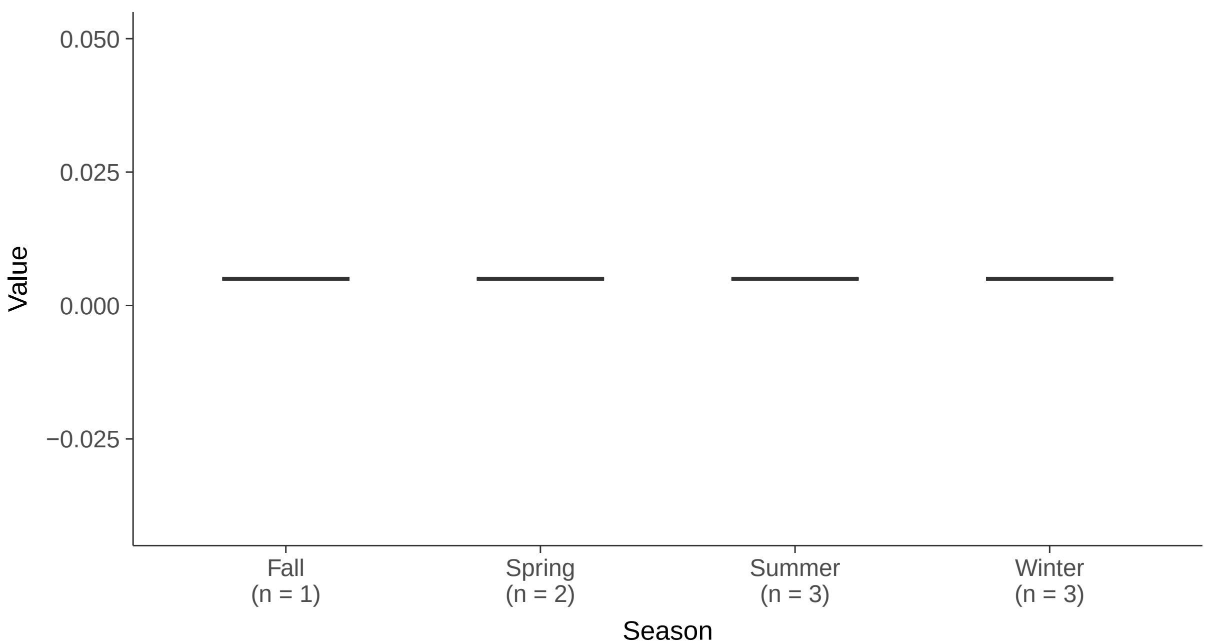
Boxplot

Chromium, MW-15 (mg/L)



Boxplot by Season

Chromium, MW-15 (mg/L)

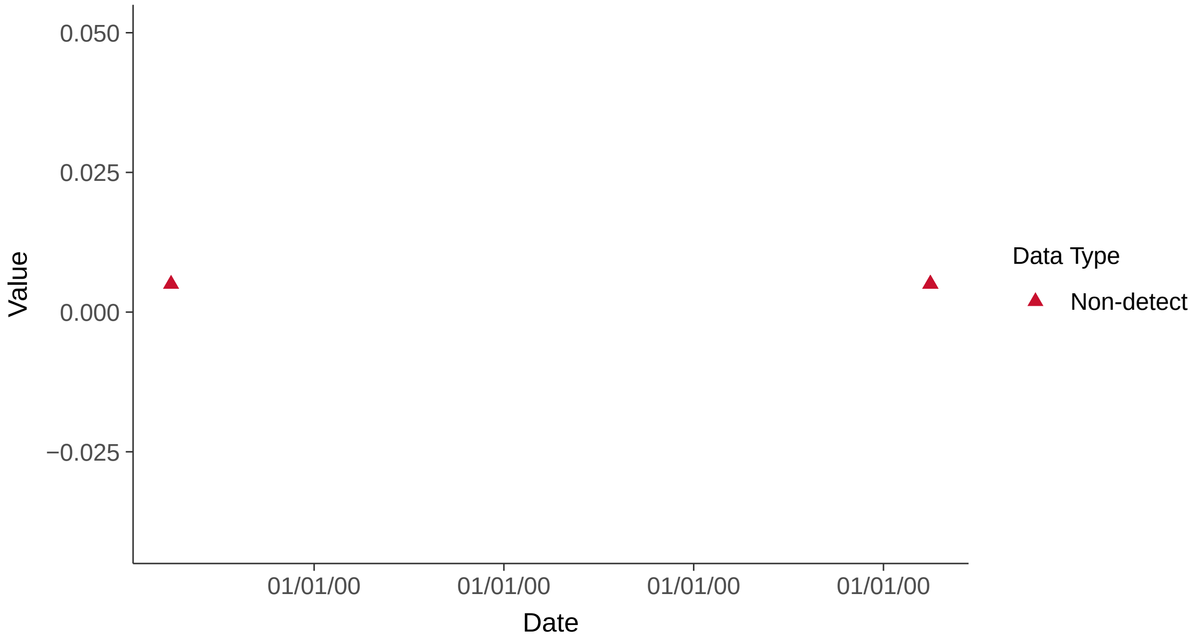


Appendix IV: Cobalt, MW-15

ID: 15_2_14

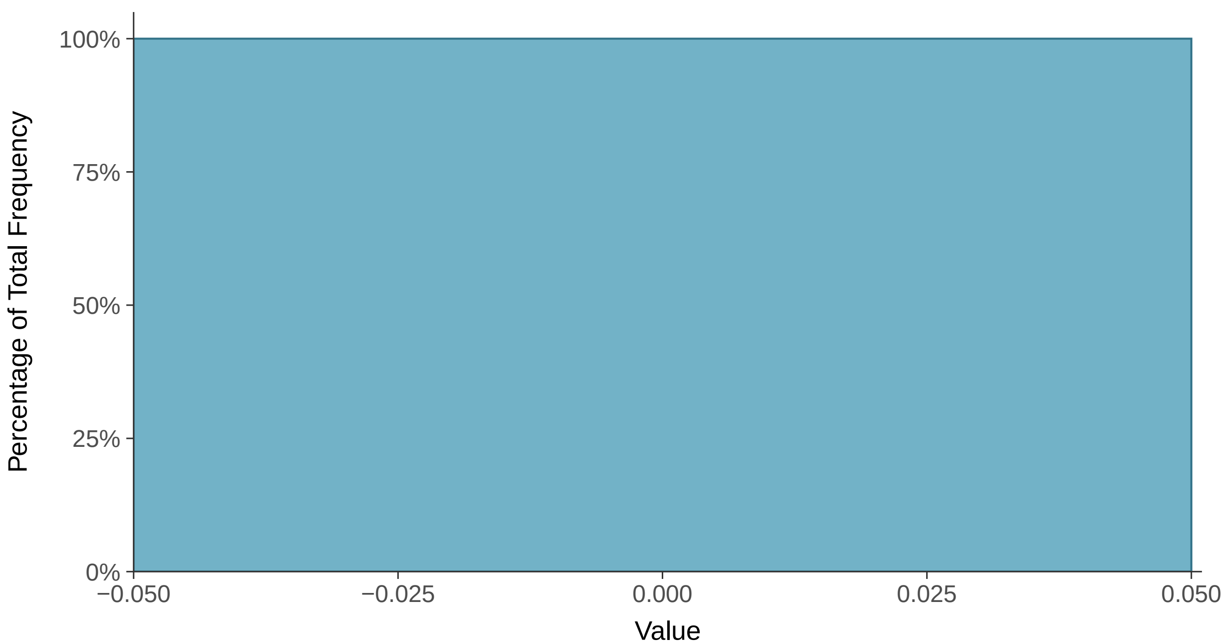
Scatter Plot

Cobalt, MW-15 (mg/L)



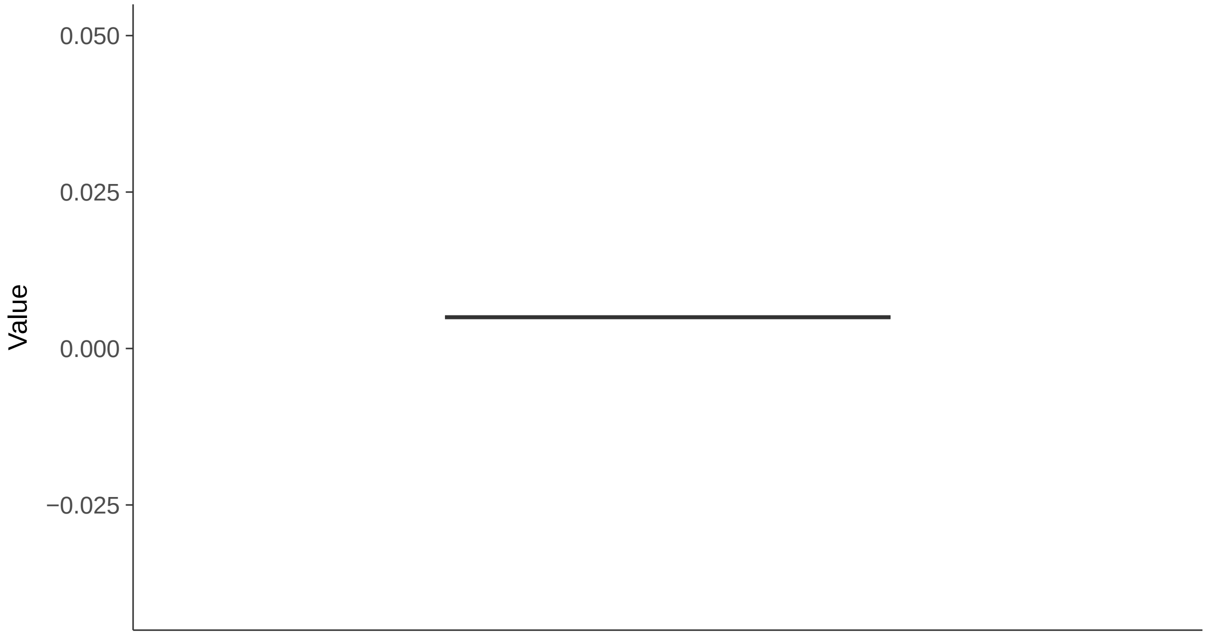
Histogram

Cobalt, MW-15 (mg/L)



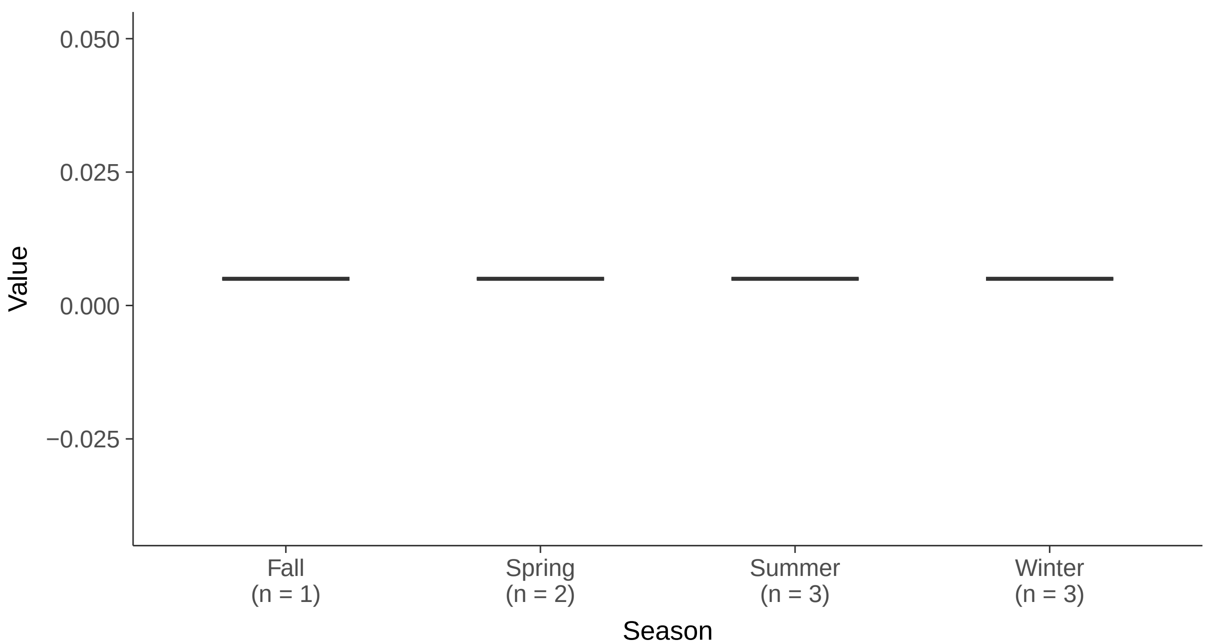
Boxplot

Cobalt, MW-15 (mg/L)



Boxplot by Season

Cobalt, MW-15 (mg/L)

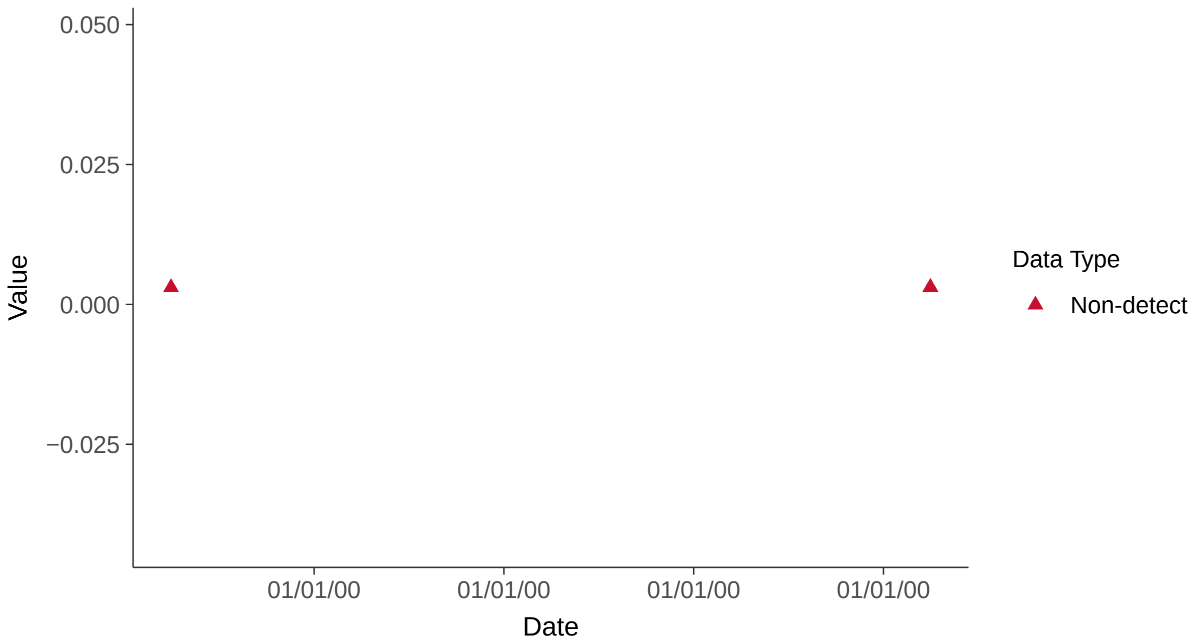


Appendix IV: Lead, MW-15

ID: 15_2_15

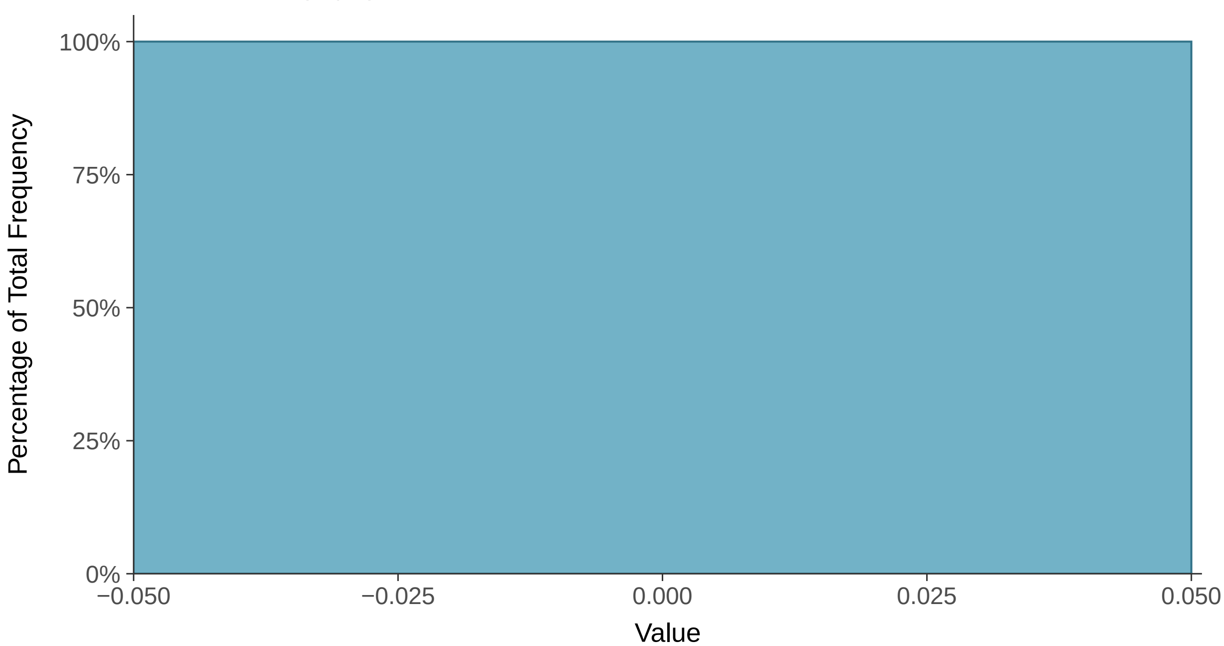
Scatter Plot

Lead, MW-15 (mg/L)



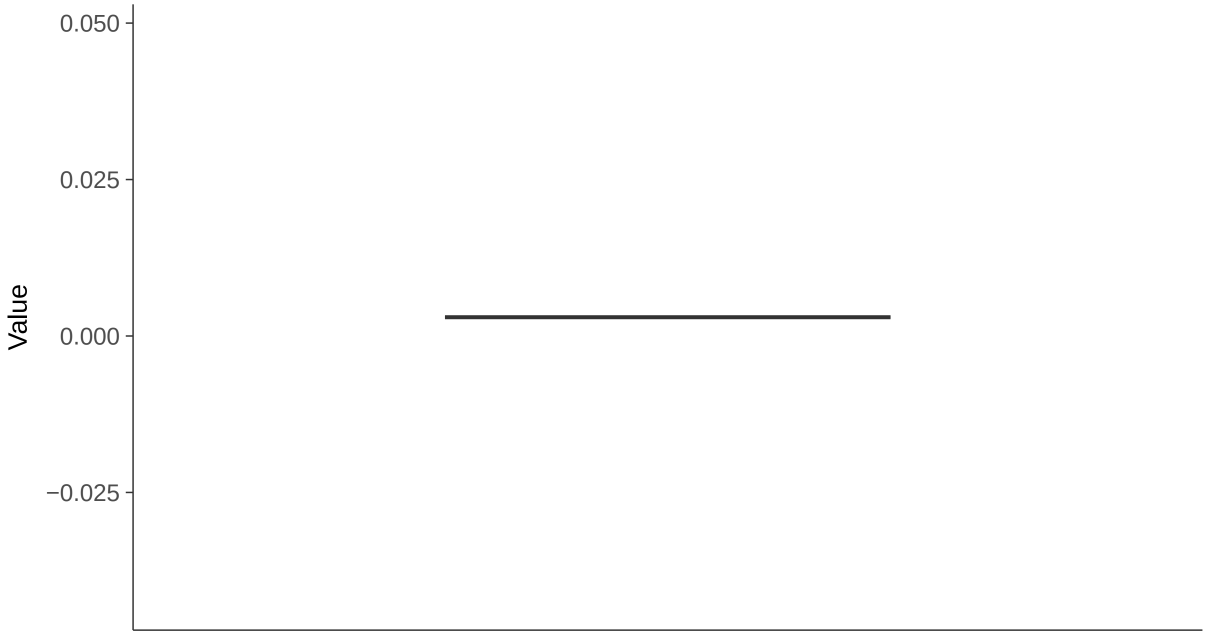
Histogram

Lead, MW-15 (mg/L)



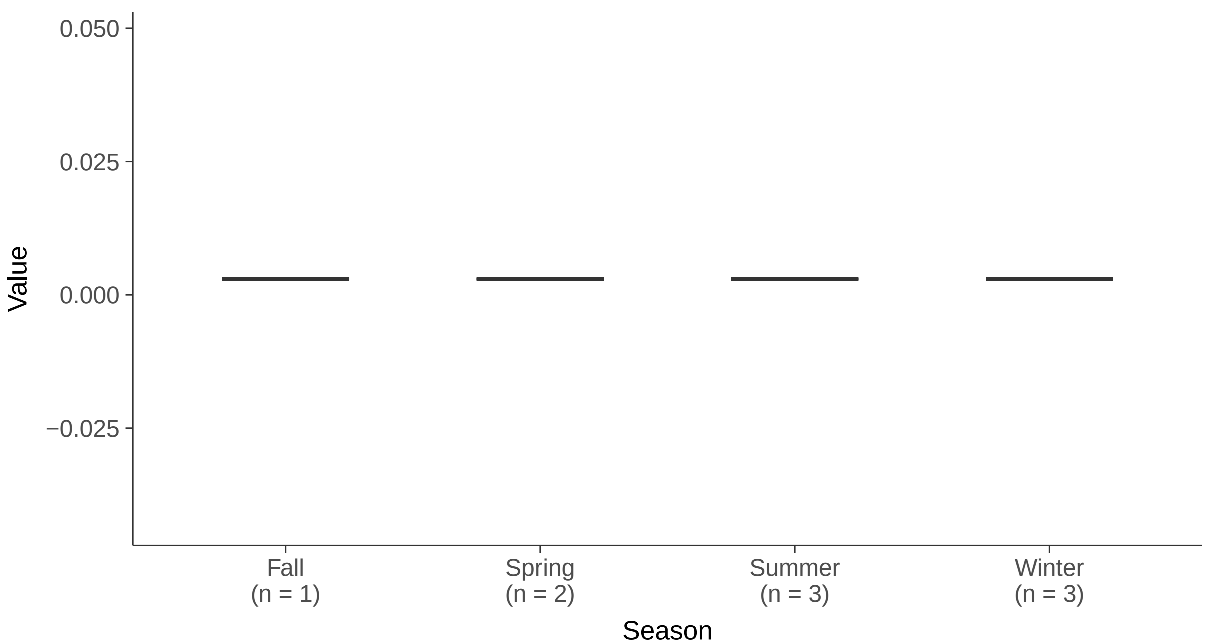
Boxplot

Lead, MW-15 (mg/L)



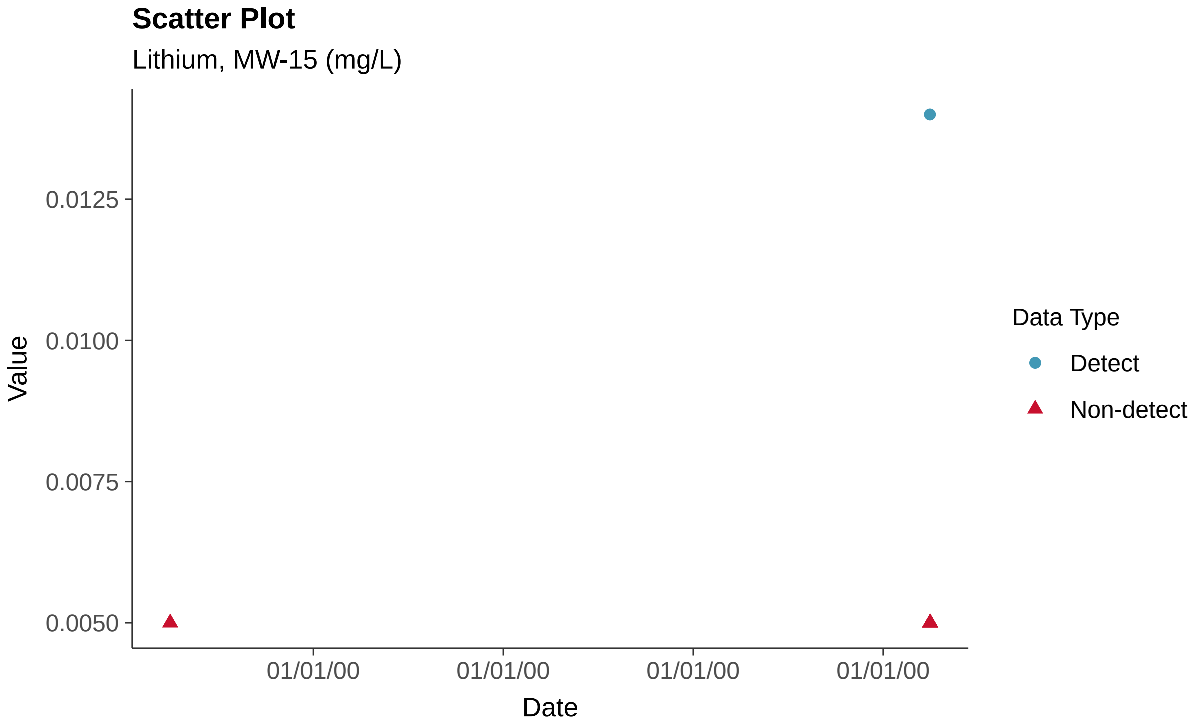
Boxplot by Season

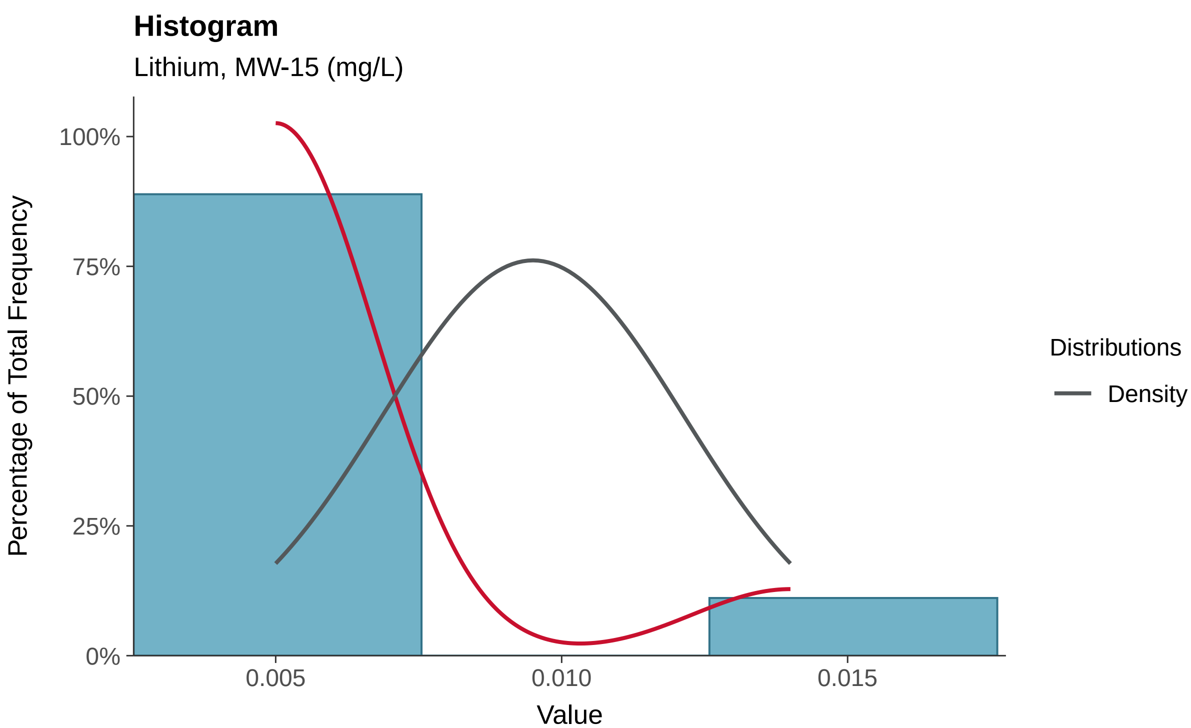
Lead, MW-15 (mg/L)



Appendix IV: Lithium, MW-15

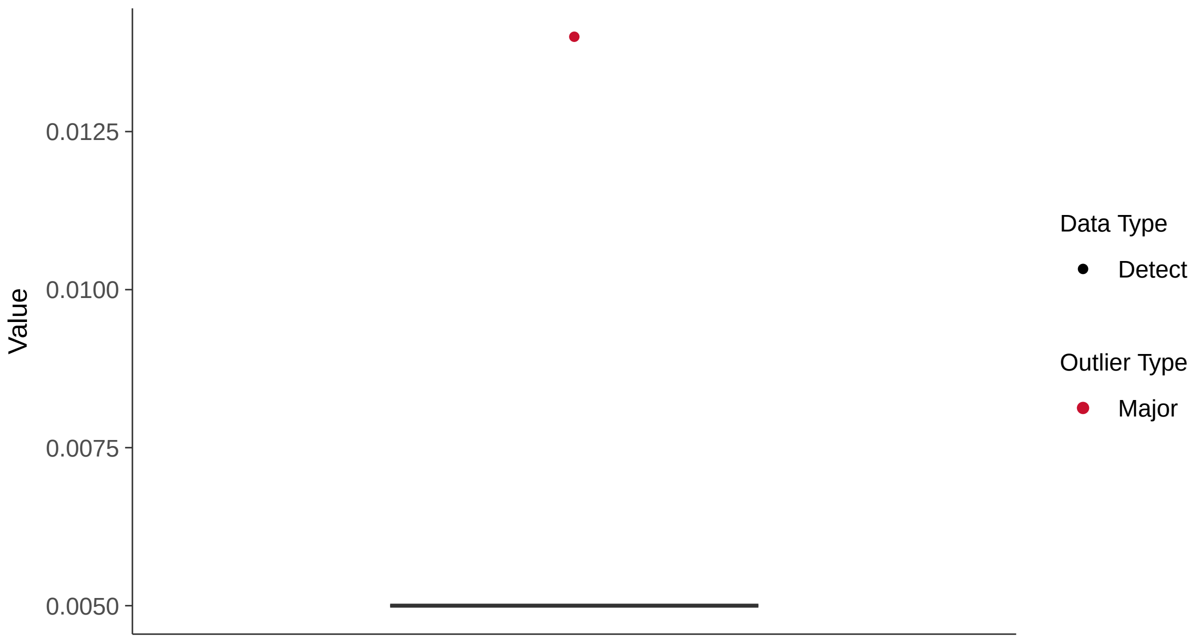
ID: 15_2_16





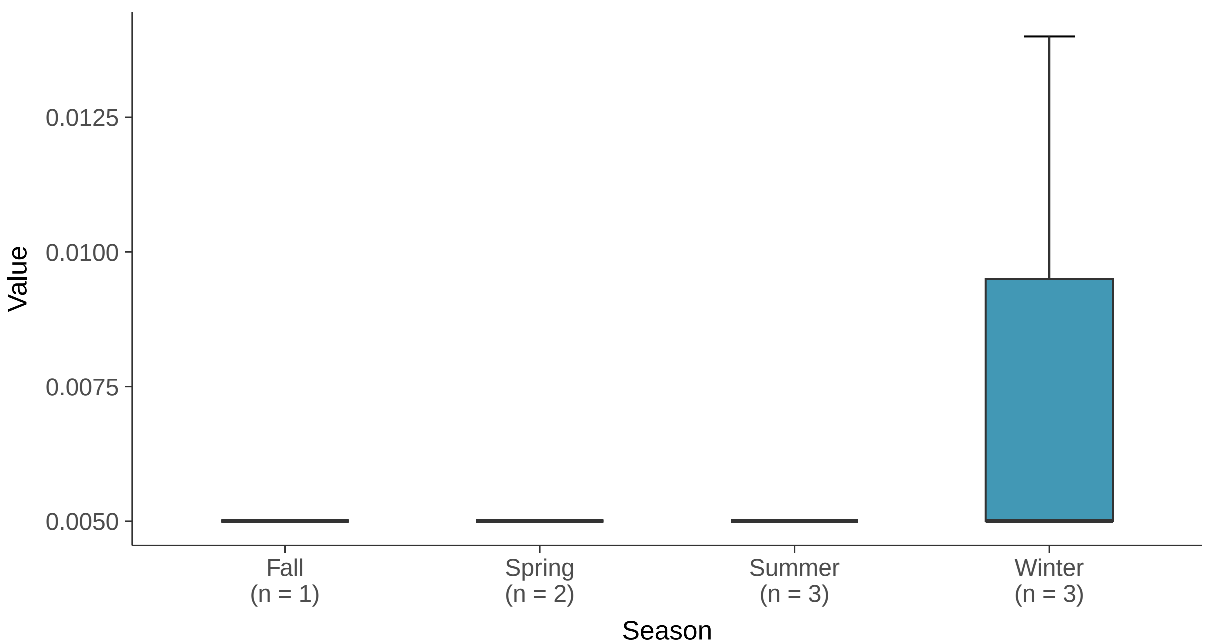
Boxplot

Lithium, MW-15 (mg/L)



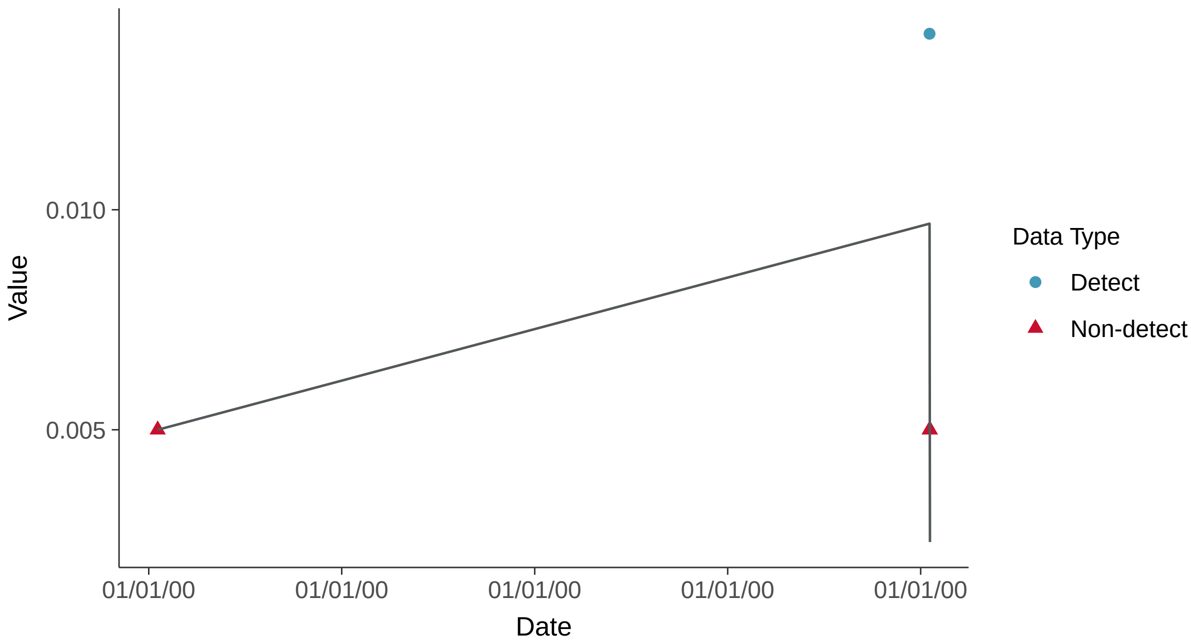
Boxplot by Season

Lithium, MW-15 (mg/L)



Trend Regression: Piecewise Linear-Linear

Lithium, MW-15 (mg/L)

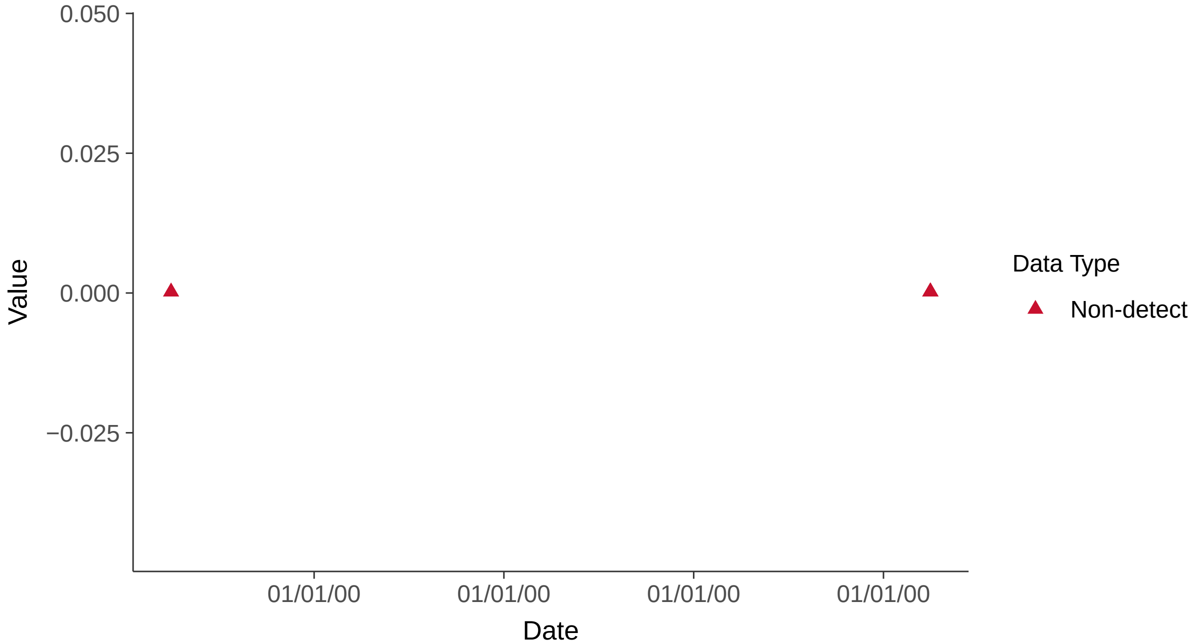


Appendix IV: Mercury, MW-15

ID: 15_2_17

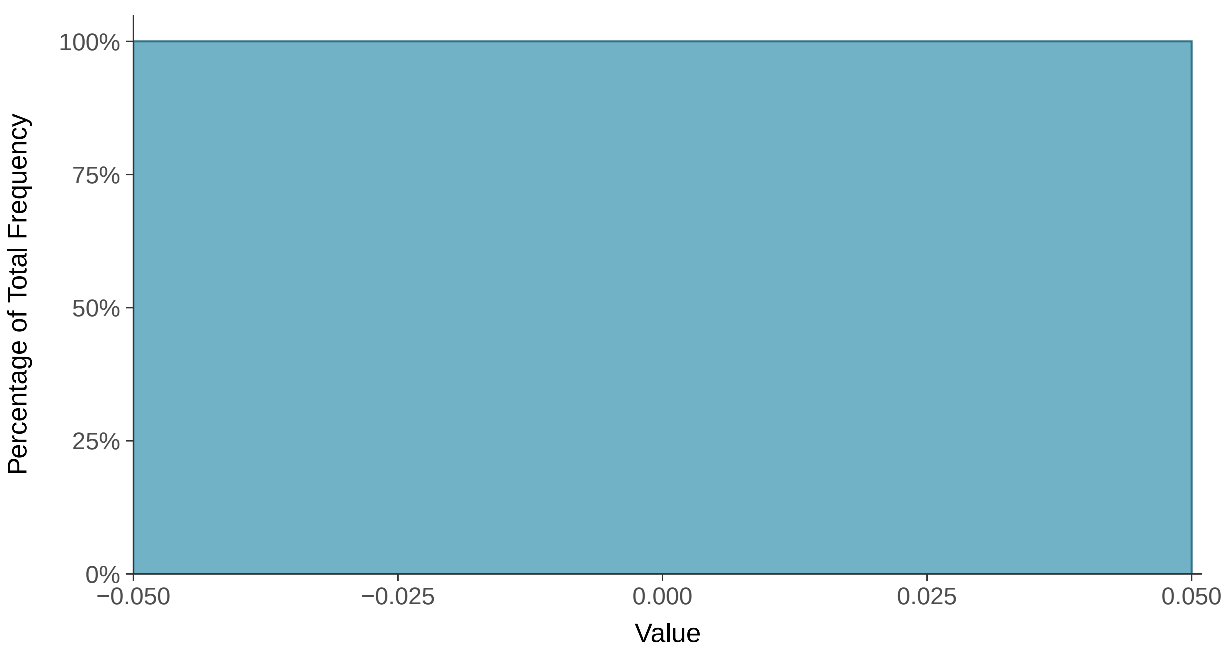
Scatter Plot

Mercury, MW-15 (mg/L)



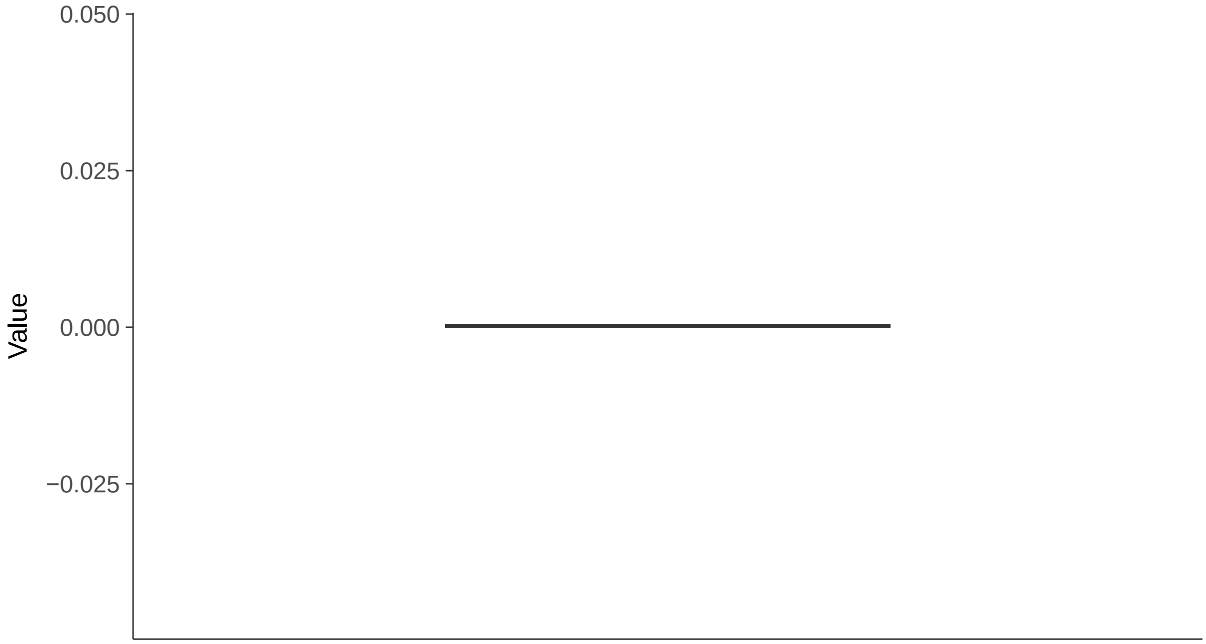
Histogram

Mercury, MW-15 (mg/L)



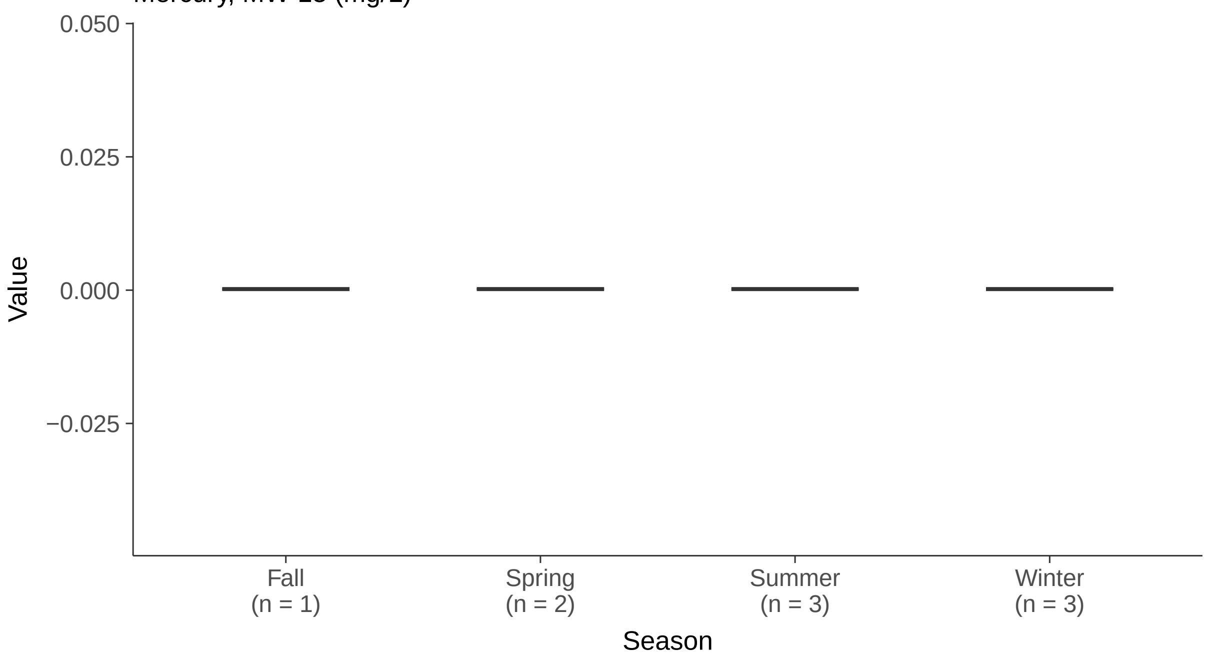
Boxplot

Mercury, MW-15 (mg/L)



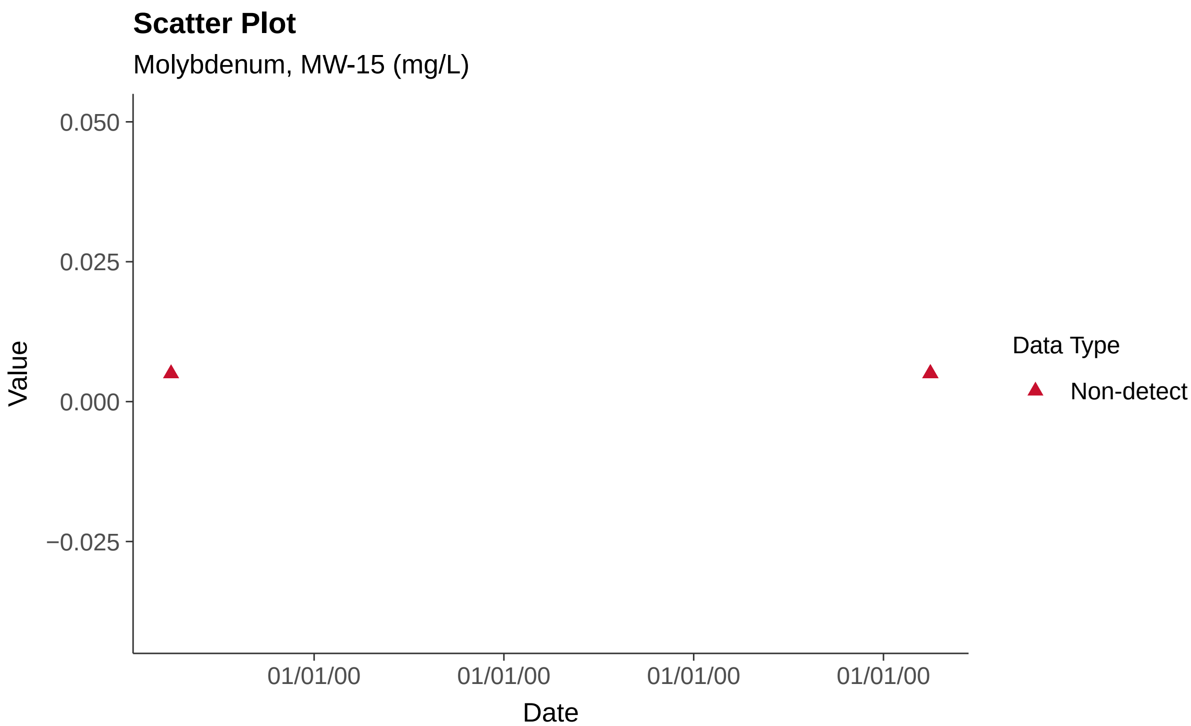
Boxplot by Season

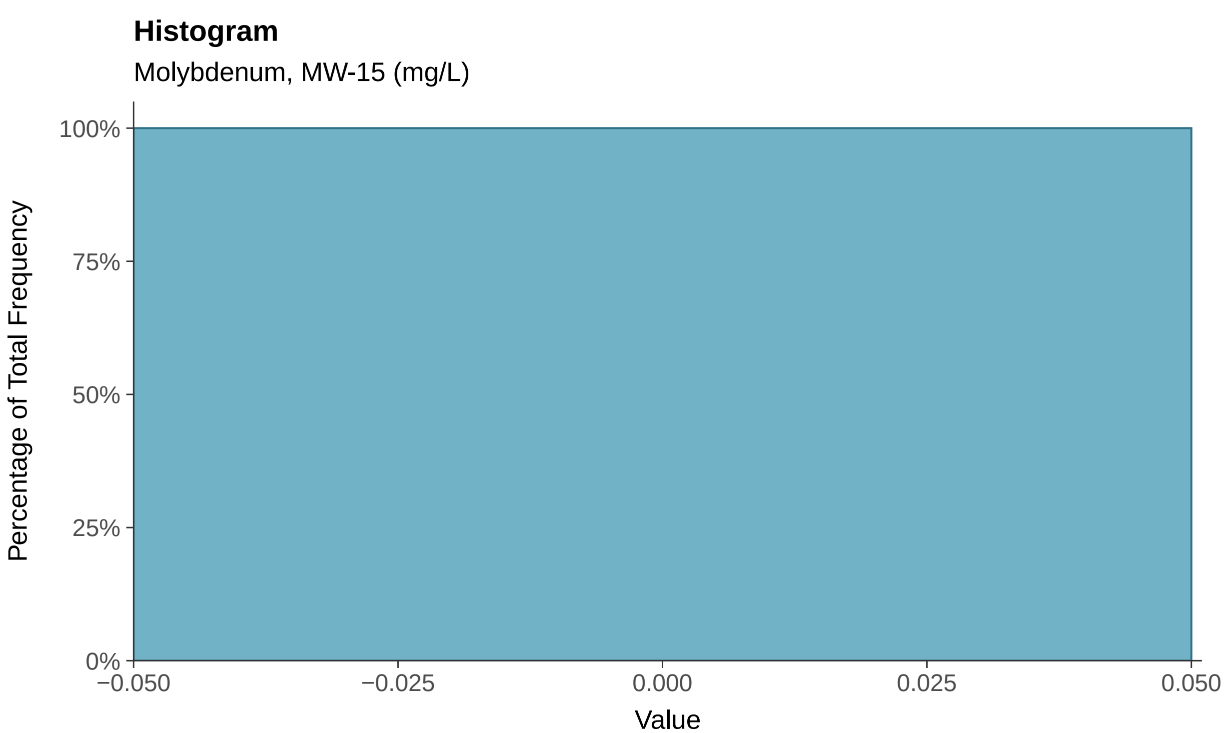
Mercury, MW-15 (mg/L)



Appendix IV: Molybdenum, MW-15

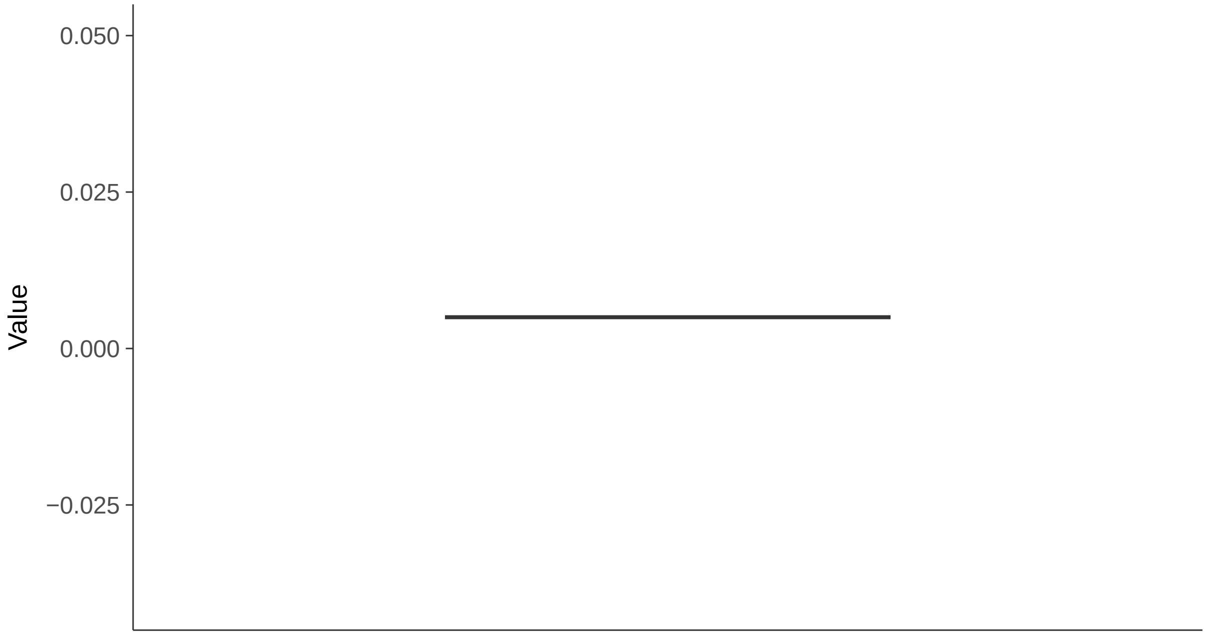
ID: 15_2_18





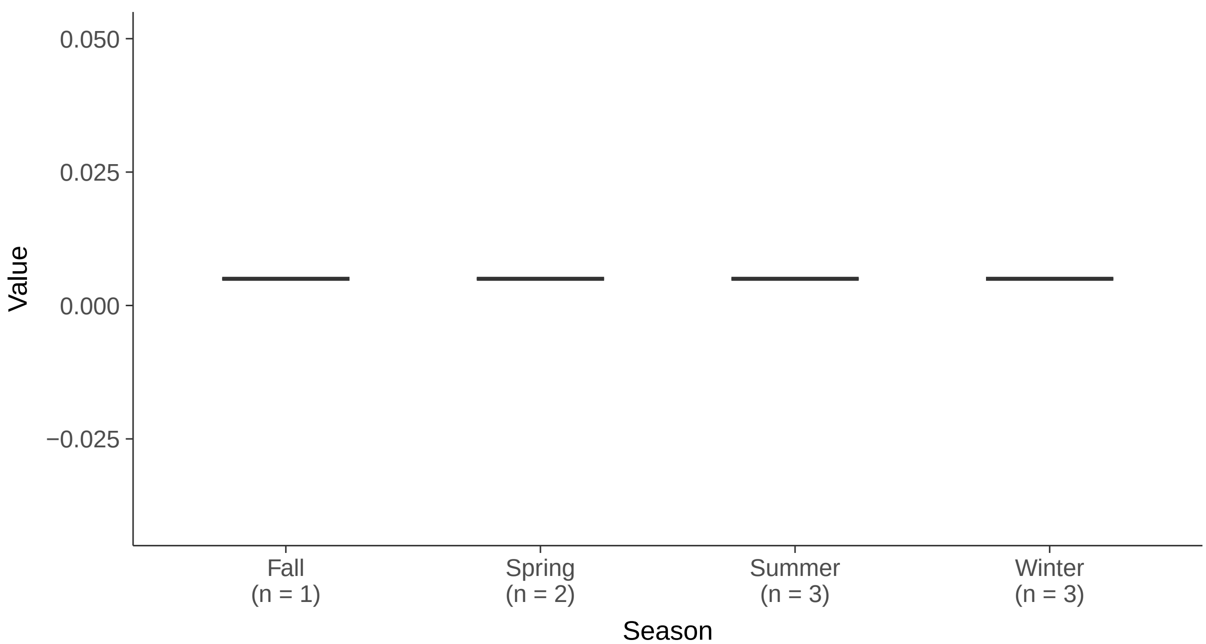
Boxplot

Molybdenum, MW-15 (mg/L)



Boxplot by Season

Molybdenum, MW-15 (mg/L)

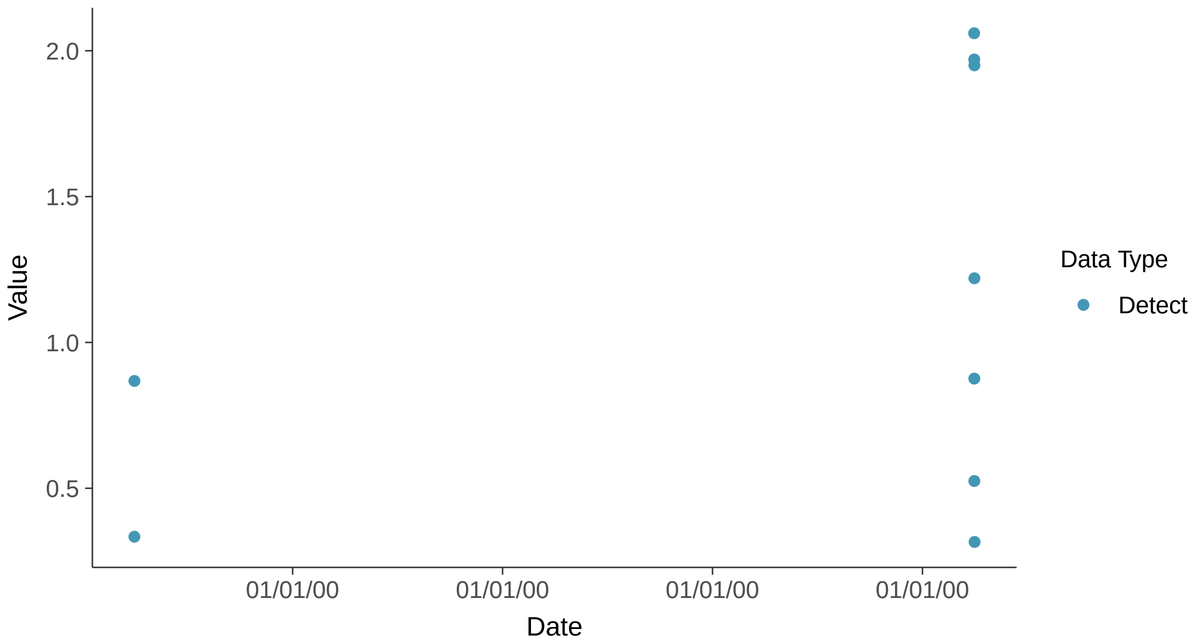


Appendix IV: Radium-226/228, MW-15

ID: 15_2_20

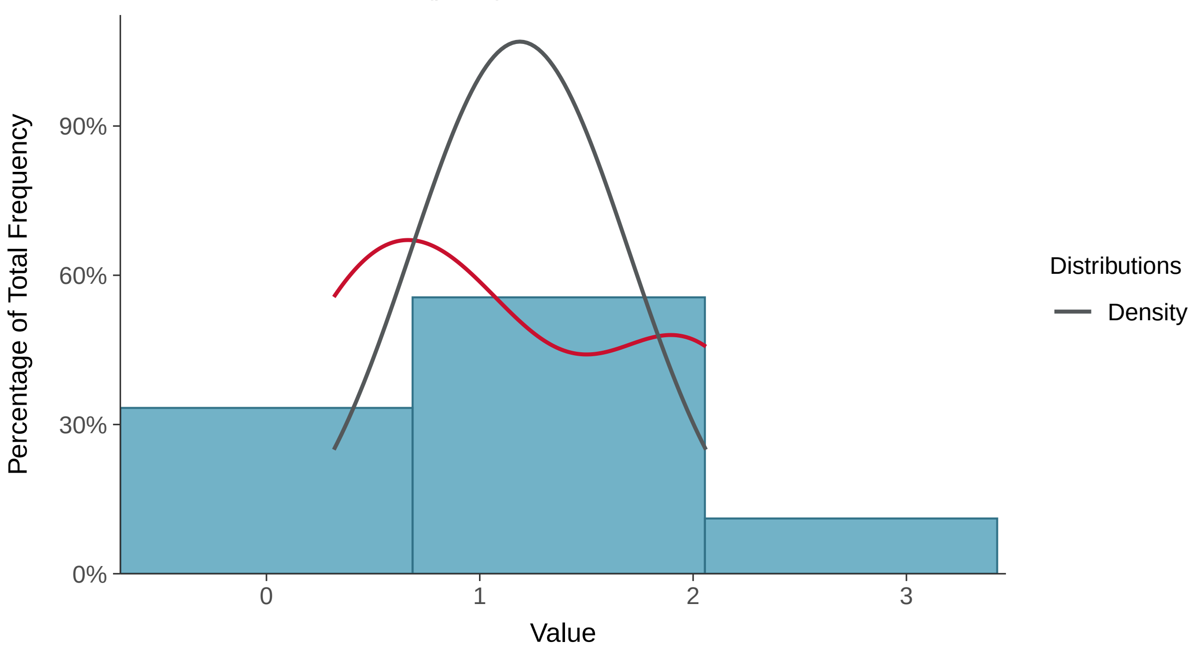
Scatter Plot

Radium-226/228, MW-15 (pCi/L)



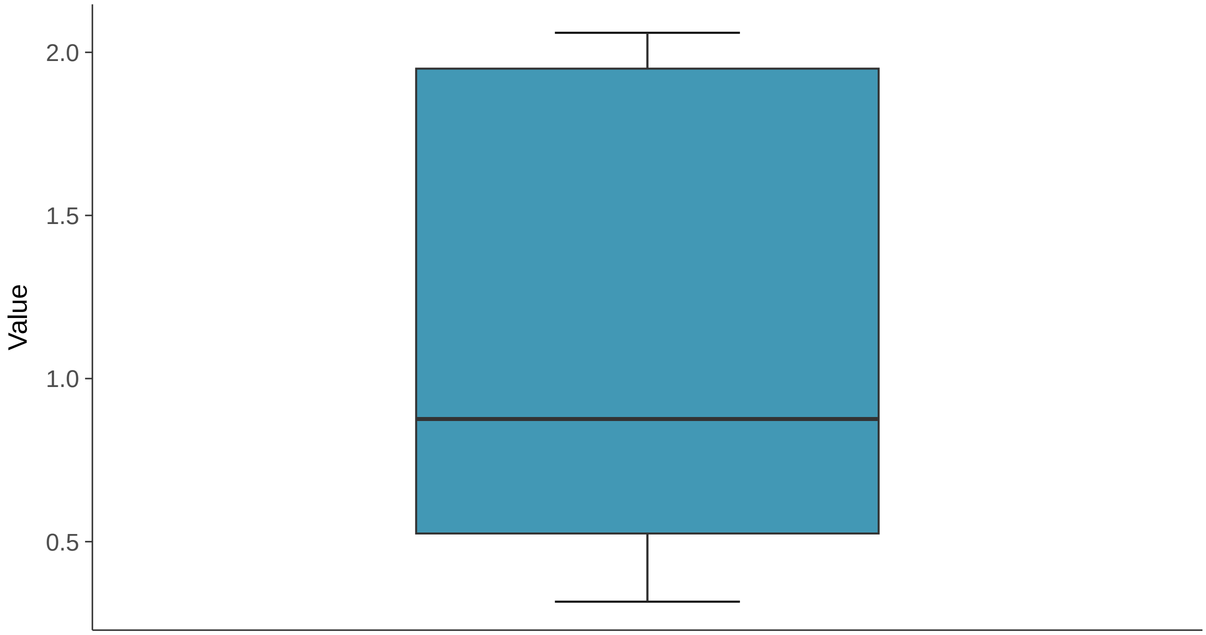
Histogram

Radium-226/228, MW-15 (pCi/L)



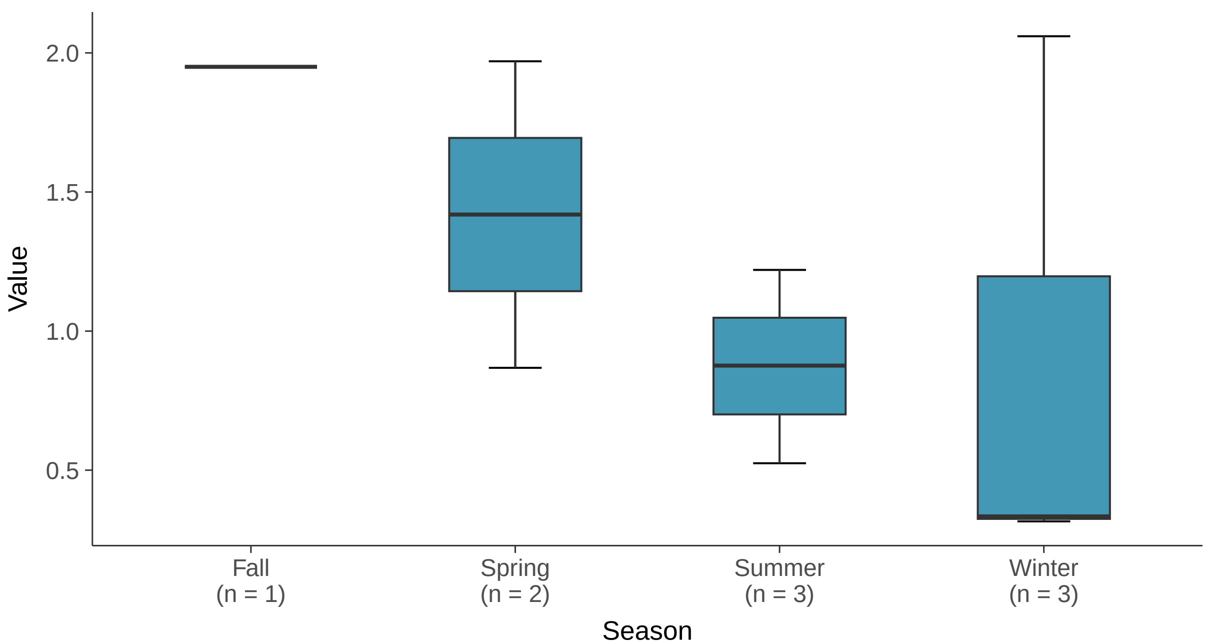
Boxplot

Radium-226/228, MW-15 (pCi/L)



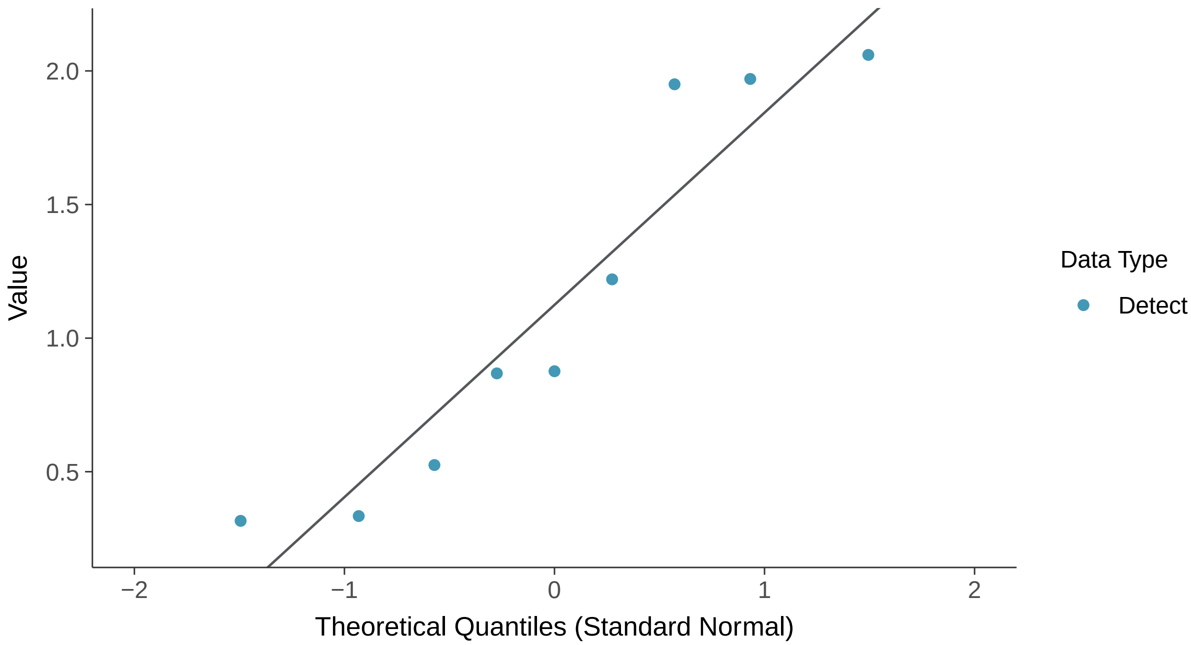
Boxplot by Season

Radium-226/228, MW-15 (pCi/L)



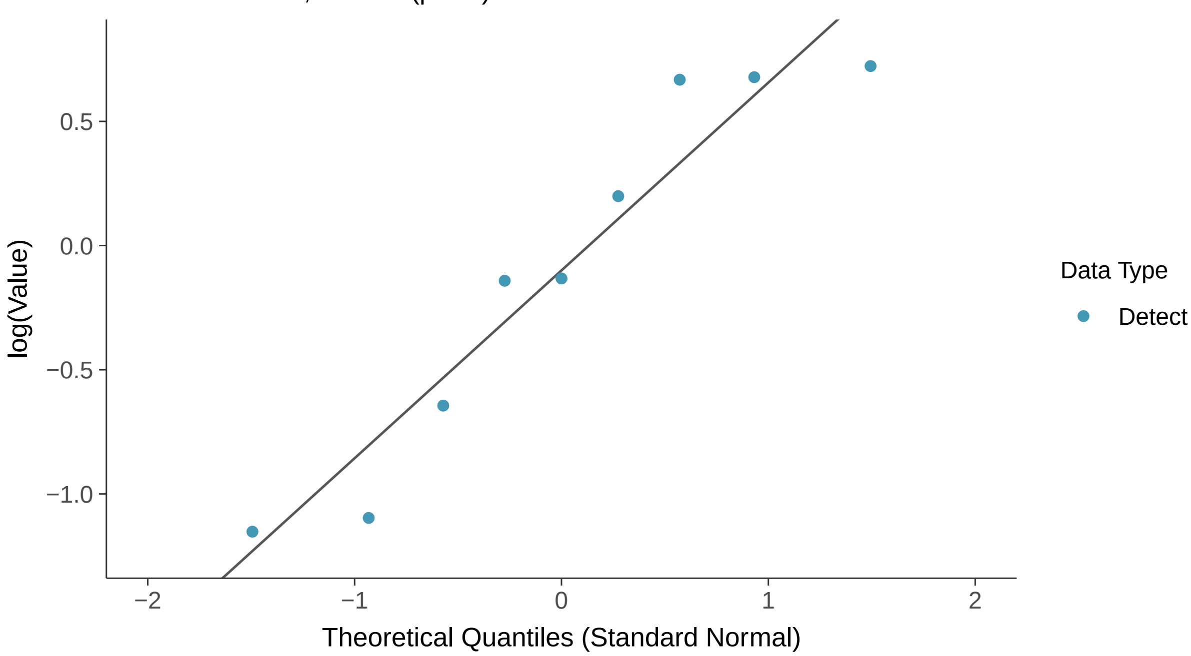
Normal Q-Q plot

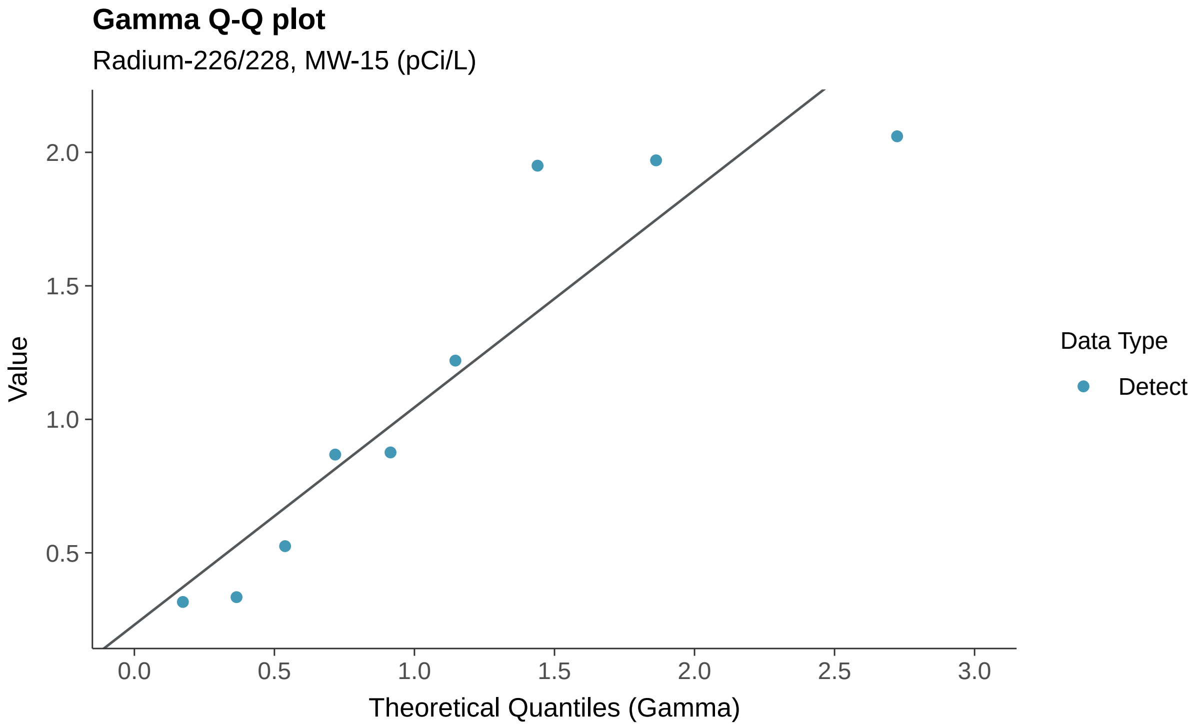
Radium-226/228, MW-15 (pCi/L)

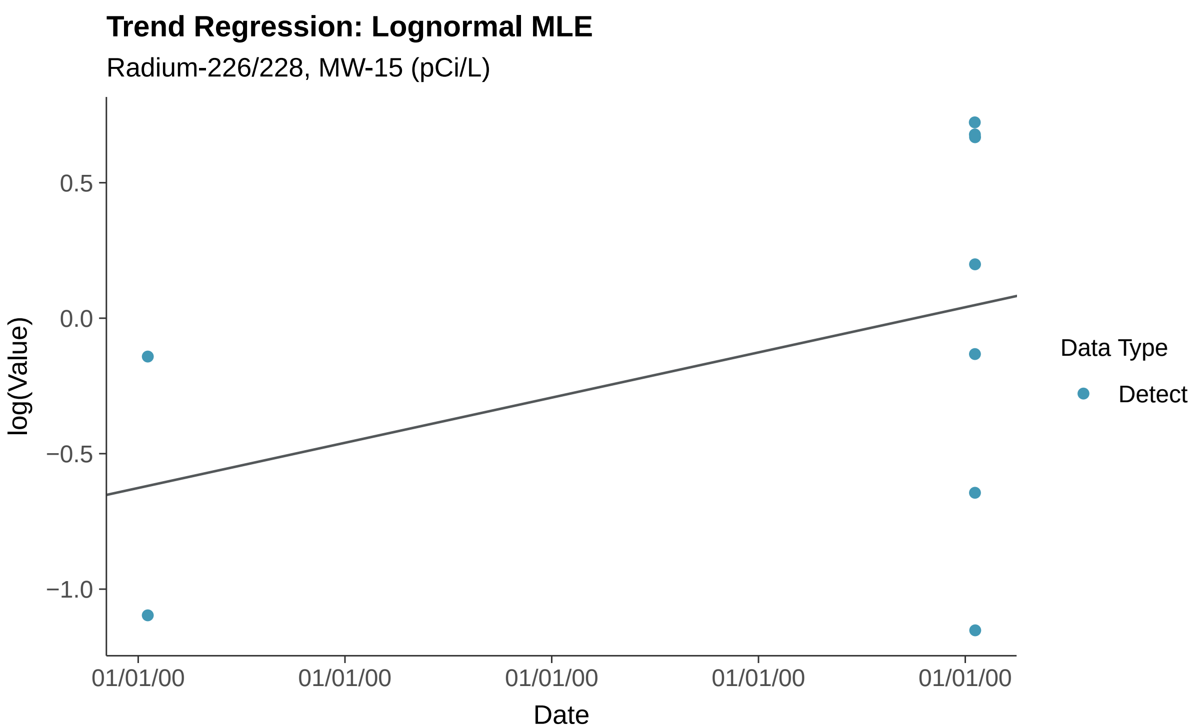


Lognormal Q-Q plot

Radium-226/228, MW-15 (pCi/L)

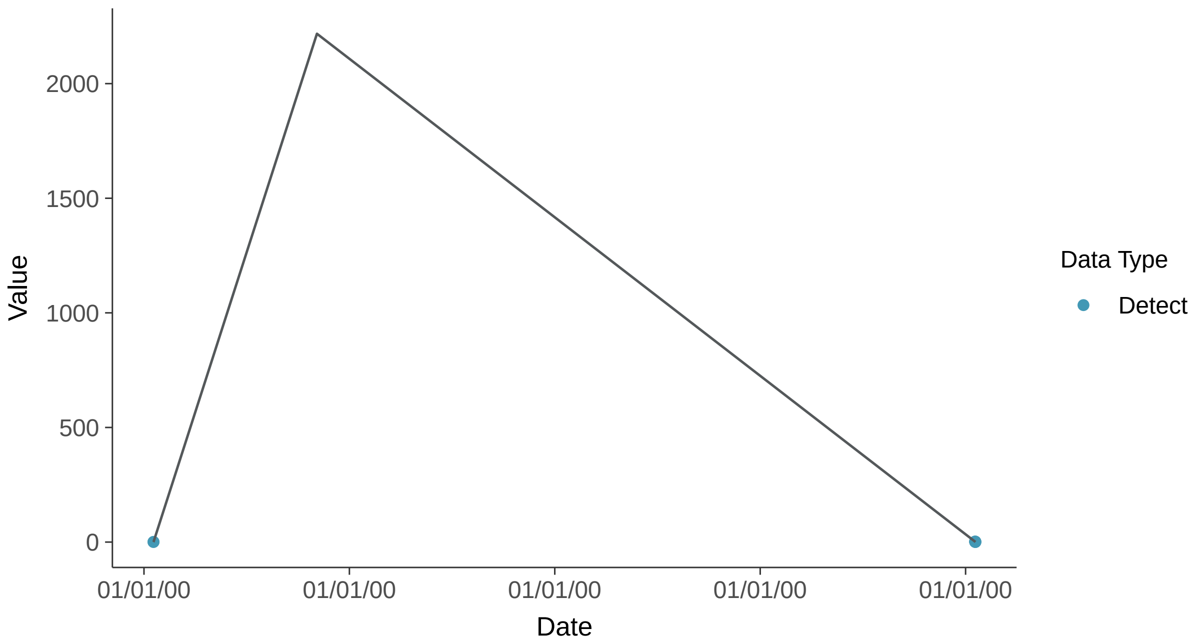



Gamma Q-Q plot
Radium-226/228, MW-15 (pCi/L)
Value
2.0
1.5
1.0
0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Radium-226/228, MW-15 (pCi/L)
log(Value)
0.5
0.0
−0.5
−1.0
01/01/00
01/01/00
01/01/00
01/01/00
01/01/00
Date
Data Type
Detect

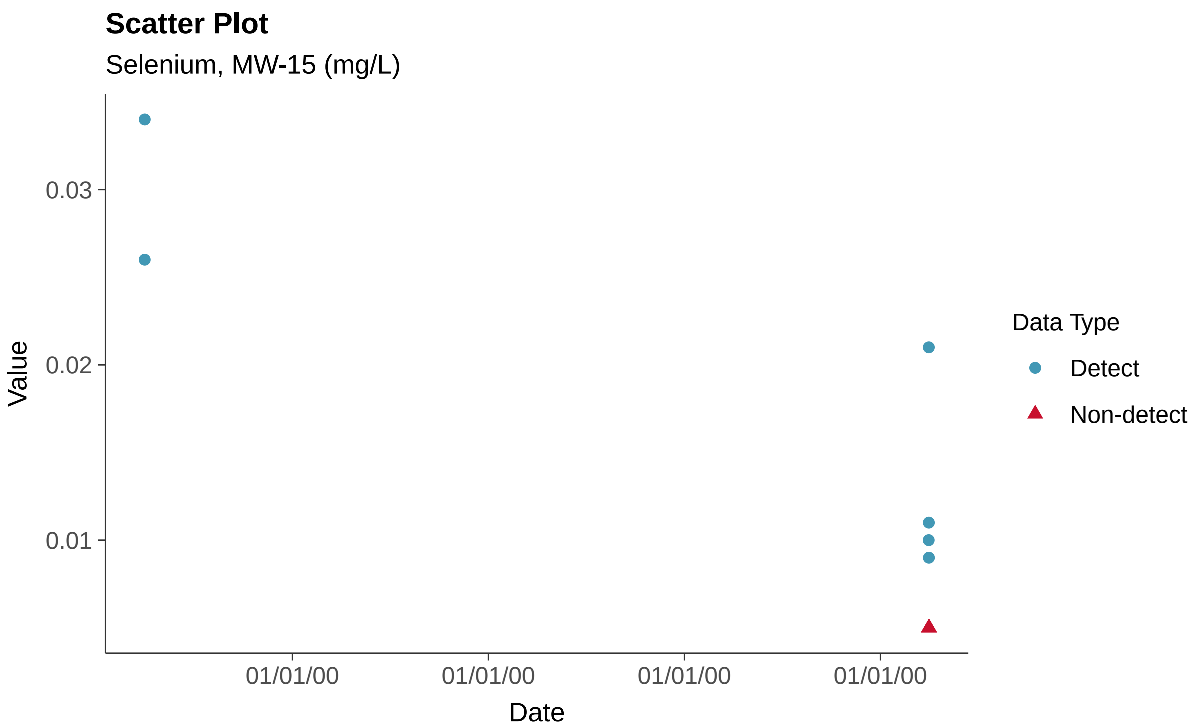
Trend Regression: Piecewise Linear-Linear

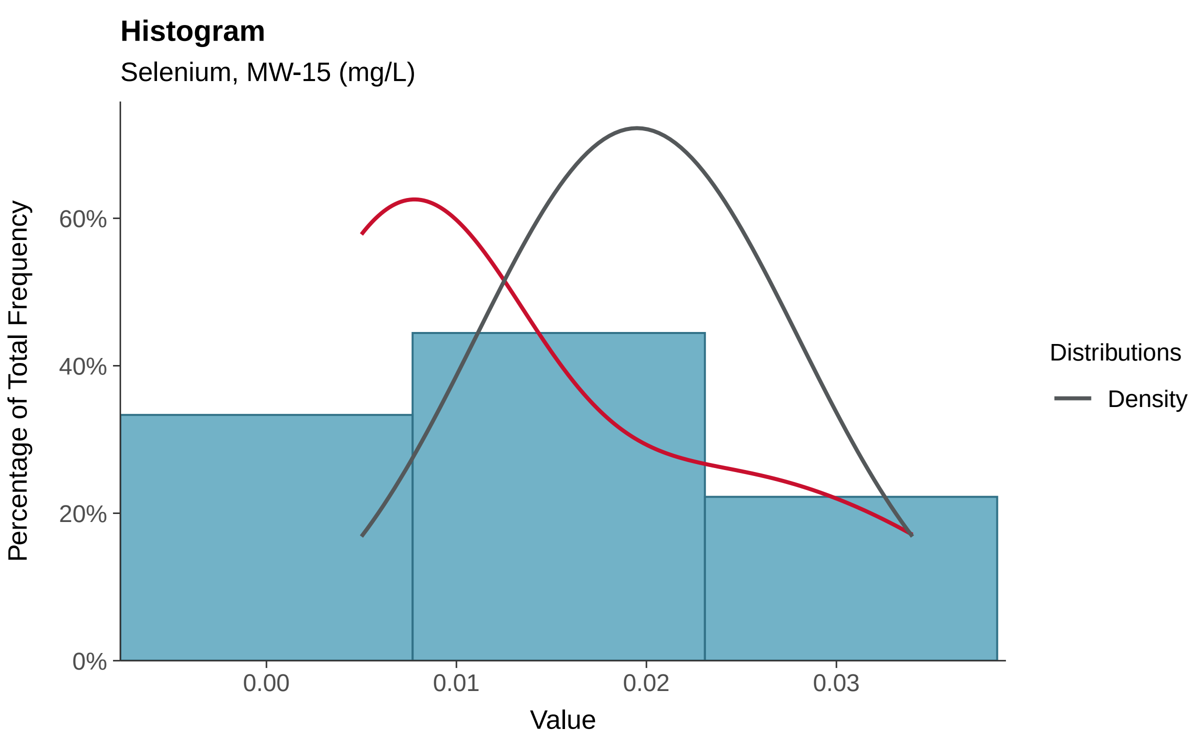
Radium-226/228, MW-15 (pCi/L)



Appendix IV: Selenium, MW-15

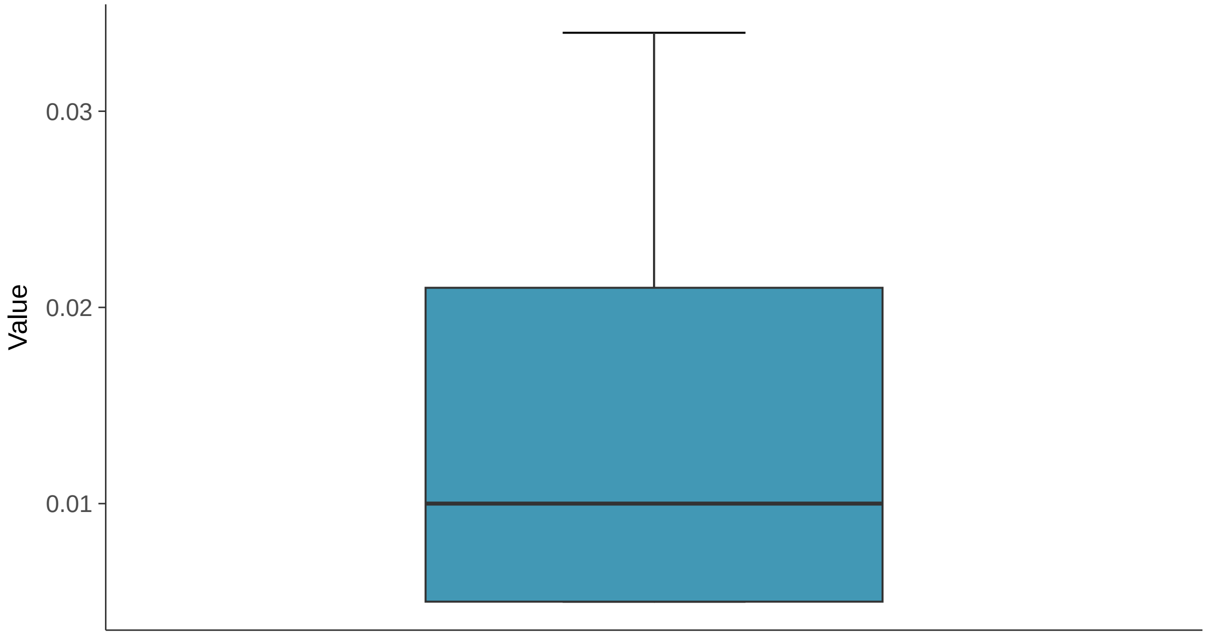
ID: 15_2_22





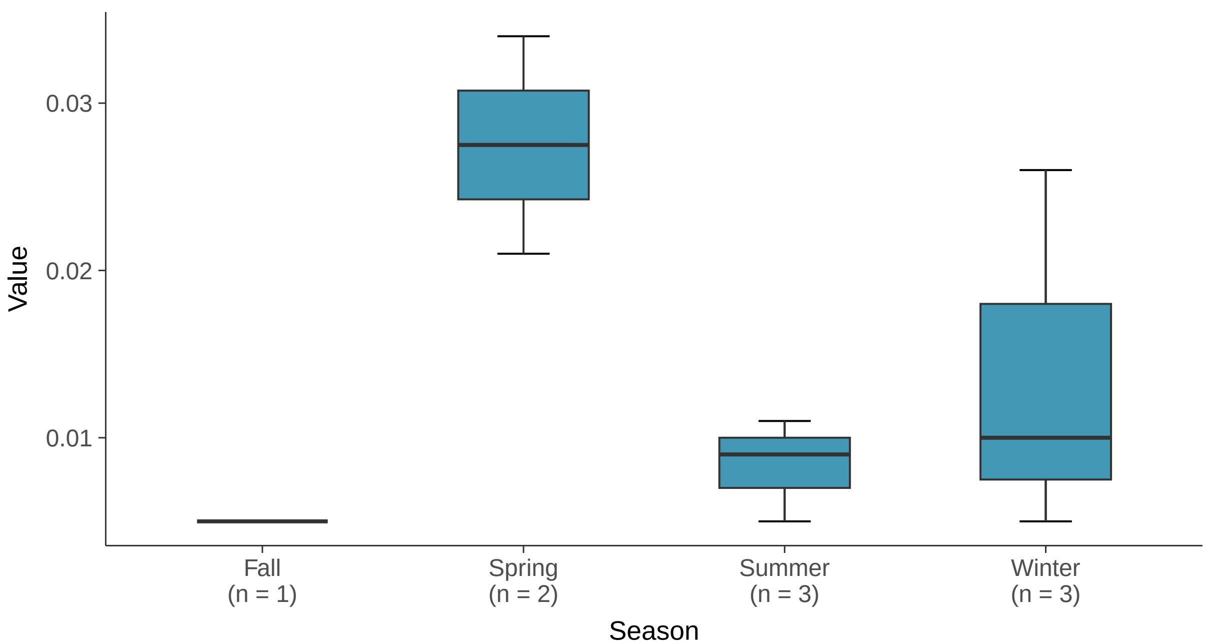
Boxplot

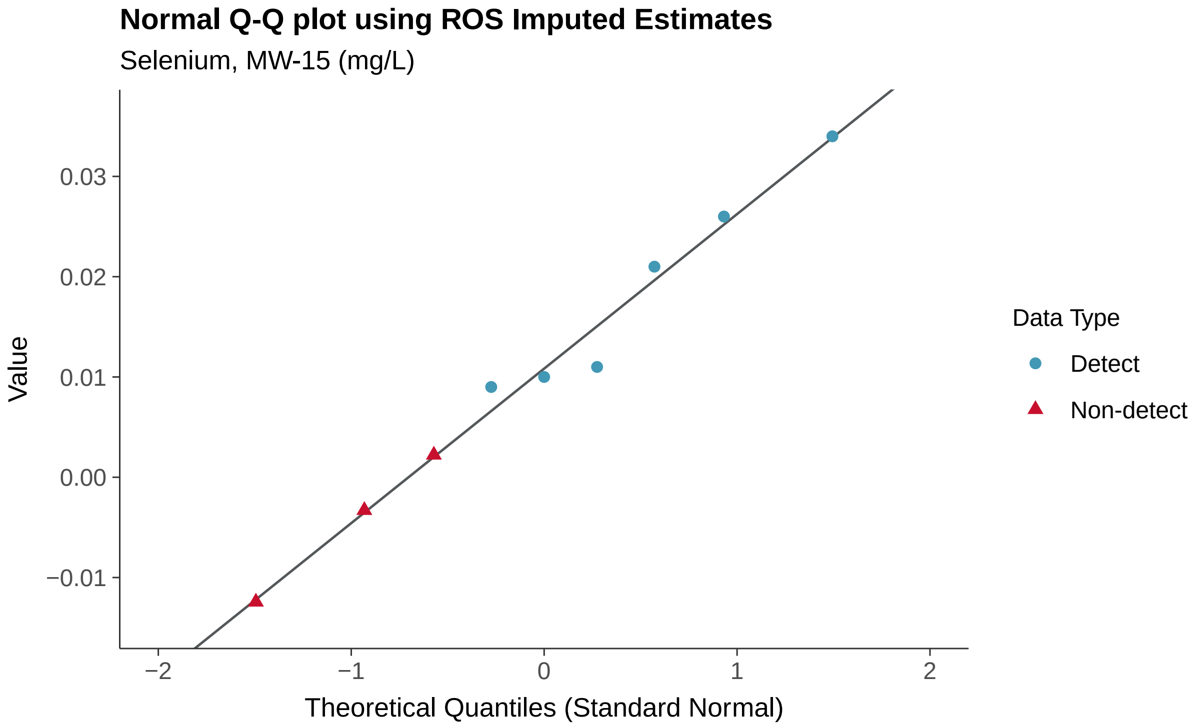
Selenium, MW-15 (mg/L)

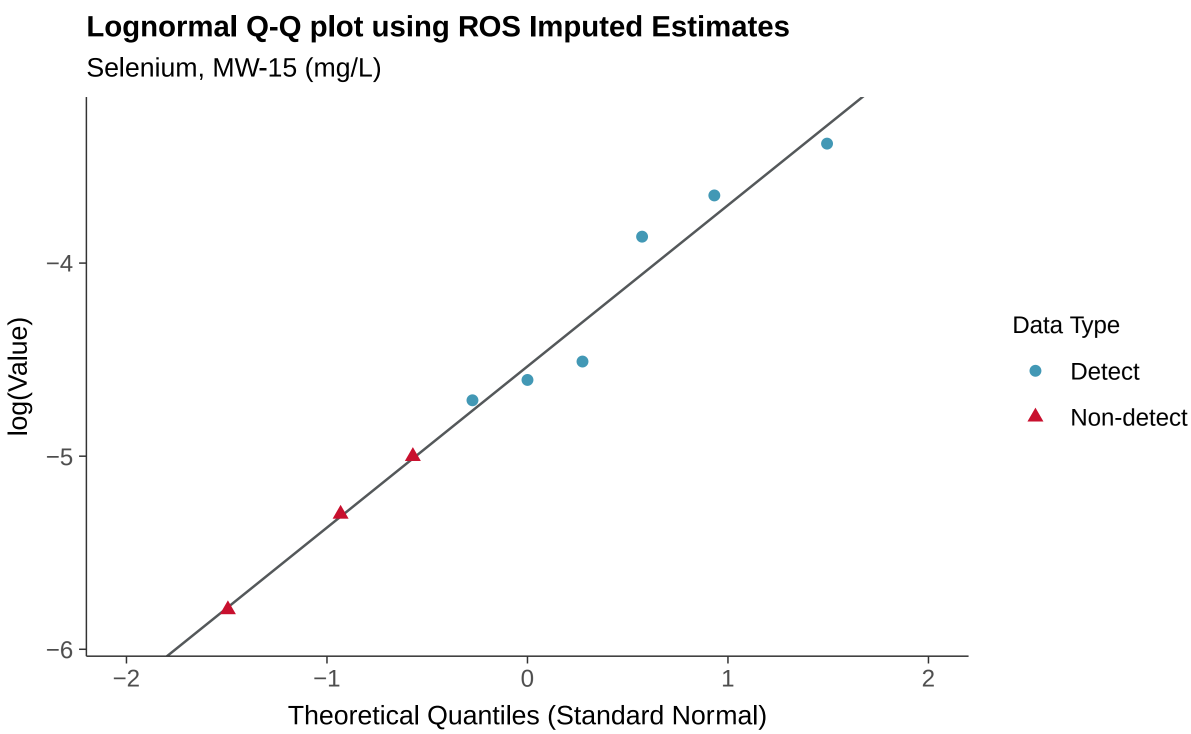


Boxplot by Season

Selenium, MW-15 (mg/L)

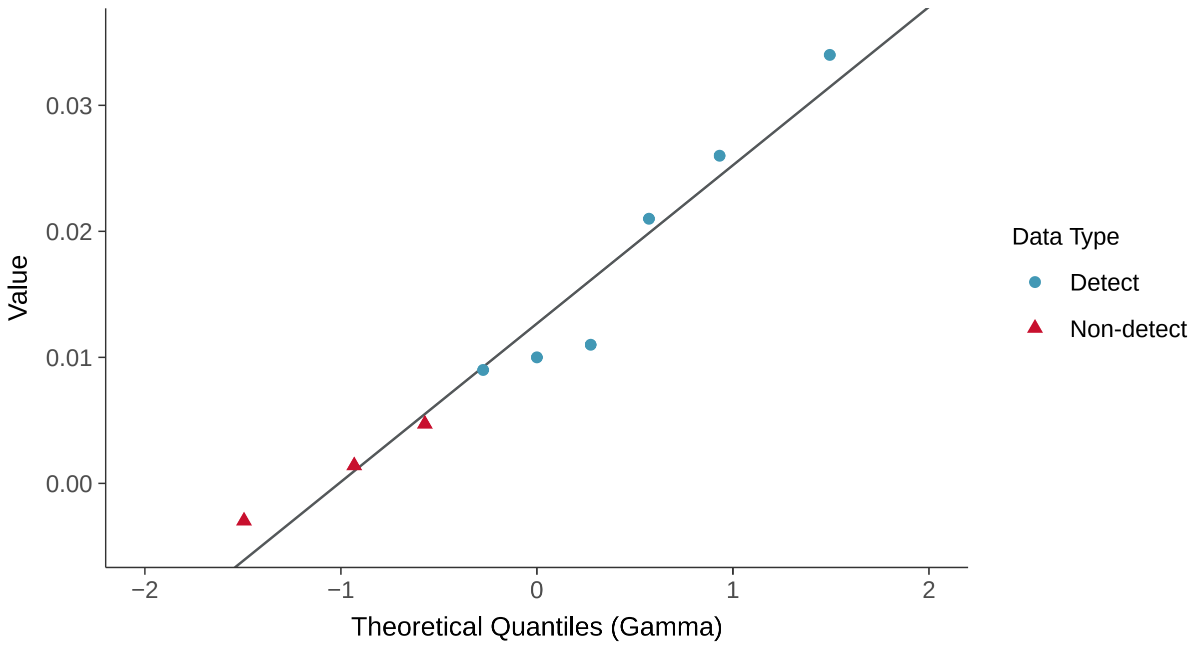



Normal Q-Q plot using ROS Imputed Estimates
Selenium, MW-15 (mg/L)
Value
0.03
0.02
0.01
0.00
−0.01
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Selenium, MW-15 (mg/L)
log(Value)
−4
−5
−6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

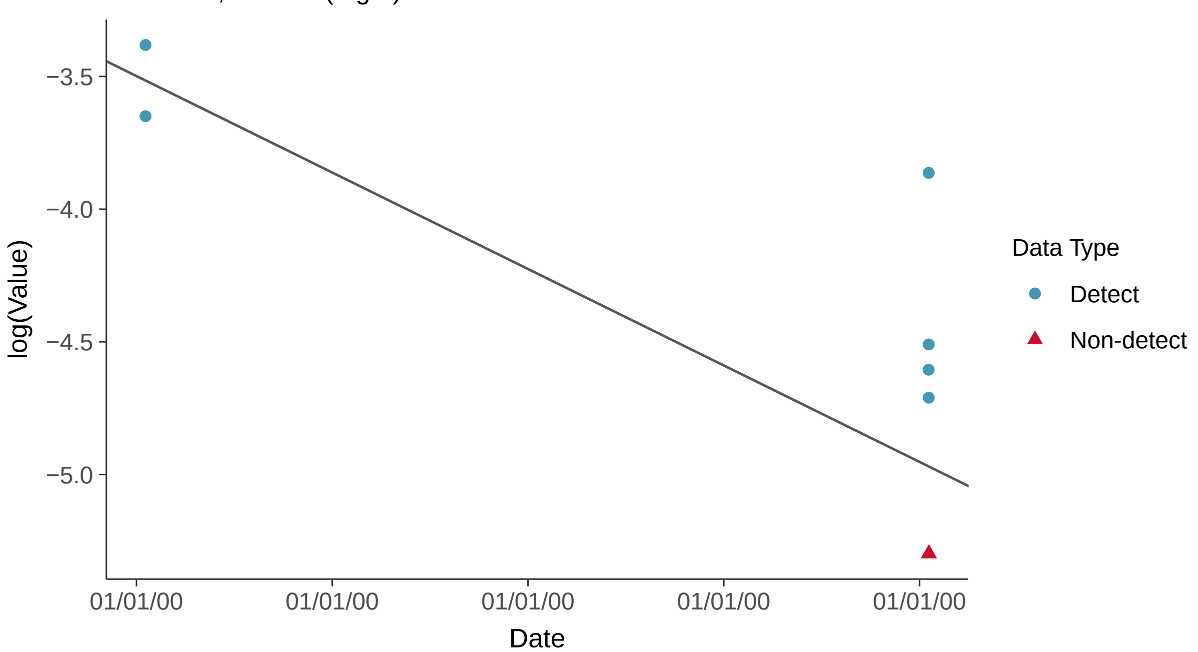
Gamma Q-Q plot using ROS Imputed Estimates

Selenium, MW-15 (mg/L)



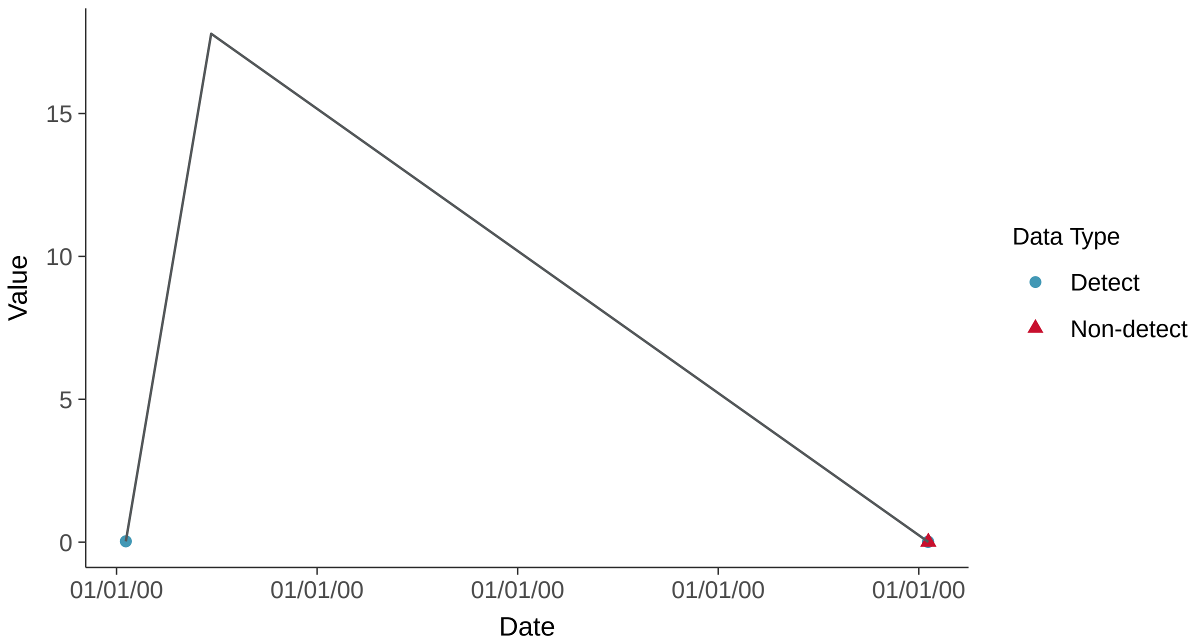
Trend Regression: Lognormal MLE

Selenium, MW-15 (mg/L)



Trend Regression: Piecewise Linear-Linear

Selenium, MW-15 (mg/L)

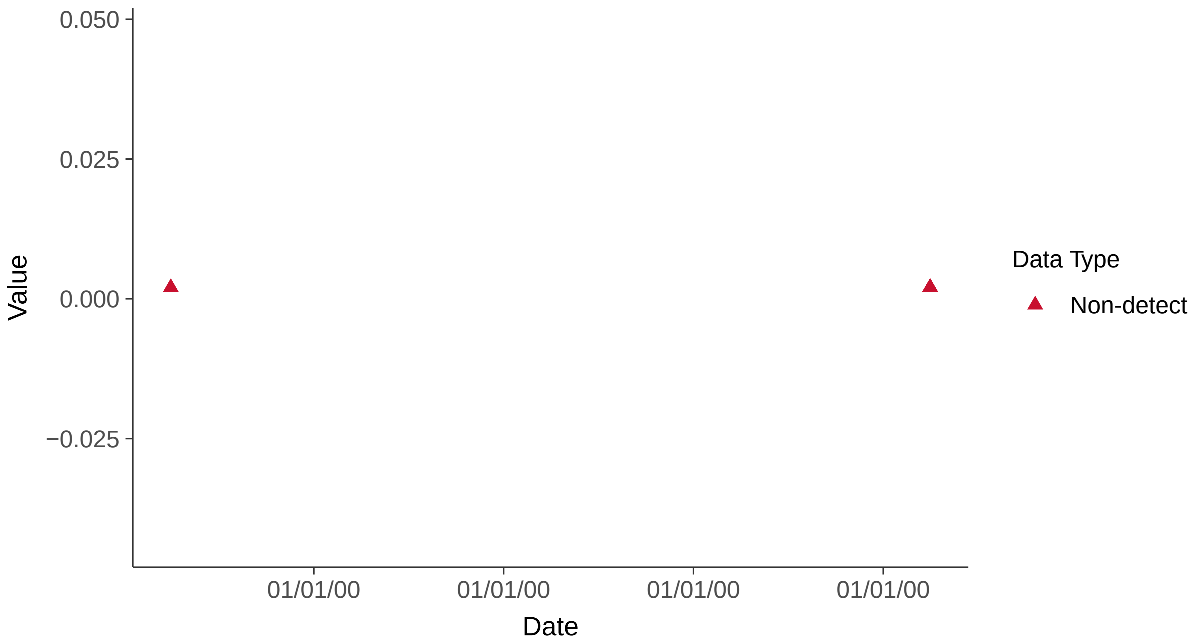


Appendix IV: Thallium, MW-15

ID: 15_2_23

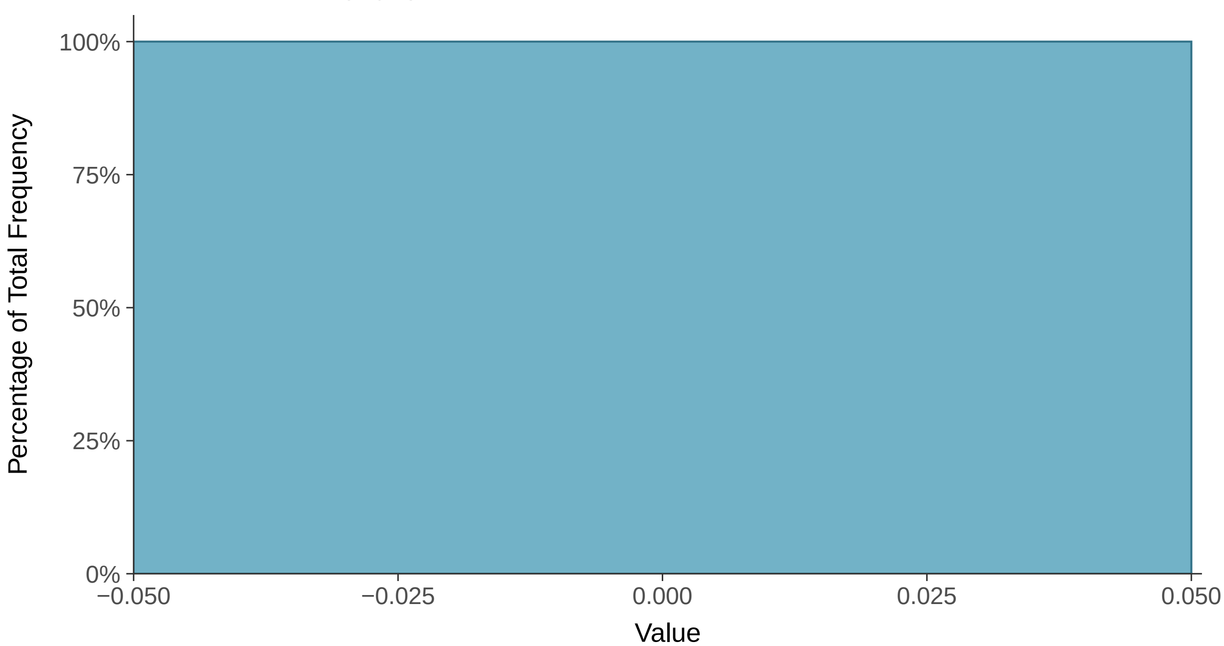
Scatter Plot

Thallium, MW-15 (mg/L)



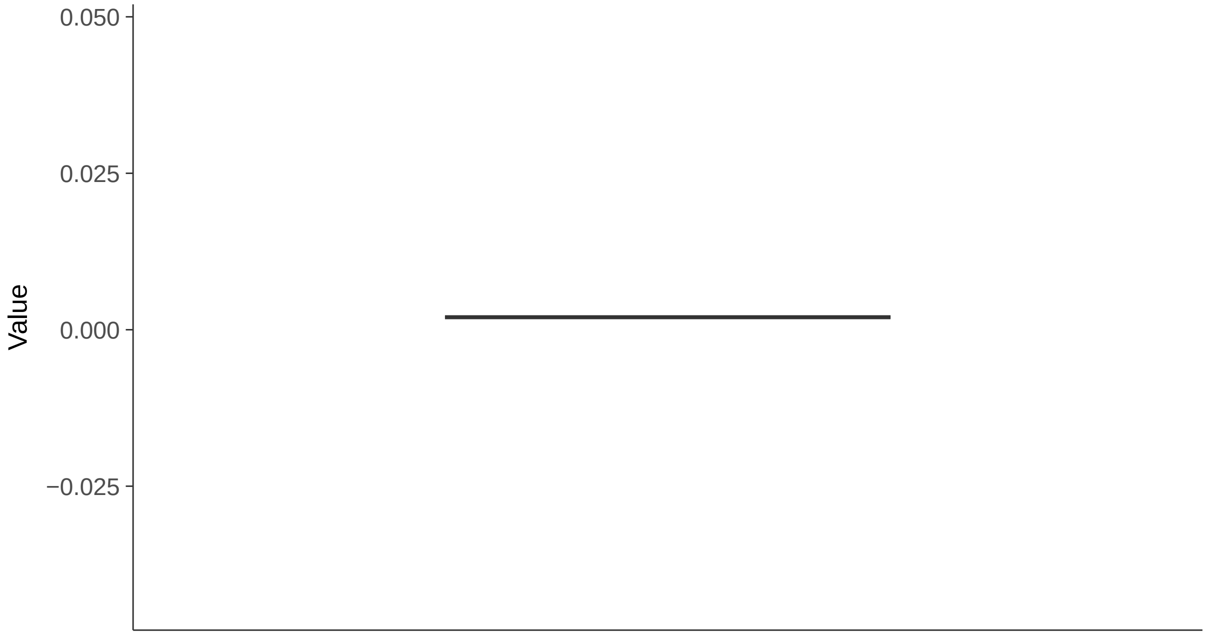
Histogram

Thallium, MW-15 (mg/L)



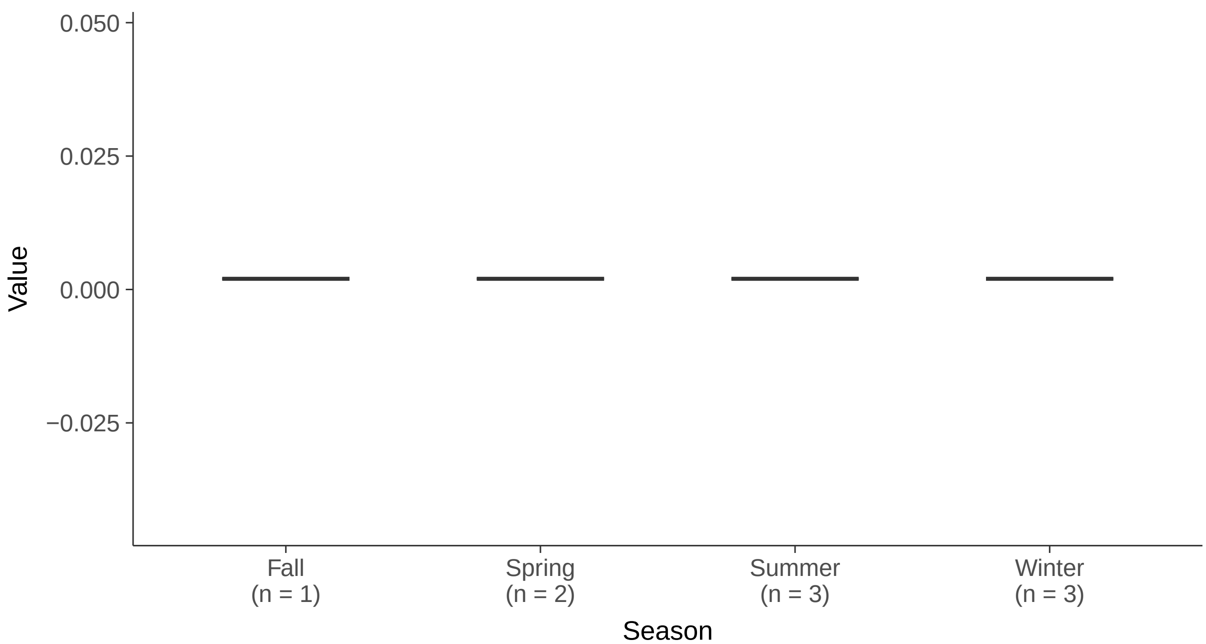
Boxplot

Thallium, MW-15 (mg/L)



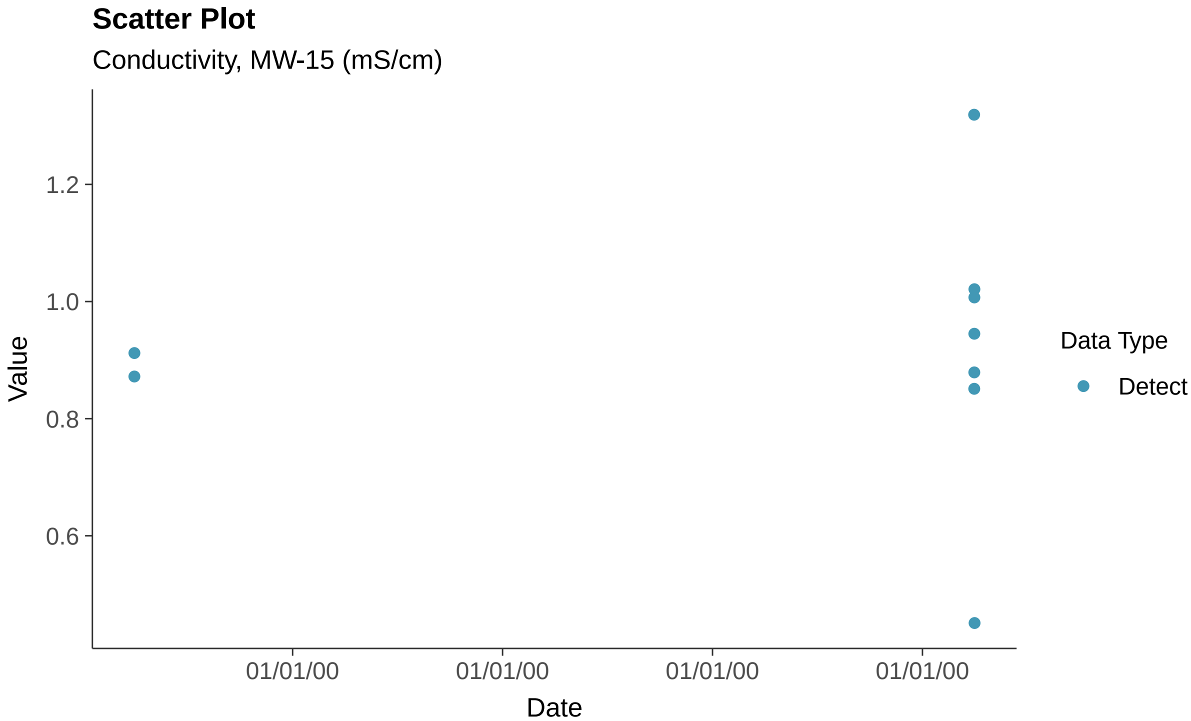
Boxplot by Season

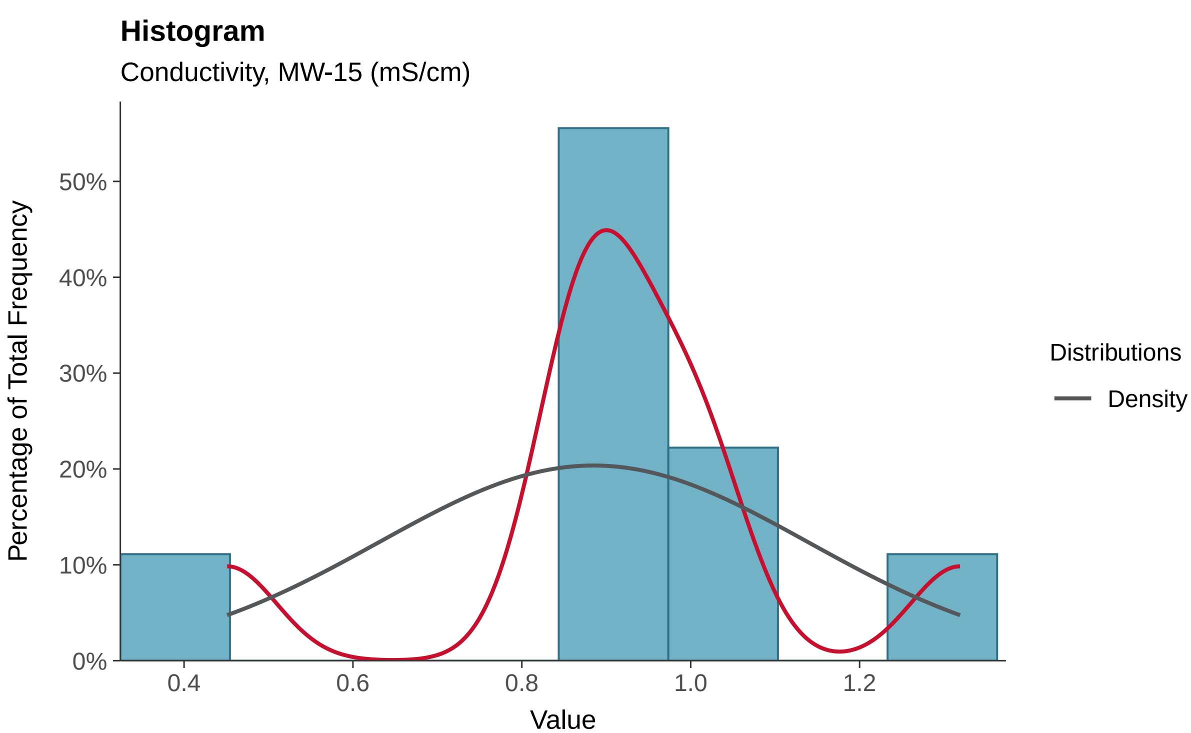
Thallium, MW-15 (mg/L)



Field Parameters: Conductivity, MW-15

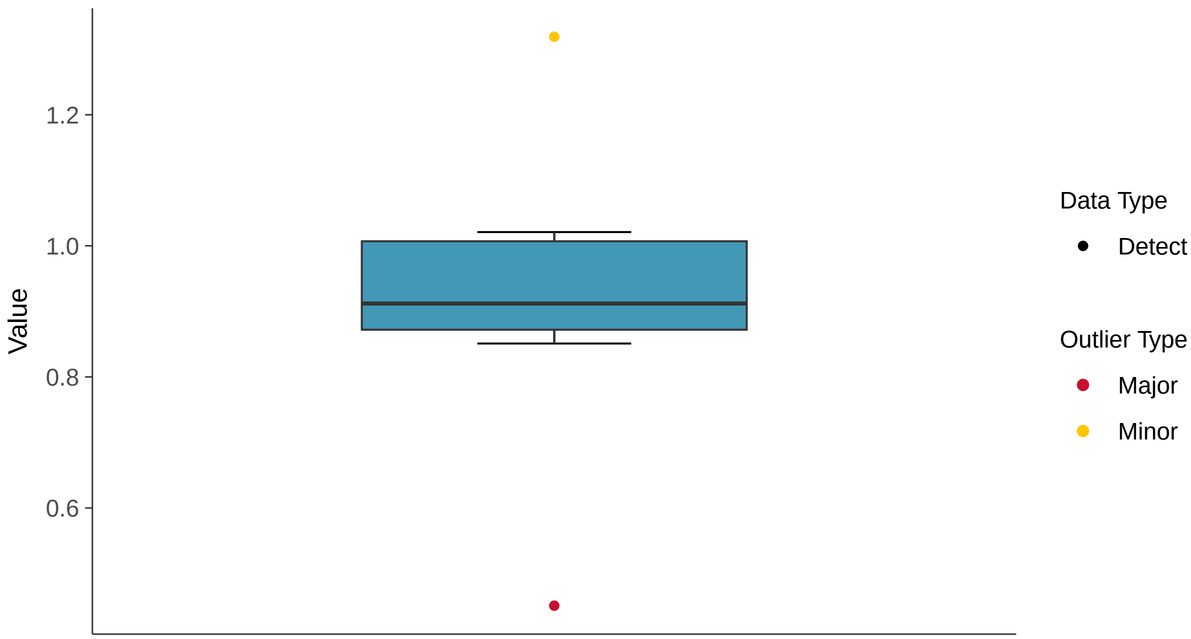
ID: 15_3_24





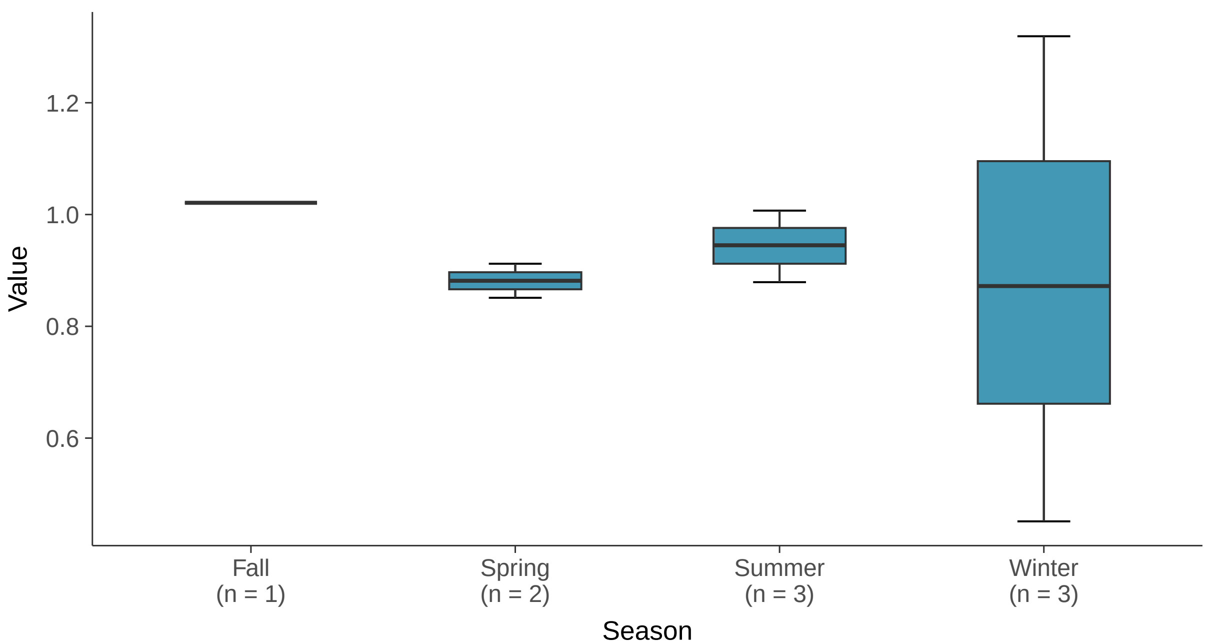
Boxplot

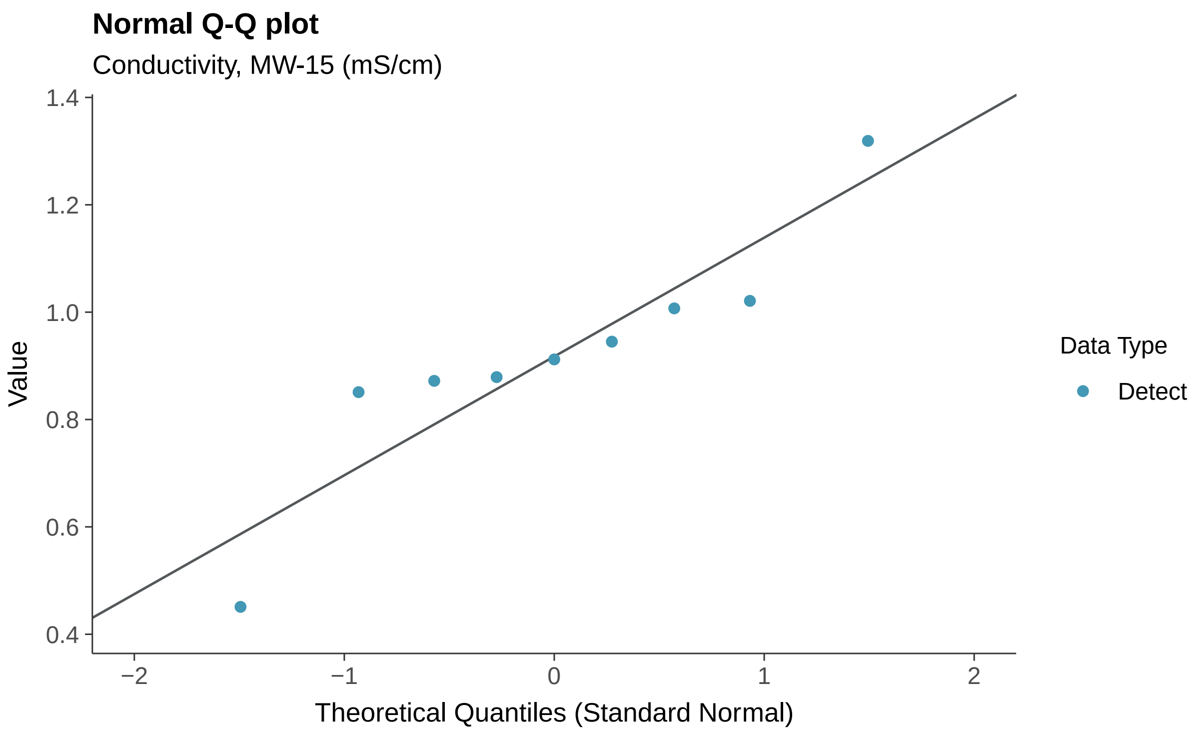
Conductivity, MW-15 (mS/cm)

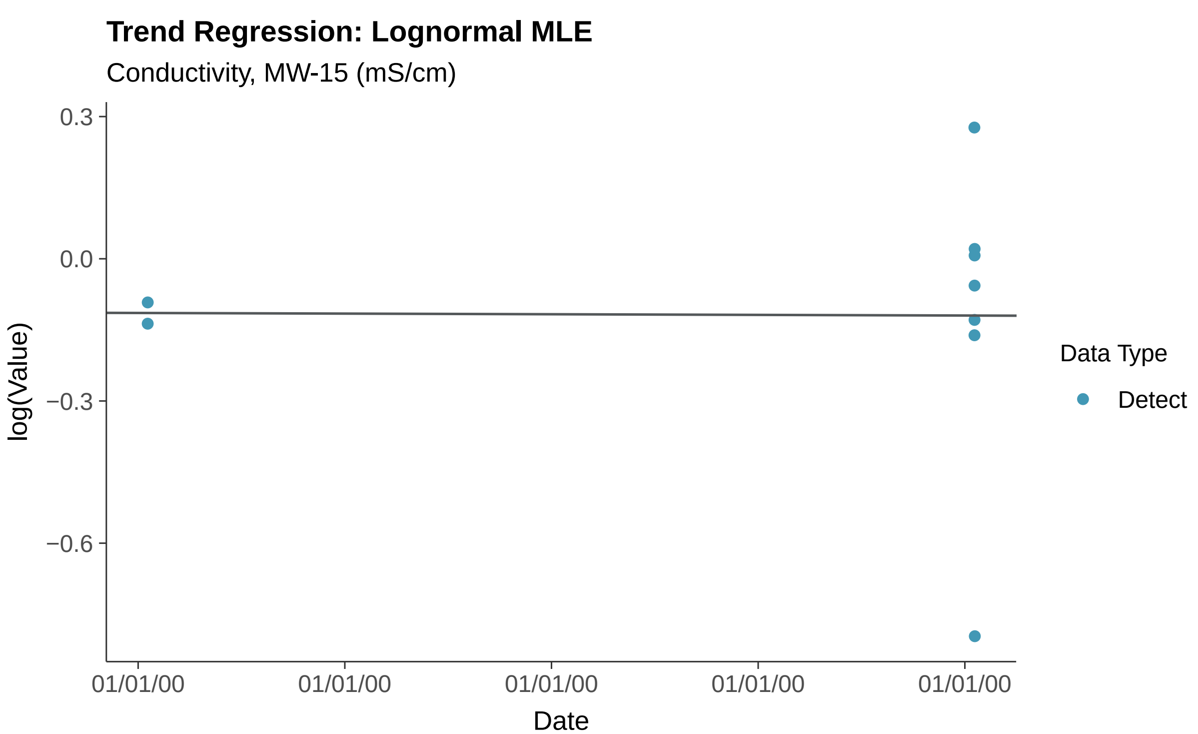


Boxplot by Season

Conductivity, MW-15 (mS/cm)

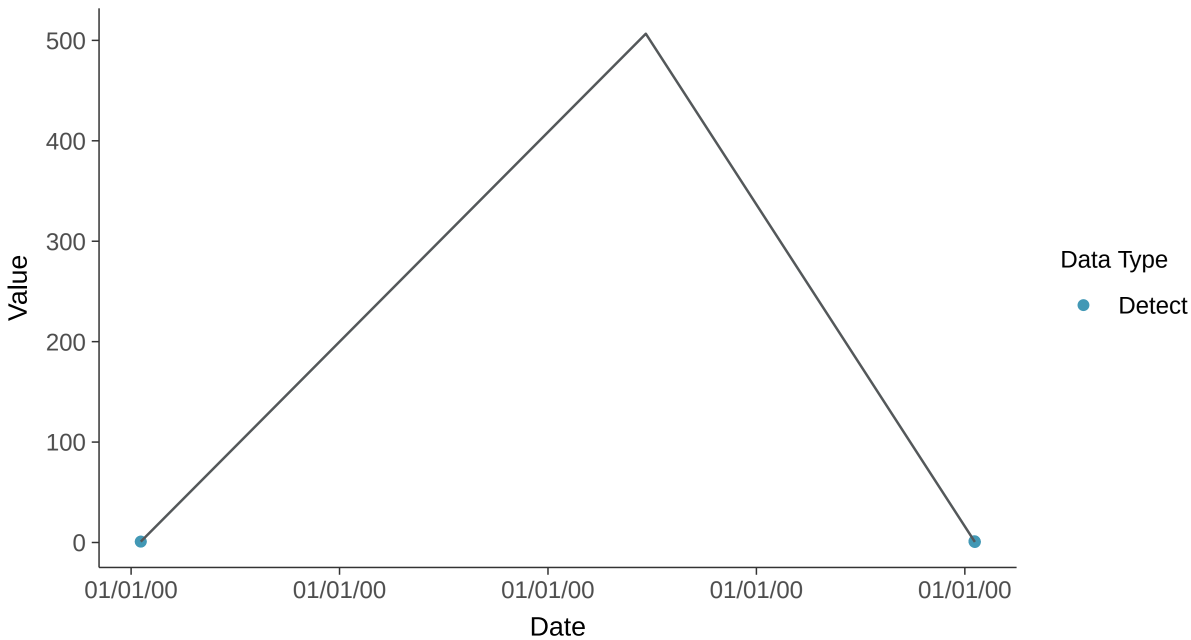



Normal Q-Q plot
Conductivity, MW-15 (mS/cm)
Value
1.4
1.2
1.0
0.8
0.6
0.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Conductivity, MW-15 (mS/cm)
log(Value)
0.3
0.0
−0.3
−0.6
01/01/00
01/01/00
01/01/00
01/01/00
01/01/00
Date
Data Type
Detect

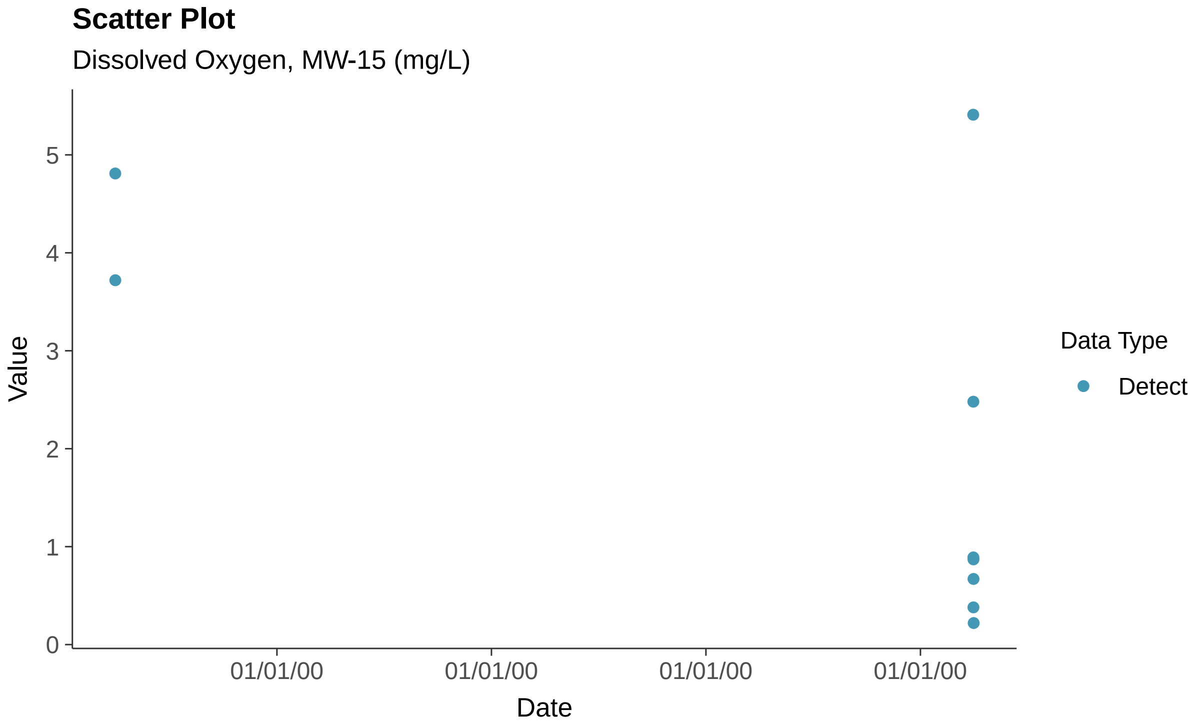
Trend Regression: Piecewise Linear-Linear

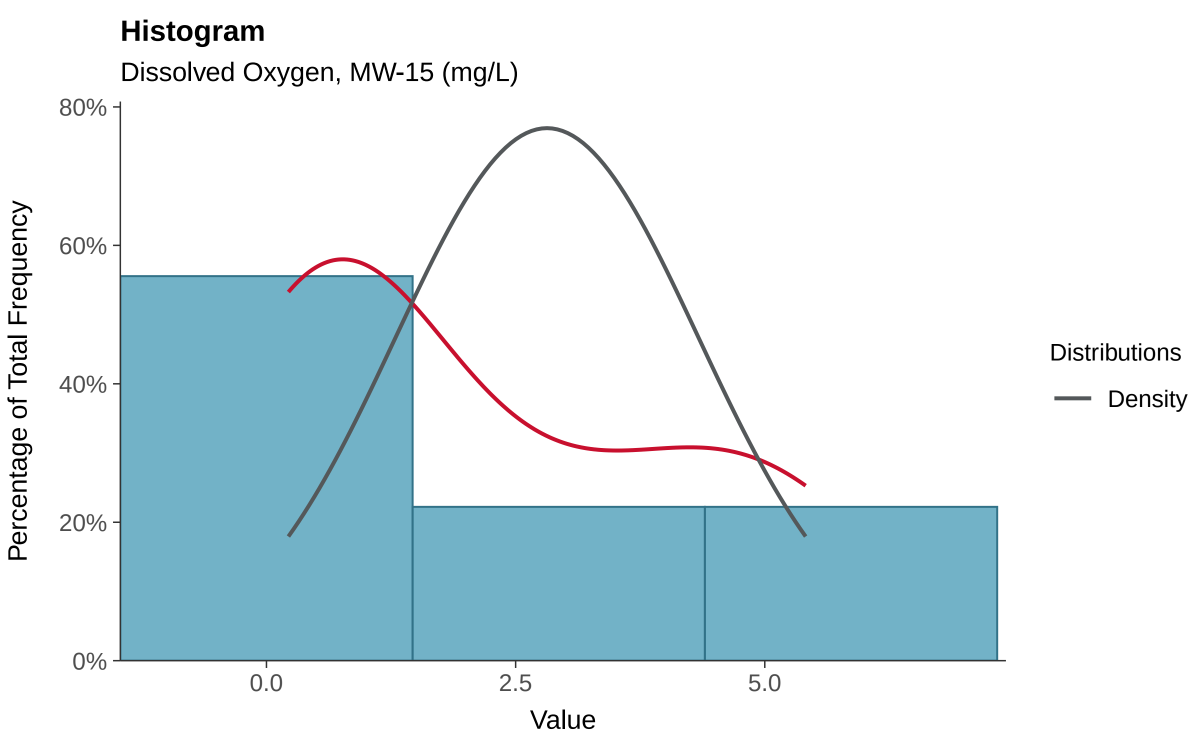
Conductivity, MW-15 (mS/cm)



Field Parameters: Dissolved Oxygen, MW-15

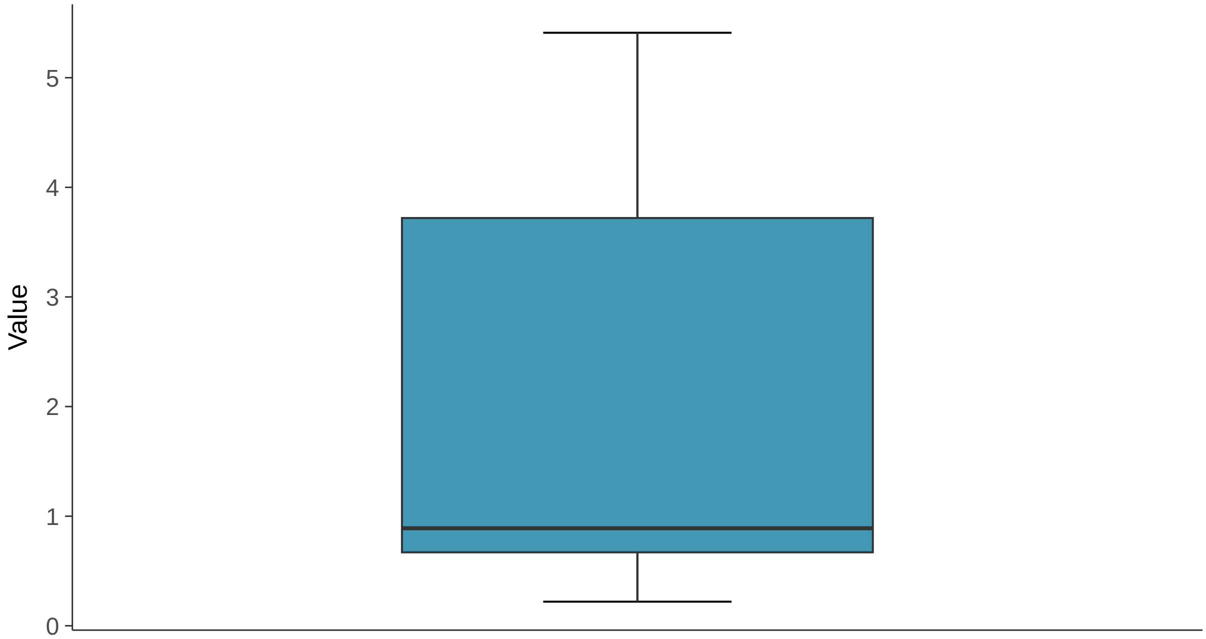
ID: 15_3_25





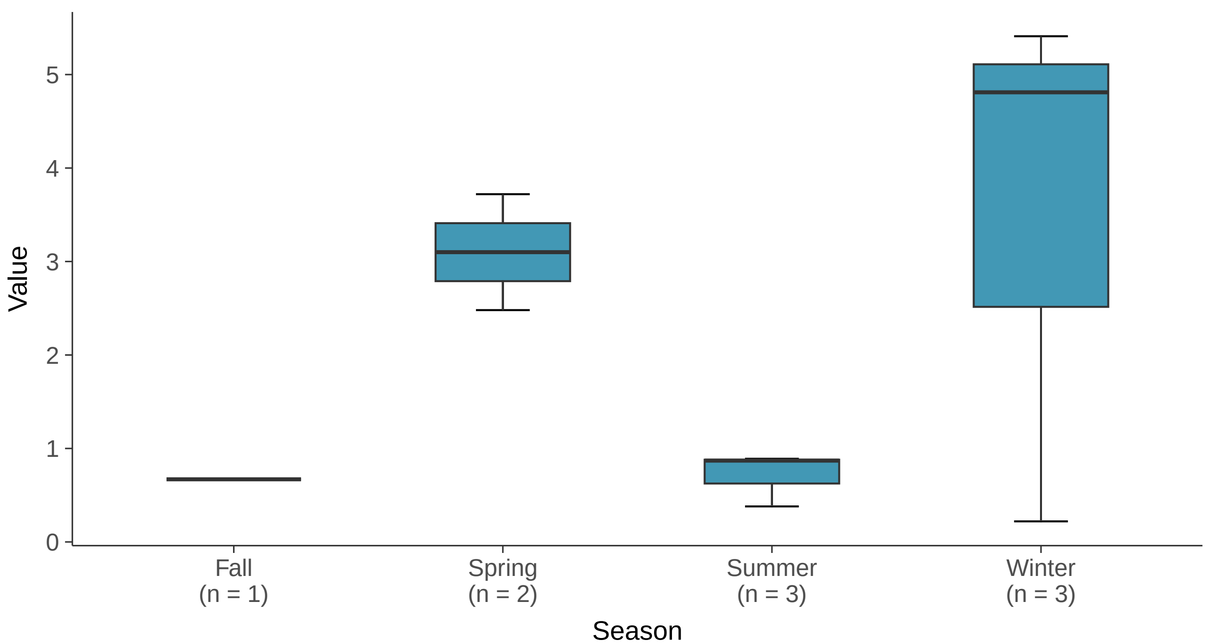
Boxplot

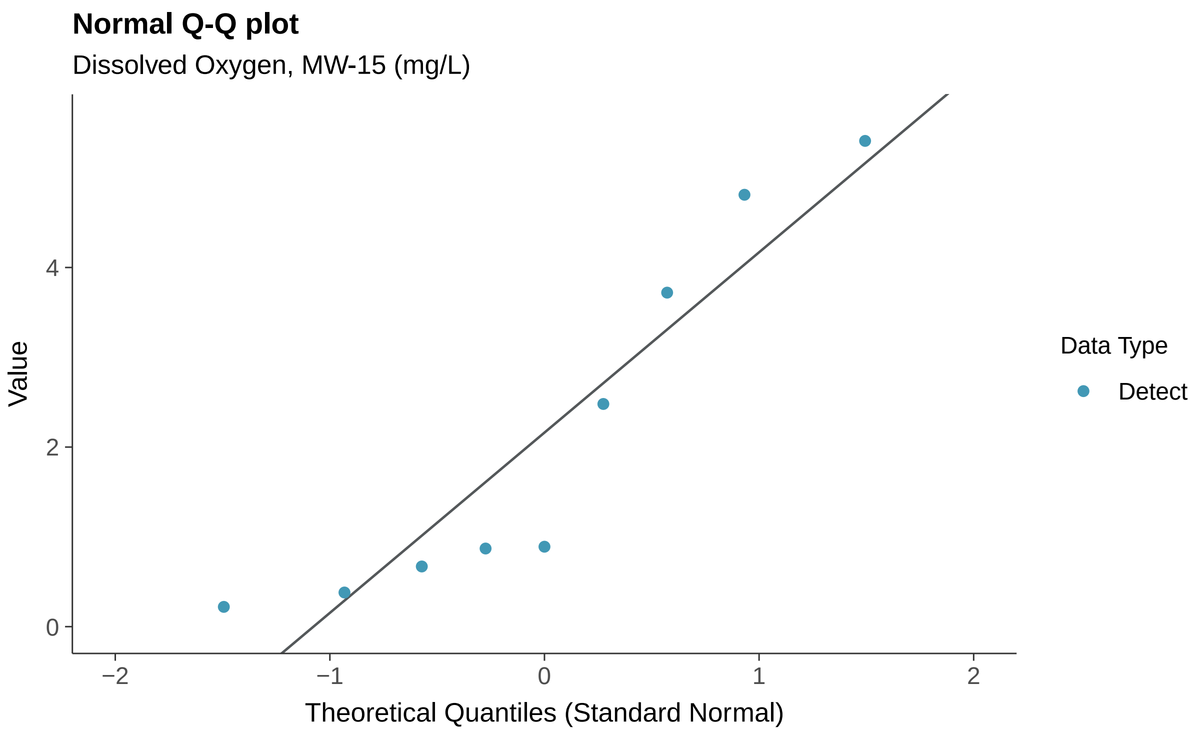
Dissolved Oxygen, MW-15 (mg/L)

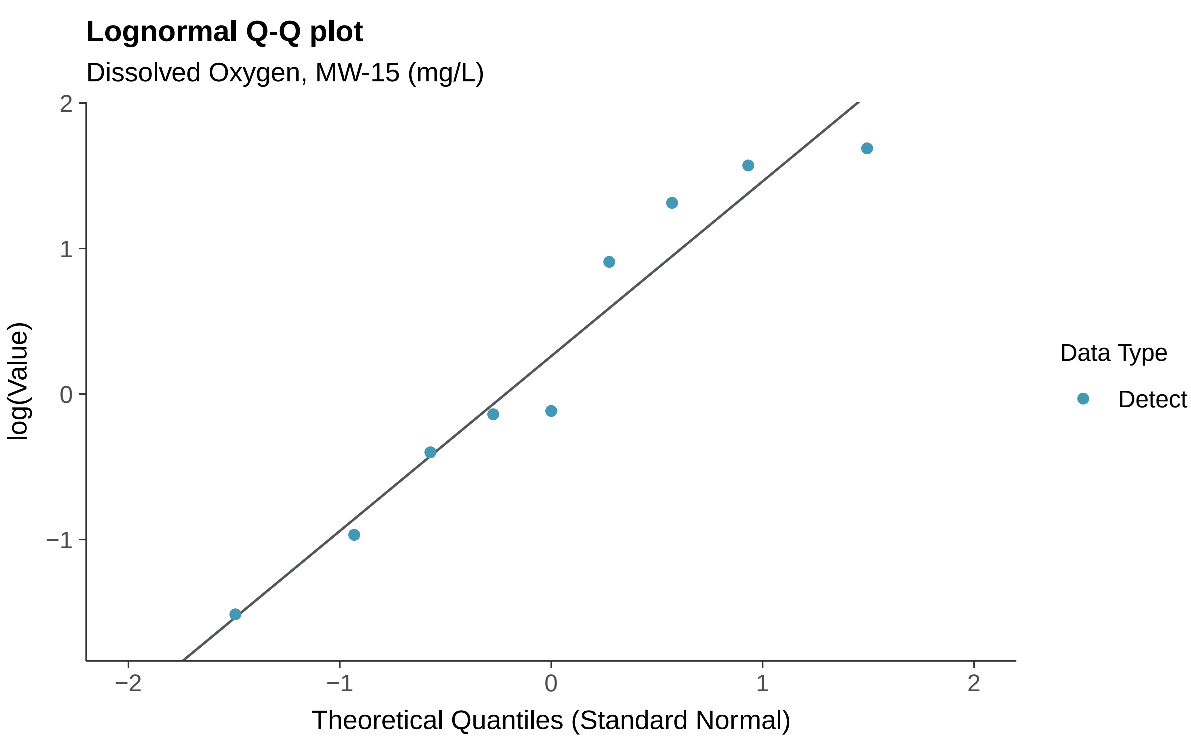


Boxplot by Season

Dissolved Oxygen, MW-15 (mg/L)

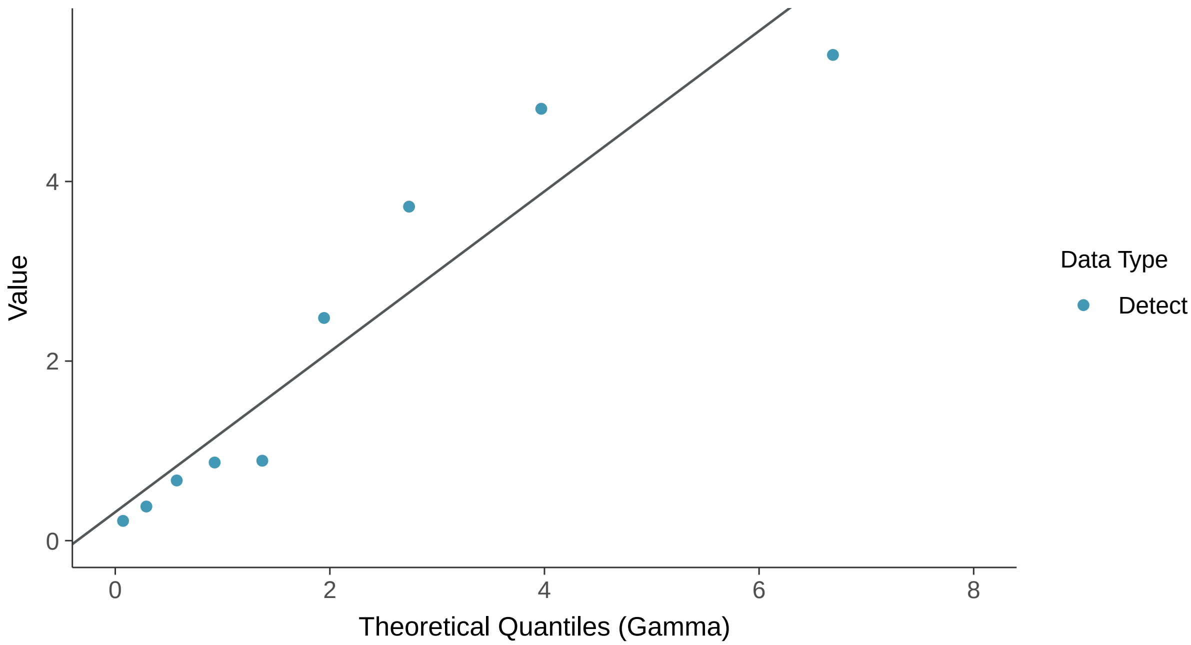



Normal Q-Q plot
Dissolved Oxygen, MW-15 (mg/L)
Value
4
2
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Dissolved Oxygen, MW-15 (mg/L)
log(Value)
2
1
0
−1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

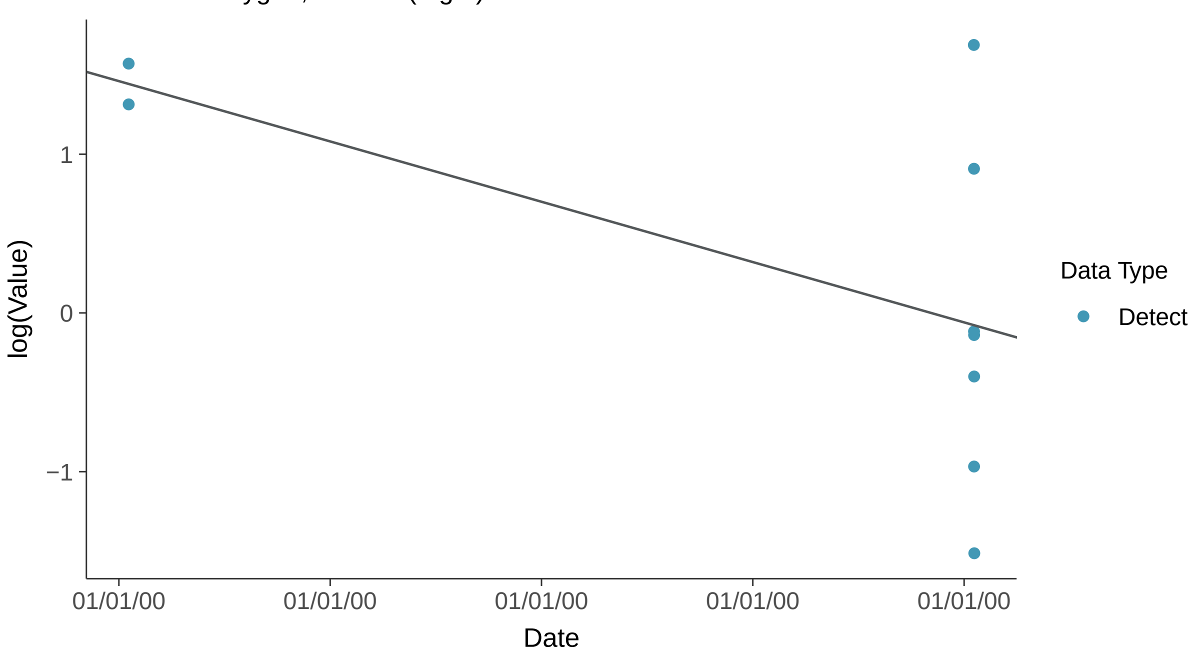
Gamma Q-Q plot

Dissolved Oxygen, MW-15 (mg/L)



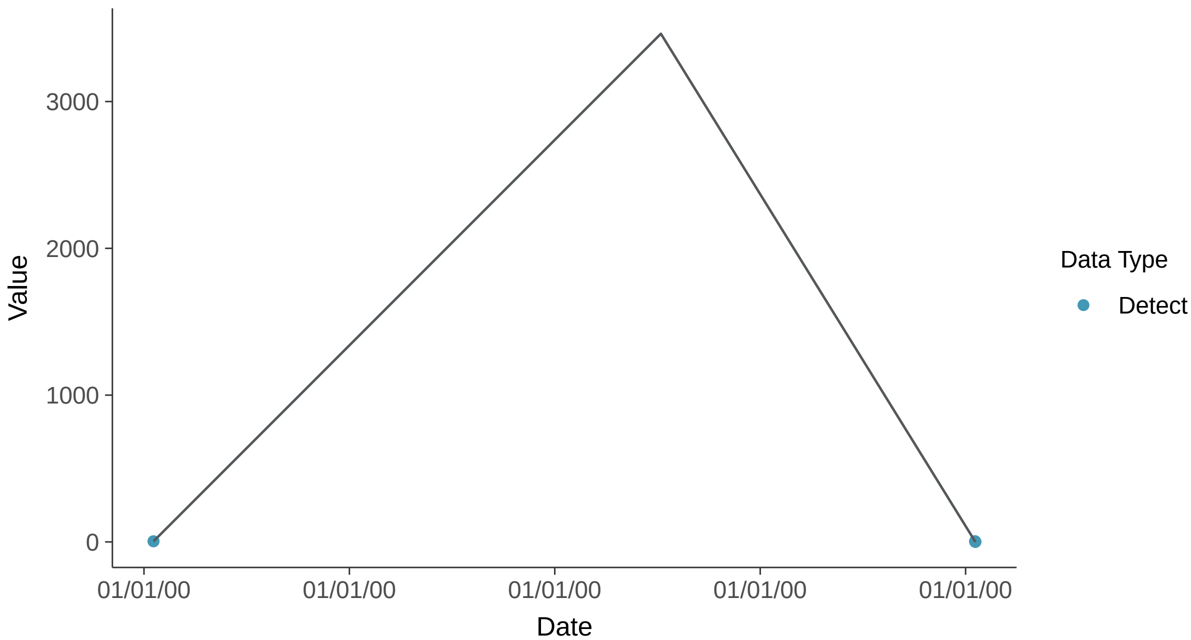
Trend Regression: Lognormal MLE

Dissolved Oxygen, MW-15 (mg/L)



Trend Regression: Piecewise Linear-Linear

Dissolved Oxygen, MW-15 (mg/L)

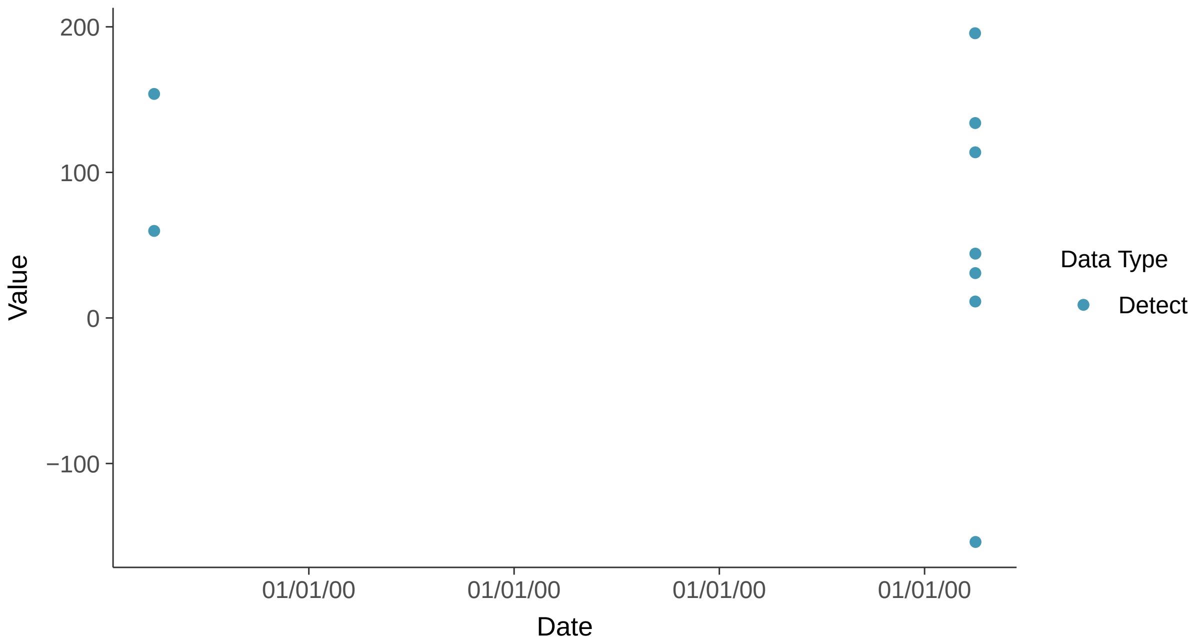


Field Parameters: Oxidation Reduction Potential, MW-15

ID: 15_3_26

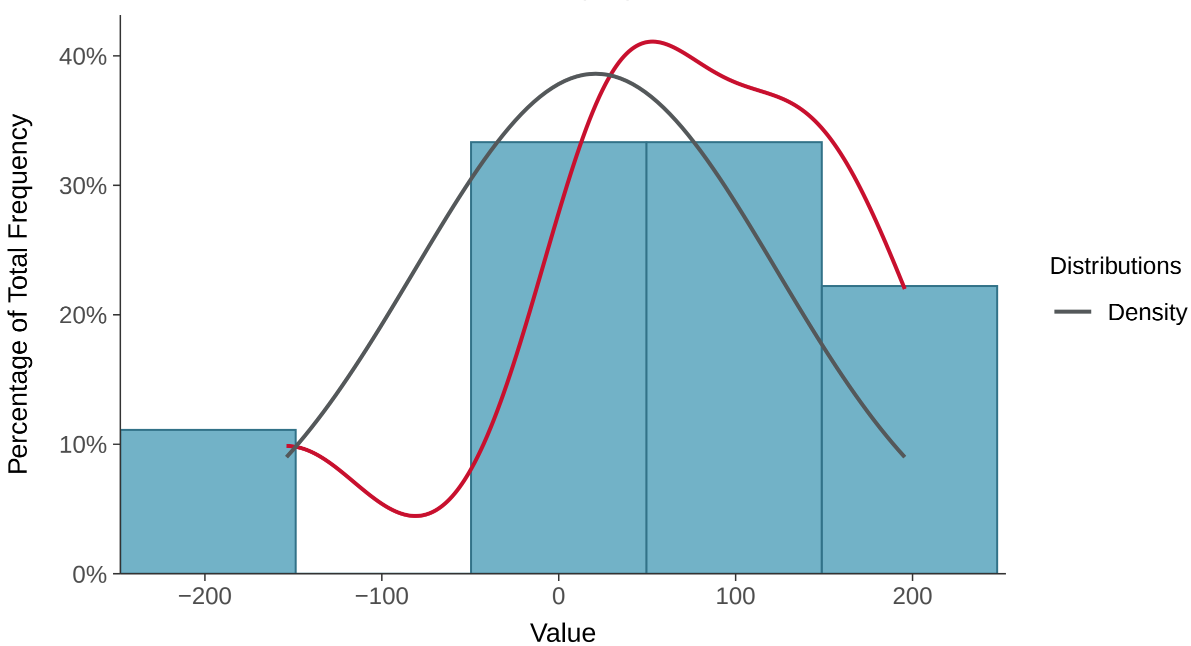
Scatter Plot

Oxidation Reduction Potential, MW-15 (mV)



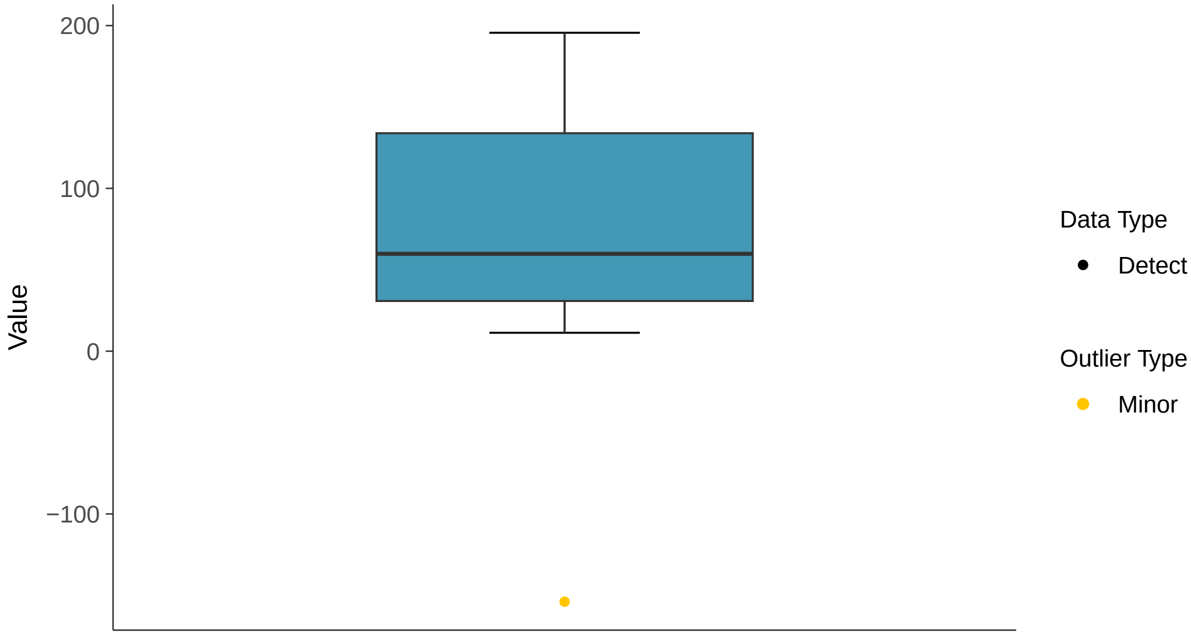
Histogram

Oxidation Reduction Potential, MW-15 (mV)



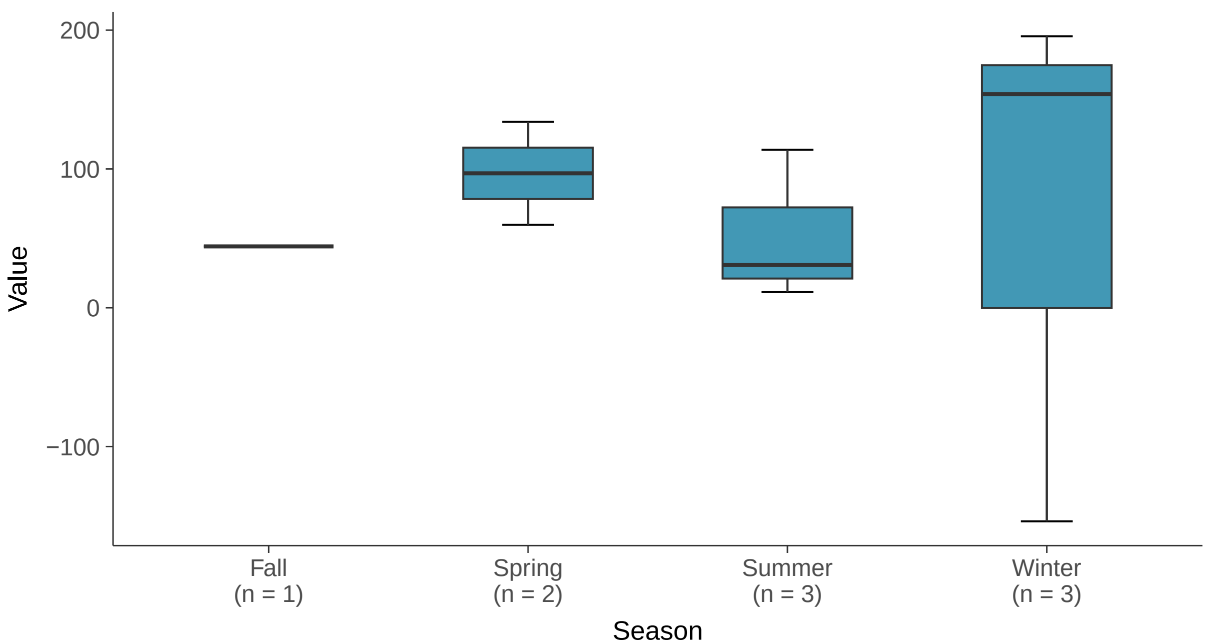
Boxplot

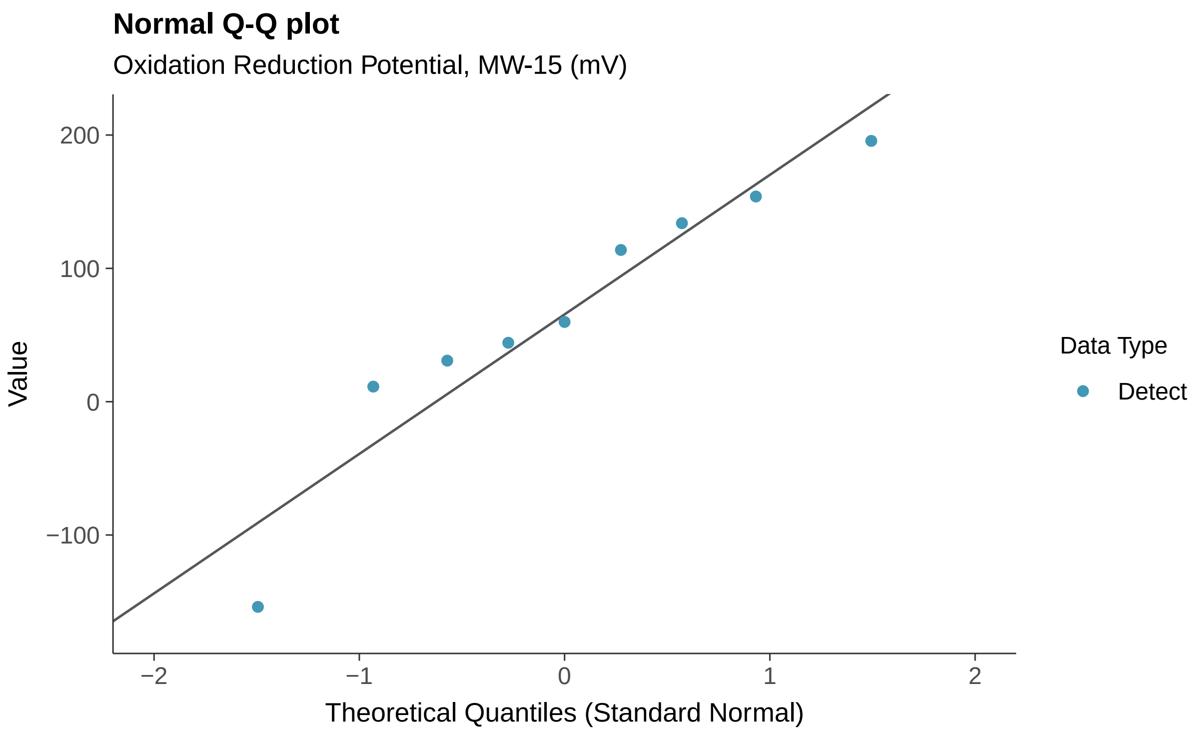
Oxidation Reduction Potential, MW-15 (mV)

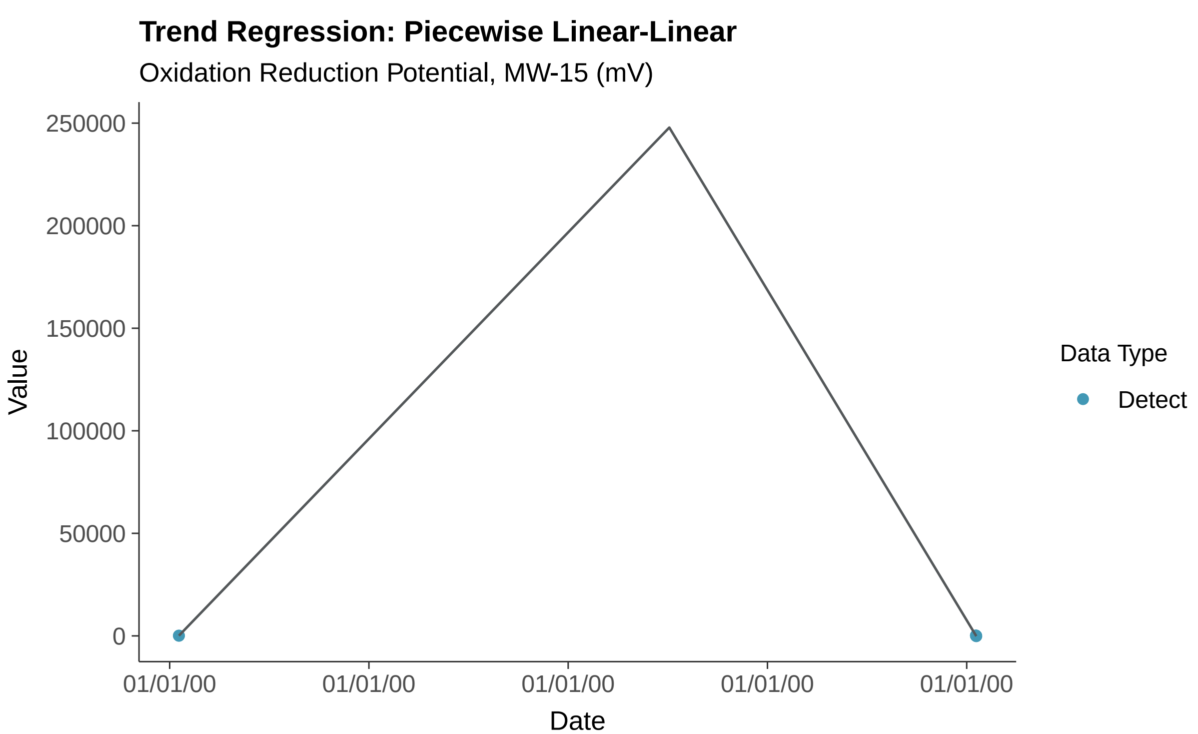


Boxplot by Season

Oxidation Reduction Potential, MW-15 (mV)




Normal Q-Q plot
Oxidation Reduction Potential, MW-15 (mV)
Value
200
100
0
−100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

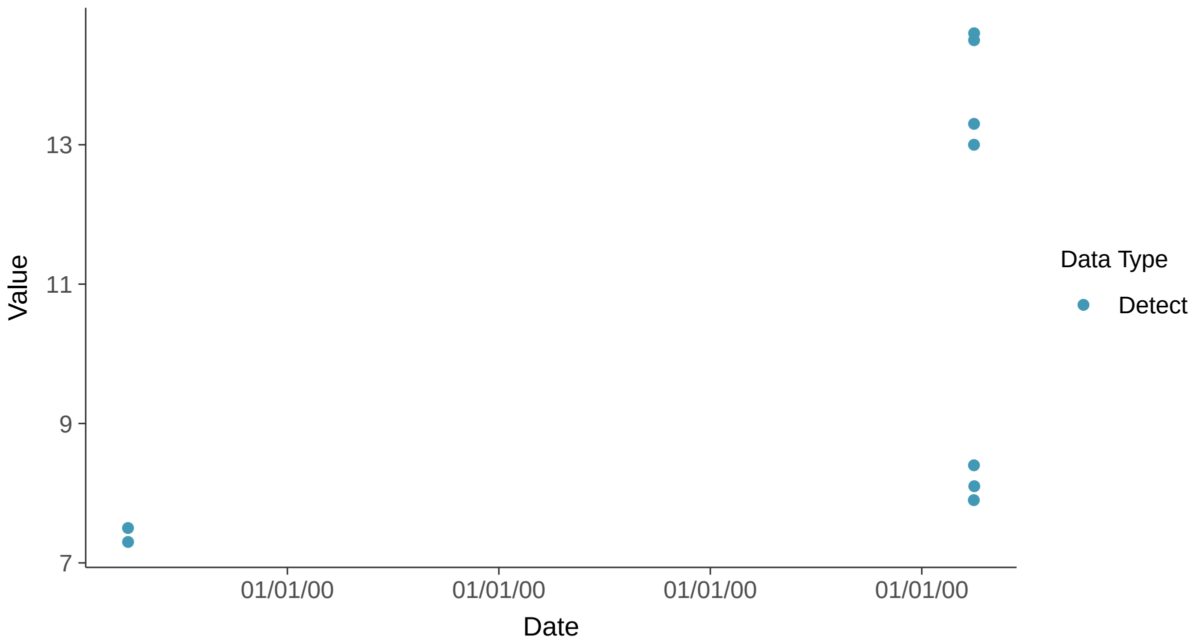

Trend Regression: Piecewise Linear-Linear
Oxidation Reduction Potential, MW-15 (mV)
Value
250000
200000
150000
100000
50000
0
01/01/00
01/01/00
01/01/00
01/01/00
01/01/00
Date
Data Type
Detect

Field Parameters: Temperature, MW-15

ID: 15_3_27

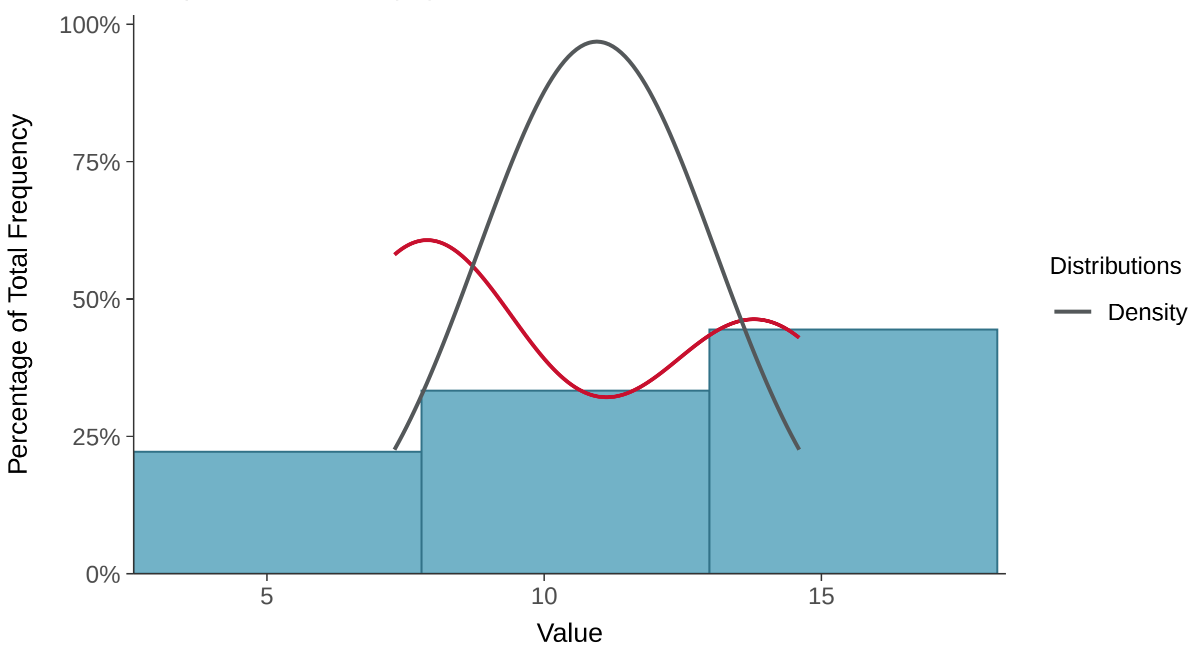
Scatter Plot

Temperature, MW-15 (°C)



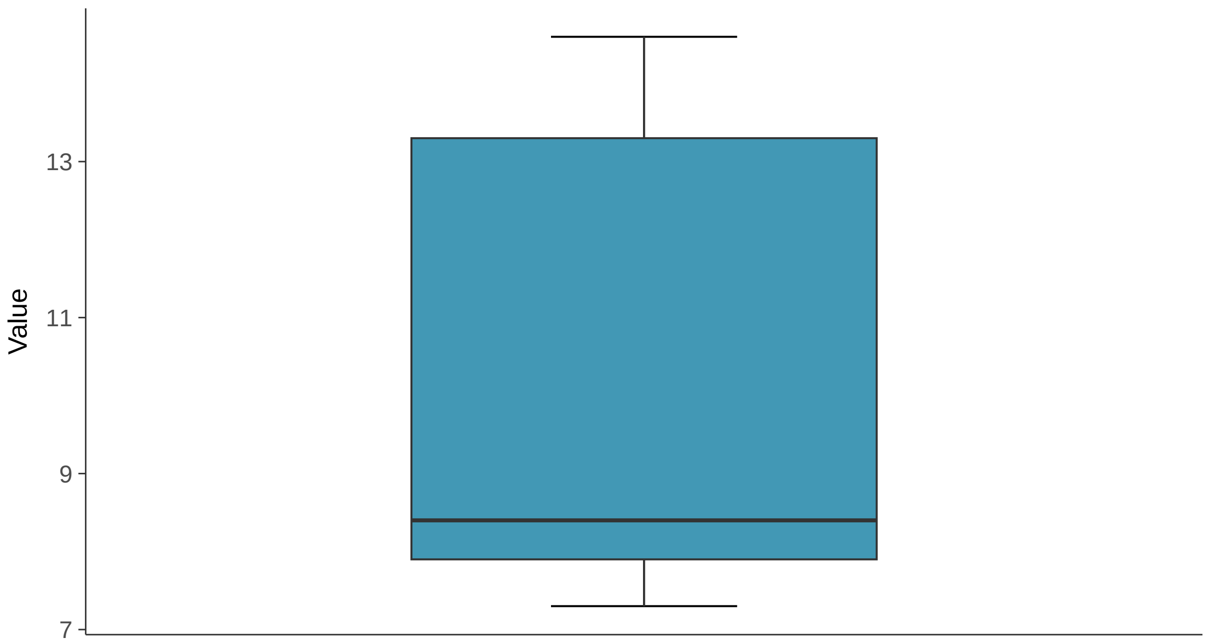
Histogram

Temperature, MW-15 (°C)



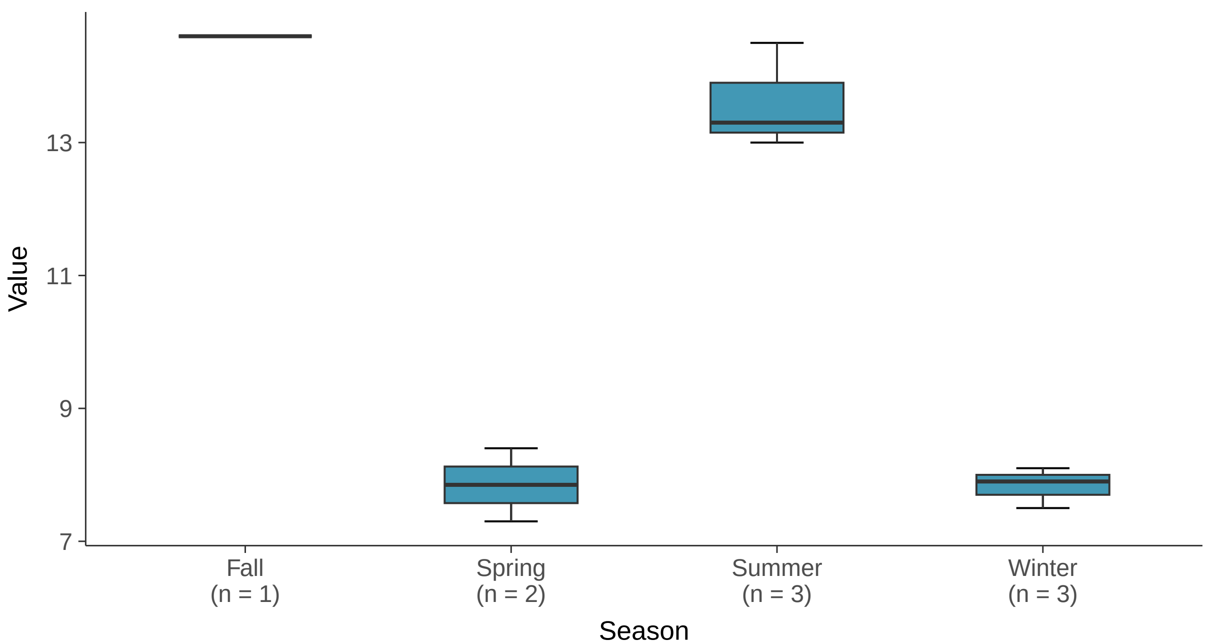
Boxplot

Temperature, MW-15 (°C)



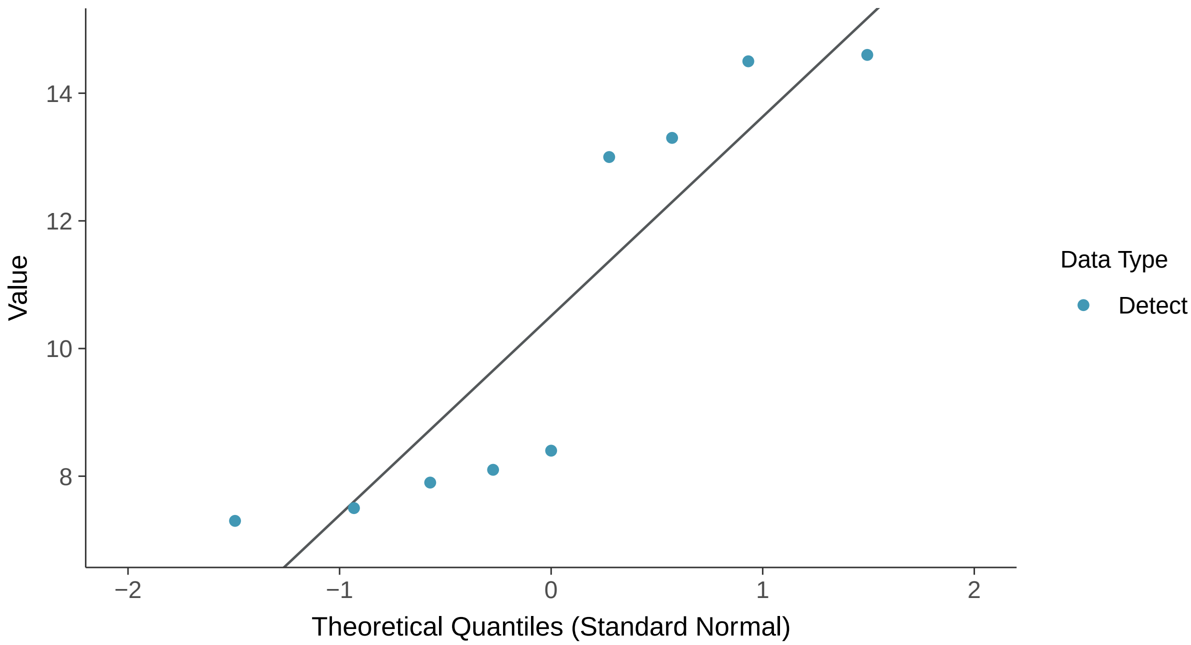
Boxplot by Season

Temperature, MW-15 (°C)



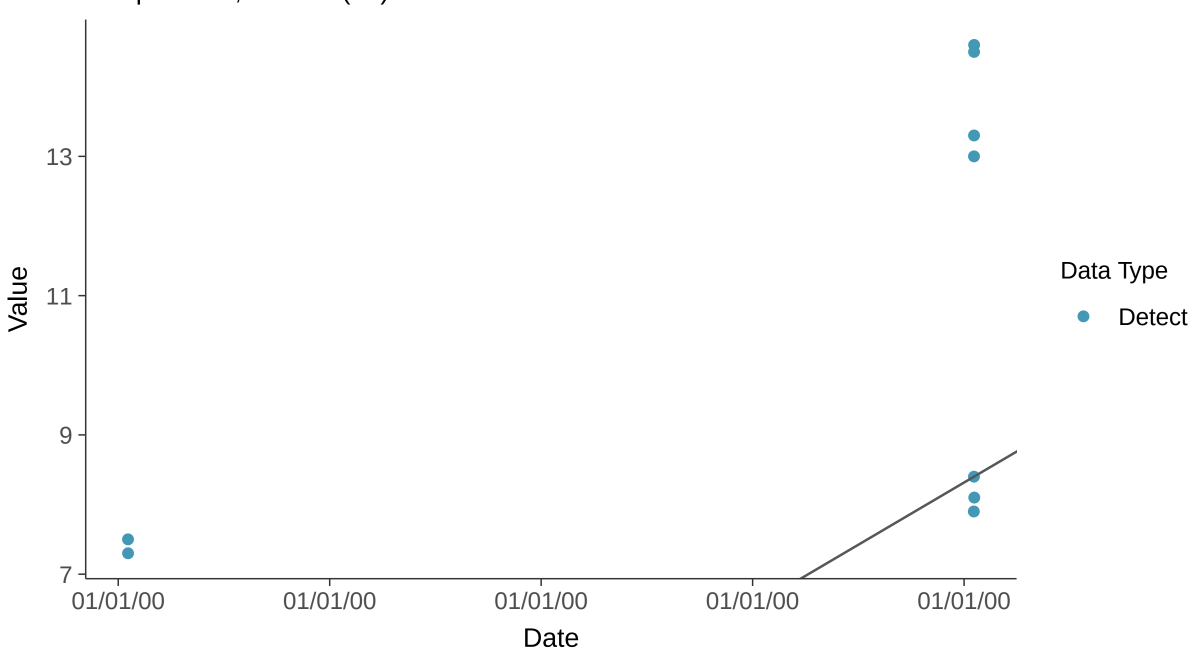
Normal Q-Q plot

Temperature, MW-15 (°C)



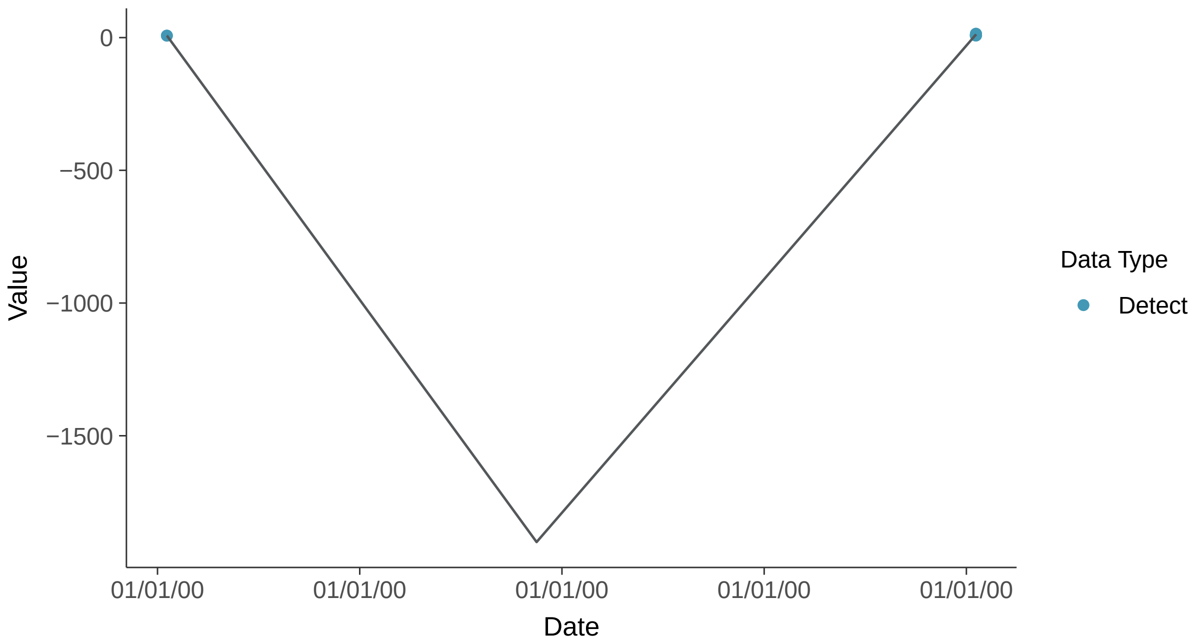
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Temperature, MW-15 (°C)



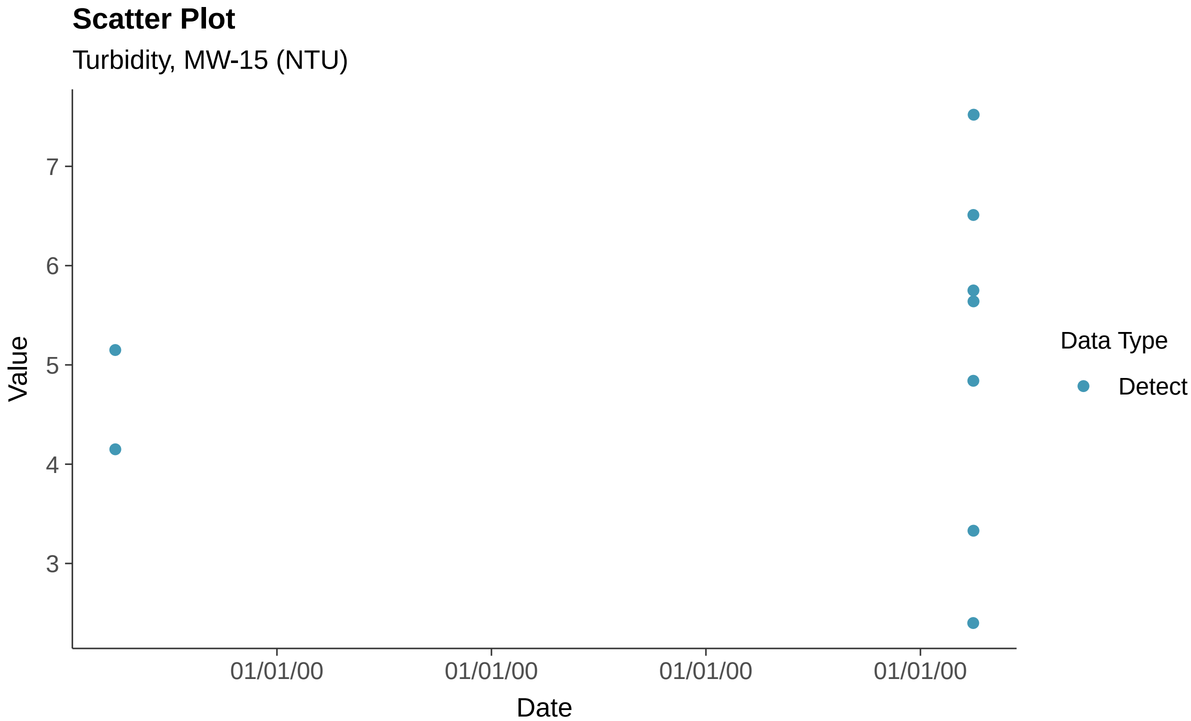
Trend Regression: Piecewise Linear-Linear

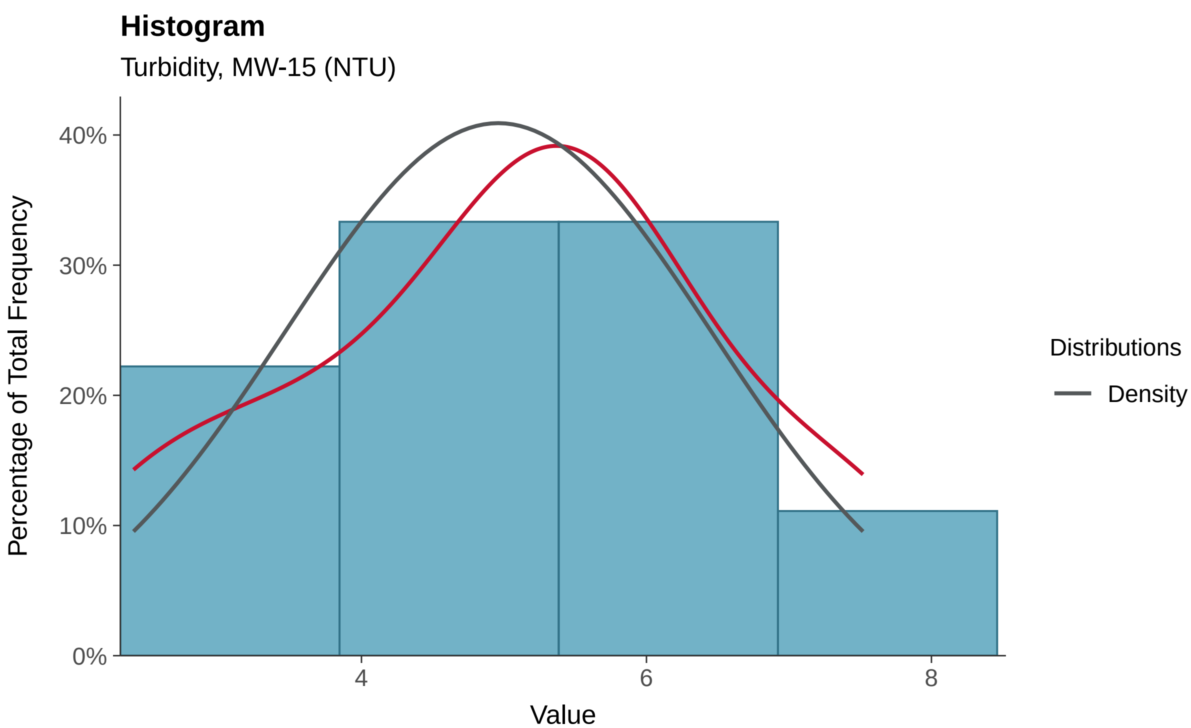
Temperature, MW-15 (°C)



Field Parameters: Turbidity, MW-15

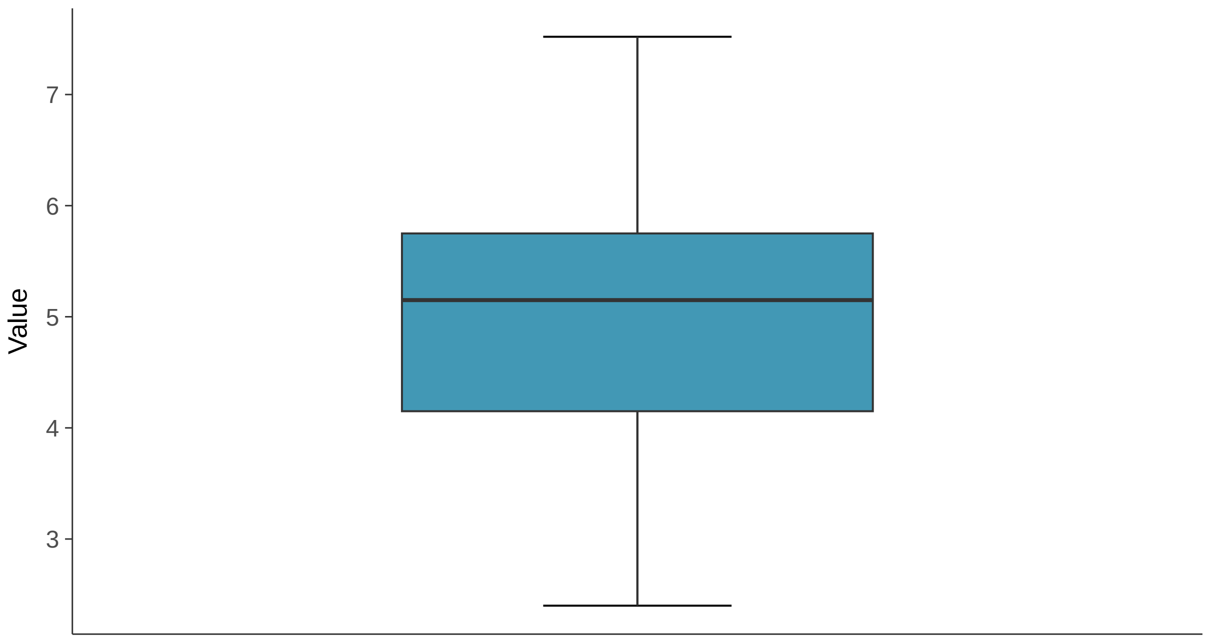
ID: 15_3_28





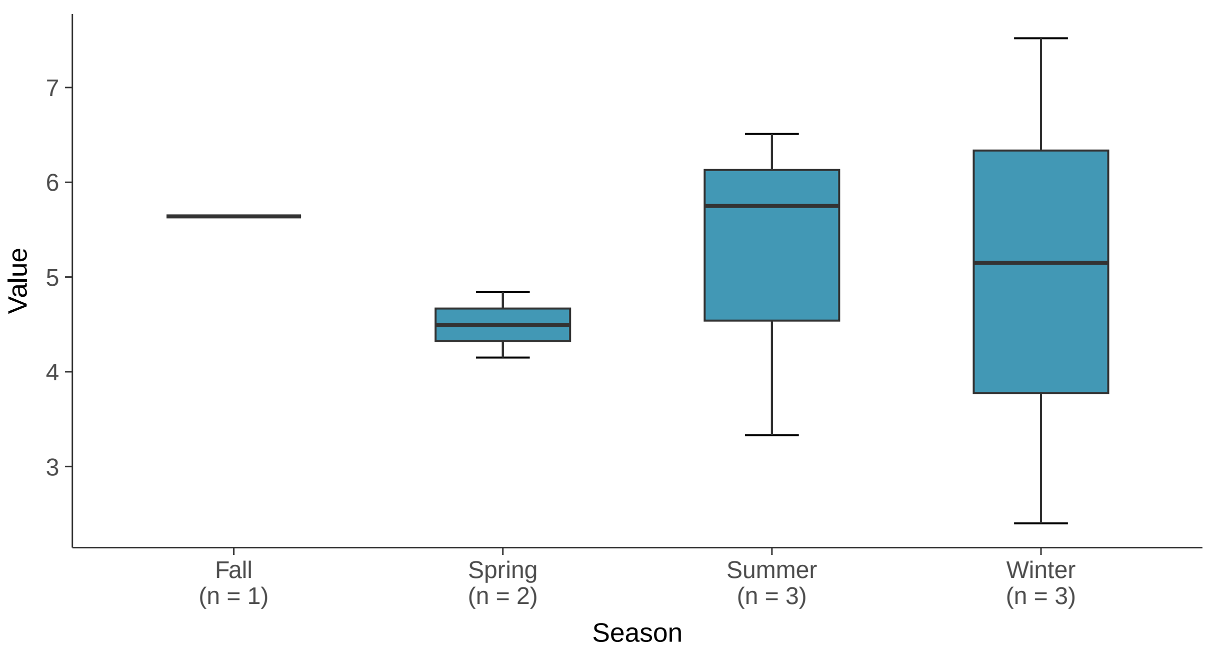
Boxplot

Turbidity, MW-15 (NTU)



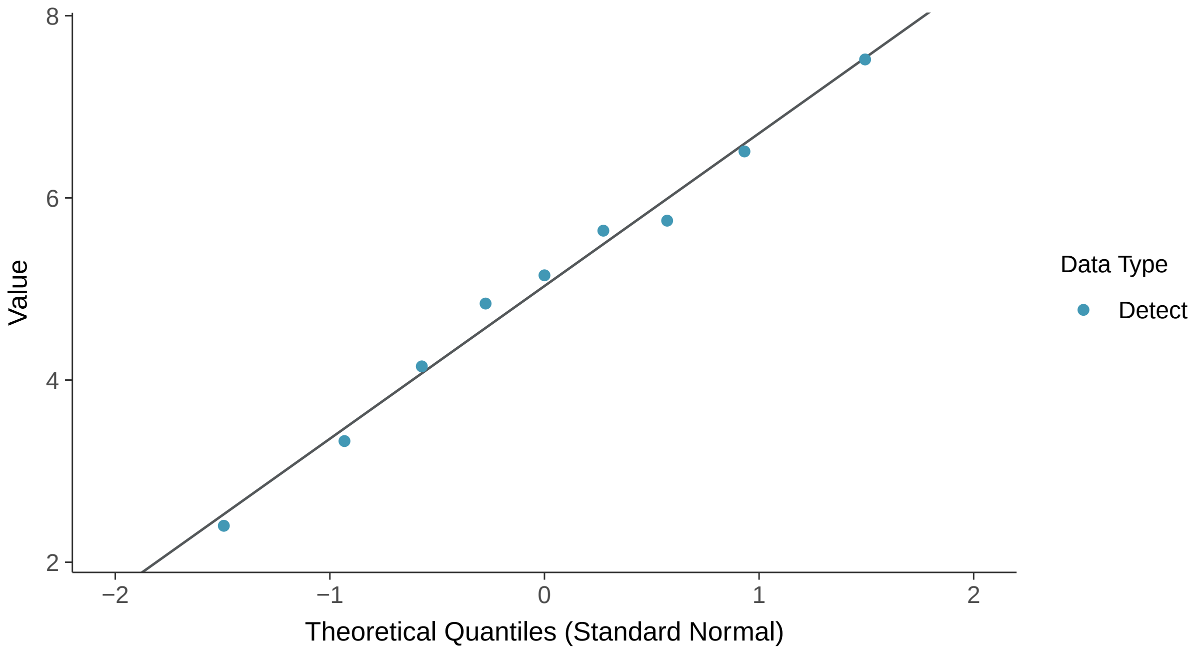
Boxplot by Season

Turbidity, MW-15 (NTU)



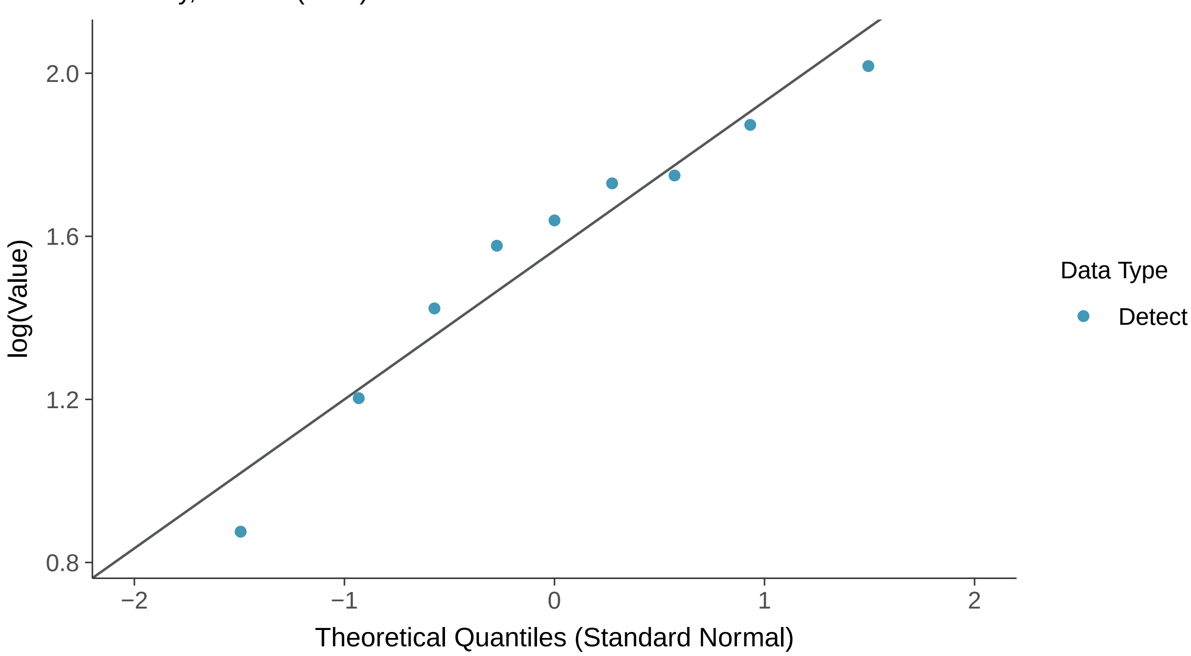
Normal Q-Q plot

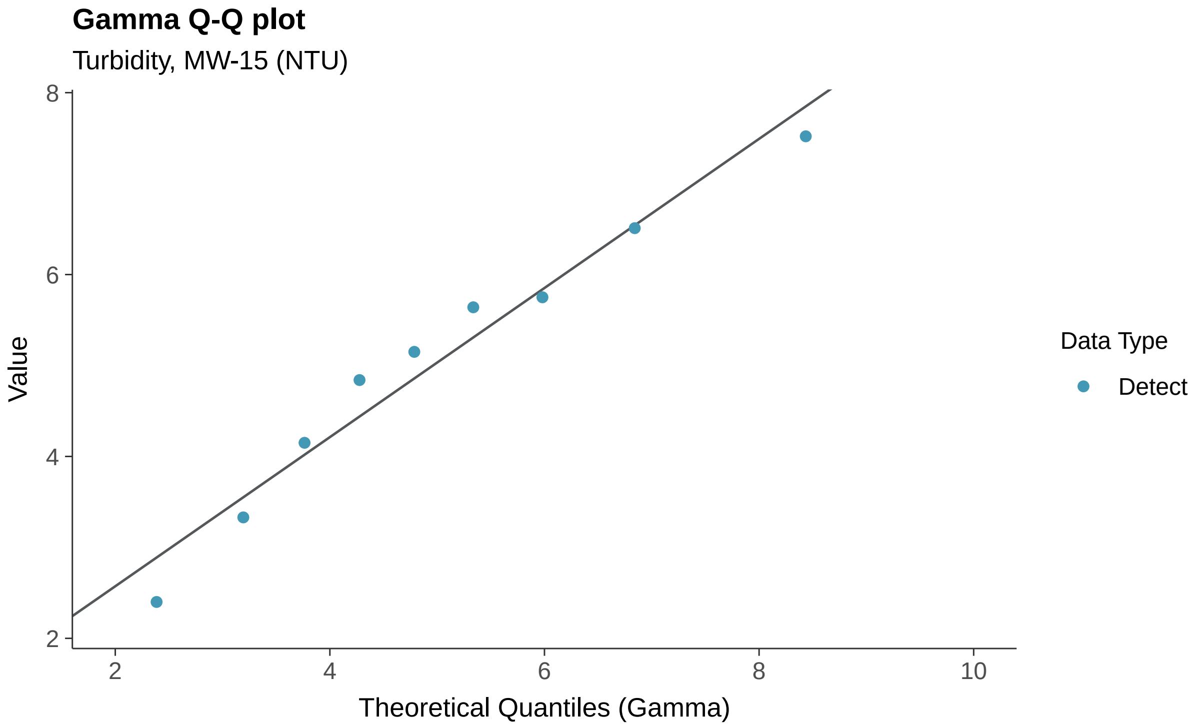
Turbidity, MW-15 (NTU)

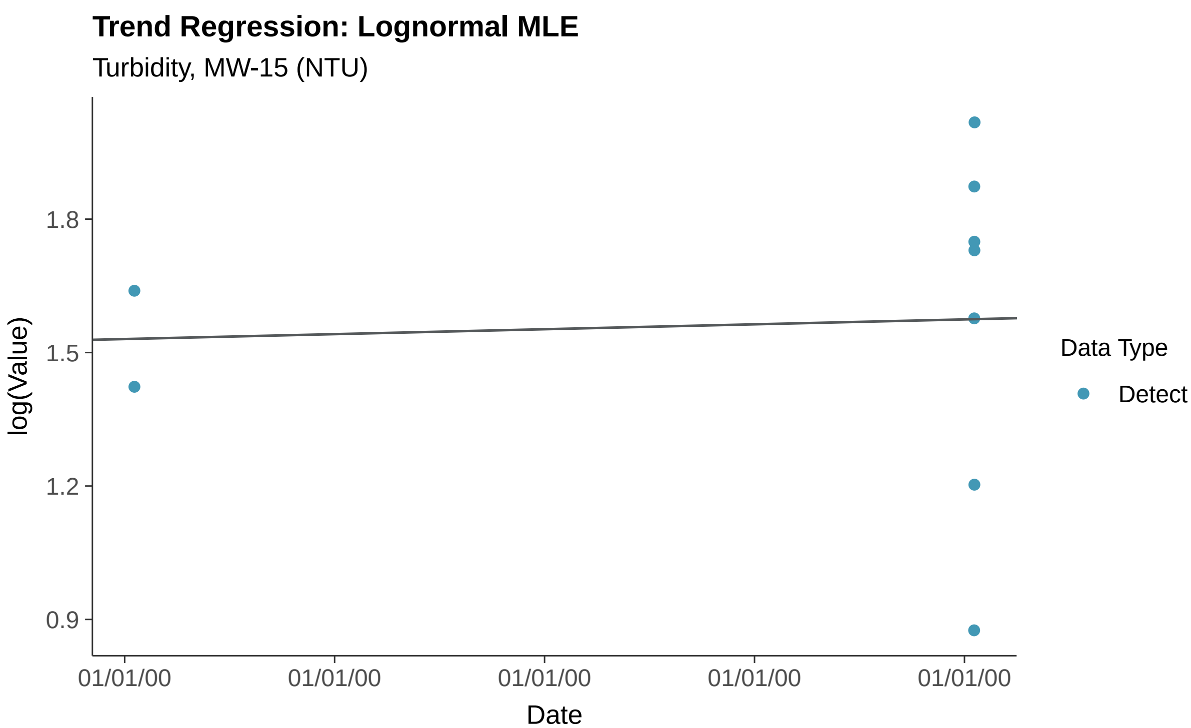


Lognormal Q-Q plot

Turbidity, MW-15 (NTU)

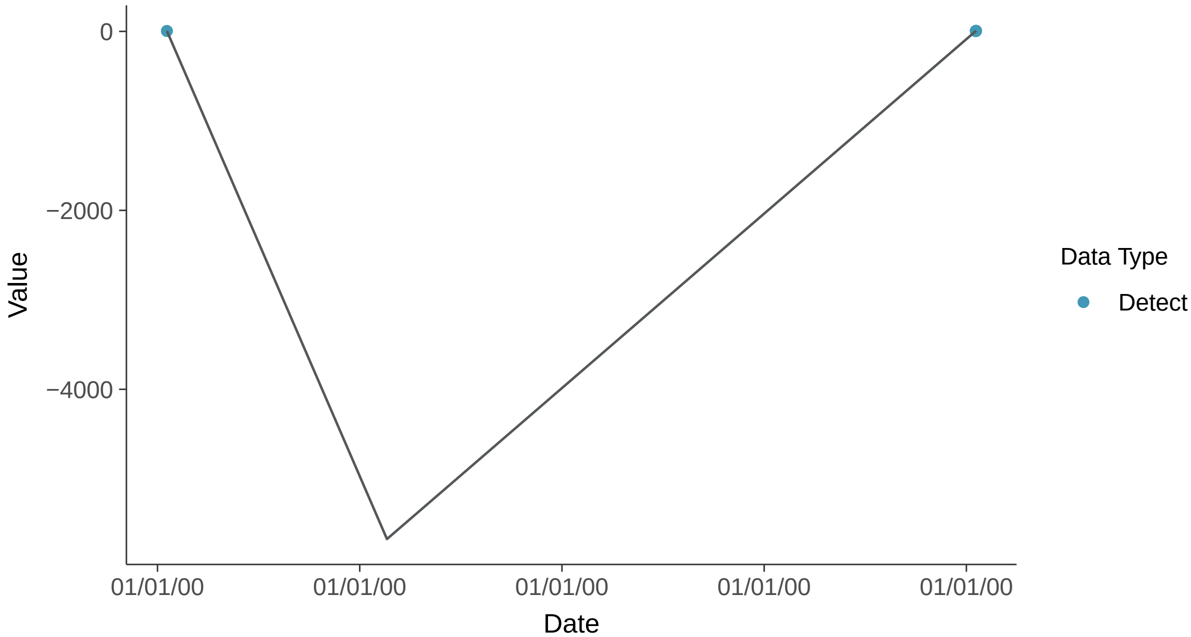



Gamma Q-Q plot
Turbidity, MW-15 (NTU)
Value
Theoretical Quantiles (Gamma)
2
4
6
8
10
Data Type
Detect


Trend Regression: Lognormal MLE
Turbidity, MW-15 (NTU)
log(Value)
0.9
1.2
1.5
1.8
01/01/00
01/01/00
01/01/00
01/01/00
01/01/00
Date
Data Type
Detect

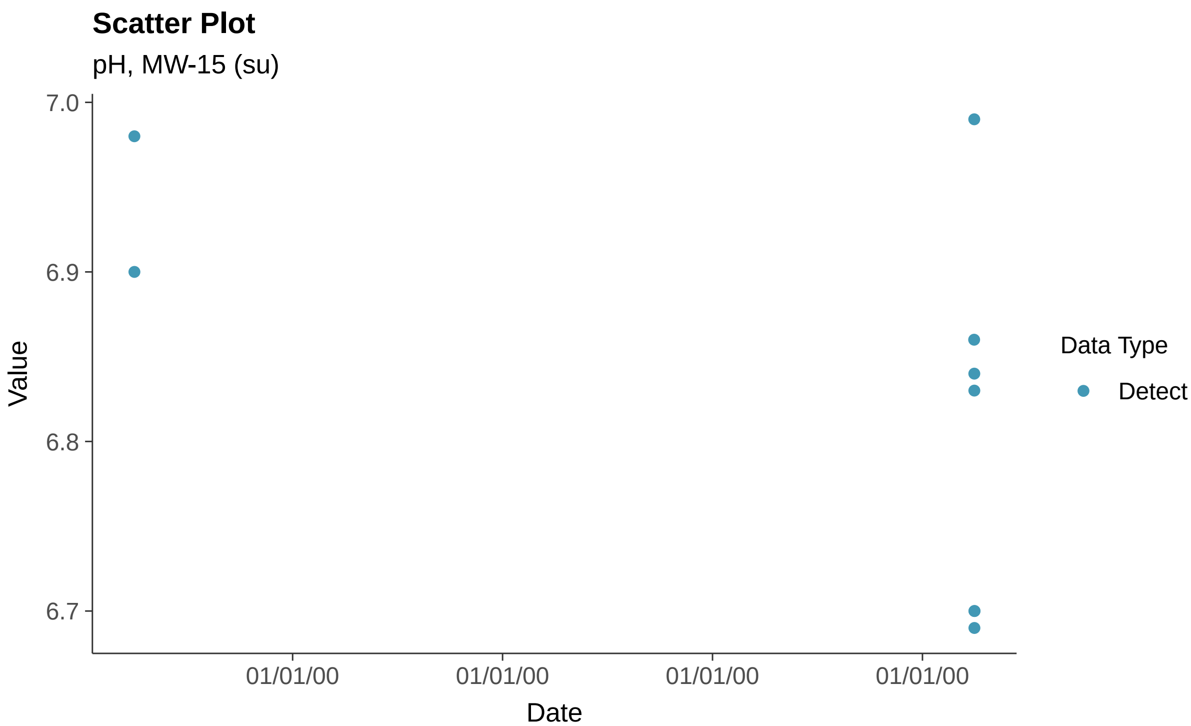
Trend Regression: Piecewise Linear-Linear

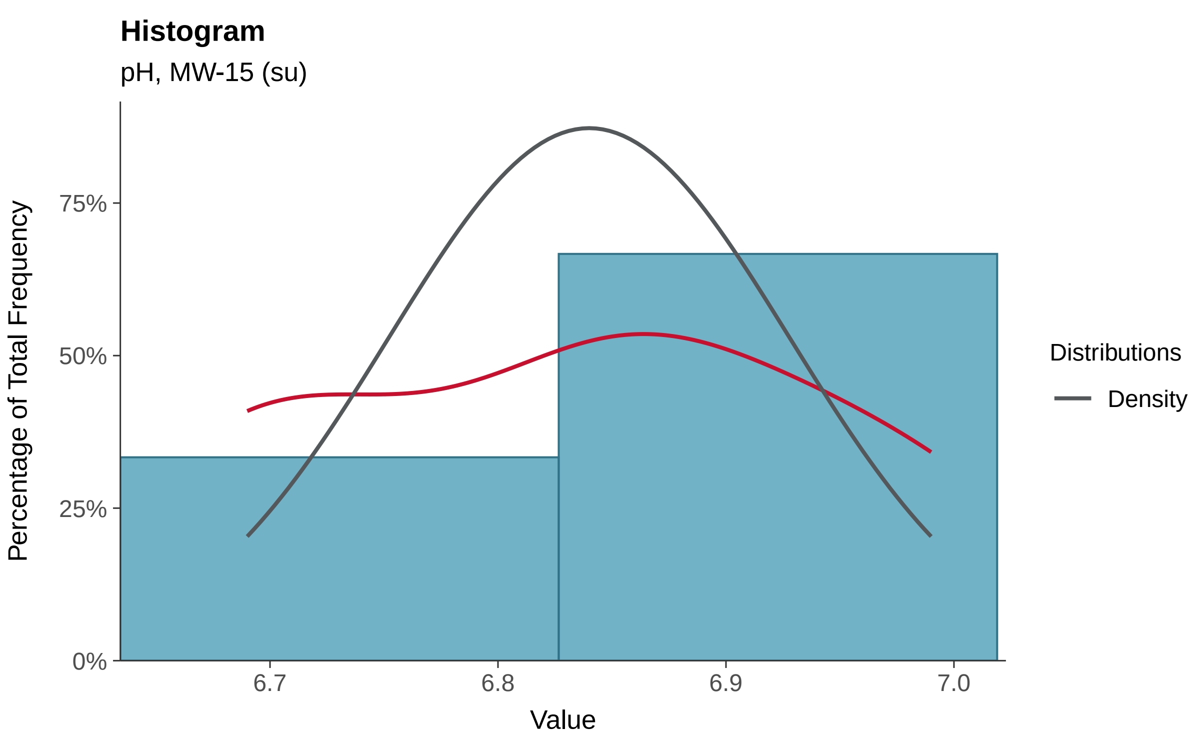
Turbidity, MW-15 (NTU)



Field Parameters: pH, MW-15

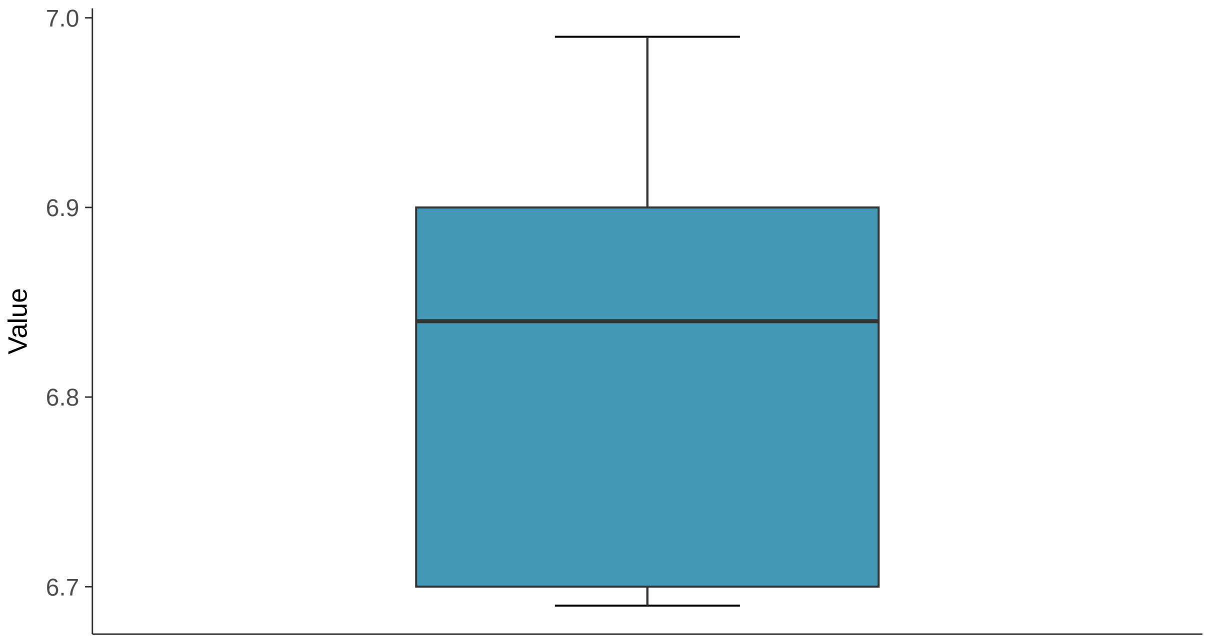
ID: 15_3_29





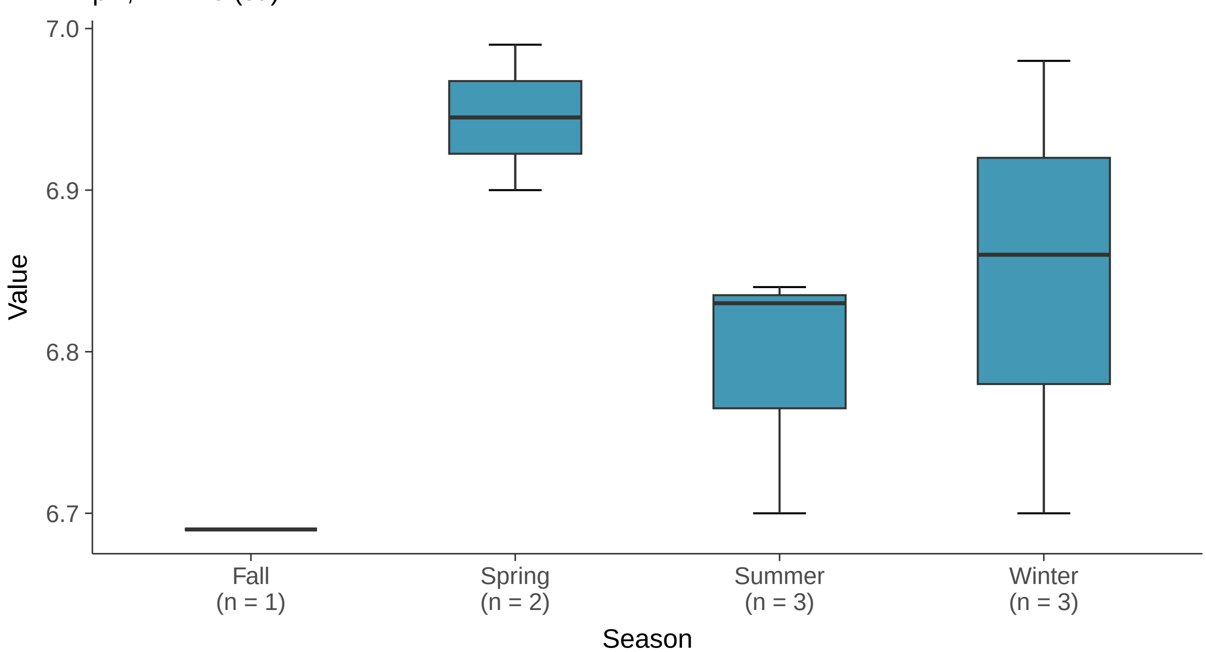
Boxplot

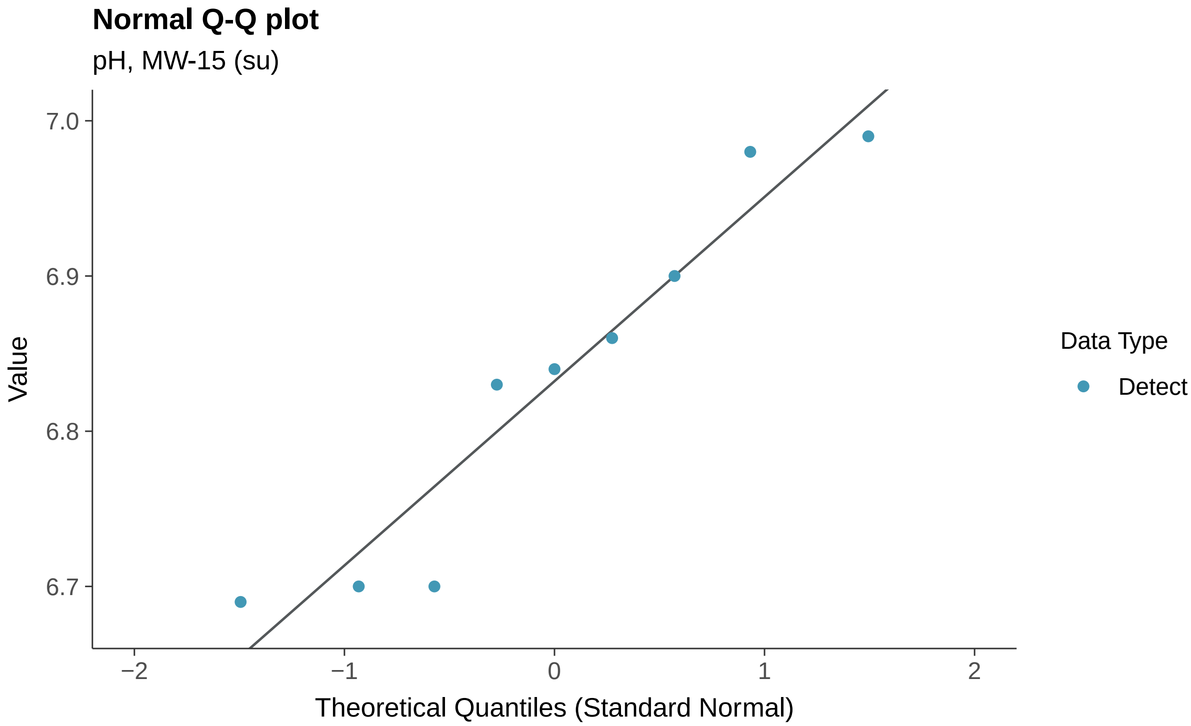
pH, MW-15 (su)

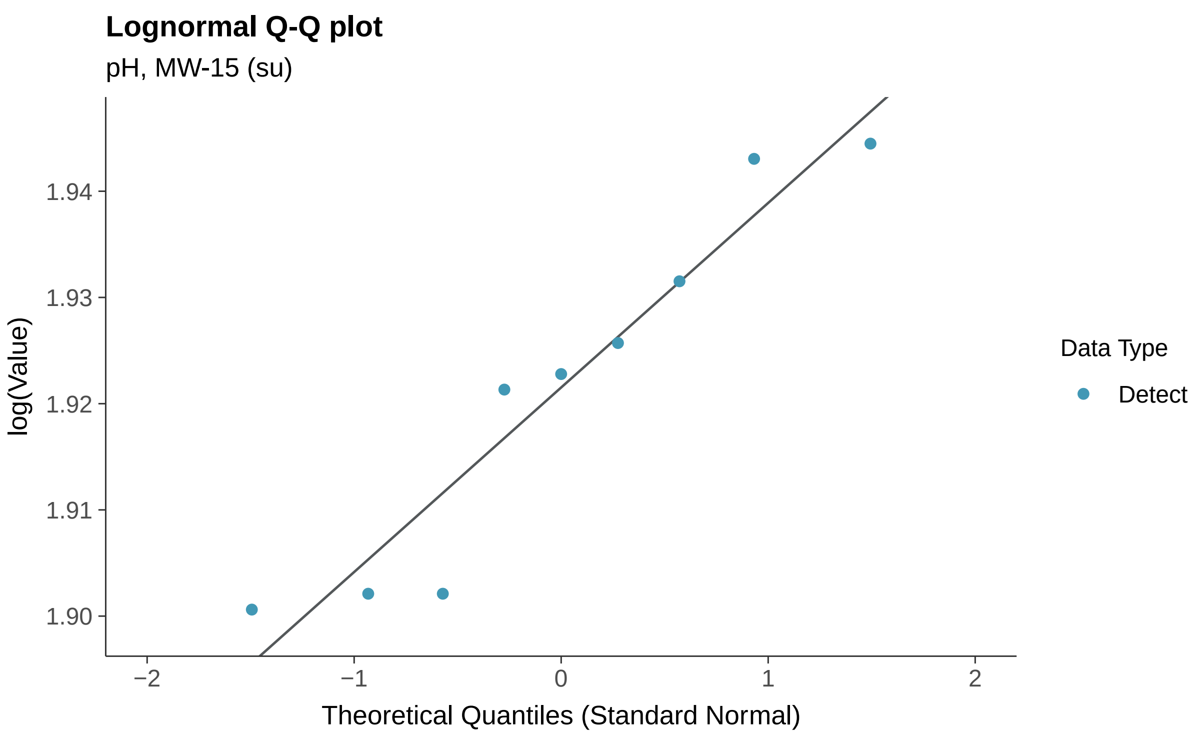


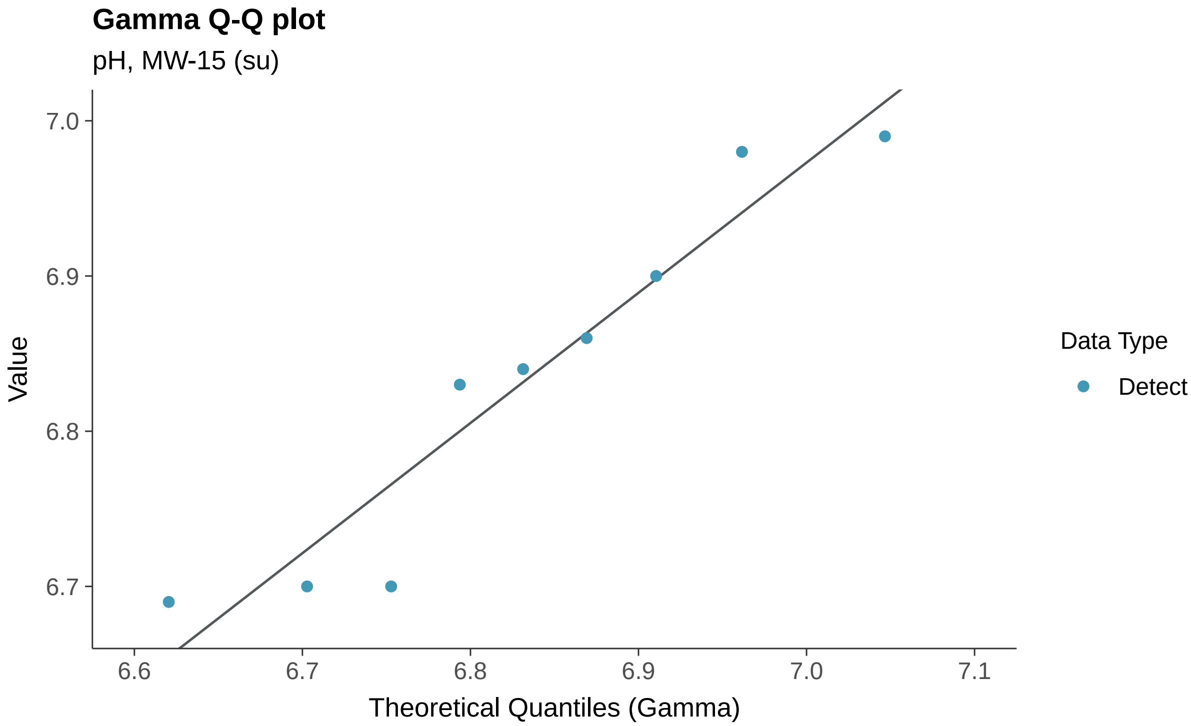
Boxplot by Season

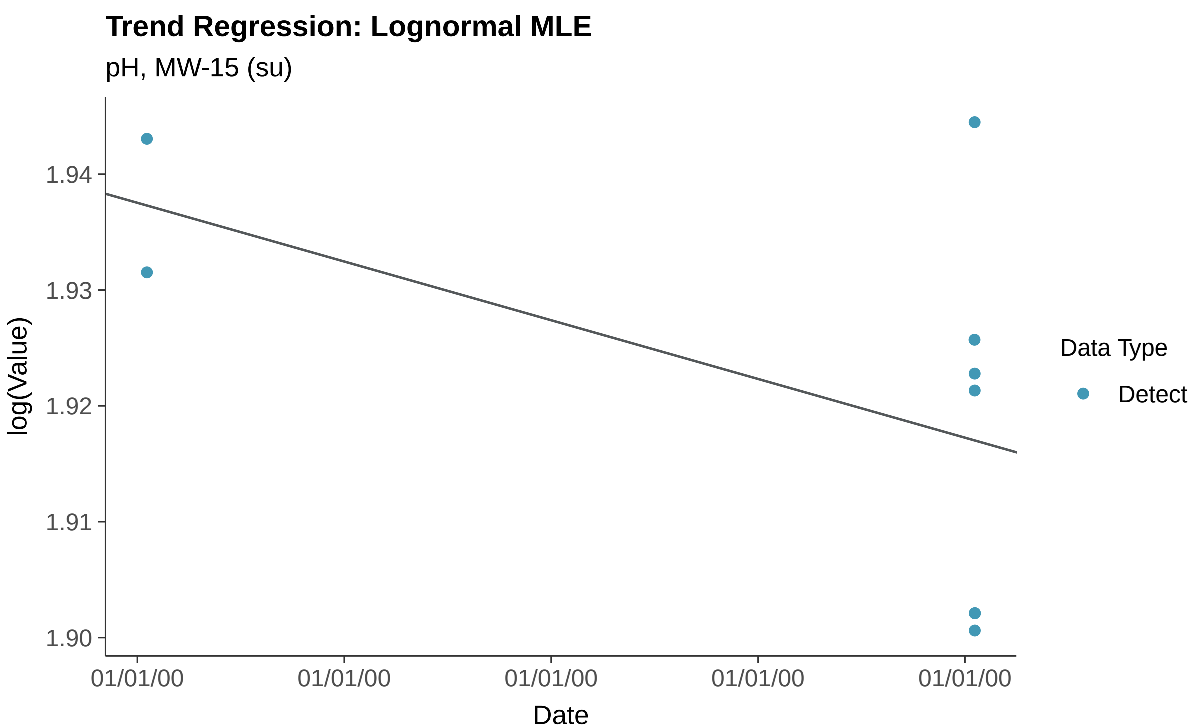
pH, MW-15 (su)




Normal Q-Q plot
pH, MW-15 (su)
Value
7.0
6.9
6.8
6.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

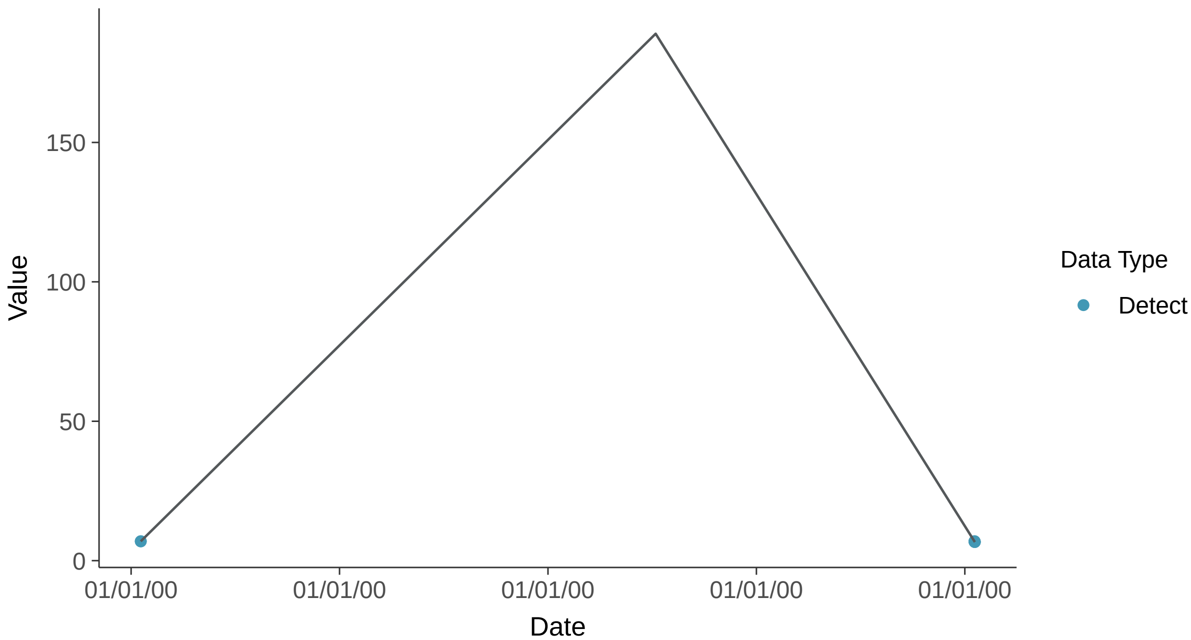

Lognormal Q-Q plot
pH, MW-15 (su)
log(Value)
1.94
1.93
1.92
1.91
1.90
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, MW-15 (su)
Value
7.0
6.9
6.8
6.7
6.6
6.7
6.8
6.9
7.0
7.1
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, MW-15 (su)
log(Value)
1.94
1.93
1.92
1.91
1.90
01/01/00
01/01/00
01/01/00
01/01/00
01/01/00
Date
Data Type
Detect

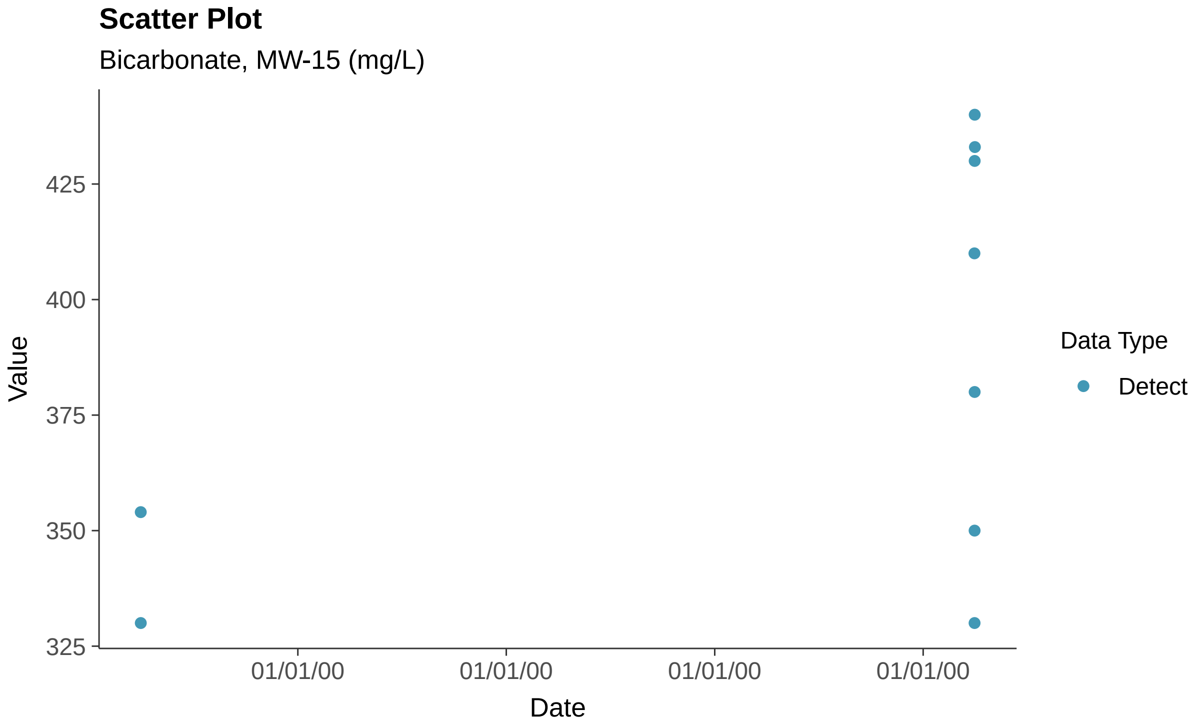
Trend Regression: Piecewise Linear-Linear

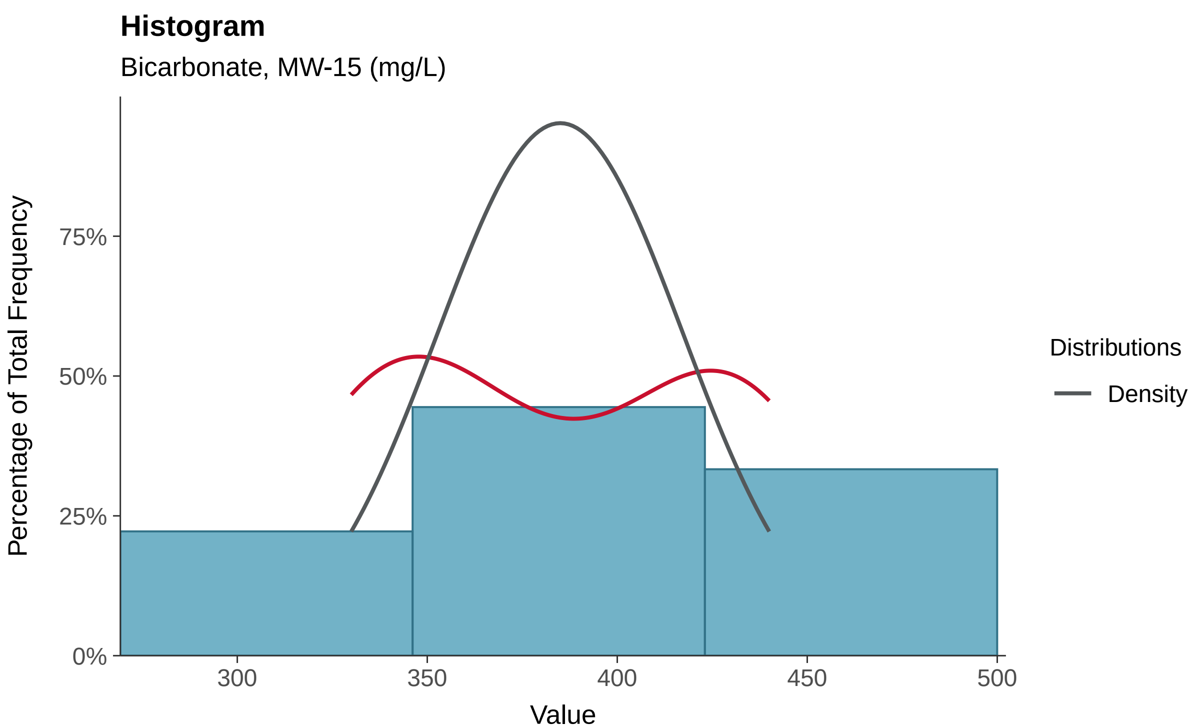
pH, MW-15 (su)



Other: Bicarbonate, MW-15

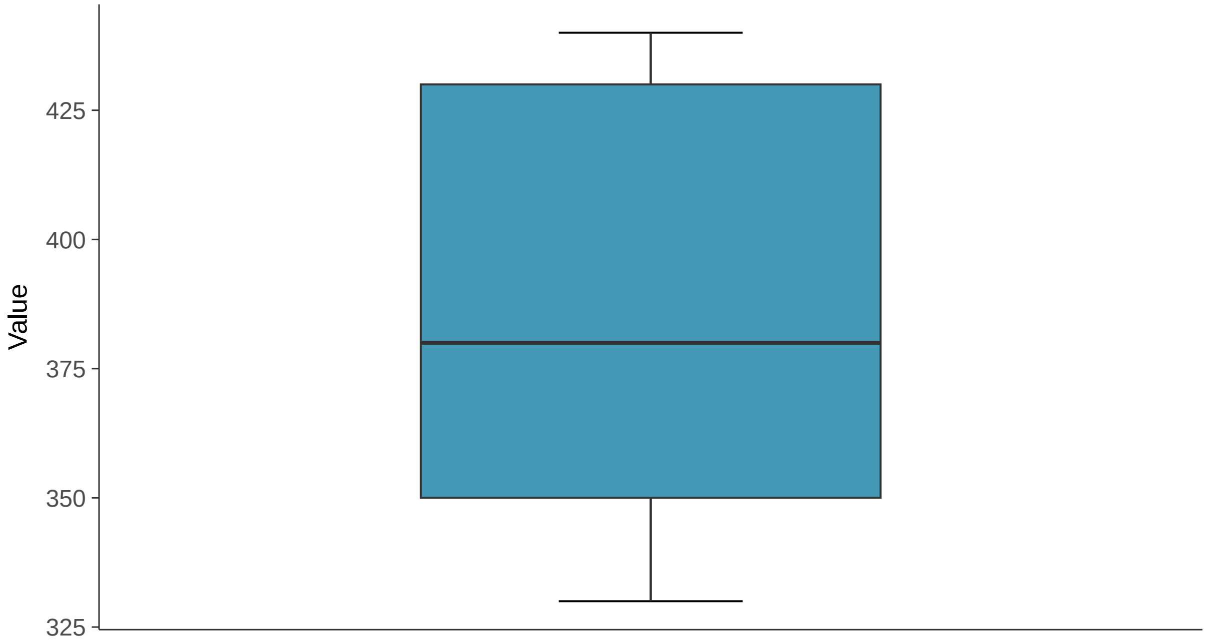
ID: 15_4_30





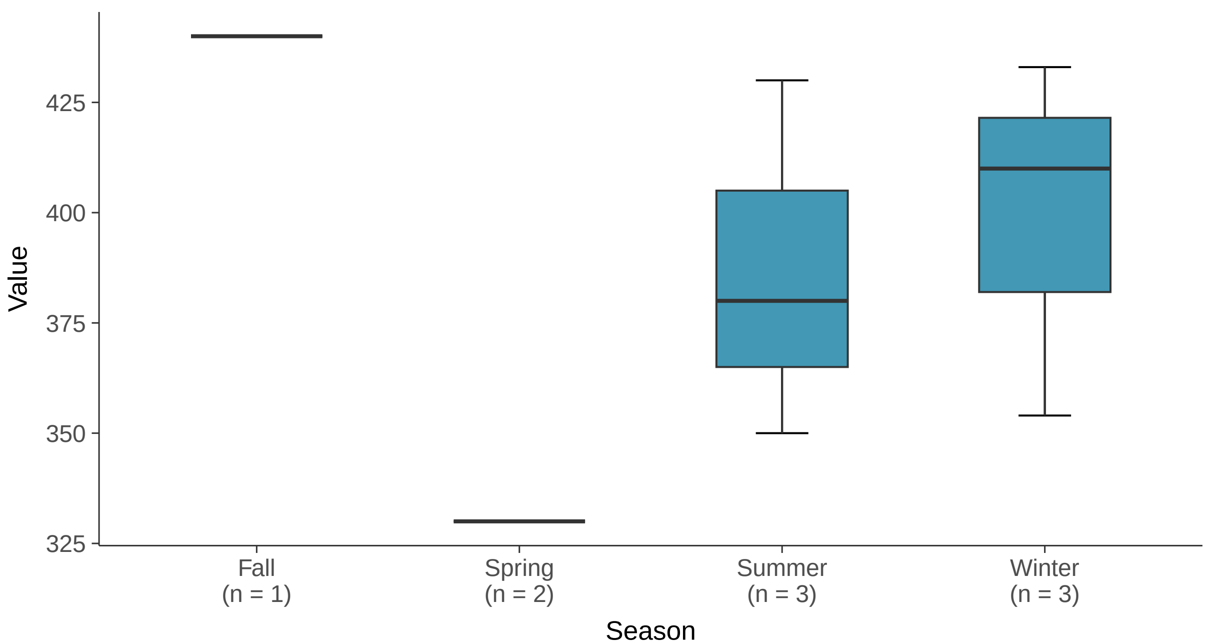
Boxplot

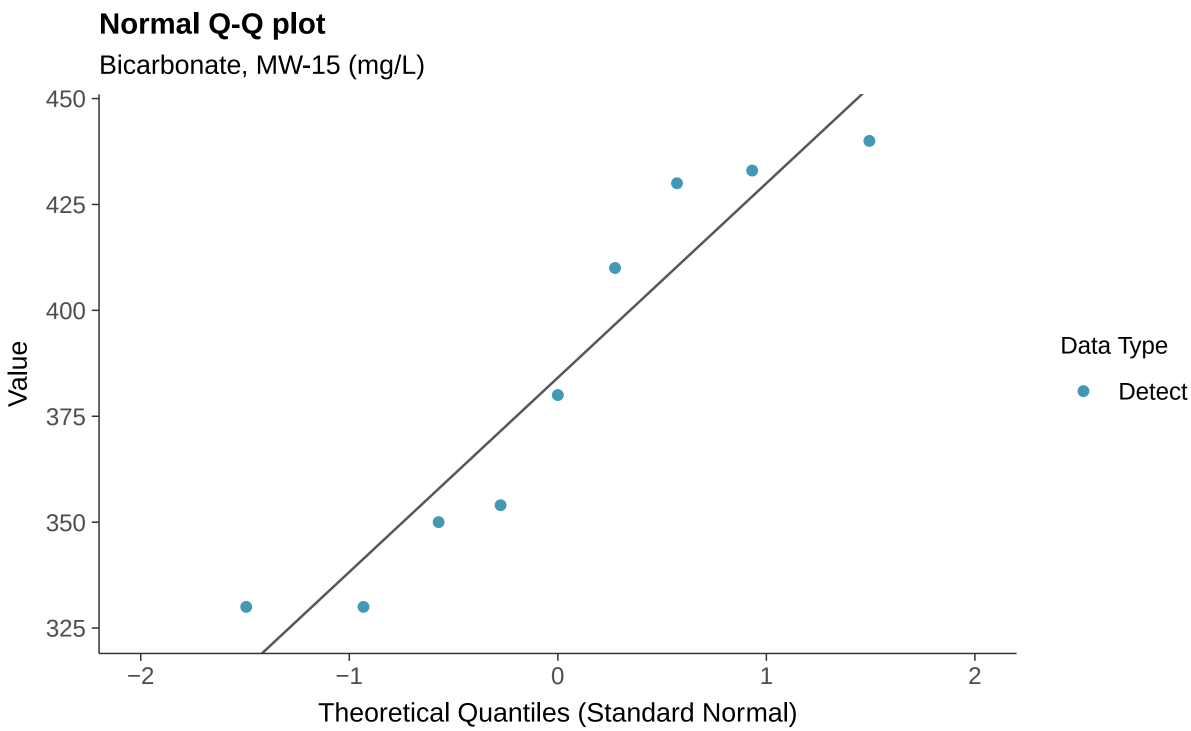
Bicarbonate, MW-15 (mg/L)

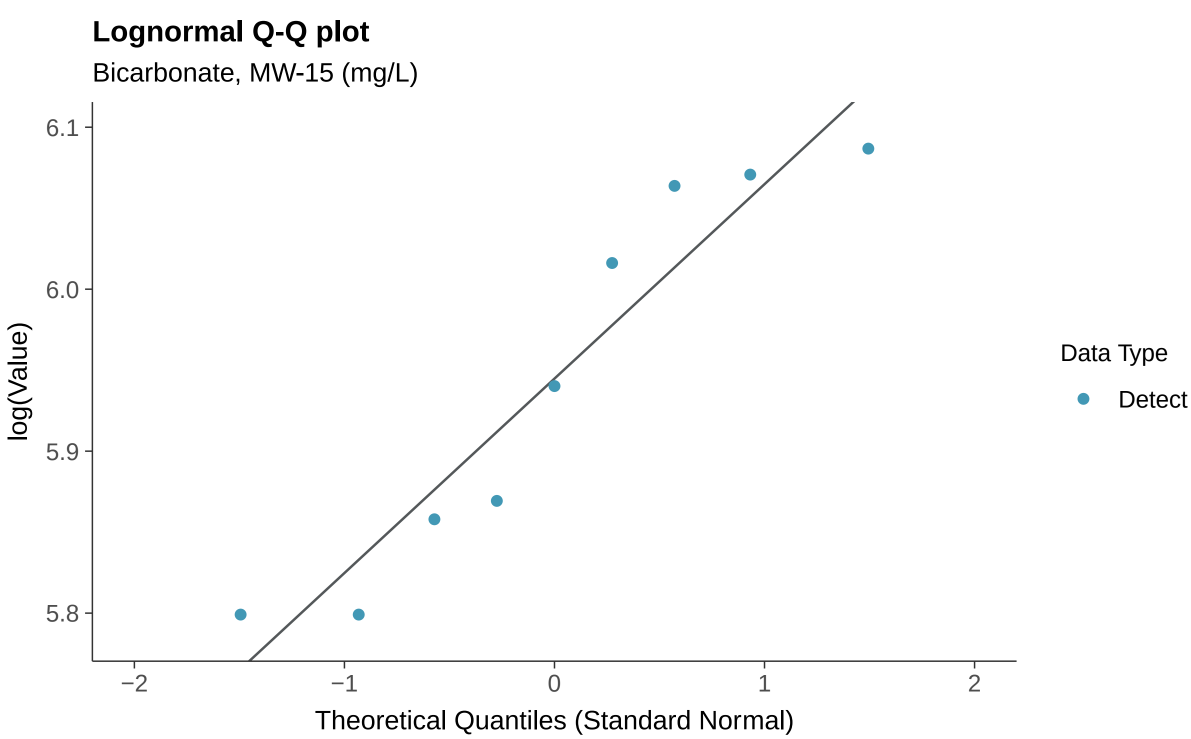


Boxplot by Season

Bicarbonate, MW-15 (mg/L)

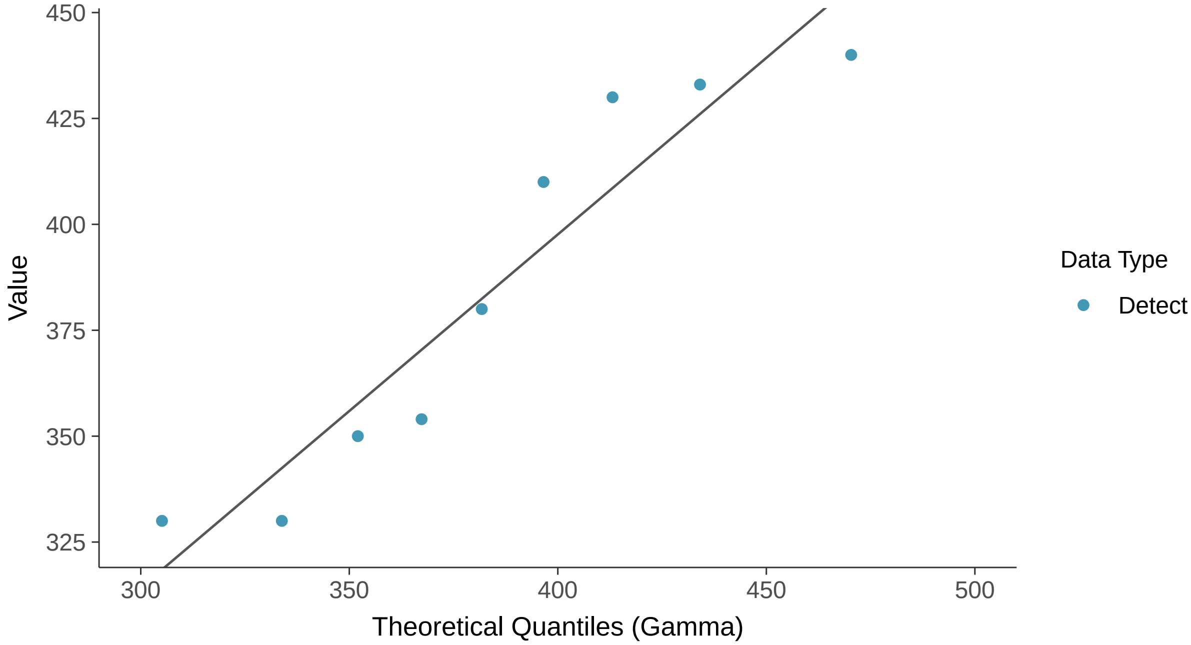



Normal Q-Q plot
Bicarbonate, MW-15 (mg/L)
Value
450
425
400
375
350
325
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Bicarbonate, MW-15 (mg/L)
log(Value)
6.1
6.0
5.9
5.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

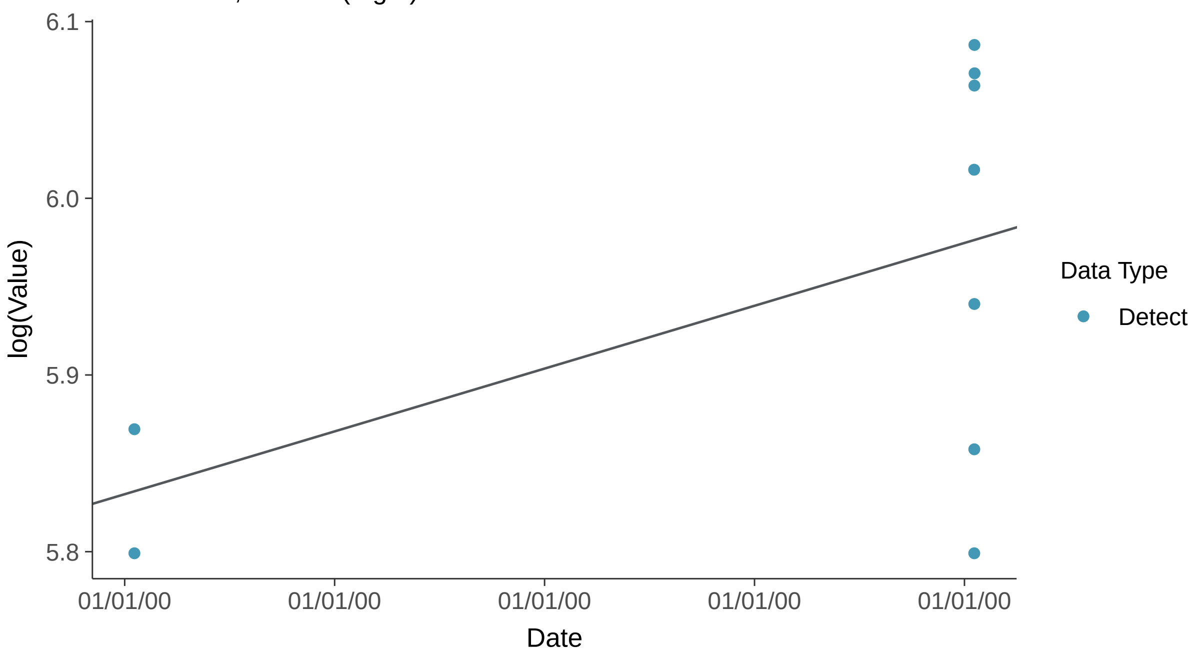
Gamma Q-Q plot

Bicarbonate, MW-15 (mg/L)



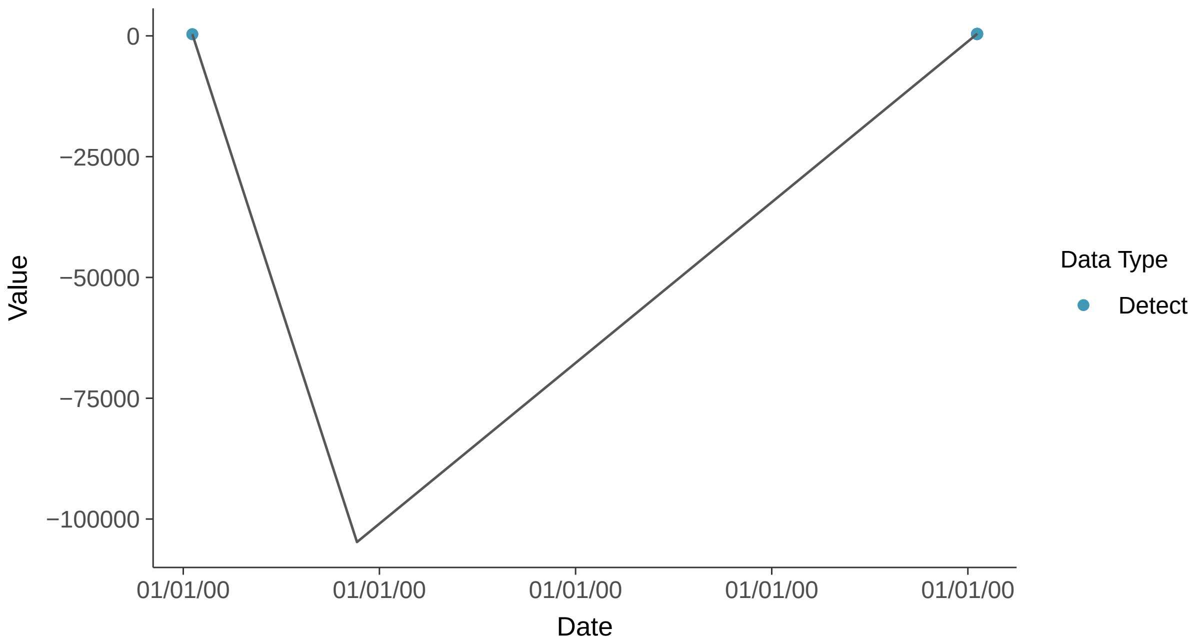
Trend Regression: Lognormal MLE

Bicarbonate, MW-15 (mg/L)



Trend Regression: Piecewise Linear-Linear

Bicarbonate, MW-15 (mg/L)

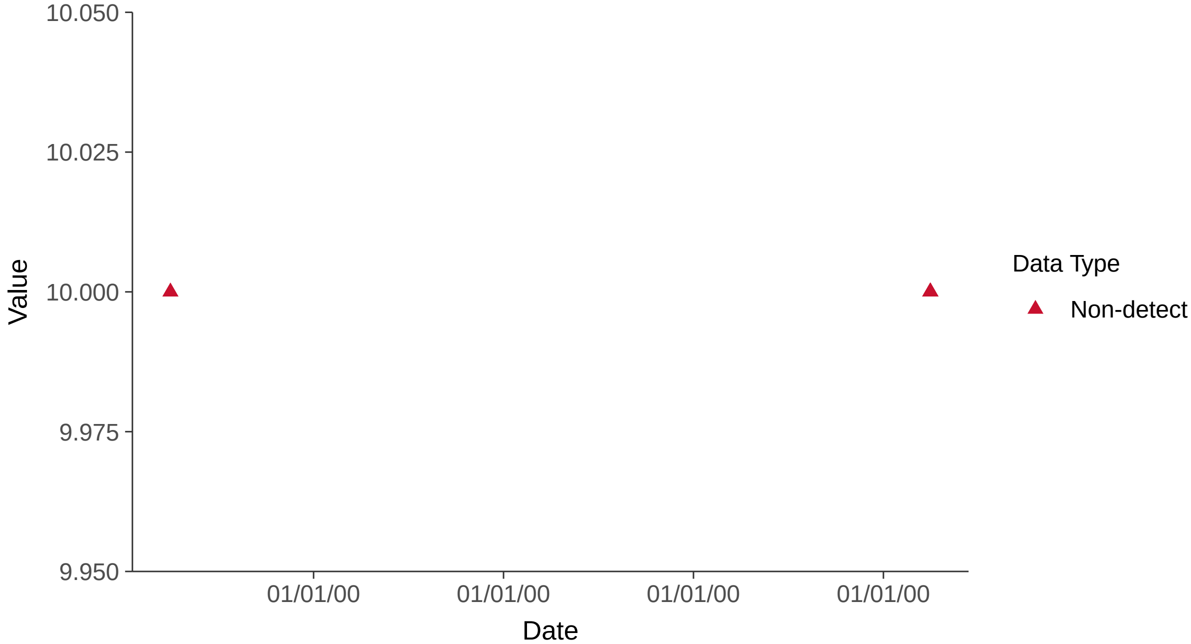


Other: Carbonate, MW-15

ID: 15_4_31

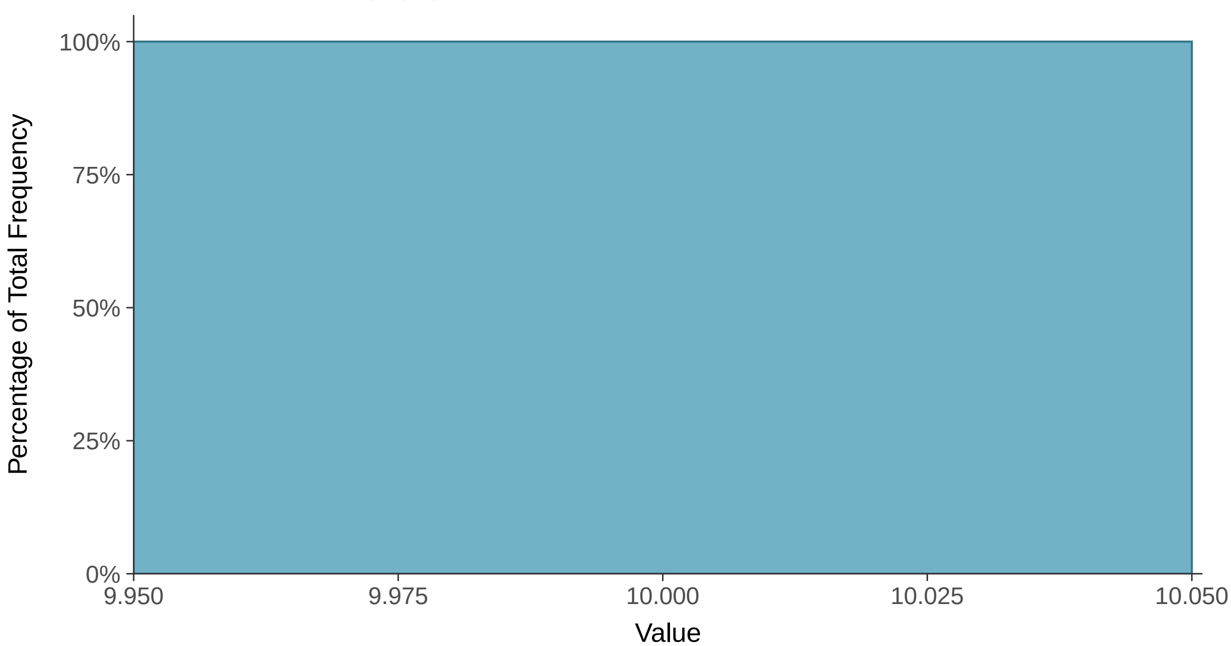
Scatter Plot

Carbonate, MW-15 (mg/L)



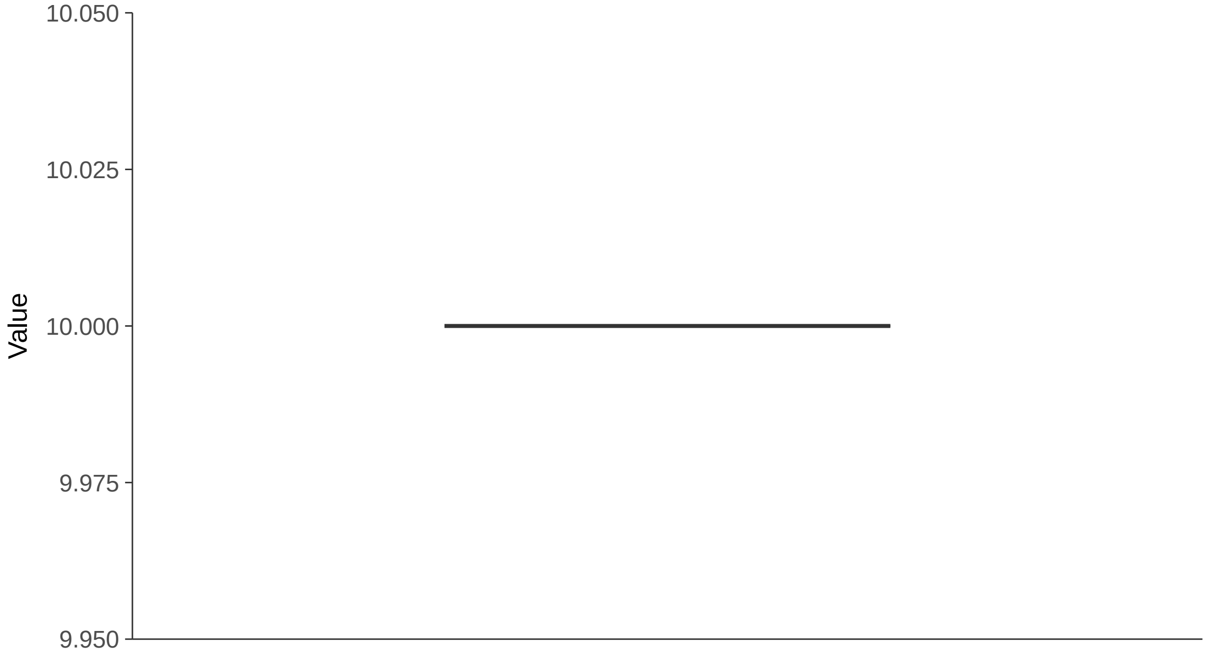
Histogram

Carbonate, MW-15 (mg/L)



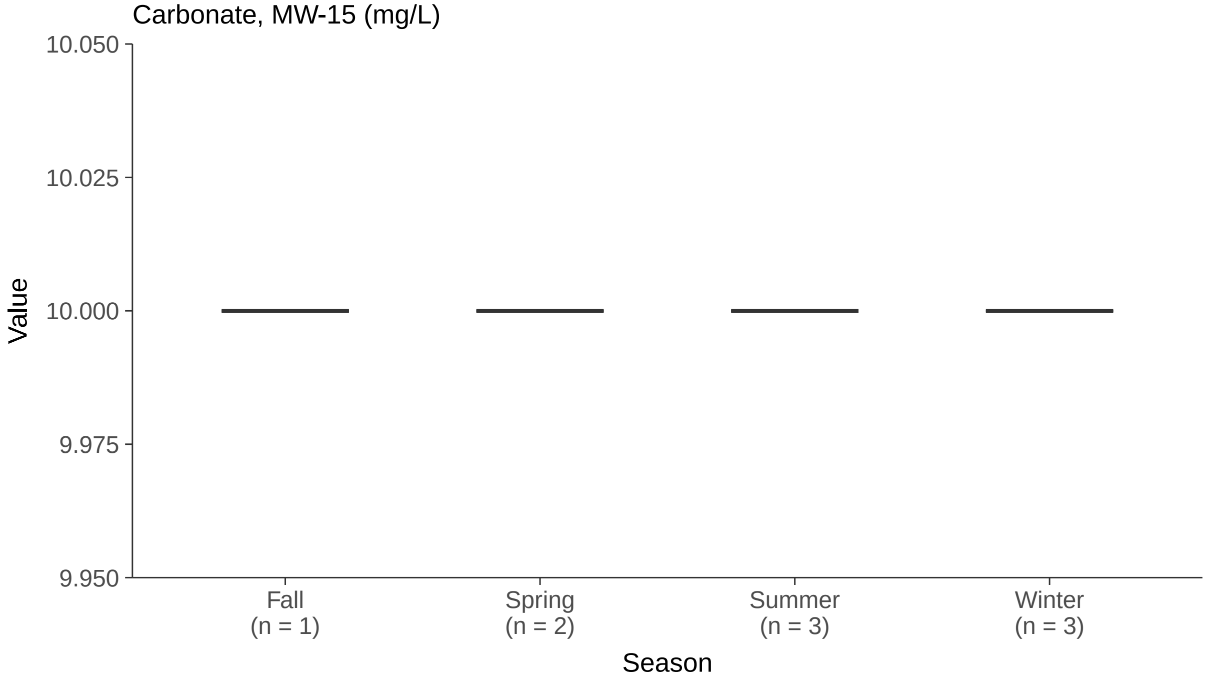
Boxplot

Carbonate, MW-15 (mg/L)



Boxplot by Season

Carbonate, MW-15 (mg/L)

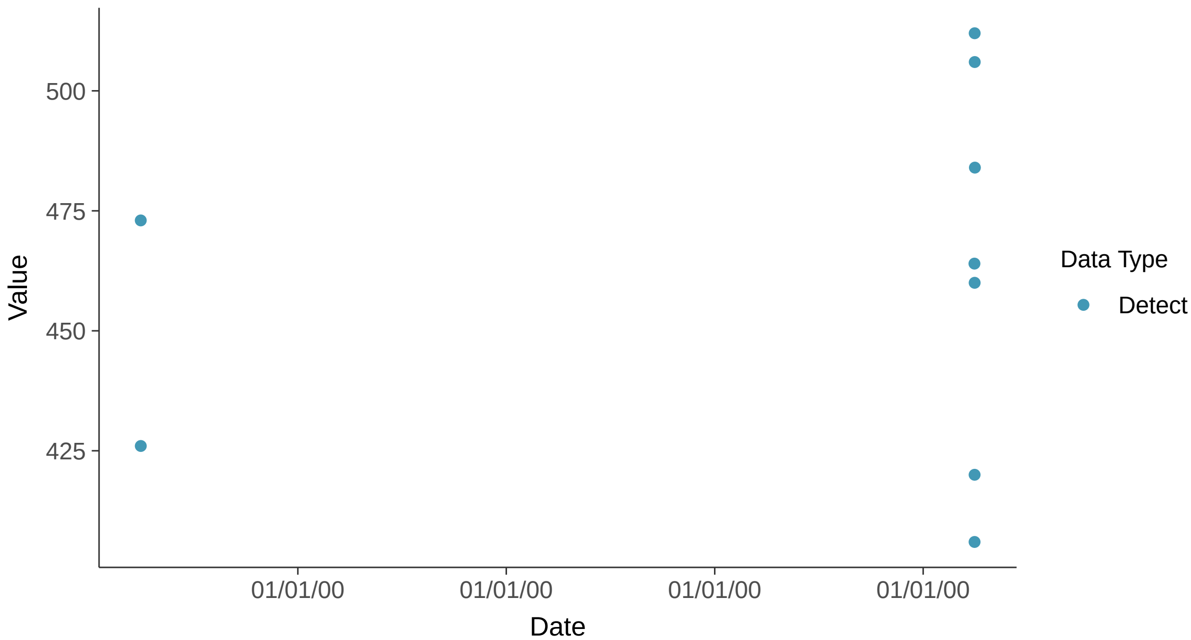


Other: Hardness, MW-15

ID: 15_4_32

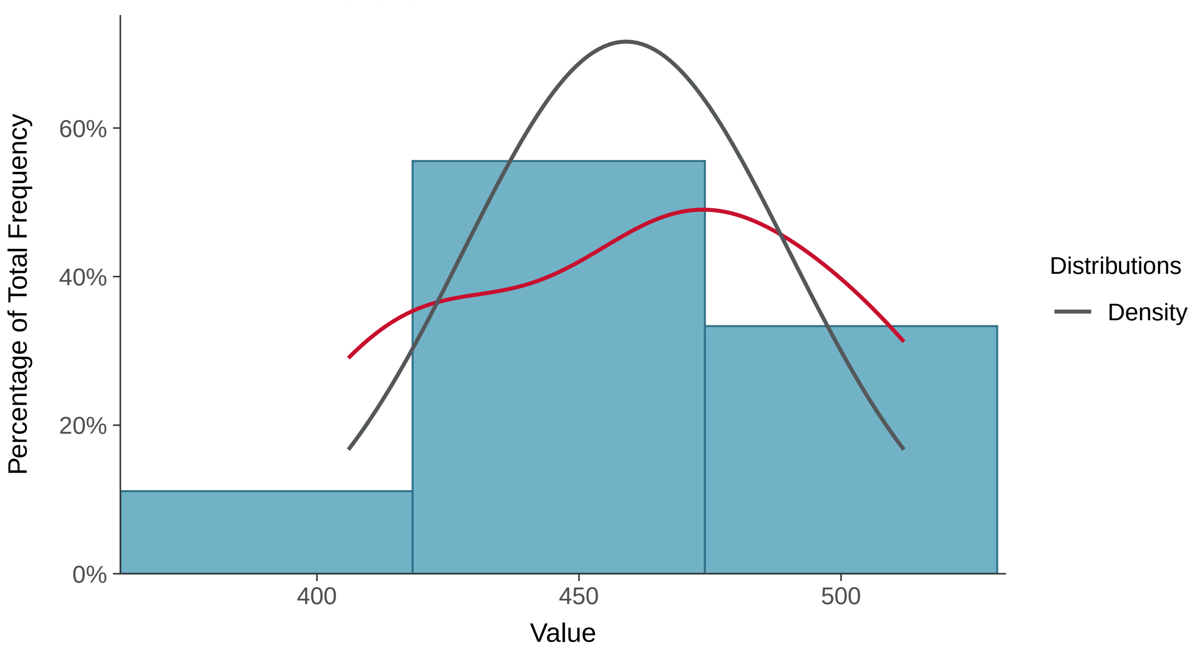
Scatter Plot

Hardness, MW-15 (mg/L)



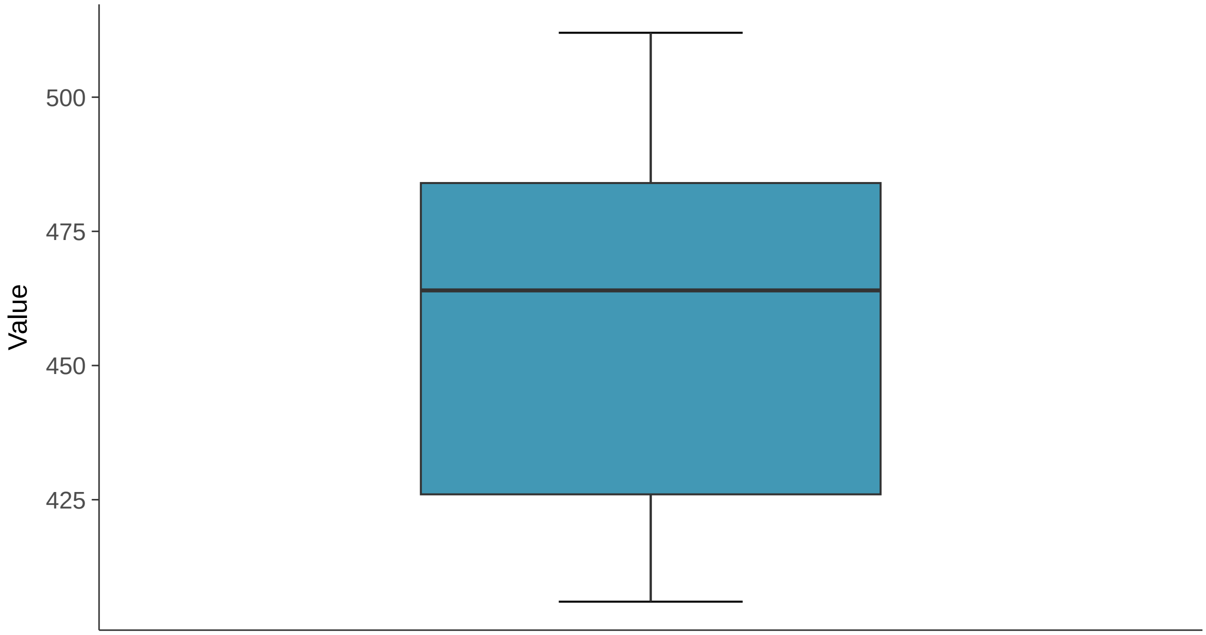
Histogram

Hardness, MW-15 (mg/L)



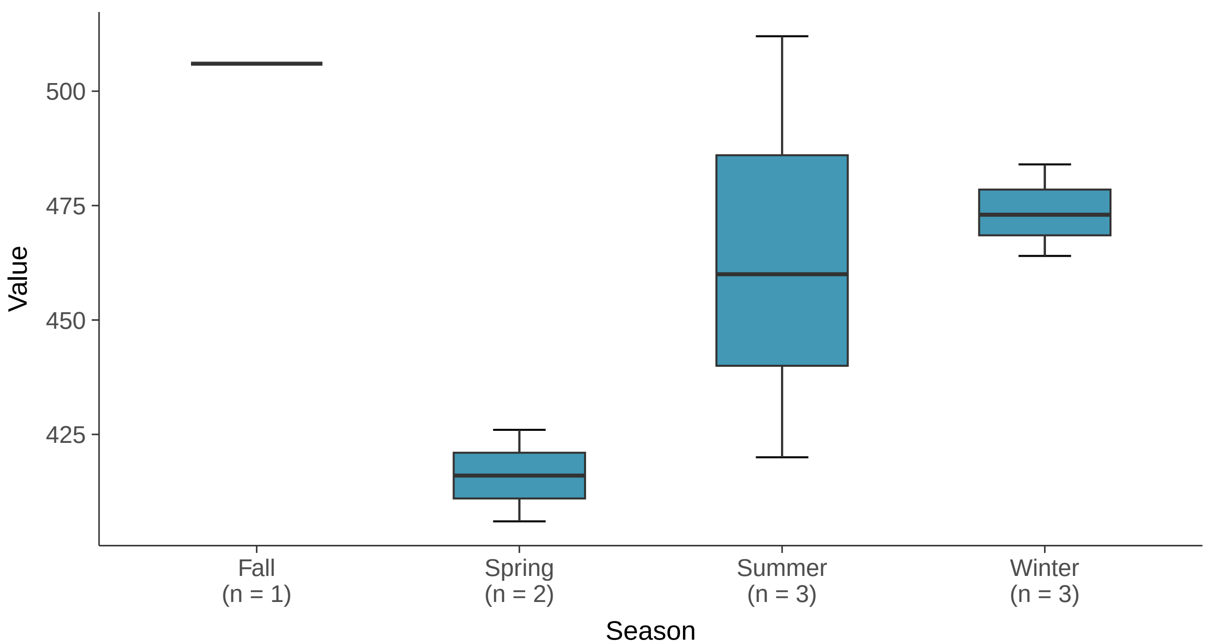
Boxplot

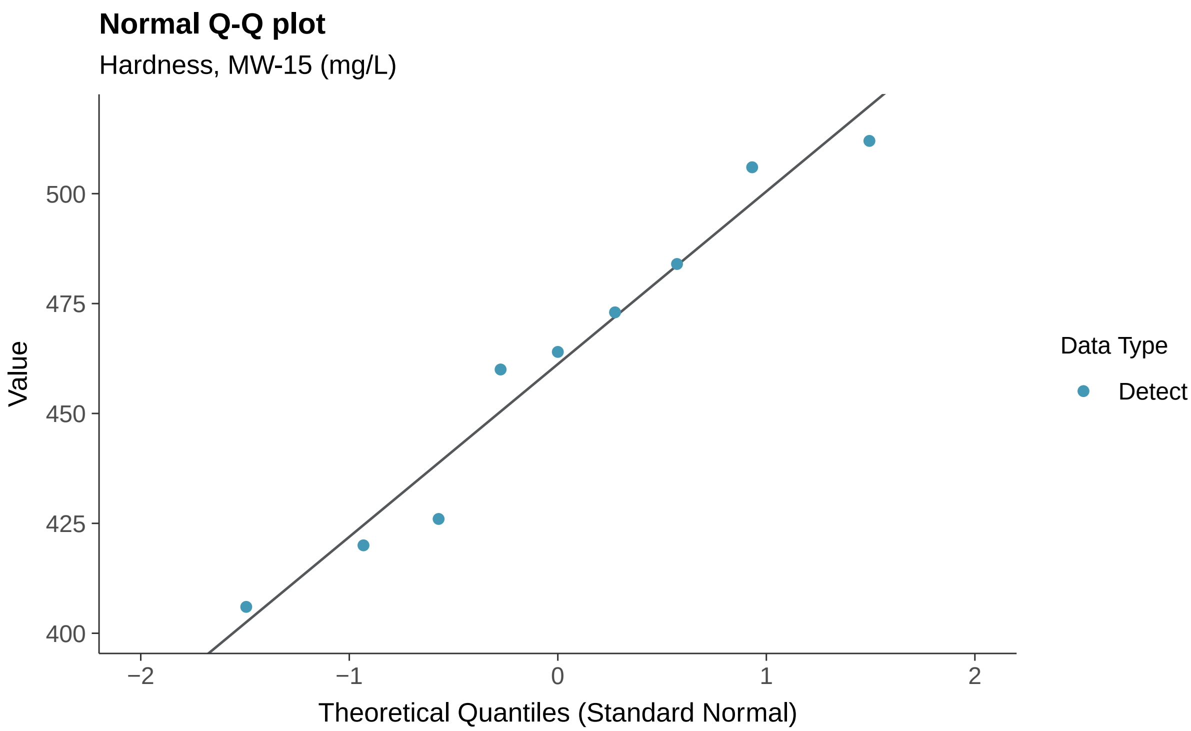
Hardness, MW-15 (mg/L)

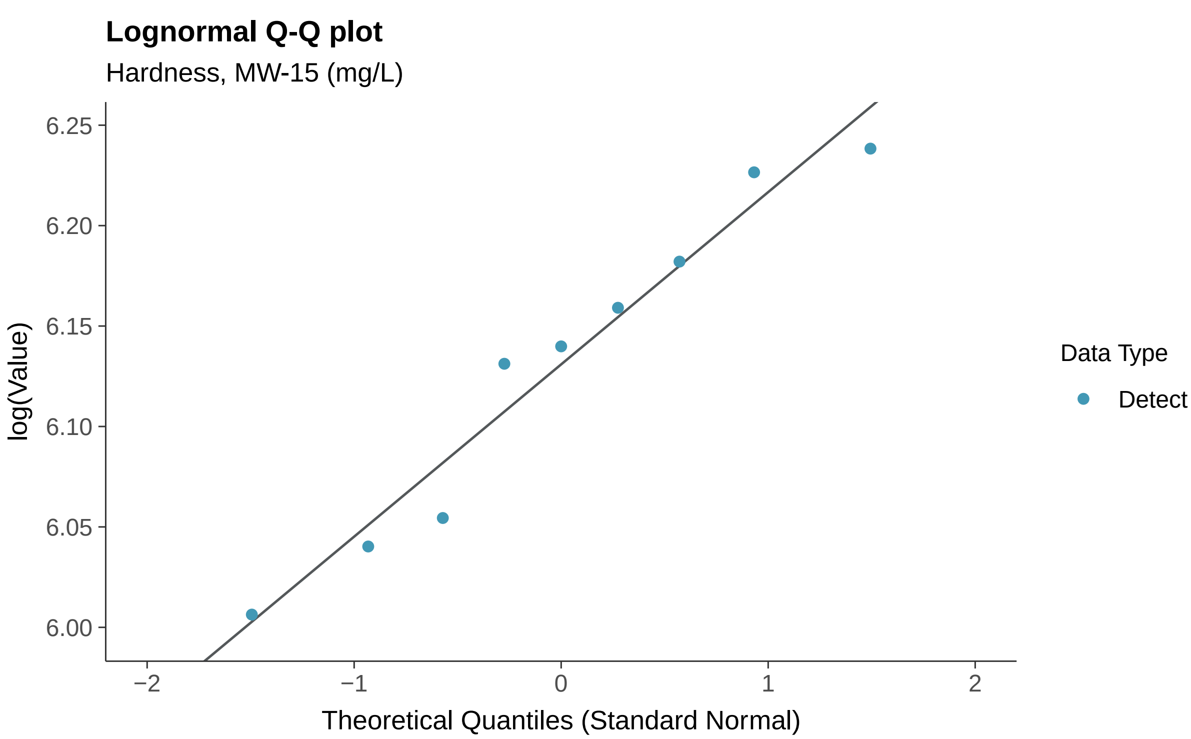


Boxplot by Season

Hardness, MW-15 (mg/L)

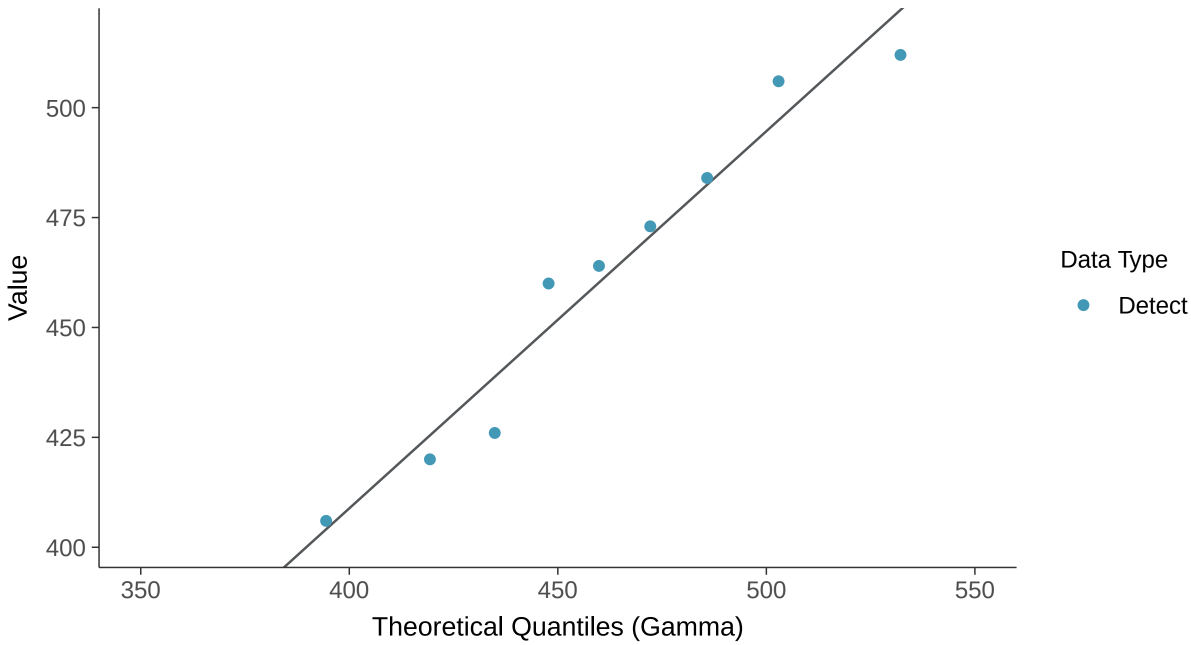



Normal Q-Q plot
Hardness, MW-15 (mg/L)
Value
500
475
450
425
400
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Hardness, MW-15 (mg/L)
log(Value)
6.25
6.20
6.15
6.10
6.05
6.00
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

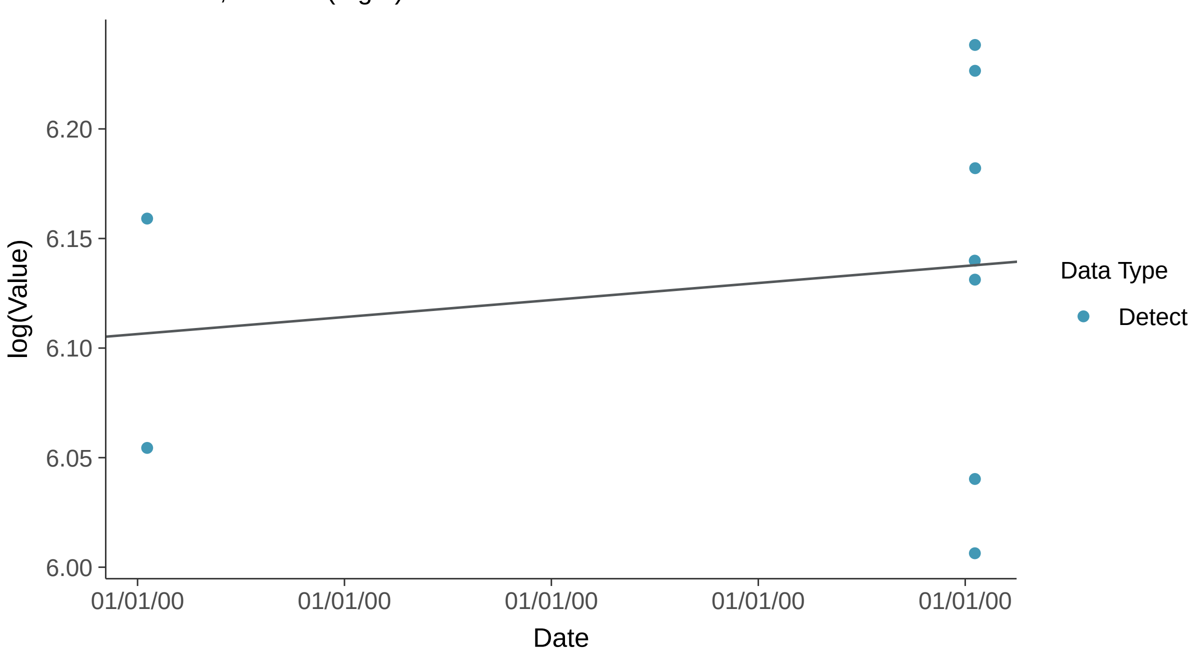
Gamma Q-Q plot

Hardness, MW-15 (mg/L)



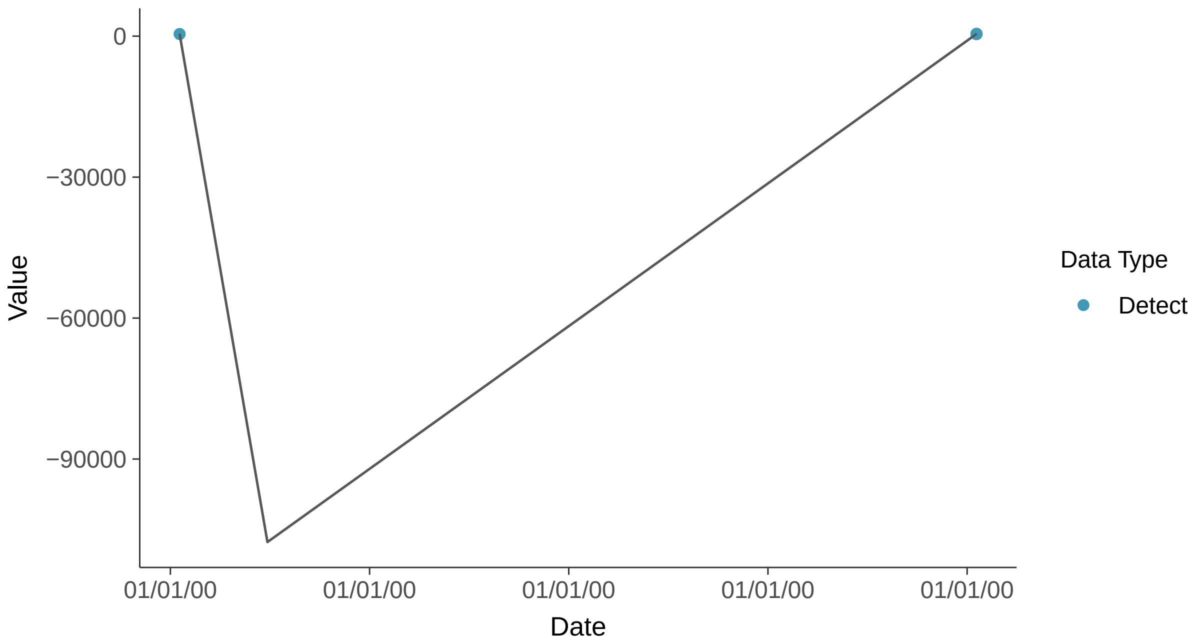
Trend Regression: Lognormal MLE

Hardness, MW-15 (mg/L)



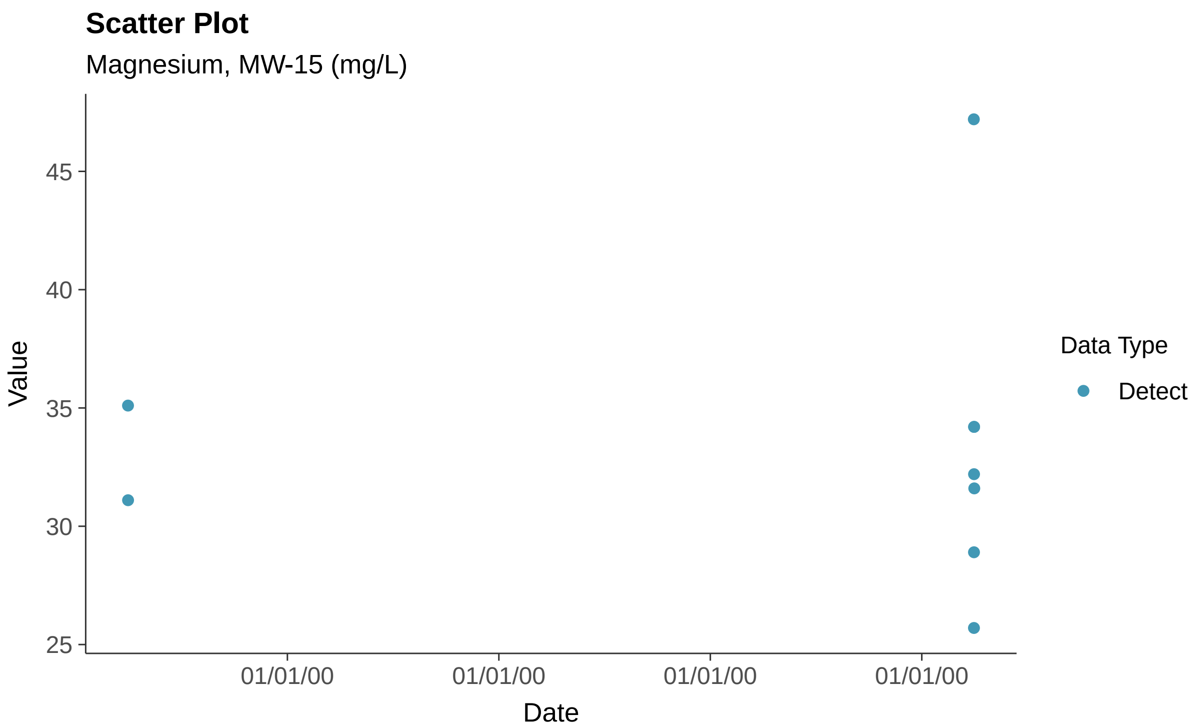
Trend Regression: Piecewise Linear-Linear

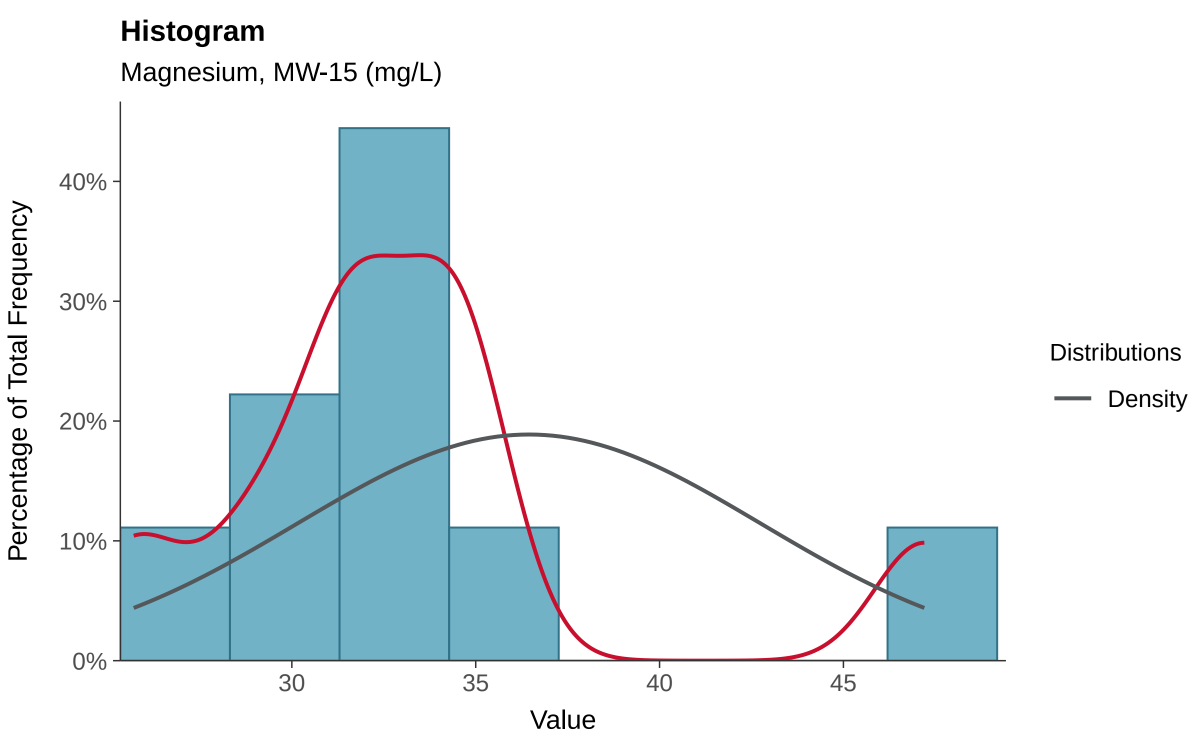
Hardness, MW-15 (mg/L)



Other: Magnesium, MW-15

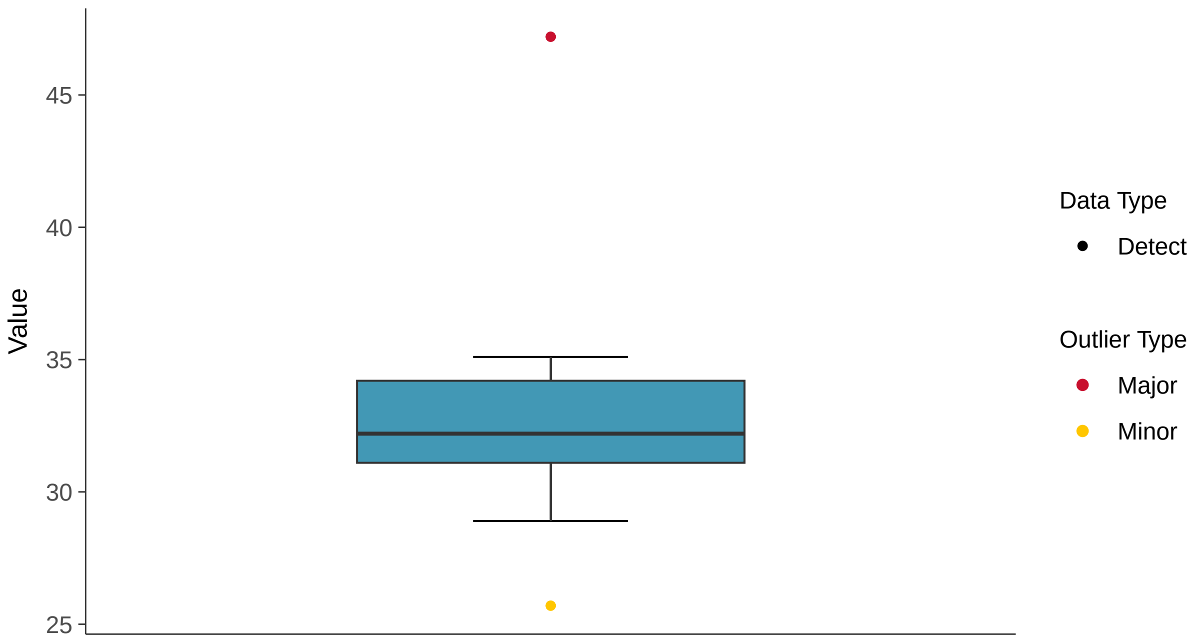
ID: 15_4_33





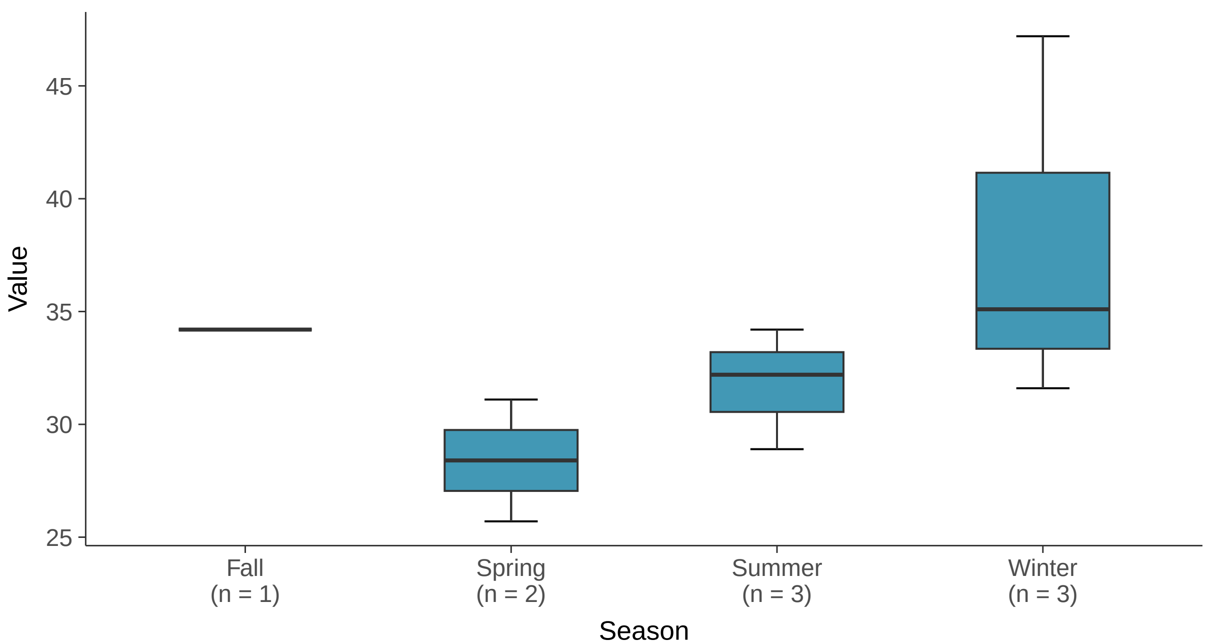
Boxplot

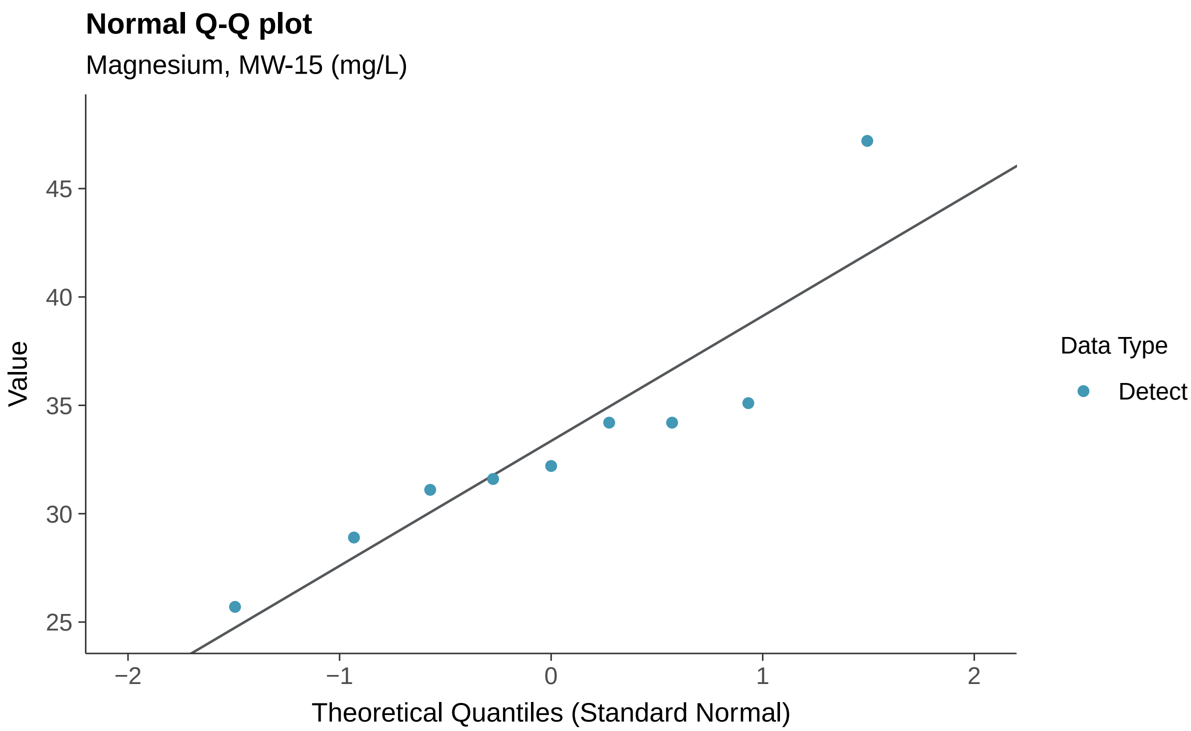
Magnesium, MW-15 (mg/L)

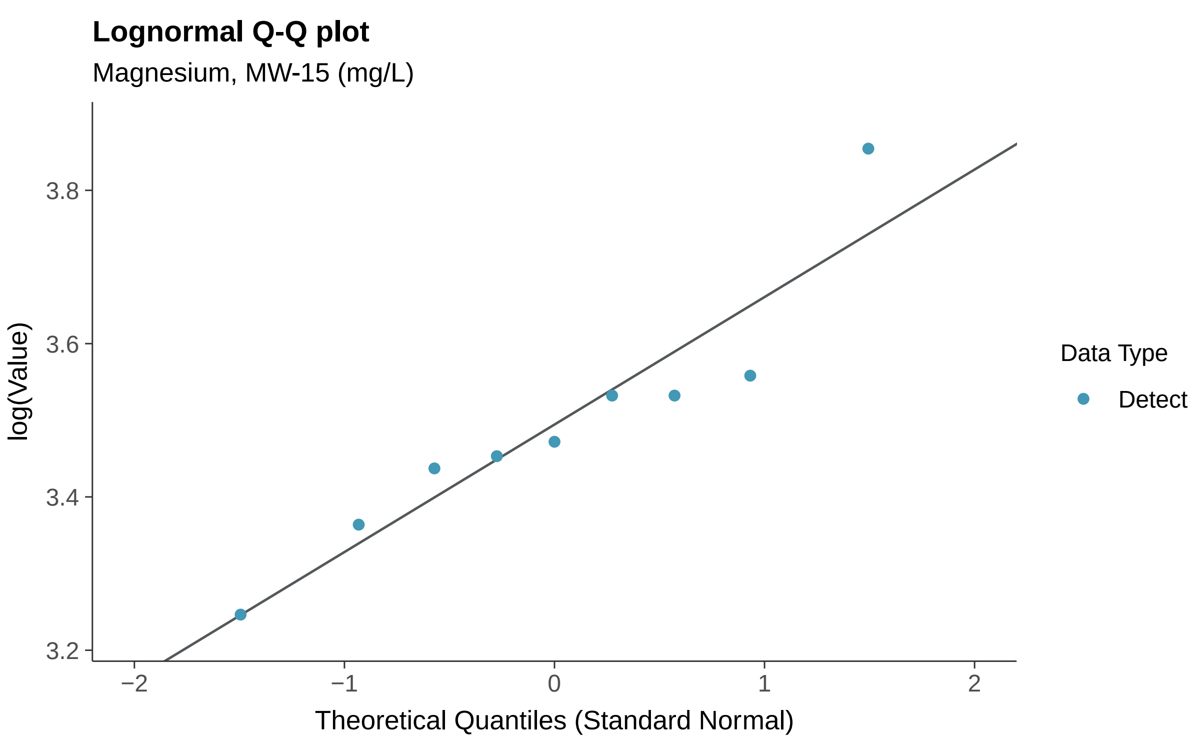


Boxplot by Season

Magnesium, MW-15 (mg/L)

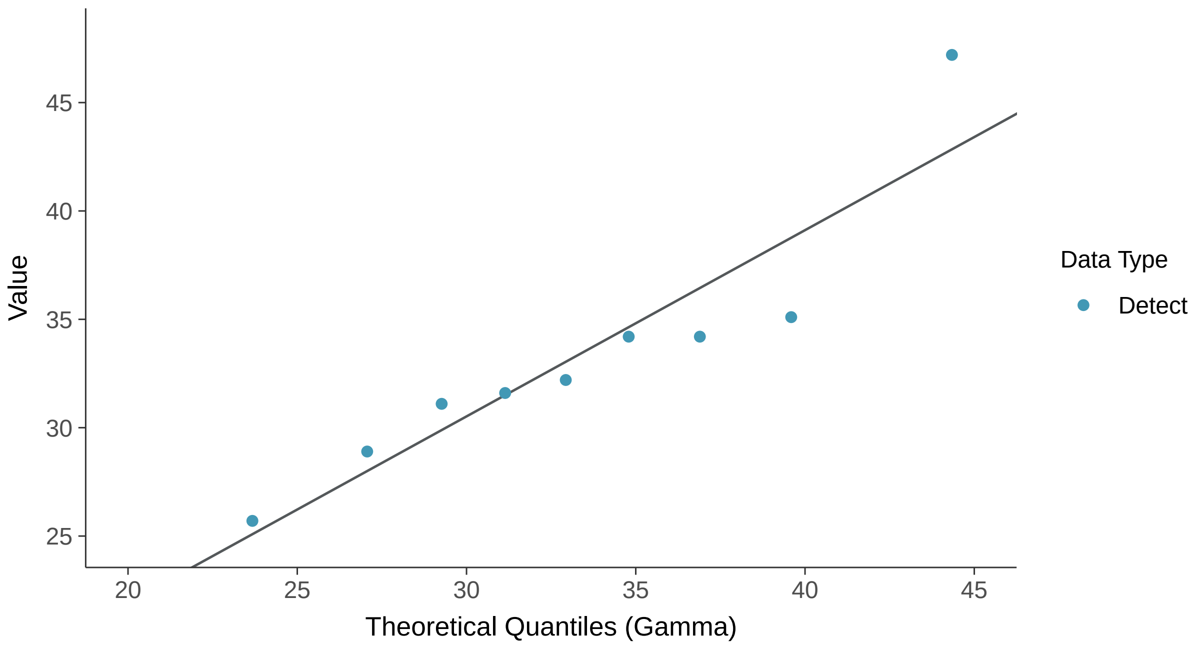



Normal Q-Q plot
Magnesium, MW-15 (mg/L)
Value
45
40
35
30
25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Magnesium, MW-15 (mg/L)
log(Value)
3.8
3.6
3.4
3.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

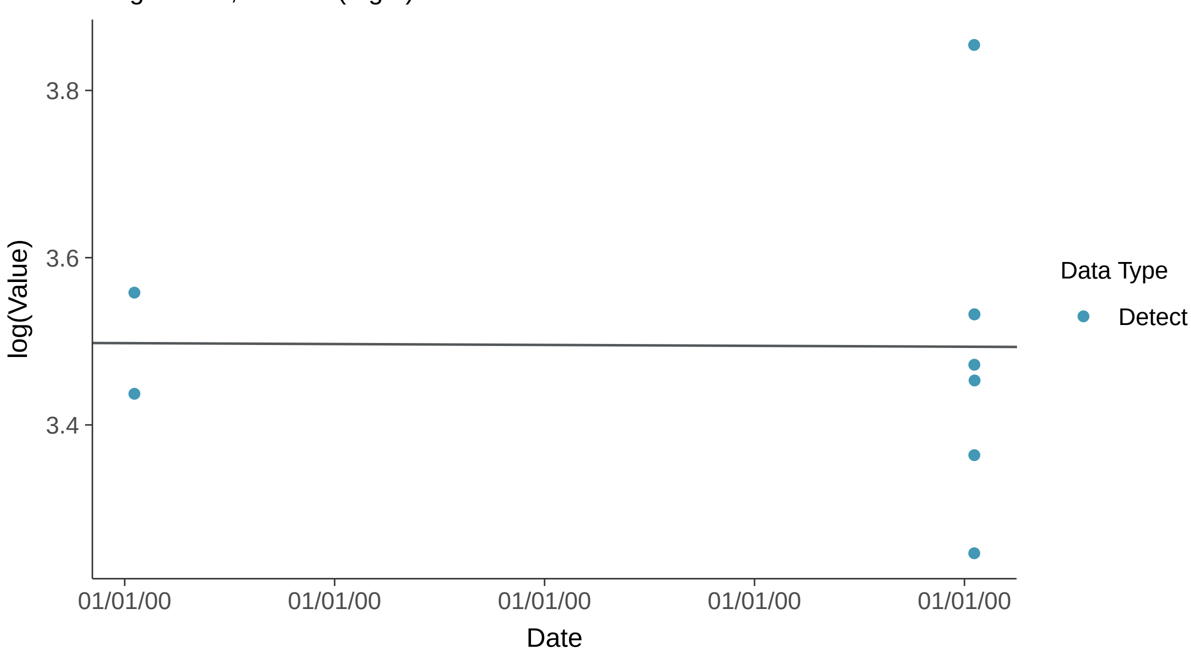
Gamma Q-Q plot

Magnesium, MW-15 (mg/L)



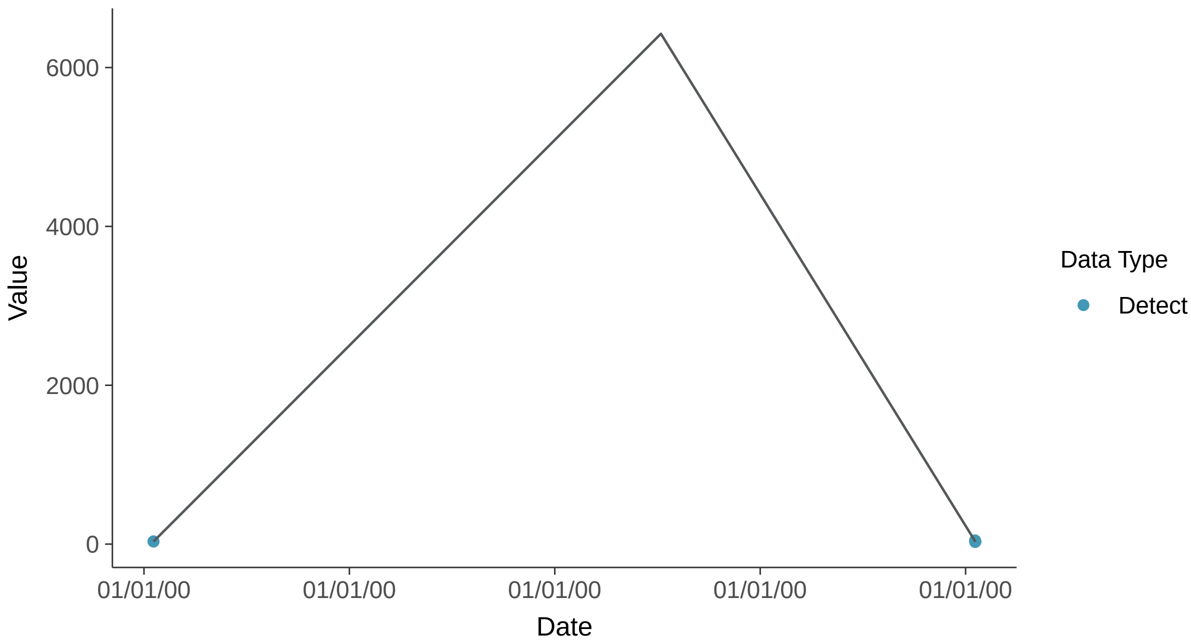
Trend Regression: Lognormal MLE

Magnesium, MW-15 (mg/L)



Trend Regression: Piecewise Linear-Linear

Magnesium, MW-15 (mg/L)

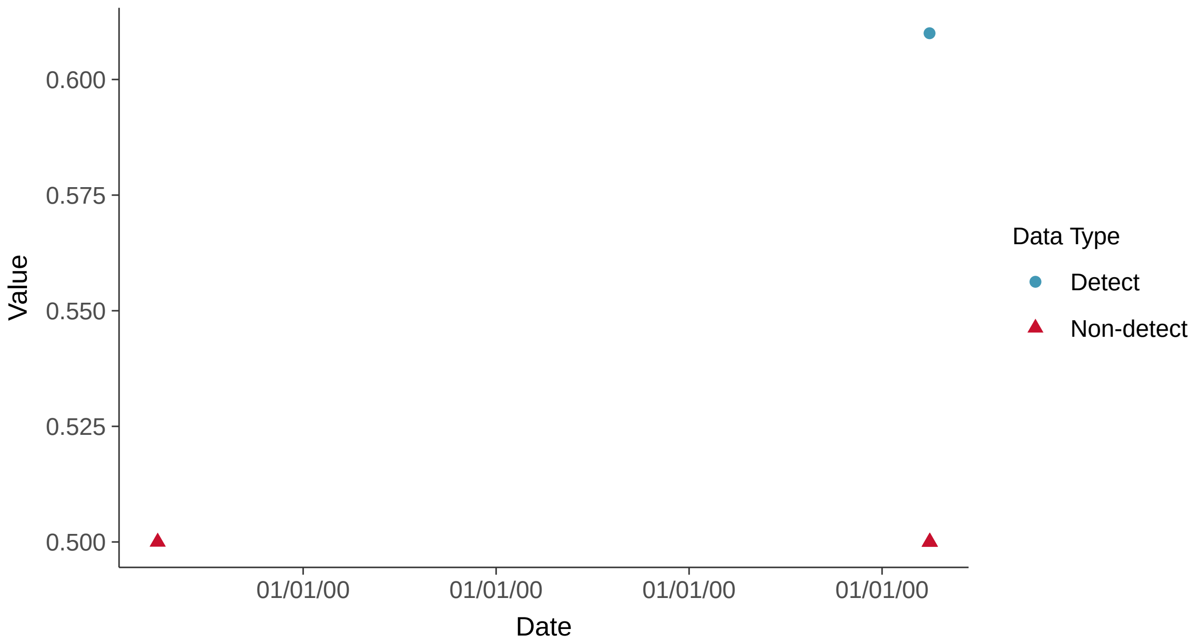


Other: Potassium, MW-15

ID: 15_4_34

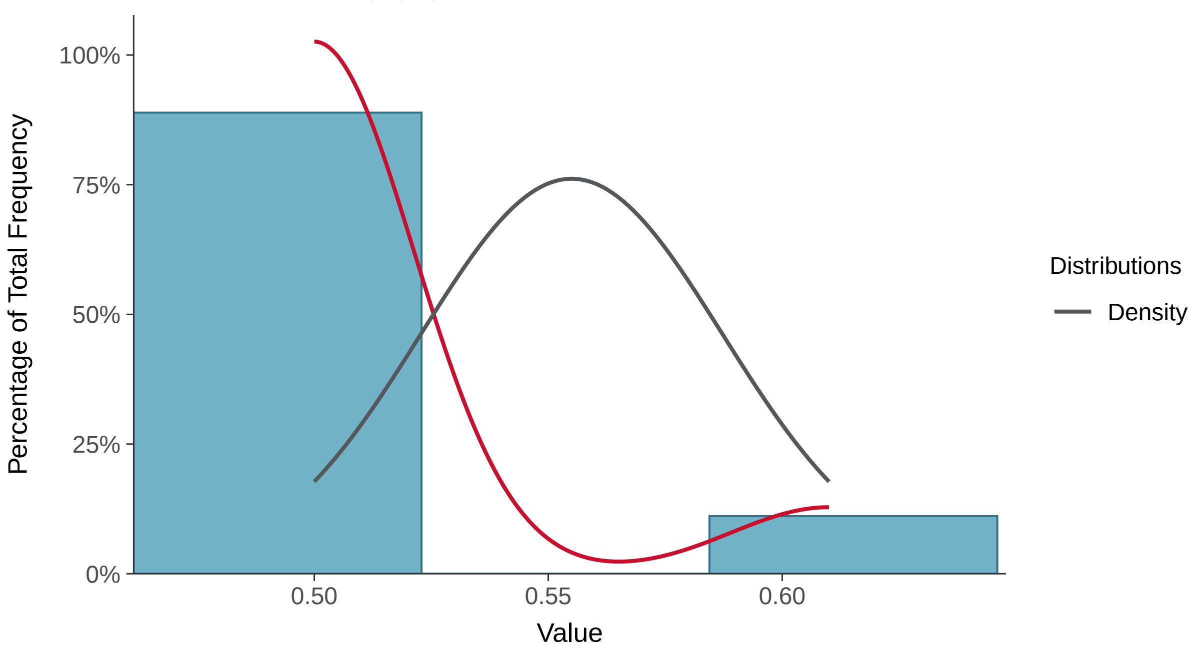
Scatter Plot

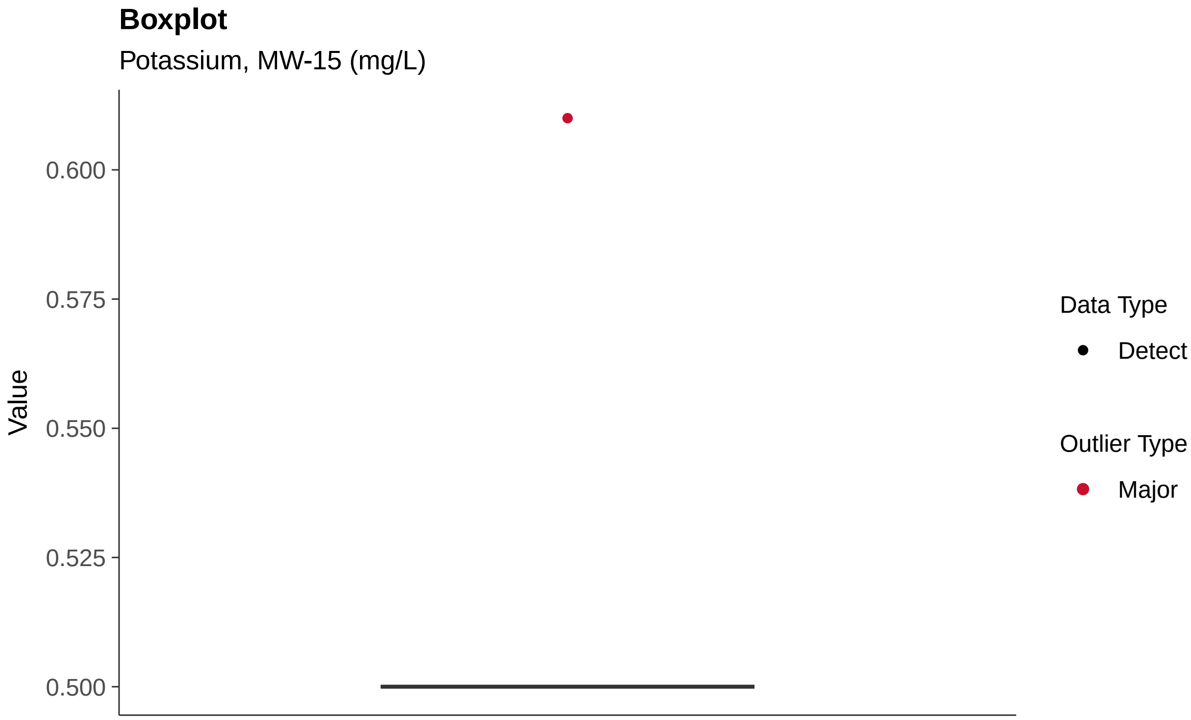
Potassium, MW-15 (mg/L)

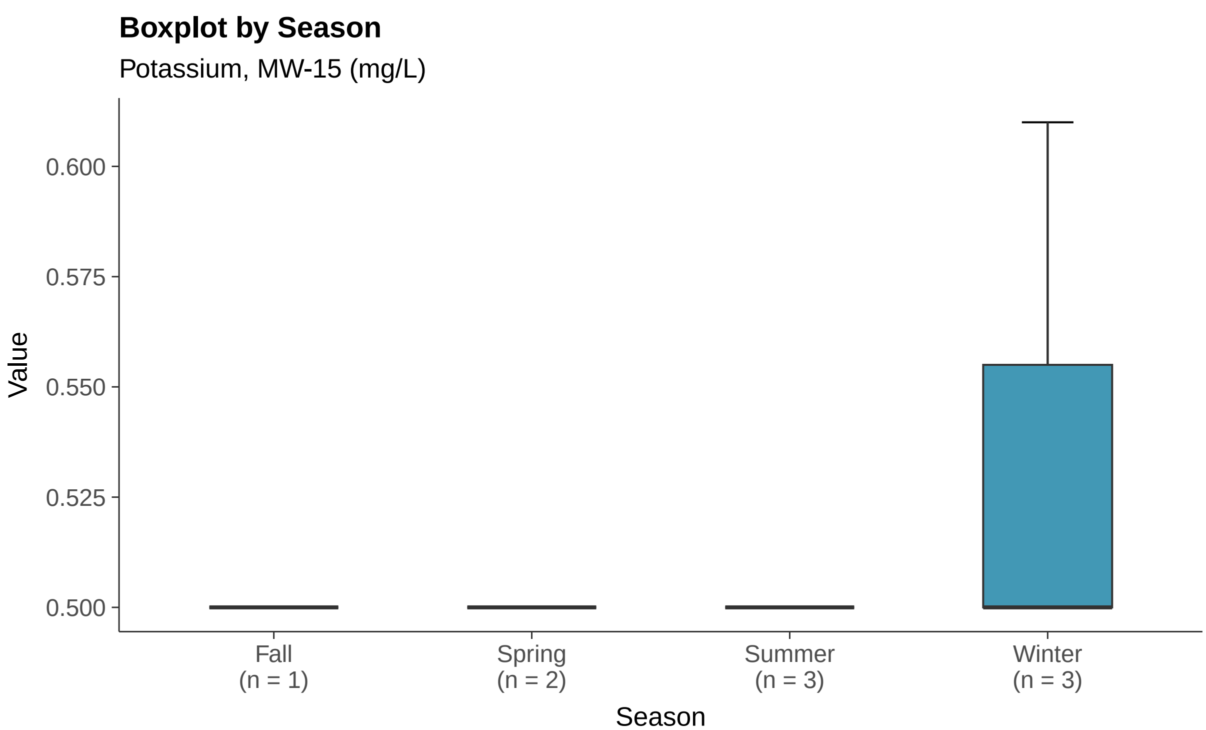


Histogram

Potassium, MW-15 (mg/L)

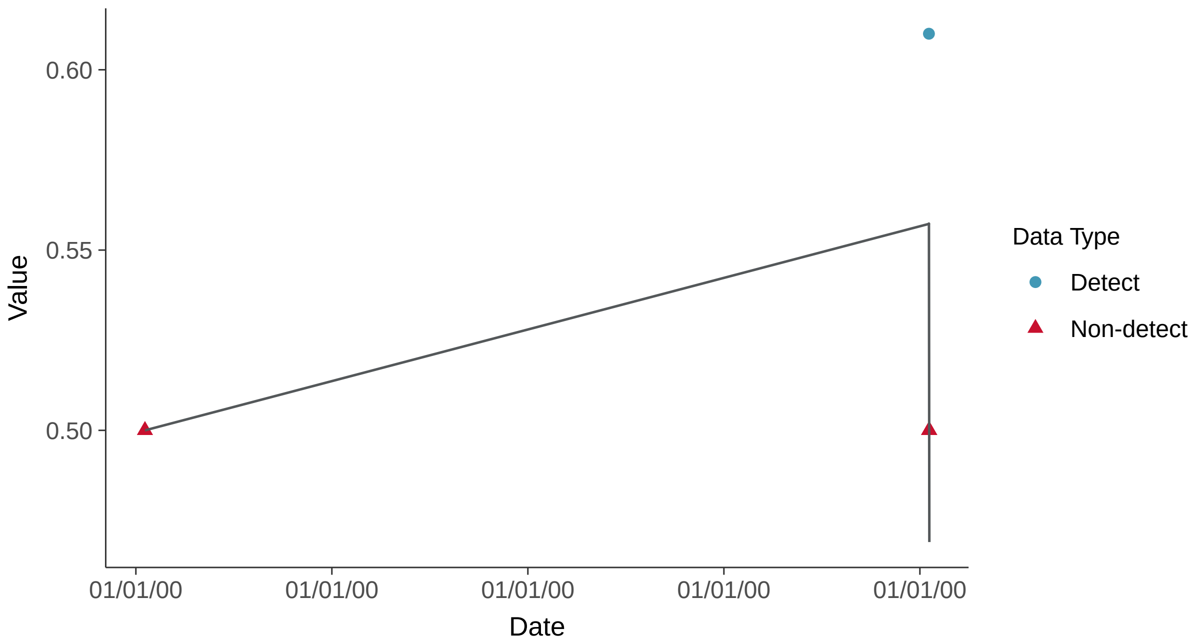



Boxplot
Potassium, MW-15 (mg/L)
Value
0.600
0.575
0.550
0.525
0.500
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Potassium, MW-15 (mg/L)
Value
0.600
0.575
0.550
0.525
0.500
Fall
(n = 1)
Spring
(n = 2)
Summer
(n = 3)
Winter
(n = 3)
Season

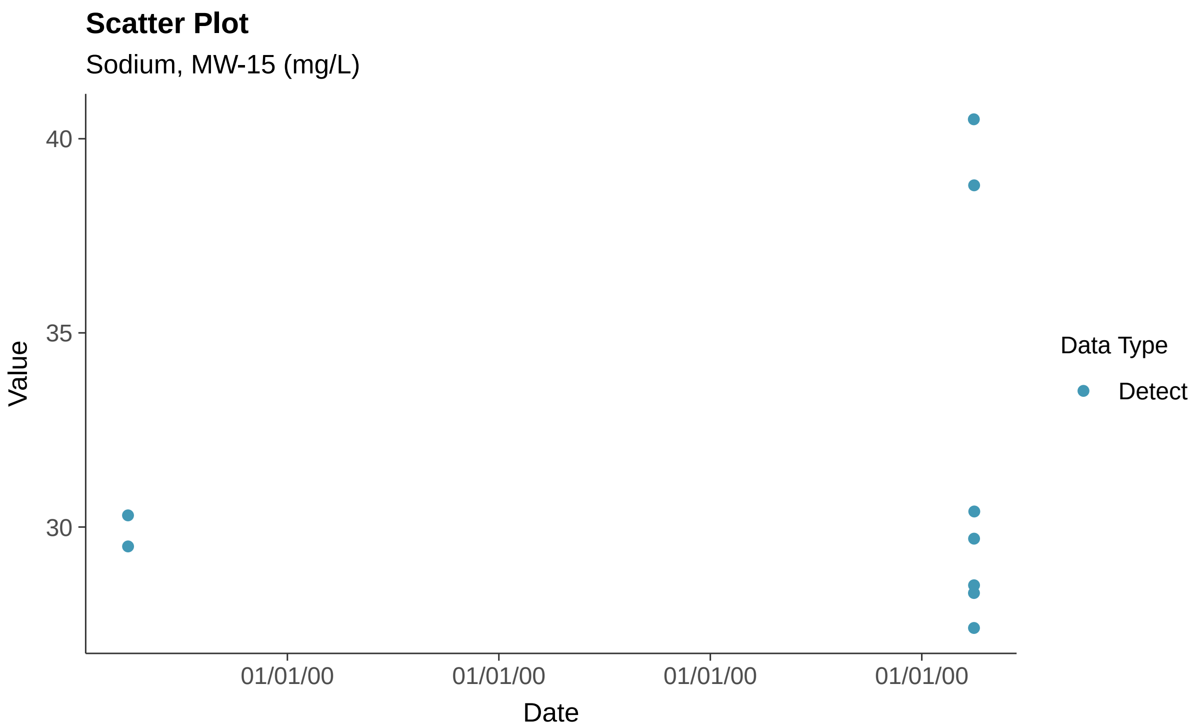
Trend Regression: Piecewise Linear-Linear

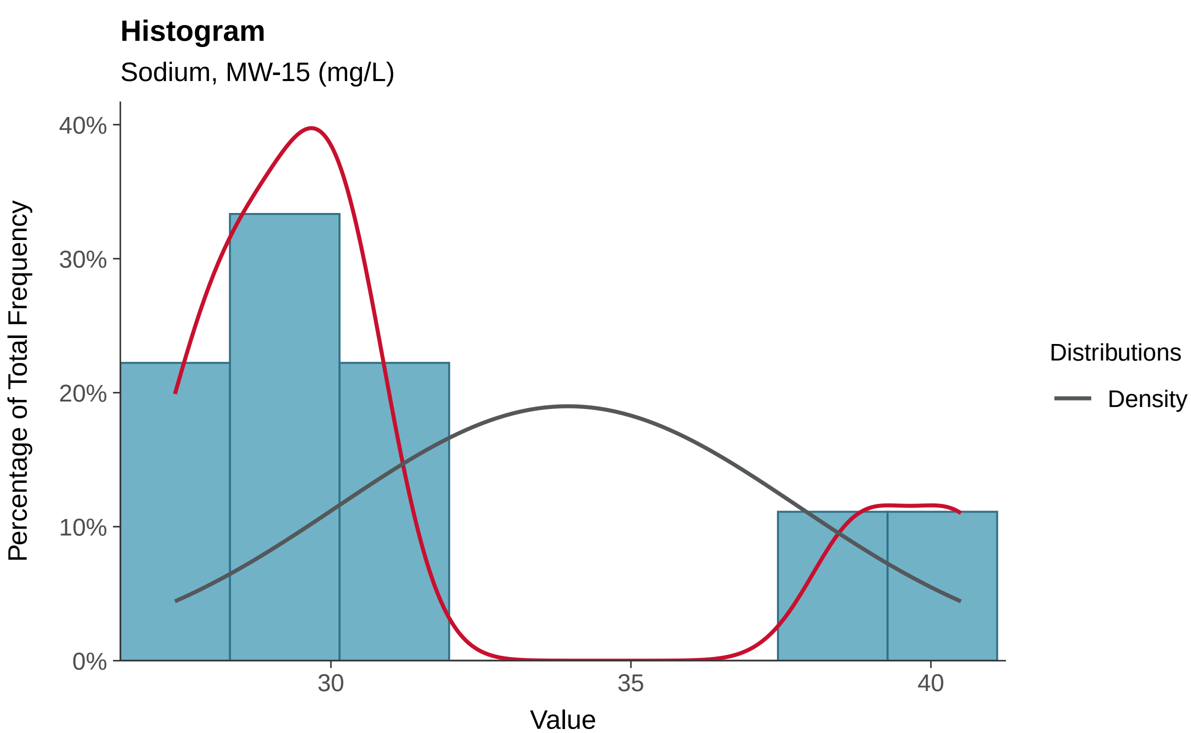
Potassium, MW-15 (mg/L)



Other: Sodium, MW-15

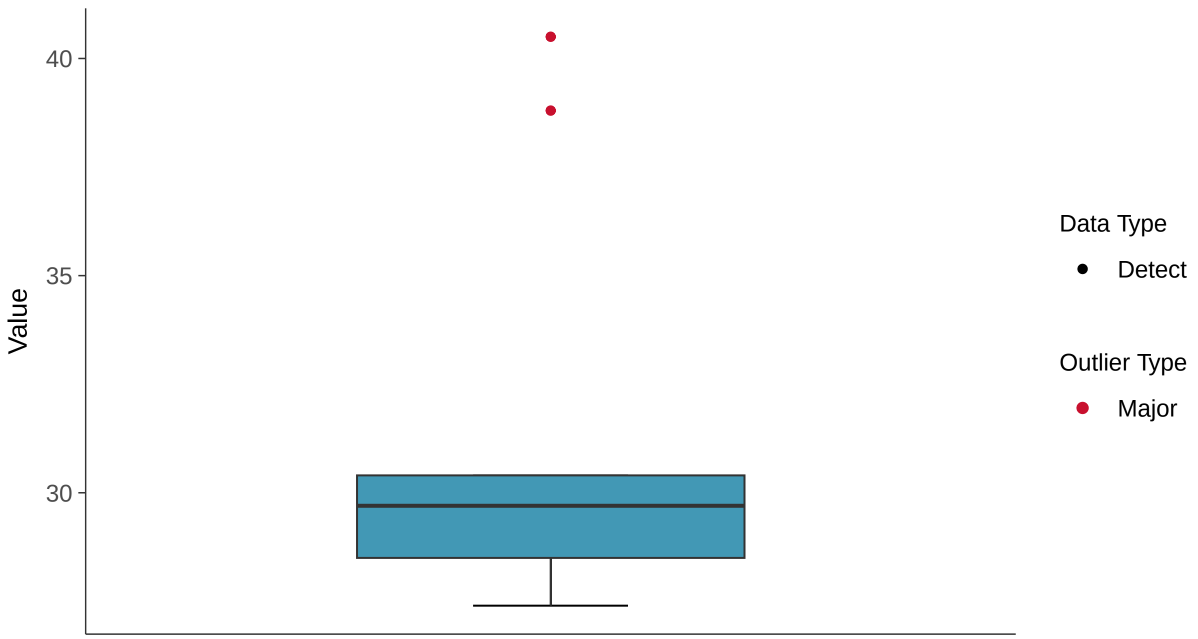
ID: 15_4_35





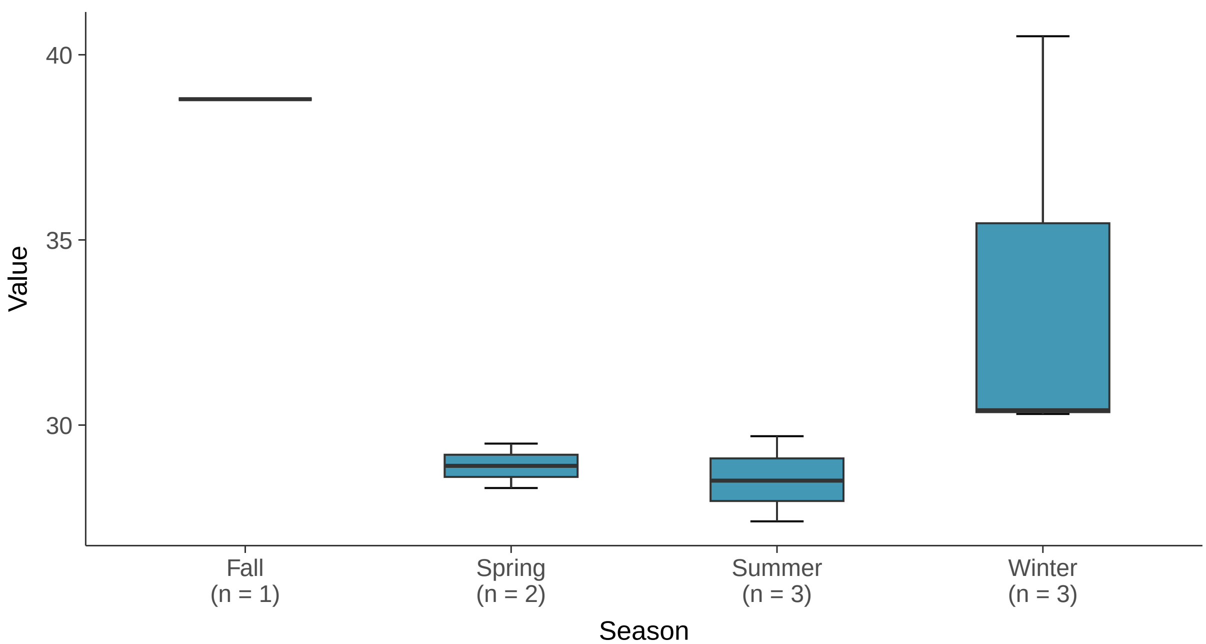
Boxplot

Sodium, MW-15 (mg/L)



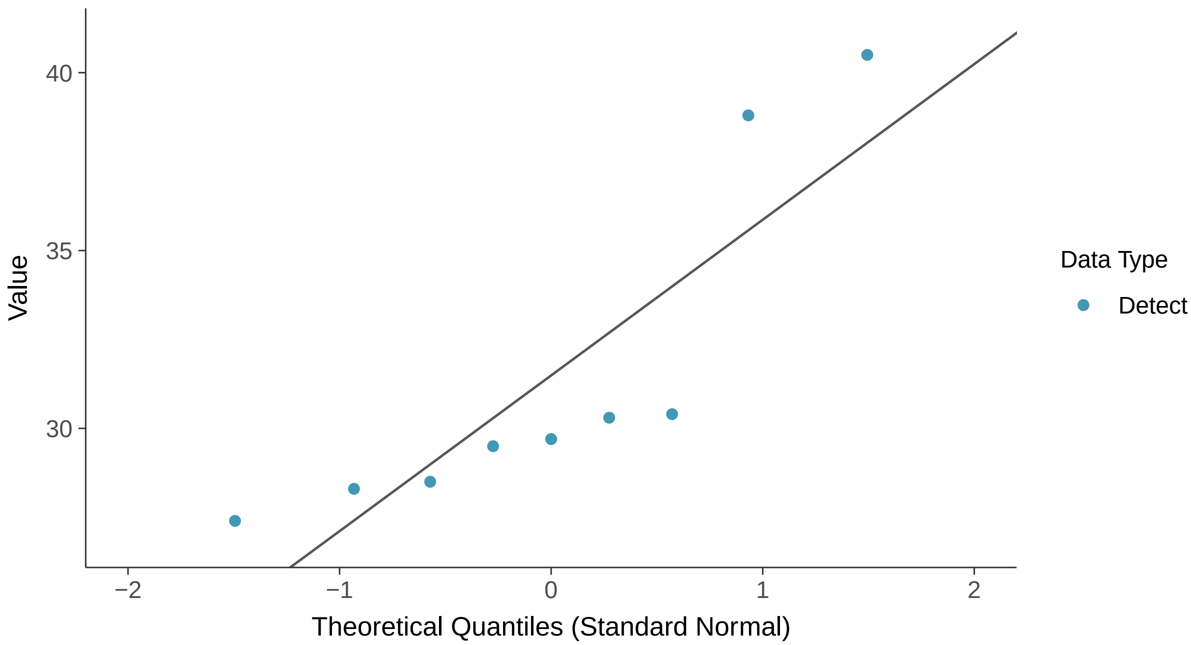
Boxplot by Season

Sodium, MW-15 (mg/L)



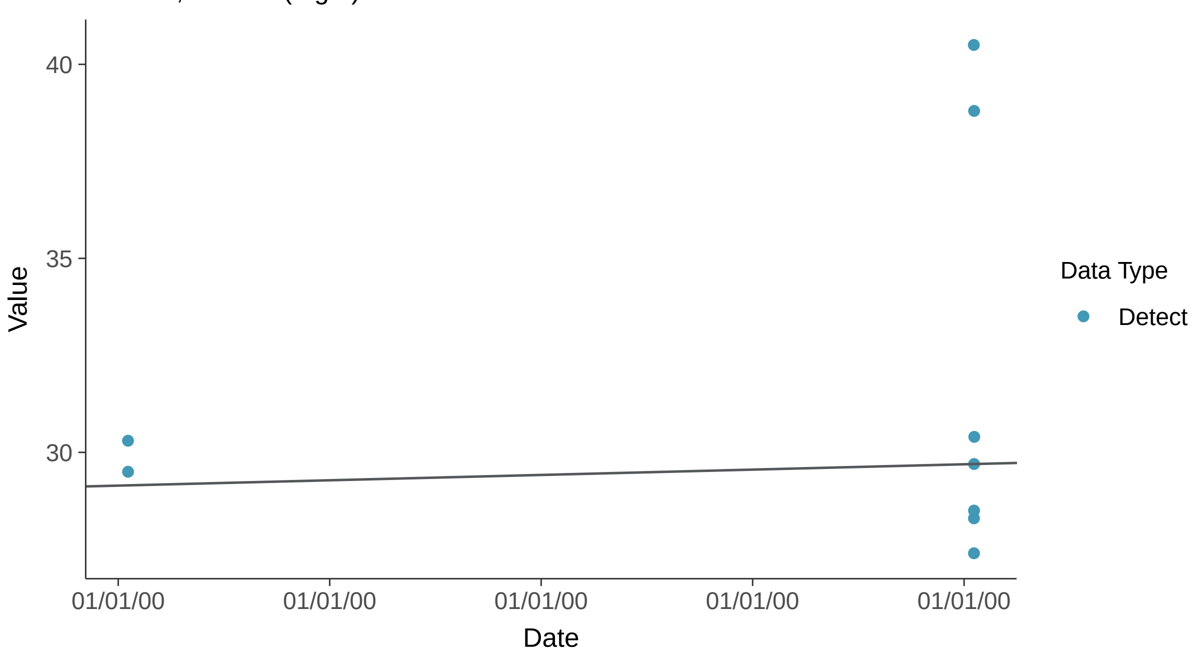
Normal Q-Q plot

Sodium, MW-15 (mg/L)



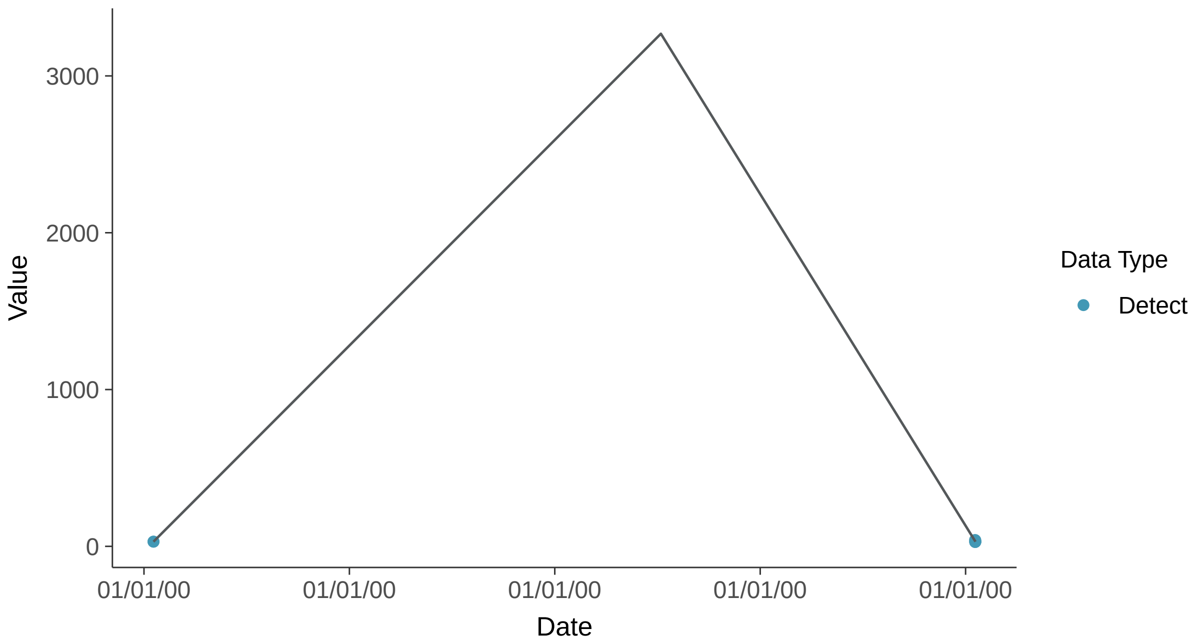
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Sodium, MW-15 (mg/L)



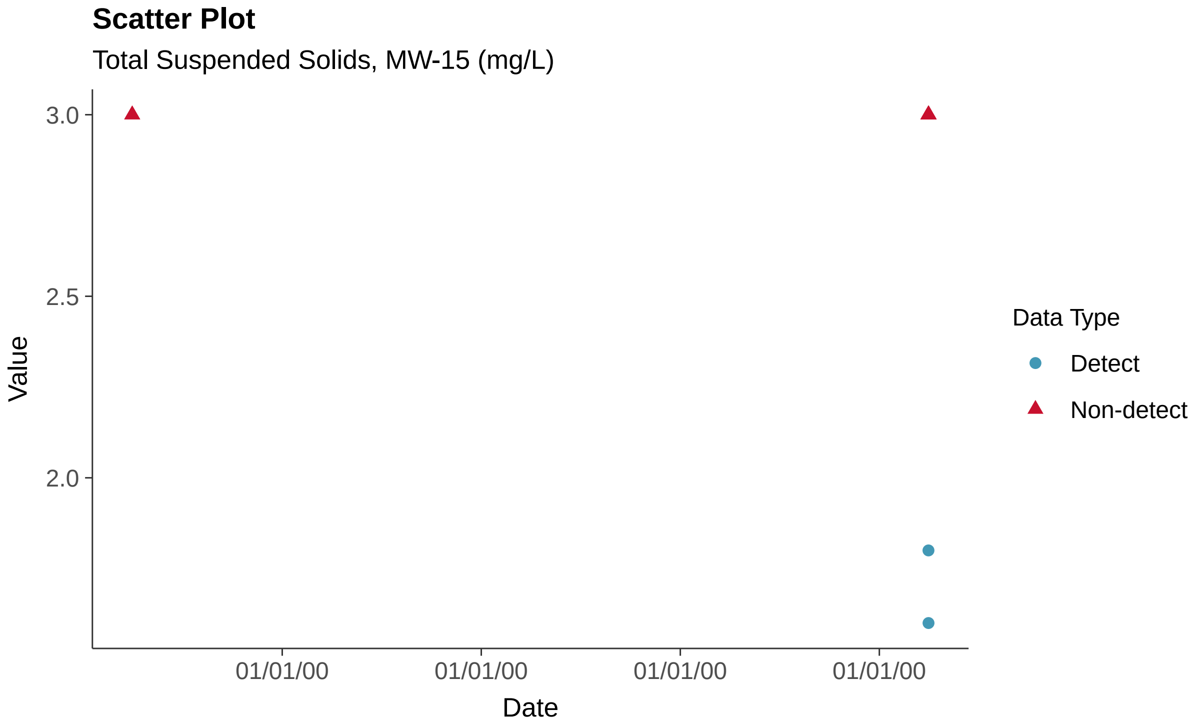
Trend Regression: Piecewise Linear-Linear

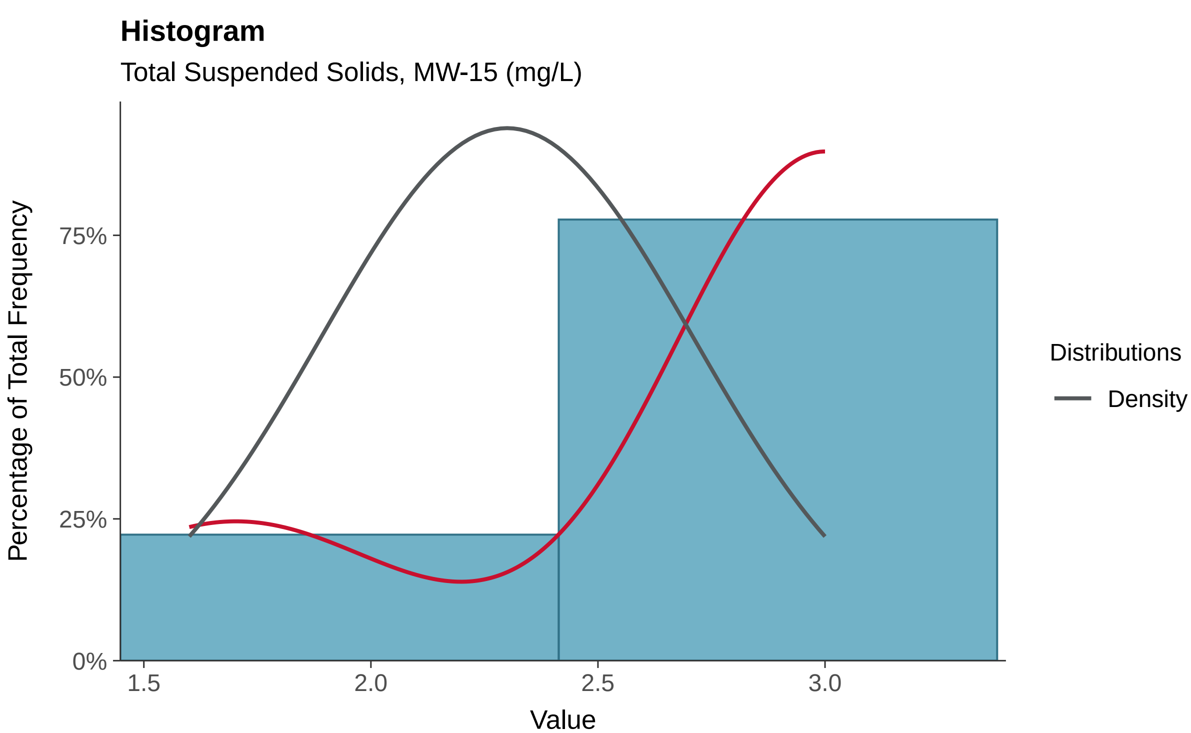
Sodium, MW-15 (mg/L)



Other: Total Suspended Solids, MW-15

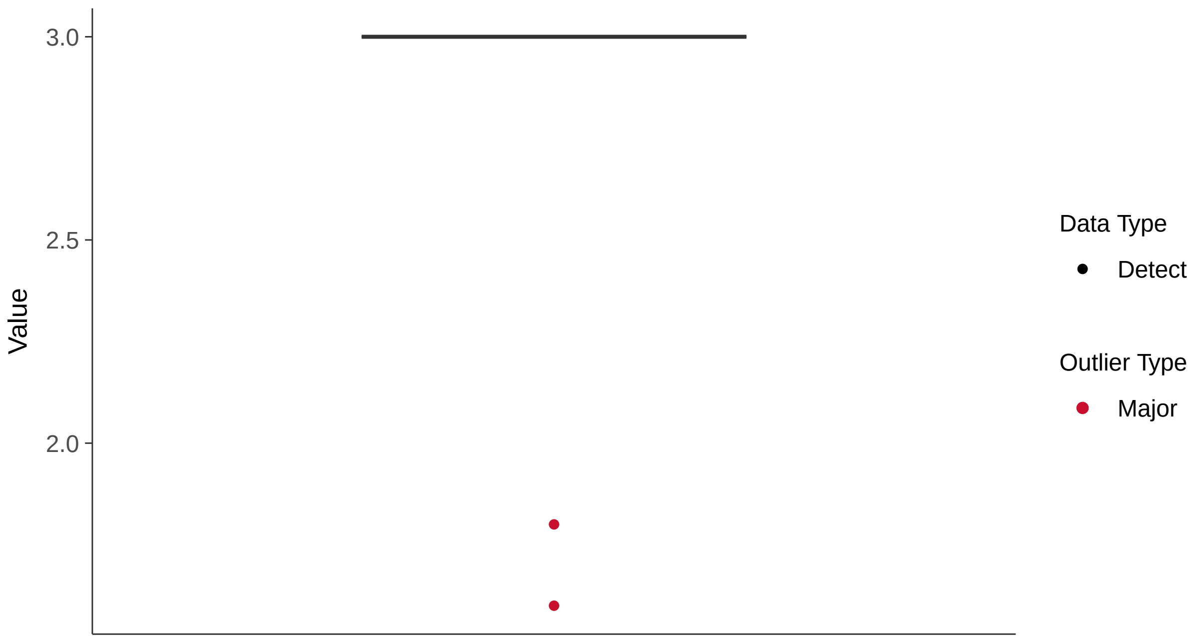
ID: 15_4_36





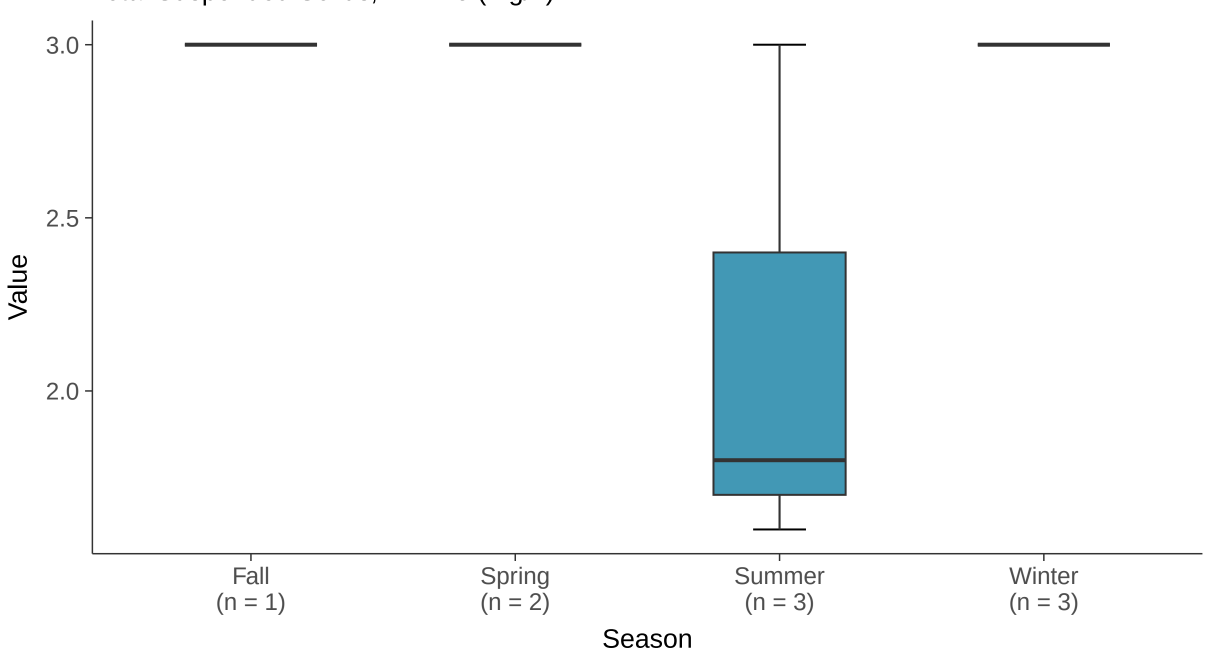
Boxplot

Total Suspended Solids, MW-15 (mg/L)



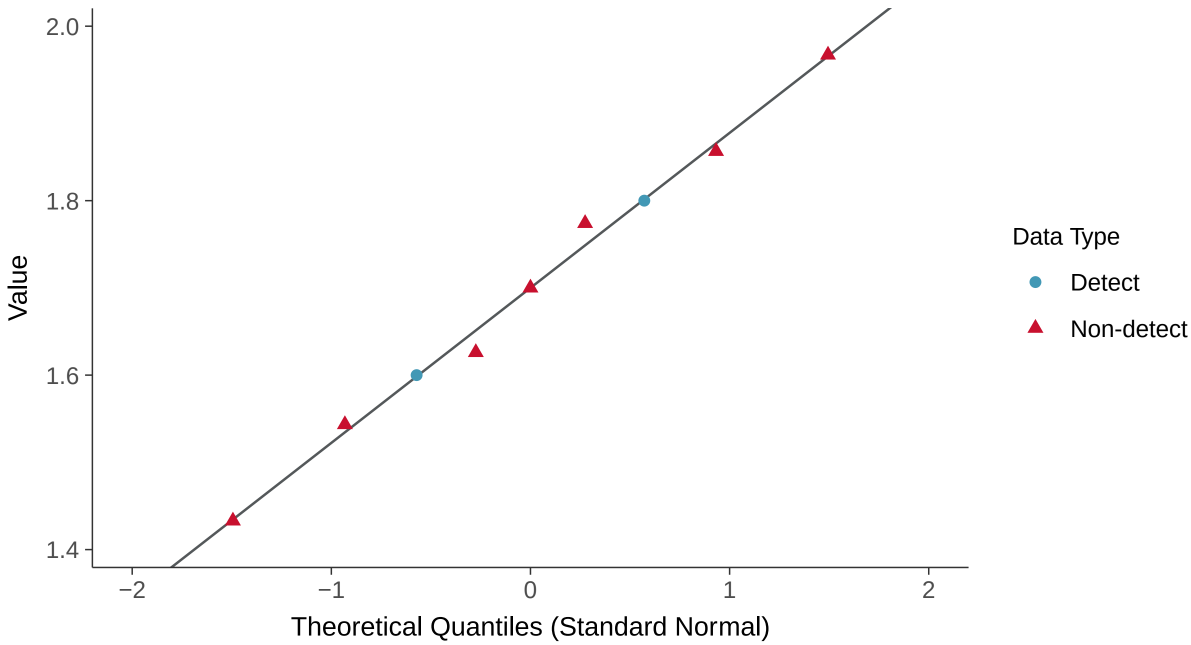
Boxplot by Season

Total Suspended Solids, MW-15 (mg/L)



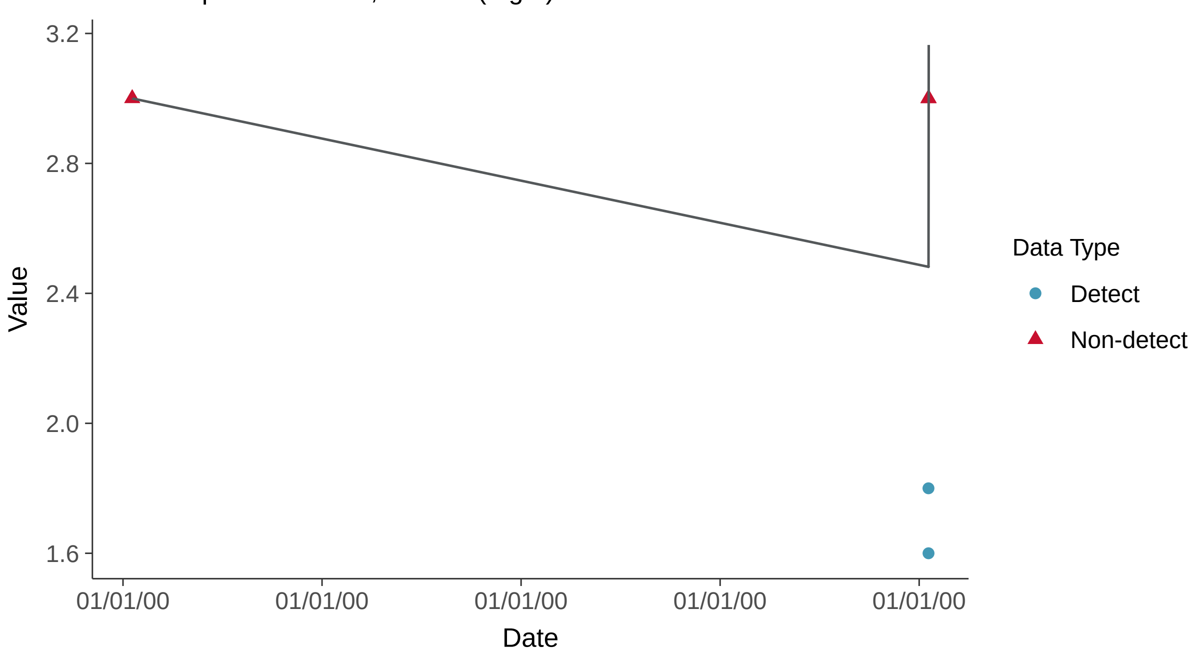
Normal Q-Q plot using ROS Imputed Estimates

Total Suspended Solids, MW-15 (mg/L)



Trend Regression: Piecewise Linear-Linear

Total Suspended Solids, MW-15 (mg/L)

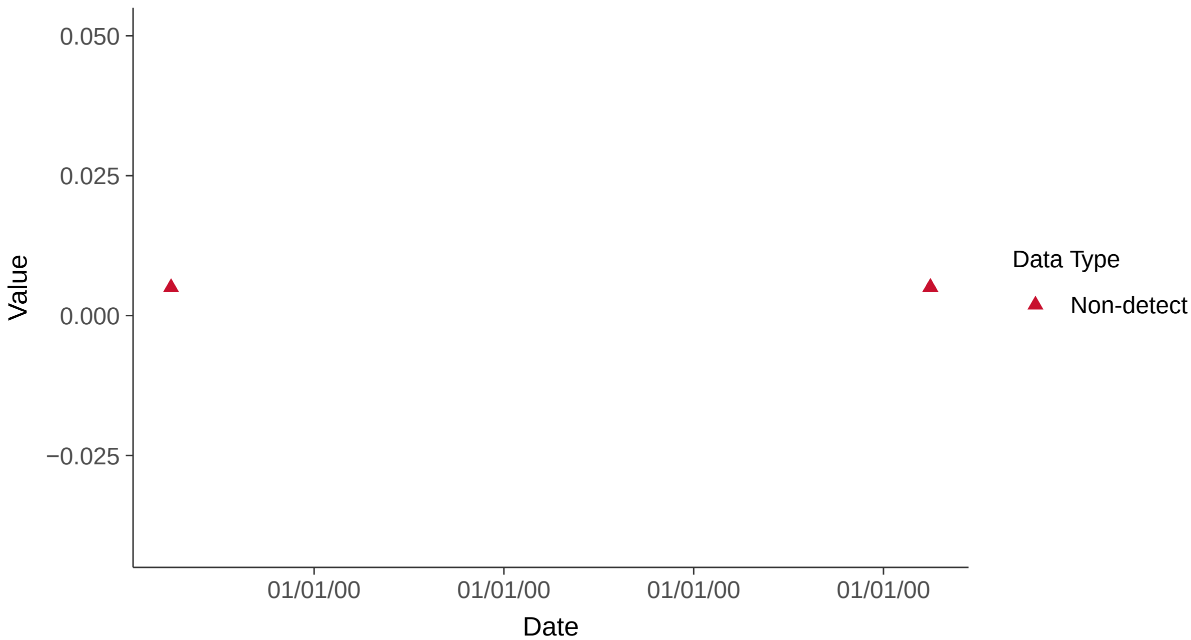


Part 115: Copper, MW-15

ID: 15_5_37

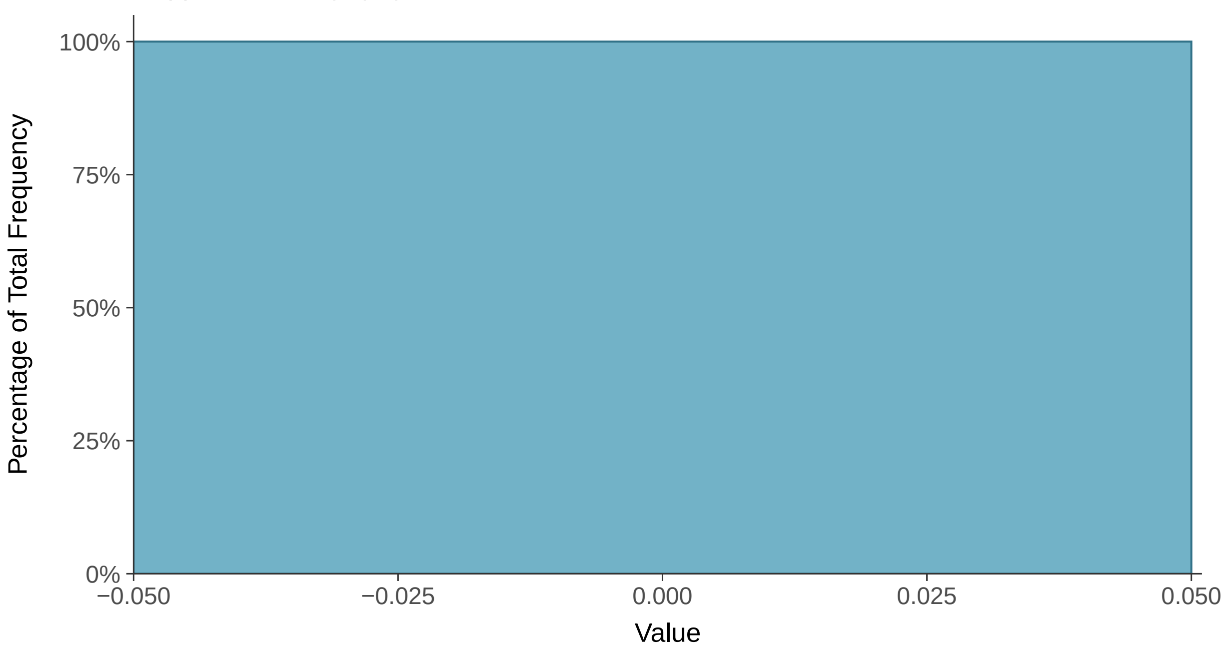
Scatter Plot

Copper, MW-15 (mg/L)



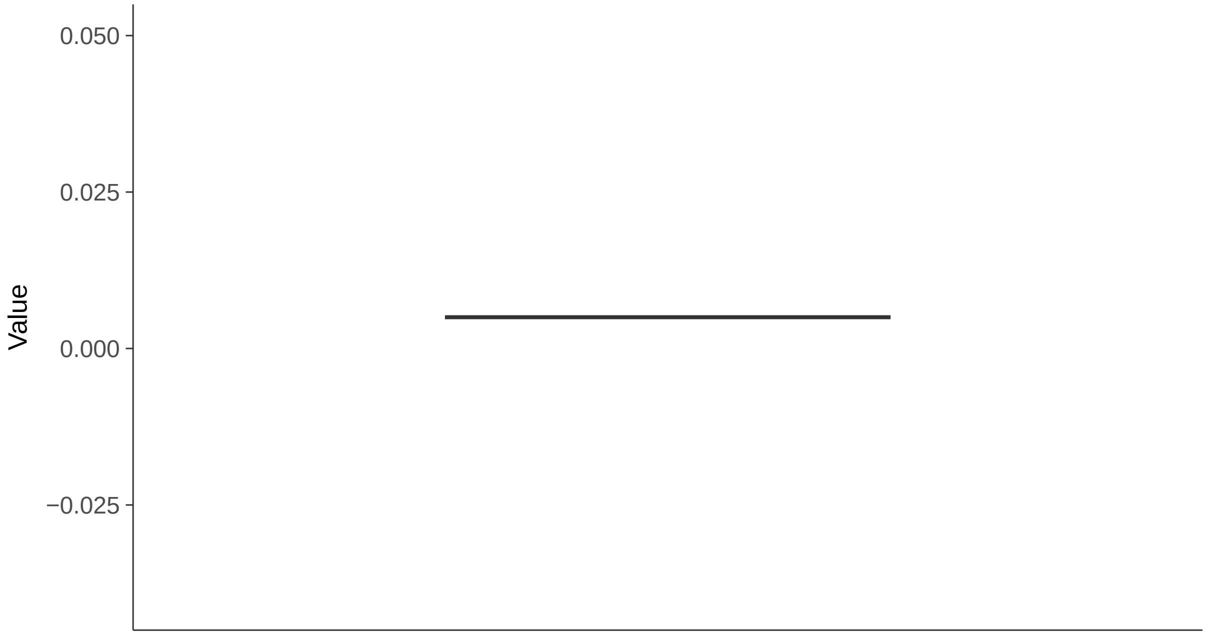
Histogram

Copper, MW-15 (mg/L)



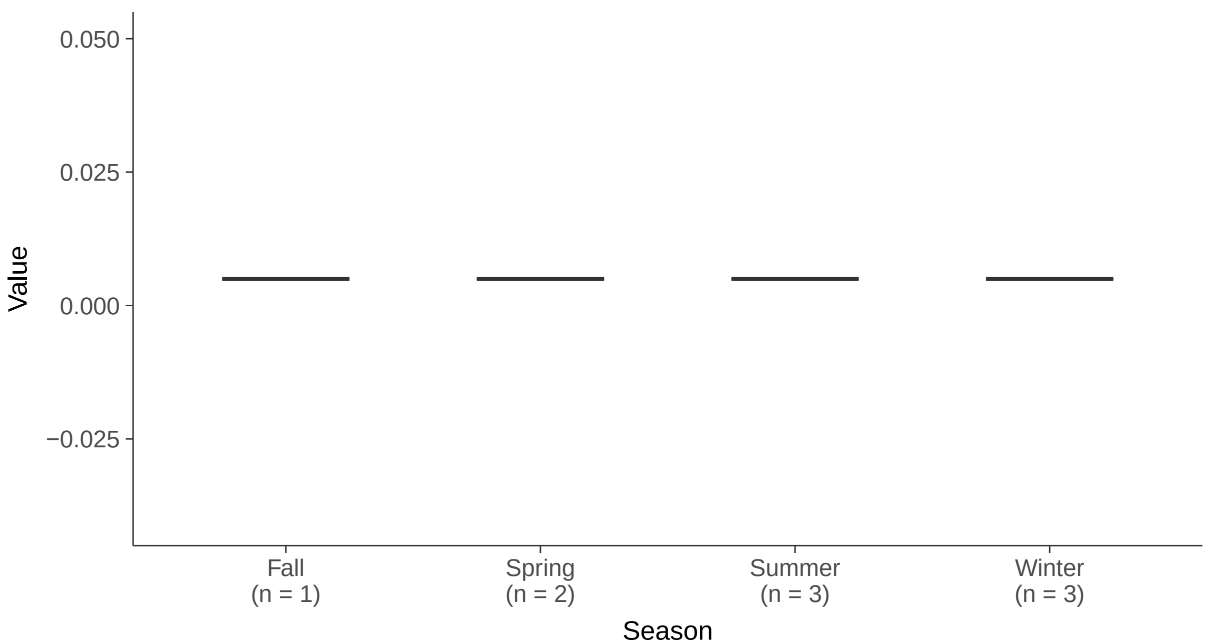
Boxplot

Copper, MW-15 (mg/L)



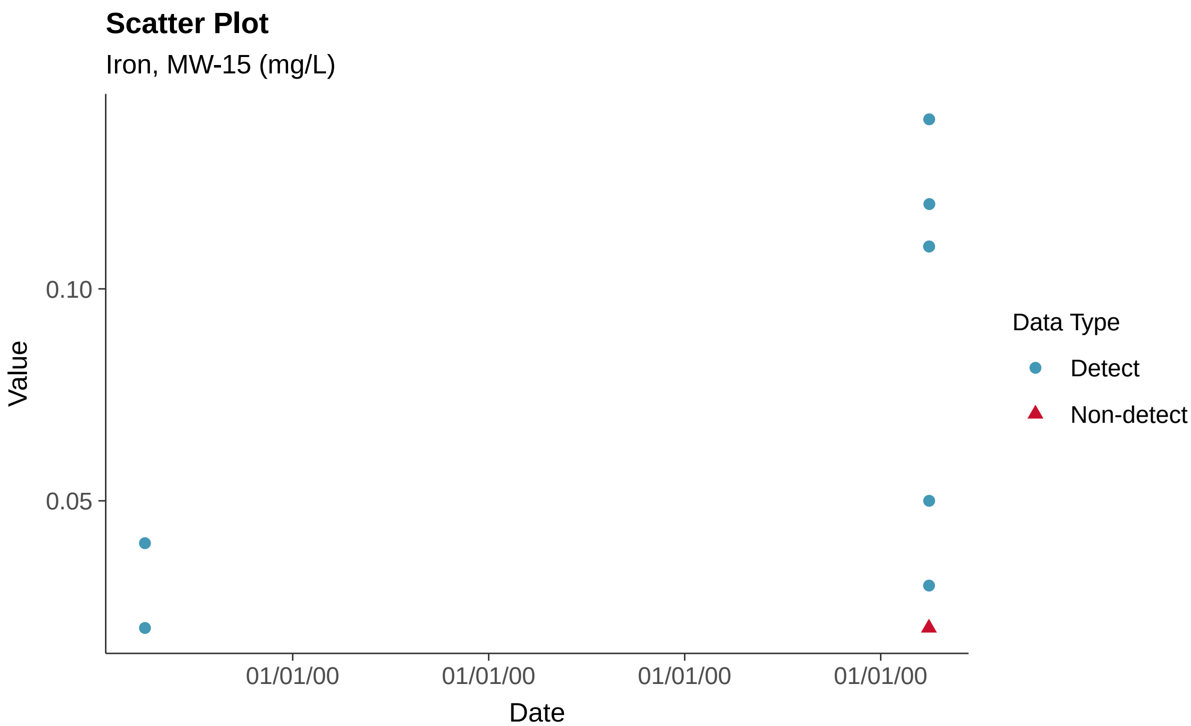
Boxplot by Season

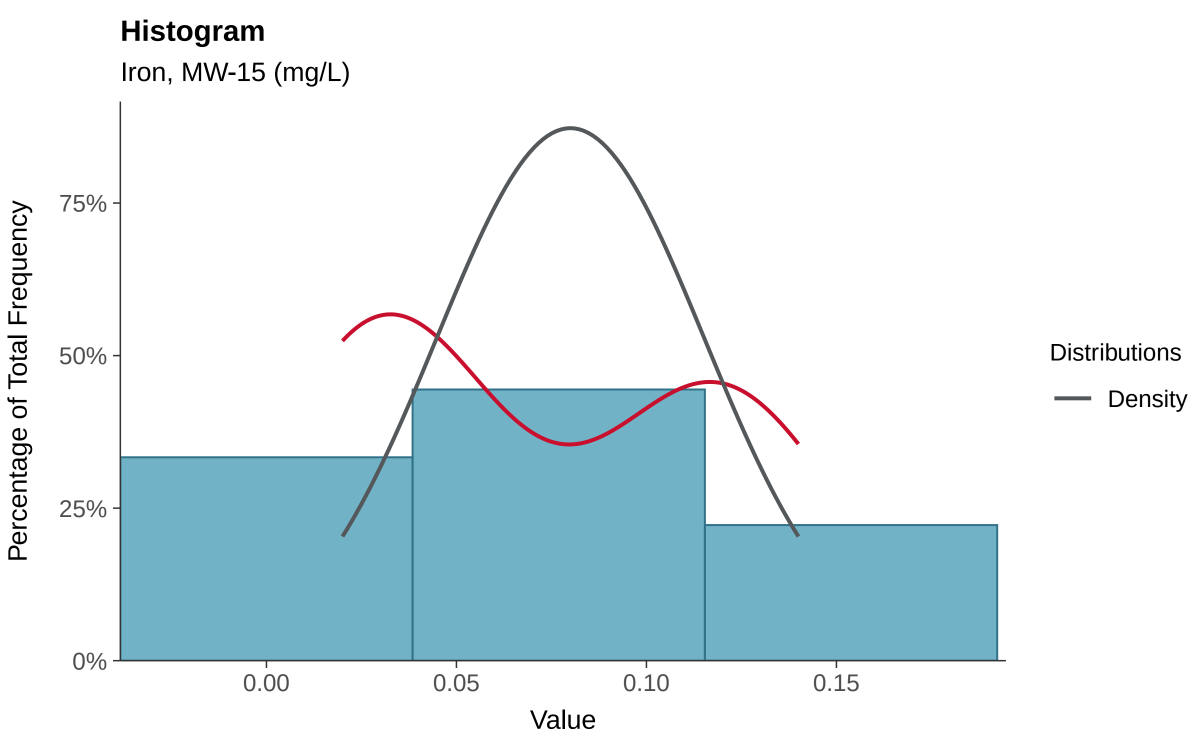
Copper, MW-15 (mg/L)



Part 115: Iron, MW-15

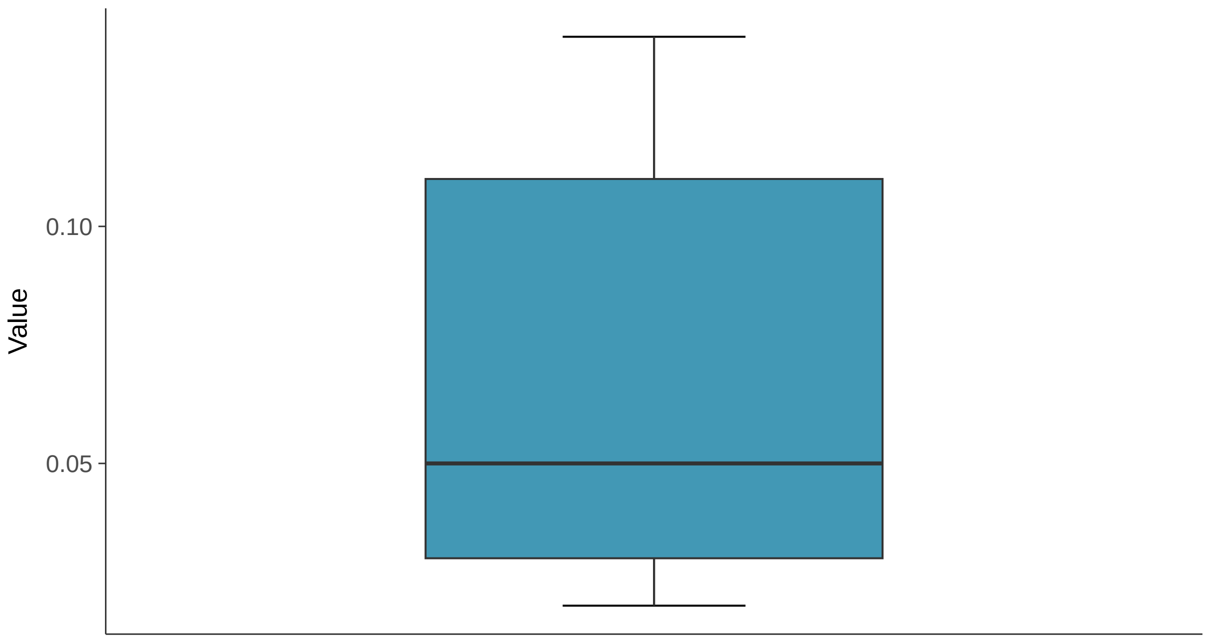
ID: 15_5_38





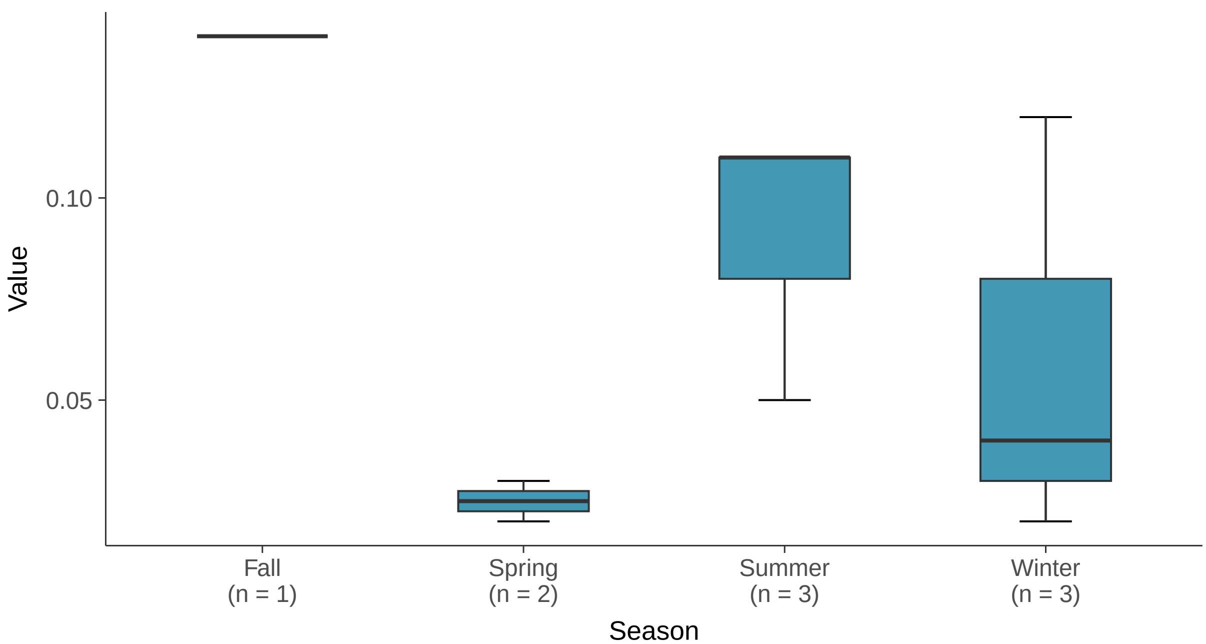
Boxplot

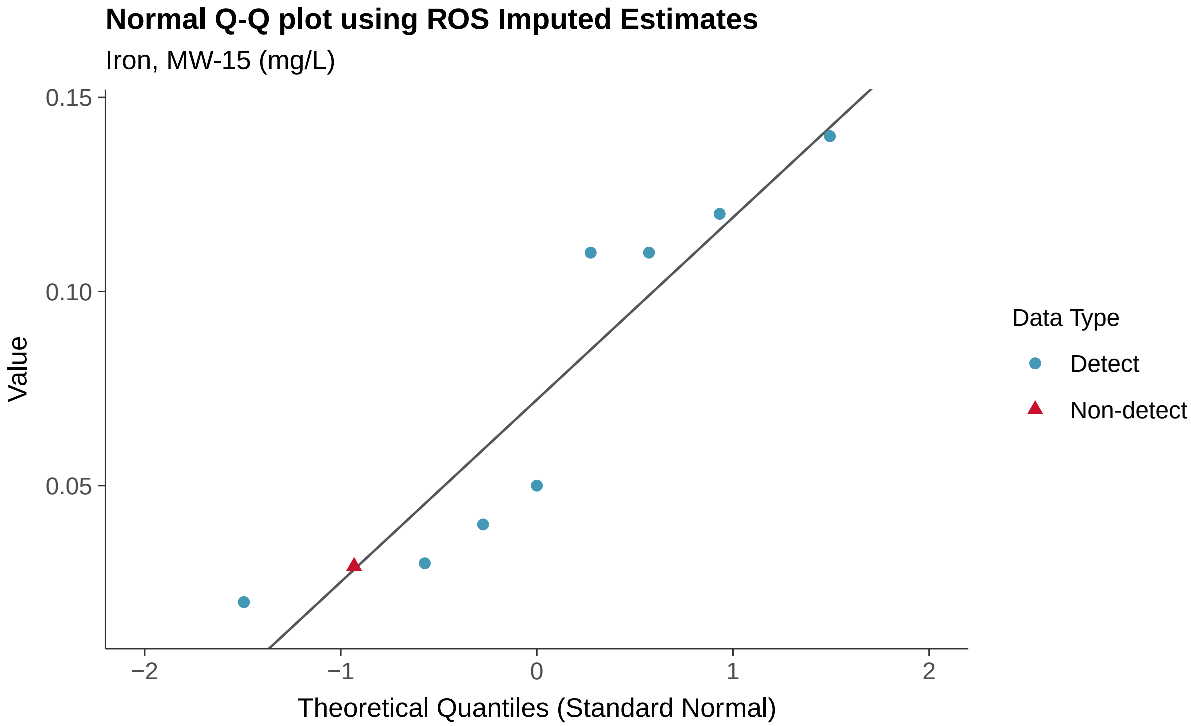
Iron, MW-15 (mg/L)

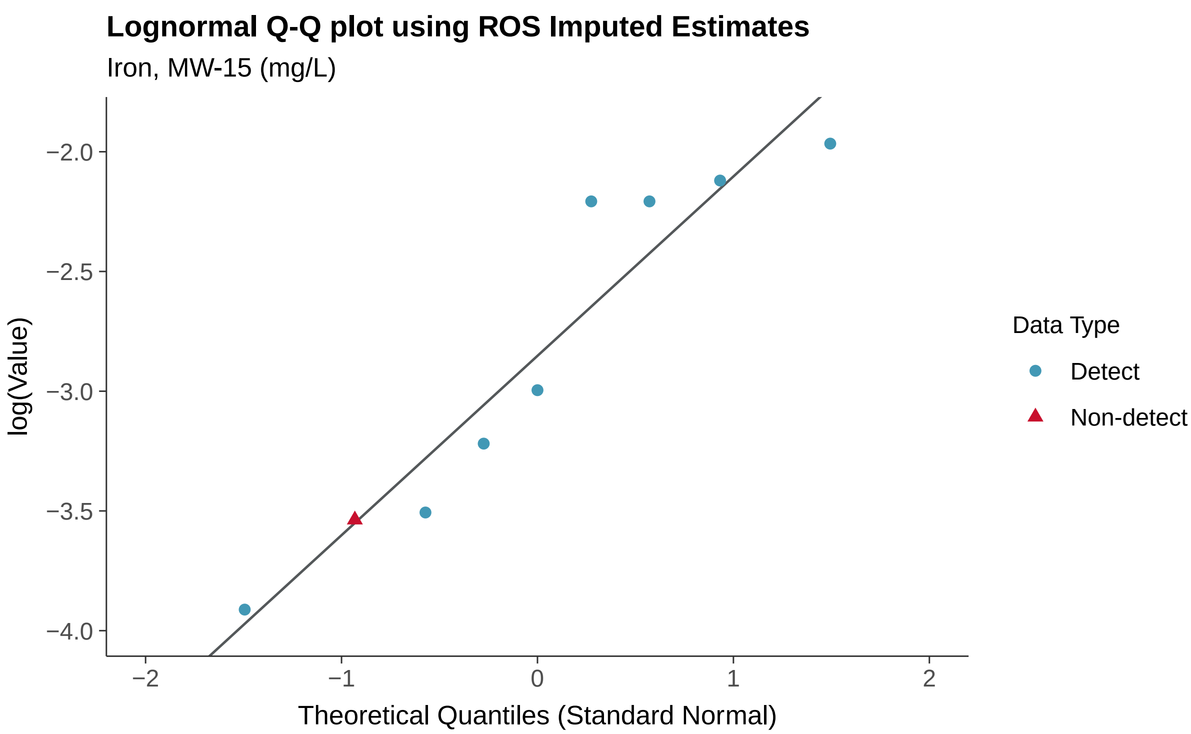


Boxplot by Season

Iron, MW-15 (mg/L)

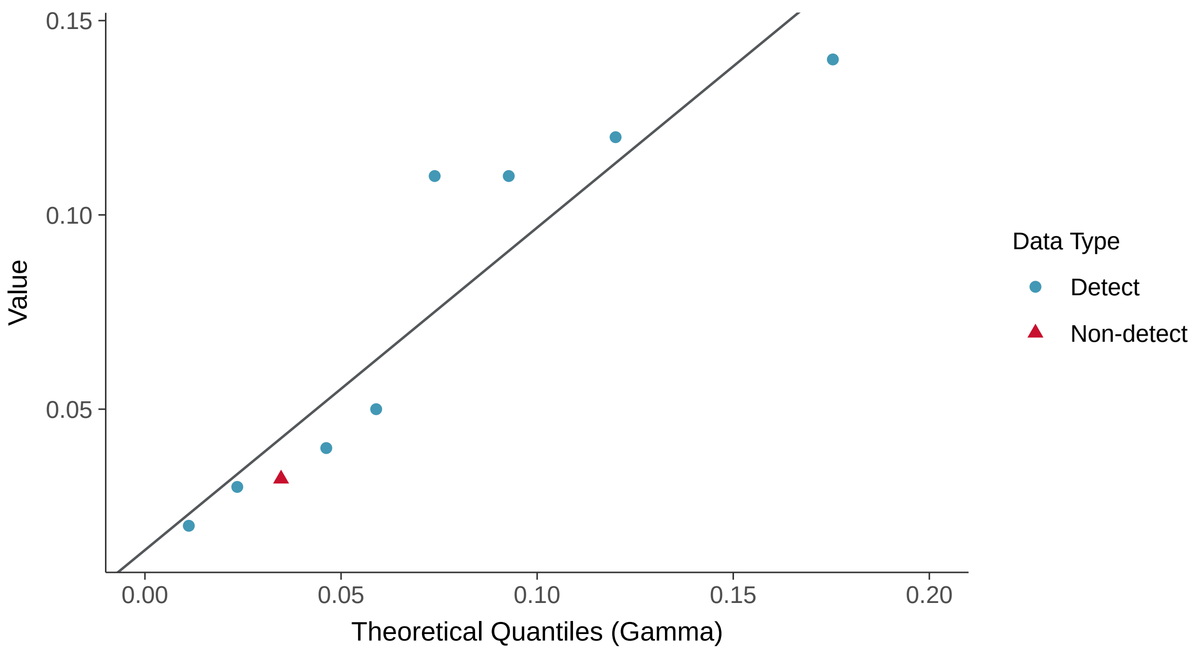



Normal Q-Q plot using ROS Imputed Estimates
Iron, MW-15 (mg/L)
0.15
0.10
0.05
Value
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Iron, MW-15 (mg/L)
−2.0
−2.5
−3.0
−3.5
−4.0
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

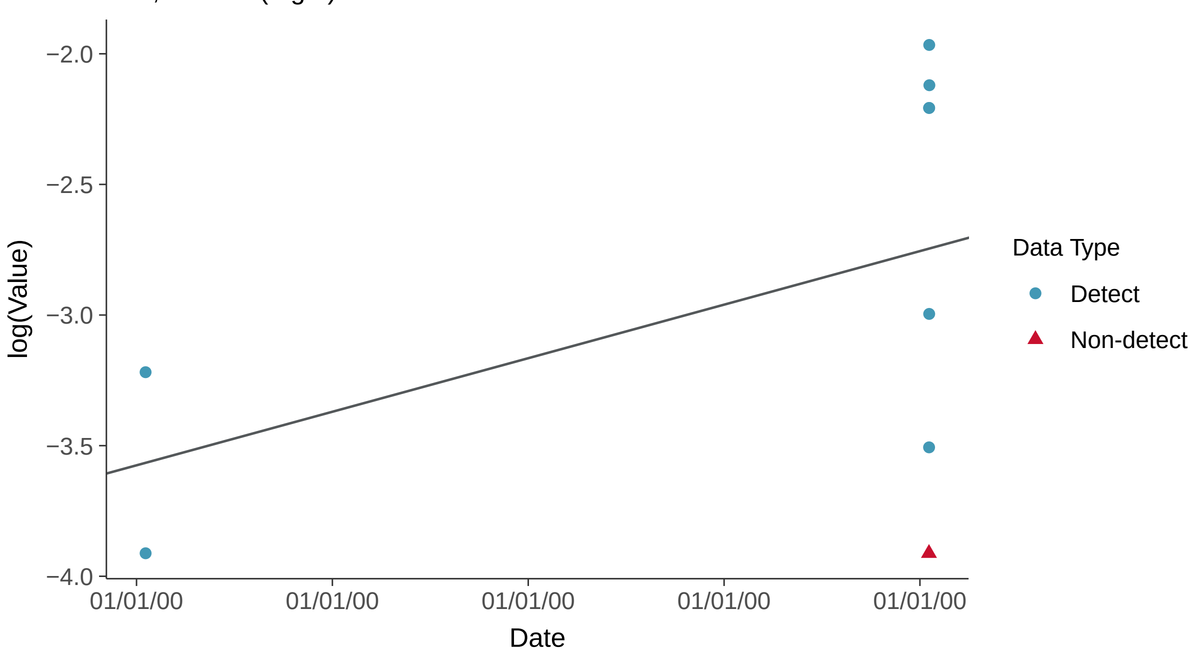
Gamma Q-Q plot using ROS Imputed Estimates

Iron, MW-15 (mg/L)



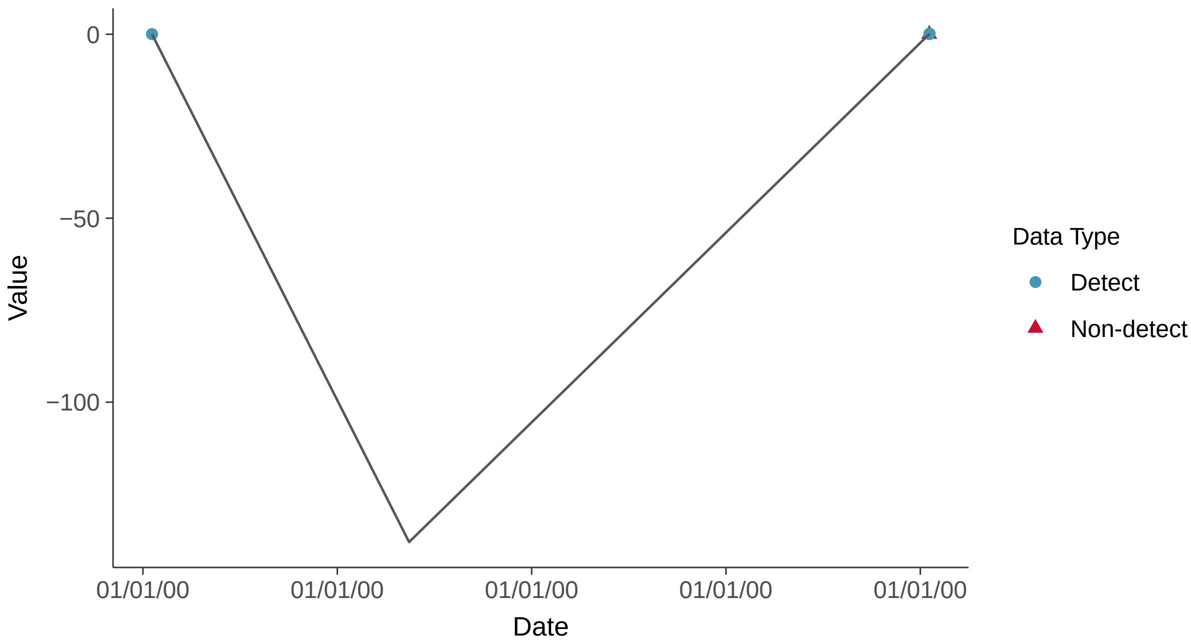
Trend Regression: Lognormal MLE

Iron, MW-15 (mg/L)



Trend Regression: Piecewise Linear-Linear

Iron, MW-15 (mg/L)

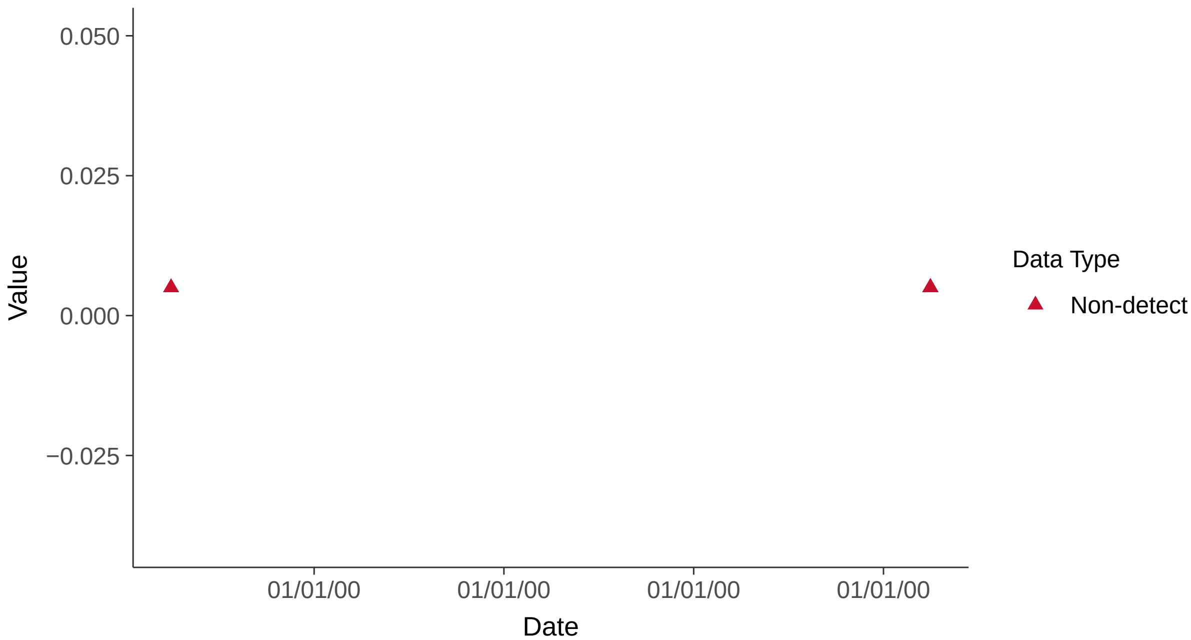


Part 115: Nickel, MW-15

ID: 15_5_39

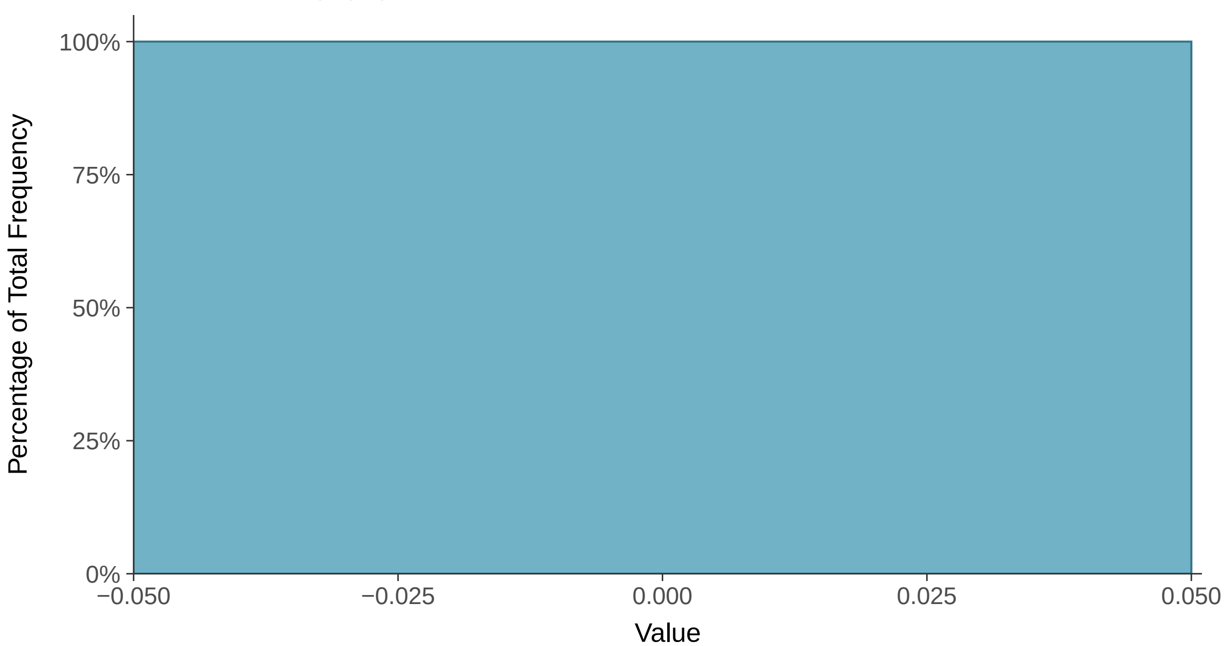
Scatter Plot

Nickel, MW-15 (mg/L)



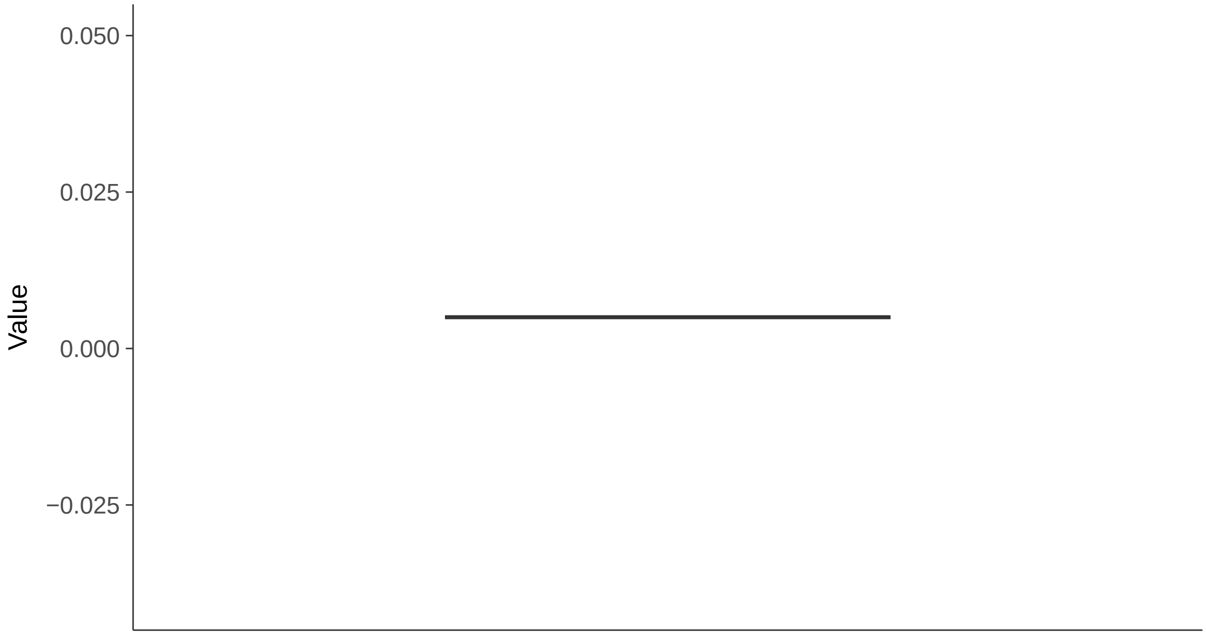
Histogram

Nickel, MW-15 (mg/L)



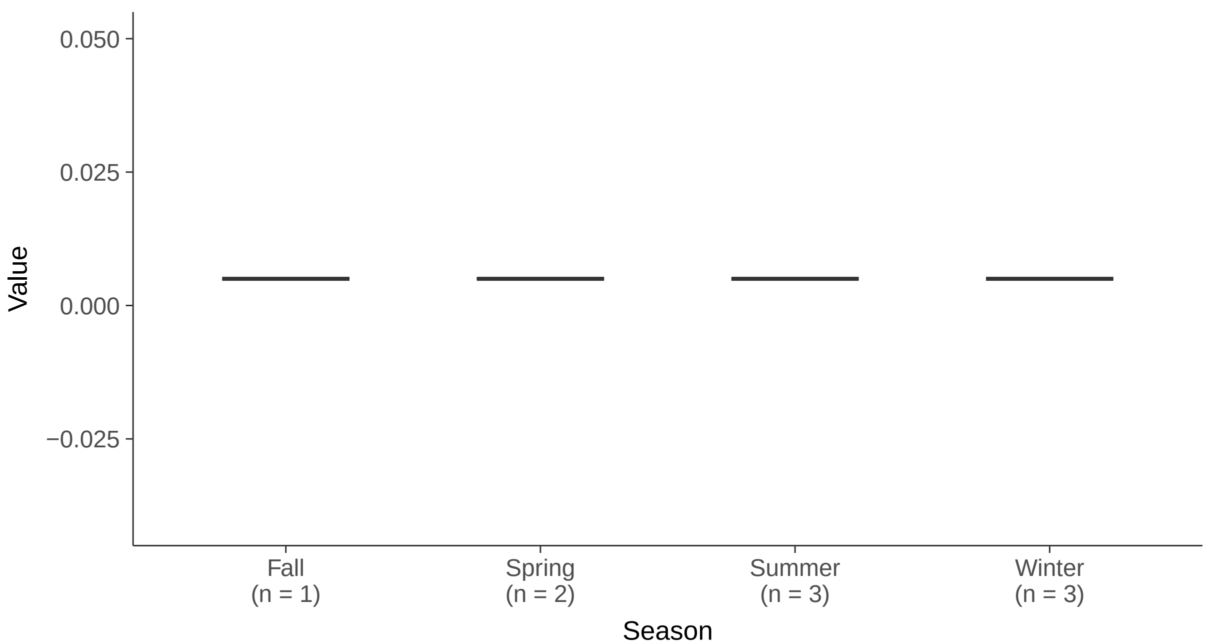
Boxplot

Nickel, MW-15 (mg/L)



Boxplot by Season

Nickel, MW-15 (mg/L)

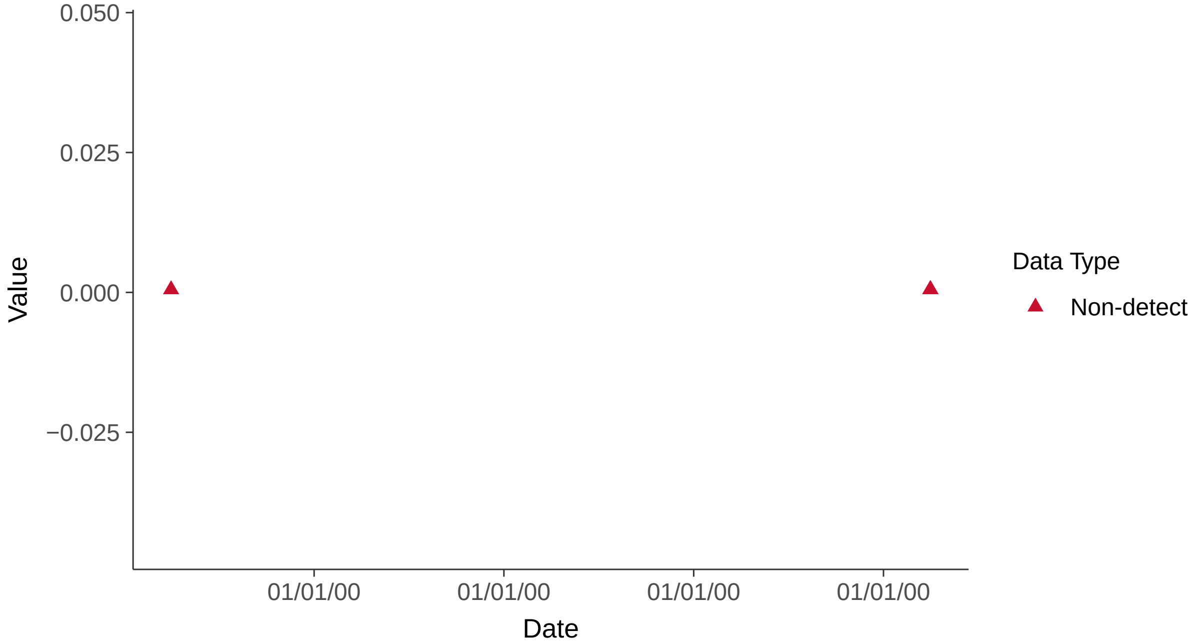


Part 115: Silver, MW-15

ID: 15_5_40

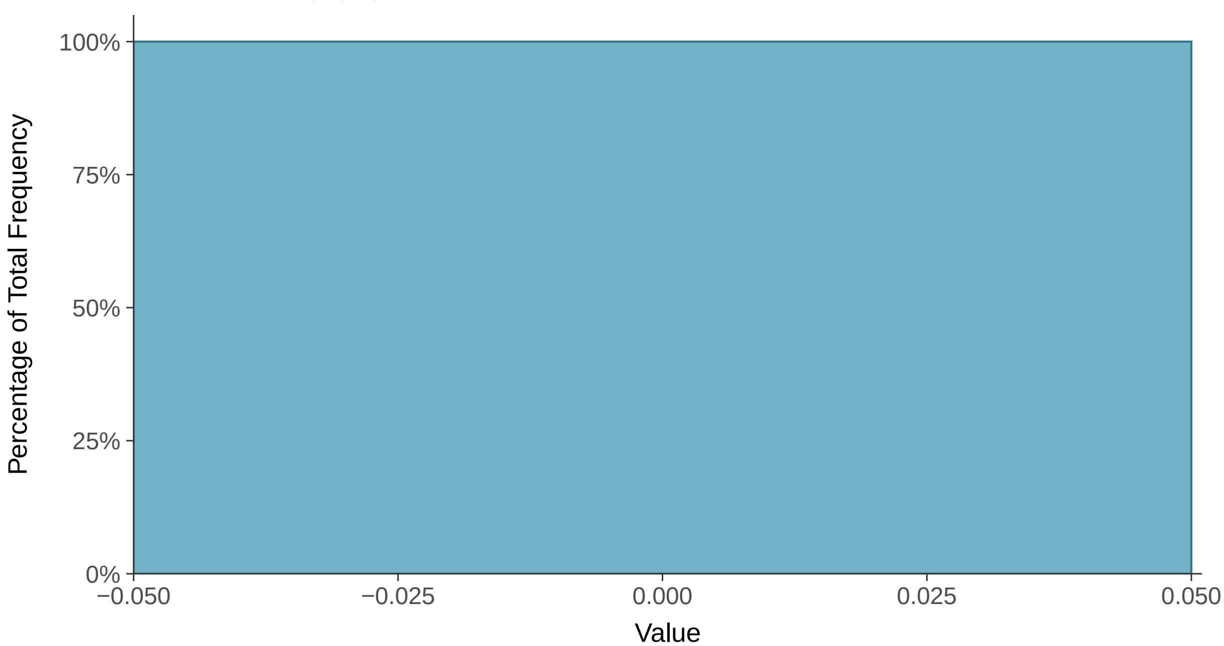
Scatter Plot

Silver, MW-15 (mg/L)



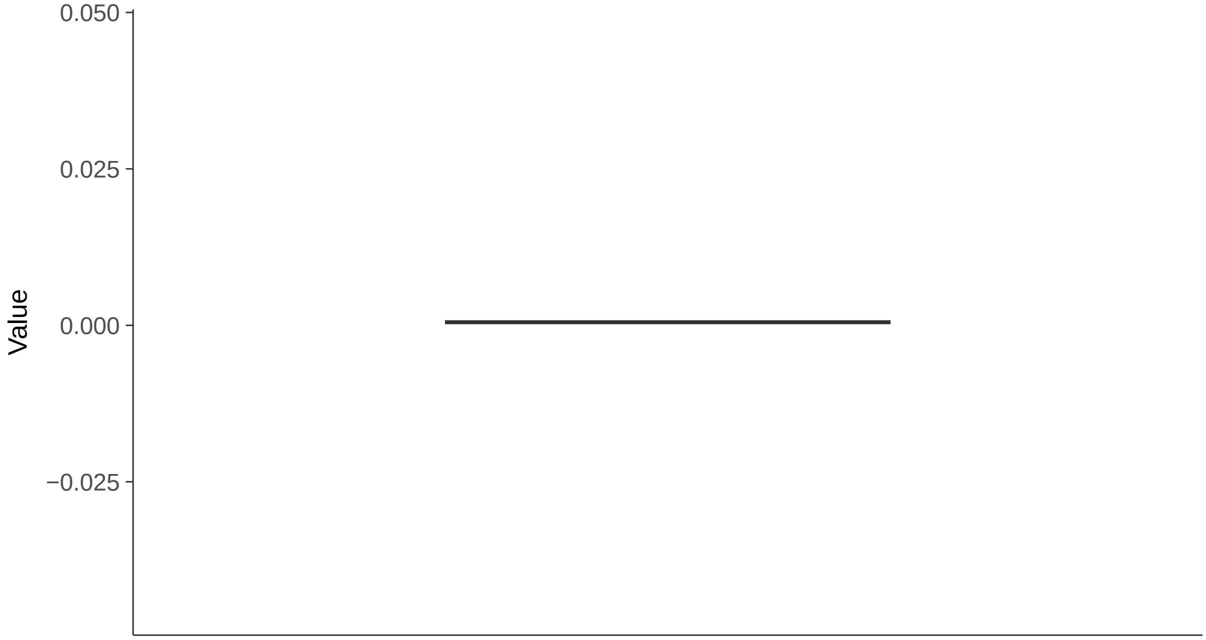
Histogram

Silver, MW-15 (mg/L)



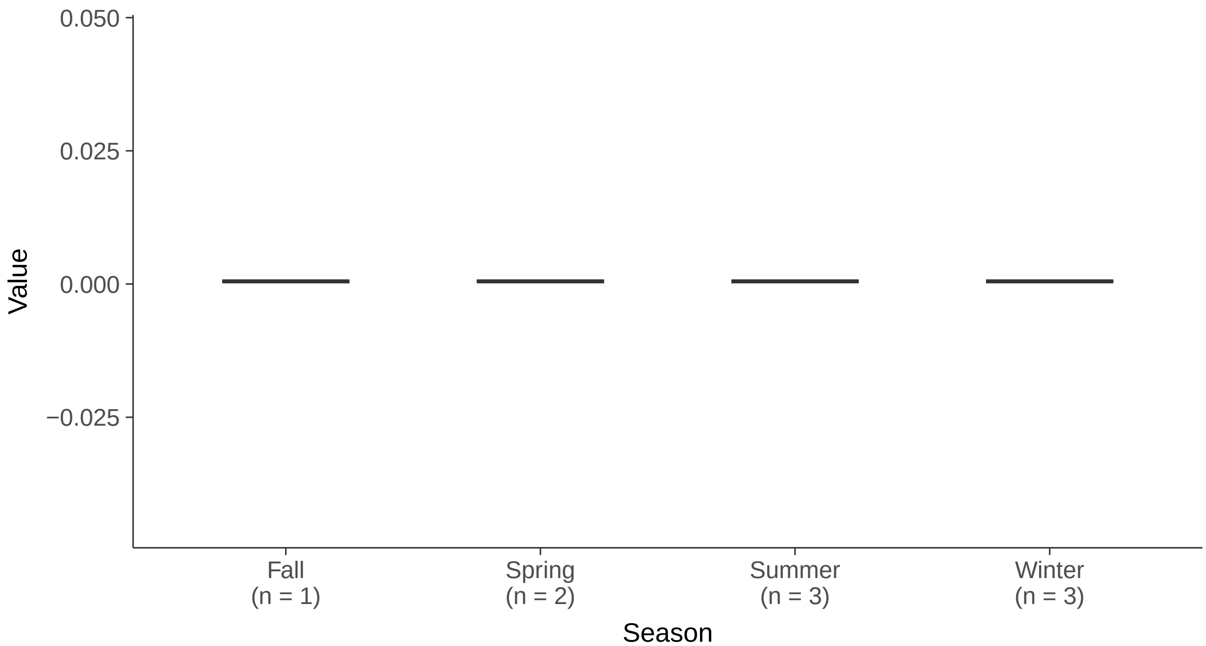
Boxplot

Silver, MW-15 (mg/L)



Boxplot by Season

Silver, MW-15 (mg/L)

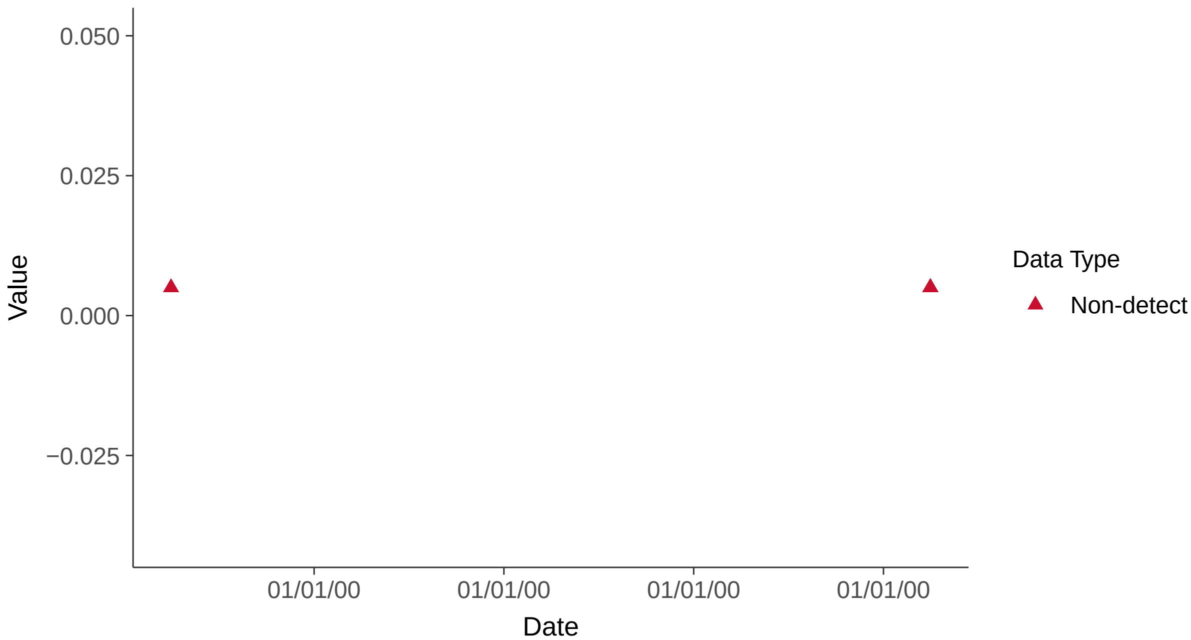


Part 115: Vanadium, MW-15

ID: 15_5_41

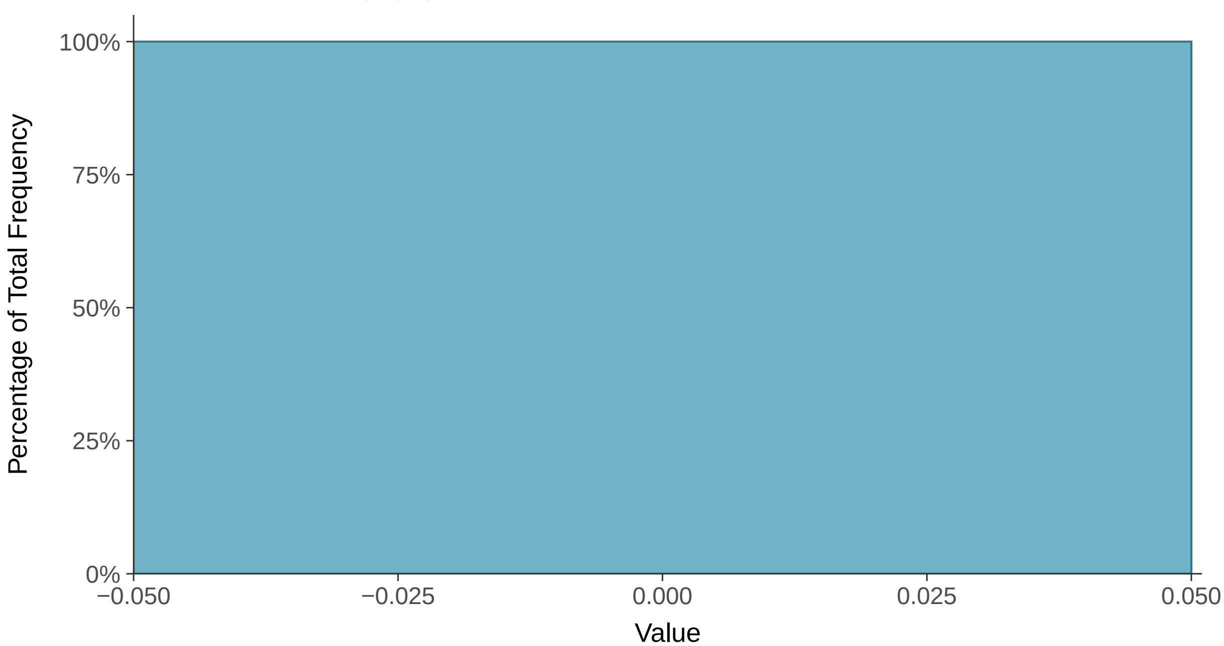
Scatter Plot

Vanadium, MW-15 (mg/L)



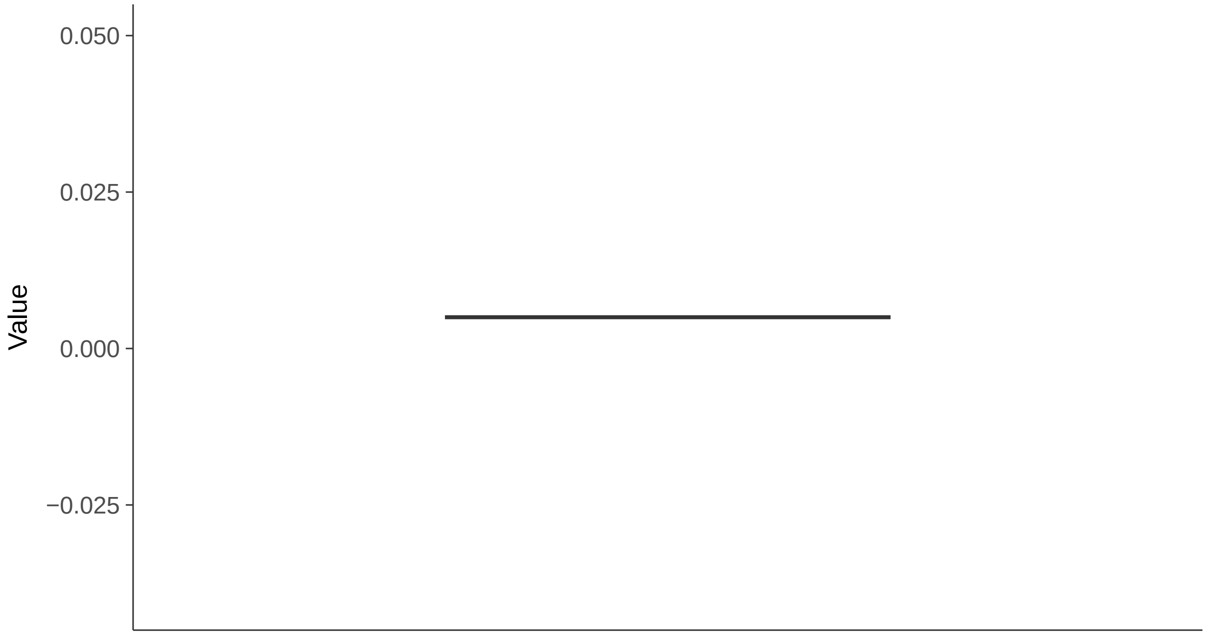
Histogram

Vanadium, MW-15 (mg/L)



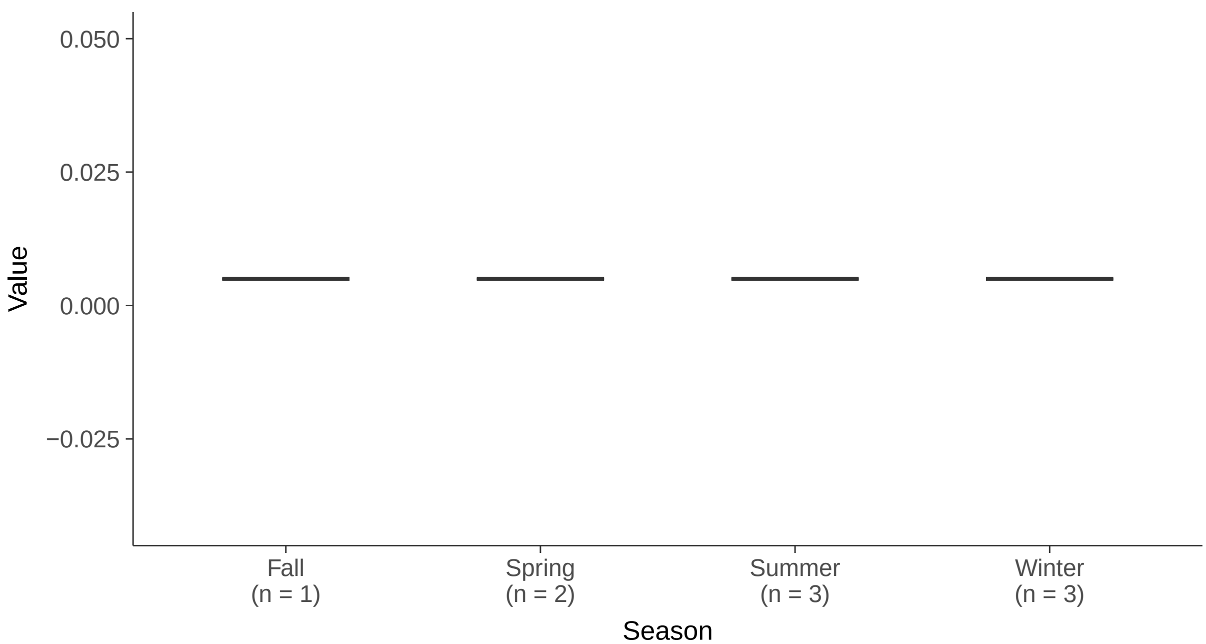
Boxplot

Vanadium, MW-15 (mg/L)



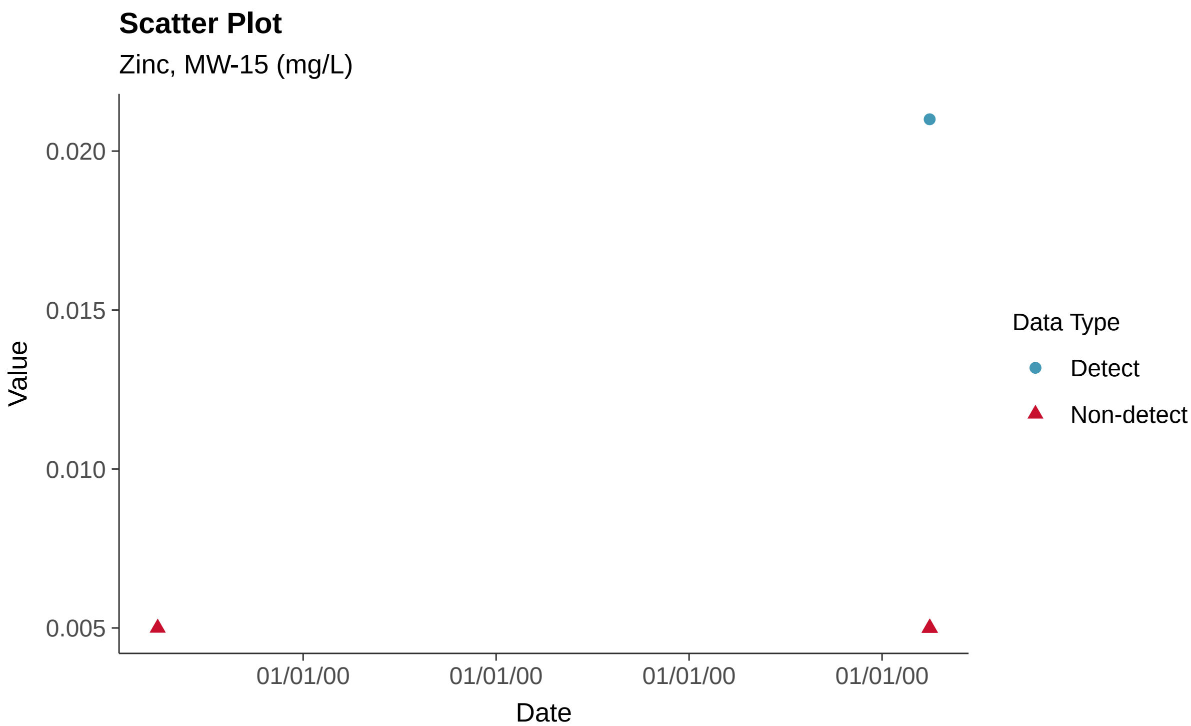
Boxplot by Season

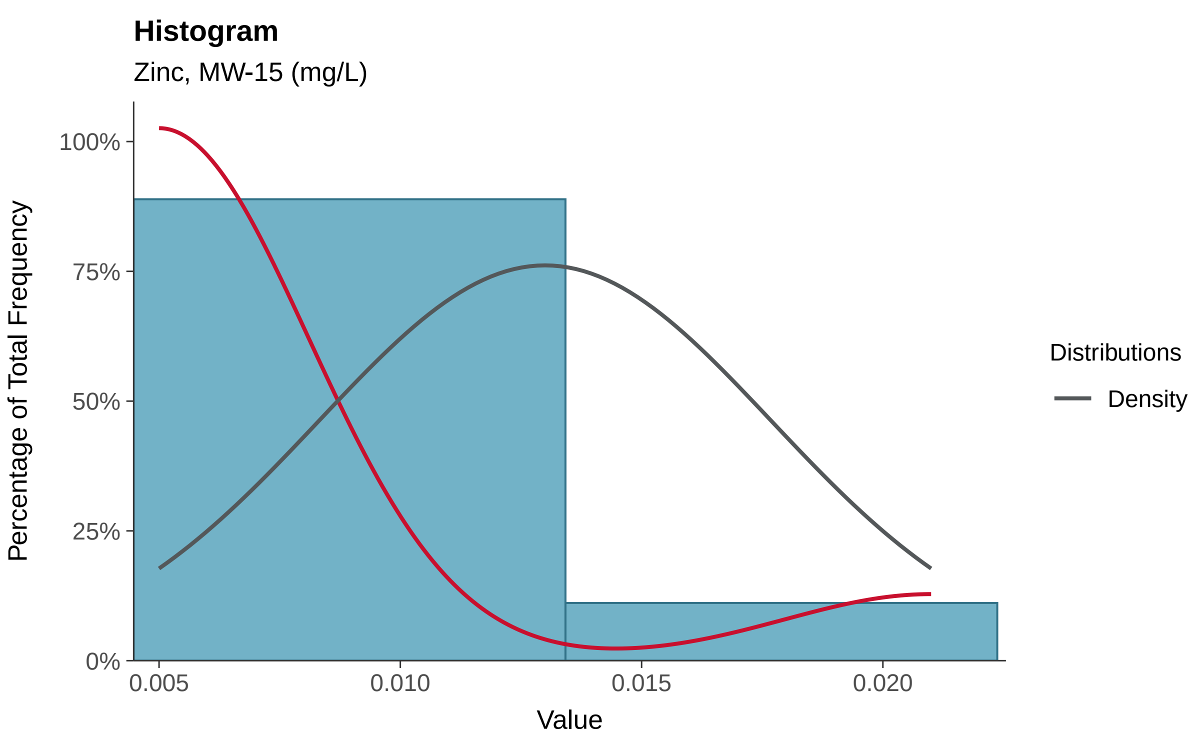
Vanadium, MW-15 (mg/L)



Part 115: Zinc, MW-15

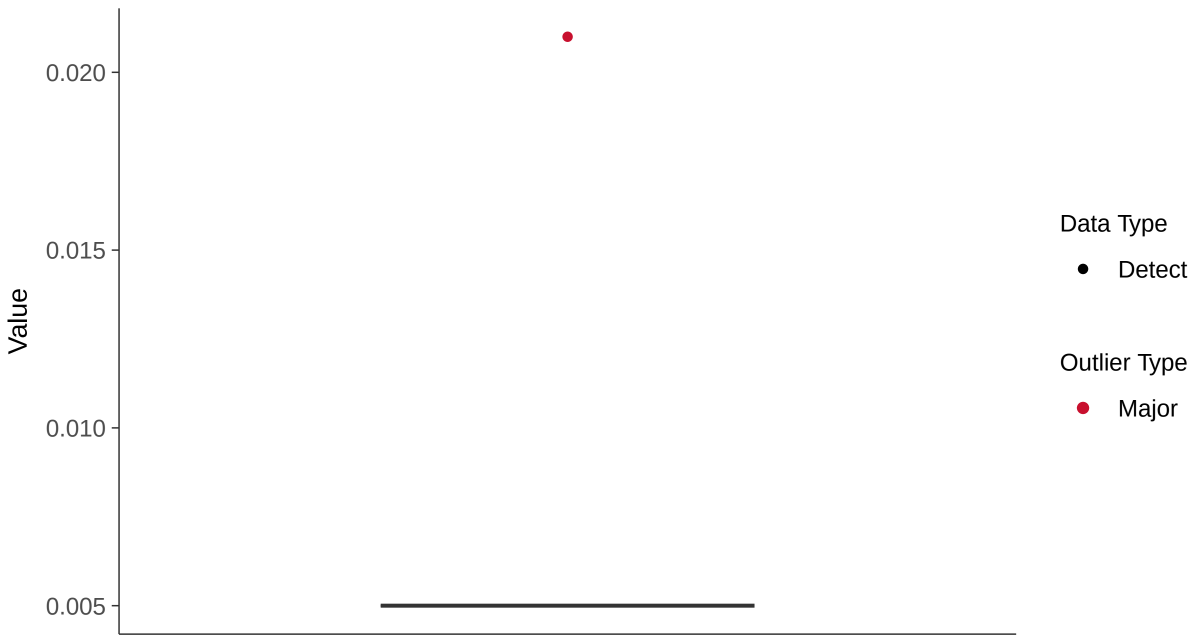
ID: 15_5_42





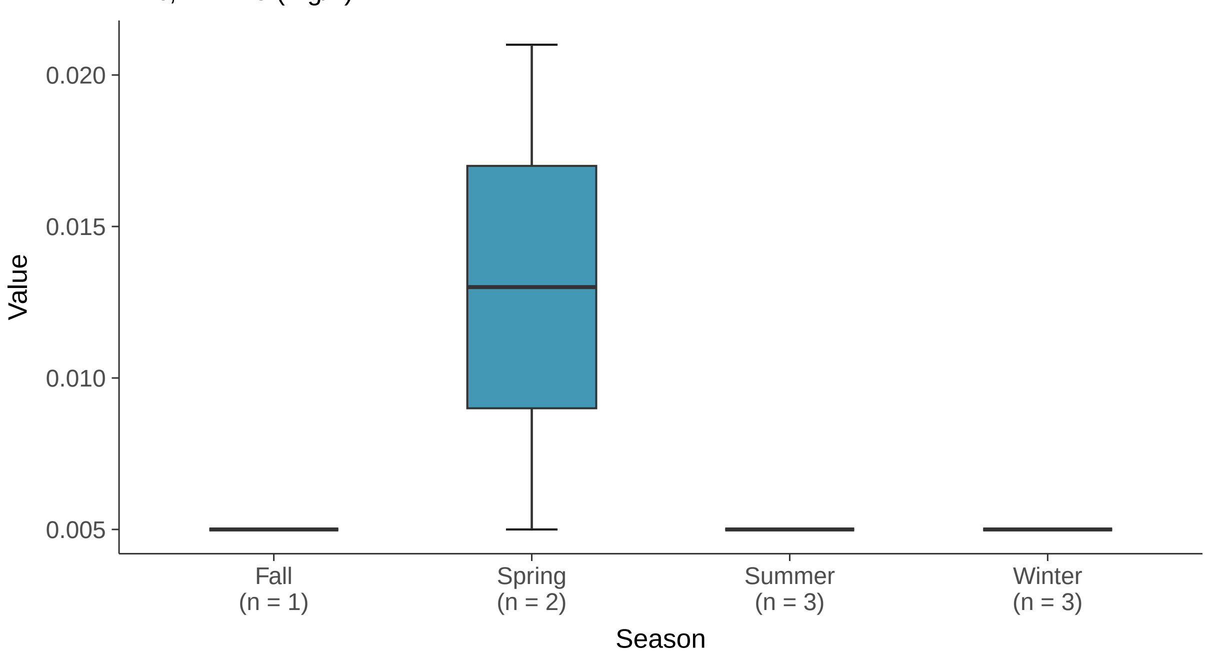
Boxplot

Zinc, MW-15 (mg/L)



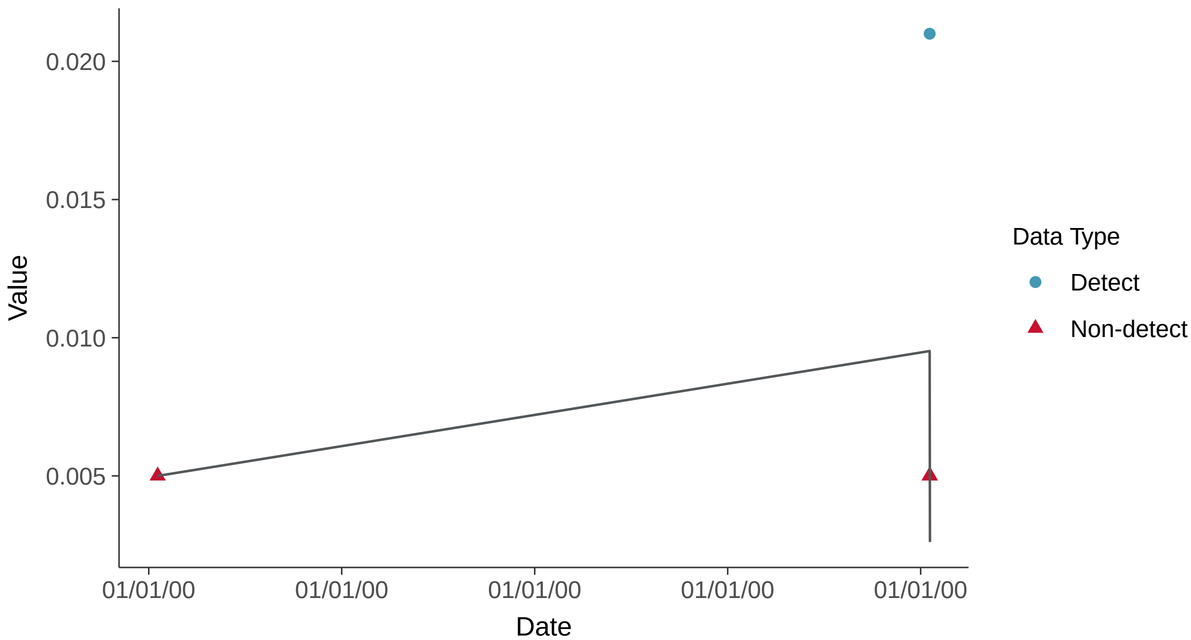
Boxplot by Season

Zinc, MW-15 (mg/L)



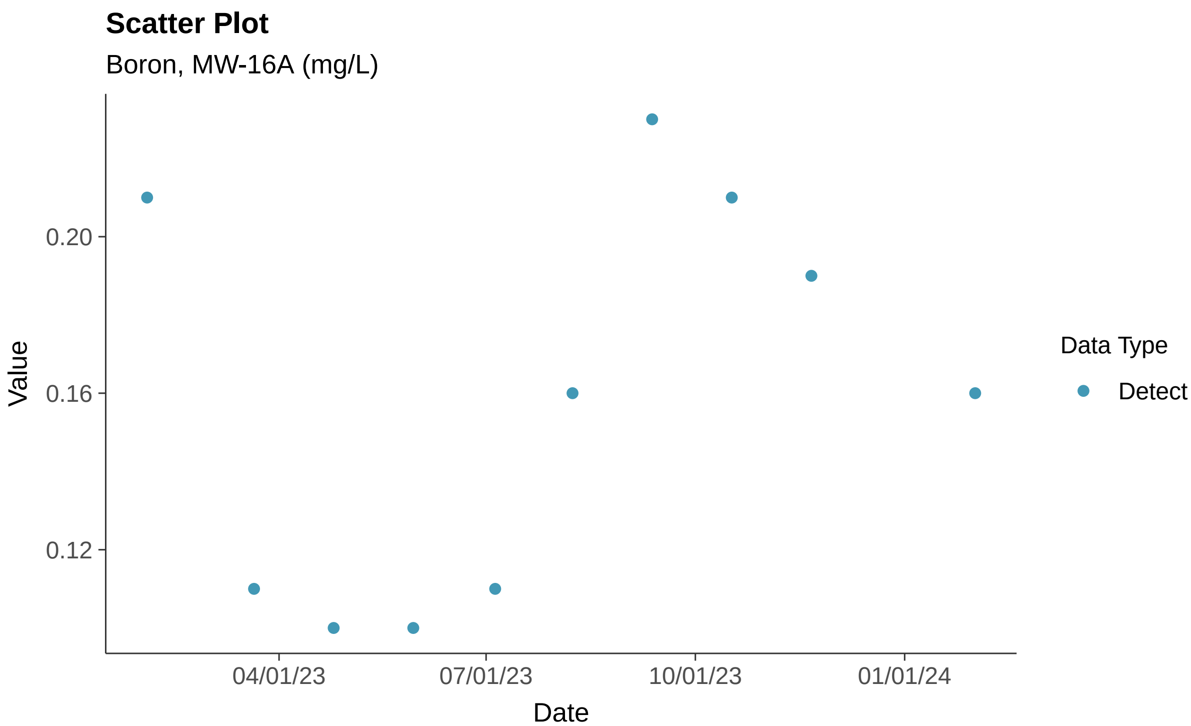
Trend Regression: Piecewise Linear-Linear

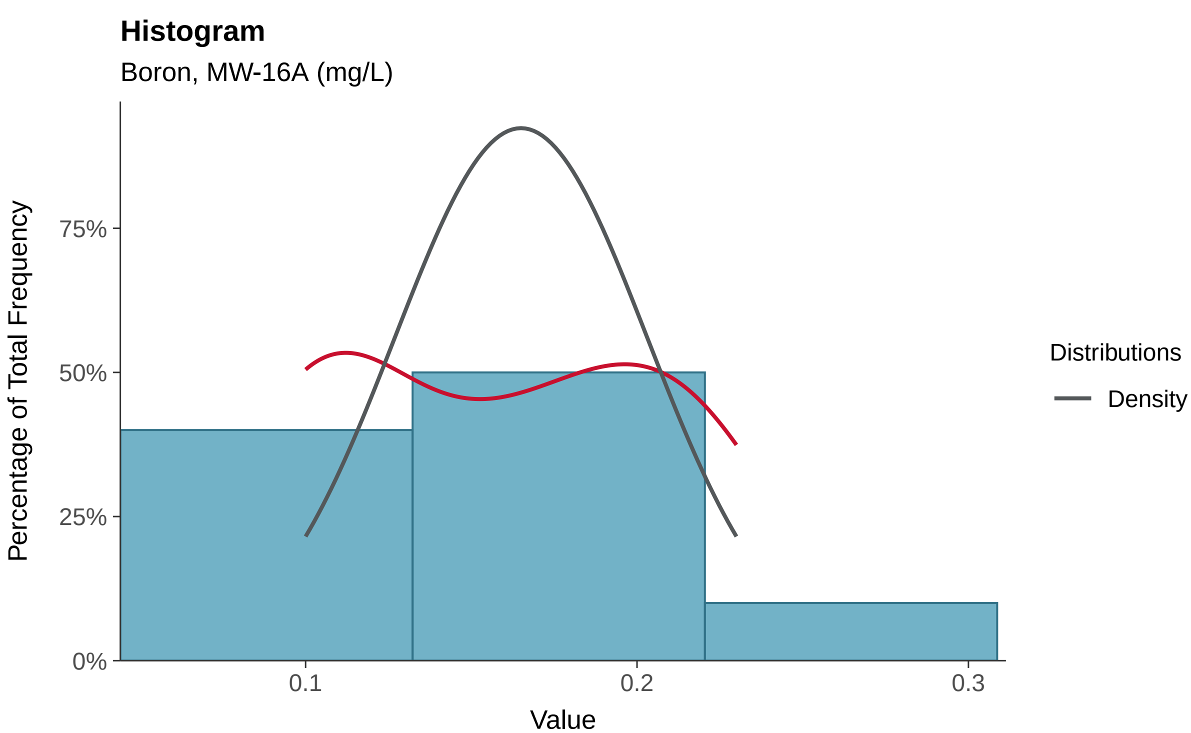
Zinc, MW-15 (mg/L)



Appendix III: Boron, MW-16A

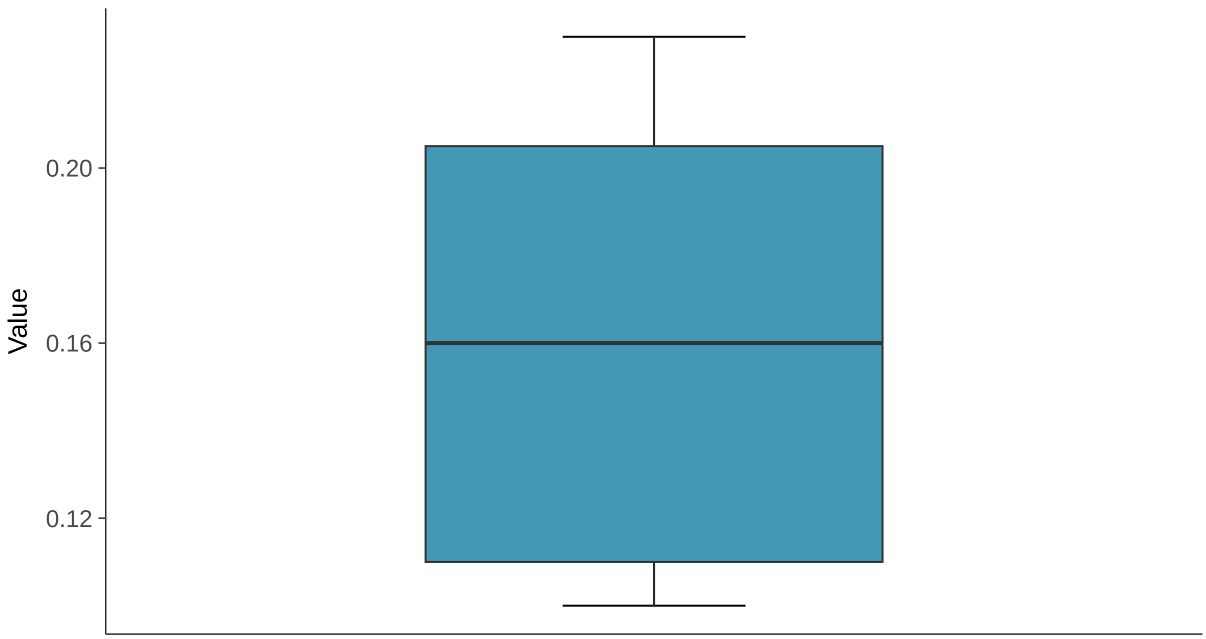
ID: 16A_1_01





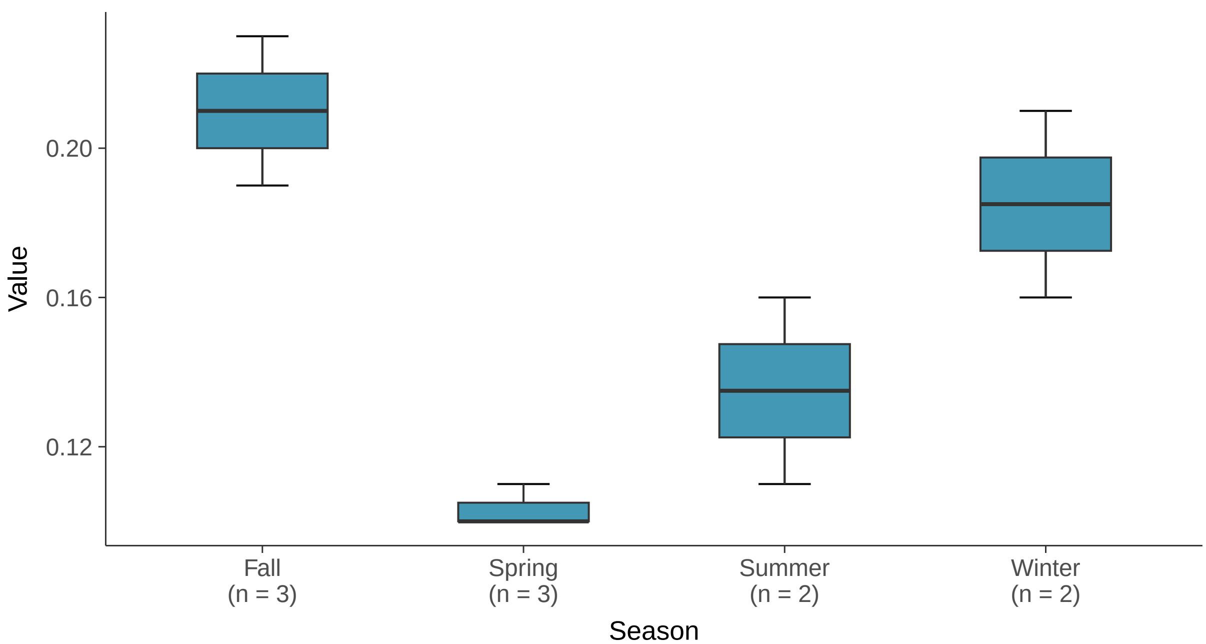
Boxplot

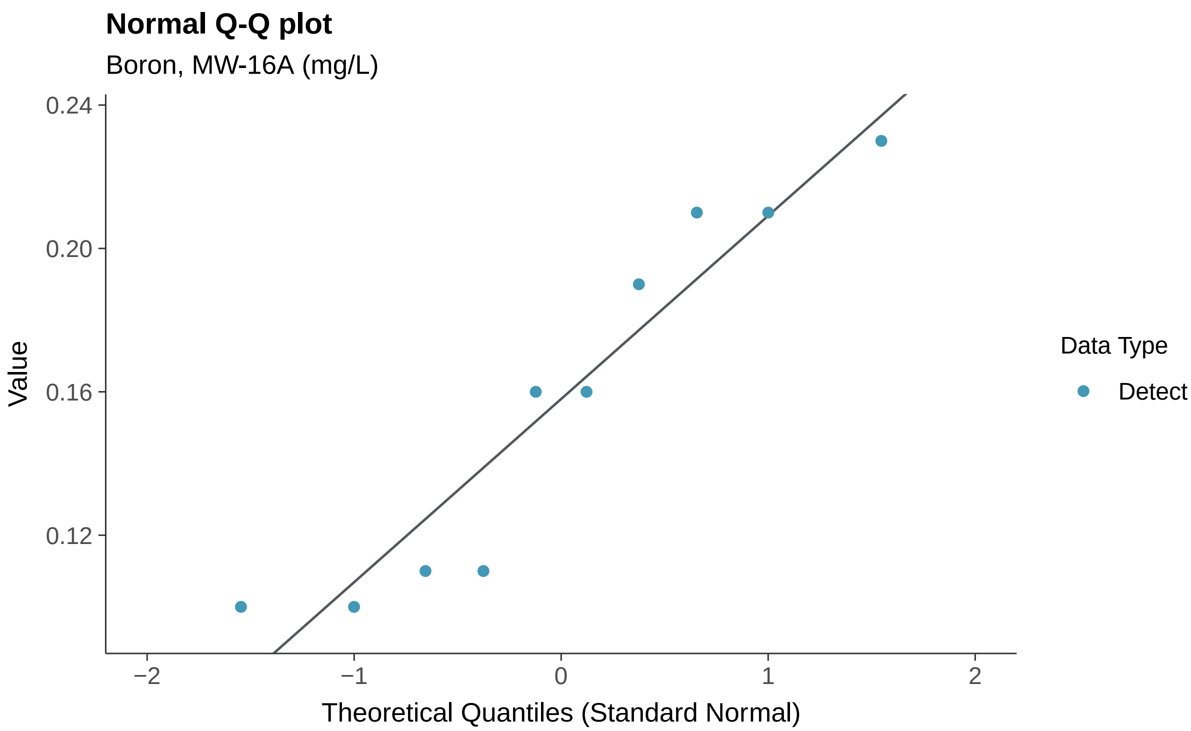
Boron, MW-16A (mg/L)

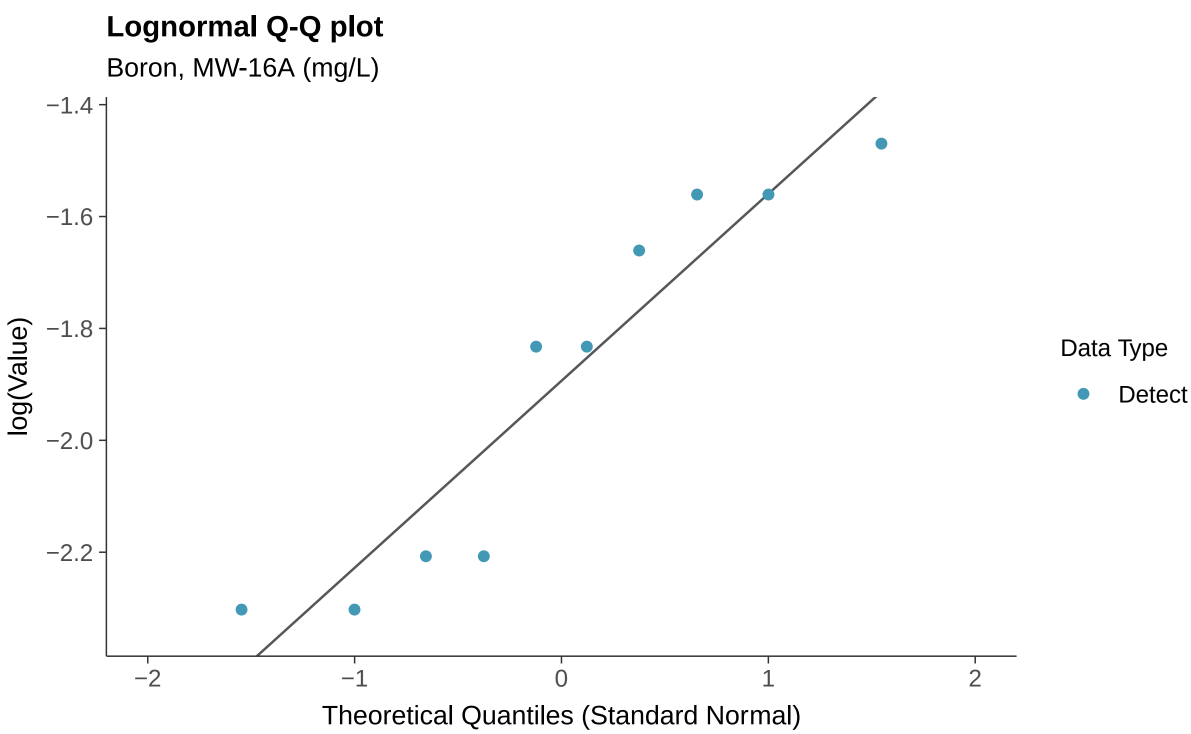


Boxplot by Season

Boron, MW-16A (mg/L)

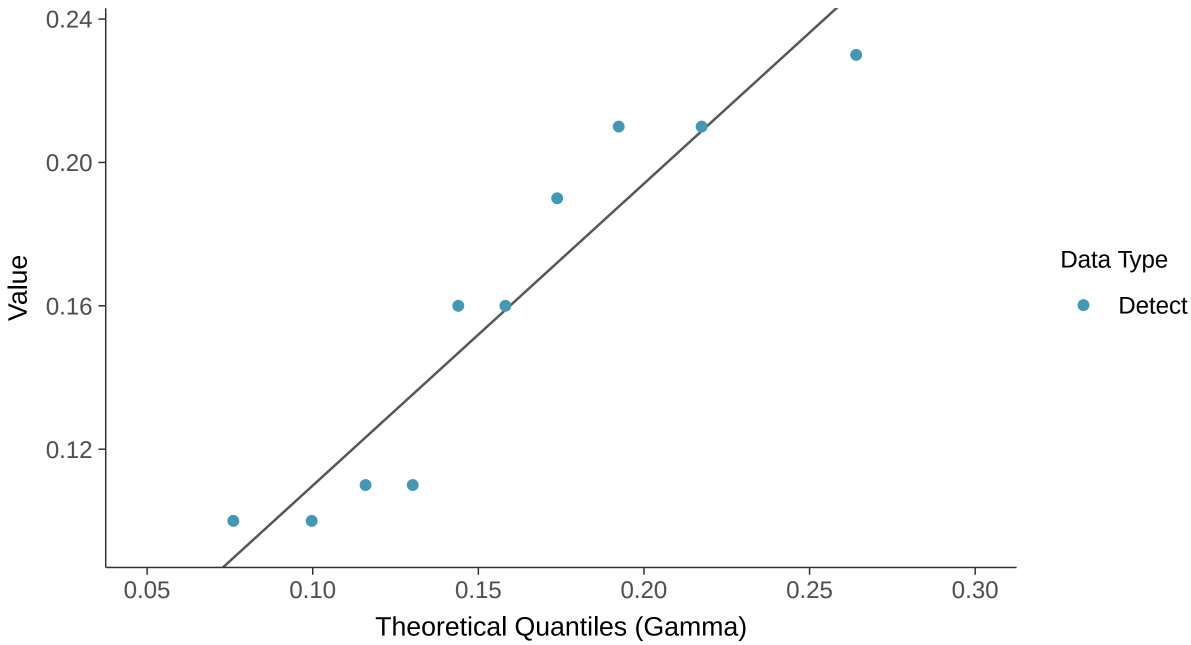



Normal Q-Q plot
Boron, MW-16A (mg/L)
Value
0.24
0.20
0.16
0.12
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Boron, MW-16A (mg/L)
log(Value)
−1.4
−1.6
−1.8
−2.0
−2.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

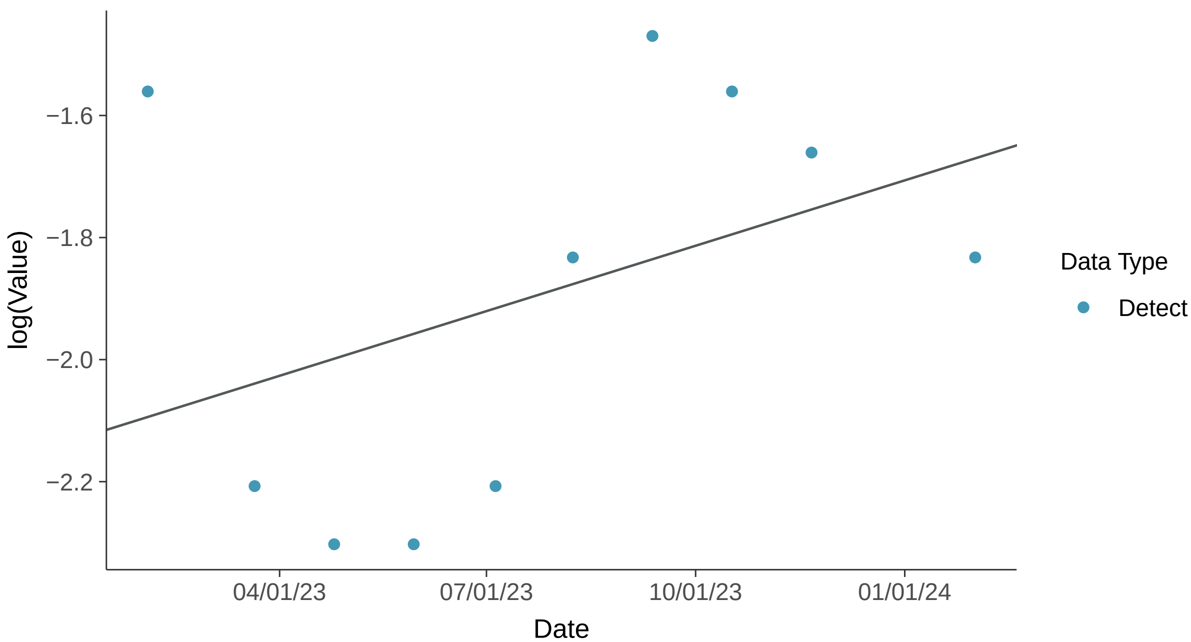
Gamma Q-Q plot

Boron, MW-16A (mg/L)



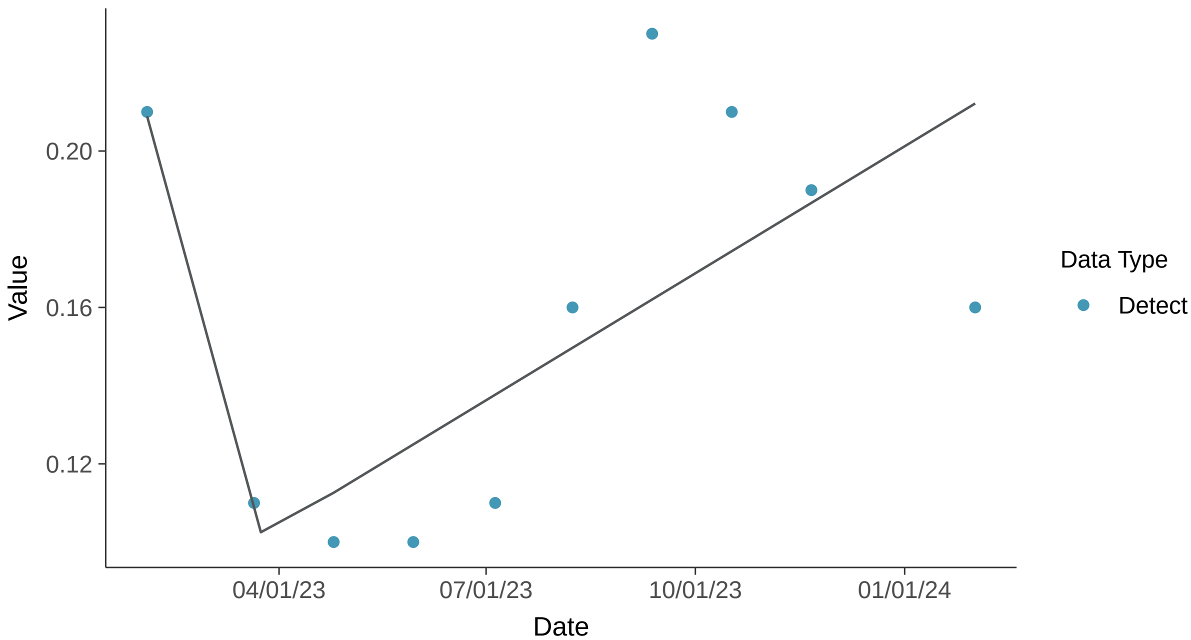
Trend Regression: Lognormal MLE

Boron, MW-16A (mg/L)



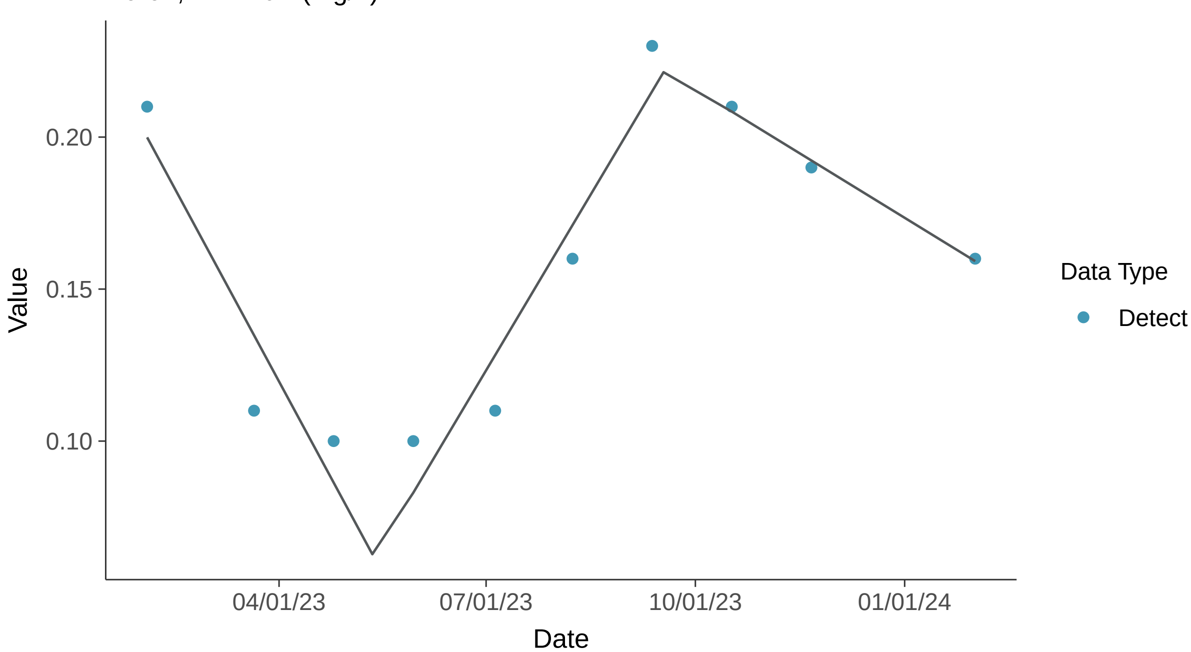
Trend Regression: Piecewise Linear-Linear

Boron, MW-16A (mg/L)



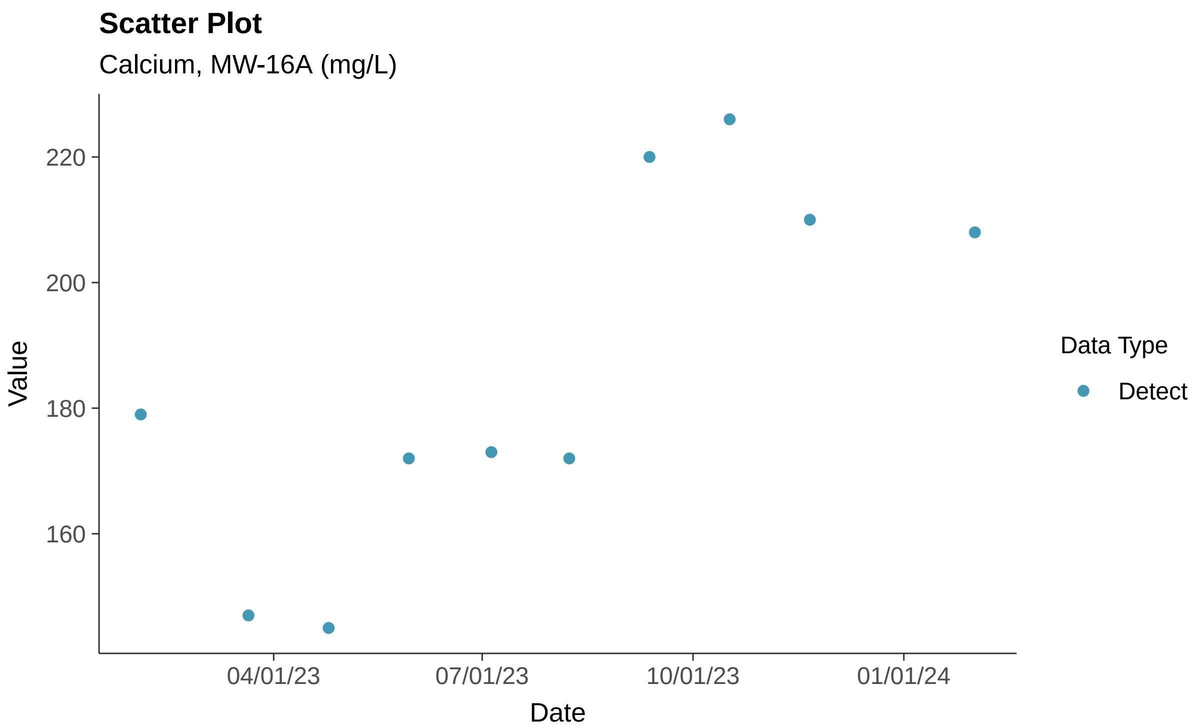
Trend Regression: Piecewise Linear-Linear-Linear

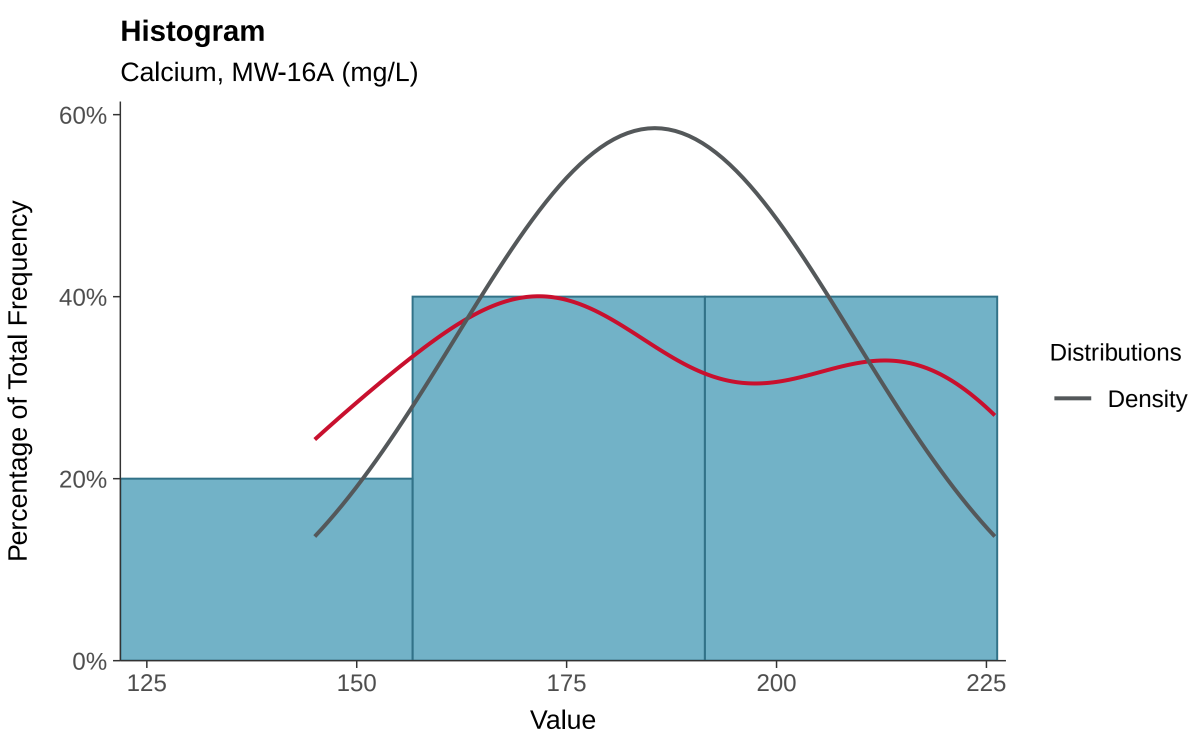
Boron, MW-16A (mg/L)



Appendix III: Calcium, MW-16A

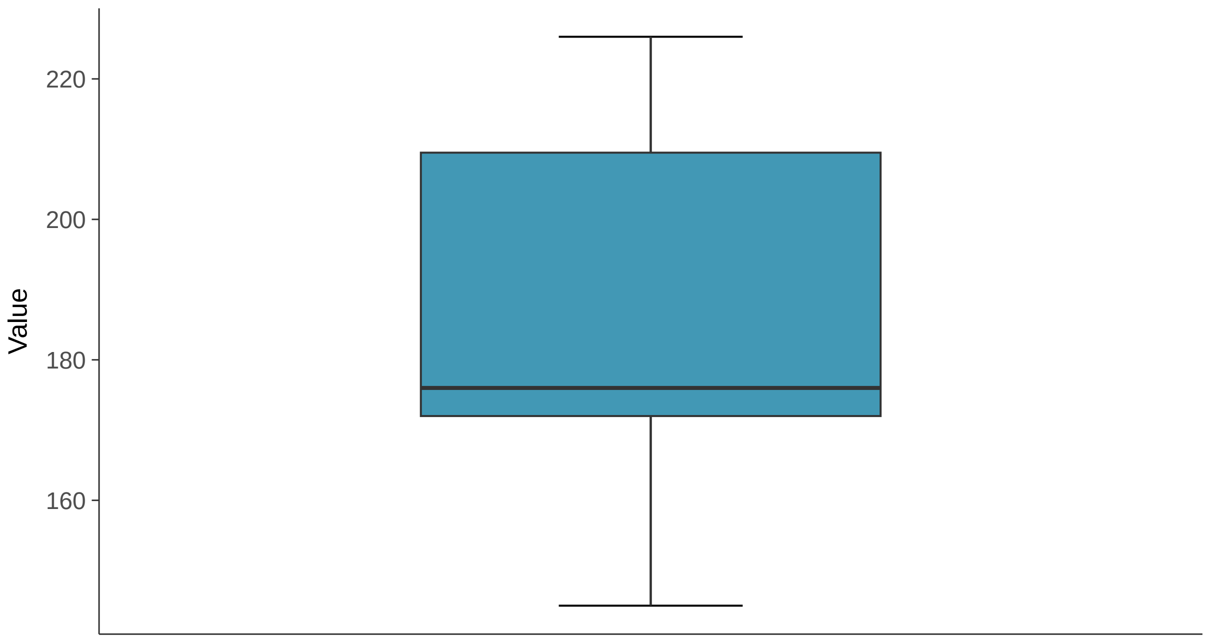
ID: 16A_1_02





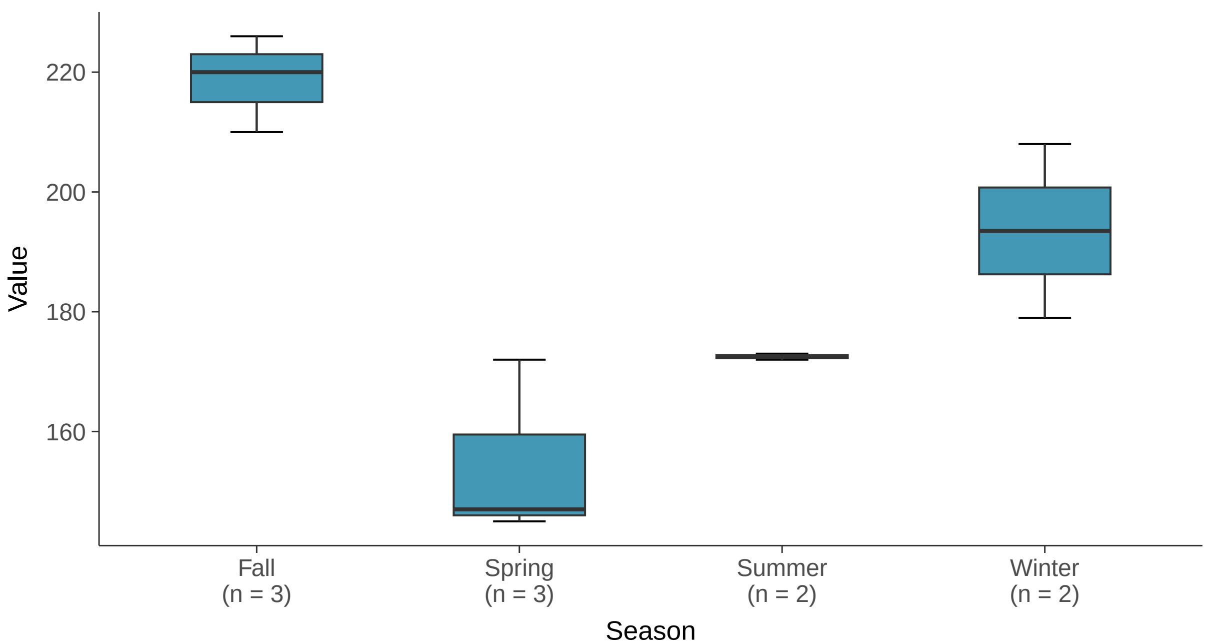
Boxplot

Calcium, MW-16A (mg/L)



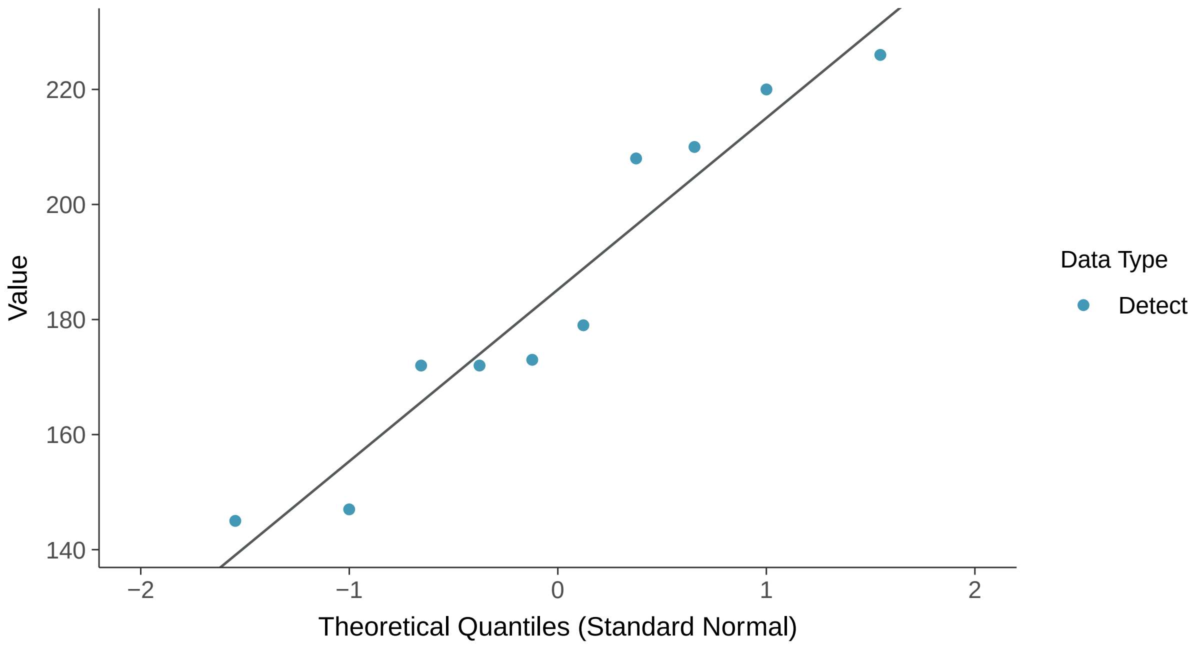
Boxplot by Season

Calcium, MW-16A (mg/L)



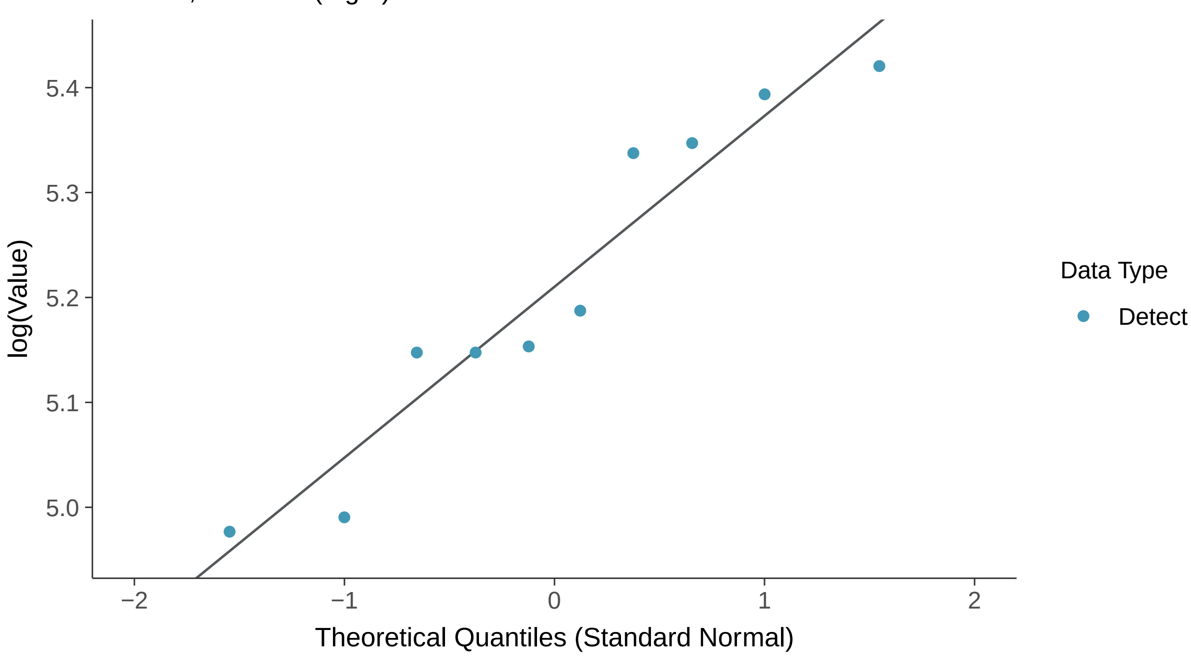
Normal Q-Q plot

Calcium, MW-16A (mg/L)



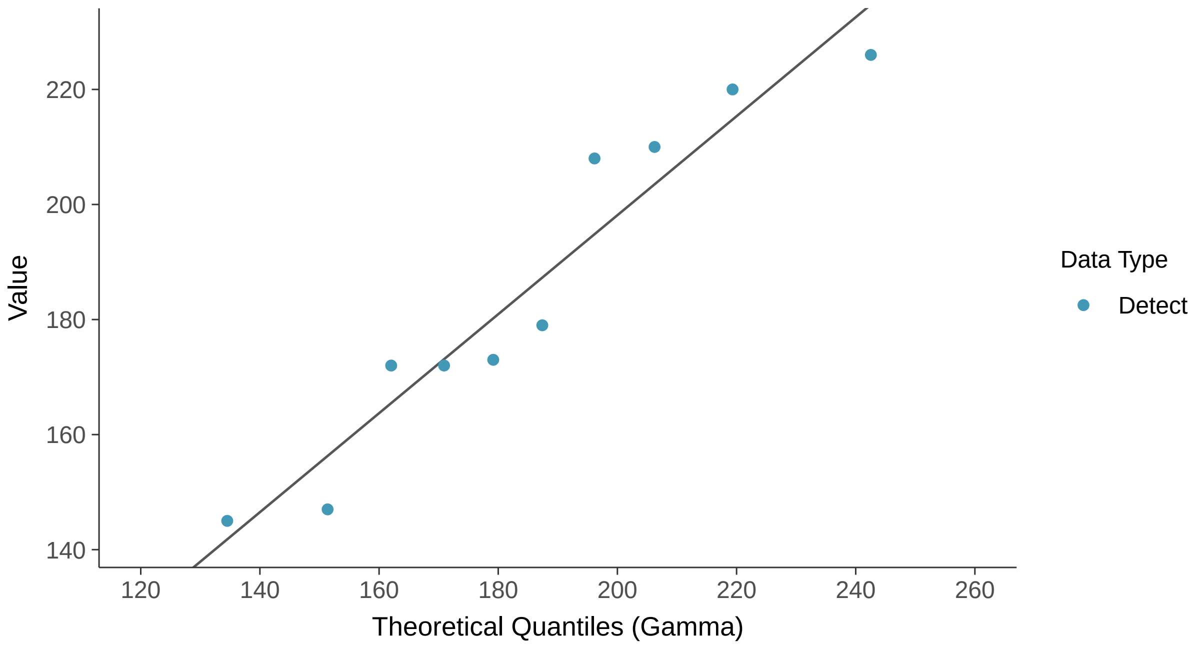
Lognormal Q-Q plot

Calcium, MW-16A (mg/L)



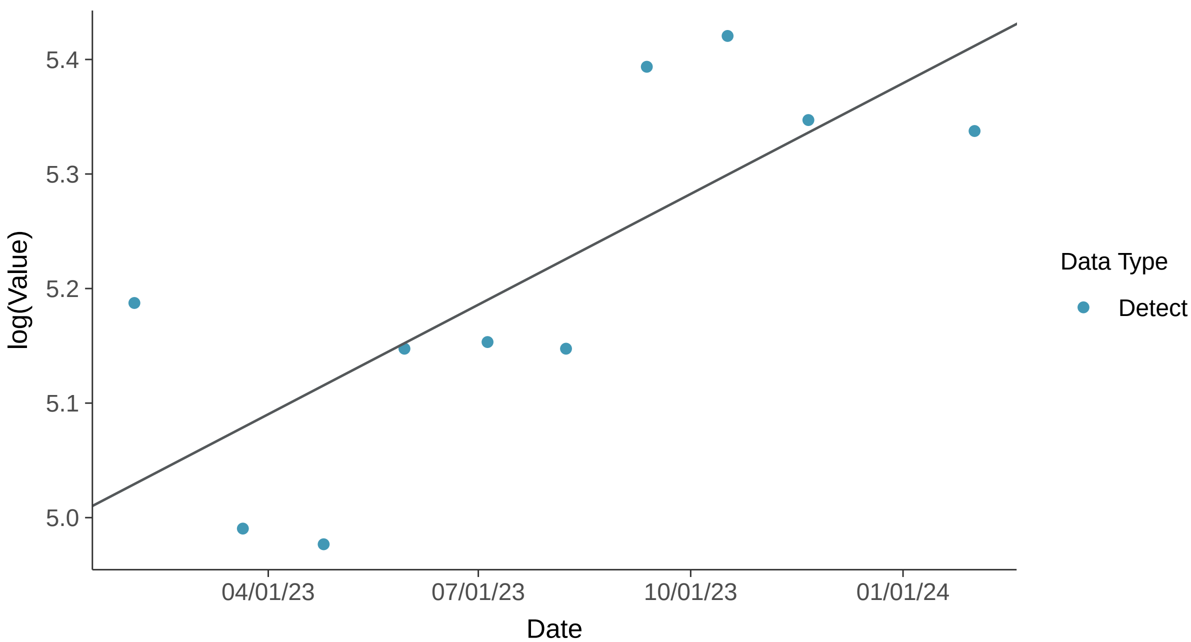
Gamma Q-Q plot

Calcium, MW-16A (mg/L)



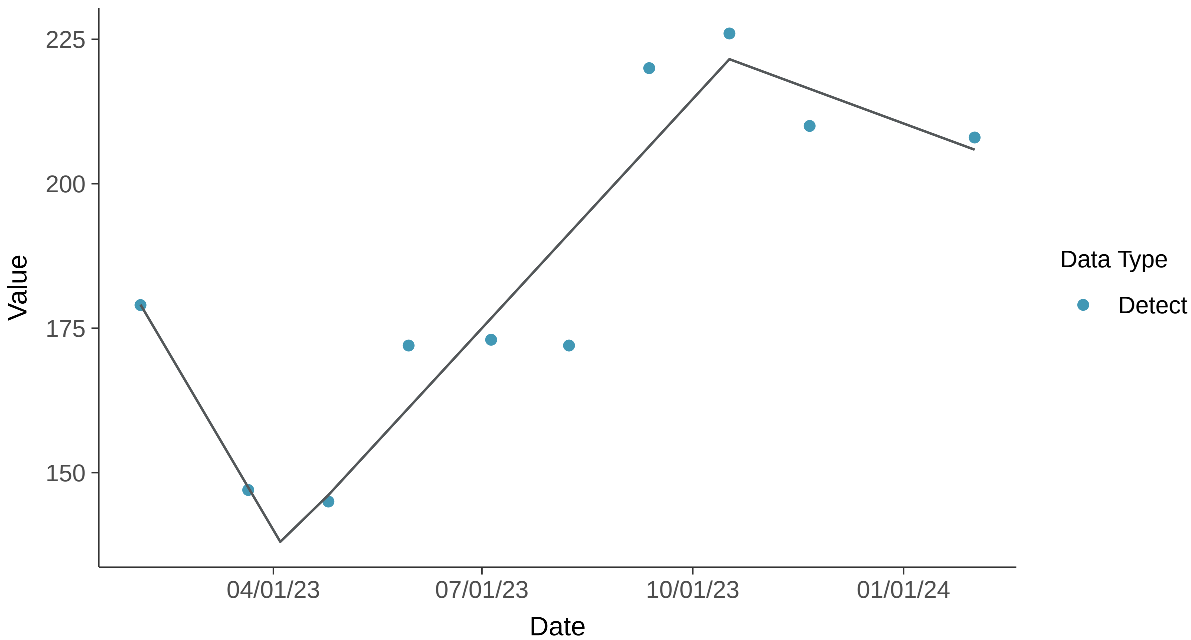
Trend Regression: Lognormal MLE

Calcium, MW-16A (mg/L)



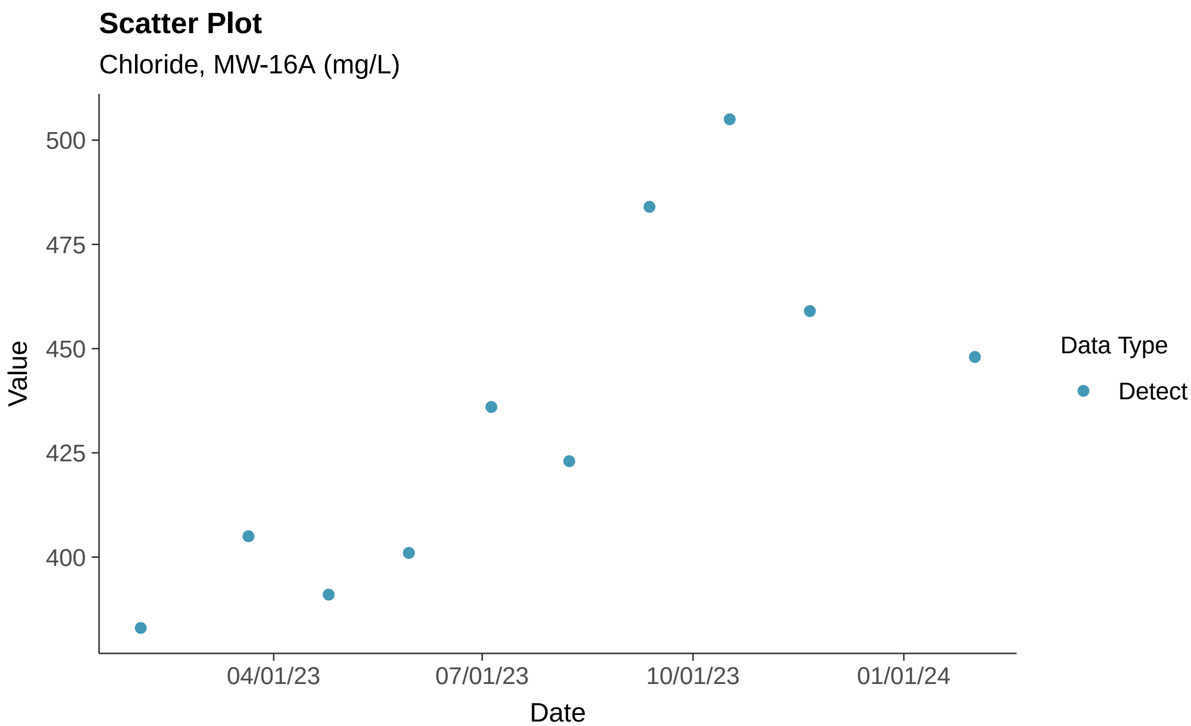
Trend Regression: Piecewise Linear-Linear-Linear

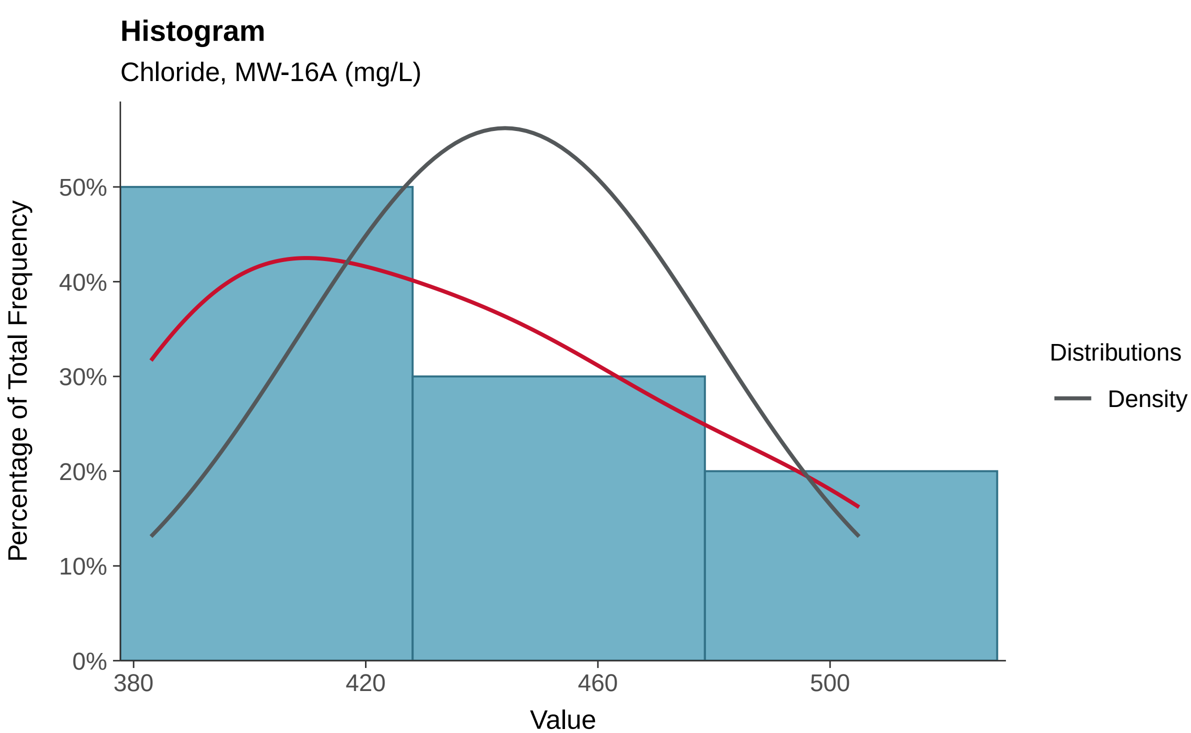
Calcium, MW-16A (mg/L)



Appendix III: Chloride, MW-16A

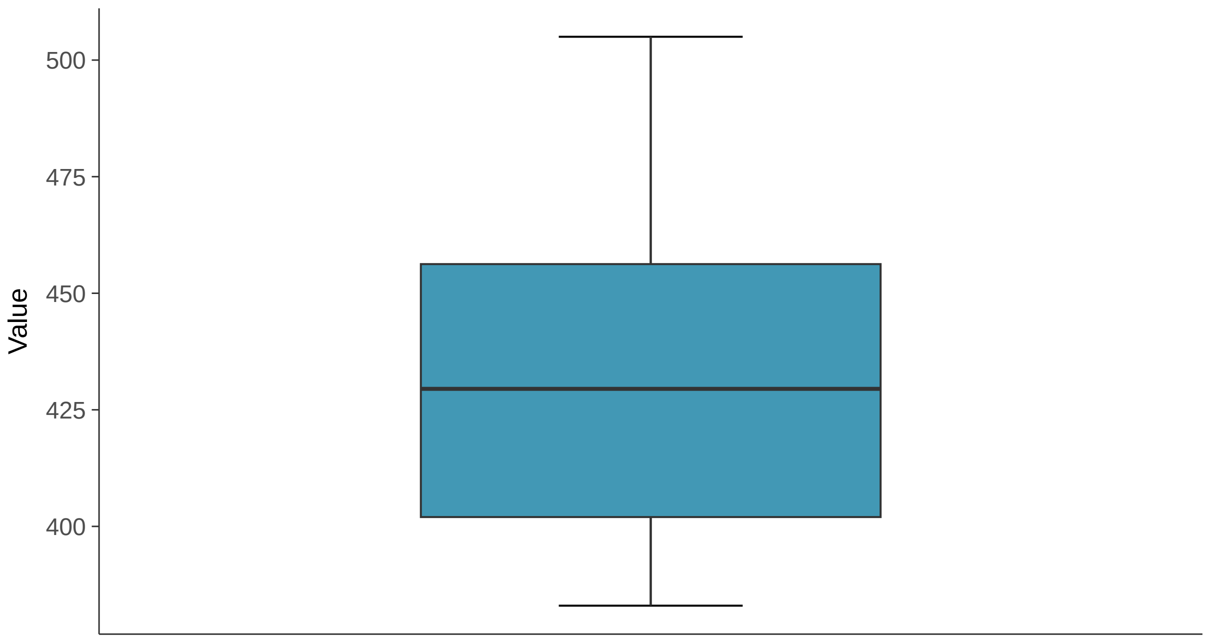
ID: 16A_1_03





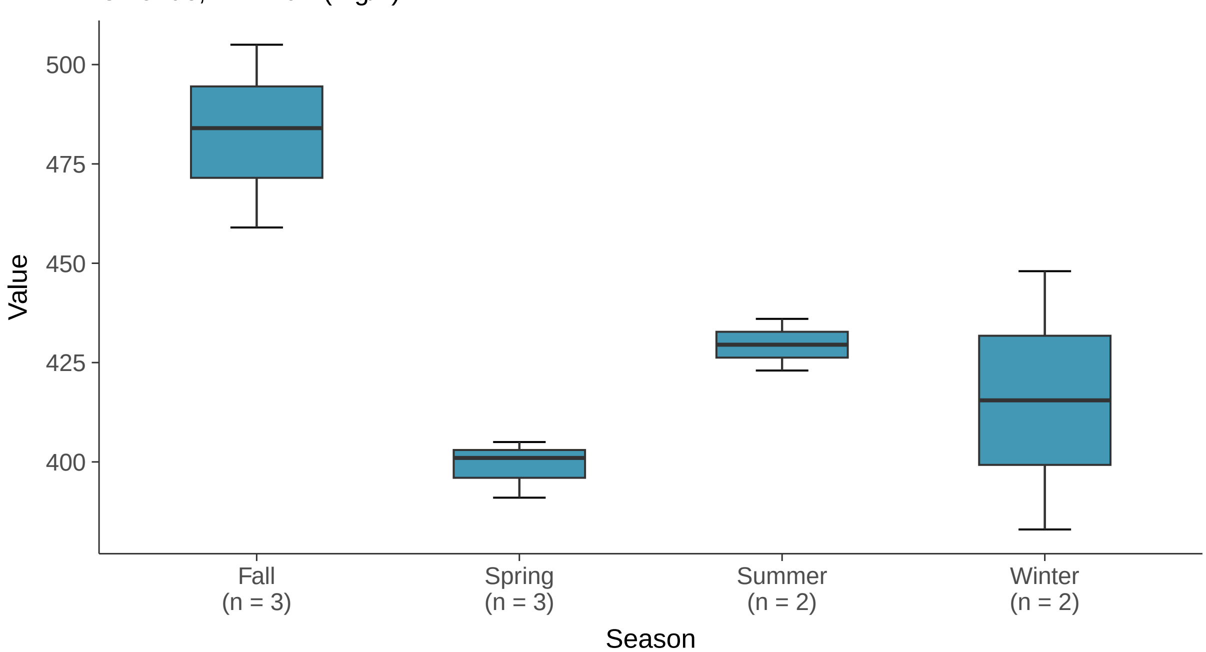
Boxplot

Chloride, MW-16A (mg/L)



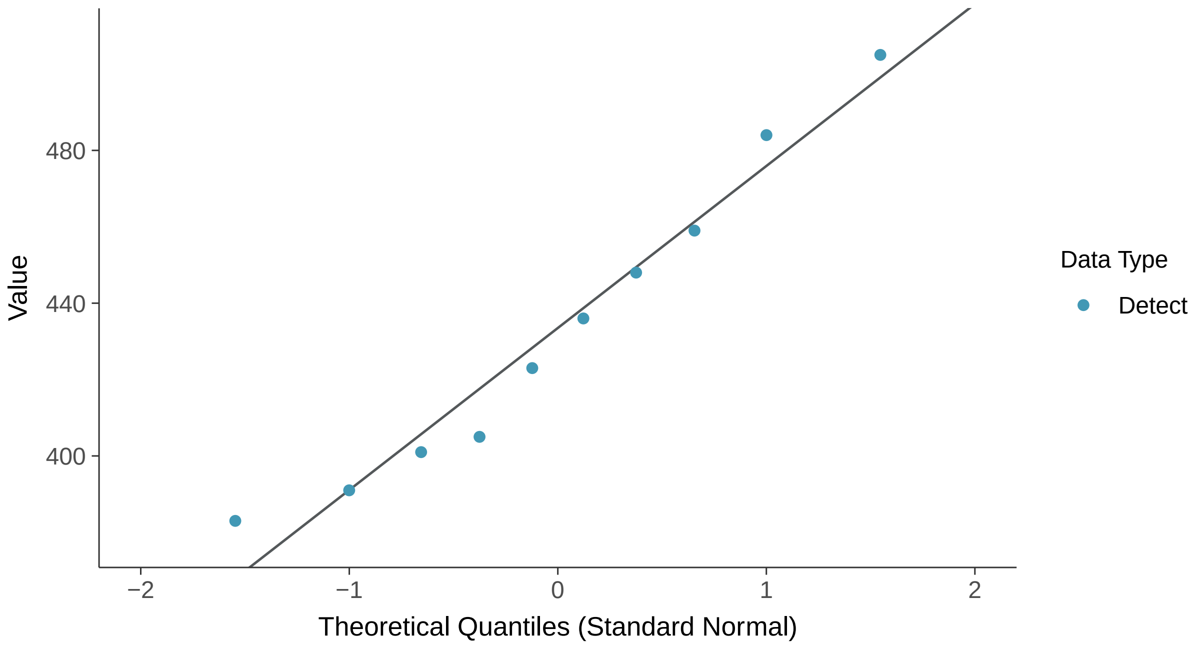
Boxplot by Season

Chloride, MW-16A (mg/L)



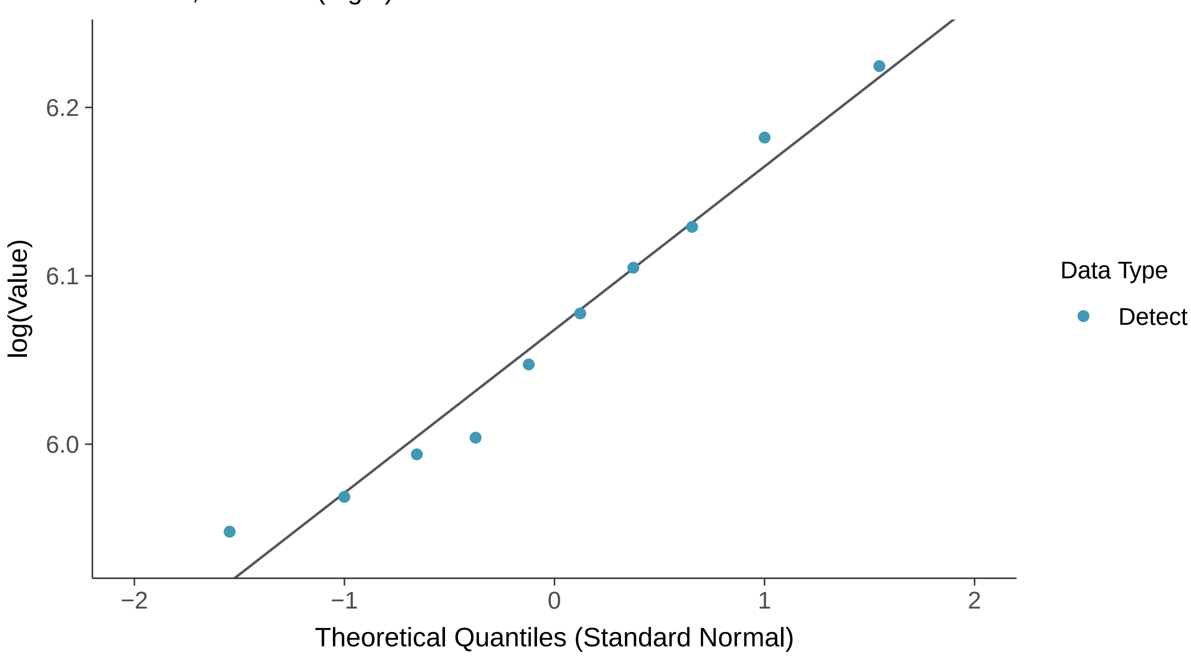
Normal Q-Q plot

Chloride, MW-16A (mg/L)



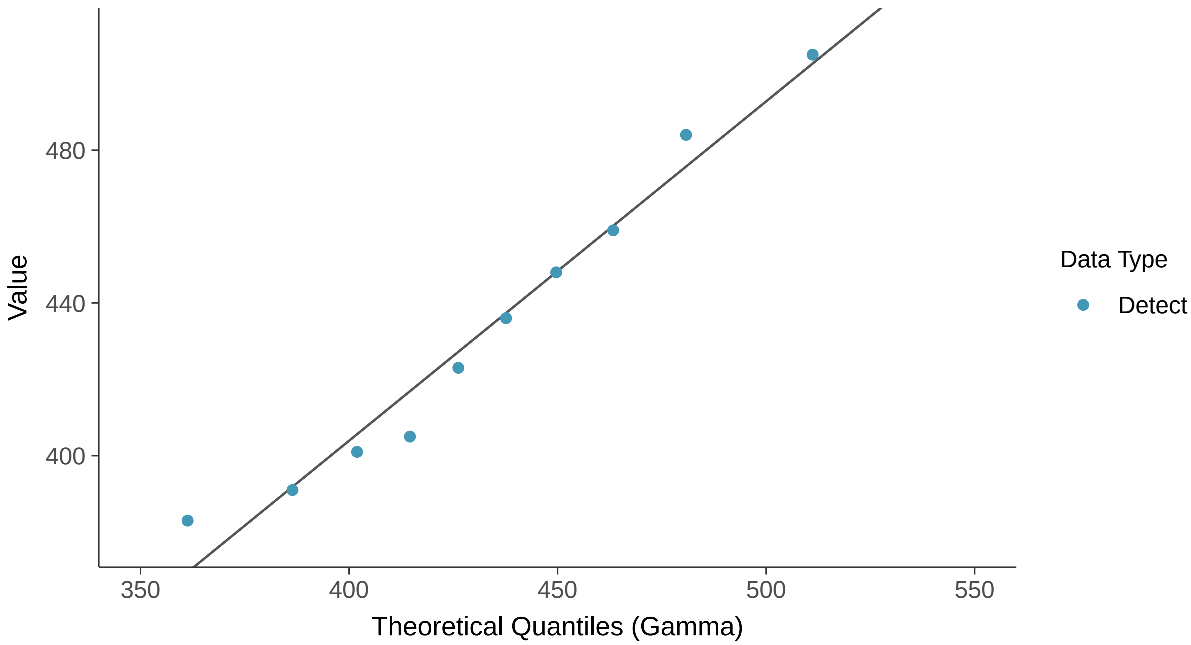
Lognormal Q-Q plot

Chloride, MW-16A (mg/L)



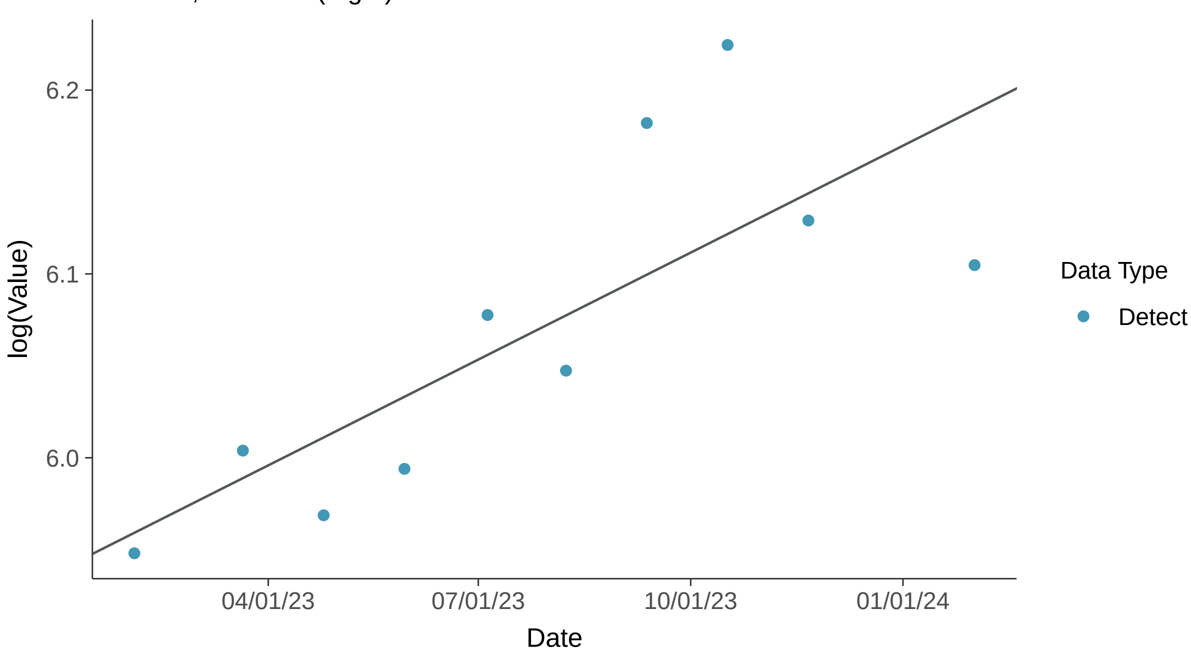
Gamma Q-Q plot

Chloride, MW-16A (mg/L)



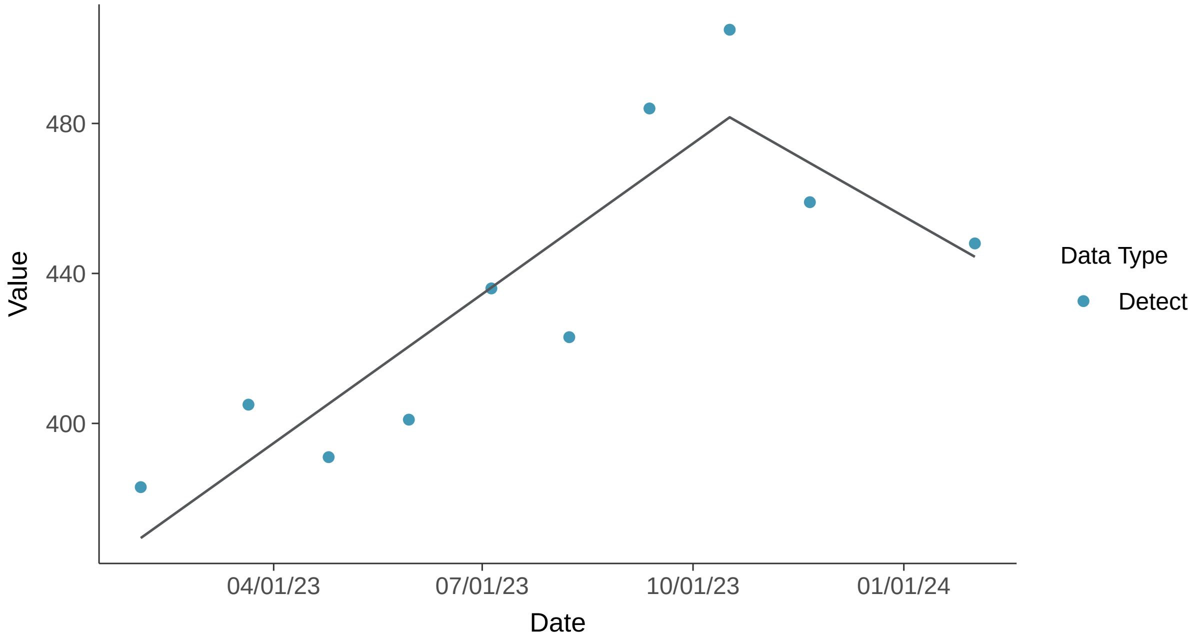
Trend Regression: Lognormal MLE

Chloride, MW-16A (mg/L)



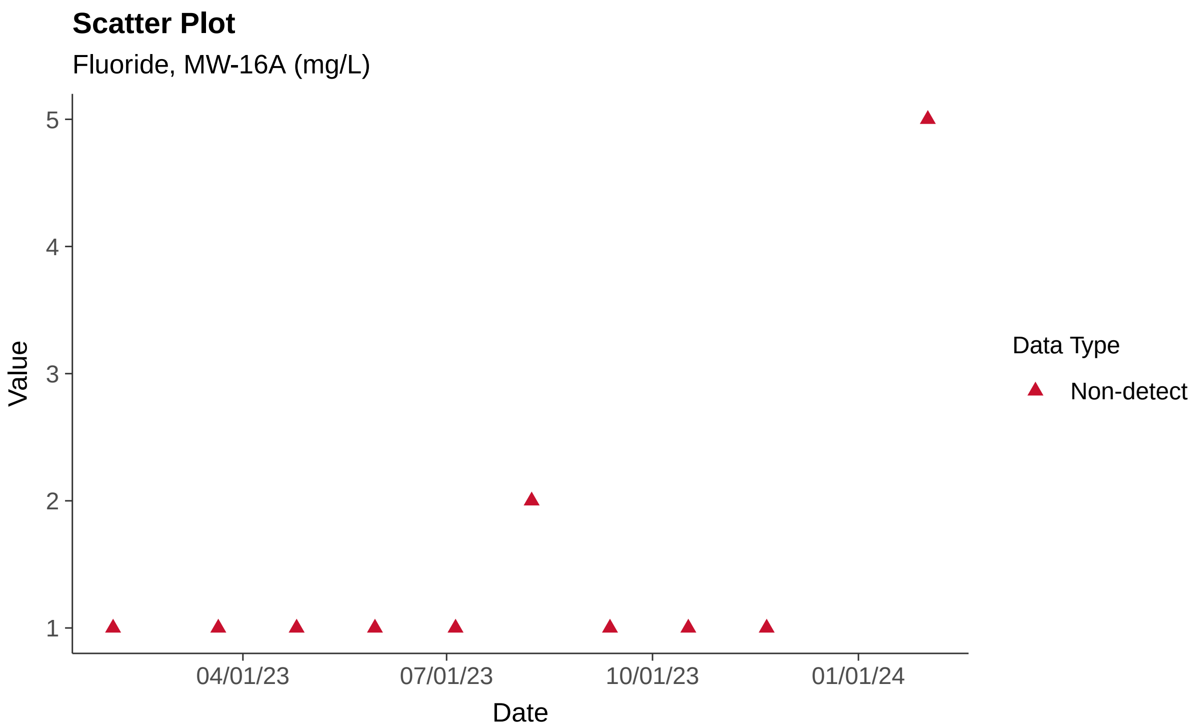
Trend Regression: Piecewise Linear-Linear

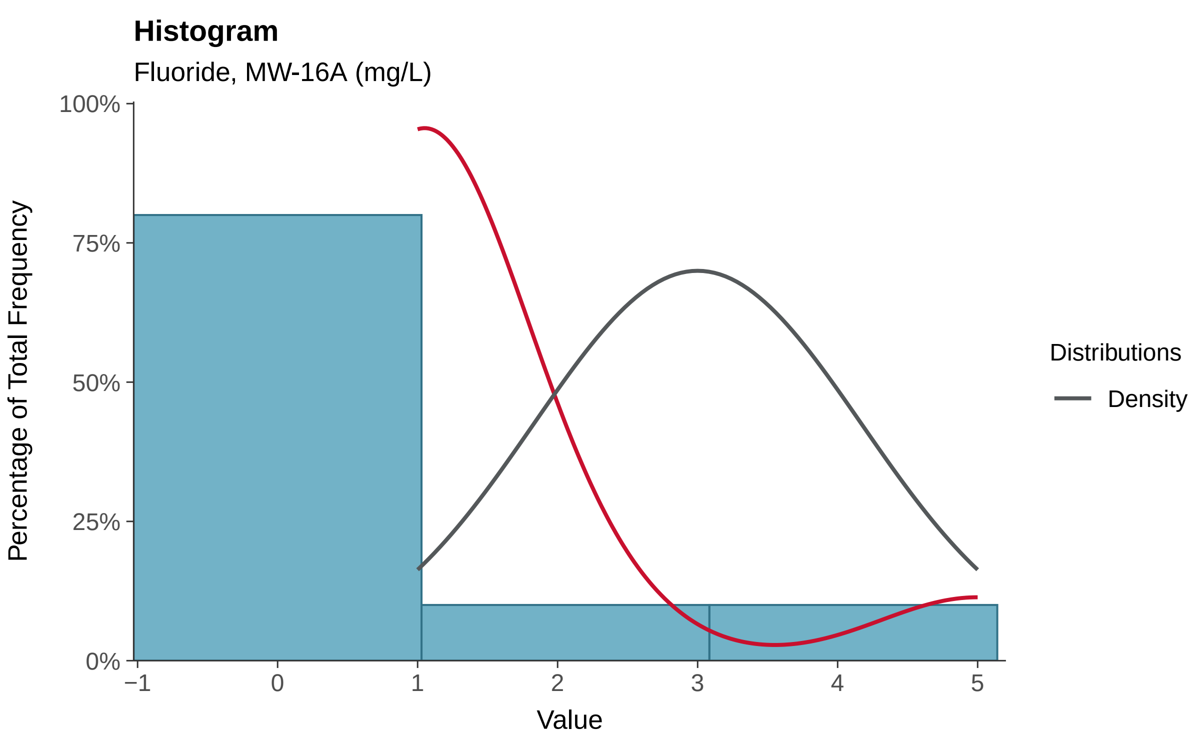
Chloride, MW-16A (mg/L)



Appendix III: Fluoride, MW-16A

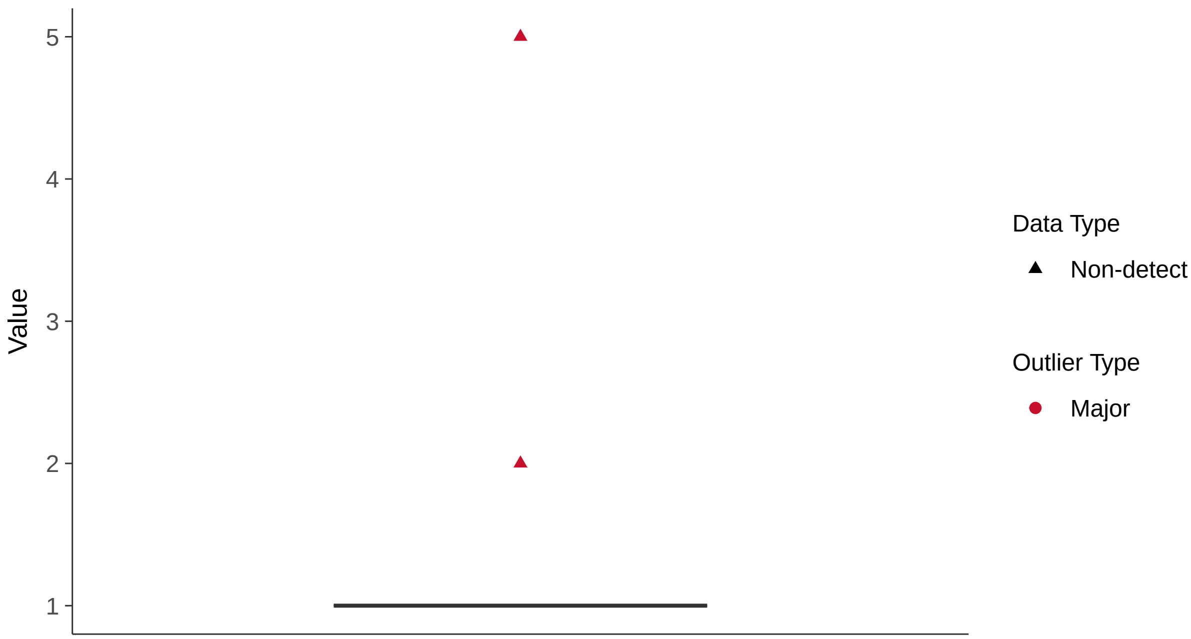
ID: 16A_1_04





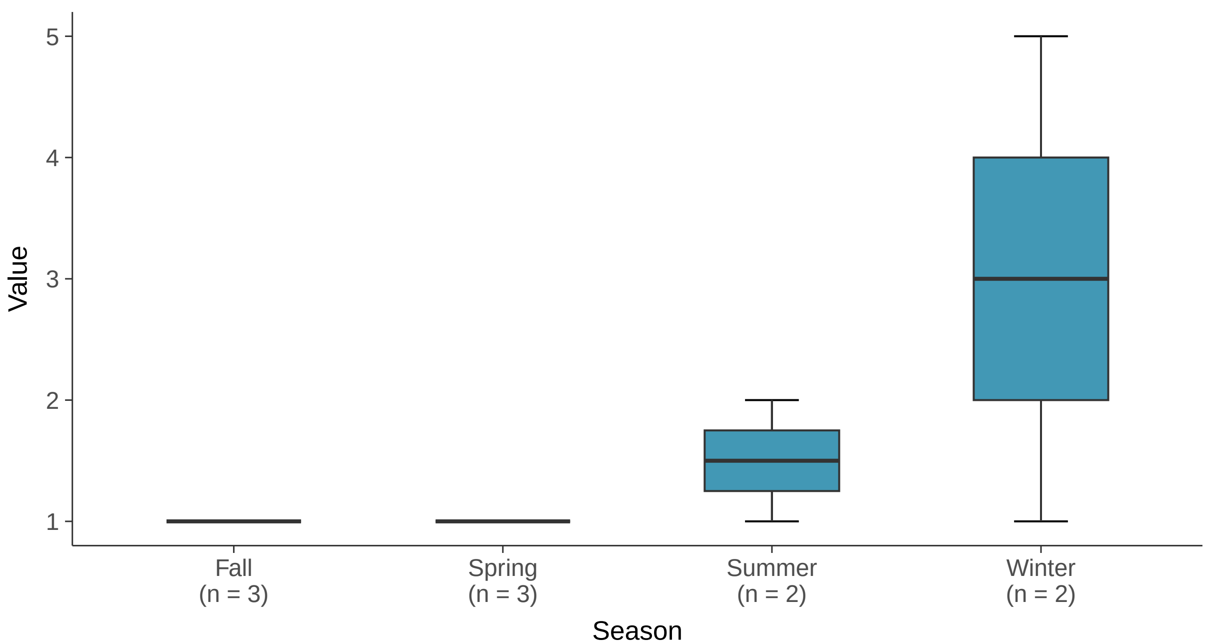
Boxplot

Fluoride, MW-16A (mg/L)



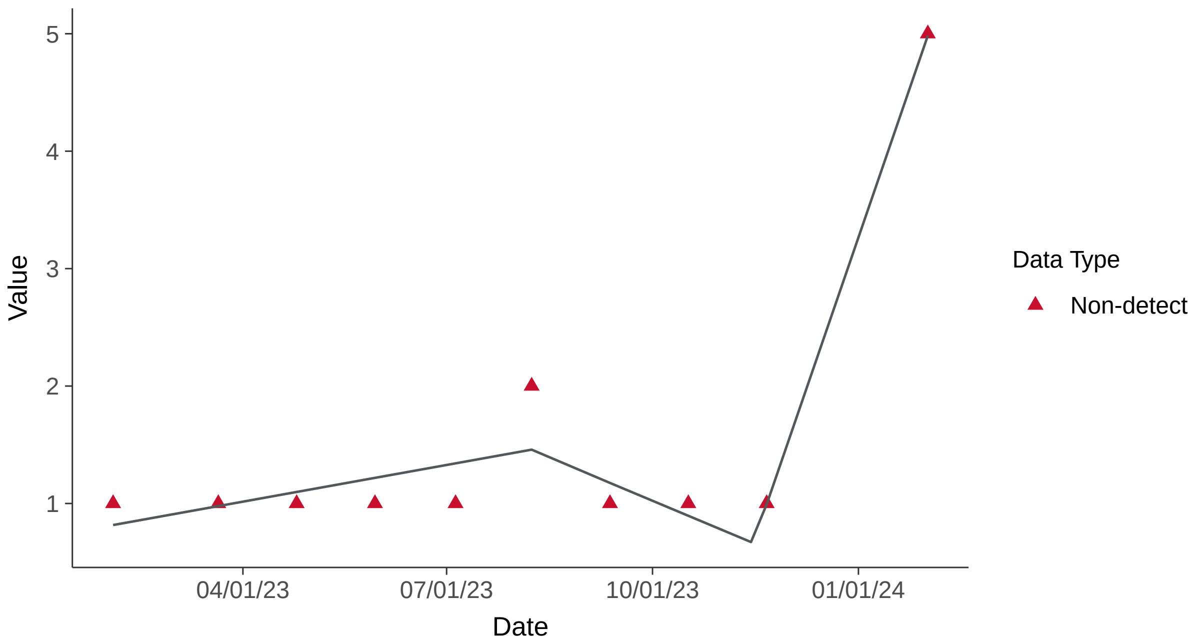
Boxplot by Season

Fluoride, MW-16A (mg/L)



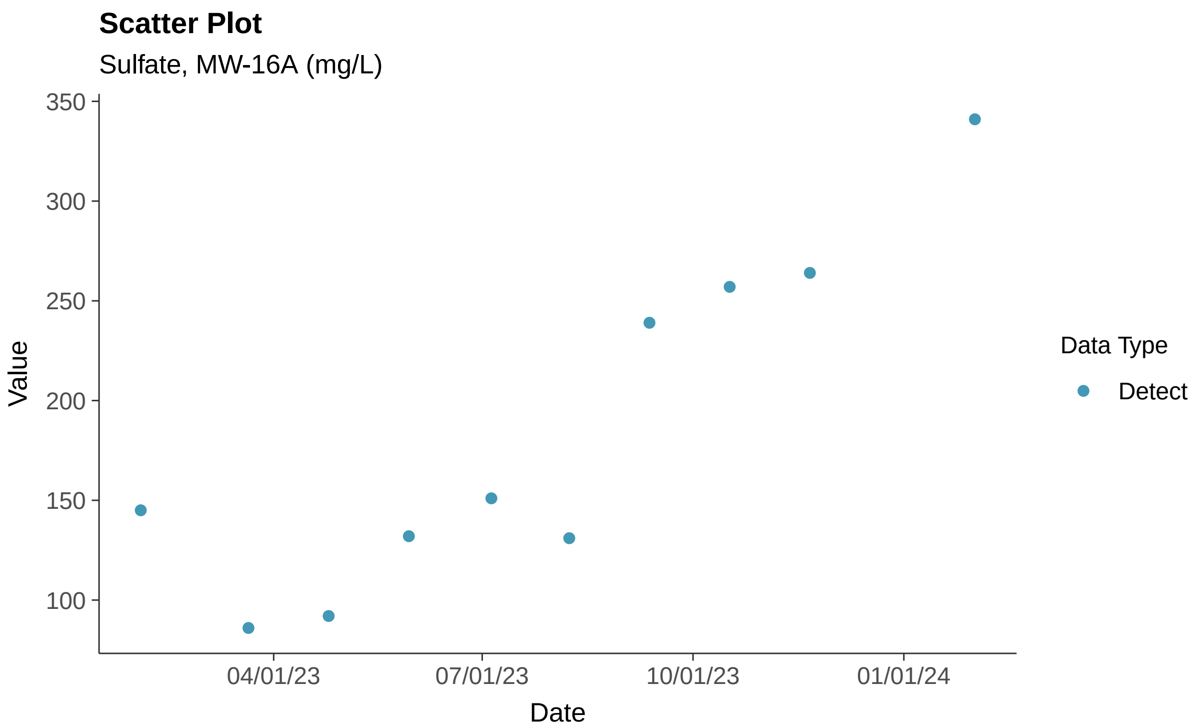
Trend Regression: Piecewise Linear-Linear-Linear

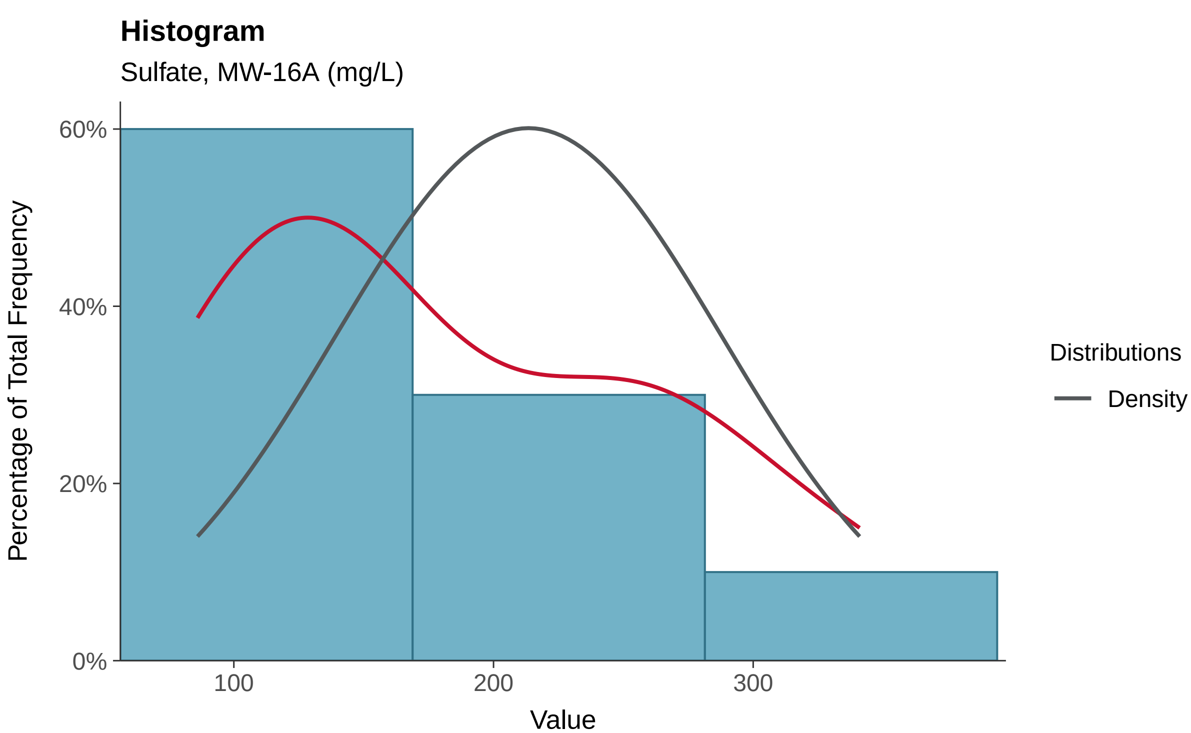
Fluoride, MW-16A (mg/L)



Appendix III: Sulfate, MW-16A

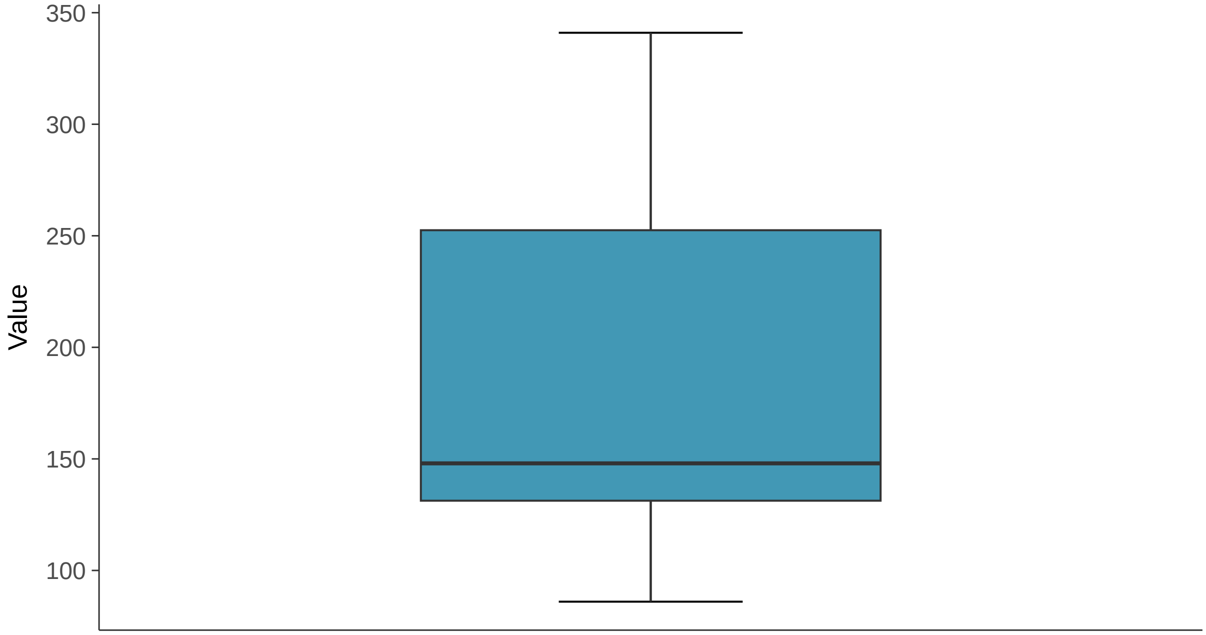
ID: 16A_1_05





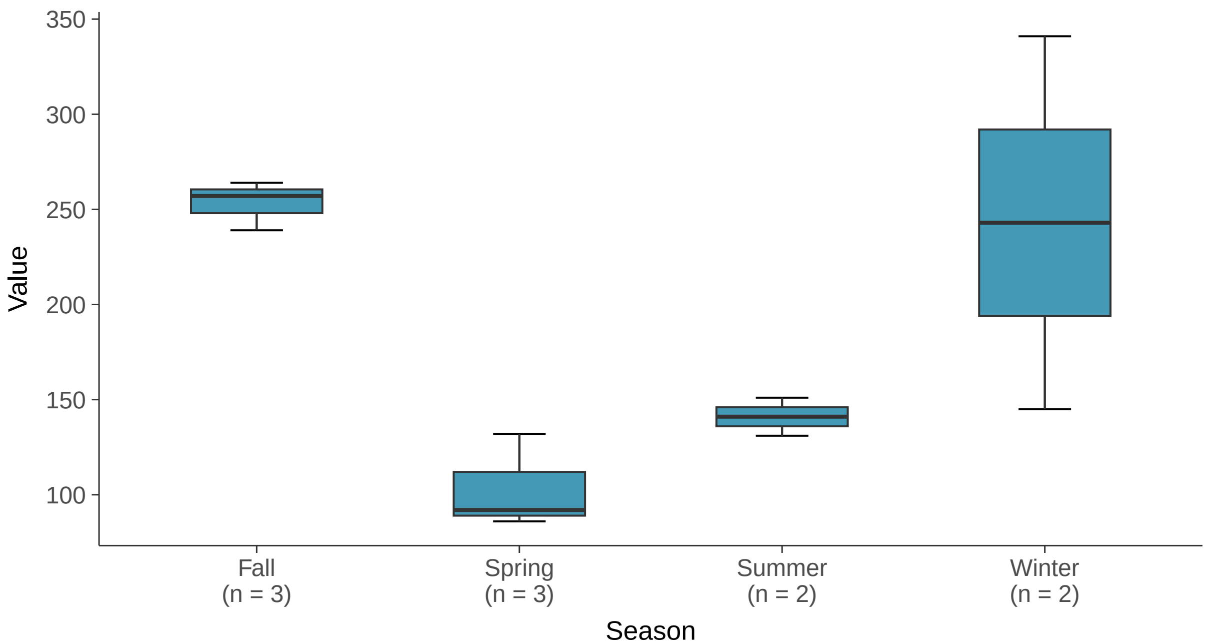
Boxplot

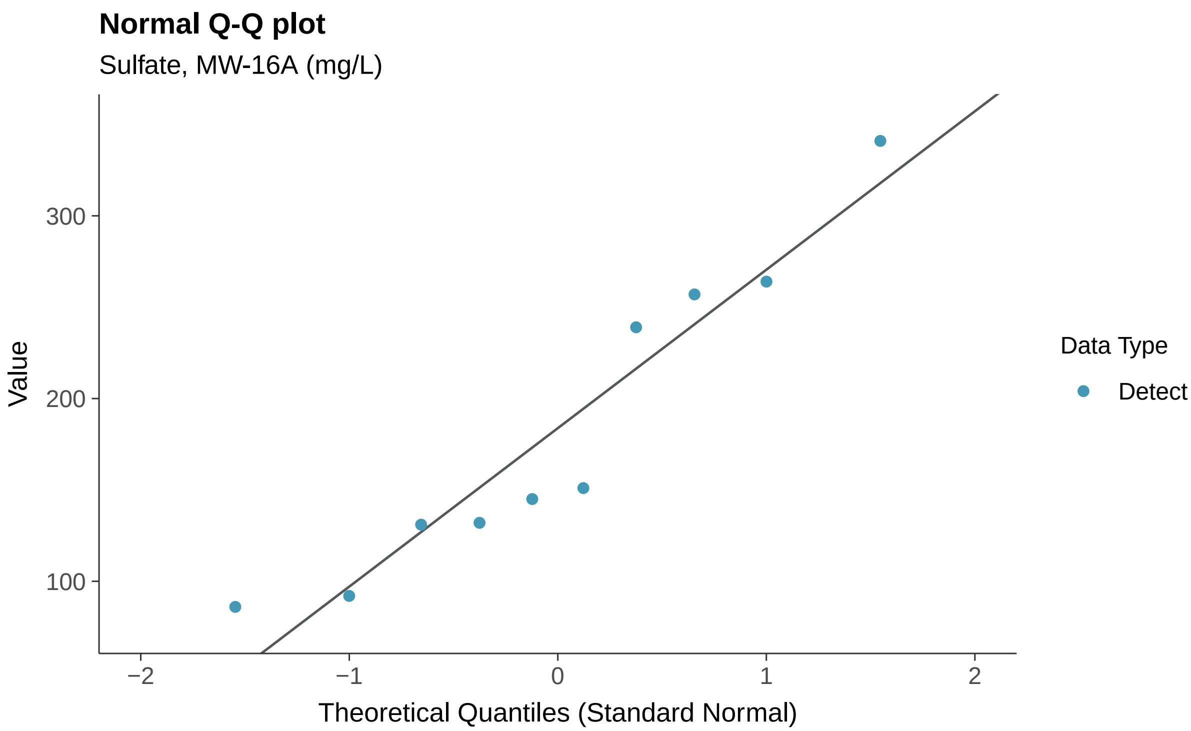
Sulfate, MW-16A (mg/L)

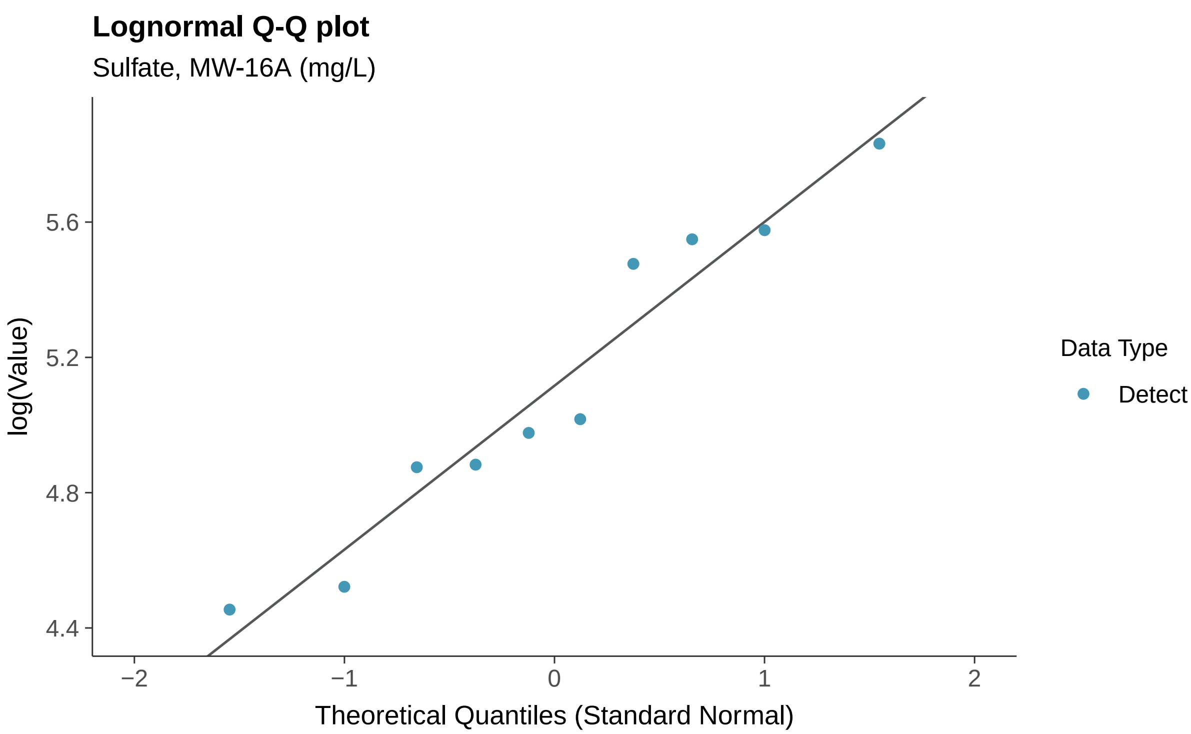


Boxplot by Season

Sulfate, MW-16A (mg/L)

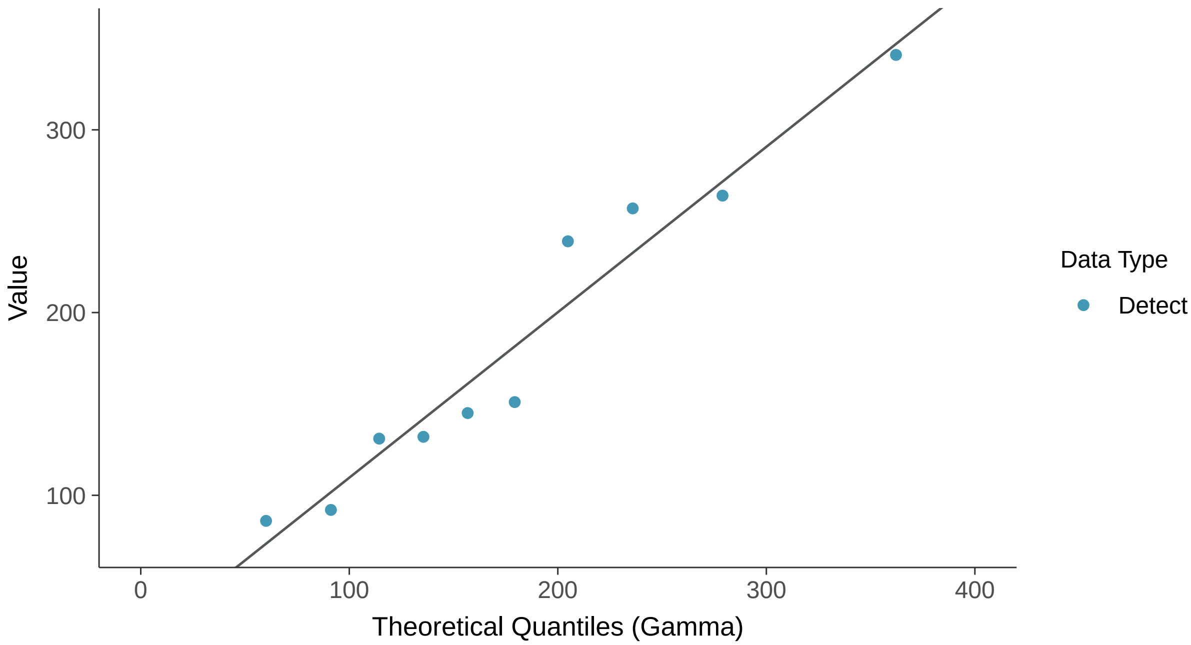



Normal Q-Q plot
Sulfate, MW-16A (mg/L)
Value
300
200
100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Sulfate, MW-16A (mg/L)
log(Value)
5.6
5.2
4.8
4.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

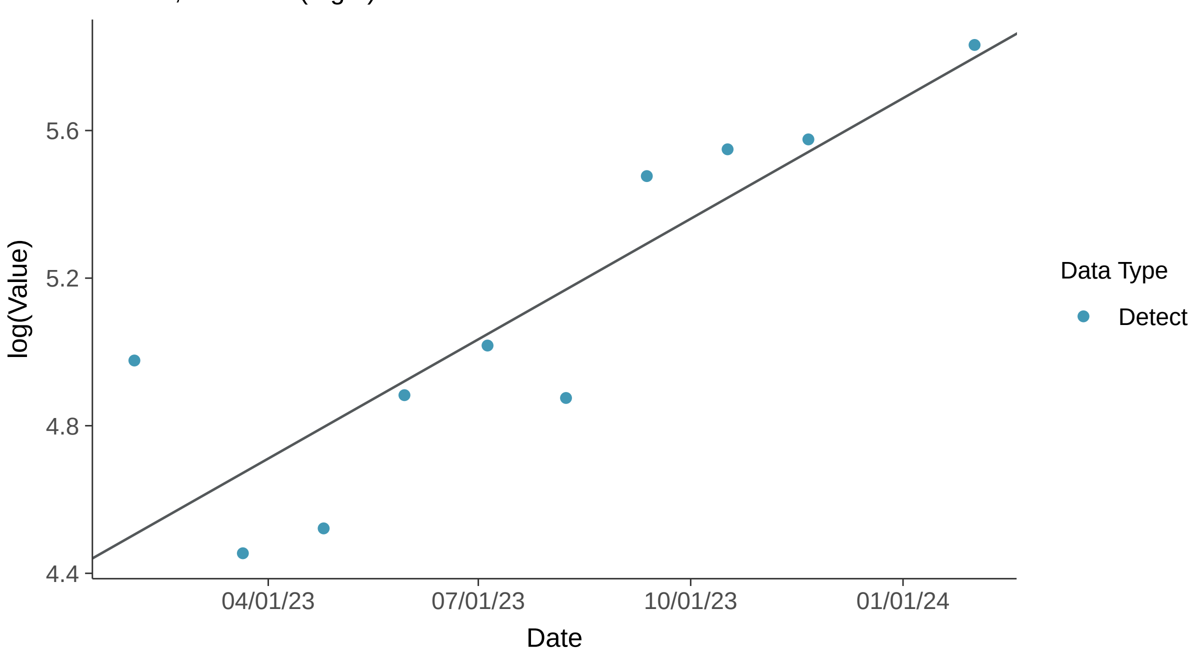
Gamma Q-Q plot

Sulfate, MW-16A (mg/L)



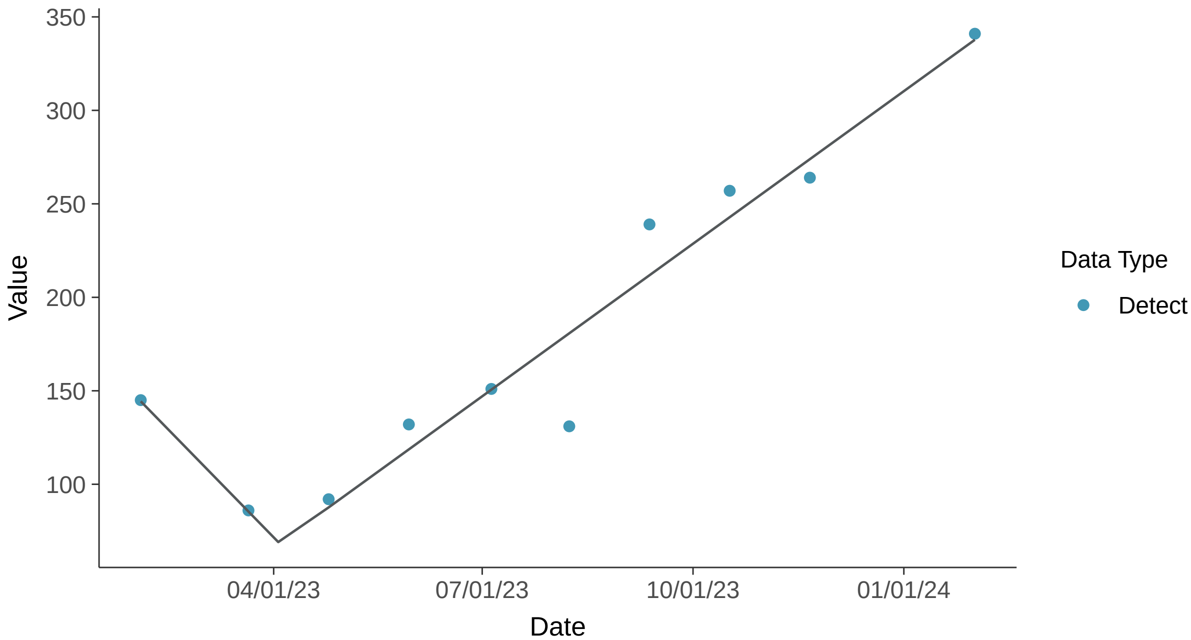
Trend Regression: Lognormal MLE

Sulfate, MW-16A (mg/L)



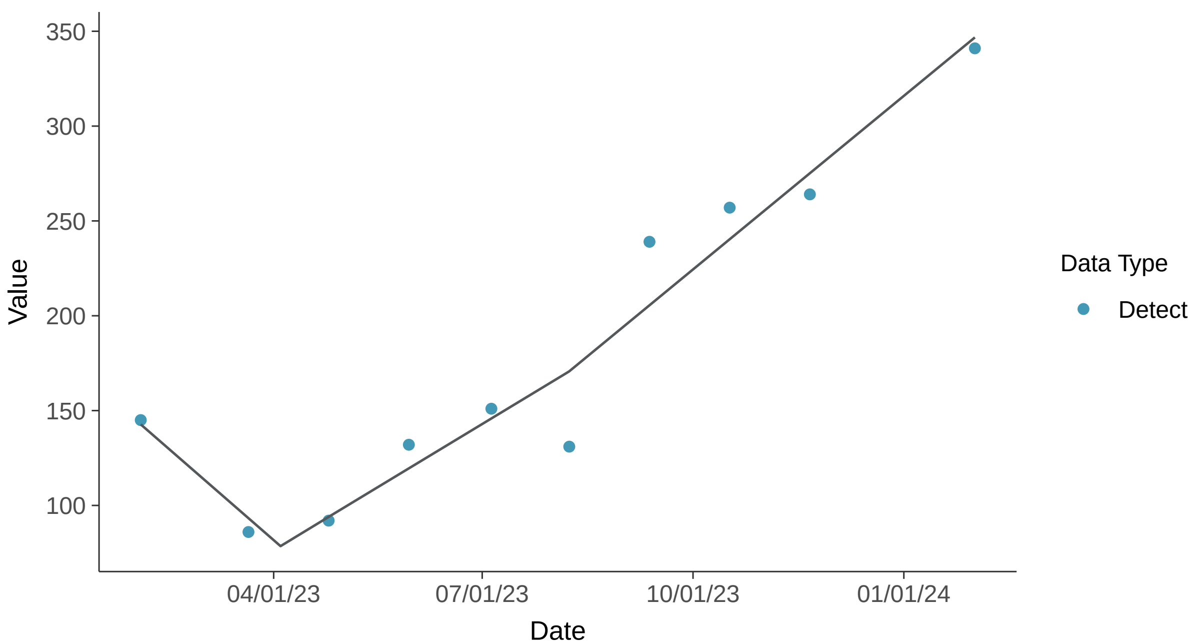
Trend Regression: Piecewise Linear-Linear

Sulfate, MW-16A (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Sulfate, MW-16A (mg/L)

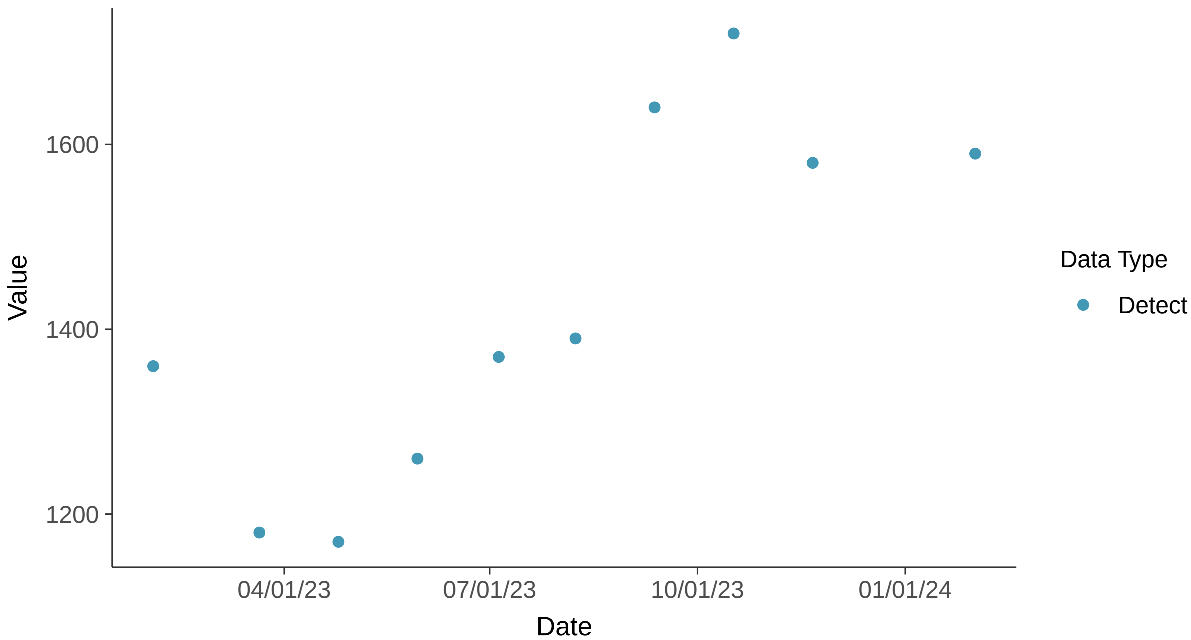


Appendix III: Total Dissolved Solids, MW-16A

ID: 16A_1_06

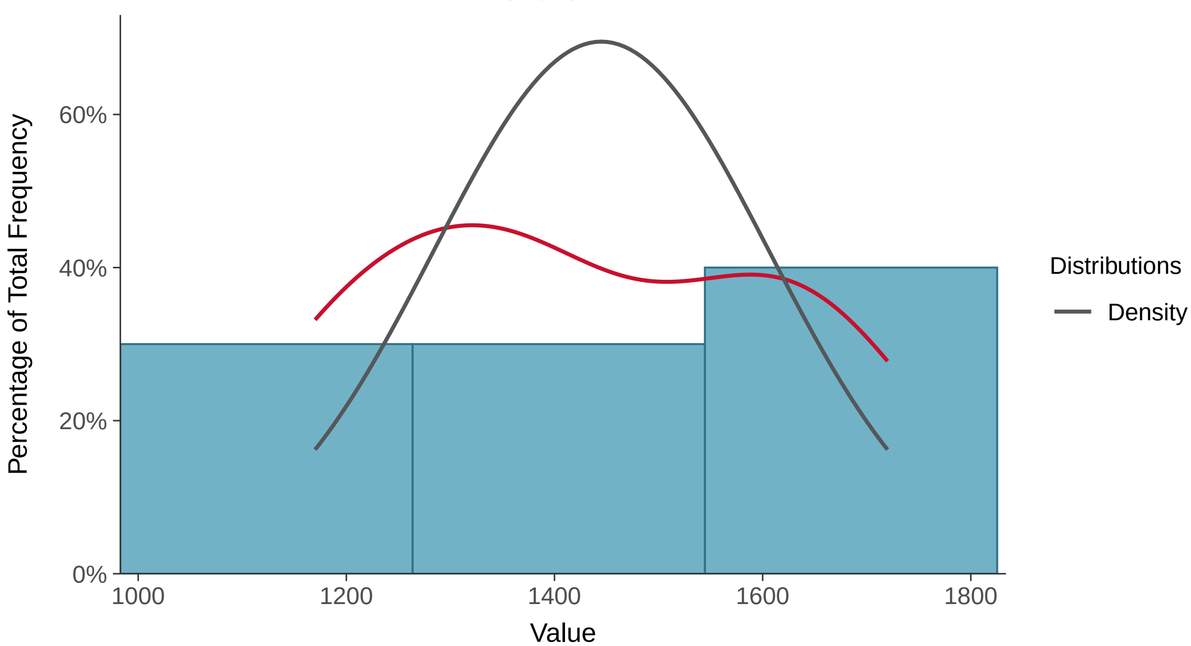
Scatter Plot

Total Dissolved Solids, MW-16A (mg/L)



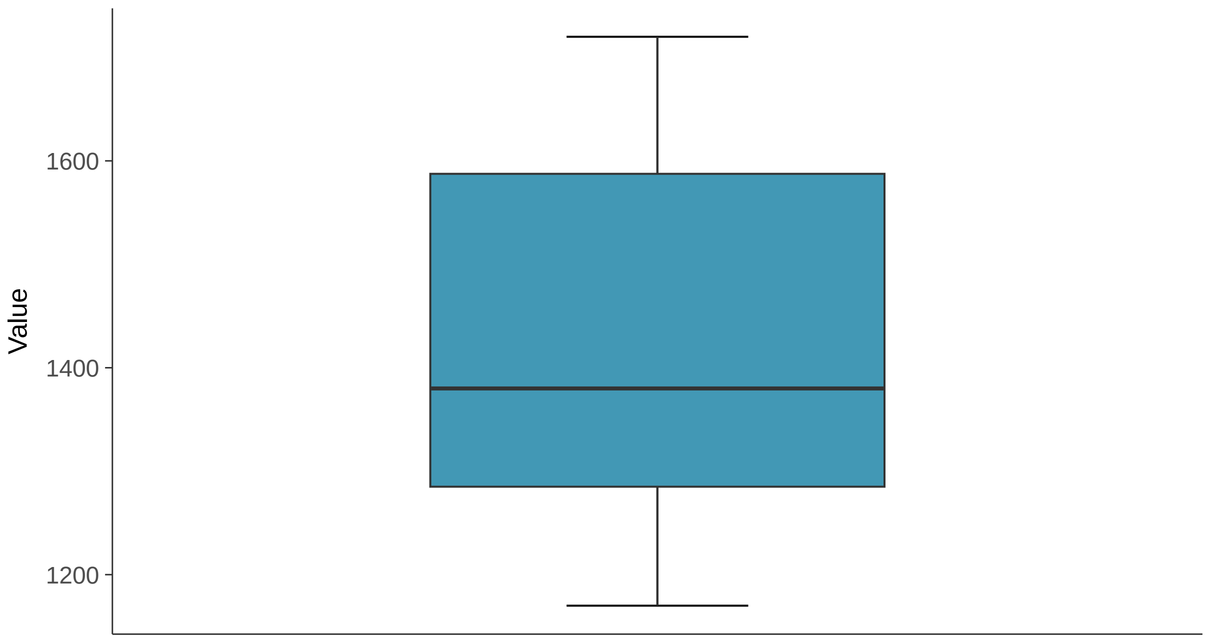
Histogram

Total Dissolved Solids, MW-16A (mg/L)



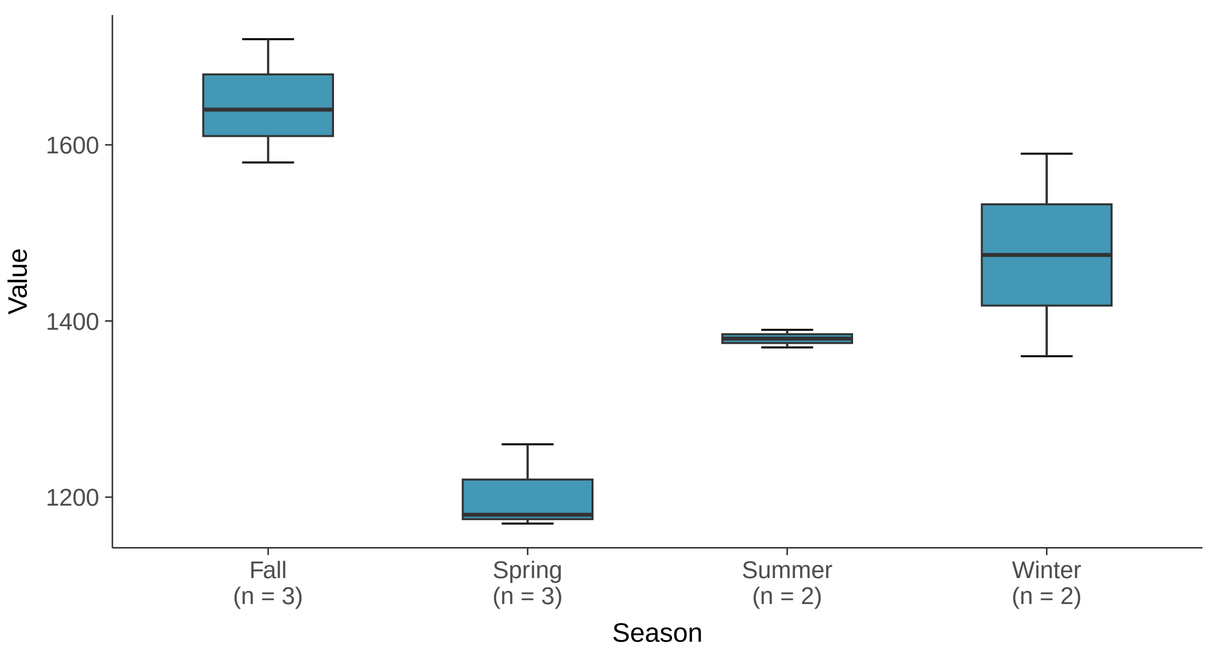
Boxplot

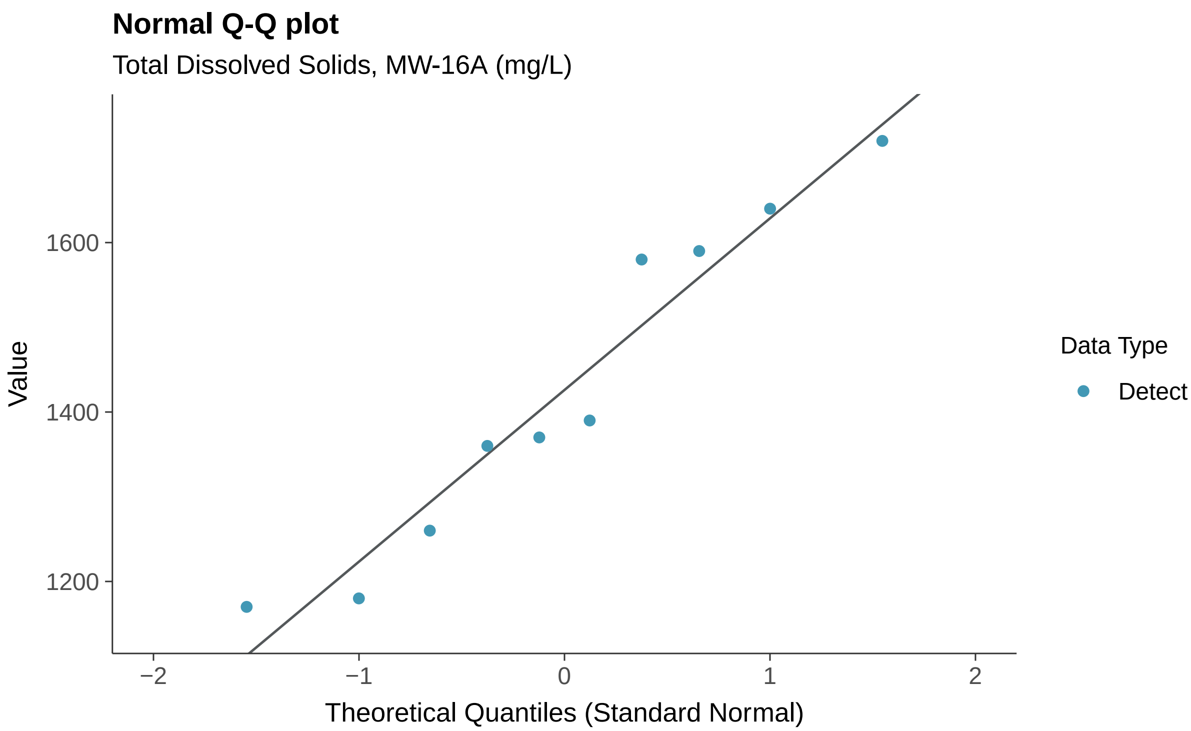
Total Dissolved Solids, MW-16A (mg/L)

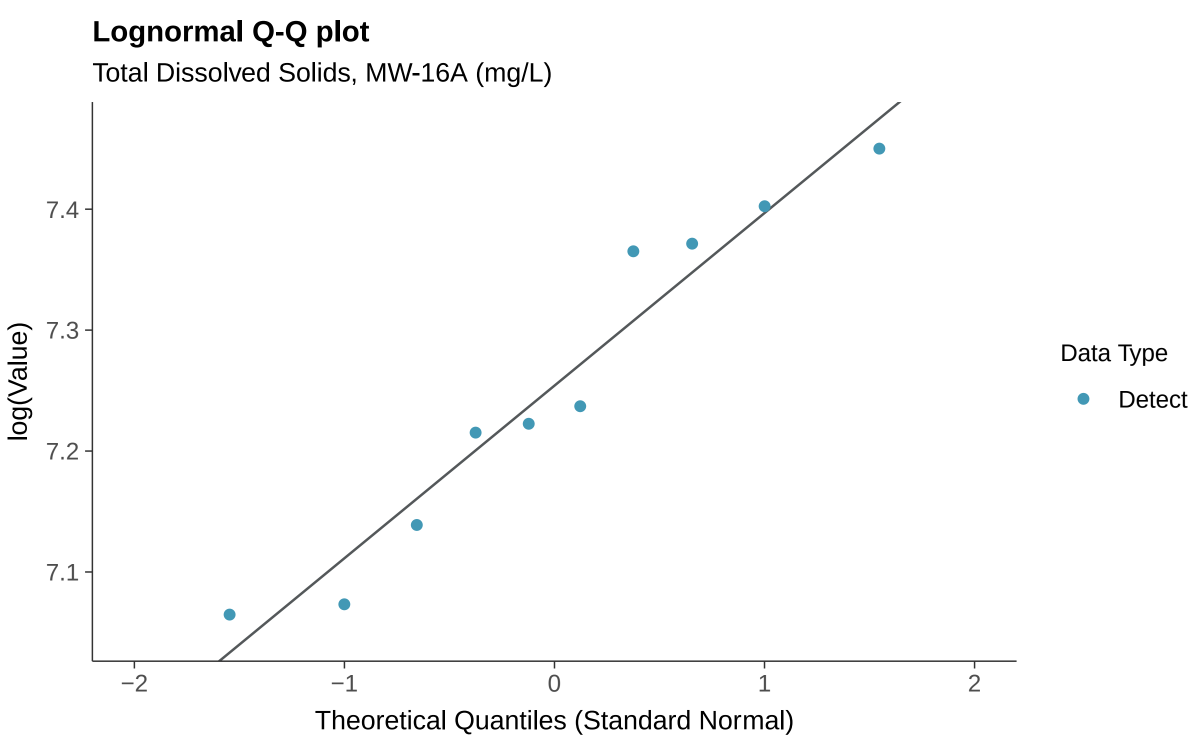


Boxplot by Season

Total Dissolved Solids, MW-16A (mg/L)

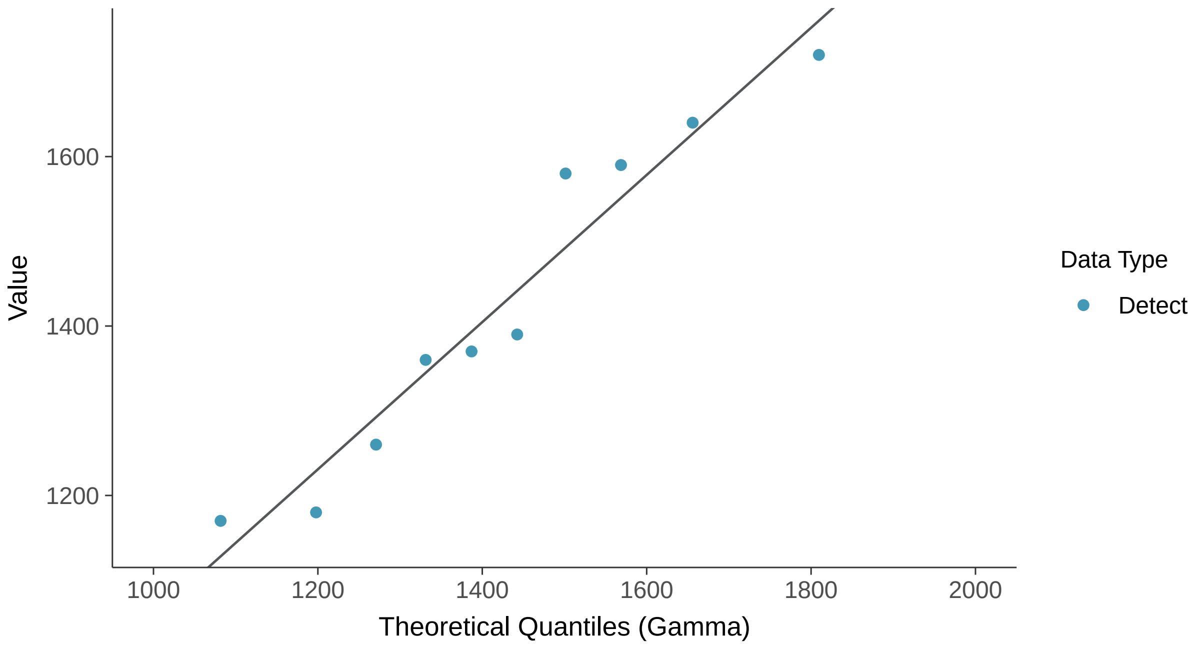



Normal Q-Q plot
Total Dissolved Solids, MW-16A (mg/L)
Value
1600
1400
1200
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Total Dissolved Solids, MW-16A (mg/L)
log(Value)
7.4
7.3
7.2
7.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

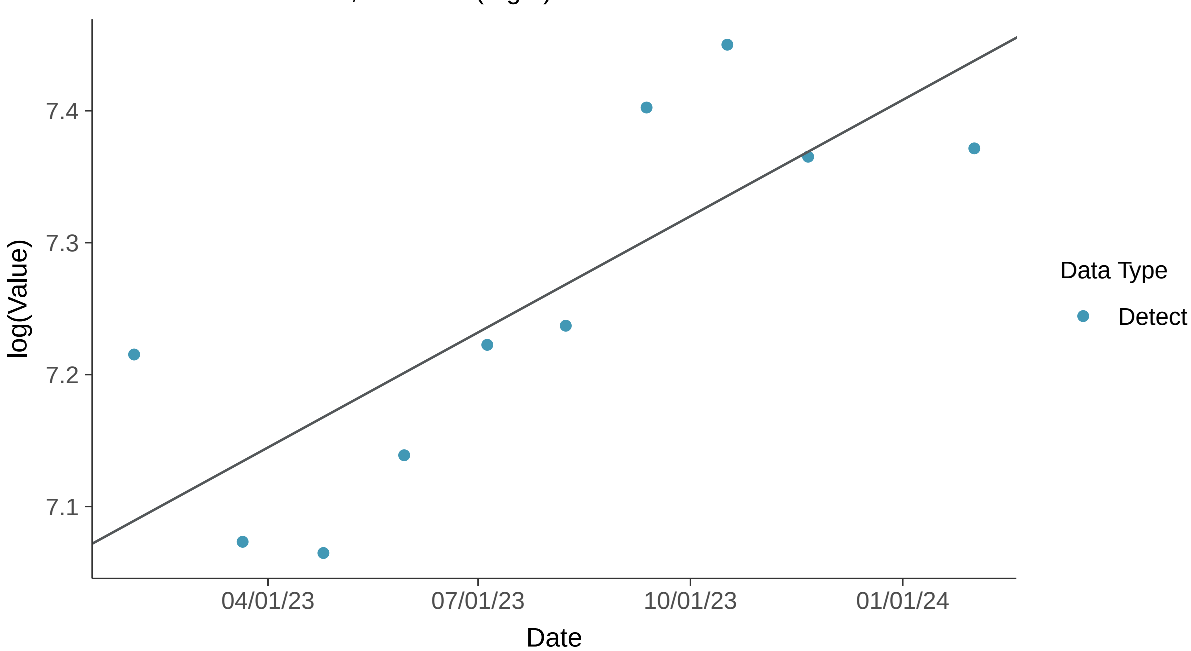
Gamma Q-Q plot

Total Dissolved Solids, MW-16A (mg/L)



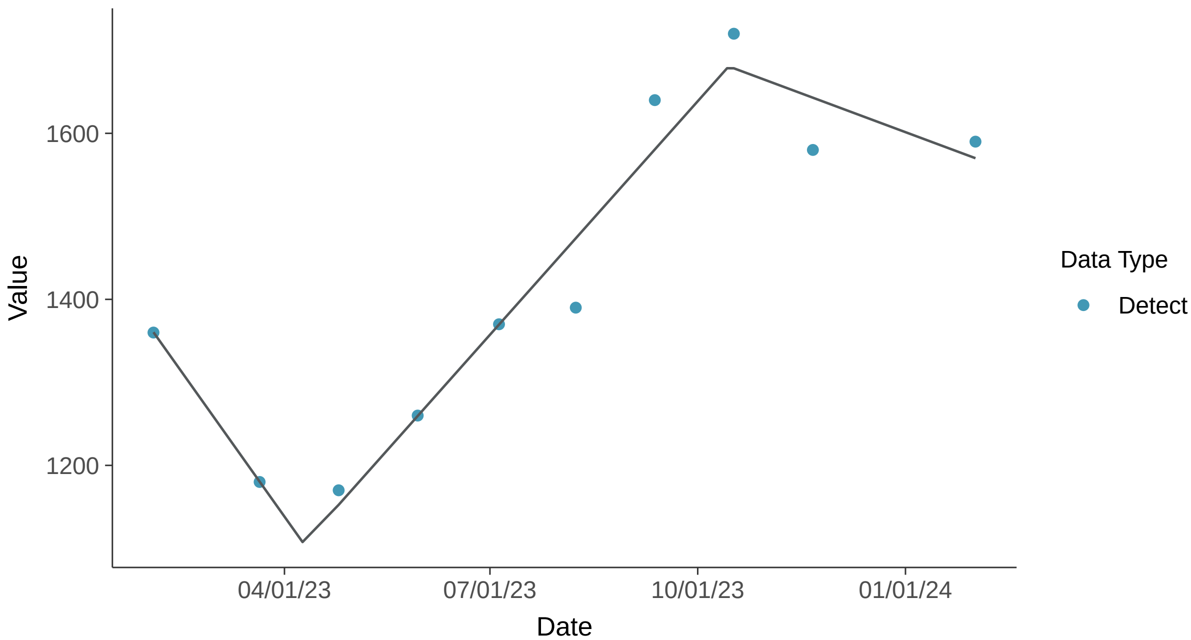
Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-16A (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Total Dissolved Solids, MW-16A (mg/L)

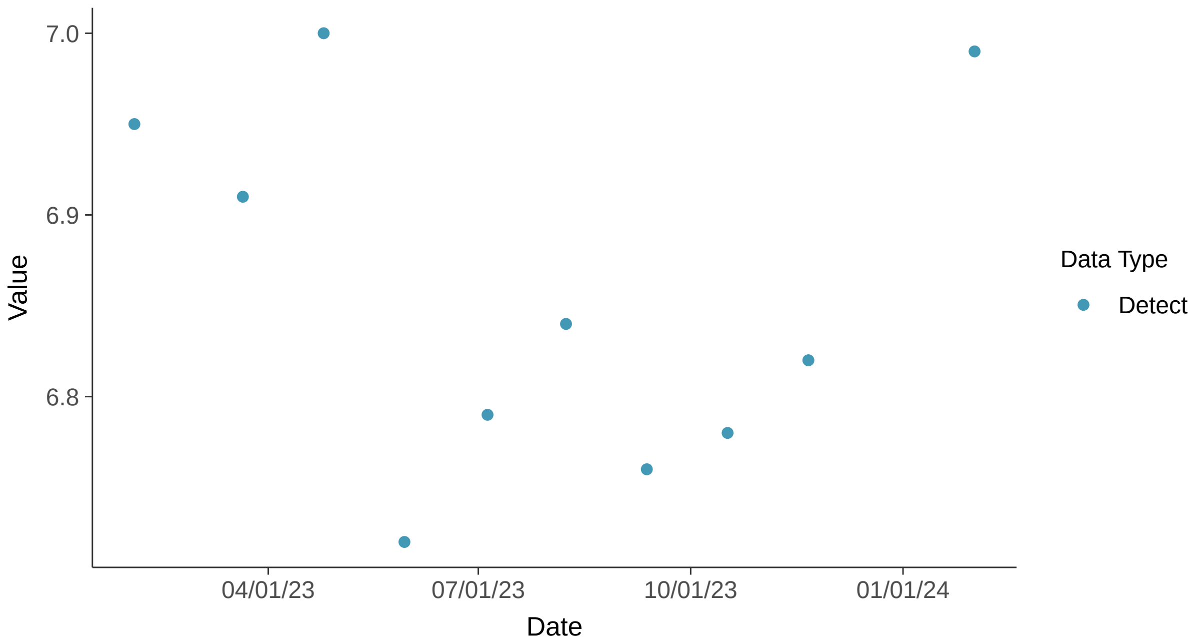


Appendix III: pH, Field, MW-16A

ID: 16A_1_07

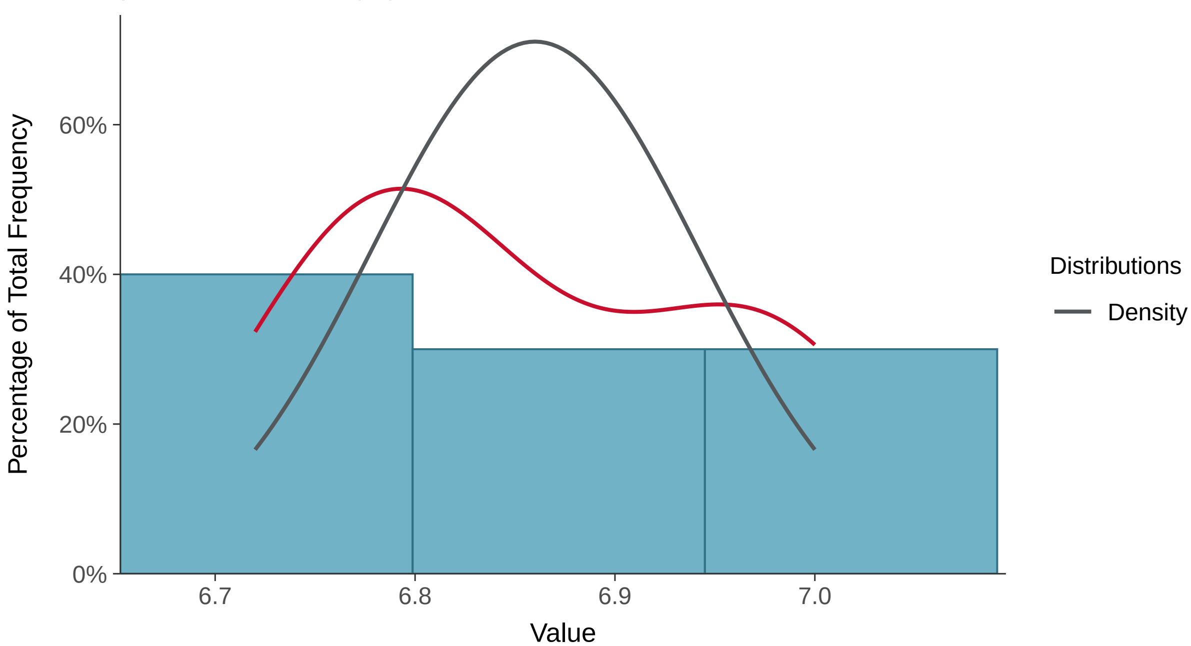
Scatter Plot

pH, Field, MW-16A (su)



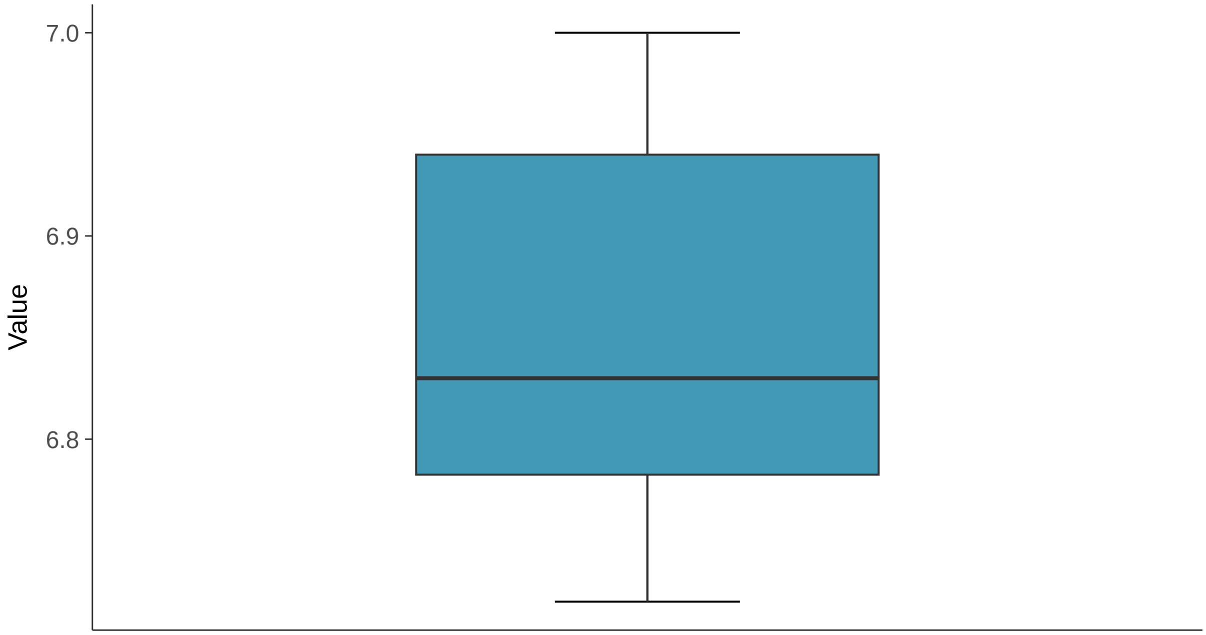
Histogram

pH, Field, MW-16A (su)



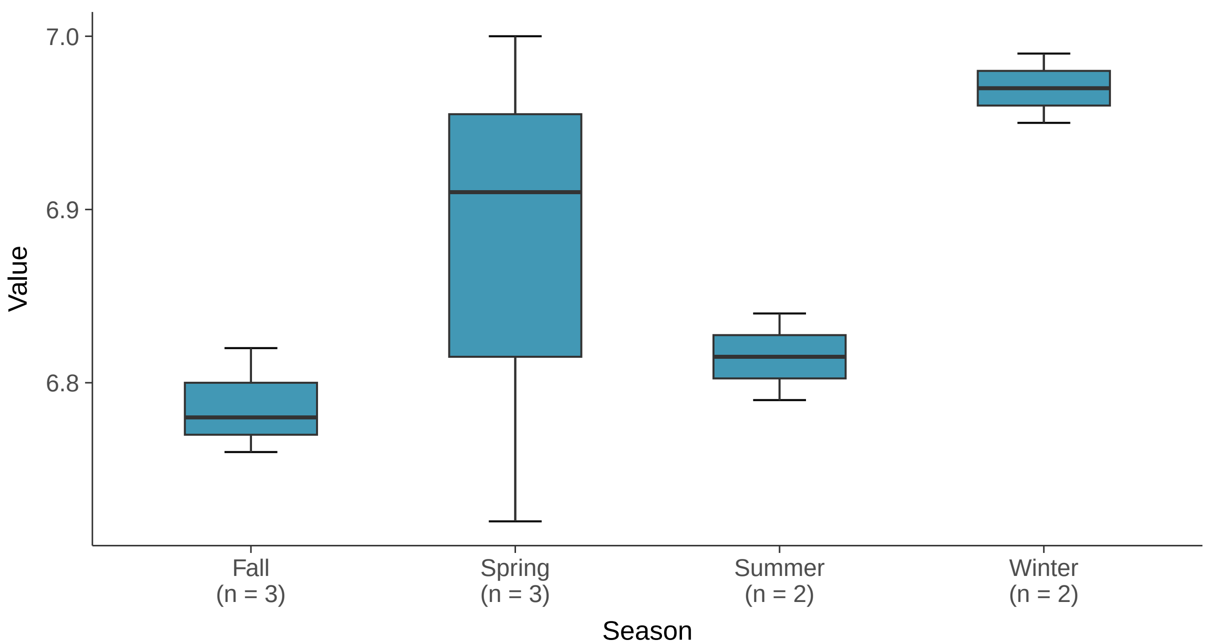
Boxplot

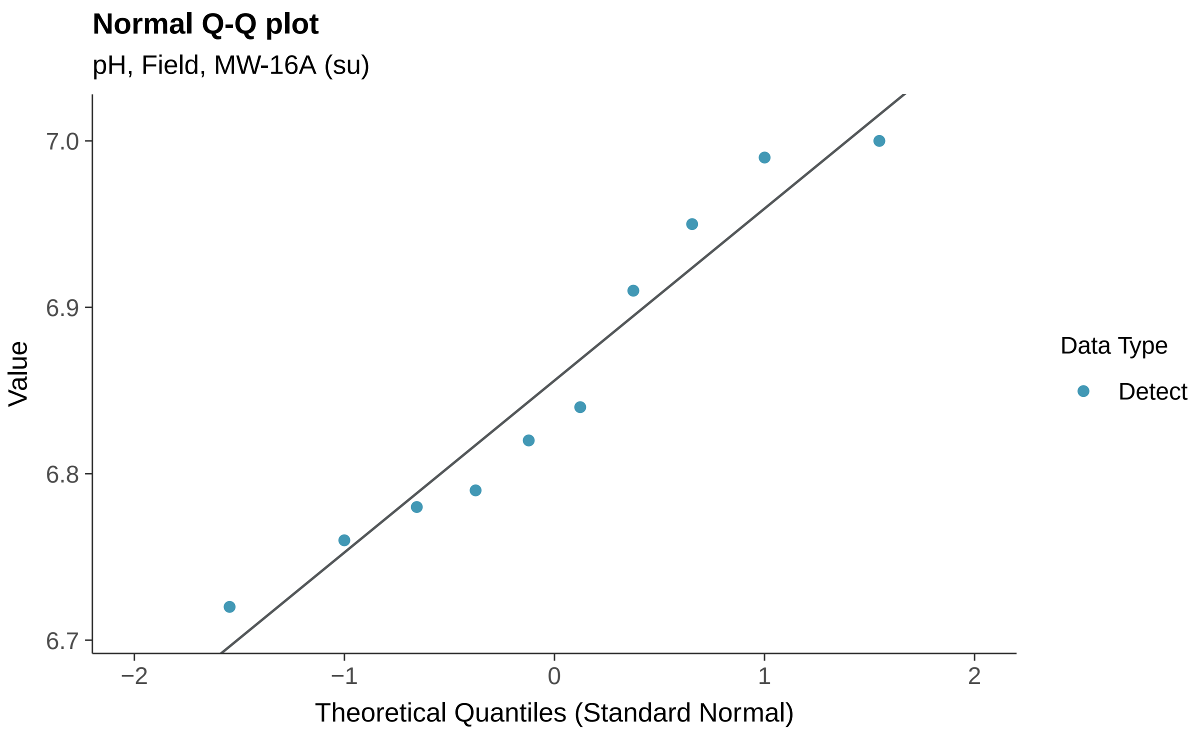
pH, Field, MW-16A (su)

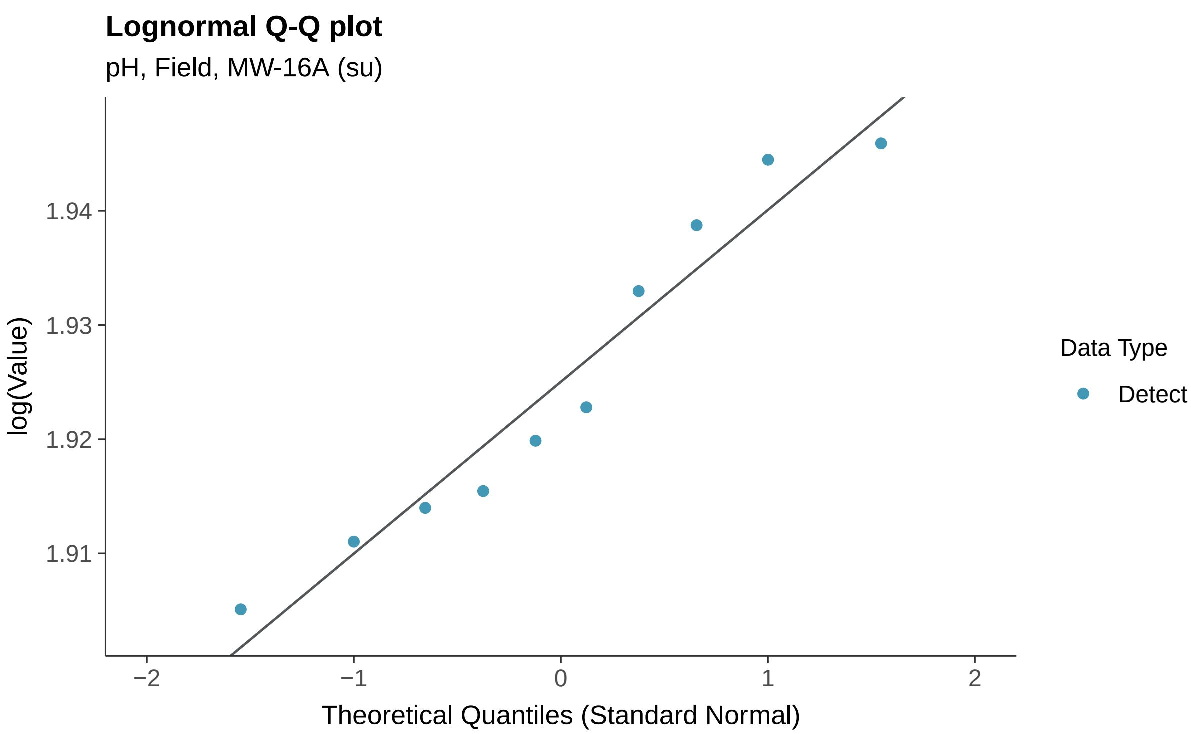


Boxplot by Season

pH, Field, MW-16A (su)

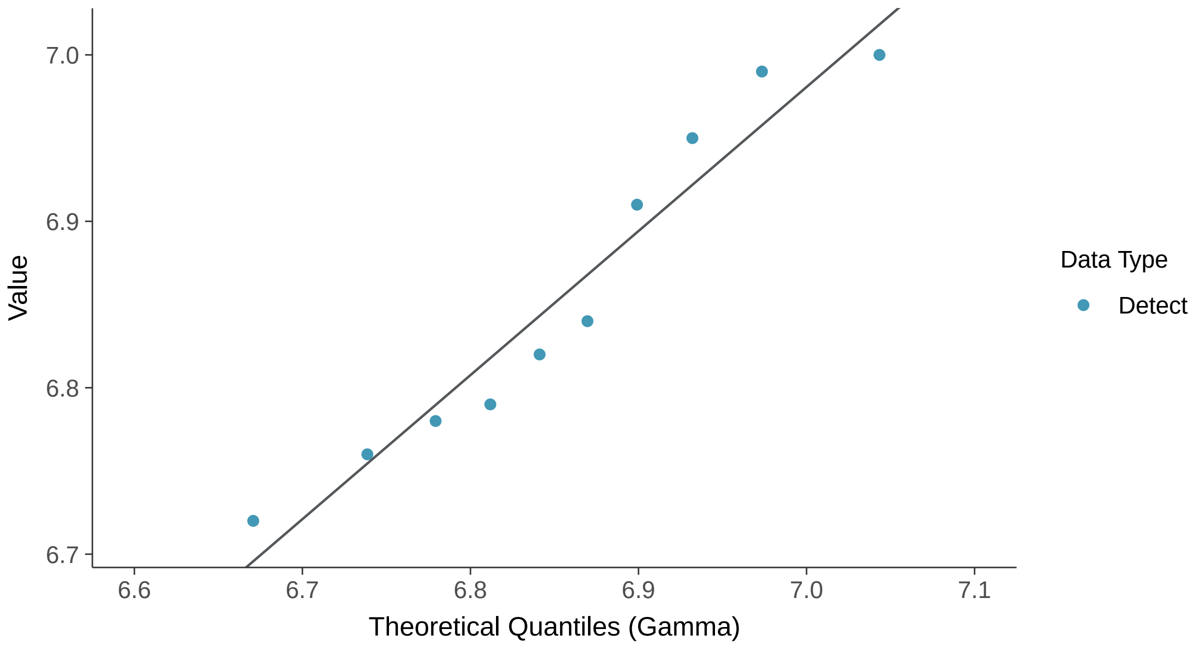



Normal Q-Q plot
pH, Field, MW-16A (su)
Value
7.0
6.9
6.8
6.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH, Field, MW-16A (su)
log(Value)
1.94
1.93
1.92
1.91
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

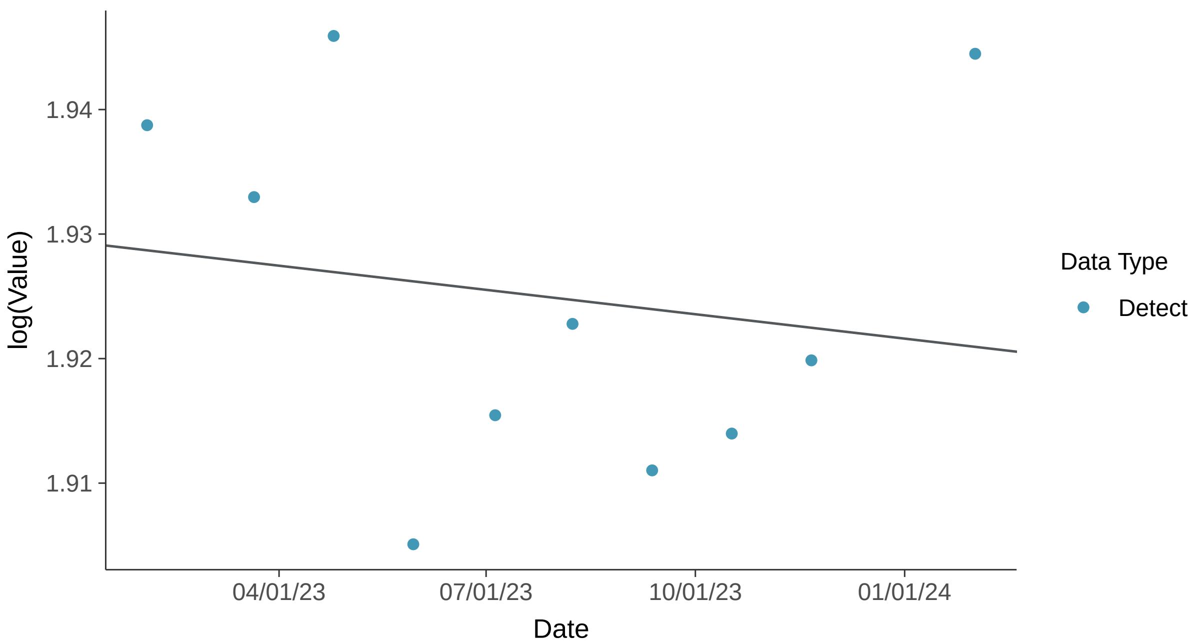
Gamma Q-Q plot

pH, Field, MW-16A (su)



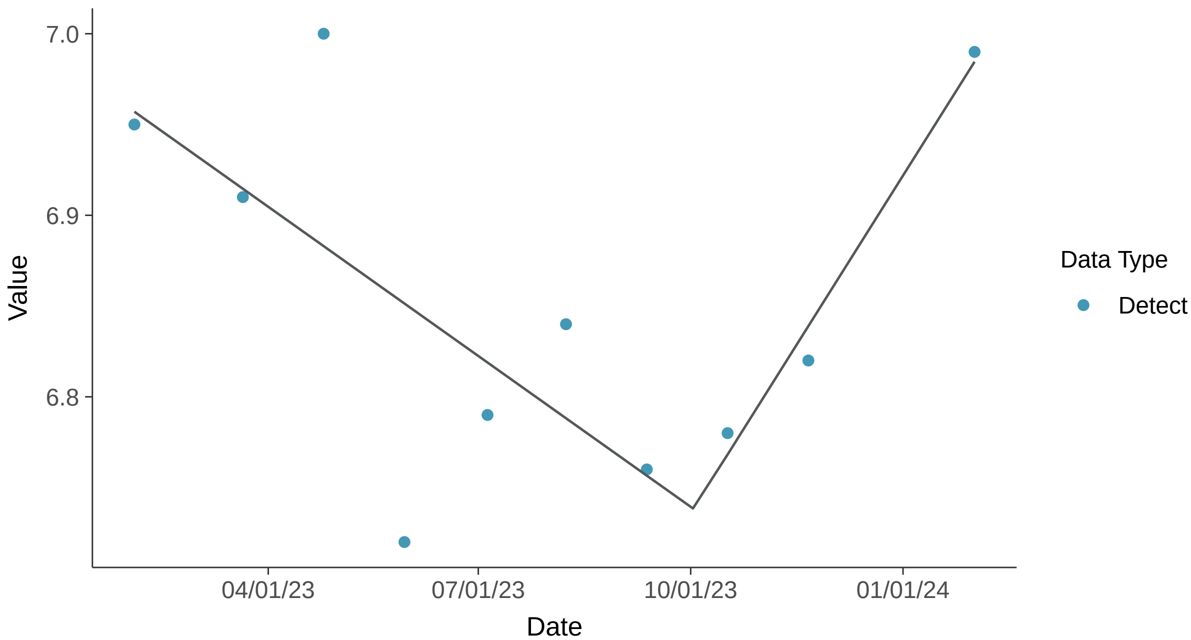
Trend Regression: Lognormal MLE

pH, Field, MW-16A (su)



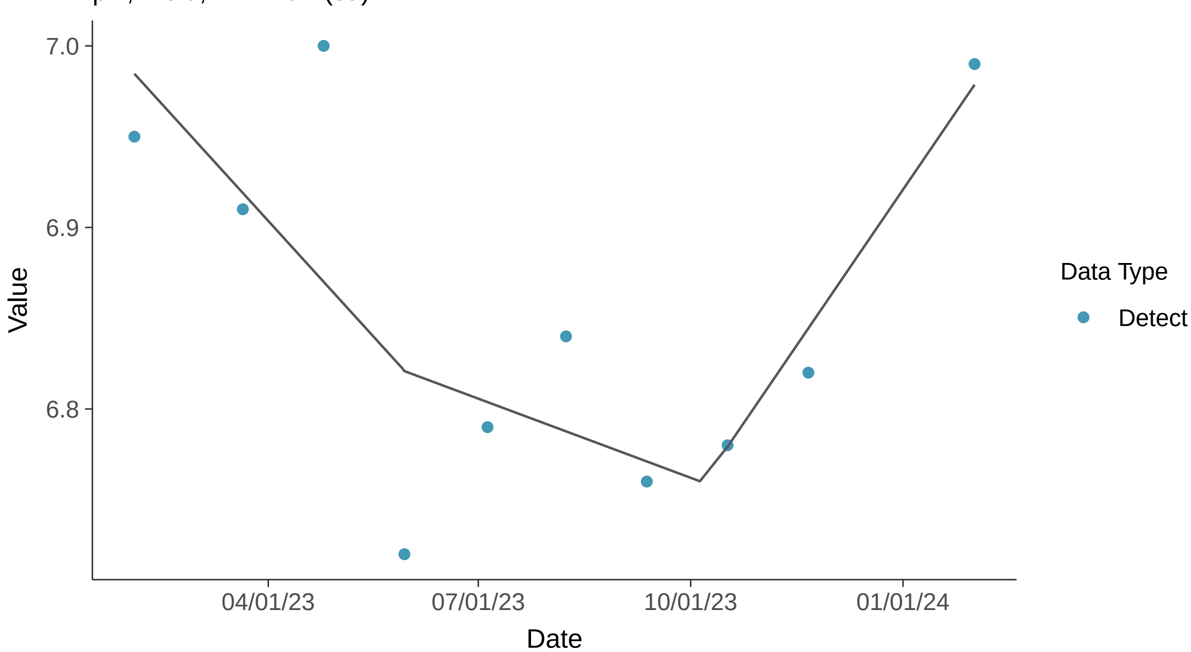
Trend Regression: Piecewise Linear-Linear

pH, Field, MW-16A (su)



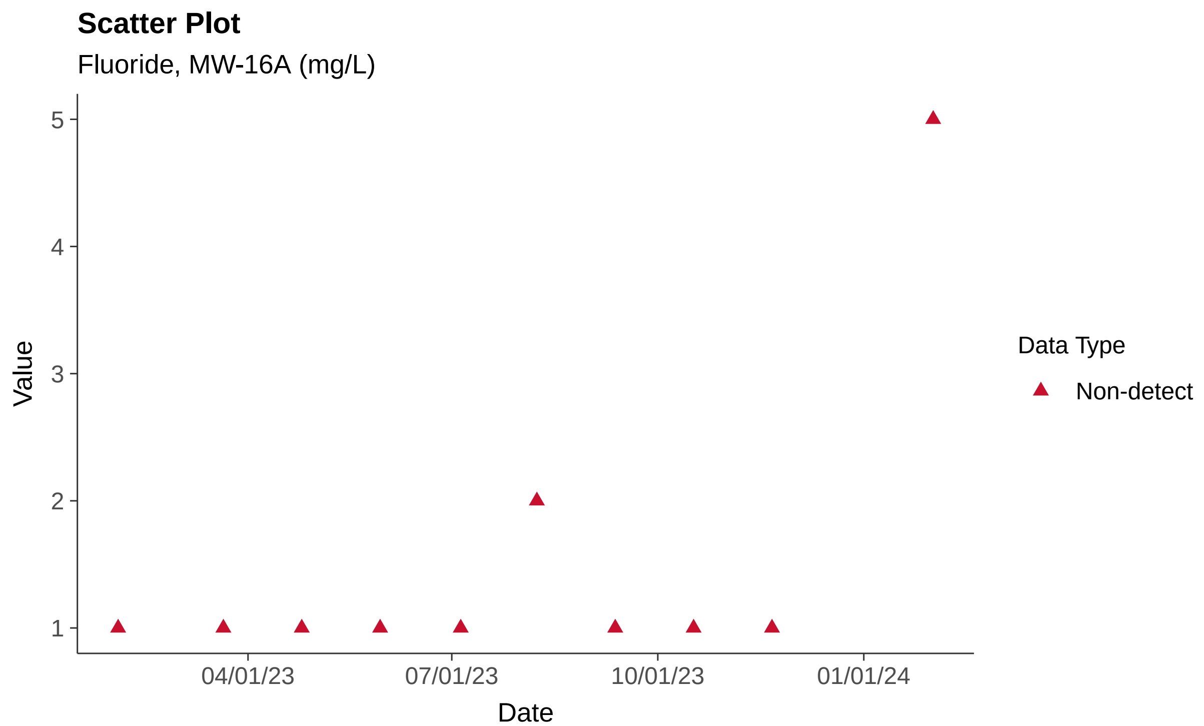
Trend Regression: Piecewise Linear-Linear-Linear

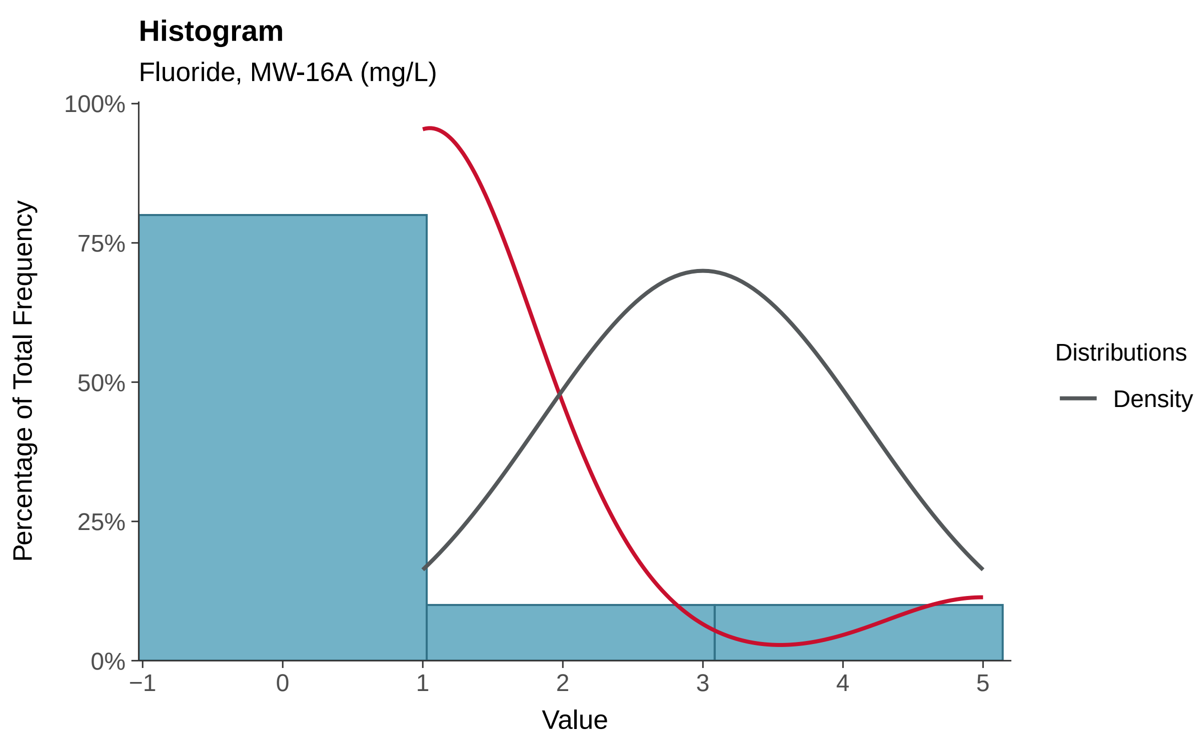
pH, Field, MW-16A (su)



Appendix IV: Fluoride, MW-16A

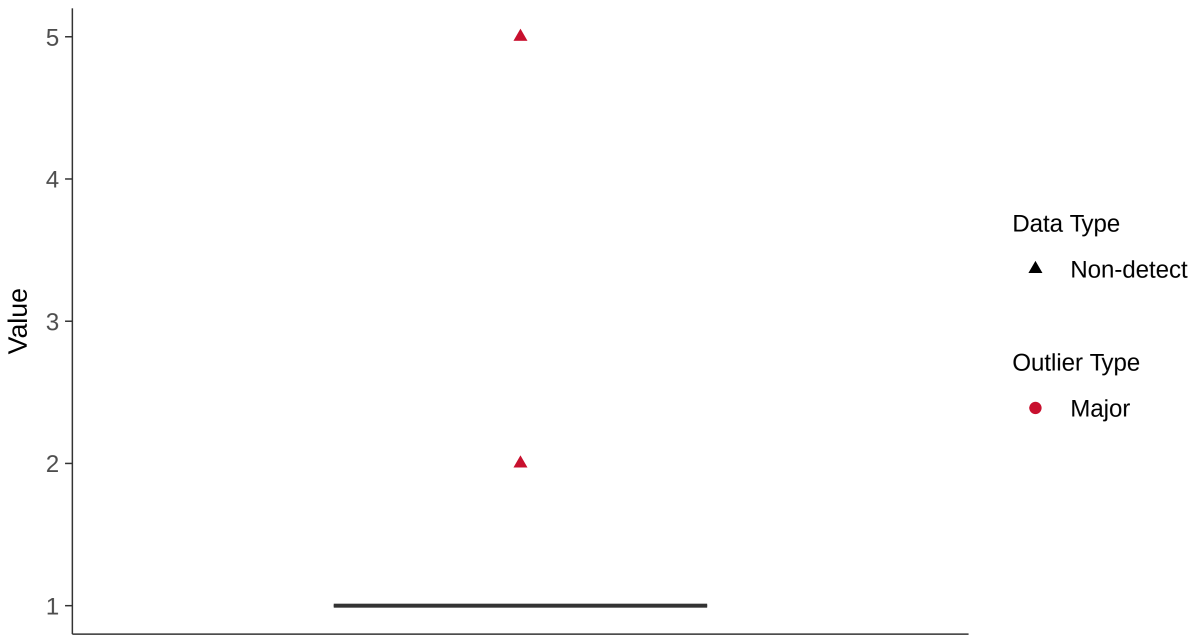
ID: 16A_2_04





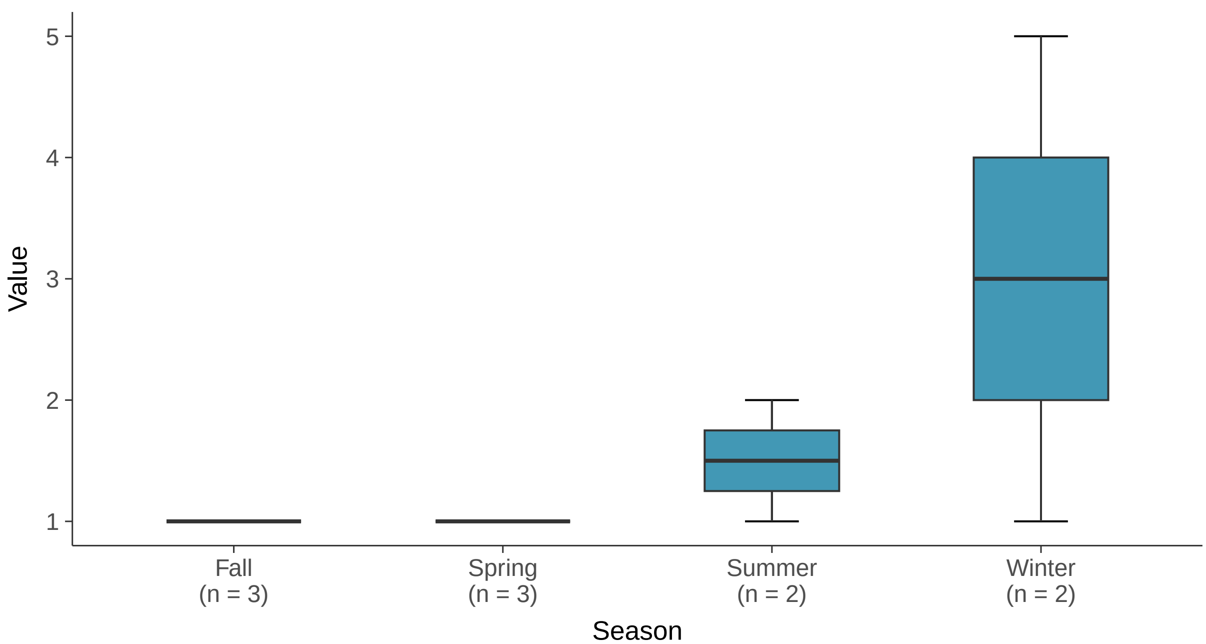
Boxplot

Fluoride, MW-16A (mg/L)



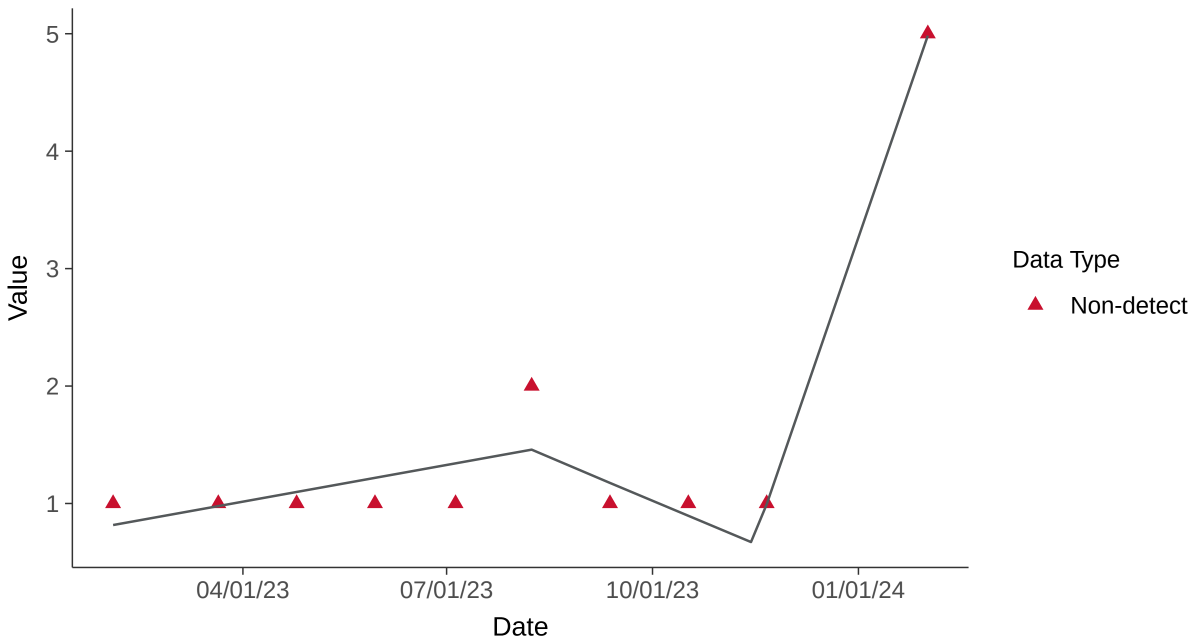
Boxplot by Season

Fluoride, MW-16A (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-16A (mg/L)

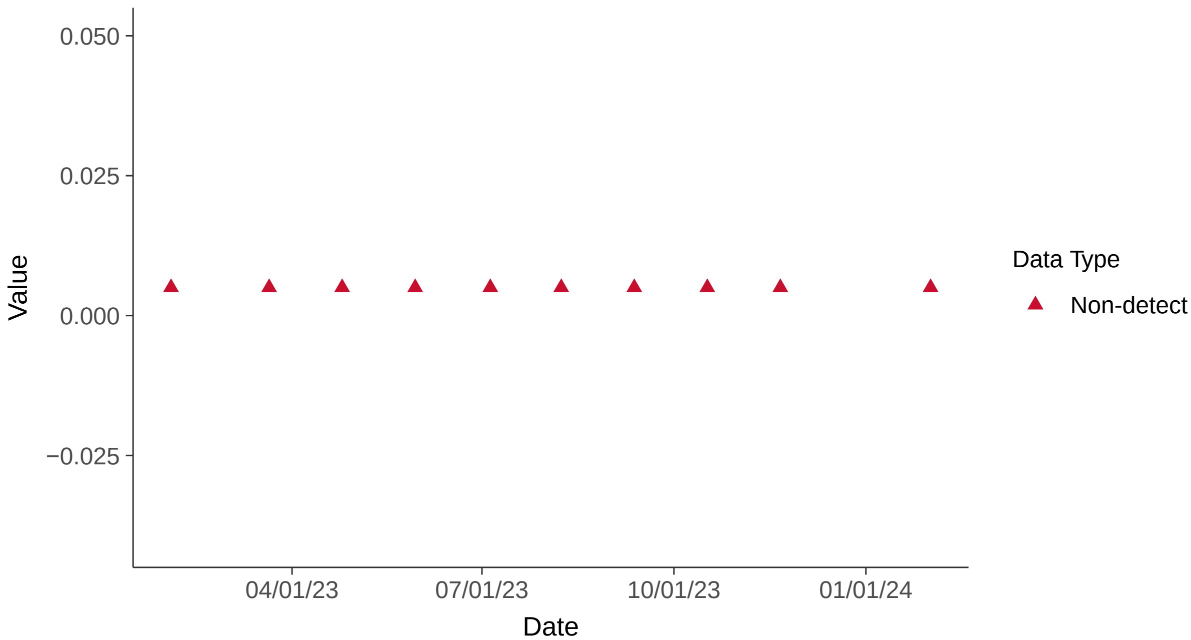


Appendix IV: Antimony, MW-16A

ID: 16A_2_08

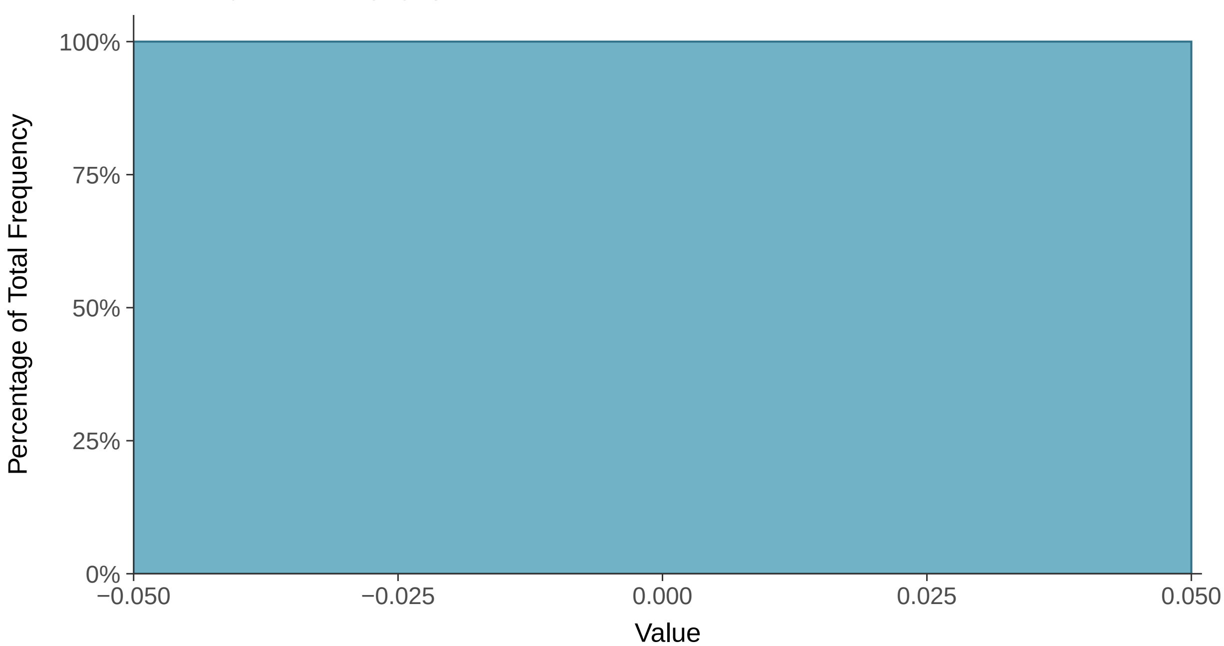
Scatter Plot

Antimony, MW-16A (mg/L)



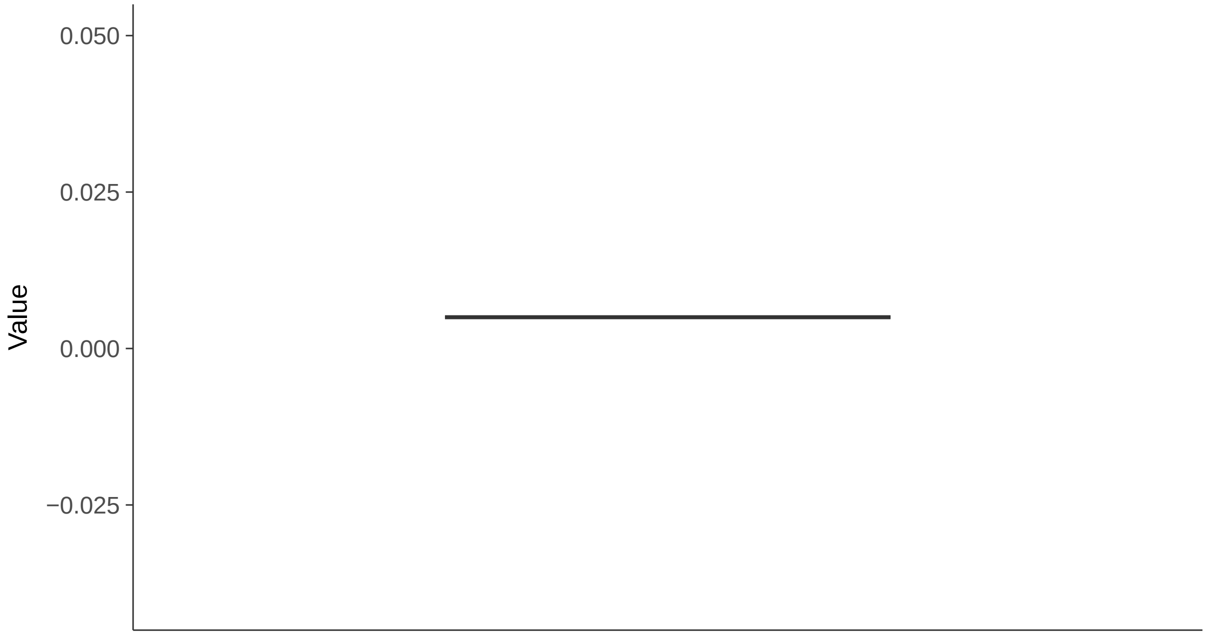
Histogram

Antimony, MW-16A (mg/L)



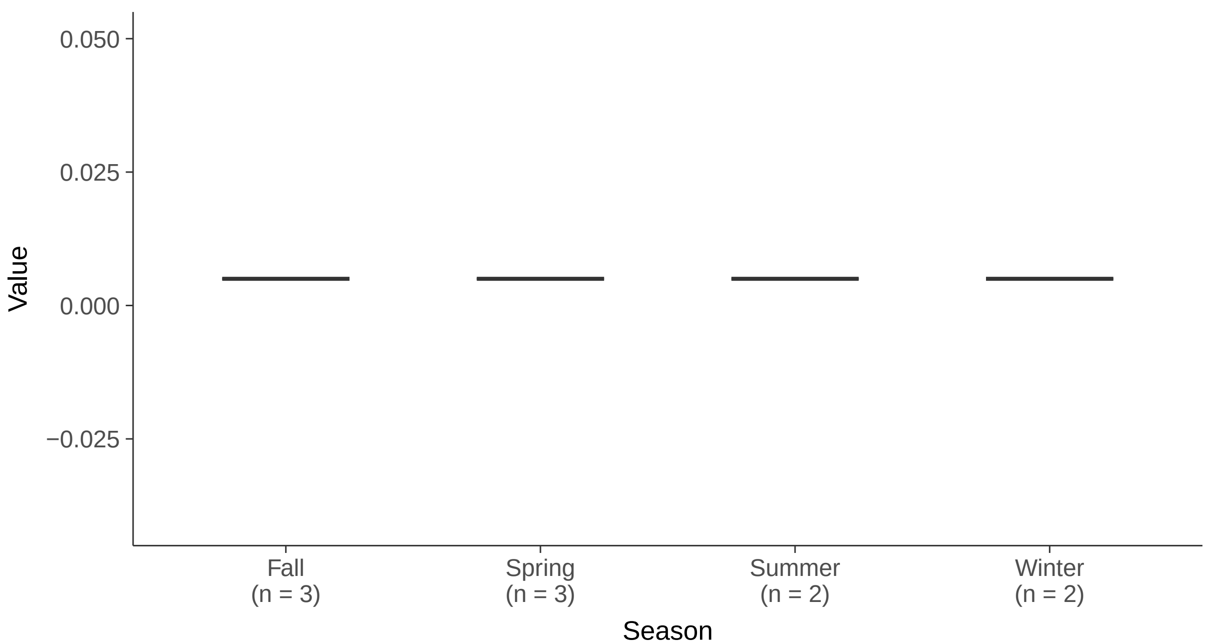
Boxplot

Antimony, MW-16A (mg/L)



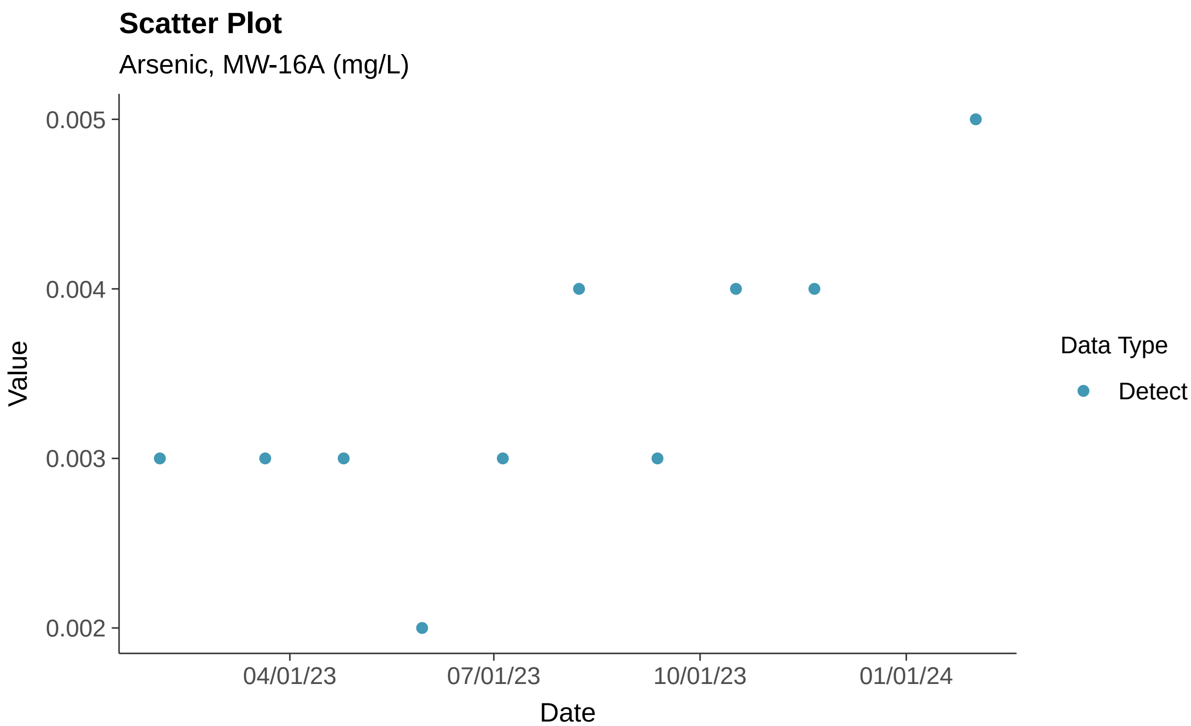
Boxplot by Season

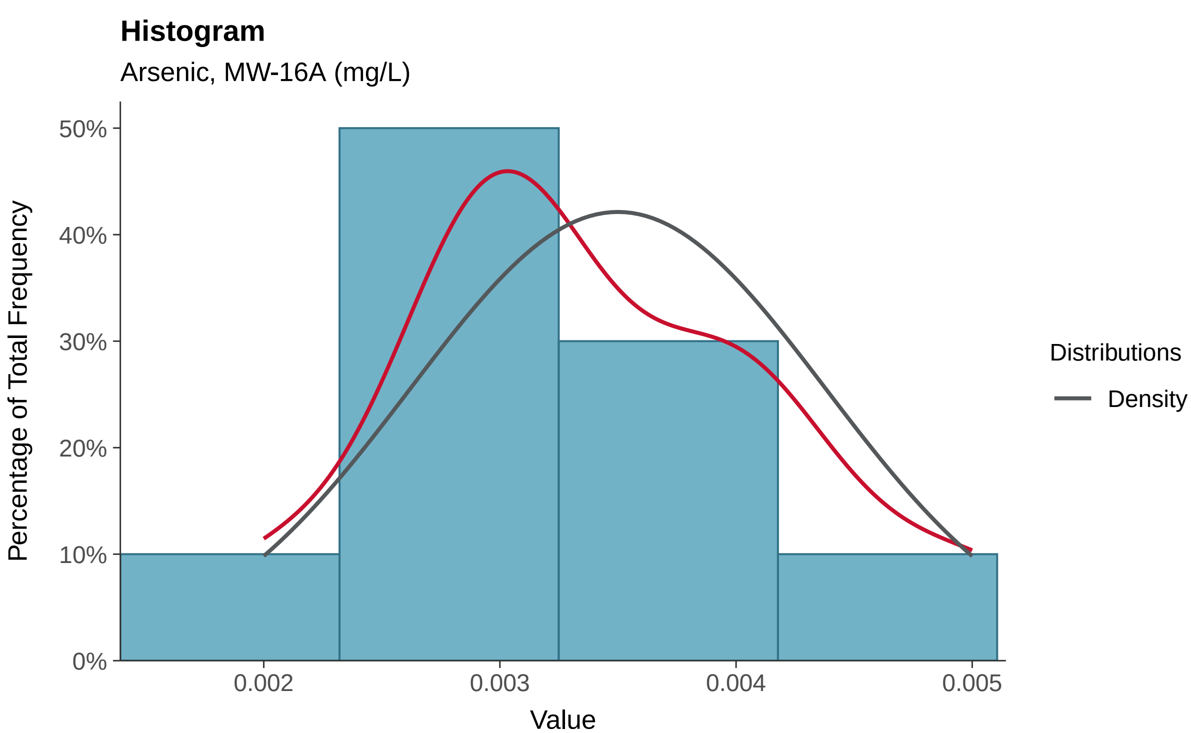
Antimony, MW-16A (mg/L)



Appendix IV: Arsenic, MW-16A

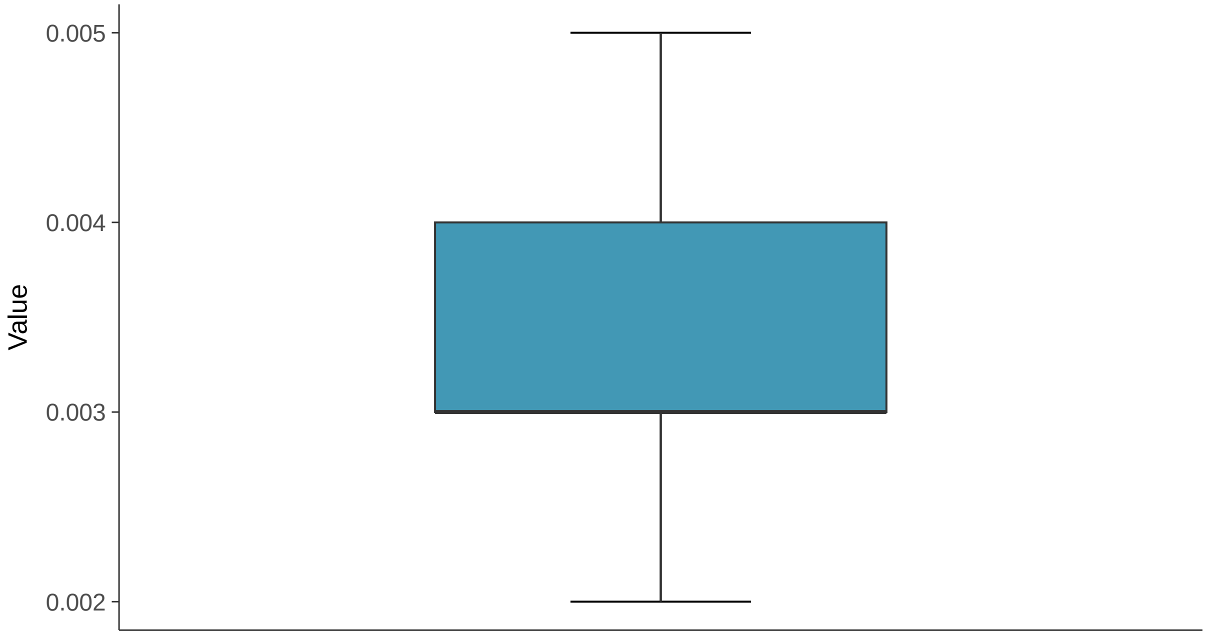
ID: 16A_2_09





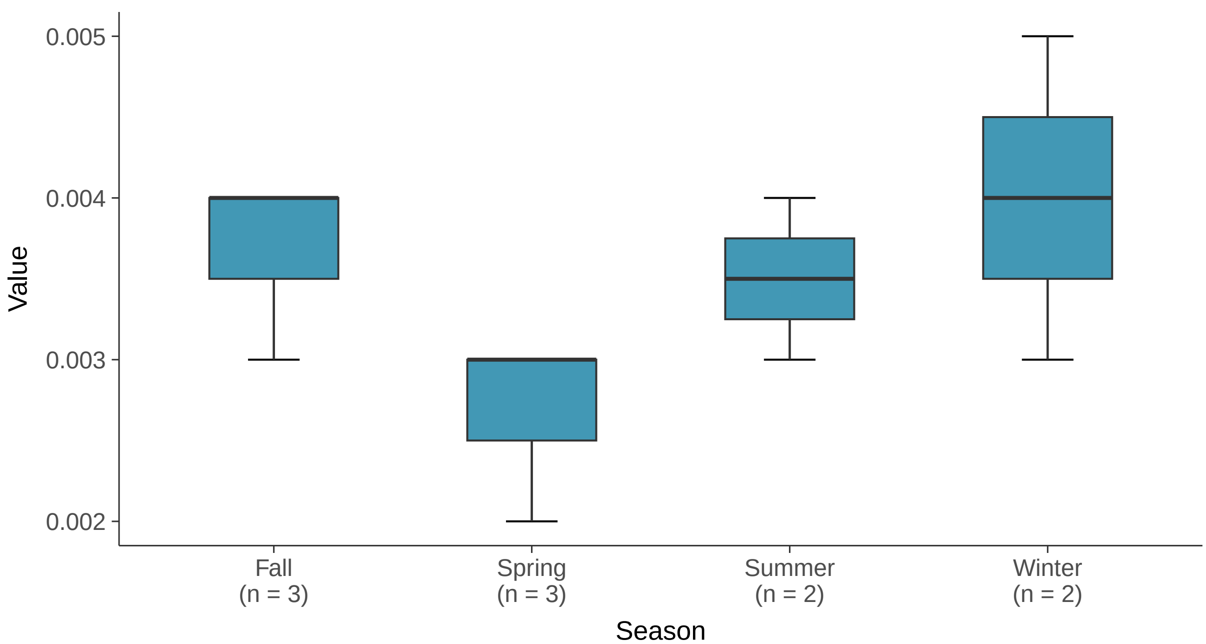
Boxplot

Arsenic, MW-16A (mg/L)



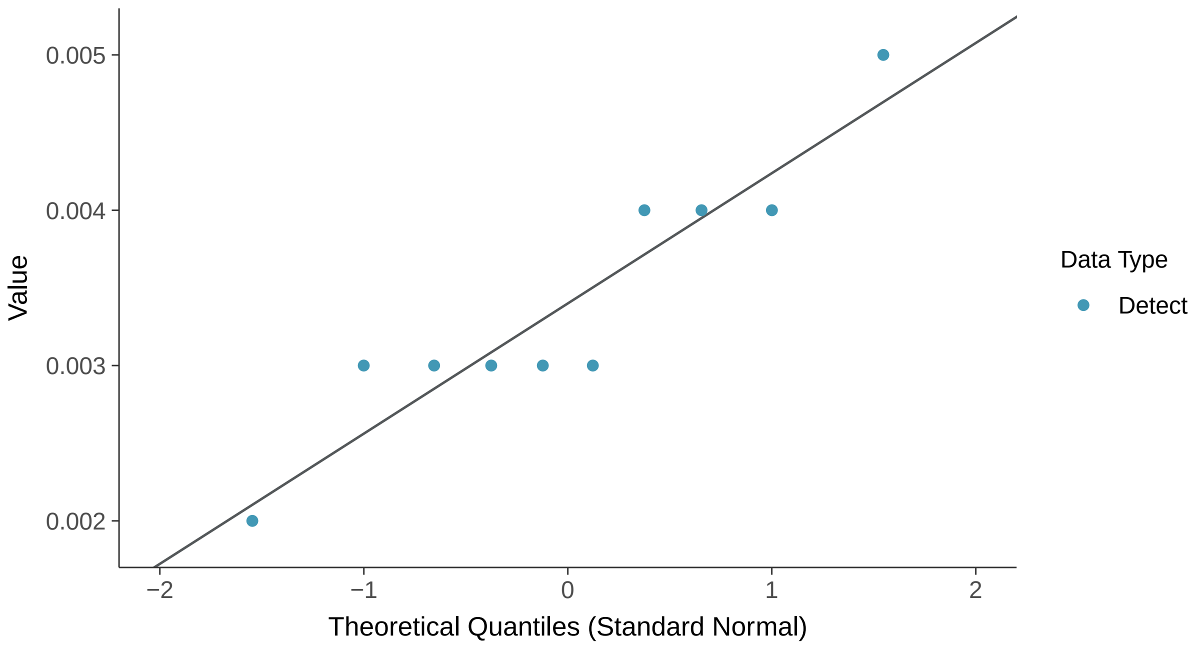
Boxplot by Season

Arsenic, MW-16A (mg/L)



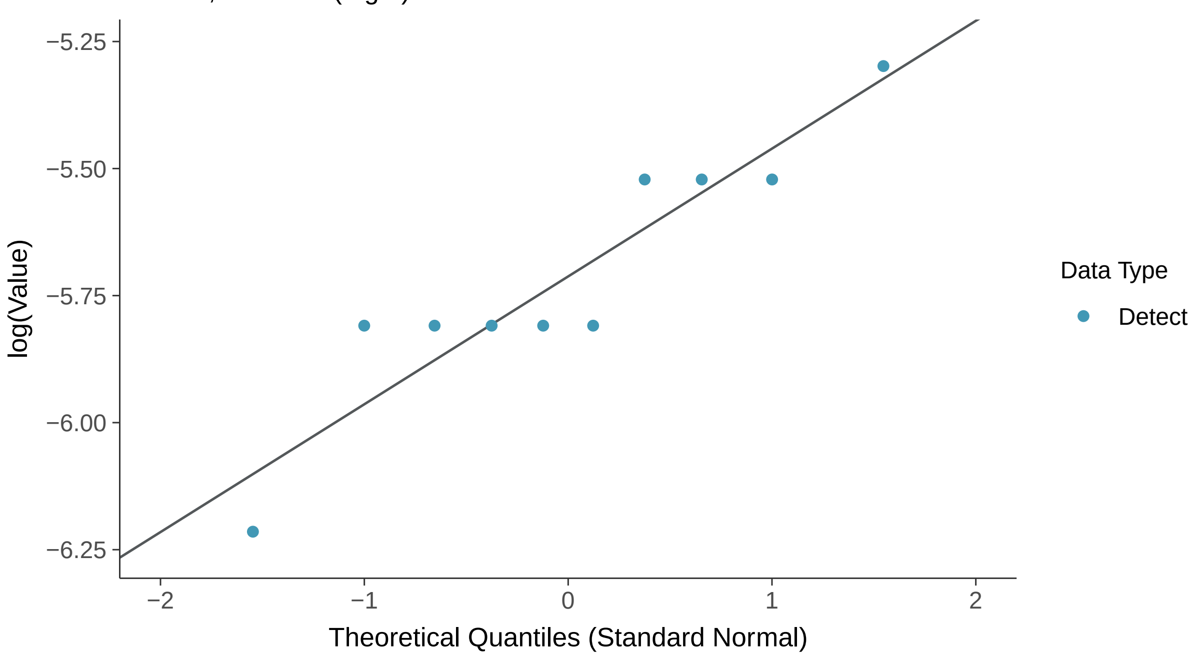
Normal Q-Q plot

Arsenic, MW-16A (mg/L)



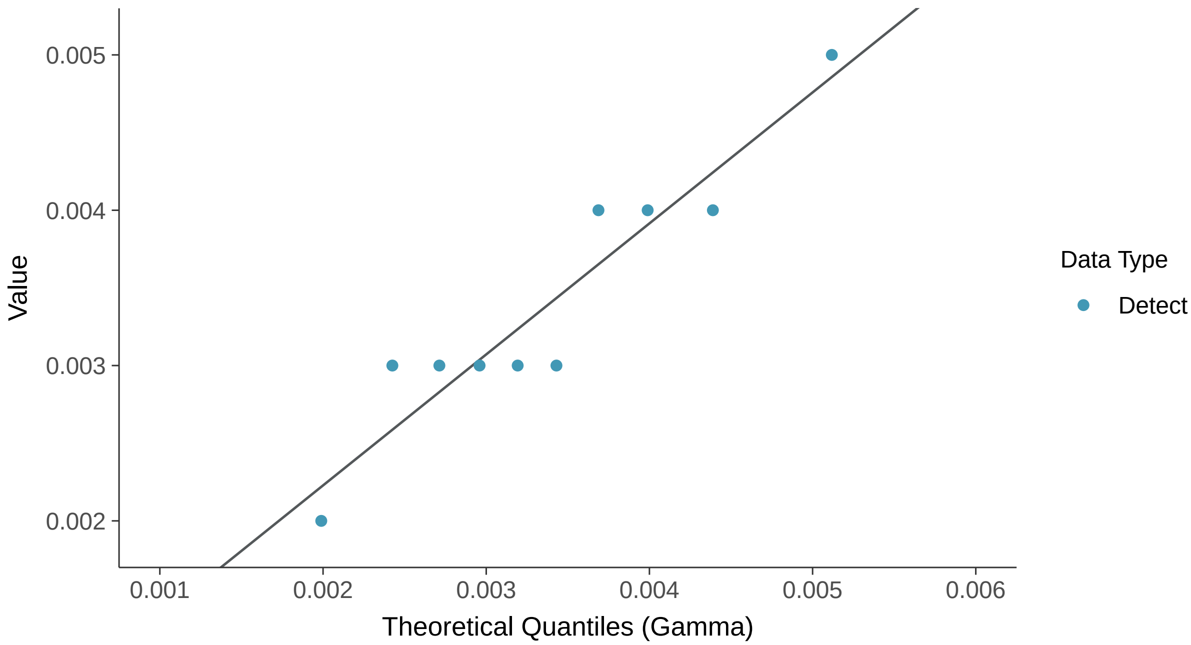
Lognormal Q-Q plot

Arsenic, MW-16A (mg/L)



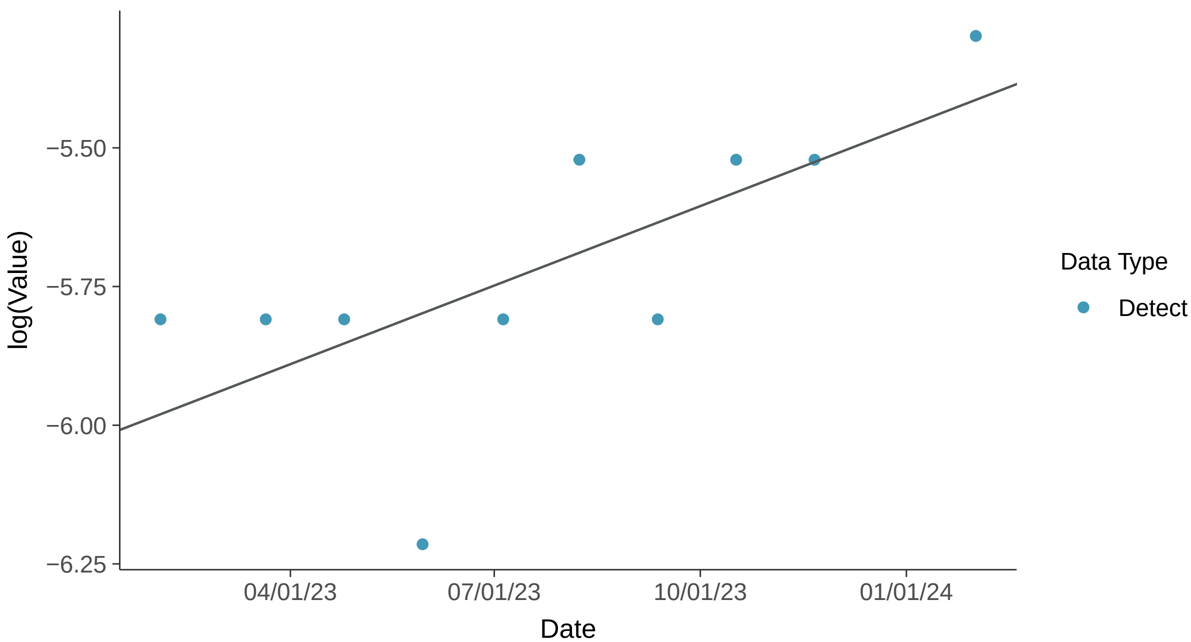
Gamma Q-Q plot

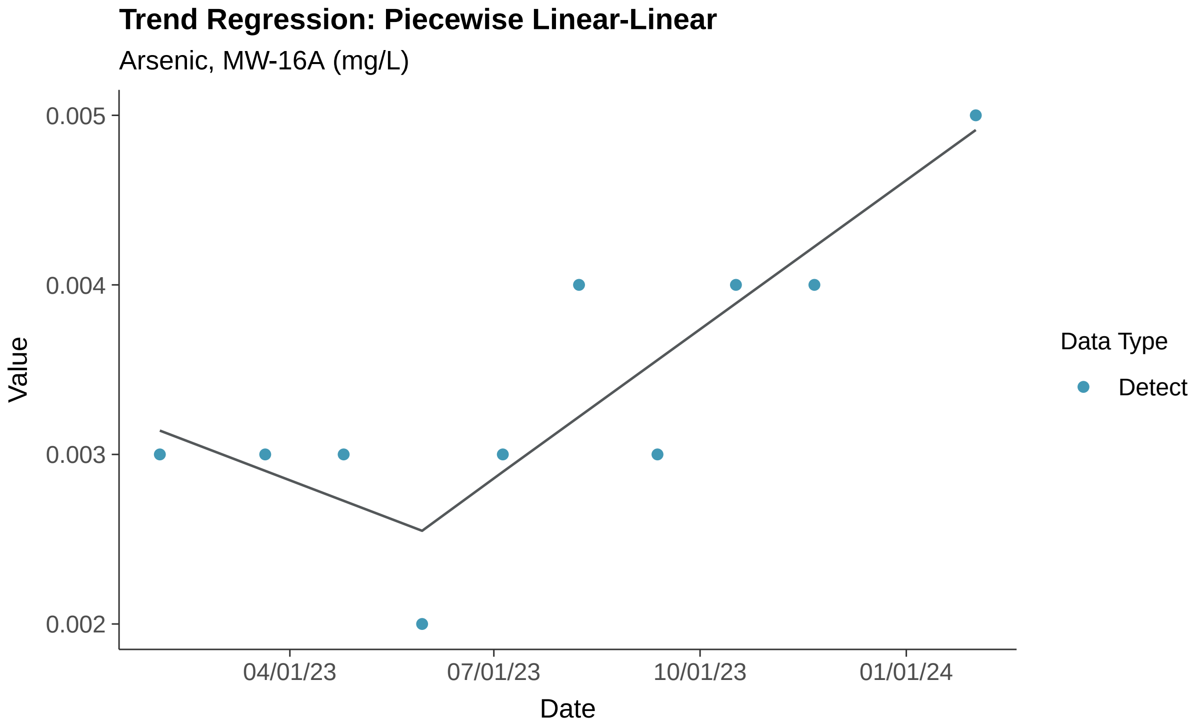
Arsenic, MW-16A (mg/L)

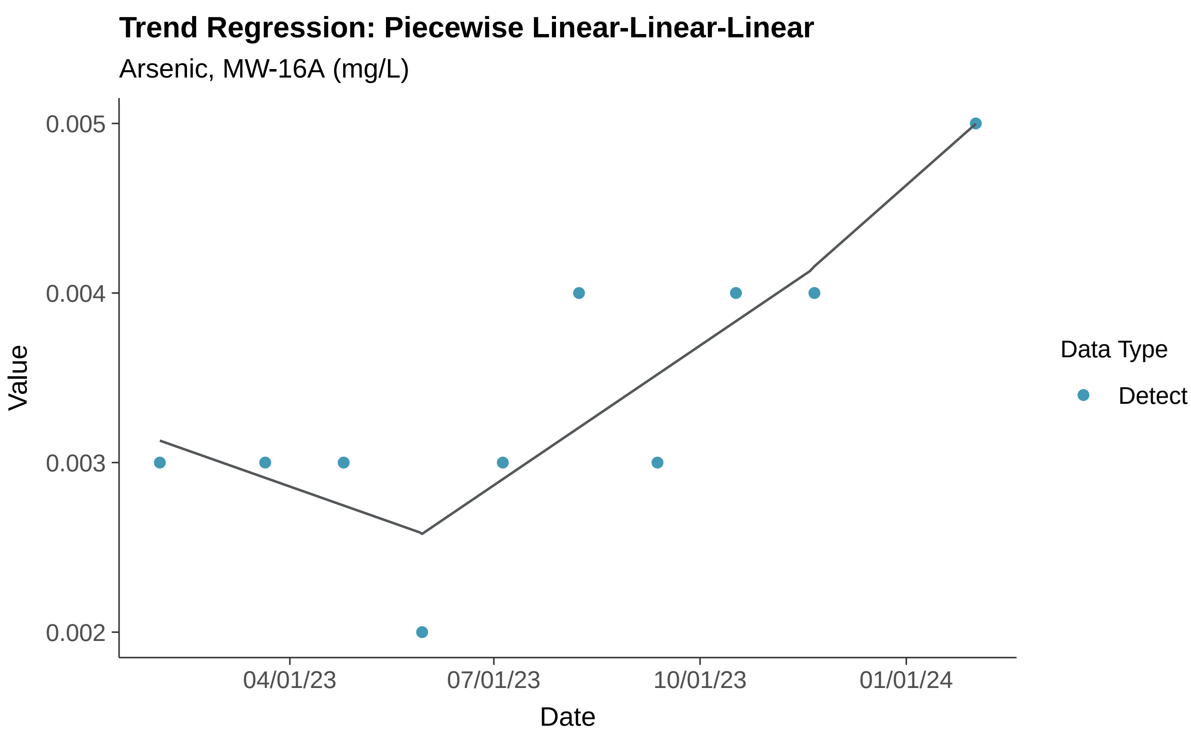


Trend Regression: Lognormal MLE

Arsenic, MW-16A (mg/L)

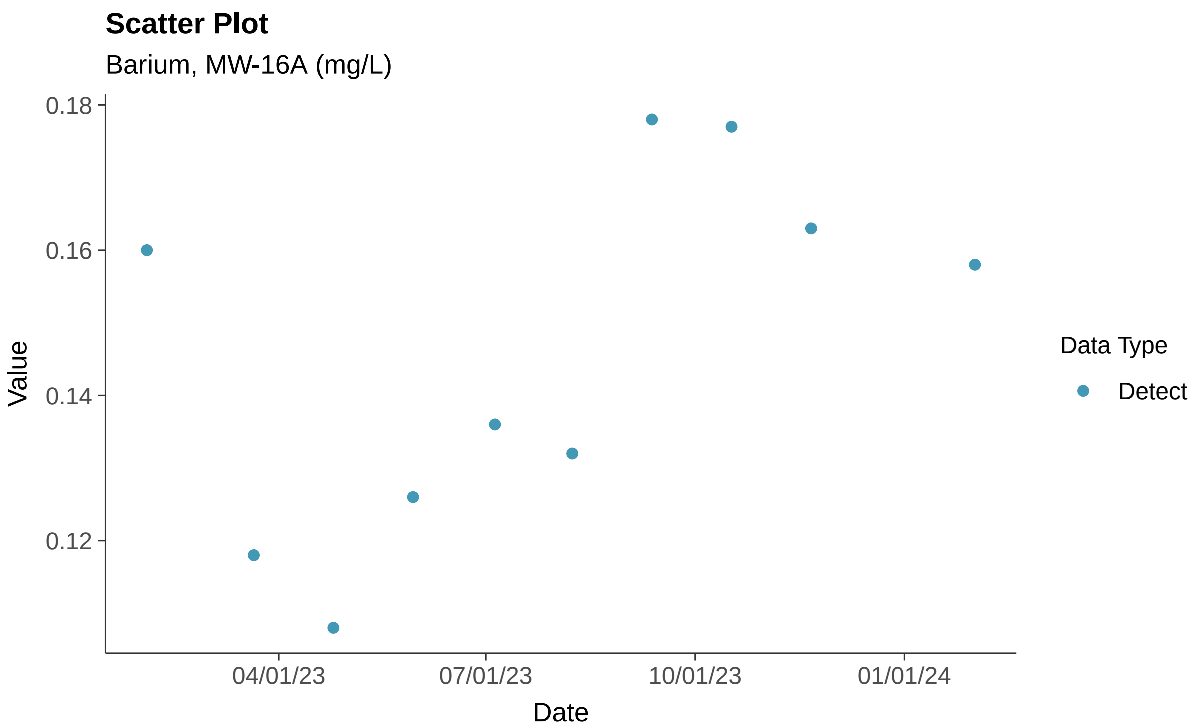


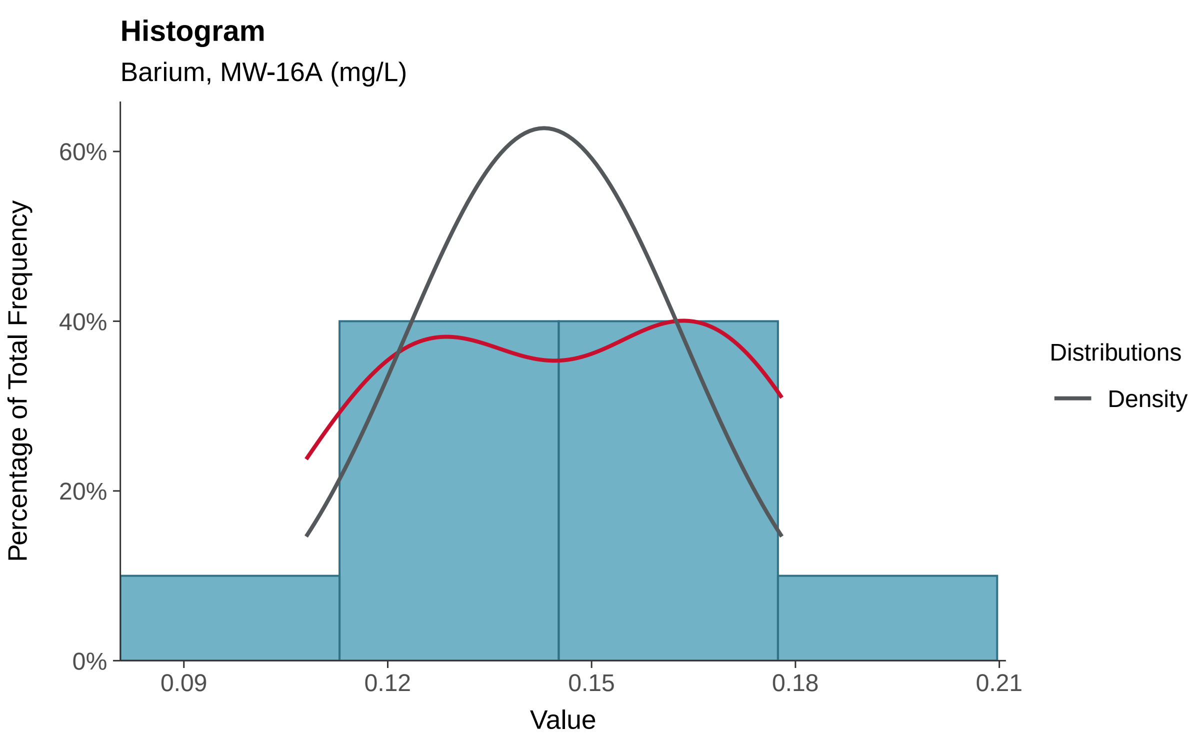

Trend Regression: Piecewise Linear-Linear
Arsenic, MW-16A (mg/L)
Value
0.005
0.004
0.003
0.002
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Arsenic, MW-16A (mg/L)
Value
0.005
0.004
0.003
0.002
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Barium, MW-16A

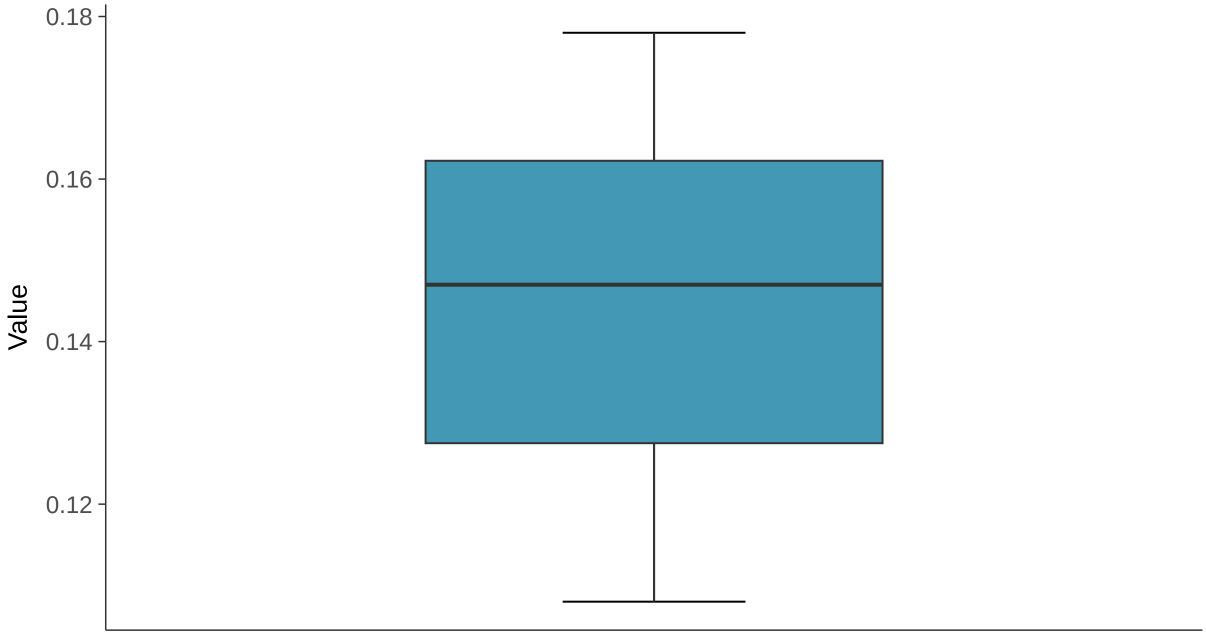
ID: 16A_2_10





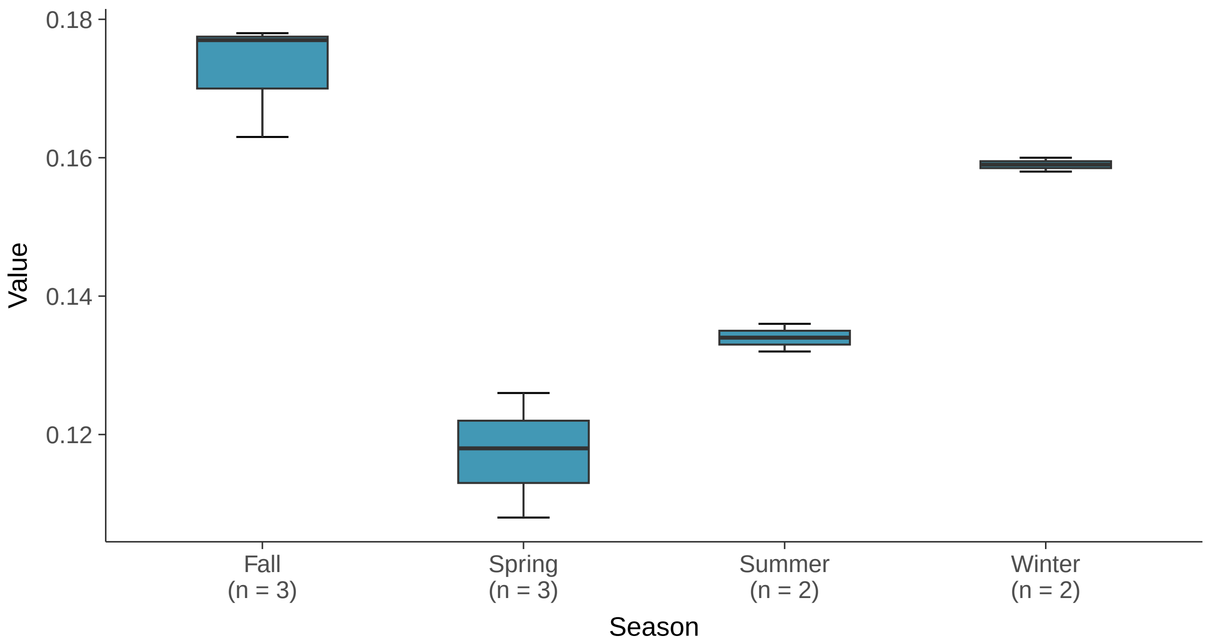
Boxplot

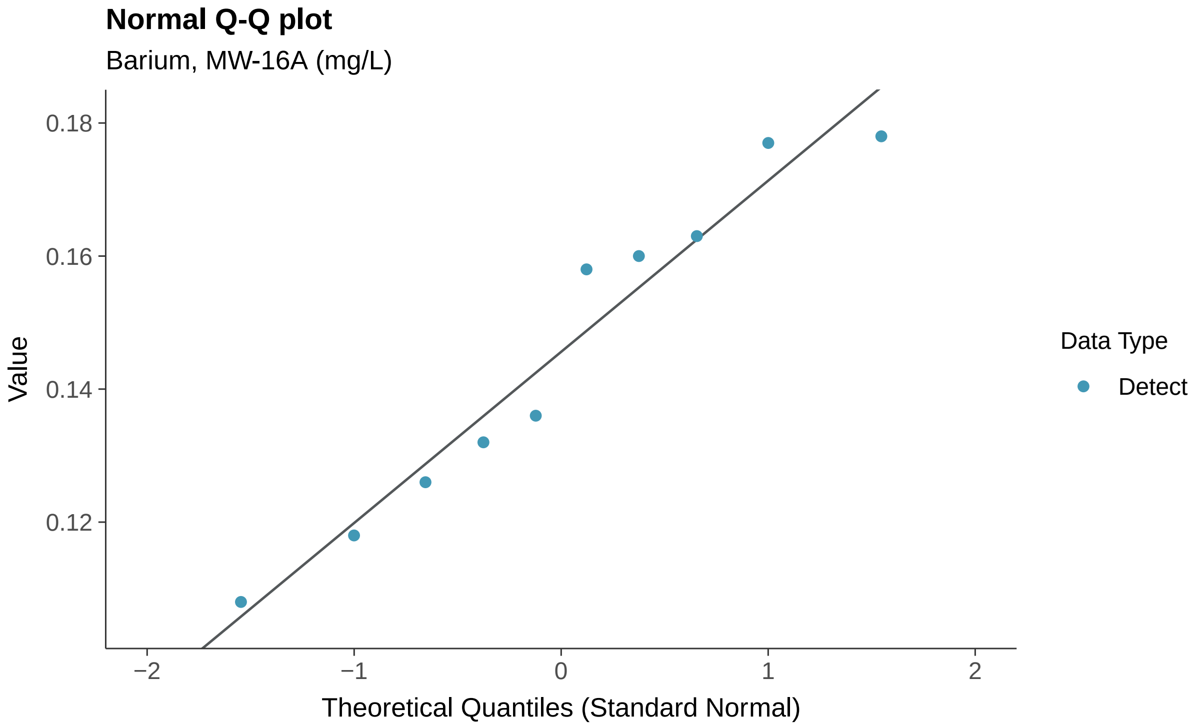
Barium, MW-16A (mg/L)

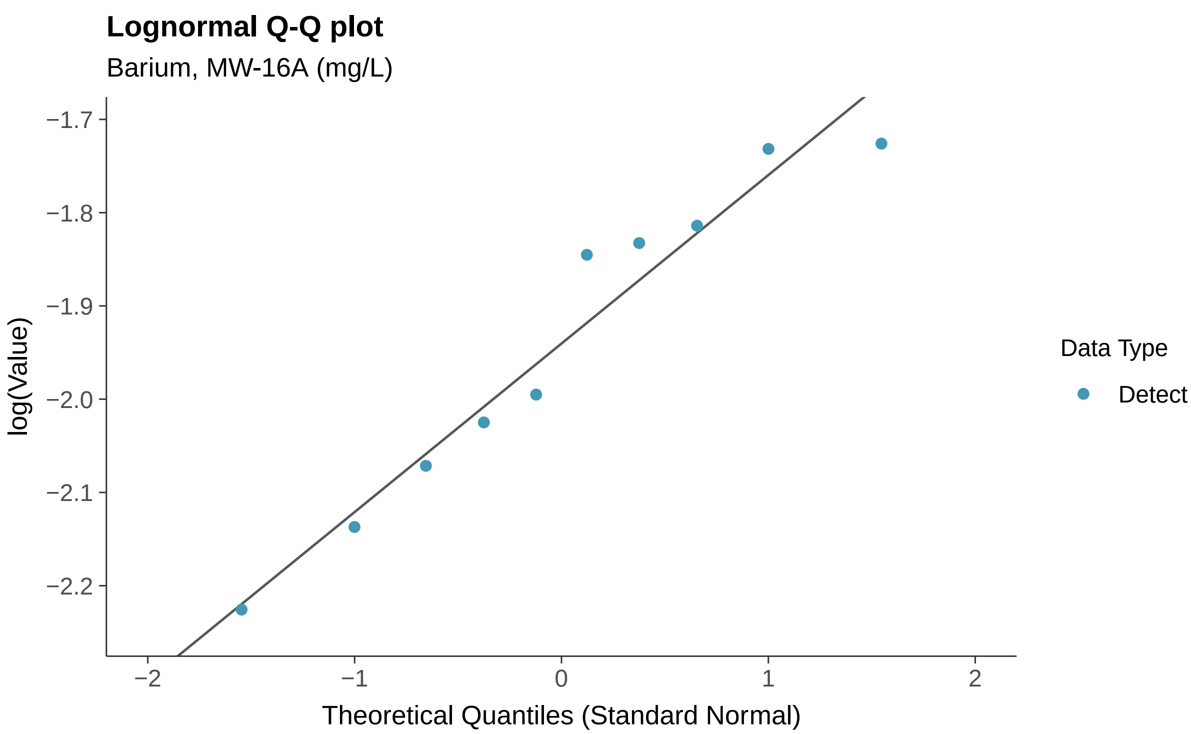


Boxplot by Season

Barium, MW-16A (mg/L)

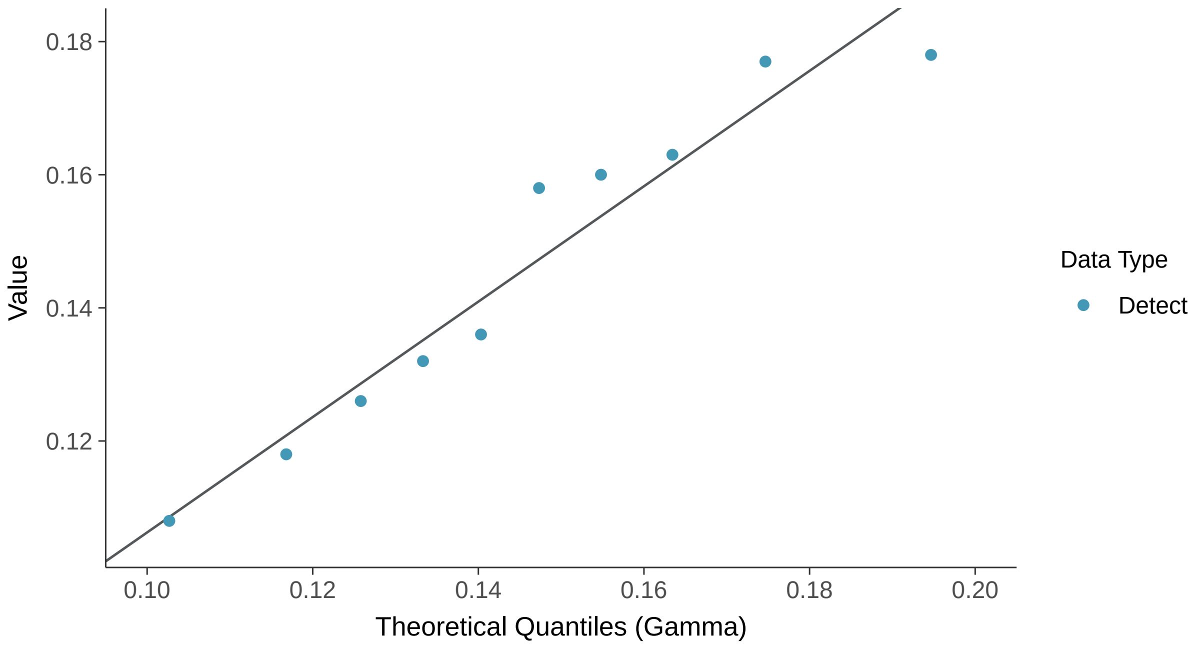



Normal Q-Q plot
Barium, MW-16A (mg/L)
Value
0.18
0.16
0.14
0.12
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-16A (mg/L)
log(Value)
−1.7
−1.8
−1.9
−2.0
−2.1
−2.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

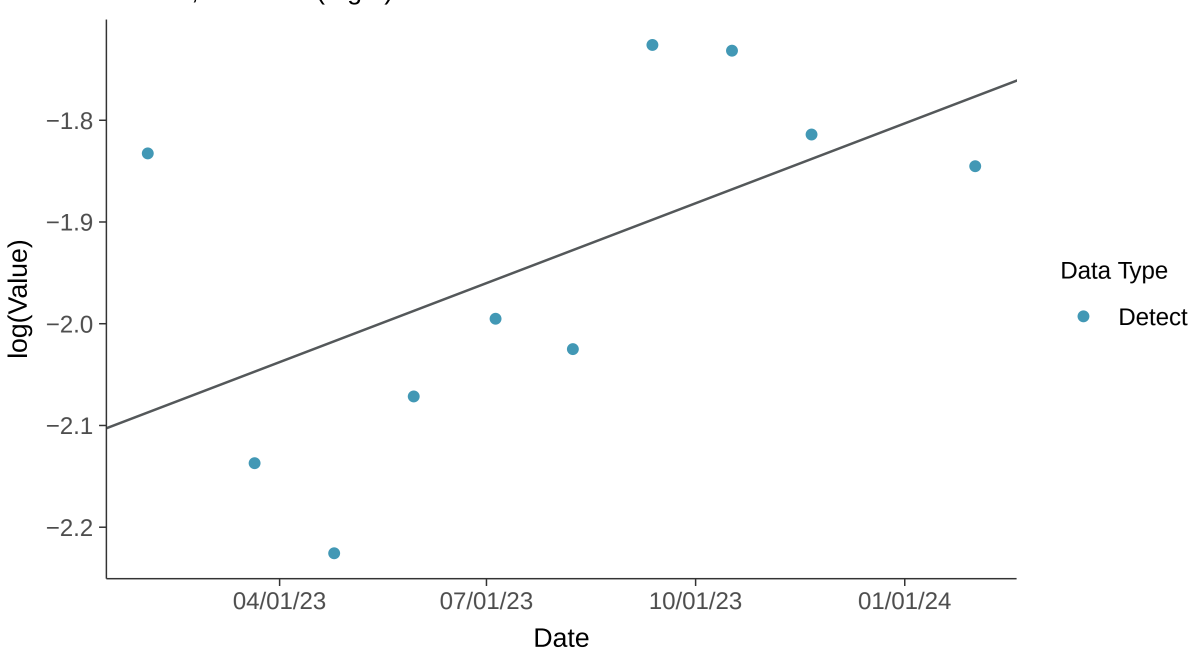
Gamma Q-Q plot

Barium, MW-16A (mg/L)



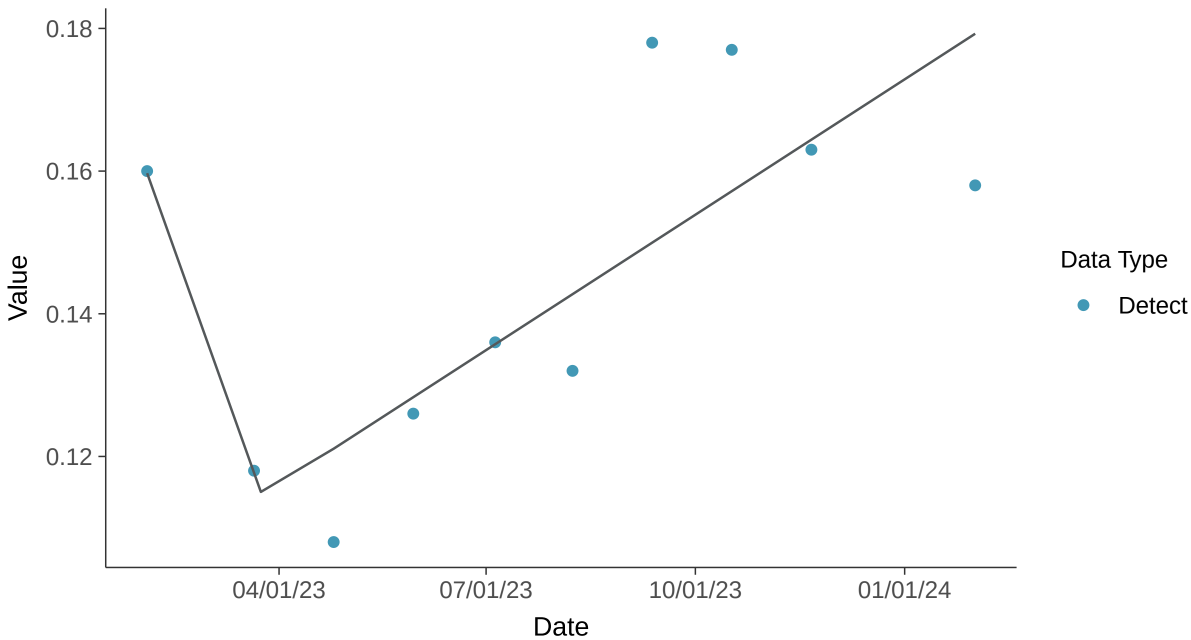
Trend Regression: Lognormal MLE

Barium, MW-16A (mg/L)



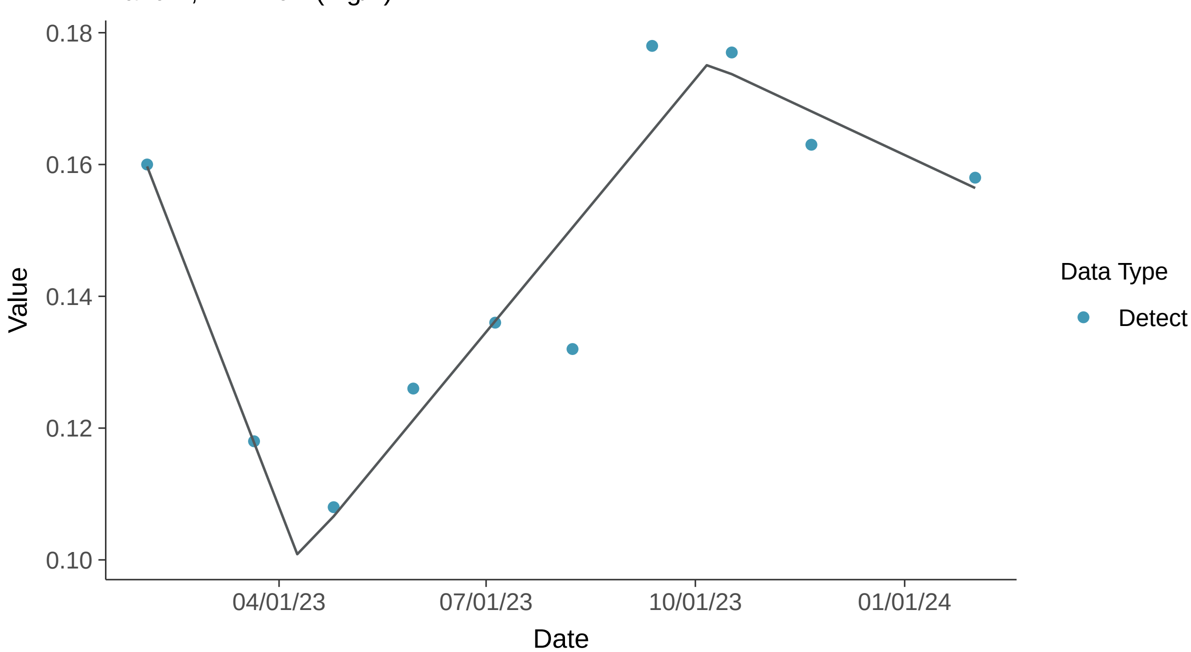
Trend Regression: Piecewise Linear-Linear

Barium, MW-16A (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-16A (mg/L)

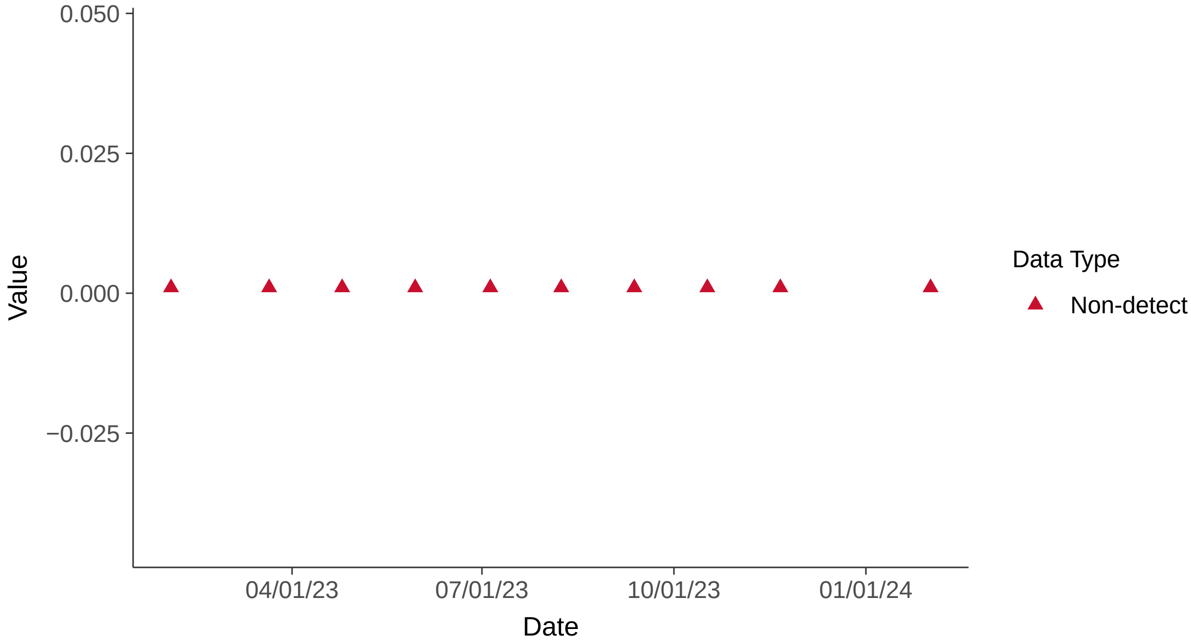


Appendix IV: Beryllium, MW-16A

ID: 16A_2_11

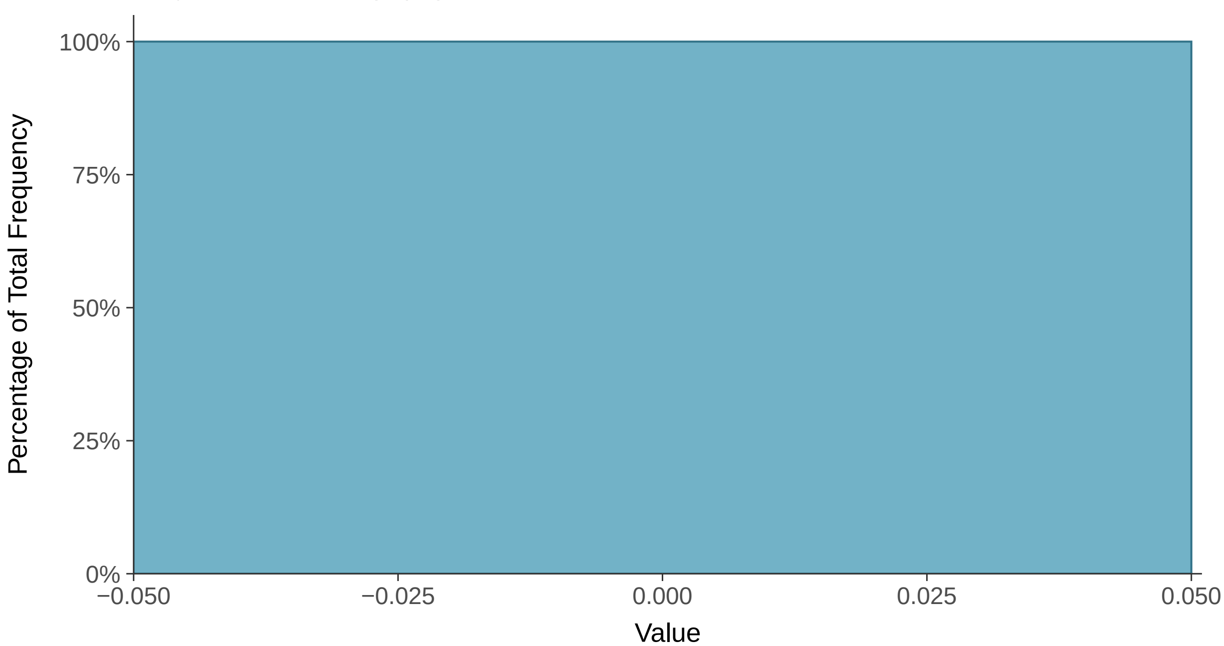
Scatter Plot

Beryllium, MW-16A (mg/L)



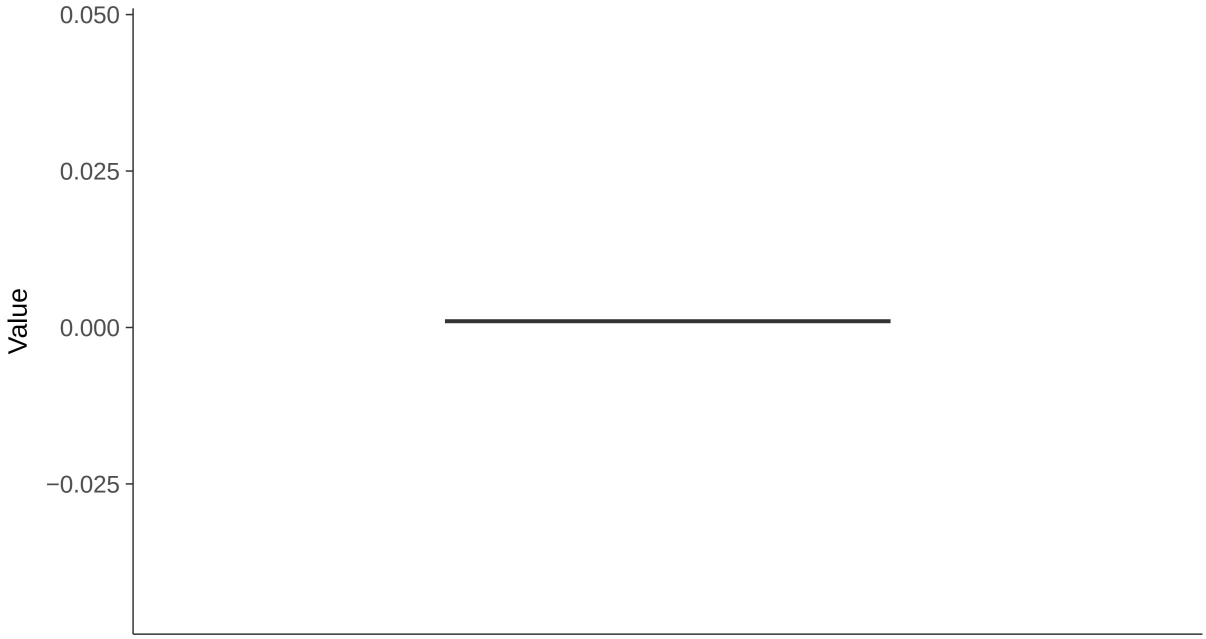
Histogram

Beryllium, MW-16A (mg/L)



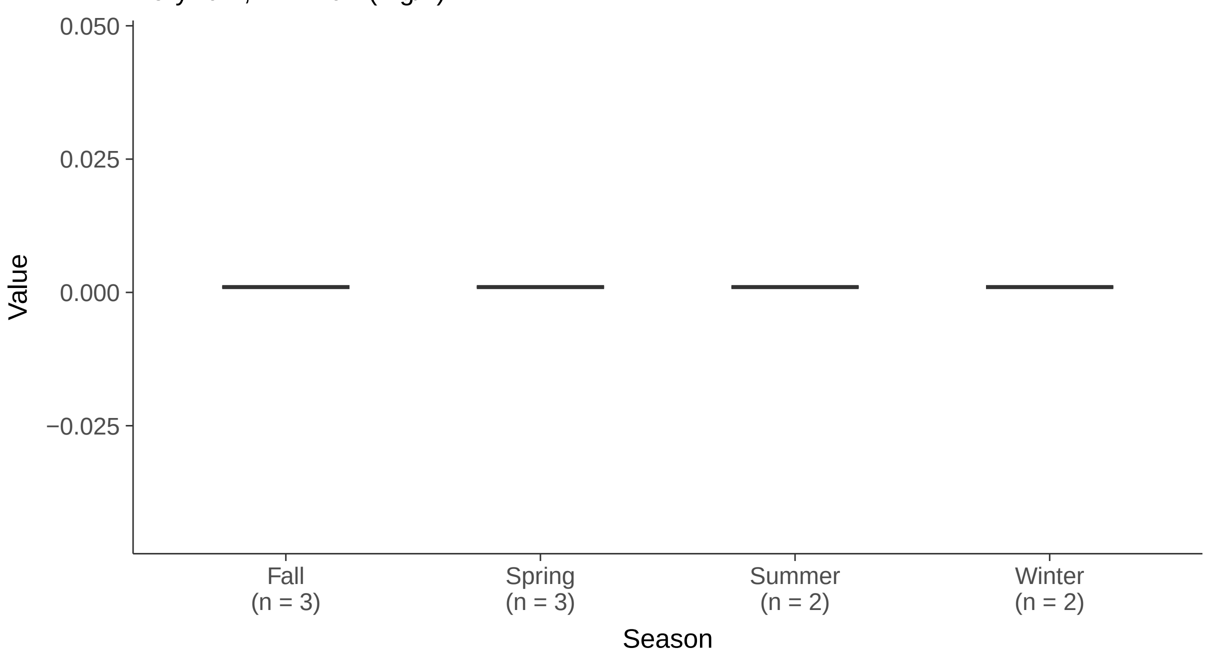
Boxplot

Beryllium, MW-16A (mg/L)



Boxplot by Season

Beryllium, MW-16A (mg/L)

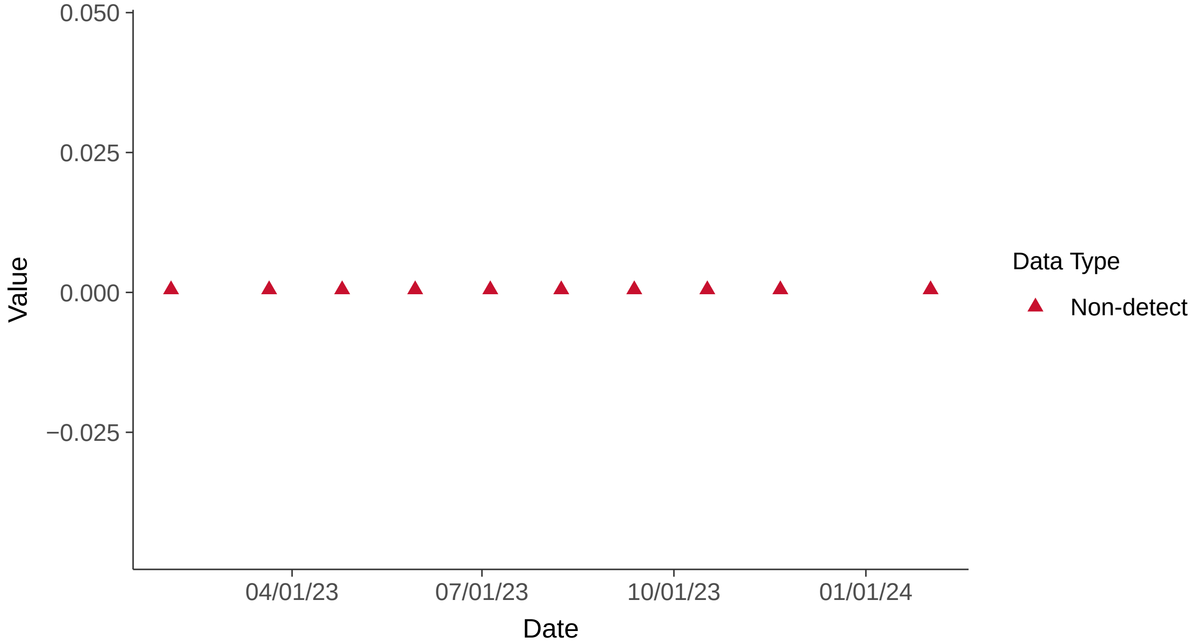


Appendix IV: Cadmium, MW-16A

ID: 16A_2_12

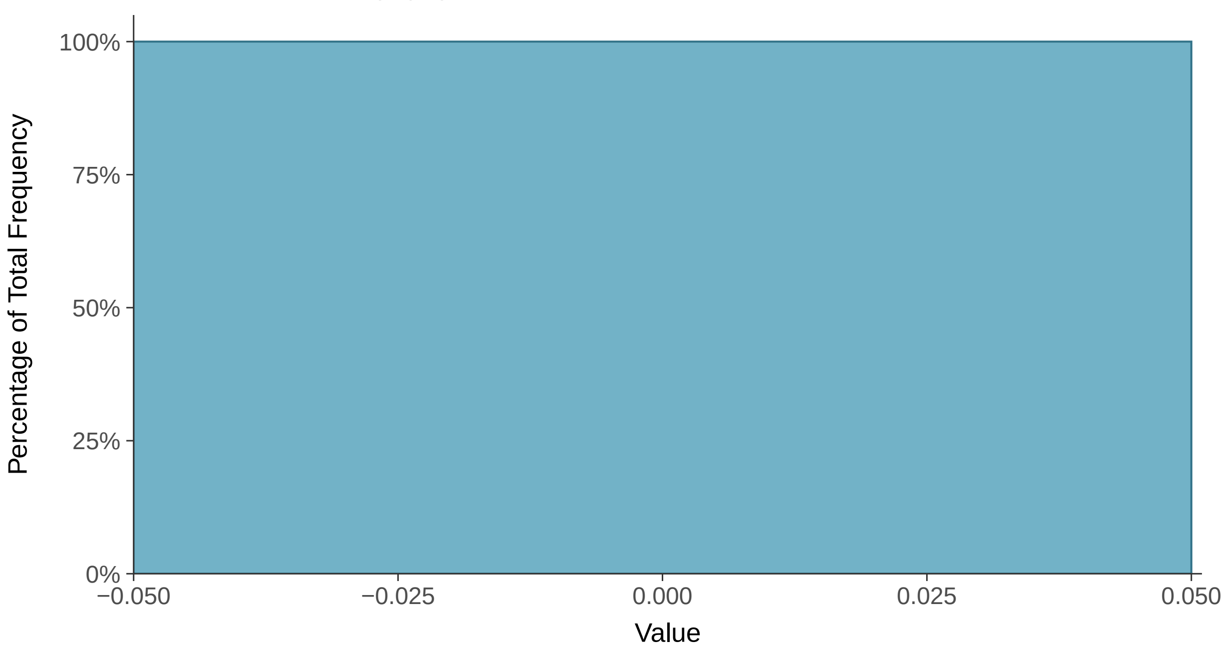
Scatter Plot

Cadmium, MW-16A (mg/L)



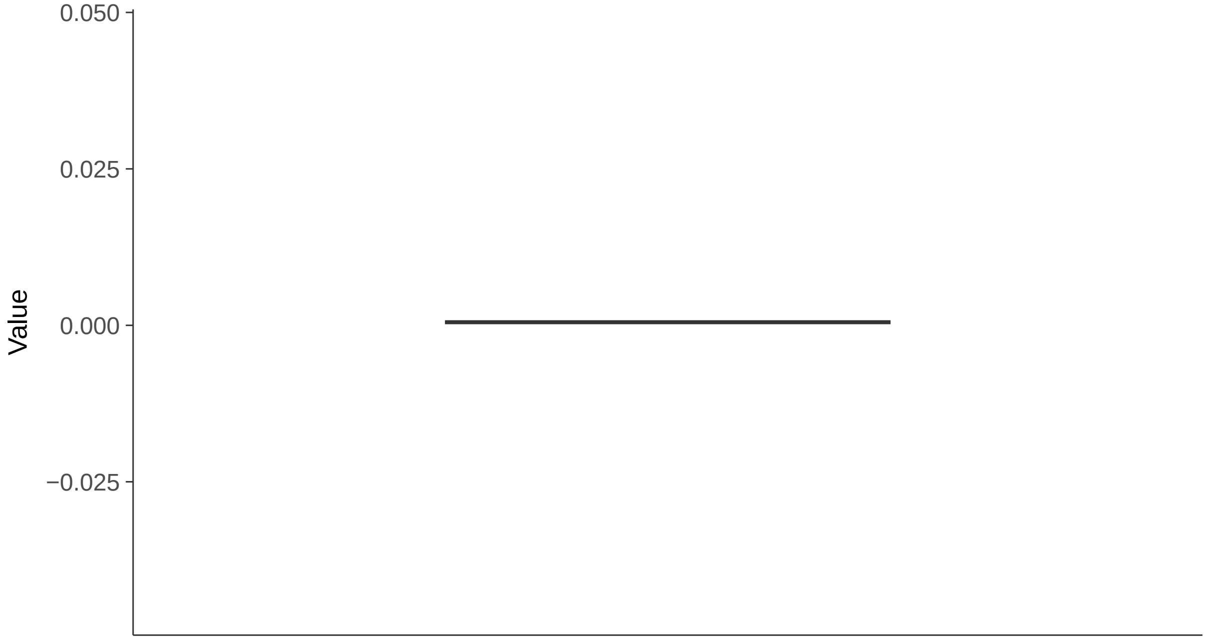
Histogram

Cadmium, MW-16A (mg/L)



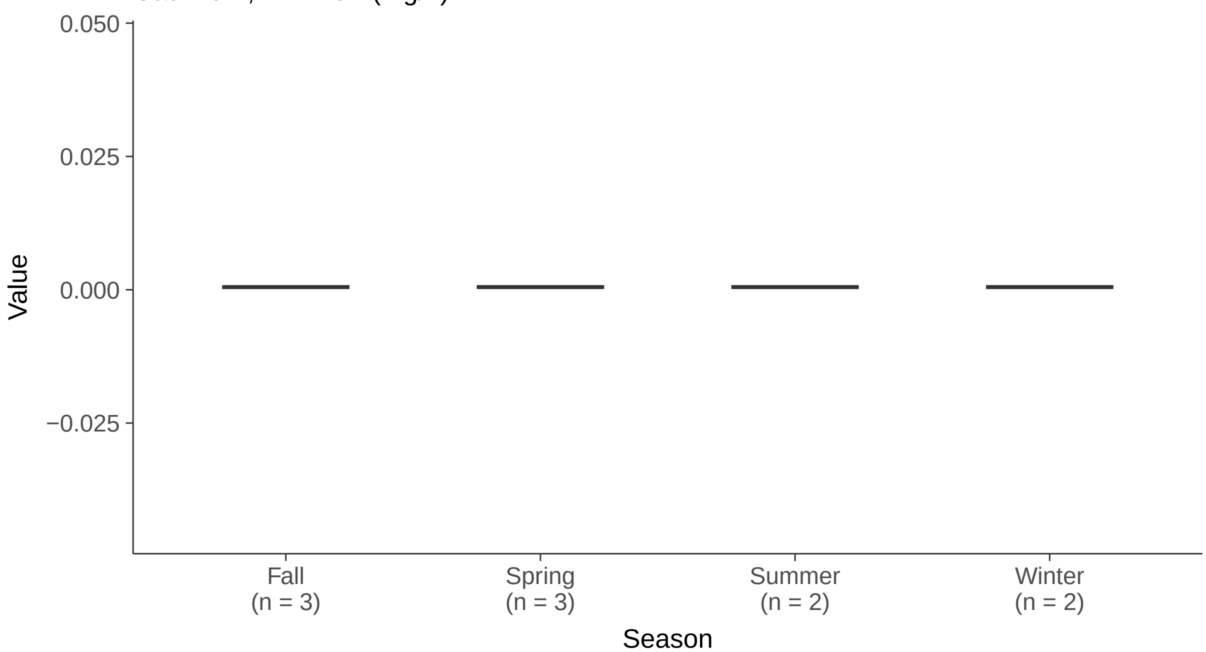
Boxplot

Cadmium, MW-16A (mg/L)



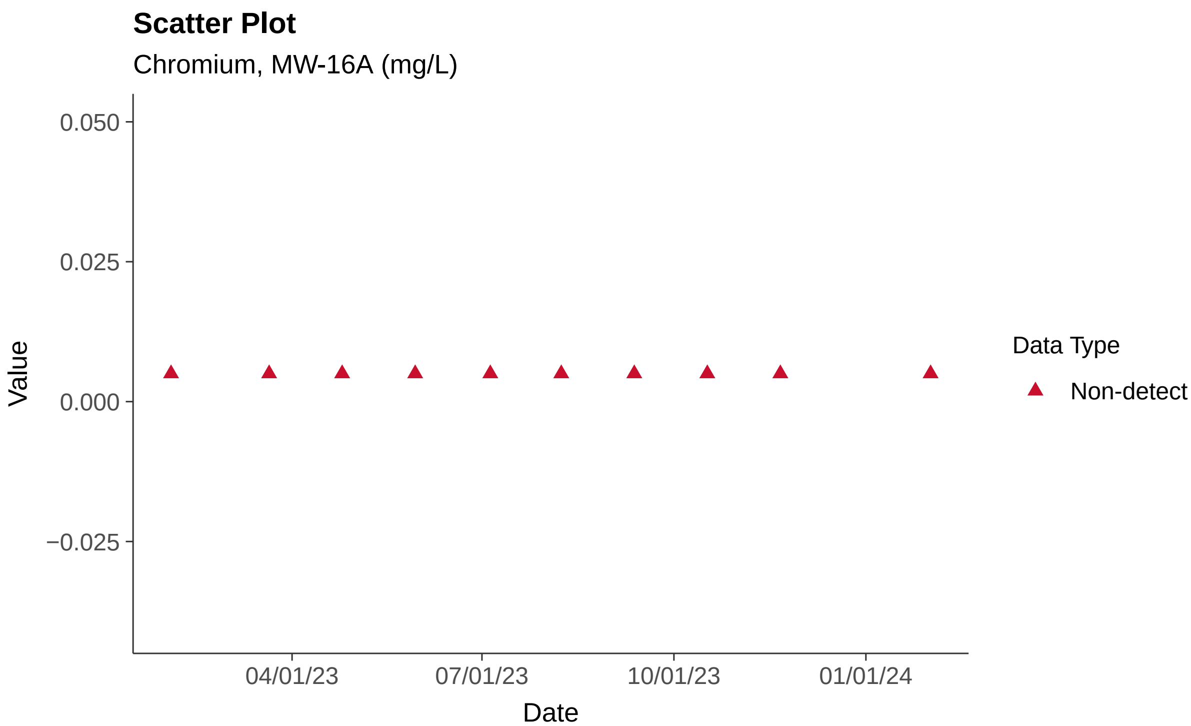
Boxplot by Season

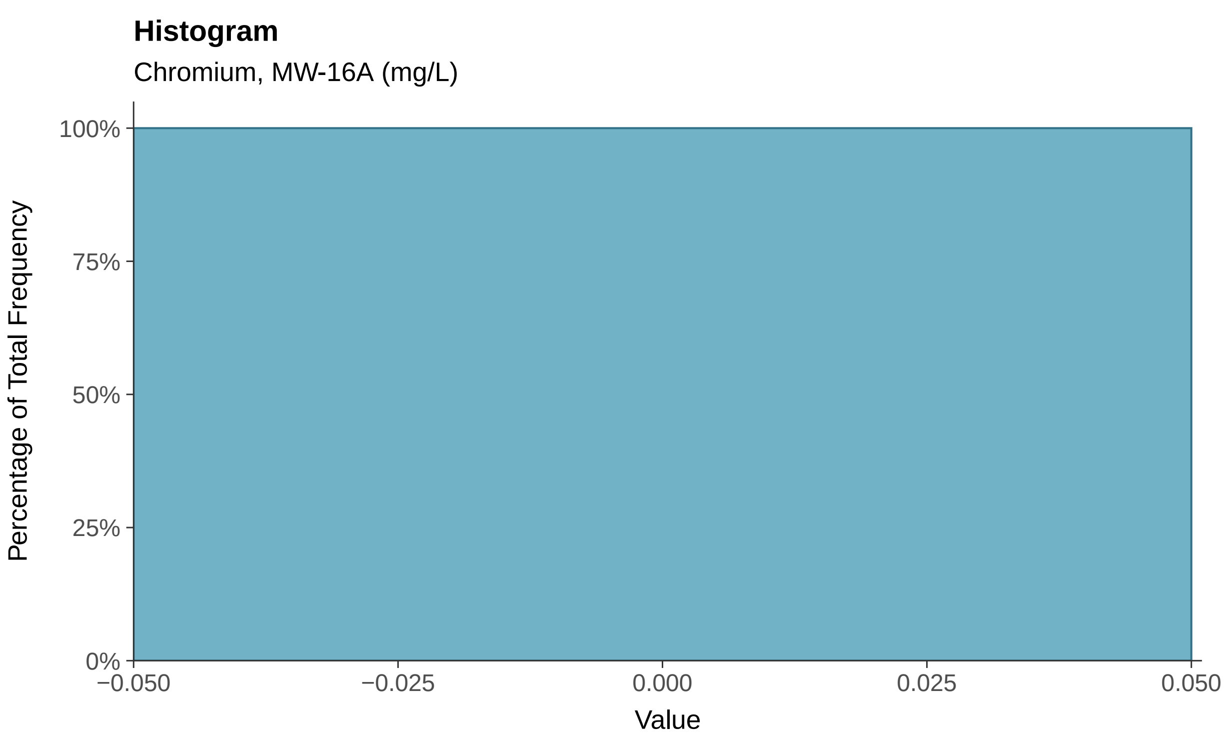
Cadmium, MW-16A (mg/L)



Appendix IV: Chromium, MW-16A

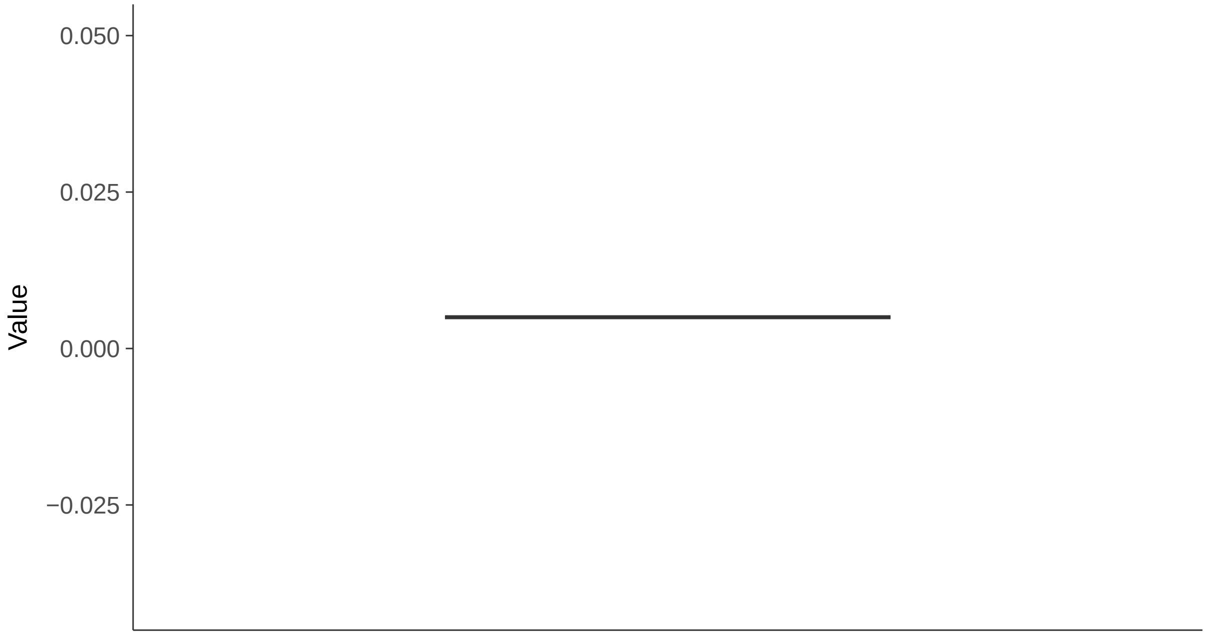
ID: 16A_2_13





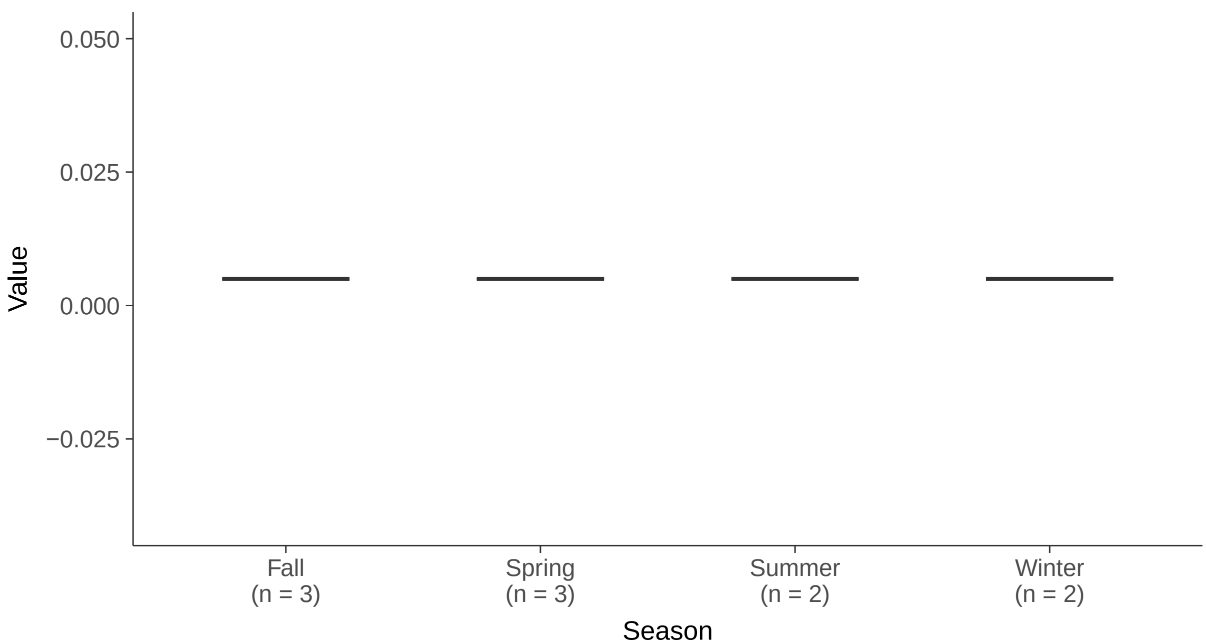
Boxplot

Chromium, MW-16A (mg/L)



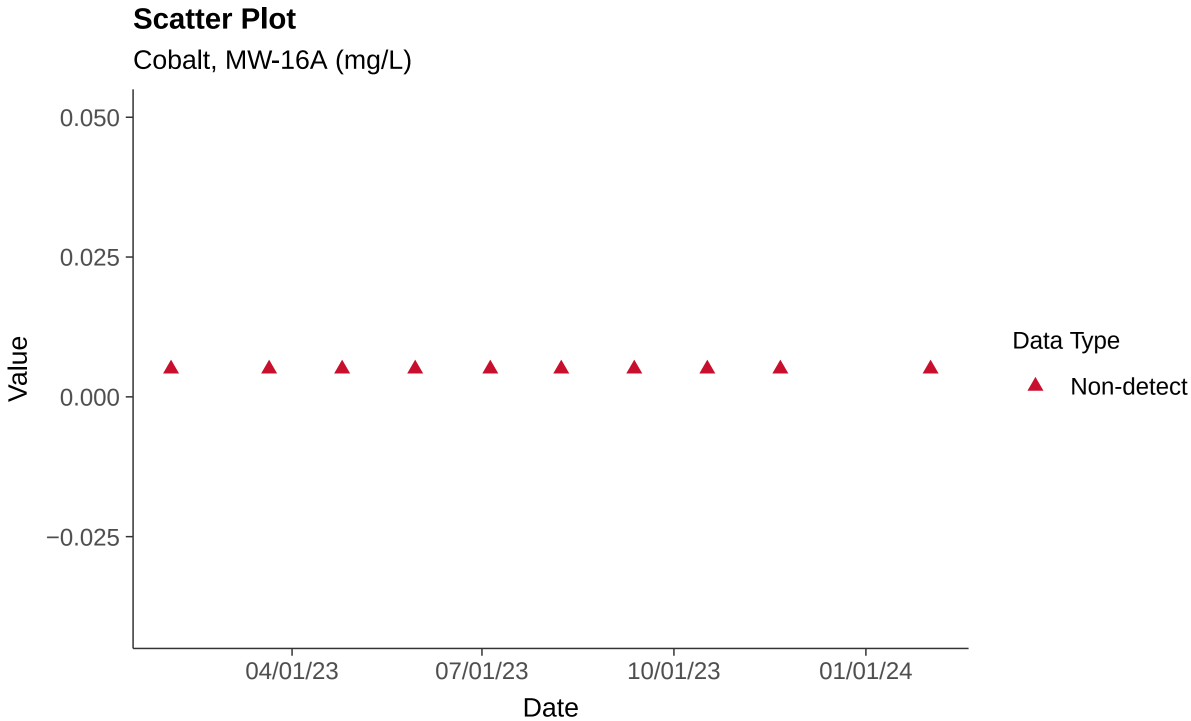
Boxplot by Season

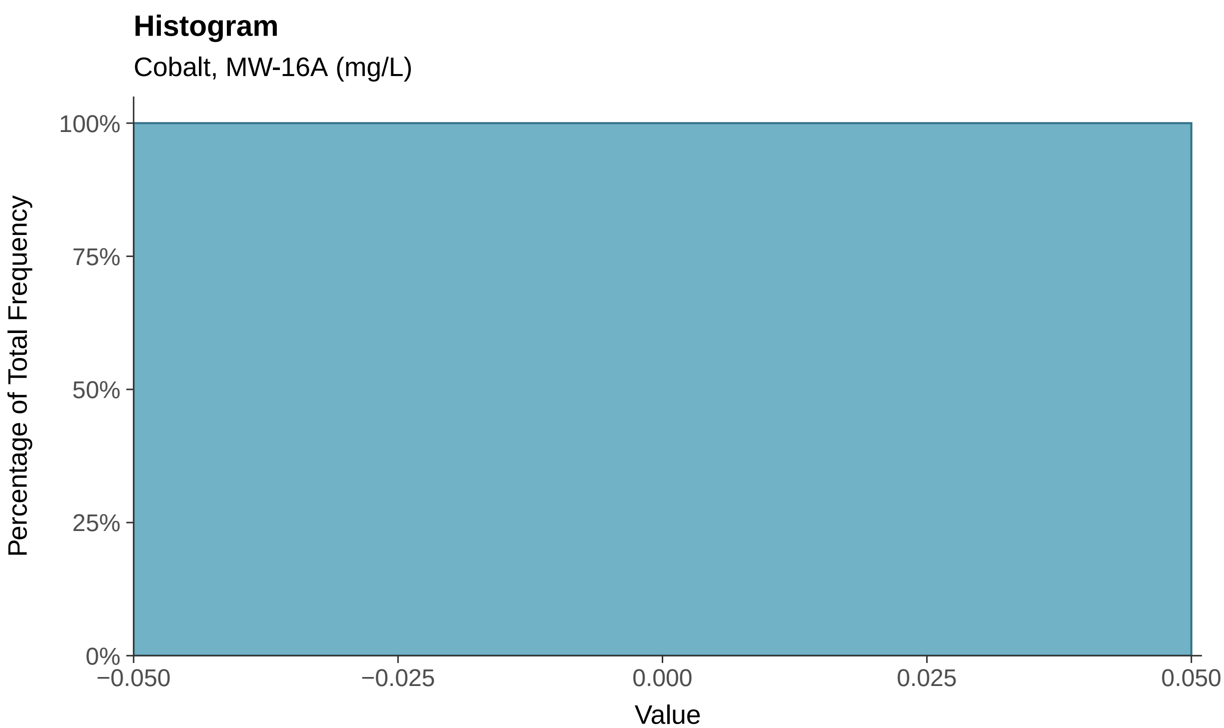
Chromium, MW-16A (mg/L)



Appendix IV: Cobalt, MW-16A

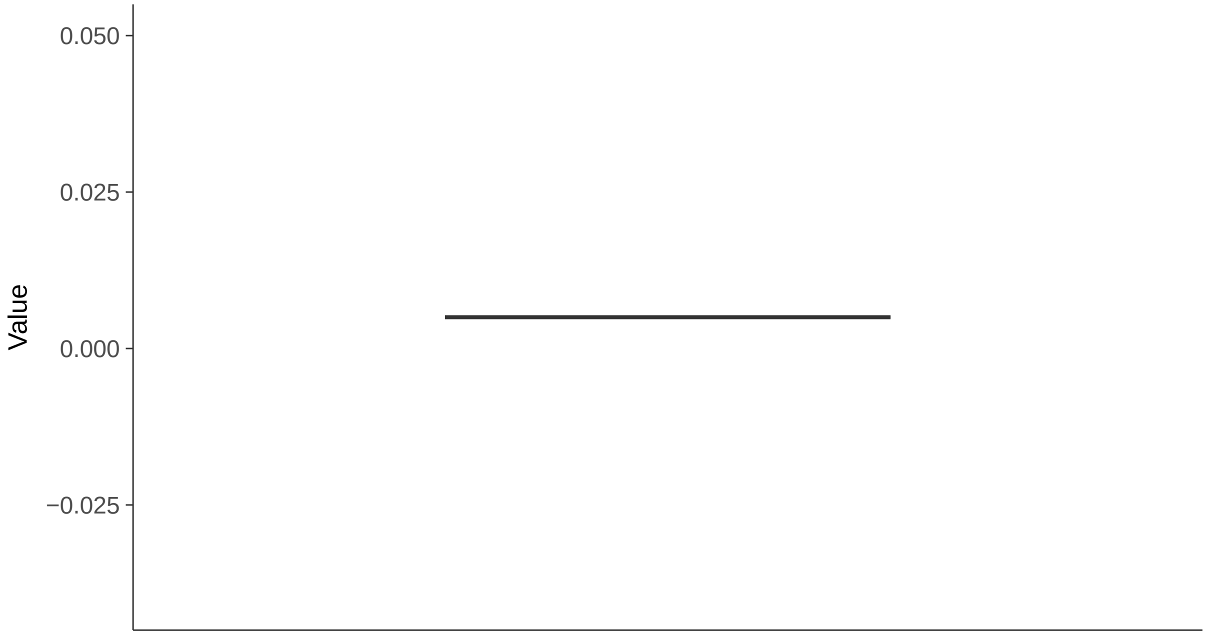
ID: 16A_2_14





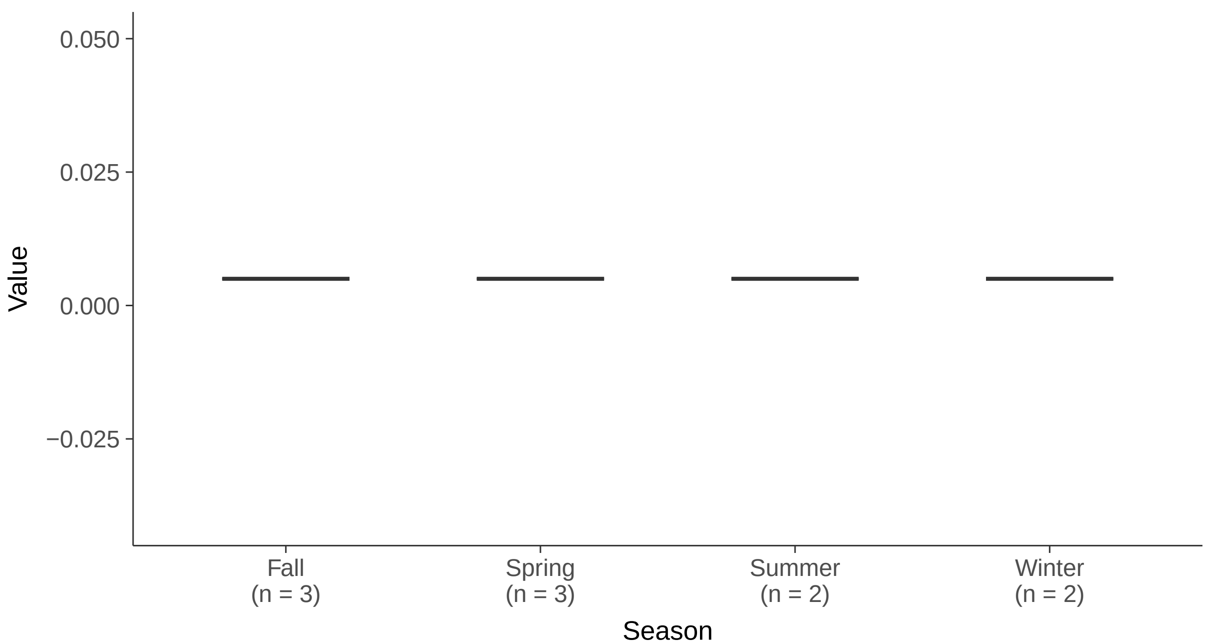
Boxplot

Cobalt, MW-16A (mg/L)



Boxplot by Season

Cobalt, MW-16A (mg/L)

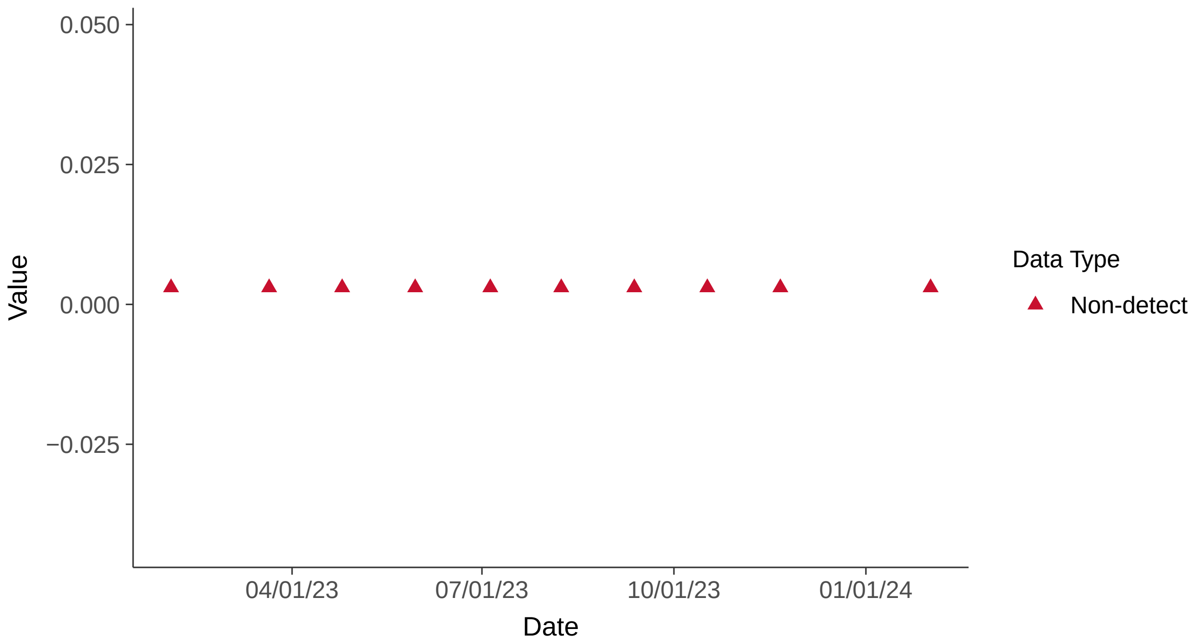


Appendix IV: Lead, MW-16A

ID: 16A_2_15

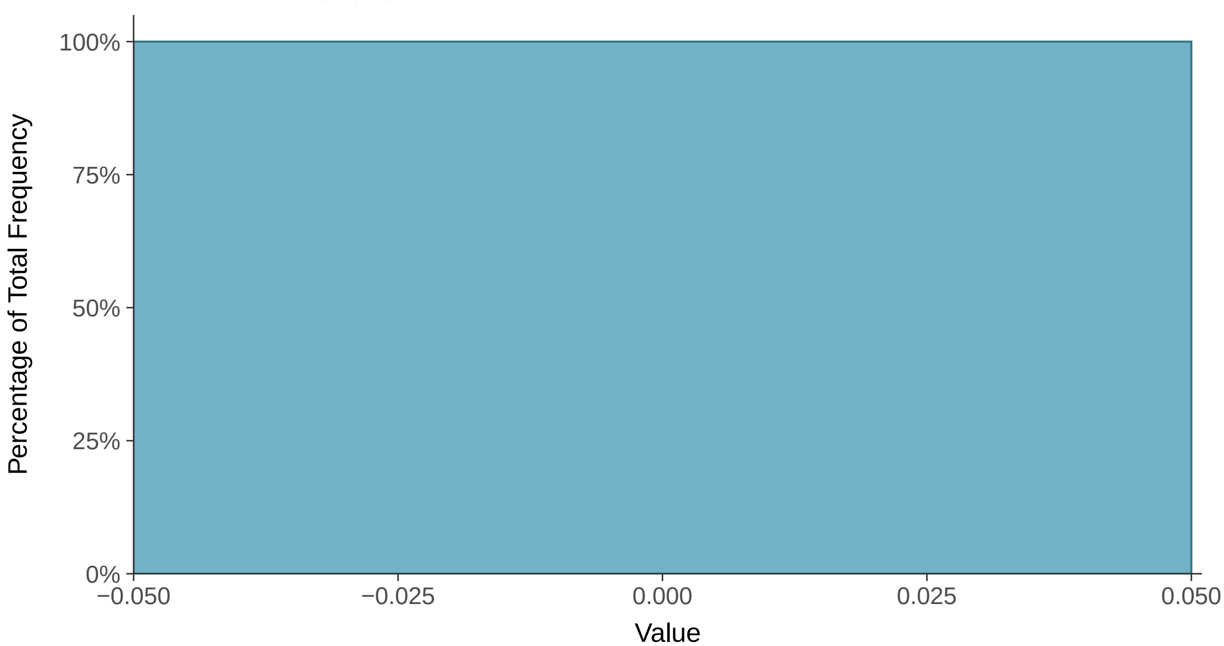
Scatter Plot

Lead, MW-16A (mg/L)



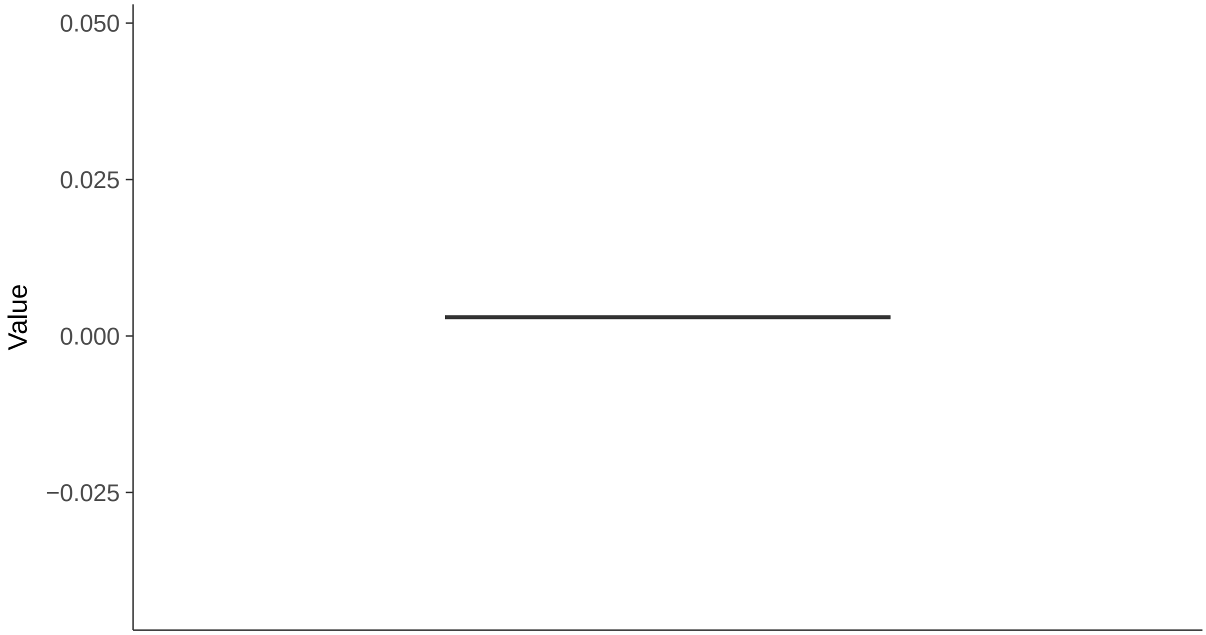
Histogram

Lead, MW-16A (mg/L)



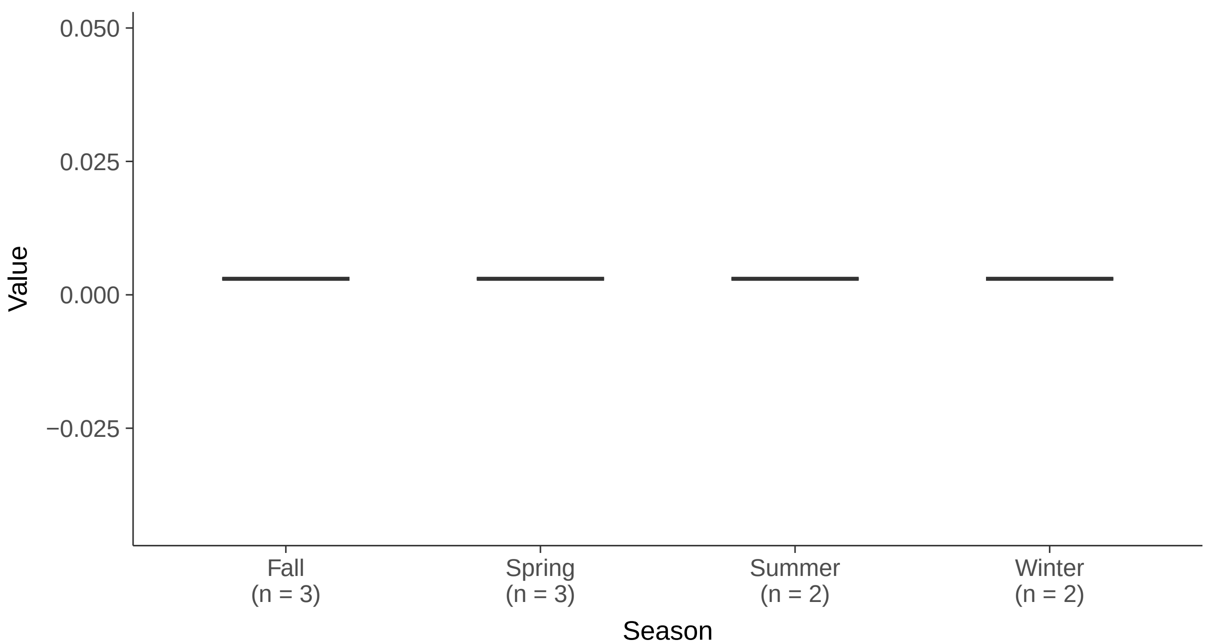
Boxplot

Lead, MW-16A (mg/L)



Boxplot by Season

Lead, MW-16A (mg/L)

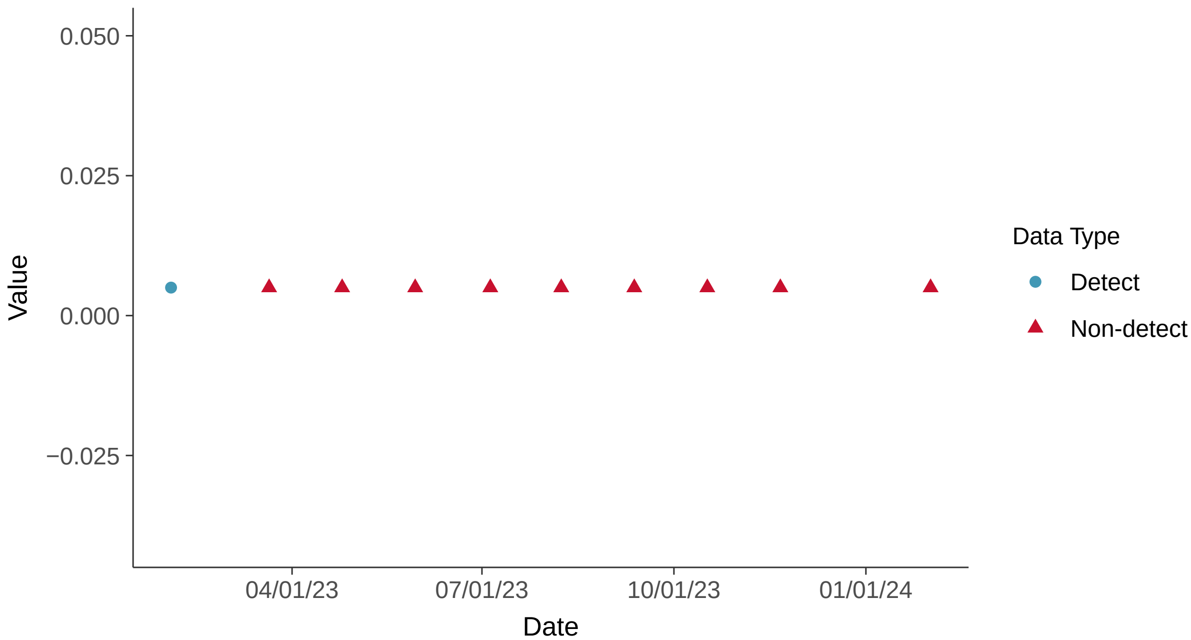


Appendix IV: Lithium, MW-16A

ID: 16A_2_16

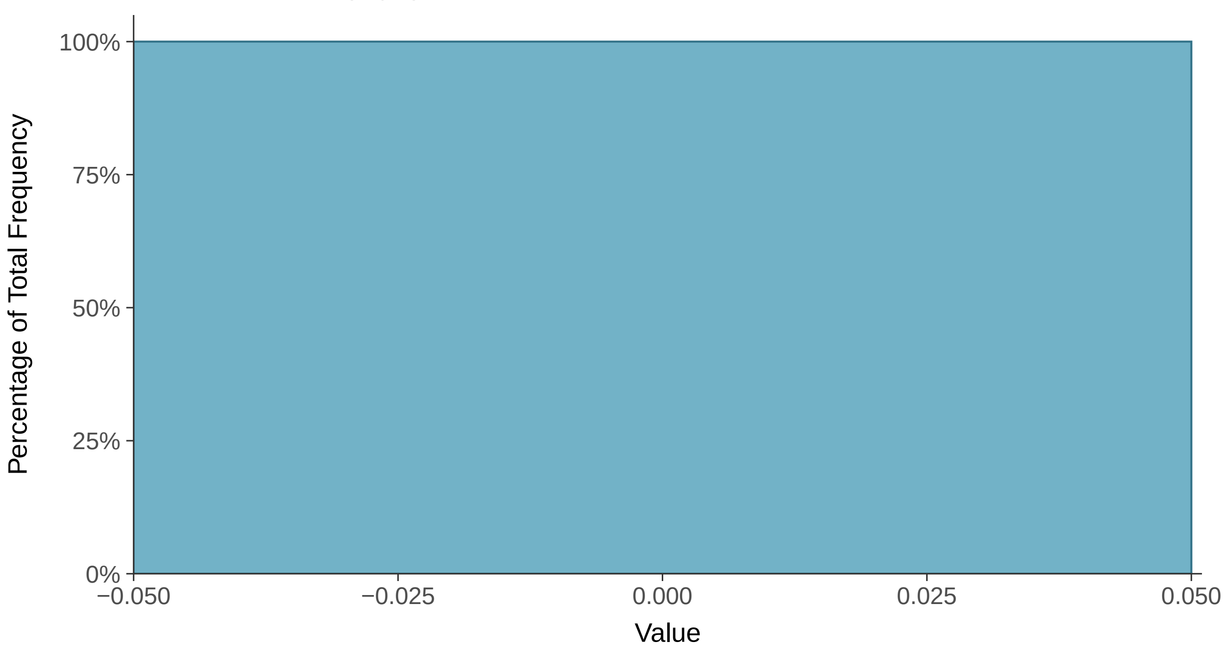
Scatter Plot

Lithium, MW-16A (mg/L)



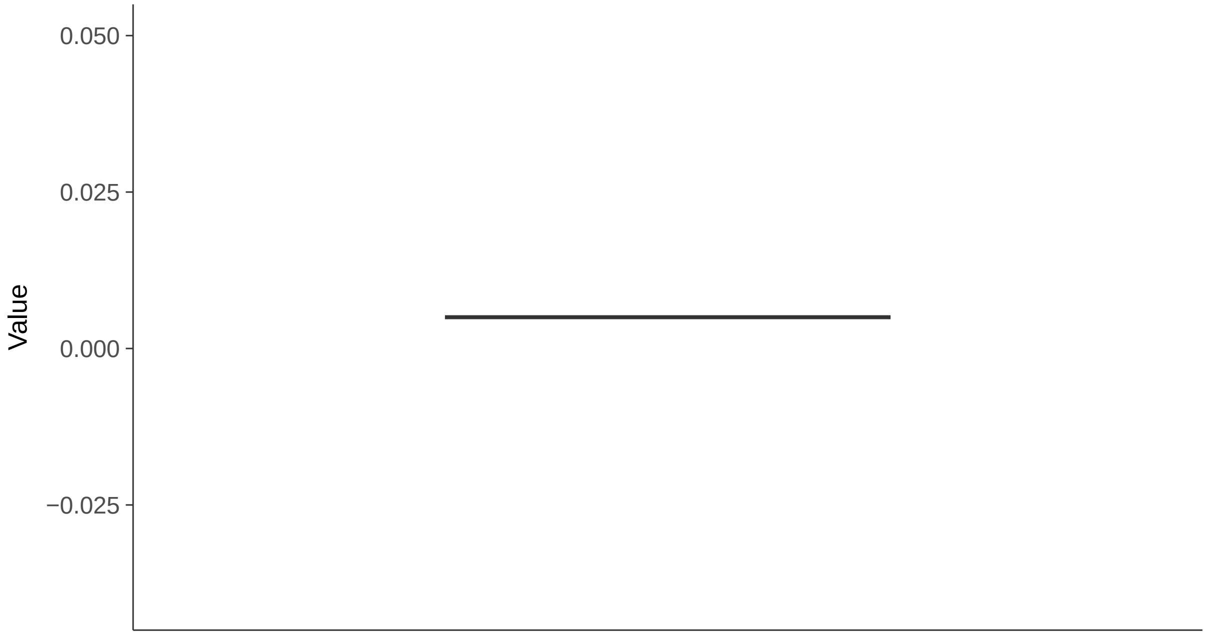
Histogram

Lithium, MW-16A (mg/L)



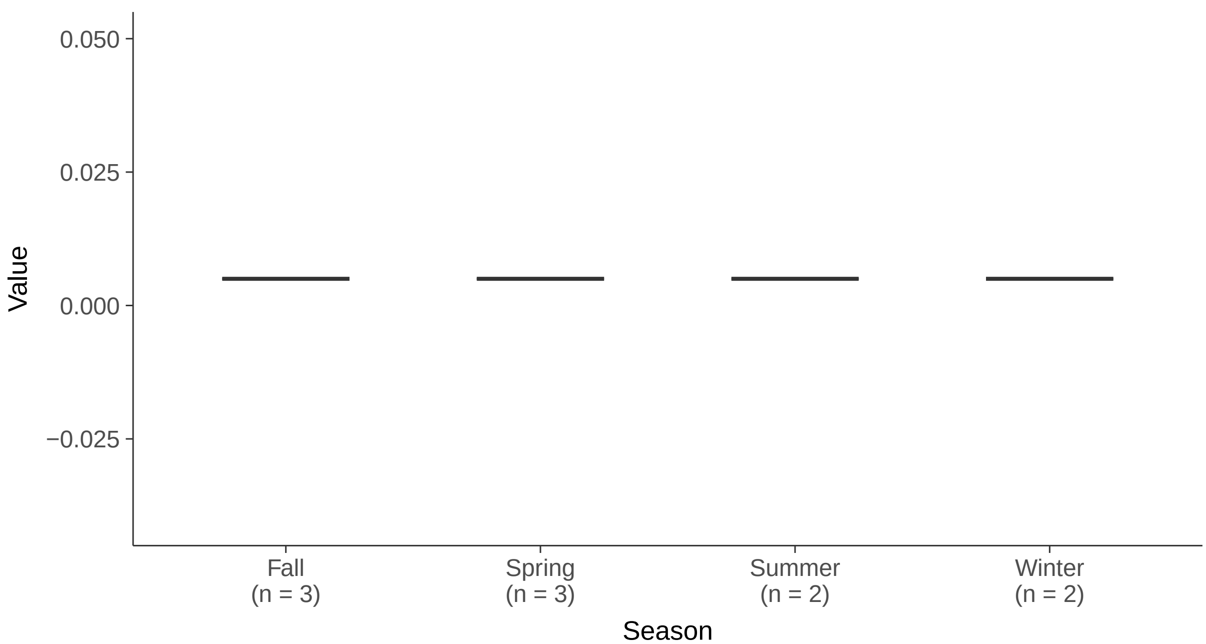
Boxplot

Lithium, MW-16A (mg/L)



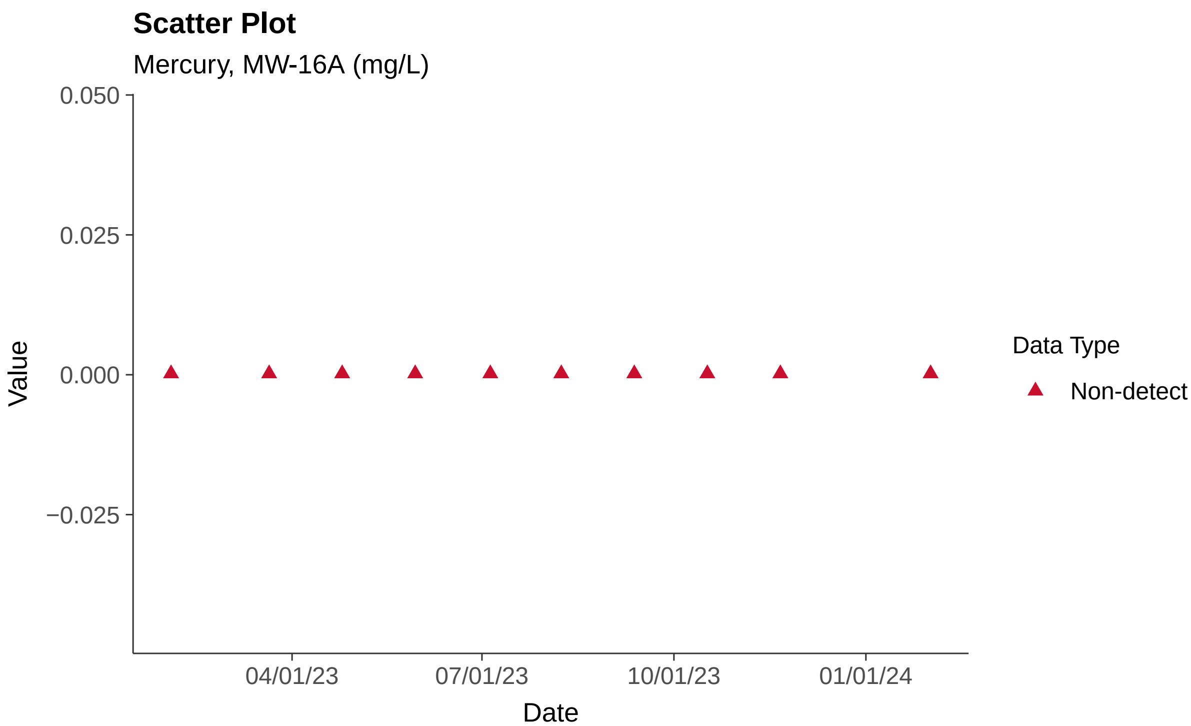
Boxplot by Season

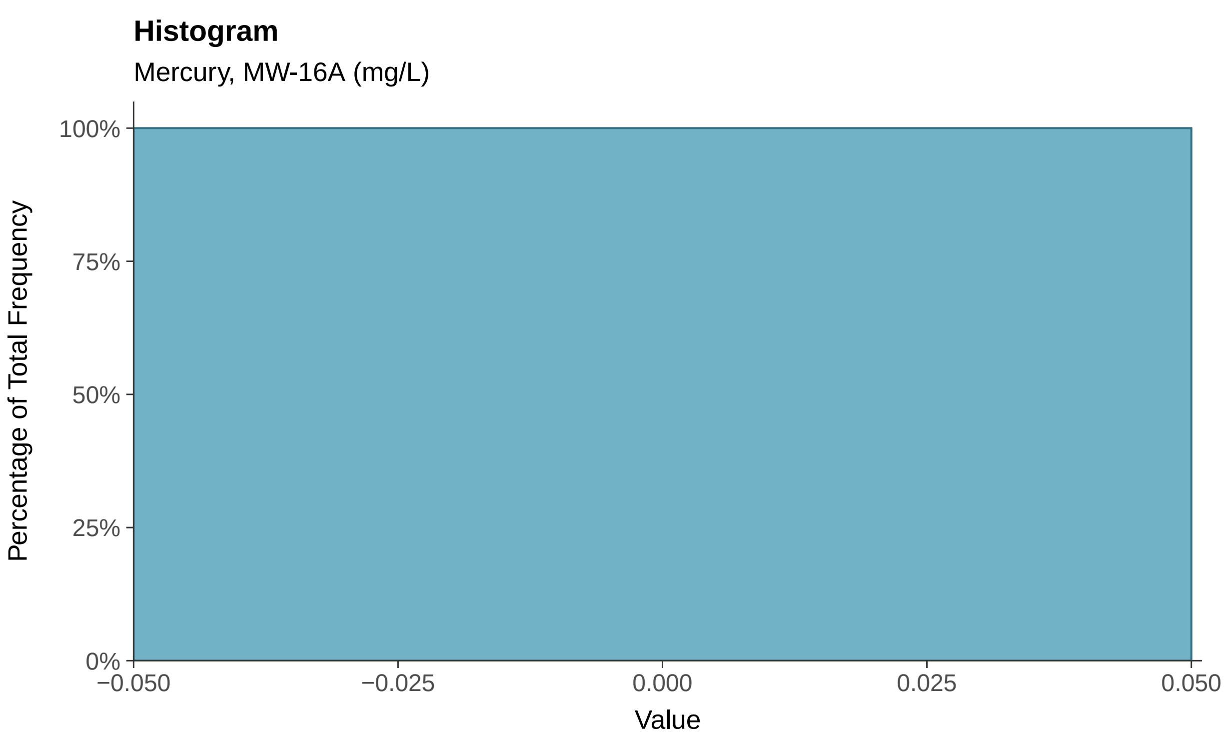
Lithium, MW-16A (mg/L)



Appendix IV: Mercury, MW-16A

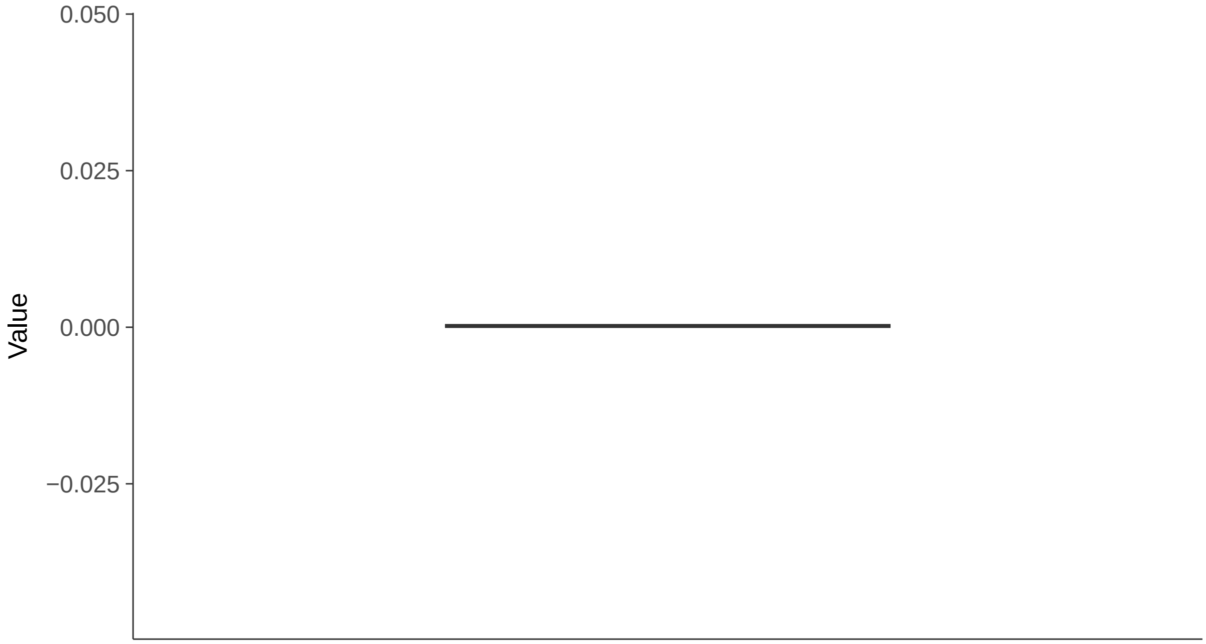
ID: 16A_2_17





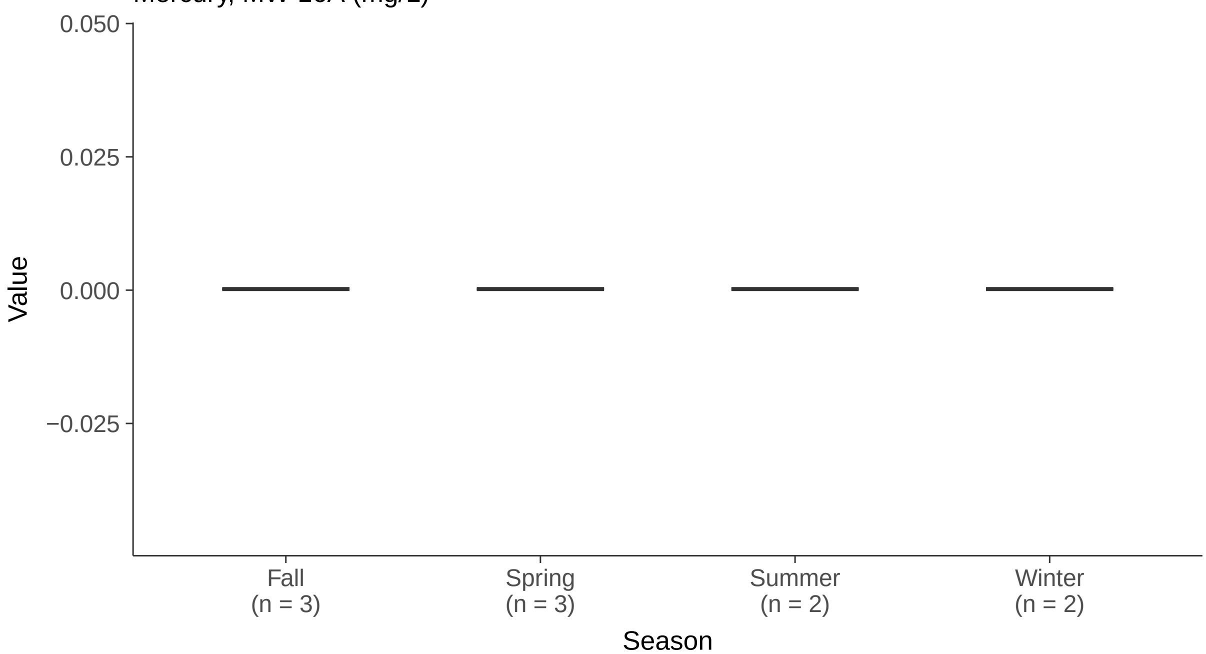
Boxplot

Mercury, MW-16A (mg/L)



Boxplot by Season

Mercury, MW-16A (mg/L)

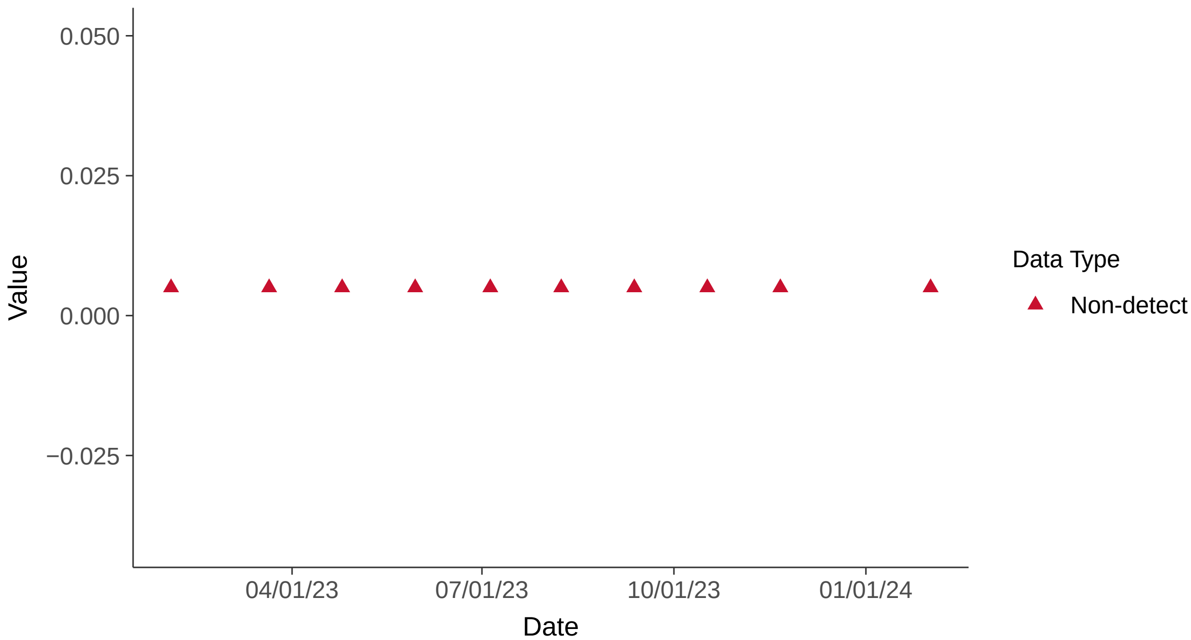


Appendix IV: Molybdenum, MW-16A

ID: 16A_2_18

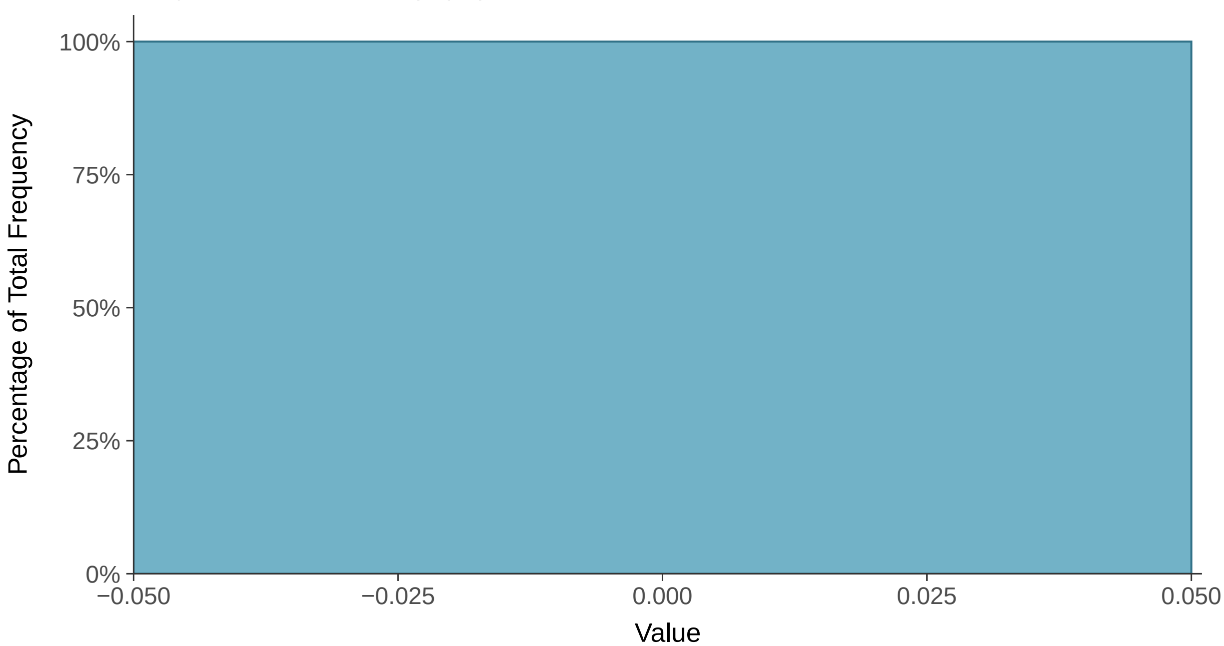
Scatter Plot

Molybdenum, MW-16A (mg/L)



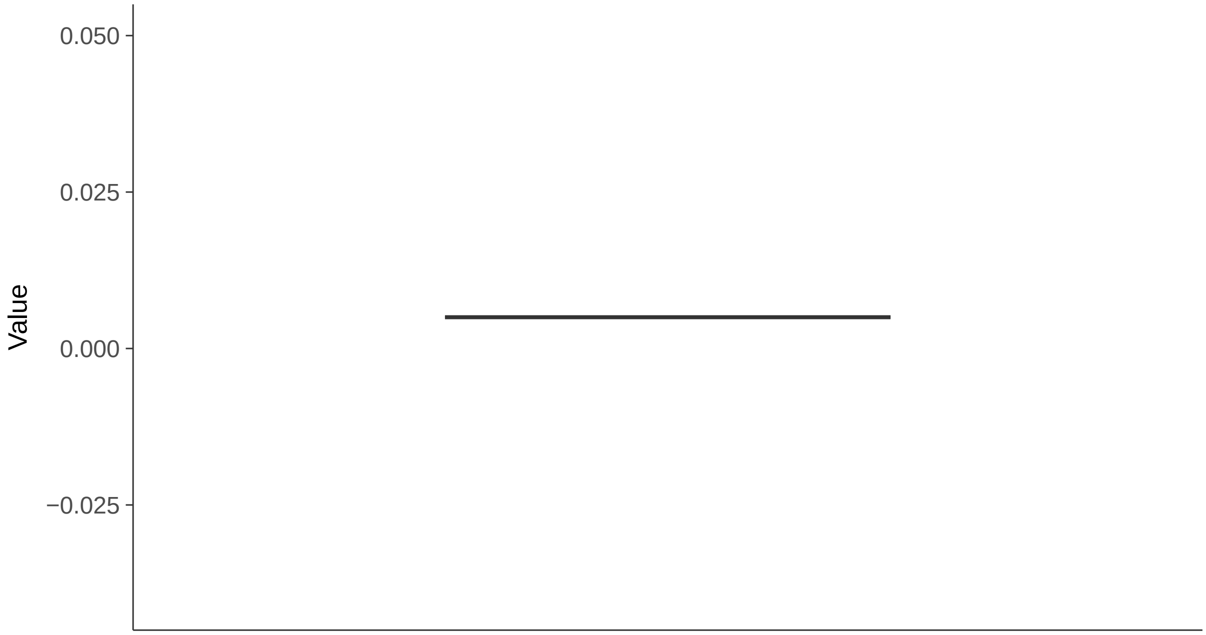
Histogram

Molybdenum, MW-16A (mg/L)



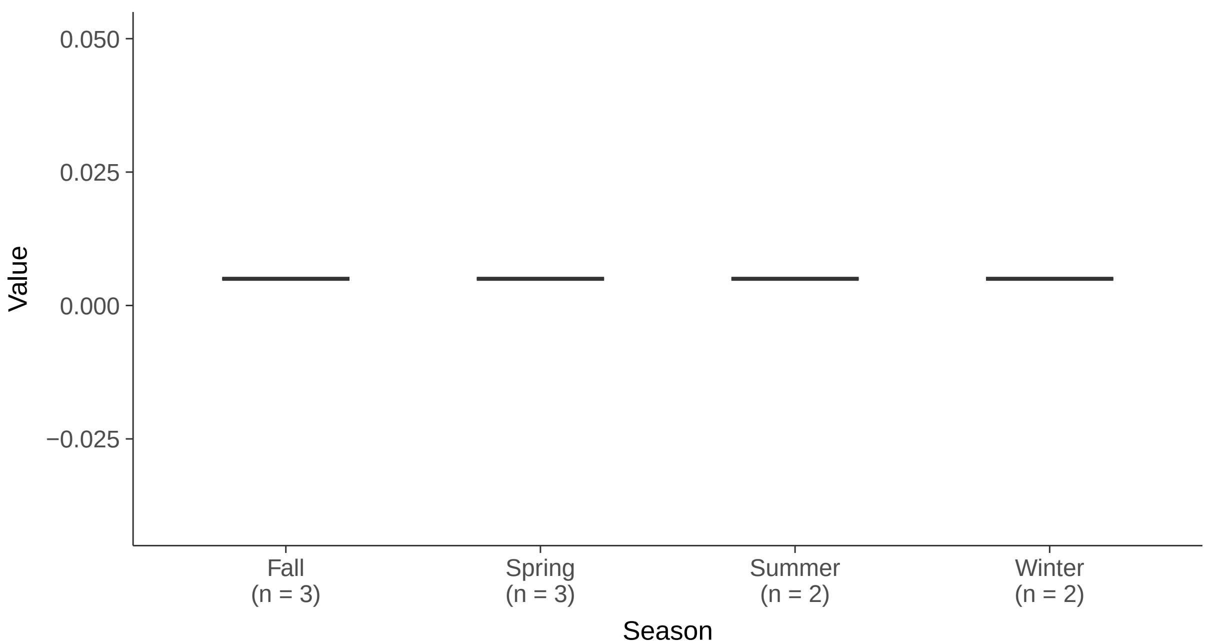
Boxplot

Molybdenum, MW-16A (mg/L)



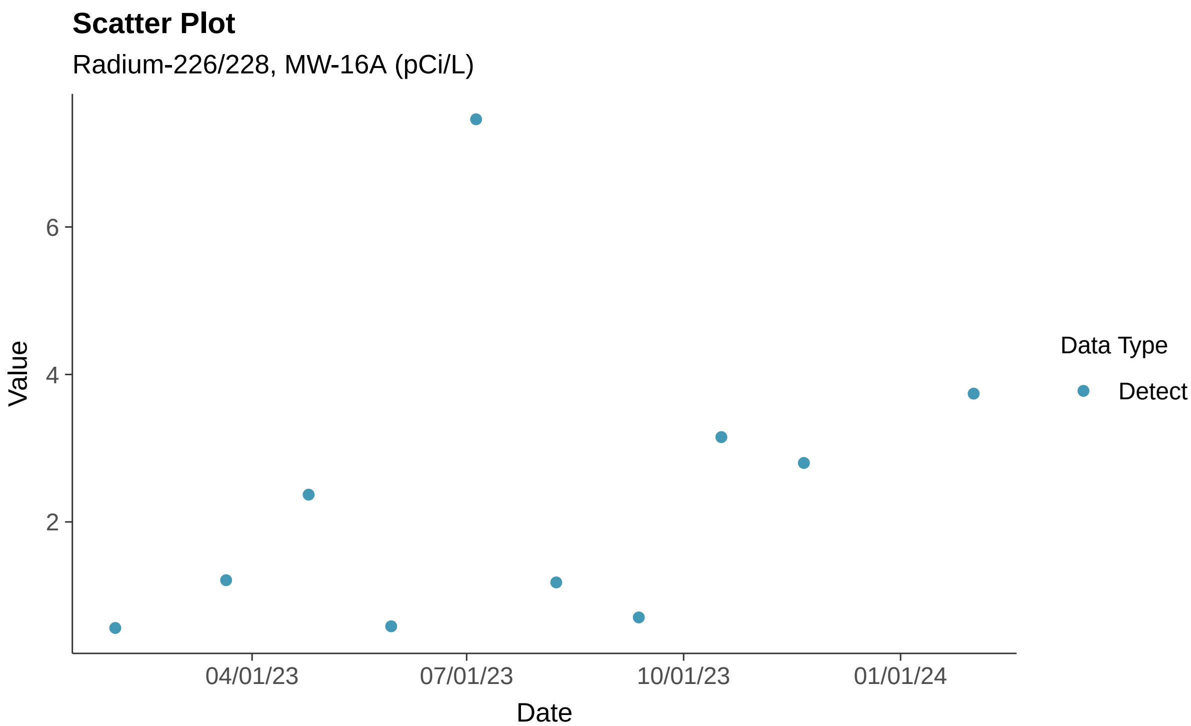
Boxplot by Season

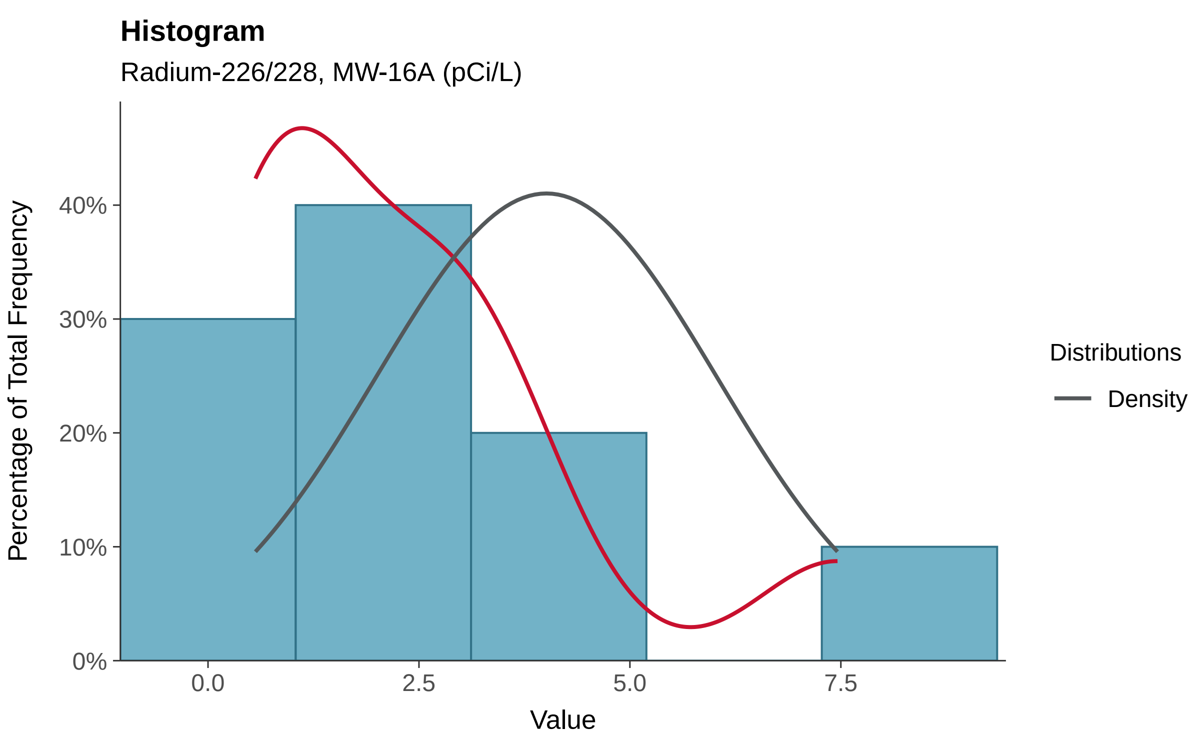
Molybdenum, MW-16A (mg/L)



Appendix IV: Radium-226/228, MW-16A

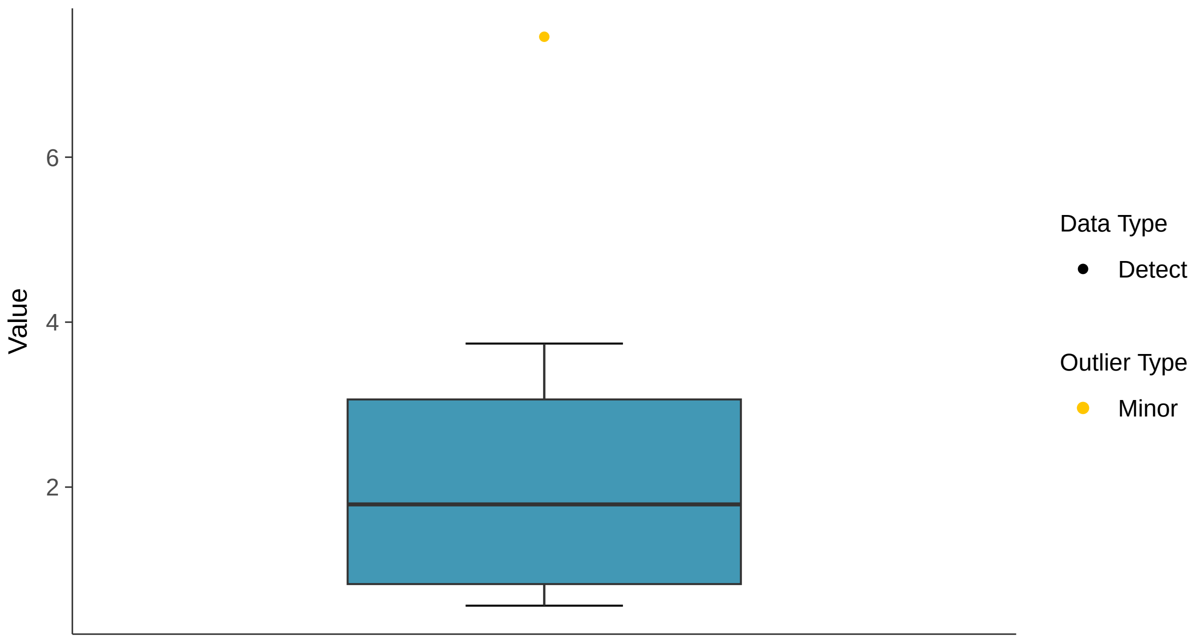
ID: 16A_2_20





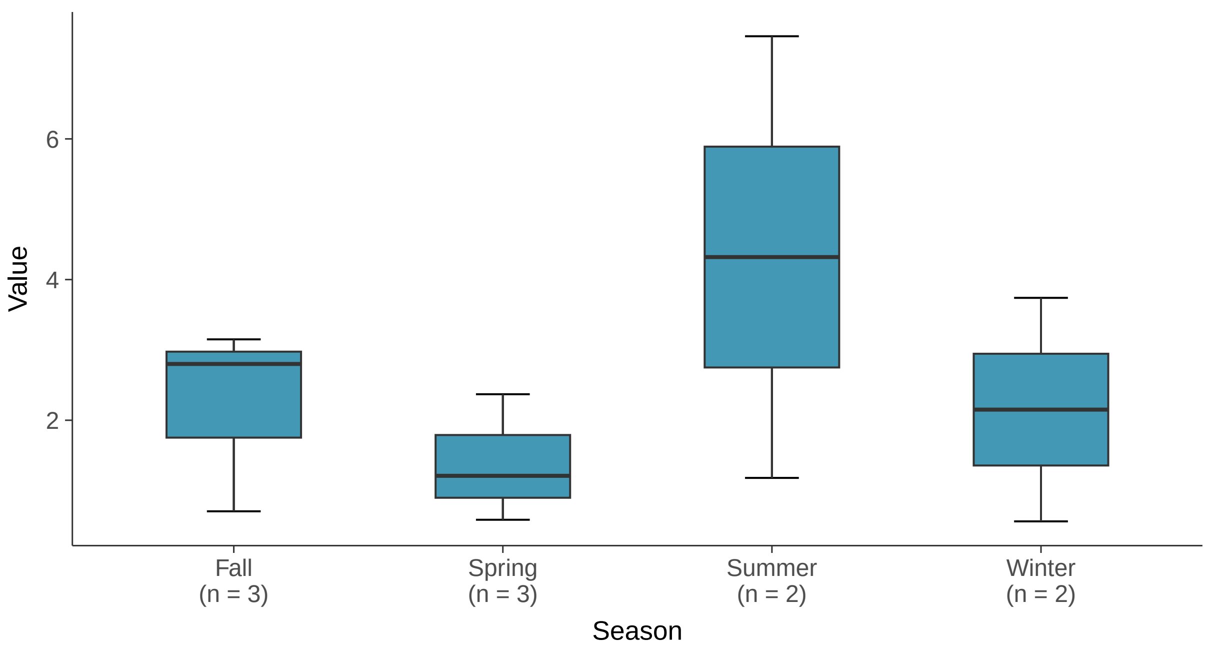
Boxplot

Radium-226/228, MW-16A (pCi/L)



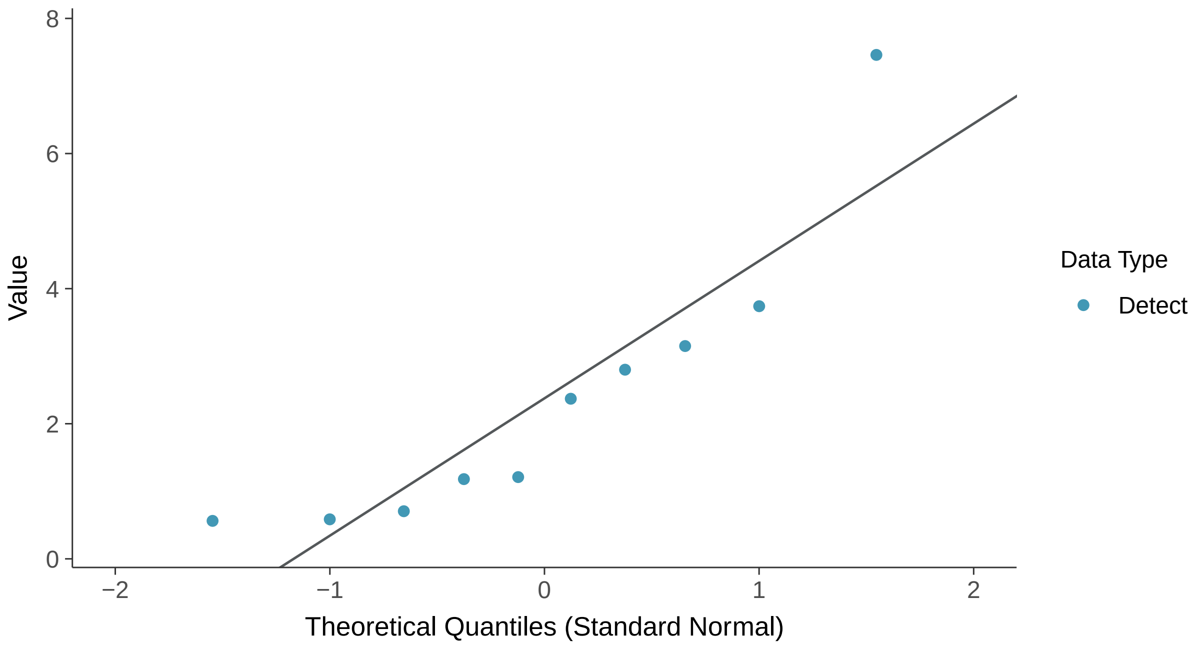
Boxplot by Season

Radium-226/228, MW-16A (pCi/L)



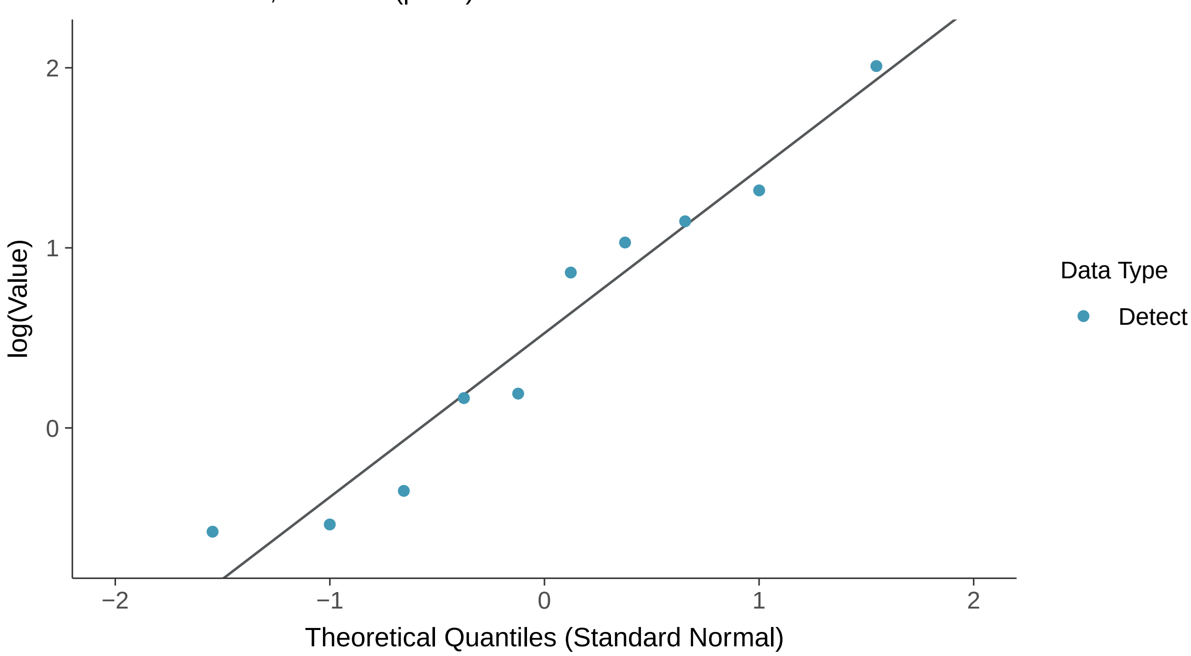
Normal Q-Q plot

Radium-226/228, MW-16A (pCi/L)



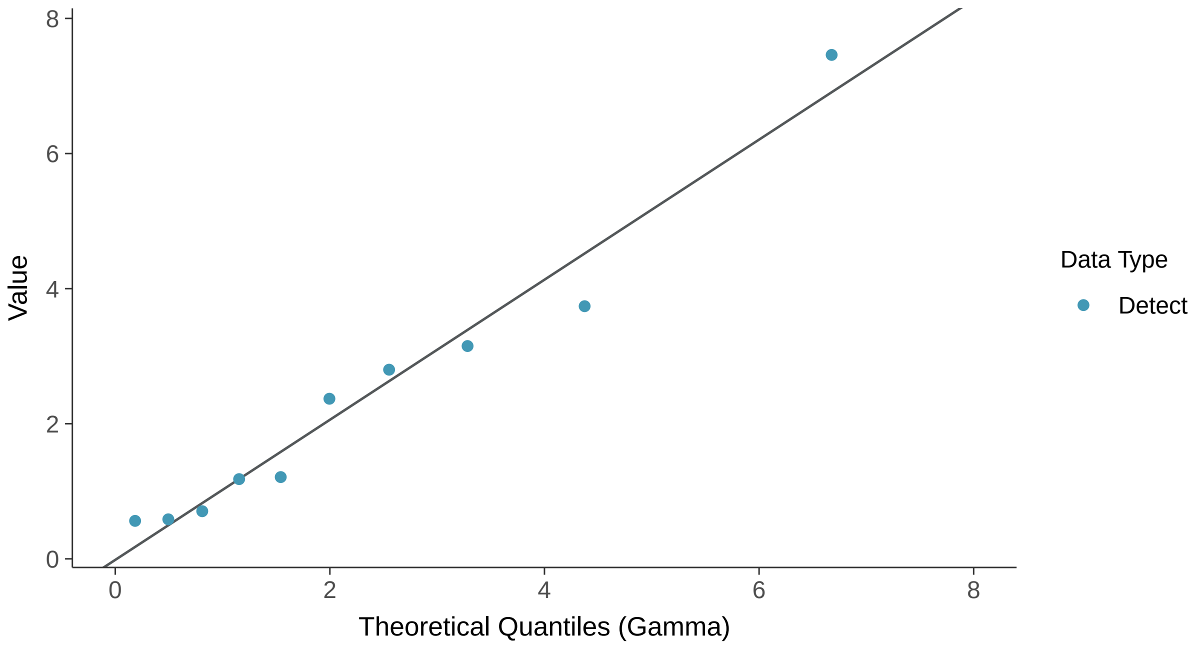
Lognormal Q-Q plot

Radium-226/228, MW-16A (pCi/L)



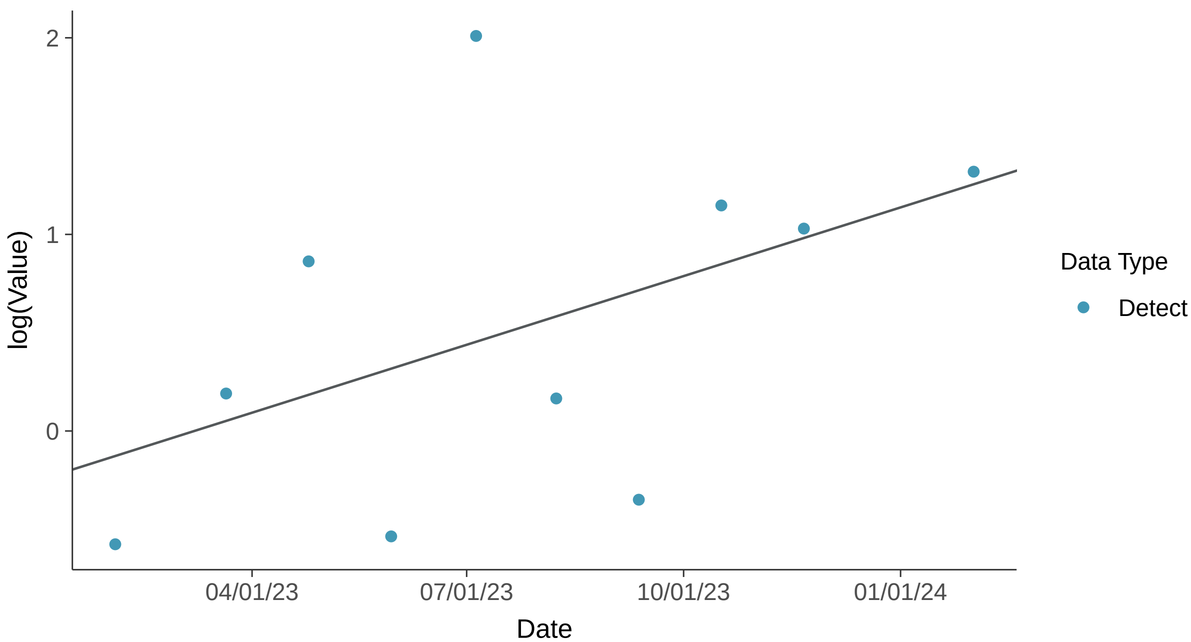
Gamma Q-Q plot

Radium-226/228, MW-16A (pCi/L)



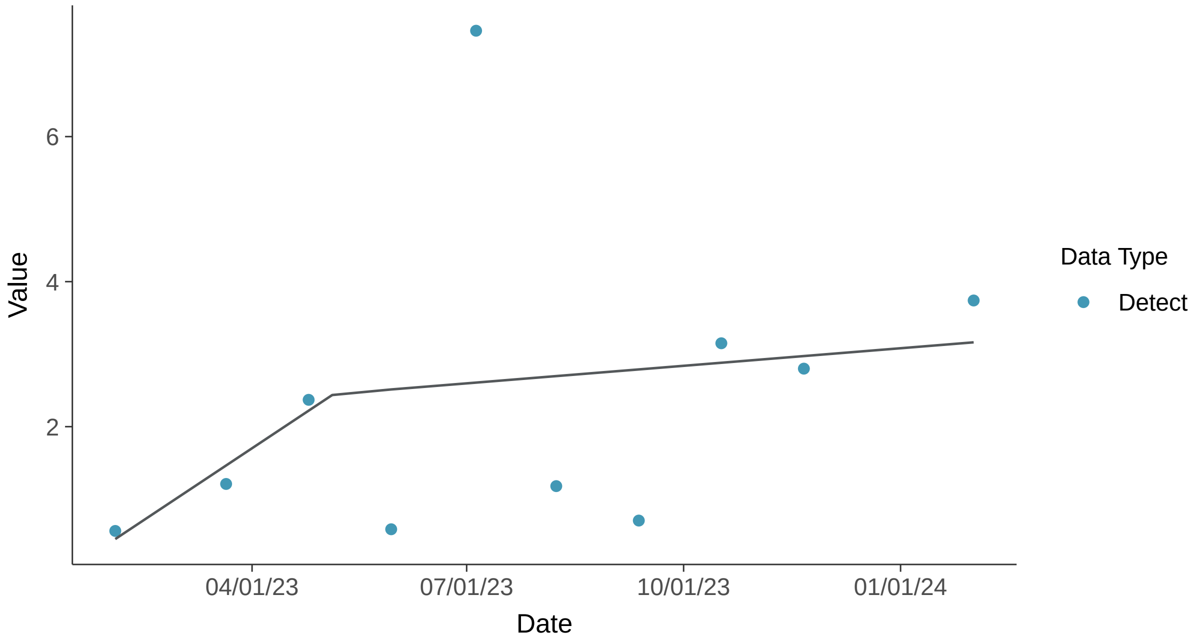
Trend Regression: Lognormal MLE

Radium-226/228, MW-16A (pCi/L)



Trend Regression: Piecewise Linear-Linear

Radium-226/228, MW-16A (pCi/L)

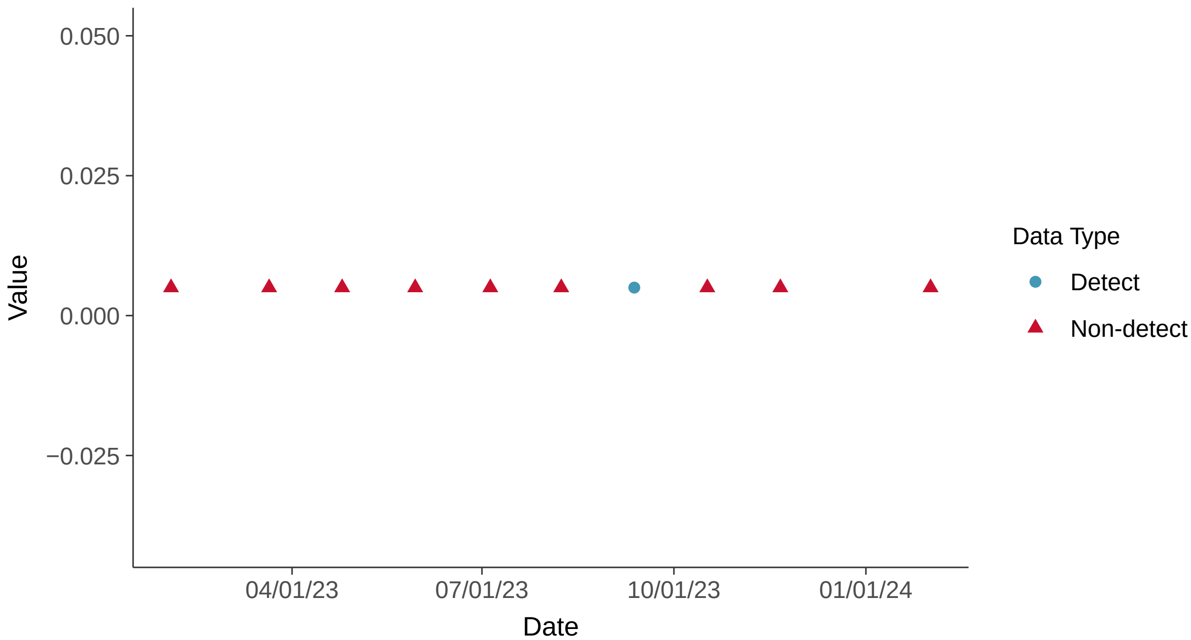


Appendix IV: Selenium, MW-16A

ID: 16A_2_22

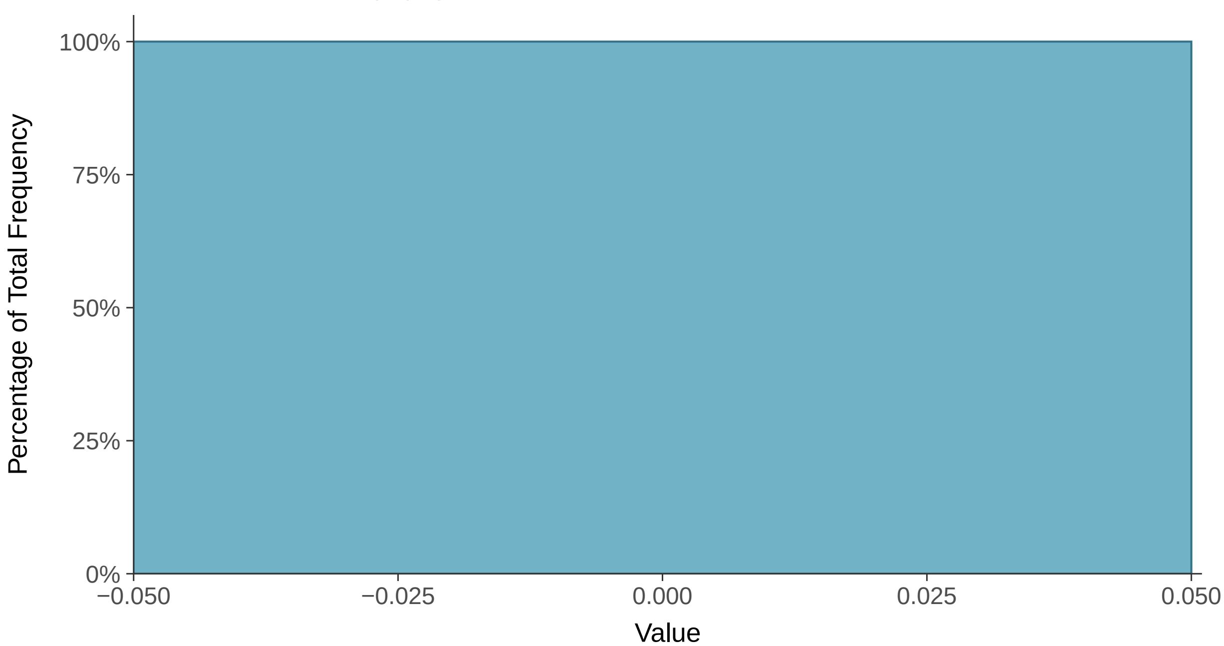
Scatter Plot

Selenium, MW-16A (mg/L)



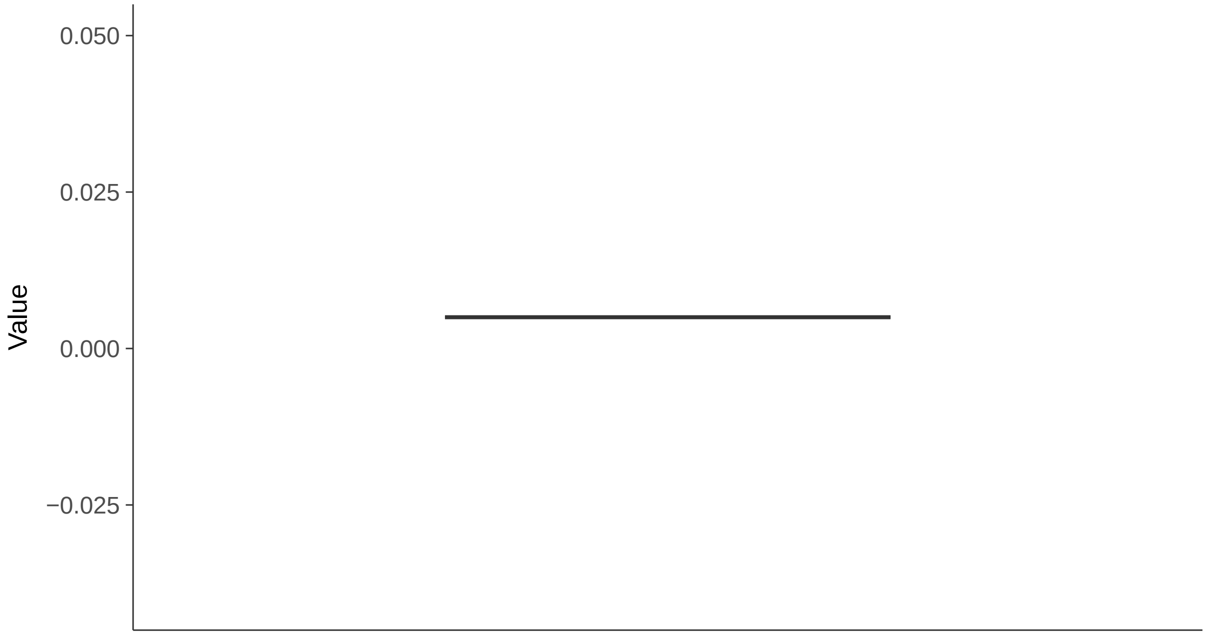
Histogram

Selenium, MW-16A (mg/L)



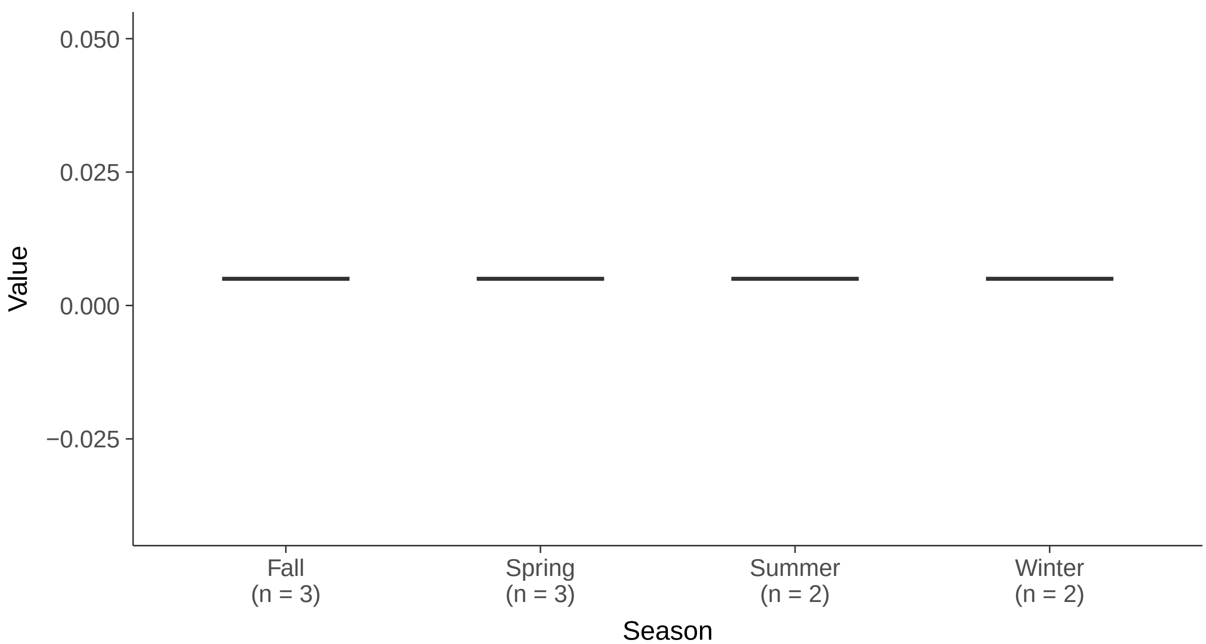
Boxplot

Selenium, MW-16A (mg/L)



Boxplot by Season

Selenium, MW-16A (mg/L)

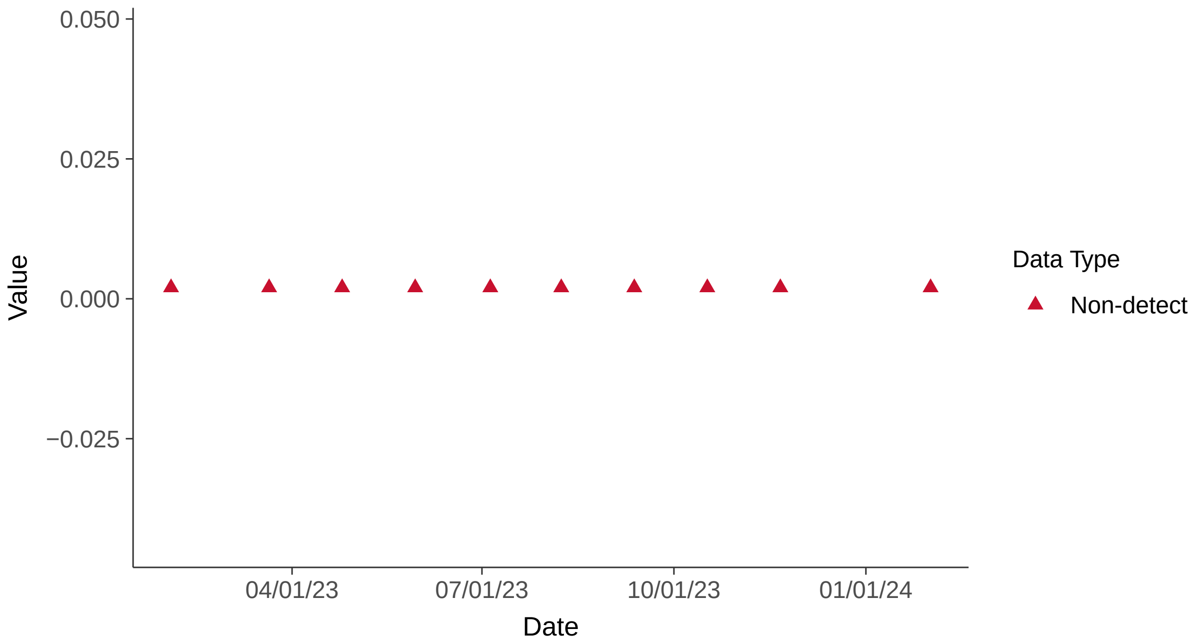


Appendix IV: Thallium, MW-16A

ID: 16A_2_23

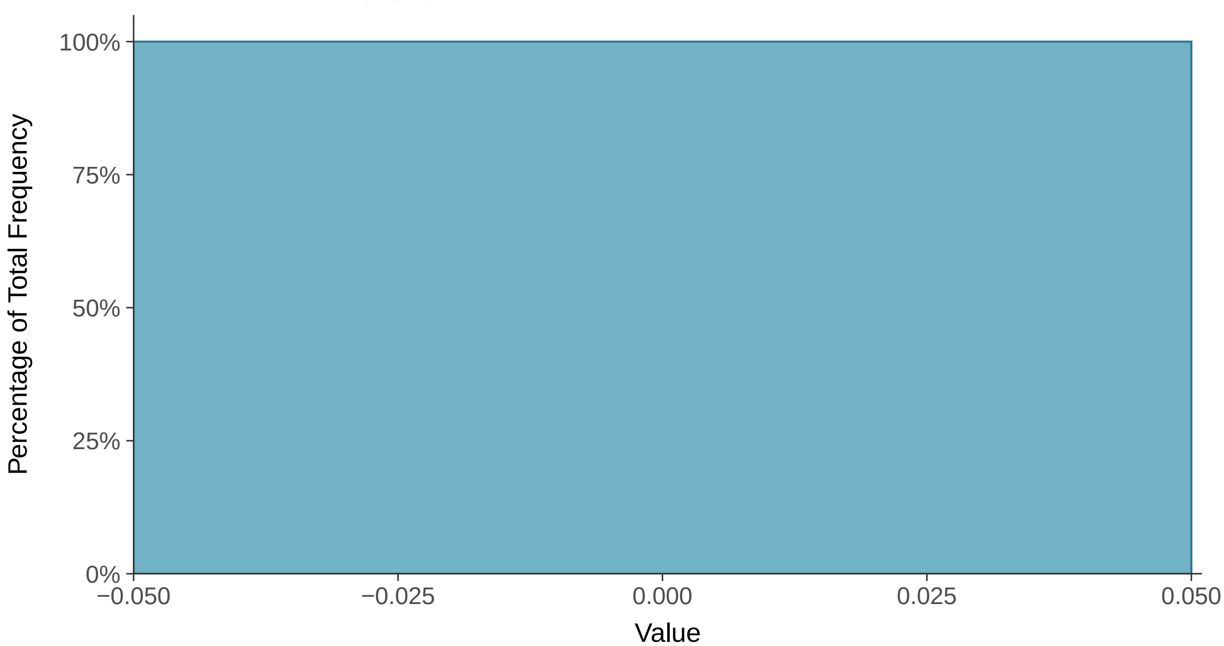
Scatter Plot

Thallium, MW-16A (mg/L)



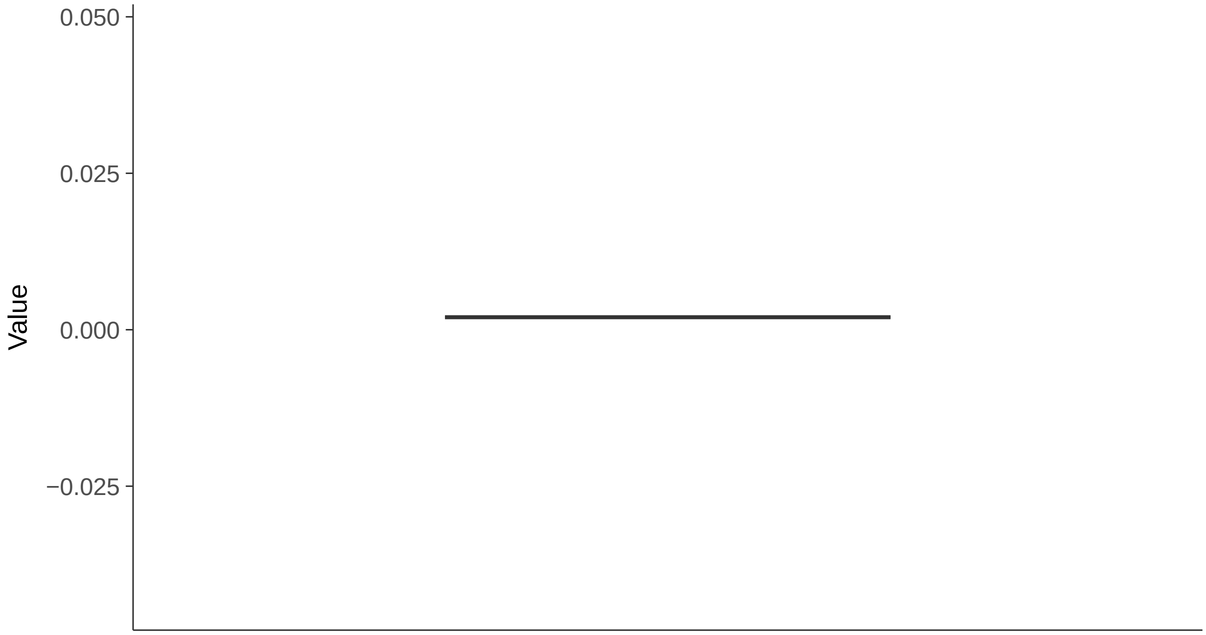
Histogram

Thallium, MW-16A (mg/L)



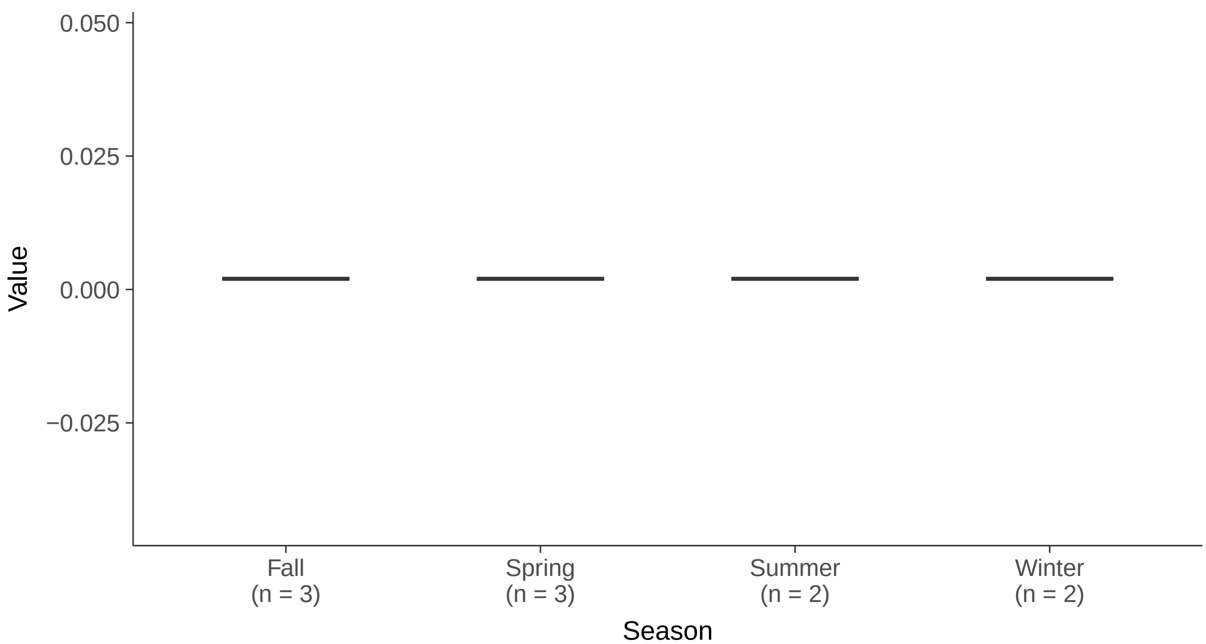
Boxplot

Thallium, MW-16A (mg/L)



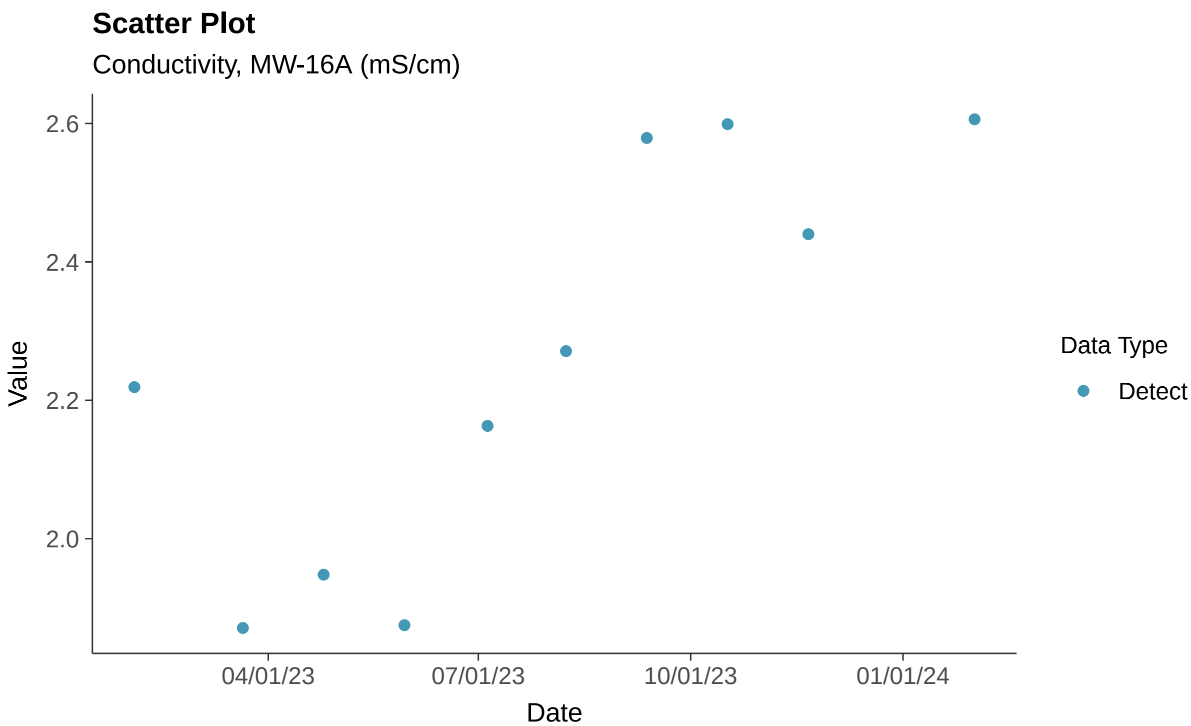
Boxplot by Season

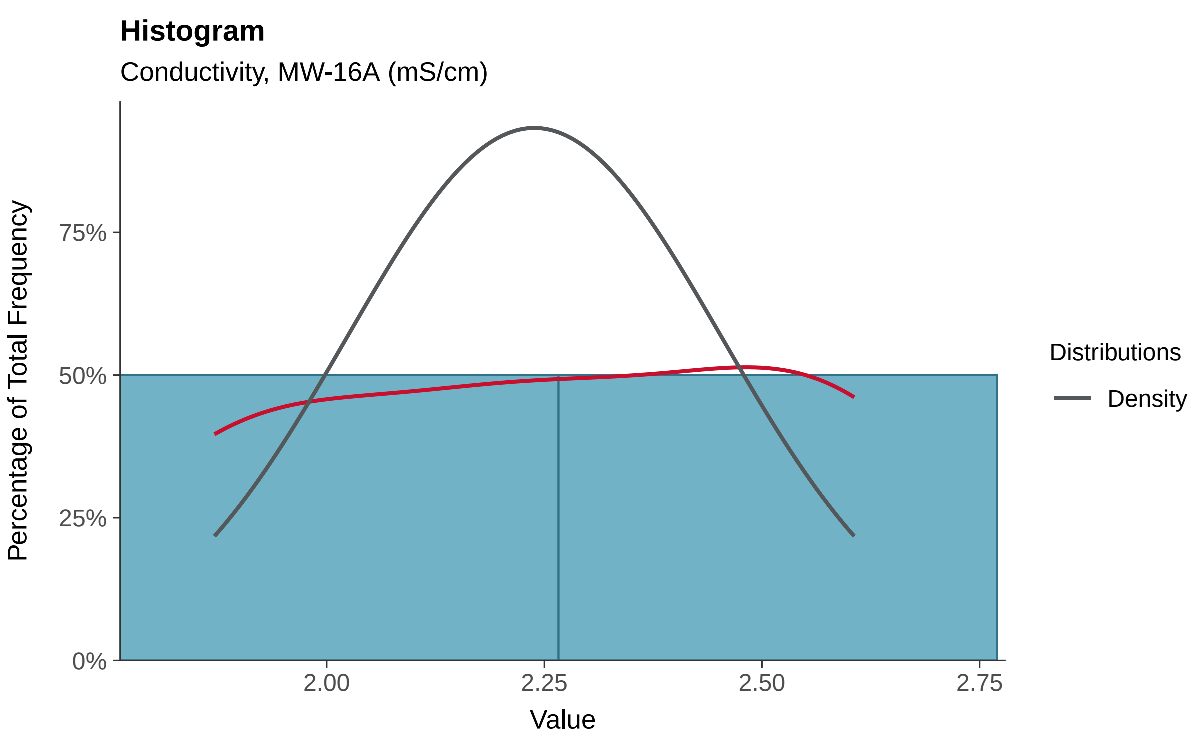
Thallium, MW-16A (mg/L)



Field Parameters: Conductivity, MW-16A

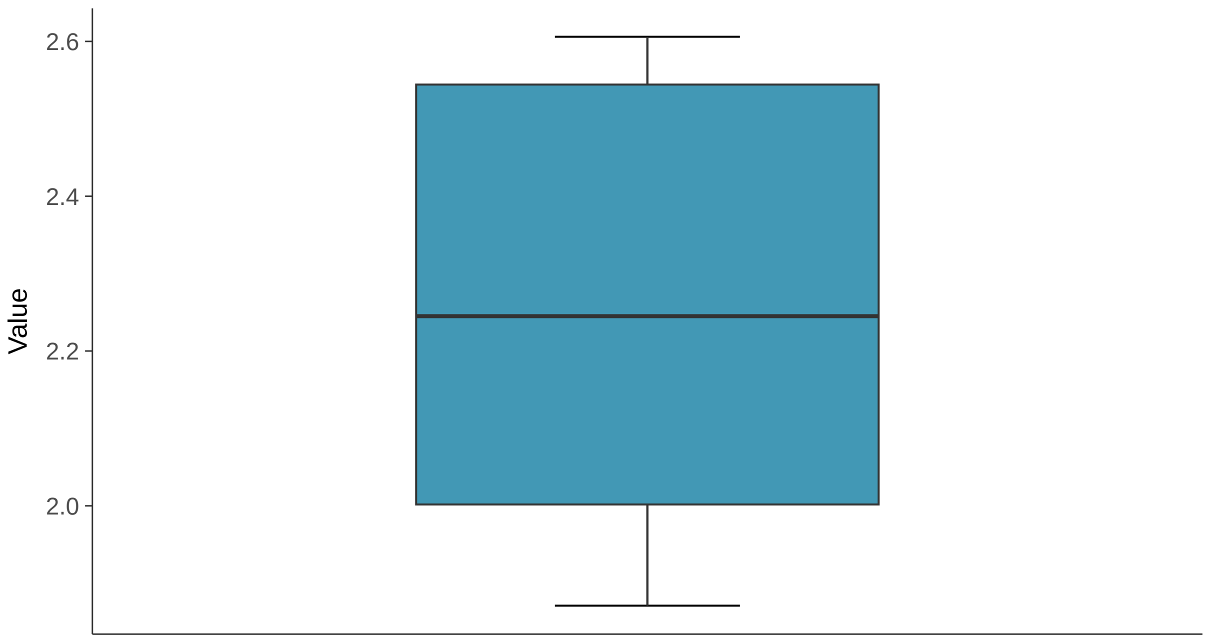
ID: 16A_3_24





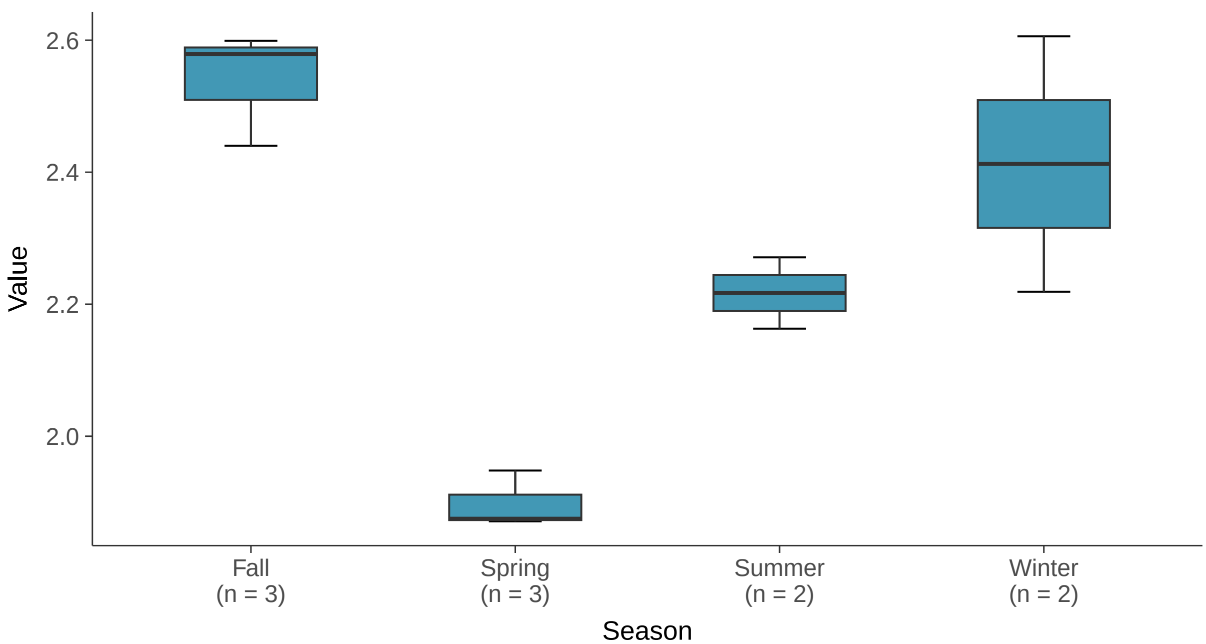
Boxplot

Conductivity, MW-16A (mS/cm)



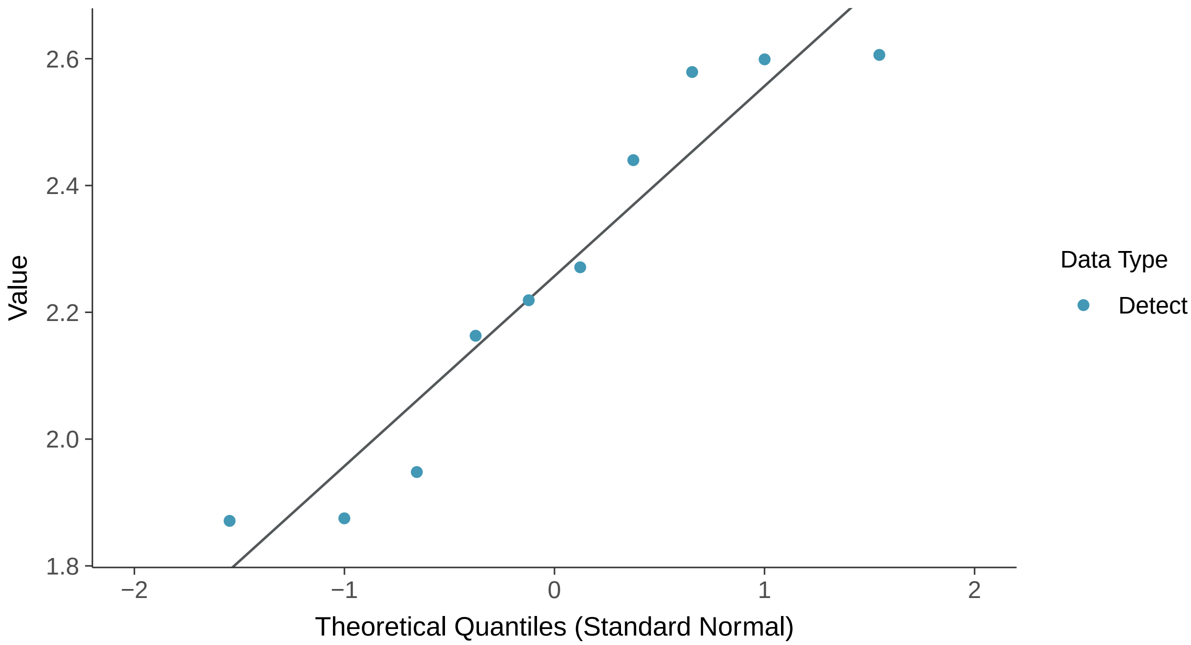
Boxplot by Season

Conductivity, MW-16A (mS/cm)



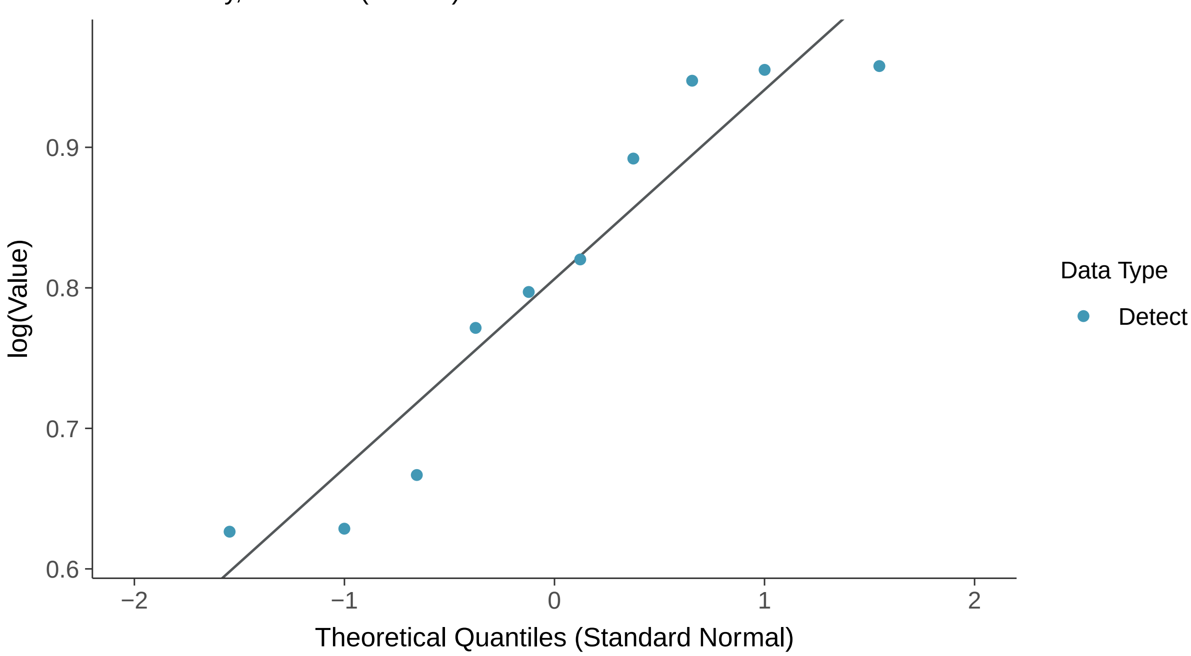
Normal Q-Q plot

Conductivity, MW-16A (mS/cm)



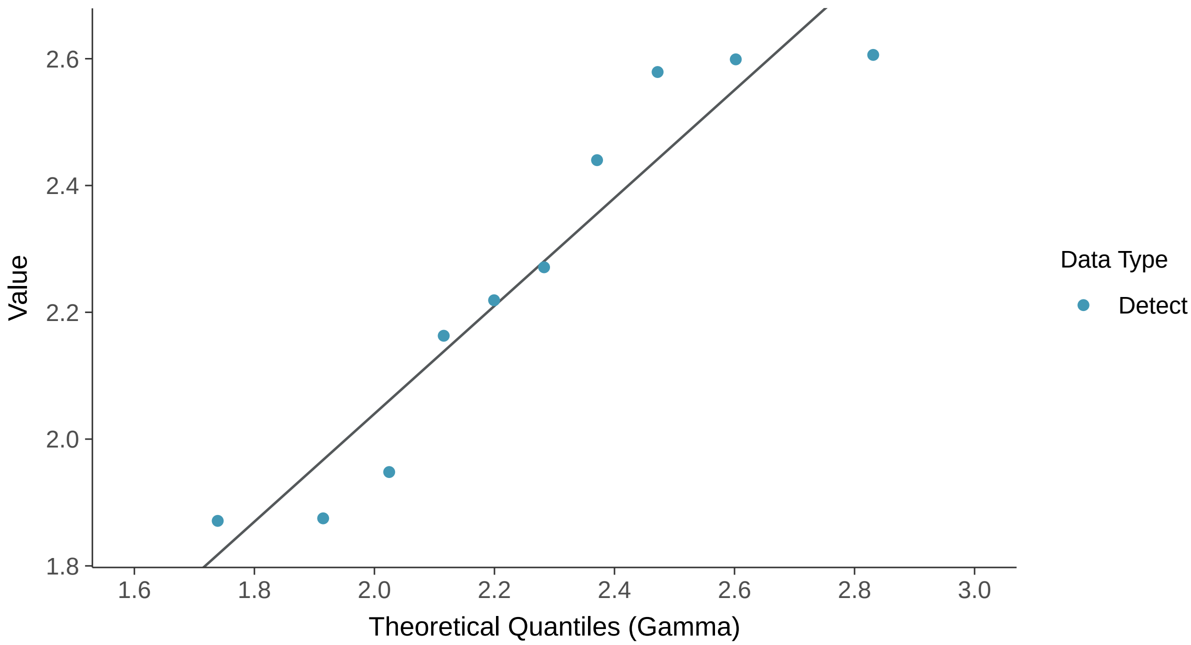
Lognormal Q-Q plot

Conductivity, MW-16A (mS/cm)



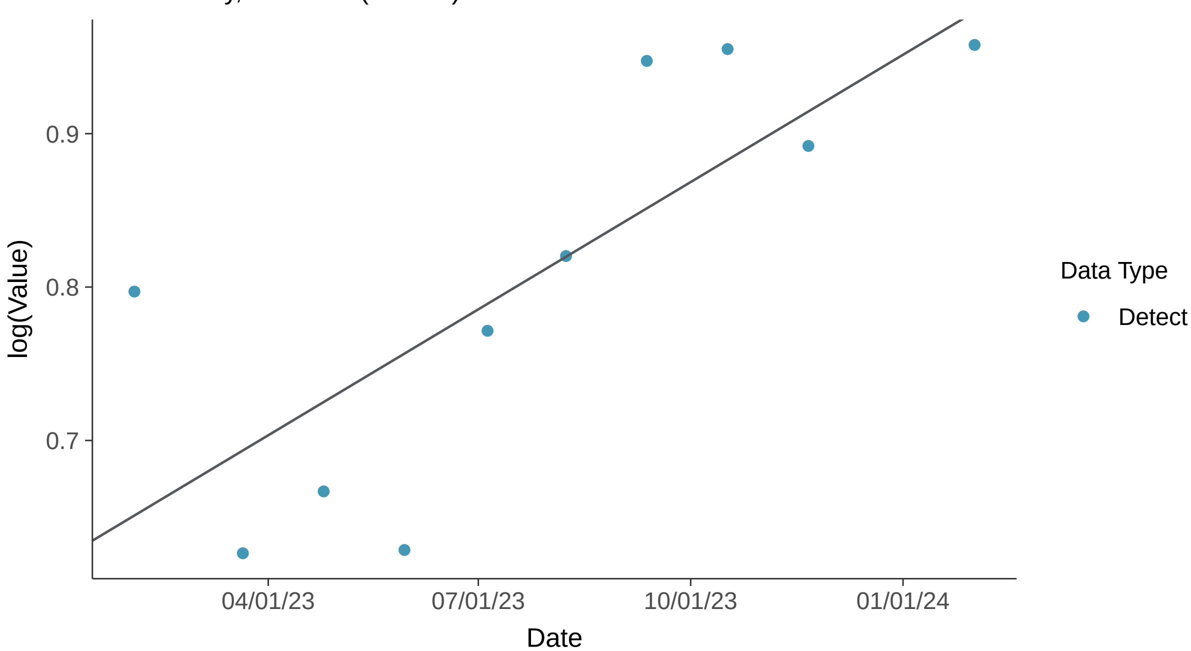
Gamma Q-Q plot

Conductivity, MW-16A (mS/cm)



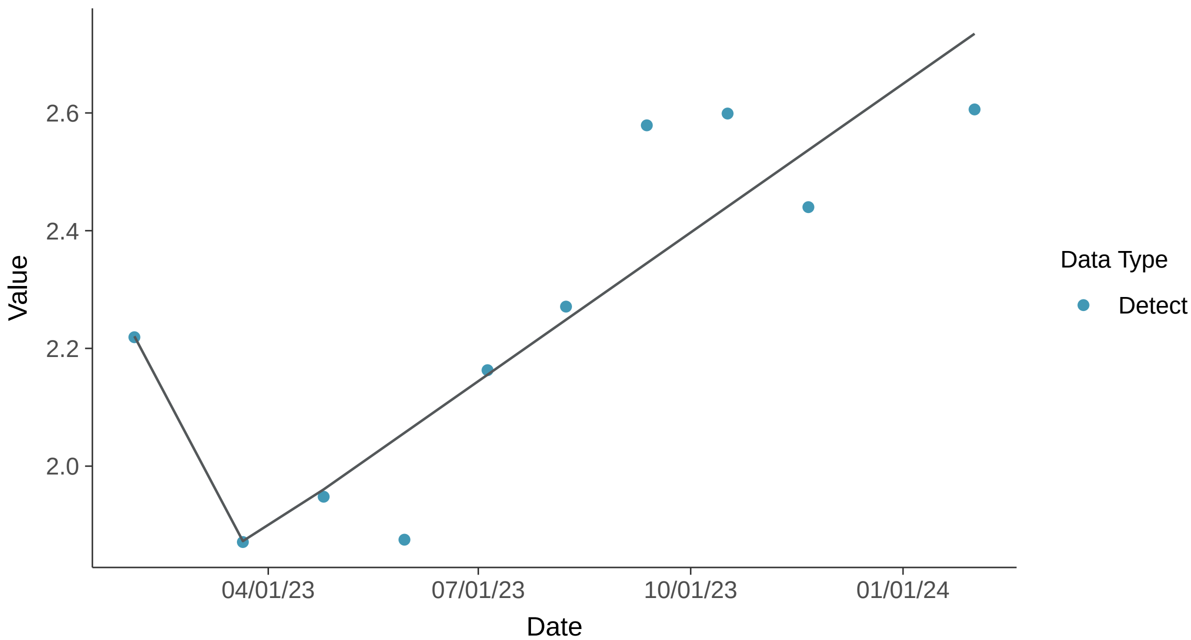
Trend Regression: Lognormal MLE

Conductivity, MW-16A (mS/cm)



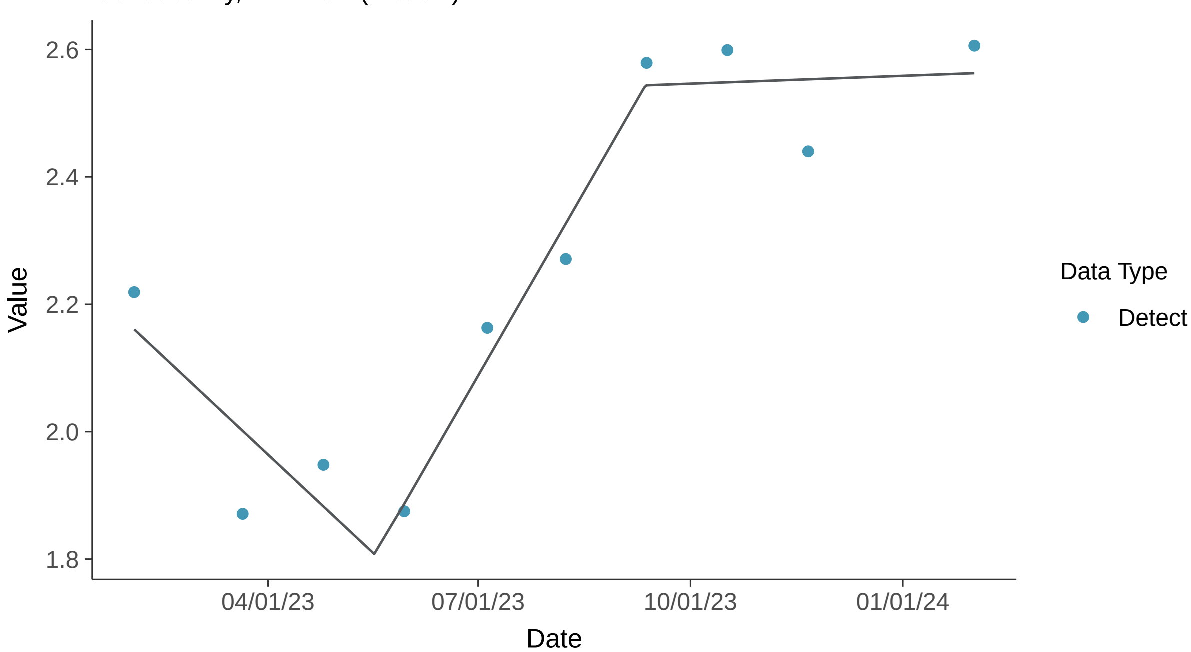
Trend Regression: Piecewise Linear-Linear

Conductivity, MW-16A (mS/cm)



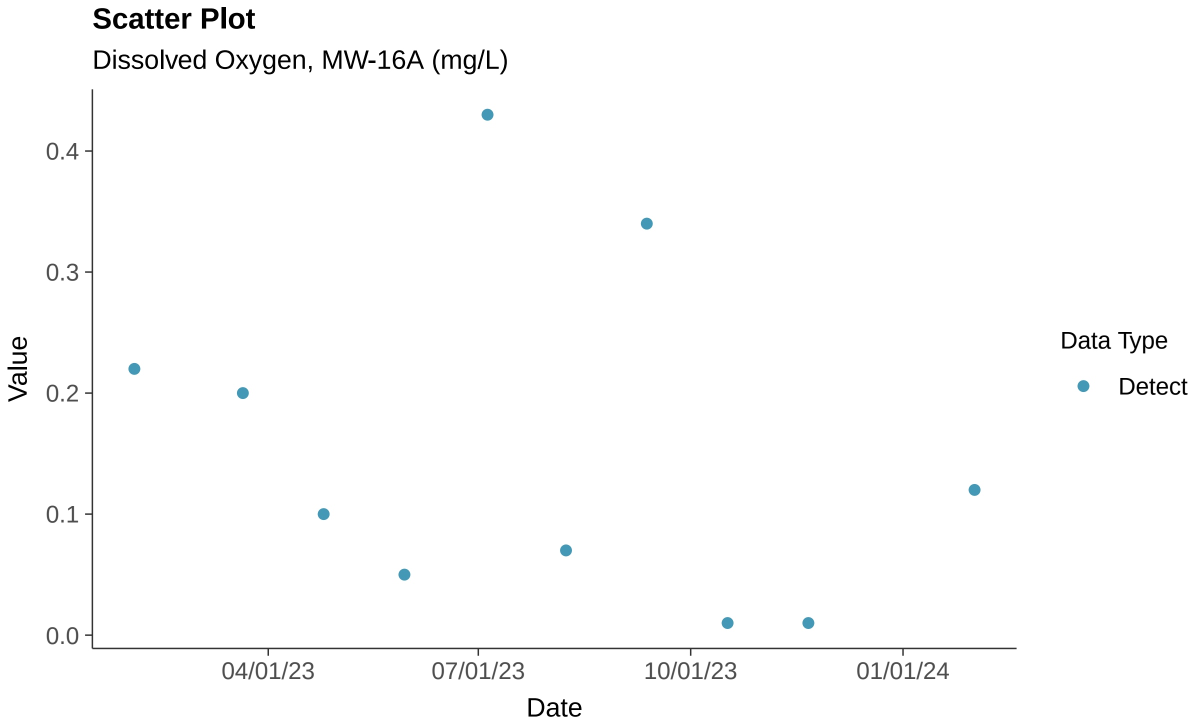
Trend Regression: Piecewise Linear-Linear-Linear

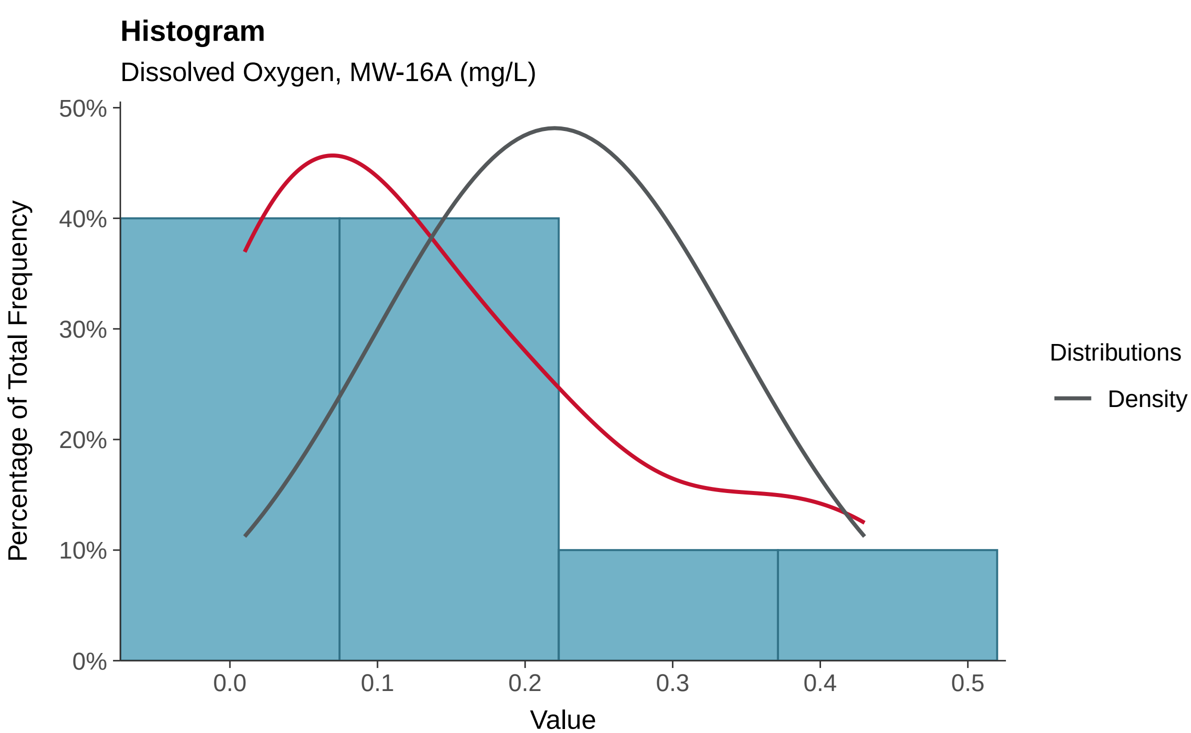
Conductivity, MW-16A (mS/cm)



Field Parameters: Dissolved Oxygen, MW-16A

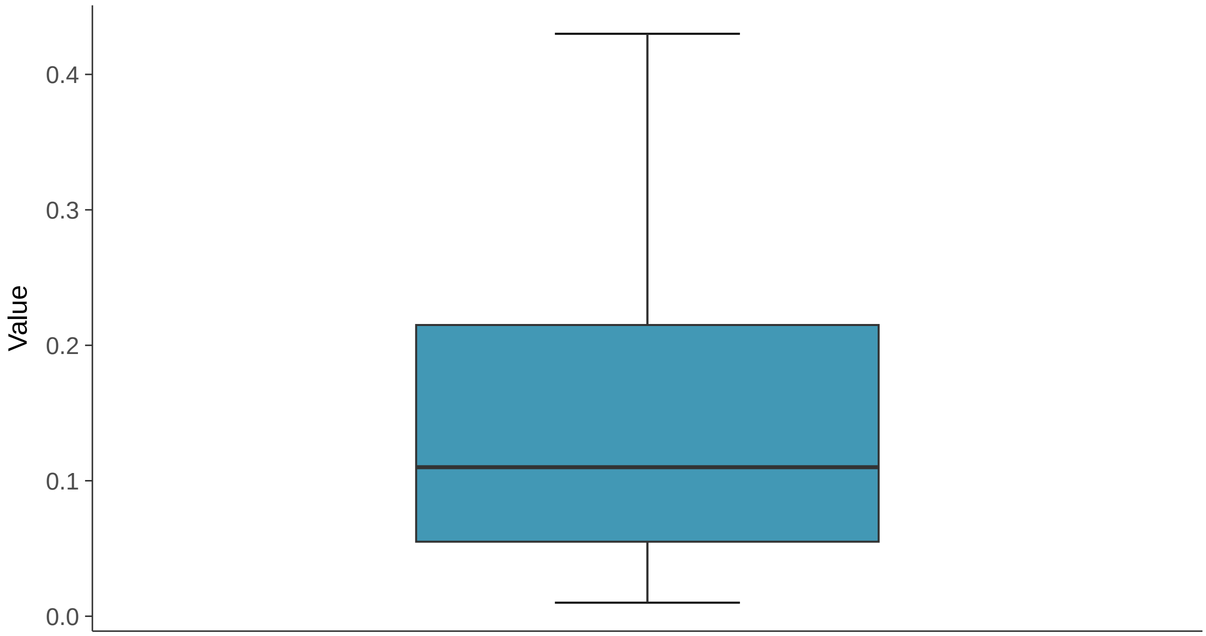
ID: 16A_3_25





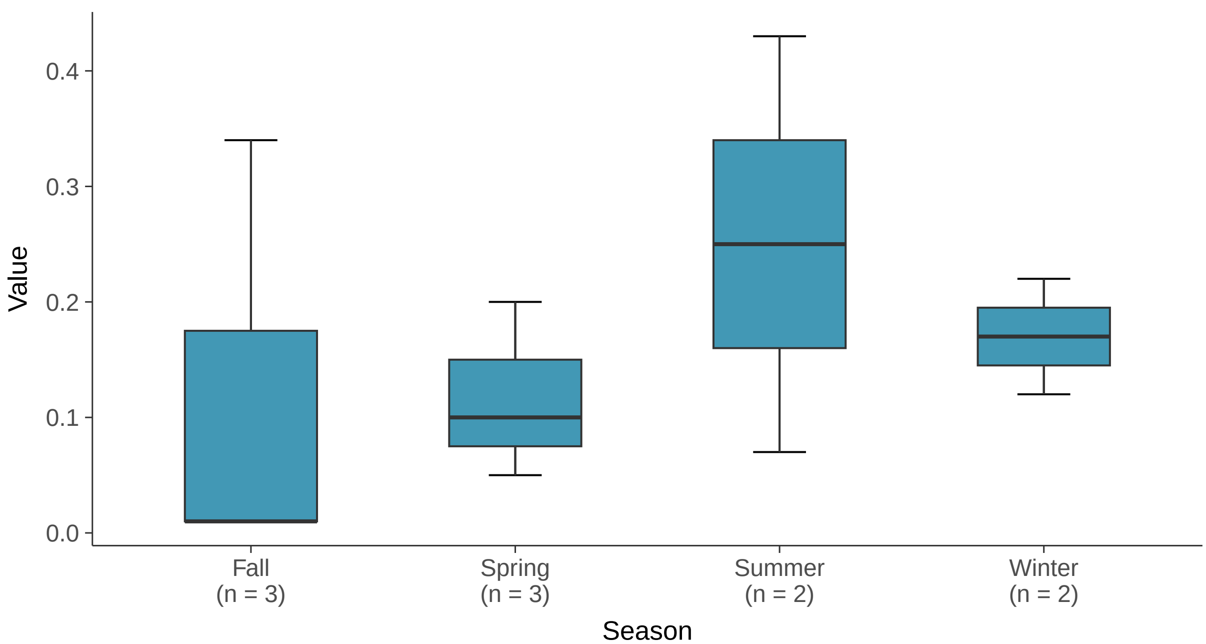
Boxplot

Dissolved Oxygen, MW-16A (mg/L)



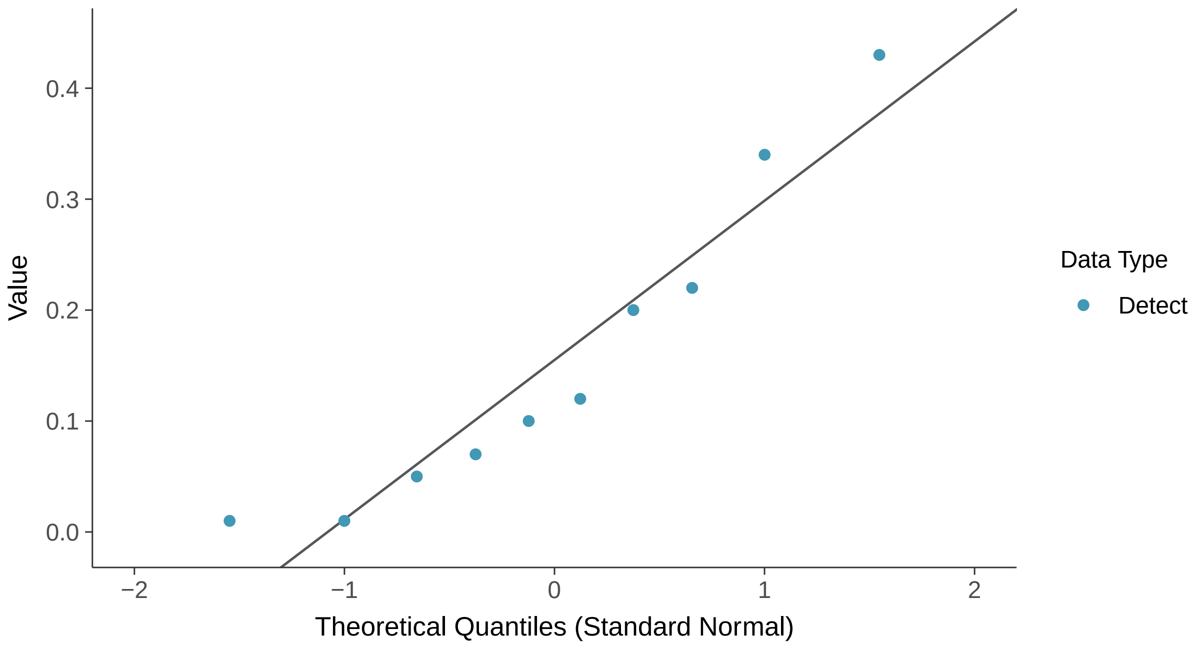
Boxplot by Season

Dissolved Oxygen, MW-16A (mg/L)



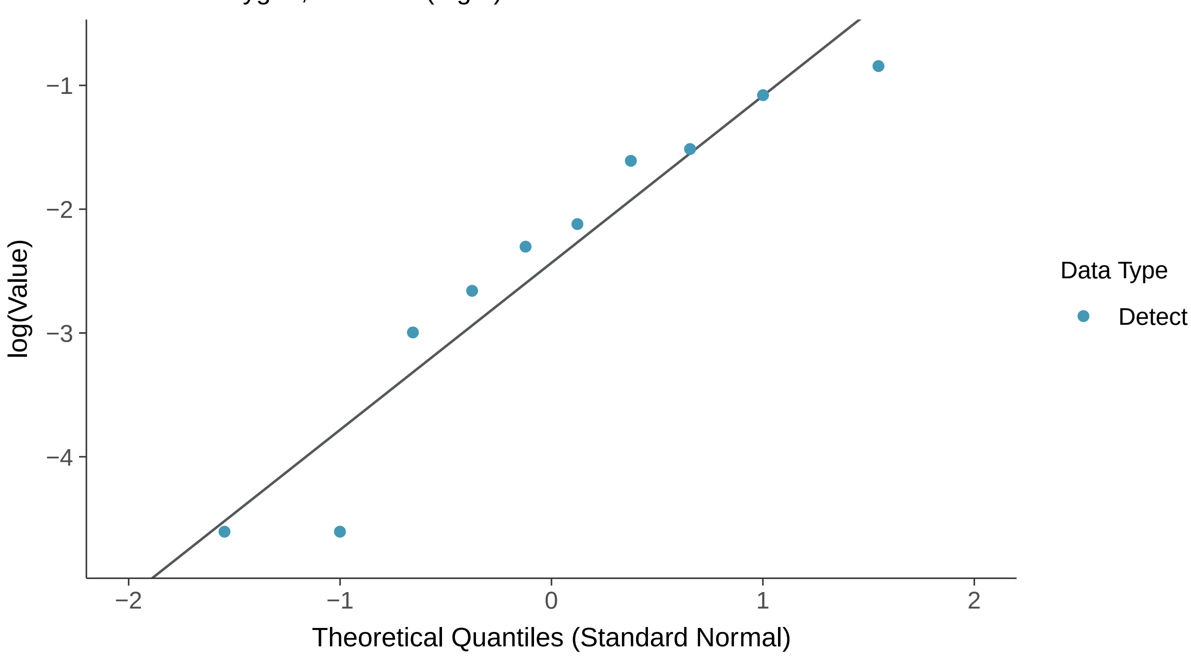
Normal Q-Q plot

Dissolved Oxygen, MW-16A (mg/L)



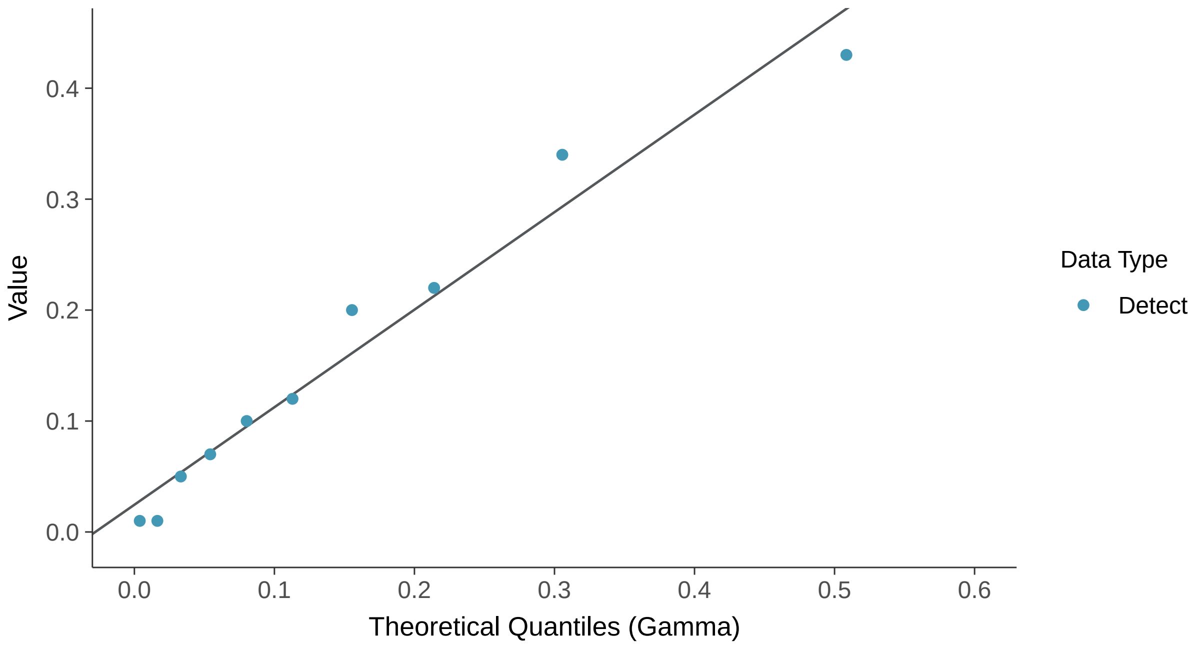
Lognormal Q-Q plot

Dissolved Oxygen, MW-16A (mg/L)



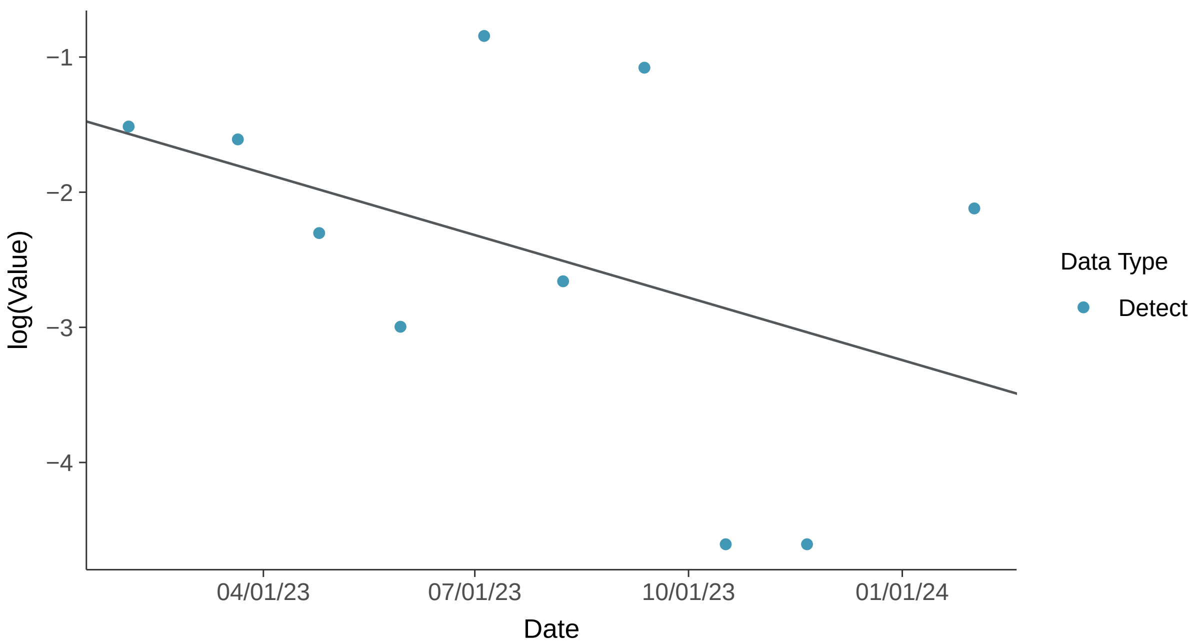
Gamma Q-Q plot

Dissolved Oxygen, MW-16A (mg/L)



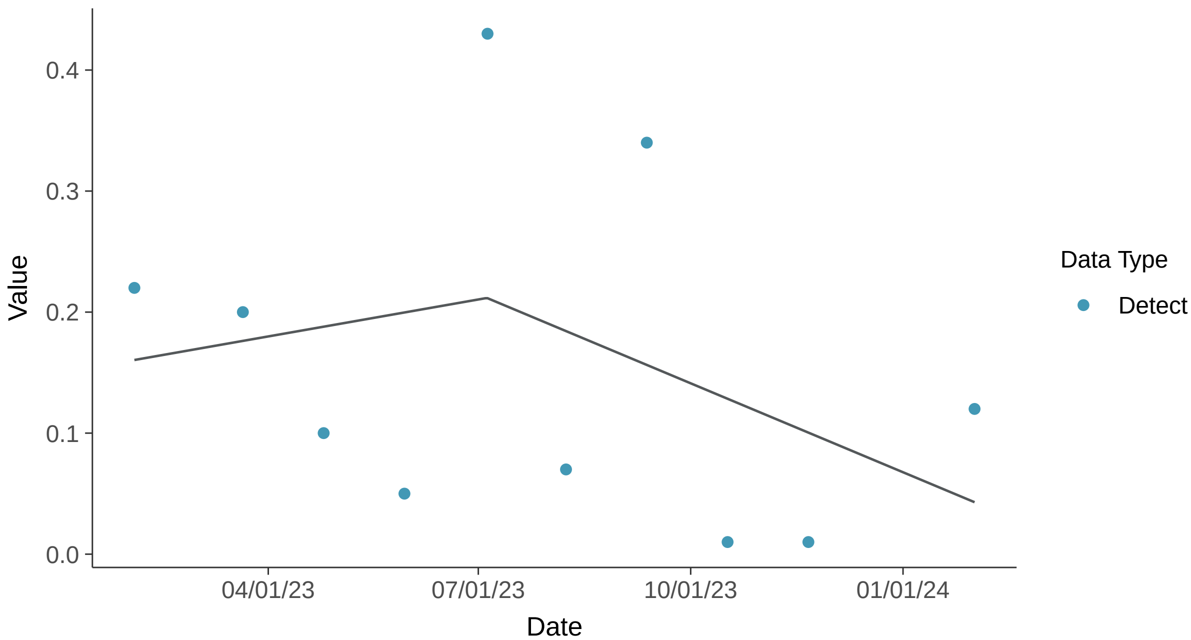
Trend Regression: Lognormal MLE

Dissolved Oxygen, MW-16A (mg/L)



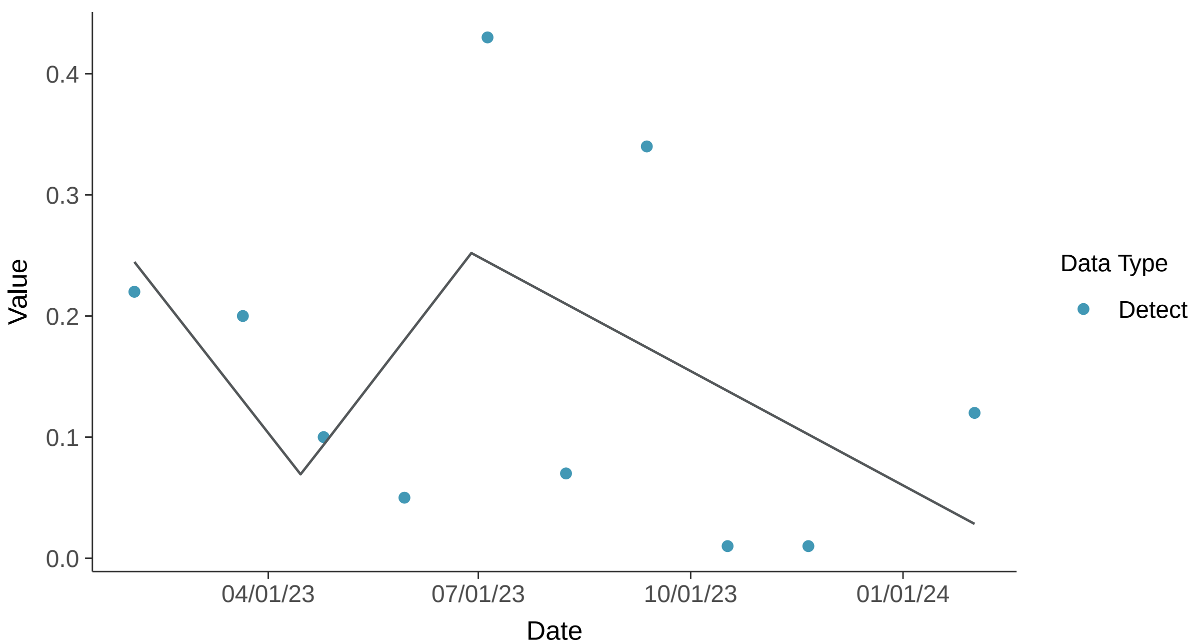
Trend Regression: Piecewise Linear-Linear

Dissolved Oxygen, MW-16A (mg/L)



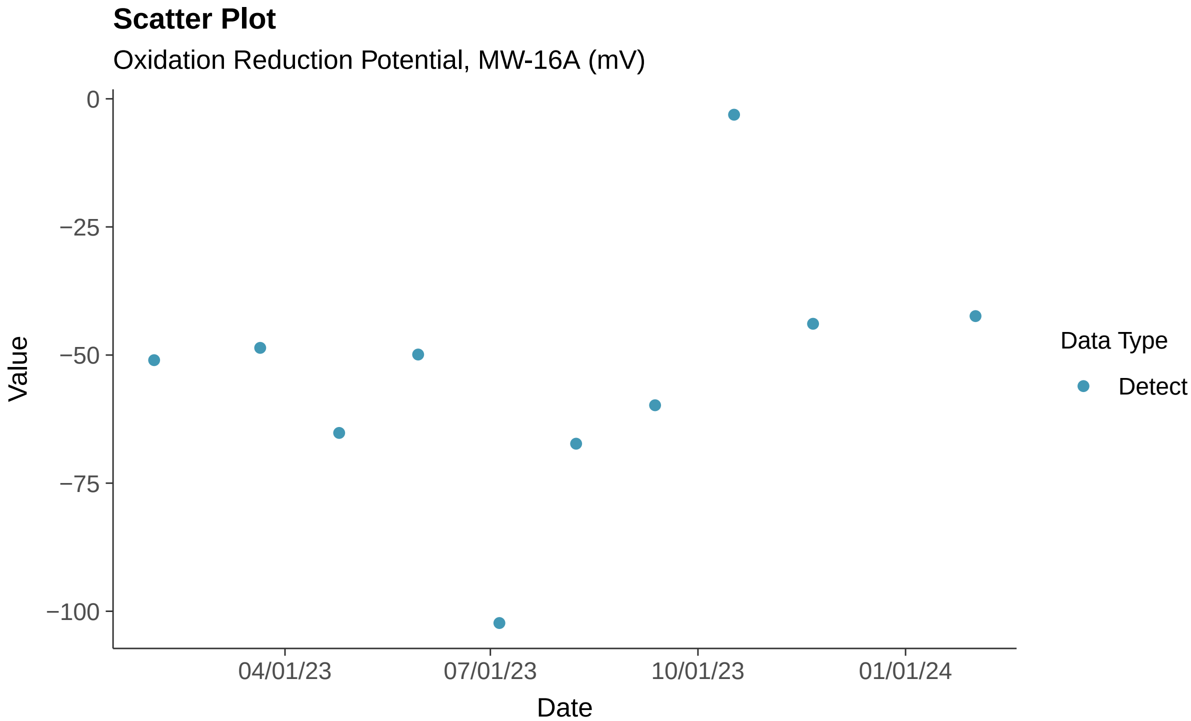
Trend Regression: Piecewise Linear-Linear-Linear

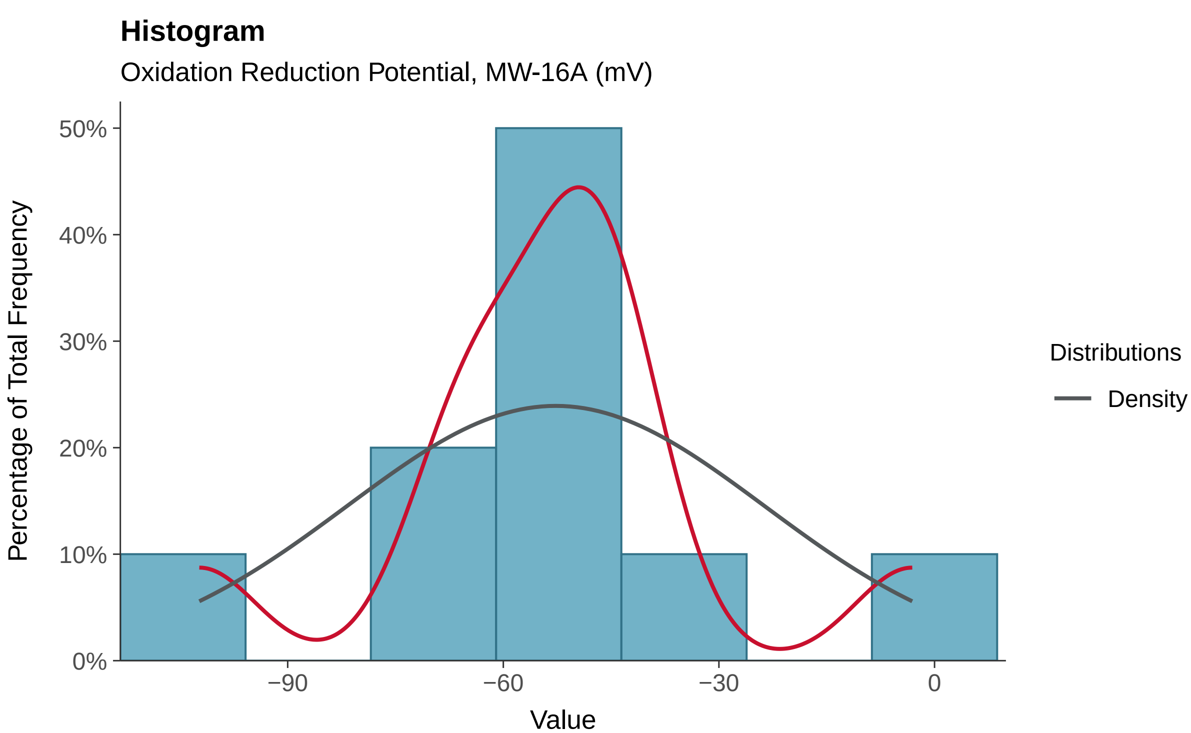
Dissolved Oxygen, MW-16A (mg/L)

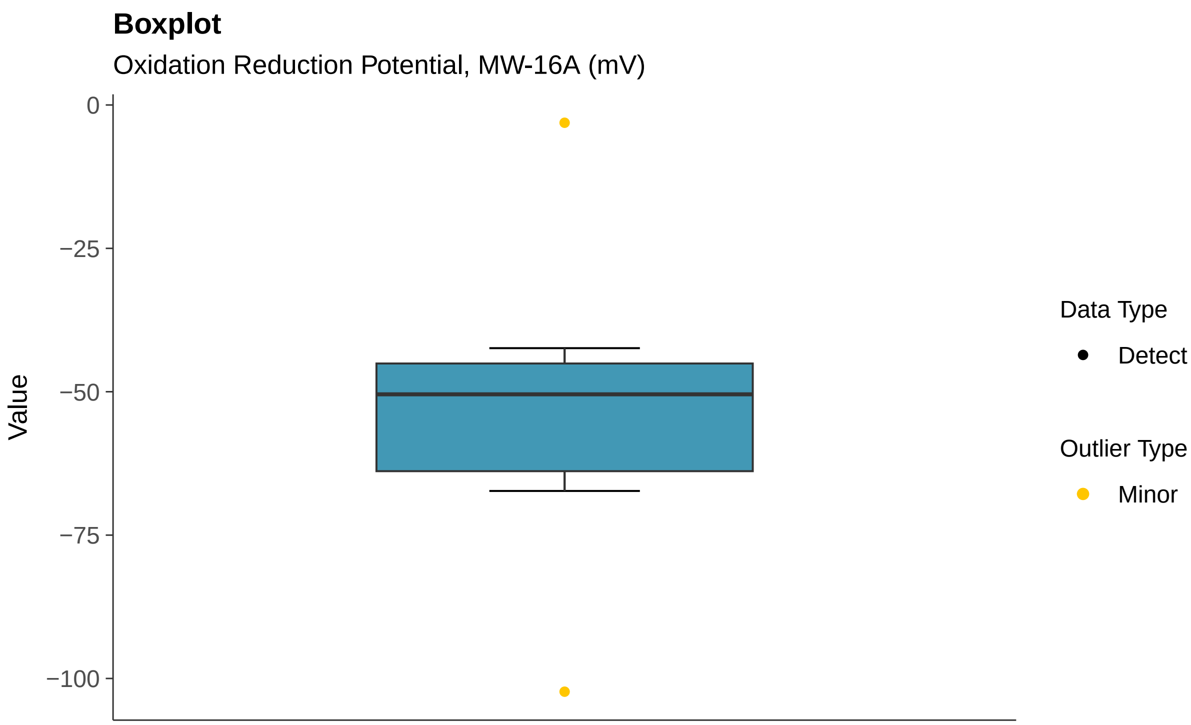


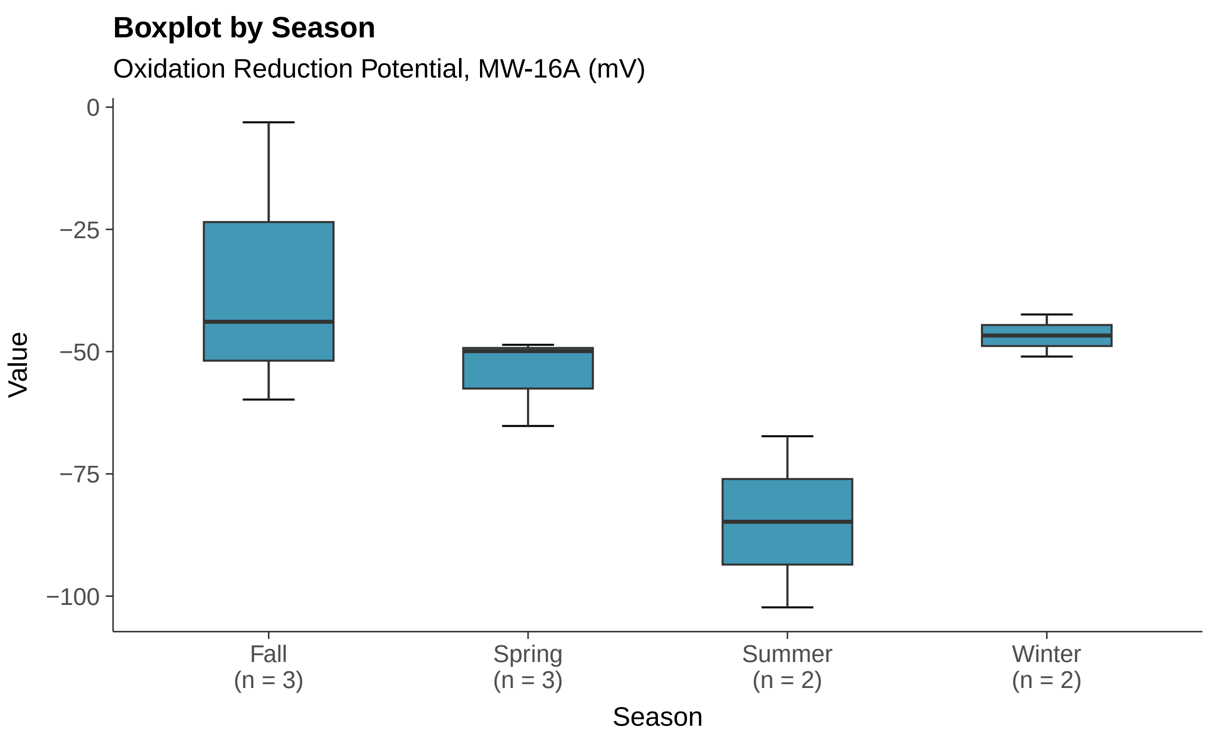
Field Parameters: Oxidation Reduction Potential, MW-16A

ID: 16A_3_26



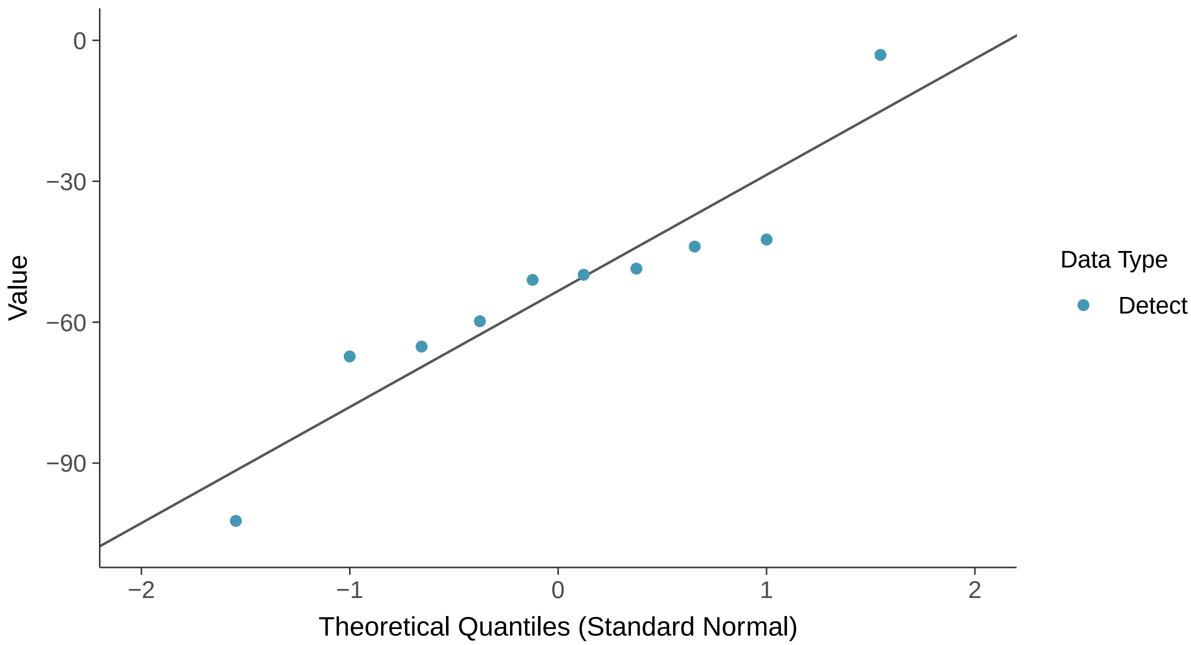



Boxplot
Oxidation Reduction Potential, MW-16A (mV)
0
−25
−50
−75
−100
Value
Data Type
Detect
Outlier Type
Minor


Boxplot by Season
Oxidation Reduction Potential, MW-16A (mV)
0
−25
−50
−75
−100
Value
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season

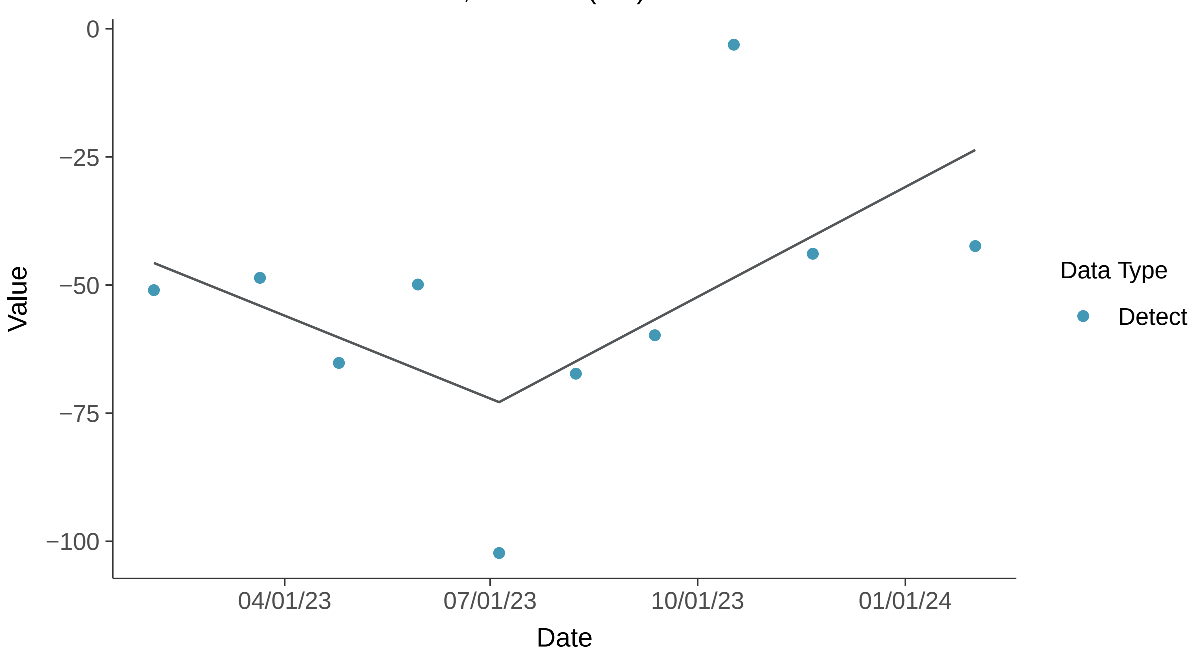
Normal Q-Q plot

Oxidation Reduction Potential, MW-16A (mV)



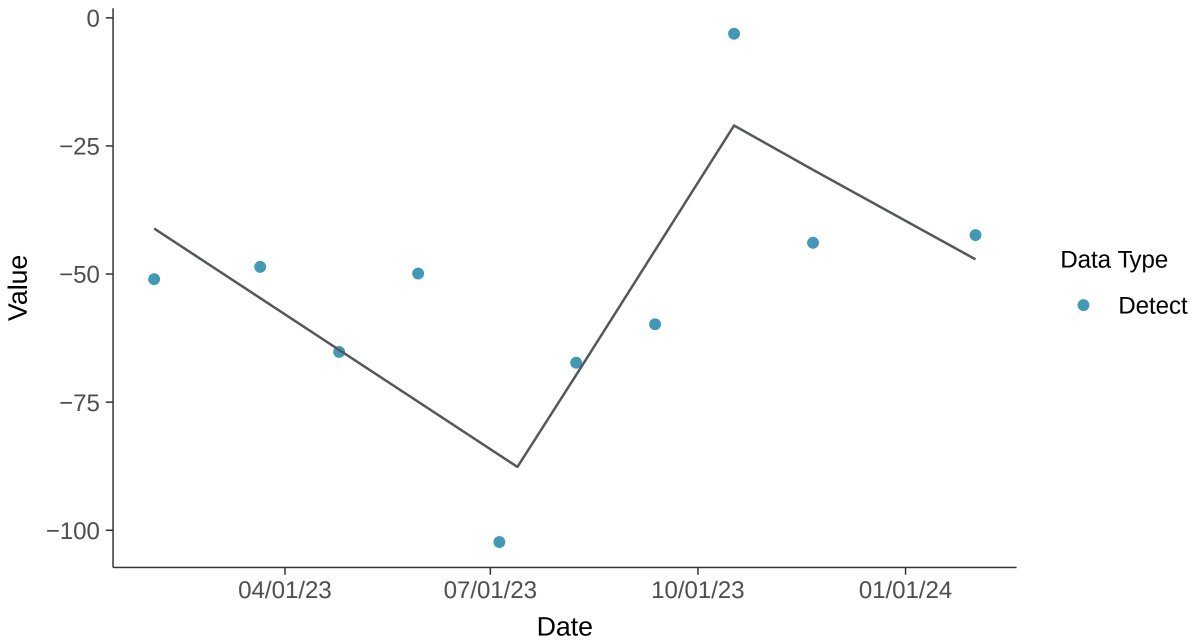
Trend Regression: Piecewise Linear-Linear

Oxidation Reduction Potential, MW-16A (mV)



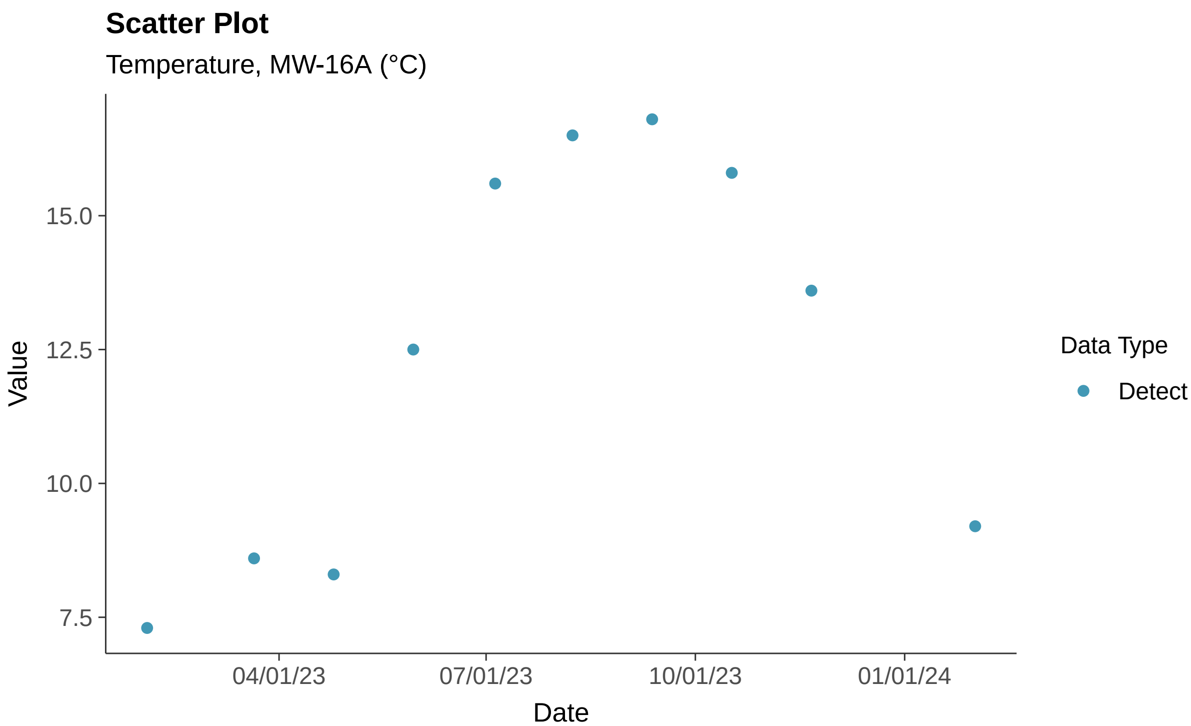
Trend Regression: Piecewise Linear-Linear-Linear

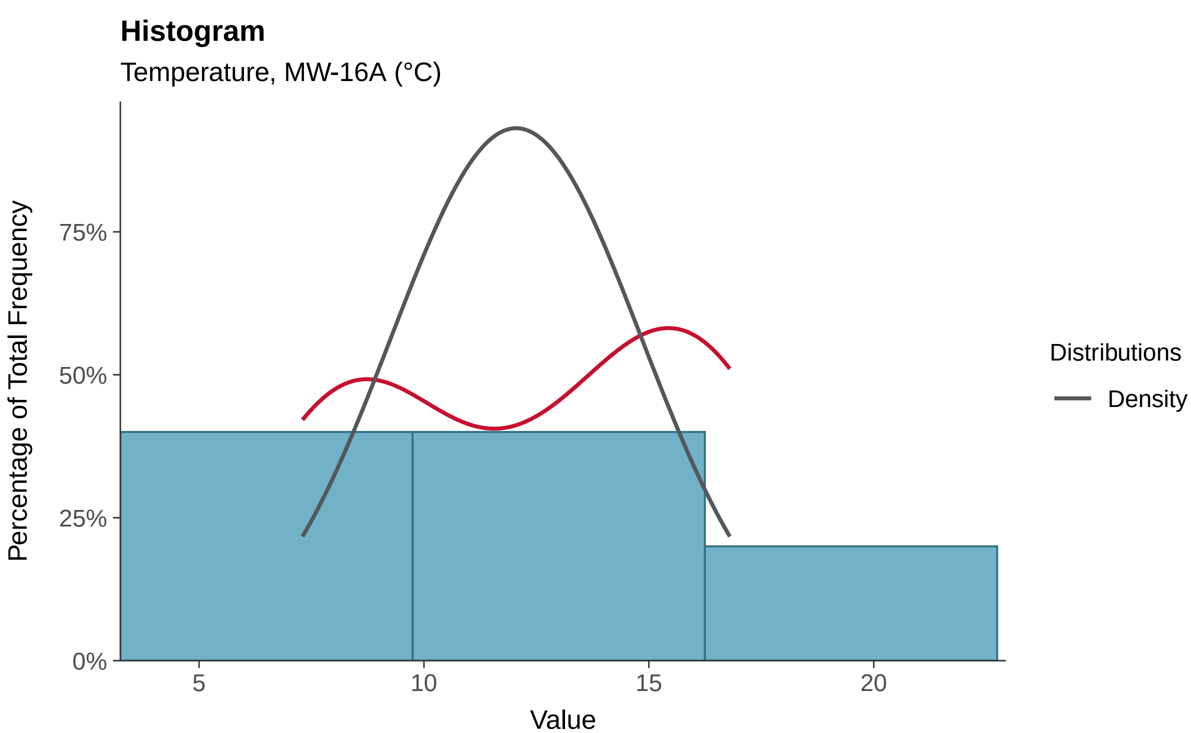
Oxidation Reduction Potential, MW-16A (mV)



Field Parameters: Temperature, MW-16A

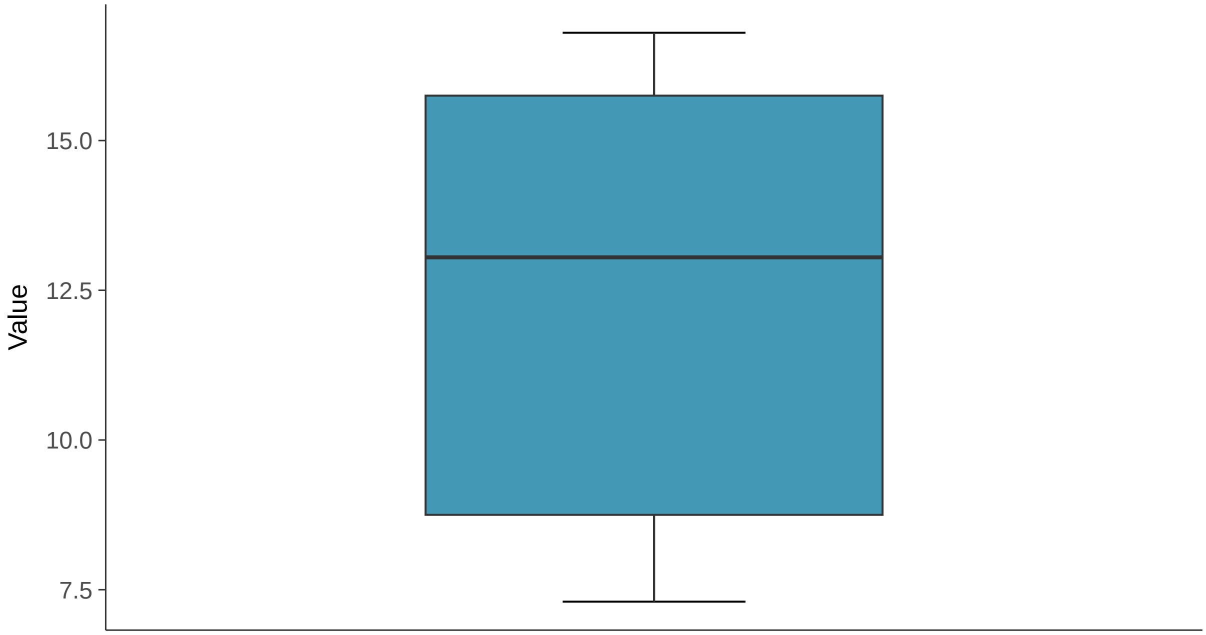
ID: 16A_3_27





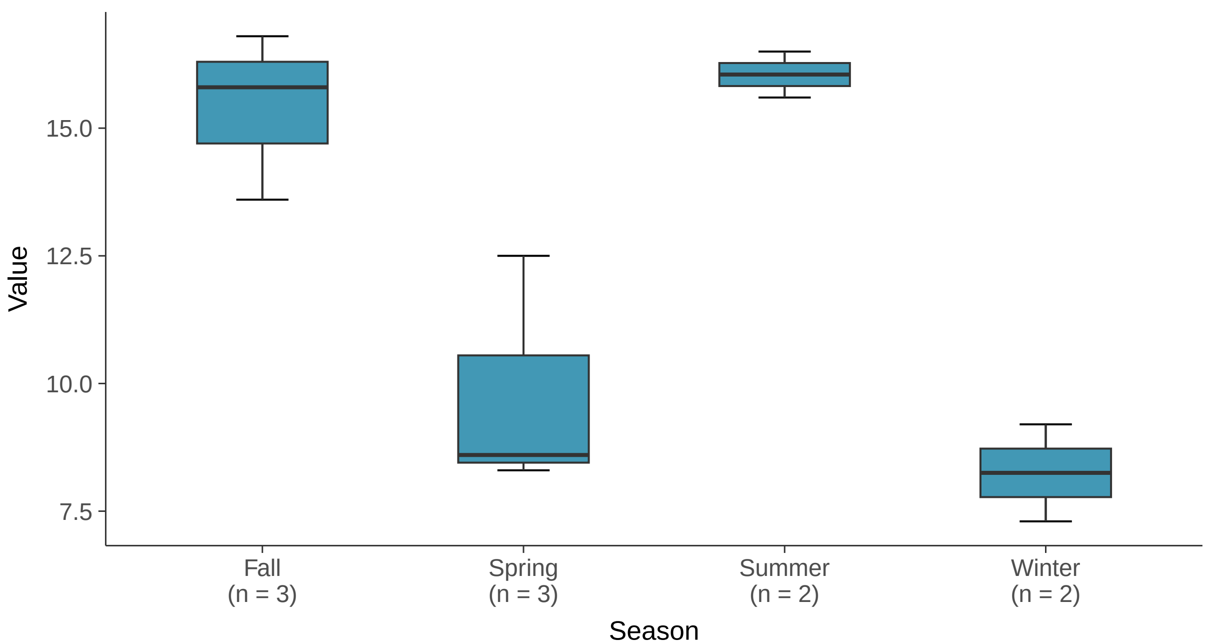
Boxplot

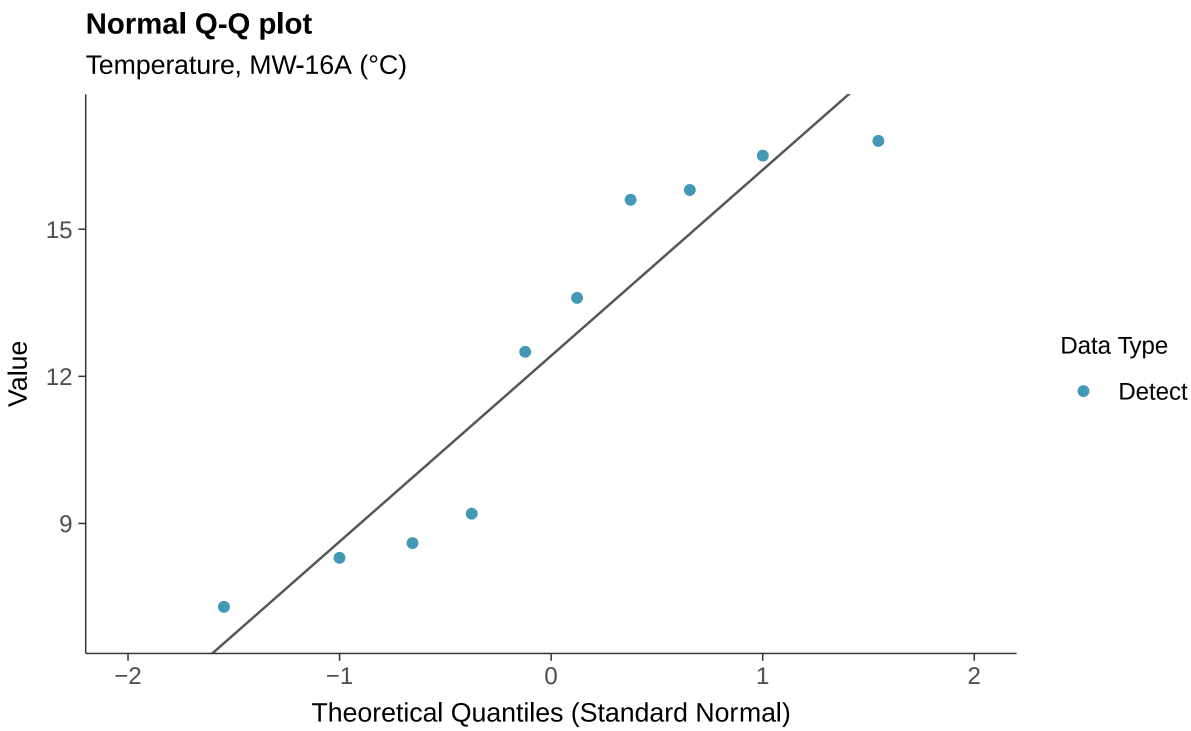
Temperature, MW-16A (°C)

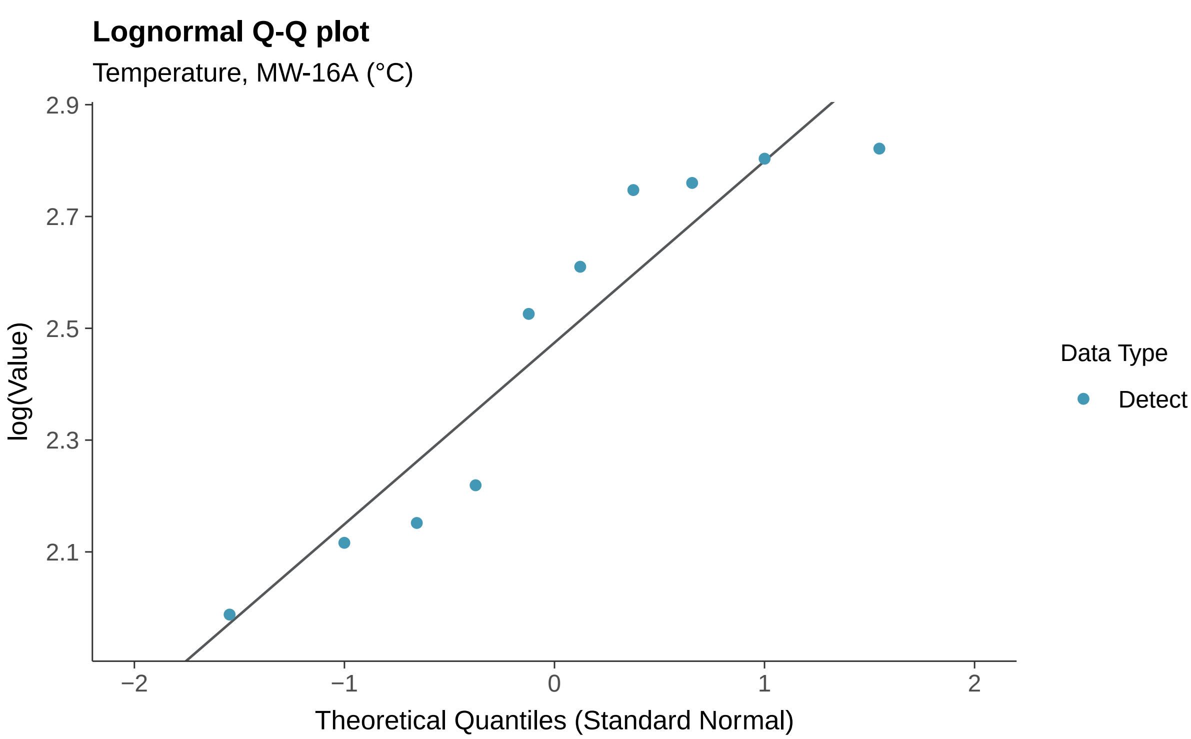


Boxplot by Season

Temperature, MW-16A (°C)

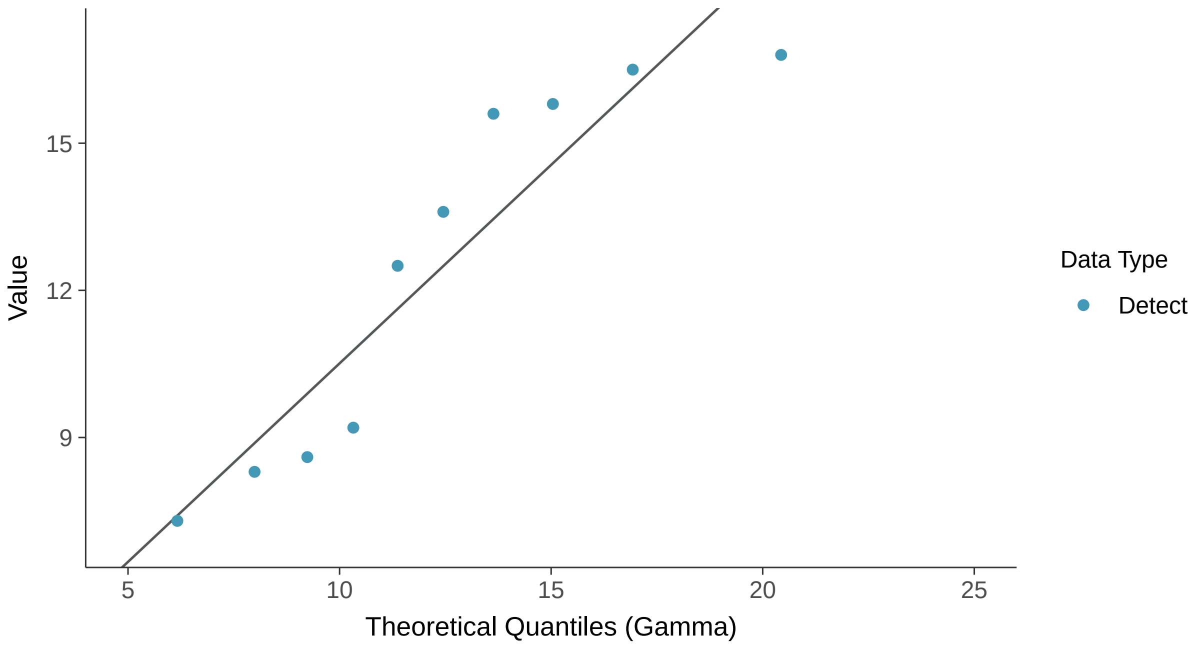



Normal Q-Q plot
Temperature, MW-16A (°C)
Value
15
12
9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Temperature, MW-16A (°C)
log(Value)
2.9
2.7
2.5
2.3
2.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

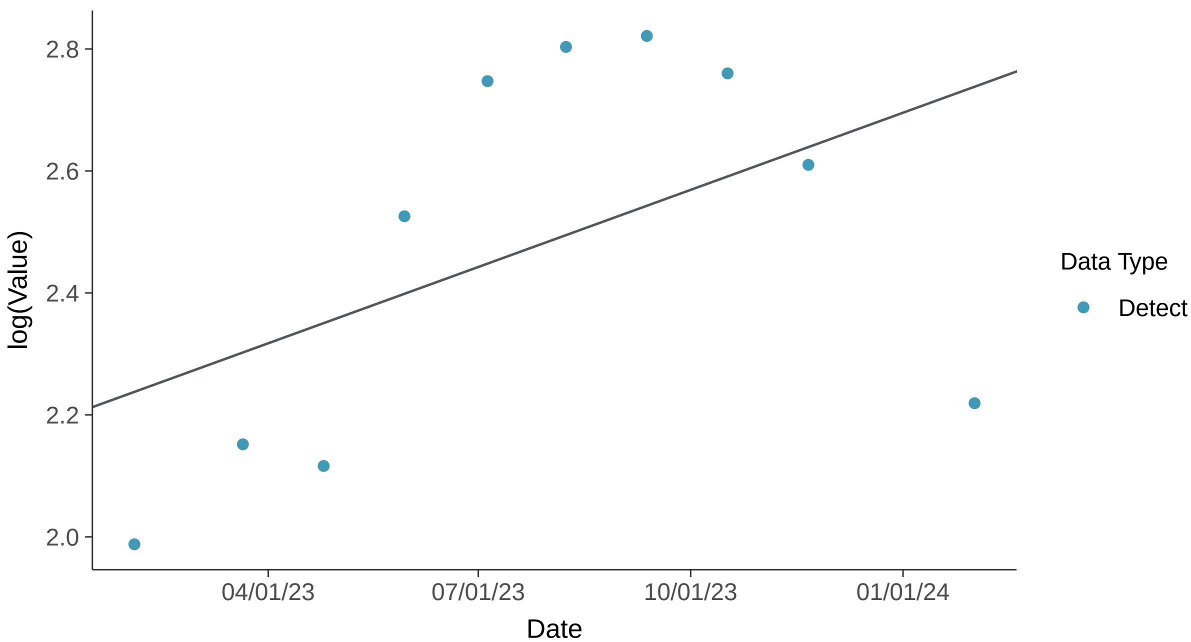
Gamma Q-Q plot

Temperature, MW-16A (°C)



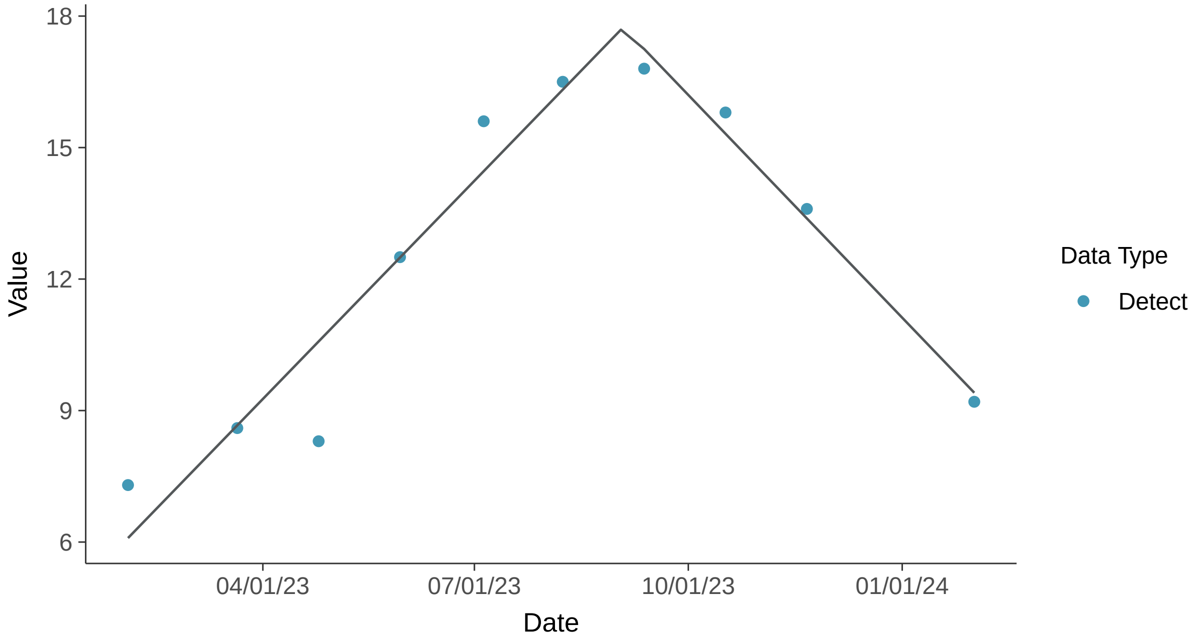
Trend Regression: Lognormal MLE

Temperature, MW-16A (°C)



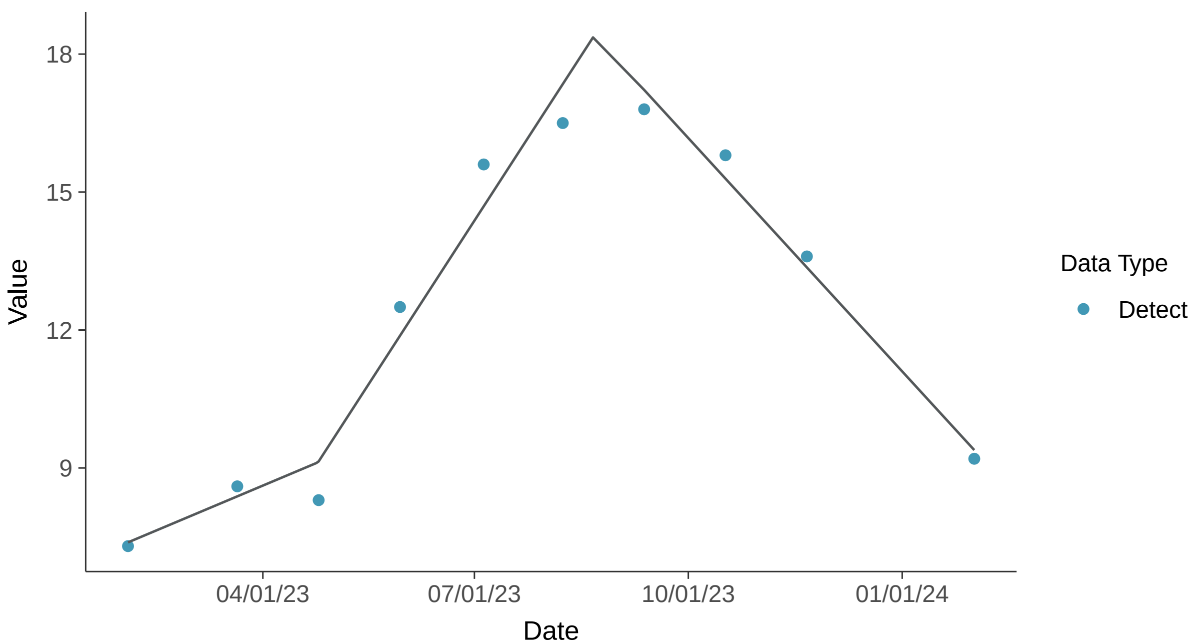
Trend Regression: Piecewise Linear-Linear

Temperature, MW-16A (°C)



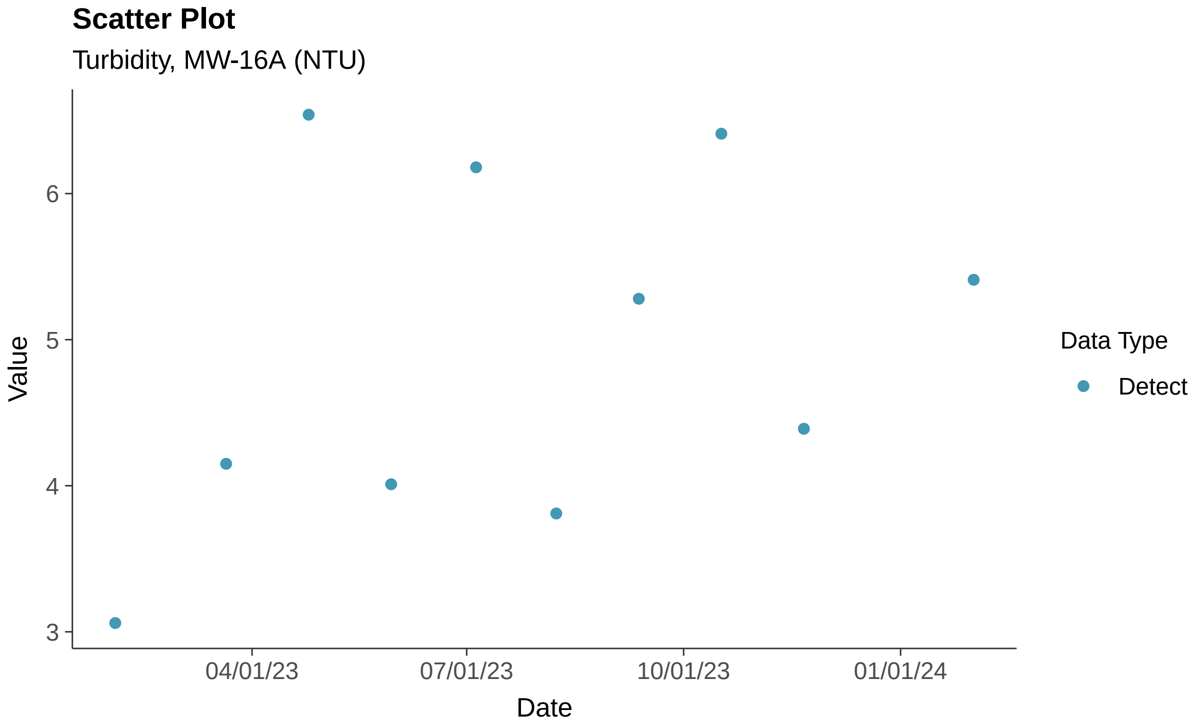
Trend Regression: Piecewise Linear-Linear-Linear

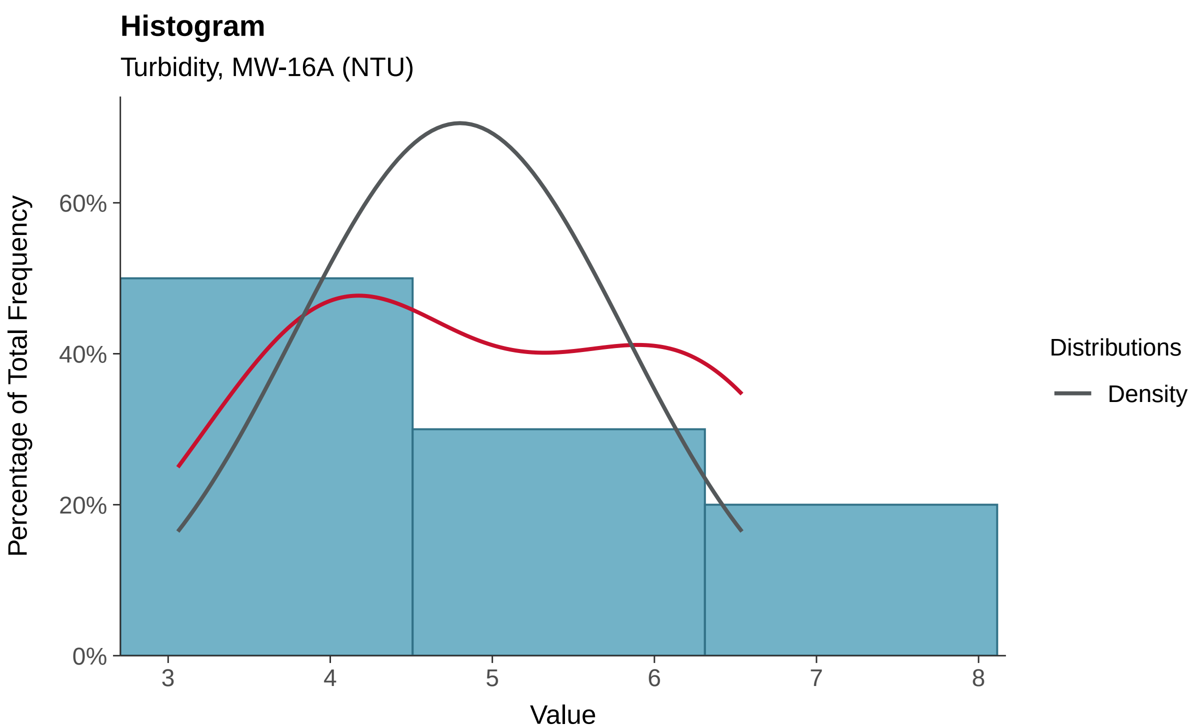
Temperature, MW-16A (°C)



Field Parameters: Turbidity, MW-16A

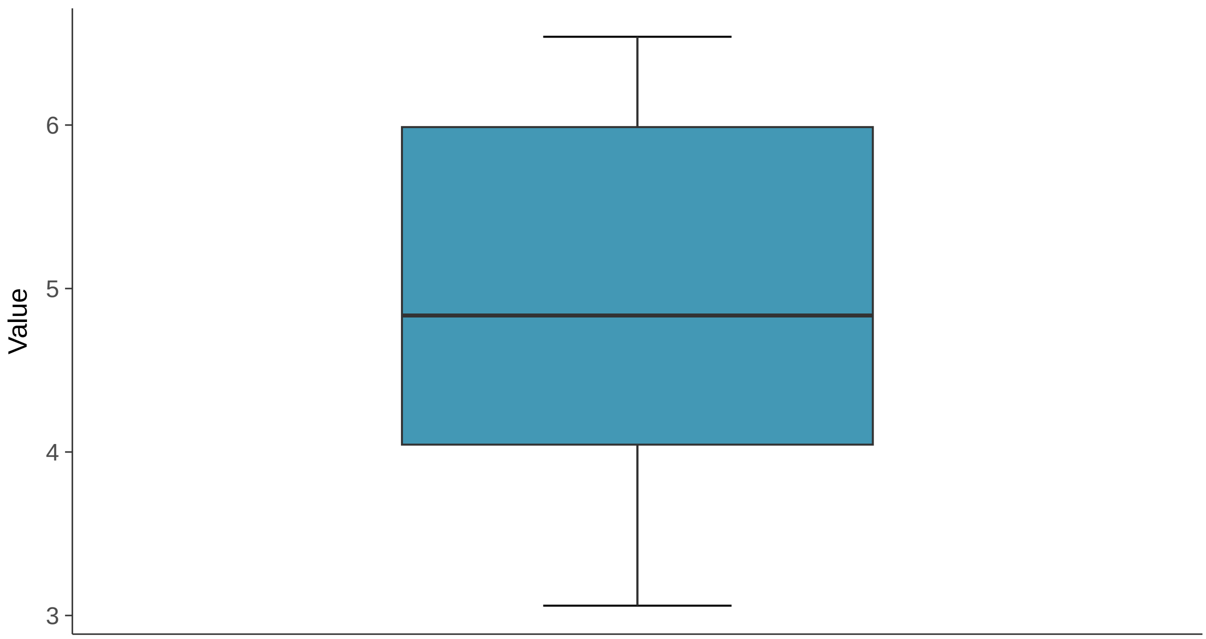
ID: 16A_3_28





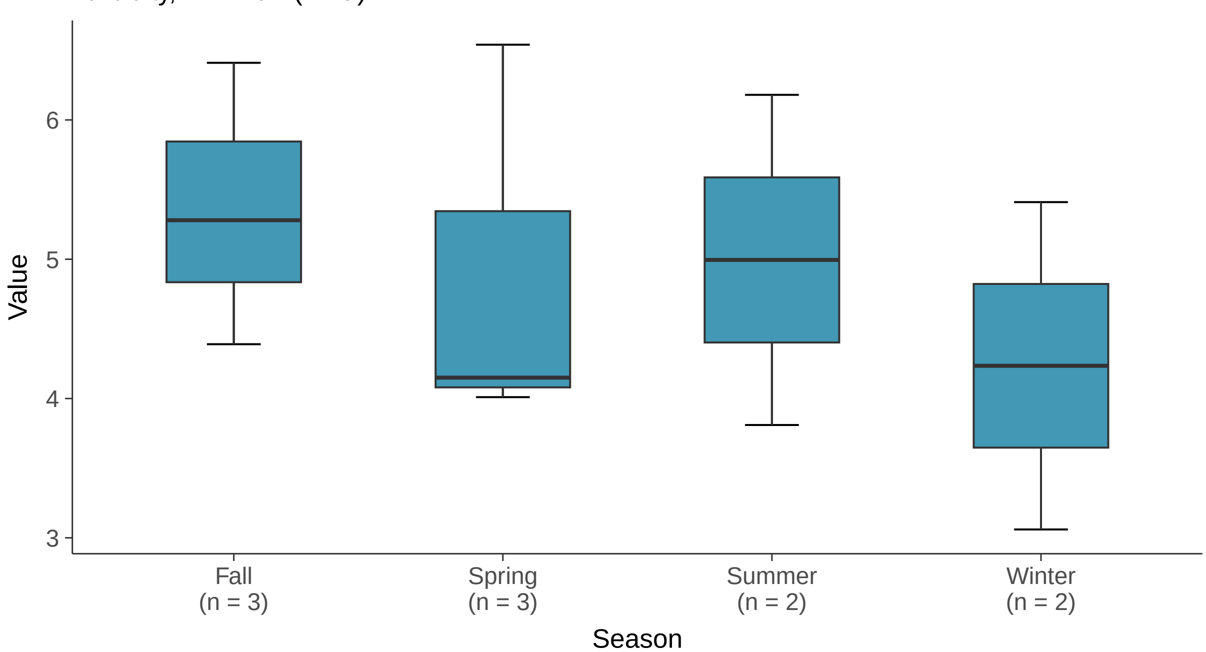
Boxplot

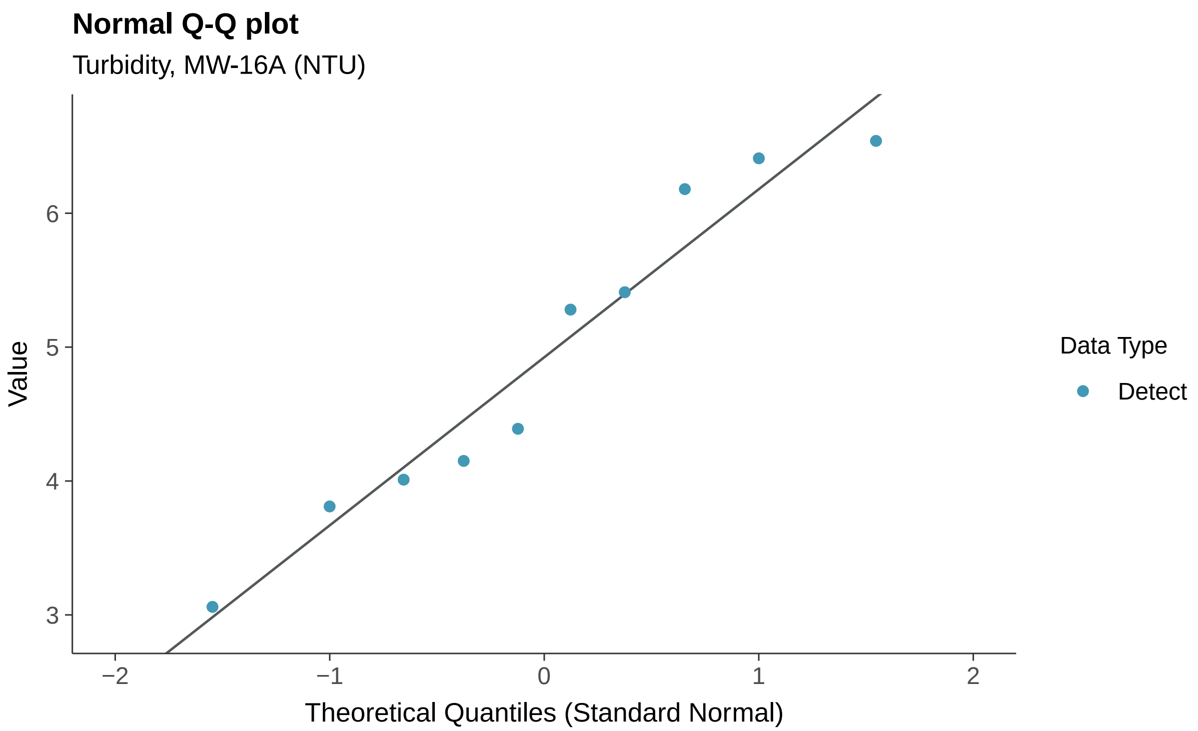
Turbidity, MW-16A (NTU)

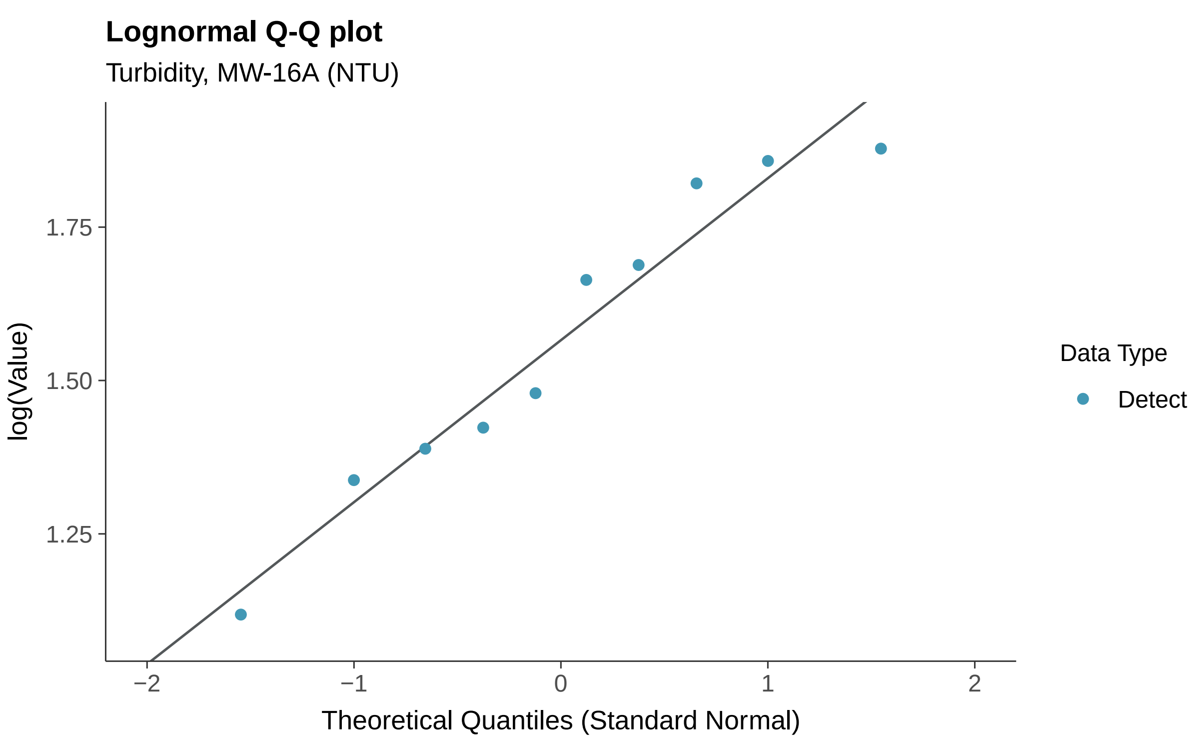


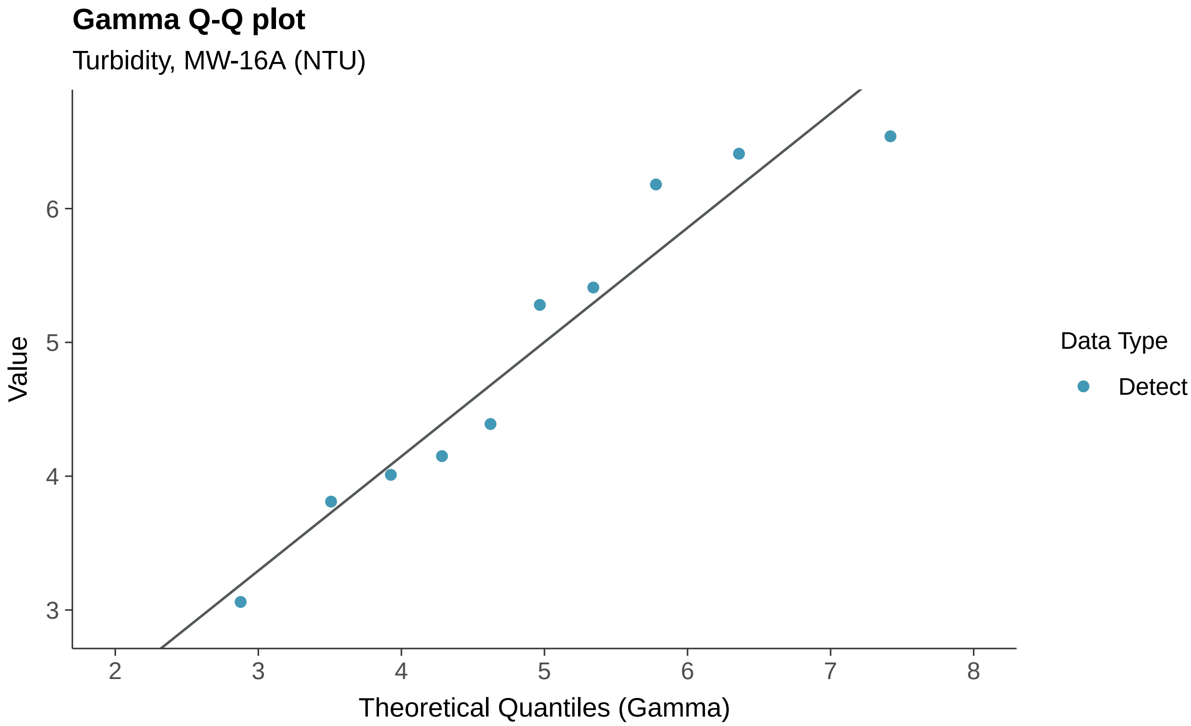
Boxplot by Season

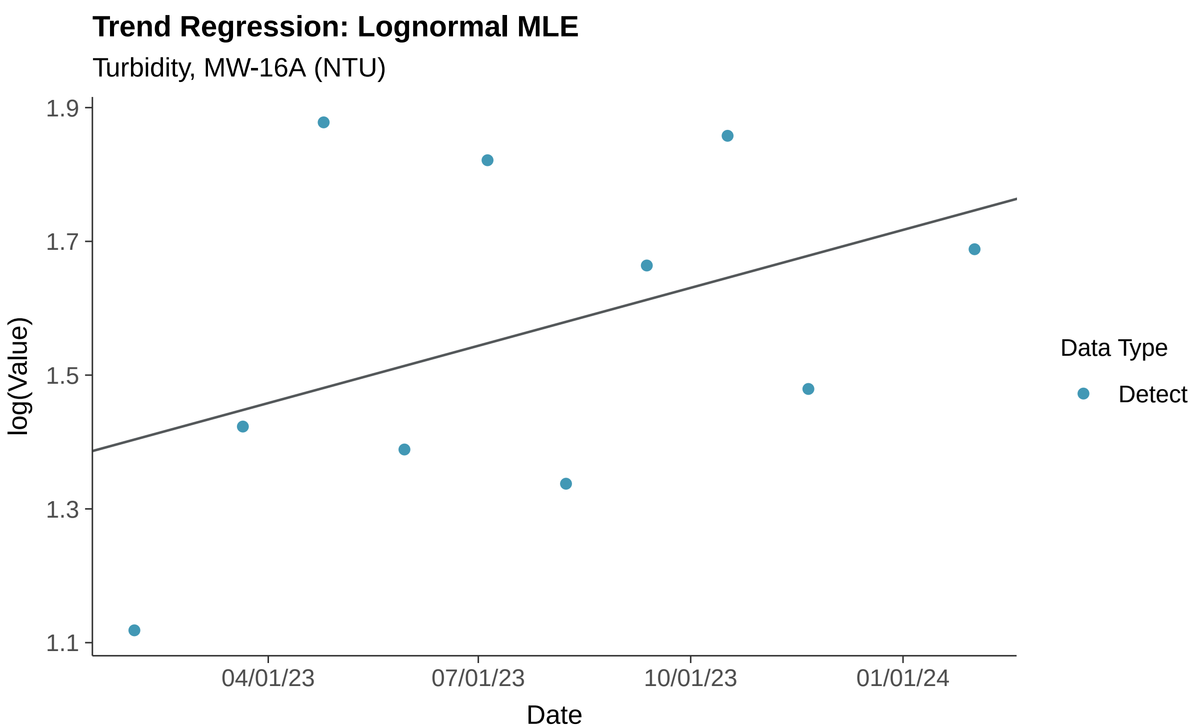
Turbidity, MW-16A (NTU)




Normal Q-Q plot
Turbidity, MW-16A (NTU)
Value
3
4
5
6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

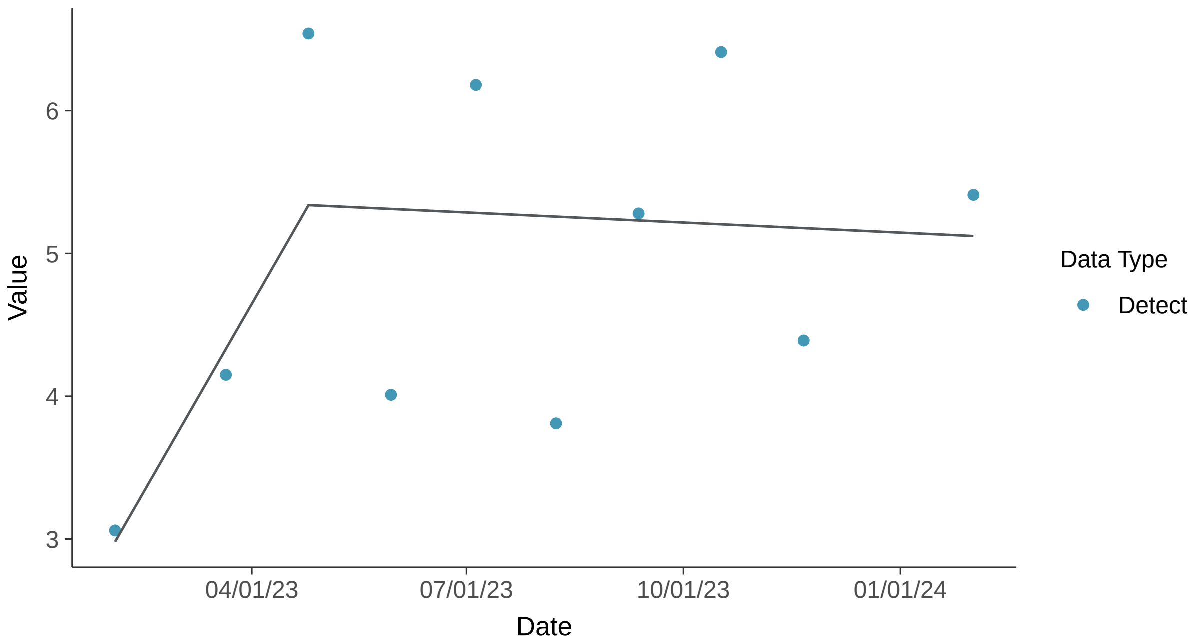

Lognormal Q-Q plot
Turbidity, MW-16A (NTU)
log(Value)
1.25
1.50
1.75
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Turbidity, MW-16A (NTU)
Value
6
5
4
3
2
3
4
5
6
7
8
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Turbidity, MW-16A (NTU)
log(Value)
1.9
1.7
1.5
1.3
1.1
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

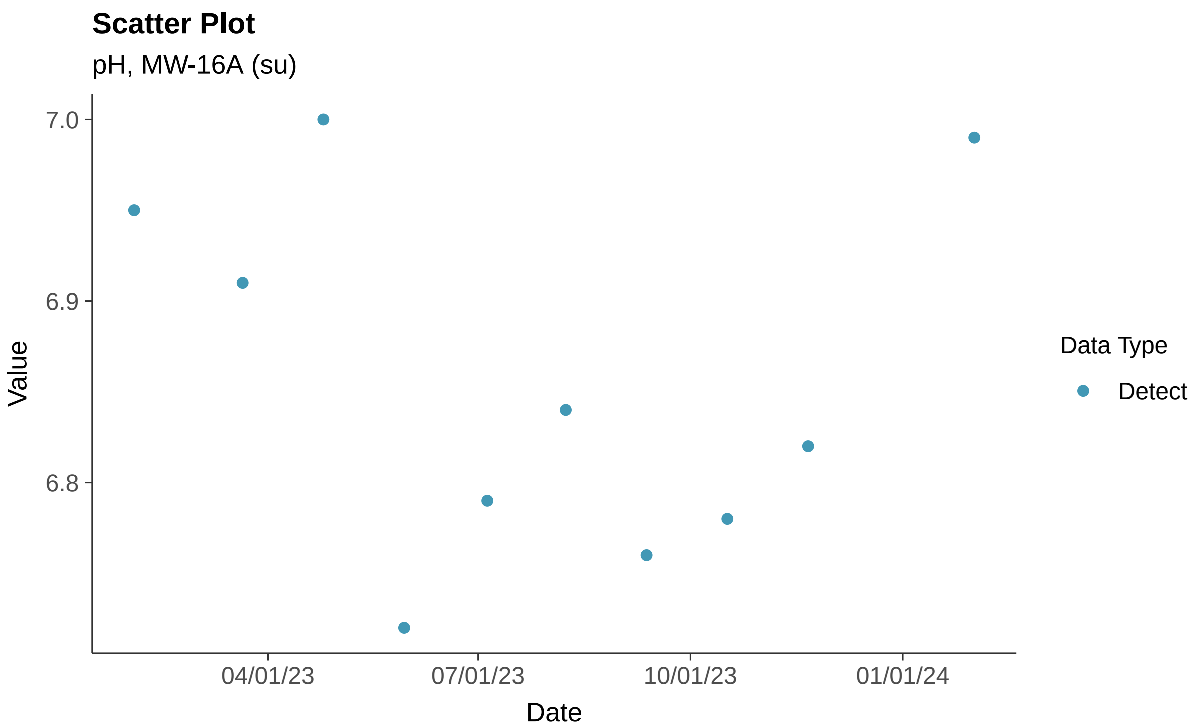
Trend Regression: Piecewise Linear-Linear

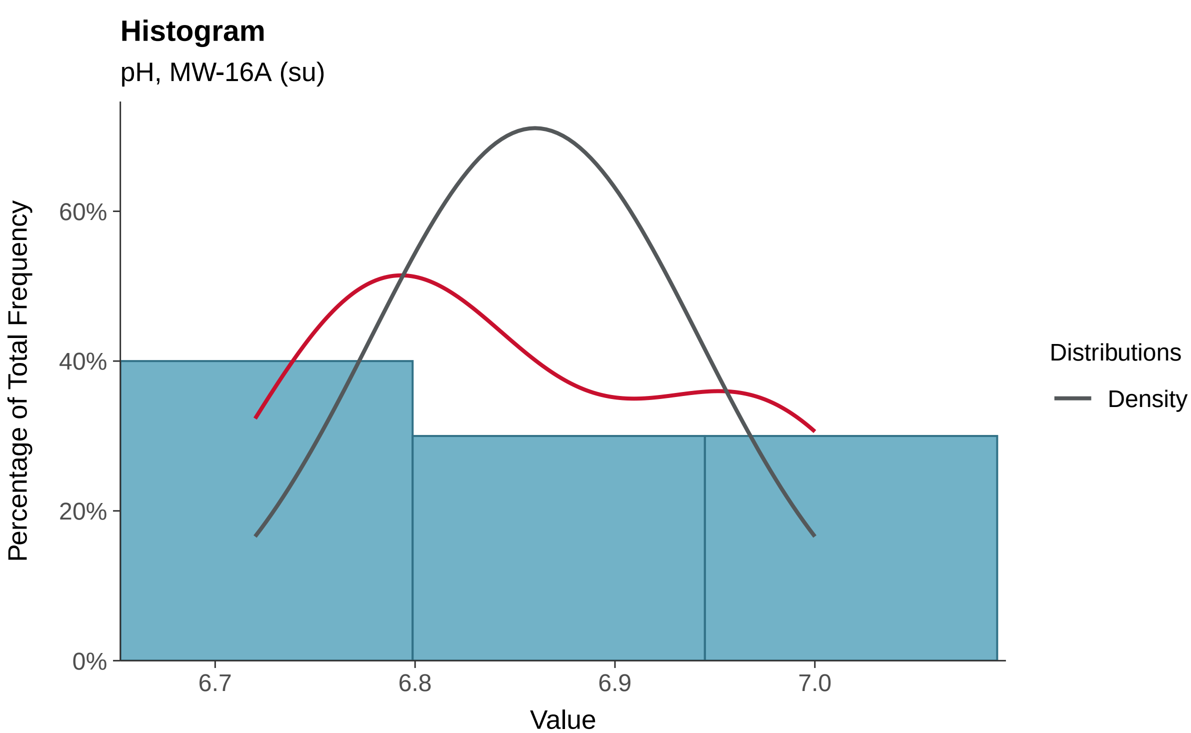
Turbidity, MW-16A (NTU)



Field Parameters: pH, MW-16A

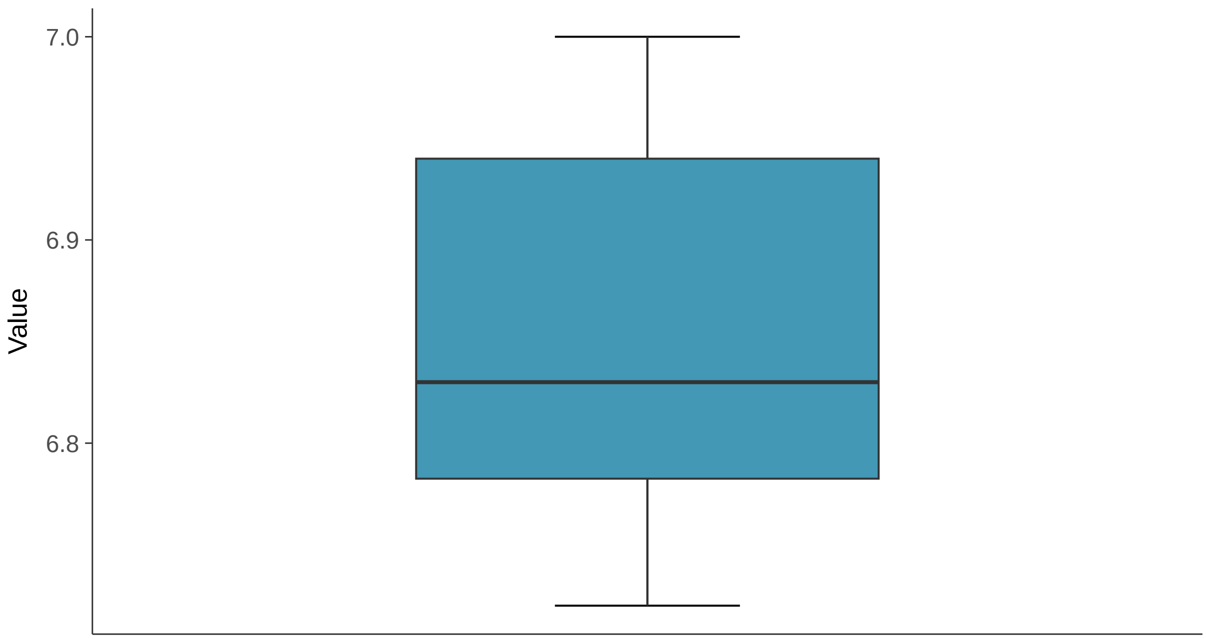
ID: 16A_3_29





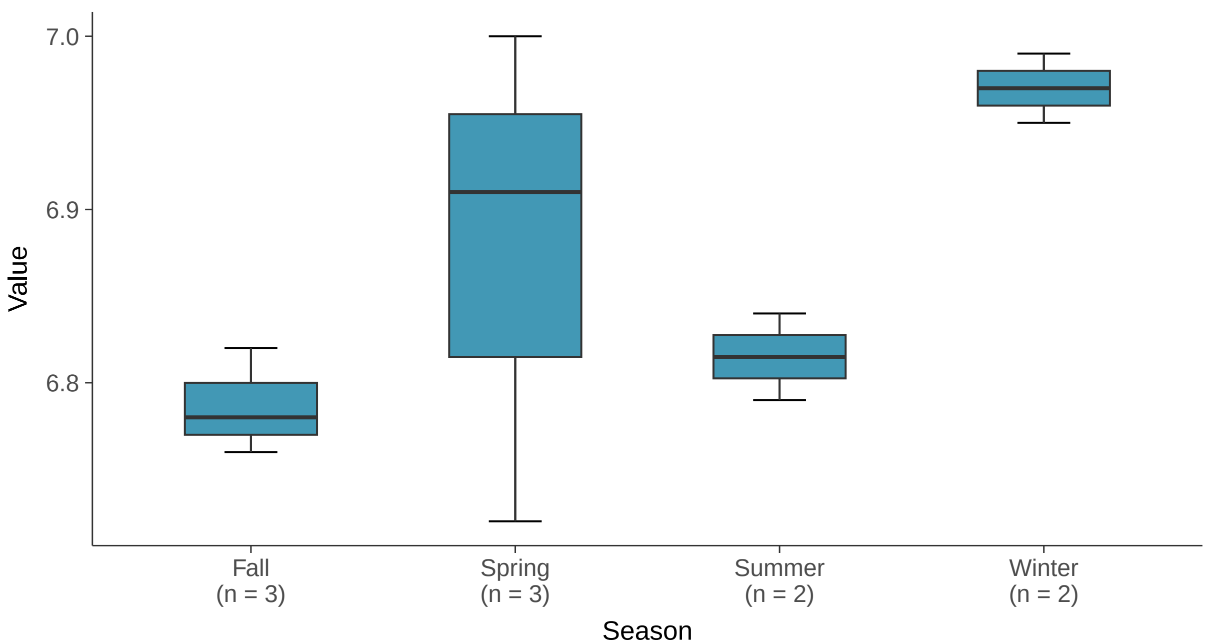
Boxplot

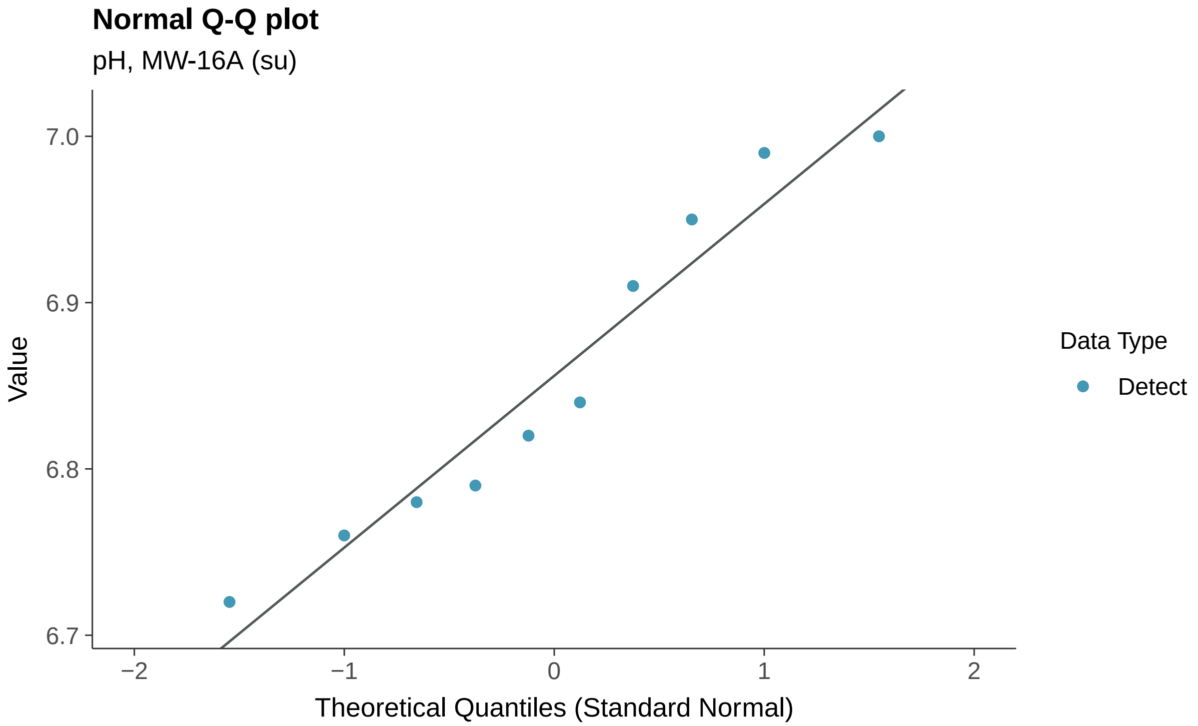
pH, MW-16A (su)

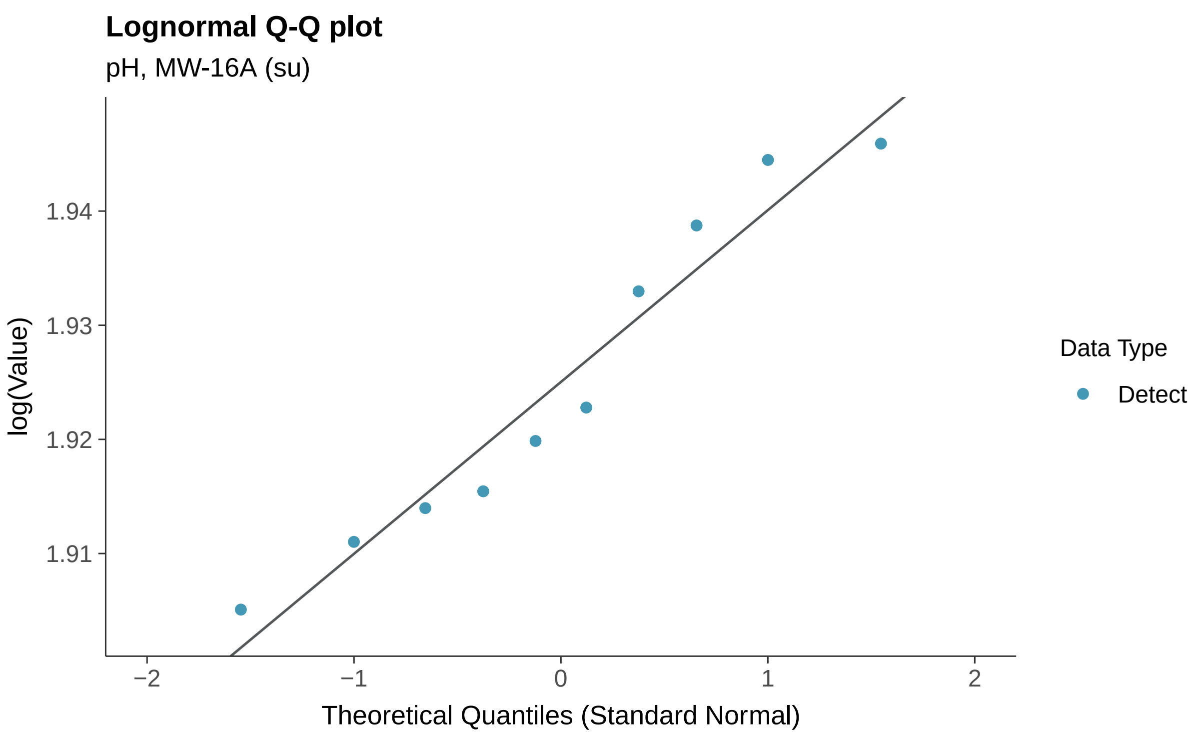


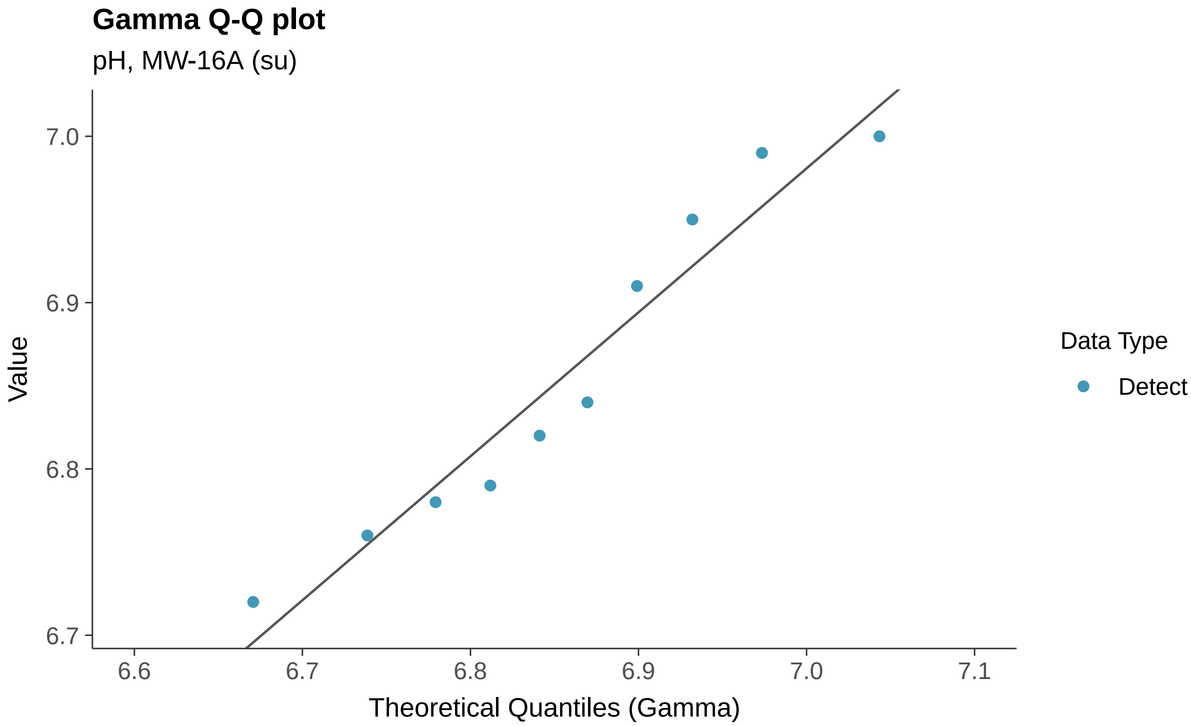
Boxplot by Season

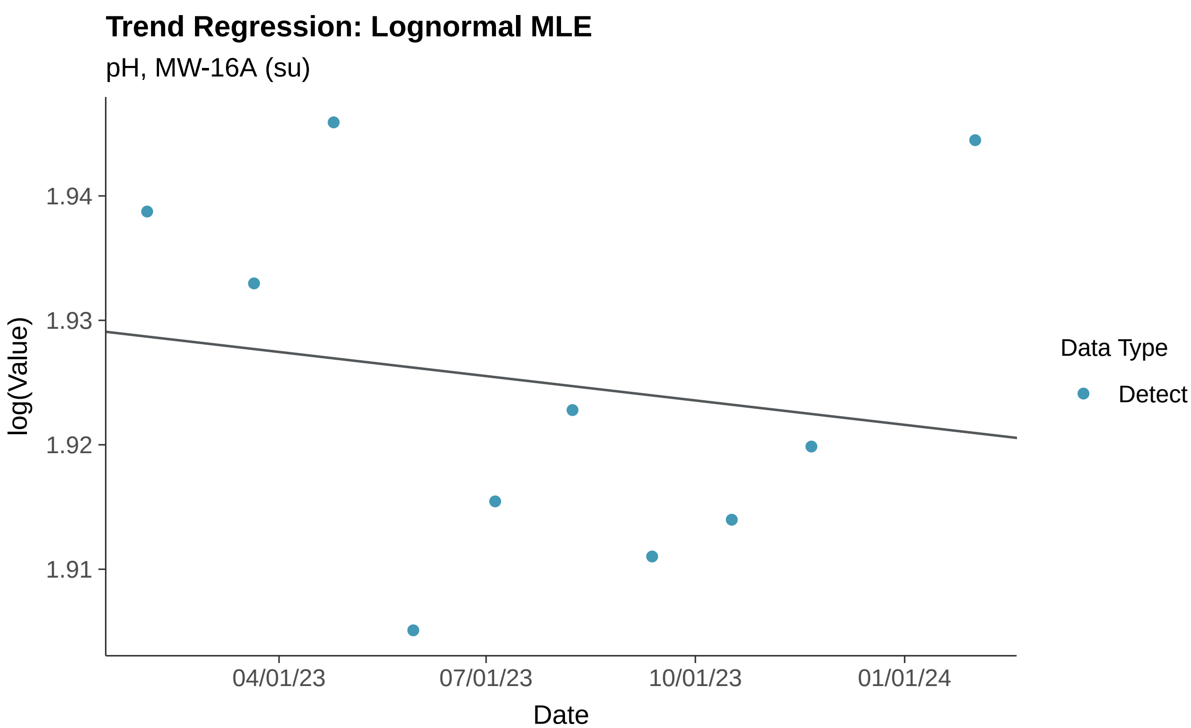
pH, MW-16A (su)




Normal Q-Q plot
pH, MW-16A (su)
Value
7.0
6.9
6.8
6.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

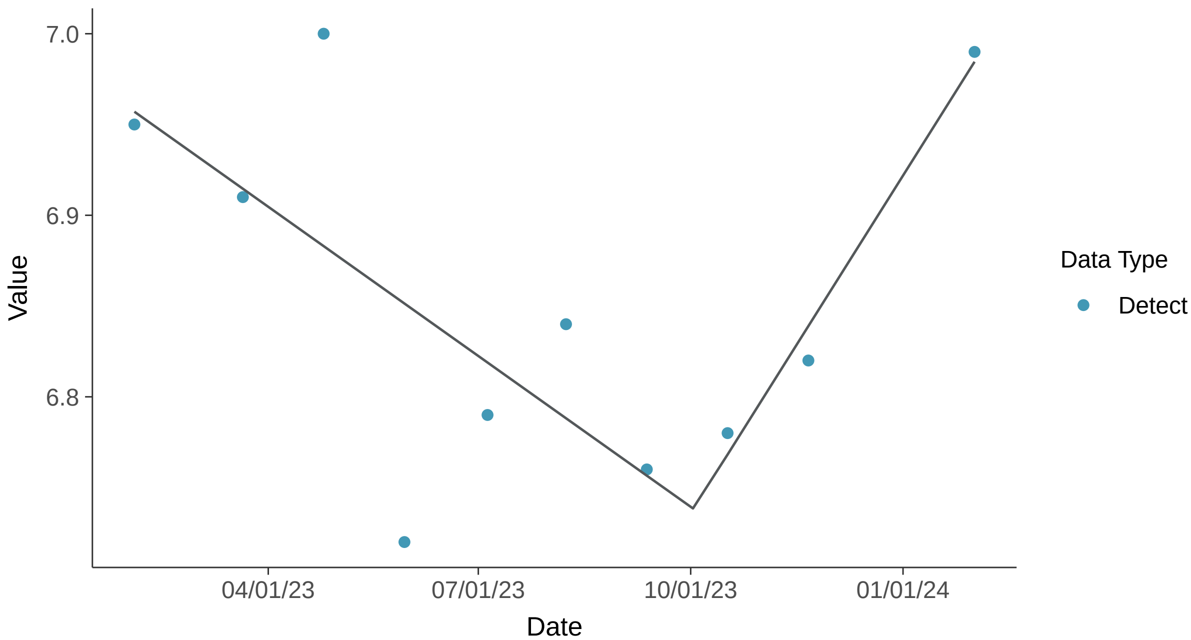

Lognormal Q-Q plot
pH, MW-16A (su)
log(Value)
1.94
1.93
1.92
1.91
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, MW-16A (su)
Value
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, MW-16A (su)
log(Value)
Date
Data Type
Detect

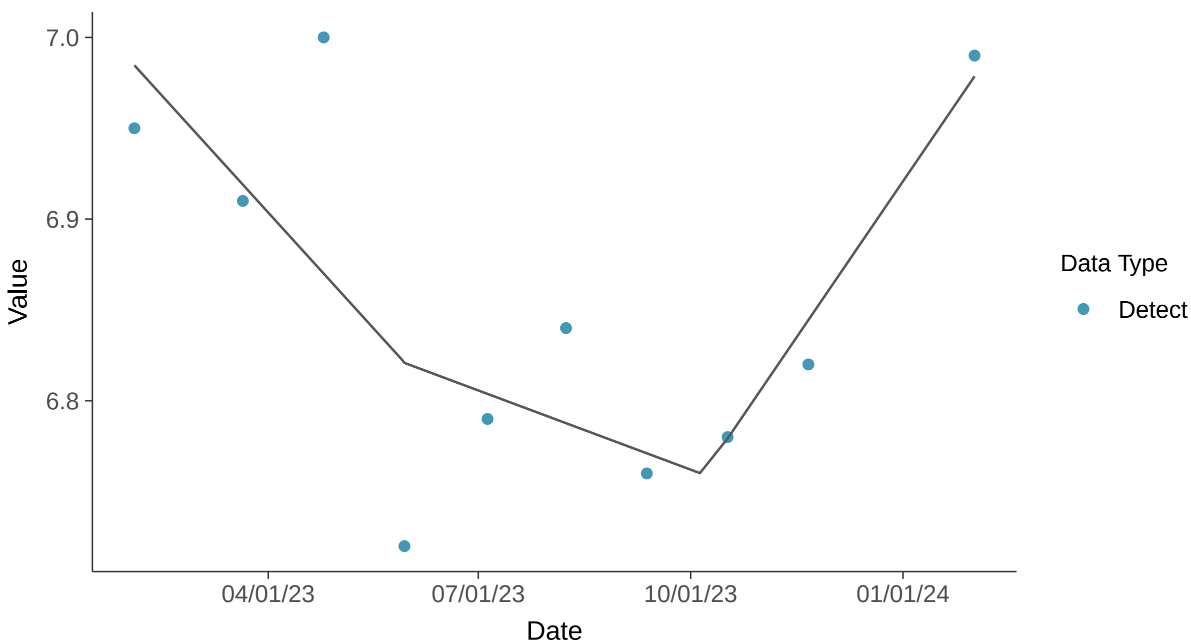
Trend Regression: Piecewise Linear-Linear

pH, MW-16A (su)



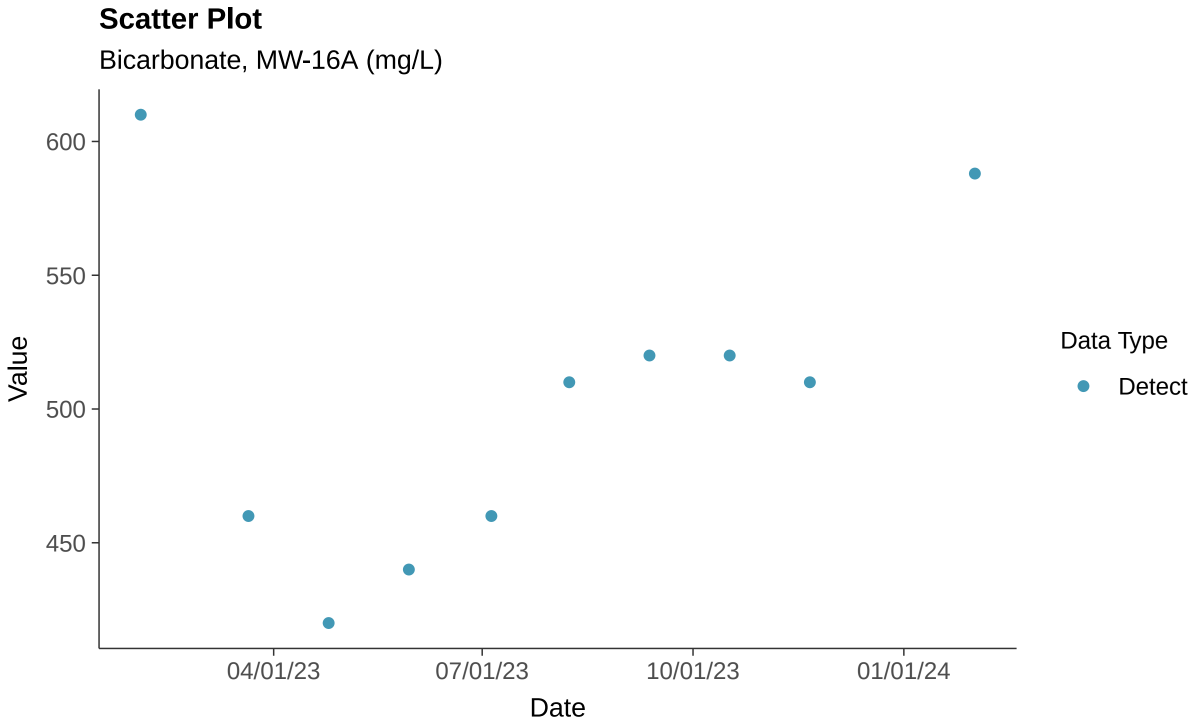
Trend Regression: Piecewise Linear-Linear-Linear

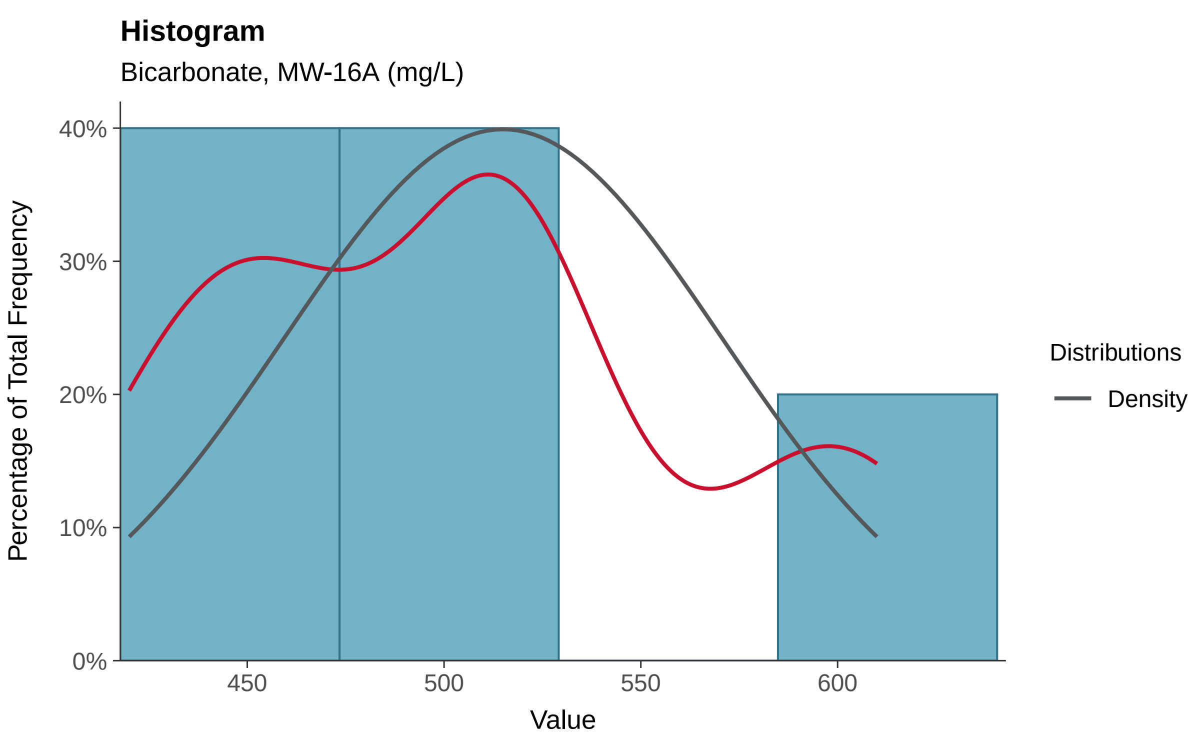
pH, MW-16A (su)



Other: Bicarbonate, MW-16A

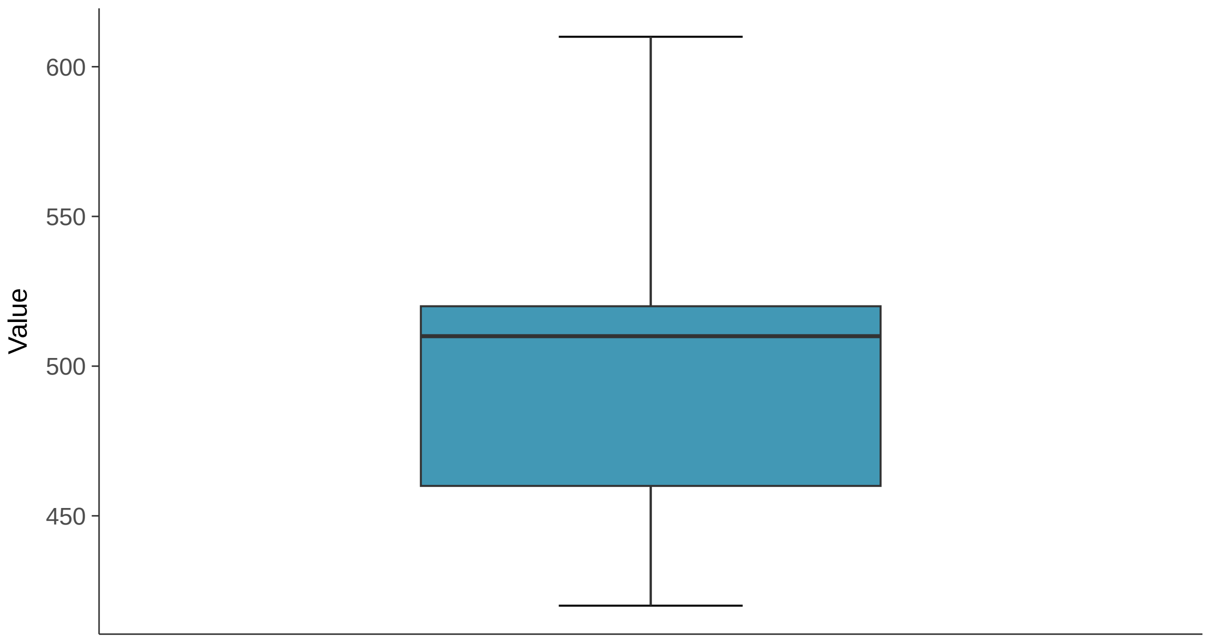
ID: 16A_4_30





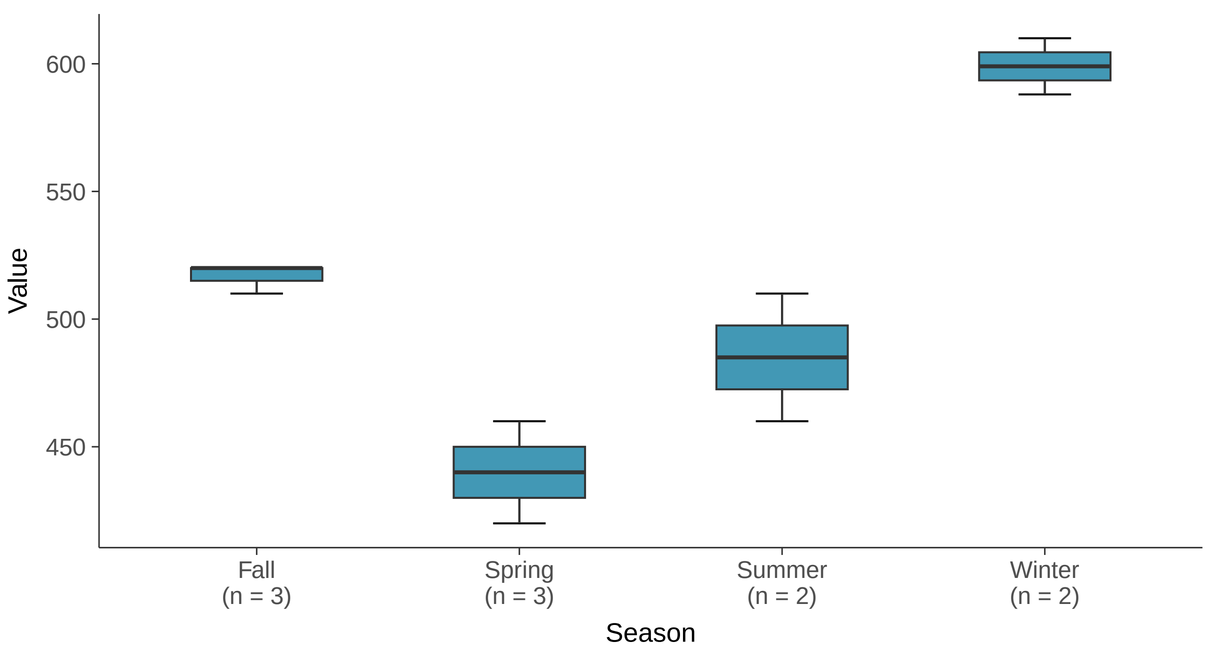
Boxplot

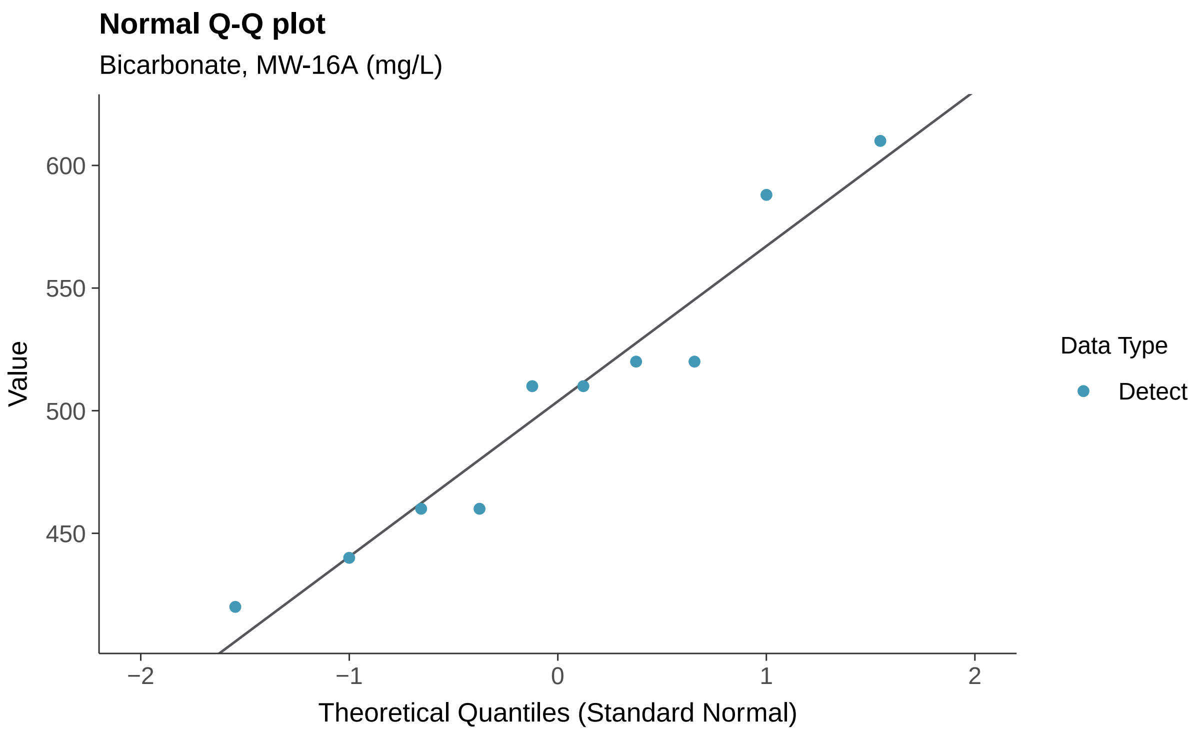
Bicarbonate, MW-16A (mg/L)

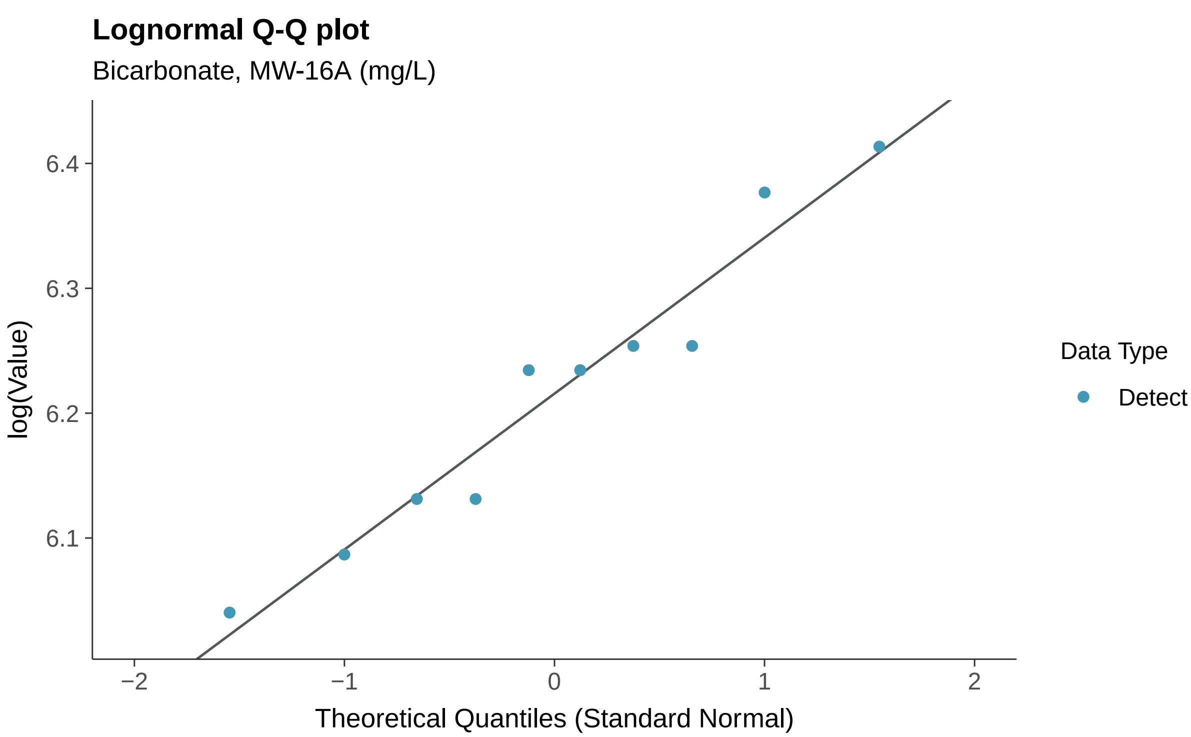


Boxplot by Season

Bicarbonate, MW-16A (mg/L)

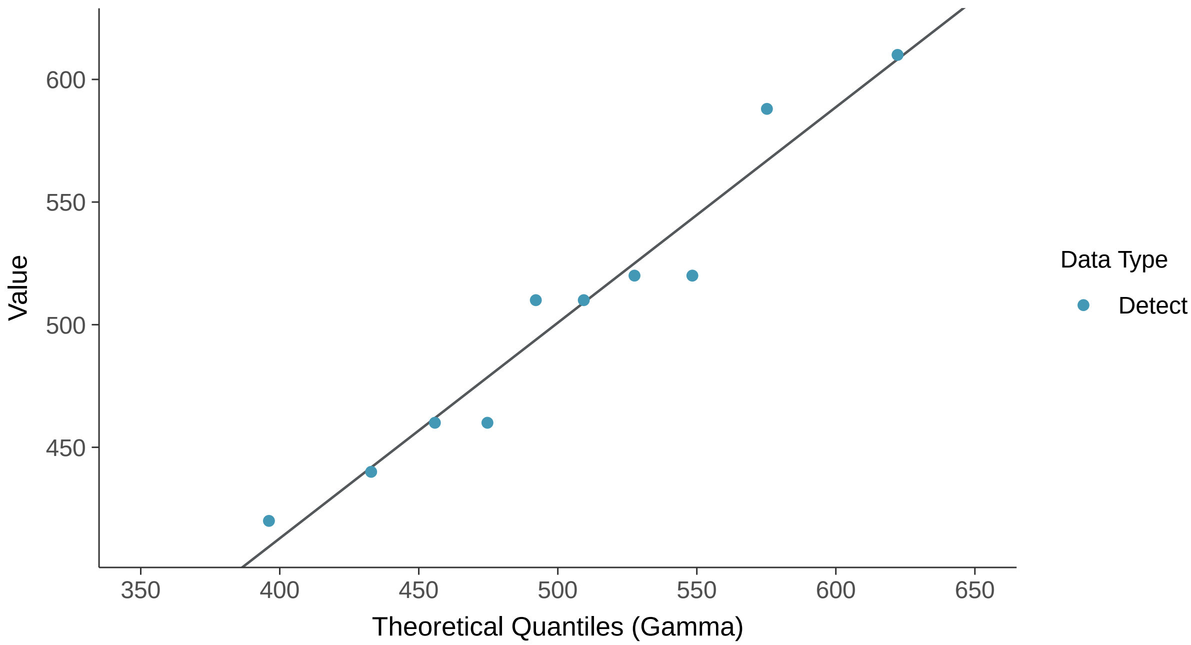



Normal Q-Q plot
Bicarbonate, MW-16A (mg/L)
Value
600
550
500
450
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Bicarbonate, MW-16A (mg/L)
log(Value)
6.4
6.3
6.2
6.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

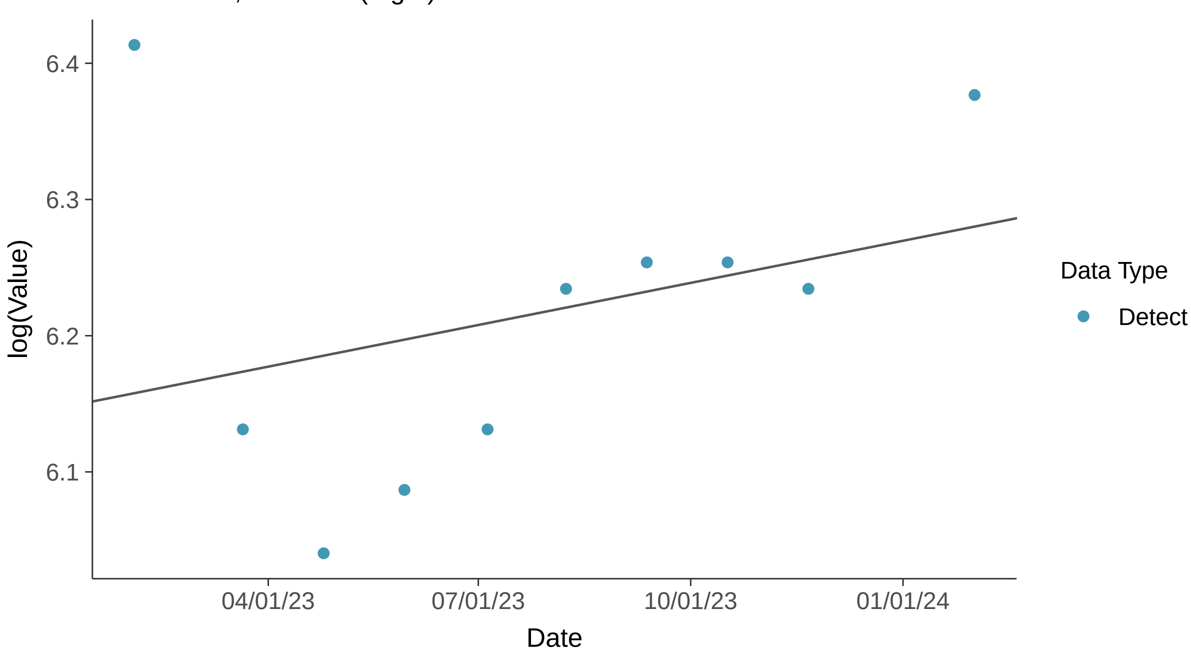
Gamma Q-Q plot

Bicarbonate, MW-16A (mg/L)



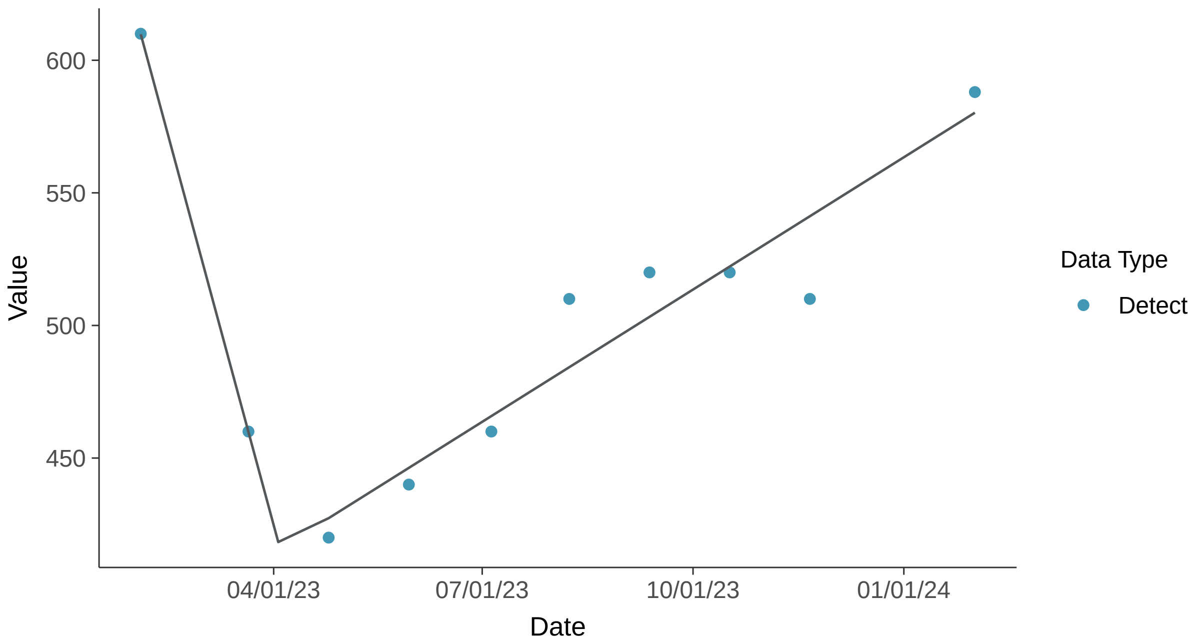
Trend Regression: Lognormal MLE

Bicarbonate, MW-16A (mg/L)



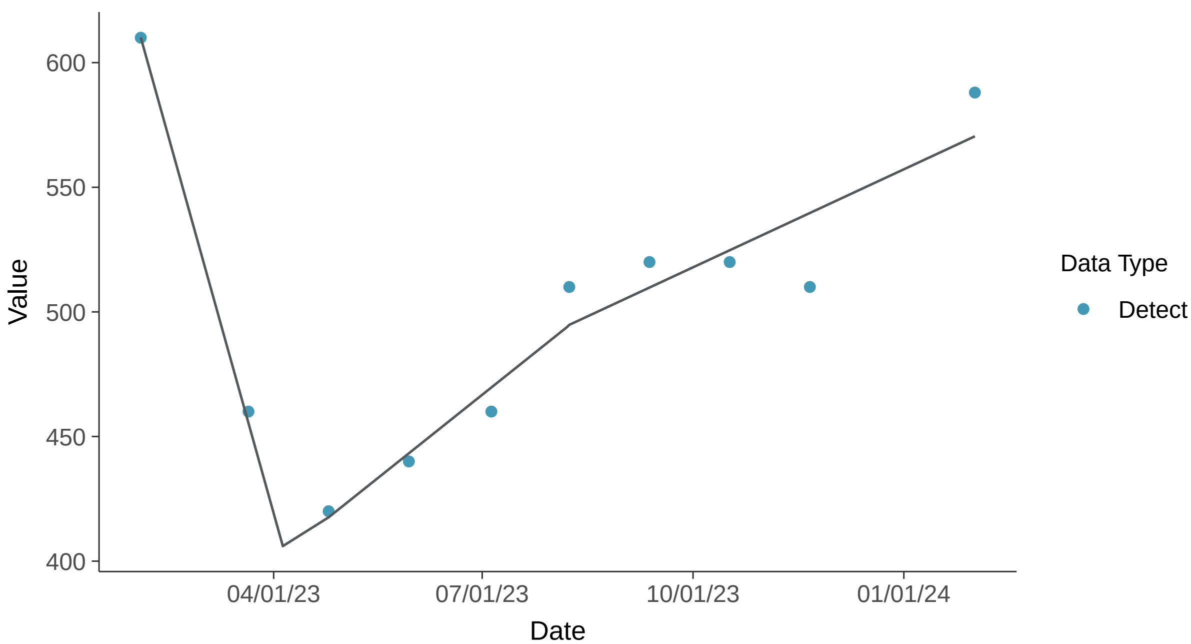
Trend Regression: Piecewise Linear-Linear

Bicarbonate, MW-16A (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Bicarbonate, MW-16A (mg/L)

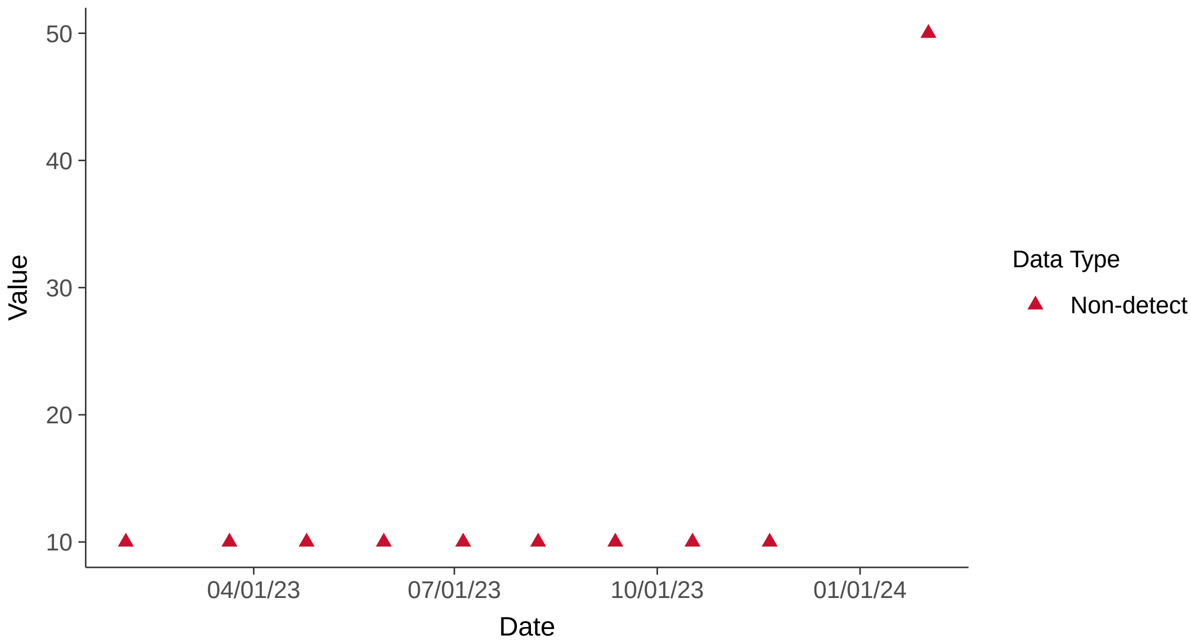


Other: Carbonate, MW-16A

ID: 16A_4_31

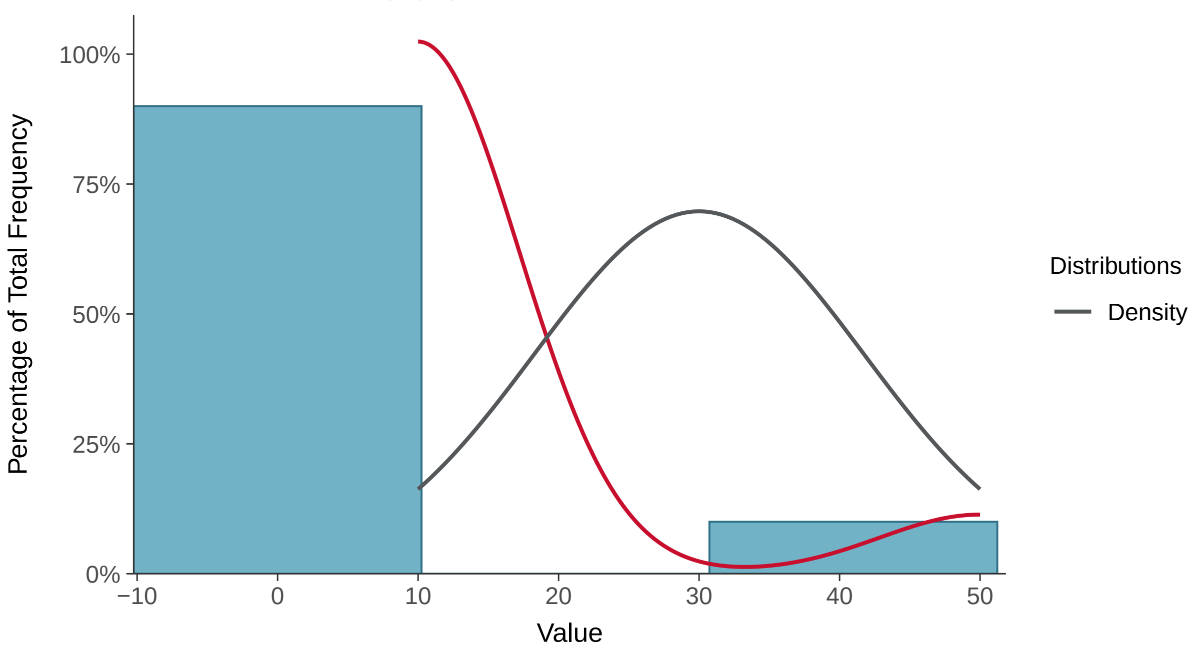
Scatter Plot

Carbonate, MW-16A (mg/L)



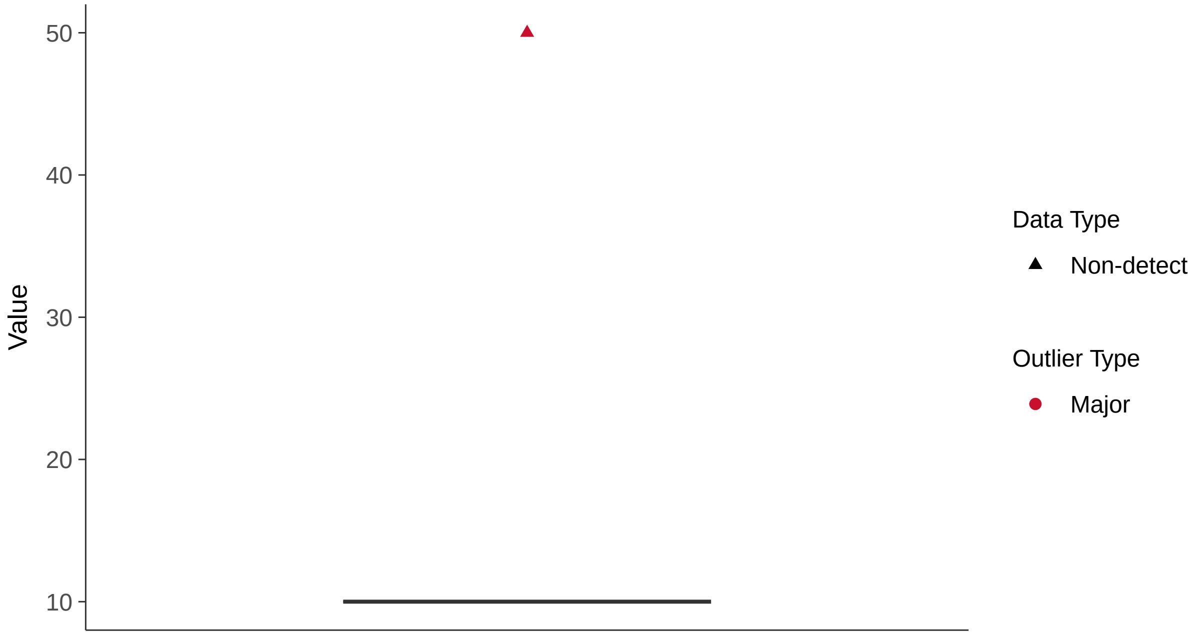
Histogram

Carbonate, MW-16A (mg/L)



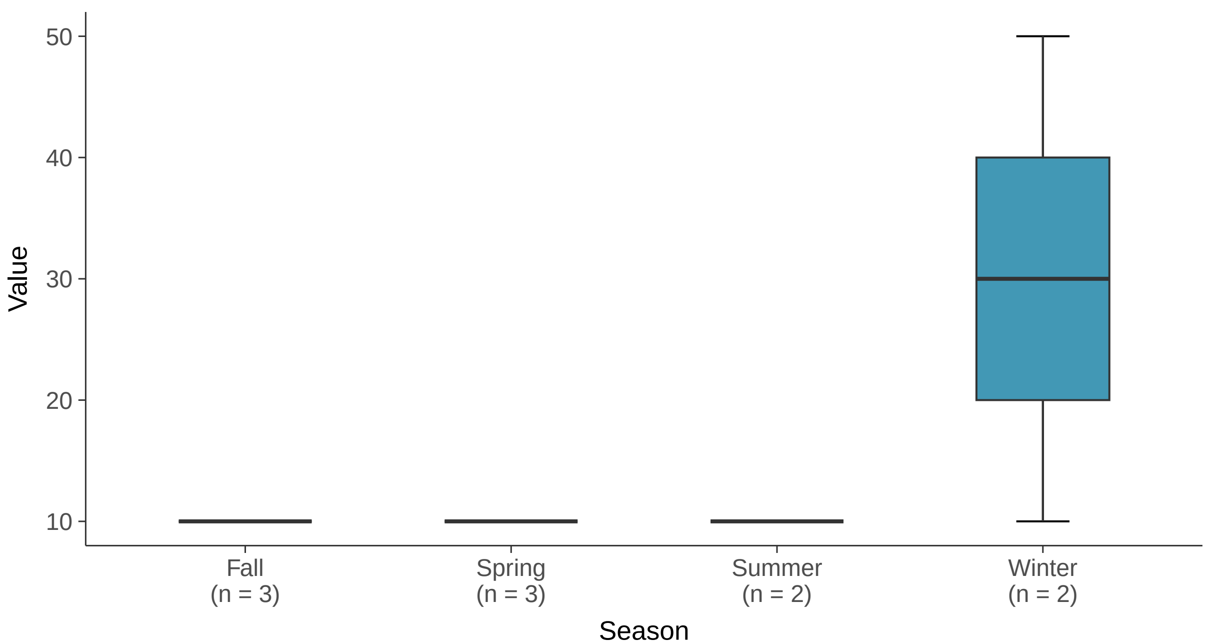
Boxplot

Carbonate, MW-16A (mg/L)



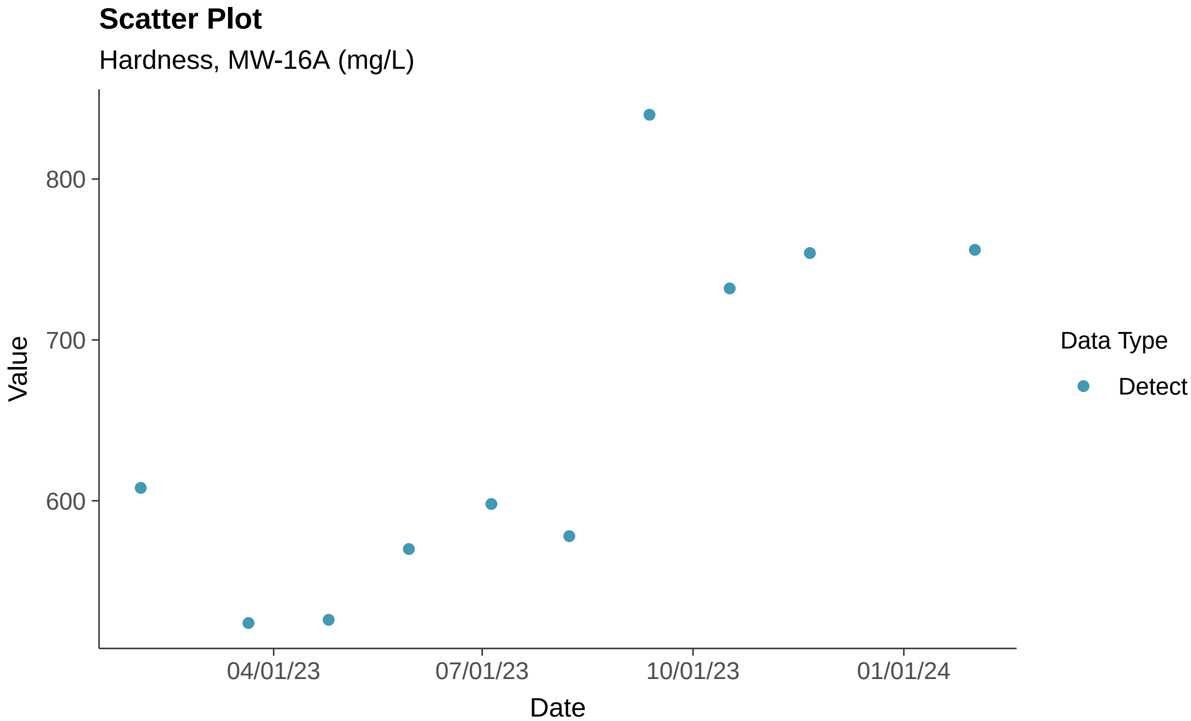
Boxplot by Season

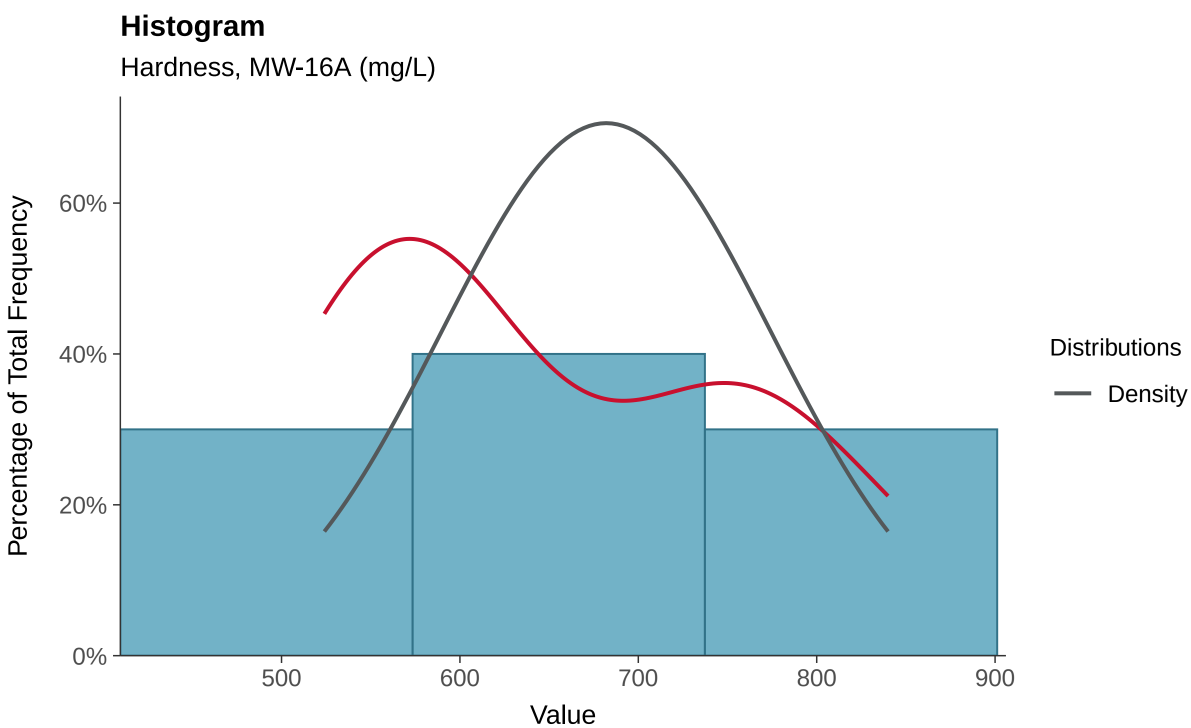
Carbonate, MW-16A (mg/L)



Other: Hardness, MW-16A

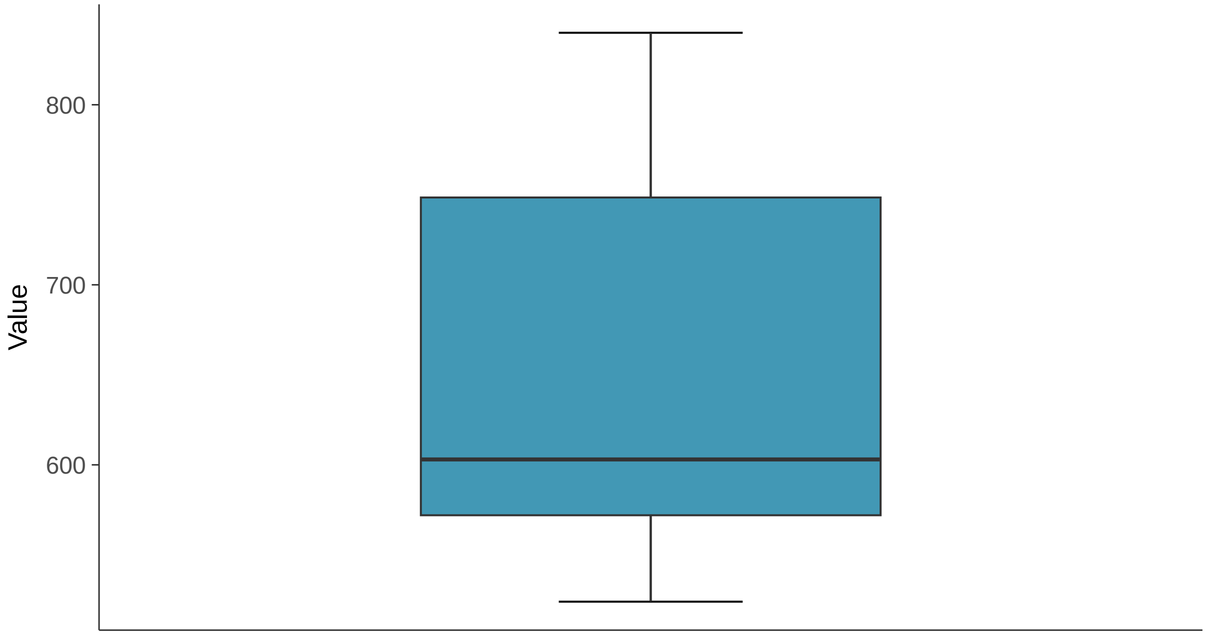
ID: 16A_4_32





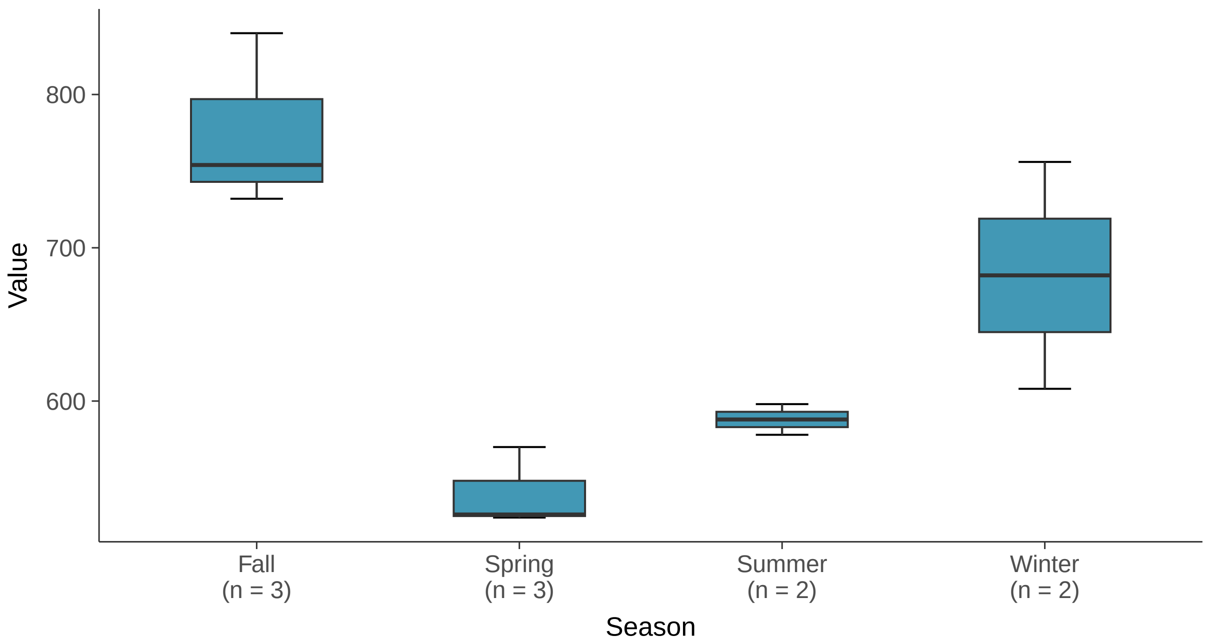
Boxplot

Hardness, MW-16A (mg/L)



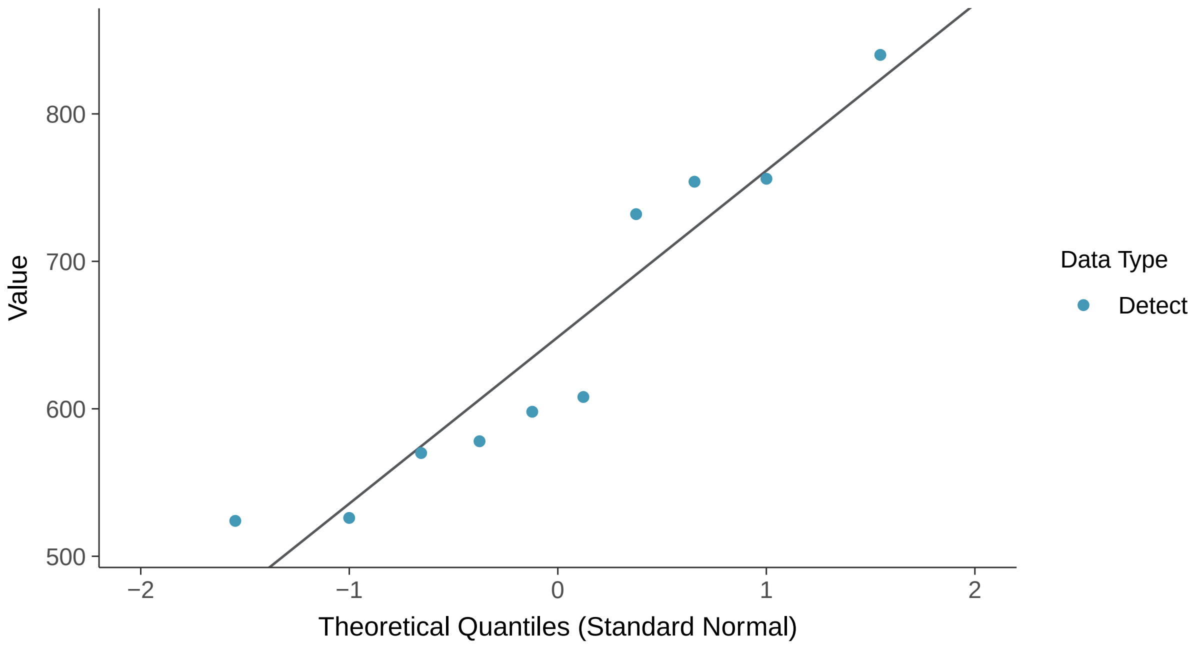
Boxplot by Season

Hardness, MW-16A (mg/L)



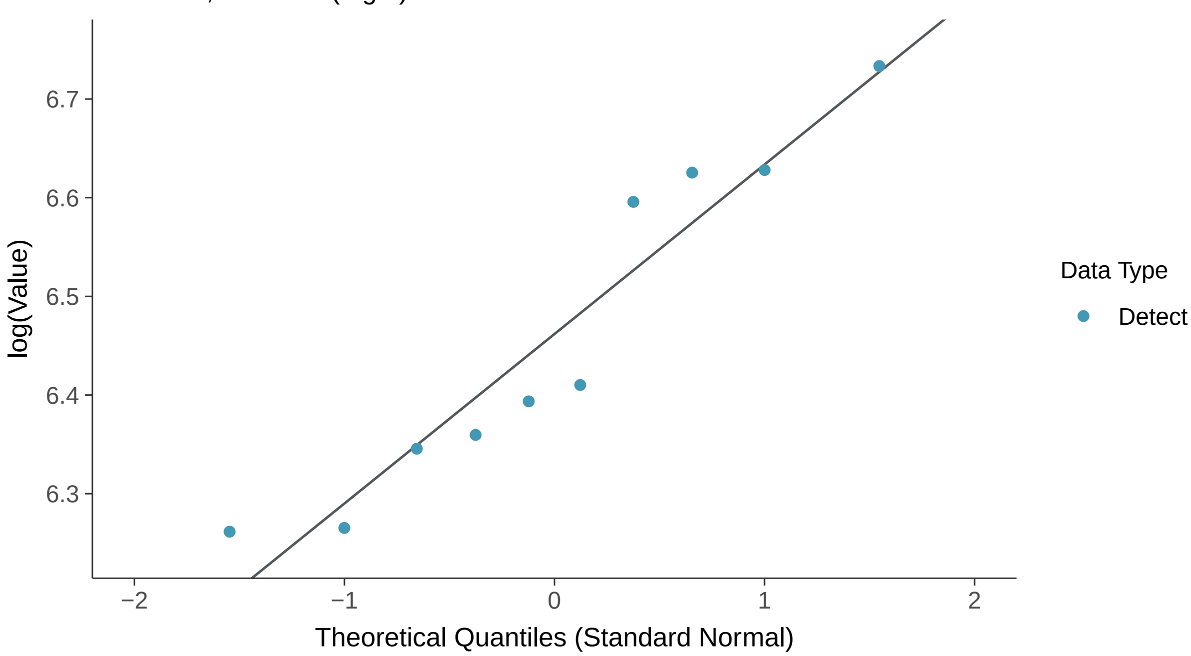
Normal Q-Q plot

Hardness, MW-16A (mg/L)



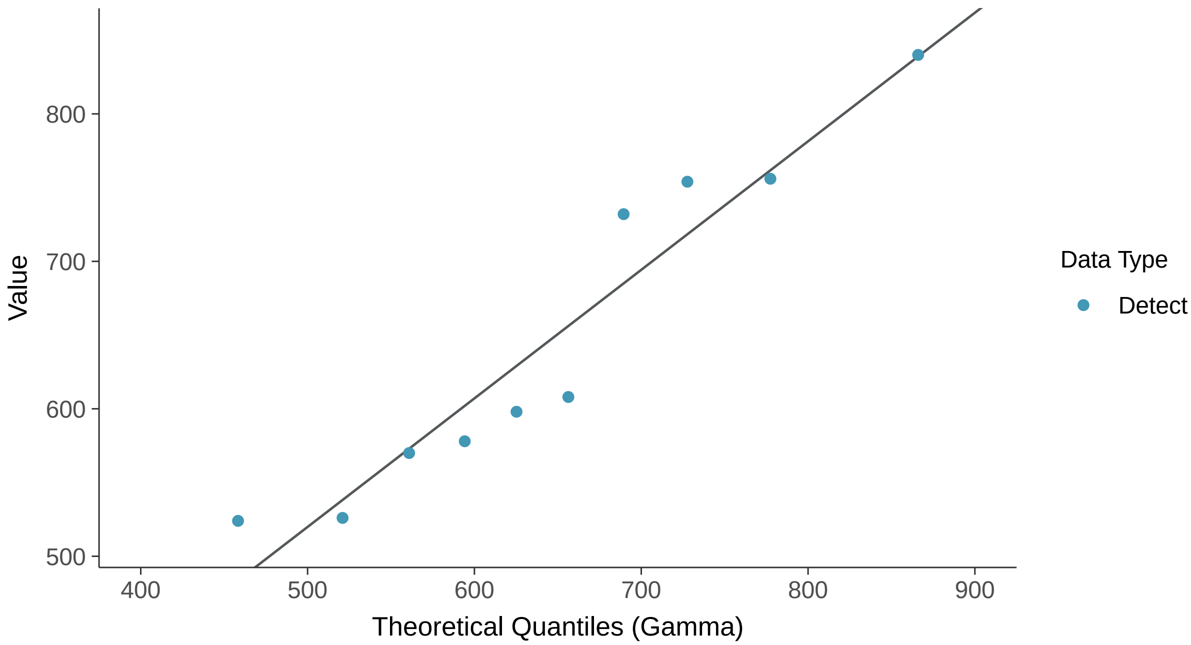
Lognormal Q-Q plot

Hardness, MW-16A (mg/L)



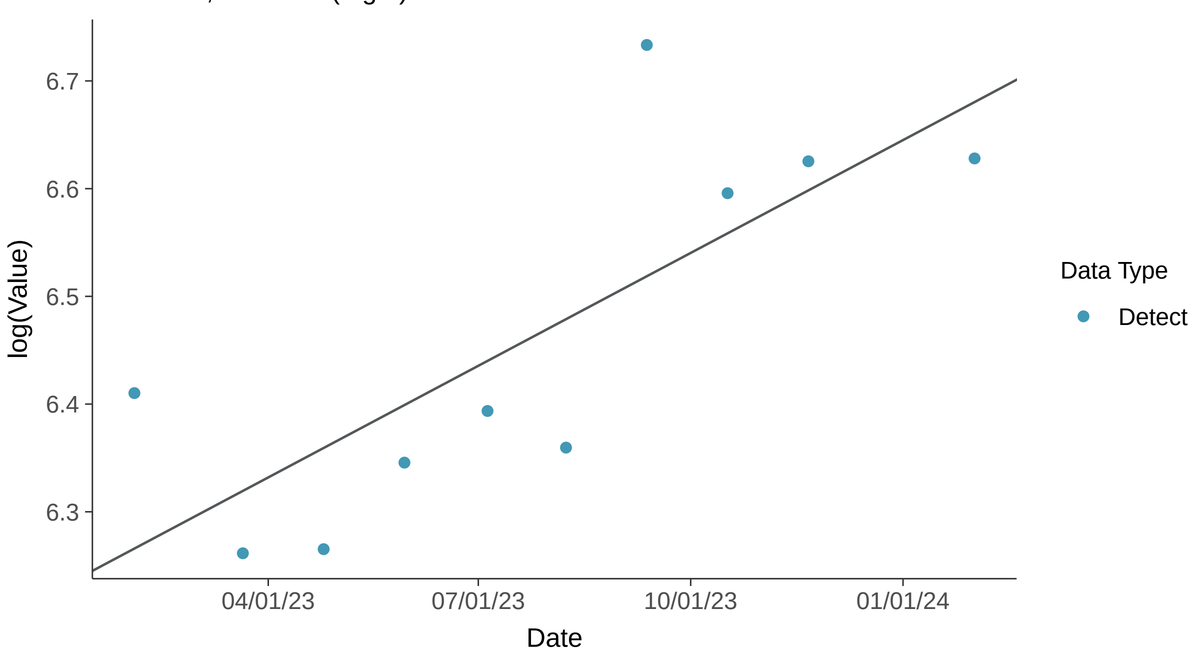
Gamma Q-Q plot

Hardness, MW-16A (mg/L)



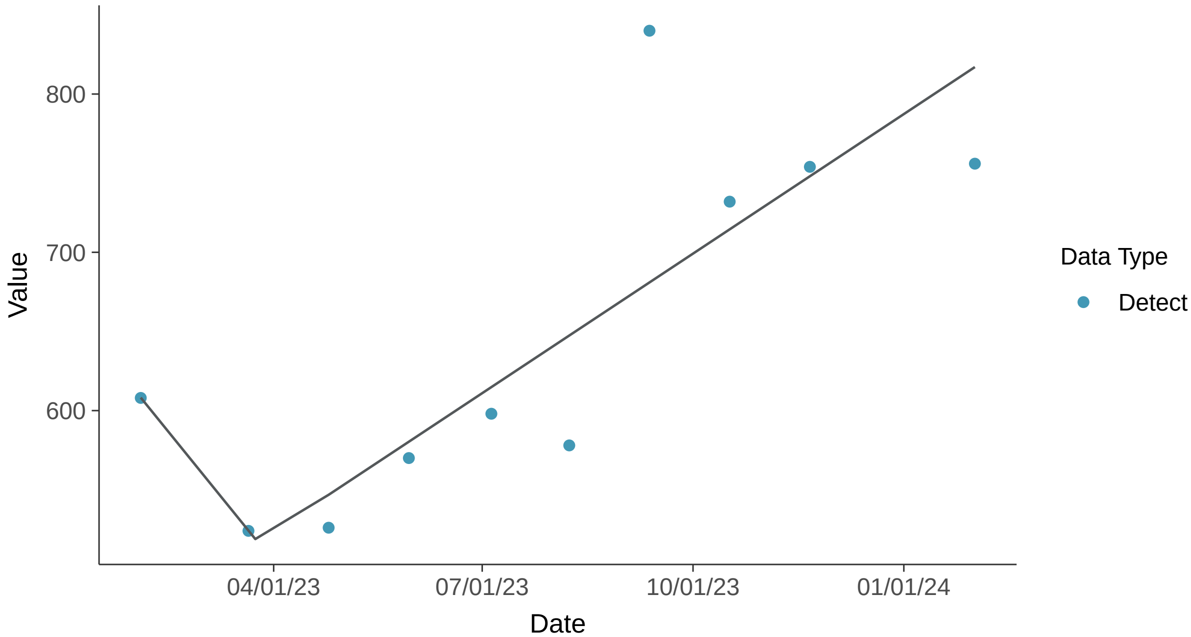
Trend Regression: Lognormal MLE

Hardness, MW-16A (mg/L)



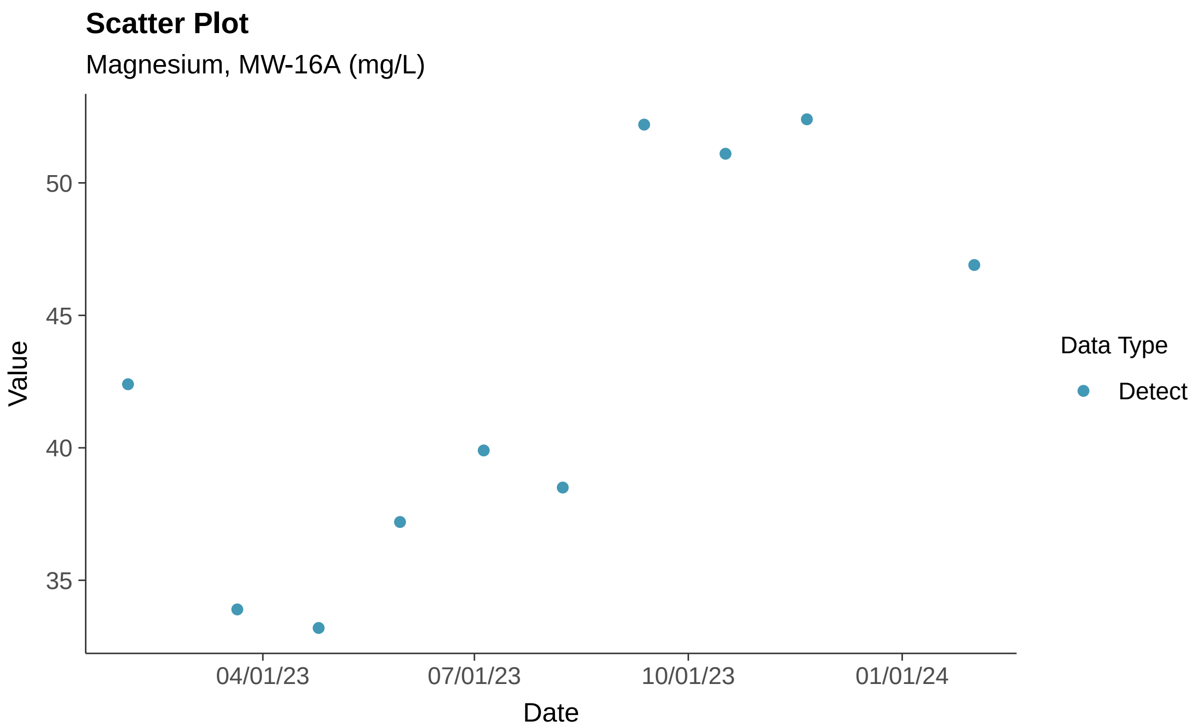
Trend Regression: Piecewise Linear-Linear

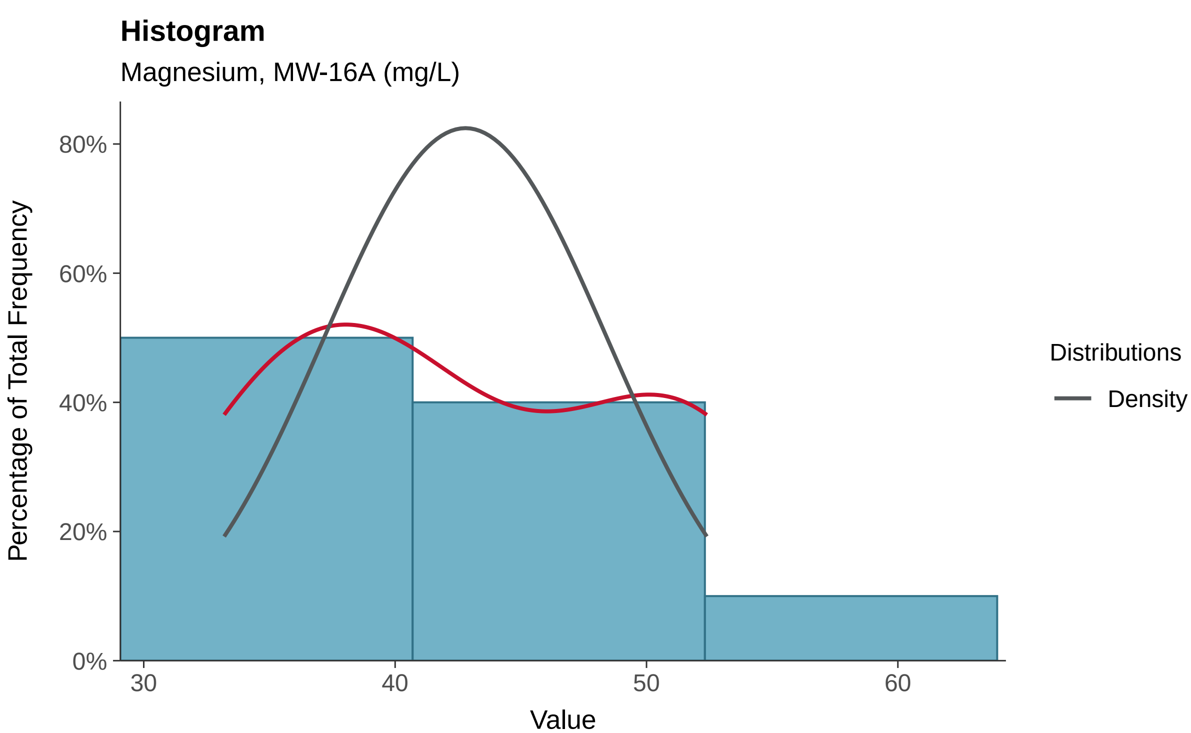
Hardness, MW-16A (mg/L)



Other: Magnesium, MW-16A

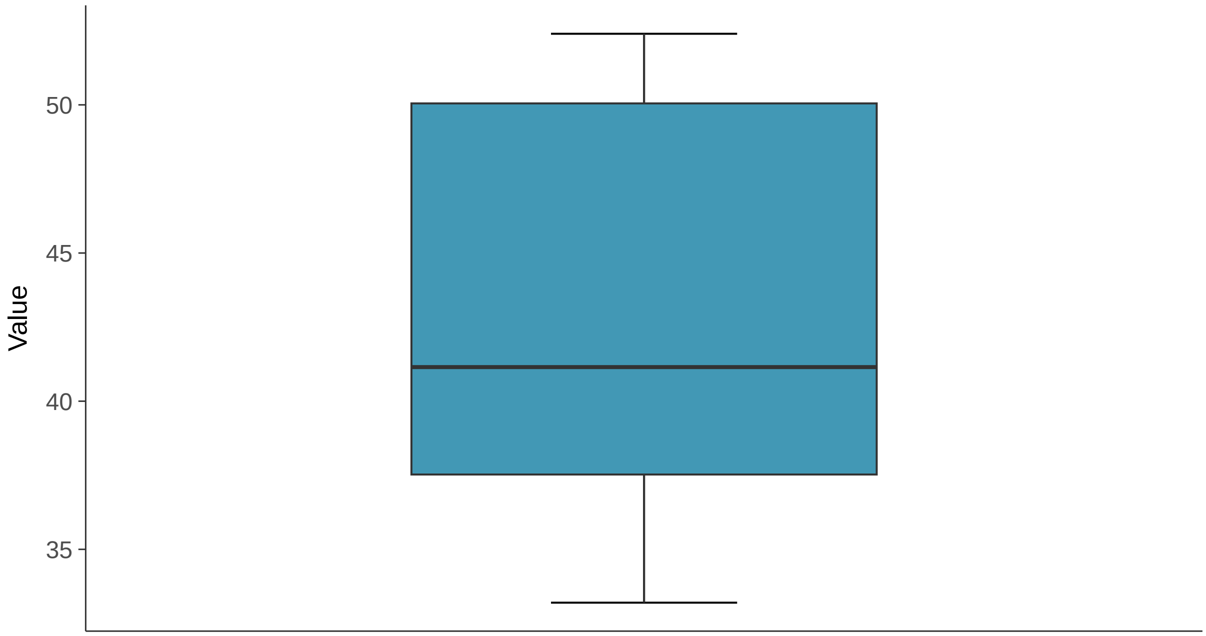
ID: 16A_4_33





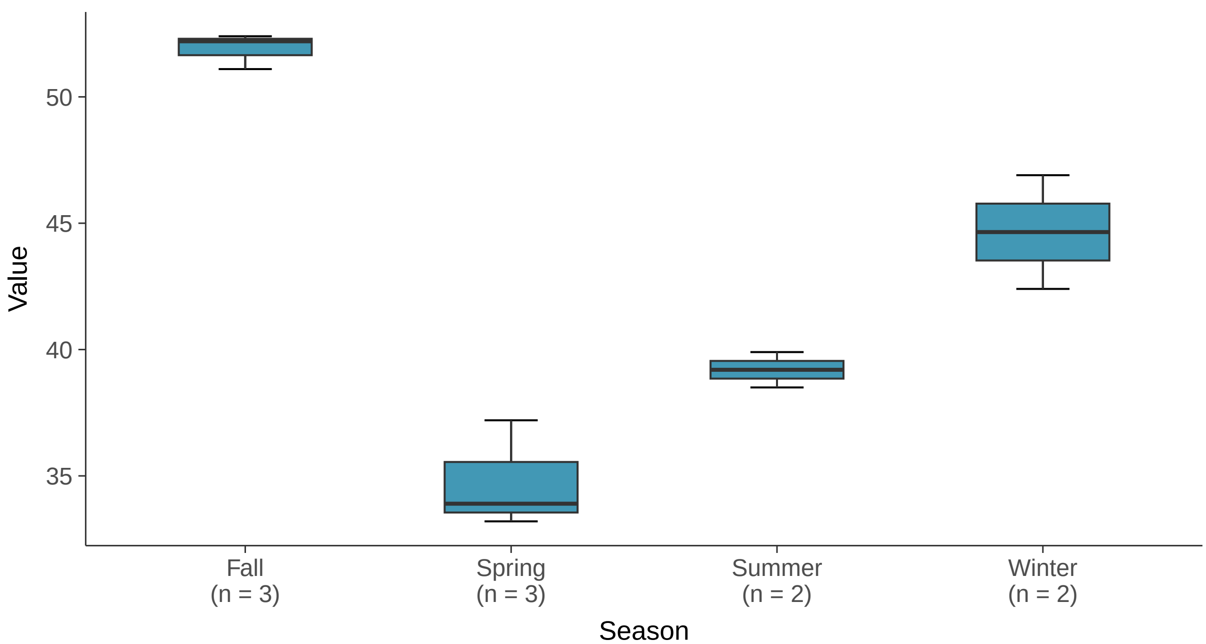
Boxplot

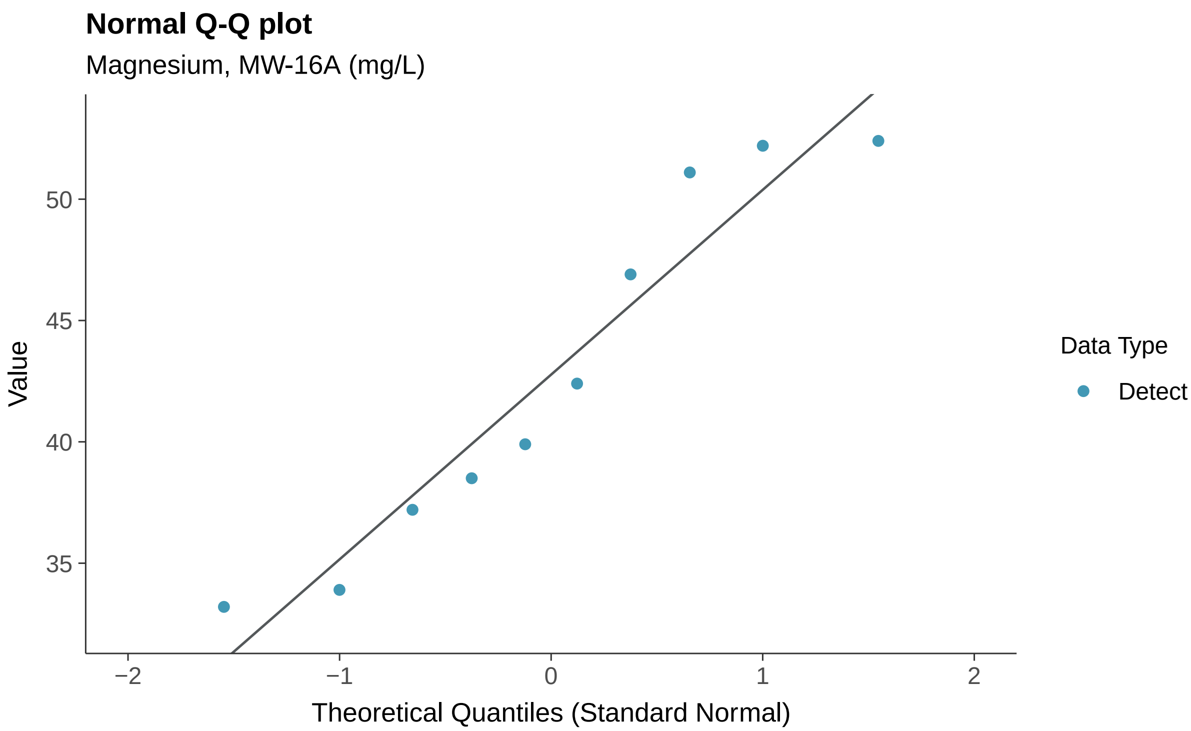
Magnesium, MW-16A (mg/L)

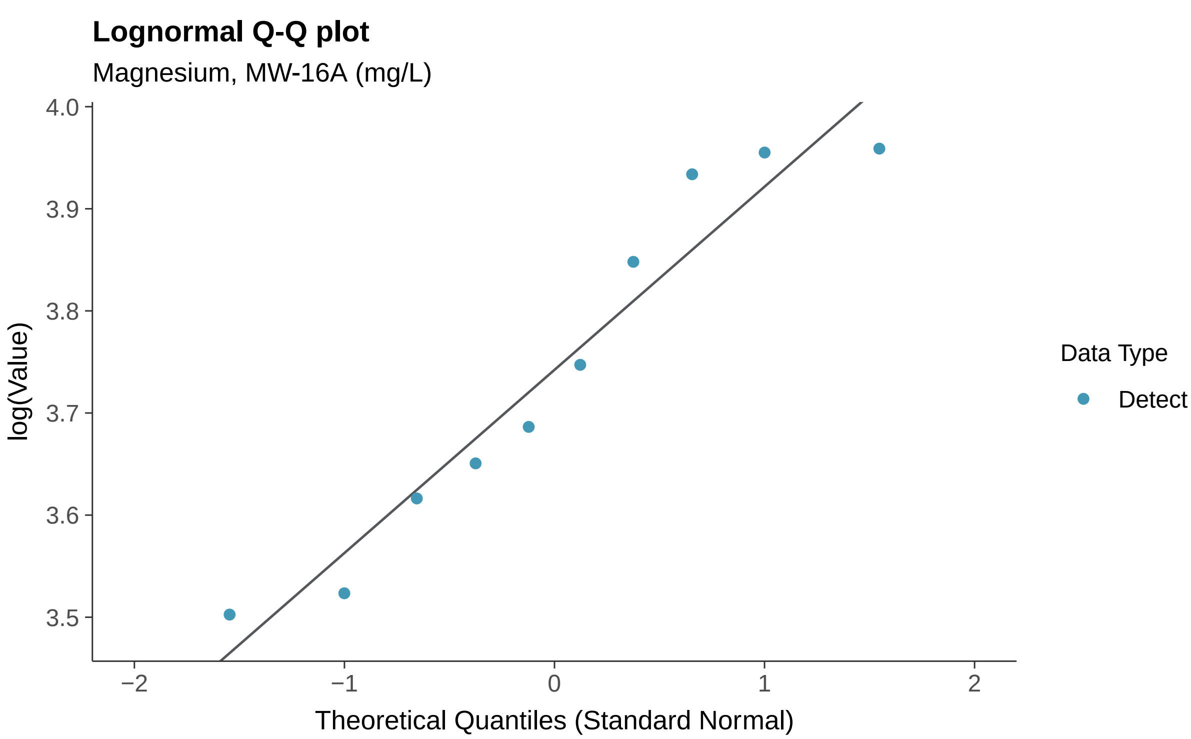


Boxplot by Season

Magnesium, MW-16A (mg/L)

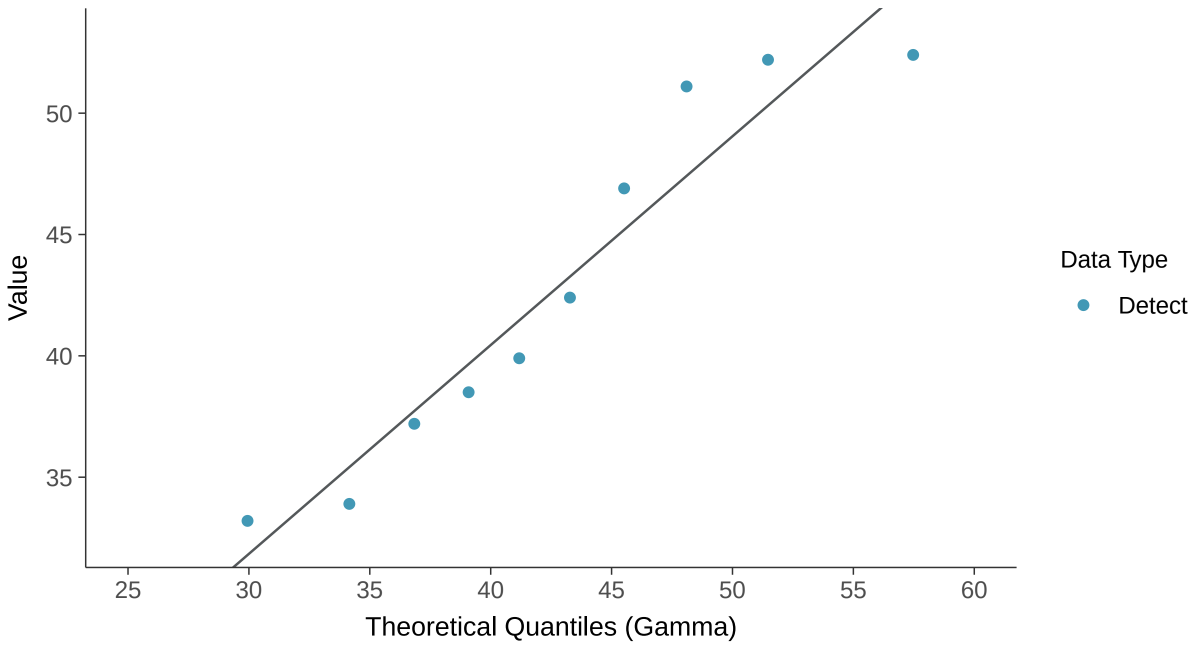



Normal Q-Q plot
Magnesium, MW-16A (mg/L)
Value
50
45
40
35
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Magnesium, MW-16A (mg/L)
log(Value)
4.0
3.9
3.8
3.7
3.6
3.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

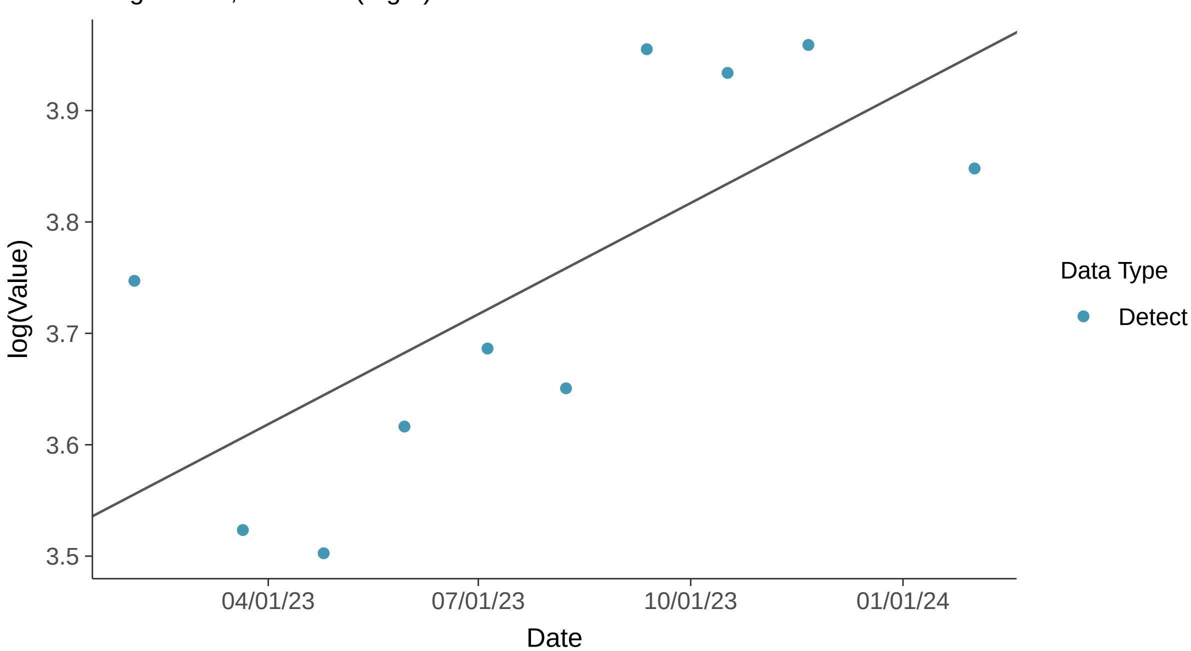
Gamma Q-Q plot

Magnesium, MW-16A (mg/L)



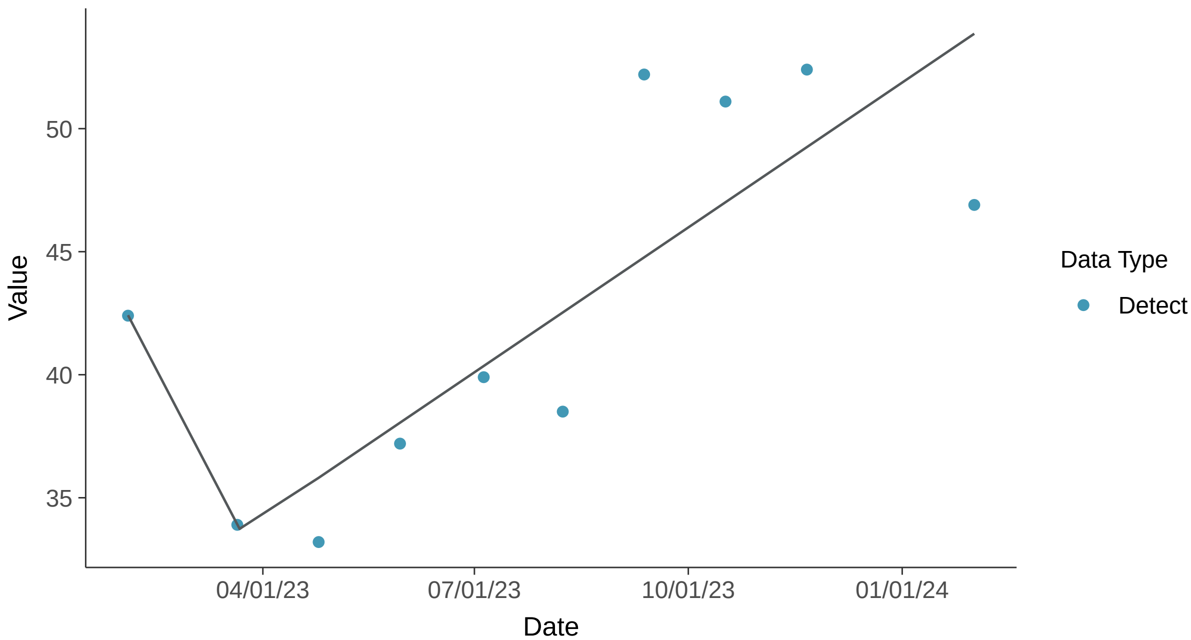
Trend Regression: Lognormal MLE

Magnesium, MW-16A (mg/L)



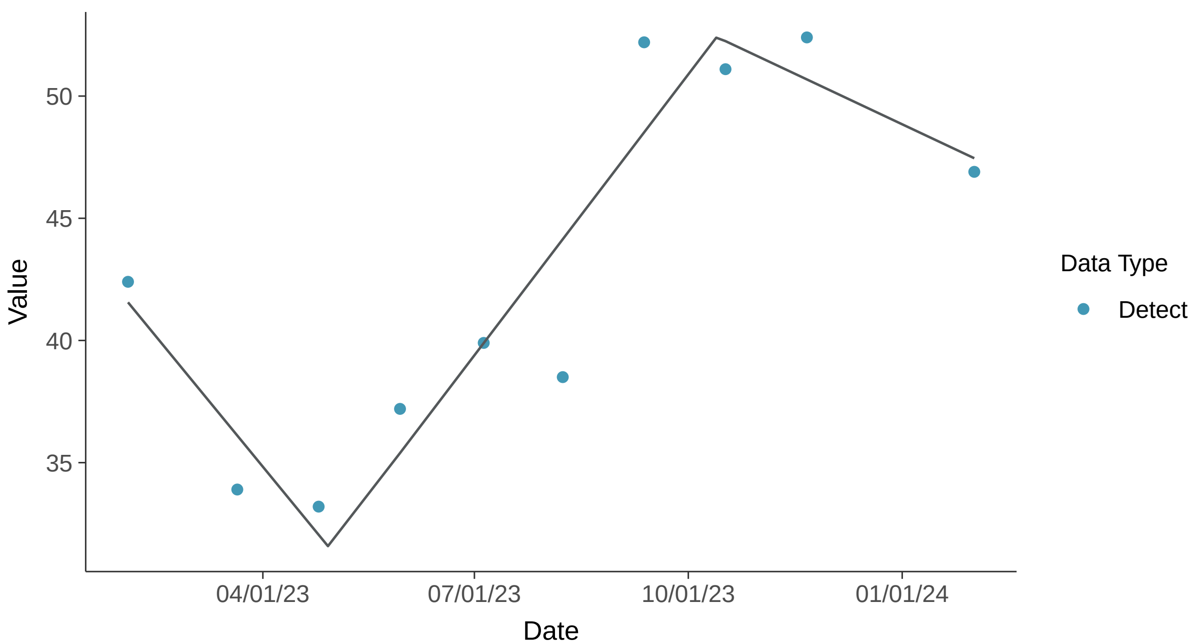
Trend Regression: Piecewise Linear-Linear

Magnesium, MW-16A (mg/L)



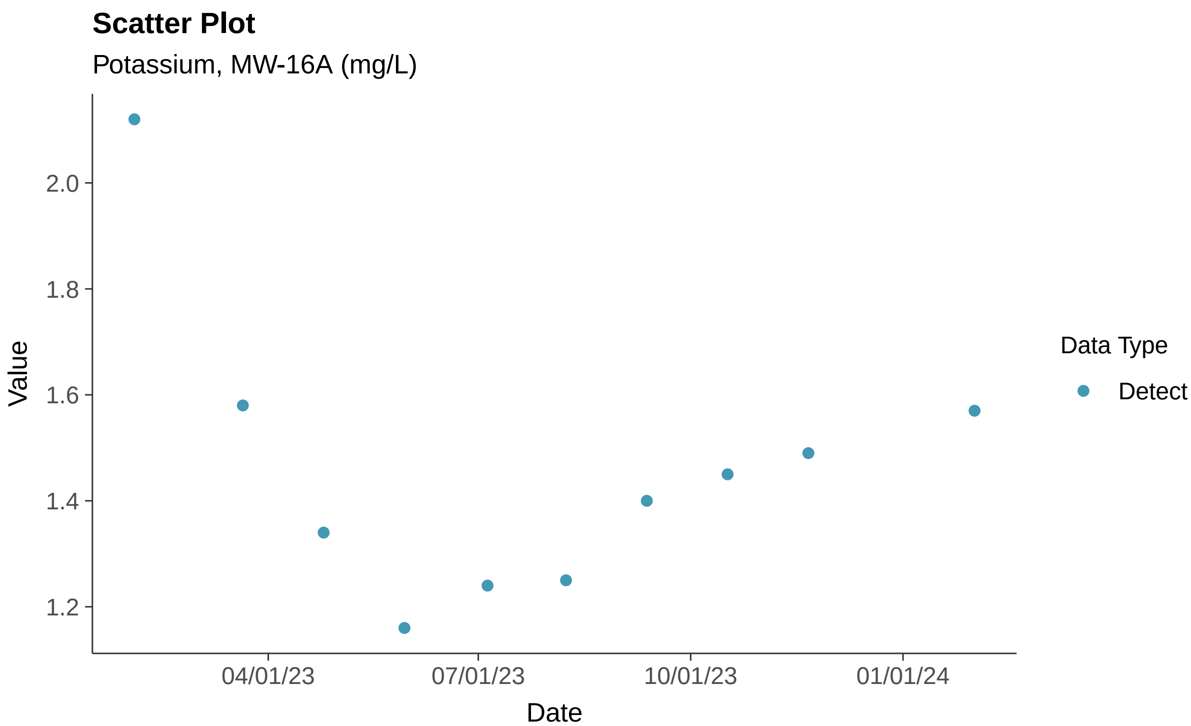
Trend Regression: Piecewise Linear-Linear-Linear

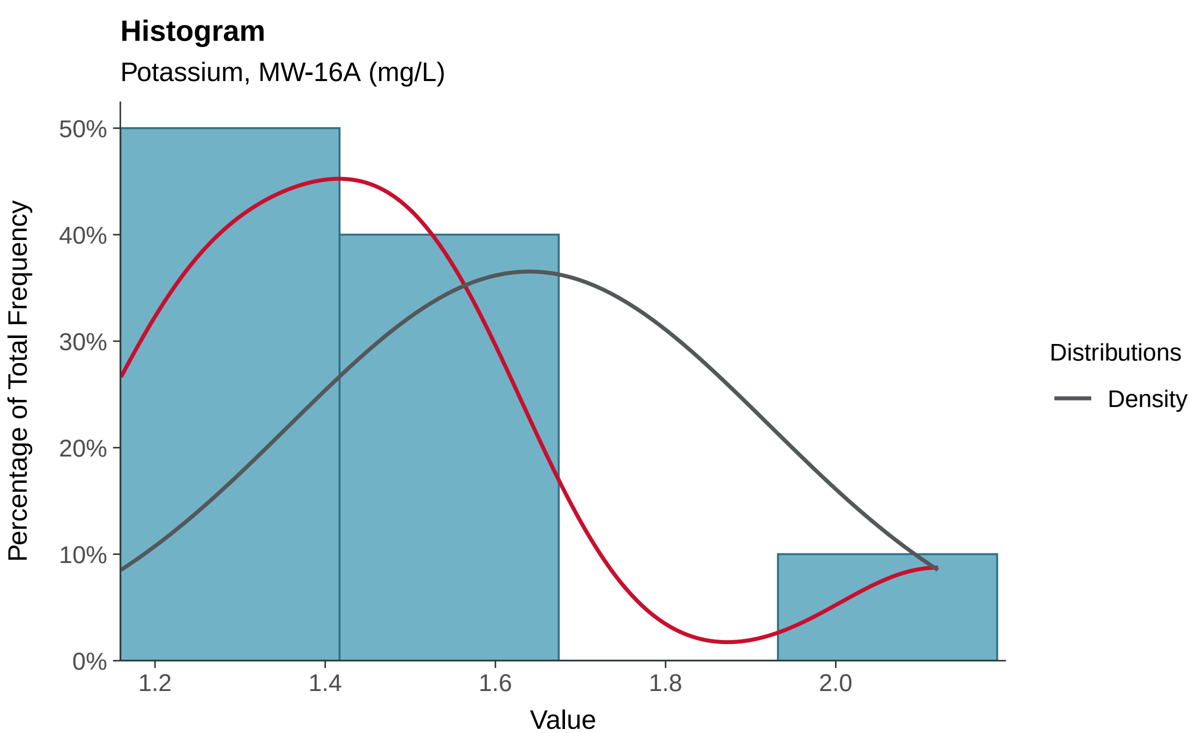
Magnesium, MW-16A (mg/L)



Other: Potassium, MW-16A

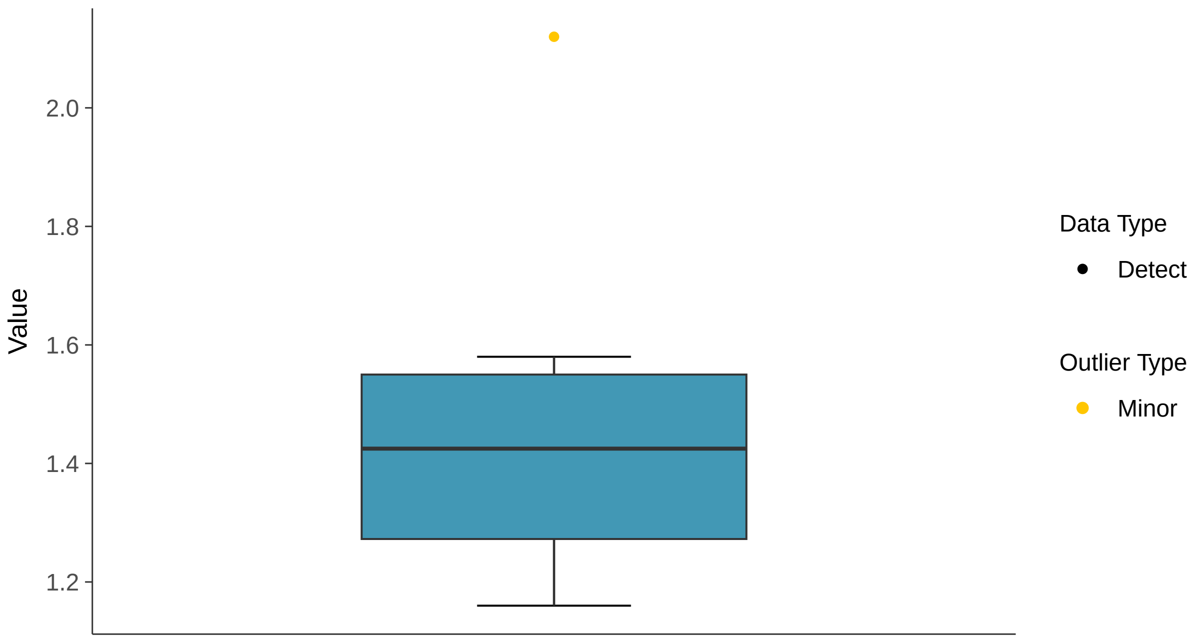
ID: 16A_4_34





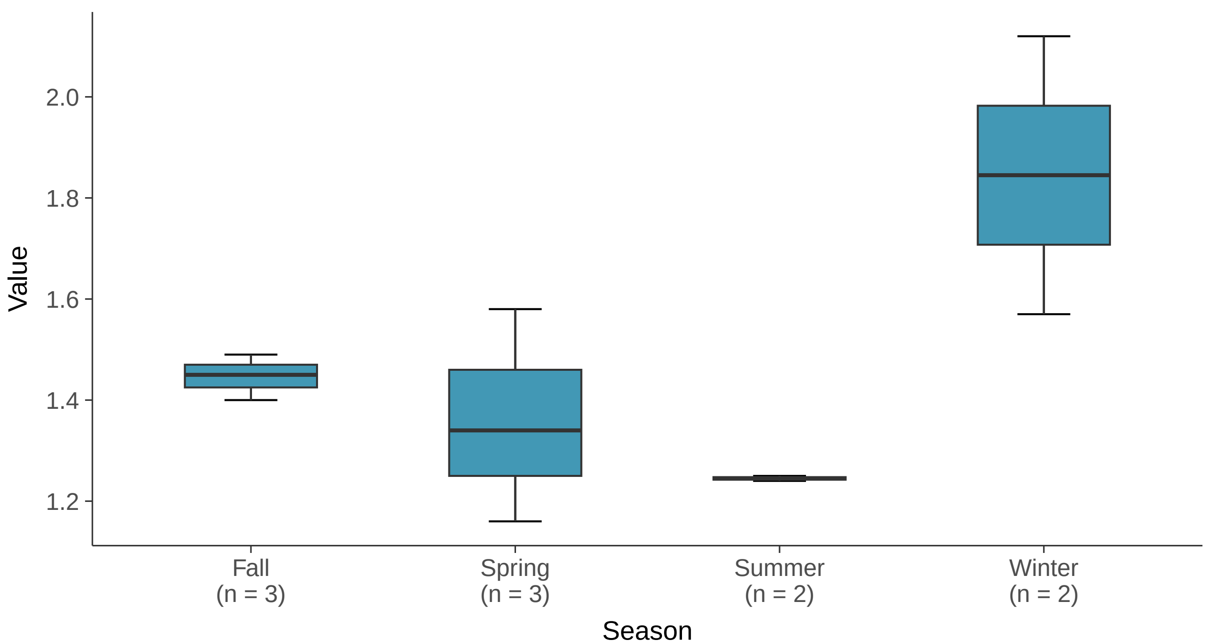
Boxplot

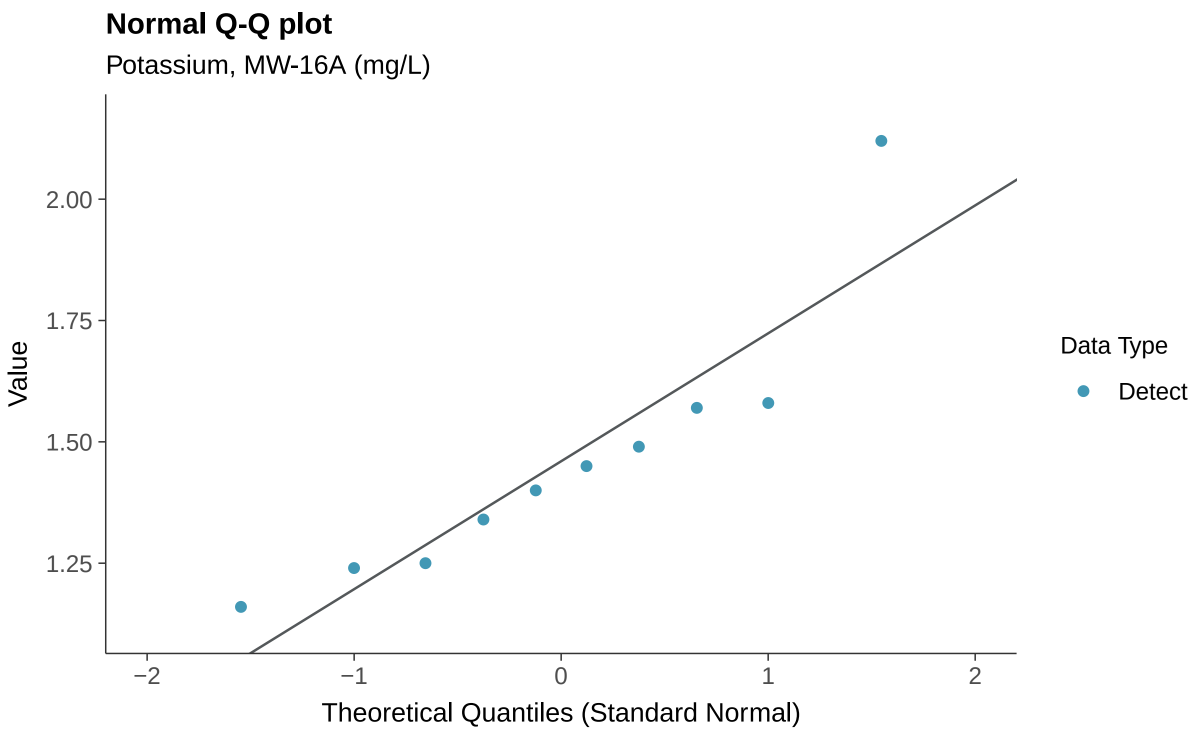
Potassium, MW-16A (mg/L)

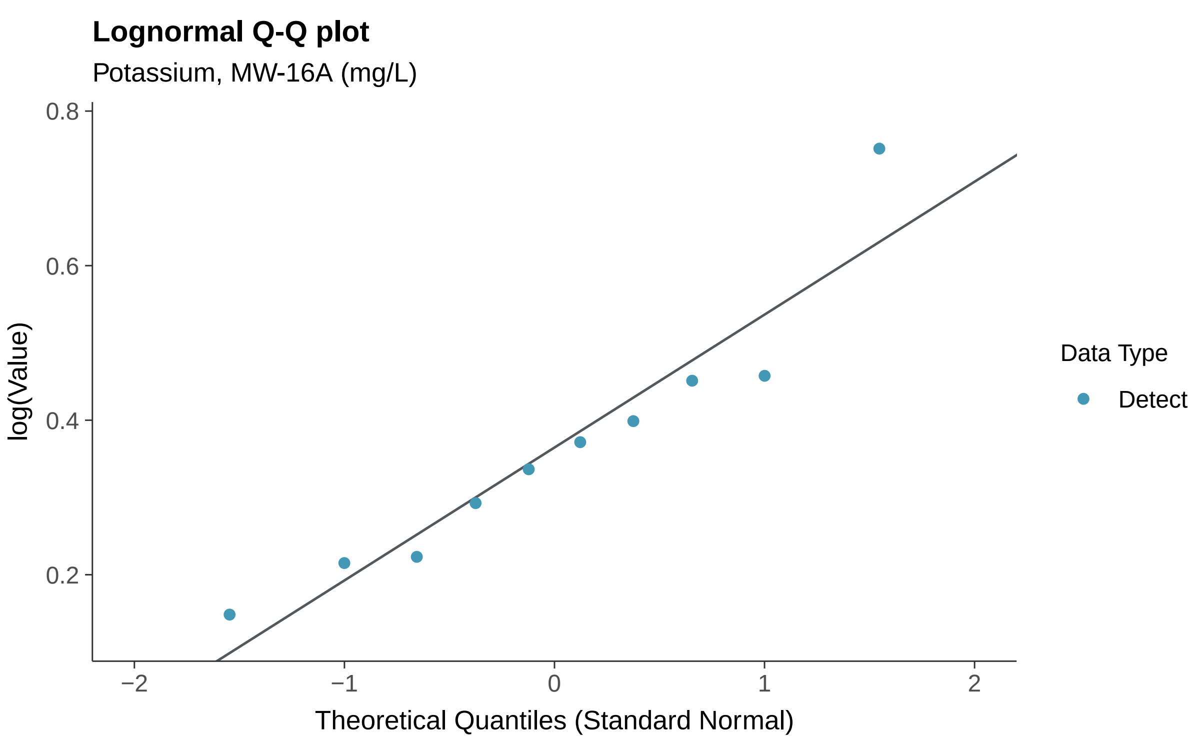


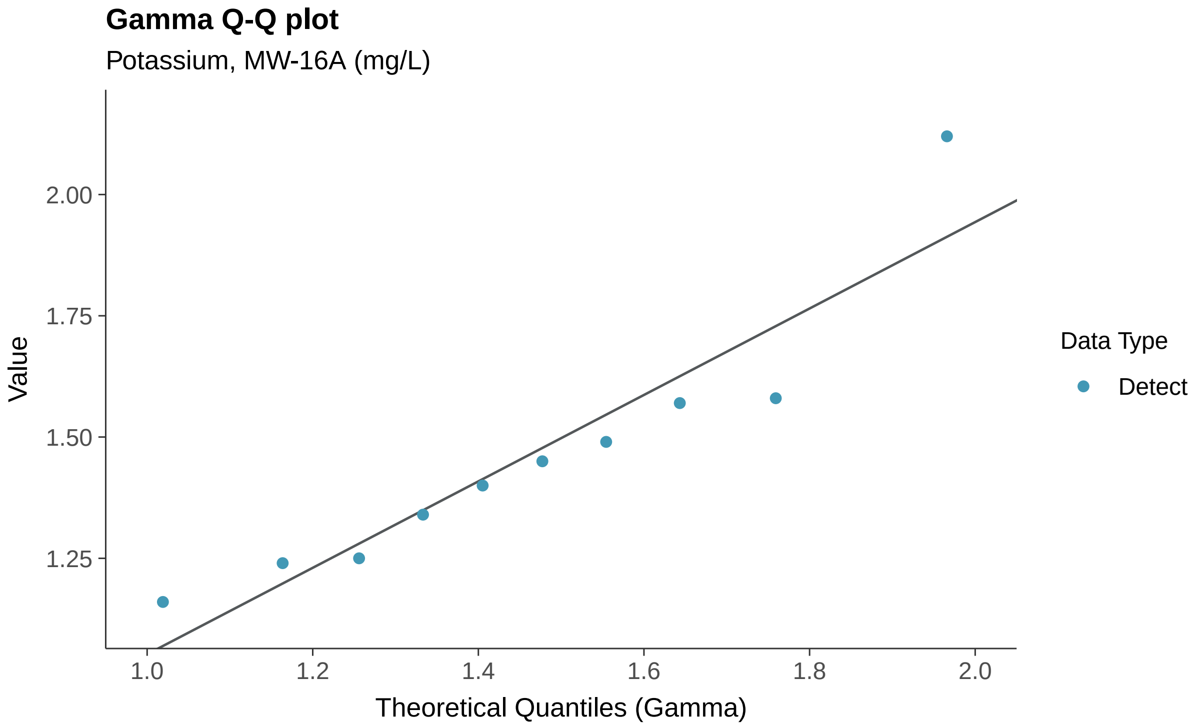
Boxplot by Season

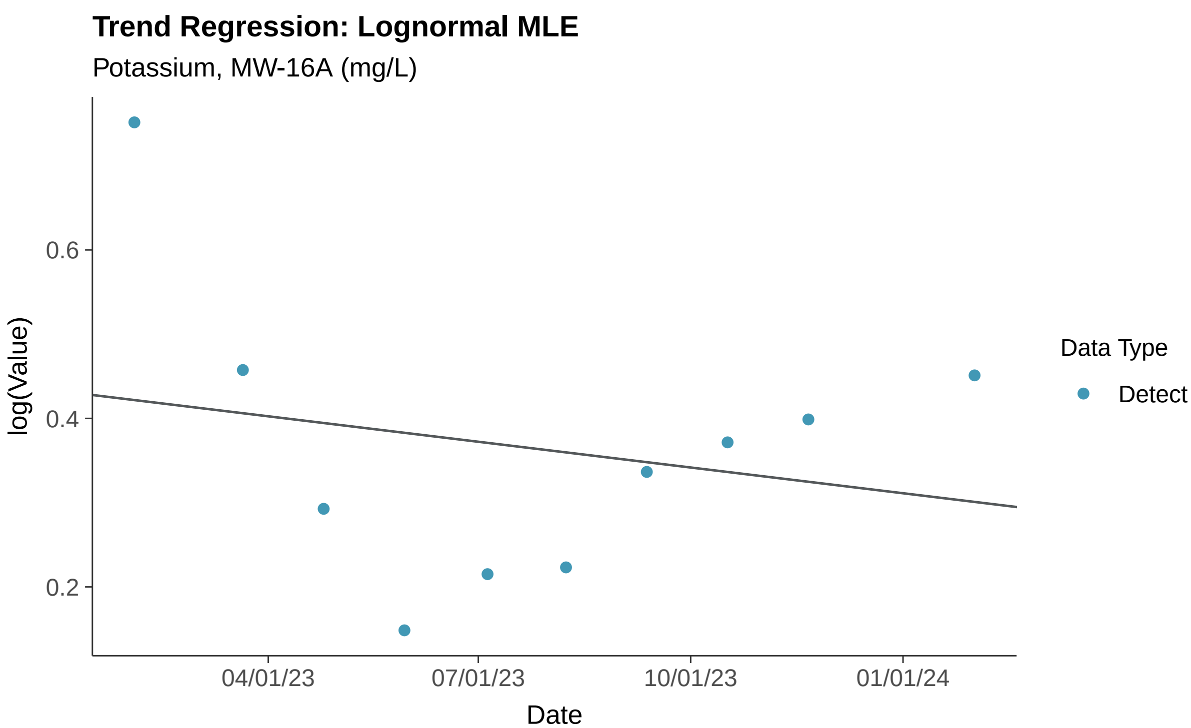
Potassium, MW-16A (mg/L)




Normal Q-Q plot
Potassium, MW-16A (mg/L)
Value
2.00
1.75
1.50
1.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

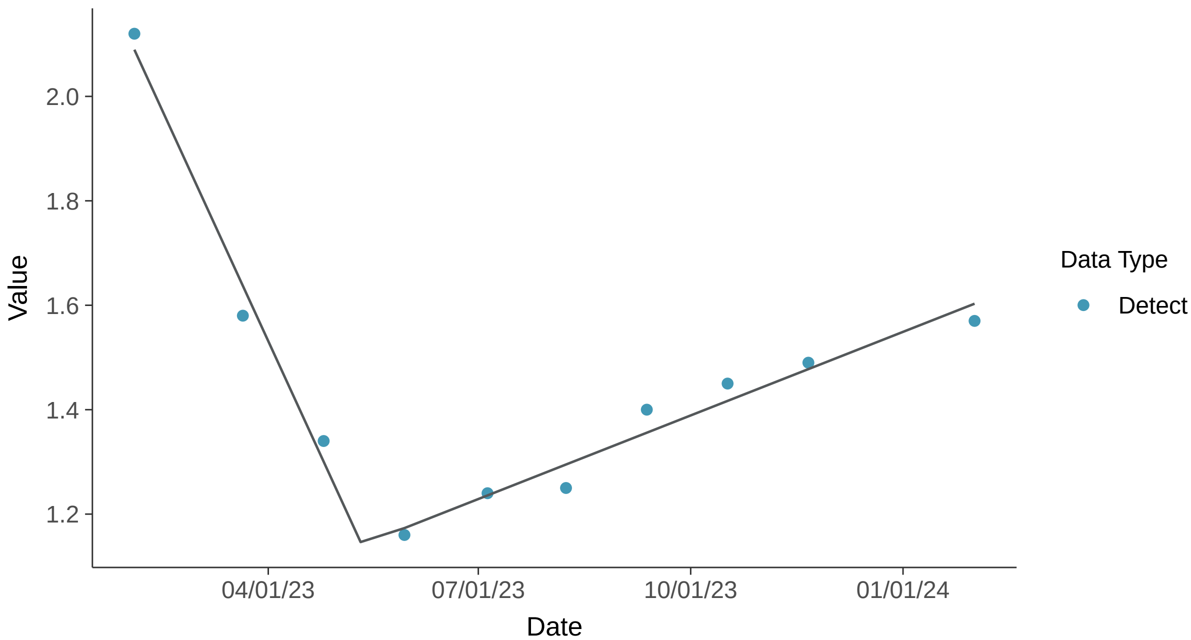

Lognormal Q-Q plot
Potassium, MW-16A (mg/L)
log(Value)
0.8
0.6
0.4
0.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Potassium, MW-16A (mg/L)
Value
2.00
1.75
1.50
1.25
1.0
1.2
1.4
1.6
1.8
2.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Potassium, MW-16A (mg/L)
log(Value)
0.6
0.4
0.2
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

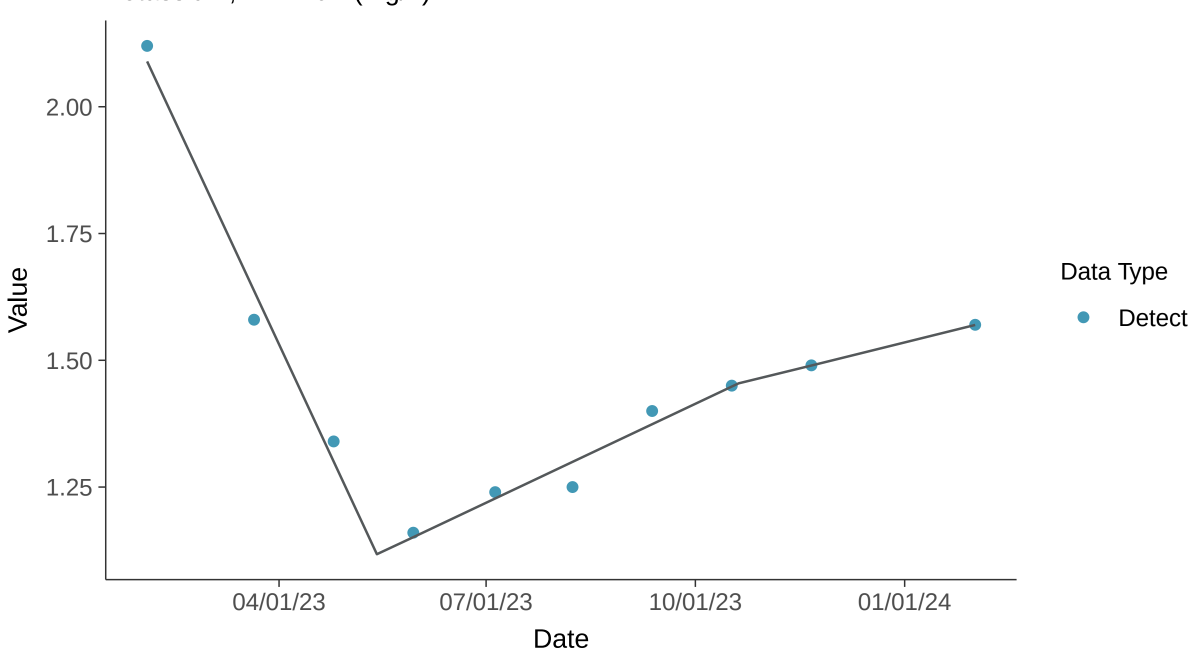
Trend Regression: Piecewise Linear-Linear

Potassium, MW-16A (mg/L)



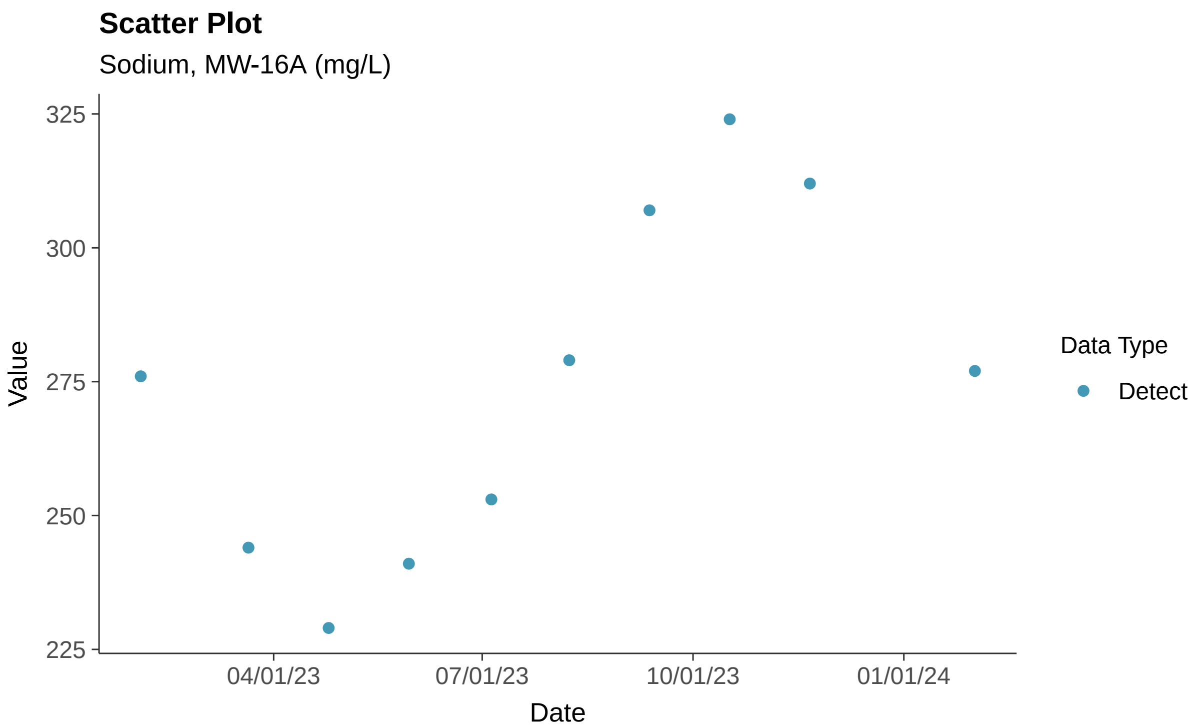
Trend Regression: Piecewise Linear-Linear-Linear

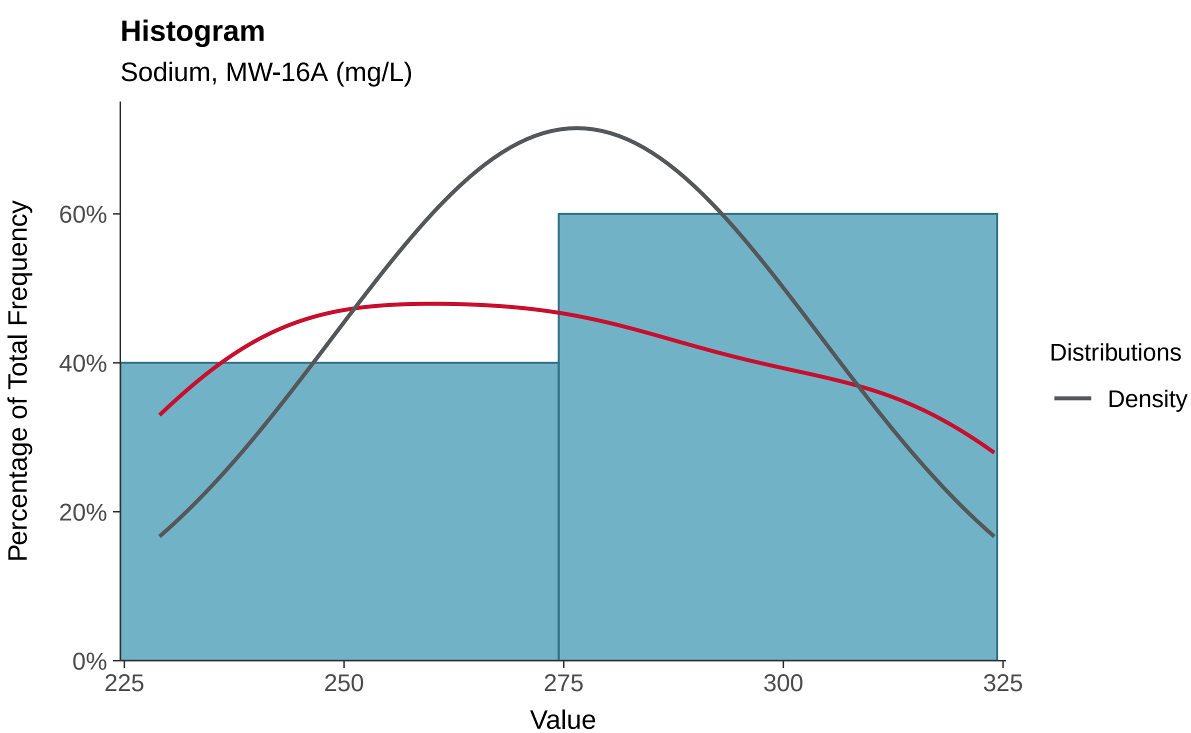
Potassium, MW-16A (mg/L)



Other: Sodium, MW-16A

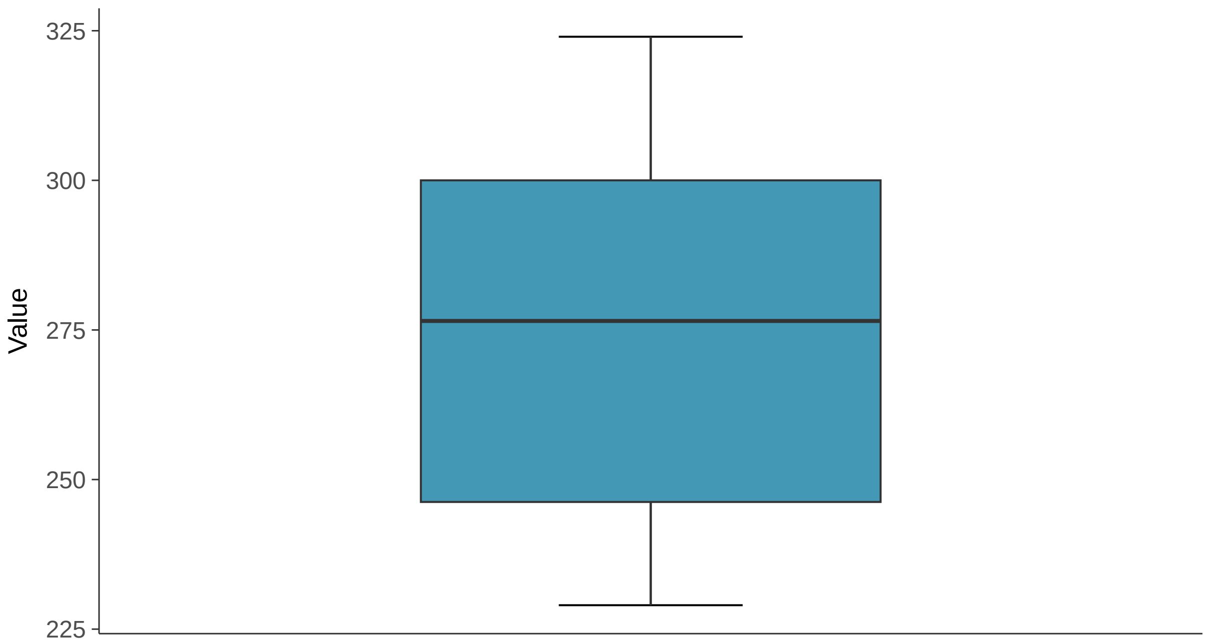
ID: 16A_4_35





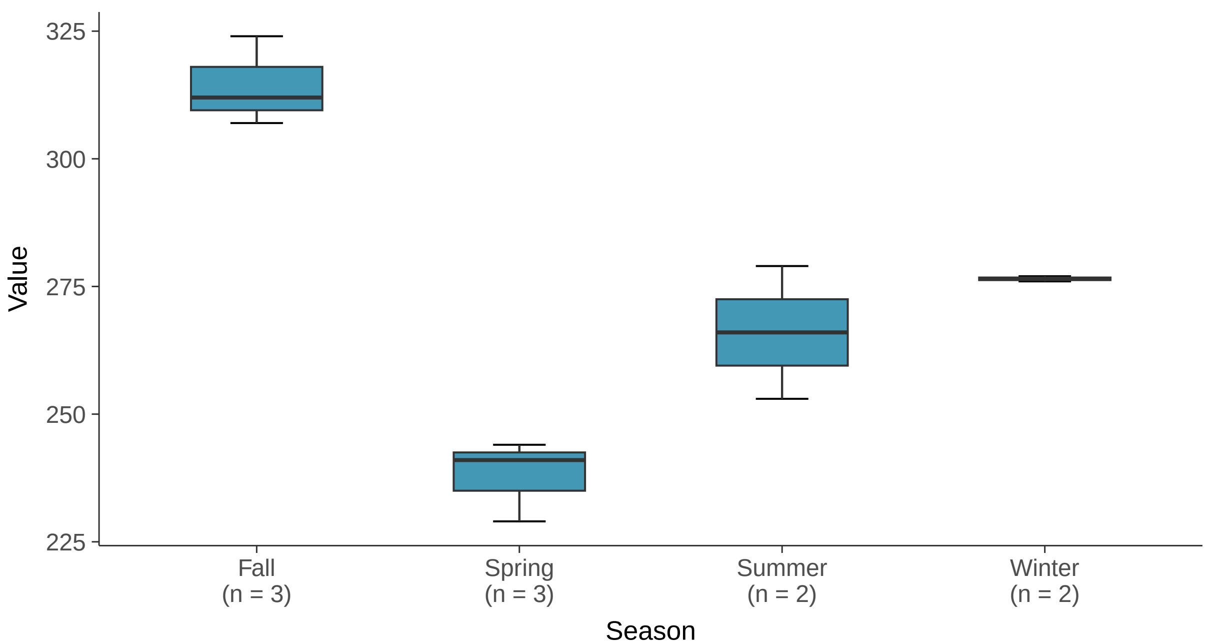
Boxplot

Sodium, MW-16A (mg/L)



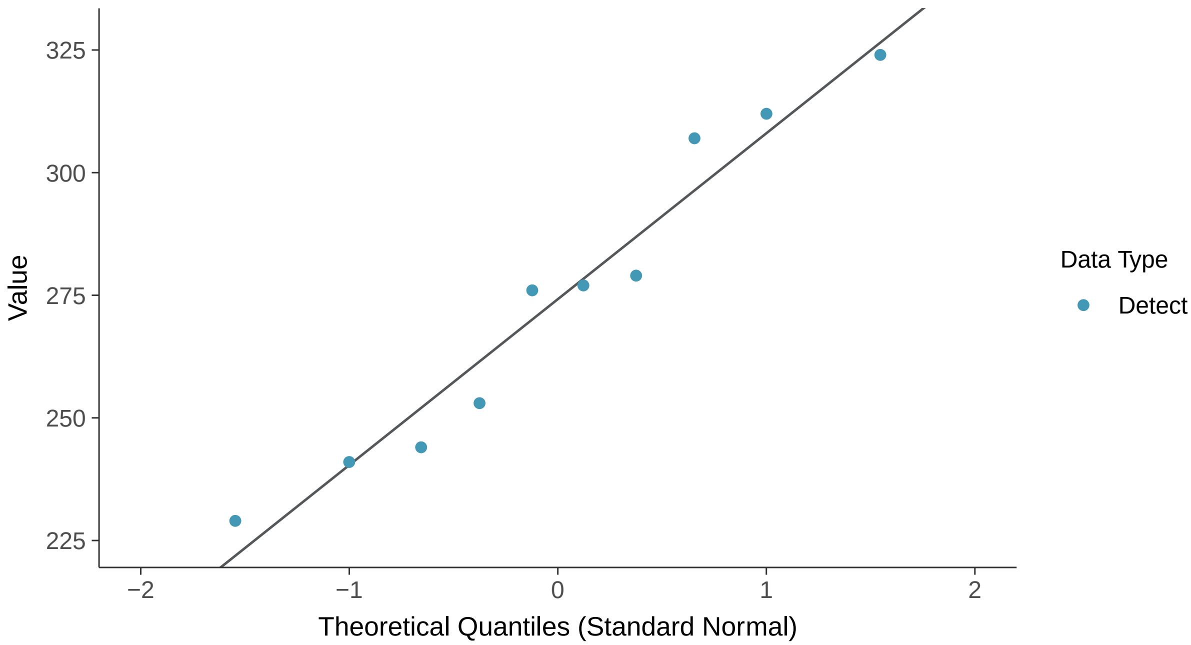
Boxplot by Season

Sodium, MW-16A (mg/L)



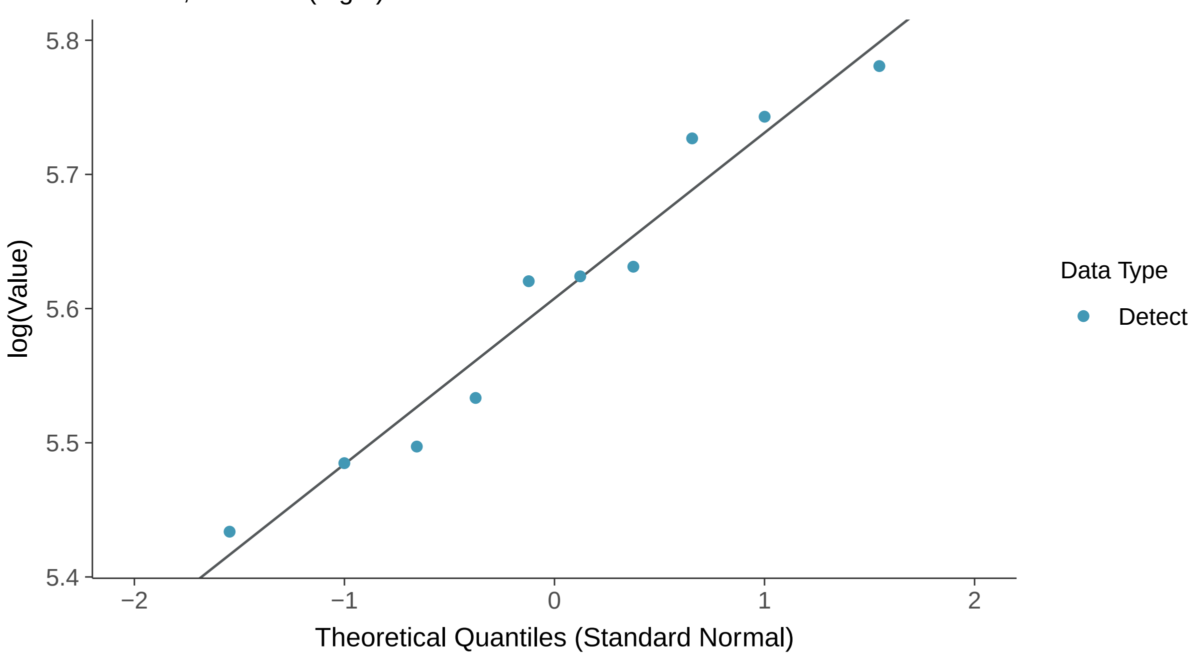
Normal Q-Q plot

Sodium, MW-16A (mg/L)



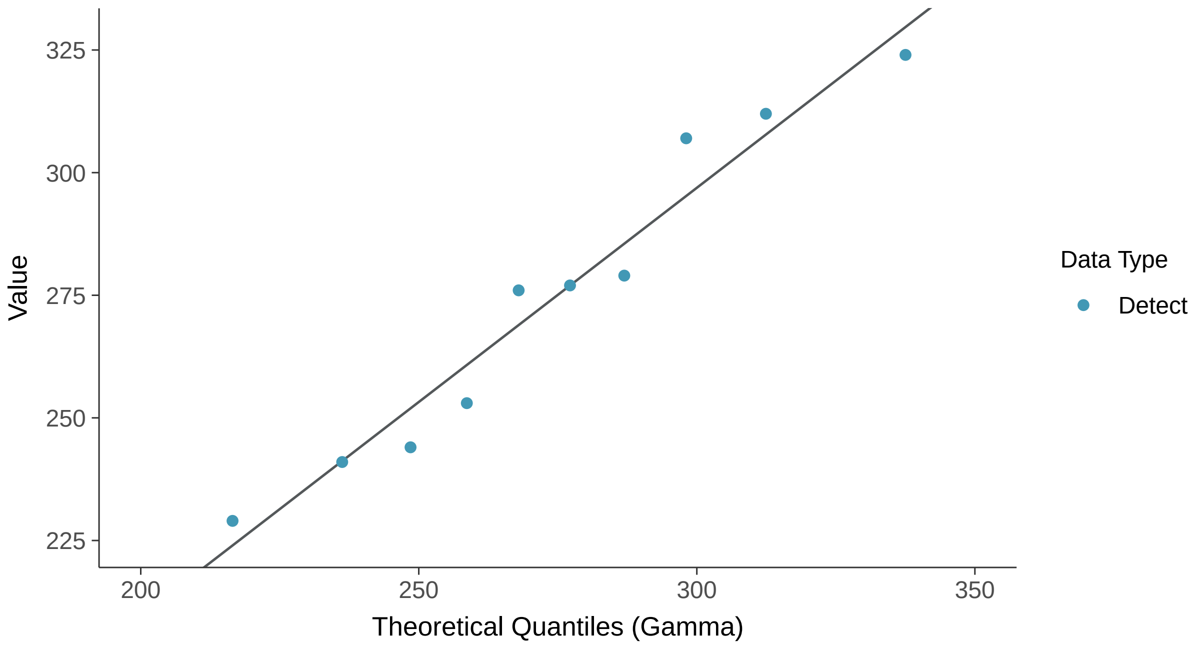
Lognormal Q-Q plot

Sodium, MW-16A (mg/L)



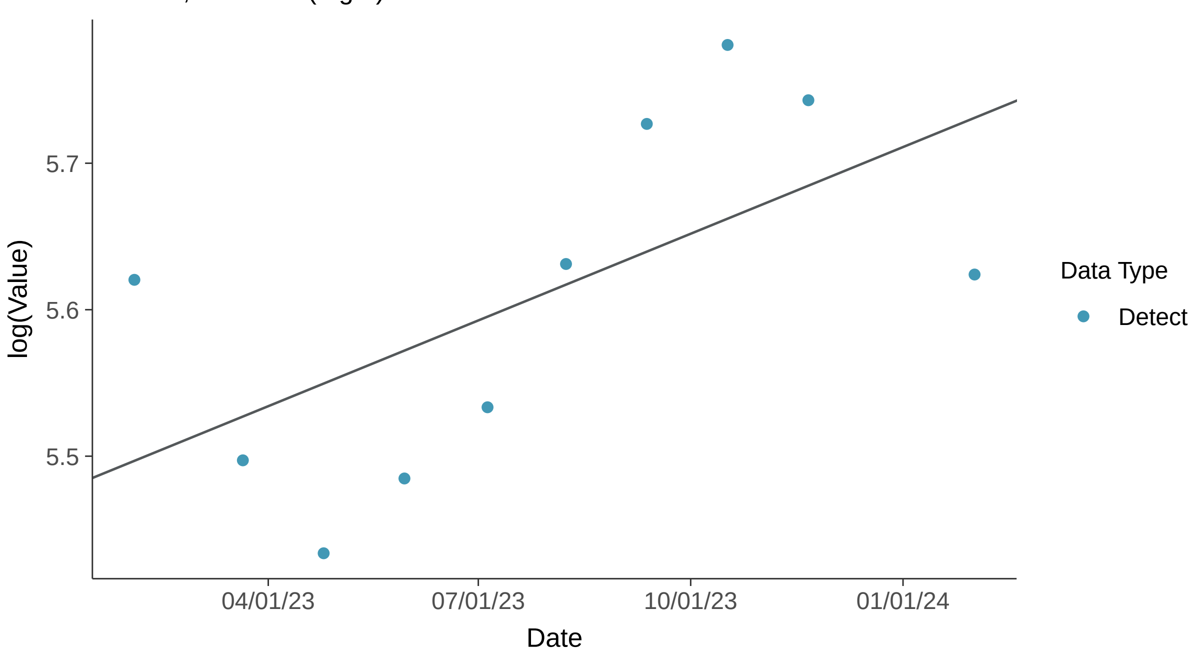
Gamma Q-Q plot

Sodium, MW-16A (mg/L)



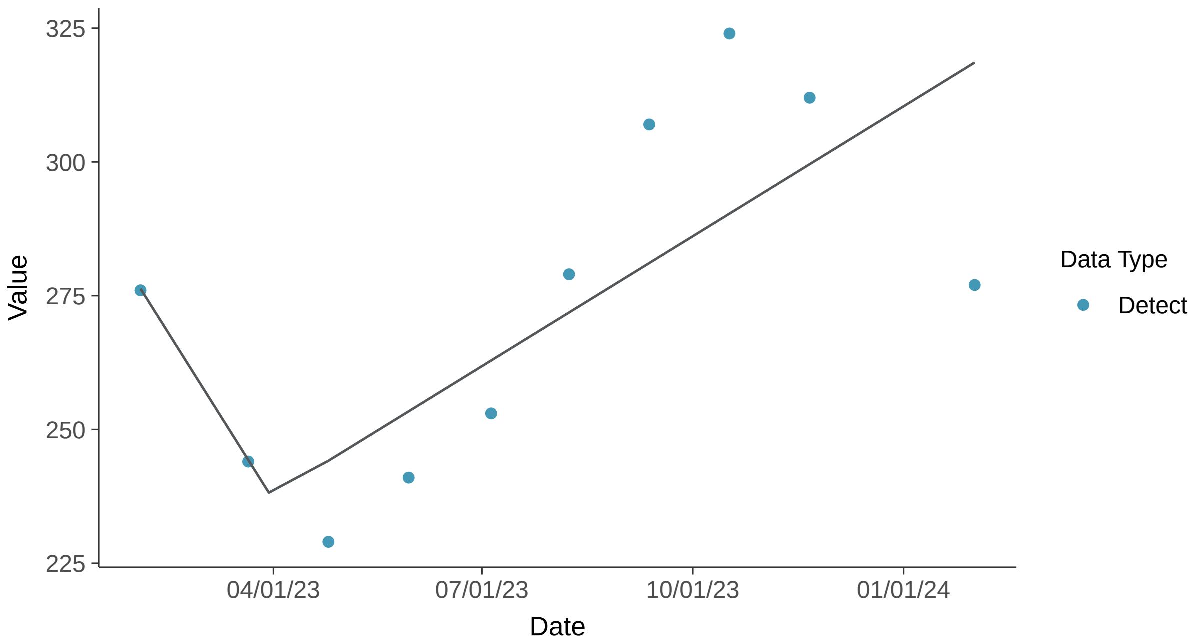
Trend Regression: Lognormal MLE

Sodium, MW-16A (mg/L)



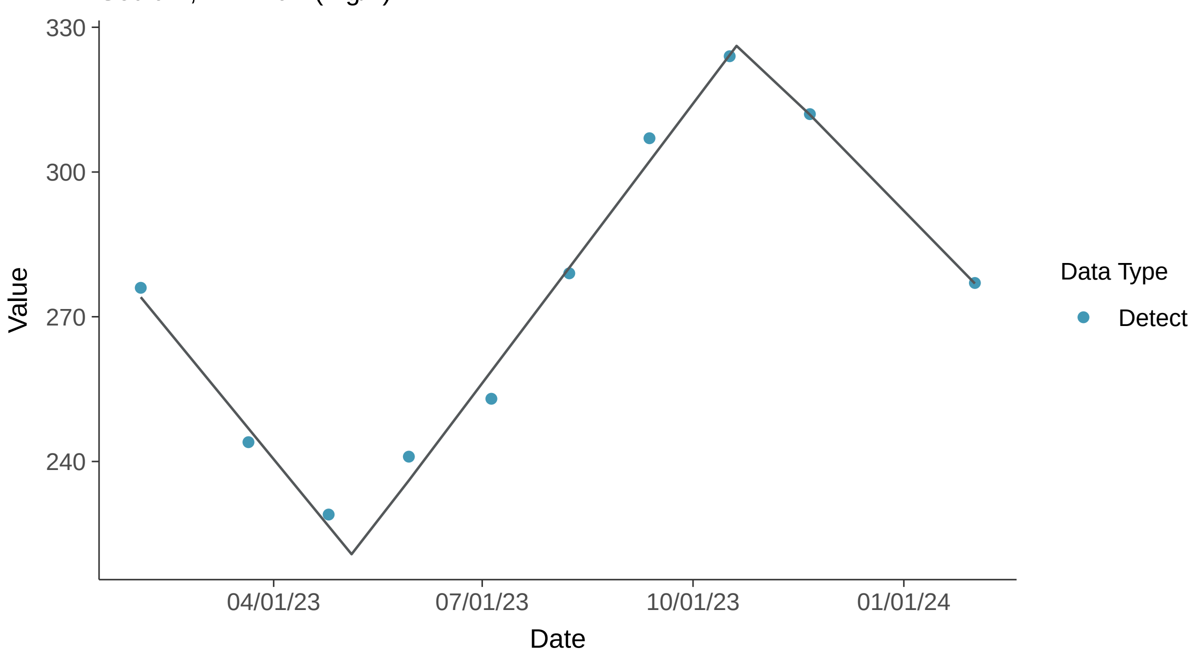
Trend Regression: Piecewise Linear-Linear

Sodium, MW-16A (mg/L)



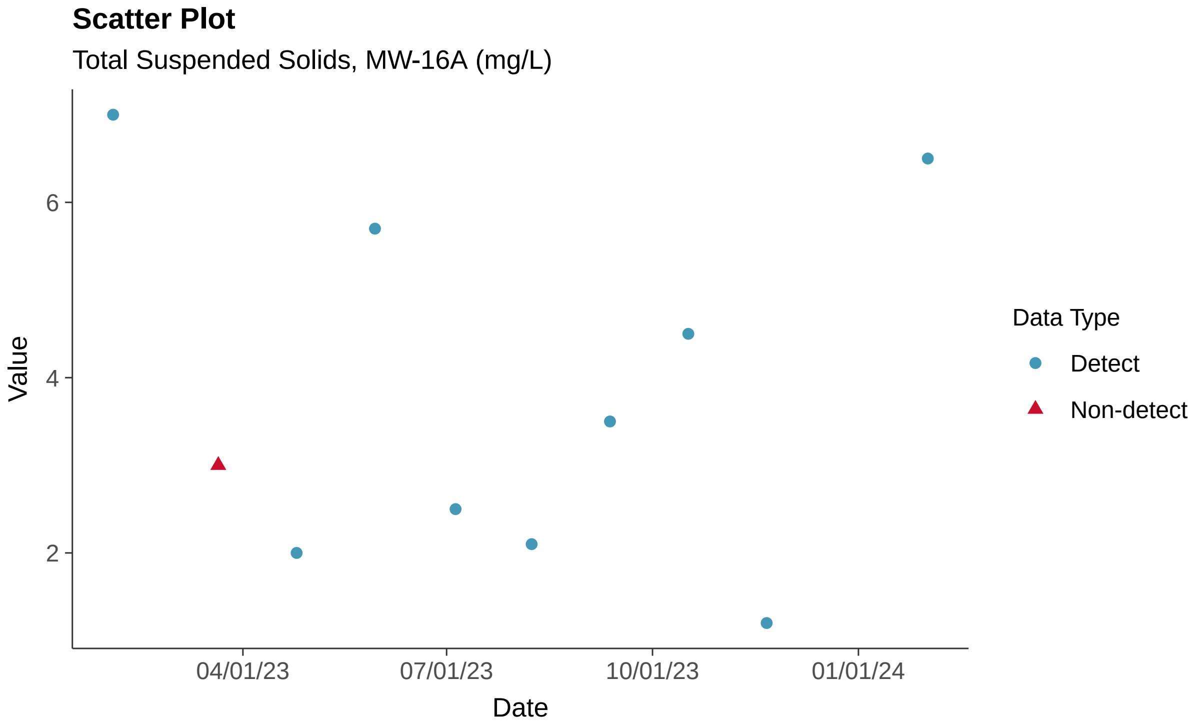
Trend Regression: Piecewise Linear-Linear-Linear

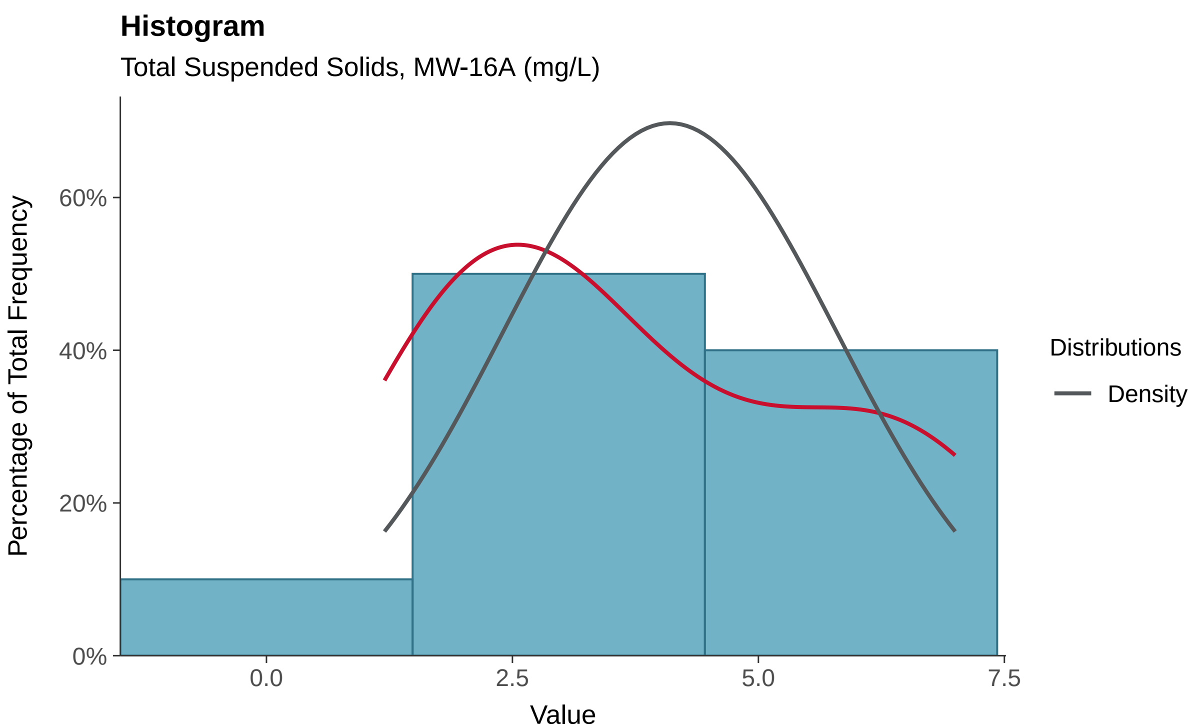
Sodium, MW-16A (mg/L)



Other: Total Suspended Solids, MW-16A

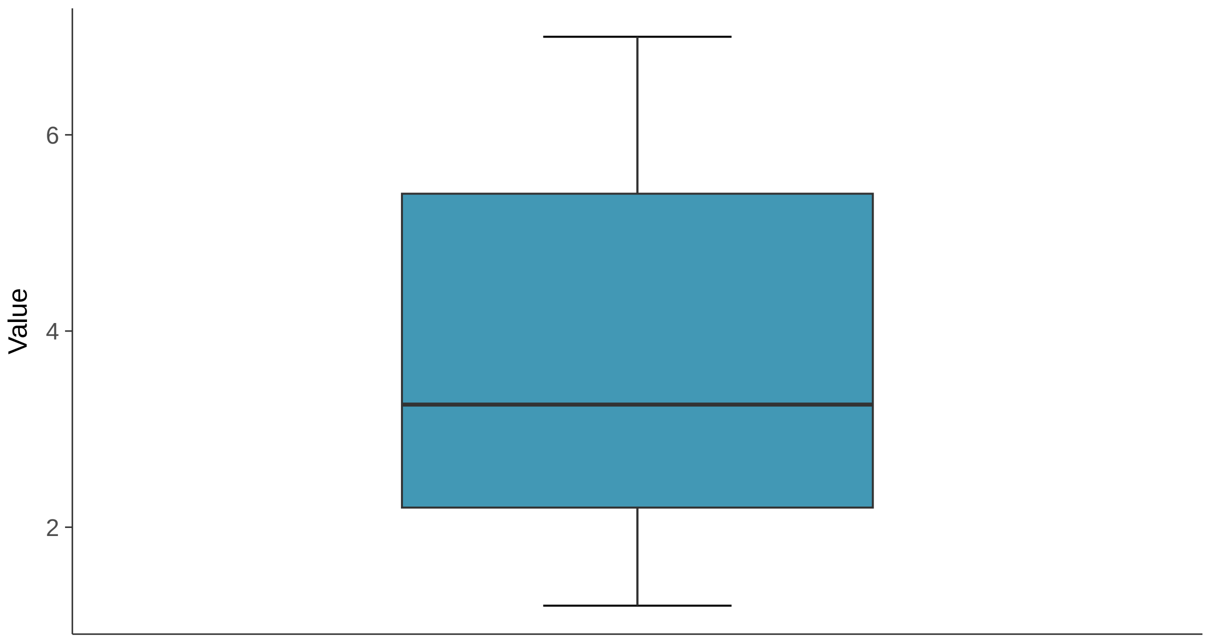
ID: 16A_4_36





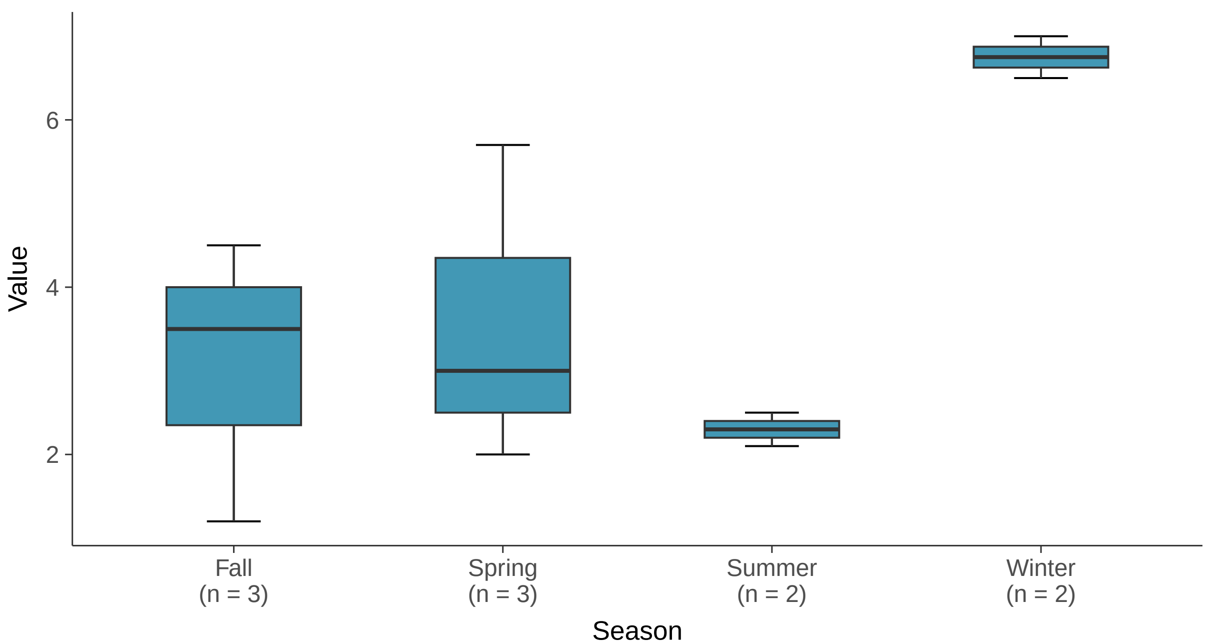
Boxplot

Total Suspended Solids, MW-16A (mg/L)



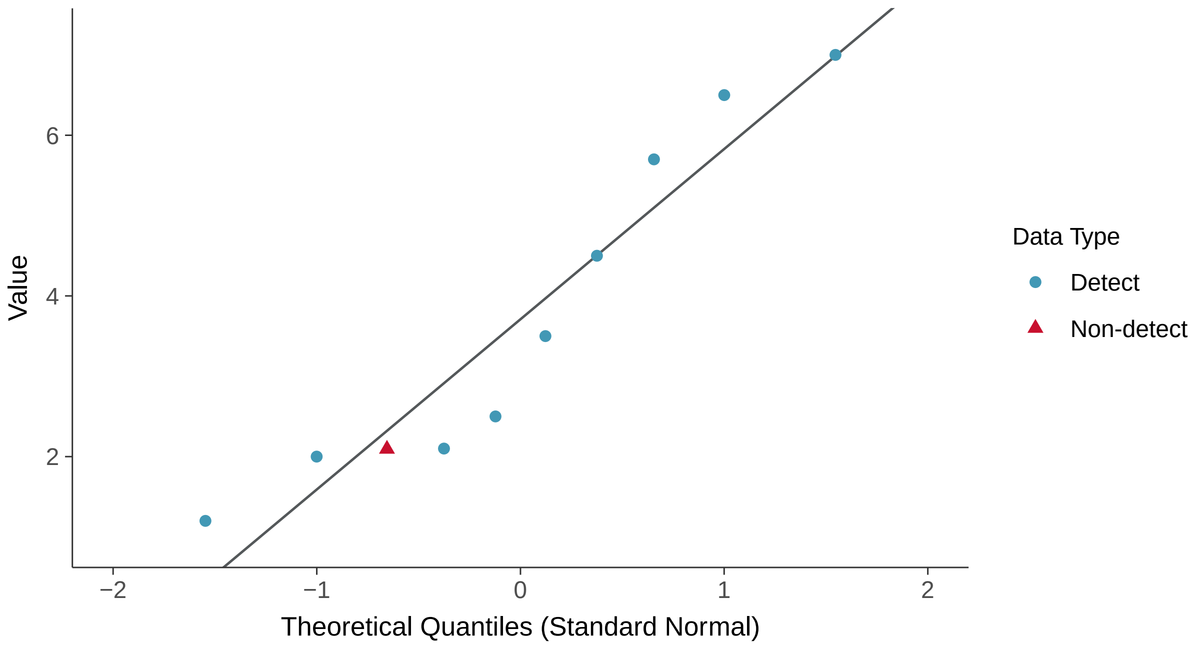
Boxplot by Season

Total Suspended Solids, MW-16A (mg/L)



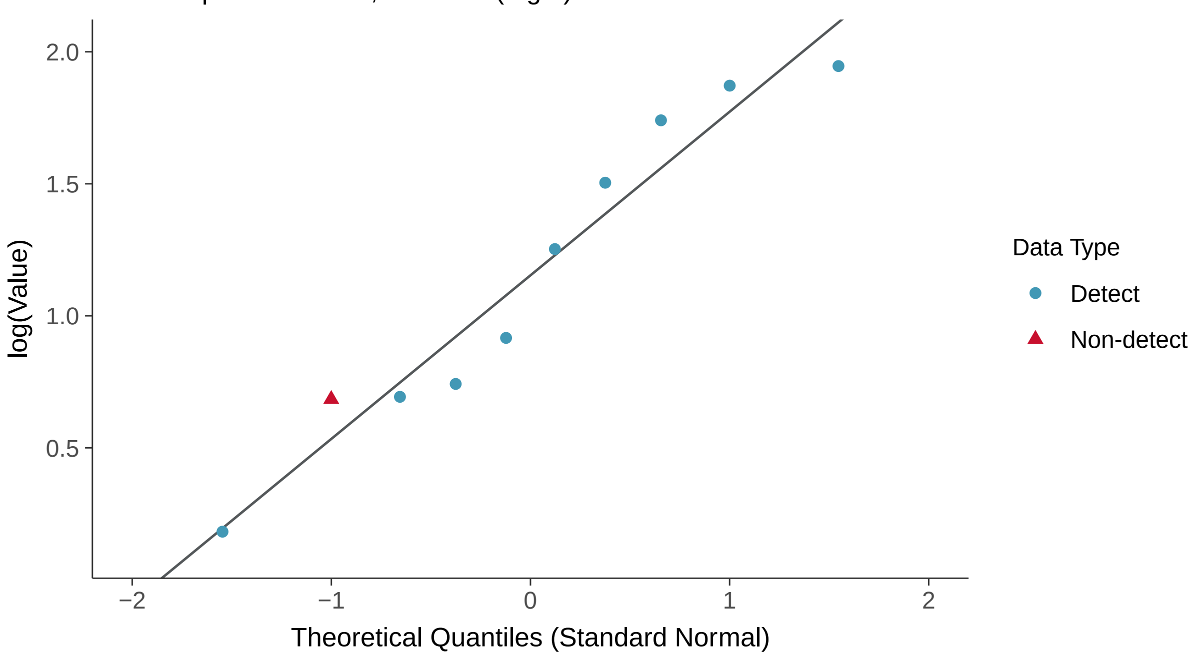
Normal Q-Q plot using ROS Imputed Estimates

Total Suspended Solids, MW-16A (mg/L)



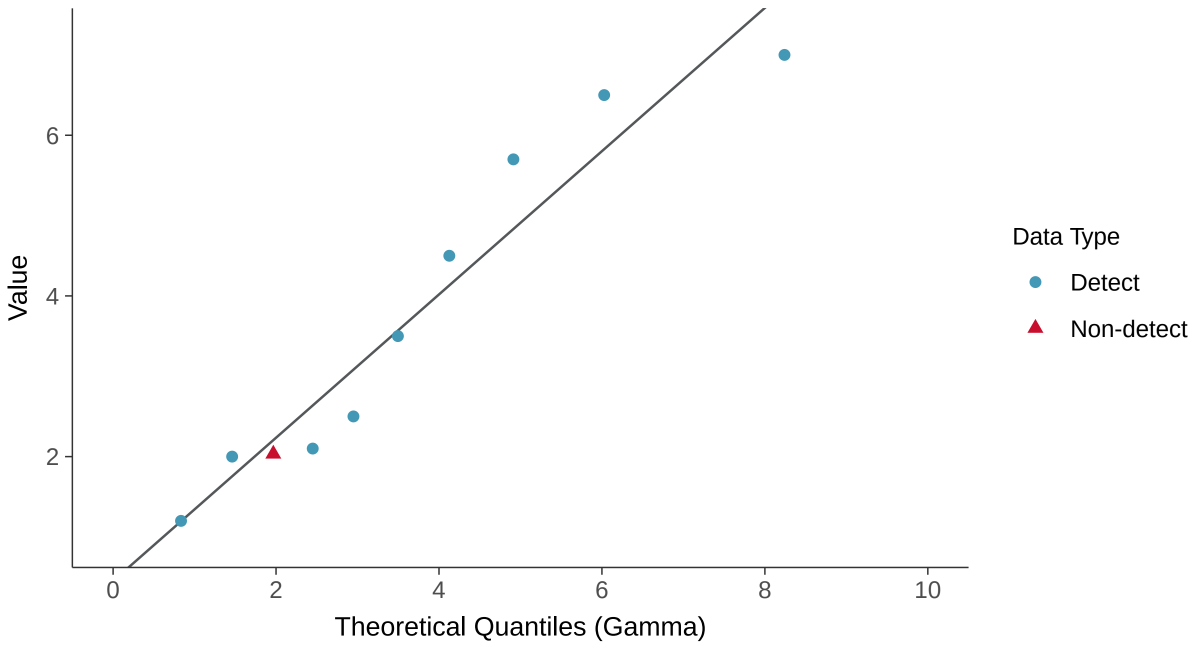
Lognormal Q-Q plot using ROS Imputed Estimates

Total Suspended Solids, MW-16A (mg/L)



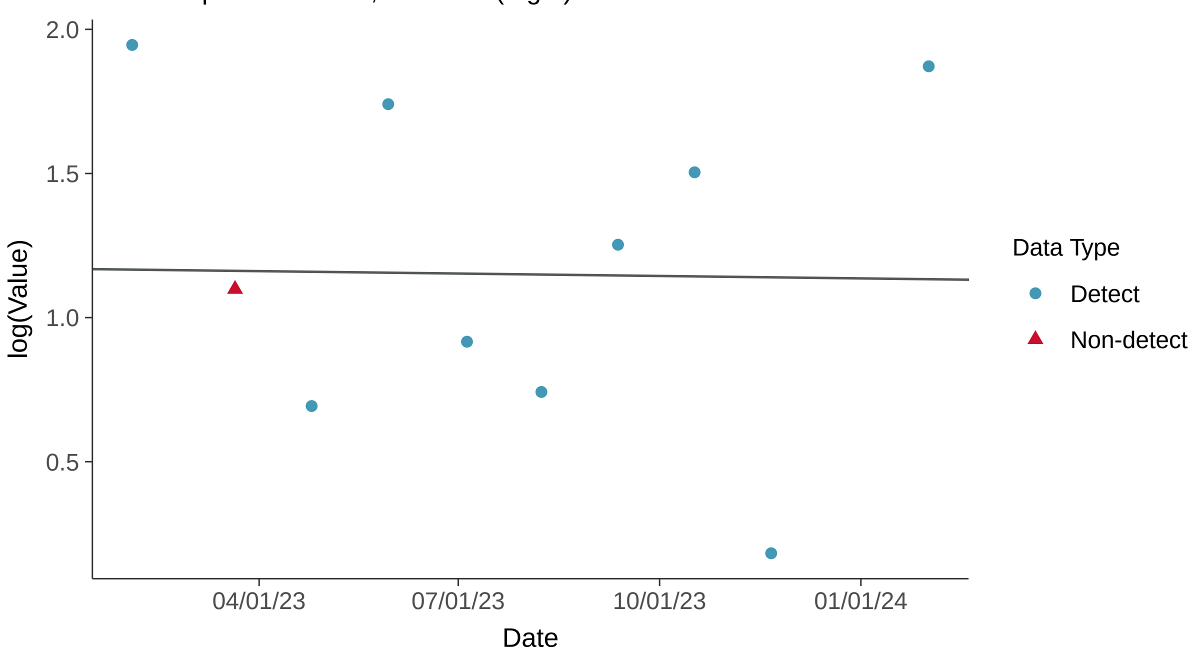
Gamma Q-Q plot using ROS Imputed Estimates

Total Suspended Solids, MW-16A (mg/L)



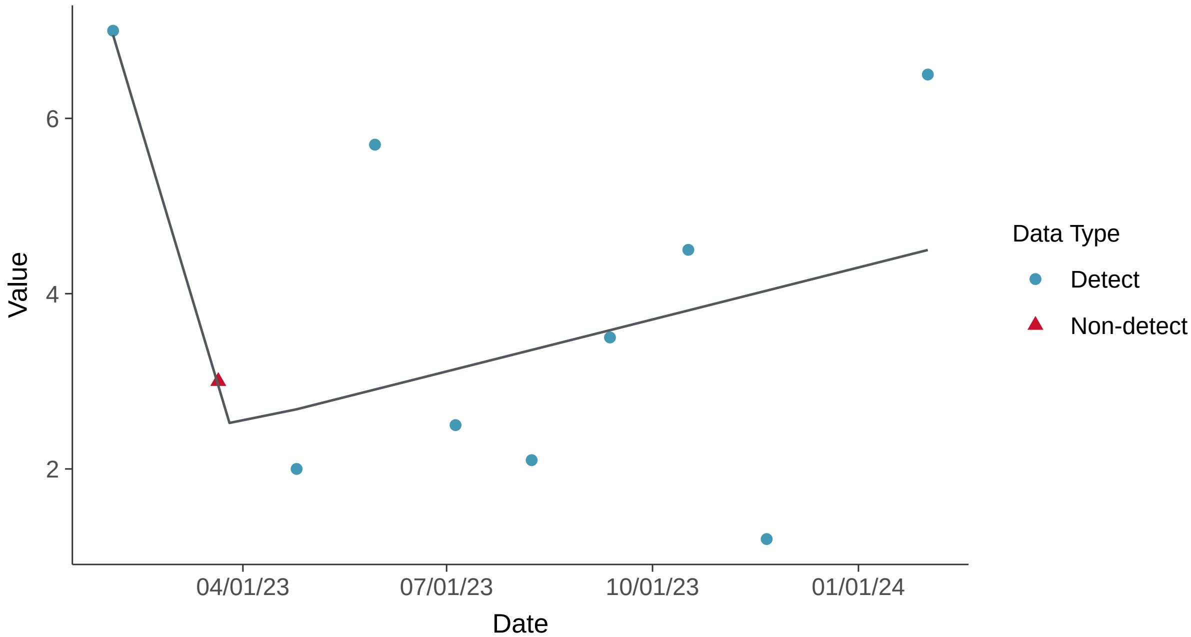
Trend Regression: Lognormal MLE

Total Suspended Solids, MW-16A (mg/L)



Trend Regression: Piecewise Linear-Linear

Total Suspended Solids, MW-16A (mg/L)

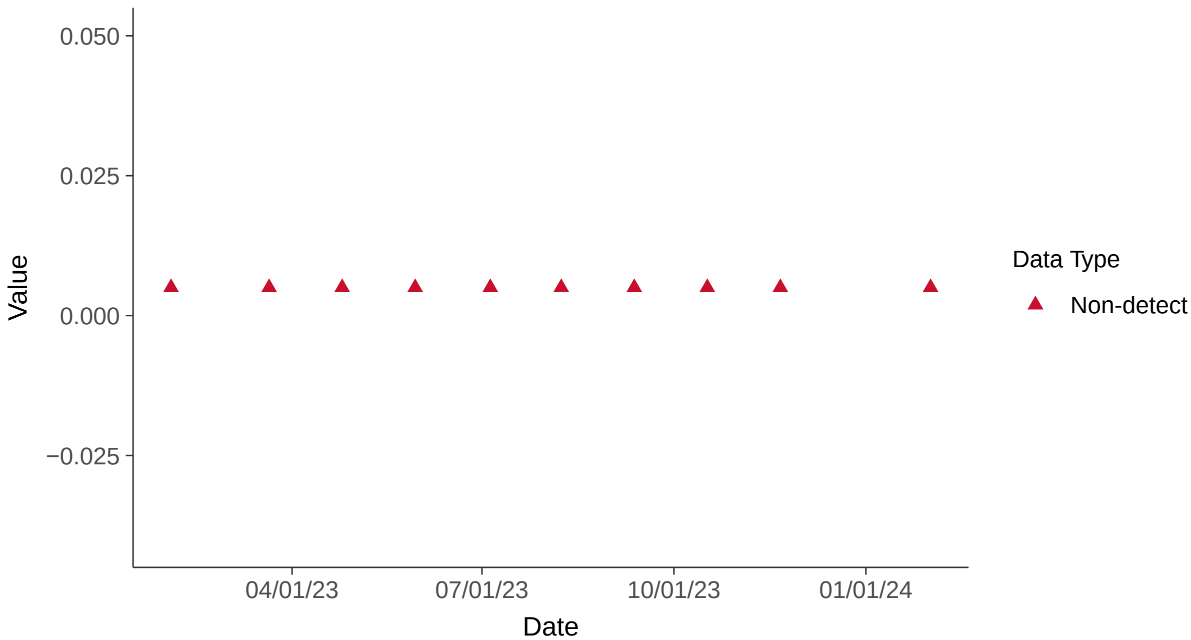


Part 115: Copper, MW-16A

ID: 16A_5_37

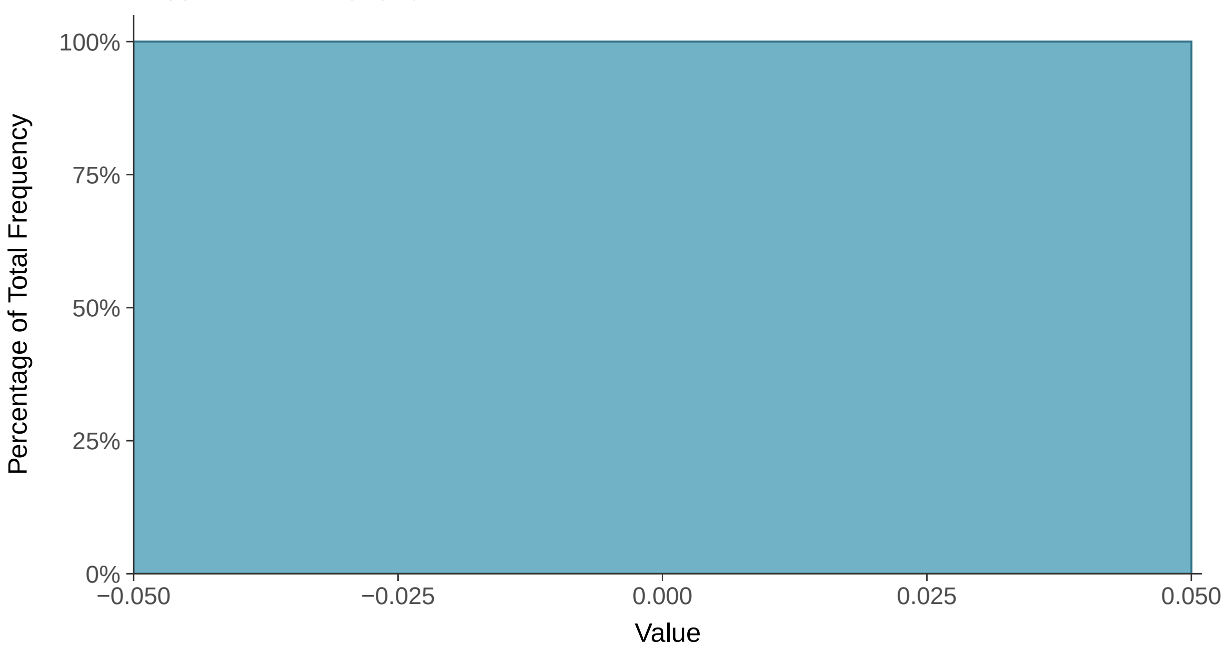
Scatter Plot

Copper, MW-16A (mg/L)



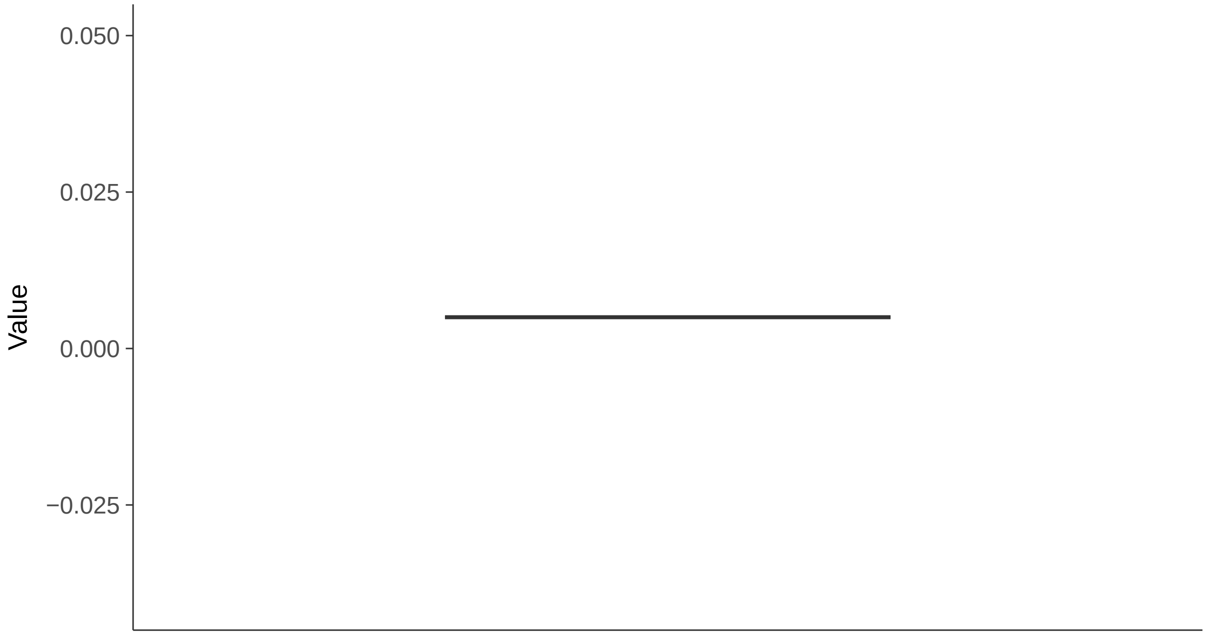
Histogram

Copper, MW-16A (mg/L)



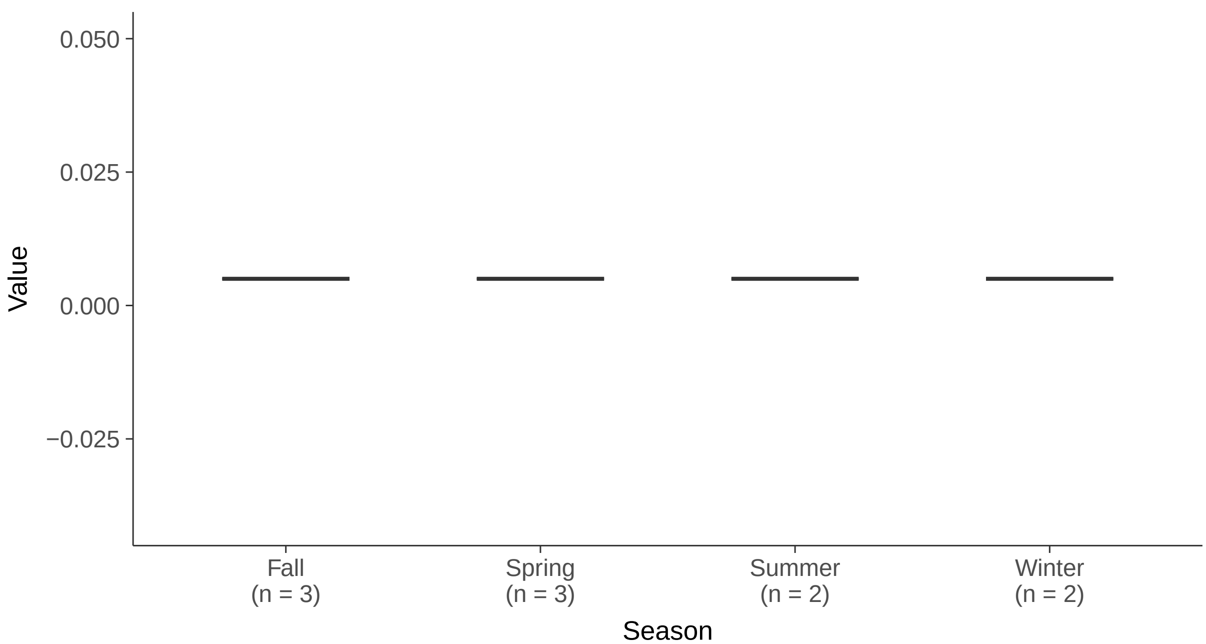
Boxplot

Copper, MW-16A (mg/L)



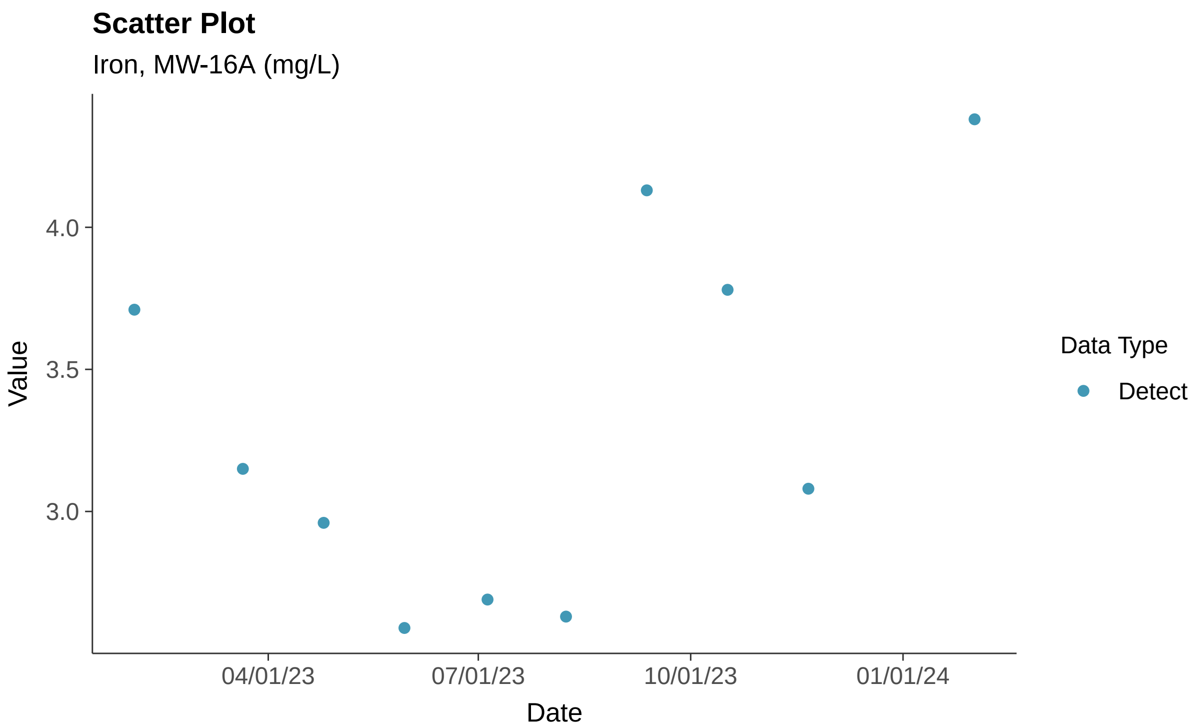
Boxplot by Season

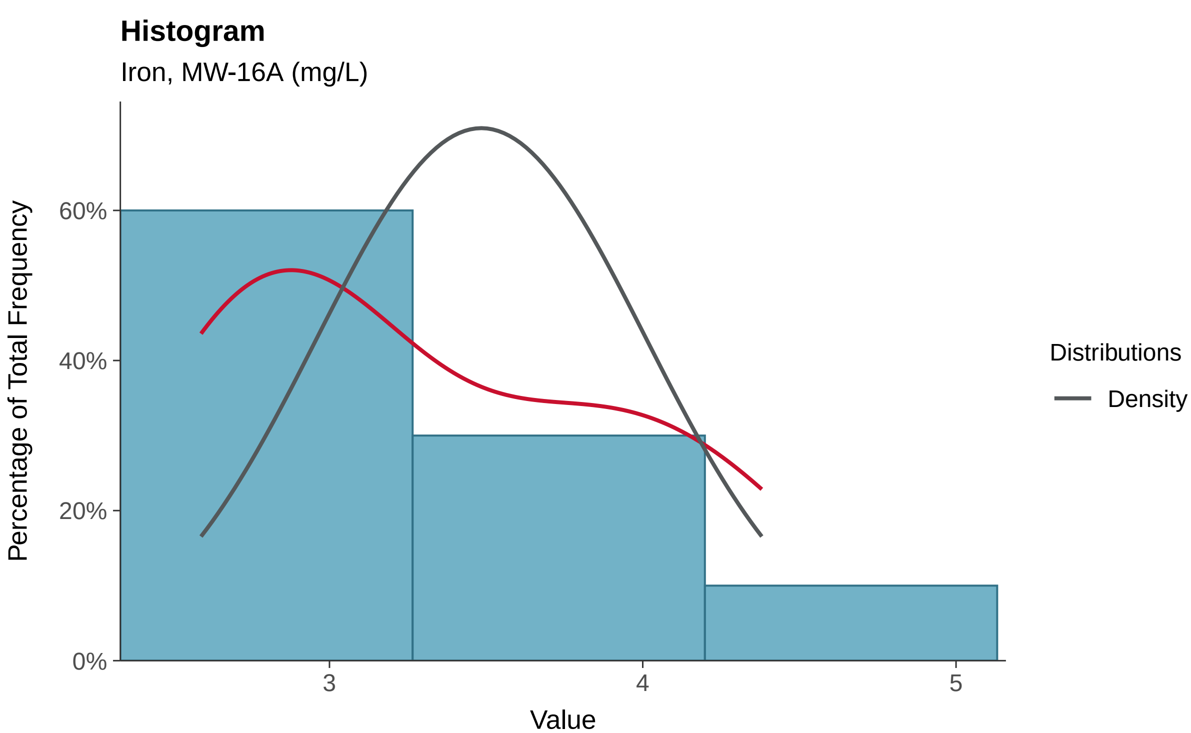
Copper, MW-16A (mg/L)



Part 115: Iron, MW-16A

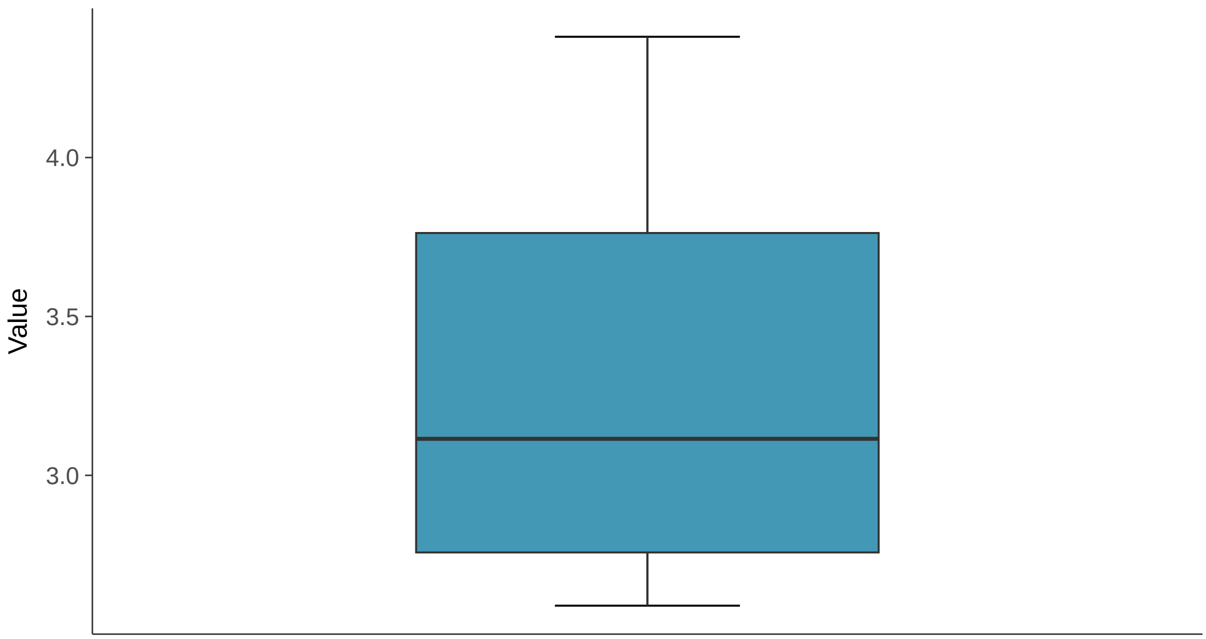
ID: 16A_5_38





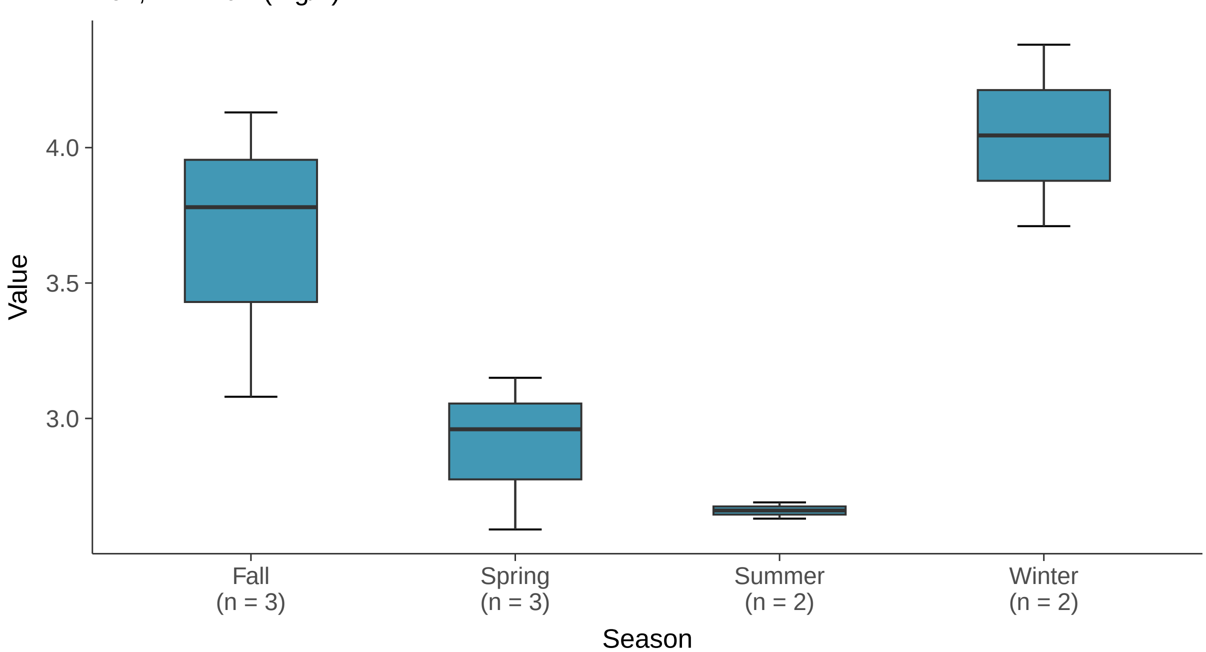
Boxplot

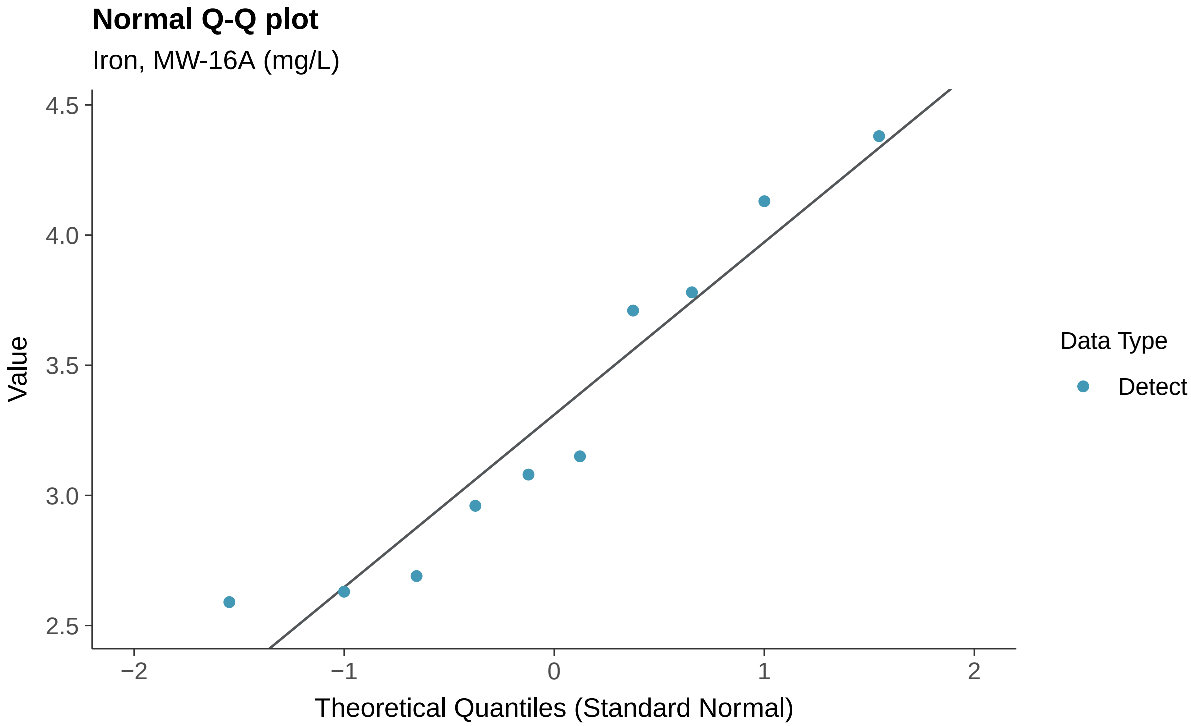
Iron, MW-16A (mg/L)

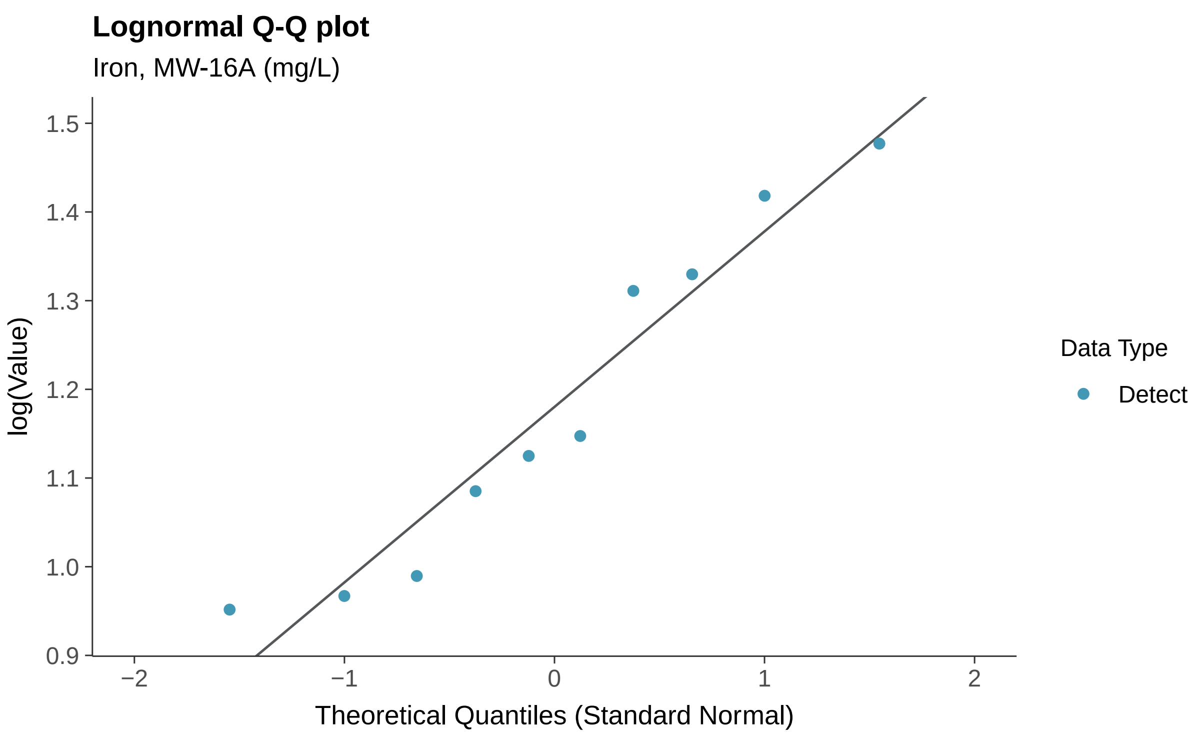


Boxplot by Season

Iron, MW-16A (mg/L)

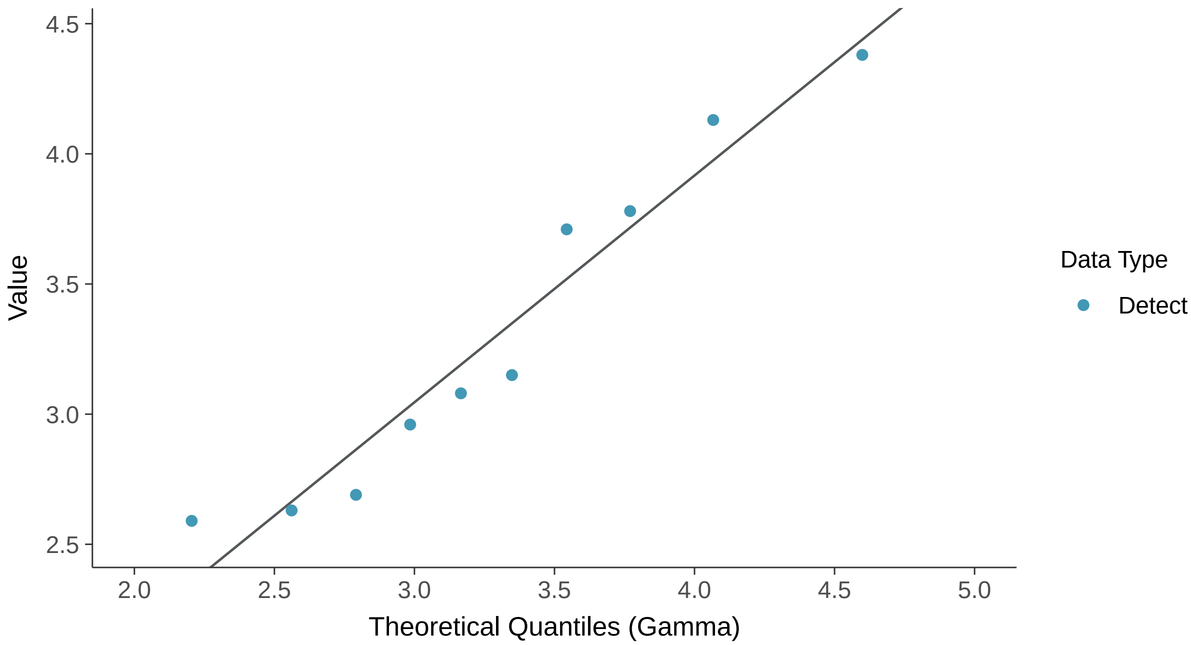



Normal Q-Q plot
Iron, MW-16A (mg/L)
Value
4.5
4.0
3.5
3.0
2.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Iron, MW-16A (mg/L)
log(Value)
1.5
1.4
1.3
1.2
1.1
1.0
0.9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

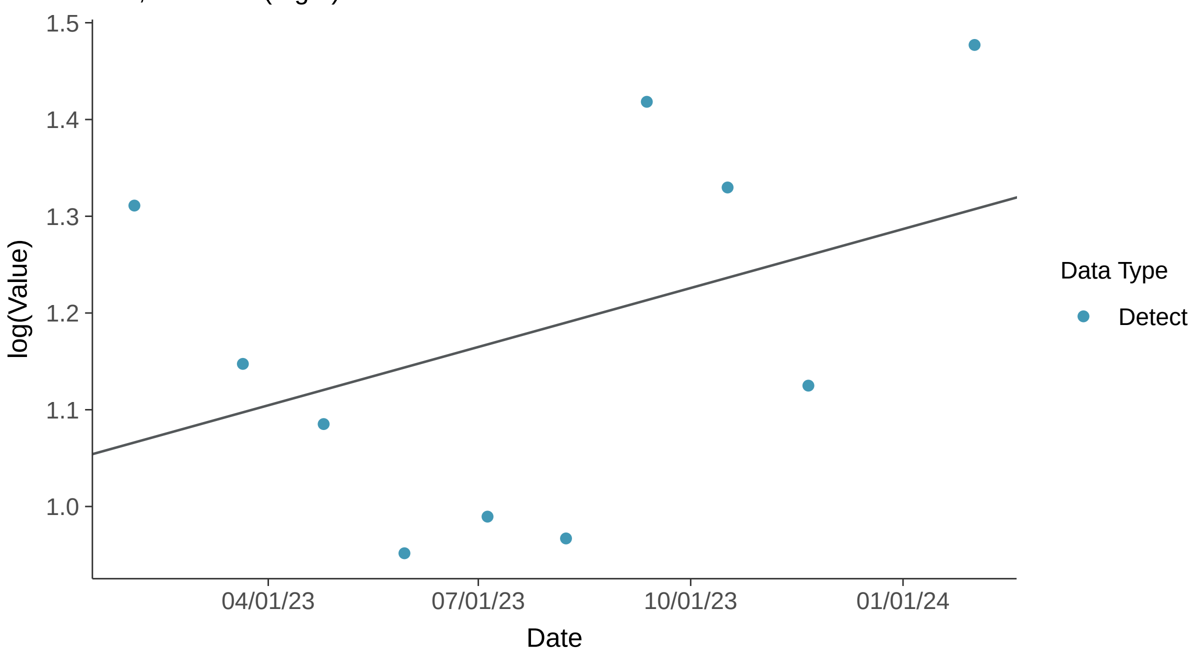
Gamma Q-Q plot

Iron, MW-16A (mg/L)



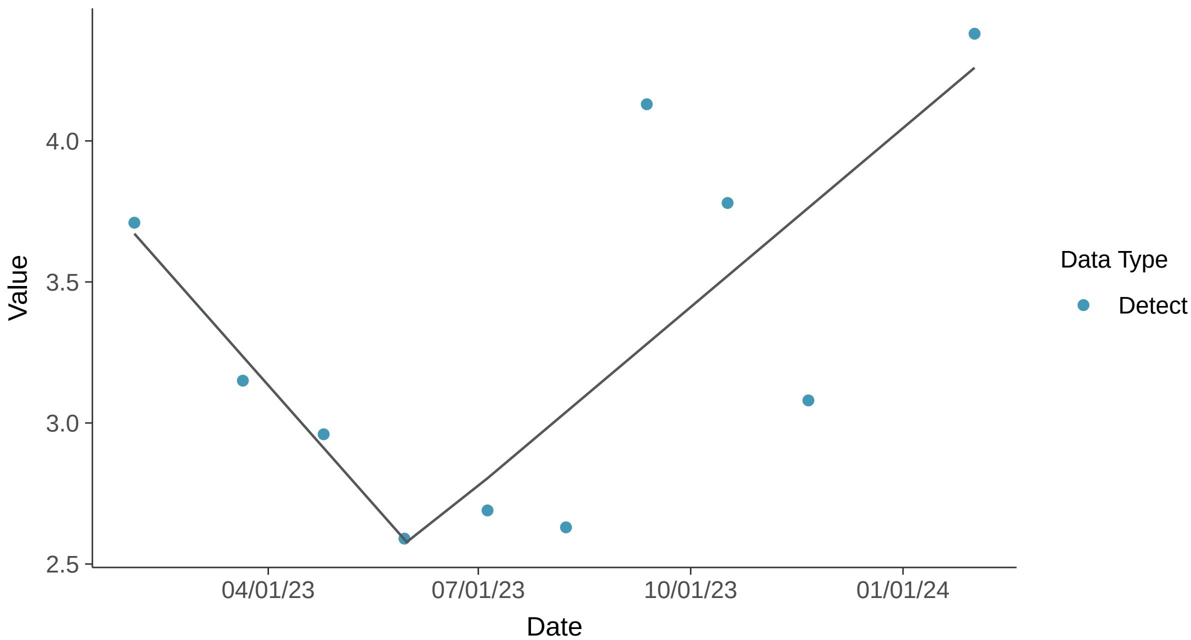
Trend Regression: Lognormal MLE

Iron, MW-16A (mg/L)



Trend Regression: Piecewise Linear-Linear

Iron, MW-16A (mg/L)

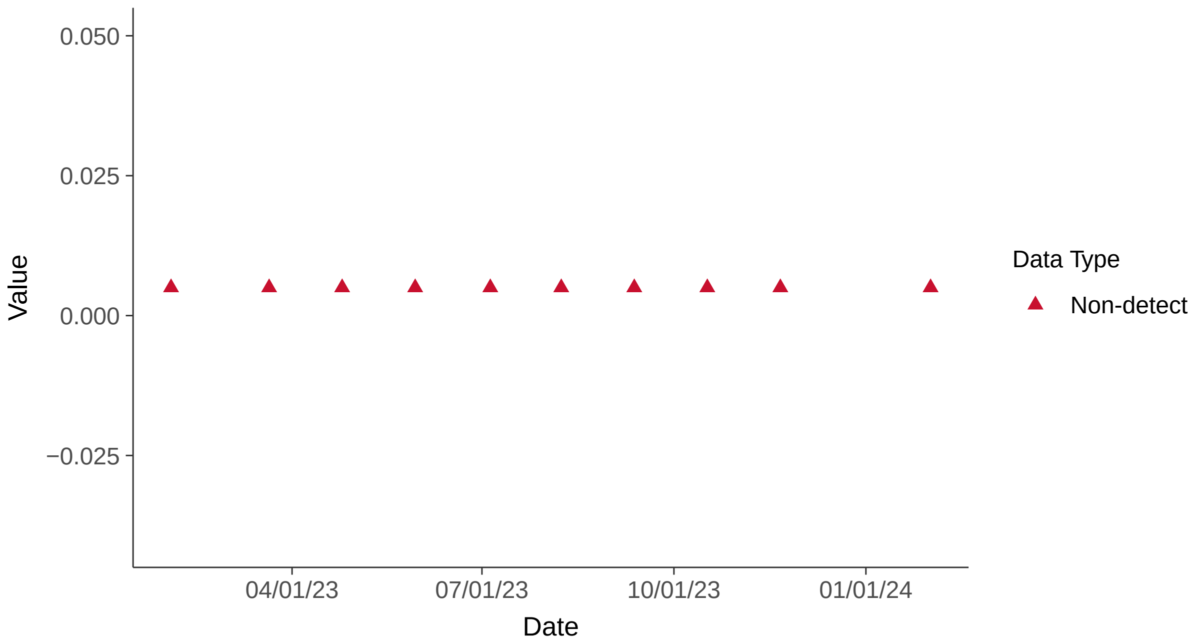


Part 115: Nickel, MW-16A

ID: 16A_5_39

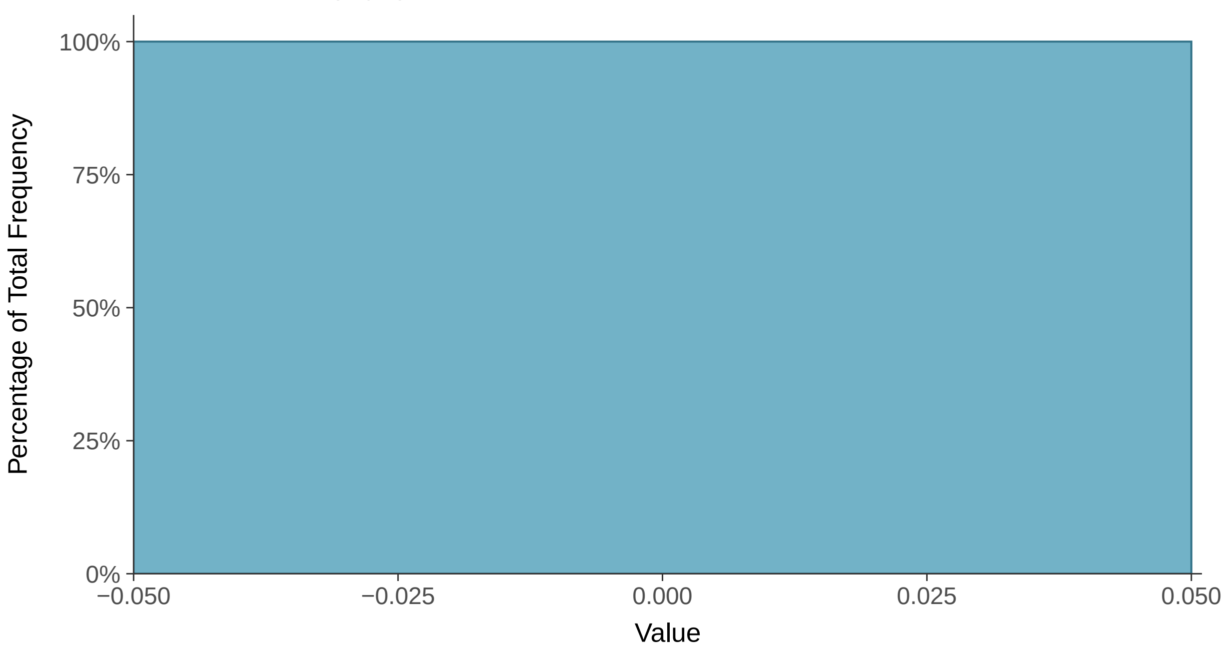
Scatter Plot

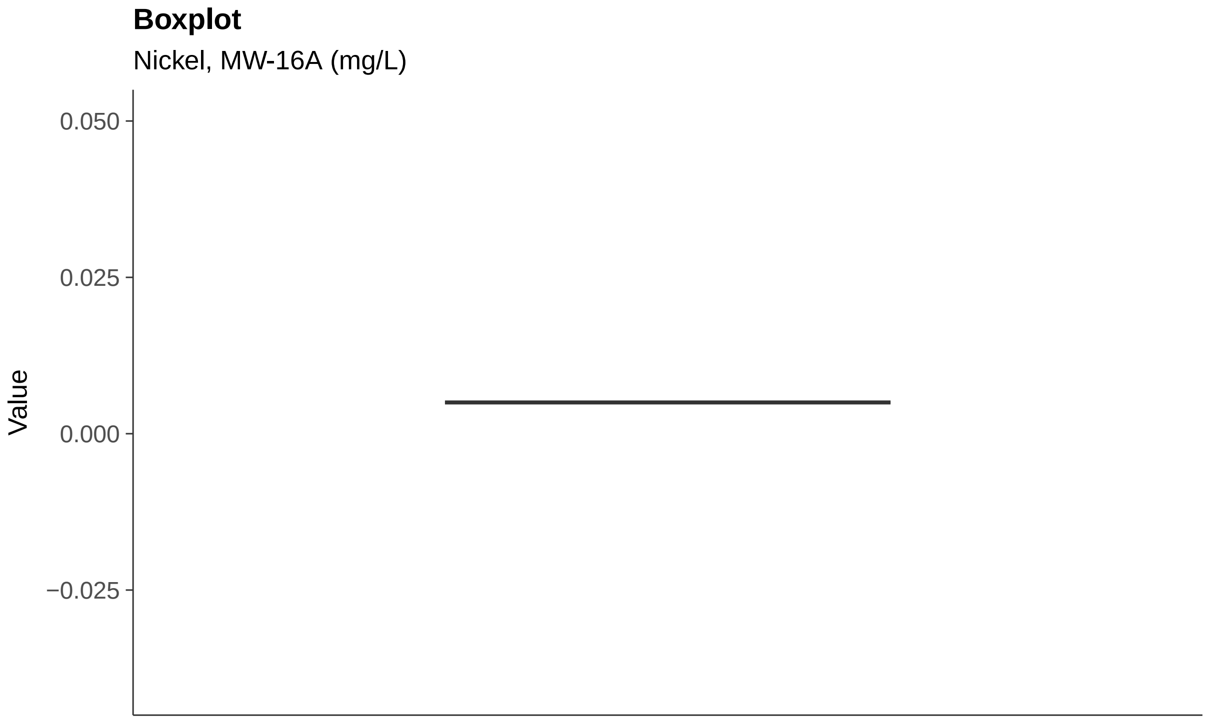
Nickel, MW-16A (mg/L)

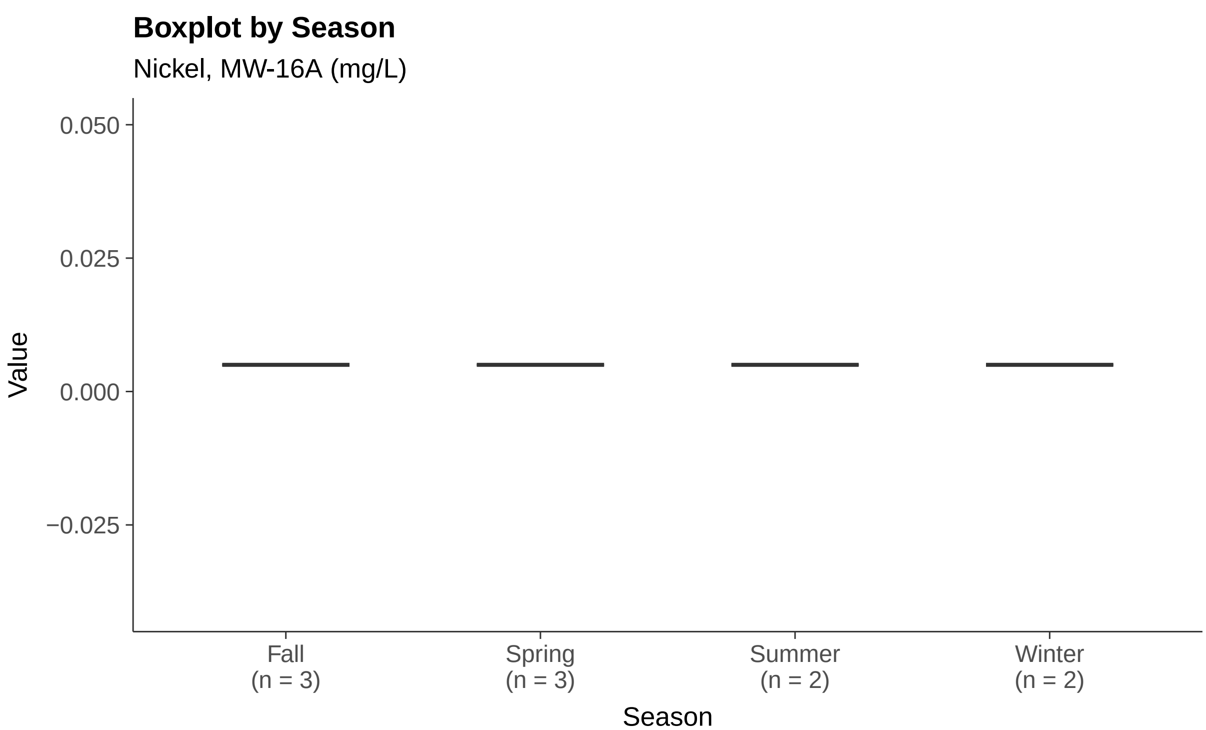


Histogram

Nickel, MW-16A (mg/L)




Boxplot
Nickel, MW-16A (mg/L)
Value
0.050
0.025
0.000
−0.025

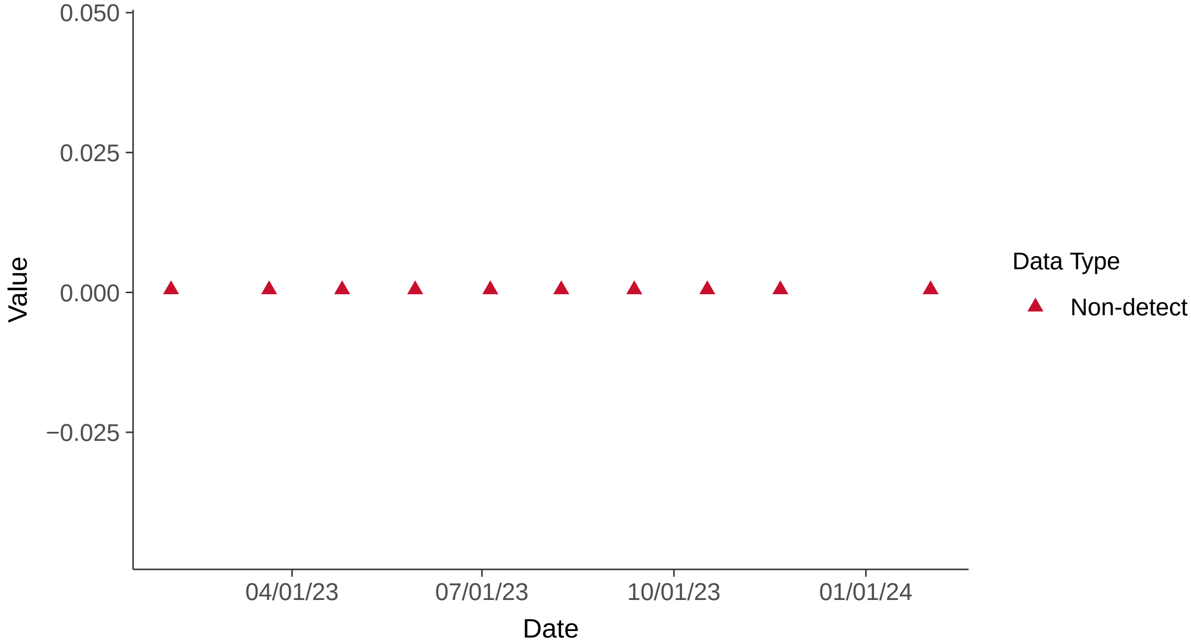

Boxplot by Season
Nickel, MW-16A (mg/L)
Value
0.050
0.025
0.000
−0.025
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season

Part 115: Silver, MW-16A

ID: 16A_5_40

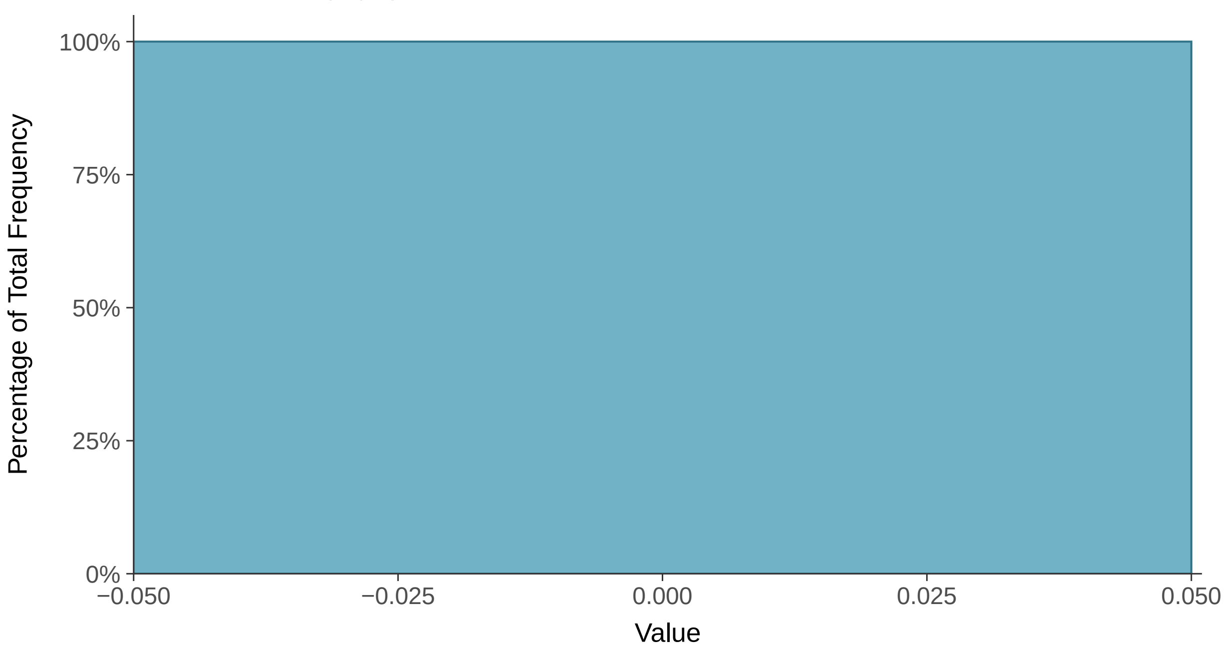
Scatter Plot

Silver, MW-16A (mg/L)



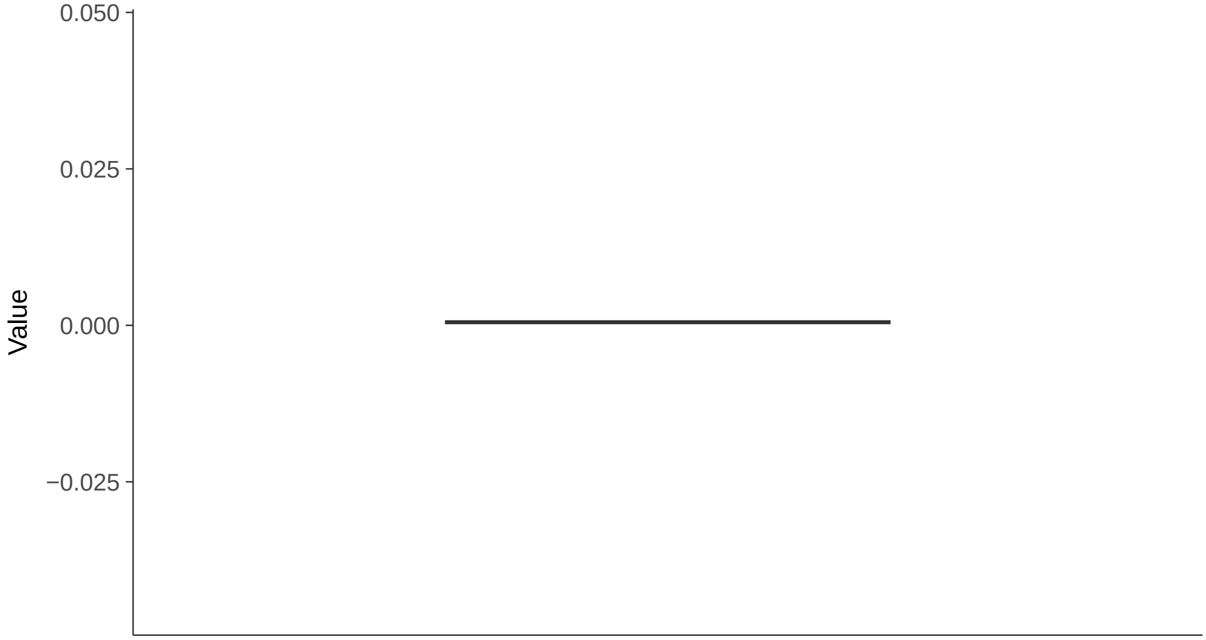
Histogram

Silver, MW-16A (mg/L)



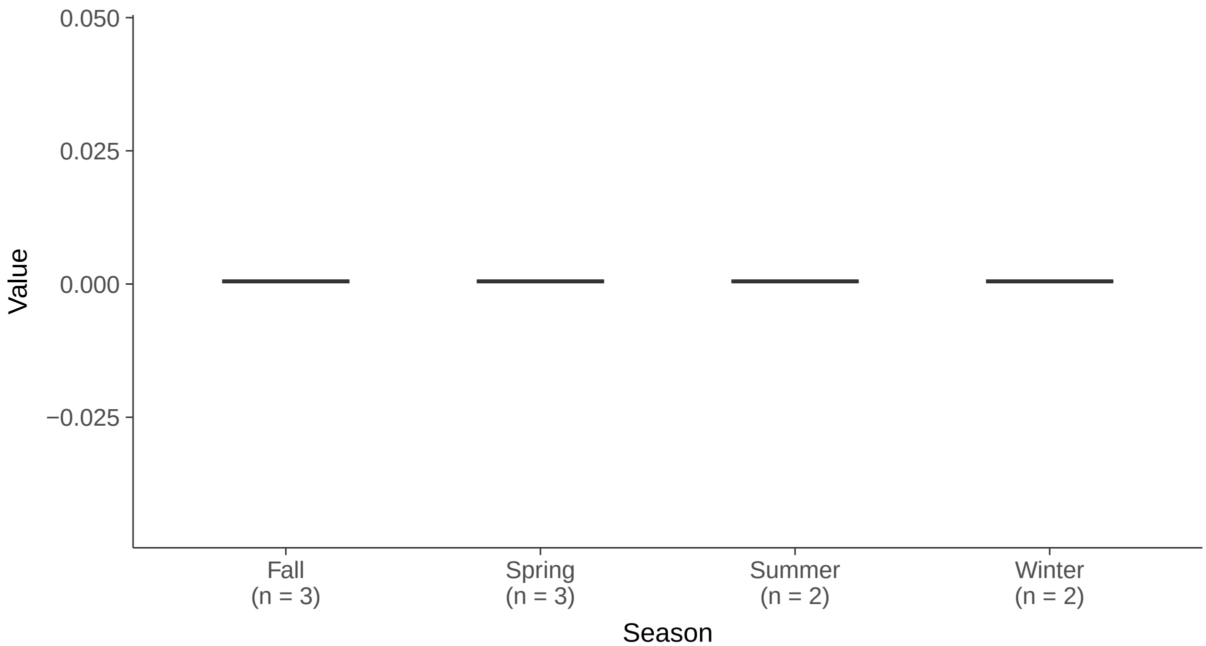
Boxplot

Silver, MW-16A (mg/L)



Boxplot by Season

Silver, MW-16A (mg/L)

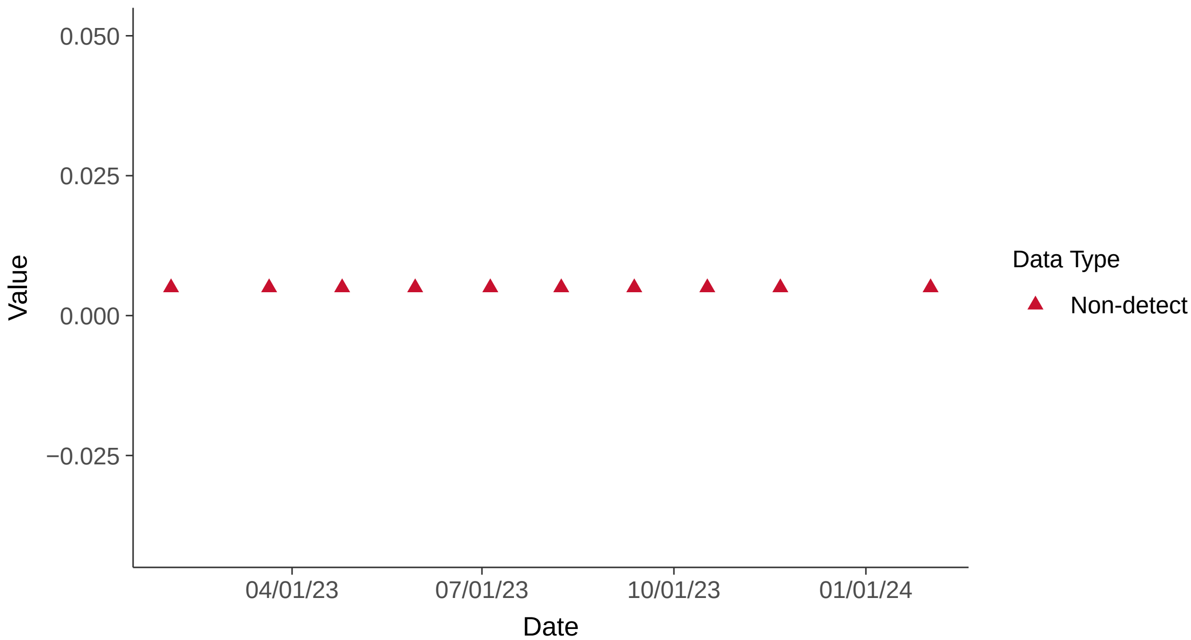


Part 115: Vanadium, MW-16A

ID: 16A_5_41

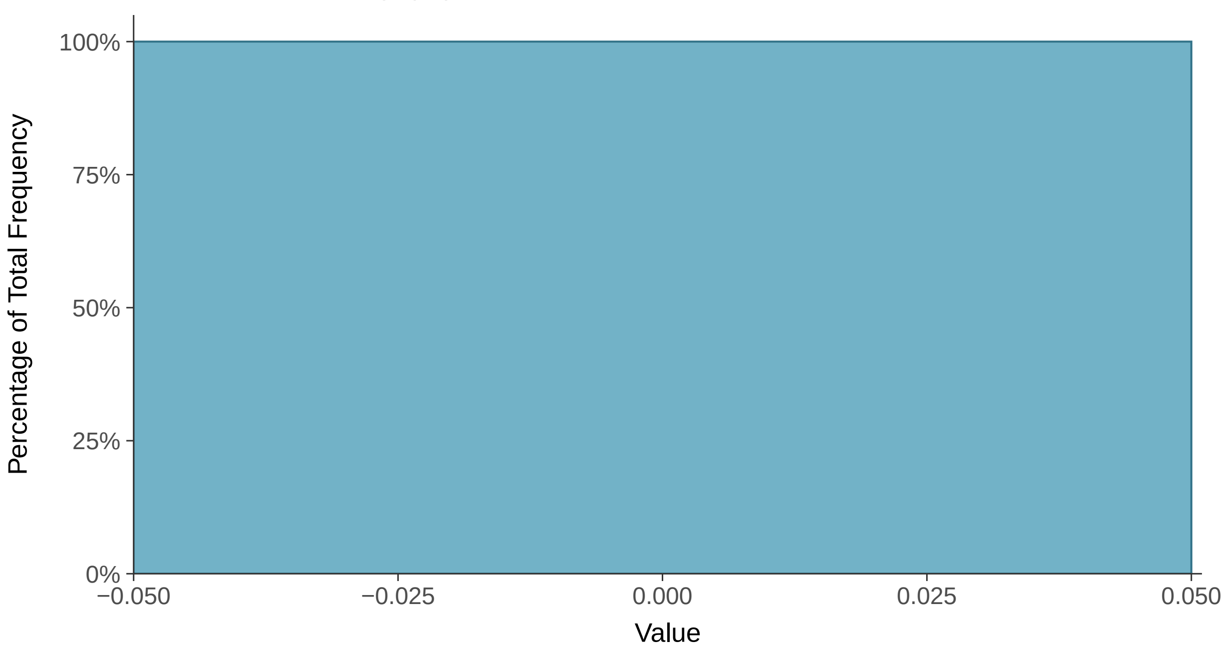
Scatter Plot

Vanadium, MW-16A (mg/L)



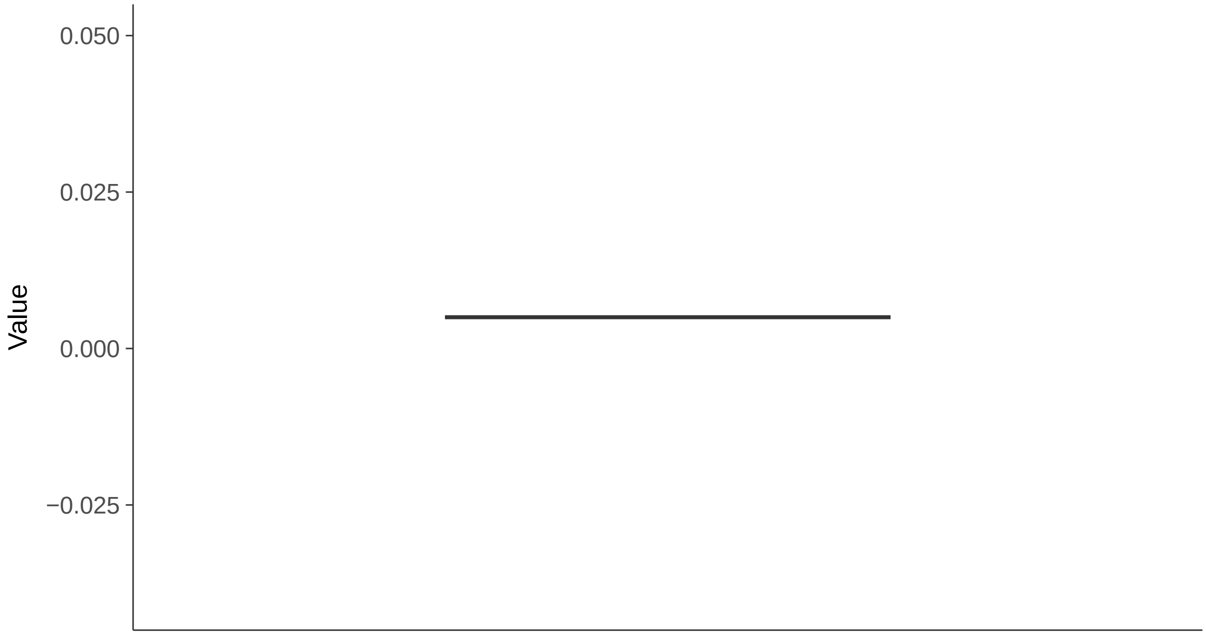
Histogram

Vanadium, MW-16A (mg/L)



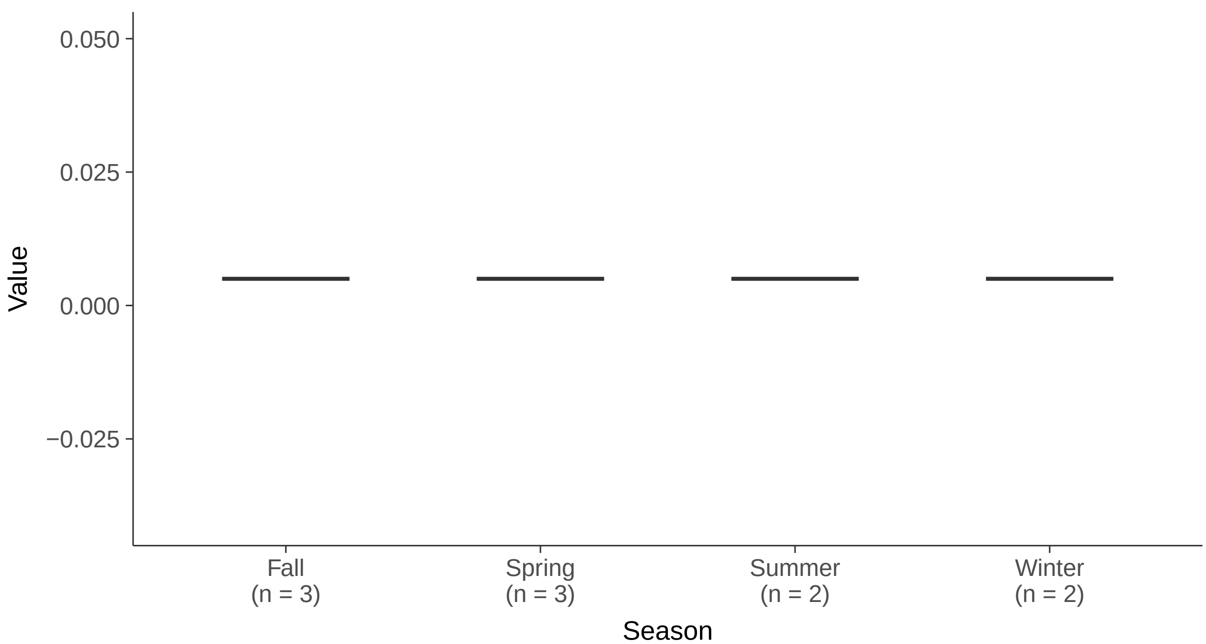
Boxplot

Vanadium, MW-16A (mg/L)



Boxplot by Season

Vanadium, MW-16A (mg/L)

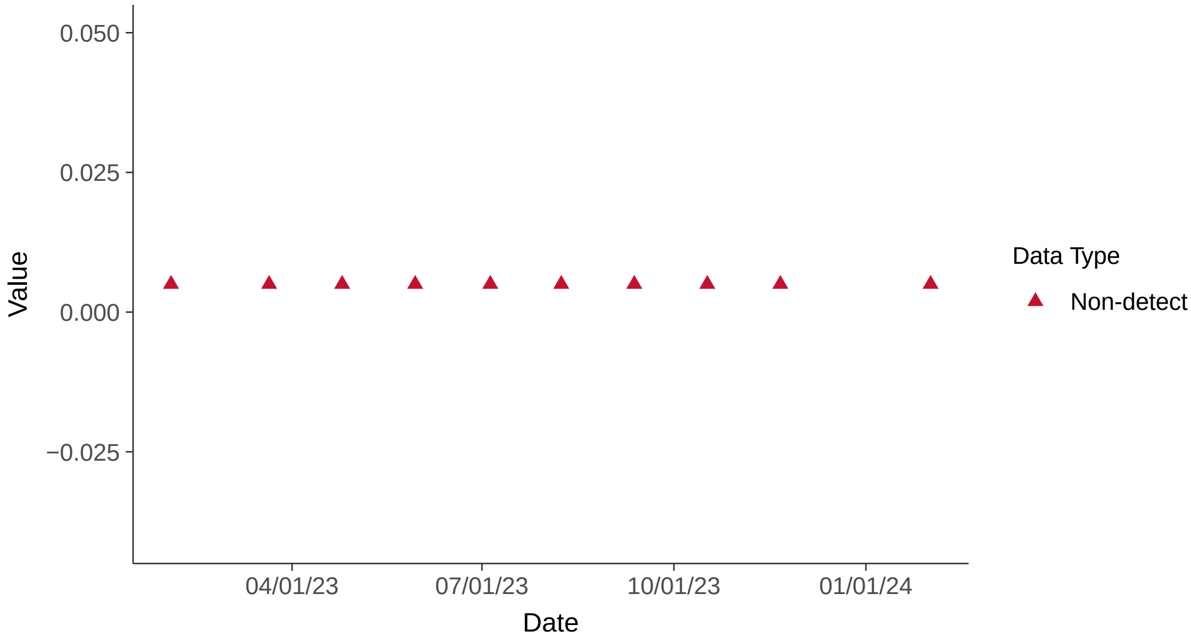


Part 115: Zinc, MW-16A

ID: 16A_5_42

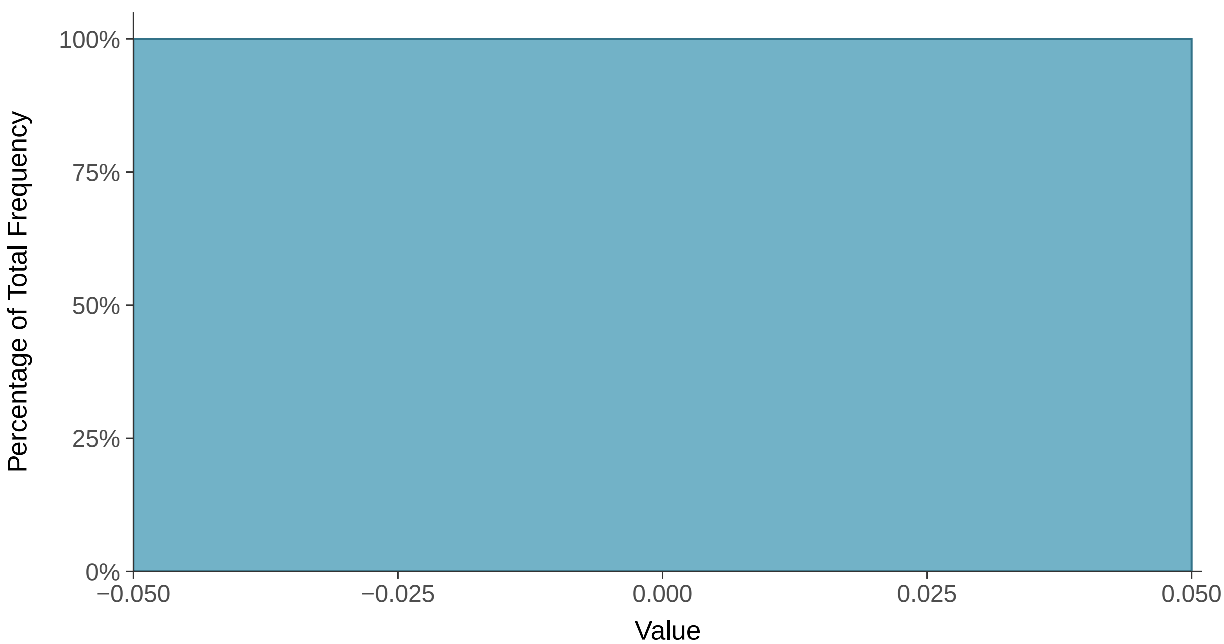
Scatter Plot

Zinc, MW-16A (mg/L)



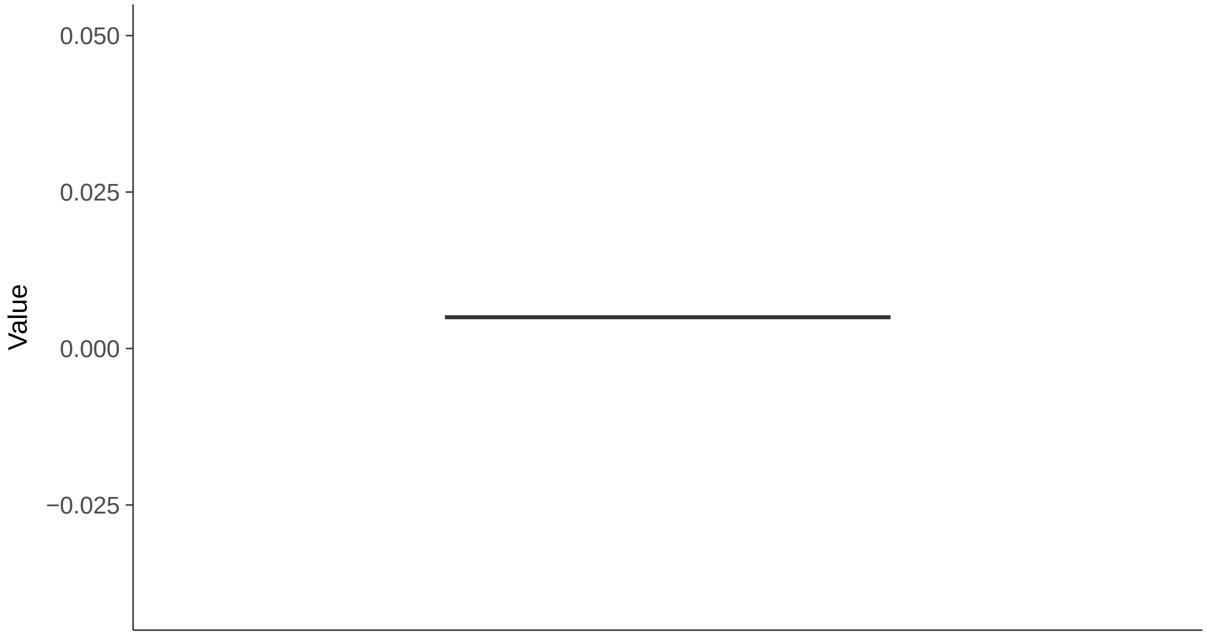
Histogram

Zinc, MW-16A (mg/L)



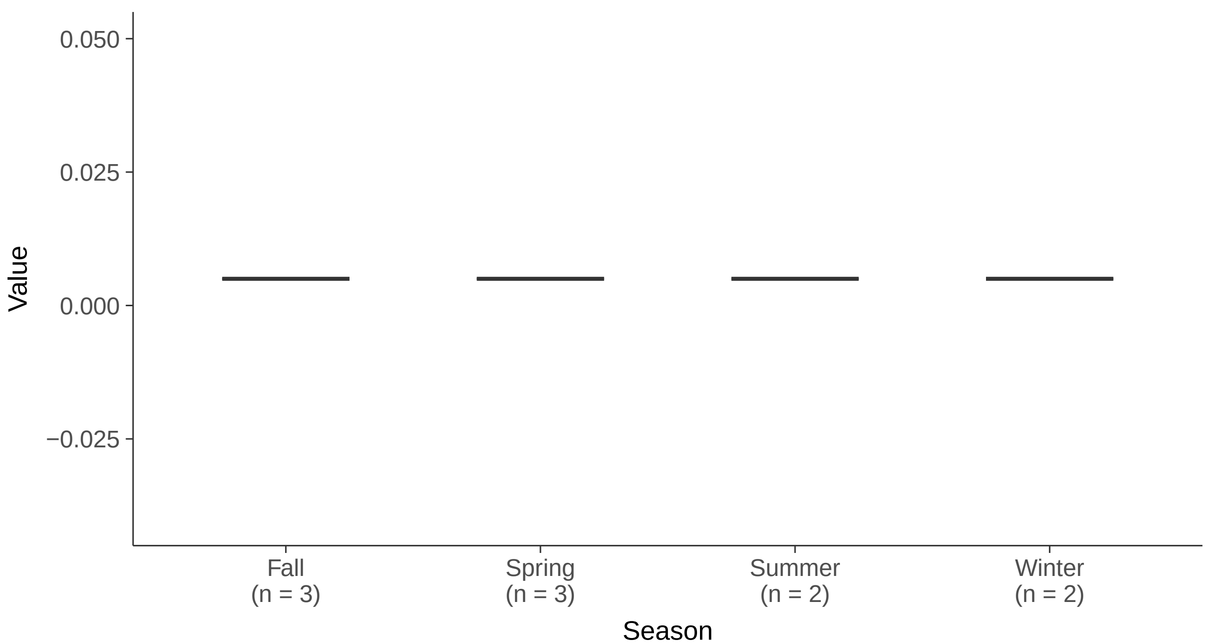
Boxplot

Zinc, MW-16A (mg/L)



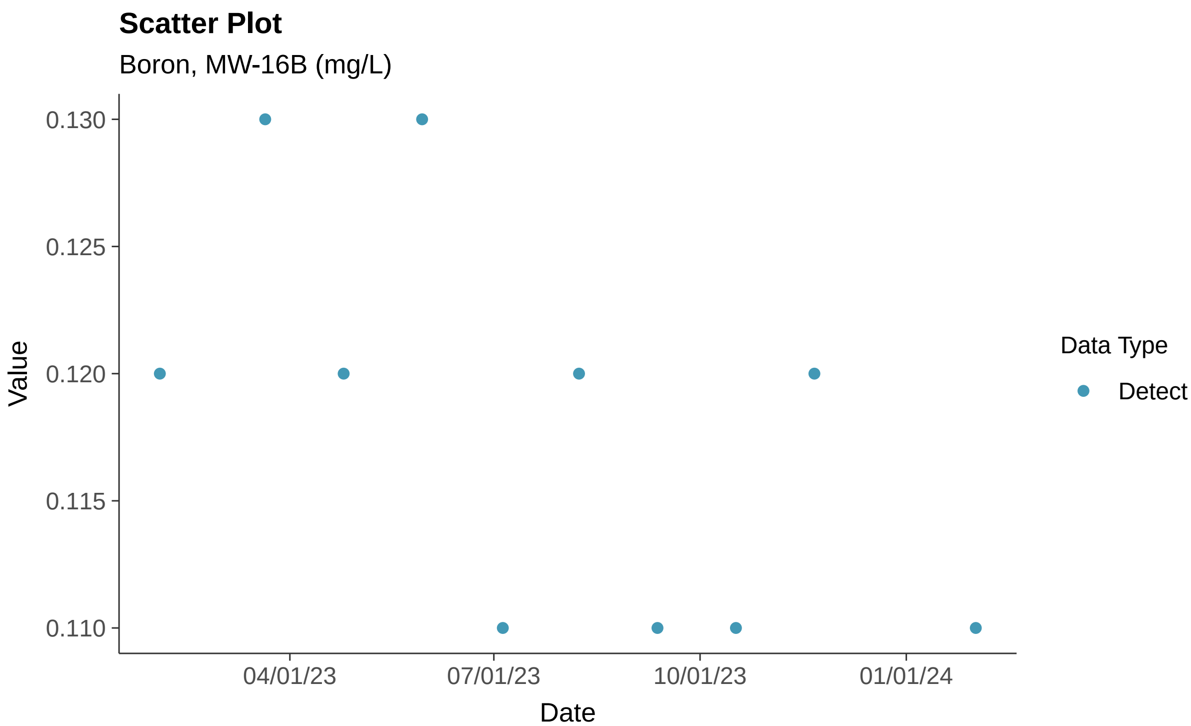
Boxplot by Season

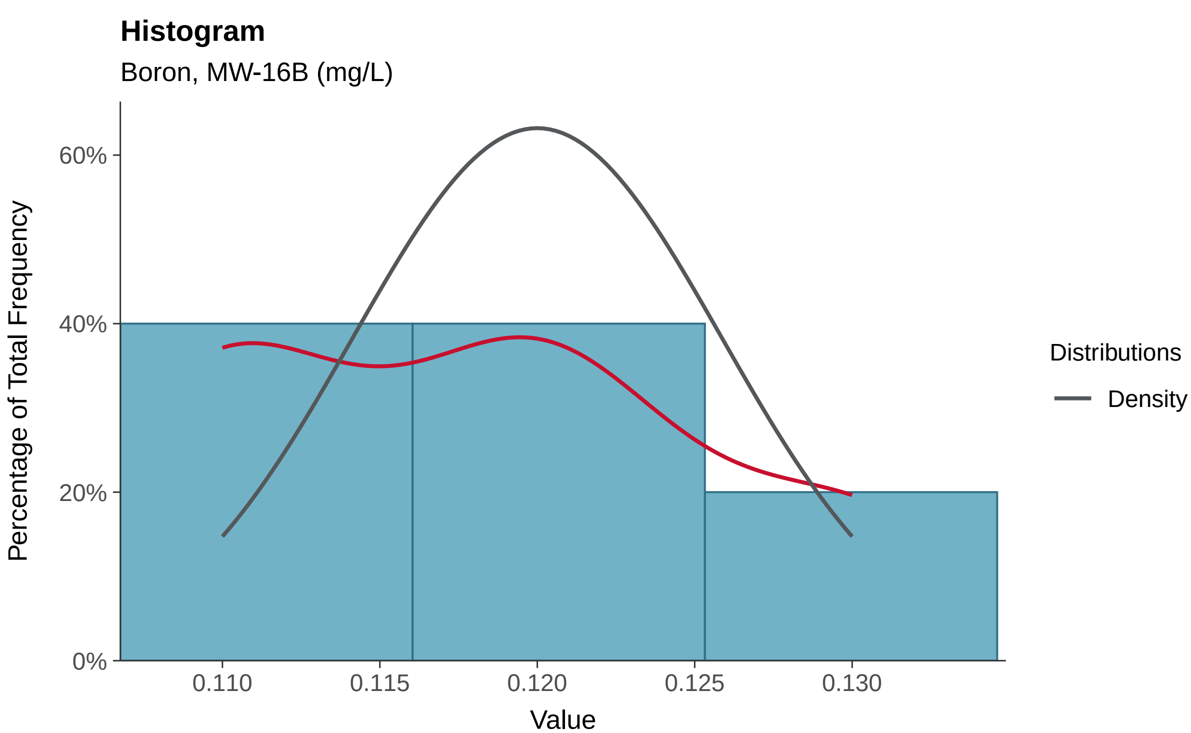
Zinc, MW-16A (mg/L)



Appendix III: Boron, MW-16B

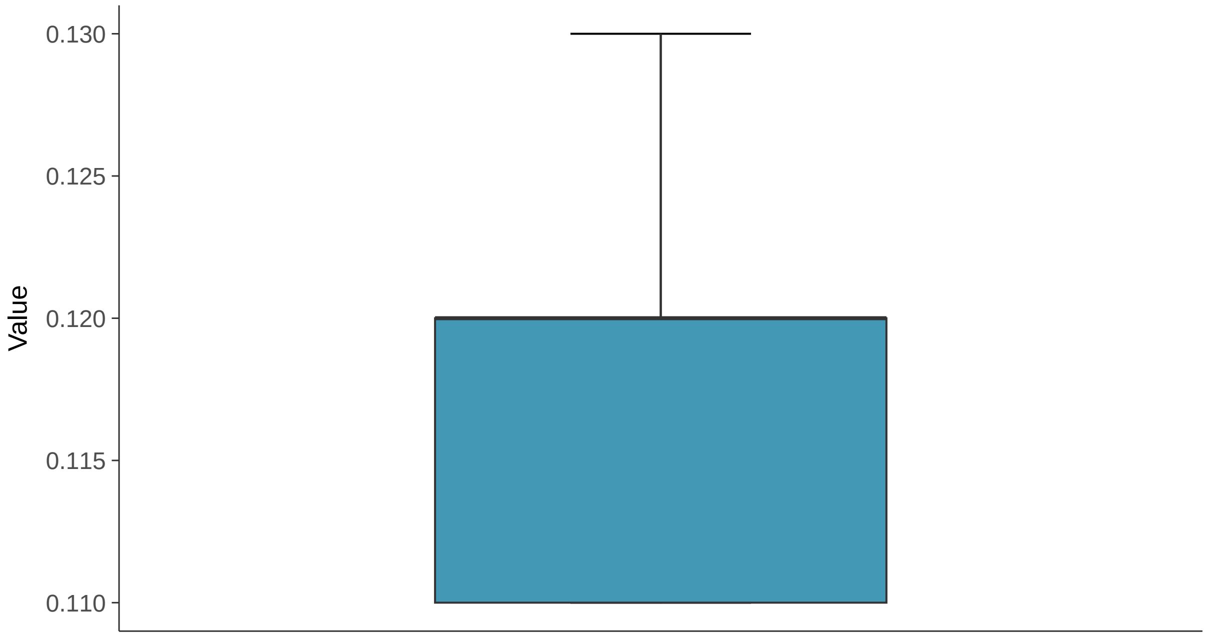
ID: 16B_1_01





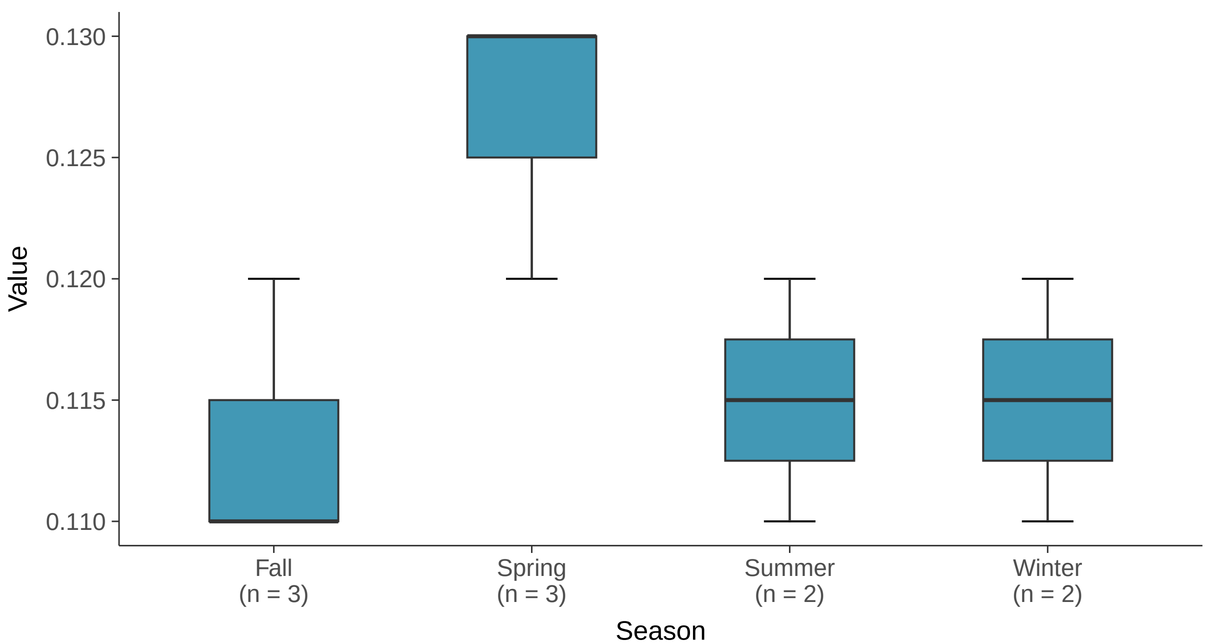
Boxplot

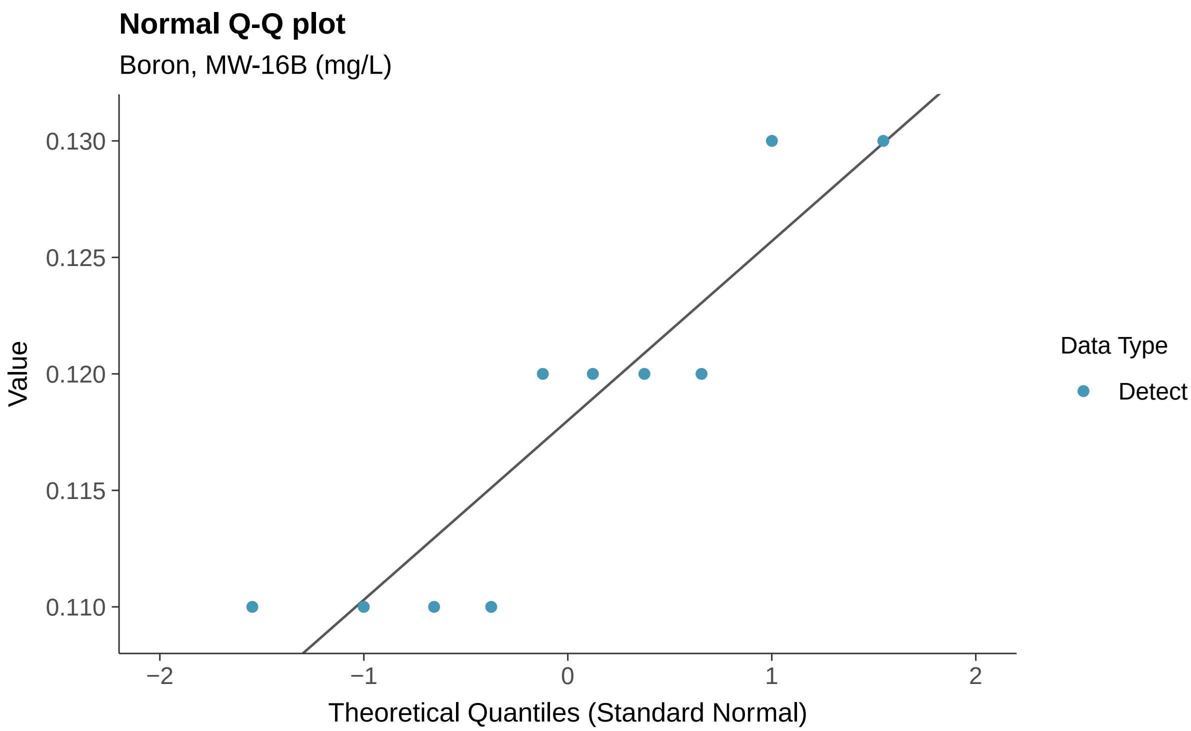
Boron, MW-16B (mg/L)

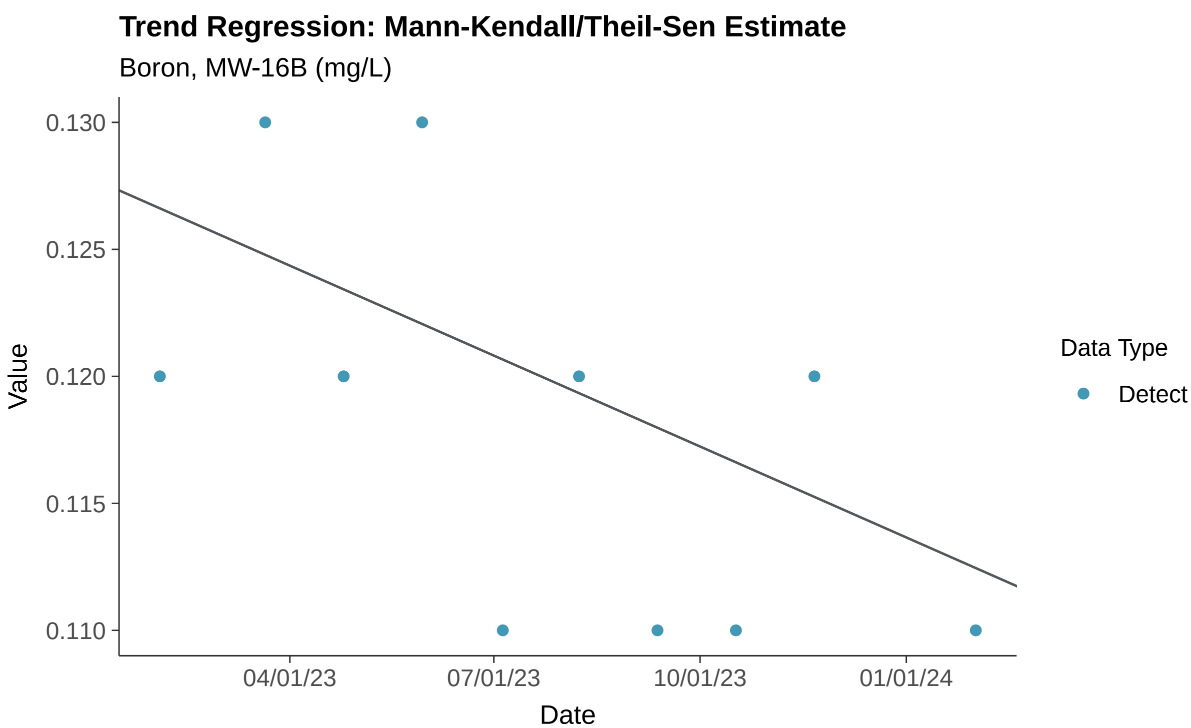


Boxplot by Season

Boron, MW-16B (mg/L)

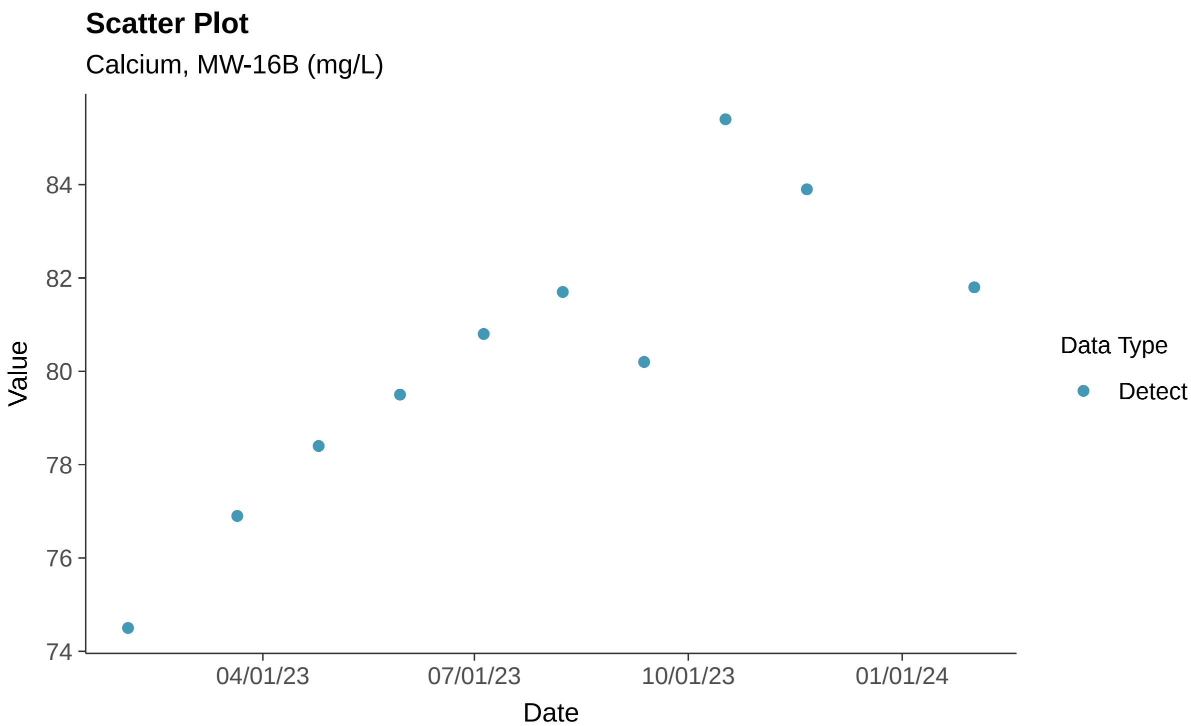


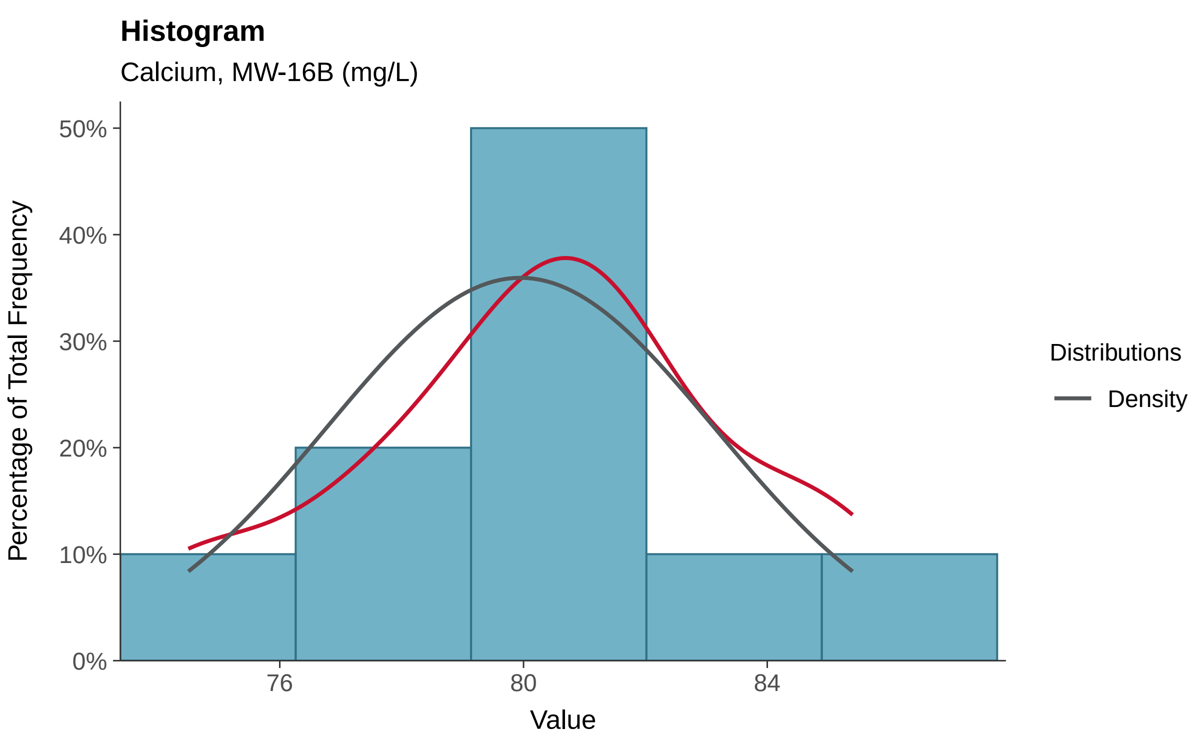

Normal Q-Q plot
Boron, MW-16B (mg/L)
Value
0.130
0.125
0.120
0.115
0.110
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Boron, MW-16B (mg/L)
Value
0.130
0.125
0.120
0.115
0.110
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix III: Calcium, MW-16B

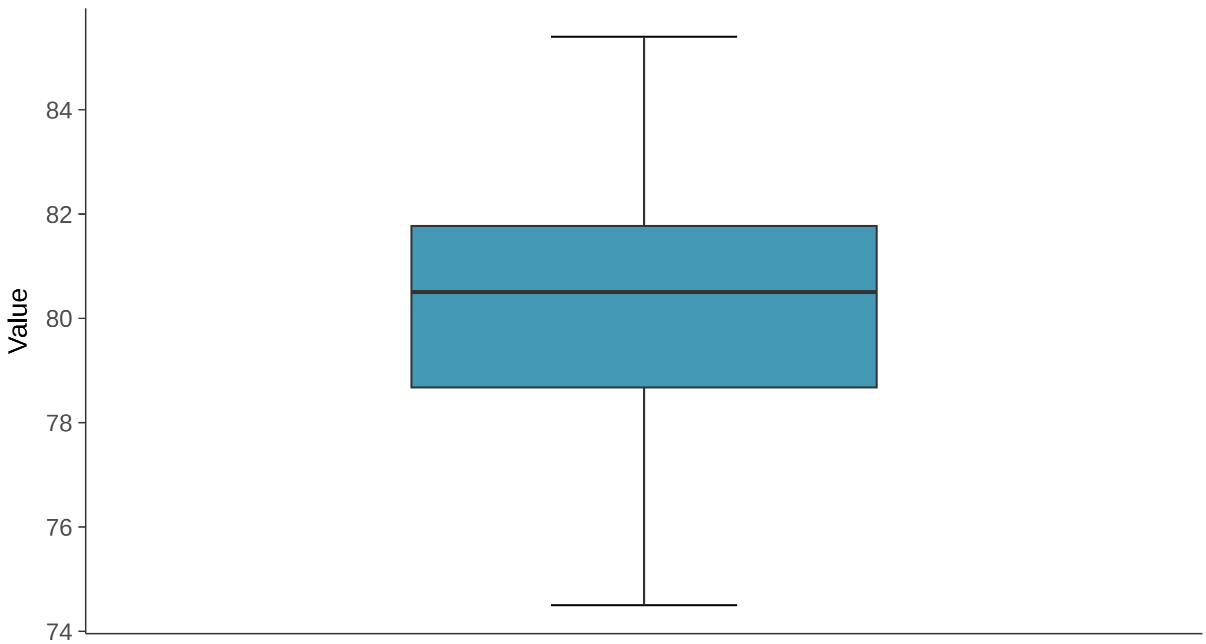
ID: 16B_1_02





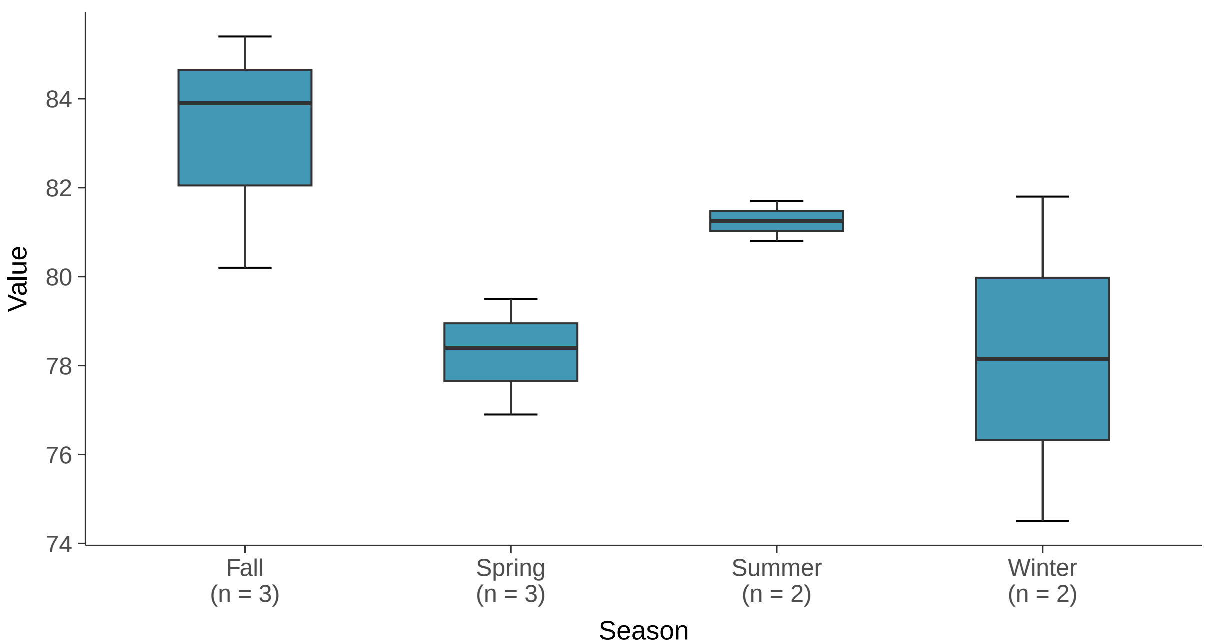
Boxplot

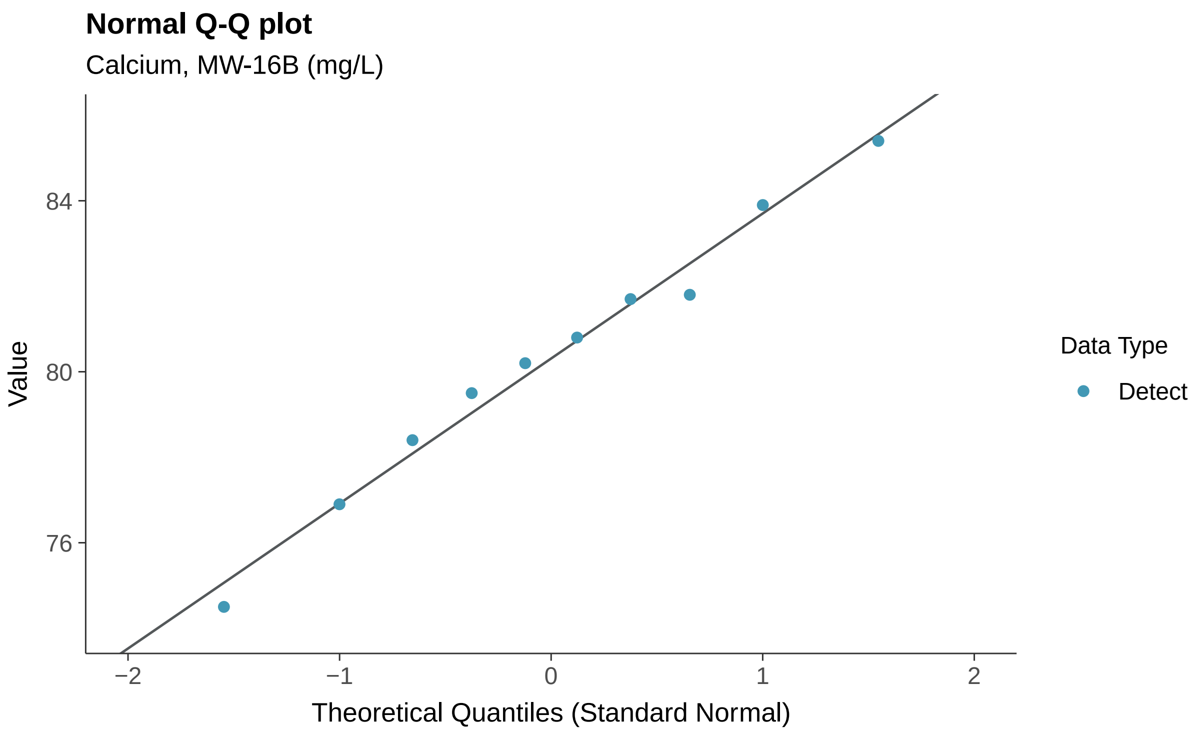
Calcium, MW-16B (mg/L)

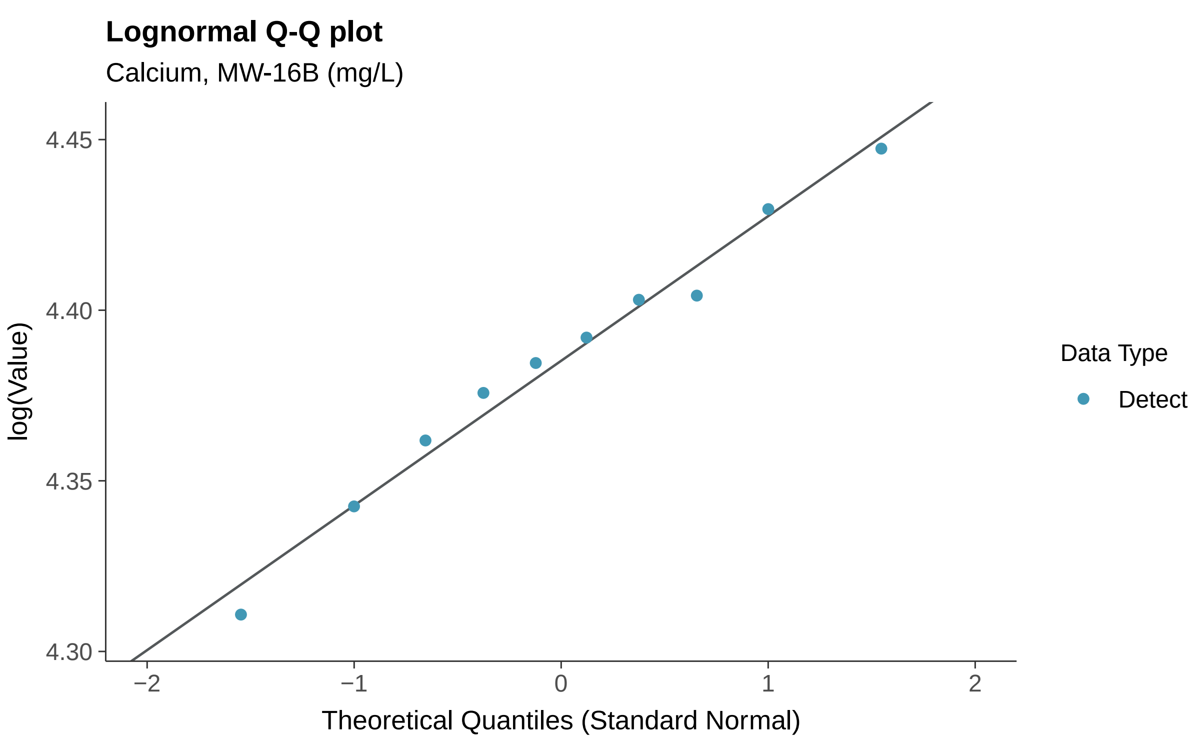


Boxplot by Season

Calcium, MW-16B (mg/L)

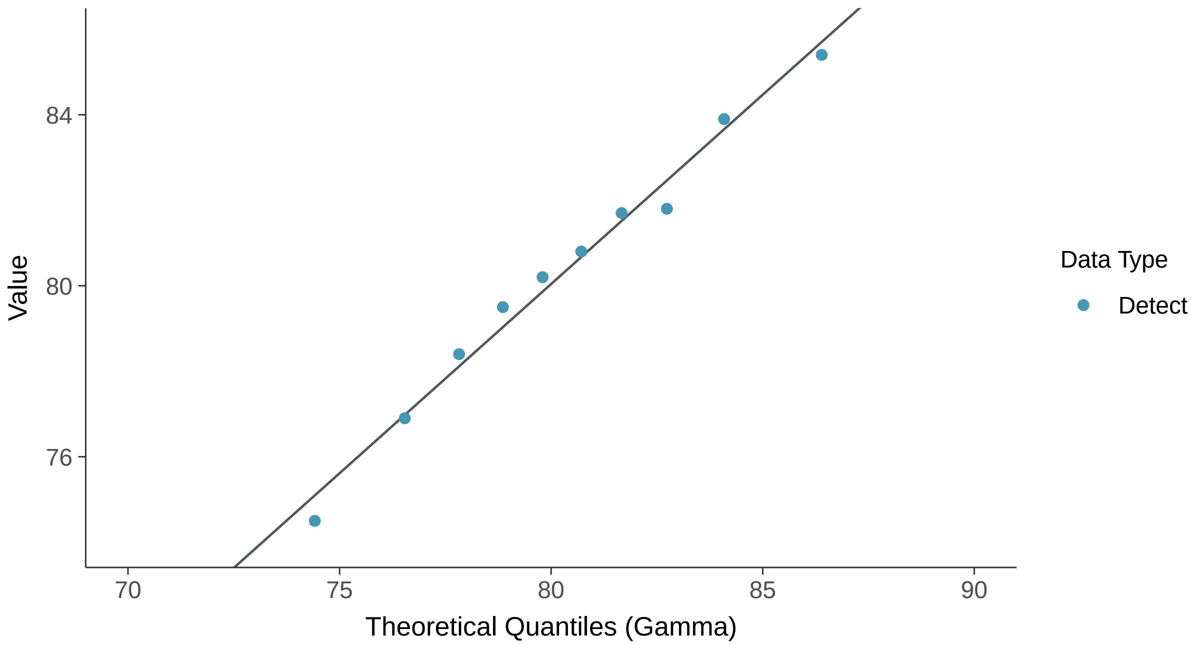



Normal Q-Q plot
Calcium, MW-16B (mg/L)
Value
84
80
76
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-16B (mg/L)
log(Value)
4.45
4.40
4.35
4.30
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

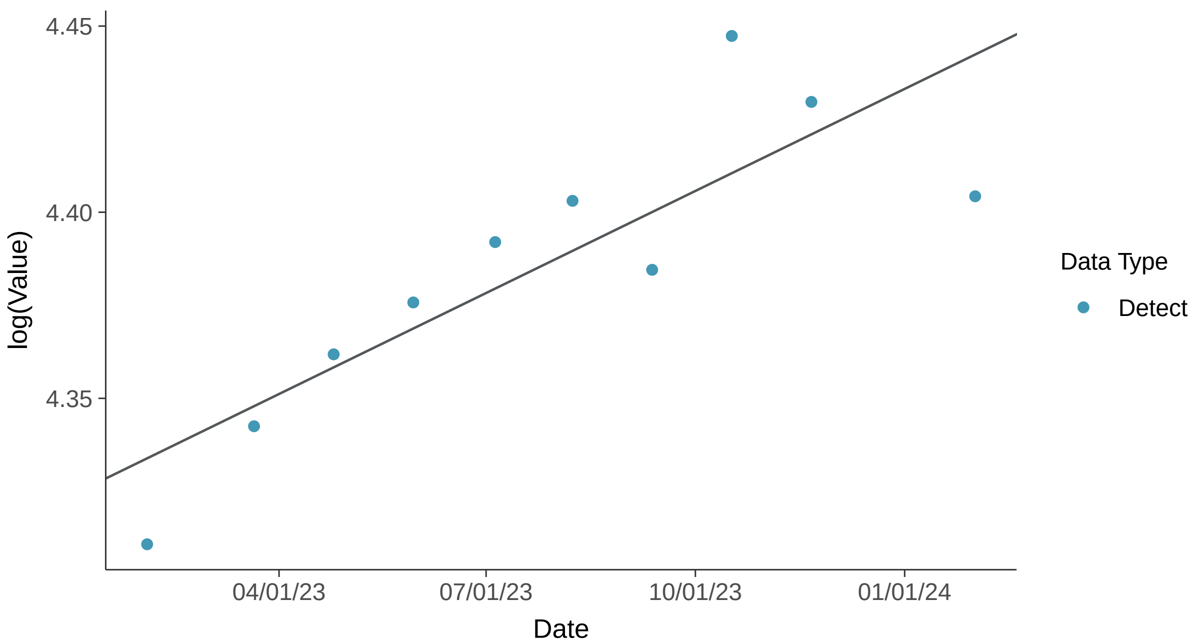
Gamma Q-Q plot

Calcium, MW-16B (mg/L)



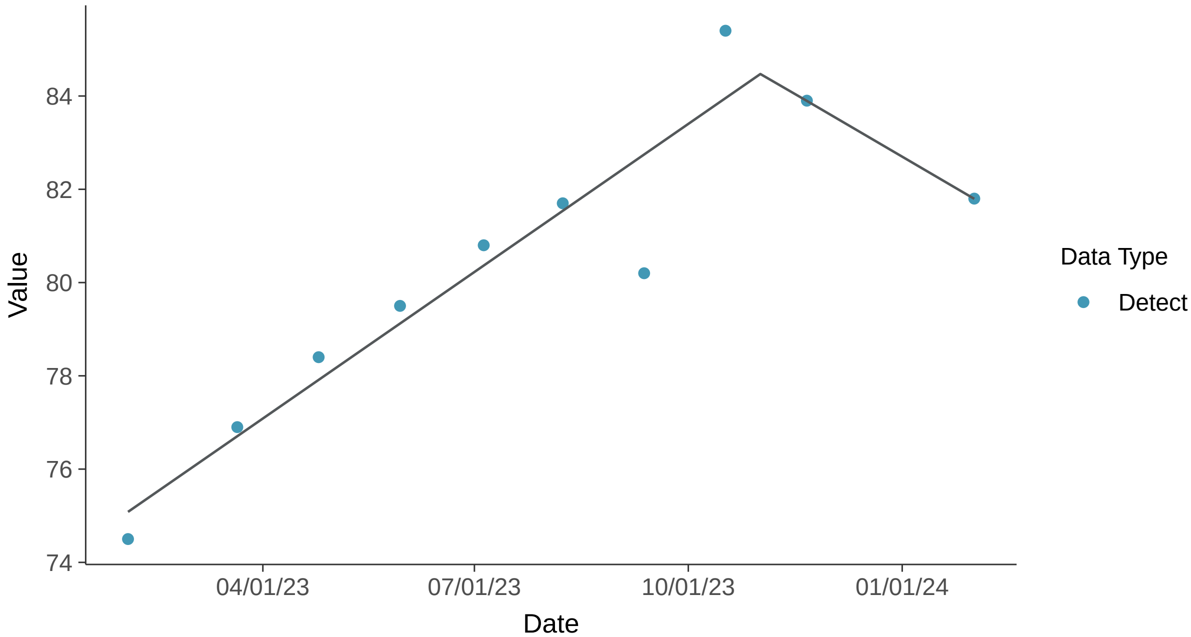
Trend Regression: Lognormal MLE

Calcium, MW-16B (mg/L)



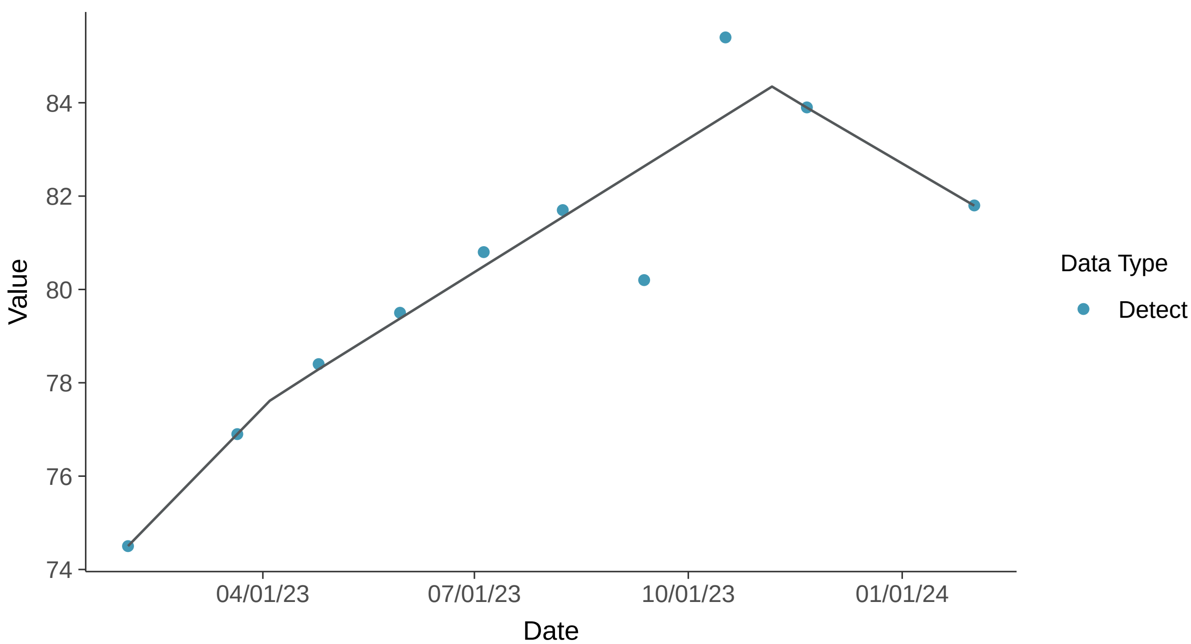
Trend Regression: Piecewise Linear-Linear

Calcium, MW-16B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Calcium, MW-16B (mg/L)

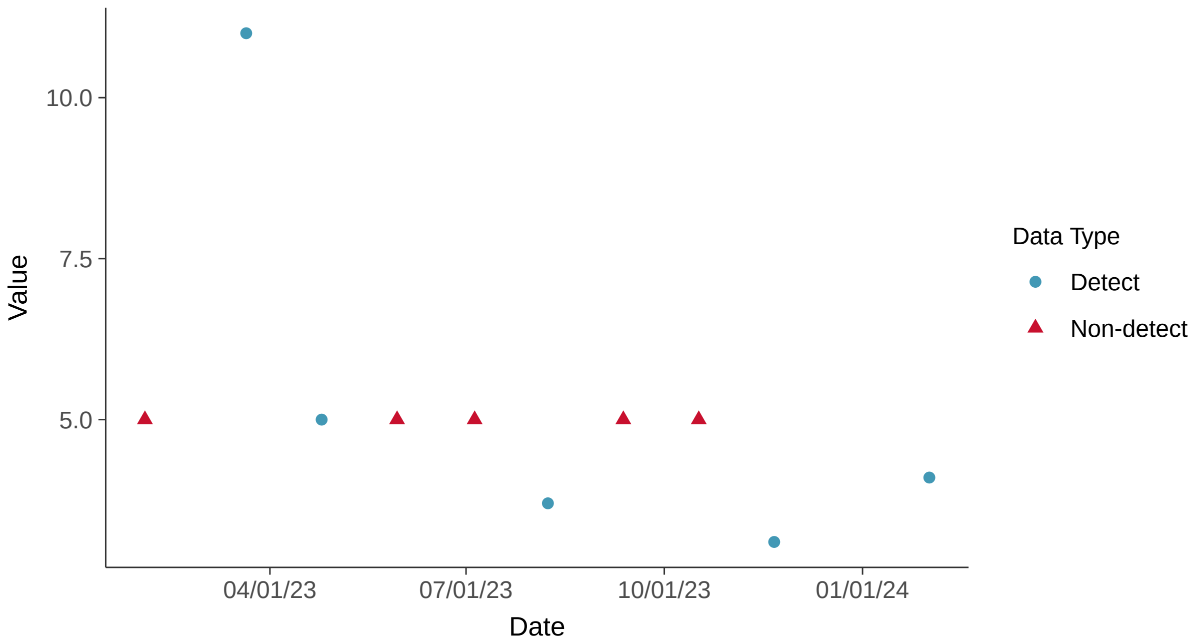


Appendix III: Chloride, MW-16B

ID: 16B_1_03

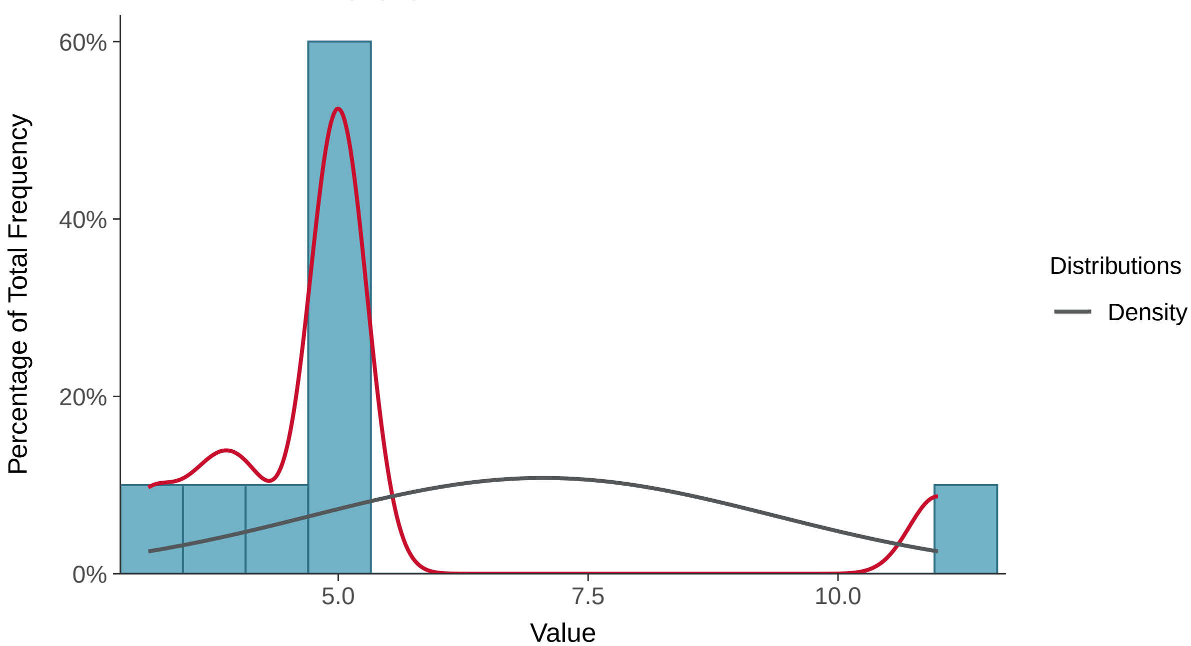
Scatter Plot

Chloride, MW-16B (mg/L)



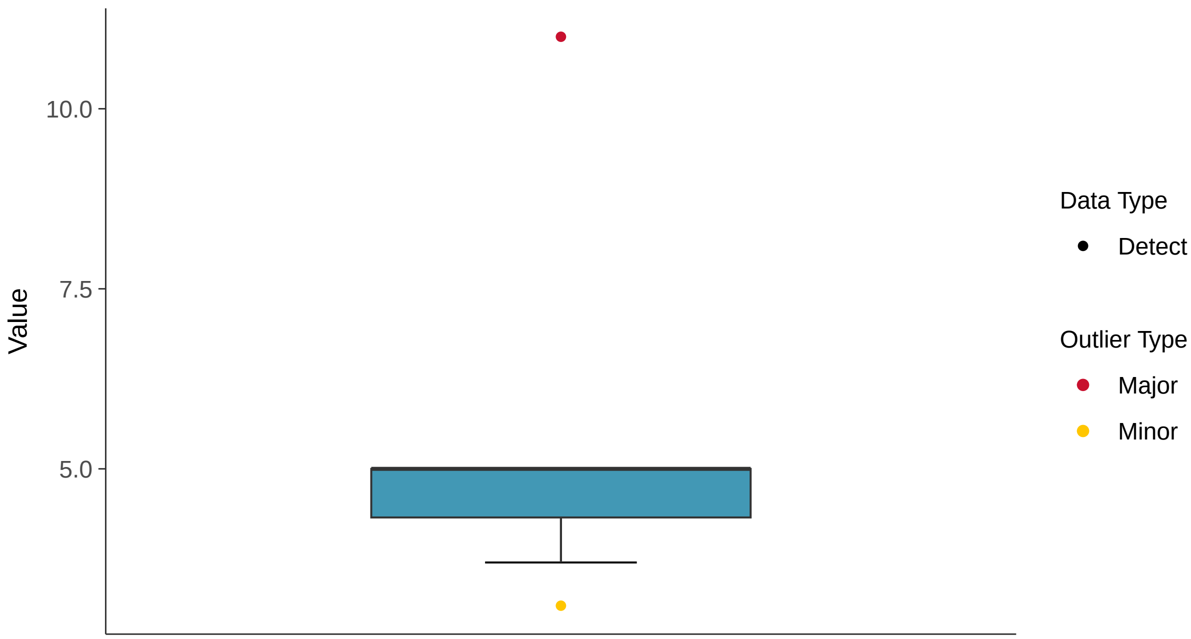
Histogram

Chloride, MW-16B (mg/L)



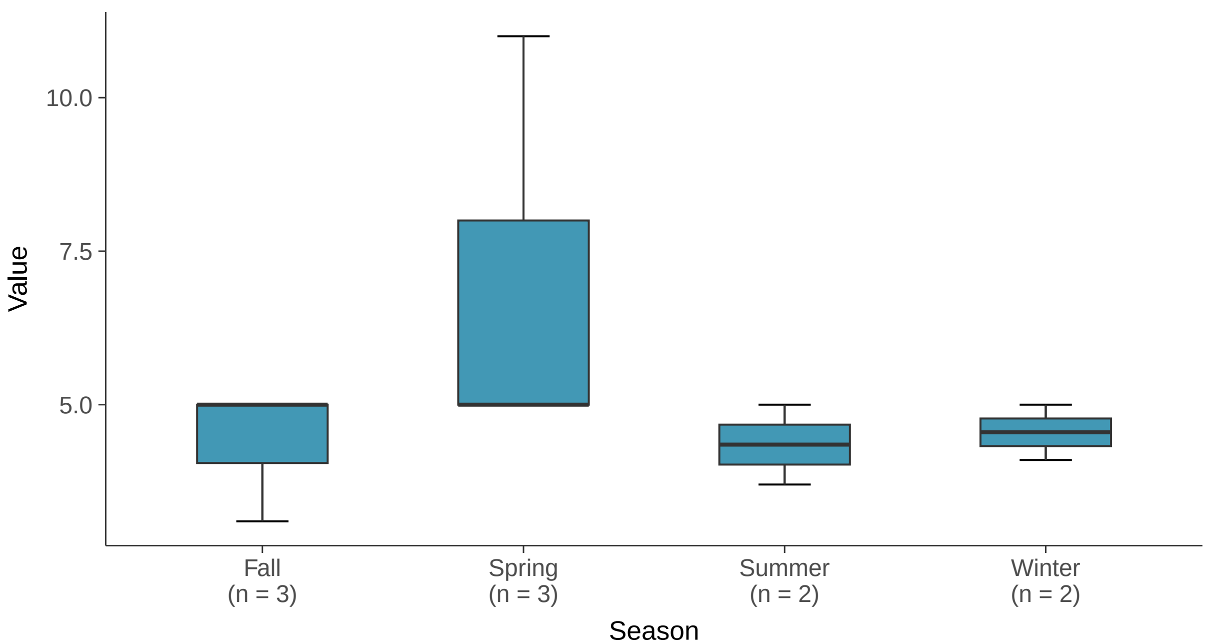
Boxplot

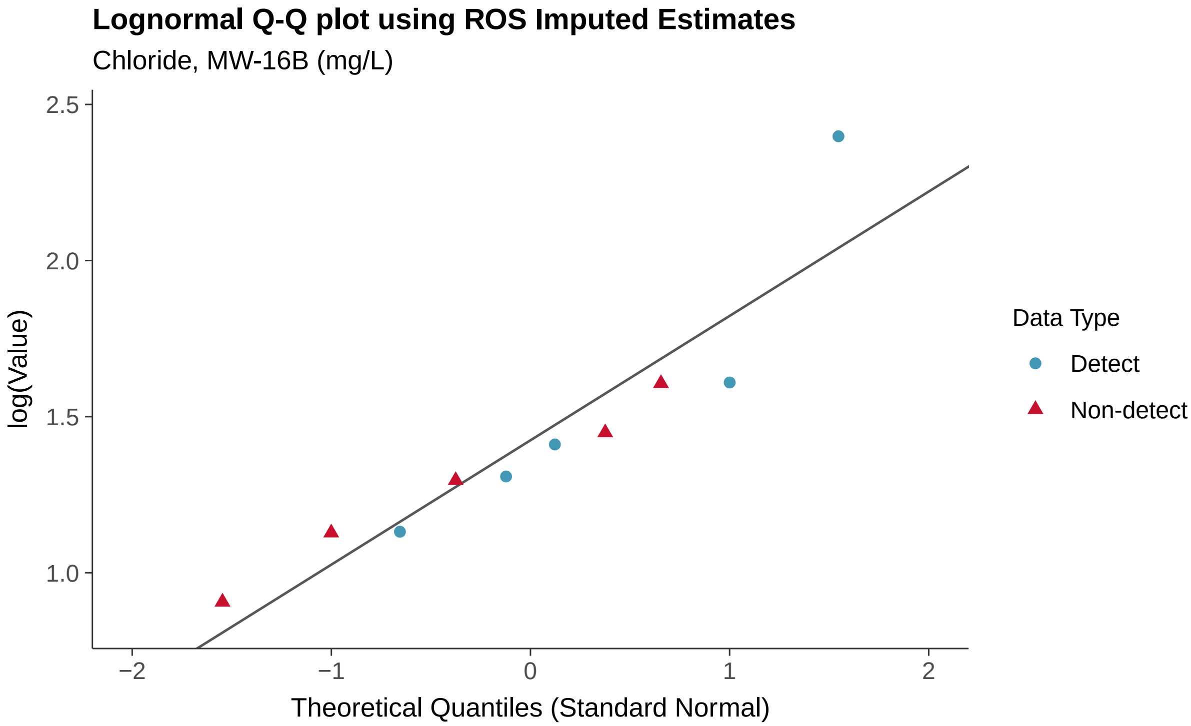
Chloride, MW-16B (mg/L)

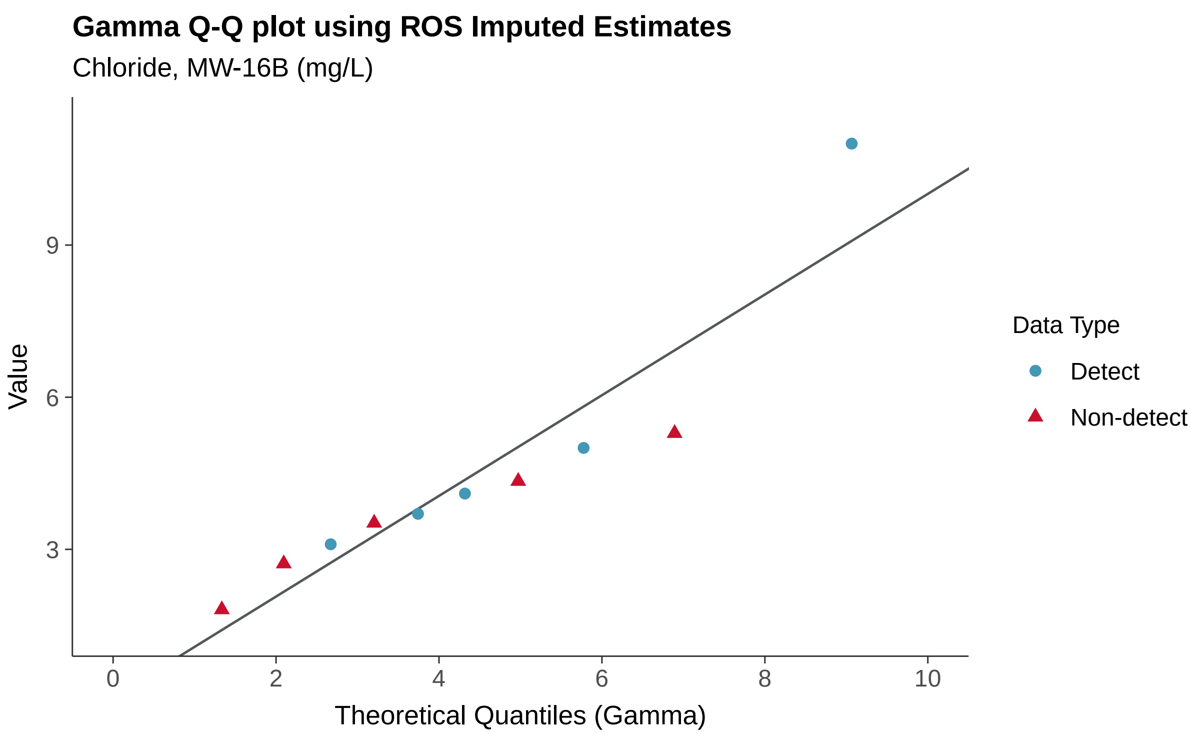


Boxplot by Season

Chloride, MW-16B (mg/L)

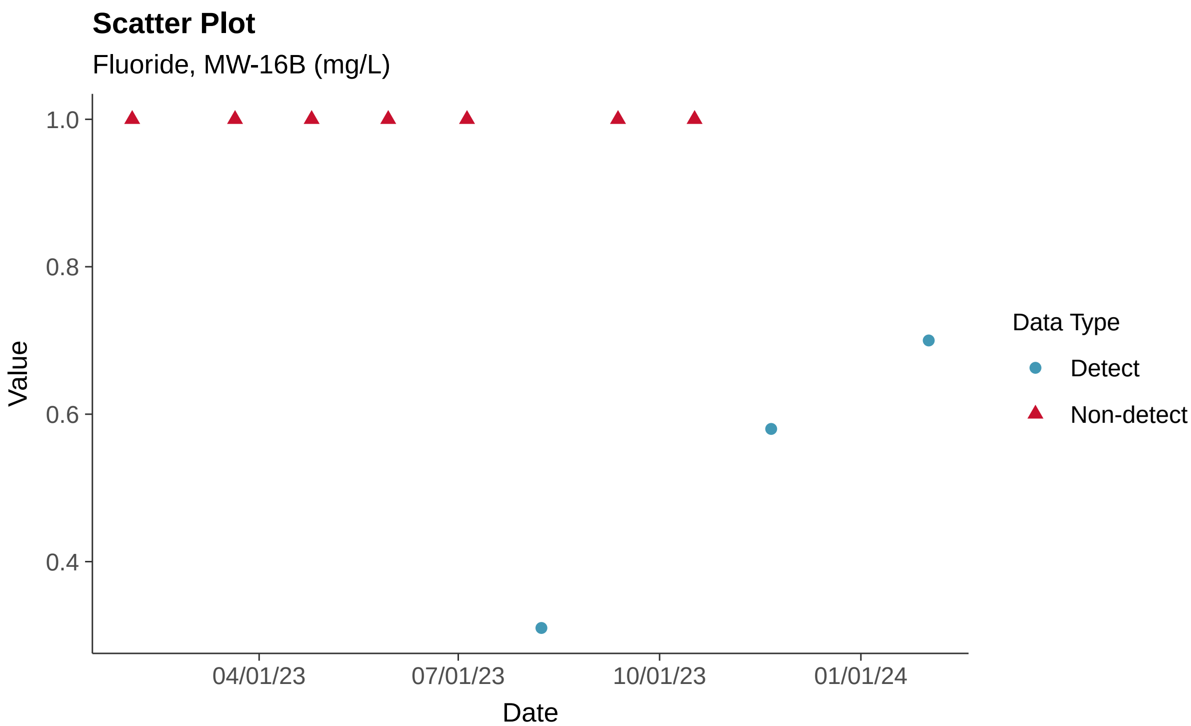


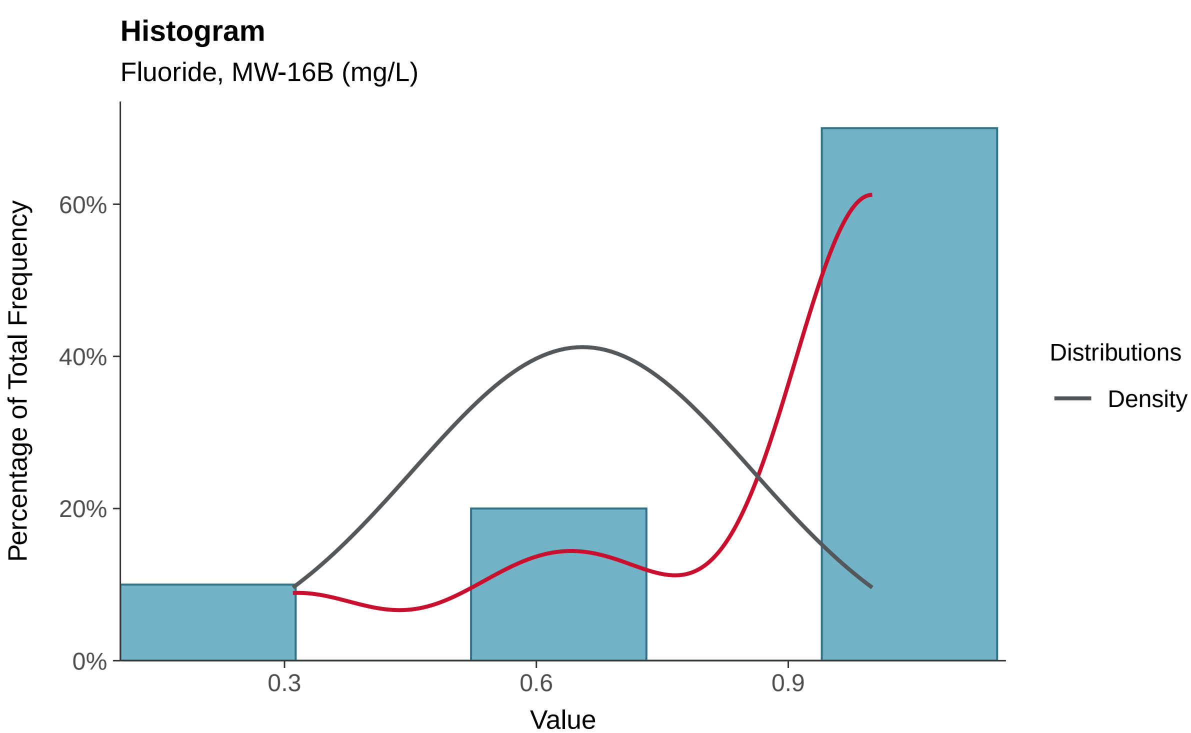

Lognormal Q-Q plot using ROS Imputed Estimates
Chloride, MW-16B (mg/L)
log(Value)
2.5
2.0
1.5
1.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Chloride, MW-16B (mg/L)
Value
9
6
3
0
2
4
6
8
10
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

Appendix III: Fluoride, MW-16B

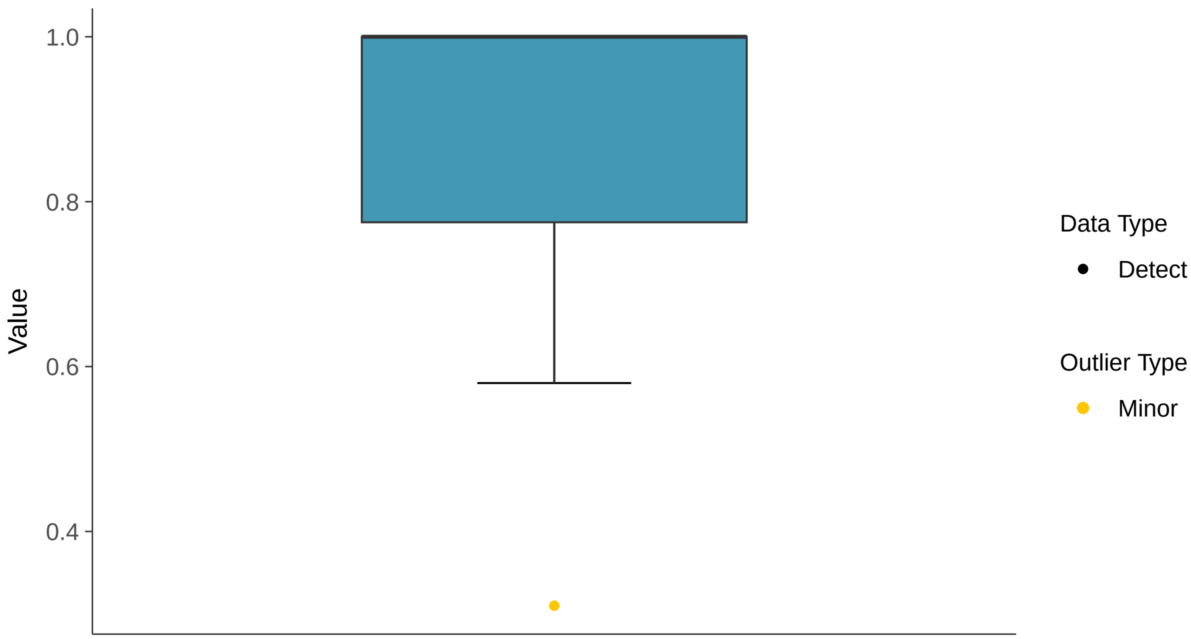
ID: 16B_1_04





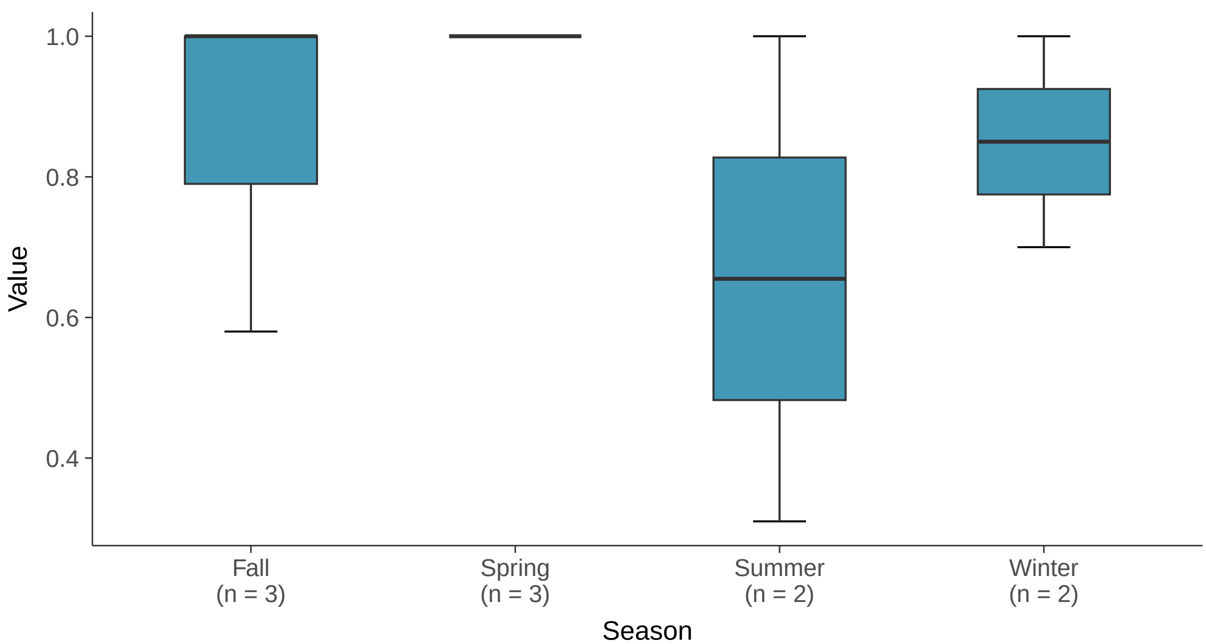
Boxplot

Fluoride, MW-16B (mg/L)



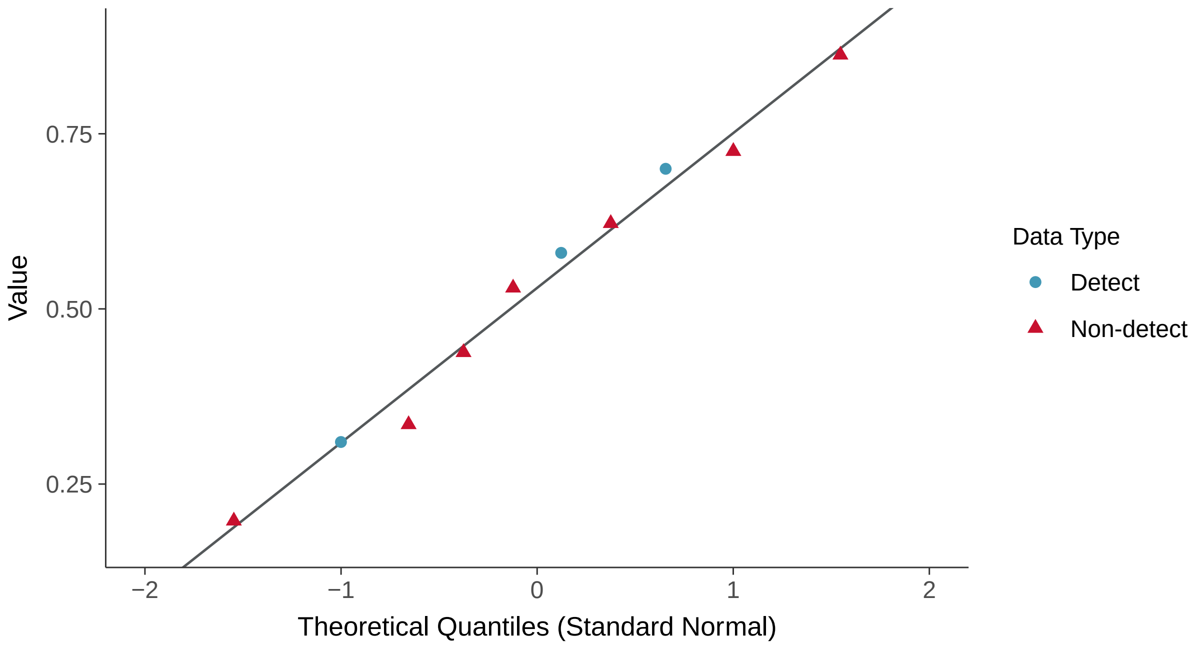
Boxplot by Season

Fluoride, MW-16B (mg/L)



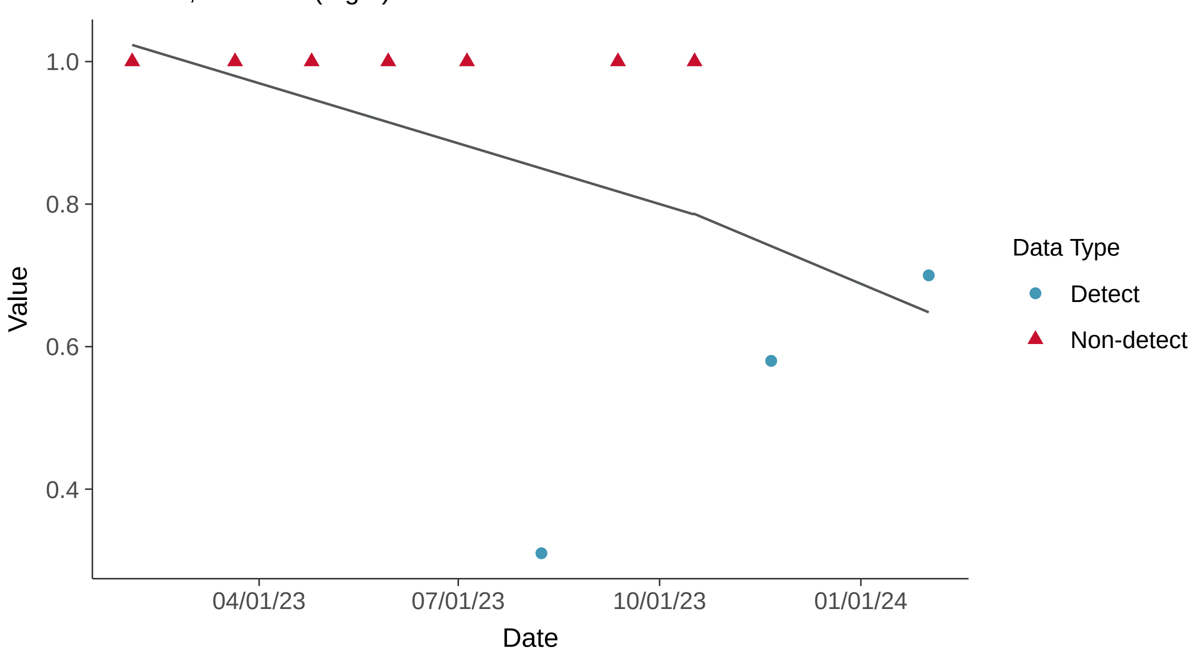
Normal Q-Q plot using ROS Imputed Estimates

Fluoride, MW-16B (mg/L)



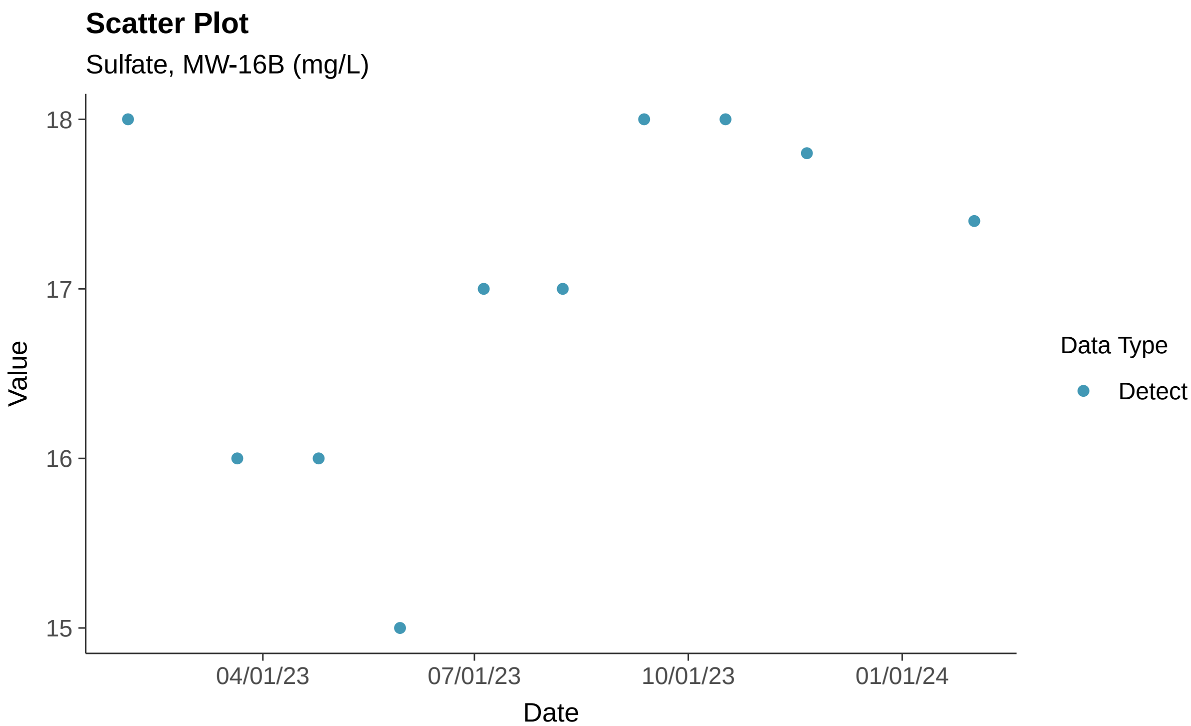
Trend Regression: Piecewise Linear-Linear

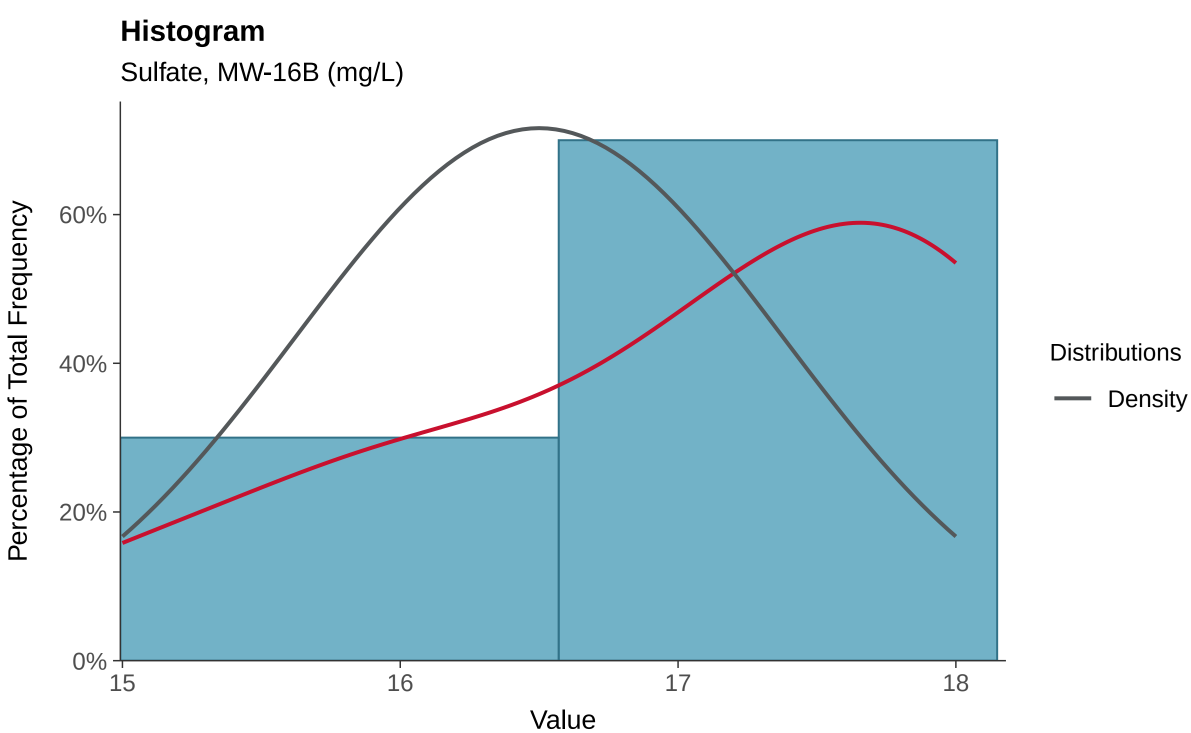
Fluoride, MW-16B (mg/L)



Appendix III: Sulfate, MW-16B

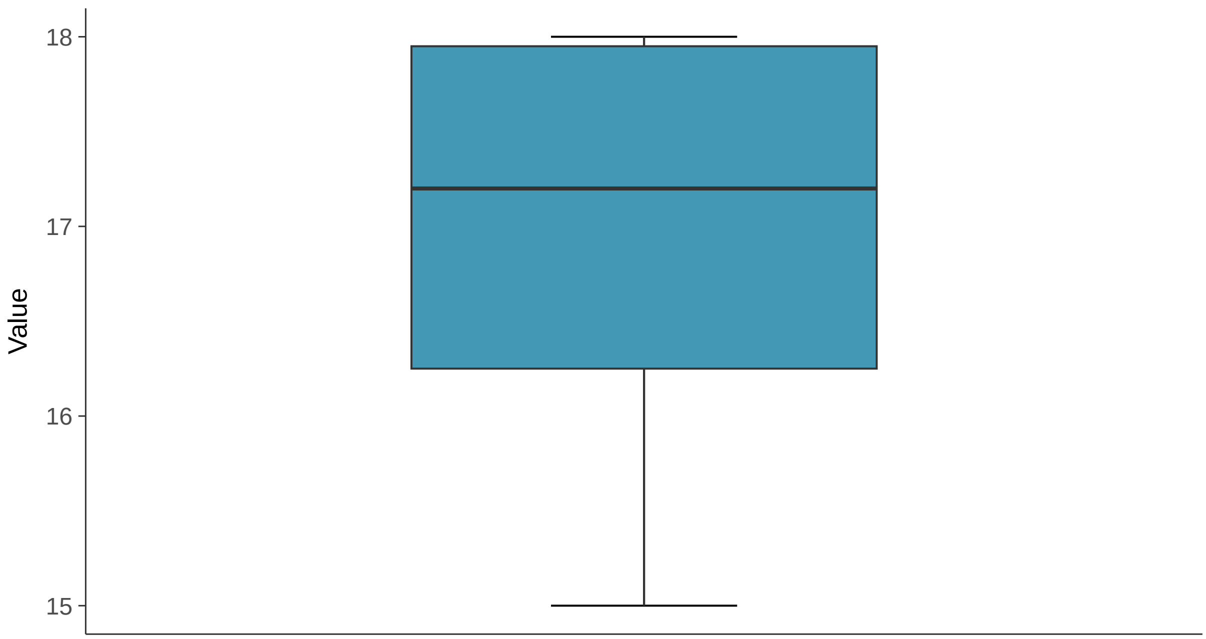
ID: 16B_1_05





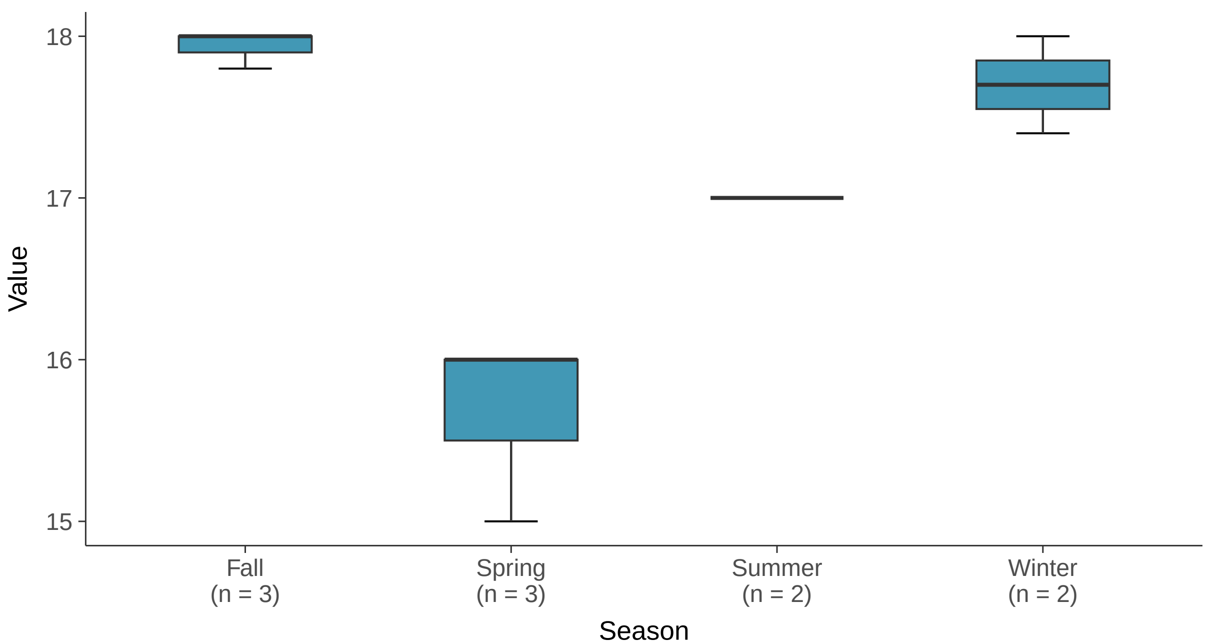
Boxplot

Sulfate, MW-16B (mg/L)



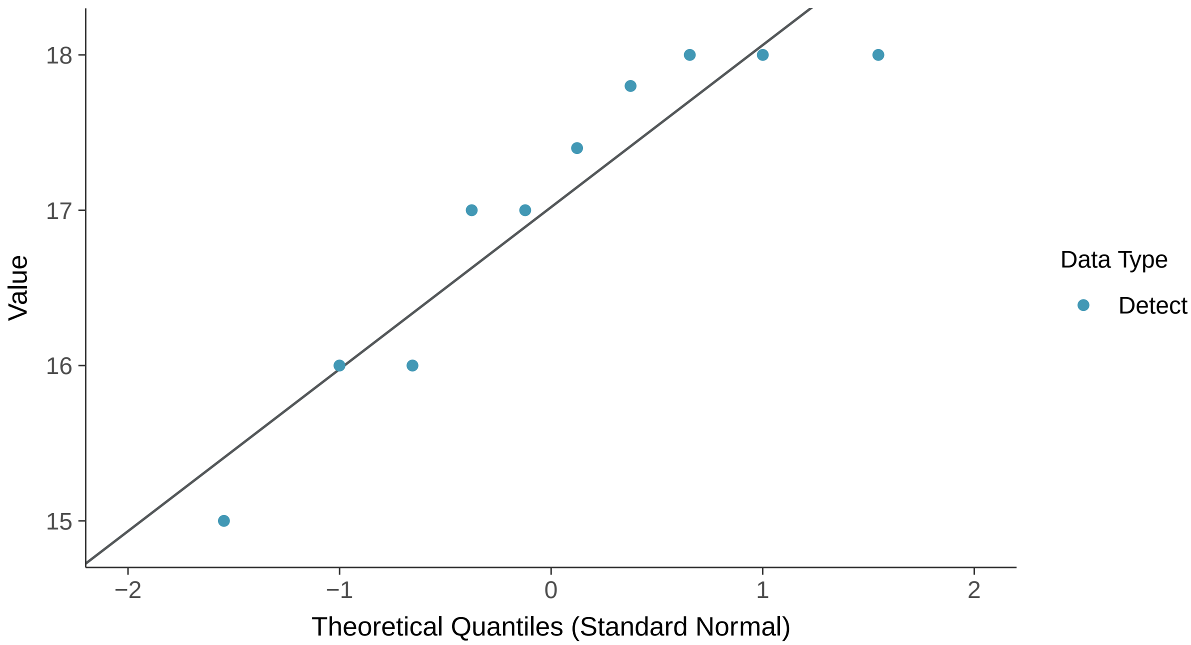
Boxplot by Season

Sulfate, MW-16B (mg/L)



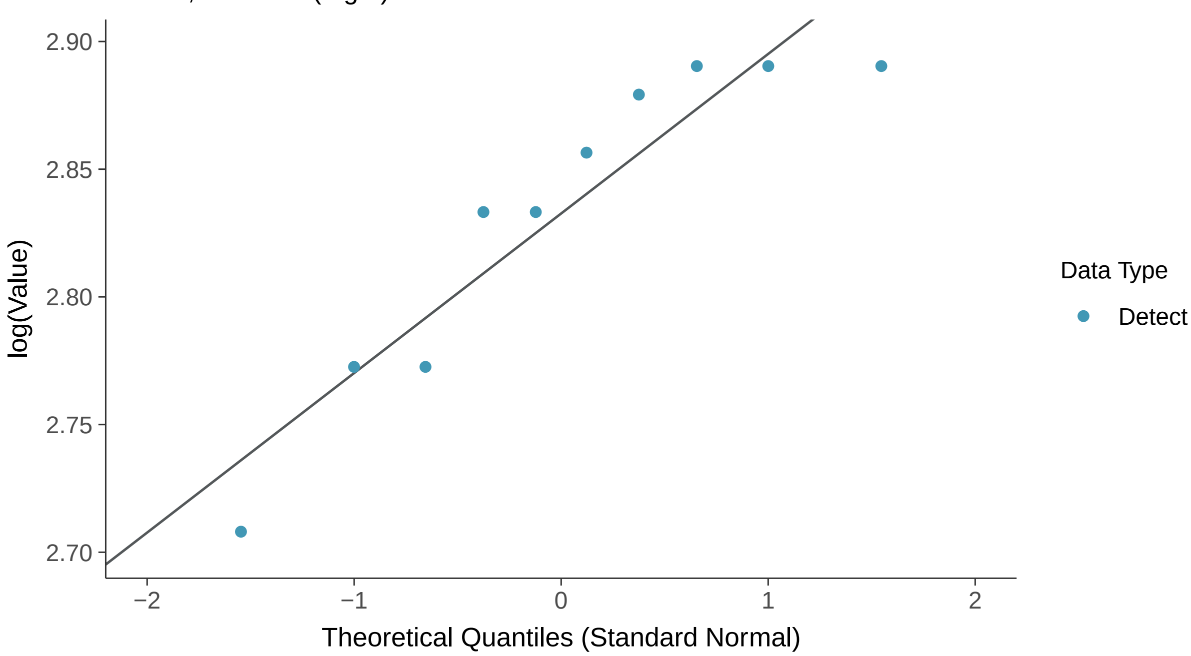
Normal Q-Q plot

Sulfate, MW-16B (mg/L)



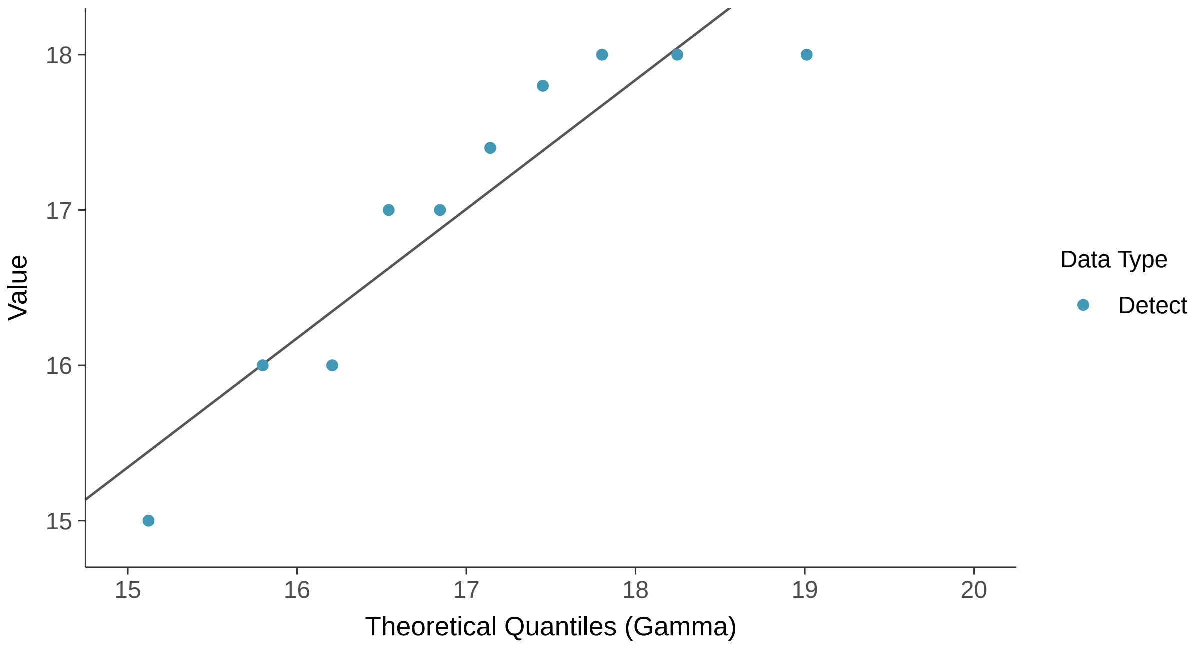
Lognormal Q-Q plot

Sulfate, MW-16B (mg/L)



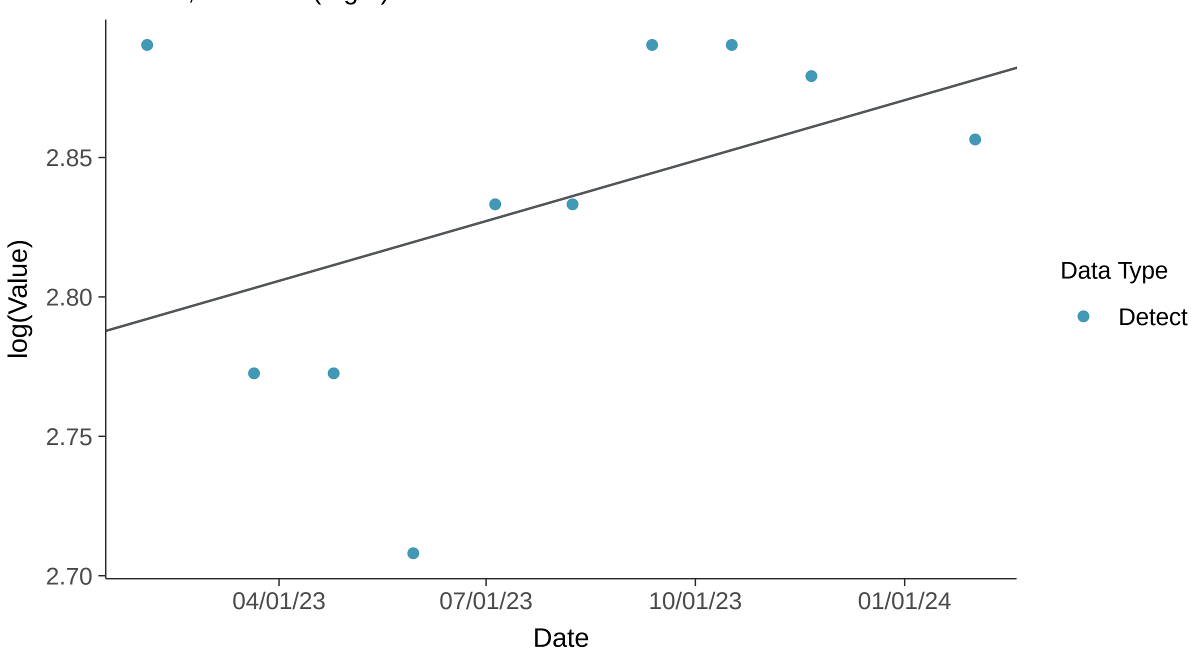
Gamma Q-Q plot

Sulfate, MW-16B (mg/L)



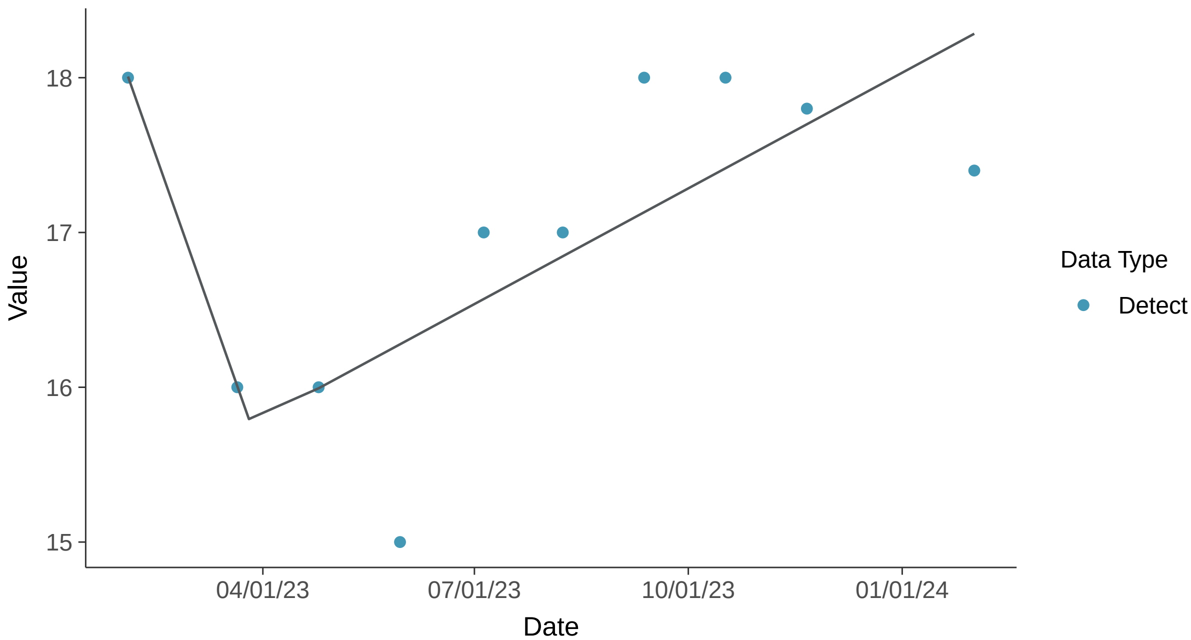
Trend Regression: Lognormal MLE

Sulfate, MW-16B (mg/L)



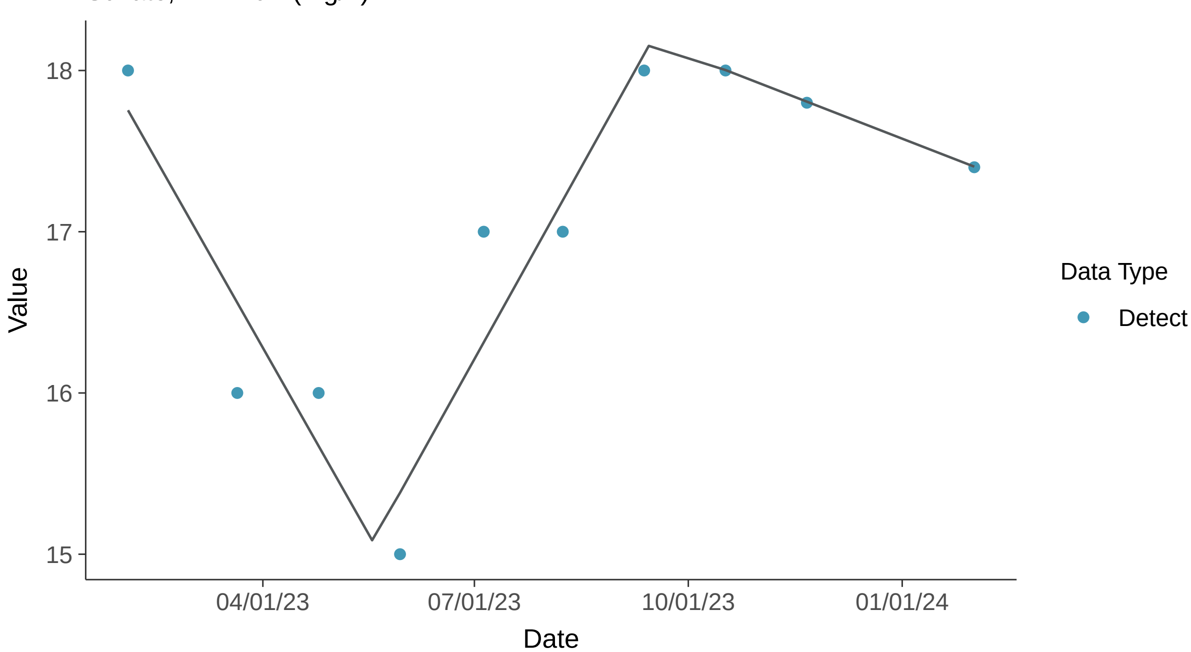
Trend Regression: Piecewise Linear-Linear

Sulfate, MW-16B (mg/L)



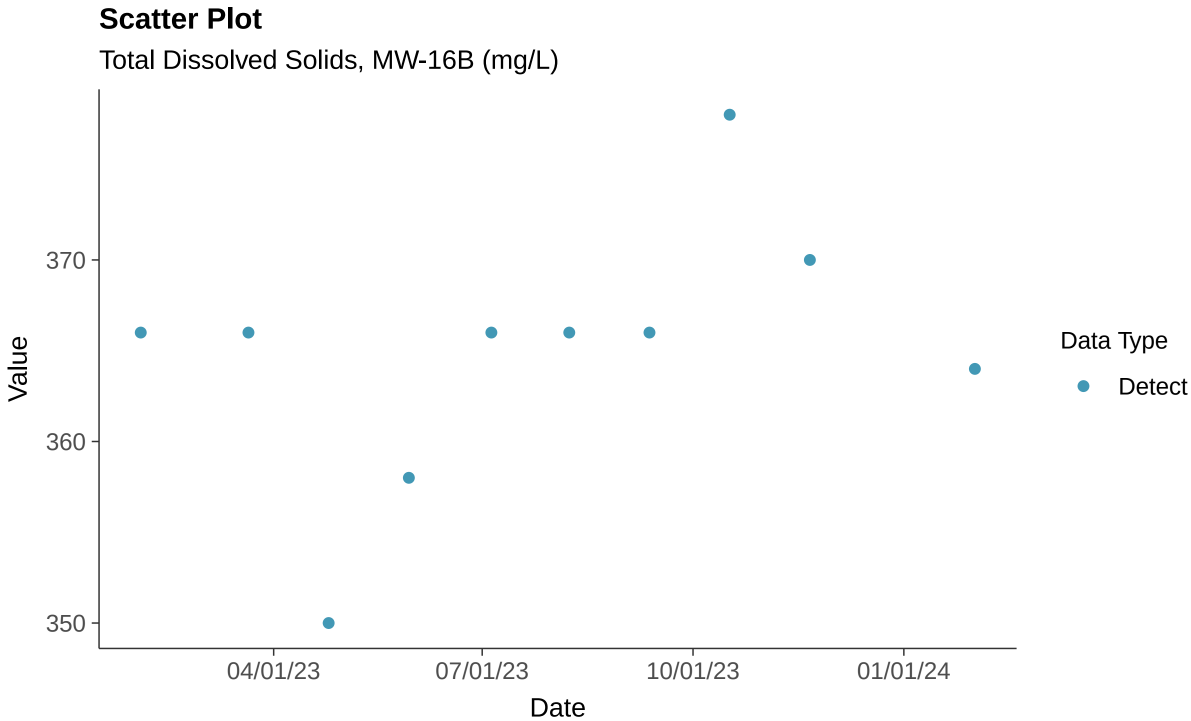
Trend Regression: Piecewise Linear-Linear-Linear

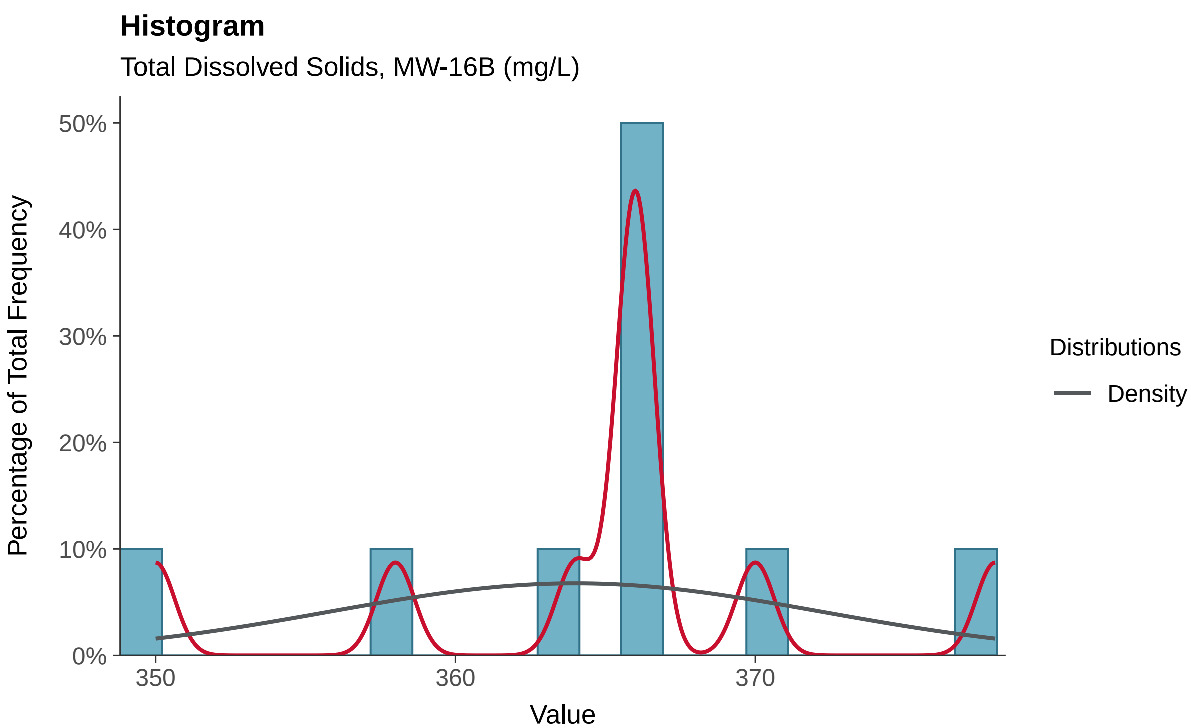
Sulfate, MW-16B (mg/L)



Appendix III: Total Dissolved Solids, MW-16B

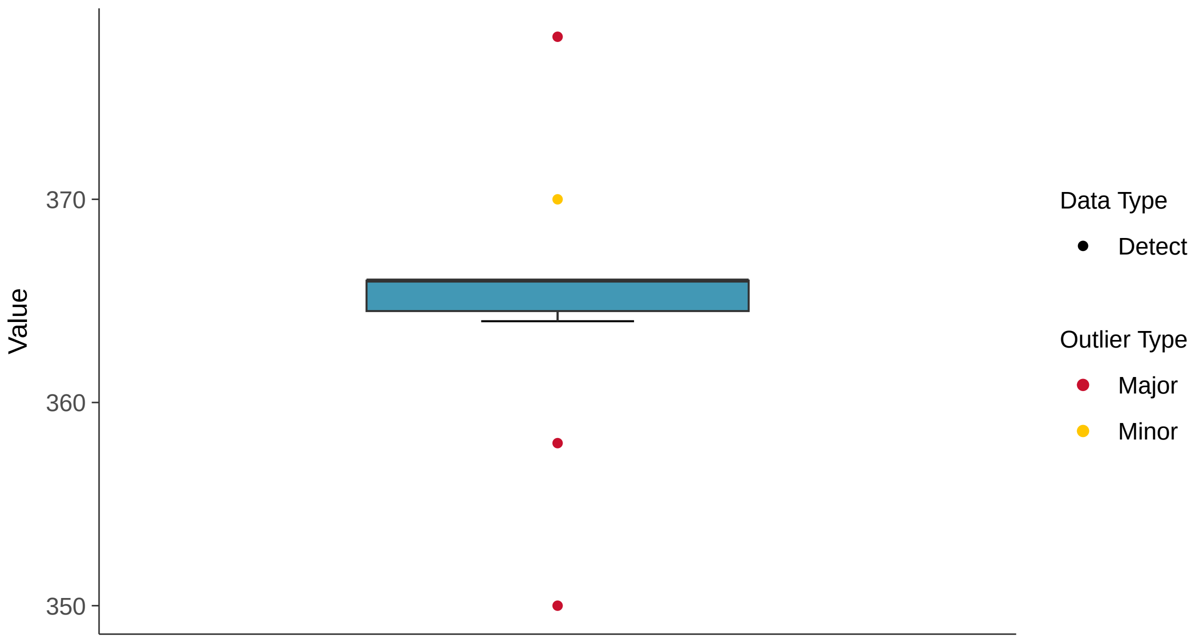
ID: 16B_1_06





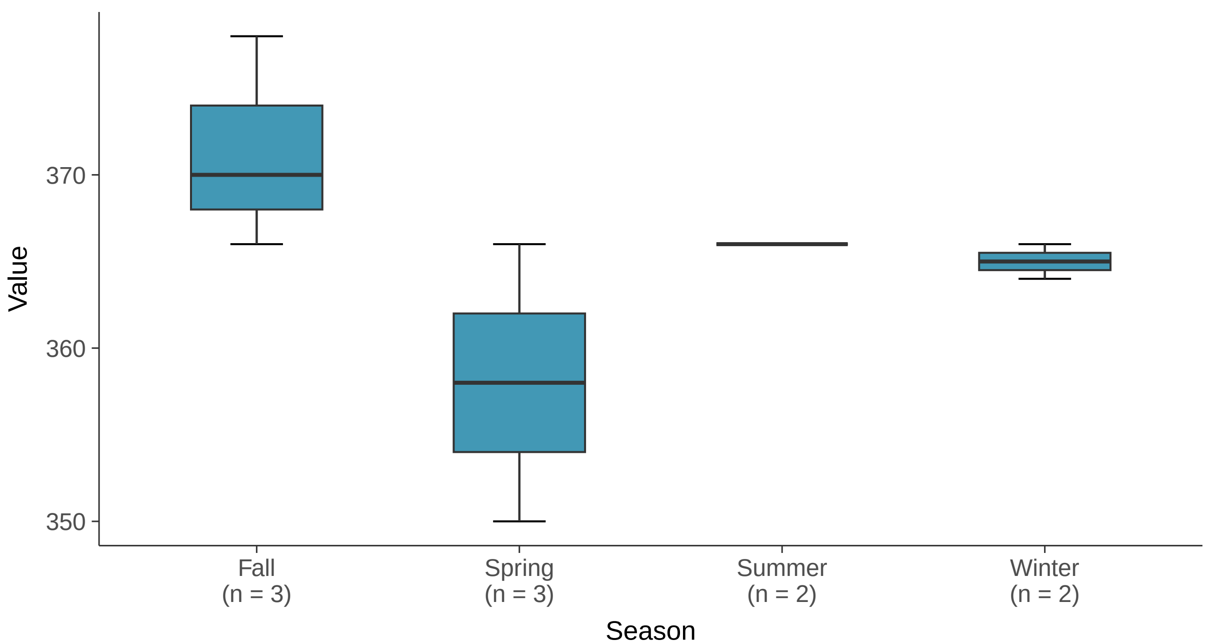
Boxplot

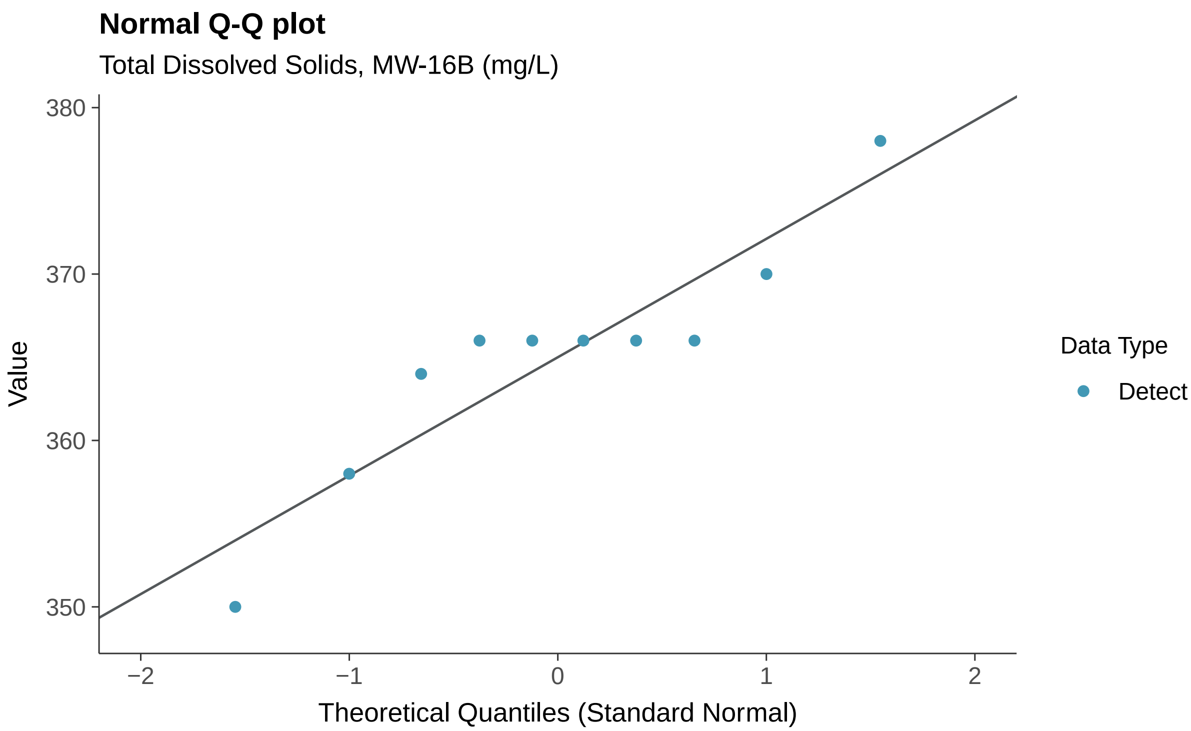
Total Dissolved Solids, MW-16B (mg/L)

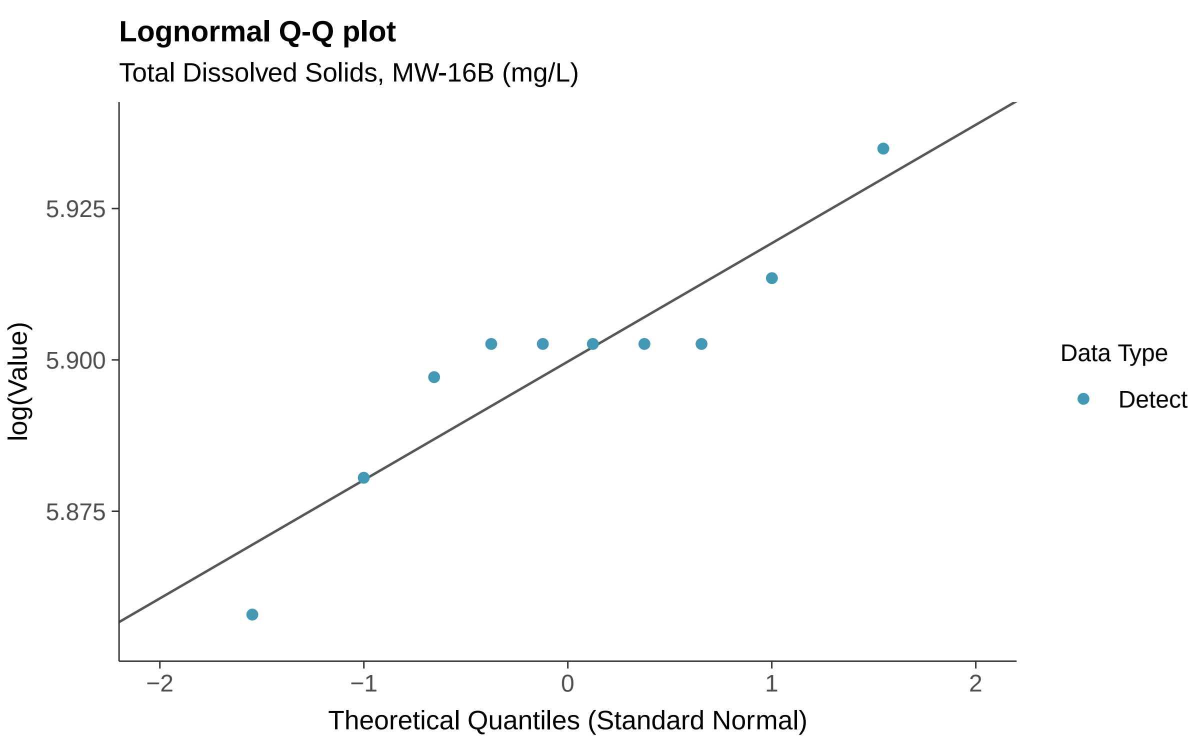


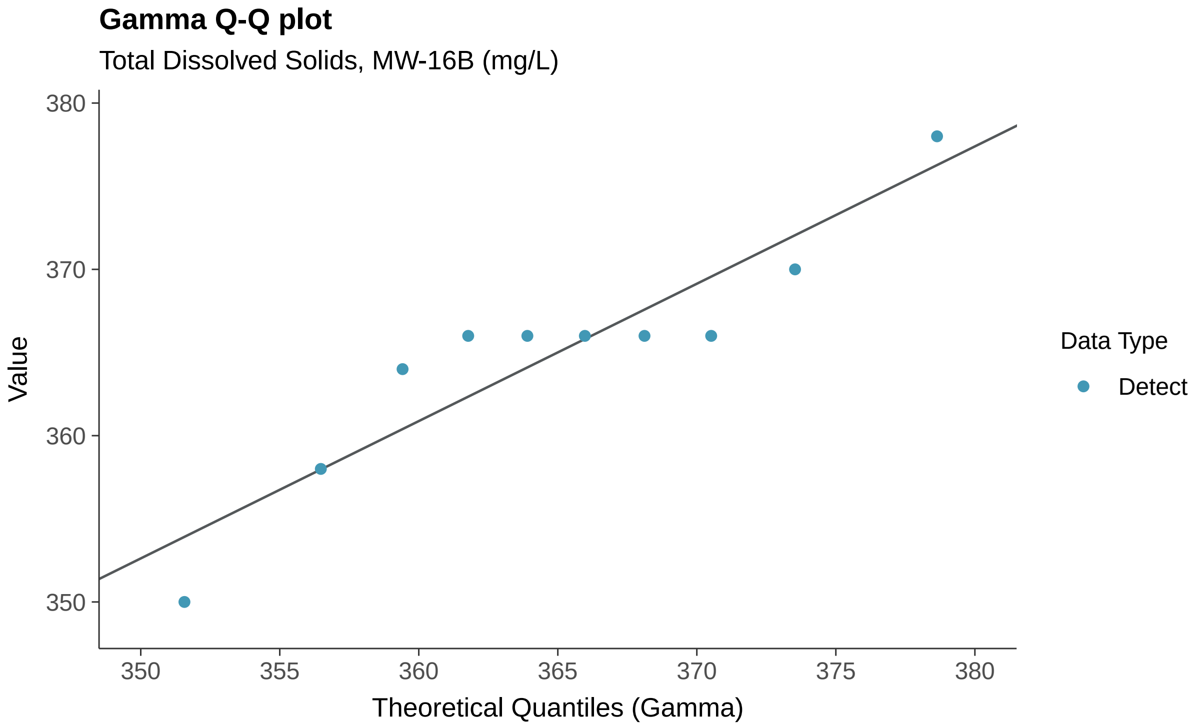
Boxplot by Season

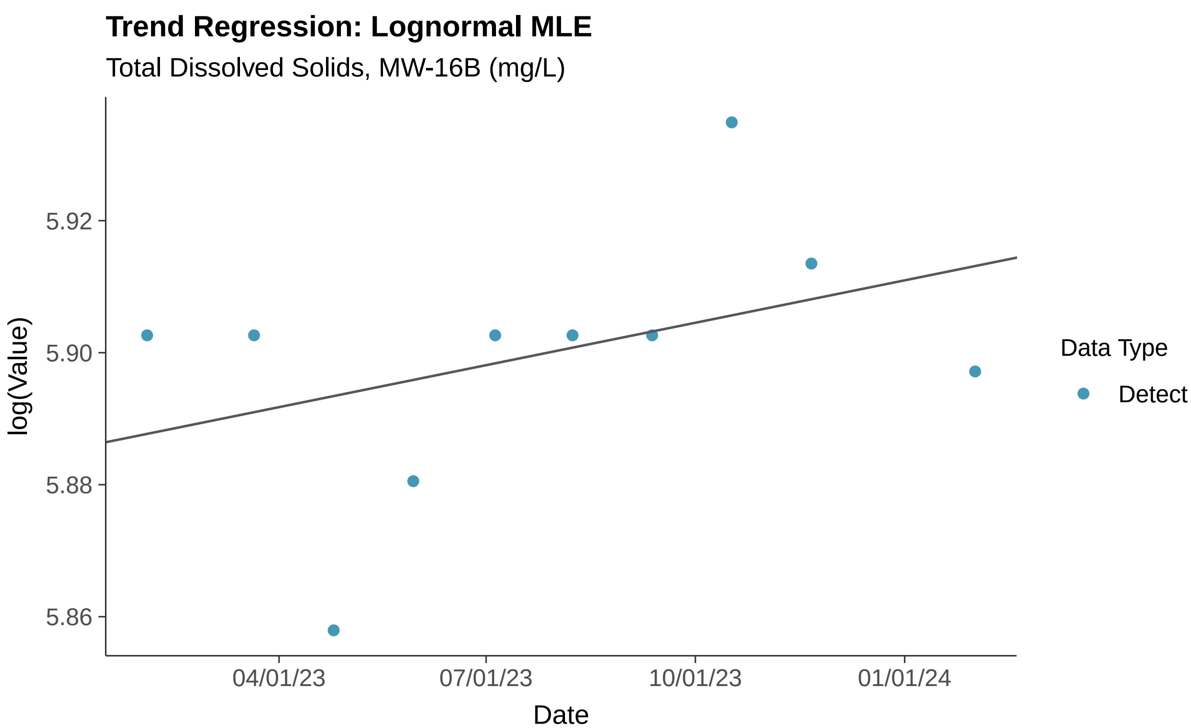
Total Dissolved Solids, MW-16B (mg/L)



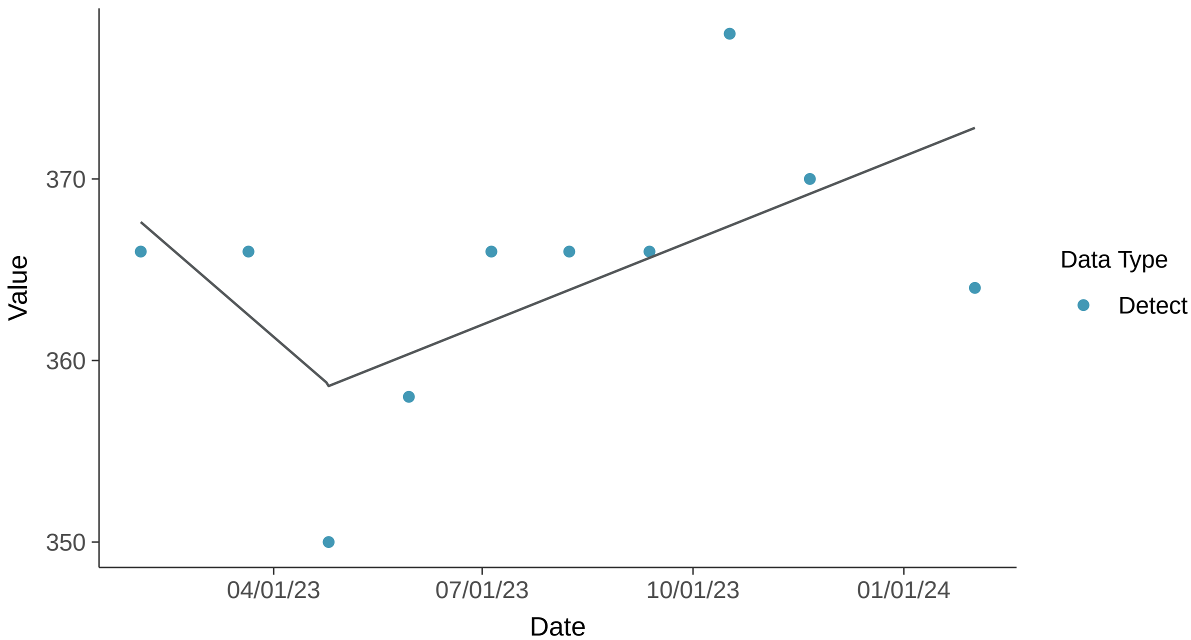

Normal Q-Q plot
Total Dissolved Solids, MW-16B (mg/L)
Value
380
370
360
350
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Total Dissolved Solids, MW-16B (mg/L)
log(Value)
5.925
5.900
5.875
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

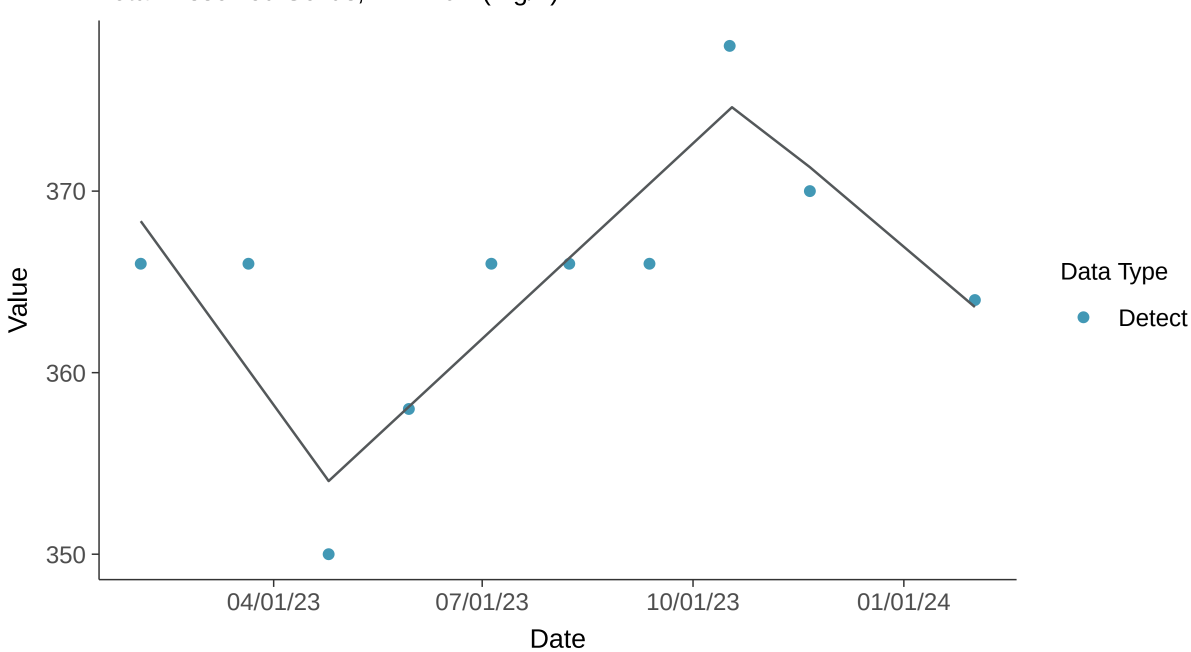

Gamma Q-Q plot
Total Dissolved Solids, MW-16B (mg/L)
Value
380
370
360
350
350
355
360
365
370
375
380
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-16B (mg/L)
log(Value)
5.92
5.90
5.88
5.86
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear
Total Dissolved Solids, MW-16B (mg/L)

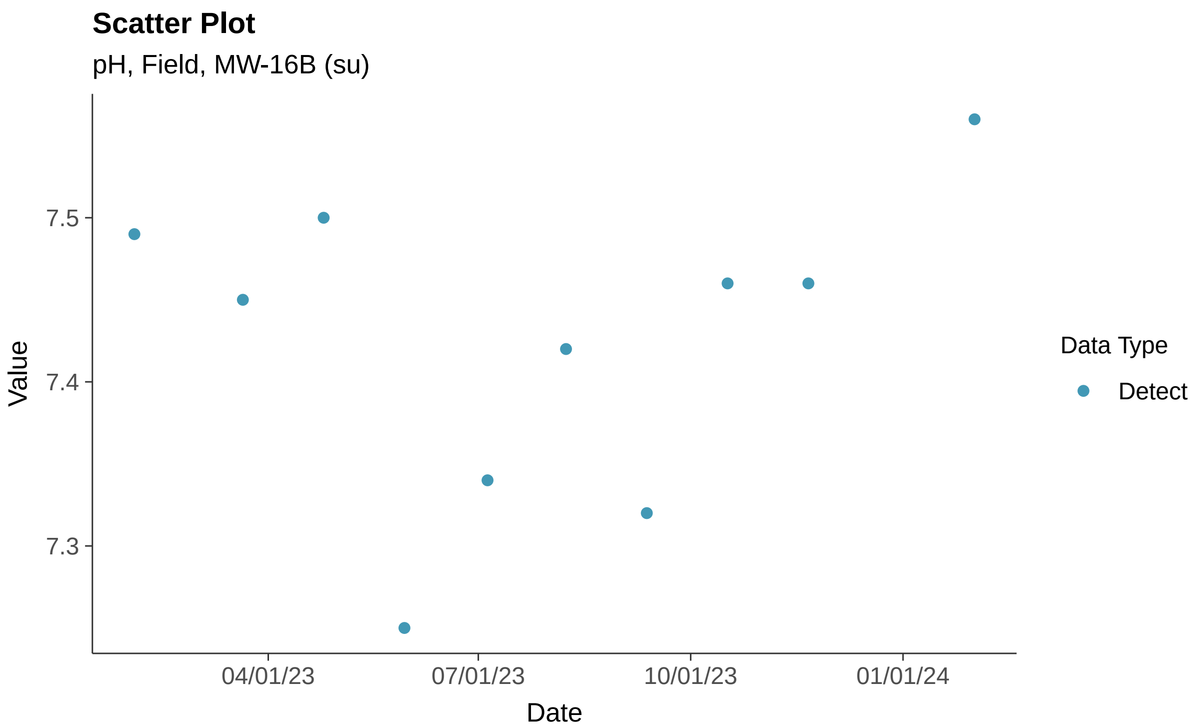


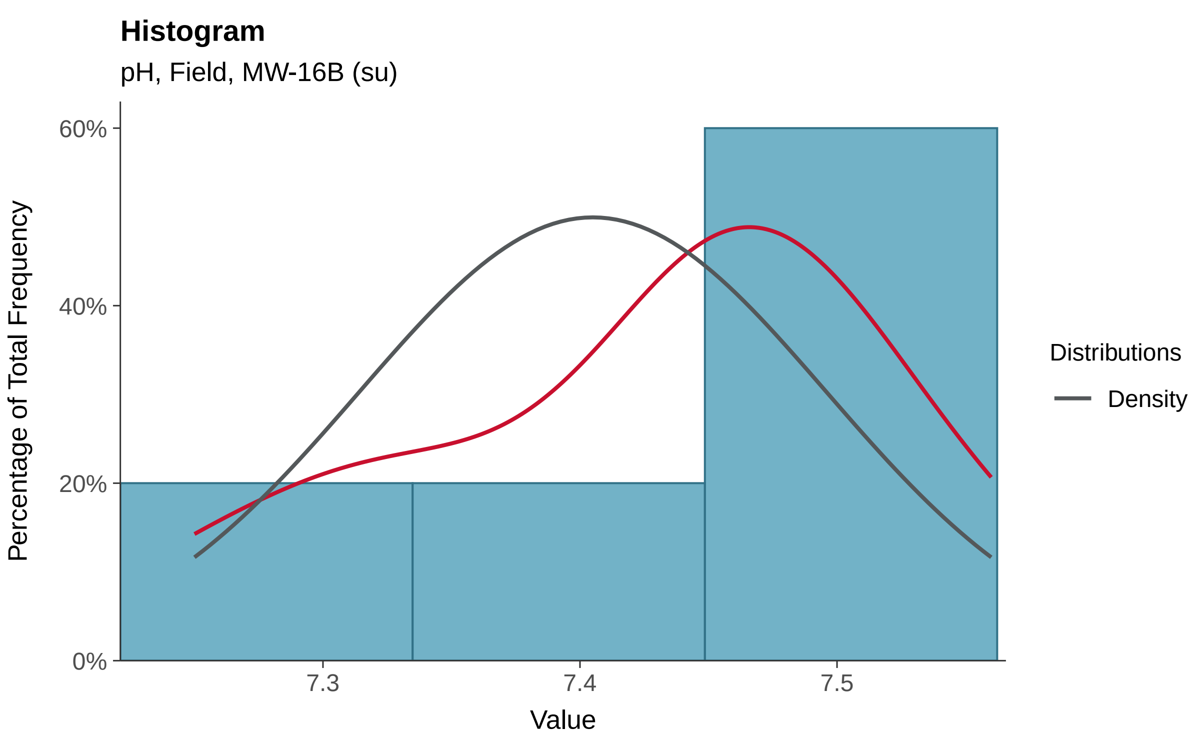
Trend Regression: Piecewise Linear-Linear-Linear
Total Dissolved Solids, MW-16B (mg/L)



Appendix III: pH, Field, MW-16B

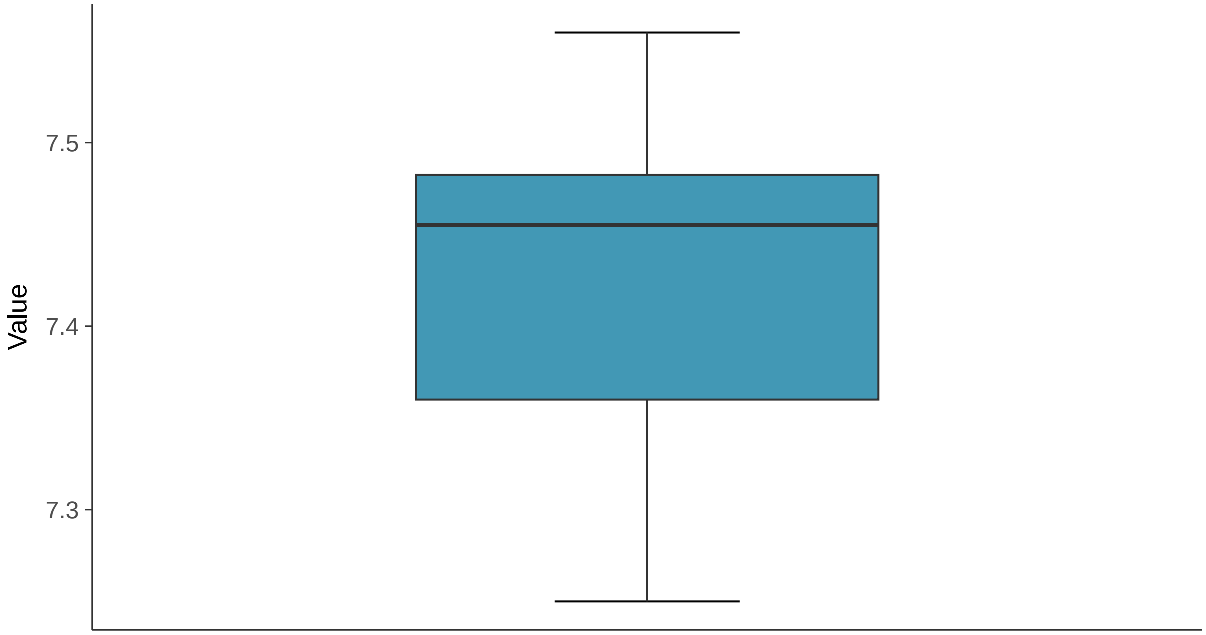
ID: 16B_1_07





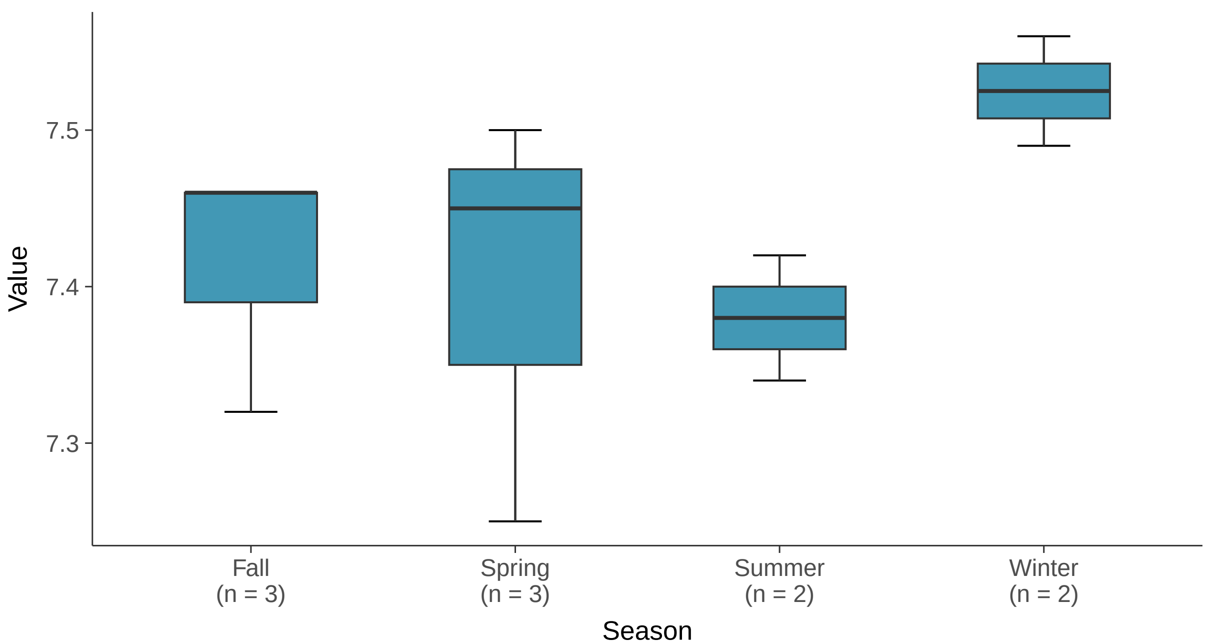
Boxplot

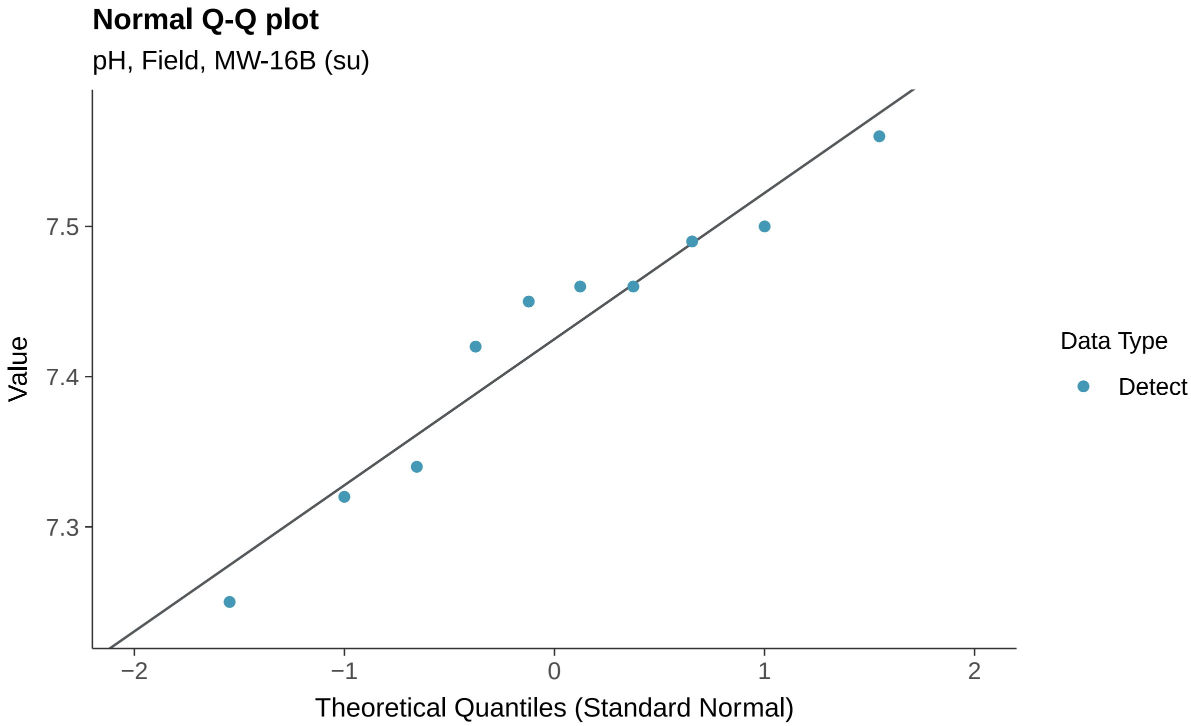
pH, Field, MW-16B (su)

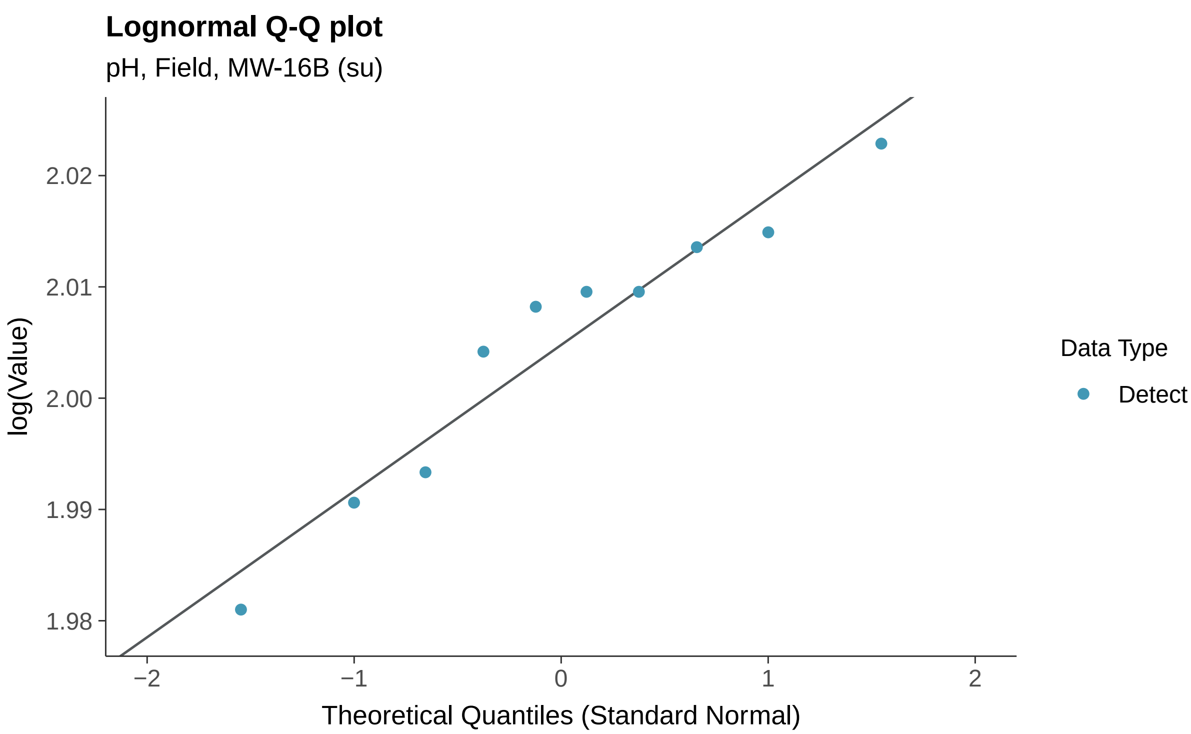


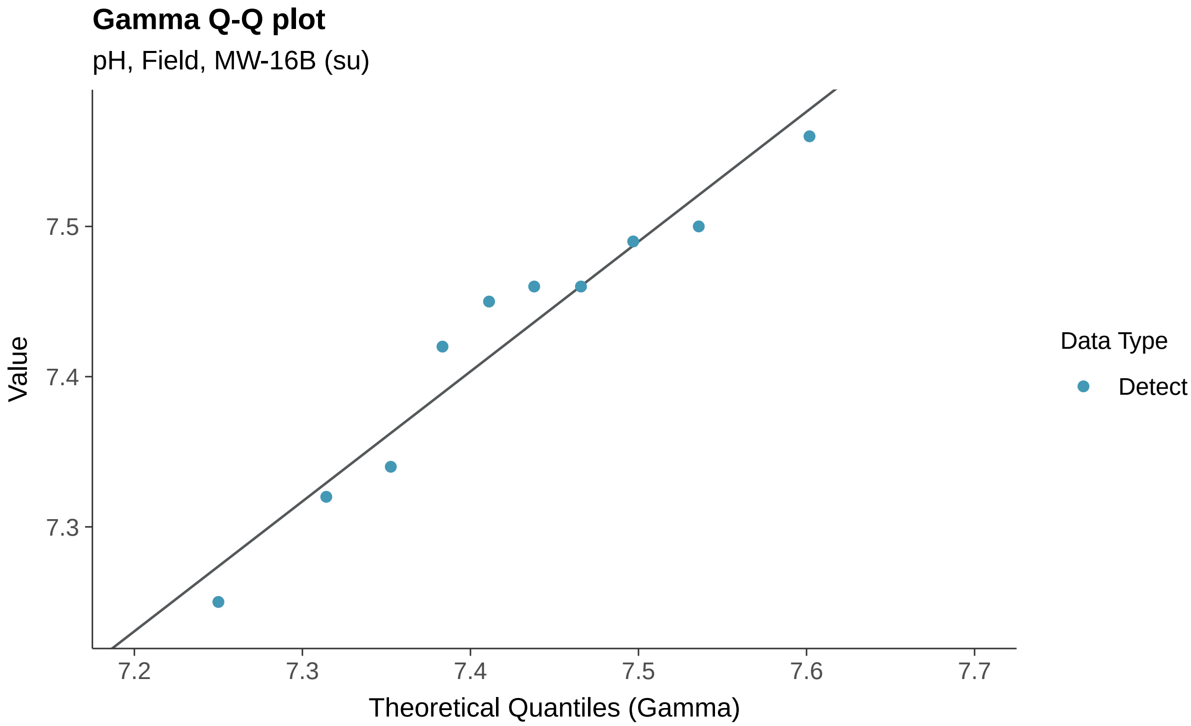
Boxplot by Season

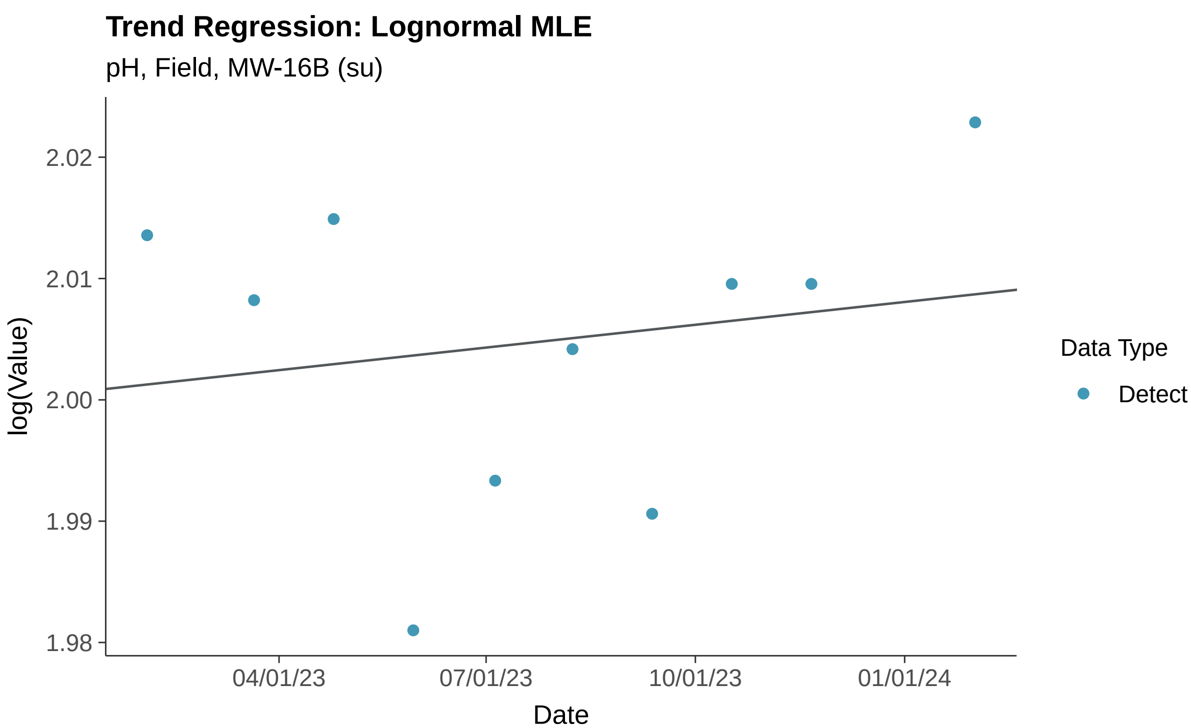
pH, Field, MW-16B (su)




Normal Q-Q plot
pH, Field, MW-16B (su)
Value
7.5
7.4
7.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

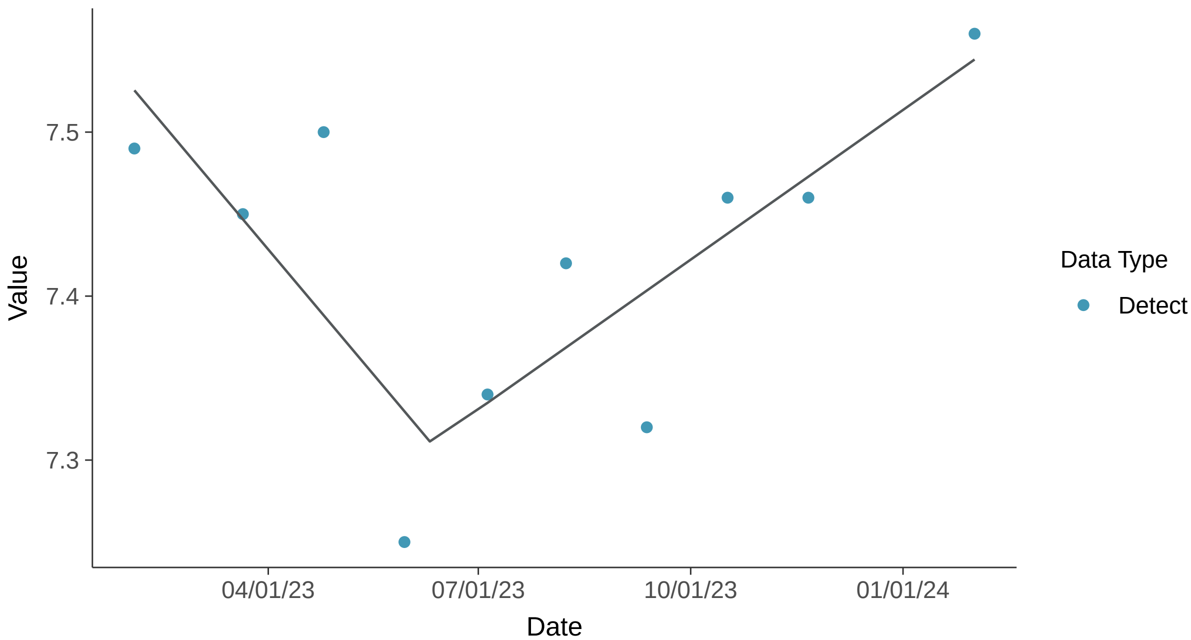

Lognormal Q-Q plot
pH, Field, MW-16B (su)
log(Value)
2.02
2.01
2.00
1.99
1.98
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, Field, MW-16B (su)
Value
7.5
7.4
7.3
7.2
7.3
7.4
7.5
7.6
7.7
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, Field, MW-16B (su)
log(Value)
2.02
2.01
2.00
1.99
1.98
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

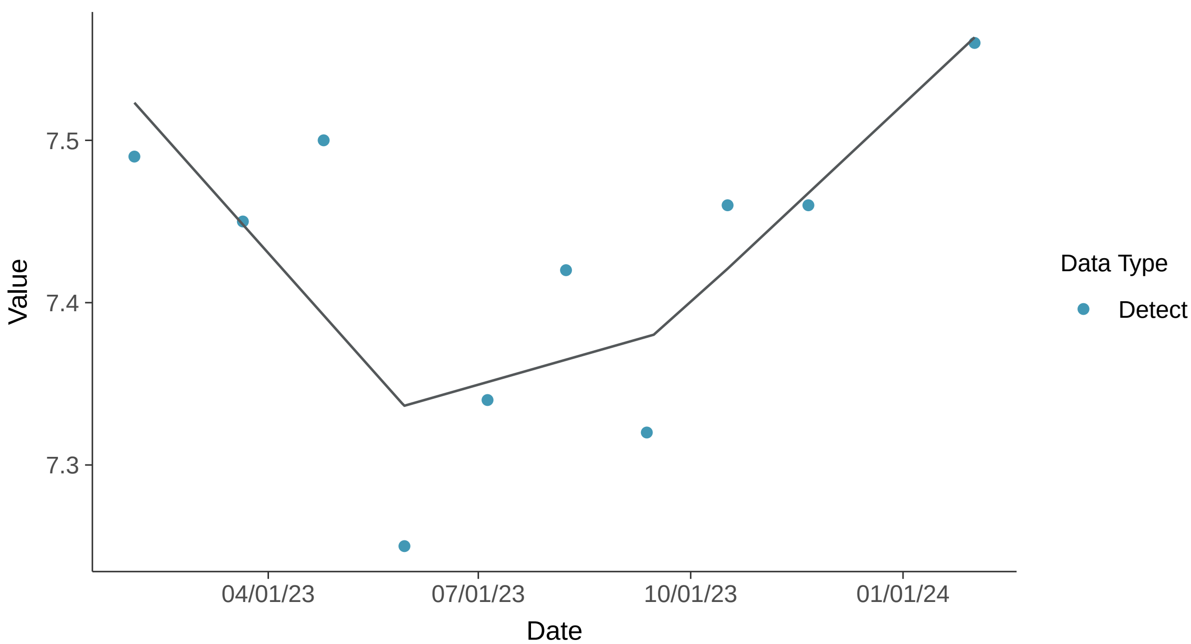
Trend Regression: Piecewise Linear-Linear

pH, Field, MW-16B (su)



Trend Regression: Piecewise Linear-Linear-Linear

pH, Field, MW-16B (su)

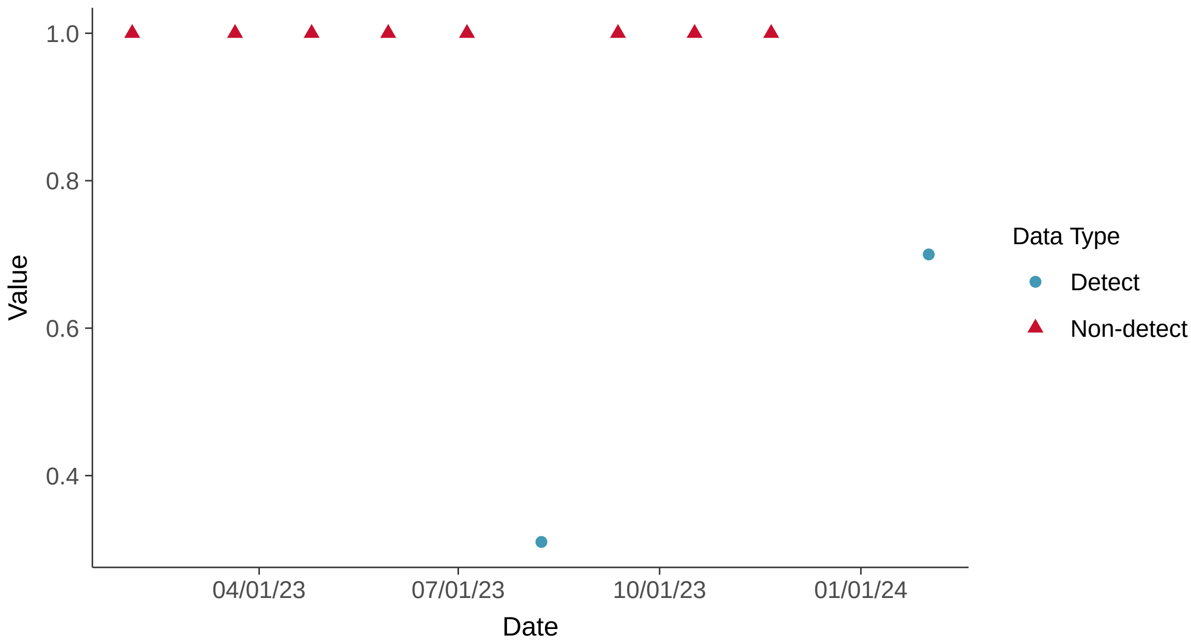


Appendix IV: Fluoride, MW-16B

ID: 16B_2_04

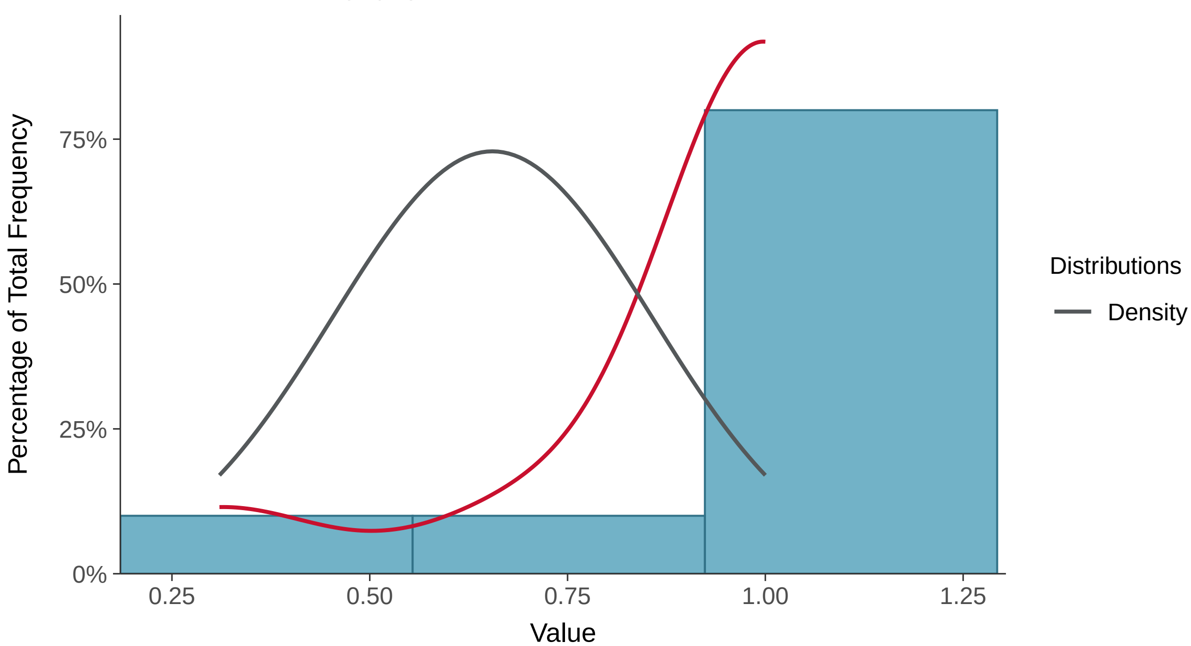
Scatter Plot

Fluoride, MW-16B (mg/L)



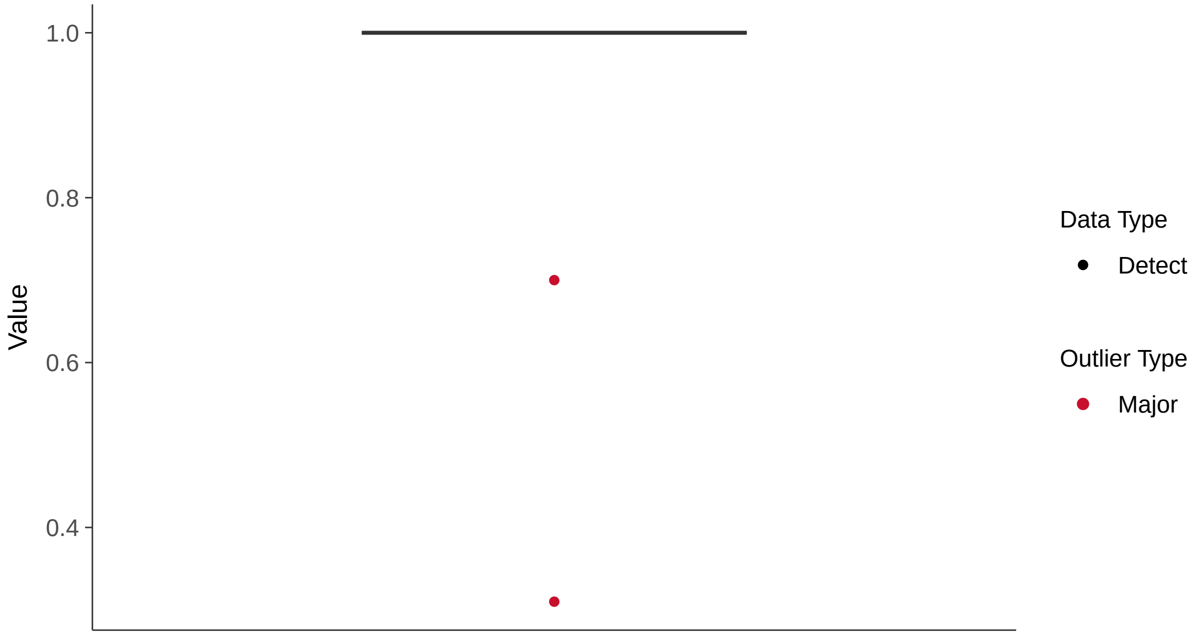
Histogram

Fluoride, MW-16B (mg/L)



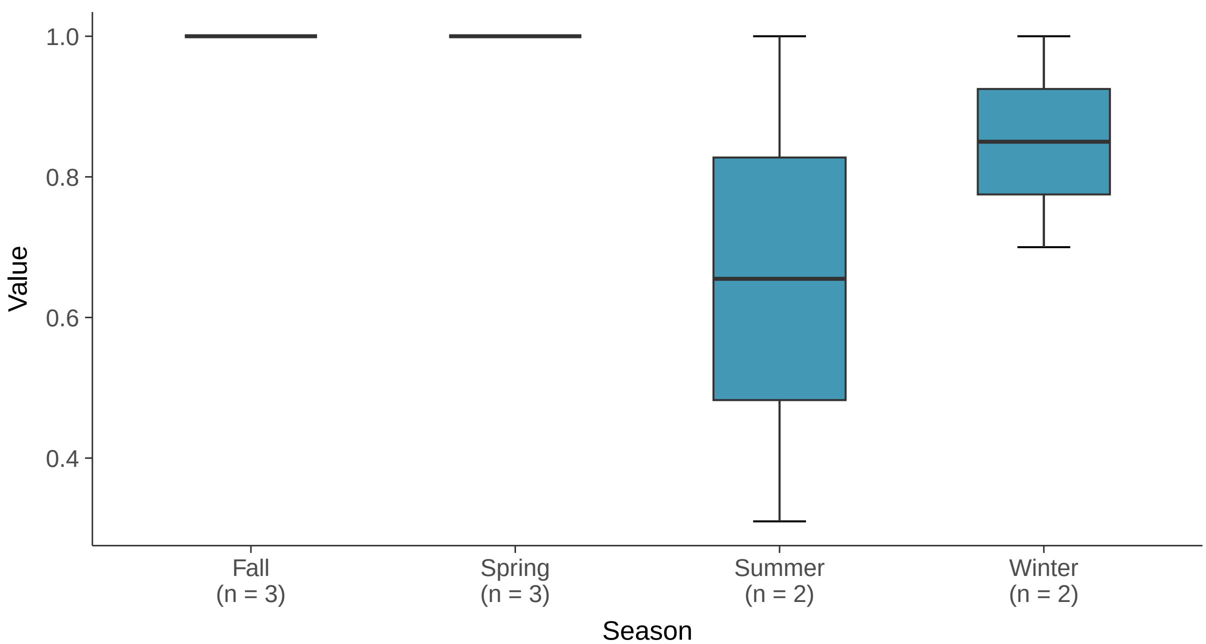
Boxplot

Fluoride, MW-16B (mg/L)



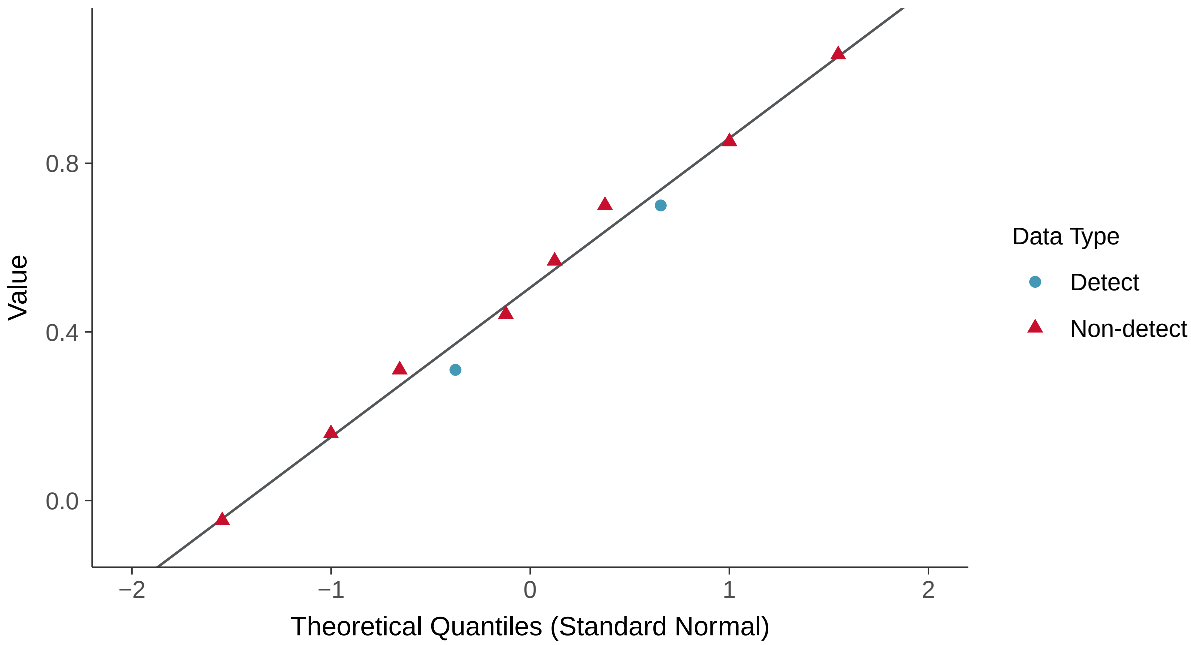
Boxplot by Season

Fluoride, MW-16B (mg/L)



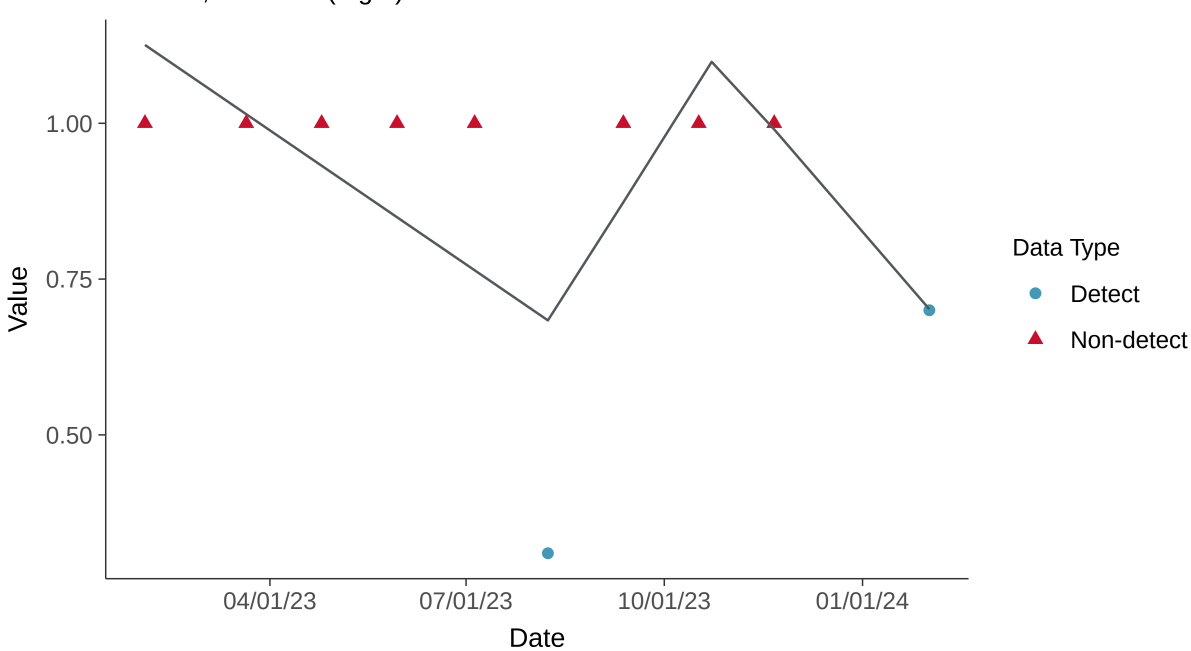
Normal Q-Q plot using ROS Imputed Estimates

Fluoride, MW-16B (mg/L)



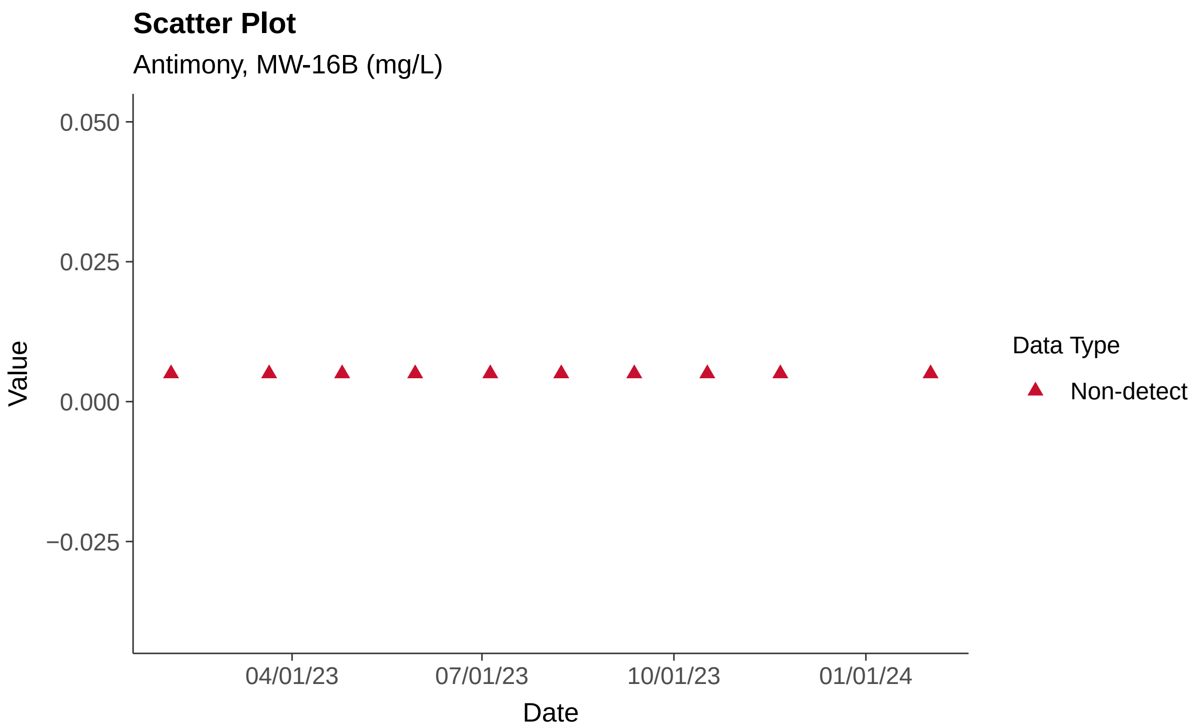
Trend Regression: Piecewise Linear-Linear-Linear

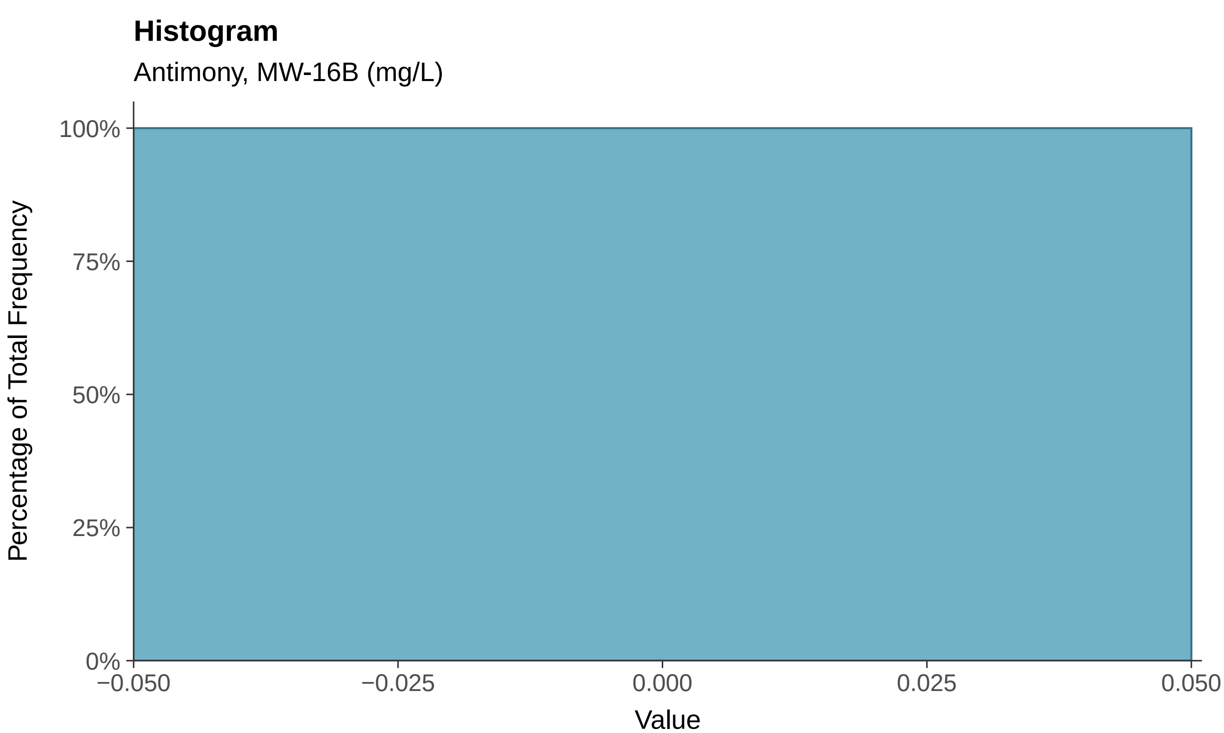
Fluoride, MW-16B (mg/L)



Appendix IV: Antimony, MW-16B

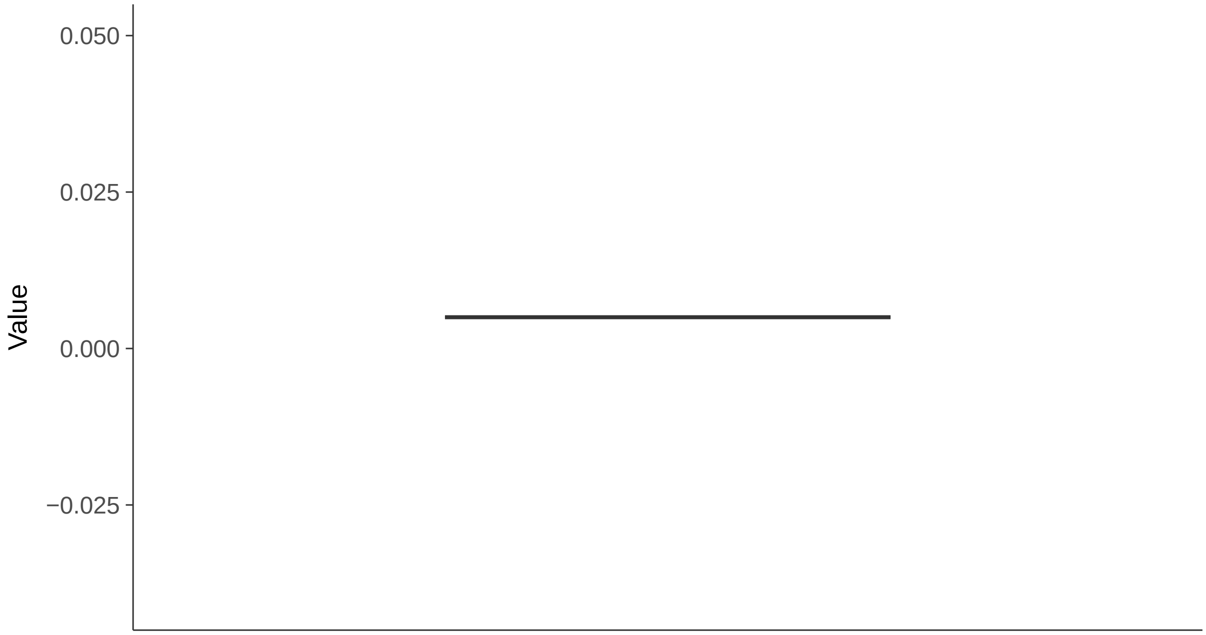
ID: 16B_2_08





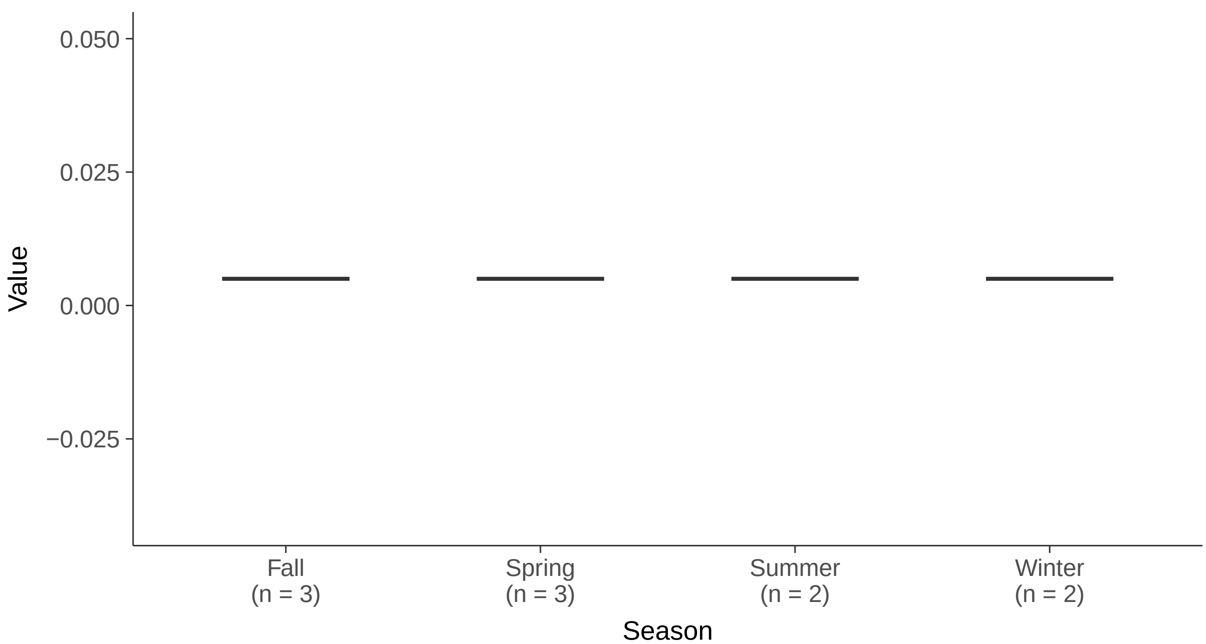
Boxplot

Antimony, MW-16B (mg/L)



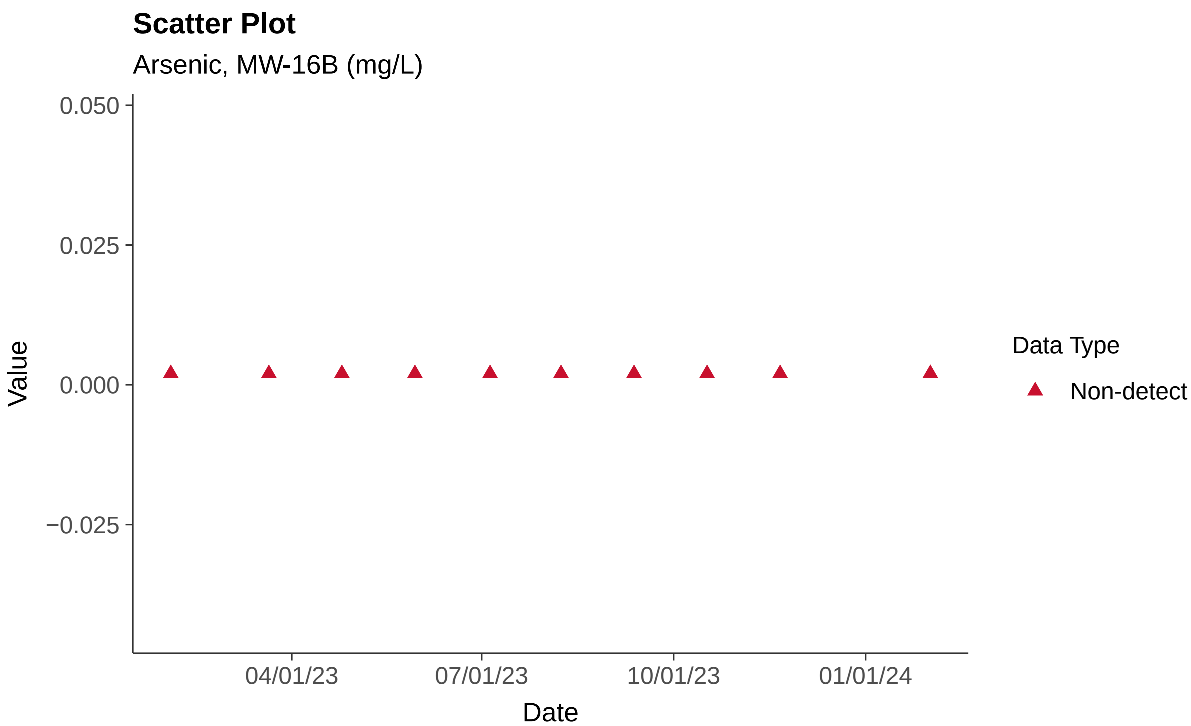
Boxplot by Season

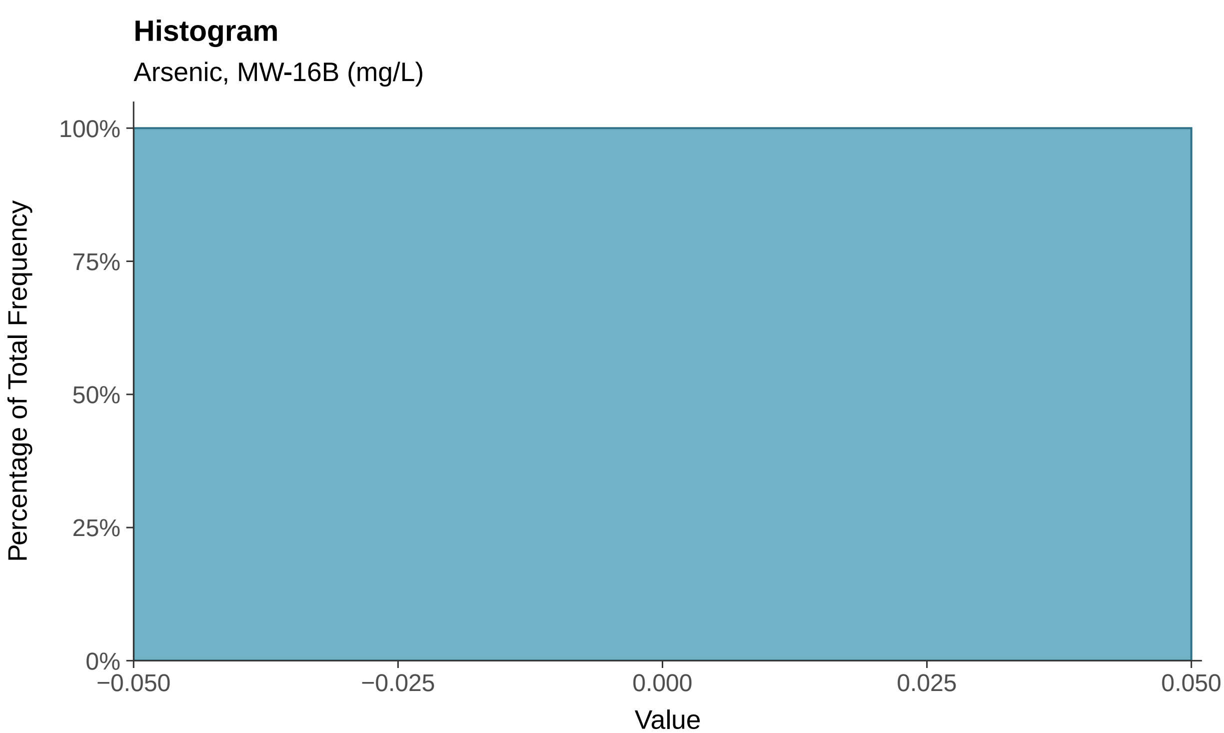
Antimony, MW-16B (mg/L)



Appendix IV: Arsenic, MW-16B

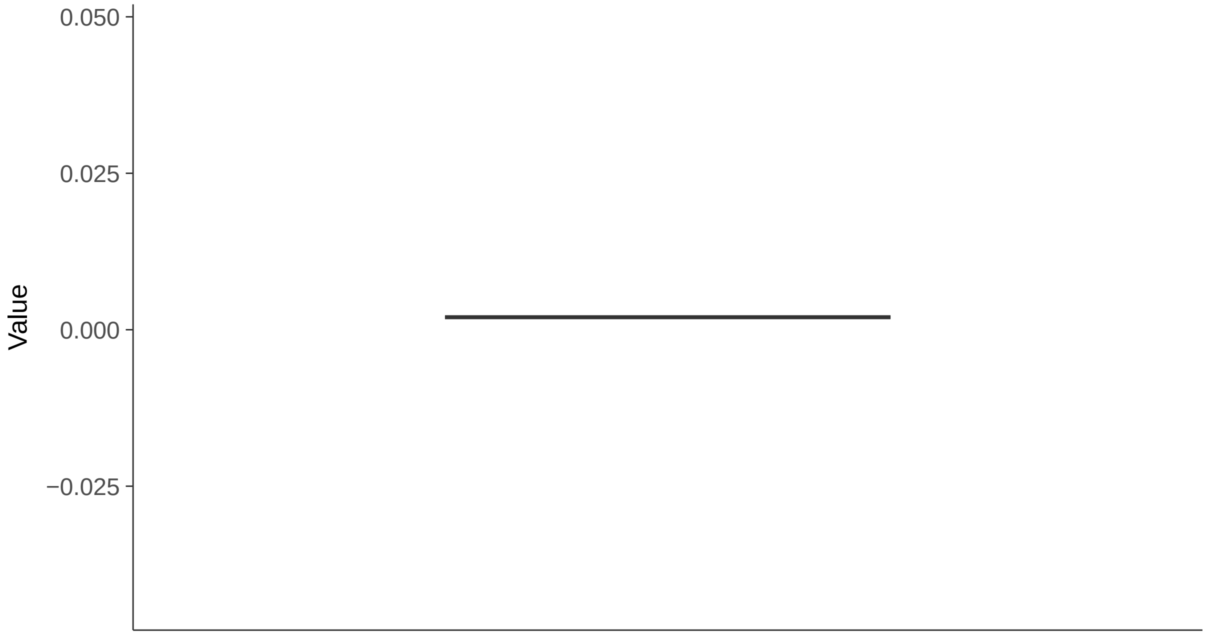
ID: 16B_2_09





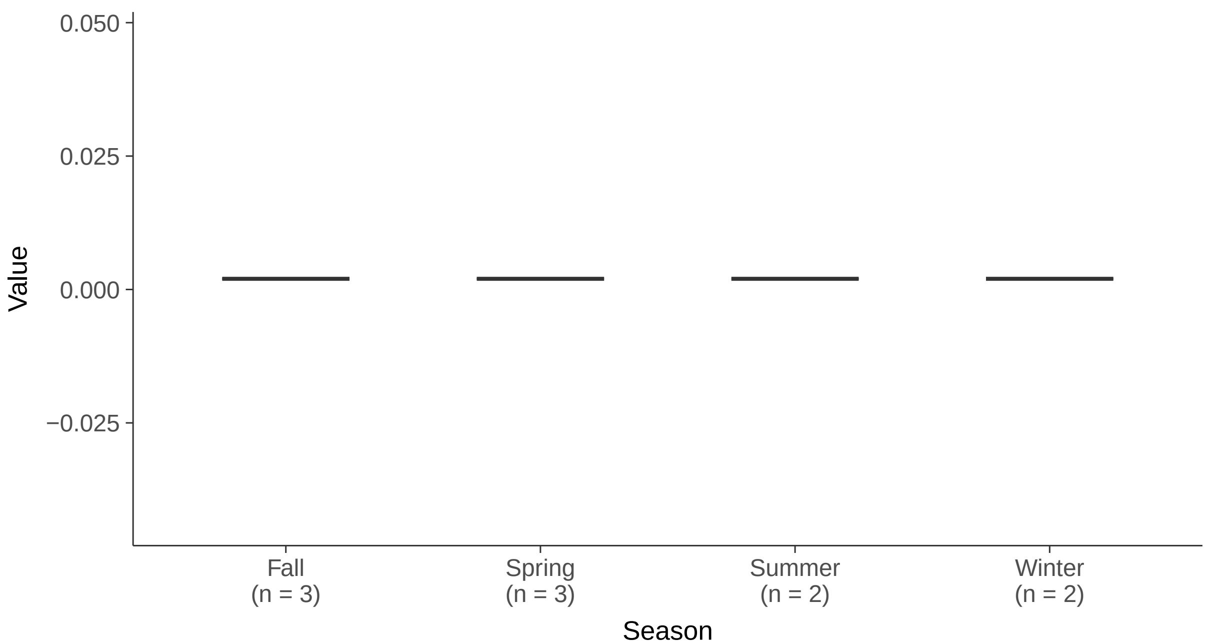
Boxplot

Arsenic, MW-16B (mg/L)



Boxplot by Season

Arsenic, MW-16B (mg/L)

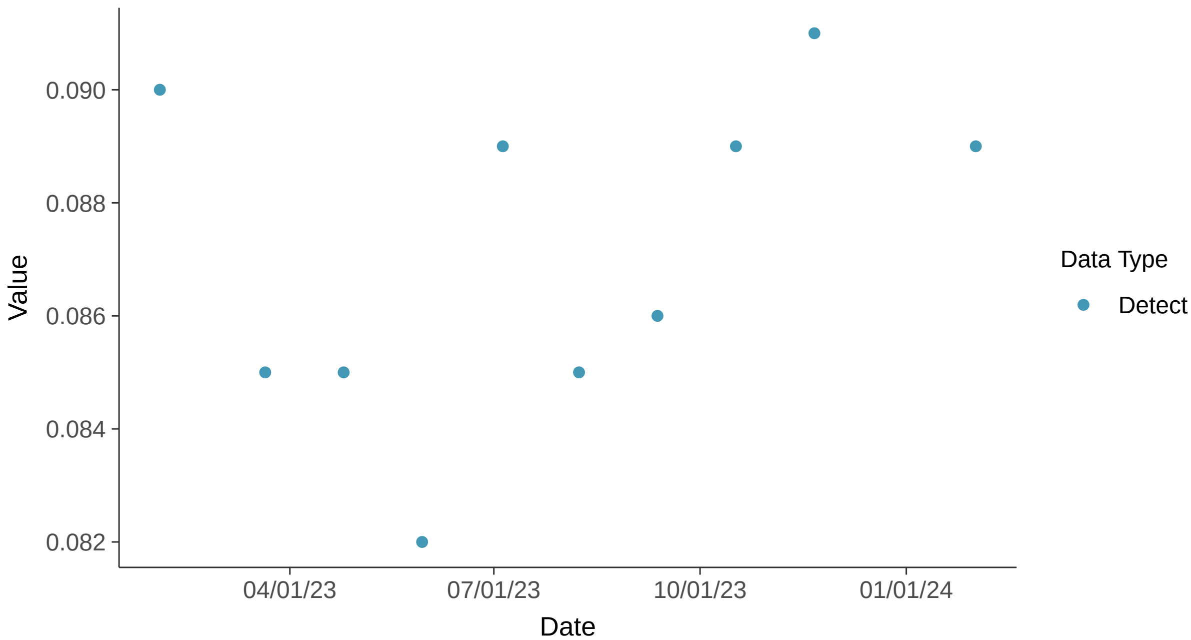


Appendix IV: Barium, MW-16B

ID: 16B_2_10

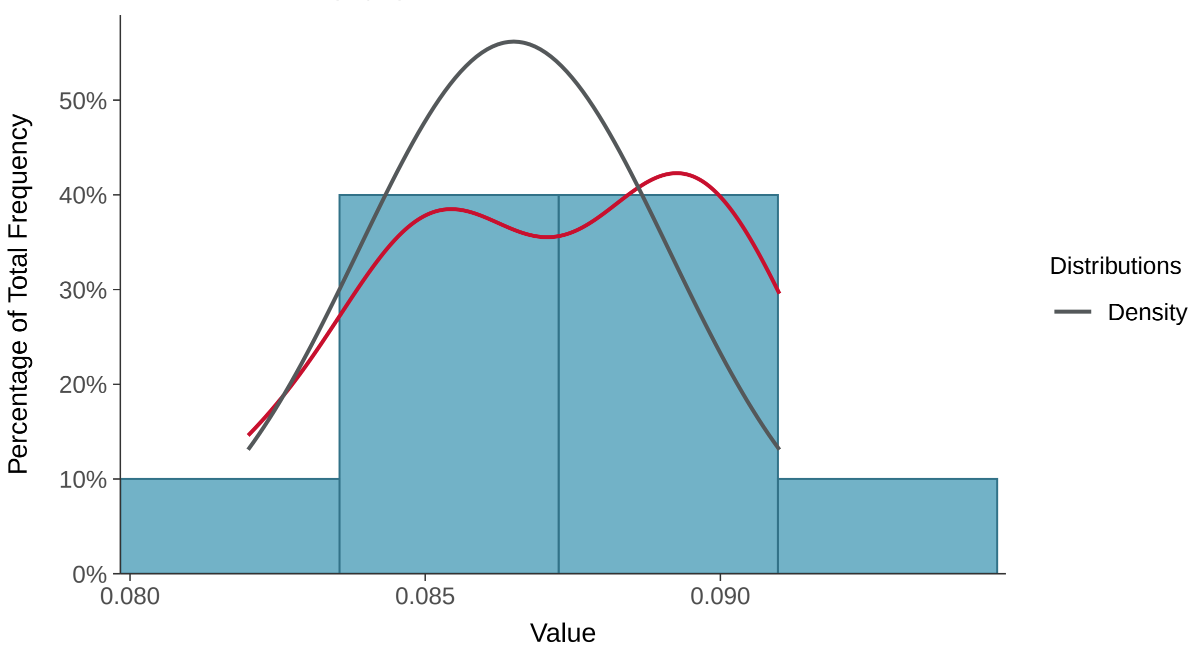
Scatter Plot

Barium, MW-16B (mg/L)



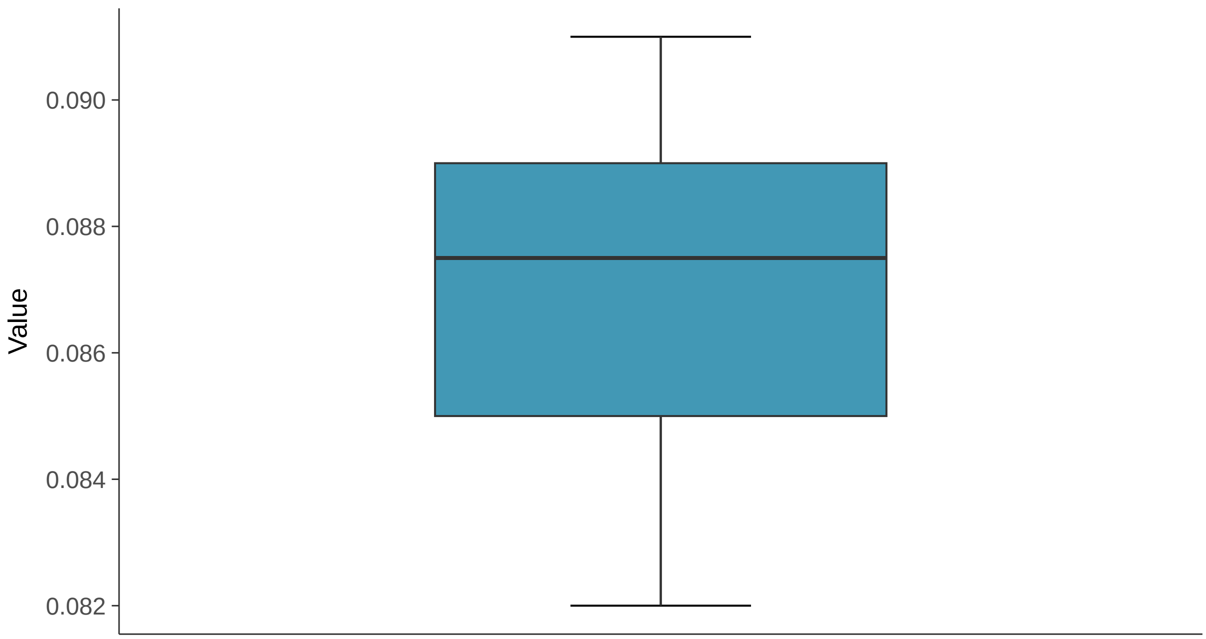
Histogram

Barium, MW-16B (mg/L)



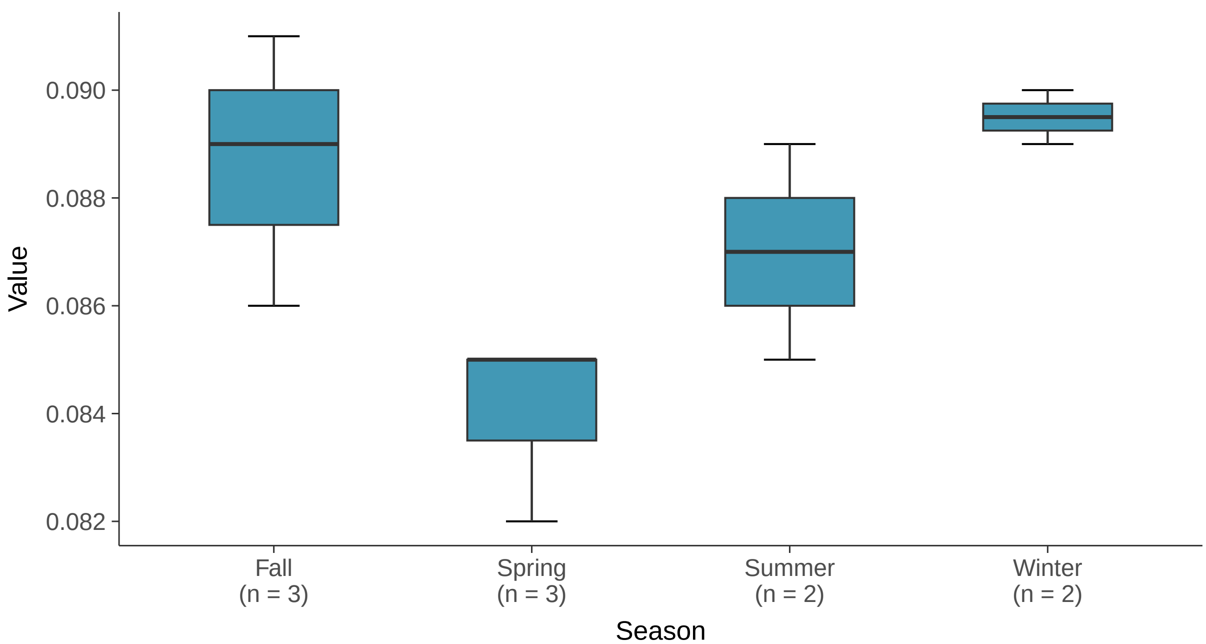
Boxplot

Barium, MW-16B (mg/L)



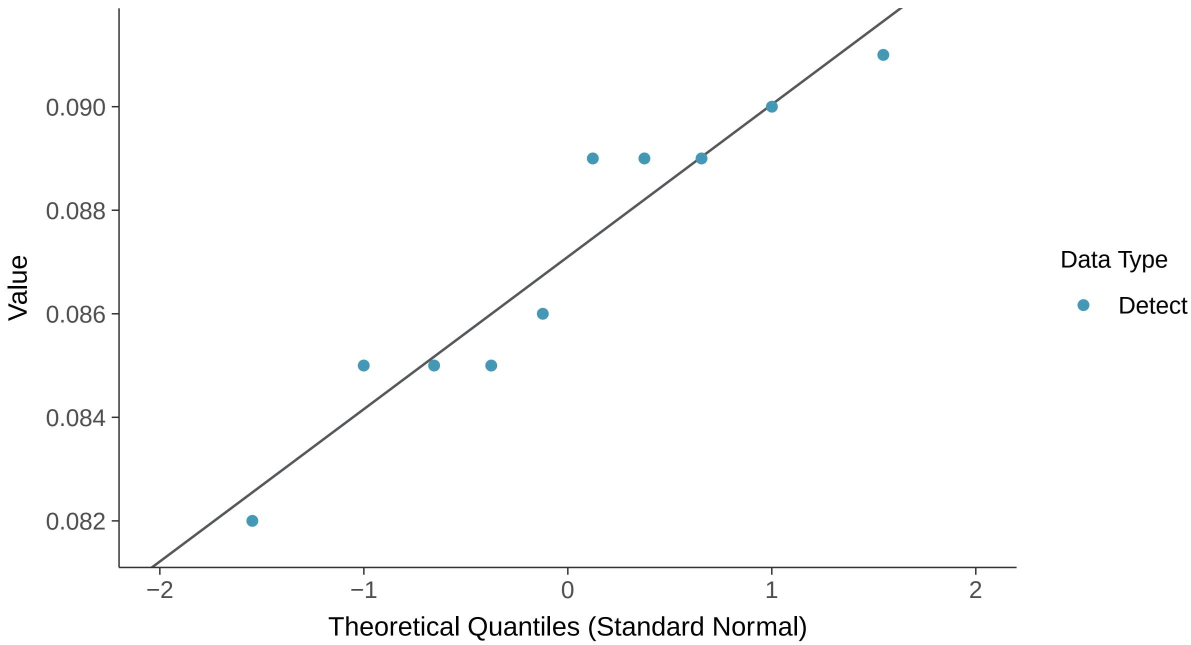
Boxplot by Season

Barium, MW-16B (mg/L)



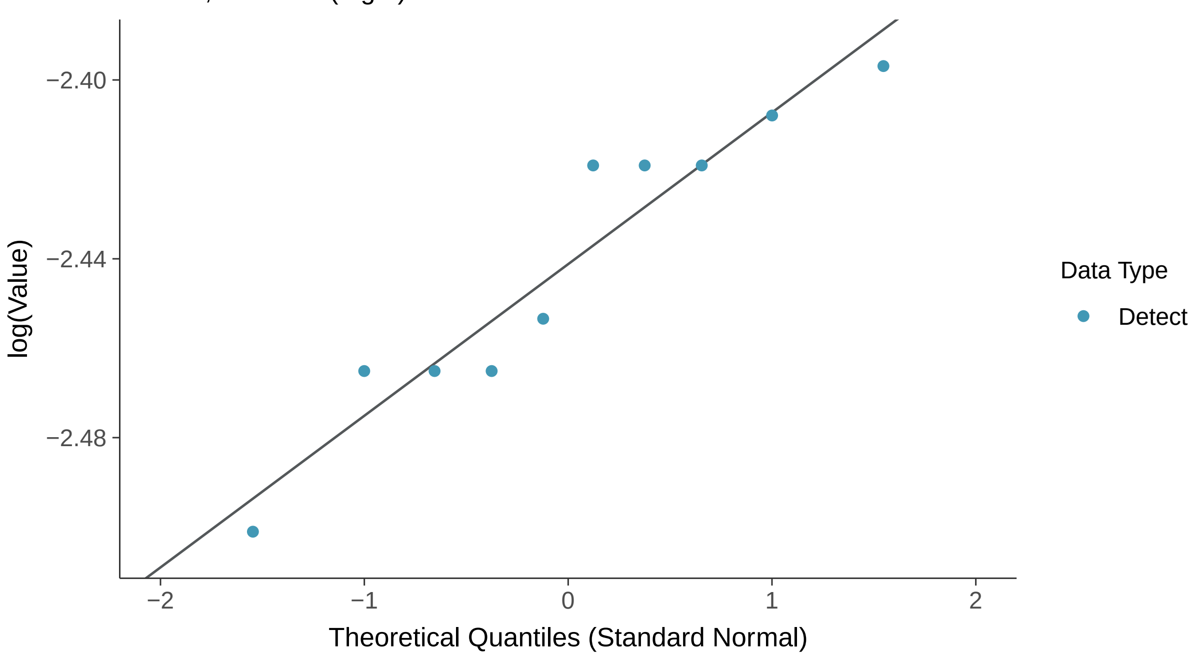
Normal Q-Q plot

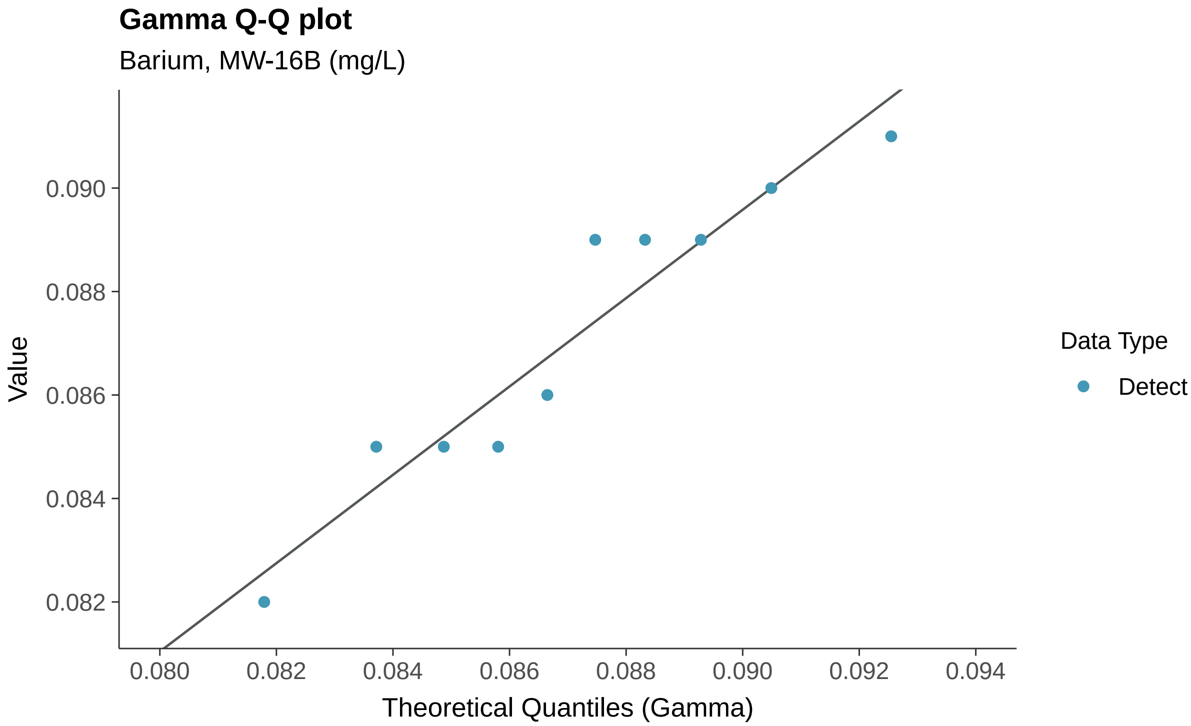
Barium, MW-16B (mg/L)

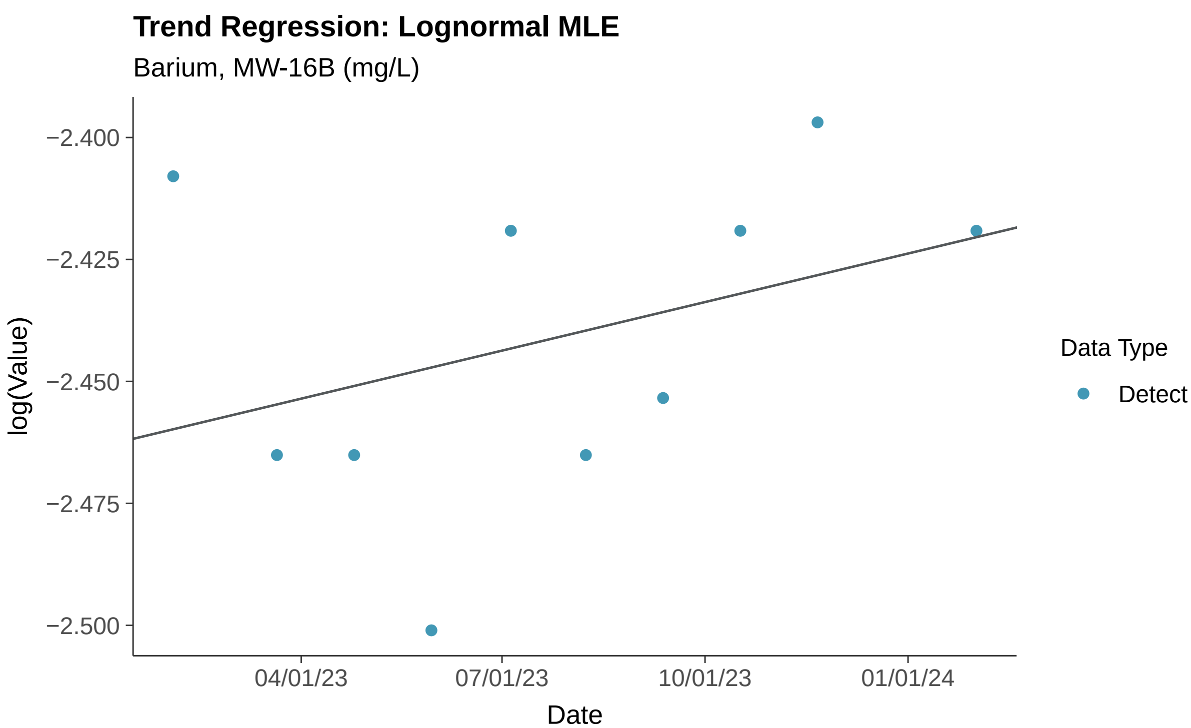


Lognormal Q-Q plot

Barium, MW-16B (mg/L)

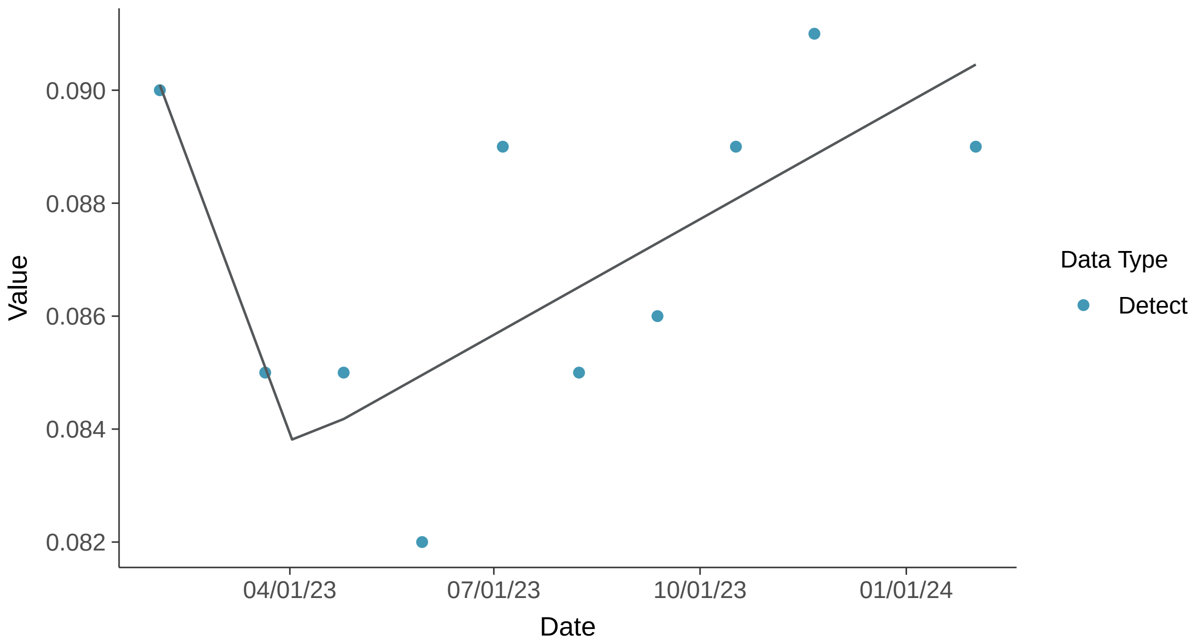



Gamma Q-Q plot
Barium, MW-16B (mg/L)
Value
0.090
0.088
0.086
0.084
0.082
0.080
0.082
0.084
0.086
0.088
0.090
0.092
0.094
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-16B (mg/L)
log(Value)
−2.400
−2.425
−2.450
−2.475
−2.500
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

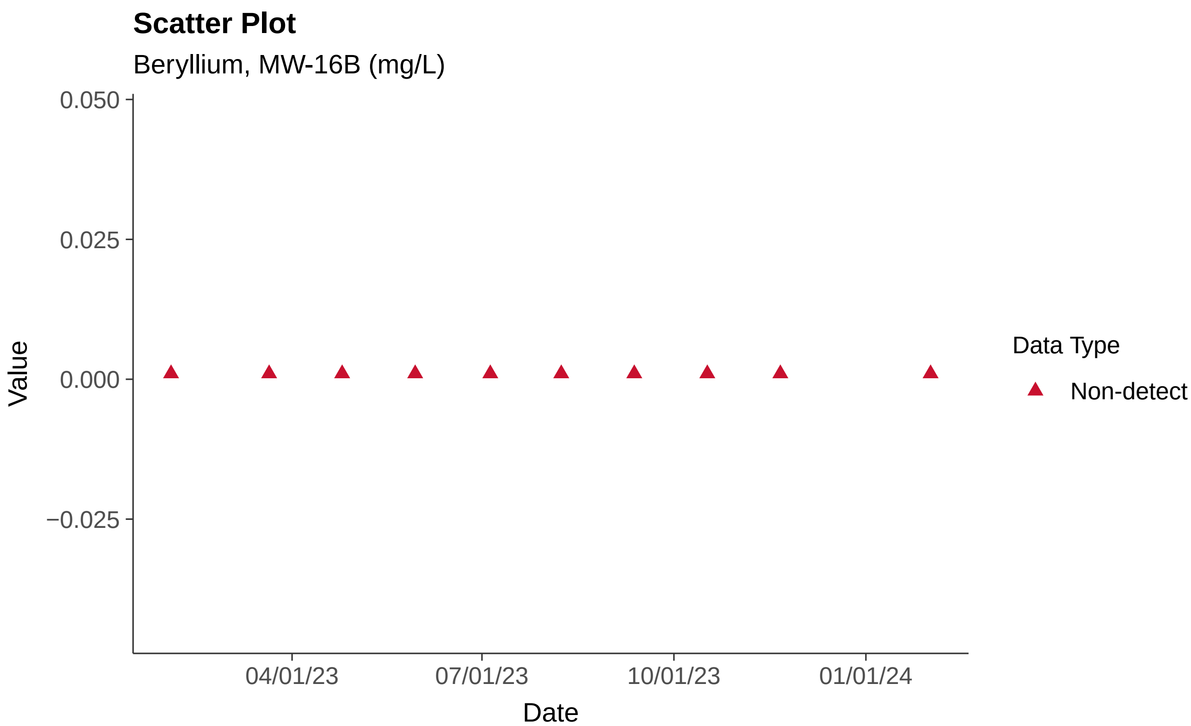
Trend Regression: Piecewise Linear-Linear

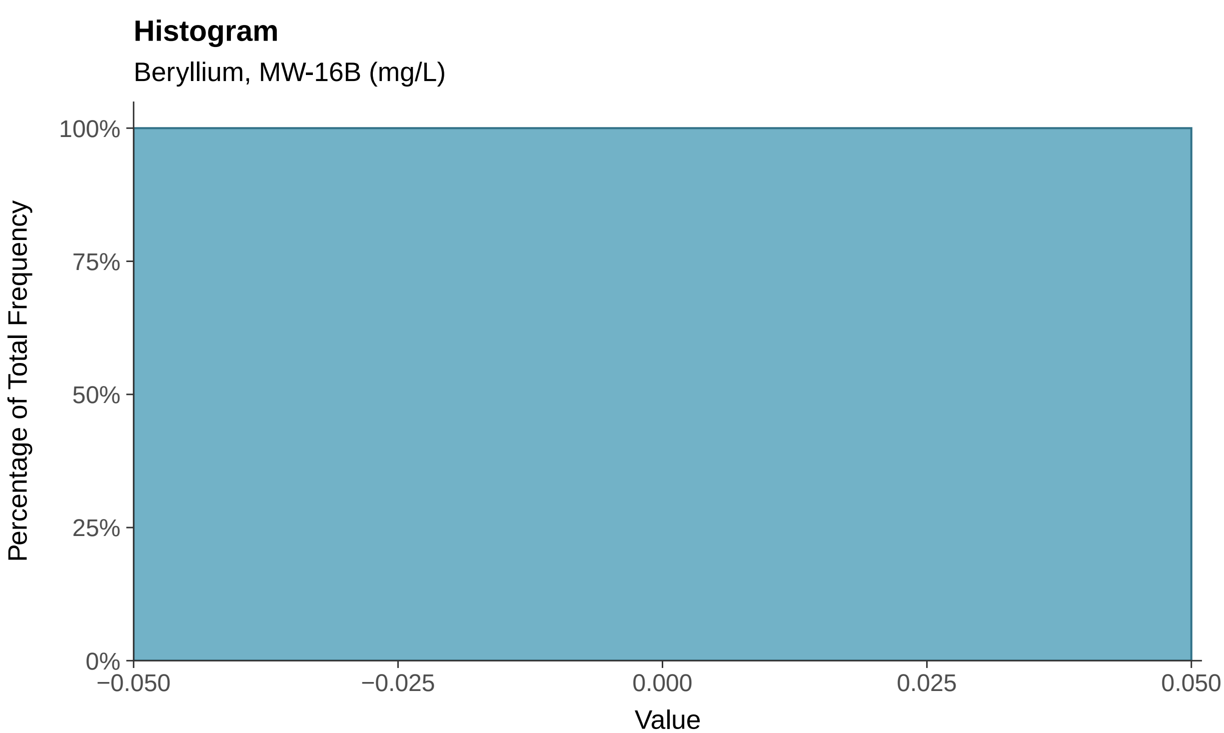
Barium, MW-16B (mg/L)



Appendix IV: Beryllium, MW-16B

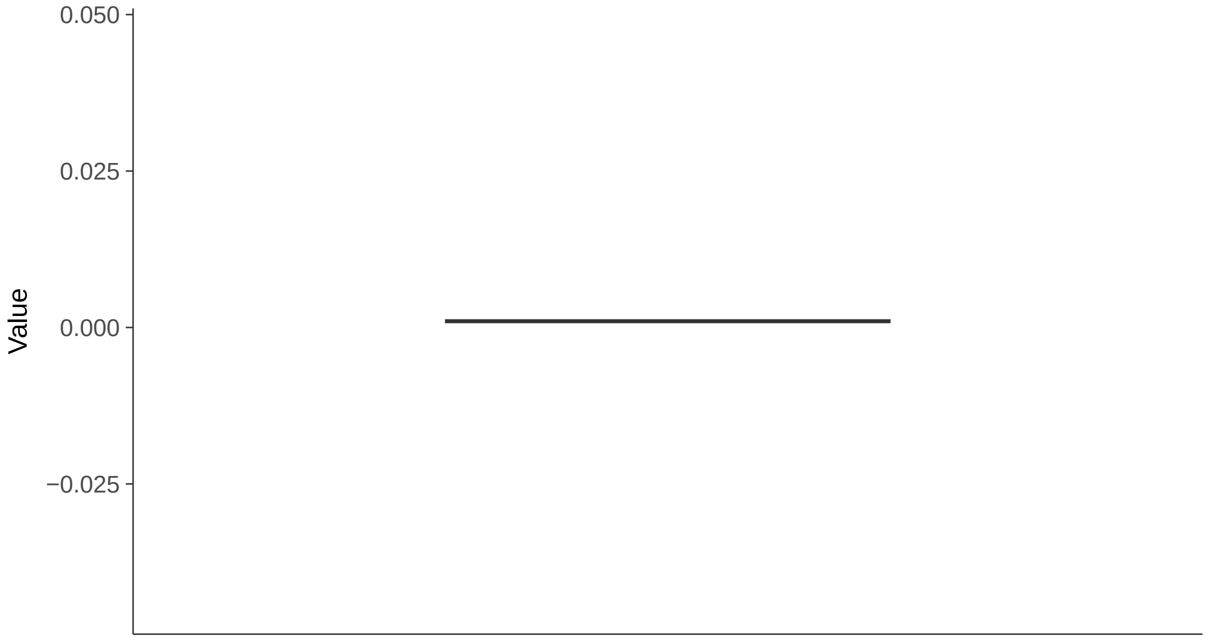
ID: 16B_2_11





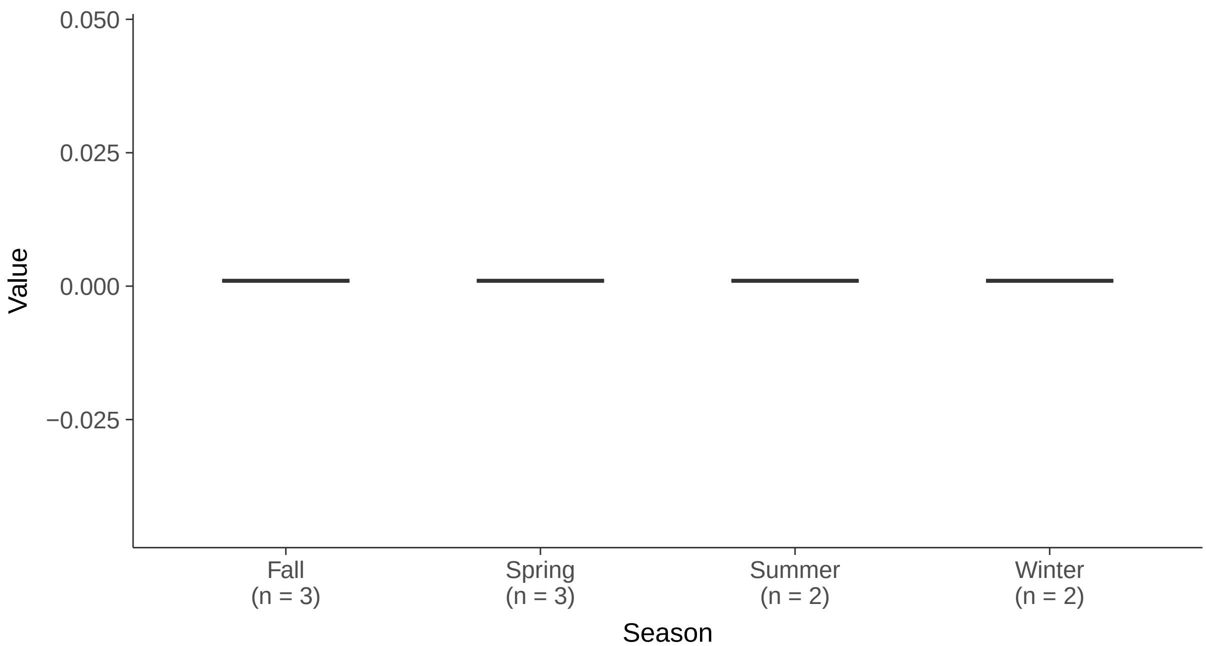
Boxplot

Beryllium, MW-16B (mg/L)



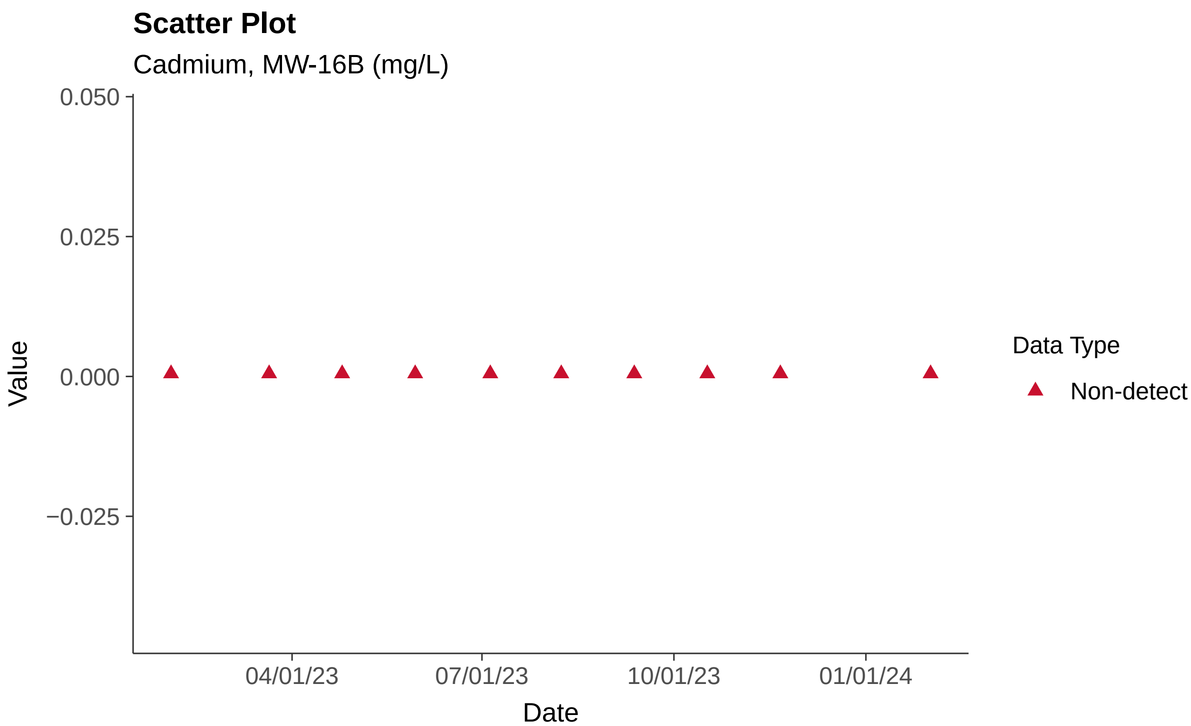
Boxplot by Season

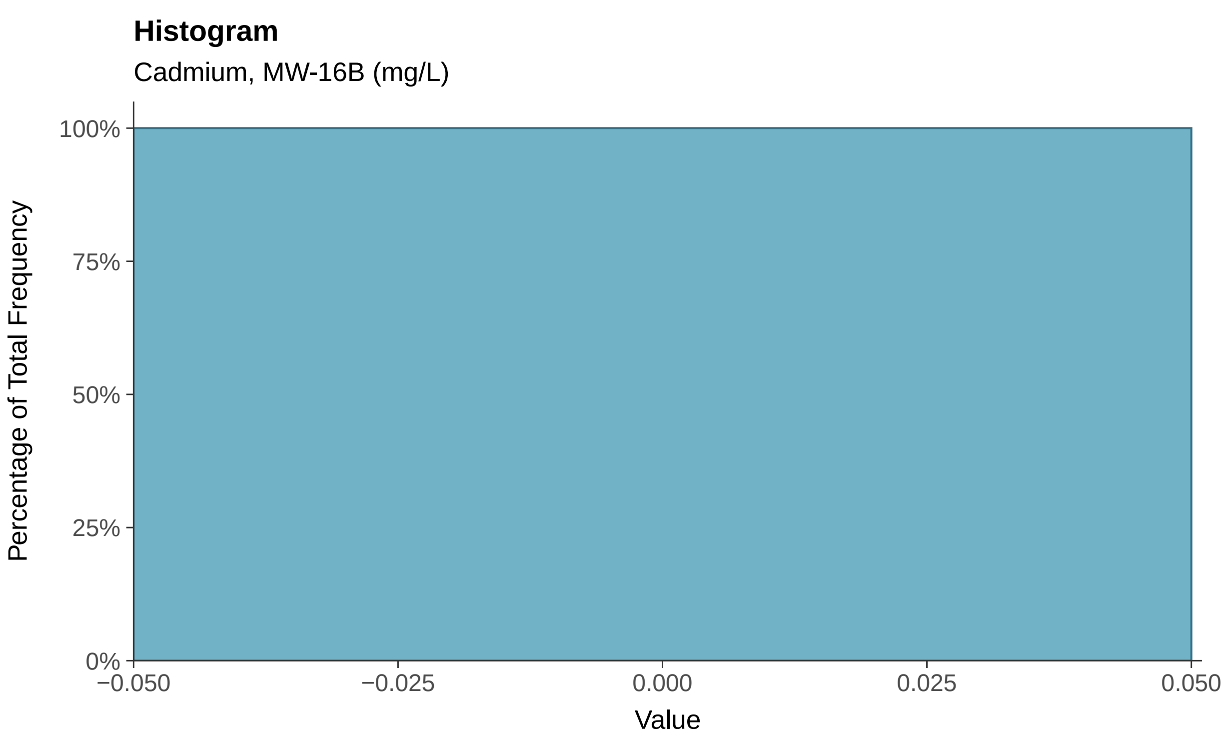
Beryllium, MW-16B (mg/L)



Appendix IV: Cadmium, MW-16B

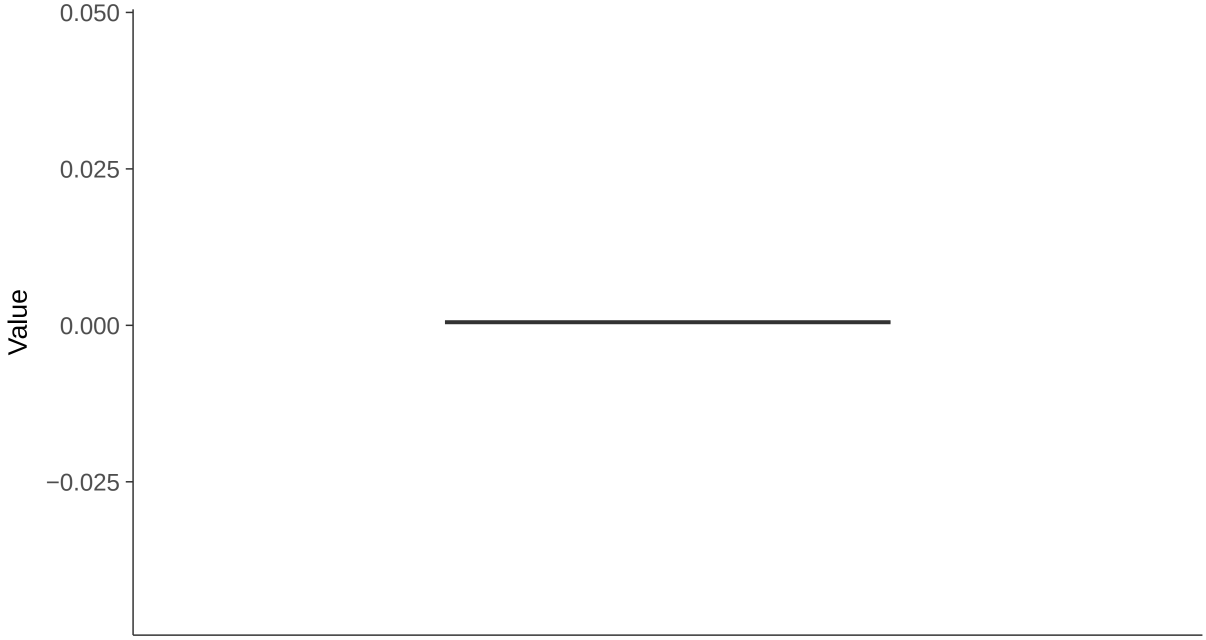
ID: 16B_2_12





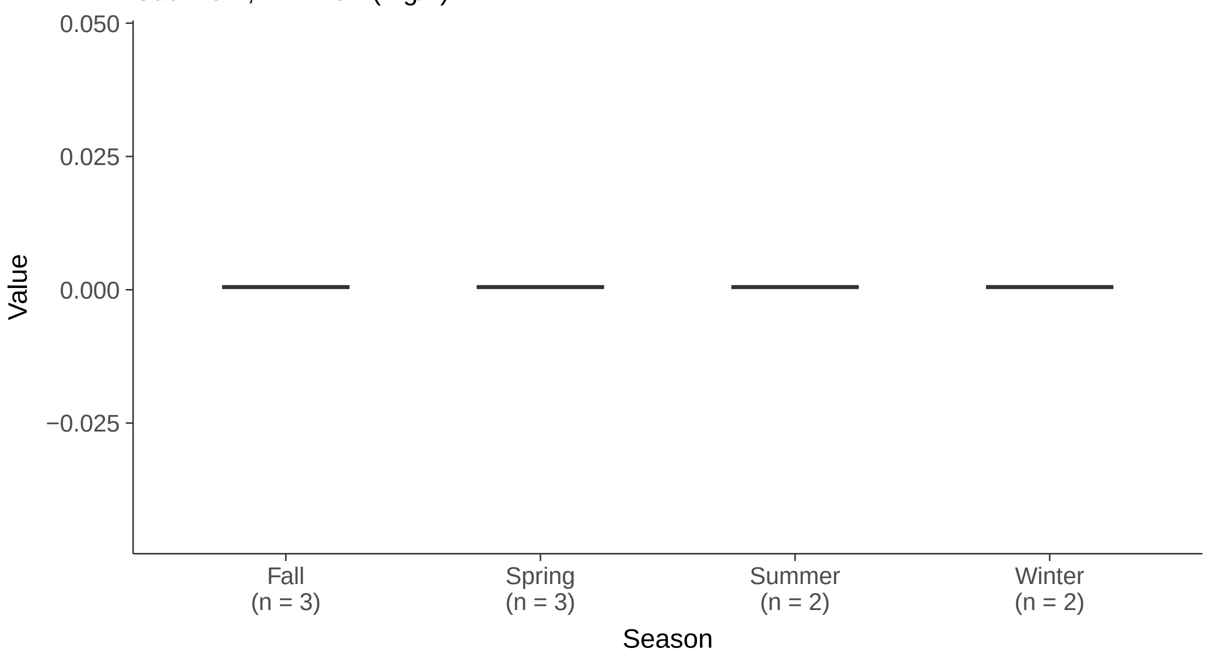
Boxplot

Cadmium, MW-16B (mg/L)



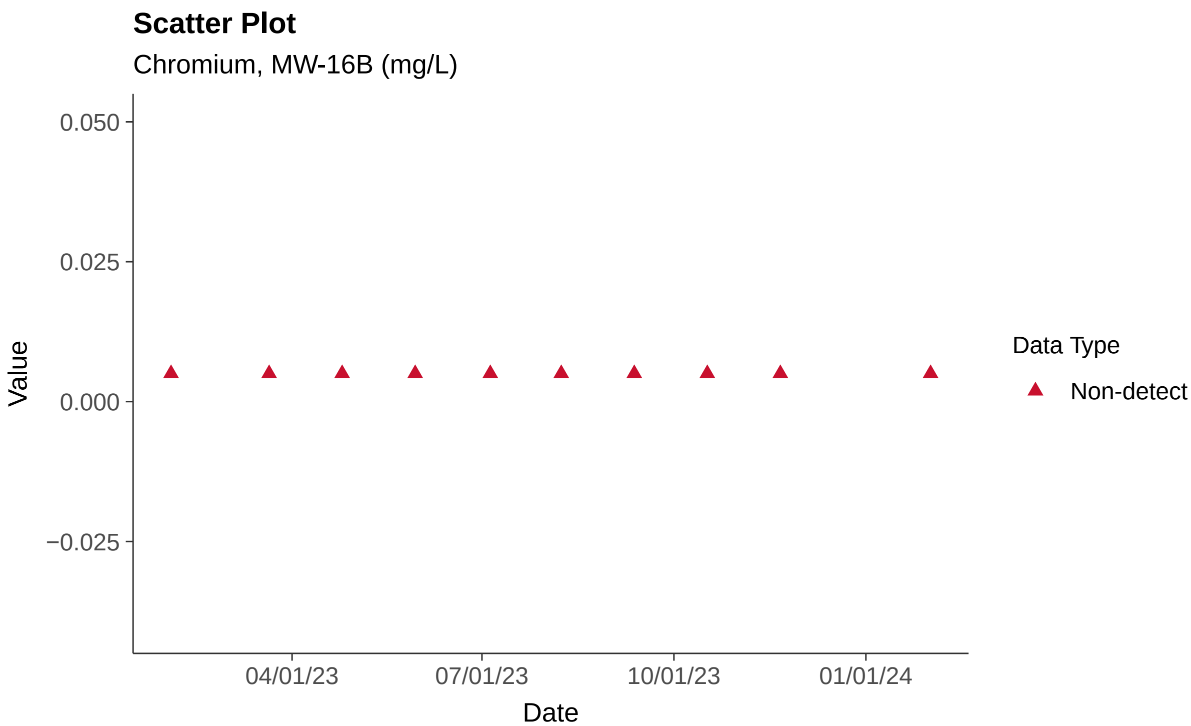
Boxplot by Season

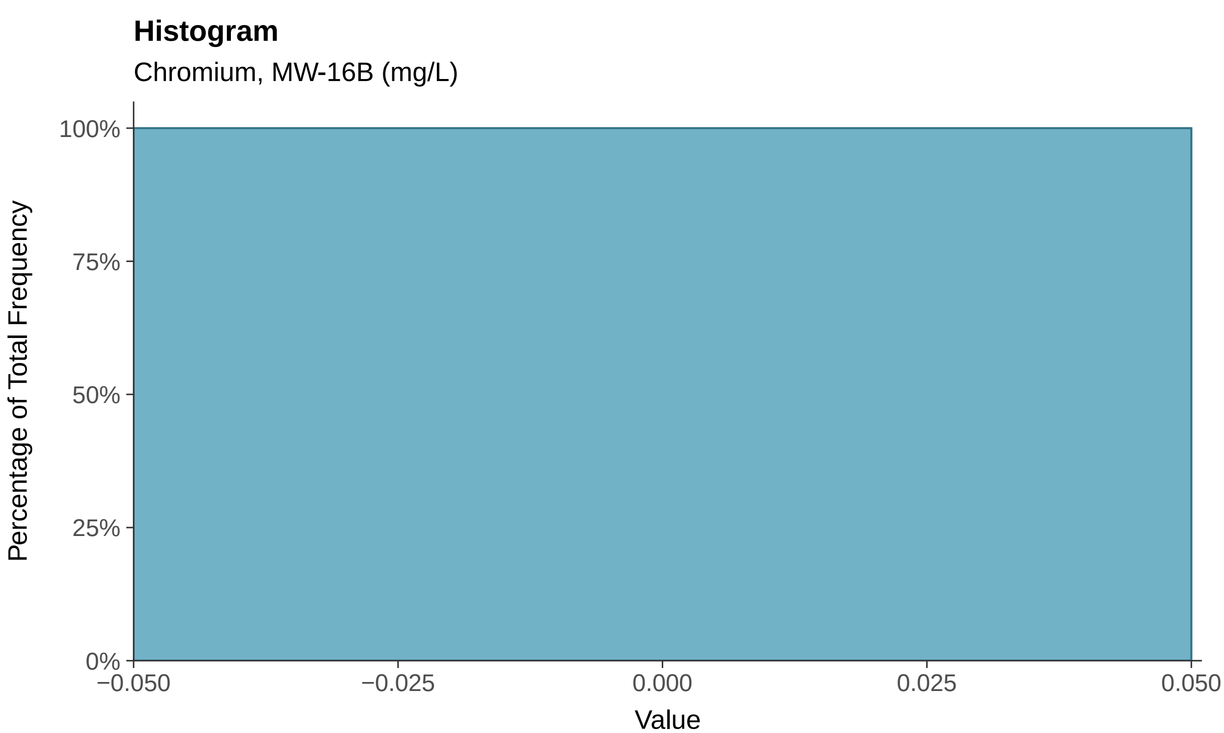
Cadmium, MW-16B (mg/L)

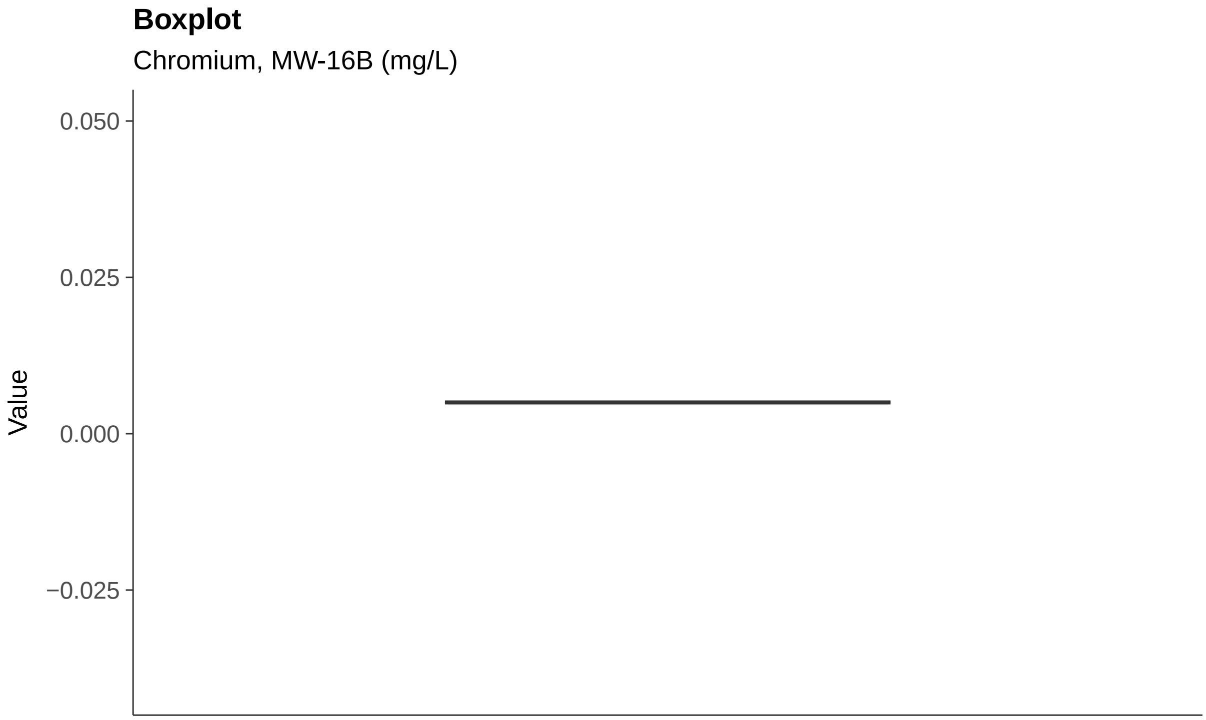


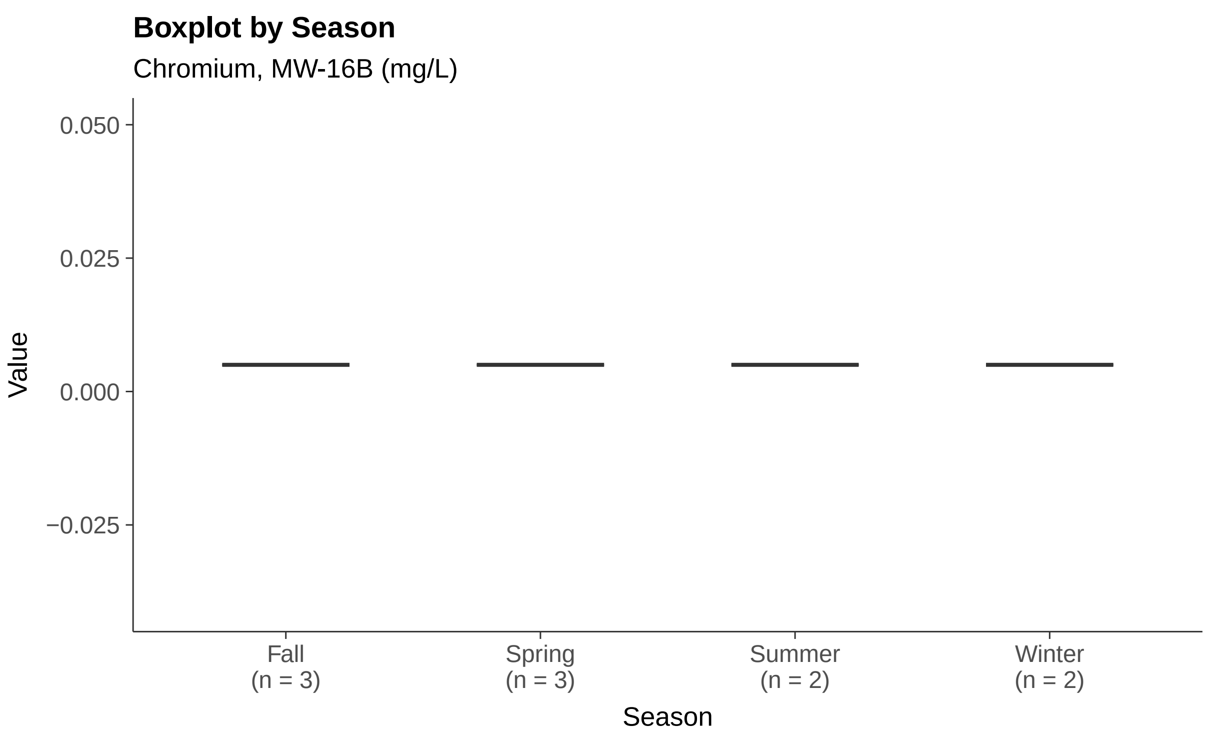
Appendix IV: Chromium, MW-16B

ID: 16B_2_13






Boxplot
Chromium, MW-16B (mg/L)
Value
0.050
0.025
0.000
−0.025

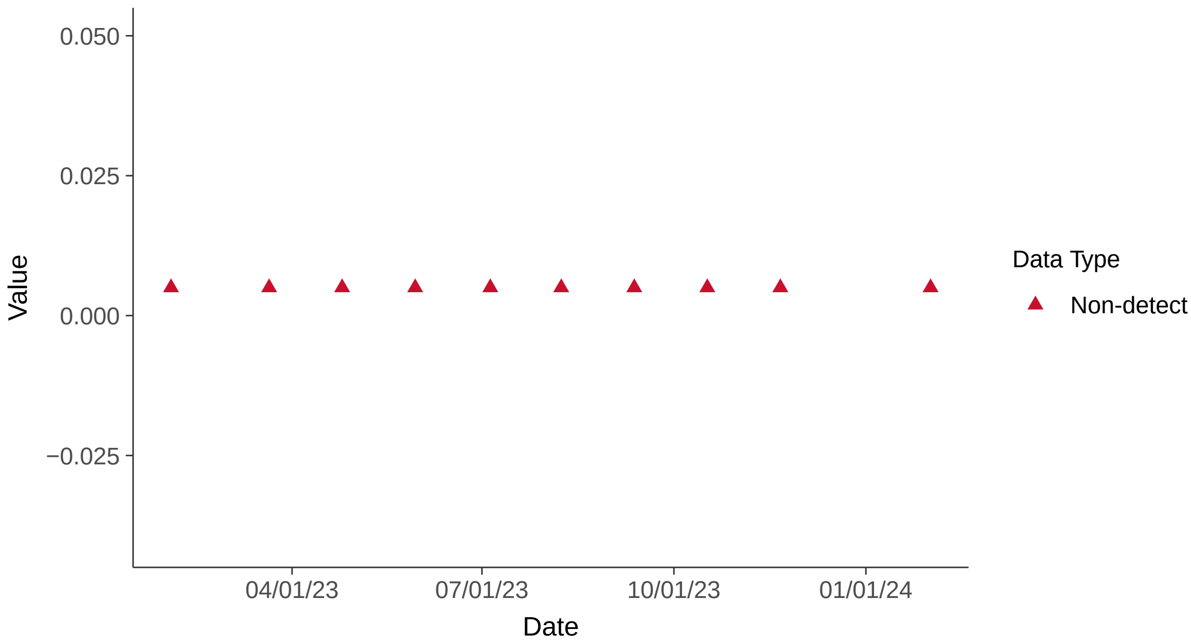

Boxplot by Season
Chromium, MW-16B (mg/L)
Value
0.050
0.025
0.000
−0.025
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season

Appendix IV: Cobalt, MW-16B

ID: 16B_2_14

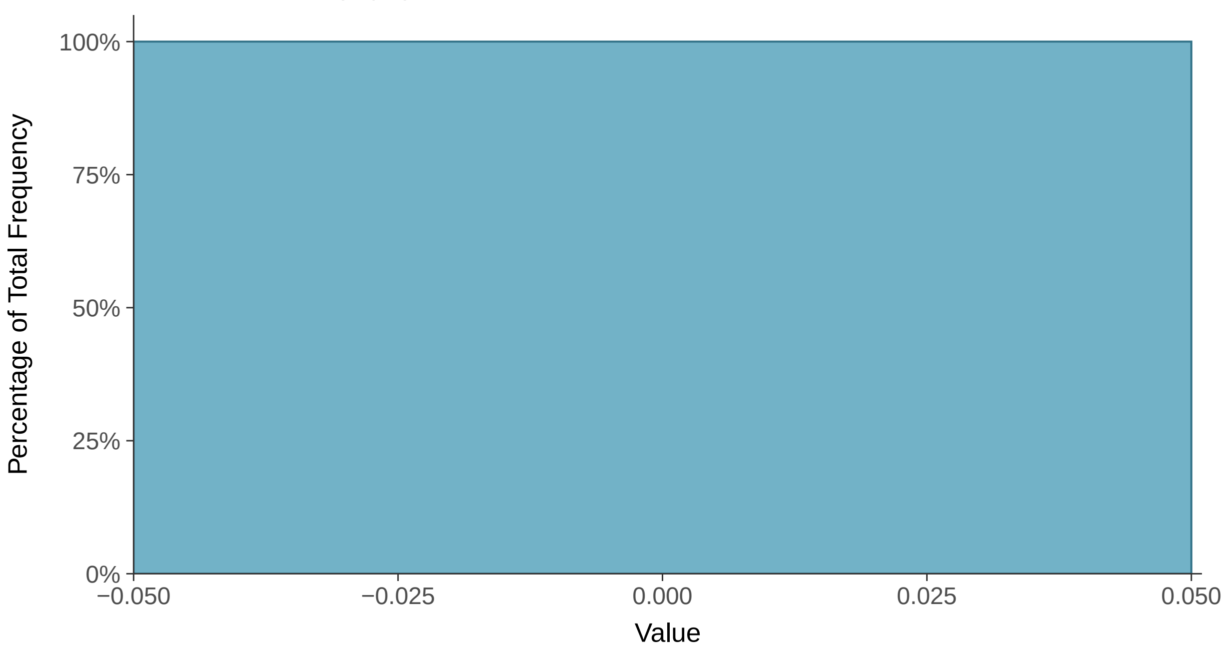
Scatter Plot

Cobalt, MW-16B (mg/L)



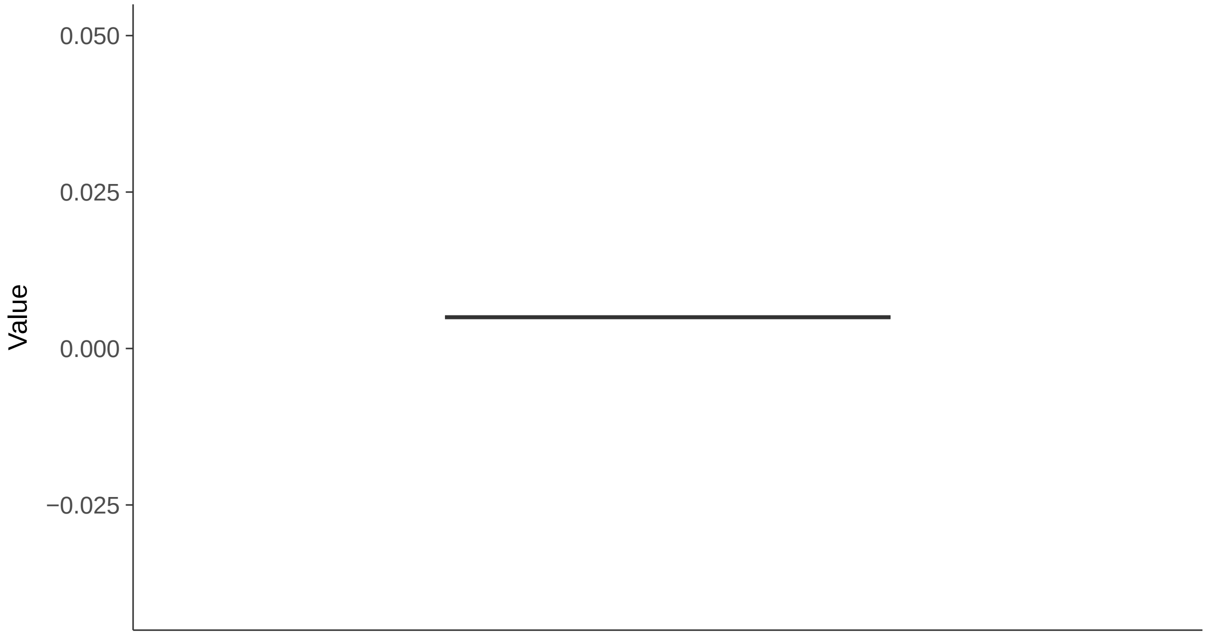
Histogram

Cobalt, MW-16B (mg/L)



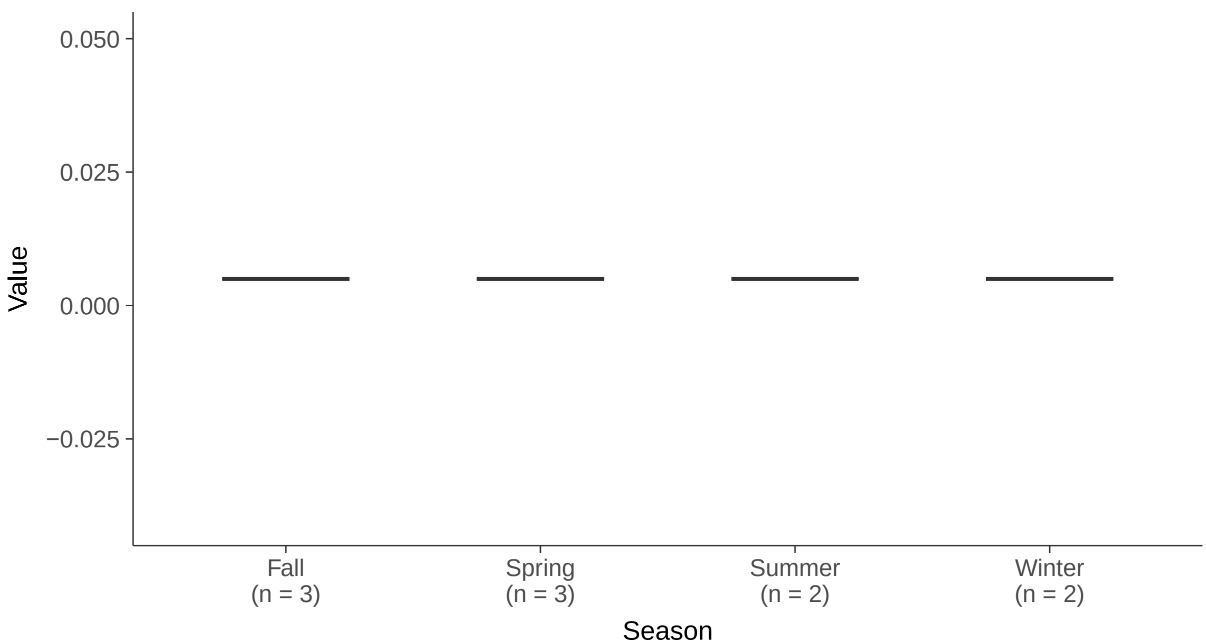
Boxplot

Cobalt, MW-16B (mg/L)



Boxplot by Season

Cobalt, MW-16B (mg/L)

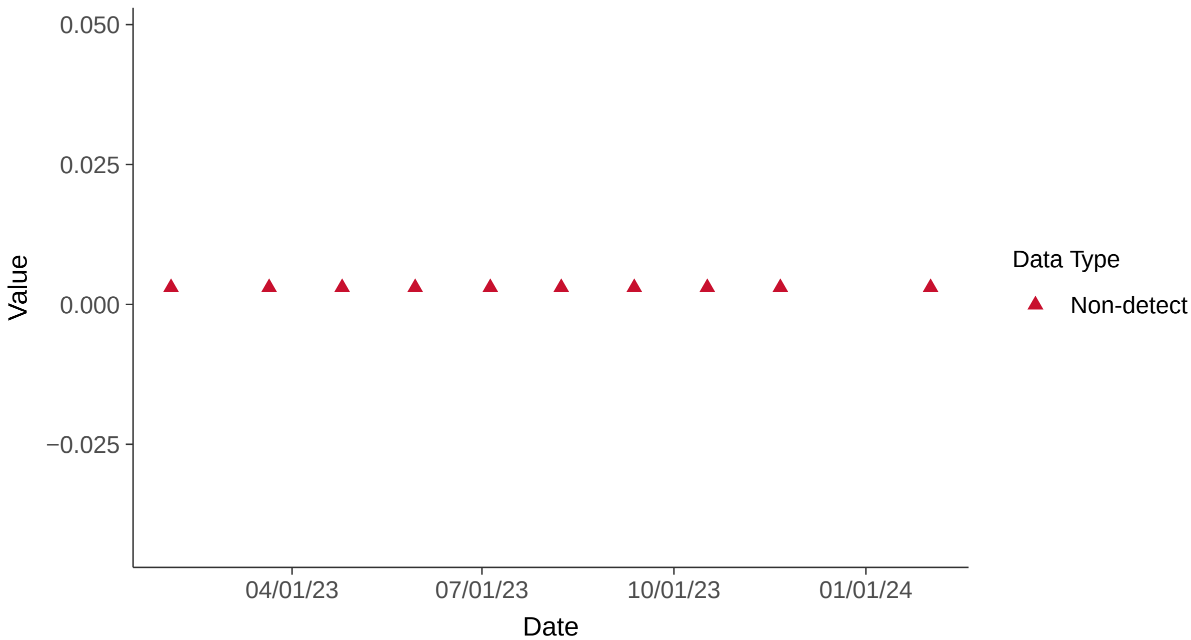


Appendix IV: Lead, MW-16B

ID: 16B_2_15

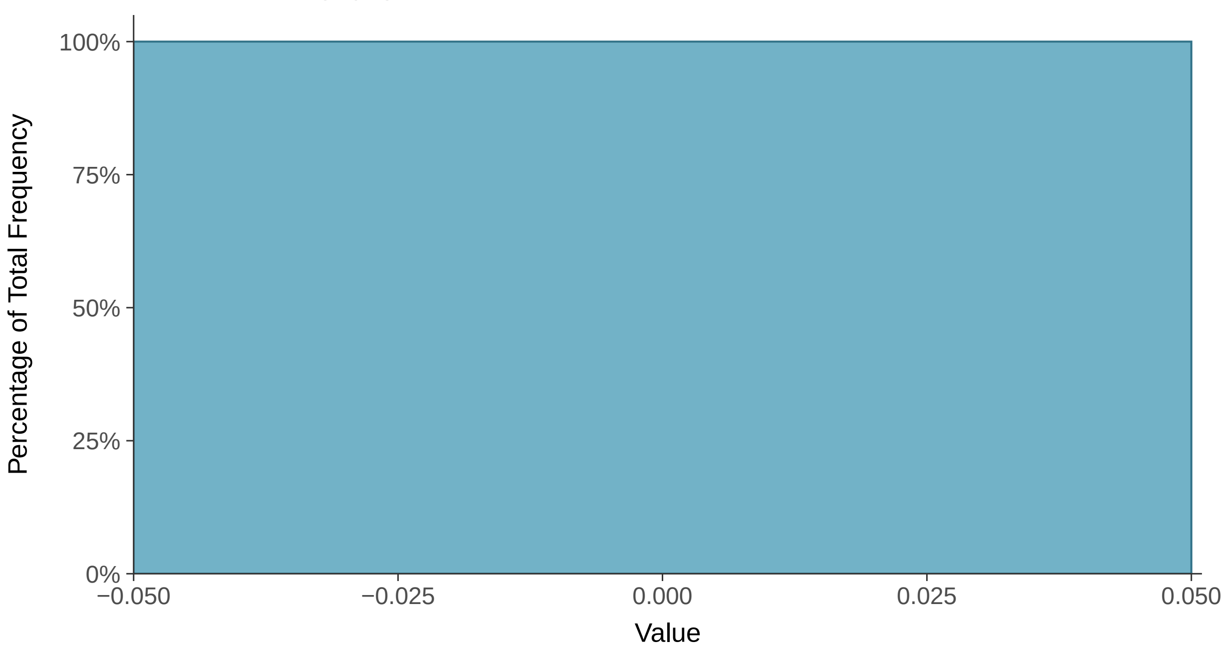
Scatter Plot

Lead, MW-16B (mg/L)



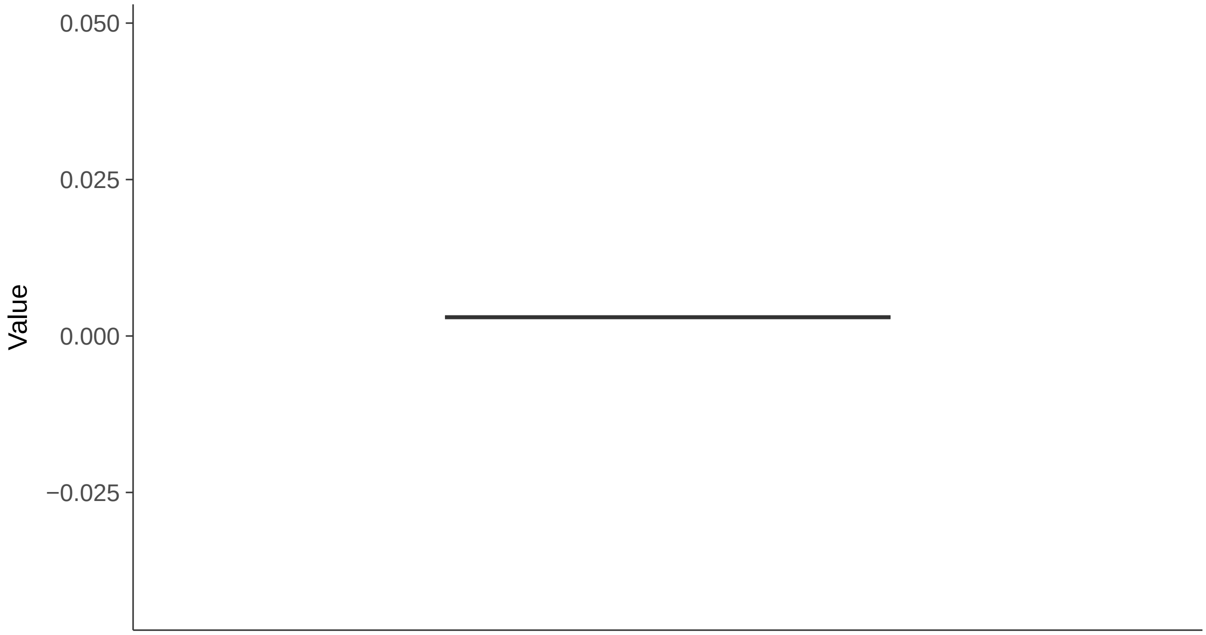
Histogram

Lead, MW-16B (mg/L)



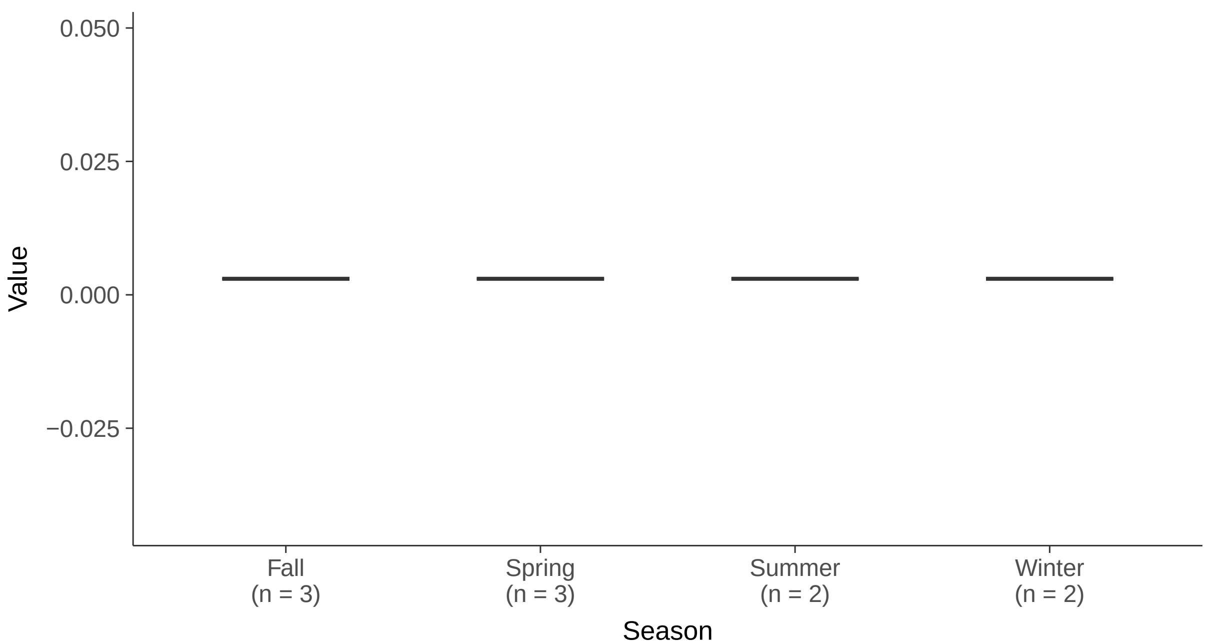
Boxplot

Lead, MW-16B (mg/L)



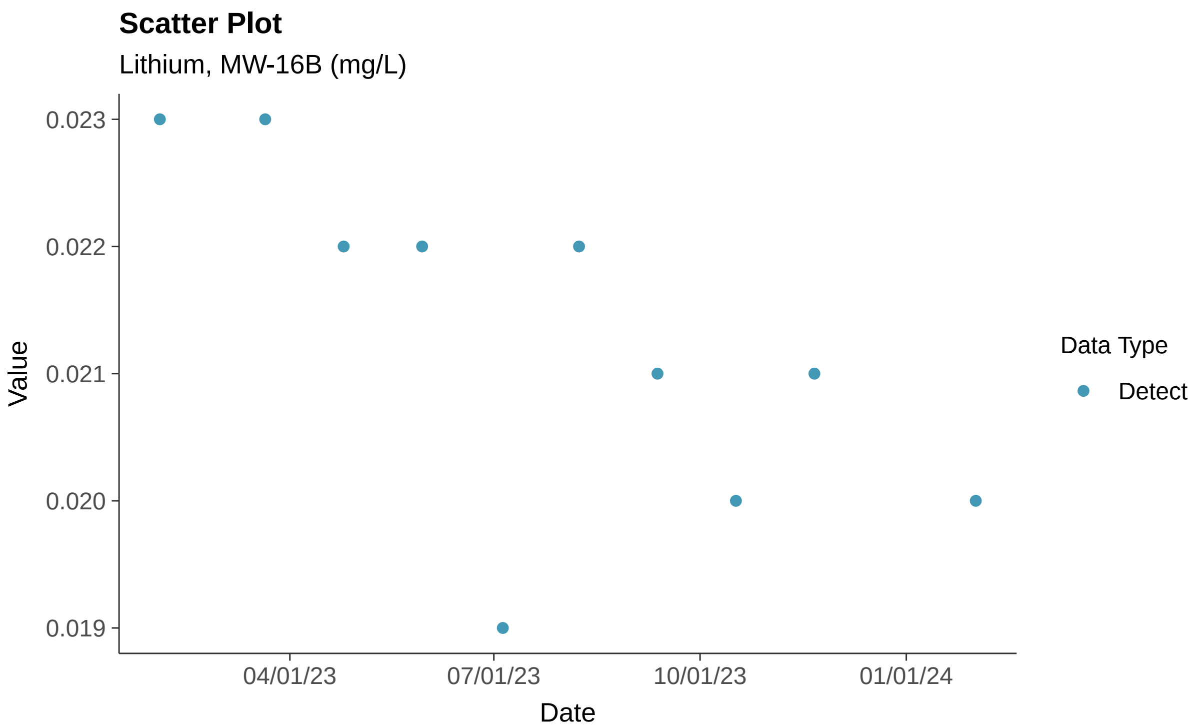
Boxplot by Season

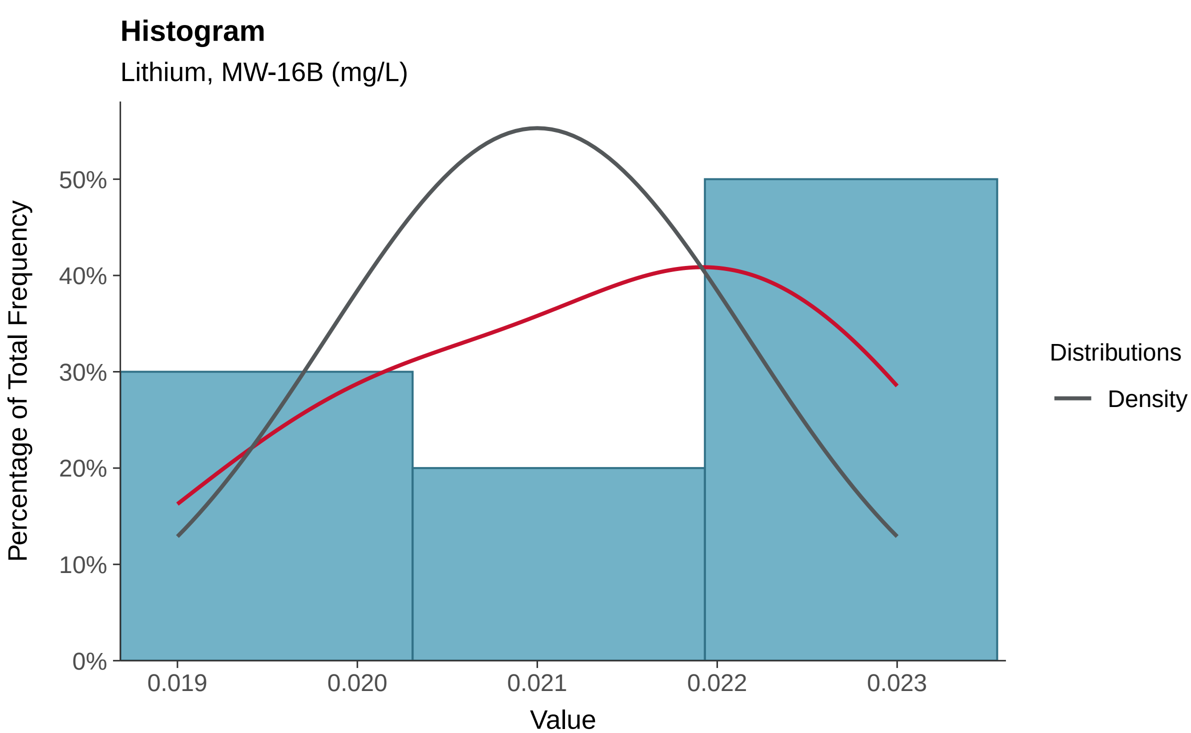
Lead, MW-16B (mg/L)



Appendix IV: Lithium, MW-16B

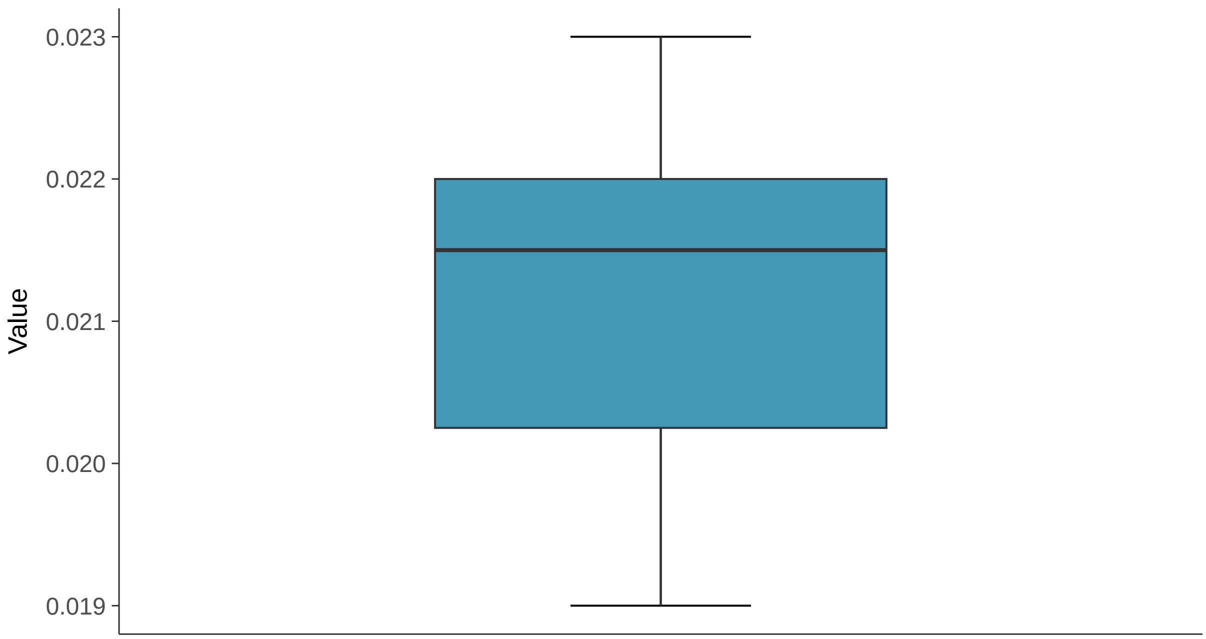
ID: 16B_2_16





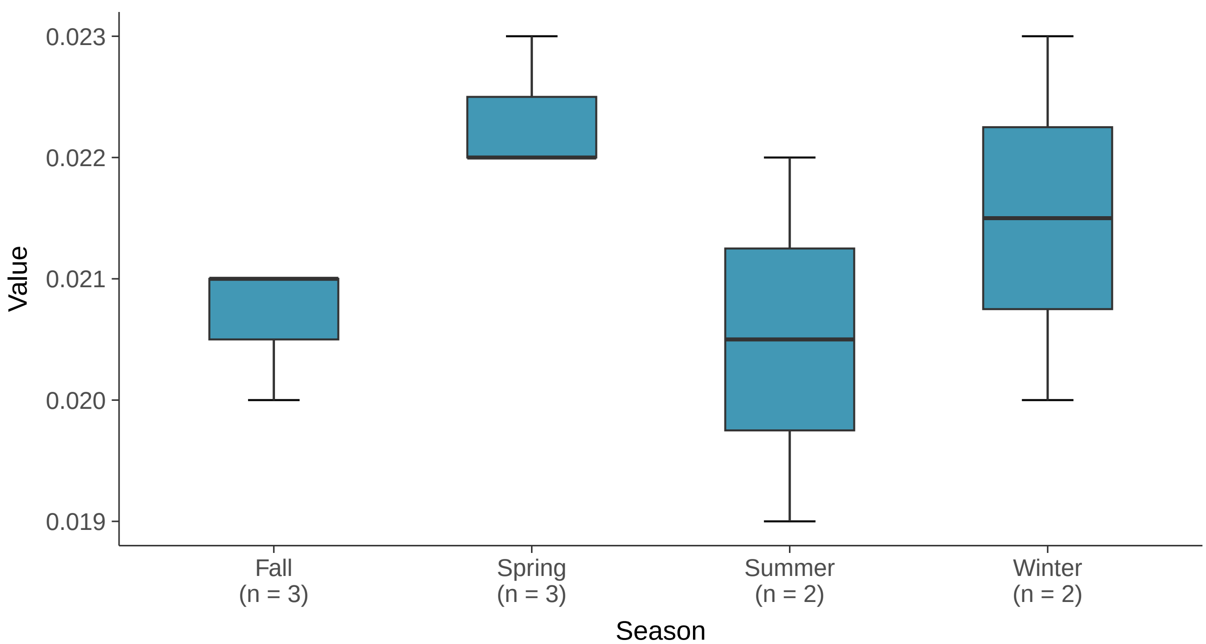
Boxplot

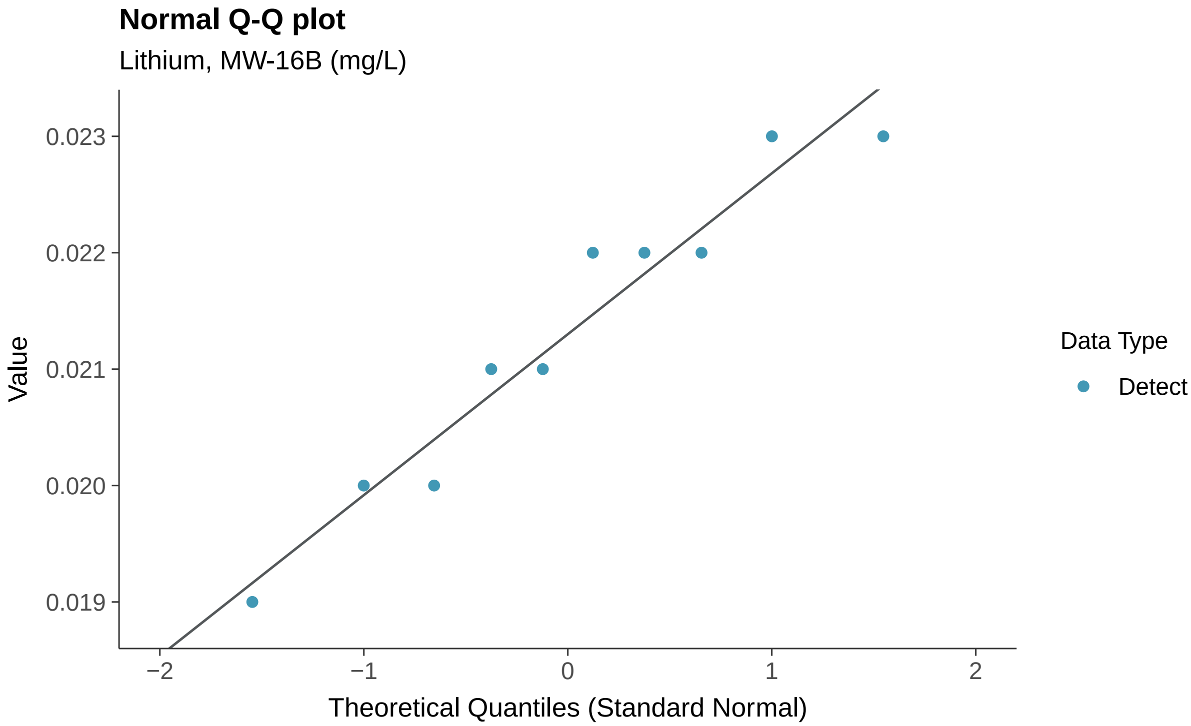
Lithium, MW-16B (mg/L)

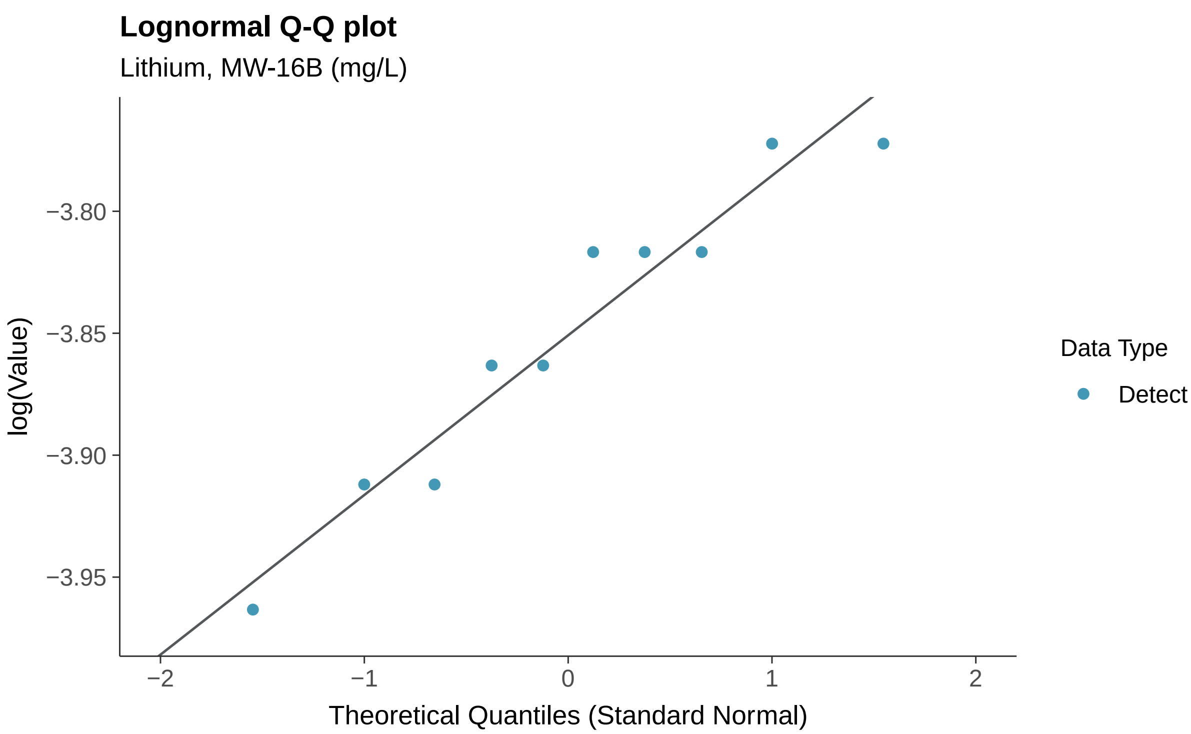


Boxplot by Season

Lithium, MW-16B (mg/L)

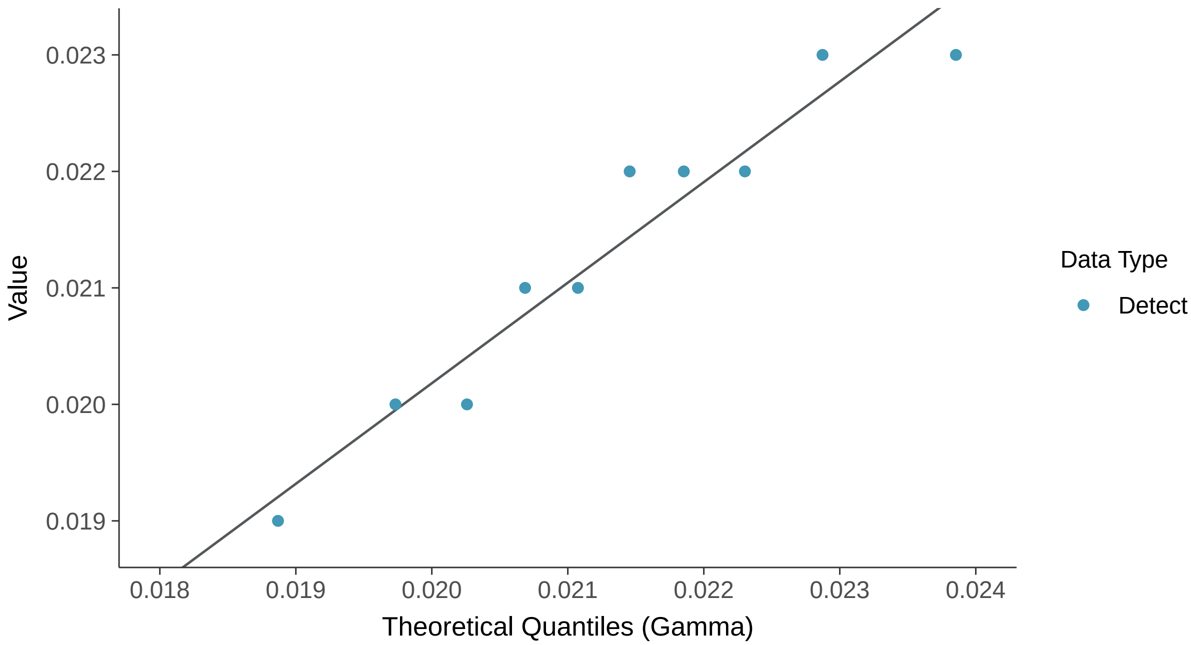



Normal Q-Q plot
Lithium, MW-16B (mg/L)
Value
0.023
0.022
0.021
0.020
0.019
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-16B (mg/L)
log(Value)
−3.80
−3.85
−3.90
−3.95
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

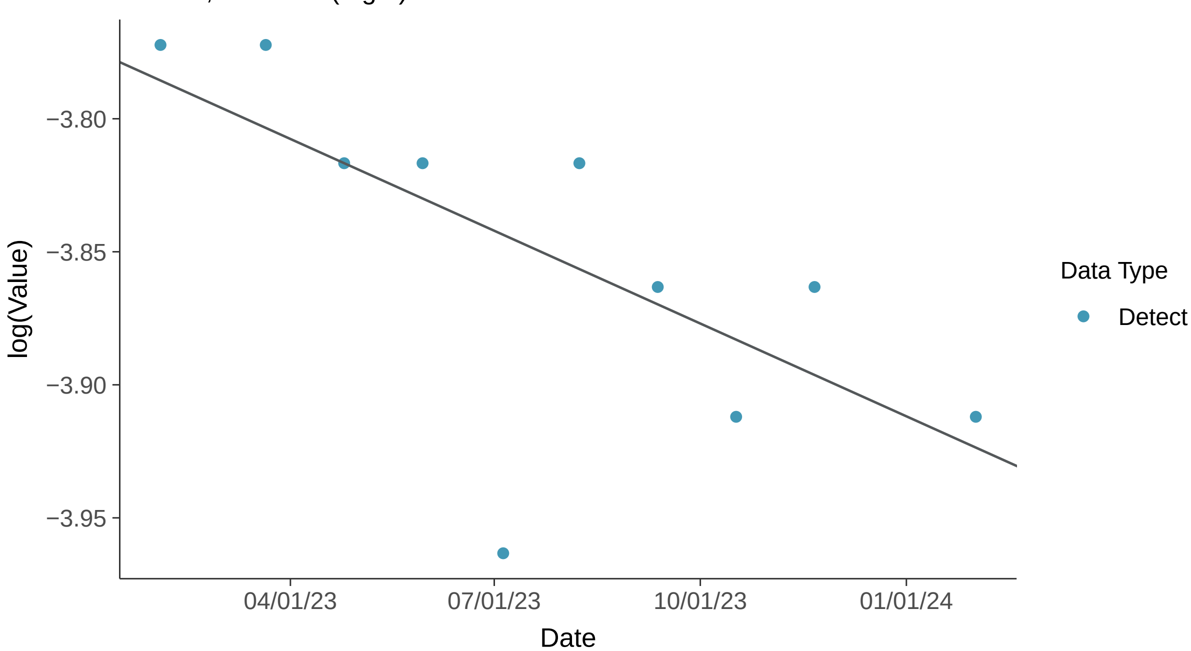
Gamma Q-Q plot

Lithium, MW-16B (mg/L)



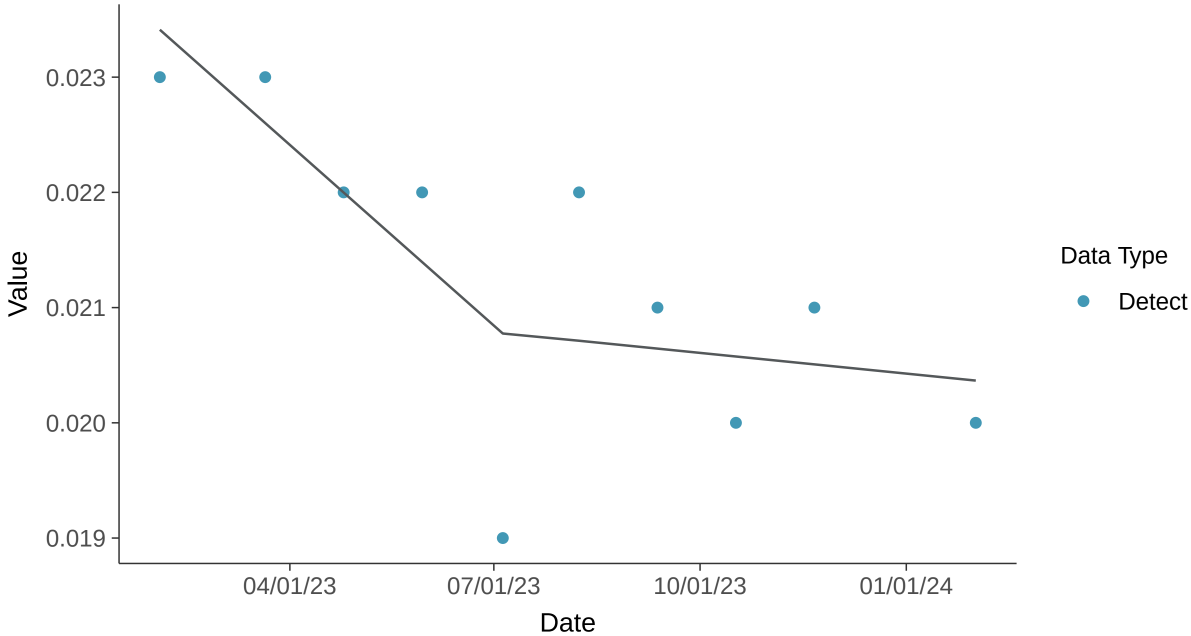
Trend Regression: Lognormal MLE

Lithium, MW-16B (mg/L)



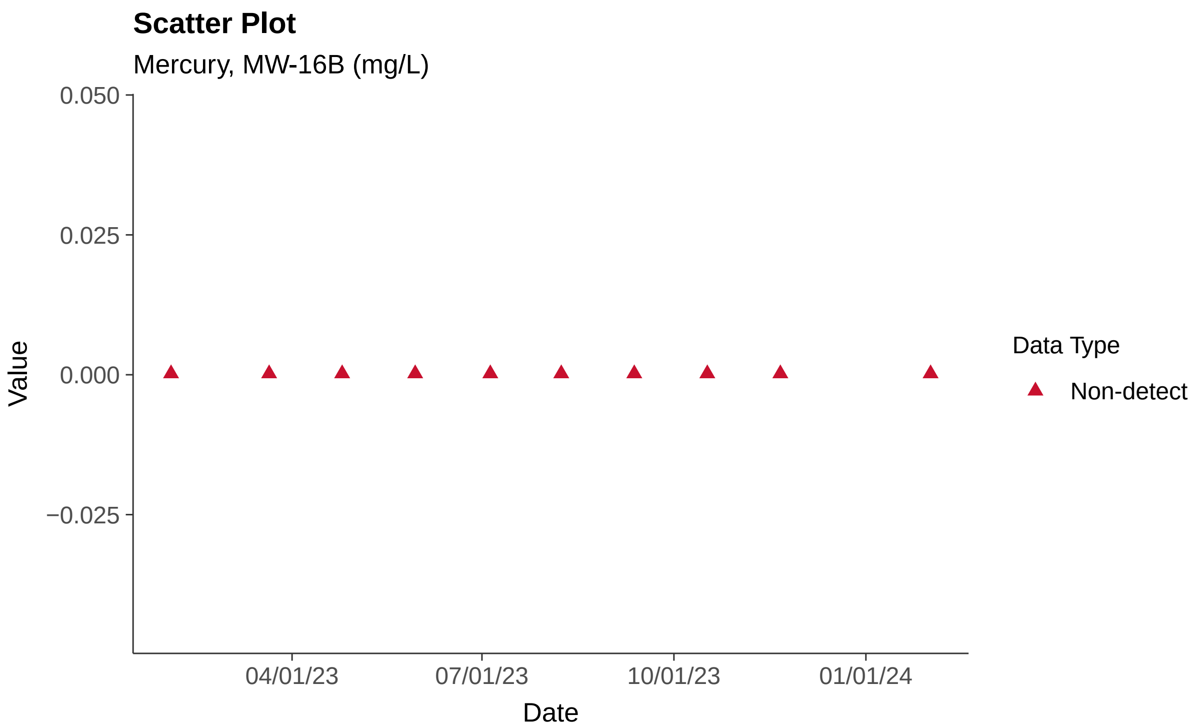
Trend Regression: Piecewise Linear-Linear

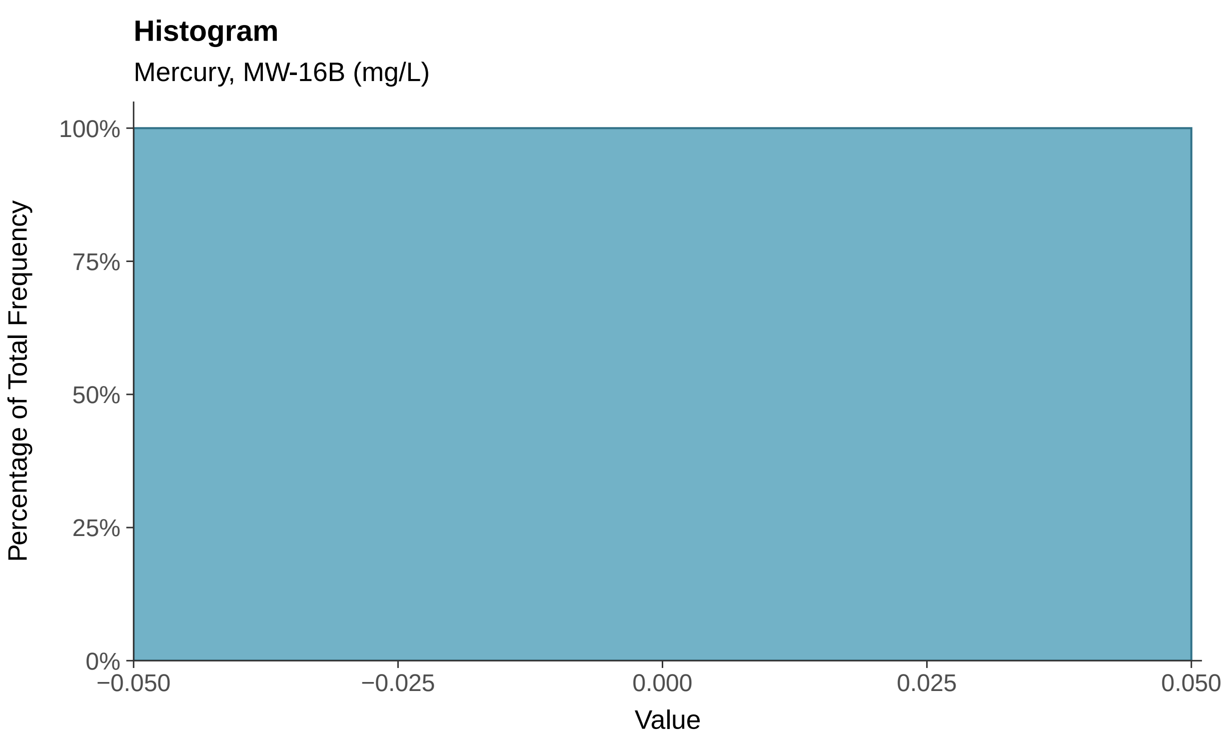
Lithium, MW-16B (mg/L)



Appendix IV: Mercury, MW-16B

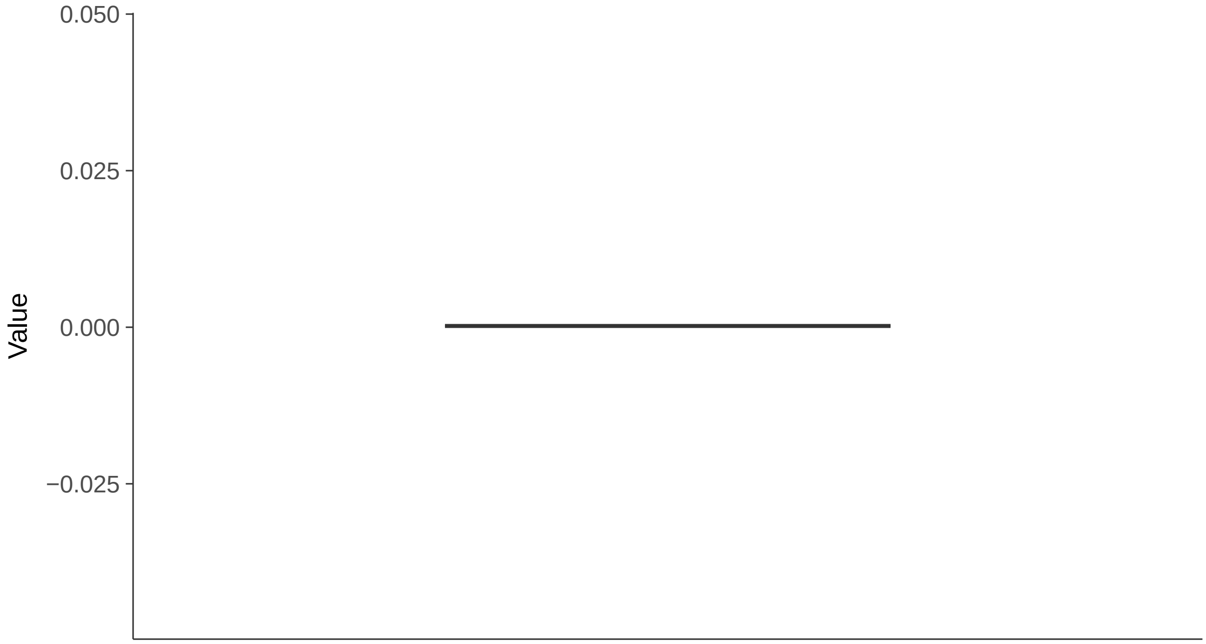
ID: 16B_2_17





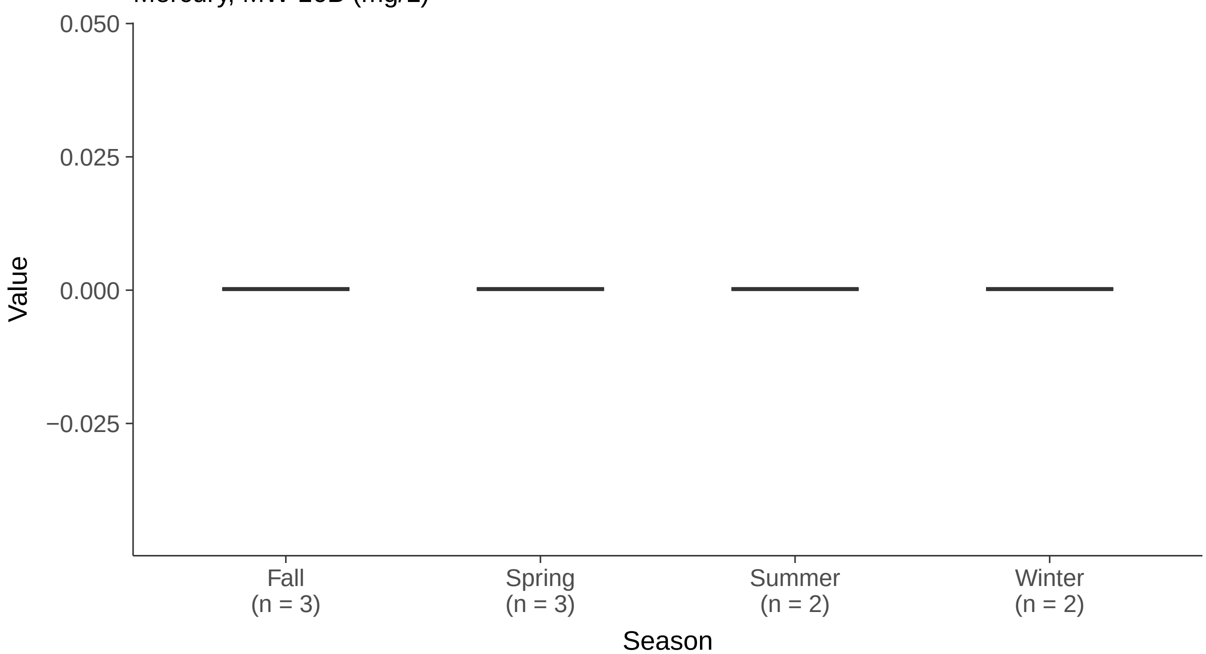
Boxplot

Mercury, MW-16B (mg/L)



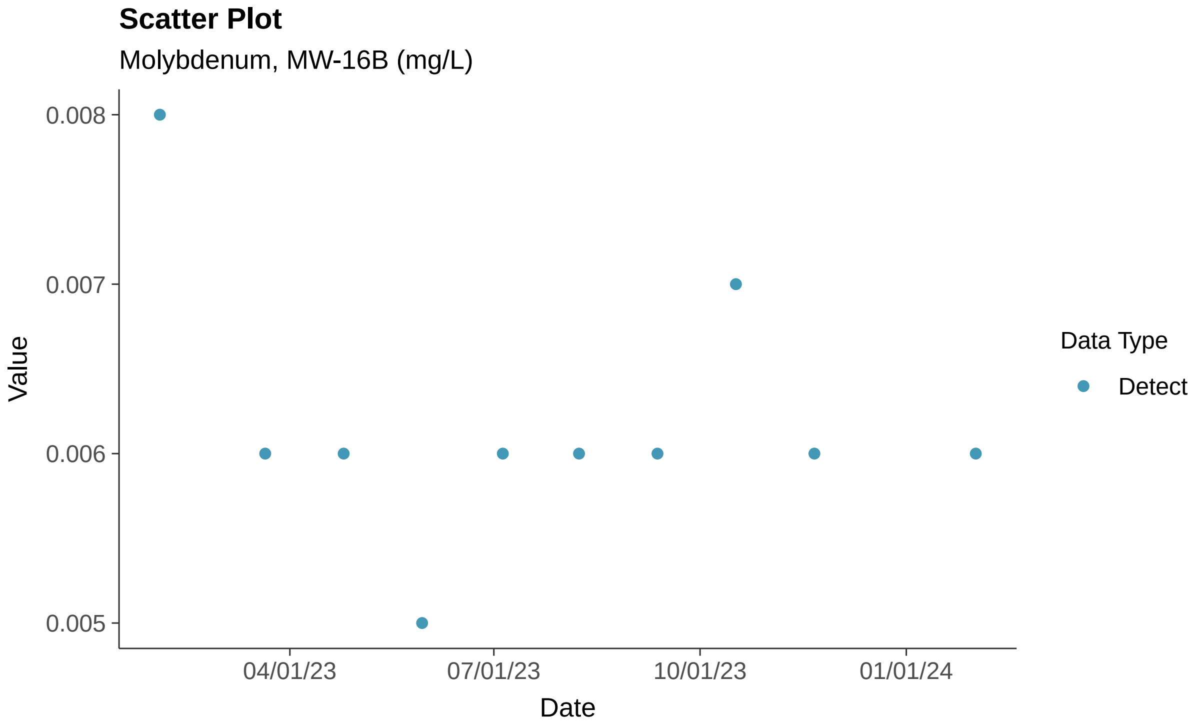
Boxplot by Season

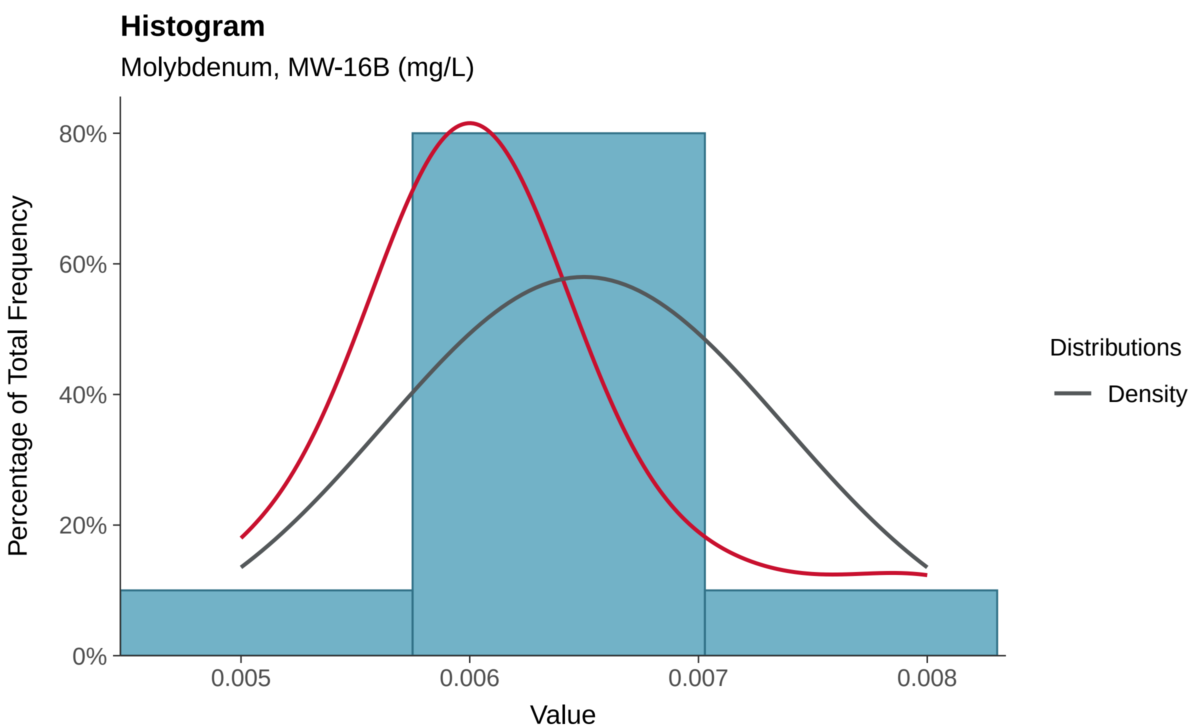
Mercury, MW-16B (mg/L)



Appendix IV: Molybdenum, MW-16B

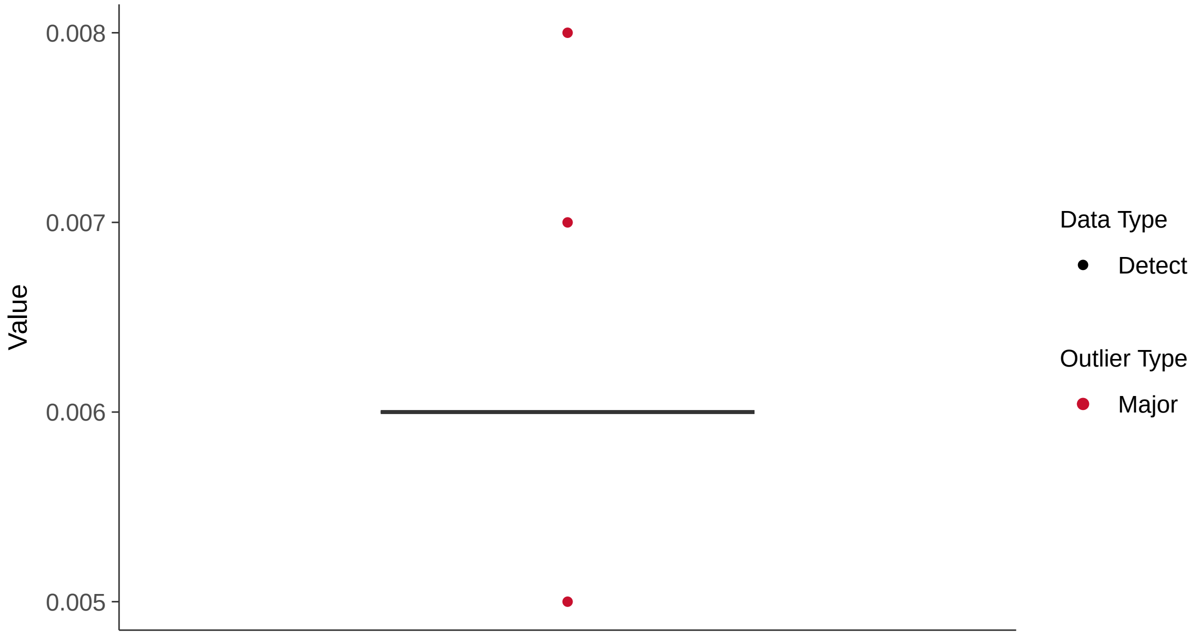
ID: 16B_2_18





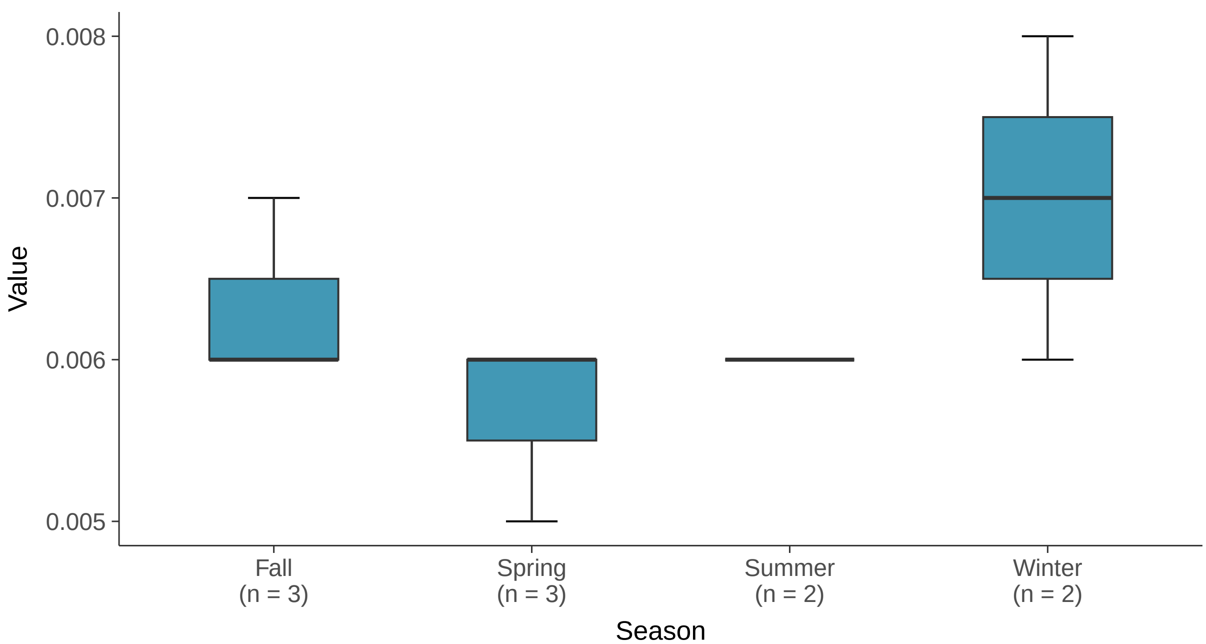
Boxplot

Molybdenum, MW-16B (mg/L)



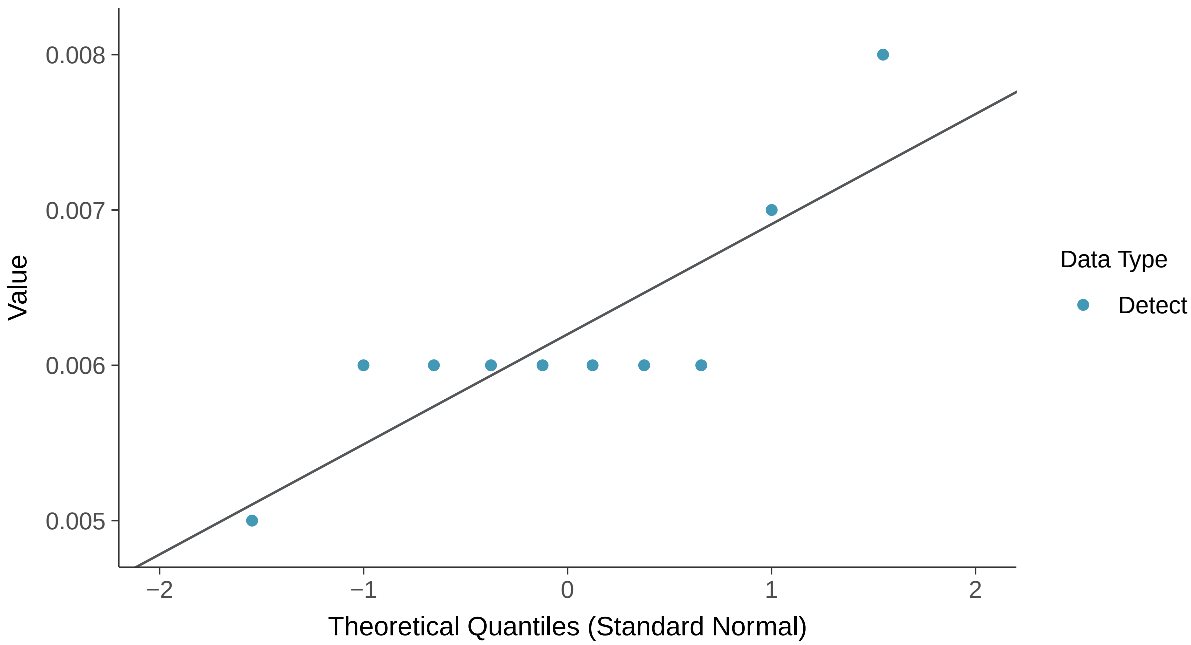
Boxplot by Season

Molybdenum, MW-16B (mg/L)



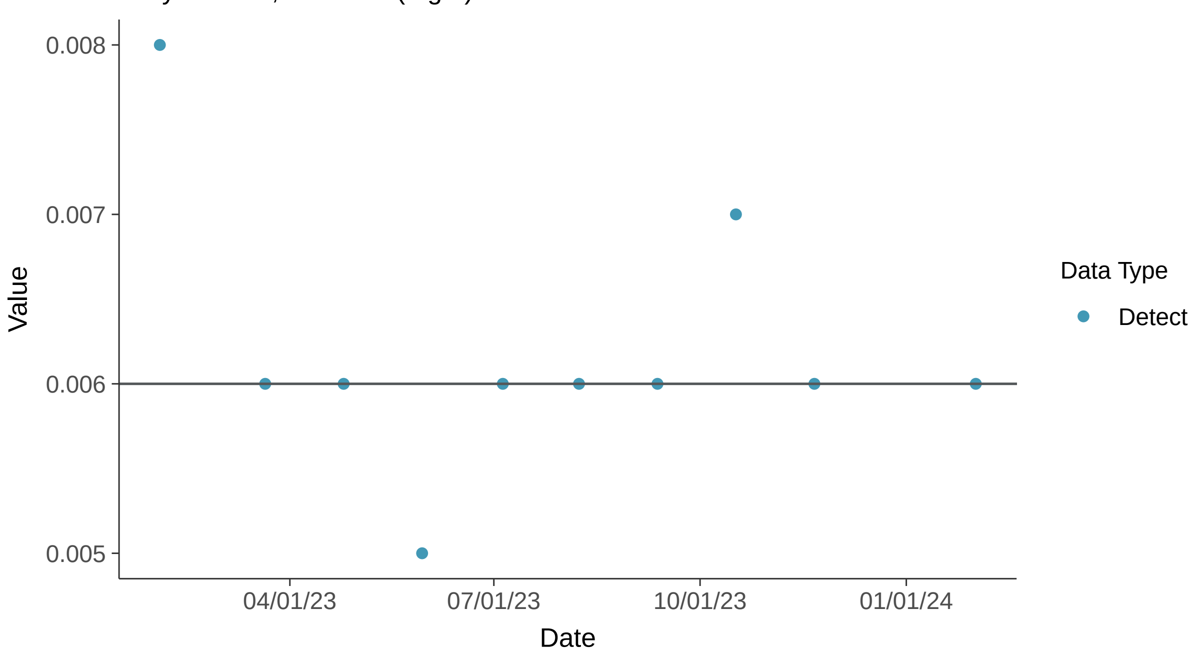
Normal Q-Q plot

Molybdenum, MW-16B (mg/L)



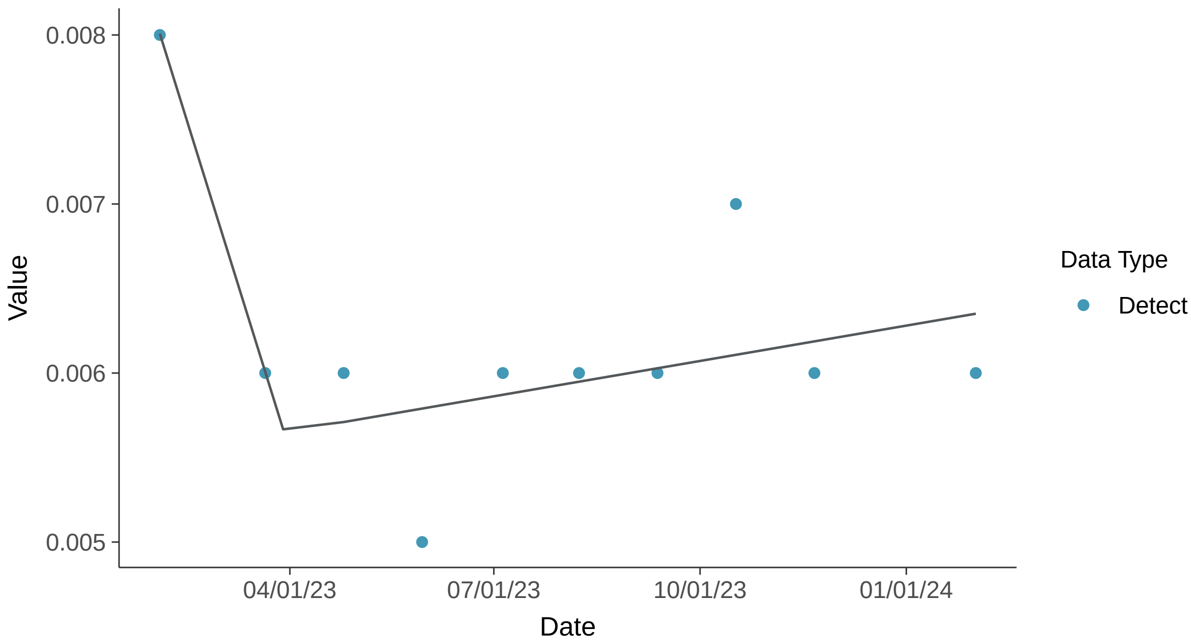
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Molybdenum, MW-16B (mg/L)



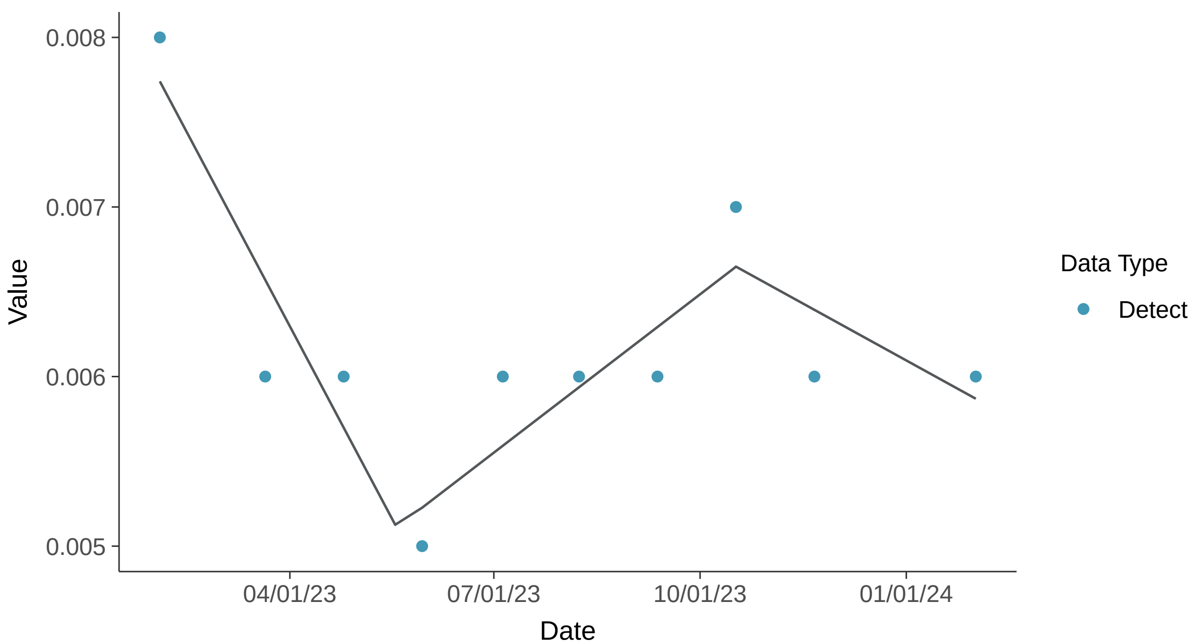
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-16B (mg/L)



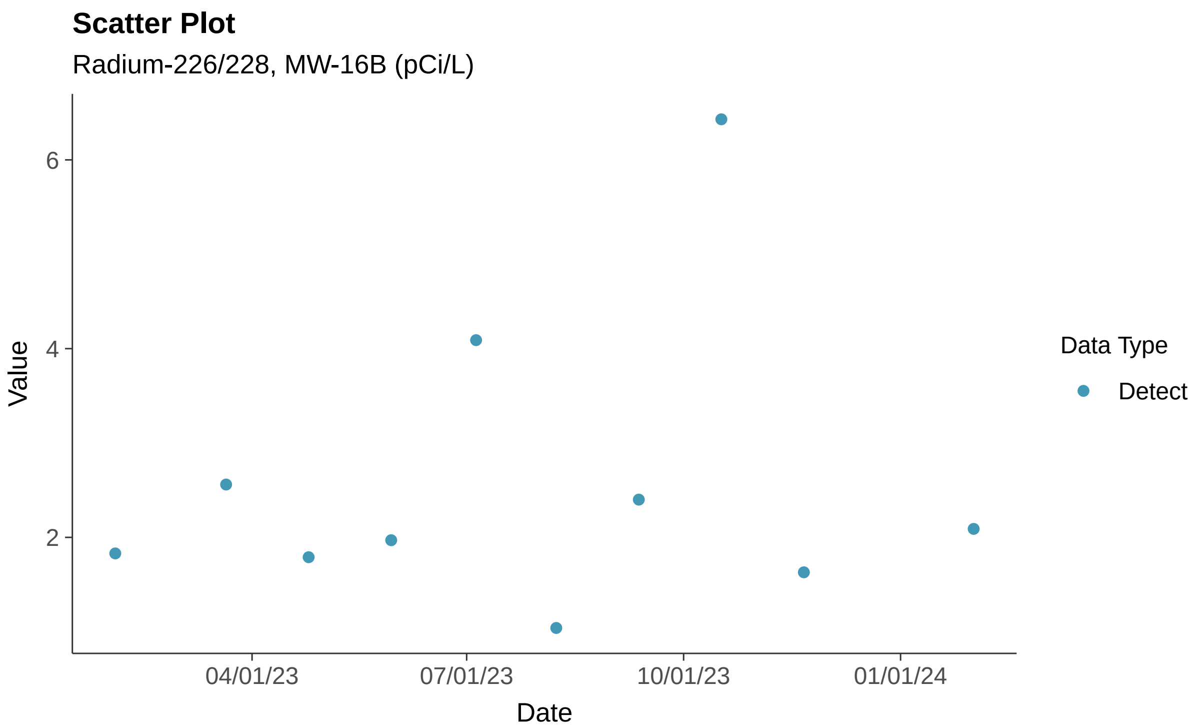
Trend Regression: Piecewise Linear-Linear-Linear

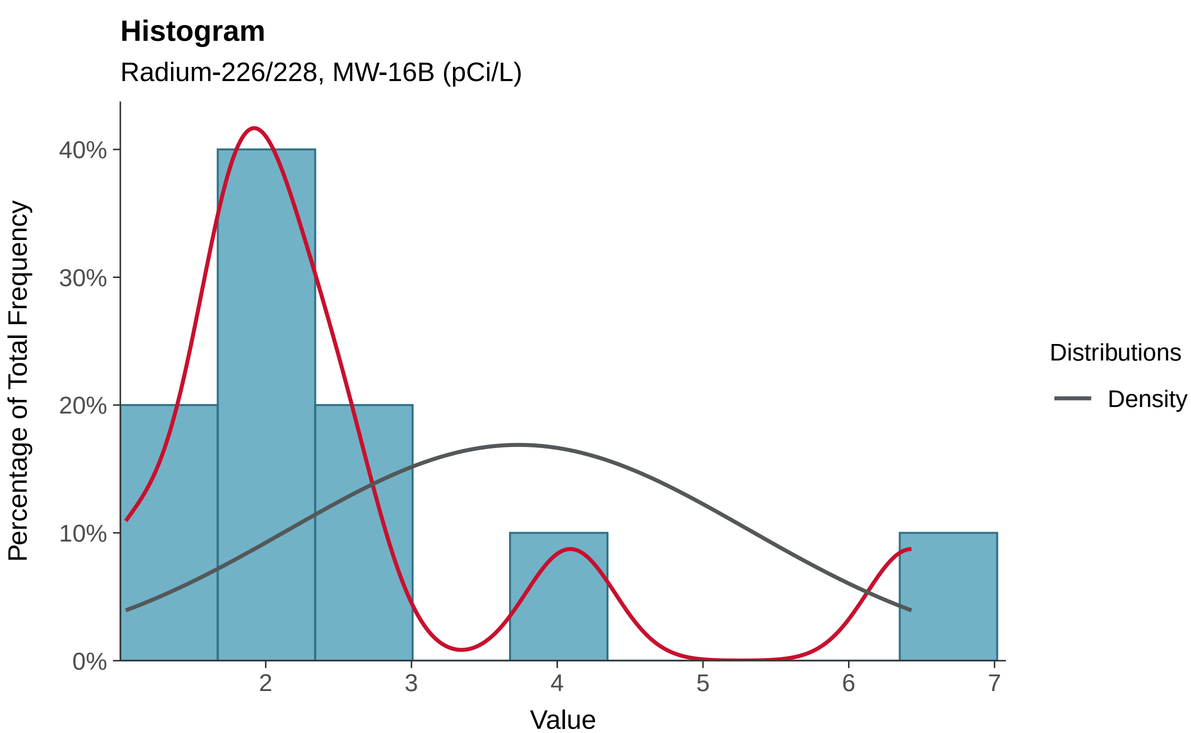
Molybdenum, MW-16B (mg/L)



Appendix IV: Radium-226/228, MW-16B

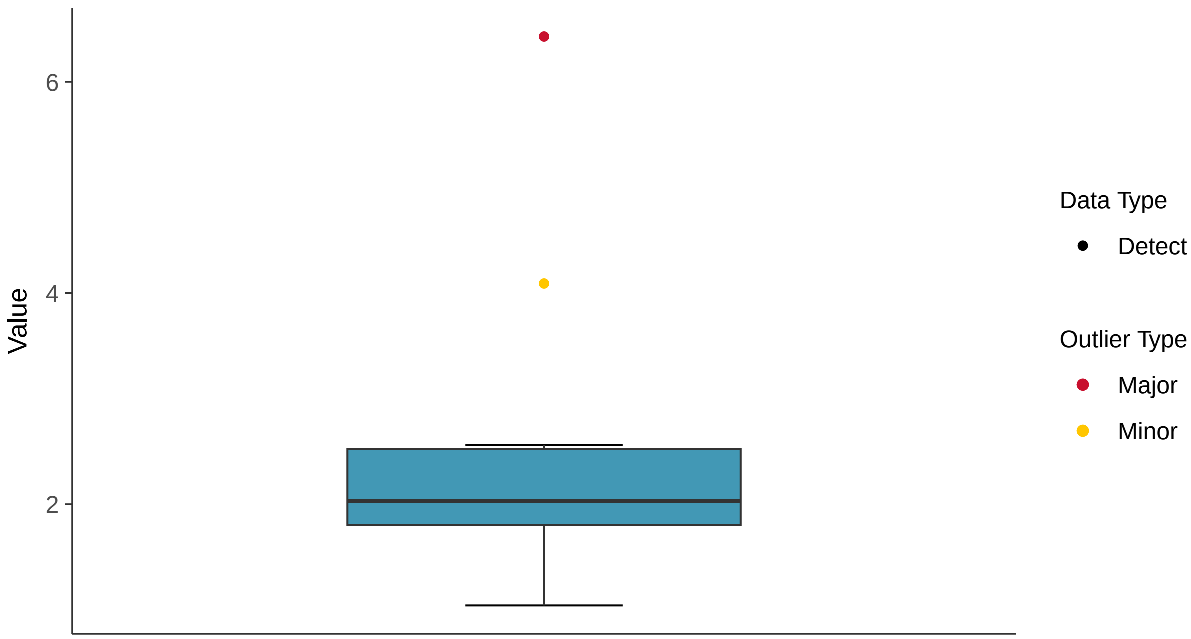
ID: 16B_2_20





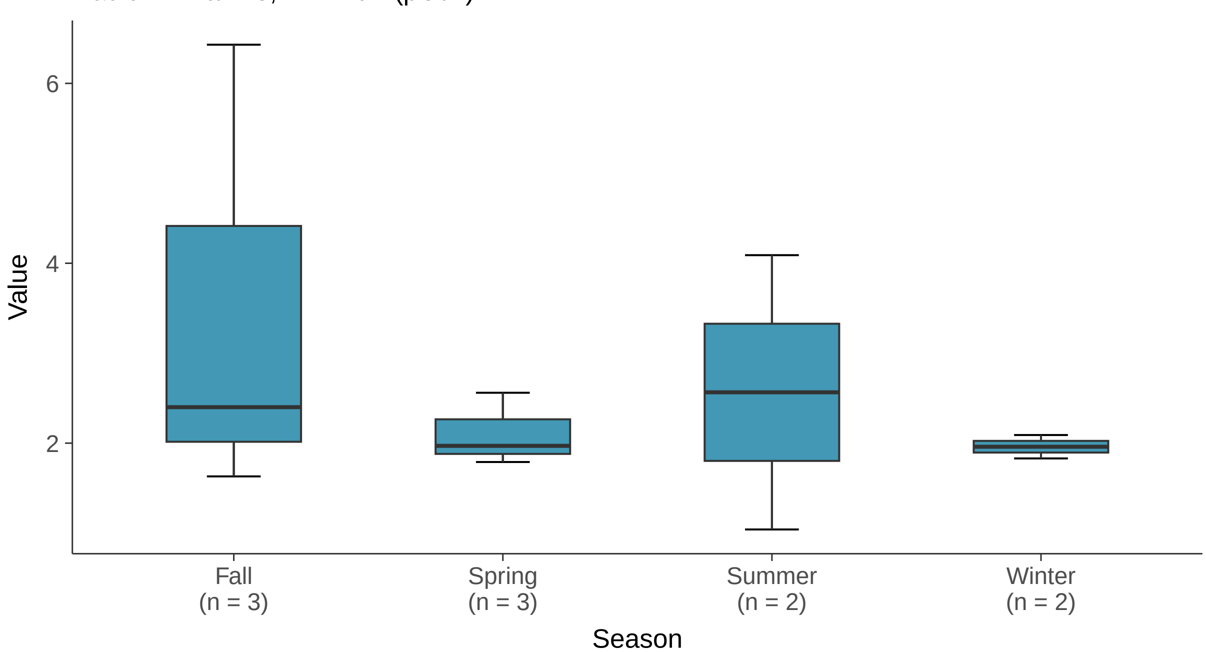
Boxplot

Radium-226/228, MW-16B (pCi/L)



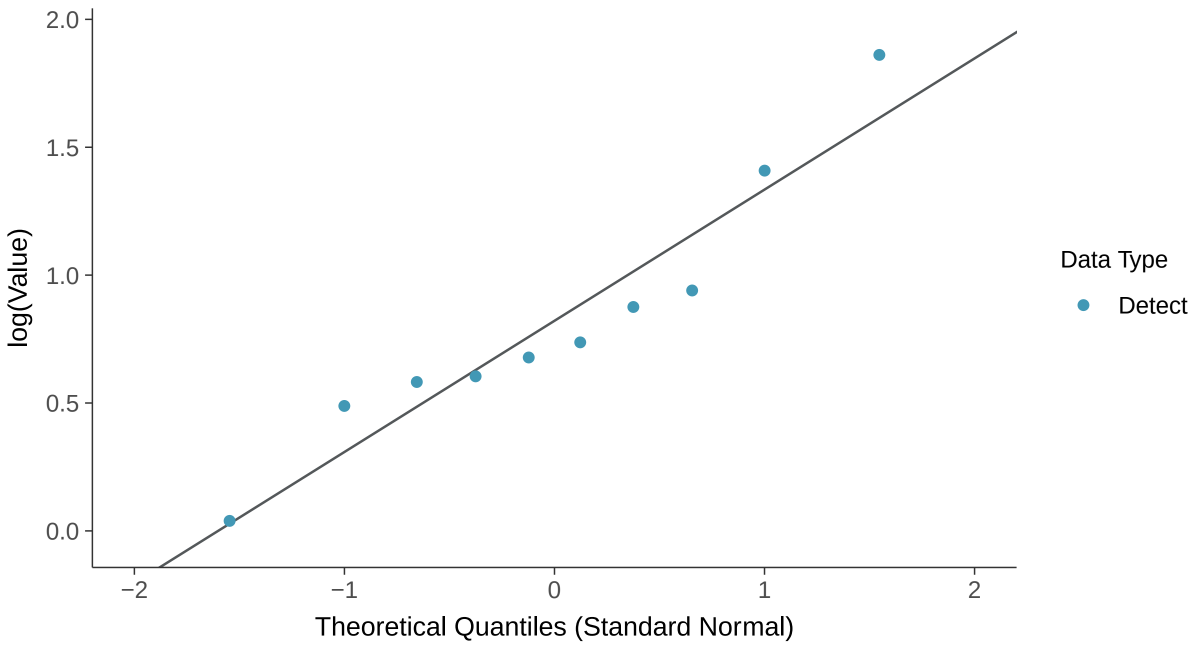
Boxplot by Season

Radium-226/228, MW-16B (pCi/L)



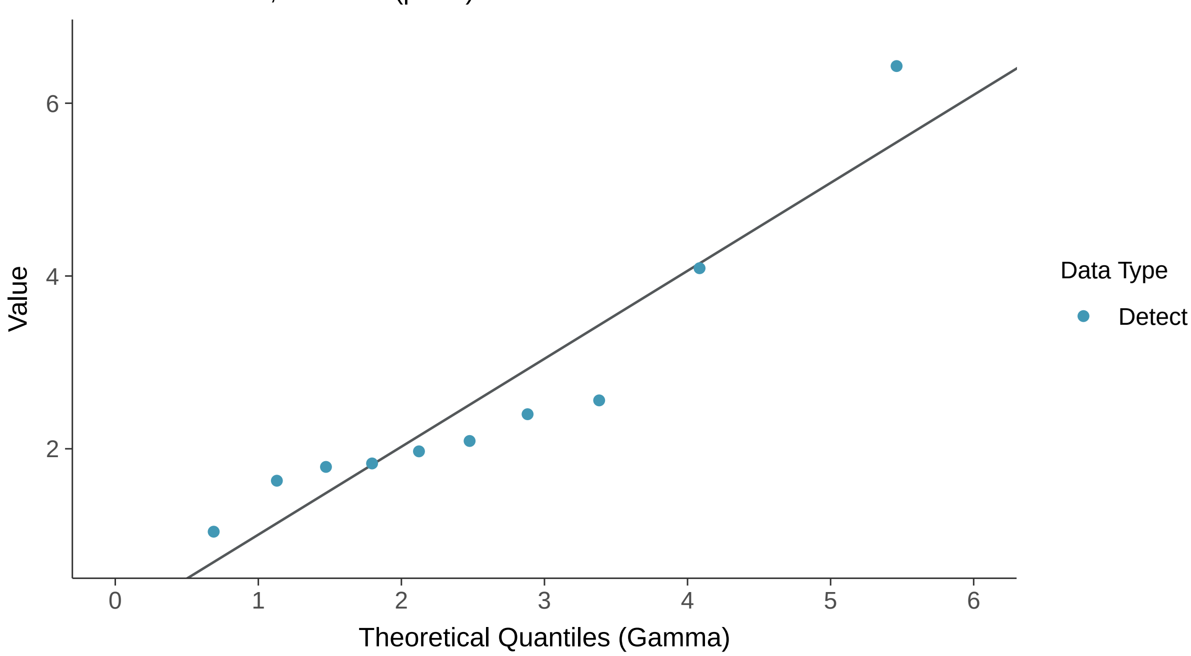
Lognormal Q-Q plot

Radium-226/228, MW-16B (pCi/L)



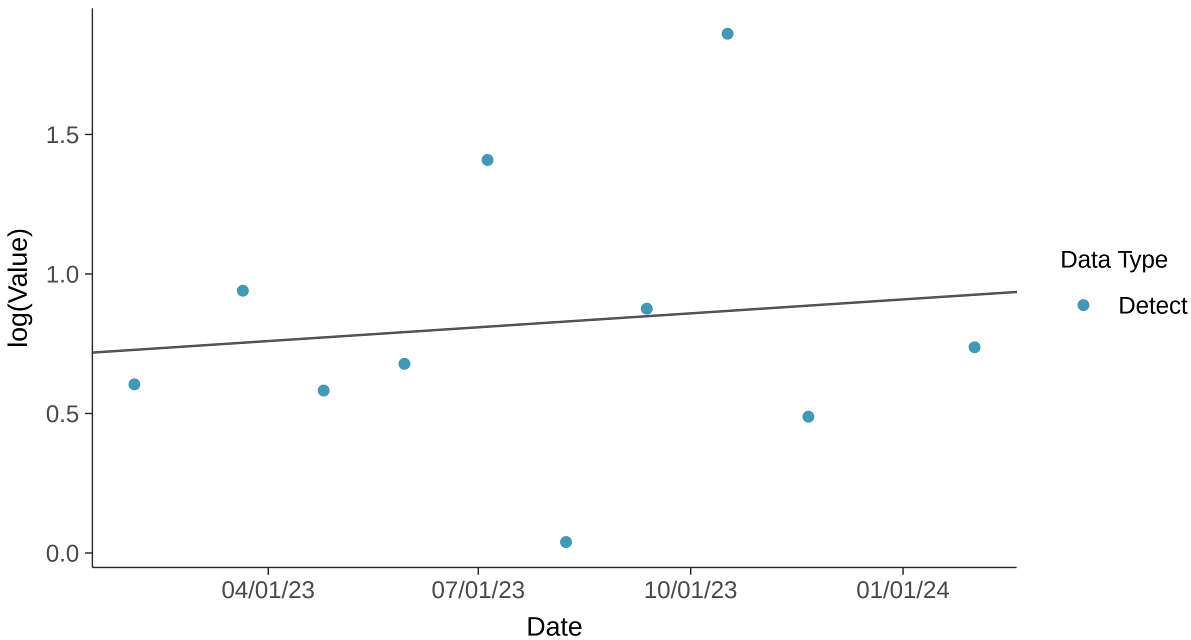
Gamma Q-Q plot

Radium-226/228, MW-16B (pCi/L)



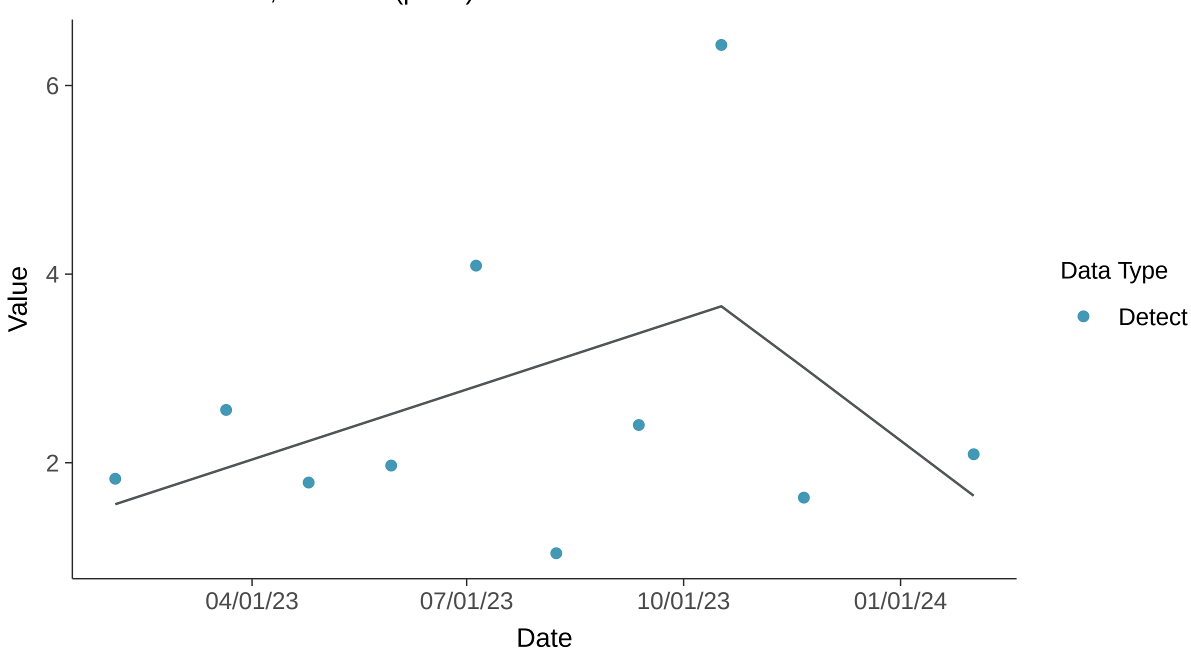
Trend Regression: Lognormal MLE

Radium-226/228, MW-16B (pCi/L)



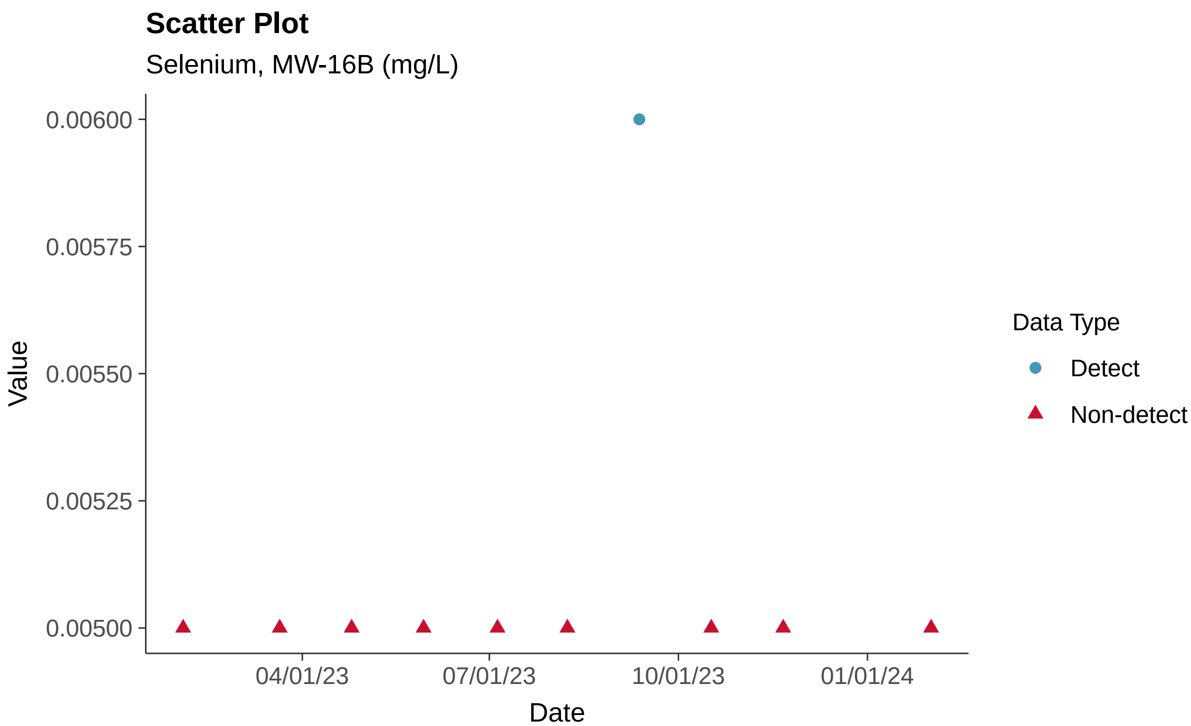
Trend Regression: Piecewise Linear-Linear

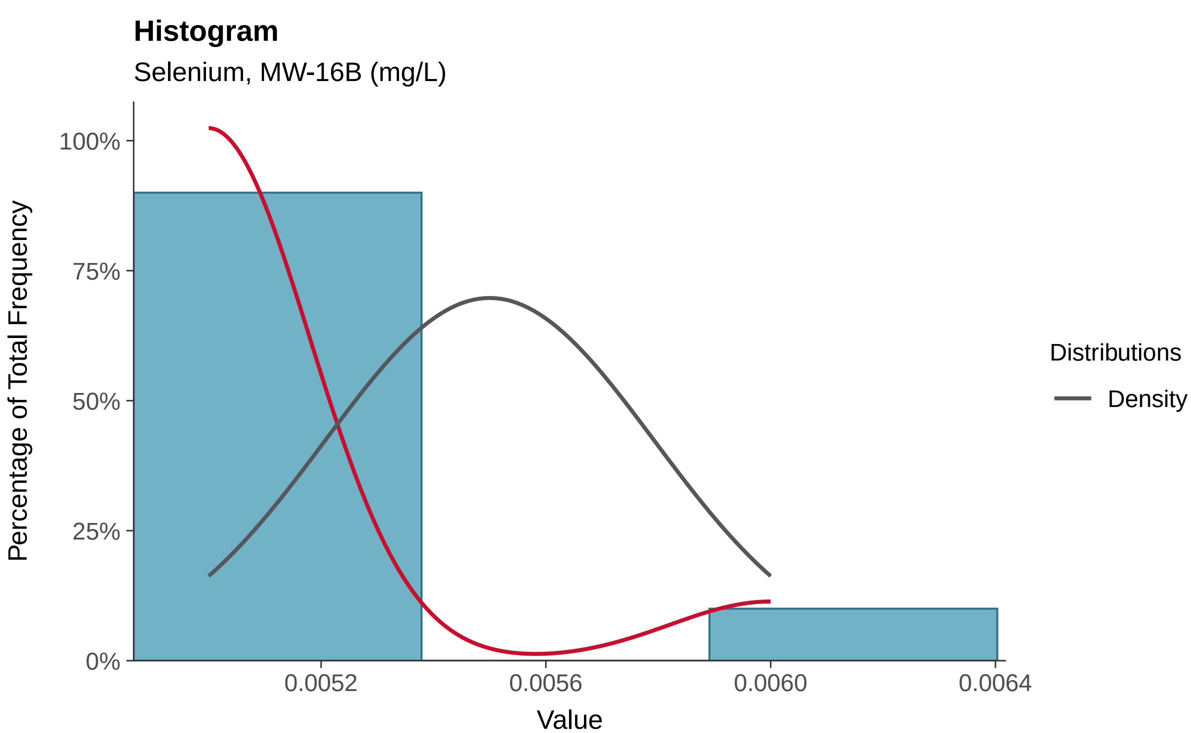
Radium-226/228, MW-16B (pCi/L)



Appendix IV: Selenium, MW-16B

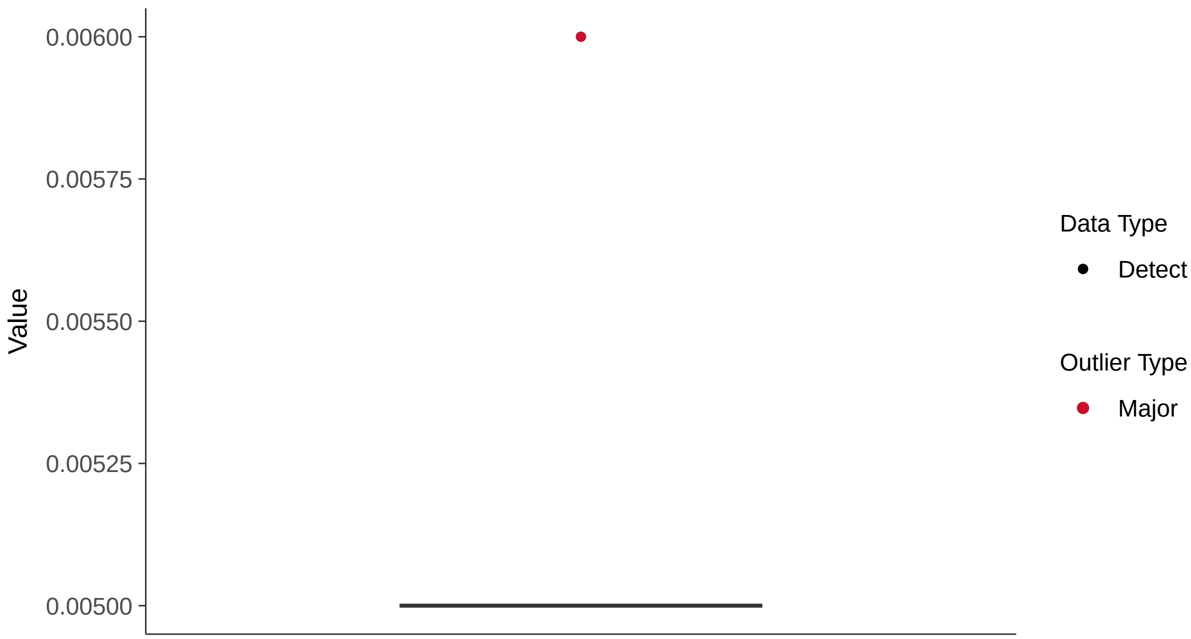
ID: 16B_2_22





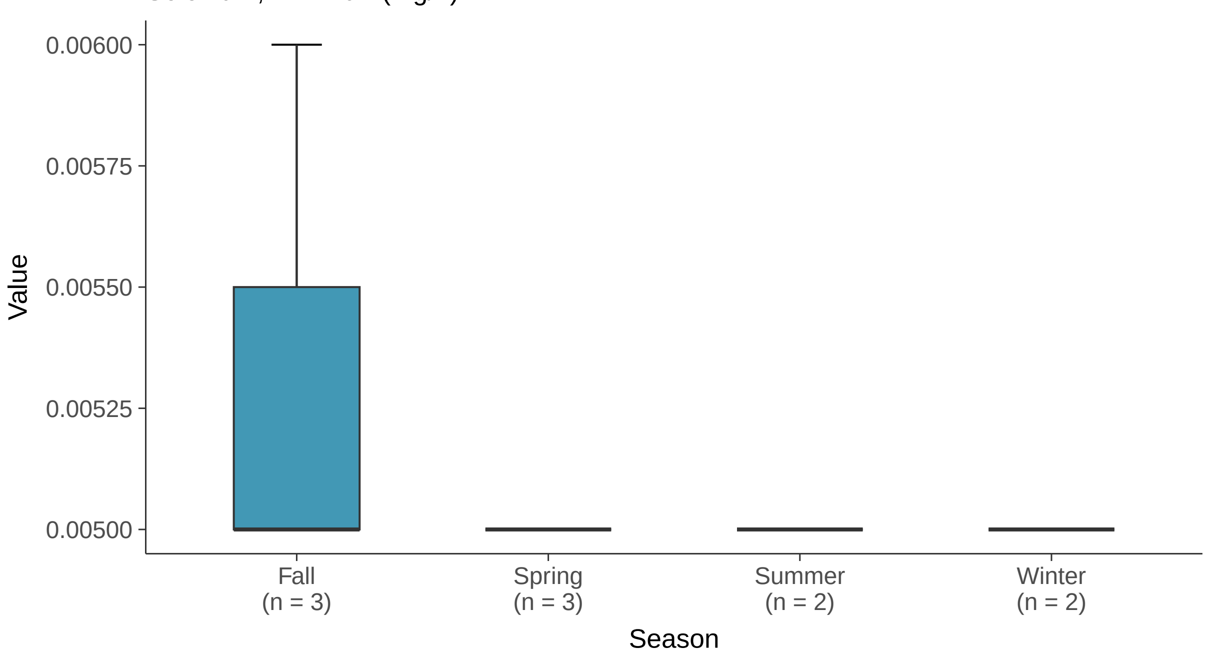
Boxplot

Selenium, MW-16B (mg/L)



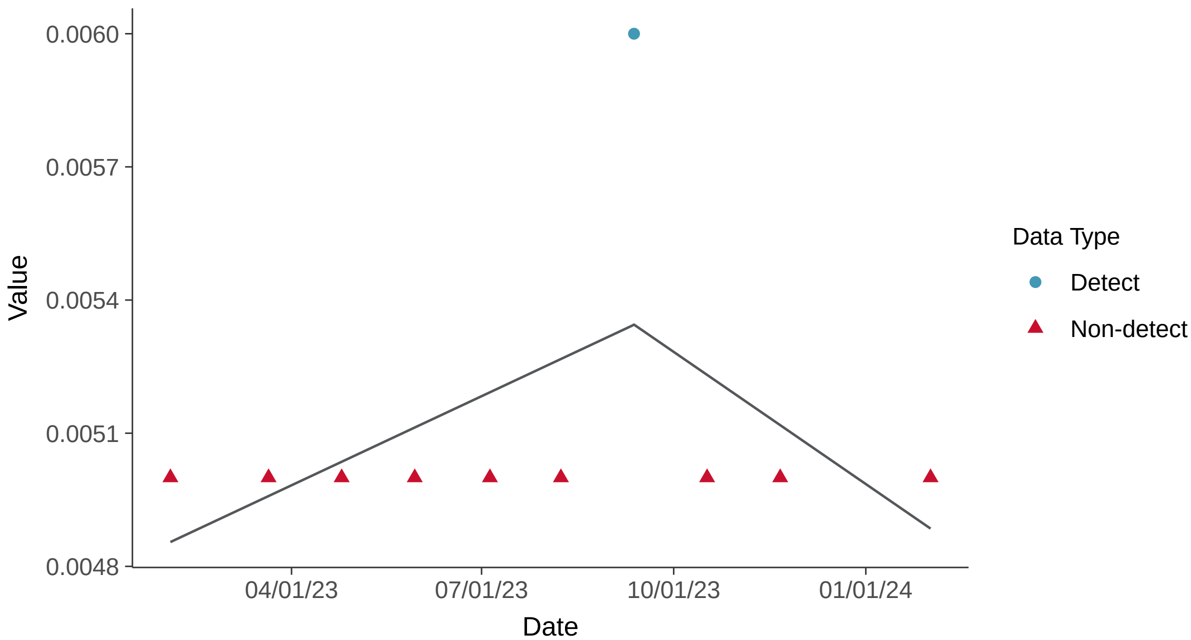
Boxplot by Season

Selenium, MW-16B (mg/L)



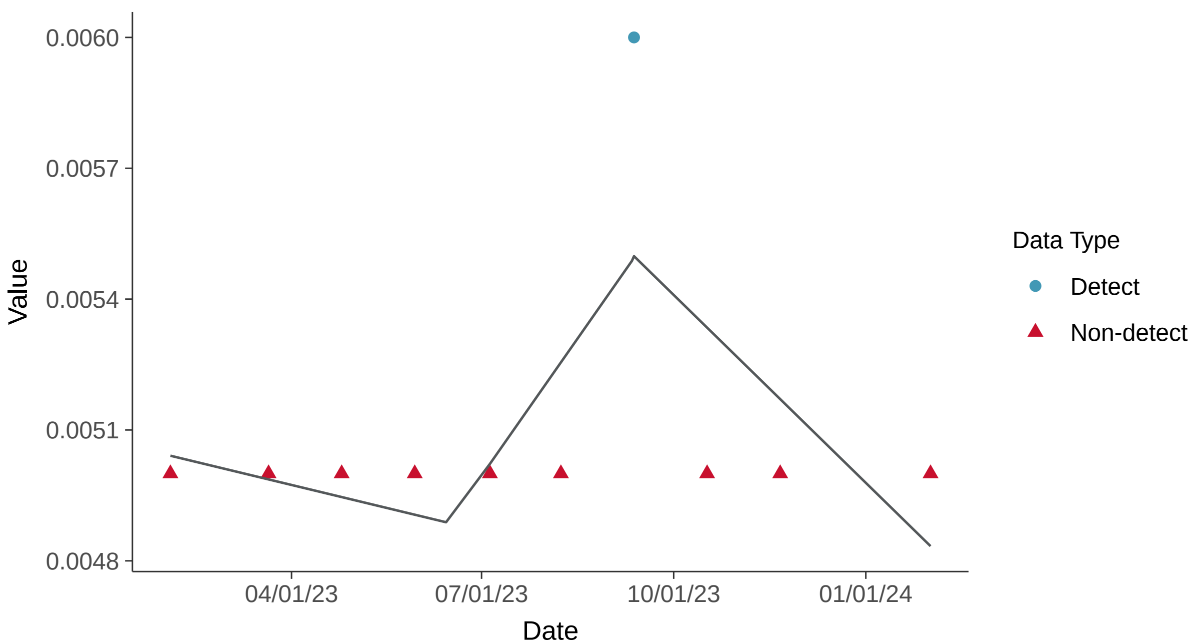
Trend Regression: Piecewise Linear-Linear

Selenium, MW-16B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Selenium, MW-16B (mg/L)

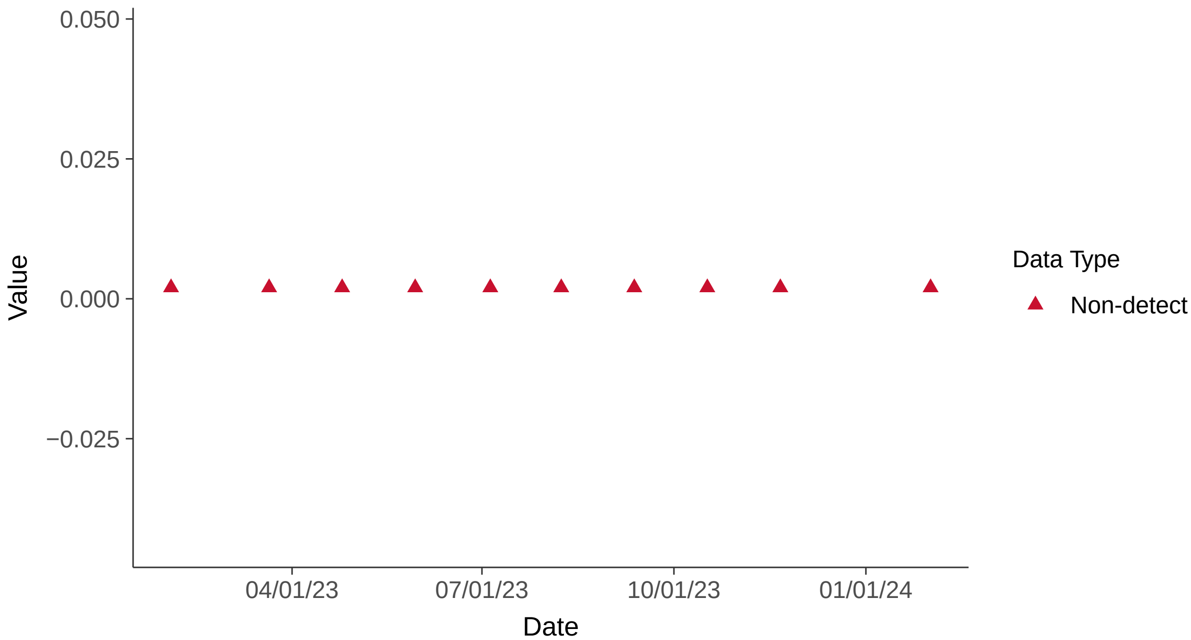


Appendix IV: Thallium, MW-16B

ID: 16B_2_23

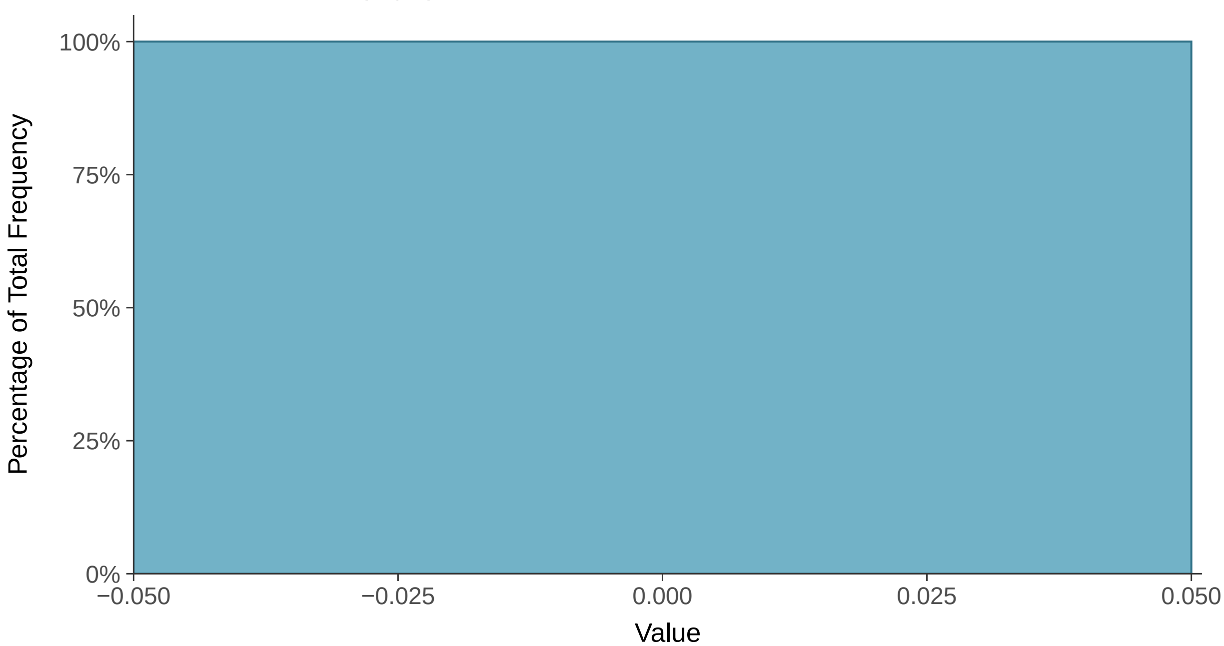
Scatter Plot

Thallium, MW-16B (mg/L)



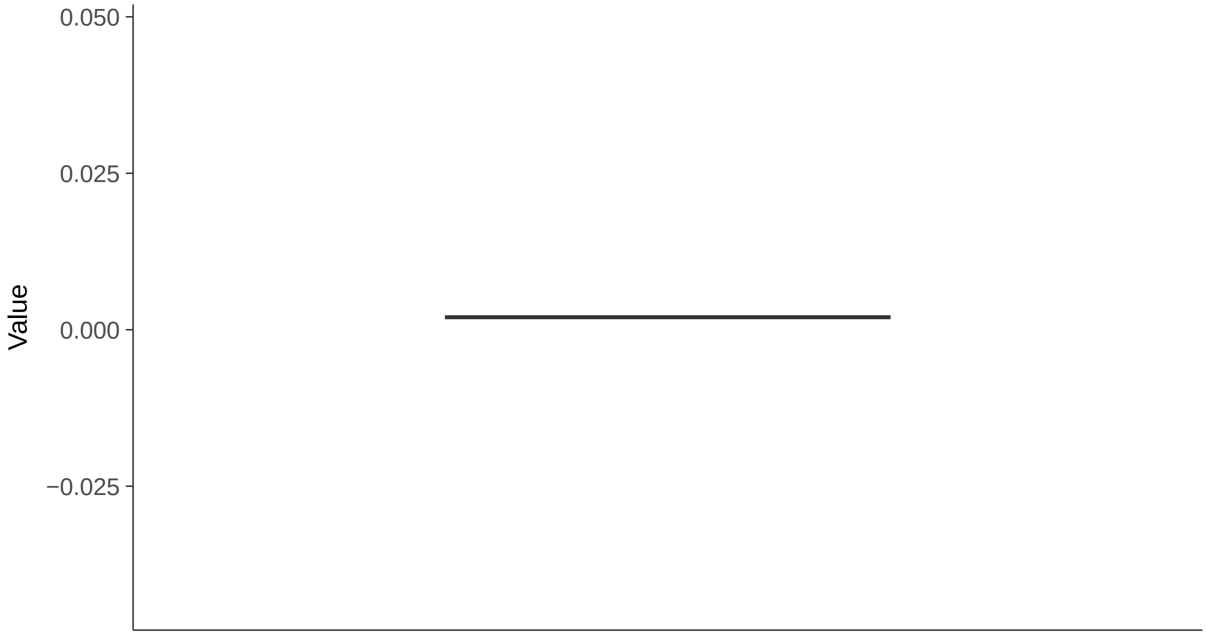
Histogram

Thallium, MW-16B (mg/L)



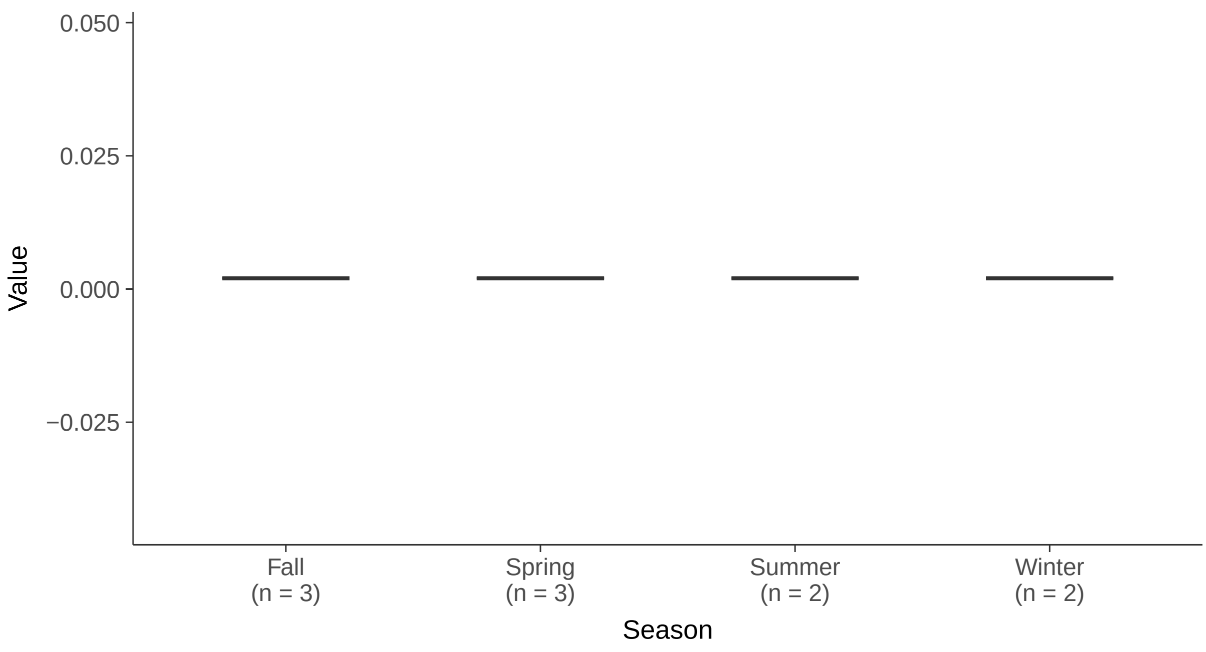
Boxplot

Thallium, MW-16B (mg/L)



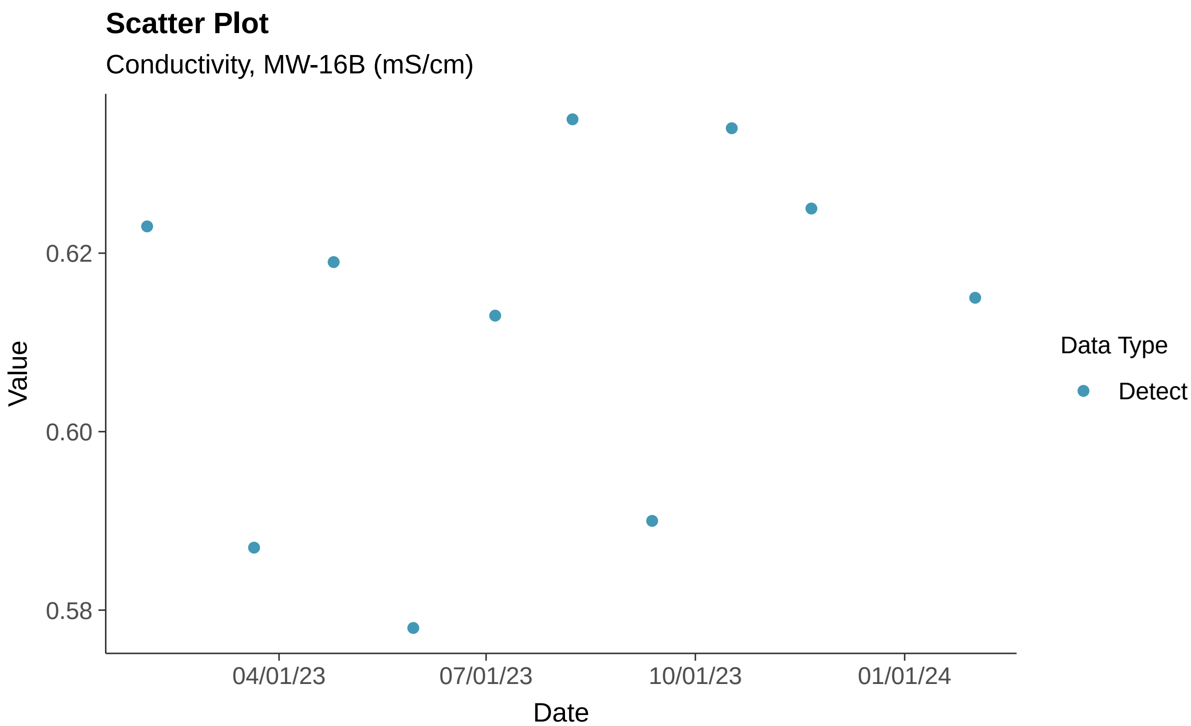
Boxplot by Season

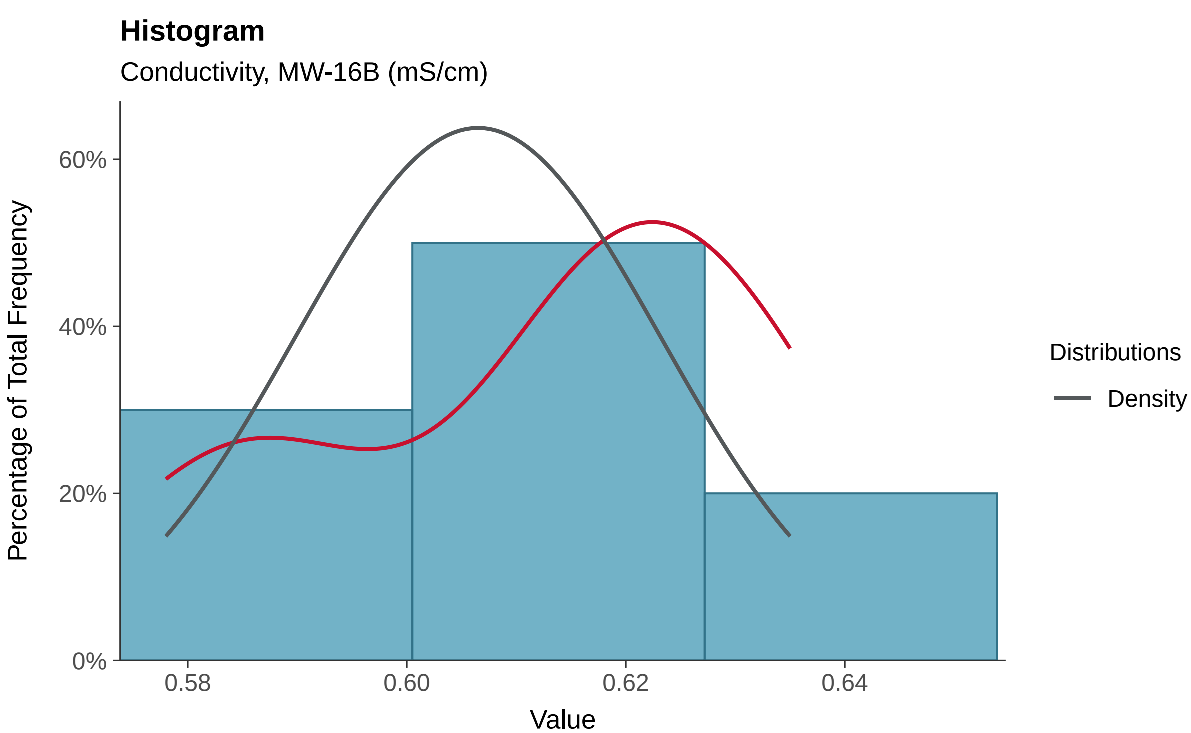
Thallium, MW-16B (mg/L)



Field Parameters: Conductivity, MW-16B

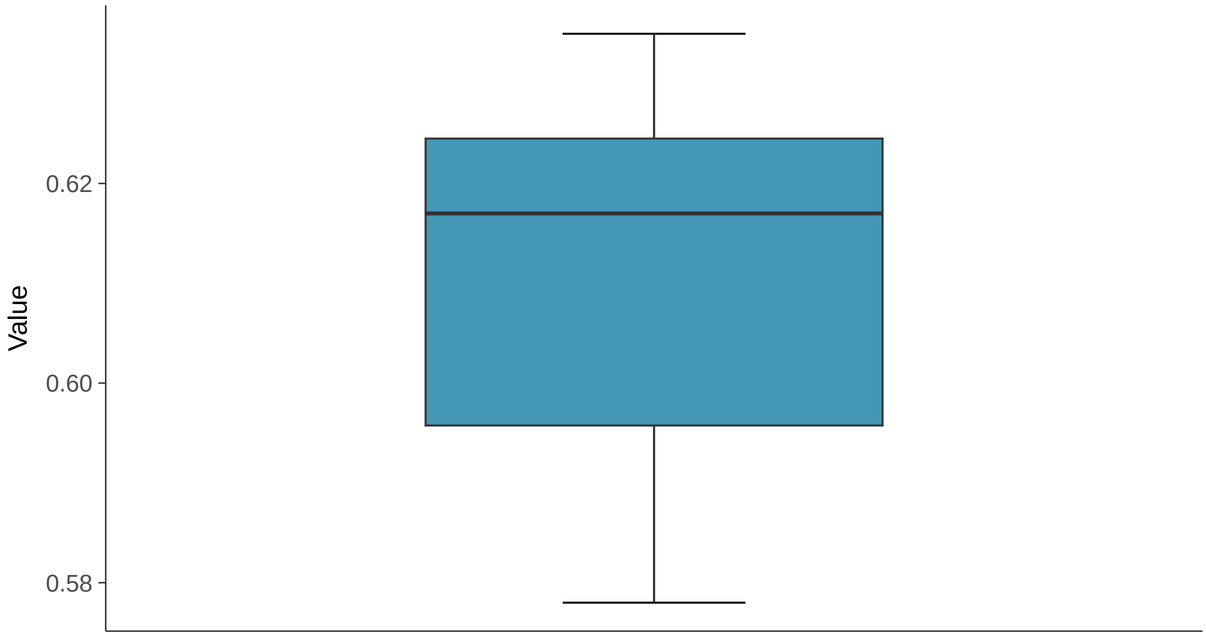
ID: 16B_3_24





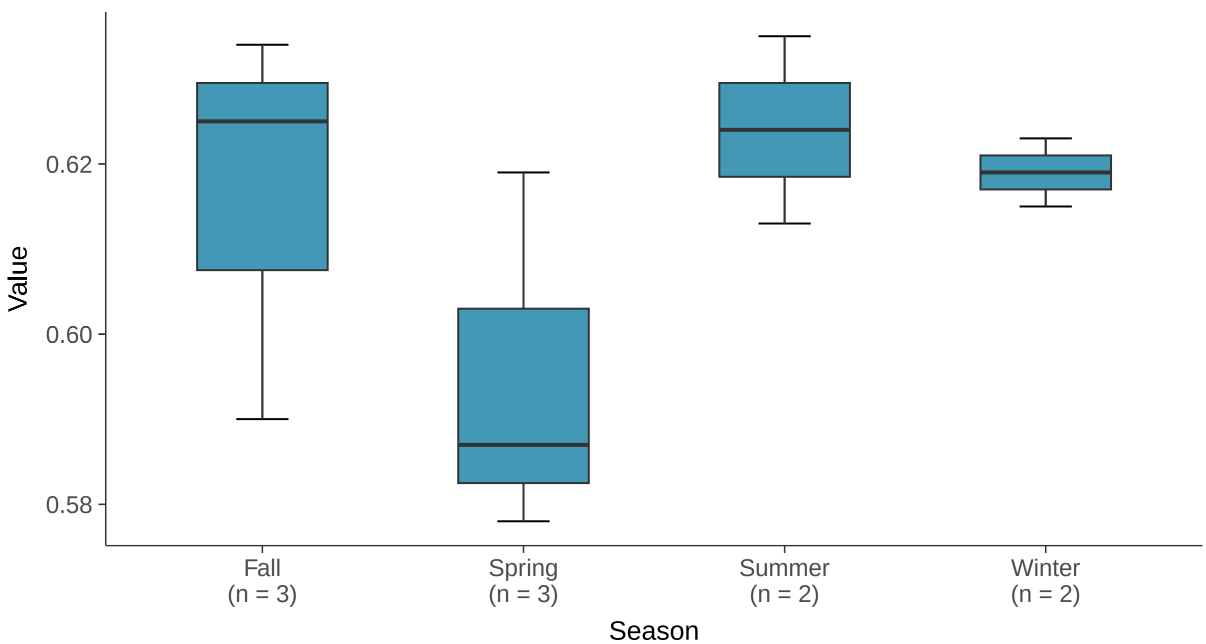
Boxplot

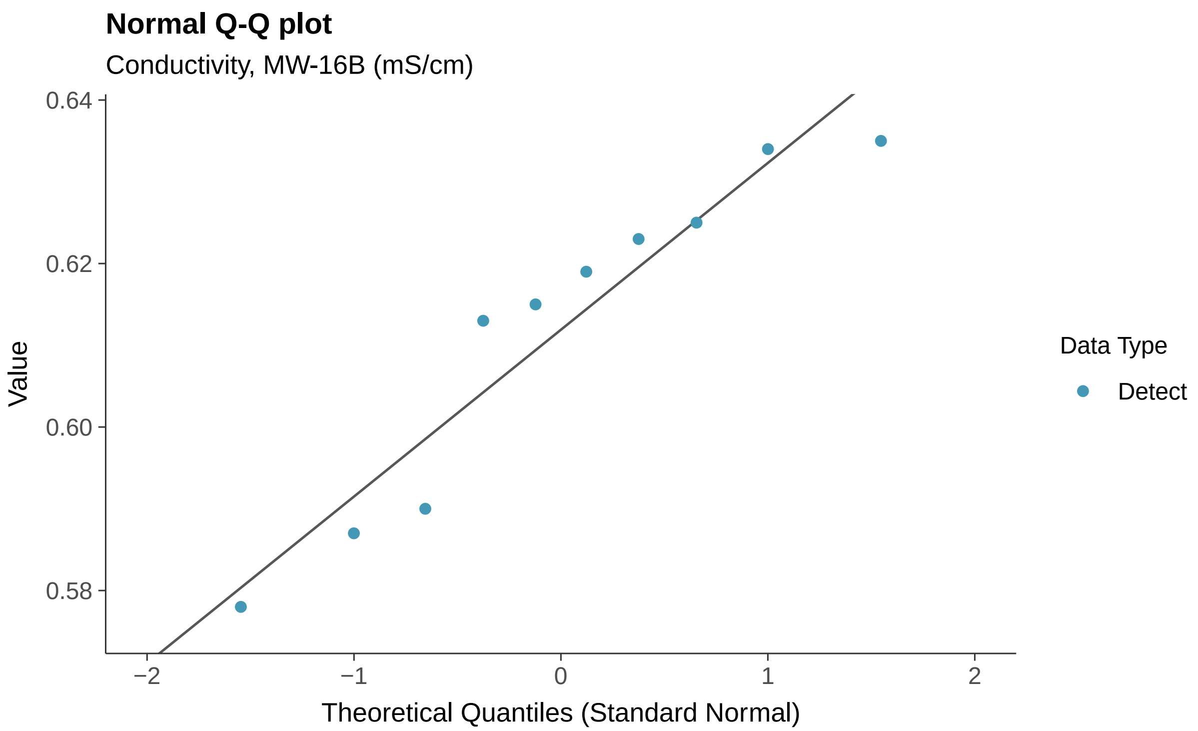
Conductivity, MW-16B (mS/cm)

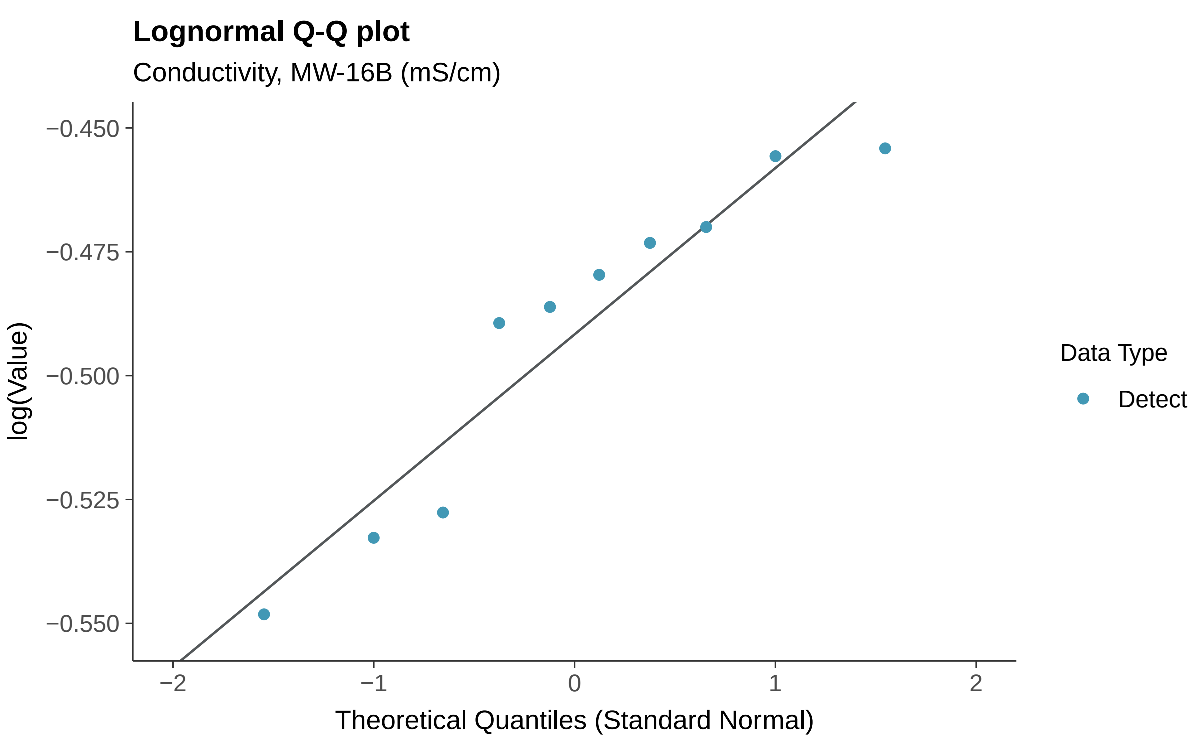


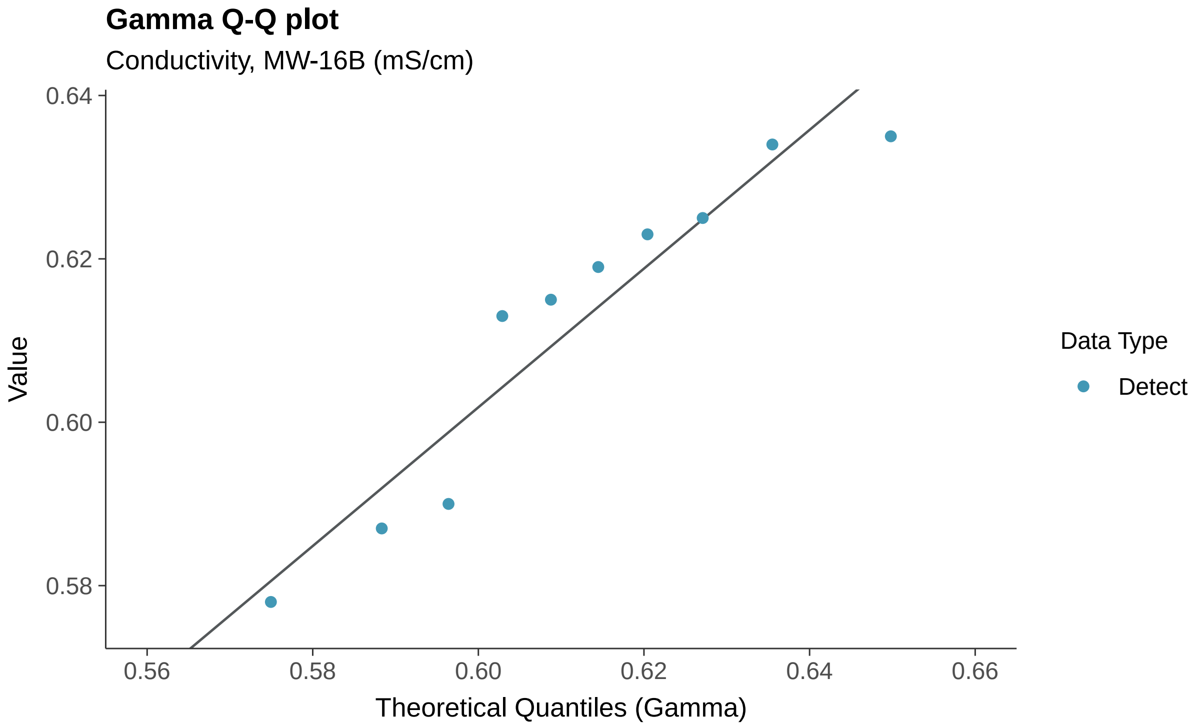
Boxplot by Season

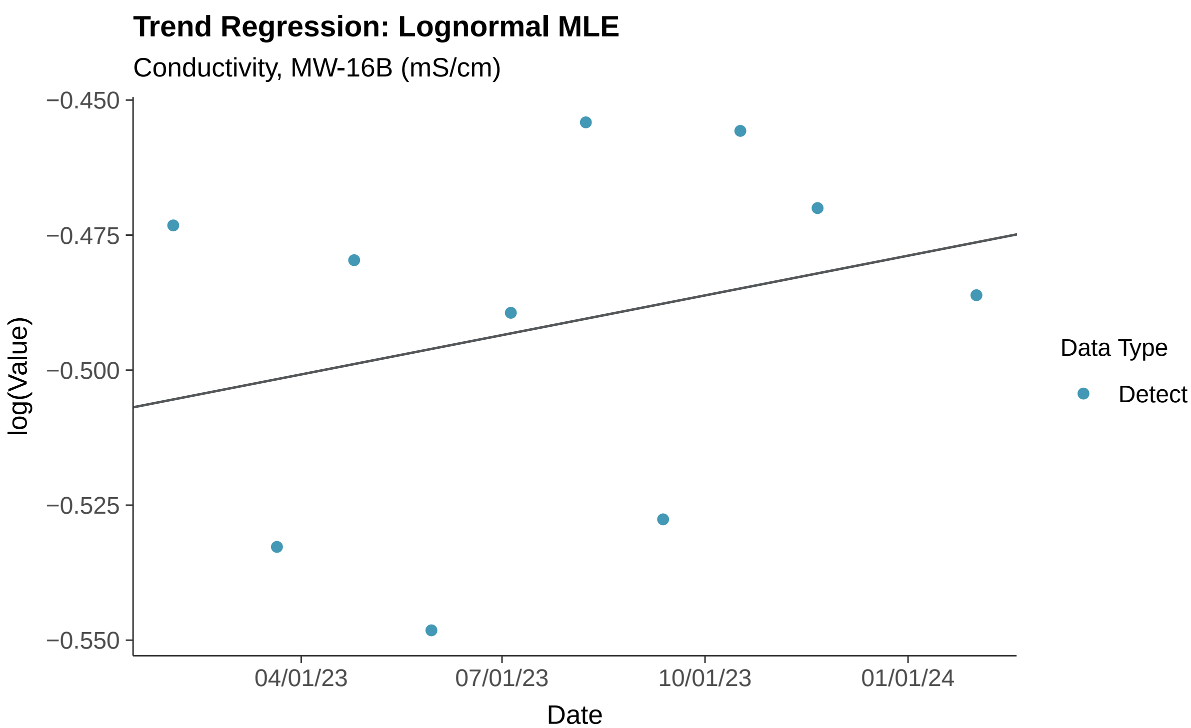
Conductivity, MW-16B (mS/cm)




Normal Q-Q plot
Conductivity, MW-16B (mS/cm)
Value
0.64
0.62
0.60
0.58
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

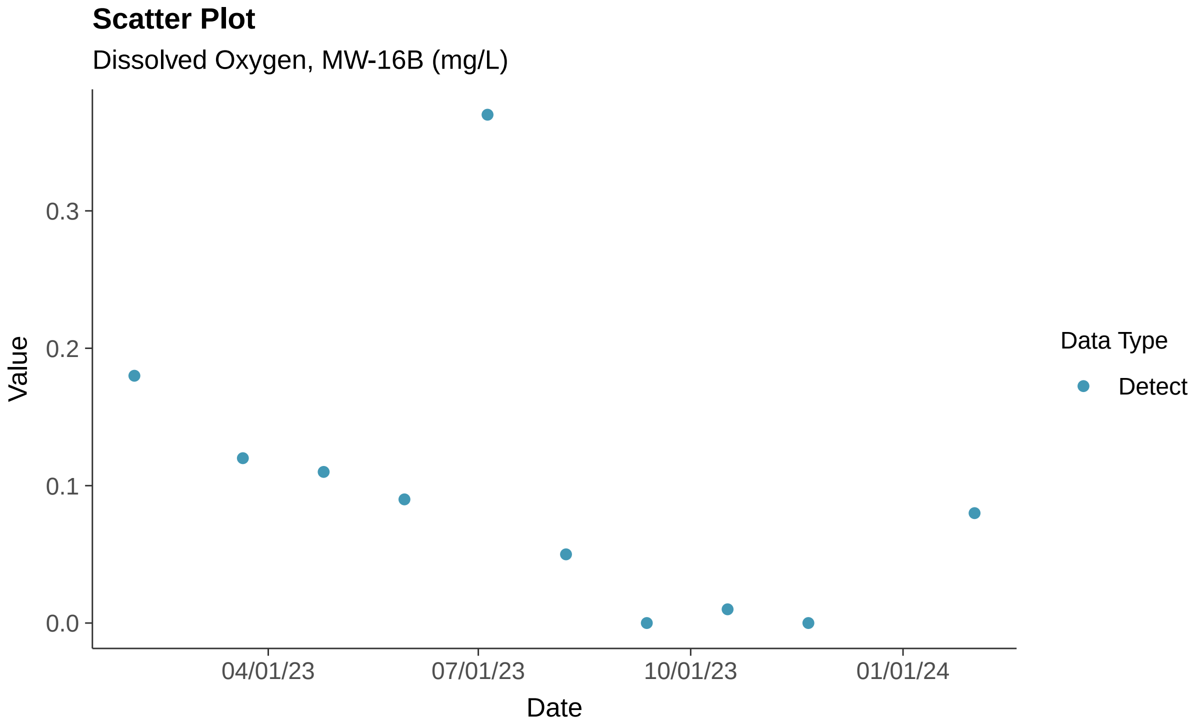

Lognormal Q-Q plot
Conductivity, MW-16B (mS/cm)
log(Value)
−0.450
−0.475
−0.500
−0.525
−0.550
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

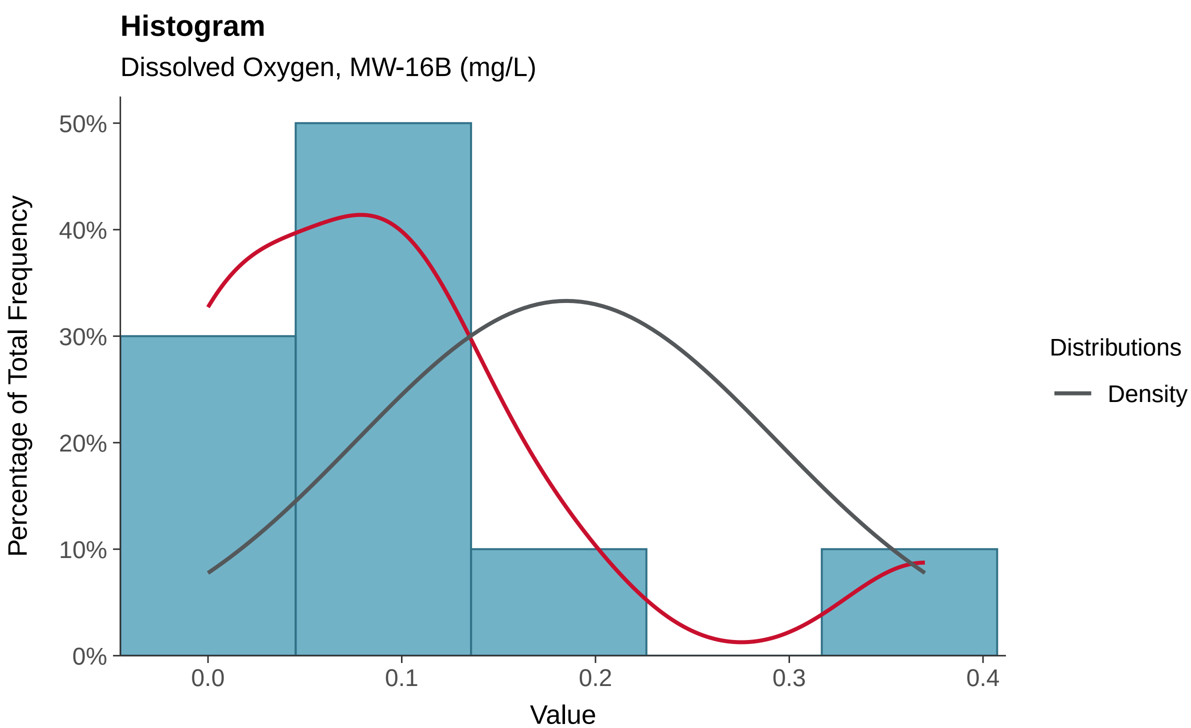

Gamma Q-Q plot
Conductivity, MW-16B (mS/cm)
Value
0.64
0.62
0.60
0.58
0.56
0.58
0.60
0.62
0.64
0.66
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Conductivity, MW-16B (mS/cm)
log(Value)
−0.450
−0.475
−0.500
−0.525
−0.550
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Dissolved Oxygen, MW-16B

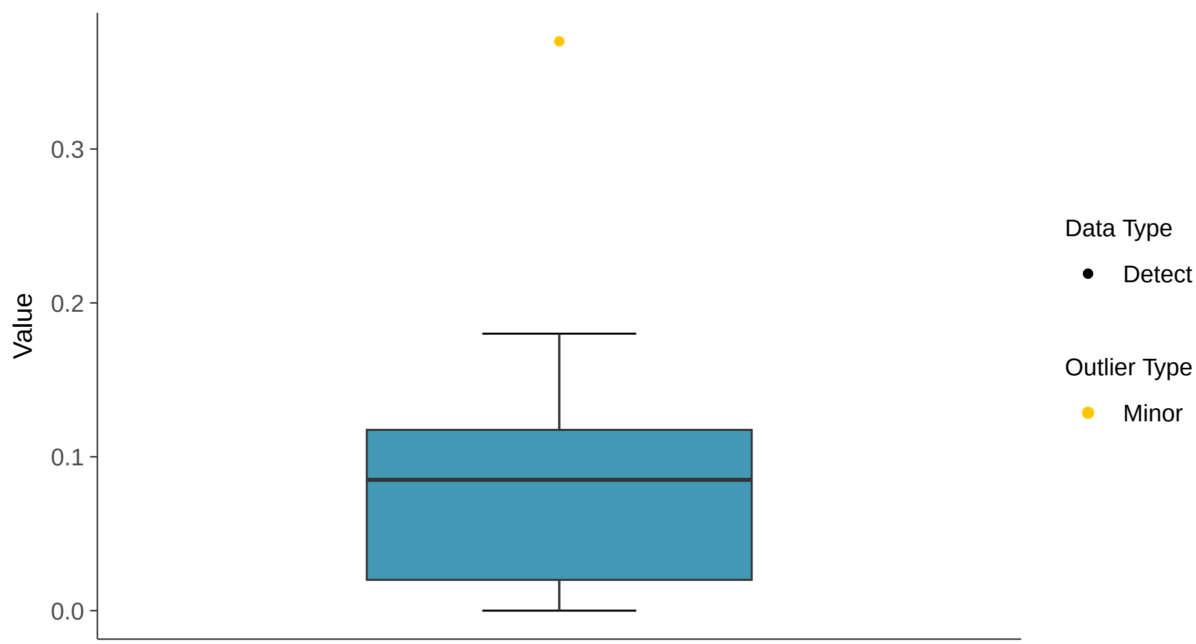
ID: 16B_3_25





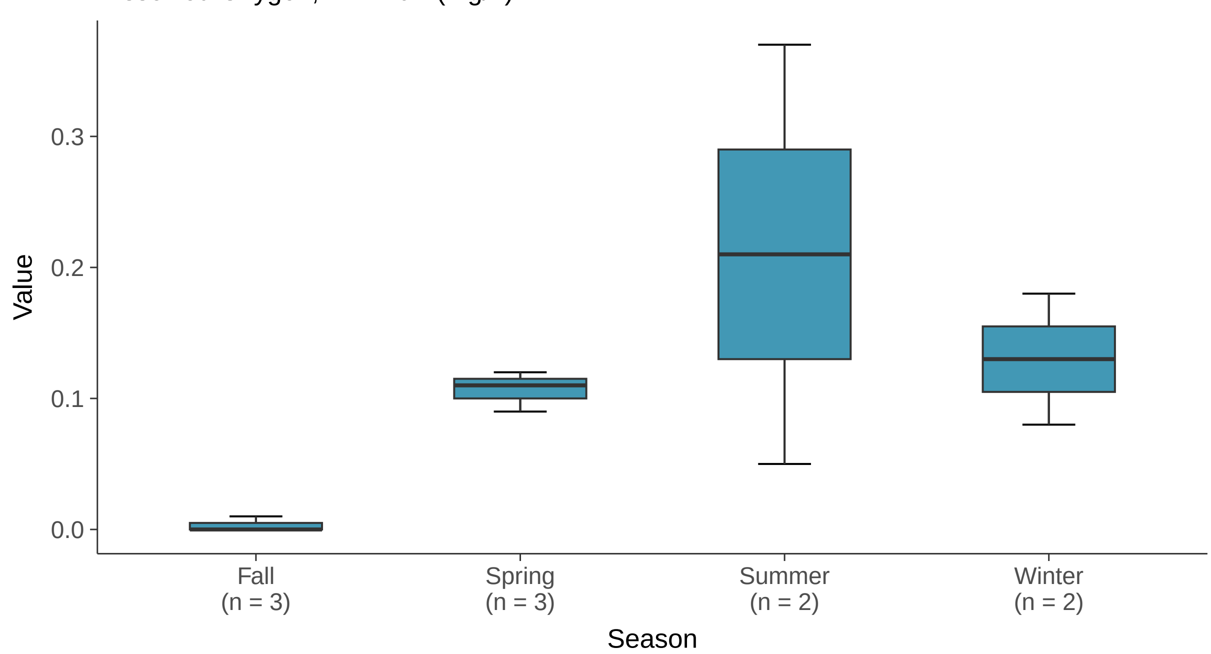
Boxplot

Dissolved Oxygen, MW-16B (mg/L)



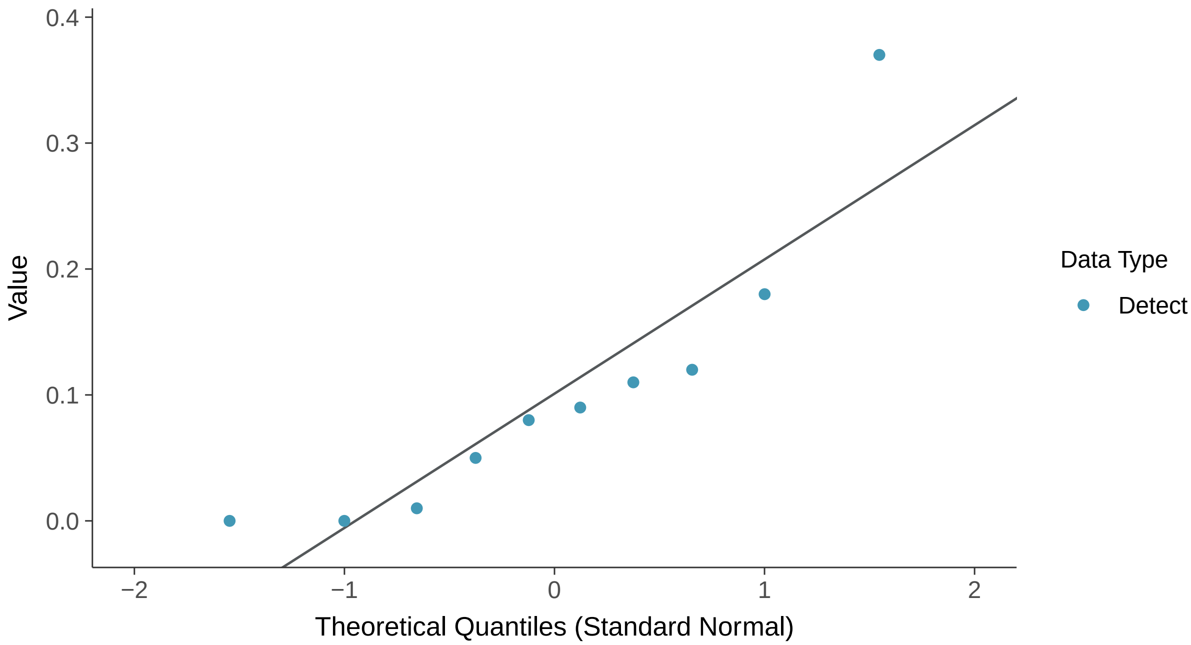
Boxplot by Season

Dissolved Oxygen, MW-16B (mg/L)



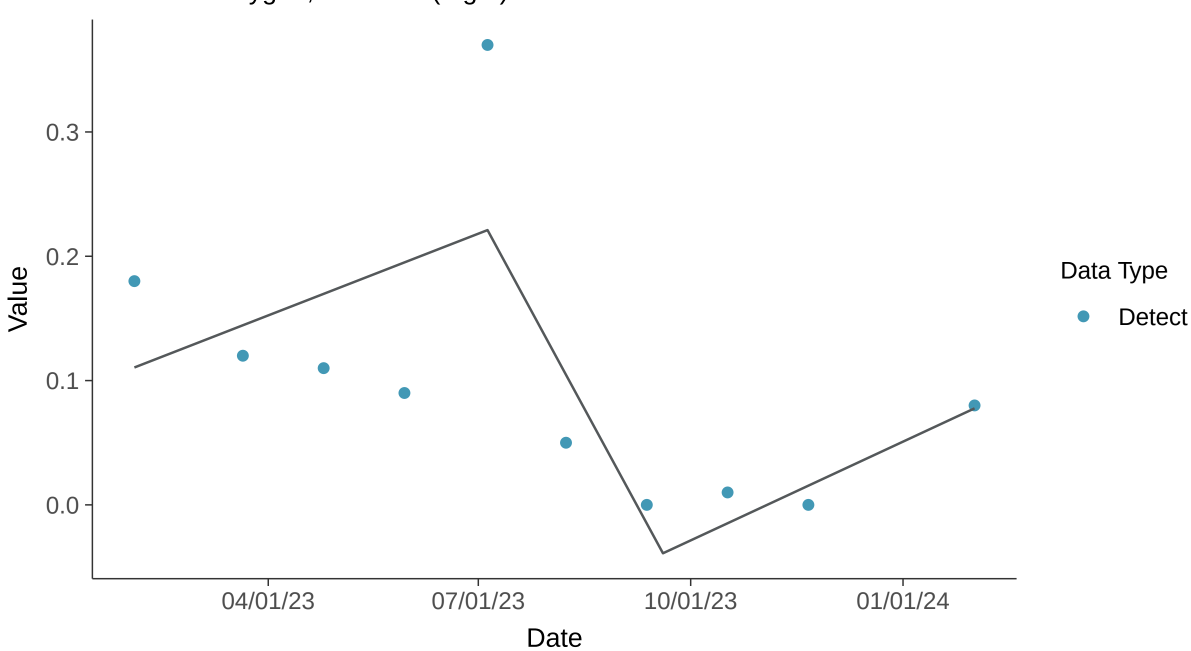
Normal Q-Q plot

Dissolved Oxygen, MW-16B (mg/L)



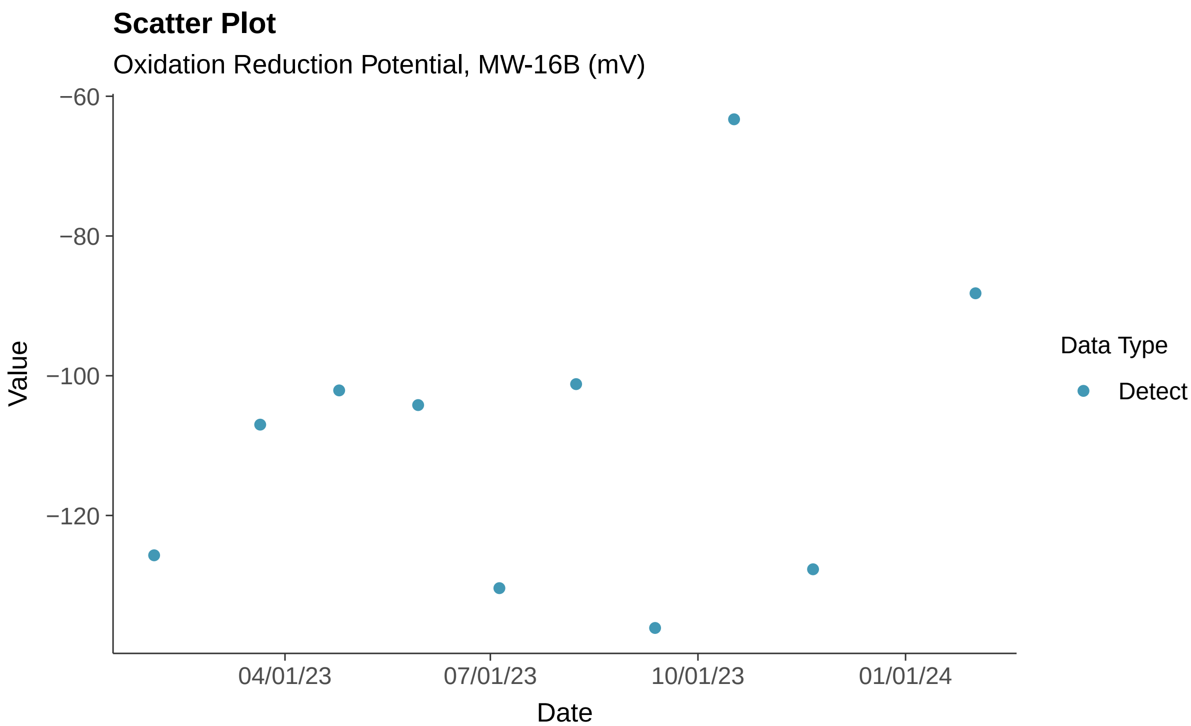
Trend Regression: Piecewise Linear-Linear-Linear

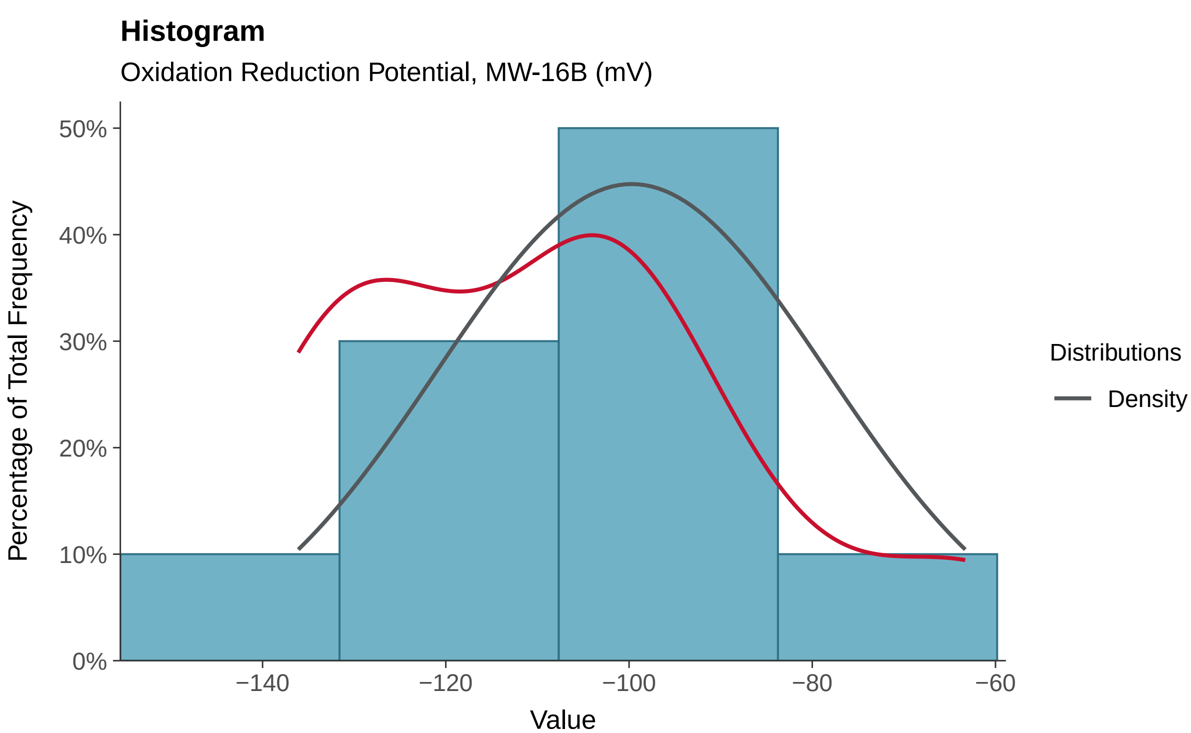
Dissolved Oxygen, MW-16B (mg/L)



Field Parameters: Oxidation Reduction Potential, MW-16B

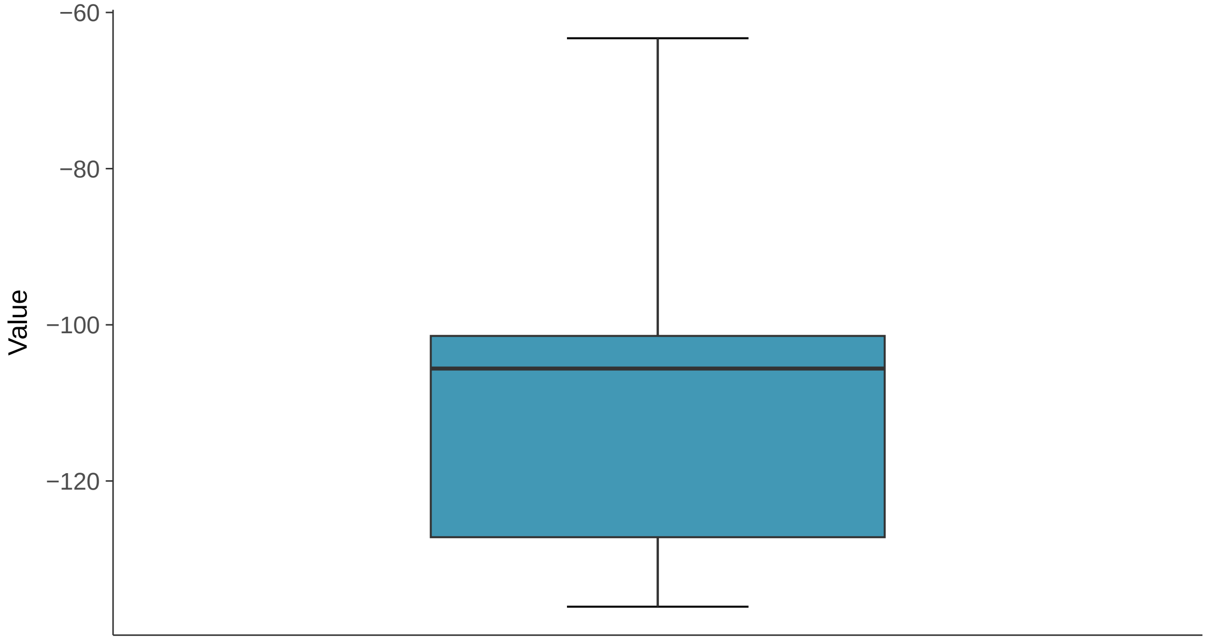
ID: 16B_3_26





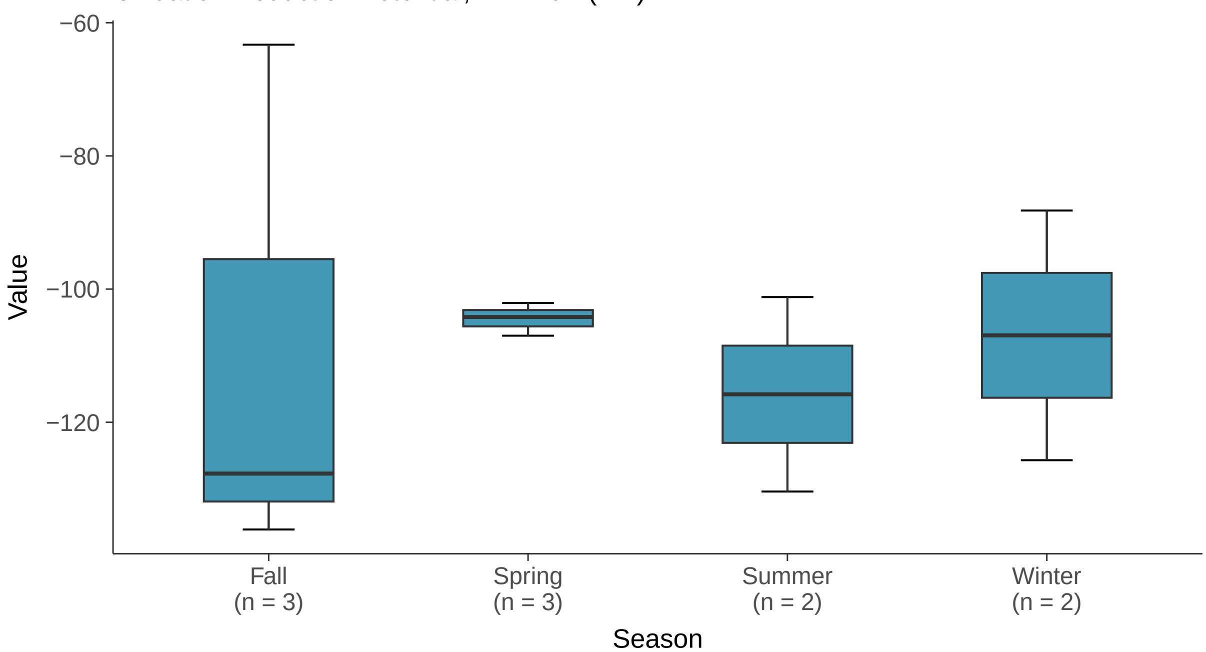
Boxplot

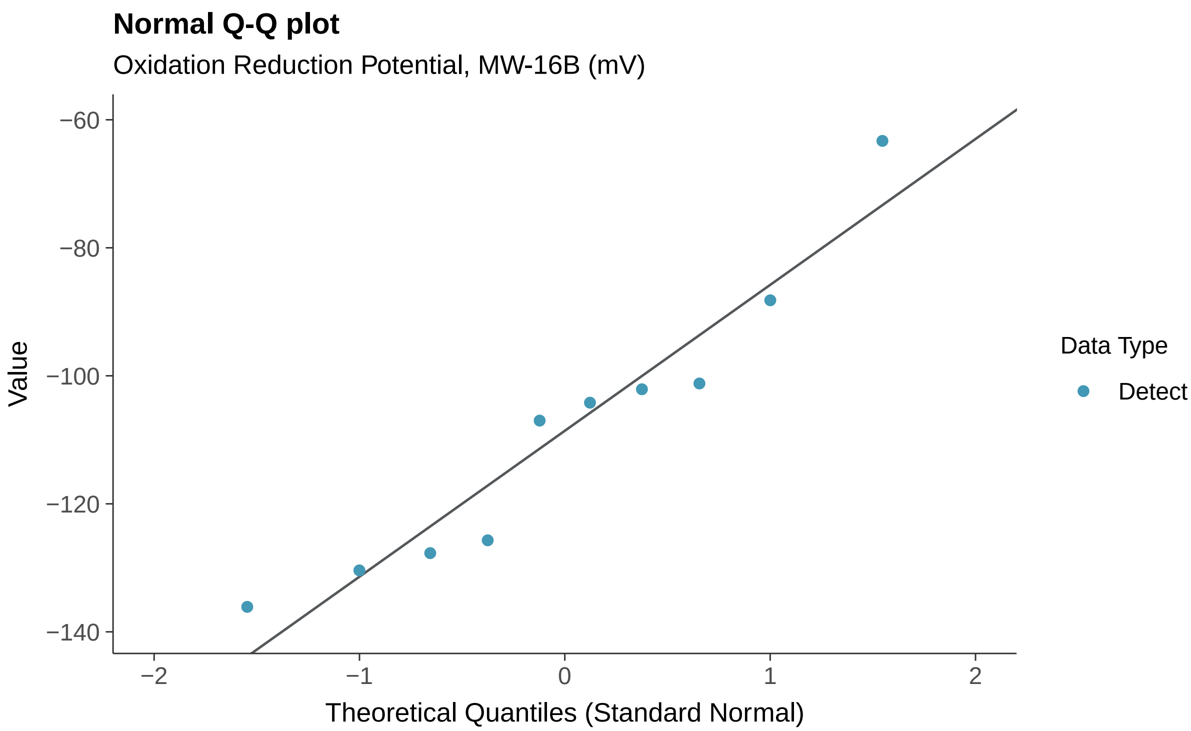
Oxidation Reduction Potential, MW-16B (mV)

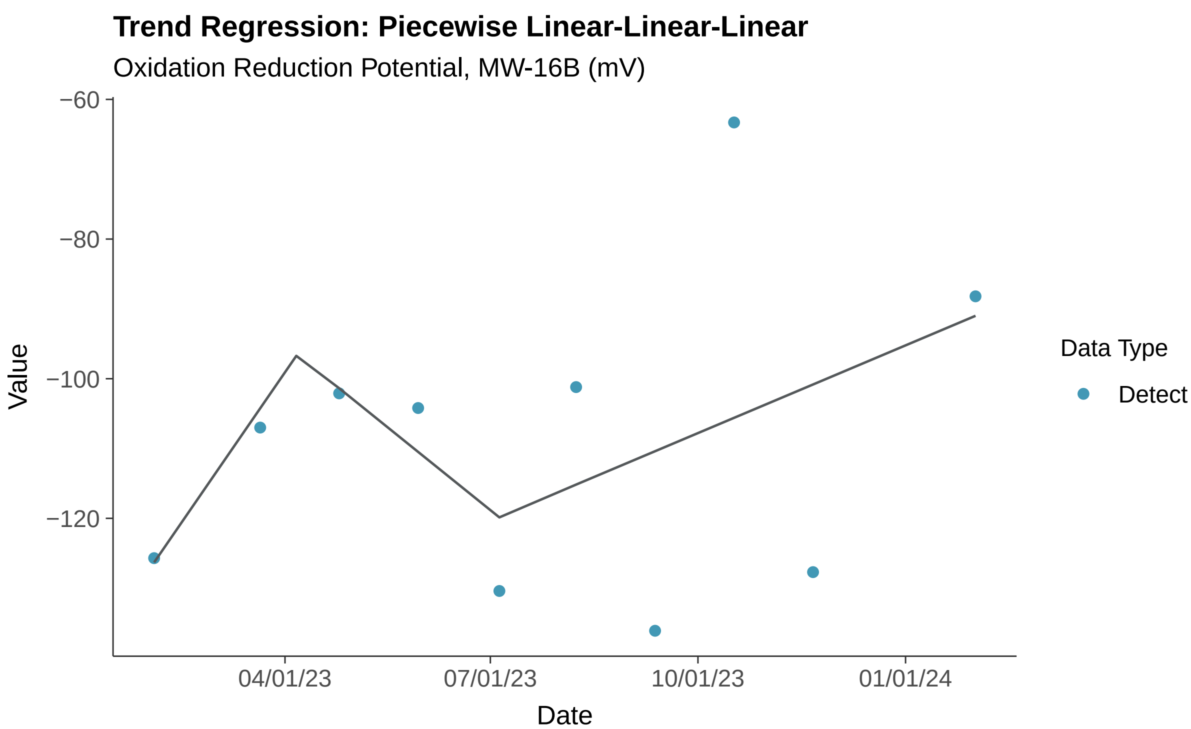


Boxplot by Season

Oxidation Reduction Potential, MW-16B (mV)

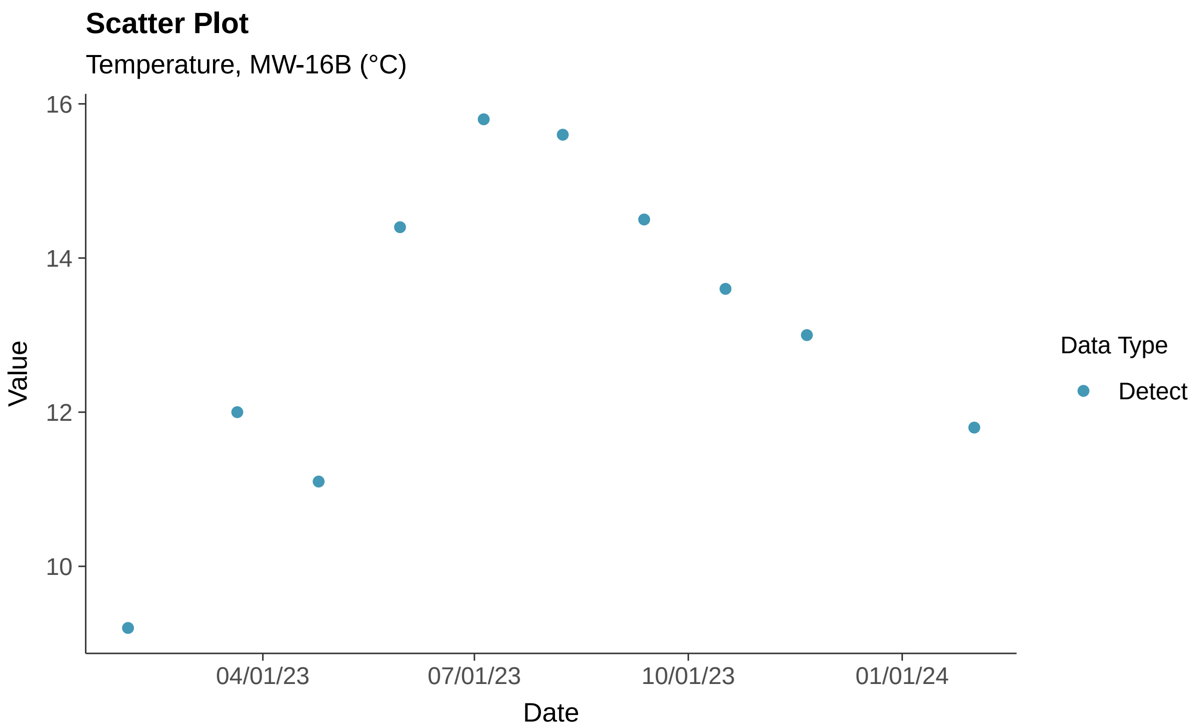


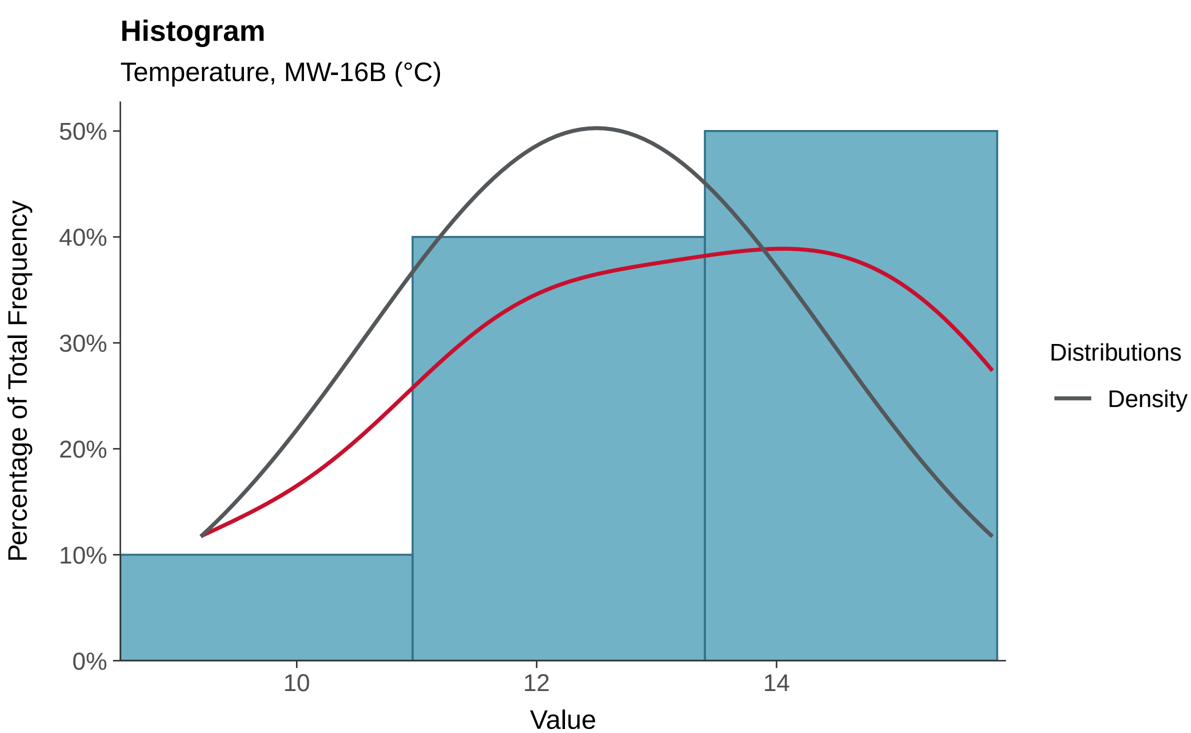

Normal Q-Q plot
Oxidation Reduction Potential, MW-16B (mV)
Value
−60
−80
−100
−120
−140
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Oxidation Reduction Potential, MW-16B (mV)
Value
−60
−80
−100
−120
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Temperature, MW-16B

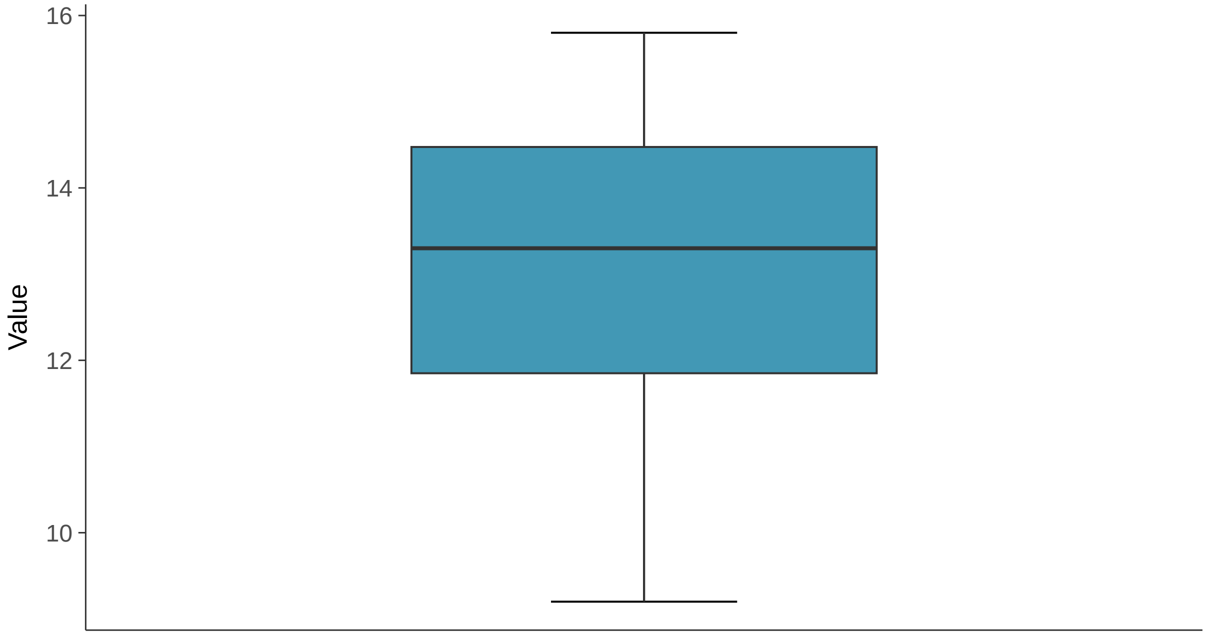
ID: 16B_3_27





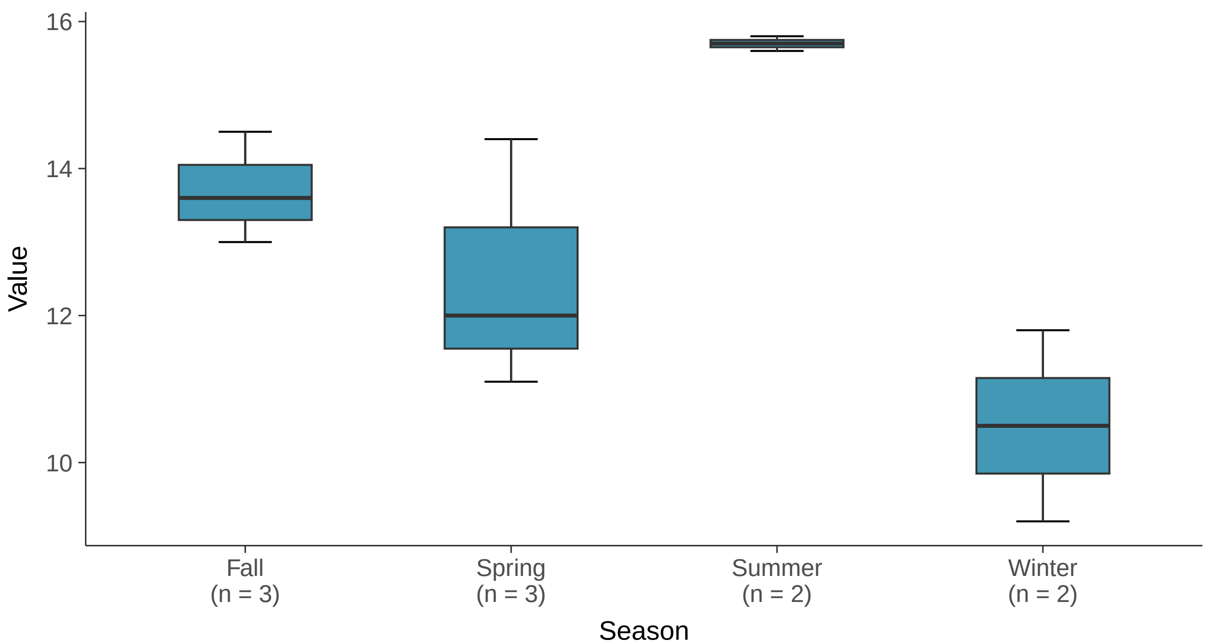
Boxplot

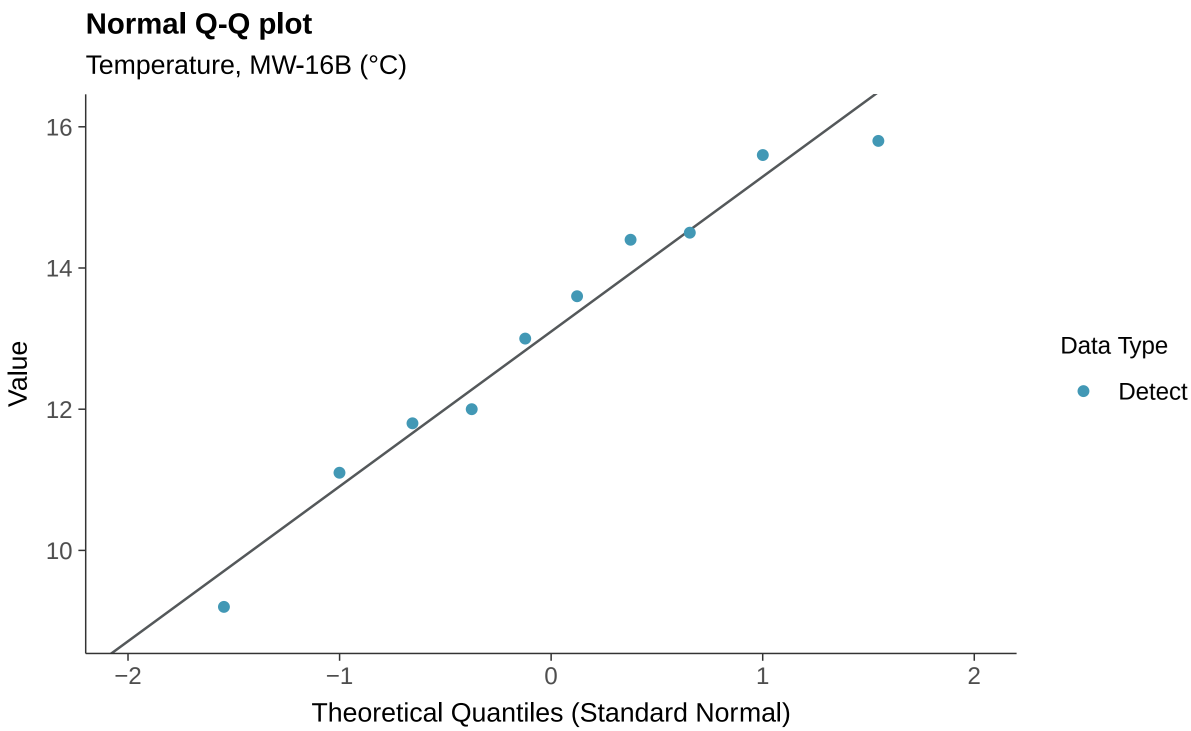
Temperature, MW-16B (°C)

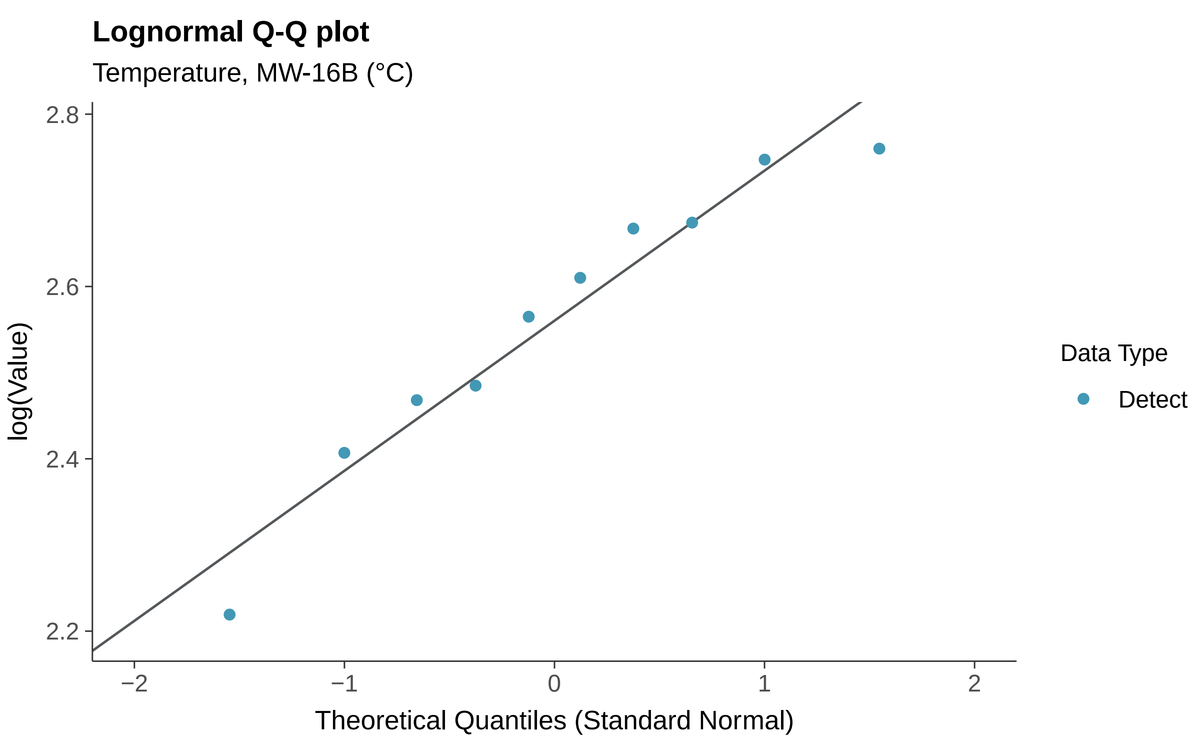


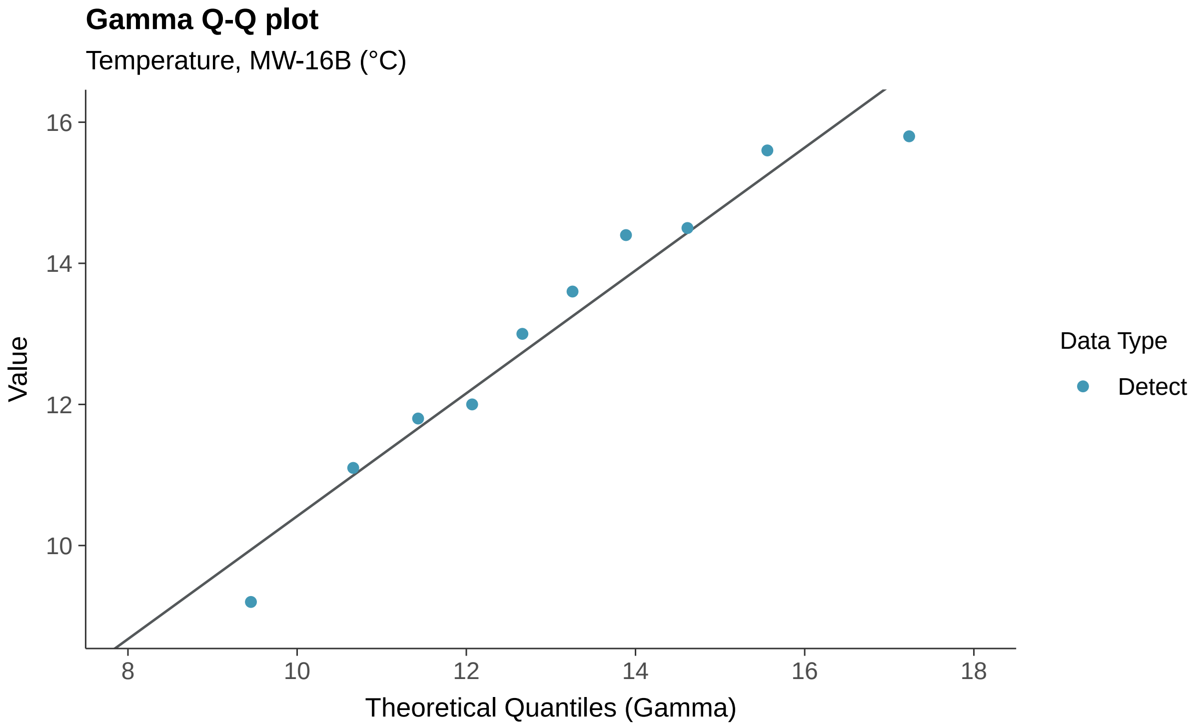
Boxplot by Season

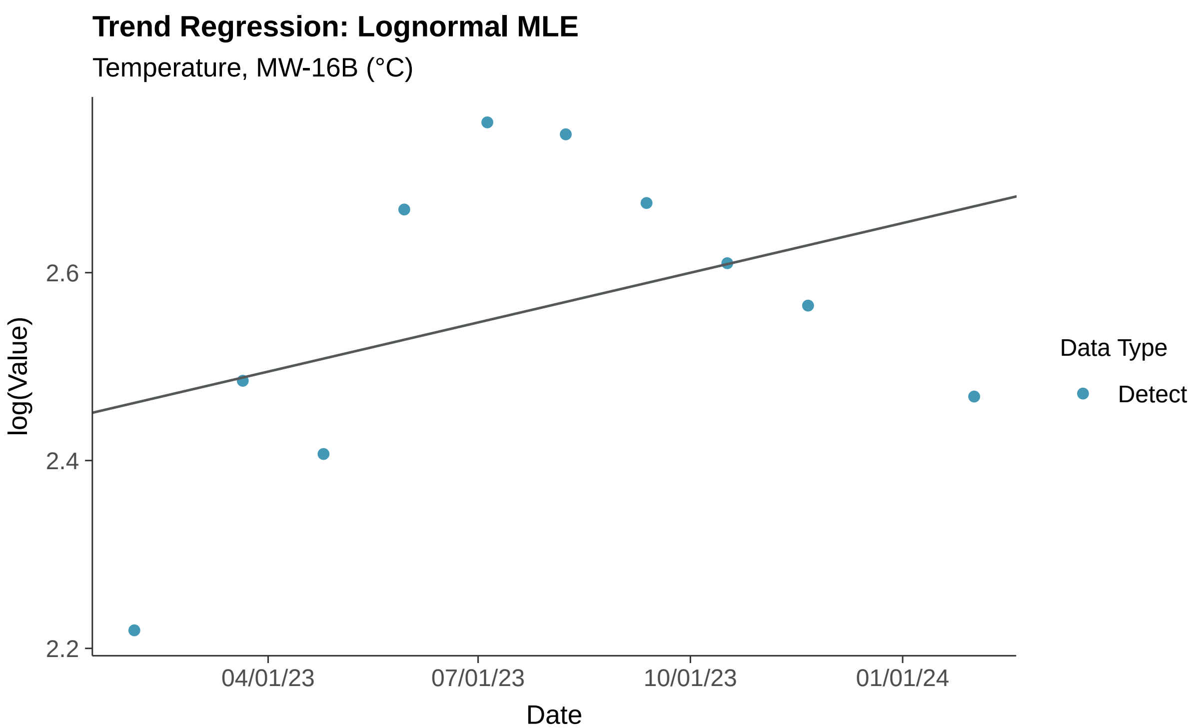
Temperature, MW-16B (°C)




Normal Q-Q plot
Temperature, MW-16B (°C)
Value
16
14
12
10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

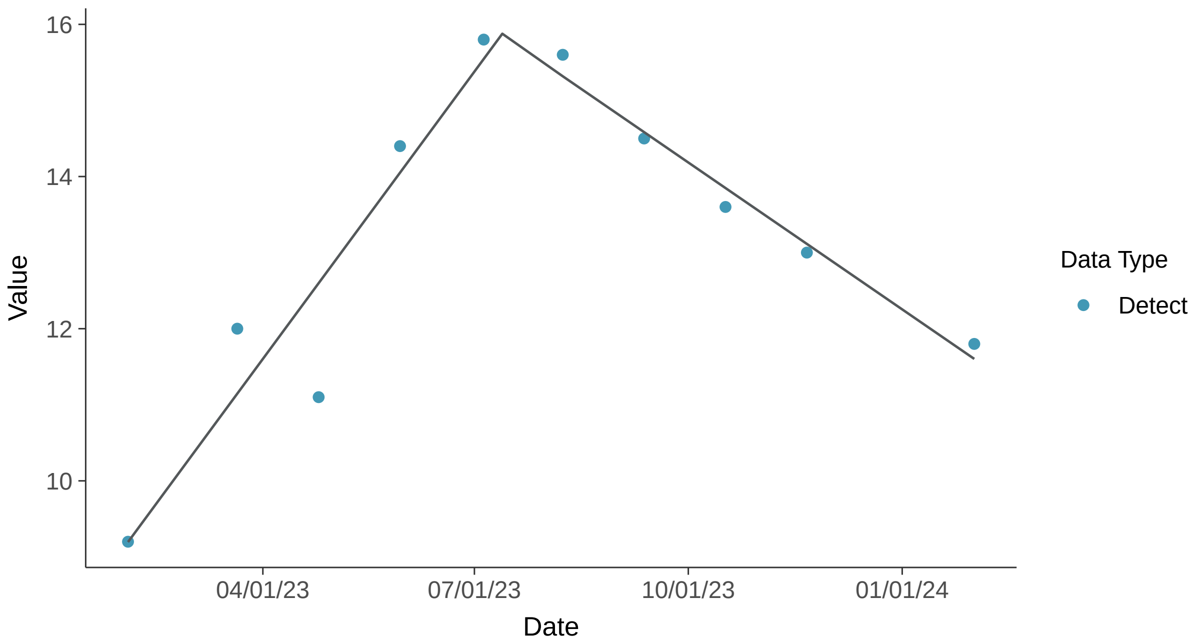

Lognormal Q-Q plot
Temperature, MW-16B (°C)
log(Value)
2.8
2.6
2.4
2.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Temperature, MW-16B (°C)
Value
16
14
12
10
8
10
12
14
16
18
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Temperature, MW-16B (°C)
log(Value)
2.6
2.4
2.2
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

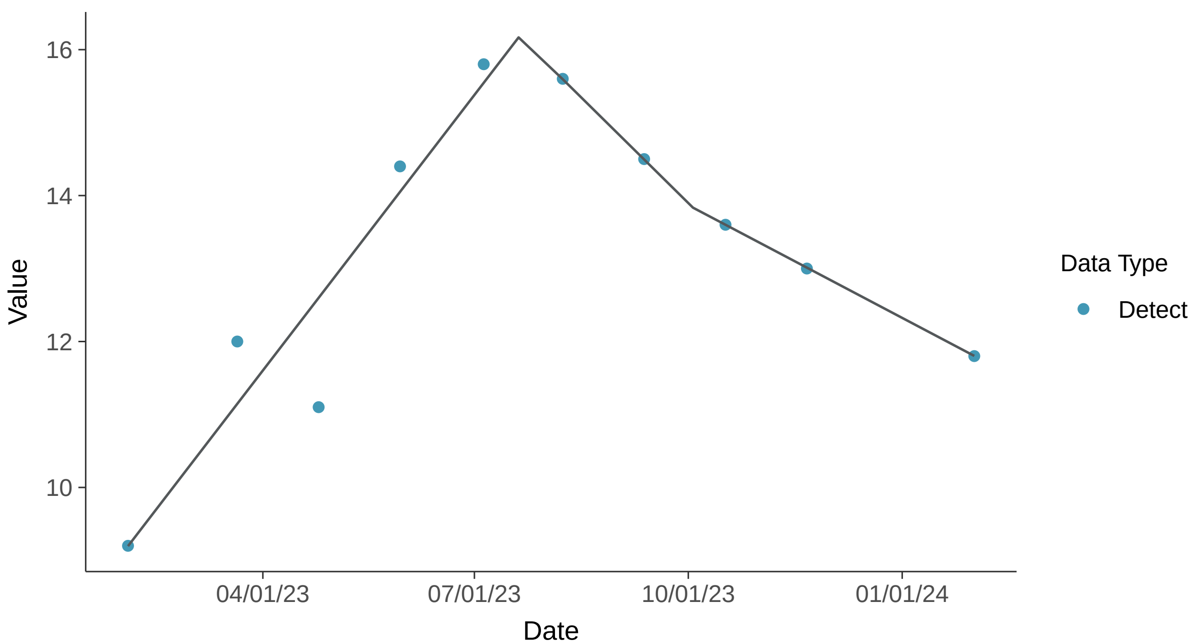
Trend Regression: Piecewise Linear-Linear

Temperature, MW-16B (°C)



Trend Regression: Piecewise Linear-Linear-Linear

Temperature, MW-16B (°C)

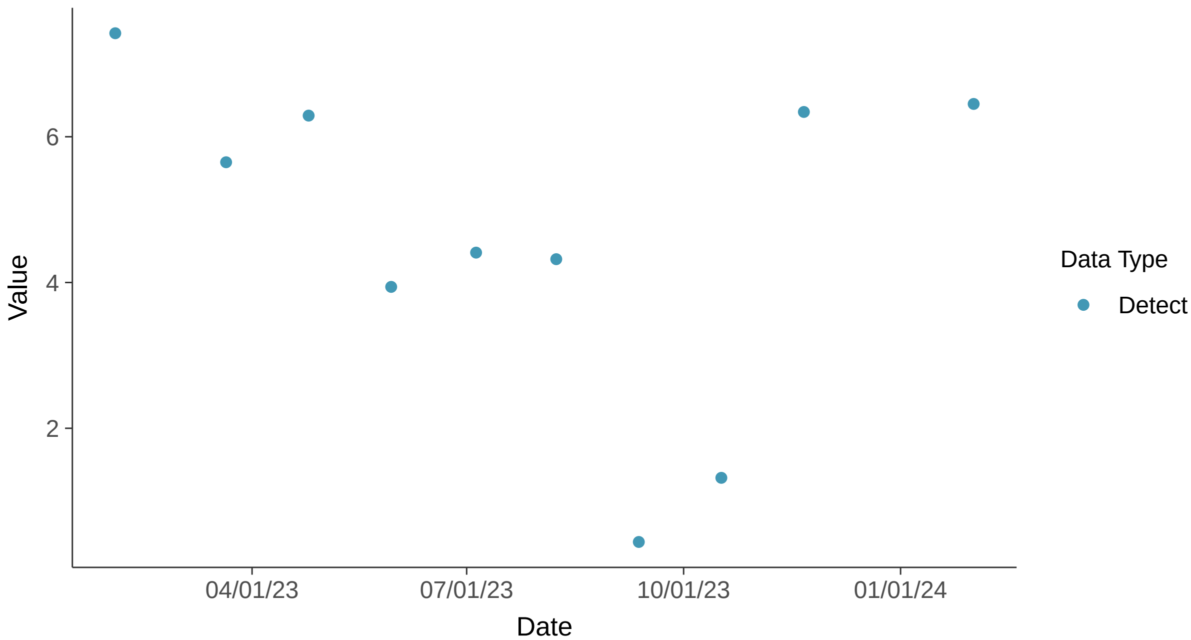


Field Parameters: Turbidity, MW-16B

ID: 16B_3_28

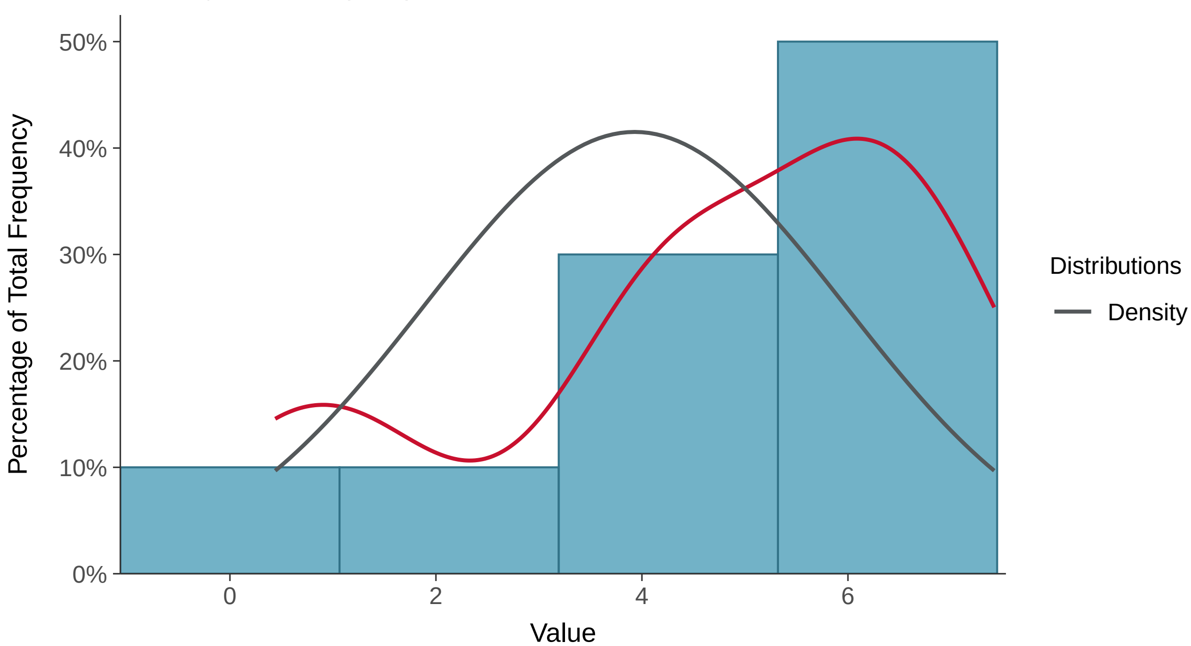
Scatter Plot

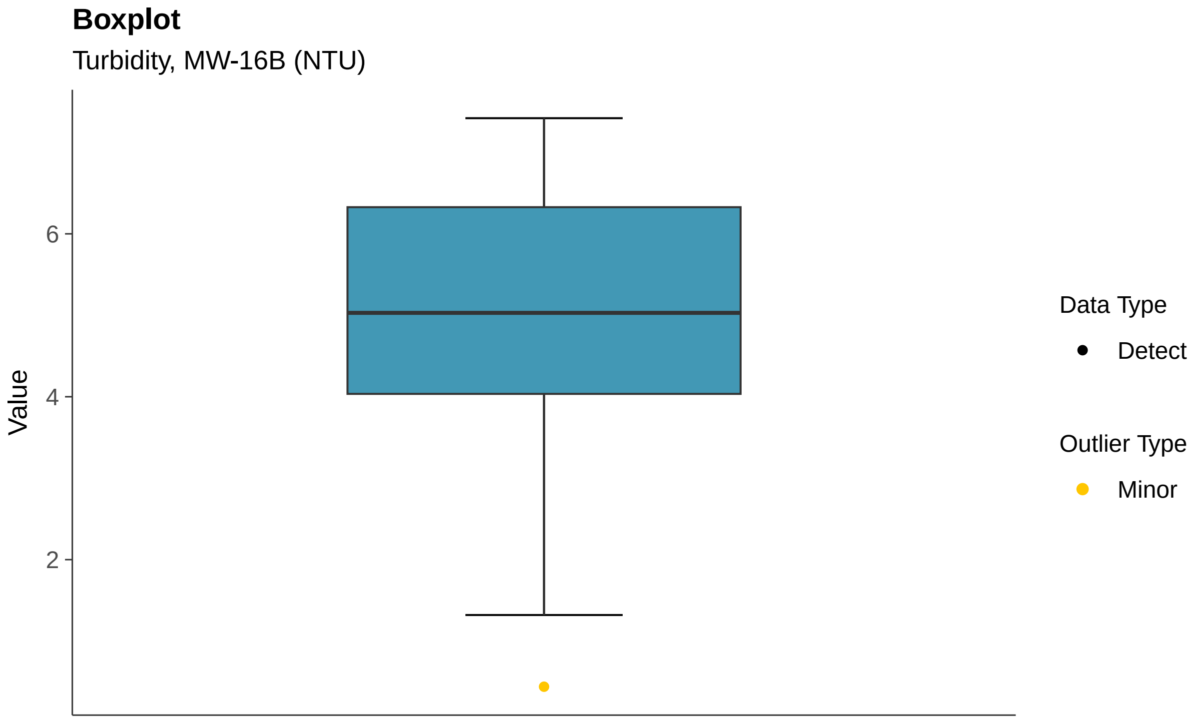
Turbidity, MW-16B (NTU)

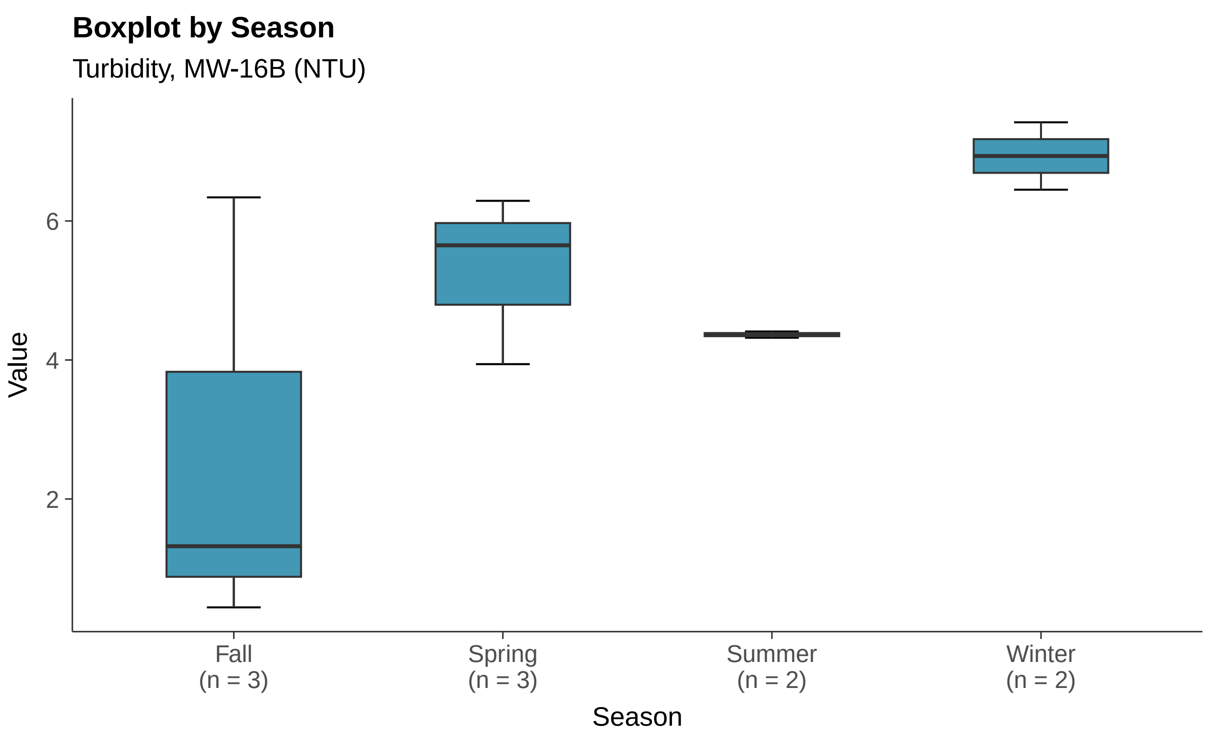


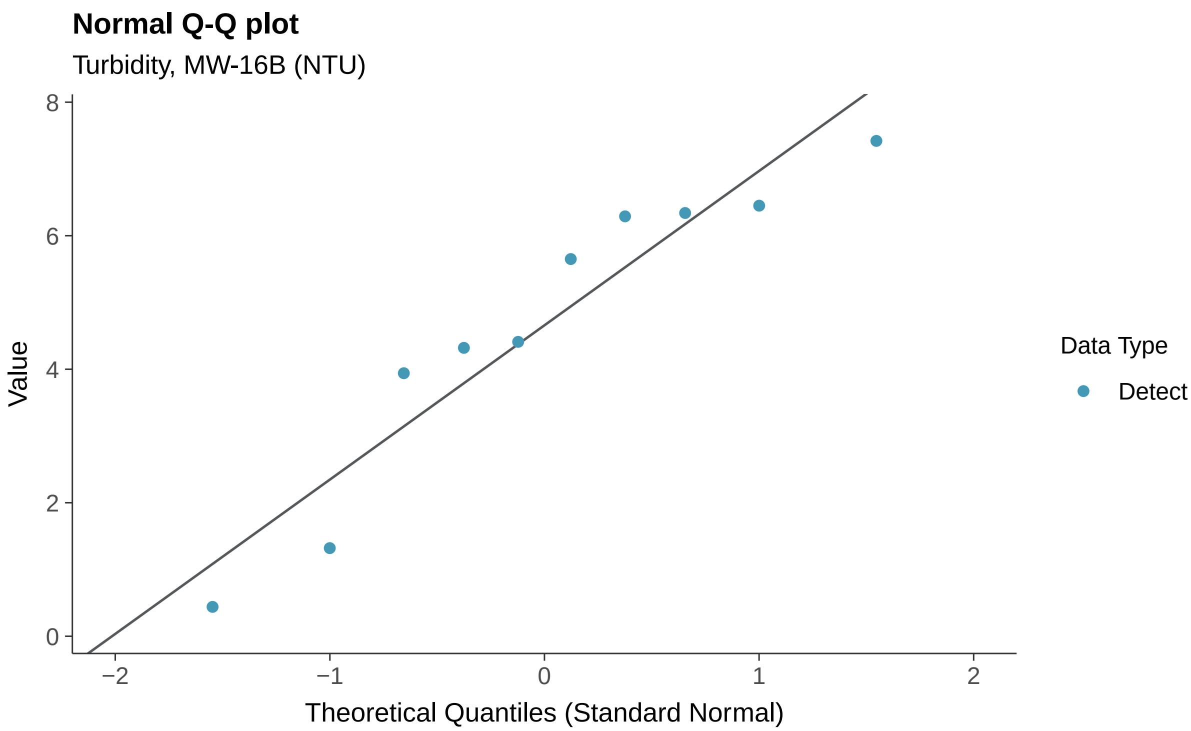
Histogram

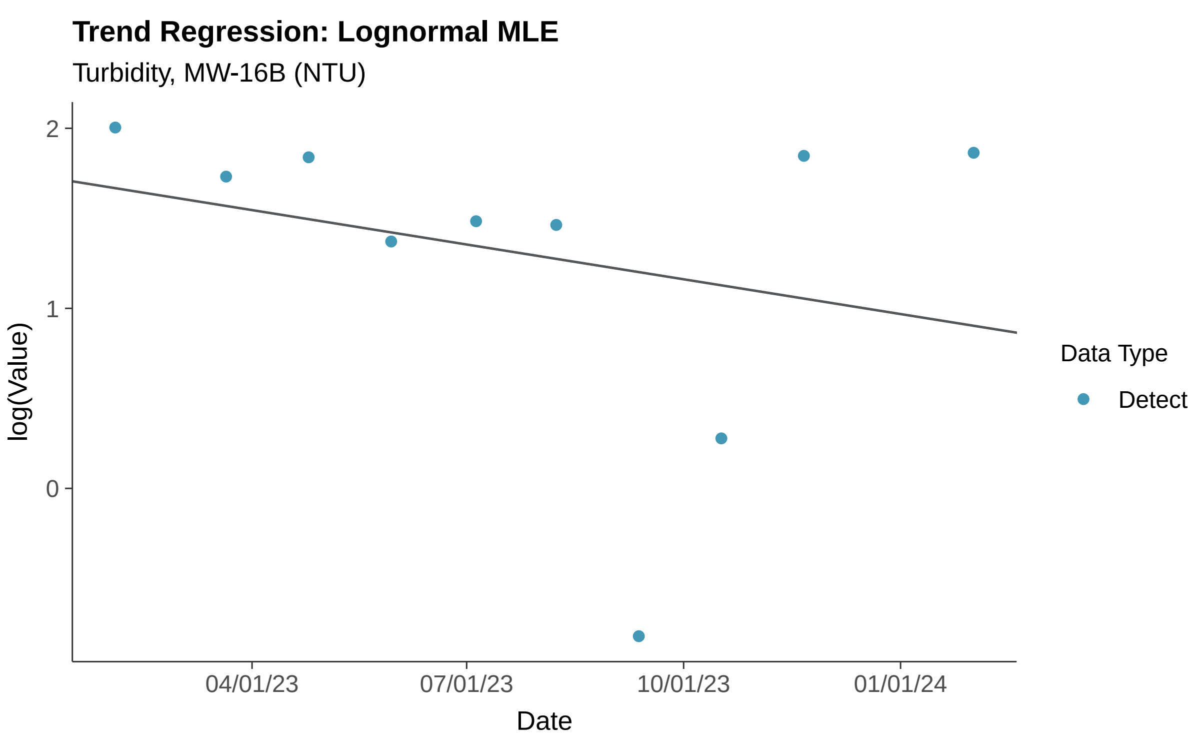
Turbidity, MW-16B (NTU)




Boxplot
Turbidity, MW-16B (NTU)
Value
6
4
2
Data Type
Detect
Outlier Type
Minor

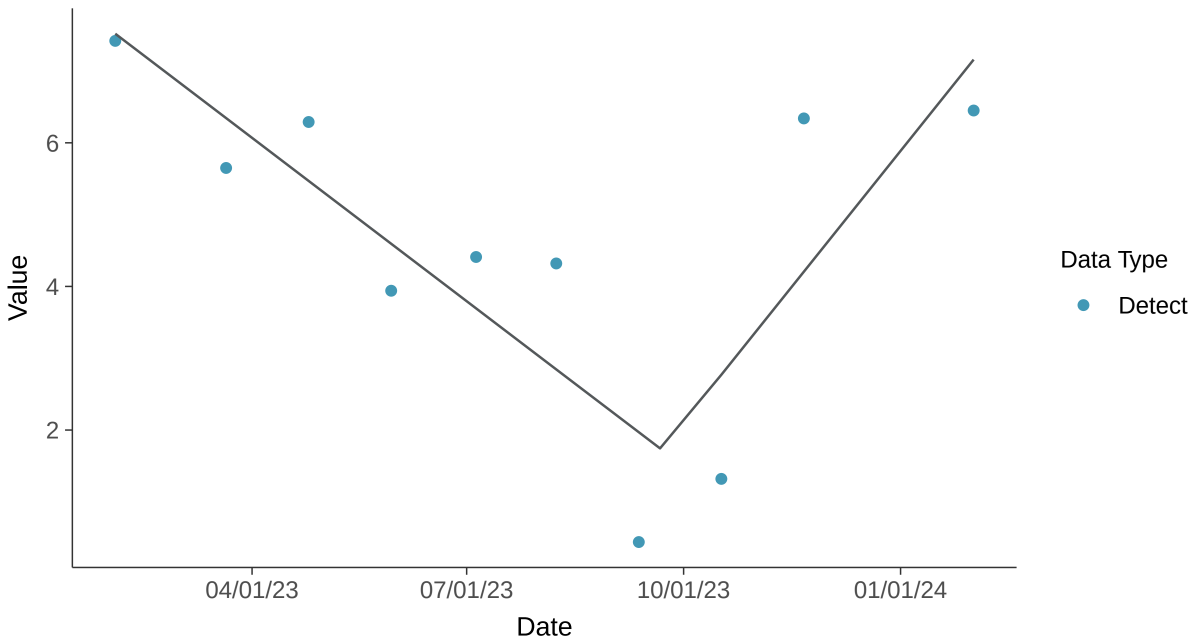

Boxplot by Season
Turbidity, MW-16B (NTU)
Value
6
4
2
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season


Normal Q-Q plot
Turbidity, MW-16B (NTU)
Value
8
6
4
2
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Turbidity, MW-16B (NTU)
log(Value)
2
1
0
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

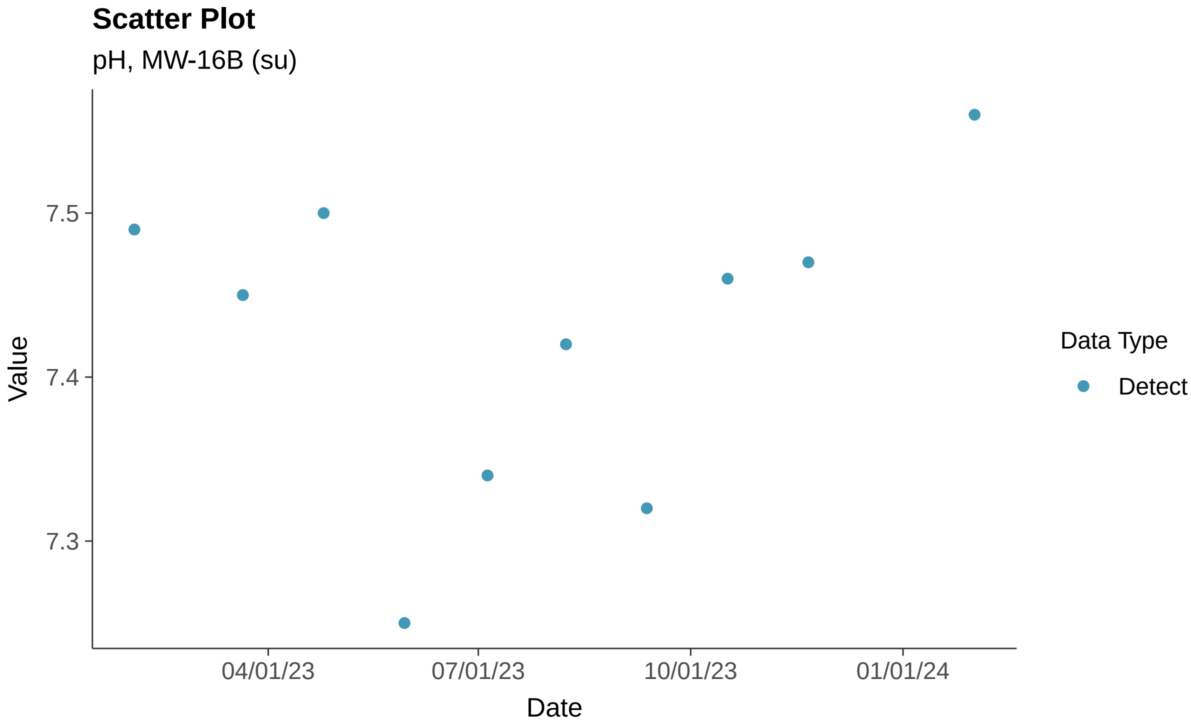
Trend Regression: Piecewise Linear-Linear

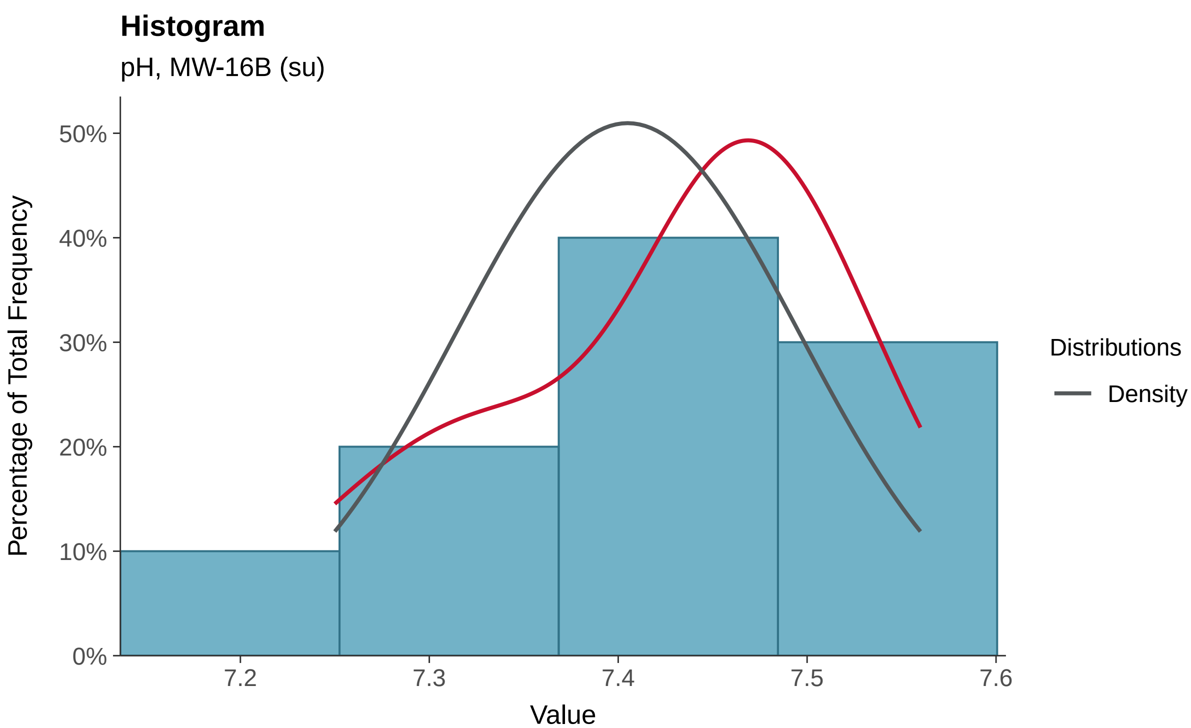
Turbidity, MW-16B (NTU)



Field Parameters: pH, MW-16B

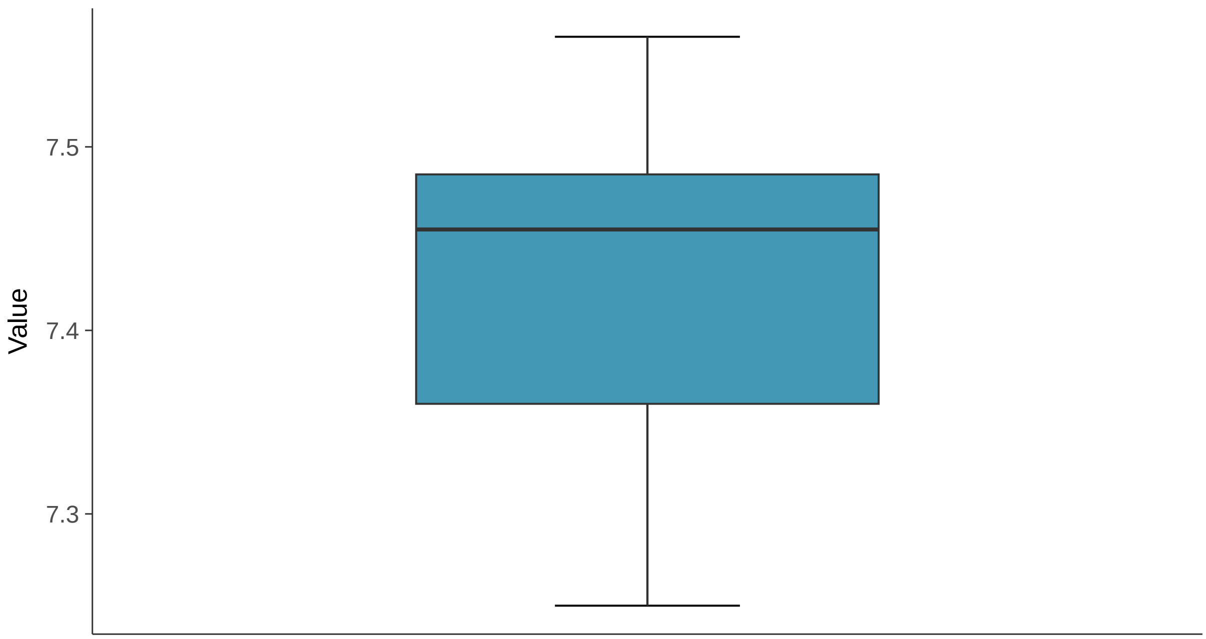
ID: 16B_3_29





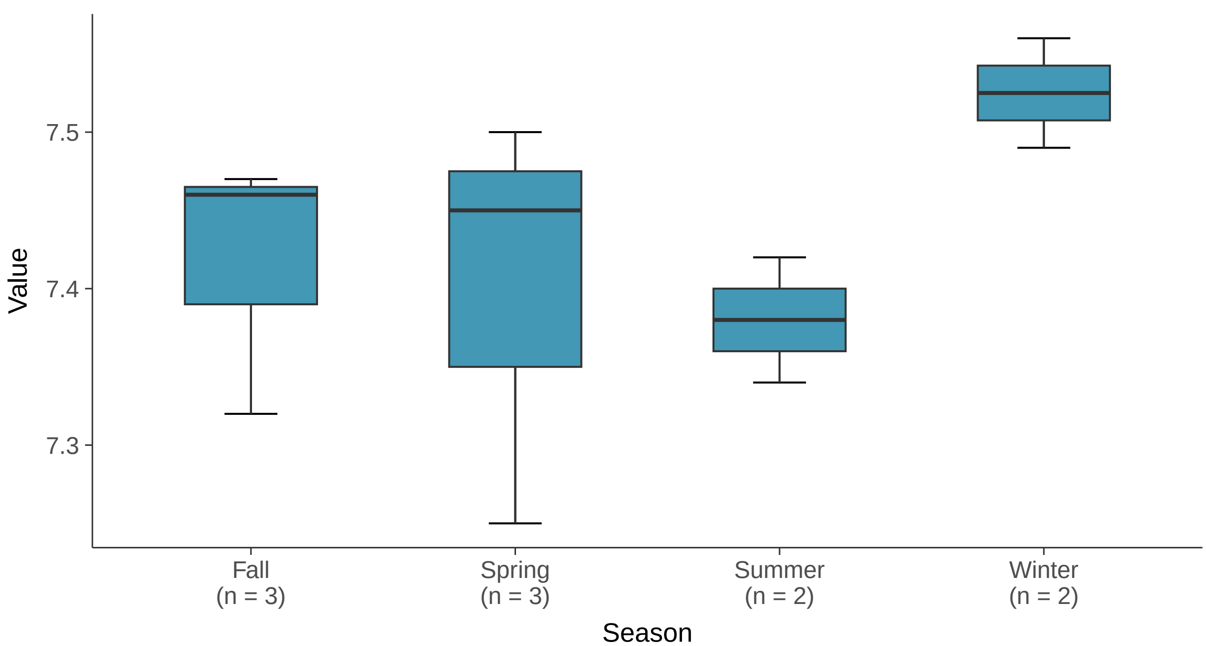
Boxplot

pH, MW-16B (su)



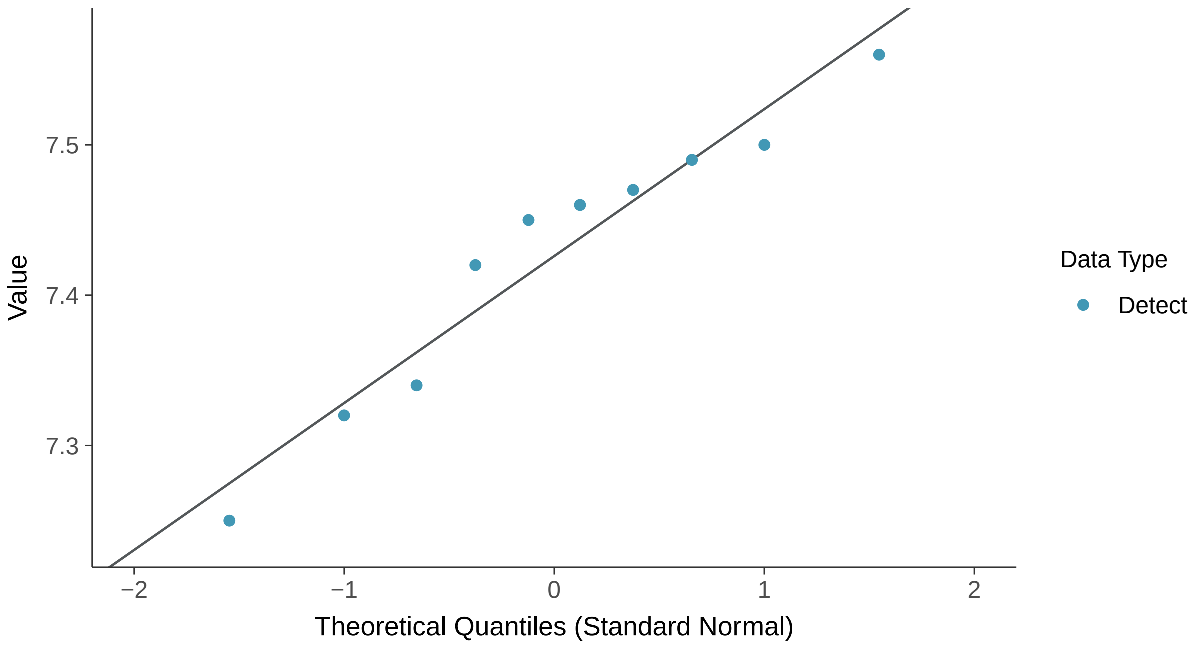
Boxplot by Season

pH, MW-16B (su)



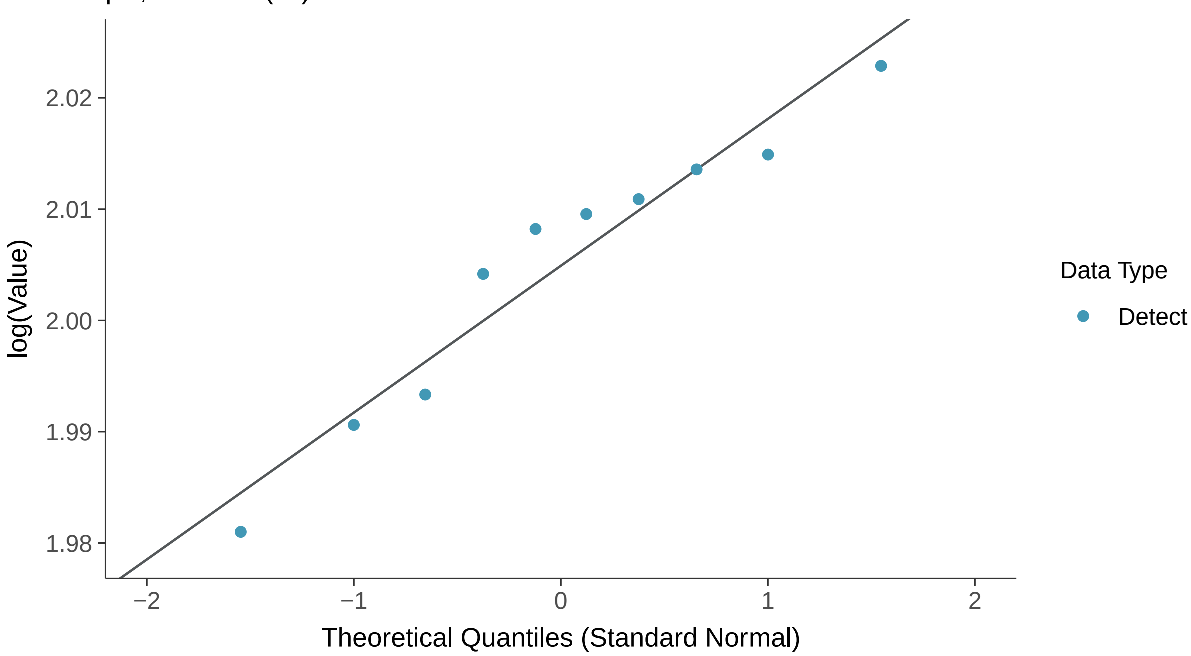
Normal Q-Q plot

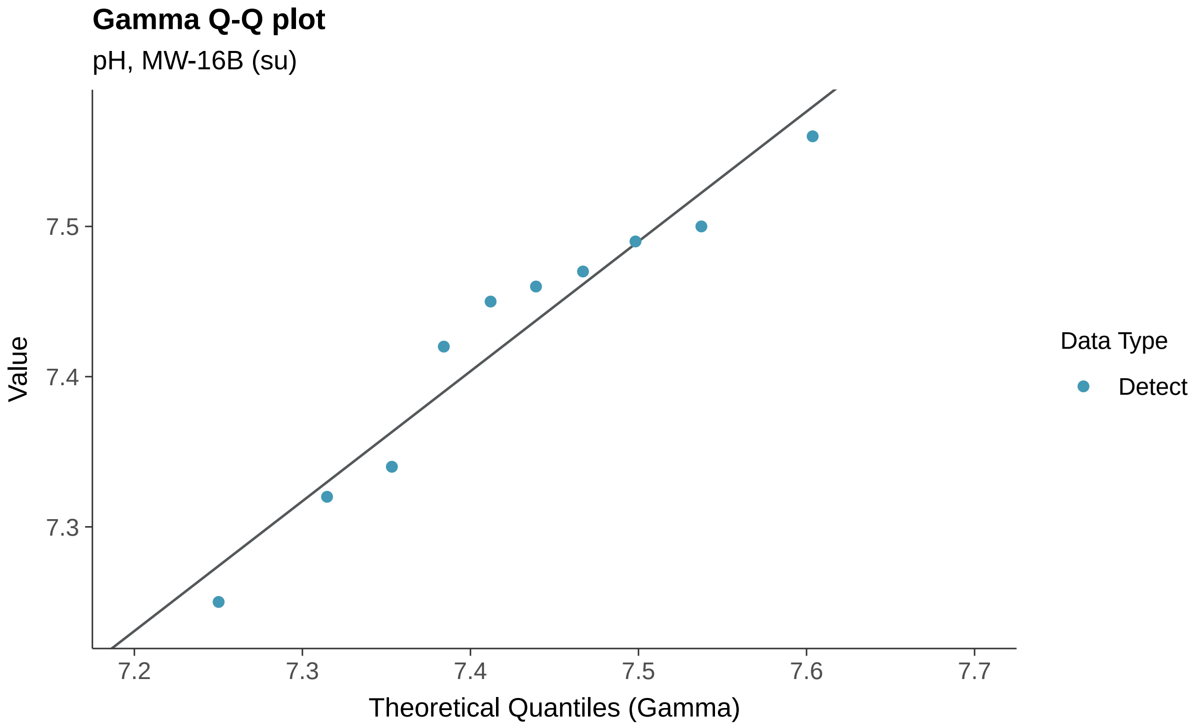
pH, MW-16B (su)

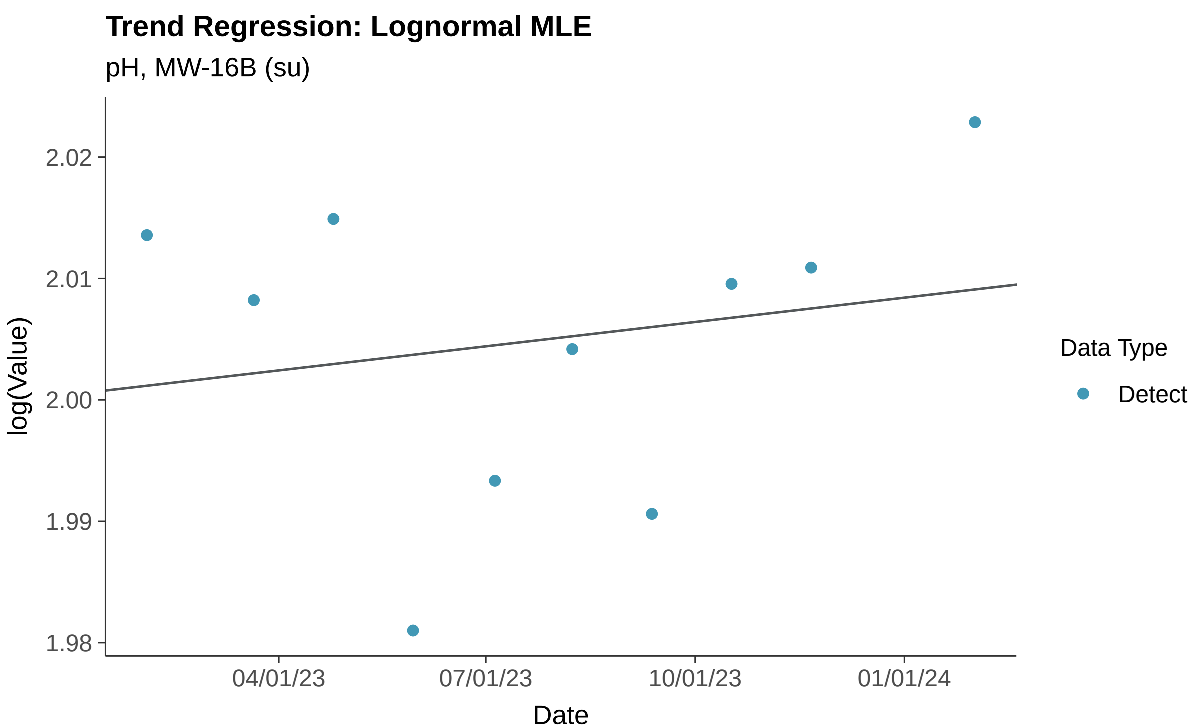


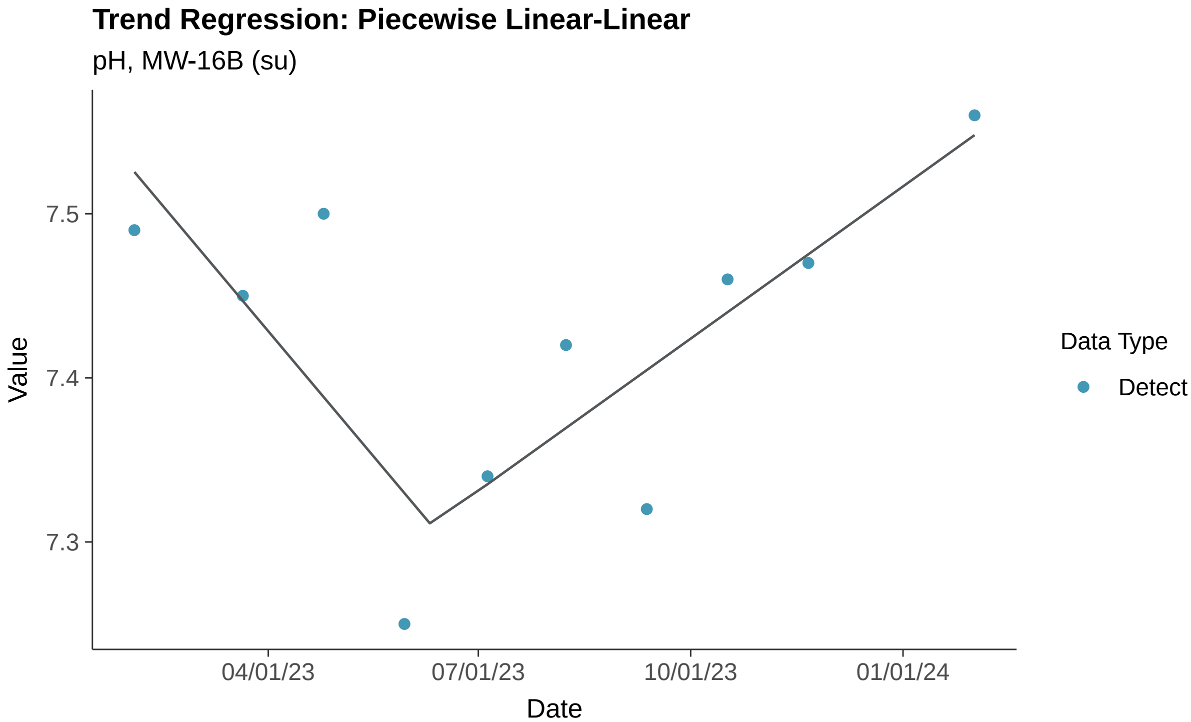
Lognormal Q-Q plot

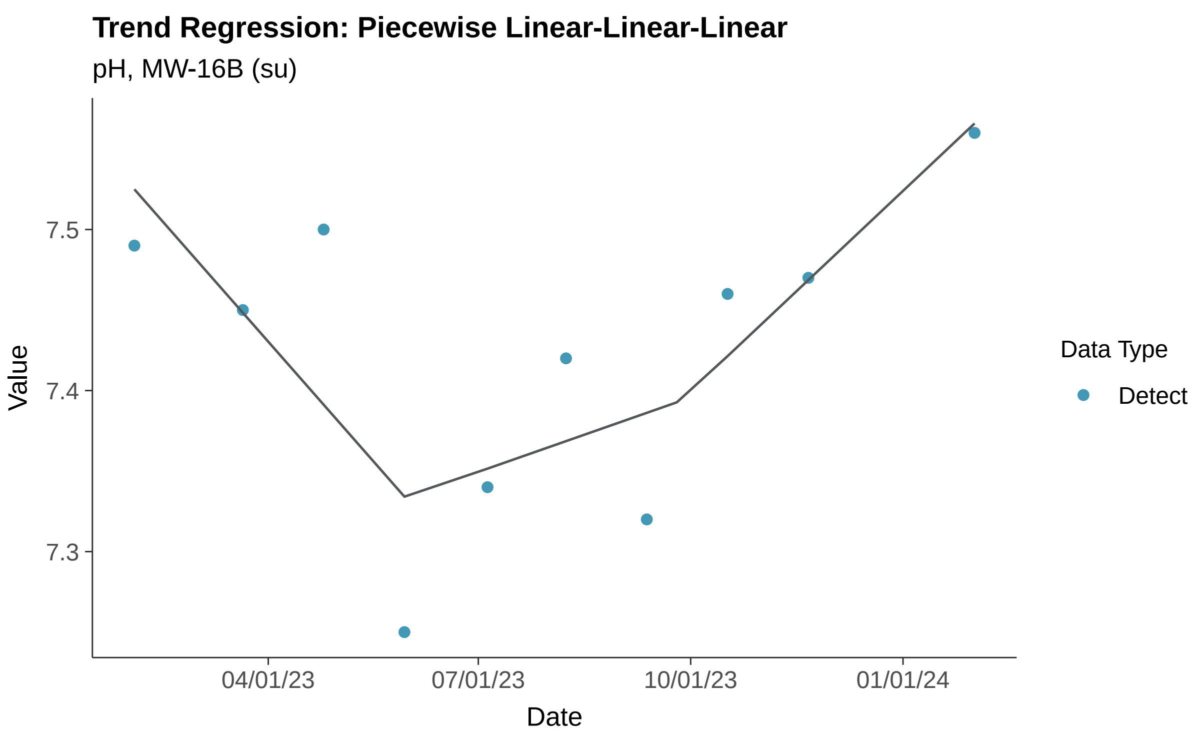
pH, MW-16B (su)




Gamma Q-Q plot
pH, MW-16B (su)
Value
7.5
7.4
7.3
7.2
7.3
7.4
7.5
7.6
7.7
Theoretical Quantiles (Gamma)
Data Type
Detect

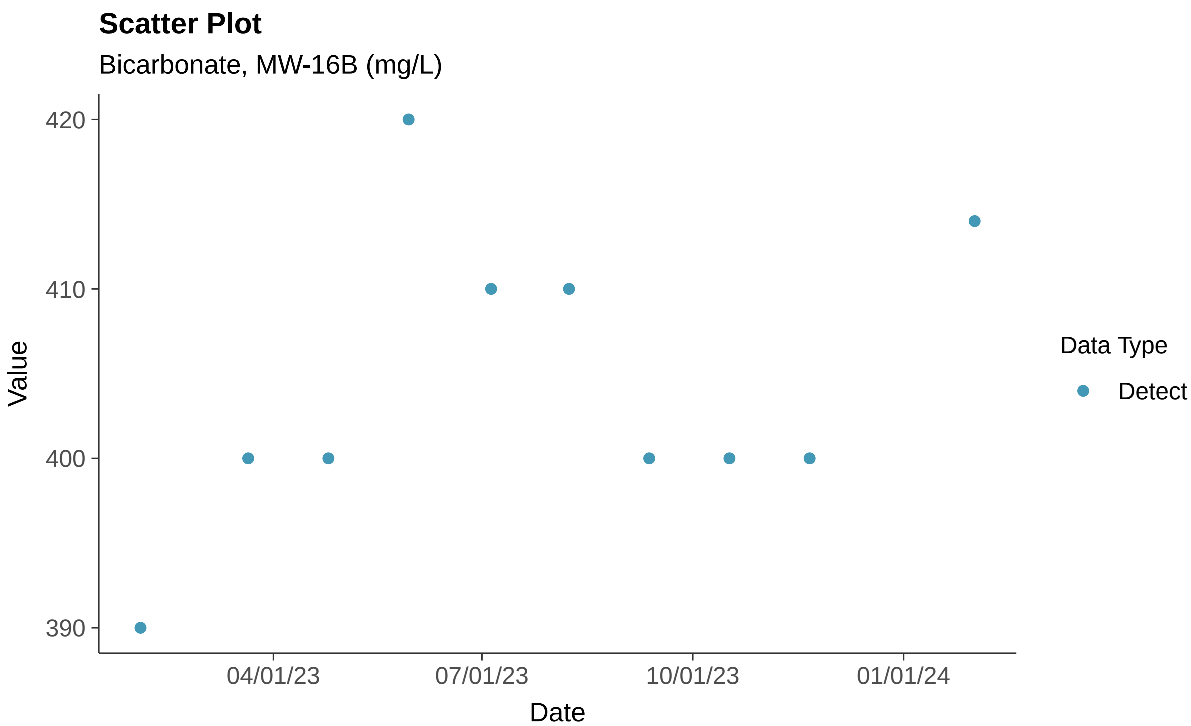

Trend Regression: Lognormal MLE
pH, MW-16B (su)
log(Value)
2.02
2.01
2.00
1.99
1.98
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

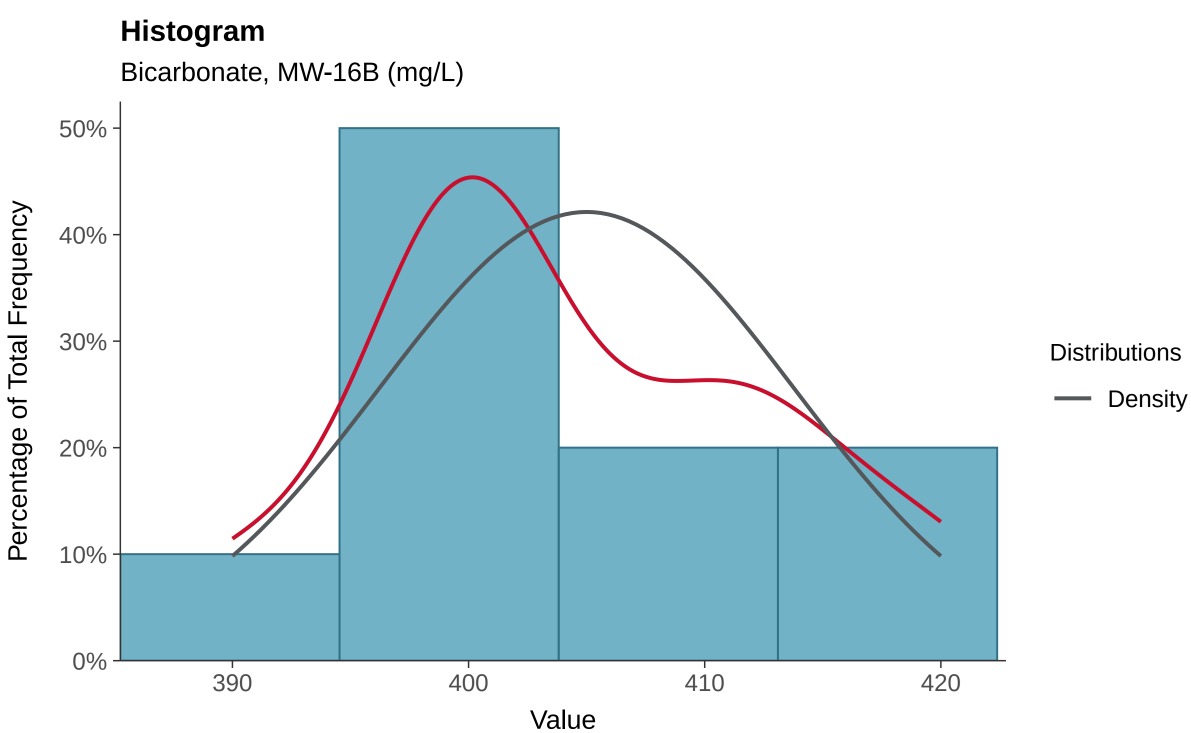

Trend Regression: Piecewise Linear-Linear
pH, MW-16B (su)
Value
7.5
7.4
7.3
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
pH, MW-16B (su)
Value
7.5
7.4
7.3
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Other: Bicarbonate, MW-16B

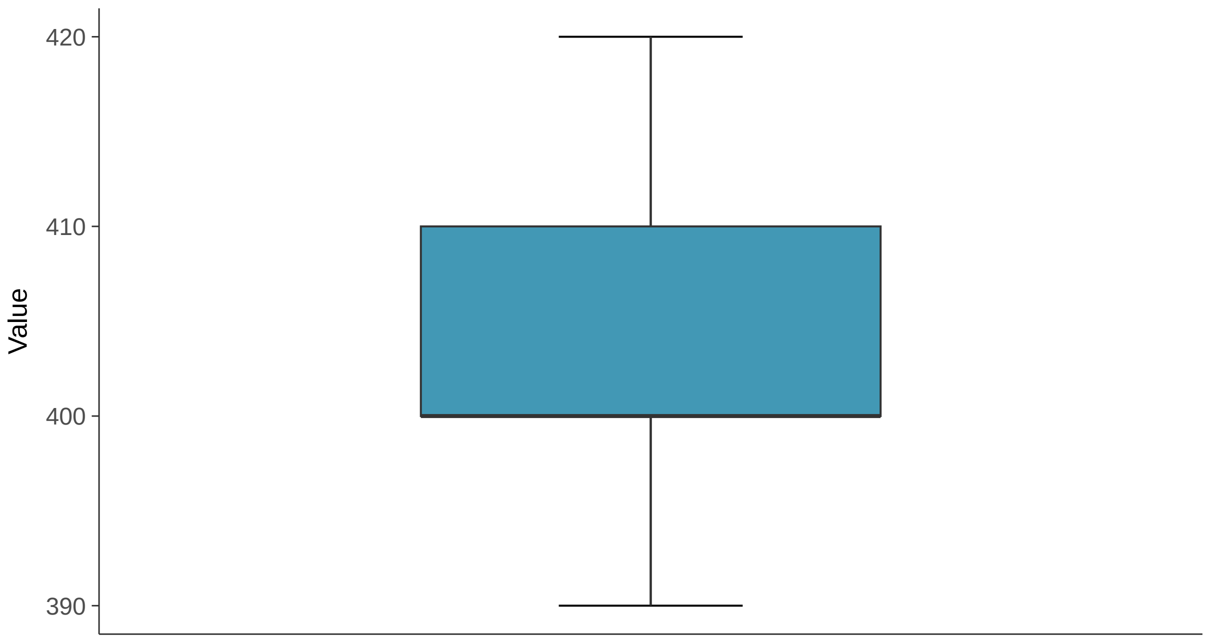
ID: 16B_4_30





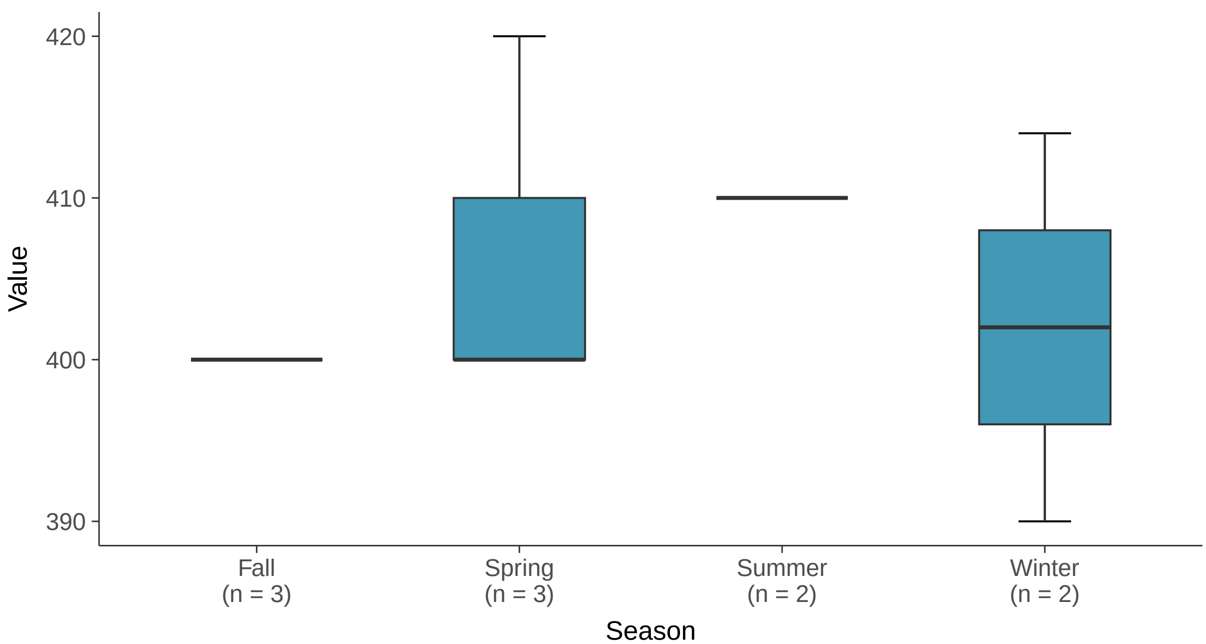
Boxplot

Bicarbonate, MW-16B (mg/L)



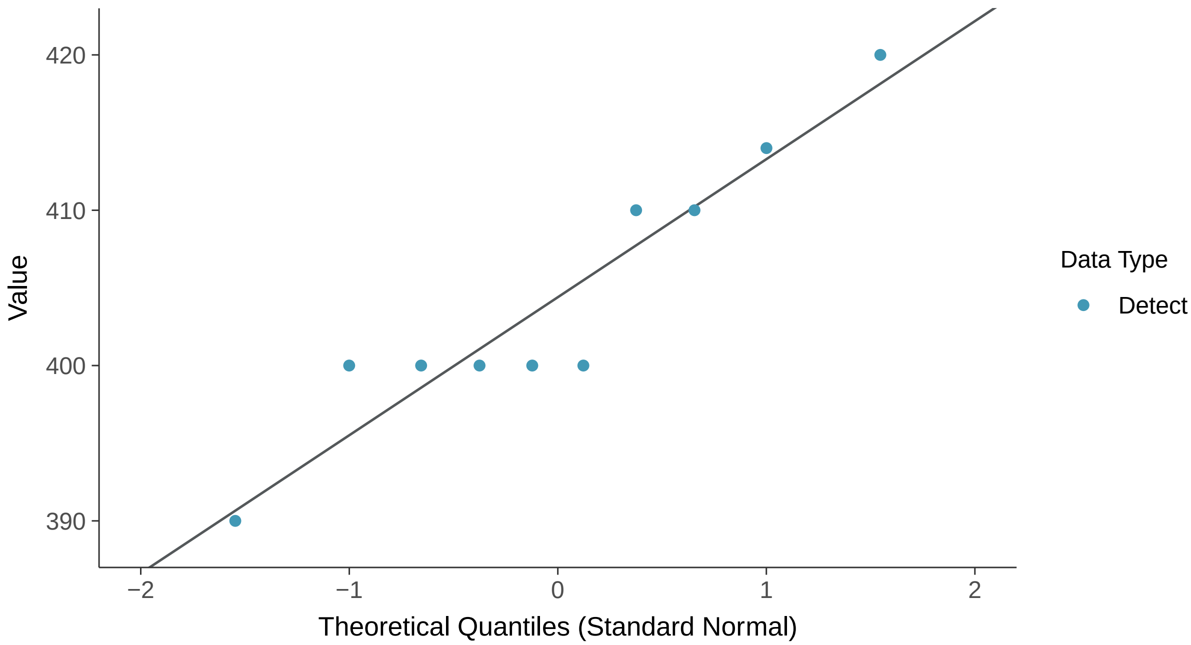
Boxplot by Season

Bicarbonate, MW-16B (mg/L)



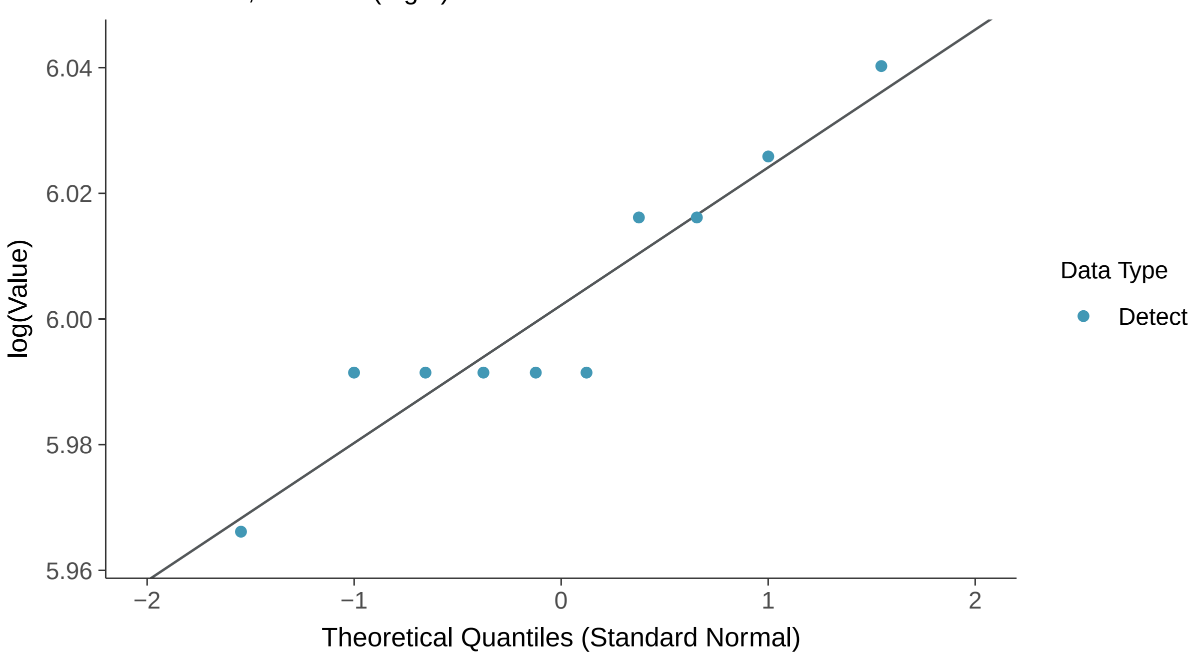
Normal Q-Q plot

Bicarbonate, MW-16B (mg/L)



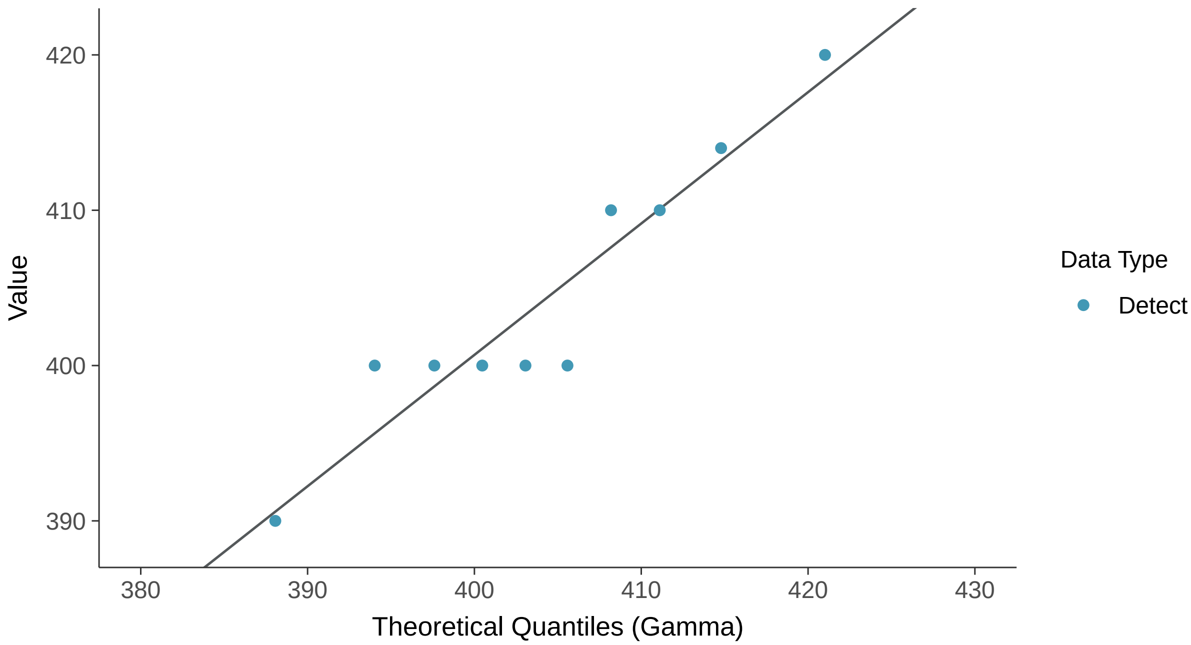
Lognormal Q-Q plot

Bicarbonate, MW-16B (mg/L)



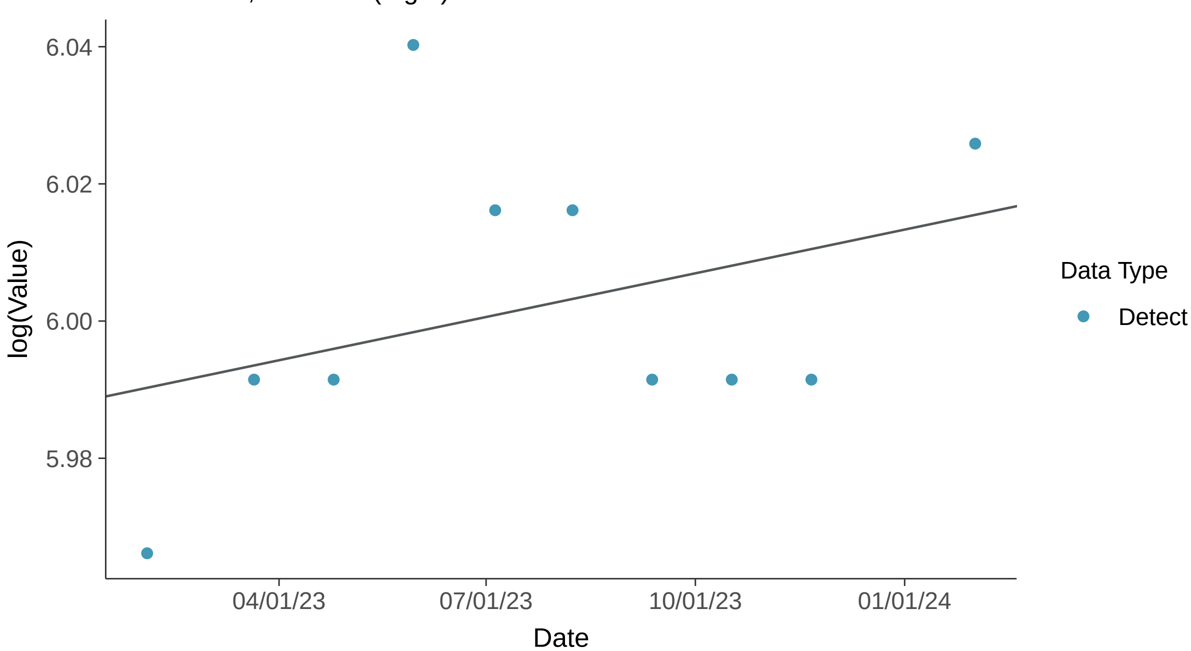
Gamma Q-Q plot

Bicarbonate, MW-16B (mg/L)



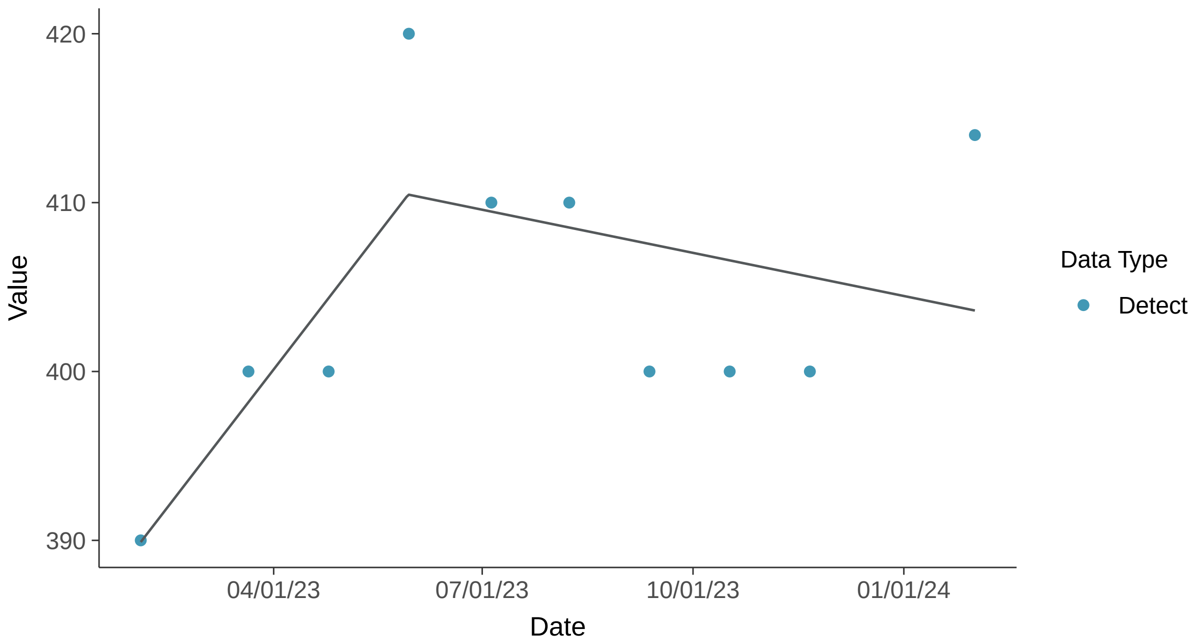
Trend Regression: Lognormal MLE

Bicarbonate, MW-16B (mg/L)



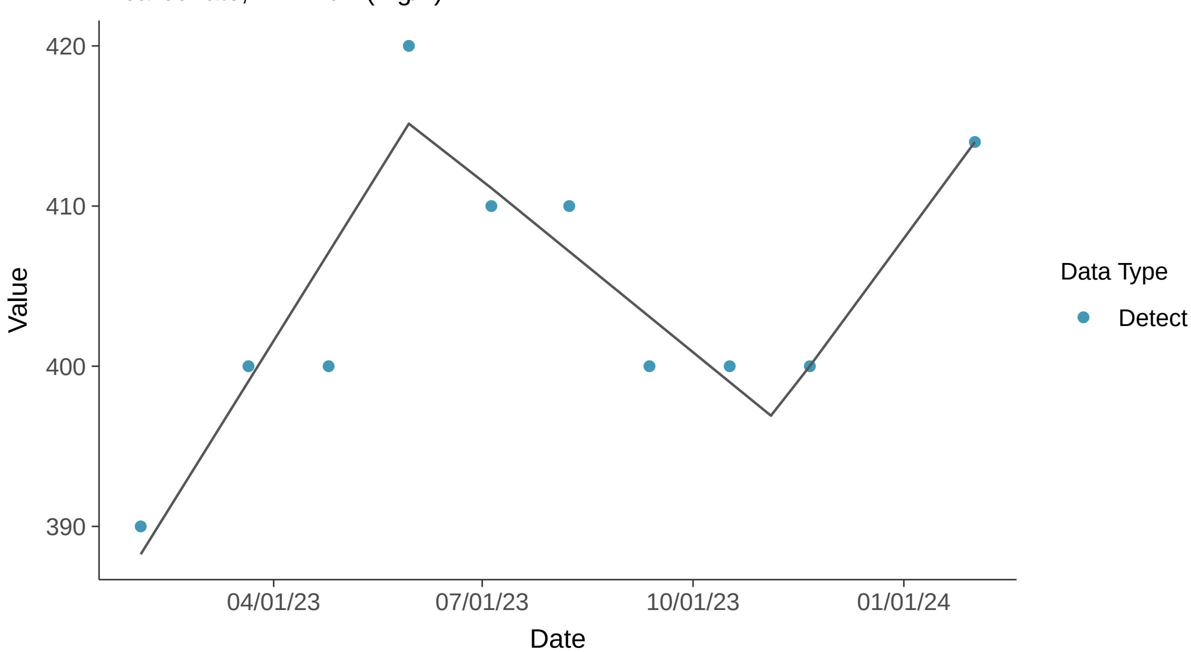
Trend Regression: Piecewise Linear-Linear

Bicarbonate, MW-16B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Bicarbonate, MW-16B (mg/L)

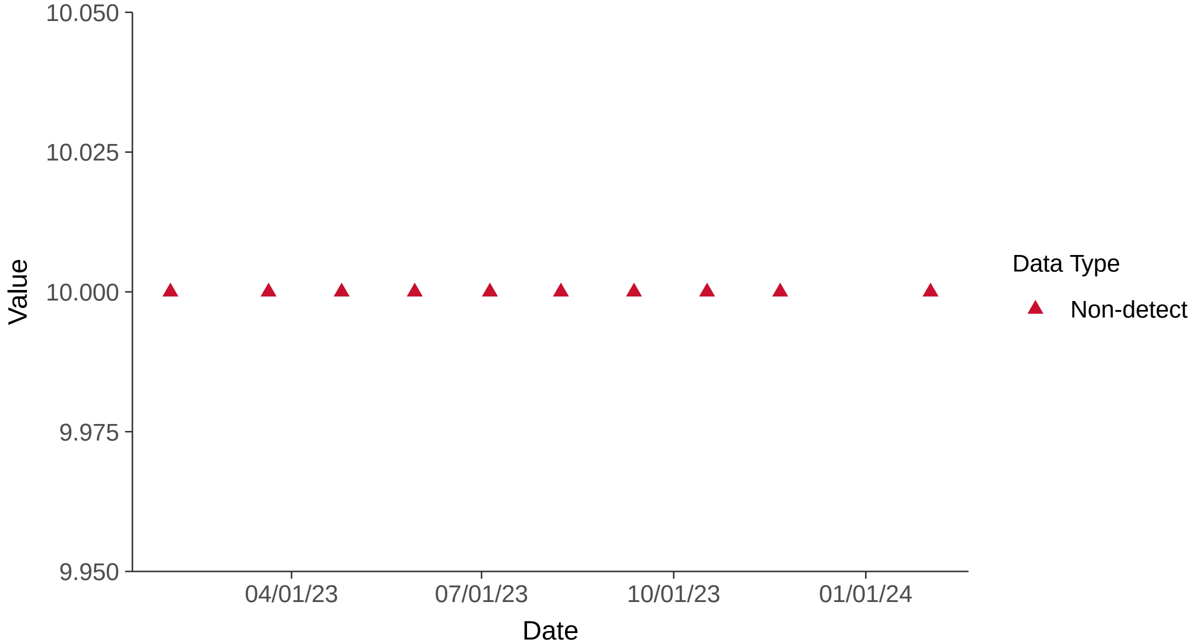


Other: Carbonate, MW-16B

ID: 16B_4_31

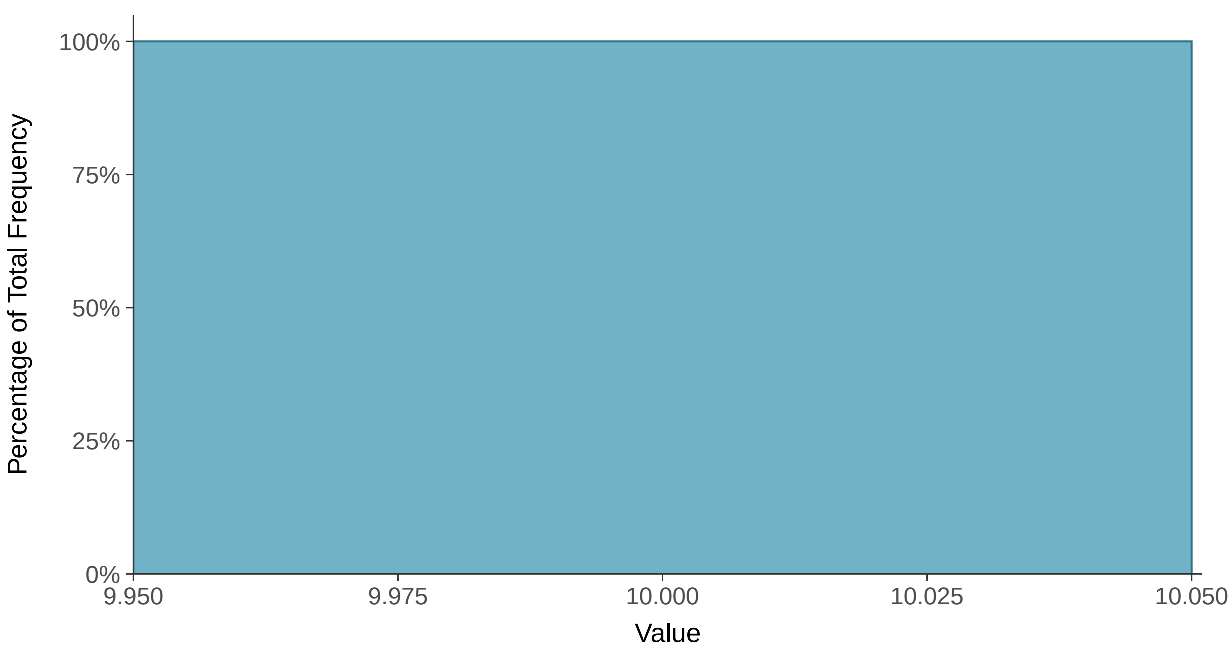
Scatter Plot

Carbonate, MW-16B (mg/L)



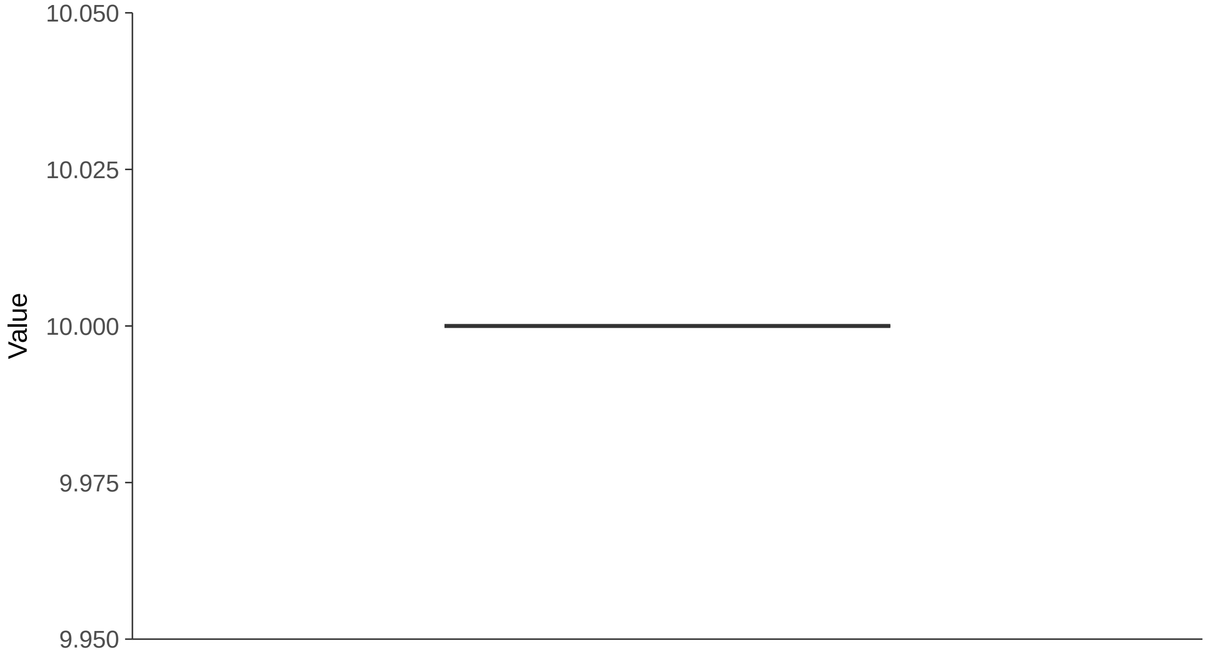
Histogram

Carbonate, MW-16B (mg/L)



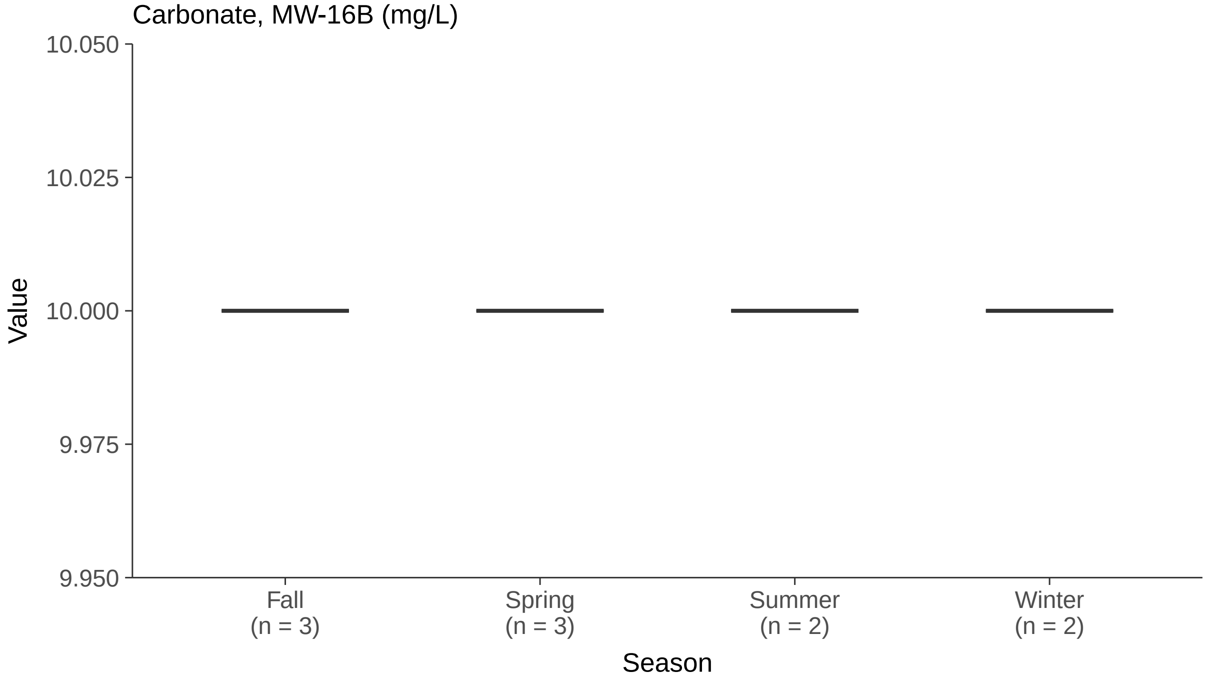
Boxplot

Carbonate, MW-16B (mg/L)



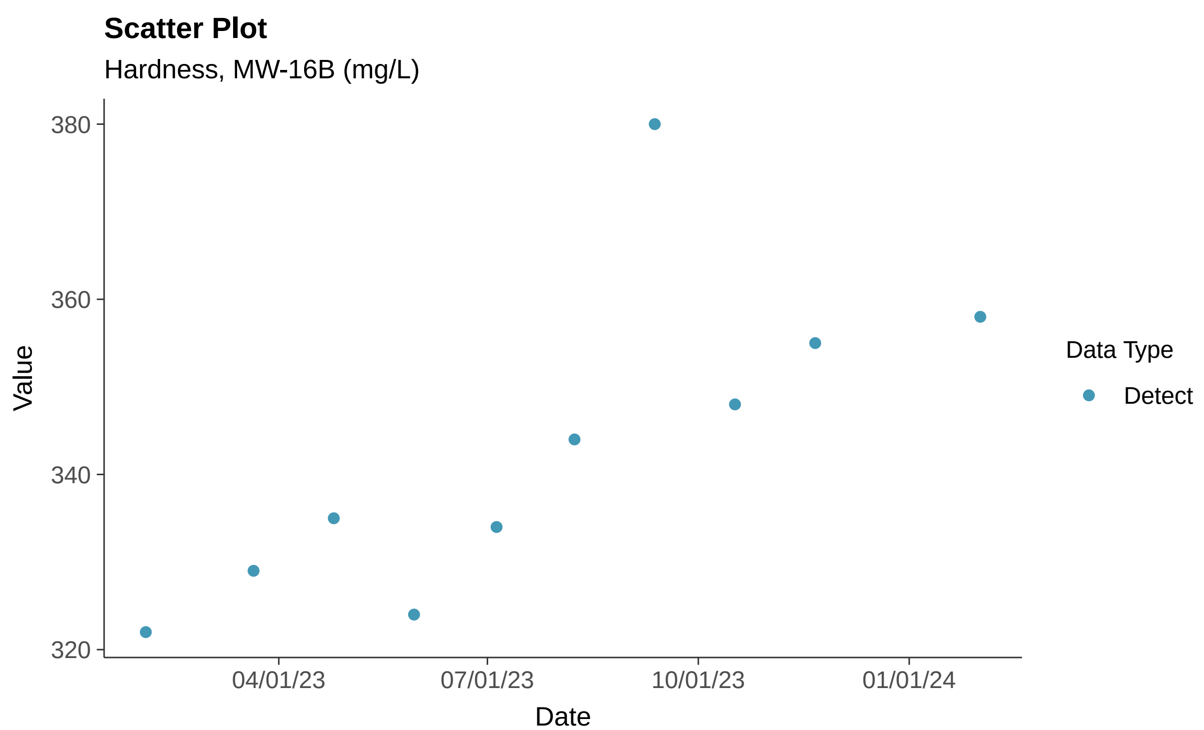
Boxplot by Season

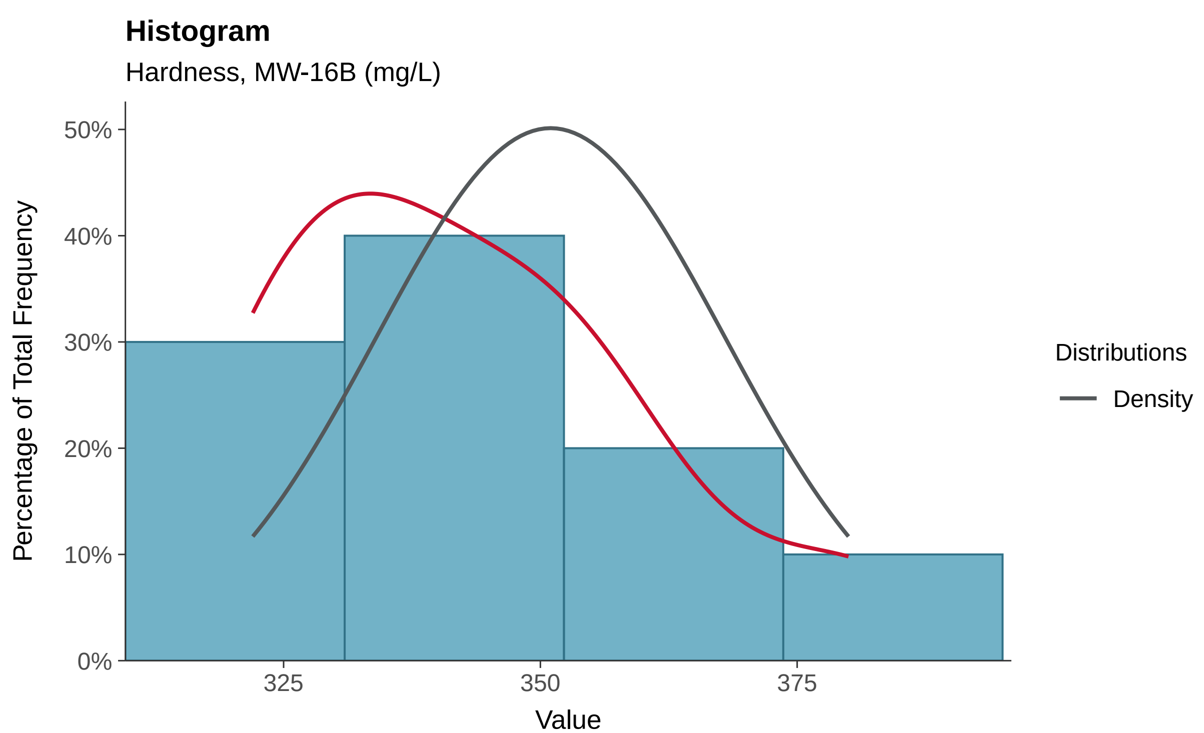
Carbonate, MW-16B (mg/L)



Other: Hardness, MW-16B

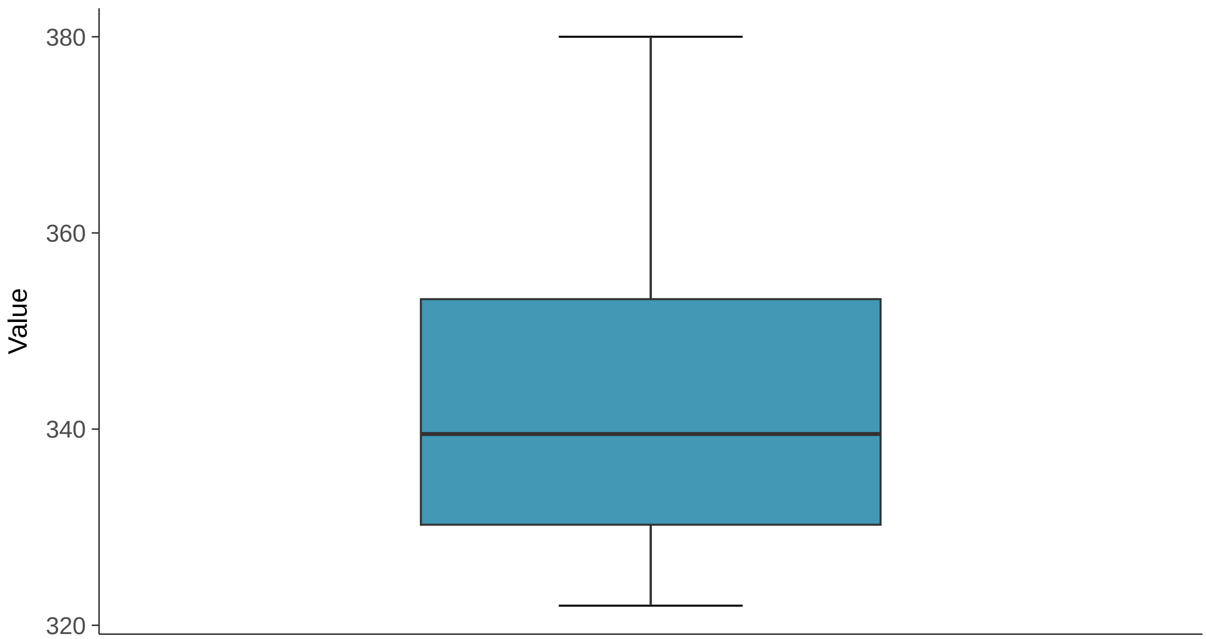
ID: 16B_4_32





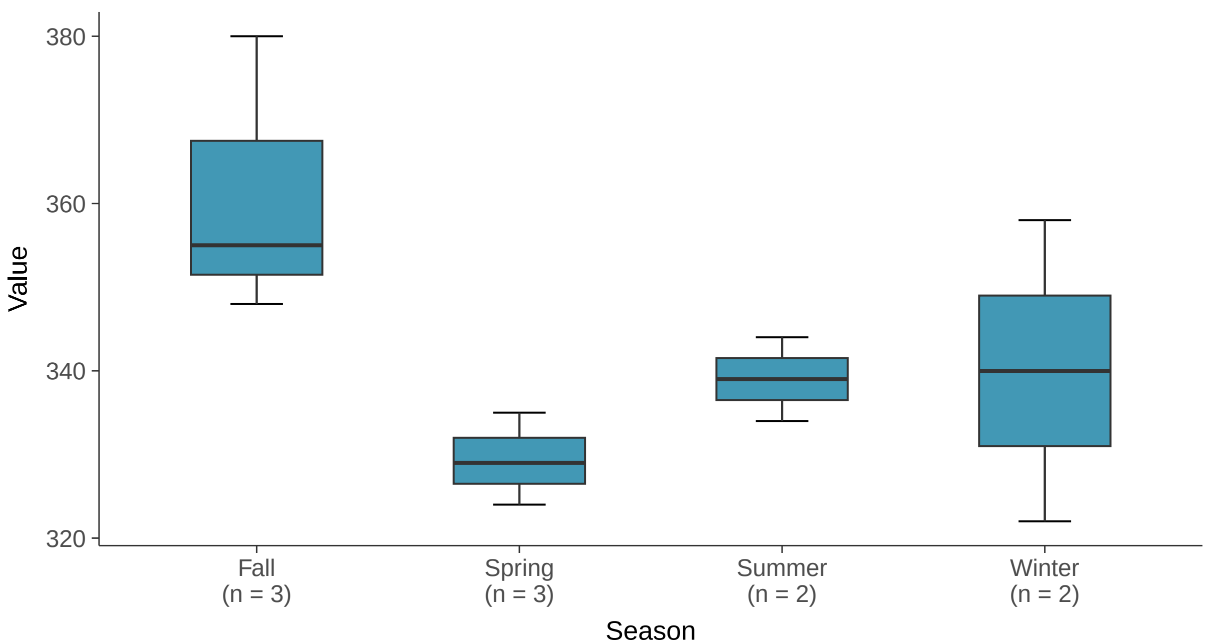
Boxplot

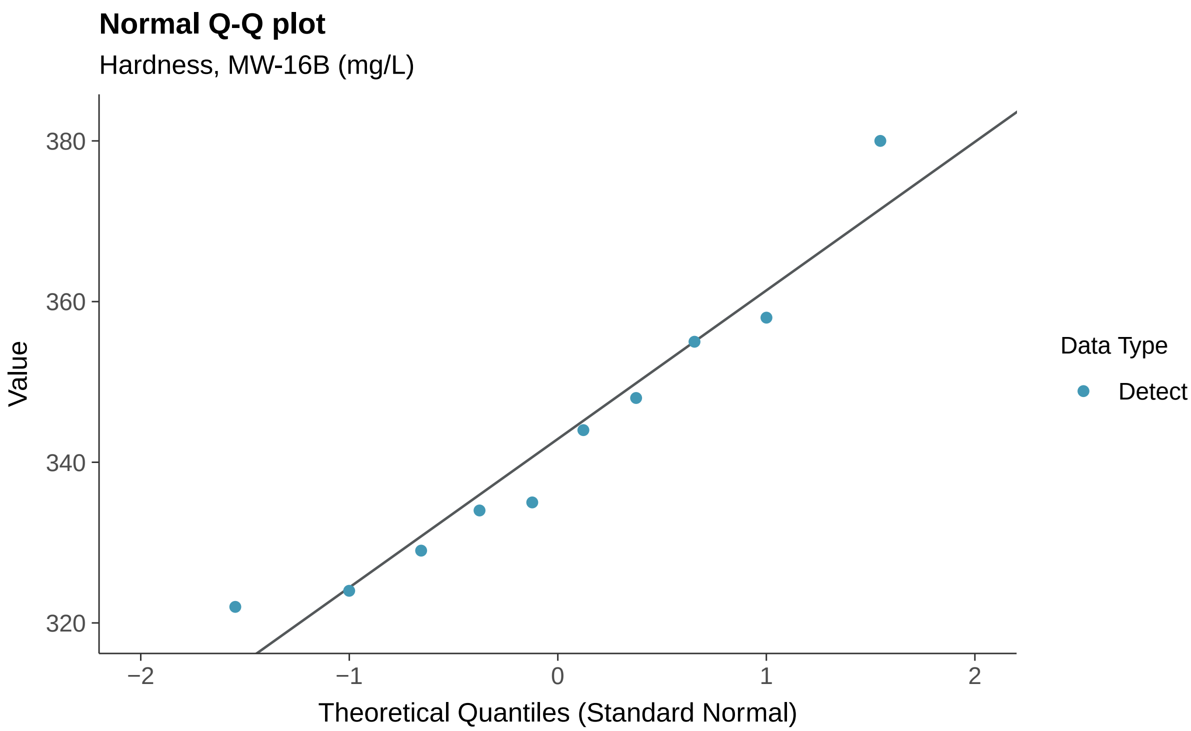
Hardness, MW-16B (mg/L)

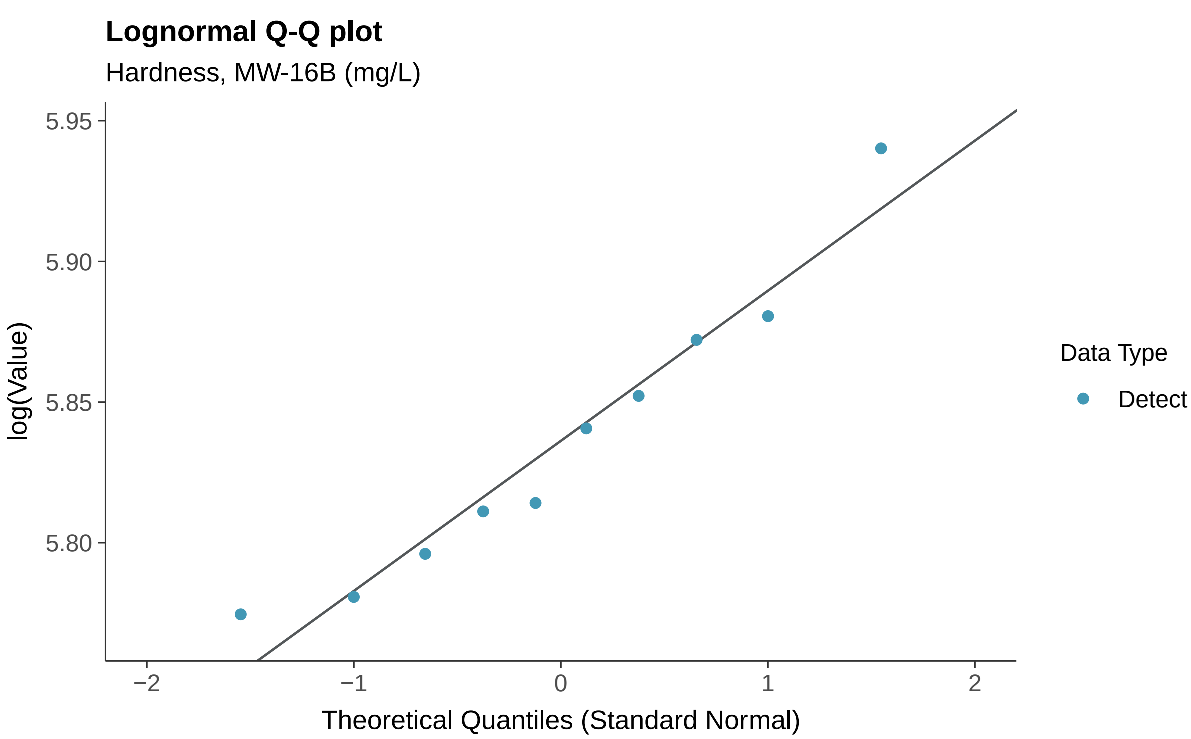


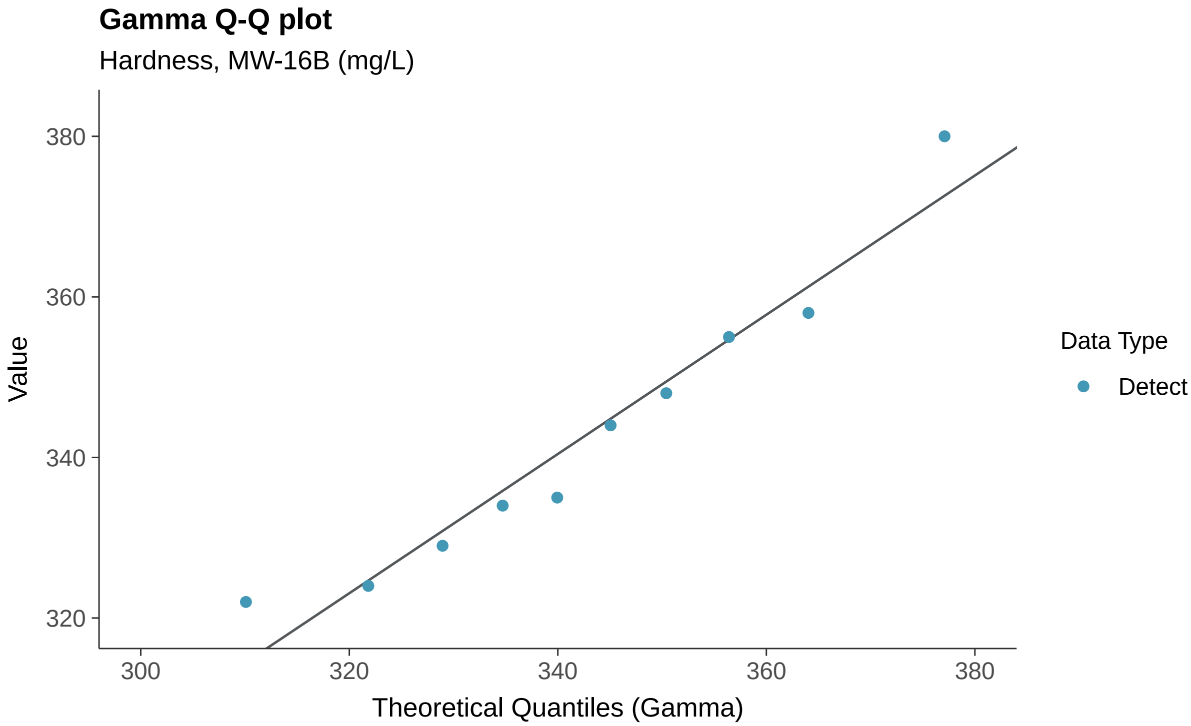
Boxplot by Season

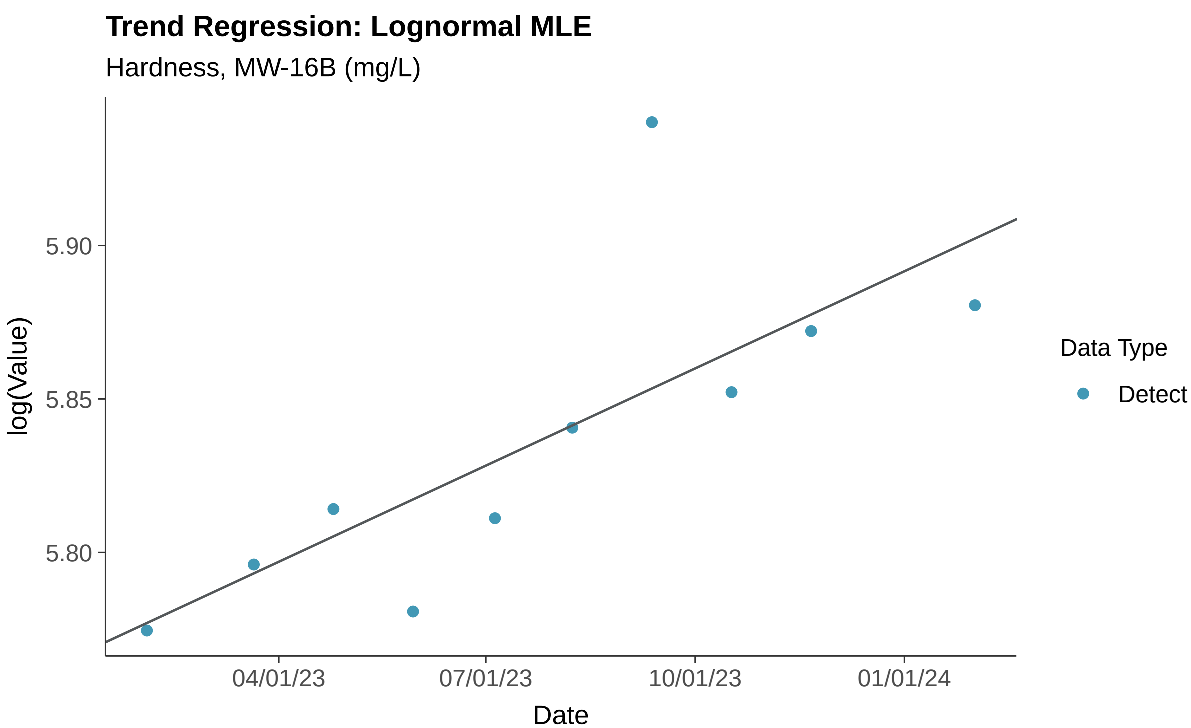
Hardness, MW-16B (mg/L)




Normal Q-Q plot
Hardness, MW-16B (mg/L)
Value
380
360
340
320
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

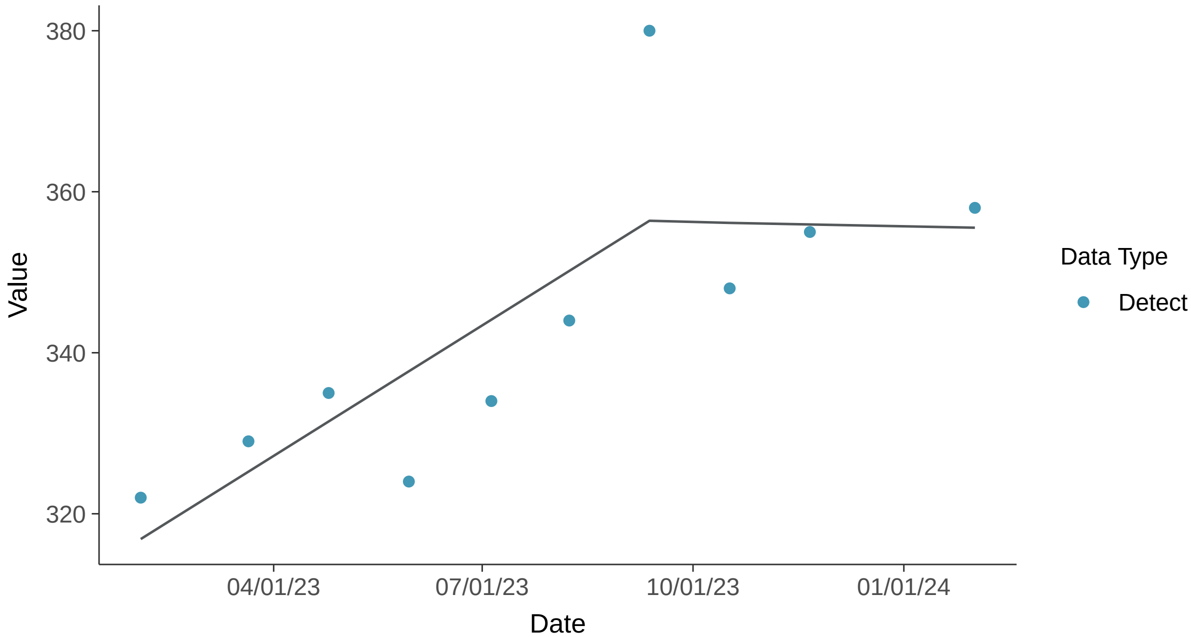

Lognormal Q-Q plot
Hardness, MW-16B (mg/L)
log(Value)
5.95
5.90
5.85
5.80
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Hardness, MW-16B (mg/L)
Value
380
360
340
320
300
320
340
360
380
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Hardness, MW-16B (mg/L)
log(Value)
5.90
5.85
5.80
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

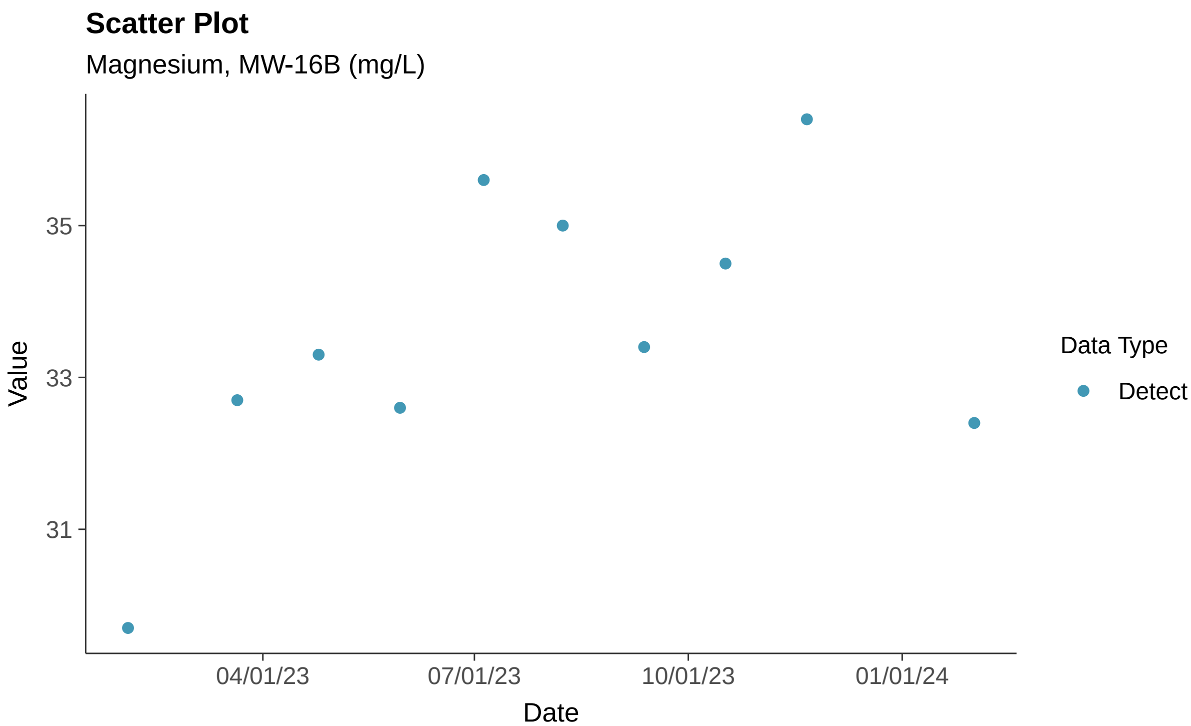
Trend Regression: Piecewise Linear-Linear

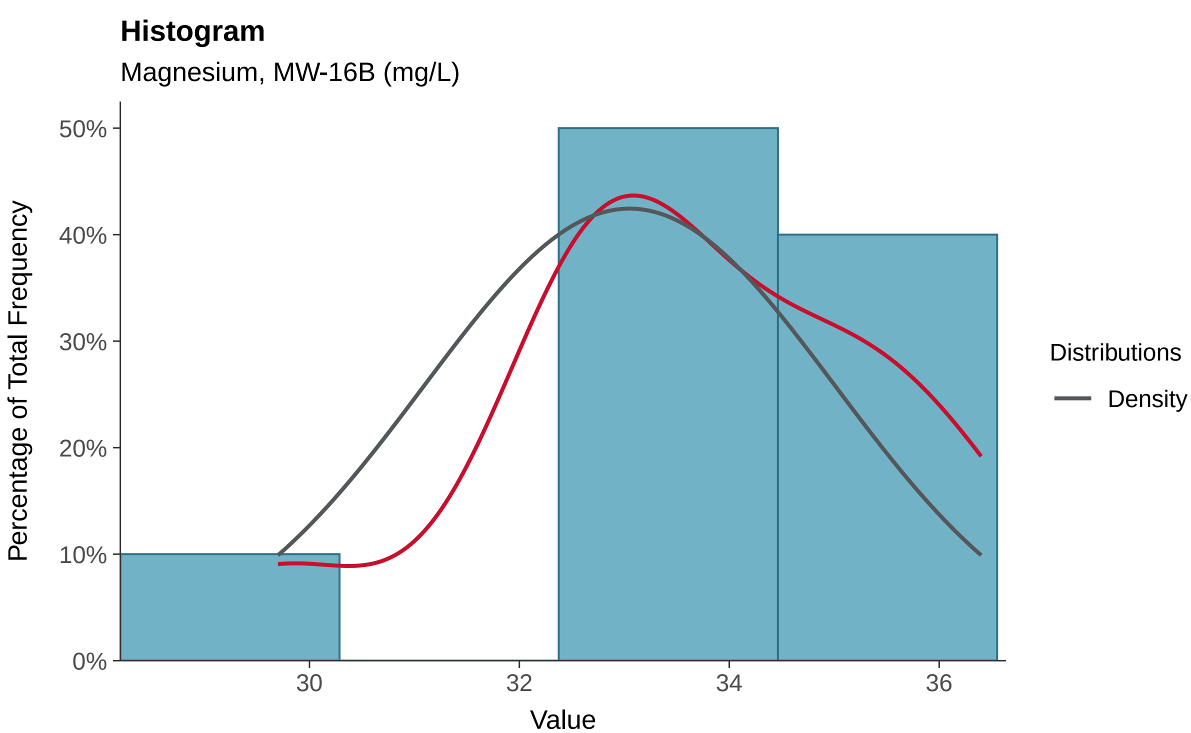
Hardness, MW-16B (mg/L)



Other: Magnesium, MW-16B

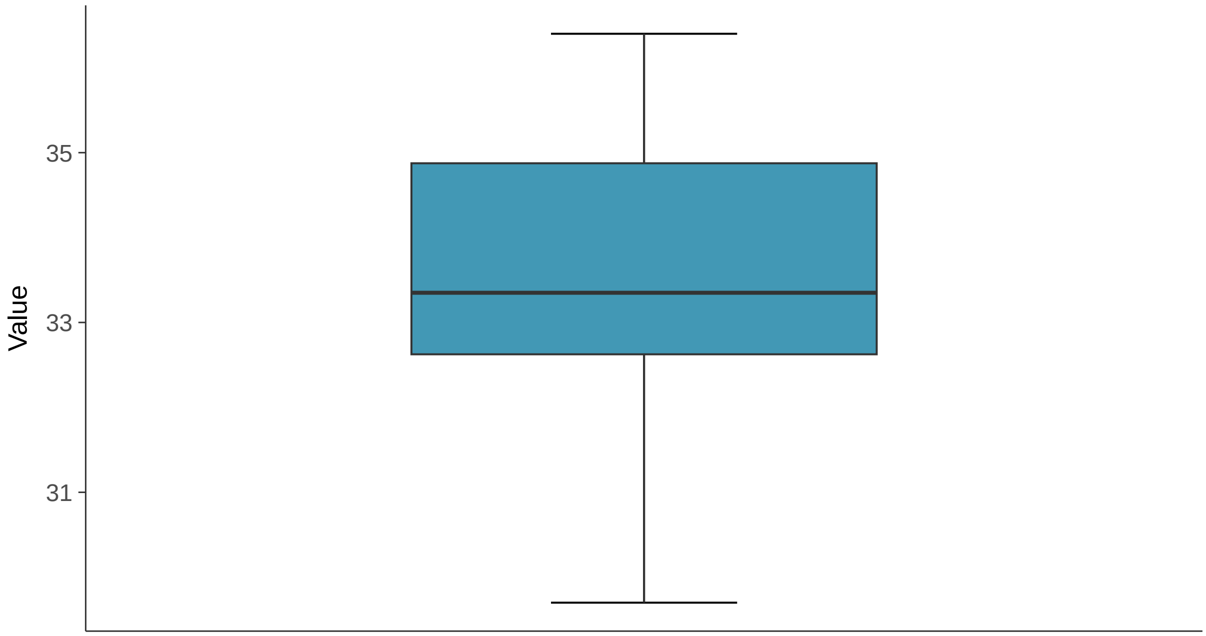
ID: 16B_4_33





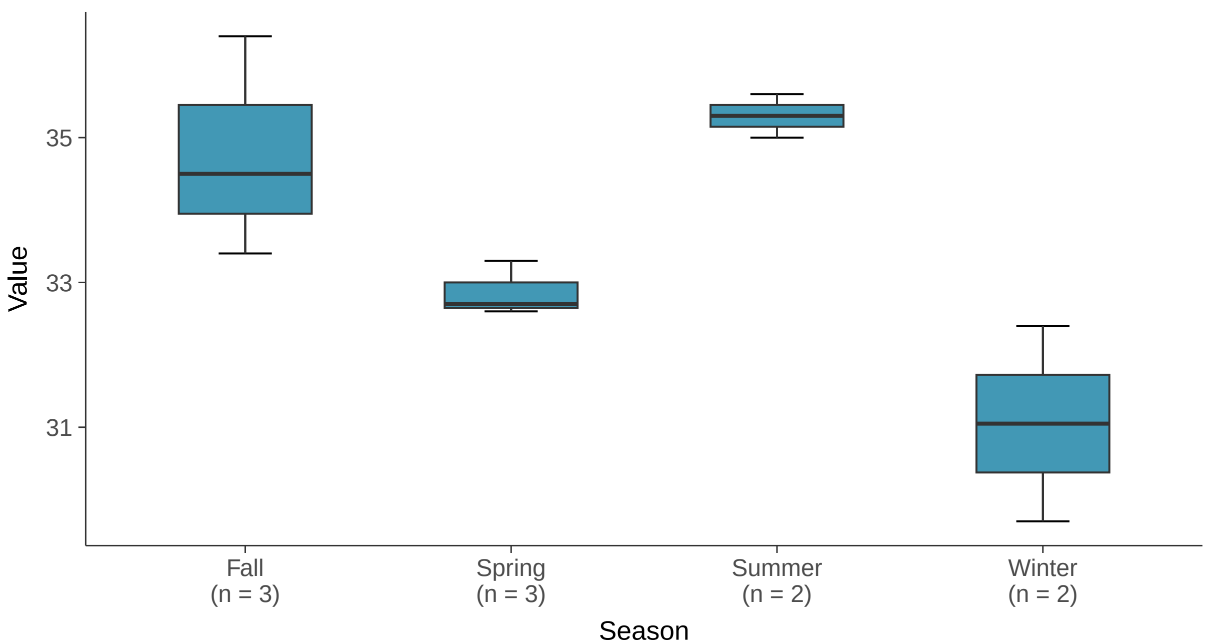
Boxplot

Magnesium, MW-16B (mg/L)



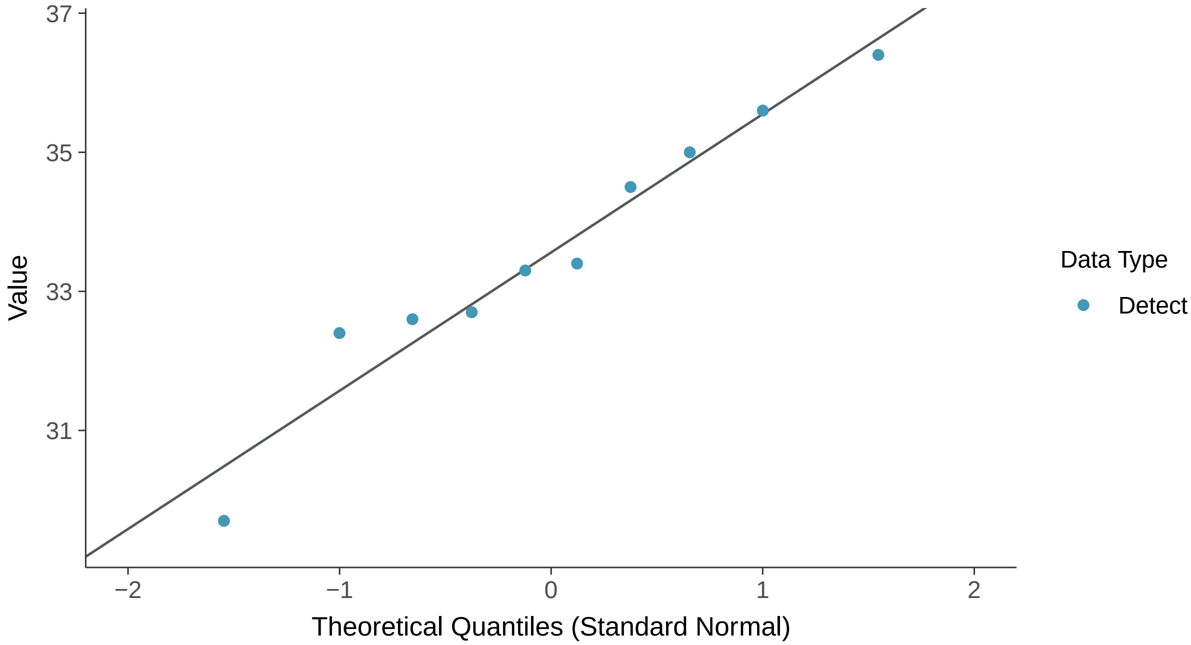
Boxplot by Season

Magnesium, MW-16B (mg/L)



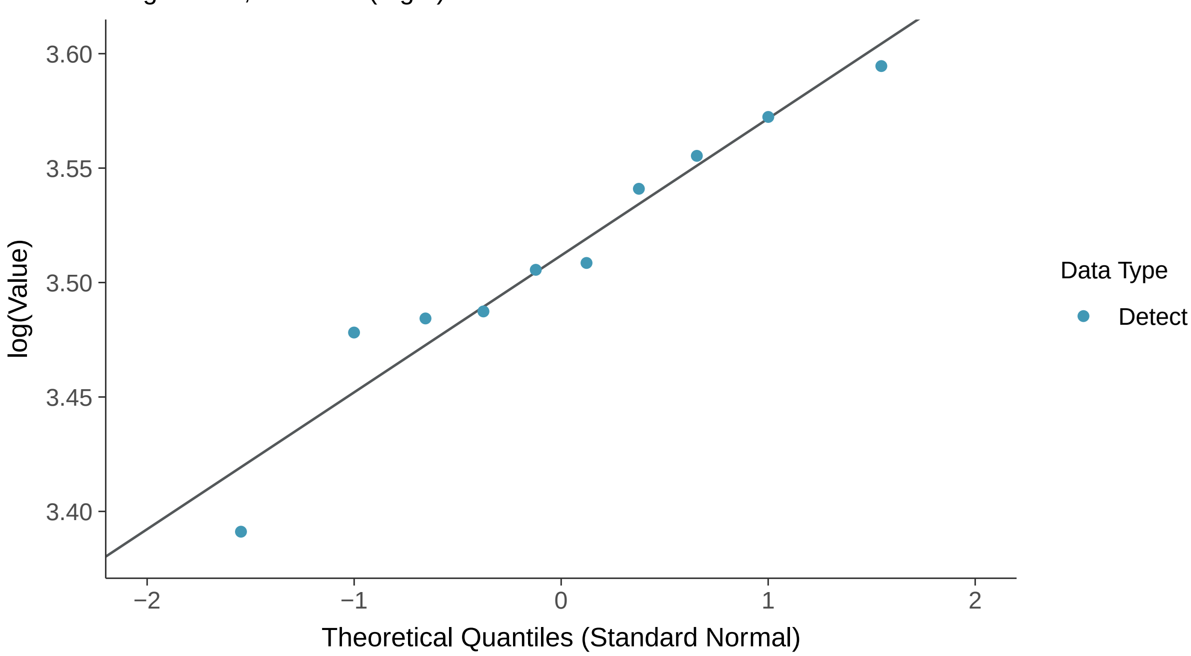
Normal Q-Q plot

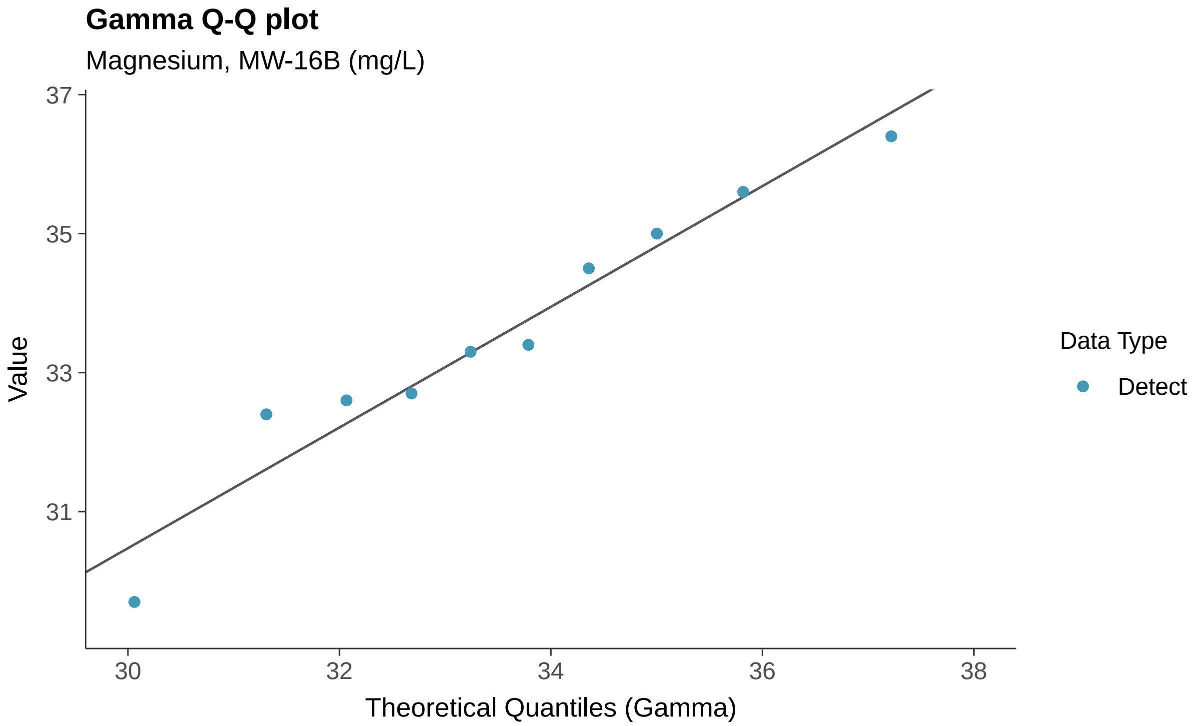
Magnesium, MW-16B (mg/L)

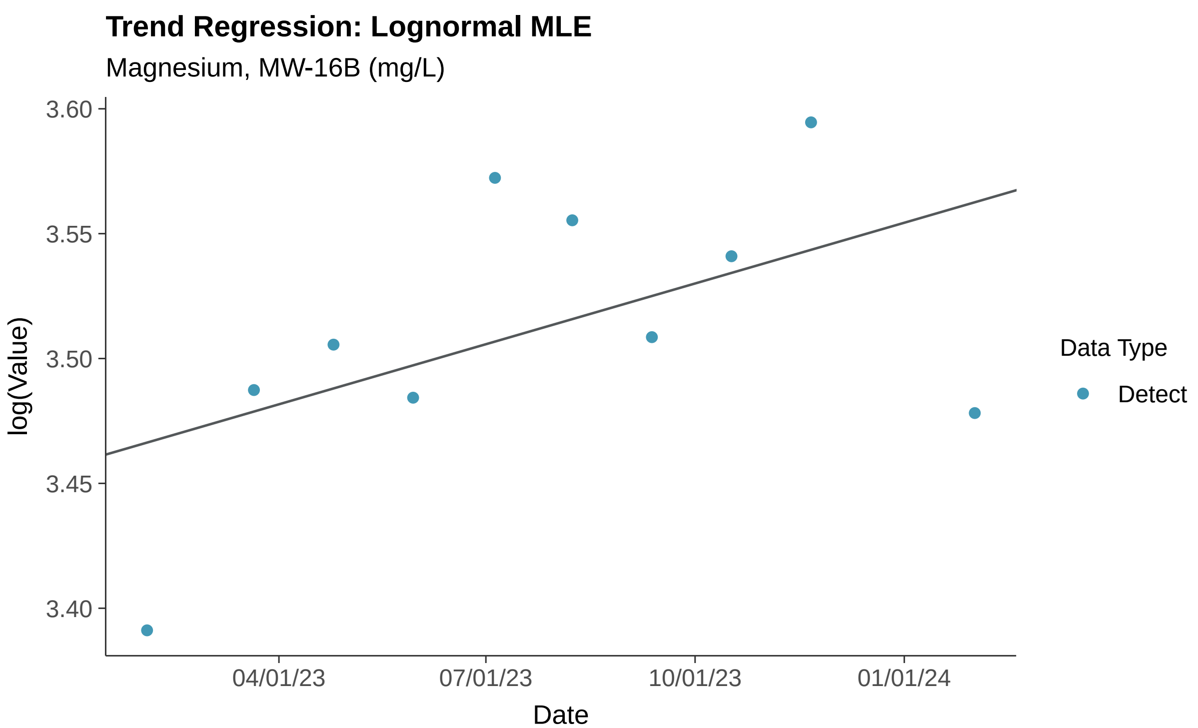


Lognormal Q-Q plot

Magnesium, MW-16B (mg/L)

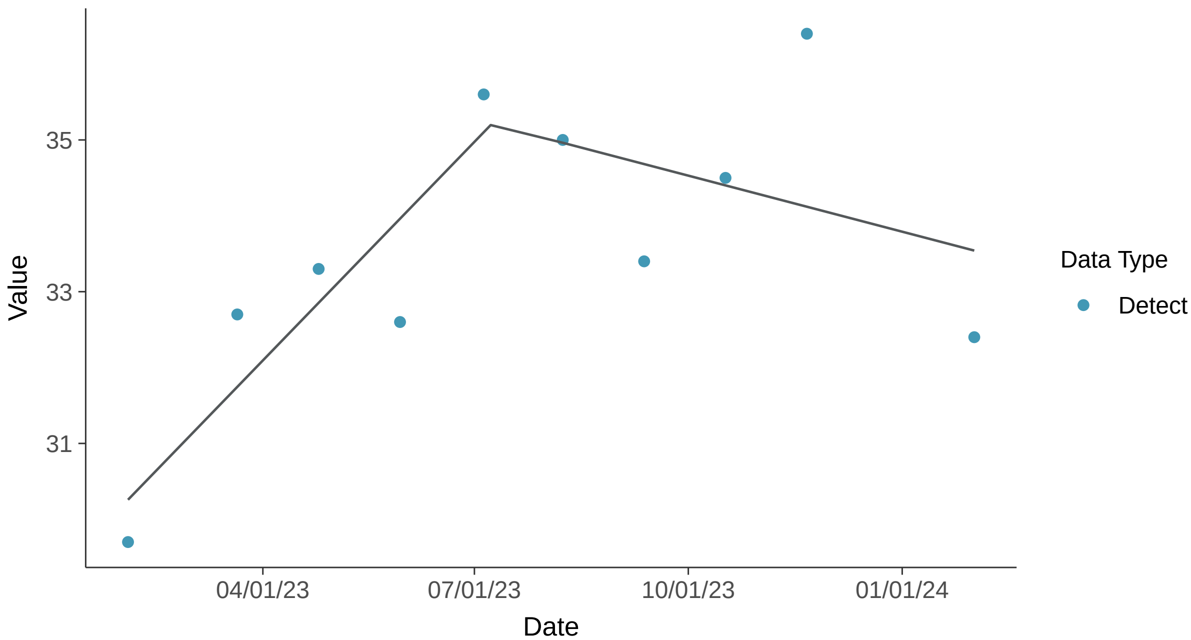



Gamma Q-Q plot
Magnesium, MW-16B (mg/L)
Value
37
35
33
31
30
32
34
36
38
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Magnesium, MW-16B (mg/L)
log(Value)
3.60
3.55
3.50
3.45
3.40
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

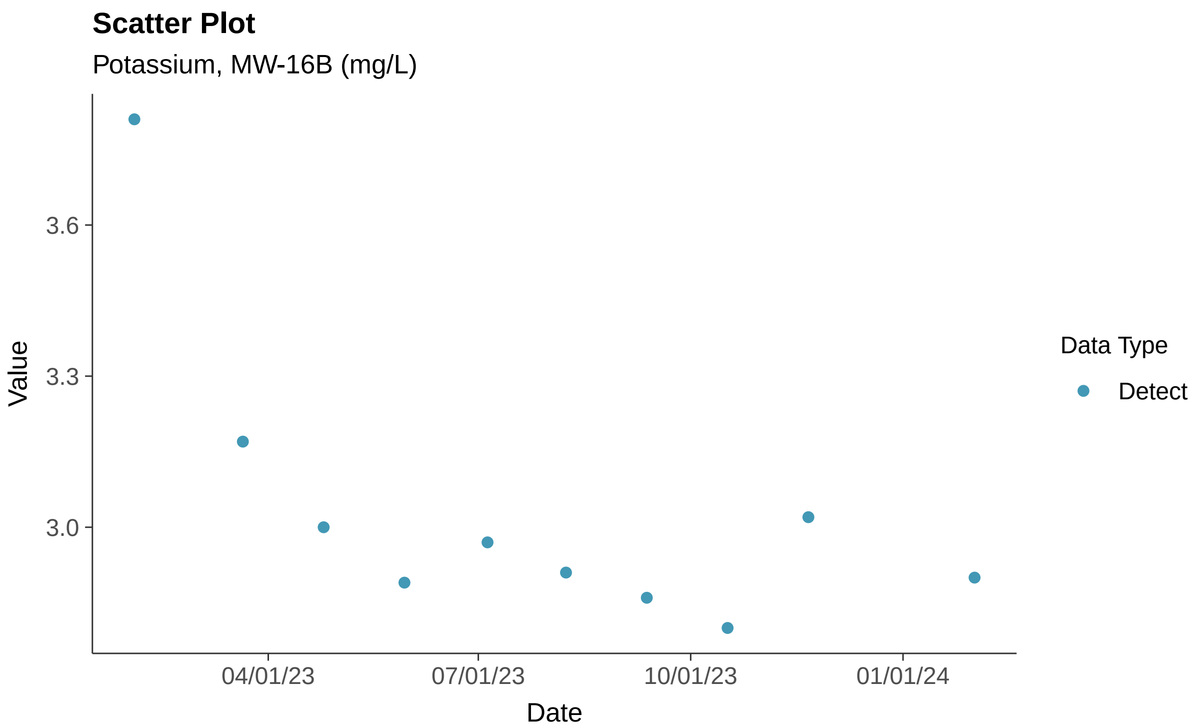
Trend Regression: Piecewise Linear-Linear

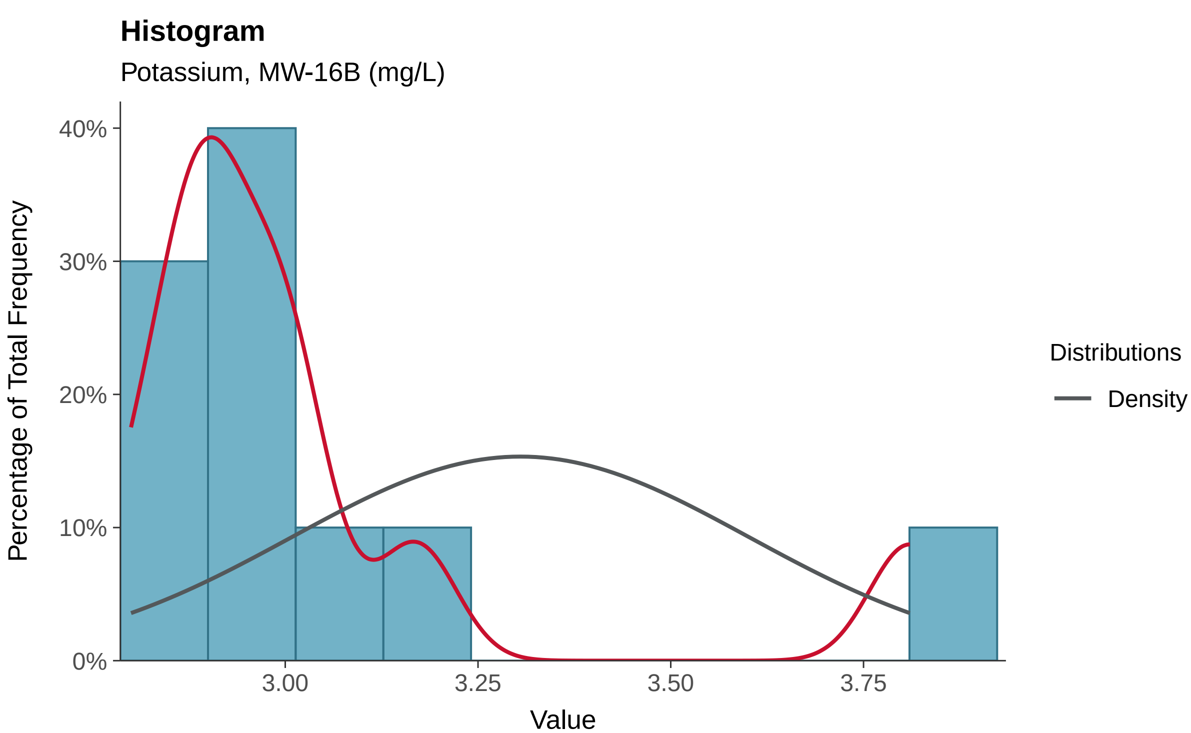
Magnesium, MW-16B (mg/L)



Other: Potassium, MW-16B

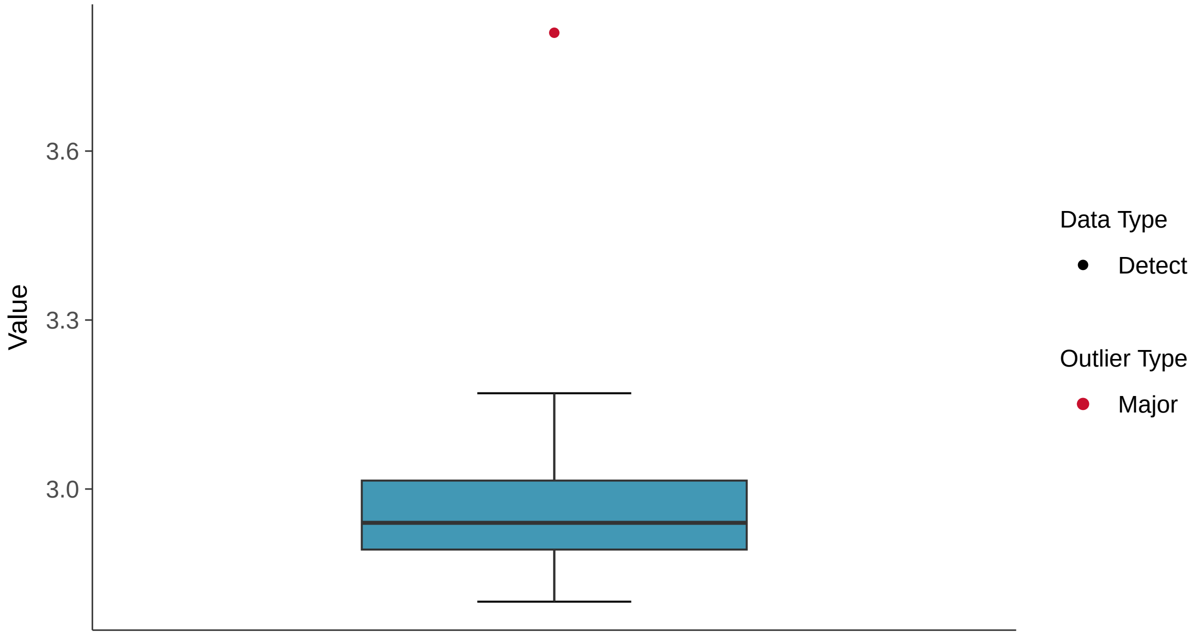
ID: 16B_4_34





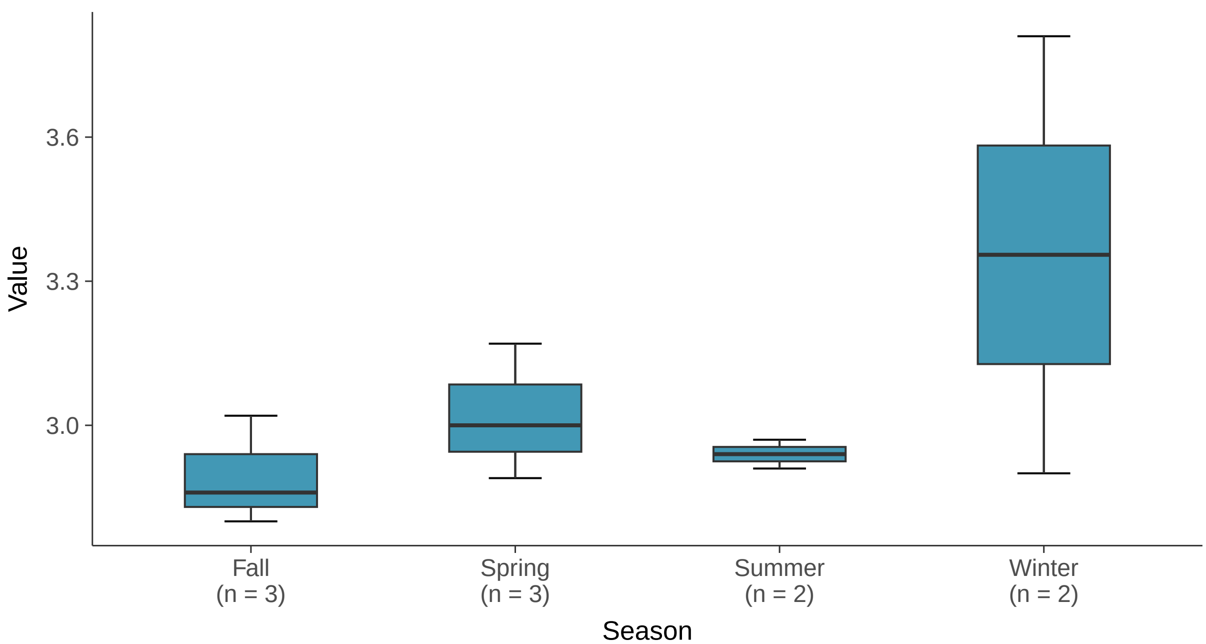
Boxplot

Potassium, MW-16B (mg/L)



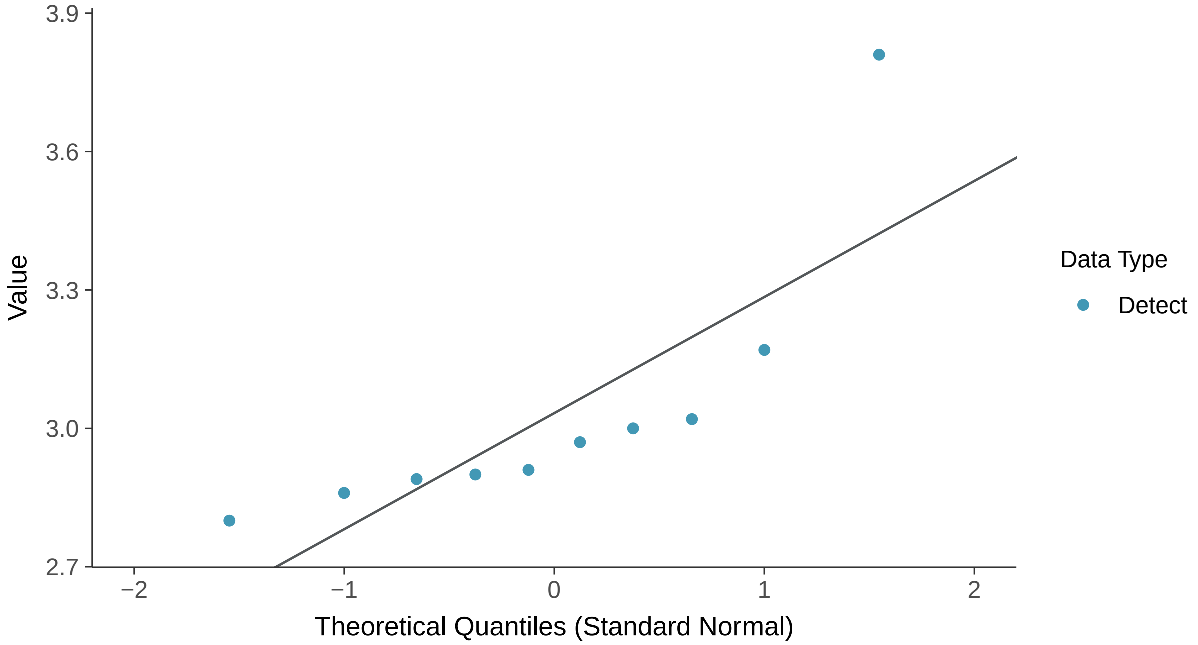
Boxplot by Season

Potassium, MW-16B (mg/L)



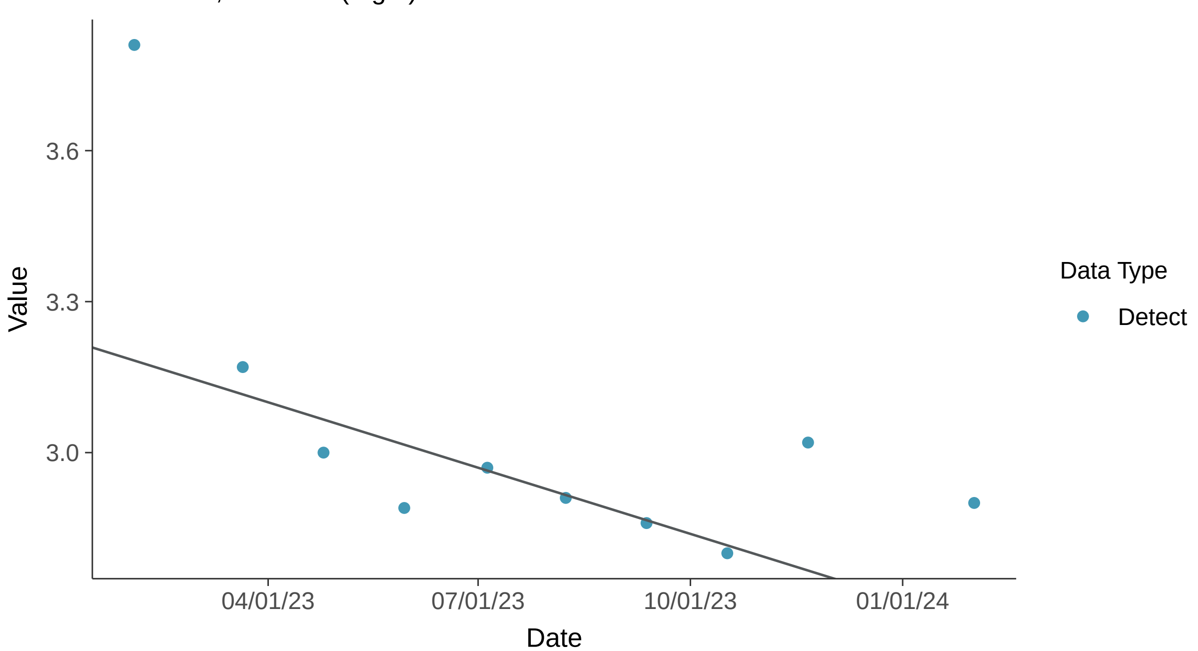
Normal Q-Q plot

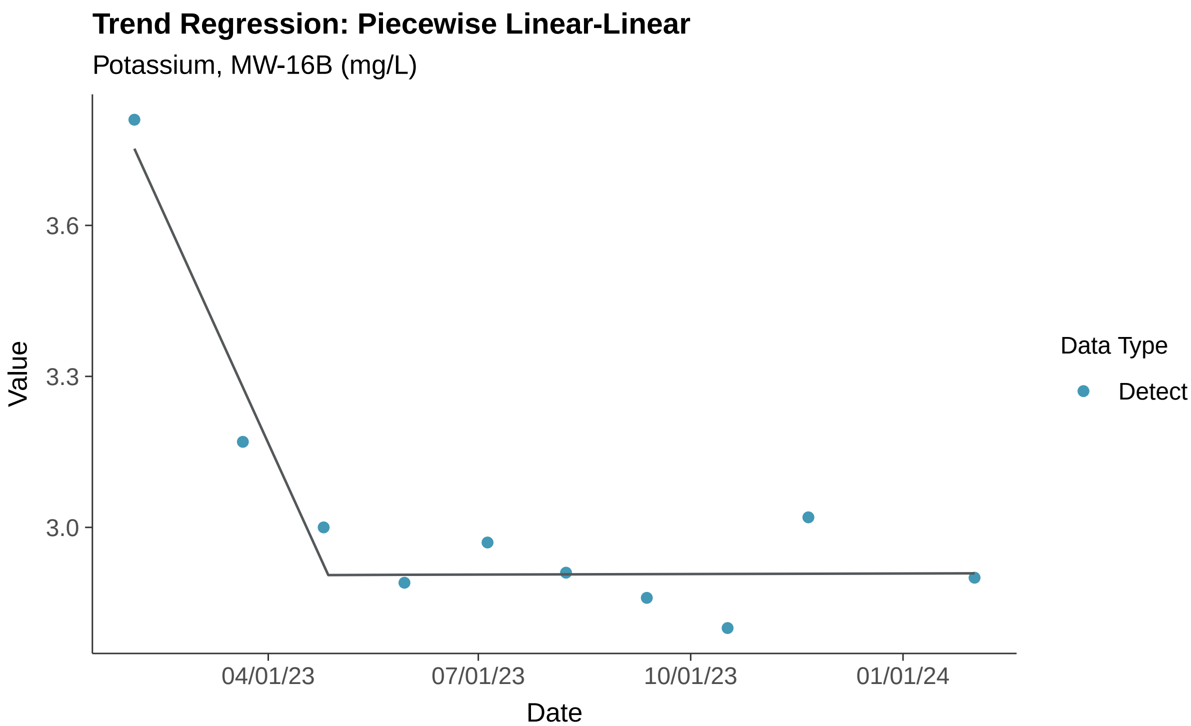
Potassium, MW-16B (mg/L)

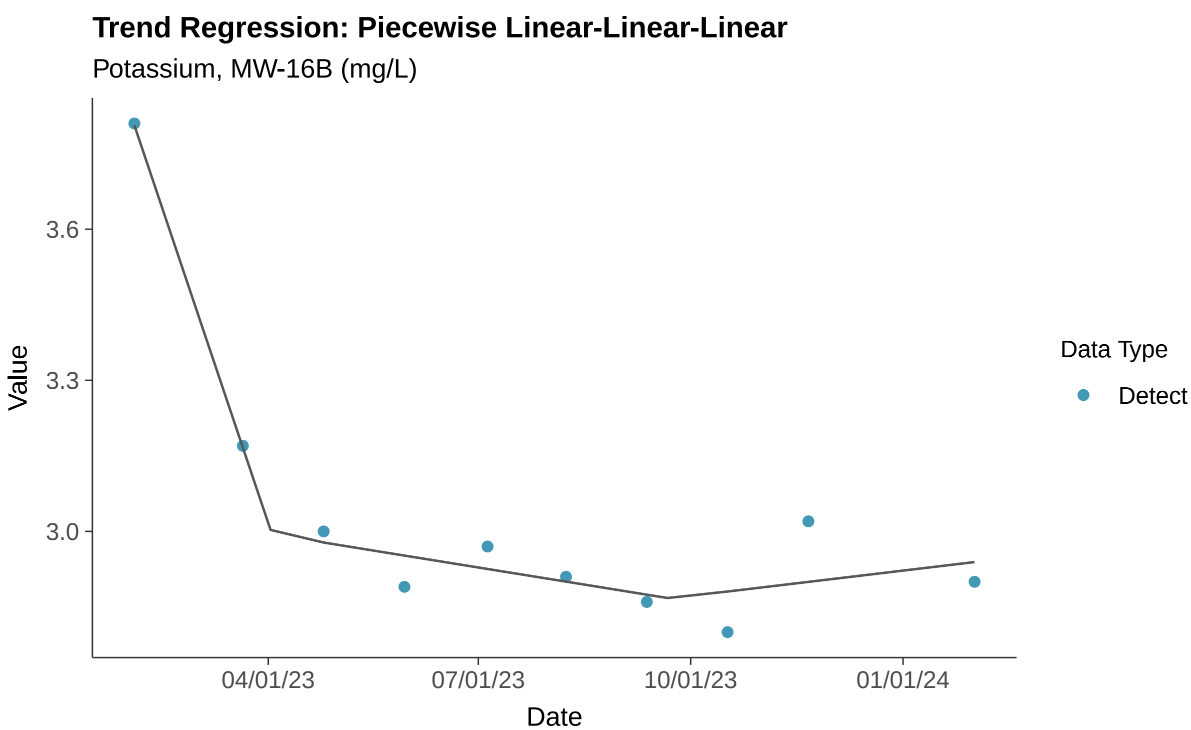


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Potassium, MW-16B (mg/L)

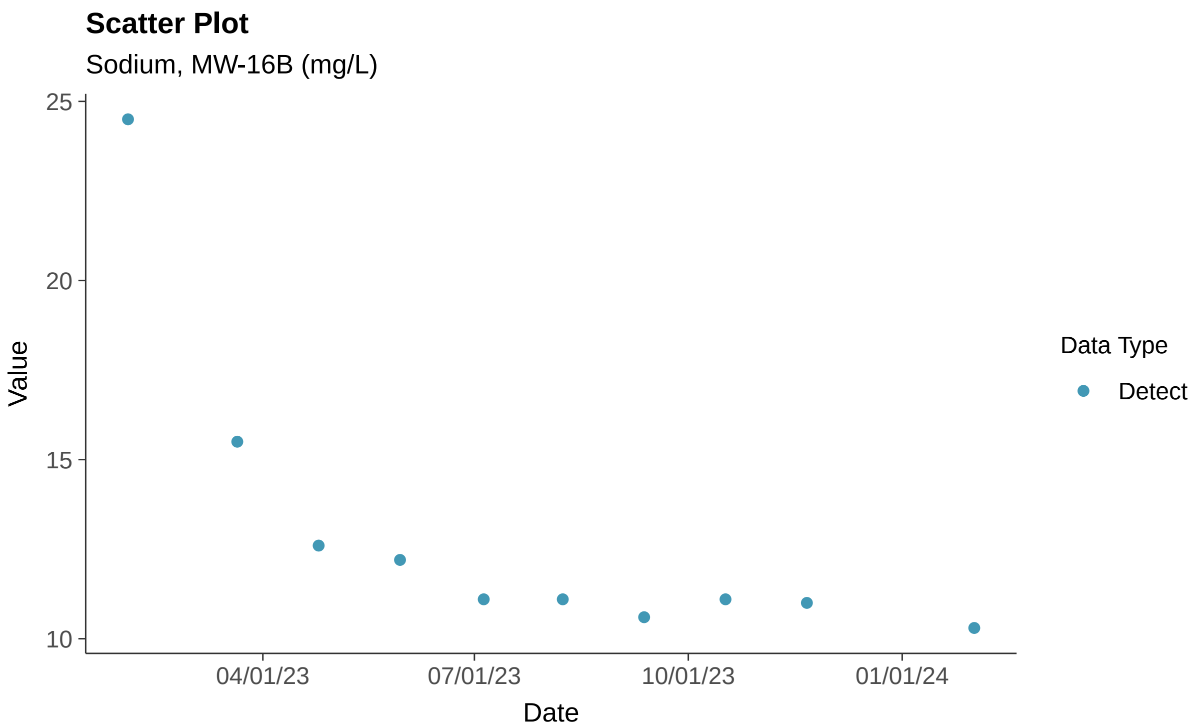


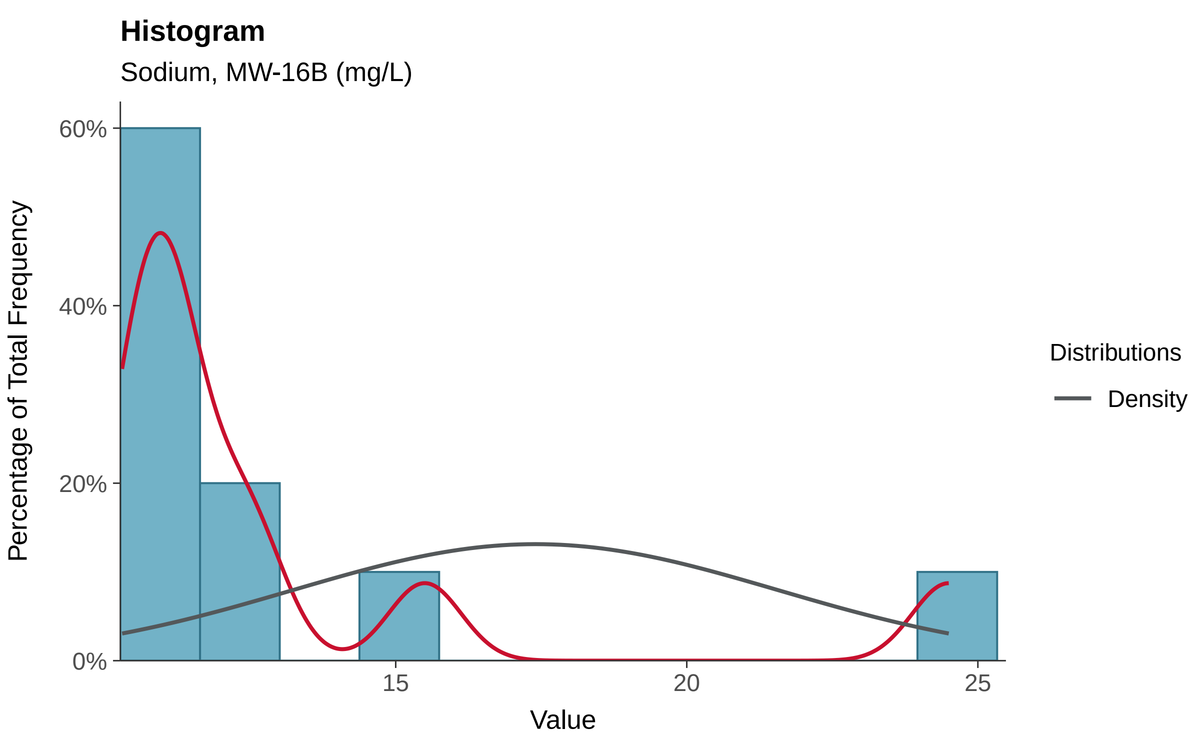

Trend Regression: Piecewise Linear-Linear
Potassium, MW-16B (mg/L)
Value
3.6
3.3
3.0
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Potassium, MW-16B (mg/L)
Value
3.6
3.3
3.0
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Other: Sodium, MW-16B

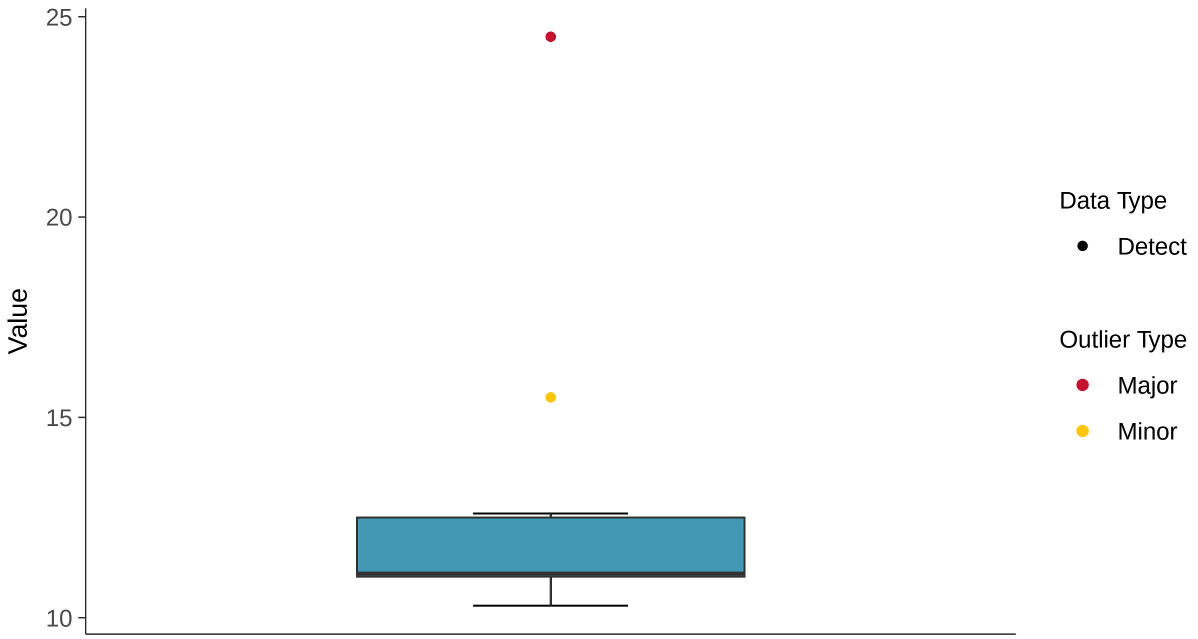
ID: 16B_4_35





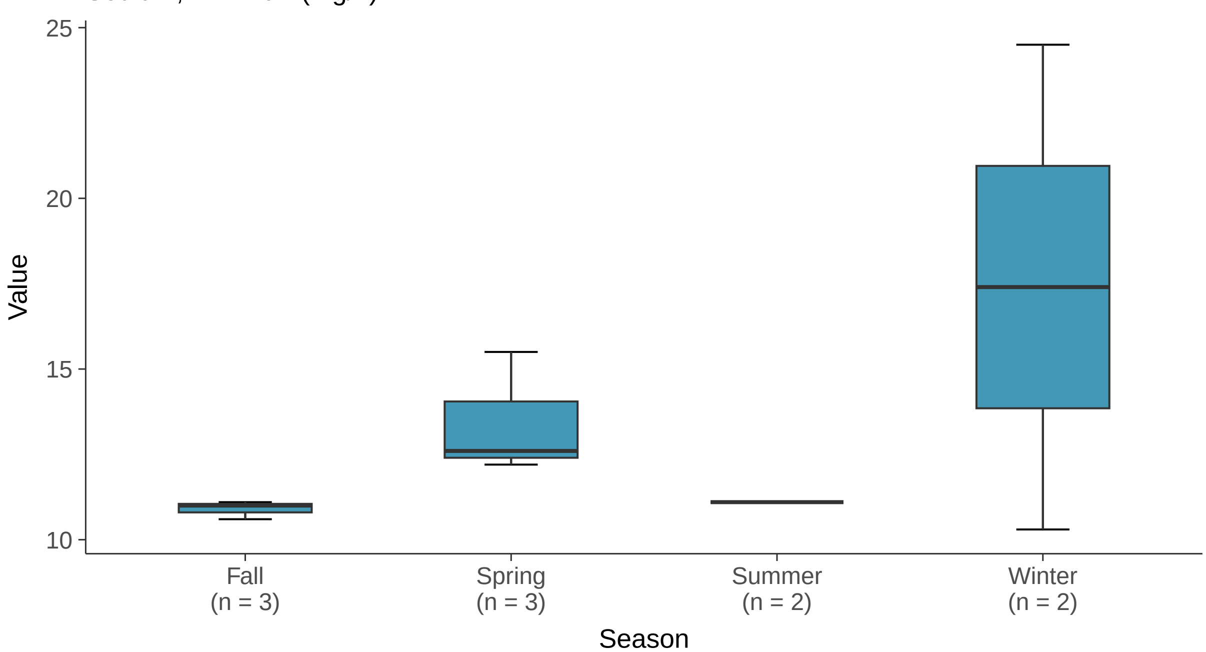
Boxplot

Sodium, MW-16B (mg/L)



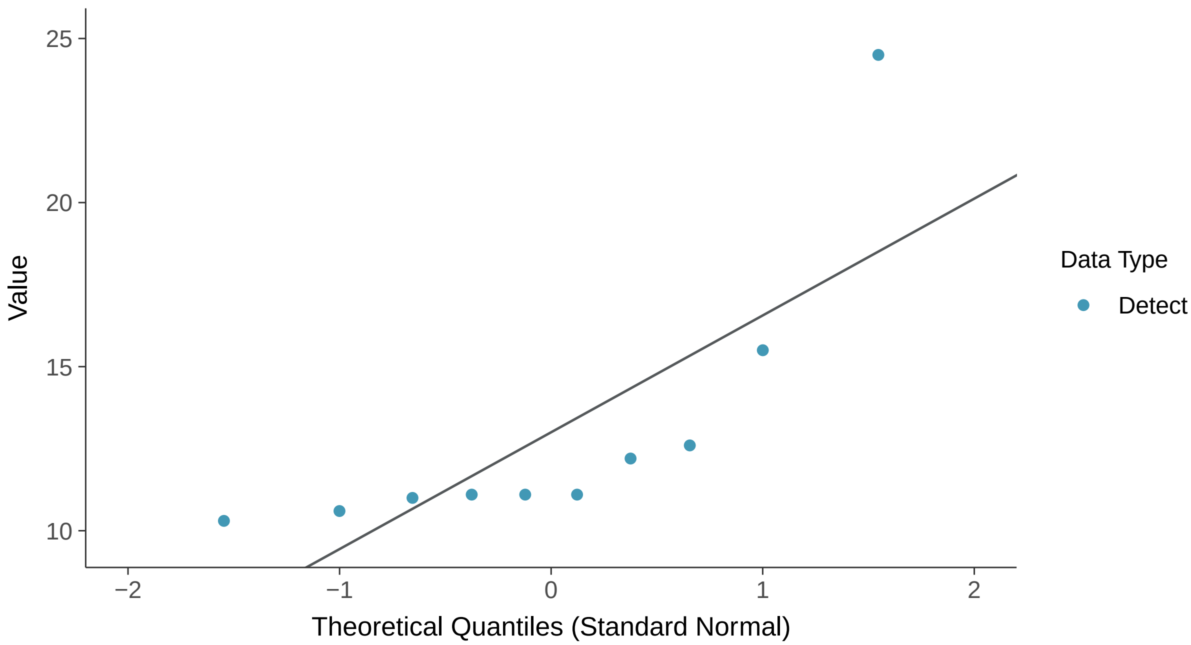
Boxplot by Season

Sodium, MW-16B (mg/L)



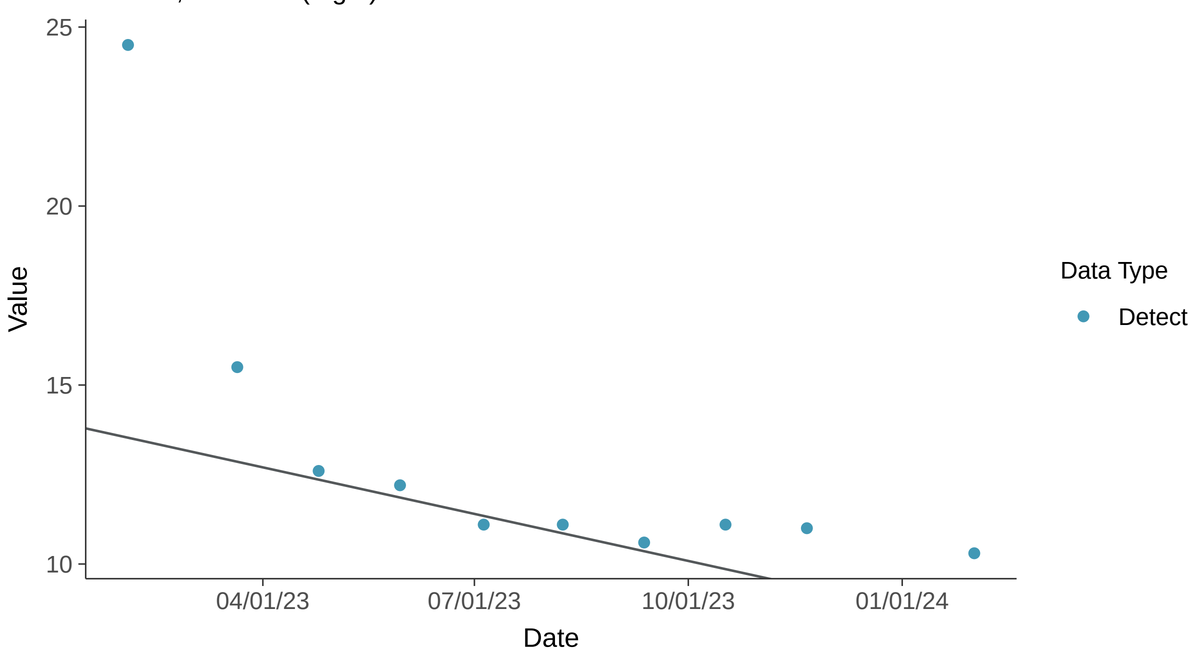
Normal Q-Q plot

Sodium, MW-16B (mg/L)



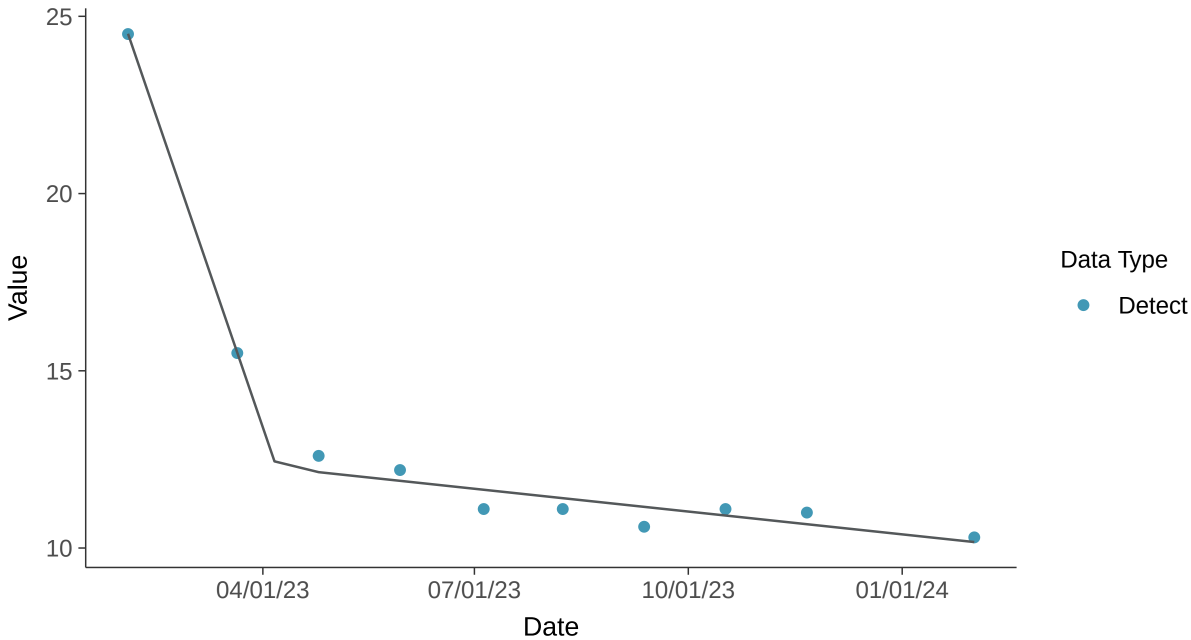
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Sodium, MW-16B (mg/L)



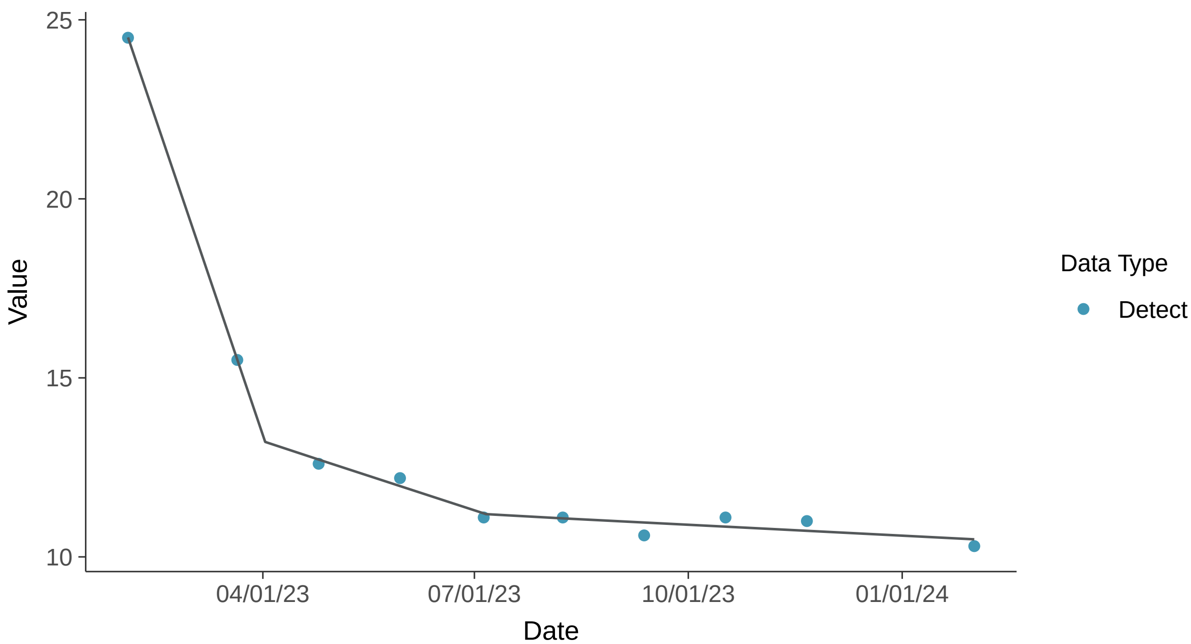
Trend Regression: Piecewise Linear-Linear

Sodium, MW-16B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Sodium, MW-16B (mg/L)

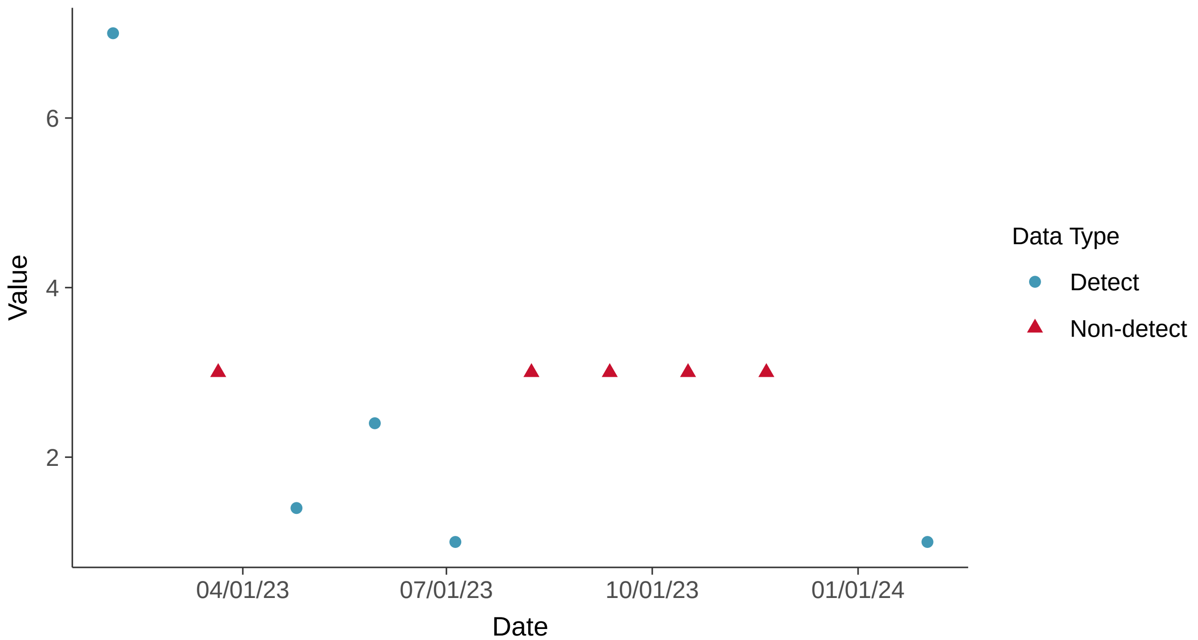


Other: Total Suspended Solids, MW-16B

ID: 16B_4_36

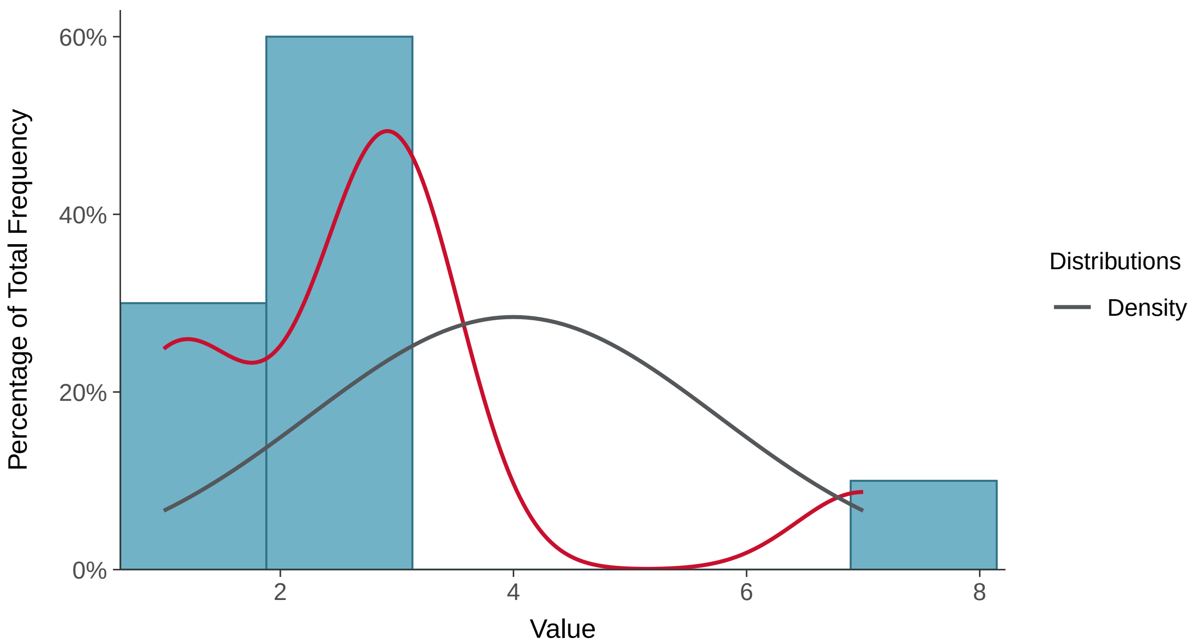
Scatter Plot

Total Suspended Solids, MW-16B (mg/L)



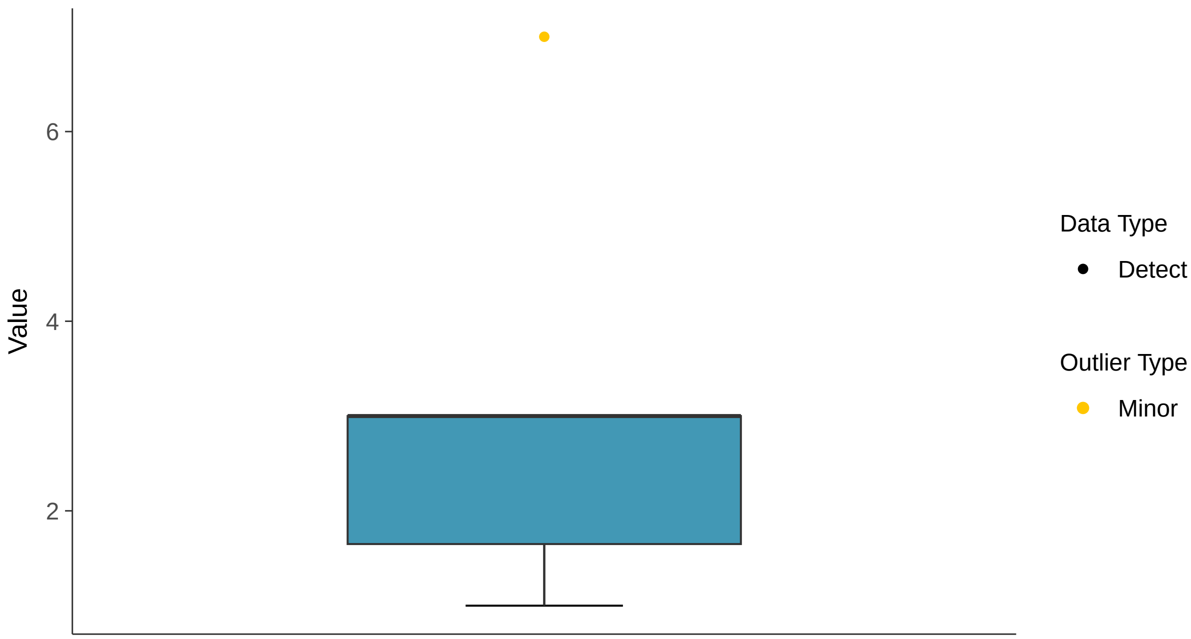
Histogram

Total Suspended Solids, MW-16B (mg/L)



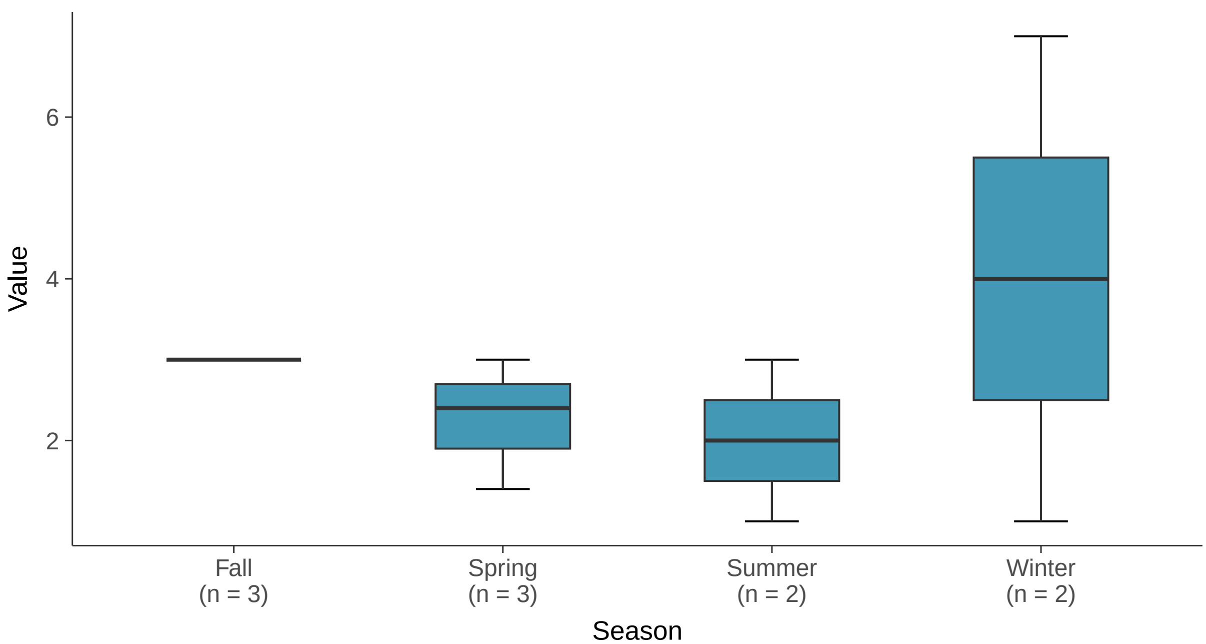
Boxplot

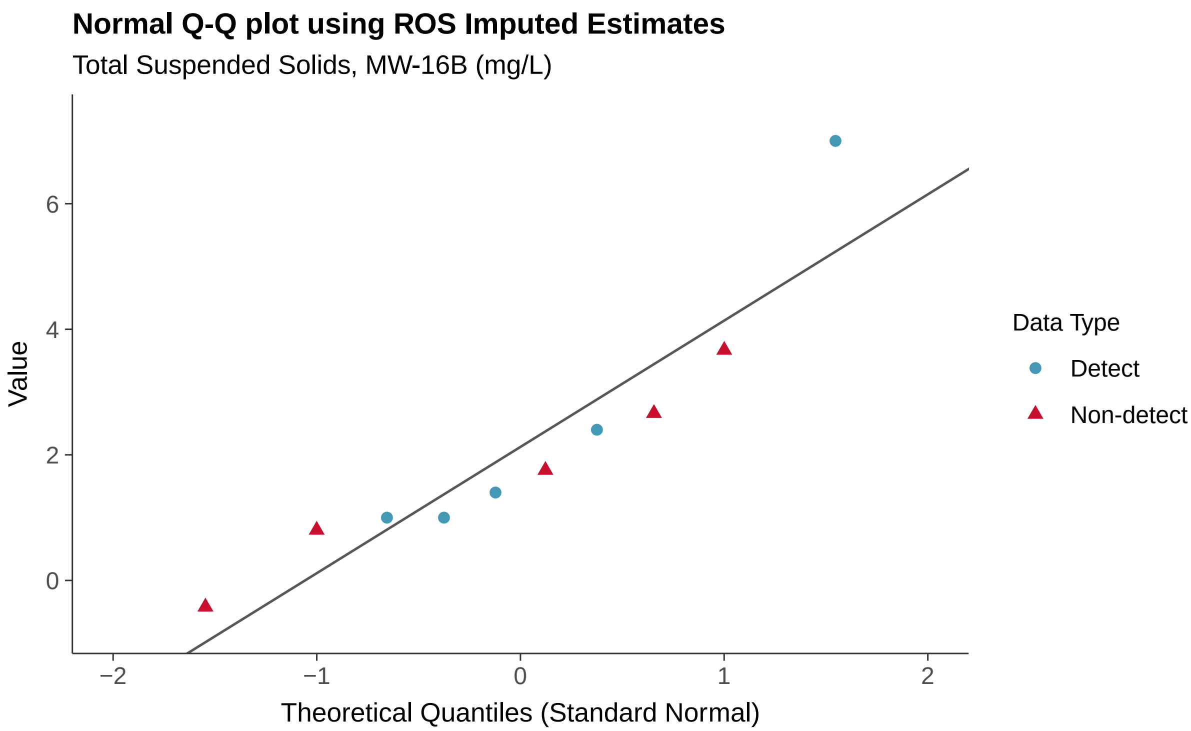
Total Suspended Solids, MW-16B (mg/L)

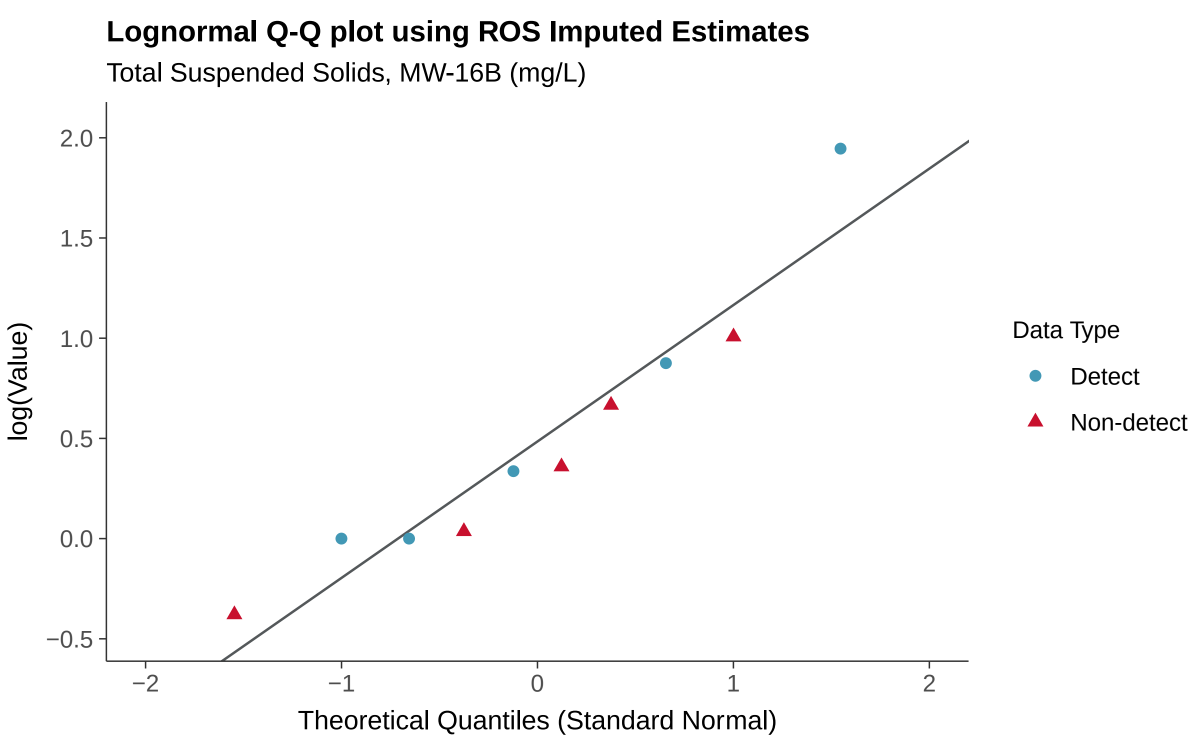


Boxplot by Season

Total Suspended Solids, MW-16B (mg/L)

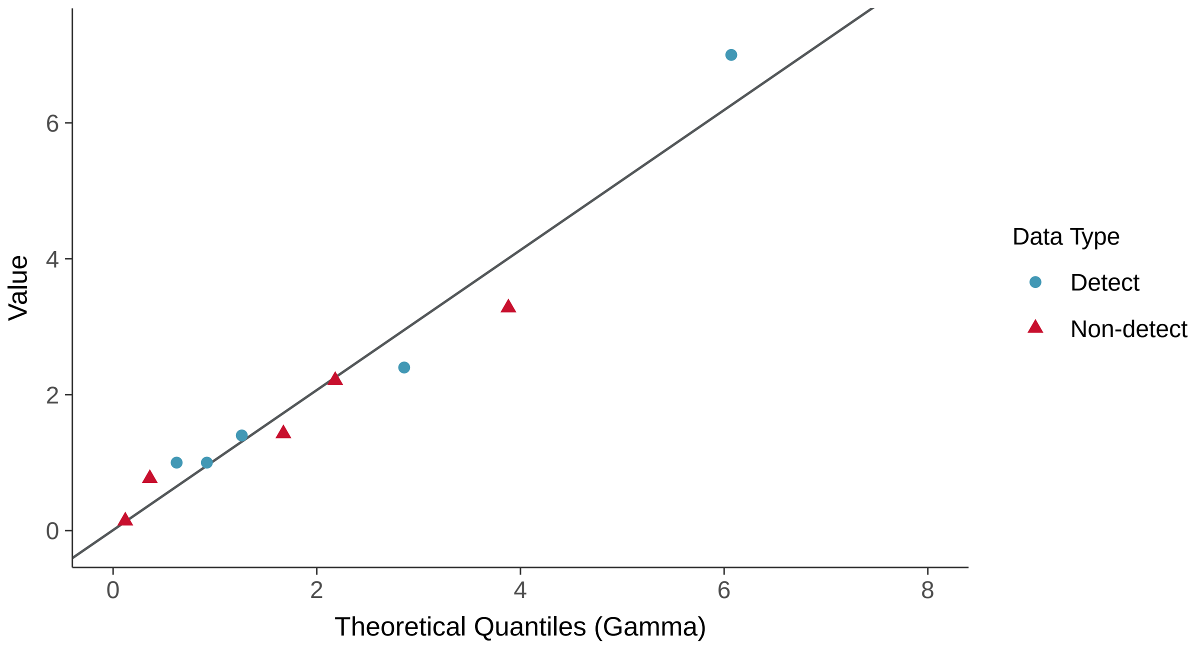



Normal Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-16B (mg/L)
Value
6
4
2
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-16B (mg/L)
log(Value)
2.0
1.5
1.0
0.5
0.0
−0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

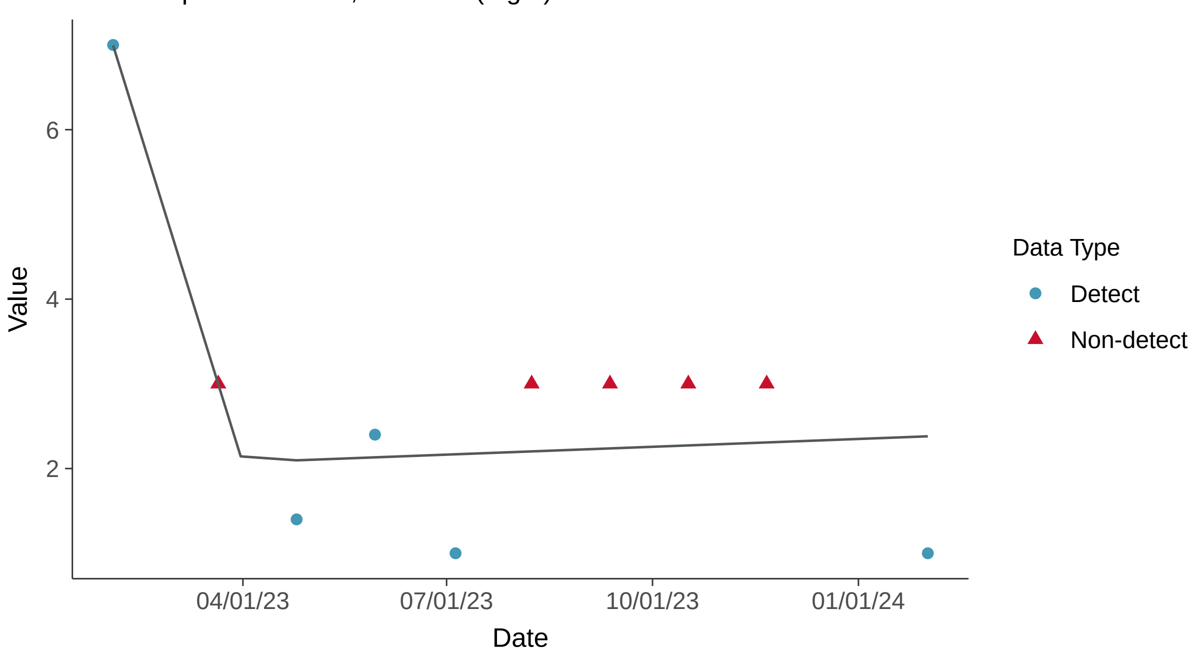
Gamma Q-Q plot using ROS Imputed Estimates

Total Suspended Solids, MW-16B (mg/L)



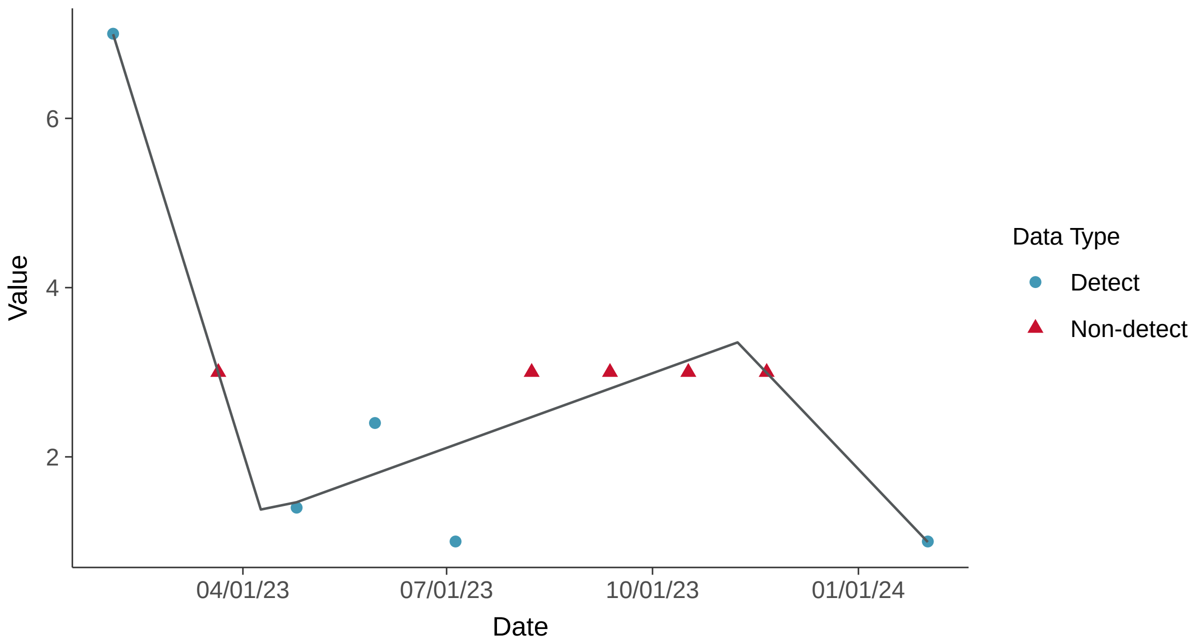
Trend Regression: Piecewise Linear-Linear

Total Suspended Solids, MW-16B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Total Suspended Solids, MW-16B (mg/L)

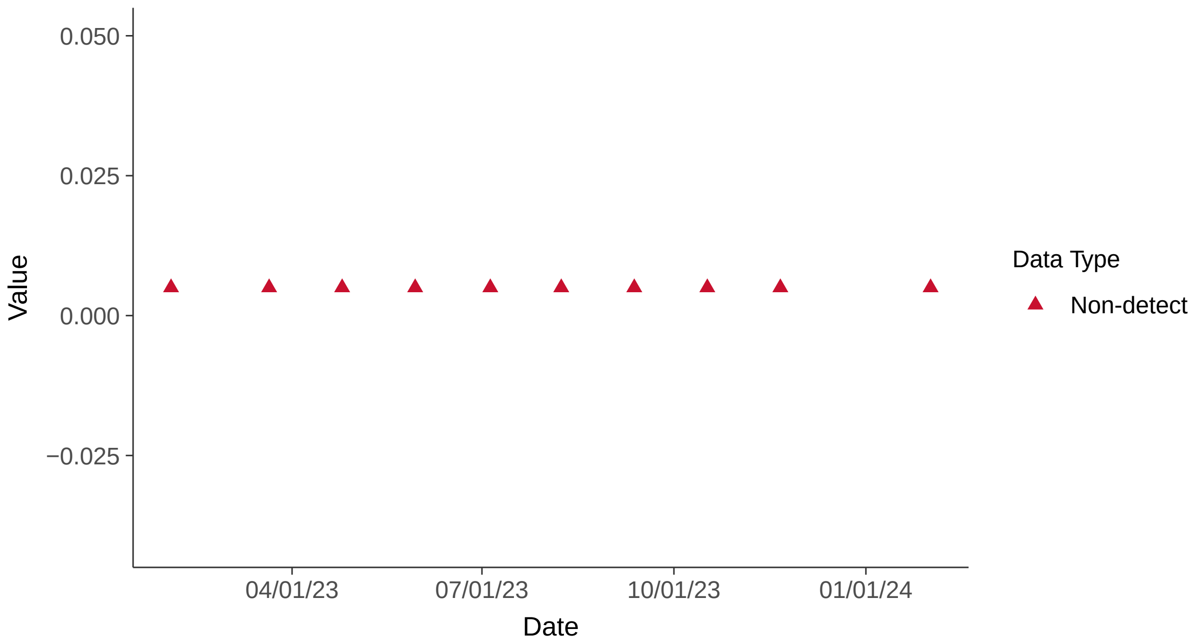


Part 115: Copper, MW-16B

ID: 16B_5_37

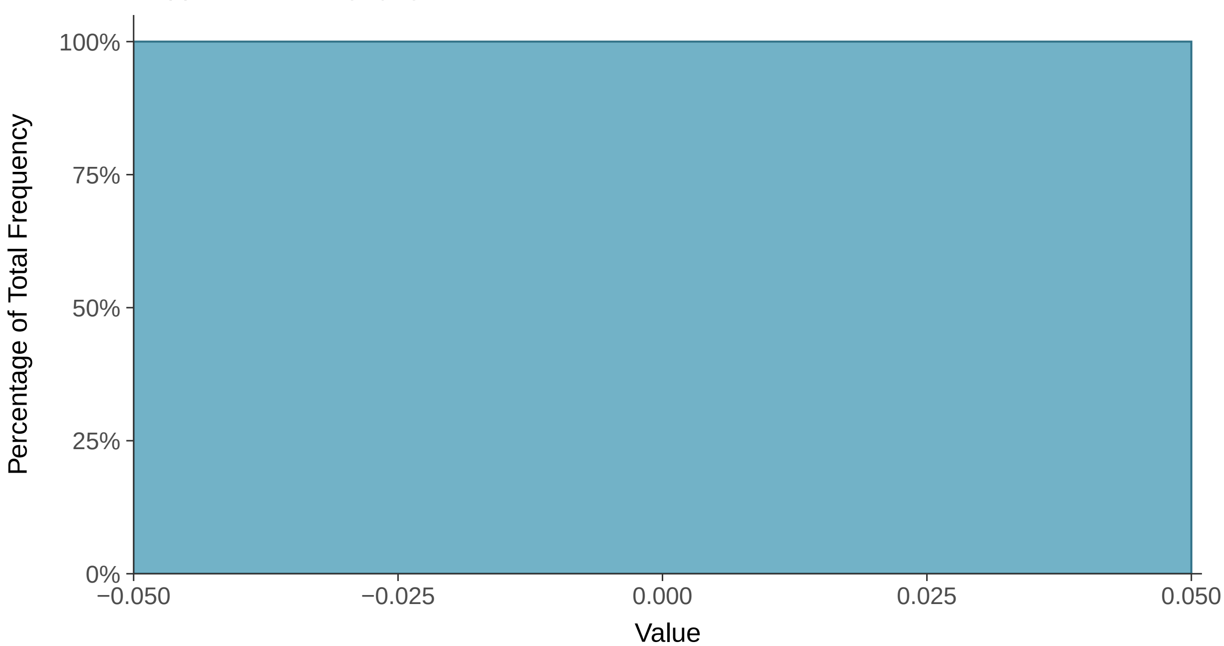
Scatter Plot

Copper, MW-16B (mg/L)



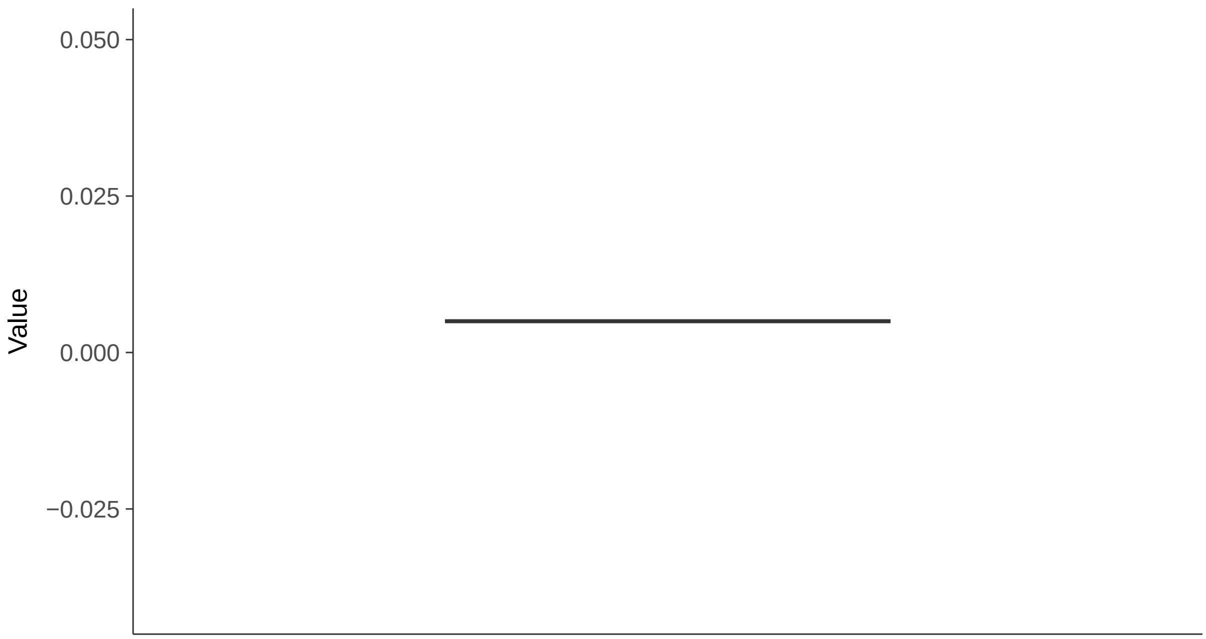
Histogram

Copper, MW-16B (mg/L)



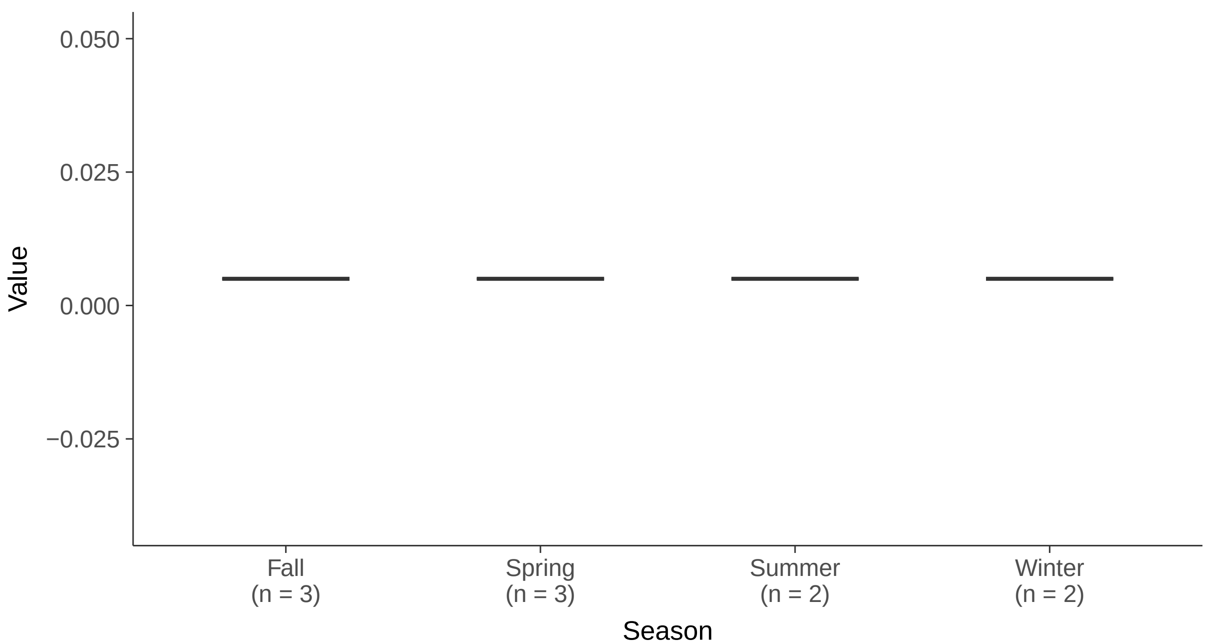
Boxplot

Copper, MW-16B (mg/L)



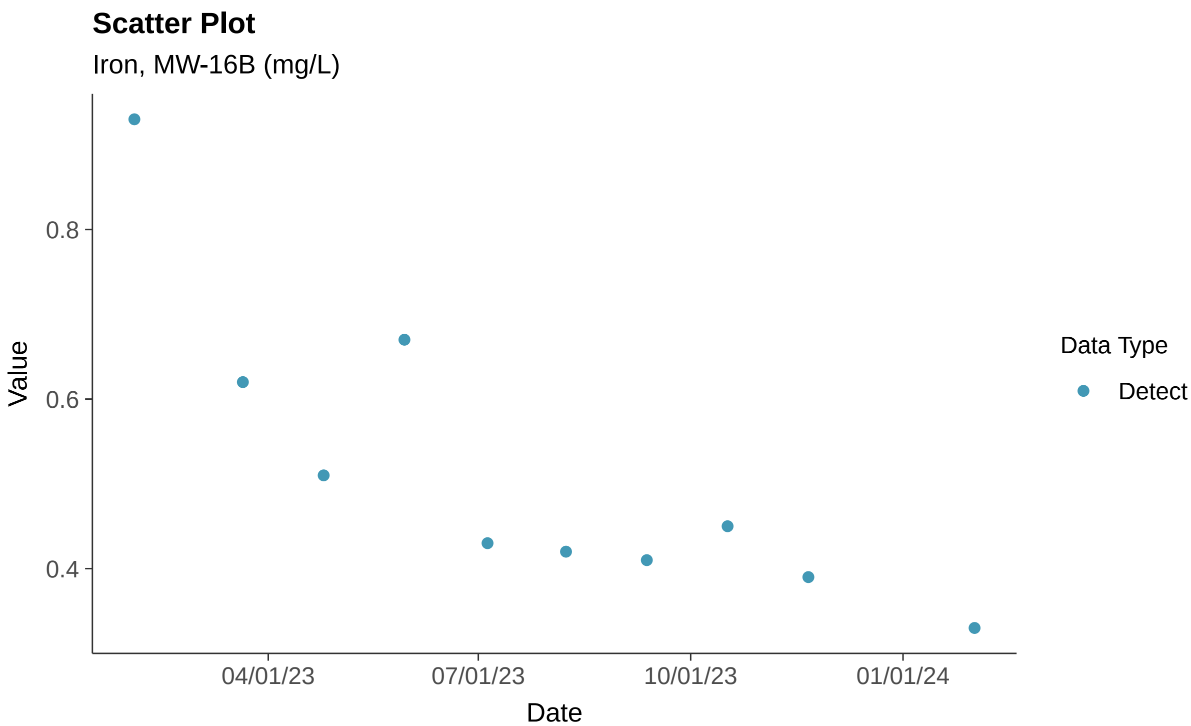
Boxplot by Season

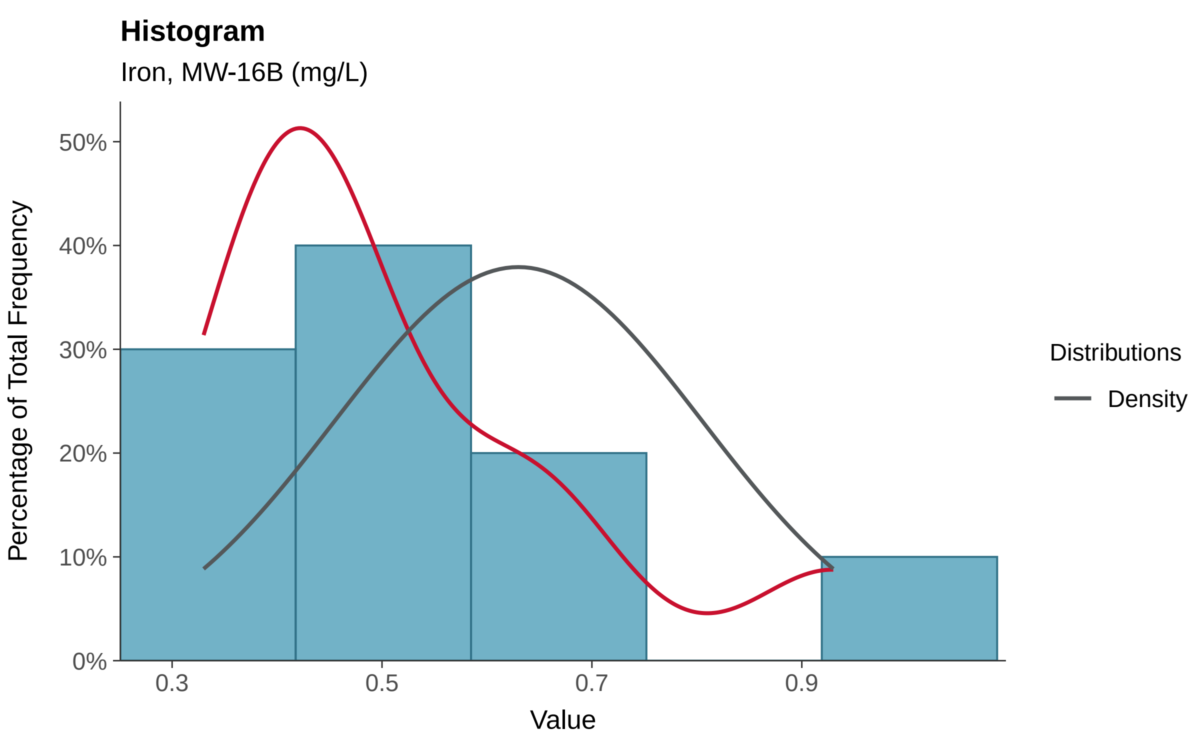
Copper, MW-16B (mg/L)



Part 115: Iron, MW-16B

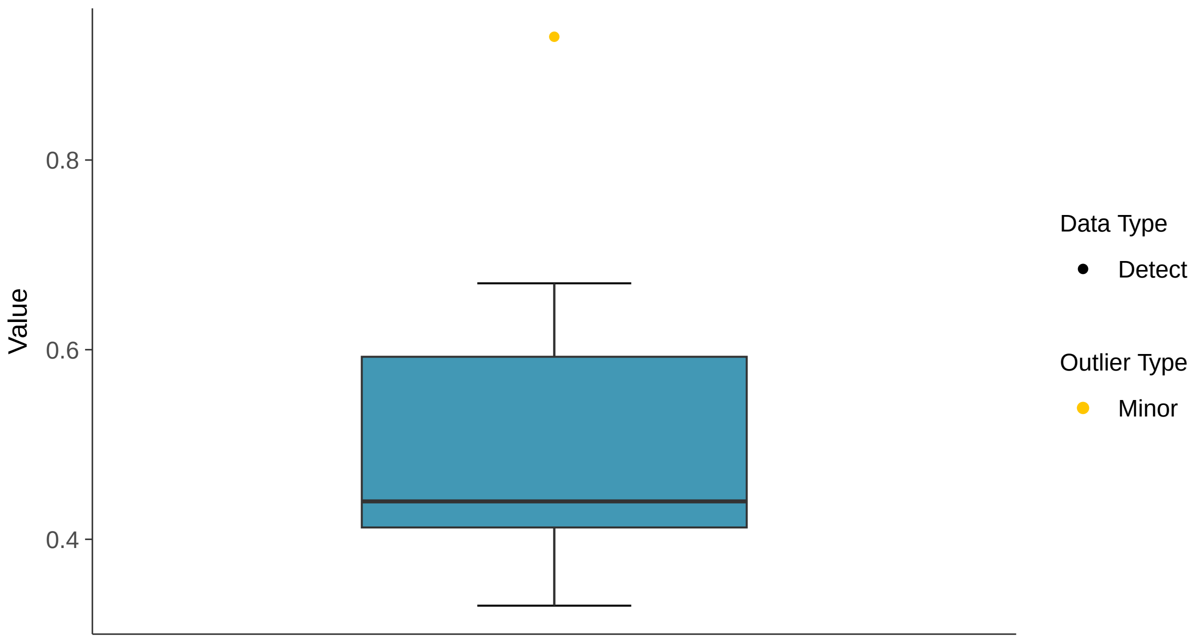
ID: 16B_5_38





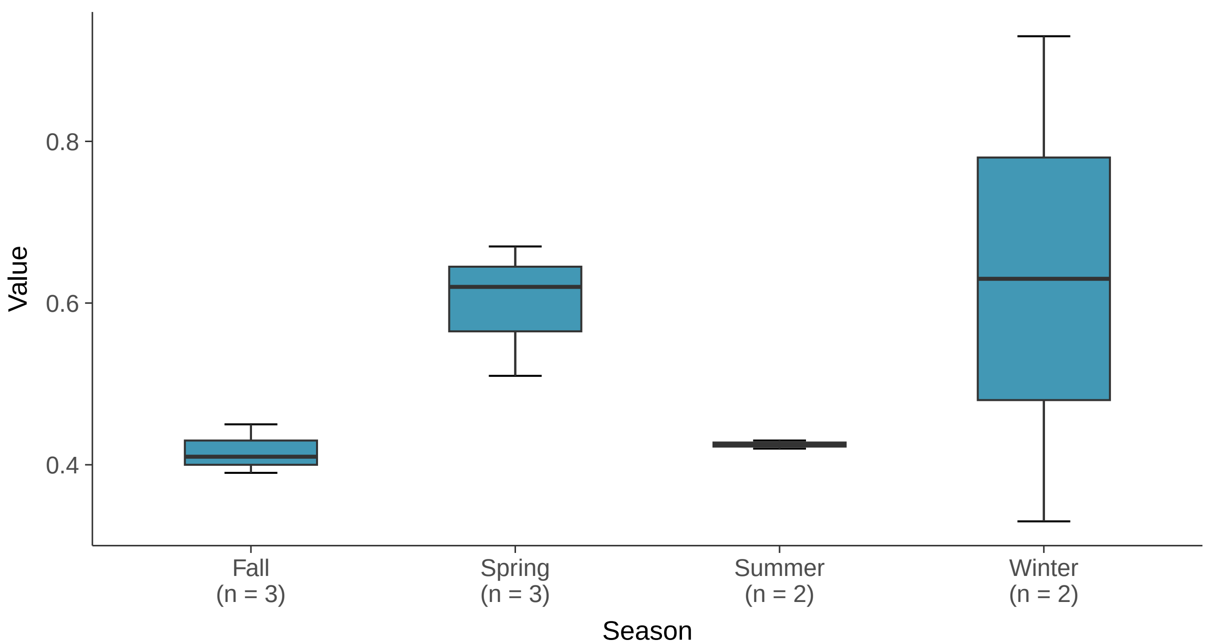
Boxplot

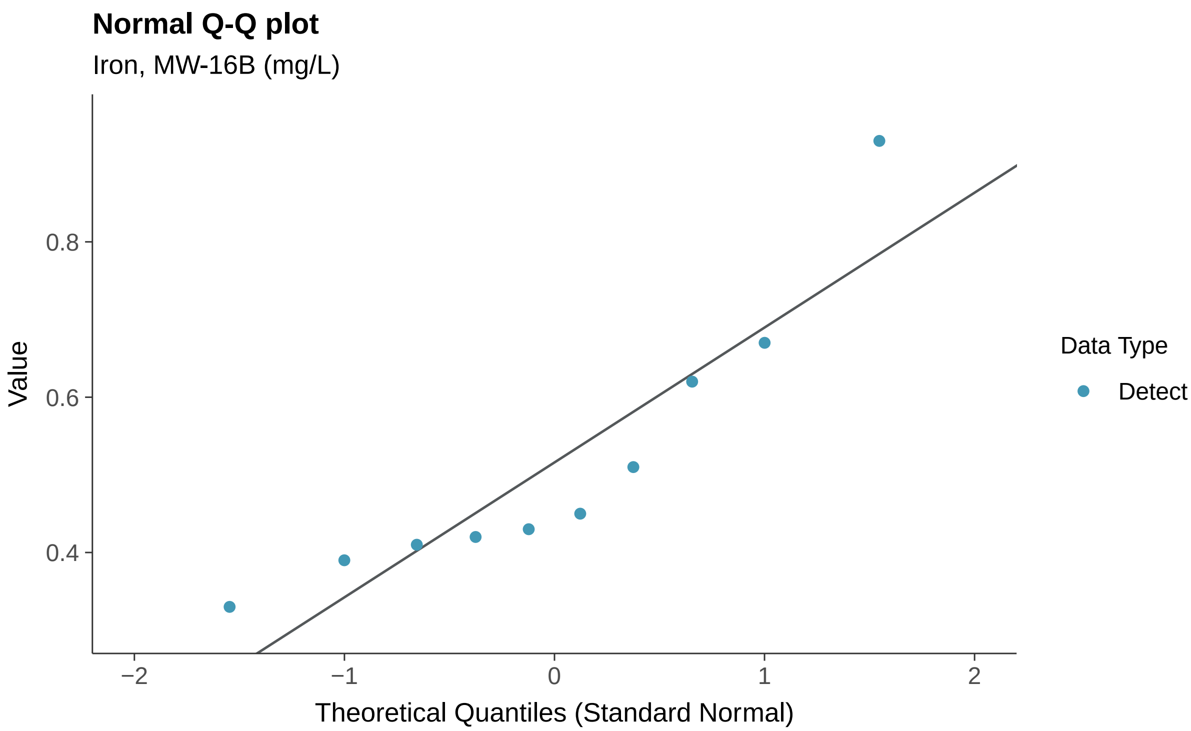
Iron, MW-16B (mg/L)

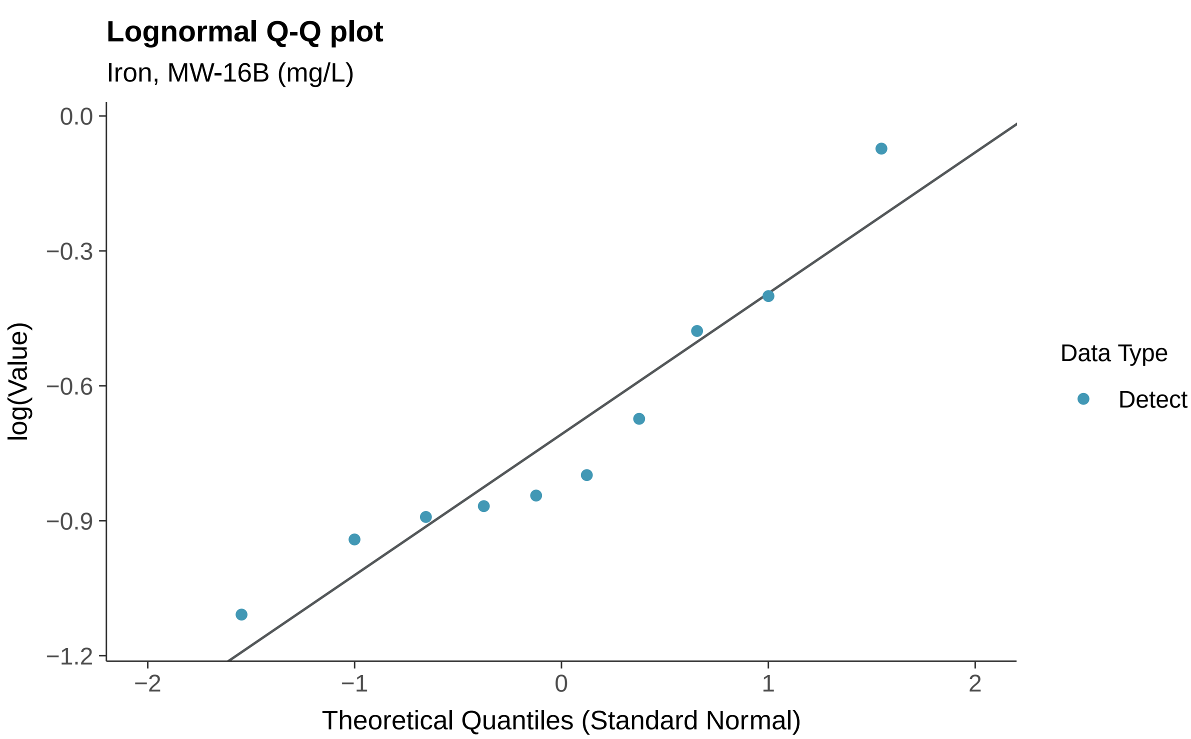


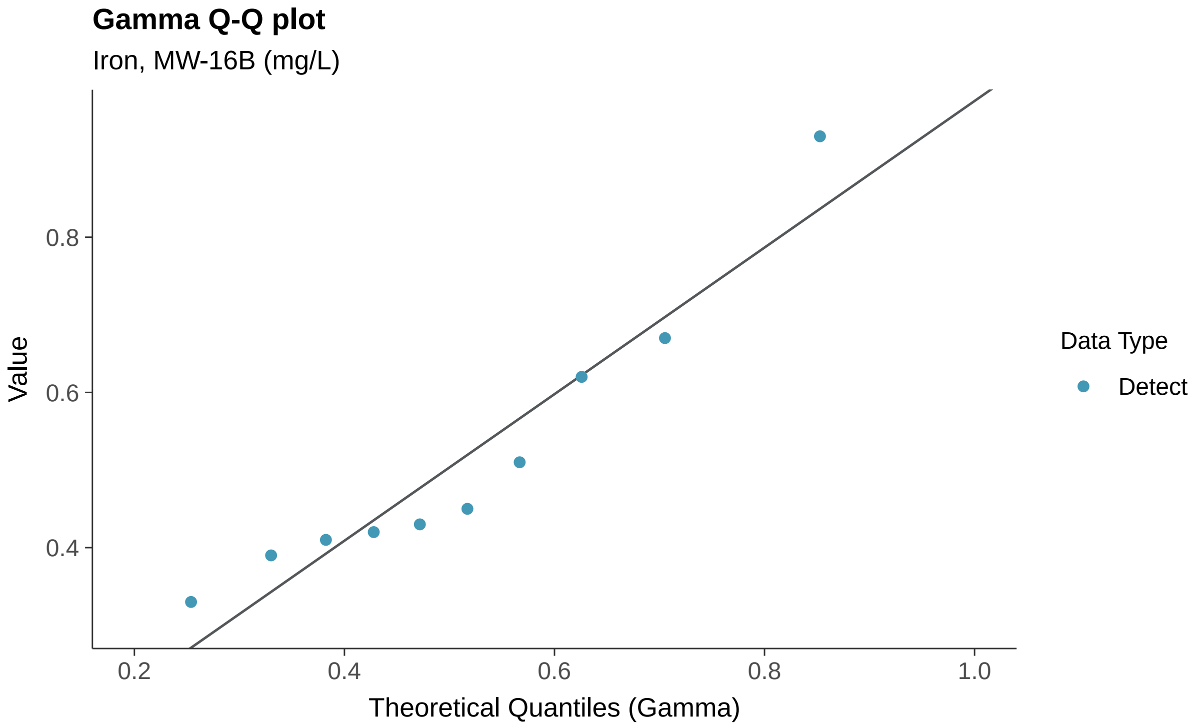
Boxplot by Season

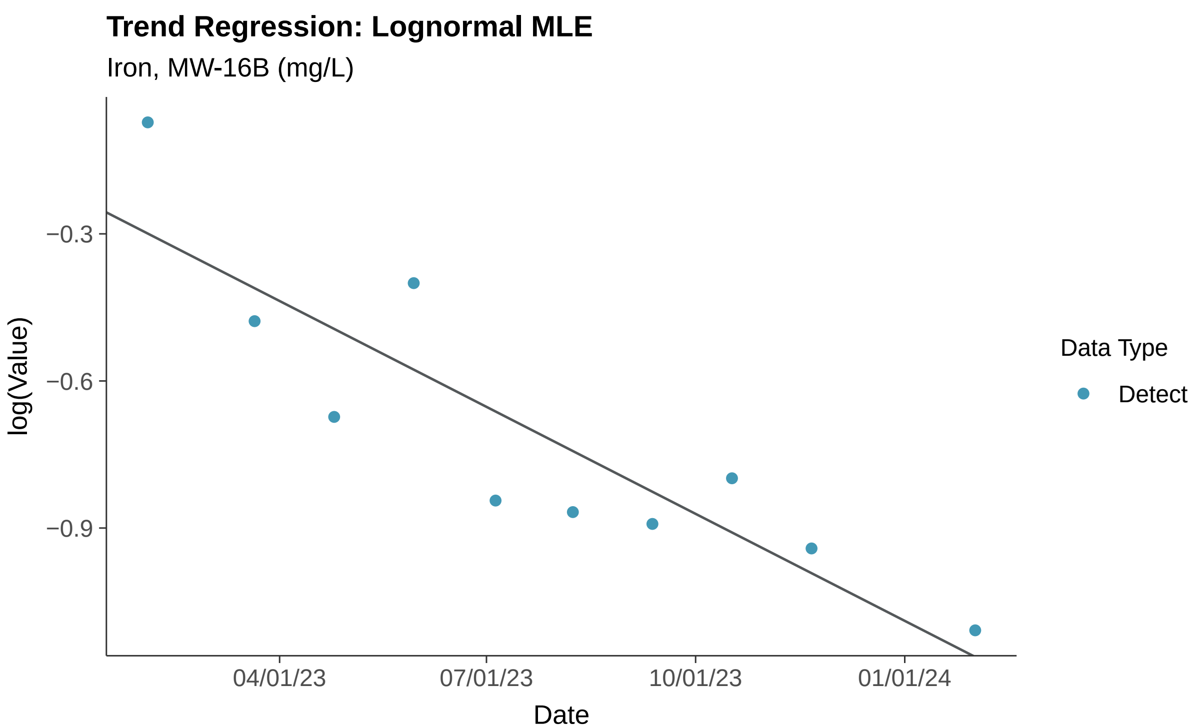
Iron, MW-16B (mg/L)




Normal Q-Q plot
Iron, MW-16B (mg/L)
Value
0.8
0.6
0.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

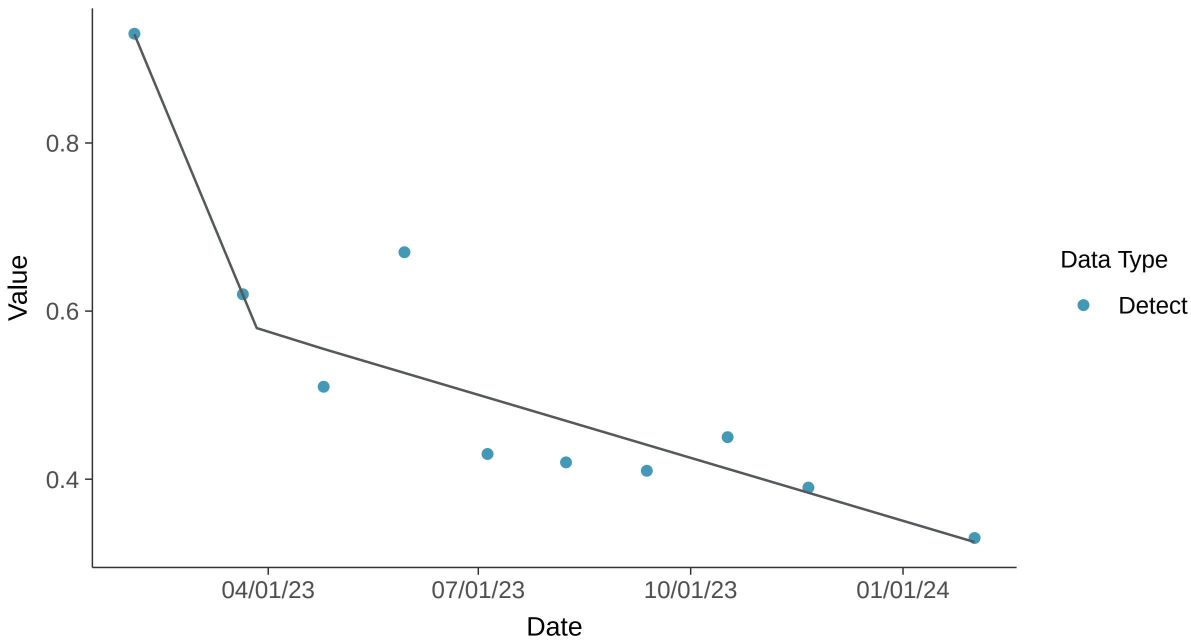

Lognormal Q-Q plot
Iron, MW-16B (mg/L)
log(Value)
0.0
−0.3
−0.6
−0.9
−1.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Iron, MW-16B (mg/L)
Value
0.8
0.6
0.4
0.2
0.4
0.6
0.8
1.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Iron, MW-16B (mg/L)
log(Value)
−0.3
−0.6
−0.9
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

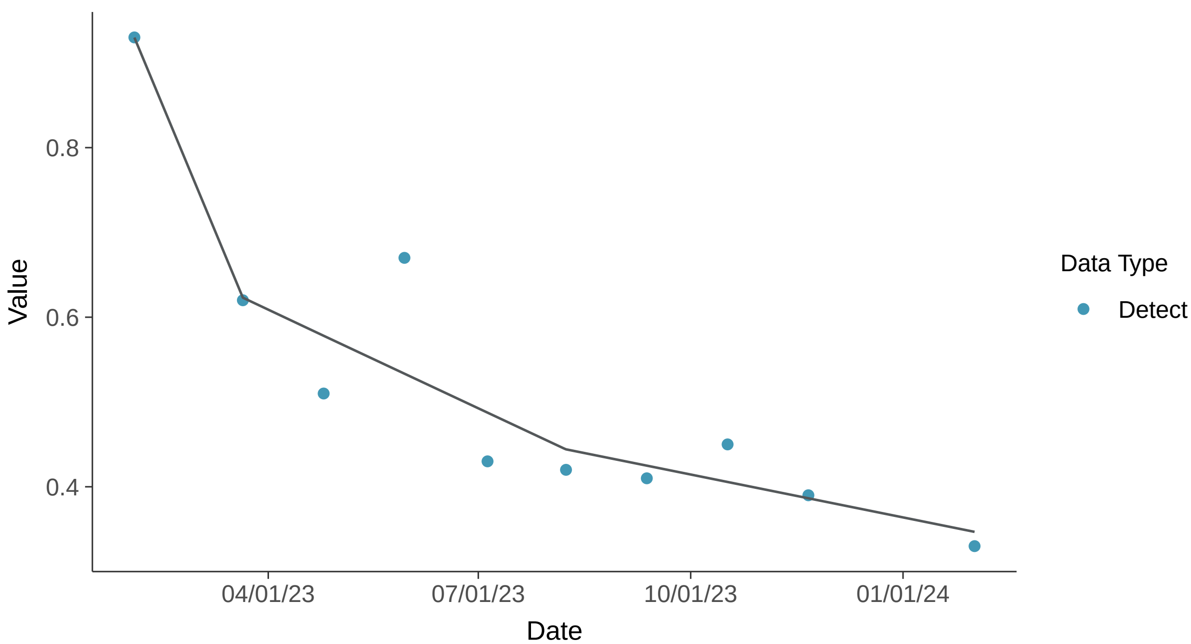
Trend Regression: Piecewise Linear-Linear

Iron, MW-16B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Iron, MW-16B (mg/L)

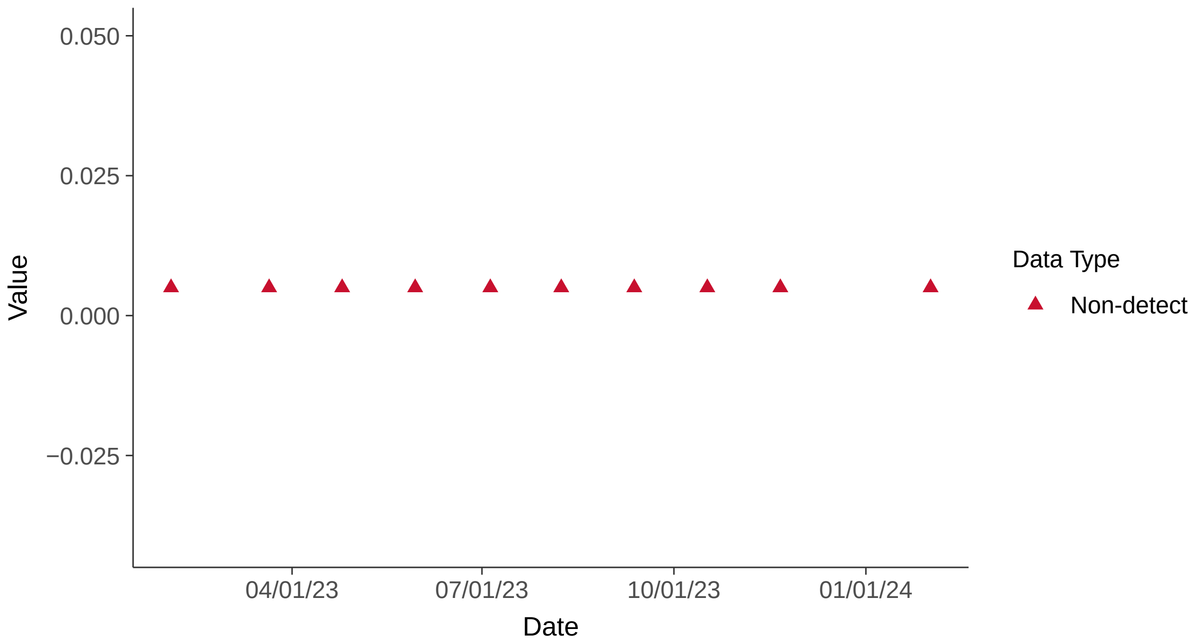


Part 115: Nickel, MW-16B

ID: 16B_5_39

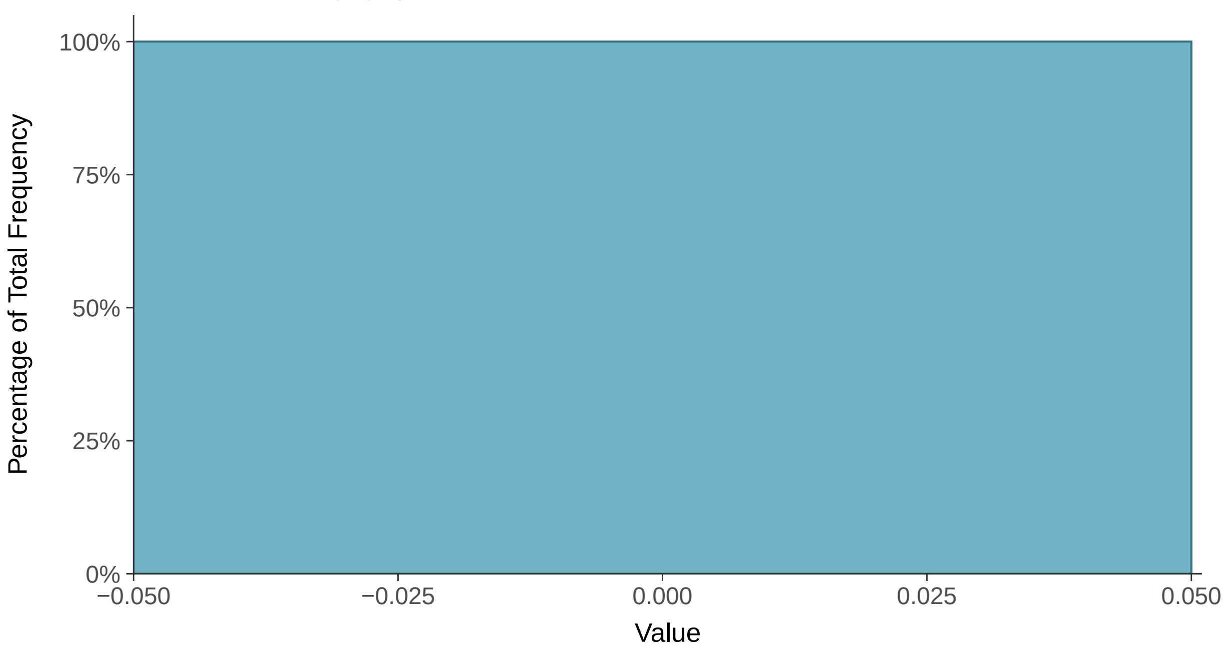
Scatter Plot

Nickel, MW-16B (mg/L)



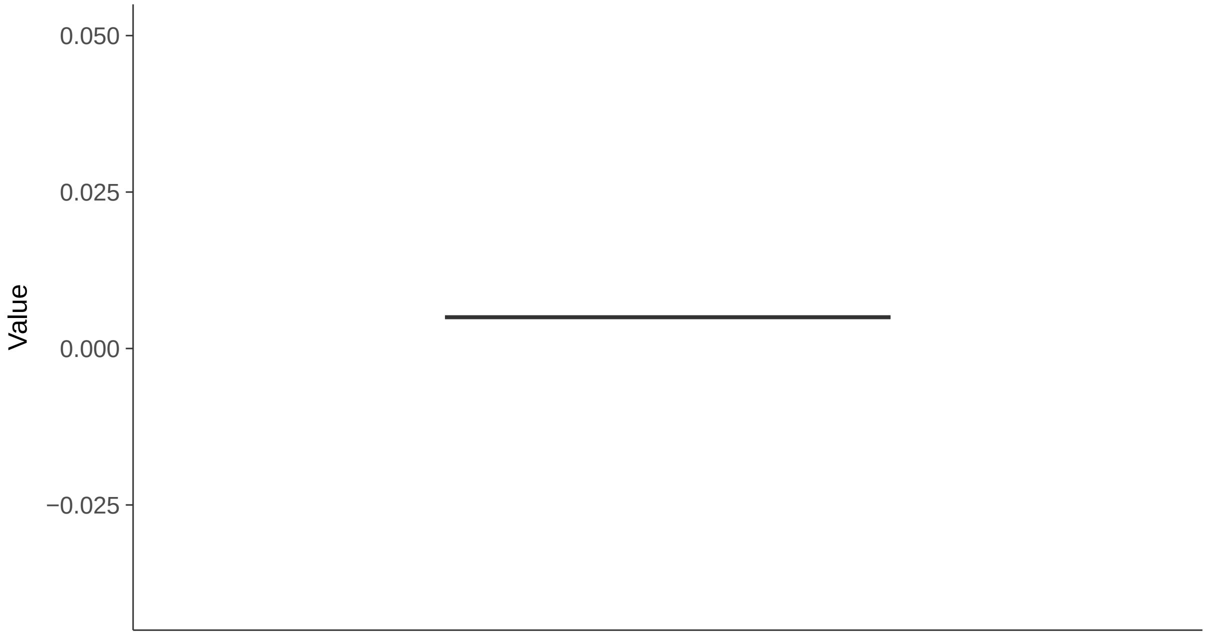
Histogram

Nickel, MW-16B (mg/L)



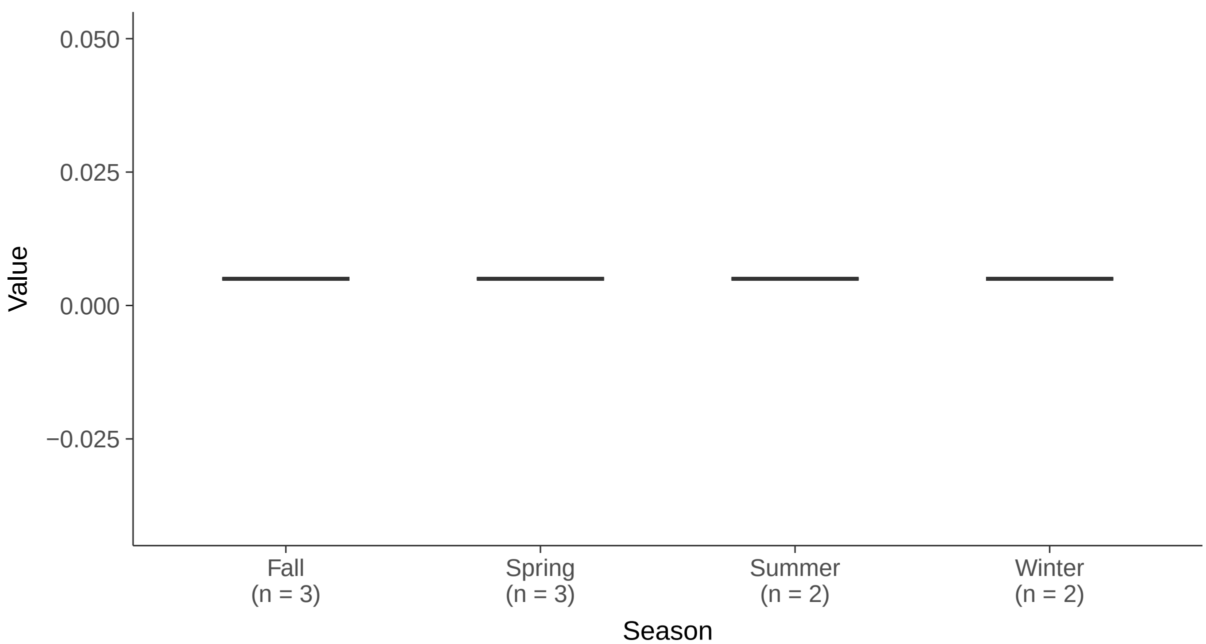
Boxplot

Nickel, MW-16B (mg/L)



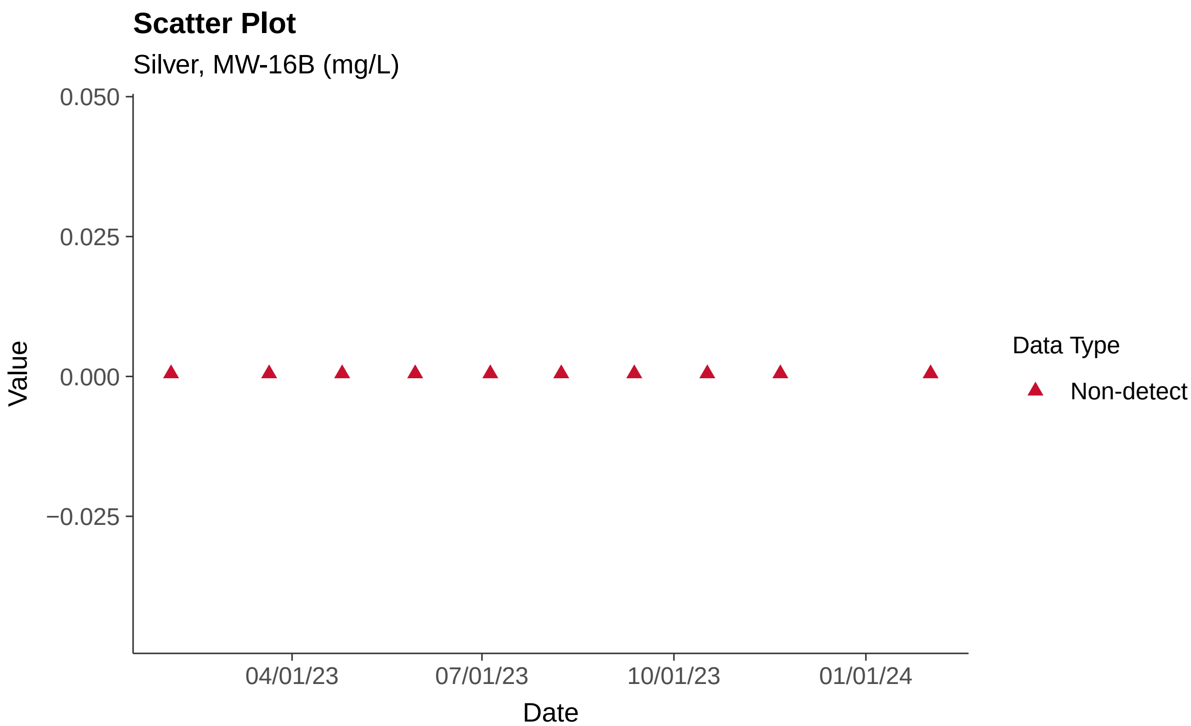
Boxplot by Season

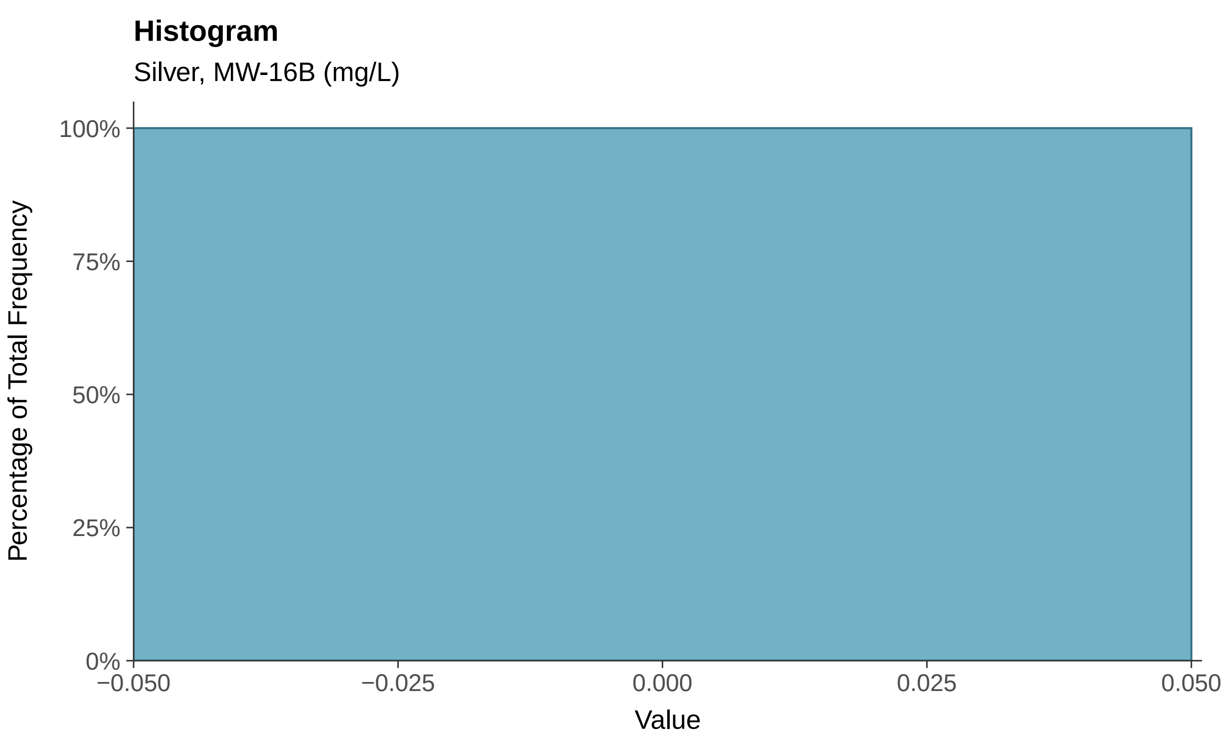
Nickel, MW-16B (mg/L)



Part 115: Silver, MW-16B

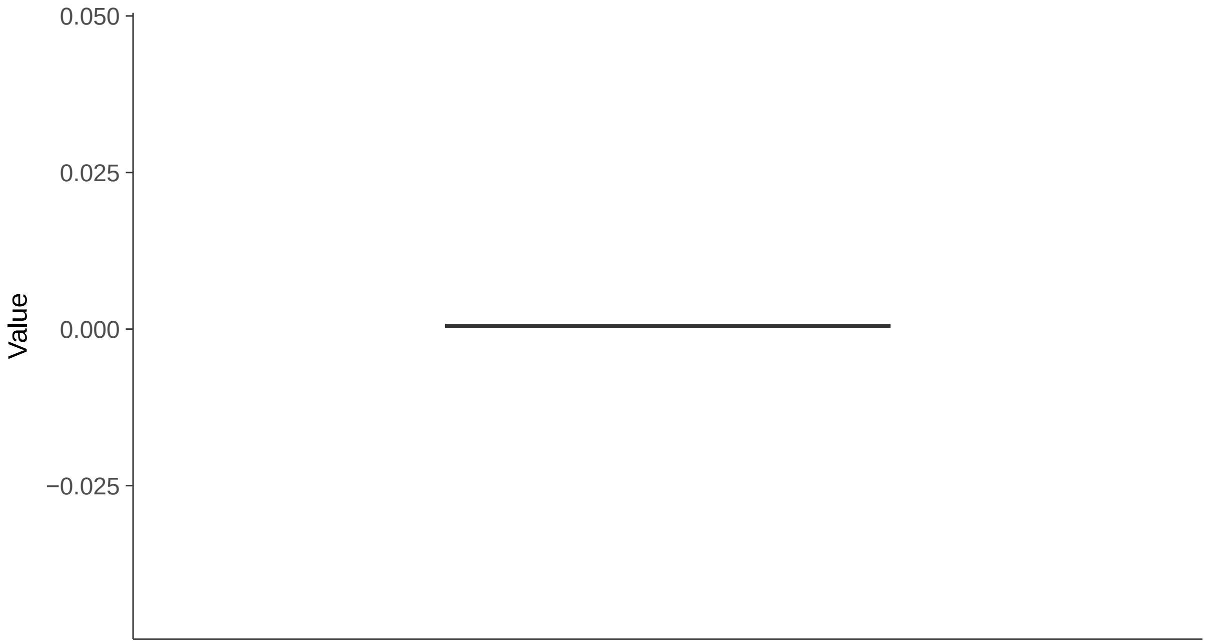
ID: 16B_5_40





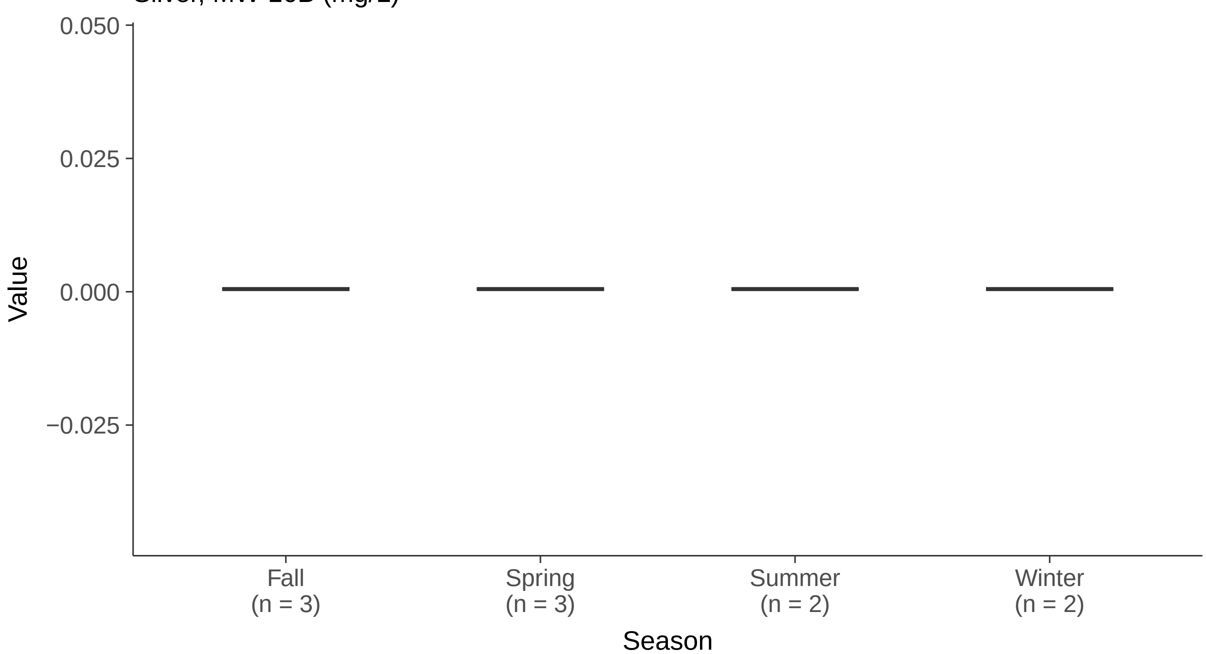
Boxplot

Silver, MW-16B (mg/L)



Boxplot by Season

Silver, MW-16B (mg/L)

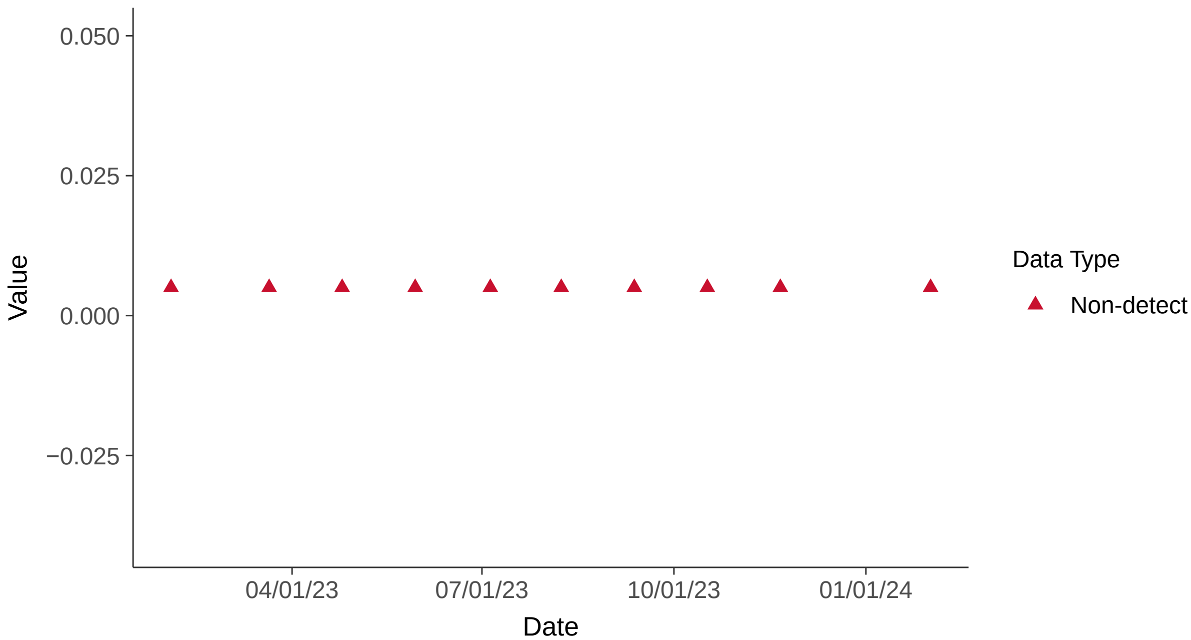


Part 115: Vanadium, MW-16B

ID: 16B_5_41

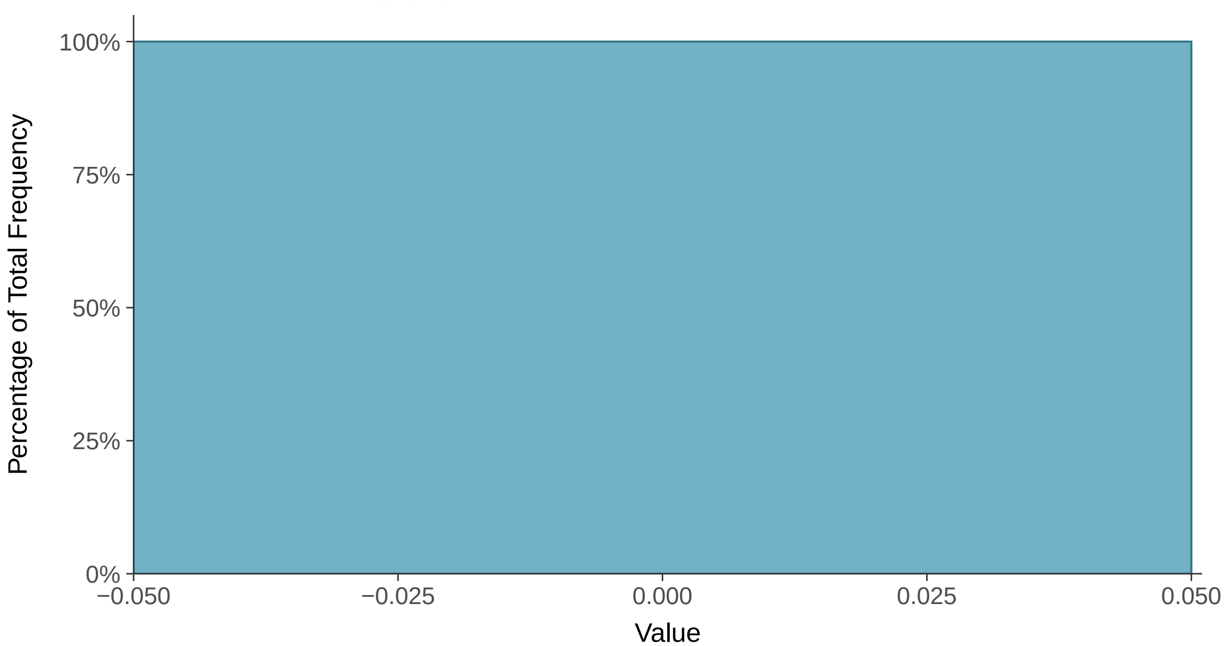
Scatter Plot

Vanadium, MW-16B (mg/L)



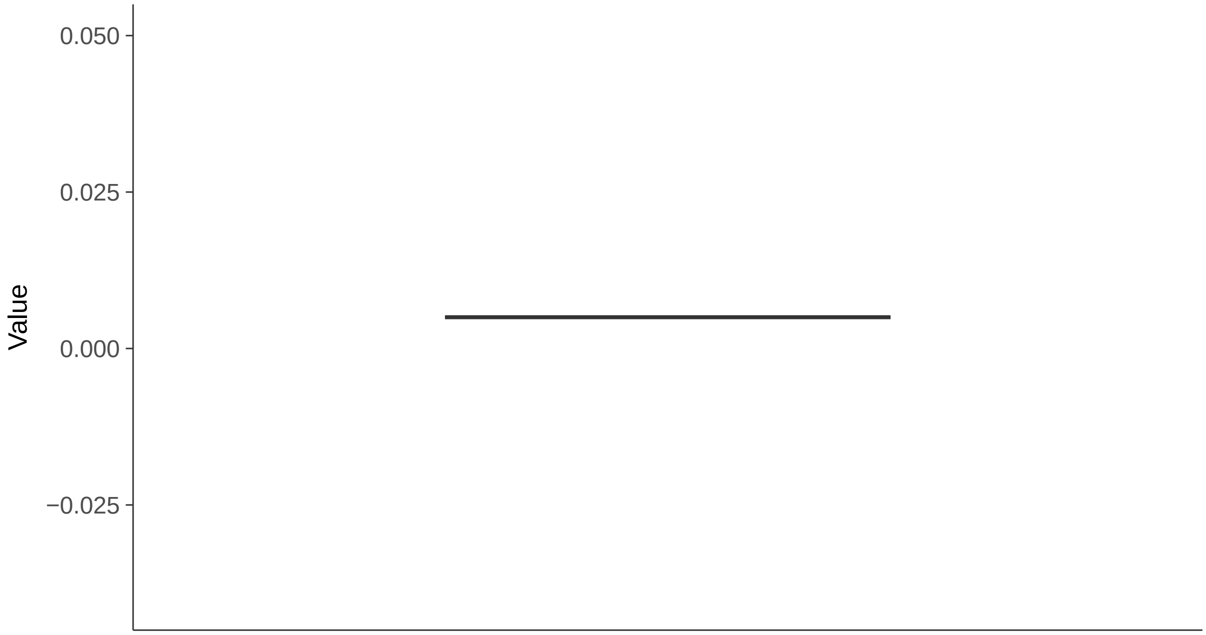
Histogram

Vanadium, MW-16B (mg/L)



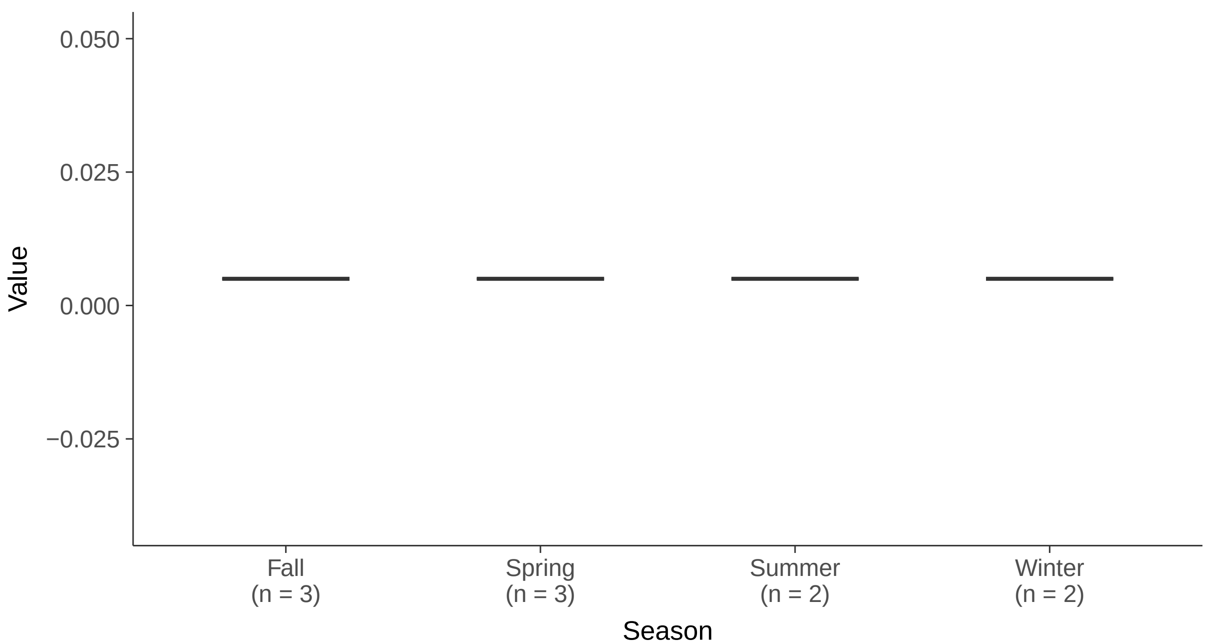
Boxplot

Vanadium, MW-16B (mg/L)



Boxplot by Season

Vanadium, MW-16B (mg/L)

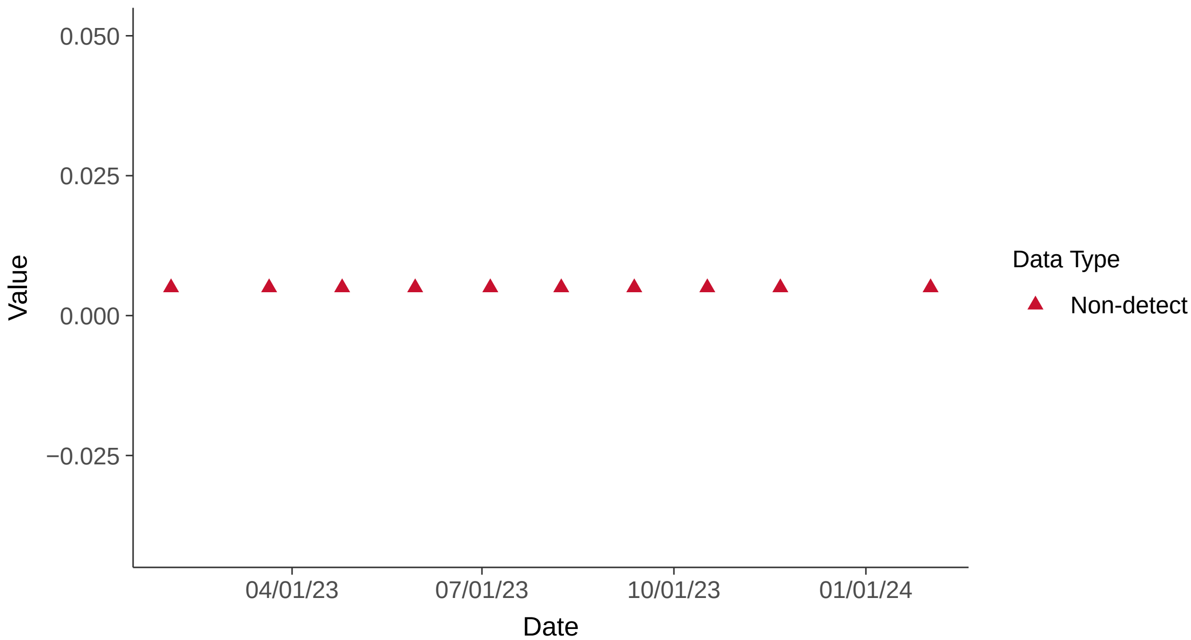


Part 115: Zinc, MW-16B

ID: 16B_5_42

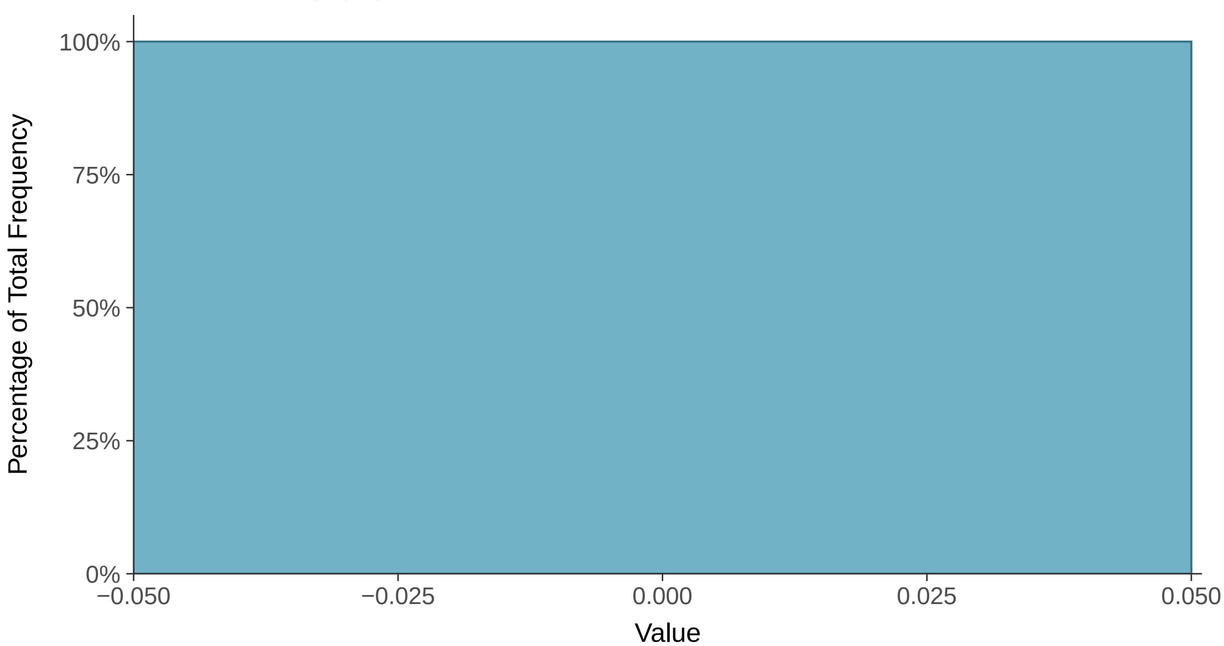
Scatter Plot

Zinc, MW-16B (mg/L)



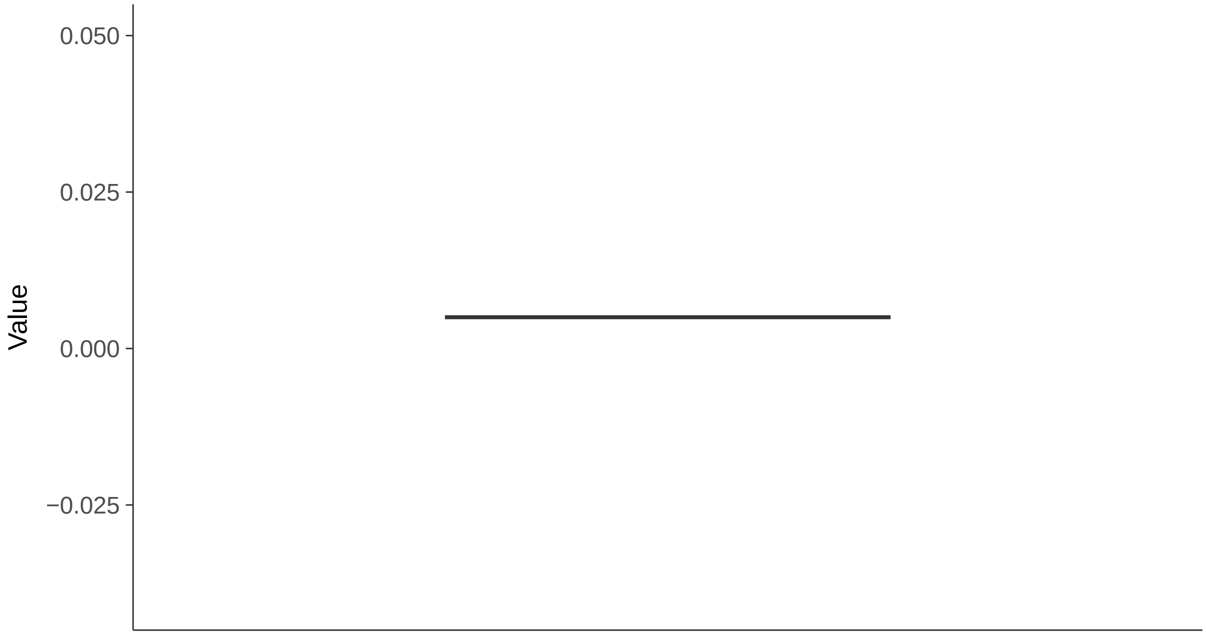
Histogram

Zinc, MW-16B (mg/L)



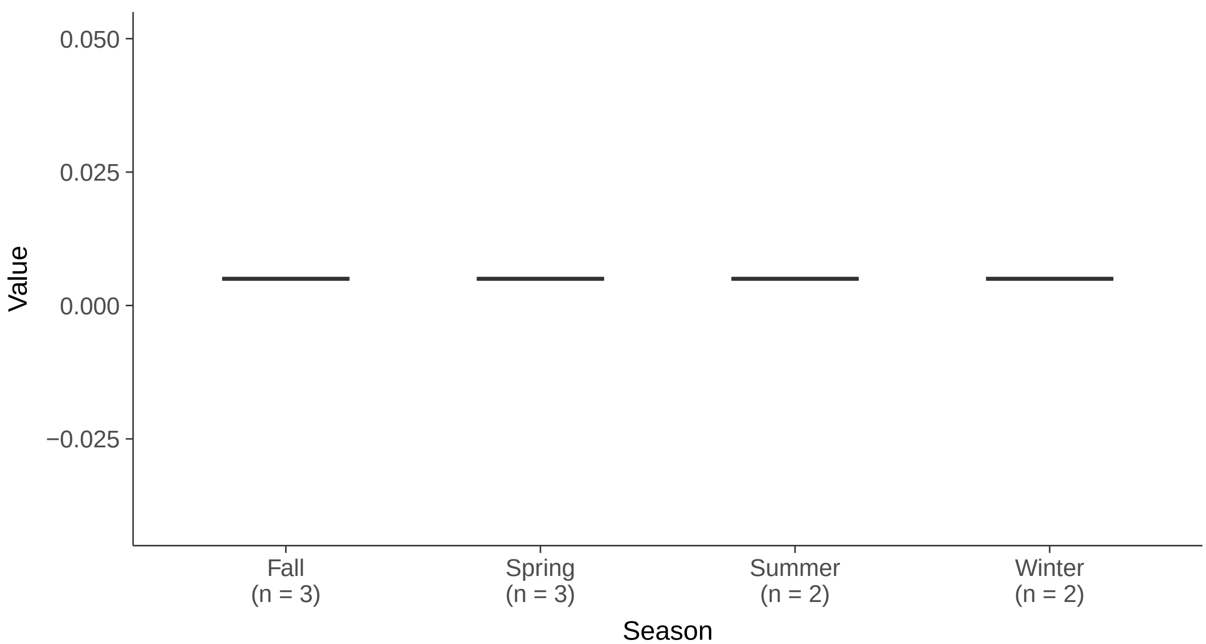
Boxplot

Zinc, MW-16B (mg/L)



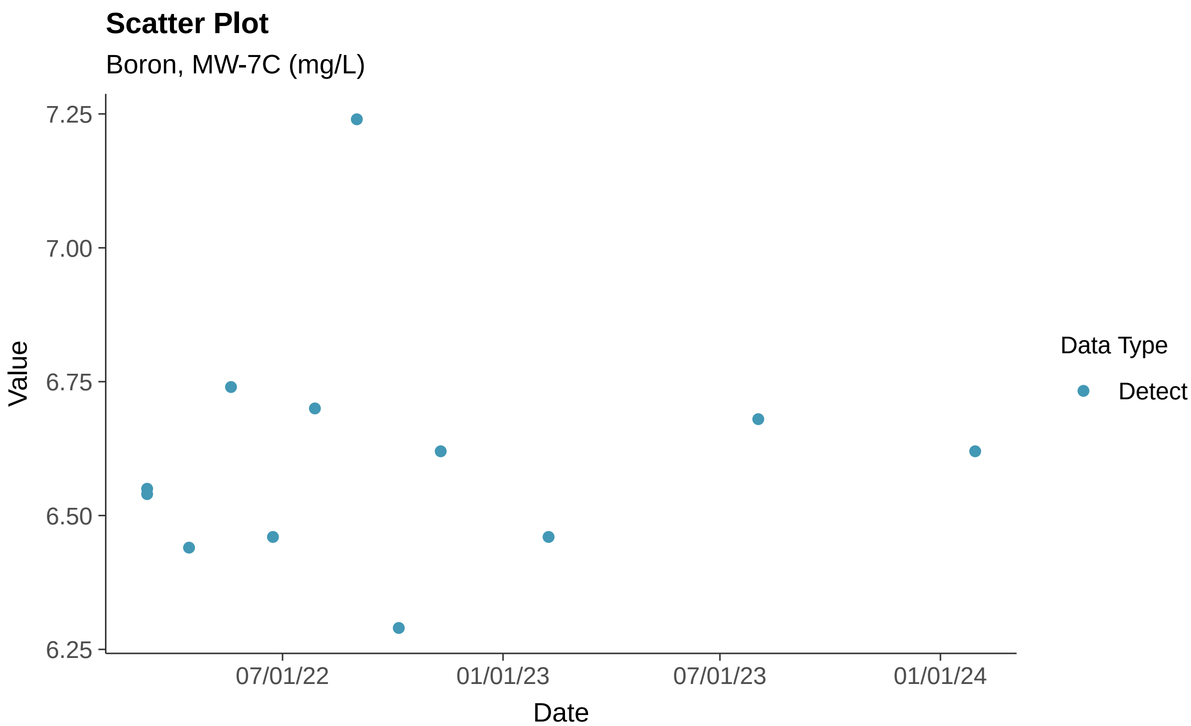
Boxplot by Season

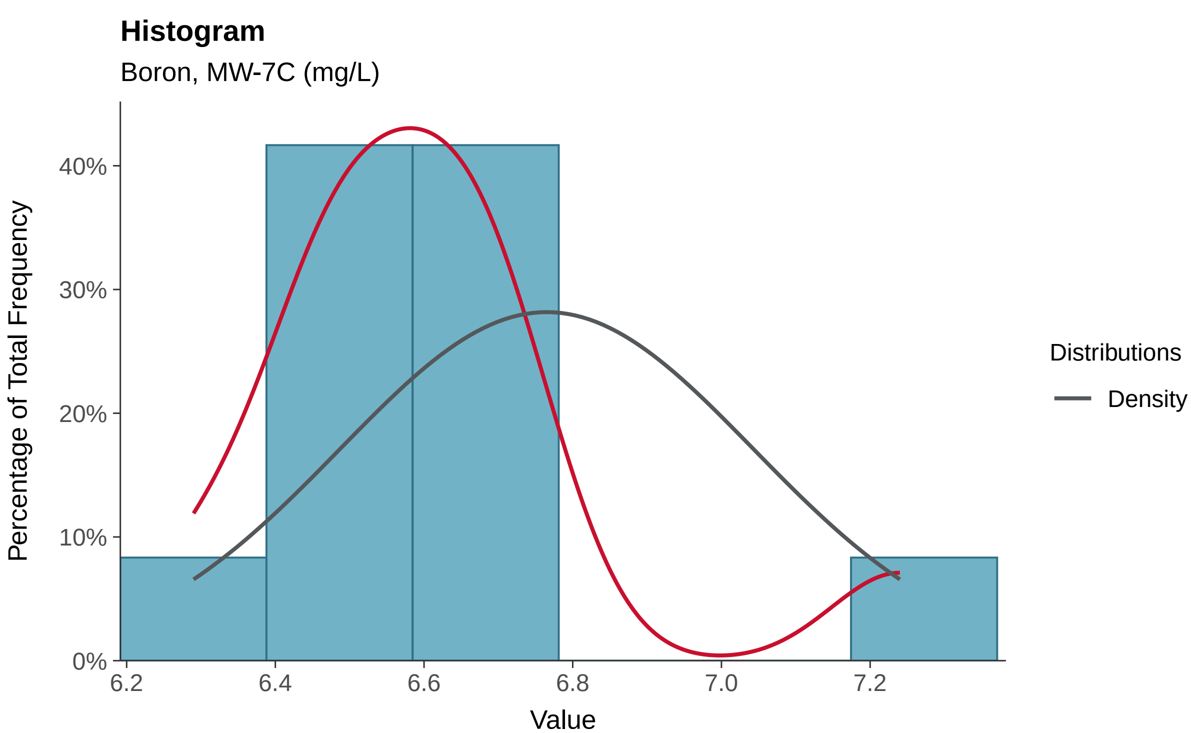
Zinc, MW-16B (mg/L)



Appendix III: Boron, MW-7C

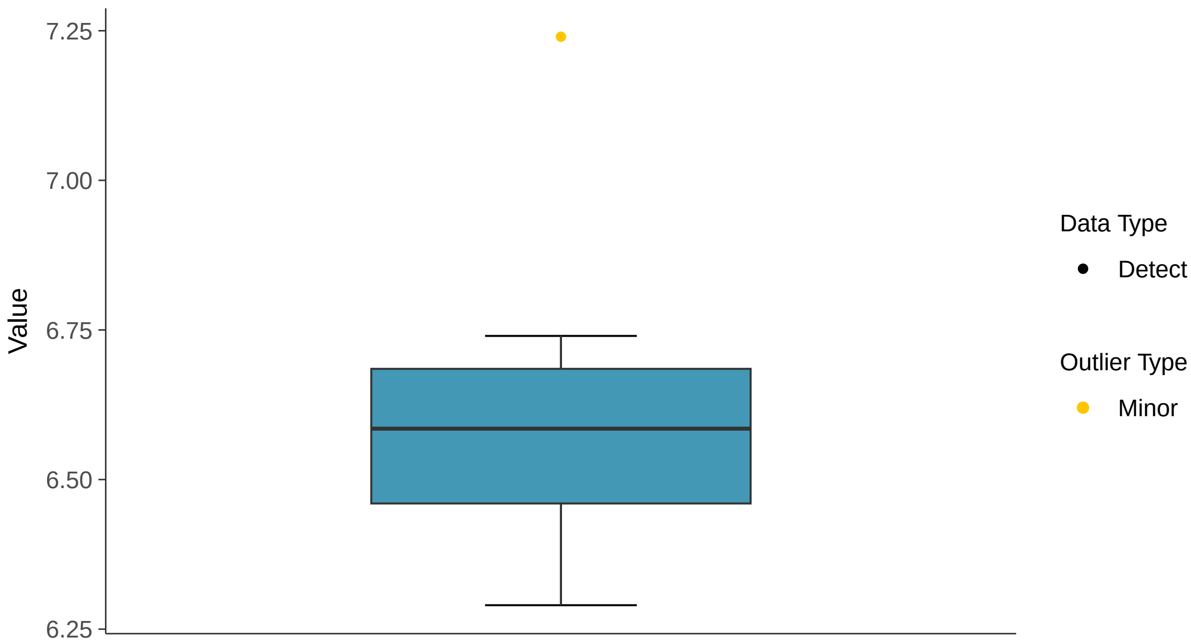
ID: 7C_1_01





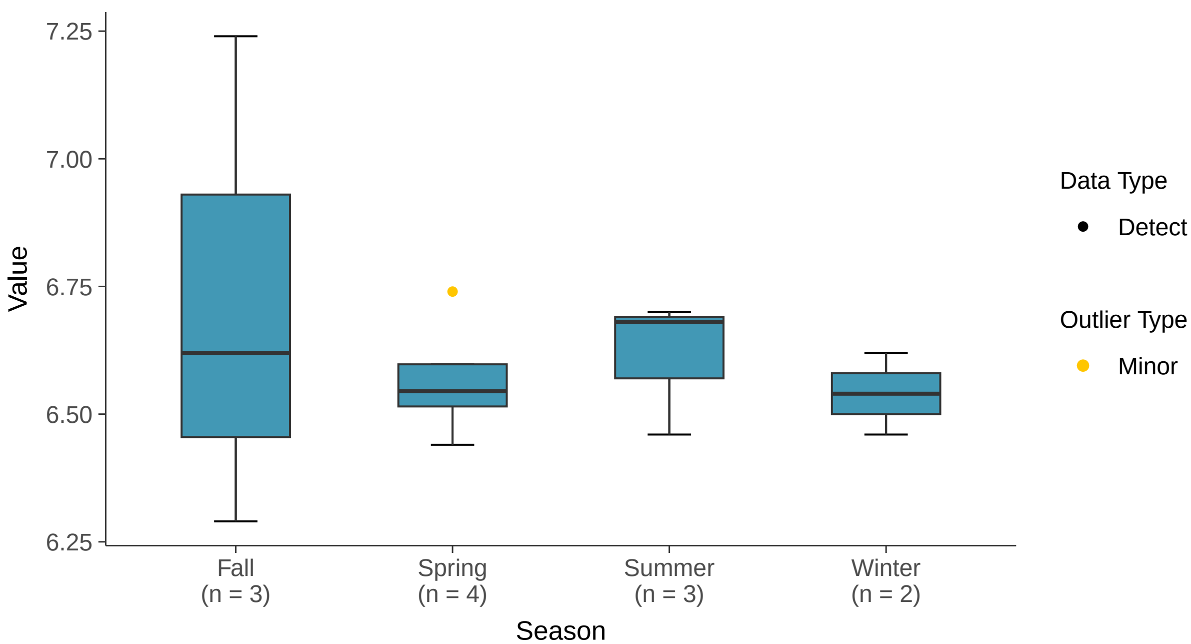
Boxplot

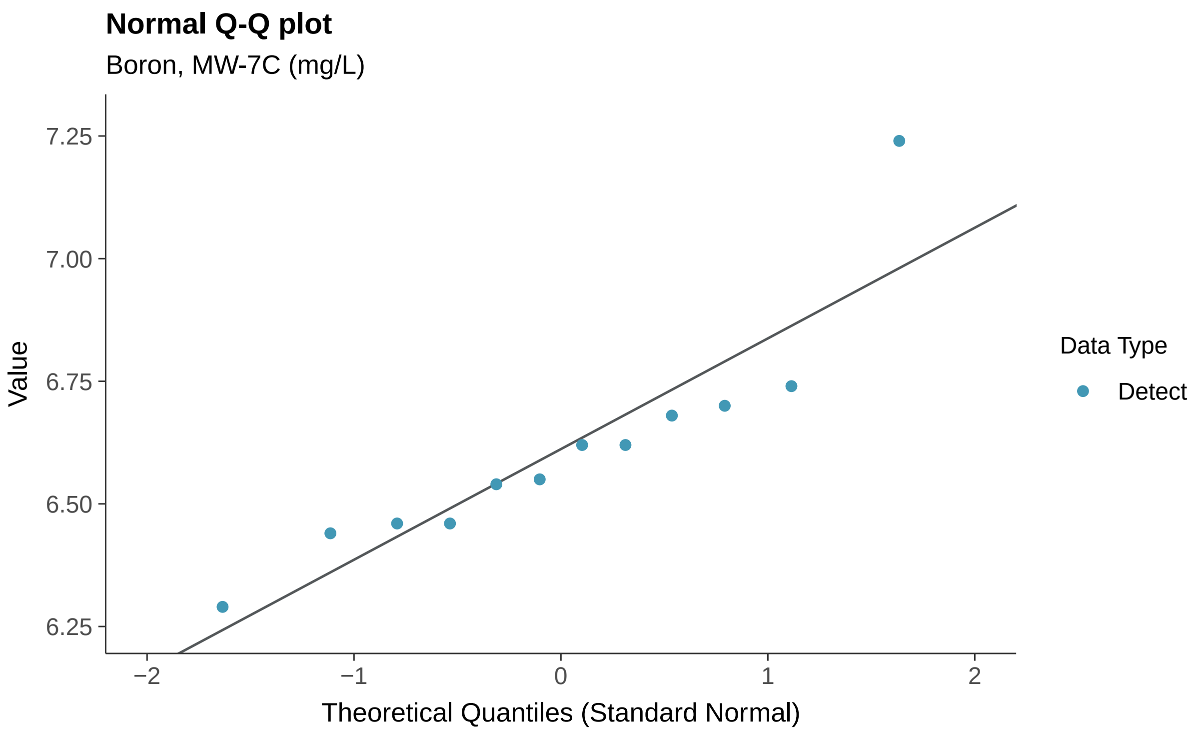
Boron, MW-7C (mg/L)

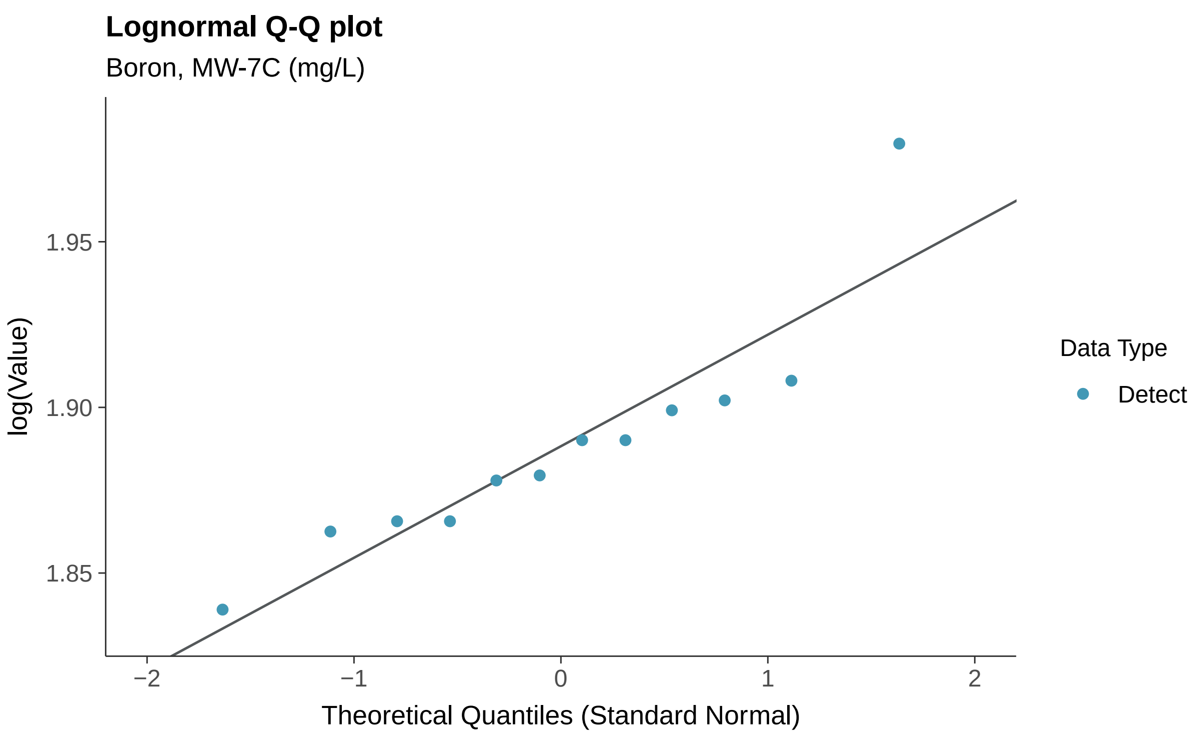


Boxplot by Season

Boron, MW-7C (mg/L)

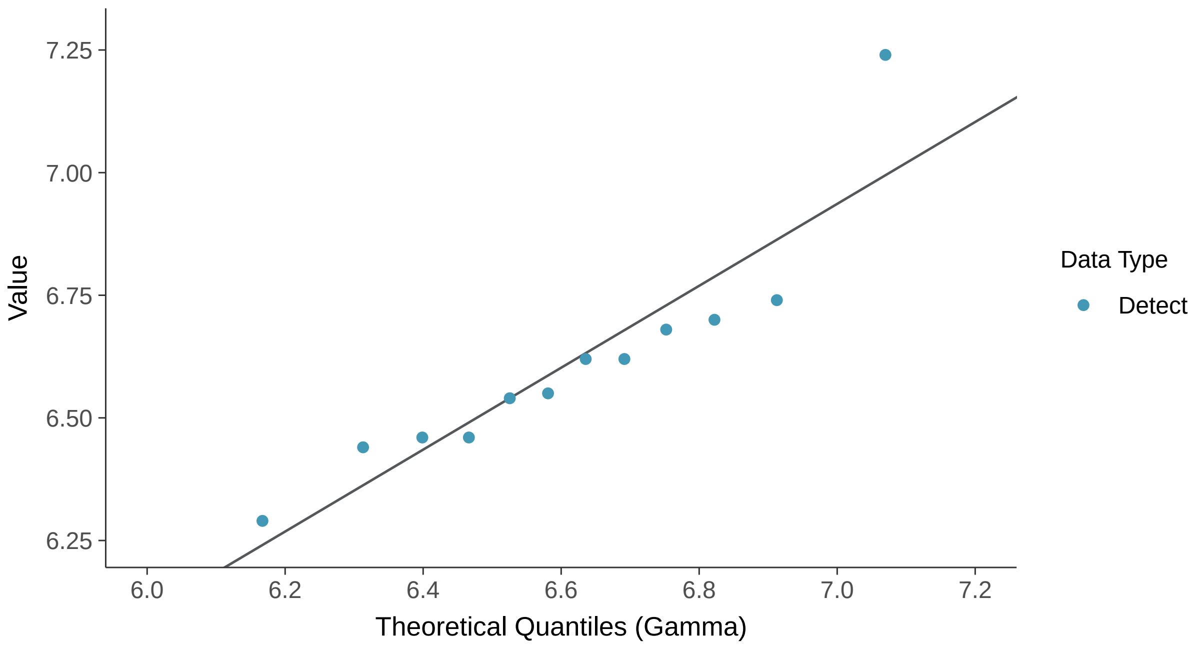



Normal Q-Q plot
Boron, MW-7C (mg/L)
Value
7.25
7.00
6.75
6.50
6.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Boron, MW-7C (mg/L)
log(Value)
1.95
1.90
1.85
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

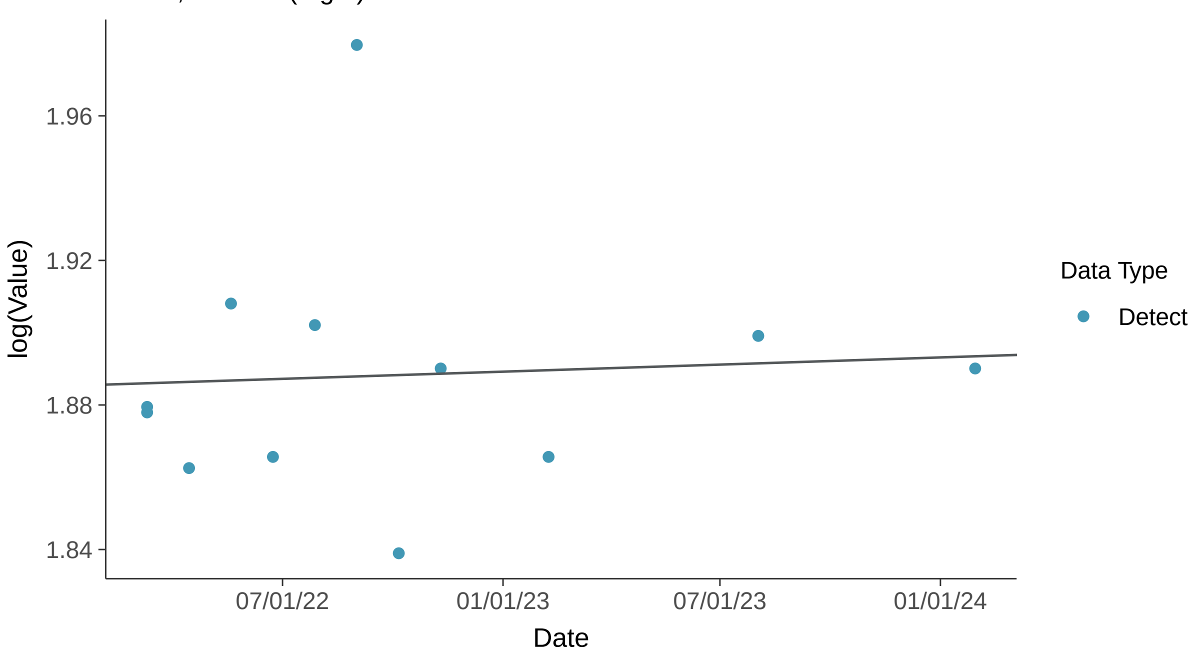
Gamma Q-Q plot

Boron, MW-7C (mg/L)



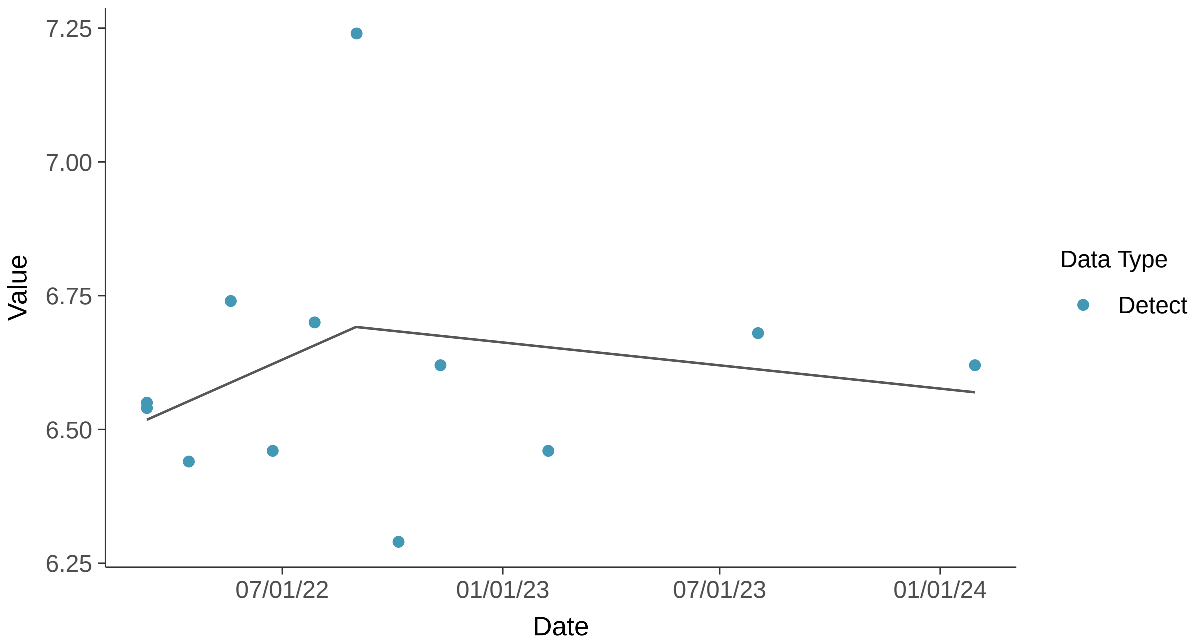
Trend Regression: Lognormal MLE

Boron, MW-7C (mg/L)



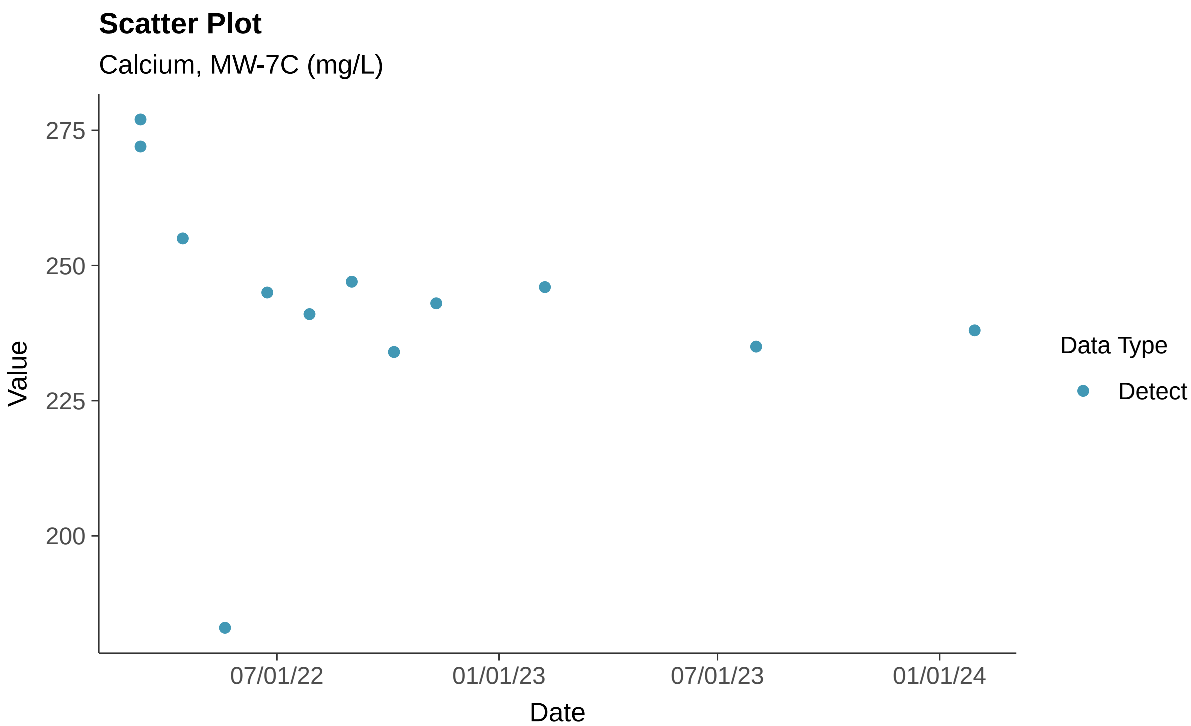
Trend Regression: Piecewise Linear-Linear

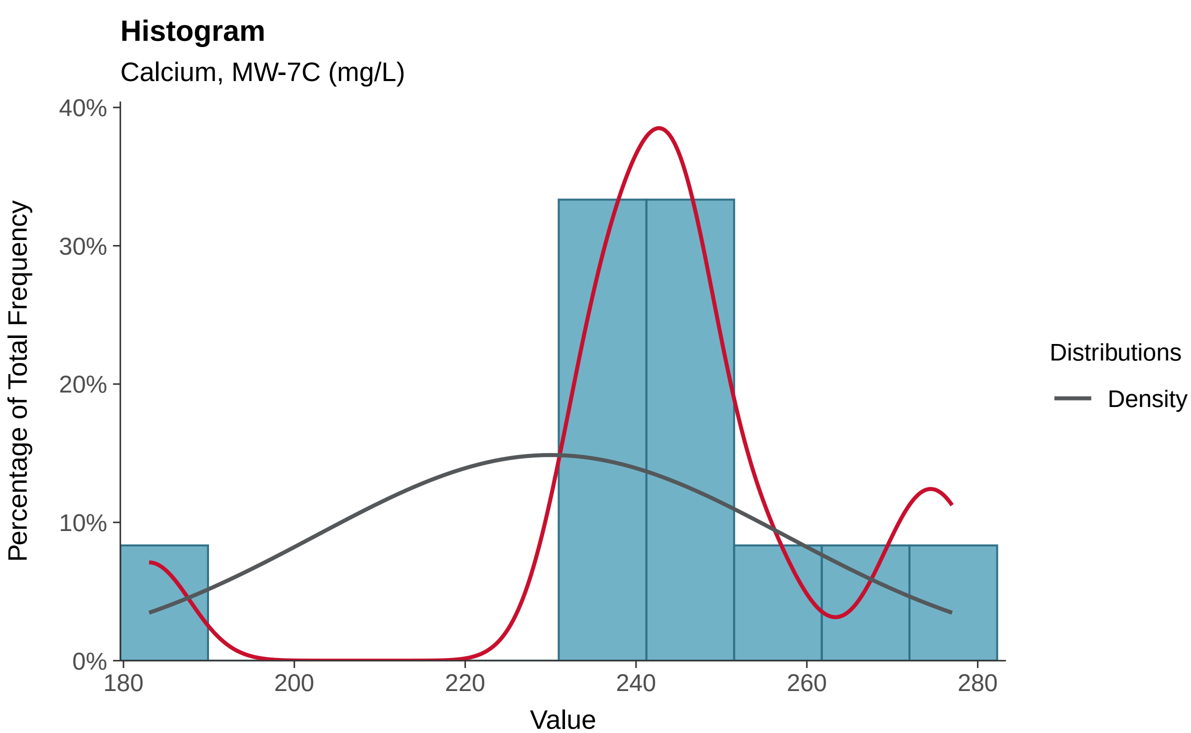
Boron, MW-7C (mg/L)



Appendix III: Calcium, MW-7C

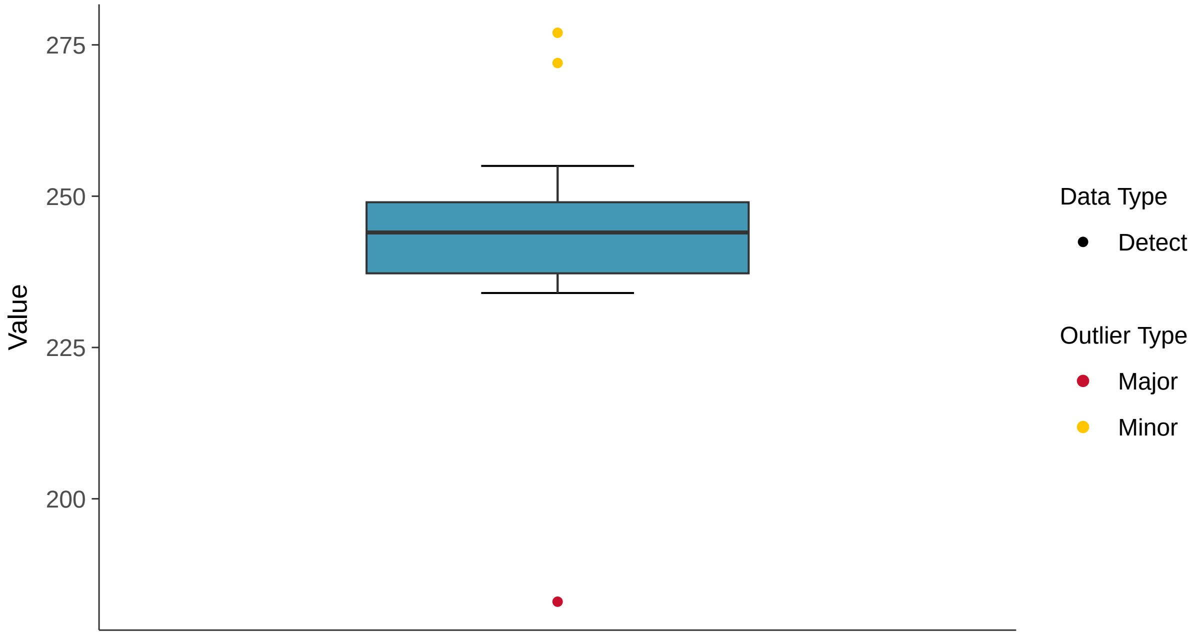
ID: 7C_1_02





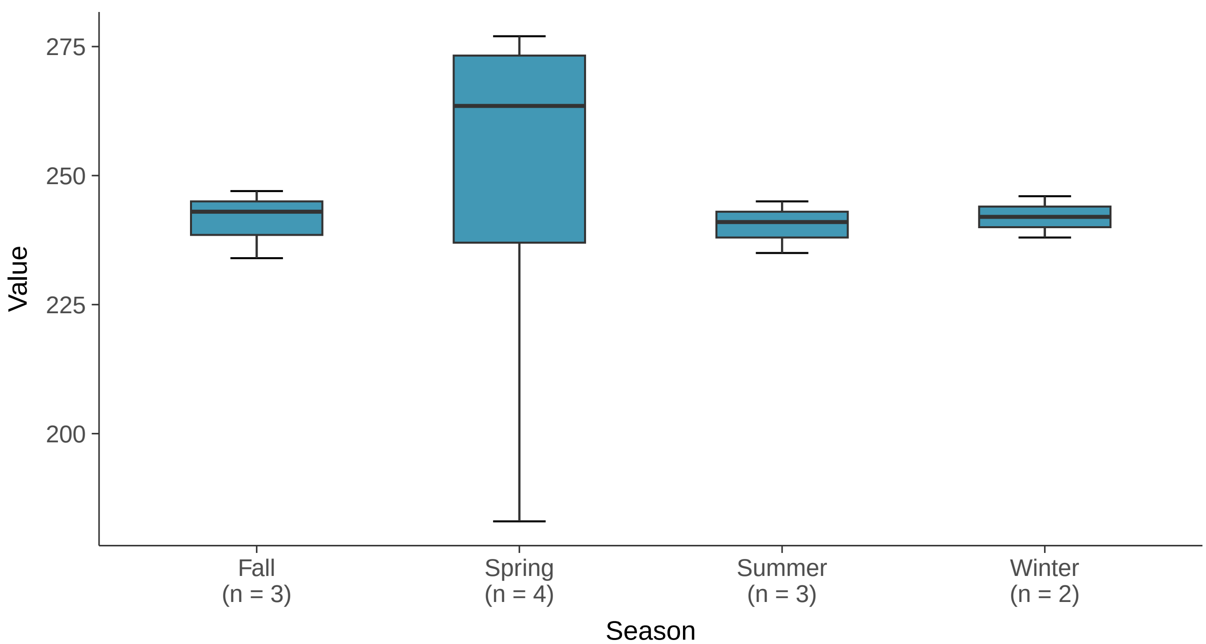
Boxplot

Calcium, MW-7C (mg/L)



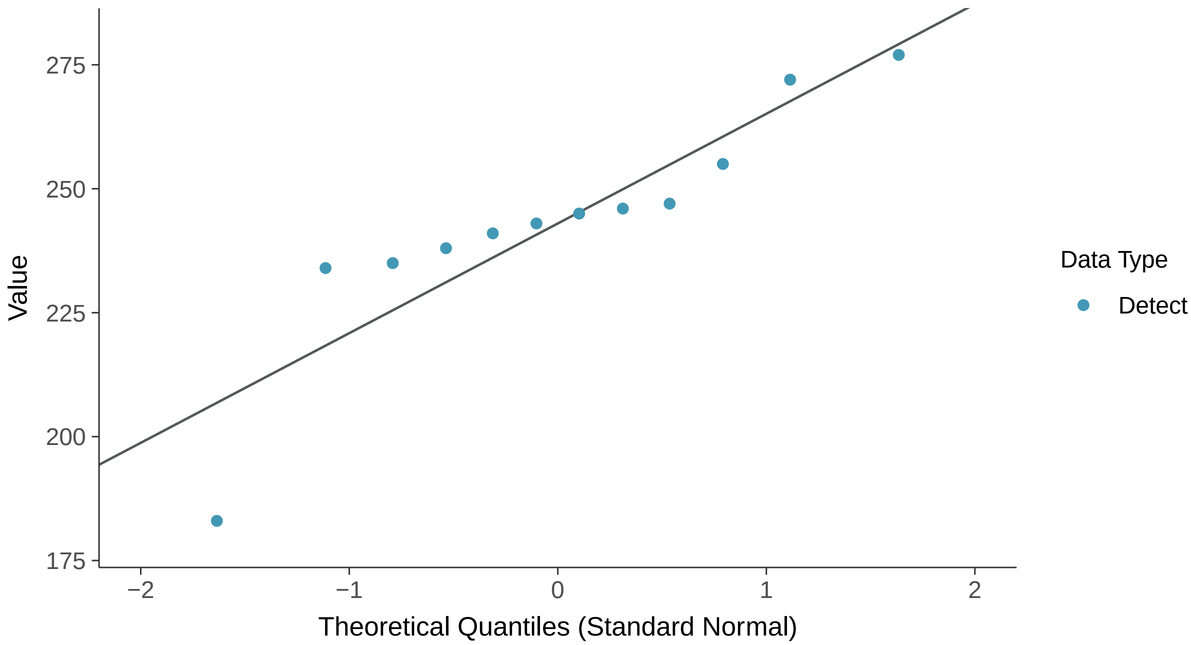
Boxplot by Season

Calcium, MW-7C (mg/L)



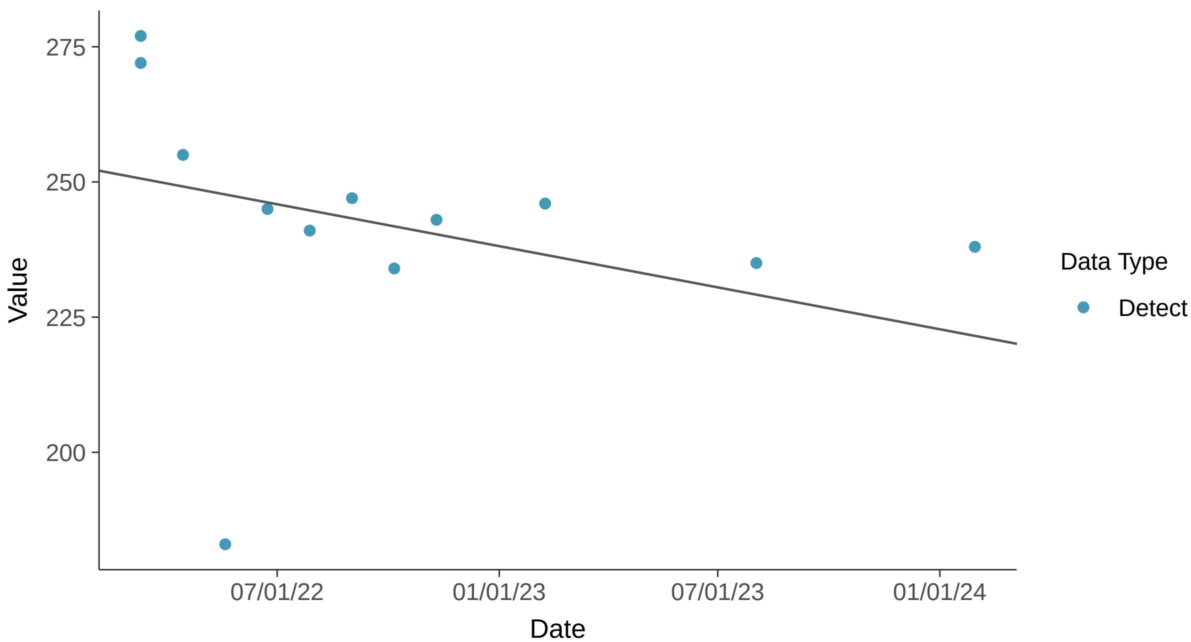
Normal Q-Q plot

Calcium, MW-7C (mg/L)



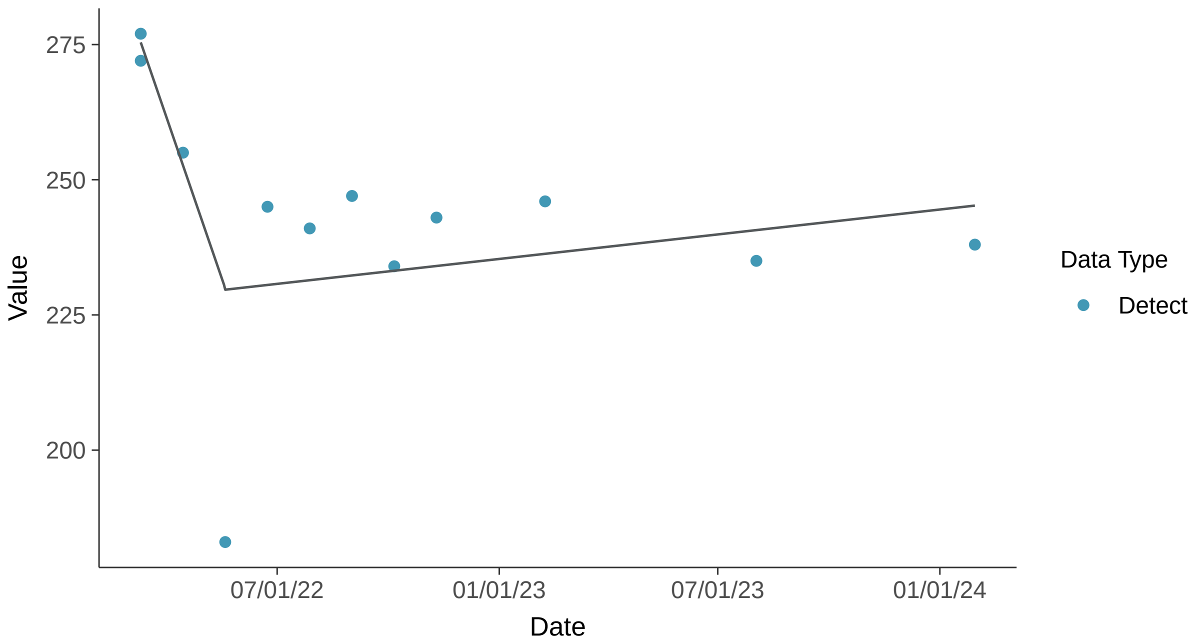
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Calcium, MW-7C (mg/L)



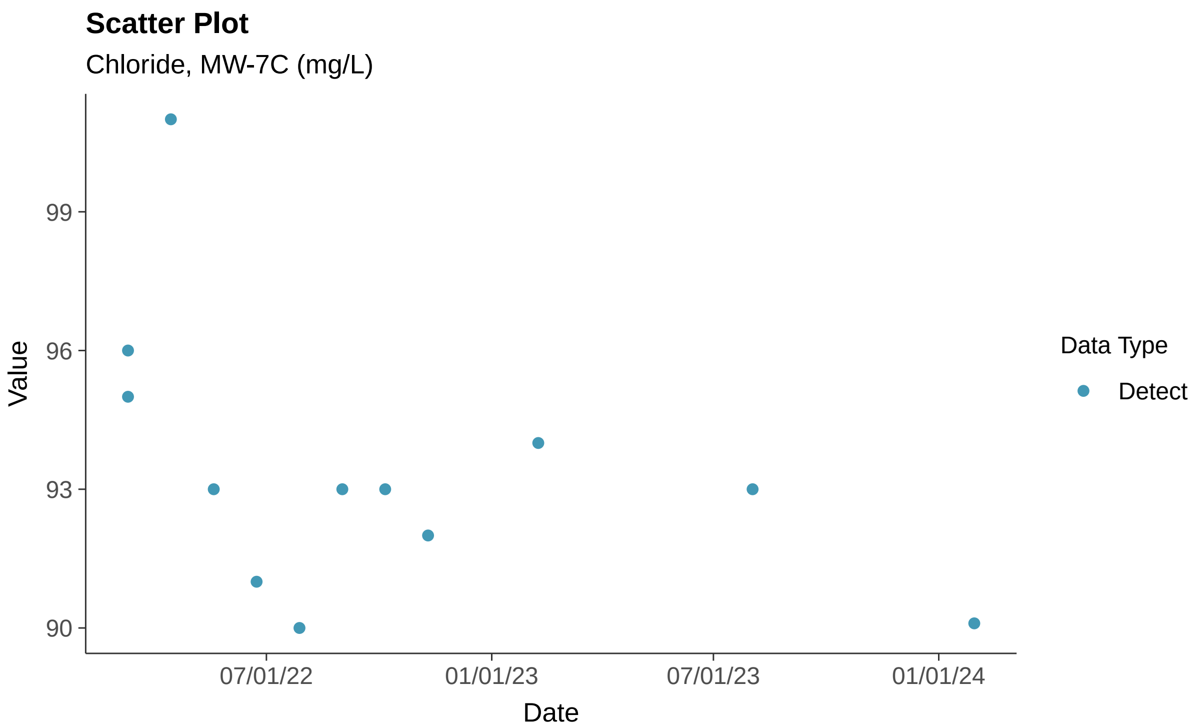
Trend Regression: Piecewise Linear-Linear

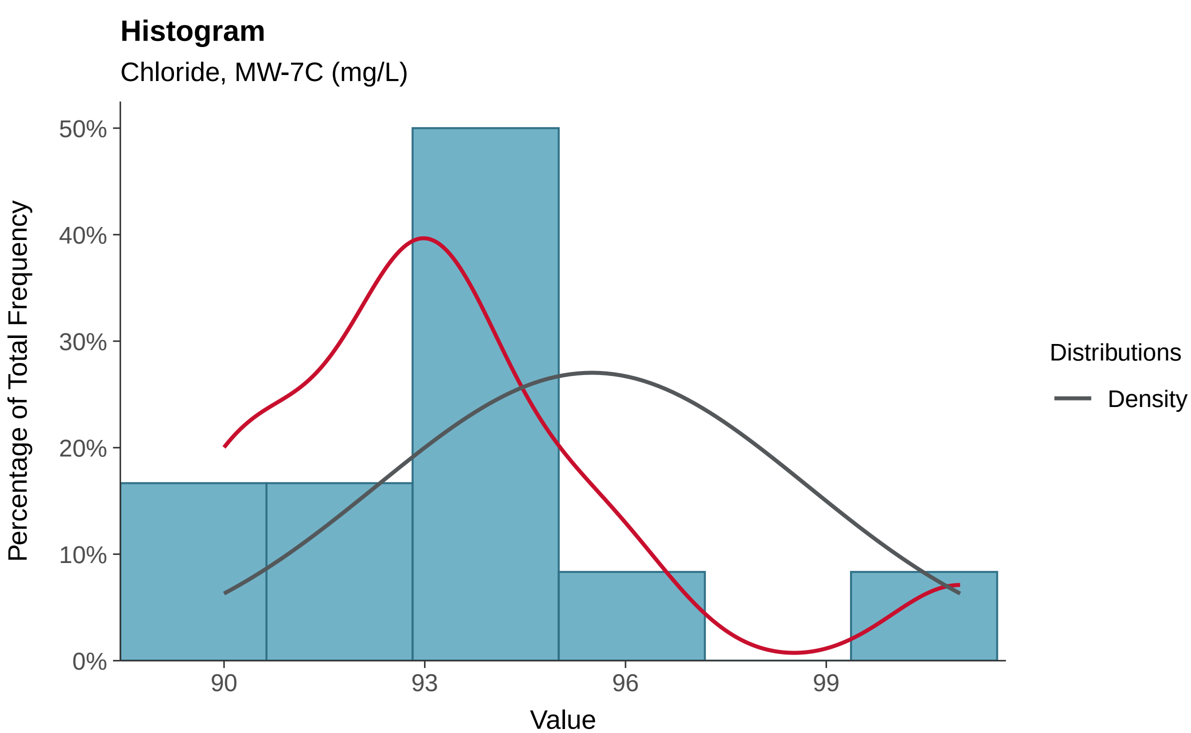
Calcium, MW-7C (mg/L)



Appendix III: Chloride, MW-7C

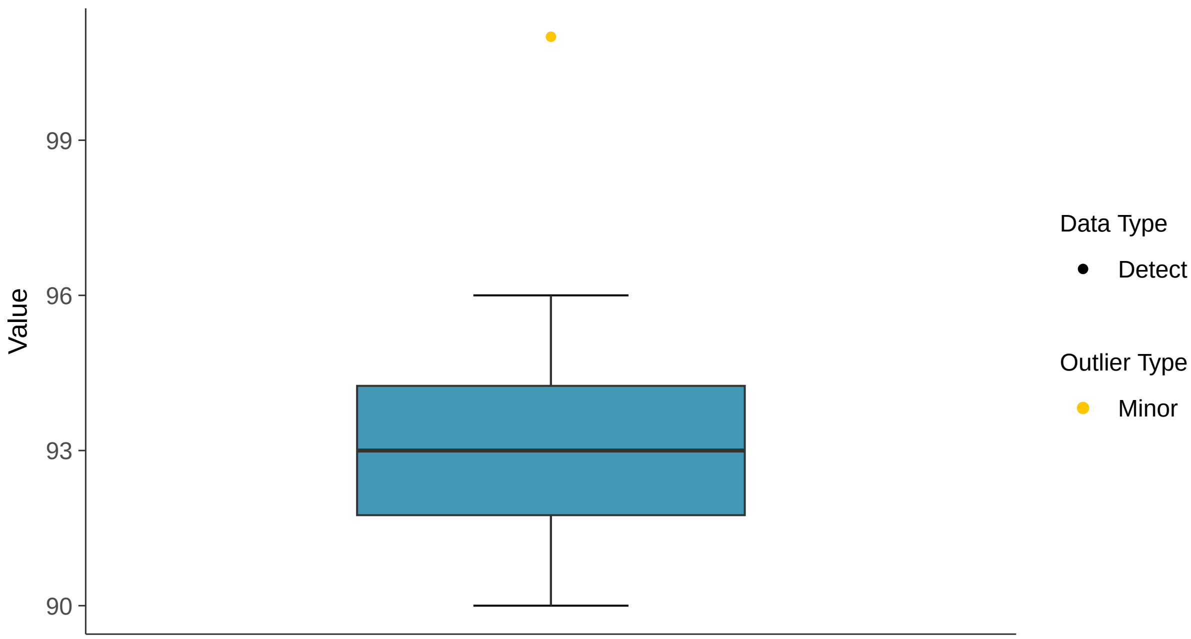
ID: 7C_1_03





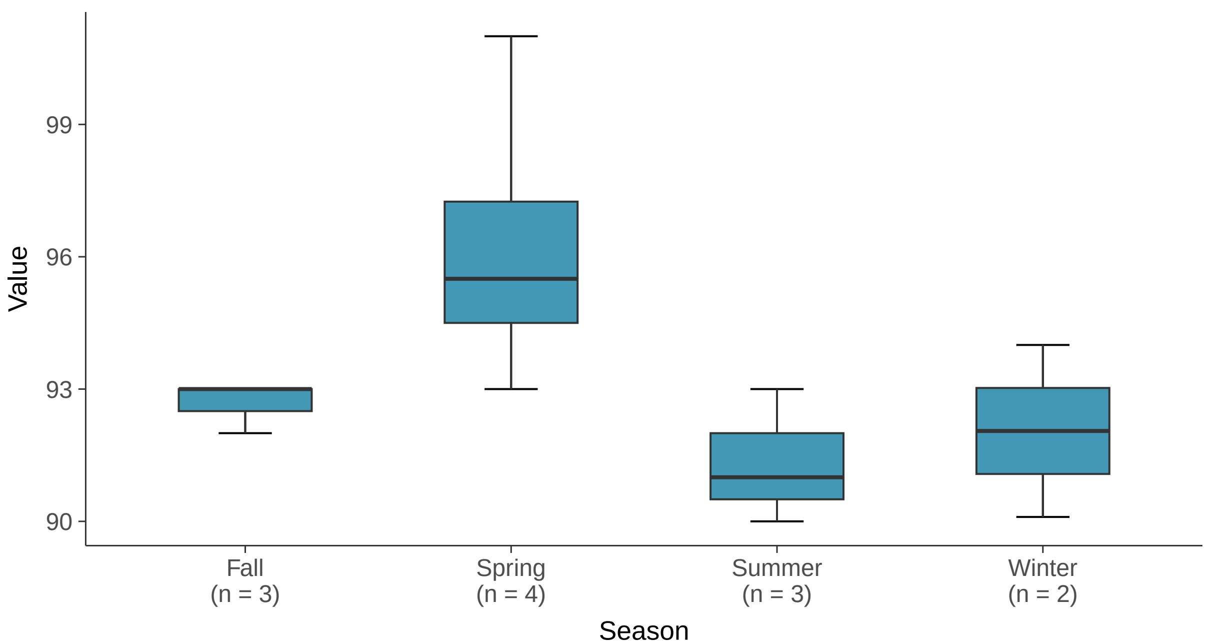
Boxplot

Chloride, MW-7C (mg/L)



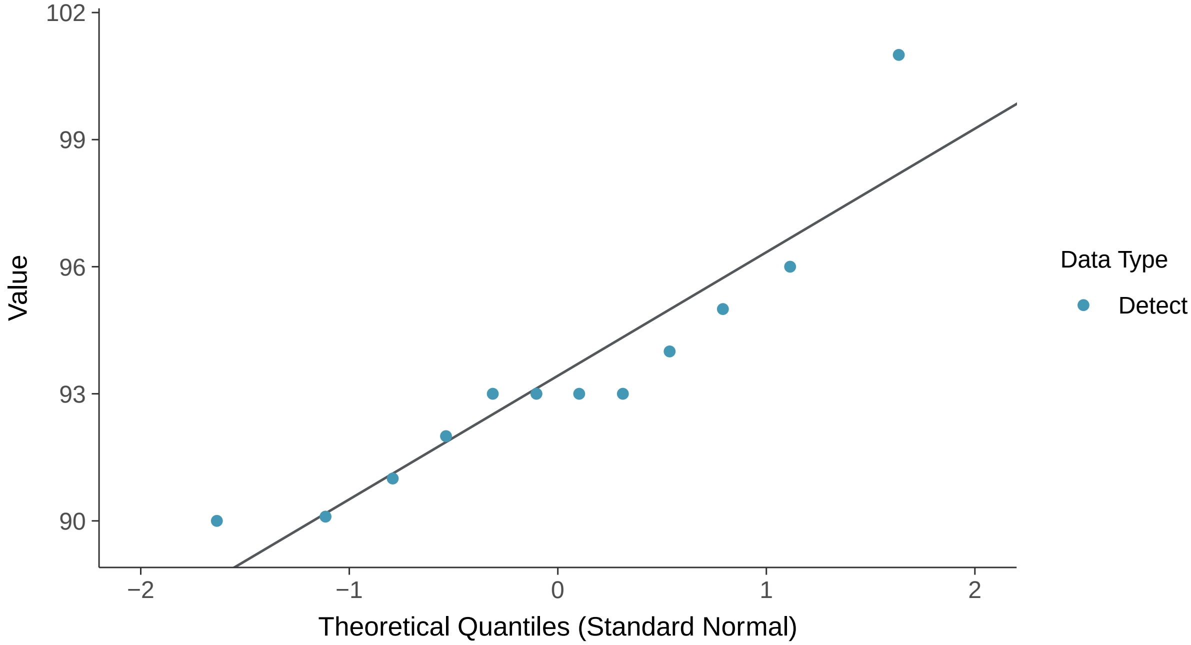
Boxplot by Season

Chloride, MW-7C (mg/L)



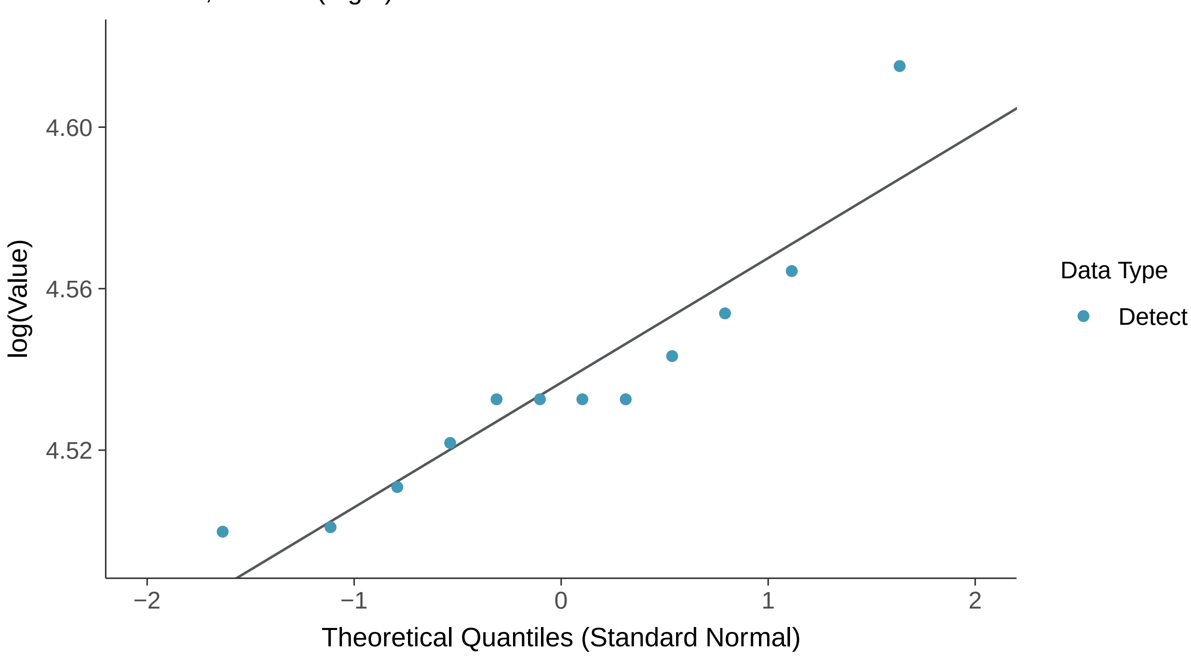
Normal Q-Q plot

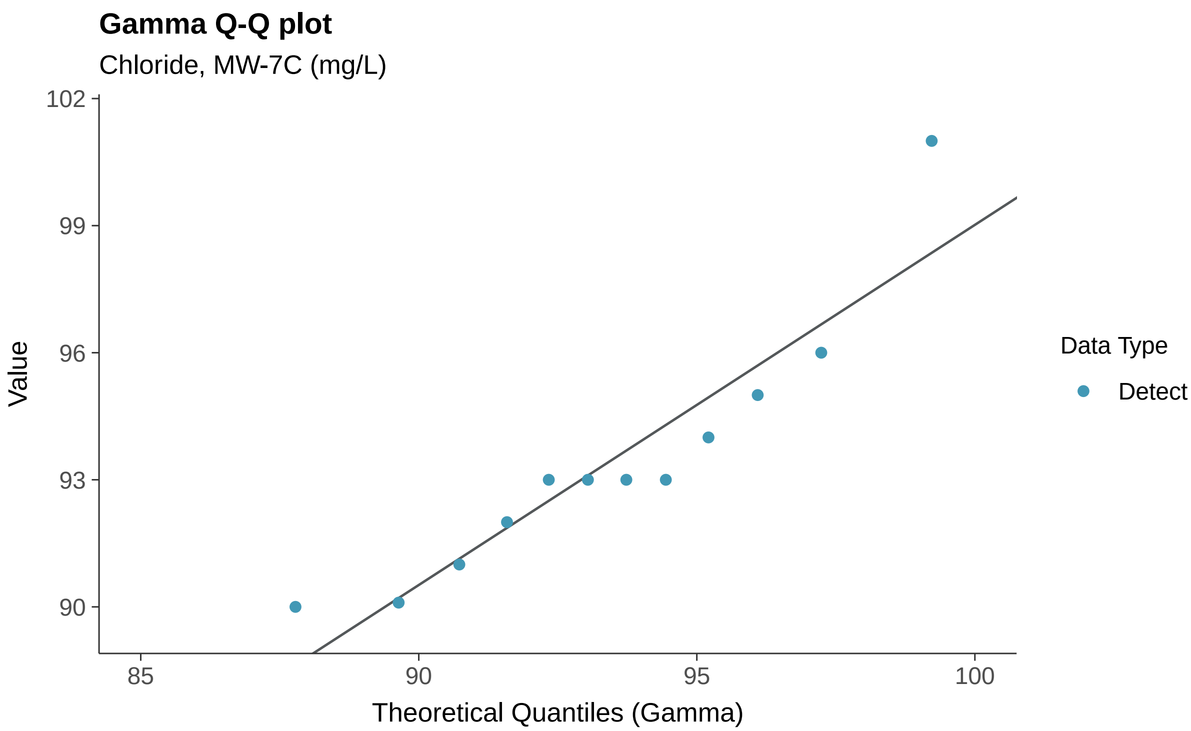
Chloride, MW-7C (mg/L)

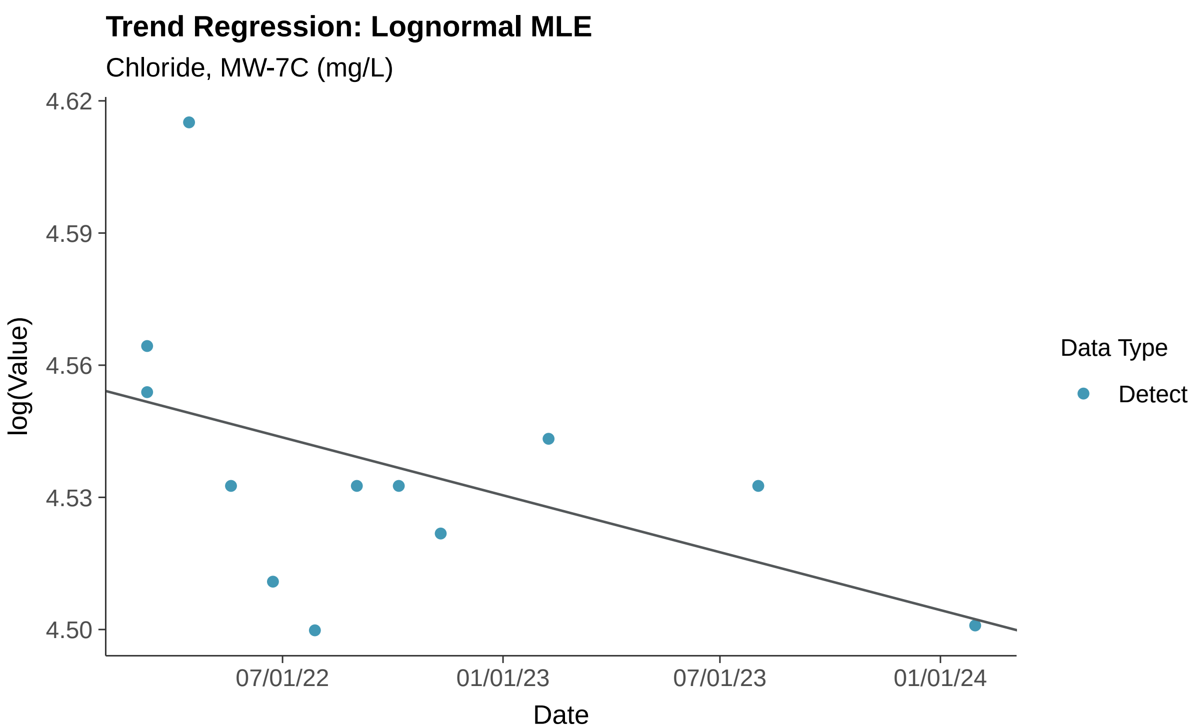


Lognormal Q-Q plot

Chloride, MW-7C (mg/L)

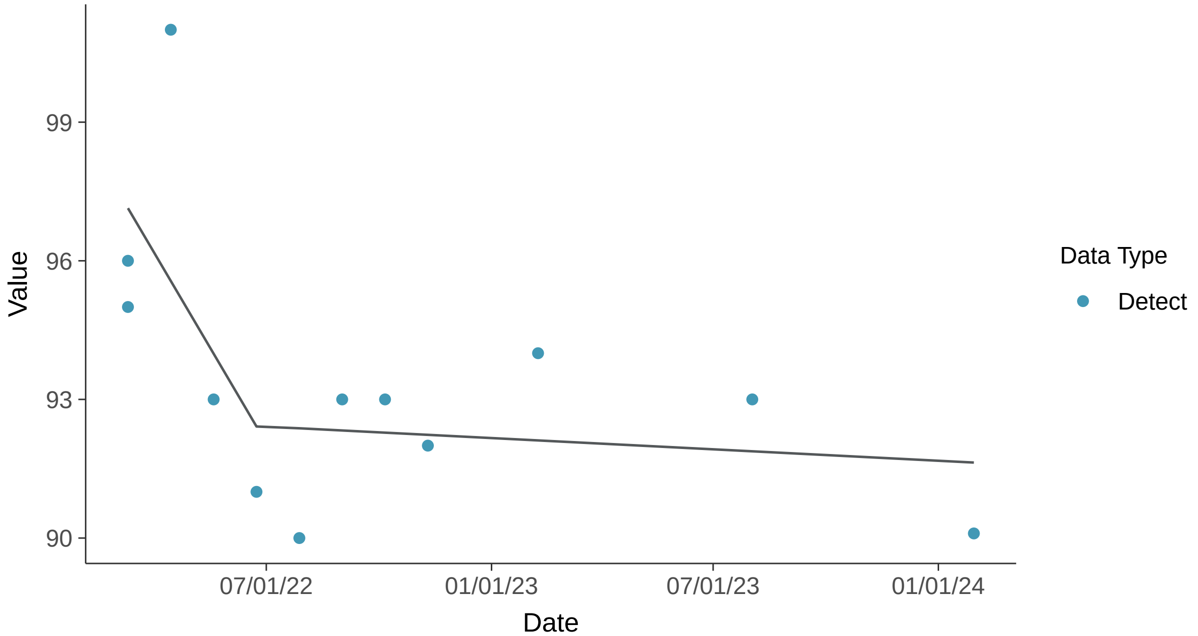



Gamma Q-Q plot
Chloride, MW-7C (mg/L)
Value
102
99
96
93
90
85
90
95
100
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Chloride, MW-7C (mg/L)
log(Value)
4.62
4.59
4.56
4.53
4.50
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

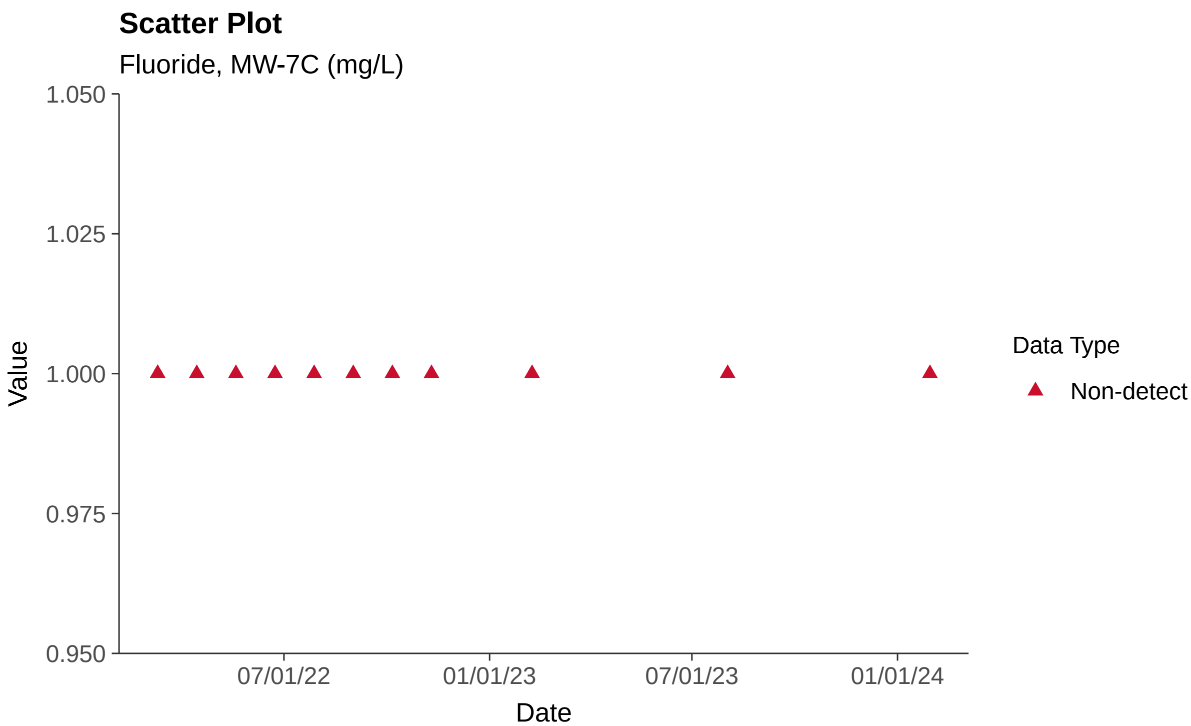
Trend Regression: Piecewise Linear-Linear

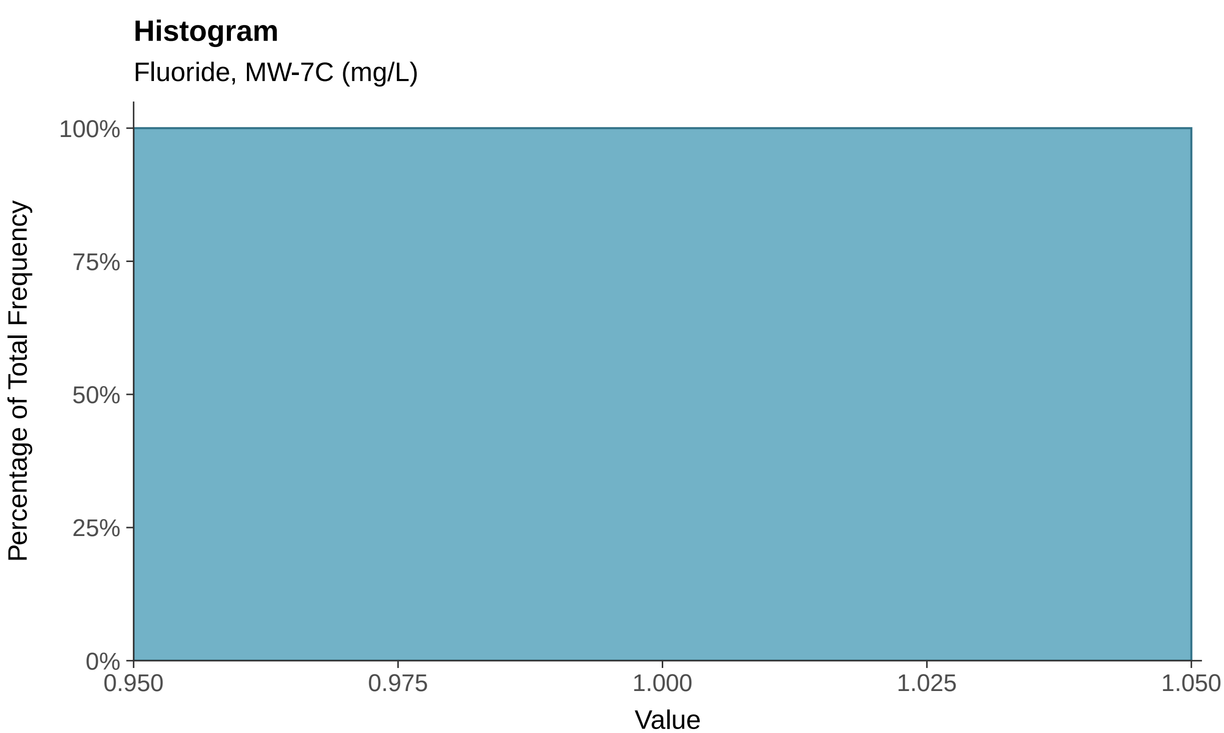
Chloride, MW-7C (mg/L)



Appendix III: Fluoride, MW-7C

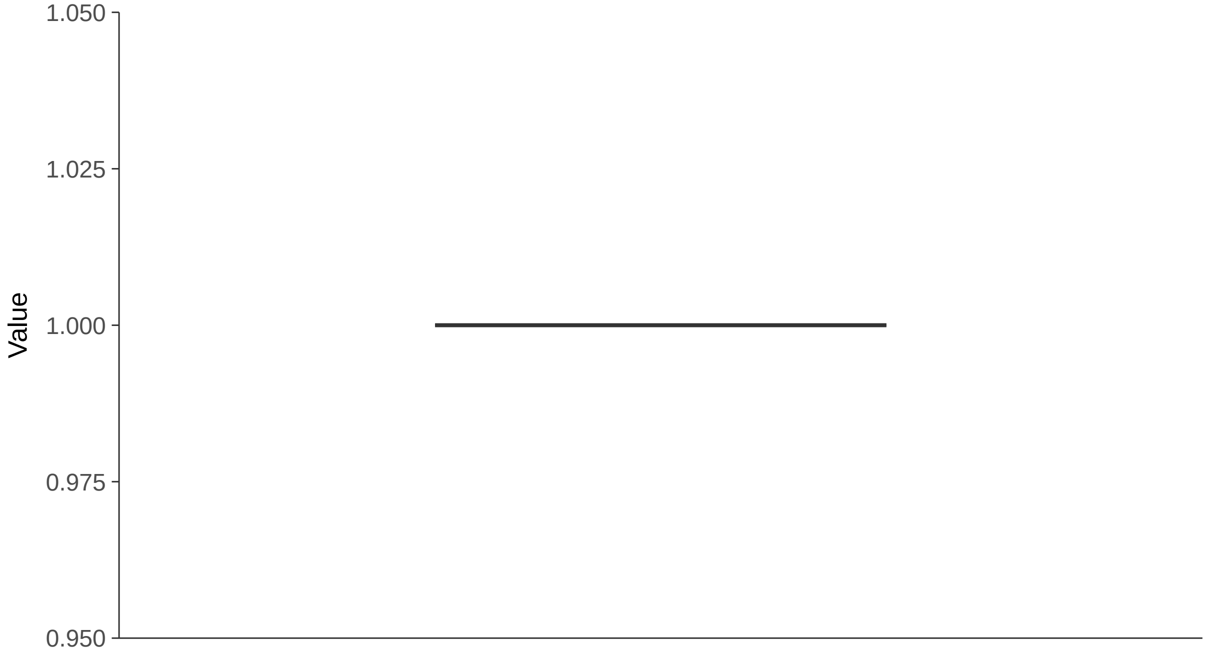
ID: 7C_1_04





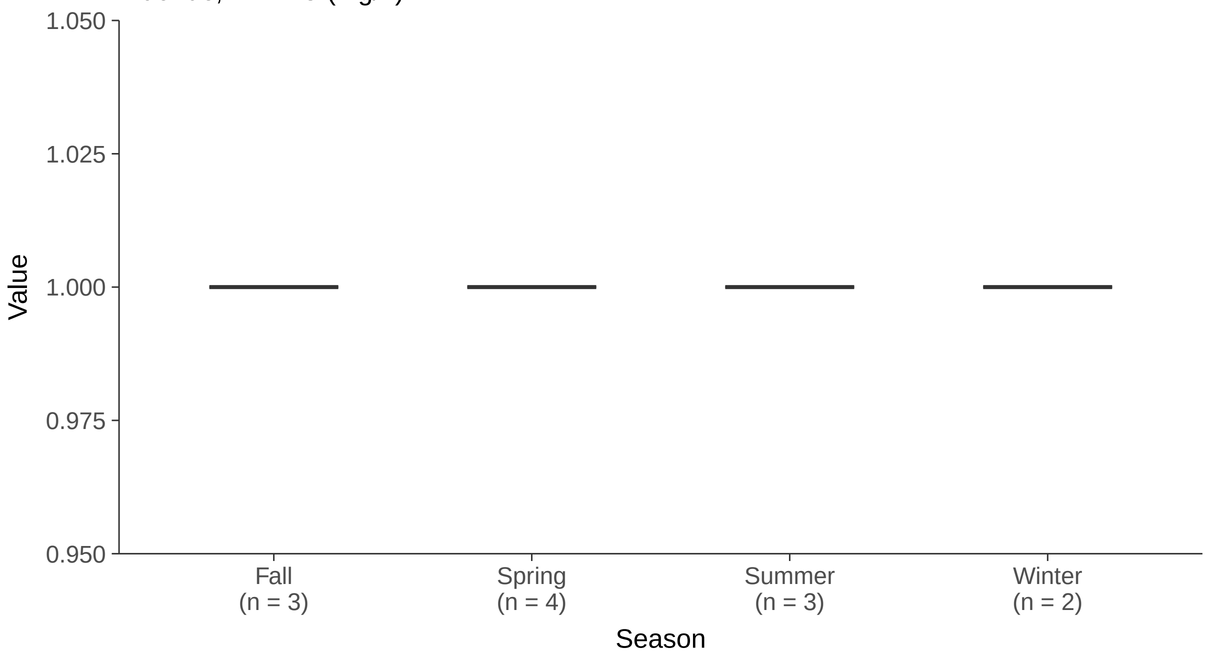
Boxplot

Fluoride, MW-7C (mg/L)



Boxplot by Season

Fluoride, MW-7C (mg/L)

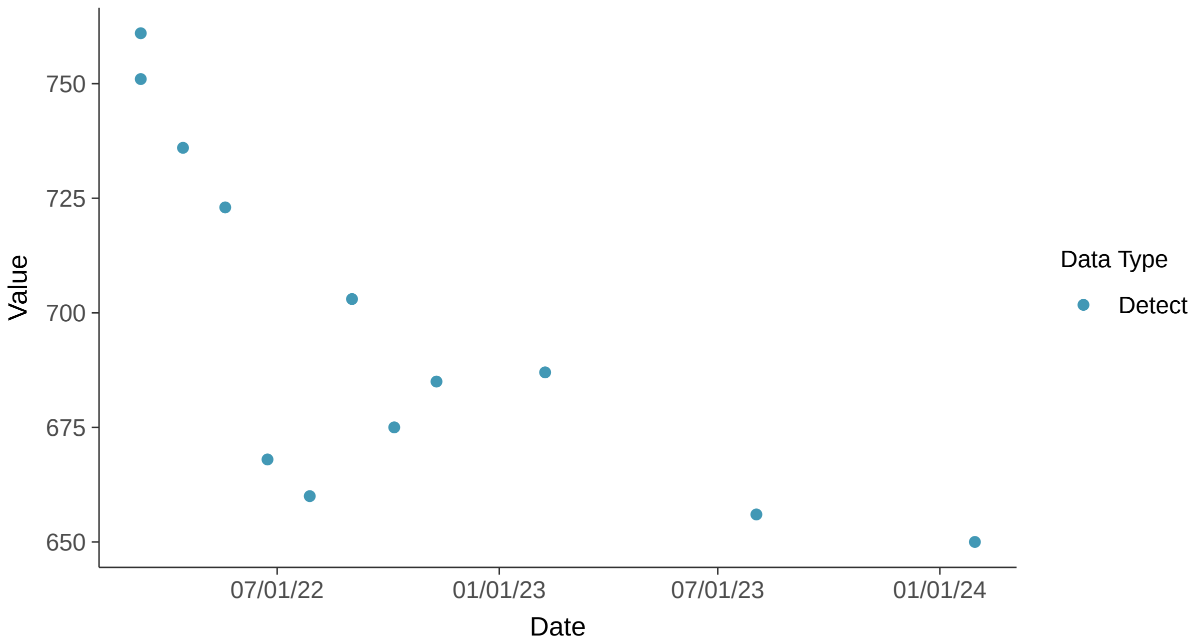


Appendix III: Sulfate, MW-7C

ID: 7C_1_05

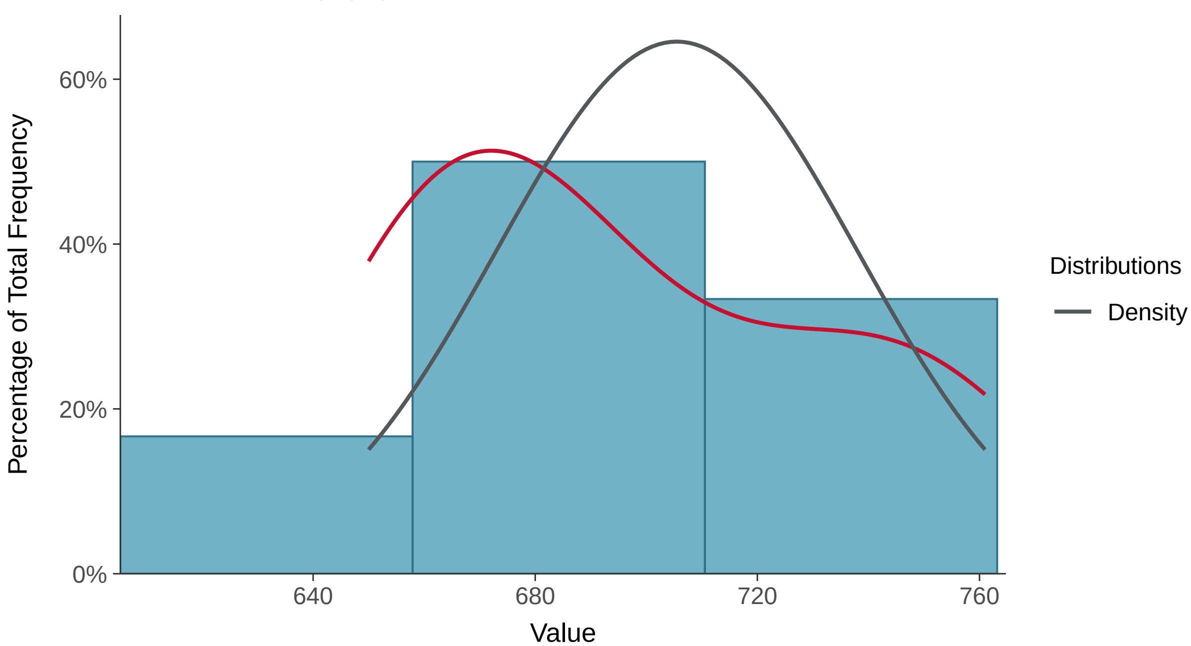
Scatter Plot

Sulfate, MW-7C (mg/L)



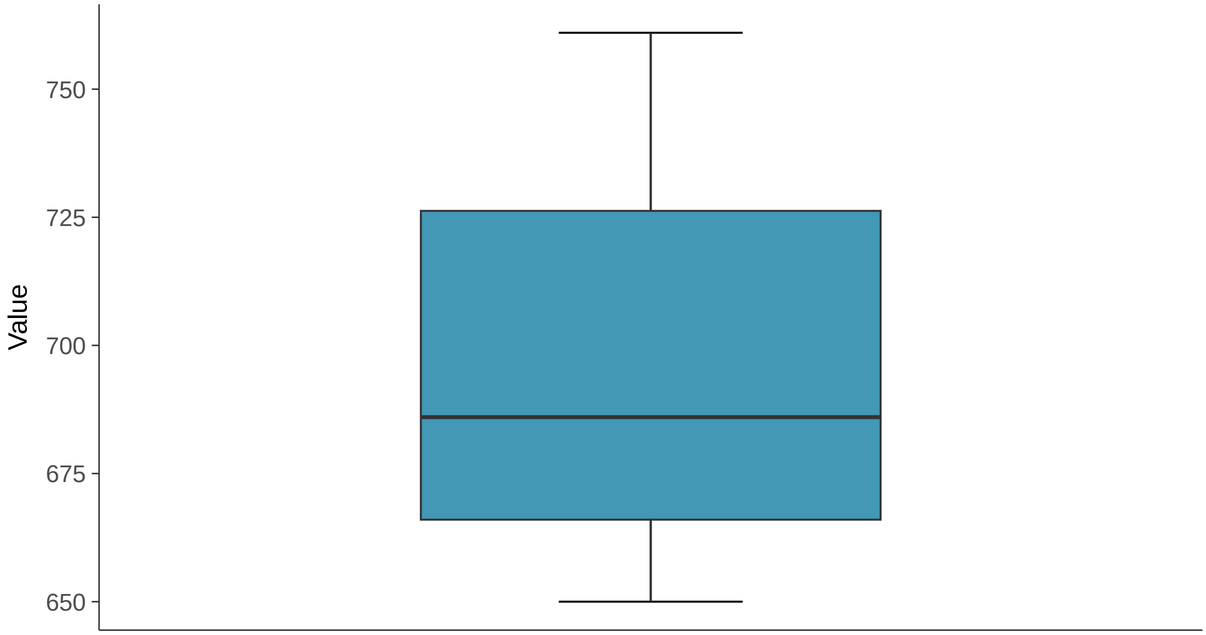
Histogram

Sulfate, MW-7C (mg/L)



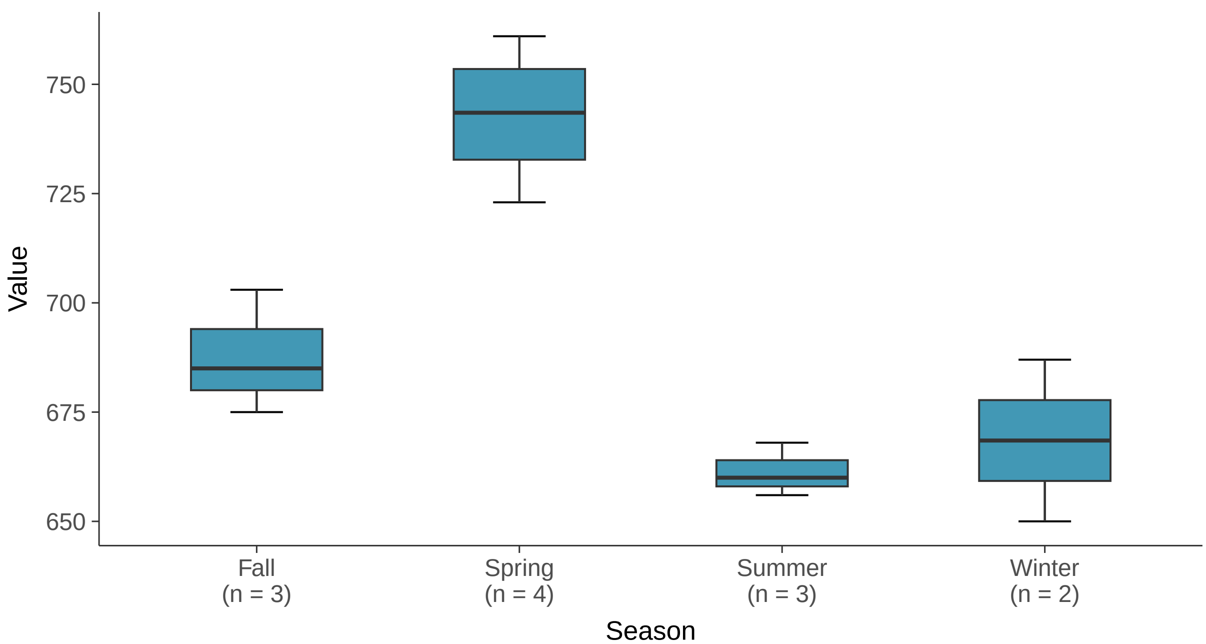
Boxplot

Sulfate, MW-7C (mg/L)



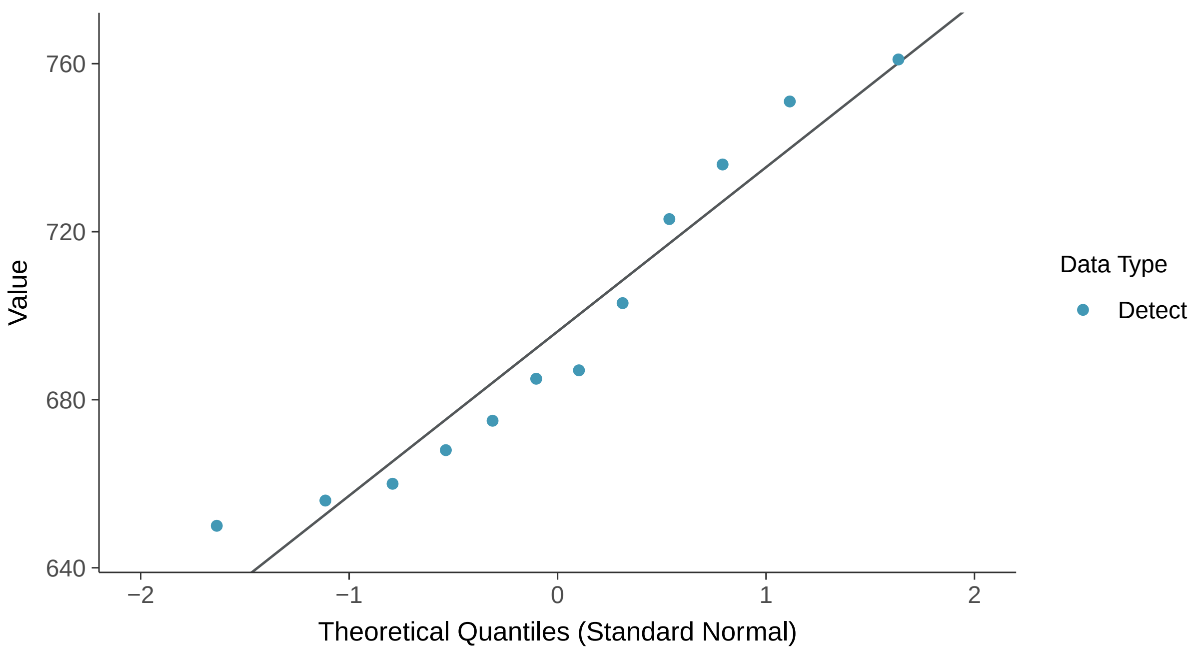
Boxplot by Season

Sulfate, MW-7C (mg/L)



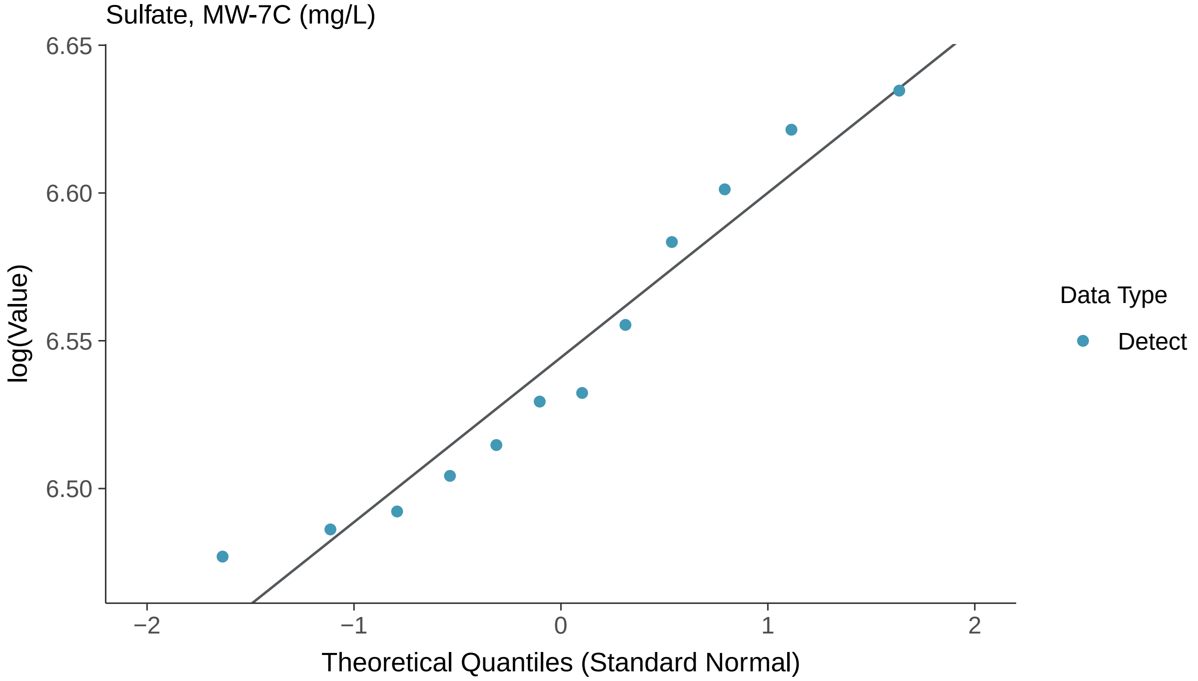
Normal Q-Q plot

Sulfate, MW-7C (mg/L)



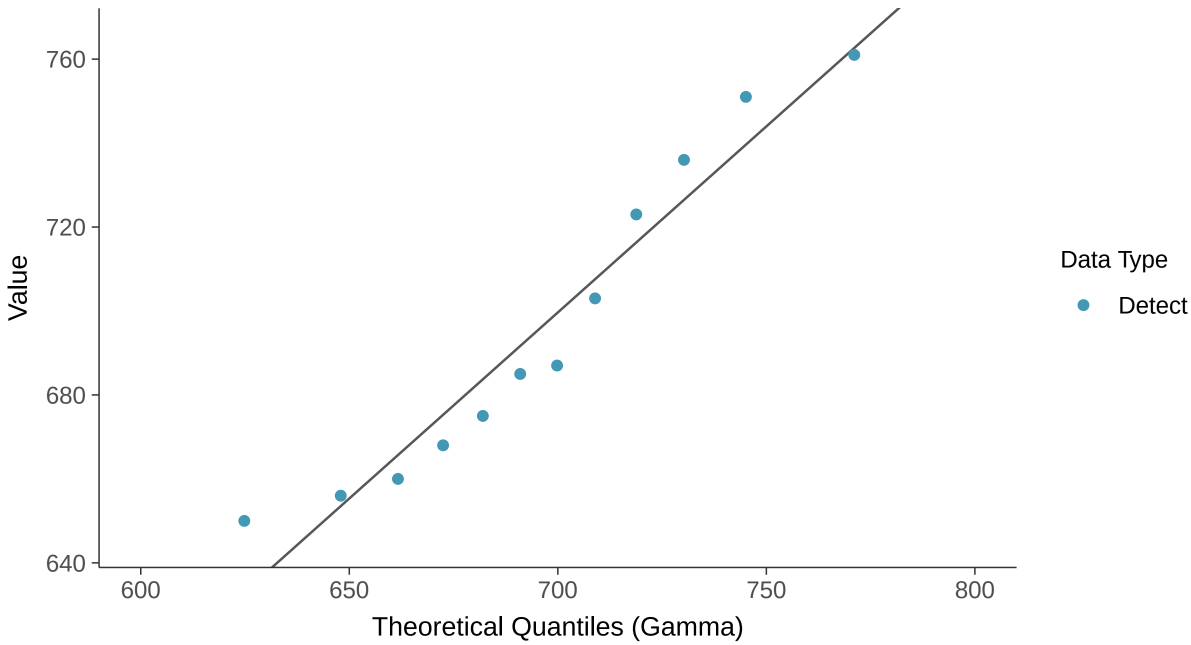
Lognormal Q-Q plot

Sulfate, MW-7C (mg/L)



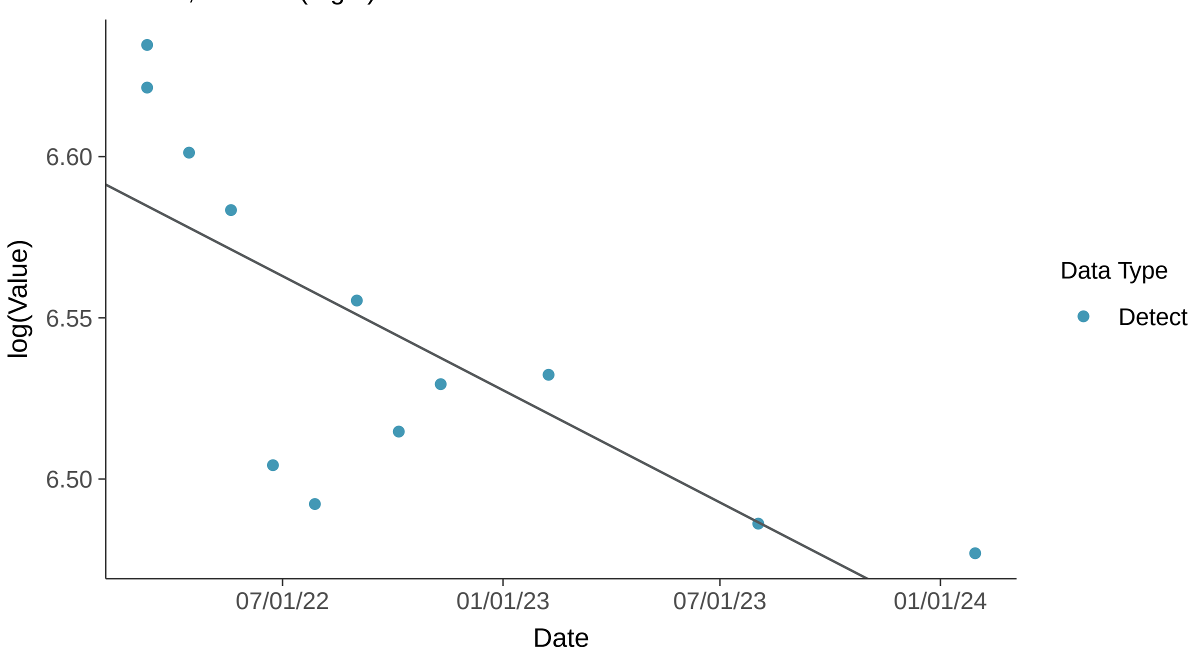
Gamma Q-Q plot

Sulfate, MW-7C (mg/L)



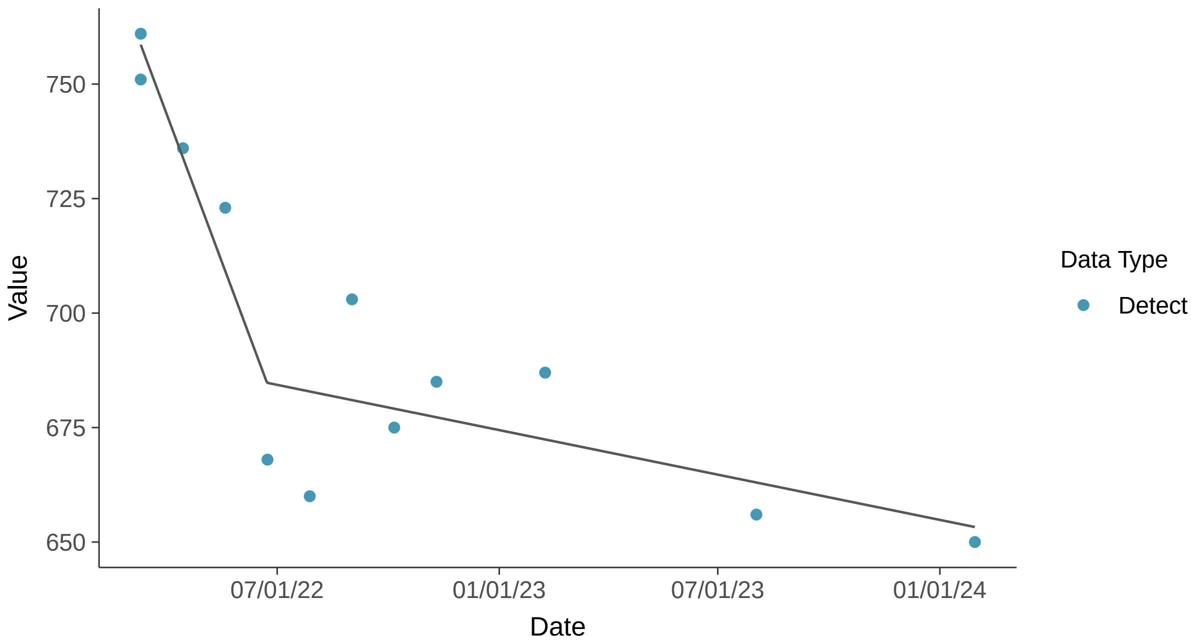
Trend Regression: Lognormal MLE

Sulfate, MW-7C (mg/L)



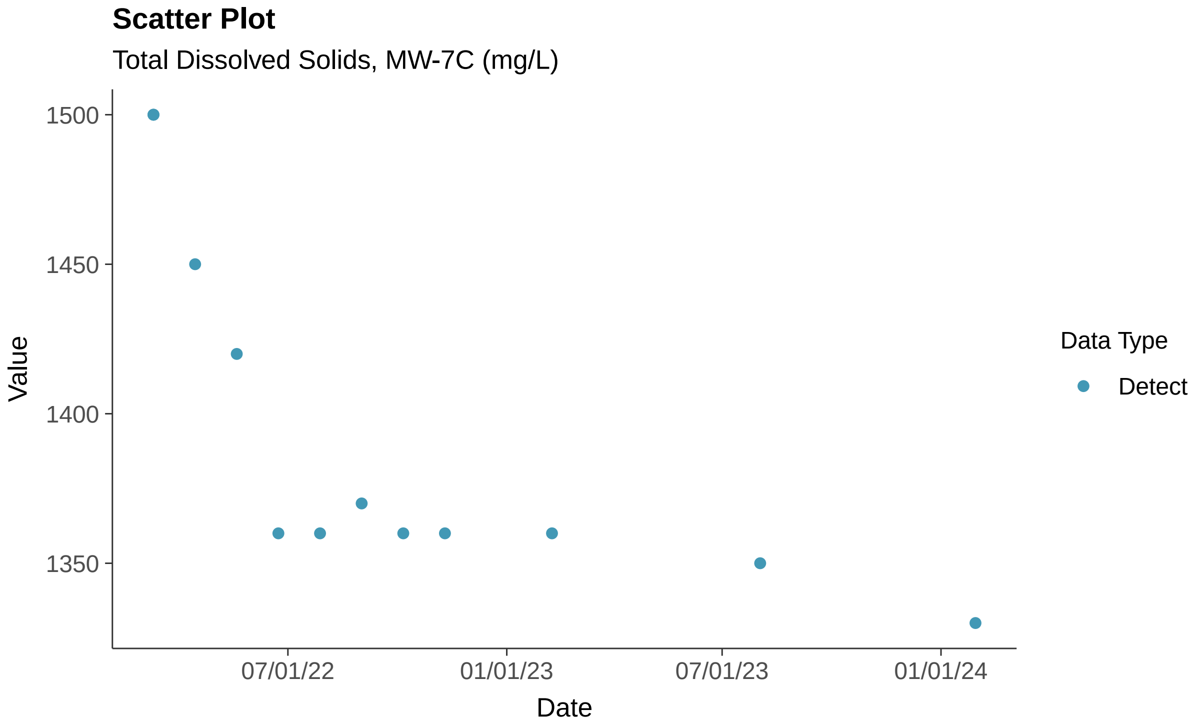
Trend Regression: Piecewise Linear-Linear

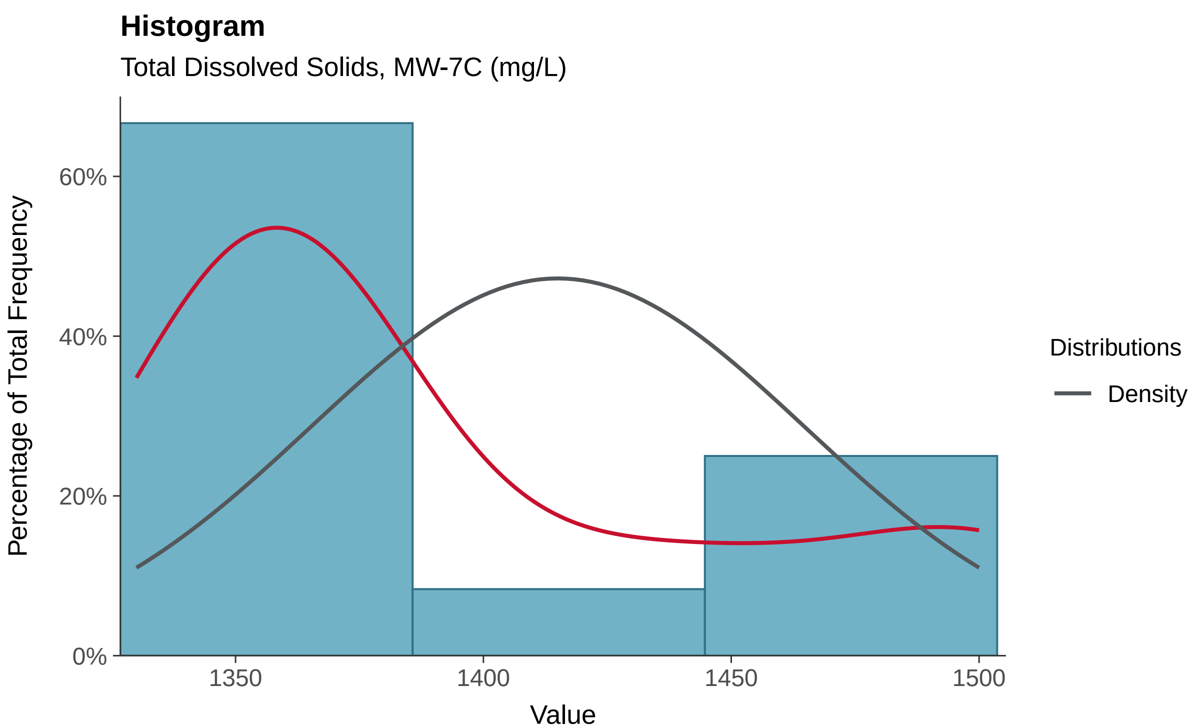
Sulfate, MW-7C (mg/L)



Appendix III: Total Dissolved Solids, MW-7C

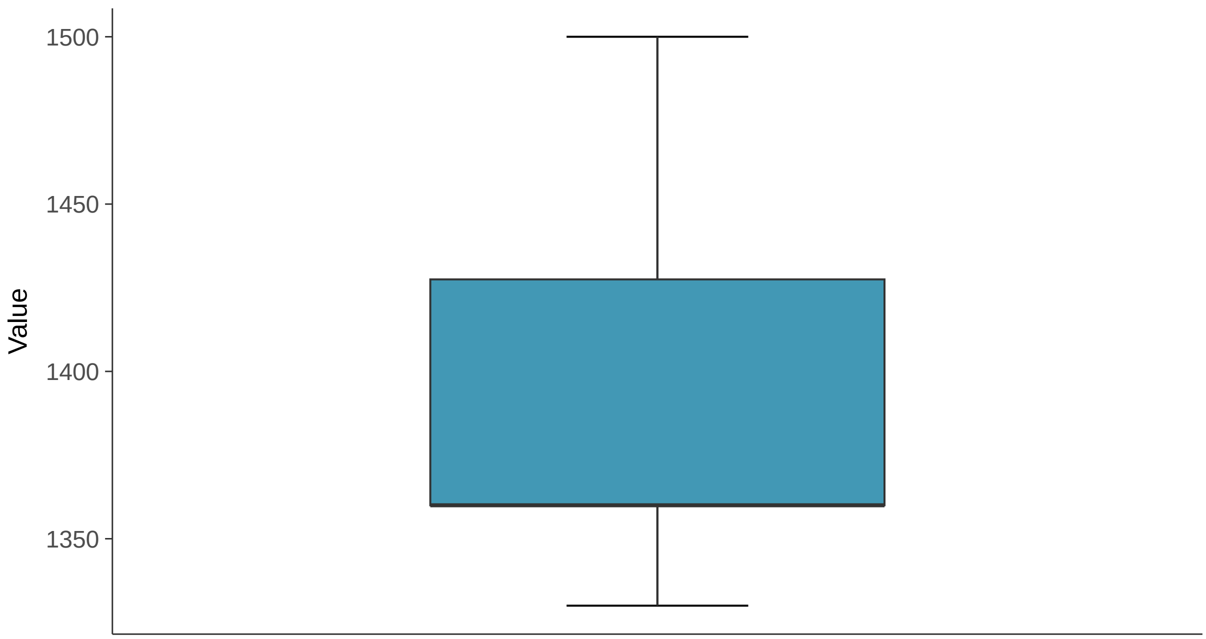
ID: 7C_1_06





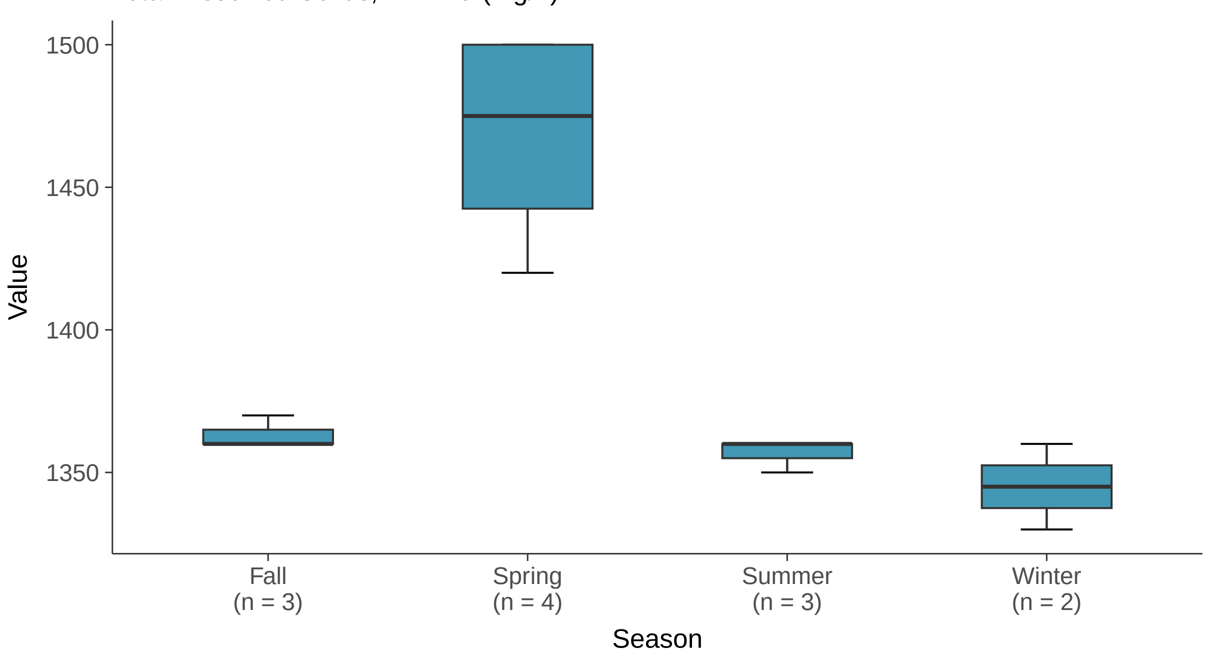
Boxplot

Total Dissolved Solids, MW-7C (mg/L)



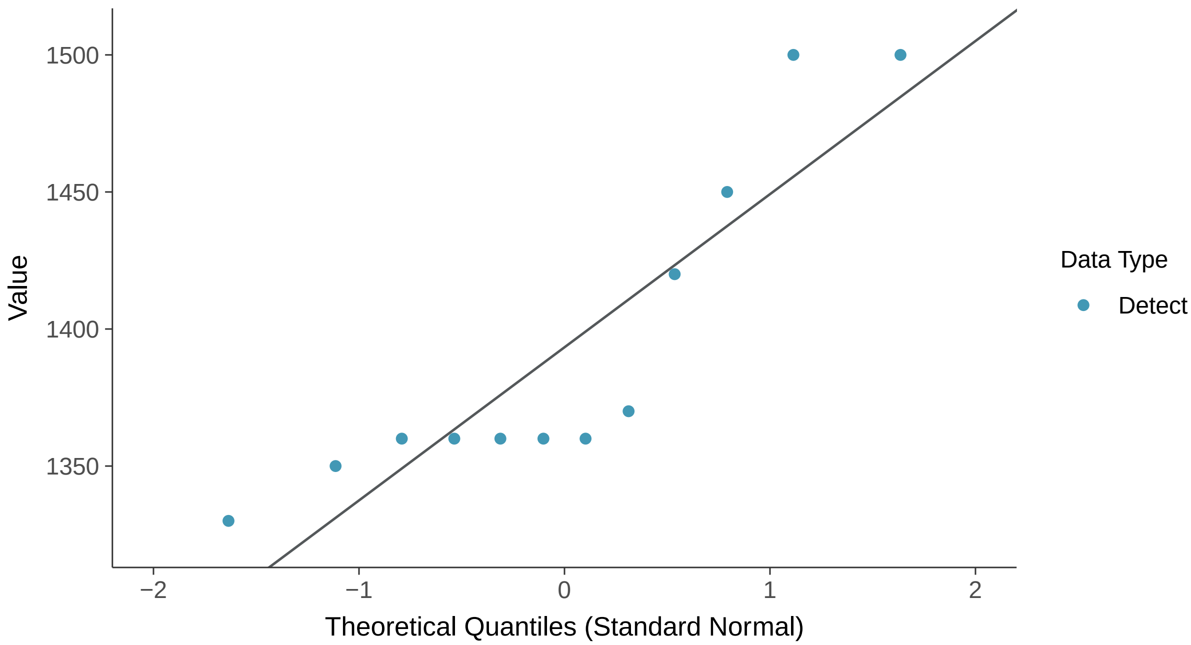
Boxplot by Season

Total Dissolved Solids, MW-7C (mg/L)



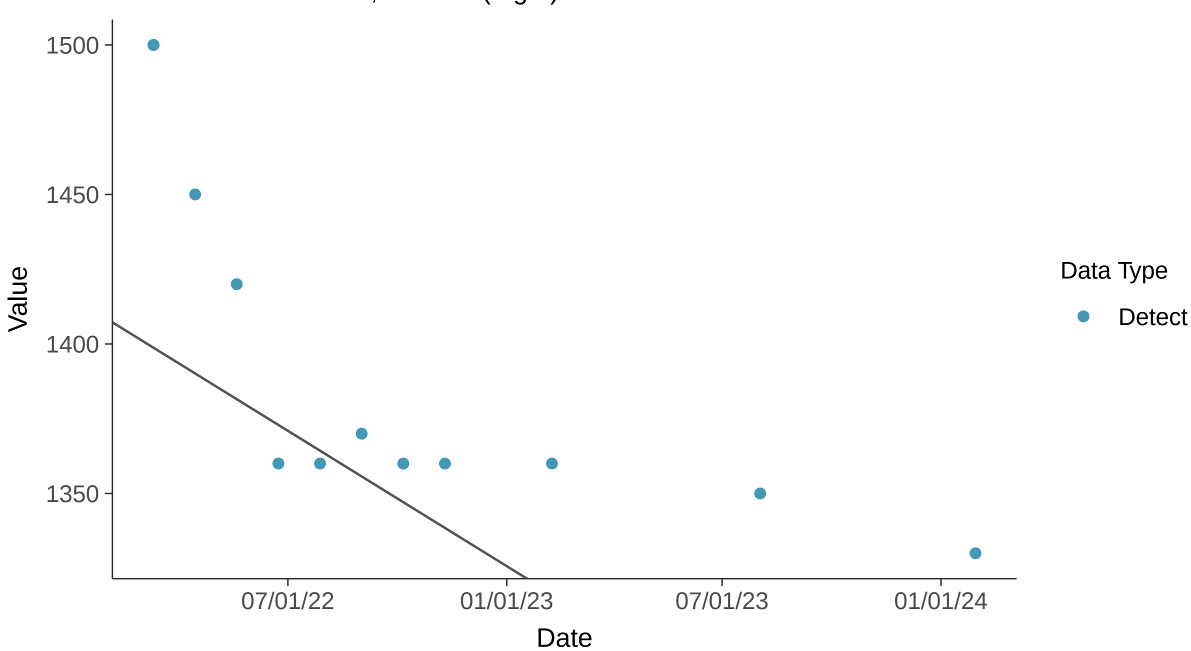
Normal Q-Q plot

Total Dissolved Solids, MW-7C (mg/L)



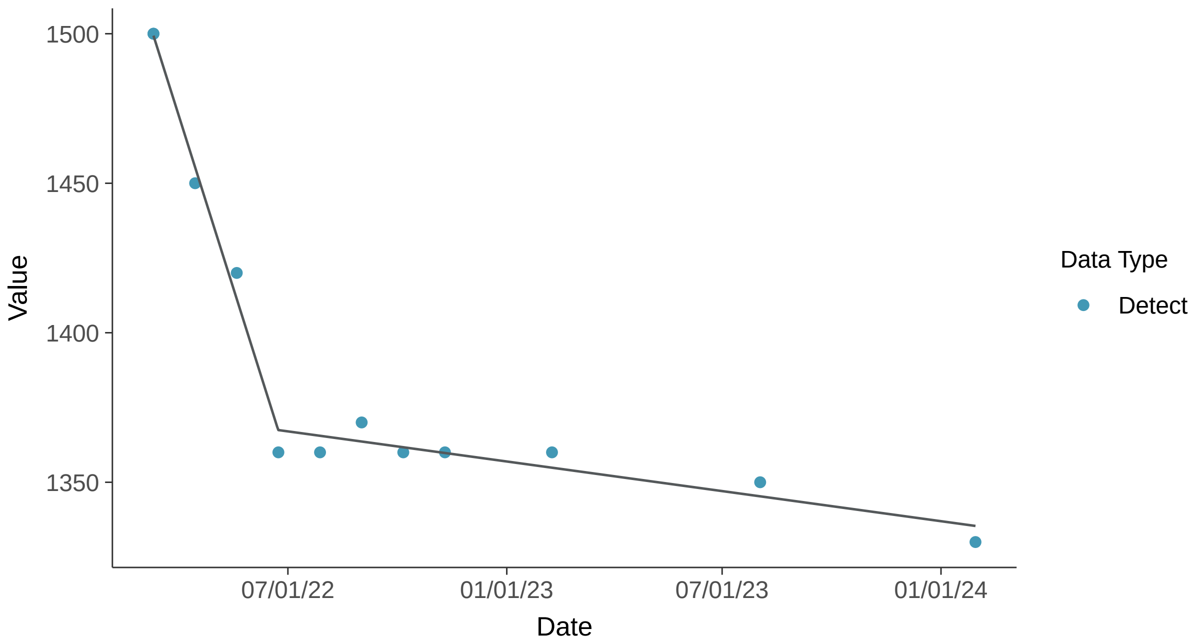
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Total Dissolved Solids, MW-7C (mg/L)



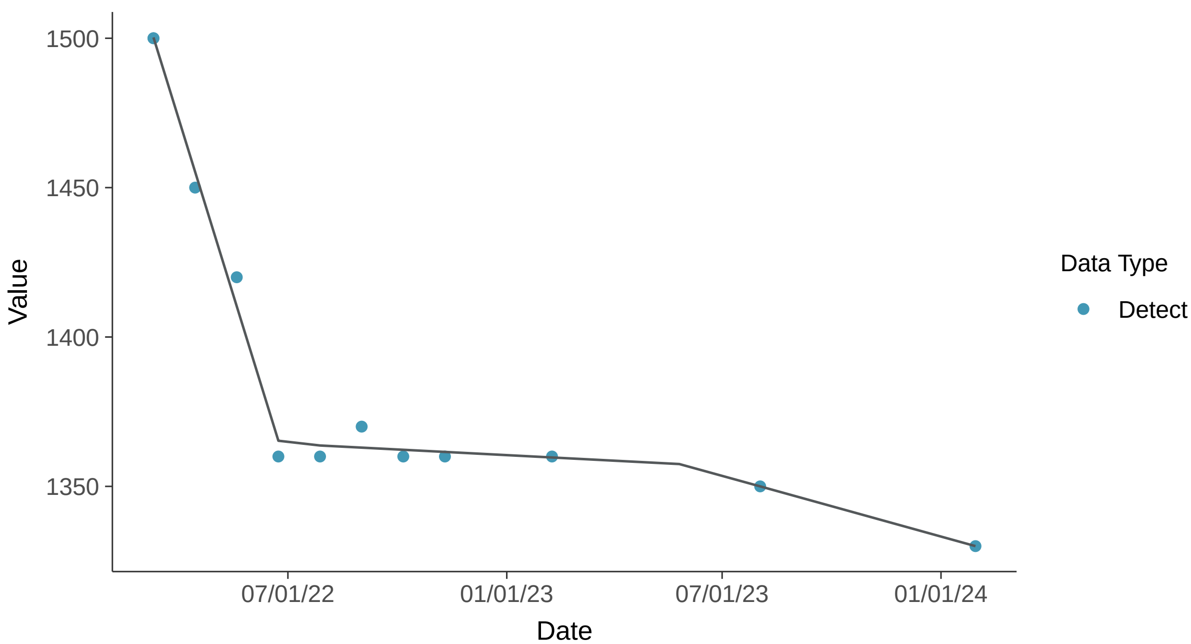
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-7C (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Total Dissolved Solids, MW-7C (mg/L)

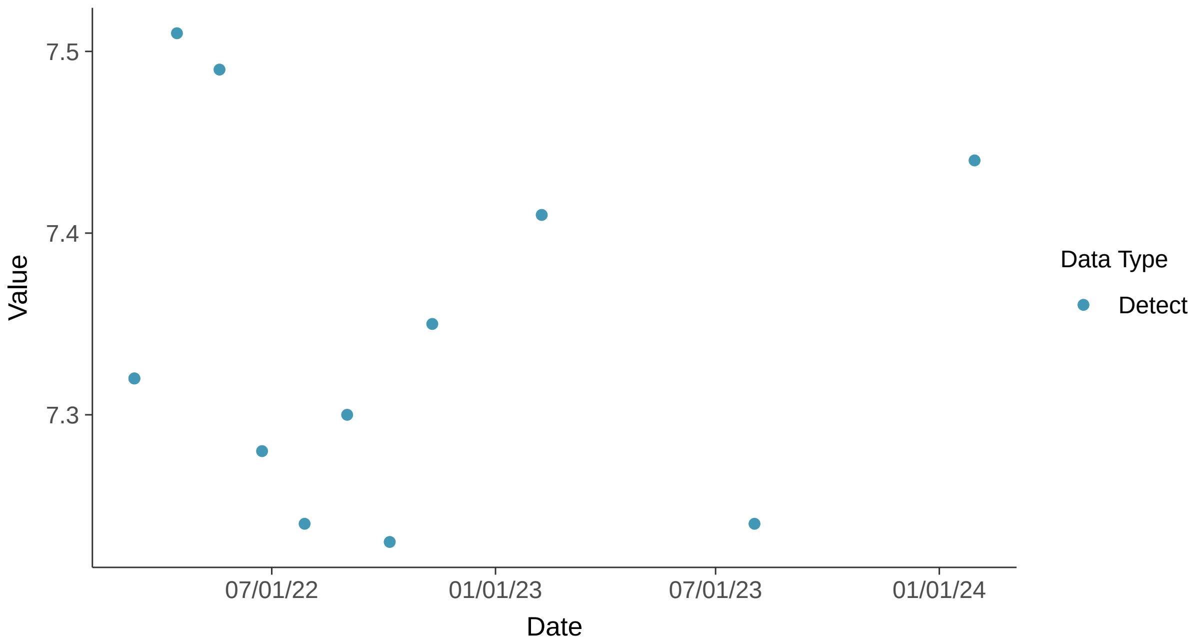


Appendix III: pH, Field, MW-7C

ID: 7C_1_07

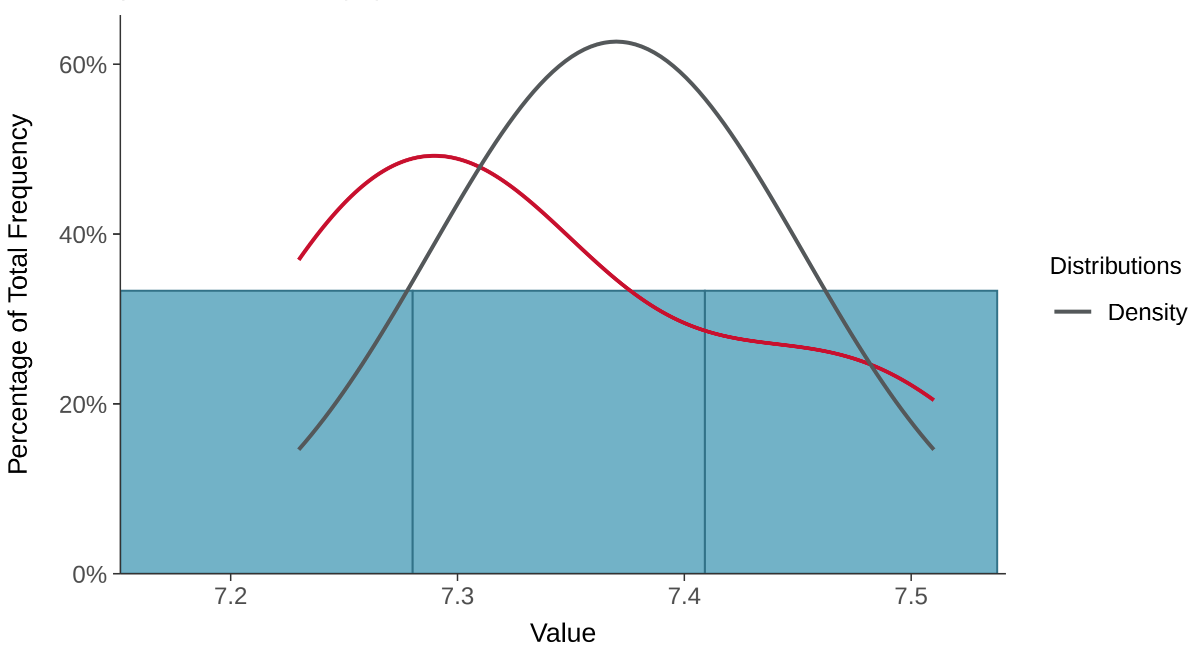
Scatter Plot

pH, Field, MW-7C (su)



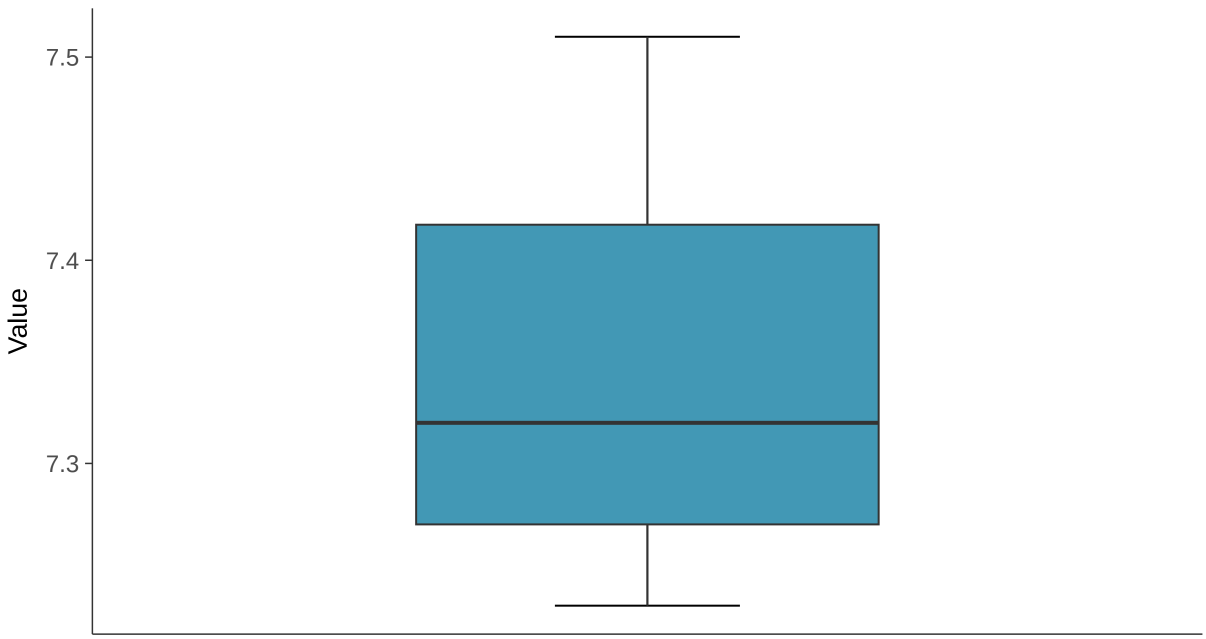
Histogram

pH, Field, MW-7C (su)



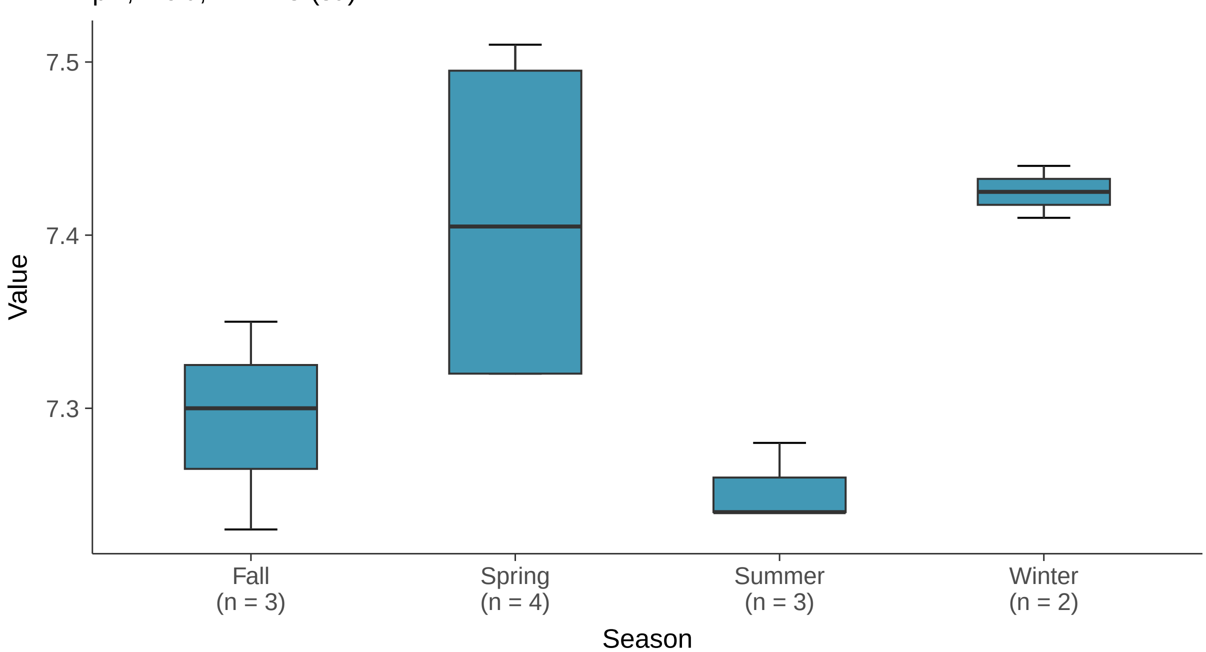
Boxplot

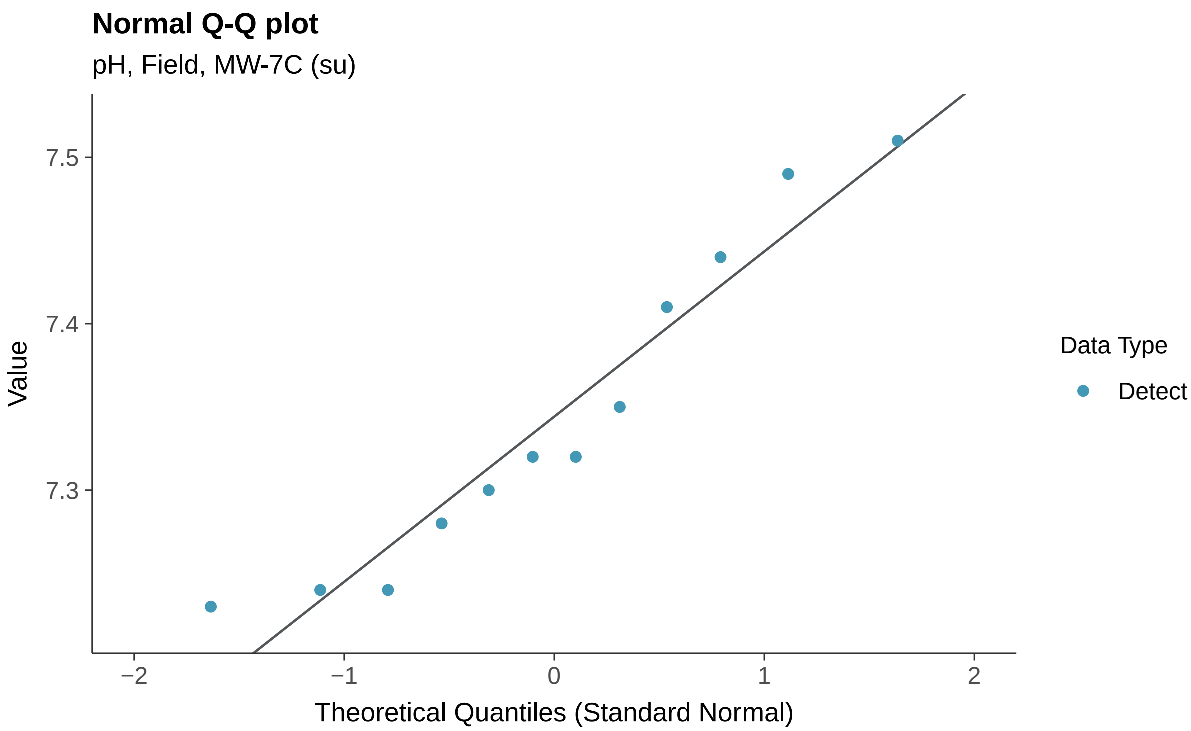
pH, Field, MW-7C (su)

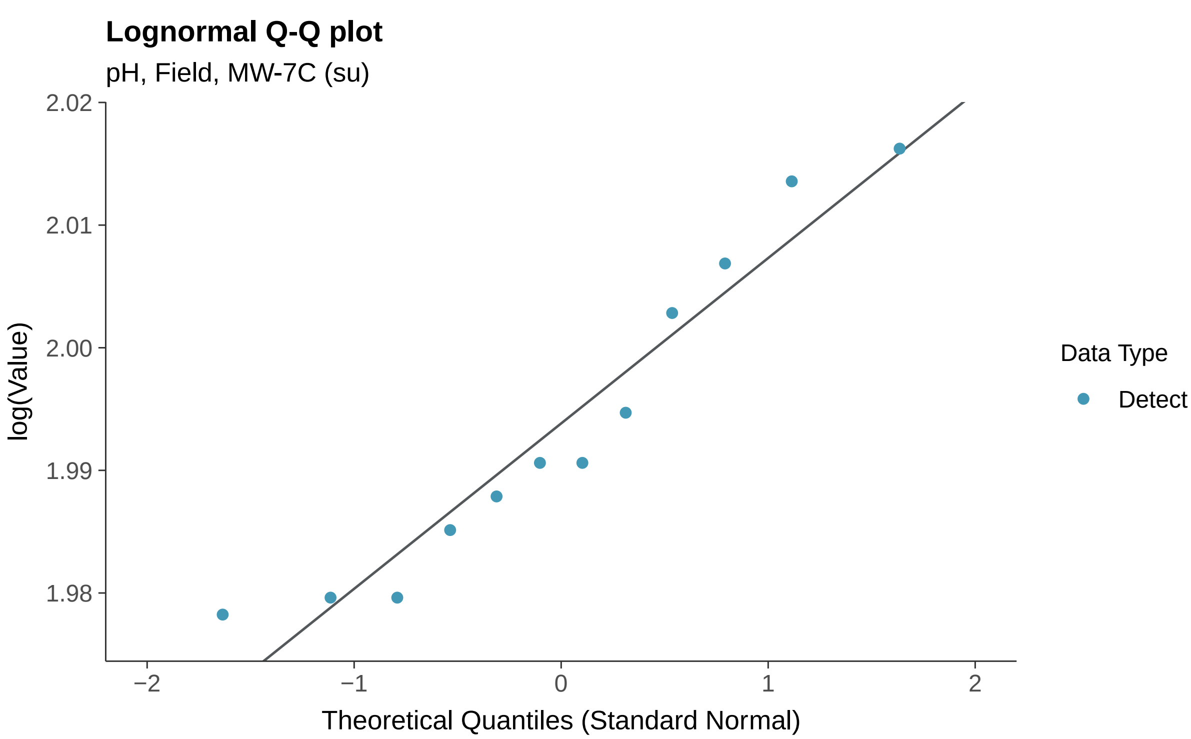


Boxplot by Season

pH, Field, MW-7C (su)

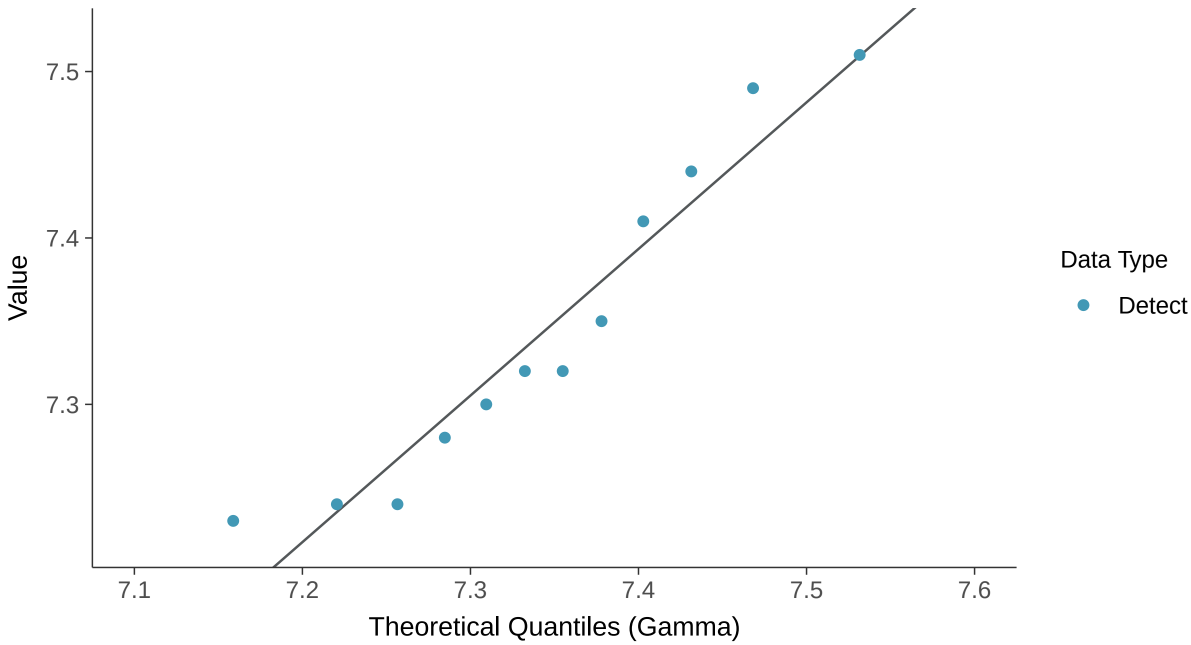



Normal Q-Q plot
pH, Field, MW-7C (su)
Value
7.5
7.4
7.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH, Field, MW-7C (su)
log(Value)
2.02
2.01
2.00
1.99
1.98
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

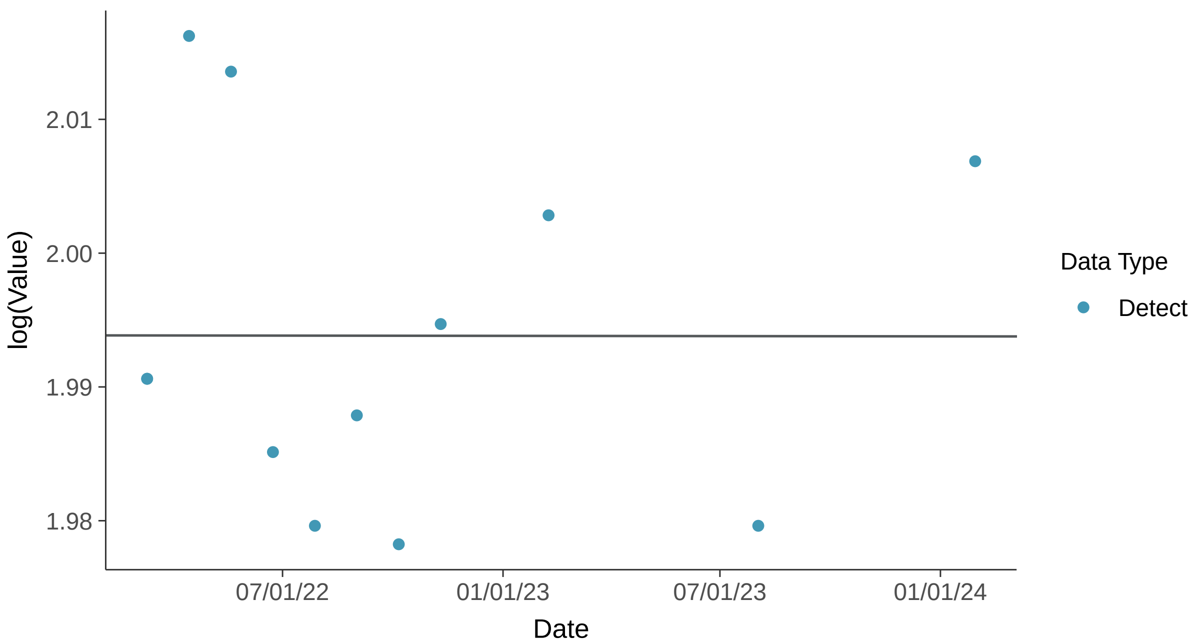
Gamma Q-Q plot

pH, Field, MW-7C (su)



Trend Regression: Lognormal MLE

pH, Field, MW-7C (su)

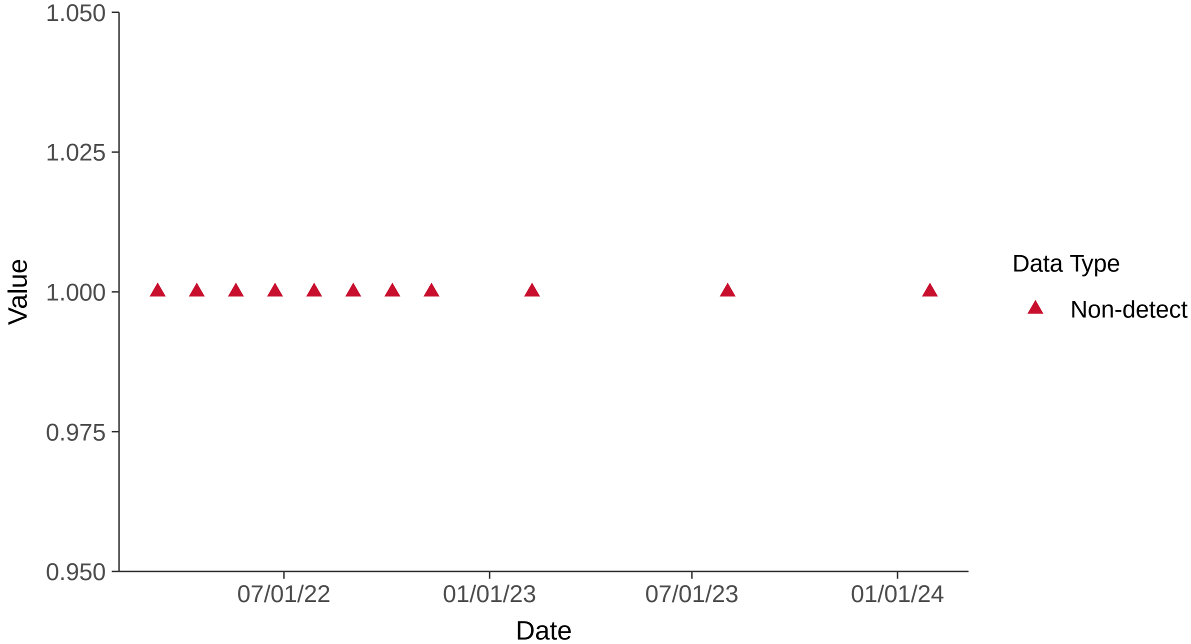


Appendix IV: Fluoride, MW-7C

ID: 7C_2_04

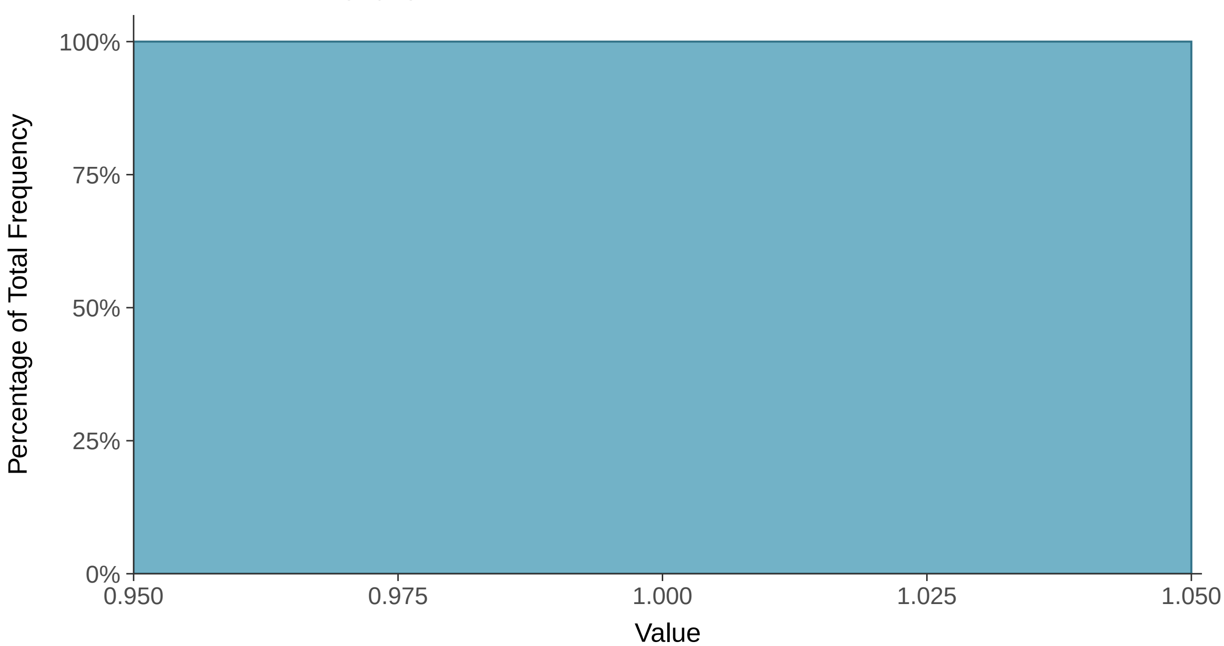
Scatter Plot

Fluoride, MW-7C (mg/L)



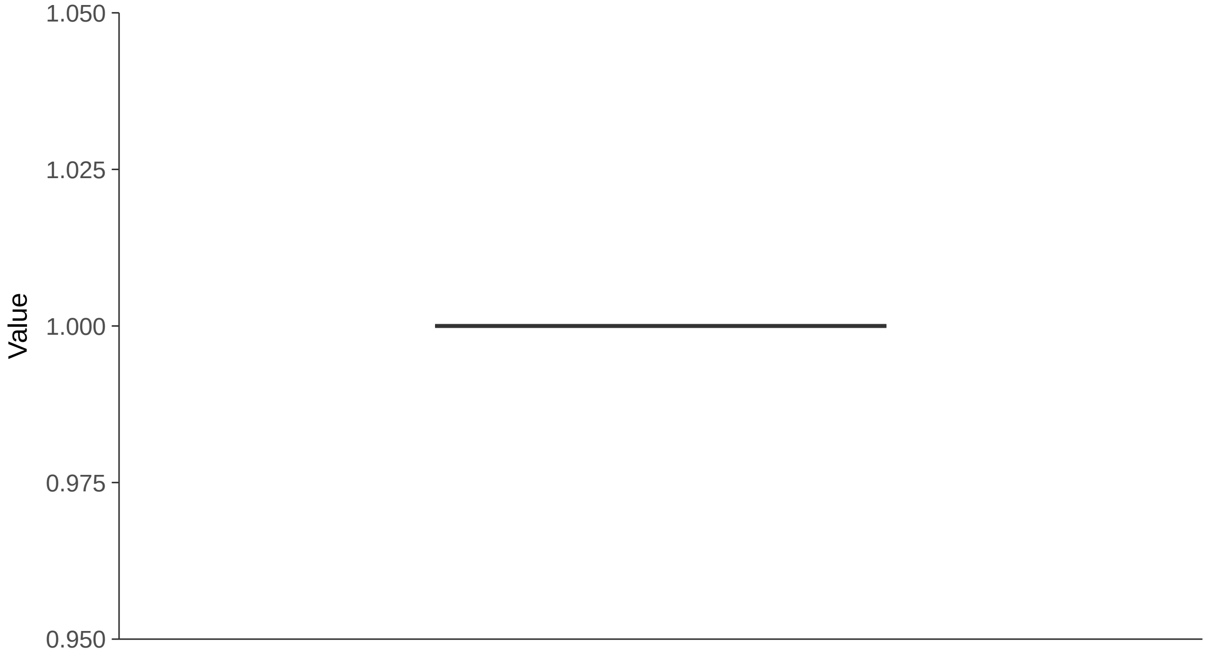
Histogram

Fluoride, MW-7C (mg/L)



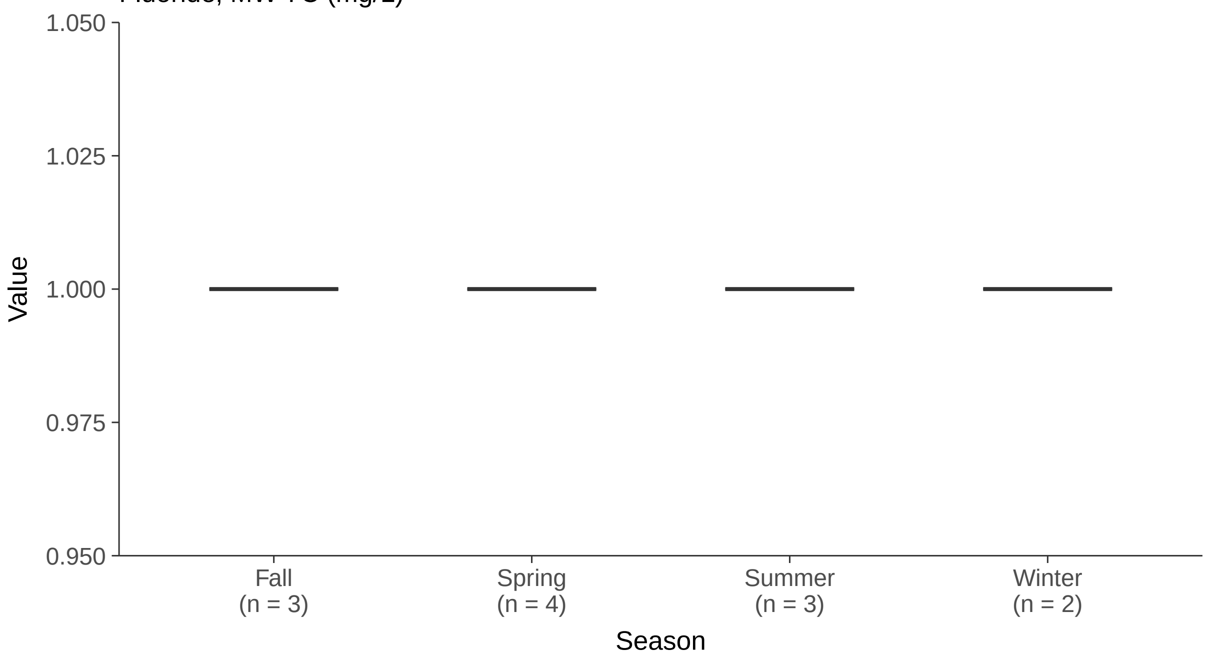
Boxplot

Fluoride, MW-7C (mg/L)



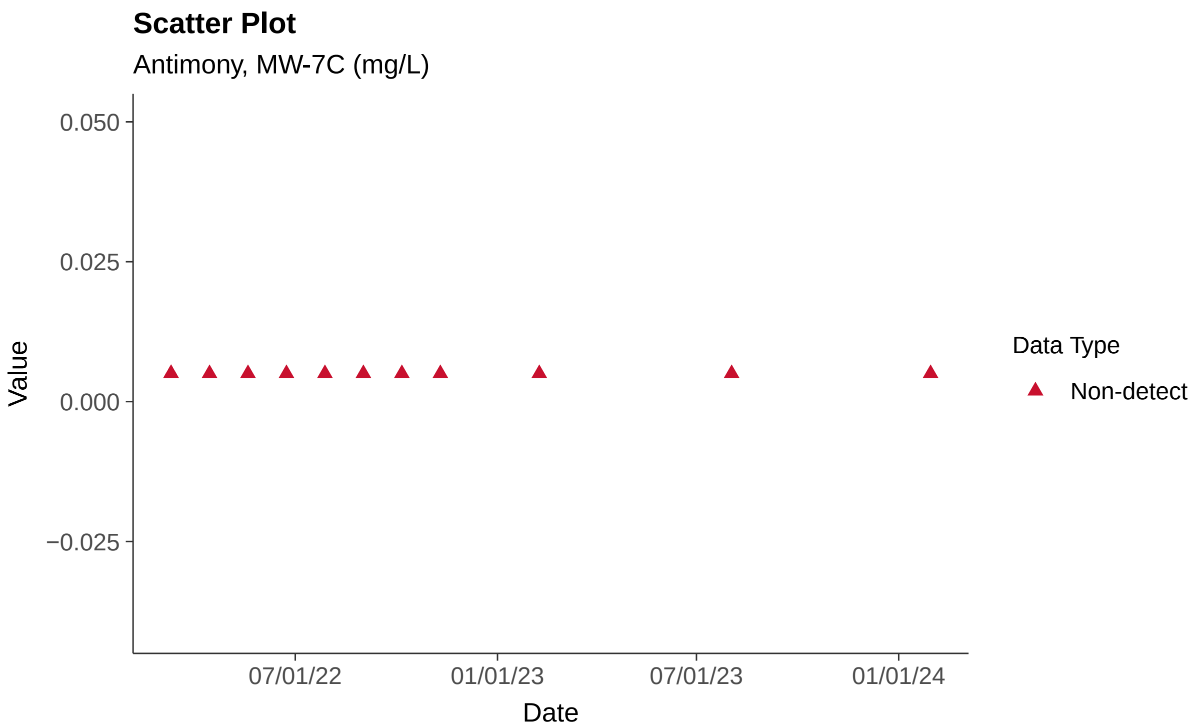
Boxplot by Season

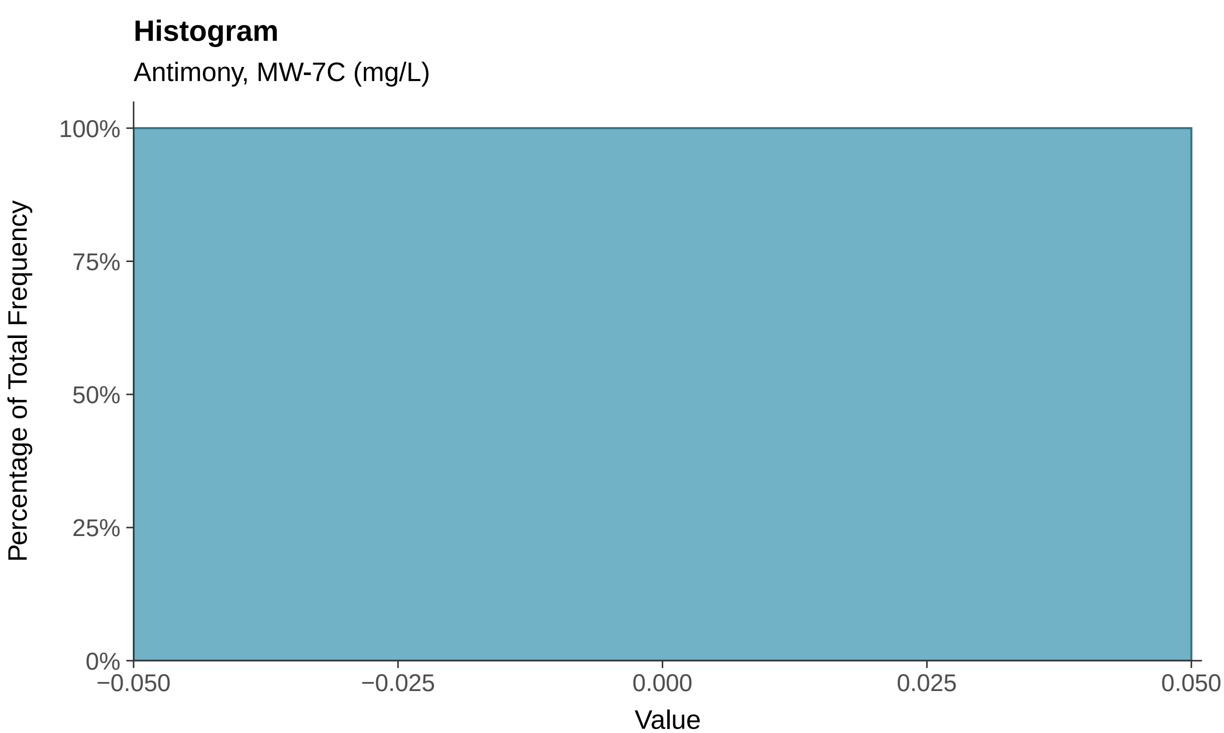
Fluoride, MW-7C (mg/L)



Appendix IV: Antimony, MW-7C

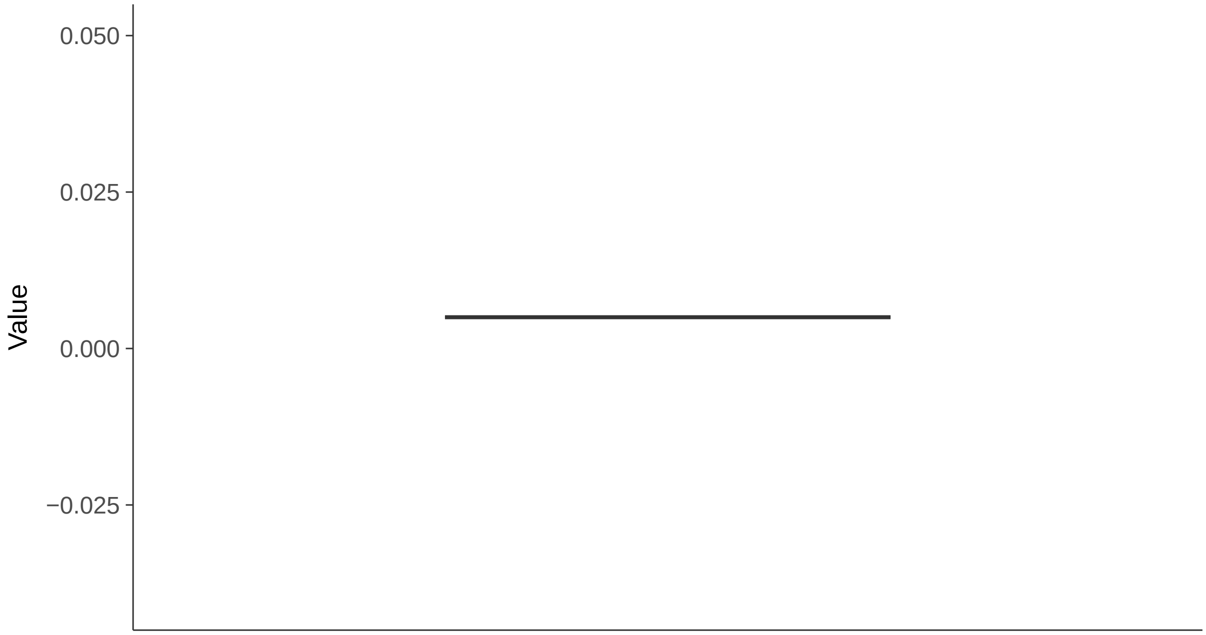
ID: 7C_2_08





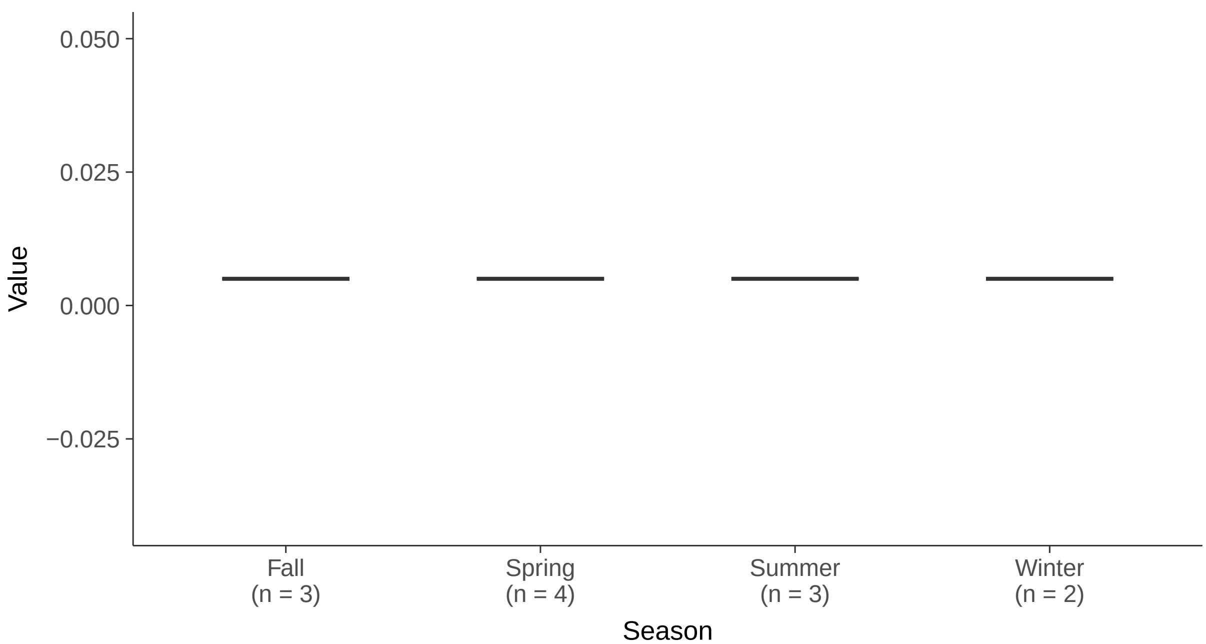
Boxplot

Antimony, MW-7C (mg/L)



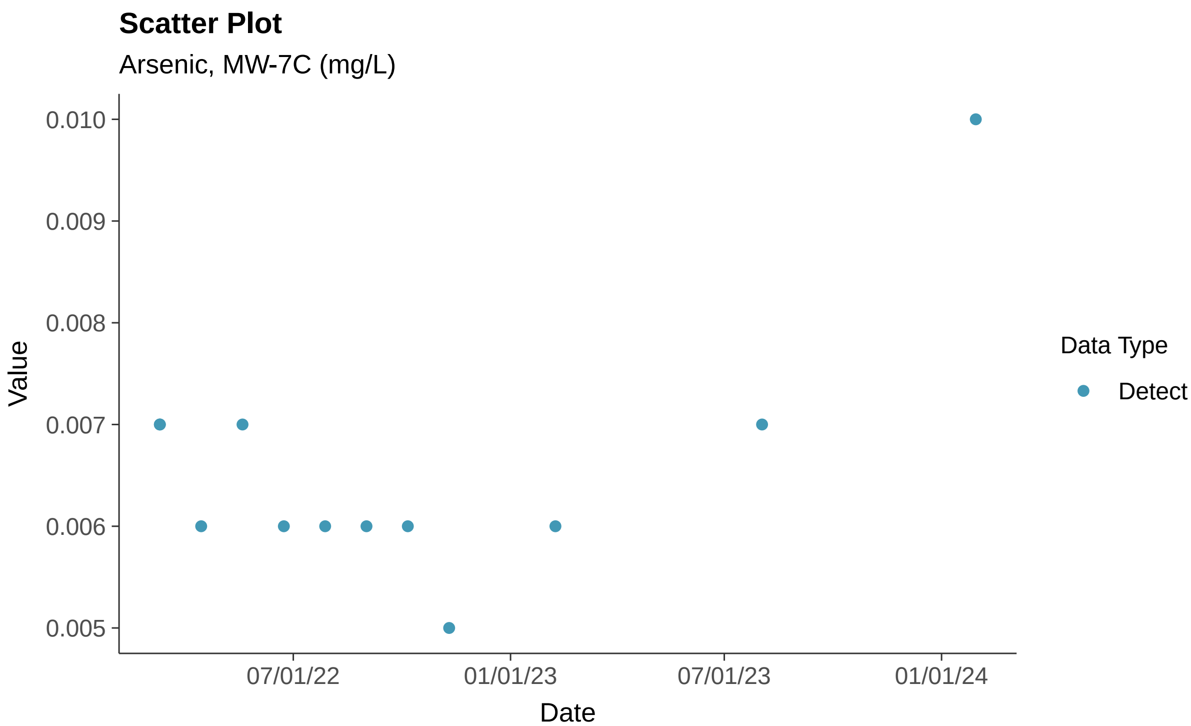
Boxplot by Season

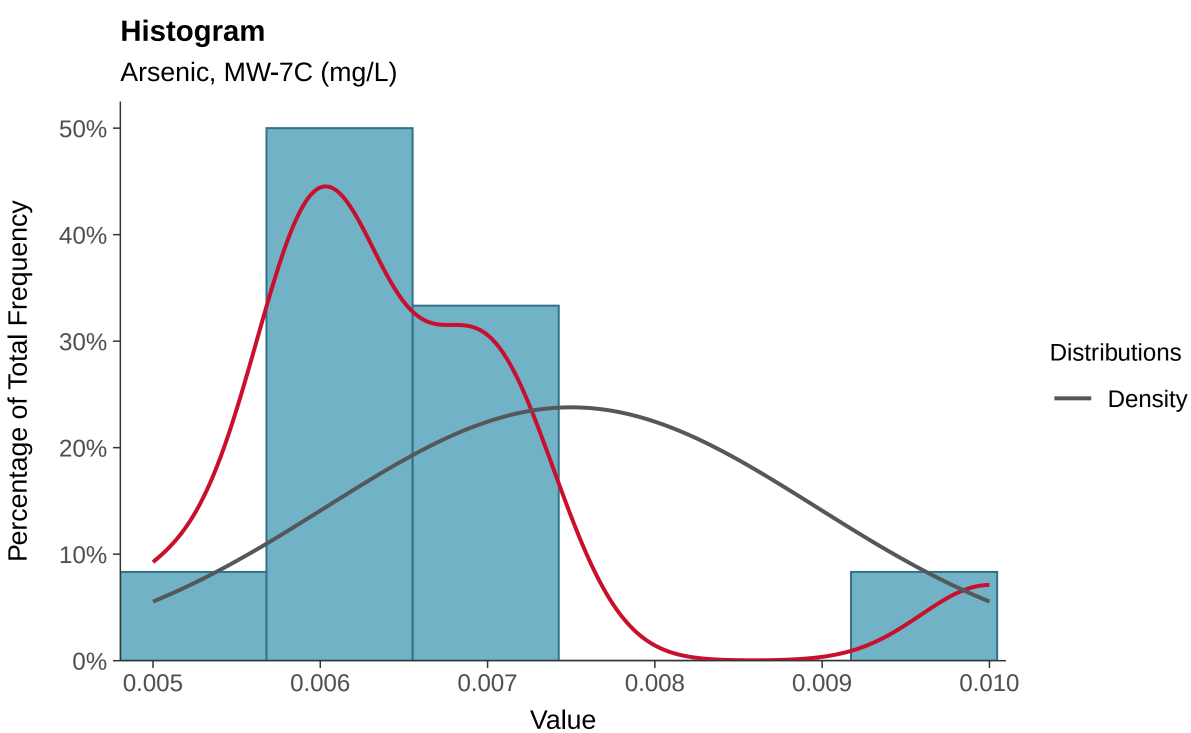
Antimony, MW-7C (mg/L)



Appendix IV: Arsenic, MW-7C

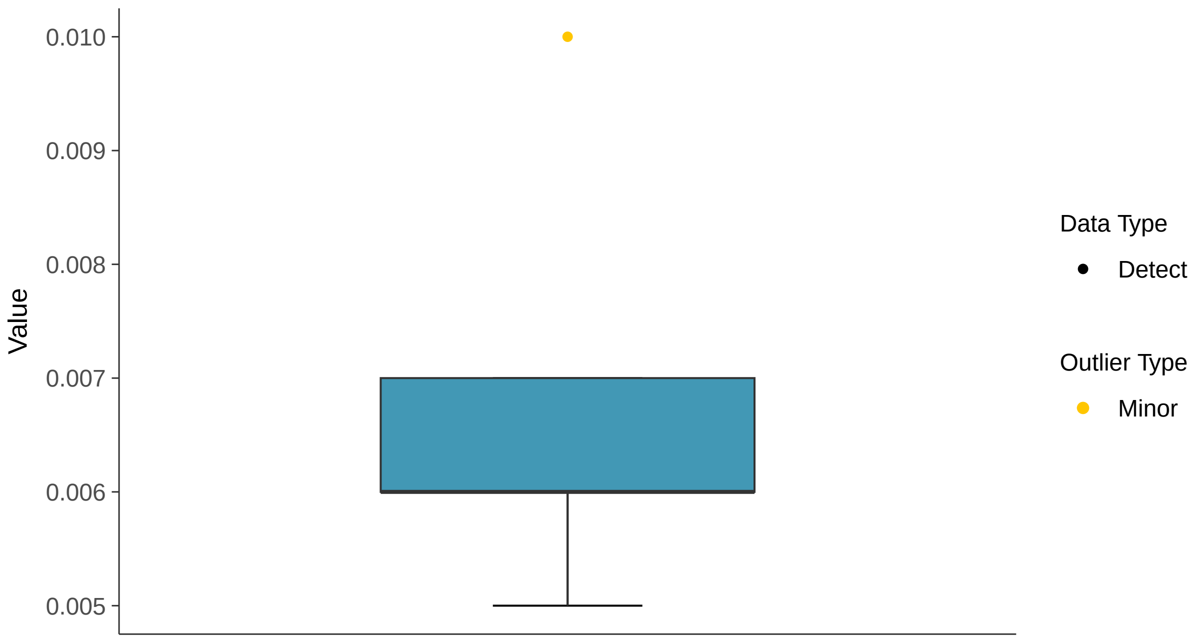
ID: 7C_2_09





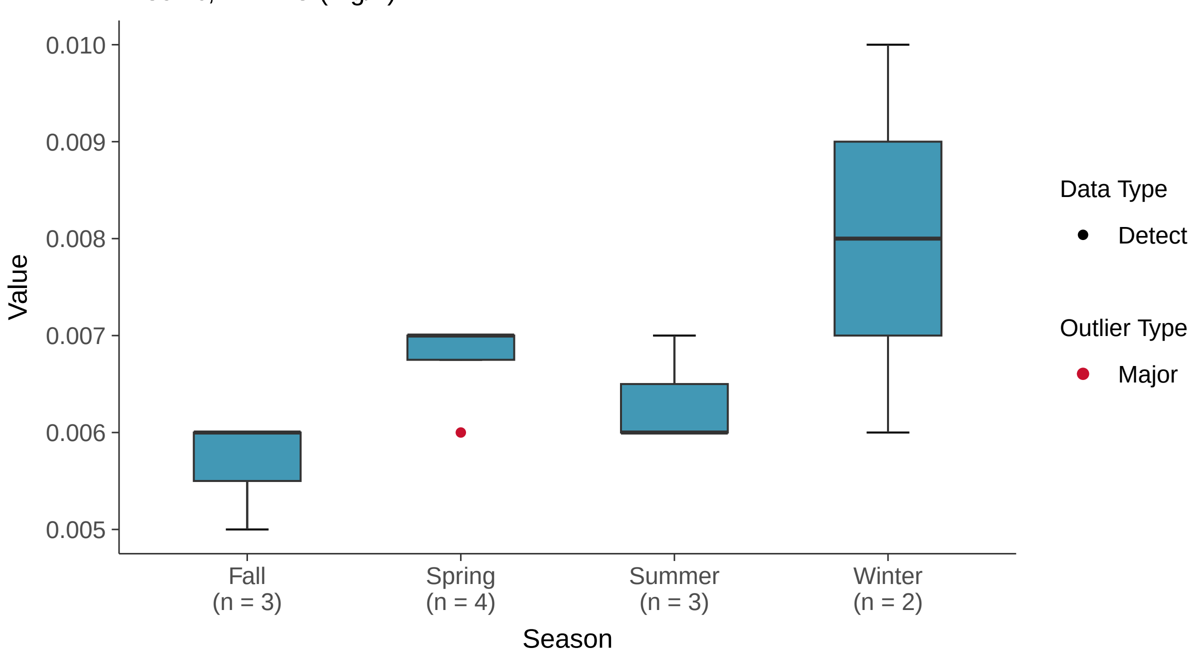
Boxplot

Arsenic, MW-7C (mg/L)



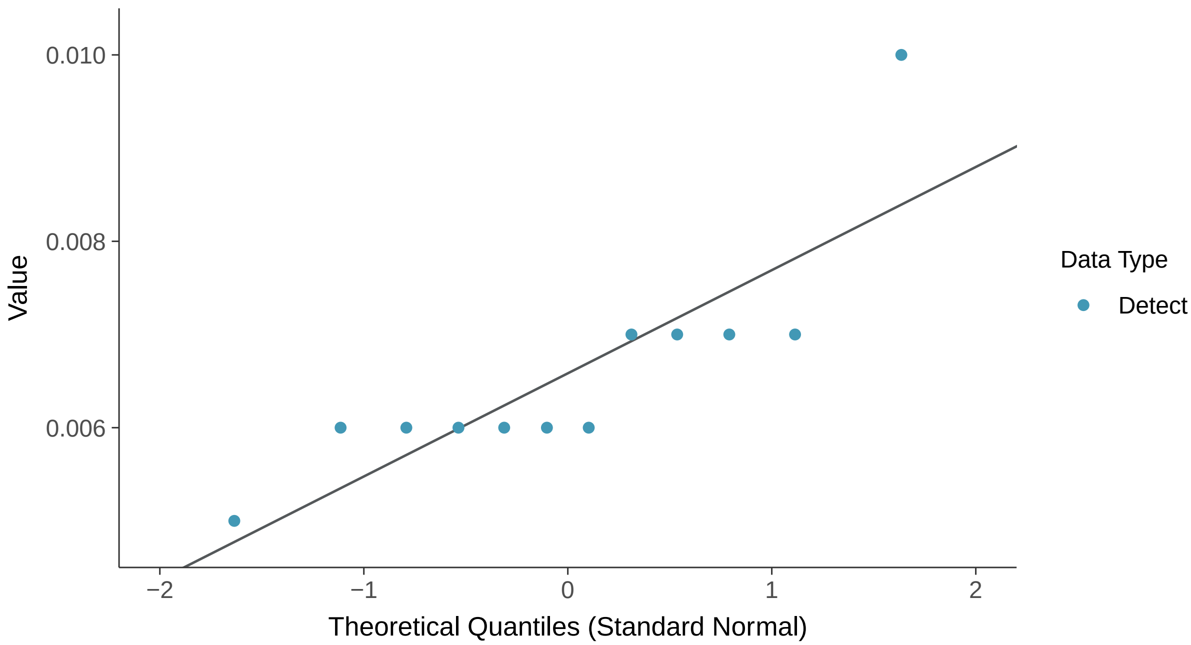
Boxplot by Season

Arsenic, MW-7C (mg/L)



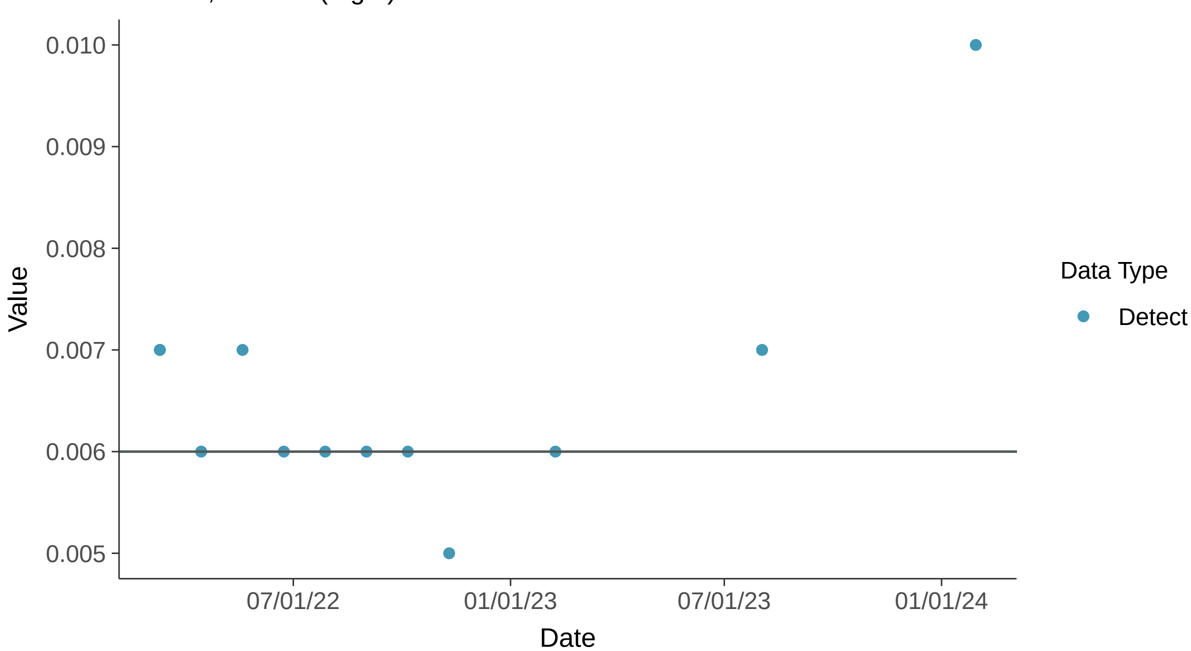
Normal Q-Q plot

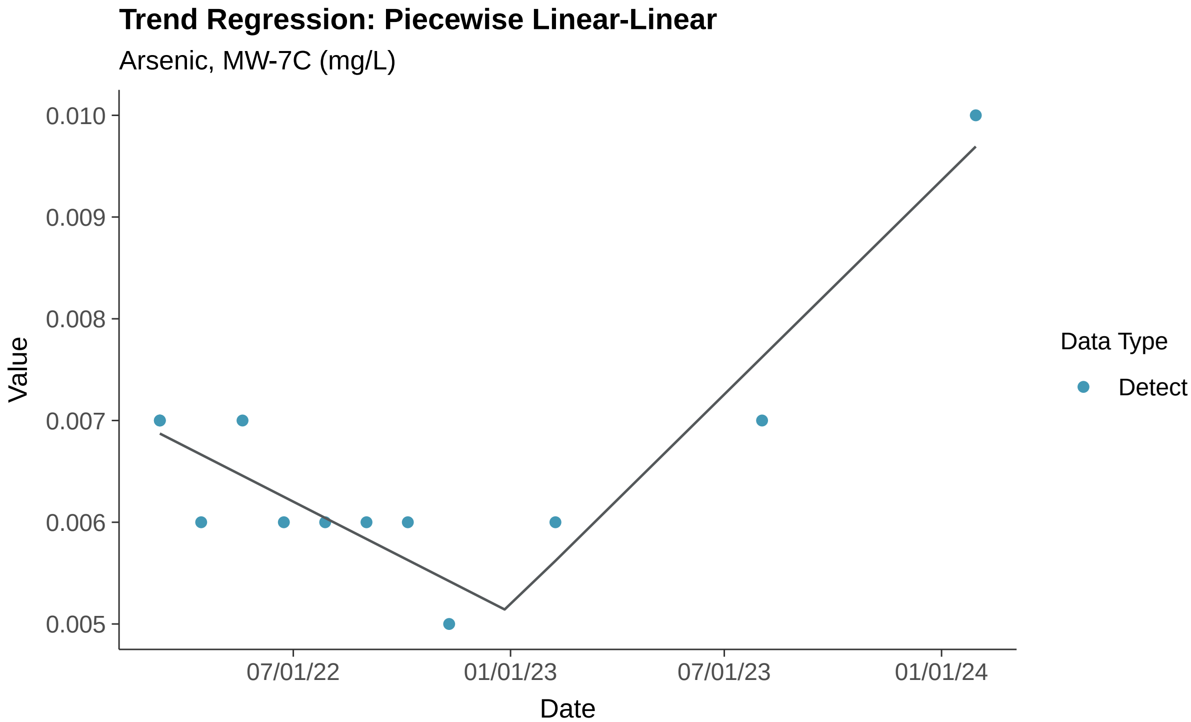
Arsenic, MW-7C (mg/L)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

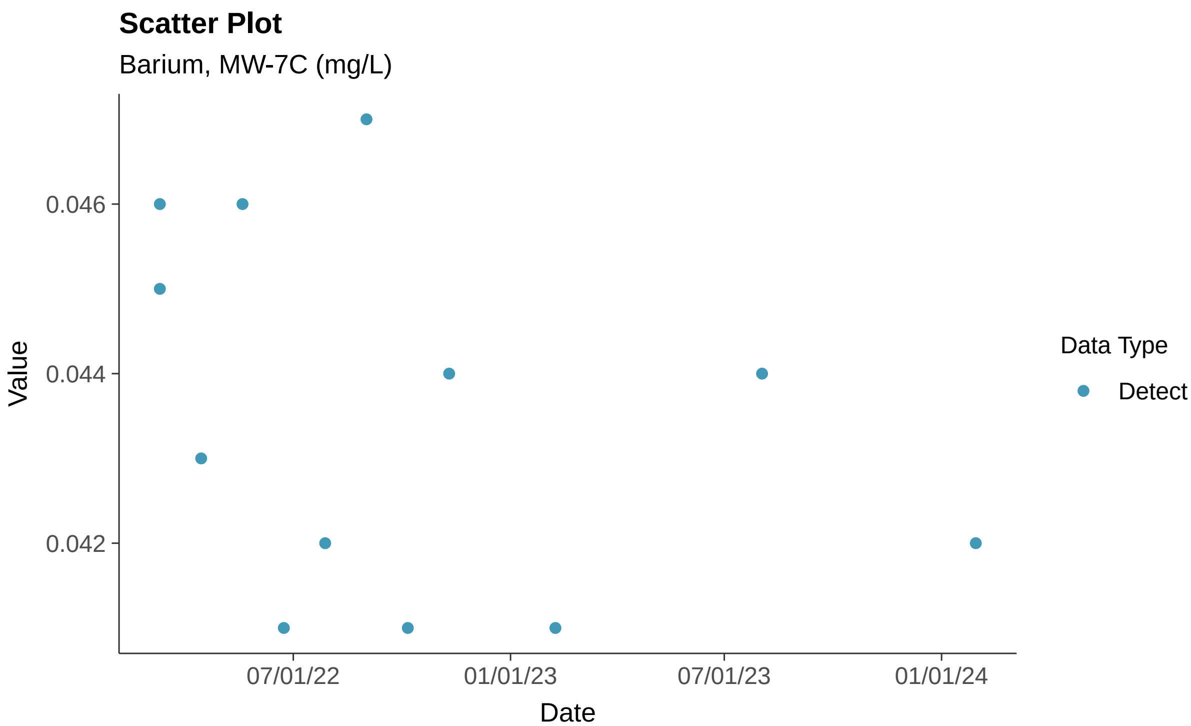
Arsenic, MW-7C (mg/L)

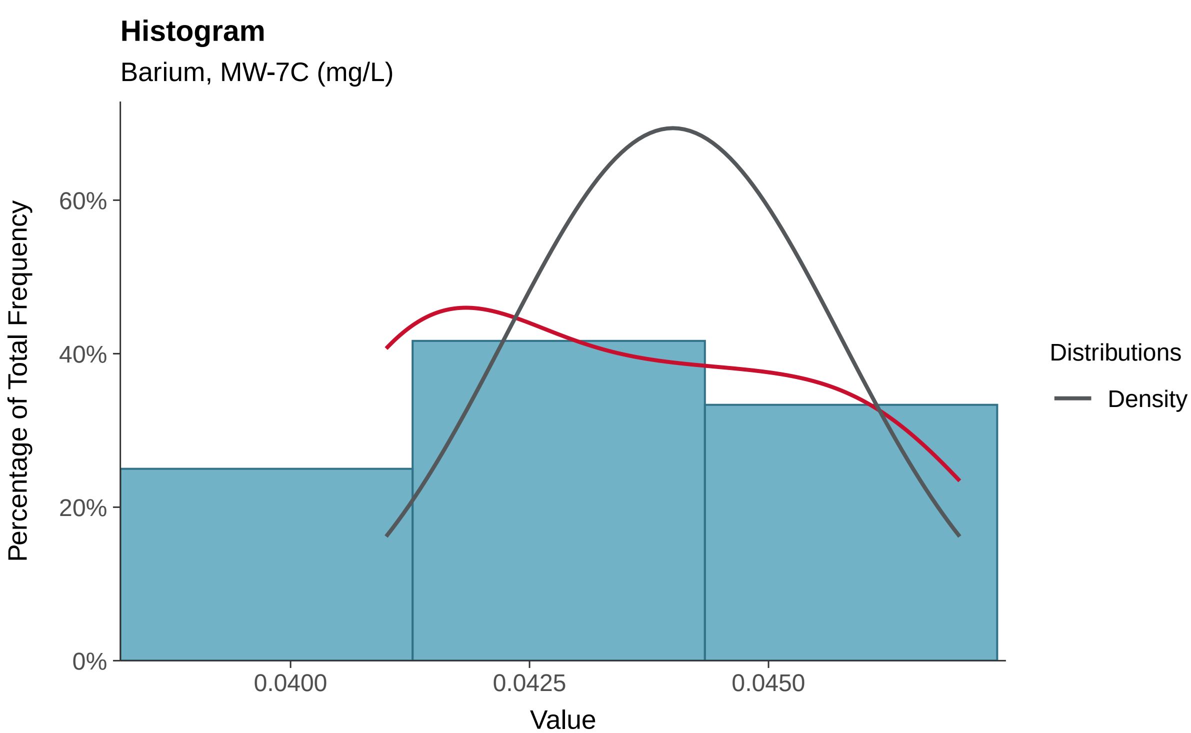



Trend Regression: Piecewise Linear-Linear
Arsenic, MW-7C (mg/L)
Value
0.010
0.009
0.008
0.007
0.006
0.005
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Barium, MW-7C

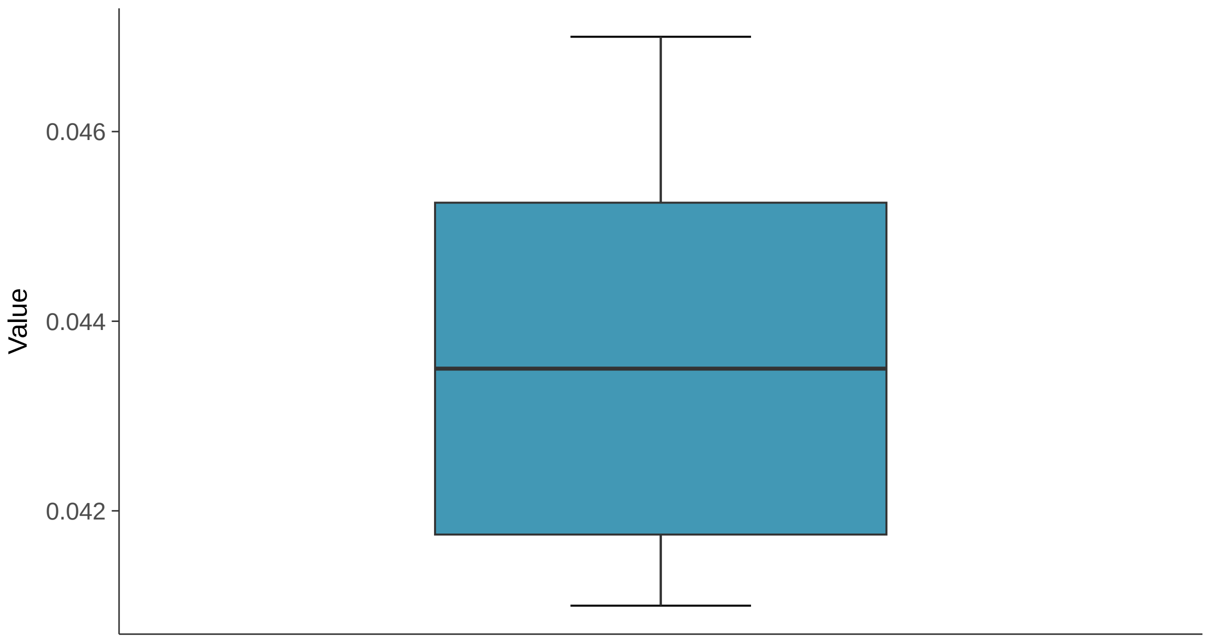
ID: 7C_2_10





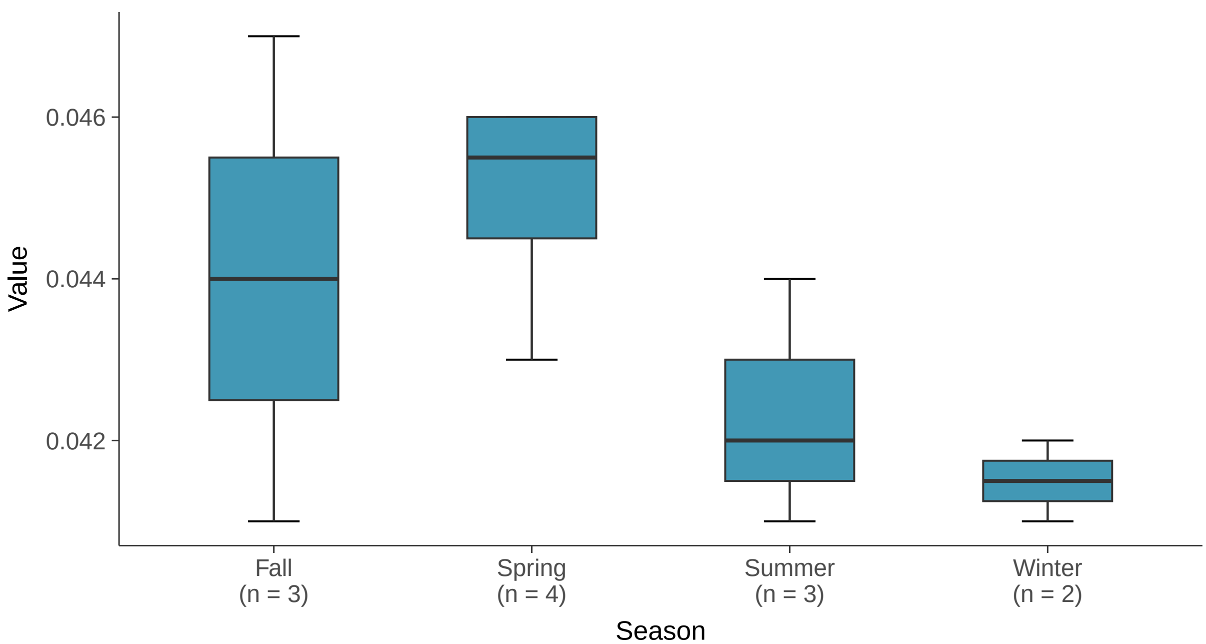
Boxplot

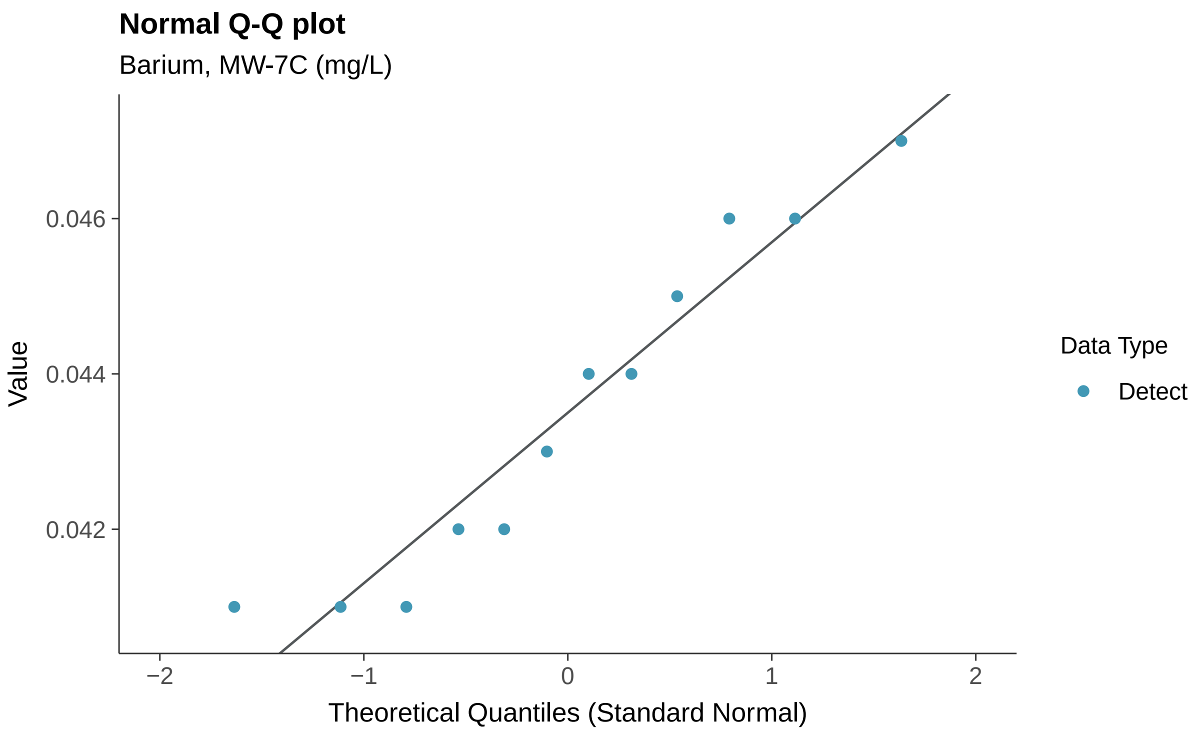
Barium, MW-7C (mg/L)

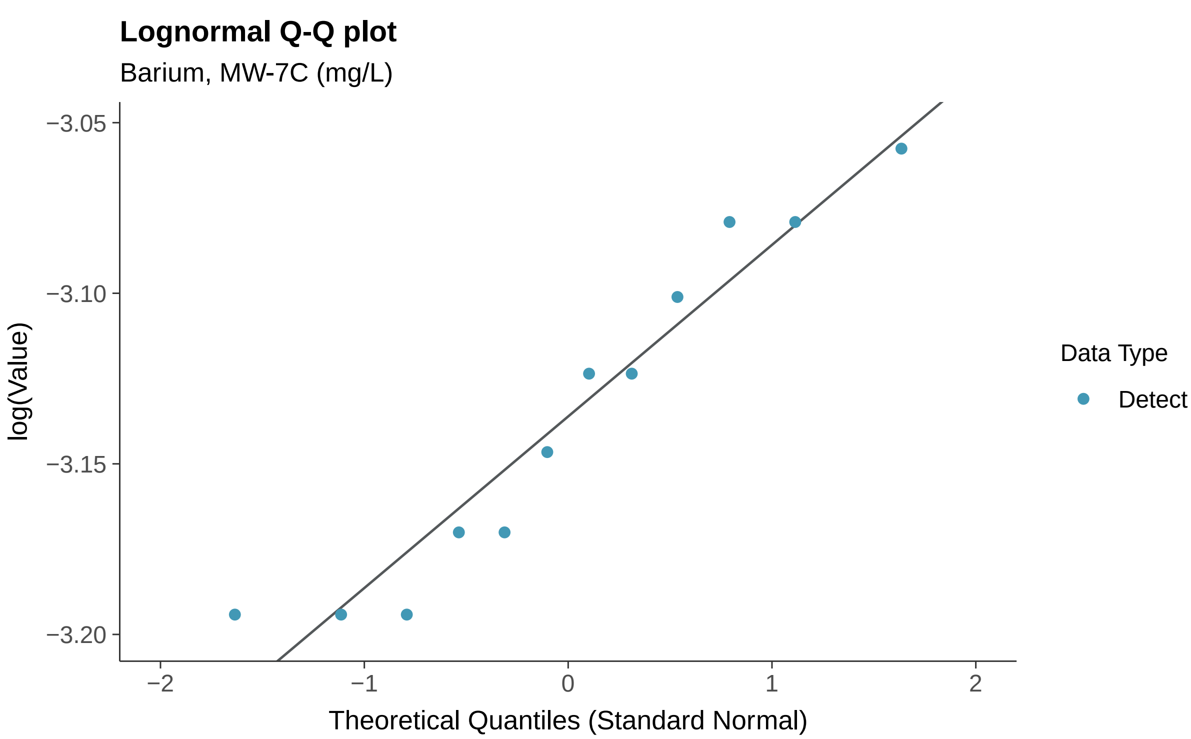


Boxplot by Season

Barium, MW-7C (mg/L)

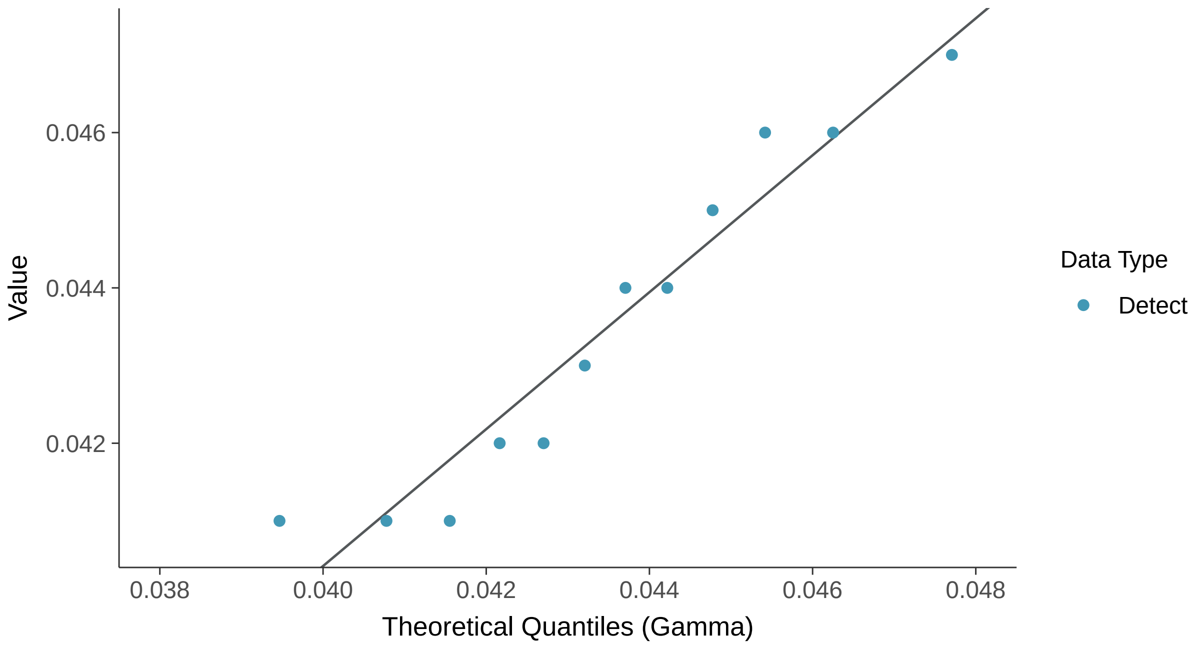



Normal Q-Q plot
Barium, MW-7C (mg/L)
Value
0.046
0.044
0.042
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-7C (mg/L)
log(Value)
−3.05
−3.10
−3.15
−3.20
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

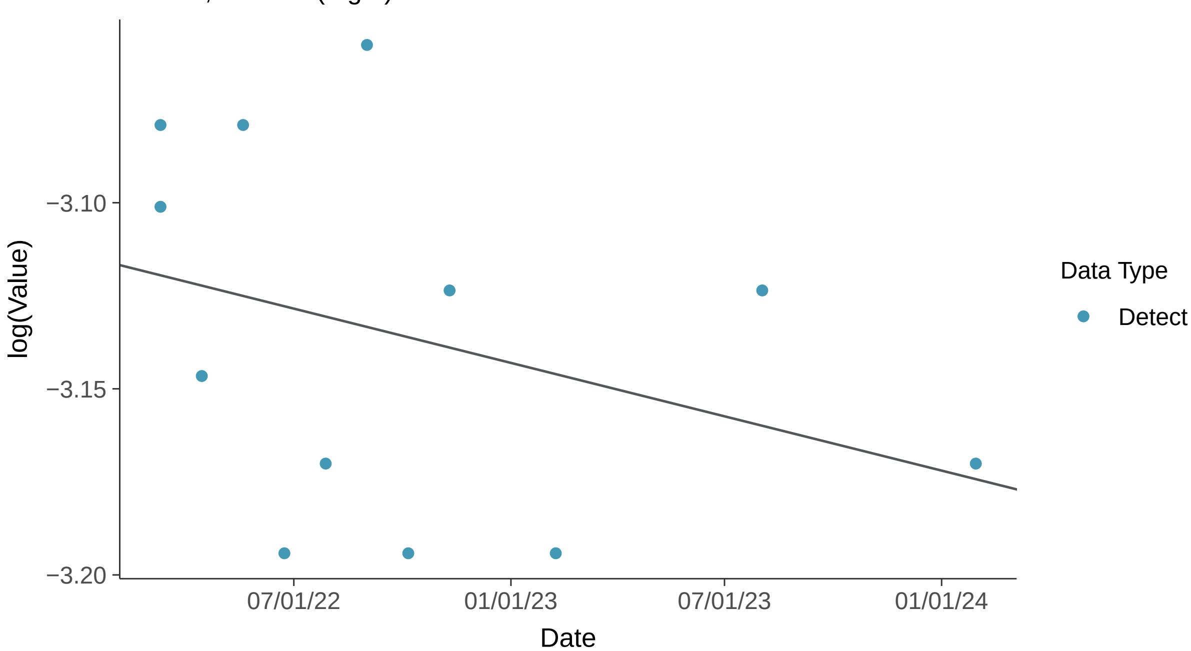
Gamma Q-Q plot

Barium, MW-7C (mg/L)



Trend Regression: Lognormal MLE

Barium, MW-7C (mg/L)

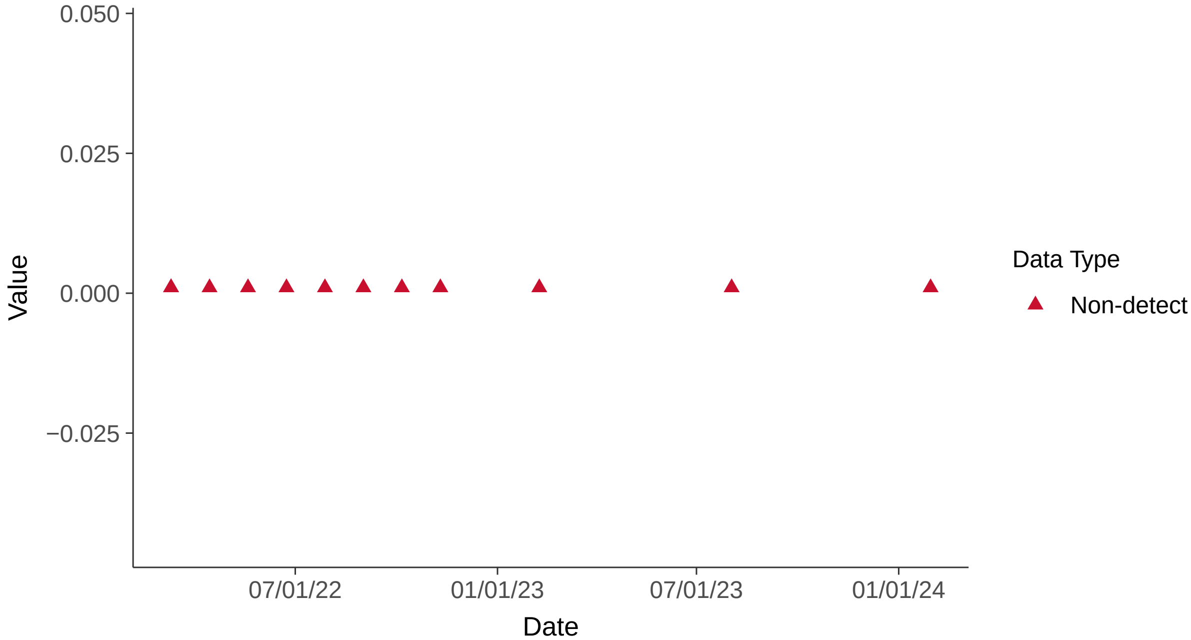


Appendix IV: Beryllium, MW-7C

ID: 7C_2_11

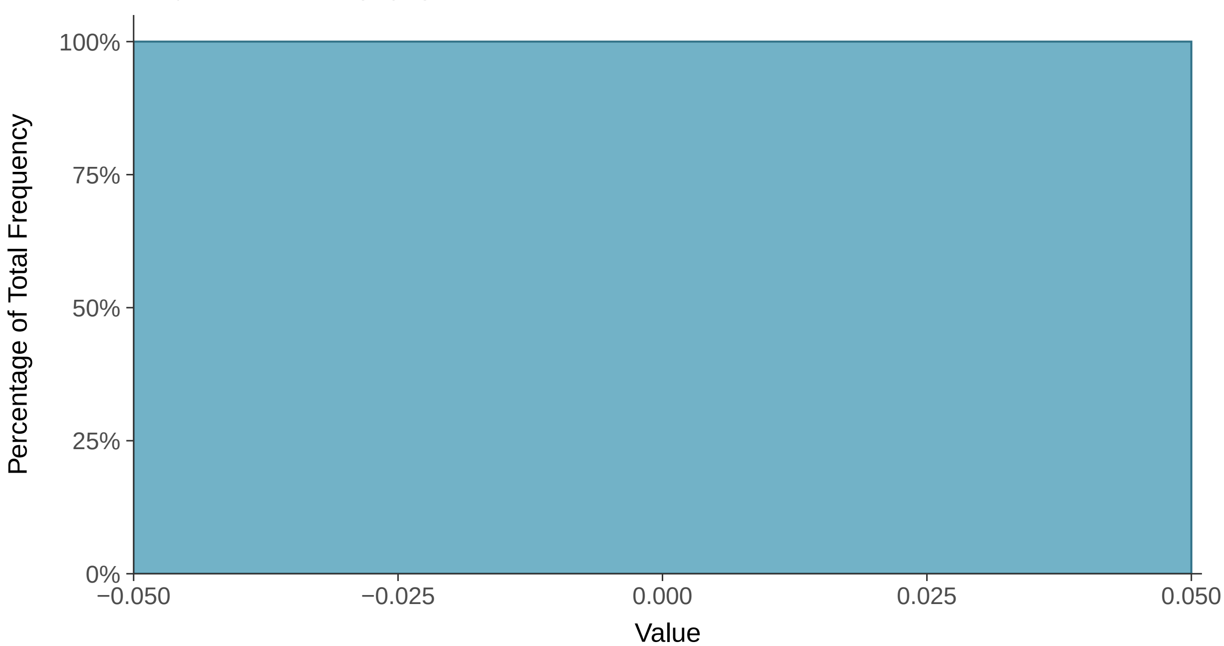
Scatter Plot

Beryllium, MW-7C (mg/L)



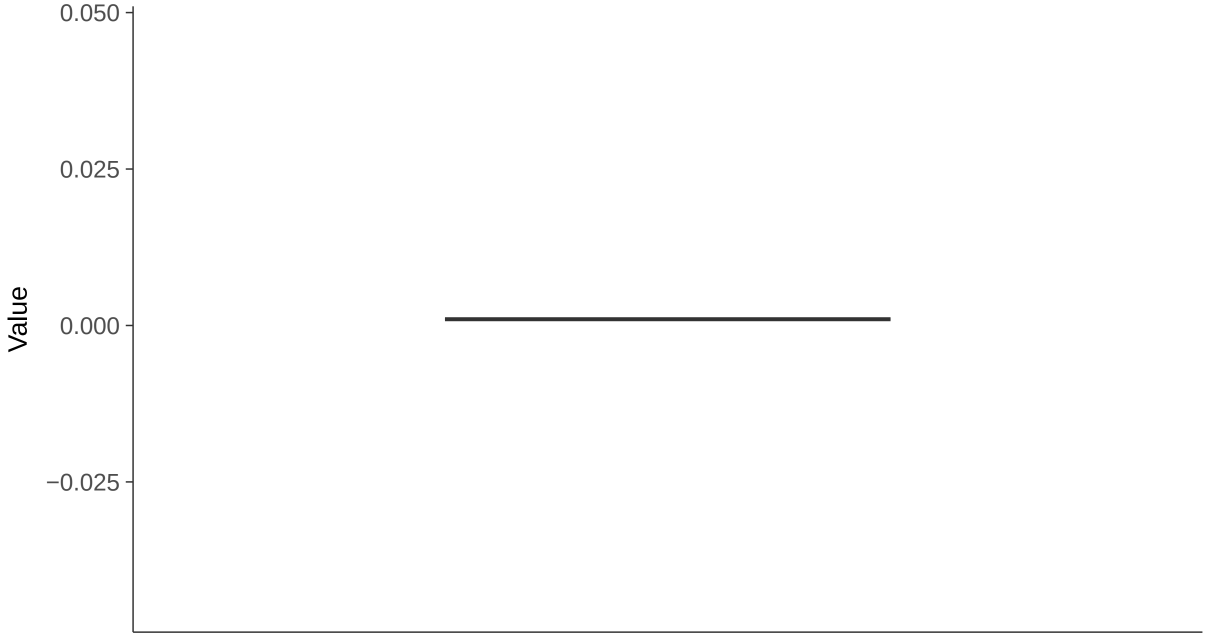
Histogram

Beryllium, MW-7C (mg/L)



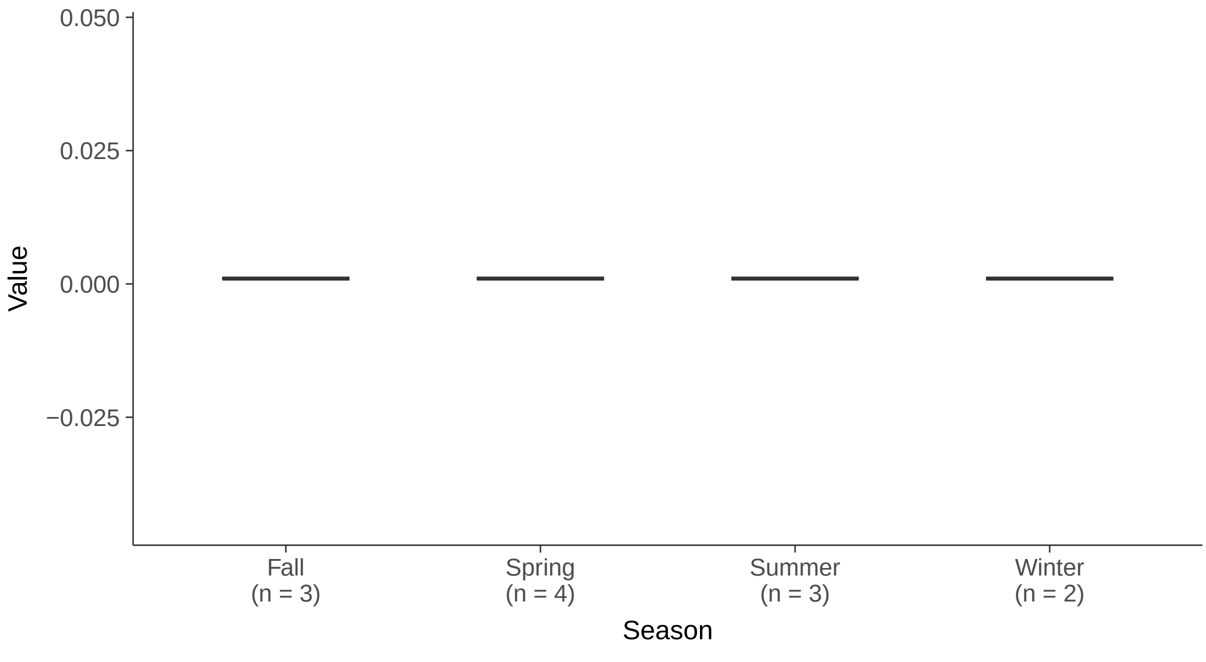
Boxplot

Beryllium, MW-7C (mg/L)



Boxplot by Season

Beryllium, MW-7C (mg/L)

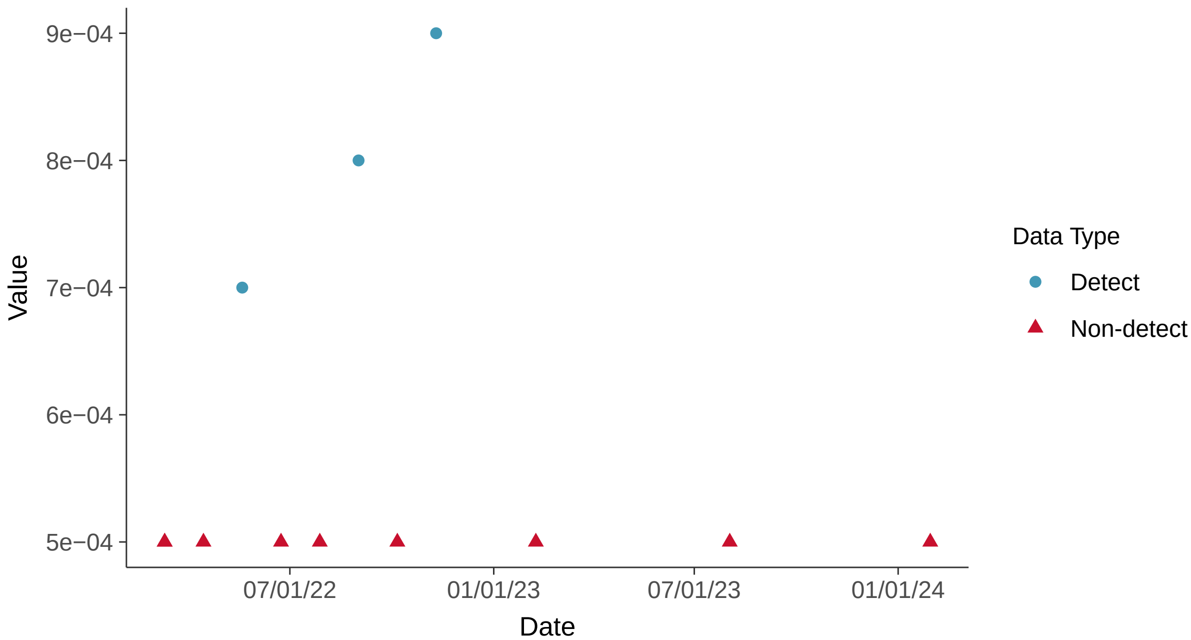


Appendix IV: Cadmium, MW-7C

ID: 7C_2_12

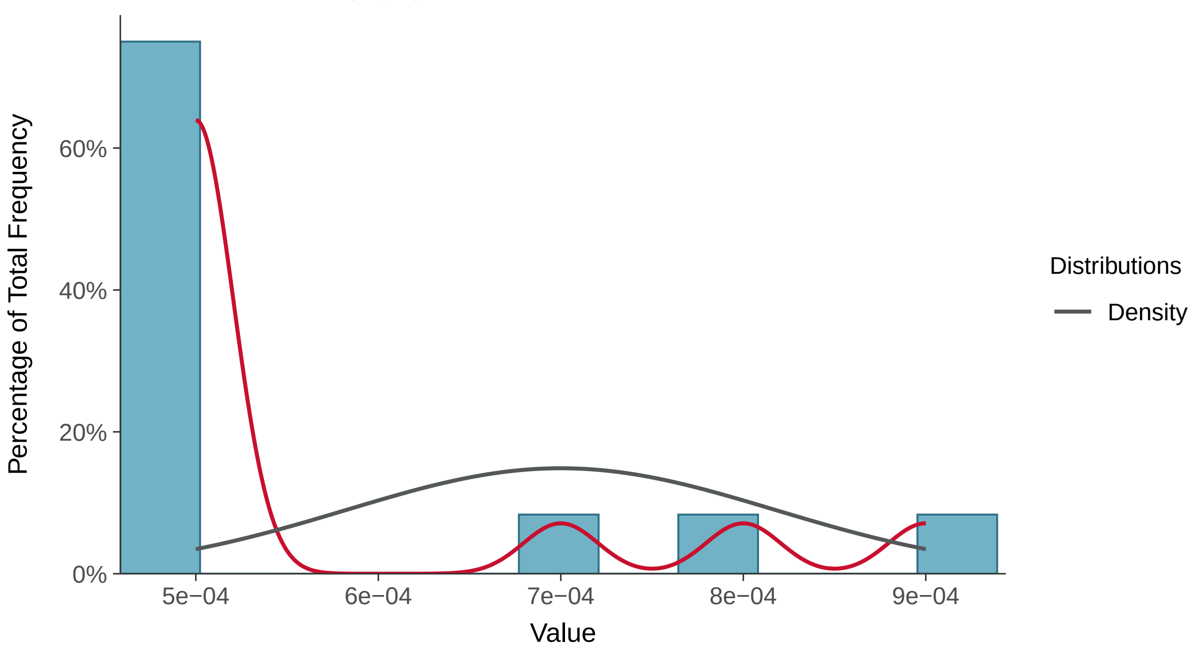
Scatter Plot

Cadmium, MW-7C (mg/L)



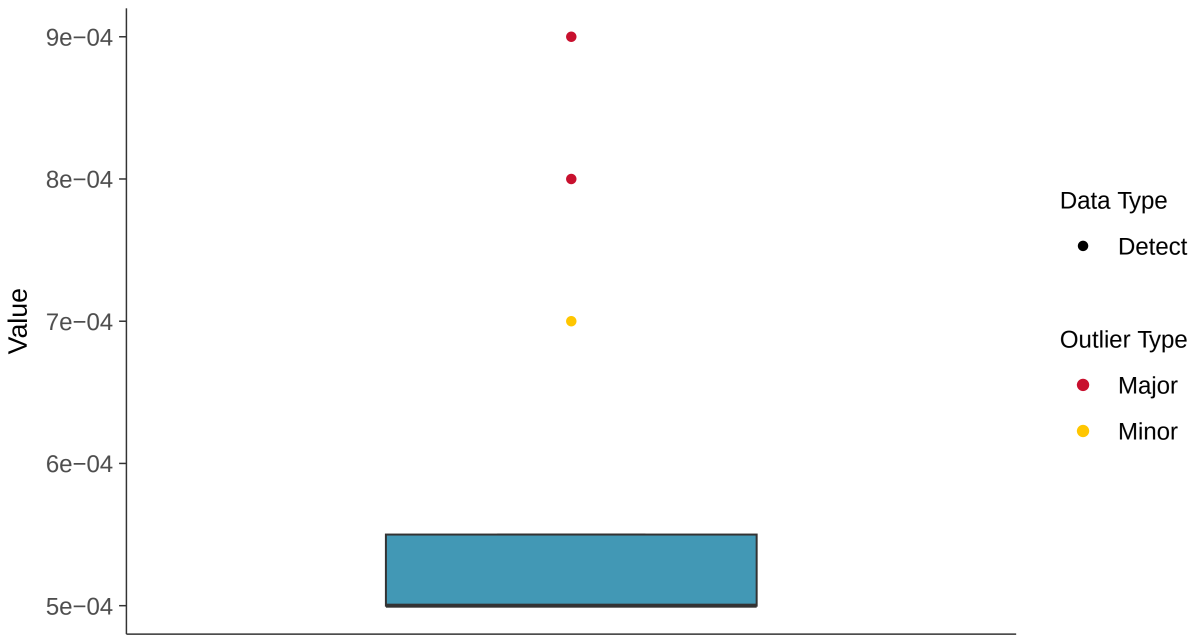
Histogram

Cadmium, MW-7C (mg/L)



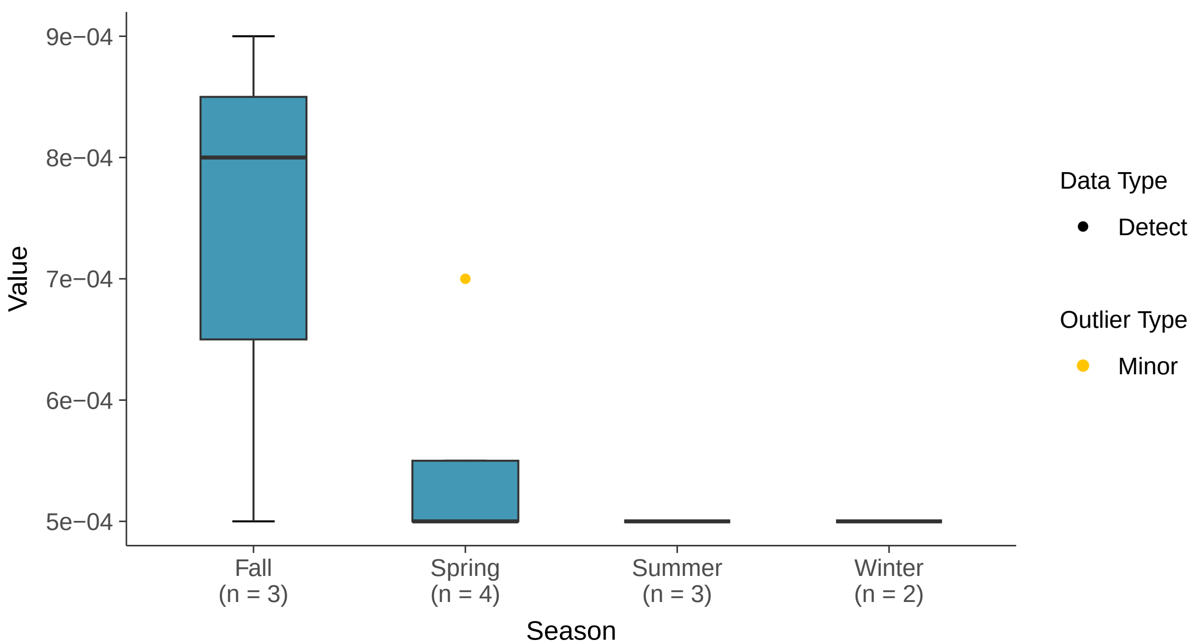
Boxplot

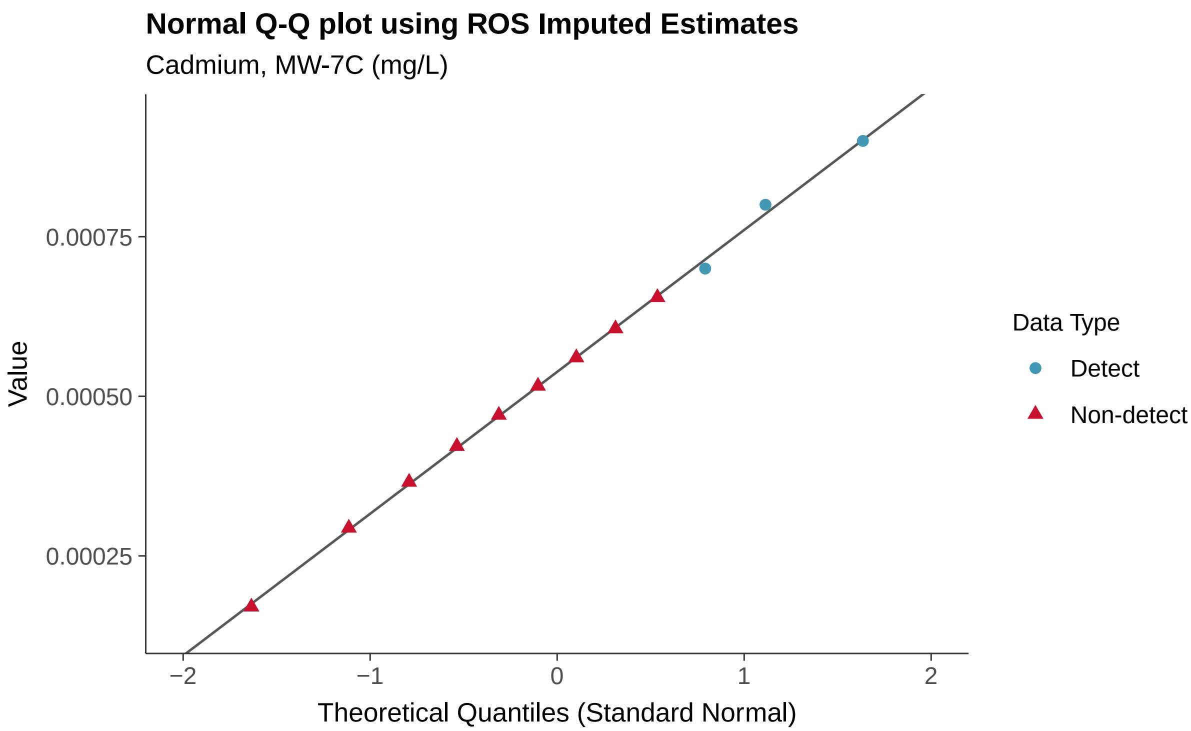
Cadmium, MW-7C (mg/L)

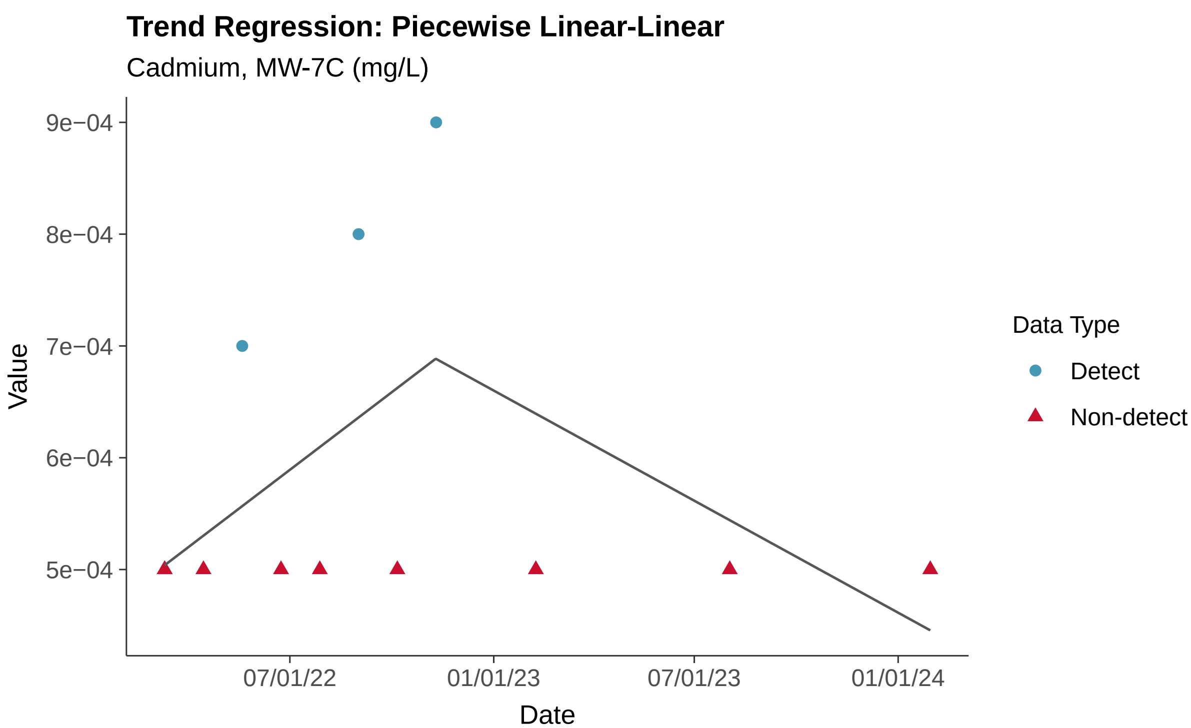


Boxplot by Season

Cadmium, MW-7C (mg/L)

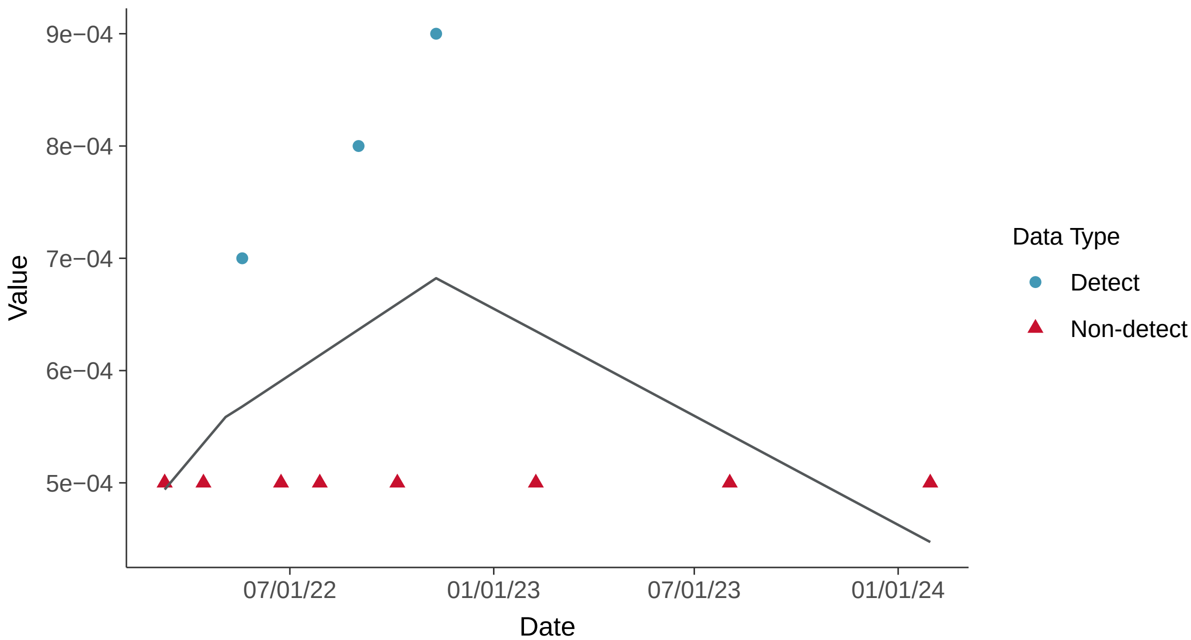



Normal Q-Q plot using ROS Imputed Estimates
Cadmium, MW-7C (mg/L)
Value
0.00075
0.00050
0.00025
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Cadmium, MW-7C (mg/L)
Value
9e−04
8e−04
7e−04
6e−04
5e−04
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect
Non-detect

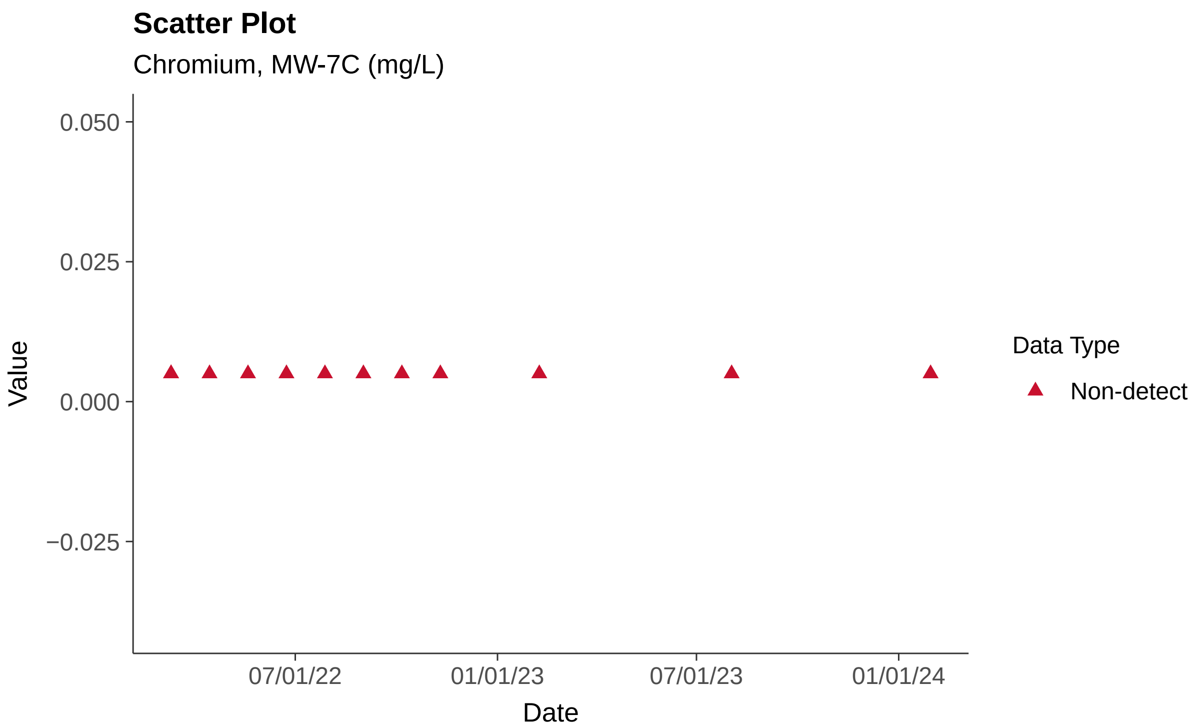
Trend Regression: Piecewise Linear-Linear-Linear

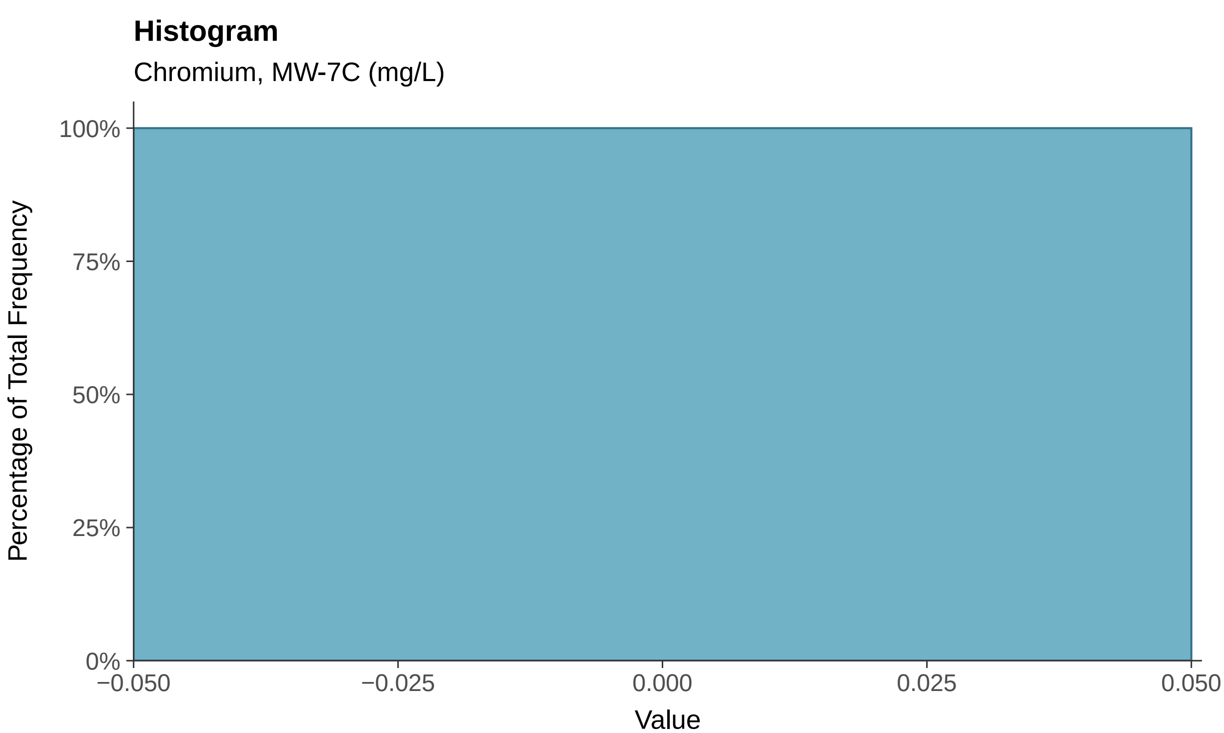
Cadmium, MW-7C (mg/L)



Appendix IV: Chromium, MW-7C

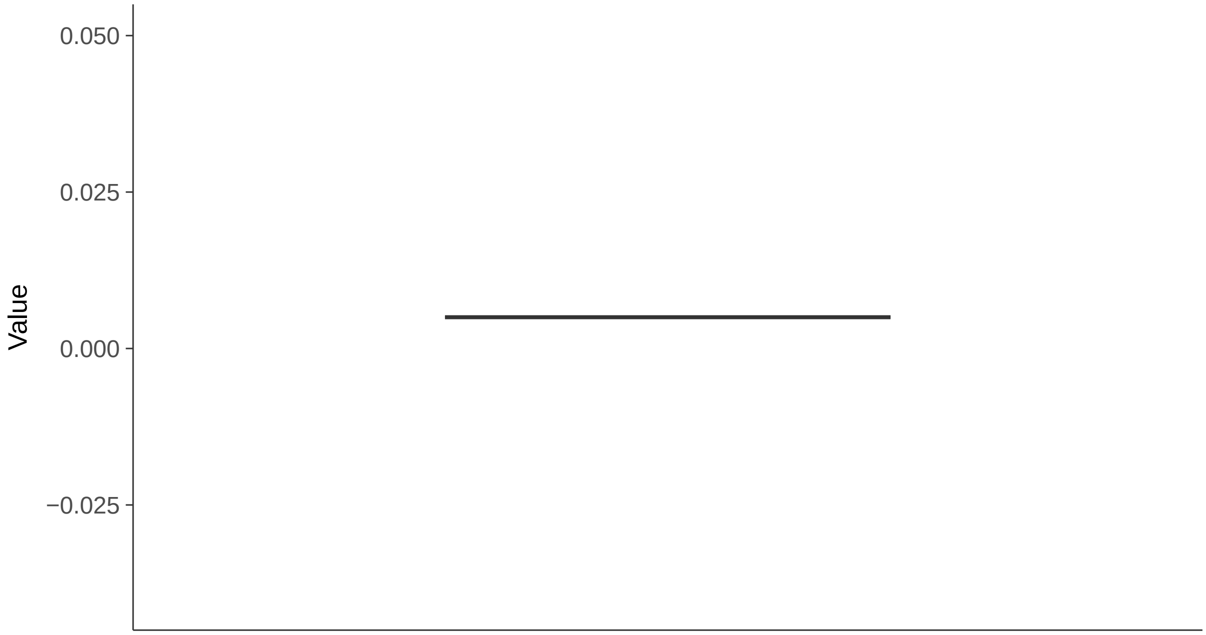
ID: 7C_2_13





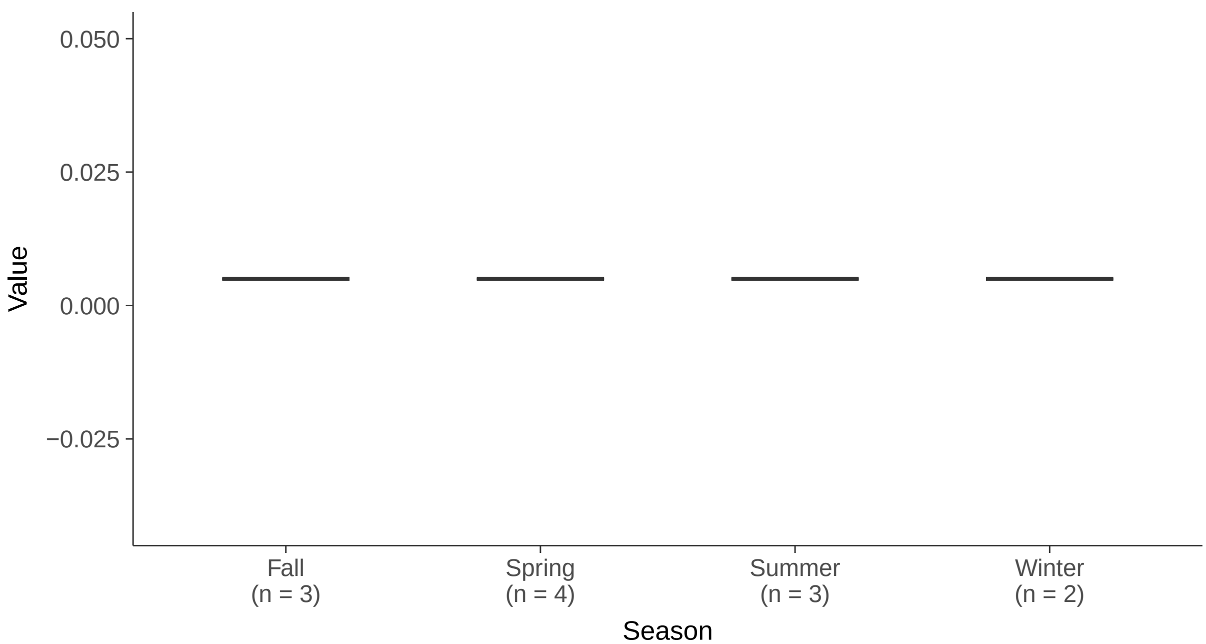
Boxplot

Chromium, MW-7C (mg/L)



Boxplot by Season

Chromium, MW-7C (mg/L)

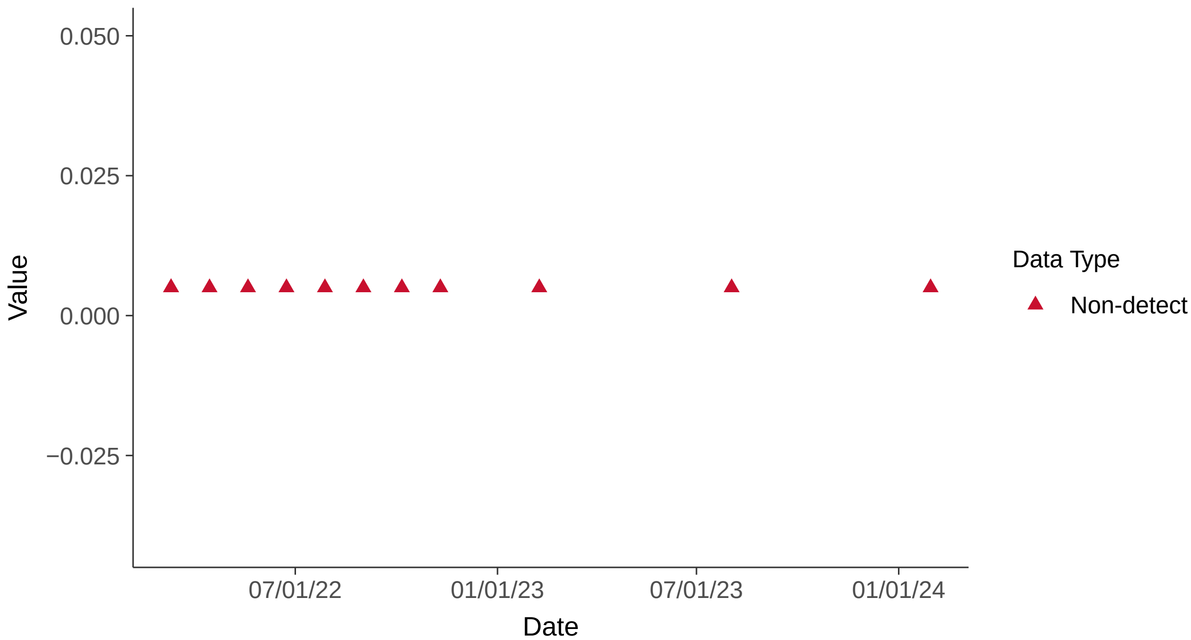


Appendix IV: Cobalt, MW-7C

ID: 7C_2_14

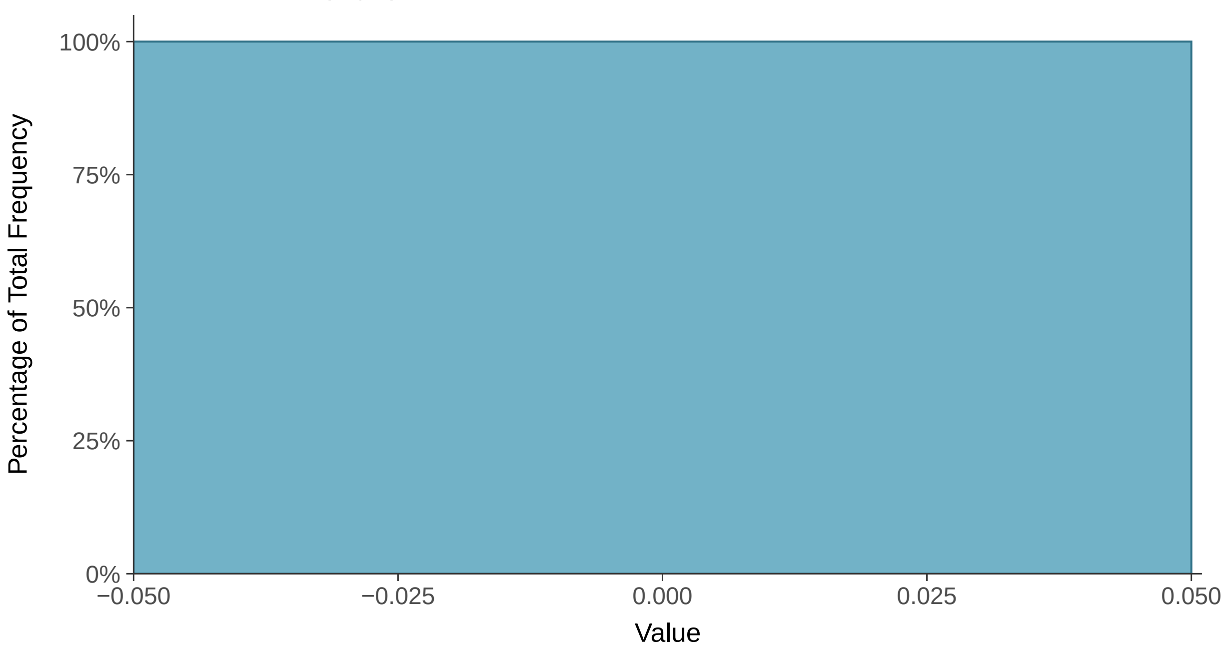
Scatter Plot

Cobalt, MW-7C (mg/L)



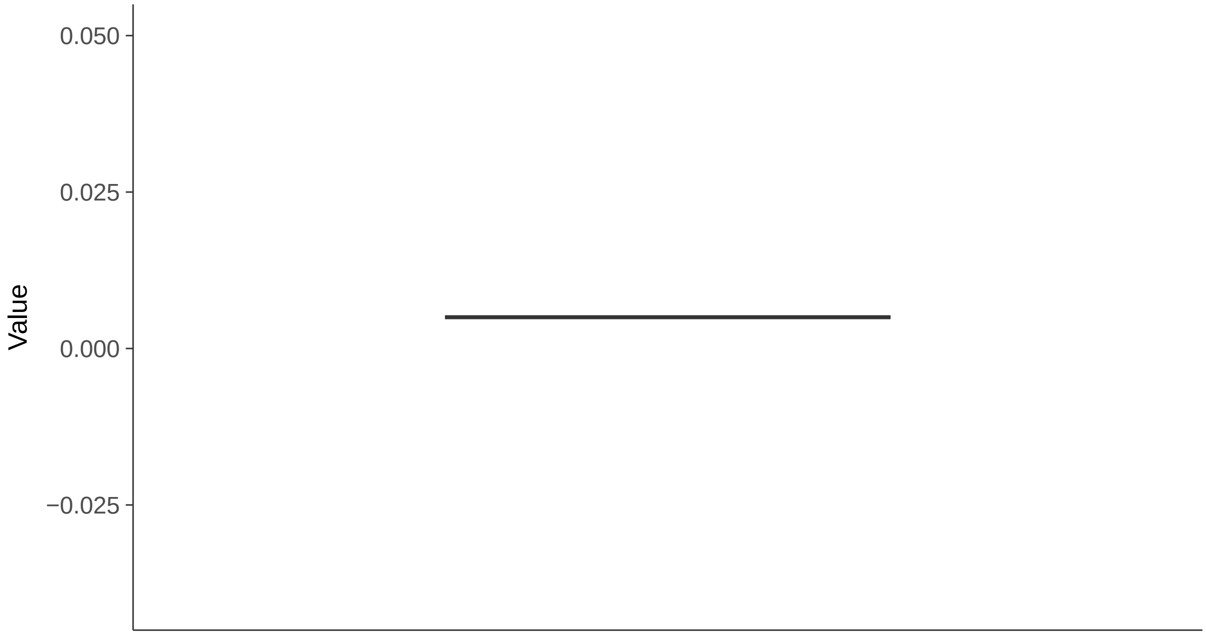
Histogram

Cobalt, MW-7C (mg/L)



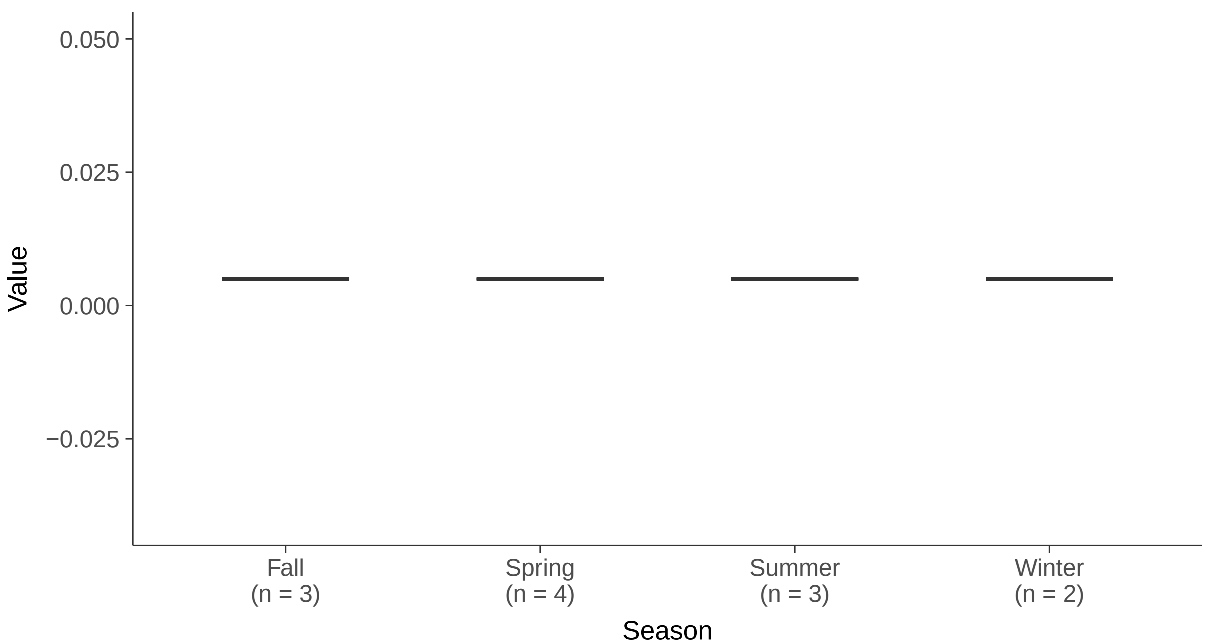
Boxplot

Cobalt, MW-7C (mg/L)



Boxplot by Season

Cobalt, MW-7C (mg/L)

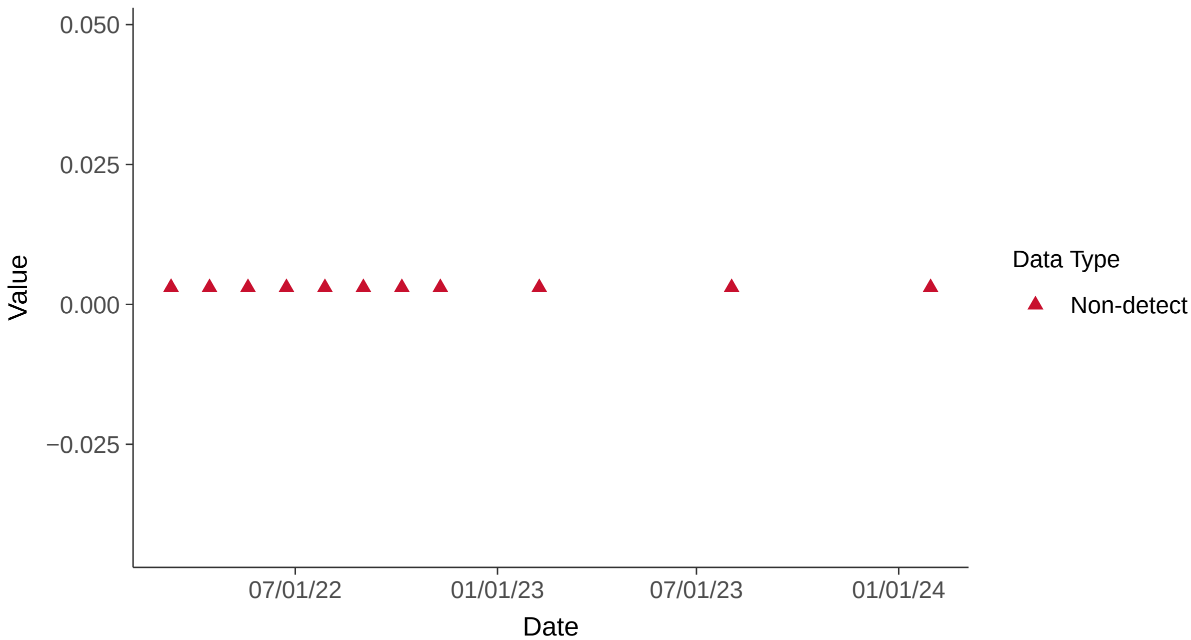


Appendix IV: Lead, MW-7C

ID: 7C_2_15

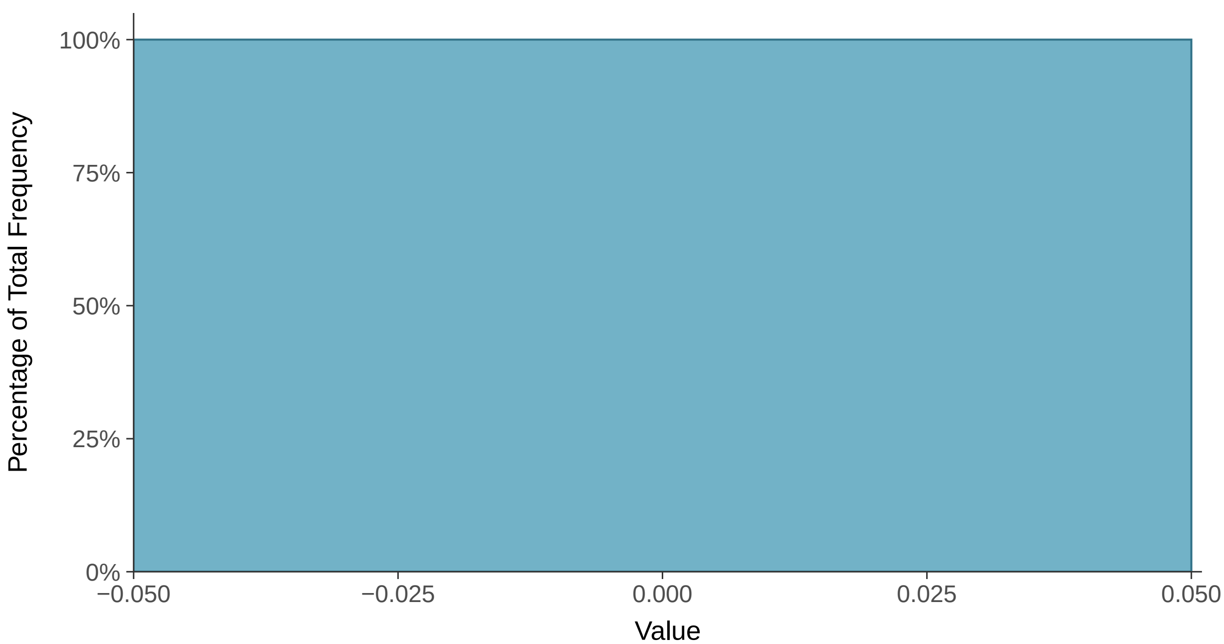
Scatter Plot

Lead, MW-7C (mg/L)



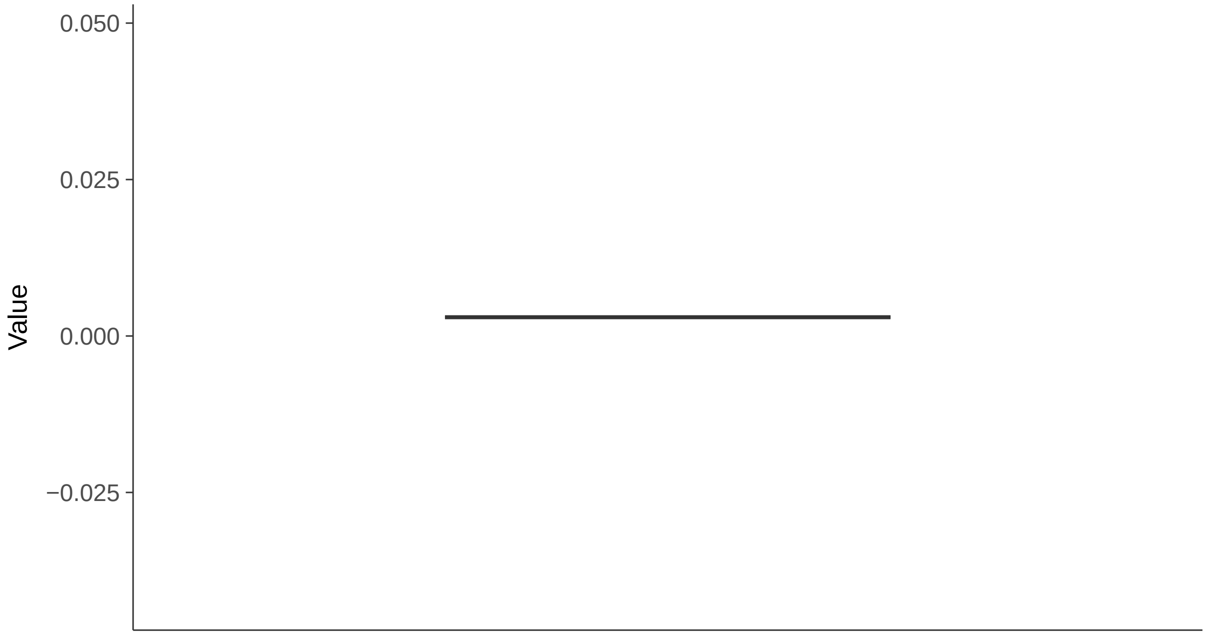
Histogram

Lead, MW-7C (mg/L)



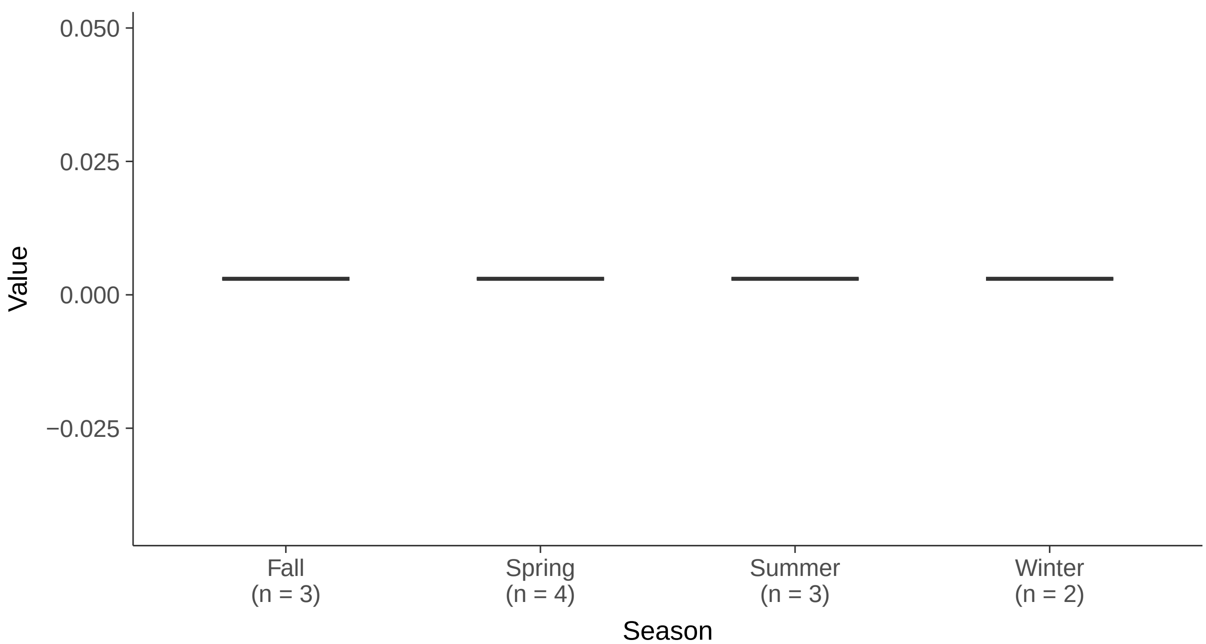
Boxplot

Lead, MW-7C (mg/L)



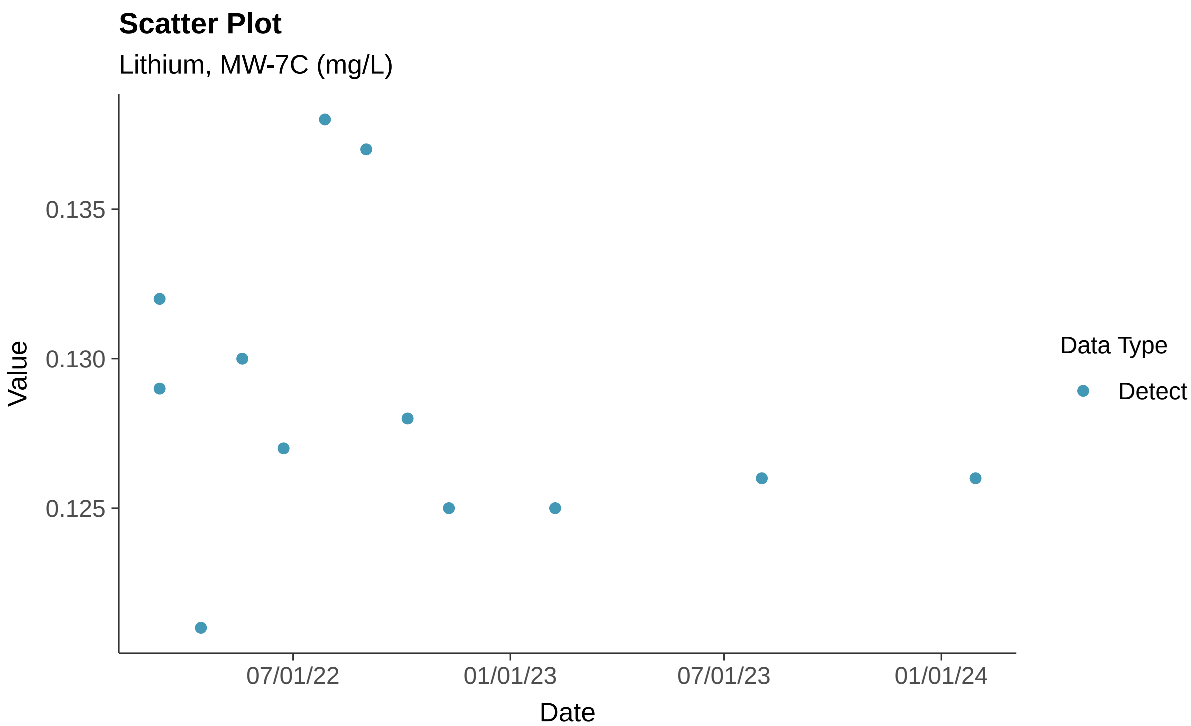
Boxplot by Season

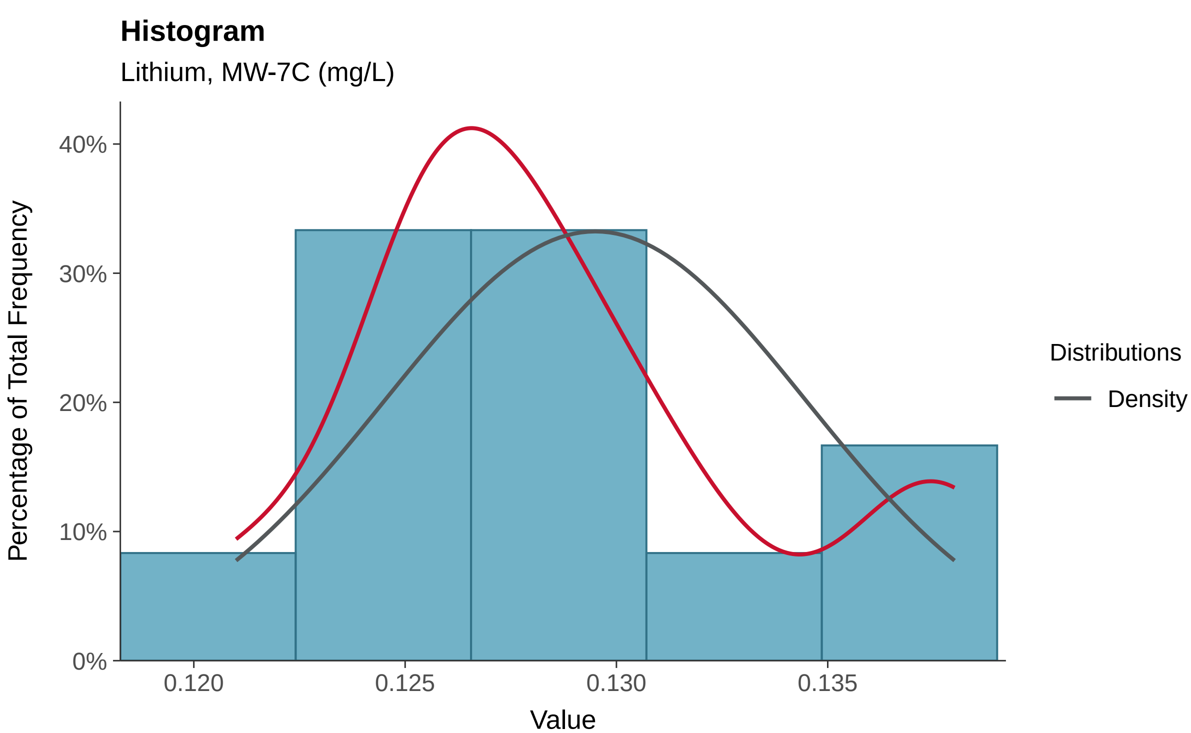
Lead, MW-7C (mg/L)



Appendix IV: Lithium, MW-7C

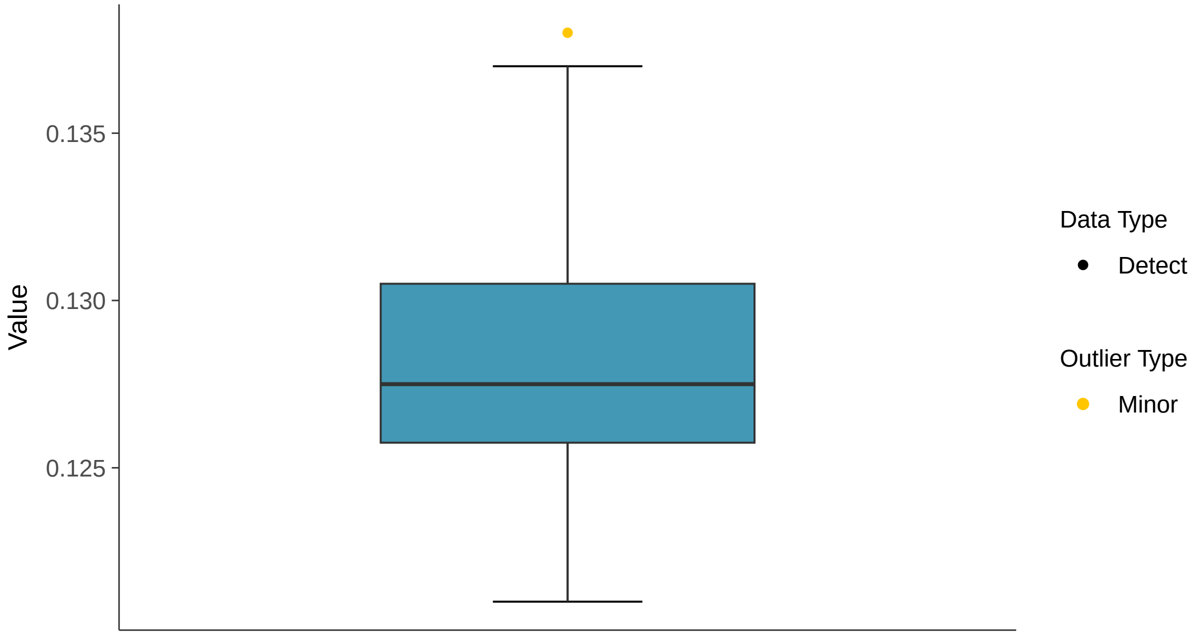
ID: 7C_2_16





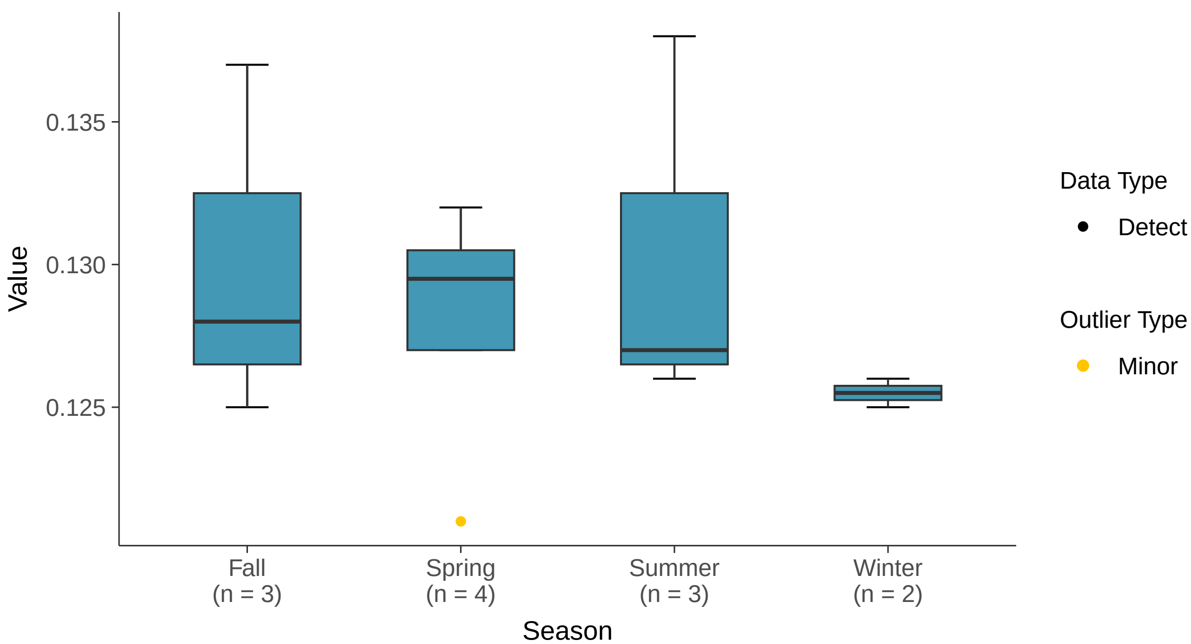
Boxplot

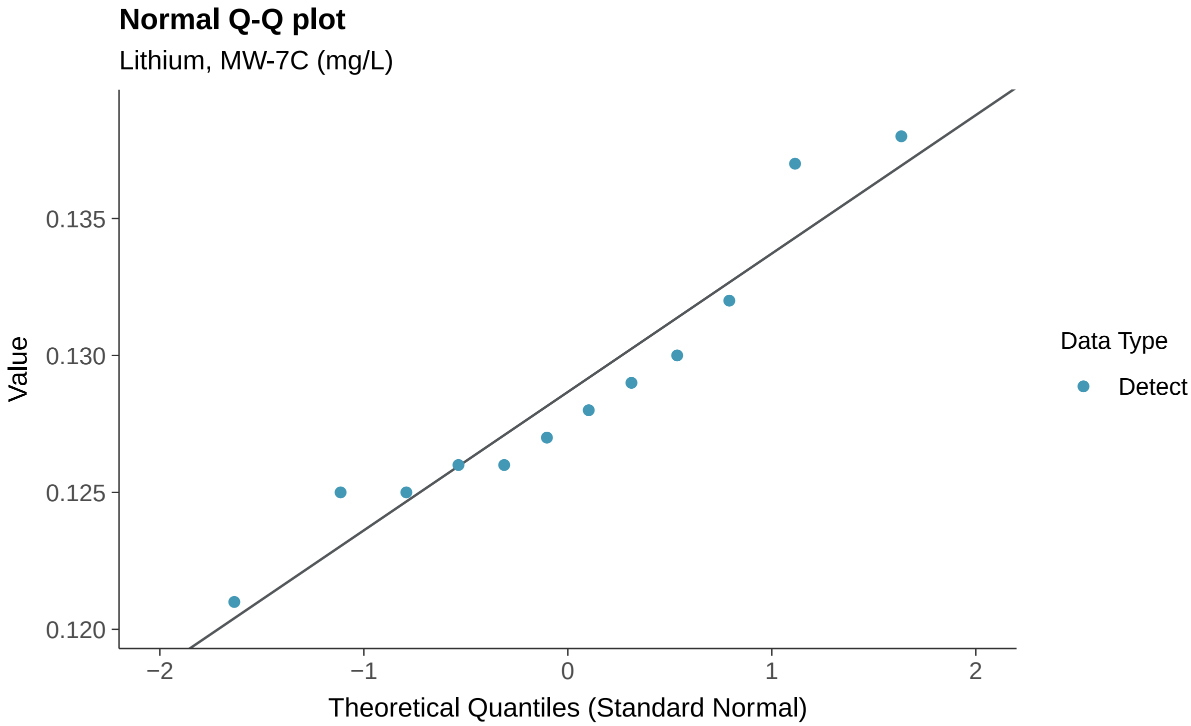
Lithium, MW-7C (mg/L)

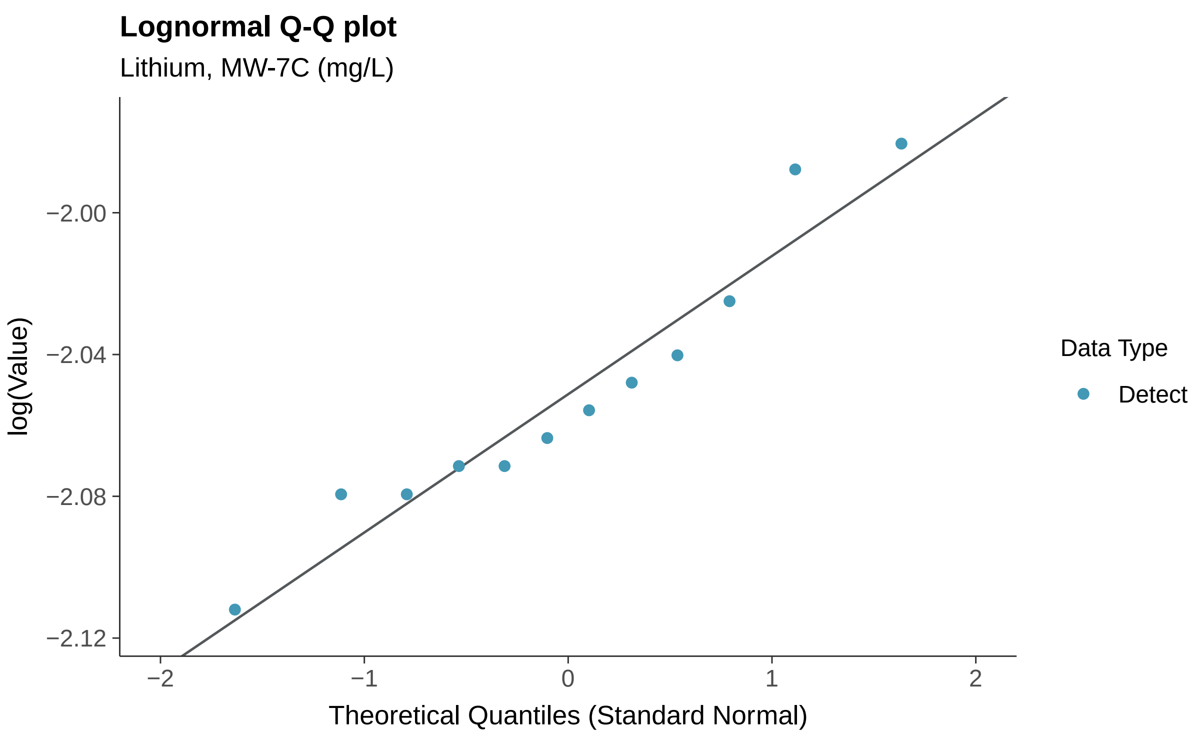


Boxplot by Season

Lithium, MW-7C (mg/L)

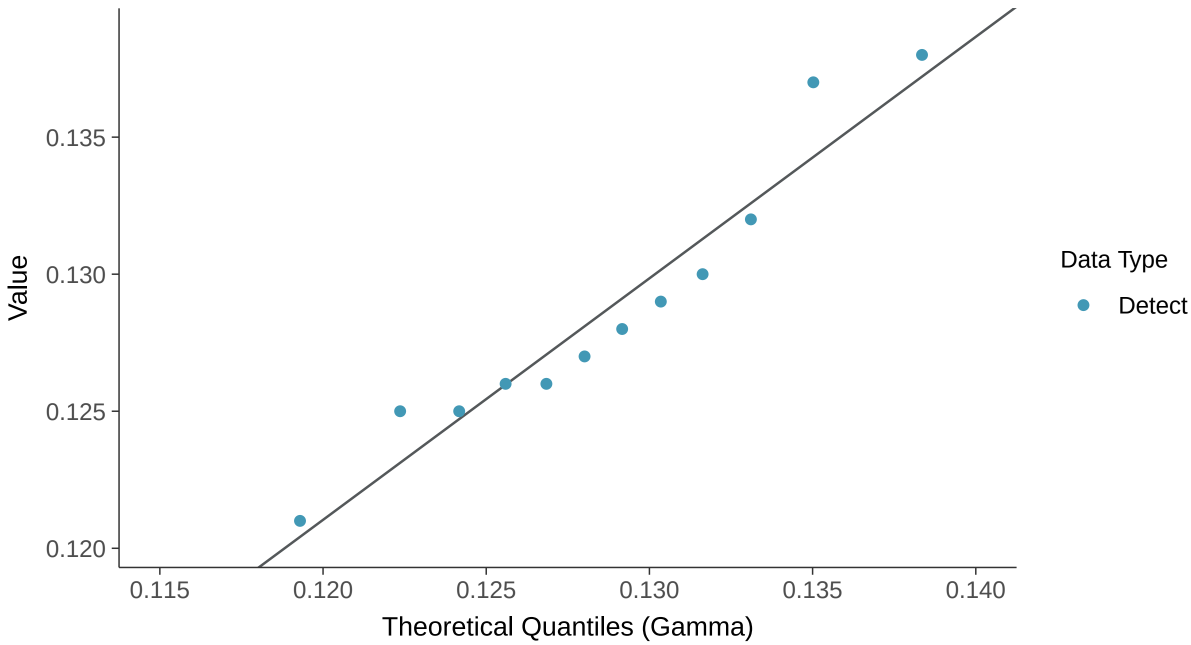



Normal Q-Q plot
Lithium, MW-7C (mg/L)
Value
0.135
0.130
0.125
0.120
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-7C (mg/L)
log(Value)
−2.00
−2.04
−2.08
−2.12
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

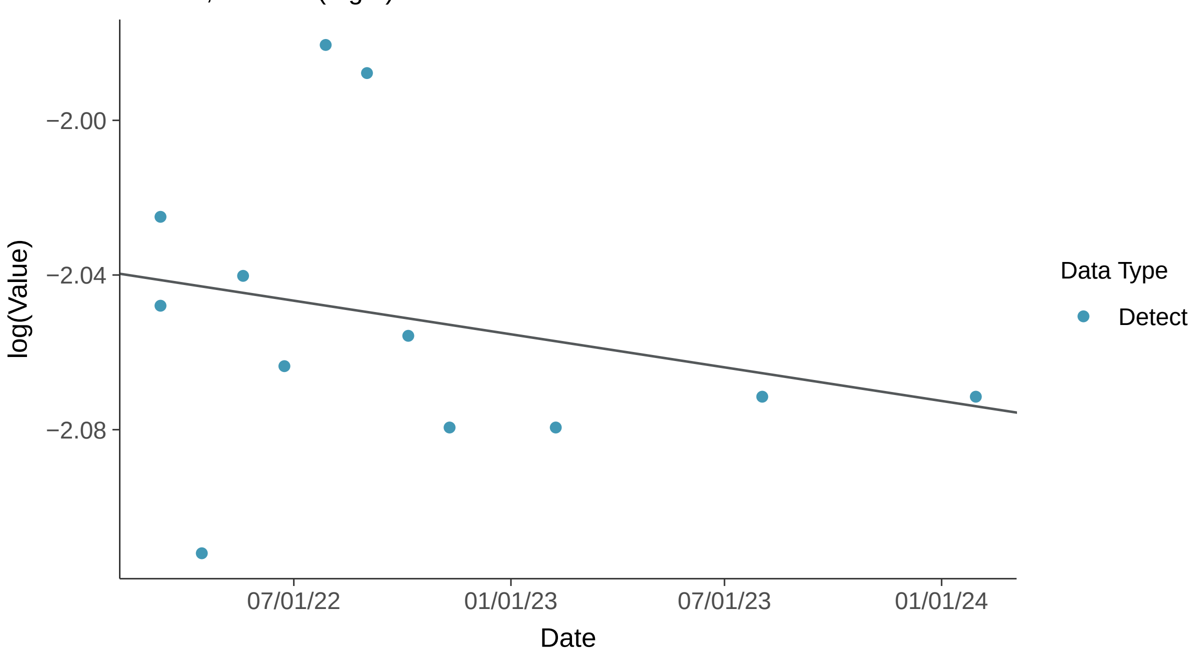
Gamma Q-Q plot

Lithium, MW-7C (mg/L)



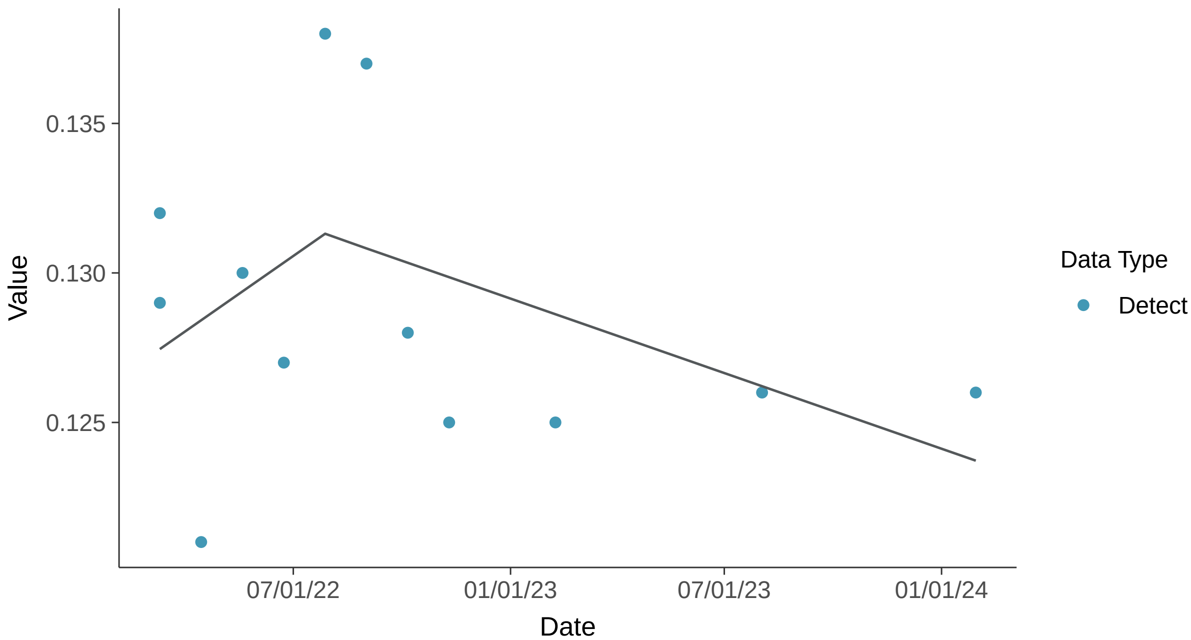
Trend Regression: Lognormal MLE

Lithium, MW-7C (mg/L)



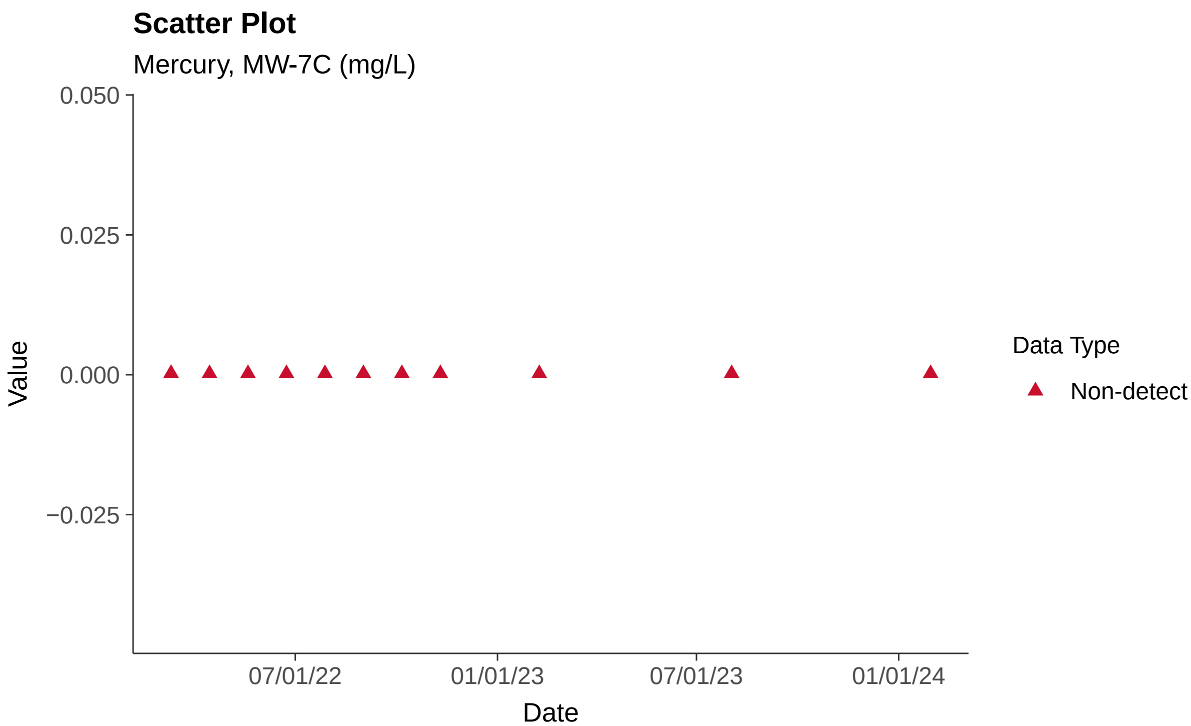
Trend Regression: Piecewise Linear-Linear

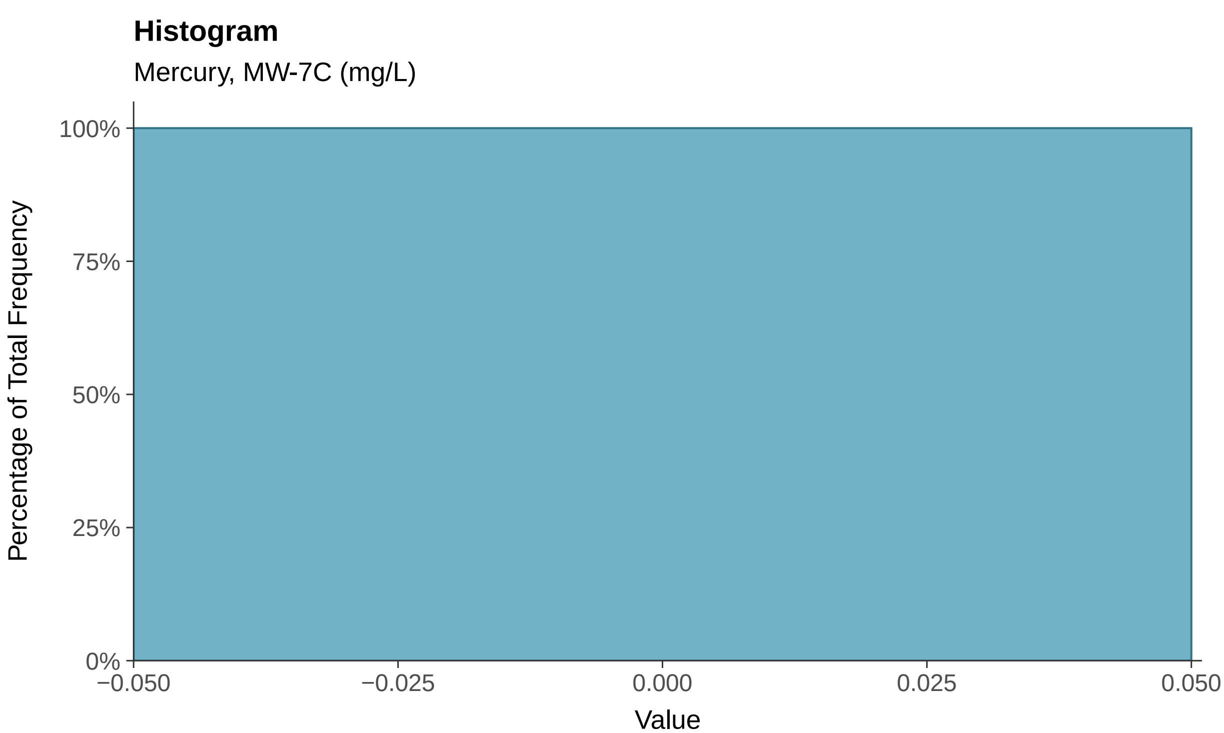
Lithium, MW-7C (mg/L)

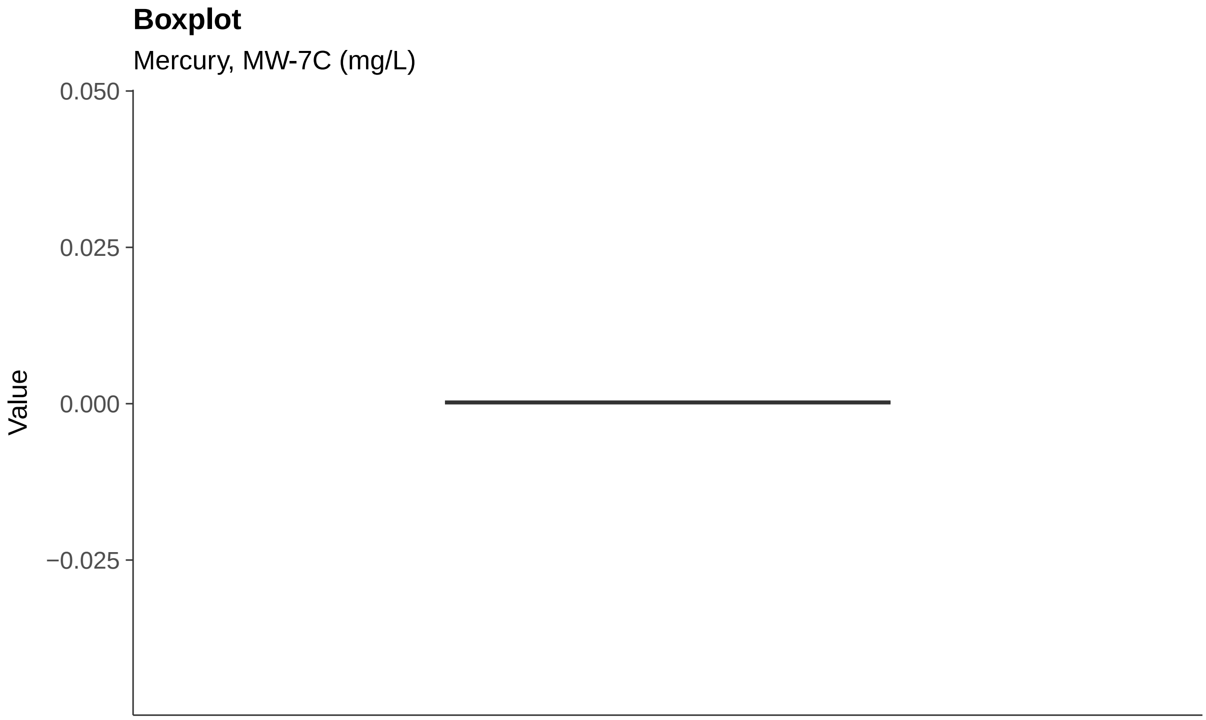


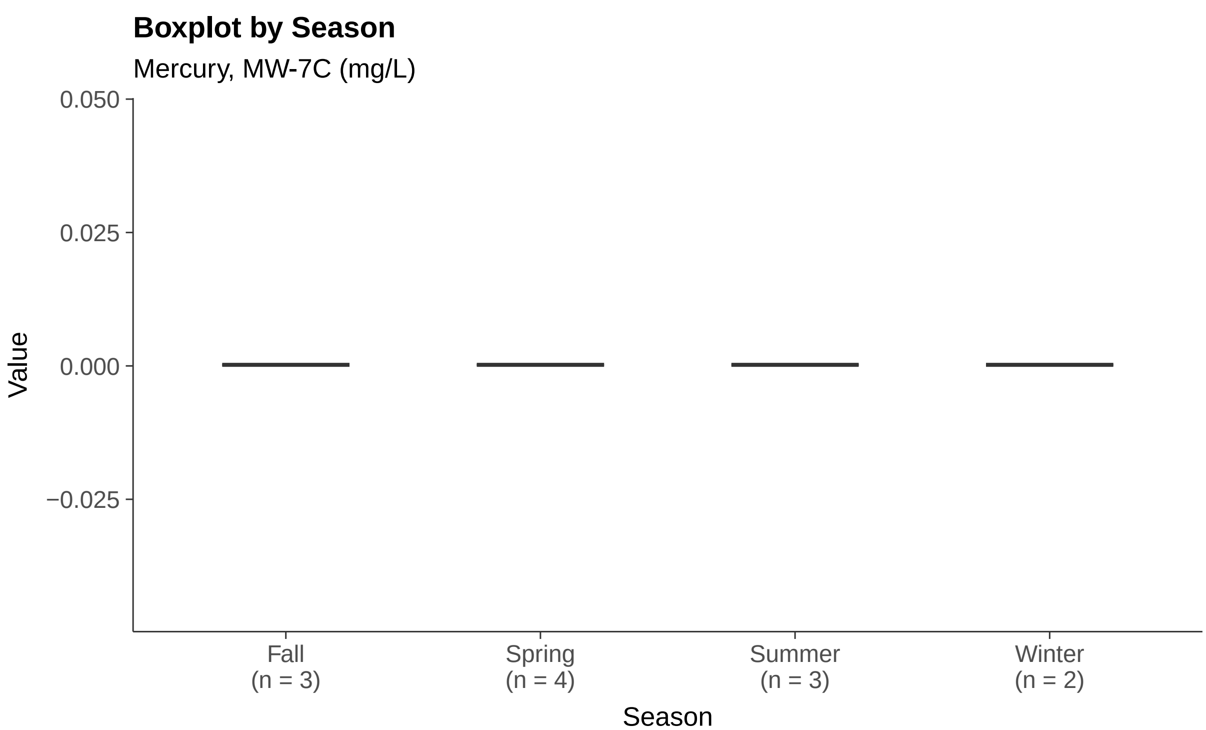
Appendix IV: Mercury, MW-7C

ID: 7C_2_17



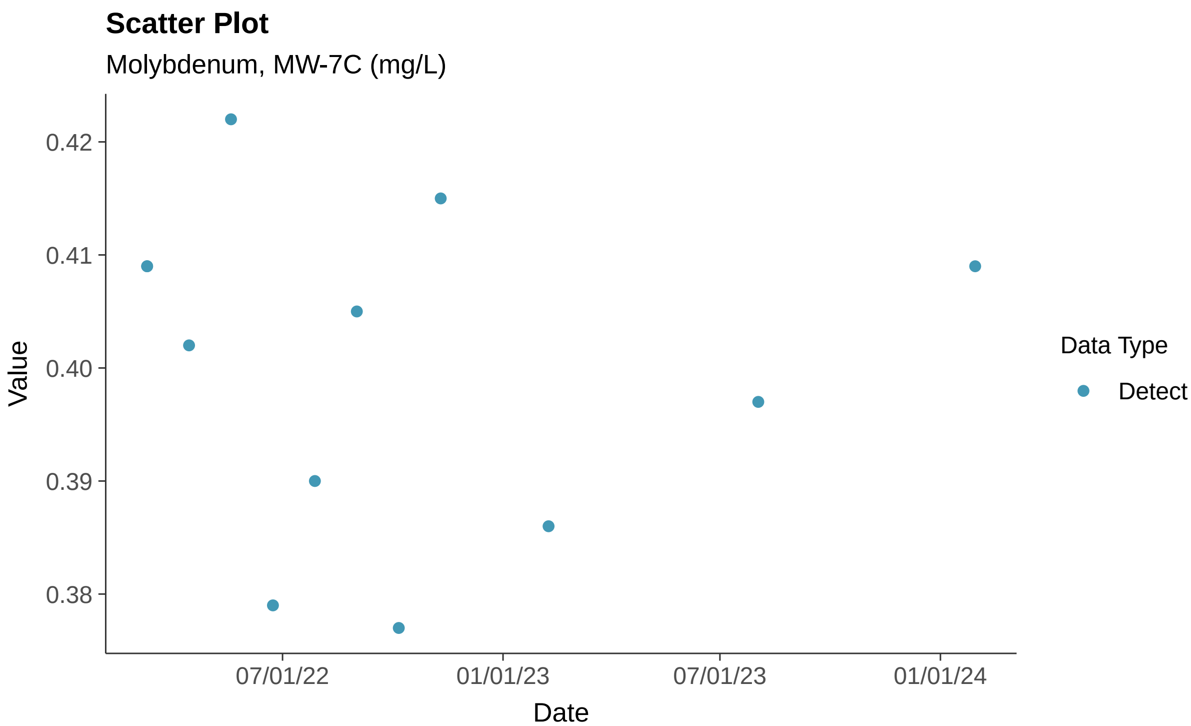


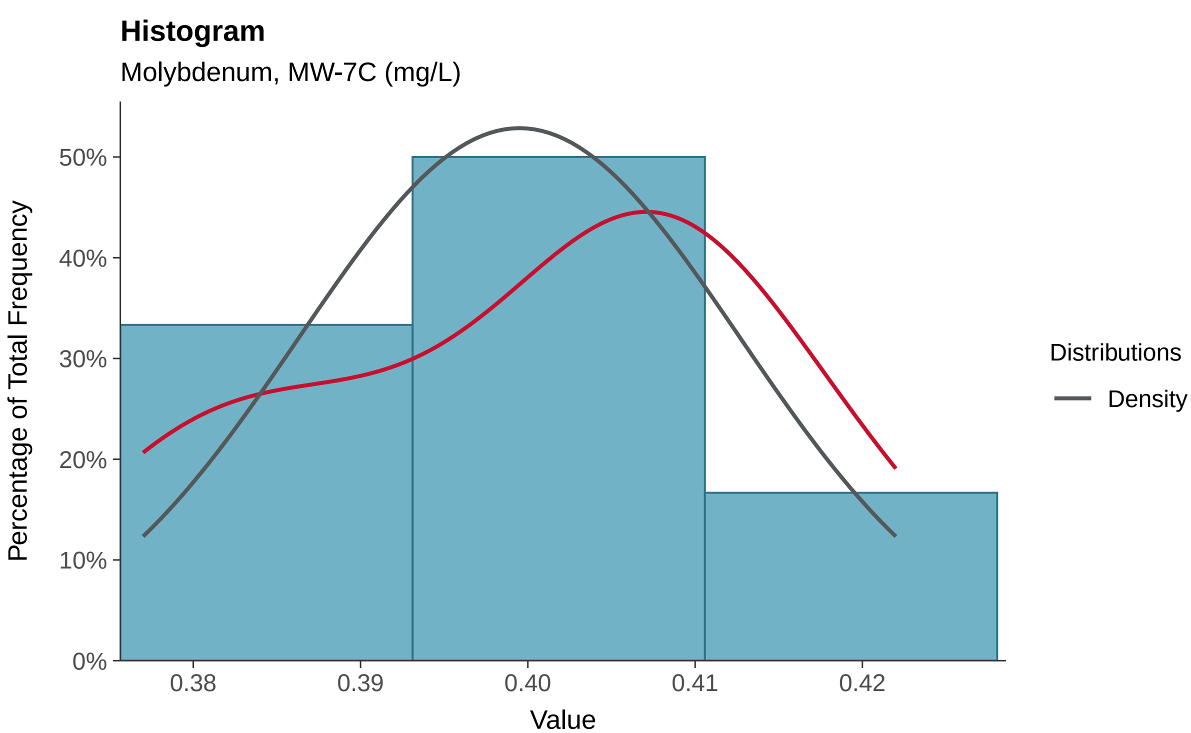

Boxplot
Mercury, MW-7C (mg/L)
0.050
0.025
0.000
−0.025
Value


Boxplot by Season
Mercury, MW-7C (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 3)
Spring
(n = 4)
Summer
(n = 3)
Winter
(n = 2)
Season

Appendix IV: Molybdenum, MW-7C

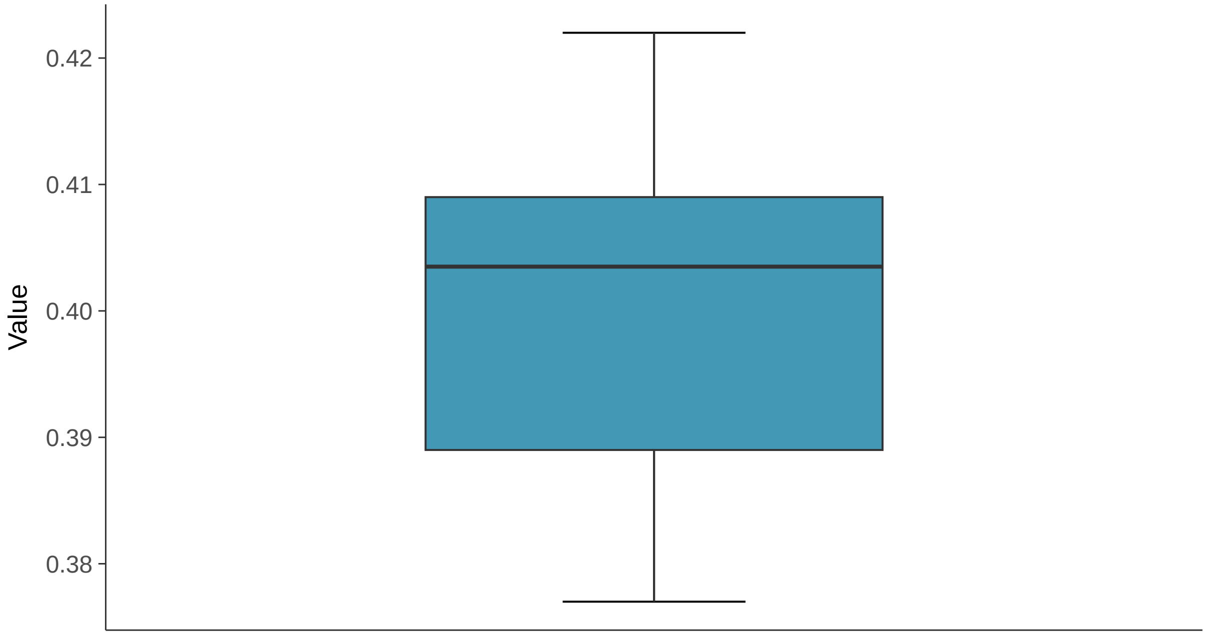
ID: 7C_2_18





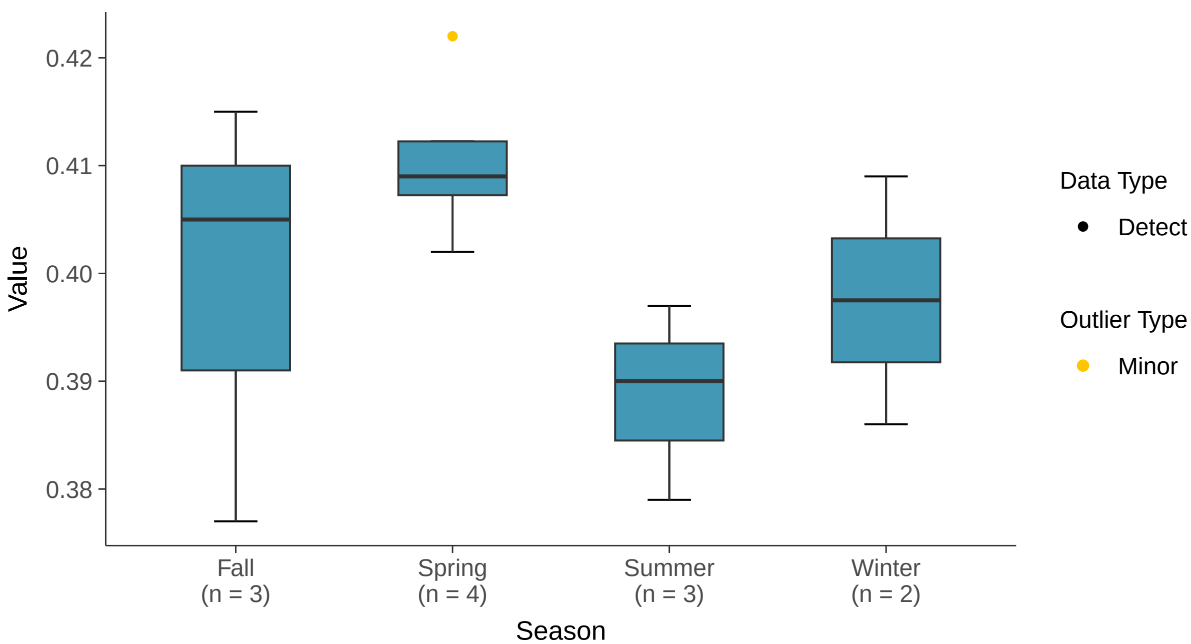
Boxplot

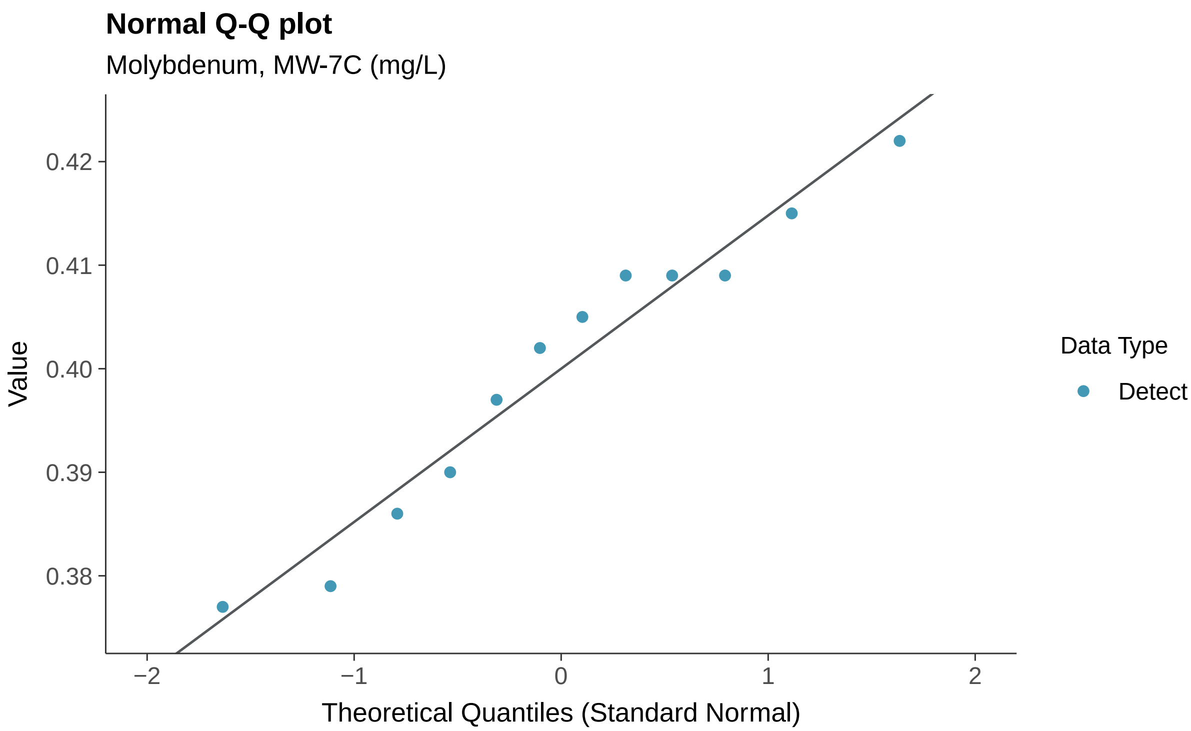
Molybdenum, MW-7C (mg/L)

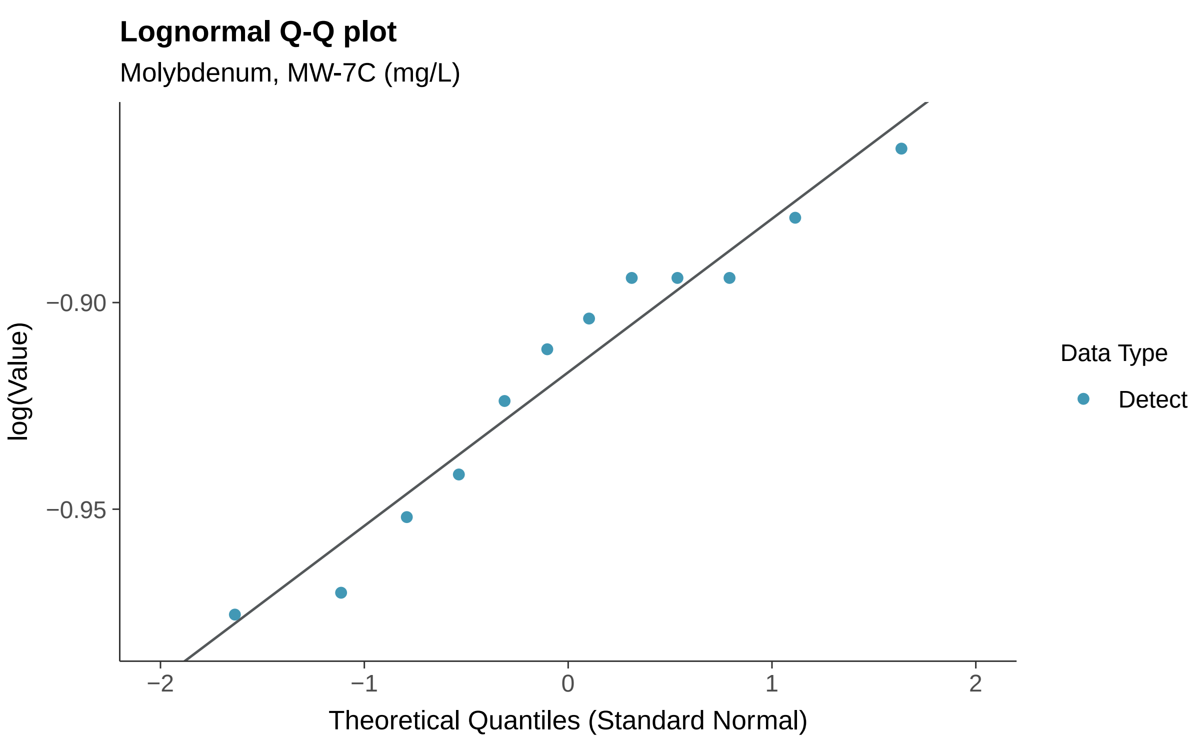


Boxplot by Season

Molybdenum, MW-7C (mg/L)

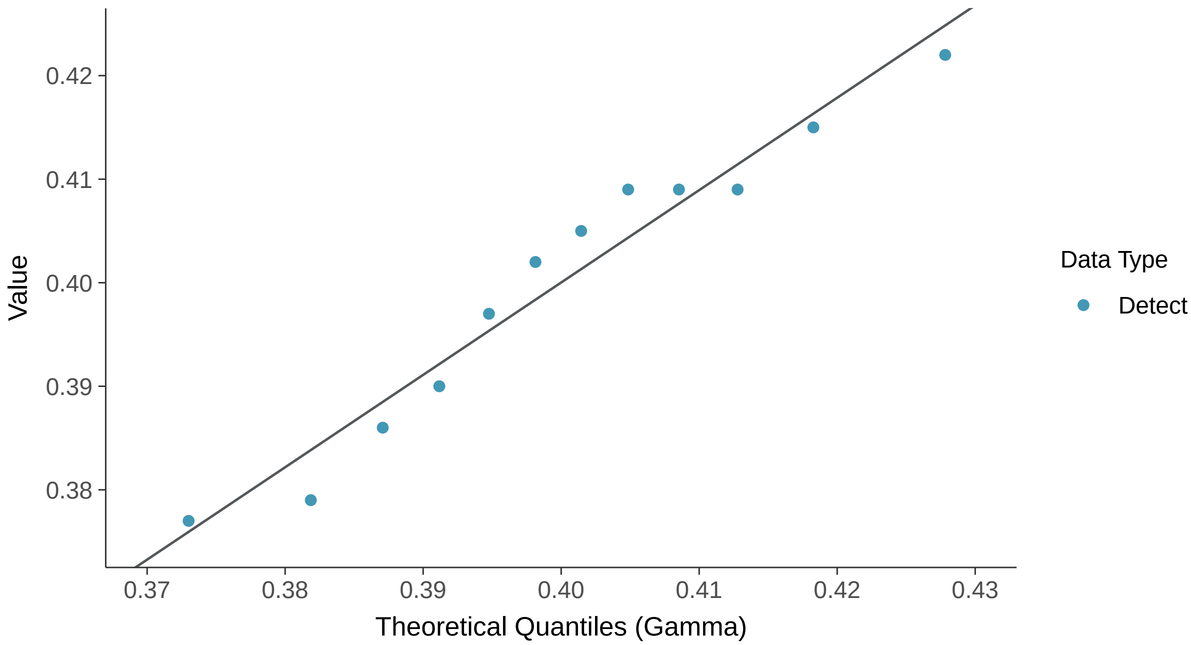



Normal Q-Q plot
Molybdenum, MW-7C (mg/L)
Value
0.42
0.41
0.40
0.39
0.38
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Molybdenum, MW-7C (mg/L)
log(Value)
−0.90
−0.95
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

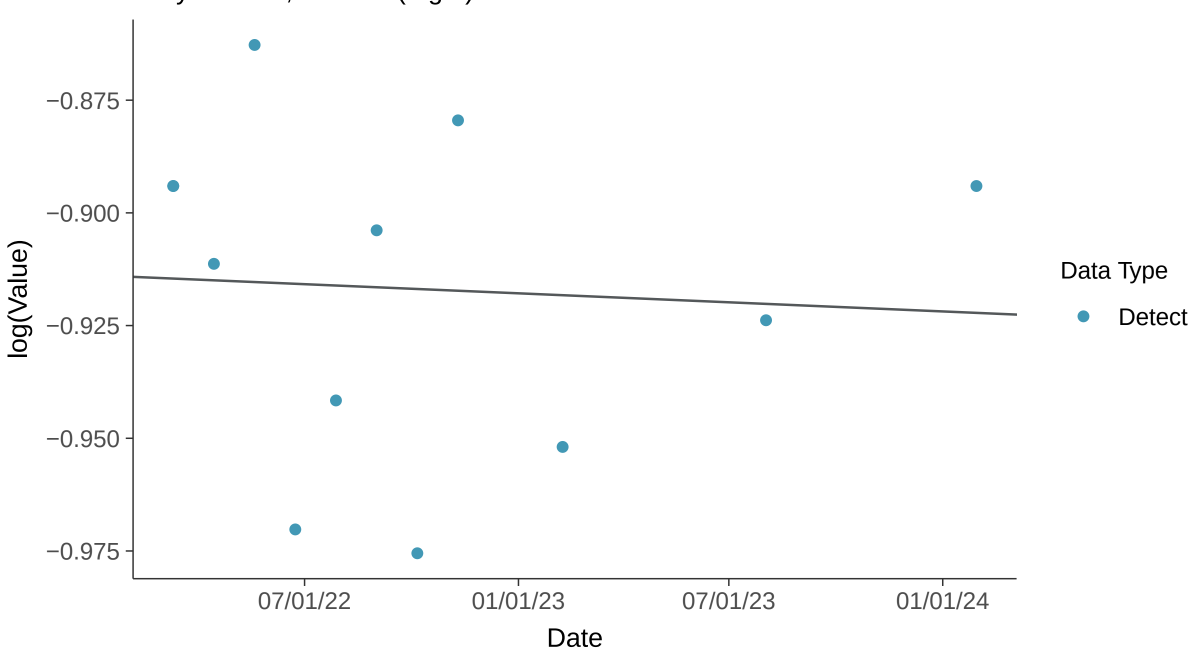
Gamma Q-Q plot

Molybdenum, MW-7C (mg/L)



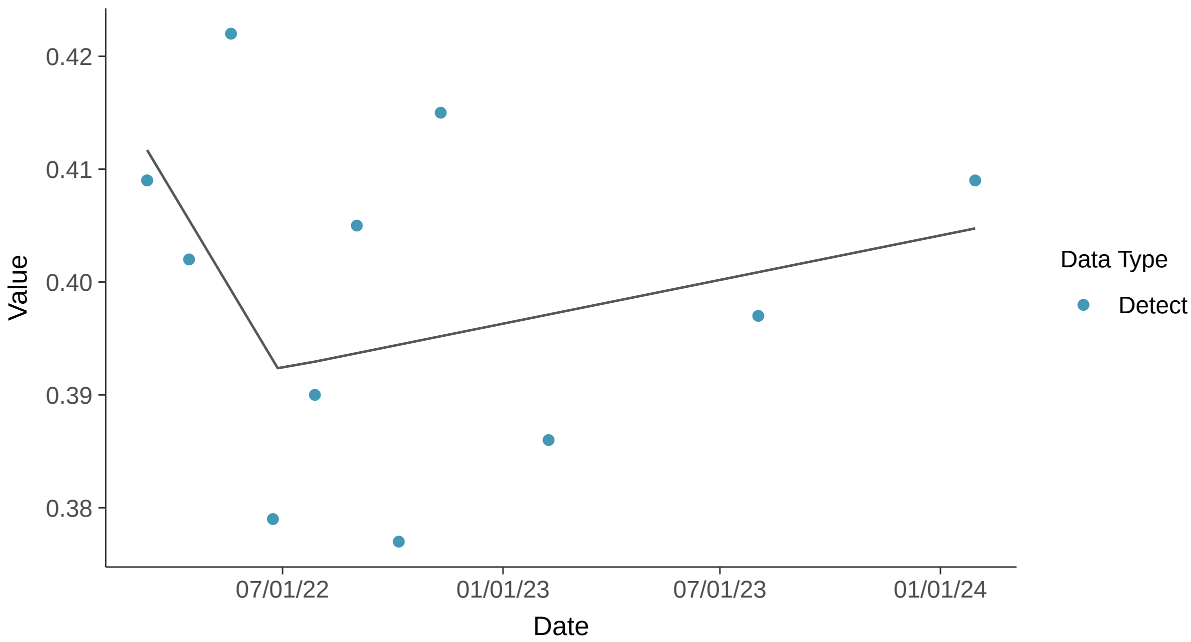
Trend Regression: Lognormal MLE

Molybdenum, MW-7C (mg/L)



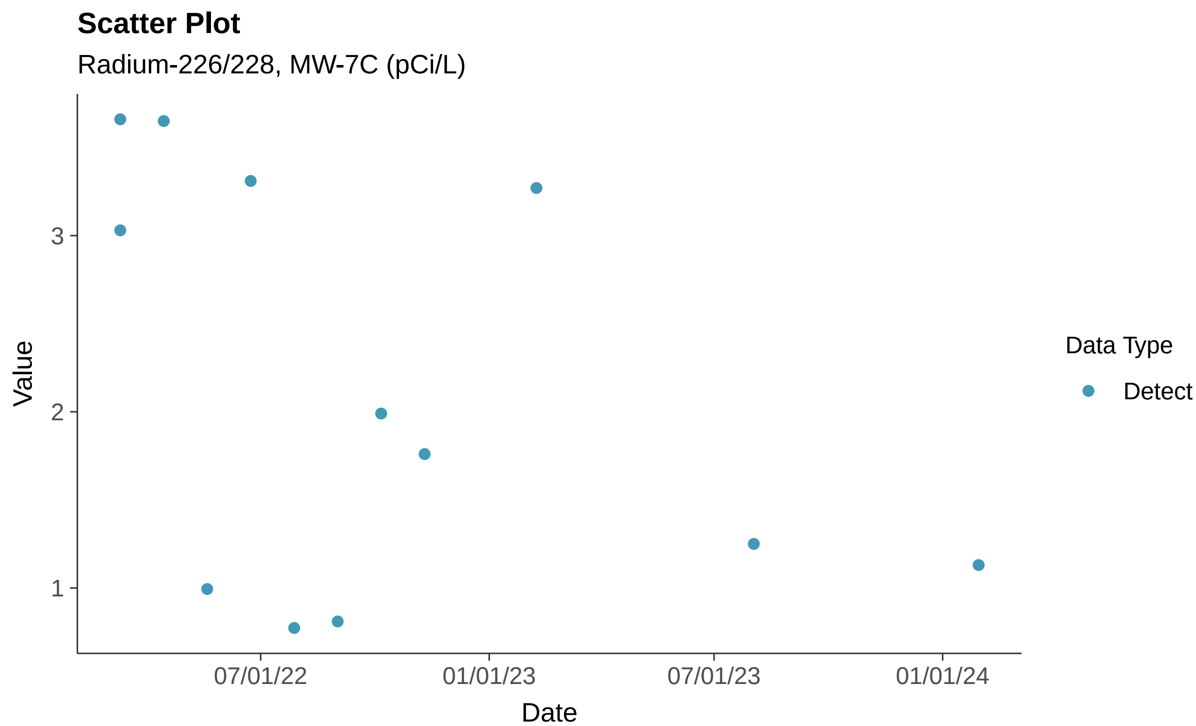
Trend Regression: Piecewise Linear-Linear

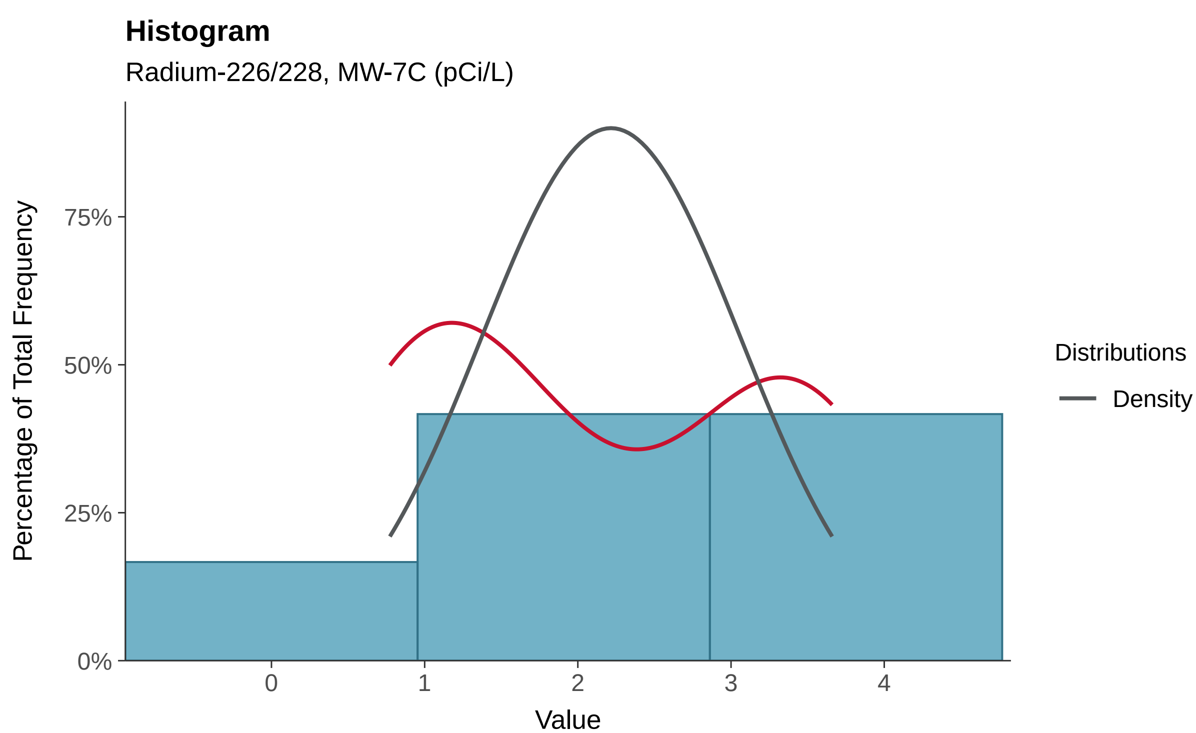
Molybdenum, MW-7C (mg/L)



Appendix IV: Radium-226/228, MW-7C

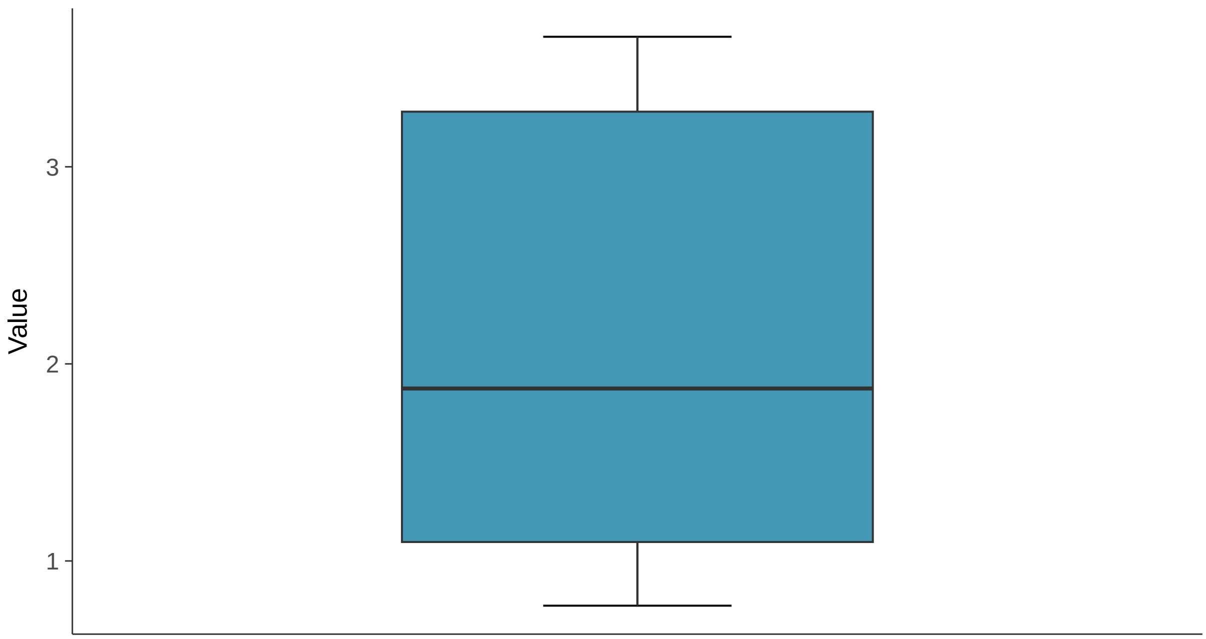
ID: 7C_2_20





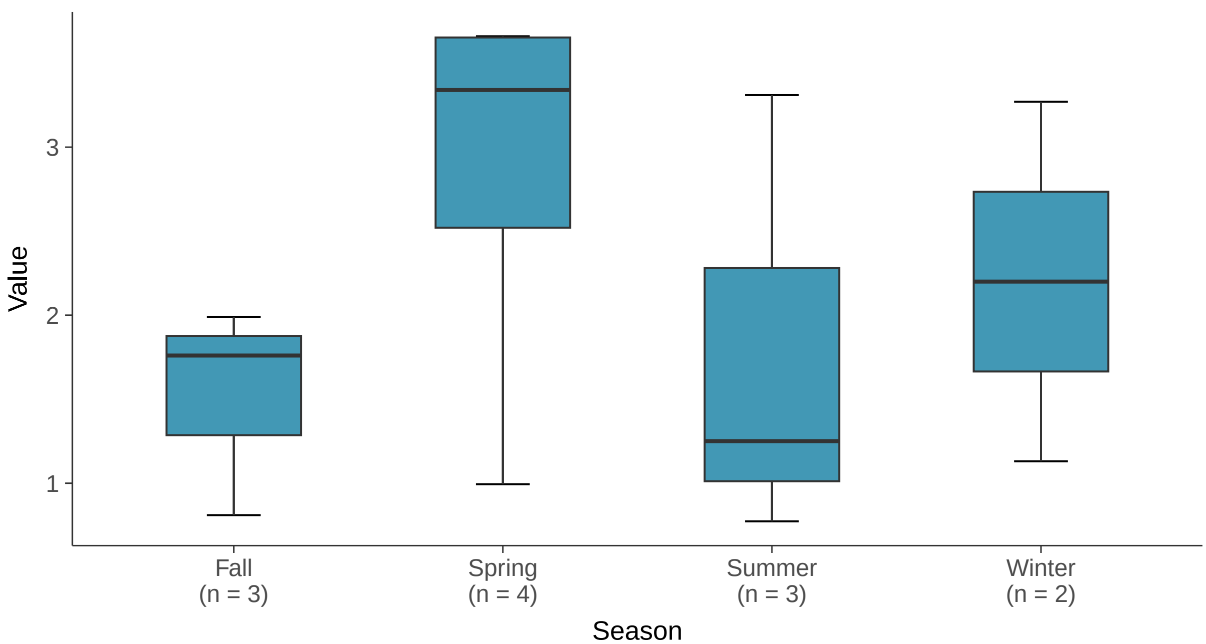
Boxplot

Radium-226/228, MW-7C (pCi/L)



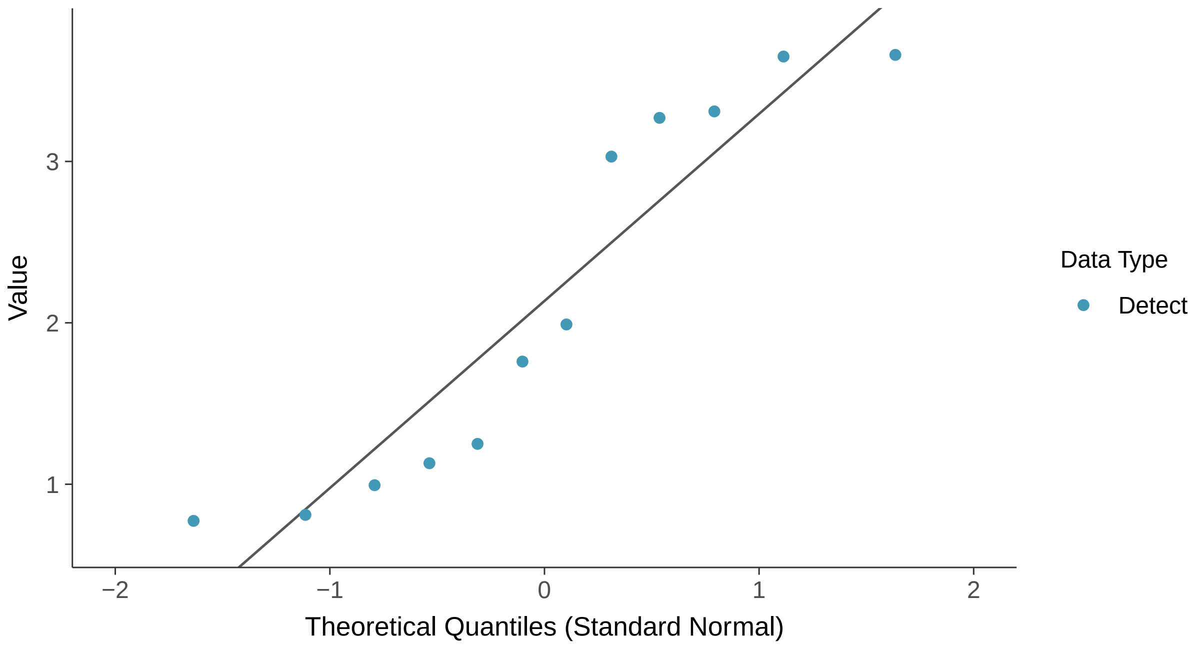
Boxplot by Season

Radium-226/228, MW-7C (pCi/L)



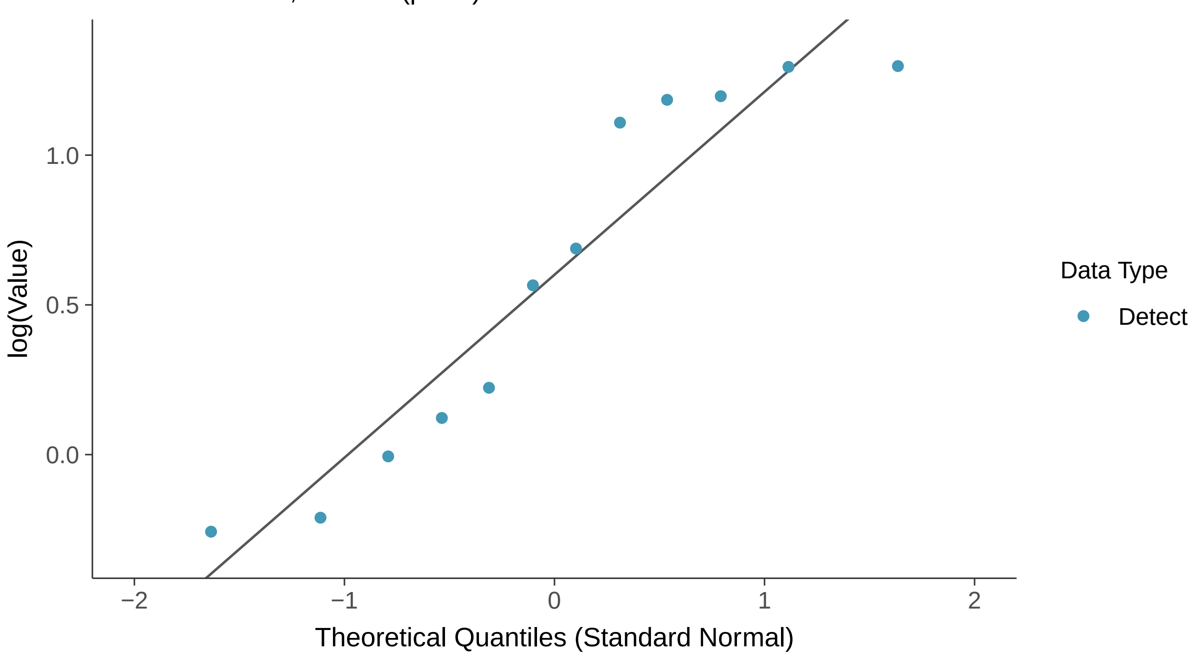
Normal Q-Q plot

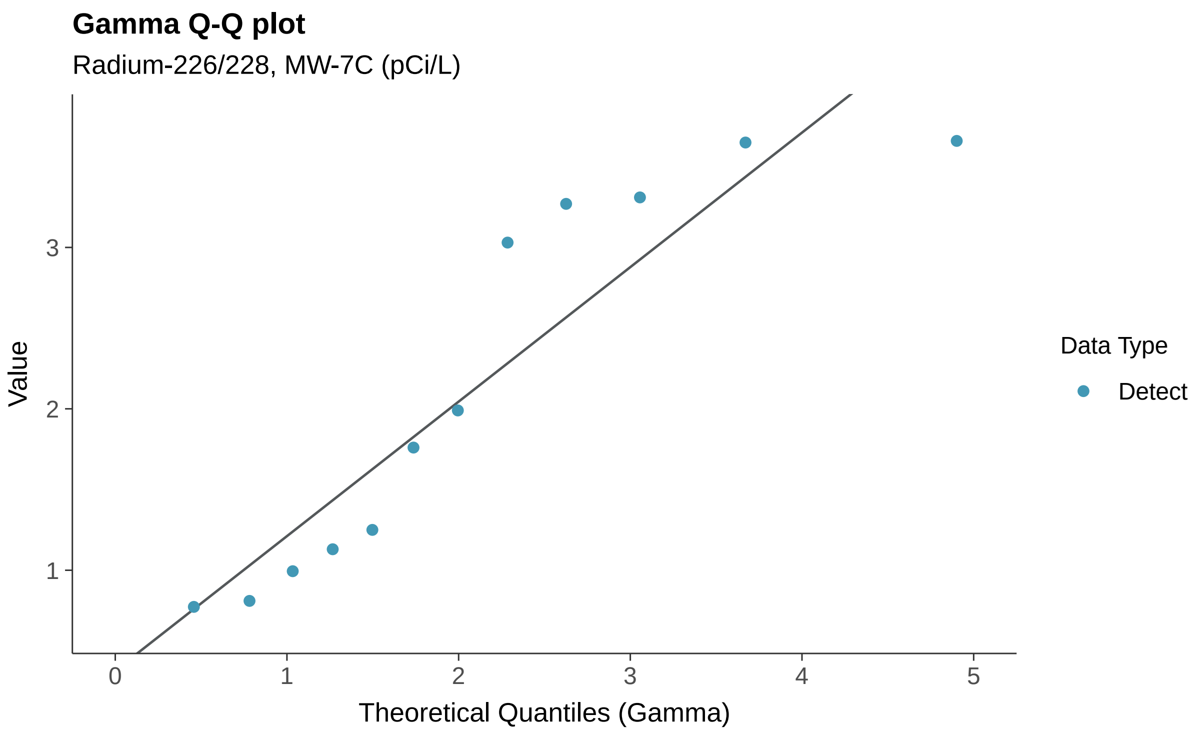
Radium-226/228, MW-7C (pCi/L)

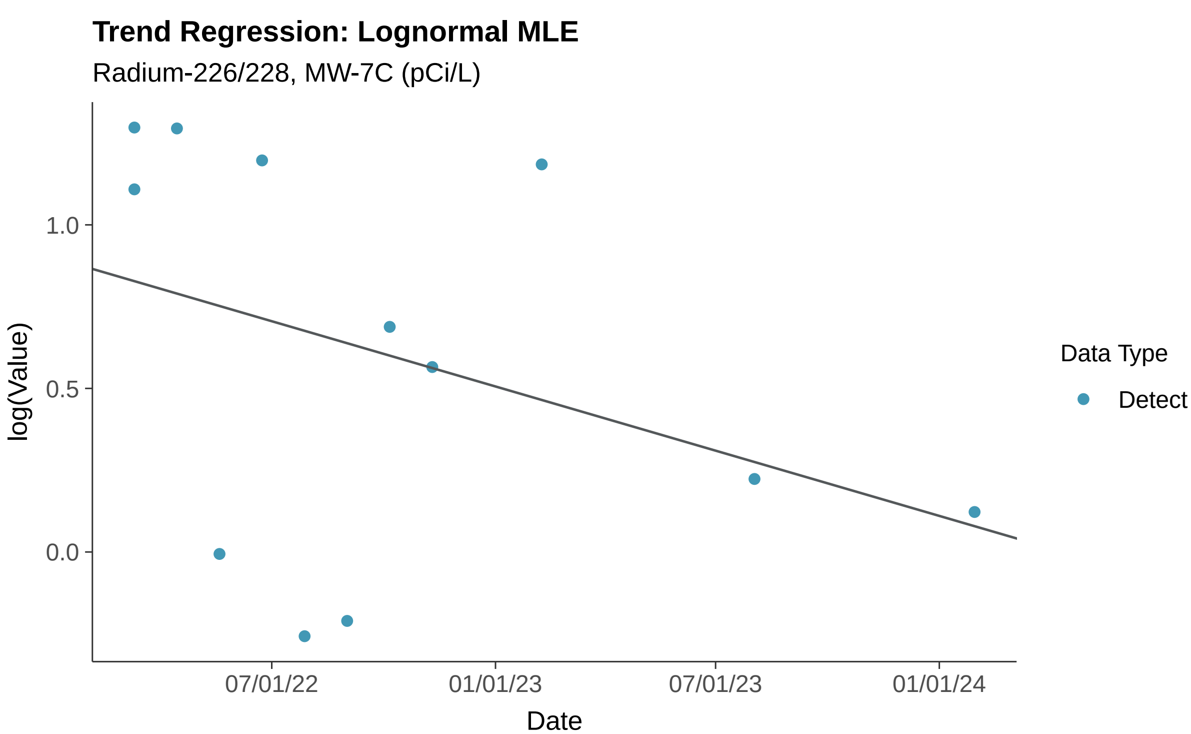


Lognormal Q-Q plot

Radium-226/228, MW-7C (pCi/L)

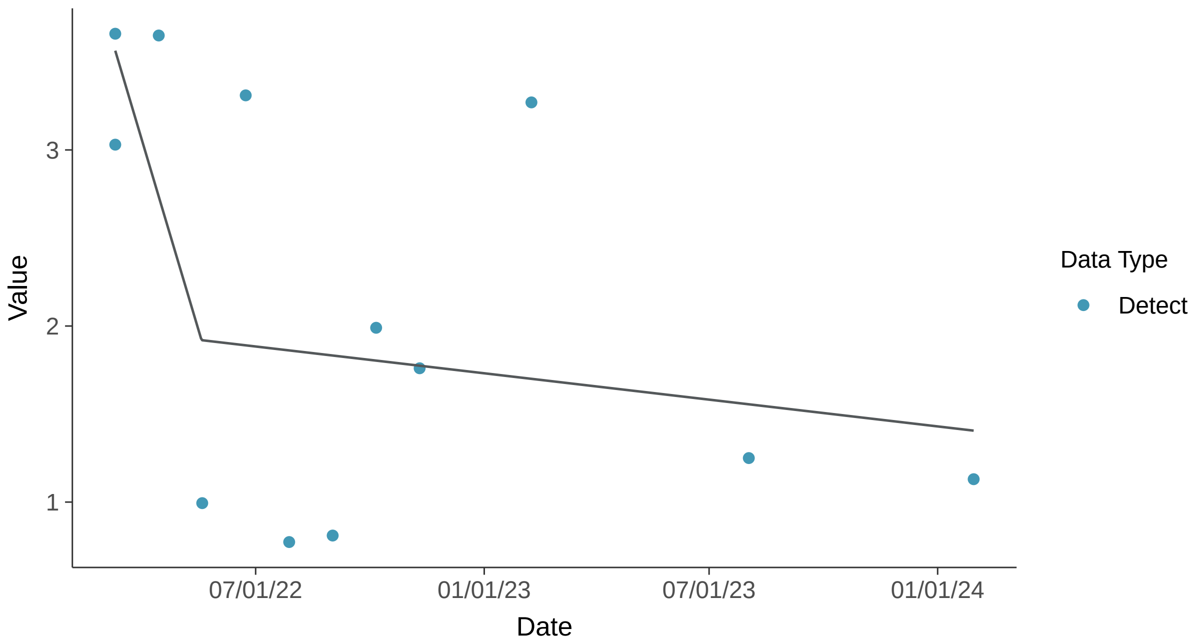



Gamma Q-Q plot
Radium-226/228, MW-7C (pCi/L)
Value
3
2
1
0
1
2
3
4
5
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Radium-226/228, MW-7C (pCi/L)
log(Value)
1.0
0.5
0.0
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

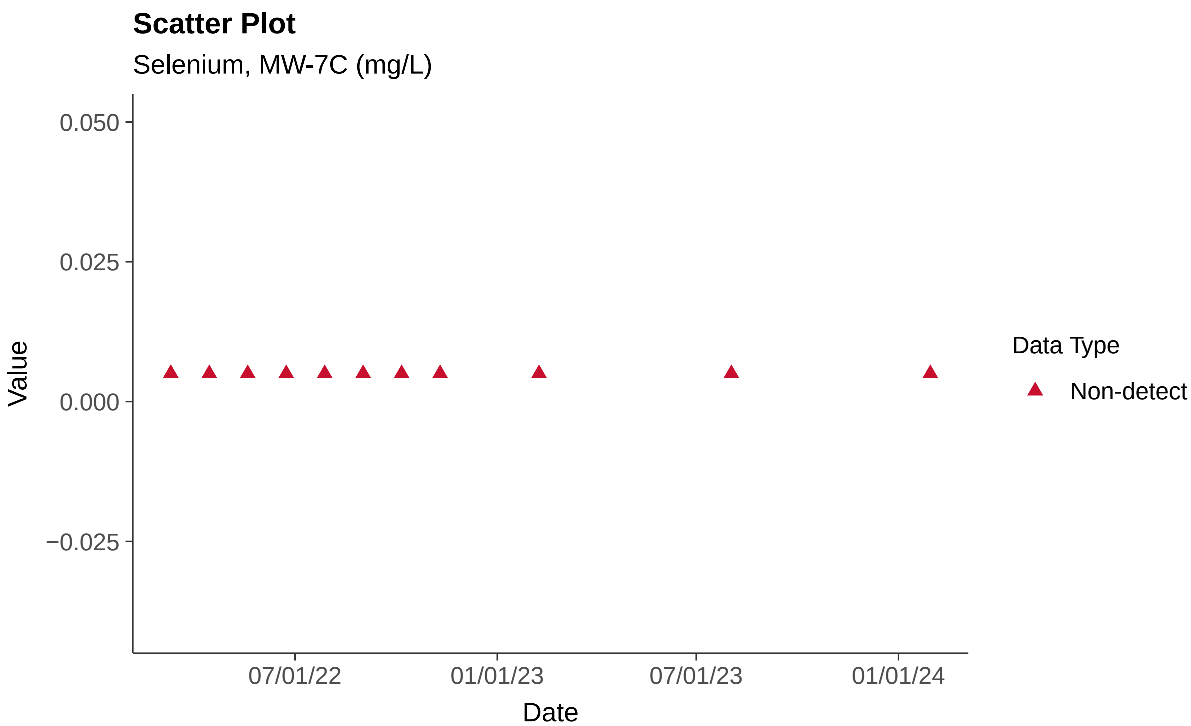
Trend Regression: Piecewise Linear-Linear

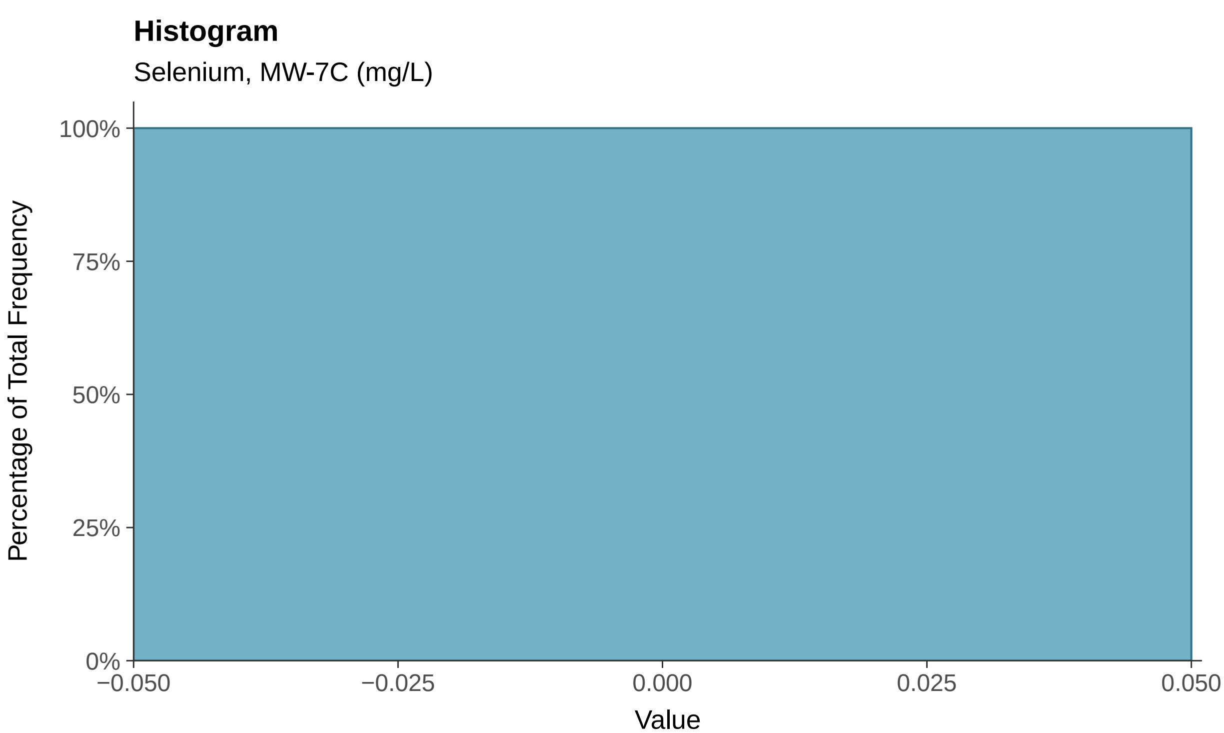
Radium-226/228, MW-7C (pCi/L)



Appendix IV: Selenium, MW-7C

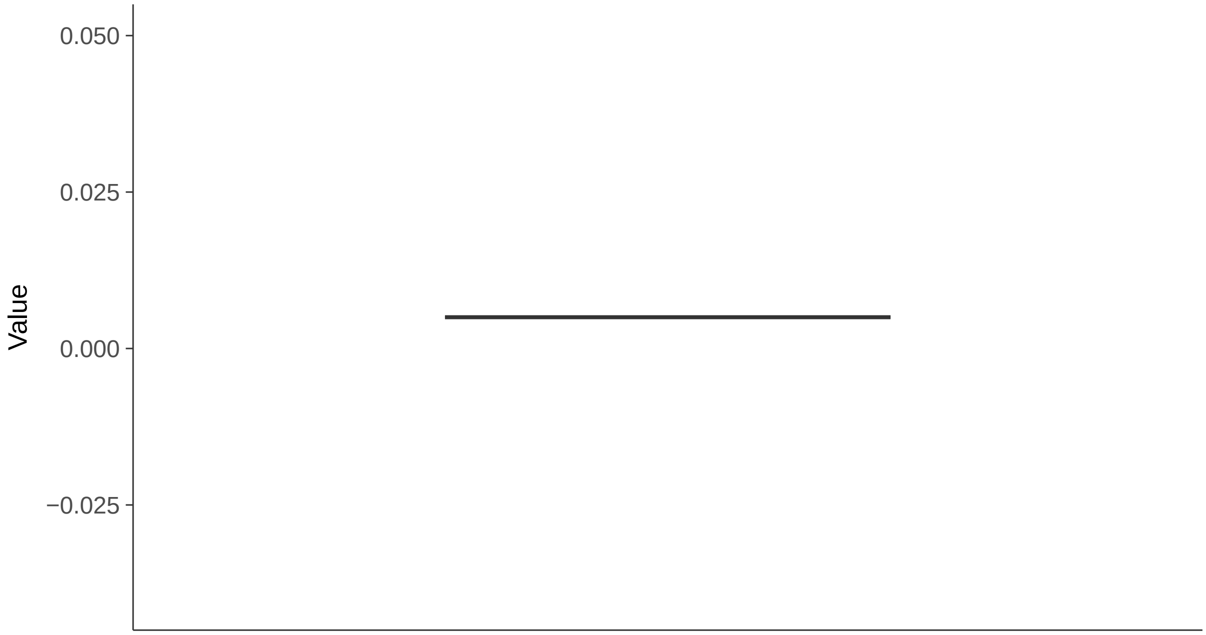
ID: 7C_2_22





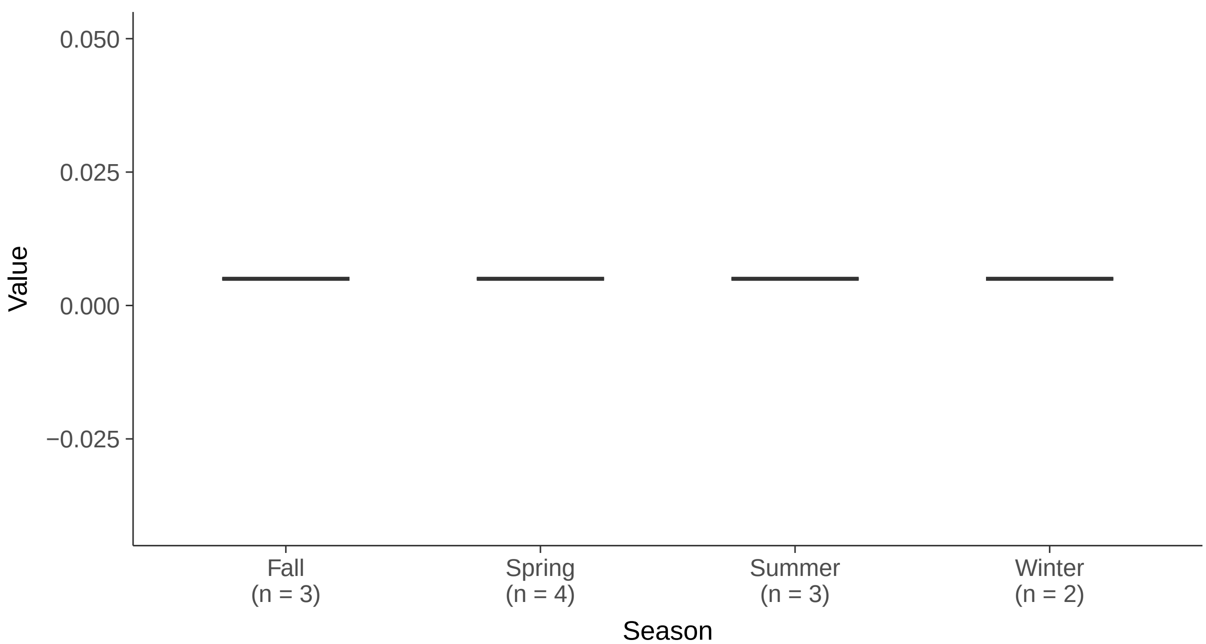
Boxplot

Selenium, MW-7C (mg/L)



Boxplot by Season

Selenium, MW-7C (mg/L)

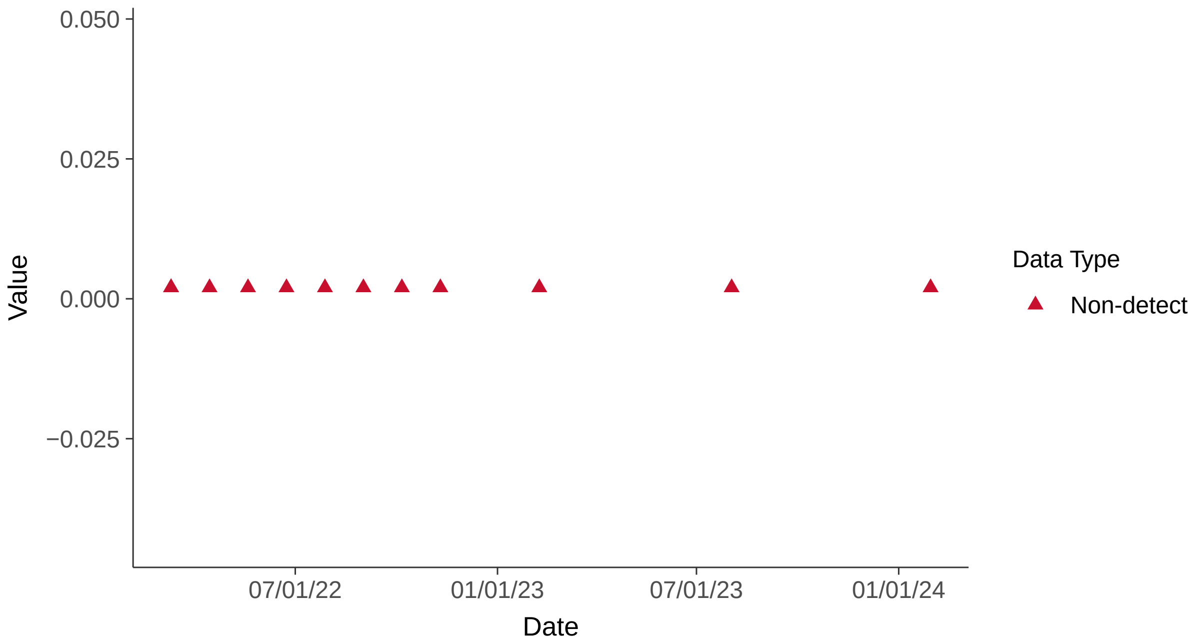


Appendix IV: Thallium, MW-7C

ID: 7C_2_23

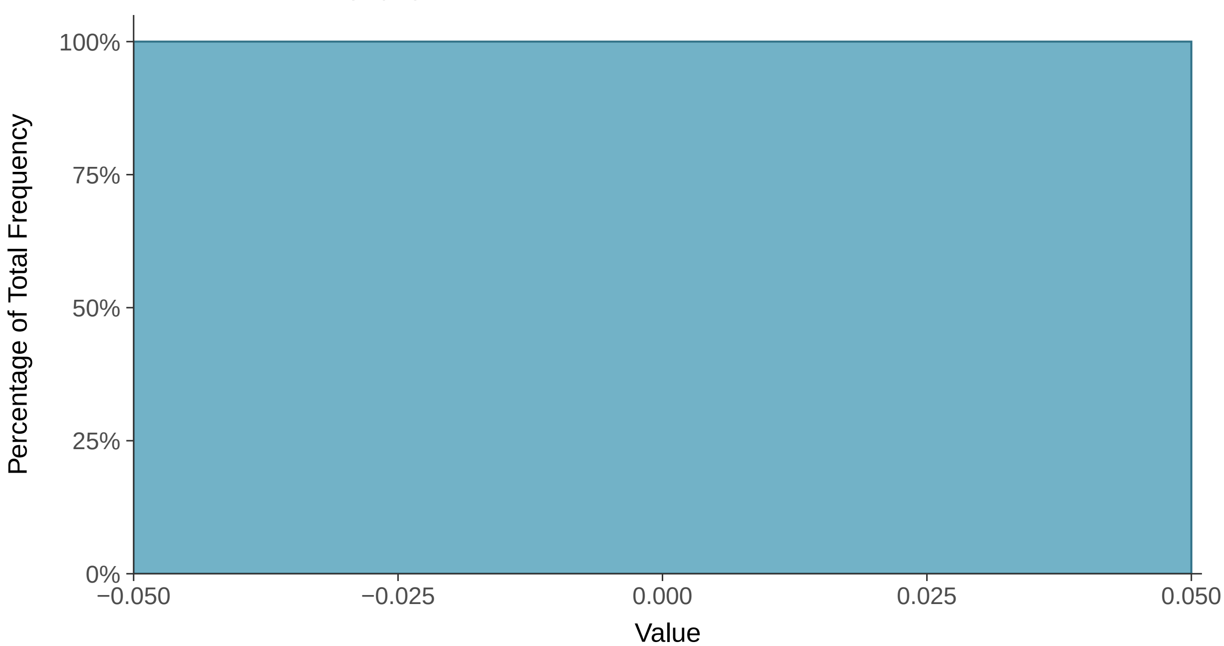
Scatter Plot

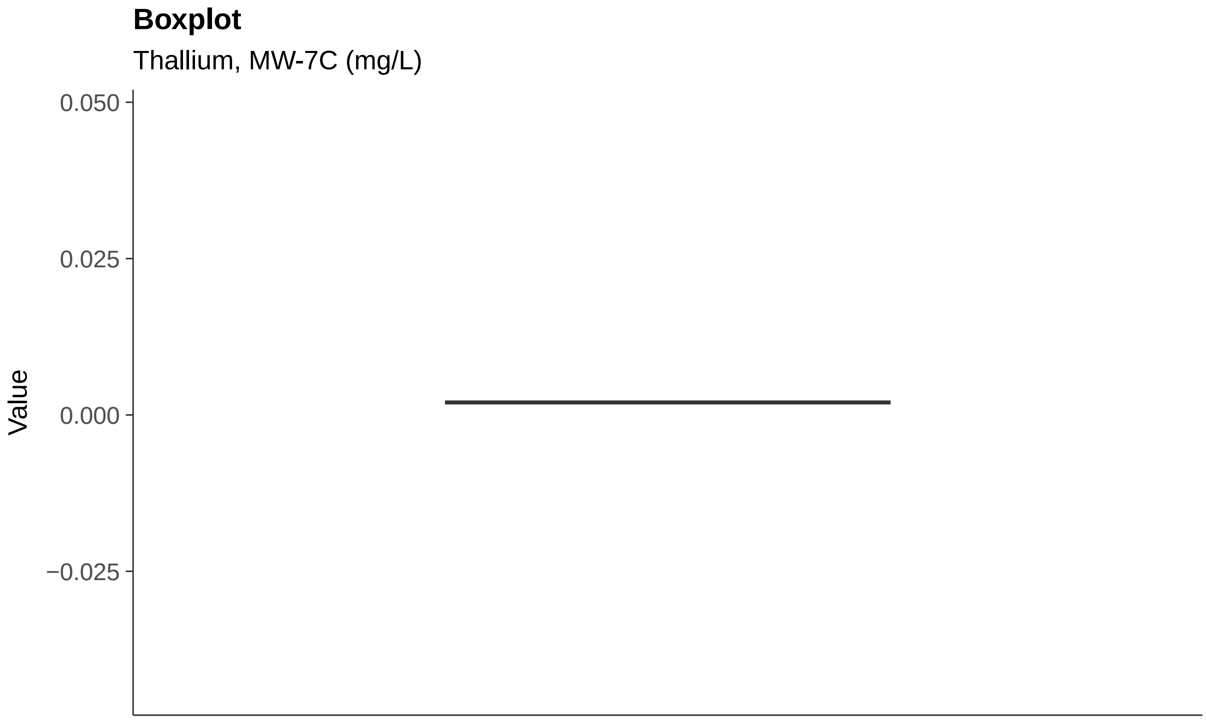
Thallium, MW-7C (mg/L)

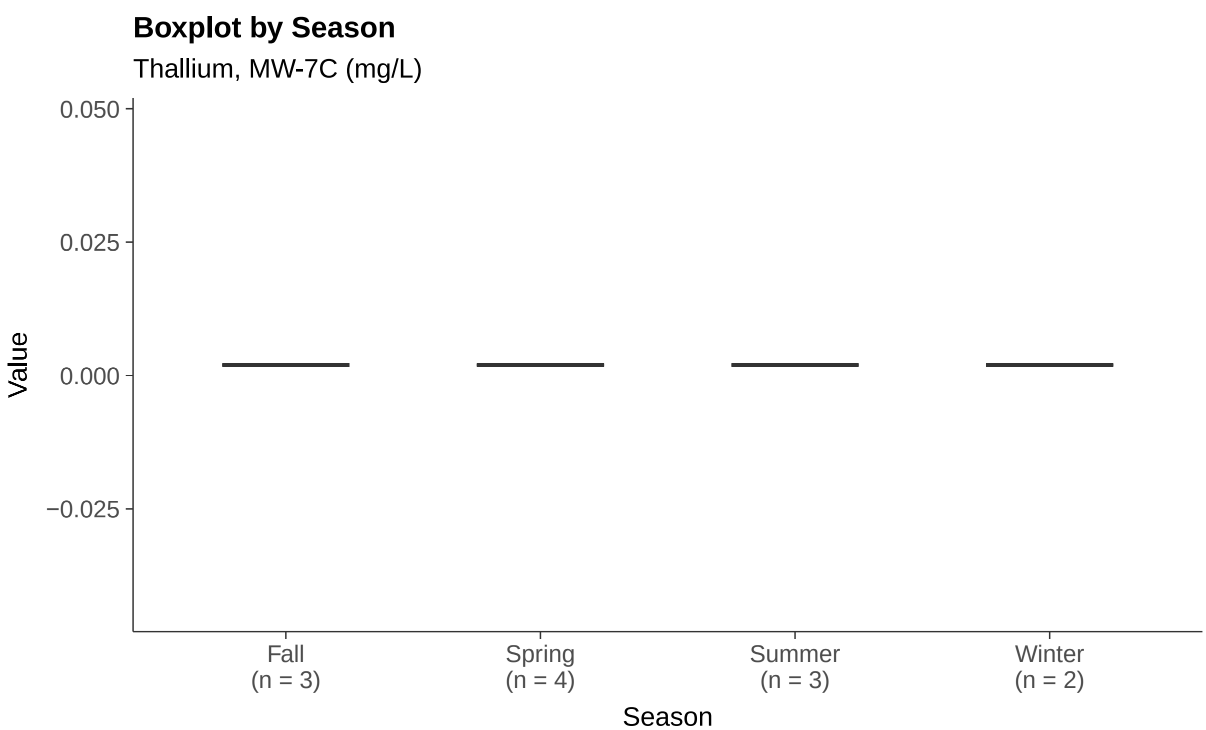


Histogram

Thallium, MW-7C (mg/L)

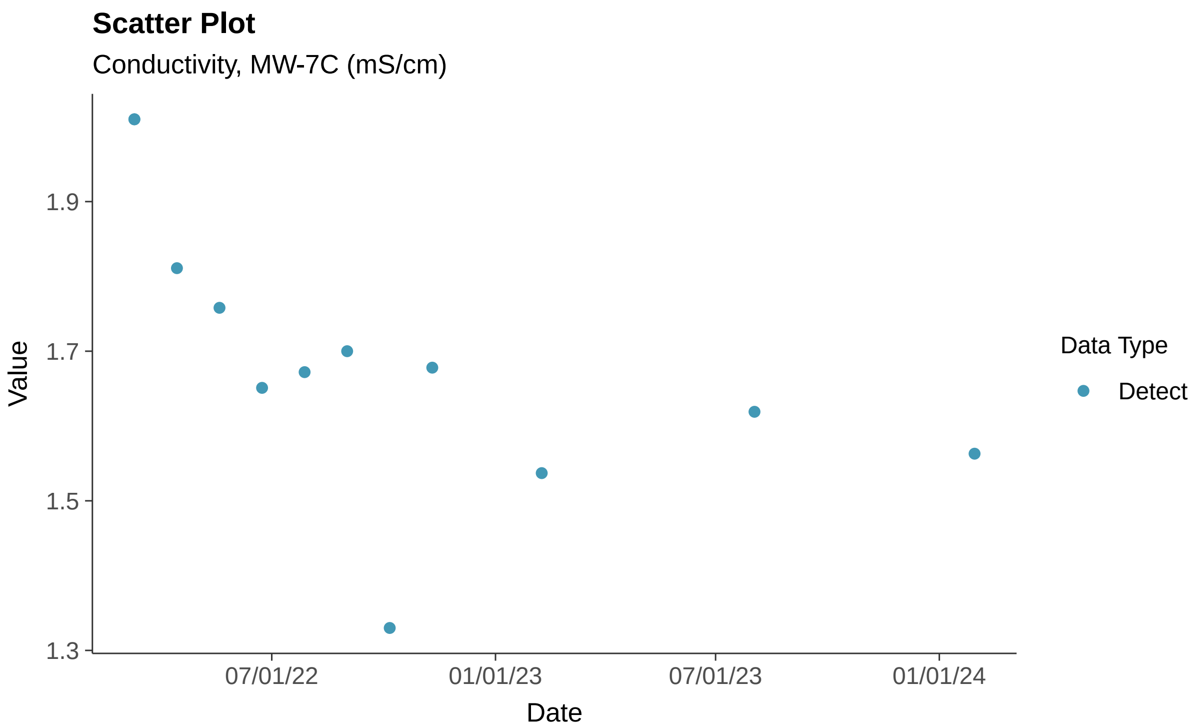


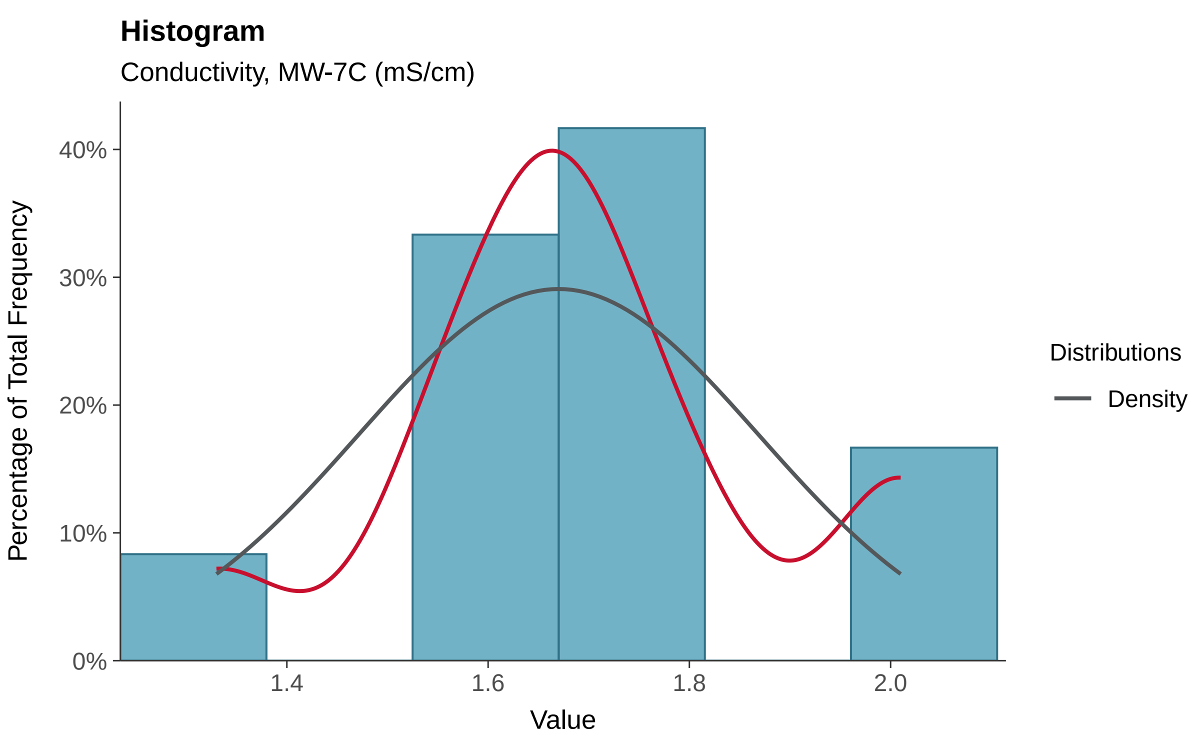

Boxplot
Thallium, MW-7C (mg/L)
0.050
0.025
0.000
−0.025
Value


Boxplot by Season
Thallium, MW-7C (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 3)
Spring
(n = 4)
Summer
(n = 3)
Winter
(n = 2)
Season

Field Parameters: Conductivity, MW-7C

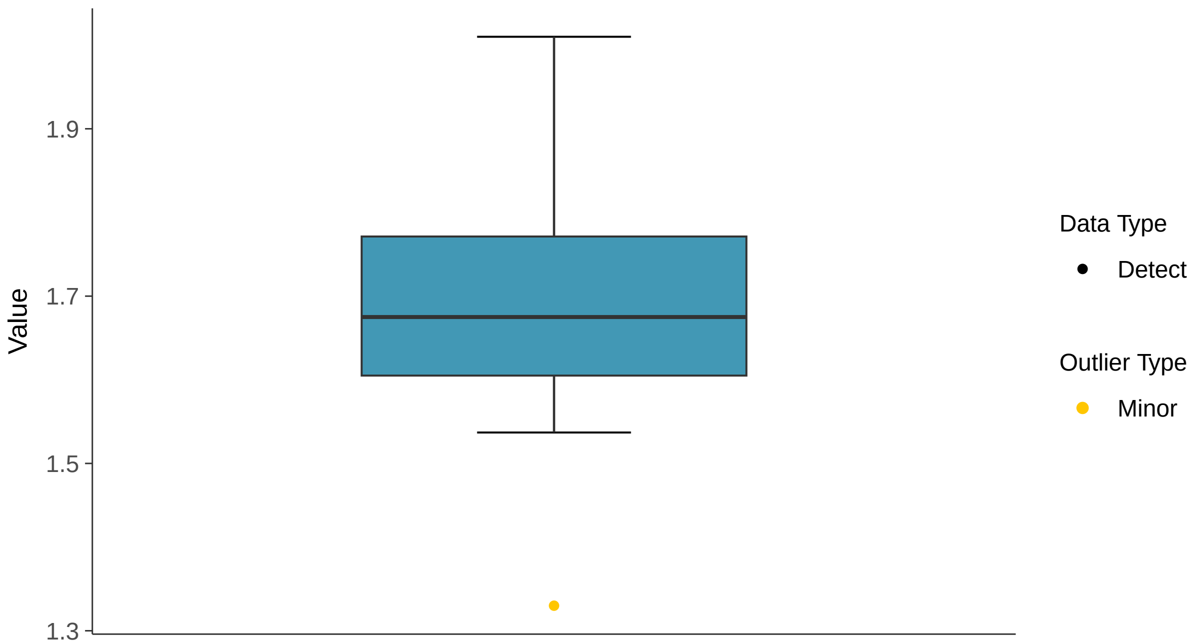
ID: 7C_3_24





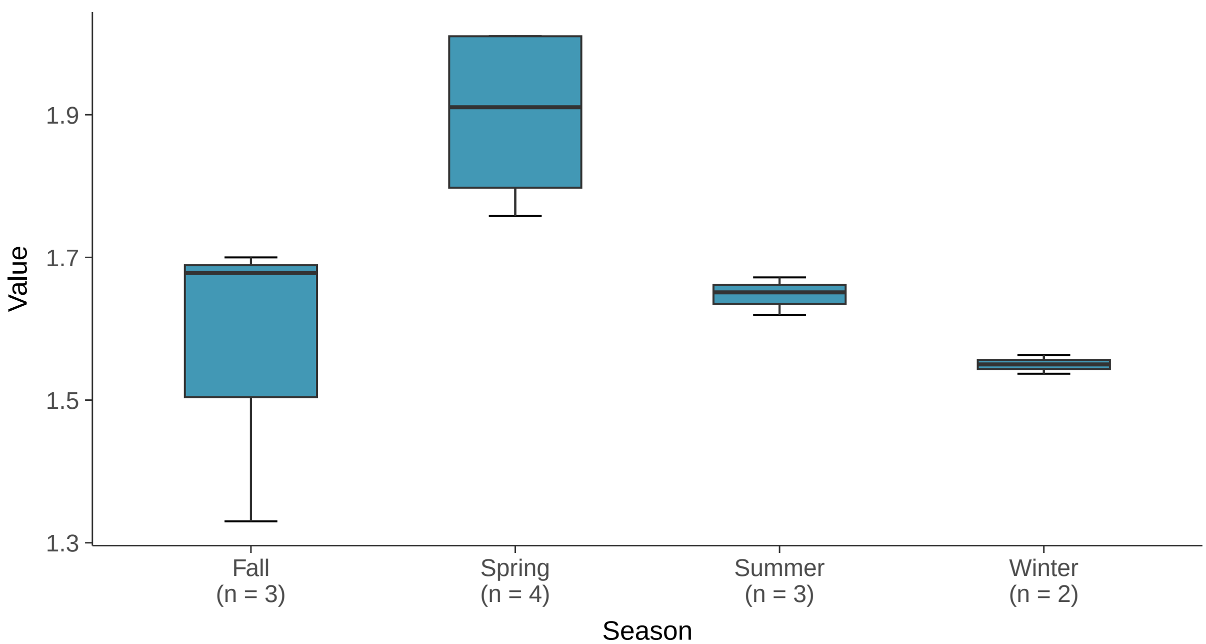
Boxplot

Conductivity, MW-7C (mS/cm)



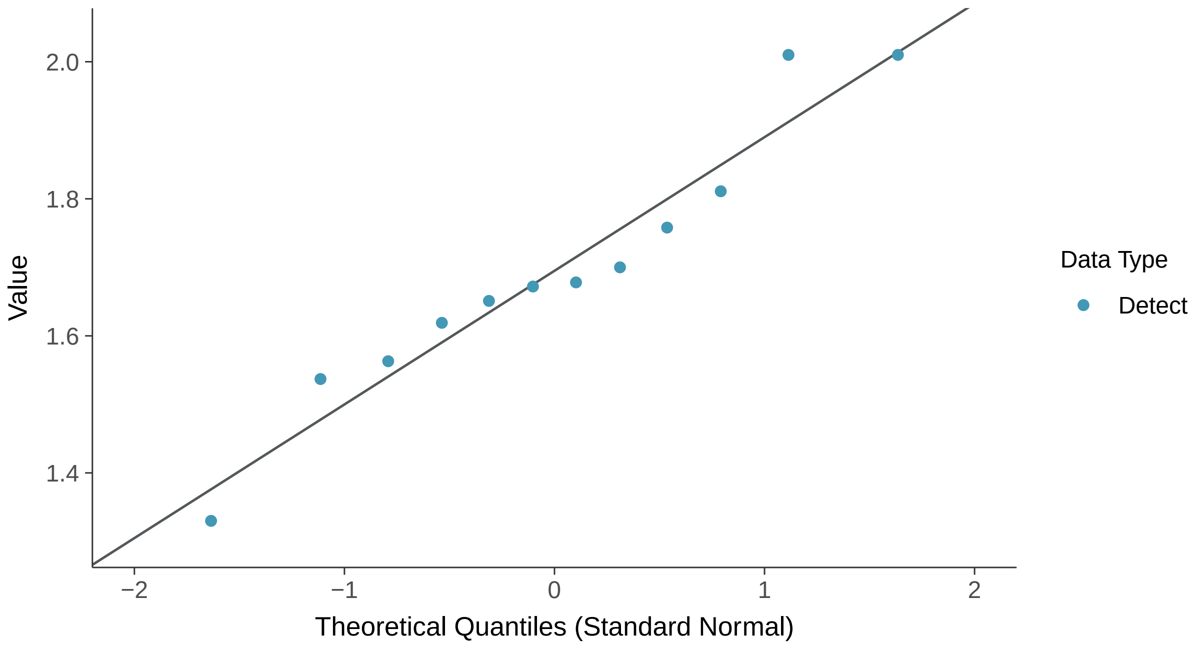
Boxplot by Season

Conductivity, MW-7C (mS/cm)



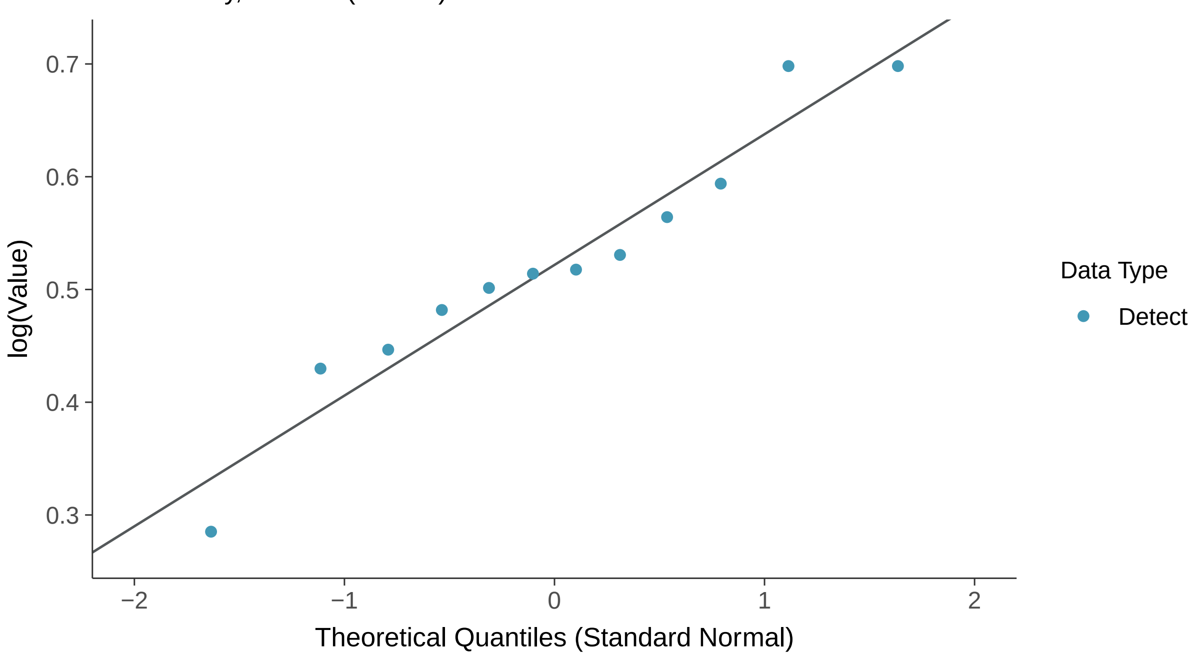
Normal Q-Q plot

Conductivity, MW-7C (mS/cm)



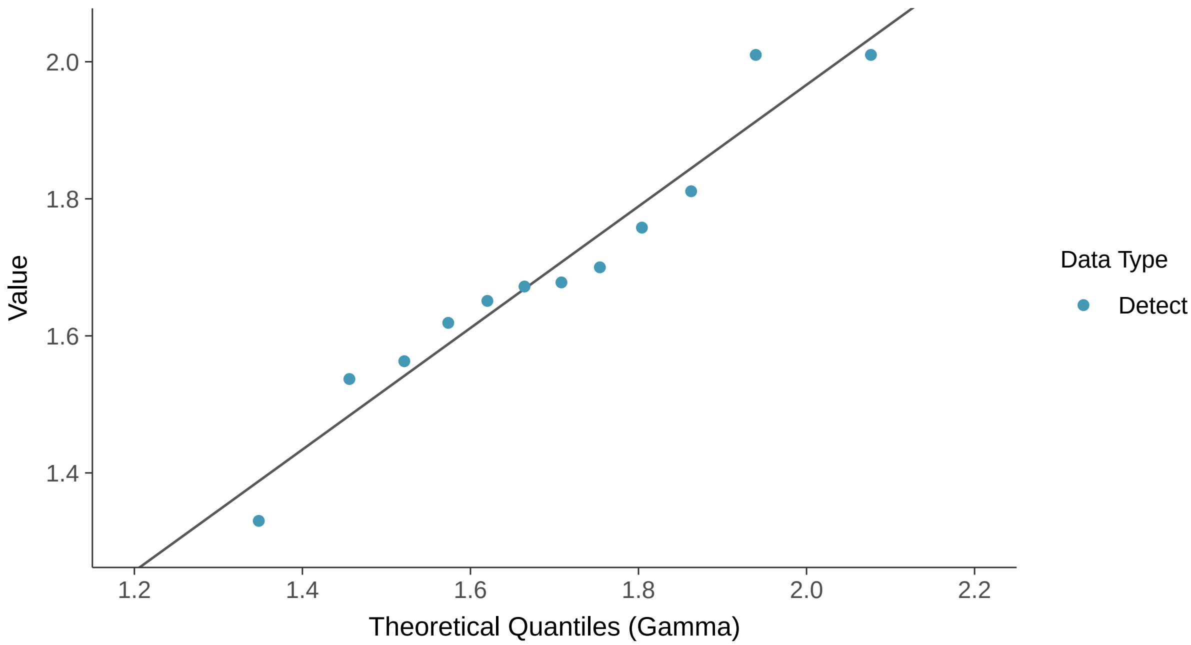
Lognormal Q-Q plot

Conductivity, MW-7C (mS/cm)



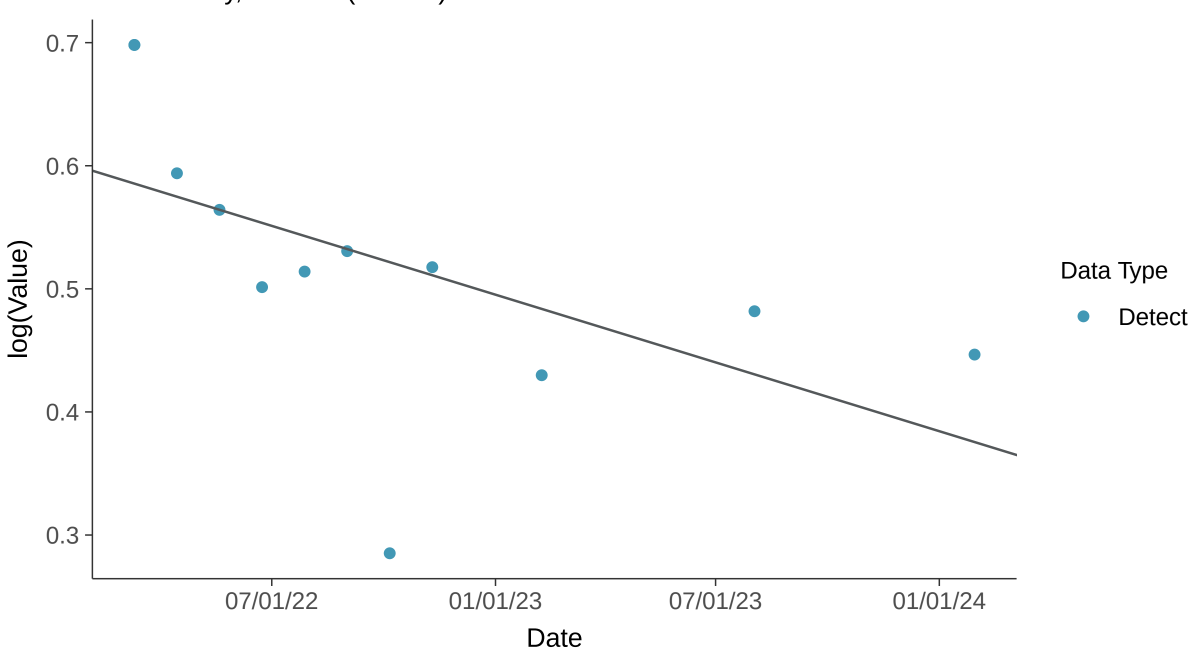
Gamma Q-Q plot

Conductivity, MW-7C (mS/cm)



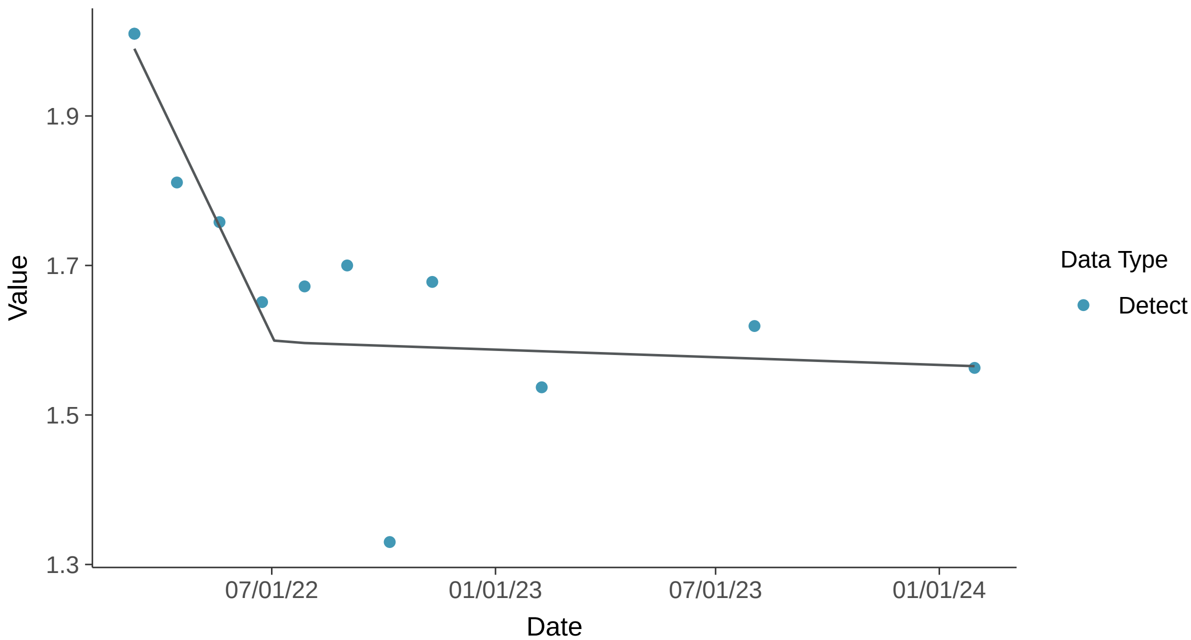
Trend Regression: Lognormal MLE

Conductivity, MW-7C (mS/cm)



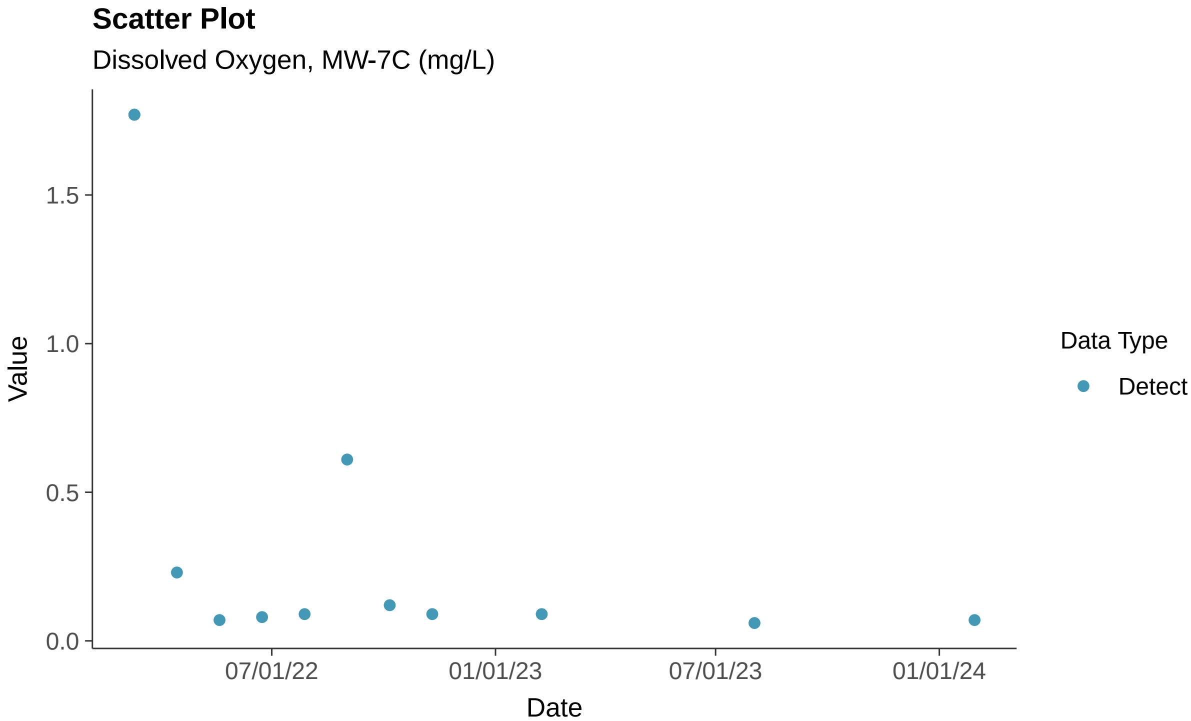
Trend Regression: Piecewise Linear-Linear

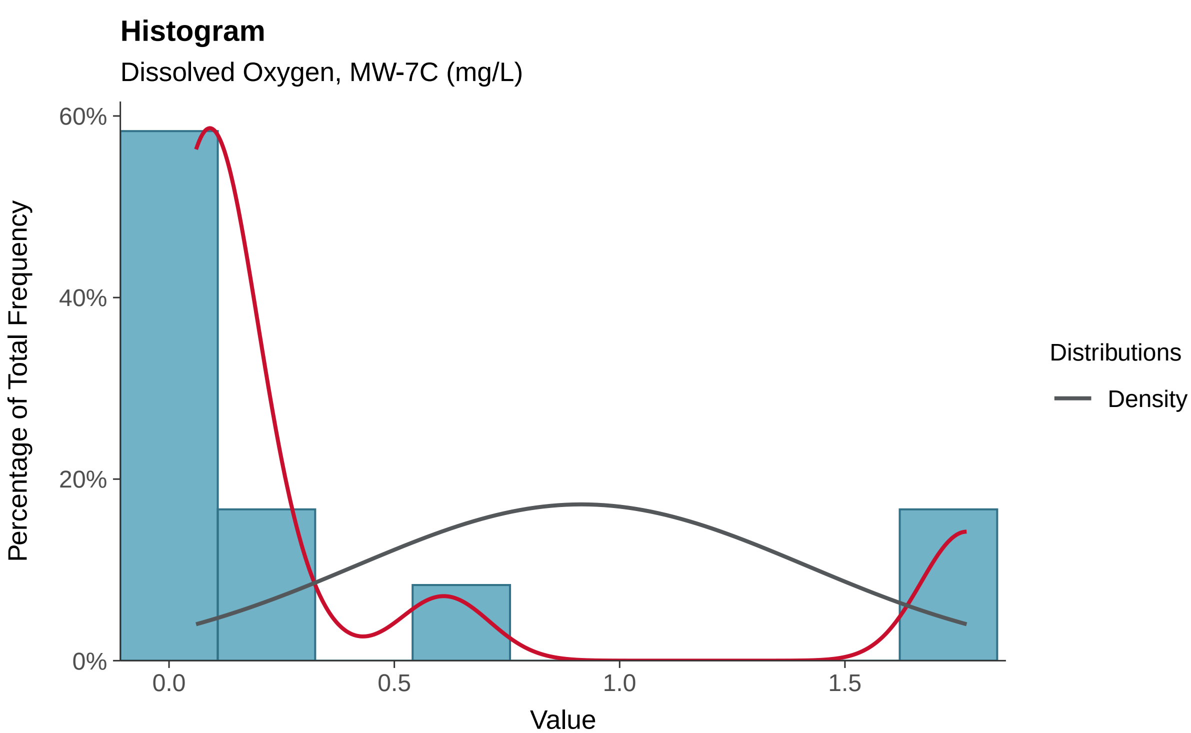
Conductivity, MW-7C (mS/cm)



Field Parameters: Dissolved Oxygen, MW-7C

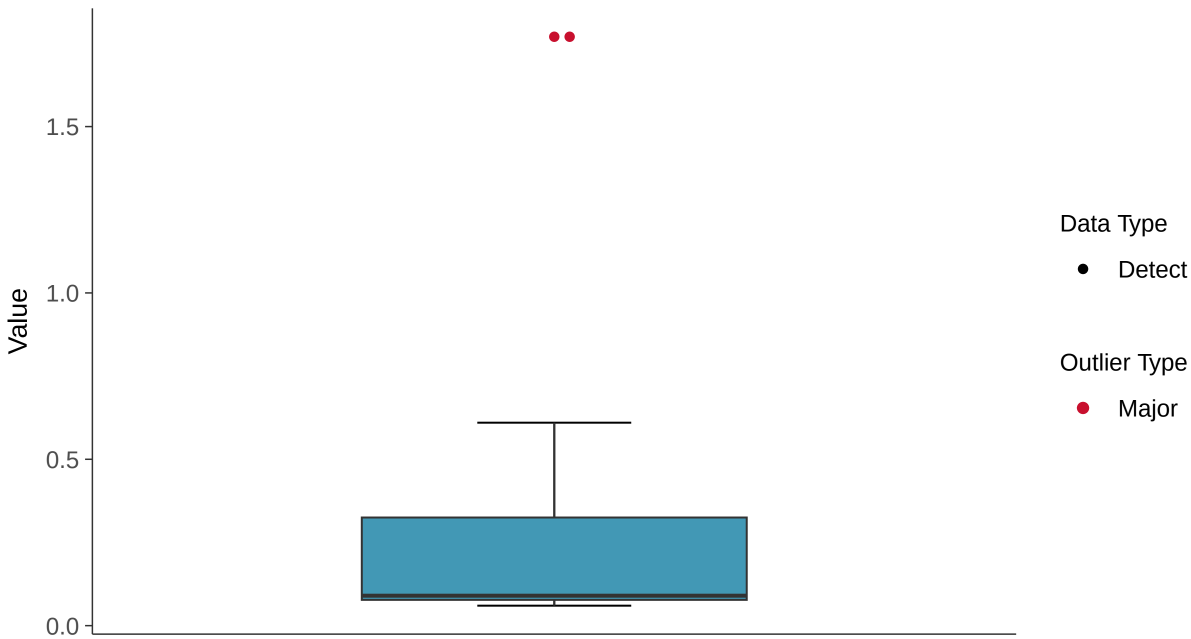
ID: 7C_3_25





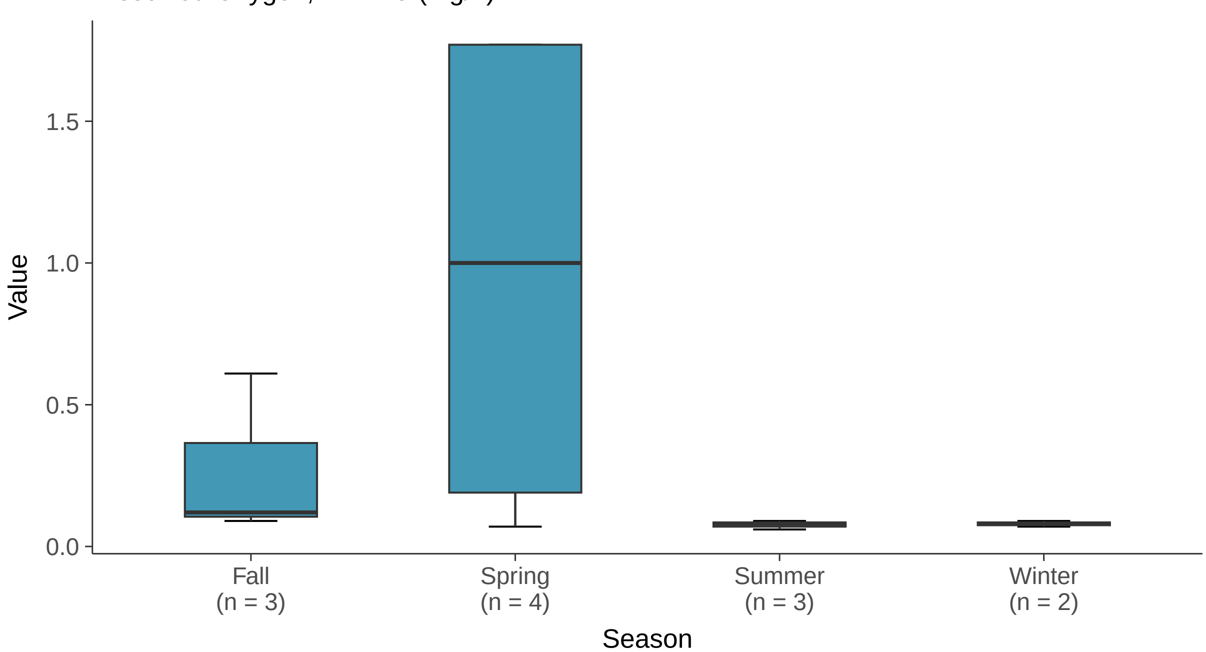
Boxplot

Dissolved Oxygen, MW-7C (mg/L)



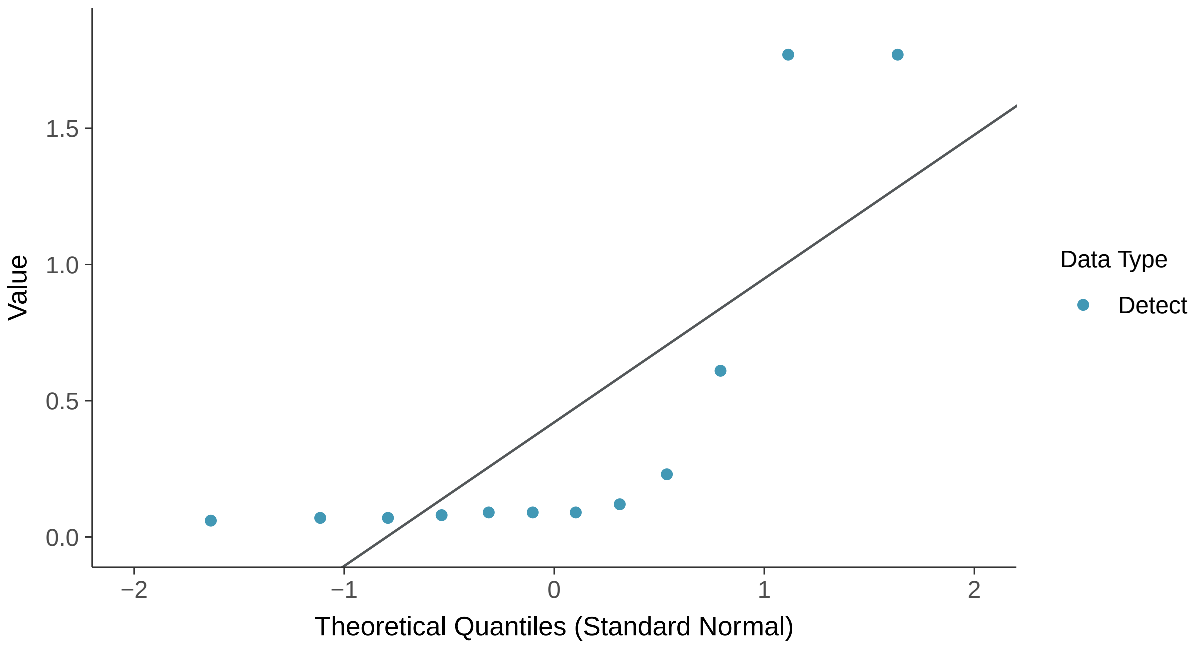
Boxplot by Season

Dissolved Oxygen, MW-7C (mg/L)



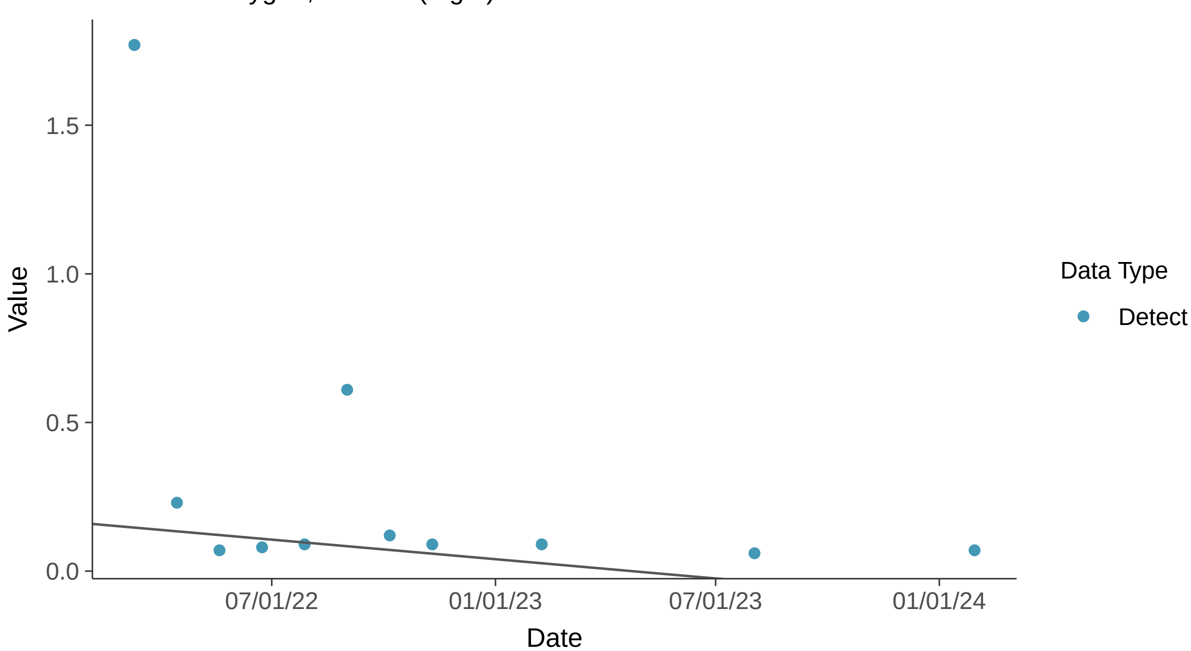
Normal Q-Q plot

Dissolved Oxygen, MW-7C (mg/L)



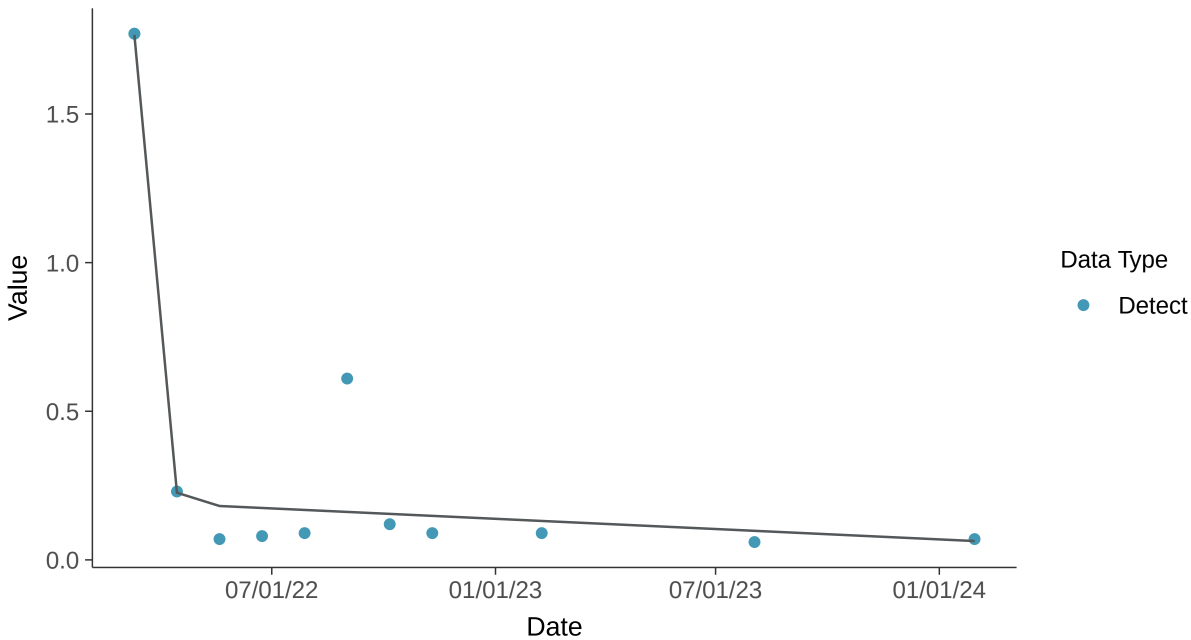
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Dissolved Oxygen, MW-7C (mg/L)



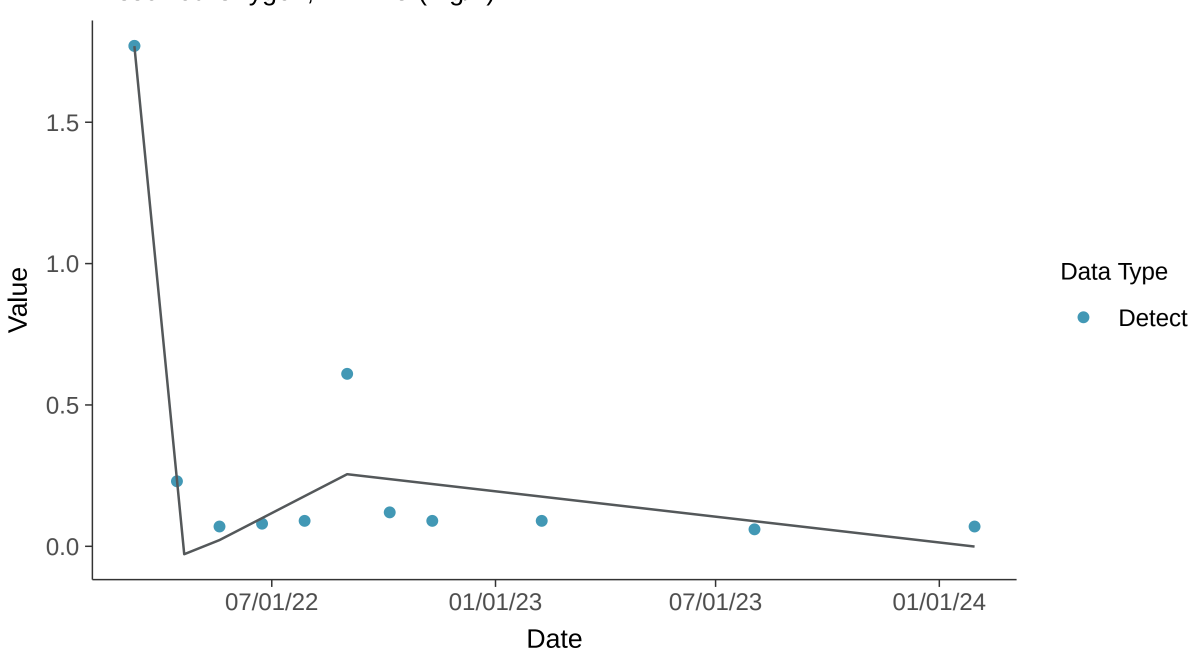
Trend Regression: Piecewise Linear-Linear

Dissolved Oxygen, MW-7C (mg/L)



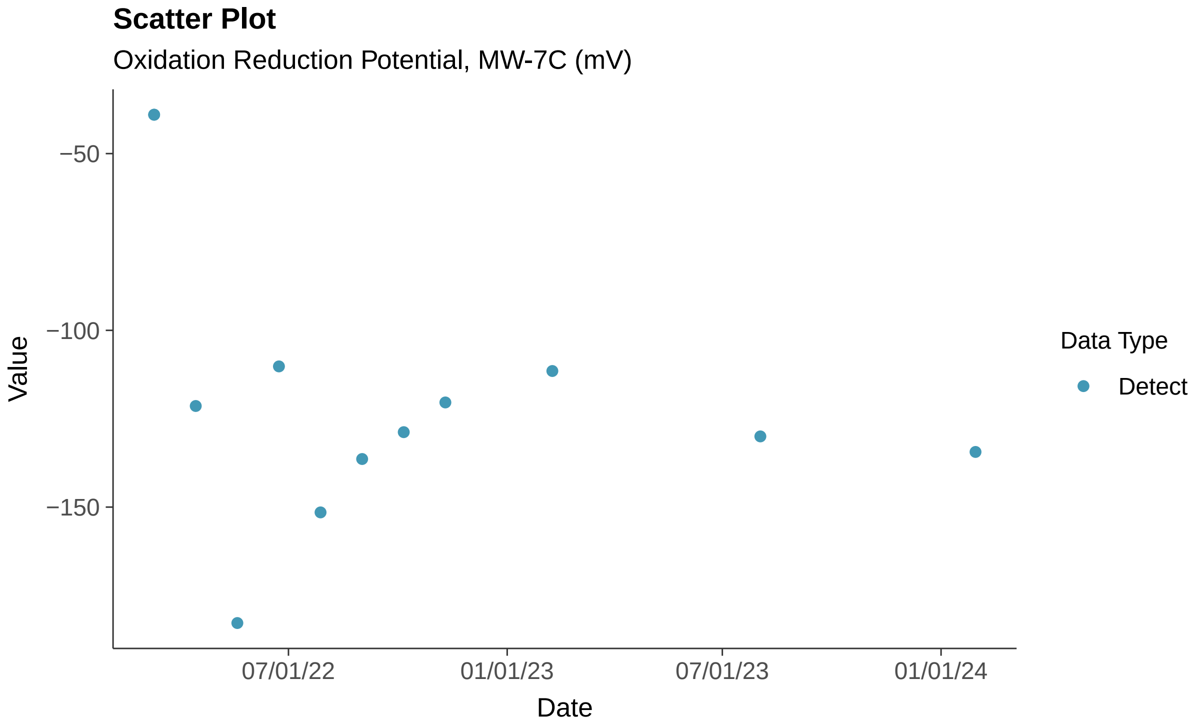
Trend Regression: Piecewise Linear-Linear-Linear

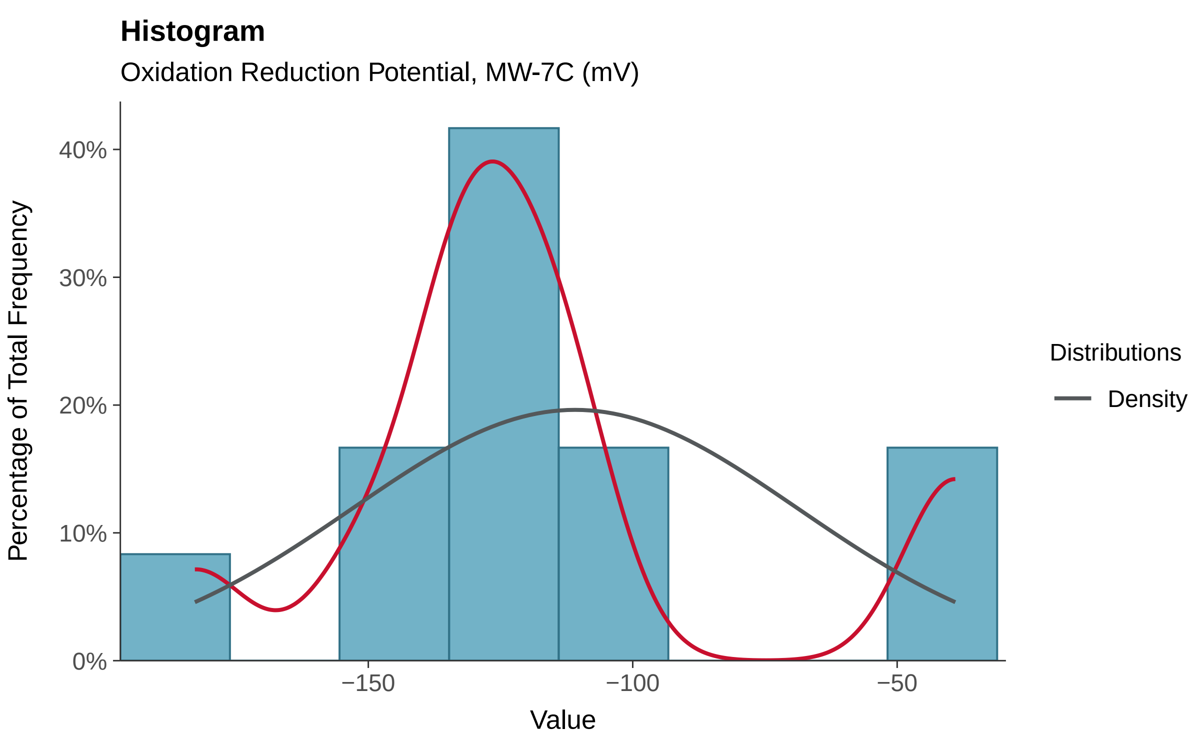
Dissolved Oxygen, MW-7C (mg/L)



Field Parameters: Oxidation Reduction Potential, MW-7C

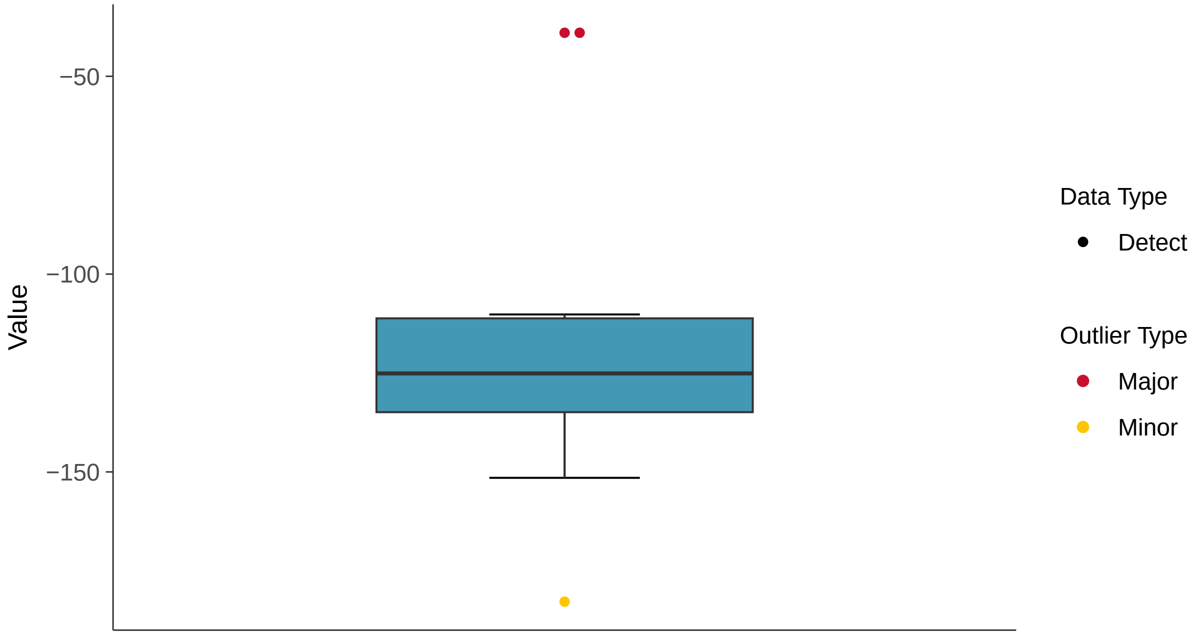
ID: 7C_3_26





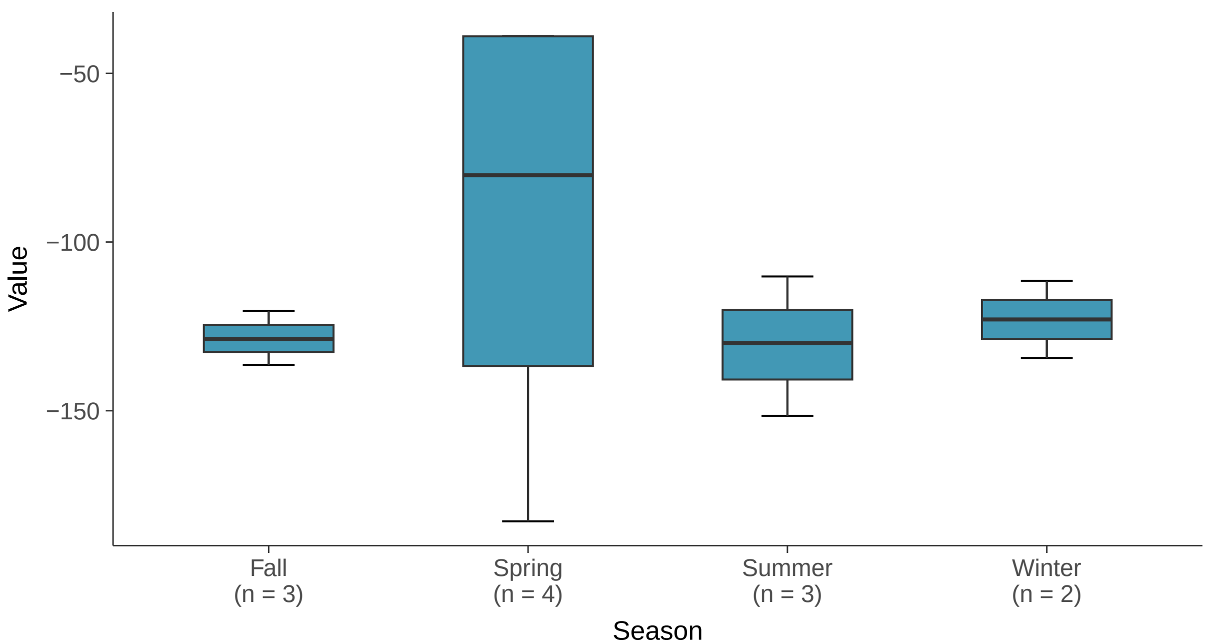
Boxplot

Oxidation Reduction Potential, MW-7C (mV)



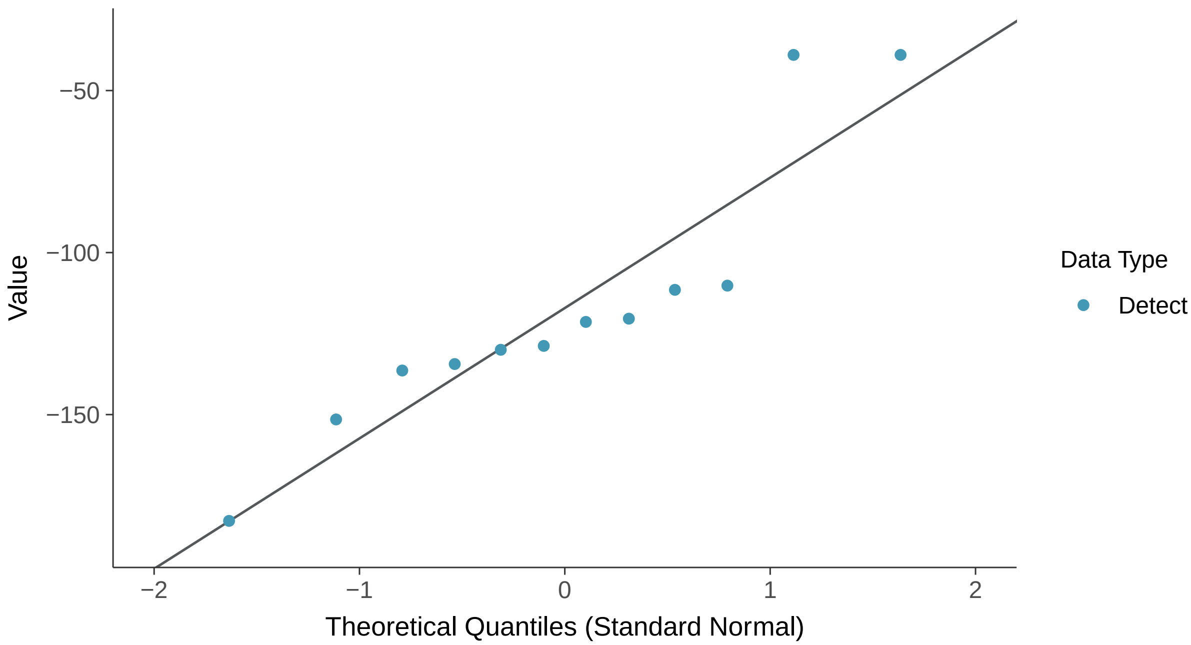
Boxplot by Season

Oxidation Reduction Potential, MW-7C (mV)



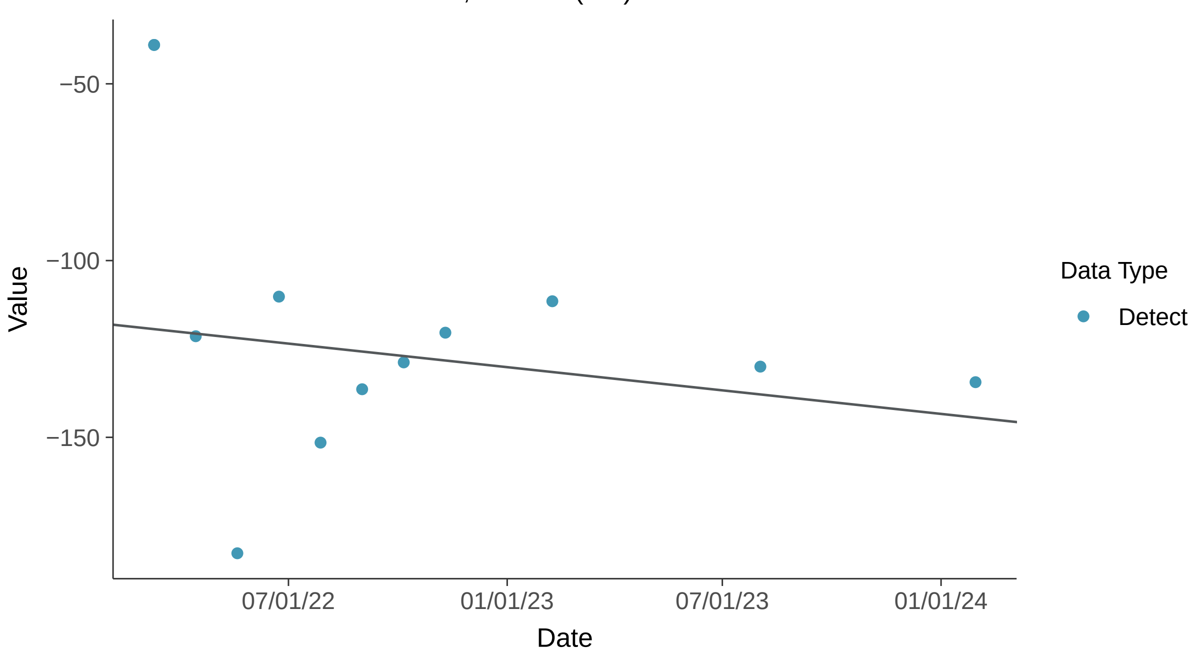
Normal Q-Q plot

Oxidation Reduction Potential, MW-7C (mV)



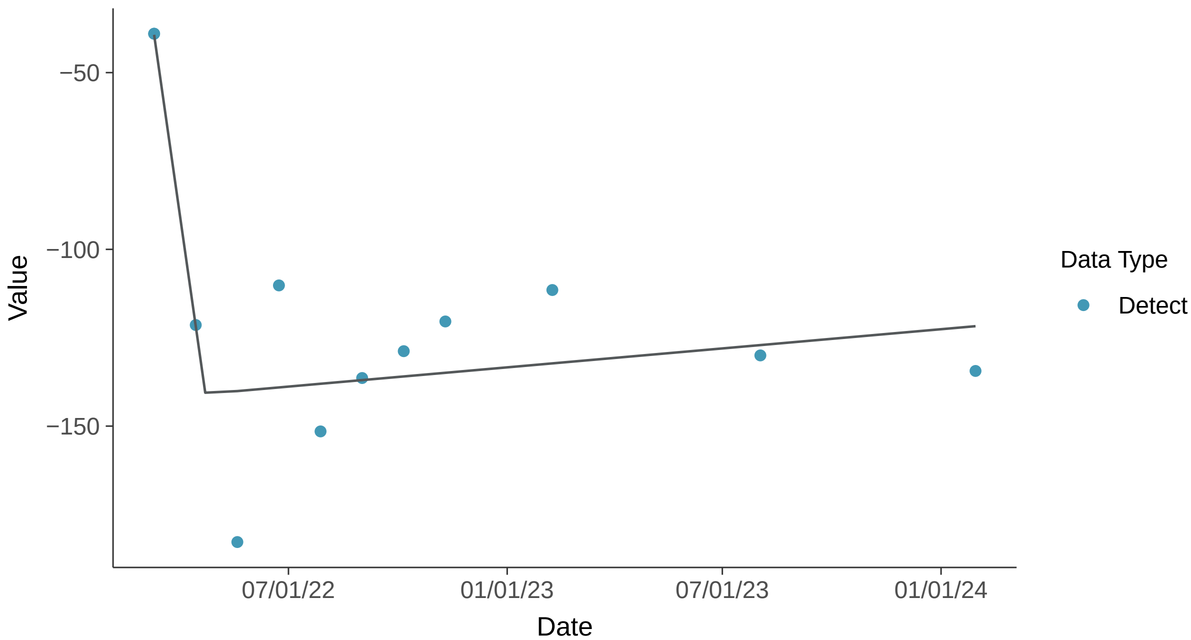
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Oxidation Reduction Potential, MW-7C (mV)



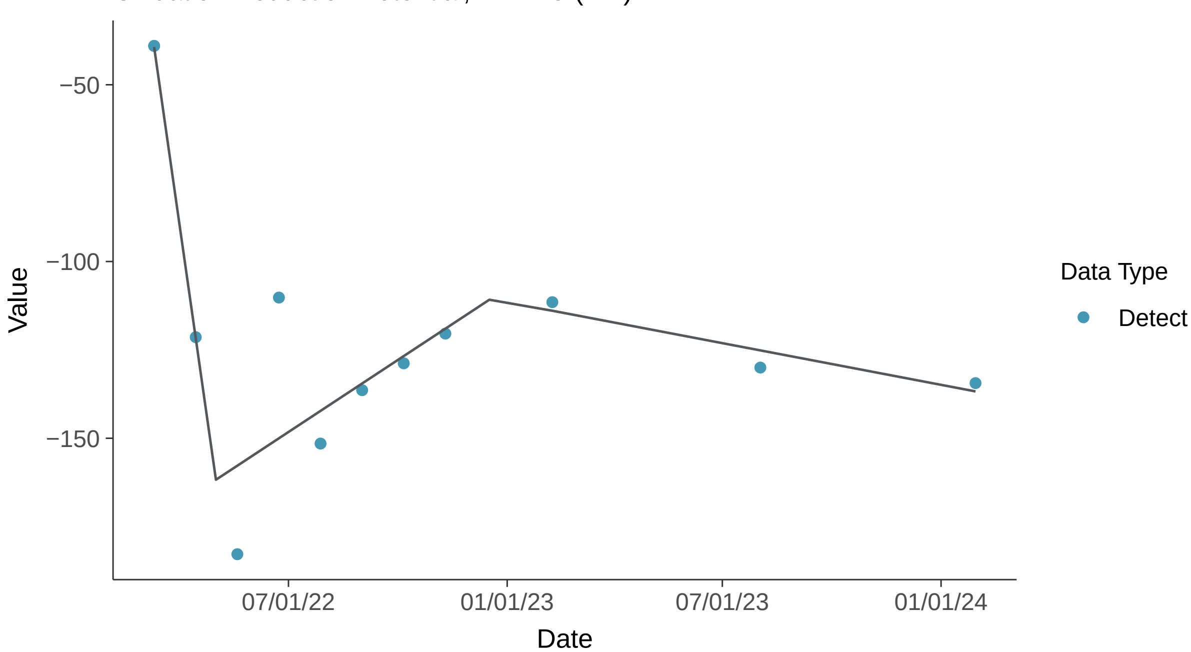
Trend Regression: Piecewise Linear-Linear

Oxidation Reduction Potential, MW-7C (mV)



Trend Regression: Piecewise Linear-Linear-Linear

Oxidation Reduction Potential, MW-7C (mV)

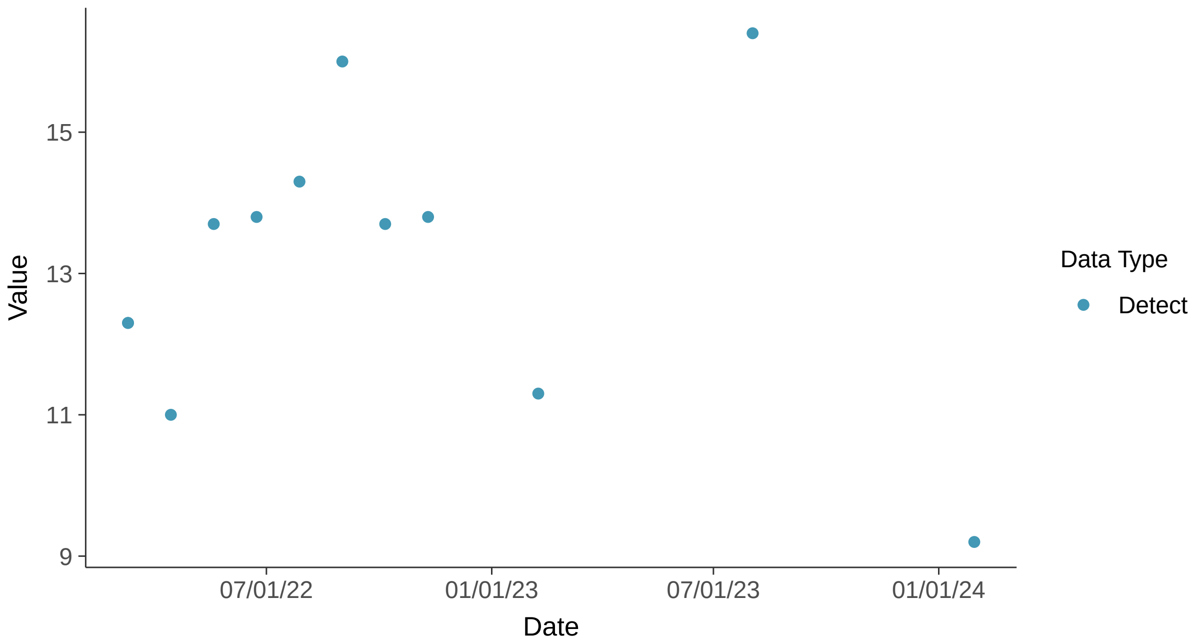


Field Parameters: Temperature, MW-7C

ID: 7C_3_27

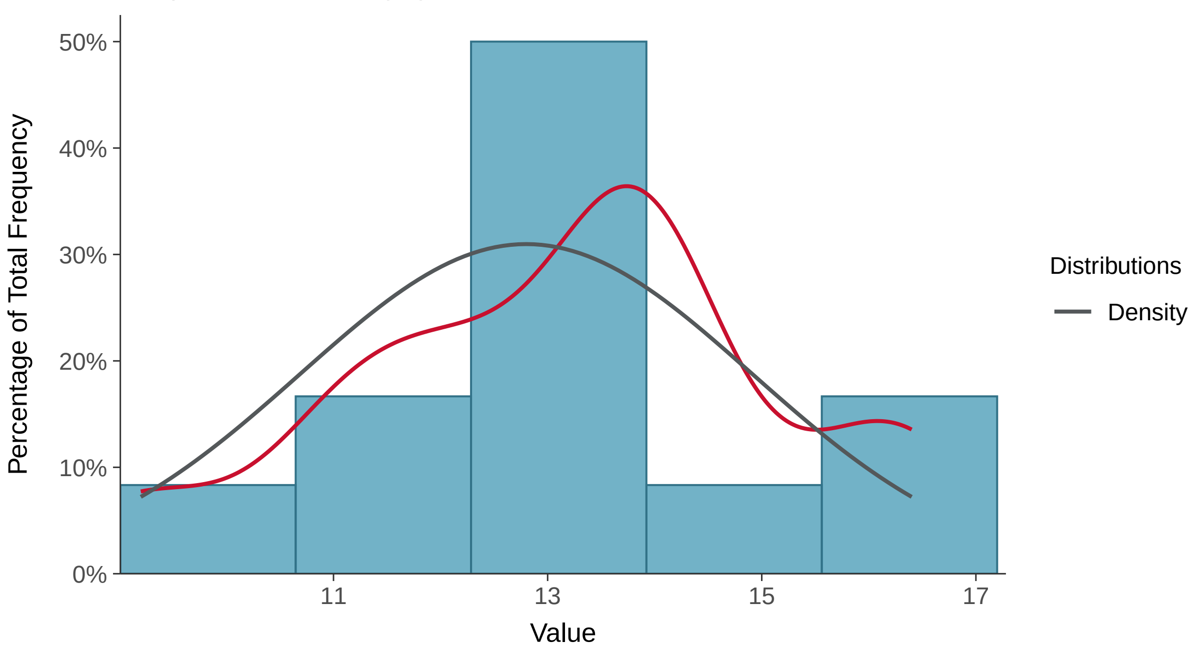
Scatter Plot

Temperature, MW-7C (°C)



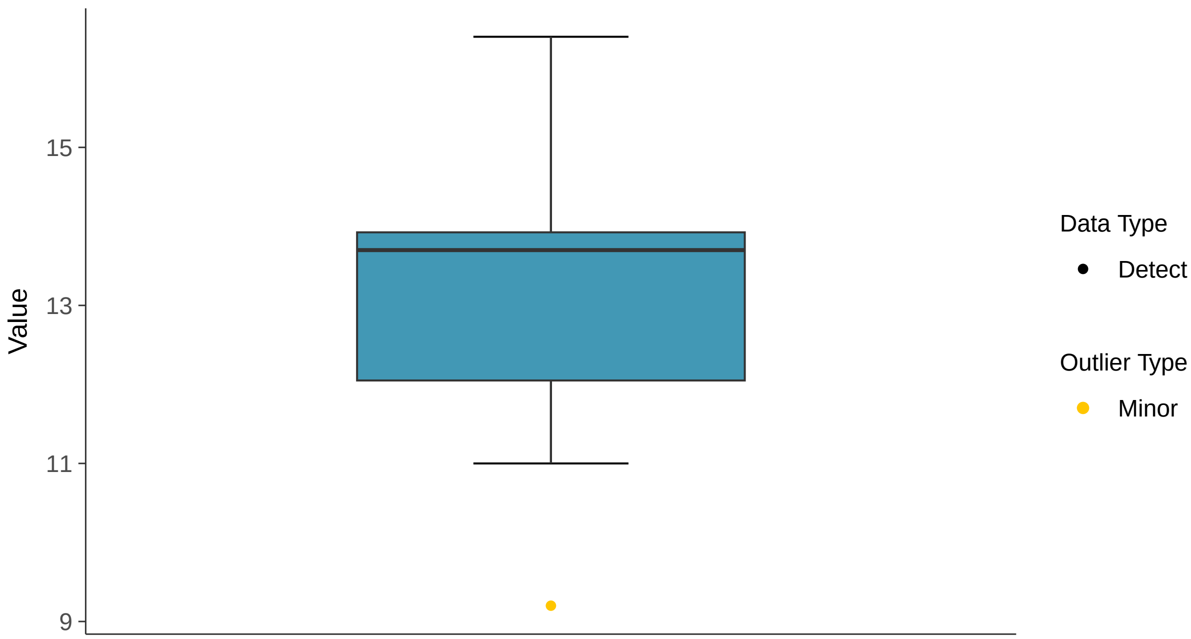
Histogram

Temperature, MW-7C (°C)



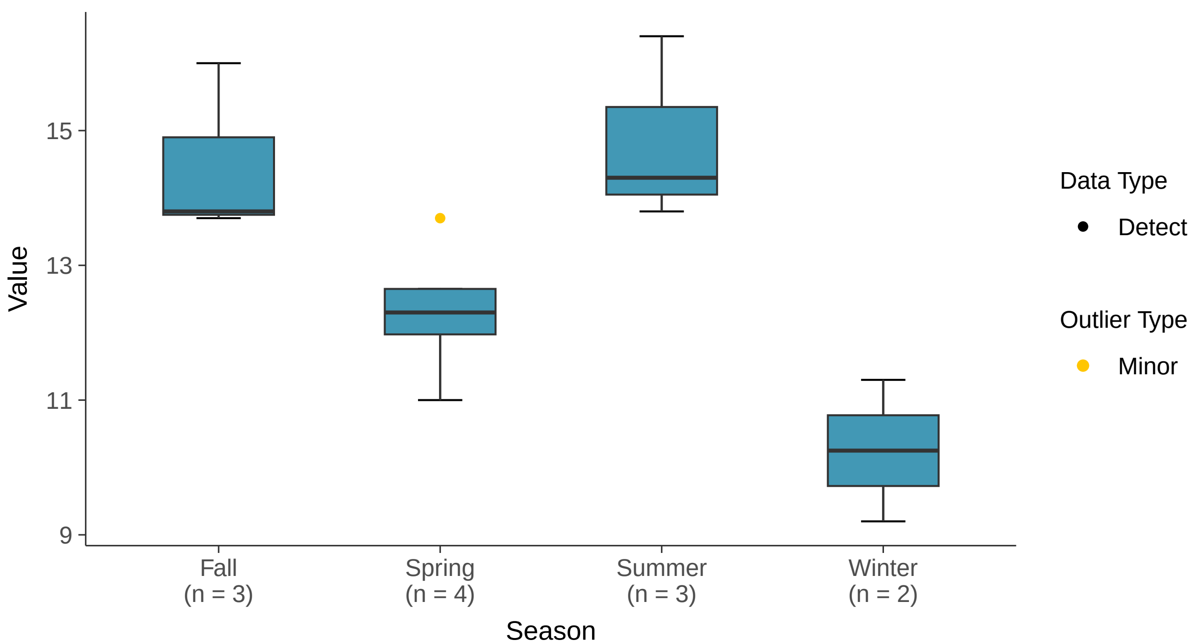
Boxplot

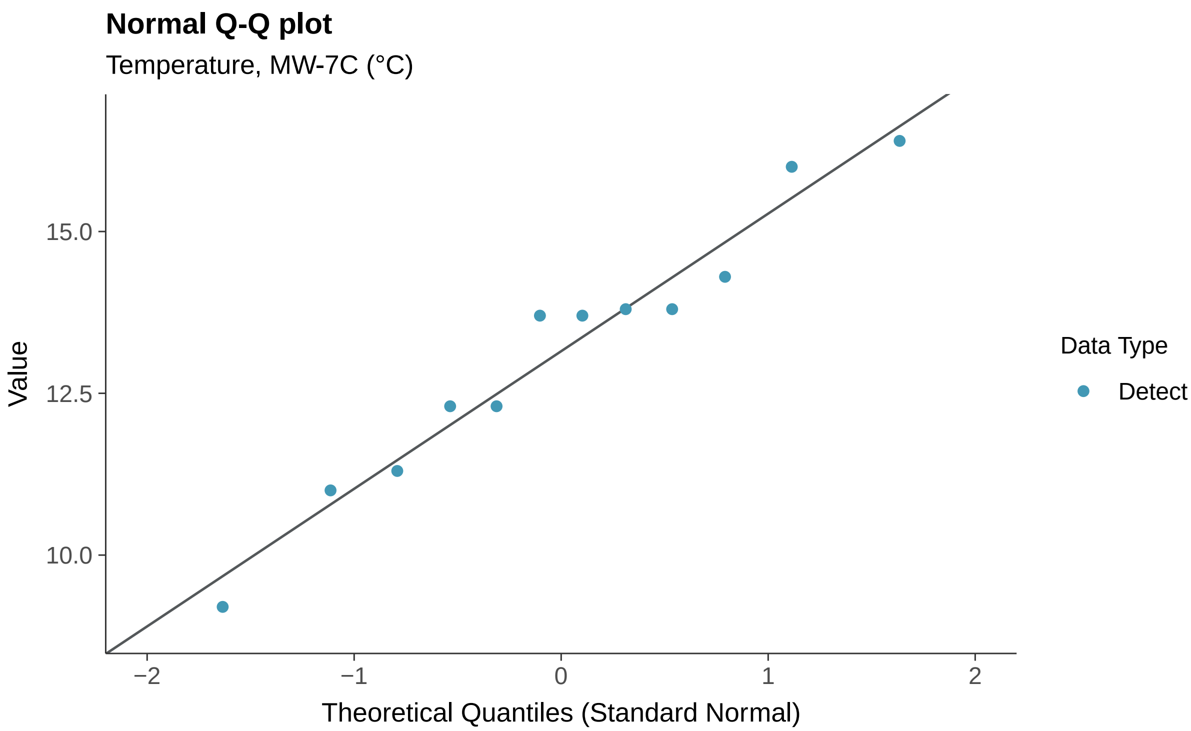
Temperature, MW-7C (°C)

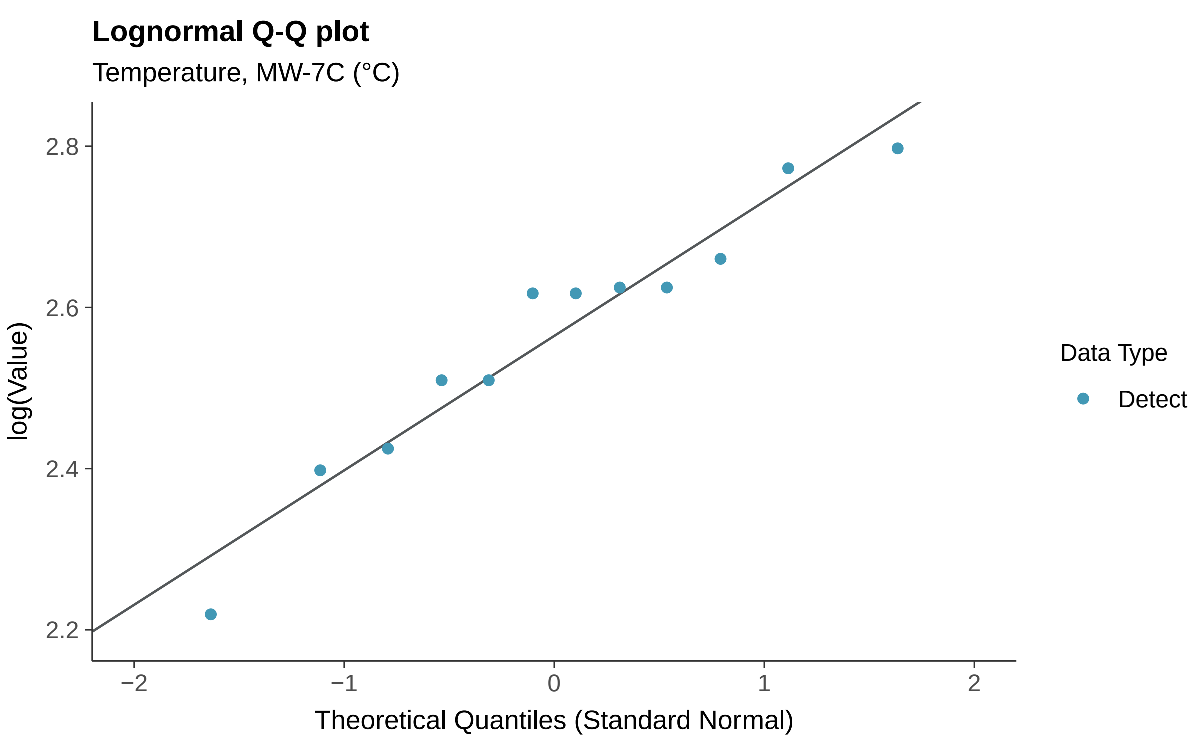


Boxplot by Season

Temperature, MW-7C (°C)

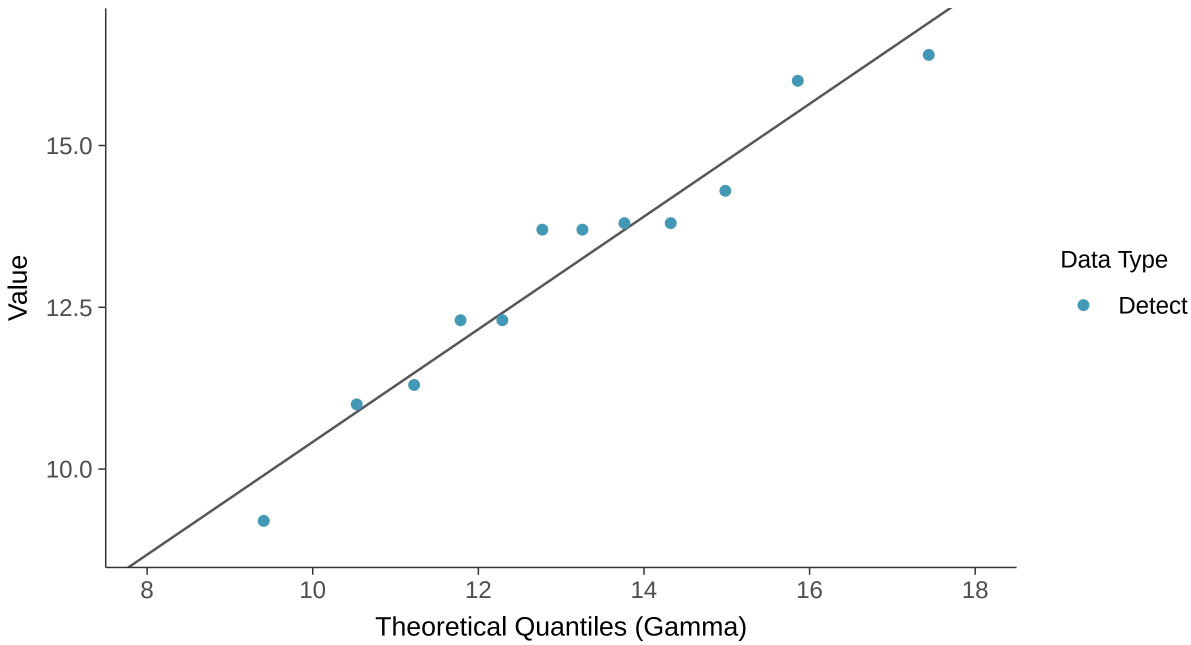



Normal Q-Q plot
Temperature, MW-7C (°C)
Value
15.0
12.5
10.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Temperature, MW-7C (°C)
log(Value)
2.8
2.6
2.4
2.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

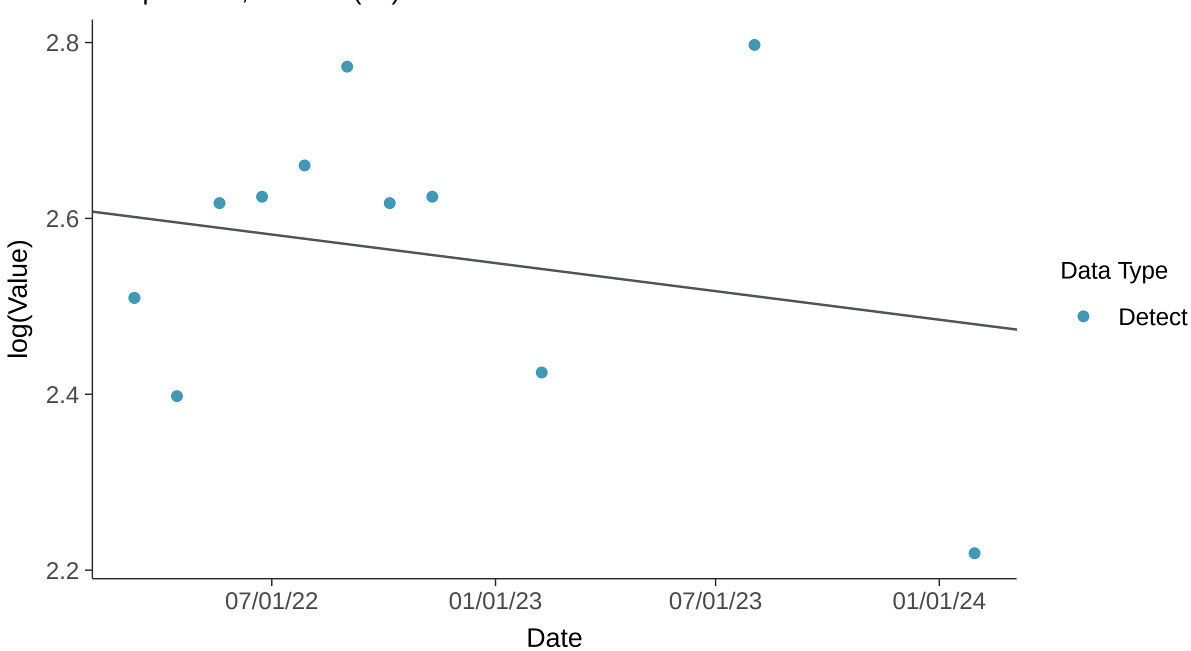
Gamma Q-Q plot

Temperature, MW-7C (°C)



Trend Regression: Lognormal MLE

Temperature, MW-7C (°C)

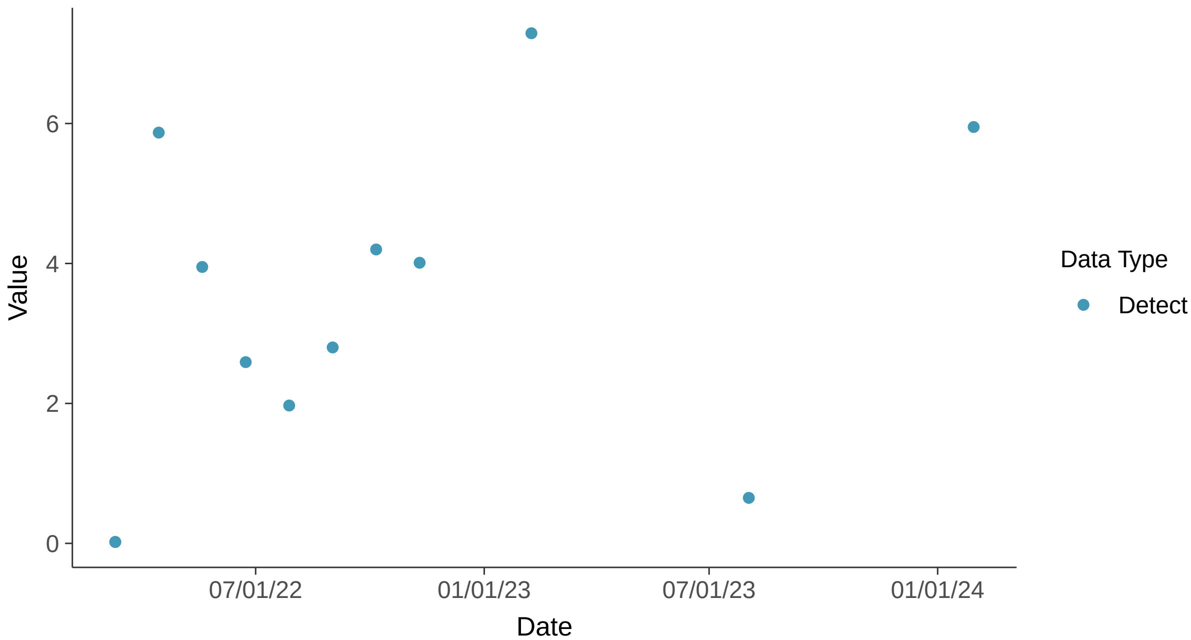


Field Parameters: Turbidity, MW-7C

ID: 7C_3_28

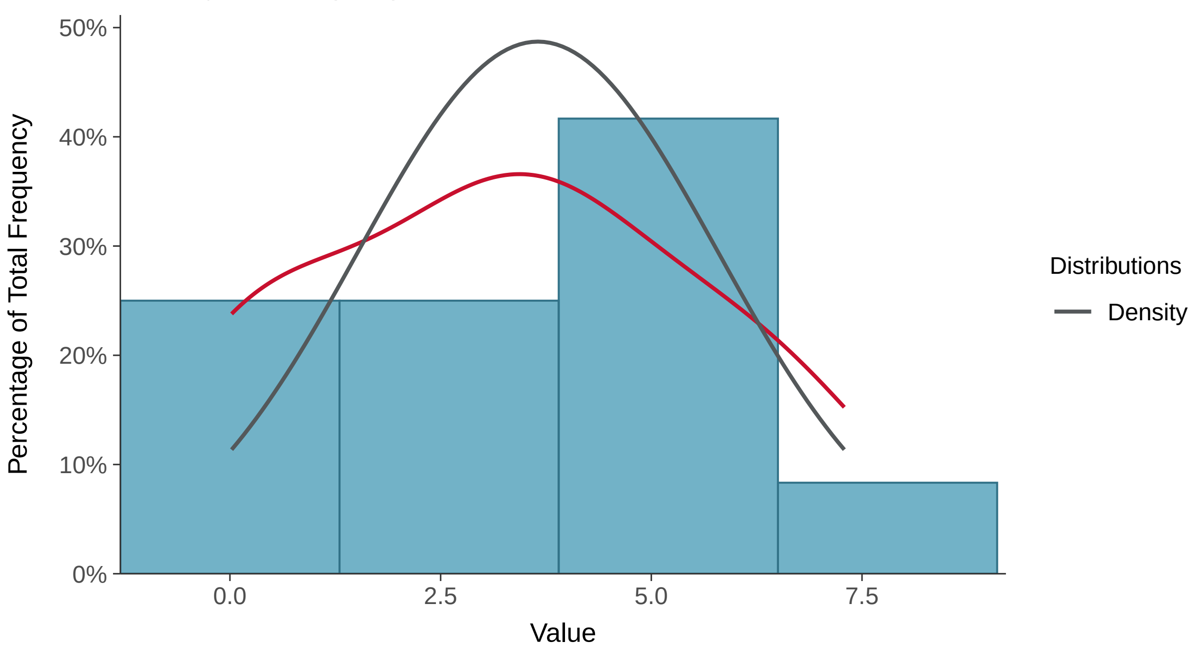
Scatter Plot

Turbidity, MW-7C (NTU)



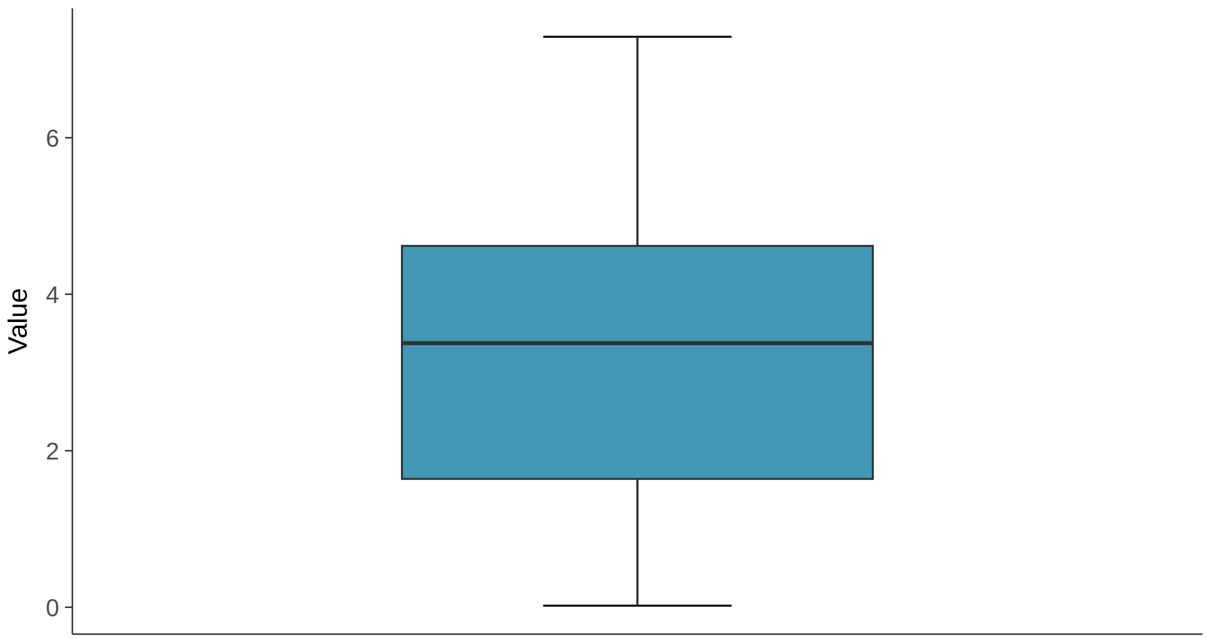
Histogram

Turbidity, MW-7C (NTU)



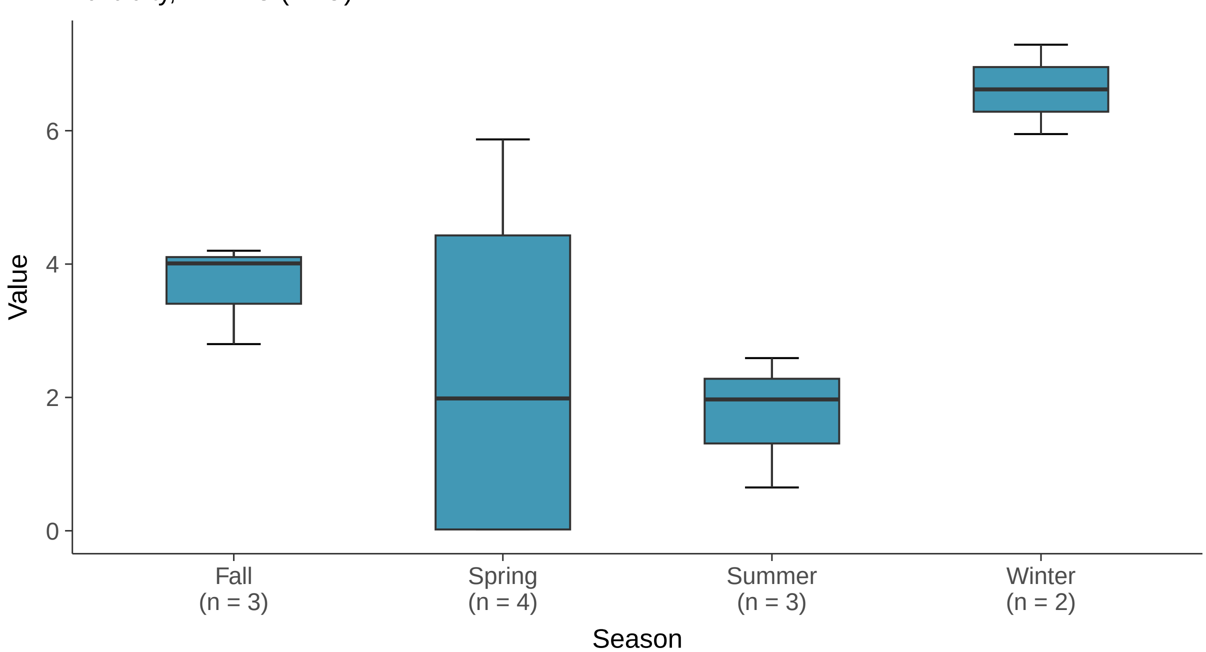
Boxplot

Turbidity, MW-7C (NTU)



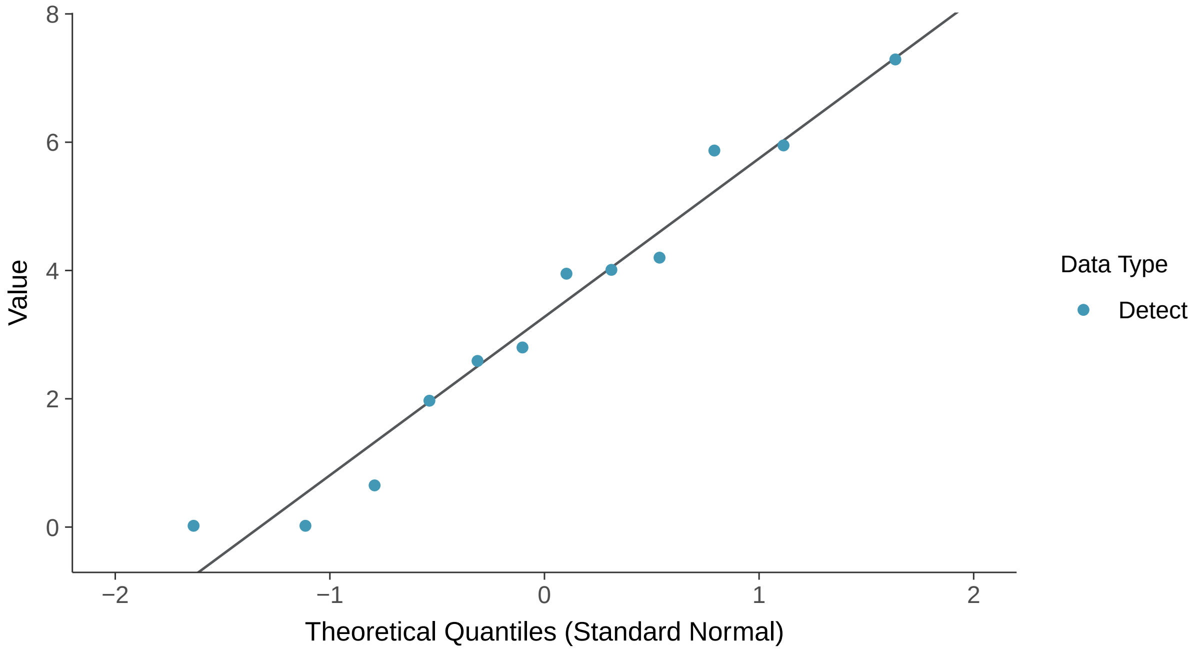
Boxplot by Season

Turbidity, MW-7C (NTU)



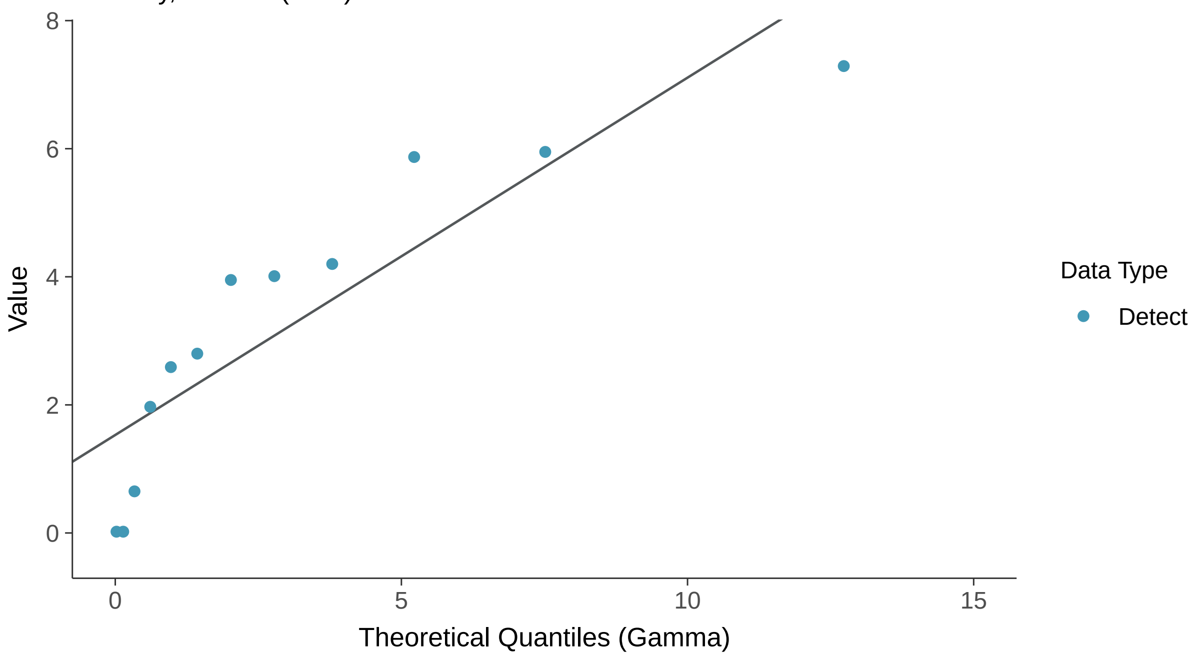
Normal Q-Q plot

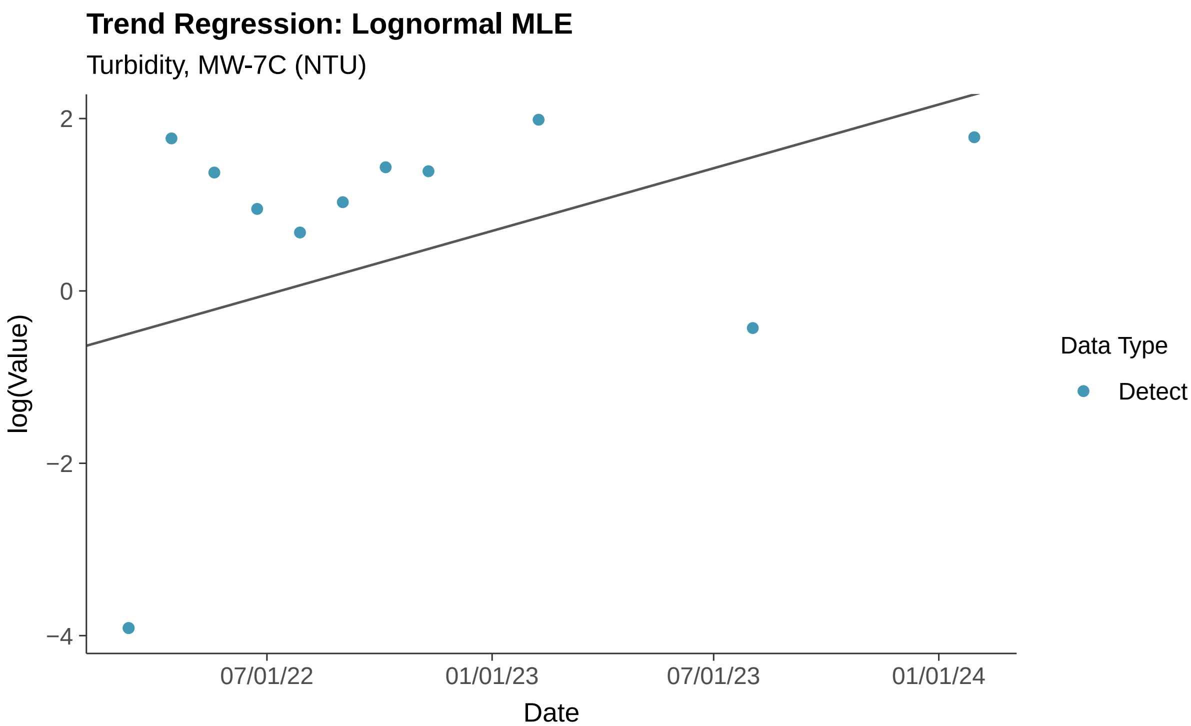
Turbidity, MW-7C (NTU)



Gamma Q-Q plot

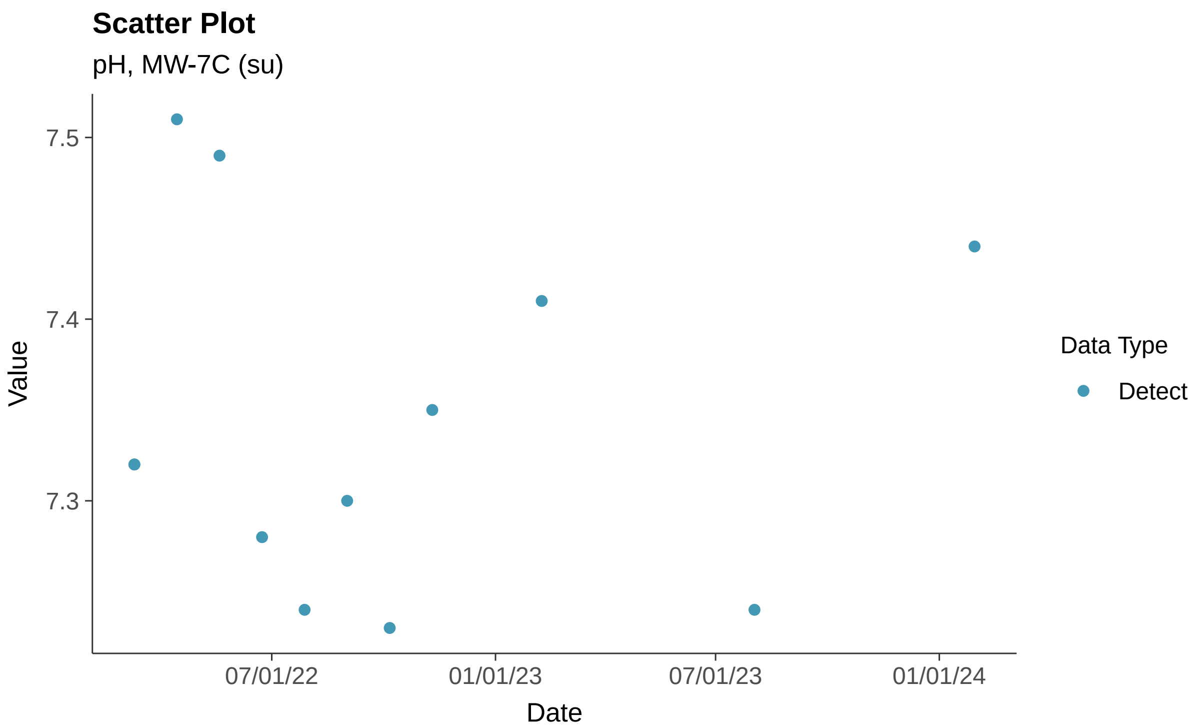
Turbidity, MW-7C (NTU)

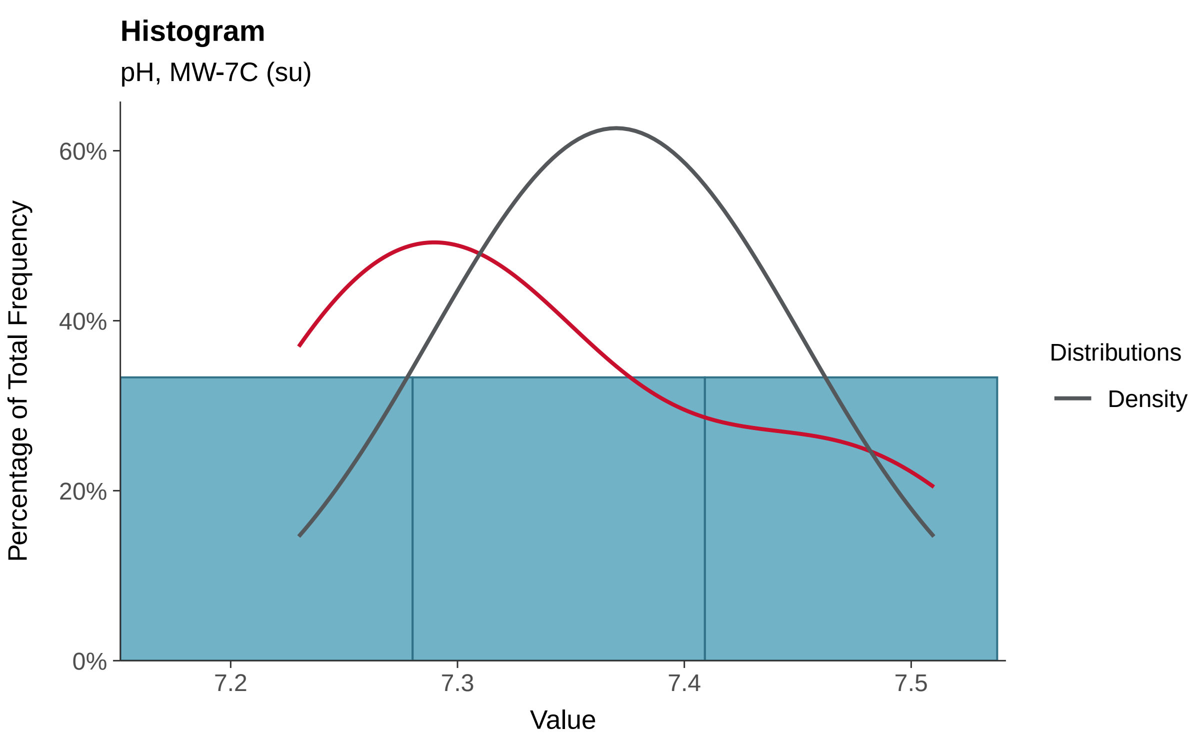



Trend Regression: Lognormal MLE
Turbidity, MW-7C (NTU)
log(Value)
2
0
−2
−4
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: pH, MW-7C

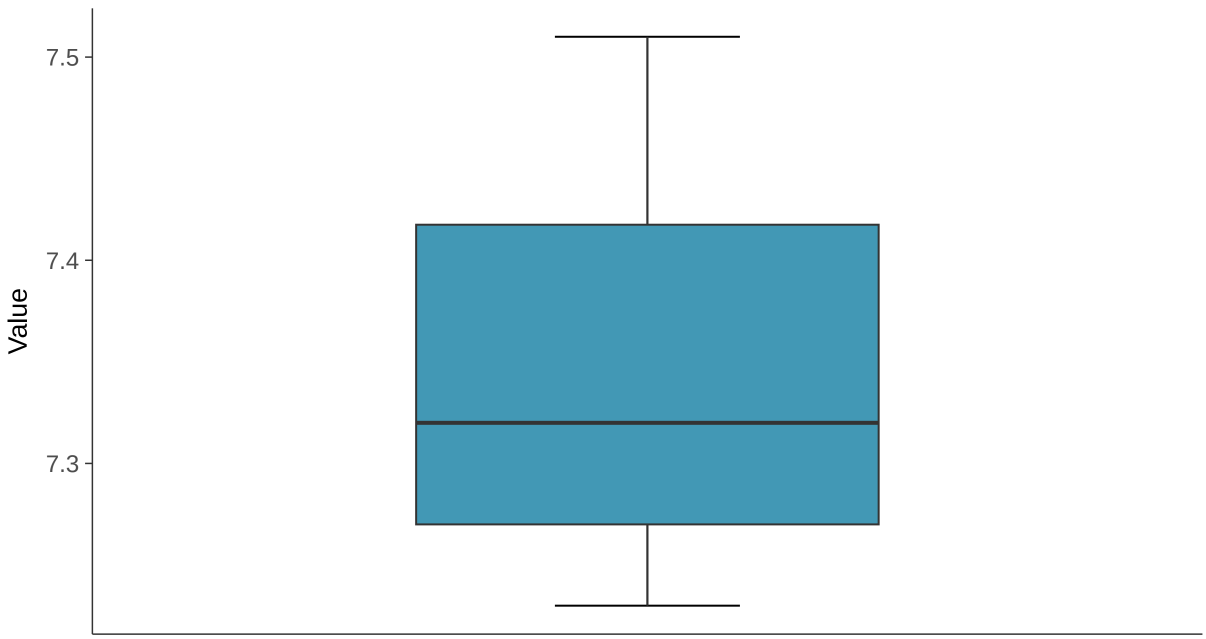
ID: 7C_3_29





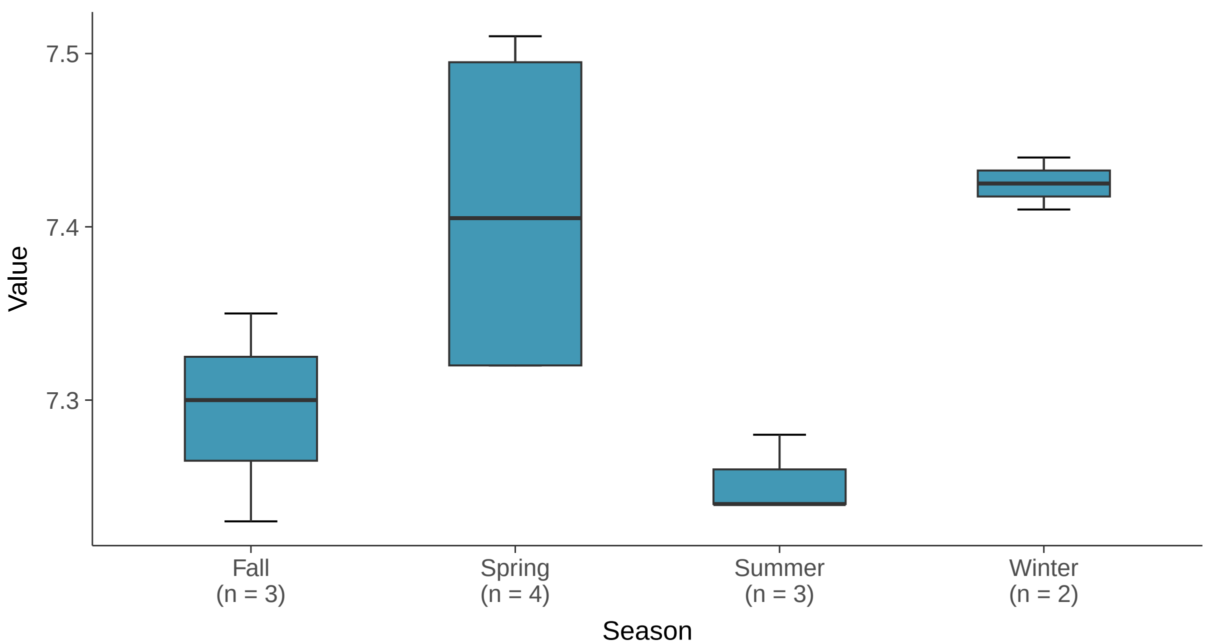
Boxplot

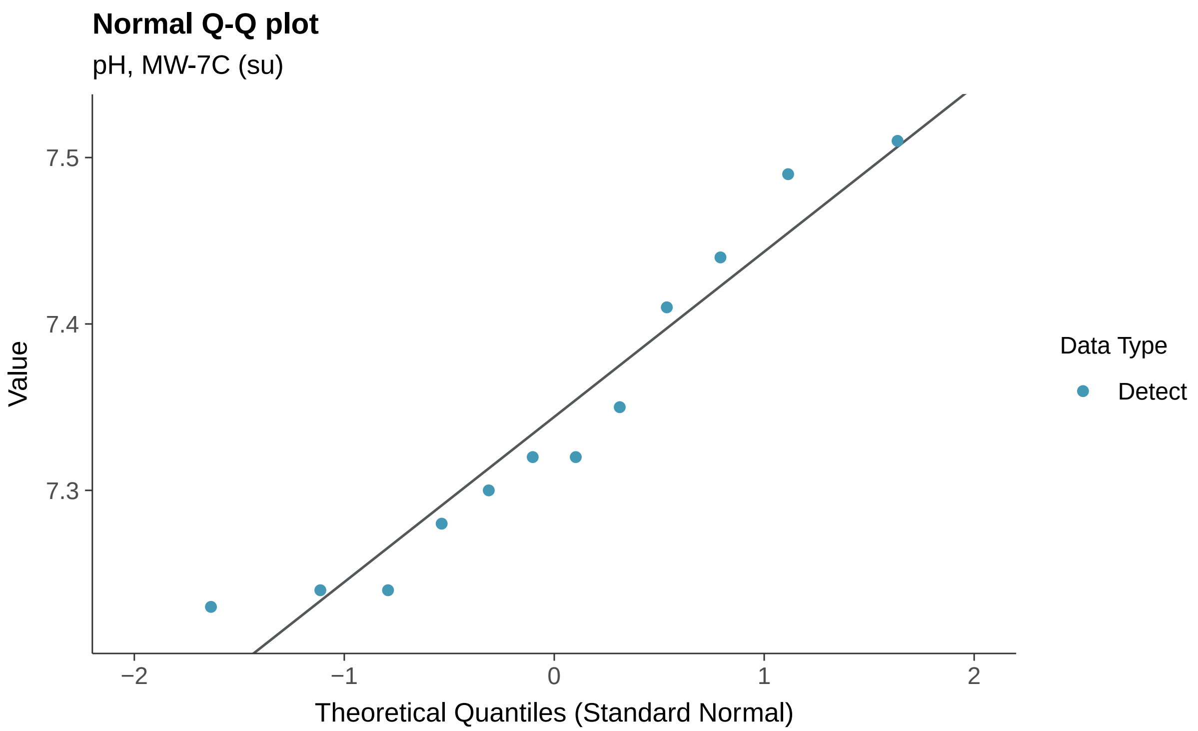
pH, MW-7C (su)

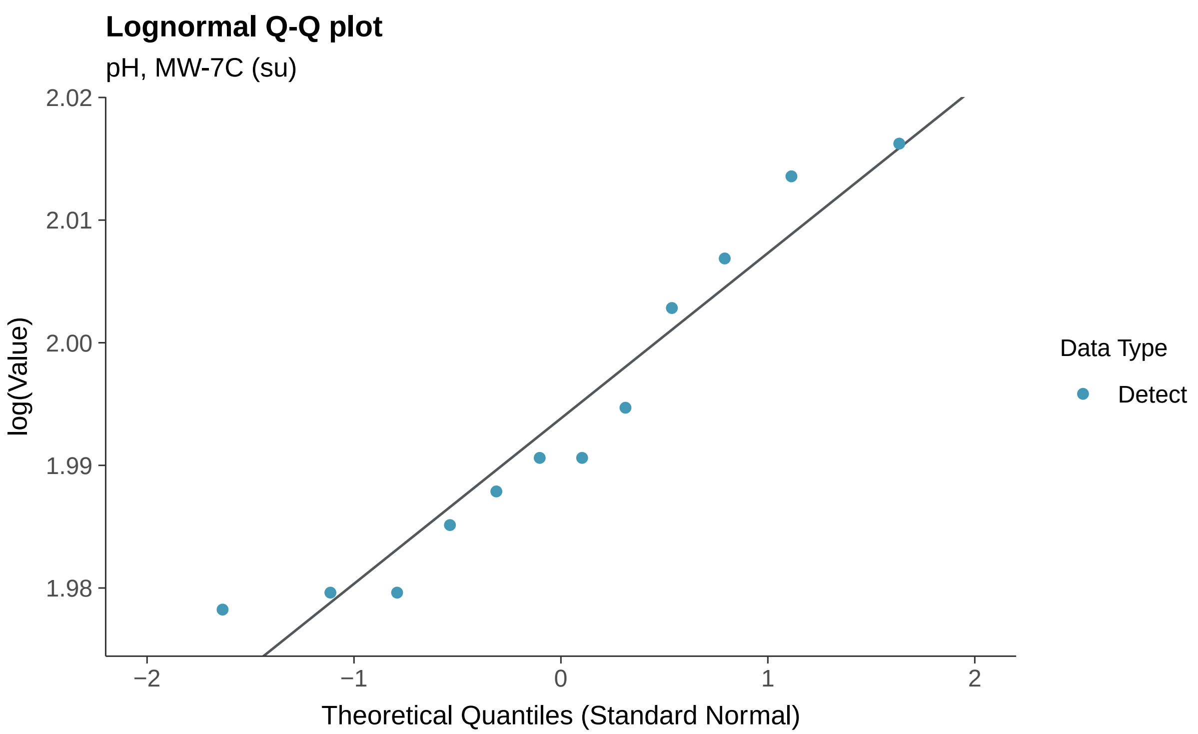


Boxplot by Season

pH, MW-7C (su)

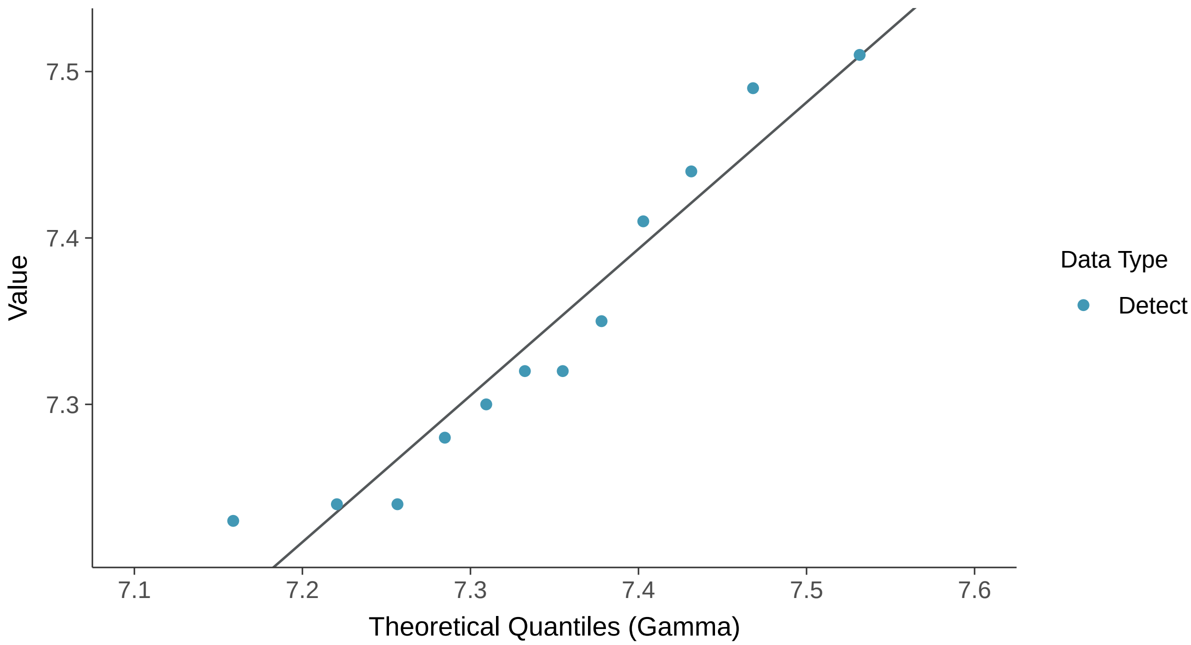



Normal Q-Q plot
pH, MW-7C (su)
Value
7.5
7.4
7.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH, MW-7C (su)
log(Value)
2.02
2.01
2.00
1.99
1.98
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

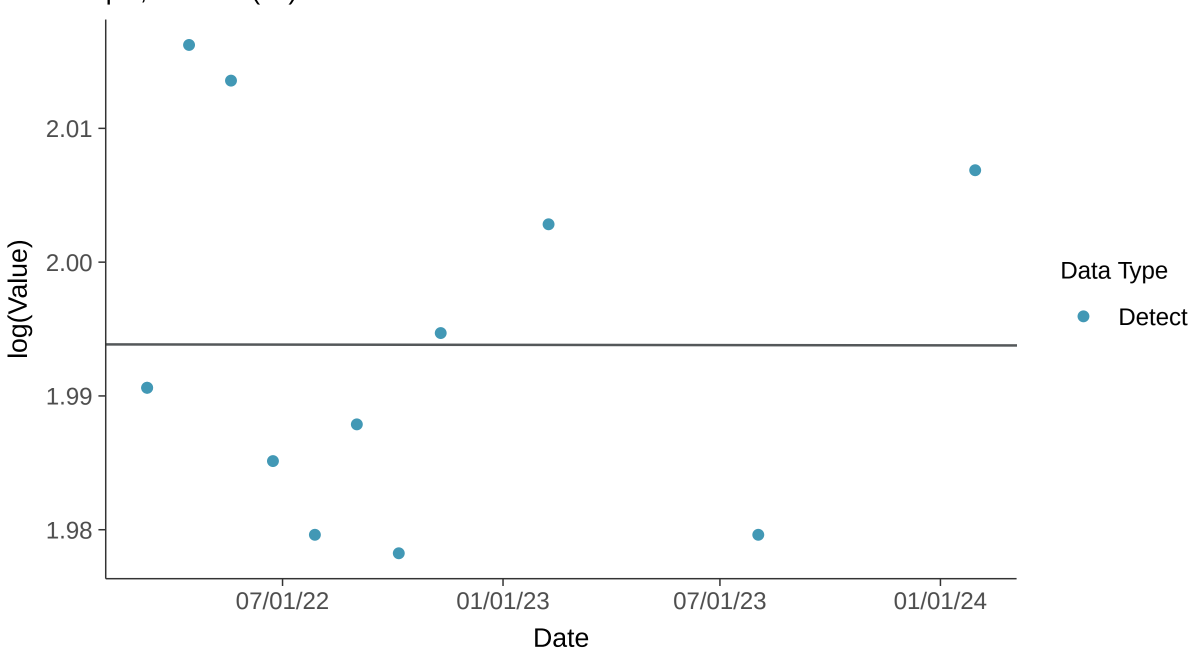
Gamma Q-Q plot

pH, MW-7C (su)



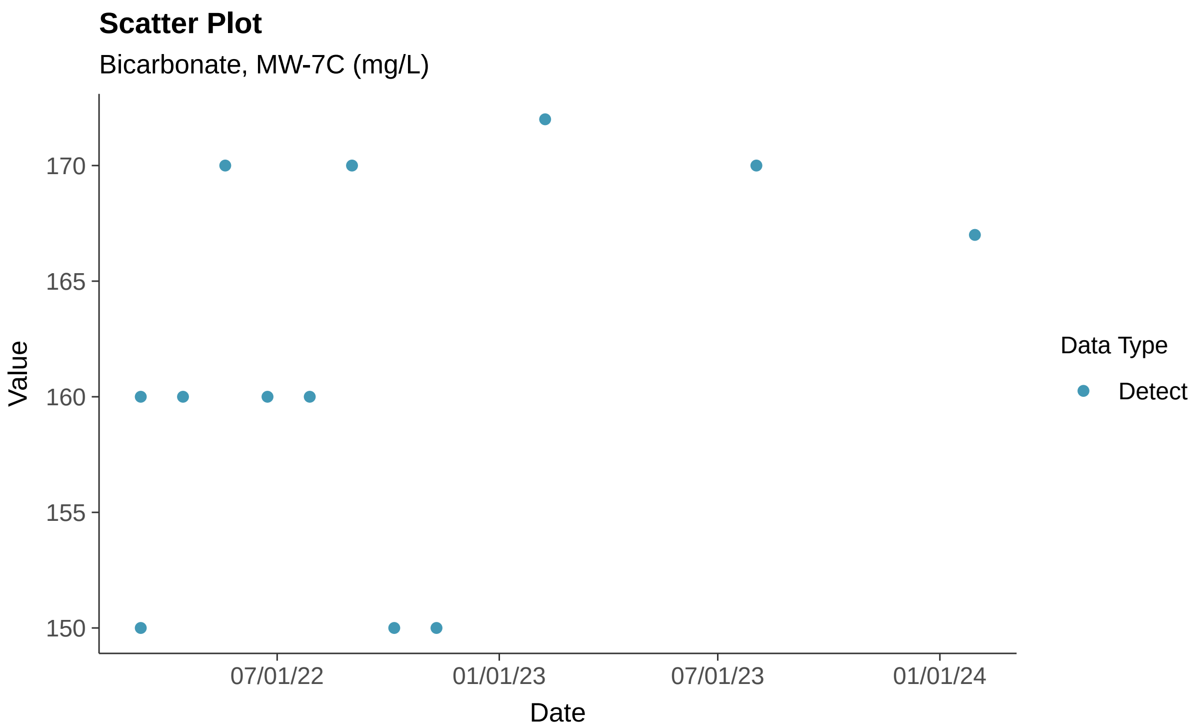
Trend Regression: Lognormal MLE

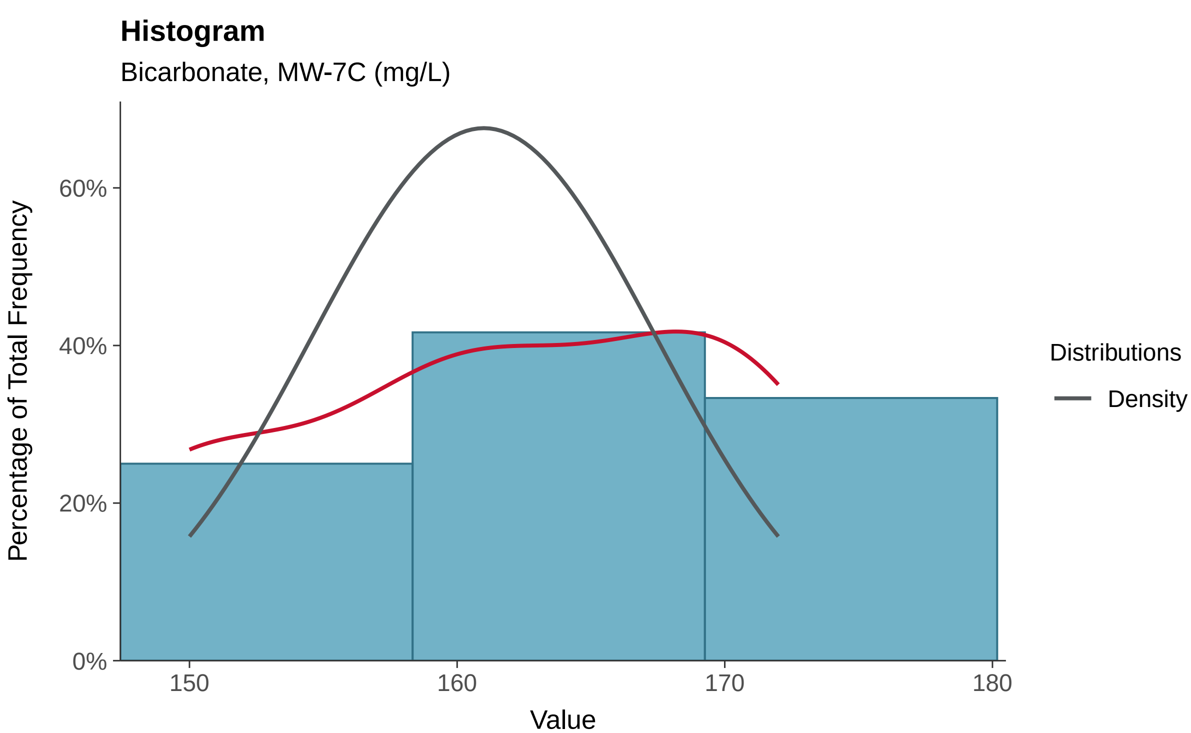
pH, MW-7C (su)



Other: Bicarbonate, MW-7C

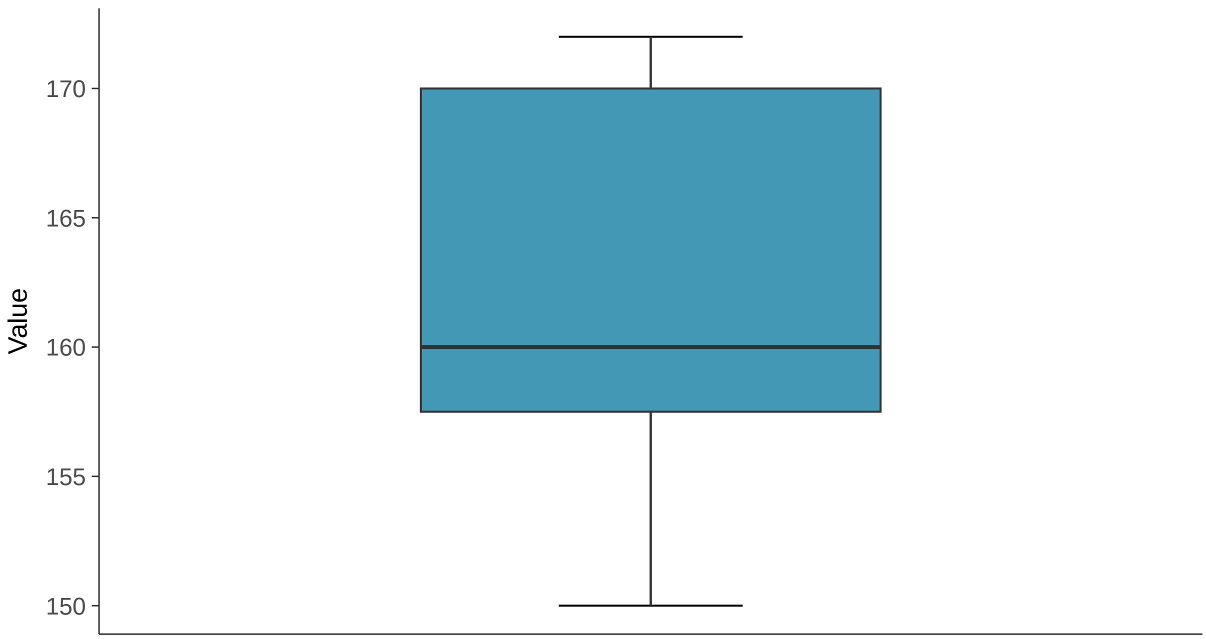
ID: 7C_4_30





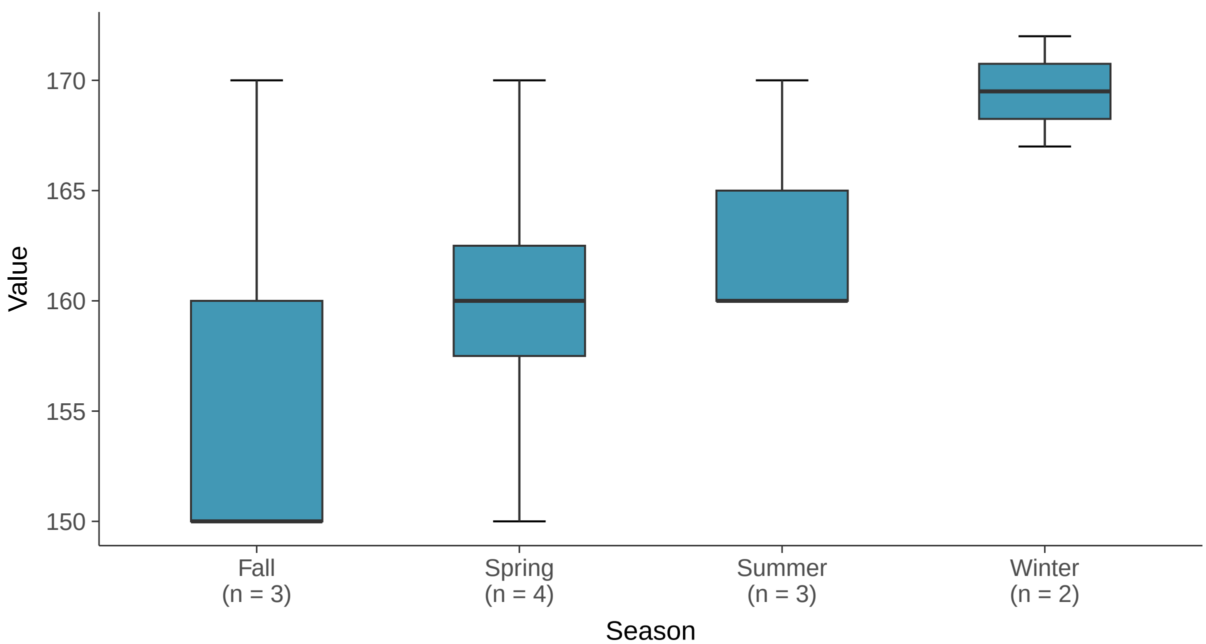
Boxplot

Bicarbonate, MW-7C (mg/L)



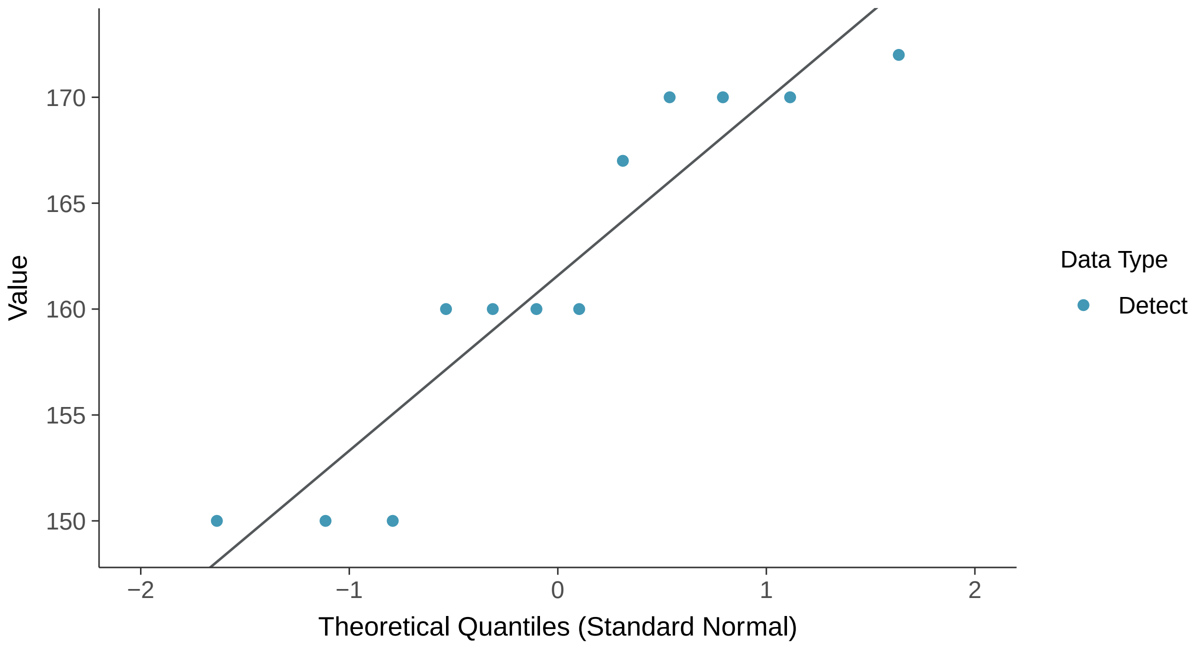
Boxplot by Season

Bicarbonate, MW-7C (mg/L)



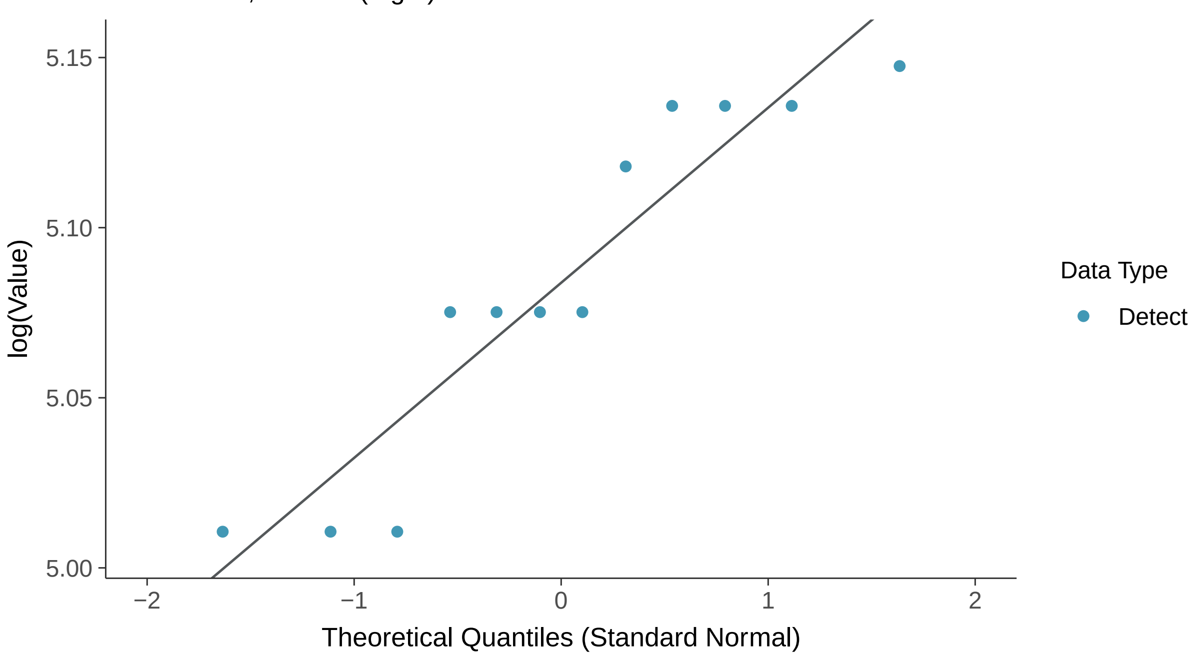
Normal Q-Q plot

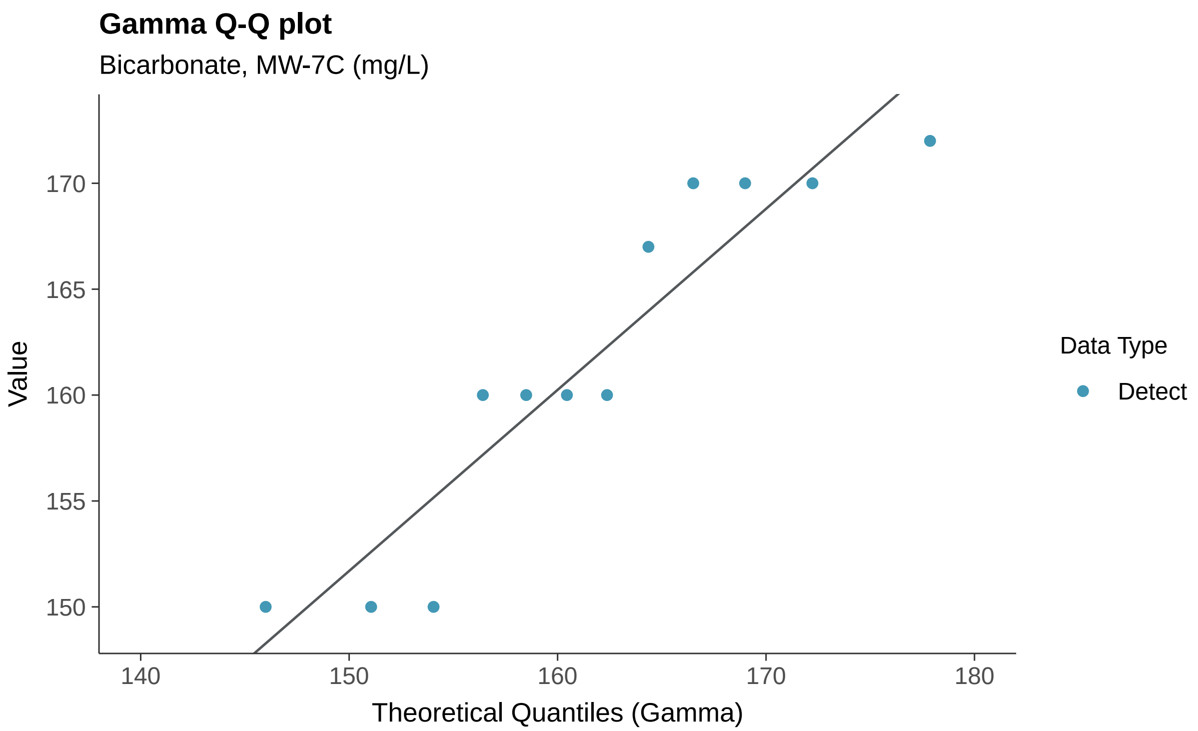
Bicarbonate, MW-7C (mg/L)

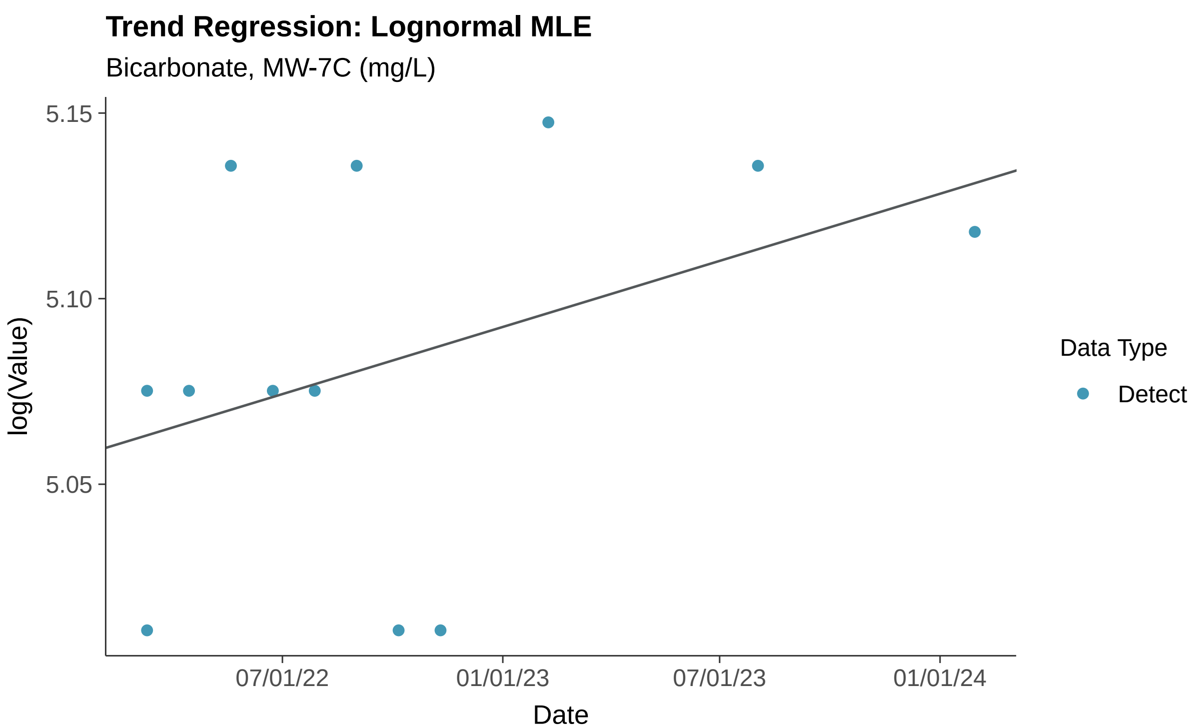


Lognormal Q-Q plot

Bicarbonate, MW-7C (mg/L)

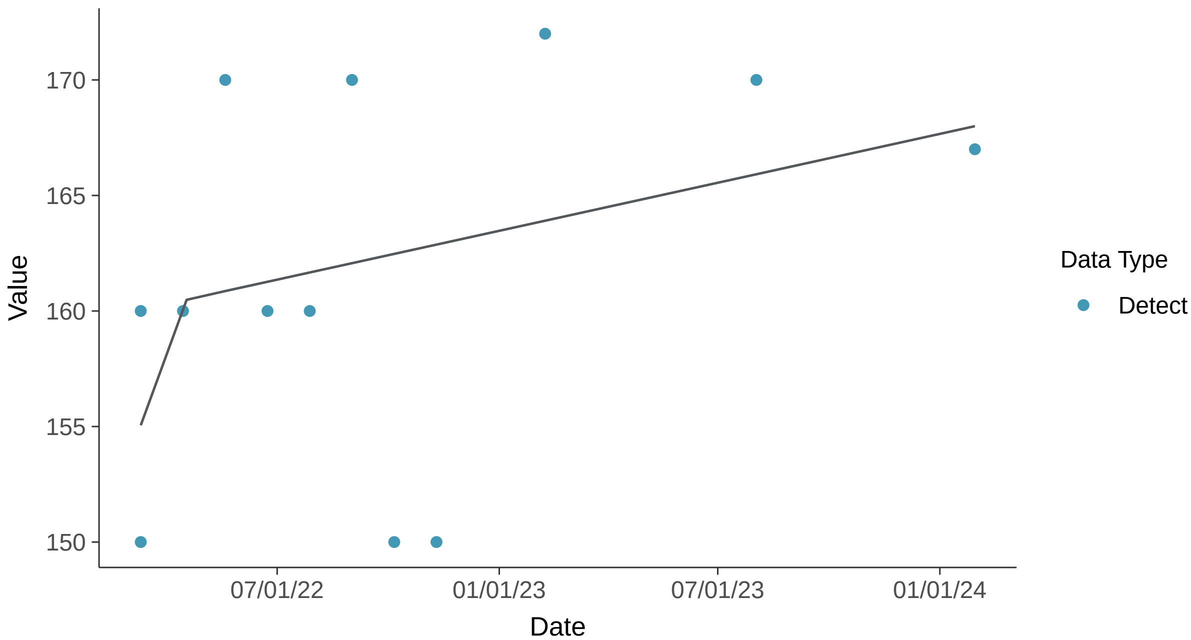



Gamma Q-Q plot
Bicarbonate, MW-7C (mg/L)
Value
170
165
160
155
150
140
150
160
170
180
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Bicarbonate, MW-7C (mg/L)
log(Value)
5.15
5.10
5.05
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

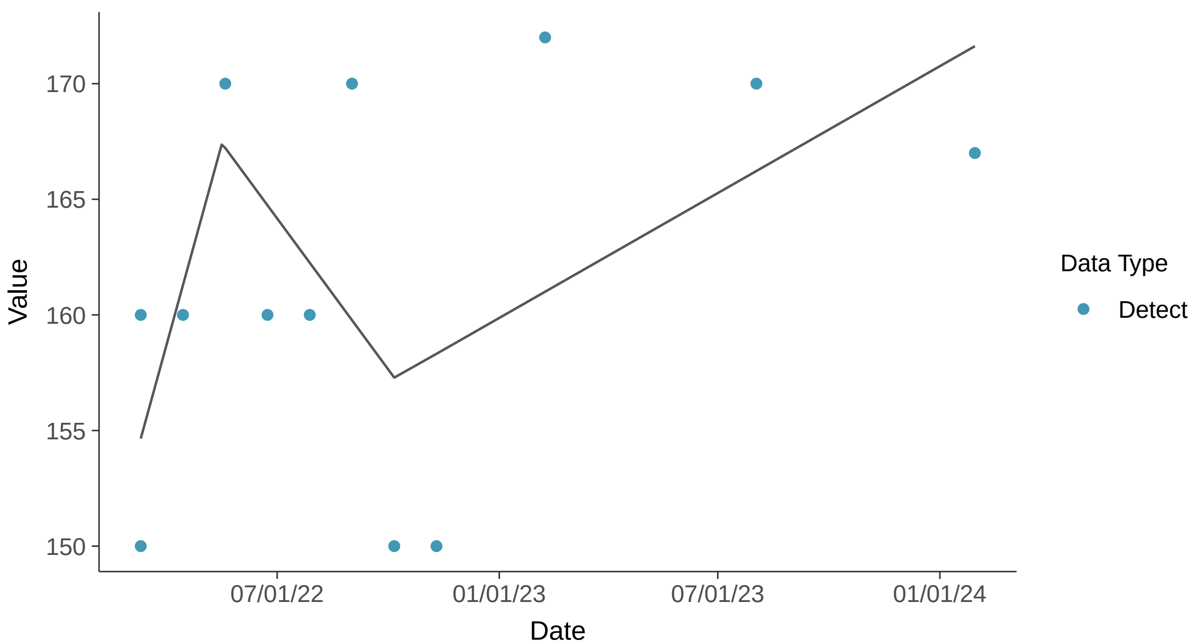
Trend Regression: Piecewise Linear-Linear

Bicarbonate, MW-7C (mg/L)



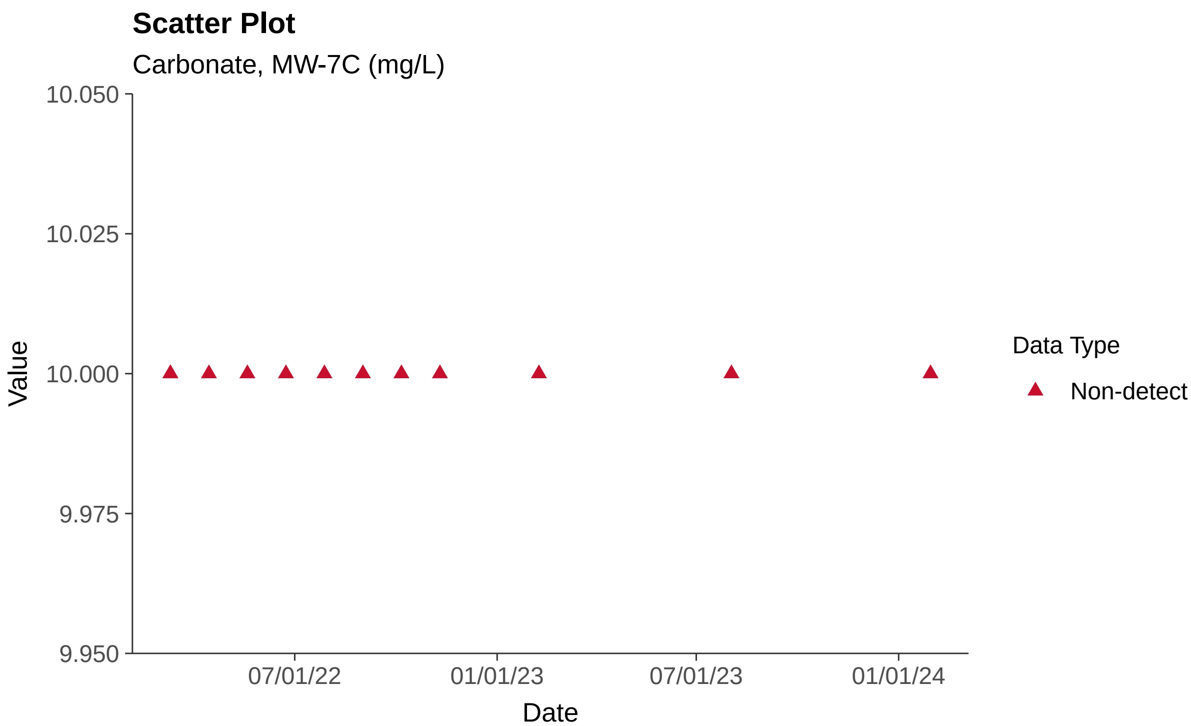
Trend Regression: Piecewise Linear-Linear-Linear

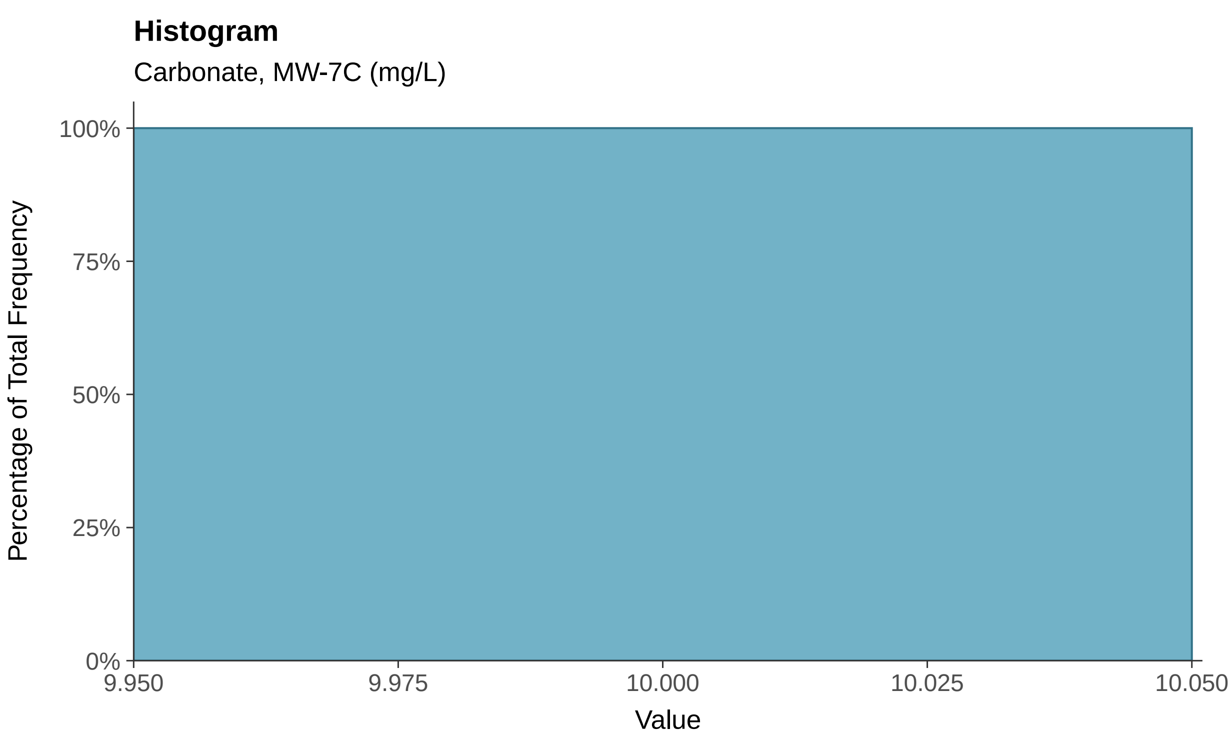
Bicarbonate, MW-7C (mg/L)



Other: Carbonate, MW-7C

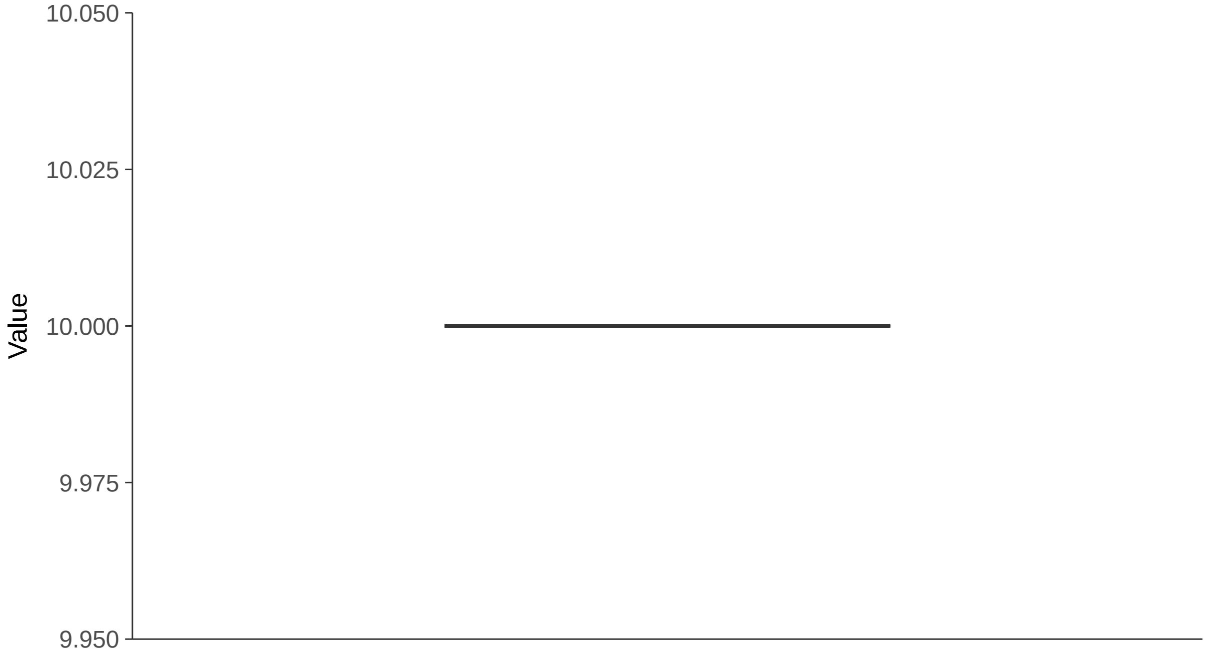
ID: 7C_4_31





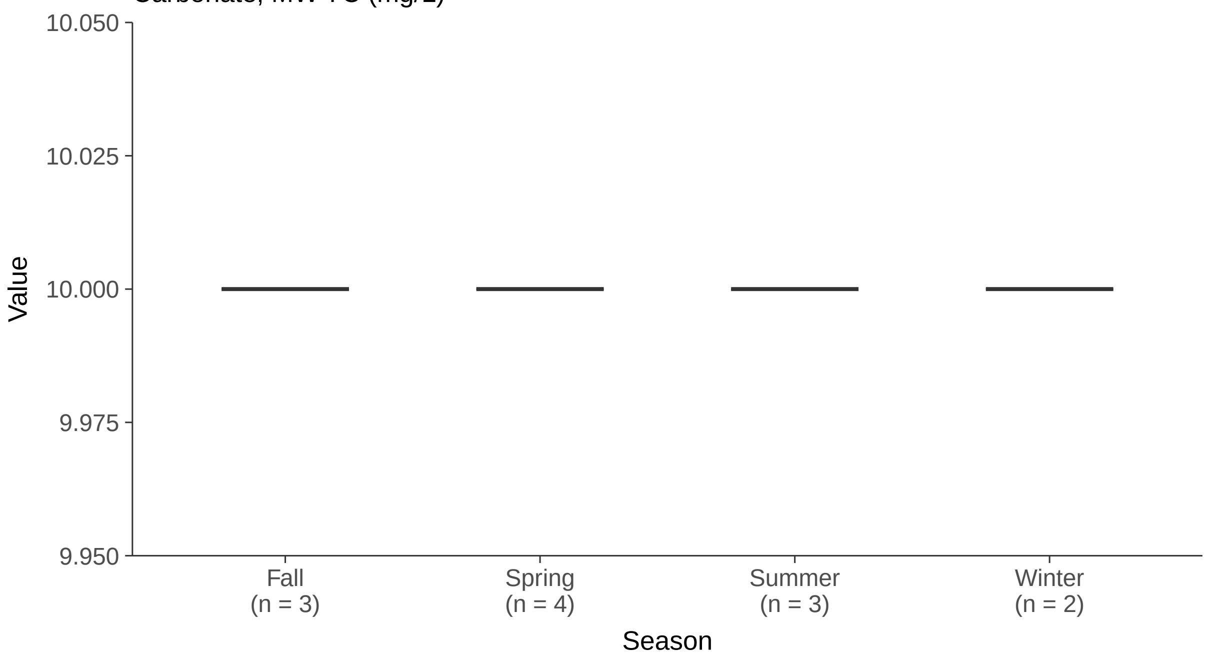
Boxplot

Carbonate, MW-7C (mg/L)



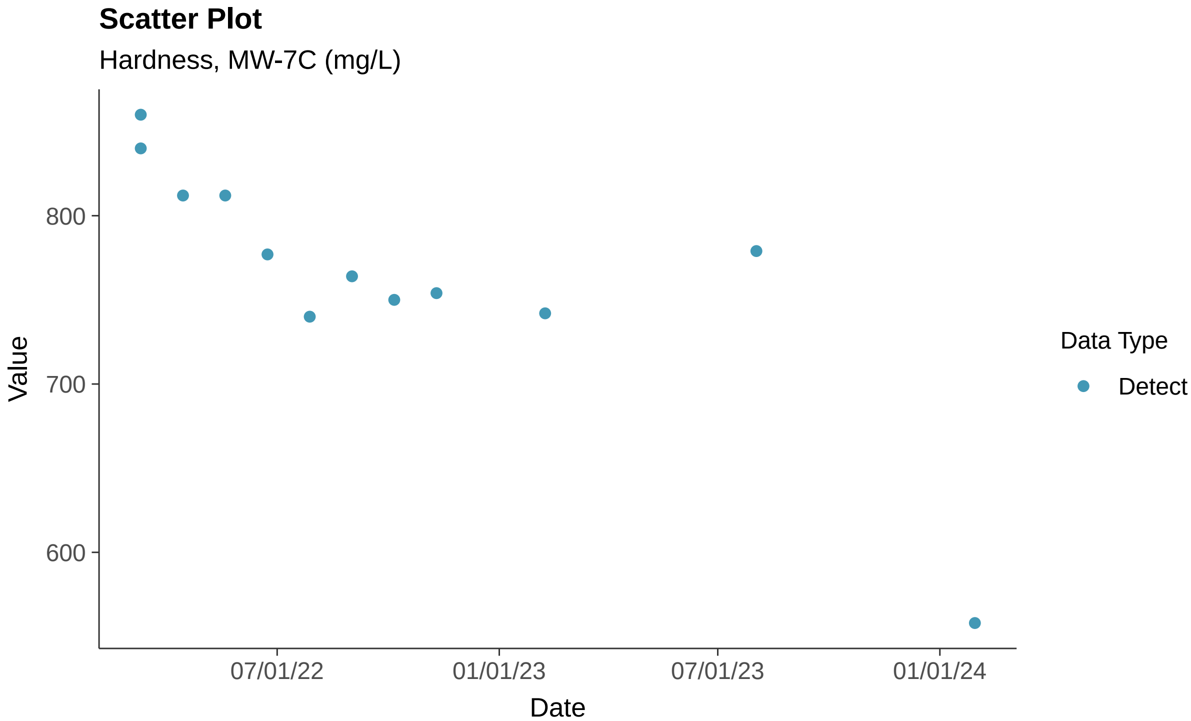
Boxplot by Season

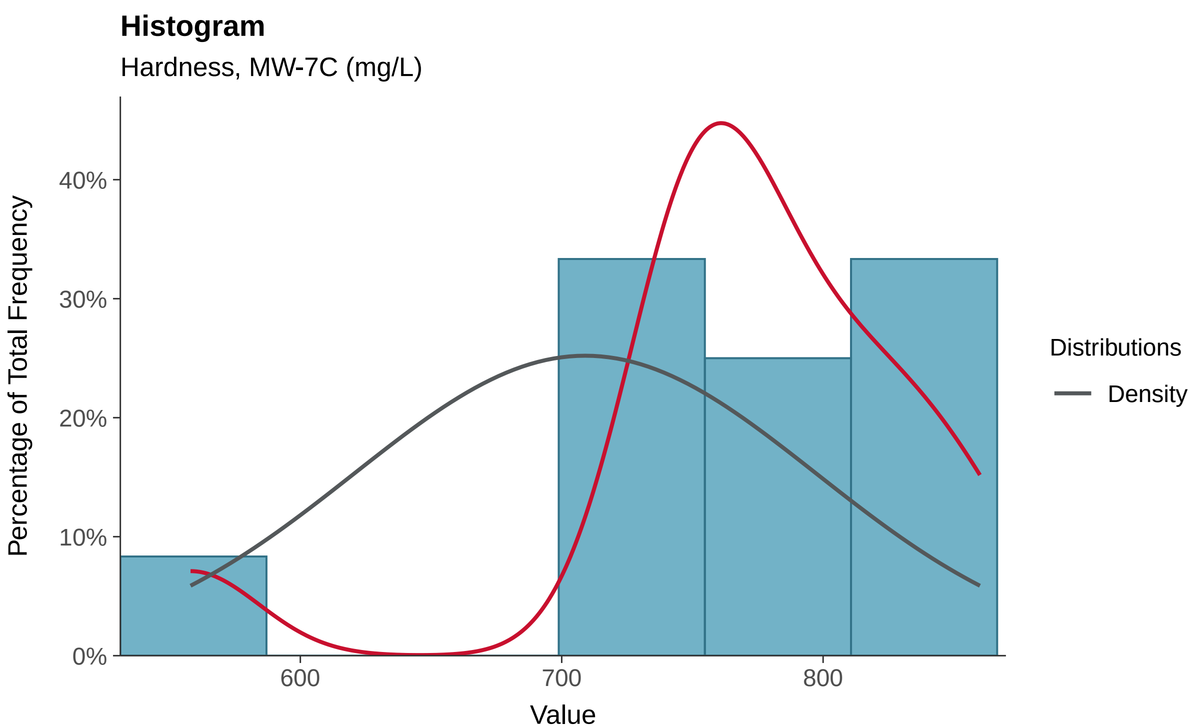
Carbonate, MW-7C (mg/L)



Other: Hardness, MW-7C

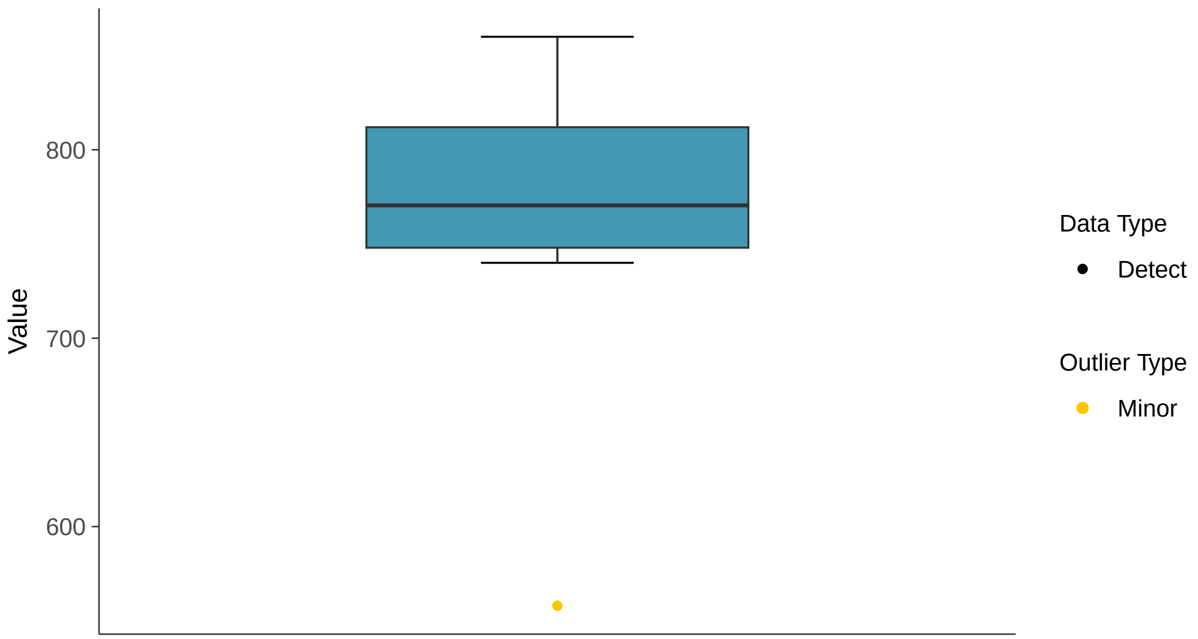
ID: 7C_4_32





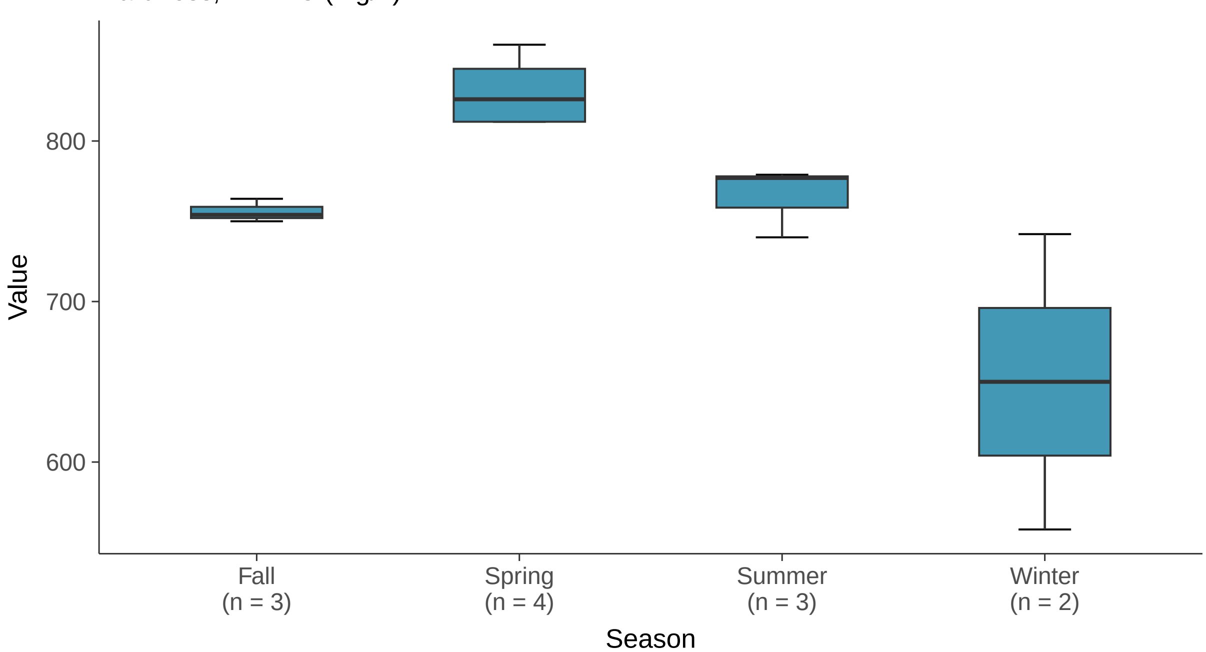
Boxplot

Hardness, MW-7C (mg/L)



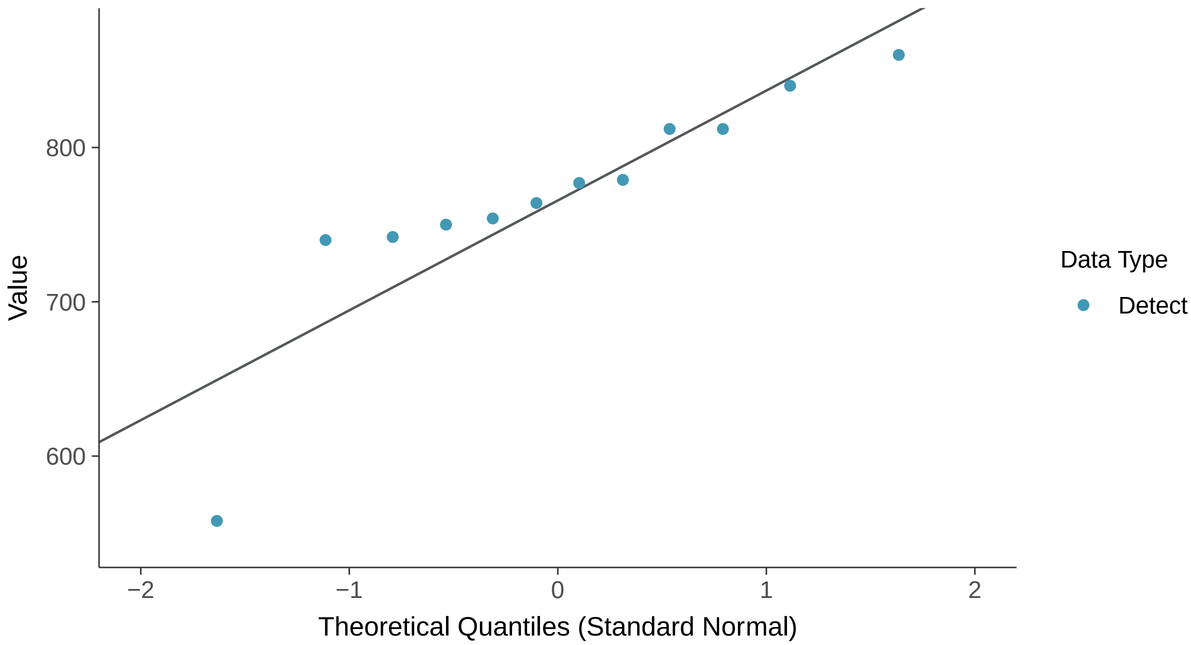
Boxplot by Season

Hardness, MW-7C (mg/L)



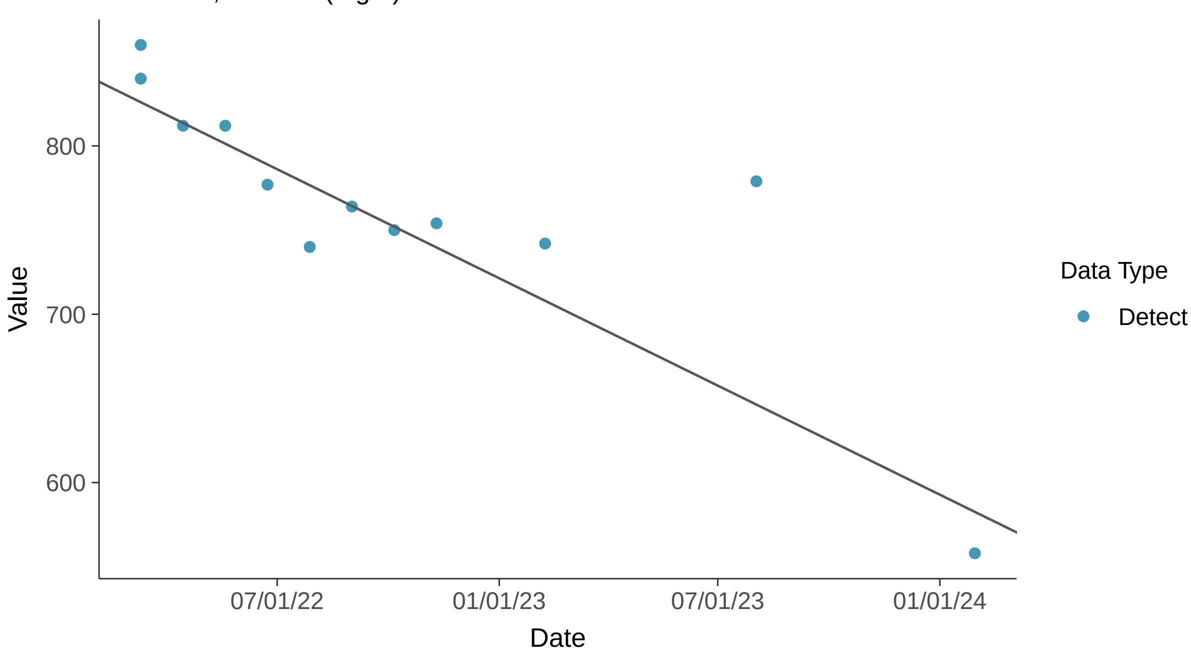
Normal Q-Q plot

Hardness, MW-7C (mg/L)



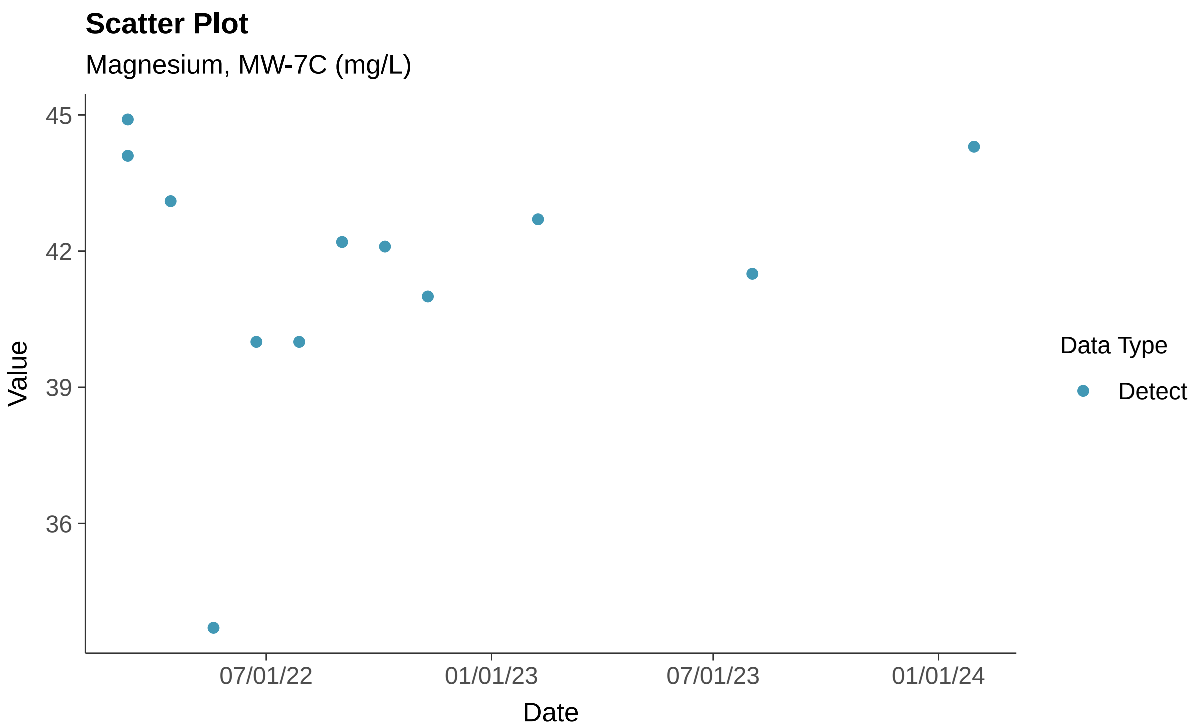
Trend Regression: Mann-Kendall/Theil-Sen Estimate

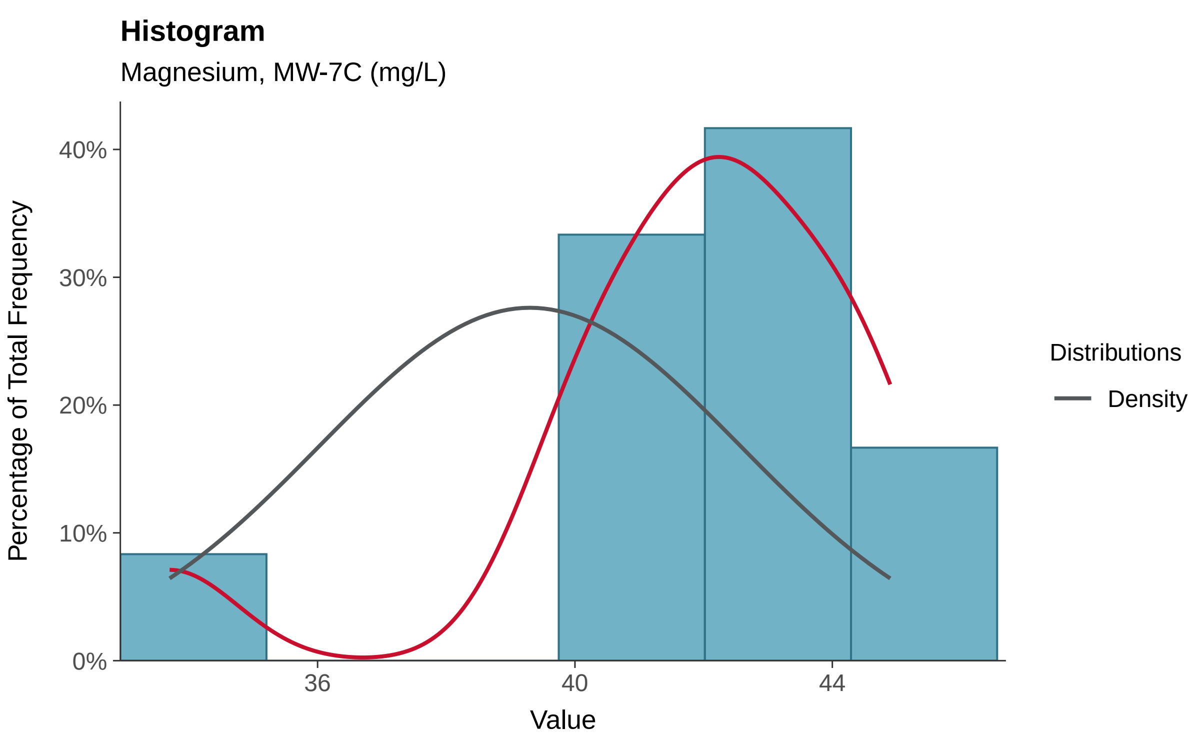
Hardness, MW-7C (mg/L)



Other: Magnesium, MW-7C

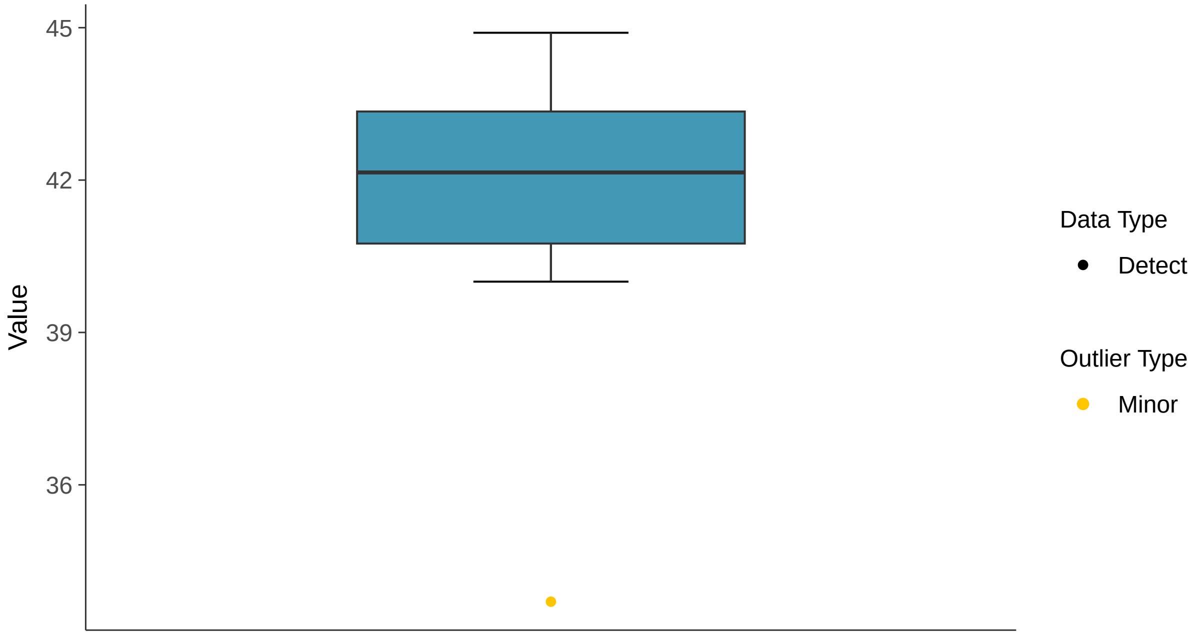
ID: 7C_4_33





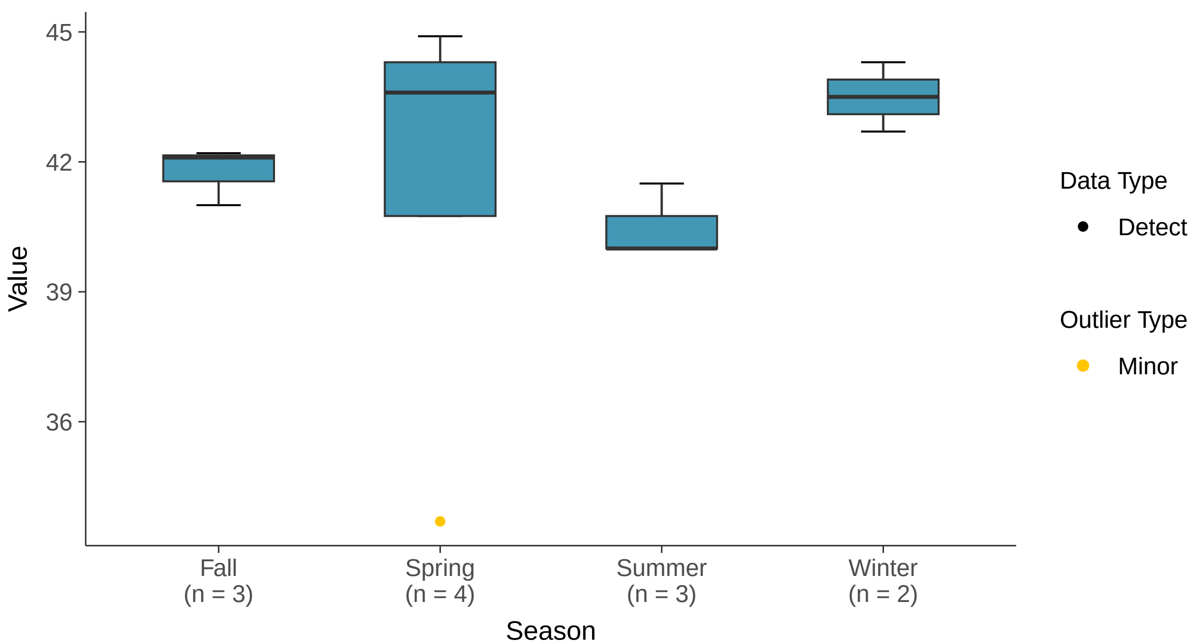
Boxplot

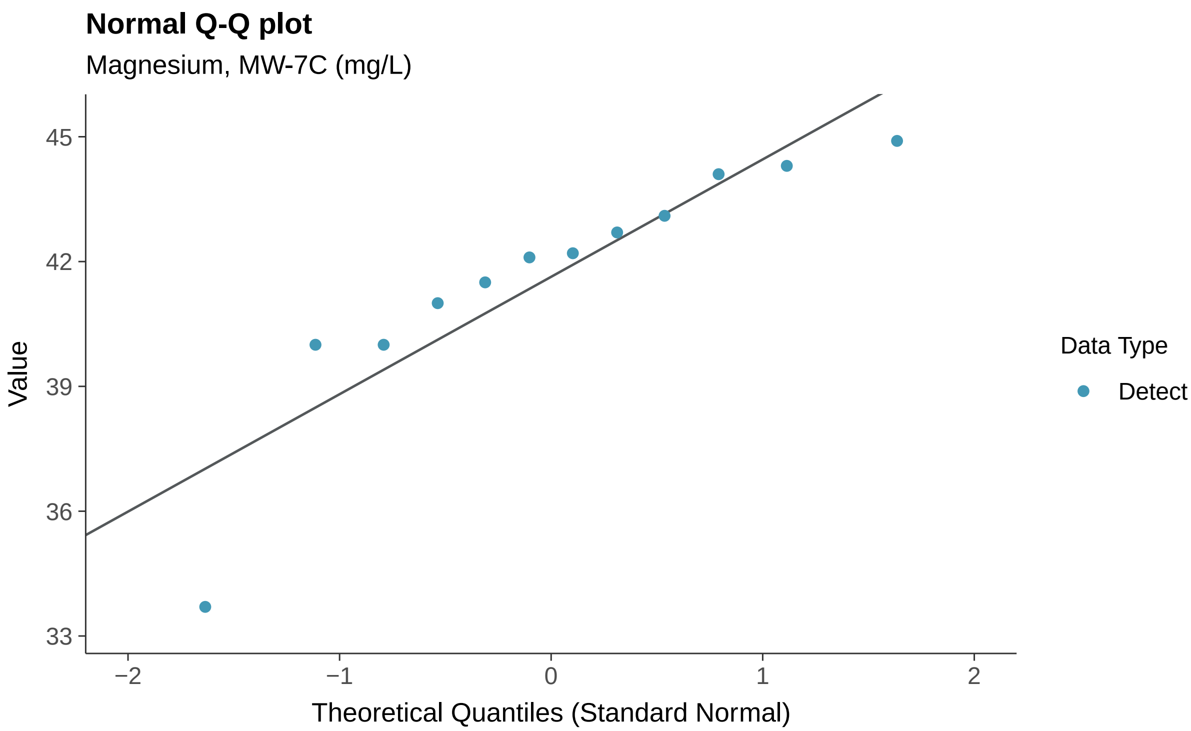
Magnesium, MW-7C (mg/L)

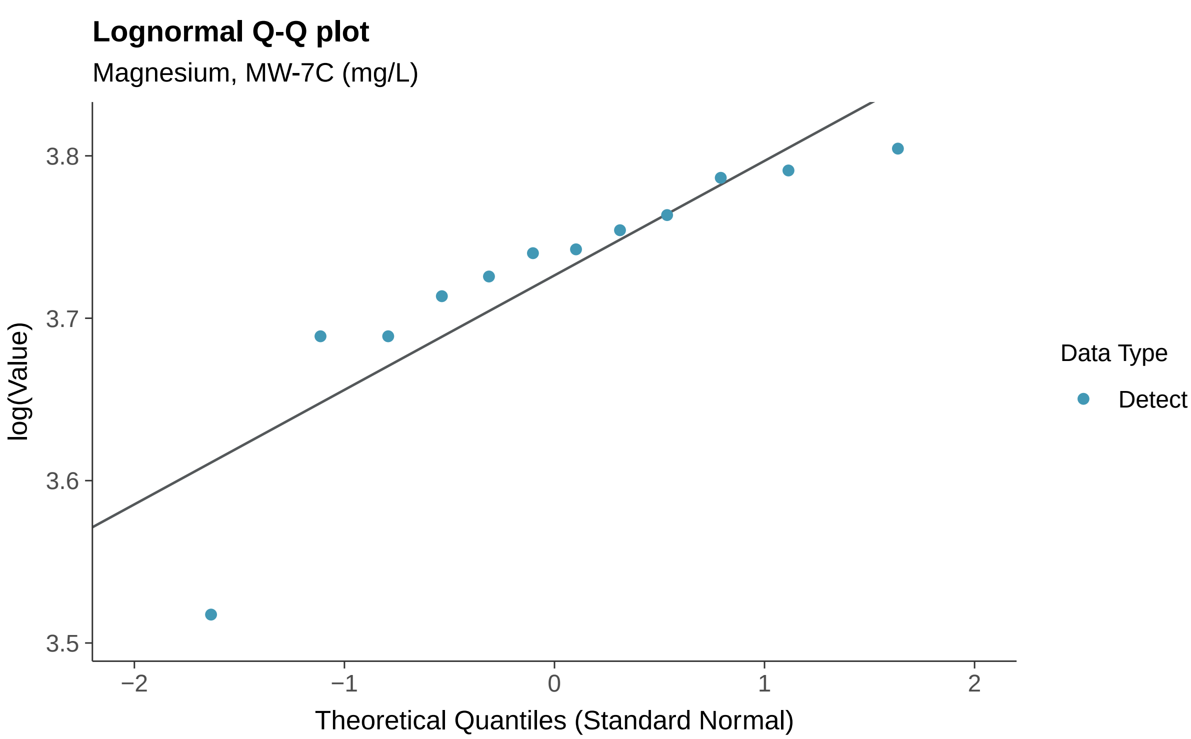


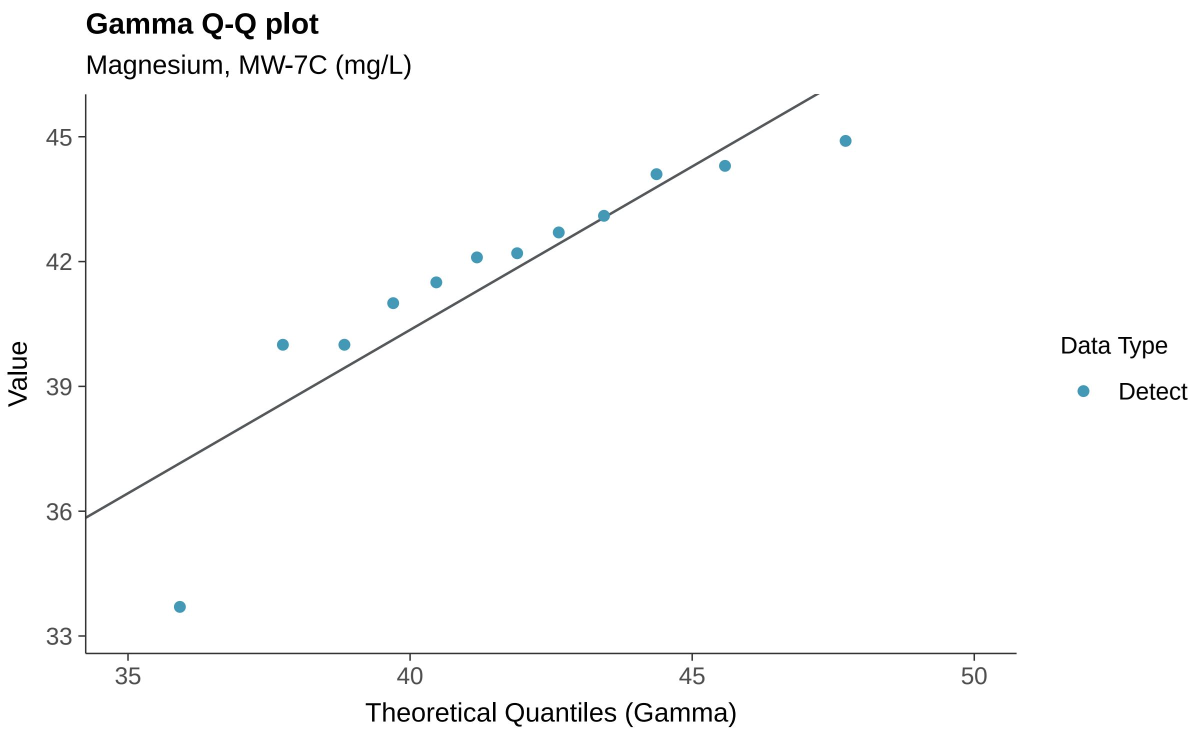
Boxplot by Season

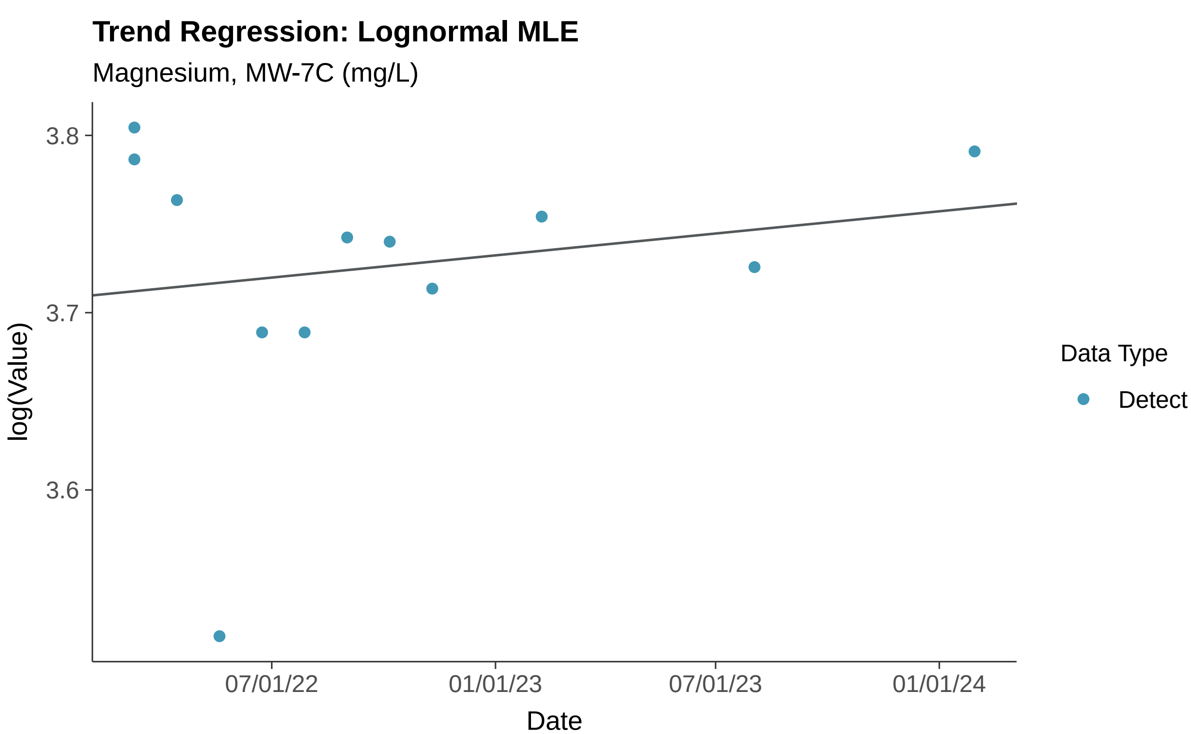
Magnesium, MW-7C (mg/L)




Normal Q-Q plot
Magnesium, MW-7C (mg/L)
Value
45
42
39
36
33
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

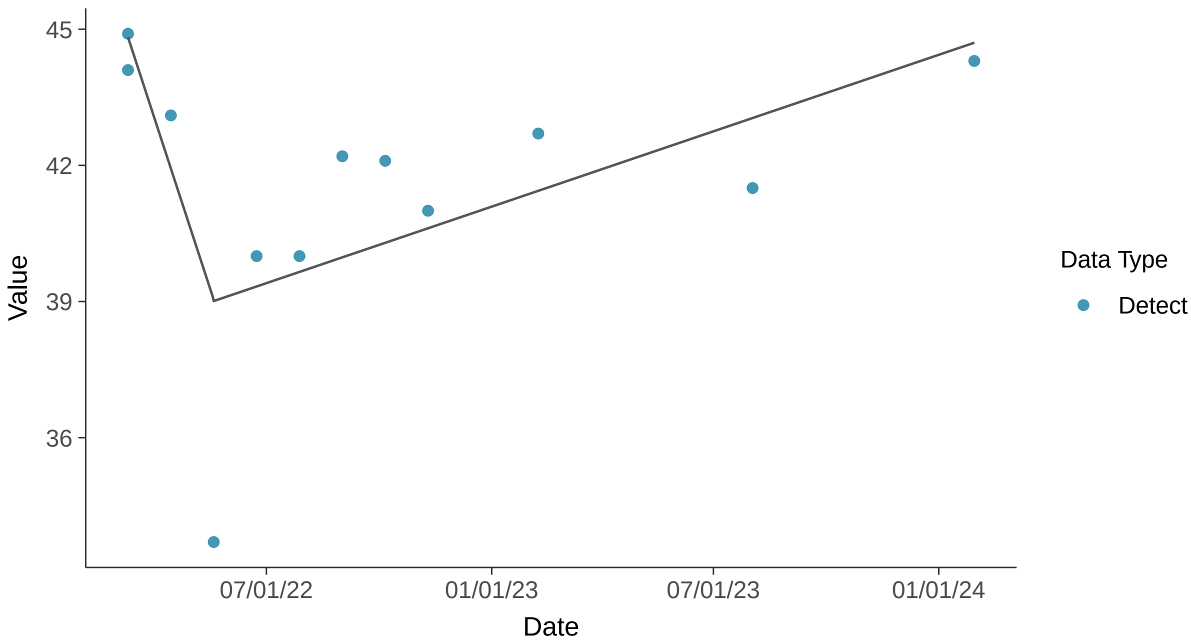

Lognormal Q-Q plot
Magnesium, MW-7C (mg/L)
log(Value)
3.8
3.7
3.6
3.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Magnesium, MW-7C (mg/L)
Value
45
42
39
36
33
35
40
45
50
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Magnesium, MW-7C (mg/L)
log(Value)
3.8
3.7
3.6
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

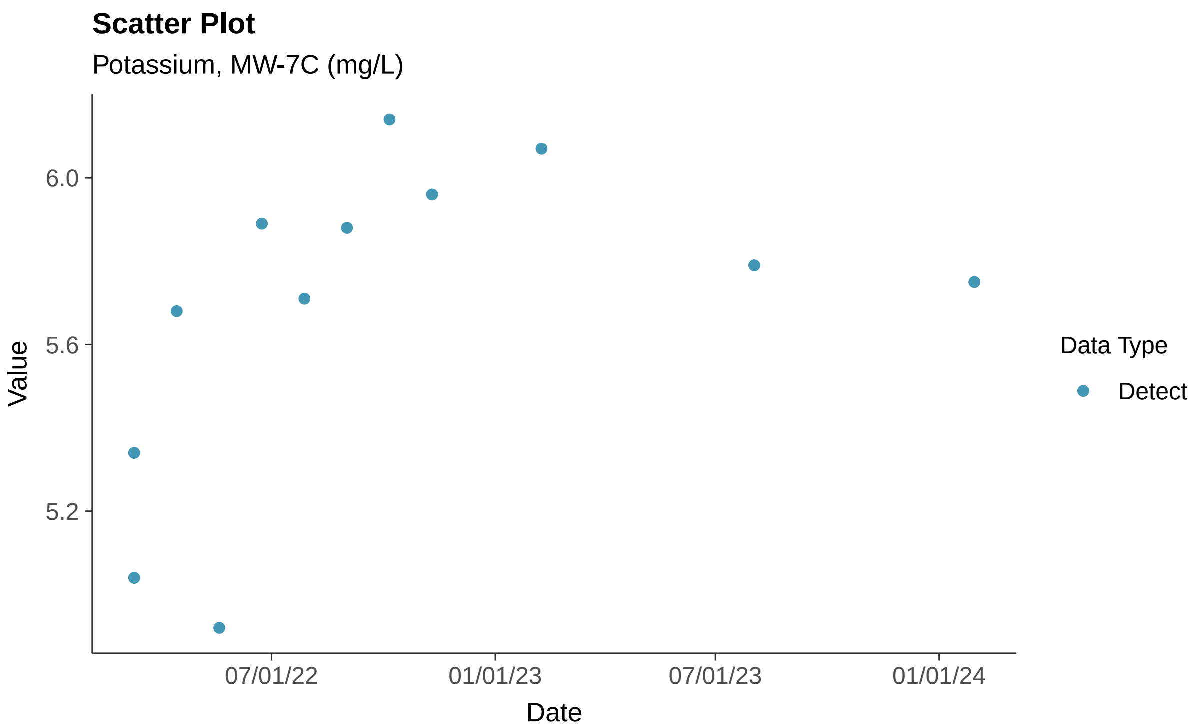
Trend Regression: Piecewise Linear-Linear

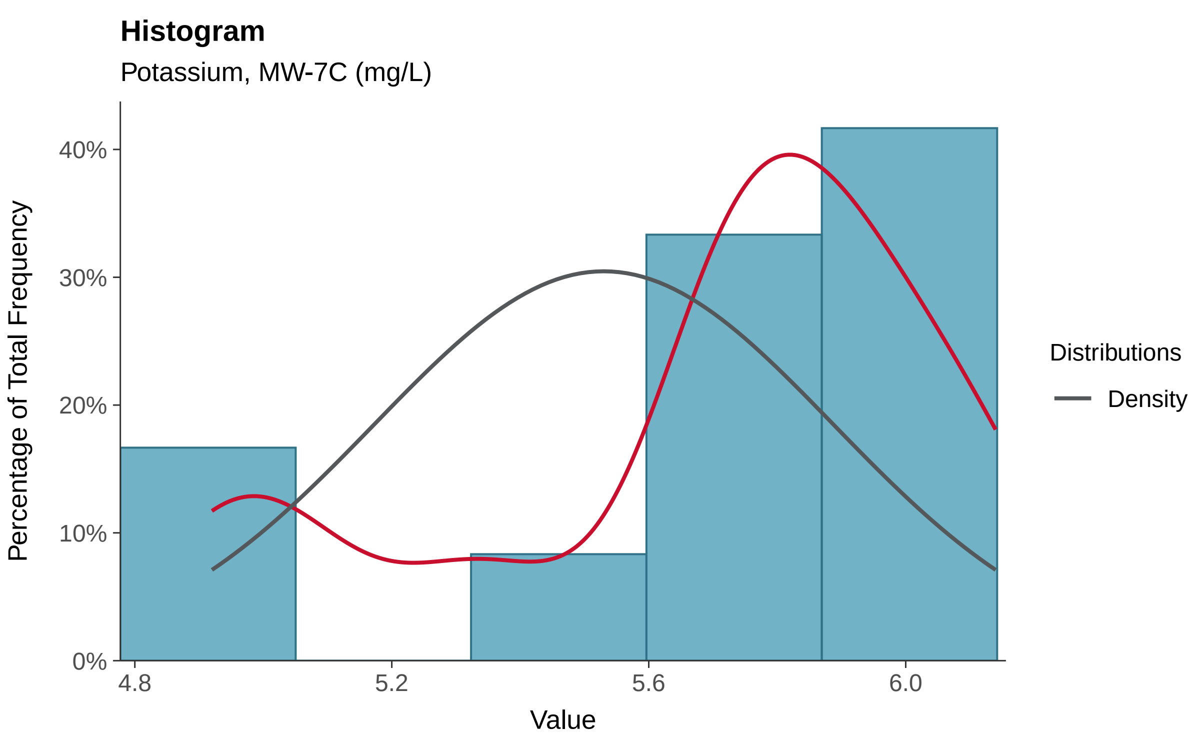
Magnesium, MW-7C (mg/L)



Other: Potassium, MW-7C

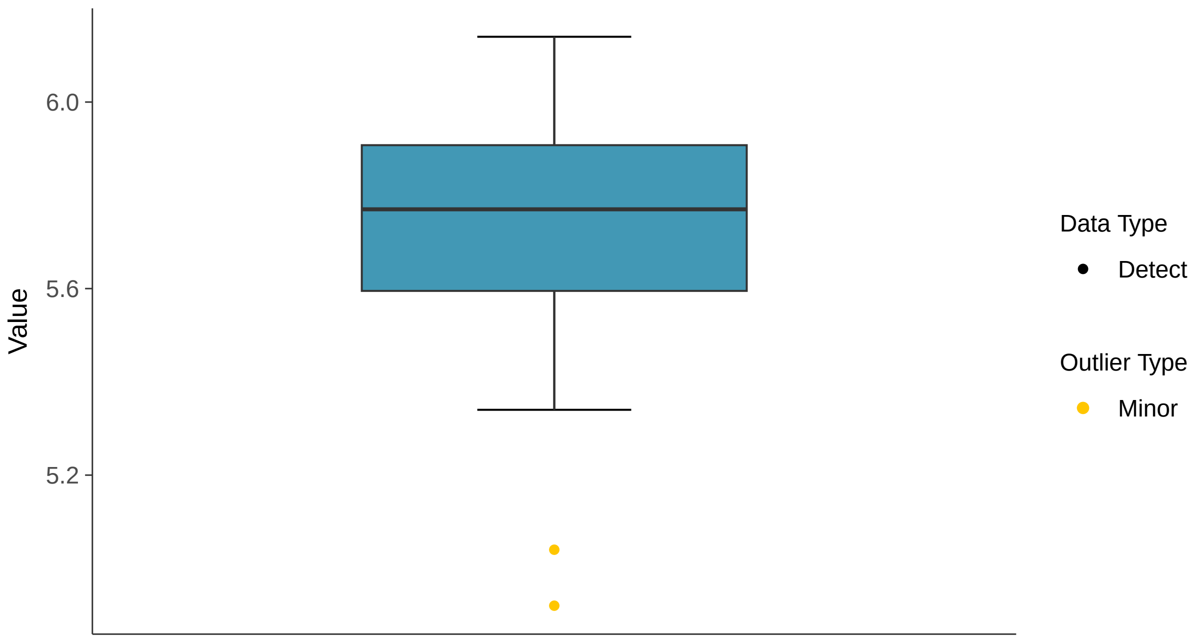
ID: 7C_4_34





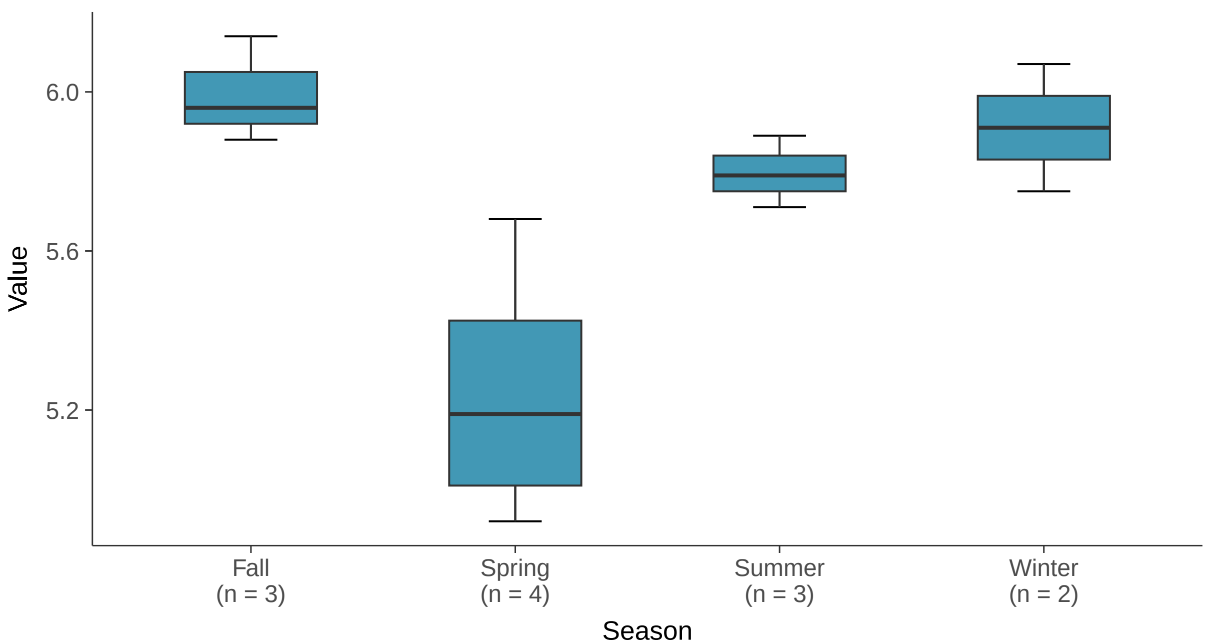
Boxplot

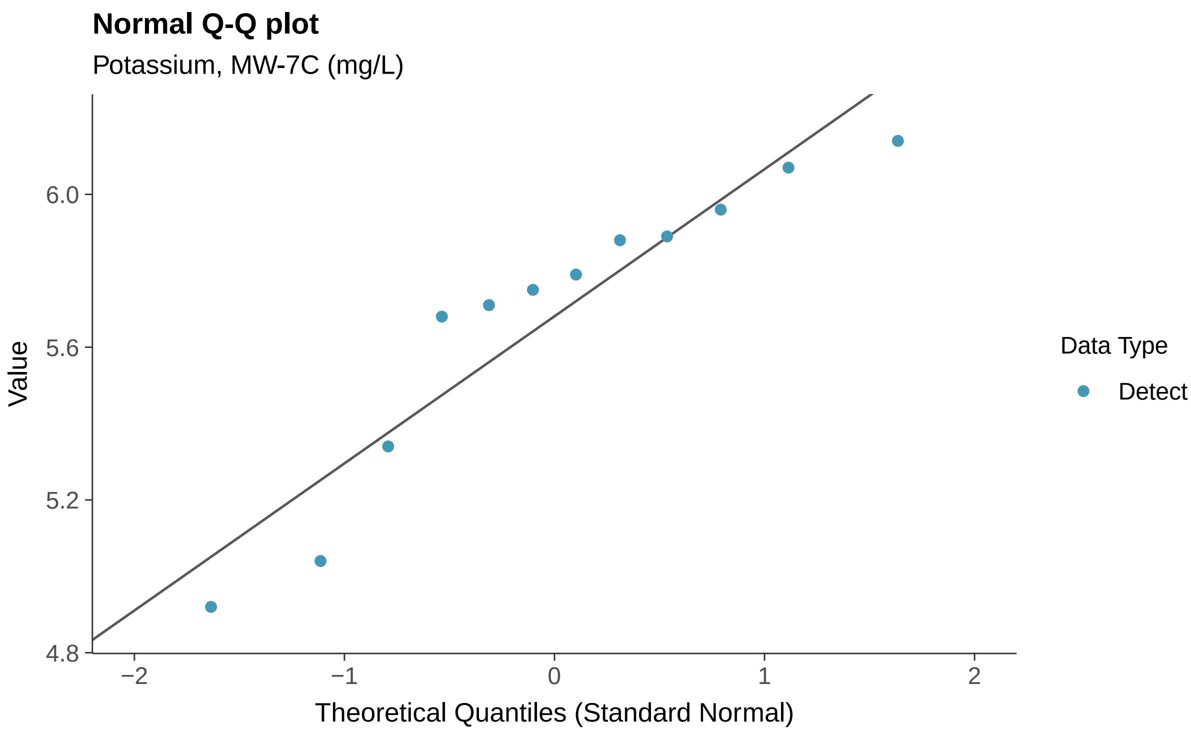
Potassium, MW-7C (mg/L)

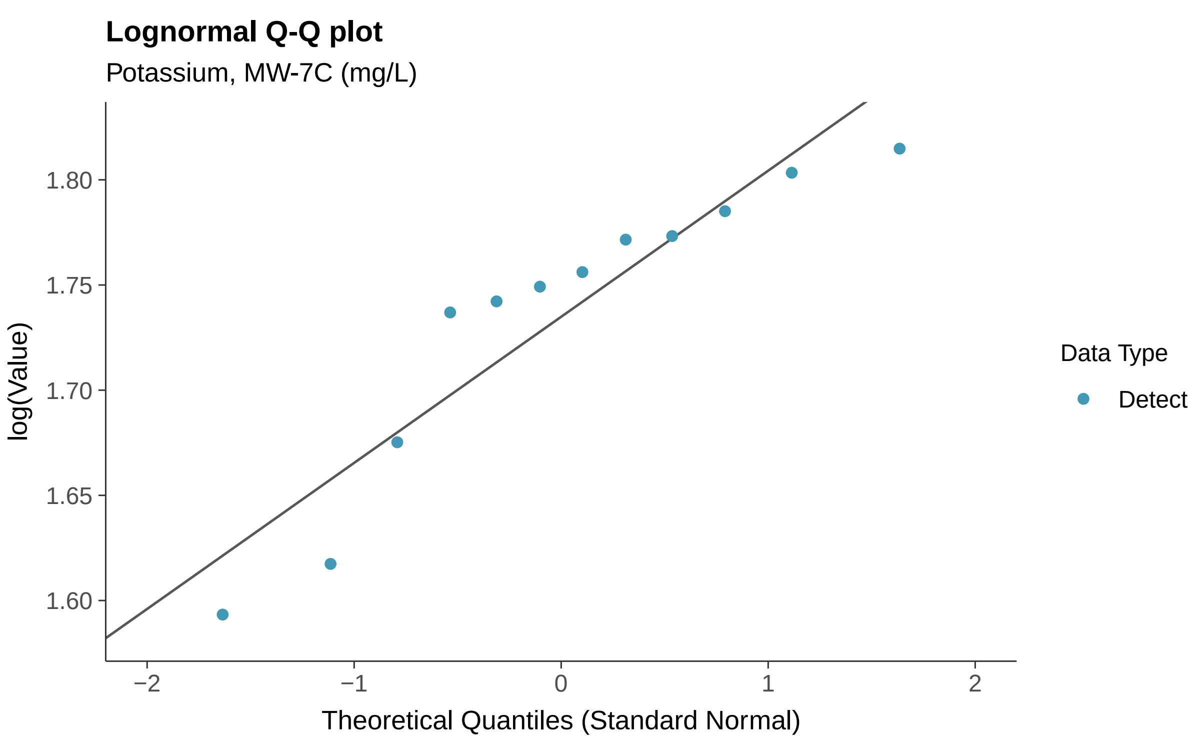


Boxplot by Season

Potassium, MW-7C (mg/L)

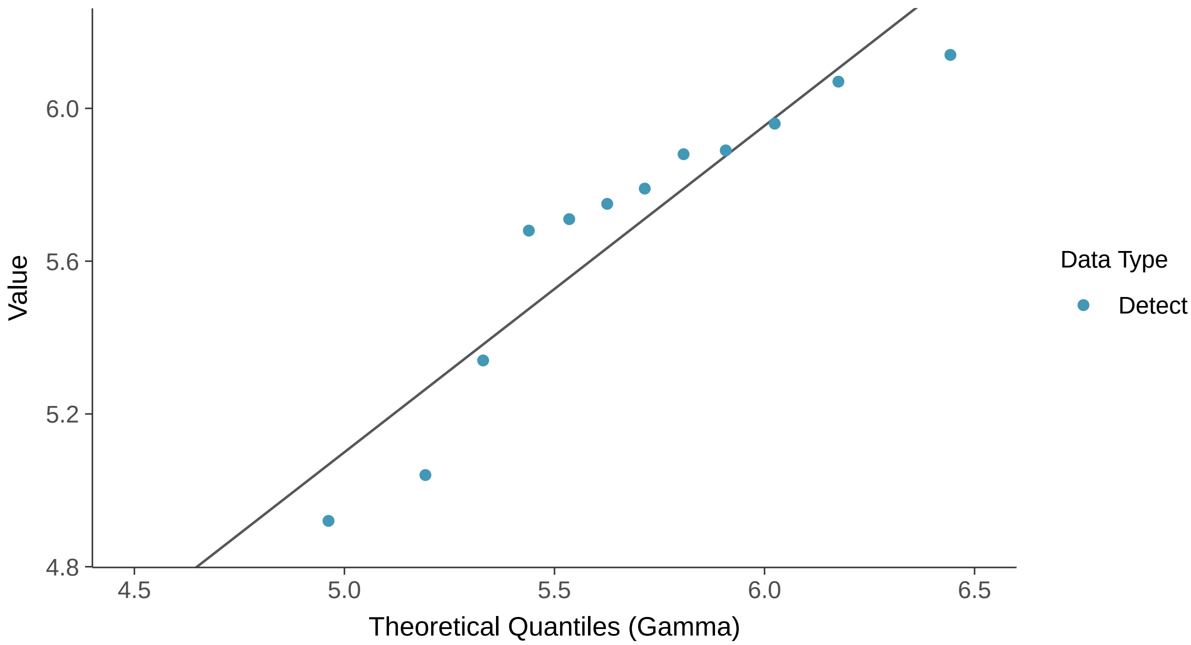



Normal Q-Q plot
Potassium, MW-7C (mg/L)
Value
6.0
5.6
5.2
4.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Potassium, MW-7C (mg/L)
log(Value)
1.80
1.75
1.70
1.65
1.60
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

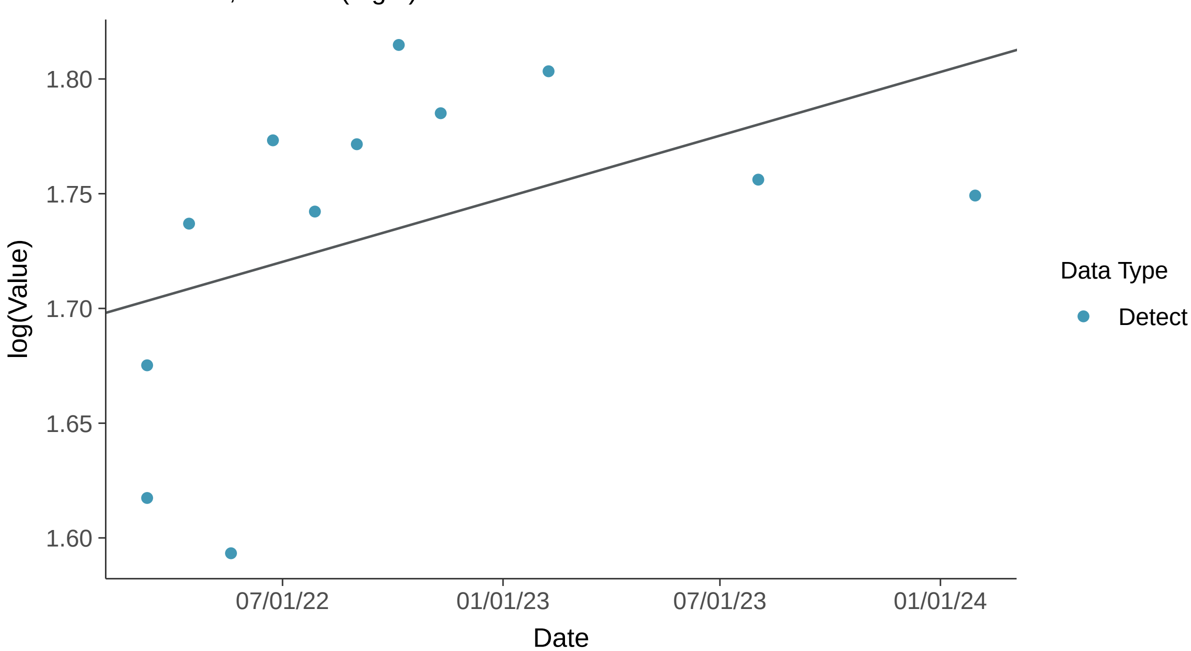
Gamma Q-Q plot

Potassium, MW-7C (mg/L)



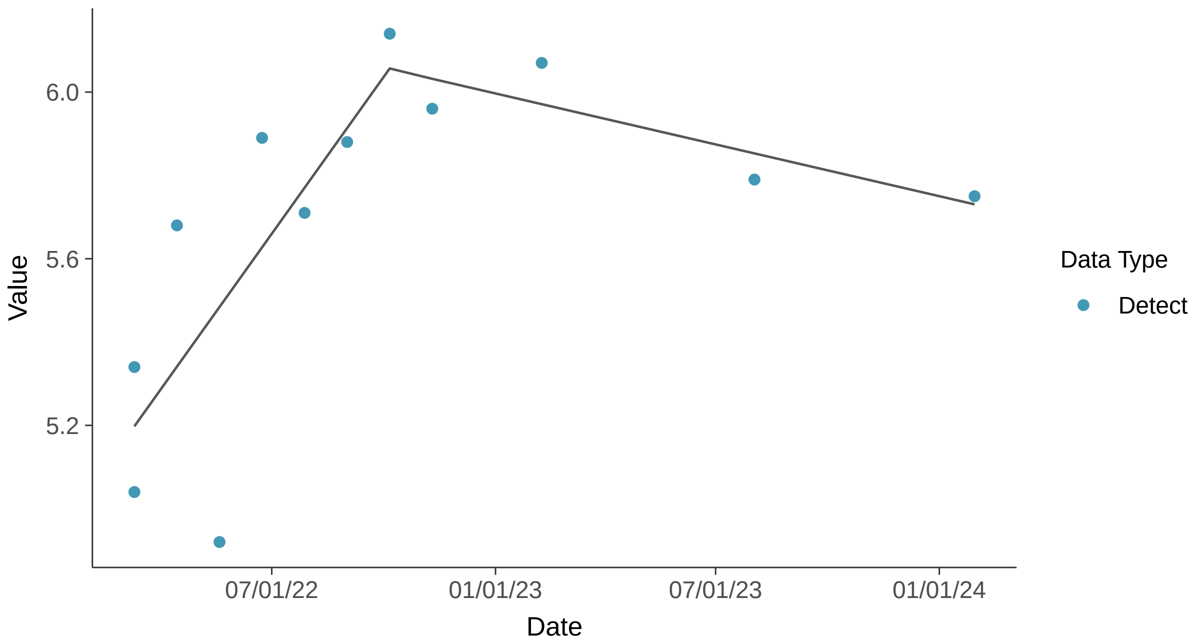
Trend Regression: Lognormal MLE

Potassium, MW-7C (mg/L)



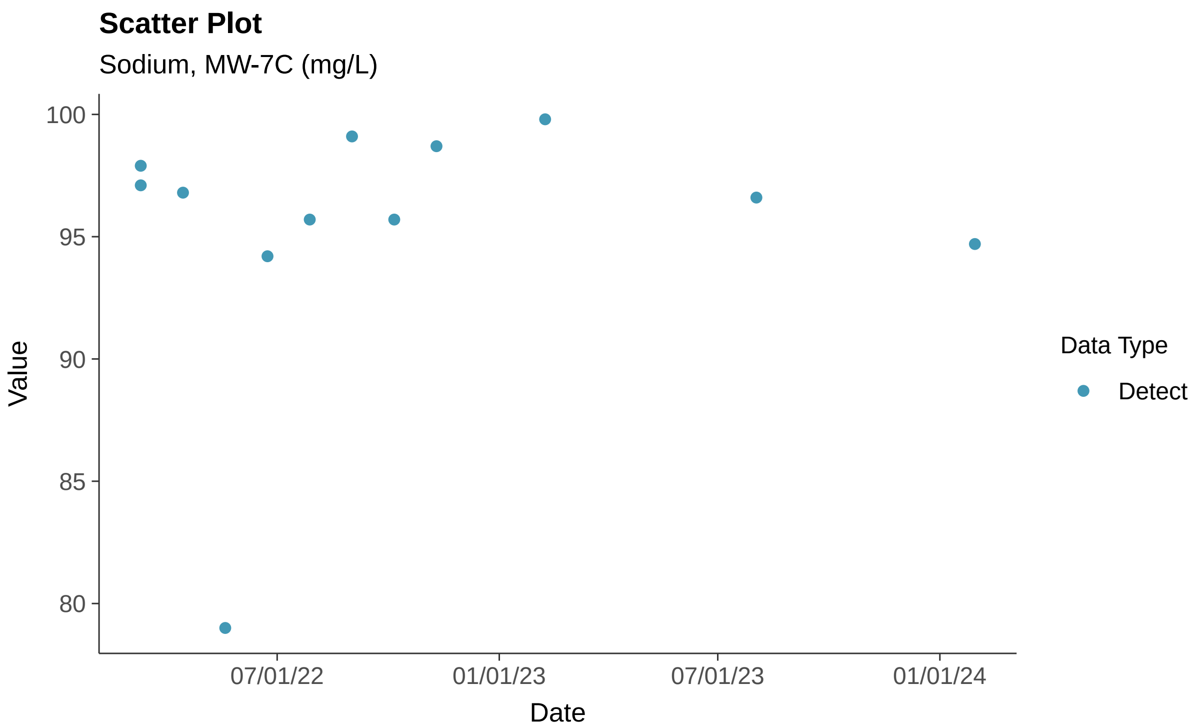
Trend Regression: Piecewise Linear-Linear

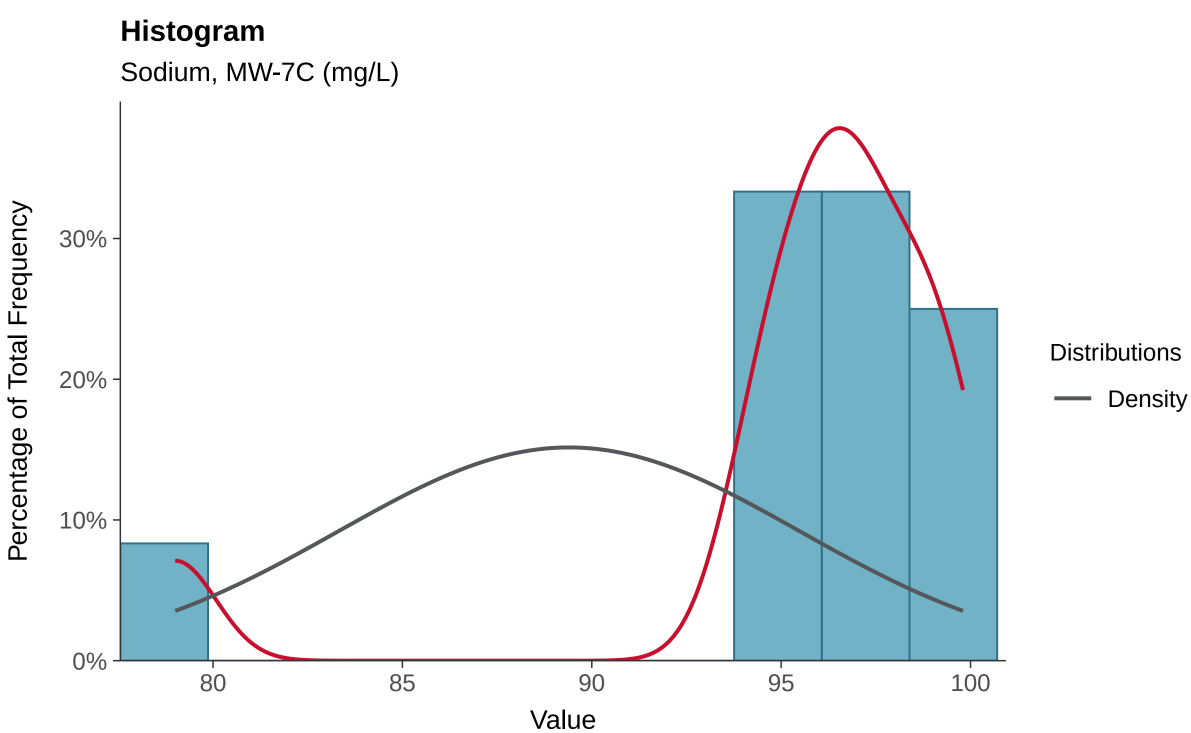
Potassium, MW-7C (mg/L)



Other: Sodium, MW-7C

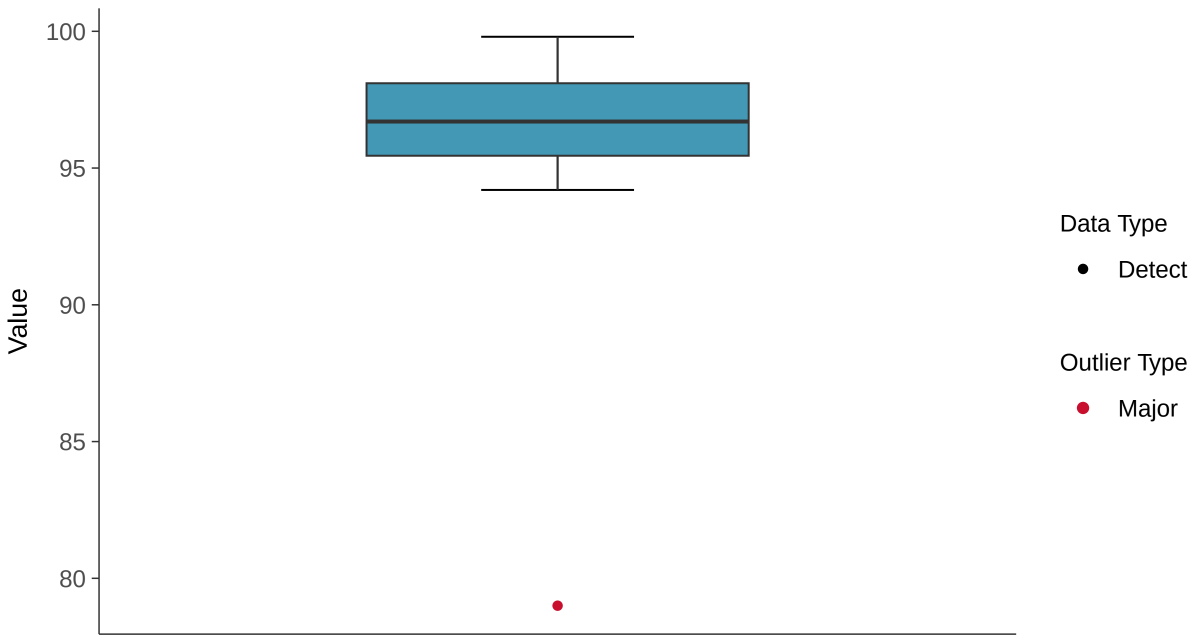
ID: 7C_4_35





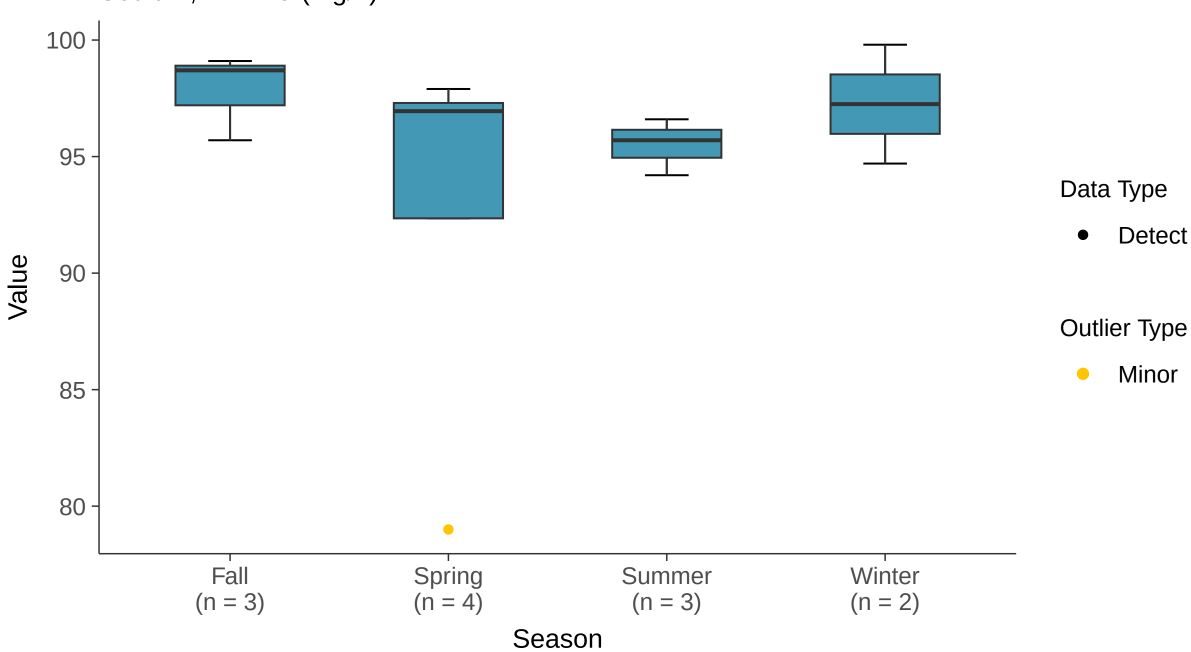
Boxplot

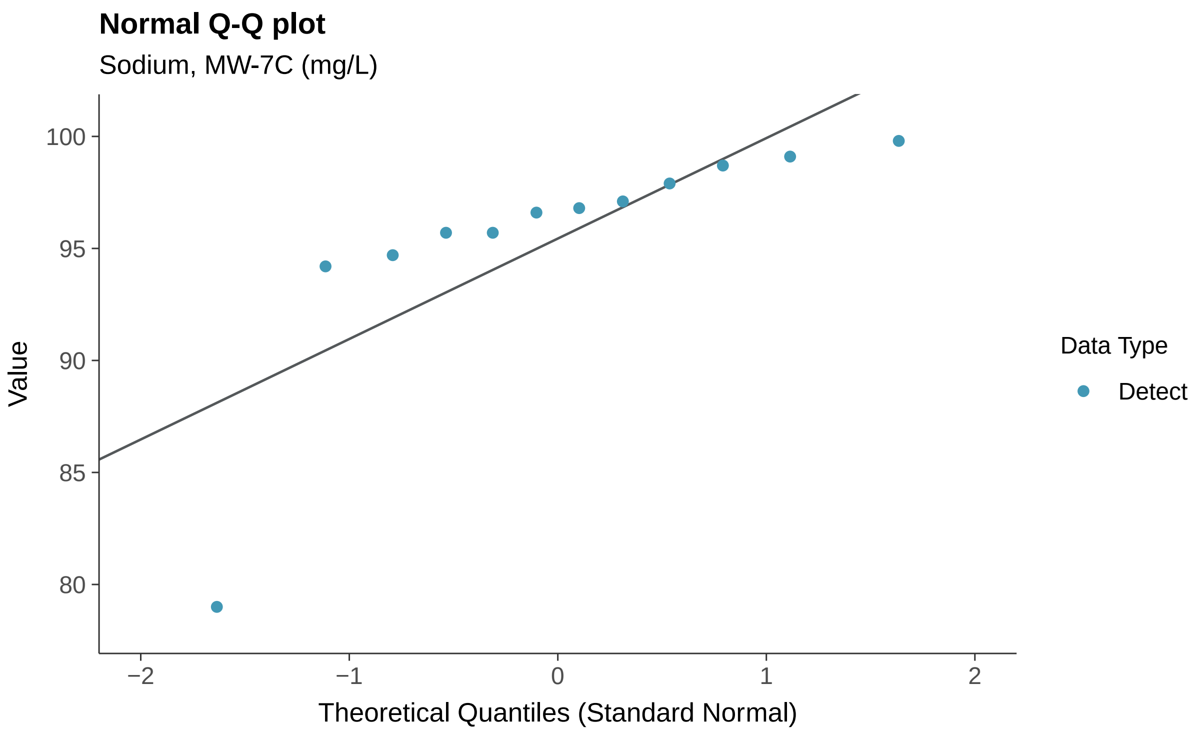
Sodium, MW-7C (mg/L)

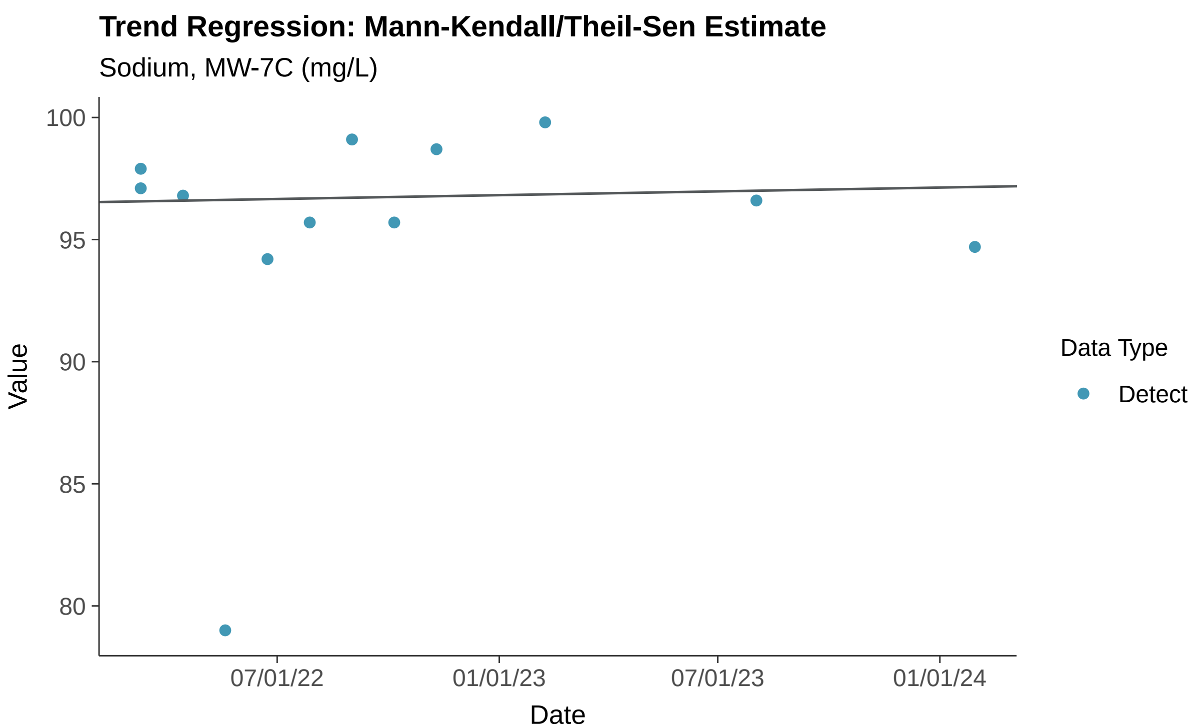


Boxplot by Season

Sodium, MW-7C (mg/L)

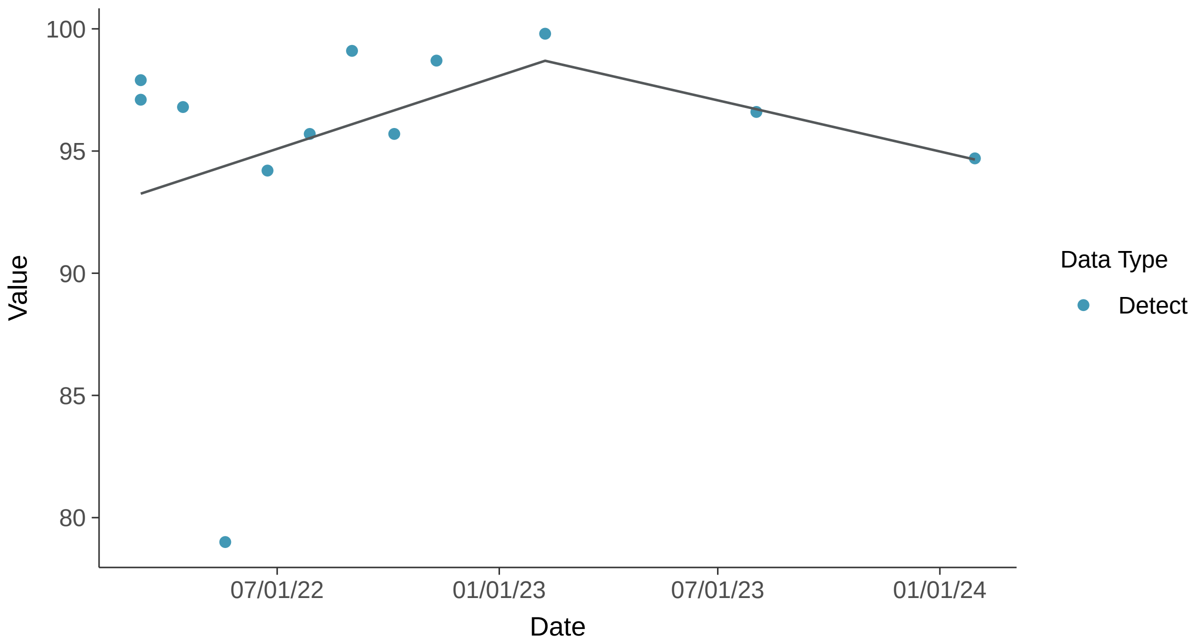



Normal Q-Q plot
Sodium, MW-7C (mg/L)
Value
100
95
90
85
80
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Sodium, MW-7C (mg/L)
Value
100
95
90
85
80
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

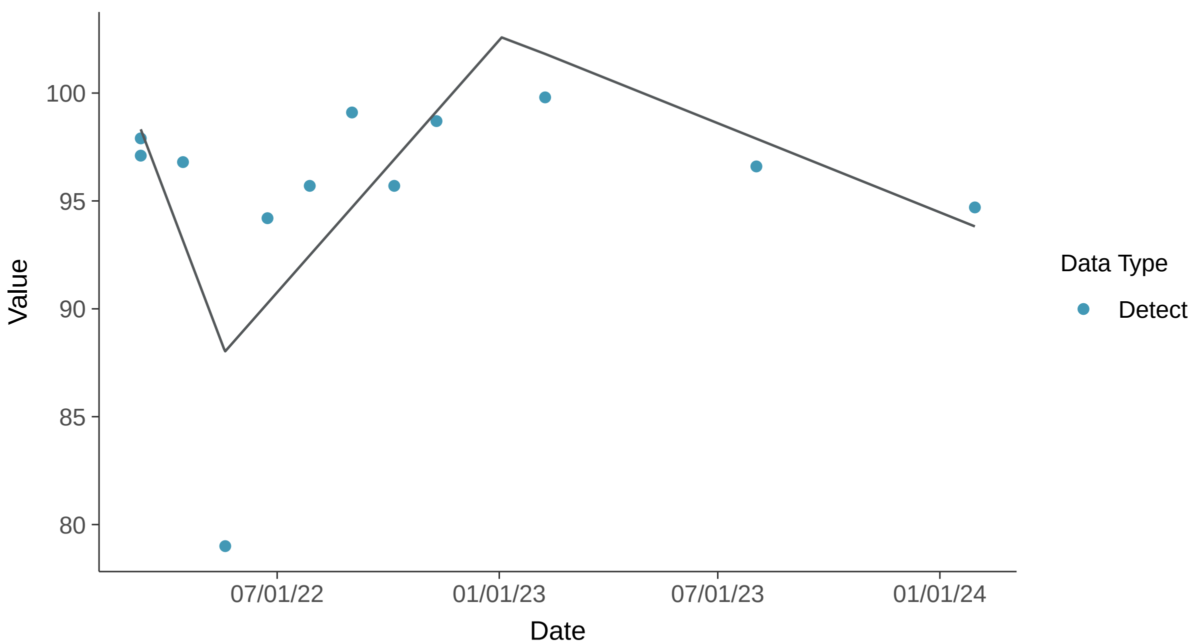
Trend Regression: Piecewise Linear-Linear

Sodium, MW-7C (mg/L)



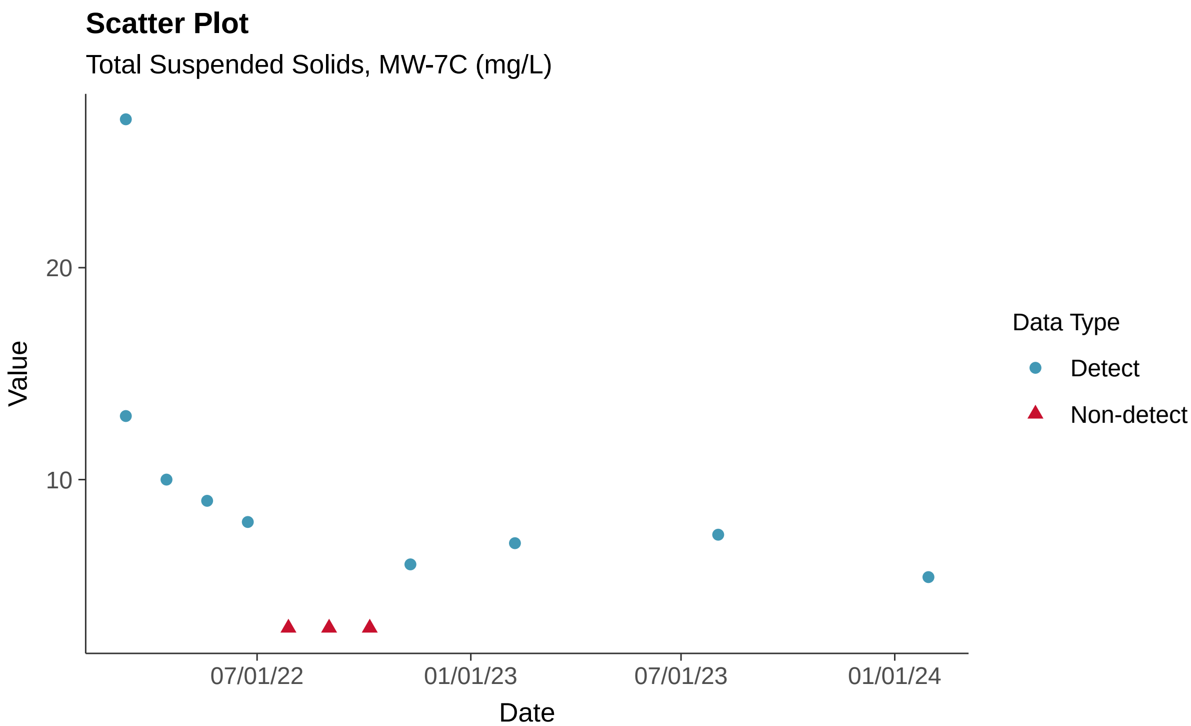
Trend Regression: Piecewise Linear-Linear-Linear

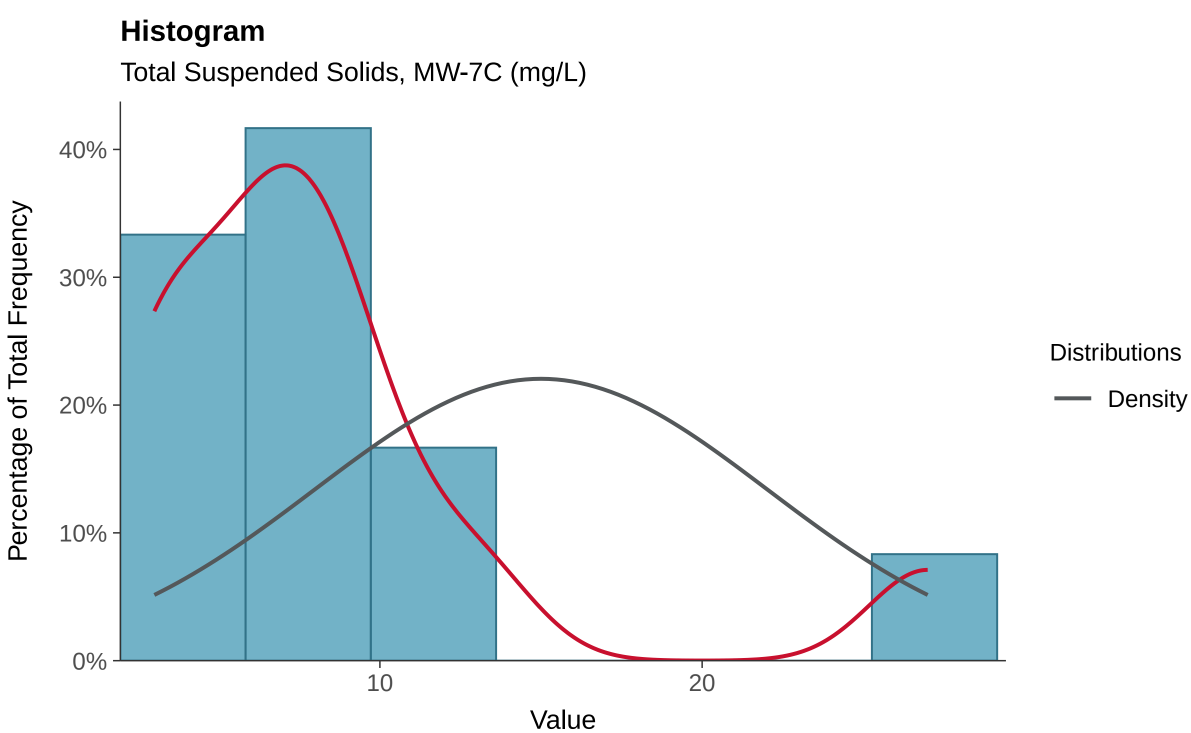
Sodium, MW-7C (mg/L)



Other: Total Suspended Solids, MW-7C

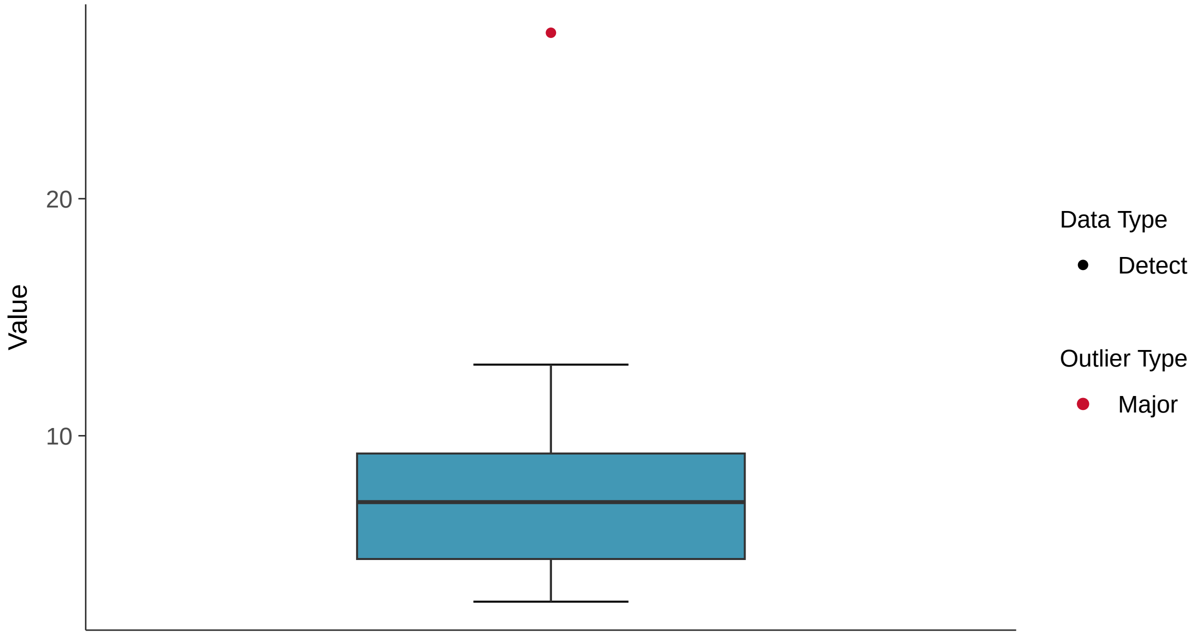
ID: 7C_4_36





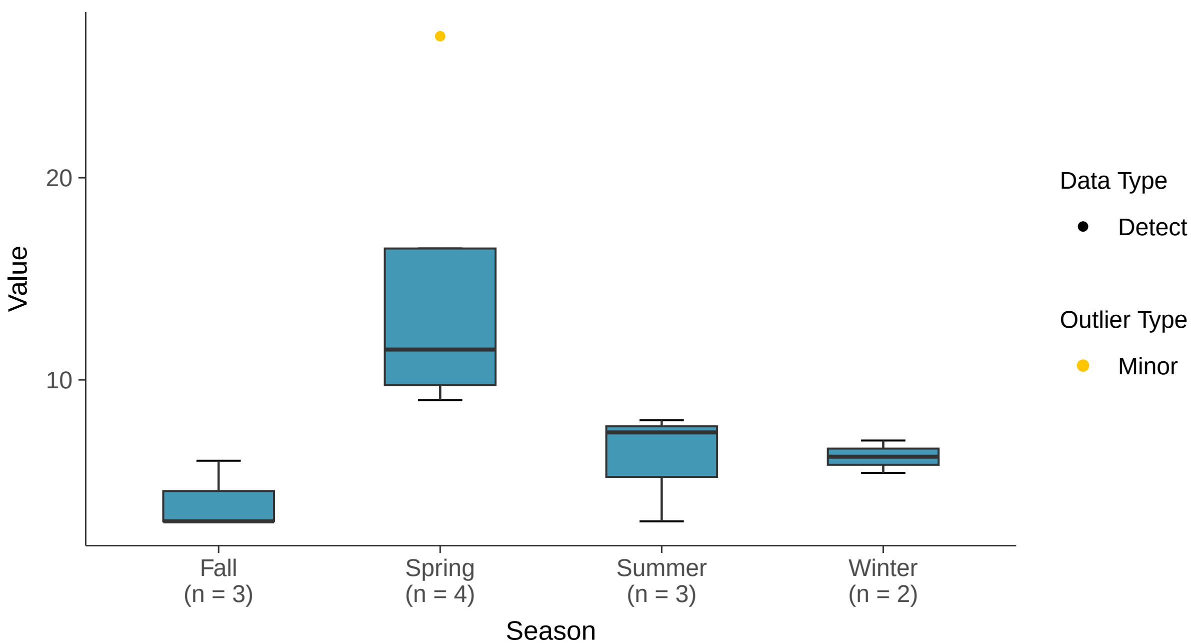
Boxplot

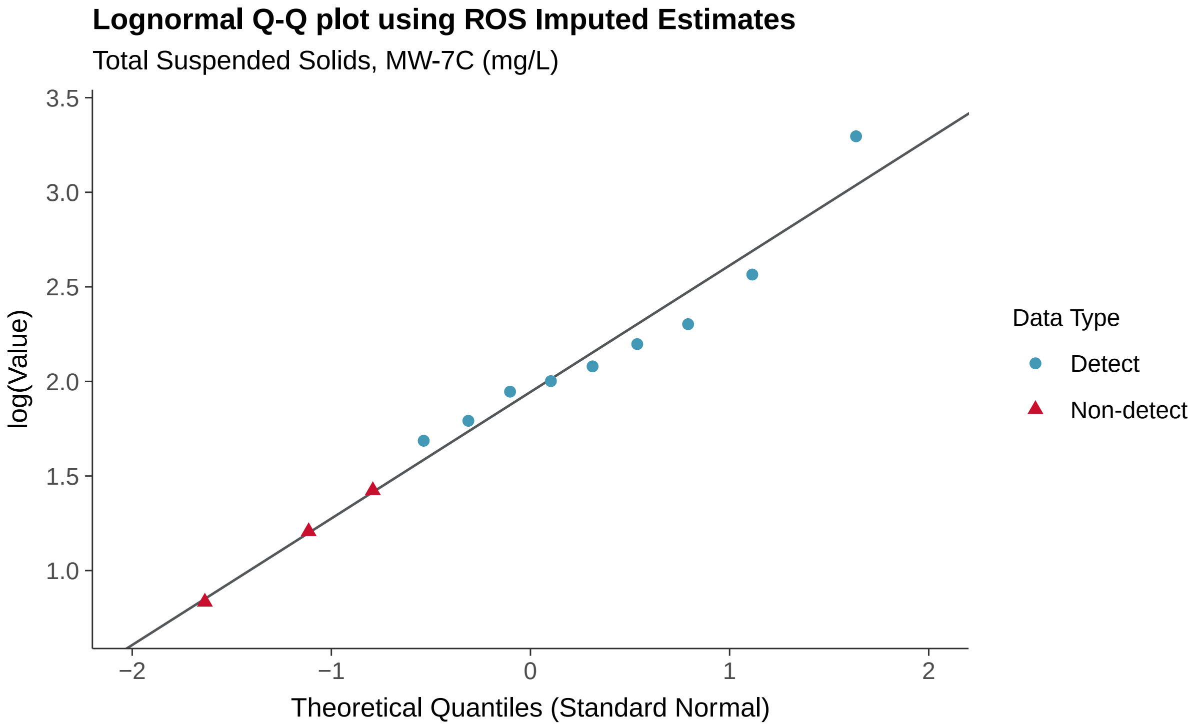
Total Suspended Solids, MW-7C (mg/L)

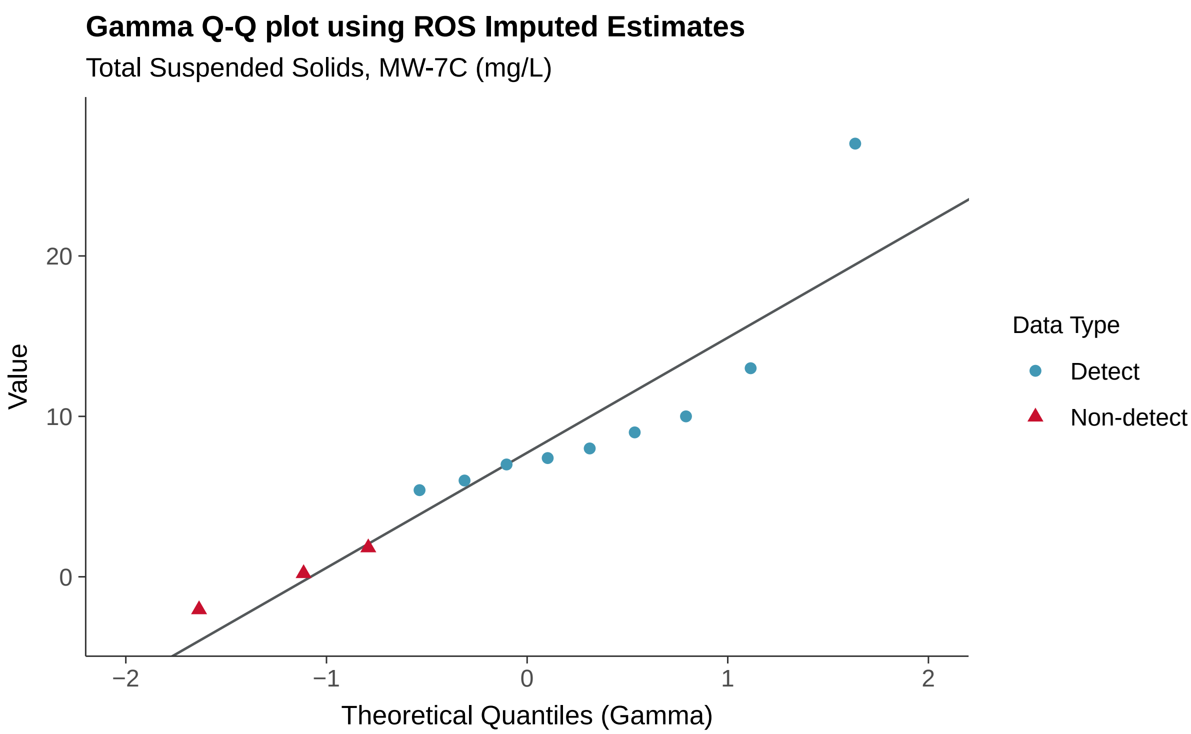


Boxplot by Season

Total Suspended Solids, MW-7C (mg/L)

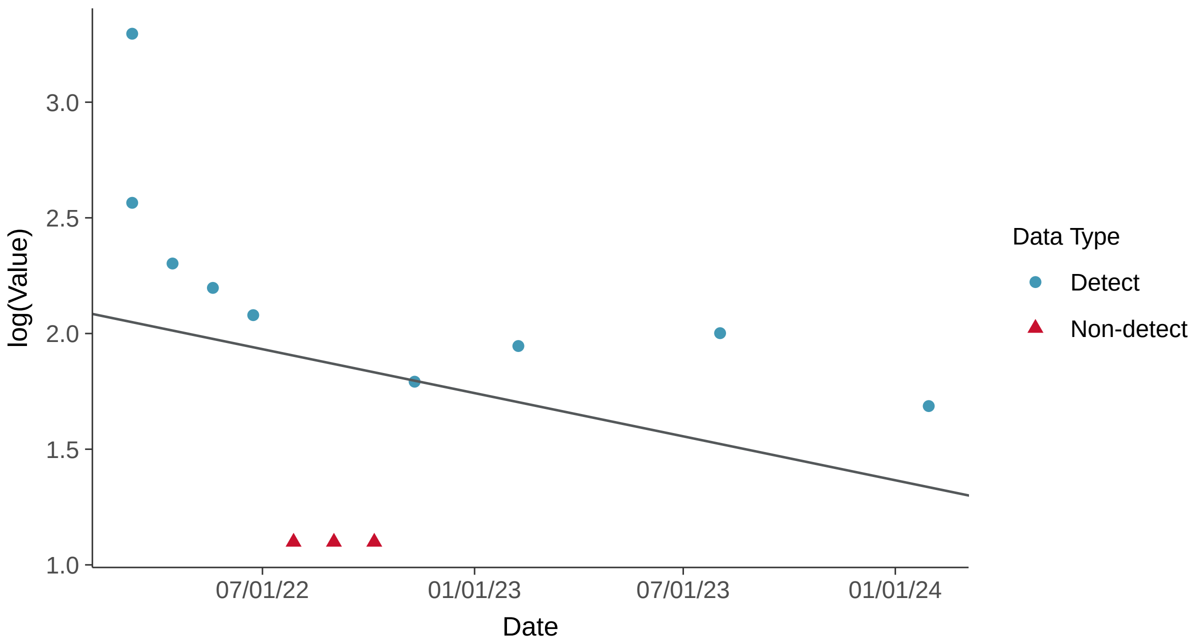



Lognormal Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-7C (mg/L)
log(Value)
3.5
3.0
2.5
2.0
1.5
1.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-7C (mg/L)
Value
20
10
0
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect

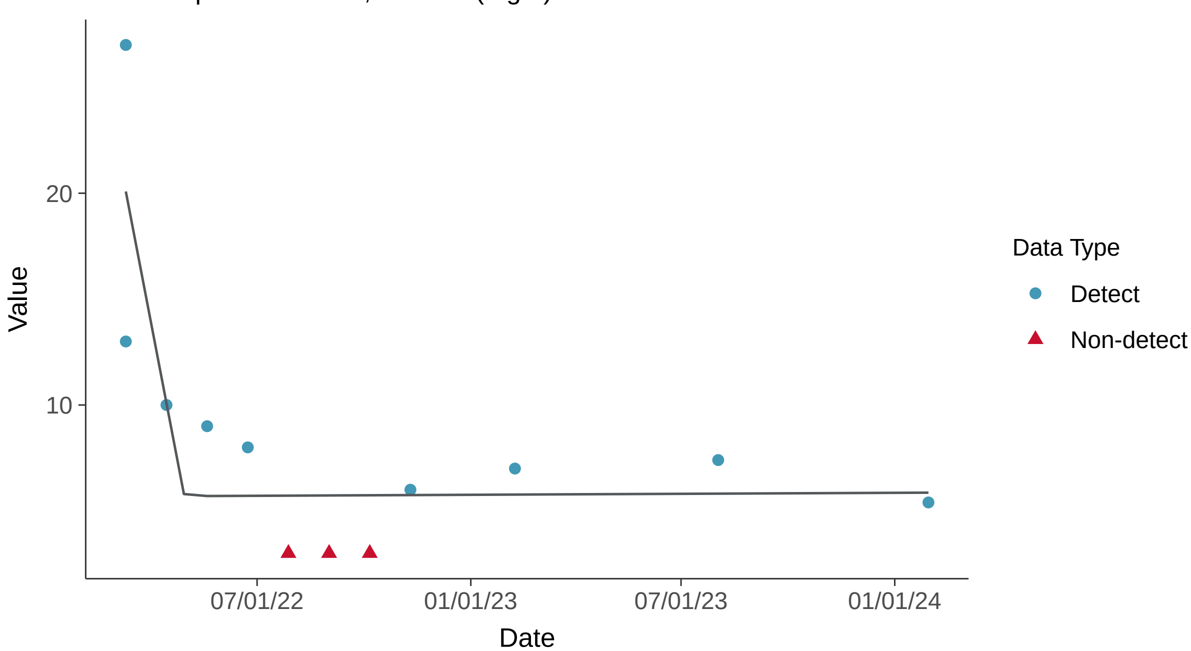
Trend Regression: Lognormal MLE

Total Suspended Solids, MW-7C (mg/L)



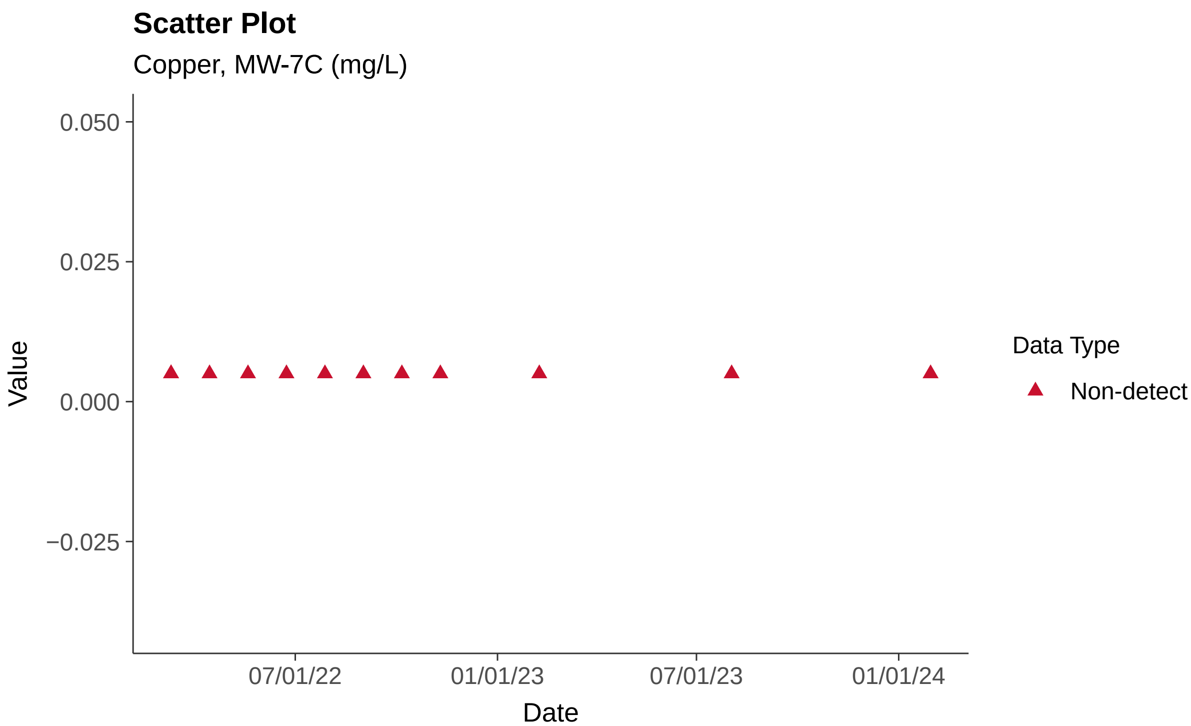
Trend Regression: Piecewise Linear-Linear

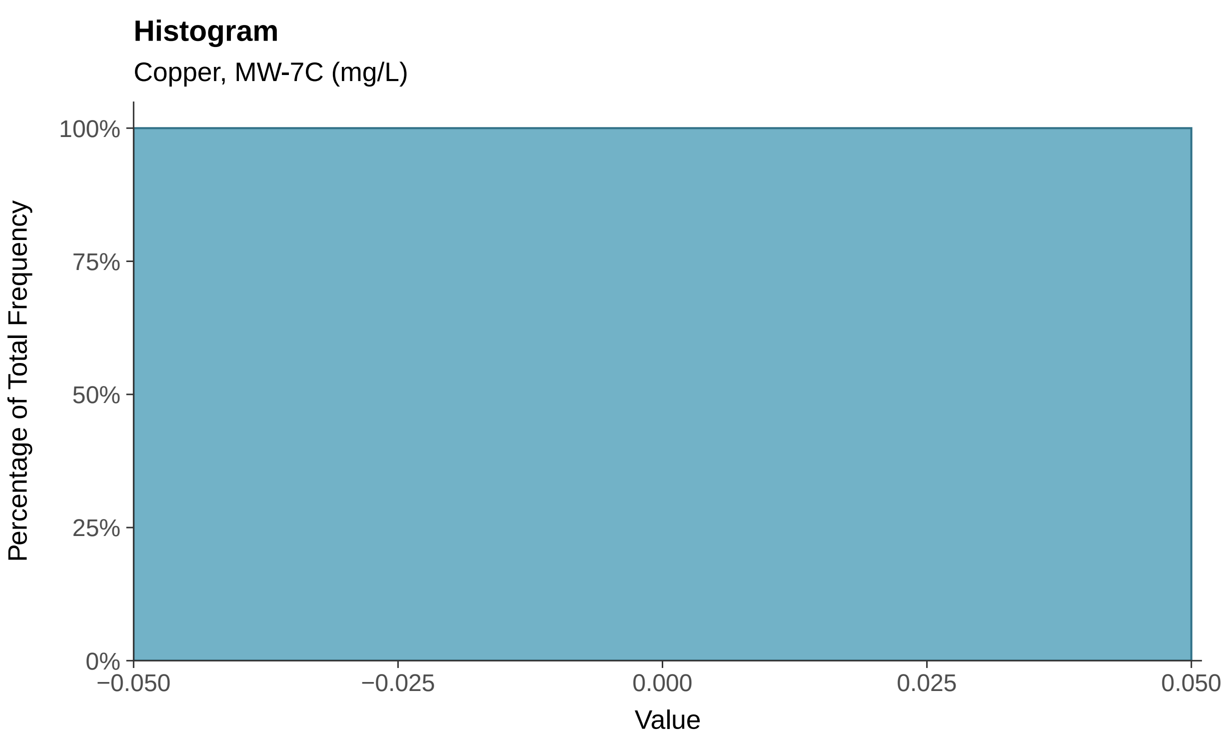
Total Suspended Solids, MW-7C (mg/L)



Part 115: Copper, MW-7C

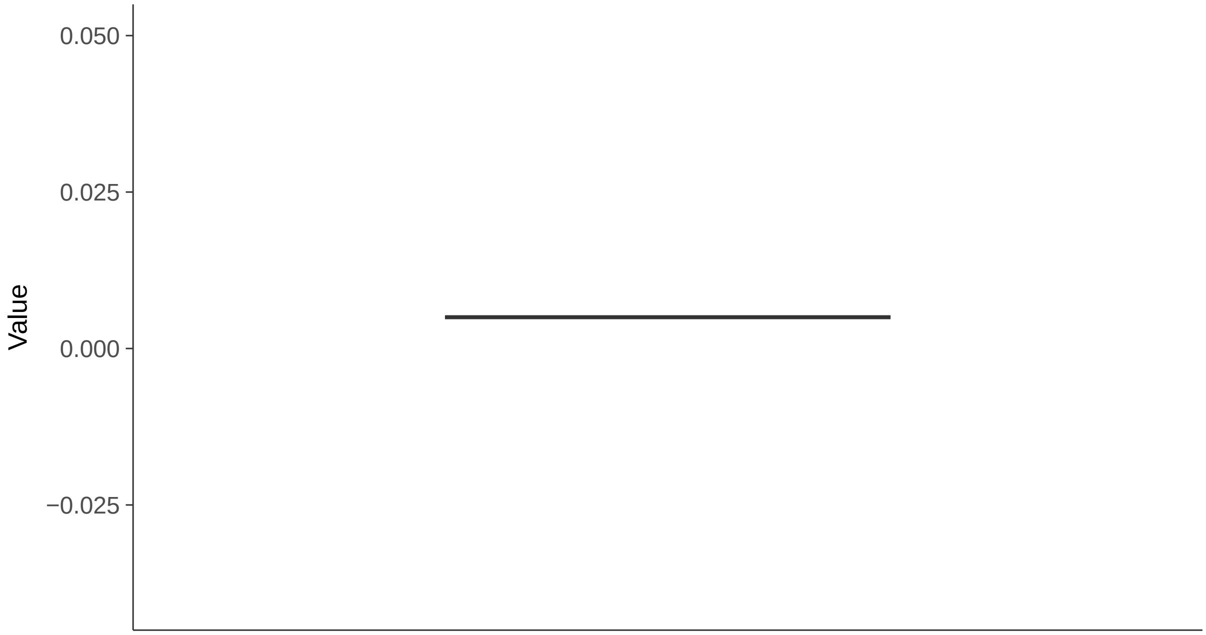
ID: 7C_5_37





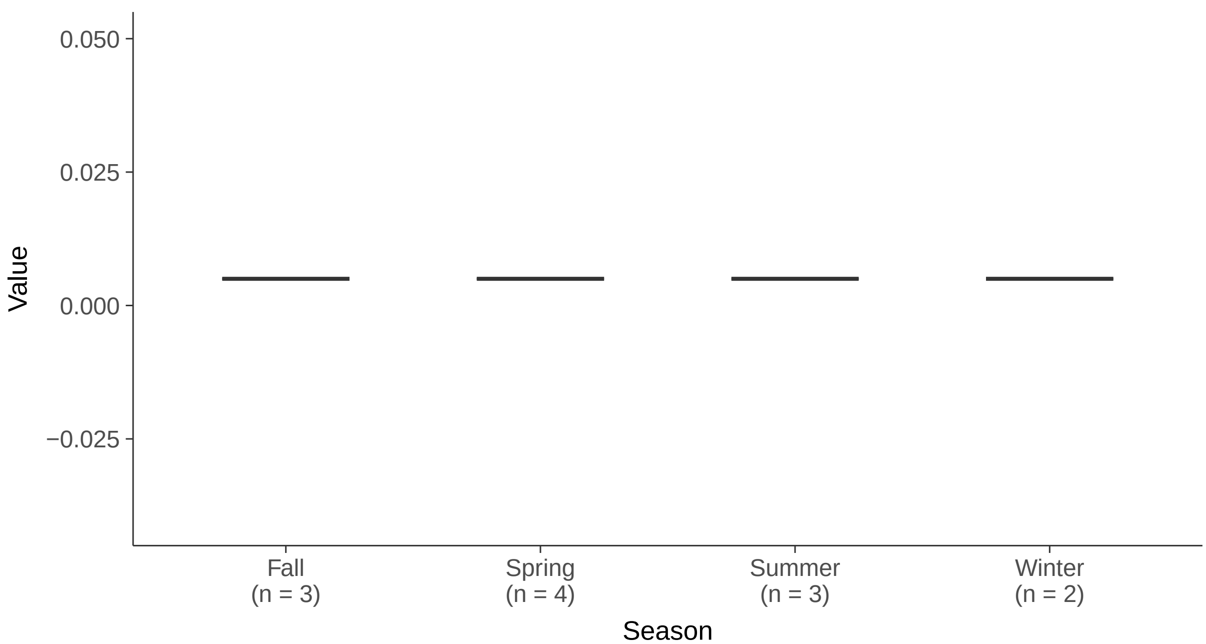
Boxplot

Copper, MW-7C (mg/L)



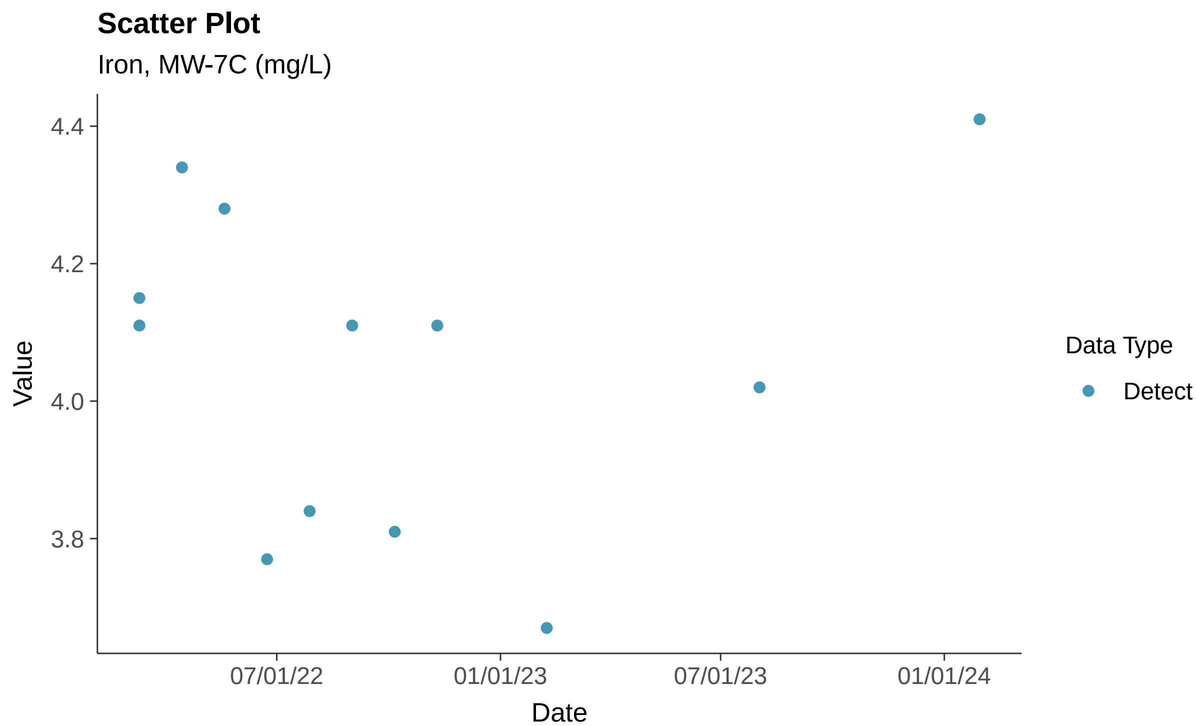
Boxplot by Season

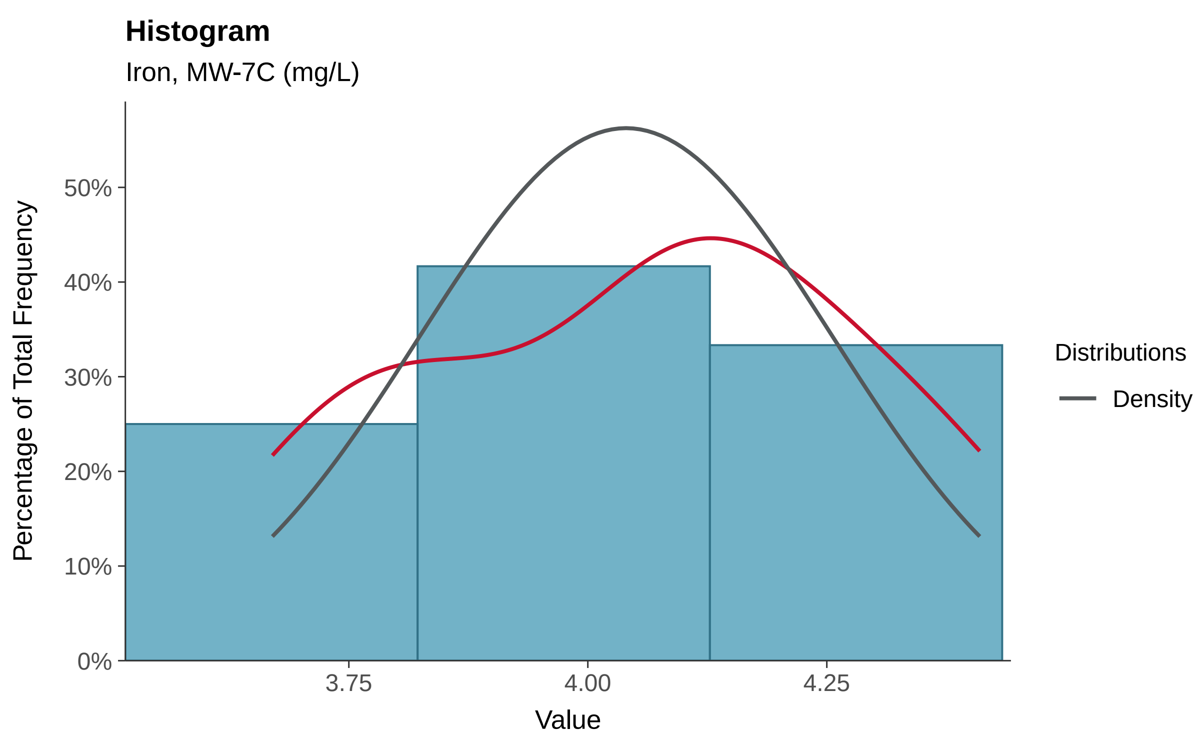
Copper, MW-7C (mg/L)



Part 115: Iron, MW-7C

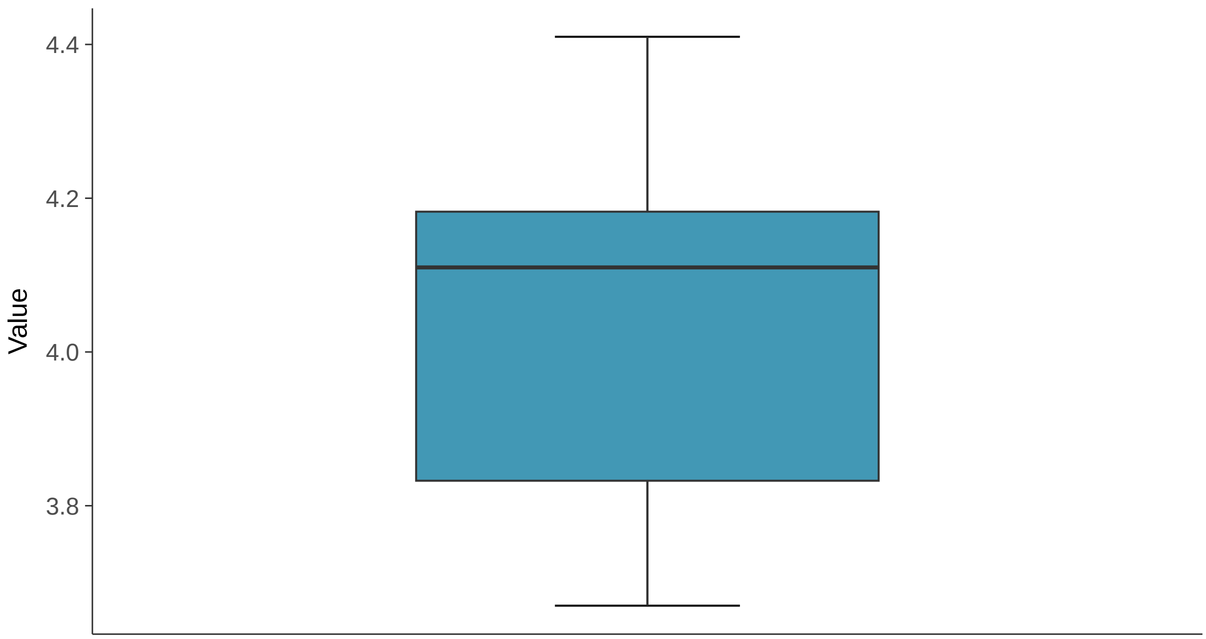
ID: 7C_5_38





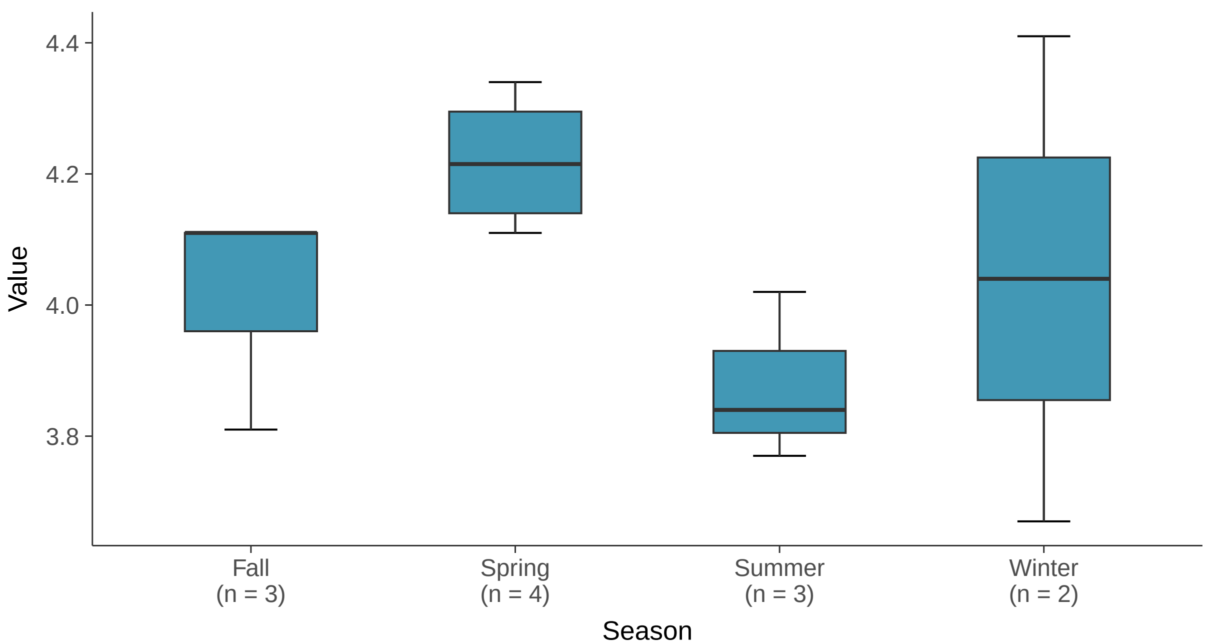
Boxplot

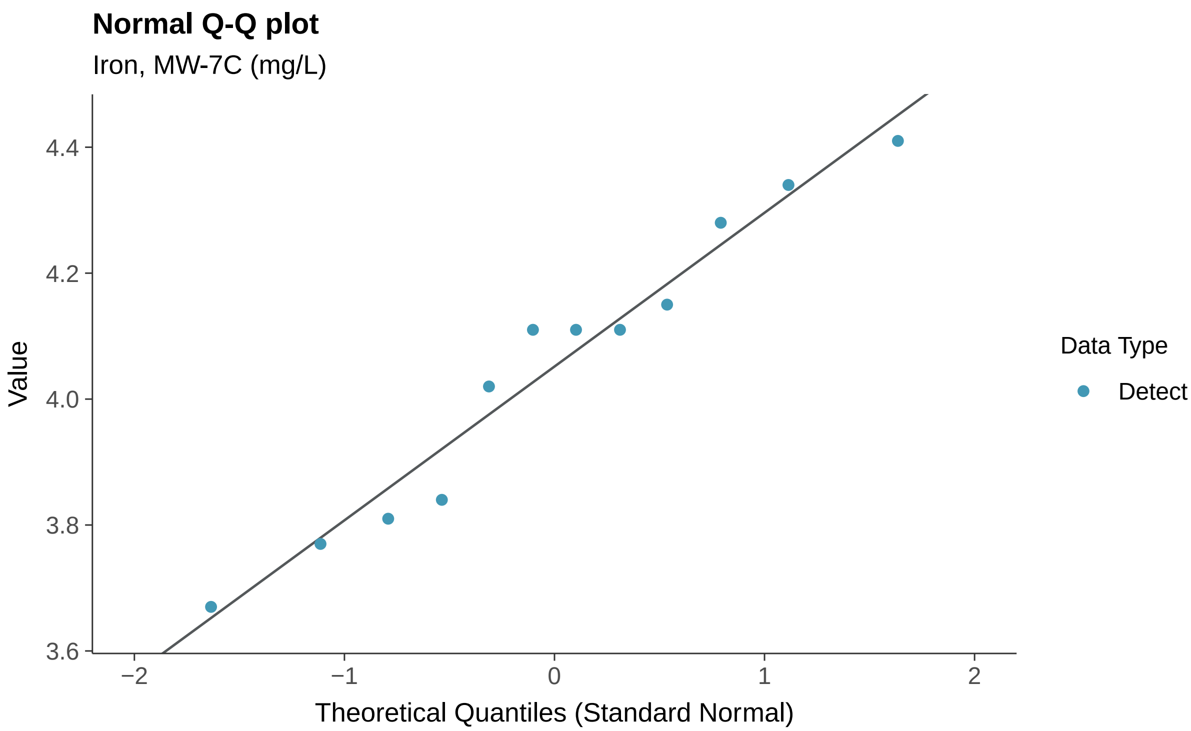
Iron, MW-7C (mg/L)

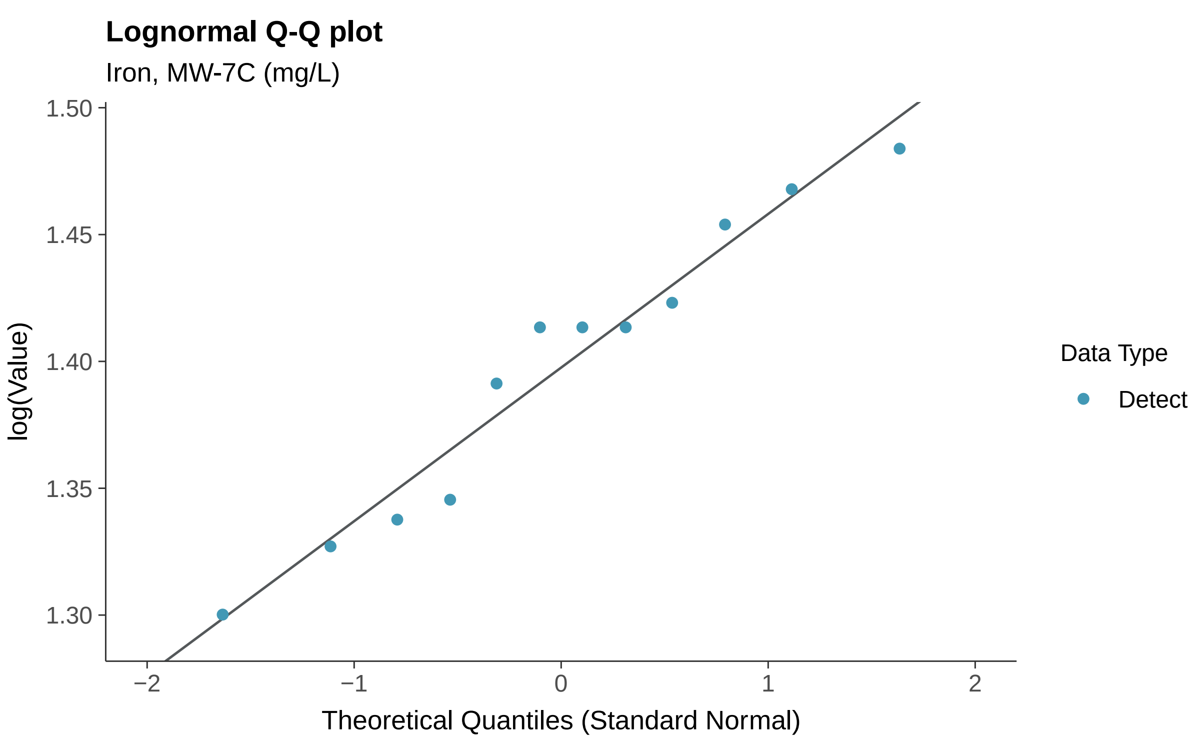


Boxplot by Season

Iron, MW-7C (mg/L)

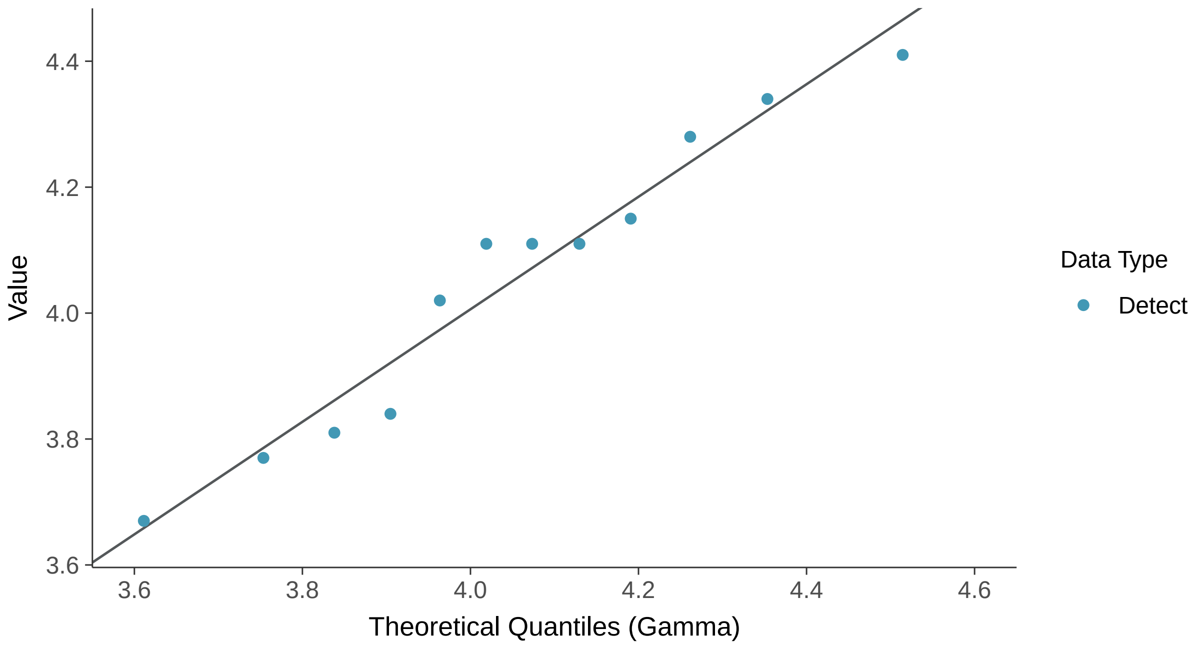



Normal Q-Q plot
Iron, MW-7C (mg/L)
Value
4.4
4.2
4.0
3.8
3.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Iron, MW-7C (mg/L)
log(Value)
1.50
1.45
1.40
1.35
1.30
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

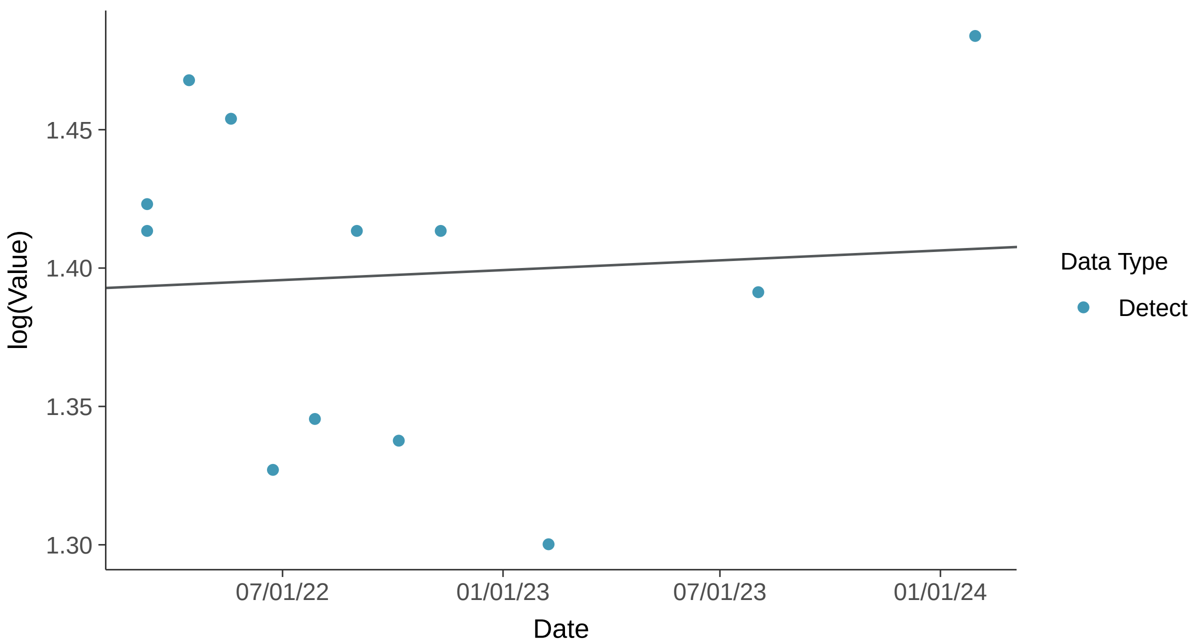
Gamma Q-Q plot

Iron, MW-7C (mg/L)



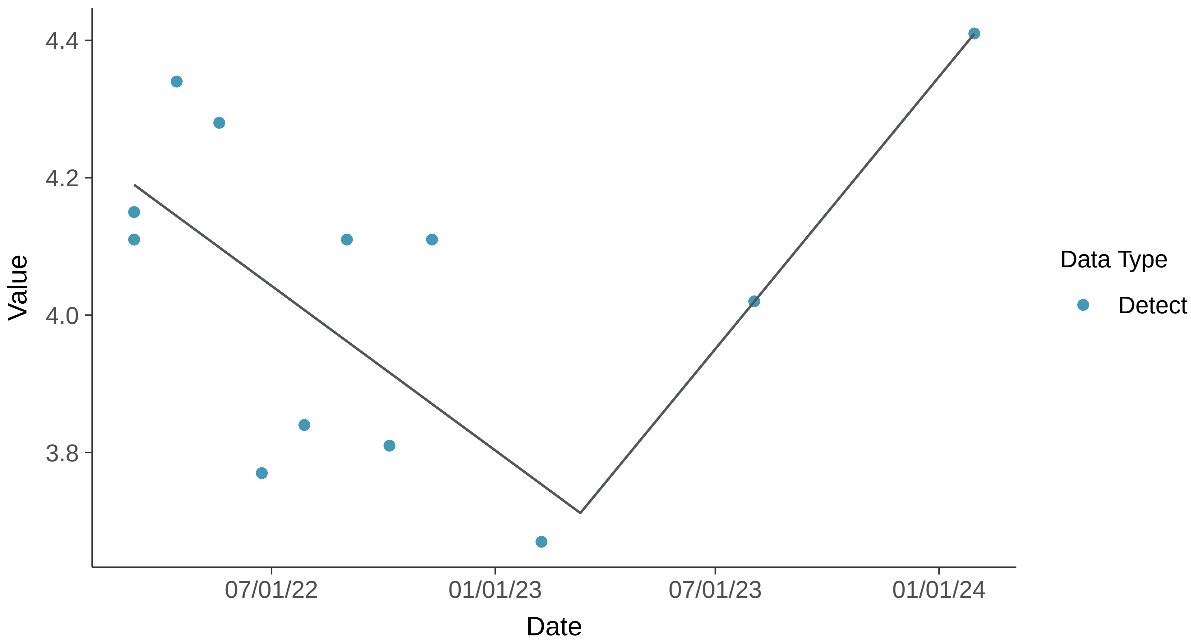
Trend Regression: Lognormal MLE

Iron, MW-7C (mg/L)



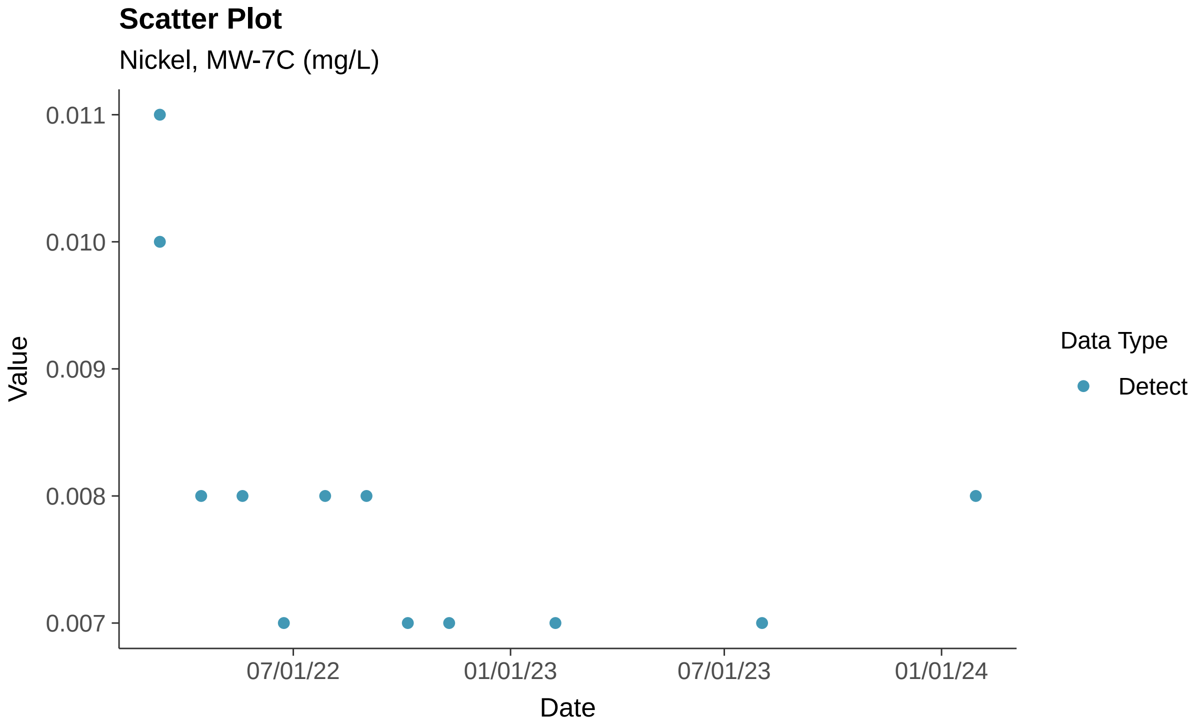
Trend Regression: Piecewise Linear-Linear

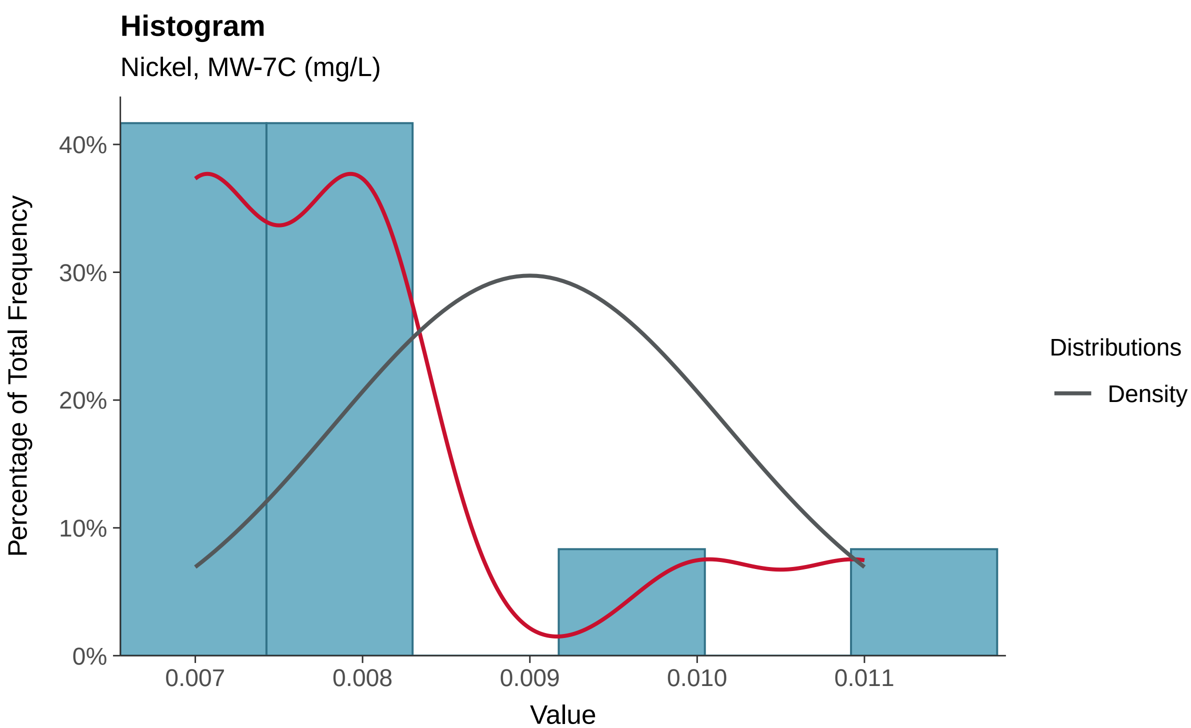
Iron, MW-7C (mg/L)

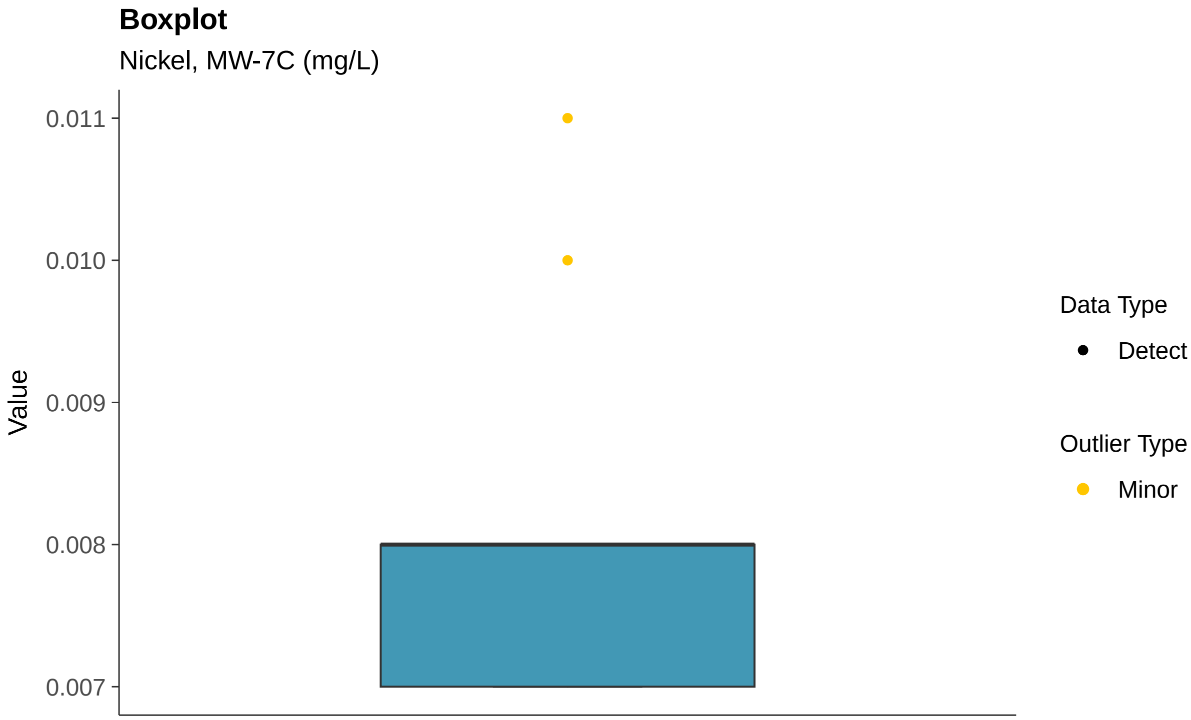


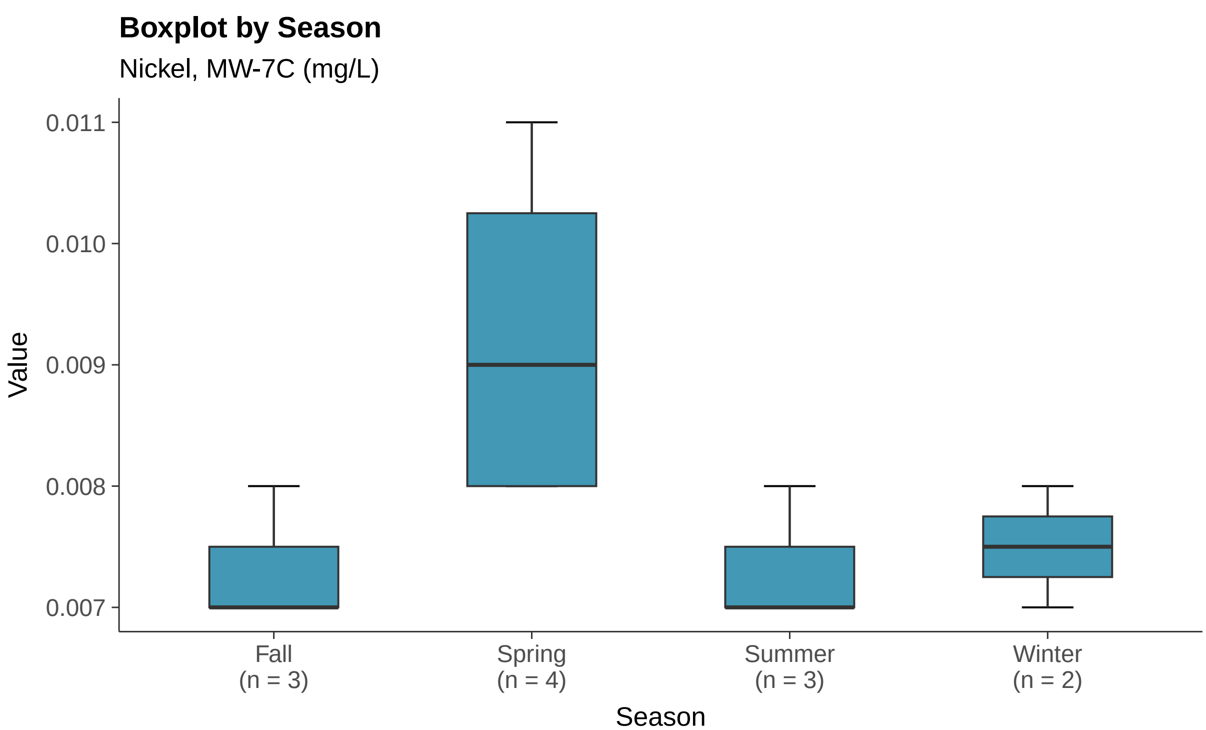
Part 115: Nickel, MW-7C

ID: 7C_5_39



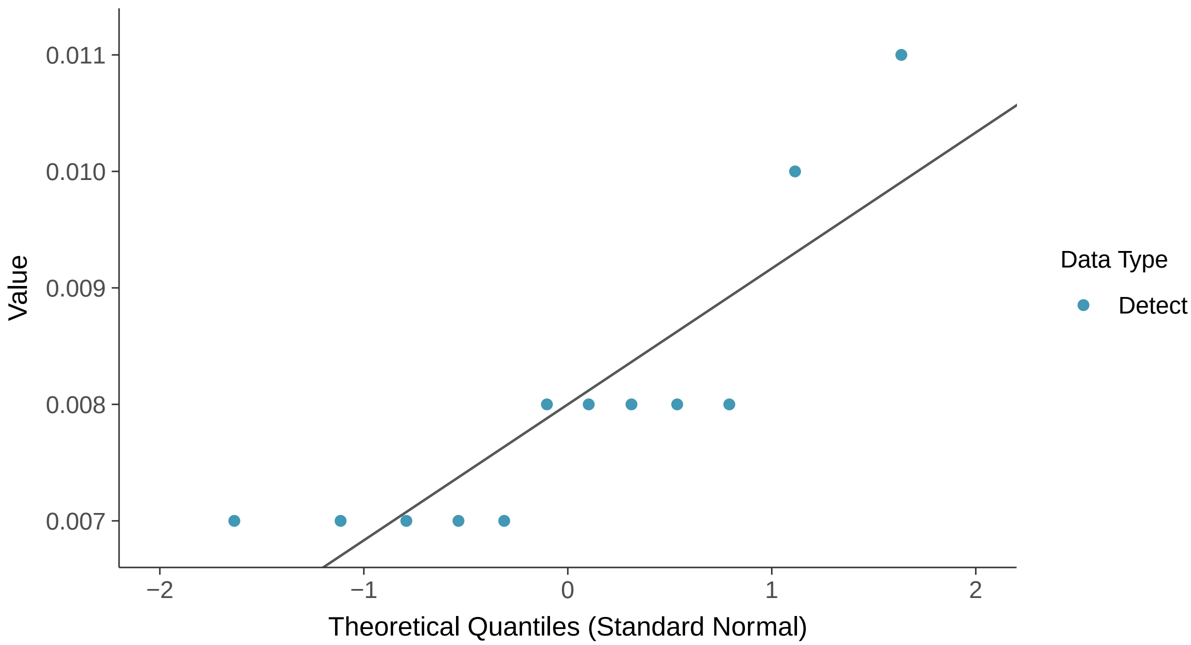



Boxplot
Nickel, MW-7C (mg/L)
Value
0.011
0.010
0.009
0.008
0.007
Data Type
Detect
Outlier Type
Minor


Boxplot by Season
Nickel, MW-7C (mg/L)
Value
0.011
0.010
0.009
0.008
0.007
Fall
(n = 3)
Spring
(n = 4)
Summer
(n = 3)
Winter
(n = 2)
Season

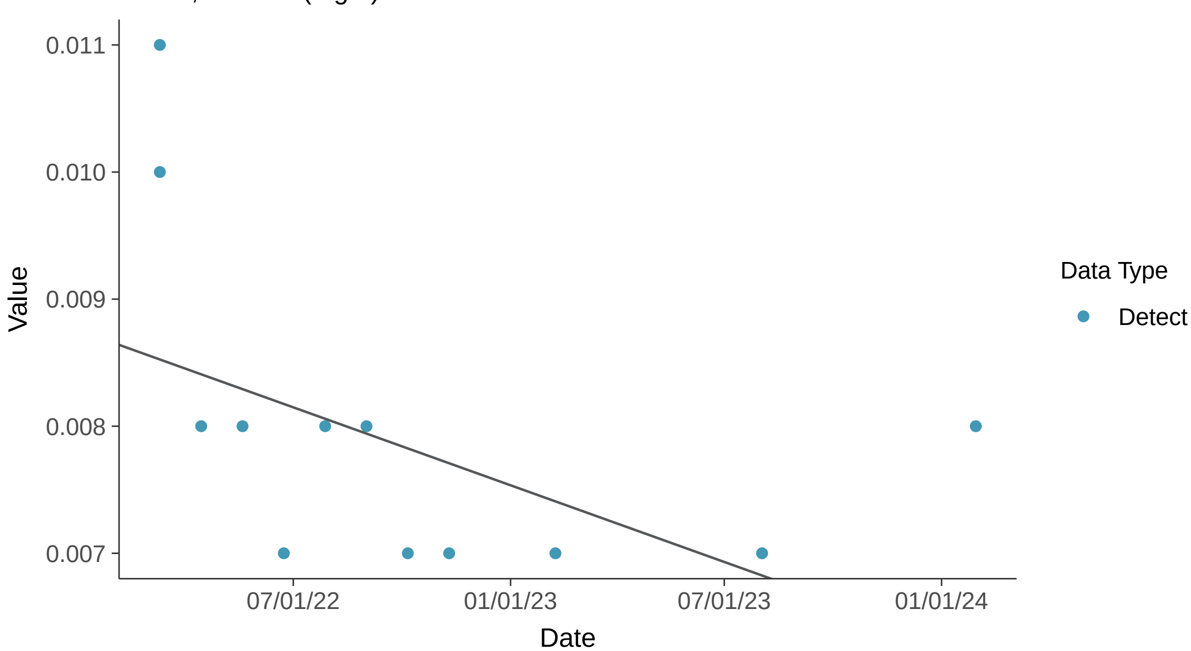
Normal Q-Q plot

Nickel, MW-7C (mg/L)



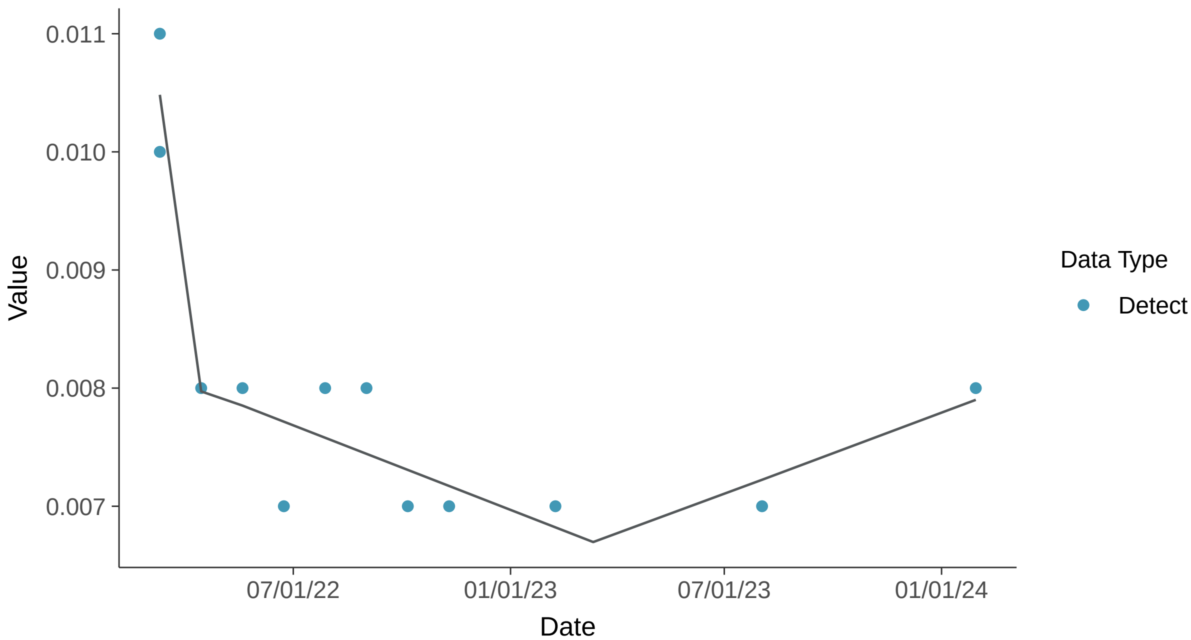
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Nickel, MW-7C (mg/L)



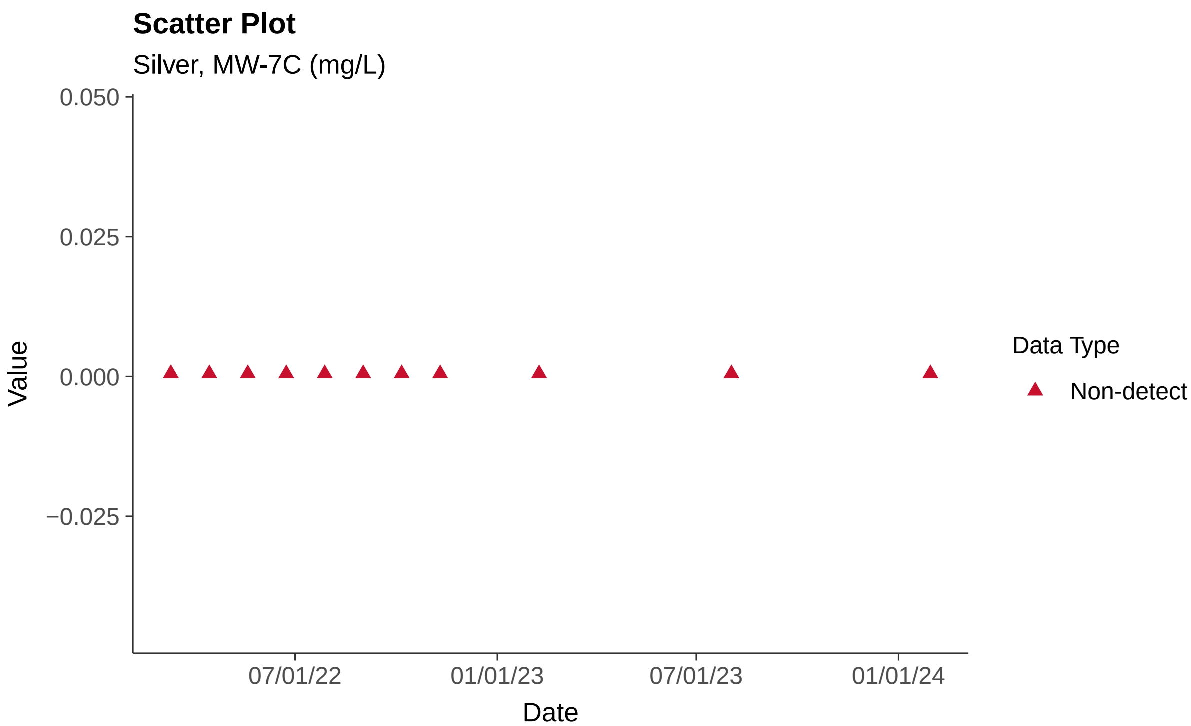
Trend Regression: Piecewise Linear-Linear-Linear

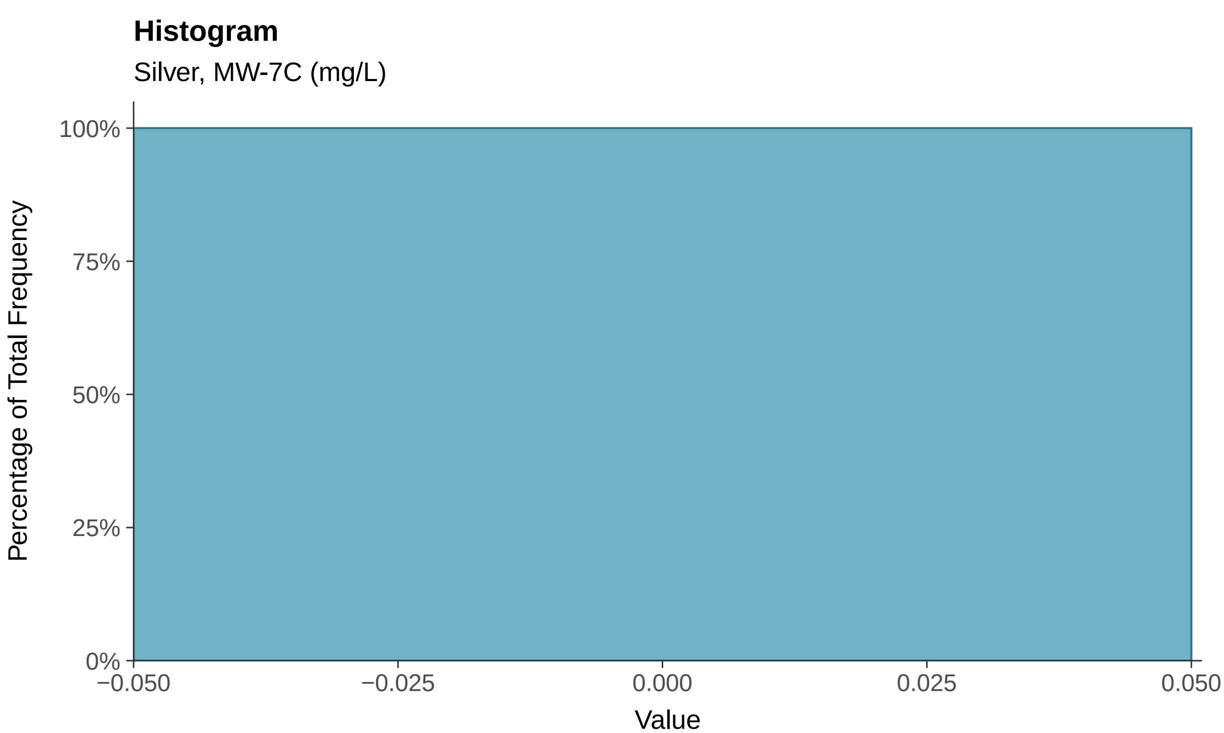
Nickel, MW-7C (mg/L)

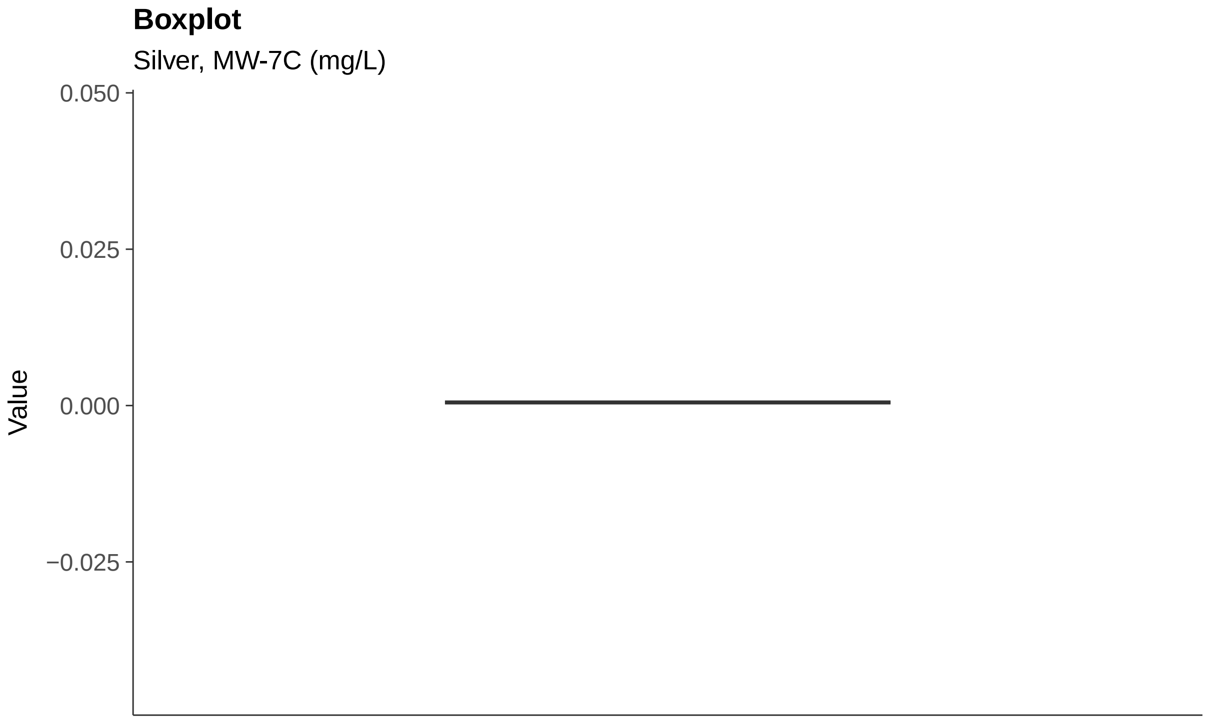


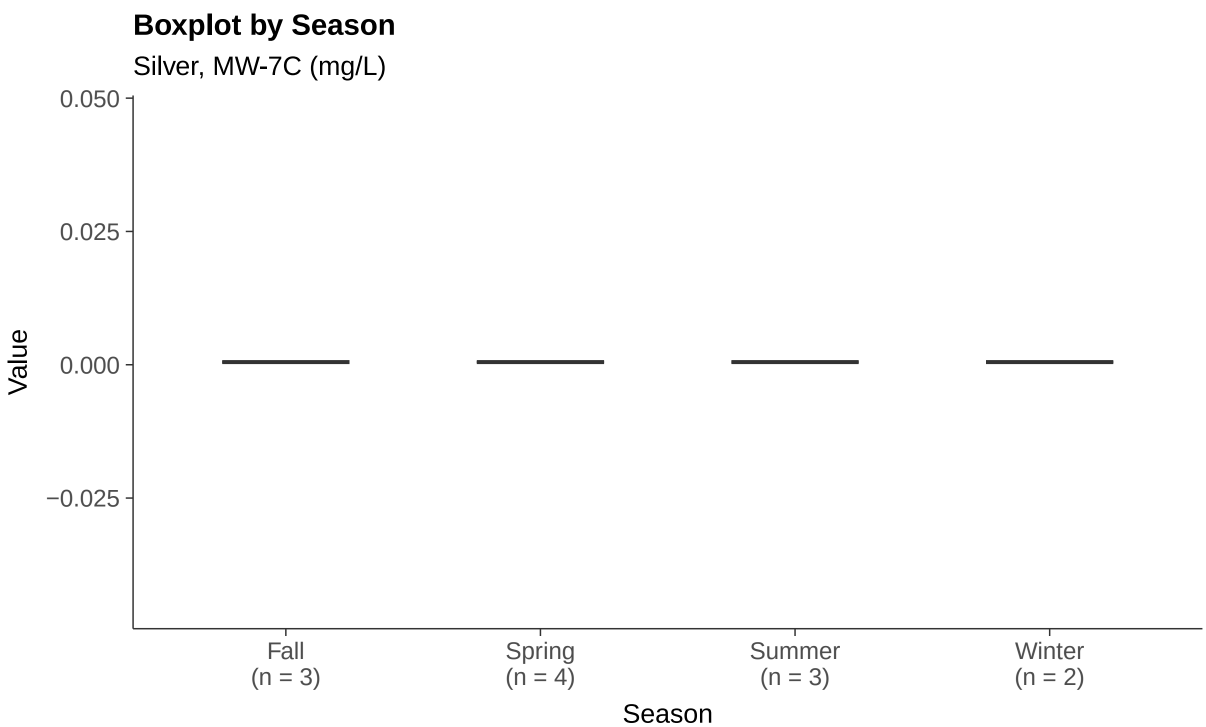
Part 115: Silver, MW-7C

ID: 7C_5_40






Boxplot
Silver, MW-7C (mg/L)
Value
0.050
0.025
0.000
−0.025

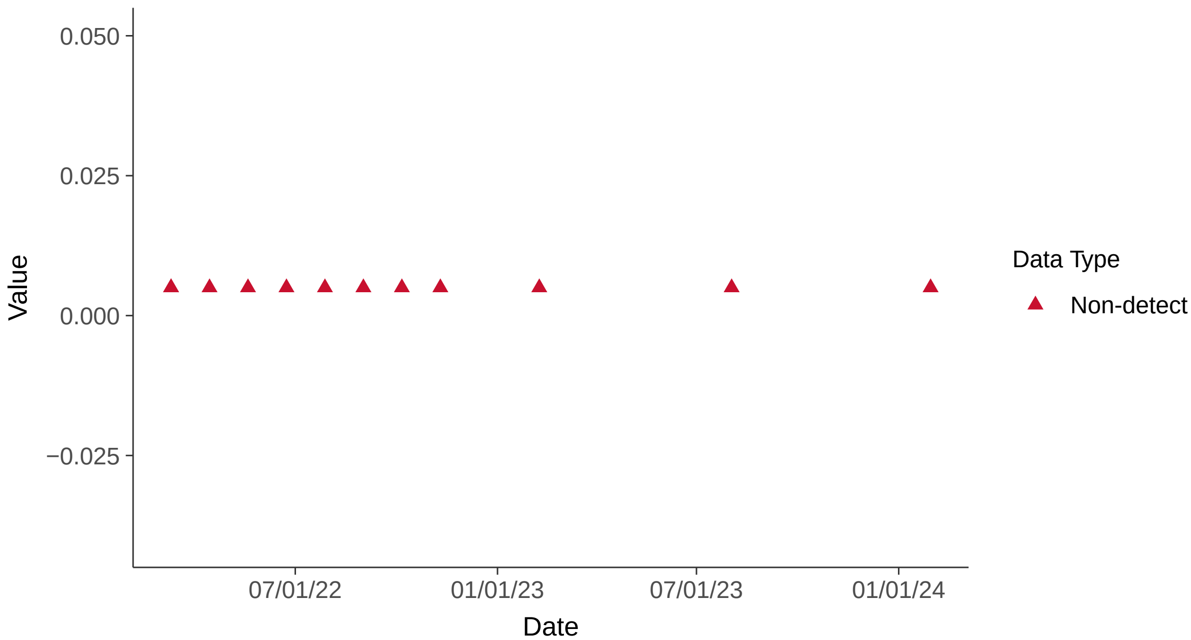

Boxplot by Season
Silver, MW-7C (mg/L)
Value
0.050
0.025
0.000
−0.025
Fall
(n = 3)
Spring
(n = 4)
Summer
(n = 3)
Winter
(n = 2)
Season

Part 115: Vanadium, MW-7C

ID: 7C_5_41

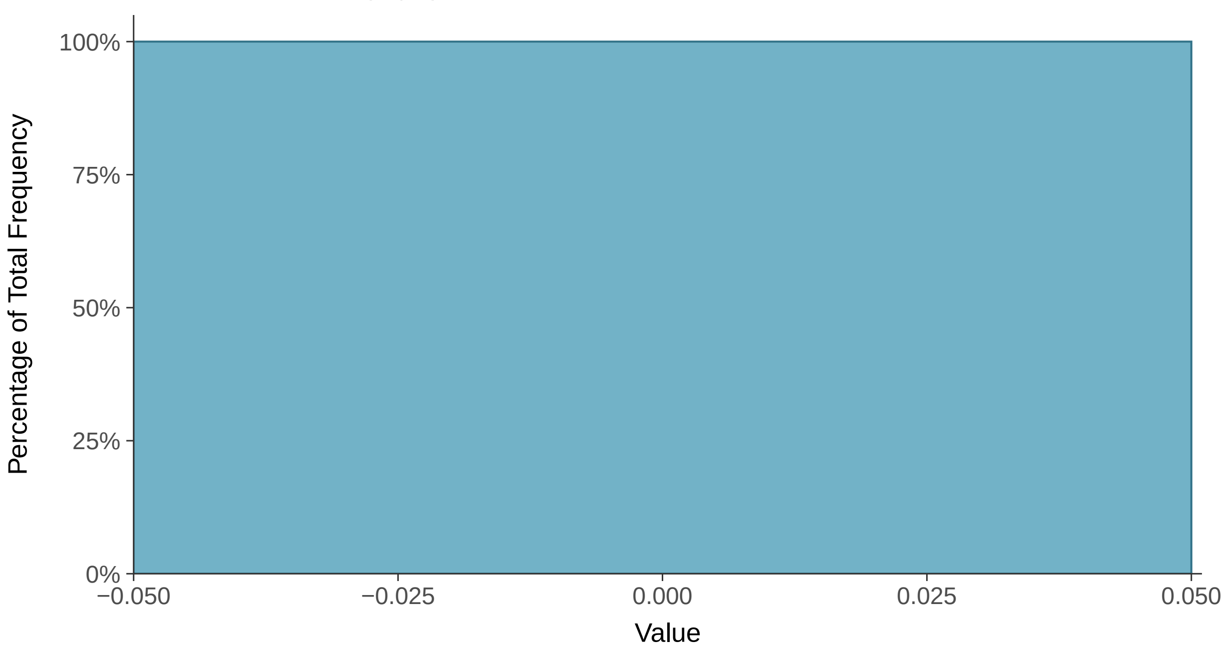
Scatter Plot

Vanadium, MW-7C (mg/L)



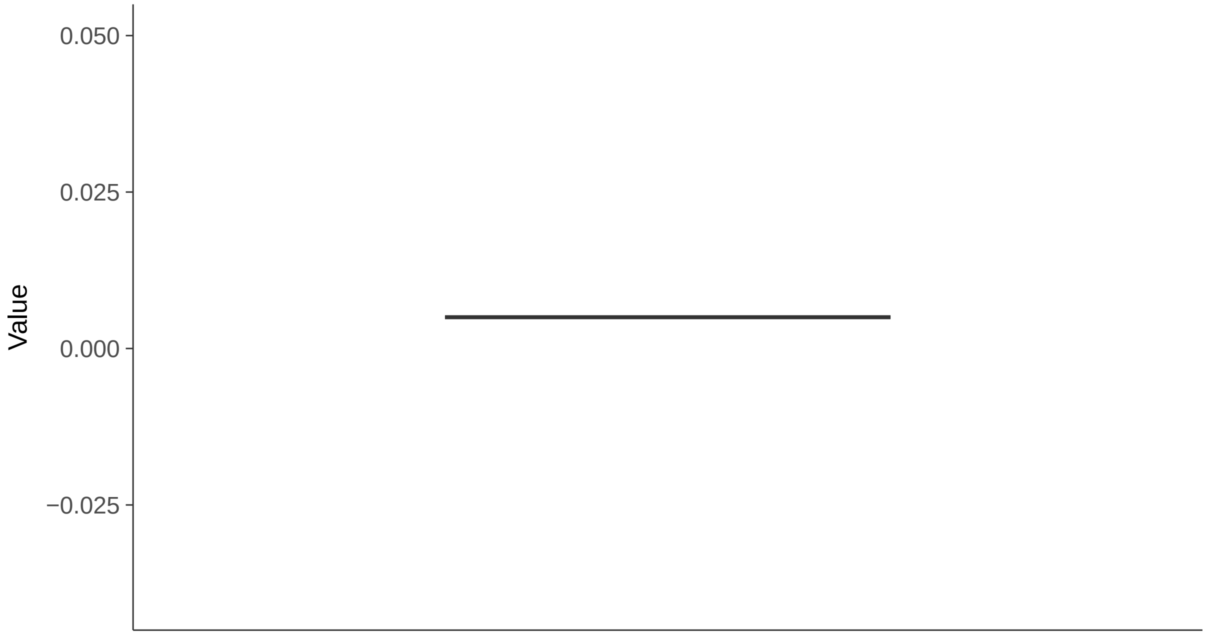
Histogram

Vanadium, MW-7C (mg/L)



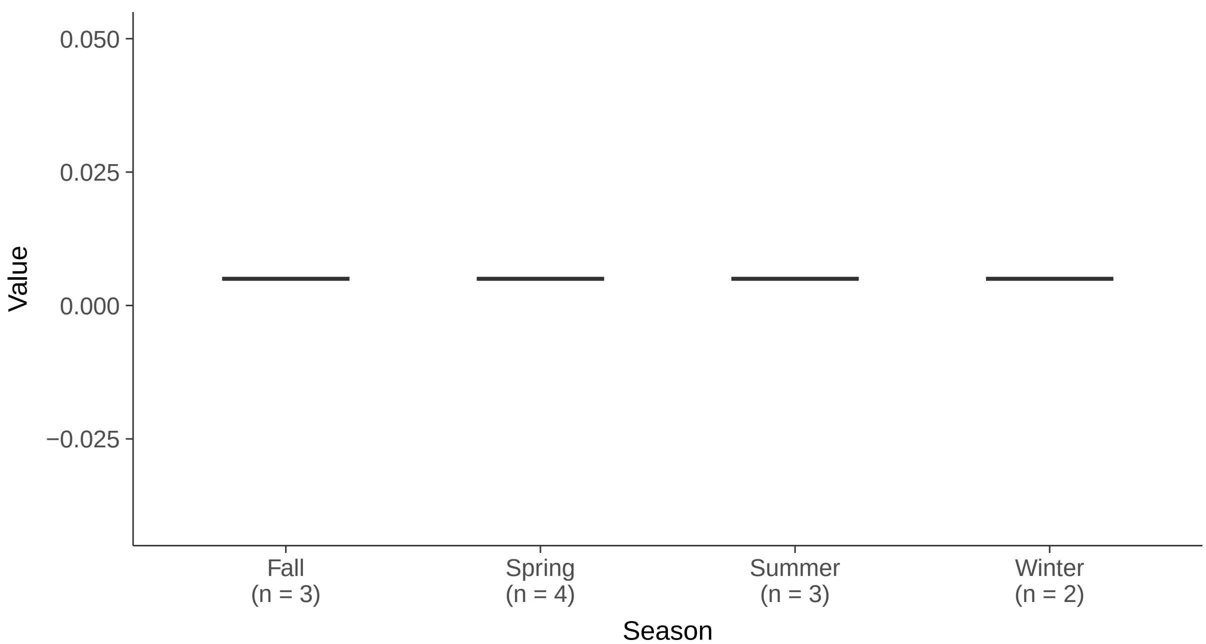
Boxplot

Vanadium, MW-7C (mg/L)



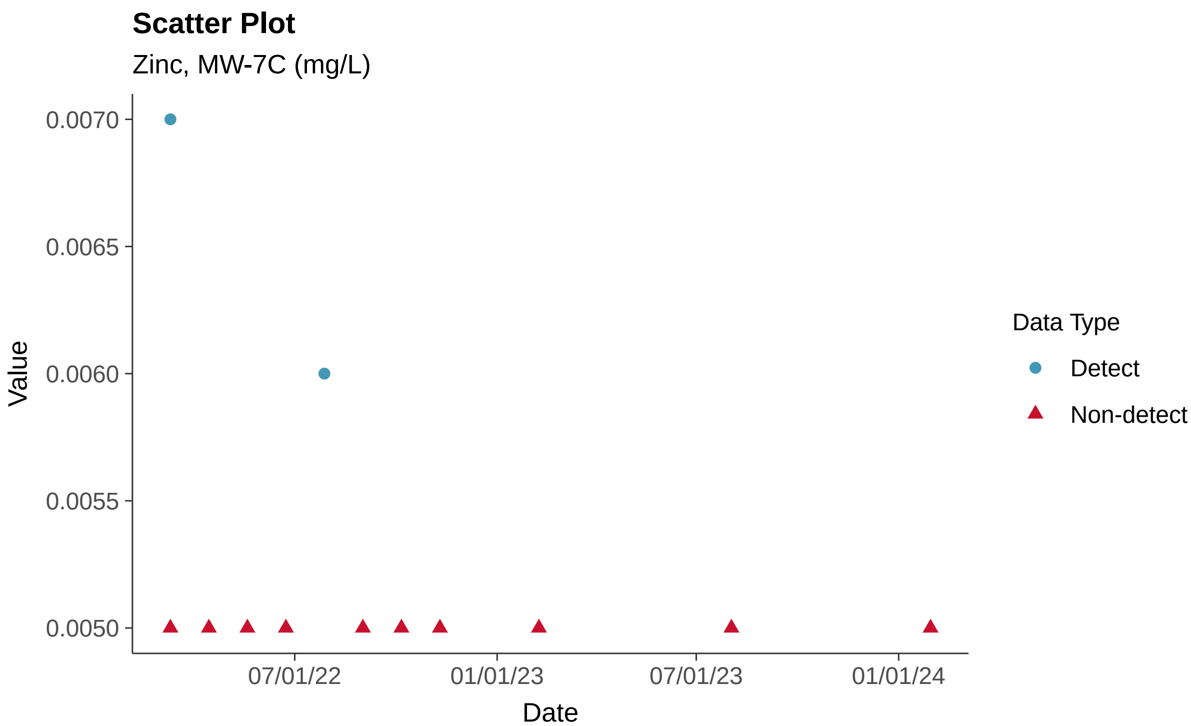
Boxplot by Season

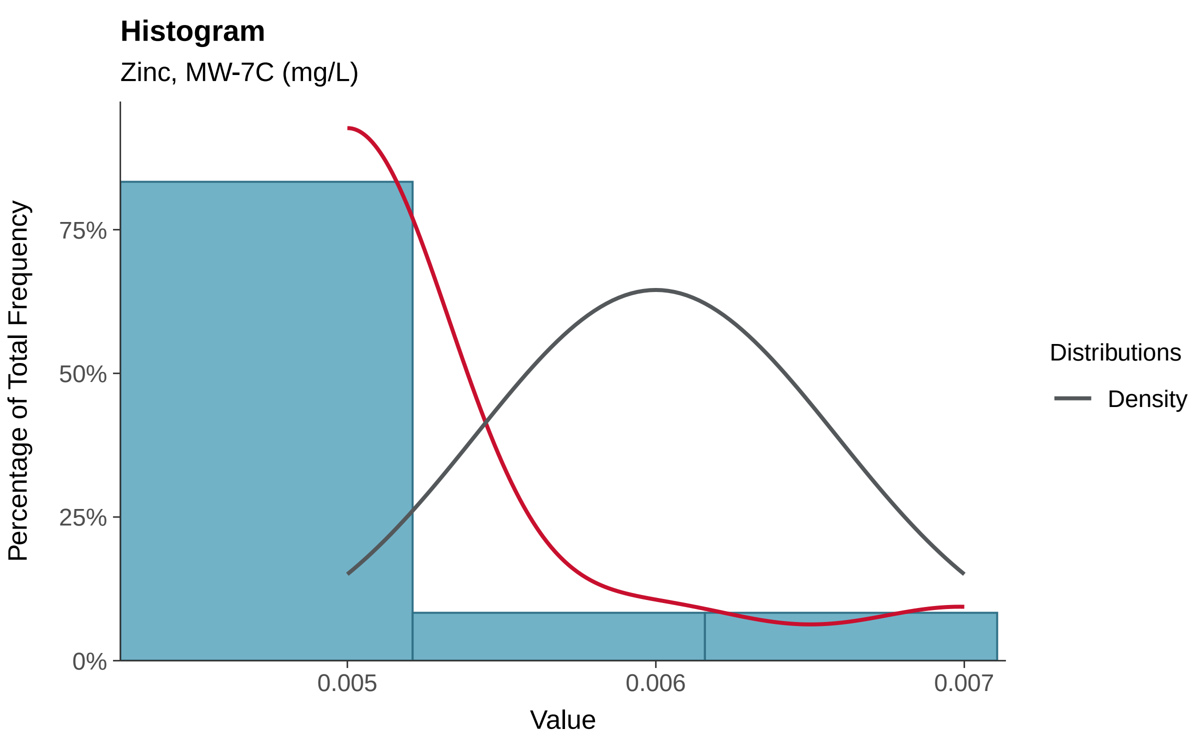
Vanadium, MW-7C (mg/L)



Part 115: Zinc, MW-7C

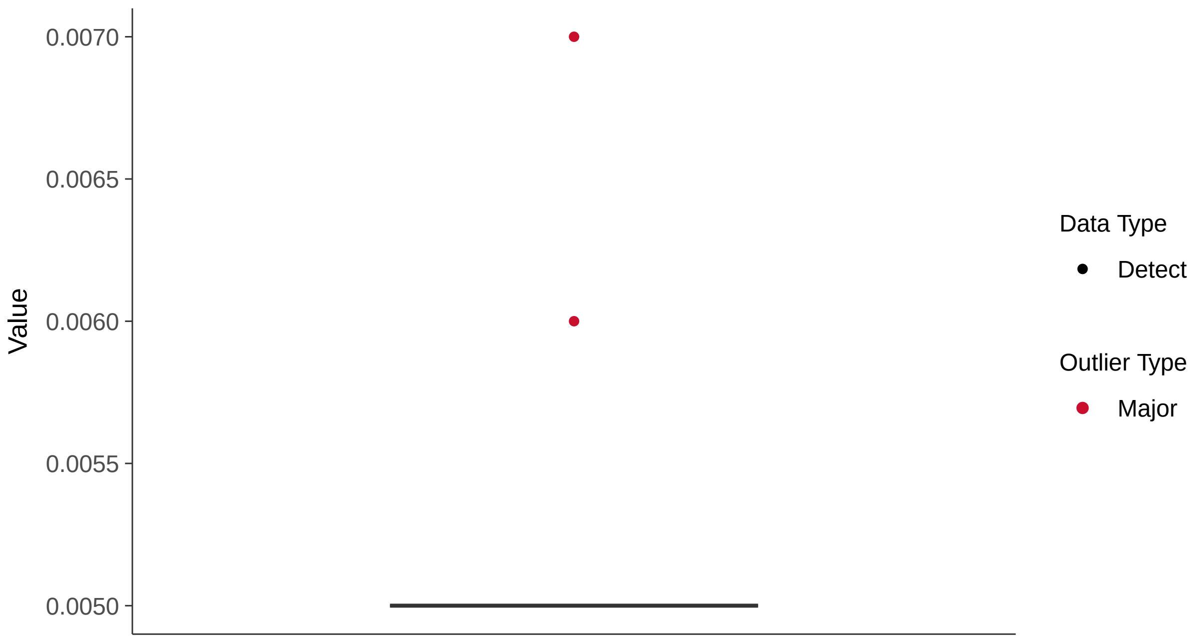
ID: 7C_5_42





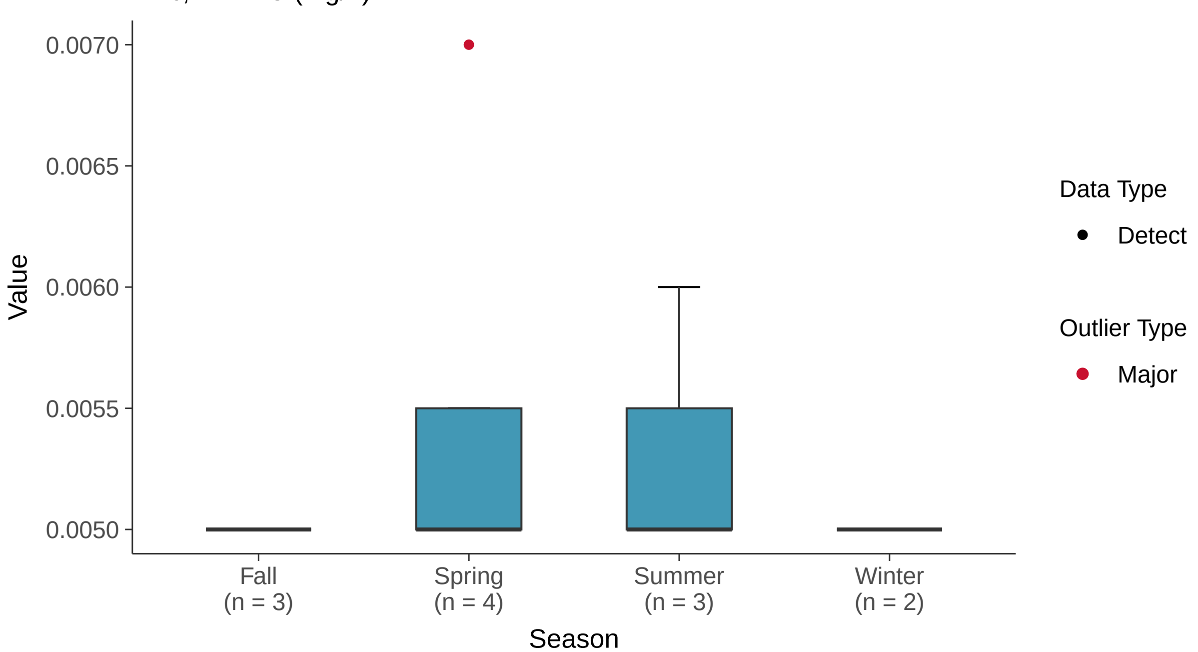
Boxplot

Zinc, MW-7C (mg/L)



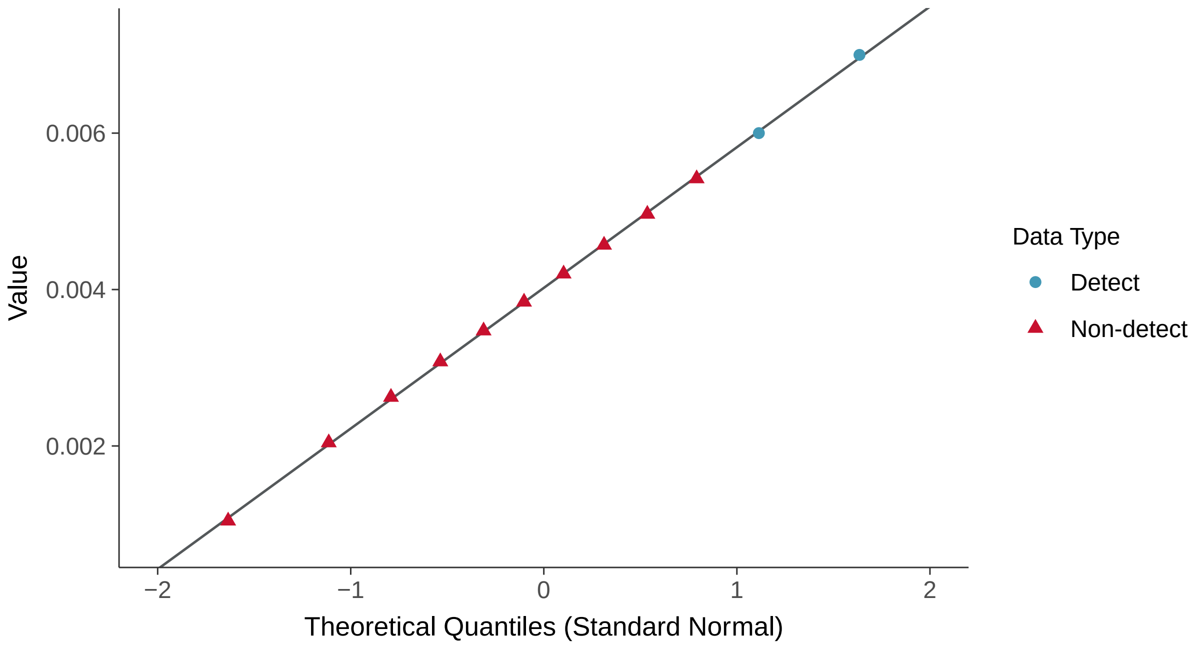
Boxplot by Season

Zinc, MW-7C (mg/L)



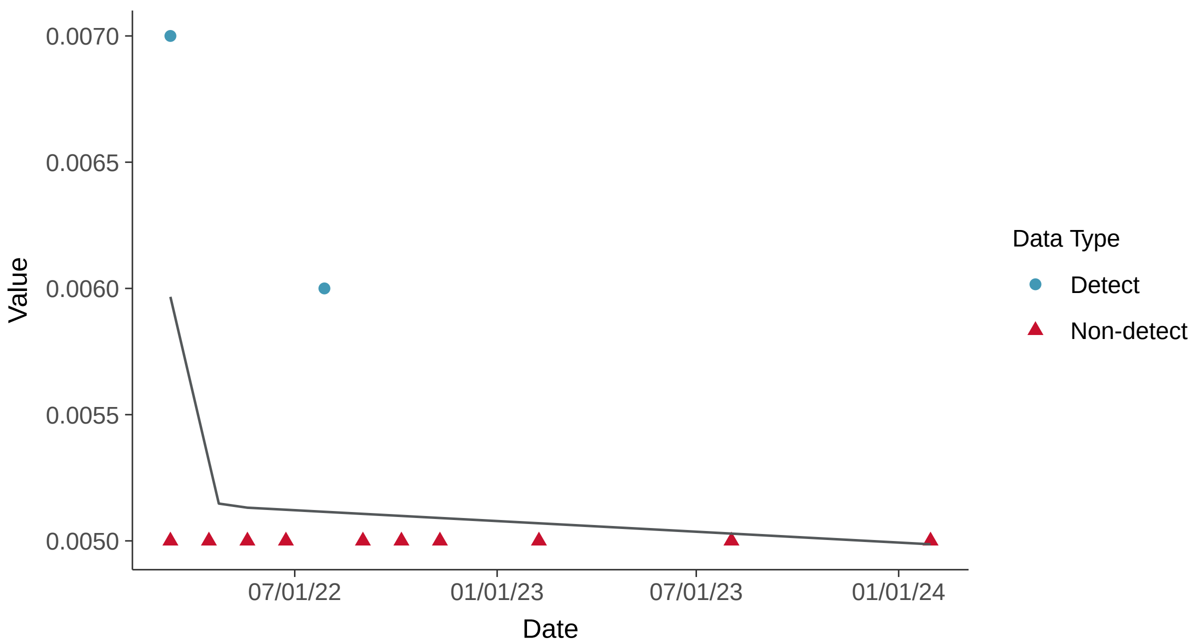
Normal Q-Q plot using ROS Imputed Estimates

Zinc, MW-7C (mg/L)



Trend Regression: Piecewise Linear-Linear

Zinc, MW-7C (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Zinc, MW-7C (mg/L)

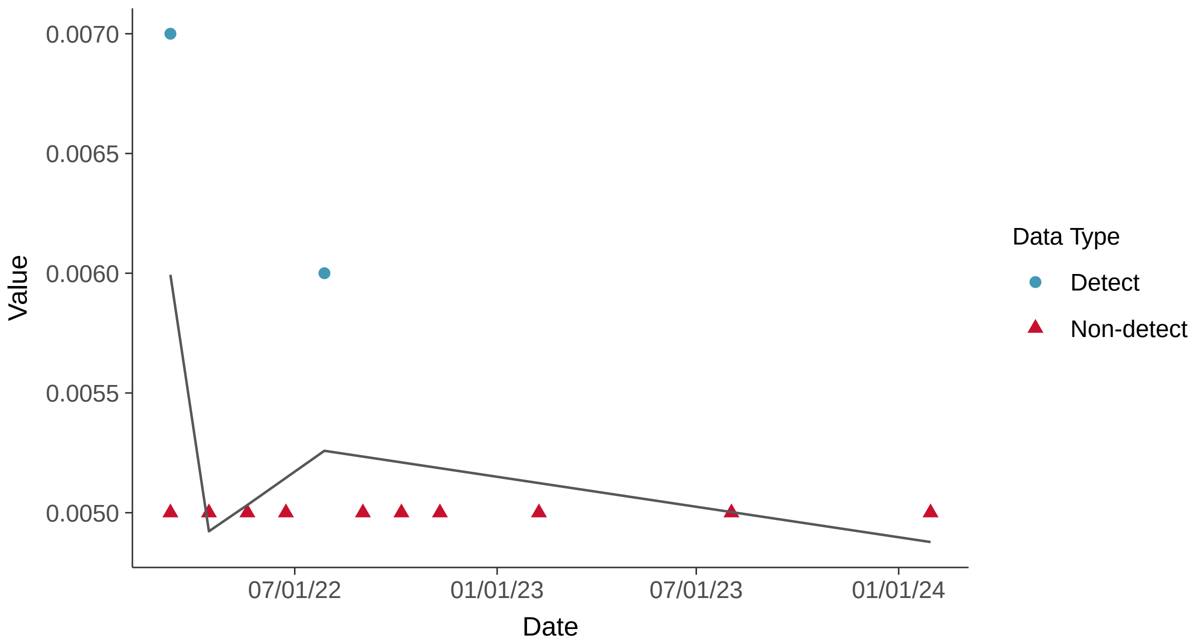


Table 1: Summary Statistics, Non-Detects Included

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
100C_1_01	MW-100C	Appendix III	Boron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	1.76	1.80	1.54	1.87	0.106	0.0602	0.0519	-1.55	2.33
100C_1_02	MW-100C	Appendix III	Calcium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	58.6	59.2	55.2	61.2	2.43	0.0416	2.81	-0.352	-1.92
100C_1_03	MW-100C	Appendix III	Chloride	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.19	5.50	4.70	14.0	3.33	0.464	1.12	1.48	1.58
100C_1_04	MW-100C	Appendix III	Fluoride	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.891	1.00	0.130	1.00	0.308	0.345	0	-2.83	8.00
100C_1_05	MW-100C	Appendix III	Sulfate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	10.7	7.50	5.40	27.0	7.38	0.688	2.97	1.84	3.51
100C_1_06	MW-100C	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	302	302	282	314	9.50	0.0315	4.44	-1.27	2.89
100C_1_07	MW-100C	Appendix III	pH, Field	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.36	7.32	7.23	7.54	0.108	0.0146	0.104	0.655	-0.813
100C_2_04	MW-100C	Appendix IV	Fluoride	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.891	1.00	0.130	1.00	0.308	0.345	0	-2.83	8.00
100C_2_08	MW-100C	Appendix IV	Antimony	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100C_2_09	MW-100C	Appendix IV	Arsenic	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
100C_2_10	MW-100C	Appendix IV	Barium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.0793	0.0815	0.0670	0.0920	0.00752	0.0948	0.00519	-0.00841	0.575
100C_2_11	MW-100C	Appendix IV	Beryllium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
100C_2_12	MW-100C	Appendix IV	Cadmium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
100C_2_13	MW-100C	Appendix IV	Chromium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100C_2_14	MW-100C	Appendix IV	Cobalt	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100C_2_15	MW-100C	Appendix IV	Lead	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
100C_2_16	MW-100C	Appendix IV	Lithium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.0319	0.0325	0.0280	0.0350	0.00242	0.0758	0.00222	-0.535	-0.744
100C_2_17	MW-100C	Appendix IV	Mercury	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
100C_2_18	MW-100C	Appendix IV	Molybdenum	mg/L	8	5	62%	2023-06-05 to 2024-02-07		Nonparametric	0.00625	0.00500	0.00500	0.00900	0.00183	0.293	0	0.999	-1.04
100C_2_20	MW-100C	Appendix IV	Radium-226/228	pCi/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	1.11	1.09	0.525	1.69	0.419	0.378	0.521	0.0340	-1.39
100C_2_22	MW-100C	Appendix IV	Selenium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100C_2_23	MW-100C	Appendix IV	Thallium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
100C_3_24	MW-100C	Field Parameters	Conductivity	mS/cm	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.532	0.535	0.520	0.544	0.00868	0.0163	0.00963	-0.285	-1.54
100C_3_25	MW-100C	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	0.0400	0.00500	0	0.230	0.0795	1.99	0.00741	2.50	6.40
100C_3_26	MW-100C	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	2023-06-05 to 2024-02-07	Normal	Normal	-115	-115	-134	-89.9	16.5	-0.144	23.7	0.304	-1.33
100C_3_27	MW-100C	Field Parameters	Temperature	°C	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	12.4	12.6	10.2	14.0	1.36	0.110	1.78	-0.392	-1.16
100C_3_28	MW-100C	Field Parameters	Turbidity	NTU	8	0	0%	2023-06-05 to 2024-02-07	Normal	Normal	3.99	4.42	0.810	5.89	1.90	0.476	1.56	-0.951	-0.433
100C_3_29	MW-100C	Field Parameters	pH	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.36	7.32	7.23	7.54	0.108	0.0146	0.104	0.655	-0.813
100C_4_30	MW-100C	Other	Bicarbonate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	308	340	100	350	84.8	0.276	14.8	-2.71	7.45
100C_4_31	MW-100C	Other	Carbonate	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
100C_4_32	MW-100C	Other	Hardness	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	224	232	200	238	15.0	0.0671	8.15	-0.924	-0.952
100C_4_33	MW-100C	Other	Magnesium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	18.7	18.8	17.3	19.8	0.853	0.0456	1.04	-0.385	-0.885
100C_4_34	MW-100C	Other	Potassium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	6.58	6.58	6.12	6.98	0.263	0.0399	0.200	-0.247	0.530
100C_4_35	MW-100C	Other	Sodium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	32.7	30.0	25.7	44.1	6.21	0.190	4.44	0.920	-0.0752
100C_4_36	MW-100C	Other	Total Suspended Solids	mg/L	8	2	25%	2023-06-05 to 2024-02-07	Gamma; Lognormal	Gamma	2.94	2.30	1.20	8.90	2.52	0.859	1.19	2.34	5.95
100C_5_37	MW-100C	Part 115	Copper	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100C_5_38	MW-100C	Part 115	Iron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.695	0.650	0.310	1.00	0.221	0.317	0.126	-0.164	0.387
100C_5_39	MW-100C	Part 115	Nickel	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100C_5_40	MW-100C	Part 115	Silver	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
100C_5_41	MW-100C	Part 115	Vanadium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100C_5_42	MW-100C	Part 115	Zinc	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.00562	0.00500	0.00500	0.0100	0.00177	0.314	0	2.83	8.00
100D_1_01	MW-100D	Appendix III	Boron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	3.25	3.29	2.84	3.45	0.192	0.0588	0.133	-1.61	3.18

(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
100D_1_02	MW-100D	Appendix III	Calcium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	8.04	6.24	5.26	20.2	4.98	0.620	1.19	2.68	7.35
100D_1_03	MW-100D	Appendix III	Chloride	mg/L	8	4	50%	2023-06-05 to 2024-02-07		Nonparametric	5.31	5.00	4.20	9.10	1.57	0.296	0	2.52	6.81
100D_1_04	MW-100D	Appendix III	Fluoride	mg/L	8	5	62%	2023-06-05 to 2024-02-07		Nonparametric	0.786	1.00	0.300	1.00	0.301	0.383	0	-0.807	-1.53
100D_1_05	MW-100D	Appendix III	Sulfate	mg/L	8	1	12%	2023-06-05 to 2024-02-07	Gamma; Lognormal	Gamma	12	9.90	5.00	31.0	8.18	0.681	3.70	2.19	5.40
100D_1_06	MW-100D	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	398	391	366	468	31.8	0.0797	17.8	1.72	3.63
100D_1_07	MW-100D	Appendix III	pH, Field	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.86	7.86	7.58	8.22	0.225	0.0286	0.244	0.165	-0.875
100D_2_04	MW-100D	Appendix IV	Fluoride	mg/L	8	5	62%	2023-06-05 to 2024-02-07		Nonparametric	0.786	1.00	0.300	1.00	0.301	0.383	0	-0.807	-1.53
100D_2_08	MW-100D	Appendix IV	Antimony	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100D_2_09	MW-100D	Appendix IV	Arsenic	mg/L	8	2	25%	2023-06-05 to 2024-02-07		Nonparametric	0.00275	0.00300	0.00200	0.00300	0.000463	0.168	0	-1.44	-0.0000000000000466
100D_2_10	MW-100D	Appendix IV	Barium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.00950	0.0100	0.00700	0.0120	0.00169	0.178	0.00222	-0.118	-0.973
100D_2_11	MW-100D	Appendix IV	Beryllium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
100D_2_12	MW-100D	Appendix IV	Cadmium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
100D_2_13	MW-100D	Appendix IV	Chromium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100D_2_14	MW-100D	Appendix IV	Cobalt	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100D_2_15	MW-100D	Appendix IV	Lead	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
100D_2_16	MW-100D	Appendix IV	Lithium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	0.0191	0.0175	0.0160	0.0310	0.00497	0.260	0.00148	2.47	6.41
100D_2_17	MW-100D	Appendix IV	Mercury	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
100D_2_18	MW-100D	Appendix IV	Molybdenum	mg/L	8	1	12%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.00863	0.00850	0.00500	0.0120	0.00213	0.247	0.00222	-0.171	0.339
100D_2_20	MW-100D	Appendix IV	Radium-226/228	pCi/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal	Gamma	1.48	0.952	0.477	5.06	1.50	1.02	0.668	2.45	6.36
100D_2_22	MW-100D	Appendix IV	Selenium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100D_2_23	MW-100D	Appendix IV	Thallium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
100D_3_24	MW-100D	Field Parameters	Conductivity	mS/cm	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	0.610	0.597	0.575	0.737	0.0519	0.0851	0.00593	2.68	7.41
100D_3_25	MW-100D	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	0.0325	0.0150	0	0.150	0.0501	1.54	0.0148	2.32	5.65
100D_3_26	MW-100D	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	2023-06-05 to 2024-02-07	Normal	Normal	-148	-173	-209	-73.2	57.1	-0.385	48.1	0.460	-2.04
100D_3_27	MW-100D	Field Parameters	Temperature	°C	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	12.6	13.0	9.90	14.5	1.64	0.129	2.00	-0.574	-0.847
100D_3_28	MW-100D	Field Parameters	Turbidity	NTU	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	6.22	5.88	3.08	8.78	1.95	0.313	2.22	-0.140	-0.899
100D_3_29	MW-100D	Field Parameters	pH	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.86	7.86	7.58	8.22	0.225	0.0286	0.244	0.165	-0.875
100D_4_30	MW-100D	Other	Bicarbonate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	393	390	370	443	21.5	0.0548	0	2.13	5.67
100D_4_31	MW-100D	Other	Carbonate	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
100D_4_32	MW-100D	Other	Hardness	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	32.9	29.0	17.0	69.0	17.9	0.544	14.8	1.40	1.52
100D_4_33	MW-100D	Other	Magnesium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	1.78	1.47	1.27	3.68	0.814	0.457	0.289	2.25	5.36
100D_4_34	MW-100D	Other	Potassium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	4.35	4.29	4.00	4.92	0.313	0.0719	0.333	0.773	0.0270
100D_4_35	MW-100D	Other	Sodium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	147	150	134	158	8.18	0.0556	3.70	-0.736	-0.315
100D_4_36	MW-100D	Other	Total Suspended Solids	mg/L	8	3	38%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	2.55	2.70	1.80	3.00	0.484	0.190	0.444	-0.590	-1.48
100D_5_37	MW-100D	Part 115	Copper	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100D_5_38	MW-100D	Part 115	Iron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.279	0.195	0.120	0.640	0.193	0.692	0.111	1.05	0.0523
100D_5_39	MW-100D	Part 115	Nickel	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100D_5_40	MW-100D	Part 115	Silver	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
100D_5_41	MW-100D	Part 115	Vanadium	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
100D_5_42	MW-100D	Part 115	Zinc	mg/L	8	8	100%	2023-06-05 to 2024-02-07		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16C_1_01	MW-16C	Appendix III	Boron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Lognormal; Normal	Normal	0.404	0.400	0.390	0.430	0.0126	0.0313	0.00741	1.10	0.792
16C_1_02	MW-16C	Appendix III	Calcium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	70.8	72.2	62.1	77.1	5.25	0.0742	4.74	-0.616	-0.786

(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
16C_1_03	MW-16C	Appendix III	Chloride	mg/L	10	6	60%	2023-02-02 to 2024-02-01		Nonparametric	4.50	5.00	2.20	8.00	1.76	0.391	0	0.326	0.615
16C_1_04	MW-16C	Appendix III	Fluoride	mg/L	10	8	80%	2023-02-02 to 2024-02-01		Nonparametric	0.790	1.00	0.200	1.00	0.348	0.440	0	-1.22	-0.418
16C_1_05	MW-16C	Appendix III	Sulfate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	8.76	7.95	7.00	19.0	3.62	0.414	0.370	3.08	9.63
16C_1_06	MW-16C	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	344	333	320	418	29.7	0.0863	13.3	2.09	4.52
16C_1_07	MW-16C	Appendix III	pH, Field	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.33	7.36	7.17	7.46	0.113	0.0154	0.148	-0.345	-1.59
16C_2_04	MW-16C	Appendix IV	Fluoride	mg/L	10	8	80%	2023-02-02 to 2024-02-01		Nonparametric	0.790	1.00	0.200	1.00	0.348	0.440	0	-1.22	-0.418
16C_2_08	MW-16C	Appendix IV	Antimony	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16C_2_09	MW-16C	Appendix IV	Arsenic	mg/L	10	7	70%	2023-02-02 to 2024-02-01		Nonparametric	0.00220	0.00200	0.00200	0.00300	0.000422	0.192	0	1.78	1.41
16C_2_10	MW-16C	Appendix IV	Barium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.0395	0.0340	0.0300	0.0610	0.0109	0.275	0.00519	1.06	-0.138
16C_2_11	MW-16C	Appendix IV	Beryllium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
16C_2_12	MW-16C	Appendix IV	Cadmium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
16C_2_13	MW-16C	Appendix IV	Chromium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16C_2_14	MW-16C	Appendix IV	Cobalt	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16C_2_15	MW-16C	Appendix IV	Lead	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
16C_2_16	MW-16C	Appendix IV	Lithium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.0275	0.0270	0.0260	0.0300	0.00158	0.0575	0.00148	0.422	-1.73
16C_2_17	MW-16C	Appendix IV	Mercury	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
16C_2_18	MW-16C	Appendix IV	Molybdenum	mg/L	10	8	80%	2023-02-02 to 2024-02-01		Nonparametric	0.00560	0.00500	0.00500	0.00900	0.00135	0.241	0	2.28	4.77
16C_2_20	MW-16C	Appendix IV	Radium-226/228	pCi/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	1.53	1.45	0.225	3.60	1.13	0.737	1.35	0.457	-0.687
16C_2_22	MW-16C	Appendix IV	Selenium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16C_2_23	MW-16C	Appendix IV	Thallium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
16C_3_24	MW-16C	Field Parameters	Conductivity	mS/cm	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.577	0.583	0.529	0.601	0.0205	0.0356	0.0126	-1.43	2.54
16C_3_25	MW-16C	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	0.0880	0.0550	0	0.360	0.112	1.27	0.0815	1.82	3.68
16C_3_26	MW-16C	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	-106	-101	-146	-62.2	25.3	-0.239	14.4	-0.154	-0.192
16C_3_27	MW-16C	Field Parameters	Temperature	°C	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	11.6	12.6	1.10	14.8	4.01	0.347	2.37	-2.29	6.0
16C_3_28	MW-16C	Field Parameters	Turbidity	NTU	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal	Gamma	6.99	5.01	0.450	34.2	9.88	1.41	3.45	2.81	8.40
16C_3_29	MW-16C	Field Parameters	pH	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.33	7.36	7.17	7.46	0.113	0.0154	0.148	-0.345	-1.59
16C_4_30	MW-16C	Other	Bicarbonate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	406	400	370	470	25.6	0.0629	14.8	1.69	4.95
16C_4_31	MW-16C	Other	Carbonate	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
16C_4_32	MW-16C	Other	Hardness	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	291	296	253	318	21.3	0.0734	17.8	-0.706	-0.632
16C_4_33	MW-16C	Other	Magnesium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	28.5	28.9	24.4	31.4	2.41	0.0846	2.59	-0.427	-1.11
16C_4_34	MW-16C	Other	Potassium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	4.46	4.70	3.56	5.11	0.566	0.127	0.474	-0.531	-1.51
16C_4_35	MW-16C	Other	Sodium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	23.0	16.5	15.6	41.4	10.2	0.444	1.26	1.11	-0.331
16C_4_36	MW-16C	Other	Total Suspended Solids	mg/L	10	3	30%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Gamma	7.17	3.00	1.10	40.0	12	1.67	2.52	2.79	8.10
16C_5_37	MW-16C	Part 115	Copper	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16C_5_38	MW-16C	Part 115	Iron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Lognormal	Lognormal	0.596	0.495	0.450	1.10	0.204	0.342	0.0593	1.99	4.14
16C_5_39	MW-16C	Part 115	Nickel	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16C_5_40	MW-16C	Part 115	Silver	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
16C_5_41	MW-16C	Part 115	Vanadium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16C_5_42	MW-16C	Part 115	Zinc	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16D_1_01	MW-16D	Appendix III	Boron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	4.68	4.67	4.39	5.01	0.164	0.0352	0.0963	0.484	1.62
16D_1_02	MW-16D	Appendix III	Calcium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	29.3	29.3	28.5	30.5	0.576	0.0197	0.519	0.954	1.06
16D_1_03	MW-16D	Appendix III	Chloride	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.26	7.12	6.00	8.00	0.646	0.0890	0.593	-0.490	0.0498

(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
16D_1_04	MW-16D	Appendix III	Fluoride	mg/L	10	8	80%	2023-02-02 to 2024-02-01		Nonparametric	0.826	1.00	0.360	1.00	0.282	0.342	0	-1.09	-0.975
16D_1_05	MW-16D	Appendix III	Sulfate	mg/L	10	1	10%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	6.69	6.10	4.20	13.0	2.64	0.395	1.63	1.71	3.24
16D_1_06	MW-16D	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	376	376	364	396	8.88	0.0236	5.93	0.899	2.10
16D_1_07	MW-16D	Appendix III	pH, Field	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.57	7.53	7.44	7.83	0.128	0.0169	0.0667	1.13	0.234
16D_2_04	MW-16D	Appendix IV	Fluoride	mg/L	10	8	80%	2023-02-02 to 2024-02-01		Nonparametric	0.826	1.00	0.360	1.00	0.282	0.342	0	-1.09	-0.975
16D_2_08	MW-16D	Appendix IV	Antimony	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16D_2_09	MW-16D	Appendix IV	Arsenic	mg/L	10	3	30%	2023-02-02 to 2024-02-01		Nonparametric	0.00310	0.00300	0.00200	0.00400	0.000876	0.282	0.00148	-0.223	-1.73
16D_2_10	MW-16D	Appendix IV	Barium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.0359	0.0360	0.0340	0.0380	0.00120	0.0333	0.00148	0.233	-0.369
16D_2_11	MW-16D	Appendix IV	Beryllium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
16D_2_12	MW-16D	Appendix IV	Cadmium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
16D_2_13	MW-16D	Appendix IV	Chromium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16D_2_14	MW-16D	Appendix IV	Cobalt	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16D_2_15	MW-16D	Appendix IV	Lead	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
16D_2_16	MW-16D	Appendix IV	Lithium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.0296	0.0300	0.0220	0.0390	0.00438	0.148	0.00296	0.586	2.42
16D_2_17	MW-16D	Appendix IV	Mercury	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
16D_2_18	MW-16D	Appendix IV	Molybdenum	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	0.0101	0.0105	0.00500	0.0120	0.00191	0.189	0.000741	-2.44	6.97
16D_2_20	MW-16D	Appendix IV	Radium-226/228	pCi/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	1.75	1.42	0.515	4.14	1.11	0.637	0.904	1.17	1.10
16D_2_22	MW-16D	Appendix IV	Selenium	mg/L	10	9	90%	2023-02-02 to 2024-02-01		Nonparametric	0.00510	0.00500	0.00500	0.00600	0.000316	0.0620	0	3.16	10
16D_2_23	MW-16D	Appendix IV	Thallium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
16D_3_24	MW-16D	Field Parameters	Conductivity	mS/cm	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.609	0.613	0.582	0.638	0.0172	0.0282	0.0170	-0.0409	-0.480
16D_3_25	MW-16D	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Lognormal	Nonparametric	0.672	0.235	0.0600	4.82	1.46	2.18	0.222	3.12	9.81
16D_3_26	MW-16D	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	-69.3	-102	-200	85.9	88.6	-1.28	72.1	0.522	-0.454
16D_3_27	MW-16D	Field Parameters	Temperature	°C	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	13.1	11.8	3.90	22.5	5.88	0.450	5.04	0.226	-0.871
16D_3_28	MW-16D	Field Parameters	Turbidity	NTU	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	6.49	6.93	4.32	8.31	1.33	0.206	1.44	-0.376	-1.07
16D_3_29	MW-16D	Field Parameters	pH	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.57	7.53	7.44	7.83	0.131	0.0173	0.0963	1.08	0.0978
16D_4_30	MW-16D	Other	Bicarbonate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	394	392	380	430	15	0.0380	11.9	1.51	3.18
16D_4_31	MW-16D	Other	Carbonate	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
16D_4_32	MW-16D	Other	Hardness	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	105	102	96.0	124	9.45	0.0903	7.41	1.25	0.739
16D_4_33	MW-16D	Other	Magnesium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.36	7.36	6.99	7.69	0.220	0.0299	0.126	-0.0421	-0.100
16D_4_34	MW-16D	Other	Potassium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	9.53	9.51	9.18	9.90	0.265	0.0278	0.363	0.101	-1.65
16D_4_35	MW-16D	Other	Sodium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	110	111	95.0	116	6.28	0.0571	5.19	-1.58	3.04
16D_4_36	MW-16D	Other	Total Suspended Solids	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	6.79	5.70	2.00	14.0	4.51	0.665	4.74	0.583	-1.30
16D_5_37	MW-16D	Part 115	Copper	mg/L	10	9	90%	2023-02-02 to 2024-02-01		Nonparametric	0.00550	0.00500	0.00500	0.0100	0.00158	0.287	0	3.16	10.0
16D_5_38	MW-16D	Part 115	Iron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.276	0.280	0.0600	0.480	0.144	0.521	0.163	-0.189	-0.960
16D_5_39	MW-16D	Part 115	Nickel	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16D_5_40	MW-16D	Part 115	Silver	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
16D_5_41	MW-16D	Part 115	Vanadium	mg/L	10	10	100%	2023-02-02 to 2024-02-01		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
16D_5_42	MW-16D	Part 115	Zinc	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal	Gamma	0.0689	0.0240	0.00800	0.271	0.0910	1.32	0.0215	1.62	1.71
7B_1_01	MW-7B	Appendix III	Boron	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	3.00	3.00	2.90	3.17	0.0824	0.0275	0.0889	0.632	0.144
7B_1_02	MW-7B	Appendix III	Calcium	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	9.14	9.22	8.24	10.2	0.511	0.0559	0.548	0.362	1.24
7B_1_03	MW-7B	Appendix III	Chloride	mg/L	11	10	91%	2022-03-09 to 2024-01-30		Nonparametric	4.72	5.00	1.90	5.00	0.935	0.198	0	-3.32	11.0
7B_1_04	MW-7B	Appendix III	Fluoride	mg/L	11	10	91%	2022-03-09 to 2024-01-30		Nonparametric	0.936	1.00	0.300	1.00	0.211	0.225	0	-3.32	11.0

(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
7B_1_05	MW-7B	Appendix III	Sulfate	mg/L	11	10	91%	2022-03-09 to 2024-01-30		Nonparametric	4.66	5.00	1.30	5.00	1.12	0.239	0	-3.32	11.0
7B_1_06	MW-7B	Appendix III	Total Dissolved Solids	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	366	366	356	376	6.98	0.0191	5.93	0.203	-0.874
7B_1_07	MW-7B	Appendix III	pH, Field	su	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	7.96	7.90	7.73	8.17	0.160	0.0201	0.207	0.119	-1.73
7B_2_04	MW-7B	Appendix IV	Fluoride	mg/L	11	10	91%	2022-03-09 to 2024-01-30		Nonparametric	0.936	1.00	0.300	1.00	0.211	0.225	0	-3.32	11.0
7B_2_08	MW-7B	Appendix IV	Antimony	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7B_2_09	MW-7B	Appendix IV	Arsenic	mg/L	11	9	82%	2022-03-09 to 2024-01-30		Nonparametric	0.00218	0.00200	0.00200	0.00300	0.000405	0.185	0	1.92	2.04
7B_2_10	MW-7B	Appendix IV	Barium	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.00918	0.00900	0.00800	0.0110	0.000982	0.107	0.00148	0.346	-0.587
7B_2_11	MW-7B	Appendix IV	Beryllium	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.00100	0.00100	0.00100	0.00100	0	0	0	NA	NA
7B_2_12	MW-7B	Appendix IV	Cadmium	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
7B_2_13	MW-7B	Appendix IV	Chromium	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7B_2_14	MW-7B	Appendix IV	Cobalt	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7B_2_15	MW-7B	Appendix IV	Lead	mg/L	11	10	91%	2022-03-09 to 2024-01-30		Nonparametric	0.00382	0.00300	0.00300	0.0120	0.00271	0.711	0	3.32	11.0
7B_2_16	MW-7B	Appendix IV	Lithium	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Normal	Normal	0.0316	0.0320	0.0280	0.0340	0.00150	0.0475	0.00148	-1.19	3.41
7B_2_17	MW-7B	Appendix IV	Mercury	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.000200	0.000200	0.000200	0.000200	0	0	0	NA	NA
7B_2_18	MW-7B	Appendix IV	Molybdenum	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7B_2_20	MW-7B	Appendix IV	Radium-226/228	pCi/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	1.21	1.31	0.378	2.43	0.656	0.543	0.681	0.292	-0.600
7B_2_22	MW-7B	Appendix IV	Selenium	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7B_2_23	MW-7B	Appendix IV	Thallium	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.00200	0.00200	0.00200	0.00200	0	0	0	NA	NA
7B_3_24	MW-7B	Field Parameters	Conductivity	mS/cm	11	0	0%	2022-03-09 to 2024-01-30	Nonparametric	Nonparametric	0.595	0.586	0.565	0.730	0.0453	0.0761	0.00889	3.16	10.3
7B_3_25	MW-7B	Field Parameters	Dissolved Oxygen	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal	Gamma	0.232	0.110	0.0200	0.850	0.271	1.17	0.0593	1.82	2.21
7B_3_26	MW-7B	Field Parameters	Oxidation Reduction Potential	mV	11	0	0%	2022-03-09 to 2024-01-30	Nonparametric	Nonparametric	-100	-109	-153	19.2	49.9	-0.497	31.4	1.64	2.66
7B_3_27	MW-7B	Field Parameters	Temperature	°C	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	12.7	13.3	9.40	14.9	1.64	0.129	1.19	-0.738	-0.0914
7B_3_28	MW-7B	Field Parameters	Turbidity	NTU	11	0	0%	2022-03-09 to 2024-01-30	Normal	Normal	4.48	5.25	0.0200	7.01	2.30	0.512	1.69	-0.990	-0.0429
7B_3_29	MW-7B	Field Parameters	pH	su	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	7.96	7.90	7.73	8.17	0.160	0.0201	0.207	0.119	-1.73
7B_4_30	MW-7B	Other	Bicarbonate	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	395	390	380	418	9.77	0.0247	7.41	1.19	2.73
7B_4_31	MW-7B	Other	Carbonate	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	10.0	10.0	10.0	10.0	0	0	0	NA	NA
7B_4_32	MW-7B	Other	Hardness	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Nonparametric	Nonparametric	31.8	30.0	29.0	38.0	3.84	0.121	1.48	1.11	-0.773
7B_4_33	MW-7B	Other	Magnesium	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	2.78	2.79	2.43	2.99	0.143	0.0515	0.0593	-1.26	3.47
7B_4_34	MW-7B	Other	Potassium	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Nonparametric	Nonparametric	5.56	5.61	4.80	5.85	0.275	0.0495	0.119	-2.38	6.97
7B_4_35	MW-7B	Other	Sodium	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Nonparametric	Nonparametric	132	137	87.5	146	16.5	0.125	4.44	-2.29	5.53
7B_4_36	MW-7B	Other	Total Suspended Solids	mg/L	11	10	91%	2022-03-09 to 2024-01-30		Nonparametric	2.82	3.00	1.00	3.00	0.603	0.214	0	-3.32	11.0
7B_5_37	MW-7B	Part 115	Copper	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7B_5_38	MW-7B	Part 115	Iron	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0591	0.0600	0.0300	0.0900	0.0217	0.367	0.0296	0.142	-1.16
7B_5_39	MW-7B	Part 115	Nickel	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7B_5_40	MW-7B	Part 115	Silver	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.000500	0.000500	0.000500	0.000500	0	0	0	NA	NA
7B_5_41	MW-7B	Part 115	Vanadium	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA
7B_5_42	MW-7B	Part 115	Zinc	mg/L	11	11	100%	2022-03-09 to 2024-01-30		Nonparametric	0.00500	0.00500	0.00500	0.00500	0	0	0	NA	NA

[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
100C_1_01	MW-100C	Appendix III	Boron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	1.76	1.80	1.54	1.87	0.106	0.0602	0.0519	-1.55	2.33
100C_1_02	MW-100C	Appendix III	Calcium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	58.6	59.2	55.2	61.2	2.43	0.0416	2.81	-0.352	-1.92
100C_1_03	MW-100C	Appendix III	Chloride	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.19	5.50	4.70	14.0	3.33	0.464	1.12	1.48	1.58
100C_1_04	MW-100C	Appendix III	Fluoride	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.130	0.130	0.130	0.130	NA	NA	0	NA	NA
100C_1_05	MW-100C	Appendix III	Sulfate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	10.7	7.50	5.40	27.0	7.38	0.688	2.97	1.84	3.51
100C_1_06	MW-100C	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	302	302	282	314	9.50	0.0315	4.44	-1.27	2.89
100C_1_07	MW-100C	Appendix III	pH, Field	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.36	7.32	7.23	7.54	0.108	0.0146	0.104	0.655	-0.813
100C_2_04	MW-100C	Appendix IV	Fluoride	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.130	0.130	0.130	0.130	NA	NA	0	NA	NA
100C_2_09	MW-100C	Appendix IV	Arsenic	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.00200	0.00200	0.00200	0.00200	NA	NA	0	NA	NA
100C_2_10	MW-100C	Appendix IV	Barium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.0793	0.0815	0.0670	0.0920	0.00752	0.0948	0.00519	-0.00841	0.575
100C_2_16	MW-100C	Appendix IV	Lithium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.0319	0.0325	0.0280	0.0350	0.00242	0.0758	0.00222	-0.535	-0.744
100C_2_18	MW-100C	Appendix IV	Molybdenum	mg/L	8	5	62%	2023-06-05 to 2024-02-07		Nonparametric	0.00833	0.00900	0.00700	0.00900	0.00115	0.139	0	-1.73	NA
100C_2_20	MW-100C	Appendix IV	Radium-226/228	pCi/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	1.11	1.09	0.525	1.69	0.419	0.378	0.521	0.0340	-1.39
100C_3_24	MW-100C	Field Parameters	Conductivity	mS/cm	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.532	0.535	0.520	0.544	0.00868	0.0163	0.00963	-0.285	-1.54
100C_3_25	MW-100C	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	0.0400	0.00500	0	0.230	0.0795	1.99	0.00741	2.50	6.40
100C_3_26	MW-100C	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	2023-06-05 to 2024-02-07	Normal	Normal	-115	-115	-134	-89.9	16.5	-0.144	23.7	0.304	-1.33
100C_3_27	MW-100C	Field Parameters	Temperature	°C	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	12.4	12.6	10.2	14.0	1.36	0.110	1.78	-0.392	-1.16
100C_3_28	MW-100C	Field Parameters	Turbidity	NTU	8	0	0%	2023-06-05 to 2024-02-07	Normal	Normal	3.99	4.42	0.810	5.89	1.90	0.476	1.56	-0.951	-0.433
100C_3_29	MW-100C	Field Parameters	pH	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.36	7.32	7.23	7.54	0.108	0.0146	0.104	0.655	-0.813
100C_4_30	MW-100C	Other	Bicarbonate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	308	340	100	350	84.8	0.276	14.8	-2.71	7.45
100C_4_32	MW-100C	Other	Hardness	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	224	232	200	238	15.0	0.0671	8.15	-0.924	-0.952
100C_4_33	MW-100C	Other	Magnesium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	18.7	18.8	17.3	19.8	0.853	0.0456	1.04	-0.385	-0.885
100C_4_34	MW-100C	Other	Potassium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	6.58	6.58	6.12	6.98	0.263	0.0399	0.200	-0.247	0.530
100C_4_35	MW-100C	Other	Sodium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	32.7	30.0	25.7	44.1	6.21	0.190	4.44	0.920	-0.0752
100C_4_36	MW-100C	Other	Total Suspended Solids	mg/L	8	2	25%	2023-06-05 to 2024-02-07	Gamma; Lognormal	Gamma	2.92	1.60	1.20	8.90	2.99	1.02	0.444	2.26	5.20
100C_5_38	MW-100C	Part 115	Iron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.695	0.650	0.310	1.00	0.221	0.317	0.126	-0.164	0.387
100C_5_42	MW-100C	Part 115	Zinc	mg/L	8	7	88%	2023-06-05 to 2024-02-07		Nonparametric	0.0100	0.0100	0.0100	0.0100	NA	NA	0	NA	NA
100D_1_01	MW-100D	Appendix III	Boron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	3.25	3.29	2.84	3.45	0.192	0.0588	0.133	-1.61	3.18
100D_1_02	MW-100D	Appendix III	Calcium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	8.04	6.24	5.26	20.2	4.98	0.620	1.19	2.68	7.35
100D_1_03	MW-100D	Appendix III	Chloride	mg/L	8	4	50%	2023-06-05 to 2024-02-07		Nonparametric	5.62	4.60	4.20	9.10	2.35	0.417	0.593	1.85	3.44
100D_1_04	MW-100D	Appendix III	Fluoride	mg/L	8	5	62%	2023-06-05 to 2024-02-07		Nonparametric	0.430	0.490	0.300	0.500	0.113	0.262	0.0148	-1.72	NA
100D_1_05	MW-100D	Appendix III	Sulfate	mg/L	8	1	12%	2023-06-05 to 2024-02-07	Gamma; Lognormal	Gamma	13	10.0	6.00	31.0	8.29	0.638	1.48	2.20	5.28
100D_1_06	MW-100D	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	398	391	366	468	31.8	0.0797	17.8	1.72	3.63
100D_1_07	MW-100D	Appendix III	pH, Field	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.86	7.86	7.58	8.22	0.225	0.0286	0.244	0.165	-0.875
100D_2_04	MW-100D	Appendix IV	Fluoride	mg/L	8	5	62%	2023-06-05 to 2024-02-07		Nonparametric	0.430	0.490	0.300	0.500	0.113	0.262	0.0148	-1.72	NA
100D_2_09	MW-100D	Appendix IV	Arsenic	mg/L	8	2	25%	2023-06-05 to 2024-02-07		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
100D_2_10	MW-100D	Appendix IV	Barium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.00950	0.0100	0.00700	0.0120	0.00169	0.178	0.00222	-0.118	-0.973
100D_2_16	MW-100D	Appendix IV	Lithium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	0.0191	0.0175	0.0160	0.0310	0.00497	0.260	0.00148	2.47	6.41
100D_2_18	MW-100D	Appendix IV	Molybdenum	mg/L	8	1	12%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.00914	0.00900	0.00700	0.0120	0.00168	0.183	0.00148	0.582	0.0519
100D_2_20	MW-100D	Appendix IV	Radium-226/228	pCi/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal	Gamma	1.48	0.952	0.477	5.06	1.50	1.02	0.668	2.45	6.36
100D_3_24	MW-100D	Field Parameters	Conductivity	mS/cm	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	0.610	0.597	0.575	0.737	0.0519	0.0851	0.00593	2.68	7.41
100D_3_25	MW-100D	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	0.0325	0.0150	0	0.150	0.0501	1.54	0.0148	2.32	5.65
100D_3_26	MW-100D	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	2023-06-05 to 2024-02-07	Normal	Normal	-148	-173	-209	-73.2	57.1	-0.385	48.1	0.460	-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
100D_3_27	MW-100D	Field Parameters	Temperature	°C	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	12.6	13.0	9.90	14.5	1.64	0.129	2.00	-0.574	-0.847
100D_3_28	MW-100D	Field Parameters	Turbidity	NTU	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	6.22	5.88	3.08	8.78	1.95	0.313	2.22	-0.140	-0.899
100D_3_29	MW-100D	Field Parameters	pH	su	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	7.86	7.86	7.58	8.22	0.225	0.0286	0.244	0.165	-0.875
100D_4_30	MW-100D	Other	Bicarbonate	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Nonparametric	Nonparametric	393	390	370	443	21.5	0.0548	0	2.13	5.67
100D_4_32	MW-100D	Other	Hardness	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	32.9	29.0	17.0	69.0	17.9	0.544	14.8	1.40	1.52
100D_4_33	MW-100D	Other	Magnesium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	1.78	1.47	1.27	3.68	0.814	0.457	0.289	2.25	5.36
100D_4_34	MW-100D	Other	Potassium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	4.35	4.29	4.00	4.92	0.313	0.0719	0.333	0.773	0.0270
100D_4_35	MW-100D	Other	Sodium	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	147	150	134	158	8.18	0.0556	3.70	-0.736	-0.315
100D_4_36	MW-100D	Other	Total Suspended Solids	mg/L	8	3	38%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	2.28	2.20	1.80	2.70	0.409	0.179	0.593	0.0923	-2.55
100D_5_38	MW-100D	Part 115	Iron	mg/L	8	0	0%	2023-06-05 to 2024-02-07	Gamma; Lognormal; Normal	Normal	0.279	0.195	0.120	0.640	0.193	0.692	0.111	1.05	0.0523
16C_1_01	MW-16C	Appendix III	Boron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Lognormal; Normal	Normal	0.404	0.400	0.390	0.430	0.0126	0.0313	0.00741	1.10	0.792
16C_1_02	MW-16C	Appendix III	Calcium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	70.8	72.2	62.1	77.1	5.25	0.0742	4.74	-0.616	-0.786
16C_1_03	MW-16C	Appendix III	Chloride	mg/L	10	6	60%	2023-02-02 to 2024-02-01		Nonparametric	3.75	2.40	2.20	8.00	2.84	0.756	0.222	1.99	3.96
16C_1_04	MW-16C	Appendix III	Fluoride	mg/L	10	8	80%	2023-02-02 to 2024-02-01		Nonparametric	0.200	0.200	0.200	0.200	0	0	0	NA	NA
16C_1_05	MW-16C	Appendix III	Sulfate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	8.76	7.95	7.00	19.0	3.62	0.414	0.370	3.08	9.63
16C_1_06	MW-16C	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	344	333	320	418	29.7	0.0863	13.3	2.09	4.52
16C_1_07	MW-16C	Appendix III	pH, Field	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.33	7.36	7.17	7.46	0.113	0.0154	0.148	-0.345	-1.59
16C_2_04	MW-16C	Appendix IV	Fluoride	mg/L	10	8	80%	2023-02-02 to 2024-02-01		Nonparametric	0.200	0.200	0.200	0.200	0	0	0	NA	NA
16C_2_09	MW-16C	Appendix IV	Arsenic	mg/L	10	7	70%	2023-02-02 to 2024-02-01		Nonparametric	0.00267	0.00300	0.00200	0.00300	0.000577	0.217	0	-1.73	NA
16C_2_10	MW-16C	Appendix IV	Barium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.0395	0.0340	0.0300	0.0610	0.0109	0.275	0.00519	1.06	-0.138
16C_2_16	MW-16C	Appendix IV	Lithium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.0275	0.0270	0.0260	0.0300	0.00158	0.0575	0.00148	0.422	-1.73
16C_2_18	MW-16C	Appendix IV	Molybdenum	mg/L	10	8	80%	2023-02-02 to 2024-02-01		Nonparametric	0.00800	0.00800	0.00700	0.00900	0.00141	0.177	0.00148	NA	NA
16C_2_20	MW-16C	Appendix IV	Radium-226/228	pCi/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	1.53	1.45	0.225	3.60	1.13	0.737	1.35	0.457	-0.687
16C_3_24	MW-16C	Field Parameters	Conductivity	mS/cm	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.577	0.583	0.529	0.601	0.0205	0.0356	0.0126	-1.43	2.54
16C_3_25	MW-16C	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	0.0880	0.0550	0	0.360	0.112	1.27	0.0815	1.82	3.68
16C_3_26	MW-16C	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	-106	-101	-146	-62.2	25.3	-0.239	14.4	-0.154	-0.192
16C_3_27	MW-16C	Field Parameters	Temperature	°C	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	11.6	12.6	1.10	14.8	4.01	0.347	2.37	-2.29	6.0
16C_3_28	MW-16C	Field Parameters	Turbidity	NTU	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal	Gamma	6.99	5.01	0.450	34.2	9.88	1.41	3.45	2.81	8.40
16C_3_29	MW-16C	Field Parameters	pH	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.33	7.36	7.17	7.46	0.113	0.0154	0.148	-0.345	-1.59
16C_4_30	MW-16C	Other	Bicarbonate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	406	400	370	470	25.6	0.0629	14.8	1.69	4.95
16C_4_32	MW-16C	Other	Hardness	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	291	296	253	318	21.3	0.0734	17.8	-0.706	-0.632
16C_4_33	MW-16C	Other	Magnesium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	28.5	28.9	24.4	31.4	2.41	0.0846	2.59	-0.427	-1.11
16C_4_34	MW-16C	Other	Potassium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	4.46	4.70	3.56	5.11	0.566	0.127	0.474	-0.531	-1.51
16C_4_35	MW-16C	Other	Sodium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	23.0	16.5	15.6	41.4	10.2	0.444	1.26	1.11	-0.331
16C_4_36	MW-16C	Other	Total Suspended Solids	mg/L	10	3	30%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Gamma	8.96	1.60	1.10	40.0	14.2	1.59	0.741	2.28	5.35
16C_5_38	MW-16C	Part 115	Iron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Lognormal	Lognormal	0.596	0.495	0.450	1.10	0.204	0.342	0.0593	1.99	4.14
16D_1_01	MW-16D	Appendix III	Boron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	4.68	4.67	4.39	5.01	0.164	0.0352	0.0963	0.484	1.62
16D_1_02	MW-16D	Appendix III	Calcium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	29.3	29.3	28.5	30.5	0.576	0.0197	0.519	0.954	1.06
16D_1_03	MW-16D	Appendix III	Chloride	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.26	7.12	6.00	8.00	0.646	0.0890	0.593	-0.490	0.0498
16D_1_04	MW-16D	Appendix III	Fluoride	mg/L	10	8	80%	2023-02-02 to 2024-02-01		Nonparametric	0.380	0.380	0.360	0.400	0.0283	0.0744	0.0296	NA	NA
16D_1_05	MW-16D	Appendix III	Sulfate	mg/L	10	1	10%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	6.87	6.20	4.20	13.0	2.73	0.398	1.78	1.57	2.76
16D_1_06	MW-16D	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	376	376	364	396	8.88	0.0236	5.93	0.899	2.10
16D_1_07	MW-16D	Appendix III	pH, Field	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.57	7.53	7.44	7.83	0.128	0.0169	0.0667	1.13	0.234

(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
16D_2_04	MW-16D	Appendix IV	Fluoride	mg/L	10	8	80%	2023-02-02 to 2024-02-01		Nonparametric	0.380	0.380	0.360	0.400	0.0283	0.0744	0.0296	NA	NA
16D_2_09	MW-16D	Appendix IV	Arsenic	mg/L	10	3	30%	2023-02-02 to 2024-02-01		Nonparametric	0.00357	0.00400	0.00300	0.00400	0.000535	0.150	0	-0.374	-2.80
16D_2_10	MW-16D	Appendix IV	Barium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.0359	0.0360	0.0340	0.0380	0.00120	0.0333	0.00148	0.233	-0.369
16D_2_16	MW-16D	Appendix IV	Lithium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.0296	0.0300	0.0220	0.0390	0.00438	0.148	0.00296	0.586	2.42
16D_2_18	MW-16D	Appendix IV	Molybdenum	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Nonparametric	Nonparametric	0.0101	0.0105	0.00500	0.0120	0.00191	0.189	0.000741	-2.44	6.97
16D_2_20	MW-16D	Appendix IV	Radium-226/228	pCi/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	1.75	1.42	0.515	4.14	1.11	0.637	0.904	1.17	1.10
16D_2_22	MW-16D	Appendix IV	Selenium	mg/L	10	9	90%	2023-02-02 to 2024-02-01		Nonparametric	0.00600	0.00600	0.00600	0.00600	NA	NA	0	NA	NA
16D_3_24	MW-16D	Field Parameters	Conductivity	mS/cm	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.609	0.613	0.582	0.638	0.0172	0.0282	0.0170	-0.0409	-0.480
16D_3_25	MW-16D	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Lognormal	Nonparametric	0.672	0.235	0.0600	4.82	1.46	2.18	0.222	3.12	9.81
16D_3_26	MW-16D	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	2023-02-02 to 2024-02-01	Normal	Normal	-69.3	-102	-200	85.9	88.6	-1.28	72.1	0.522	-0.454
16D_3_27	MW-16D	Field Parameters	Temperature	°C	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	13.1	11.8	3.90	22.5	5.88	0.450	5.04	0.226	-0.871
16D_3_28	MW-16D	Field Parameters	Turbidity	NTU	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	6.49	6.93	4.32	8.31	1.33	0.206	1.44	-0.376	-1.07
16D_3_29	MW-16D	Field Parameters	pH	su	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.57	7.53	7.44	7.83	0.131	0.0173	0.0963	1.08	0.0978
16D_4_30	MW-16D	Other	Bicarbonate	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	394	392	380	430	15	0.0380	11.9	1.51	3.18
16D_4_32	MW-16D	Other	Hardness	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	105	102	96.0	124	9.45	0.0903	7.41	1.25	0.739
16D_4_33	MW-16D	Other	Magnesium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	7.36	7.36	6.99	7.69	0.220	0.0299	0.126	-0.0421	-0.100
16D_4_34	MW-16D	Other	Potassium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	9.53	9.51	9.18	9.90	0.265	0.0278	0.363	0.101	-1.65
16D_4_35	MW-16D	Other	Sodium	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	110	111	95.0	116	6.28	0.0571	5.19	-1.58	3.04
16D_4_36	MW-16D	Other	Total Suspended Solids	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	6.79	5.70	2.00	14.0	4.51	0.665	4.74	0.583	-1.30
16D_5_37	MW-16D	Part 115	Copper	mg/L	10	9	90%	2023-02-02 to 2024-02-01		Nonparametric	0.0100	0.0100	0.0100	0.0100	NA	NA	0	NA	NA
16D_5_38	MW-16D	Part 115	Iron	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal; Normal	Normal	0.276	0.280	0.0600	0.480	0.144	0.521	0.163	-0.189	-0.960
16D_5_42	MW-16D	Part 115	Zinc	mg/L	10	0	0%	2023-02-02 to 2024-02-01	Gamma; Lognormal	Gamma	0.0689	0.0240	0.00800	0.271	0.0910	1.32	0.0215	1.62	1.71
7B_1_01	MW-7B	Appendix III	Boron	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	3.00	3.00	2.90	3.17	0.0824	0.0275	0.0889	0.632	0.144
7B_1_02	MW-7B	Appendix III	Calcium	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	9.14	9.22	8.24	10.2	0.511	0.0559	0.548	0.362	1.24
7B_1_03	MW-7B	Appendix III	Chloride	mg/L	11	10	91%	2022-03-09 to 2024-01-30		Nonparametric	1.90	1.90	1.90	1.90	NA	NA	0	NA	NA
7B_1_04	MW-7B	Appendix III	Fluoride	mg/L	11	10	91%	2022-03-09 to 2024-01-30		Nonparametric	0.300	0.300	0.300	0.300	NA	NA	0	NA	NA
7B_1_05	MW-7B	Appendix III	Sulfate	mg/L	11	10	91%	2022-03-09 to 2024-01-30		Nonparametric	1.30	1.30	1.30	1.30	NA	NA	0	NA	NA
7B_1_06	MW-7B	Appendix III	Total Dissolved Solids	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	366	366	356	376	6.98	0.0191	5.93	0.203	-0.874
7B_1_07	MW-7B	Appendix III	pH, Field	su	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	7.96	7.90	7.73	8.17	0.160	0.0201	0.207	0.119	-1.73
7B_2_04	MW-7B	Appendix IV	Fluoride	mg/L	11	10	91%	2022-03-09 to 2024-01-30		Nonparametric	0.300	0.300	0.300	0.300	NA	NA	0	NA	NA
7B_2_09	MW-7B	Appendix IV	Arsenic	mg/L	11	9	82%	2022-03-09 to 2024-01-30		Nonparametric	0.00300	0.00300	0.00300	0.00300	0	0	0	NA	NA
7B_2_10	MW-7B	Appendix IV	Barium	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.00918	0.00900	0.00800	0.0110	0.000982	0.107	0.00148	0.346	-0.587
7B_2_15	MW-7B	Appendix IV	Lead	mg/L	11	10	91%	2022-03-09 to 2024-01-30		Nonparametric	0.0120	0.0120	0.0120	0.0120	NA	NA	0	NA	NA
7B_2_16	MW-7B	Appendix IV	Lithium	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Normal	Normal	0.0316	0.0320	0.0280	0.0340	0.00150	0.0475	0.00148	-1.19	3.41
7B_2_20	MW-7B	Appendix IV	Radium-226/228	pCi/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	1.21	1.31	0.378	2.43	0.656	0.543	0.681	0.292	-0.600
7B_3_24	MW-7B	Field Parameters	Conductivity	mS/cm	11	0	0%	2022-03-09 to 2024-01-30	Nonparametric	Nonparametric	0.595	0.586	0.565	0.730	0.0453	0.0761	0.00889	3.16	10.3
7B_3_25	MW-7B	Field Parameters	Dissolved Oxygen	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal	Gamma	0.232	0.110	0.0200	0.850	0.271	1.17	0.0593	1.82	2.21
7B_3_26	MW-7B	Field Parameters	Oxidation Reduction Potential	mV	11	0	0%	2022-03-09 to 2024-01-30	Nonparametric	Nonparametric	-100	-109	-153	19.2	49.9	-0.497	31.4	1.64	2.66
7B_3_27	MW-7B	Field Parameters	Temperature	°C	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	12.7	13.3	9.40	14.9	1.64	0.129	1.19	-0.738	-0.0914
7B_3_28	MW-7B	Field Parameters	Turbidity	NTU	11	0	0%	2022-03-09 to 2024-01-30	Normal	Normal	4.48	5.25	0.0200	7.01	2.30	0.512	1.69	-0.990	-0.0429
7B_3_29	MW-7B	Field Parameters	pH	su	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	7.96	7.90	7.73	8.17	0.160	0.0201	0.207	0.119	-1.73
7B_4_30	MW-7B	Other	Bicarbonate	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	395	390	380	418	9.77	0.0247	7.41	1.19	2.73
7B_4_32	MW-7B	Other	Hardness	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Nonparametric	Nonparametric	31.8	30.0	29.0	38.0	3.84	0.121	1.48	1.11	-0.773

(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
7B_4_33	MW-7B	Other	Magnesium	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	2.78	2.79	2.43	2.99	0.143	0.0515	0.0593	-1.26	3.47
7B_4_34	MW-7B	Other	Potassium	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Nonparametric	Nonparametric	5.56	5.61	4.80	5.85	0.275	0.0495	0.119	-2.38	6.97
7B_4_35	MW-7B	Other	Sodium	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Nonparametric	Nonparametric	132	137	87.5	146	16.5	0.125	4.44	-2.29	5.53
7B_4_36	MW-7B	Other	Total Suspended Solids	mg/L	11	10	91%	2022-03-09 to 2024-01-30		Nonparametric	1.00	1.00	1.00	1.00	NA	NA	0	NA	NA
7B_5_38	MW-7B	Part 115	Iron	mg/L	11	0	0%	2022-03-09 to 2024-01-30	Gamma; Lognormal; Normal	Normal	0.0591	0.0600	0.0300	0.0900	0.0217	0.367	0.0296	0.142	-1.16

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
100C_1_01	MW-100C	Appendix III	Boron	mg/L	8	0	0%	0.850	0.096	0.241	0.188	0.833	0.064	0.252	0.143	0.247	>= 0.10	0.646	0.05 <= p < 0.10	0.063	Gamma; Lognormal; Normal	Normal
100C_1_02	MW-100C	Appendix III	Calcium	mg/L	8	0	0%	0.879	0.184	0.199	0.464	0.877	0.176	0.198	0.471	0.215	>= 0.10	0.512	>= 0.10	0.042	Gamma; Lognormal; Normal	Normal
100C_1_03	MW-100C	Appendix III	Chloride	mg/L	8	0	0%	0.793	0.024	0.264	0.102	0.841	0.077	0.257	0.125	0.269	>= 0.10	0.679	0.05 <= p < 0.10	0.406	Gamma; Lognormal; Normal	Normal
100C_1_04	MW-100C	Appendix III	Fluoride	mg/L	8	7	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_1_05	MW-100C	Appendix III	Sulfate	mg/L	8	0	0%	0.763	0.011	0.269	0.091	0.871	0.153	0.216	0.331	0.248	>= 0.10	0.596	>= 0.10	0.572	Gamma; Lognormal; Normal	Normal
100C_1_06	MW-100C	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	0.879	0.186	0.292	0.044	0.869	0.148	0.298	0.035	0.290	0.05 <= p < 0.10	0.530	>= 0.10	0.032	Gamma; Lognormal; Normal	Normal
100C_1_07	MW-100C	Appendix III	pH, Field	su	8	0	0%	0.928	0.499	0.203	0.427	0.930	0.513	0.202	0.433	0.215	>= 0.10	0.358	>= 0.10	0.015	Gamma; Lognormal; Normal	Normal
100C_2_04	MW-100C	Appendix IV	Fluoride	mg/L	8	7	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_2_08	MW-100C	Appendix IV	Antimony	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_2_09	MW-100C	Appendix IV	Arsenic	mg/L	8	7	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_2_10	MW-100C	Appendix IV	Barium	mg/L	8	0	0%	0.937	0.586	0.232	0.231	0.936	0.576	0.231	0.235	0.234	>= 0.10	0.404	>= 0.10	0.096	Gamma; Lognormal; Normal	Normal
100C_2_11	MW-100C	Appendix IV	Beryllium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_2_12	MW-100C	Appendix IV	Cadmium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_2_13	MW-100C	Appendix IV	Chromium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_2_14	MW-100C	Appendix IV	Cobalt	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_2_15	MW-100C	Appendix IV	Lead	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_2_16	MW-100C	Appendix IV	Lithium	mg/L	8	0	0%	0.948	0.687	0.179	0.631	0.938	0.594	0.185	0.579	0.197	>= 0.10	0.310	>= 0.10	0.077	Gamma; Lognormal; Normal	Normal
100C_2_17	MW-100C	Appendix IV	Mercury	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_2_18	MW-100C	Appendix IV	Molybdenum	mg/L	8	5	62%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.145		Nonparametric
100C_2_20	MW-100C	Appendix IV	Radium-226/228	pCi/L	8	0	0%	0.962	0.829	0.123	0.976	0.953	0.743	0.141	0.909	0.144	>= 0.10	0.207	>= 0.10	0.413	Gamma; Lognormal; Normal	Normal
100C_2_22	MW-100C	Appendix IV	Selenium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_2_23	MW-100C	Appendix IV	Thallium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_3_24	MW-100C	Field Parameters	Conductivity	mS/cm	8	0	0%	0.924	0.463	0.203	0.431	0.923	0.454	0.204	0.420	0.217	>= 0.10	0.396	>= 0.10	0.016	Gamma; Lognormal; Normal	Normal
100C_3_25	MW-100C	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.595	0.000	0.349	0.005	NA	NA	NA	NA	NA		NA		NA	Nonparametric	Nonparametric
100C_3_26	MW-100C	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	0.921	0.436	0.196	0.484	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
100C_3_27	MW-100C	Field Parameters	Temperature	°C	8	0	0%	0.935	0.565	0.169	0.720	0.929	0.503	0.168	0.731	0.187	>= 0.10	0.337	>= 0.10	0.112	Gamma; Lognormal; Normal	Normal
100C_3_28	MW-100C	Field Parameters	Turbidity	NTU	8	0	0%	0.864	0.133	0.256	0.126	0.768	0.013	0.348	0.005	0.331	0.01 <= p < 0.05	0.823	0.01 <= p < 0.05	0.729	Normal	Normal
100C_3_29	MW-100C	Field Parameters	pH	su	8	0	0%	0.928	0.499	0.203	0.427	0.930	0.513	0.202	0.433	0.215	>= 0.10	0.358	>= 0.10	0.015	Gamma; Lognormal; Normal	Normal
100C_4_30	MW-100C	Other	Bicarbonate	mg/L	8	0	0%	0.545	0.000	0.387	0.001	0.494	0.000	0.438	0.000	0.430	< 0.01	1.985	< 0.01	0.431	Nonparametric	Nonparametric
100C_4_31	MW-100C	Other	Carbonate	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_4_32	MW-100C	Other	Hardness	mg/L	8	0	0%	0.820	0.047	0.322	0.015	0.814	0.040	0.325	0.013	0.339	< 0.01	0.793	0.01 <= p < 0.05	0.069	Nonparametric	Nonparametric
100C_4_33	MW-100C	Other	Magnesium	mg/L	8	0	0%	0.951	0.718	0.175	0.665	0.947	0.686	0.179	0.629	0.190	>= 0.10	0.287	>= 0.10	0.046	Gamma; Lognormal; Normal	Normal
100C_4_34	MW-100C	Other	Potassium	mg/L	8	0	0%	0.984	0.980	0.122	0.979	0.981	0.967	0.125	0.970	0.111	>= 0.10	0.174	>= 0.10	0.040	Gamma; Lognormal; Normal	Normal
100C_4_35	MW-100C	Other	Sodium	mg/L	8	0	0%	0.901	0.293	0.266	0.098	0.925	0.473	0.246	0.164	0.262	>= 0.10	0.428	>= 0.10	0.182	Gamma; Lognormal; Normal	Normal
100C_4_36	MW-100C	Other	Total Suspended Solids	mg/L	8	2	25%	0.649	0.002	0.349	0.021	0.801	0.060	0.266	0.204	0.304	>= 0.10	0.805	0.01 <= p < 0.05	0.752	Gamma; Lognormal	Gamma
100C_5_37	MW-100C	Part 115	Copper	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_5_38	MW-100C	Part 115	Iron	mg/L	8	0	0%	0.926	0.480	0.192	0.520	0.874	0.166	0.254	0.132	0.223	>= 0.10	0.434	>= 0.10	0.364	Gamma; Lognormal; Normal	Normal
100C_5_39	MW-100C	Part 115	Nickel	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_5_40	MW-100C	Part 115	Silver	mg/L	8	8	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
100C_5_41	MW-100C	Part 115	Vanadium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100C_5_42	MW-100C	Part 115	Zinc	mg/L	8	7	88%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_1_01	MW-100D	Appendix III	Boron	mg/L	8	0	0%	0.843	0.082	0.242	0.181	0.824	0.051	0.256	0.128	0.239	>= 0.10	0.625	0.05 <= p < 0.10	0.061	Gamma; Lognormal; Normal	Normal
100D_1_02	MW-100D	Appendix III	Calcium	mg/L	8	0	0%	0.572	0.000	0.397	0.001	0.693	0.002	0.310	0.023	0.345	< 0.01	1.311	< 0.01	0.434	Nonparametric	Nonparametric
100D_1_03	MW-100D	Appendix III	Chloride	mg/L	8	4	50%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.367		Nonparametric
100D_1_04	MW-100D	Appendix III	Fluoride	mg/L	8	5	62%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.289		Nonparametric
100D_1_05	MW-100D	Appendix III	Sulfate	mg/L	8	1	12%	0.719	0.006	0.309	0.041	0.884	0.243	0.246	0.228	0.278	>= 0.10	0.657	0.05 <= p < 0.10	0.507	Gamma; Lognormal	Gamma
100D_1_06	MW-100D	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	0.829	0.058	0.278	0.068	0.855	0.106	0.266	0.098	0.270	>= 0.10	0.585	>= 0.10	0.076	Gamma; Lognormal; Normal	Normal
100D_1_07	MW-100D	Appendix III	pH, Field	su	8	0	0%	0.957	0.777	0.137	0.928	0.956	0.774	0.139	0.918	0.154	>= 0.10	0.217	>= 0.10	0.029	Gamma; Lognormal; Normal	Normal
100D_2_04	MW-100D	Appendix IV	Fluoride	mg/L	8	5	62%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.289		Nonparametric
100D_2_08	MW-100D	Appendix IV	Antimony	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_2_09	MW-100D	Appendix IV	Arsenic	mg/L	8	2	25%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.000		Nonparametric
100D_2_10	MW-100D	Appendix IV	Barium	mg/L	8	0	0%	0.935	0.563	0.241	0.185	0.925	0.474	0.265	0.100	0.266	>= 0.10	0.415	>= 0.10	0.183	Gamma; Lognormal; Normal	Normal
100D_2_11	MW-100D	Appendix IV	Beryllium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_2_12	MW-100D	Appendix IV	Cadmium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_2_13	MW-100D	Appendix IV	Chromium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_2_14	MW-100D	Appendix IV	Cobalt	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_2_15	MW-100D	Appendix IV	Lead	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_2_16	MW-100D	Appendix IV	Lithium	mg/L	8	0	0%	0.647	0.001	0.340	0.007	0.710	0.003	0.318	0.017	0.332	0.01 <= p < 0.05	1.125	< 0.01	0.217	Nonparametric	Nonparametric
100D_2_17	MW-100D	Appendix IV	Mercury	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_2_18	MW-100D	Appendix IV	Molybdenum	mg/L	8	1	12%	0.951	0.739	0.181	0.698	0.966	0.868	0.174	0.750	0.194	>= 0.10	0.253	>= 0.10	0.181	Gamma; Lognormal; Normal	Normal
100D_2_20	MW-100D	Appendix IV	Radium-226/228	pCi/L	8	0	0%	0.664	0.001	0.342	0.006	0.909	0.344	0.183	0.595	0.236	>= 0.10	0.601	>= 0.10	0.751	Gamma; Lognormal	Gamma
100D_2_22	MW-100D	Appendix IV	Selenium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_2_23	MW-100D	Appendix IV	Thallium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_3_24	MW-100D	Field Parameters	Conductivity	mS/cm	8	0	0%	0.571	0.000	0.452	0.000	0.589	0.000	0.445	0.000	0.448	< 0.01	1.617	< 0.01	0.079	Nonparametric	Nonparametric
100D_3_25	MW-100D	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.676	0.001	0.349	0.005	NA	NA	NA	NA	NA		NA		NA	Nonparametric	Nonparametric
100D_3_26	MW-100D	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	0.835	0.068	0.229	0.248	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
100D_3_27	MW-100D	Field Parameters	Temperature	°C	8	0	0%	0.931	0.522	0.210	0.378	0.918	0.418	0.228	0.257	0.230	>= 0.10	0.364	>= 0.10	0.135	Gamma; Lognormal; Normal	Normal
100D_3_28	MW-100D	Field Parameters	Turbidity	NTU	8	0	0%	0.944	0.649	0.188	0.551	0.922	0.444	0.178	0.640	0.199	>= 0.10	0.310	>= 0.10	0.345	Gamma; Lognormal; Normal	Normal
100D_3_29	MW-100D	Field Parameters	pH	su	8	0	0%	0.957	0.777	0.137	0.928	0.956	0.774	0.139	0.918	0.154	>= 0.10	0.217	>= 0.10	0.029	Gamma; Lognormal; Normal	Normal
100D_4_30	MW-100D	Other	Bicarbonate	mg/L	8	0	0%	0.691	0.002	0.428	0.000	0.708	0.003	0.421	0.000	0.425	< 0.01	1.236	< 0.01	0.053	Nonparametric	Nonparametric
100D_4_31	MW-100D	Other	Carbonate	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_4_32	MW-100D	Other	Hardness	mg/L	8	0	0%	0.841	0.076	0.270	0.090	0.919	0.421	0.189	0.550	0.211	>= 0.10	0.420	>= 0.10	0.490	Gamma; Lognormal; Normal	Normal
100D_4_33	MW-100D	Other	Magnesium	mg/L	8	0	0%	0.692	0.002	0.275	0.076	0.788	0.021	0.261	0.112	0.278	0.05 <= p < 0.10	0.852	0.01 <= p < 0.05	0.363	Gamma; Lognormal; Normal	Normal
100D_4_34	MW-100D	Other	Potassium	mg/L	8	0	0%	0.941	0.622	0.161	0.783	0.950	0.709	0.155	0.829	0.165	>= 0.10	0.233	>= 0.10	0.071	Gamma; Lognormal; Normal	Normal
100D_4_35	MW-100D	Other	Sodium	mg/L	8	0	0%	0.892	0.245	0.244	0.173	0.882	0.199	0.254	0.135	0.250	>= 0.10	0.564	>= 0.10	0.057	Gamma; Lognormal; Normal	Normal
100D_4_36	MW-100D	Other	Total Suspended Solids	mg/L	8	3	38%	0.881	0.314	0.248	0.396	0.895	0.382	0.243	0.428	0.272	>= 0.10	0.390	>= 0.10	0.181	Gamma; Lognormal; Normal	Normal
100D_5_37	MW-100D	Part 115	Copper	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_5_38	MW-100D	Part 115	Iron	mg/L	8	0	0%	0.840	0.075	0.248	0.158	0.872	0.156	0.236	0.212	0.258	>= 0.10	0.540	>= 0.10	0.666	Gamma; Lognormal; 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
100D_5_39	MW-100D	Part 115	Nickel	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_5_40	MW-100D	Part 115	Silver	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_5_41	MW-100D	Part 115	Vanadium	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
100D_5_42	MW-100D	Part 115	Zinc	mg/L	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_1_01	MW-16C	Appendix III	Boron	mg/L	10	0	0%	0.849	0.056	0.324	0.004	0.854	0.065	0.321	0.004	0.327	< 0.01	0.776	0.01 <= p < 0.05	0.031	Lognormal; Normal	Normal
16C_1_02	MW-16C	Appendix III	Calcium	mg/L	10	0	0%	0.914	0.308	0.179	0.486	0.904	0.242	0.193	0.366	0.187	>= 0.10	0.457	>= 0.10	0.076	Gamma; Lognormal; Normal	Normal
16C_1_03	MW-16C	Appendix III	Chloride	mg/L	10	6	60%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.619		Nonparametric
16C_1_04	MW-16C	Appendix III	Fluoride	mg/L	10	8	80%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.000		Nonparametric
16C_1_05	MW-16C	Appendix III	Sulfate	mg/L	10	0	0%	0.470	0.000	0.483	0.000	0.537	0.000	0.456	0.000	0.472	< 0.01	2.247	< 0.01	0.295	Nonparametric	Nonparametric
16C_1_06	MW-16C	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	0.743	0.003	0.297	0.012	0.770	0.006	0.282	0.023	0.286	0.01 <= p < 0.05	1.000	< 0.01	0.081	Nonparametric	Nonparametric
16C_1_07	MW-16C	Appendix III	pH, Field	su	10	0	0%	0.885	0.150	0.191	0.379	0.885	0.148	0.193	0.360	0.198	>= 0.10	0.521	>= 0.10	0.015	Gamma; Lognormal; Normal	Normal
16C_2_04	MW-16C	Appendix IV	Fluoride	mg/L	10	8	80%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.000		Nonparametric
16C_2_08	MW-16C	Appendix IV	Antimony	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_2_09	MW-16C	Appendix IV	Arsenic	mg/L	10	7	70%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.234		Nonparametric
16C_2_10	MW-16C	Appendix IV	Barium	mg/L	10	0	0%	0.827	0.031	0.261	0.052	0.851	0.060	0.238	0.111	0.254	0.05 <= p < 0.10	0.759	0.01 <= p < 0.05	0.255	Gamma; Lognormal; Normal	Normal
16C_2_11	MW-16C	Appendix IV	Beryllium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_2_12	MW-16C	Appendix IV	Cadmium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_2_13	MW-16C	Appendix IV	Chromium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_2_14	MW-16C	Appendix IV	Cobalt	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_2_15	MW-16C	Appendix IV	Lead	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_2_16	MW-16C	Appendix IV	Lithium	mg/L	10	0	0%	0.819	0.025	0.229	0.146	0.819	0.025	0.231	0.137	0.241	>= 0.10	0.888	0.01 <= p < 0.05	0.057	Gamma; Lognormal; Normal	Normal
16C_2_17	MW-16C	Appendix IV	Mercury	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_2_18	MW-16C	Appendix IV	Molybdenum	mg/L	10	8	80%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.178		Nonparametric
16C_2_20	MW-16C	Appendix IV	Radium-226/228	pCi/L	10	0	0%	0.932	0.470	0.143	0.815	0.901	0.225	0.176	0.509	0.182	>= 0.10	0.349	>= 0.10	0.994	Gamma; Lognormal; Normal	Normal
16C_2_22	MW-16C	Appendix IV	Selenium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_2_23	MW-16C	Appendix IV	Thallium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_3_24	MW-16C	Field Parameters	Conductivity	mS/cm	10	0	0%	0.888	0.162	0.171	0.559	0.876	0.117	0.178	0.494	0.176	>= 0.10	0.506	>= 0.10	0.036	Gamma; Lognormal; Normal	Normal
16C_3_25	MW-16C	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	0.797	0.013	0.215	0.209	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
16C_3_26	MW-16C	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	0.948	0.648	0.164	0.626	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
16C_3_27	MW-16C	Field Parameters	Temperature	°C	10	0	0%	0.733	0.002	0.244	0.095	0.519	0.000	0.400	0.000	0.363	< 0.01	1.858	< 0.01	0.783	Normal	Normal
16C_3_28	MW-16C	Field Parameters	Turbidity	NTU	10	0	0%	0.599	0.000	0.390	0.000	0.959	0.779	0.189	0.394	0.250	>= 0.10	0.492	>= 0.10	1.199	Gamma; Lognormal	Gamma
16C_3_29	MW-16C	Field Parameters	pH	su	10	0	0%	0.885	0.150	0.191	0.379	0.885	0.148	0.193	0.360	0.198	>= 0.10	0.521	>= 0.10	0.015	Gamma; Lognormal; Normal	Normal
16C_4_30	MW-16C	Other	Bicarbonate	mg/L	10	0	0%	0.800	0.015	0.283	0.022	0.824	0.029	0.269	0.038	0.270	0.01 <= p < 0.05	0.895	0.01 <= p < 0.05	0.061	Nonparametric	Nonparametric
16C_4_31	MW-16C	Other	Carbonate	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_4_32	MW-16C	Other	Hardness	mg/L	10	0	0%	0.923	0.383	0.222	0.173	0.912	0.296	0.235	0.121	0.233	>= 0.10	0.470	>= 0.10	0.075	Gamma; Lognormal; Normal	Normal
16C_4_33	MW-16C	Other	Magnesium	mg/L	10	0	0%	0.929	0.440	0.219	0.189	0.924	0.395	0.224	0.167	0.235	>= 0.10	0.387	>= 0.10	0.086	Gamma; Lognormal; Normal	Normal
16C_4_34	MW-16C	Other	Potassium	mg/L	10	0	0%	0.879	0.127	0.234	0.125	0.871	0.103	0.249	0.080	0.254	0.05 <= p < 0.10	0.685	0.05 <= p < 0.10	0.132	Gamma; Lognormal; Normal	Normal
16C_4_35	MW-16C	Other	Sodium	mg/L	10	0	0%	0.749	0.003	0.316	0.006	0.766	0.006	0.304	0.009	0.320	< 0.01	1.140	< 0.01	0.401	Nonparametric	Nonparametric
16C_4_36	MW-16C	Other	Total Suspended Solids	mg/L	10	3	30%	0.646	0.001	0.302	0.053	0.846	0.113	0.292	0.071	0.316	0.05 <= p < 0.10	0.708	0.05 <= p < 0.10	1.388	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
16C_5_37	MW-16C	Part 115	Copper	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_5_38	MW-16C	Part 115	Iron	mg/L	10	0	0%	0.739	0.003	0.264	0.047	0.810	0.019	0.254	0.066	0.268	0.01 <= p < 0.05	0.897	0.01 <= p < 0.05	0.287	Lognormal	Lognormal
16C_5_39	MW-16C	Part 115	Nickel	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_5_40	MW-16C	Part 115	Silver	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_5_41	MW-16C	Part 115	Vanadium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16C_5_42	MW-16C	Part 115	Zinc	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_1_01	MW-16D	Appendix III	Boron	mg/L	10	0	0%	0.931	0.463	0.249	0.079	0.935	0.500	0.243	0.097	0.242	>= 0.10	0.434	>= 0.10	0.035	Gamma; Lognormal; Normal	Normal
16D_1_02	MW-16D	Appendix III	Calcium	mg/L	10	0	0%	0.914	0.313	0.238	0.112	0.919	0.347	0.234	0.125	0.232	>= 0.10	0.472	>= 0.10	0.020	Gamma; Lognormal; Normal	Normal
16D_1_03	MW-16D	Appendix III	Chloride	mg/L	10	0	0%	0.901	0.222	0.172	0.547	0.893	0.185	0.164	0.628	0.179	>= 0.10	0.471	>= 0.10	0.091	Gamma; Lognormal; Normal	Normal
16D_1_04	MW-16D	Appendix III	Fluoride	mg/L	10	8	80%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.075		Nonparametric
16D_1_05	MW-16D	Appendix III	Sulfate	mg/L	10	1	10%	0.854	0.081	0.259	0.082	0.942	0.606	0.191	0.451	0.211	>= 0.10	0.346	>= 0.10	0.355	Gamma; Lognormal; Normal	Normal
16D_1_06	MW-16D	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	0.909	0.276	0.243	0.098	0.915	0.316	0.238	0.110	0.232	>= 0.10	0.424	>= 0.10	0.023	Gamma; Lognormal; Normal	Normal
16D_1_07	MW-16D	Appendix III	pH, Field	su	10	0	0%	0.866	0.090	0.241	0.104	0.869	0.098	0.238	0.112	0.241	>= 0.10	0.650	0.05 <= p < 0.10	0.017	Gamma; Lognormal; Normal	Normal
16D_2_04	MW-16D	Appendix IV	Fluoride	mg/L	10	8	80%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.075		Nonparametric
16D_2_08	MW-16D	Appendix IV	Antimony	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_2_09	MW-16D	Appendix IV	Arsenic	mg/L	10	3	30%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.154		Nonparametric
16D_2_10	MW-16D	Appendix IV	Barium	mg/L	10	0	0%	0.952	0.691	0.174	0.531	0.953	0.707	0.173	0.542	0.185	>= 0.10	0.344	>= 0.10	0.033	Gamma; Lognormal; Normal	Normal
16D_2_11	MW-16D	Appendix IV	Beryllium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_2_12	MW-16D	Appendix IV	Cadmium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_2_13	MW-16D	Appendix IV	Chromium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_2_14	MW-16D	Appendix IV	Cobalt	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_2_15	MW-16D	Appendix IV	Lead	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_2_16	MW-16D	Appendix IV	Lithium	mg/L	10	0	0%	0.923	0.384	0.192	0.373	0.936	0.506	0.178	0.495	0.171	>= 0.10	0.428	>= 0.10	0.147	Gamma; Lognormal; Normal	Normal
16D_2_17	MW-16D	Appendix IV	Mercury	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_2_18	MW-16D	Appendix IV	Molybdenum	mg/L	10	0	0%	0.678	0.000	0.379	0.000	0.592	0.000	0.421	0.000	0.410	< 0.01	1.681	< 0.01	0.247	Nonparametric	Nonparametric
16D_2_20	MW-16D	Appendix IV	Radium-226/228	pCi/L	10	0	0%	0.905	0.246	0.181	0.463	0.985	0.987	0.119	0.954	0.130	>= 0.10	0.179	>= 0.10	0.637	Gamma; Lognormal; Normal	Normal
16D_2_22	MW-16D	Appendix IV	Selenium	mg/L	10	9	90%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_2_23	MW-16D	Appendix IV	Thallium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_3_24	MW-16D	Field Parameters	Conductivity	mS/cm	10	0	0%	0.974	0.925	0.172	0.552	0.973	0.919	0.176	0.508	0.179	>= 0.10	0.217	>= 0.10	0.028	Gamma; Lognormal; Normal	Normal
16D_3_25	MW-16D	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	0.442	0.000	0.476	0.000	0.852	0.061	0.249	0.080	0.375	< 0.01	1.364	< 0.01	1.261	Lognormal	Nonparametric
16D_3_26	MW-16D	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	0.945	0.611	0.241	0.103	NA	NA	NA	NA	NA		NA		NA	Normal	Normal
16D_3_27	MW-16D	Field Parameters	Temperature	°C	10	0	0%	0.960	0.789	0.143	0.812	0.935	0.498	0.161	0.653	0.146	>= 0.10	0.232	>= 0.10	0.521	Gamma; Lognormal; Normal	Normal
16D_3_28	MW-16D	Field Parameters	Turbidity	NTU	10	0	0%	0.939	0.544	0.207	0.263	0.919	0.350	0.234	0.125	0.232	>= 0.10	0.413	>= 0.10	0.218	Gamma; Lognormal; Normal	Normal
16D_3_29	MW-16D	Field Parameters	pH	su	10	0	0%	0.872	0.105	0.227	0.151	0.875	0.113	0.224	0.164	0.227	>= 0.10	0.586	>= 0.10	0.017	Gamma; Lognormal; Normal	Normal
16D_4_30	MW-16D	Other	Bicarbonate	mg/L	10	0	0%	0.829	0.032	0.254	0.066	0.840	0.044	0.246	0.087	0.243	>= 0.10	0.623	0.05 <= p < 0.10	0.037	Gamma; Lognormal; Normal	Normal
16D_4_31	MW-16D	Other	Carbonate	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_4_32	MW-16D	Other	Hardness	mg/L	10	0	0%	0.850	0.058	0.204	0.281	0.867	0.092	0.186	0.423	0.189	>= 0.10	0.579	>= 0.10	0.087	Gamma; Lognormal; Normal	Normal
16D_4_33	MW-16D	Other	Magnesium	mg/L	10	0	0%	0.948	0.641	0.153	0.727	0.948	0.645	0.158	0.686	0.149	>= 0.10	0.297	>= 0.10	0.030	Gamma; Lognormal; Normal	Normal
16D_4_34	MW-16D	Other	Potassium	mg/L	10	0	0%	0.922	0.377	0.181	0.462	0.923	0.380	0.178	0.491	0.188	>= 0.10	0.374	>= 0.10	0.028	Gamma; Lognormal; 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
16D_4_35	MW-16D	Other	Sodium	mg/L	10	0	0%	0.846	0.052	0.181	0.464	0.826	0.030	0.195	0.349	0.181	>= 0.10	0.628	0.05 <= p < 0.10	0.059	Gamma; Lognormal; Normal	Normal
16D_4_36	MW-16D	Other	Total Suspended Solids	mg/L	10	0	0%	0.882	0.139	0.176	0.513	0.921	0.369	0.161	0.651	0.181	>= 0.10	0.346	>= 0.10	0.731	Gamma; Lognormal; Normal	Normal
16D_5_37	MW-16D	Part 115	Copper	mg/L	10	9	90%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_5_38	MW-16D	Part 115	Iron	mg/L	10	0	0%	0.952	0.694	0.128	0.912	0.869	0.096	0.246	0.088	0.213	>= 0.10	0.447	>= 0.10	0.710	Gamma; Lognormal; Normal	Normal
16D_5_39	MW-16D	Part 115	Nickel	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_5_40	MW-16D	Part 115	Silver	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_5_41	MW-16D	Part 115	Vanadium	mg/L	10	10	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
16D_5_42	MW-16D	Part 115	Zinc	mg/L	10	0	0%	0.726	0.002	0.341	0.002	0.896	0.198	0.176	0.516	0.247	>= 0.10	0.700	0.05 <= p < 0.10	1.290	Gamma; Lognormal	Gamma
7B_1_01	MW-7B	Appendix III	Boron	mg/L	11	0	0%	0.943	0.555	0.134	0.842	0.946	0.593	0.134	0.842	0.144	>= 0.10	0.257	>= 0.10	0.027	Gamma; Lognormal; Normal	Normal
7B_1_02	MW-7B	Appendix III	Calcium	mg/L	11	0	0%	0.959	0.758	0.154	0.663	0.963	0.813	0.146	0.742	0.141	>= 0.10	0.301	>= 0.10	0.056	Gamma; Lognormal; Normal	Normal
7B_1_03	MW-7B	Appendix III	Chloride	mg/L	11	10	91%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_1_04	MW-7B	Appendix III	Fluoride	mg/L	11	10	91%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_1_05	MW-7B	Appendix III	Sulfate	mg/L	11	10	91%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_1_06	MW-7B	Appendix III	Total Dissolved Solids	mg/L	11	0	0%	0.926	0.375	0.153	0.665	0.927	0.382	0.152	0.683	0.161	>= 0.10	0.348	>= 0.10	0.019	Gamma; Lognormal; Normal	Normal
7B_1_07	MW-7B	Appendix III	pH, Field	su	11	0	0%	0.902	0.196	0.185	0.363	0.903	0.202	0.182	0.387	0.190	>= 0.10	0.526	>= 0.10	0.020	Gamma; Lognormal; Normal	Normal
7B_2_04	MW-7B	Appendix IV	Fluoride	mg/L	11	10	91%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_2_08	MW-7B	Appendix IV	Antimony	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_2_09	MW-7B	Appendix IV	Arsenic	mg/L	11	9	82%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.000		Nonparametric
7B_2_10	MW-7B	Appendix IV	Barium	mg/L	11	0	0%	0.896	0.165	0.210	0.192	0.896	0.165	0.192	0.309	0.201	>= 0.10	0.569	>= 0.10	0.106	Gamma; Lognormal; Normal	Normal
7B_2_11	MW-7B	Appendix IV	Beryllium	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_2_12	MW-7B	Appendix IV	Cadmium	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_2_13	MW-7B	Appendix IV	Chromium	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_2_14	MW-7B	Appendix IV	Cobalt	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_2_15	MW-7B	Appendix IV	Lead	mg/L	11	10	91%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_2_16	MW-7B	Appendix IV	Lithium	mg/L	11	0	0%	0.856	0.051	0.245	0.064	0.839	0.031	0.255	0.043	0.242	0.05 <= p < 0.10	0.826	0.01 <= p < 0.05	0.049	Gamma; Normal	Normal
7B_2_17	MW-7B	Appendix IV	Mercury	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_2_18	MW-7B	Appendix IV	Molybdenum	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_2_20	MW-7B	Appendix IV	Radium-226/228	pCi/L	11	0	0%	0.943	0.560	0.132	0.856	0.911	0.250	0.196	0.280	0.177	>= 0.10	0.392	>= 0.10	0.639	Gamma; Lognormal; Normal	Normal
7B_2_22	MW-7B	Appendix IV	Selenium	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_2_23	MW-7B	Appendix IV	Thallium	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_3_24	MW-7B	Field Parameters	Conductivity	mS/cm	11	0	0%	0.493	0.000	0.463	0.000	0.512	0.000	0.455	0.000	0.456	< 0.01	2.424	< 0.01	0.070	Nonparametric	Nonparametric
7B_3_25	MW-7B	Field Parameters	Dissolved Oxygen	mg/L	11	0	0%	0.692	0.000	0.332	0.001	0.923	0.345	0.194	0.293	0.254	0.05 <= p < 0.10	0.805	0.01 <= p < 0.05	1.043	Gamma; Lognormal	Gamma
7B_3_26	MW-7B	Field Parameters	Oxidation Reduction Potential	mV	11	0	0%	0.833	0.025	0.277	0.019	NA	NA	NA	NA	NA		NA		NA	Nonparametric	Nonparametric
7B_3_27	MW-7B	Field Parameters	Temperature	°C	11	0	0%	0.929	0.404	0.239	0.079	0.906	0.220	0.255	0.044	0.259	0.01 <= p < 0.05	0.529	>= 0.10	0.137	Gamma; Lognormal; Normal	Normal
7B_3_28	MW-7B	Field Parameters	Turbidity	NTU	11	0	0%	0.883	0.114	0.202	0.240	0.580	0.000	0.352	0.000	0.312	< 0.01	1.533	< 0.01	1.719	Normal	Normal
7B_3_29	MW-7B	Field Parameters	pH	su	11	0	0%	0.902	0.196	0.185	0.363	0.903	0.202	0.182	0.387	0.190	>= 0.10	0.526	>= 0.10	0.020	Gamma; Lognormal; Normal	Normal
7B_4_30	MW-7B	Other	Bicarbonate	mg/L	11	0	0%	0.860	0.058	0.235	0.092	0.867	0.070	0.234	0.095	0.241	0.05 <= p < 0.10	0.743	0.01 <= p < 0.05	0.024	Gamma; Lognormal; Normal	Normal
7B_4_31	MW-7B	Other	Carbonate	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_4_32	MW-7B	Other	Hardness	mg/L	11	0	0%	0.698	0.000	0.314	0.003	0.708	0.001	0.308	0.004	0.312	< 0.01	1.501	< 0.01	0.115	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
7B_4_33	MW-7B	Other	Magnesium	mg/L	11	0	0%	0.880	0.104	0.238	0.083	0.860	0.057	0.249	0.055	0.240	0.05 <= p < 0.10	0.644	0.05 <= p < 0.10	0.053	Gamma; Lognormal; Normal	Normal
7B_4_34	MW-7B	Other	Potassium	mg/L	11	0	0%	0.731	0.001	0.291	0.010	0.706	0.001	0.305	0.005	0.291	0.01 <= p < 0.05	1.235	< 0.01	0.052	Nonparametric	Nonparametric
7B_4_35	MW-7B	Other	Sodium	mg/L	11	0	0%	0.705	0.001	0.328	0.002	0.656	0.000	0.351	0.000	0.345	< 0.01	1.569	< 0.01	0.145	Nonparametric	Nonparametric
7B_4_36	MW-7B	Other	Total Suspended Solids	mg/L	11	10	91%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_5_37	MW-7B	Part 115	Copper	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_5_38	MW-7B	Part 115	Iron	mg/L	11	0	0%	0.931	0.424	0.120	0.931	0.923	0.342	0.128	0.883	0.122	>= 0.10	0.296	>= 0.10	0.394	Gamma; Lognormal; Normal	Normal
7B_5_39	MW-7B	Part 115	Nickel	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_5_40	MW-7B	Part 115	Silver	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_5_41	MW-7B	Part 115	Vanadium	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
7B_5_42	MW-7B	Part 115	Zinc	mg/L	11	11	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric

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.
100C_1_01	MW-100C	Appendix III	Boron	mg/L	8	0	0%	0.278	0.348	
100C_1_02	MW-100C	Appendix III	Calcium	mg/L	8	0	0%	0.580	0.050	*
100C_1_03	MW-100C	Appendix III	Chloride	mg/L	8	0	0%	0.501	0.090	
100C_1_04	MW-100C	Appendix III	Fluoride	mg/L	8	7	88%	NA	NA	
100C_1_05	MW-100C	Appendix III	Sulfate	mg/L	8	0	0%	0.361	0.223	
100C_1_06	MW-100C	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	-0.127	0.669	
100C_1_07	MW-100C	Appendix III	pH, Field	su	8	0	0%	0.103	0.728	
100C_2_04	MW-100C	Appendix IV	Fluoride	mg/L	8	7	88%	NA	NA	
100C_2_09	MW-100C	Appendix IV	Arsenic	mg/L	8	7	88%	NA	NA	
100C_2_10	MW-100C	Appendix IV	Barium	mg/L	8	0	0%	0.163	0.582	
100C_2_16	MW-100C	Appendix IV	Lithium	mg/L	8	0	0%	0.492	0.096	
100C_2_18	MW-100C	Appendix IV	Molybdenum	mg/L	8	5	62%	-0.167	0.648	
100C_2_20	MW-100C	Appendix IV	Radium-226/228	pCi/L	8	0	0%	-0.399	0.177	
100C_3_24	MW-100C	Field Parameters	Conductivity	mS/cm	8	0	0%	-0.065	0.826	
100C_3_25	MW-100C	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.084	0.777	
100C_3_26	MW-100C	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	-0.369	0.212	
100C_3_27	MW-100C	Field Parameters	Temperature	°C	8	0	0%	0.617	0.037	*
100C_3_28	MW-100C	Field Parameters	Turbidity	NTU	8	0	0%	-0.571	0.053	
100C_3_29	MW-100C	Field Parameters	pH	su	8	0	0%	0.103	0.728	
100C_4_30	MW-100C	Other	Bicarbonate	mg/L	8	0	0%	-0.033	0.911	
100C_4_32	MW-100C	Other	Hardness	mg/L	8	0	0%	0.605	0.041	*
100C_4_33	MW-100C	Other	Magnesium	mg/L	8	0	0%	0.058	0.845	
100C_4_34	MW-100C	Other	Potassium	mg/L	8	0	0%	-0.383	0.195	
100C_4_35	MW-100C	Other	Sodium	mg/L	8	0	0%	0.499	0.091	
100C_4_36	MW-100C	Other	Total Suspended Solids	mg/L	8	2	25%	-0.118	0.714	
100C_5_38	MW-100C	Part 115	Iron	mg/L	8	0	0%	-0.017	0.955	
100C_5_42	MW-100C	Part 115	Zinc	mg/L	8	7	88%	NA	NA	
100D_1_01	MW-100D	Appendix III	Boron	mg/L	8	0	0%	0.065	0.826	
100D_1_02	MW-100D	Appendix III	Calcium	mg/L	8	0	0%	-0.072	0.807	
100D_1_03	MW-100D	Appendix III	Chloride	mg/L	8	4	50%	-0.123	0.728	
100D_1_04	MW-100D	Appendix III	Fluoride	mg/L	8	5	62%	-0.142	0.698	
100D_1_05	MW-100D	Appendix III	Sulfate	mg/L	8	1	12%	-0.090	0.772	
100D_1_06	MW-100D	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	-0.197	0.505	
100D_1_07	MW-100D	Appendix III	pH, Field	su	8	0	0%	0.074	0.804	
100D_2_04	MW-100D	Appendix IV	Fluoride	mg/L	8	5	62%	-0.142	0.698	
100D_2_09	MW-100D	Appendix IV	Arsenic	mg/L	8	2	25%	NA	NA	
100D_2_10	MW-100D	Appendix IV	Barium	mg/L	8	0	0%	0.037	0.899	
100D_2_16	MW-100D	Appendix IV	Lithium	mg/L	8	0	0%	-0.078	0.792	
100D_2_18	MW-100D	Appendix IV	Molybdenum	mg/L	8	1	12%	0.516	0.095	
100D_2_20	MW-100D	Appendix IV	Radium-226/228	pCi/L	8	0	0%	-0.017	0.954	
100D_3_24	MW-100D	Field Parameters	Conductivity	mS/cm	8	0	0%	0.012	0.966	
100D_3_25	MW-100D	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.152	0.607	

(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.
100D_3_26	MW-100D	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	0.147	0.620	
100D_3_27	MW-100D	Field Parameters	Temperature	°C	8	0	0%	0.567	0.055	
100D_3_28	MW-100D	Field Parameters	Turbidity	NTU	8	0	0%	0.508	0.086	
100D_3_29	MW-100D	Field Parameters	pH	su	8	0	0%	0.074	0.804	
100D_4_30	MW-100D	Other	Bicarbonate	mg/L	8	0	0%	0.024	0.935	
100D_4_32	MW-100D	Other	Hardness	mg/L	8	0	0%	-0.010	0.972	
100D_4_33	MW-100D	Other	Magnesium	mg/L	8	0	0%	-0.041	0.891	
100D_4_34	MW-100D	Other	Potassium	mg/L	8	0	0%	0.315	0.287	
100D_4_35	MW-100D	Other	Sodium	mg/L	8	0	0%	0.359	0.224	
100D_4_36	MW-100D	Other	Total Suspended Solids	mg/L	8	3	38%	0.449	0.185	
100D_5_38	MW-100D	Part 115	Iron	mg/L	8	0	0%	0.466	0.115	
16C_1_01	MW-16C	Appendix III	Boron	mg/L	10	0	0%	0.281	0.306	
16C_1_02	MW-16C	Appendix III	Calcium	mg/L	10	0	0%	0.682	0.013	*
16C_1_03	MW-16C	Appendix III	Chloride	mg/L	10	6	60%	-0.047	0.895	
16C_1_04	MW-16C	Appendix III	Fluoride	mg/L	10	8	80%	NA	NA	
16C_1_05	MW-16C	Appendix III	Sulfate	mg/L	10	0	0%	0.023	0.934	
16C_1_06	MW-16C	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	0.319	0.244	
16C_1_07	MW-16C	Appendix III	pH, Field	su	10	0	0%	0.501	0.068	
16C_2_04	MW-16C	Appendix IV	Fluoride	mg/L	10	8	80%	NA	NA	
16C_2_09	MW-16C	Appendix IV	Arsenic	mg/L	10	7	70%	-0.167	0.648	
16C_2_10	MW-16C	Appendix IV	Barium	mg/L	10	0	0%	0.737	0.007	**
16C_2_16	MW-16C	Appendix IV	Lithium	mg/L	10	0	0%	-0.100	0.715	
16C_2_18	MW-16C	Appendix IV	Molybdenum	mg/L	10	8	80%	-0.500	0.157	
16C_2_20	MW-16C	Appendix IV	Radium-226/228	pCi/L	10	0	0%	-0.491	0.073	
16C_3_24	MW-16C	Field Parameters	Conductivity	mS/cm	10	0	0%	-0.251	0.359	
16C_3_25	MW-16C	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	-0.079	0.774	
16C_3_26	MW-16C	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	-0.251	0.360	
16C_3_27	MW-16C	Field Parameters	Temperature	°C	10	0	0%	-0.314	0.252	
16C_3_28	MW-16C	Field Parameters	Turbidity	NTU	10	0	0%	0.144	0.599	
16C_3_29	MW-16C	Field Parameters	pH	su	10	0	0%	0.501	0.068	
16C_4_30	MW-16C	Other	Bicarbonate	mg/L	10	0	0%	-0.016	0.954	
16C_4_32	MW-16C	Other	Hardness	mg/L	10	0	0%	0.706	0.010	**
16C_4_33	MW-16C	Other	Magnesium	mg/L	10	0	0%	0.558	0.042	*
16C_4_34	MW-16C	Other	Potassium	mg/L	10	0	0%	0.671	0.014	*
16C_4_35	MW-16C	Other	Sodium	mg/L	10	0	0%	0.698	0.011	*
16C_4_36	MW-16C	Other	Total Suspended Solids	mg/L	10	3	30%	0.190	0.538	
16C_5_38	MW-16C	Part 115	Iron	mg/L	10	0	0%	0.484	0.077	
16D_1_01	MW-16D	Appendix III	Boron	mg/L	10	0	0%	0.175	0.523	
16D_1_02	MW-16D	Appendix III	Calcium	mg/L	10	0	0%	0.522	0.057	
16D_1_03	MW-16D	Appendix III	Chloride	mg/L	10	0	0%	0.285	0.298	
16D_1_04	MW-16D	Appendix III	Fluoride	mg/L	10	8	80%	-0.500	0.157	
16D_1_05	MW-16D	Appendix III	Sulfate	mg/L	10	1	10%	0.450	0.113	

(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.
16D_1_06	MW-16D	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	0.107	0.697	
16D_1_07	MW-16D	Appendix III	pH, Field	su	10	0	0%	-0.111	0.685	
16D_2_04	MW-16D	Appendix IV	Fluoride	mg/L	10	8	80%	-0.500	0.157	
16D_2_09	MW-16D	Appendix IV	Arsenic	mg/L	10	3	30%	-0.274	0.375	
16D_2_10	MW-16D	Appendix IV	Barium	mg/L	10	0	0%	0.302	0.271	
16D_2_16	MW-16D	Appendix IV	Lithium	mg/L	10	0	0%	0.206	0.453	
16D_2_18	MW-16D	Appendix IV	Molybdenum	mg/L	10	0	0%	-0.079	0.772	
16D_2_20	MW-16D	Appendix IV	Radium-226/228	pCi/L	10	0	0%	-0.253	0.356	
16D_2_22	MW-16D	Appendix IV	Selenium	mg/L	10	9	90%	NA	NA	
16D_3_24	MW-16D	Field Parameters	Conductivity	mS/cm	10	0	0%	0.305	0.266	
16D_3_25	MW-16D	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	0.032	0.908	
16D_3_26	MW-16D	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	0.502	0.067	
16D_3_27	MW-16D	Field Parameters	Temperature	°C	10	0	0%	0.449	0.101	
16D_3_28	MW-16D	Field Parameters	Turbidity	NTU	10	0	0%	0.019	0.946	
16D_3_29	MW-16D	Field Parameters	pH	su	10	0	0%	-0.160	0.558	
16D_4_30	MW-16D	Other	Bicarbonate	mg/L	10	0	0%	-0.197	0.471	
16D_4_32	MW-16D	Other	Hardness	mg/L	10	0	0%	0.470	0.086	
16D_4_33	MW-16D	Other	Magnesium	mg/L	10	0	0%	0.152	0.578	
16D_4_34	MW-16D	Other	Potassium	mg/L	10	0	0%	-0.303	0.268	
16D_4_35	MW-16D	Other	Sodium	mg/L	10	0	0%	-0.032	0.908	
16D_4_36	MW-16D	Other	Total Suspended Solids	mg/L	10	0	0%	-0.115	0.674	
16D_5_37	MW-16D	Part 115	Copper	mg/L	10	9	90%	NA	NA	
16D_5_38	MW-16D	Part 115	Iron	mg/L	10	0	0%	0.307	0.262	
16D_5_42	MW-16D	Part 115	Zinc	mg/L	10	0	0%	0.588	0.032	*
7B_1_01	MW-7B	Appendix III	Boron	mg/L	11	0	0%	-0.399	0.131	
7B_1_02	MW-7B	Appendix III	Calcium	mg/L	11	0	0%	-0.083	0.754	
7B_1_03	MW-7B	Appendix III	Chloride	mg/L	11	10	91%	NA	NA	
7B_1_04	MW-7B	Appendix III	Fluoride	mg/L	11	10	91%	NA	NA	
7B_1_05	MW-7B	Appendix III	Sulfate	mg/L	11	10	91%	NA	NA	
7B_1_06	MW-7B	Appendix III	Total Dissolved Solids	mg/L	11	0	0%	-0.517	0.050	
7B_1_07	MW-7B	Appendix III	pH, Field	su	11	0	0%	0.041	0.876	
7B_2_04	MW-7B	Appendix IV	Fluoride	mg/L	11	10	91%	NA	NA	
7B_2_09	MW-7B	Appendix IV	Arsenic	mg/L	11	9	82%	NA	NA	
7B_2_10	MW-7B	Appendix IV	Barium	mg/L	11	0	0%	0.374	0.157	
7B_2_15	MW-7B	Appendix IV	Lead	mg/L	11	10	91%	NA	NA	
7B_2_16	MW-7B	Appendix IV	Lithium	mg/L	11	0	0%	-0.296	0.263	
7B_2_20	MW-7B	Appendix IV	Radium-226/228	pCi/L	11	0	0%	-0.521	0.049	*
7B_3_24	MW-7B	Field Parameters	Conductivity	mS/cm	11	0	0%	0.046	0.863	
7B_3_25	MW-7B	Field Parameters	Dissolved Oxygen	mg/L	11	0	0%	0.072	0.784	
7B_3_26	MW-7B	Field Parameters	Oxidation Reduction Potential	mV	11	0	0%	0.047	0.860	
7B_3_27	MW-7B	Field Parameters	Temperature	°C	11	0	0%	-0.237	0.369	
7B_3_28	MW-7B	Field Parameters	Turbidity	NTU	11	0	0%	-0.146	0.582	

(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.
7B_3_29	MW-7B	Field Parameters	pH	su	11	0	0%	0.041	0.876	
7B_4_30	MW-7B	Other	Bicarbonate	mg/L	11	0	0%	0.268	0.311	
7B_4_32	MW-7B	Other	Hardness	mg/L	11	0	0%	0.085	0.747	
7B_4_33	MW-7B	Other	Magnesium	mg/L	11	0	0%	-0.170	0.519	
7B_4_34	MW-7B	Other	Potassium	mg/L	11	0	0%	-0.066	0.803	
7B_4_35	MW-7B	Other	Sodium	mg/L	11	0	0%	-0.142	0.592	
7B_4_36	MW-7B	Other	Total Suspended Solids	mg/L	11	10	91%	NA	NA	
7B_5_38	MW-7B	Part 115	Iron	mg/L	11	0	0%	0.696	0.009	**

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 5: Outlier Counts by Date

Date	Count
2022-03-09	3
2022-05-19	1
2023-02-02	7
2023-05-30	2
2023-06-05	2
2023-07-05	1
2023-07-10	1
2023-08-14	3
2024-01-30	1
2024-02-07	5

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	Value
100C_2_18	MW-100C	Appendix IV	Molybdenum	mg/L	8	5	62%	3	2023-08-14	0.00700
100C_3_25	MW-100C	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	8	2023-08-14	0.230
100C_4_30	MW-100C	Other	Bicarbonate	mg/L	8	0	0%	8	2023-07-10	100
100C_4_36	MW-100C	Other	Total Suspended Solids	mg/L	8	2	25%	6	2023-08-14	8.90
100D_1_02	MW-100D	Appendix III	Calcium	mg/L	8	0	0%	8	2024-02-07	20.2
100D_1_05	MW-100D	Appendix III	Sulfate	mg/L	8	1	12%	7	2024-02-07	31.0
100D_2_16	MW-100D	Appendix IV	Lithium	mg/L	8	0	0%	8	2023-06-05	0.0310
100D_2_20	MW-100D	Appendix IV	Radium-226/228	pCi/L	8	0	0%	8	2023-06-05	5.06
100D_3_24	MW-100D	Field Parameters	Conductivity	mS/cm	8	0	0%	8	2024-02-07	0.737
100D_4_30	MW-100D	Other	Bicarbonate	mg/L	8	0	0%	8	2024-02-07	443
100D_4_33	MW-100D	Other	Magnesium	mg/L	8	0	0%	8	2024-02-07	3.68
16C_1_03	MW-16C	Appendix III	Chloride	mg/L	10	6	60%	4	2023-02-02	8.00
16C_1_05	MW-16C	Appendix III	Sulfate	mg/L	10	0	0%	10	2023-02-02	19.0
16C_2_09	MW-16C	Appendix IV	Arsenic	mg/L	10	7	70%	3	2023-02-02	0.00200
16C_3_27	MW-16C	Field Parameters	Temperature	°C	10	0	0%	10	2023-07-05	1.10
16C_3_28	MW-16C	Field Parameters	Turbidity	NTU	10	0	0%	10	2023-02-02	34.2
16C_4_30	MW-16C	Other	Bicarbonate	mg/L	10	0	0%	10	2023-05-30	470
16C_4_36	MW-16C	Other	Total Suspended Solids	mg/L	10	3	30%	7	2023-02-02	40.0
16D_2_18	MW-16D	Appendix IV	Molybdenum	mg/L	10	0	0%	10	2023-02-02	0.00500
16D_3_25	MW-16D	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	10	2023-02-02	4.82
16D_4_30	MW-16D	Other	Bicarbonate	mg/L	10	0	0%	10	2023-05-30	430
7B_3_24	MW-7B	Field Parameters	Conductivity	mS/cm	11	0	0%	11	2022-03-09	0.730
7B_3_25	MW-7B	Field Parameters	Dissolved Oxygen	mg/L	11	0	0%	11	2022-03-09	0.850
7B_3_26	MW-7B	Field Parameters	Oxidation Reduction Potential	mV	11	0	0%	11	2022-03-09	19.2
7B_4_34	MW-7B	Other	Potassium	mg/L	11	0	0%	11	2022-05-19	4.80
7B_4_35	MW-7B	Other	Sodium	mg/L	11	0	0%	11	2024-01-30	87.5

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	
100C_1_01	MW-100C	Appendix III	Boron	mg/L	0%	2	0	3	3	8	0.249		0.214		0.219		2	0	3	3	8	0.249		0.214		0.219	
100C_1_02	MW-100C	Appendix III	Calcium	mg/L	0%	2	0	3	3	8	0.062		0.002	**	0.001	**	2	0	3	3	8	0.062		0.002	**	0.001	**
100C_1_03	MW-100C	Appendix III	Chloride	mg/L	0%	2	0	3	3	8	0.044	*	0.031	*	0.010	**	2	0	3	3	8	0.044	*	0.031	*	0.010	**
100C_1_04	MW-100C	Appendix III	Fluoride	mg/L	88%	2	0	3	3	8	0.435		0.507		0.507		0	0	0	1	1	NA		NA		NA	
100C_1_05	MW-100C	Appendix III	Sulfate	mg/L	0%	2	0	3	3	8	0.062		0.062		0.012	*	2	0	3	3	8	0.062		0.062		0.012	*
100C_1_06	MW-100C	Appendix III	Total Dissolved Solids	mg/L	0%	2	0	3	3	8	0.164		0.127		0.127		2	0	3	3	8	0.164		0.127		0.127	
100C_1_07	MW-100C	Appendix III	pH, Field	su	0%	2	0	3	3	8	0.077		0.126		0.123		2	0	3	3	8	0.077		0.126		0.123	
100C_2_04	MW-100C	Appendix IV	Fluoride	mg/L	88%	2	0	3	3	8	0.435		0.507		0.507		0	0	0	1	1	NA		NA		NA	
100C_2_08	MW-100C	Appendix IV	Antimony	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100C_2_09	MW-100C	Appendix IV	Arsenic	mg/L	88%	2	0	3	3	8	NA		NA		NA		0	0	0	1	1	NA		NA		NA	
100C_2_10	MW-100C	Appendix IV	Barium	mg/L	0%	2	0	3	3	8	0.273		0.247		0.261		2	0	3	3	8	0.273		0.247		0.261	
100C_2_11	MW-100C	Appendix IV	Beryllium	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100C_2_12	MW-100C	Appendix IV	Cadmium	mg/L	100%	2	0	3	3	8	NA		NA		NA		NA	NA	NA	NA	NA	NA		NA		NA	
100C_2_13	MW-100C	Appendix IV	Chromium	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100C_2_14	MW-100C	Appendix IV	Cobalt	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100C_2_15	MW-100C	Appendix IV	Lead	mg/L	100%	2	0	3	3	8	NA		0.507		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100C_2_16	MW-100C	Appendix IV	Lithium	mg/L	0%	2	0	3	3	8	0.074		0.025	*	0.025	*	2	0	3	3	8	0.074		0.025	*	0.025	*
100C_2_17	MW-100C	Appendix IV	Mercury	mg/L	100%	2	0	3	3	8	NA		0.507		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100C_2_18	MW-100C	Appendix IV	Molybdenum	mg/L	62%	2	0	3	3	8	0.036	*	0.004	**	0.002	**	0	0	3	0	3	NA		NA		NA	
100C_2_20	MW-100C	Appendix IV	Radium-226/228	pCi/L	0%	2	0	3	3	8	0.574		0.637		0.650		2	0	3	3	8	0.574		0.637		0.650	
100C_2_22	MW-100C	Appendix IV	Selenium	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100C_2_23	MW-100C	Appendix IV	Thallium	mg/L	100%	2	0	3	3	8	NA		NA		NA		NA	NA	NA	NA	NA	NA		NA		NA	
100C_3_24	MW-100C	Field Parameters	Conductivity	mS/cm	0%	2	0	3	3	8	0.133		0.144		0.145		2	0	3	3	8	0.133		0.144		0.145	
100C_3_25	MW-100C	Field Parameters	Dissolved Oxygen	mg/L	0%	2	0	3	3	8	0.054		0.239		NA		2	0	3	3	8	0.054		0.239		NA	
100C_3_26	MW-100C	Field Parameters	Oxidation Reduction Potential	mV	0%	2	0	3	3	8	0.882		0.884		NA		2	0	3	3	8	0.882		0.884		NA	
100C_3_27	MW-100C	Field Parameters	Temperature	°C	0%	2	0	3	3	8	0.074		0.051		0.068		2	0	3	3	8	0.074		0.051		0.068	
100C_3_28	MW-100C	Field Parameters	Turbidity	NTU	0%	2	0	3	3	8	0.707		0.671		0.627		2	0	3	3	8	0.707		0.671		0.627	
100C_3_29	MW-100C	Field Parameters	pH	su	0%	2	0	3	3	8	0.077		0.126		0.123		2	0	3	3	8	0.077		0.126		0.123	
100C_4_30	MW-100C	Other	Bicarbonate	mg/L	0%	2	0	3	3	8	0.082		0.382		0.431		2	0	3	3	8	0.082		0.382		0.431	
100C_4_31	MW-100C	Other	Carbonate	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100C_4_32	MW-100C	Other	Hardness	mg/L	0%	2	0	3	3	8	0.060		0.006	**	0.007	**	2	0	3	3	8	0.060		0.006	**	0.007	**
100C_4_33	MW-100C	Other	Magnesium	mg/L	0%	2	0	3	3	8	0.320		0.342		0.345		2	0	3	3	8	0.320		0.342		0.345	
100C_4_34	MW-100C	Other	Potassium	mg/L	0%	2	0	3	3	8	0.506		0.724		0.721		2	0	3	3	8	0.506		0.724		0.721	
100C_4_35	MW-100C	Other	Sodium	mg/L	0%	2	0	3	3	8	0.077		0.010	**	0.007	**	2	0	3	3	8	0.077		0.010	**	0.007	**
100C_4_36	MW-100C	Other	Total Suspended Solids	mg/L	25%	2	0	3	3	8	0.945		0.707		0.872		1	0	3	2	6	0.659		0.752		0.769	
100C_5_37	MW-100C	Part 115	Copper	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100C_5_38	MW-100C	Part 115	Iron	mg/L	0%	2	0	3	3	8	0.405		0.811		0.954		2	0	3	3	8	0.405		0.811		0.954	
100C_5_39	MW-100C	Part 115	Nickel	mg/L	100%	2	0	3	3	8	NA		NA		0.507		NA	NA	NA	NA	NA	NA		NA		NA	
100C_5_40	MW-100C	Part 115	Silver	mg/L	100%	2	0	3	3	8	NA		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
100C_5_41	MW-100C	Part 115	Vanadium	mg/L	100%	2	0	3	3	8	NA	NA	0.507	NA	NA	NA	NA	NA	NA	NA	NA
100C_5_42	MW-100C	Part 115	Zinc	mg/L	88%	2	0	3	3	8	0.435	0.507	0.507	0	0	0	1	1	NA	NA	NA
100D_1_01	MW-100D	Appendix III	Boron	mg/L	0%	2	0	3	3	8	0.096	0.096	0.097	2	0	3	3	8	0.096	0.096	0.097
100D_1_02	MW-100D	Appendix III	Calcium	mg/L	0%	2	0	3	3	8	0.325	0.341	0.424	2	0	3	3	8	0.325	0.341	0.424
100D_1_03	MW-100D	Appendix III	Chloride	mg/L	50%	2	0	3	3	8	0.782	0.437	0.530	2	0	1	1	4	0.632	0.852	0.860
100D_1_04	MW-100D	Appendix III	Fluoride	mg/L	62%	2	0	3	3	8	0.061	0.046 *	0.041 *	2	0	0	1	3	0.221	0.638	0.644
100D_1_05	MW-100D	Appendix III	Sulfate	mg/L	12%	2	0	3	3	8	0.486	0.265	0.277	2	0	2	3	7	0.738	0.394	0.453
100D_1_06	MW-100D	Appendix III	Total Dissolved Solids	mg/L	0%	2	0	3	3	8	0.946	0.611	0.648	2	0	3	3	8	0.946	0.611	0.648
100D_1_07	MW-100D	Appendix III	pH, Field	su	0%	2	0	3	3	8	0.405	0.467	0.462	2	0	3	3	8	0.405	0.467	0.462
100D_2_04	MW-100D	Appendix IV	Fluoride	mg/L	62%	2	0	3	3	8	0.061	0.046 *	0.041 *	2	0	0	1	3	0.221	0.638	0.644
100D_2_08	MW-100D	Appendix IV	Antimony	mg/L	100%	2	0	3	3	8	NA	NA	0.507	NA	NA	NA	NA	NA	NA	NA	NA
100D_2_09	MW-100D	Appendix IV	Arsenic	mg/L	25%	2	0	3	3	8	0.143	0.132	0.132	2	0	1	3	6	NA	NA	0.000 ***
100D_2_10	MW-100D	Appendix IV	Barium	mg/L	0%	2	0	3	3	8	0.485	0.558	0.548	2	0	3	3	8	0.485	0.558	0.548
100D_2_11	MW-100D	Appendix IV	Beryllium	mg/L	100%	2	0	3	3	8	NA	NA	0.507	NA	NA	NA	NA	NA	NA	NA	NA
100D_2_12	MW-100D	Appendix IV	Cadmium	mg/L	100%	2	0	3	3	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
100D_2_13	MW-100D	Appendix IV	Chromium	mg/L	100%	2	0	3	3	8	NA	NA	0.507	NA	NA	NA	NA	NA	NA	NA	NA
100D_2_14	MW-100D	Appendix IV	Cobalt	mg/L	100%	2	0	3	3	8	NA	NA	0.507	NA	NA	NA	NA	NA	NA	NA	NA
100D_2_15	MW-100D	Appendix IV	Lead	mg/L	100%	2	0	3	3	8	NA	0.507	0.507	NA	NA	NA	NA	NA	NA	NA	NA
100D_2_16	MW-100D	Appendix IV	Lithium	mg/L	0%	2	0	3	3	8	0.478	0.733	0.785	2	0	3	3	8	0.478	0.733	0.785
100D_2_17	MW-100D	Appendix IV	Mercury	mg/L	100%	2	0	3	3	8	NA	0.507	0.507	NA	NA	NA	NA	NA	NA	NA	NA
100D_2_18	MW-100D	Appendix IV	Molybdenum	mg/L	12%	2	0	3	3	8	0.496	0.756	0.815	2	0	2	3	7	0.105	0.071	0.066
100D_2_20	MW-100D	Appendix IV	Radium-226/228	pCi/L	0%	2	0	3	3	8	0.096	0.339	0.123	2	0	3	3	8	0.096	0.339	0.123
100D_2_22	MW-100D	Appendix IV	Selenium	mg/L	100%	2	0	3	3	8	NA	NA	0.507	NA	NA	NA	NA	NA	NA	NA	NA
100D_2_23	MW-100D	Appendix IV	Thallium	mg/L	100%	2	0	3	3	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
100D_3_24	MW-100D	Field Parameters	Conductivity	mS/cm	0%	2	0	3	3	8	0.328	0.209	0.205	2	0	3	3	8	0.328	0.209	0.205
100D_3_25	MW-100D	Field Parameters	Dissolved Oxygen	mg/L	0%	2	0	3	3	8	0.316	0.297	NA	2	0	3	3	8	0.316	0.297	NA
100D_3_26	MW-100D	Field Parameters	Oxidation Reduction Potential	mV	0%	2	0	3	3	8	0.574	0.423	NA	2	0	3	3	8	0.574	0.423	NA
100D_3_27	MW-100D	Field Parameters	Temperature	°C	0%	2	0	3	3	8	0.074	0.079	0.106	2	0	3	3	8	0.074	0.079	0.106
100D_3_28	MW-100D	Field Parameters	Turbidity	NTU	0%	2	0	3	3	8	0.082	0.019 *	0.053	2	0	3	3	8	0.082	0.019 *	0.053
100D_3_29	MW-100D	Field Parameters	pH	su	0%	2	0	3	3	8	0.405	0.467	0.462	2	0	3	3	8	0.405	0.467	0.462
100D_4_30	MW-100D	Other	Bicarbonate	mg/L	0%	2	0	3	3	8	0.127	0.172	0.168	2	0	3	3	8	0.127	0.172	0.168
100D_4_31	MW-100D	Other	Carbonate	mg/L	100%	2	0	3	3	8	NA	NA	0.507	NA	NA	NA	NA	NA	NA	NA	NA
100D_4_32	MW-100D	Other	Hardness	mg/L	0%	2	0	3	3	8	0.531	0.421	0.473	2	0	3	3	8	0.531	0.421	0.473
100D_4_33	MW-100D	Other	Magnesium	mg/L	0%	2	0	3	3	8	0.277	0.360	0.387	2	0	3	3	8	0.277	0.360	0.387
100D_4_34	MW-100D	Other	Potassium	mg/L	0%	2	0	3	3	8	0.151	0.214	0.213	2	0	3	3	8	0.151	0.214	0.213
100D_4_35	MW-100D	Other	Sodium	mg/L	0%	2	0	3	3	8	0.125	0.008 **	0.006 **	2	0	3	3	8	0.125	0.008 **	0.006 **
100D_4_36	MW-100D	Other	Total Suspended Solids	mg/L	38%	2	0	3	3	8	0.744	0.873	0.854	1	0	3	1	5	0.186	0.250	0.214
100D_5_37	MW-100D	Part 115	Copper	mg/L	100%	2	0	3	3	8	NA	NA	0.507	NA	NA	NA	NA	NA	NA	NA	NA
100D_5_38	MW-100D	Part 115	Iron	mg/L	0%	2	0	3	3	8	0.116	0.146	0.102	2	0	3	3	8	0.116	0.146	0.102

(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
100D_5_39	MW-100D	Part 115	Nickel	mg/L	100%	2	0	3	3	8	NA	NA	0.507	NA	NA	NA	NA	NA	NA	NA	NA
100D_5_40	MW-100D	Part 115	Silver	mg/L	100%	2	0	3	3	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
100D_5_41	MW-100D	Part 115	Vanadium	mg/L	100%	2	0	3	3	8	NA	NA	0.507	NA	NA	NA	NA	NA	NA	NA	NA
100D_5_42	MW-100D	Part 115	Zinc	mg/L	100%	2	0	3	3	8	NA	NA	0.507	NA	NA	NA	NA	NA	NA	NA	NA
16C_1_01	MW-16C	Appendix III	Boron	mg/L	0%	2	3	2	3	10	0.521	0.586	0.583	2	3	2	3	10	0.521	0.586	0.583
16C_1_02	MW-16C	Appendix III	Calcium	mg/L	0%	2	3	2	3	10	0.110	0.113	0.122	2	3	2	3	10	0.110	0.113	0.122
16C_1_03	MW-16C	Appendix III	Chloride	mg/L	60%	2	3	2	3	10	0.818	0.847	0.861	2	0	1	1	4	0.407	0.821	0.822
16C_1_04	MW-16C	Appendix III	Fluoride	mg/L	80%	2	3	2	3	10	0.618	0.697	0.677	1	0	0	1	2	NA	NA	NA
16C_1_05	MW-16C	Appendix III	Sulfate	mg/L	0%	2	3	2	3	10	0.490	0.303	0.312	2	3	2	3	10	0.490	0.303	0.312
16C_1_06	MW-16C	Appendix III	Total Dissolved Solids	mg/L	0%	2	3	2	3	10	0.210	0.379	0.375	2	3	2	3	10	0.210	0.379	0.375
16C_1_07	MW-16C	Appendix III	pH, Field	su	0%	2	3	2	3	10	0.239	0.230	0.232	2	3	2	3	10	0.239	0.230	0.232
16C_2_04	MW-16C	Appendix IV	Fluoride	mg/L	80%	2	3	2	3	10	0.618	0.697	0.677	1	0	0	1	2	NA	NA	NA
16C_2_08	MW-16C	Appendix IV	Antimony	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16C_2_09	MW-16C	Appendix IV	Arsenic	mg/L	70%	2	3	2	3	10	0.487	0.564	0.564	2	1	0	0	3	0.480	0.667	0.667
16C_2_10	MW-16C	Appendix IV	Barium	mg/L	0%	2	3	2	3	10	0.168	0.106	0.088	2	3	2	3	10	0.168	0.106	0.088
16C_2_11	MW-16C	Appendix IV	Beryllium	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16C_2_12	MW-16C	Appendix IV	Cadmium	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16C_2_13	MW-16C	Appendix IV	Chromium	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16C_2_14	MW-16C	Appendix IV	Cobalt	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16C_2_15	MW-16C	Appendix IV	Lead	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16C_2_16	MW-16C	Appendix IV	Lithium	mg/L	0%	2	3	2	3	10	0.221	0.171	0.178	2	3	2	3	10	0.221	0.171	0.178
16C_2_17	MW-16C	Appendix IV	Mercury	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16C_2_18	MW-16C	Appendix IV	Molybdenum	mg/L	80%	2	3	2	3	10	0.519	0.644	0.637	1	1	0	0	2	0.317	NA	NA
16C_2_20	MW-16C	Appendix IV	Radium-226/228	pCi/L	0%	2	3	2	3	10	0.762	0.935	0.730	2	3	2	3	10	0.762	0.935	0.730
16C_2_22	MW-16C	Appendix IV	Selenium	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16C_2_23	MW-16C	Appendix IV	Thallium	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16C_3_24	MW-16C	Field Parameters	Conductivity	mS/cm	0%	2	3	2	3	10	0.655	0.670	0.666	2	3	2	3	10	0.655	0.670	0.666
16C_3_25	MW-16C	Field Parameters	Dissolved Oxygen	mg/L	0%	2	3	2	3	10	0.113	0.296	NA	2	3	2	3	10	0.113	0.296	NA
16C_3_26	MW-16C	Field Parameters	Oxidation Reduction Potential	mV	0%	2	3	2	3	10	0.223	0.140	NA	2	3	2	3	10	0.223	0.140	NA
16C_3_27	MW-16C	Field Parameters	Temperature	°C	0%	2	3	2	3	10	0.480	0.512	0.382	2	3	2	3	10	0.480	0.512	0.382
16C_3_28	MW-16C	Field Parameters	Turbidity	NTU	0%	2	3	2	3	10	0.121	0.192	0.095	2	3	2	3	10	0.121	0.192	0.095
16C_3_29	MW-16C	Field Parameters	pH	su	0%	2	3	2	3	10	0.239	0.230	0.232	2	3	2	3	10	0.239	0.230	0.232
16C_4_30	MW-16C	Other	Bicarbonate	mg/L	0%	2	3	2	3	10	0.896	0.625	0.623	2	3	2	3	10	0.896	0.625	0.623
16C_4_31	MW-16C	Other	Carbonate	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16C_4_32	MW-16C	Other	Hardness	mg/L	0%	2	3	2	3	10	0.113	0.141	0.153	2	3	2	3	10	0.113	0.141	0.153
16C_4_33	MW-16C	Other	Magnesium	mg/L	0%	2	3	2	3	10	0.076	0.013 *	0.016 *	2	3	2	3	10	0.076	0.013 *	0.016 *
16C_4_34	MW-16C	Other	Potassium	mg/L	0%	2	3	2	3	10	0.168	0.072	0.077	2	3	2	3	10	0.168	0.072	0.077
16C_4_35	MW-16C	Other	Sodium	mg/L	0%	2	3	2	3	10	0.103	0.161	0.103	2	3	2	3	10	0.103	0.161	0.103
16C_4_36	MW-16C	Other	Total Suspended Solids	mg/L	30%	2	3	2	3	10	0.238	0.310	0.272	1	3	1	2	7	0.162	0.014 *	0.120

(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
16C_5_37	MW-16C	Part 115	Copper	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16C_5_38	MW-16C	Part 115	Iron	mg/L	0%	2	3	2	3	10	0.172	0.249	0.175	2	3	2	3	10	0.172	0.249	0.175
16C_5_39	MW-16C	Part 115	Nickel	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16C_5_40	MW-16C	Part 115	Silver	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16C_5_41	MW-16C	Part 115	Vanadium	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16C_5_42	MW-16C	Part 115	Zinc	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D_1_01	MW-16D	Appendix III	Boron	mg/L	0%	2	3	2	3	10	0.563	0.365	0.365	2	3	2	3	10	0.563	0.365	0.365
16D_1_02	MW-16D	Appendix III	Calcium	mg/L	0%	2	3	2	3	10	0.066	0.058	0.058	2	3	2	3	10	0.066	0.058	0.058
16D_1_03	MW-16D	Appendix III	Chloride	mg/L	0%	2	3	2	3	10	0.591	0.548	0.546	2	3	2	3	10	0.591	0.548	0.546
16D_1_04	MW-16D	Appendix III	Fluoride	mg/L	80%	2	3	2	3	10	0.648	0.708	0.717	1	0	0	1	2	0.317	NA	NA
16D_1_05	MW-16D	Appendix III	Sulfate	mg/L	10%	2	3	2	3	10	0.053	0.066	0.029 *	1	3	2	3	9	0.067	0.118	0.054
16D_1_06	MW-16D	Appendix III	Total Dissolved Solids	mg/L	0%	2	3	2	3	10	0.937	0.889	0.895	2	3	2	3	10	0.937	0.889	0.895
16D_1_07	MW-16D	Appendix III	pH, Field	su	0%	2	3	2	3	10	0.191	0.100	0.100	2	3	2	3	10	0.191	0.100	0.100
16D_2_04	MW-16D	Appendix IV	Fluoride	mg/L	80%	2	3	2	3	10	0.648	0.708	0.717	1	0	0	1	2	0.317	NA	NA
16D_2_08	MW-16D	Appendix IV	Antimony	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D_2_09	MW-16D	Appendix IV	Arsenic	mg/L	30%	2	3	2	3	10	0.923	0.943	0.927	1	2	2	2	7	0.861	0.928	0.928
16D_2_10	MW-16D	Appendix IV	Barium	mg/L	0%	2	3	2	3	10	0.243	0.236	0.238	2	3	2	3	10	0.243	0.236	0.238
16D_2_11	MW-16D	Appendix IV	Beryllium	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16D_2_12	MW-16D	Appendix IV	Cadmium	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16D_2_13	MW-16D	Appendix IV	Chromium	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D_2_14	MW-16D	Appendix IV	Cobalt	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D_2_15	MW-16D	Appendix IV	Lead	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16D_2_16	MW-16D	Appendix IV	Lithium	mg/L	0%	2	3	2	3	10	0.638	0.444	0.442	2	3	2	3	10	0.638	0.444	0.442
16D_2_17	MW-16D	Appendix IV	Mercury	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16D_2_18	MW-16D	Appendix IV	Molybdenum	mg/L	0%	2	3	2	3	10	0.202	0.173	0.192	2	3	2	3	10	0.202	0.173	0.192
16D_2_20	MW-16D	Appendix IV	Radium-226/228	pCi/L	0%	2	3	2	3	10	0.801	0.837	0.858	2	3	2	3	10	0.801	0.837	0.858
16D_2_22	MW-16D	Appendix IV	Selenium	mg/L	90%	2	3	2	3	10	0.506	0.586	0.586	0	0	0	1	1	NA	NA	NA
16D_2_23	MW-16D	Appendix IV	Thallium	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16D_3_24	MW-16D	Field Parameters	Conductivity	mS/cm	0%	2	3	2	3	10	0.304	0.438	0.438	2	3	2	3	10	0.304	0.438	0.438
16D_3_25	MW-16D	Field Parameters	Dissolved Oxygen	mg/L	0%	2	3	2	3	10	0.411	0.334	0.649	2	3	2	3	10	0.411	0.334	0.649
16D_3_26	MW-16D	Field Parameters	Oxidation Reduction Potential	mV	0%	2	3	2	3	10	0.233	0.289	NA	2	3	2	3	10	0.233	0.289	NA
16D_3_27	MW-16D	Field Parameters	Temperature	°C	0%	2	3	2	3	10	0.225	0.180	0.294	2	3	2	3	10	0.225	0.180	0.294
16D_3_28	MW-16D	Field Parameters	Turbidity	NTU	0%	2	3	2	3	10	0.286	0.128	0.105	2	3	2	3	10	0.286	0.128	0.105
16D_3_29	MW-16D	Field Parameters	pH	su	0%	2	3	2	3	10	0.193	0.088	0.088	2	3	2	3	10	0.193	0.088	0.088
16D_4_30	MW-16D	Other	Bicarbonate	mg/L	0%	2	3	2	3	10	0.755	0.830	0.833	2	3	2	3	10	0.755	0.830	0.833
16D_4_31	MW-16D	Other	Carbonate	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D_4_32	MW-16D	Other	Hardness	mg/L	0%	2	3	2	3	10	0.390	0.559	0.552	2	3	2	3	10	0.390	0.559	0.552
16D_4_33	MW-16D	Other	Magnesium	mg/L	0%	2	3	2	3	10	0.052	0.004 **	0.004 **	2	3	2	3	10	0.052	0.004 **	0.004 **
16D_4_34	MW-16D	Other	Potassium	mg/L	0%	2	3	2	3	10	0.213	0.139	0.142	2	3	2	3	10	0.213	0.139	0.142

(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
16D_4_35	MW-16D	Other	Sodium	mg/L	0%	2	3	2	3	10	0.147	0.073	0.073	2	3	2	3	10	0.147	0.073	0.073
16D_4_36	MW-16D	Other	Total Suspended Solids	mg/L	0%	2	3	2	3	10	0.704	0.768	0.767	2	3	2	3	10	0.704	0.768	0.767
16D_5_37	MW-16D	Part 115	Copper	mg/L	90%	2	3	2	3	10	0.261	0.285	0.285	1	0	0	0	1	NA	NA	NA
16D_5_38	MW-16D	Part 115	Iron	mg/L	0%	2	3	2	3	10	0.500	0.517	0.341	2	3	2	3	10	0.500	0.517	0.341
16D_5_39	MW-16D	Part 115	Nickel	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D_5_40	MW-16D	Part 115	Silver	mg/L	100%	2	3	2	3	10	NA	0.285	0.285	NA	NA	NA	NA	NA	NA	NA	NA
16D_5_41	MW-16D	Part 115	Vanadium	mg/L	100%	2	3	2	3	10	NA	0.285	NA	NA	NA	NA	NA	NA	NA	NA	NA
16D_5_42	MW-16D	Part 115	Zinc	mg/L	0%	2	3	2	3	10	0.175	0.163	0.154	2	3	2	3	10	0.175	0.163	0.154
7B_1_01	MW-7B	Appendix III	Boron	mg/L	0%	2	3	3	3	11	0.820	0.890	0.888	2	3	3	3	11	0.820	0.890	0.888
7B_1_02	MW-7B	Appendix III	Calcium	mg/L	0%	2	3	3	3	11	0.413	0.709	0.732	2	3	3	3	11	0.413	0.709	0.732
7B_1_03	MW-7B	Appendix III	Chloride	mg/L	91%	2	3	3	3	11	0.212	0.217	0.217	1	0	0	0	1	NA	NA	NA
7B_1_04	MW-7B	Appendix III	Fluoride	mg/L	91%	2	3	3	3	11	0.212	0.217	0.217	1	0	0	0	1	NA	NA	NA
7B_1_05	MW-7B	Appendix III	Sulfate	mg/L	91%	2	3	3	3	11	0.212	0.217	0.217	1	0	0	0	1	NA	NA	NA
7B_1_06	MW-7B	Appendix III	Total Dissolved Solids	mg/L	0%	2	3	3	3	11	0.955	0.978	0.979	2	3	3	3	11	0.955	0.978	0.979
7B_1_07	MW-7B	Appendix III	pH, Field	su	0%	2	3	3	3	11	0.040 *	0.000 ***	0.000 ***	2	3	3	3	11	0.040 *	0.000 ***	0.000 ***
7B_2_04	MW-7B	Appendix IV	Fluoride	mg/L	91%	2	3	3	3	11	0.212	0.217	0.217	1	0	0	0	1	NA	NA	NA
7B_2_08	MW-7B	Appendix IV	Antimony	mg/L	100%	2	3	3	3	11	NA	NA	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_2_09	MW-7B	Appendix IV	Arsenic	mg/L	82%	2	3	3	3	11	0.412	0.471	0.471	1	1	0	0	2	NA	NA	NA
7B_2_10	MW-7B	Appendix IV	Barium	mg/L	0%	2	3	3	3	11	0.117	0.077	0.090	2	3	3	3	11	0.117	0.077	0.090
7B_2_11	MW-7B	Appendix IV	Beryllium	mg/L	100%	2	3	3	3	11	NA	0.510	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_2_12	MW-7B	Appendix IV	Cadmium	mg/L	100%	2	3	3	3	11	NA	0.510	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_2_13	MW-7B	Appendix IV	Chromium	mg/L	100%	2	3	3	3	11	NA	NA	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_2_14	MW-7B	Appendix IV	Cobalt	mg/L	100%	2	3	3	3	11	NA	NA	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_2_15	MW-7B	Appendix IV	Lead	mg/L	91%	2	3	3	3	11	0.446	0.510	0.510	0	0	1	0	1	NA	NA	NA
7B_2_16	MW-7B	Appendix IV	Lithium	mg/L	0%	2	3	3	3	11	0.434	0.750	0.733	2	3	3	3	11	0.434	0.750	0.733
7B_2_17	MW-7B	Appendix IV	Mercury	mg/L	100%	2	3	3	3	11	NA	NA	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_2_18	MW-7B	Appendix IV	Molybdenum	mg/L	100%	2	3	3	3	11	NA	NA	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_2_20	MW-7B	Appendix IV	Radium-226/228	pCi/L	0%	2	3	3	3	11	0.895	0.877	0.952	2	3	3	3	11	0.895	0.877	0.952
7B_2_22	MW-7B	Appendix IV	Selenium	mg/L	100%	2	3	3	3	11	NA	NA	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_2_23	MW-7B	Appendix IV	Thallium	mg/L	100%	2	3	3	3	11	NA	0.510	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_3_24	MW-7B	Field Parameters	Conductivity	mS/cm	0%	2	3	3	3	11	0.112	0.391	0.379	2	3	3	3	11	0.112	0.391	0.379
7B_3_25	MW-7B	Field Parameters	Dissolved Oxygen	mg/L	0%	2	3	3	3	11	0.107	0.427	0.196	2	3	3	3	11	0.107	0.427	0.196
7B_3_26	MW-7B	Field Parameters	Oxidation Reduction Potential	mV	0%	2	3	3	3	11	0.376	0.538	NA	2	3	3	3	11	0.376	0.538	NA
7B_3_27	MW-7B	Field Parameters	Temperature	°C	0%	2	3	3	3	11	0.044 *	0.008 **	0.009 **	2	3	3	3	11	0.044 *	0.008 **	0.009 **
7B_3_28	MW-7B	Field Parameters	Turbidity	NTU	0%	2	3	3	3	11	0.815	0.918	0.712	2	3	3	3	11	0.815	0.918	0.712
7B_3_29	MW-7B	Field Parameters	pH	su	0%	2	3	3	3	11	0.040 *	0.000 ***	0.000 ***	2	3	3	3	11	0.040 *	0.000 ***	0.000 ***
7B_4_30	MW-7B	Other	Bicarbonate	mg/L	0%	2	3	3	3	11	0.485	0.323	0.329	2	3	3	3	11	0.485	0.323	0.329
7B_4_31	MW-7B	Other	Carbonate	mg/L	100%	2	3	3	3	11	NA	0.510	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_4_32	MW-7B	Other	Hardness	mg/L	0%	2	3	3	3	11	0.220	0.272	0.266	2	3	3	3	11	0.220	0.272	0.266

(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
7B_4_33	MW-7B	Other	Magnesium	mg/L	0%	2	3	3	3	11	0.846	0.994	0.994	2	3	3	3	11	0.846	0.994	0.994
7B_4_34	MW-7B	Other	Potassium	mg/L	0%	2	3	3	3	11	0.500	0.330	0.336	2	3	3	3	11	0.500	0.330	0.336
7B_4_35	MW-7B	Other	Sodium	mg/L	0%	2	3	3	3	11	0.358	0.368	0.349	2	3	3	3	11	0.358	0.368	0.349
7B_4_36	MW-7B	Other	Total Suspended Solids	mg/L	91%	2	3	3	3	11	0.212	0.217	0.217	1	0	0	0	1	NA	NA	NA
7B_5_37	MW-7B	Part 115	Copper	mg/L	100%	2	3	3	3	11	NA	NA	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_5_38	MW-7B	Part 115	Iron	mg/L	0%	2	3	3	3	11	0.182	0.141	0.135	2	3	3	3	11	0.182	0.141	0.135
7B_5_39	MW-7B	Part 115	Nickel	mg/L	100%	2	3	3	3	11	NA	NA	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_5_40	MW-7B	Part 115	Silver	mg/L	100%	2	3	3	3	11	NA	0.510	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_5_41	MW-7B	Part 115	Vanadium	mg/L	100%	2	3	3	3	11	NA	NA	0.510	NA	NA	NA	NA	NA	NA	NA	NA
7B_5_42	MW-7B	Part 115	Zinc	mg/L	100%	2	3	3	3	11	NA	NA	0.510	NA	NA	NA	NA	NA	NA	NA	NA

*** 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
100C_1_01	MW-100C	Appendix III	Boron	mg/L	8	0	0%	Parametric	Lognormal MLE	0.000556	0.001	↑
100C_1_02	MW-100C	Appendix III	Calcium	mg/L	8	0	0%	Parametric	Lognormal MLE	0.000340	0.005	↑
100C_1_03	MW-100C	Appendix III	Chloride	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.00434	0.000	↓
100C_1_05	MW-100C	Appendix III	Sulfate	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.00613	0.000	↓
100C_1_06	MW-100C	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000209	0.053	↔
100C_1_07	MW-100C	Appendix III	pH, Field	su	8	0	0%	Parametric	Lognormal MLE	-0.00000140	0.981	↔
100C_2_10	MW-100C	Appendix IV	Barium	mg/L	8	0	0%	Parametric	Lognormal MLE	0.0000139	0.972	↔
100C_2_16	MW-100C	Appendix IV	Lithium	mg/L	8	0	0%	Parametric	Lognormal MLE	0.000603	0.010	↑
100C_2_20	MW-100C	Appendix IV	Radium-226/228	pCi/L	8	0	0%	Parametric	Lognormal MLE	0.00141	0.382	↔
100C_3_24	MW-100C	Field Parameters	Conductivity	mS/cm	8	0	0%	Parametric	Lognormal MLE	-0.000144	0.001	↓
100C_3_25	MW-100C	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	Nonparametric	MK	-0.000105	0.046	↔
100C_3_27	MW-100C	Field Parameters	Temperature	°C	8	0	0%	Parametric	Lognormal MLE	-0.00108	0.000	↓
100C_3_28	MW-100C	Field Parameters	Turbidity	NTU	8	0	0%	Parametric	Lognormal MLE	-0.000967	0.744	↔
100C_3_29	MW-100C	Field Parameters	pH	su	8	0	0%	Parametric	Lognormal MLE	-0.00000140	0.981	↔
100C_4_30	MW-100C	Other	Bicarbonate	mg/L	8	0	0%	Nonparametric	MK	0.127	0.054	↔
100C_4_32	MW-100C	Other	Hardness	mg/L	8	0	0%	Nonparametric	MK	0.155	0.003	↑
100C_4_33	MW-100C	Other	Magnesium	mg/L	8	0	0%	Parametric	Lognormal MLE	0.0000930	0.615	↔
100C_4_34	MW-100C	Other	Potassium	mg/L	8	0	0%	Parametric	Lognormal MLE	0.00000965	0.953	↔
100C_4_35	MW-100C	Other	Sodium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.00198	0.000	↓
100C_4_36	MW-100C	Other	Total Suspended Solids	mg/L	8	2	25%	Parametric	Lognormal MLE	-0.00338	0.297	↔
100C_5_38	MW-100C	Part 115	Iron	mg/L	8	0	0%	Parametric	Lognormal MLE	0.000264	0.859	↔
100D_1_01	MW-100D	Appendix III	Boron	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000502	0.005	↓
100D_1_02	MW-100D	Appendix III	Calcium	mg/L	8	0	0%	Nonparametric	MK	-0.00863	0.108	↔
100D_1_05	MW-100D	Appendix III	Sulfate	mg/L	8	1	12%	Parametric	Lognormal MLE	0.00538	0.003	↑
100D_1_06	MW-100D	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	Parametric	Lognormal MLE	0.000422	0.124	↔
100D_1_07	MW-100D	Appendix III	pH, Field	su	8	0	0%	Parametric	Lognormal MLE	0.00000984	0.933	↔
100D_2_09	MW-100D	Appendix IV	Arsenic	mg/L	8	2	25%	Nonparametric	MK	0	0.067	↔
100D_2_10	MW-100D	Appendix IV	Barium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000630	0.379	↔
100D_2_16	MW-100D	Appendix IV	Lithium	mg/L	8	0	0%	Nonparametric	MK	0.0000140	0.205	↔
100D_2_18	MW-100D	Appendix IV	Molybdenum	mg/L	8	1	12%	Parametric	Lognormal MLE	0.000240	0.850	↔
100D_2_20	MW-100D	Appendix IV	Radium-226/228	pCi/L	8	0	0%	Parametric	Lognormal MLE	-0.00689	0.000	↓
100D_3_24	MW-100D	Field Parameters	Conductivity	mS/cm	8	0	0%	Nonparametric	MK	0.000139	0.081	↔
100D_3_25	MW-100D	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	Nonparametric	MK	-0.000140	0.311	↔
100D_3_27	MW-100D	Field Parameters	Temperature	°C	8	0	0%	Parametric	Lognormal MLE	-0.00122	0.000	↓
100D_3_28	MW-100D	Field Parameters	Turbidity	NTU	8	0	0%	Parametric	Lognormal MLE	-0.00298	0.002	↓
100D_3_29	MW-100D	Field Parameters	pH	su	8	0	0%	Parametric	Lognormal MLE	0.00000984	0.933	↔
100D_4_30	MW-100D	Other	Bicarbonate	mg/L	8	0	0%	Nonparametric	MK	0	0.886	↔
100D_4_32	MW-100D	Other	Hardness	mg/L	8	0	0%	Parametric	Lognormal MLE	0.00275	0.117	↔
100D_4_33	MW-100D	Other	Magnesium	mg/L	8	0	0%	Parametric	Lognormal MLE	0.000630	0.668	↔
100D_4_34	MW-100D	Other	Potassium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000713	0.000	↓
100D_4_35	MW-100D	Other	Sodium	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.000421	0.017	↔
100D_4_36	MW-100D	Other	Total Suspended Solids	mg/L	8	3	38%	Parametric	Lognormal MLE	-0.00173	0.000	↓
100D_5_38	MW-100D	Part 115	Iron	mg/L	8	0	0%	Parametric	Lognormal MLE	-0.00592	0.001	↓

(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
16C_1_01	MW-16C	Appendix III	Boron	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000180	0.005	↑
16C_1_02	MW-16C	Appendix III	Calcium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000545	0.000	↑
16C_1_05	MW-16C	Appendix III	Sulfate	mg/L	10	0	0%	Nonparametric	MK	0	0.642	↔
16C_1_06	MW-16C	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	Nonparametric	MK	-0.0857	0.210	↔
16C_1_07	MW-16C	Appendix III	pH, Field	su	10	0	0%	Parametric	Lognormal MLE	-0.00000535	0.900	↔
16C_2_10	MW-16C	Appendix IV	Barium	mg/L	10	0	0%	Parametric	Lognormal MLE	-0.00196	0.000	↓
16C_2_16	MW-16C	Appendix IV	Lithium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.0000808	0.603	↔
16C_2_20	MW-16C	Appendix IV	Radium-226/228	pCi/L	10	0	0%	Parametric	Lognormal MLE	0.00398	0.103	↔
16C_3_24	MW-16C	Field Parameters	Conductivity	mS/cm	10	0	0%	Parametric	Lognormal MLE	-0.0000349	0.727	↔
16C_3_27	MW-16C	Field Parameters	Temperature	°C	10	0	0%	Parametric	Lognormal MLE	0.000902	0.674	↔
16C_3_28	MW-16C	Field Parameters	Turbidity	NTU	10	0	0%	Parametric	Lognormal MLE	-0.00353	0.258	↔
16C_3_29	MW-16C	Field Parameters	pH	su	10	0	0%	Parametric	Lognormal MLE	-0.00000535	0.900	↔
16C_4_30	MW-16C	Other	Bicarbonate	mg/L	10	0	0%	Nonparametric	MK	0.0374	0.402	↔
16C_4_32	MW-16C	Other	Hardness	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000573	0.000	↑
16C_4_33	MW-16C	Other	Magnesium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000535	0.001	↑
16C_4_34	MW-16C	Other	Potassium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.00102	0.000	↑
16C_4_35	MW-16C	Other	Sodium	mg/L	10	0	0%	Nonparametric	MK	-0.0731	0.023	↔
16C_4_36	MW-16C	Other	Total Suspended Solids	mg/L	10	3	30%	Parametric	Lognormal MLE	-0.0126	0.000	↓
16C_5_38	MW-16C	Part 115	Iron	mg/L	10	0	0%	Parametric	Lognormal MLE	-0.00204	0.000	↓
16D_1_01	MW-16D	Appendix III	Boron	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000193	0.010	↔
16D_1_02	MW-16D	Appendix III	Calcium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.0000867	0.062	↔
16D_1_03	MW-16D	Appendix III	Chloride	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000205	0.400	↔
16D_1_05	MW-16D	Appendix III	Sulfate	mg/L	10	1	10%	Parametric	Lognormal MLE	-0.00170	0.044	↔
16D_1_06	MW-16D	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	Parametric	Lognormal MLE	0.0000563	0.366	↔
16D_1_07	MW-16D	Appendix III	pH, Field	su	10	0	0%	Parametric	Lognormal MLE	0.00000564	0.903	↔
16D_2_09	MW-16D	Appendix IV	Arsenic	mg/L	10	3	30%	Nonparametric	MK	0.00000405	0.180	↔
16D_2_10	MW-16D	Appendix IV	Barium	mg/L	10	0	0%	Parametric	Lognormal MLE	-0.000196	0.004	↓
16D_2_16	MW-16D	Appendix IV	Lithium	mg/L	10	0	0%	Parametric	Lognormal MLE	-0.000215	0.591	↔
16D_2_18	MW-16D	Appendix IV	Molybdenum	mg/L	10	0	0%	Nonparametric	MK	0	0.700	↔
16D_2_20	MW-16D	Appendix IV	Radium-226/228	pCi/L	10	0	0%	Parametric	Lognormal MLE	-0.00146	0.388	↔
16D_3_24	MW-16D	Field Parameters	Conductivity	mS/cm	10	0	0%	Parametric	Lognormal MLE	0.0000393	0.609	↔
16D_3_25	MW-16D	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	Nonparametric	MK	-0.00127	0.001	↓
16D_3_27	MW-16D	Field Parameters	Temperature	°C	10	0	0%	Parametric	Lognormal MLE	0.00118	0.396	↔
16D_3_28	MW-16D	Field Parameters	Turbidity	NTU	10	0	0%	Parametric	Lognormal MLE	-0.0000937	0.876	↔
16D_3_29	MW-16D	Field Parameters	pH	su	10	0	0%	Parametric	Lognormal MLE	0.000000197	0.997	↔
16D_4_30	MW-16D	Other	Bicarbonate	mg/L	10	0	0%	Parametric	Lognormal MLE	0.0000578	0.568	↔
16D_4_32	MW-16D	Other	Hardness	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000514	0.004	↑
16D_4_33	MW-16D	Other	Magnesium	mg/L	10	0	0%	Parametric	Lognormal MLE	0.000108	0.152	↔
16D_4_34	MW-16D	Other	Potassium	mg/L	10	0	0%	Parametric	Lognormal MLE	-0.0000693	0.347	↔
16D_4_35	MW-16D	Other	Sodium	mg/L	10	0	0%	Parametric	Lognormal MLE	-0.000178	0.250	↔
16D_4_36	MW-16D	Other	Total Suspended Solids	mg/L	10	0	0%	Parametric	Lognormal MLE	-0.000388	0.847	↔
16D_5_38	MW-16D	Part 115	Iron	mg/L	10	0	0%	Parametric	Lognormal MLE	0.00459	0.001	↑
16D_5_42	MW-16D	Part 115	Zinc	mg/L	10	0	0%	Parametric	Lognormal MLE	-0.00947	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
7B_1_01	MW-7B	Appendix III	Boron	mg/L	11	0	0%	Parametric	Lognormal MLE	-0.0000234	0.541	↔
7B_1_02	MW-7B	Appendix III	Calcium	mg/L	11	0	0%	Parametric	Lognormal MLE	-0.0000736	0.335	↔
7B_1_06	MW-7B	Appendix III	Total Dissolved Solids	mg/L	11	0	0%	Parametric	Lognormal MLE	0.00000164	0.952	↔
7B_1_07	MW-7B	Appendix III	pH, Field	su	11	0	0%	Parametric	Lognormal MLE	0.0000178	0.527	↔
7B_2_10	MW-7B	Appendix IV	Barium	mg/L	11	0	0%	Parametric	Lognormal MLE	-0.000384	0.000	↓
7B_2_16	MW-7B	Appendix IV	Lithium	mg/L	11	0	0%	Parametric	Lognormal MLE	0.0000589	0.381	↔
7B_2_20	MW-7B	Appendix IV	Radium-226/228	pCi/L	11	0	0%	Parametric	Lognormal MLE	0.000373	0.680	↔
7B_3_24	MW-7B	Field Parameters	Conductivity	mS/cm	11	0	0%	Nonparametric	MK	-0.0000483	0.003	↓
7B_3_25	MW-7B	Field Parameters	Dissolved Oxygen	mg/L	11	0	0%	Parametric	Lognormal MLE	-0.00285	0.019	↔
7B_3_26	MW-7B	Field Parameters	Oxidation Reduction Potential	mV	11	0	0%	Nonparametric	MK	-0.114	0.013	↔
7B_3_27	MW-7B	Field Parameters	Temperature	°C	11	0	0%	Parametric	Lognormal MLE	-0.000192	0.302	↔
7B_3_28	MW-7B	Field Parameters	Turbidity	NTU	11	0	0%	Parametric	Lognormal MLE	0.00174	0.467	↔
7B_3_29	MW-7B	Field Parameters	pH	su	11	0	0%	Parametric	Lognormal MLE	0.0000178	0.527	↔
7B_4_30	MW-7B	Other	Bicarbonate	mg/L	11	0	0%	Parametric	Lognormal MLE	0.0000448	0.164	↔
7B_4_32	MW-7B	Other	Hardness	mg/L	11	0	0%	Nonparametric	MK	-0.00513	0.260	↔
7B_4_33	MW-7B	Other	Magnesium	mg/L	11	0	0%	Parametric	Lognormal MLE	-0.0000355	0.635	↔
7B_4_34	MW-7B	Other	Potassium	mg/L	11	0	0%	Nonparametric	MK	0.000298	0.161	↔
7B_4_35	MW-7B	Other	Sodium	mg/L	11	0	0%	Nonparametric	MK	0.0210	0.138	↔
7B_5_38	MW-7B	Part 115	Iron	mg/L	11	0	0%	Parametric	Lognormal MLE	0.00145	0.000	↑

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
100C_1_01	MW-100C	Appendix III	Boron	mg/L	8	0	0%	0.00400	0.064	↔	0.000194	0.502	↔	2023-08-07	0.922	↔
100C_1_02	MW-100C	Appendix III	Calcium	mg/L	8	0	0%	0.0403	0.037	↔	-0.0332	0.307	↔	2023-11-17	0.799	↔
100C_1_03	MW-100C	Appendix III	Chloride	mg/L	8	0	0%	-0.0857	0.001	↓	-0.00784	0.147	↔	2023-09-05	0.988	↔
100C_1_04	MW-100C	Appendix III	Fluoride	mg/L	8	7	88%	-0.00323	0.207	↔	0.00690	0.616	↔	2023-11-27	0.402	↔
100C_1_05	MW-100C	Appendix III	Sulfate	mg/L	8	0	0%	-0.371	0.007	↓	-0.0363	0.039	↔	2023-07-16	0.967	↔
100C_1_06	MW-100C	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	0.0248	0.954	↔	-0.0875	0.265	↔	2023-08-13	0.365	↔
100C_1_07	MW-100C	Appendix III	pH, Field	su	8	0	0%	-0.00254	0.044	↔	0.00188	0.092	↔	2023-09-23	0.770	↔
100C_2_04	MW-100C	Appendix IV	Fluoride	mg/L	8	7	88%	-0.00323	0.207	↔	0.00690	0.616	↔	2023-11-27	0.402	↔
100C_2_10	MW-100C	Appendix IV	Barium	mg/L	8	0	0%	0.000214	0.069	↔	-0.000121	0.034	↔	2023-09-09	0.814	↔
100C_2_16	MW-100C	Appendix IV	Lithium	mg/L	8	0	0%	0.0000584	0.036	↔	-0.00000811	0.681	↔	2023-09-18	0.790	↔
100C_2_18	MW-100C	Appendix IV	Molybdenum	mg/L	8	5	62%	-0.0000400	0.005	↓	0.000000000000500	1.000	↔	2023-09-28	0.949	↔
100C_2_20	MW-100C	Appendix IV	Radium-226/228	pCi/L	8	0	0%	0.00367	0.450	↔	-0.00209	0.838	↔	2023-11-14	0.231	↔
100C_3_24	MW-100C	Field Parameters	Conductivity	mS/cm	8	0	0%	-0.000122	0.446	↔	-0.0000461	0.507	↔	2023-09-17	0.614	↔
100C_3_25	MW-100C	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.00151	0.654	↔	-0.000929	0.149	↔	2023-08-13	0.461	↔
100C_3_27	MW-100C	Field Parameters	Temperature	°C	8	0	0%	-0.0178	0.037	↔	0.00173	0.962	↔	2023-11-27	0.776	↔
100C_3_28	MW-100C	Field Parameters	Turbidity	NTU	8	0	0%	-0.0201	0.695	↔	0.00995	0.659	↔	2023-09-17	0.125	↔
100C_3_29	MW-100C	Field Parameters	pH	su	8	0	0%	-0.00254	0.044	↔	0.00188	0.092	↔	2023-09-23	0.770	↔

(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
100C_4_30	MW-100C	Other	Bicarbonate	mg/L	8	0	0%	0.943	0.474	↔	0.141	0.910	↔	2023-09-27	0.305	↔
100C_4_32	MW-100C	Other	Hardness	mg/L	8	0	0%	0.314	0.002	↑	0.0385	0.417	↔	2023-09-23	0.971	↔
100C_4_33	MW-100C	Other	Magnesium	mg/L	8	0	0%	0.00882	0.006	↑	-0.0714	0.002	↓	2024-01-02	0.955	↔
100C_4_34	MW-100C	Other	Potassium	mg/L	8	0	0%	0.00269	0.339	↔	-0.00594	0.331	↔	2023-11-14	0.380	↔
100C_4_35	MW-100C	Other	Sodium	mg/L	8	0	0%	-0.122	0.003	↓	-0.0258	0.220	↔	2023-09-22	0.970	↔
100C_4_36	MW-100C	Other	Total Suspended Solids	mg/L	8	2	25%	0.0645	0.567	↔	-0.0249	0.223	↔	2023-08-13	0.411	↔
100C_5_42	MW-100C	Part 115	Zinc	mg/L	8	7	88%	0.0000227	0.238	↔	-0.0000285	0.468	↔	2023-10-23	0.401	↔
100D_1_01	MW-100D	Appendix III	Boron	mg/L	8	0	0%	-0.000384	0.599	↔	-0.0100	0.066	↔	2023-12-23	0.849	↔
100D_1_02	MW-100D	Appendix III	Calcium	mg/L	8	0	0%	-0.0123	0.002	↓	0.427	0.000	↑	2024-01-02	0.998	↔
100D_1_04	MW-100D	Appendix III	Fluoride	mg/L	8	5	62%	0.000000000000719	1.000	↔	-0.00587	0.013	↔	2023-10-03	0.924	↔
100D_1_07	MW-100D	Appendix III	pH, Field	su	8	0	0%	-0.00338	0.345	↔	0.00240	0.480	↔	2023-09-18	0.309	↔
100D_2_04	MW-100D	Appendix IV	Fluoride	mg/L	8	5	62%	0.000000000000719	1.000	↔	-0.00587	0.013	↔	2023-10-03	0.924	↔
100D_2_09	MW-100D	Appendix IV	Arsenic	mg/L	8	2	25%	0.0000143	0.026	↔	0.00000000000101	1.000	↔	2023-08-25	0.889	↔
100D_2_16	MW-100D	Appendix IV	Lithium	mg/L	8	0	0%	-0.000429	0.000	↓	0.0000193	0.006	↑	2023-07-11	0.994	↔
100D_2_18	MW-100D	Appendix IV	Molybdenum	mg/L	8	1	12%	0.000143	0.004	↑	-0.0000257	0.003	↓	2023-07-22	0.955	↔
100D_3_25	MW-100D	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.00114	0.591	↔	-0.000577	0.152	↔	2023-08-10	0.464	↔
100D_3_26	MW-100D	Field Parameters	Oxidation Reduction Potential	mV	8	0	0%	-1.59	0.134	↔	0.599	0.185	↔	2023-09-09	0.689	↔
100D_3_27	MW-100D	Field Parameters	Temperature	°C	8	0	0%	-0.0203	0.061	↔	0.0143	0.774	↔	2023-12-18	0.718	↔
100D_3_29	MW-100D	Field Parameters	pH	su	8	0	0%	-0.00338	0.345	↔	0.00240	0.480	↔	2023-09-18	0.309	↔
100D_4_30	MW-100D	Other	Bicarbonate	mg/L	8	0	0%	-0.0898	0.119	↔	1.51	0.005	↑	2023-12-23	0.945	↔
100D_4_32	MW-100D	Other	Hardness	mg/L	8	0	0%	-0.149	0.436	↔	0.357	0.101	↔	2023-10-01	0.677	↔
100D_4_33	MW-100D	Other	Magnesium	mg/L	8	0	0%	-0.00441	0.004	↓	0.0689	0.000	↑	2023-12-30	0.990	↔
100D_4_34	MW-100D	Other	Potassium	mg/L	8	0	0%	-0.00857	0.237	↔	-0.00187	0.144	↔	2023-08-05	0.864	↔
100D_4_35	MW-100D	Other	Sodium	mg/L	8	0	0%	0.0861	0.409	↔	-0.158	0.018	↔	2023-09-17	0.817	↔
16C_1_01	MW-16C	Appendix III	Boron	mg/L	10	0	0%	-0.0000274	0.817	↔	0.000142	0.049	↔	2023-07-03	0.602	↔
16C_1_02	MW-16C	Appendix III	Calcium	mg/L	10	0	0%	0.0748	0.011	↔	0.00109	0.954	↔	2023-07-27	0.854	↔
16C_1_04	MW-16C	Appendix III	Fluoride	mg/L	10	8	80%	0.0000000000618	1.000	↔	-0.00354	0.067	↔	2023-06-28	0.601	↔
16C_1_05	MW-16C	Appendix III	Sulfate	mg/L	10	0	0%	-0.234	0.000	↓	0.00246	0.200	↔	2023-03-24	0.991	↔
16C_1_06	MW-16C	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	-1.06	0.007	↓	0.000164	0.997	↔	2023-04-24	0.940	↔
16C_1_07	MW-16C	Appendix III	pH, Field	su	10	0	0%	-0.00212	0.026	↔	0.00130	0.012	↔	2023-07-01	0.796	↔
16C_2_04	MW-16C	Appendix IV	Fluoride	mg/L	10	8	80%	0.0000000000618	1.000	↔	-0.00354	0.067	↔	2023-06-28	0.601	↔
16C_2_09	MW-16C	Appendix IV	Arsenic	mg/L	10	7	70%	-0.00000158	0.334	↔	0.0000139	0.091	↔	2023-11-12	0.538	↔
16C_2_10	MW-16C	Appendix IV	Barium	mg/L	10	0	0%	-0.000137	0.006	↓	-0.0000119	0.814	↔	2023-08-10	0.853	↔
16C_2_16	MW-16C	Appendix IV	Lithium	mg/L	10	0	0%	-0.0000851	0.063	↔	0.00000862	0.136	↔	2023-03-21	0.587	↔
16C_2_18	MW-16C	Appendix IV	Molybdenum	mg/L	10	8	80%	-0.0000242	0.094	↔	0.00000000000946	1.000	↔	2023-06-05	0.596	↔
16C_3_24	MW-16C	Field Parameters	Conductivity	mS/cm	10	0	0%	-0.000301	0.450	↔	0.0000831	0.457	↔	2023-05-29	0.255	↔
16C_3_26	MW-16C	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	-0.249	0.137	↔	0.200	0.385	↔	2023-09-11	0.478	↔
16C_3_27	MW-16C	Field Parameters	Temperature	°C	10	0	0%	-0.00746	0.895	↔	0.0183	0.533	↔	2023-07-04	0.086	↔
16C_3_28	MW-16C	Field Parameters	Turbidity	NTU	10	0	0%	-0.353	0.002	↓	0.0210	0.313	↔	2023-04-30	0.893	↔
16C_3_29	MW-16C	Field Parameters	pH	su	10	0	0%	-0.00212	0.026	↔	0.00130	0.012	↔	2023-07-01	0.796	↔
16C_4_30	MW-16C	Other	Bicarbonate	mg/L	10	0	0%	0.500	0.255	↔	-0.146	0.236	↔	2023-05-29	0.456	↔
16C_4_32	MW-16C	Other	Hardness	mg/L	10	0	0%	0.245	0.002	↑	-0.0190	0.872	↔	2023-09-17	0.889	↔

(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
16C_4_33	MW-16C	Other	Magnesium	mg/L	10	0	0%	0.0356	0.002	↑	-0.0149	0.175	↔	2023-08-20	0.882	↔
16C_4_34	MW-16C	Other	Potassium	mg/L	10	0	0%	0.00662	0.005	↑	0.000571	0.811	↔	2023-08-31	0.881	↔
16C_4_35	MW-16C	Other	Sodium	mg/L	10	0	0%	-0.158	0.001	↓	0.000955	0.966	↔	2023-07-25	0.944	↔
16C_4_36	MW-16C	Other	Total Suspended Solids	mg/L	10	3	30%	-0.604	0.000	↓	-0.00129	0.856	↔	2023-04-04	0.987	↔
16C_5_38	MW-16C	Part 115	Iron	mg/L	10	0	0%	-0.00249	0.082	↔	-0.000148	0.892	↔	2023-07-29	0.676	↔
16D_1_01	MW-16D	Appendix III	Boron	mg/L	10	0	0%	-0.000894	0.357	↔	0.00216	0.033	↔	2023-07-05	0.719	↔
16D_1_03	MW-16D	Appendix III	Chloride	mg/L	10	0	0%	0.0218	0.184	↔	-0.00254	0.238	↔	2023-04-24	0.629	↔
16D_1_04	MW-16D	Appendix III	Fluoride	mg/L	10	8	80%	-0.000920	0.463	↔	-0.00459	0.168	↔	2023-10-16	0.573	↔
16D_1_05	MW-16D	Appendix III	Sulfate	mg/L	10	1	10%	0.0851	0.156	↔	-0.0243	0.014	↔	2023-04-04	0.709	↔
16D_1_06	MW-16D	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	0.174	0.255	↔	-0.0366	0.380	↔	2023-05-29	0.455	↔
16D_1_07	MW-16D	Appendix III	pH, Field	su	10	0	0%	-0.000742	0.079	↔	0.00472	0.026	↔	2023-11-10	0.726	↔
16D_2_04	MW-16D	Appendix IV	Fluoride	mg/L	10	8	80%	-0.000920	0.463	↔	-0.00459	0.168	↔	2023-10-16	0.573	↔
16D_2_09	MW-16D	Appendix IV	Arsenic	mg/L	10	3	30%	0.0000172	0.524	↔	0.00000132	0.710	↔	2023-04-24	0.382	↔
16D_2_10	MW-16D	Appendix IV	Barium	mg/L	10	0	0%	-0.0000109	0.157	↔	-0.00000263	0.799	↔	2023-08-08	0.502	↔
16D_2_16	MW-16D	Appendix IV	Lithium	mg/L	10	0	0%	-0.000166	0.062	↔	0.0000200	0.086	↔	2023-04-24	0.797	↔
16D_2_18	MW-16D	Appendix IV	Molybdenum	mg/L	10	0	0%	0.000128	0.001	↑	-0.00000463	0.129	↔	2023-03-23	0.922	↔
16D_2_20	MW-16D	Appendix IV	Radium-226/228	pCi/L	10	0	0%	-0.00775	0.616	↔	0.000408	0.958	↔	2023-07-04	0.138	↔
16D_2_22	MW-16D	Appendix IV	Selenium	mg/L	10	9	90%	0.00000221	0.343	↔	-0.00000324	0.343	↔	2023-09-11	0.272	↔
16D_3_24	MW-16D	Field Parameters	Conductivity	mS/cm	10	0	0%	0.000454	0.106	↔	-0.0000963	0.200	↔	2023-05-13	0.563	↔
16D_3_25	MW-16D	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	-0.0943	0.000	↓	-0.00106	0.008	↓	2023-03-21	0.999	↓
16D_3_26	MW-16D	Field Parameters	Oxidation Reduction Potential	mV	10	0	0%	-1.01	0.028	↔	-0.470	0.176	↔	2023-07-09	0.852	↔
16D_3_27	MW-16D	Field Parameters	Temperature	°C	10	0	0%	0.0972	0.042	↔	-0.0533	0.158	↔	2023-07-05	0.611	↔
16D_3_28	MW-16D	Field Parameters	Turbidity	NTU	10	0	0%	-0.0374	0.127	↔	0.00569	0.374	↔	2023-04-25	0.434	↔
16D_3_29	MW-16D	Field Parameters	pH	su	10	0	0%	-0.000742	0.079	↔	0.00528	0.017	↔	2023-11-18	0.740	↔
16D_4_30	MW-16D	Other	Bicarbonate	mg/L	10	0	0%	0.234	0.412	↔	-0.0579	0.467	↔	2023-05-29	0.288	↔
16D_4_32	MW-16D	Other	Hardness	mg/L	10	0	0%	-0.0217	0.484	↔	0.176	0.006	↑	2023-08-24	0.850	↔
16D_4_36	MW-16D	Other	Total Suspended Solids	mg/L	10	0	0%	0.0417	0.188	↔	-0.0494	0.275	↔	2023-08-08	0.387	↔
16D_5_42	MW-16D	Part 115	Zinc	mg/L	10	0	0%	-0.00102	0.065	↔	-0.0000232	0.973	↔	2023-08-08	0.611	↔
7B_1_02	MW-7B	Appendix III	Calcium	mg/L	11	0	0%	-0.0180	0.282	↔	0.000237	0.730	↔	2022-05-18	0.608	↔
7B_1_07	MW-7B	Appendix III	pH, Field	su	11	0	0%	-0.00335	0.071	↔	0.000522	0.078	↔	2022-06-23	0.572	↔
7B_2_09	MW-7B	Appendix IV	Arsenic	mg/L	11	9	82%	-0.00000121	0.298	↔	0.00000552	0.068	↔	2023-06-13	0.540	↔
7B_2_10	MW-7B	Appendix IV	Barium	mg/L	11	0	0%	-0.0000113	0.230	↔	-0.00000236	0.131	↔	2022-07-10	0.662	↔
7B_2_15	MW-7B	Appendix IV	Lead	mg/L	11	10	91%	-0.00000400	0.714	↔	-0.000000000000977	1.000	↔	2023-04-10	0.042	↔
7B_2_20	MW-7B	Appendix IV	Radium-226/228	pCi/L	11	0	0%	-0.0117	0.707	↔	0.000640	0.632	↔	2022-05-09	0.106	↔
7B_3_24	MW-7B	Field Parameters	Conductivity	mS/cm	11	0	0%	-0.00406	0.000	↓	-0.0000251	0.047	↔	2022-04-13	0.988	↔
7B_3_25	MW-7B	Field Parameters	Dissolved Oxygen	mg/L	11	0	0%	-0.0169	0.077	↔	-0.000244	0.505	↔	2022-04-15	0.613	↔
7B_3_26	MW-7B	Field Parameters	Oxidation Reduction Potential	mV	11	0	0%	-0.608	0.279	↔	-0.0880	0.324	↔	2022-07-07	0.528	↔
7B_3_29	MW-7B	Field Parameters	pH	su	11	0	0%	-0.00335	0.071	↔	0.000522	0.078	↔	2022-06-23	0.572	↔
7B_4_30	MW-7B	Other	Bicarbonate	mg/L	11	0	0%	0.0638	0.063	↔	-0.0324	0.651	↔	2023-02-08	0.432	↔
7B_4_32	MW-7B	Other	Hardness	mg/L	11	0	0%	-0.0822	0.081	↔	0.00612	0.375	↔	2022-06-24	0.515	↔
7B_4_33	MW-7B	Other	Magnesium	mg/L	11	0	0%	-0.00376	0.529	↔	0.0000899	0.722	↔	2022-05-18	0.323	↔
7B_4_34	MW-7B	Other	Potassium	mg/L	11	0	0%	0.00145	0.386	↔	-0.0000649	0.941	↔	2022-11-09	0.217	↔

(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
7B_4_35	MW-7B	Other	Sodium	mg/L	11	0	0%	0.0392	0.124	↔	-0.323	0.001	↓	2023-07-24	0.880	↔

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
100C_1_02	MW-100C	Appendix III	Calcium	mg/L	8	0	0%	-0.00138	0.977	↔	0.0783	0.066	↔	-0.0394	0.197	↔	2023-08-13	2023-11-04	0.947	↔
100C_1_03	MW-100C	Appendix III	Chloride	mg/L	8	0	0%	-0.114	0.001	↓	-0.0571	0.002	↓	-0.00311	0.059	↔	2023-07-10	2023-10-03	1.000	↔
100C_1_04	MW-100C	Appendix III	Fluoride	mg/L	8	7	88%	0.00180	0.816	↔	-0.00955	0.555	↔	0.0101	0.264	↔	2023-09-10	2023-11-26	0.658	↔
100C_1_06	MW-100C	Appendix III	Total Dissolved Solids	mg/L	8	0	0%	0.0790	0.895	↔	-0.133	0.511	↔	0.187	0.758	↔	2023-08-02	2023-12-28	0.454	↔
100C_2_04	MW-100C	Appendix IV	Fluoride	mg/L	8	7	88%	0.00180	0.816	↔	-0.00955	0.555	↔	0.0101	0.264	↔	2023-09-10	2023-11-26	0.658	↔
100C_3_25	MW-100C	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.00247	0.475	↔	-0.00277	0.190	↔	0.000439	0.780	↔	2023-08-13	2023-10-29	0.778	↔
100C_3_27	MW-100C	Field Parameters	Temperature	°C	8	0	0%	0.00818	0.523	↔	-0.0334	0.257	↔	0.0114	0.387	↔	2023-08-15	2023-11-26	0.957	↔
100C_4_36	MW-100C	Other	Total Suspended Solids	mg/L	8	2	25%	0.0887	0.507	↔	-0.0660	0.356	↔	0.0260	0.677	↔	2023-08-13	2023-11-16	0.663	↔
100C_5_38	MW-100C	Part 115	Iron	mg/L	8	0	0%	0.0197	0.000	↑	-0.00600	0.004	↓	-0.000613	0.037	↔	2023-07-16	2023-10-02	0.999	↔
100D_1_01	MW-100D	Appendix III	Boron	mg/L	8	0	0%	-0.00438	0.438	↔	0.000259	0.874	↔	-0.0104	0.150	↔	2023-07-10	2023-12-21	0.901	↔
100D_1_02	MW-100D	Appendix III	Calcium	mg/L	8	0	0%	-0.0203	0.060	↔	-0.00788	0.041	↔	0.426	0.000	↑	2023-08-13	2024-01-02	1.000	↔
100D_1_03	MW-100D	Appendix III	Chloride	mg/L	8	4	50%	0.000000190	0.484	↔	-0.0229	0.000	↓	0.140	0.000	↑	2023-10-22	2023-12-28	1.000	↔
100D_1_04	MW-100D	Appendix III	Fluoride	mg/L	8	5	62%	0.0000000000193	1.000	↔	-0.0000000000349	1.000	↔	-0.00587	0.094	↔	2023-07-12	2023-10-03	0.924	↔
100D_1_05	MW-100D	Appendix III	Sulfate	mg/L	8	1	12%	0.123	0.277	↔	-0.0327	0.340	↔	0.611	0.018	↔	2023-08-13	2023-12-31	0.982	↔
100D_2_04	MW-100D	Appendix IV	Fluoride	mg/L	8	5	62%	0.0000000000193	1.000	↔	-0.0000000000349	1.000	↔	-0.00587	0.094	↔	2023-07-12	2023-10-03	0.924	↔
100D_2_09	MW-100D	Appendix IV	Arsenic	mg/L	8	2	25%	0.0000143	0.134	↔	0.00000000000000251	1.000	↔	-0.000000000000000496	1.000	↔	2023-08-25	2023-11-04	0.889	↔
100D_2_16	MW-100D	Appendix IV	Lithium	mg/L	8	0	0%	-0.000429	0.004	↓	0.0000143	0.396	↔	0.0000275	0.168	↔	2023-07-10	2023-11-26	0.995	↔
100D_2_18	MW-100D	Appendix IV	Molybdenum	mg/L	8	1	12%	0.000143	0.008	↑	-0.0000571	0.049	↔	-0.0000167	0.055	↔	2023-07-30	2023-09-30	0.993	↔
100D_3_24	MW-100D	Field Parameters	Conductivity	mS/cm	8	0	0%	0.000329	0.039	↔	-0.0000714	0.395	↔	0.00400	0.001	↑	2023-08-23	2024-01-01	0.999	↔
100D_3_25	MW-100D	Field Parameters	Dissolved Oxygen	mg/L	8	0	0%	0.00173	0.147	↔	-0.00190	0.331	↔	0.000270	0.746	↔	2023-08-14	2023-10-24	0.844	↔
100D_3_27	MW-100D	Field Parameters	Temperature	°C	8	0	0%	0.0119	0.584	↔	-0.0406	0.387	↔	0.0153	0.483	↔	2023-08-16	2023-11-26	0.911	↔
100D_4_33	MW-100D	Other	Magnesium	mg/L	8	0	0%	-0.00773	0.027	↔	-0.00258	0.184	↔	0.0684	0.001	↑	2023-08-14	2023-12-31	0.998	↔
100D_4_36	MW-100D	Other	Total Suspended Solids	mg/L	8	3	38%	-0.00714	0.388	↔	0.0143	0.160	↔	-0.0343	0.119	↔	2023-09-11	2023-12-19	0.873	↔
16C_1_02	MW-16C	Appendix III	Calcium	mg/L	10	0	0%	0.0714	0.024	↔	0.0333	0.530	↔	-0.0549	0.308	↔	2023-07-05	2023-11-17	0.907	↔
16C_1_03	MW-16C	Appendix III	Chloride	mg/L	10	6	60%	-0.0547	0.243	↔	-0.00366	0.707	↔	-0.0202	0.481	↔	2023-03-31	2023-10-17	0.748	↔
16C_1_05	MW-16C	Appendix III	Sulfate	mg/L	10	0	0%	-0.234	0.000	↓	0.00633	0.140	↔	-0.00480	0.387	↔	2023-03-26	2023-10-10	0.995	↔
16C_1_06	MW-16C	Appendix III	Total Dissolved Solids	mg/L	10	0	0%	-1.04	0.027	↔	-0.133	0.544	↔	0.0347	0.665	↔	2023-04-20	2023-07-05	0.948	↔
16C_1_07	MW-16C	Appendix III	pH, Field	su	10	0	0%	0.000426	0.607	↔	-0.00686	0.003	↓	0.00130	0.001	↑	2023-04-16	2023-06-02	0.978	↔
16C_2_16	MW-16C	Appendix IV	Lithium	mg/L	10	0	0%	-0.0000774	0.163	↔	0.00000748	0.508	↔	0.0000165	0.608	↔	2023-03-24	2023-11-11	0.595	↔
16C_3_24	MW-16C	Field Parameters	Conductivity	mS/cm	10	0	0%	-0.000470	0.267	↔	0.000517	0.293	↔	-0.000118	0.590	↔	2023-05-29	2023-08-17	0.527	↔
16C_3_25	MW-16C	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	0.000797	0.593	↔	-0.00309	0.273	↔	0.000921	0.582	↔	2023-07-04	2023-09-24	0.498	↔
16C_3_27	MW-16C	Field Parameters	Temperature	°C	10	0	0%	-0.0283	0.530	↔	0.0971	0.650	↔	-0.0345	0.616	↔	2023-07-05	2023-09-22	0.334	↔
16C_3_29	MW-16C	Field Parameters	pH	su	10	0	0%	0.000426	0.607	↔	-0.00686	0.003	↓	0.00130	0.001	↑	2023-04-16	2023-06-02	0.978	↔
16C_4_30	MW-16C	Other	Bicarbonate	mg/L	10	0	0%	0.648	0.065	↔	-0.436	0.391	↔	0.177	0.571	↔	2023-05-30	2023-09-26	0.666	↔

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

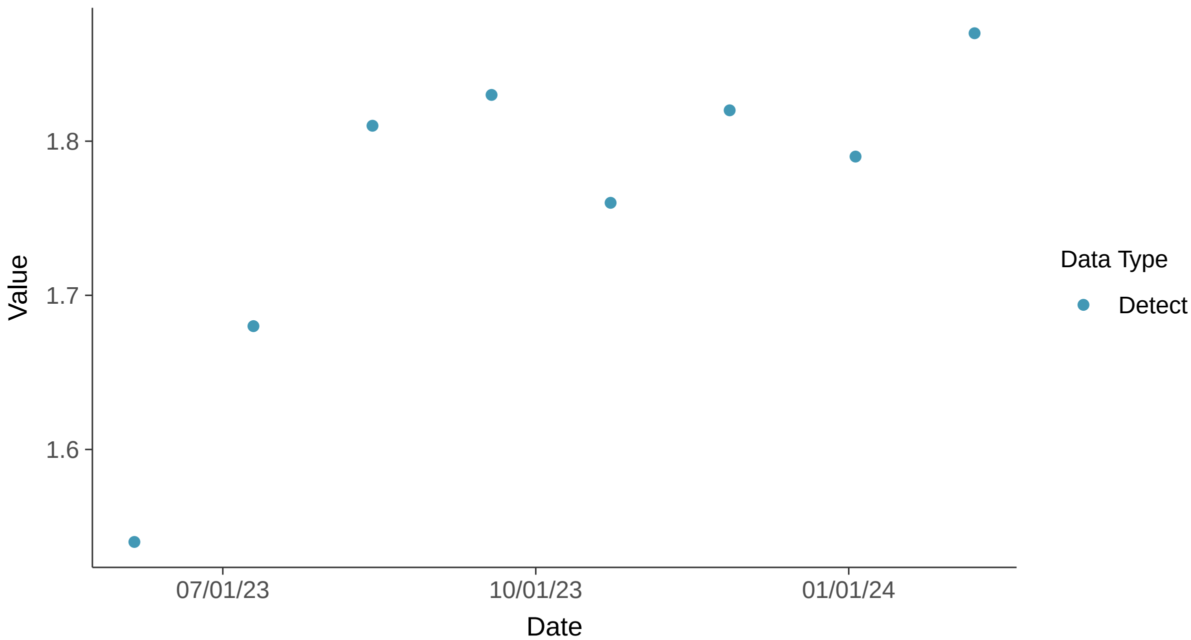
								Line 1			Line 2			Line 3						
ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend	Break 1	Break 2	R-Squared	Overall Trend
16C_4_32	MW-16C	Other	Hardness	mg/L	10	0	0%	-0.213	0.421	↔	0.571	0.148	↔	0.0691	0.211	↔	2023-03-22	2023-06-06	0.939	↔
16C_4_34	MW-16C	Other	Potassium	mg/L	10	0	0%	-0.00367	0.573	↔	0.0120	0.039	↔	0.00137	0.403	↔	2023-03-26	2023-07-05	0.945	↔
16C_4_36	MW-16C	Other	Total Suspended Solids	mg/L	10	3	30%	-0.604	0.000	↓	-0.0110	0.563	↔	0.0127	0.637	↔	2023-04-03	2023-09-27	0.988	↔
16C_5_38	MW-16C	Part 115	Iron	mg/L	10	0	0%	0.00429	0.269	↔	-0.00714	0.186	↔	-0.000115	0.869	↔	2023-03-28	2023-06-10	0.868	↔
16D_1_02	MW-16D	Appendix III	Calcium	mg/L	10	0	0%	-0.00454	0.074	↔	0.0171	0.019	↔	-0.00972	0.092	↔	2023-07-06	2023-10-17	0.933	↔
16D_1_03	MW-16D	Appendix III	Chloride	mg/L	10	0	0%	0.0184	0.003	↑	-0.0353	0.026	↔	0.00455	0.123	↔	2023-06-17	2023-08-08	0.936	↔
16D_1_07	MW-16D	Appendix III	pH, Field	su	10	0	0%	-0.00127	0.318	↔	-0.000362	0.785	↔	0.00467	0.069	↔	2023-05-30	2023-11-16	0.748	↔
16D_2_09	MW-16D	Appendix IV	Arsenic	mg/L	10	3	30%	0.0000196	0.543	↔	-0.00000101	0.888	↔	0.0000115	0.583	↔	2023-04-24	2023-11-17	0.442	↔
16D_2_10	MW-16D	Appendix IV	Barium	mg/L	10	0	0%	0.0000103	0.560	↔	-0.0000309	0.452	↔	0.00000173	0.816	↔	2023-05-12	2023-08-07	0.722	↔
16D_2_16	MW-16D	Appendix IV	Lithium	mg/L	10	0	0%	-0.000199	0.001	↓	0.0000617	0.100	↔	-0.0000164	0.295	↔	2023-04-25	2023-08-27	0.953	↔
16D_2_22	MW-16D	Appendix IV	Selenium	mg/L	10	9	90%	-0.00000116	0.792	↔	0.00000684	0.666	↔	-0.00000468	0.237	↔	2023-06-14	2023-09-11	0.443	↔
16D_3_24	MW-16D	Field Parameters	Conductivity	mS/cm	10	0	0%	0.000488	0.007	↑	-0.000439	0.060	↔	0.000134	0.279	↔	2023-06-05	2023-09-12	0.897	↔
16D_3_25	MW-16D	Field Parameters	Dissolved Oxygen	mg/L	10	0	0%	-0.0934	0.000	↓	-0.00169	0.133	↔	-0.000557	0.452	↔	2023-03-21	2023-08-08	0.999	↔
16D_3_28	MW-16D	Field Parameters	Turbidity	NTU	10	0	0%	-0.0221	0.098	↔	0.0543	0.334	↔	-0.00701	0.682	↔	2023-07-24	2023-09-20	0.626	↔
16D_4_34	MW-16D	Other	Potassium	mg/L	10	0	0%	0.00830	0.439	↔	-0.00385	0.580	↔	0.000504	0.841	↔	2023-03-31	2023-08-05	0.346	↔
16D_5_42	MW-16D	Part 115	Zinc	mg/L	10	0	0%	0.00343	0.000	↑	-0.00420	0.000	↓	-0.0000454	0.357	↔	2023-03-28	2023-06-02	0.997	↔
7B_1_02	MW-7B	Appendix III	Calcium	mg/L	11	0	0%	-0.0196	0.298	↔	0.00108	0.593	↔	-0.00242	0.491	↔	2022-05-18	2023-07-22	0.666	↔
7B_1_06	MW-7B	Appendix III	Total Dissolved Solids	mg/L	11	0	0%	0.0284	0.527	↔	-0.0667	0.609	↔	0.0884	0.206	↔	2022-10-17	2023-06-26	0.376	↔
7B_2_09	MW-7B	Appendix IV	Arsenic	mg/L	11	9	82%	0.00000664	0.677	↔	-0.00000142	0.438	↔	0.00000619	0.087	↔	2022-04-16	2023-06-29	0.577	↔
7B_2_15	MW-7B	Appendix IV	Lead	mg/L	11	10	91%	0.0000520	0.411	↔	-0.0000399	0.332	↔	0.00000289	0.748	↔	2022-06-22	2022-11-02	0.424	↔
7B_3_25	MW-7B	Field Parameters	Dissolved Oxygen	mg/L	11	0	0%	-0.0138	0.170	↔	0.00262	0.571	↔	-0.000581	0.276	↔	2022-05-08	2022-08-31	0.688	↔
7B_4_30	MW-7B	Other	Bicarbonate	mg/L	11	0	0%	-0.0161	0.737	↔	0.286	0.339	↔	-0.0644	0.060	↔	2022-09-29	2023-01-10	0.765	↔
7B_4_33	MW-7B	Other	Magnesium	mg/L	11	0	0%	-0.00532	0.398	↔	0.00118	0.281	↔	-0.000306	0.612	↔	2022-05-18	2022-11-15	0.503	↔
7B_4_34	MW-7B	Other	Potassium	mg/L	11	0	0%	-0.00507	0.689	↔	0.00320	0.285	↔	-0.000339	0.712	↔	2022-05-18	2022-11-09	0.423	↔
7B_4_35	MW-7B	Other	Sodium	mg/L	11	0	0%	-0.107	0.737	↔	0.0644	0.116	↔	-0.317	0.003	↓	2022-05-08	2023-07-02	0.898	↔
7B_5_38	MW-7B	Part 115	Iron	mg/L	11	0	0%	-0.000857	0.018	↔	0.000181	0.001	↑	0.0000000000262	1.000	↔	2022-04-15	2023-03-25	0.960	↔

Appendix III: Boron, MW-100C

ID: 100C_1_01

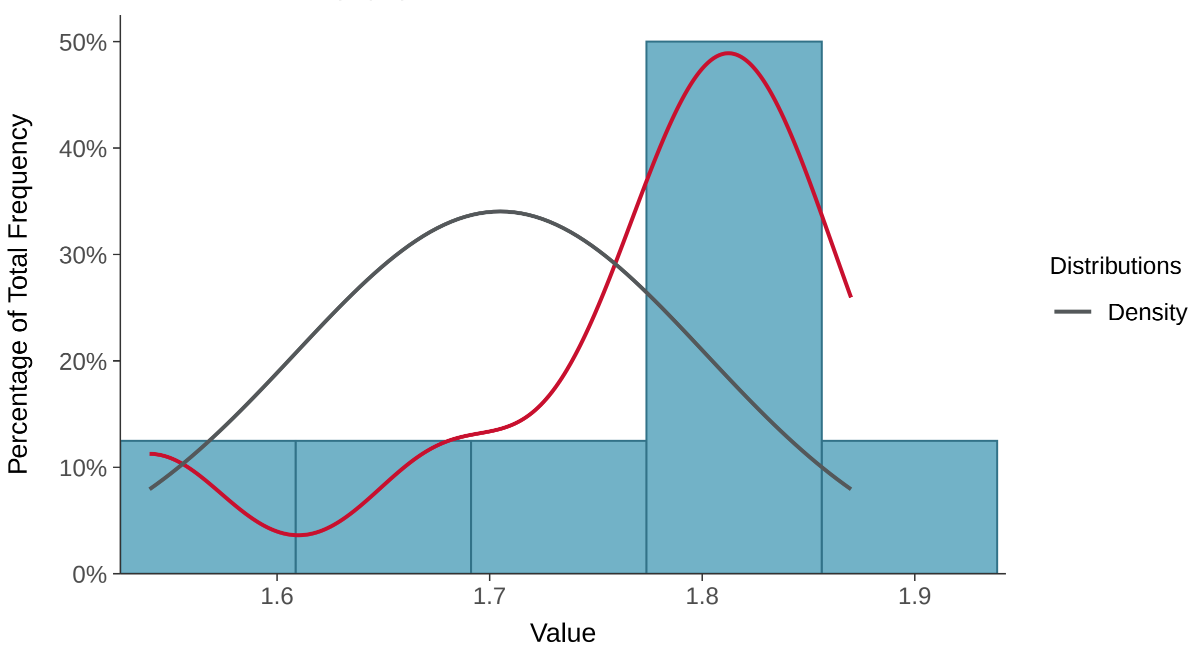
Scatter Plot

Boron, MW-100C (mg/L)



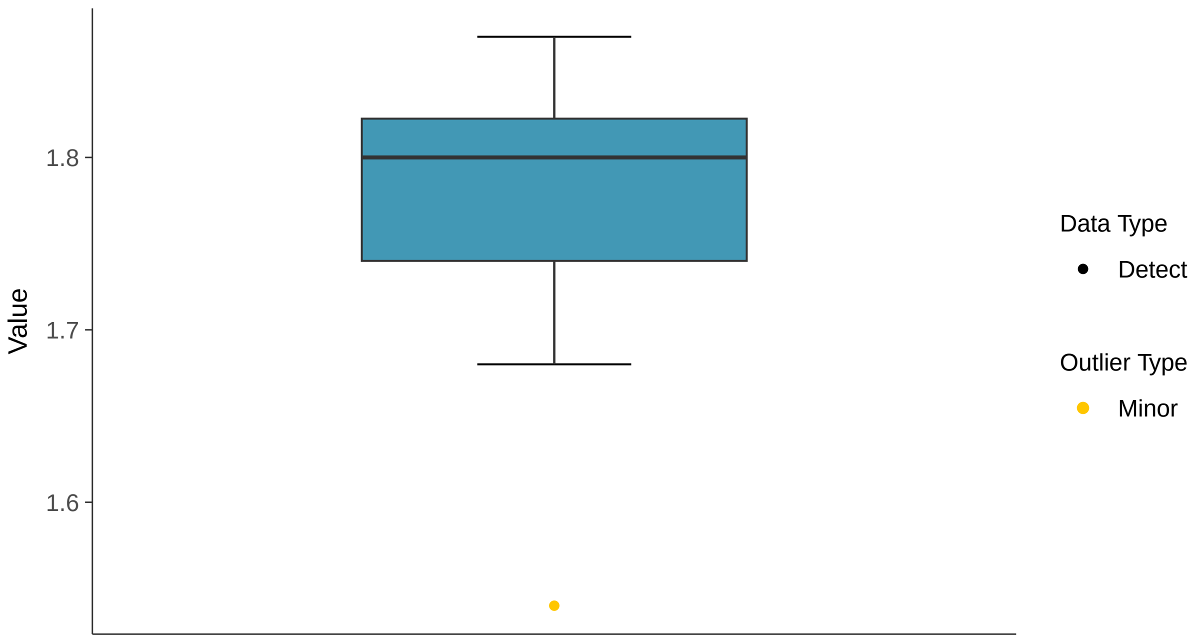
Histogram

Boron, MW-100C (mg/L)



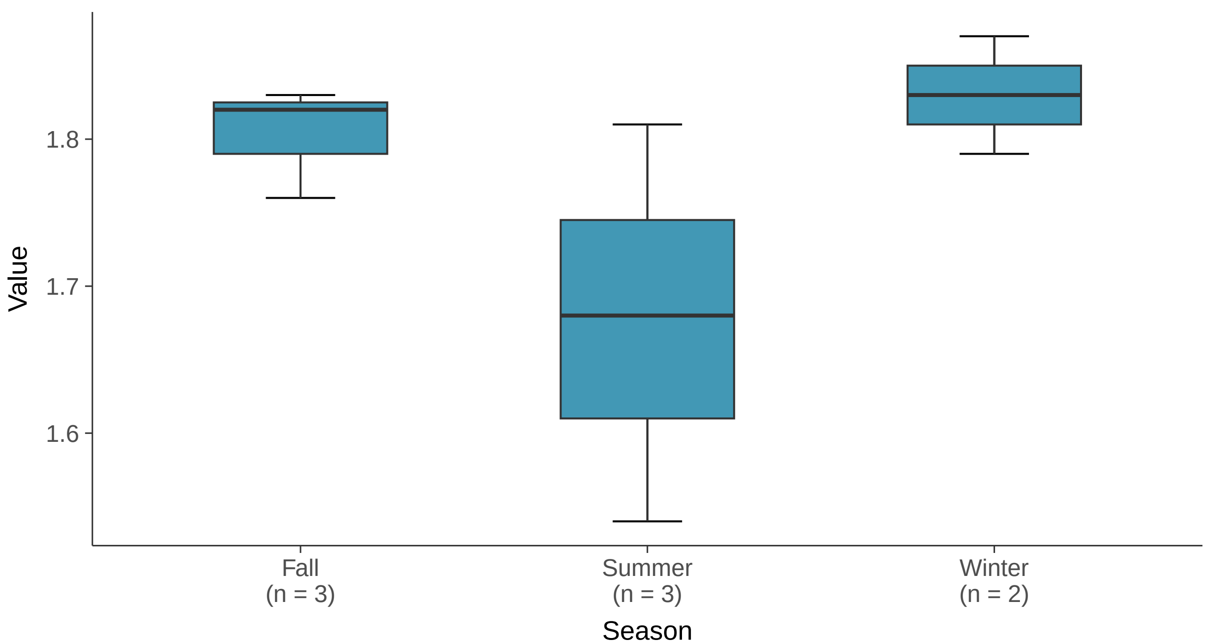
Boxplot

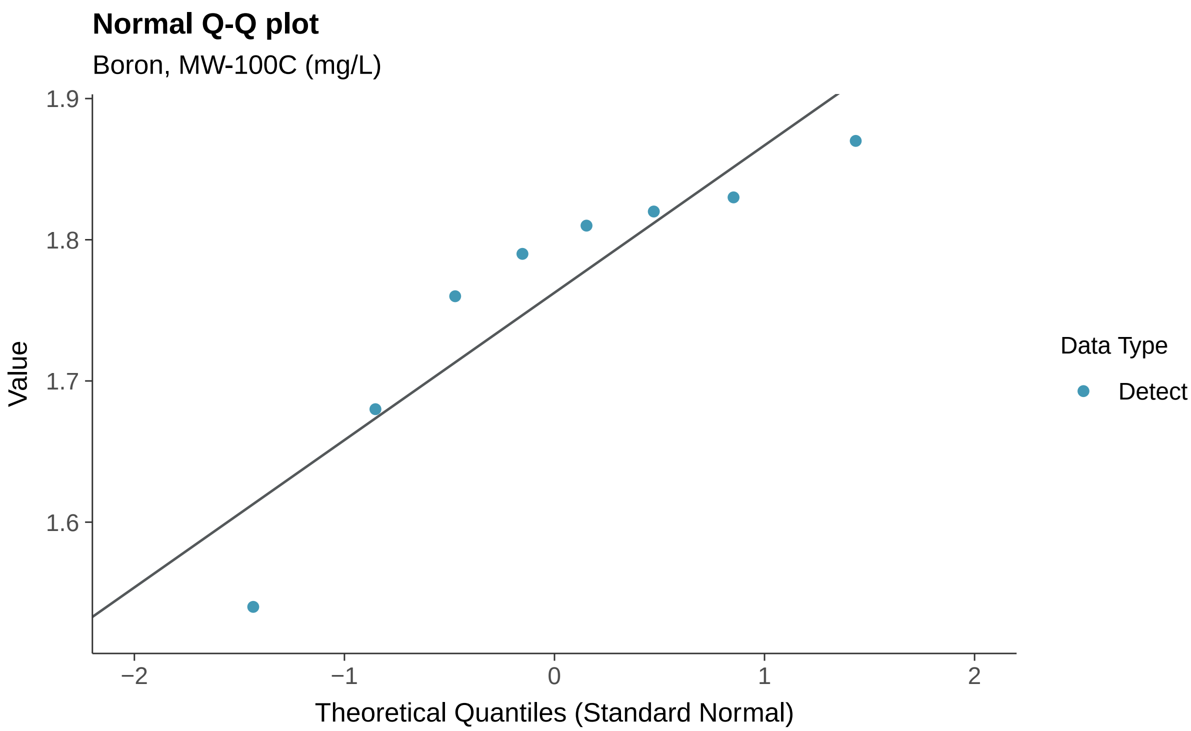
Boron, MW-100C (mg/L)

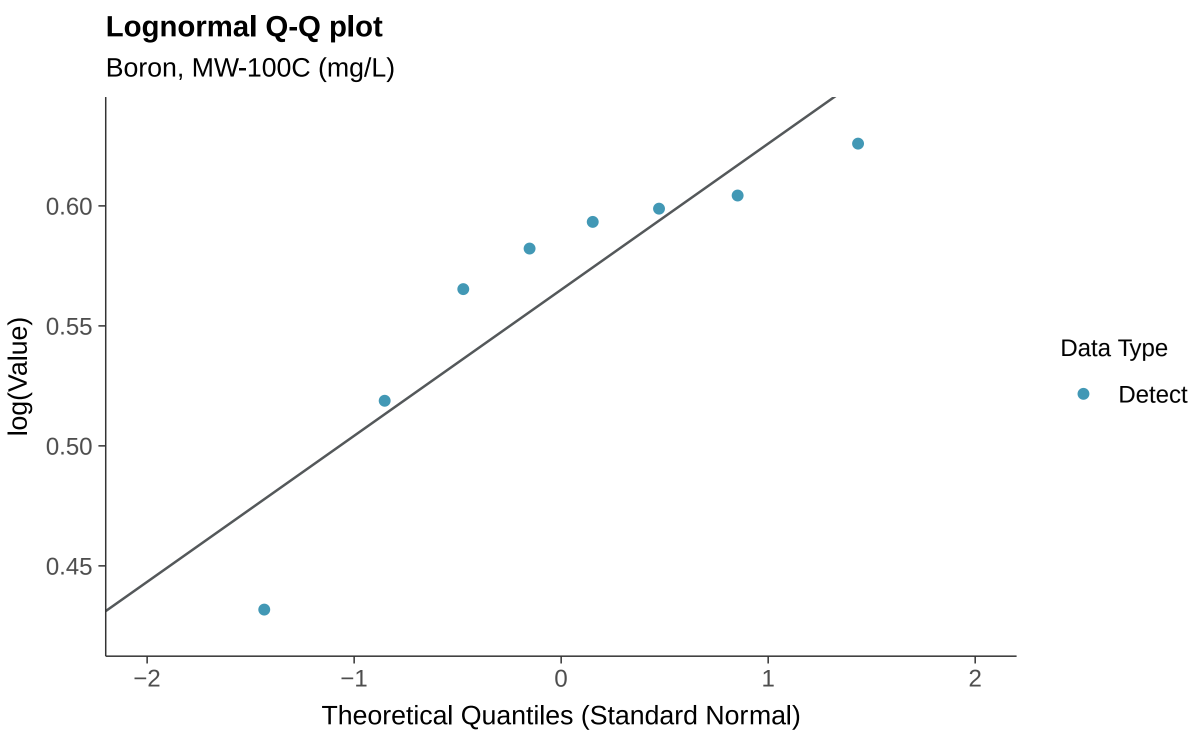


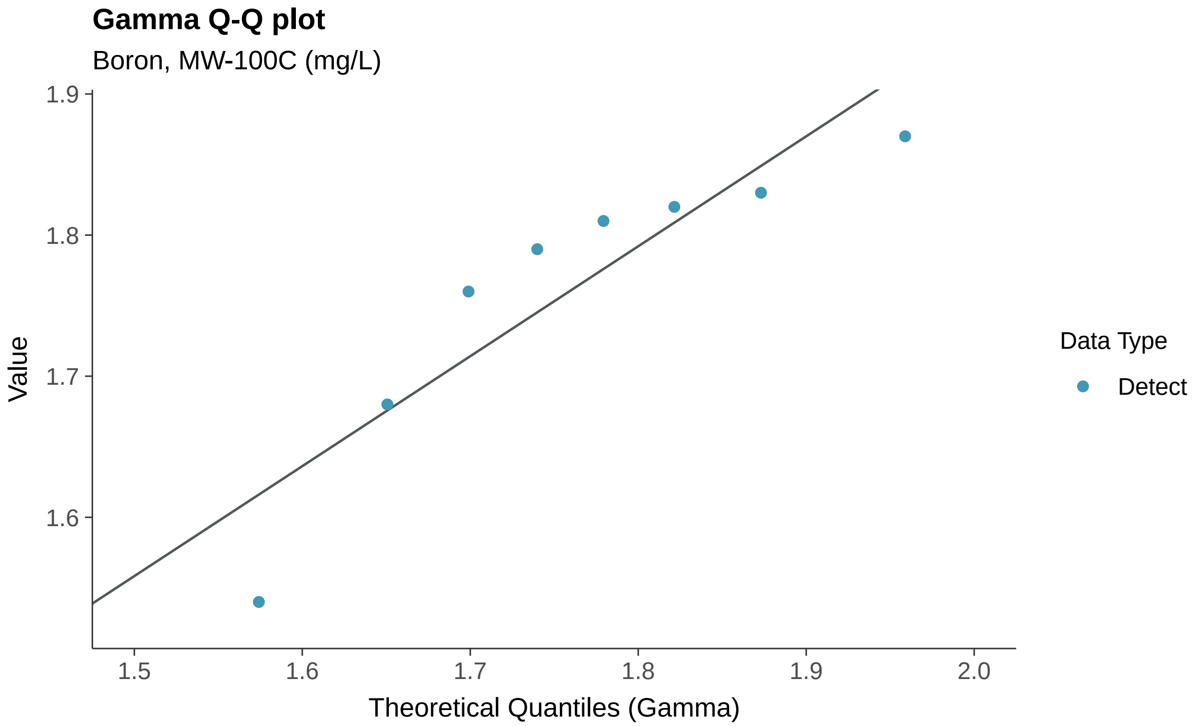
Boxplot by Season

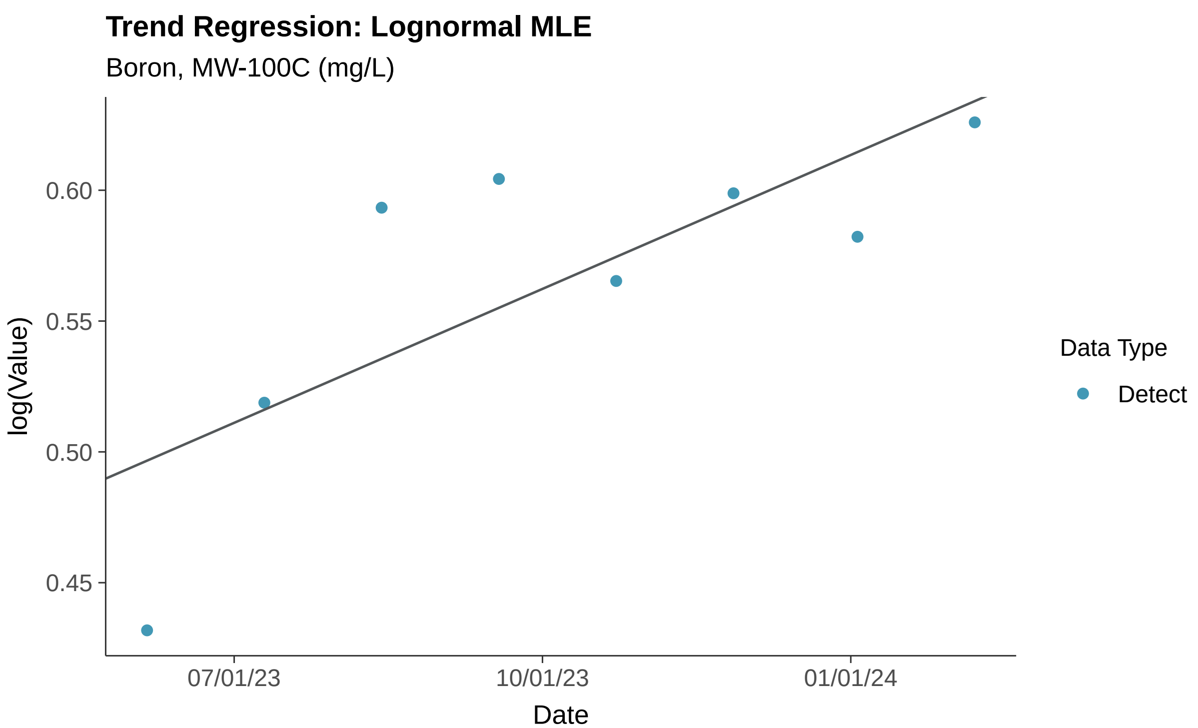
Boron, MW-100C (mg/L)




Normal Q-Q plot
Boron, MW-100C (mg/L)
Value
1.9
1.8
1.7
1.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

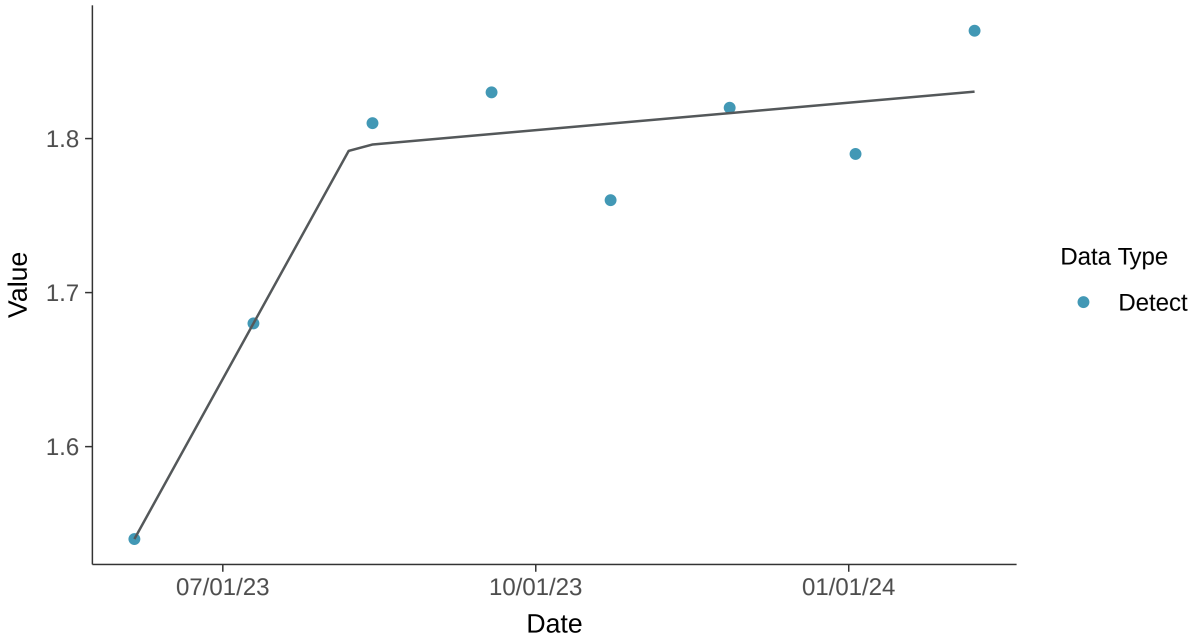

Lognormal Q-Q plot
Boron, MW-100C (mg/L)
log(Value)
0.60
0.55
0.50
0.45
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Boron, MW-100C (mg/L)
Value
1.9
1.8
1.7
1.6
1.5
1.6
1.7
1.8
1.9
2.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-100C (mg/L)
log(Value)
0.60
0.55
0.50
0.45
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Boron, MW-100C (mg/L)

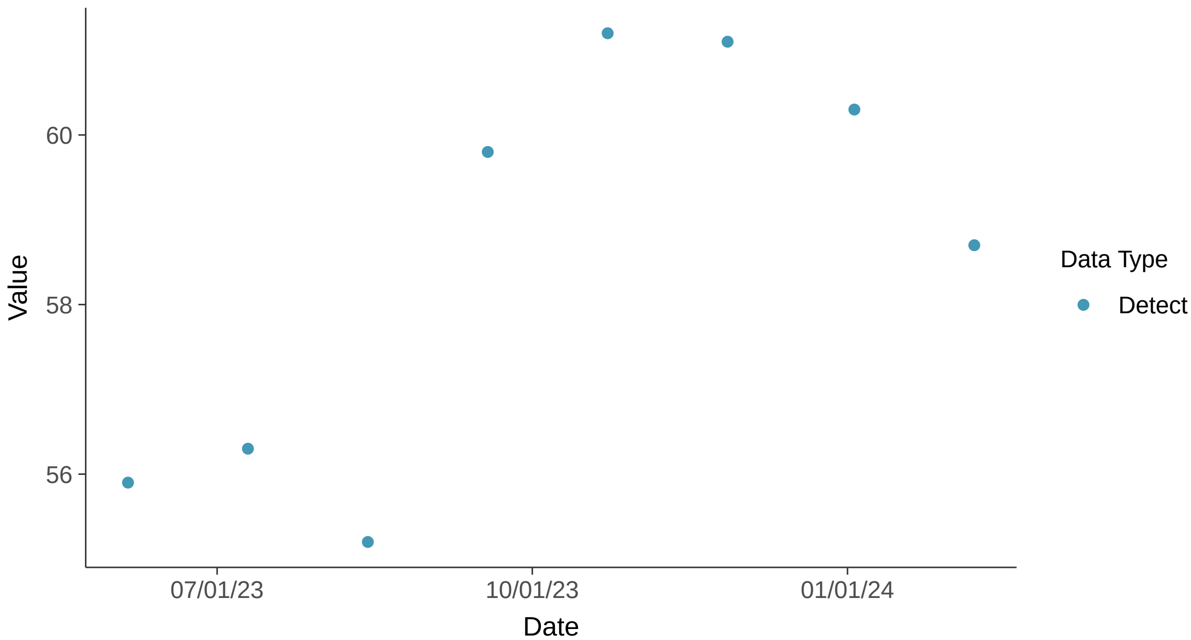


Appendix III: Calcium, MW-100C

ID: 100C_1_02

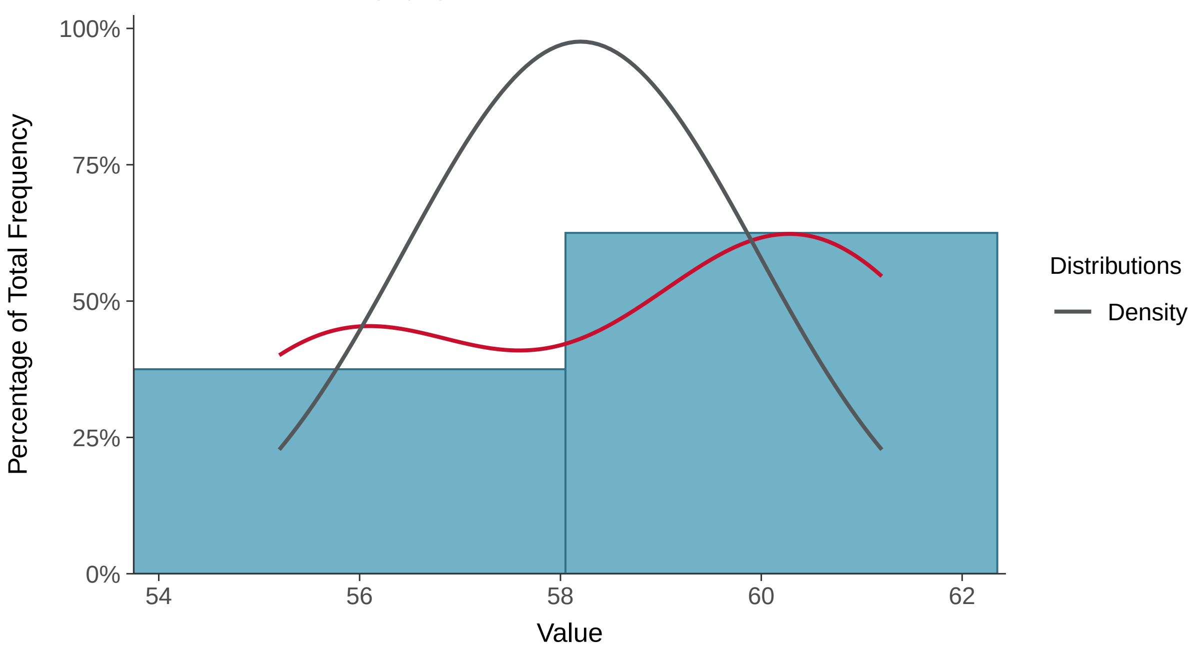
Scatter Plot

Calcium, MW-100C (mg/L)



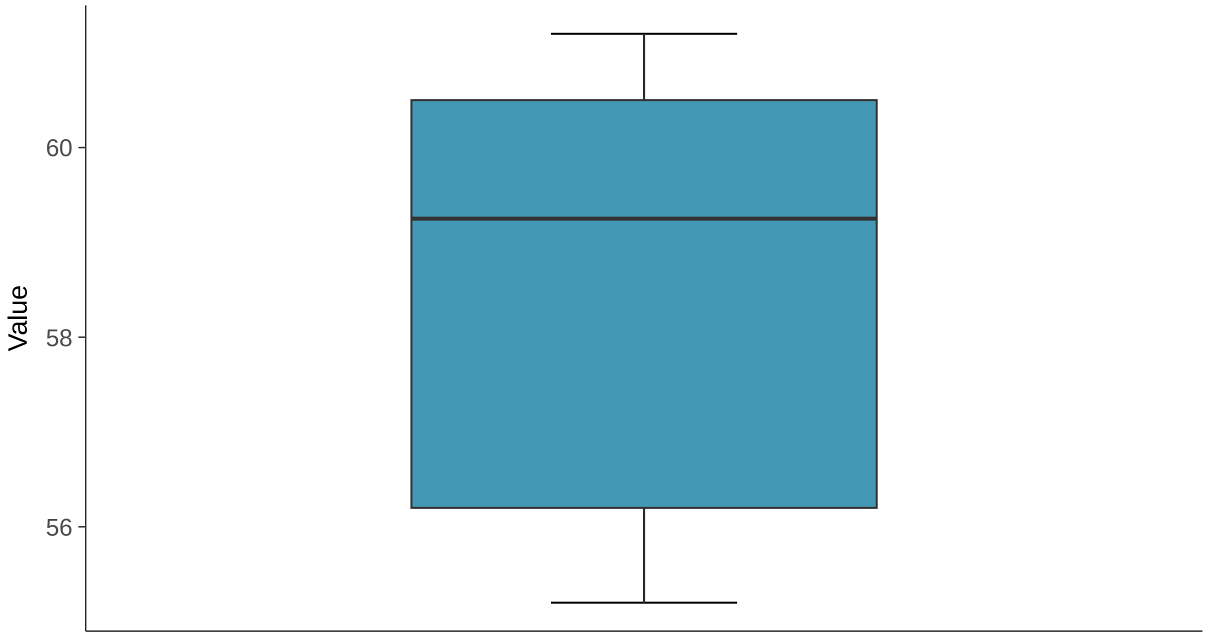
Histogram

Calcium, MW-100C (mg/L)



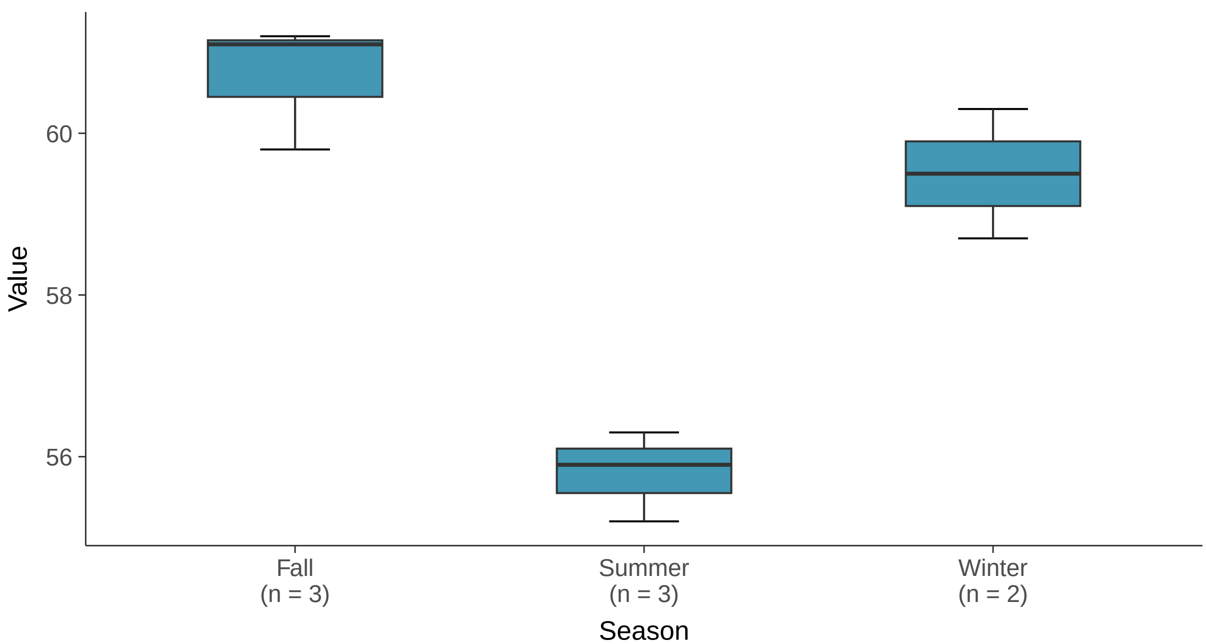
Boxplot

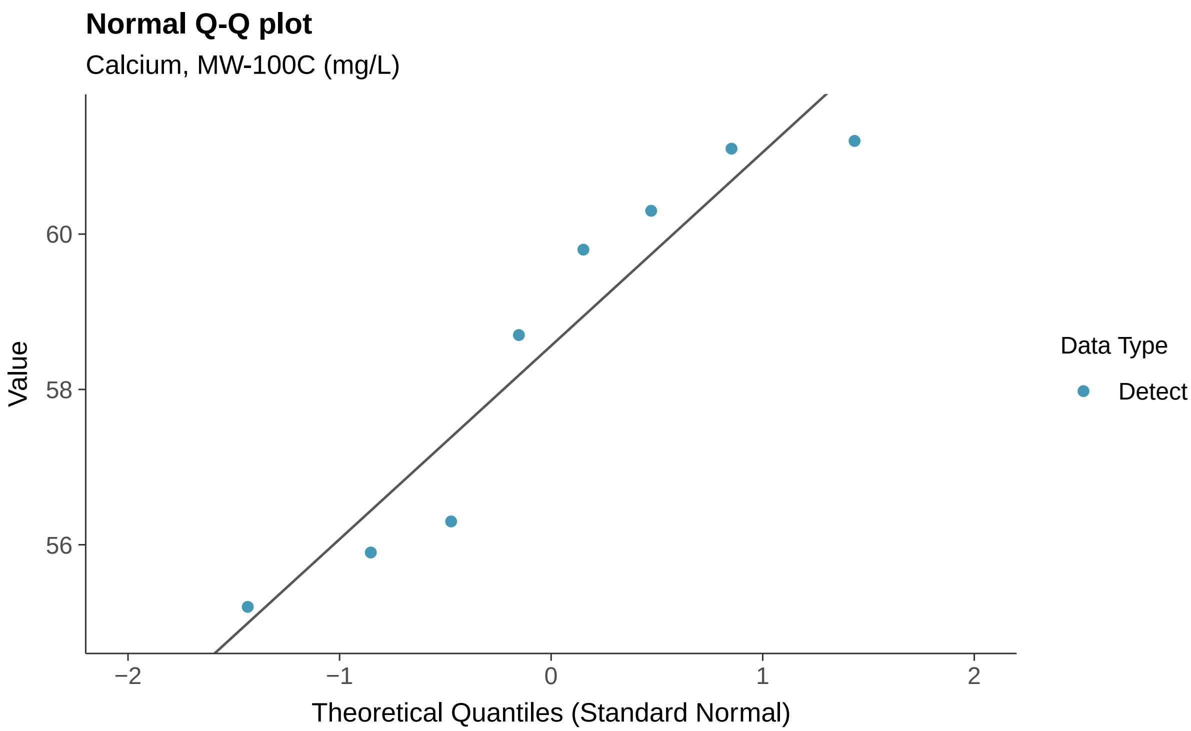
Calcium, MW-100C (mg/L)

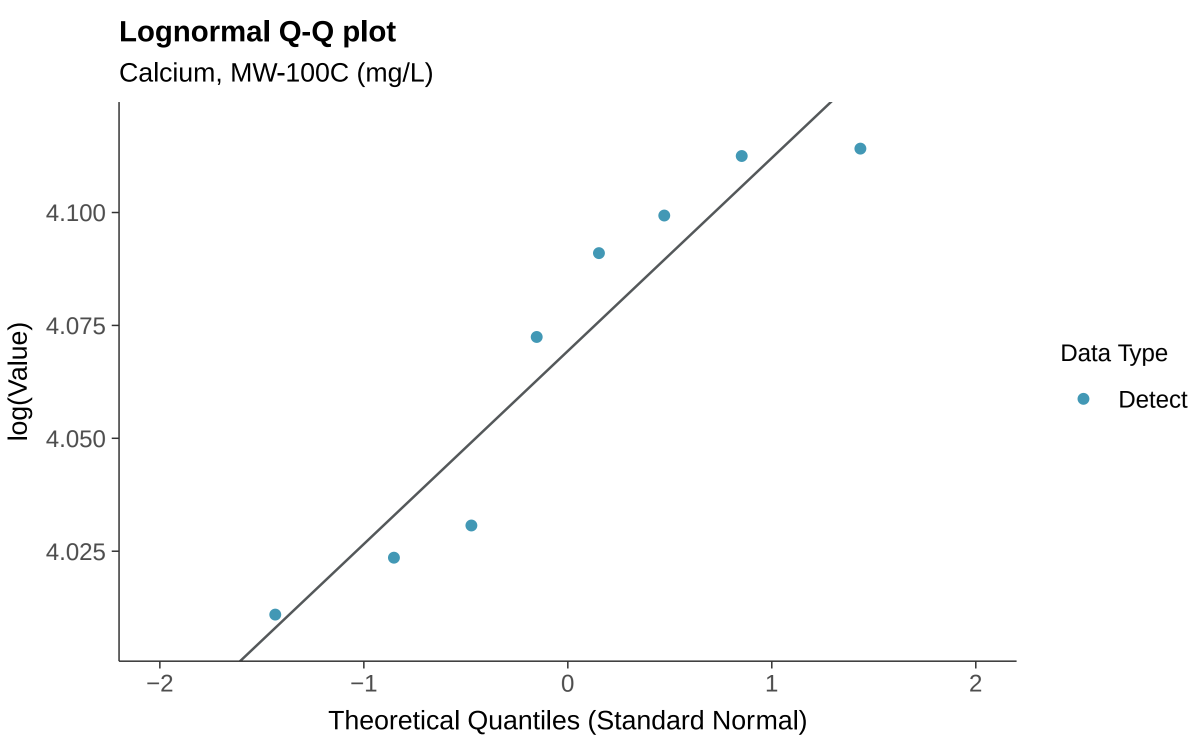


Boxplot by Season

Calcium, MW-100C (mg/L)

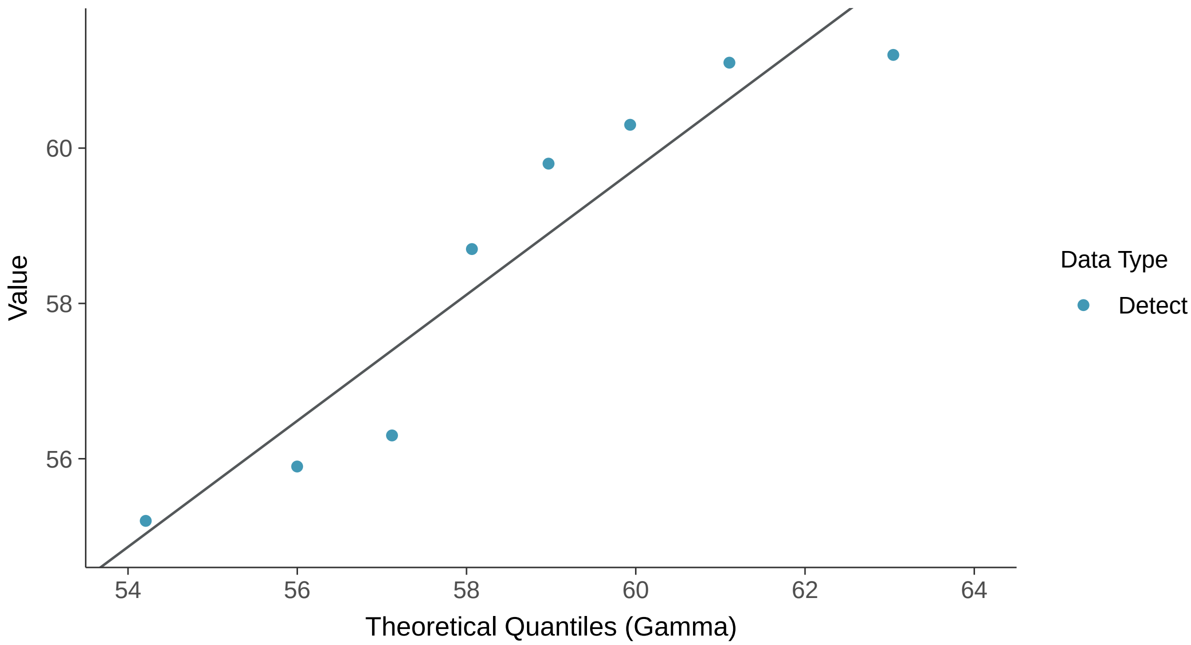



Normal Q-Q plot
Calcium, MW-100C (mg/L)
Value
60
58
56
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-100C (mg/L)
log(Value)
4.100
4.075
4.050
4.025
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

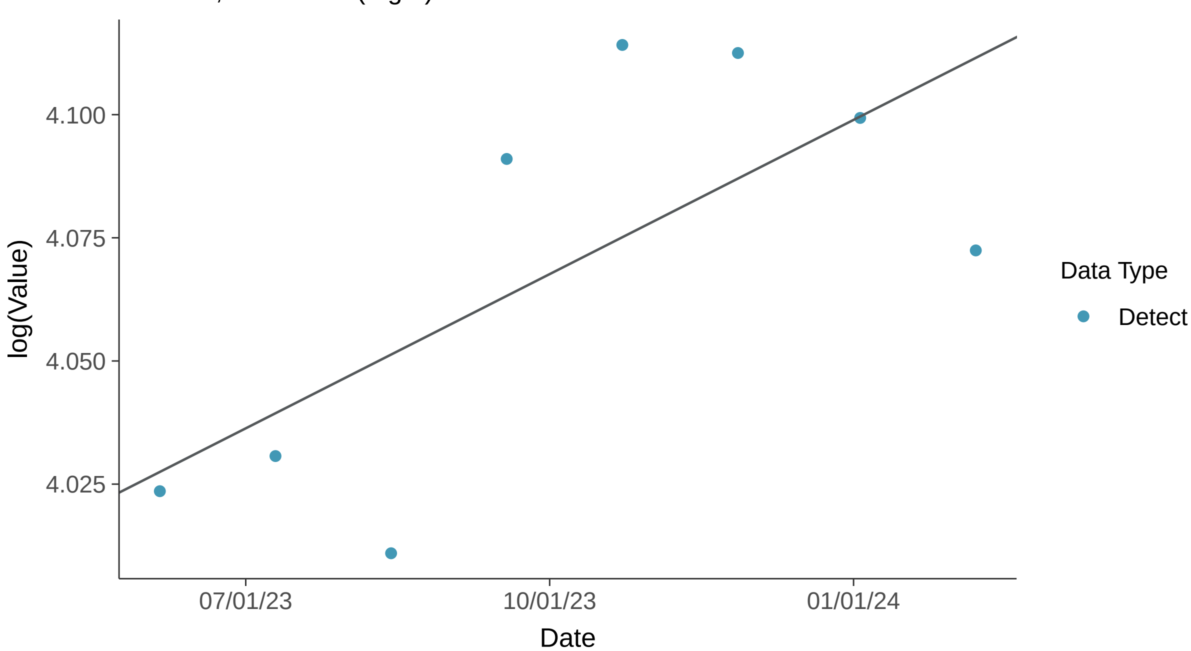
Gamma Q-Q plot

Calcium, MW-100C (mg/L)



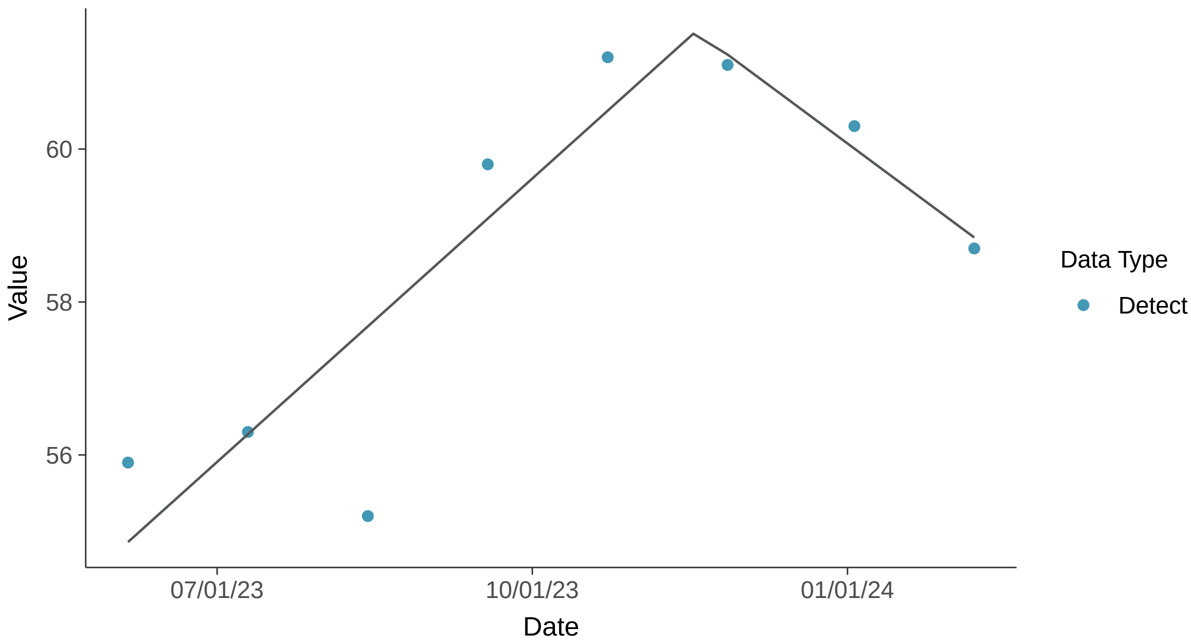
Trend Regression: Lognormal MLE

Calcium, MW-100C (mg/L)



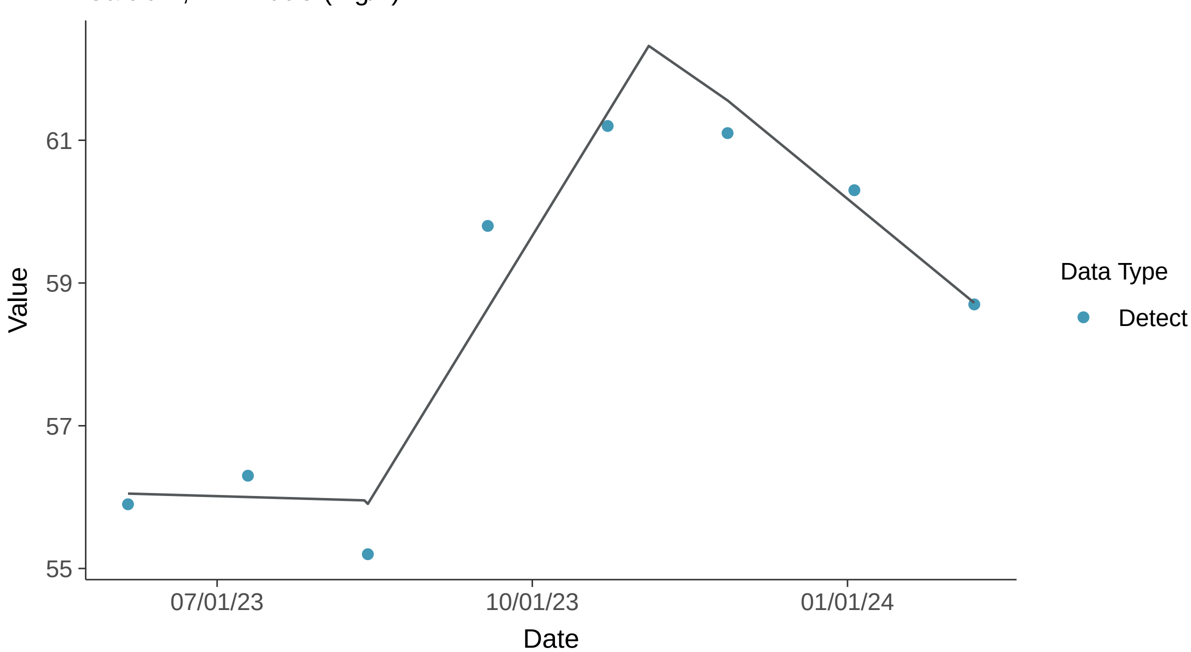
Trend Regression: Piecewise Linear-Linear

Calcium, MW-100C (mg/L)



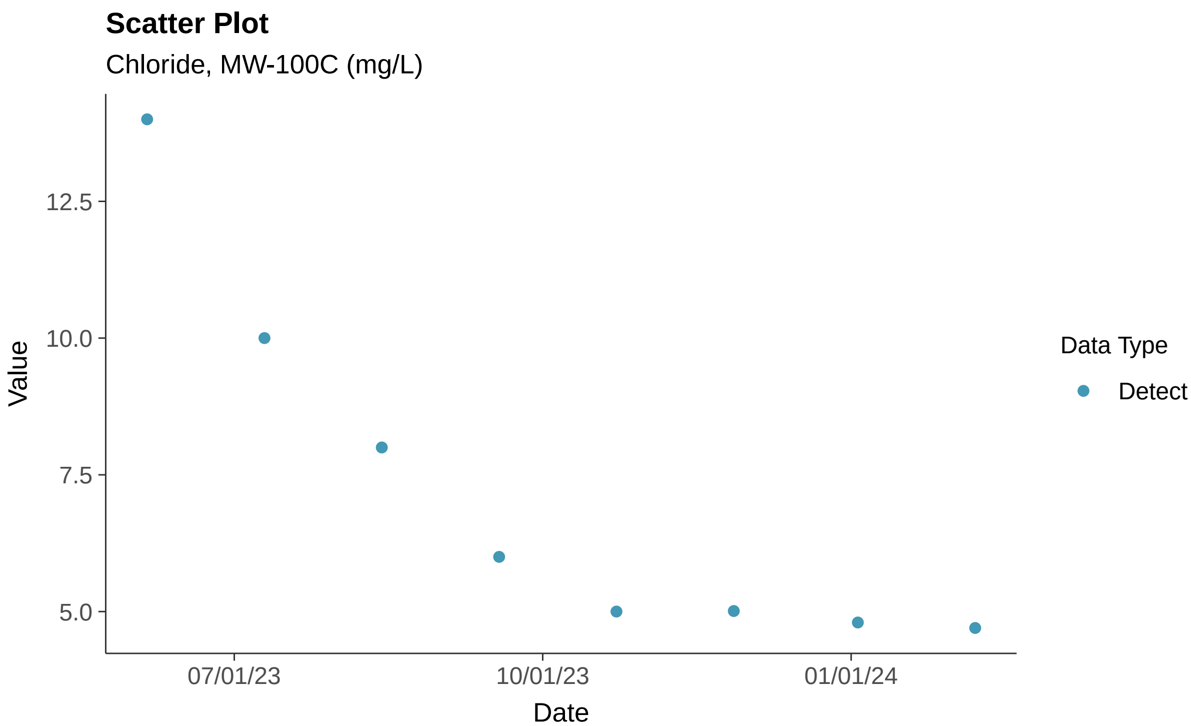
Trend Regression: Piecewise Linear-Linear-Linear

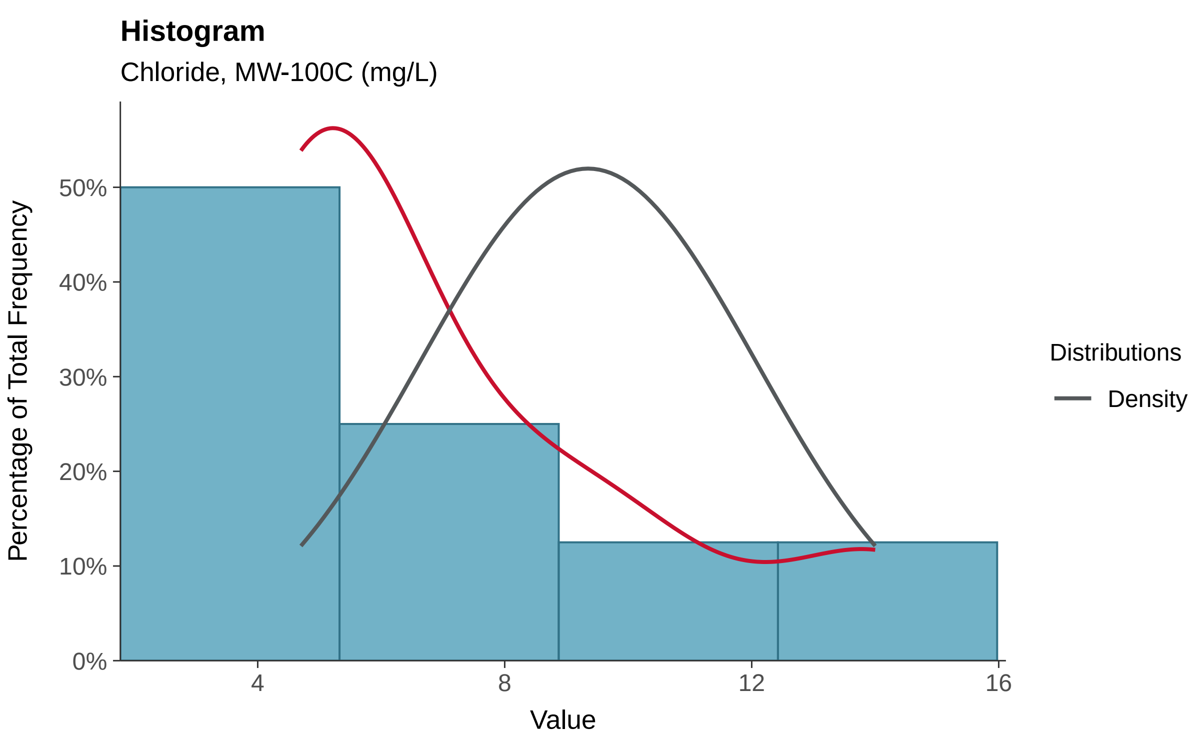
Calcium, MW-100C (mg/L)



Appendix III: Chloride, MW-100C

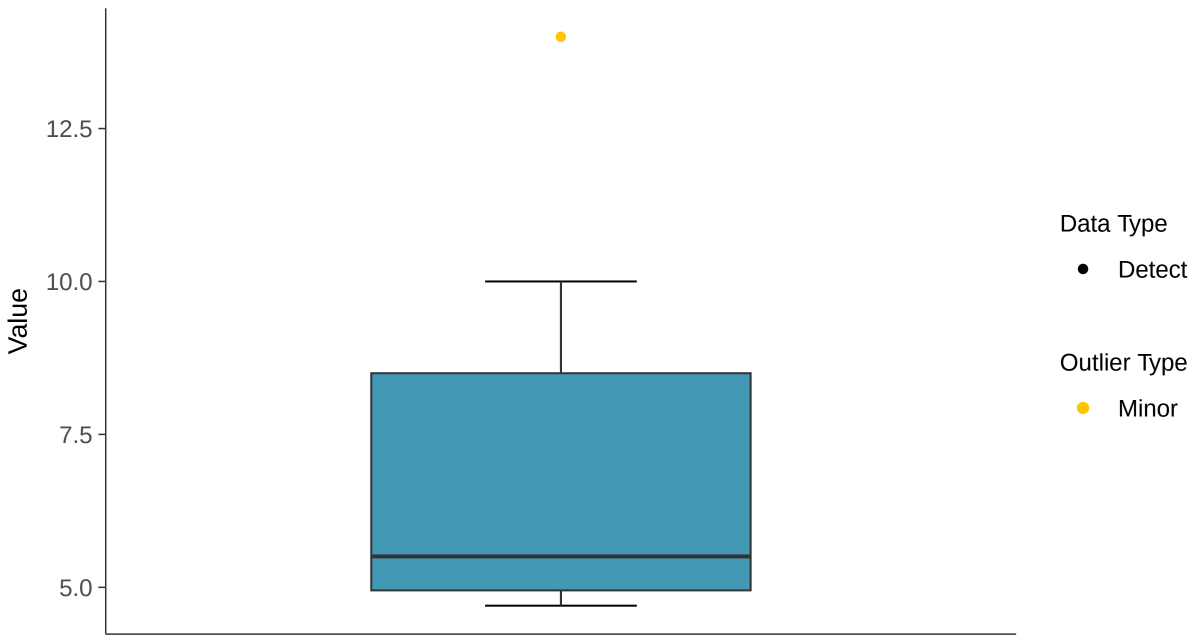
ID: 100C_1_03





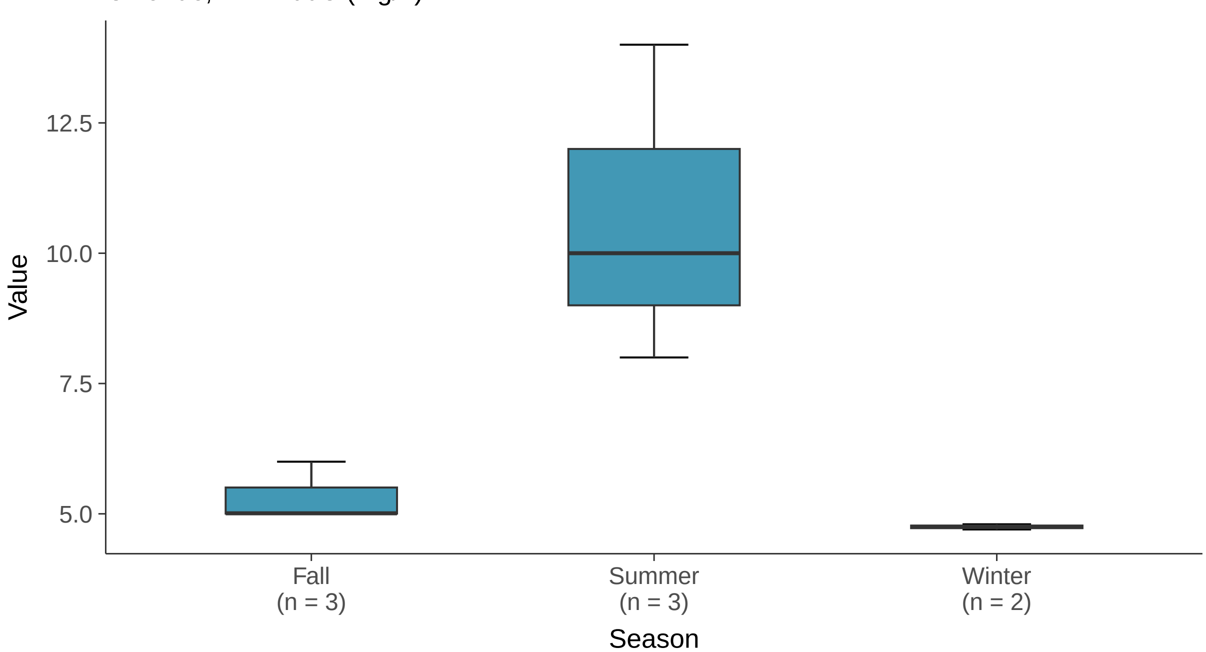
Boxplot

Chloride, MW-100C (mg/L)



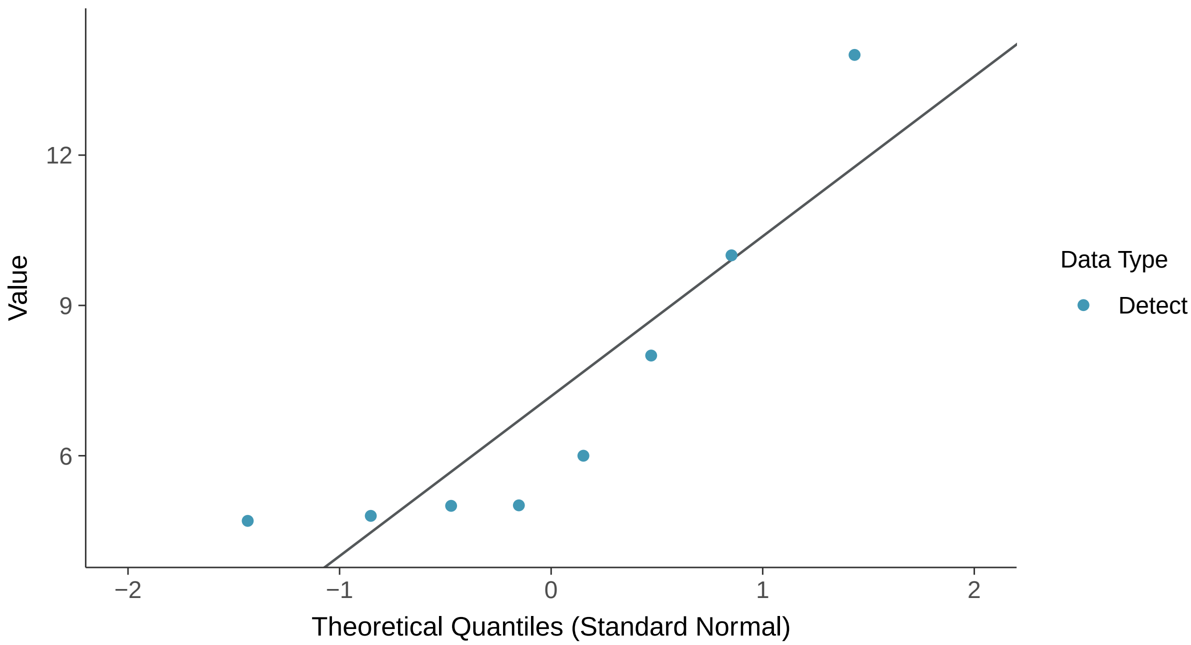
Boxplot by Season

Chloride, MW-100C (mg/L)



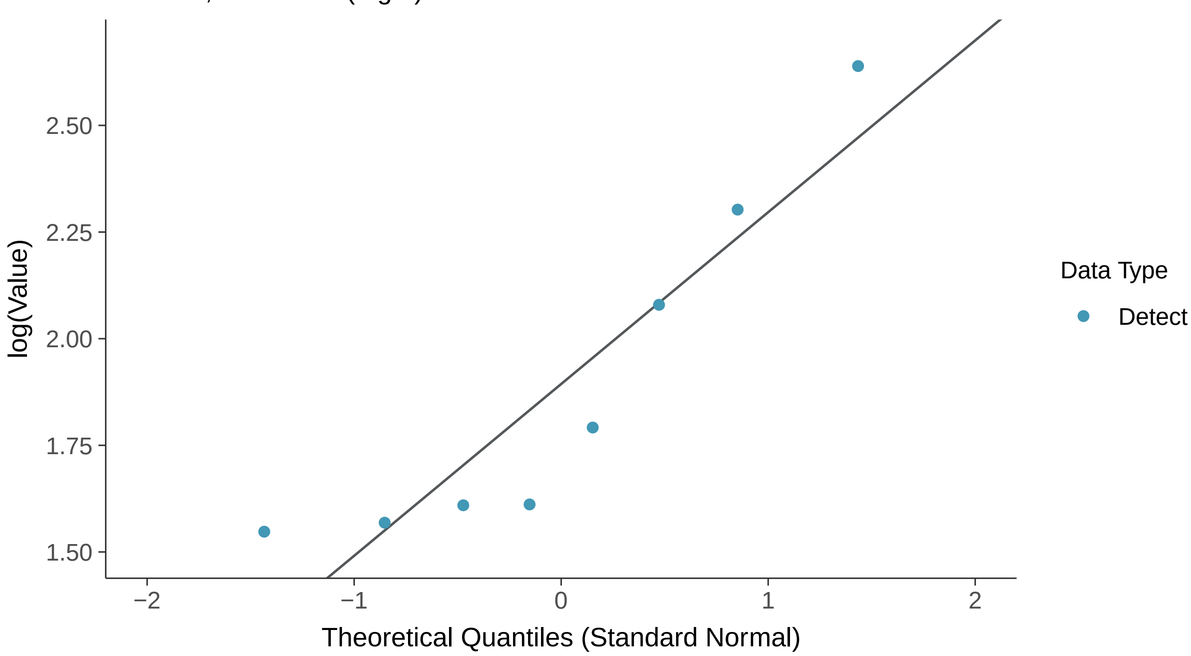
Normal Q-Q plot

Chloride, MW-100C (mg/L)



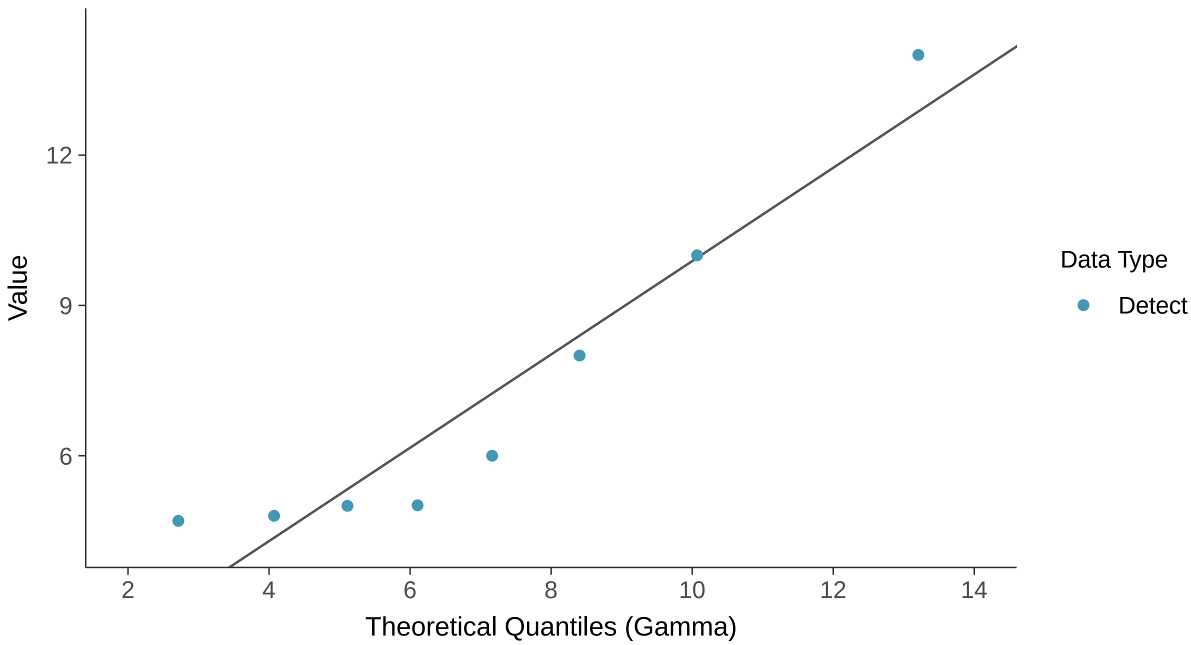
Lognormal Q-Q plot

Chloride, MW-100C (mg/L)



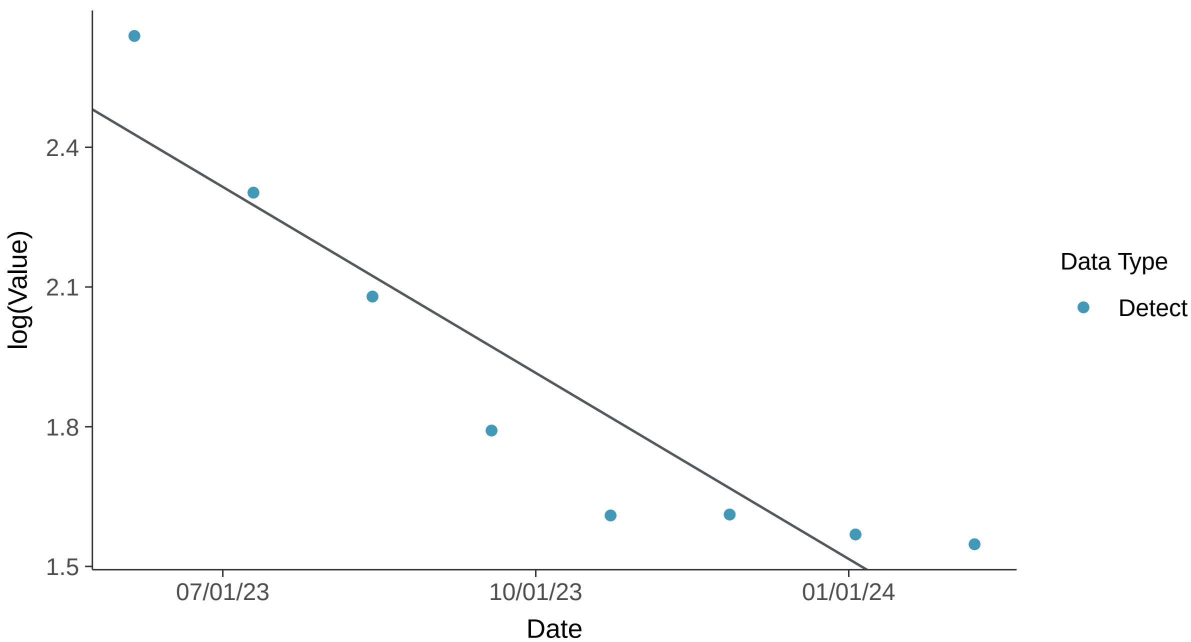
Gamma Q-Q plot

Chloride, MW-100C (mg/L)



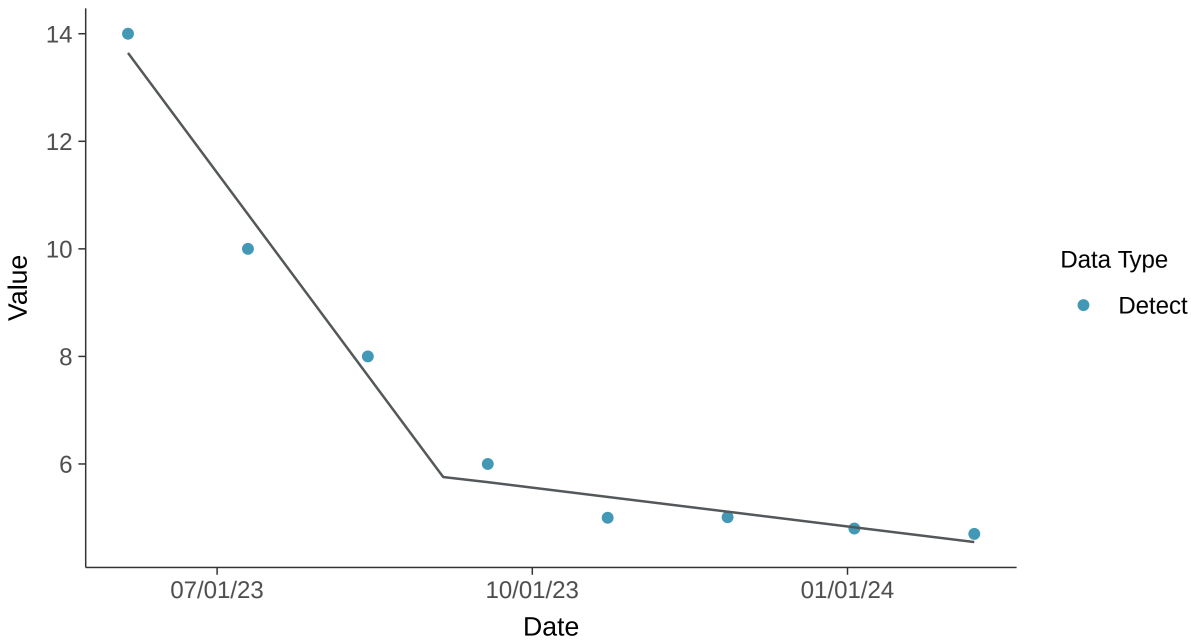
Trend Regression: Lognormal MLE

Chloride, MW-100C (mg/L)



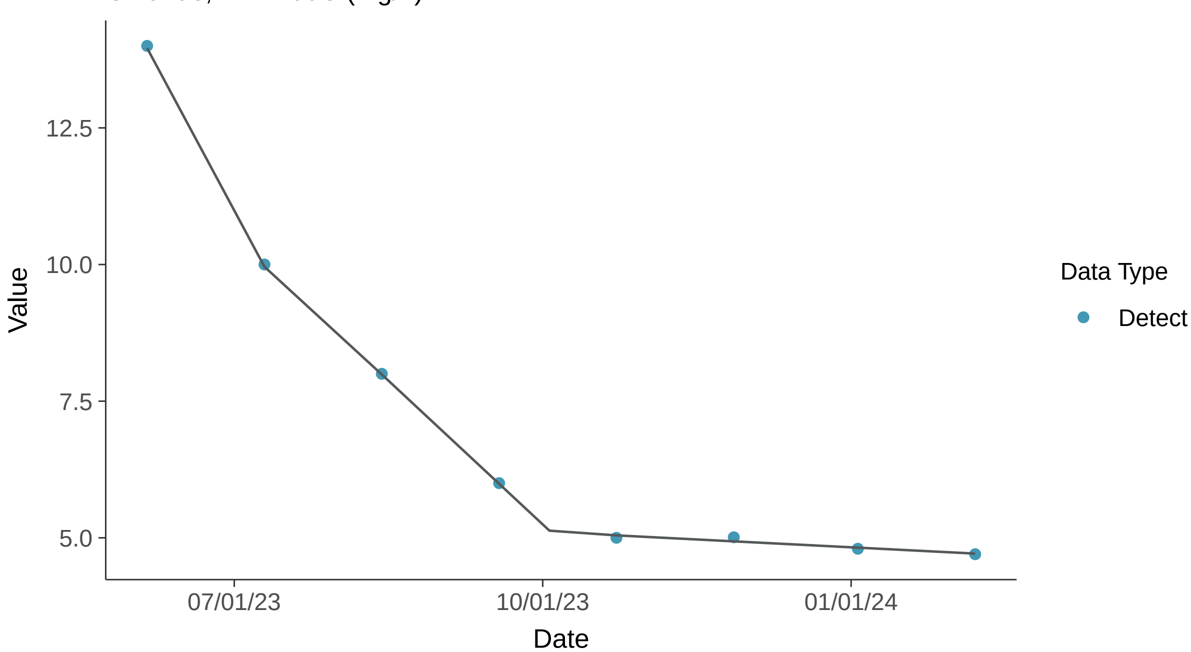
Trend Regression: Piecewise Linear-Linear

Chloride, MW-100C (mg/L)



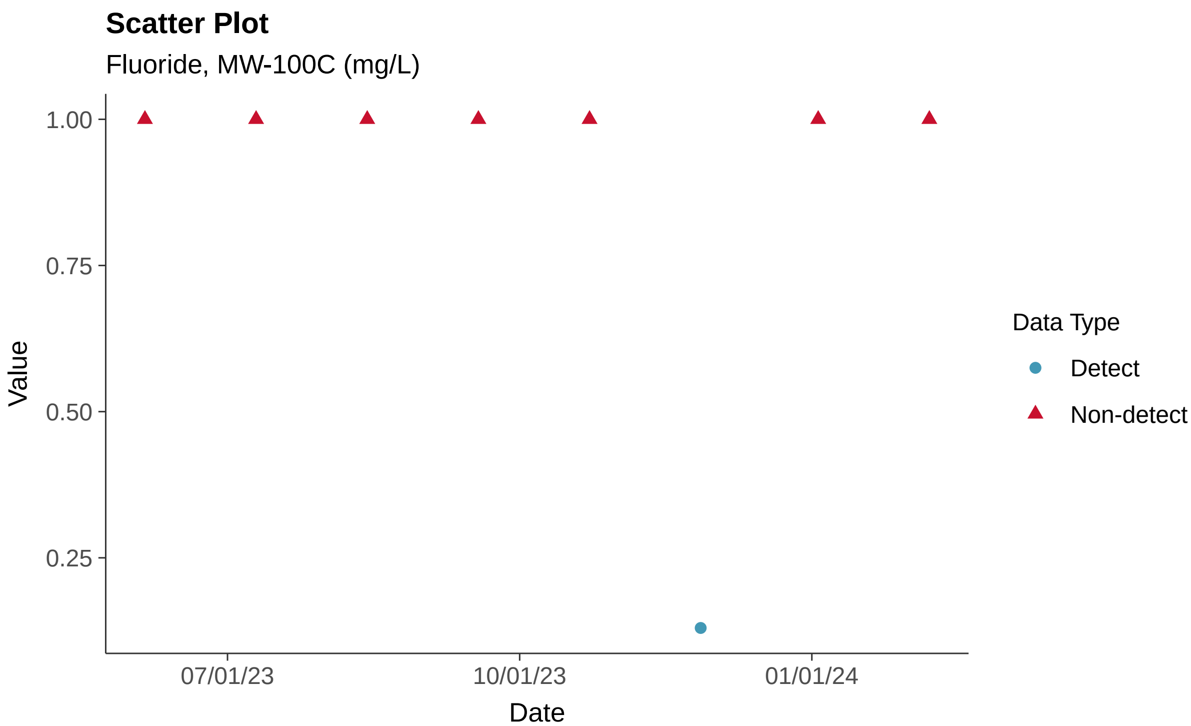
Trend Regression: Piecewise Linear-Linear-Linear

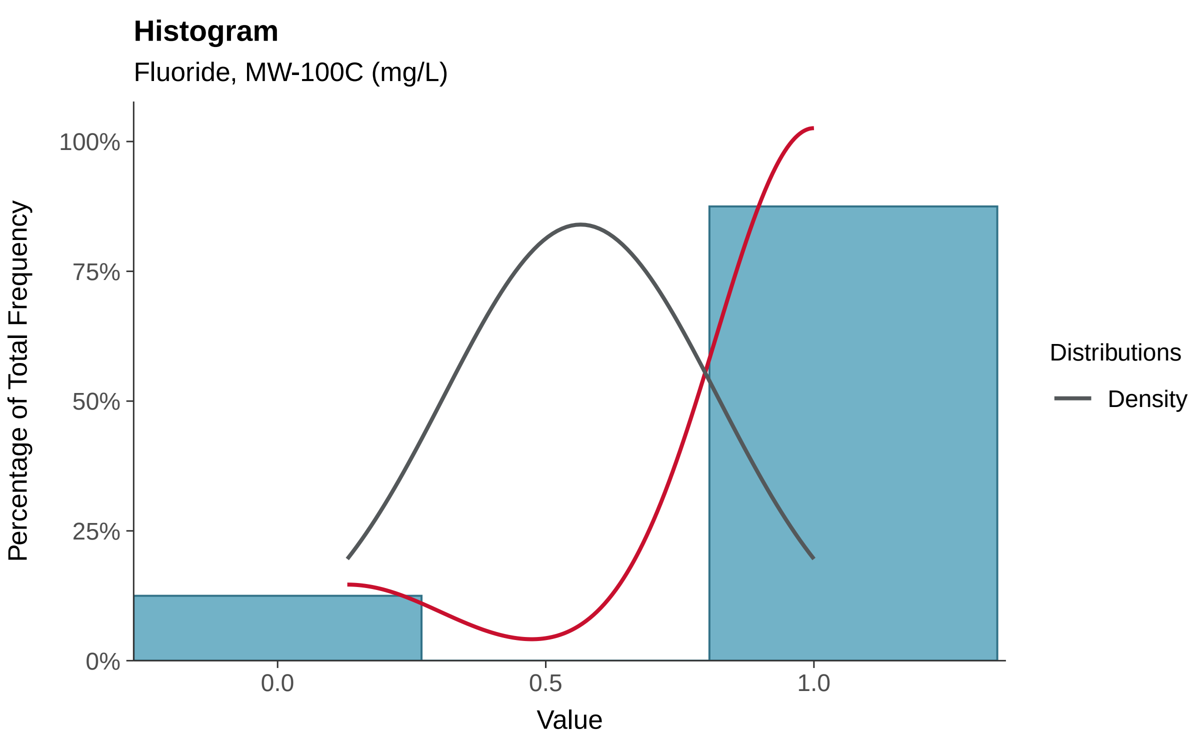
Chloride, MW-100C (mg/L)



Appendix III: Fluoride, MW-100C

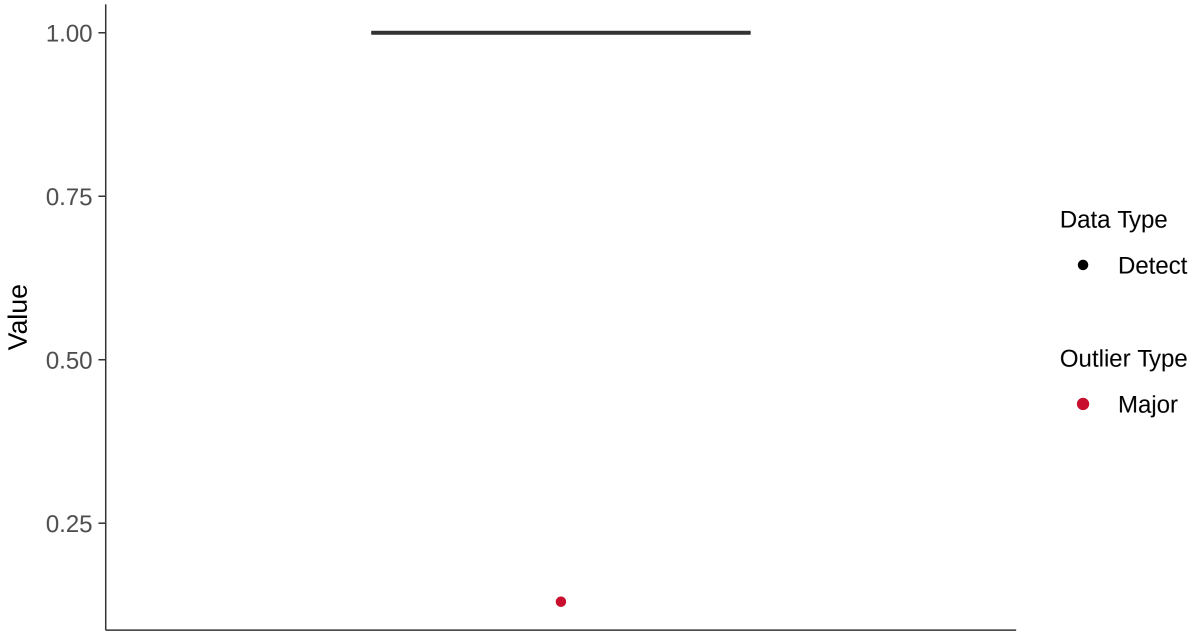
ID: 100C_1_04





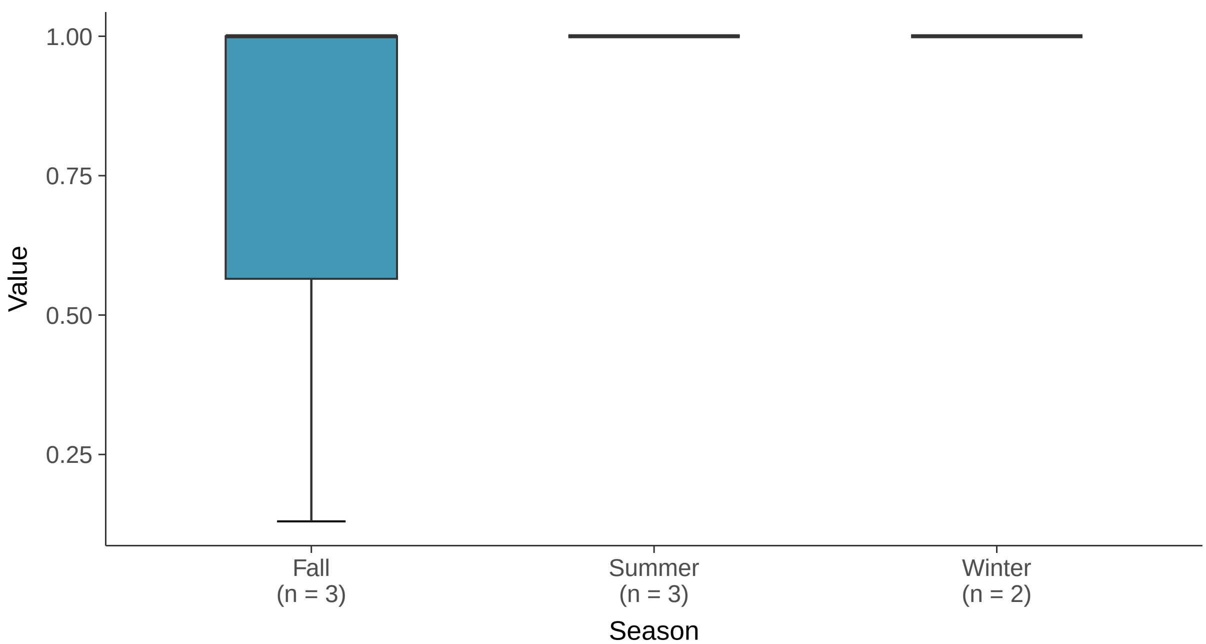
Boxplot

Fluoride, MW-100C (mg/L)



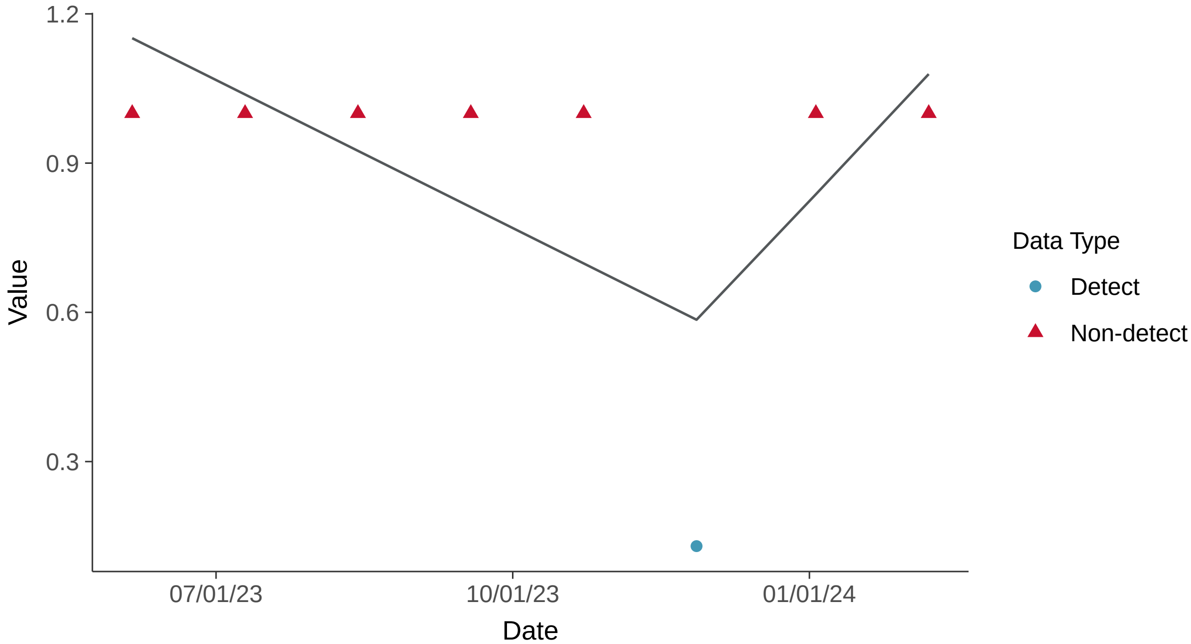
Boxplot by Season

Fluoride, MW-100C (mg/L)



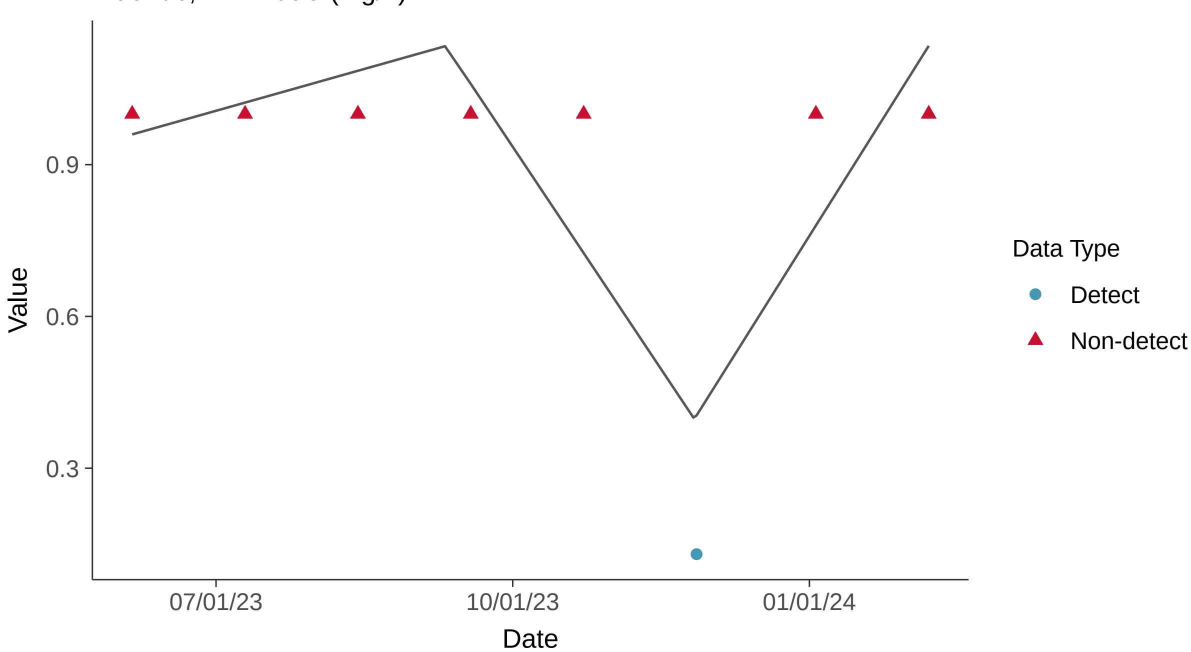
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-100C (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-100C (mg/L)

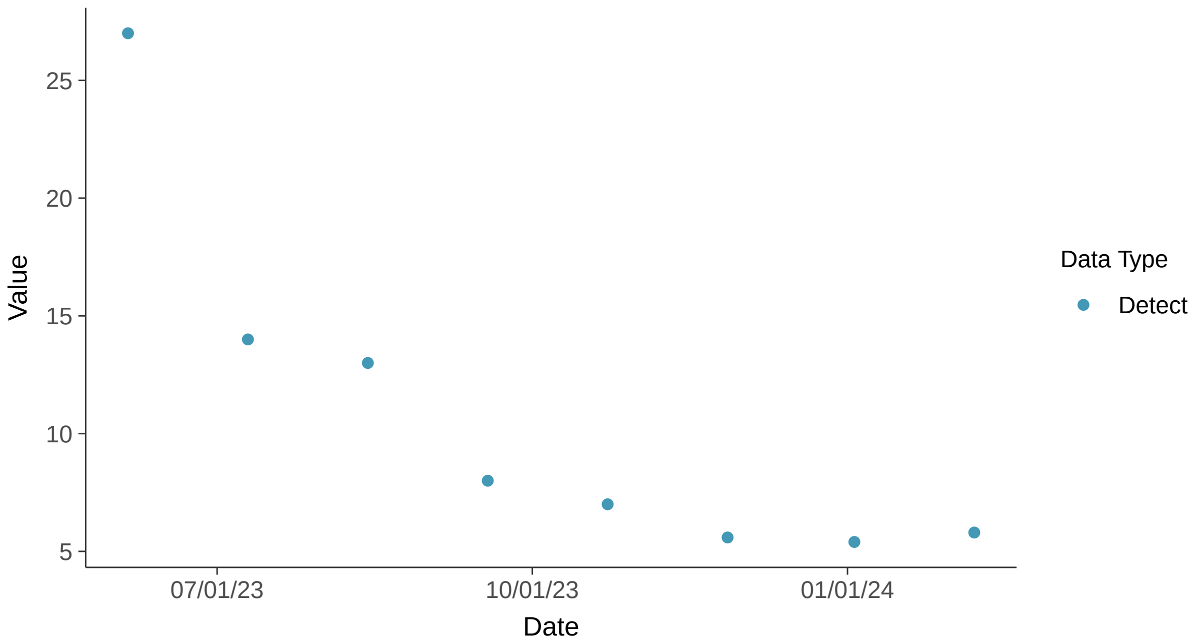


Appendix III: Sulfate, MW-100C

ID: 100C_1_05

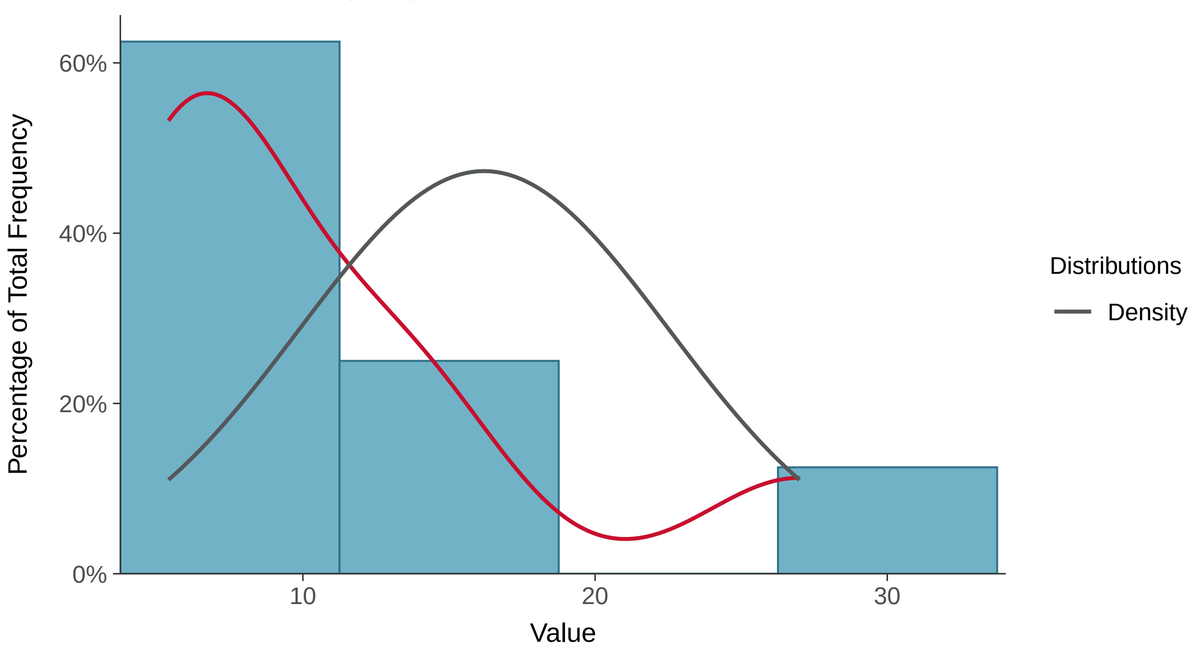
Scatter Plot

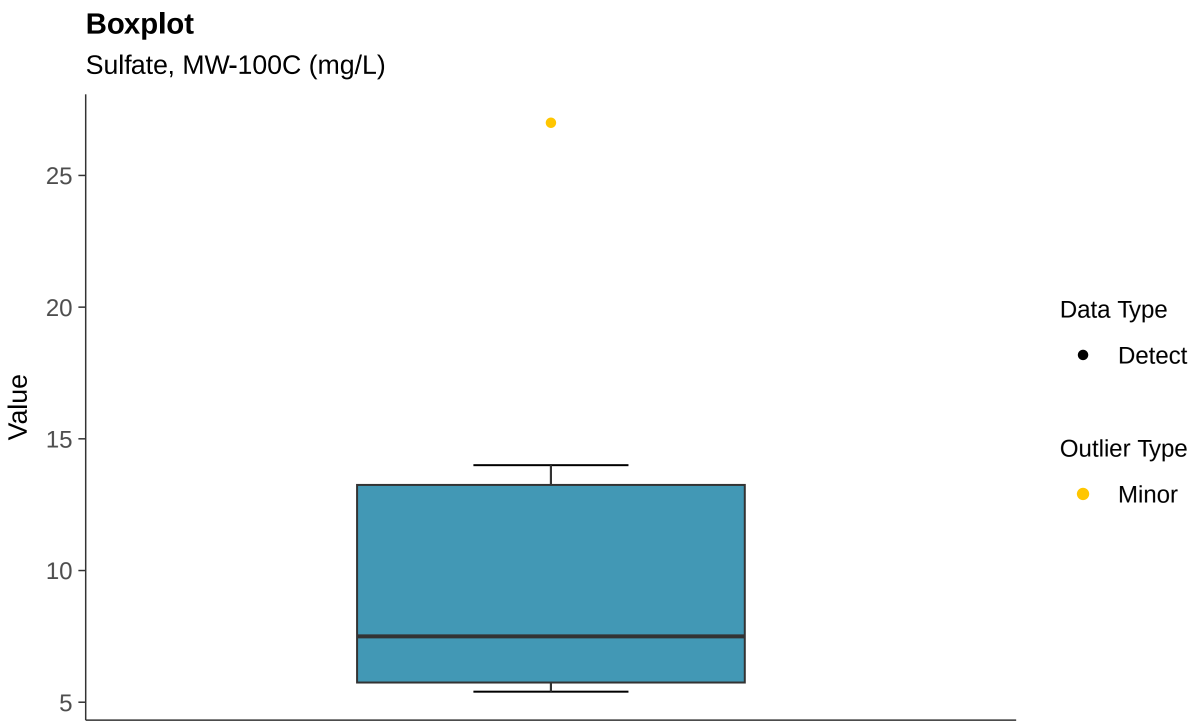
Sulfate, MW-100C (mg/L)

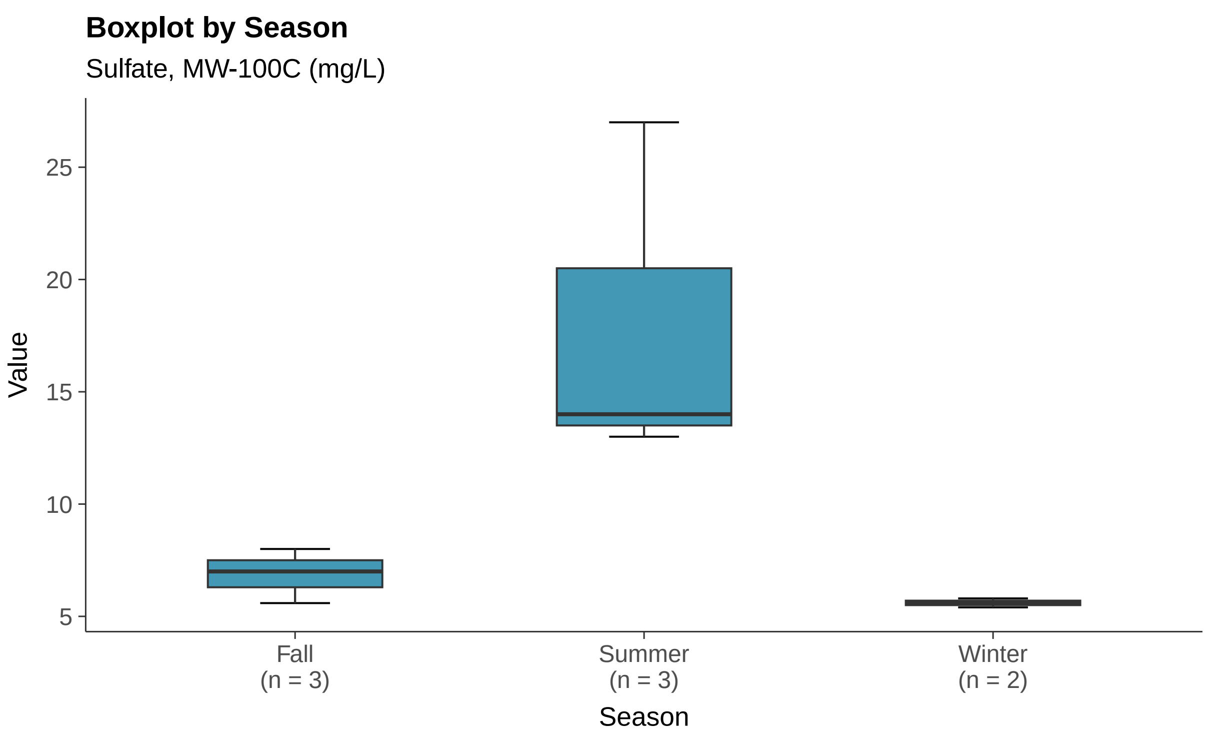


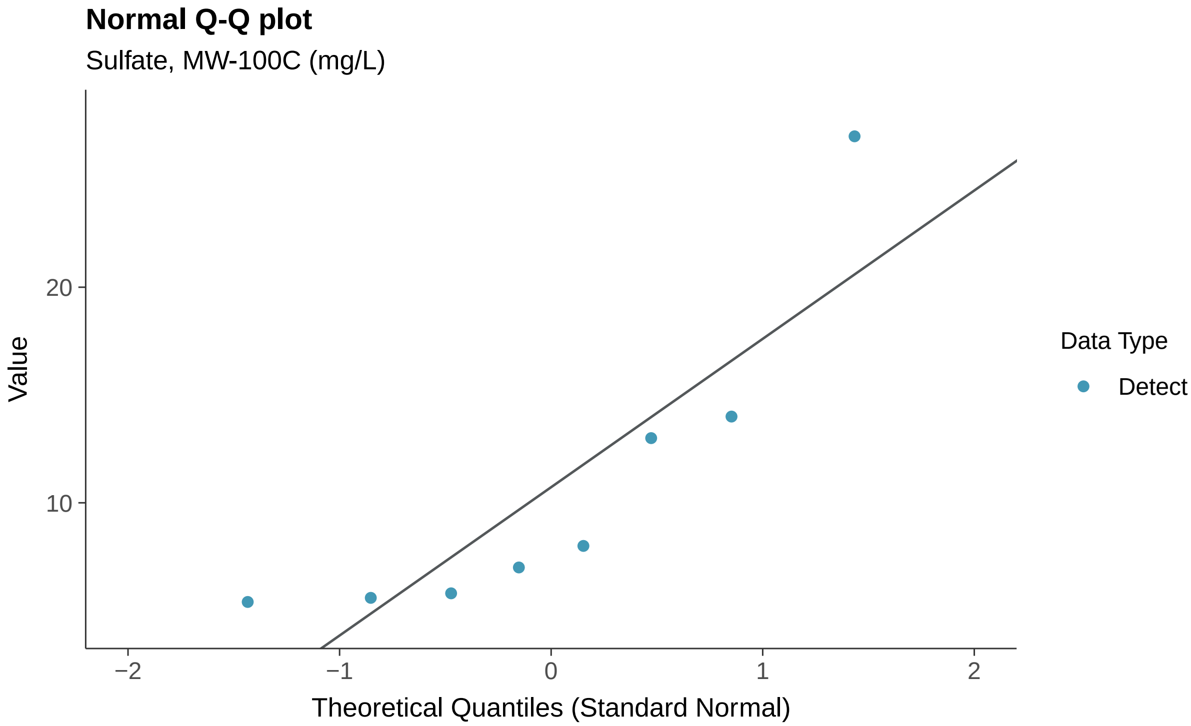
Histogram

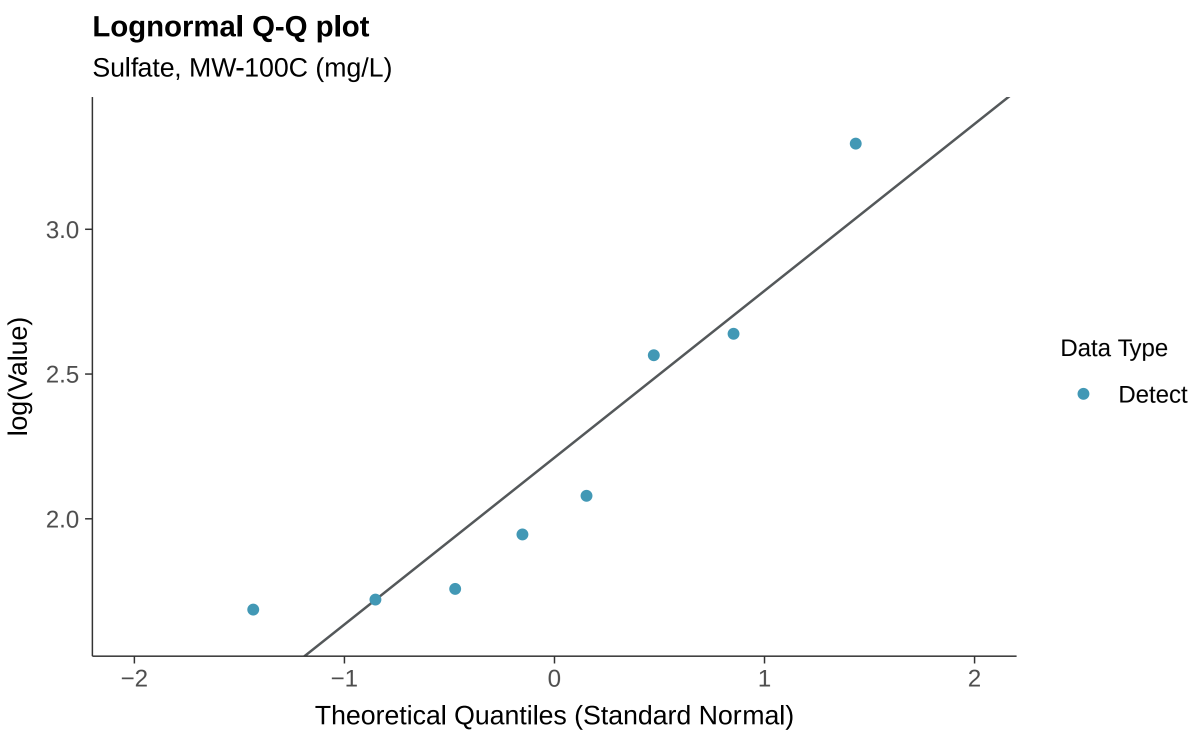
Sulfate, MW-100C (mg/L)

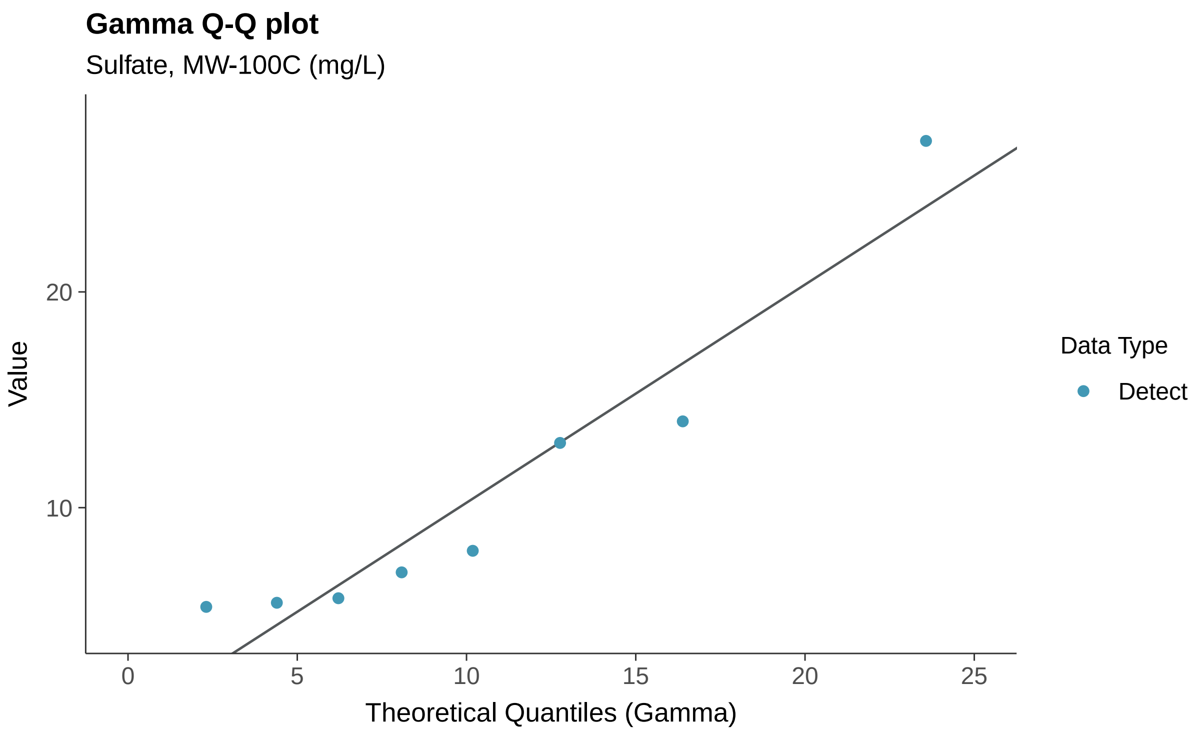


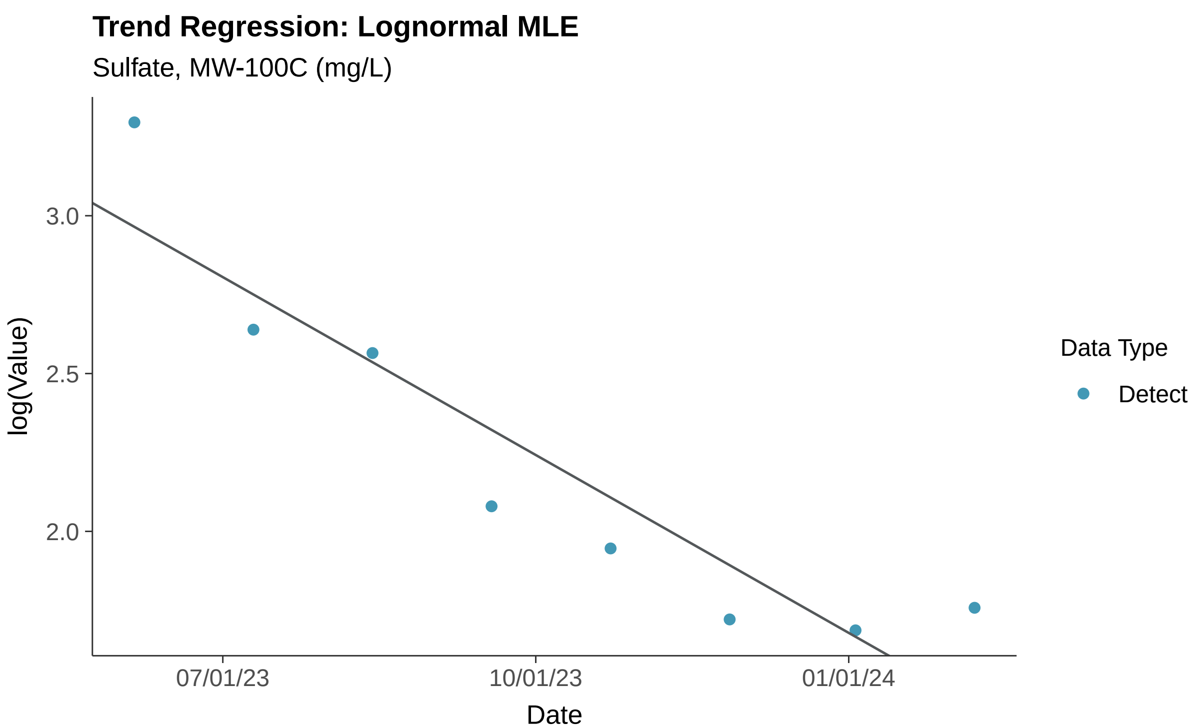

Boxplot
Sulfate, MW-100C (mg/L)
Value
25
20
15
10
5
Data Type
Detect
Outlier Type
Minor


Boxplot by Season
Sulfate, MW-100C (mg/L)
Value
25
20
15
10
5
Fall
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season


Normal Q-Q plot
Sulfate, MW-100C (mg/L)
Value
20
10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

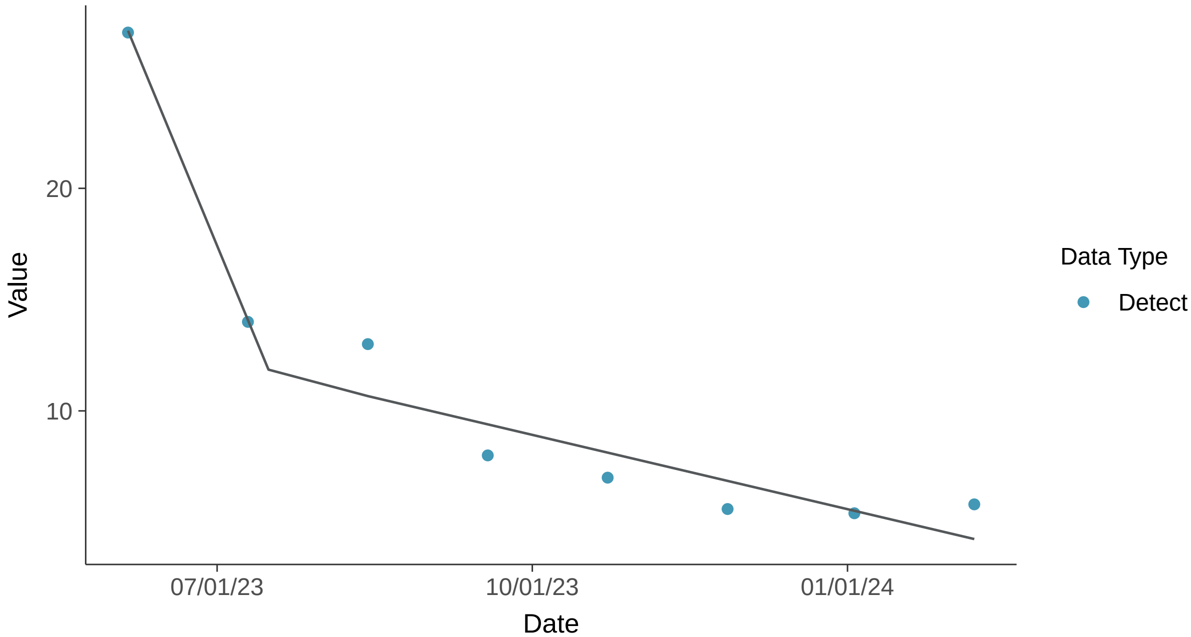

Lognormal Q-Q plot
Sulfate, MW-100C (mg/L)
log(Value)
3.0
2.5
2.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Sulfate, MW-100C (mg/L)
Value
20
10
0
5
10
15
20
25
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Sulfate, MW-100C (mg/L)
log(Value)
3.0
2.5
2.0
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

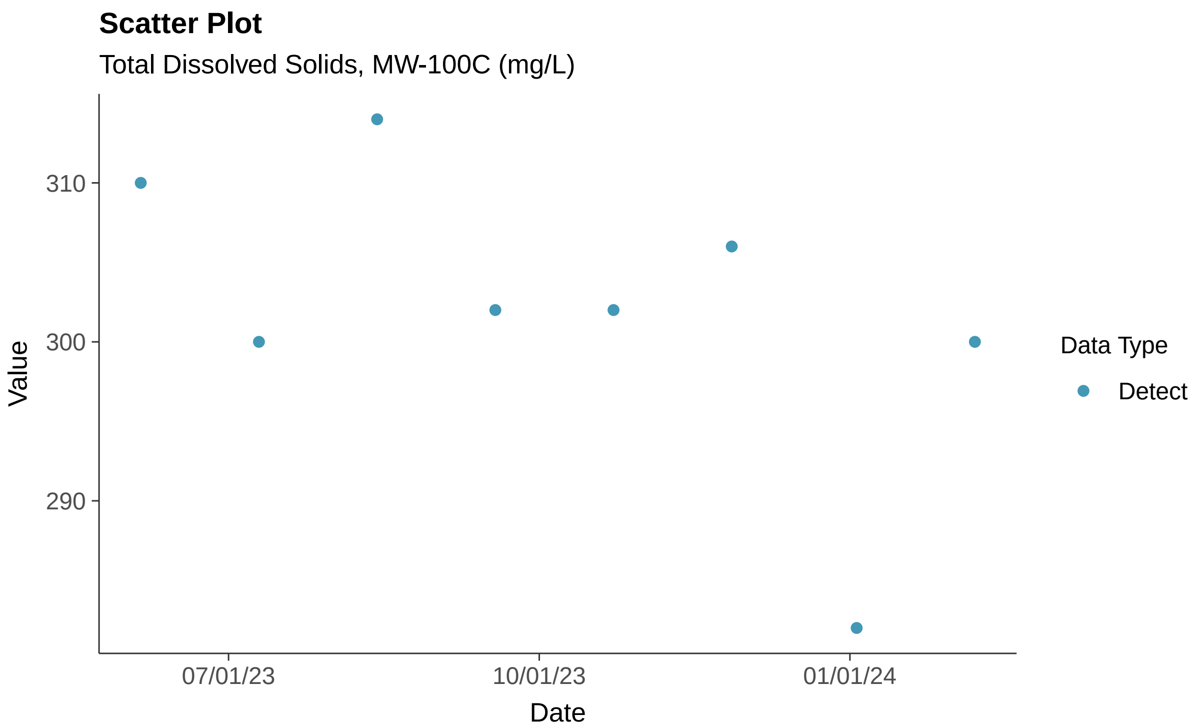
Trend Regression: Piecewise Linear-Linear

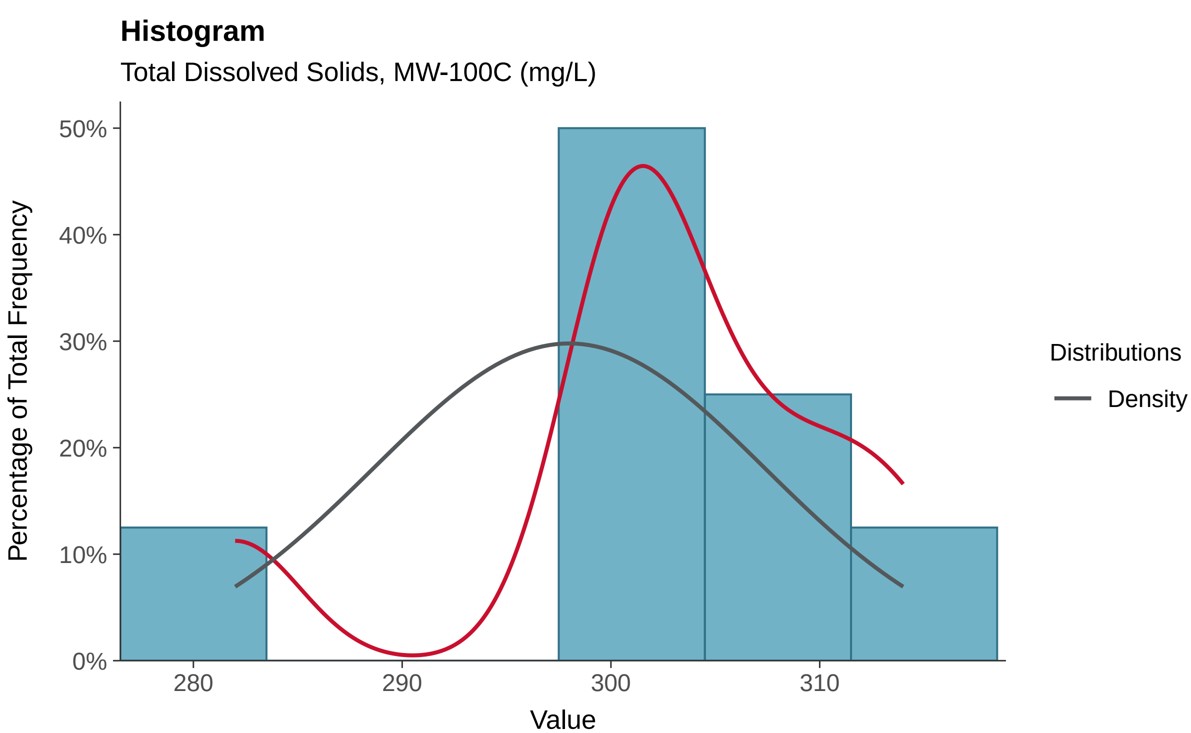
Sulfate, MW-100C (mg/L)



Appendix III: Total Dissolved Solids, MW-100C

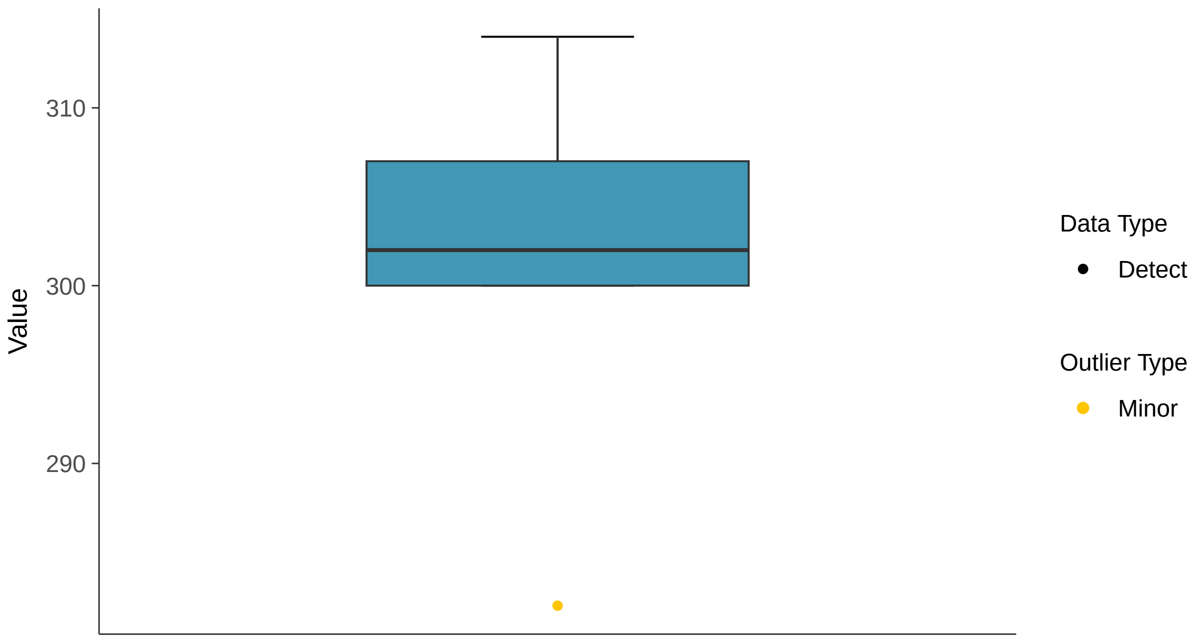
ID: 100C_1_06





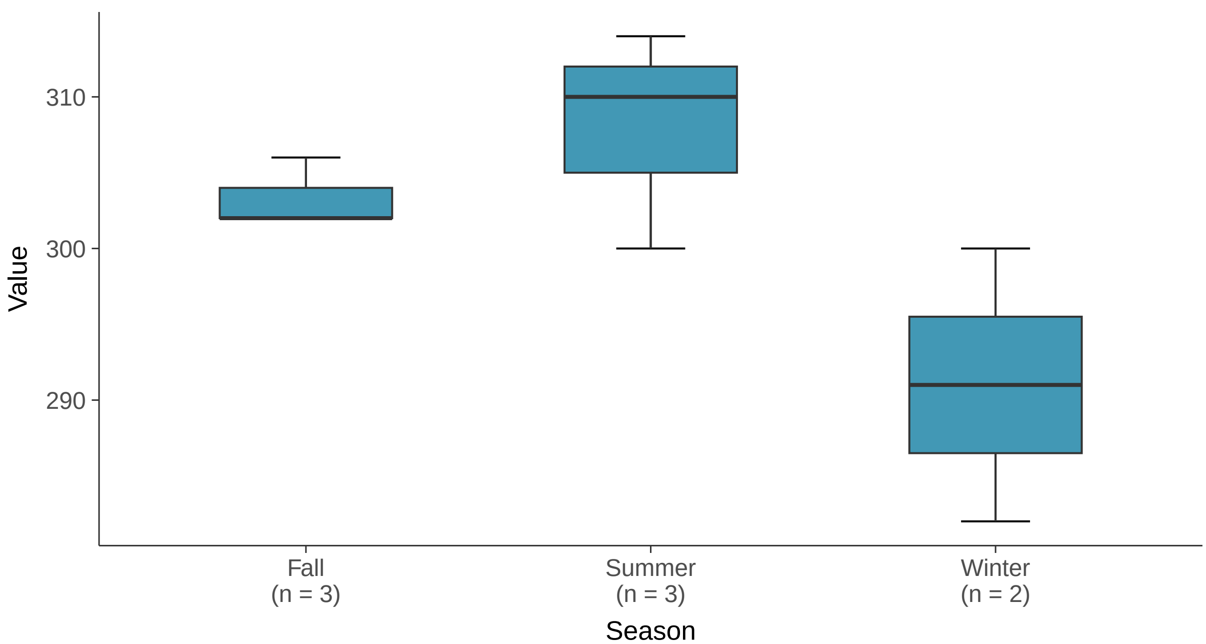
Boxplot

Total Dissolved Solids, MW-100C (mg/L)



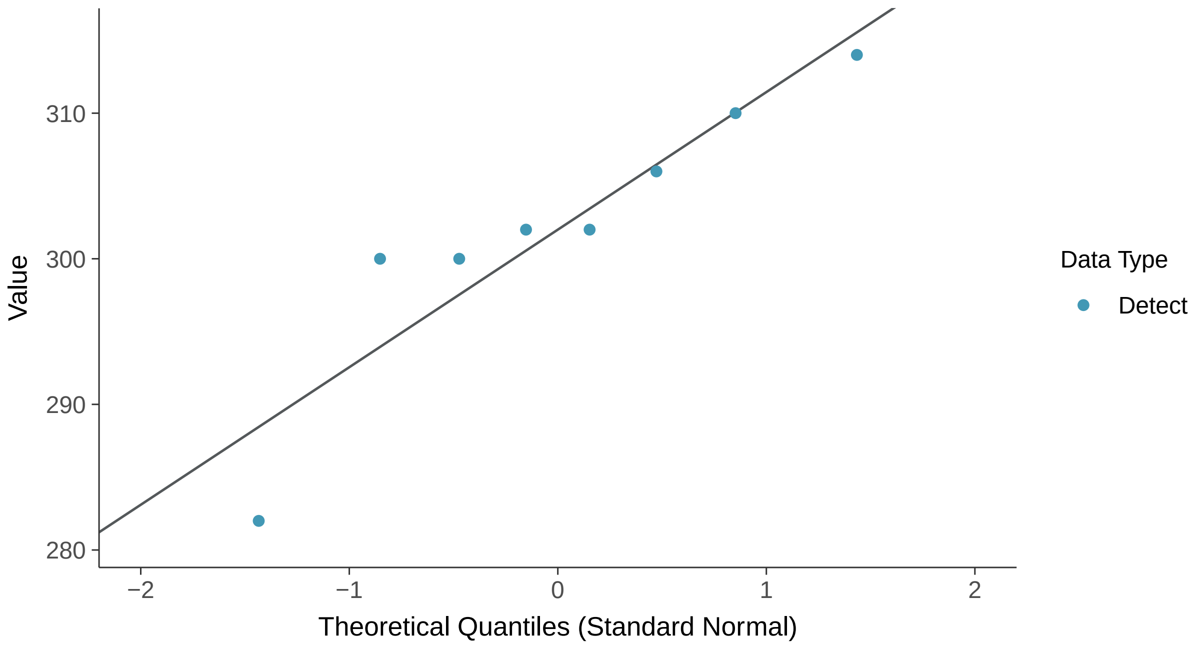
Boxplot by Season

Total Dissolved Solids, MW-100C (mg/L)



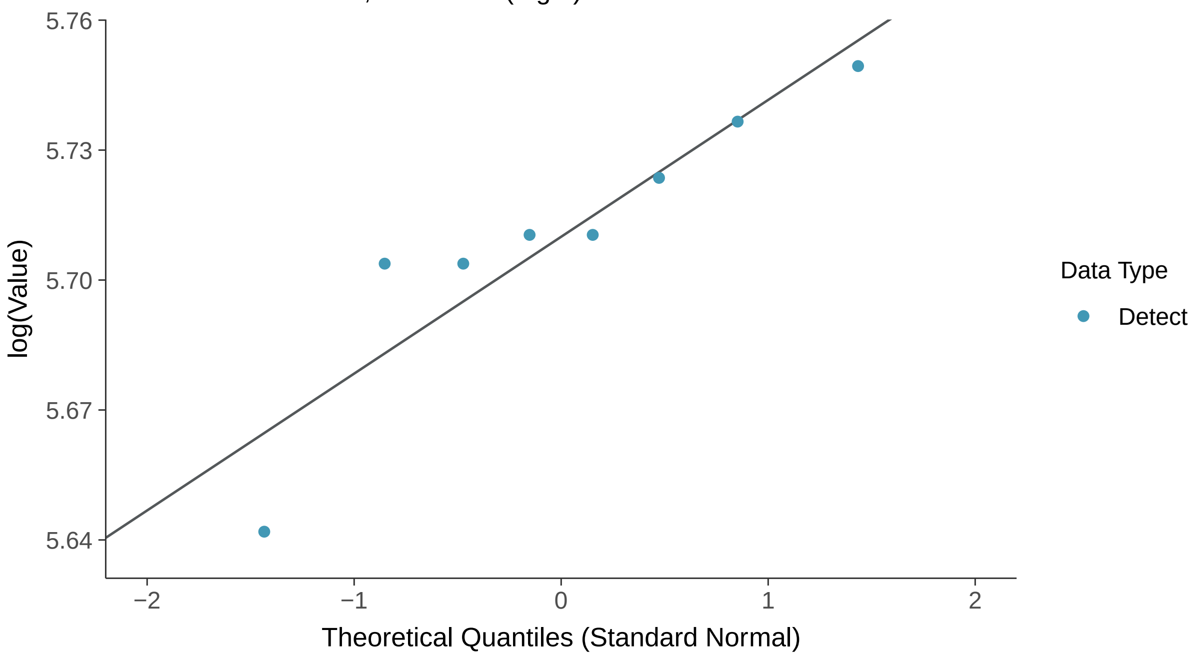
Normal Q-Q plot

Total Dissolved Solids, MW-100C (mg/L)



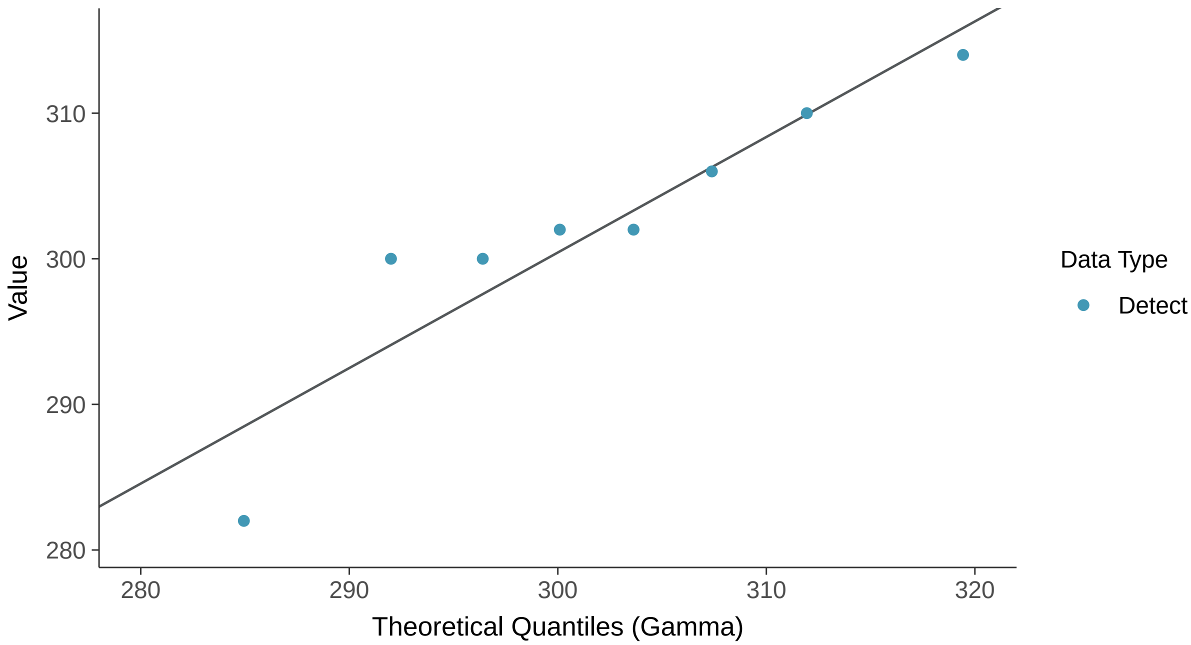
Lognormal Q-Q plot

Total Dissolved Solids, MW-100C (mg/L)



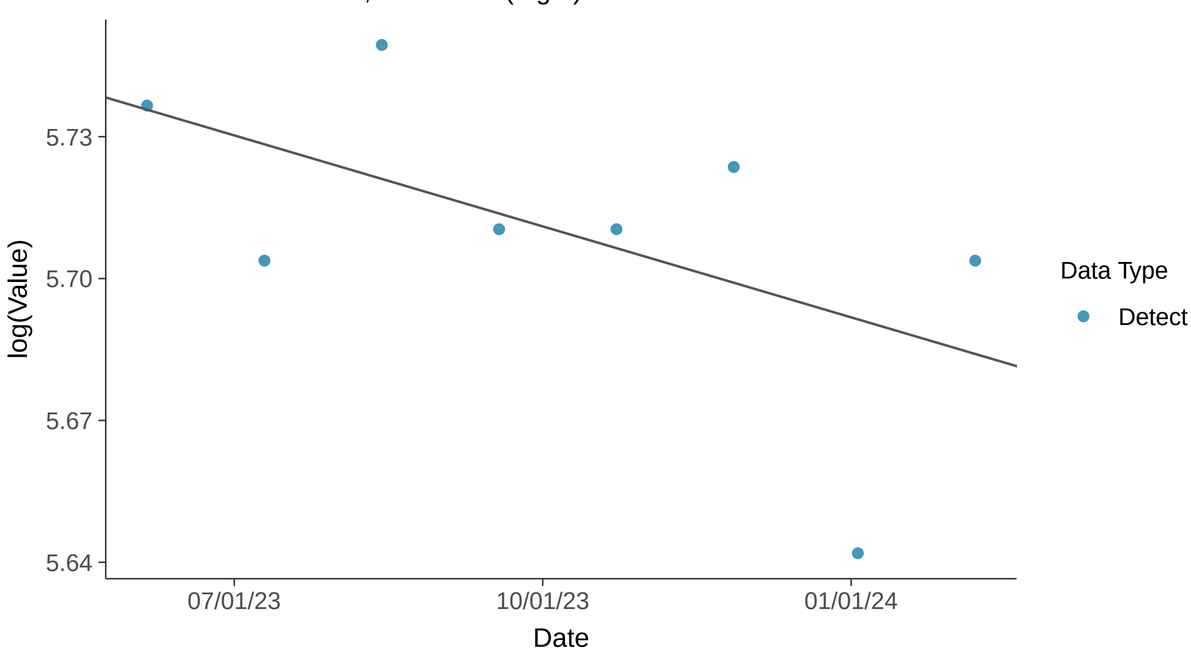
Gamma Q-Q plot

Total Dissolved Solids, MW-100C (mg/L)



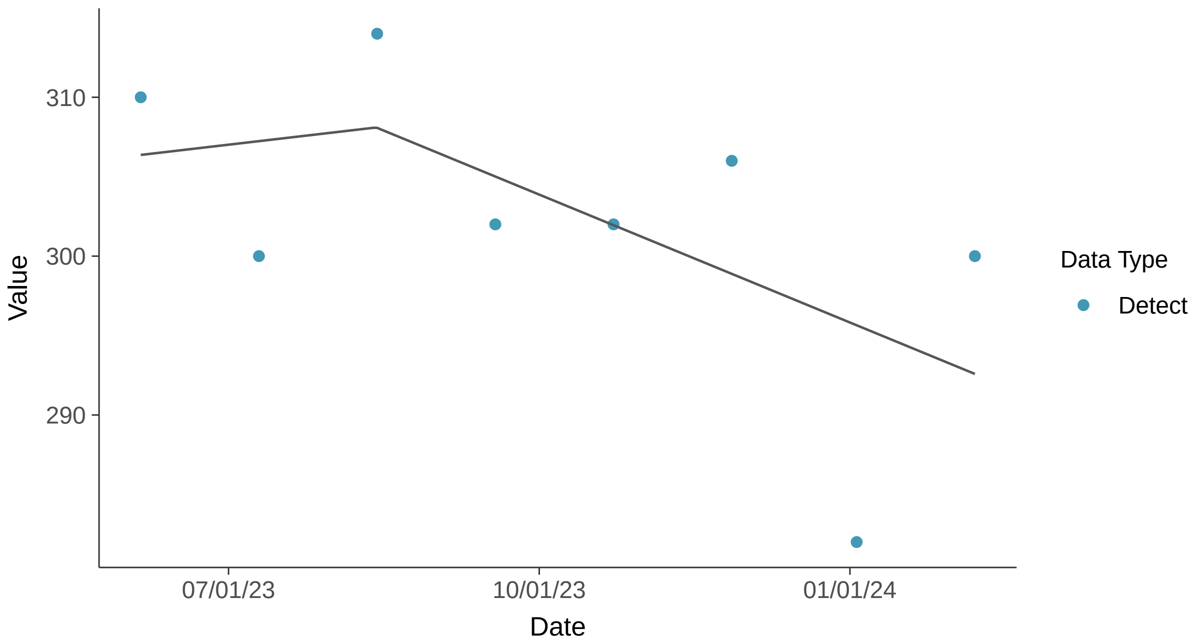
Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-100C (mg/L)



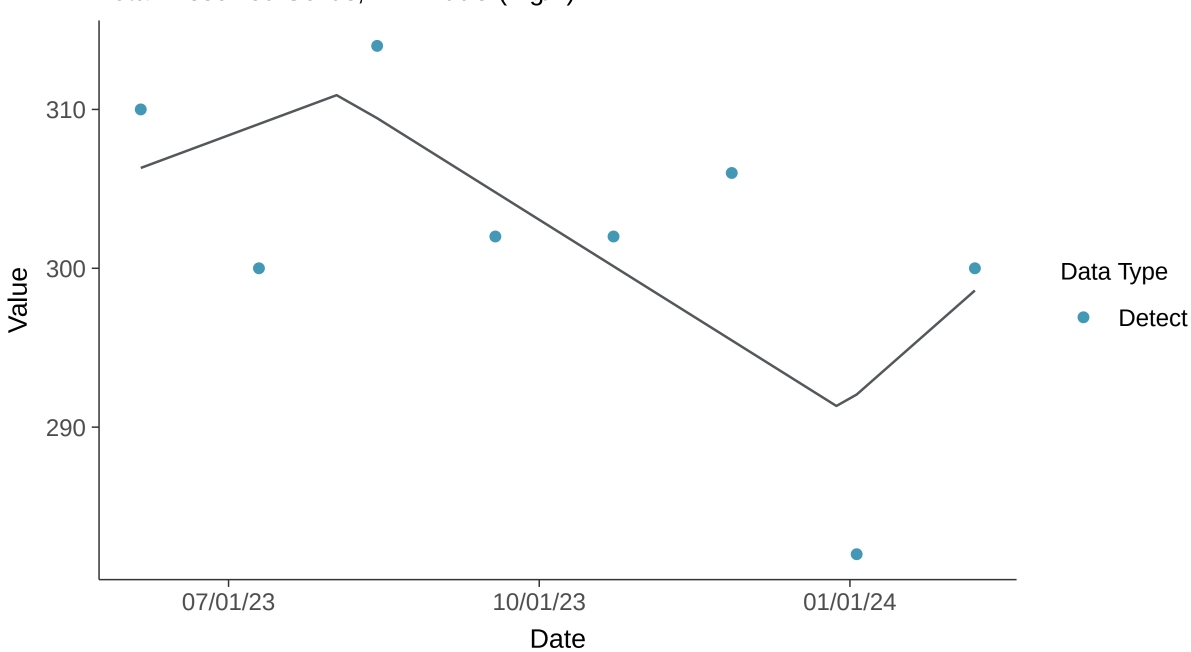
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-100C (mg/L)



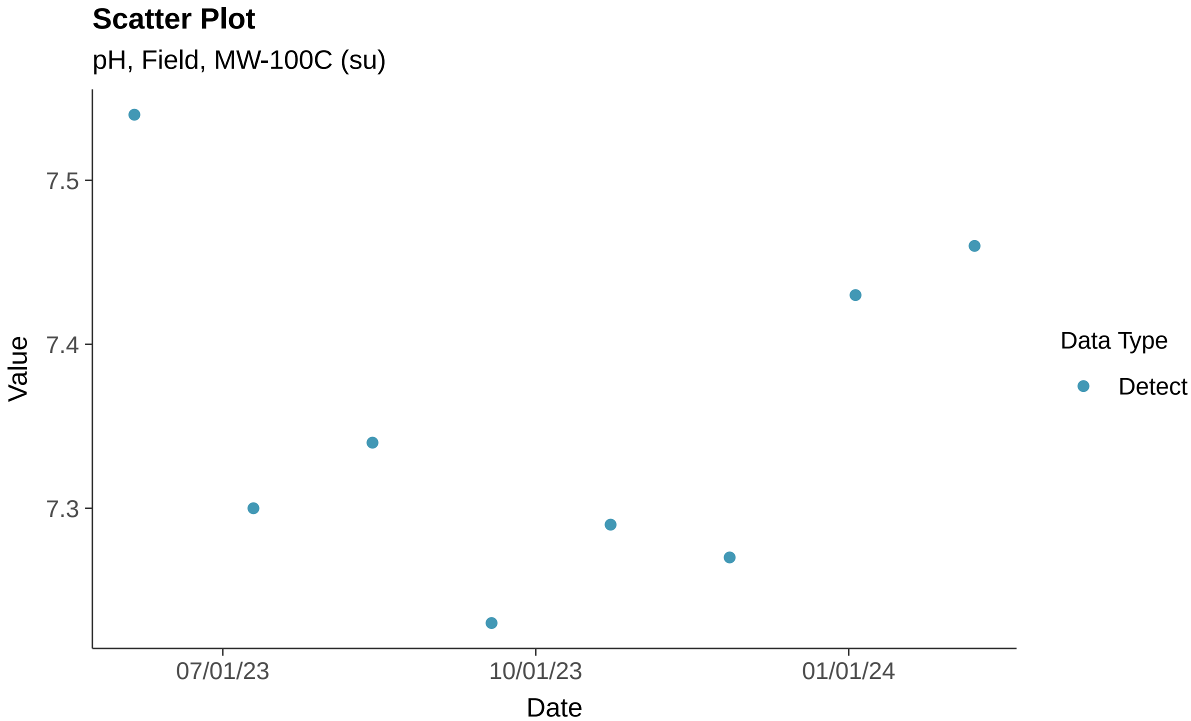
Trend Regression: Piecewise Linear-Linear-Linear

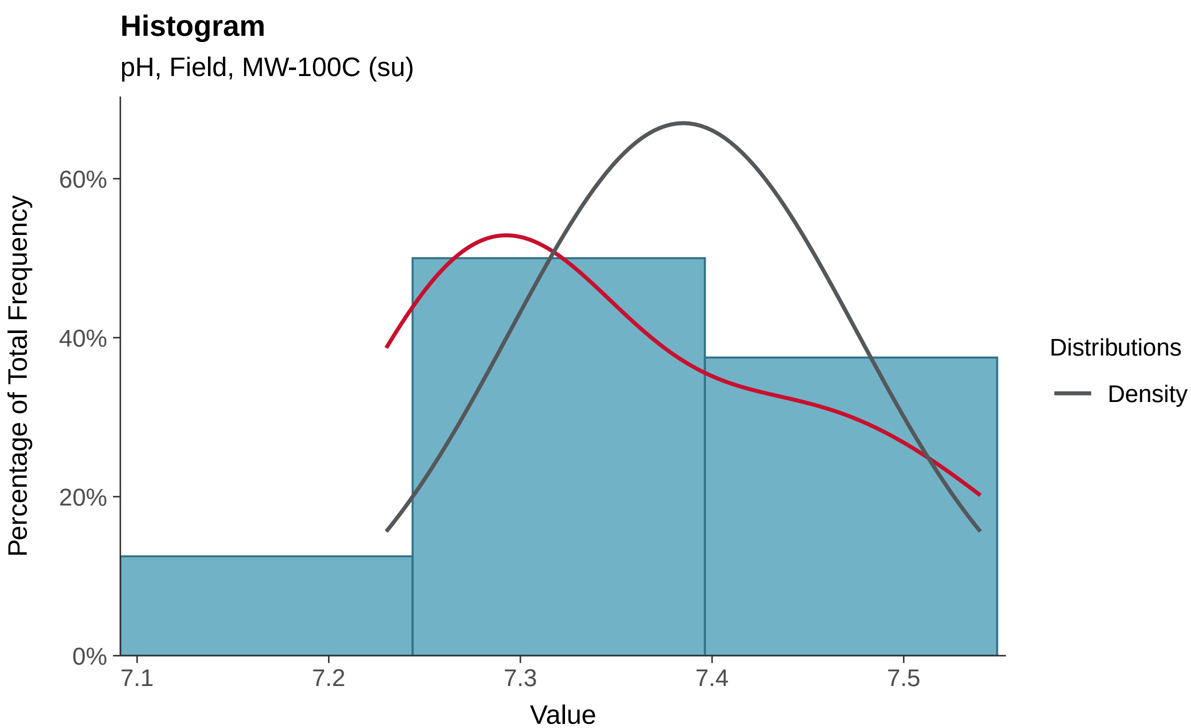
Total Dissolved Solids, MW-100C (mg/L)



Appendix III: pH, Field, MW-100C

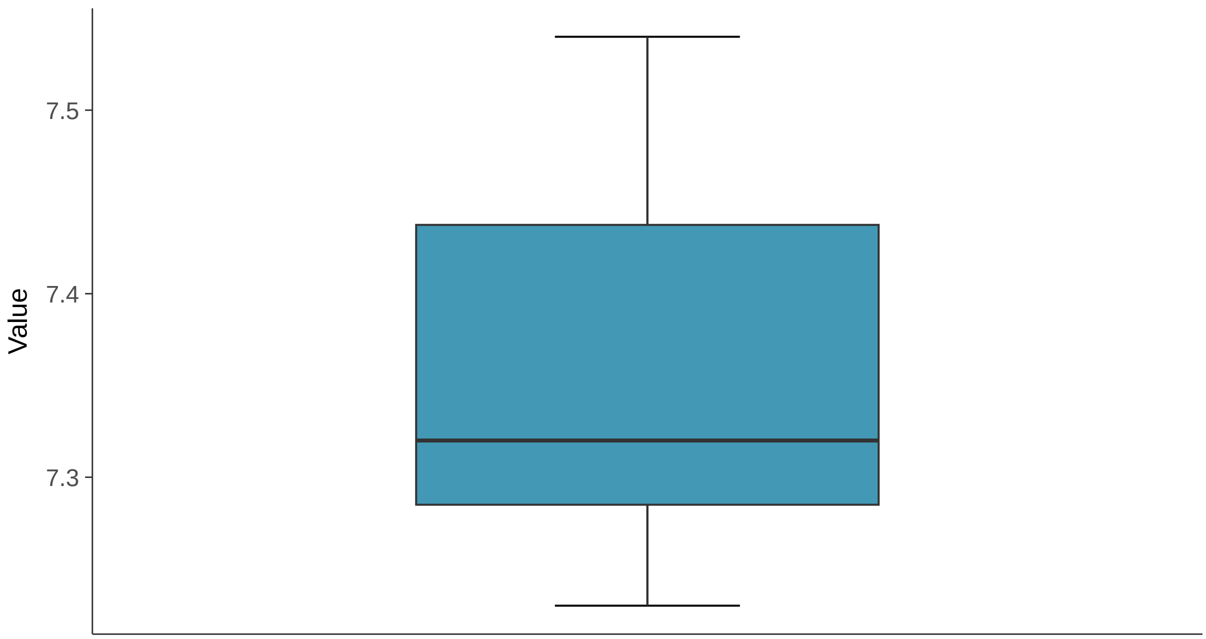
ID: 100C_1_07





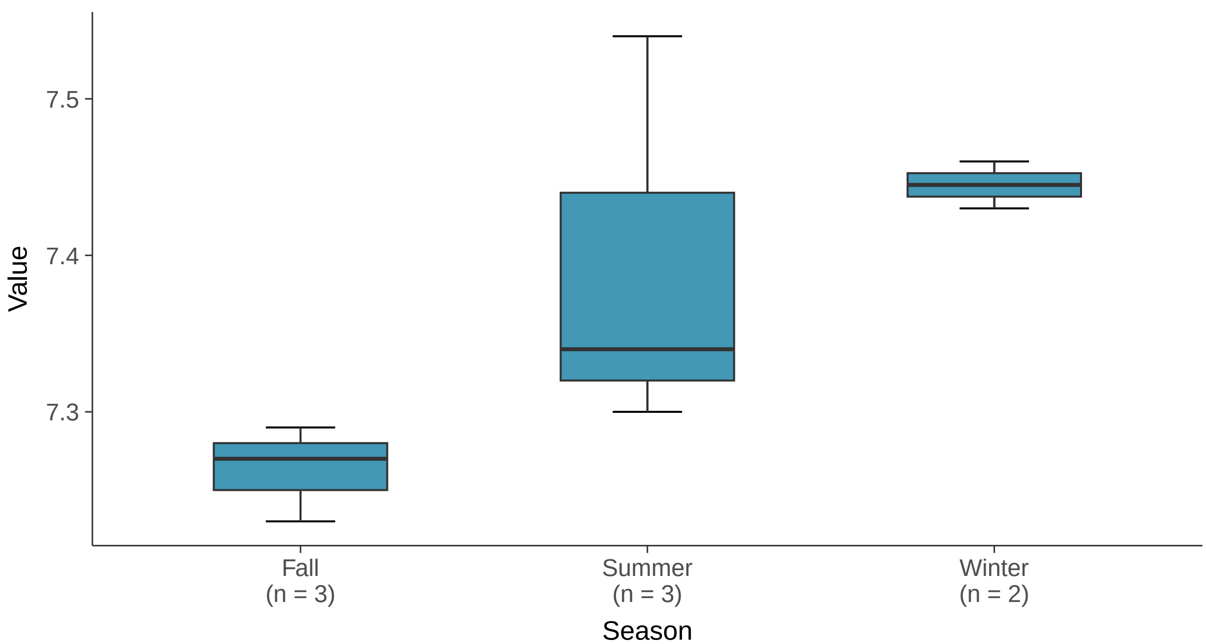
Boxplot

pH, Field, MW-100C (su)



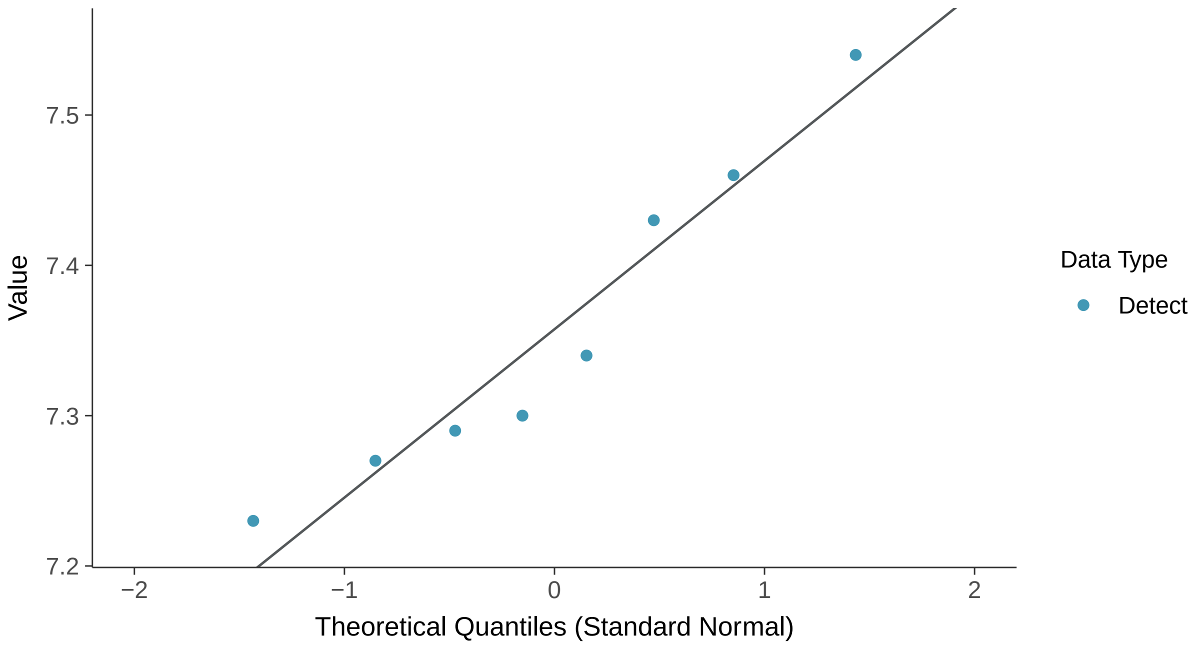
Boxplot by Season

pH, Field, MW-100C (su)



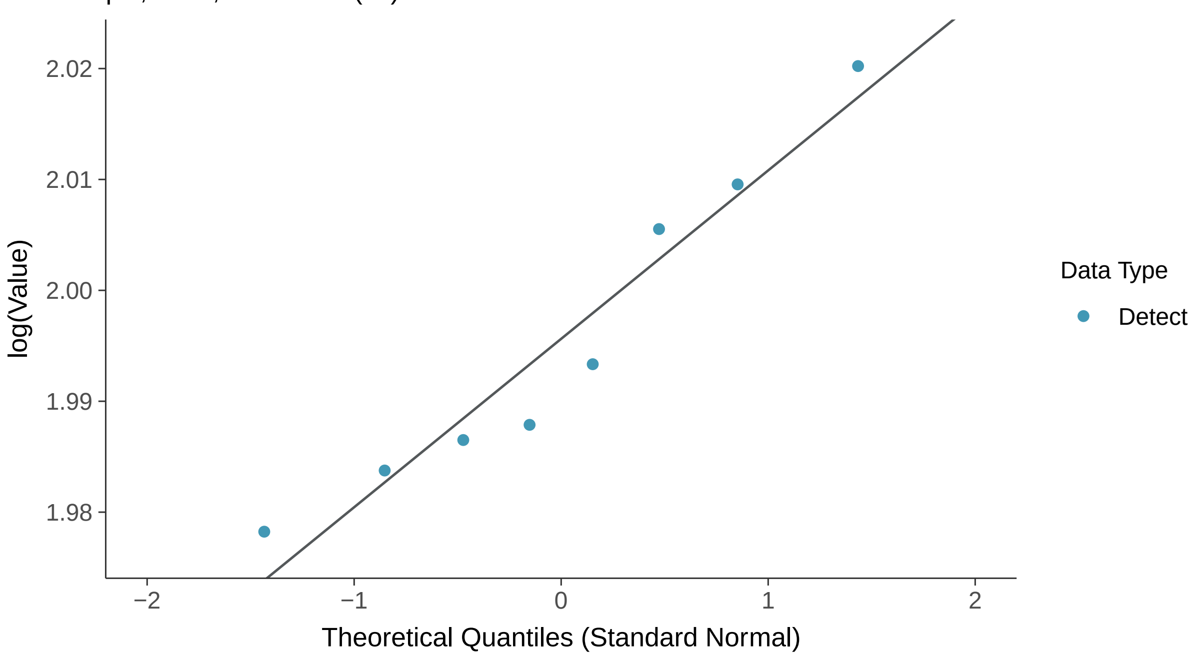
Normal Q-Q plot

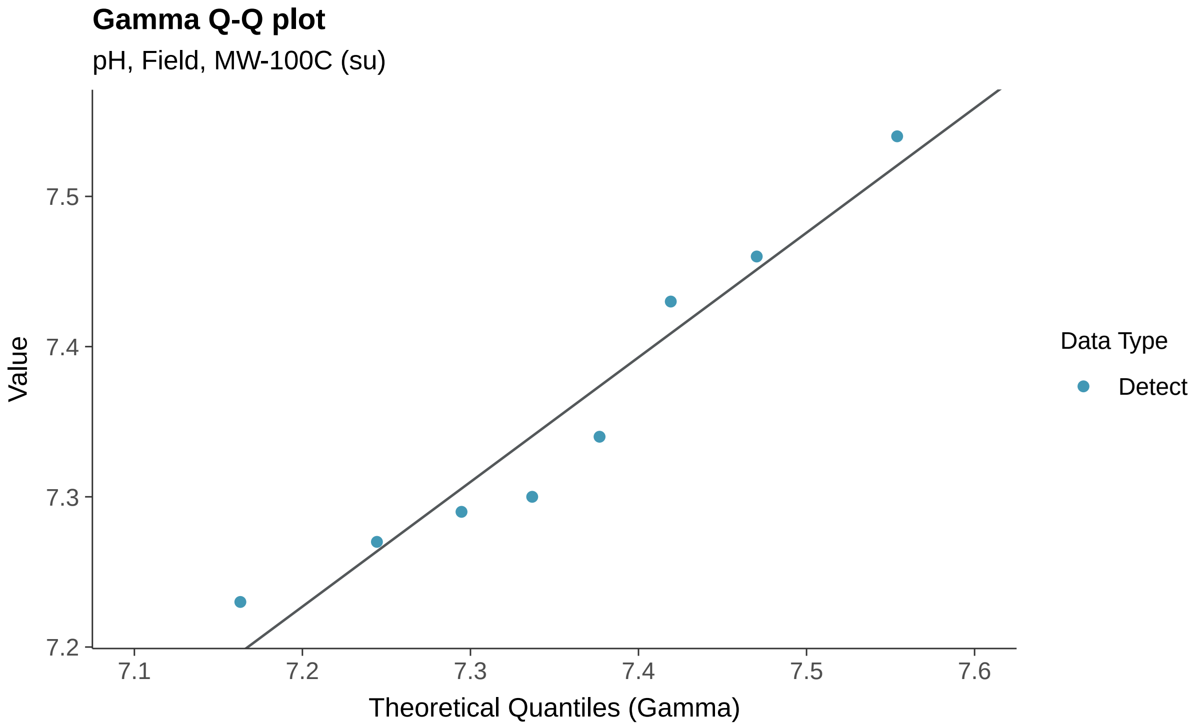
pH, Field, MW-100C (su)

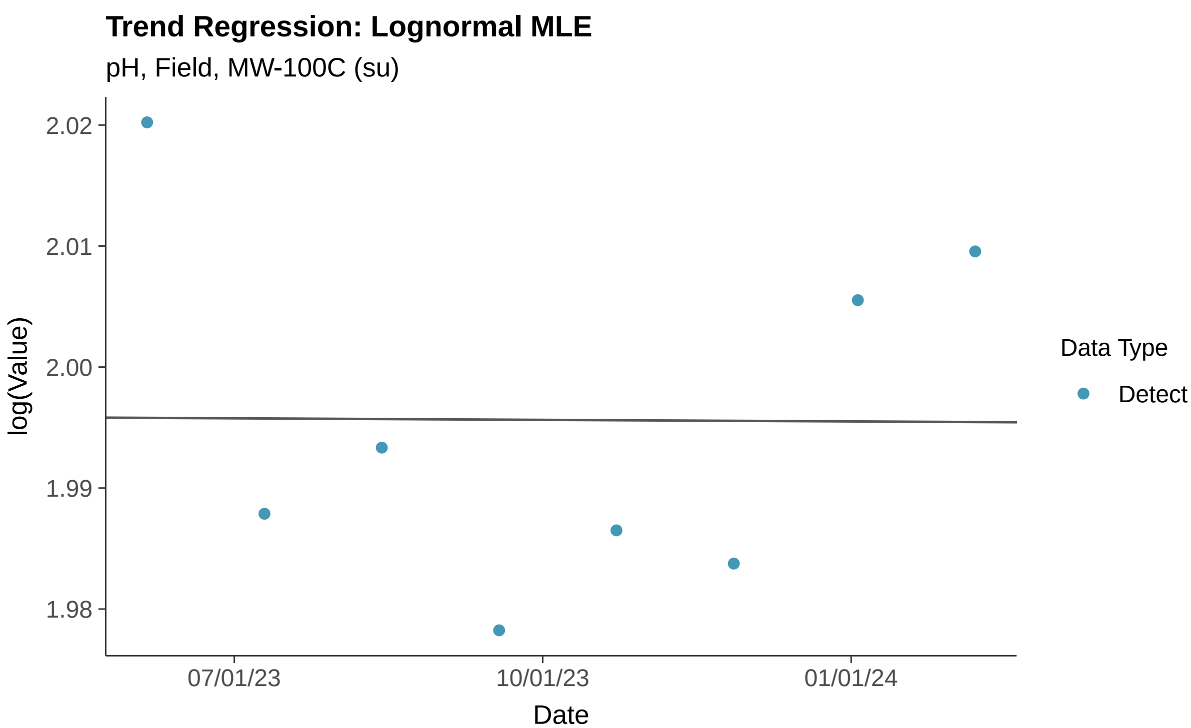


Lognormal Q-Q plot

pH, Field, MW-100C (su)

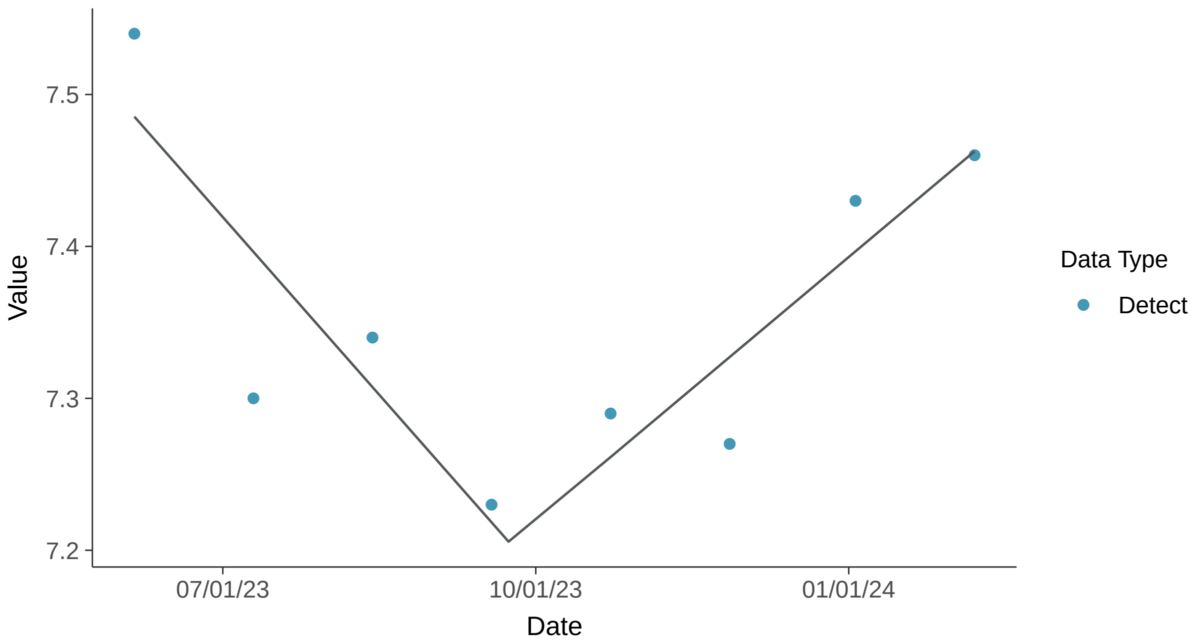



Gamma Q-Q plot
pH, Field, MW-100C (su)
Value
7.5
7.4
7.3
7.2
7.1
7.2
7.3
7.4
7.5
7.6
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, Field, MW-100C (su)
log(Value)
2.02
2.01
2.00
1.99
1.98
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

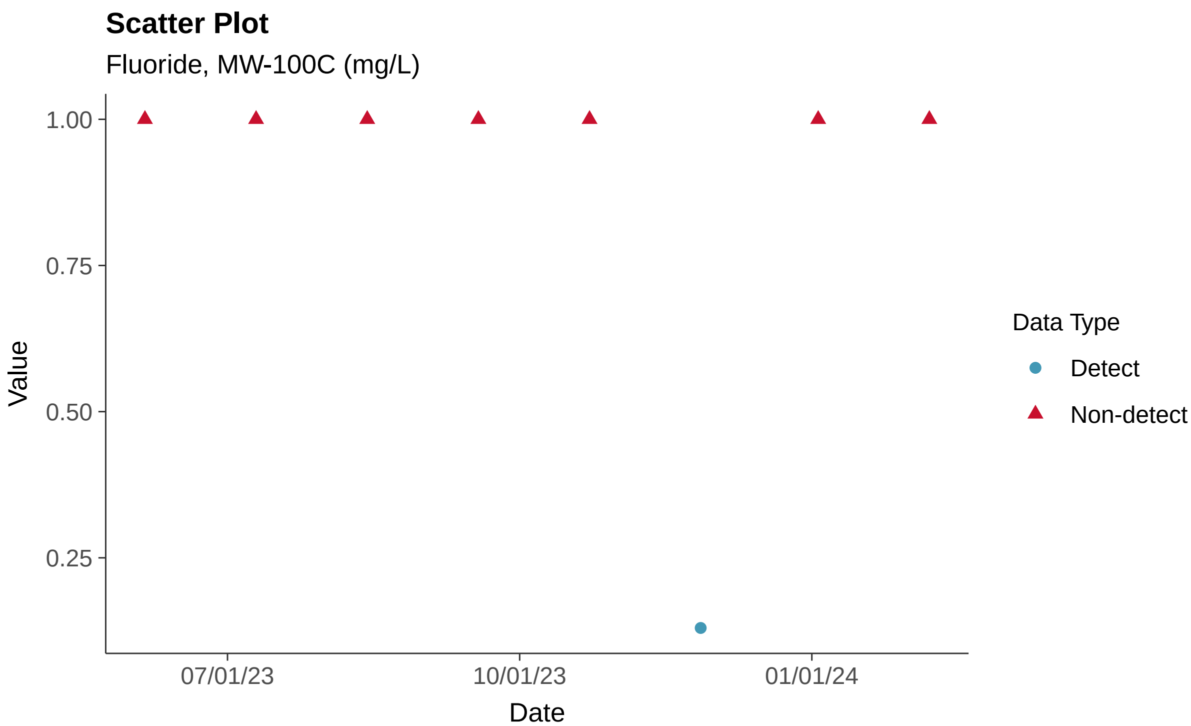
Trend Regression: Piecewise Linear-Linear

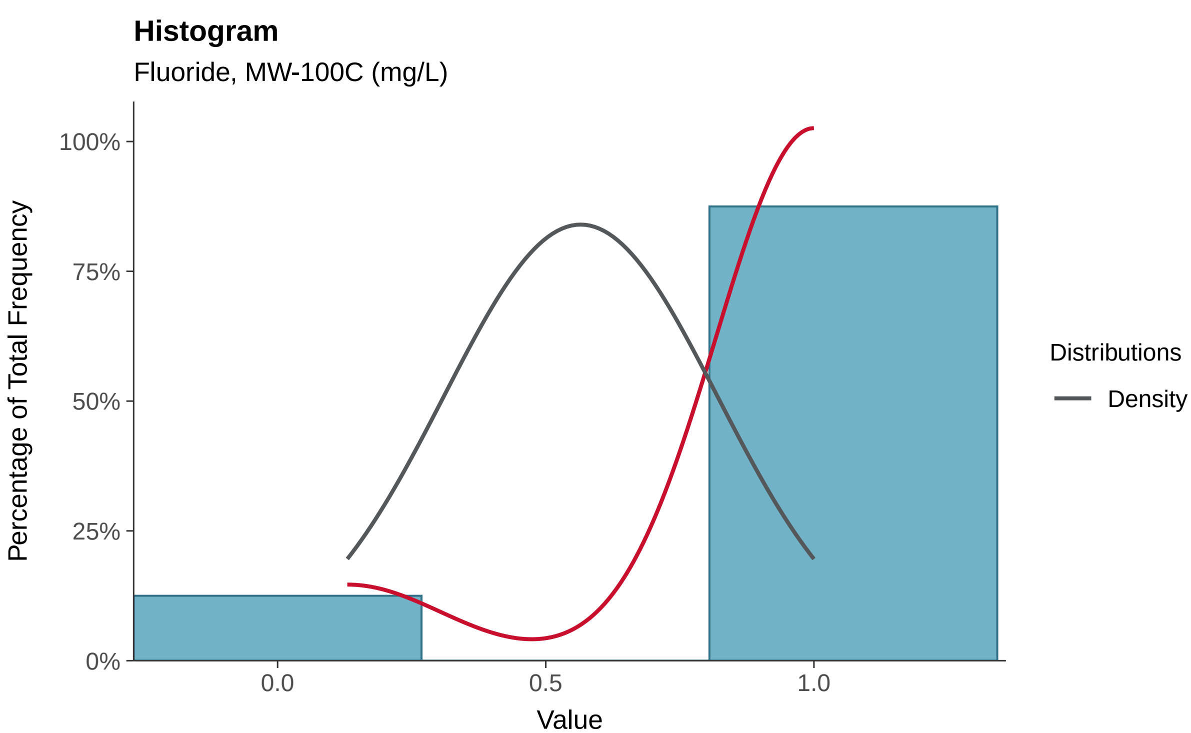
pH, Field, MW-100C (su)



Appendix IV: Fluoride, MW-100C

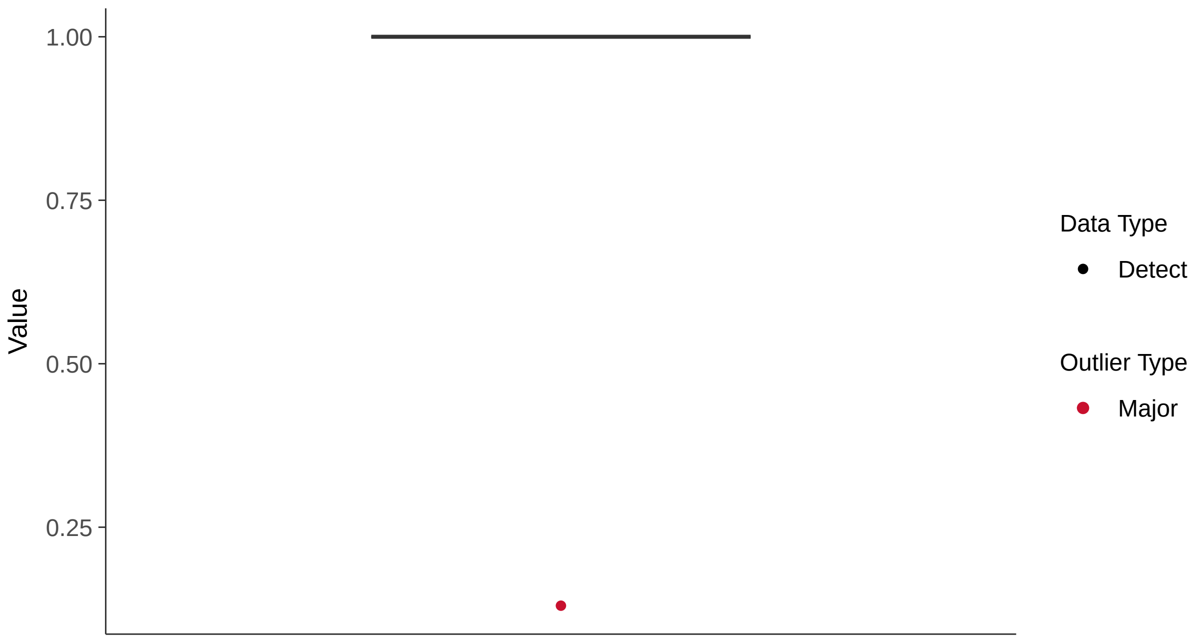
ID: 100C_2_04





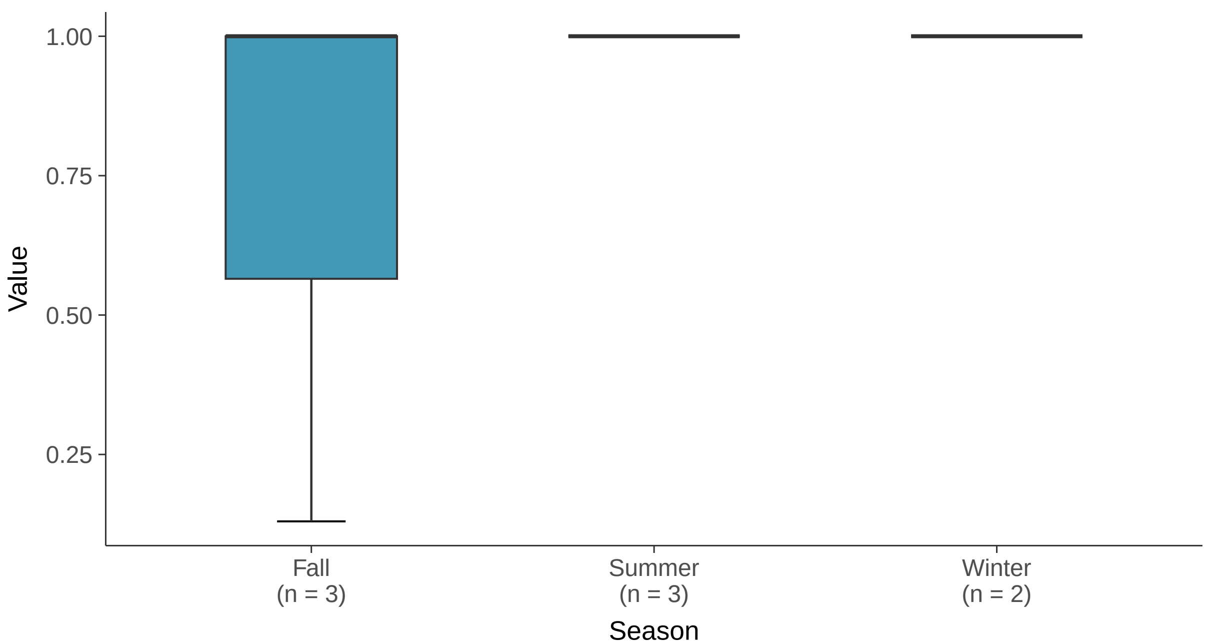
Boxplot

Fluoride, MW-100C (mg/L)



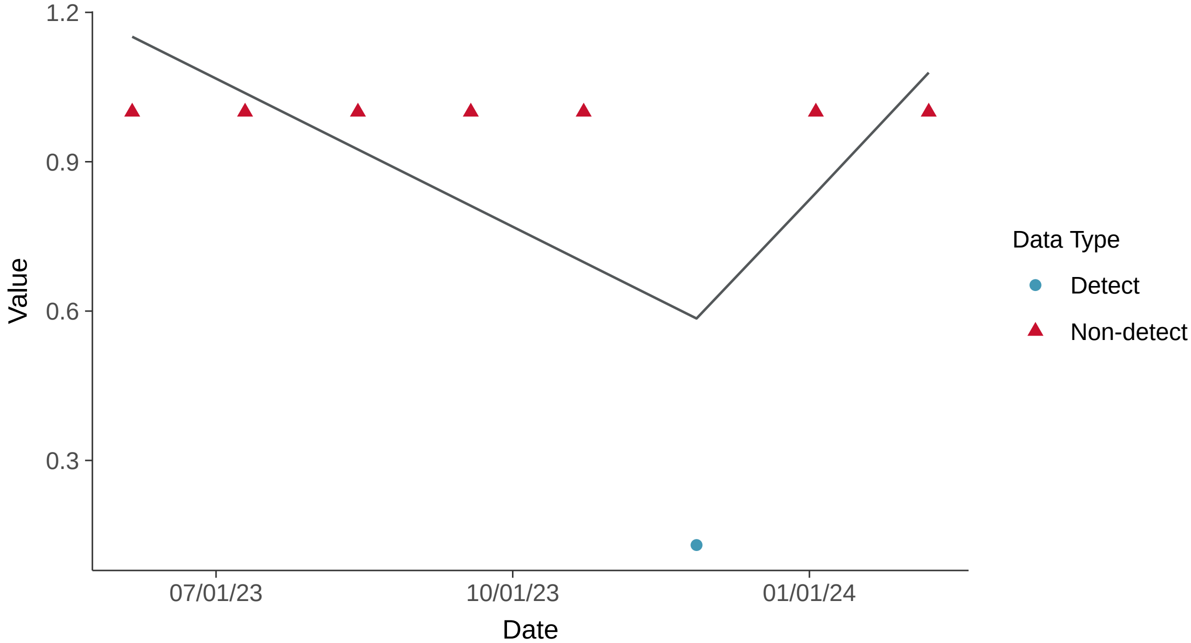
Boxplot by Season

Fluoride, MW-100C (mg/L)



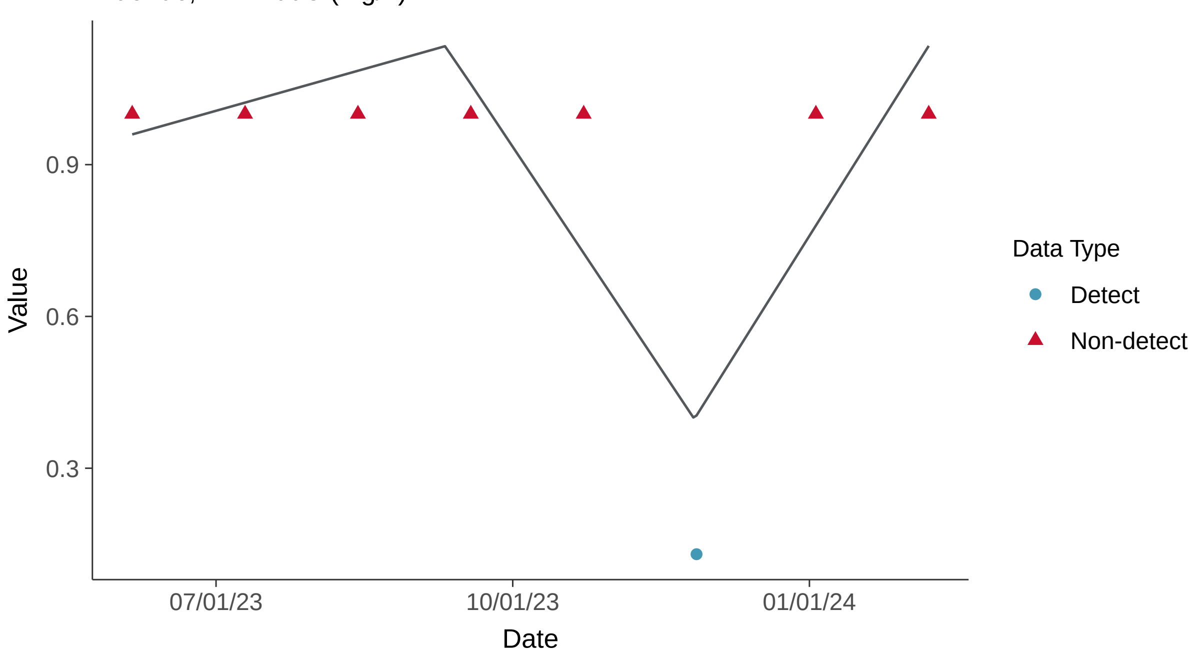
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-100C (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-100C (mg/L)

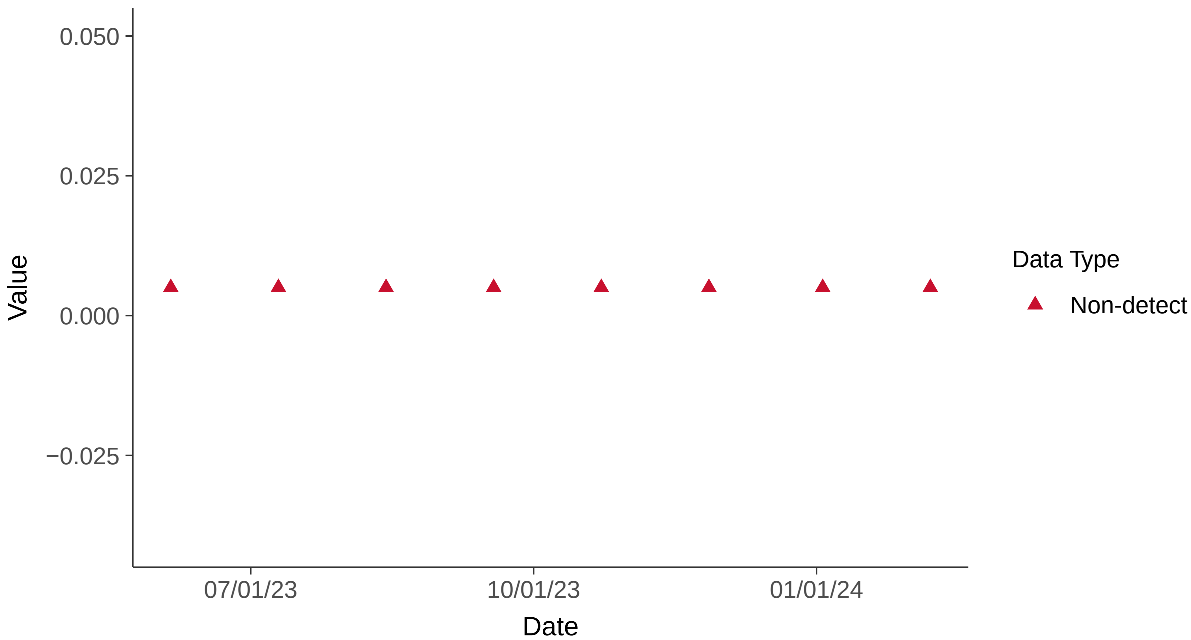


Appendix IV: Antimony, MW-100C

ID: 100C_2_08

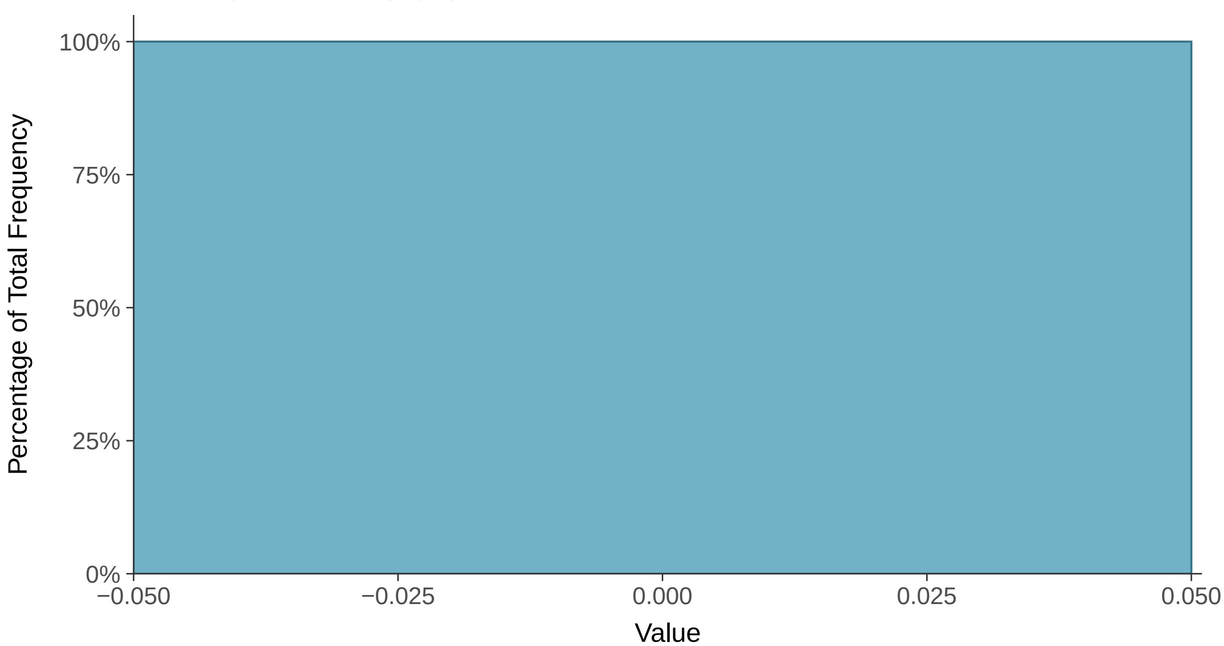
Scatter Plot

Antimony, MW-100C (mg/L)



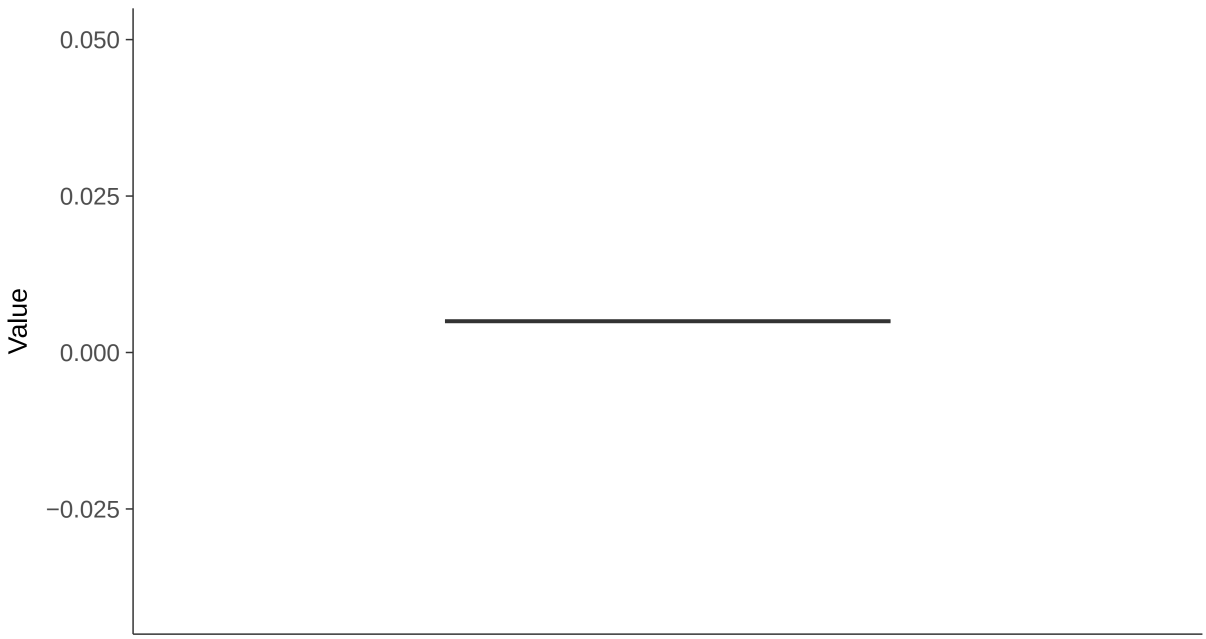
Histogram

Antimony, MW-100C (mg/L)



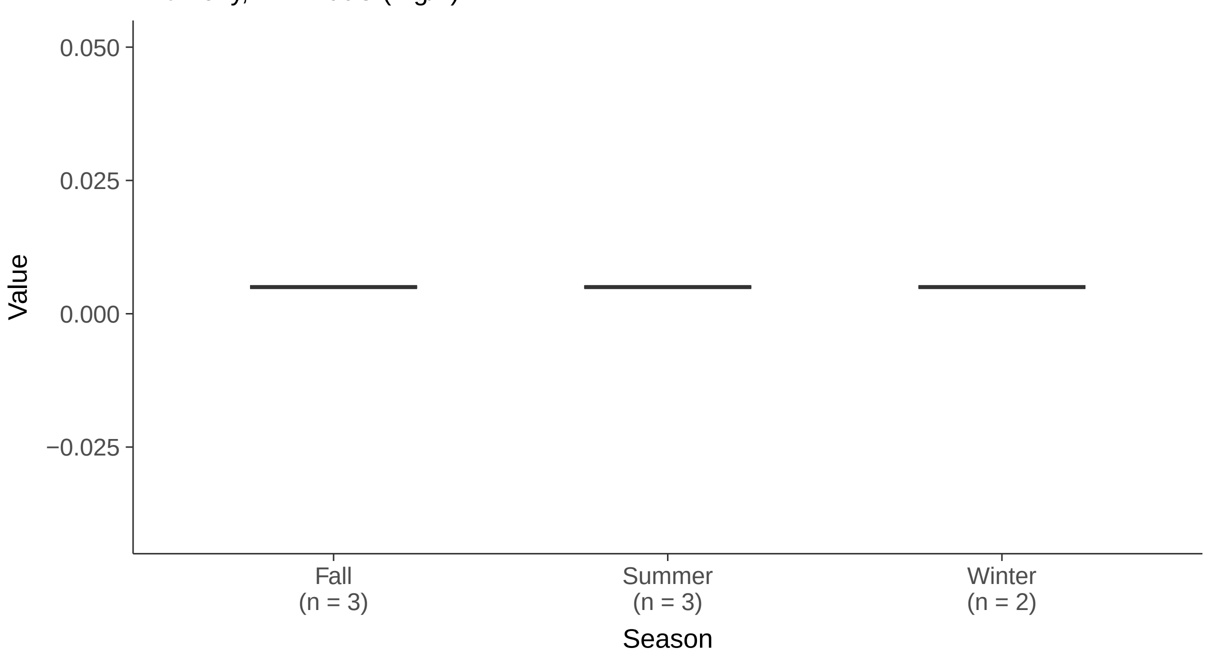
Boxplot

Antimony, MW-100C (mg/L)



Boxplot by Season

Antimony, MW-100C (mg/L)

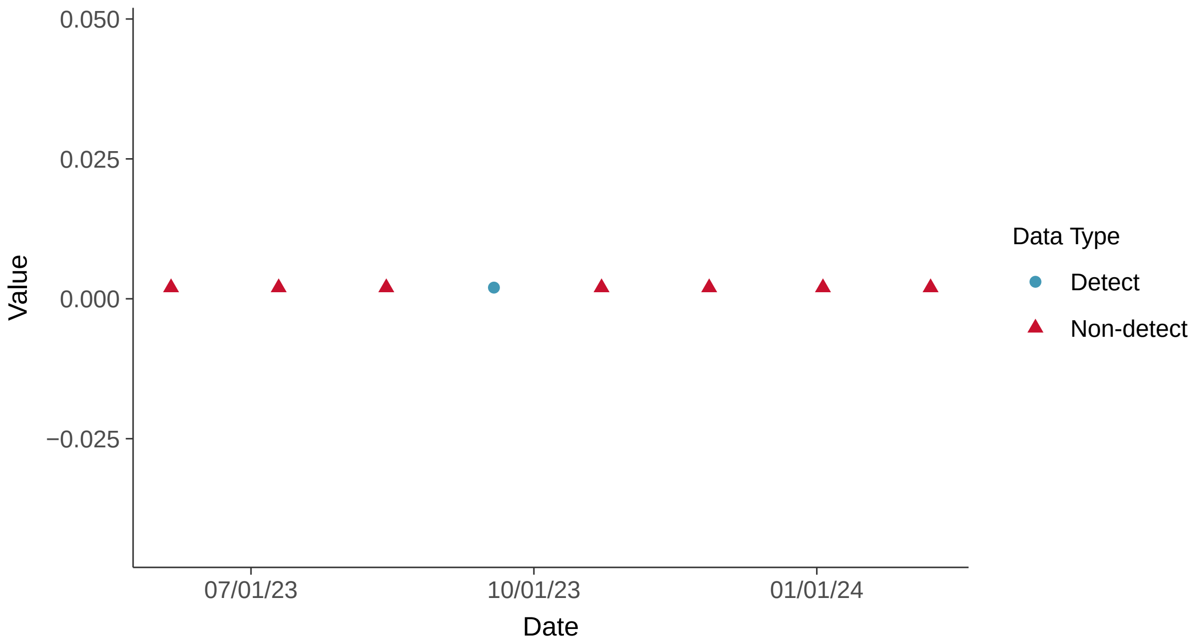


Appendix IV: Arsenic, MW-100C

ID: 100C_2_09

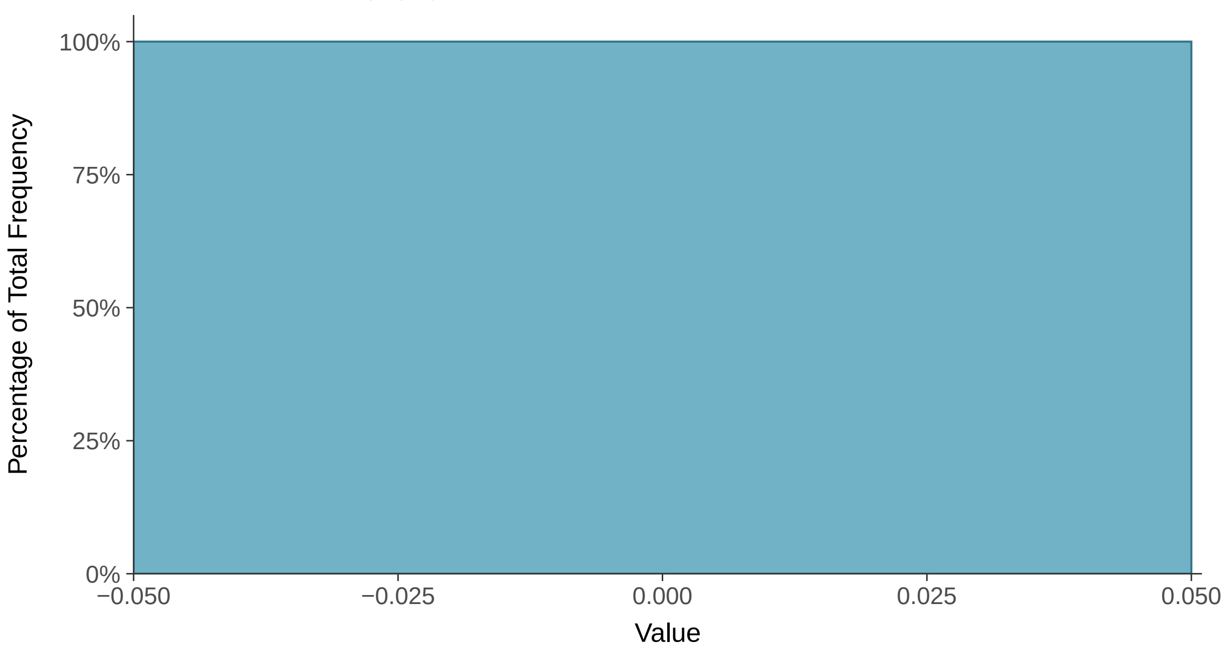
Scatter Plot

Arsenic, MW-100C (mg/L)



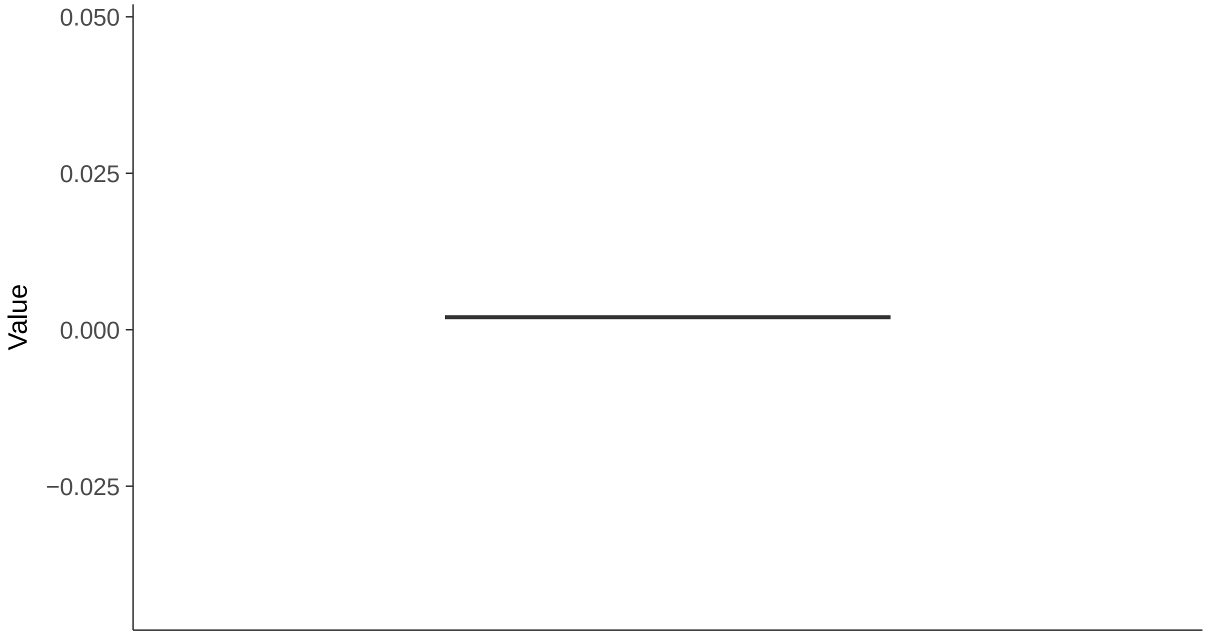
Histogram

Arsenic, MW-100C (mg/L)



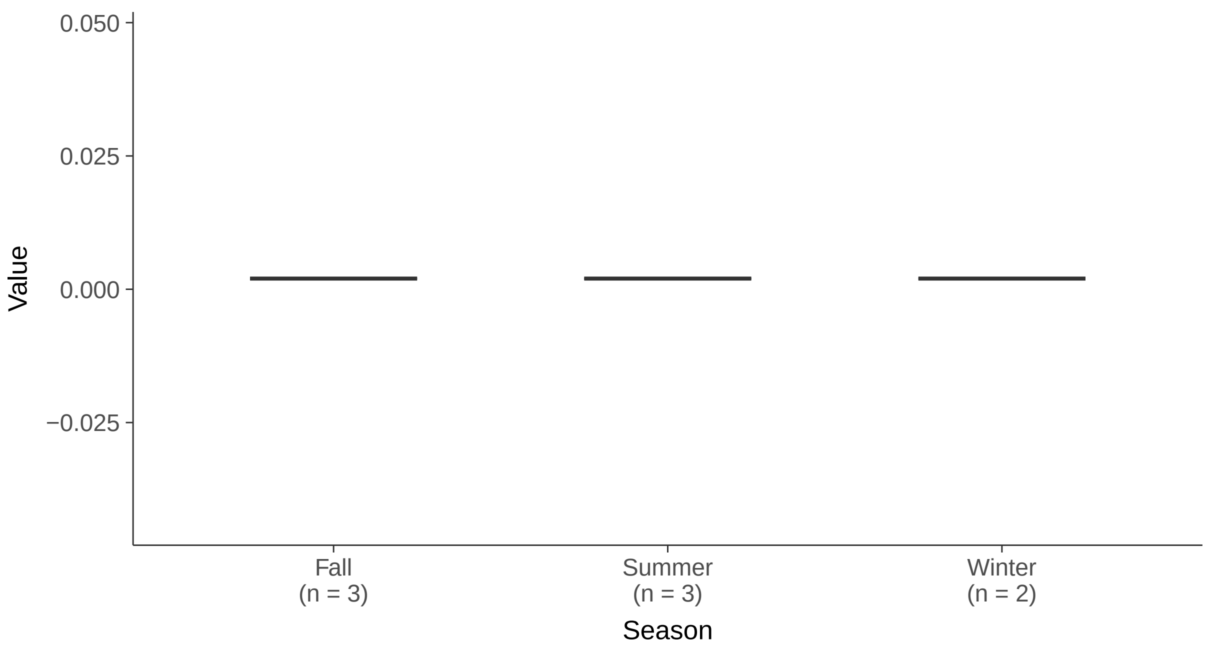
Boxplot

Arsenic, MW-100C (mg/L)



Boxplot by Season

Arsenic, MW-100C (mg/L)

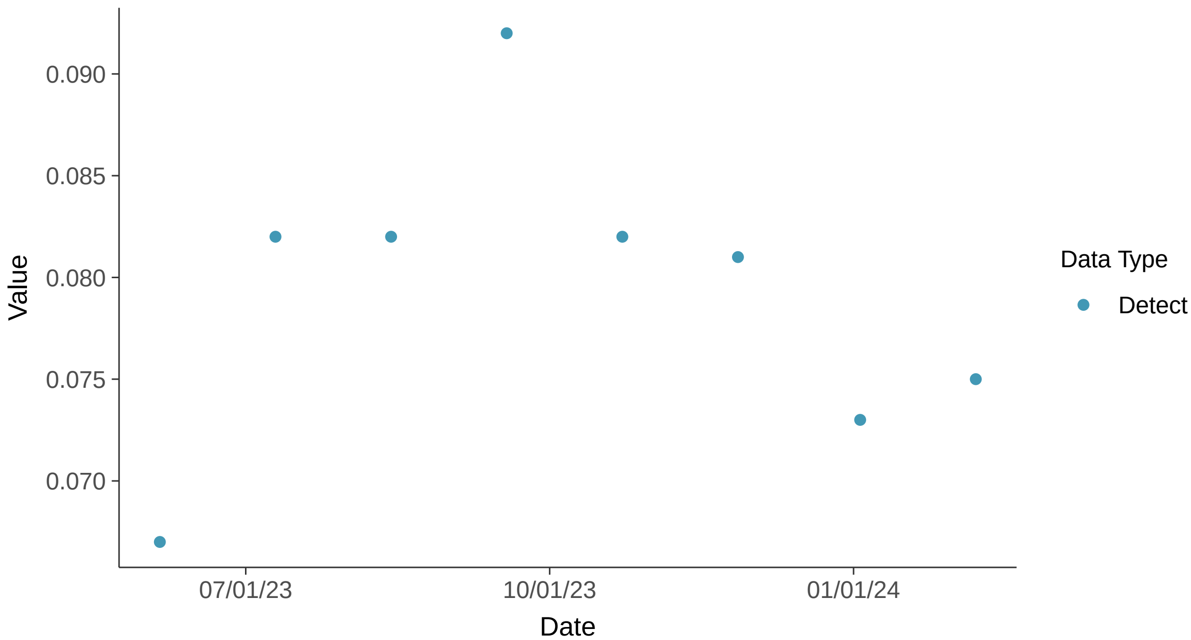


Appendix IV: Barium, MW-100C

ID: 100C_2_10

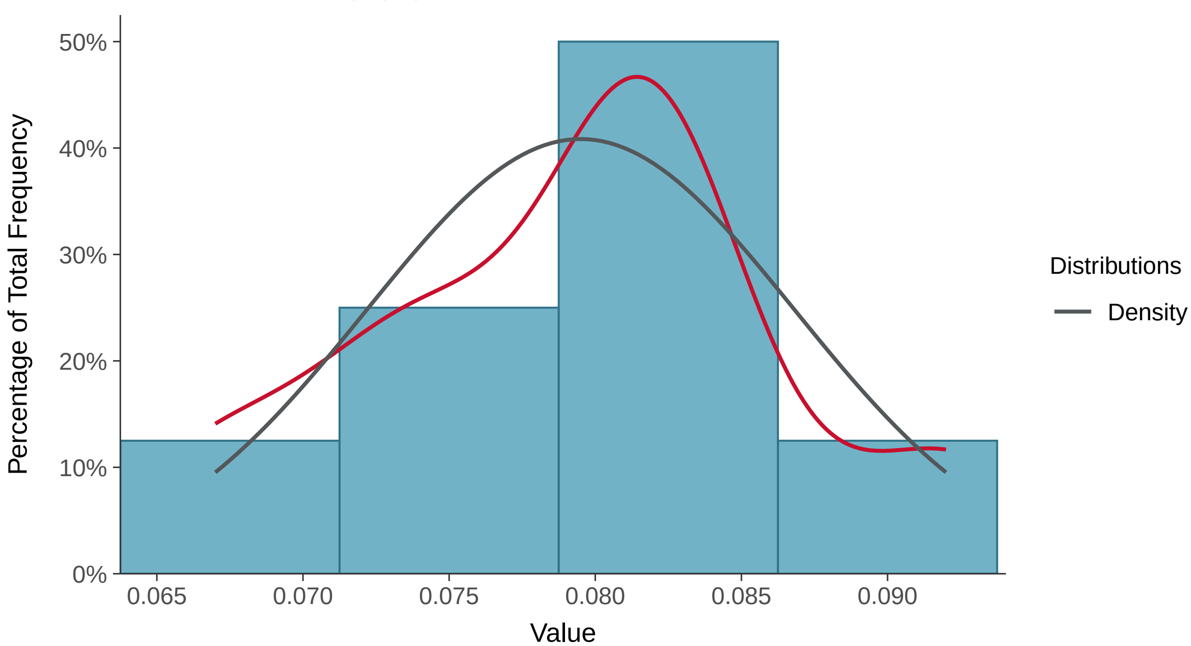
Scatter Plot

Barium, MW-100C (mg/L)



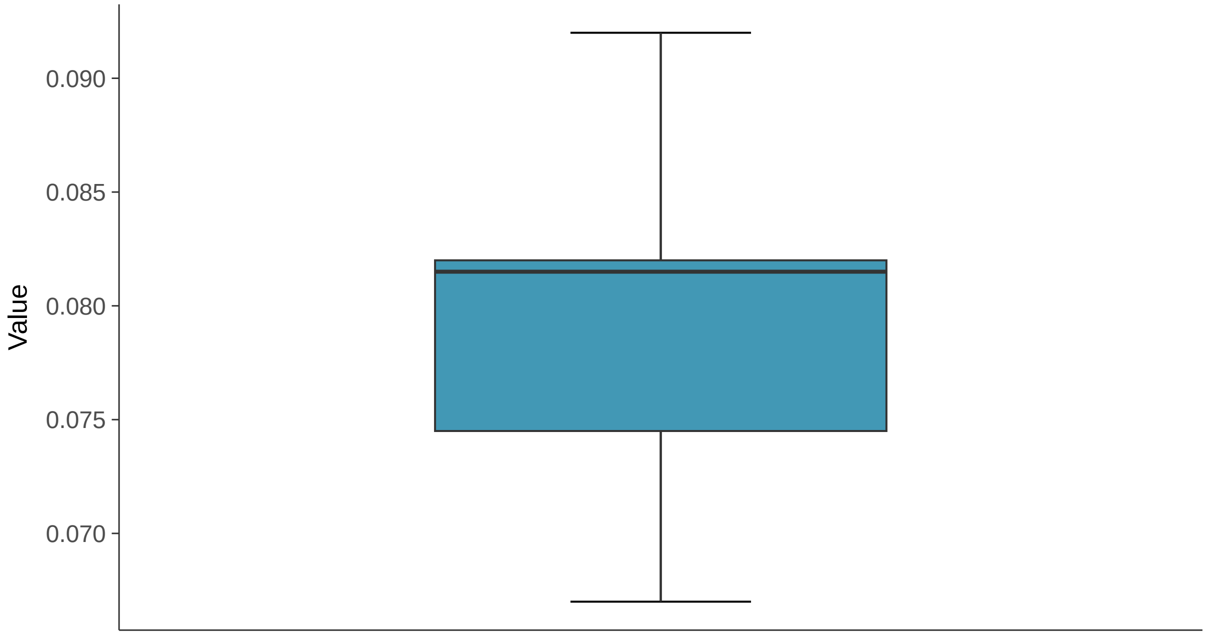
Histogram

Barium, MW-100C (mg/L)



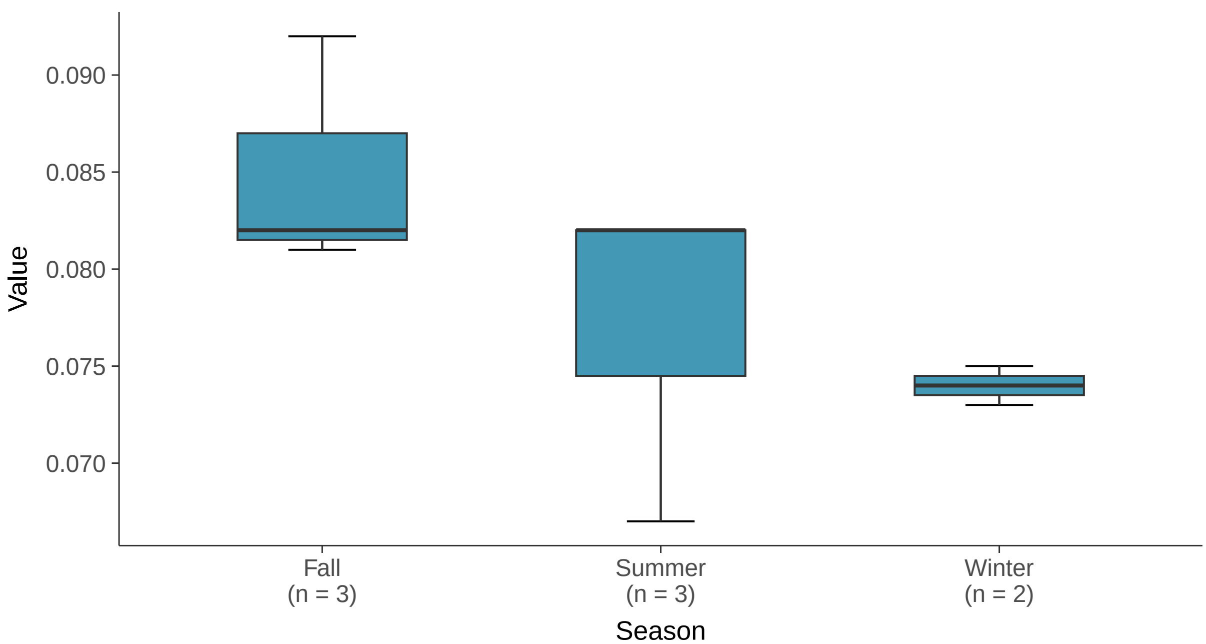
Boxplot

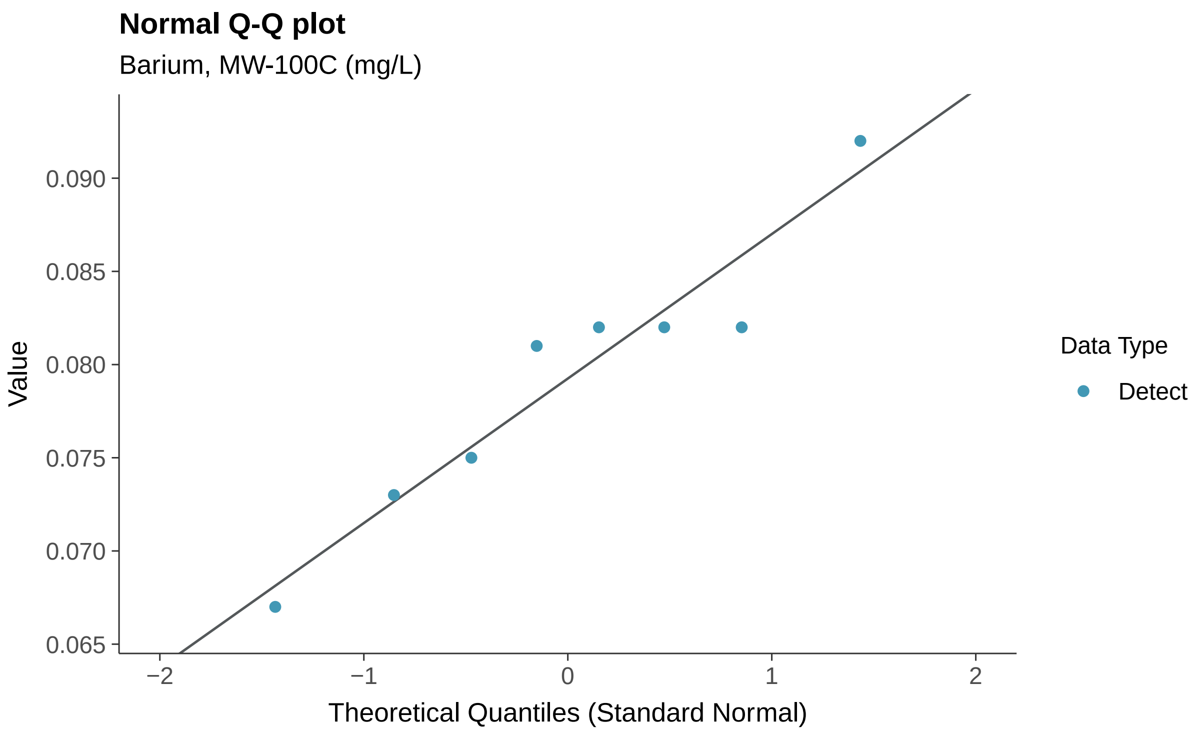
Barium, MW-100C (mg/L)

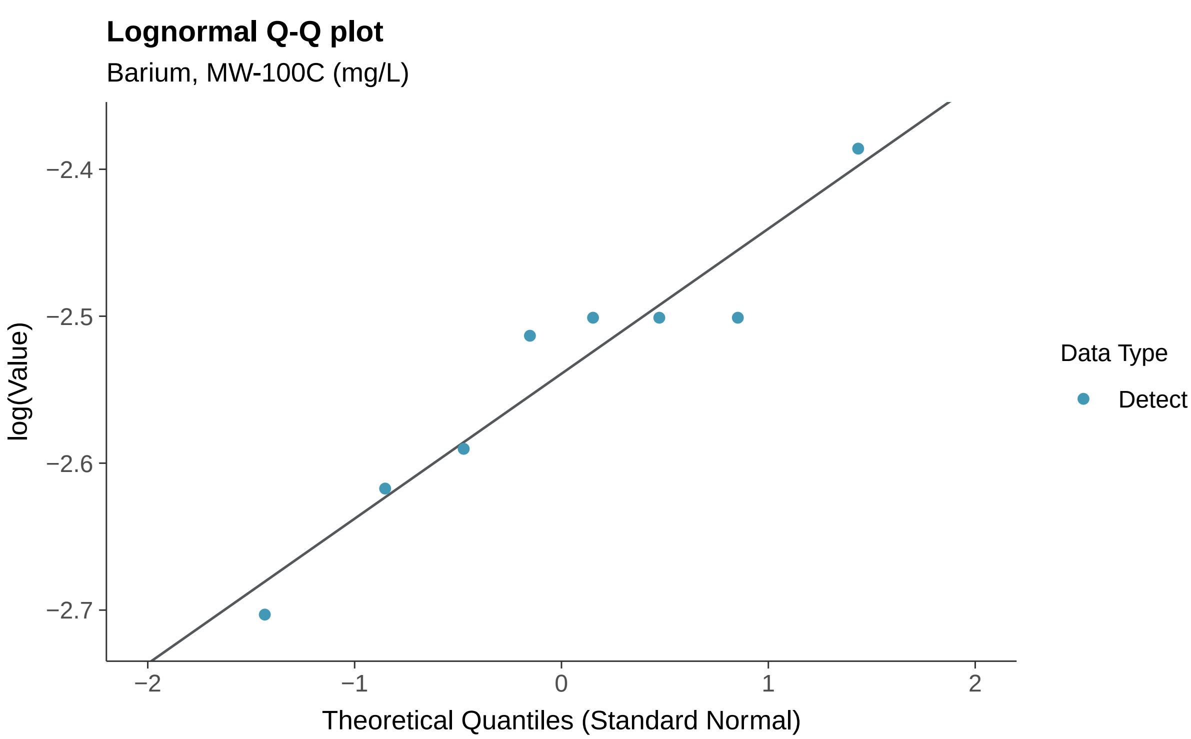


Boxplot by Season

Barium, MW-100C (mg/L)

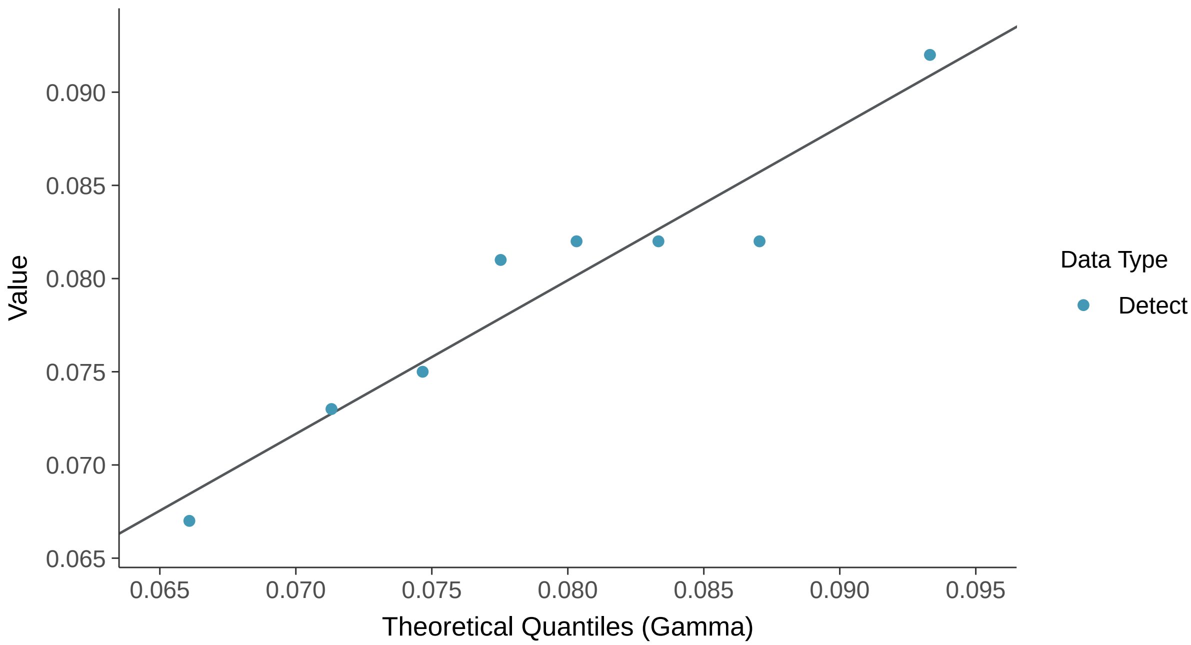



Normal Q-Q plot
Barium, MW-100C (mg/L)
Value
0.090
0.085
0.080
0.075
0.070
0.065
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-100C (mg/L)
log(Value)
−2.4
−2.5
−2.6
−2.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

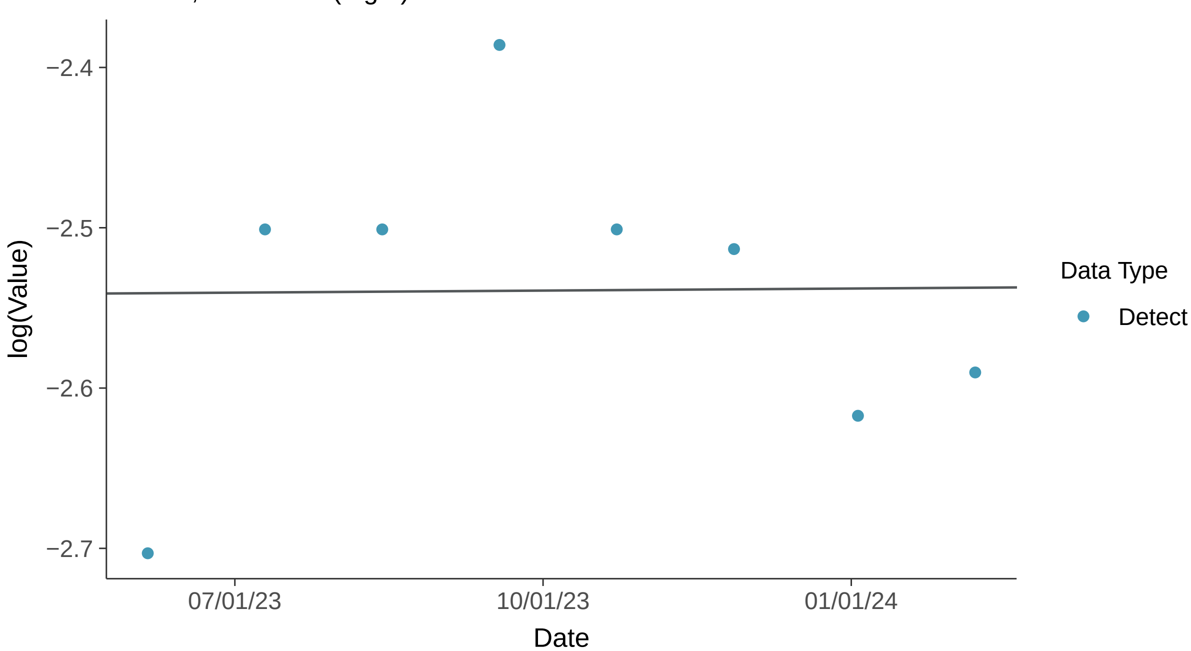
Gamma Q-Q plot

Barium, MW-100C (mg/L)



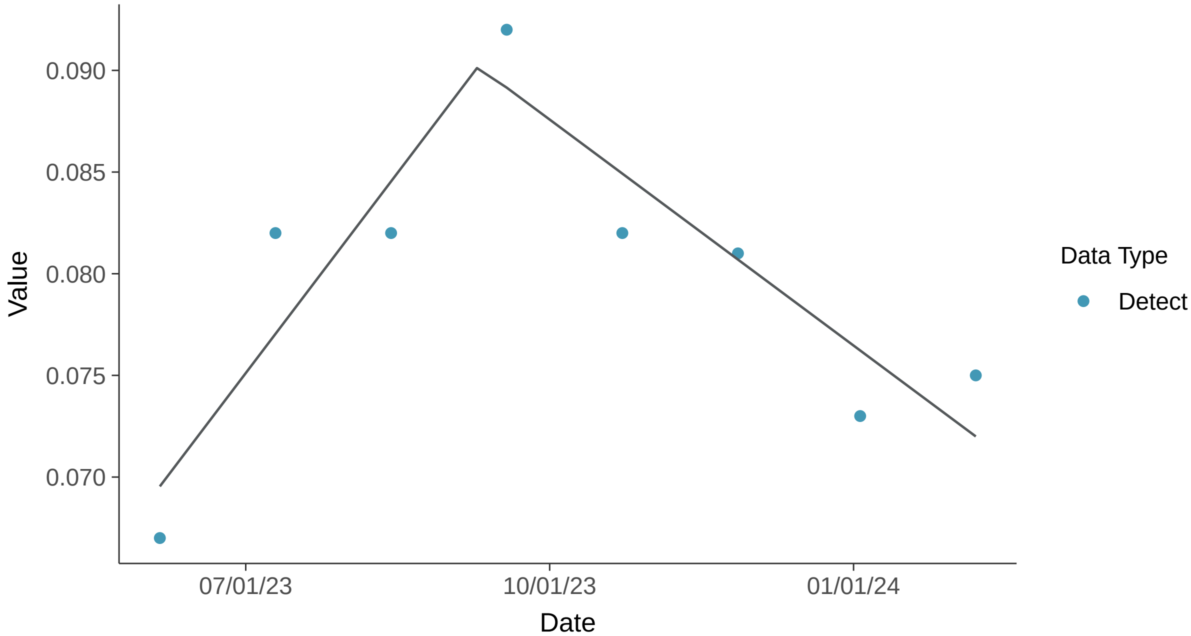
Trend Regression: Lognormal MLE

Barium, MW-100C (mg/L)



Trend Regression: Piecewise Linear-Linear

Barium, MW-100C (mg/L)

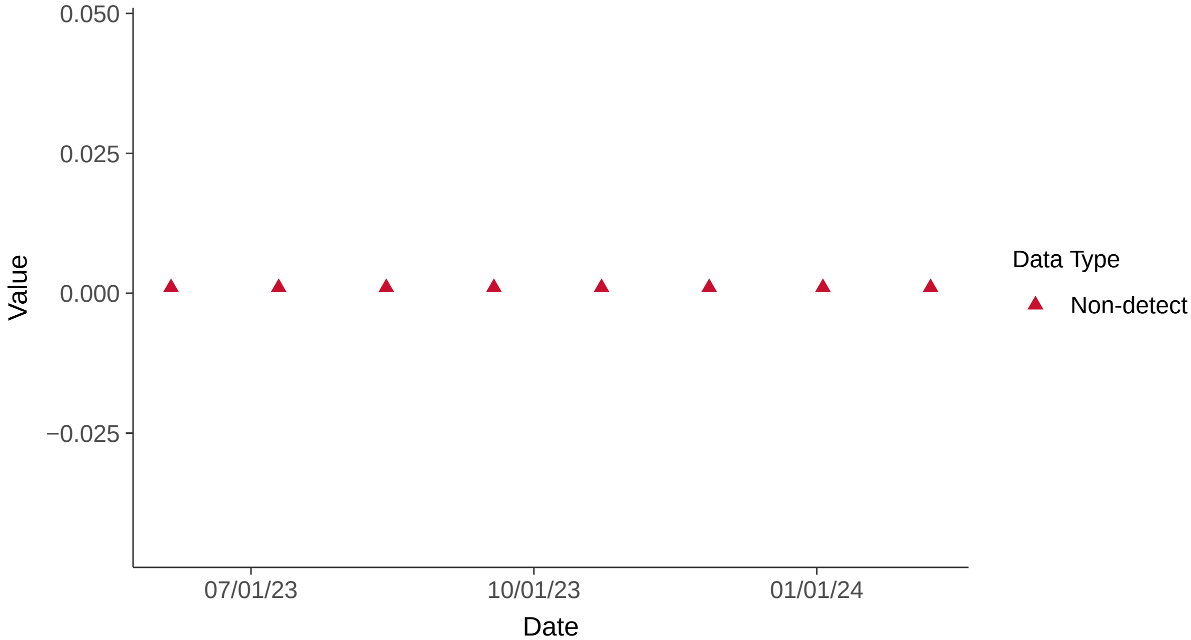


Appendix IV: Beryllium, MW-100C

ID: 100C_2_11

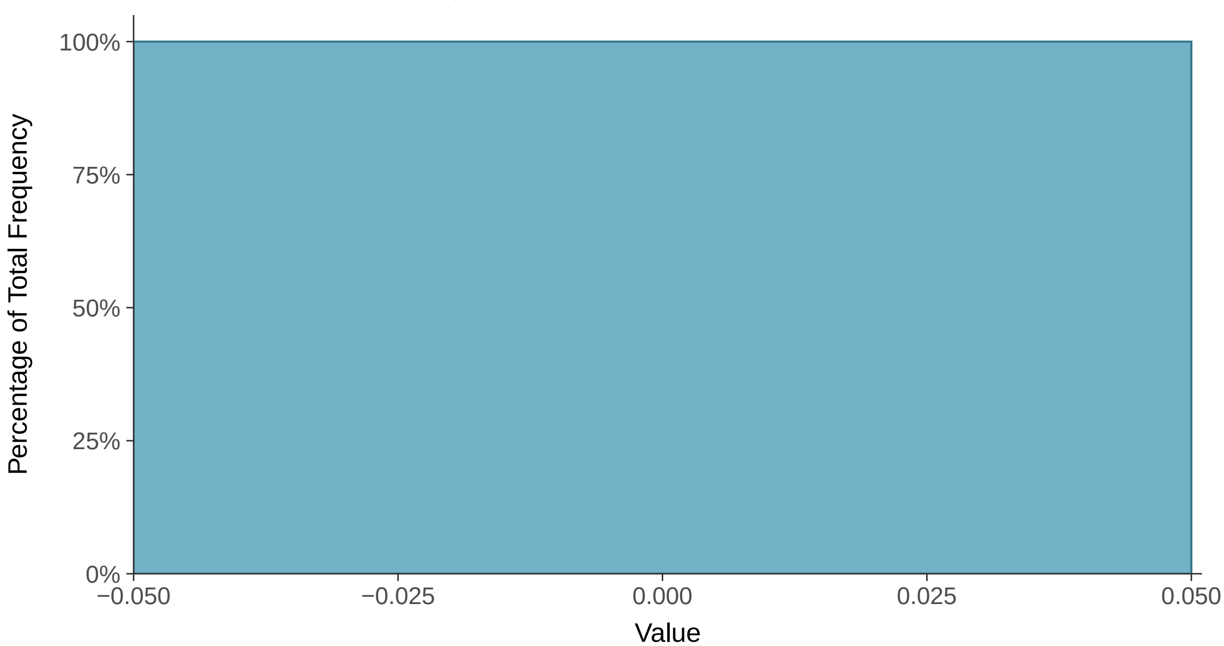
Scatter Plot

Beryllium, MW-100C (mg/L)



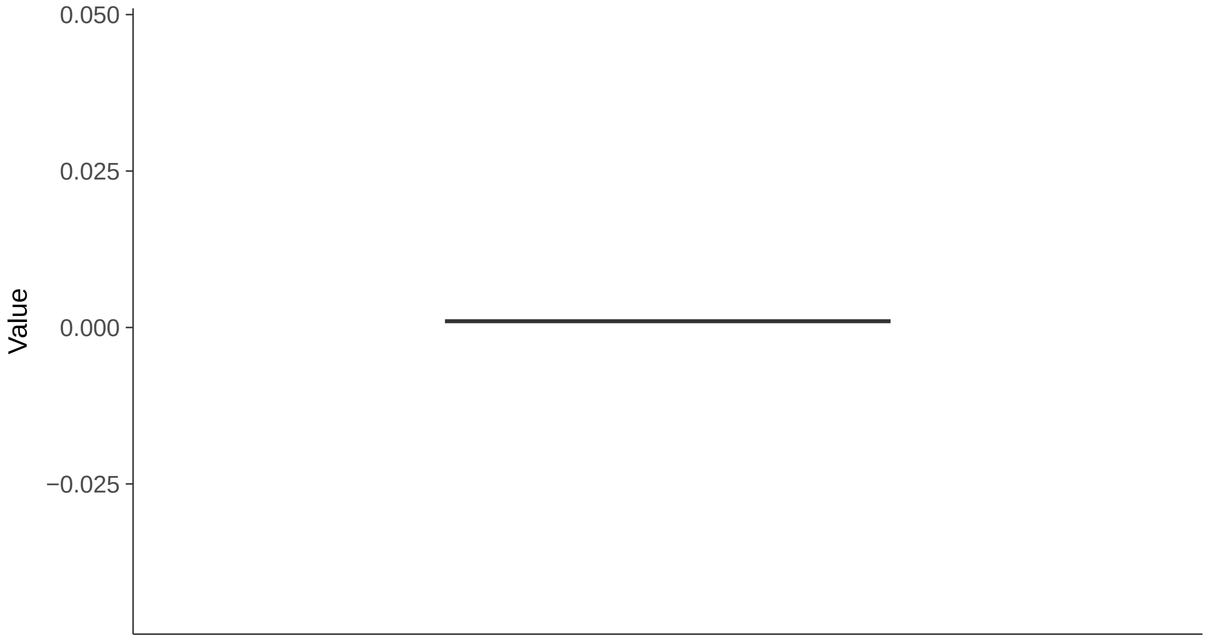
Histogram

Beryllium, MW-100C (mg/L)



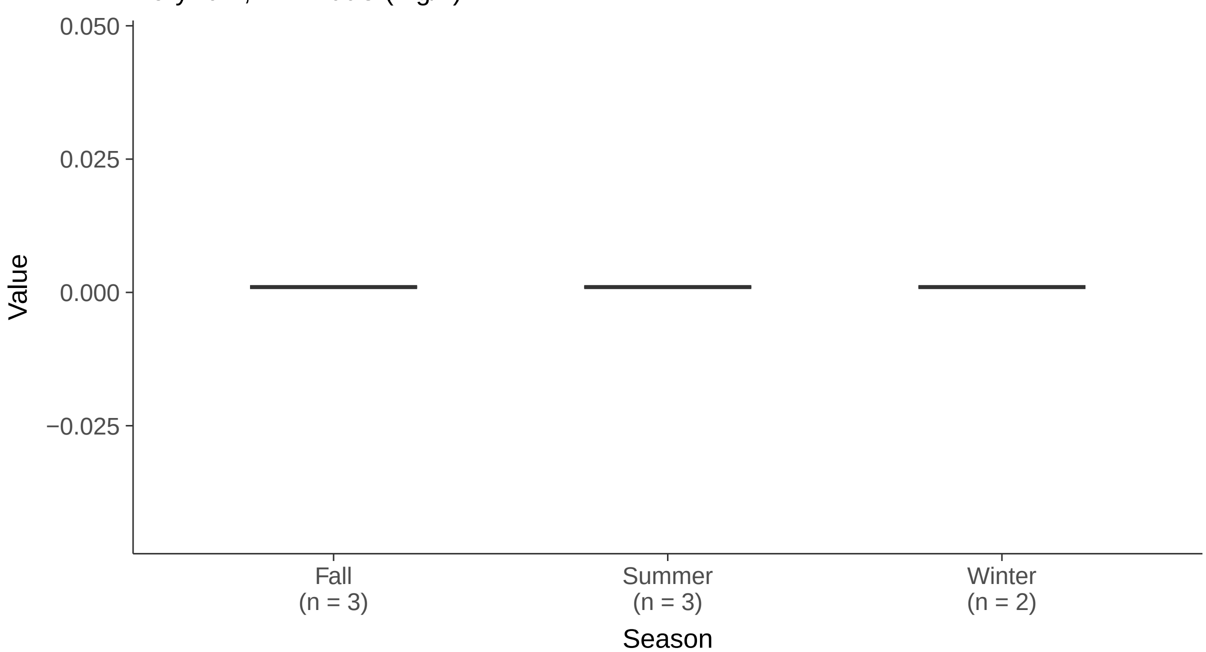
Boxplot

Beryllium, MW-100C (mg/L)



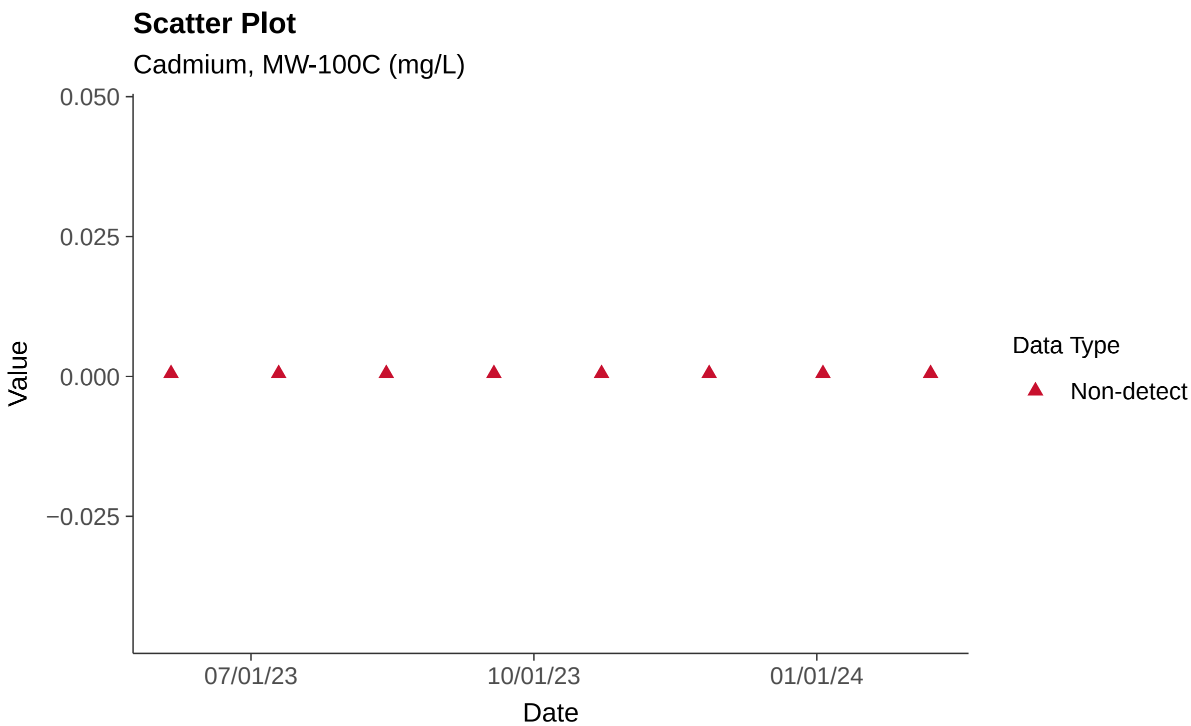
Boxplot by Season

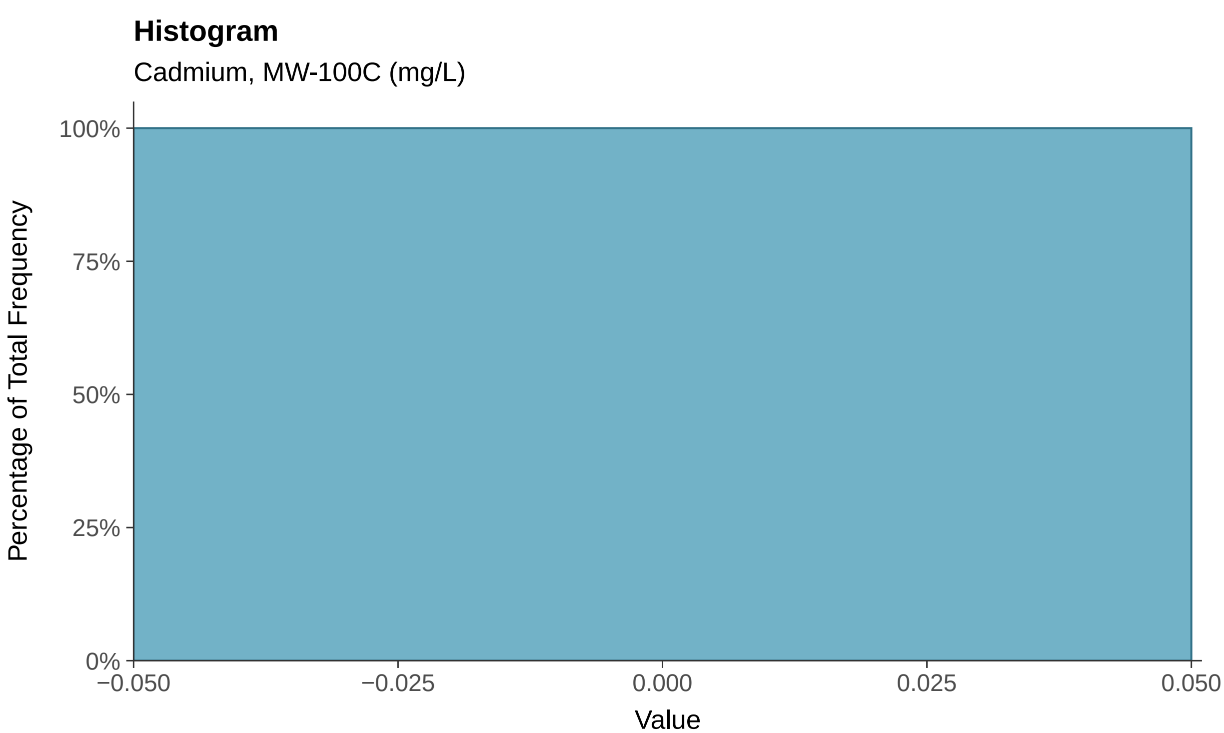
Beryllium, MW-100C (mg/L)



Appendix IV: Cadmium, MW-100C

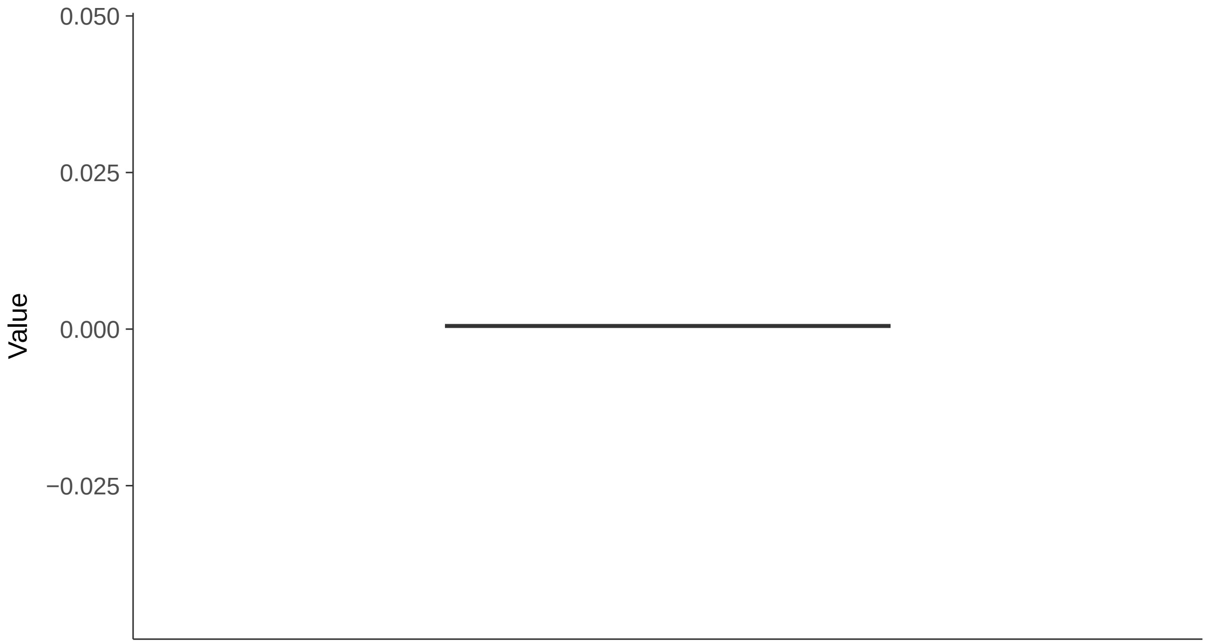
ID: 100C_2_12





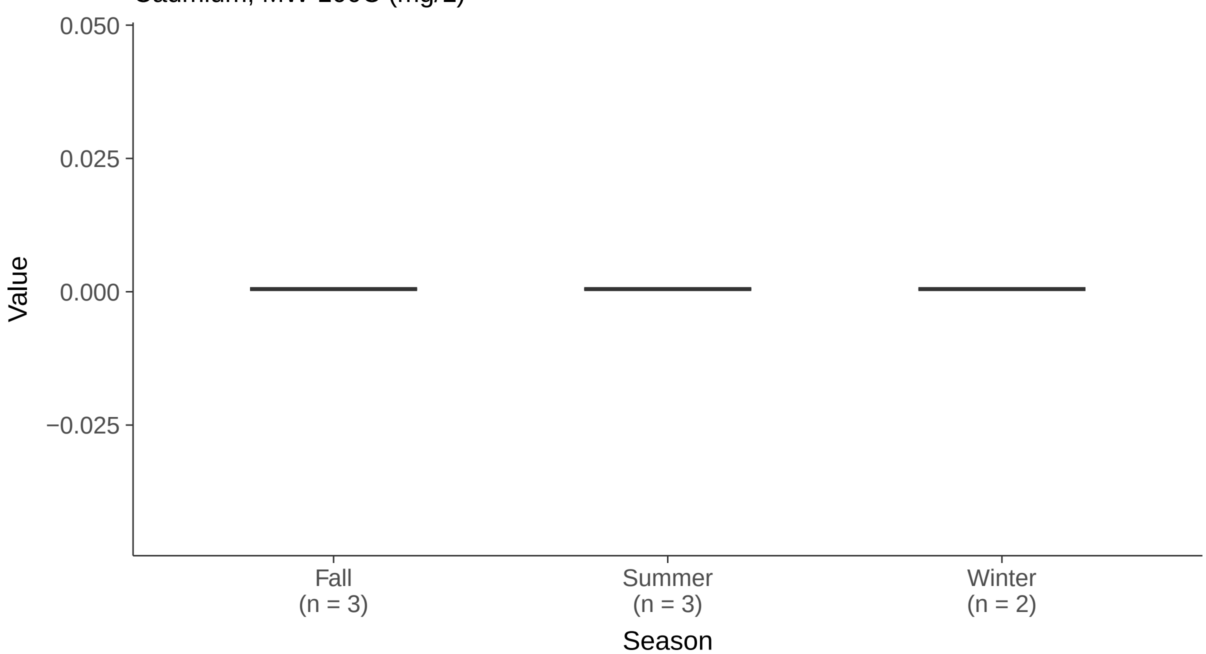
Boxplot

Cadmium, MW-100C (mg/L)



Boxplot by Season

Cadmium, MW-100C (mg/L)

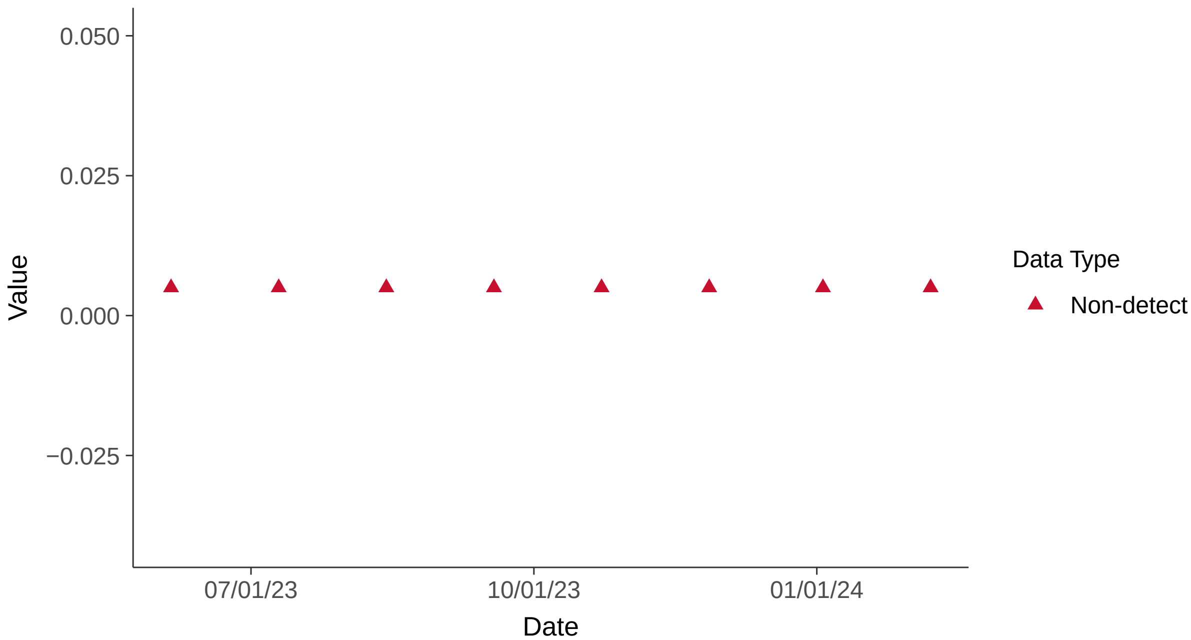


Appendix IV: Chromium, MW-100C

ID: 100C_2_13

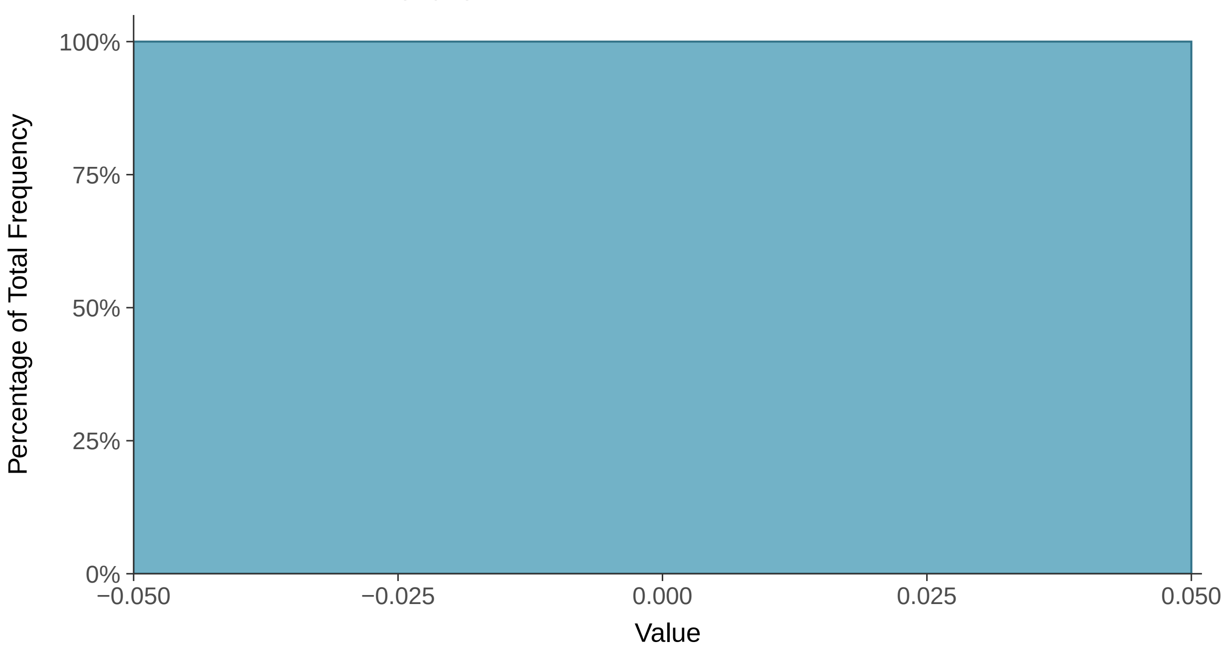
Scatter Plot

Chromium, MW-100C (mg/L)



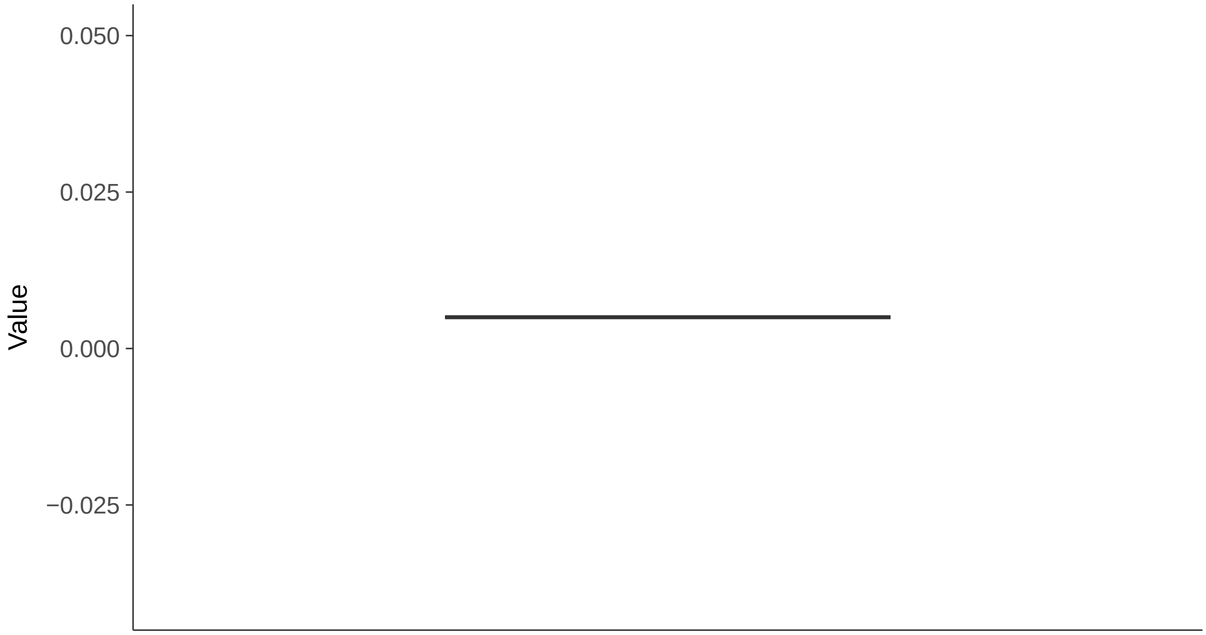
Histogram

Chromium, MW-100C (mg/L)



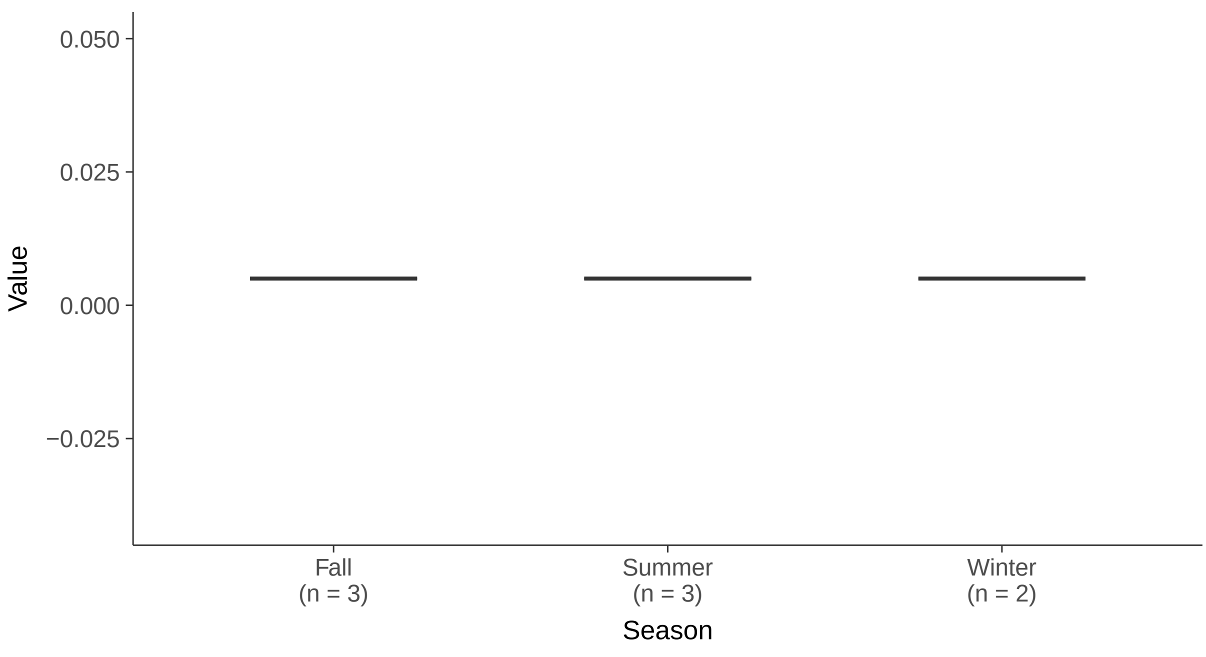
Boxplot

Chromium, MW-100C (mg/L)



Boxplot by Season

Chromium, MW-100C (mg/L)

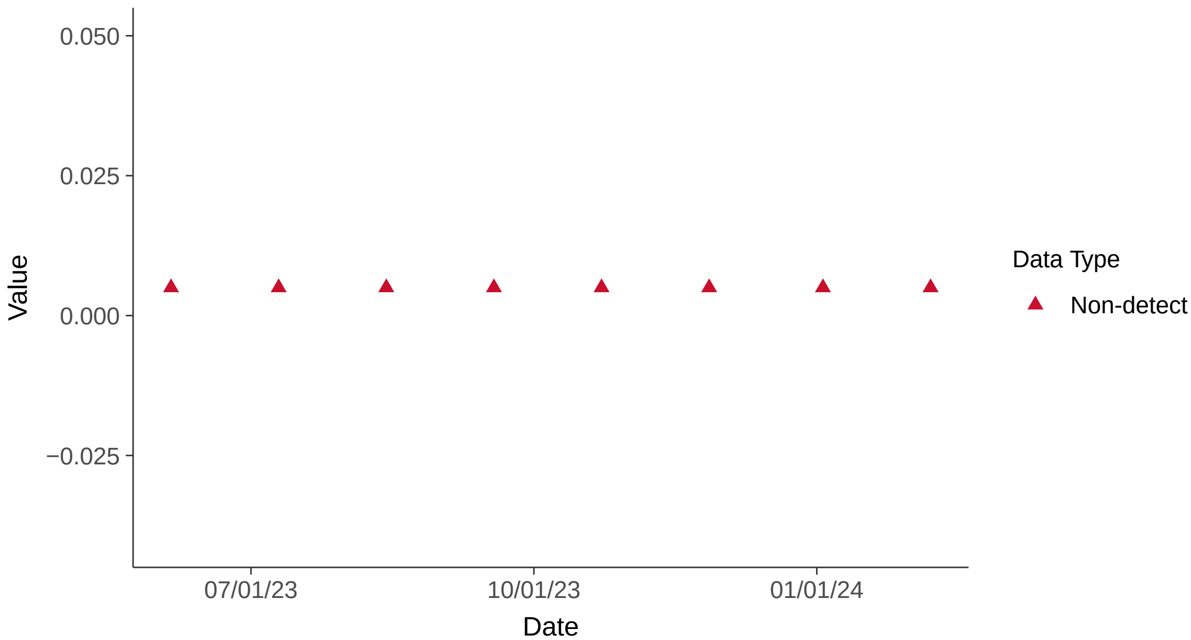


Appendix IV: Cobalt, MW-100C

ID: 100C_2_14

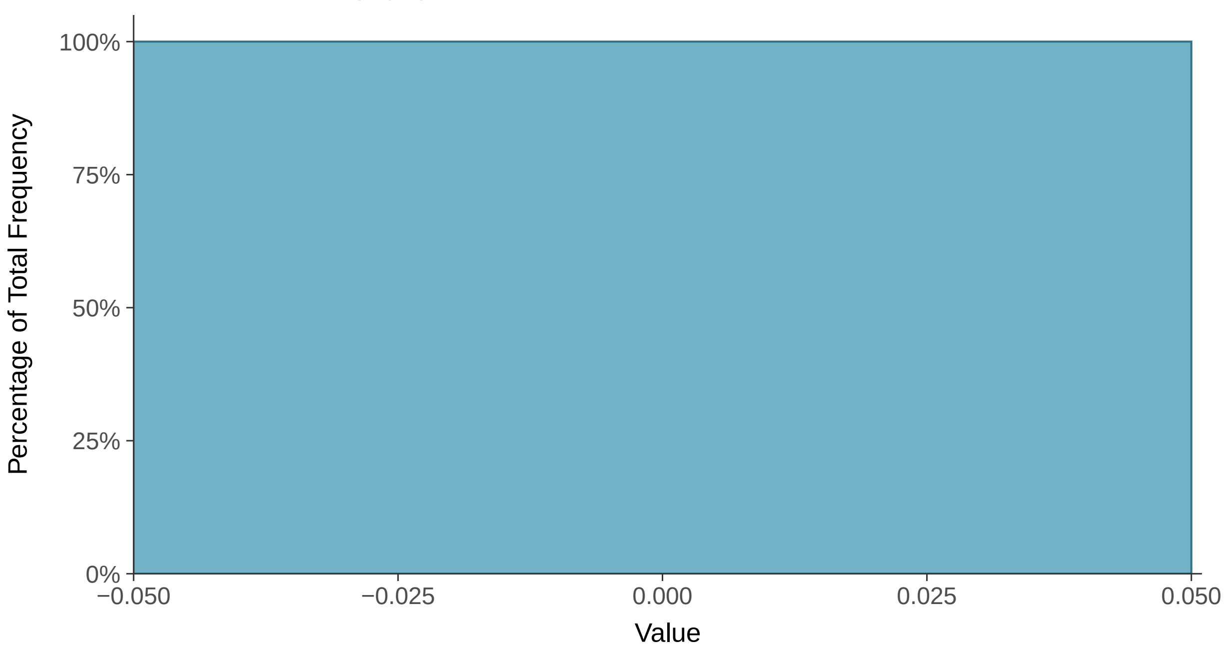
Scatter Plot

Cobalt, MW-100C (mg/L)



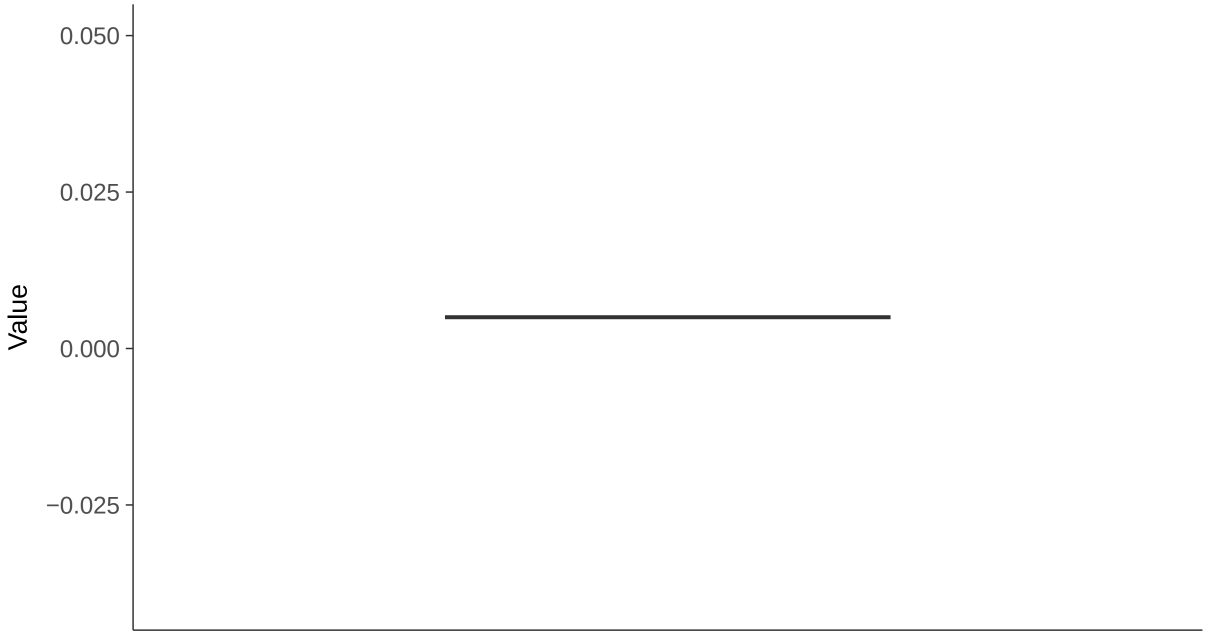
Histogram

Cobalt, MW-100C (mg/L)



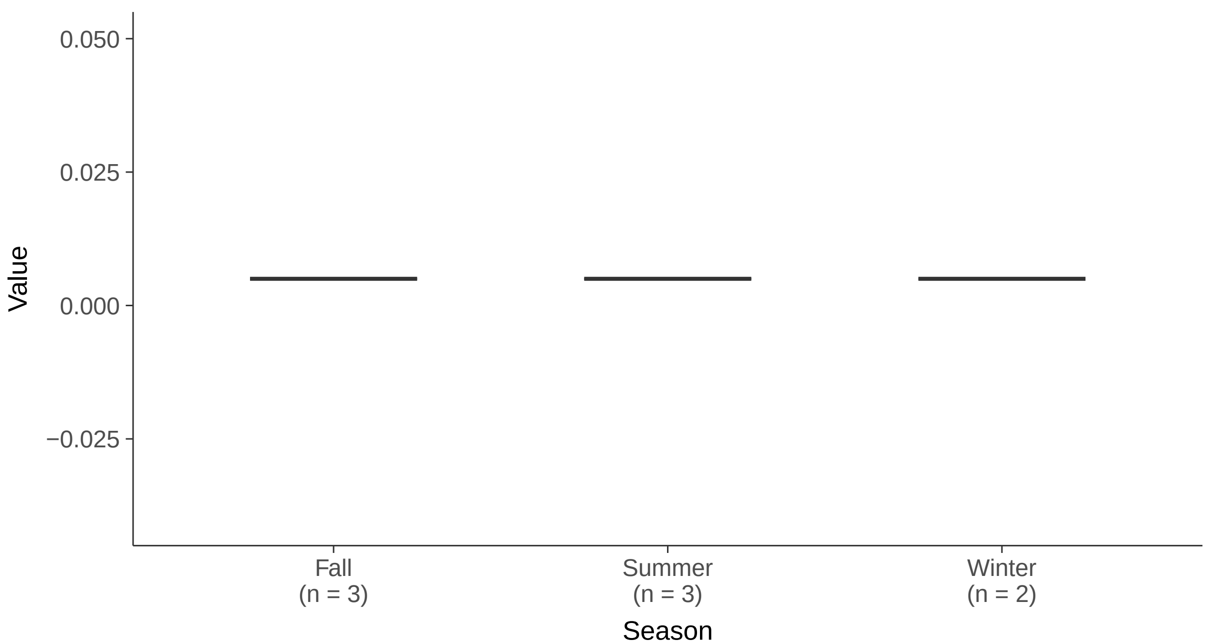
Boxplot

Cobalt, MW-100C (mg/L)



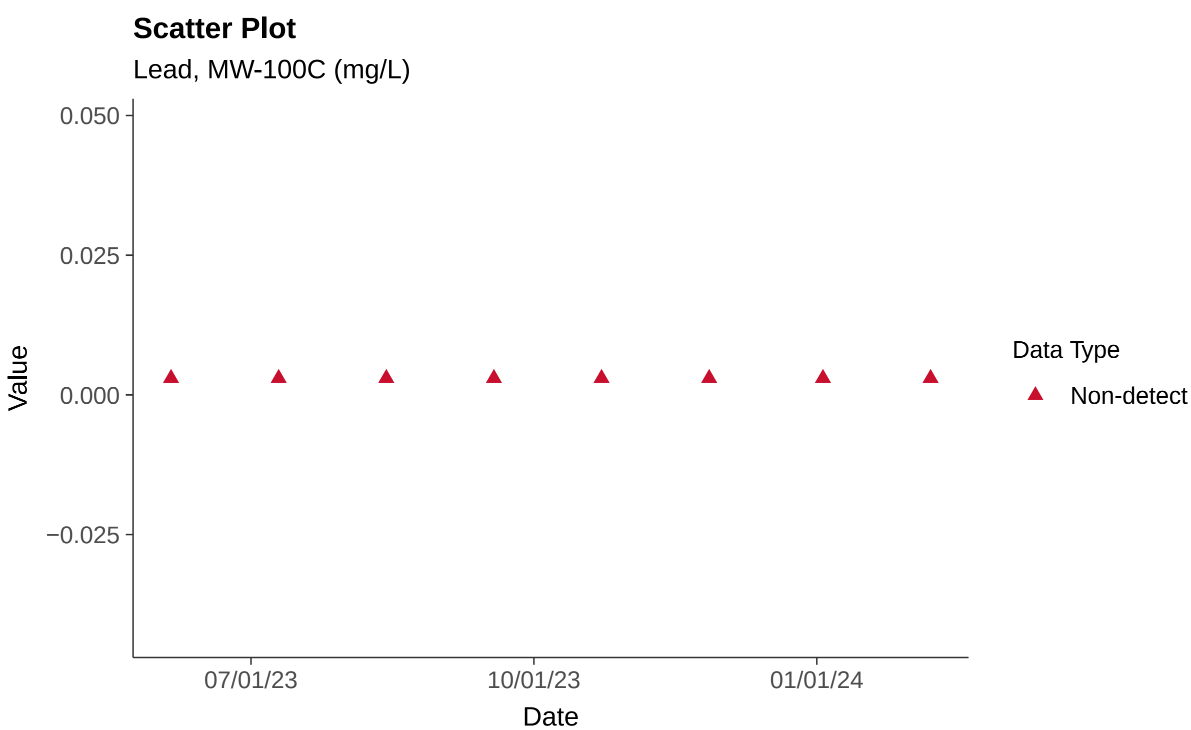
Boxplot by Season

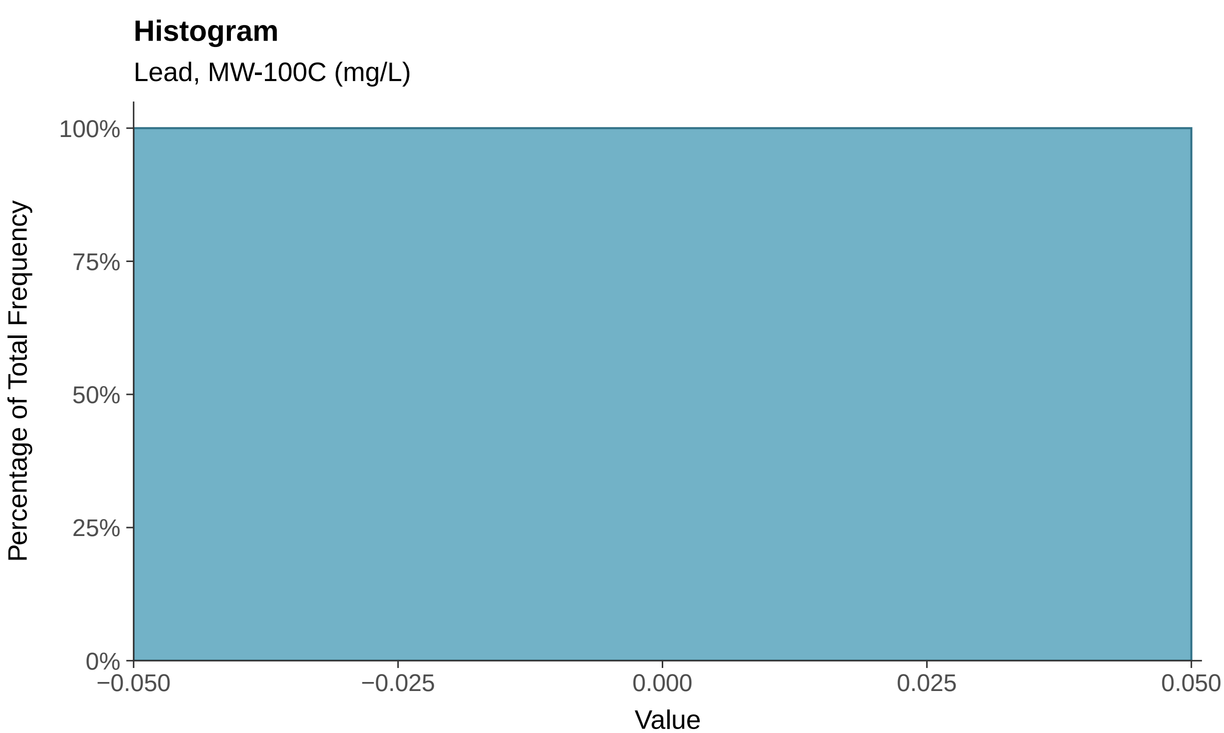
Cobalt, MW-100C (mg/L)



Appendix IV: Lead, MW-100C

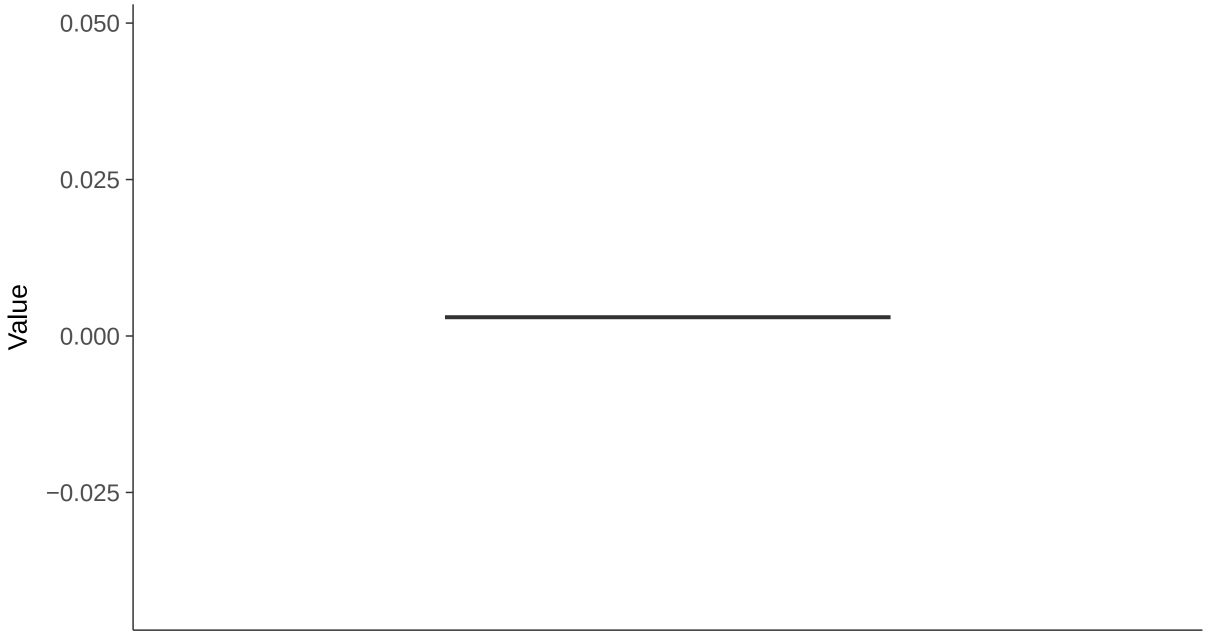
ID: 100C_2_15





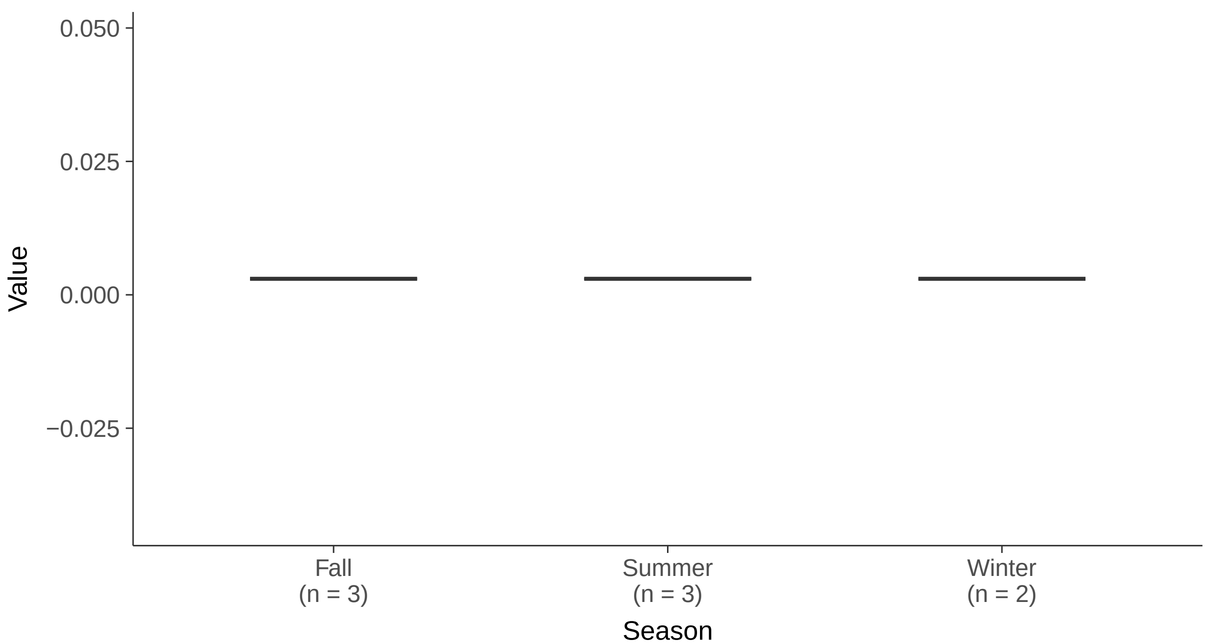
Boxplot

Lead, MW-100C (mg/L)



Boxplot by Season

Lead, MW-100C (mg/L)

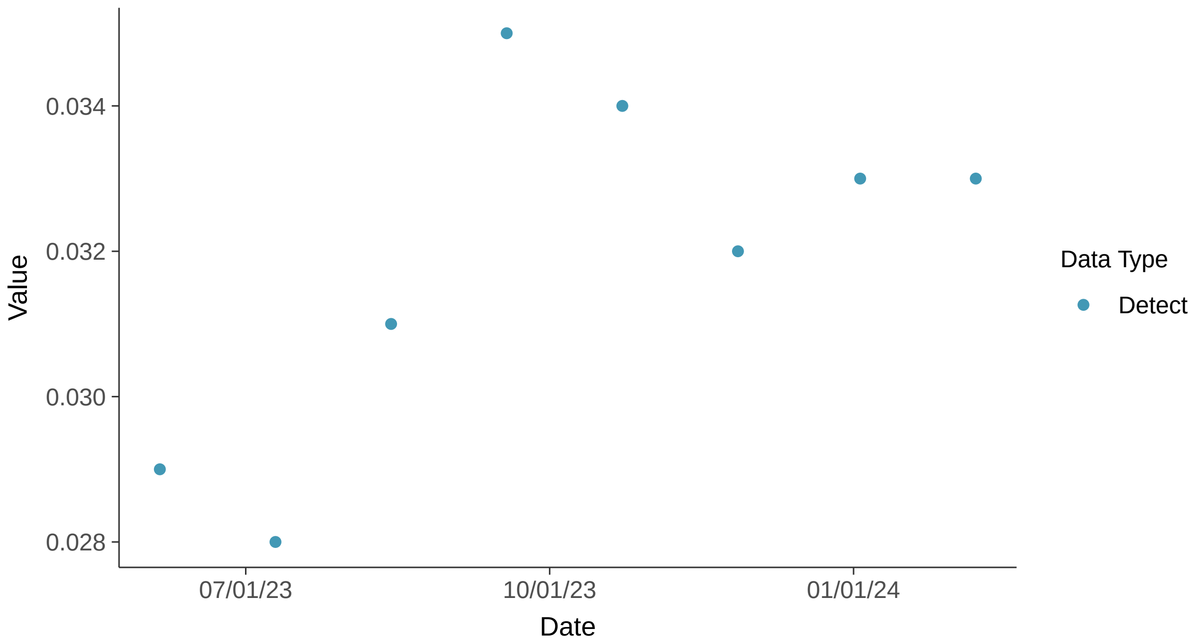


Appendix IV: Lithium, MW-100C

ID: 100C_2_16

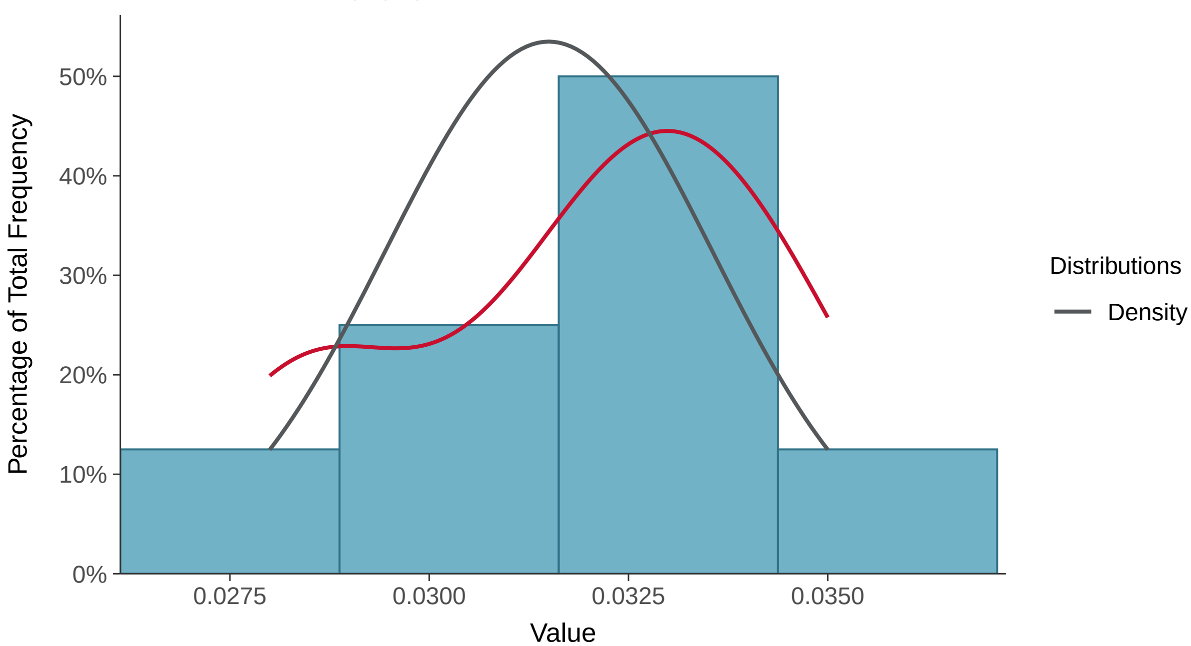
Scatter Plot

Lithium, MW-100C (mg/L)



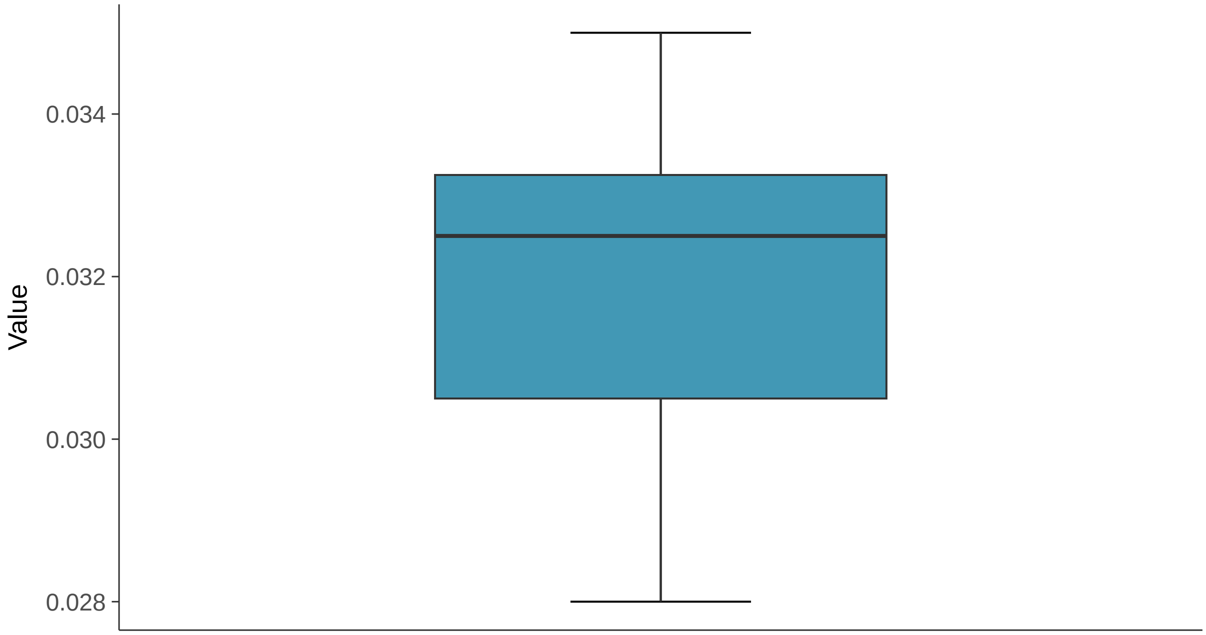
Histogram

Lithium, MW-100C (mg/L)



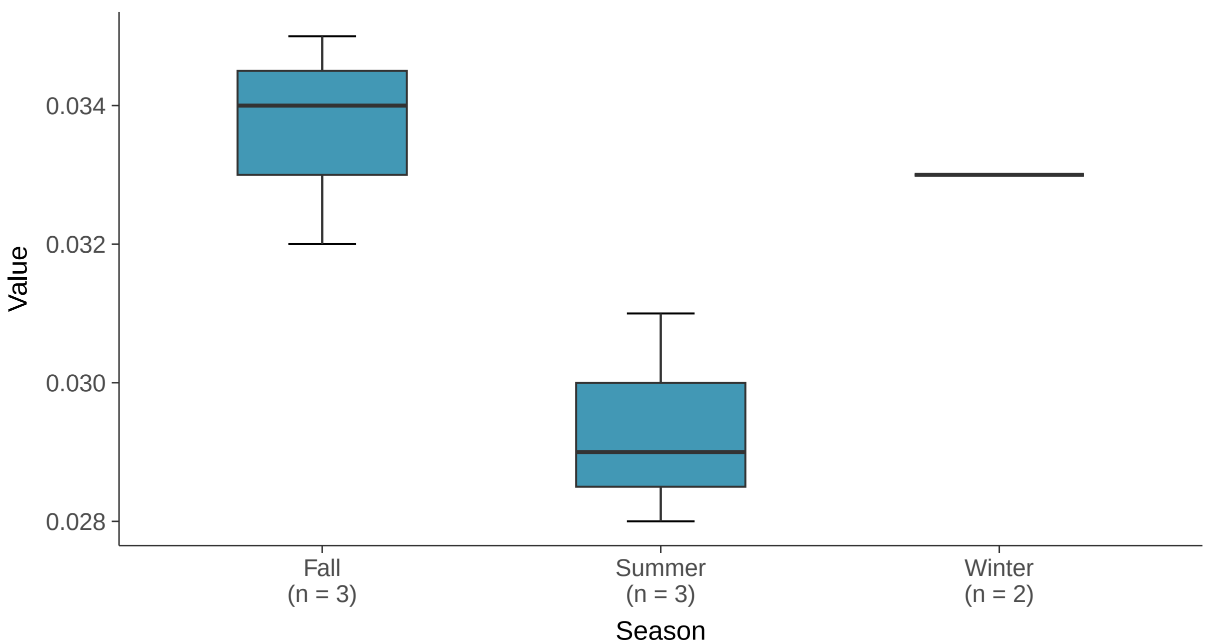
Boxplot

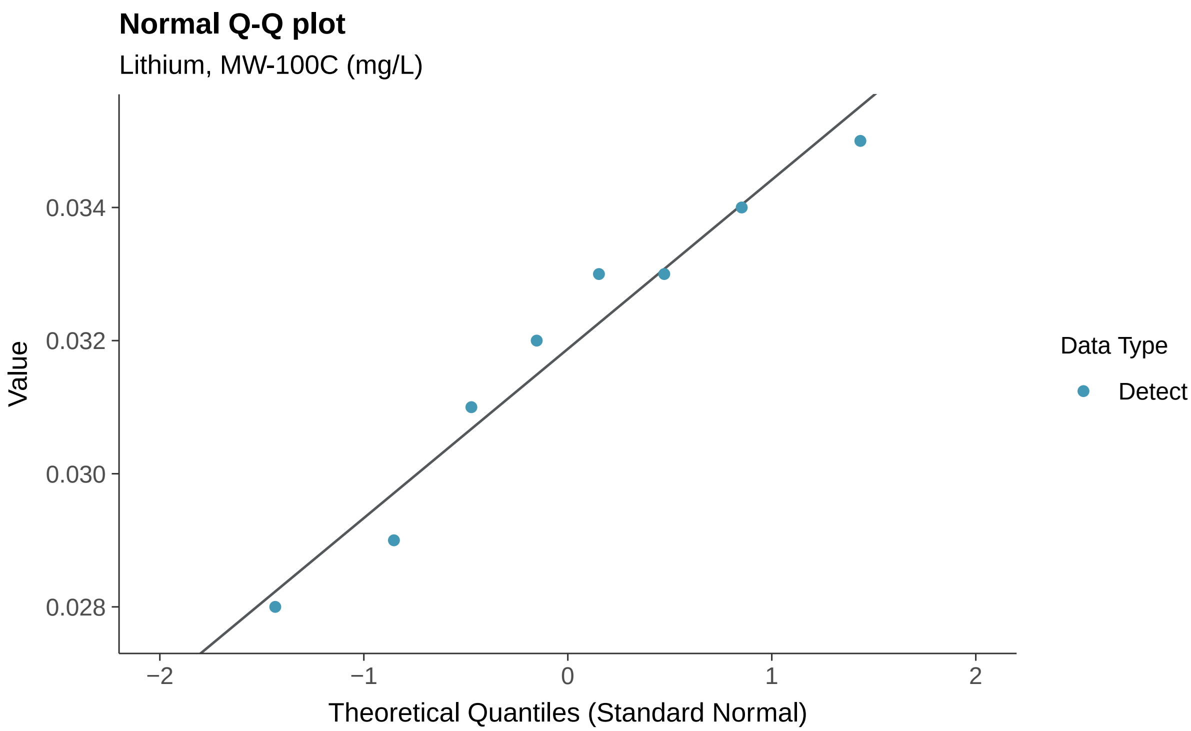
Lithium, MW-100C (mg/L)

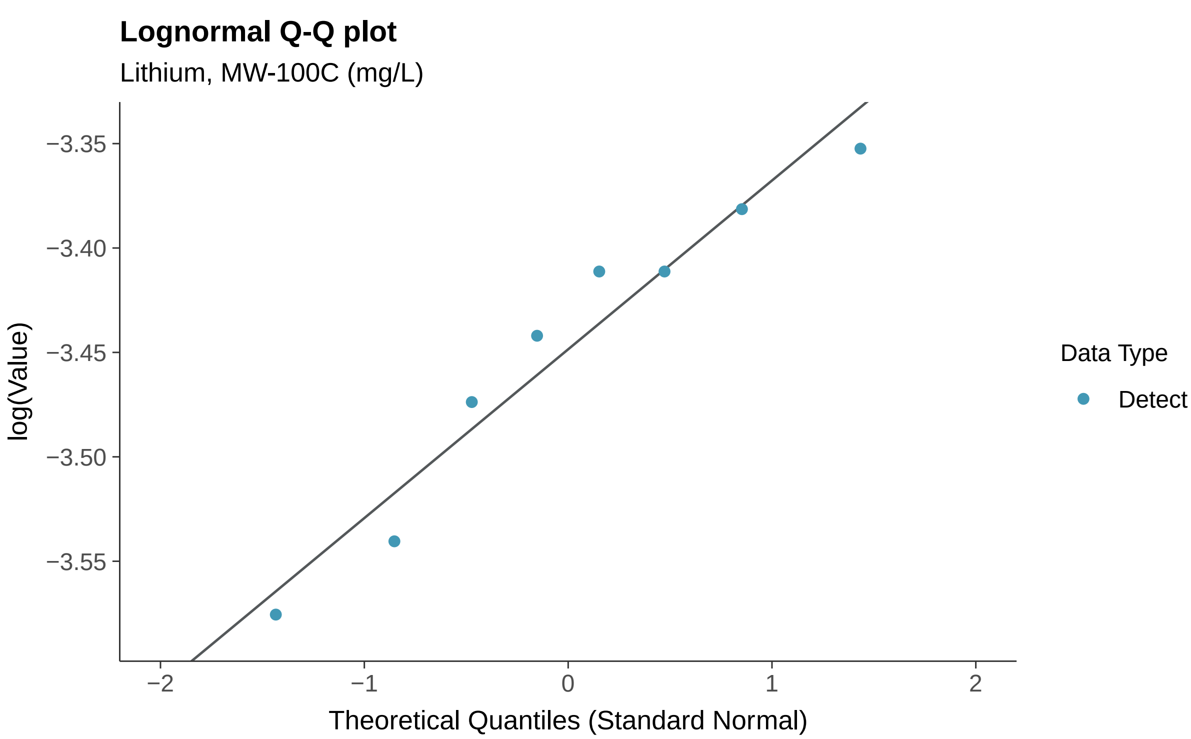


Boxplot by Season

Lithium, MW-100C (mg/L)

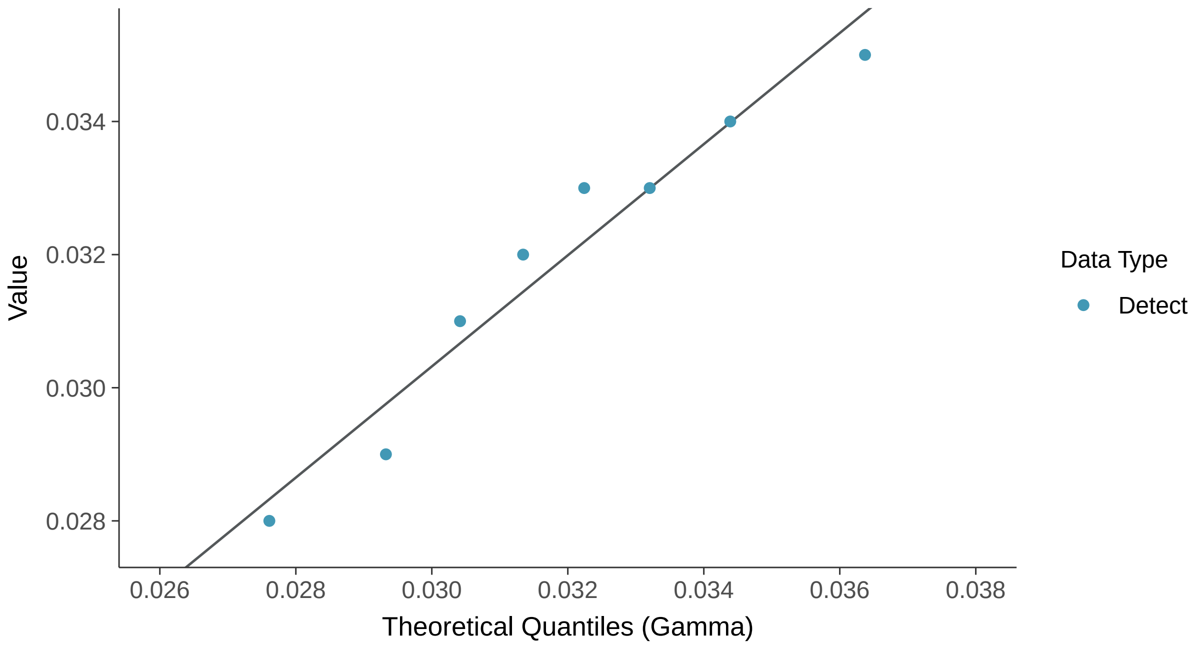



Normal Q-Q plot
Lithium, MW-100C (mg/L)
Value
0.034
0.032
0.030
0.028
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-100C (mg/L)
log(Value)
−3.35
−3.40
−3.45
−3.50
−3.55
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

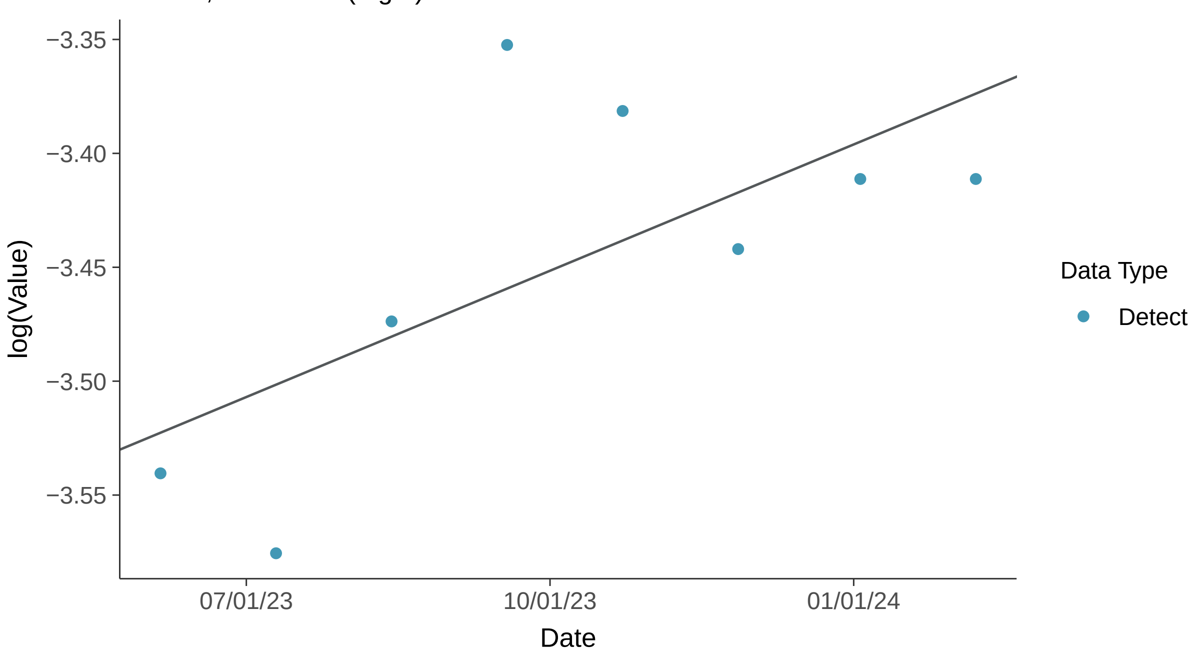
Gamma Q-Q plot

Lithium, MW-100C (mg/L)



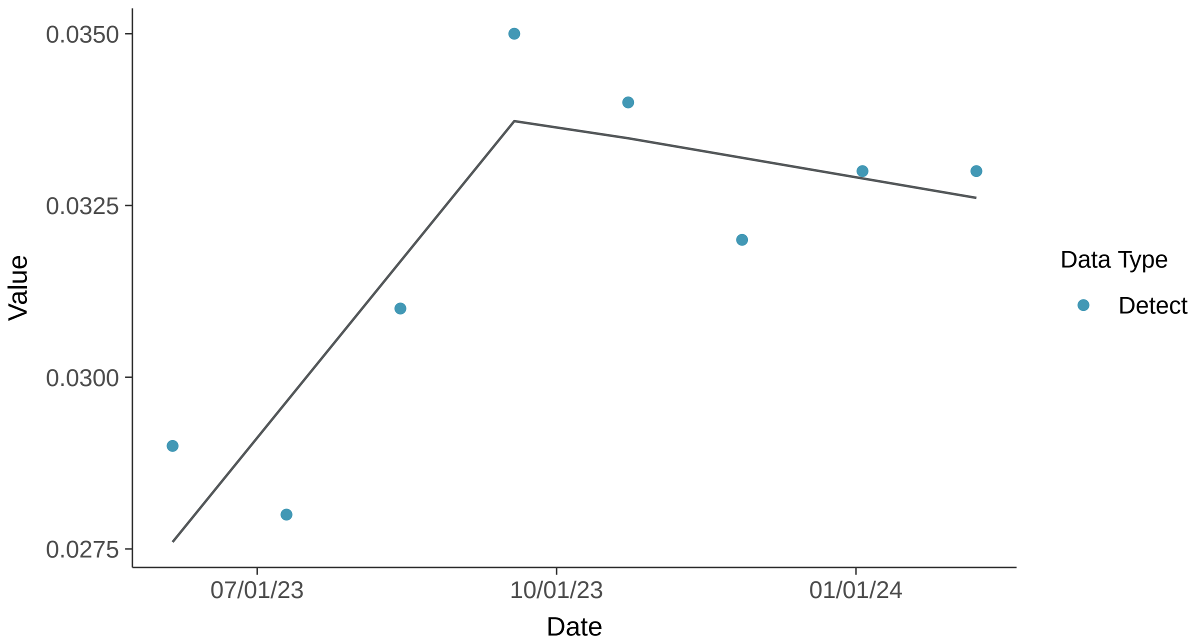
Trend Regression: Lognormal MLE

Lithium, MW-100C (mg/L)



Trend Regression: Piecewise Linear-Linear

Lithium, MW-100C (mg/L)

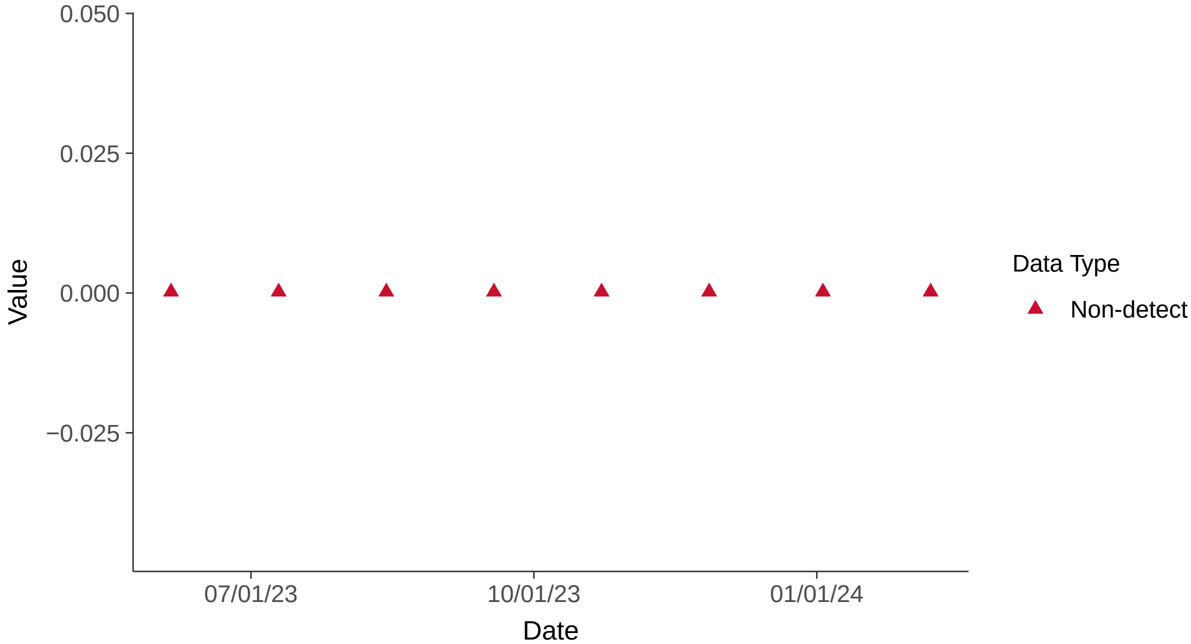


Appendix IV: Mercury, MW-100C

ID: 100C_2_17

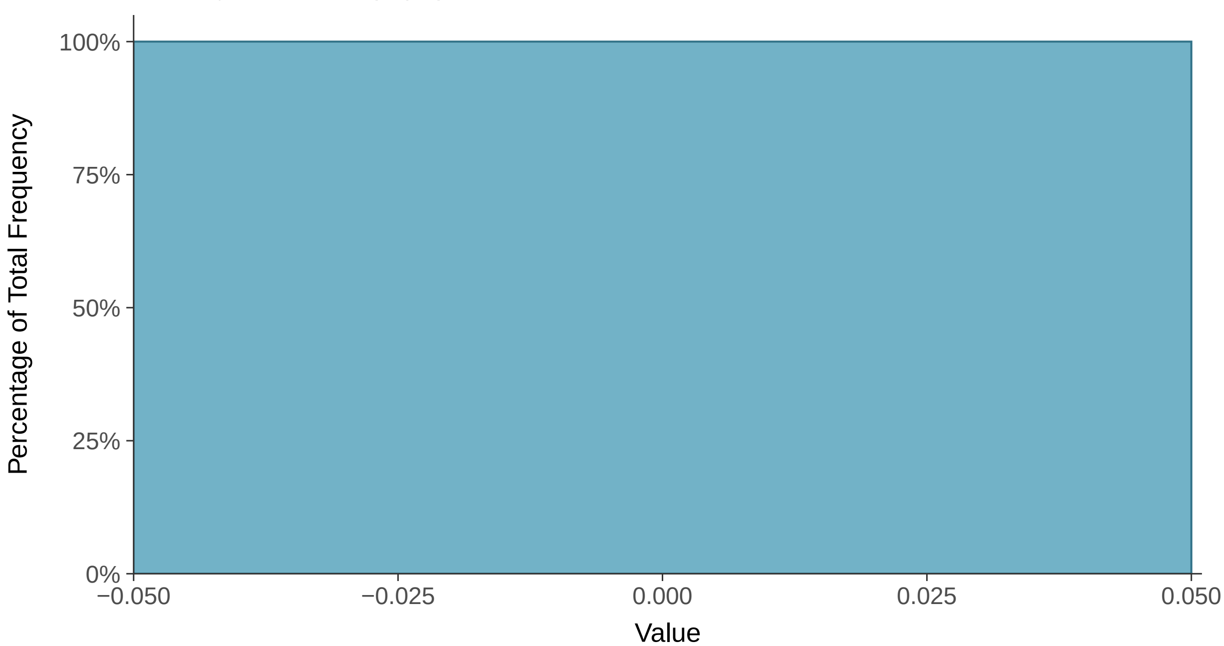
Scatter Plot

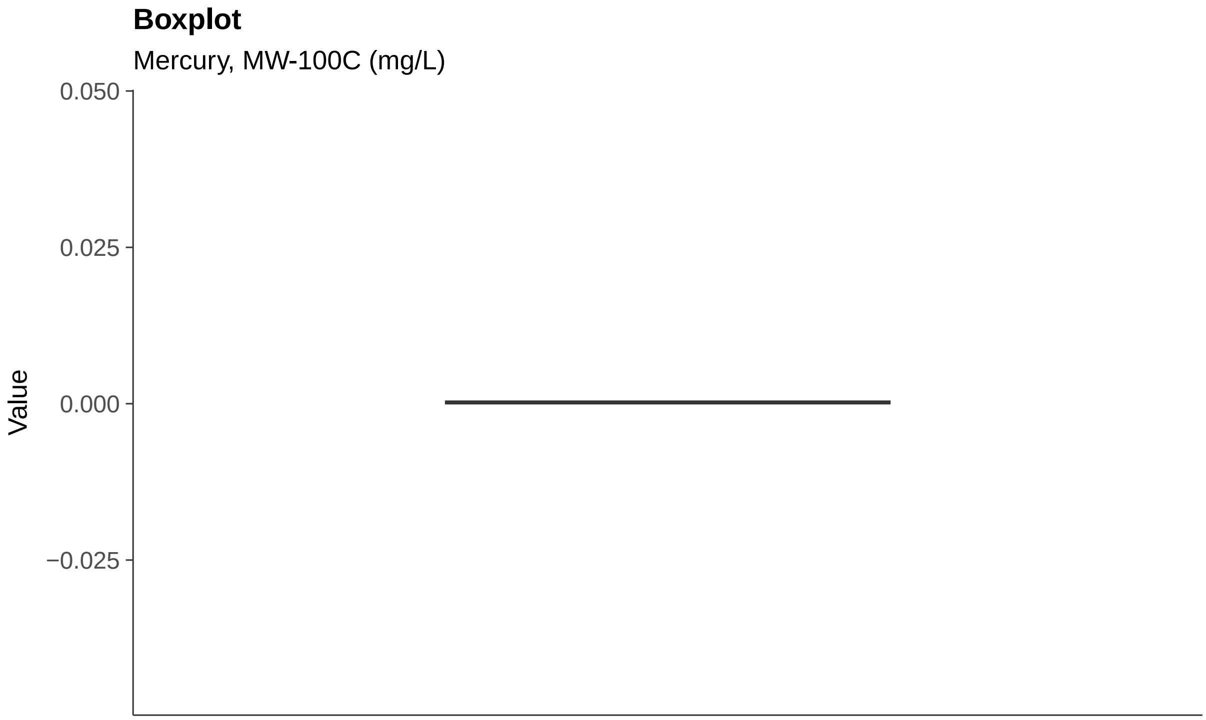
Mercury, MW-100C (mg/L)

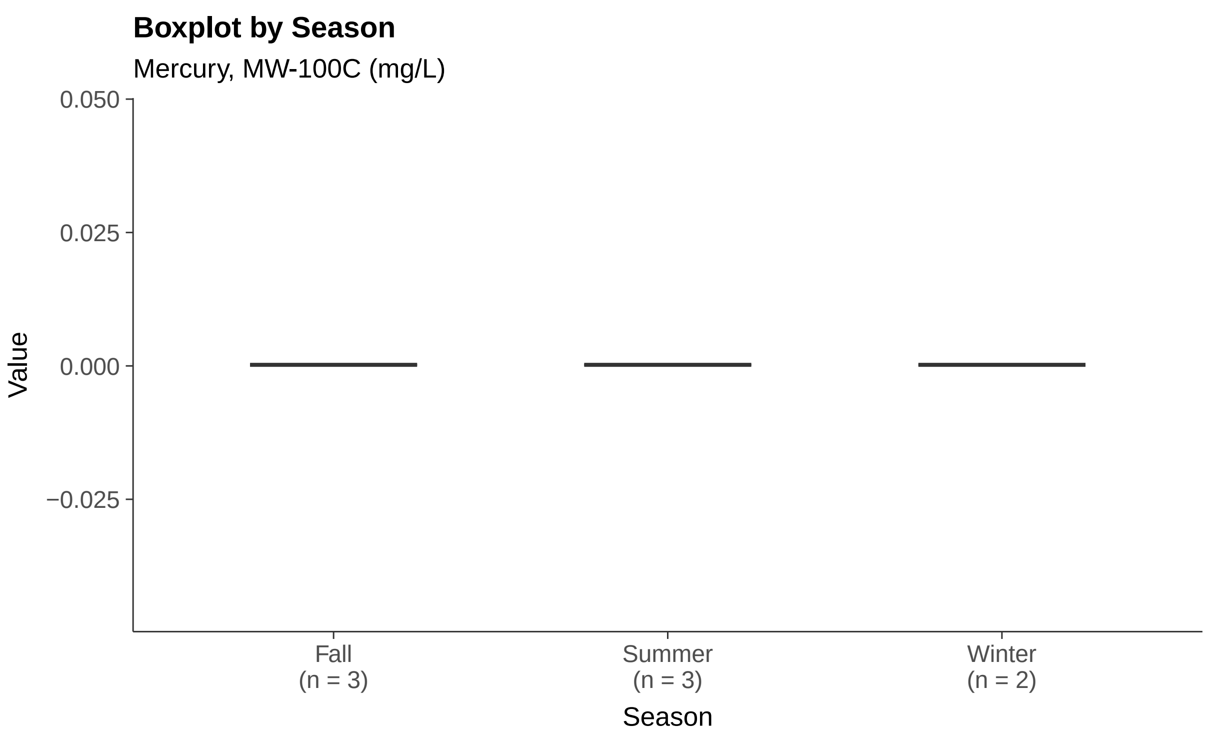


Histogram

Mercury, MW-100C (mg/L)

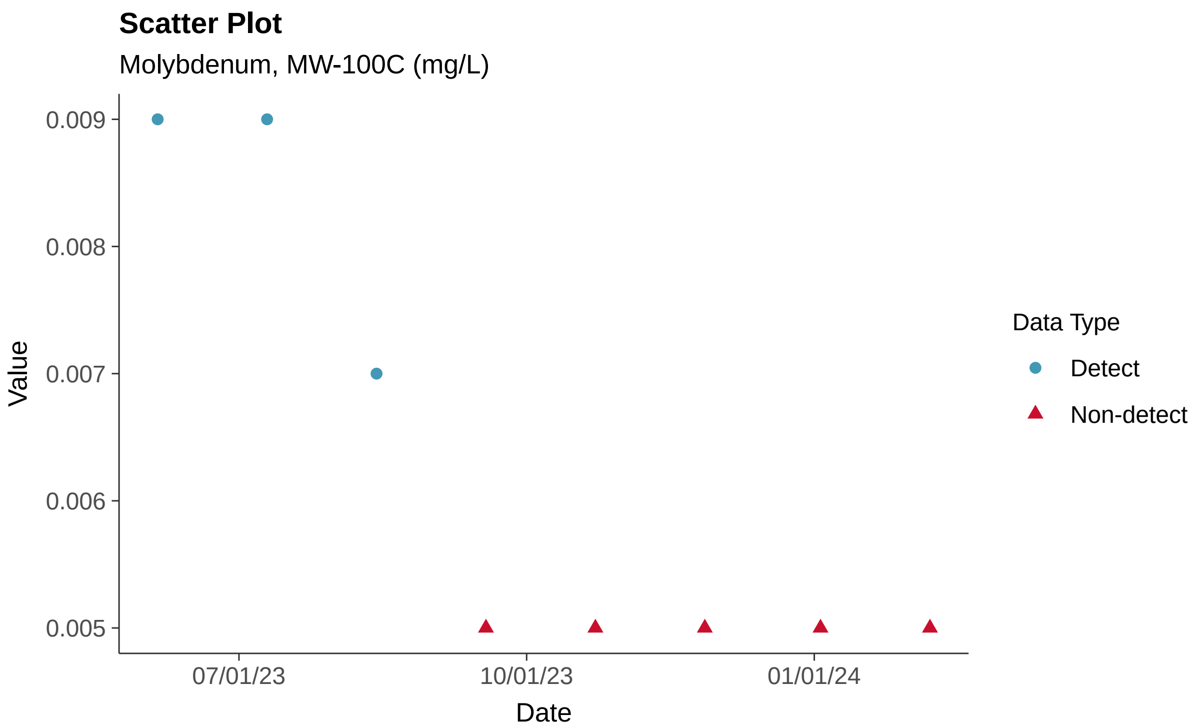


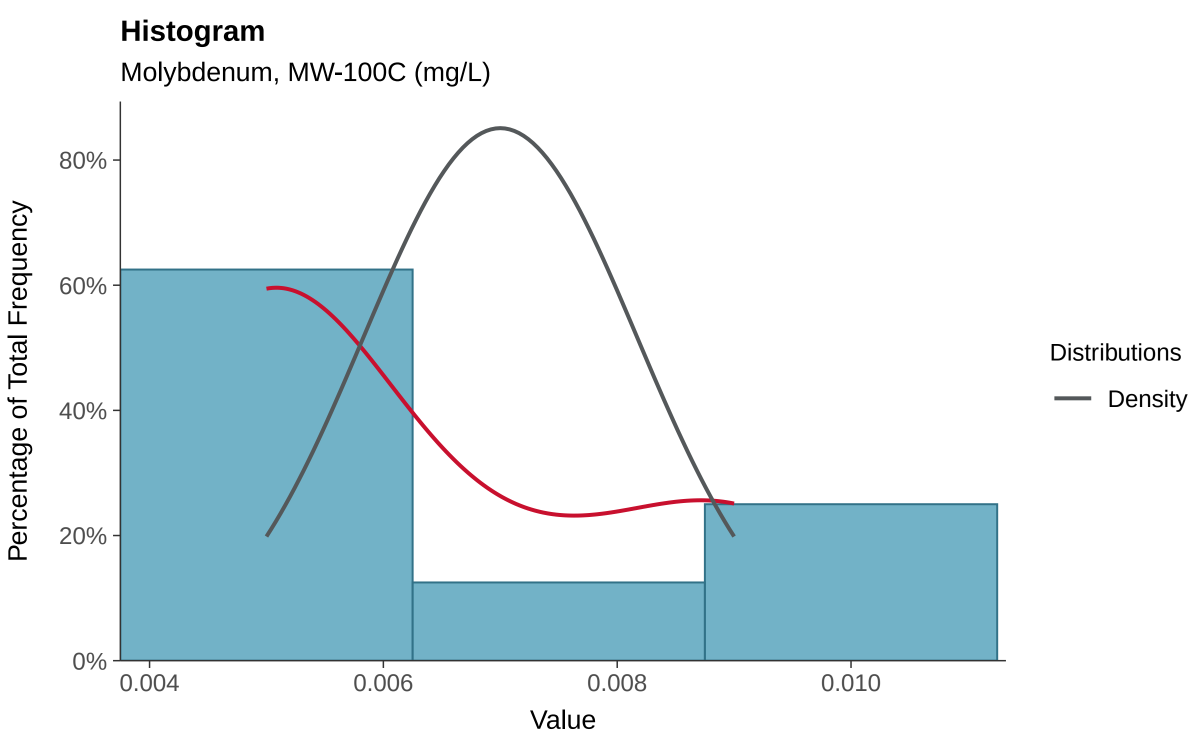

Boxplot
Mercury, MW-100C (mg/L)
0.050
0.025
0.000
−0.025
Value


Boxplot by Season
Mercury, MW-100C (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season

Appendix IV: Molybdenum, MW-100C

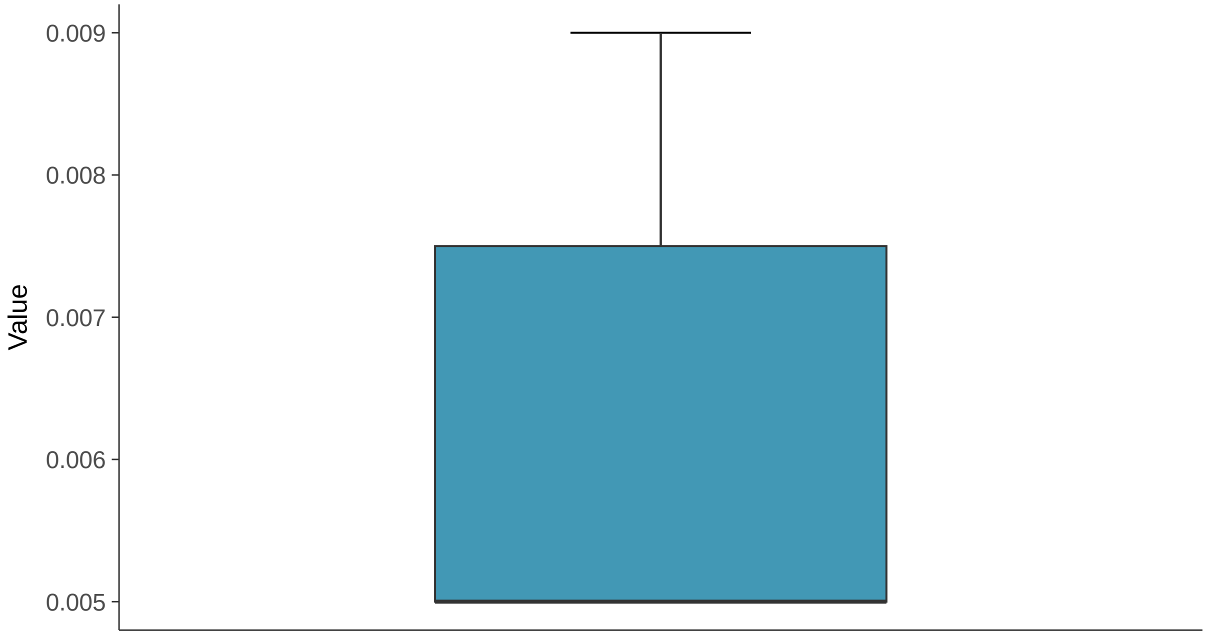
ID: 100C_2_18





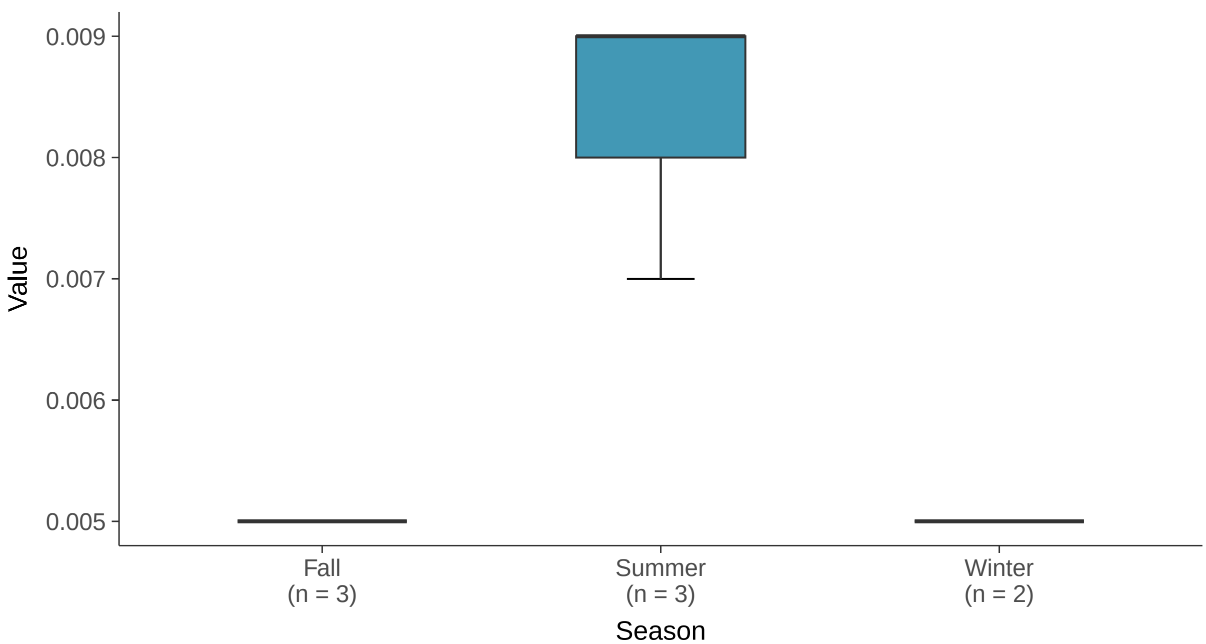
Boxplot

Molybdenum, MW-100C (mg/L)

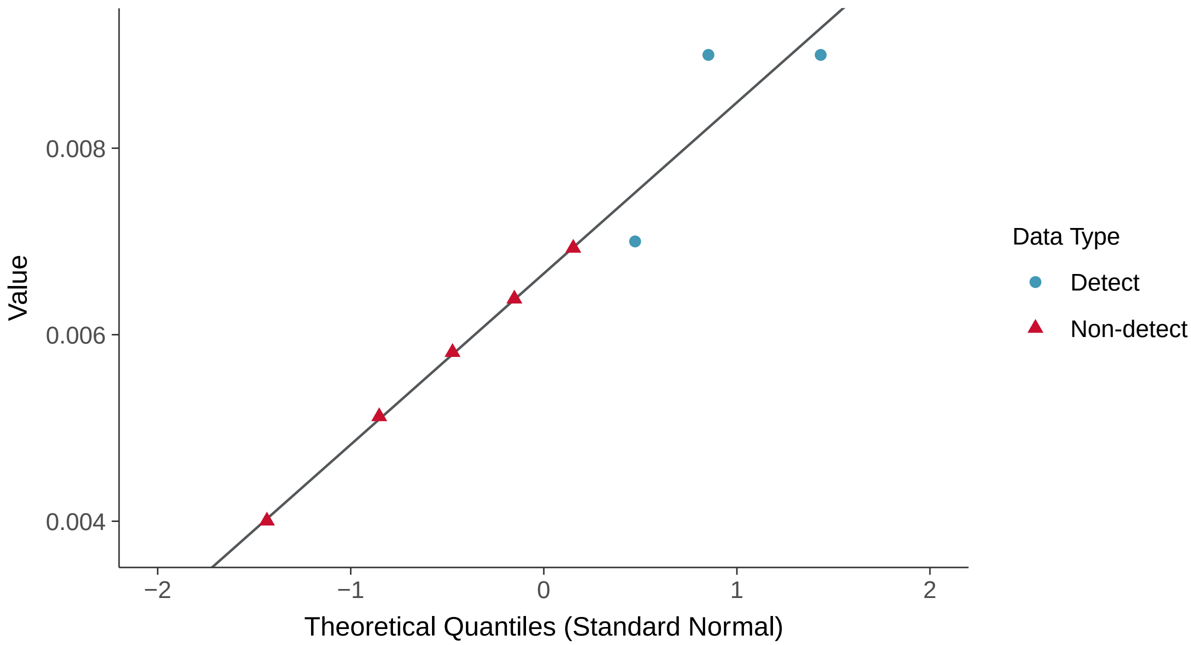


Boxplot by Season

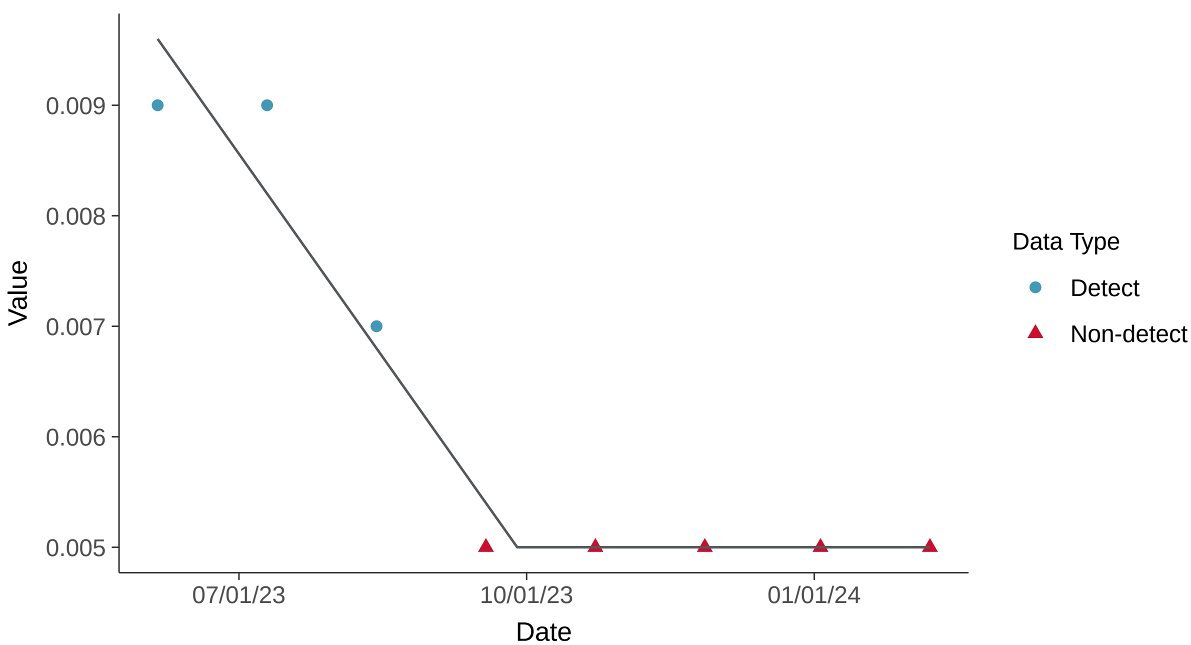
Molybdenum, MW-100C (mg/L)



Normal Q-Q plot using ROS Imputed Estimates
Molybdenum, MW-100C (mg/L)

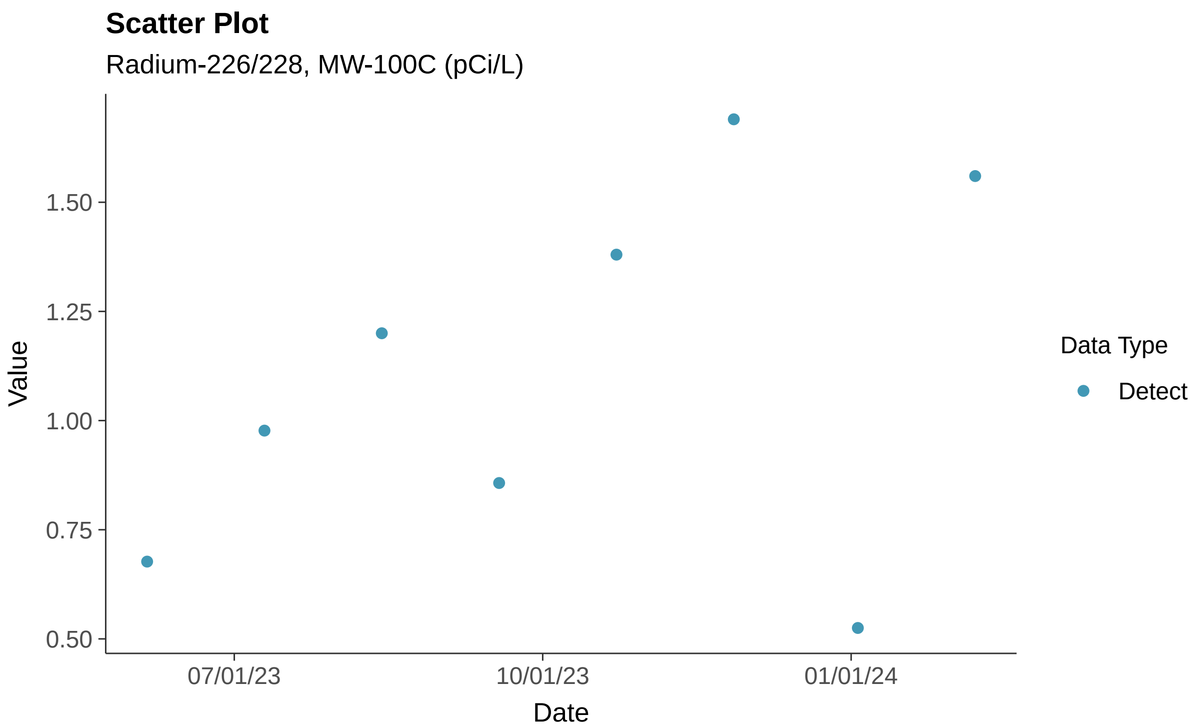


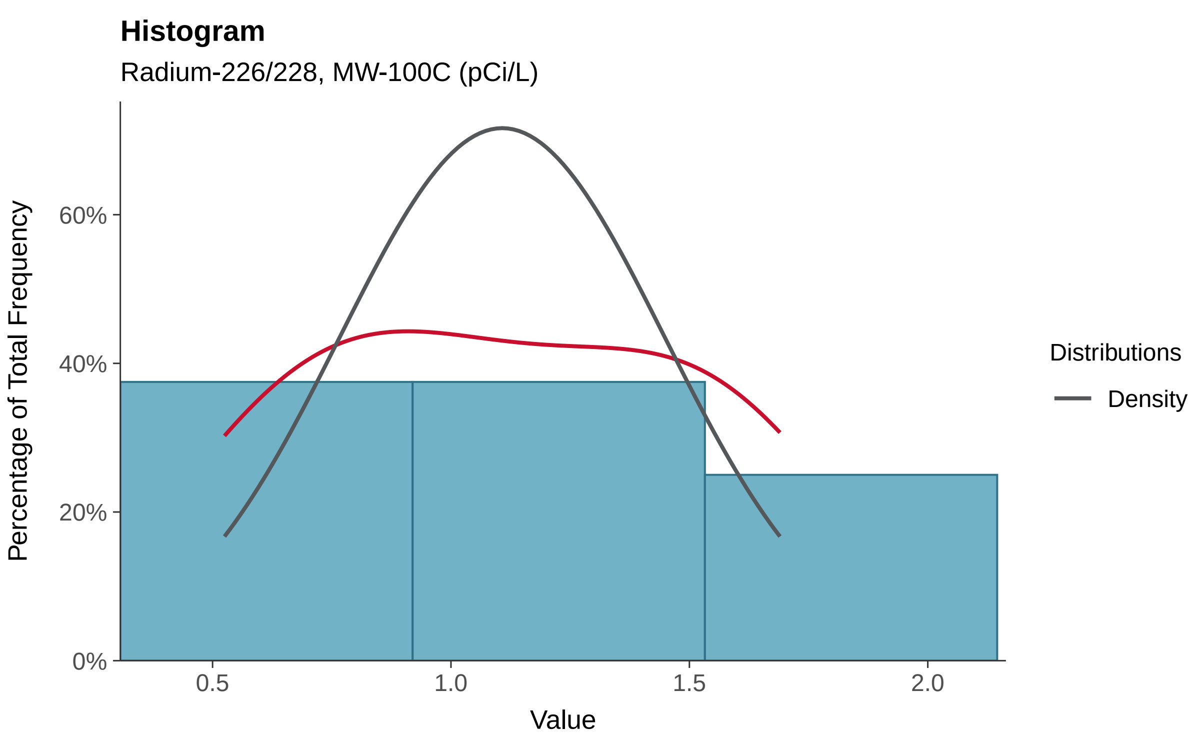
Trend Regression: Piecewise Linear-Linear
Molybdenum, MW-100C (mg/L)



Appendix IV: Radium-226/228, MW-100C

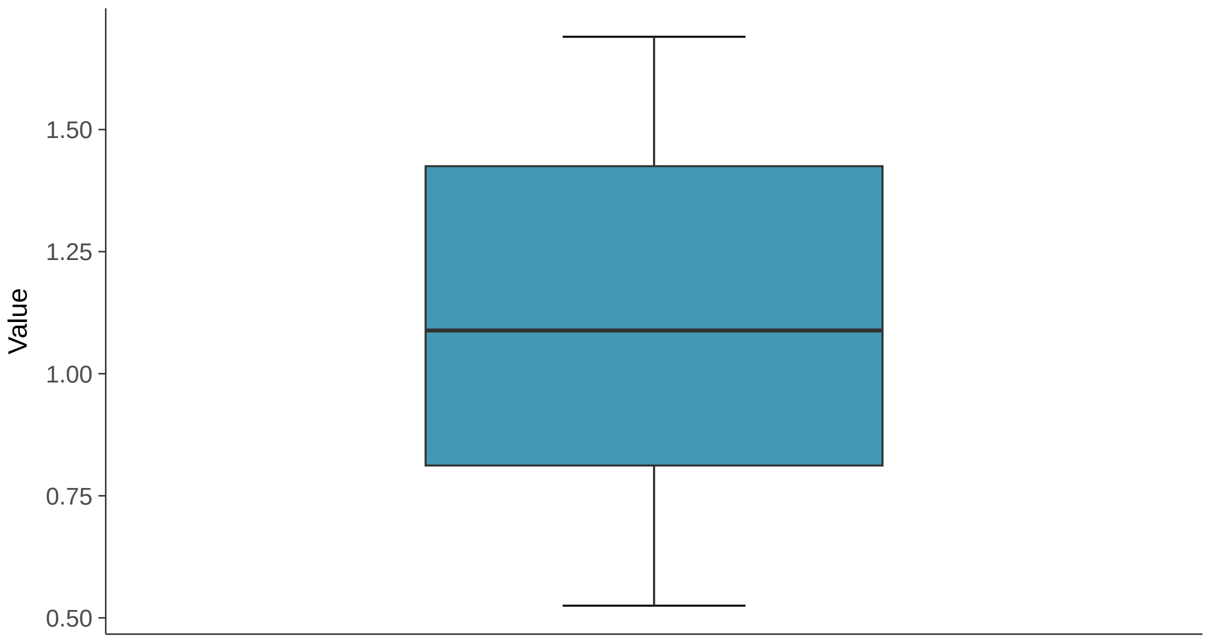
ID: 100C_2_20





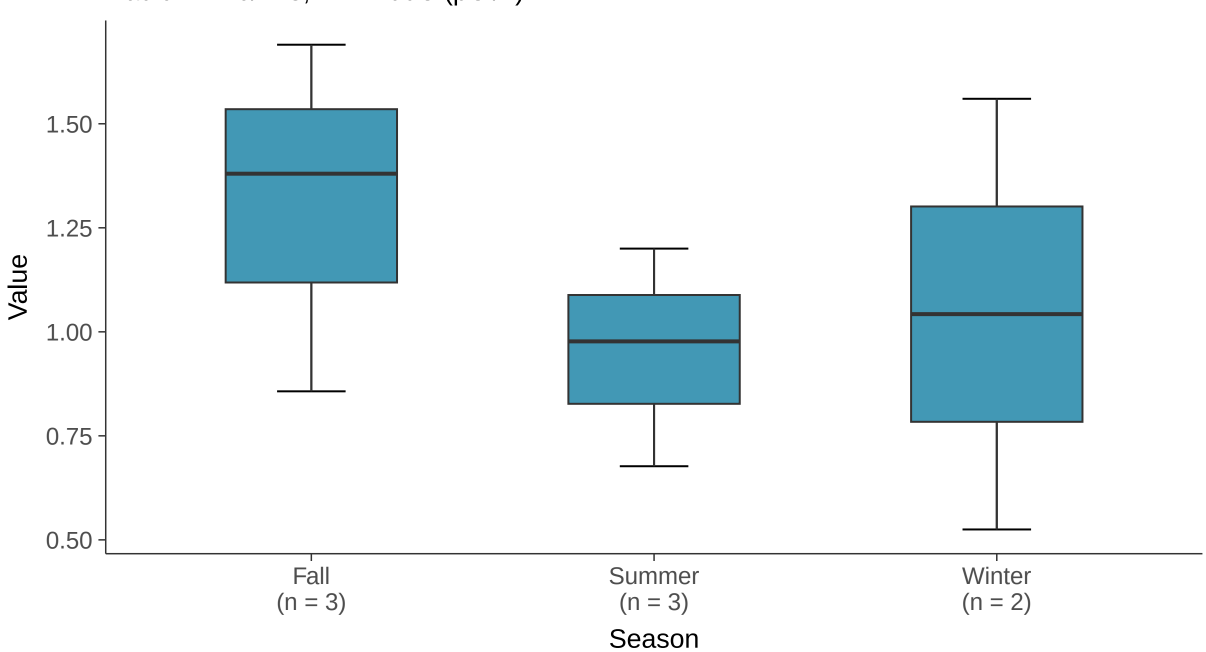
Boxplot

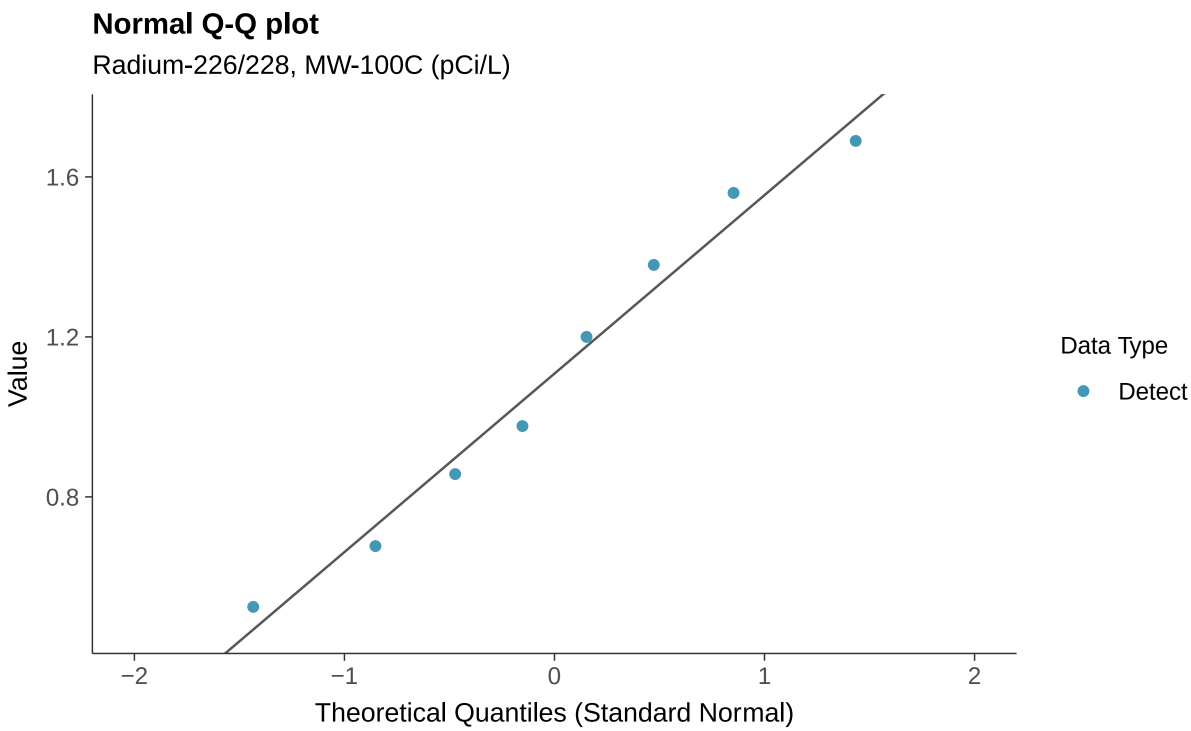
Radium-226/228, MW-100C (pCi/L)

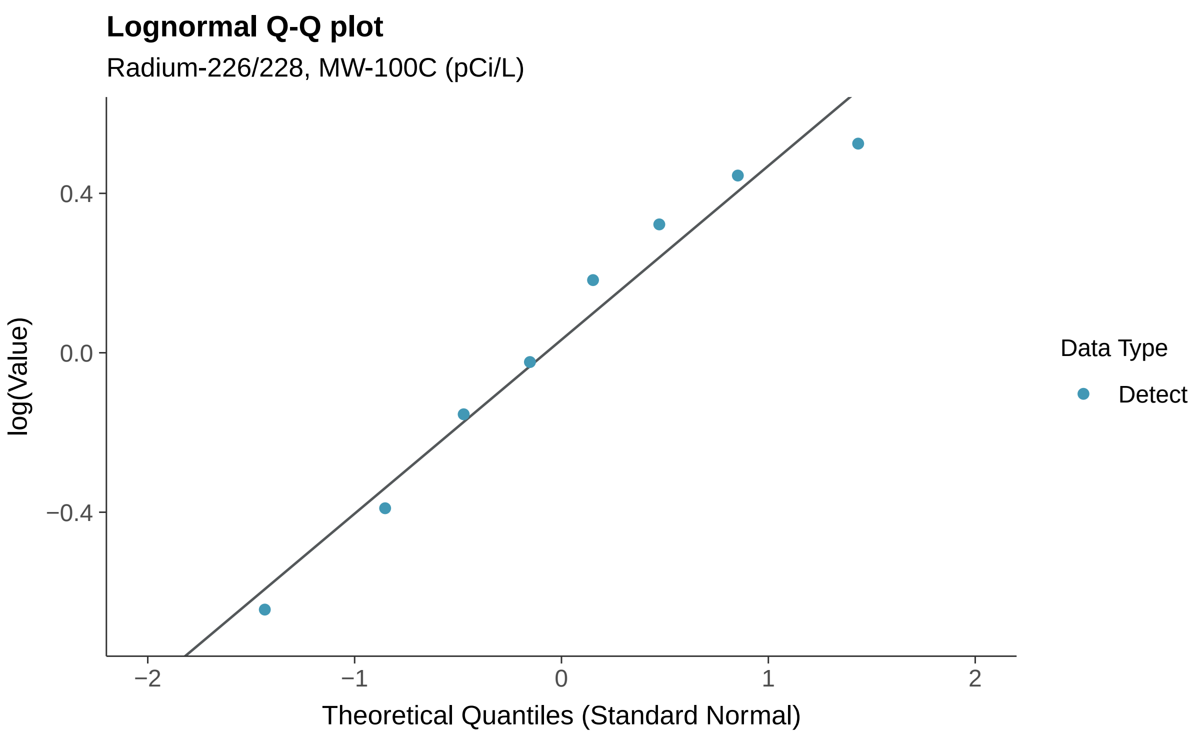


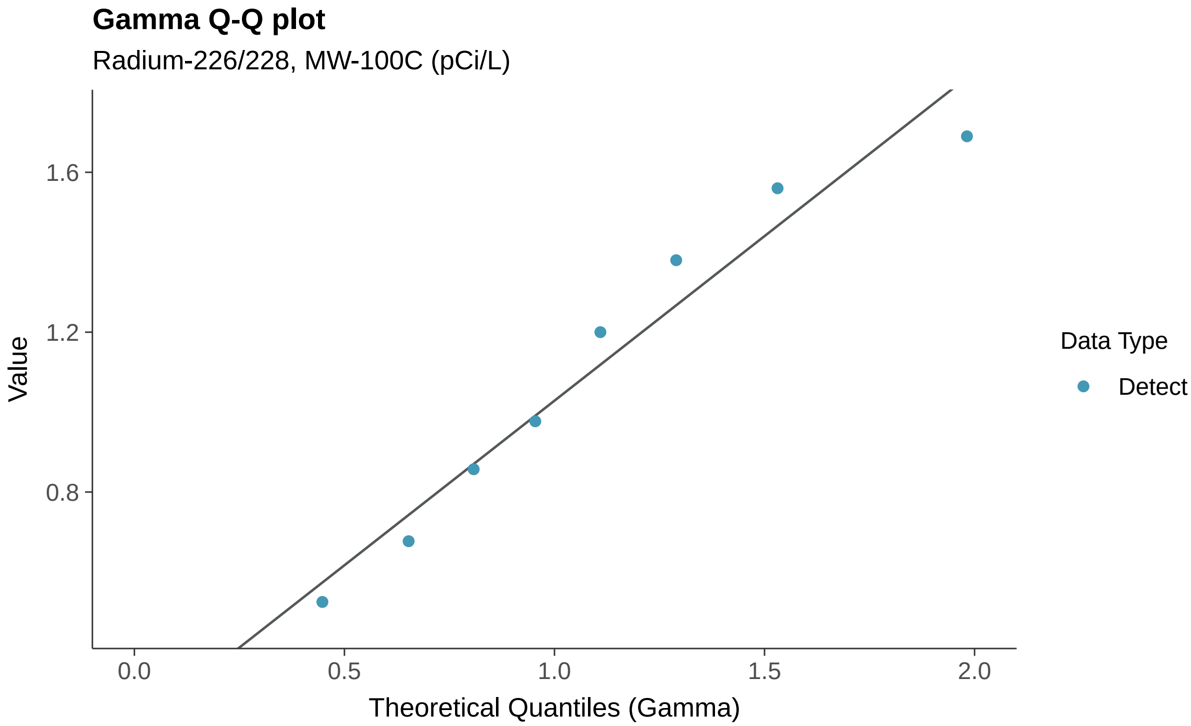
Boxplot by Season

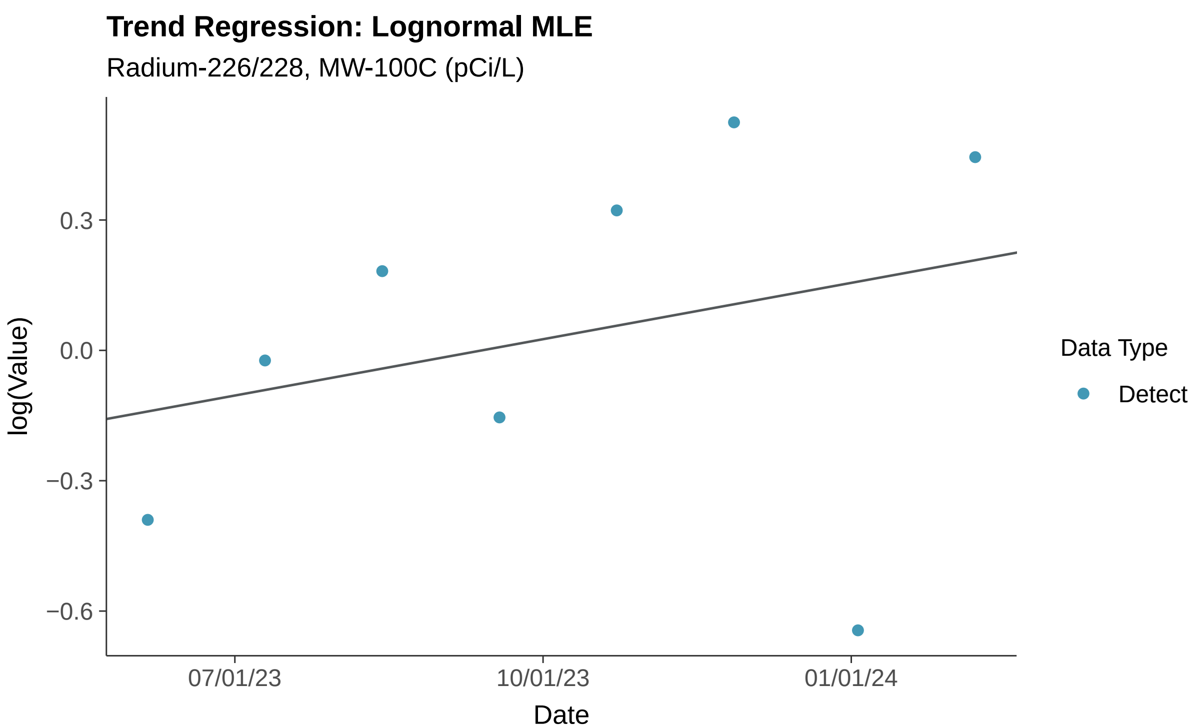
Radium-226/228, MW-100C (pCi/L)




Normal Q-Q plot
Radium-226/228, MW-100C (pCi/L)
Value
1.6
1.2
0.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

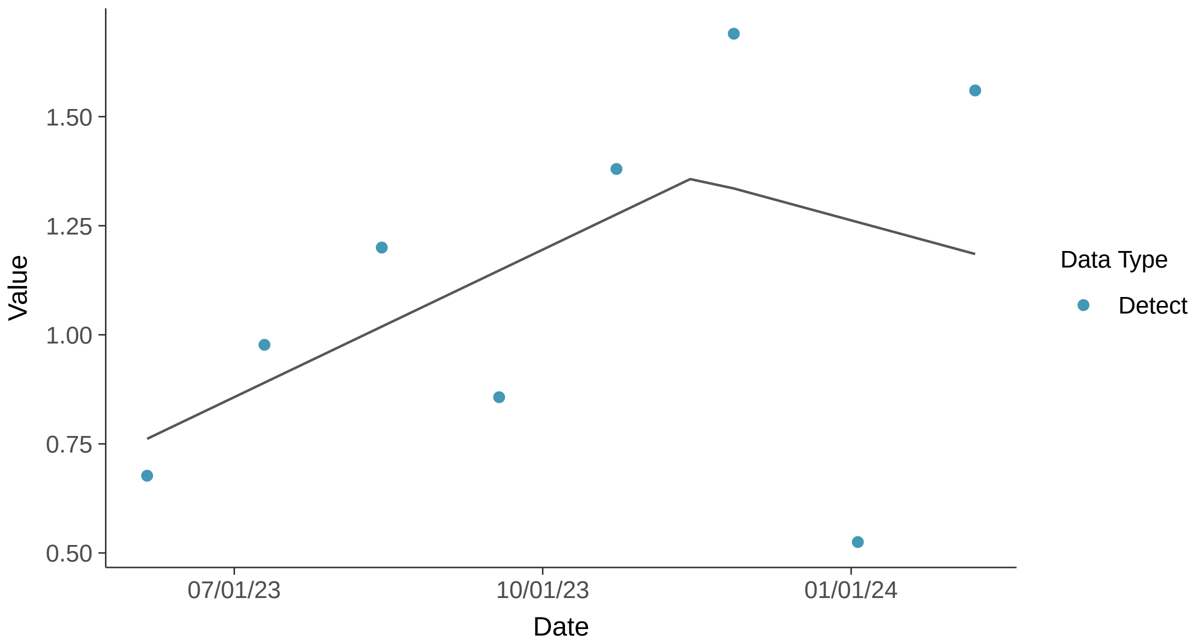

Lognormal Q-Q plot
Radium-226/228, MW-100C (pCi/L)
log(Value)
0.4
0.0
−0.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Radium-226/228, MW-100C (pCi/L)
Value
1.6
1.2
0.8
0.0
0.5
1.0
1.5
2.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Radium-226/228, MW-100C (pCi/L)
log(Value)
0.3
0.0
−0.3
−0.6
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Radium-226/228, MW-100C (pCi/L)

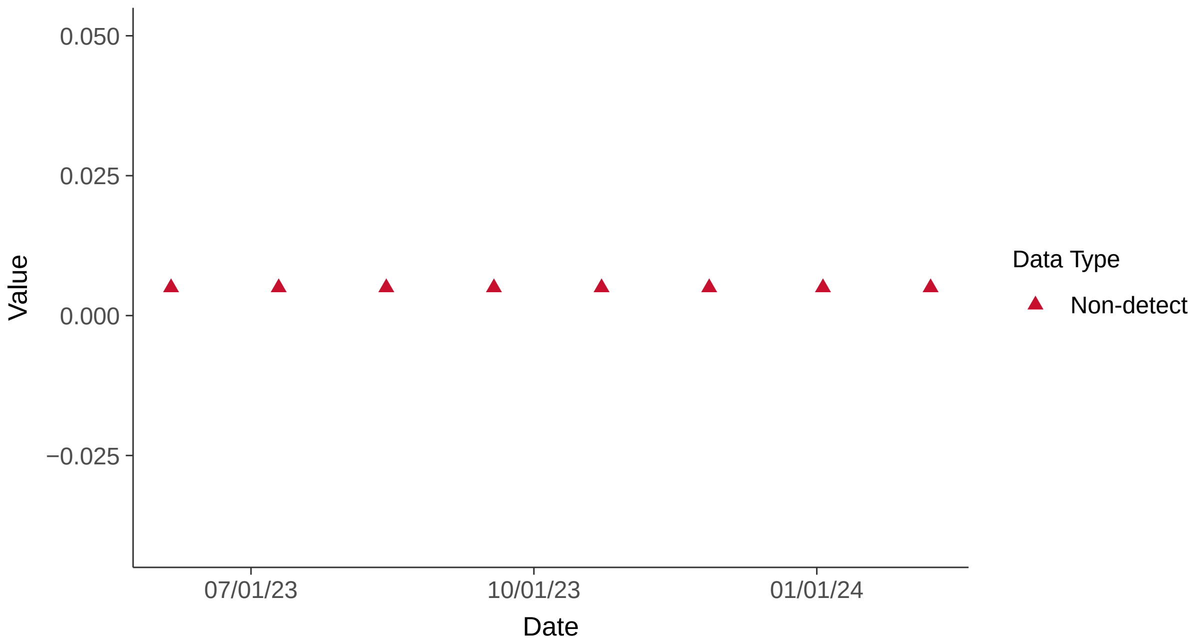


Appendix IV: Selenium, MW-100C

ID: 100C_2_22

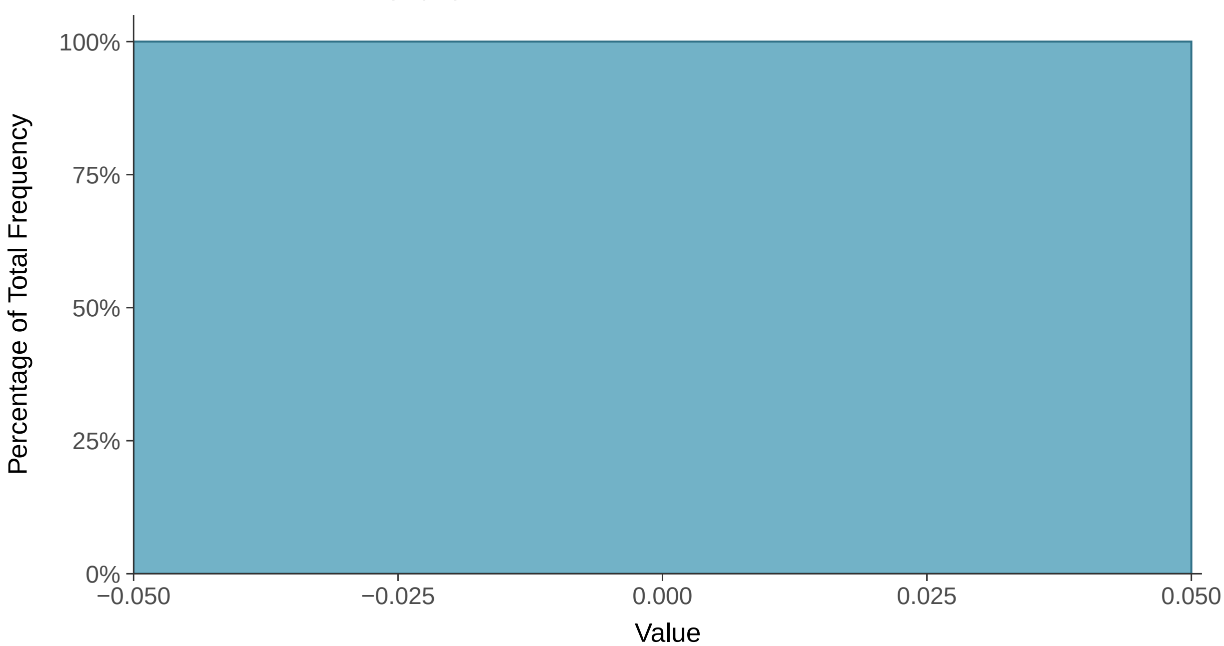
Scatter Plot

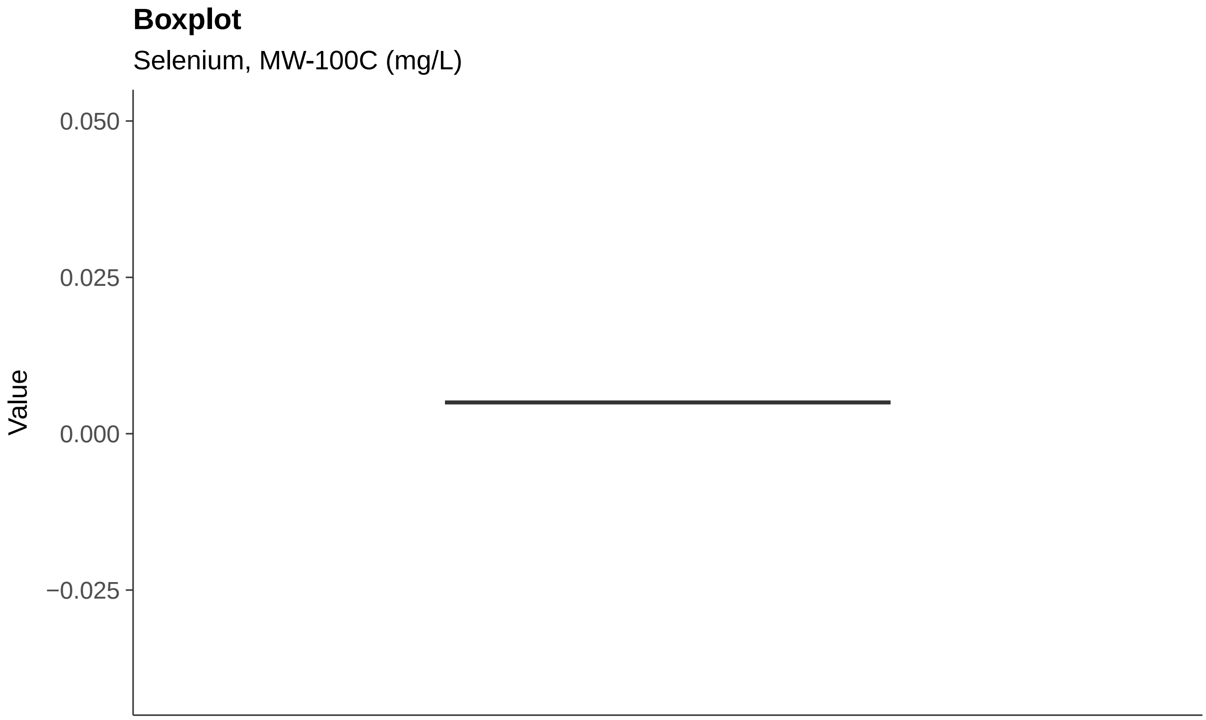
Selenium, MW-100C (mg/L)

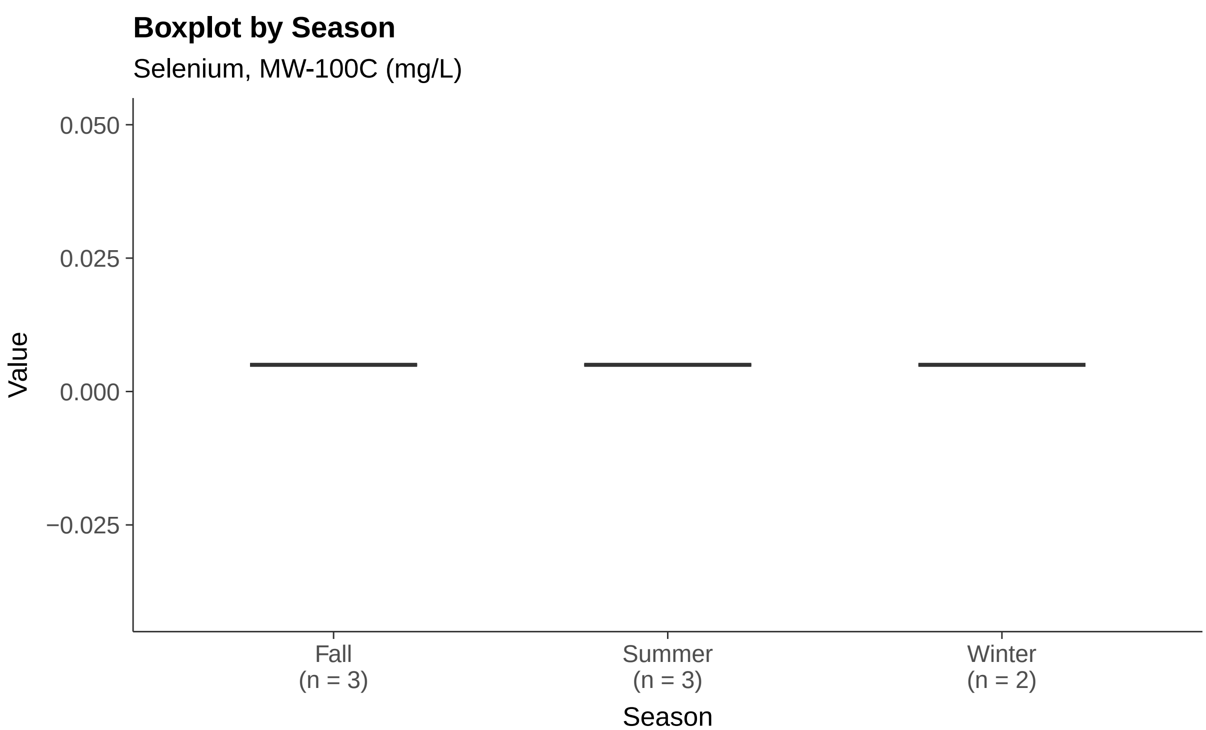


Histogram

Selenium, MW-100C (mg/L)




Boxplot
Selenium, MW-100C (mg/L)
0.050
0.025
0.000
−0.025
Value

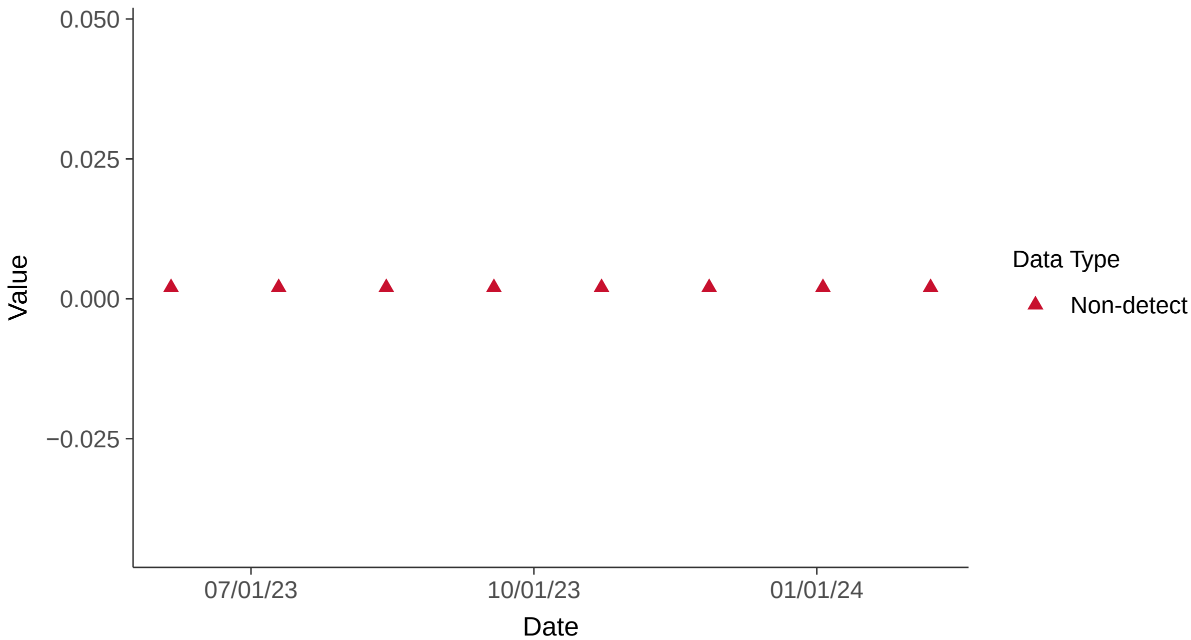

Boxplot by Season
Selenium, MW-100C (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season

Appendix IV: Thallium, MW-100C

ID: 100C_2_23

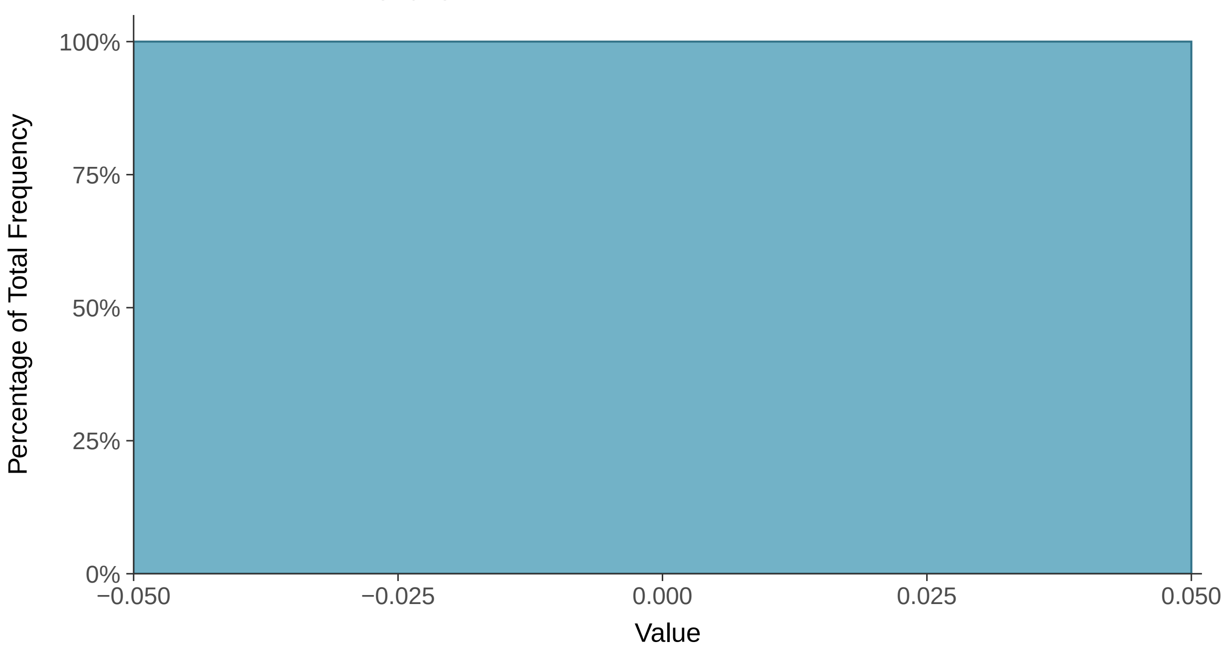
Scatter Plot

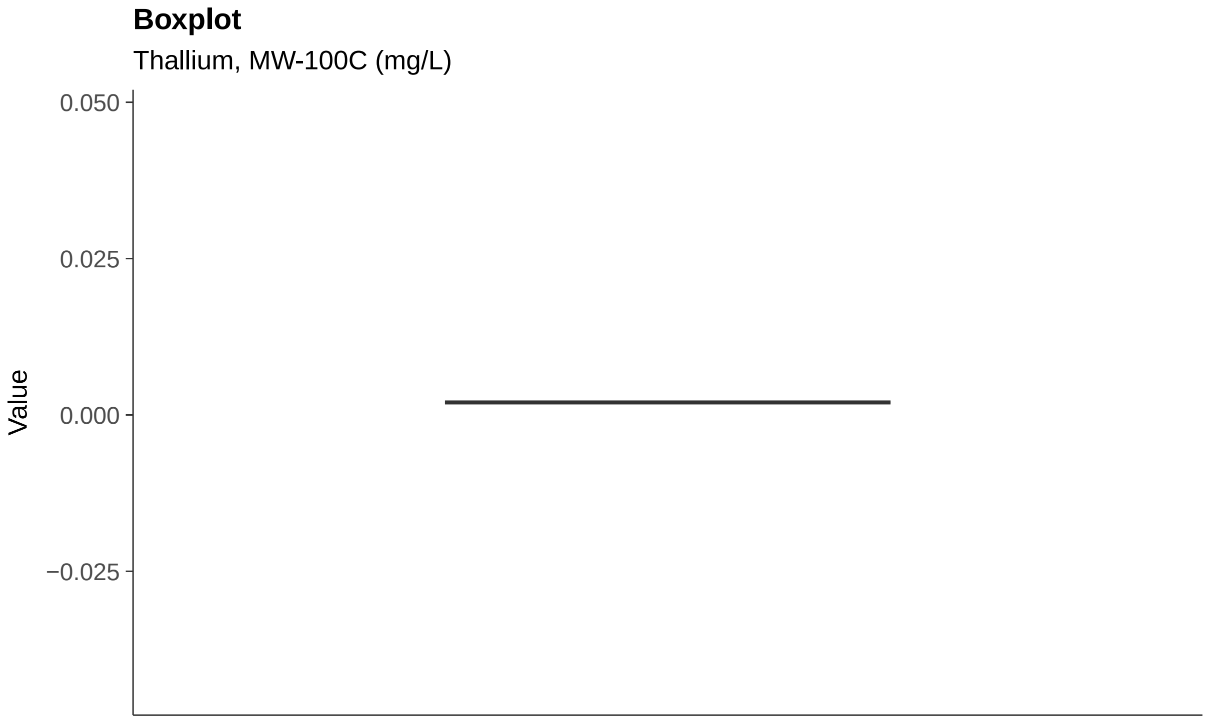
Thallium, MW-100C (mg/L)

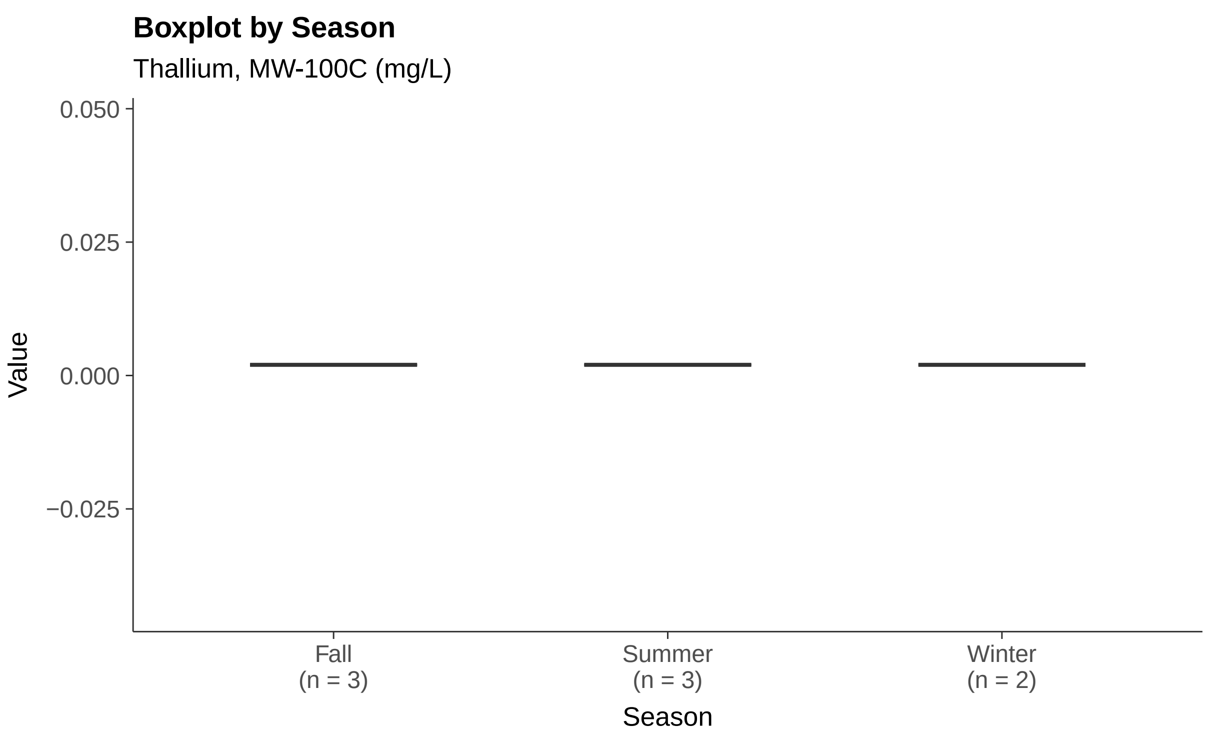


Histogram

Thallium, MW-100C (mg/L)

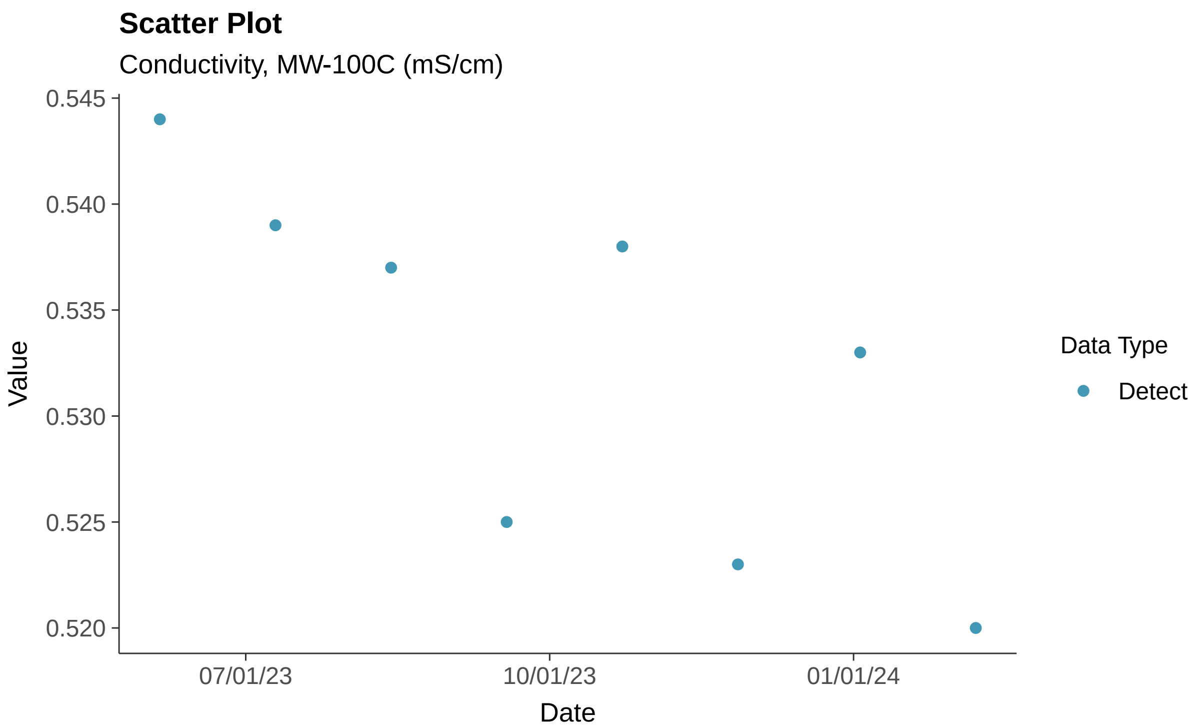


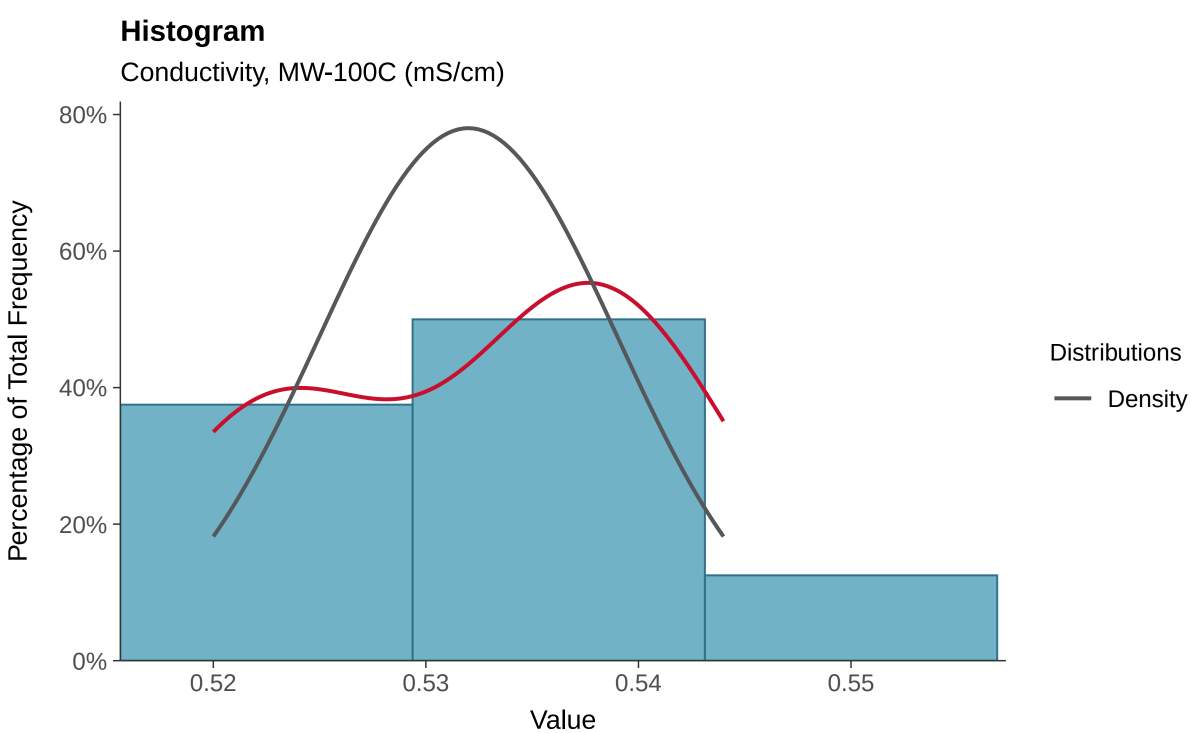

Boxplot
Thallium, MW-100C (mg/L)
0.050
0.025
0.000
−0.025
Value


Boxplot by Season
Thallium, MW-100C (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season

Field Parameters: Conductivity, MW-100C

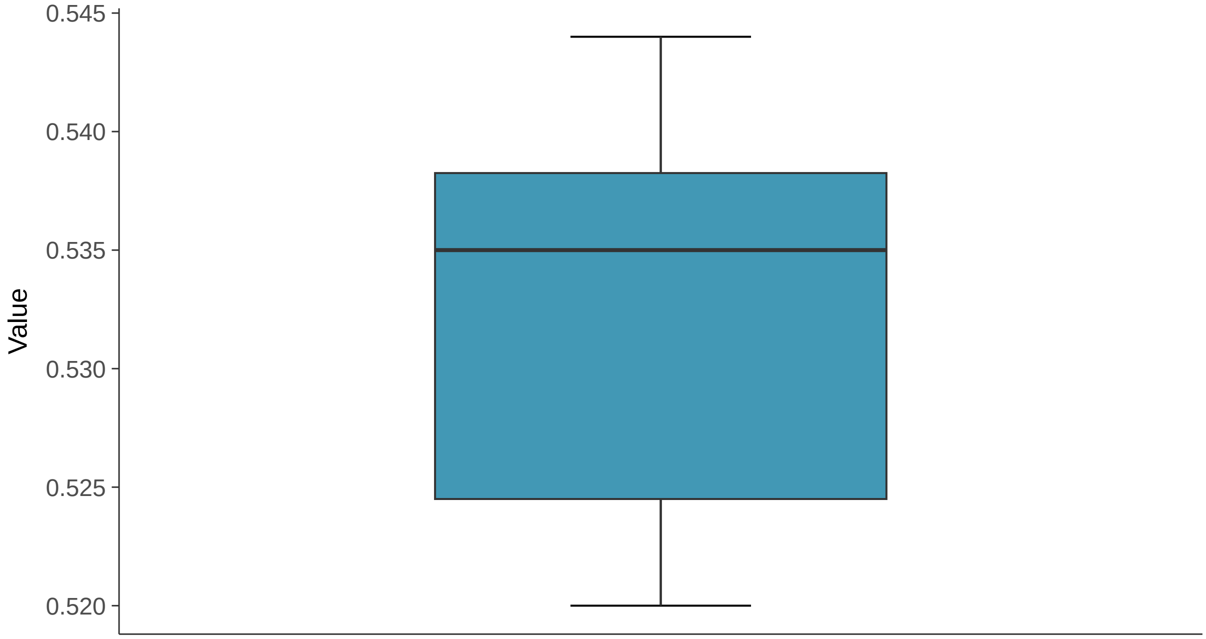
ID: 100C_3_24





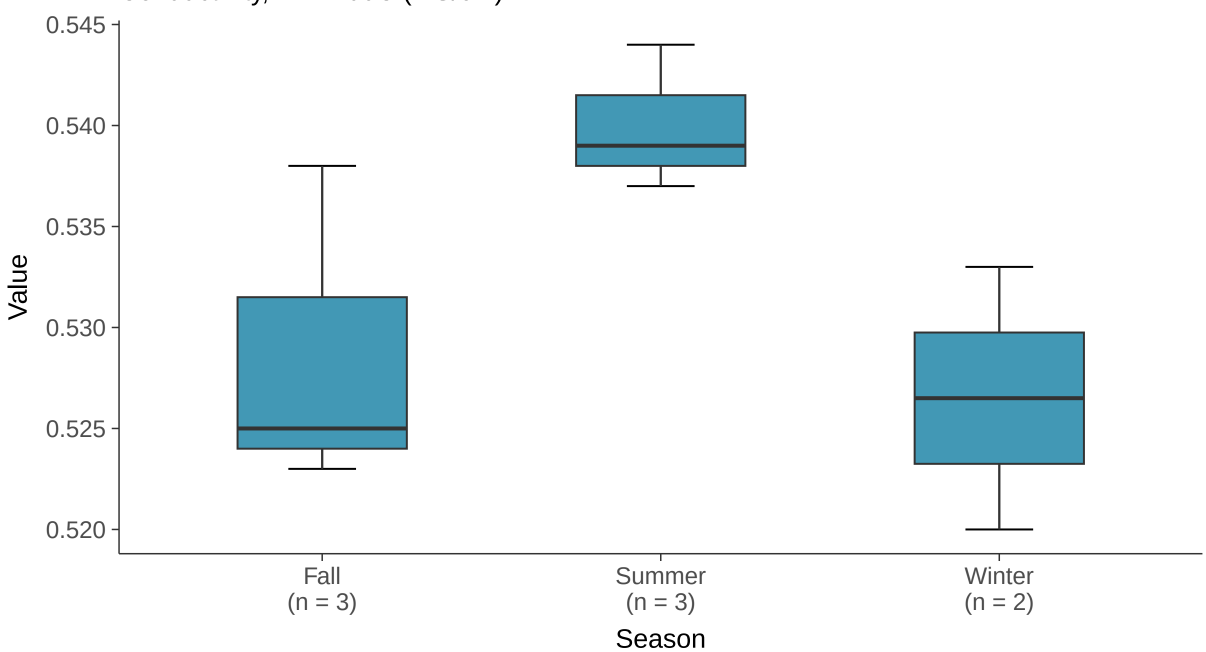
Boxplot

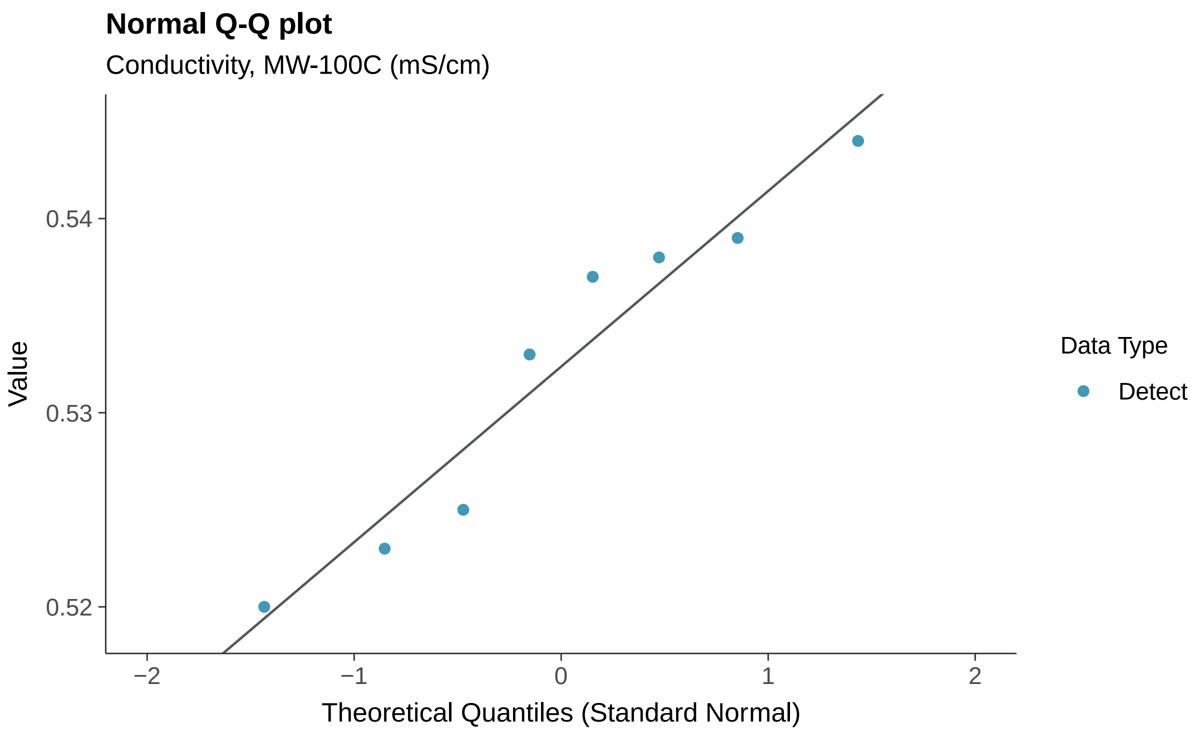
Conductivity, MW-100C (mS/cm)

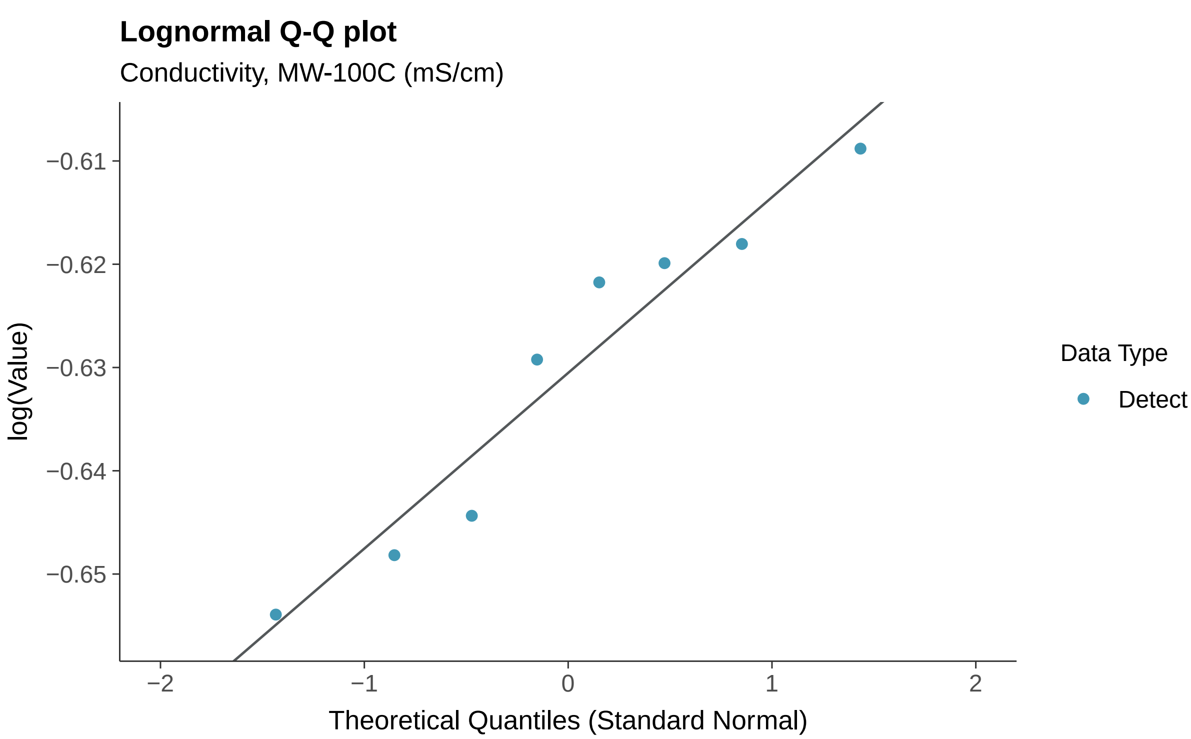


Boxplot by Season

Conductivity, MW-100C (mS/cm)

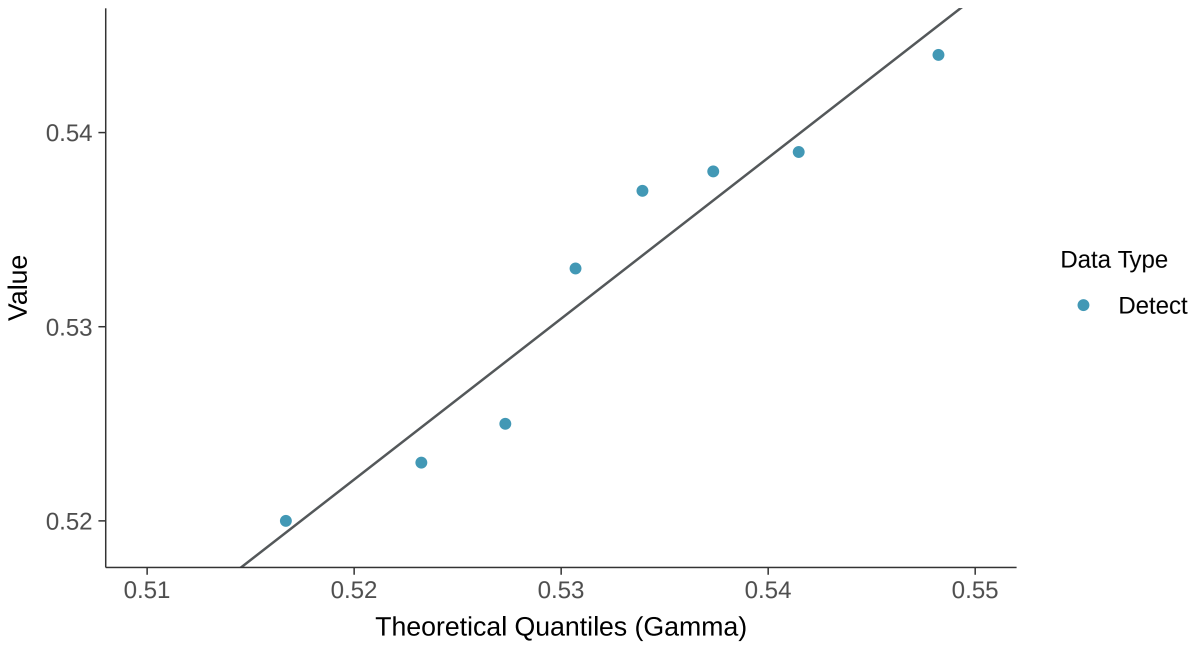



Normal Q-Q plot
Conductivity, MW-100C (mS/cm)
Value
0.54
0.53
0.52
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Conductivity, MW-100C (mS/cm)
log(Value)
−0.61
−0.62
−0.63
−0.64
−0.65
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

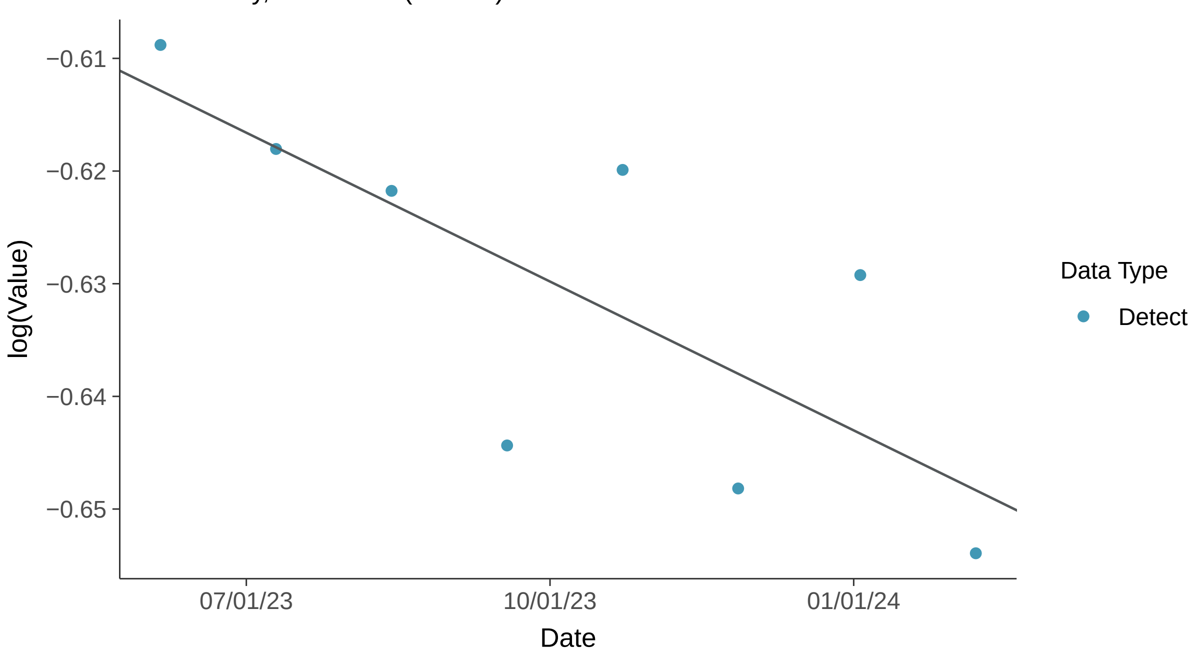
Gamma Q-Q plot

Conductivity, MW-100C (mS/cm)



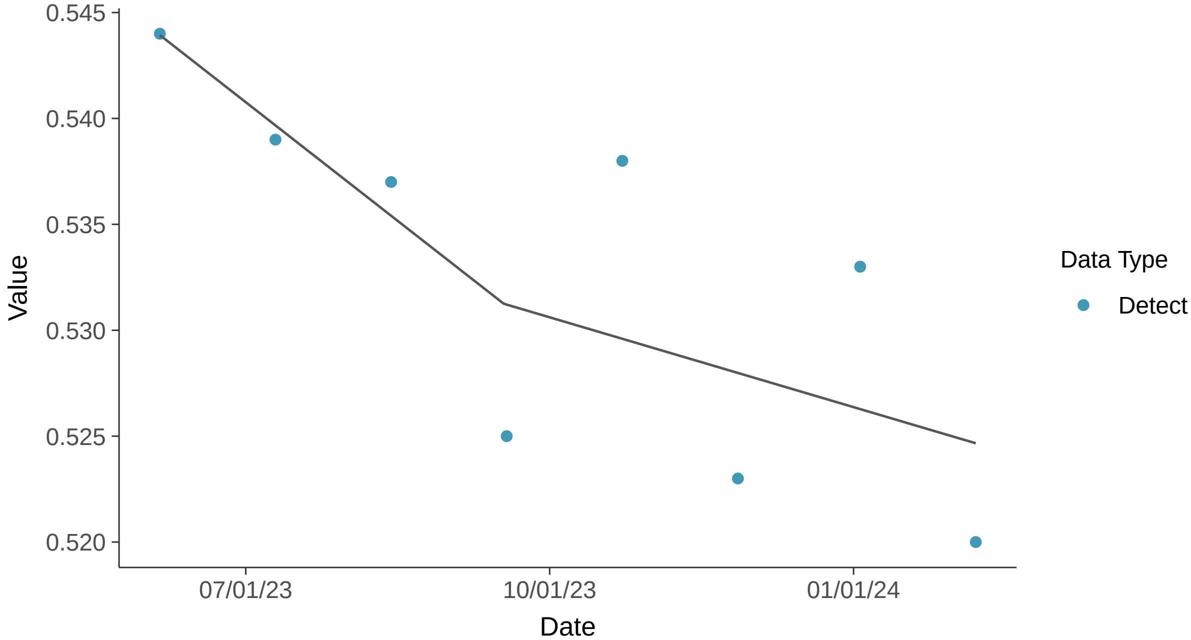
Trend Regression: Lognormal MLE

Conductivity, MW-100C (mS/cm)



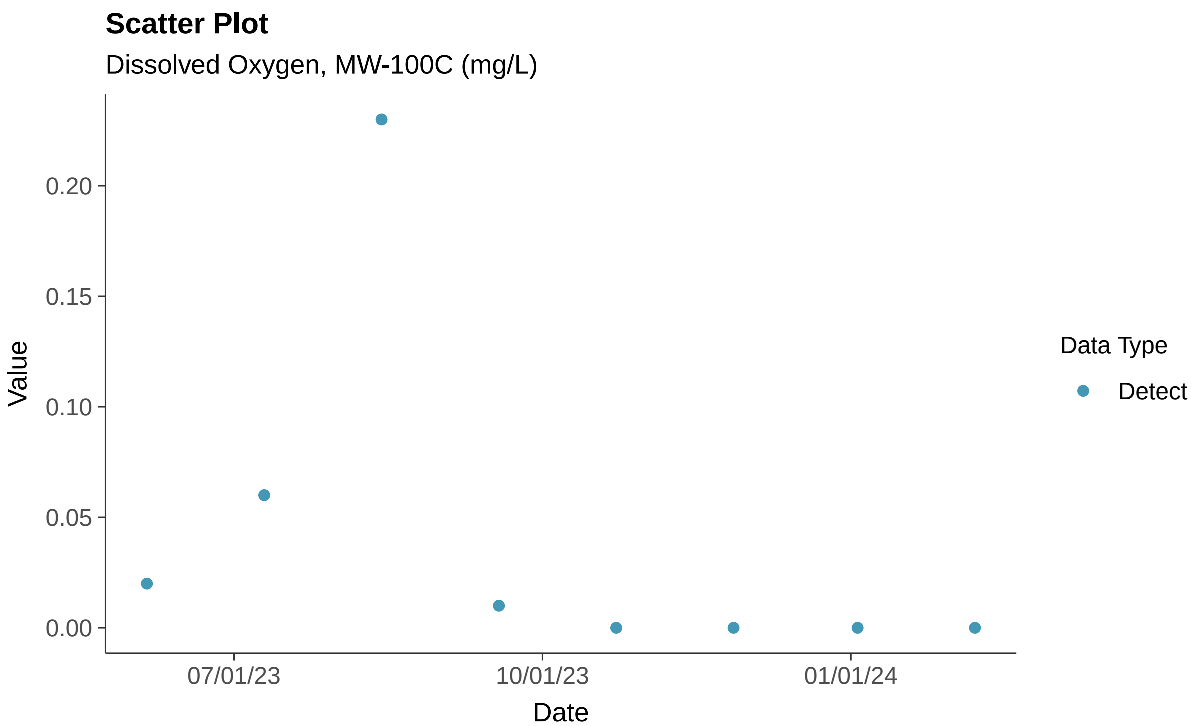
Trend Regression: Piecewise Linear-Linear

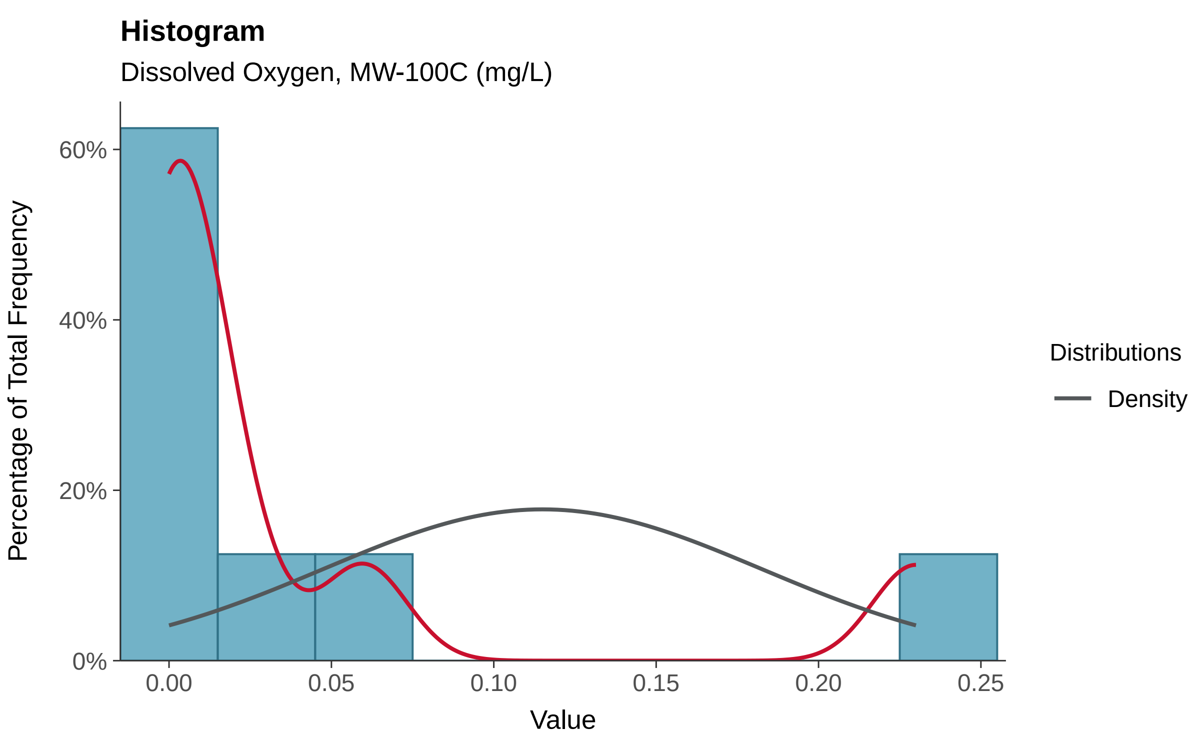
Conductivity, MW-100C (mS/cm)



Field Parameters: Dissolved Oxygen, MW-100C

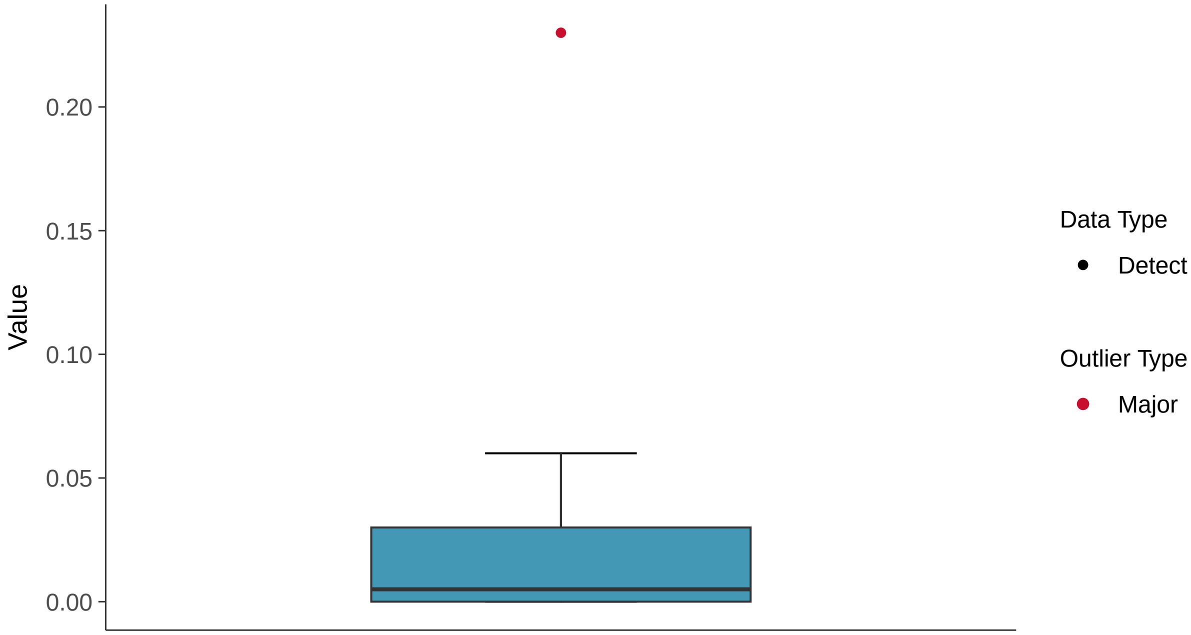
ID: 100C_3_25





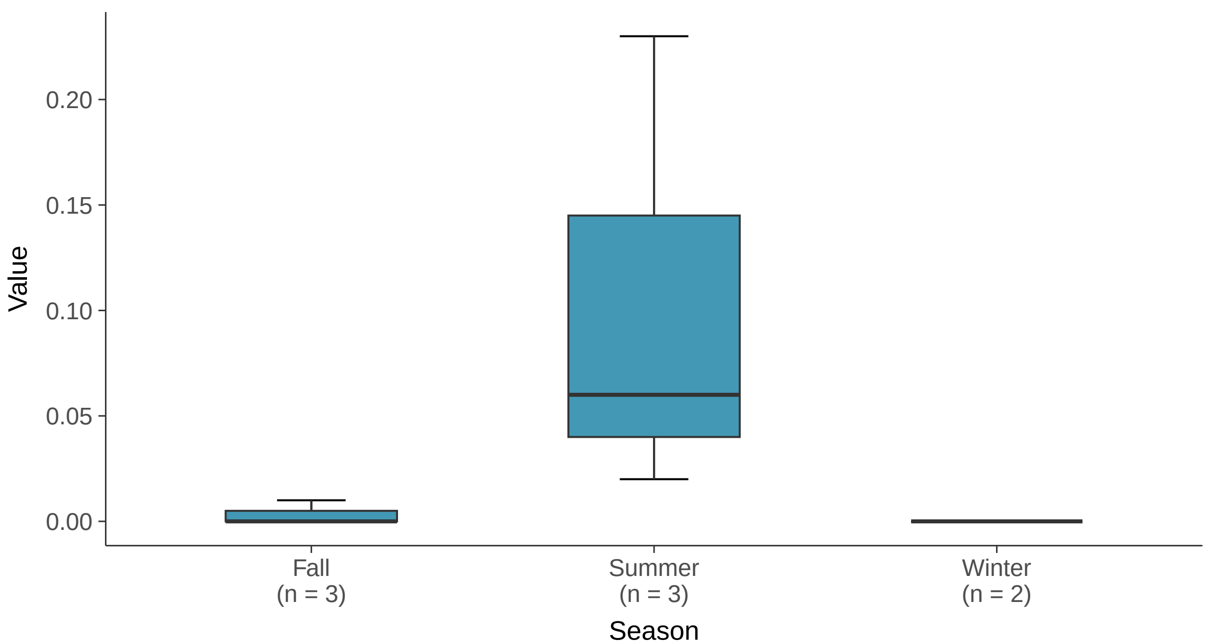
Boxplot

Dissolved Oxygen, MW-100C (mg/L)



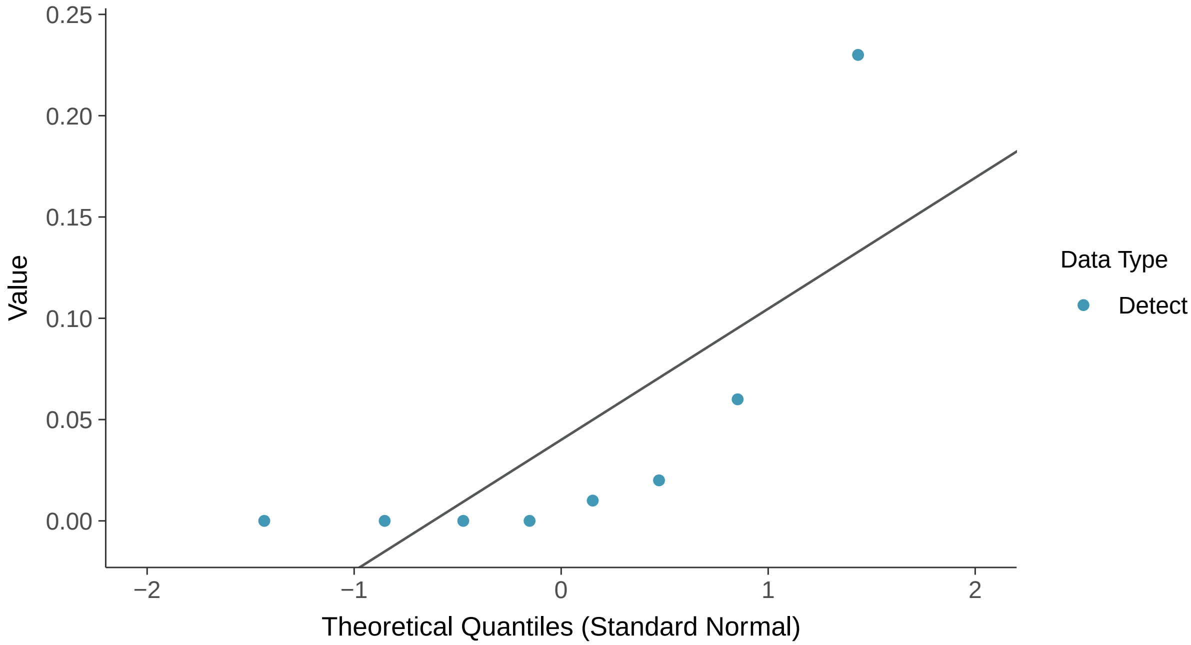
Boxplot by Season

Dissolved Oxygen, MW-100C (mg/L)



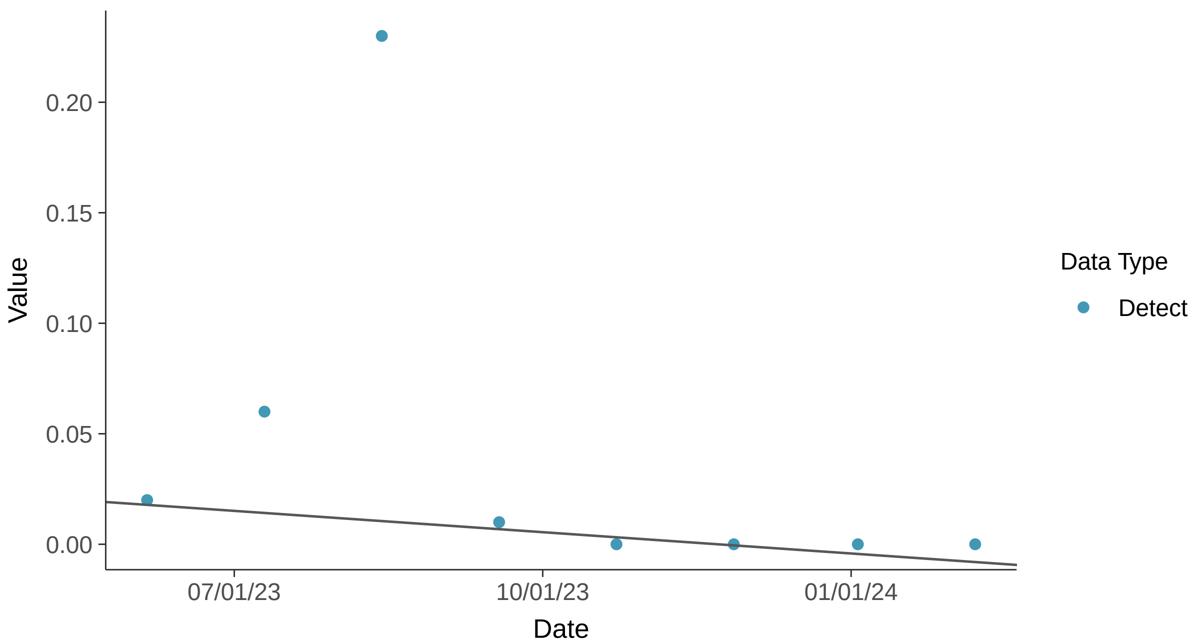
Normal Q-Q plot

Dissolved Oxygen, MW-100C (mg/L)



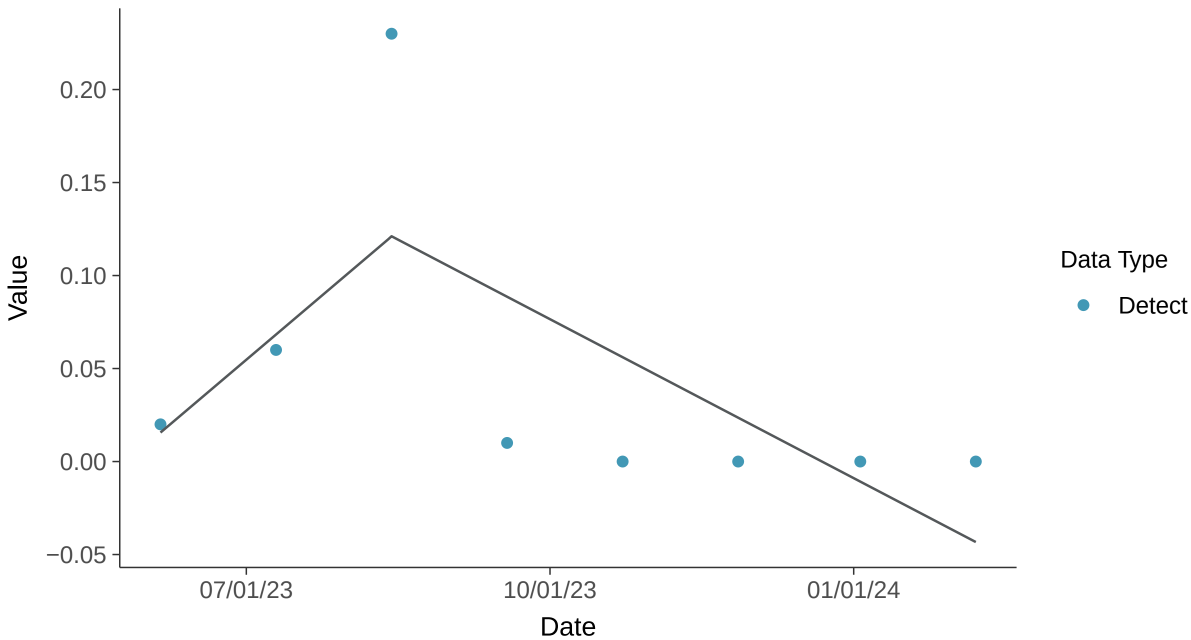
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Dissolved Oxygen, MW-100C (mg/L)



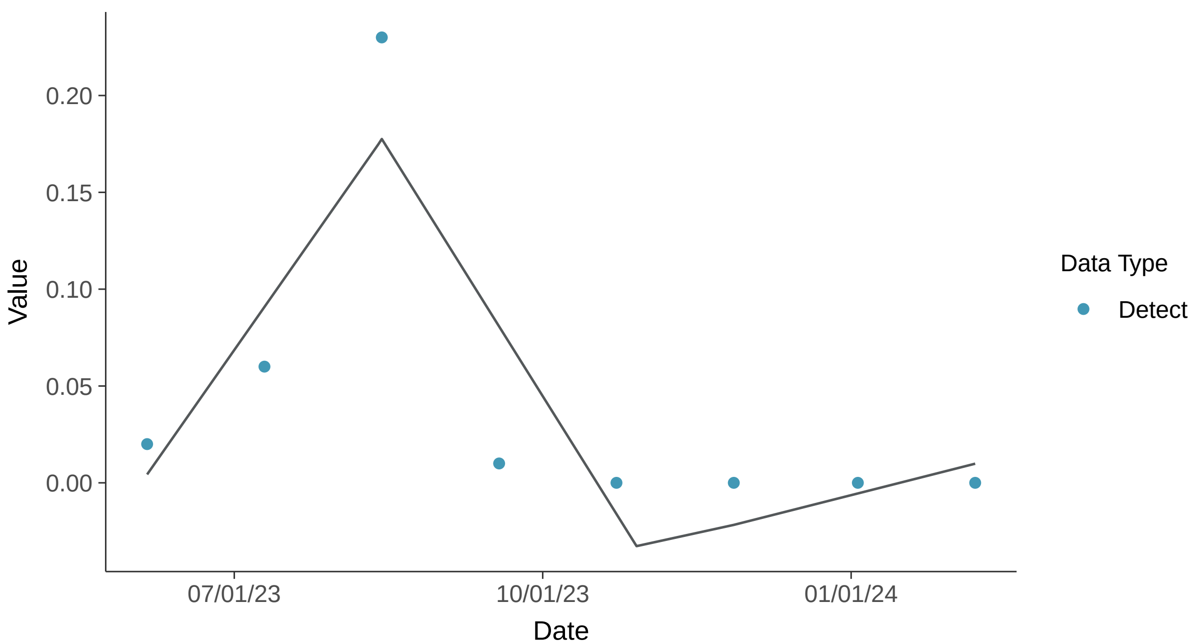
Trend Regression: Piecewise Linear-Linear

Dissolved Oxygen, MW-100C (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Dissolved Oxygen, MW-100C (mg/L)

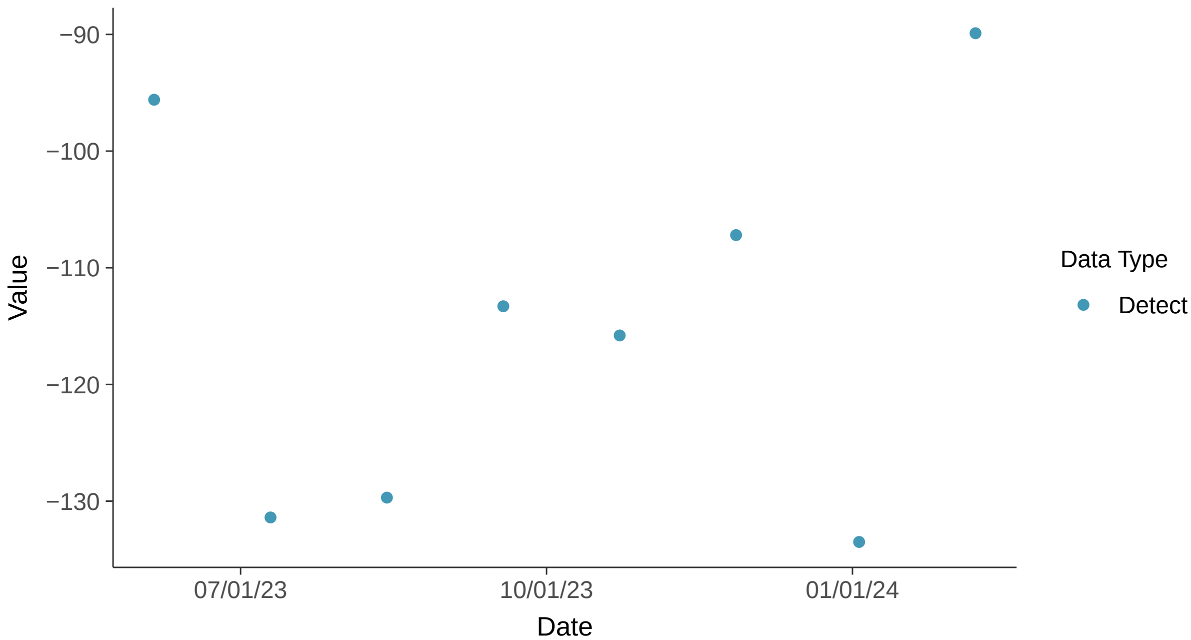


Field Parameters: Oxidation Reduction Potential, MW-100C

ID: 100C_3_26

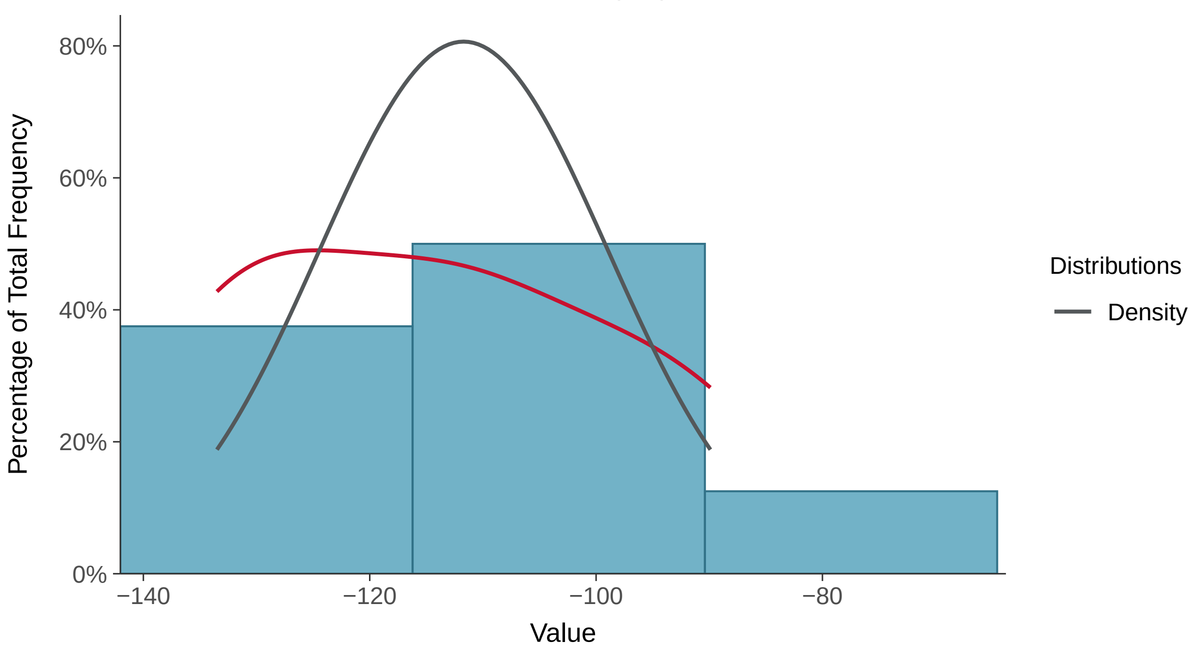
Scatter Plot

Oxidation Reduction Potential, MW-100C (mV)



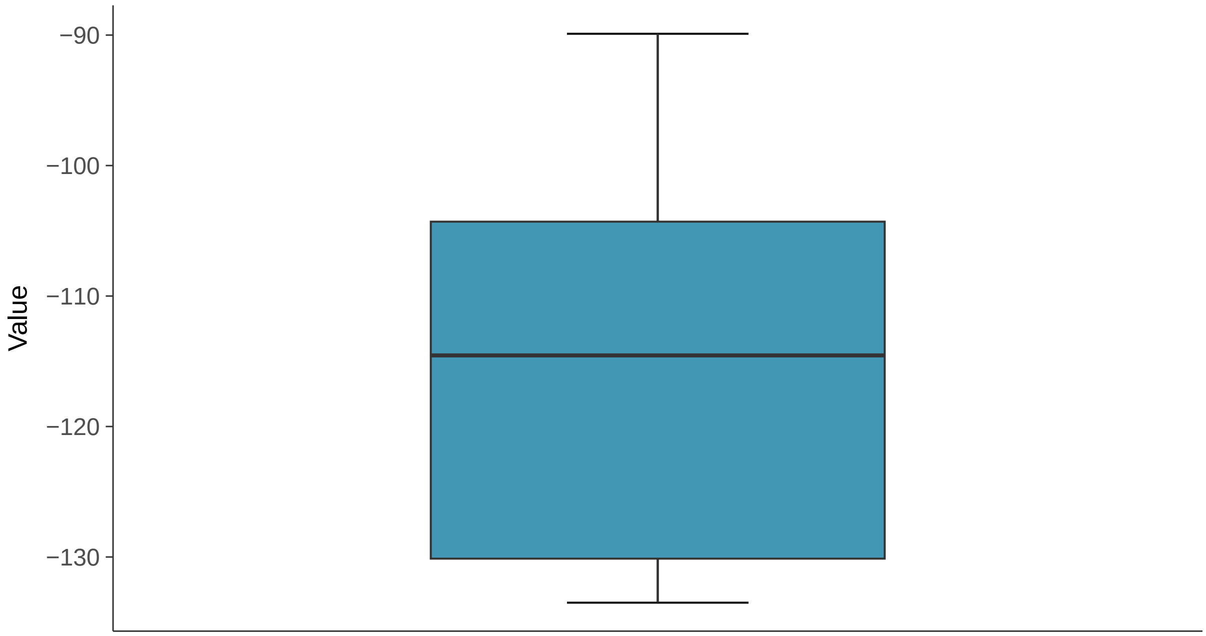
Histogram

Oxidation Reduction Potential, MW-100C (mV)



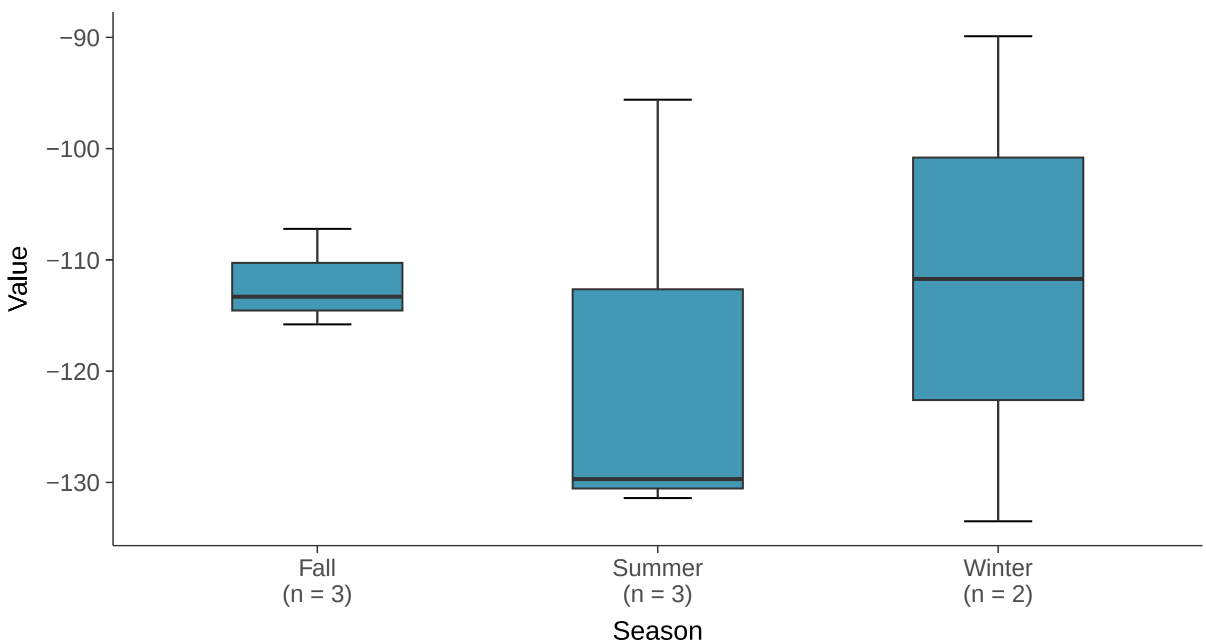
Boxplot

Oxidation Reduction Potential, MW-100C (mV)



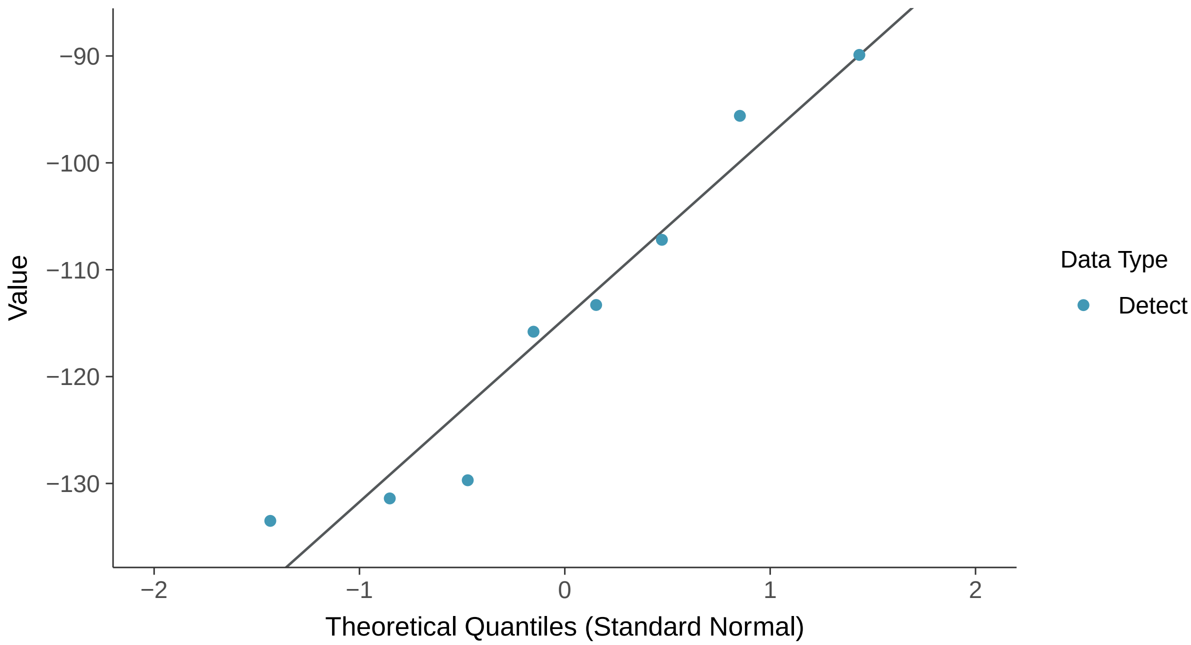
Boxplot by Season

Oxidation Reduction Potential, MW-100C (mV)



Normal Q-Q plot

Oxidation Reduction Potential, MW-100C (mV)

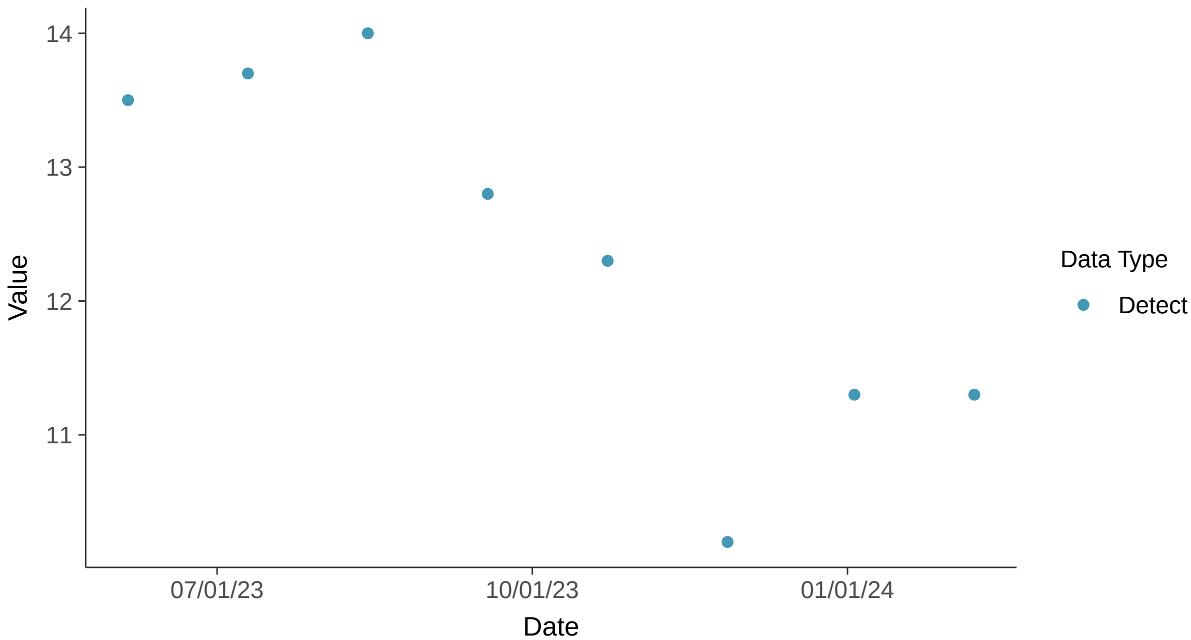


Field Parameters: Temperature, MW-100C

ID: 100C_3_27

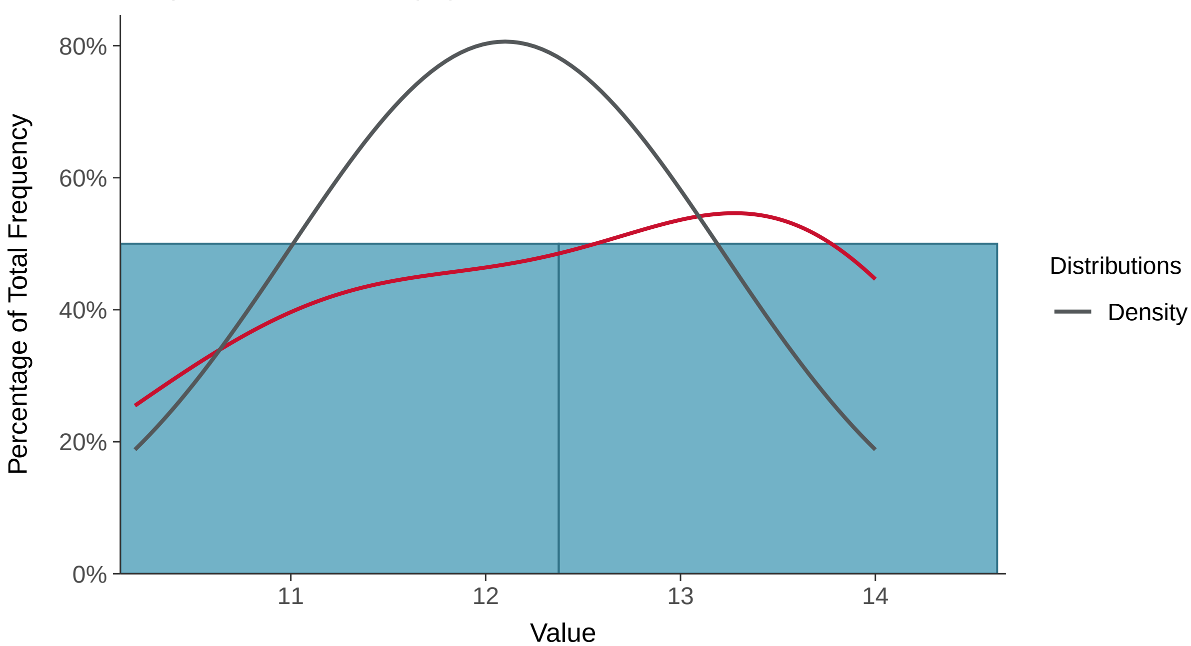
Scatter Plot

Temperature, MW-100C (°C)



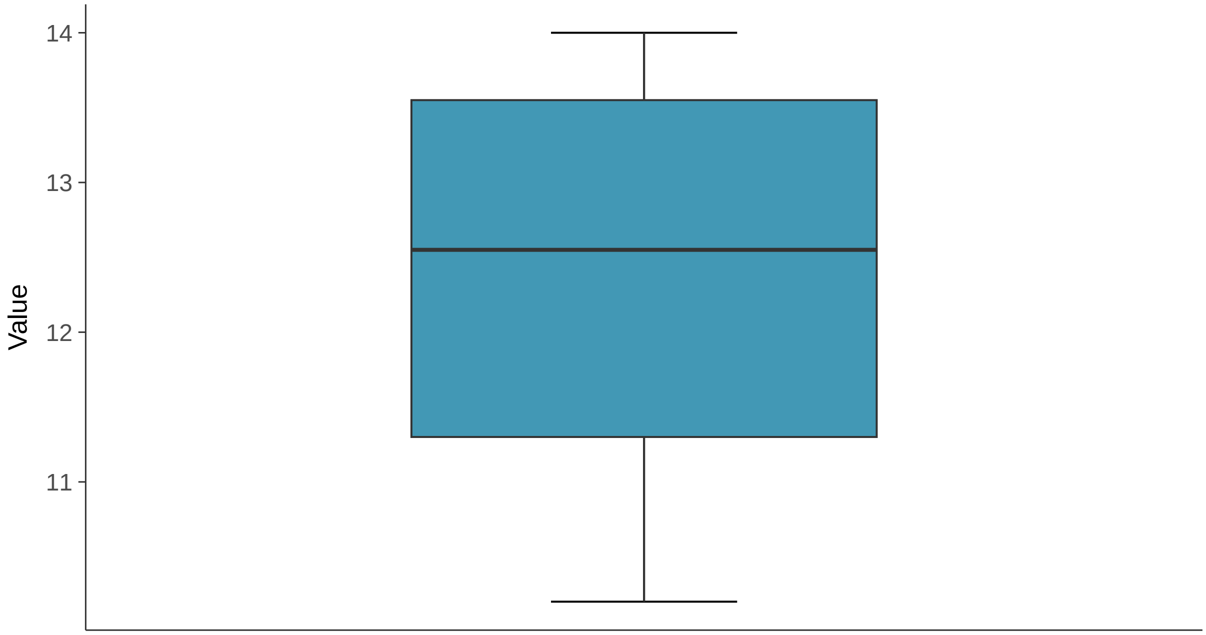
Histogram

Temperature, MW-100C (°C)



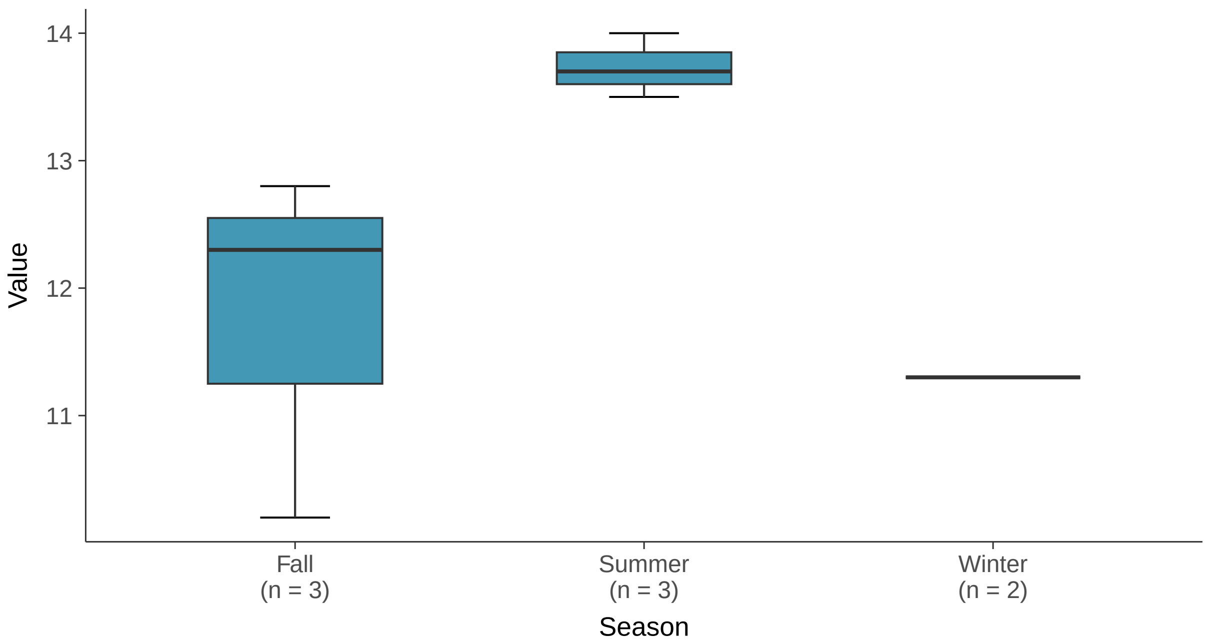
Boxplot

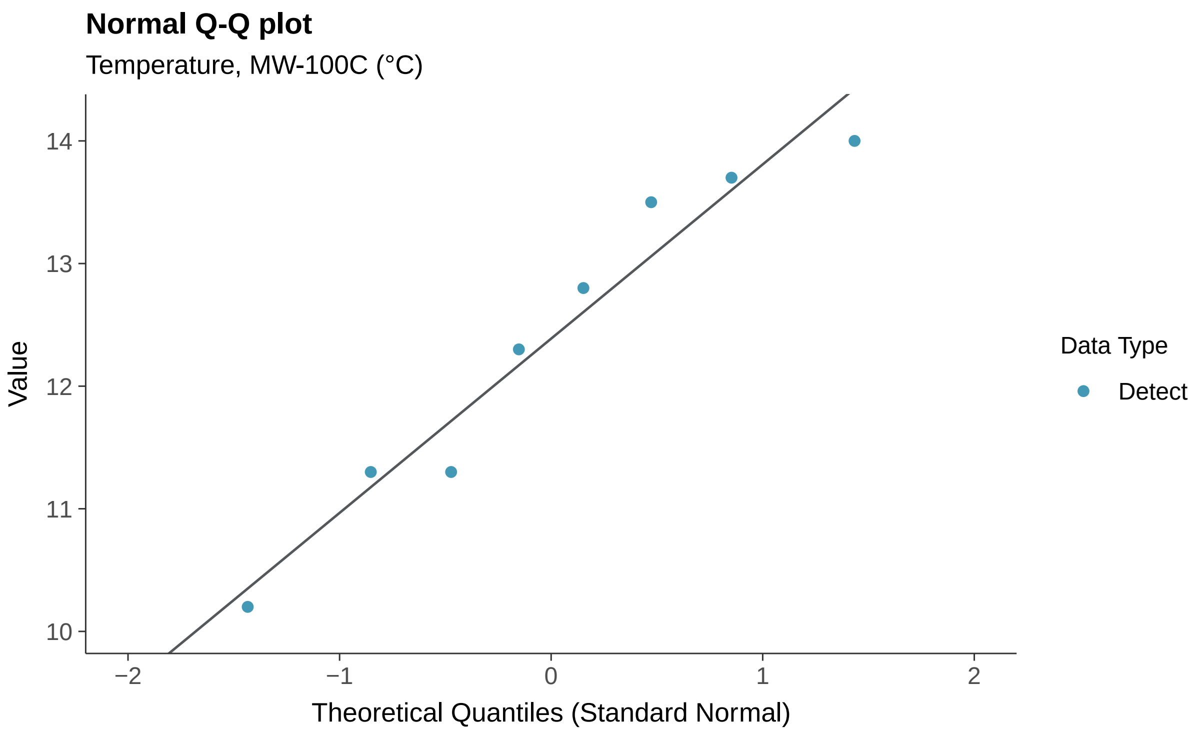
Temperature, MW-100C (°C)

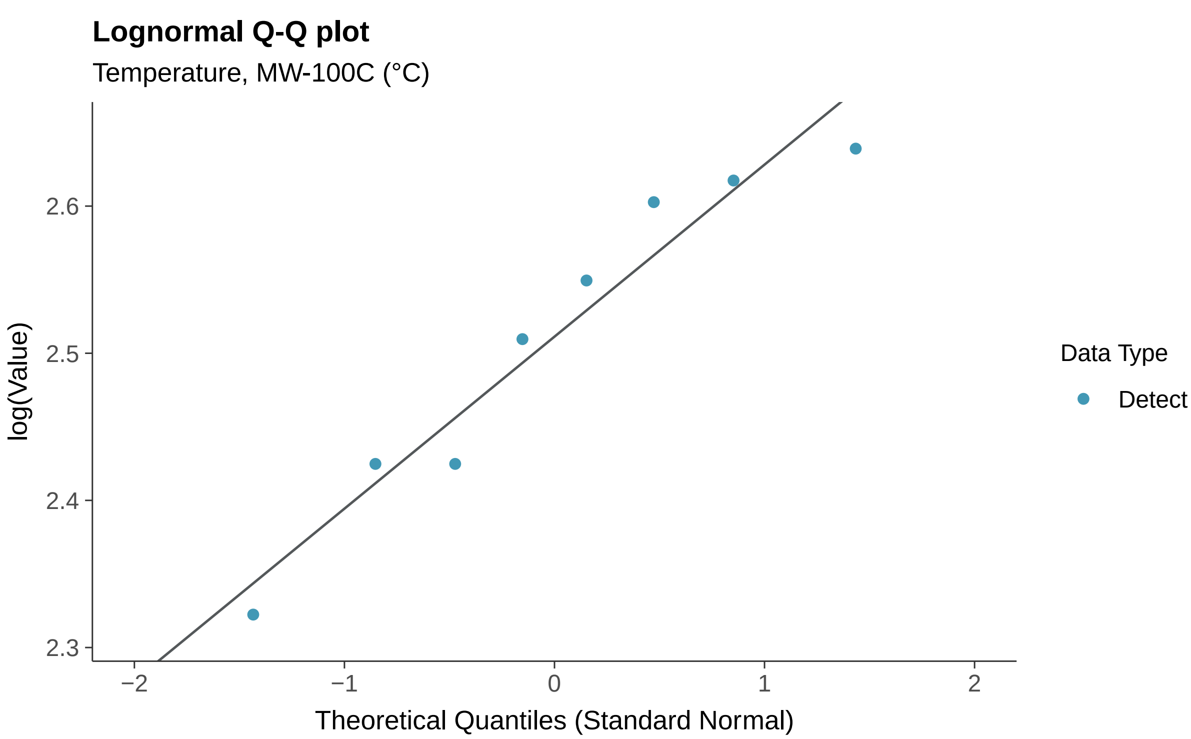


Boxplot by Season

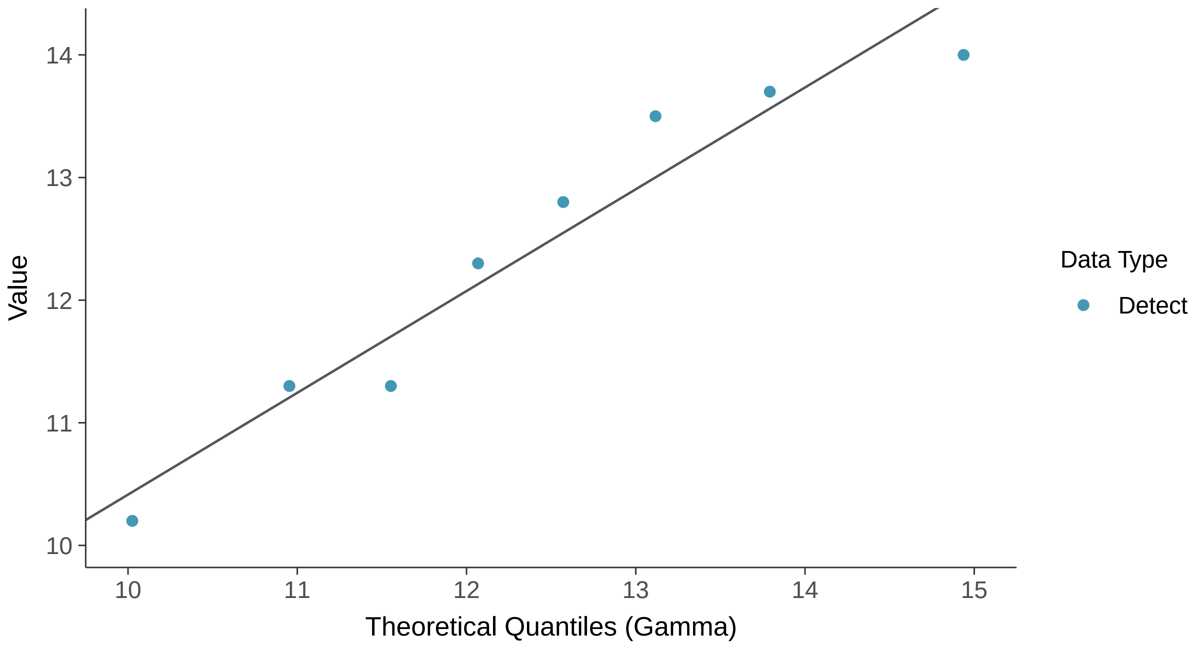
Temperature, MW-100C (°C)



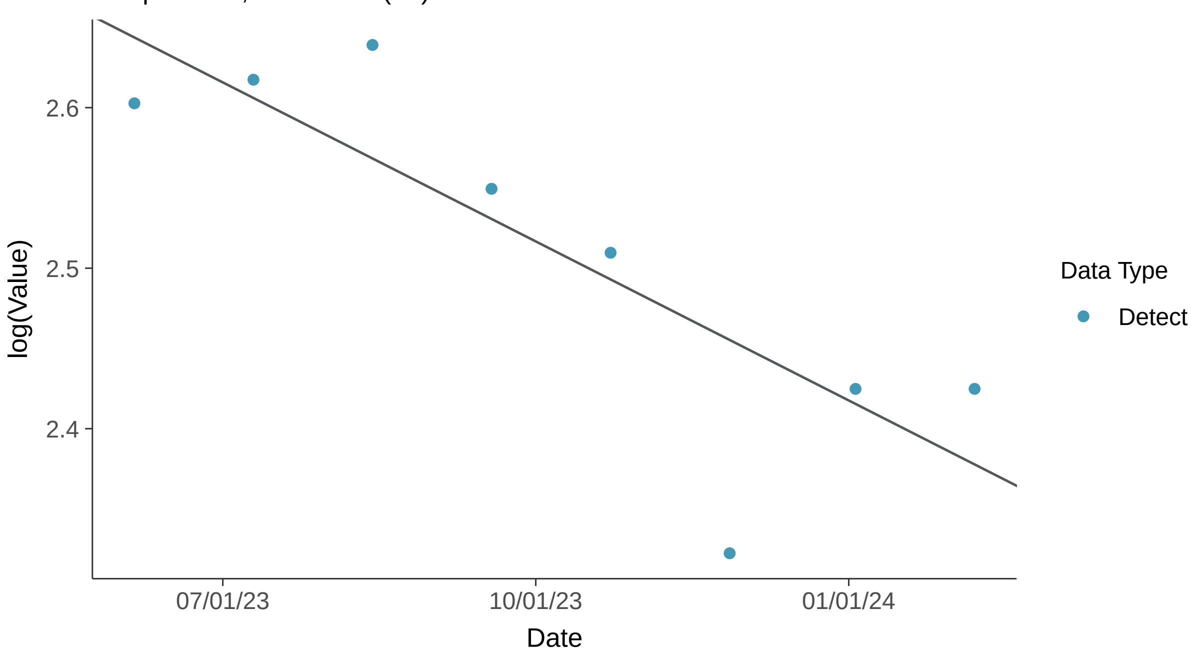

Normal Q-Q plot
Temperature, MW-100C (°C)
Value
14
13
12
11
10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Temperature, MW-100C (°C)
log(Value)
2.6
2.5
2.4
2.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

Gamma Q-Q plot
Temperature, MW-100C (°C)

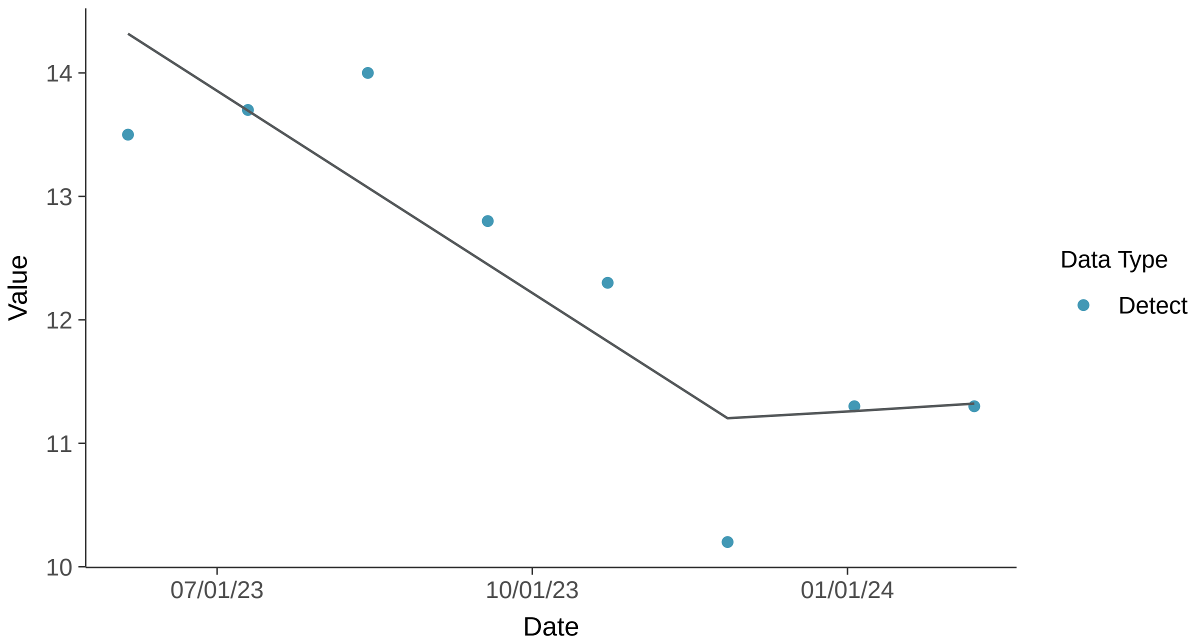


Trend Regression: Lognormal MLE
Temperature, MW-100C (°C)



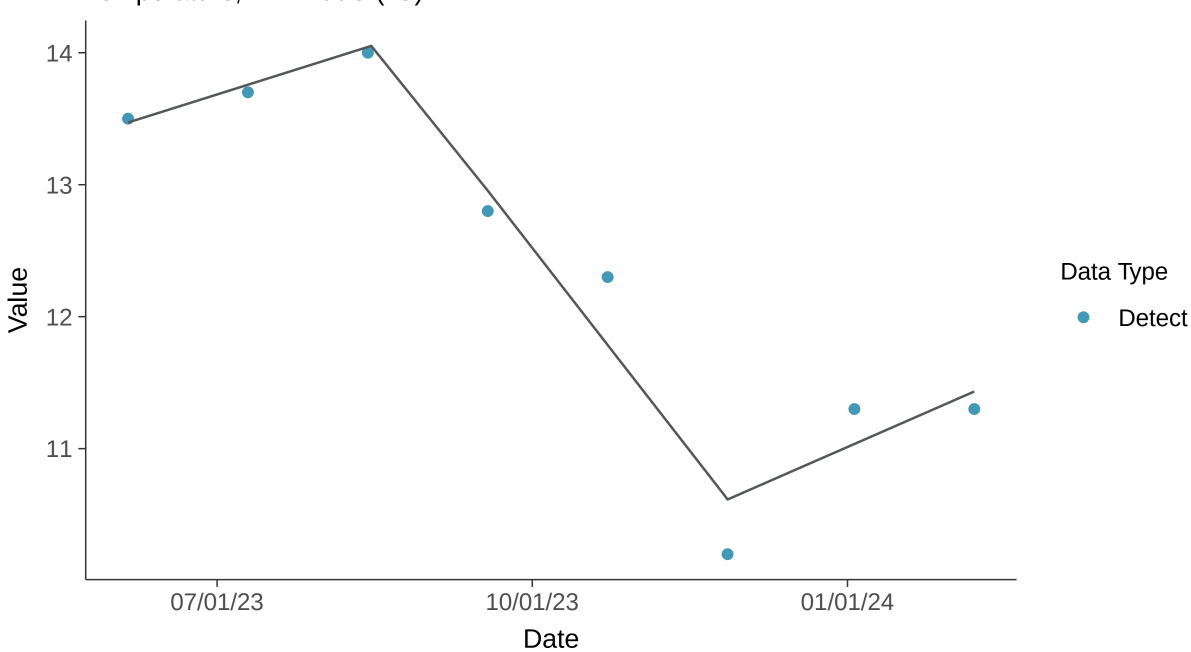
Trend Regression: Piecewise Linear-Linear

Temperature, MW-100C (°C)



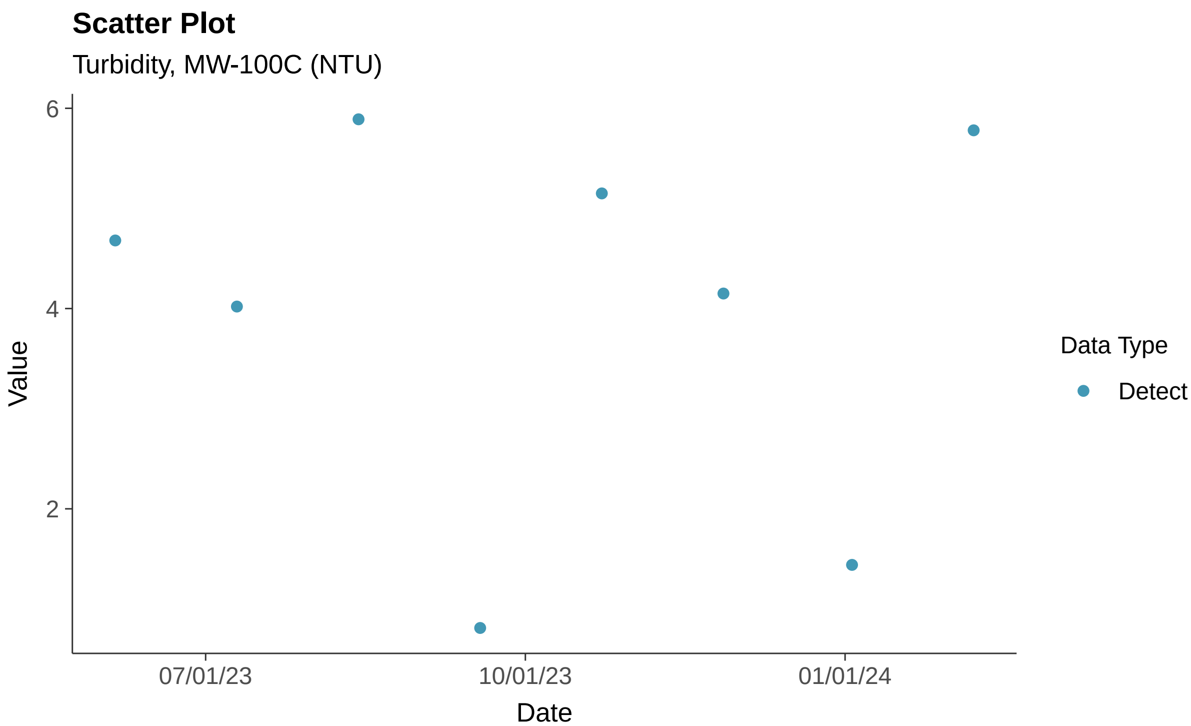
Trend Regression: Piecewise Linear-Linear-Linear

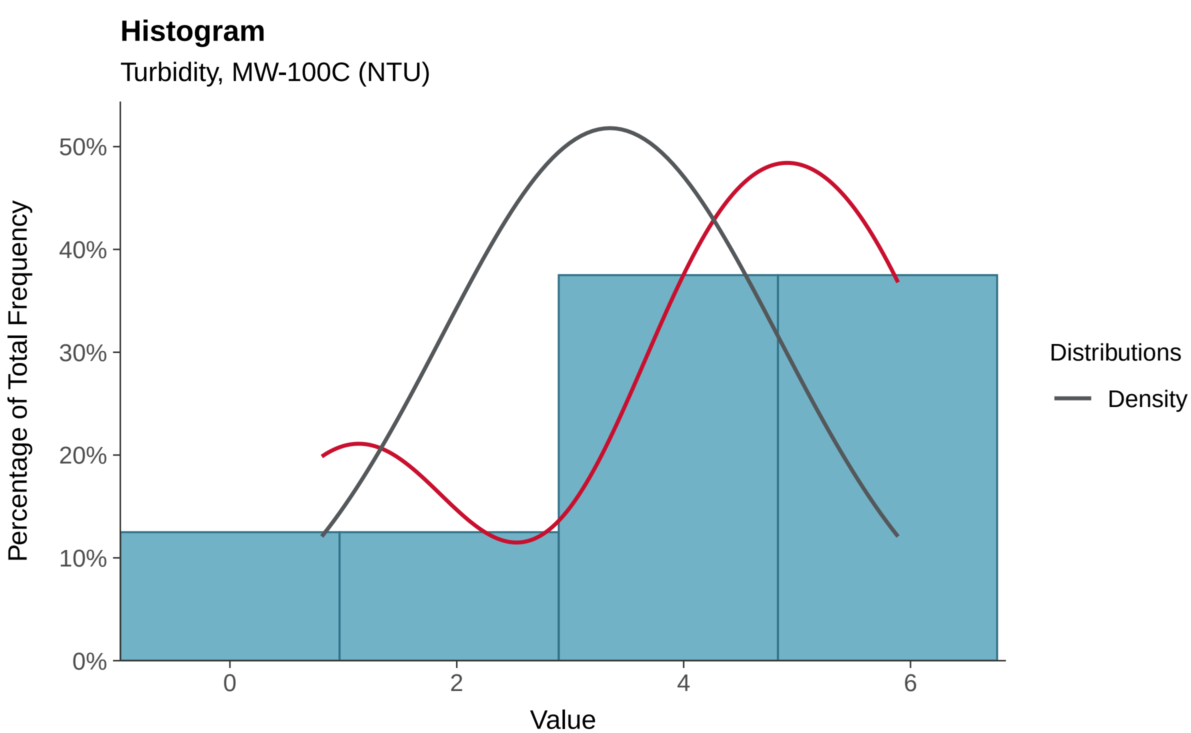
Temperature, MW-100C (°C)



Field Parameters: Turbidity, MW-100C

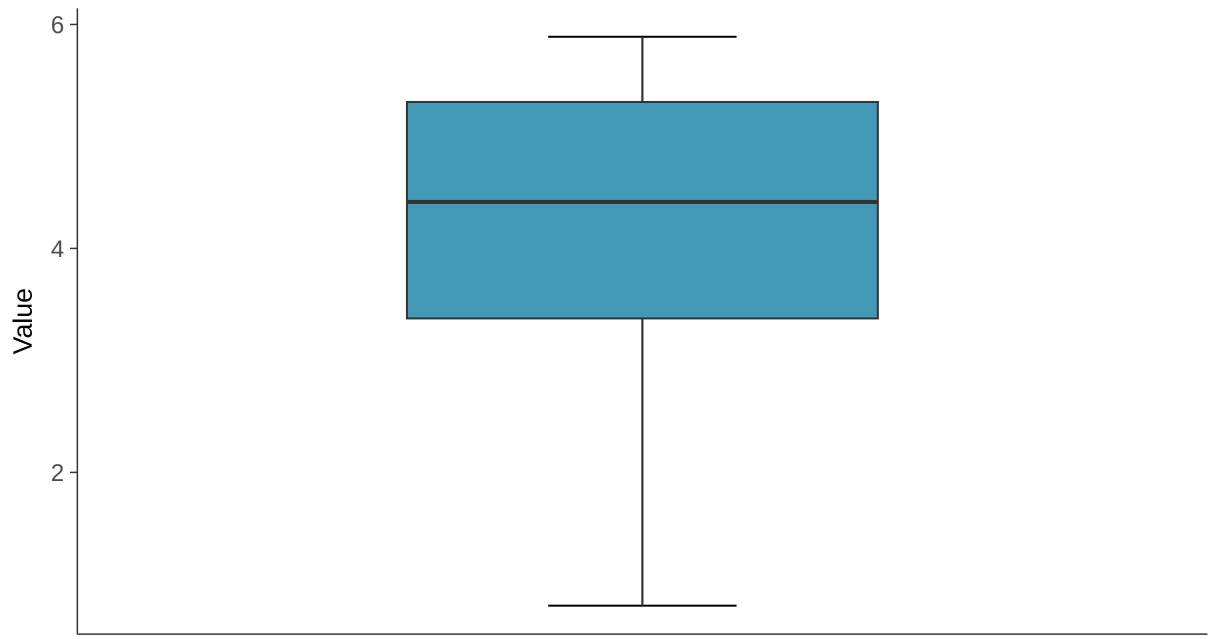
ID: 100C_3_28





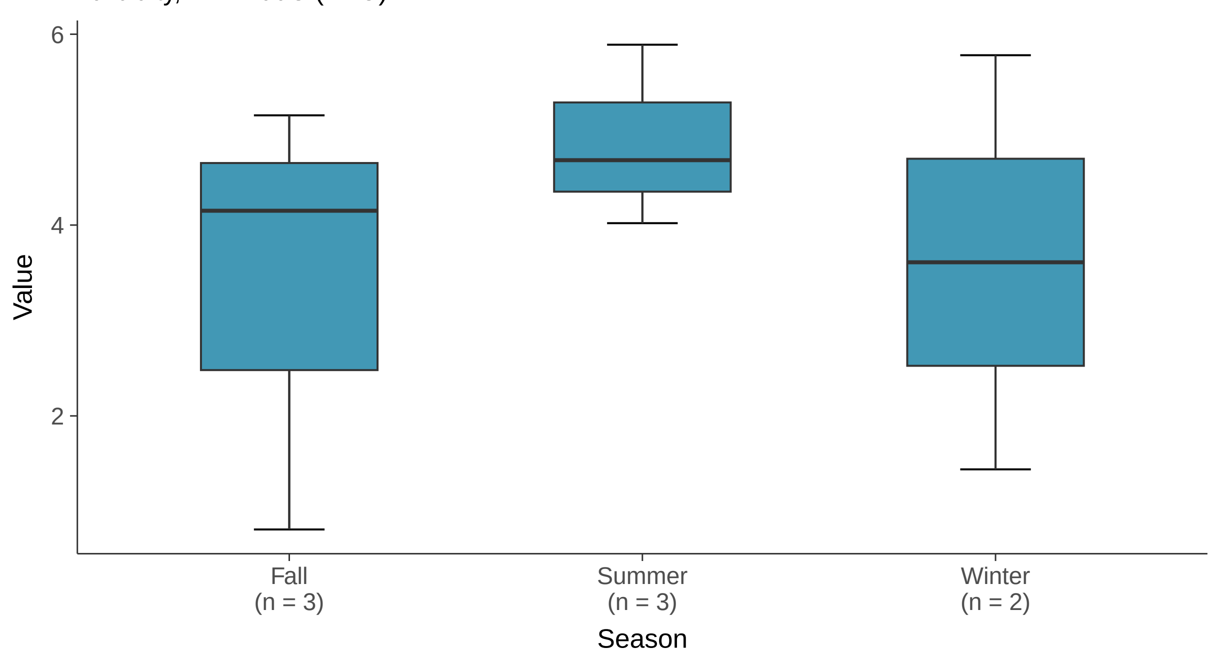
Boxplot

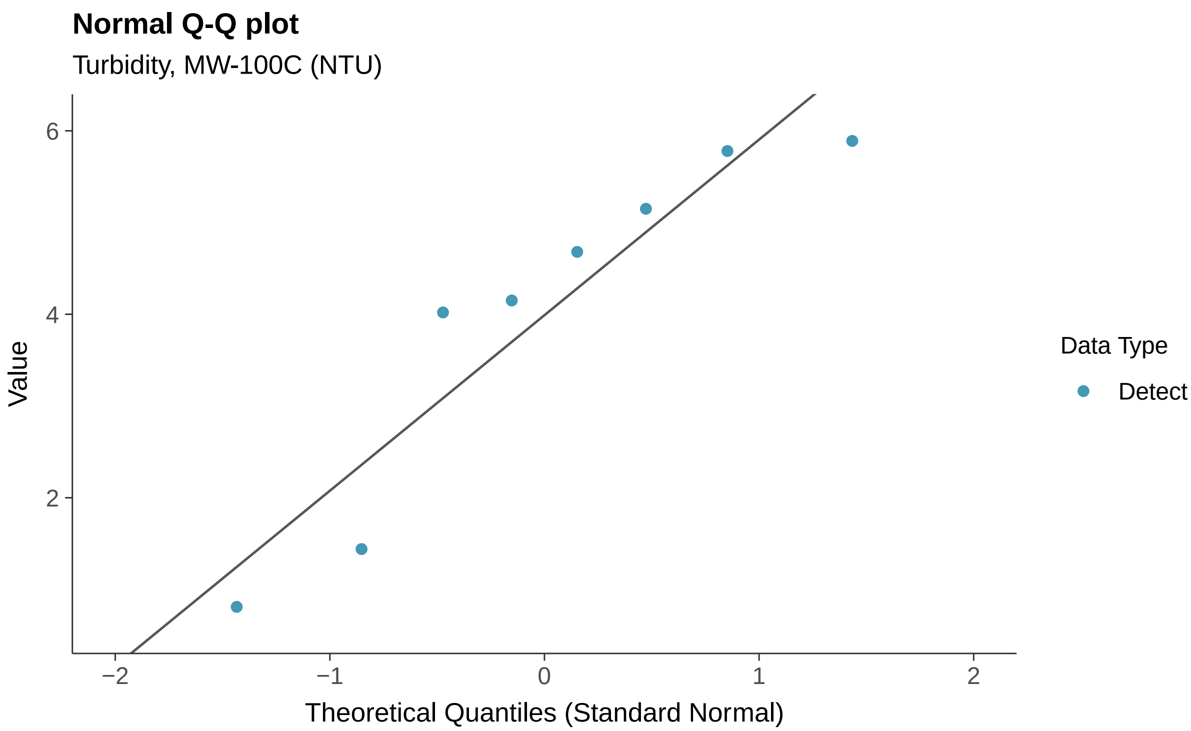
Turbidity, MW-100C (NTU)

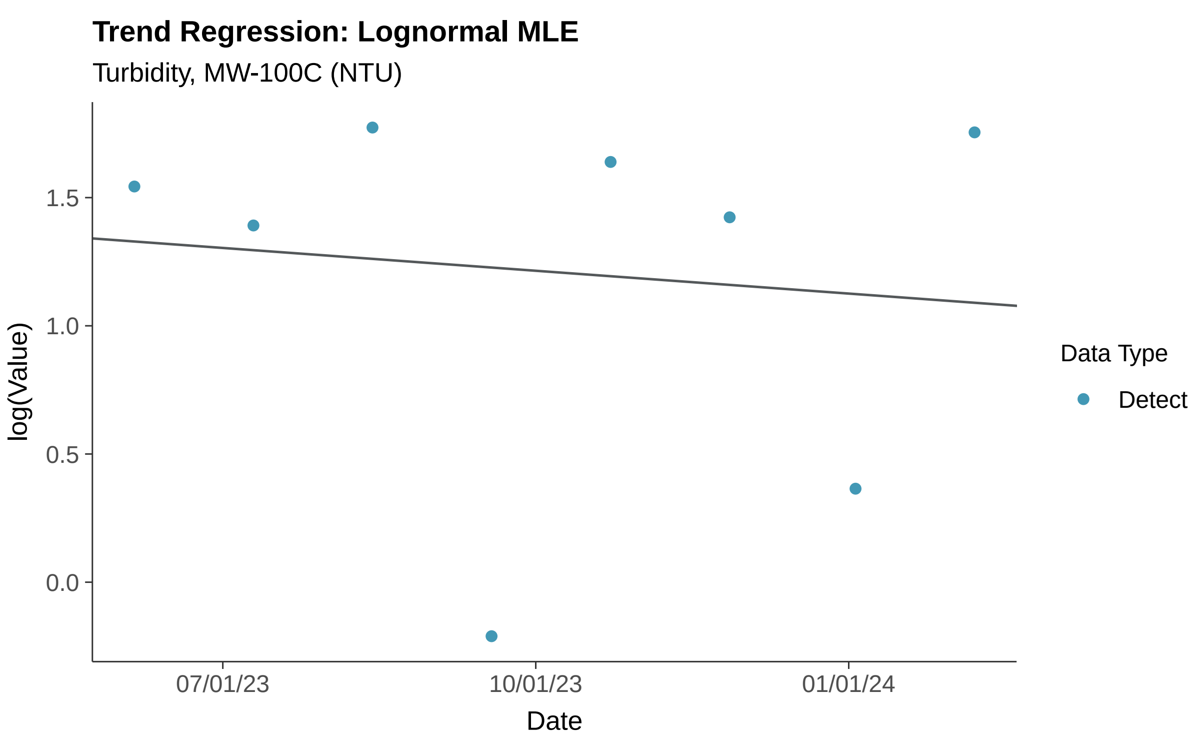


Boxplot by Season

Turbidity, MW-100C (NTU)

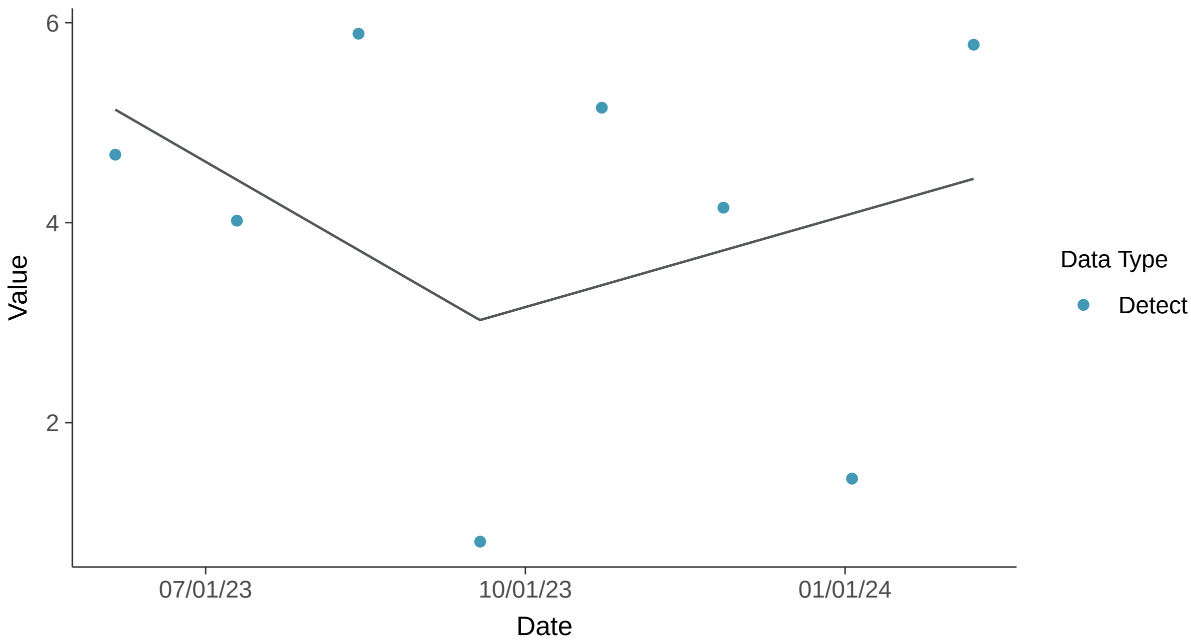



Normal Q-Q plot
Turbidity, MW-100C (NTU)
Value
6
4
2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Turbidity, MW-100C (NTU)
log(Value)
1.5
1.0
0.5
0.0
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

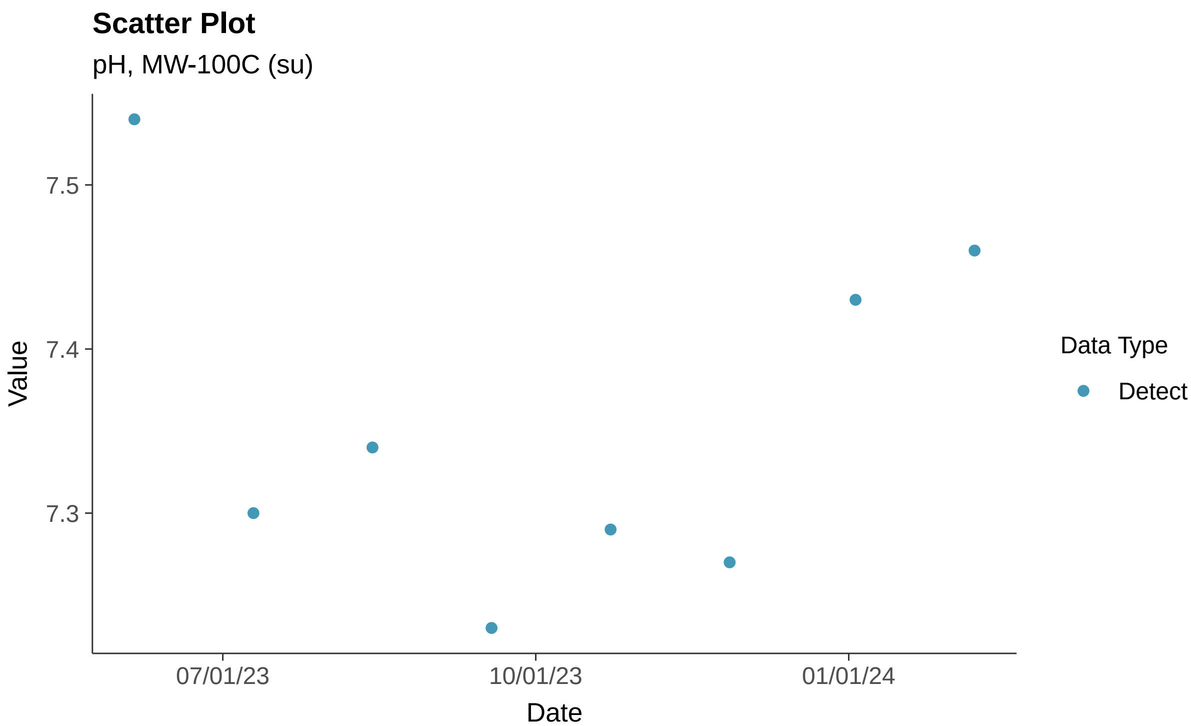
Trend Regression: Piecewise Linear-Linear

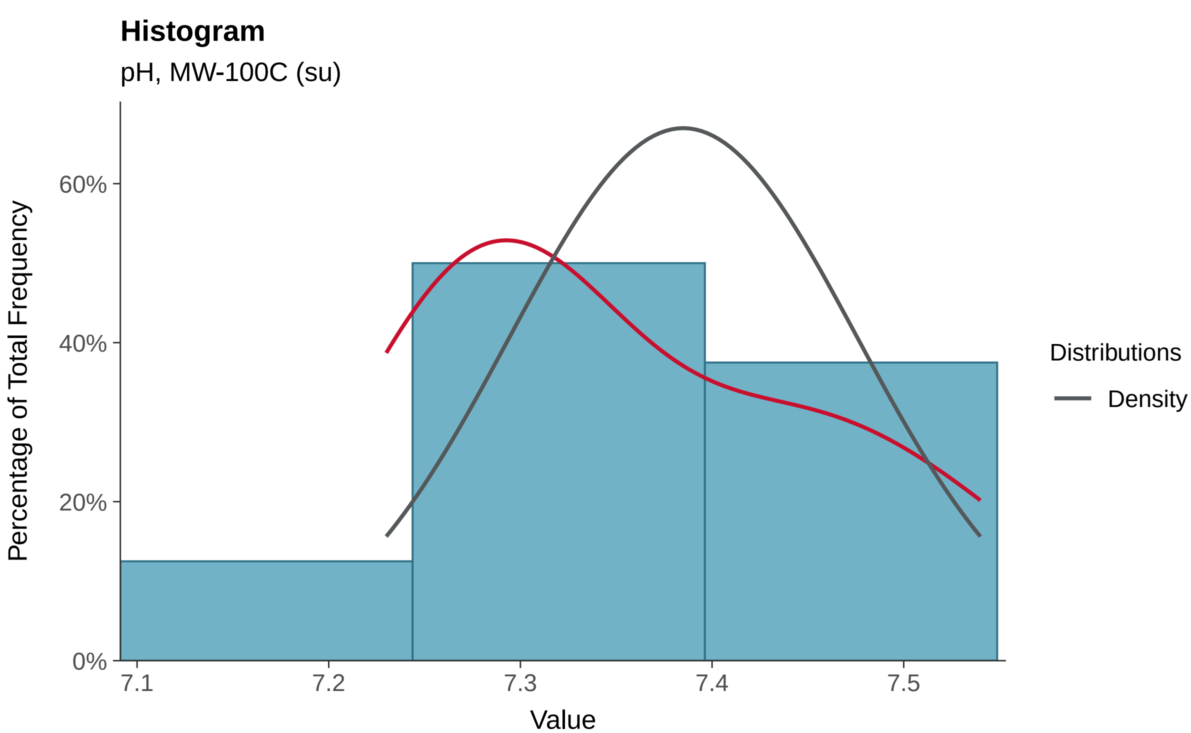
Turbidity, MW-100C (NTU)



Field Parameters: pH, MW-100C

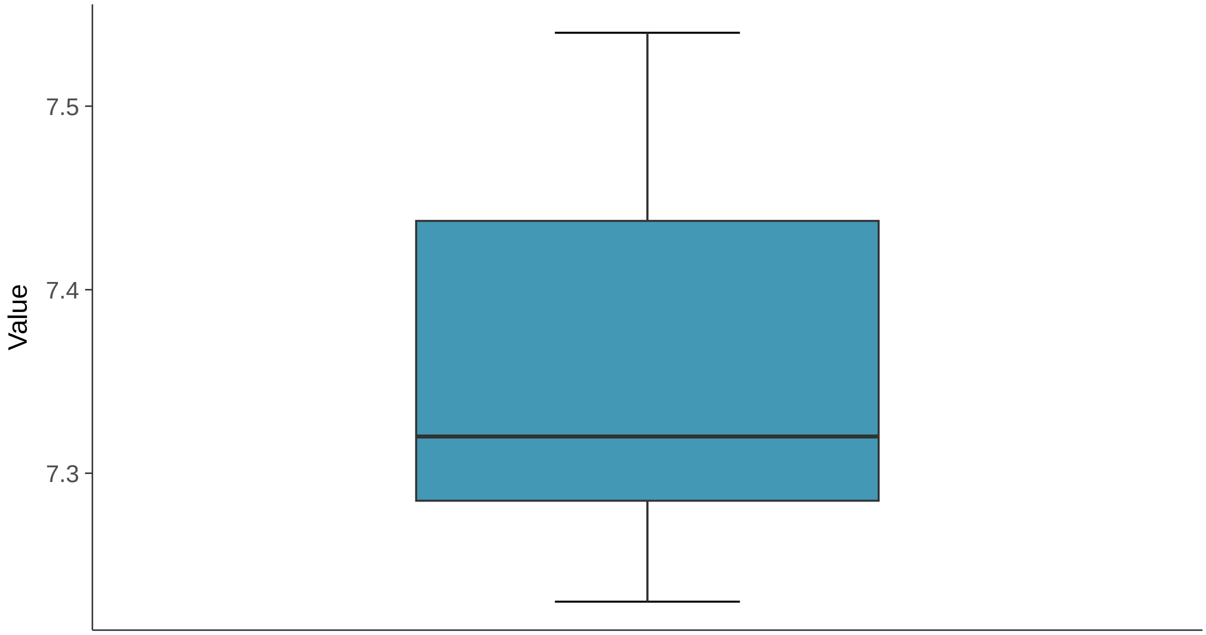
ID: 100C_3_29





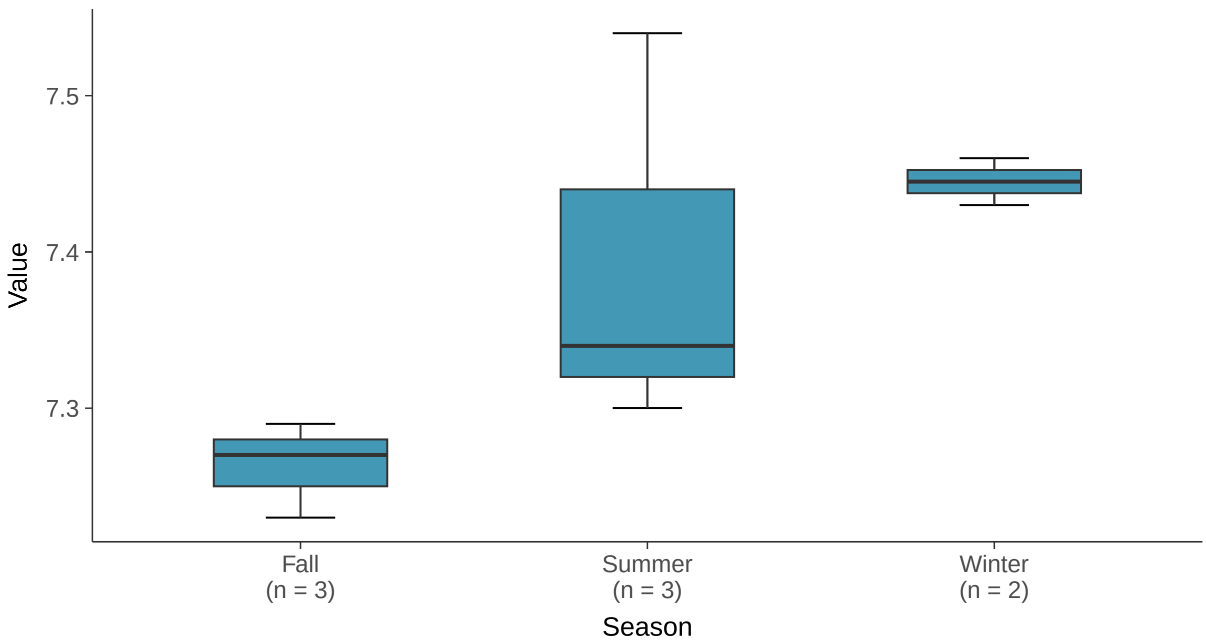
Boxplot

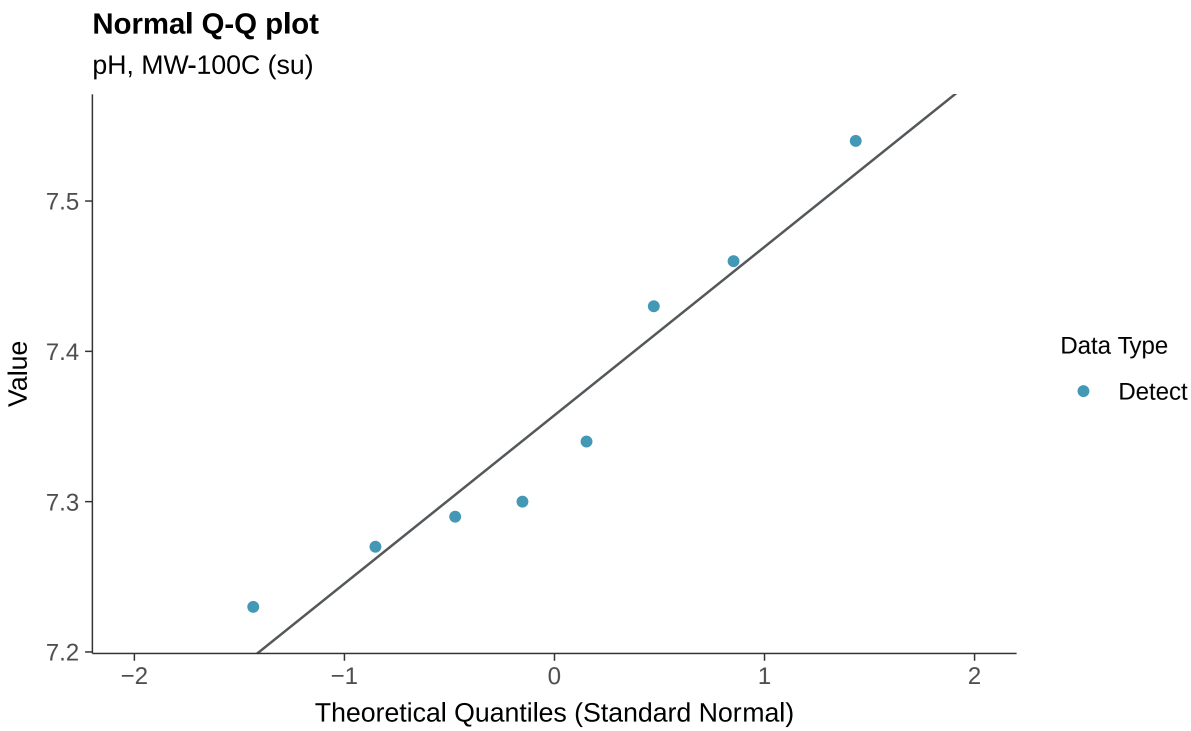
pH, MW-100C (su)

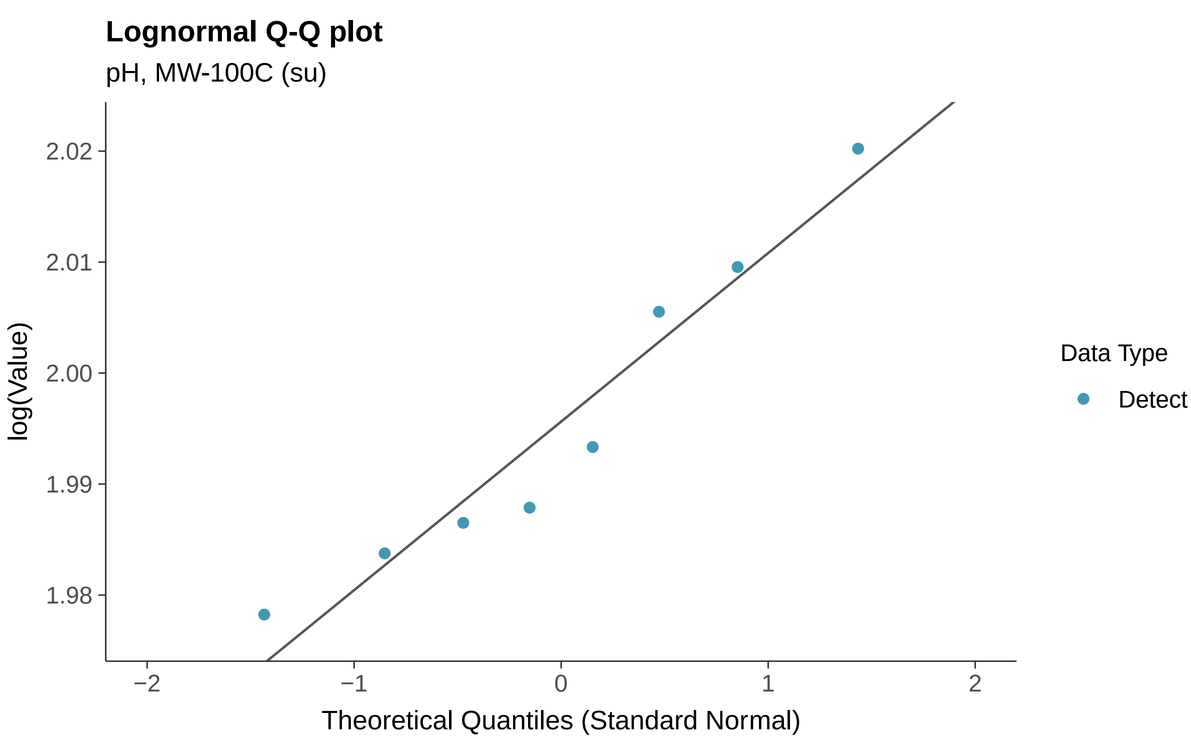


Boxplot by Season

pH, MW-100C (su)

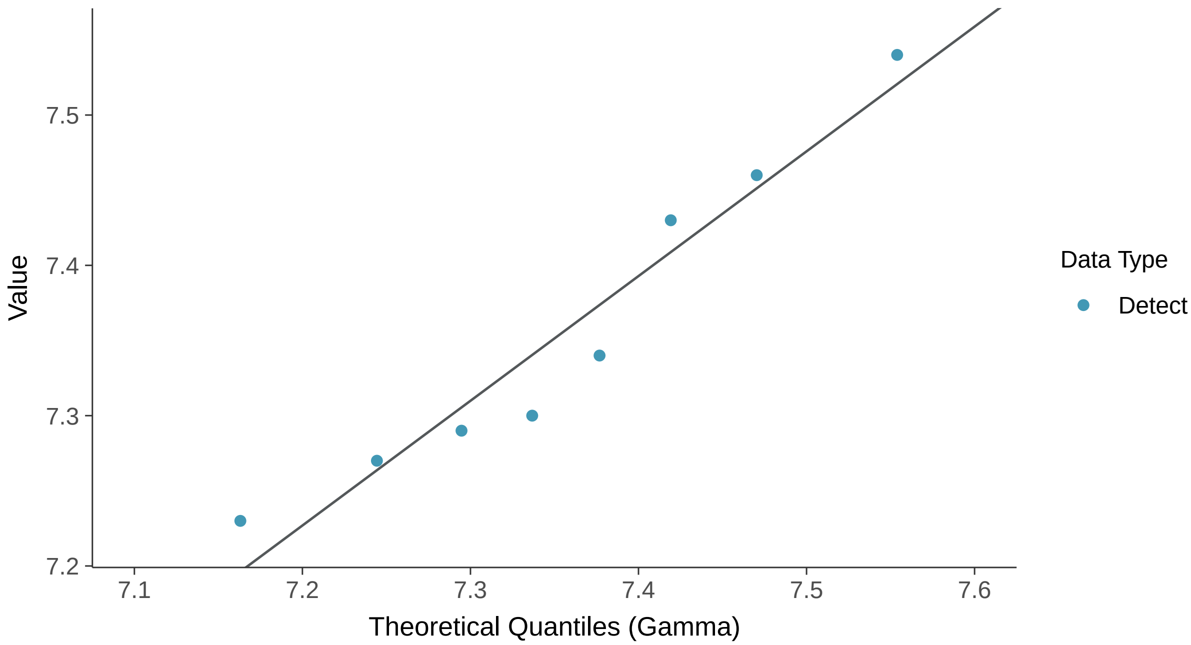



Normal Q-Q plot
pH, MW-100C (su)
Value
7.5
7.4
7.3
7.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH, MW-100C (su)
log(Value)
2.02
2.01
2.00
1.99
1.98
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

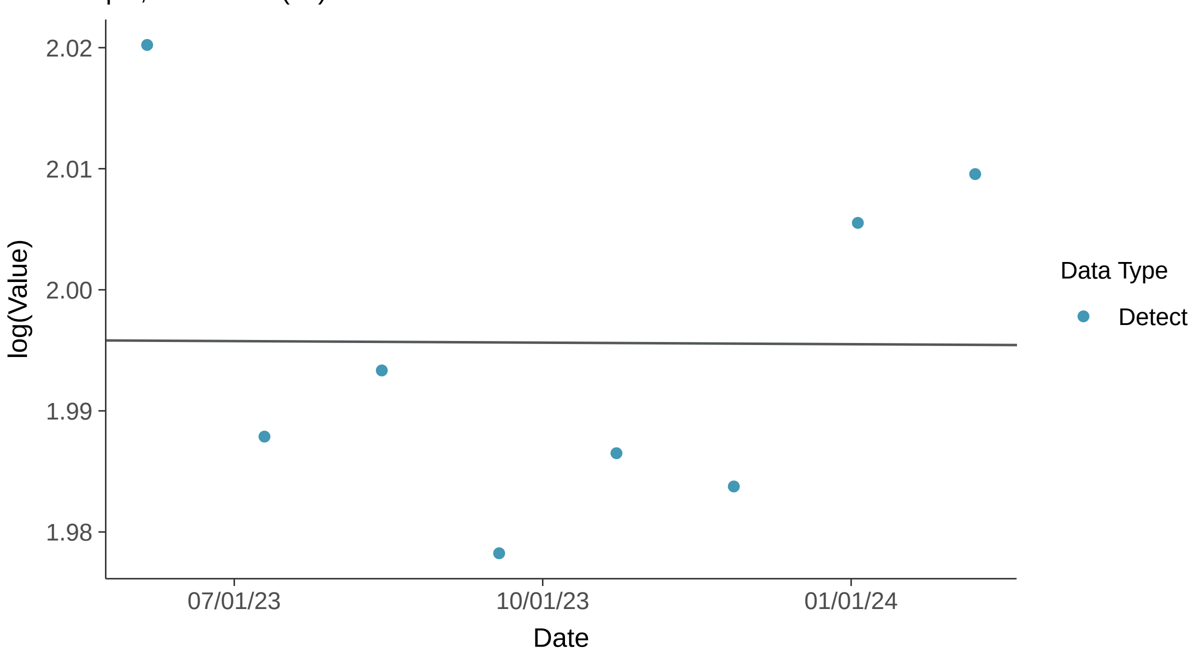
Gamma Q-Q plot

pH, MW-100C (su)



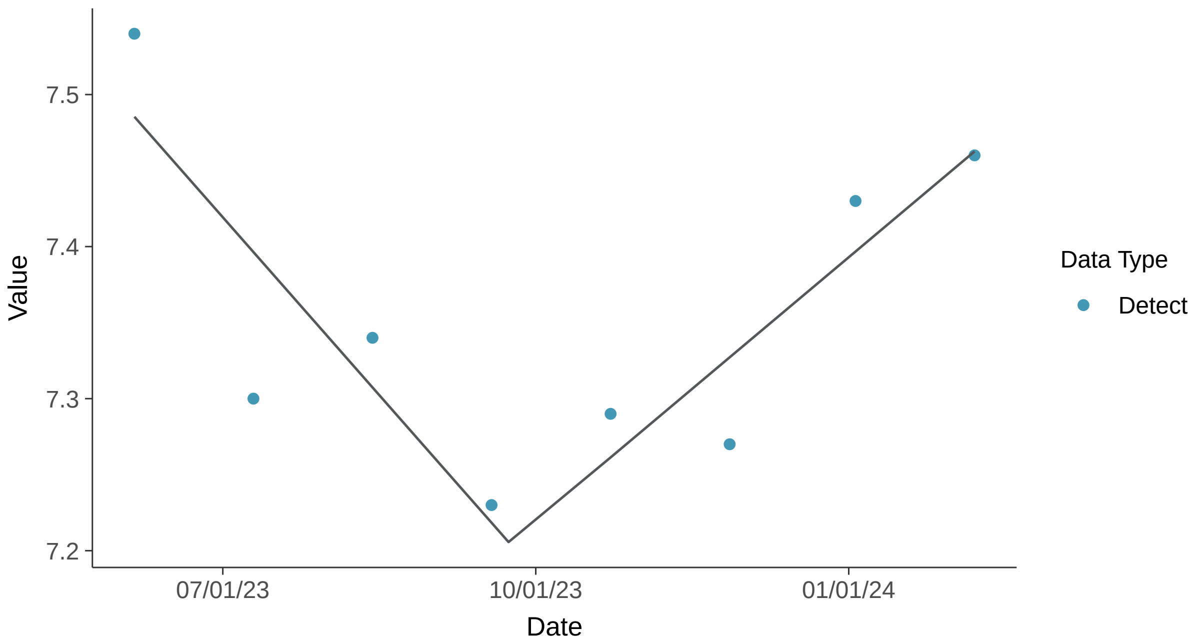
Trend Regression: Lognormal MLE

pH, MW-100C (su)



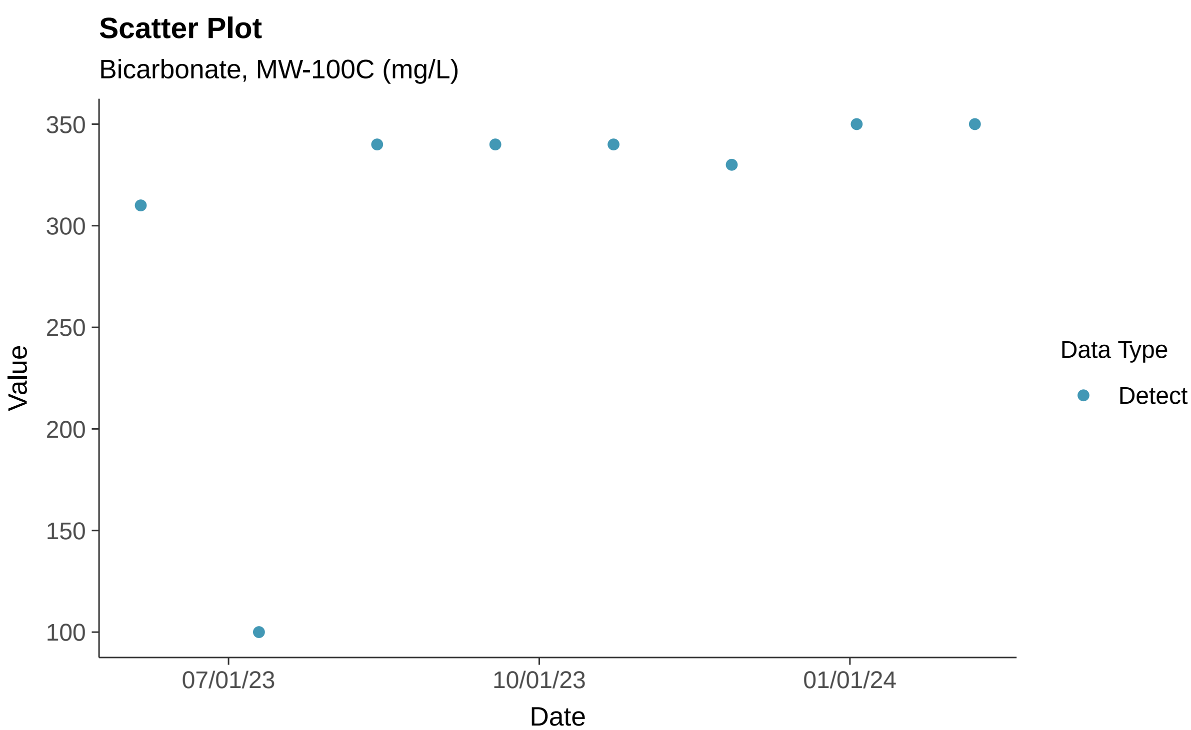
Trend Regression: Piecewise Linear-Linear

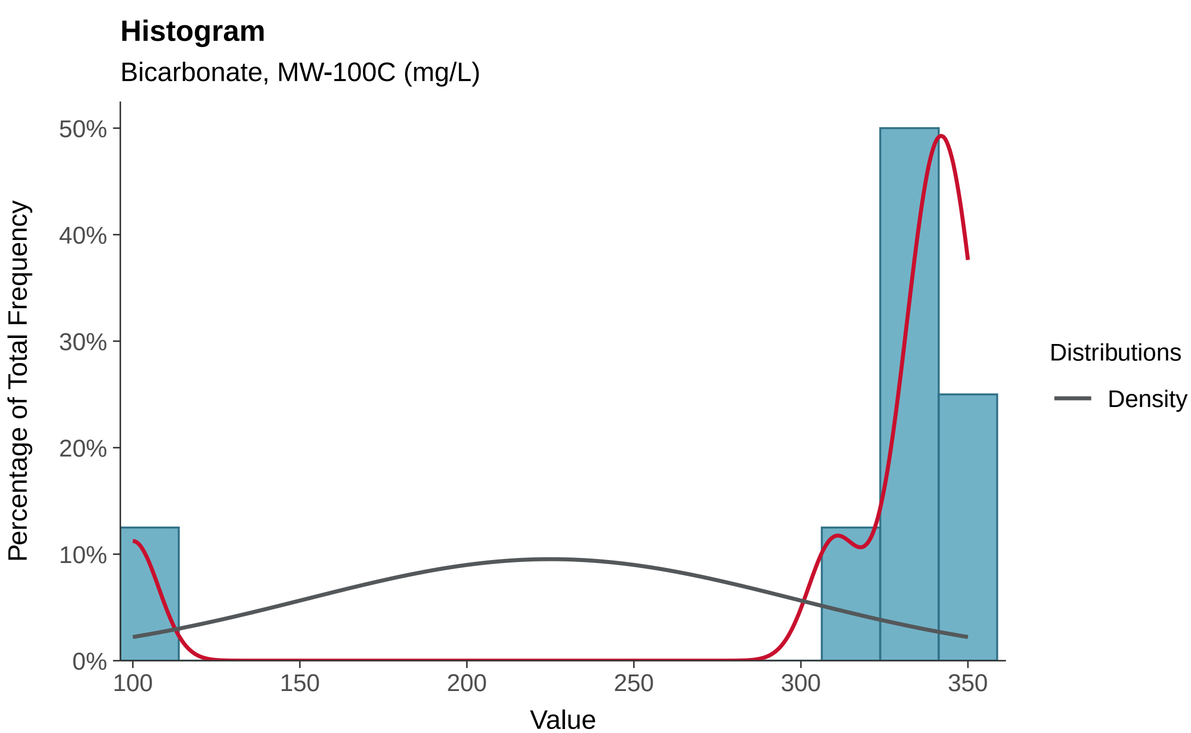
pH, MW-100C (su)



Other: Bicarbonate, MW-100C

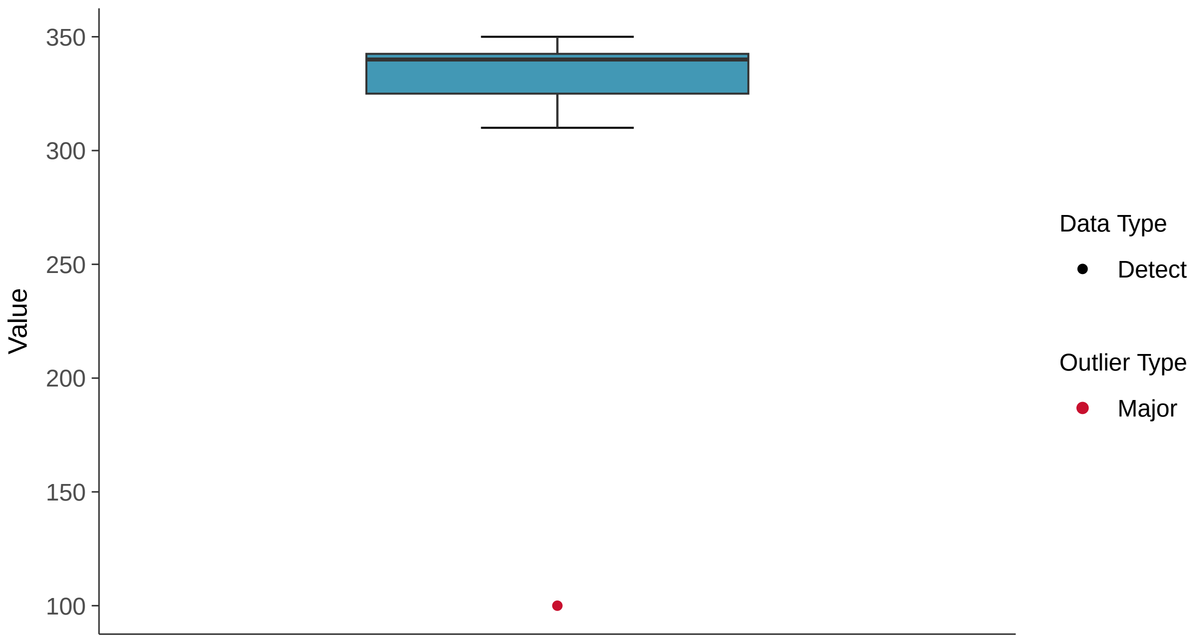
ID: 100C_4_30





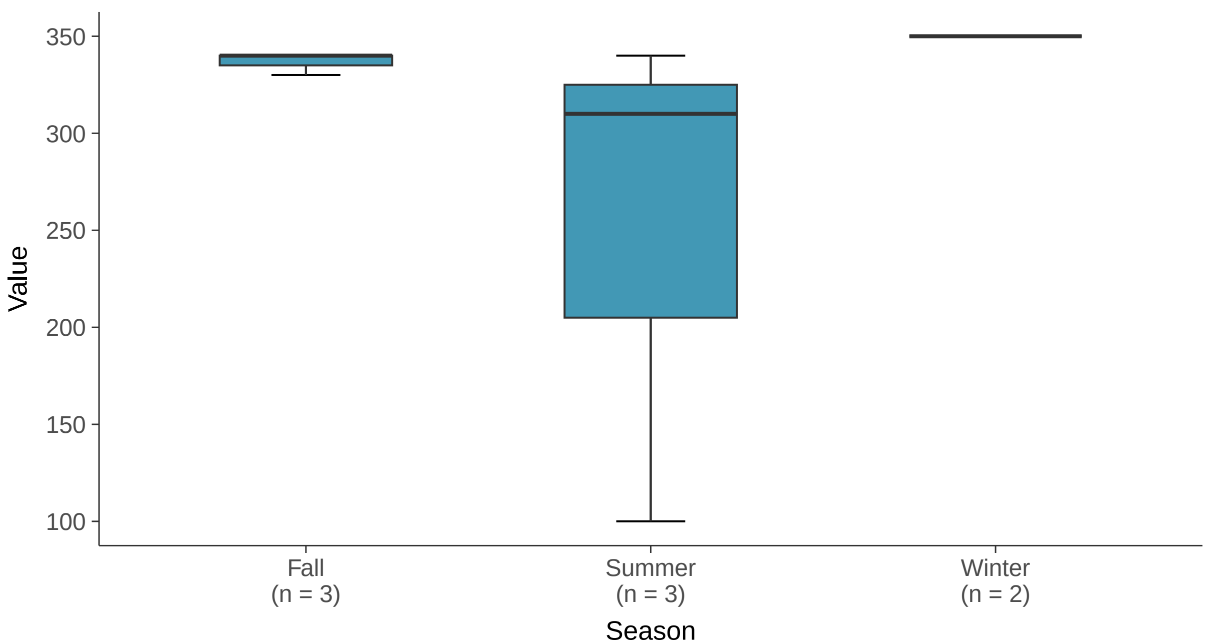
Boxplot

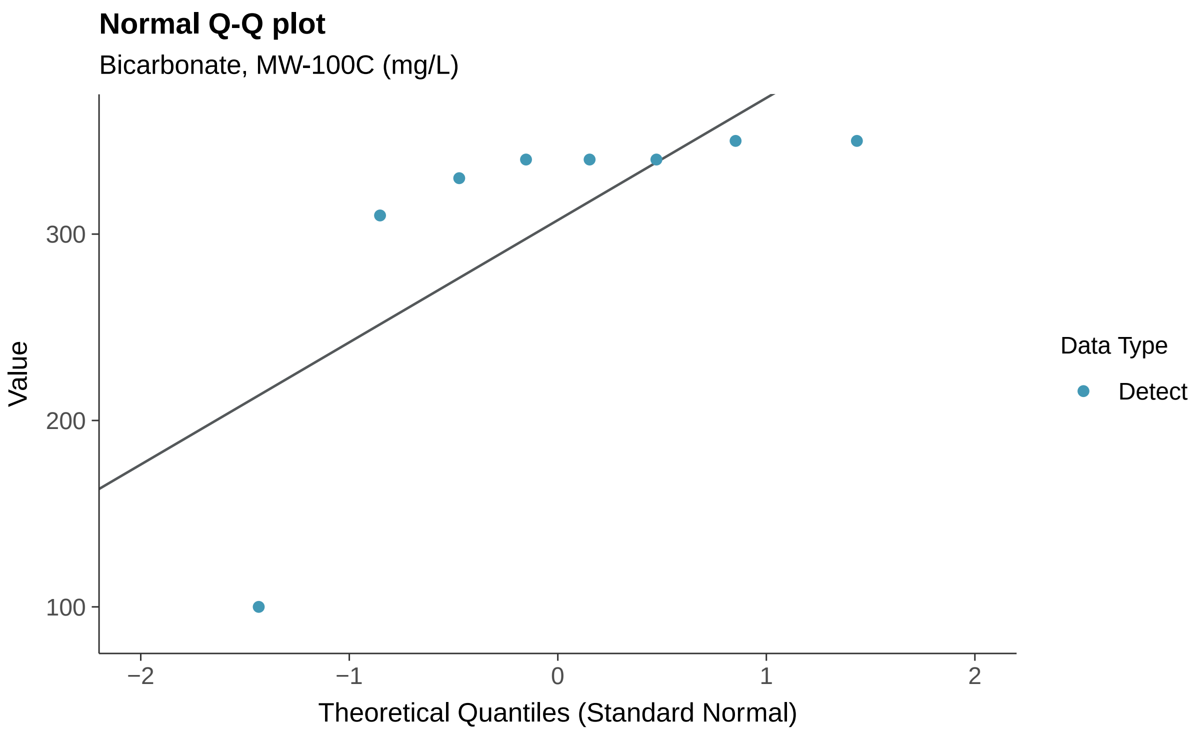
Bicarbonate, MW-100C (mg/L)

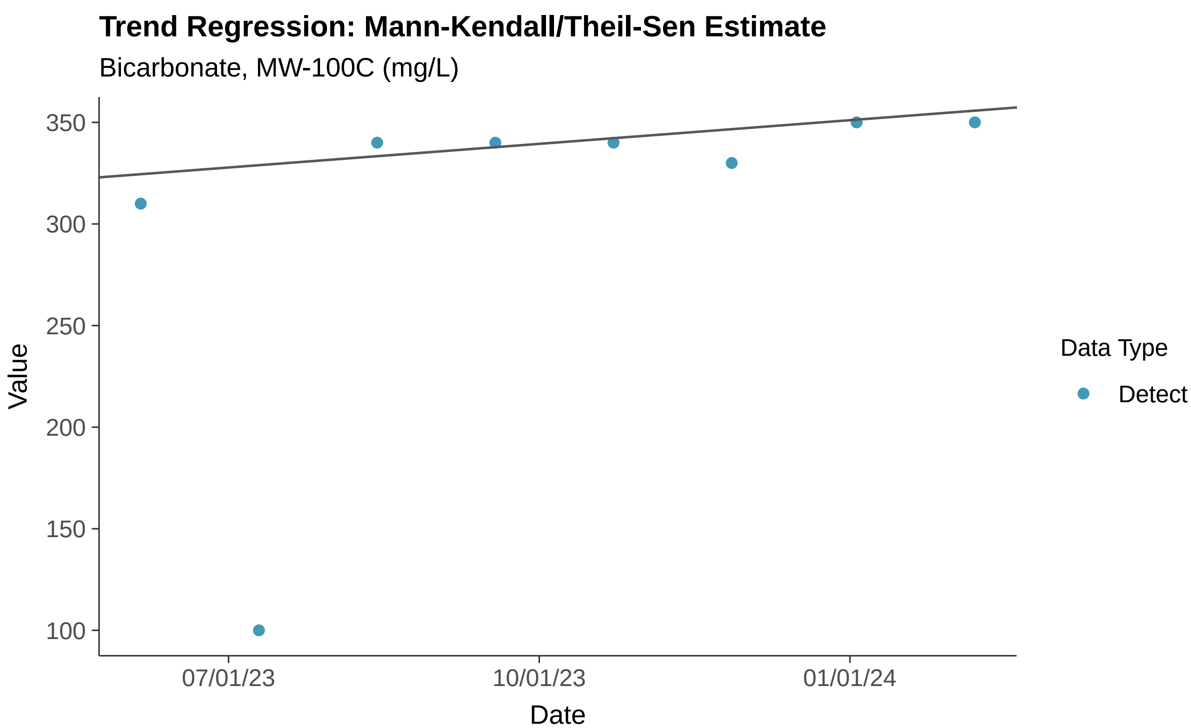


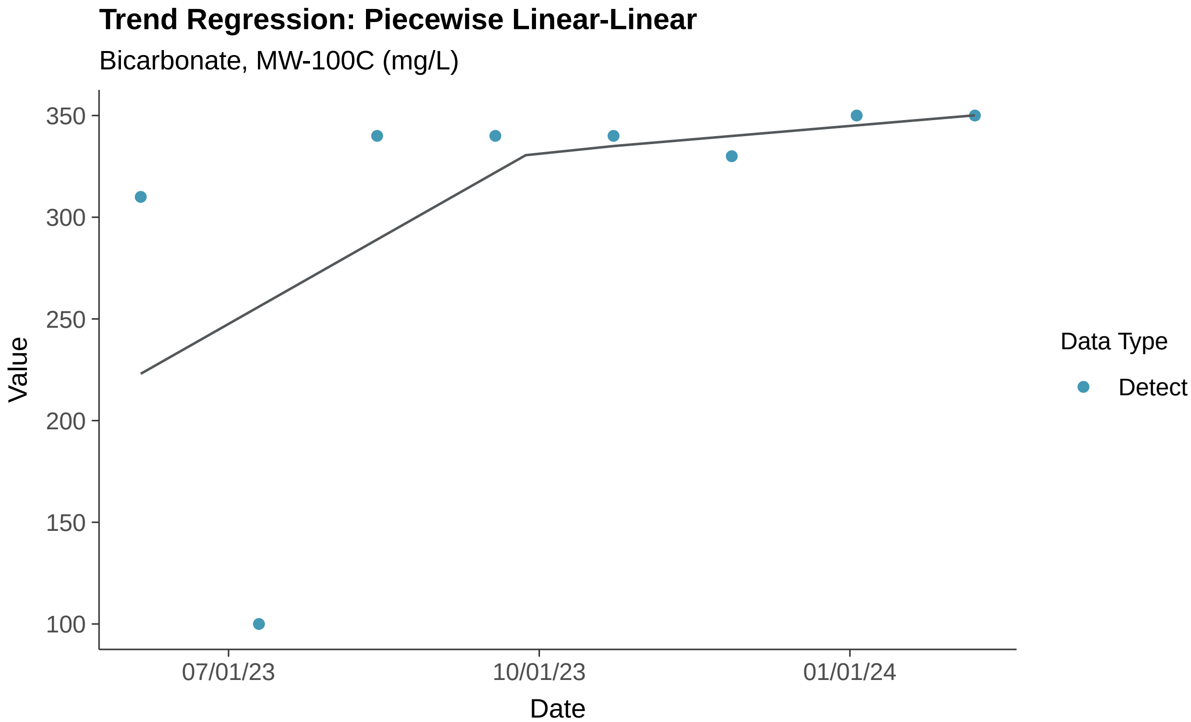
Boxplot by Season

Bicarbonate, MW-100C (mg/L)




Normal Q-Q plot
Bicarbonate, MW-100C (mg/L)
Value
300
200
100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Bicarbonate, MW-100C (mg/L)
Value
350
300
250
200
150
100
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

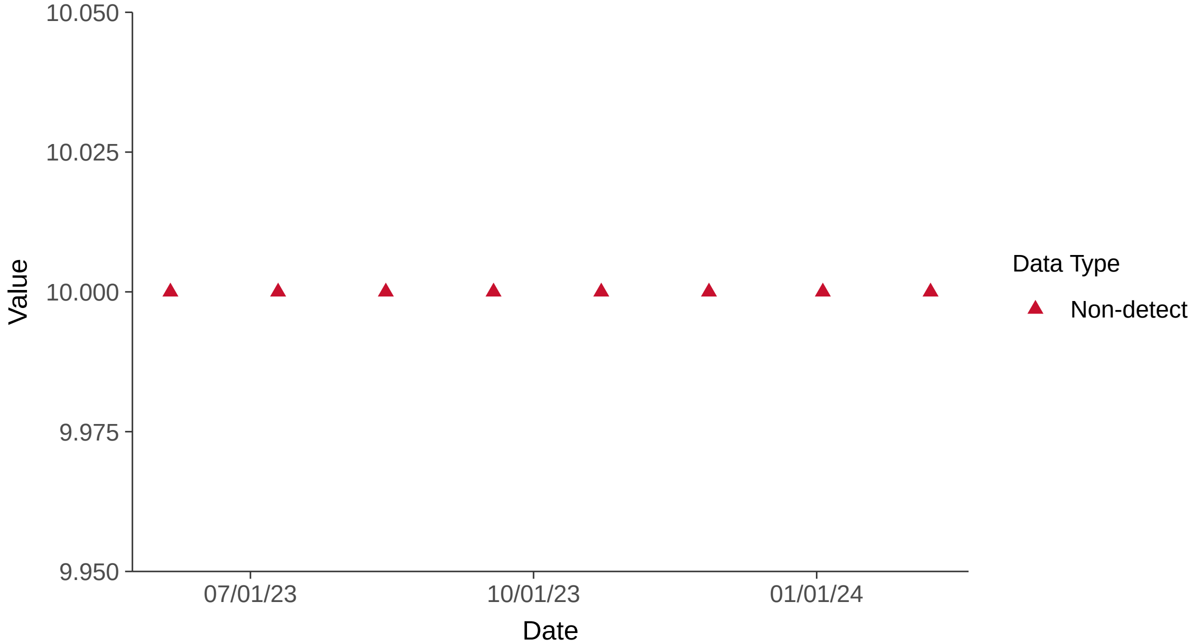

Trend Regression: Piecewise Linear-Linear
Bicarbonate, MW-100C (mg/L)
Value
350
300
250
200
150
100
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Other: Carbonate, MW-100C

ID: 100C_4_31

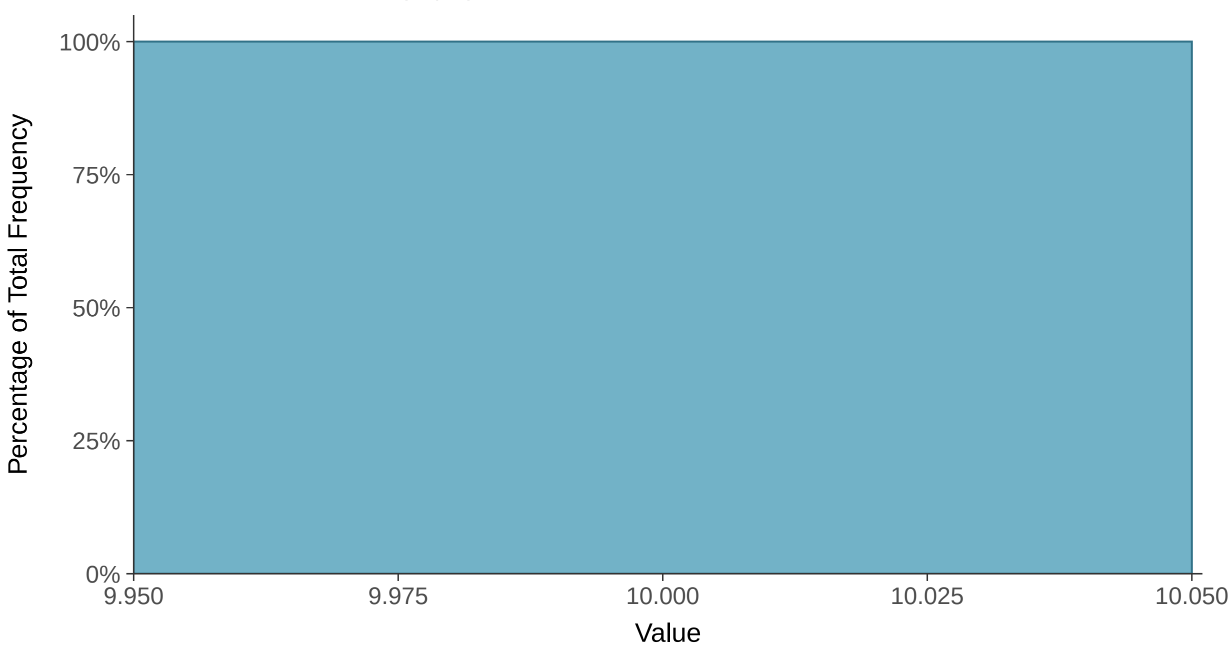
Scatter Plot

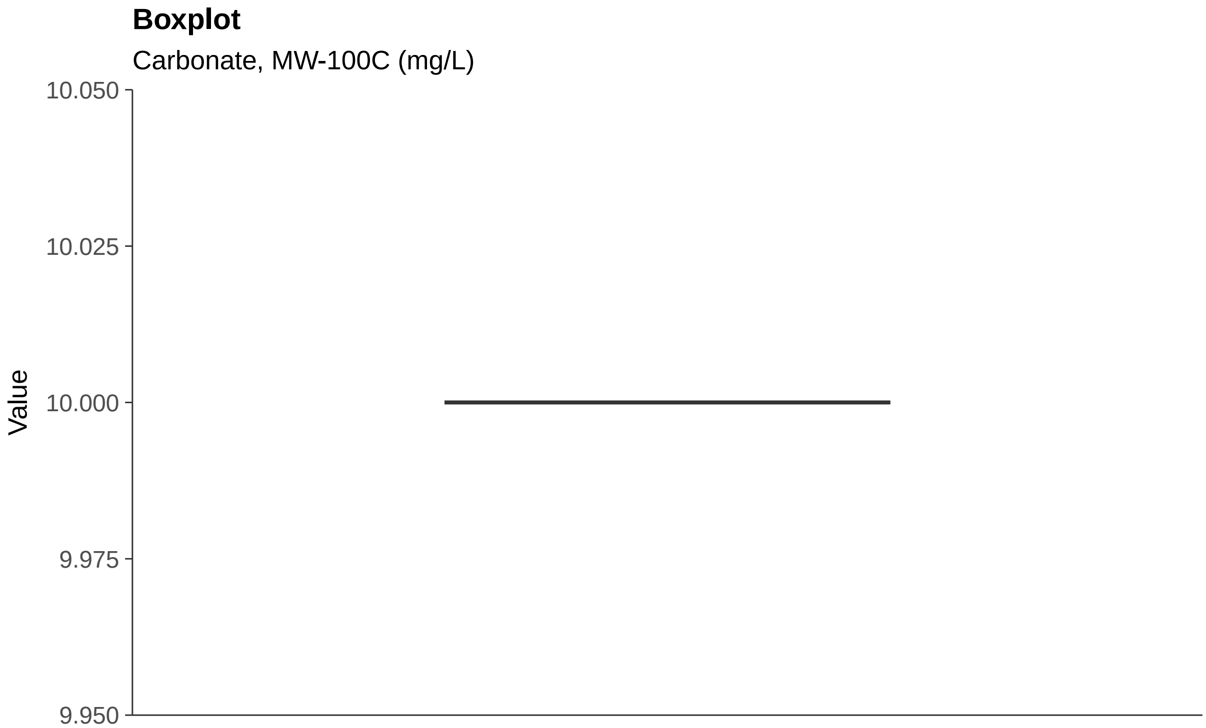
Carbonate, MW-100C (mg/L)

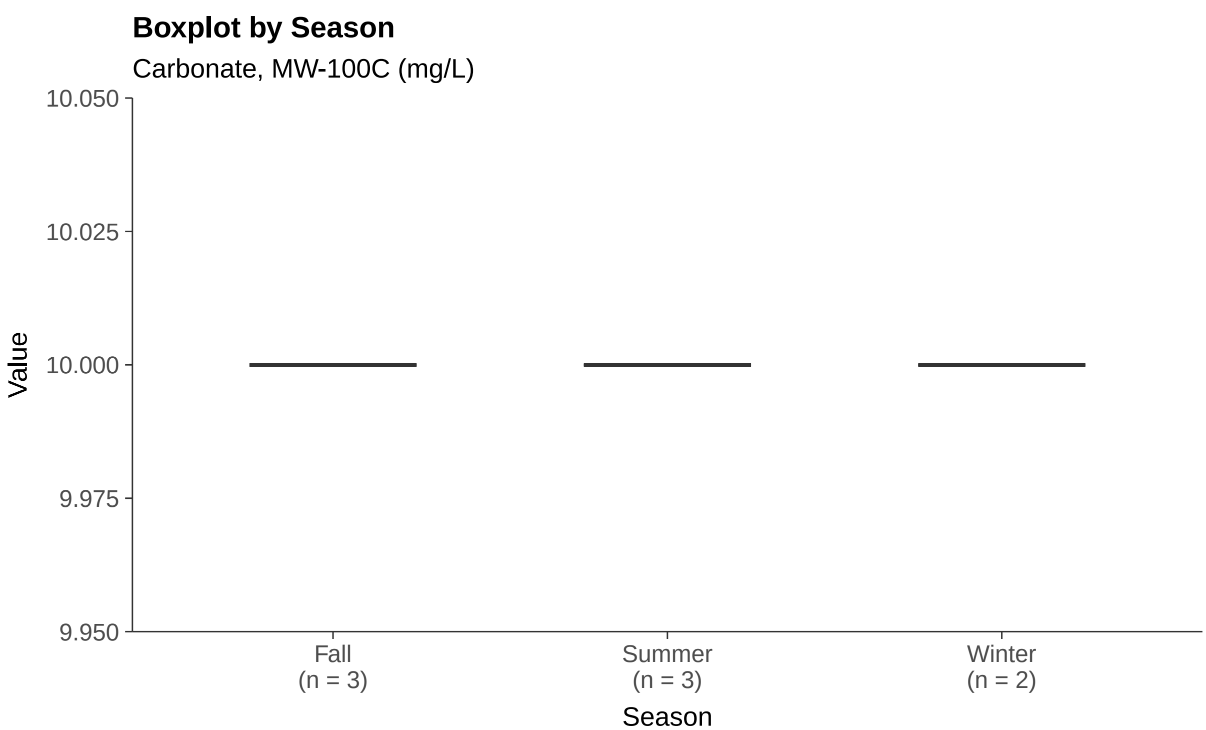


Histogram

Carbonate, MW-100C (mg/L)




Boxplot
Carbonate, MW-100C (mg/L)
10.050
10.025
10.000
9.975
9.950
Value

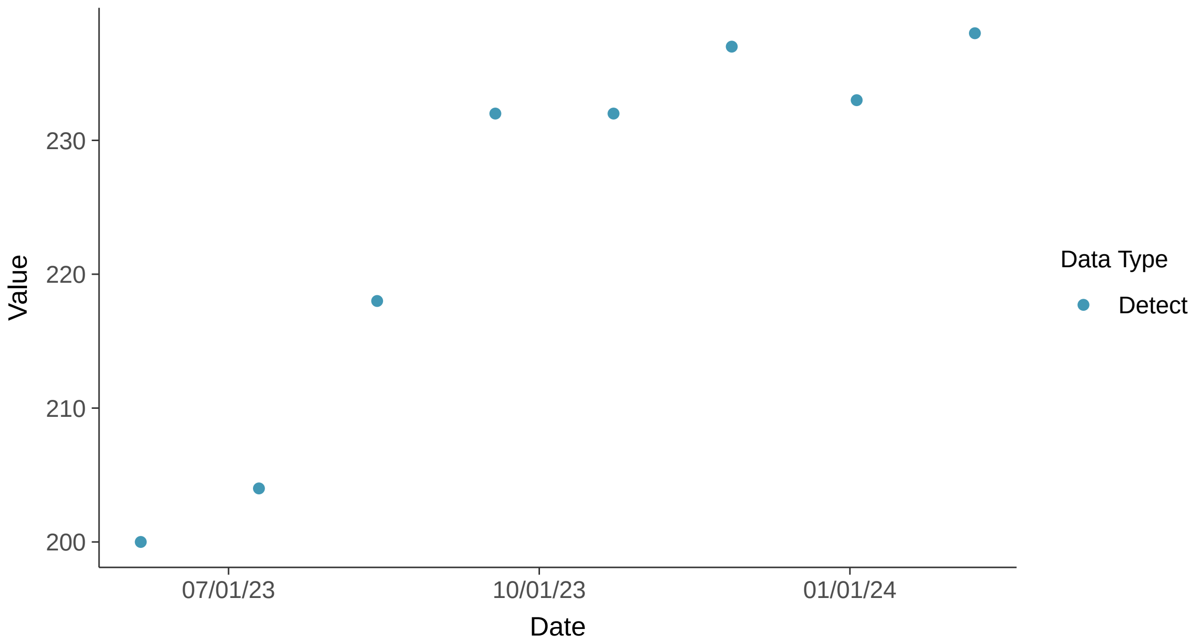

Boxplot by Season
Carbonate, MW-100C (mg/L)
10.050
10.025
10.000
9.975
9.950
Value
Fall
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season

Other: Hardness, MW-100C

ID: 100C_4_32

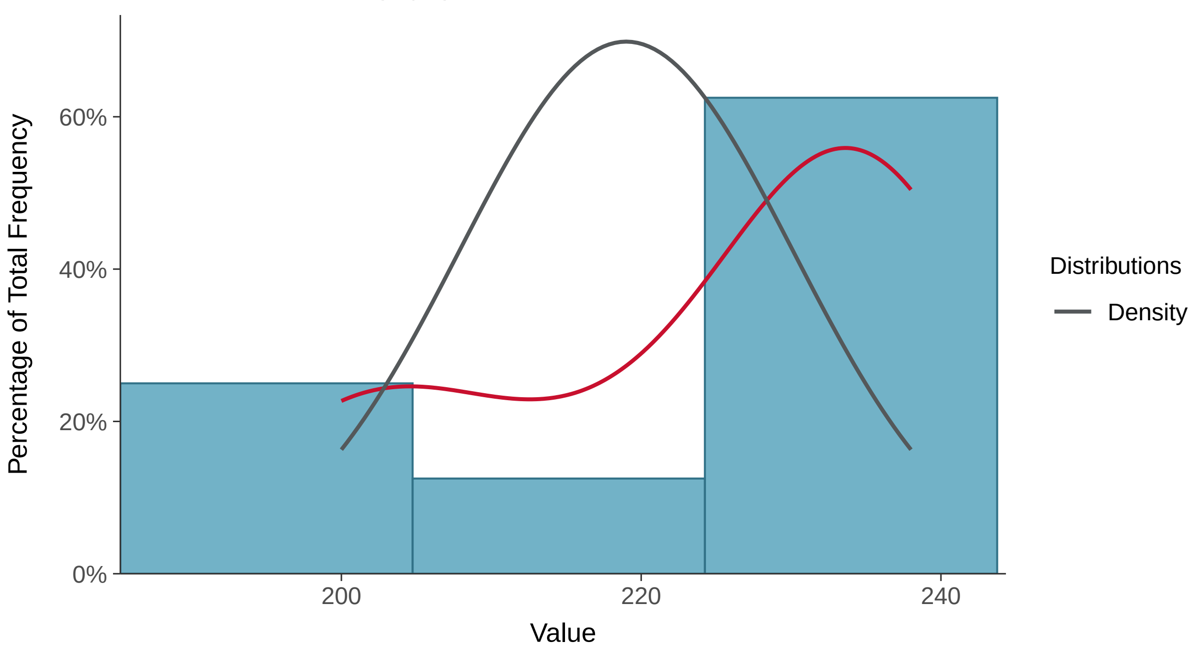
Scatter Plot

Hardness, MW-100C (mg/L)



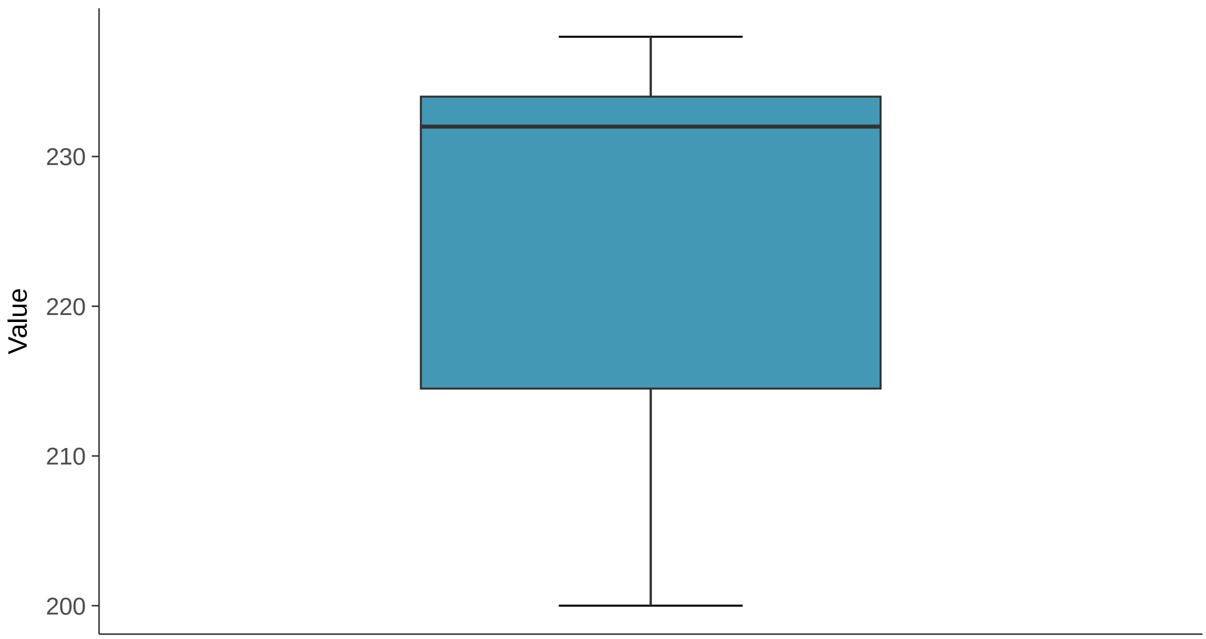
Histogram

Hardness, MW-100C (mg/L)



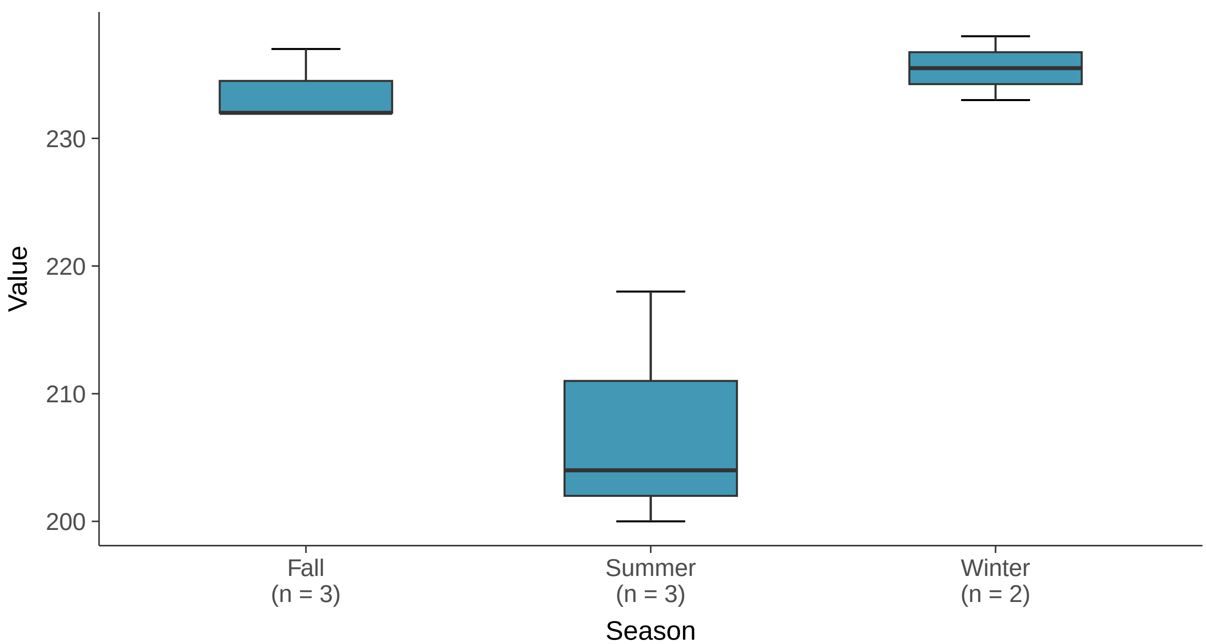
Boxplot

Hardness, MW-100C (mg/L)



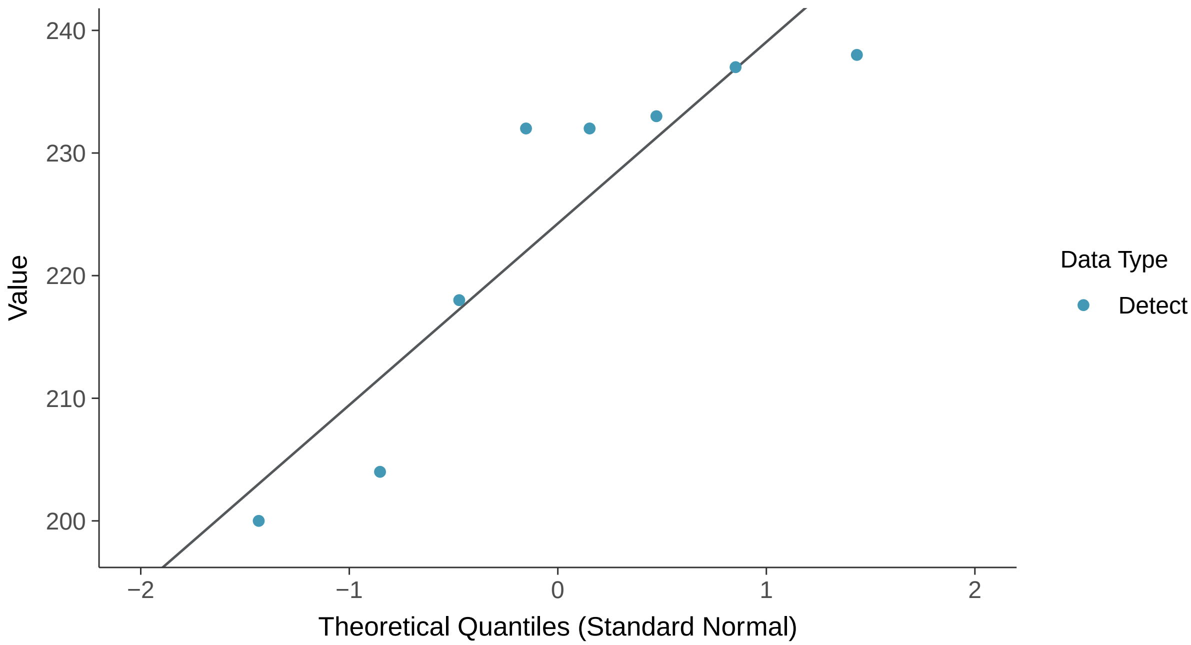
Boxplot by Season

Hardness, MW-100C (mg/L)



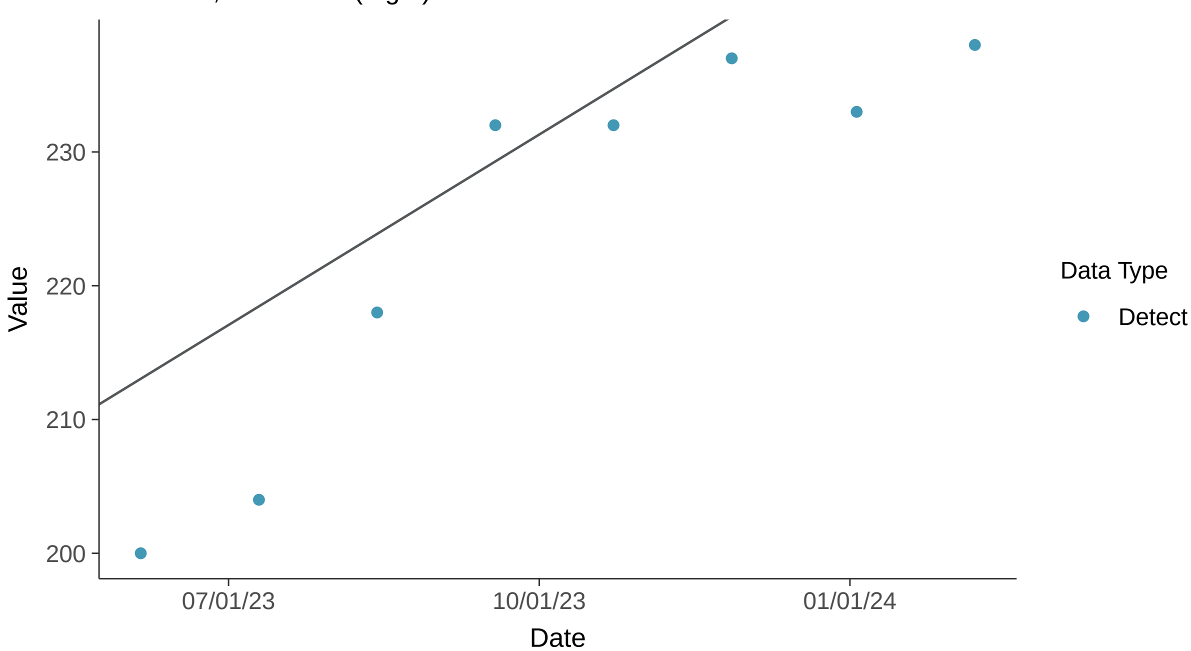
Normal Q-Q plot

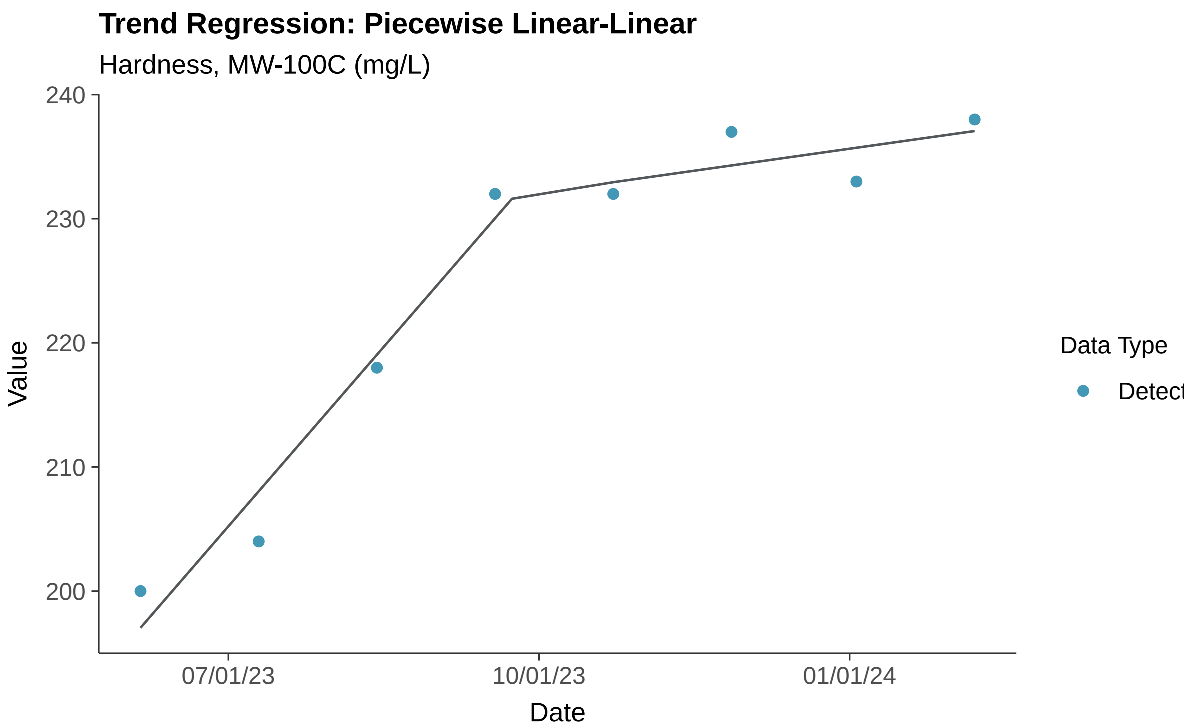
Hardness, MW-100C (mg/L)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

Hardness, MW-100C (mg/L)



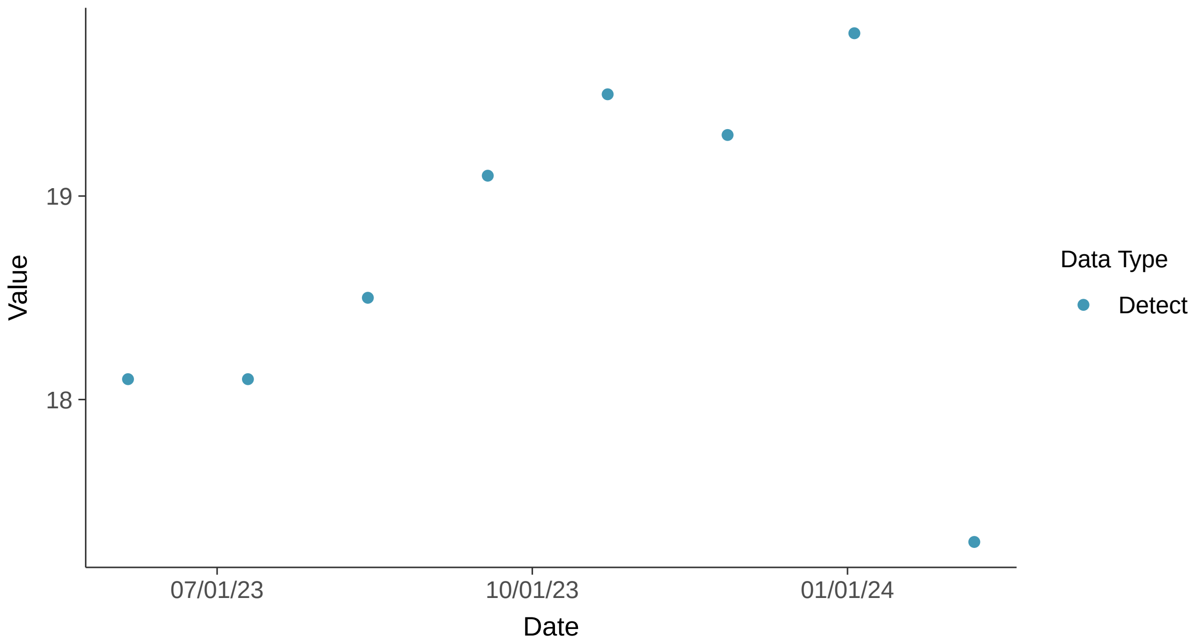

Trend Regression: Piecewise Linear-Linear
Hardness, MW-100C (mg/L)
240
230
220
210
200
Value
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Other: Magnesium, MW-100C

ID: 100C_4_33

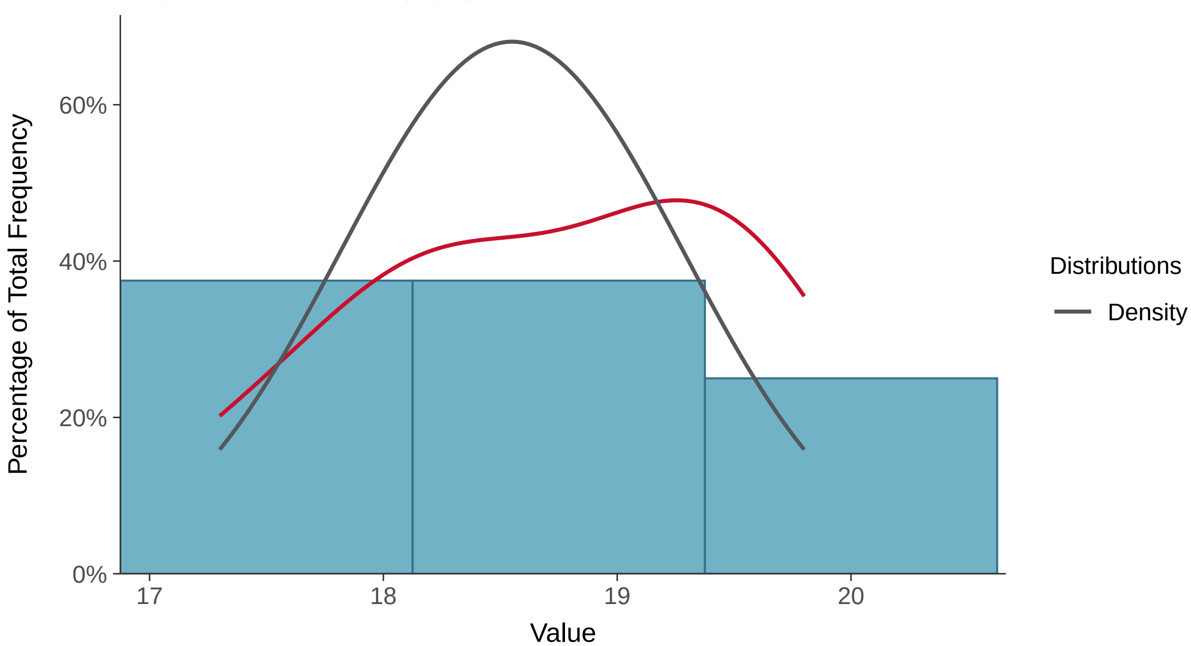
Scatter Plot

Magnesium, MW-100C (mg/L)



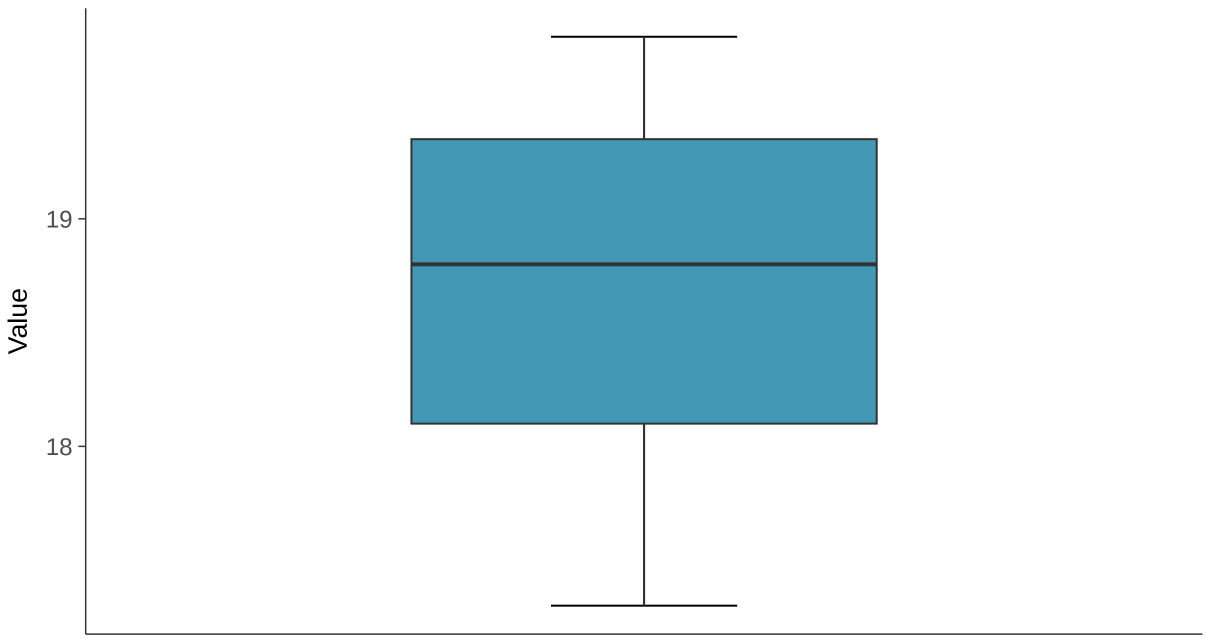
Histogram

Magnesium, MW-100C (mg/L)



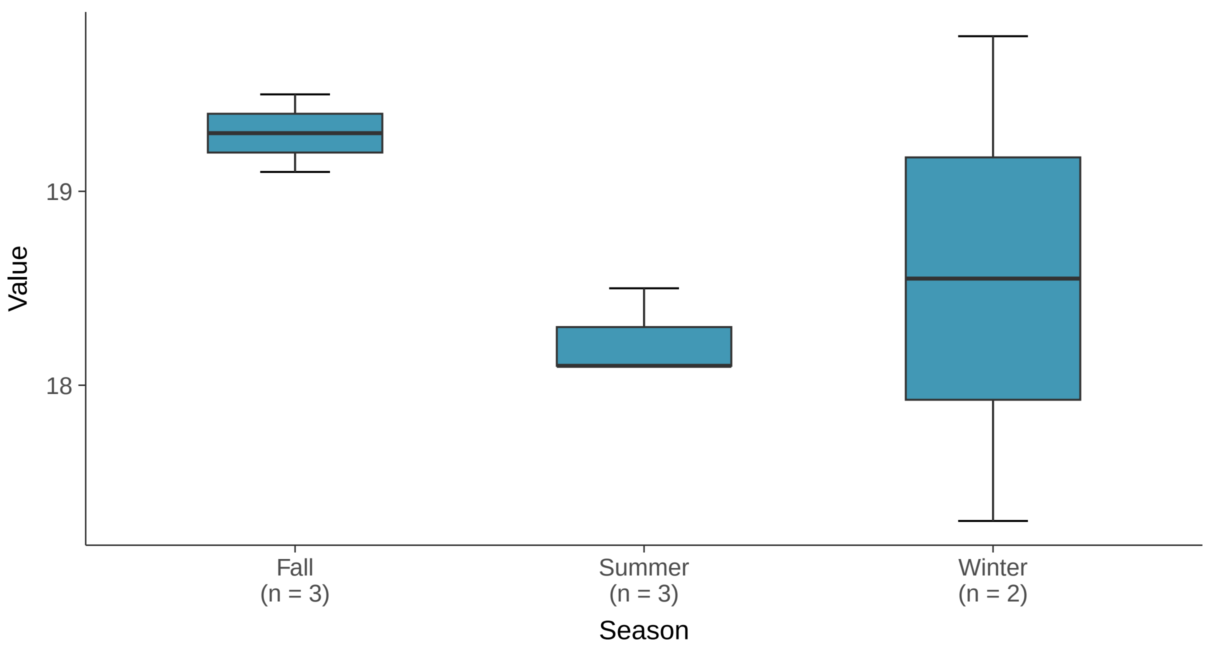
Boxplot

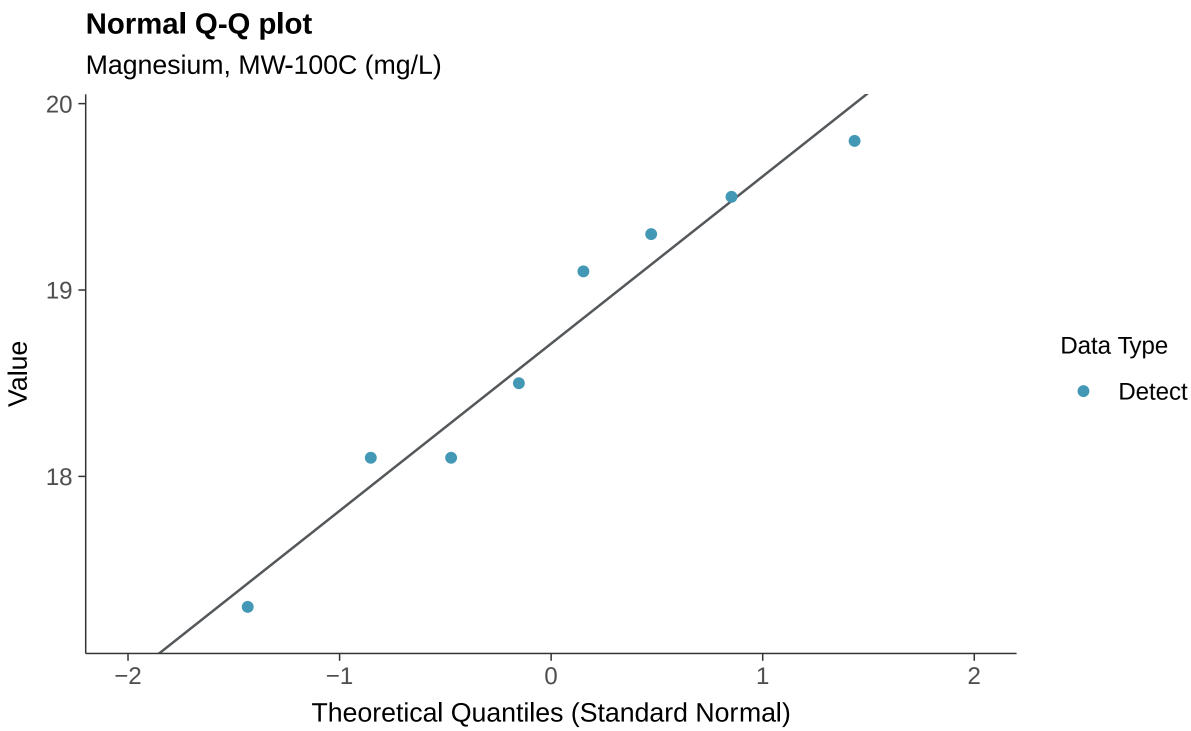
Magnesium, MW-100C (mg/L)

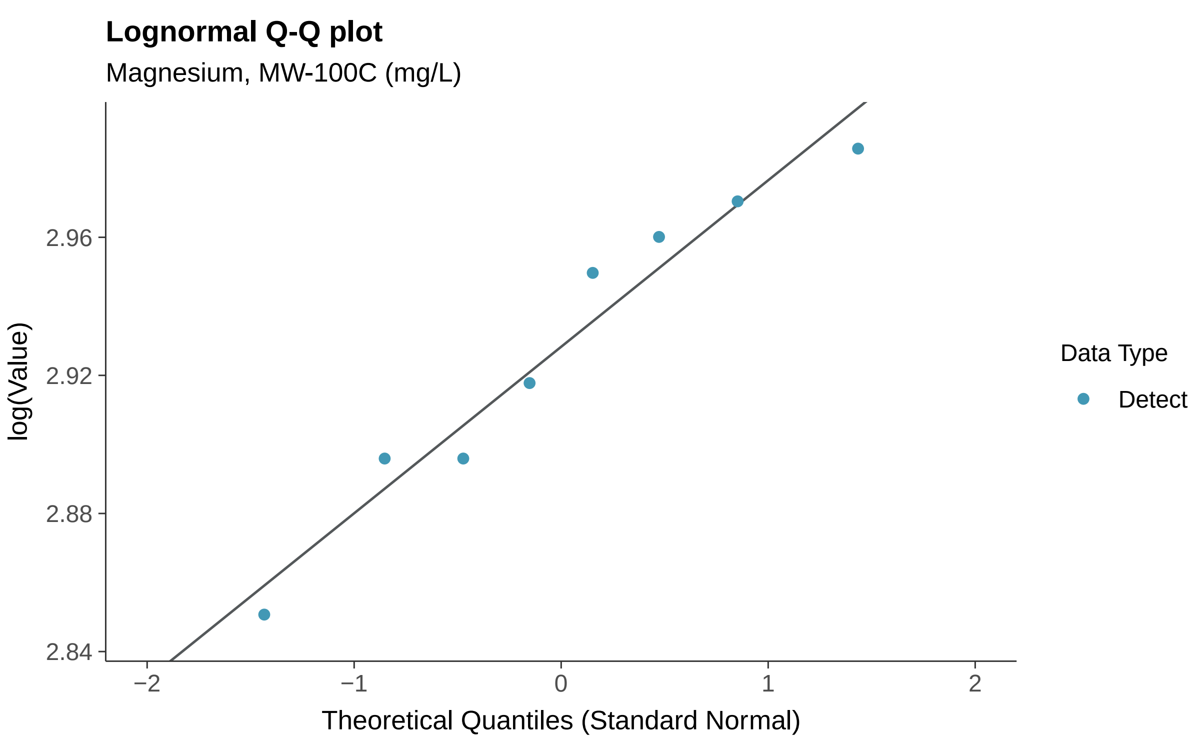


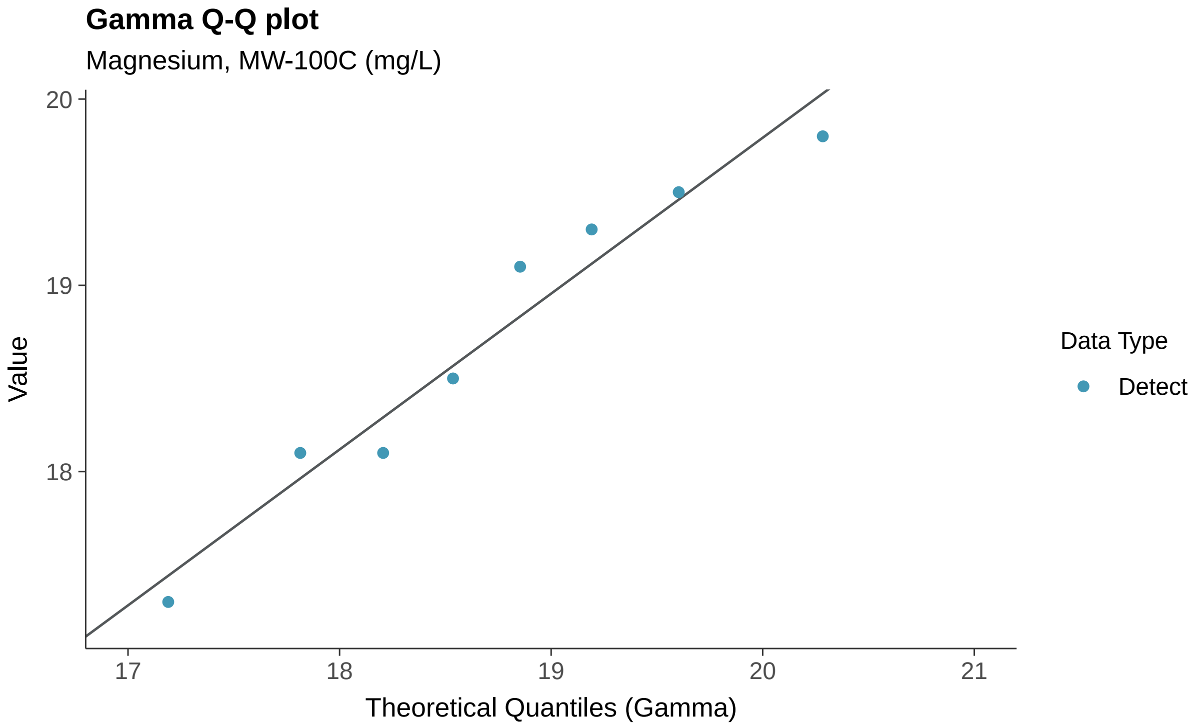
Boxplot by Season

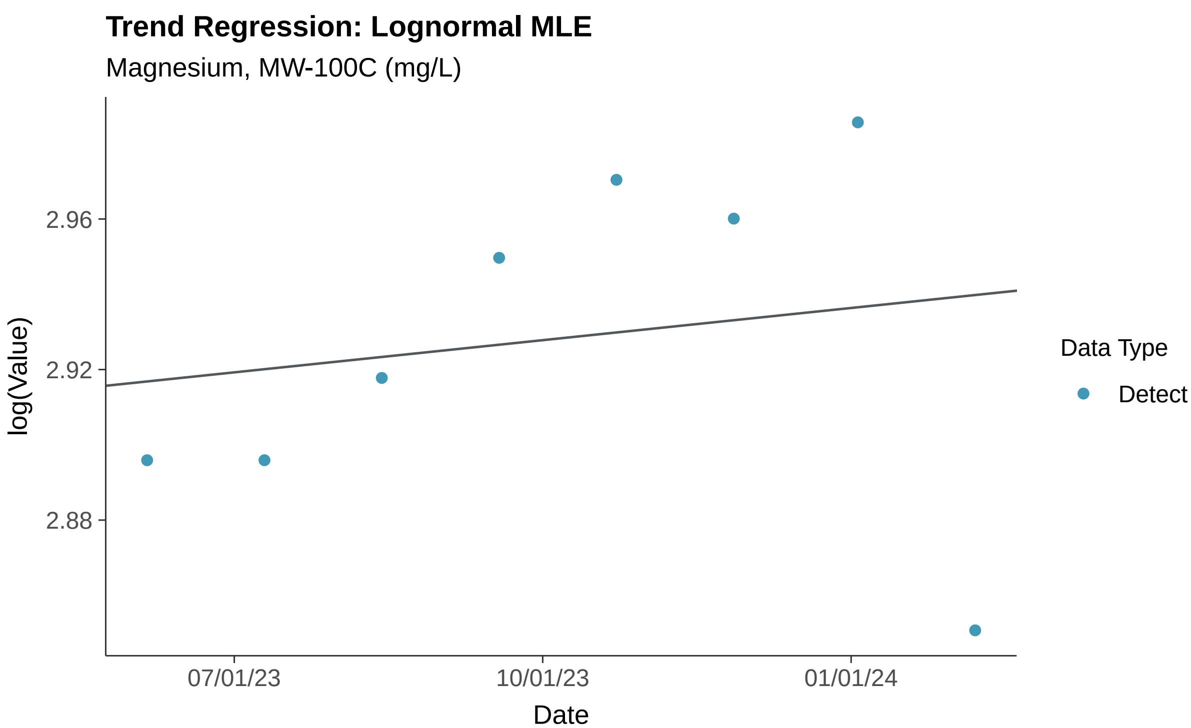
Magnesium, MW-100C (mg/L)




Normal Q-Q plot
Magnesium, MW-100C (mg/L)
Value
20
19
18
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

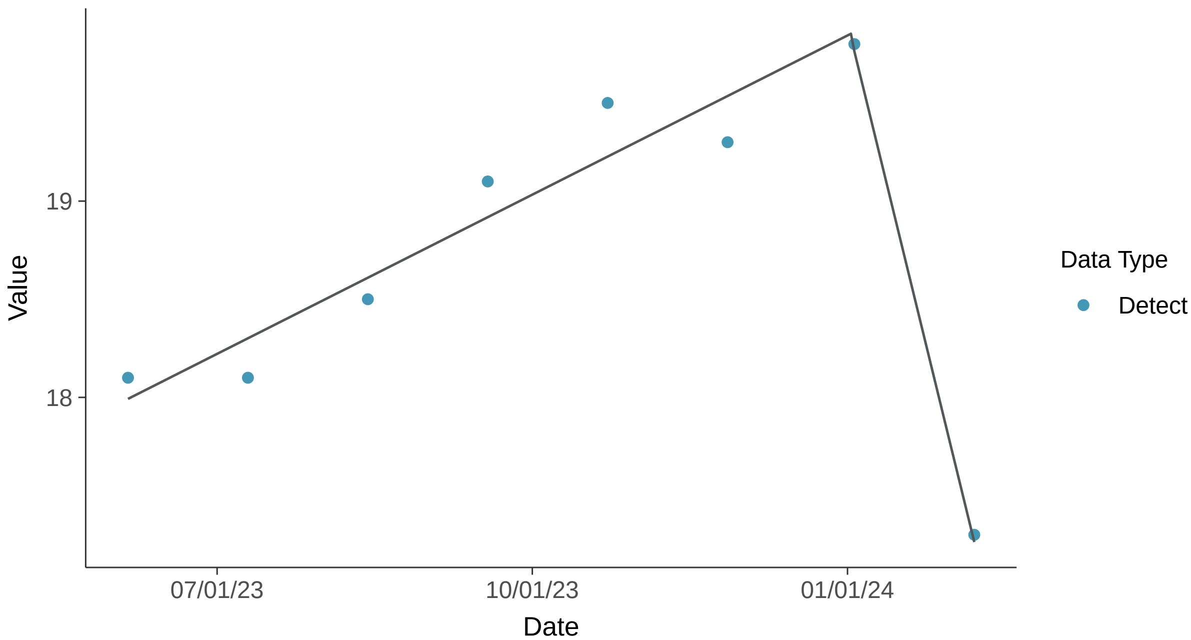

Lognormal Q-Q plot
Magnesium, MW-100C (mg/L)
log(Value)
2.96
2.92
2.88
2.84
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Magnesium, MW-100C (mg/L)
Value
Theoretical Quantiles (Gamma)
Data Type
Detect
20
19
18
17
18
19
20
21


Trend Regression: Lognormal MLE
Magnesium, MW-100C (mg/L)
log(Value)
Date
Data Type
Detect
2.96
2.92
2.88
07/01/23
10/01/23
01/01/24

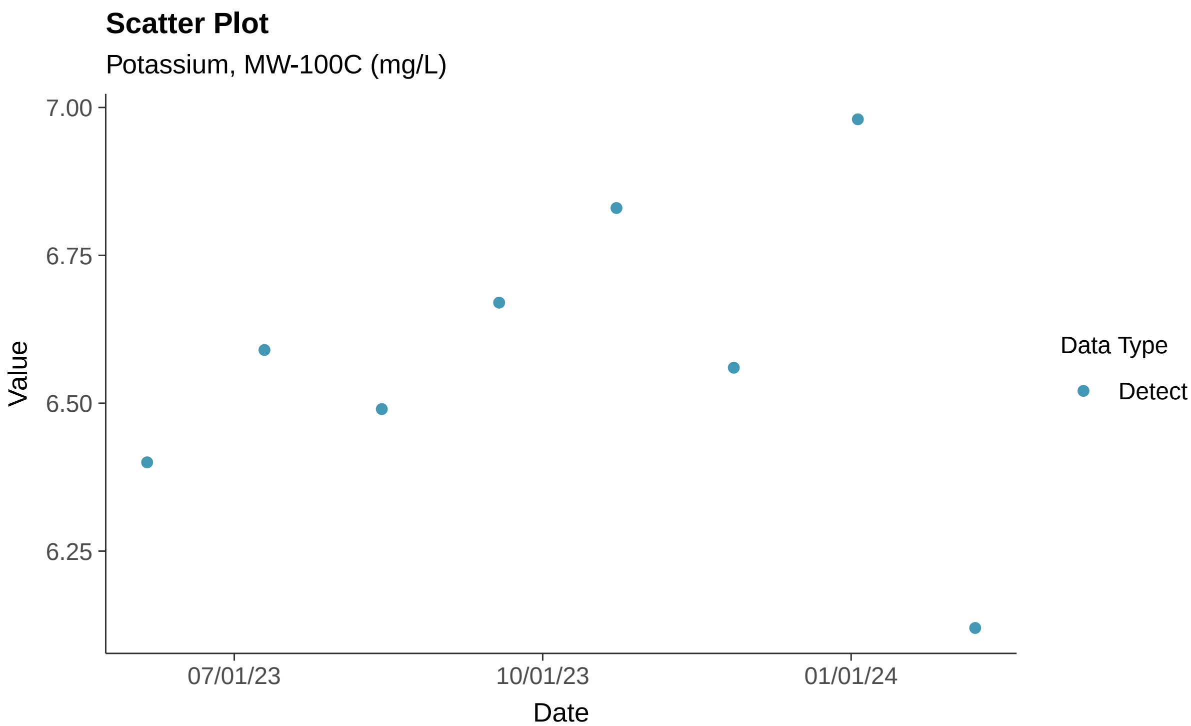
Trend Regression: Piecewise Linear-Linear

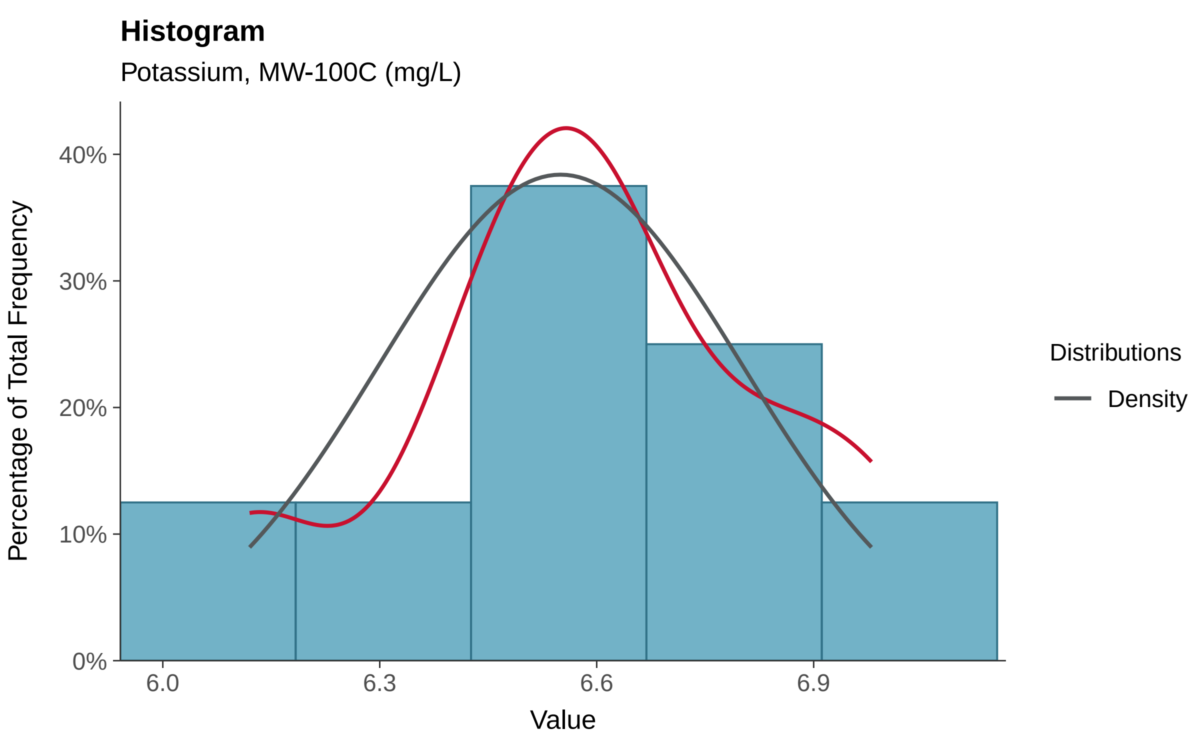
Magnesium, MW-100C (mg/L)



Other: Potassium, MW-100C

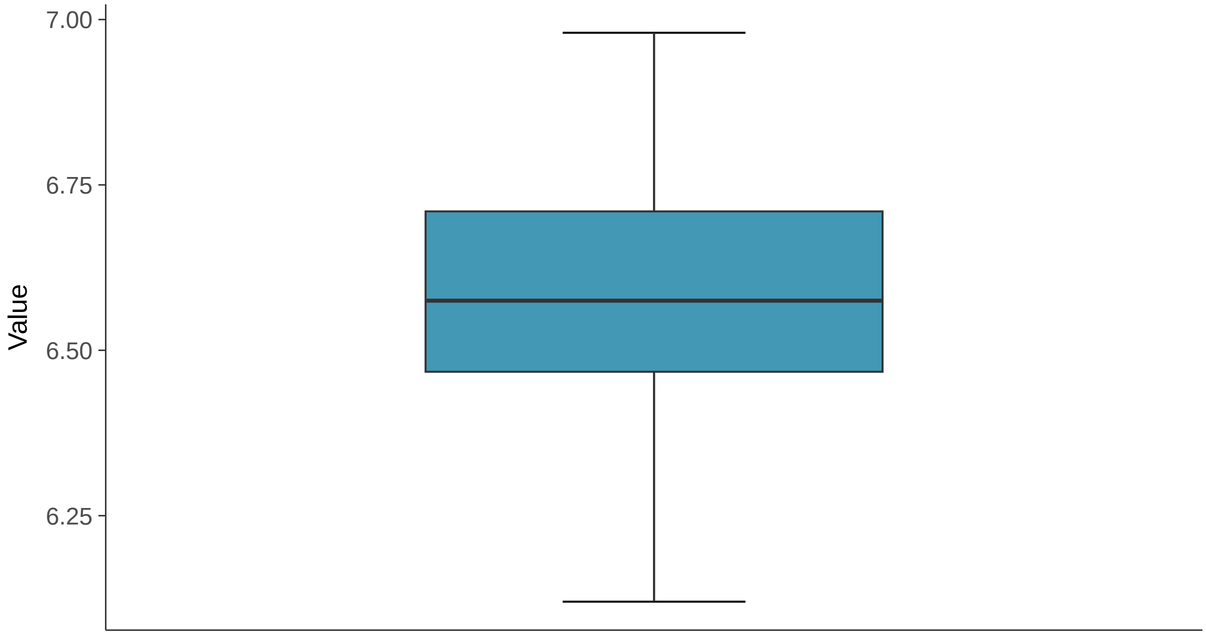
ID: 100C_4_34





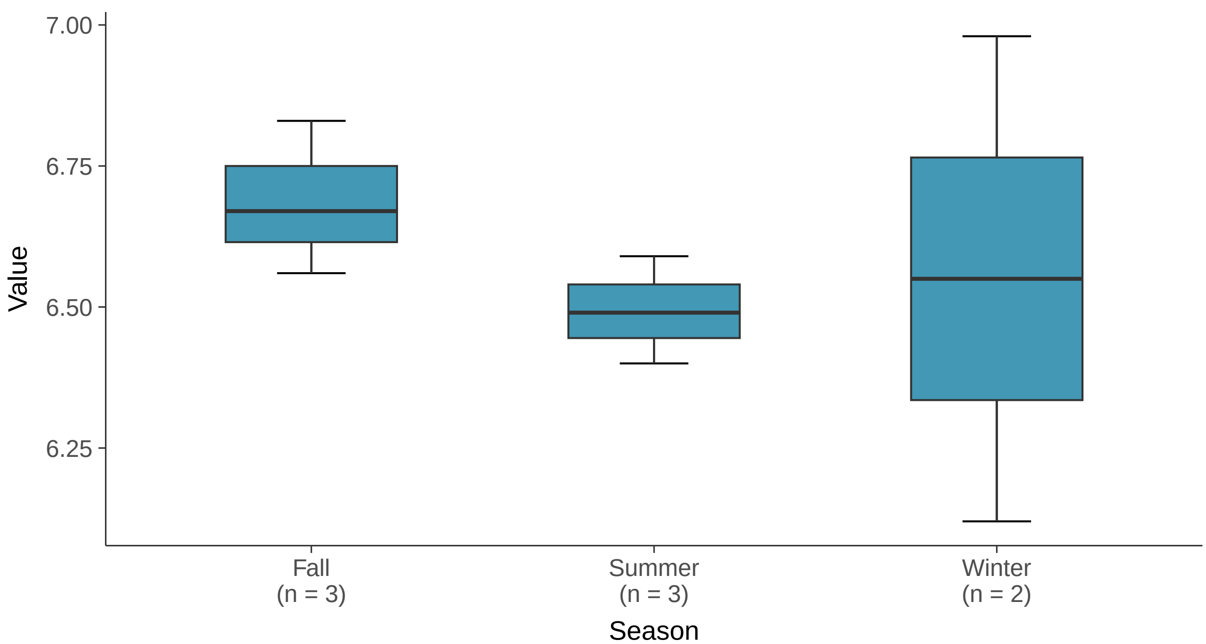
Boxplot

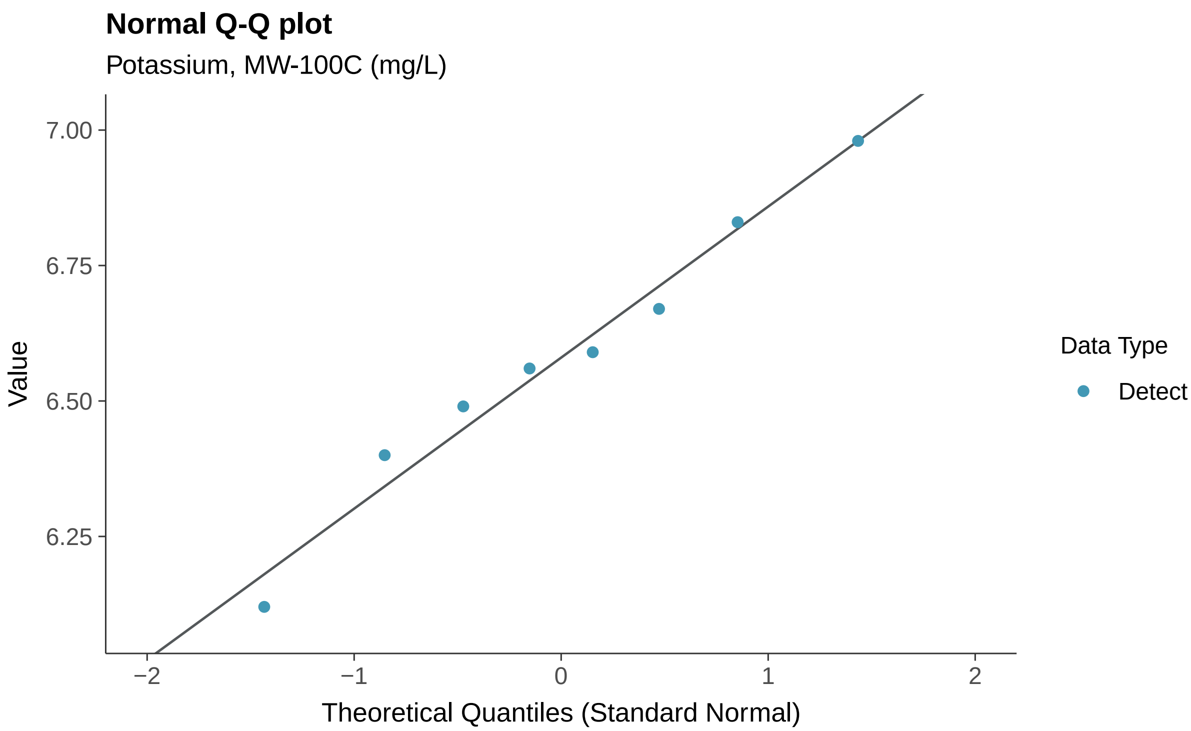
Potassium, MW-100C (mg/L)

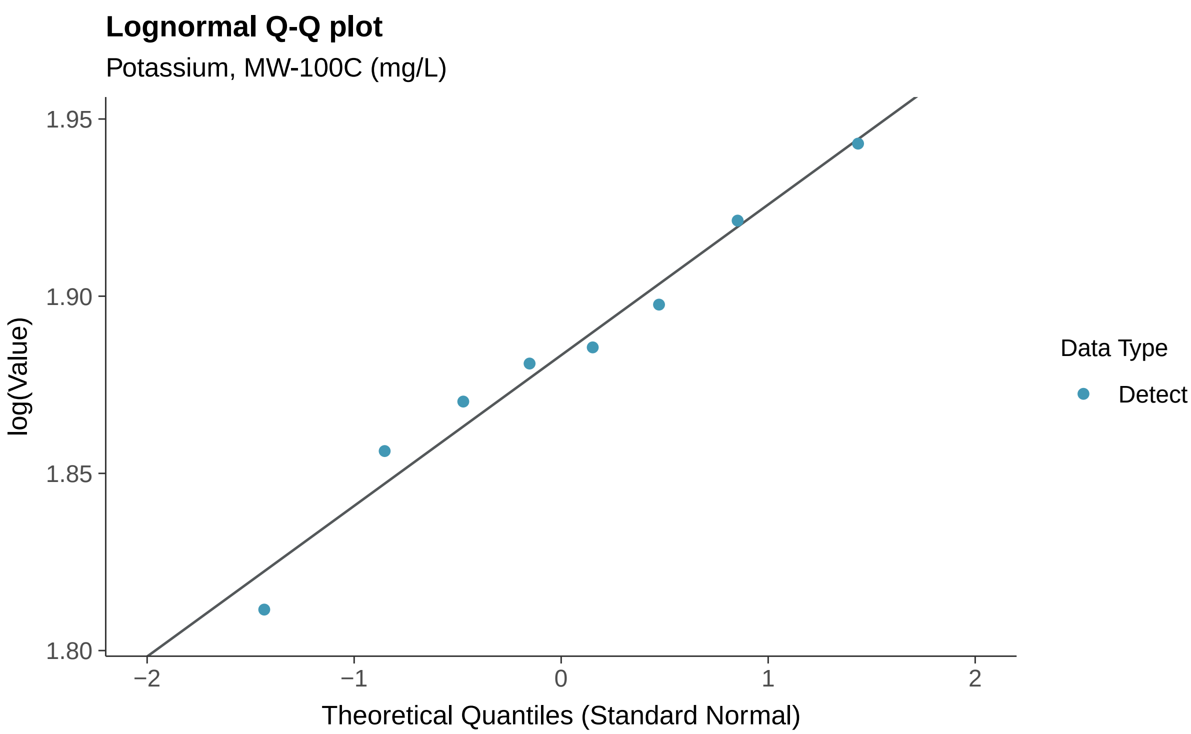


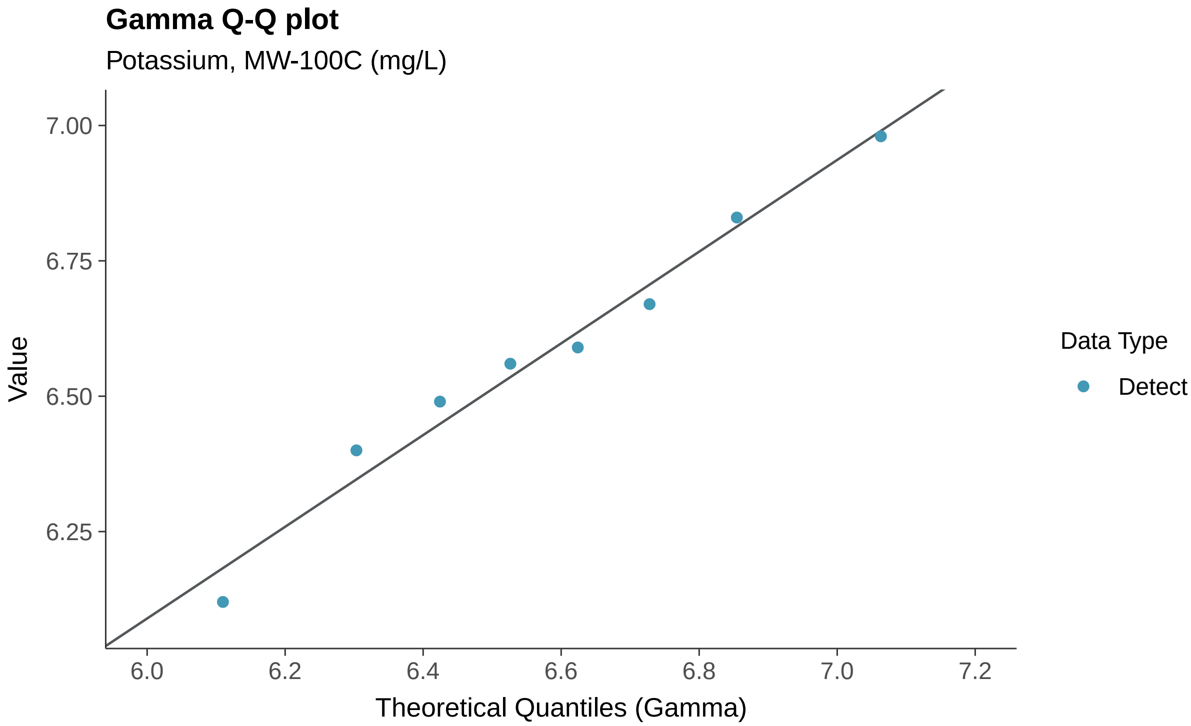
Boxplot by Season

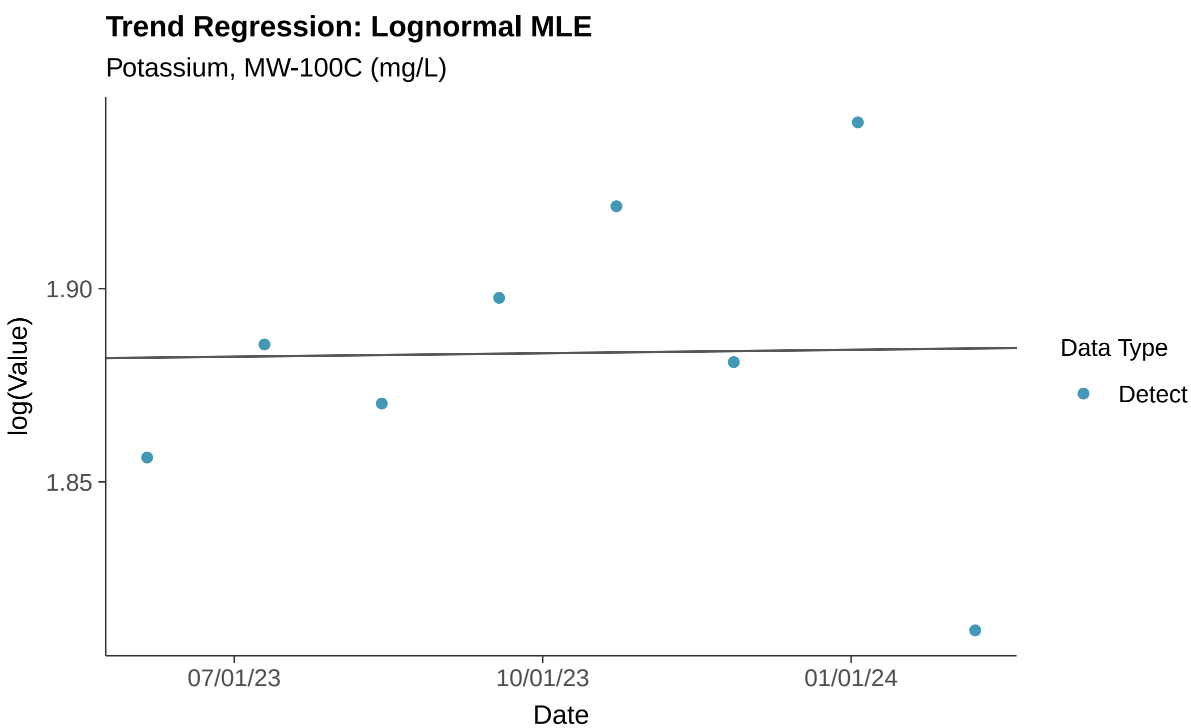
Potassium, MW-100C (mg/L)




Normal Q-Q plot
Potassium, MW-100C (mg/L)
Value
7.00
6.75
6.50
6.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

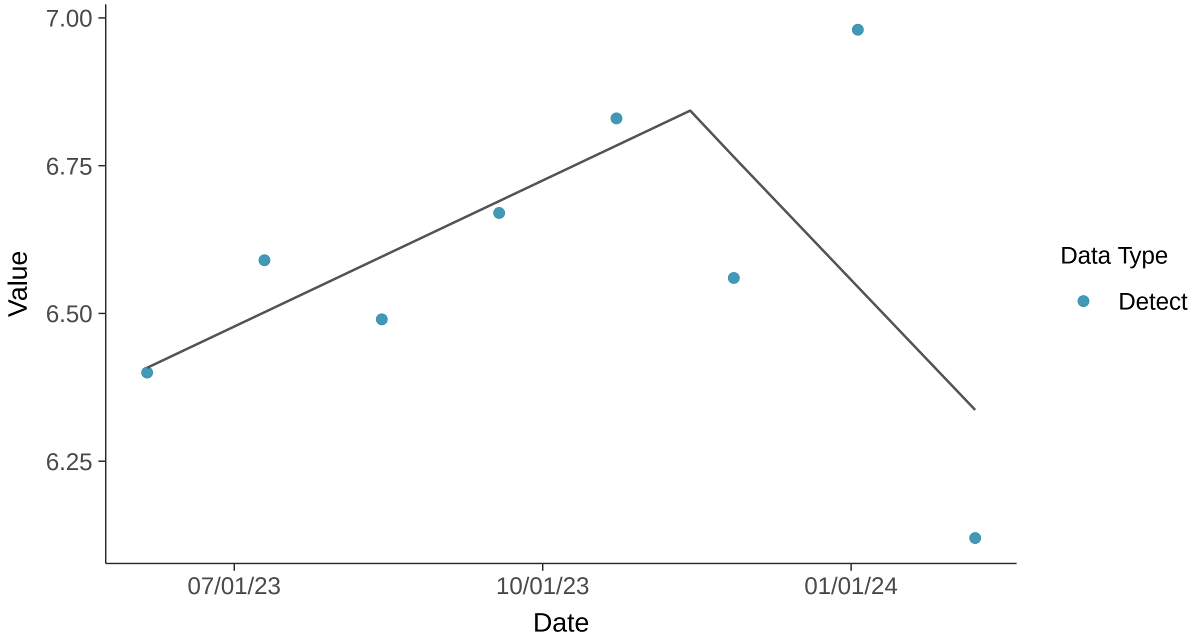

Lognormal Q-Q plot
Potassium, MW-100C (mg/L)
log(Value)
1.95
1.90
1.85
1.80
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Potassium, MW-100C (mg/L)
Value
7.00
6.75
6.50
6.25
6.0
6.2
6.4
6.6
6.8
7.0
7.2
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Potassium, MW-100C (mg/L)
log(Value)
1.90
1.85
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

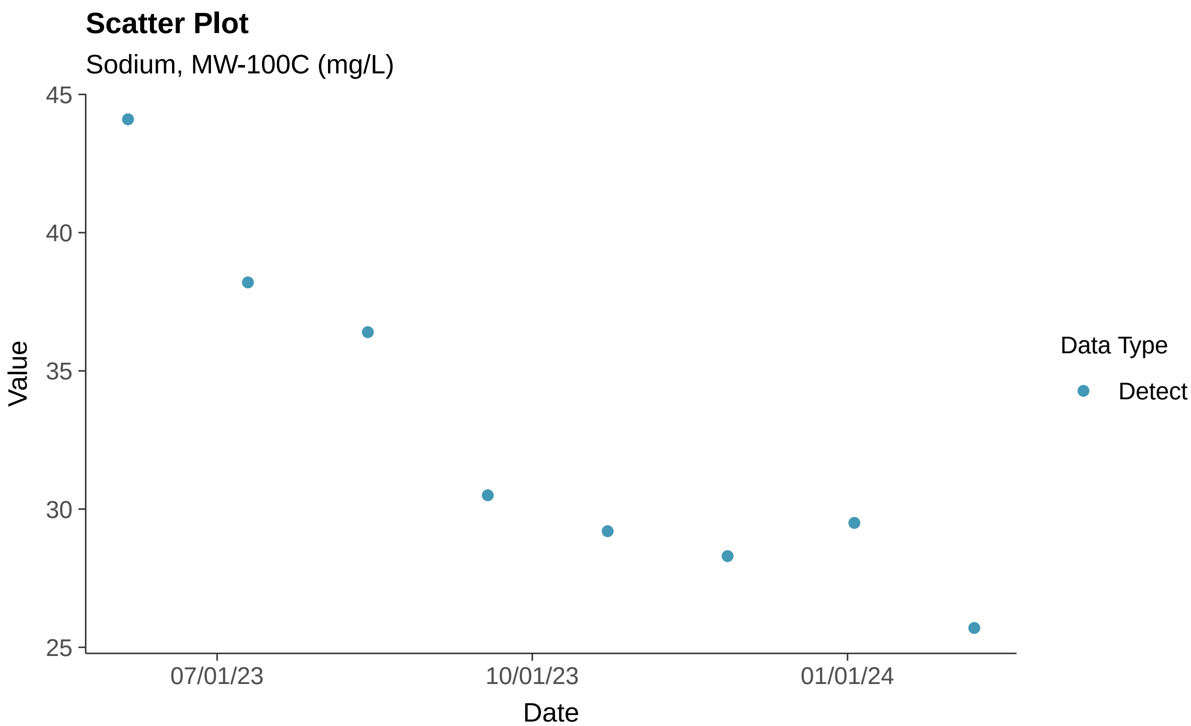
Trend Regression: Piecewise Linear-Linear

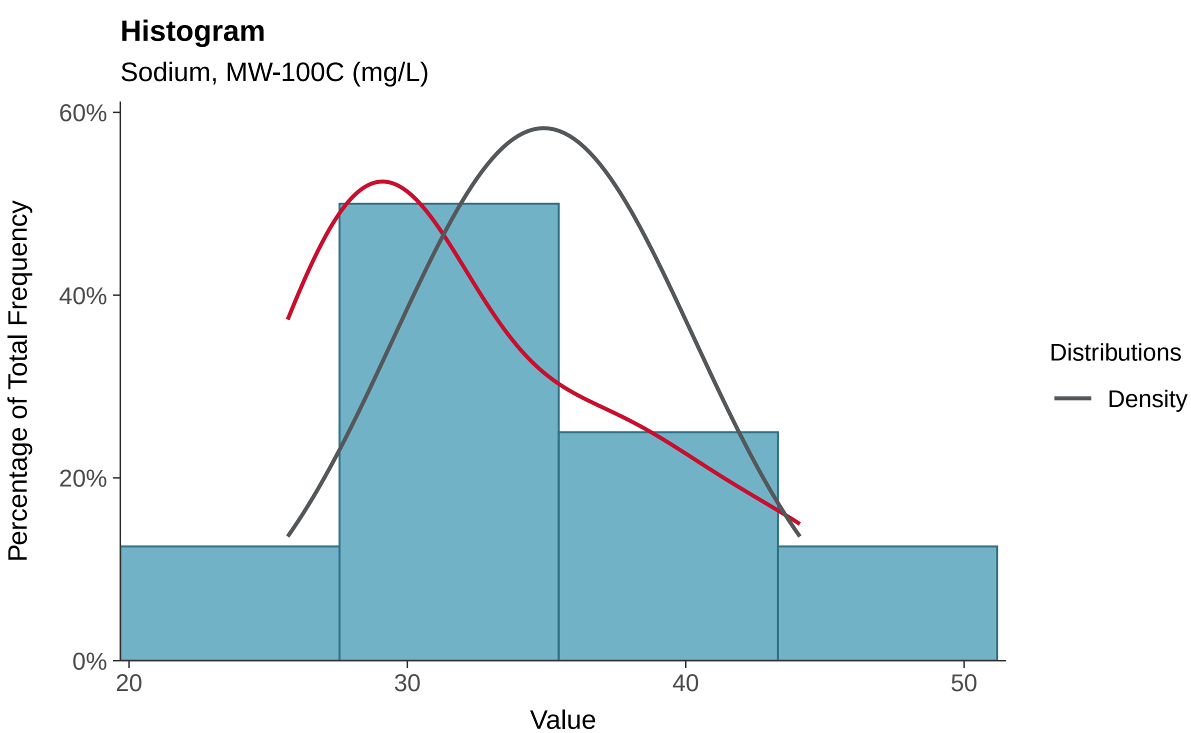
Potassium, MW-100C (mg/L)



Other: Sodium, MW-100C

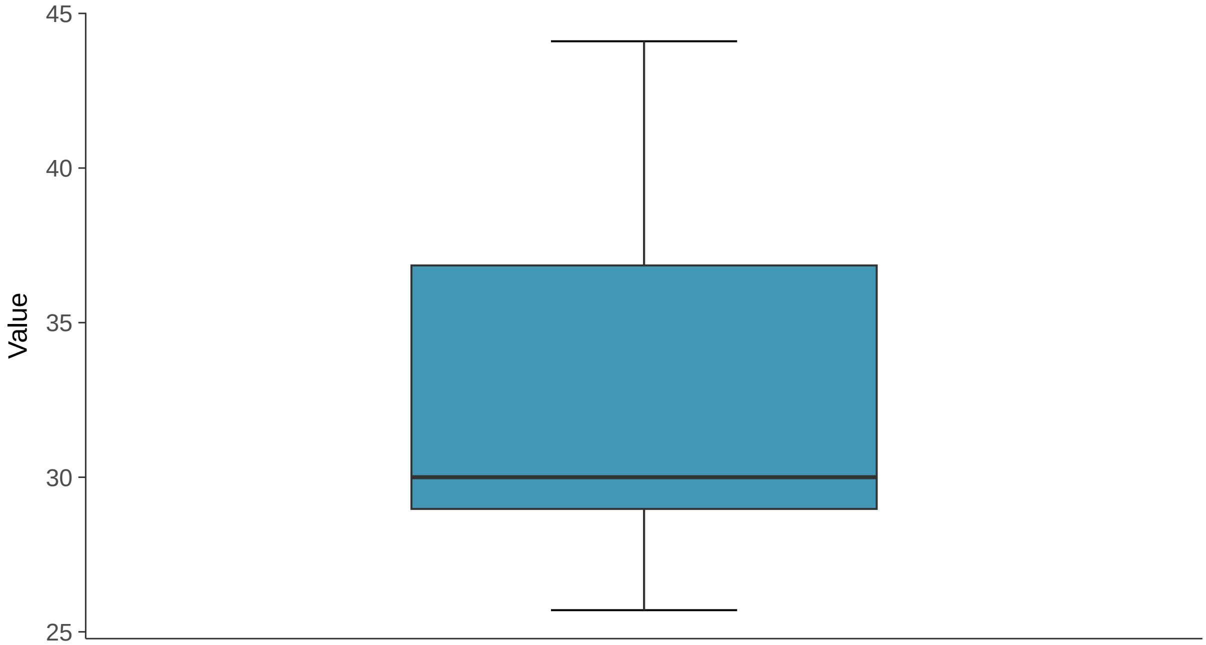
ID: 100C_4_35





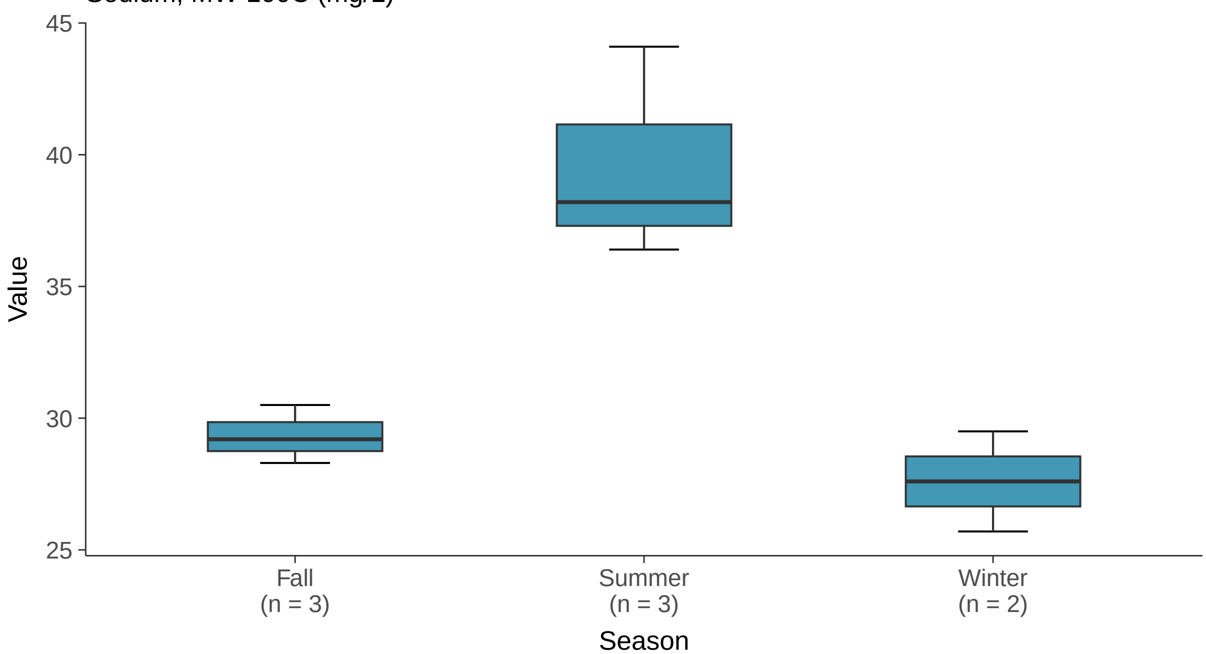
Boxplot

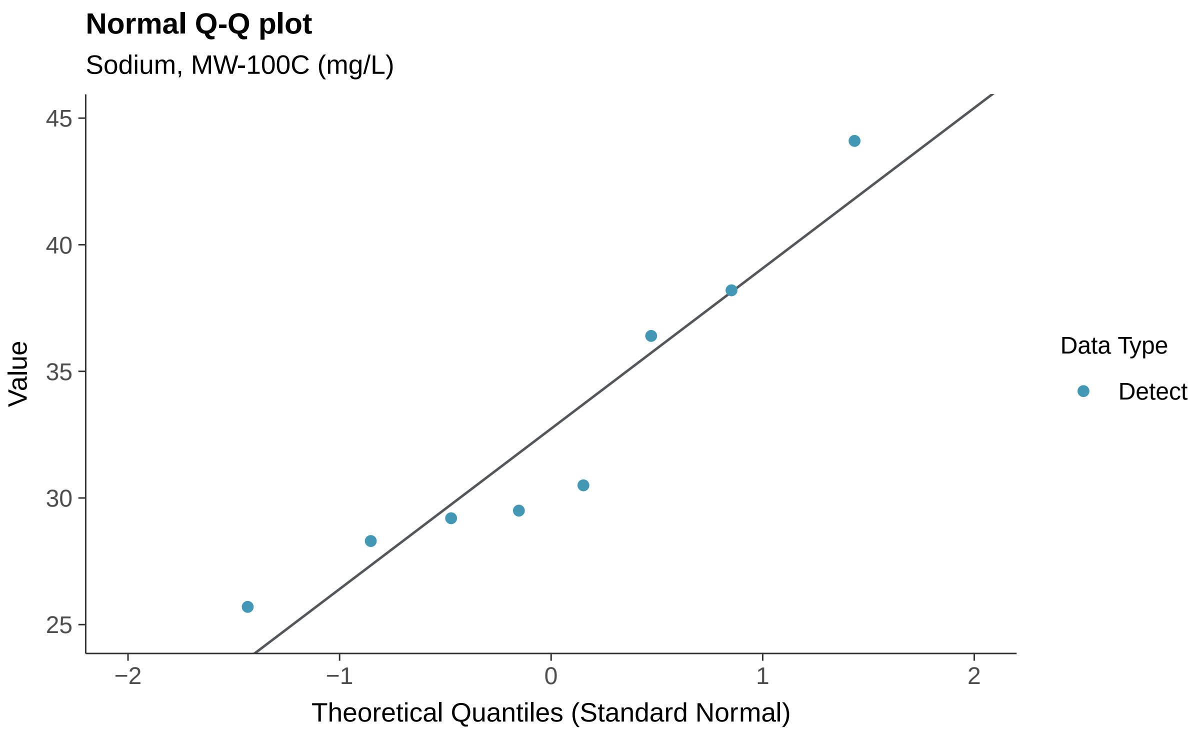
Sodium, MW-100C (mg/L)

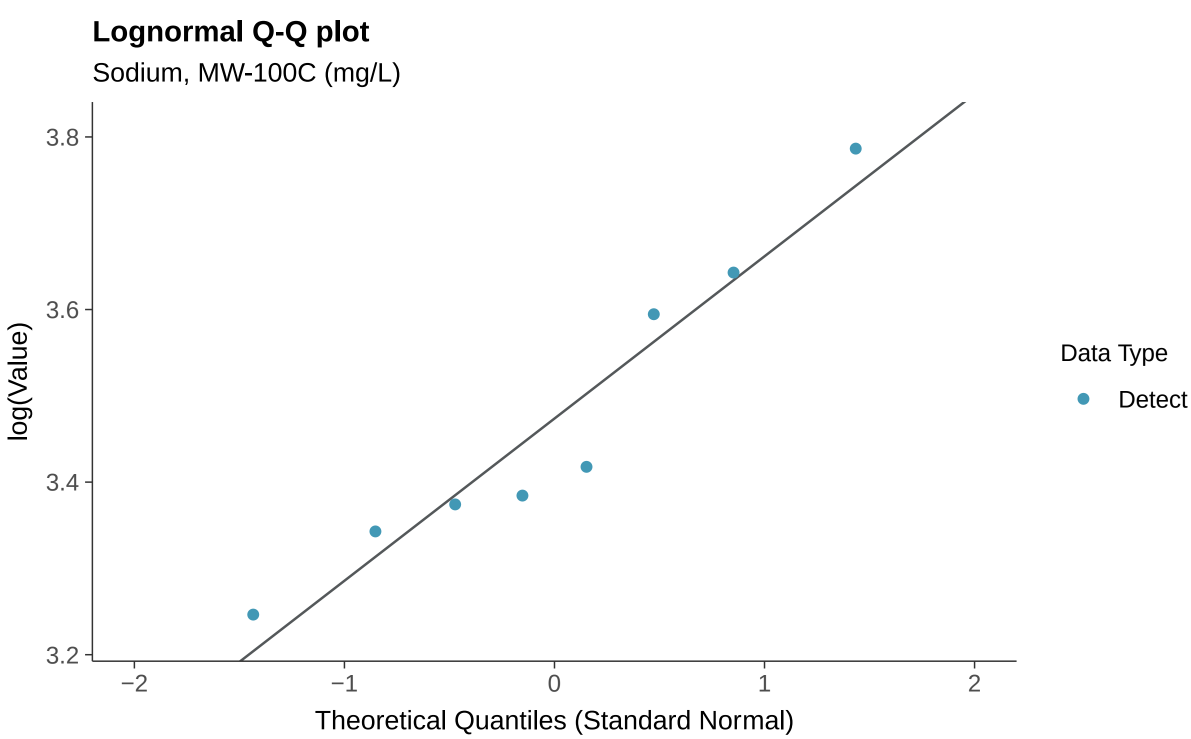


Boxplot by Season

Sodium, MW-100C (mg/L)

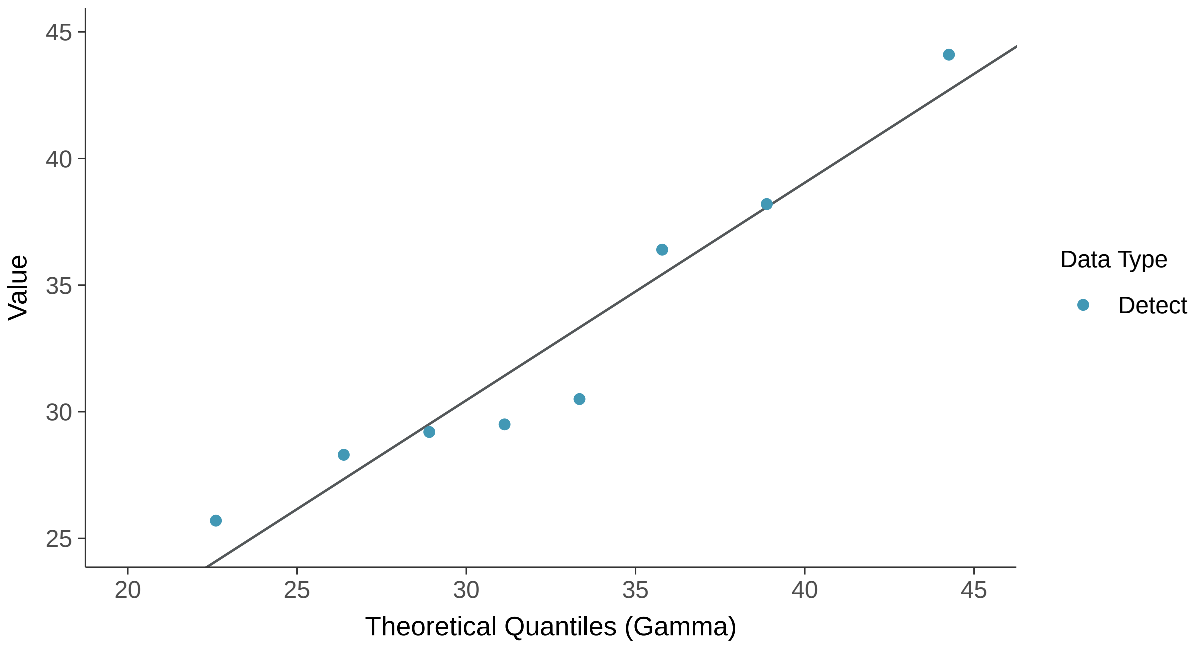



Normal Q-Q plot
Sodium, MW-100C (mg/L)
Value
45
40
35
30
25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Sodium, MW-100C (mg/L)
log(Value)
3.8
3.6
3.4
3.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

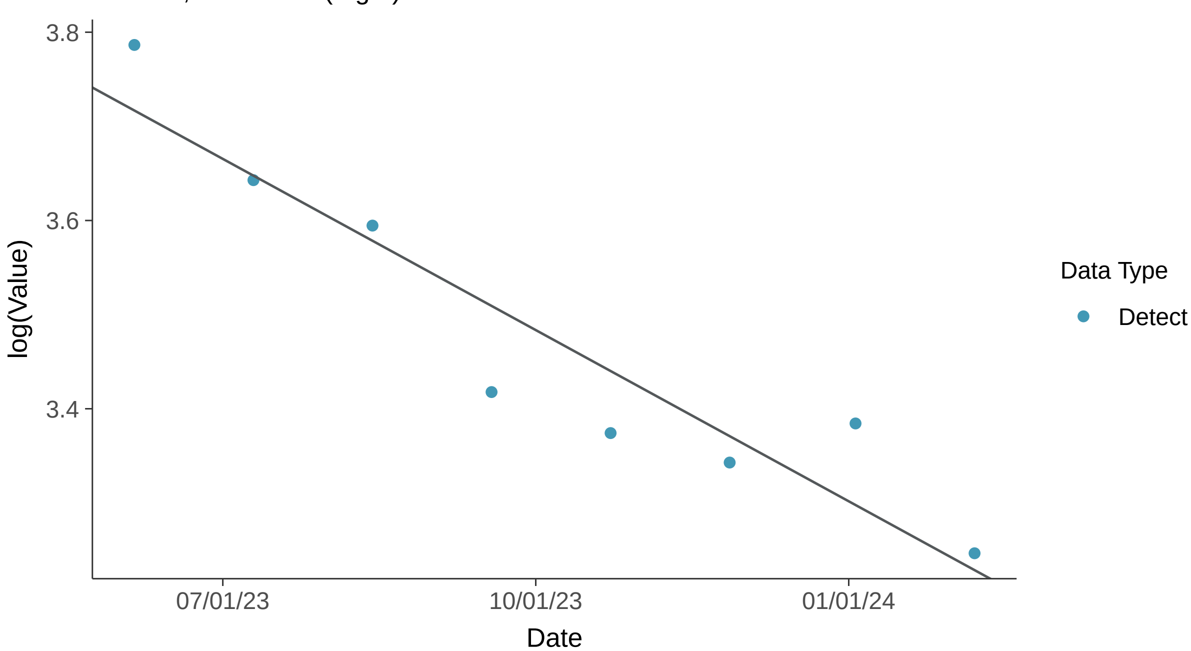
Gamma Q-Q plot

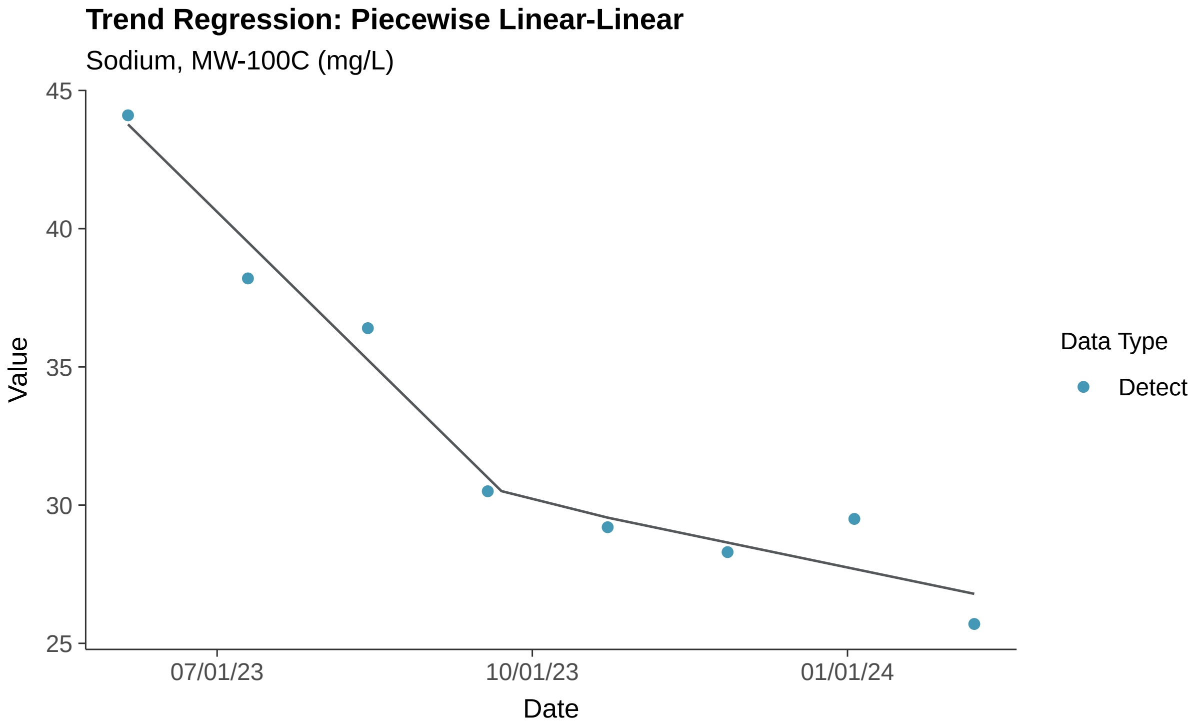
Sodium, MW-100C (mg/L)



Trend Regression: Lognormal MLE

Sodium, MW-100C (mg/L)



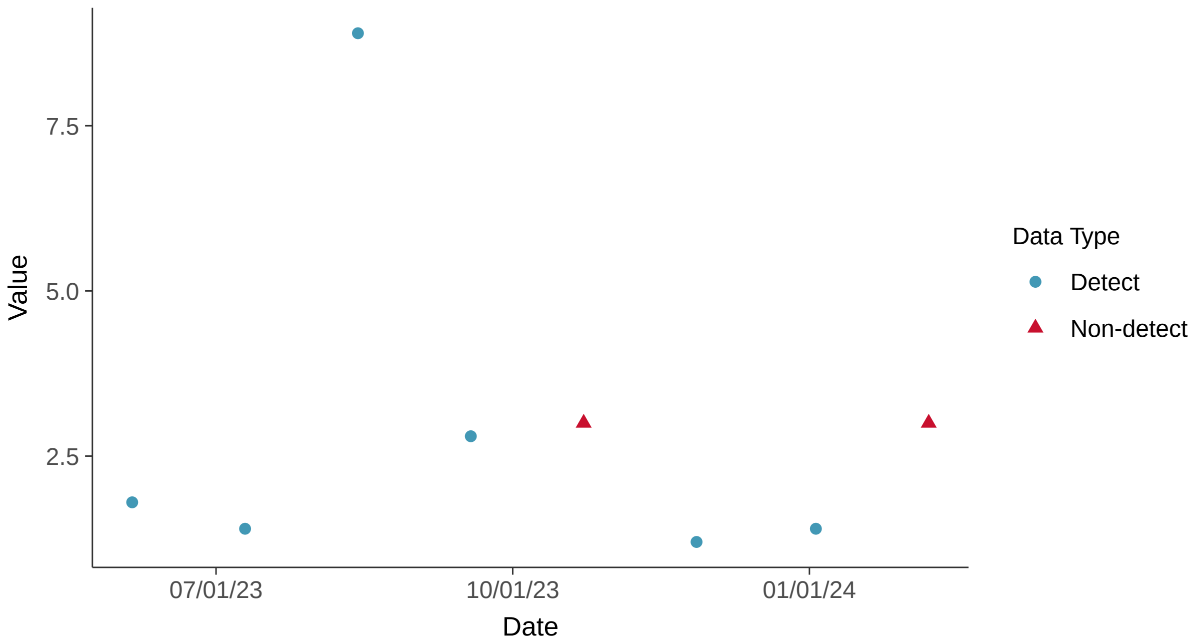

Trend Regression: Piecewise Linear-Linear
Sodium, MW-100C (mg/L)
45
40
35
30
25
Value
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Other: Total Suspended Solids, MW-100C

ID: 100C_4_36

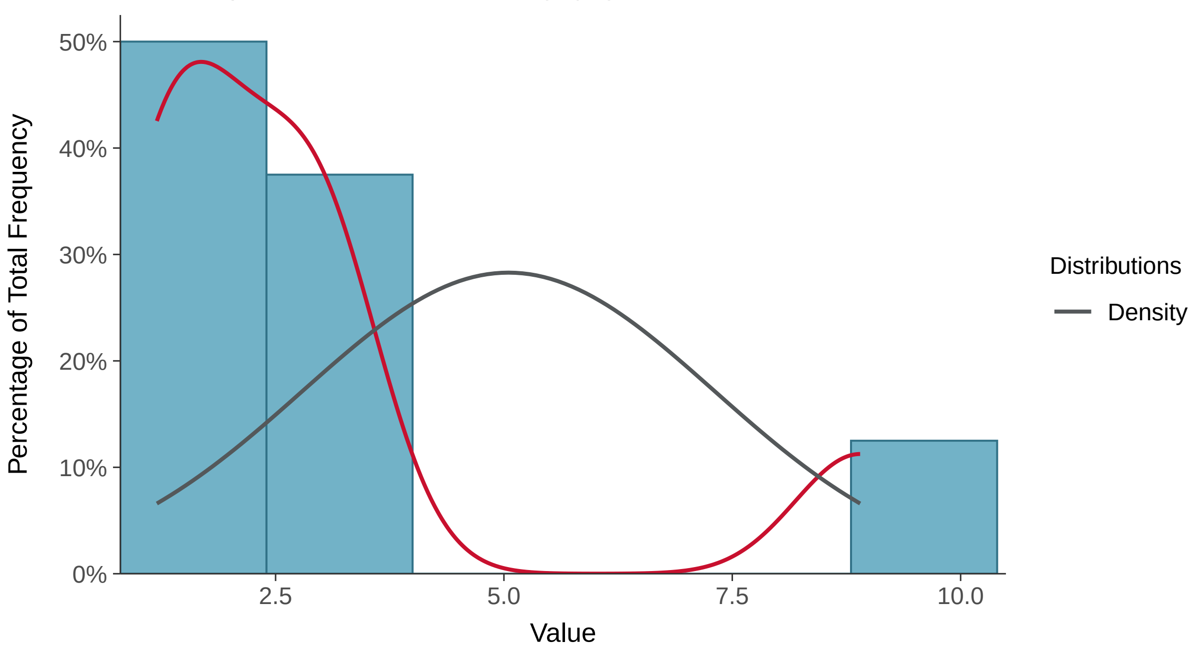
Scatter Plot

Total Suspended Solids, MW-100C (mg/L)



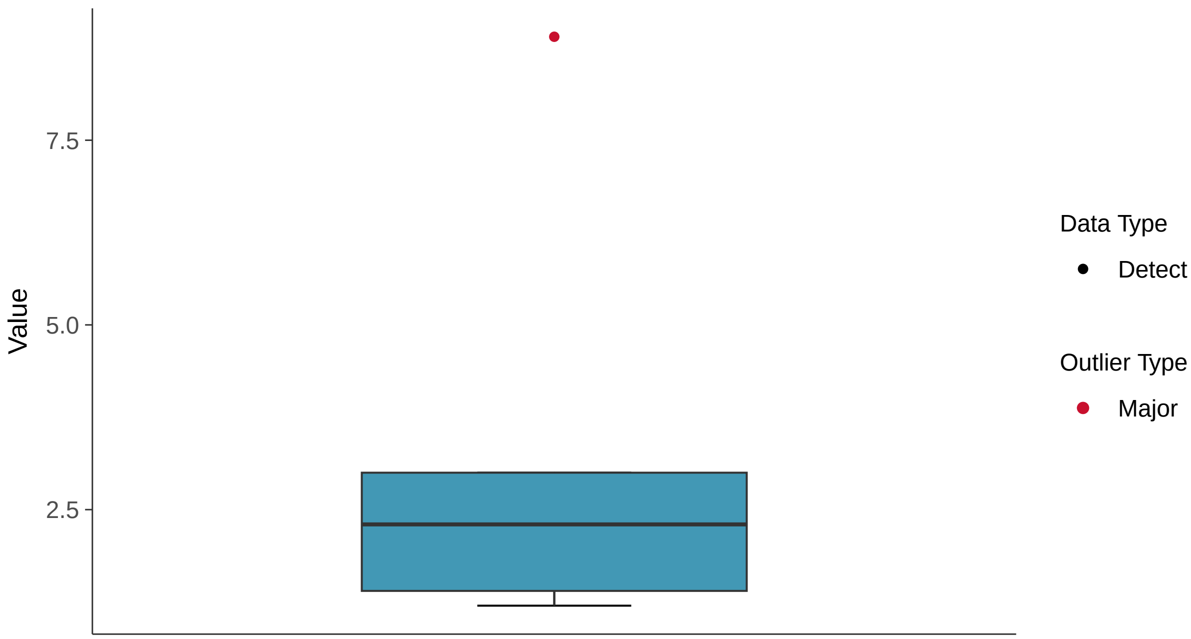
Histogram

Total Suspended Solids, MW-100C (mg/L)



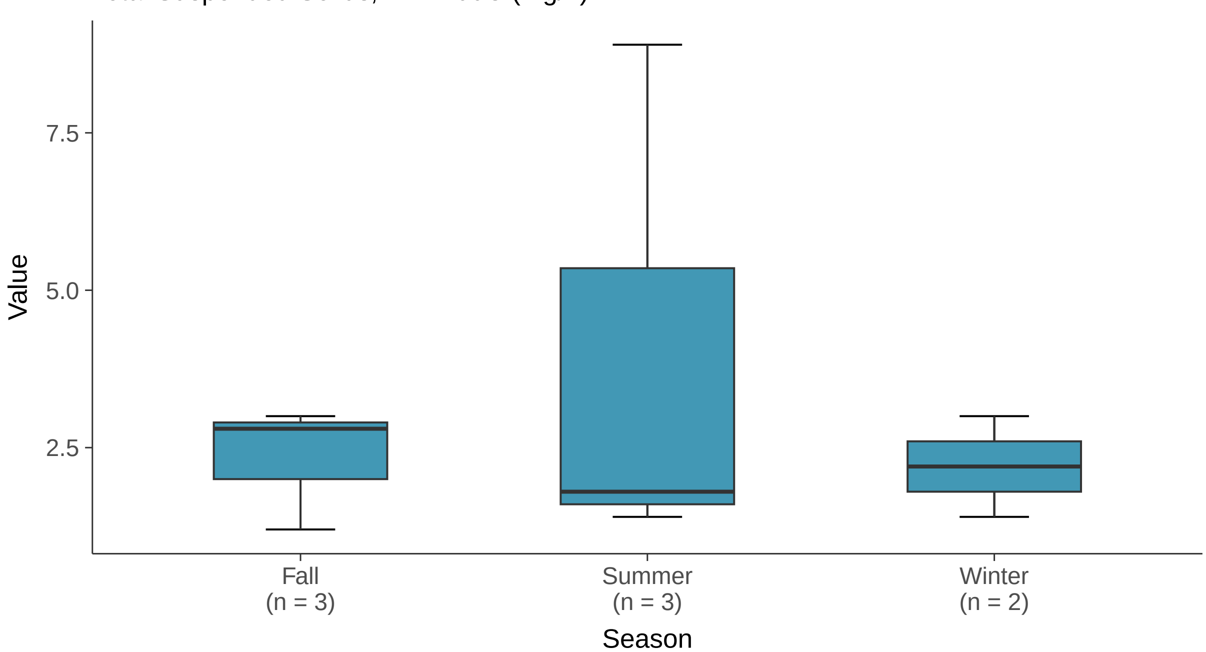
Boxplot

Total Suspended Solids, MW-100C (mg/L)



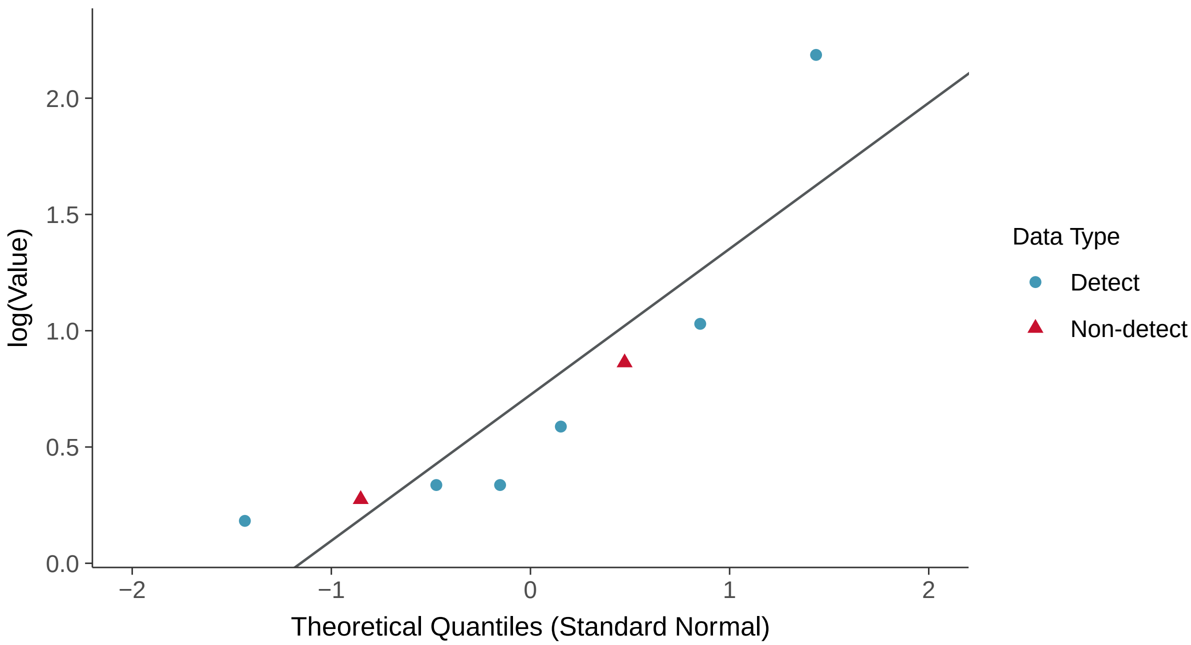
Boxplot by Season

Total Suspended Solids, MW-100C (mg/L)



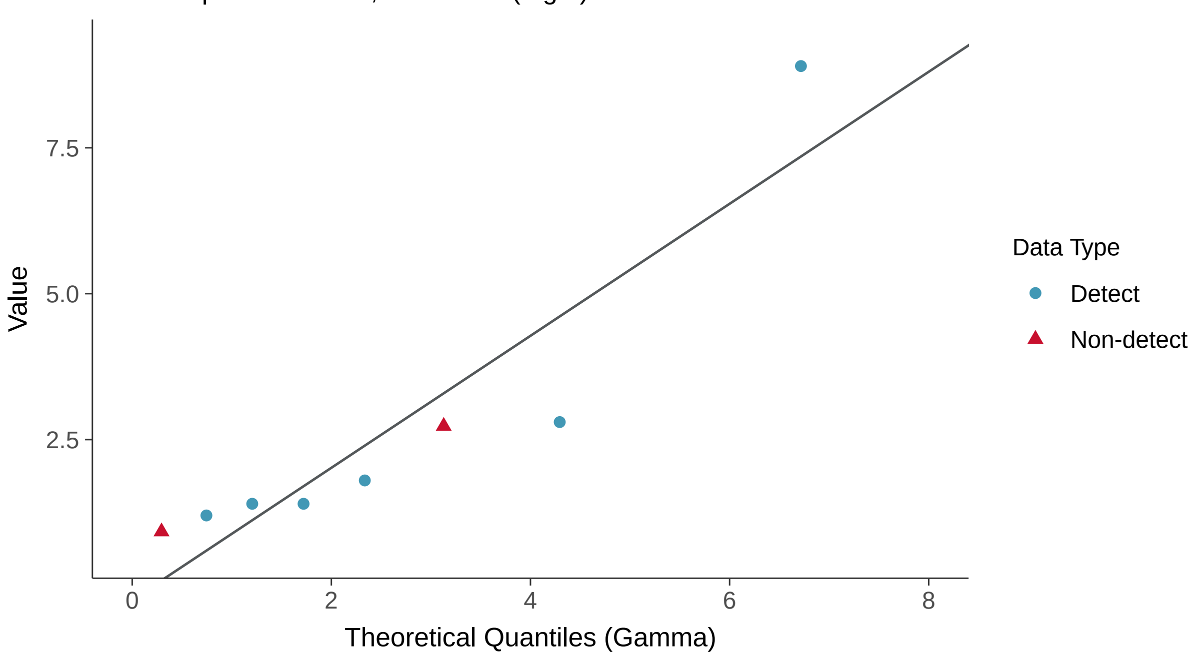
Lognormal Q-Q plot using ROS Imputed Estimates

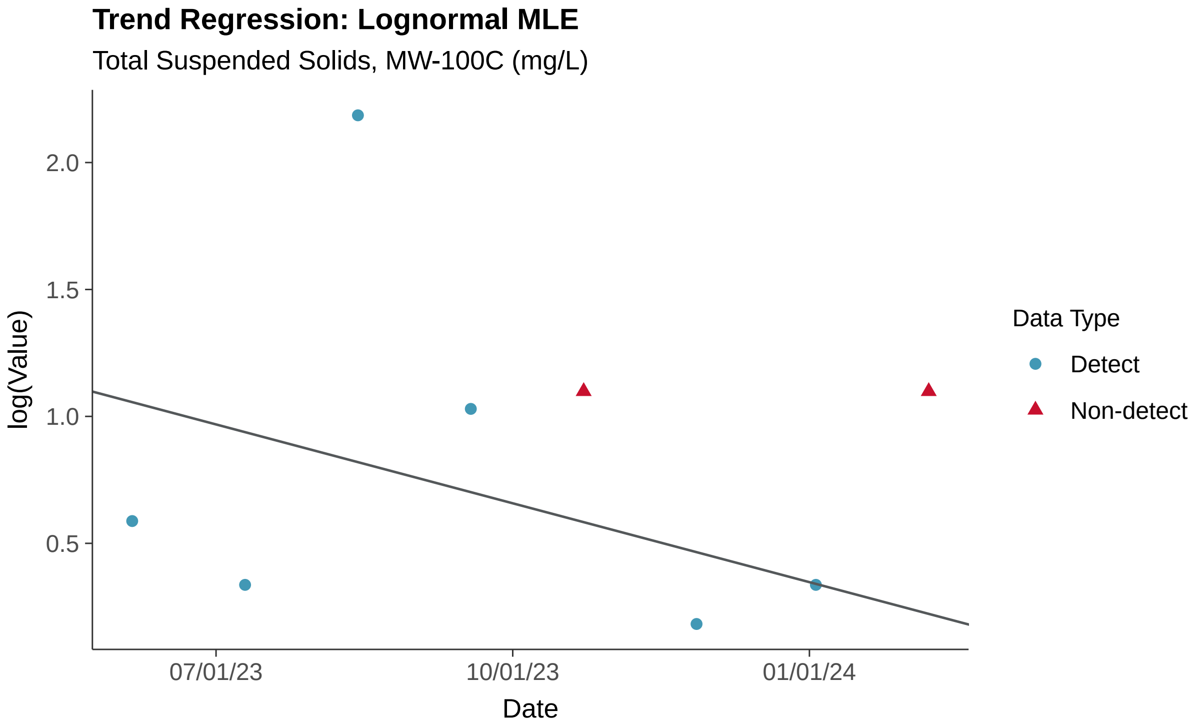
Total Suspended Solids, MW-100C (mg/L)

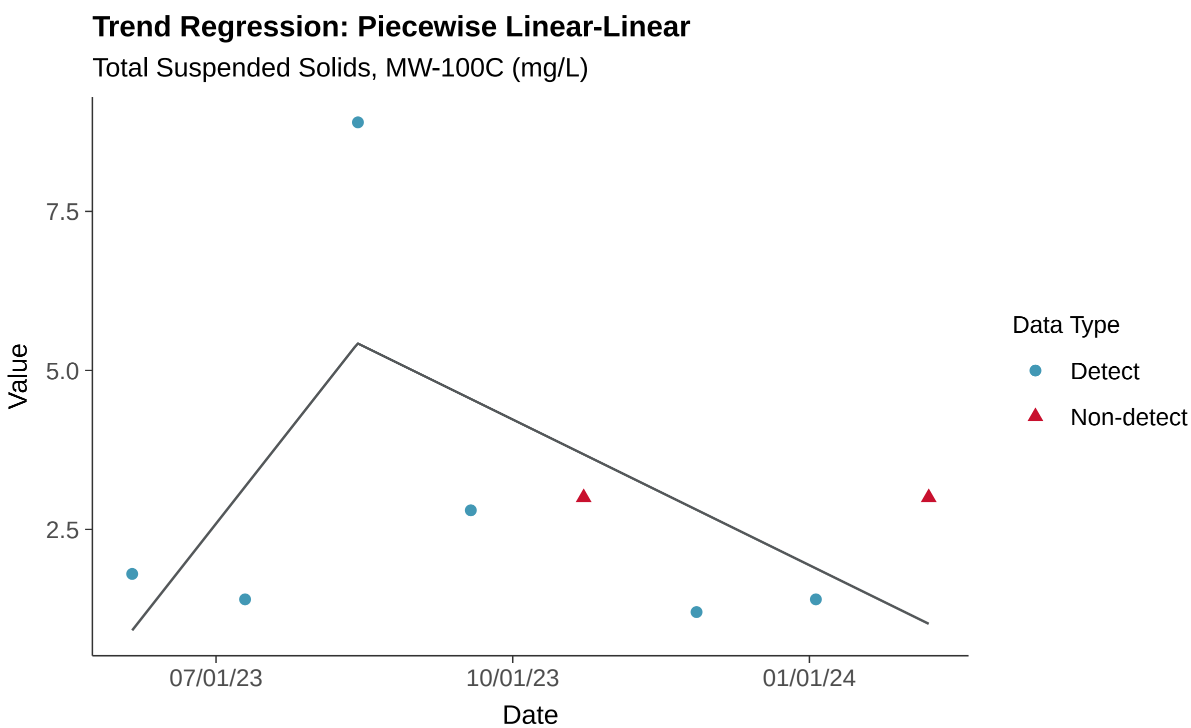


Gamma Q-Q plot using ROS Imputed Estimates

Total Suspended Solids, MW-100C (mg/L)

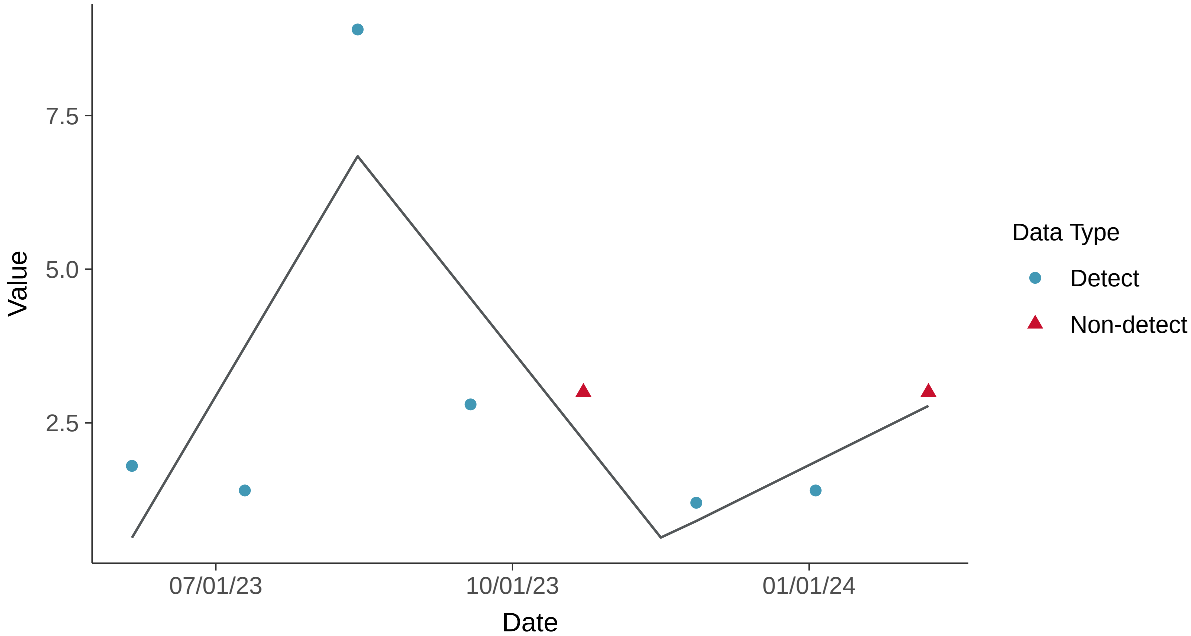



Trend Regression: Lognormal MLE
Total Suspended Solids, MW-100C (mg/L)
log(Value)
2.0
1.5
1.0
0.5
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Total Suspended Solids, MW-100C (mg/L)
Value
7.5
5.0
2.5
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear-Linear

Total Suspended Solids, MW-100C (mg/L)

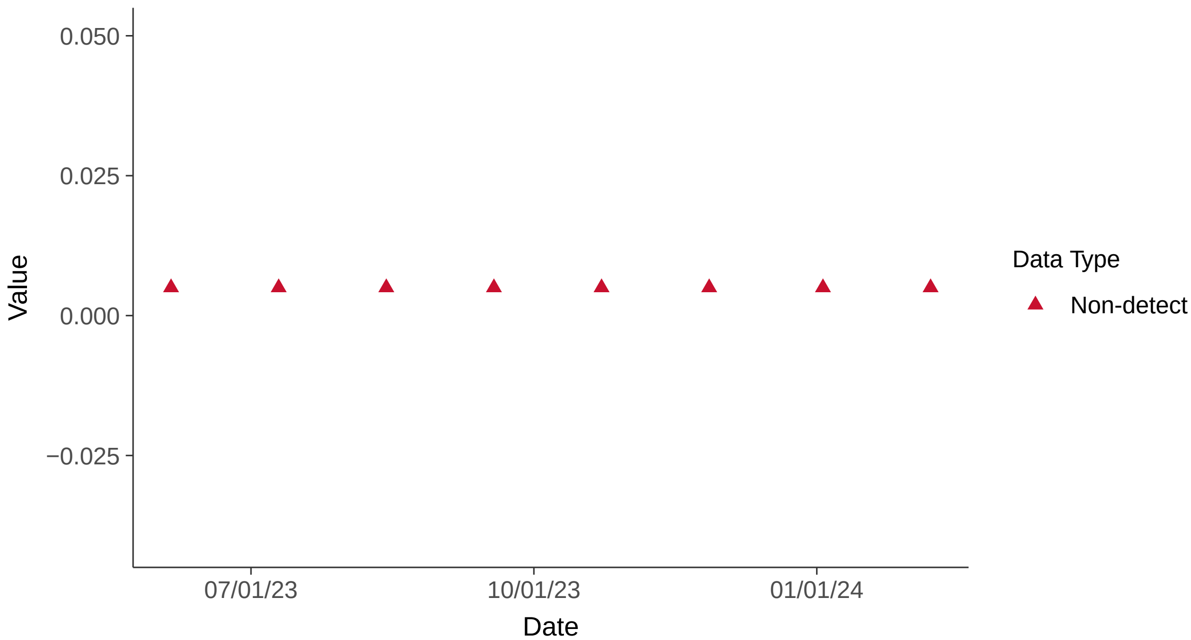


Part 115: Copper, MW-100C

ID: 100C_5_37

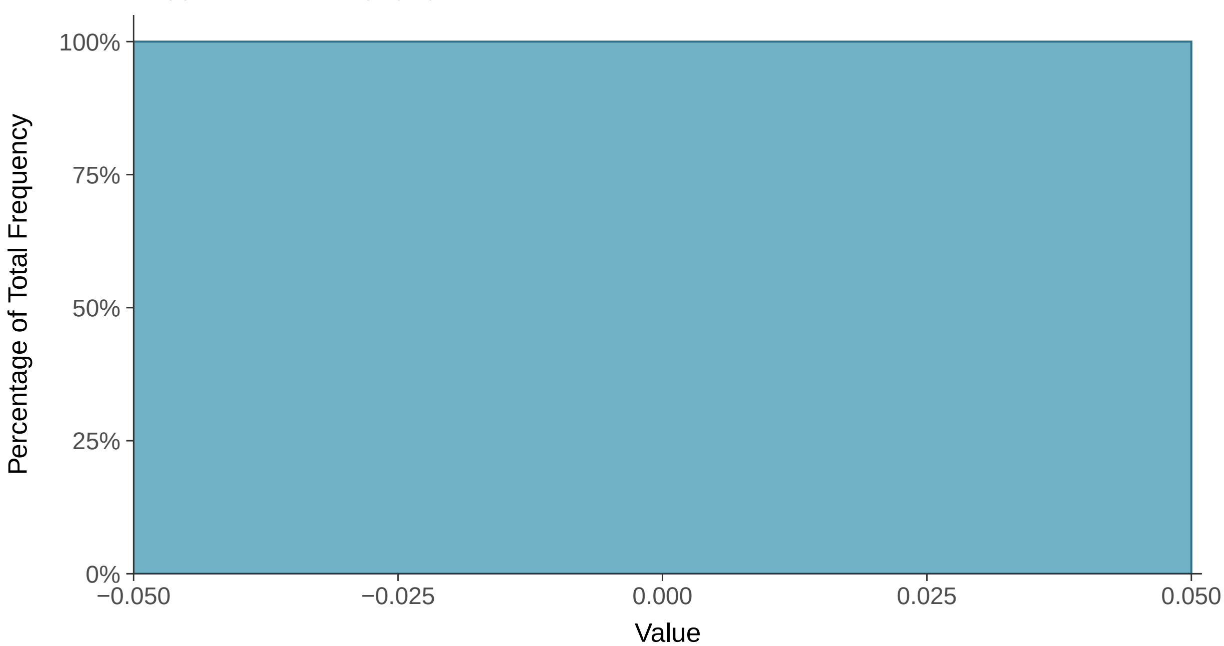
Scatter Plot

Copper, MW-100C (mg/L)



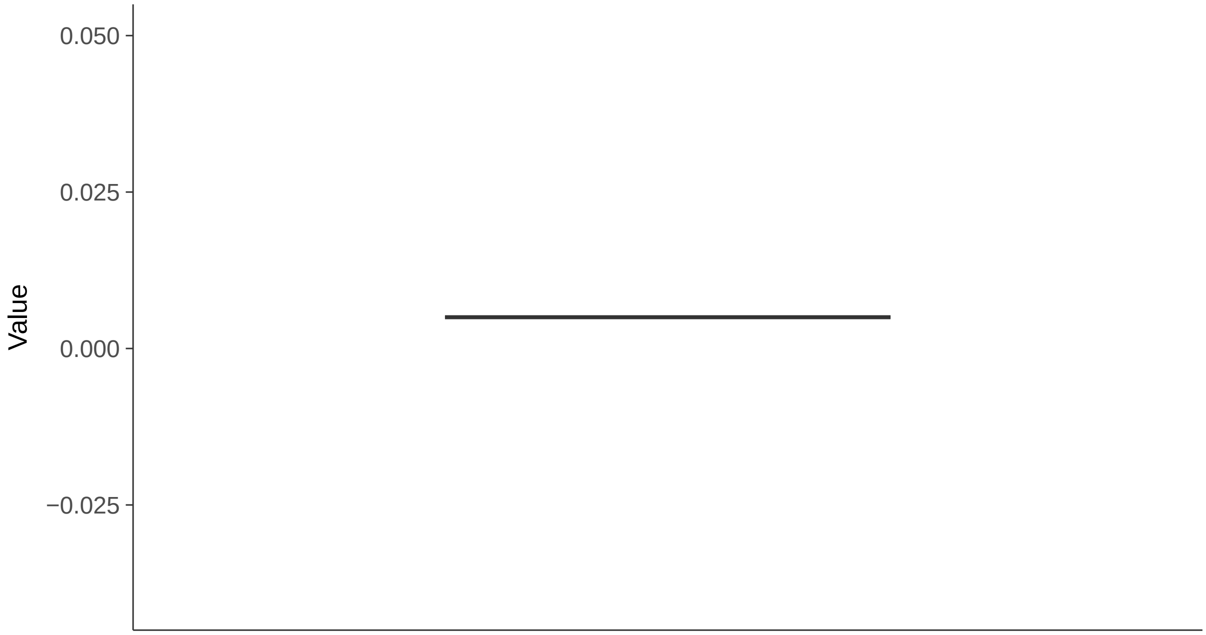
Histogram

Copper, MW-100C (mg/L)



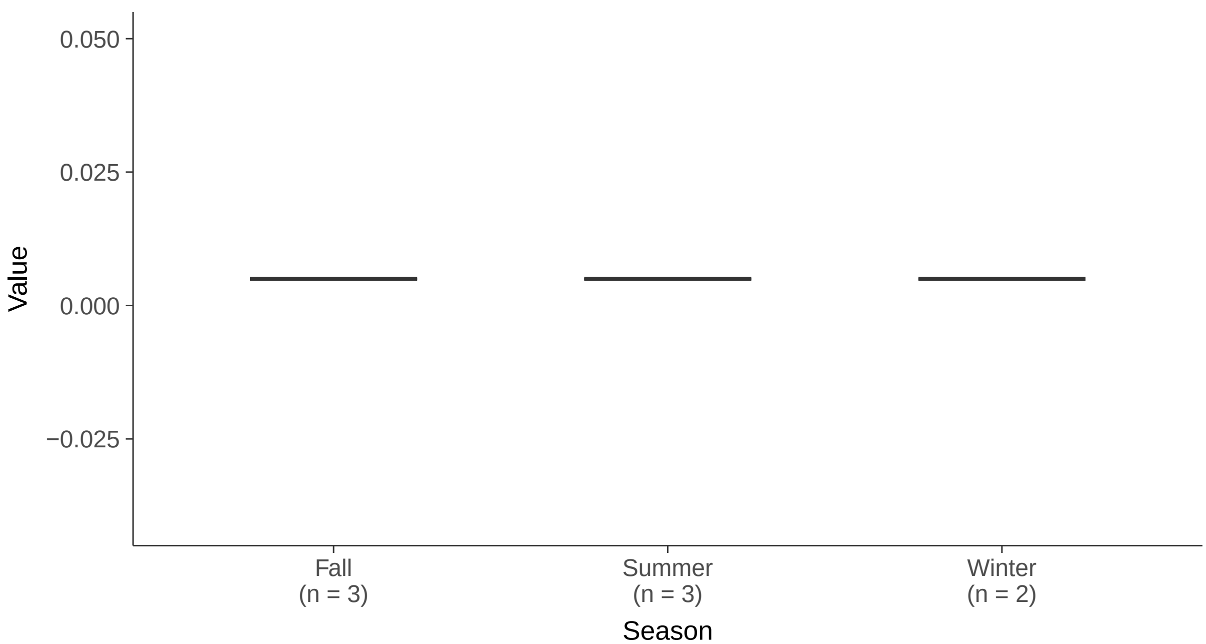
Boxplot

Copper, MW-100C (mg/L)



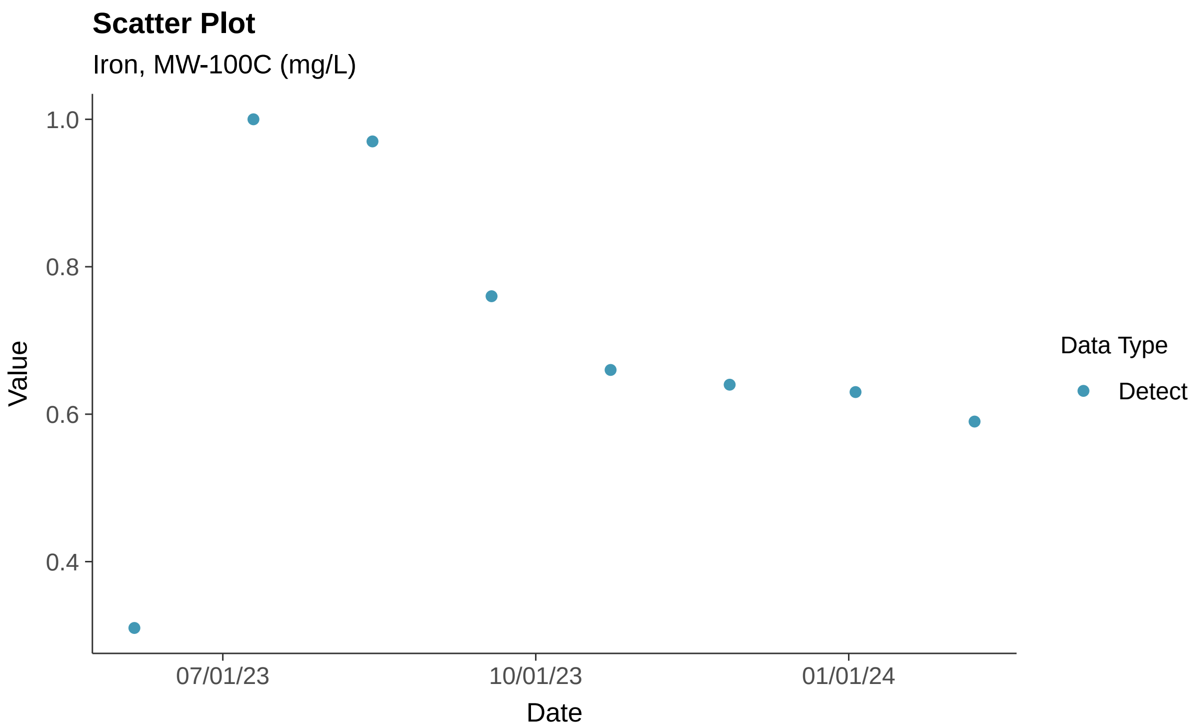
Boxplot by Season

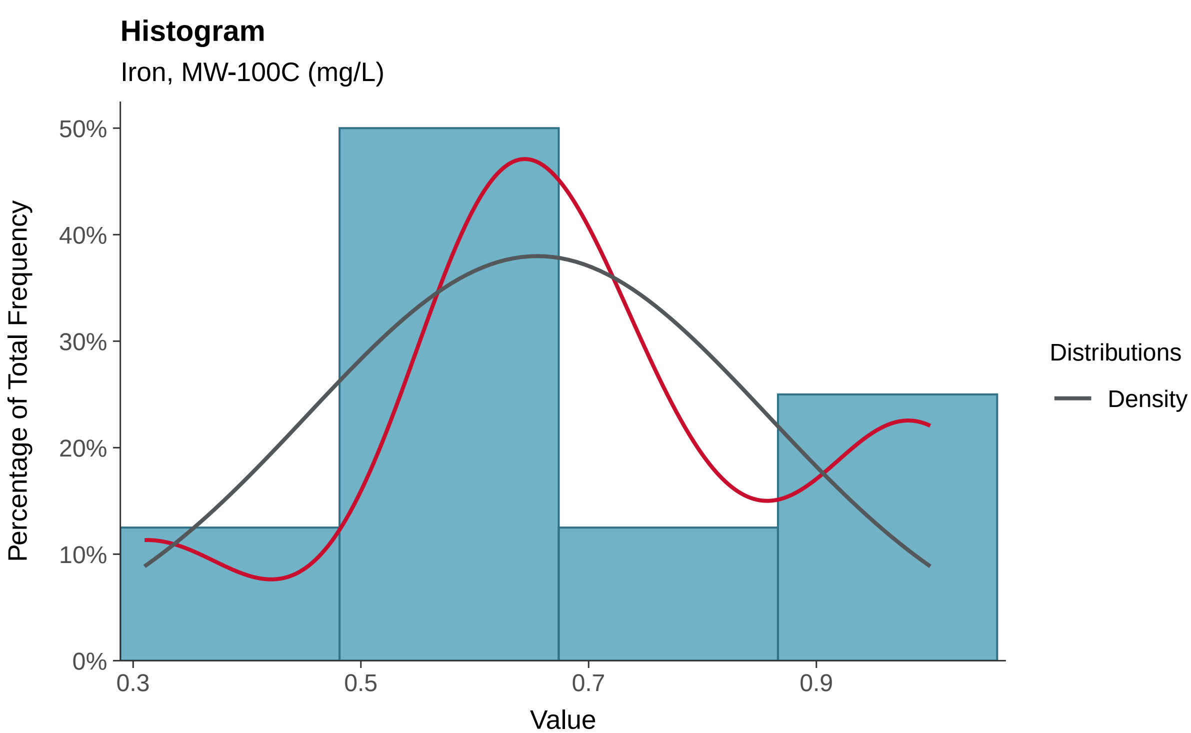
Copper, MW-100C (mg/L)



Part 115: Iron, MW-100C

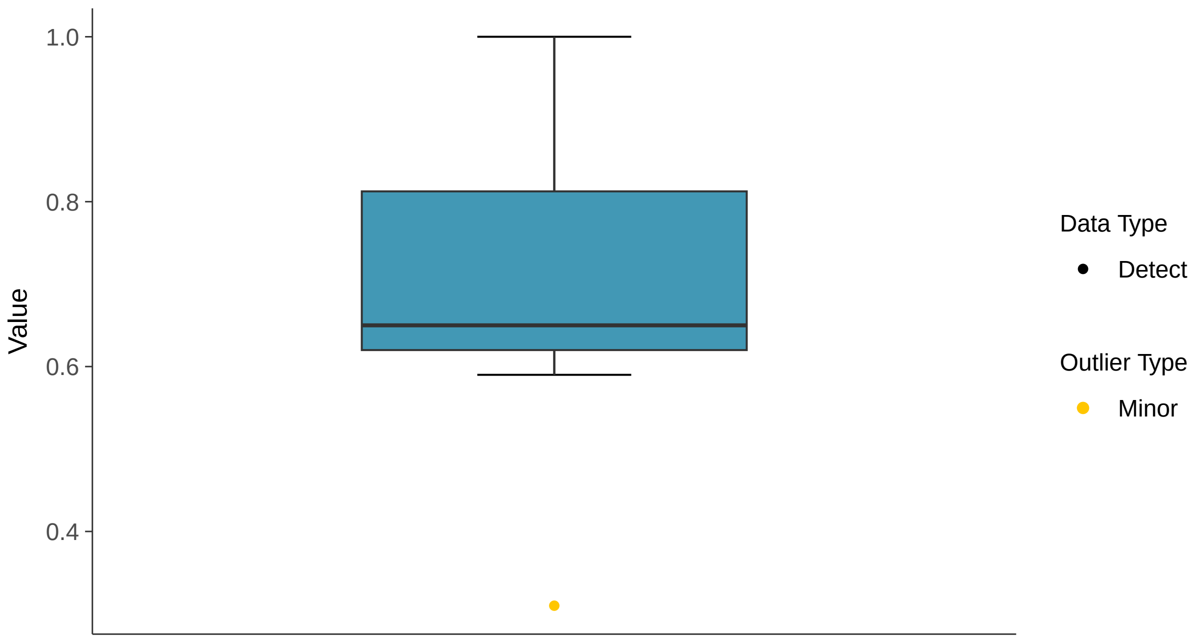
ID: 100C_5_38





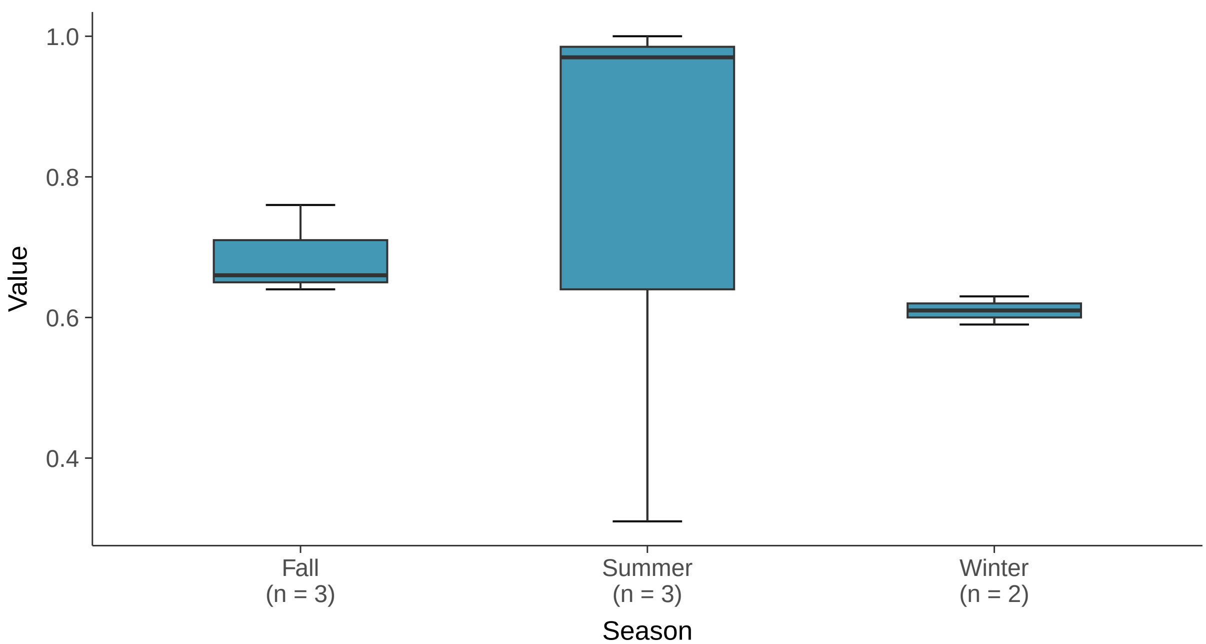
Boxplot

Iron, MW-100C (mg/L)

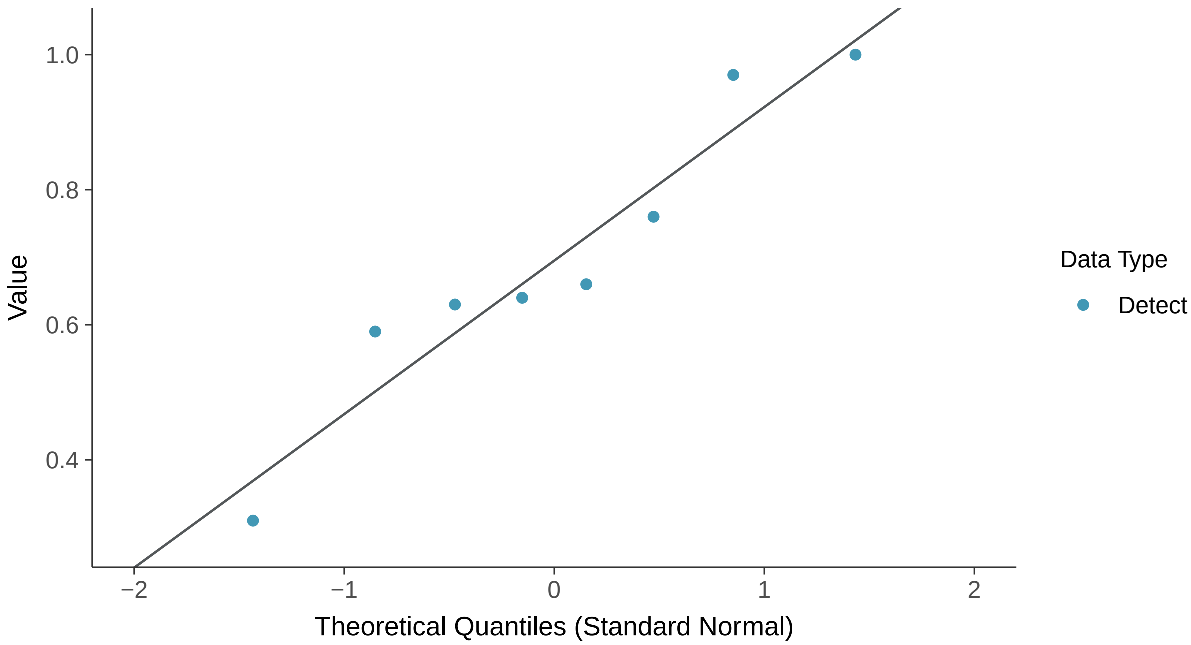


Boxplot by Season

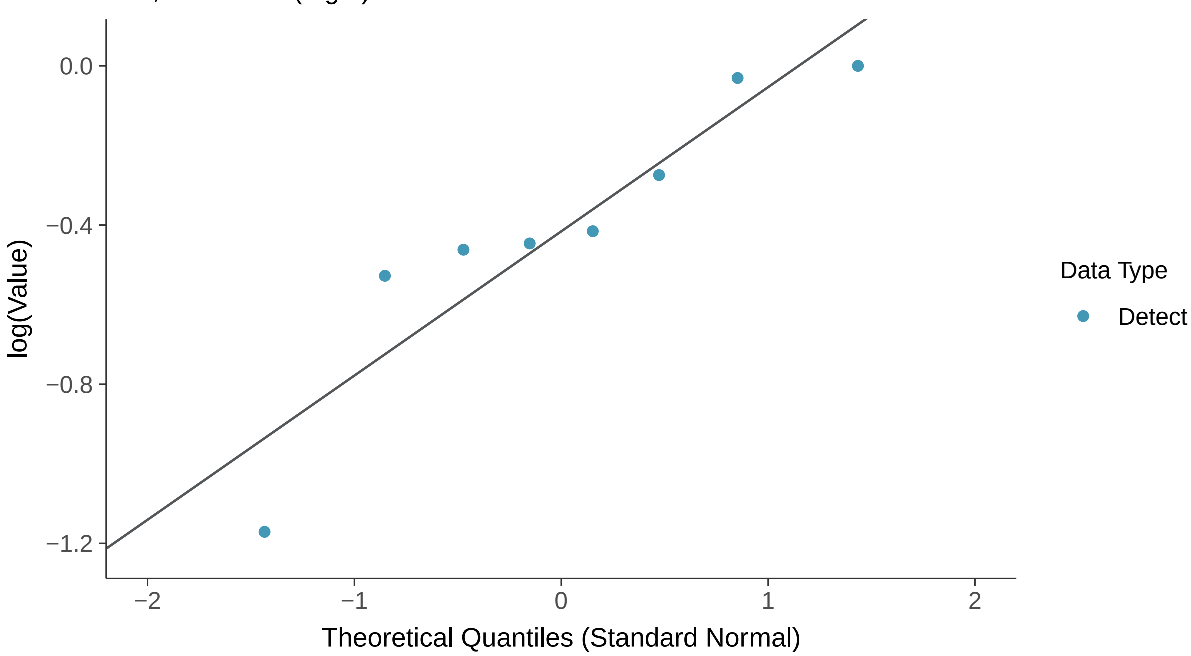
Iron, MW-100C (mg/L)



Normal Q-Q plot
Iron, MW-100C (mg/L)

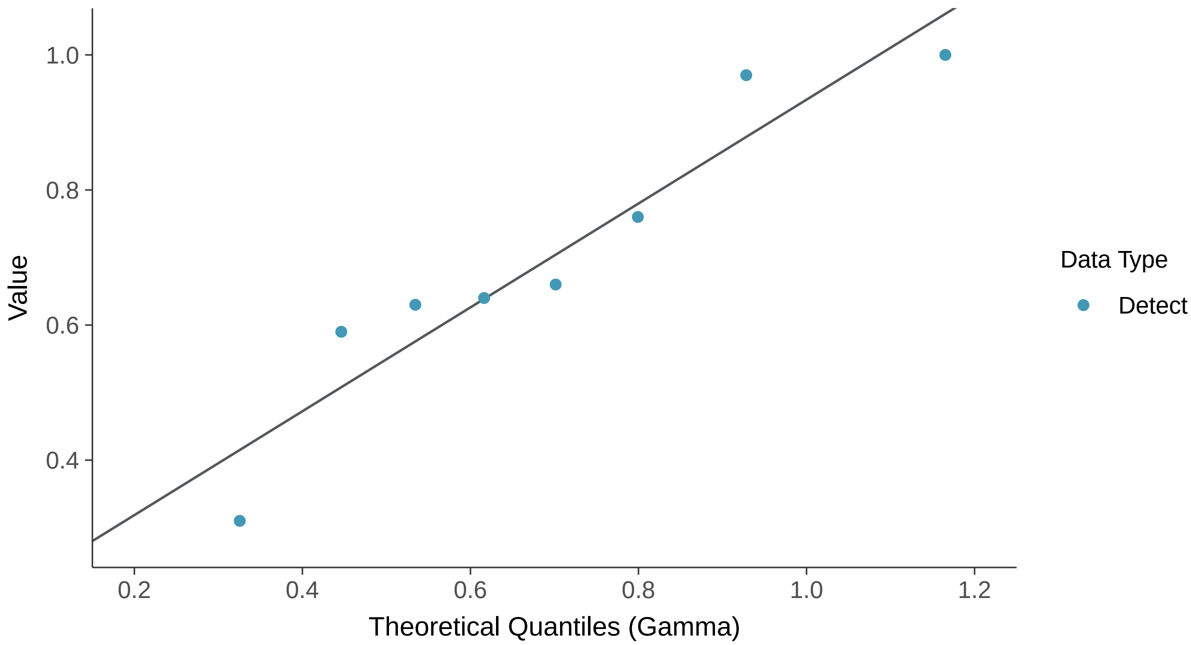


Lognormal Q-Q plot
Iron, MW-100C (mg/L)



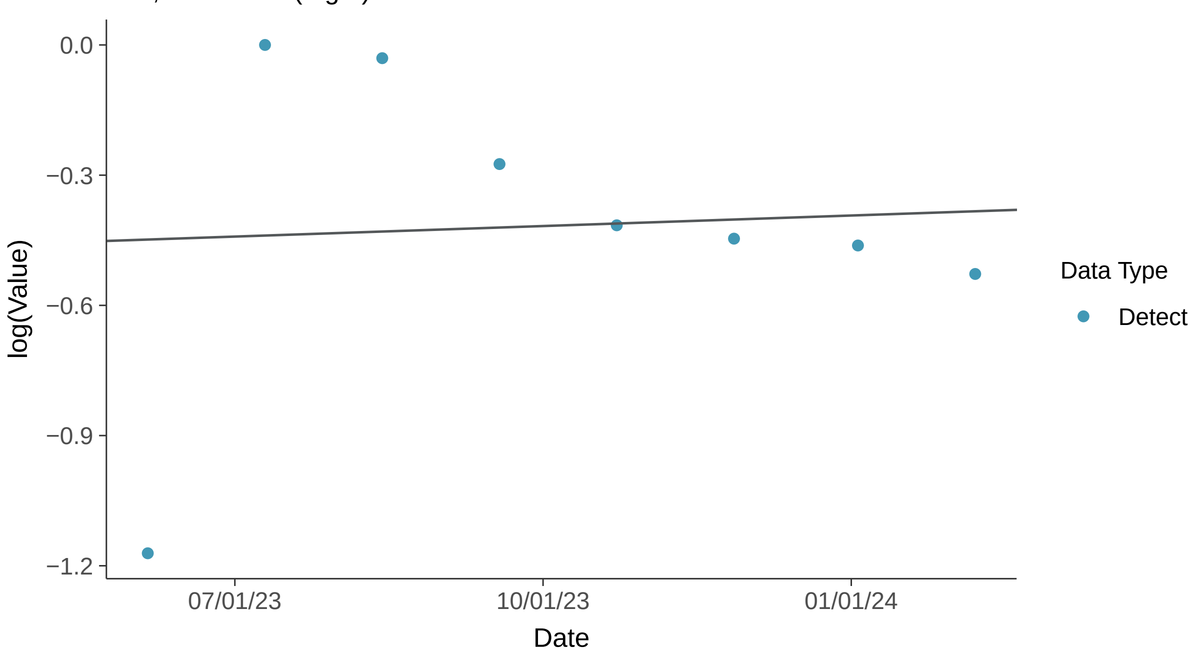
Gamma Q-Q plot

Iron, MW-100C (mg/L)



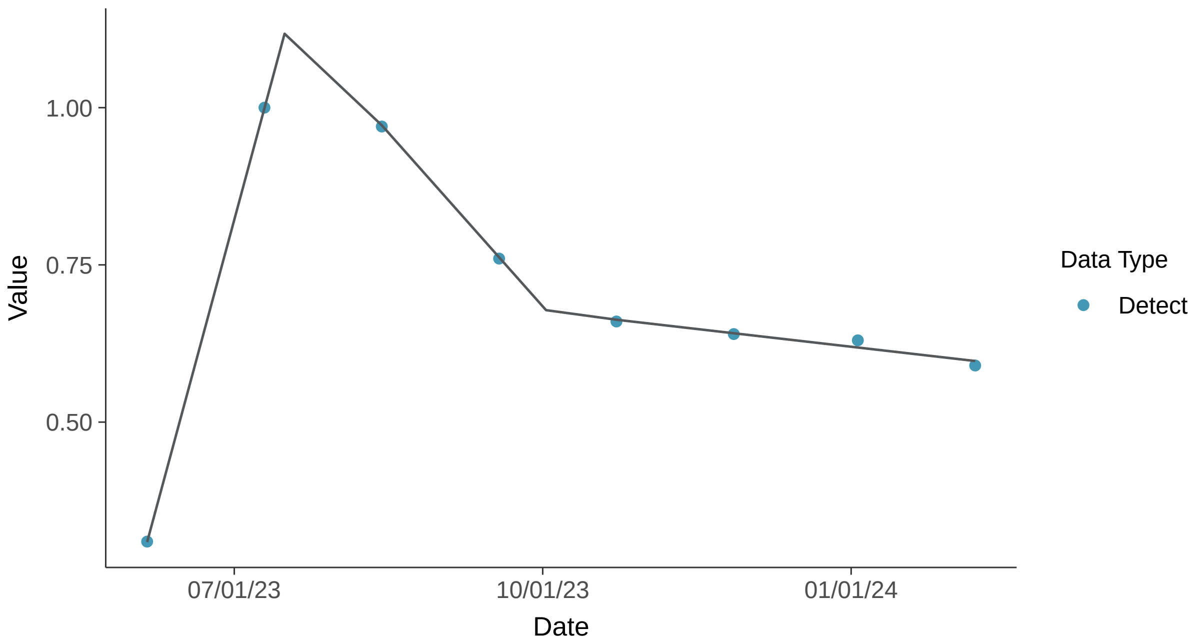
Trend Regression: Lognormal MLE

Iron, MW-100C (mg/L)



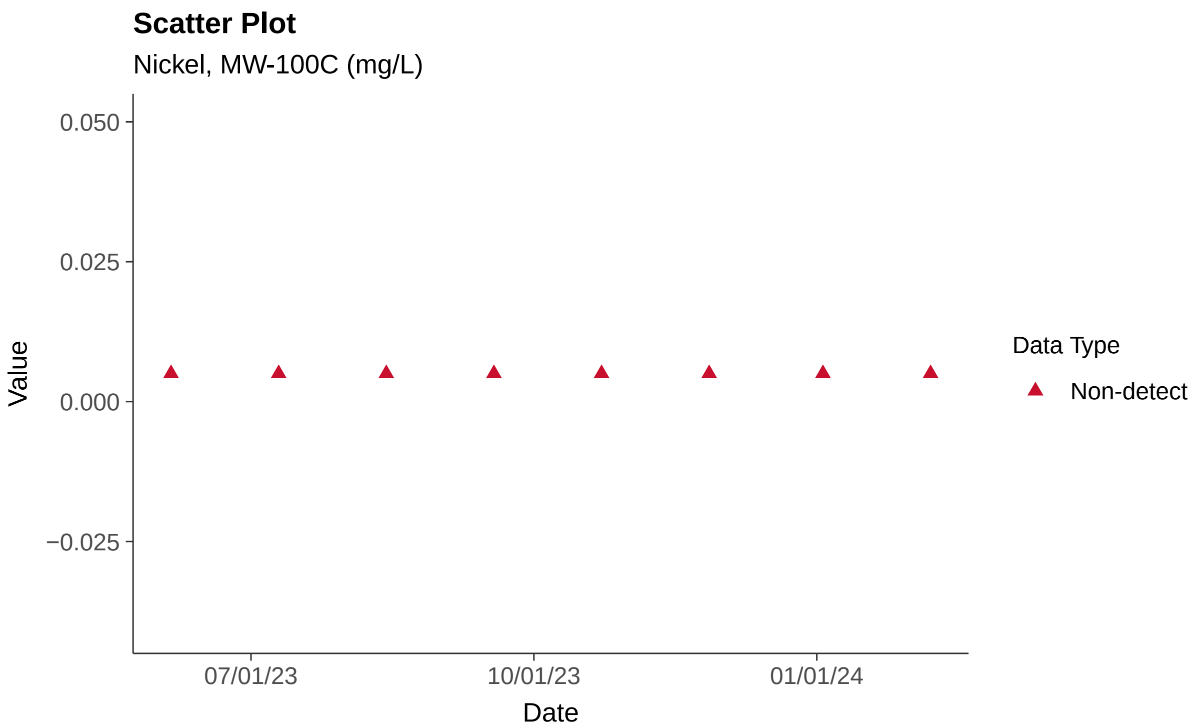
Trend Regression: Piecewise Linear-Linear-Linear

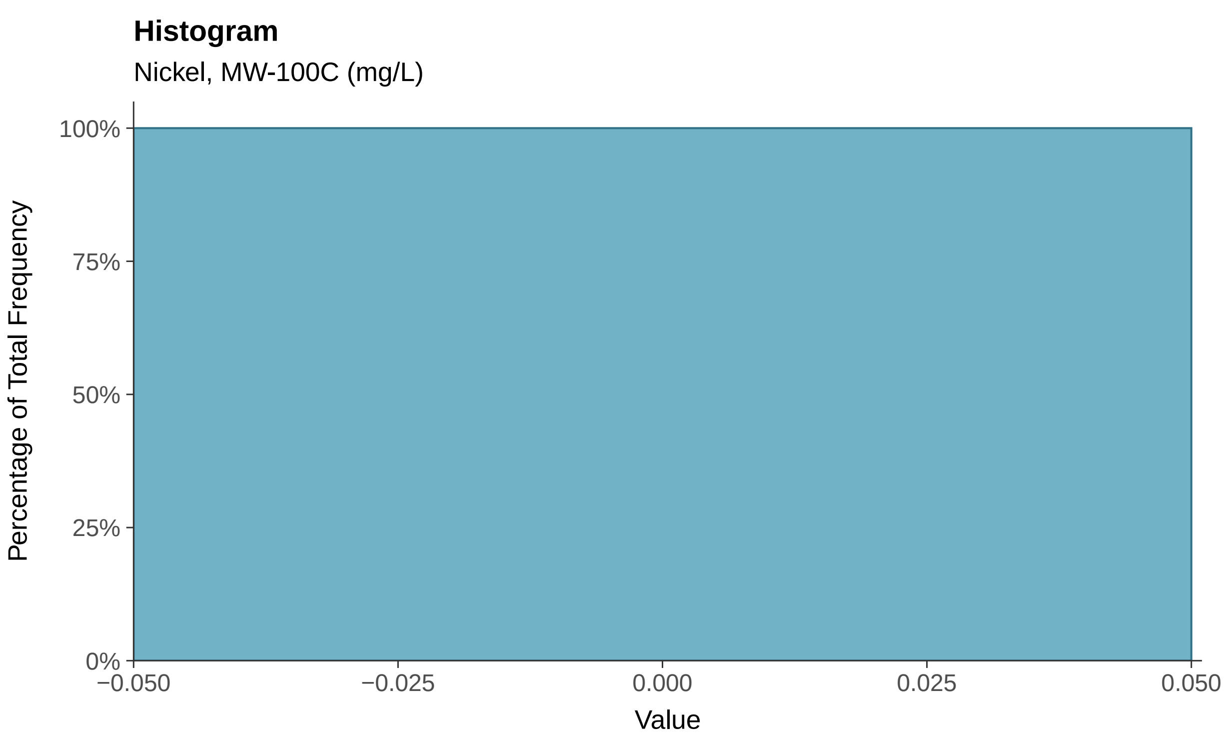
Iron, MW-100C (mg/L)



Part 115: Nickel, MW-100C

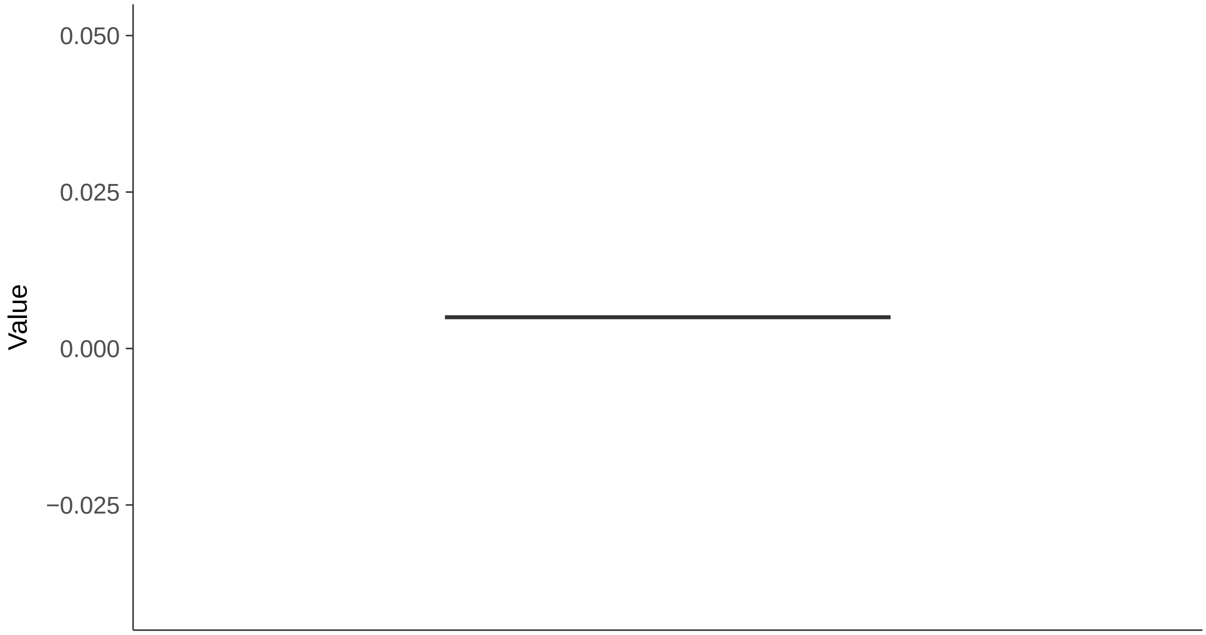
ID: 100C_5_39





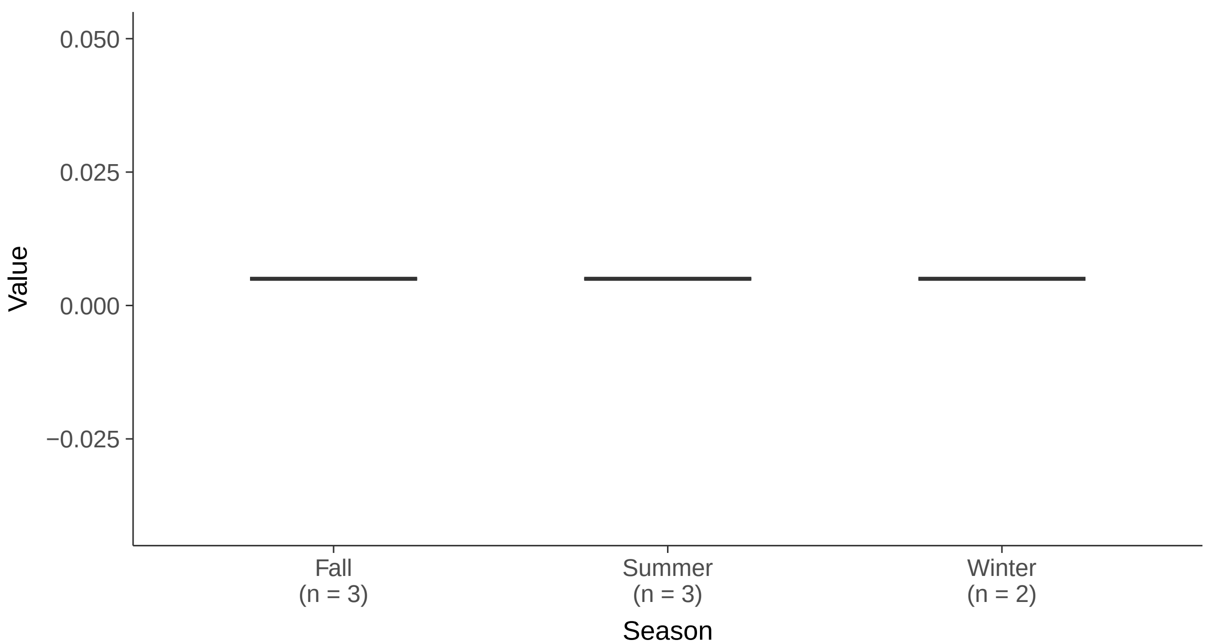
Boxplot

Nickel, MW-100C (mg/L)



Boxplot by Season

Nickel, MW-100C (mg/L)

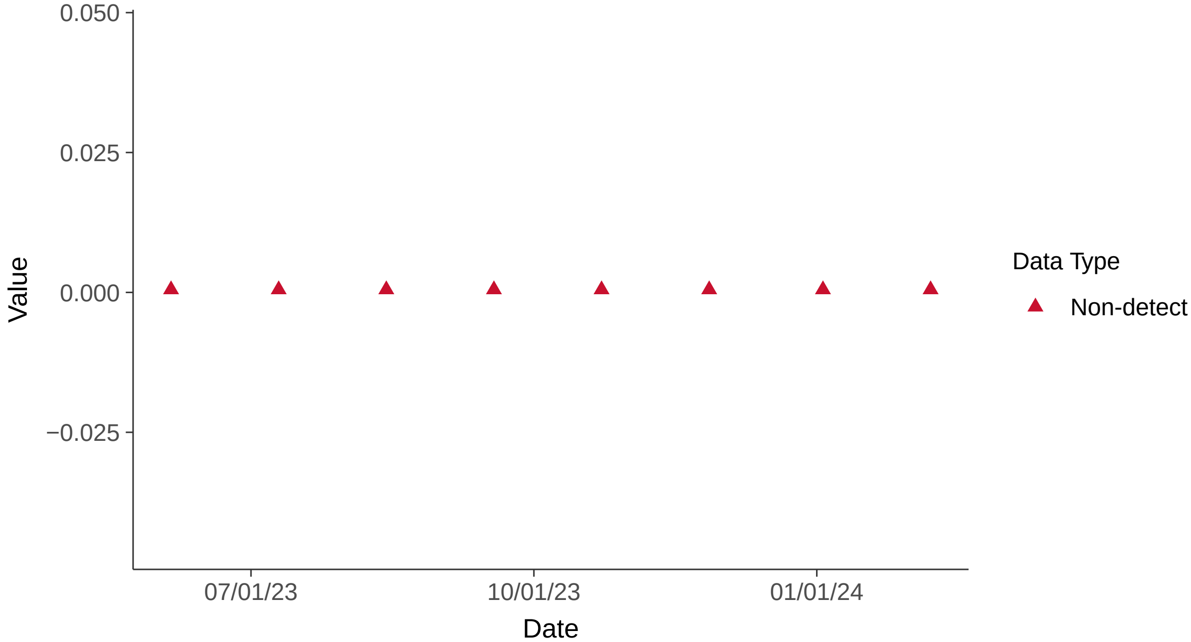


Part 115: Silver, MW-100C

ID: 100C_5_40

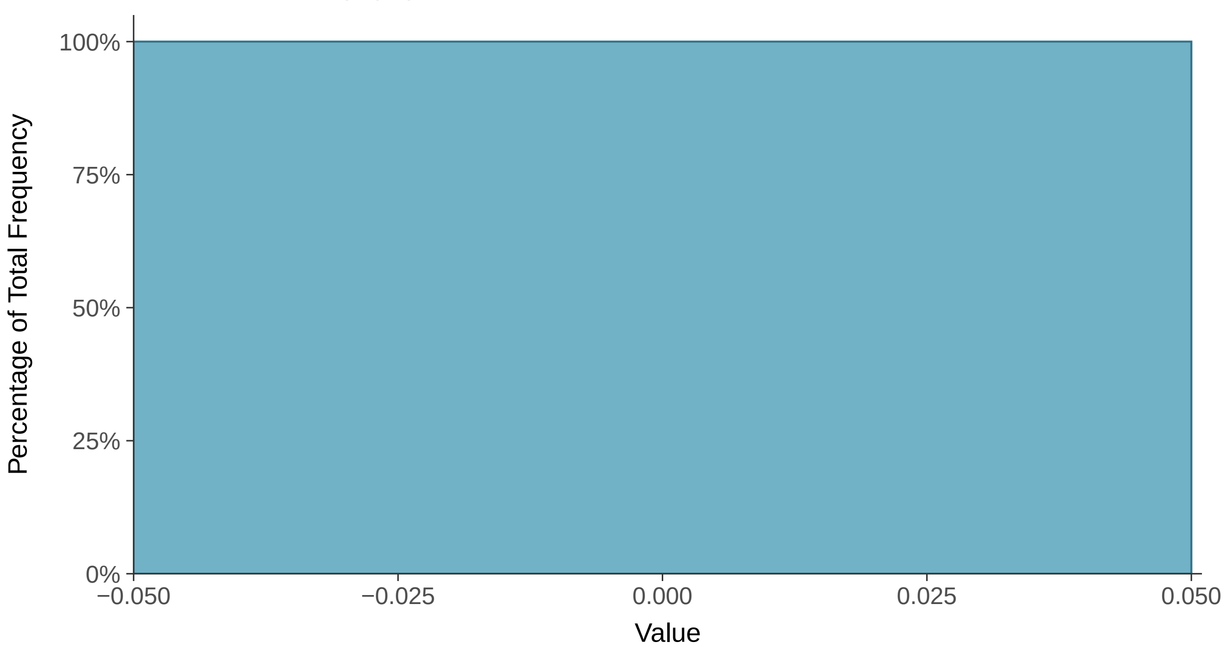
Scatter Plot

Silver, MW-100C (mg/L)



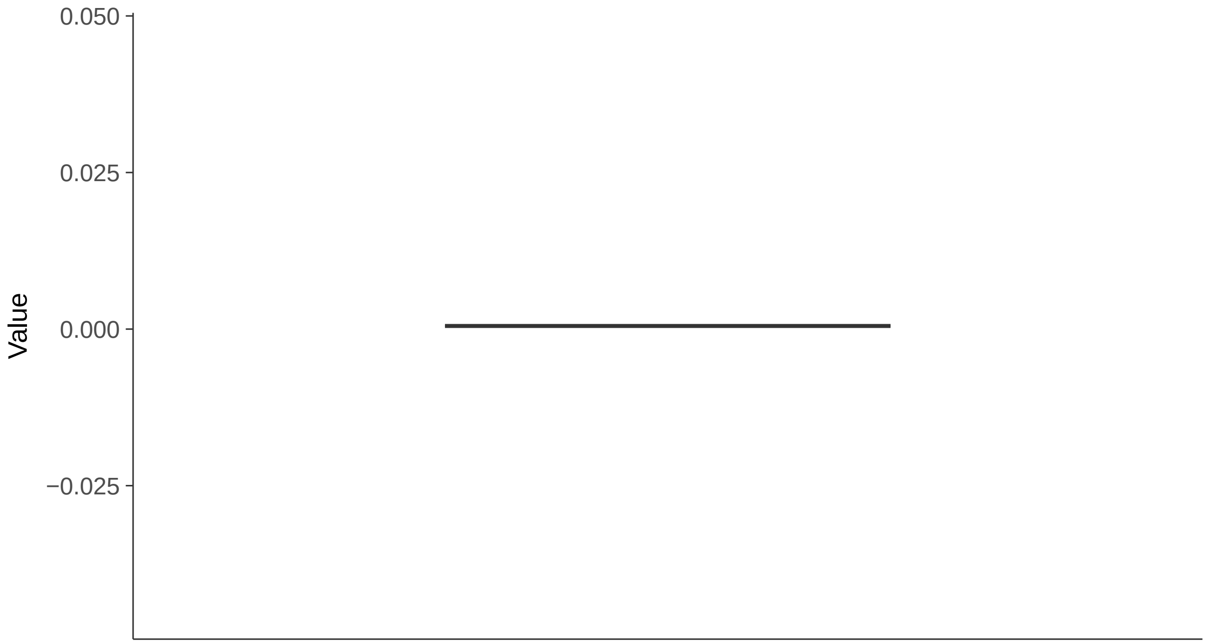
Histogram

Silver, MW-100C (mg/L)



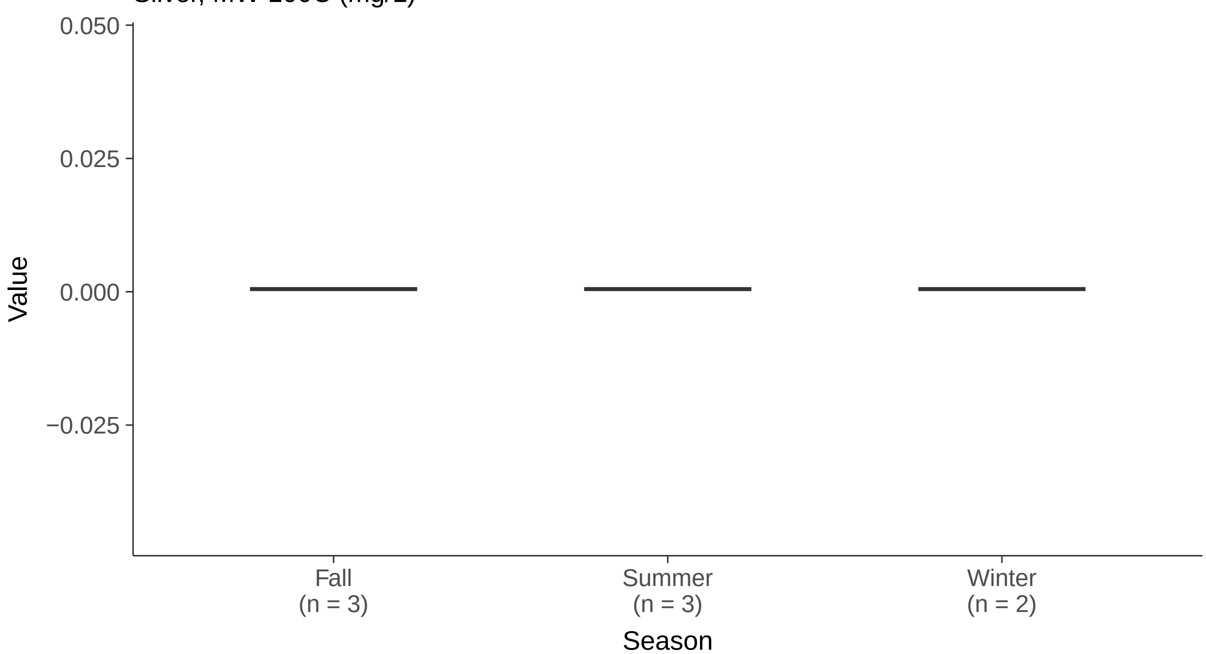
Boxplot

Silver, MW-100C (mg/L)



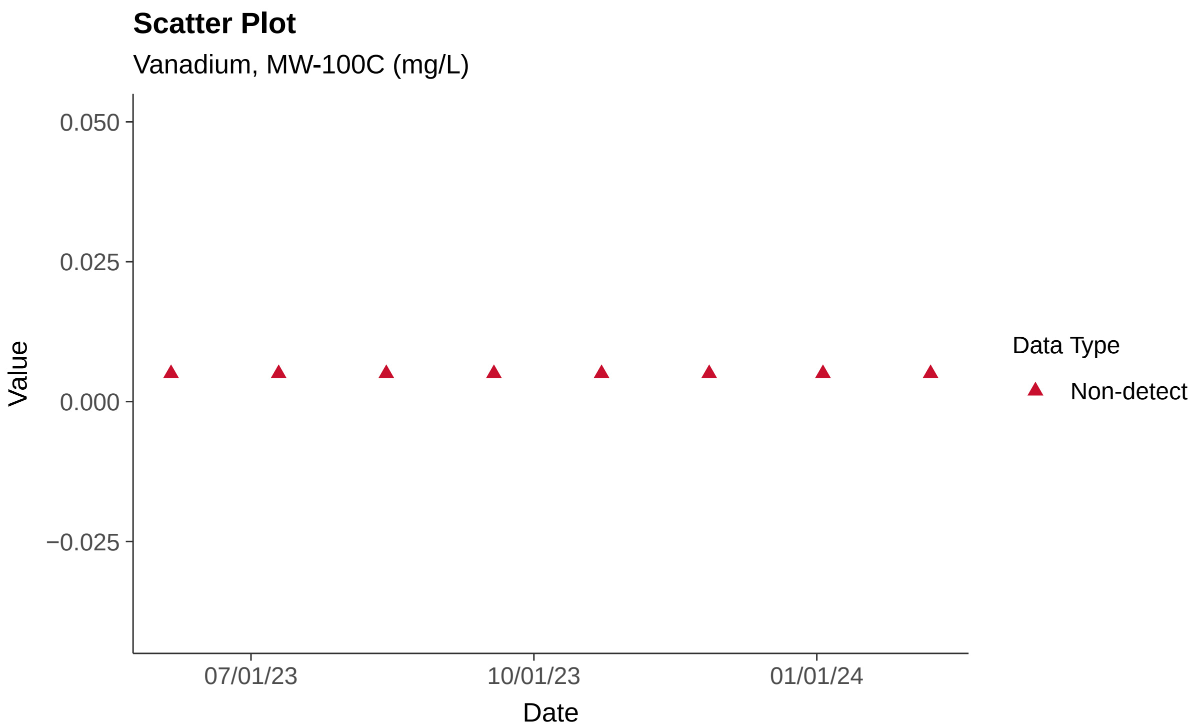
Boxplot by Season

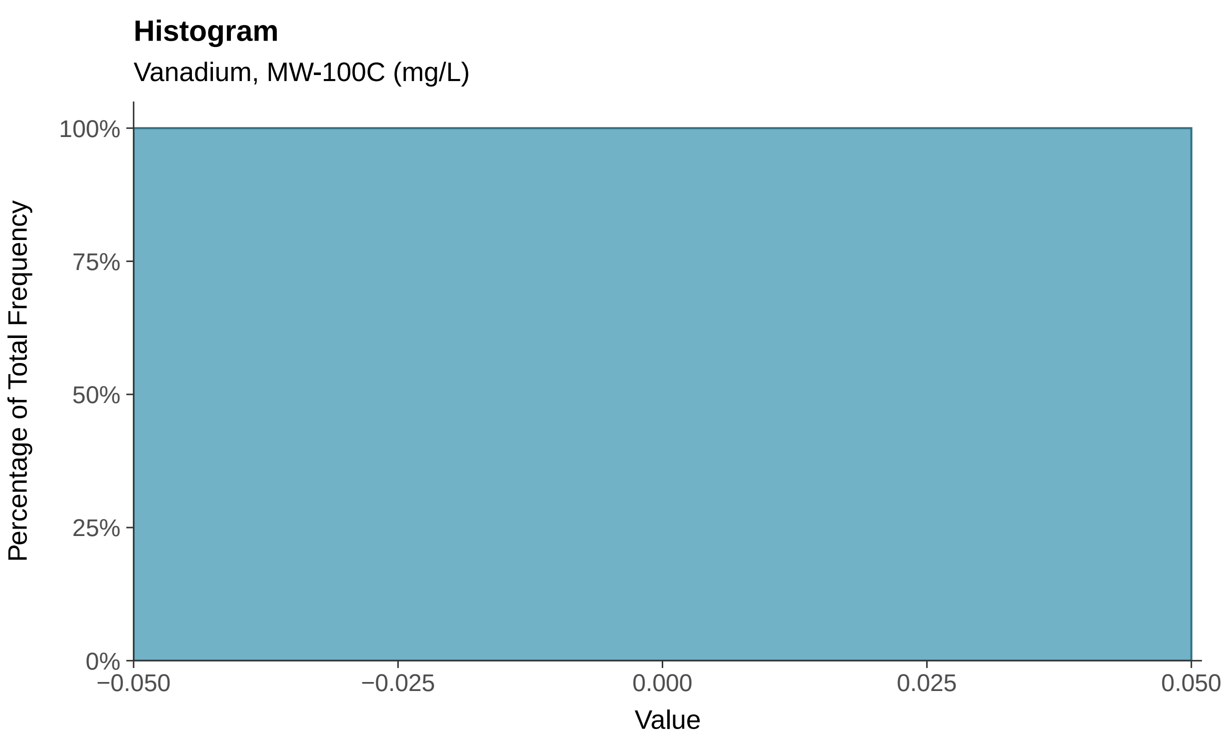
Silver, MW-100C (mg/L)



Part 115: Vanadium, MW-100C

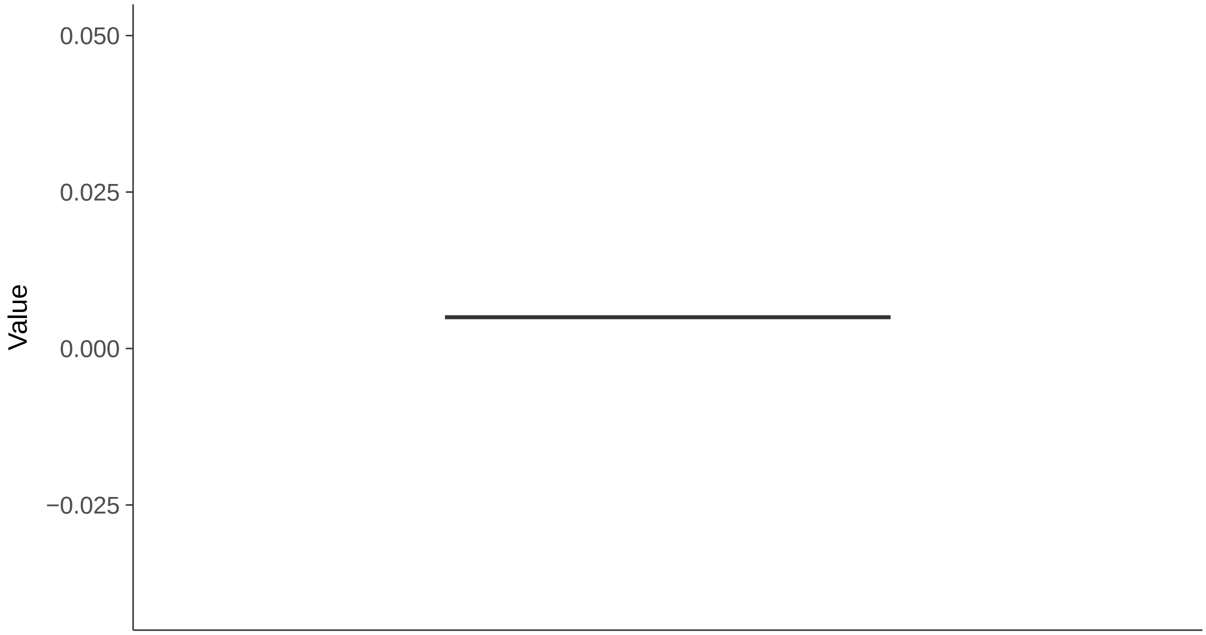
ID: 100C_5_41





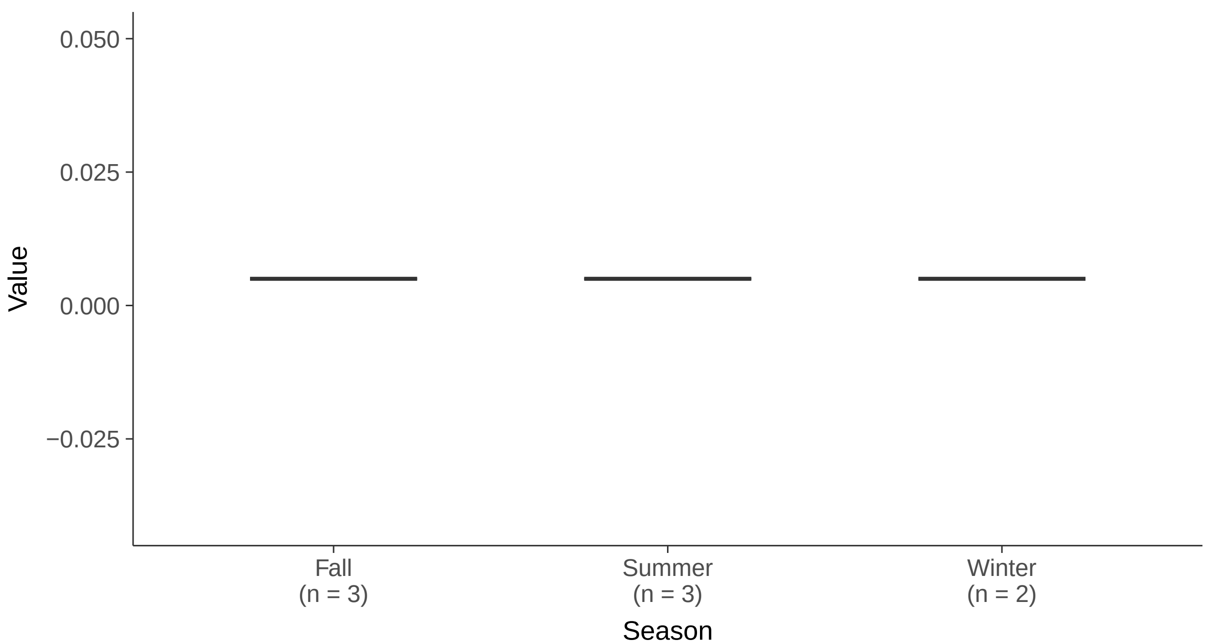
Boxplot

Vanadium, MW-100C (mg/L)



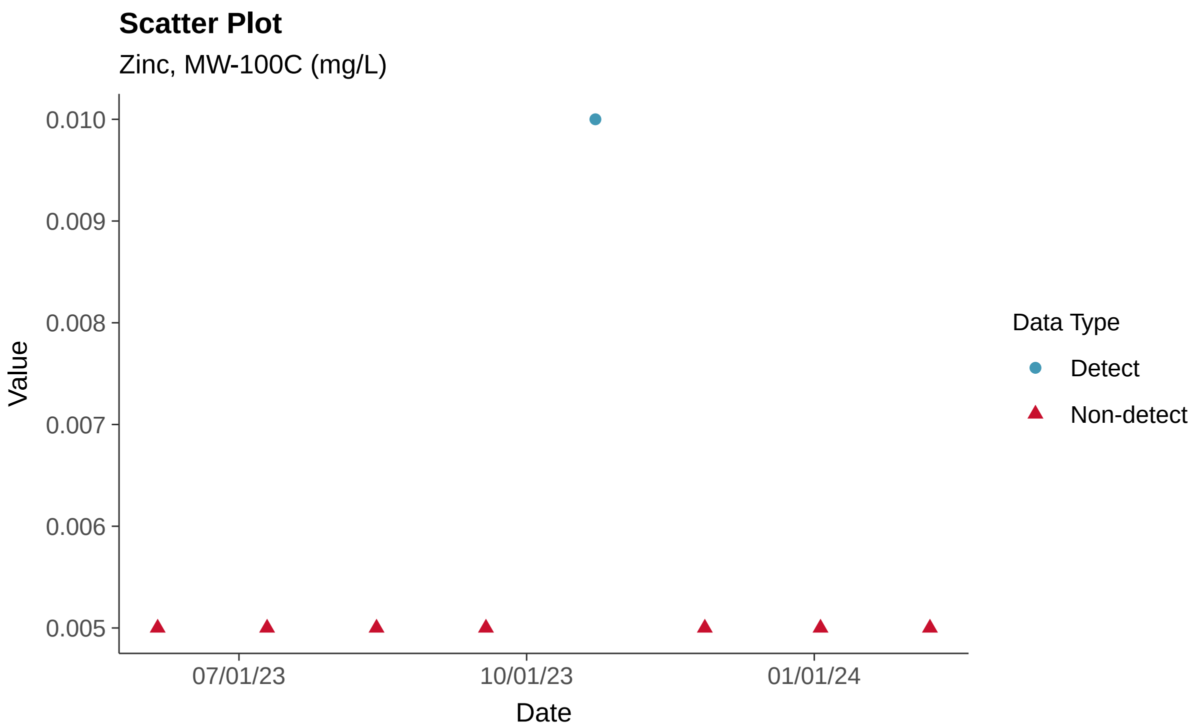
Boxplot by Season

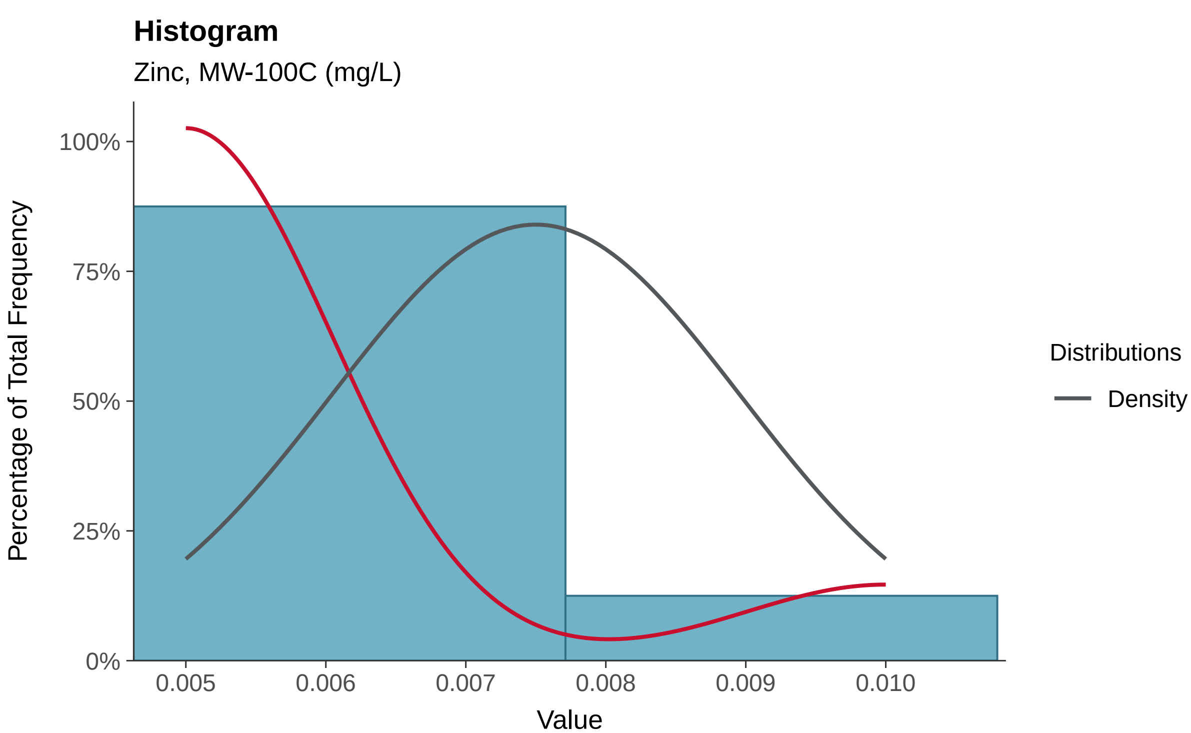
Vanadium, MW-100C (mg/L)



Part 115: Zinc, MW-100C

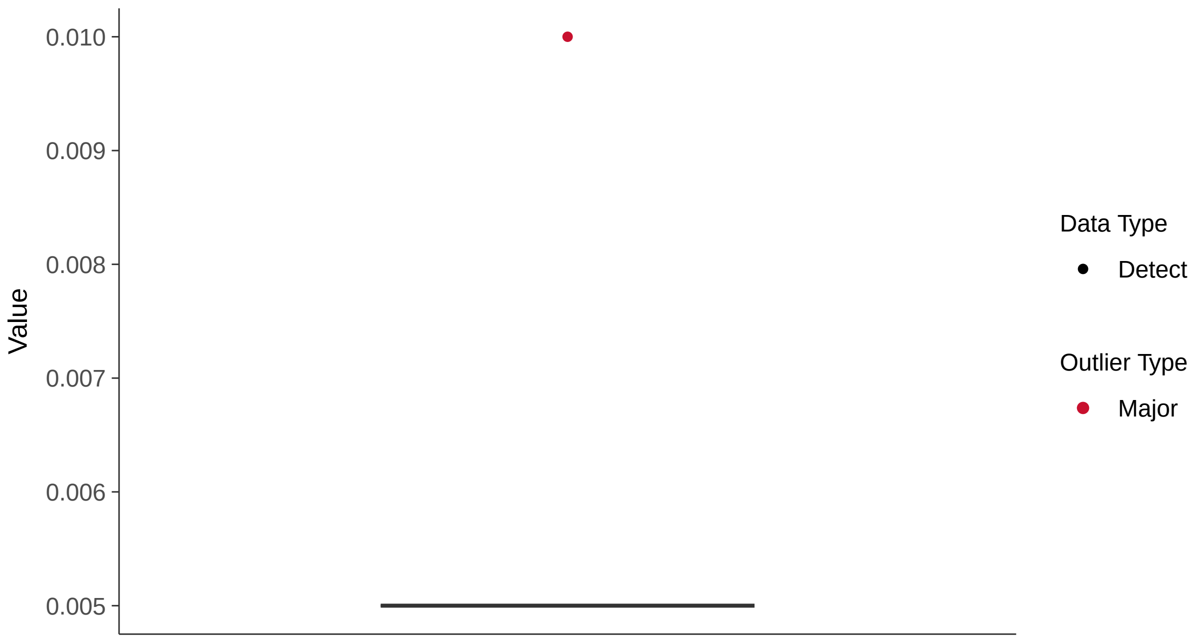
ID: 100C_5_42





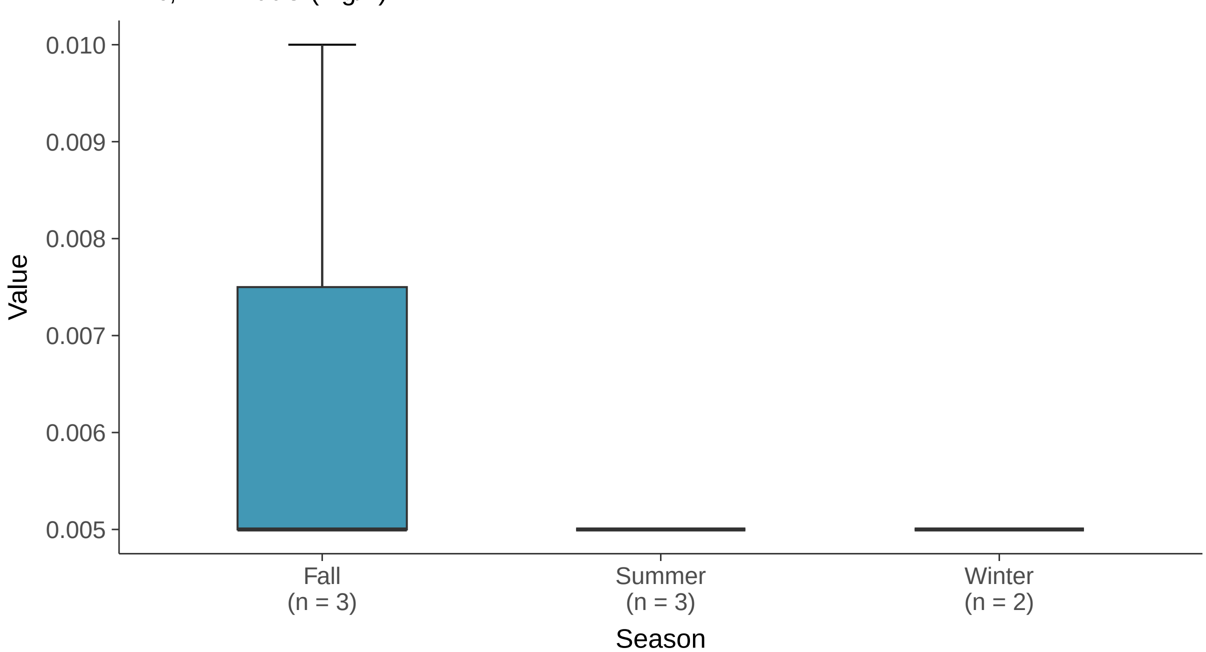
Boxplot

Zinc, MW-100C (mg/L)



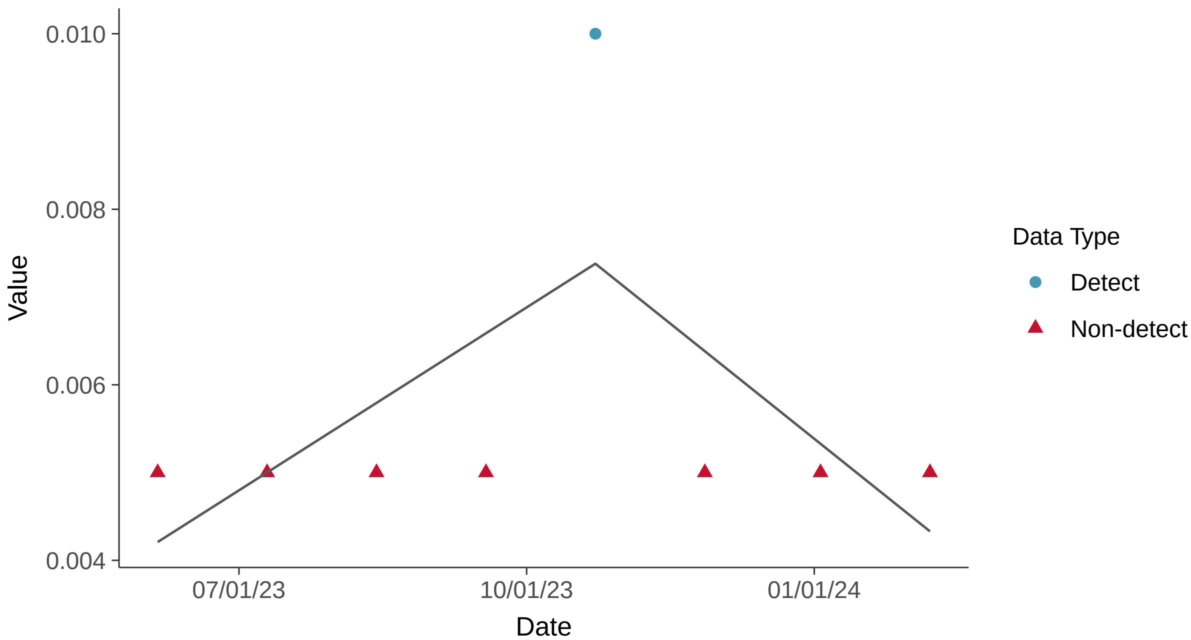
Boxplot by Season

Zinc, MW-100C (mg/L)



Trend Regression: Piecewise Linear-Linear

Zinc, MW-100C (mg/L)

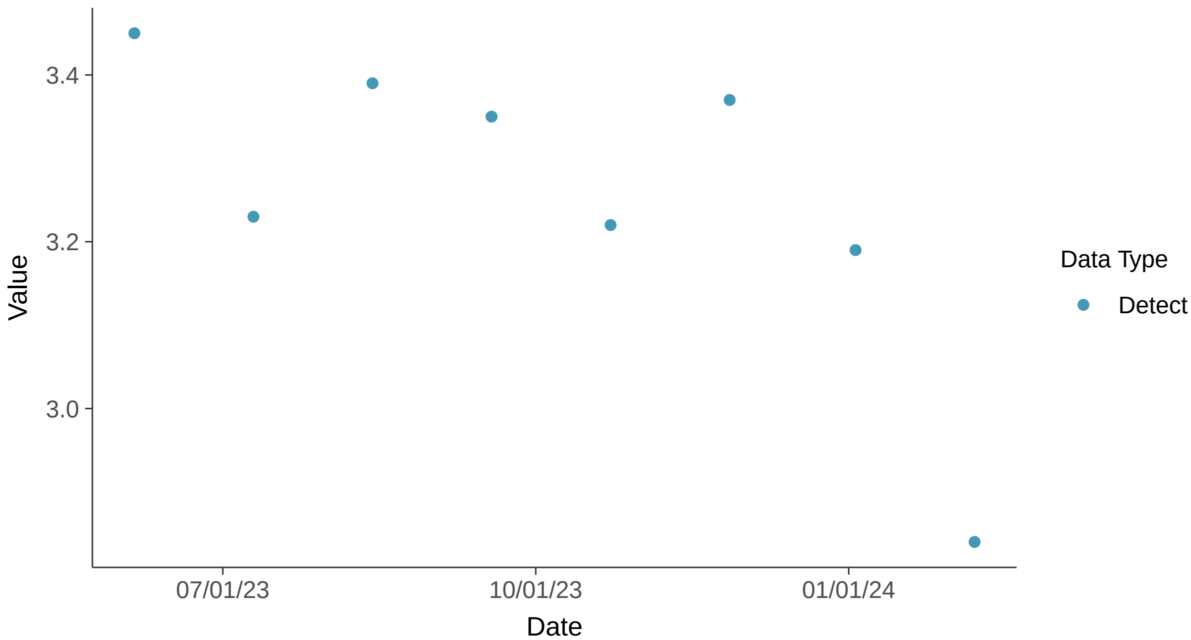


Appendix III: Boron, MW-100D

ID: 100D_1_01

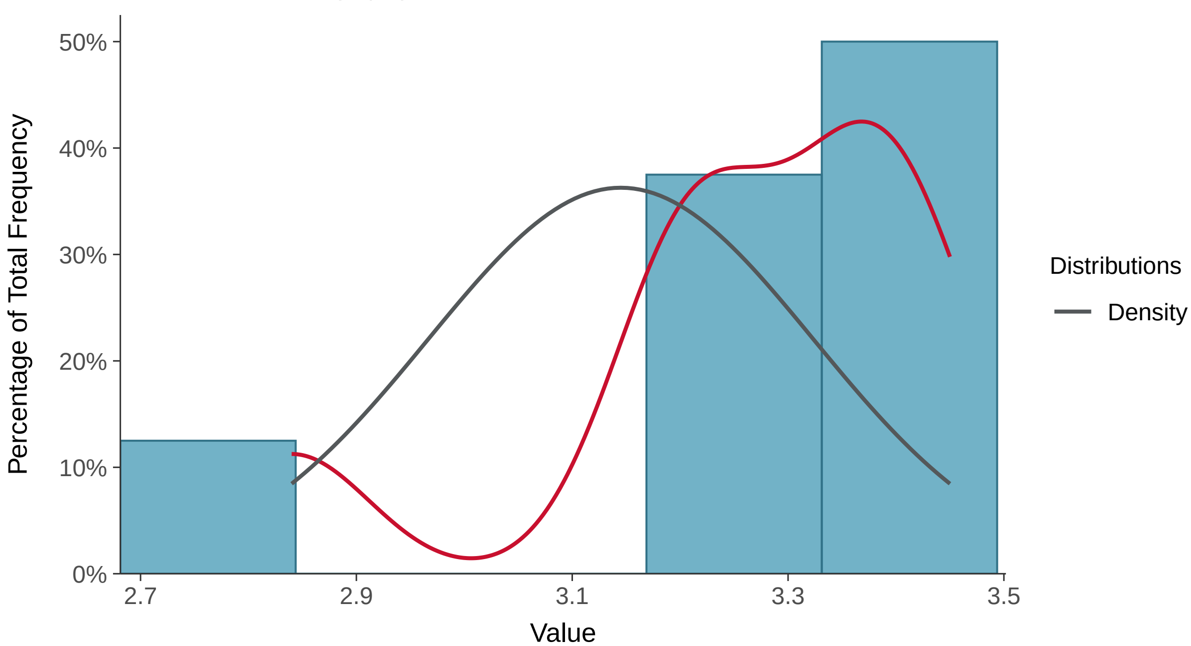
Scatter Plot

Boron, MW-100D (mg/L)



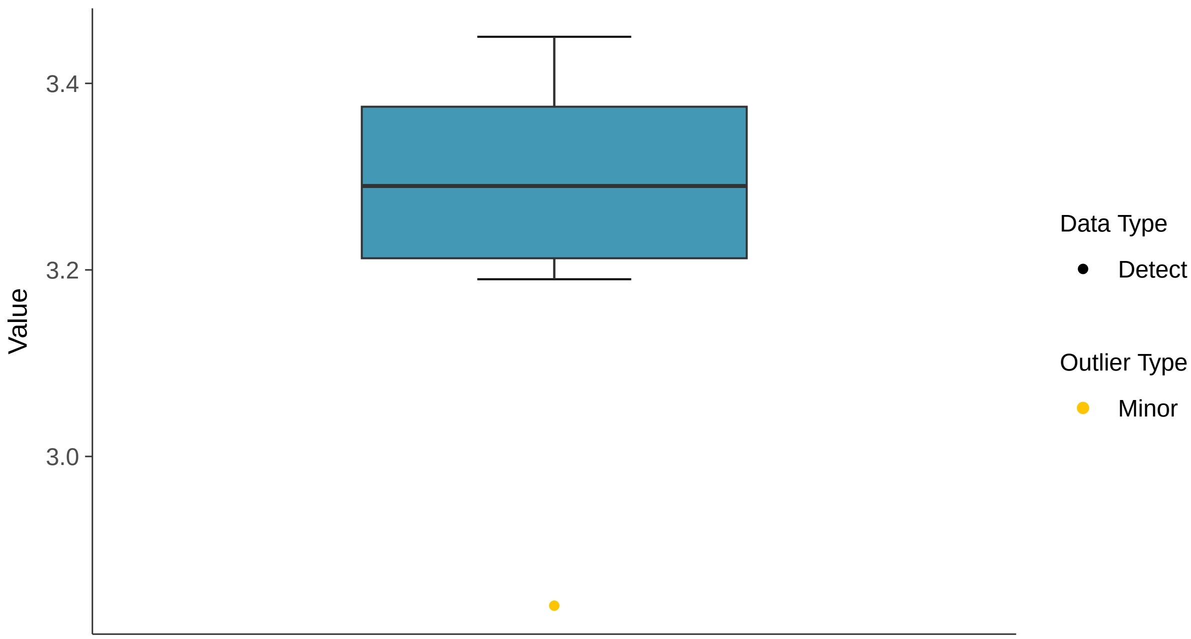
Histogram

Boron, MW-100D (mg/L)



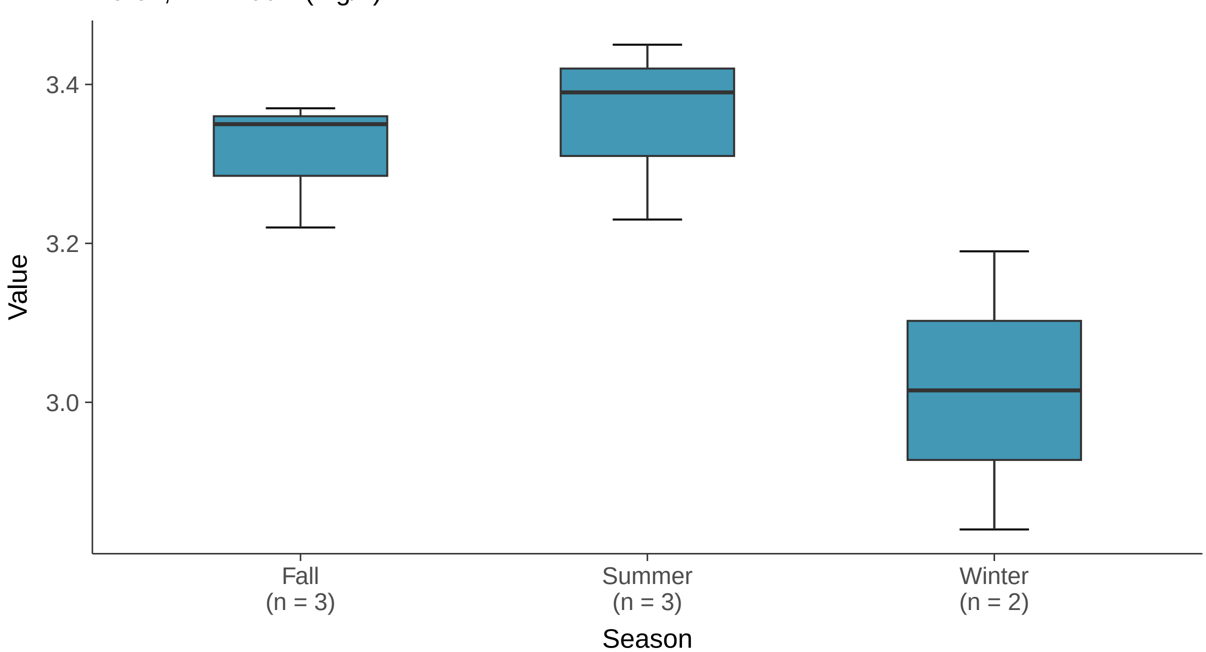
Boxplot

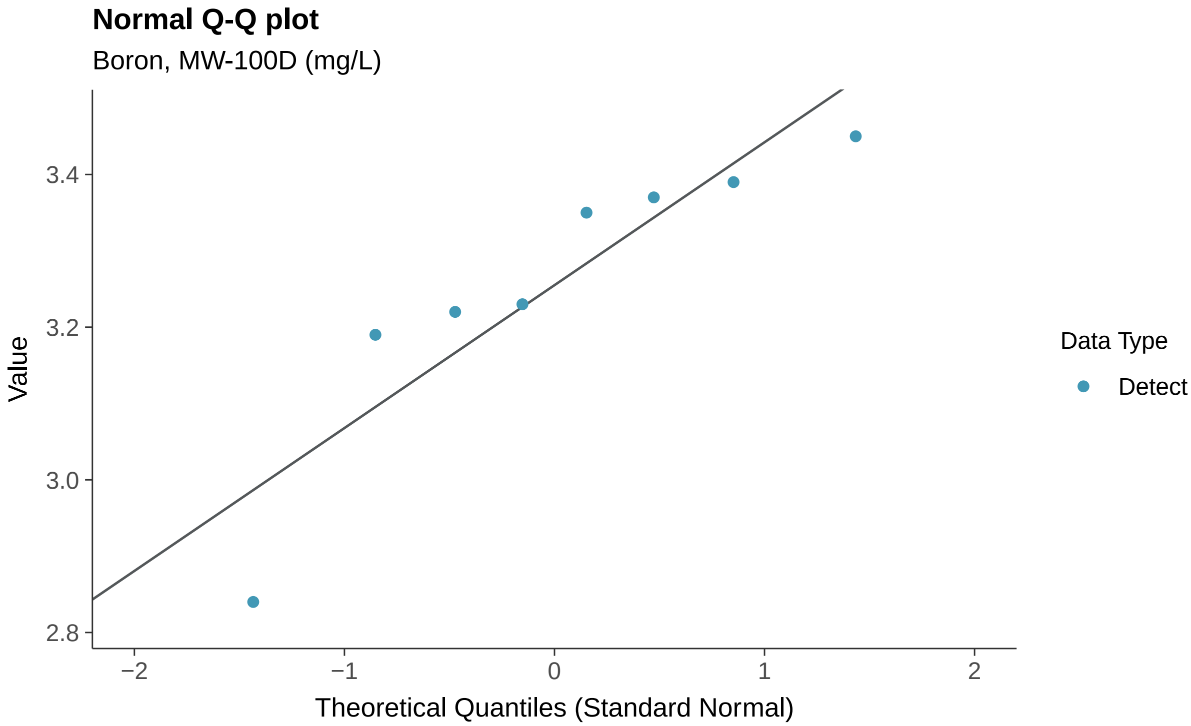
Boron, MW-100D (mg/L)

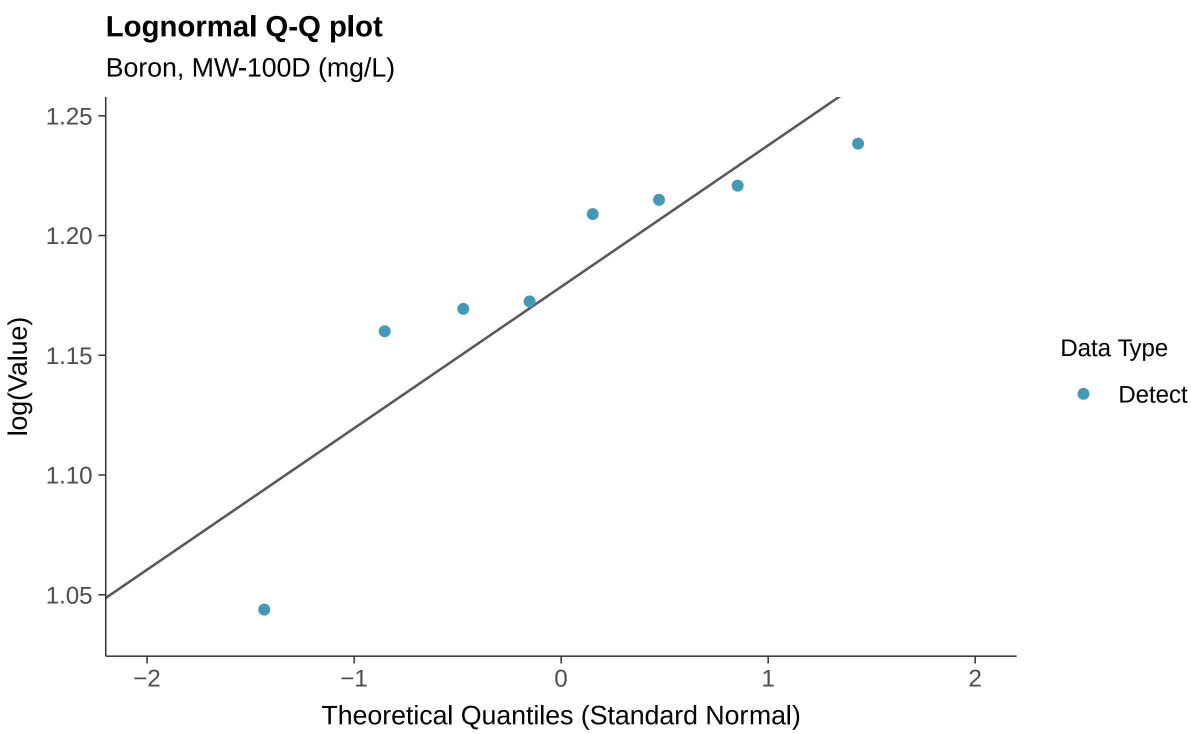


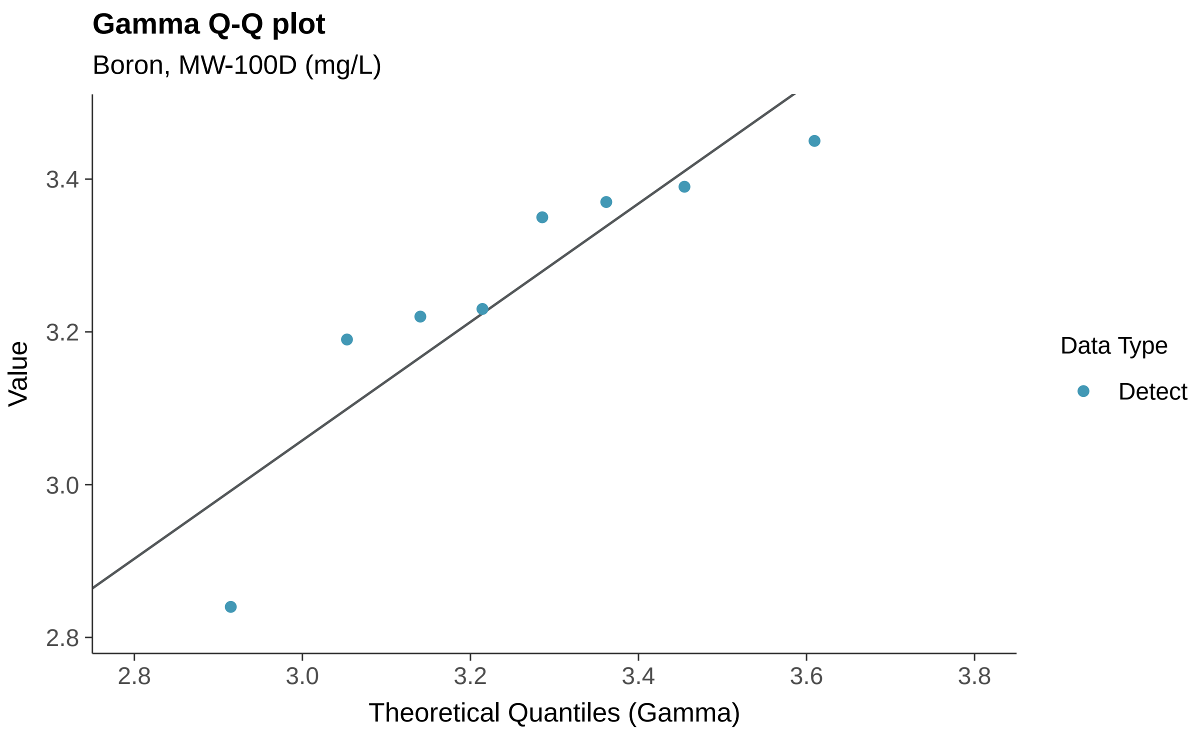
Boxplot by Season

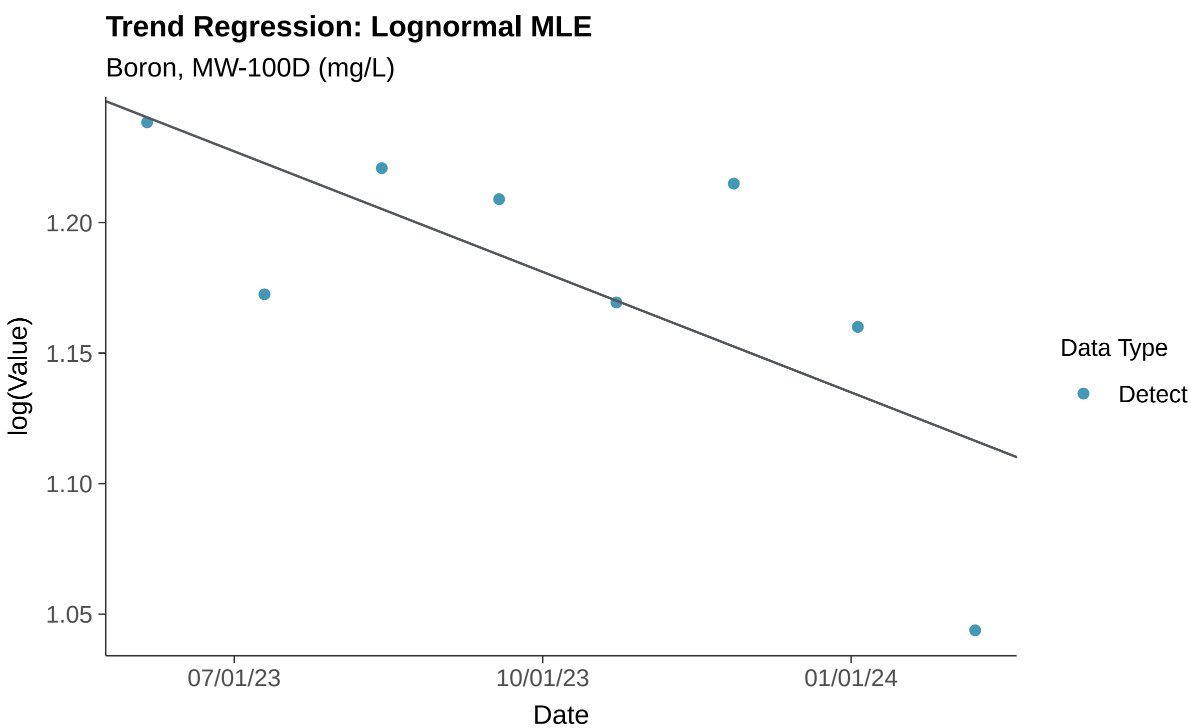
Boron, MW-100D (mg/L)




Normal Q-Q plot
Boron, MW-100D (mg/L)
Value
3.4
3.2
3.0
2.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

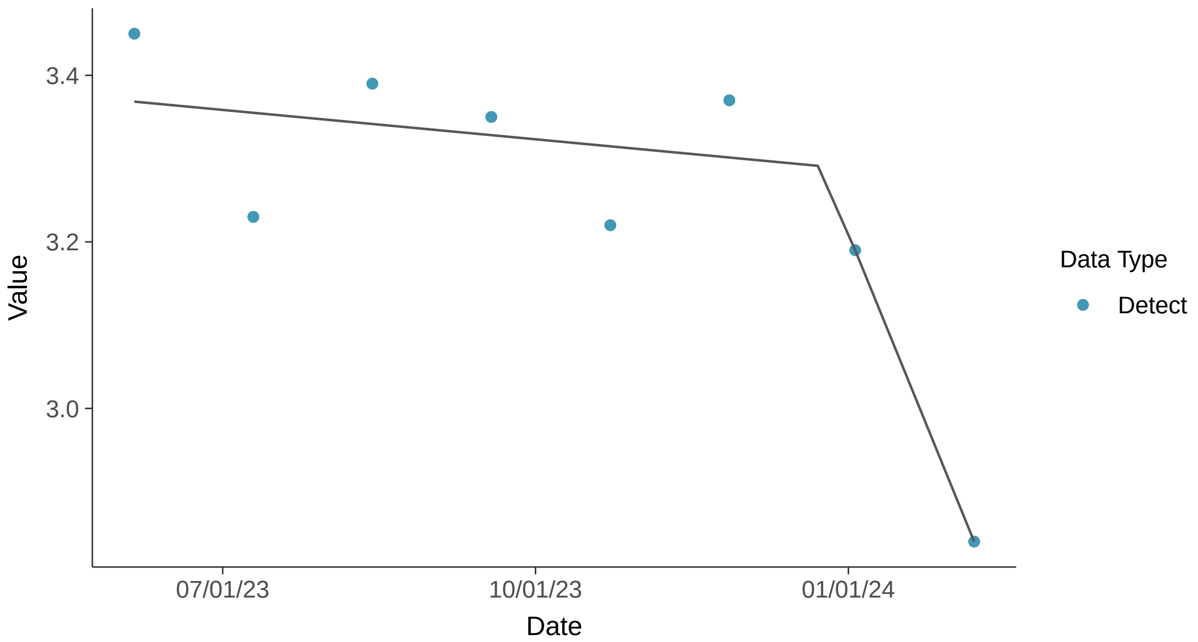

Lognormal Q-Q plot
Boron, MW-100D (mg/L)
log(Value)
1.25
1.20
1.15
1.10
1.05
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Boron, MW-100D (mg/L)
Value
3.4
3.2
3.0
2.8
2.8
3.0
3.2
3.4
3.6
3.8
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-100D (mg/L)
log(Value)
1.20
1.15
1.10
1.05
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

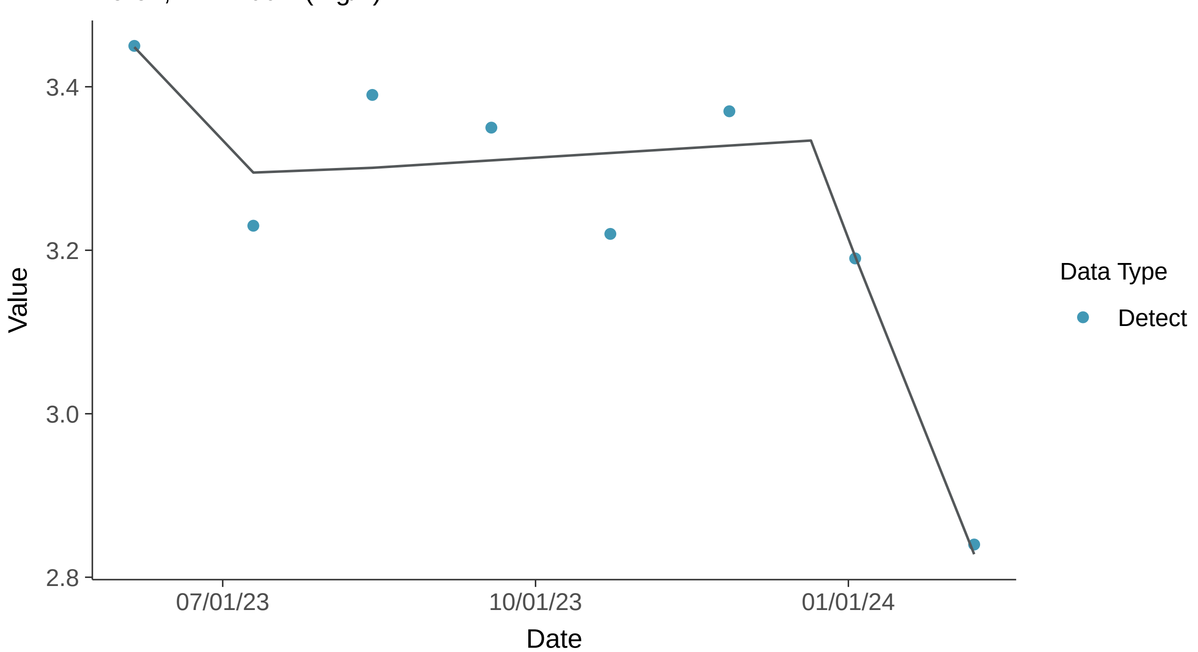
Trend Regression: Piecewise Linear-Linear

Boron, MW-100D (mg/L)



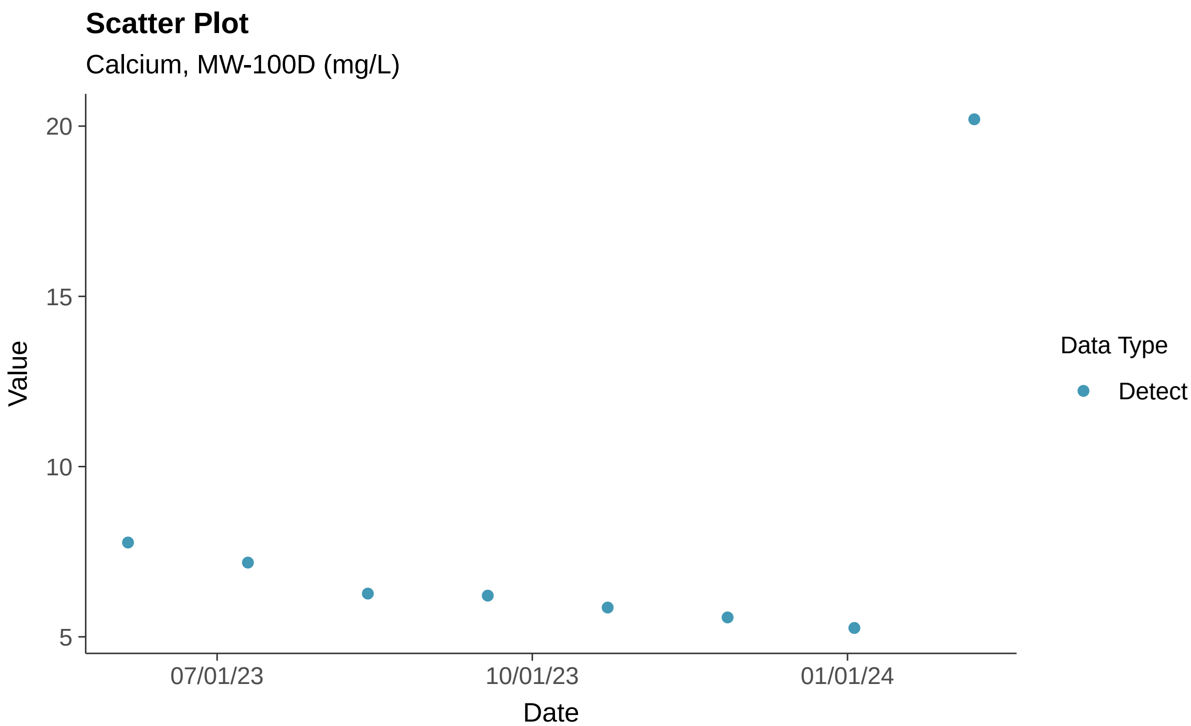
Trend Regression: Piecewise Linear-Linear-Linear

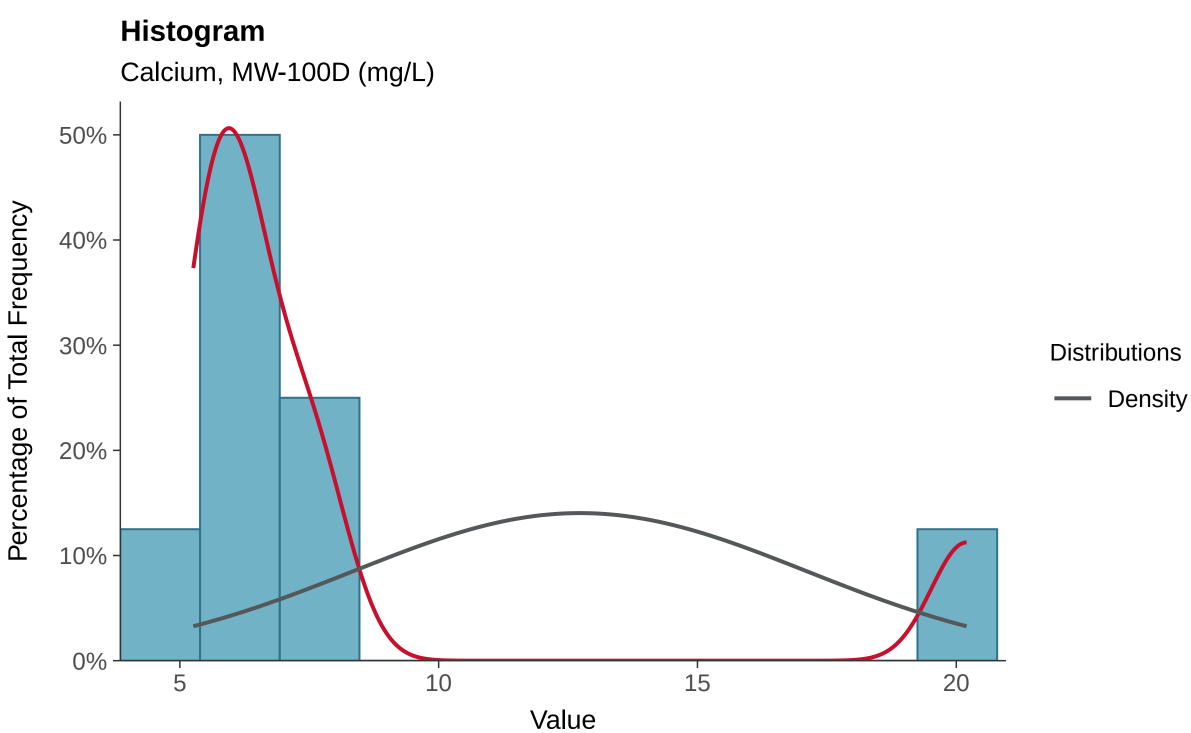
Boron, MW-100D (mg/L)



Appendix III: Calcium, MW-100D

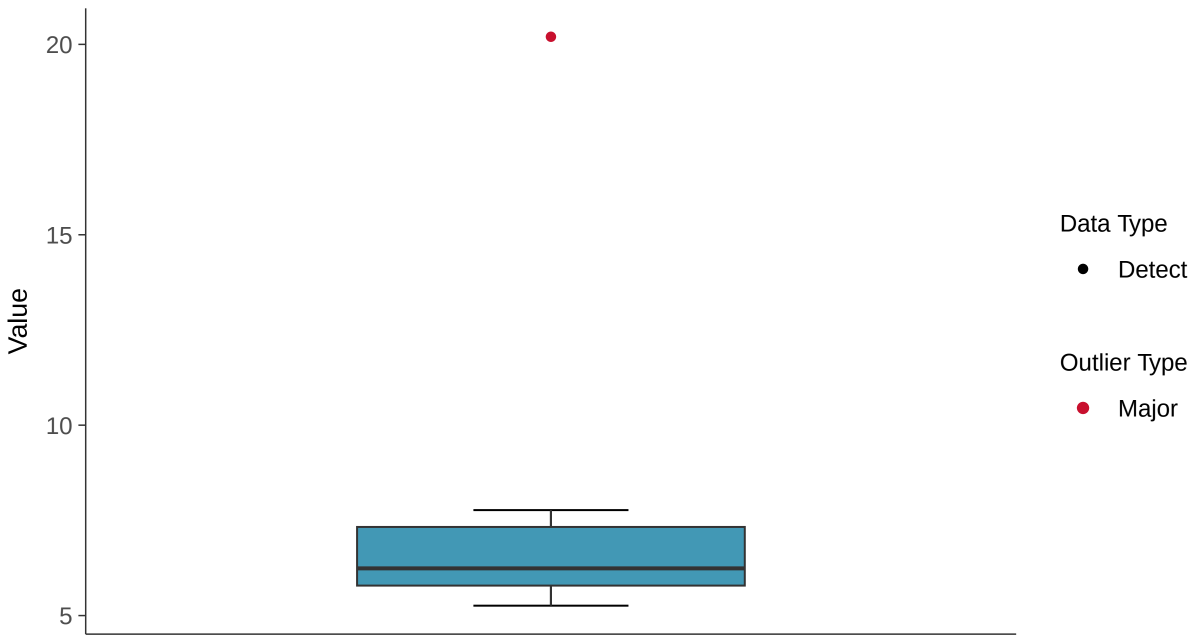
ID: 100D_1_02





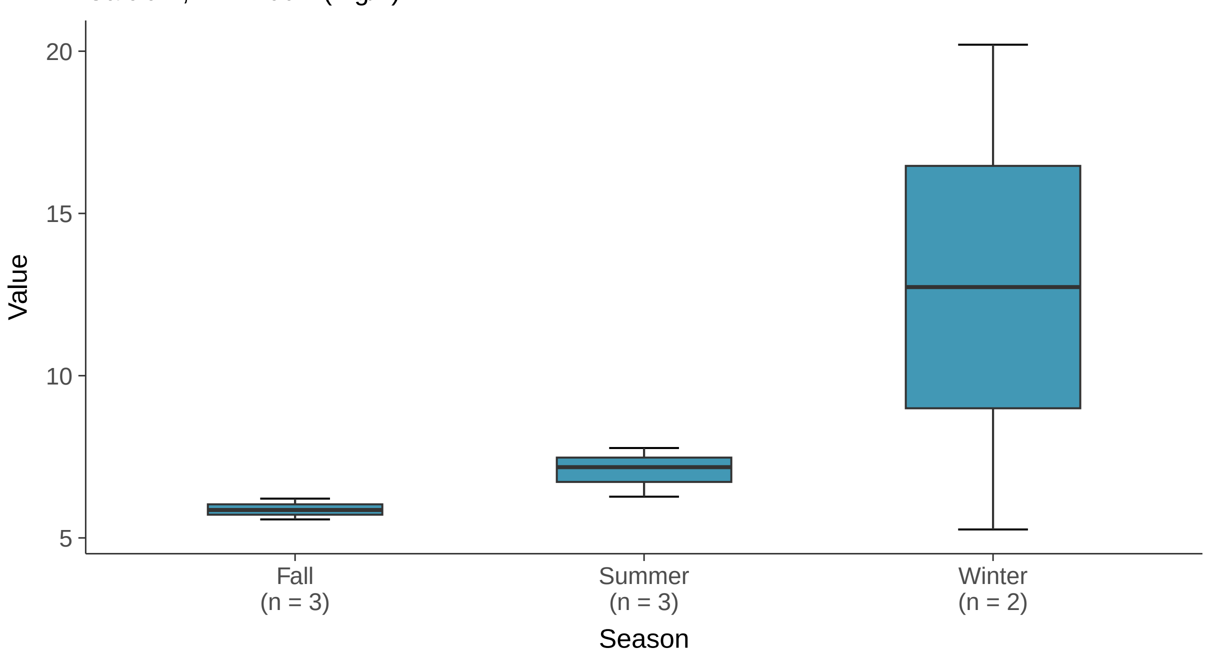
Boxplot

Calcium, MW-100D (mg/L)



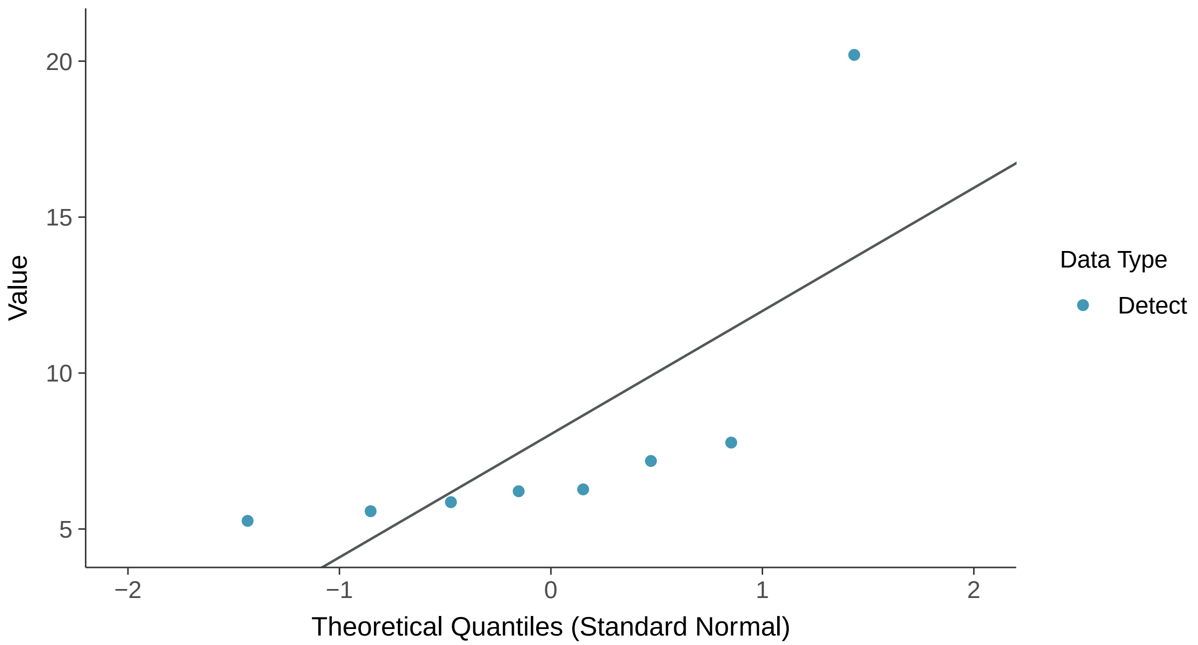
Boxplot by Season

Calcium, MW-100D (mg/L)



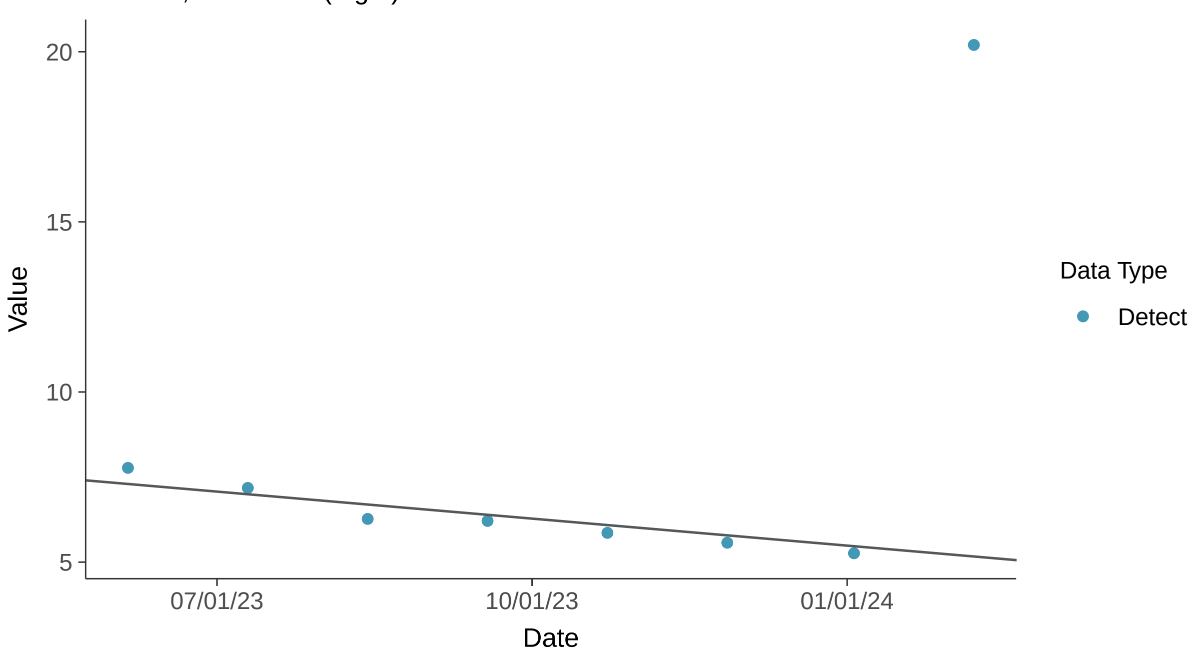
Normal Q-Q plot

Calcium, MW-100D (mg/L)



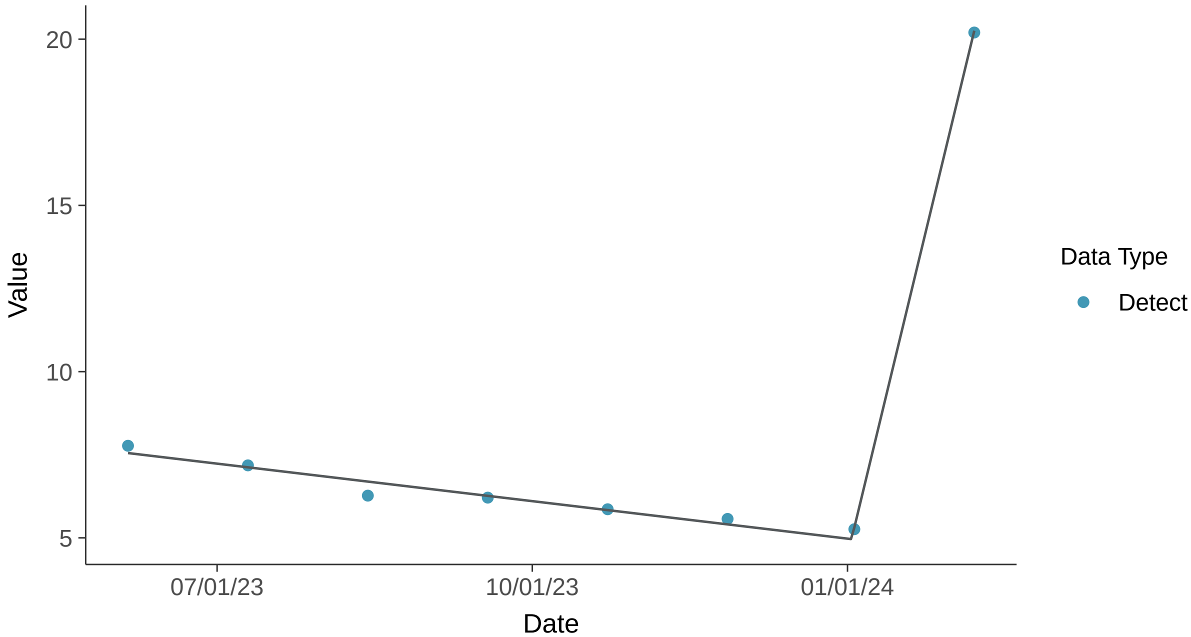
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Calcium, MW-100D (mg/L)



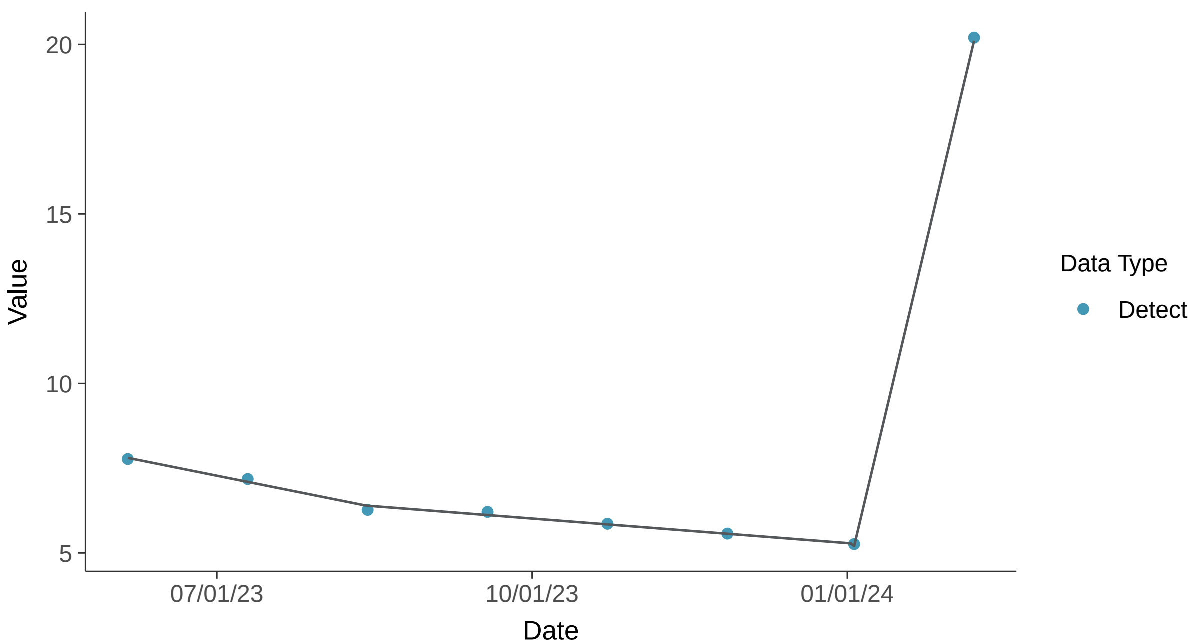
Trend Regression: Piecewise Linear-Linear

Calcium, MW-100D (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Calcium, MW-100D (mg/L)

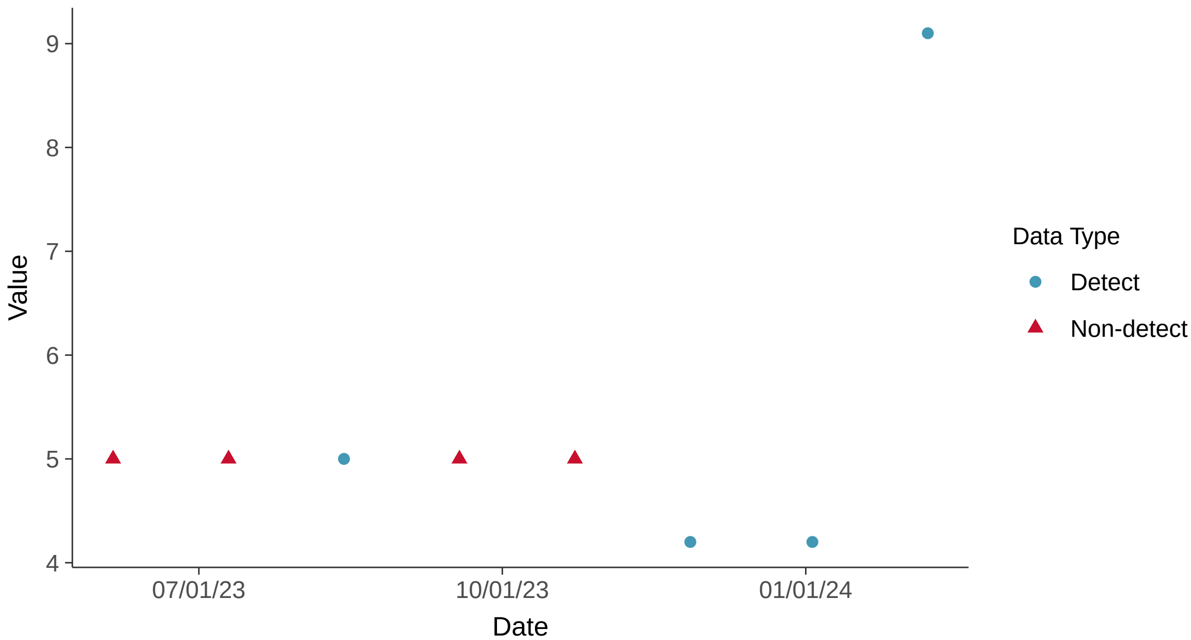


Appendix III: Chloride, MW-100D

ID: 100D_1_03

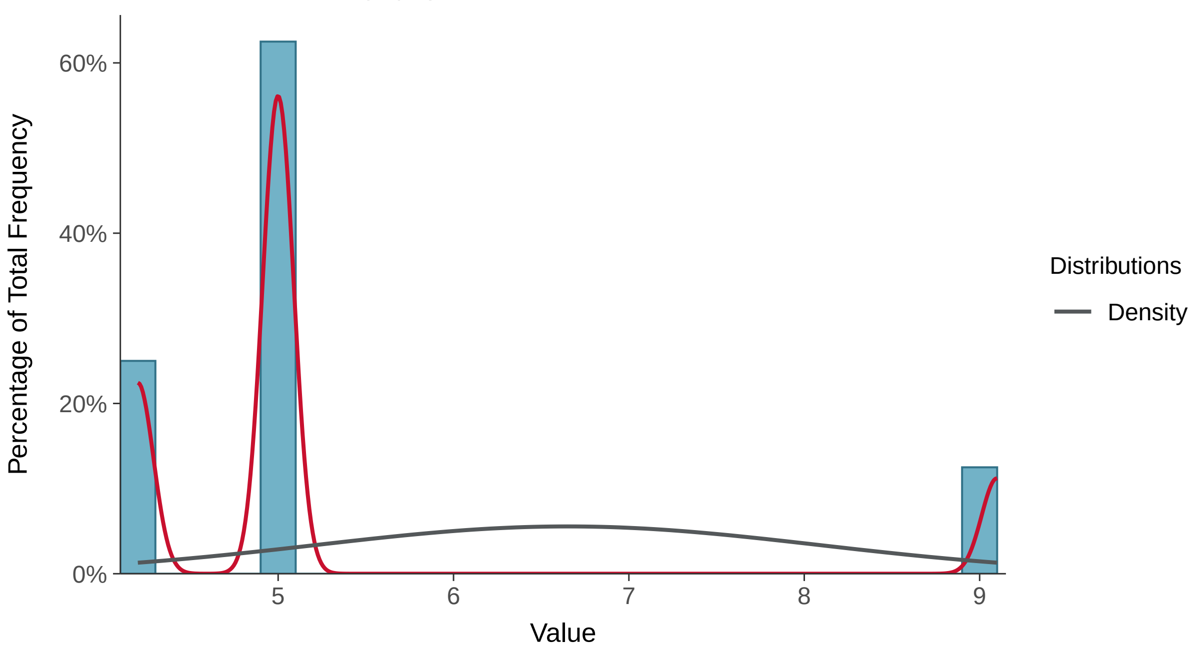
Scatter Plot

Chloride, MW-100D (mg/L)



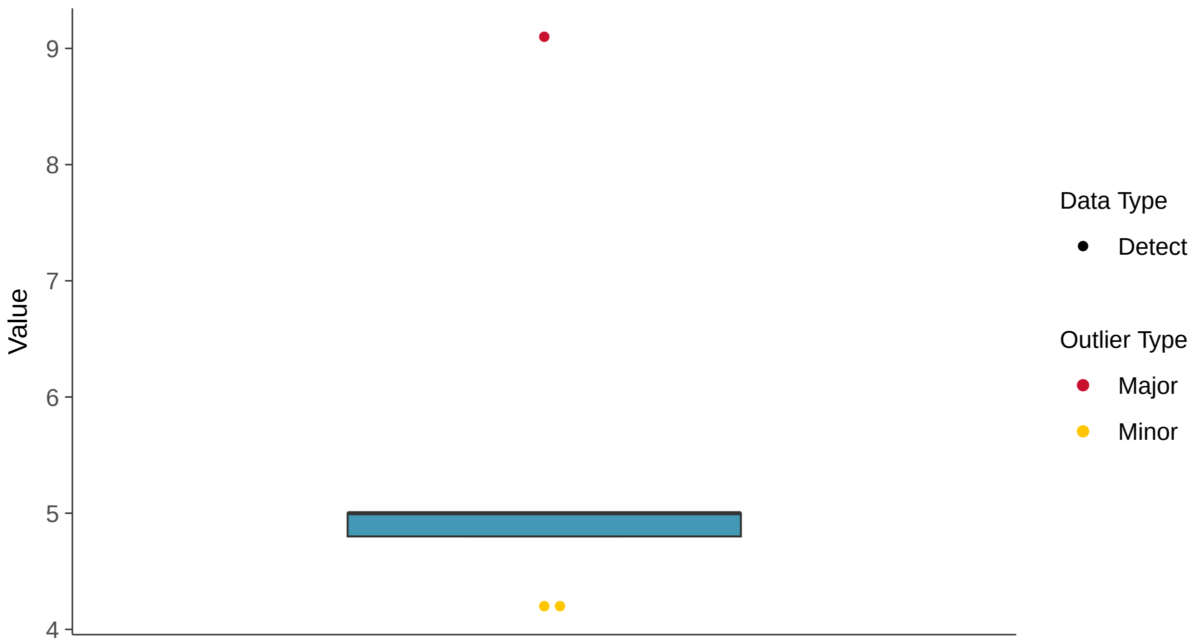
Histogram

Chloride, MW-100D (mg/L)



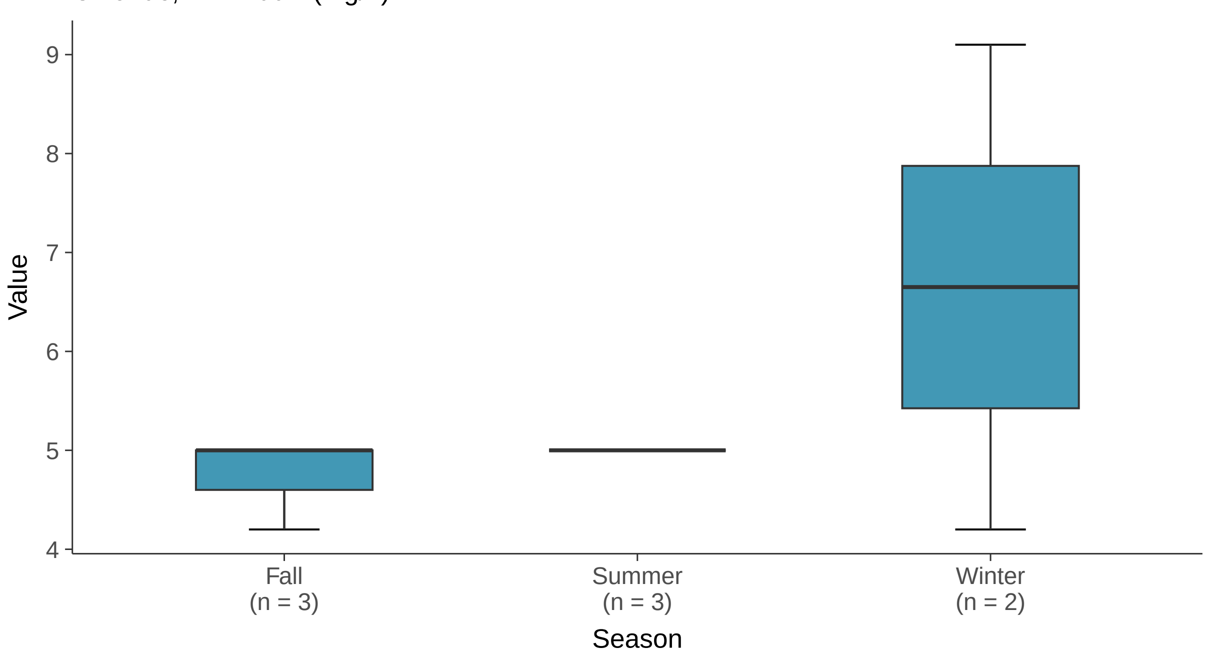
Boxplot

Chloride, MW-100D (mg/L)



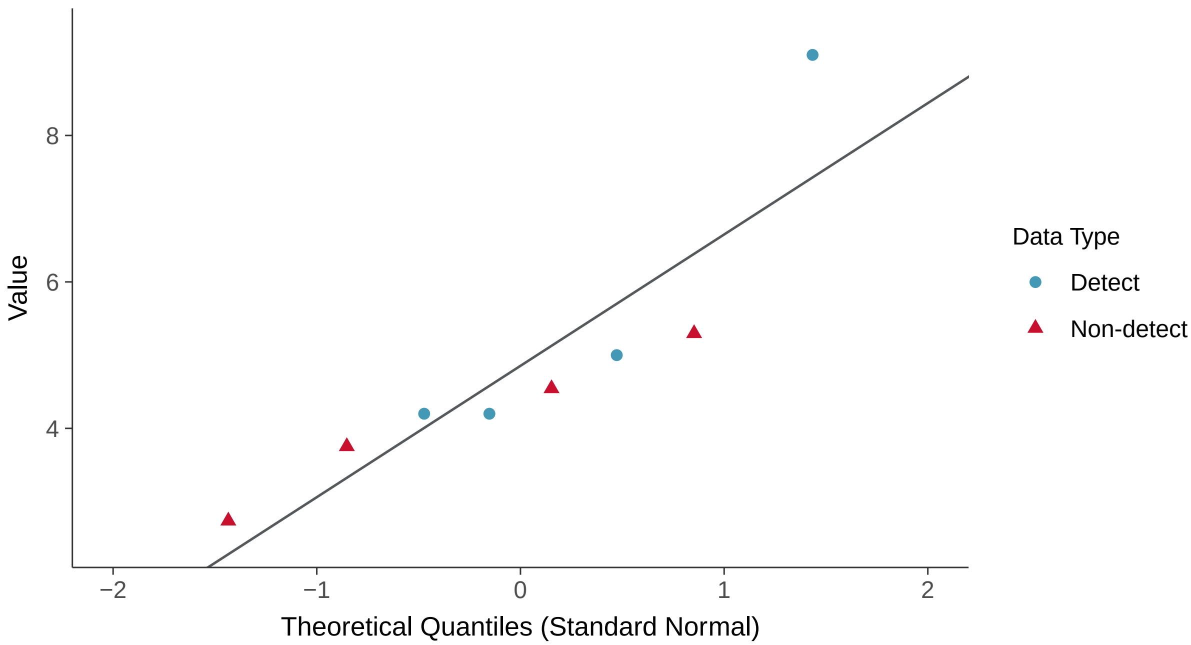
Boxplot by Season

Chloride, MW-100D (mg/L)



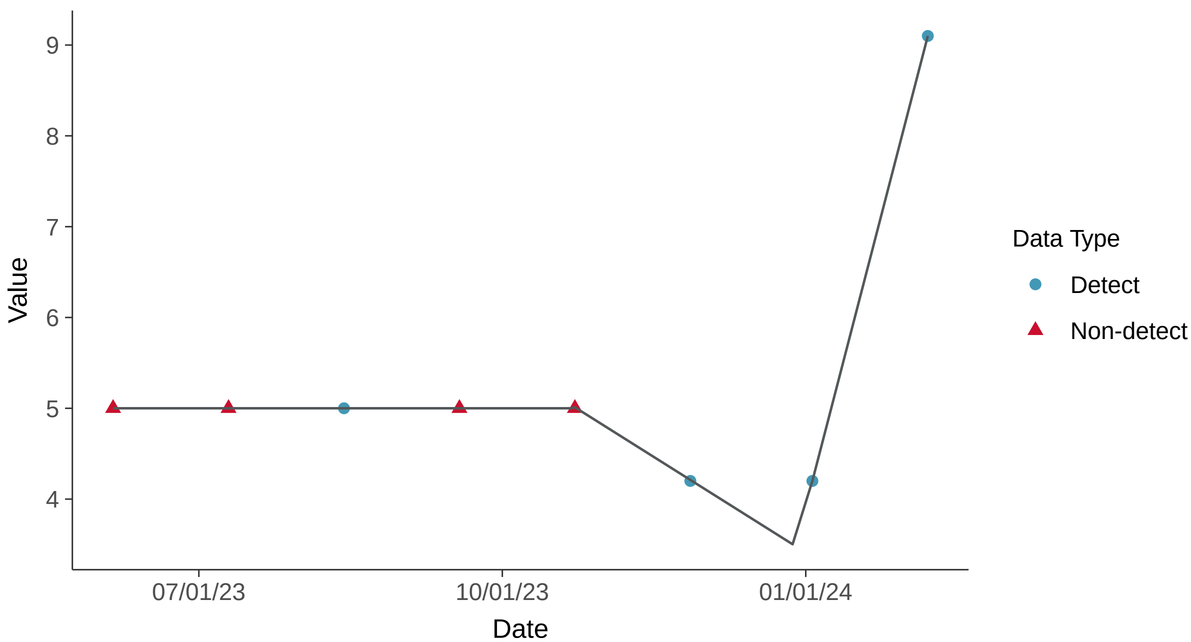
Normal Q-Q plot using ROS Imputed Estimates

Chloride, MW-100D (mg/L)



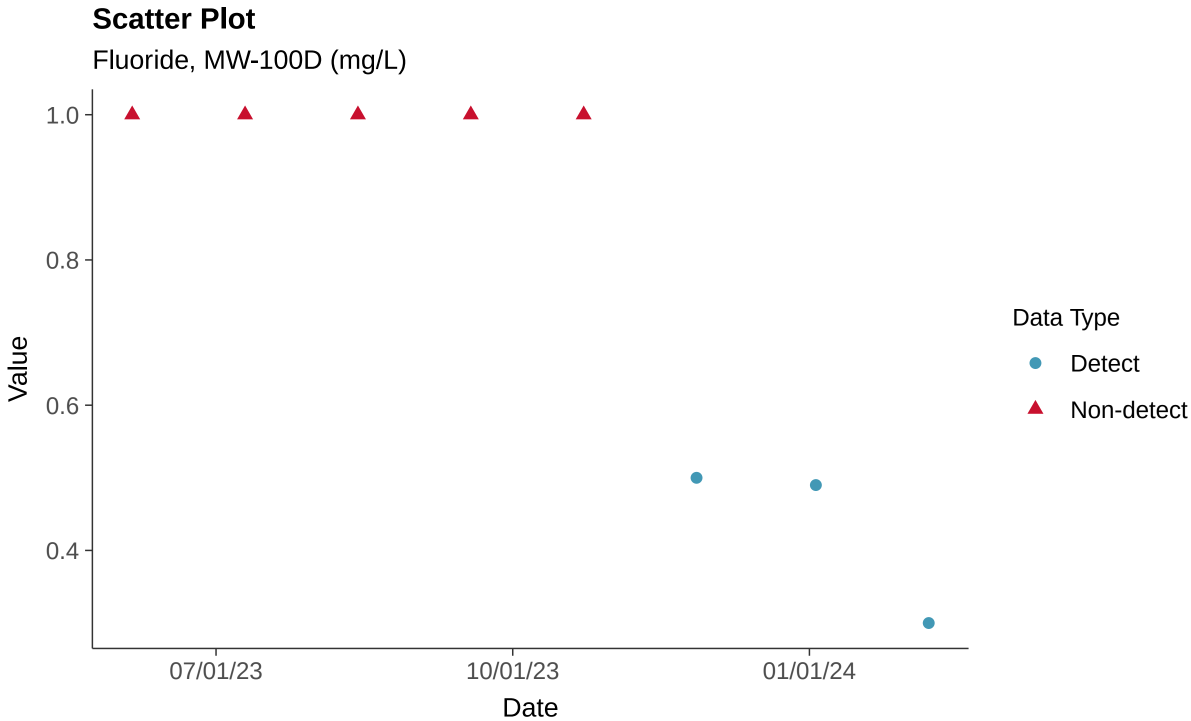
Trend Regression: Piecewise Linear-Linear-Linear

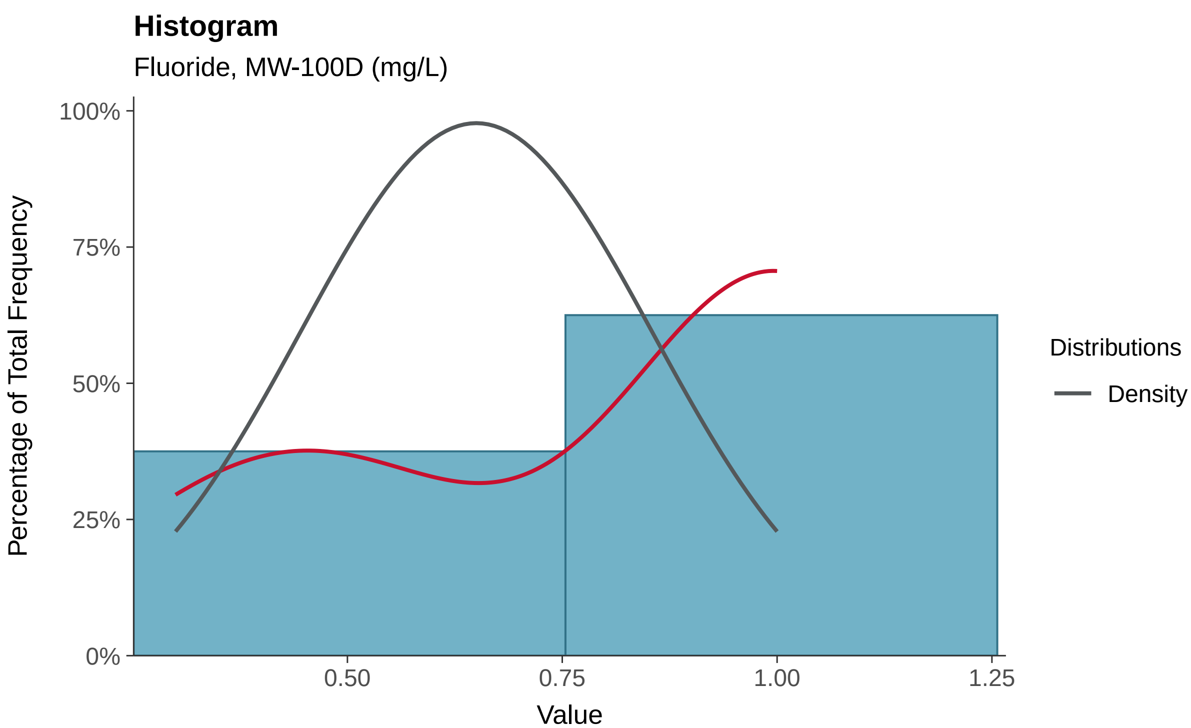
Chloride, MW-100D (mg/L)



Appendix III: Fluoride, MW-100D

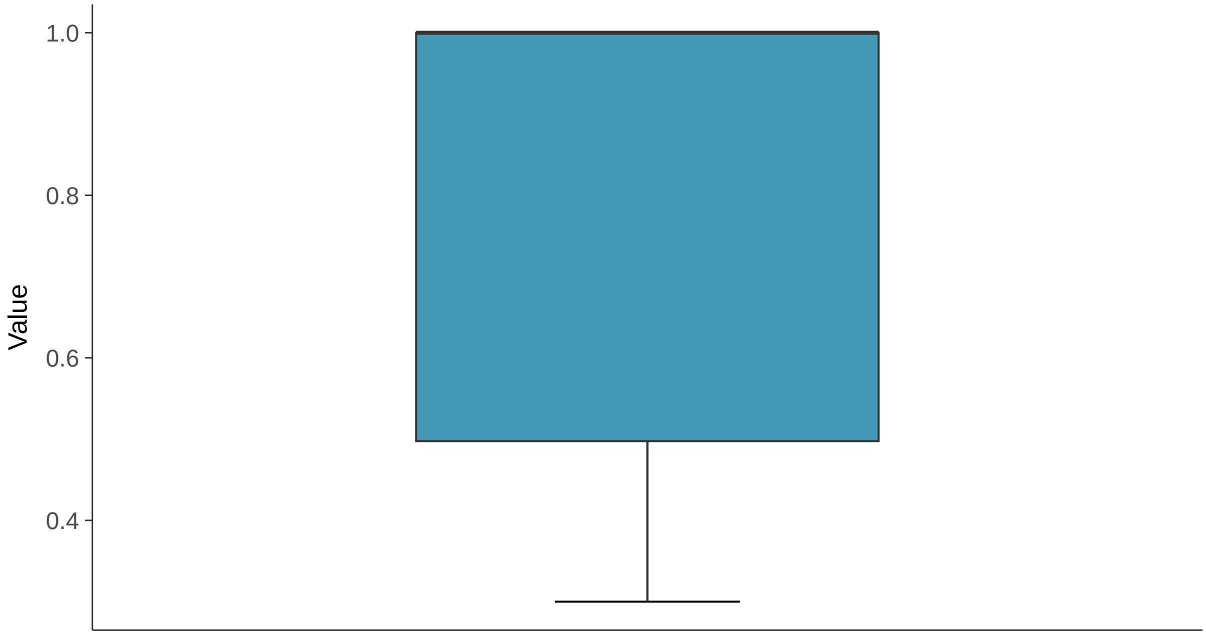
ID: 100D_1_04





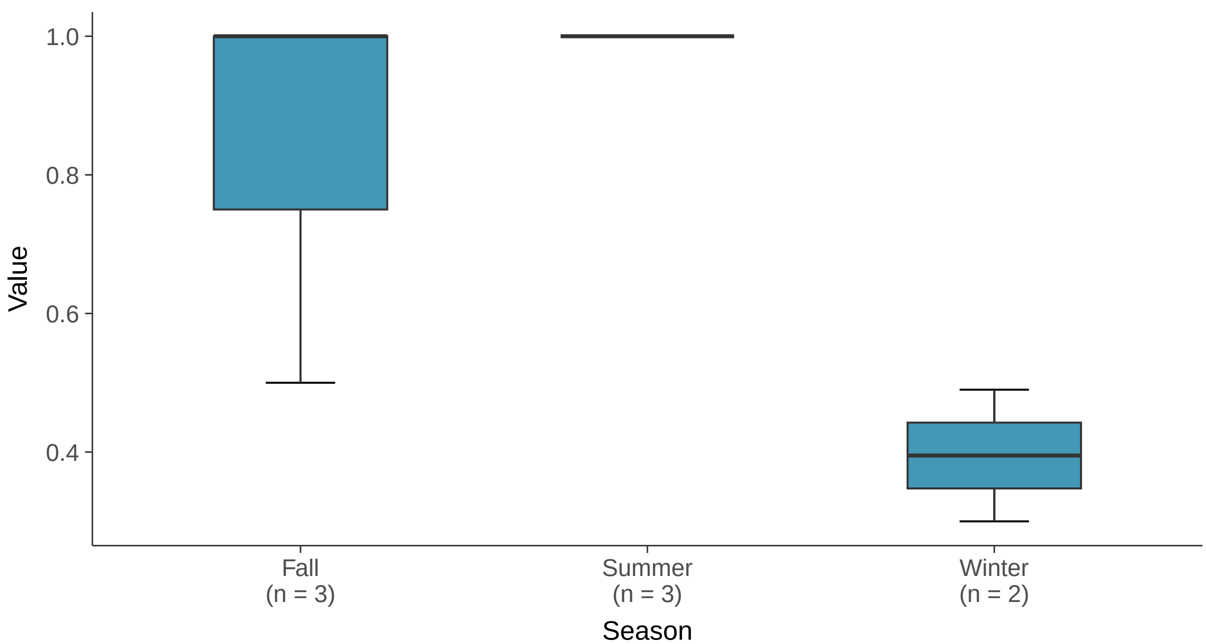
Boxplot

Fluoride, MW-100D (mg/L)



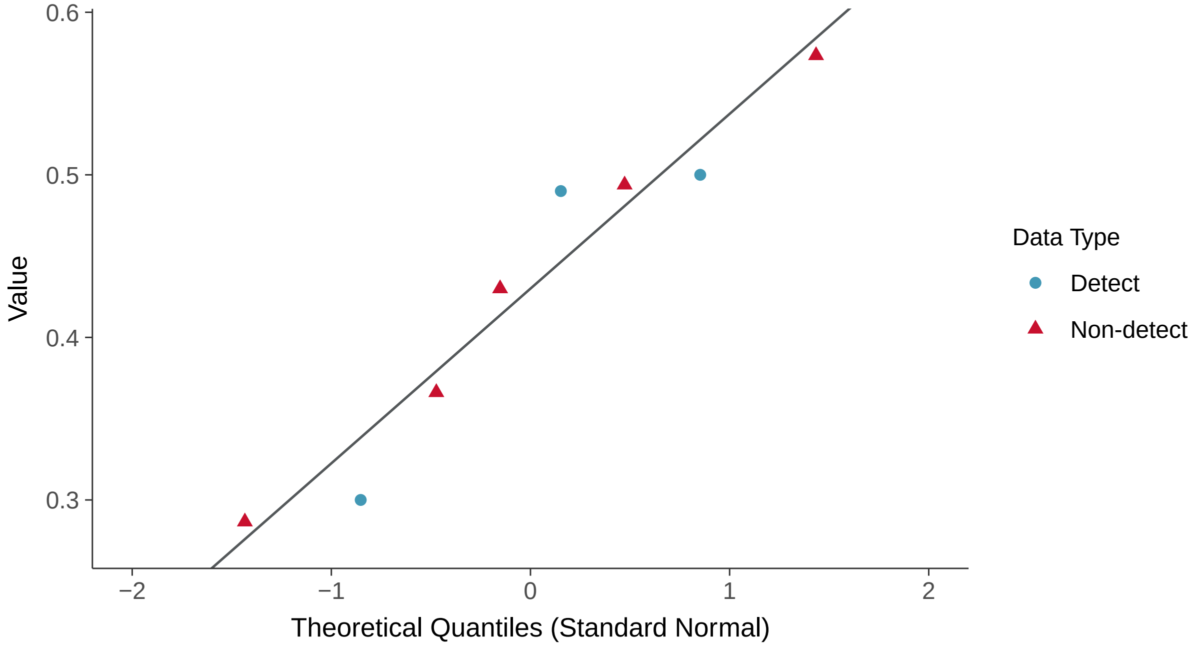
Boxplot by Season

Fluoride, MW-100D (mg/L)



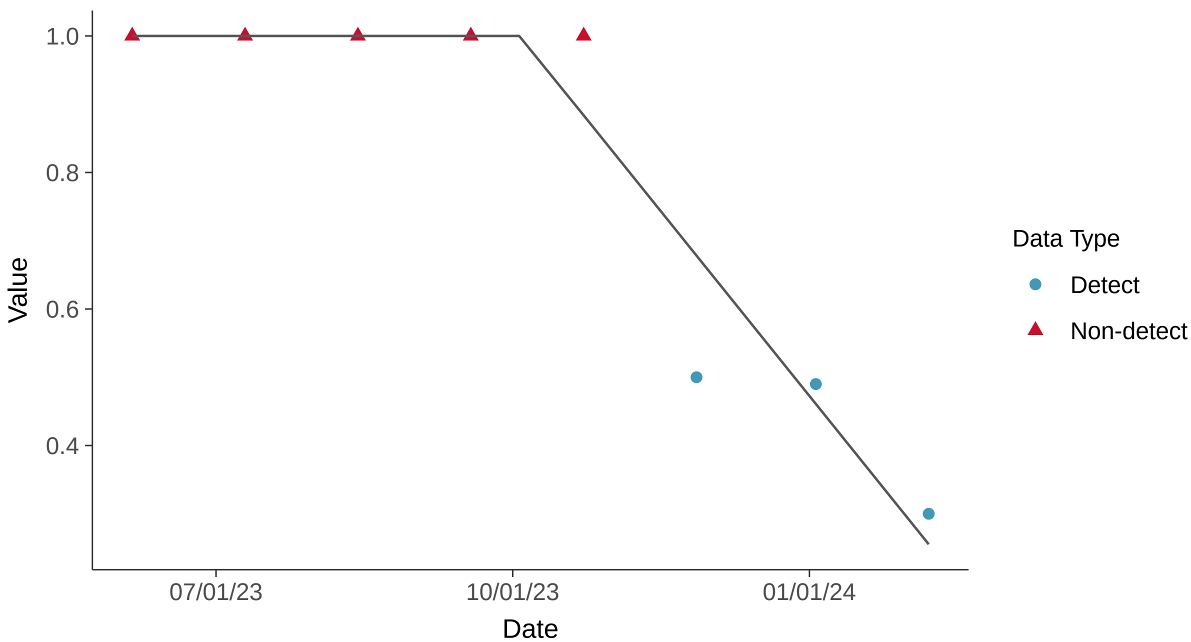
Normal Q-Q plot using ROS Imputed Estimates

Fluoride, MW-100D (mg/L)



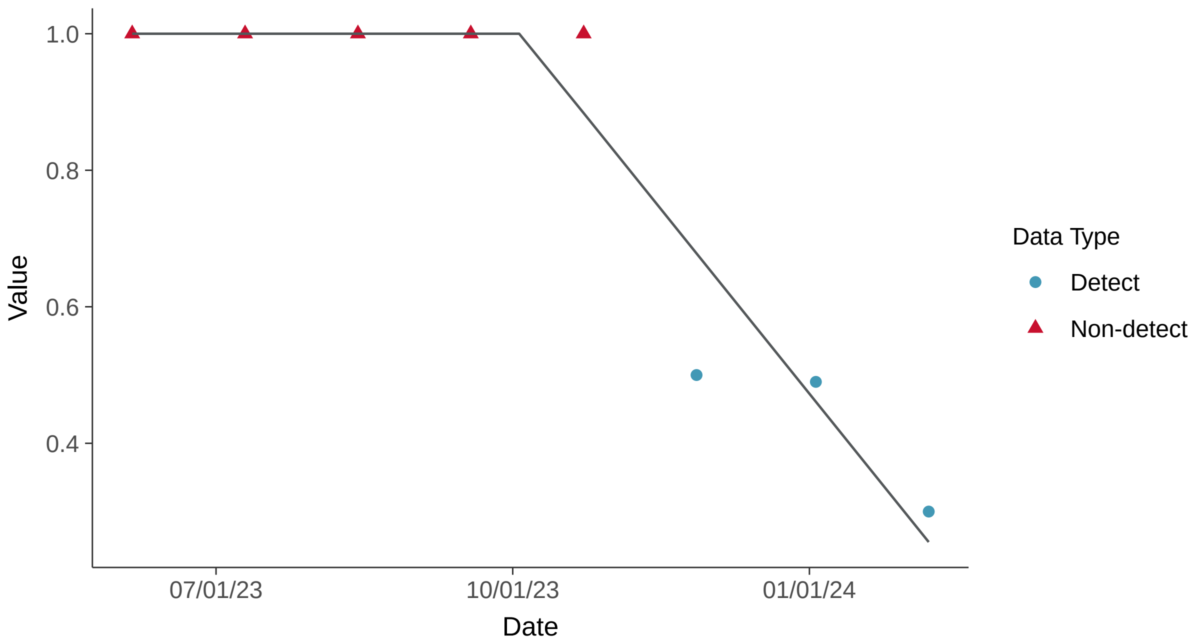
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-100D (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-100D (mg/L)

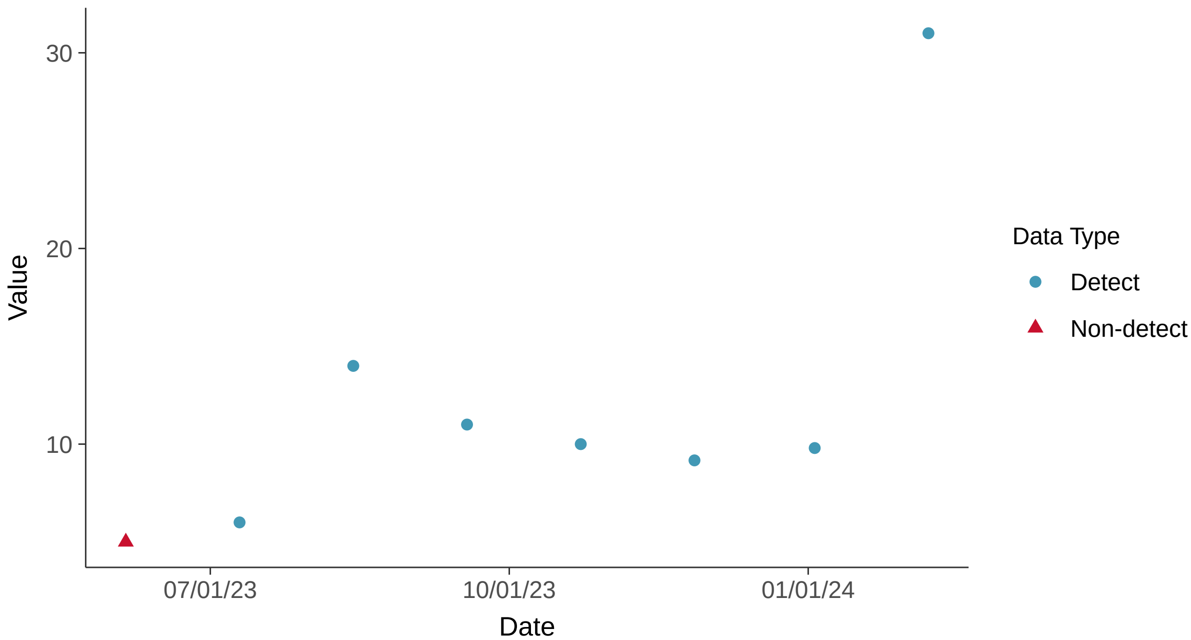


Appendix III: Sulfate, MW-100D

ID: 100D_1_05

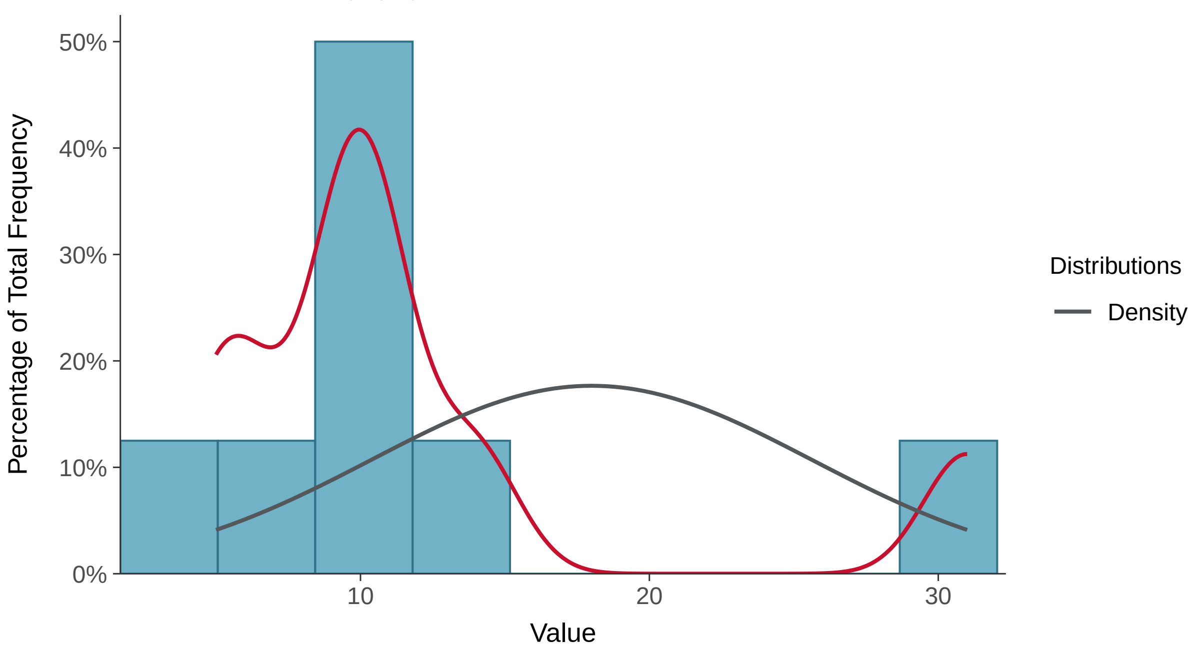
Scatter Plot

Sulfate, MW-100D (mg/L)



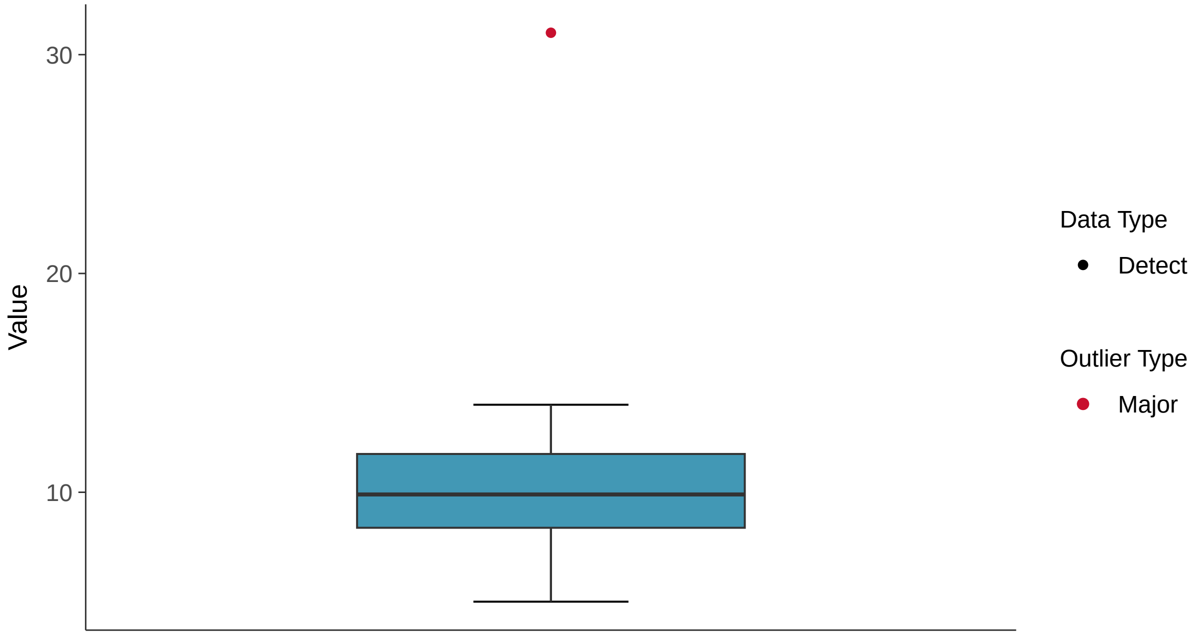
Histogram

Sulfate, MW-100D (mg/L)



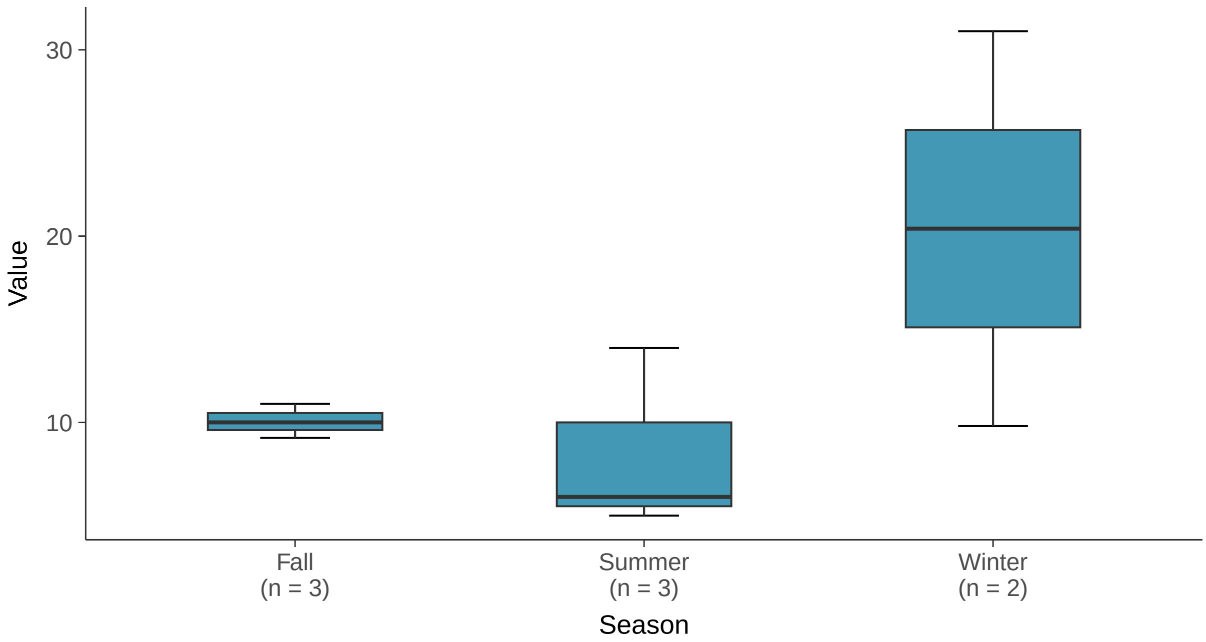
Boxplot

Sulfate, MW-100D (mg/L)



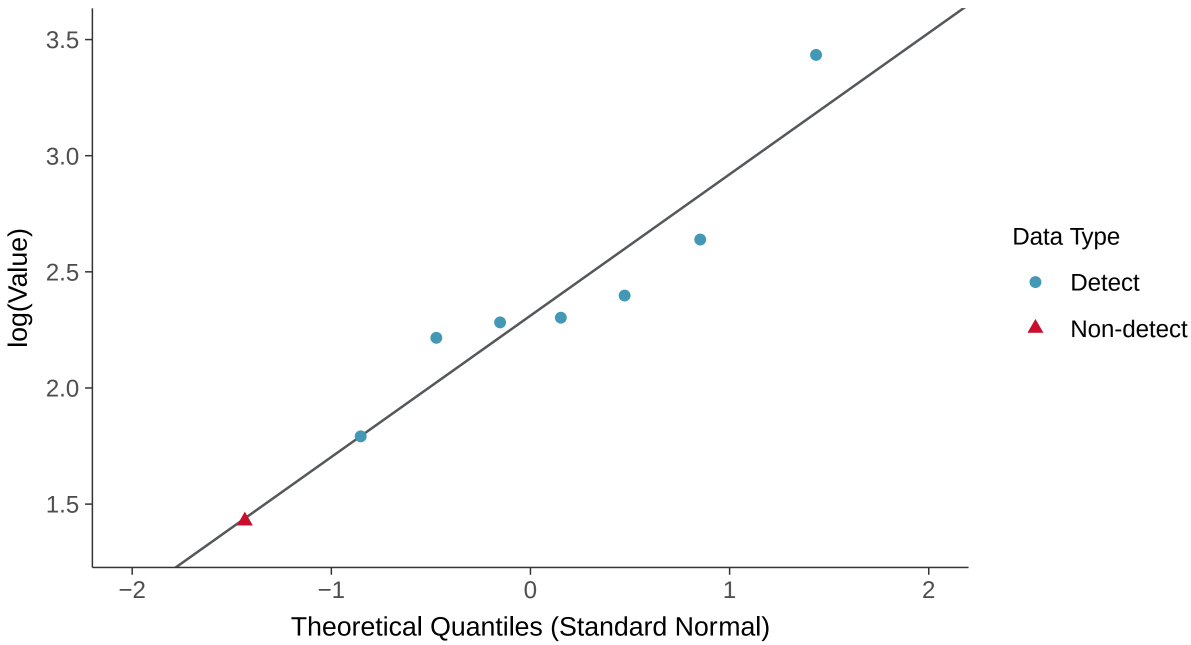
Boxplot by Season

Sulfate, MW-100D (mg/L)



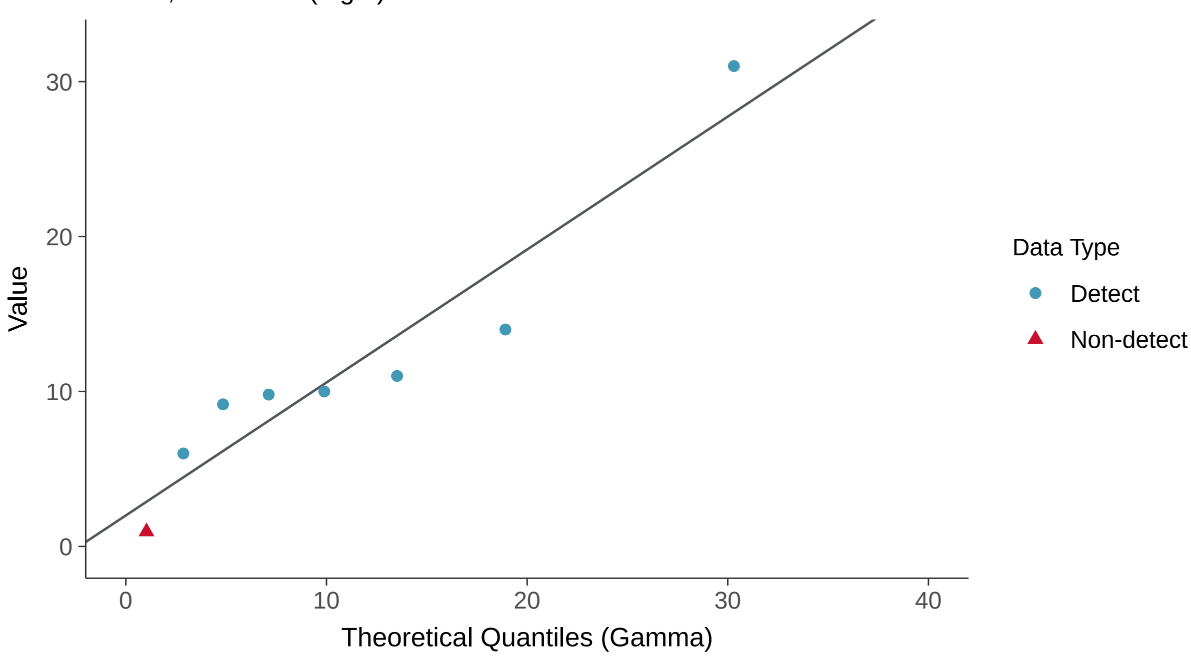
Lognormal Q-Q plot using ROS Imputed Estimates

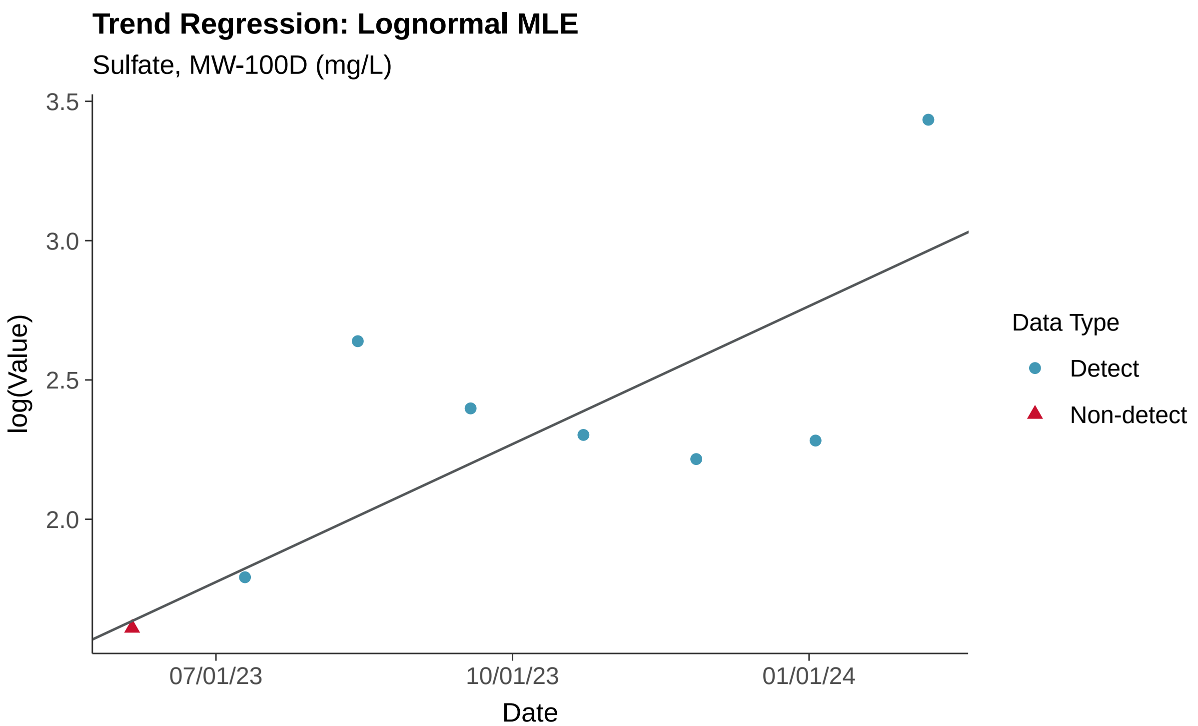
Sulfate, MW-100D (mg/L)

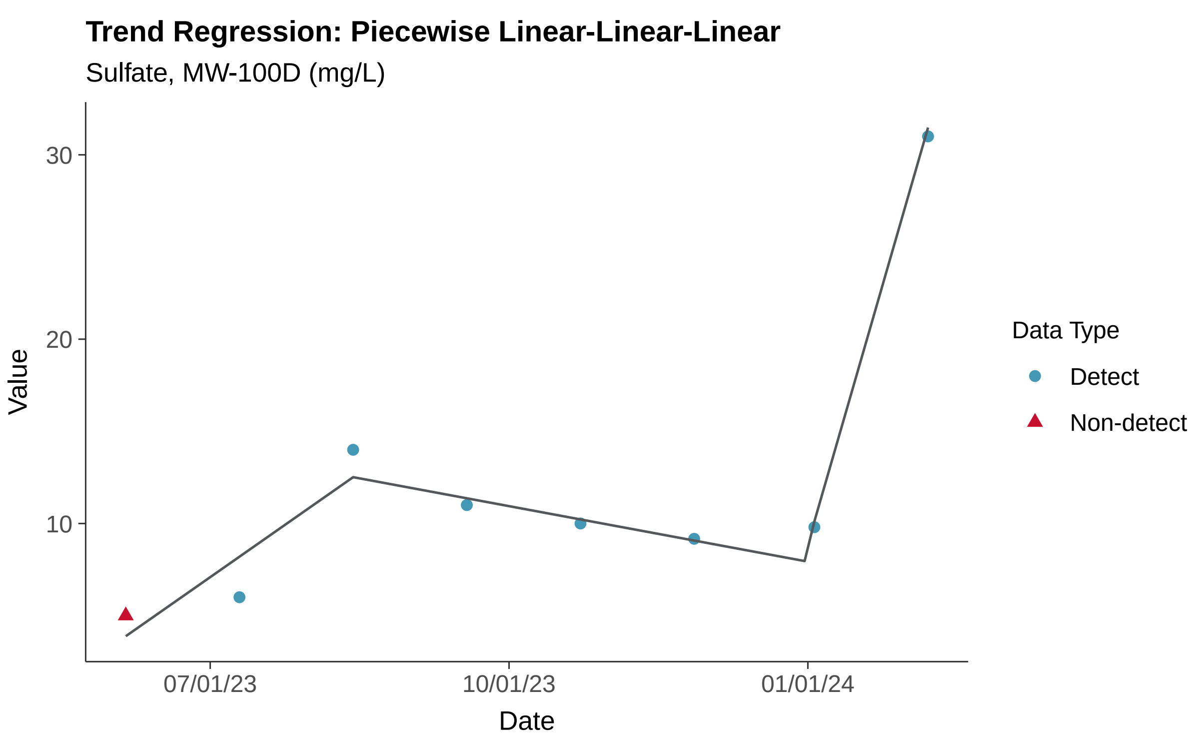


Gamma Q-Q plot using ROS Imputed Estimates

Sulfate, MW-100D (mg/L)

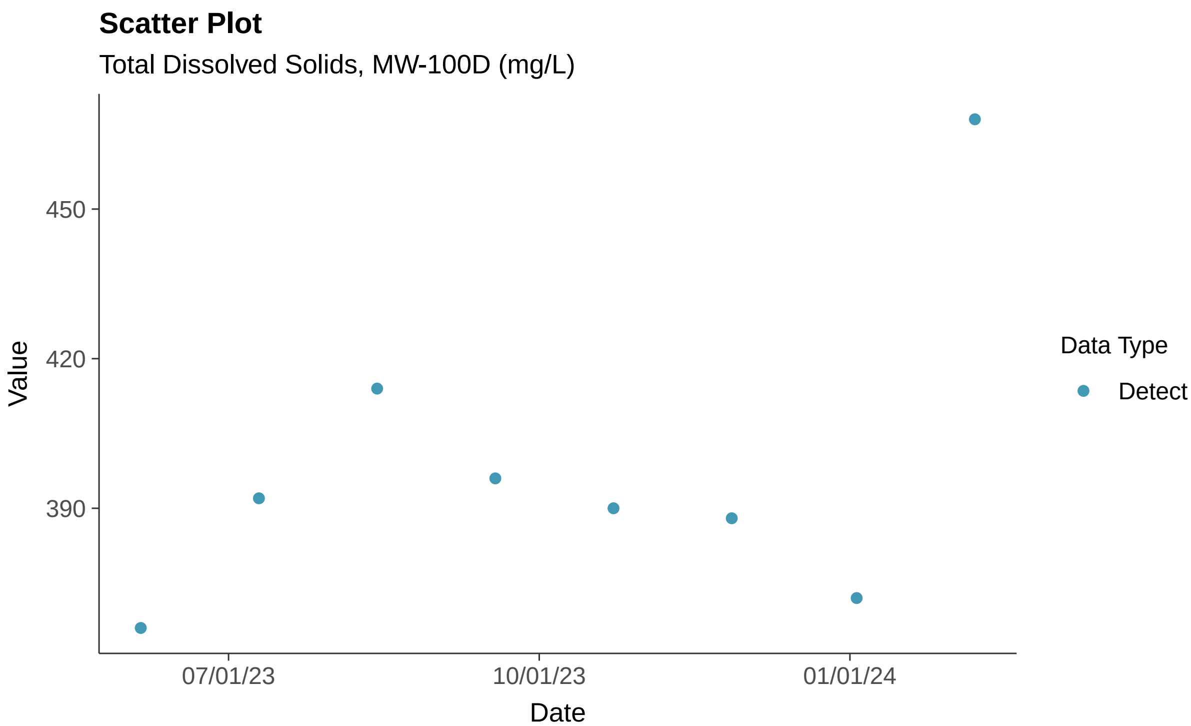


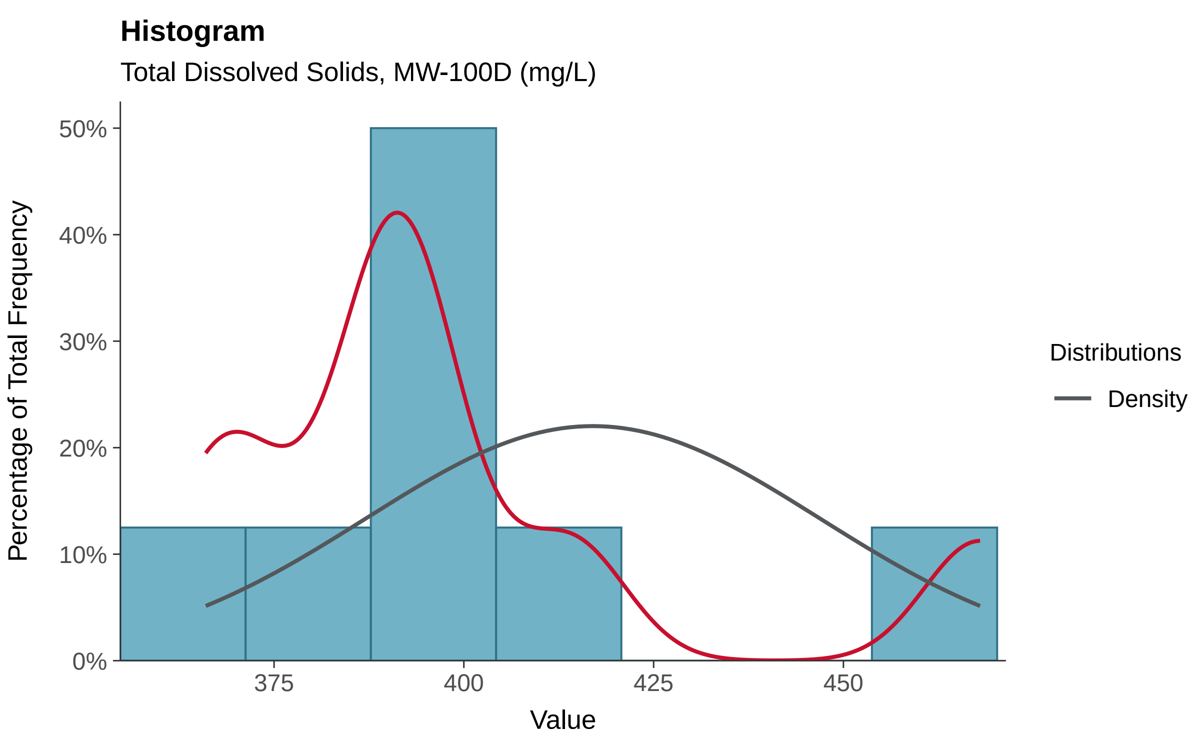

Trend Regression: Lognormal MLE
Sulfate, MW-100D (mg/L)
3.5
3.0
2.5
2.0
log(Value)
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear-Linear
Sulfate, MW-100D (mg/L)
30
20
10
Value
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Appendix III: Total Dissolved Solids, MW-100D

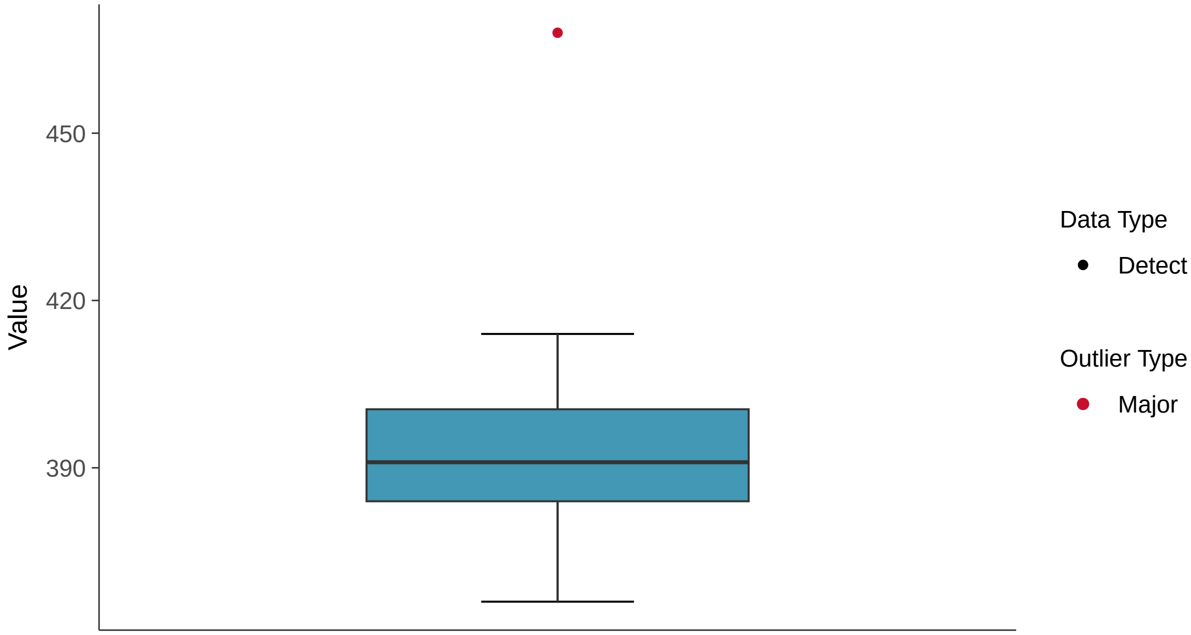
ID: 100D_1_06





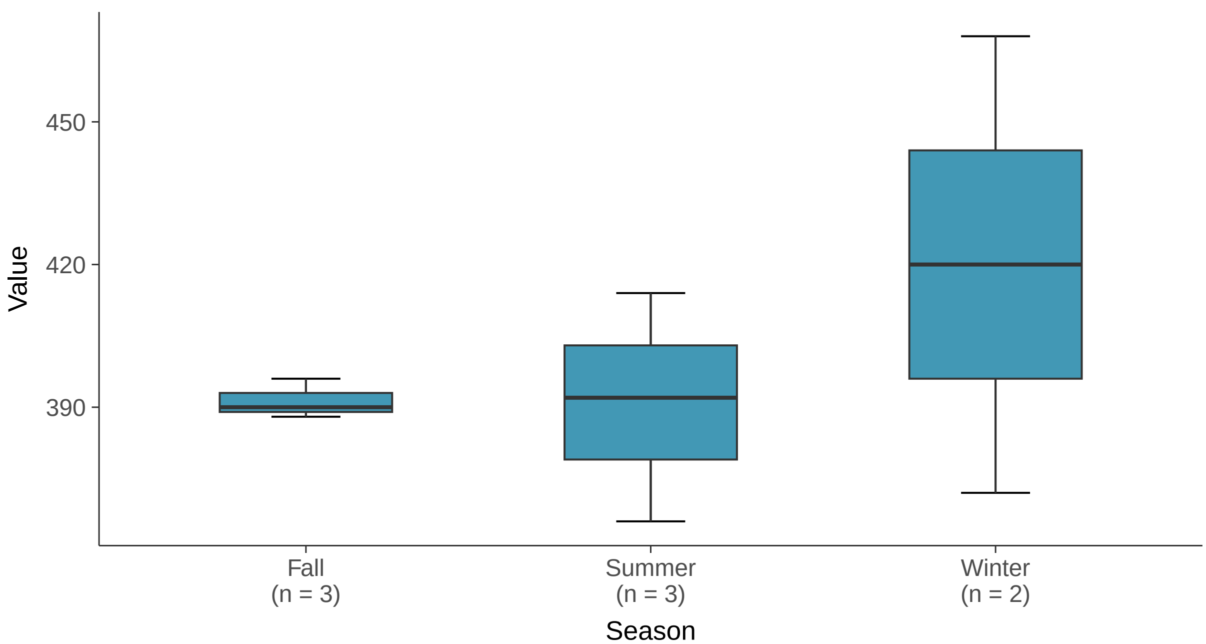
Boxplot

Total Dissolved Solids, MW-100D (mg/L)



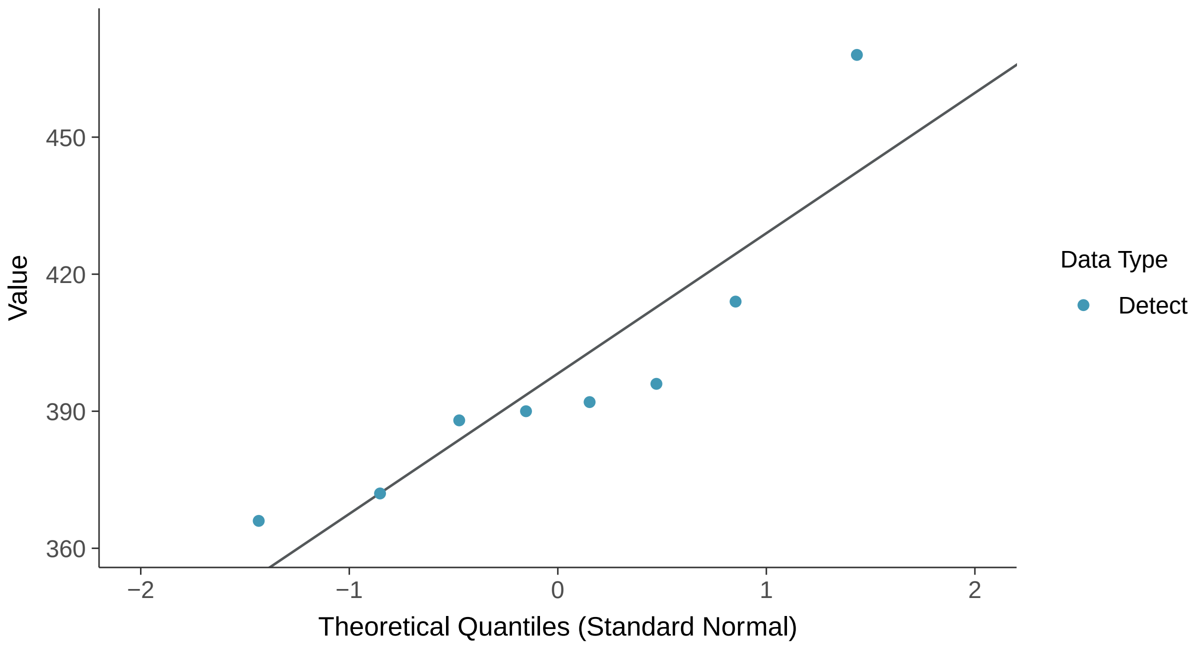
Boxplot by Season

Total Dissolved Solids, MW-100D (mg/L)



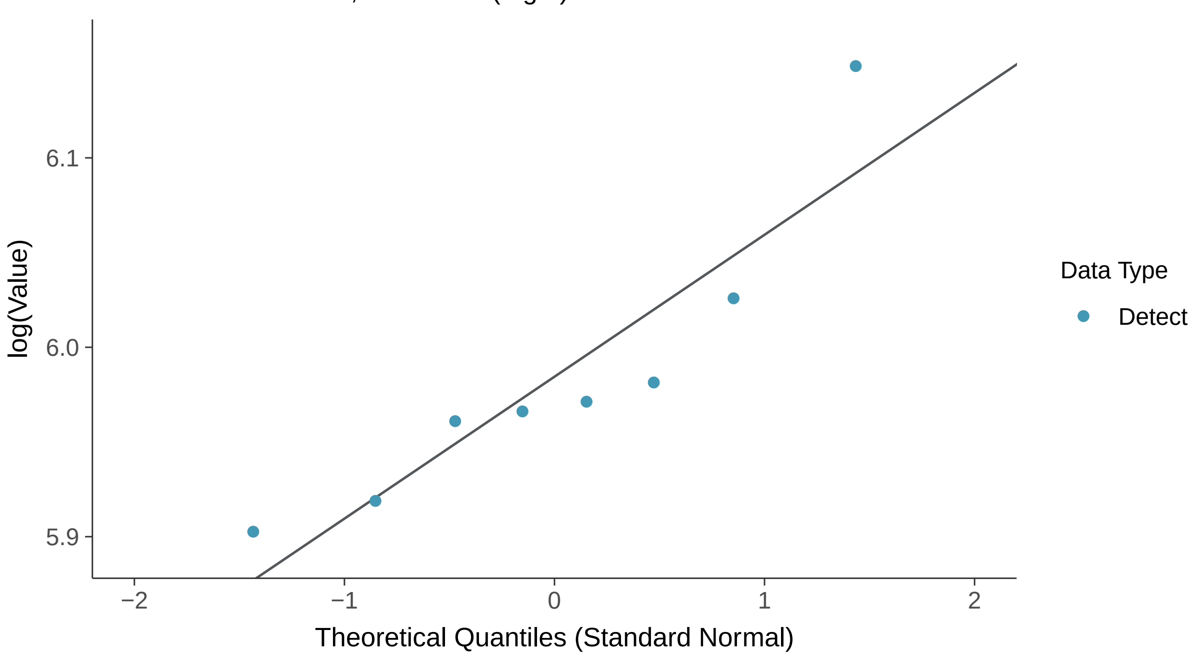
Normal Q-Q plot

Total Dissolved Solids, MW-100D (mg/L)



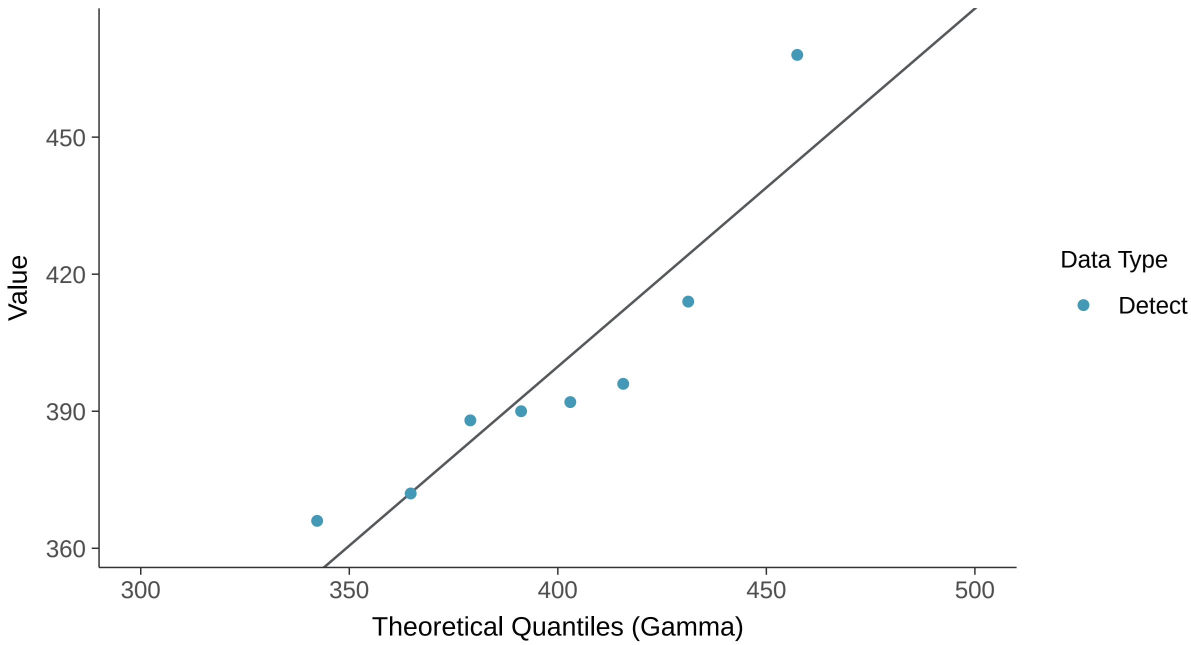
Lognormal Q-Q plot

Total Dissolved Solids, MW-100D (mg/L)



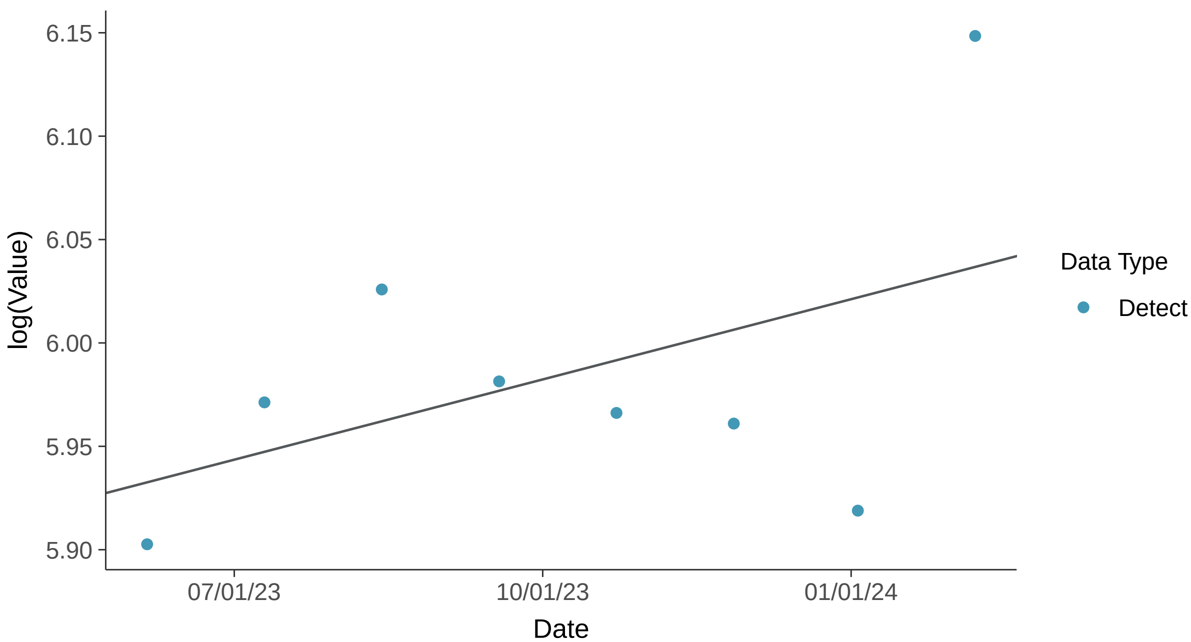
Gamma Q-Q plot

Total Dissolved Solids, MW-100D (mg/L)



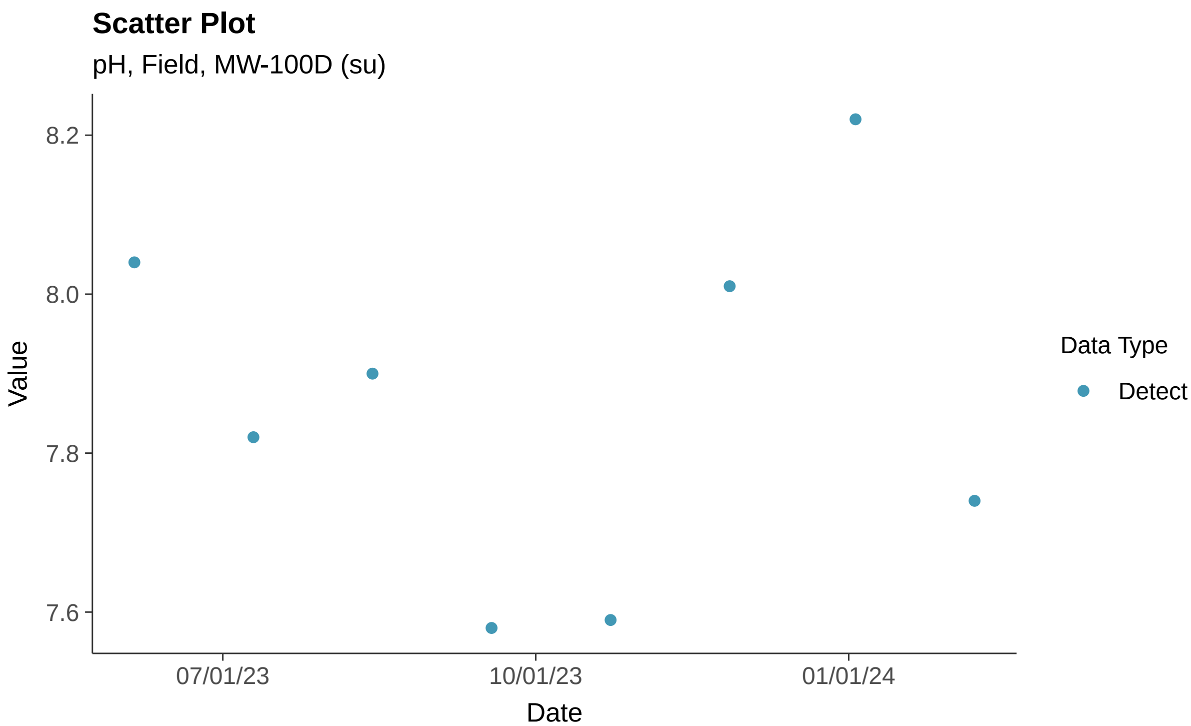
Trend Regression: Lognormal MLE

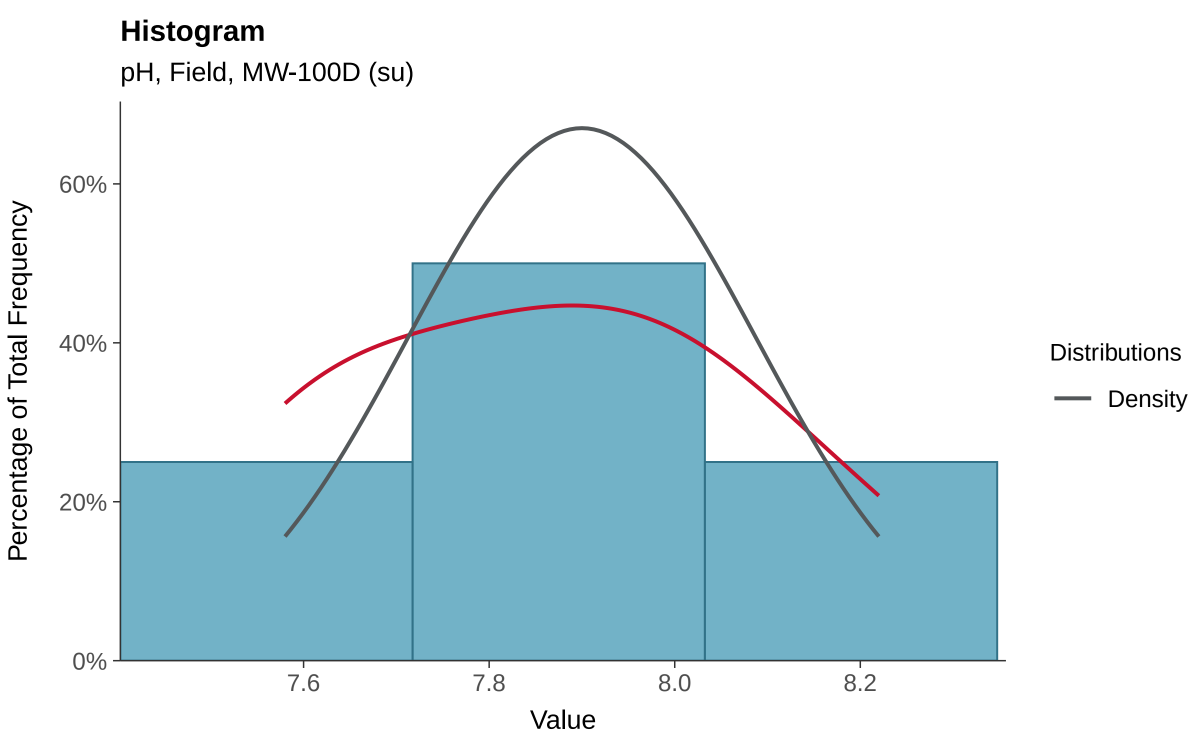
Total Dissolved Solids, MW-100D (mg/L)



Appendix III: pH, Field, MW-100D

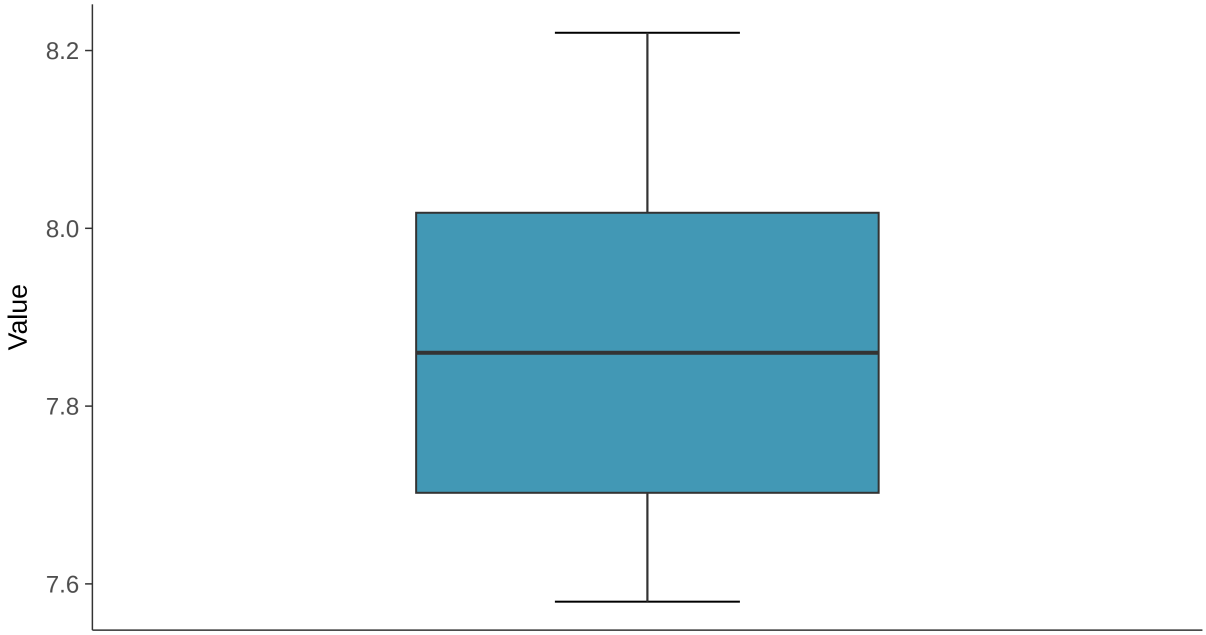
ID: 100D_1_07





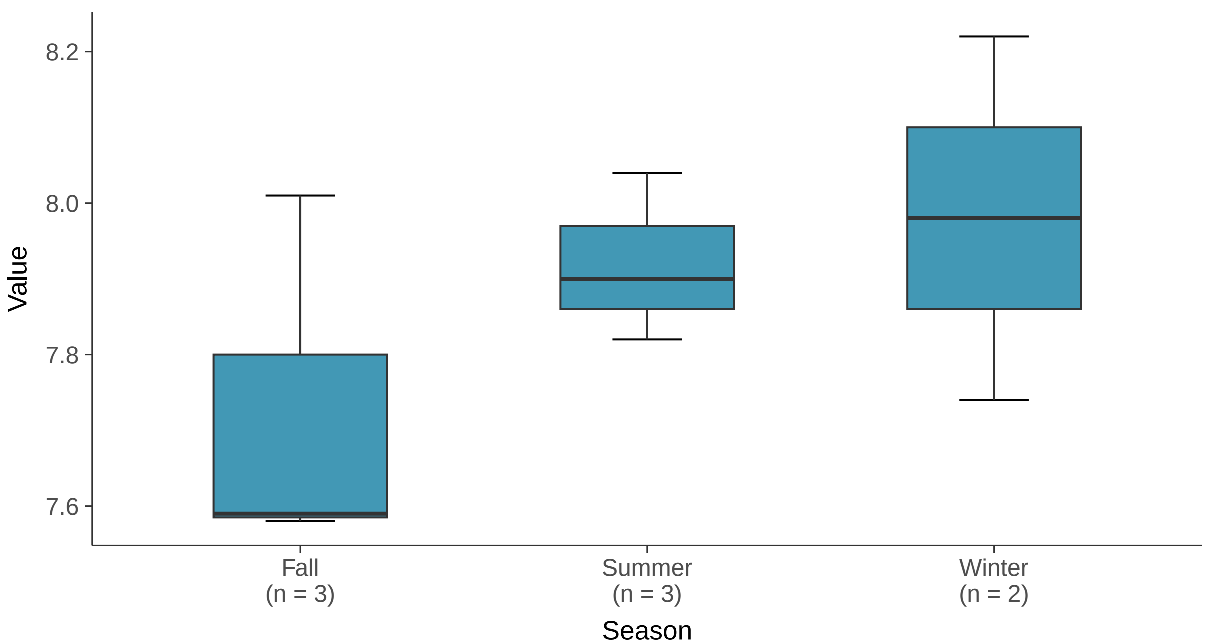
Boxplot

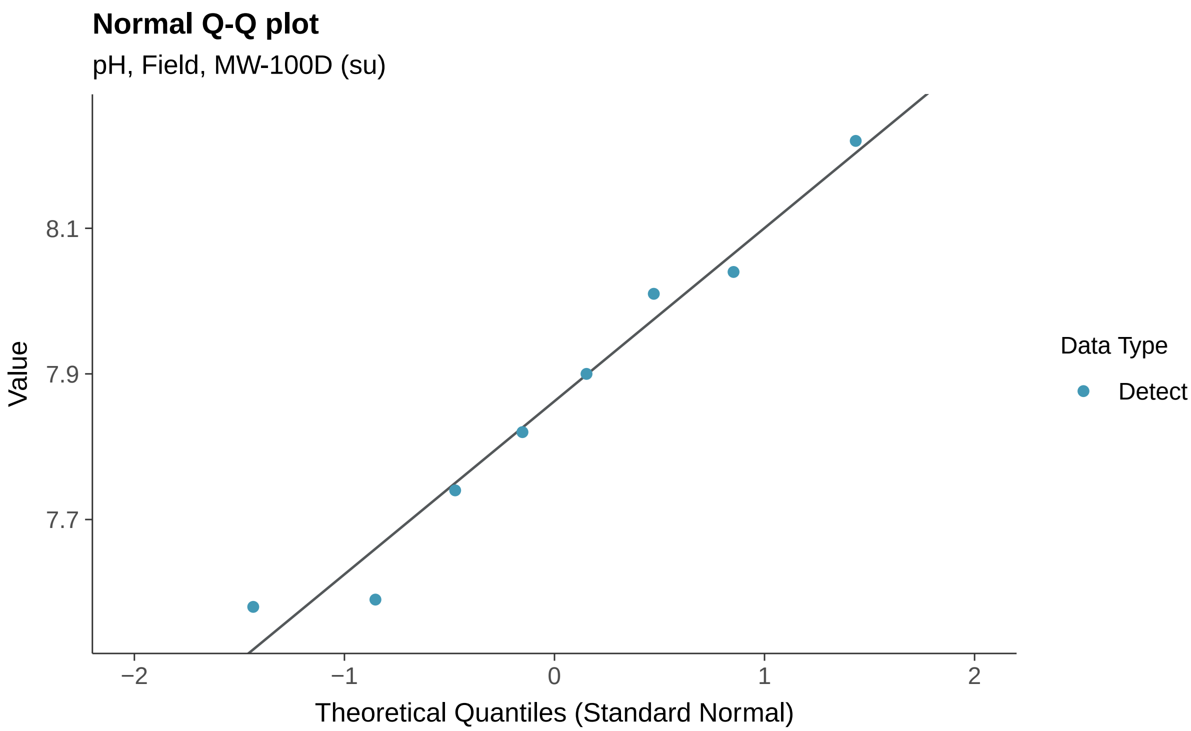
pH, Field, MW-100D (su)

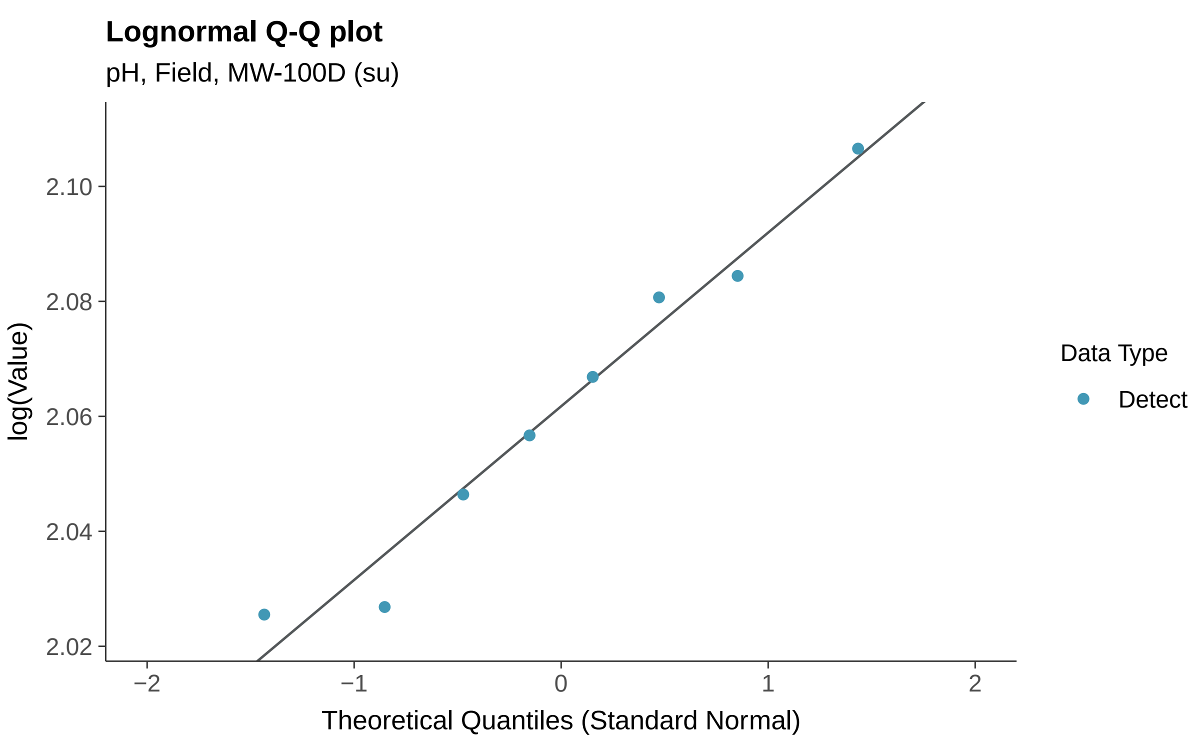


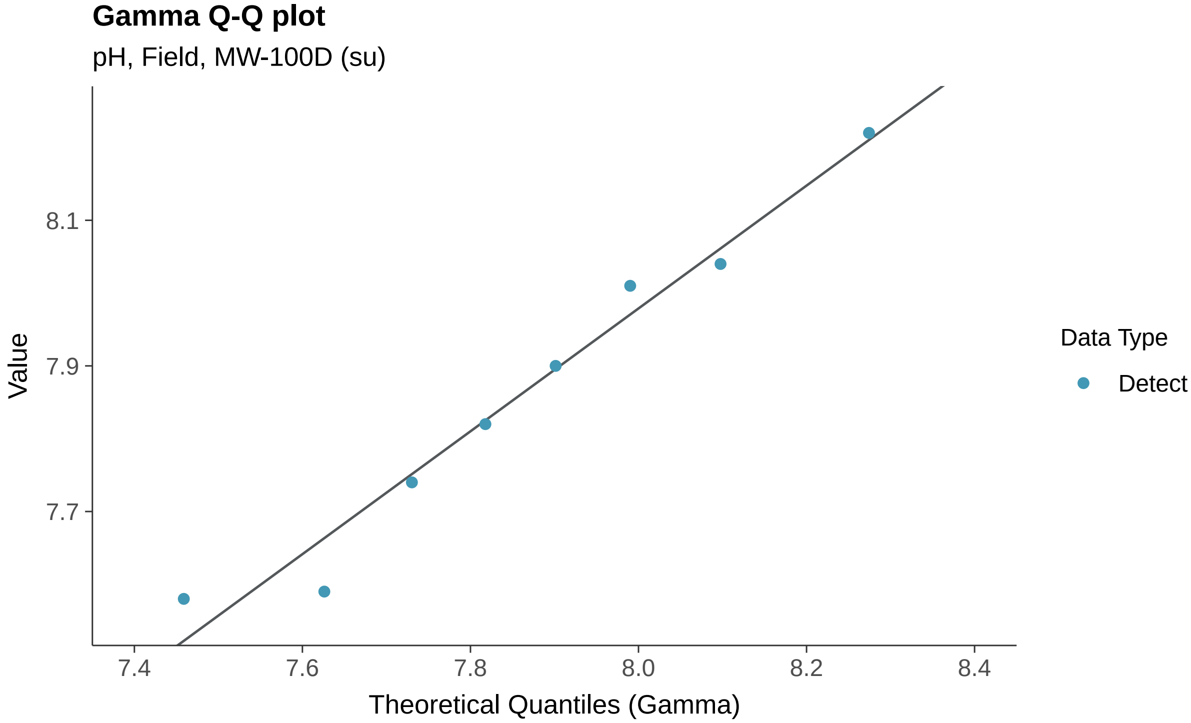
Boxplot by Season

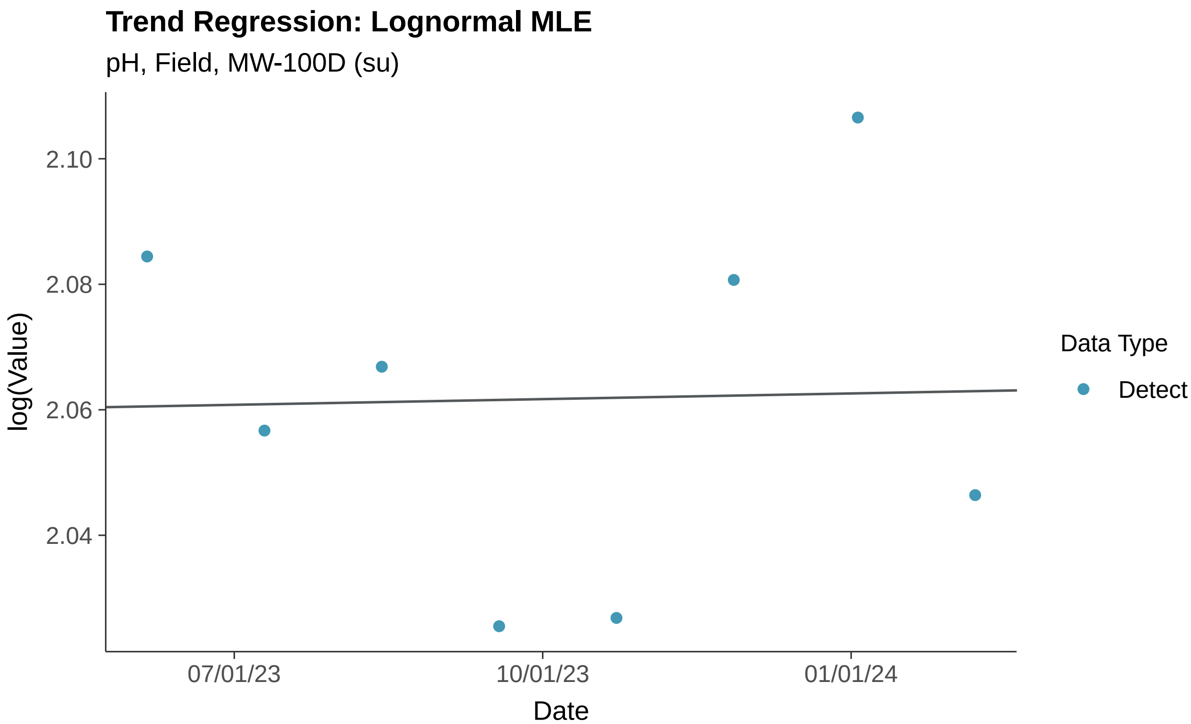
pH, Field, MW-100D (su)




Normal Q-Q plot
pH, Field, MW-100D (su)
Value
8.1
7.9
7.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

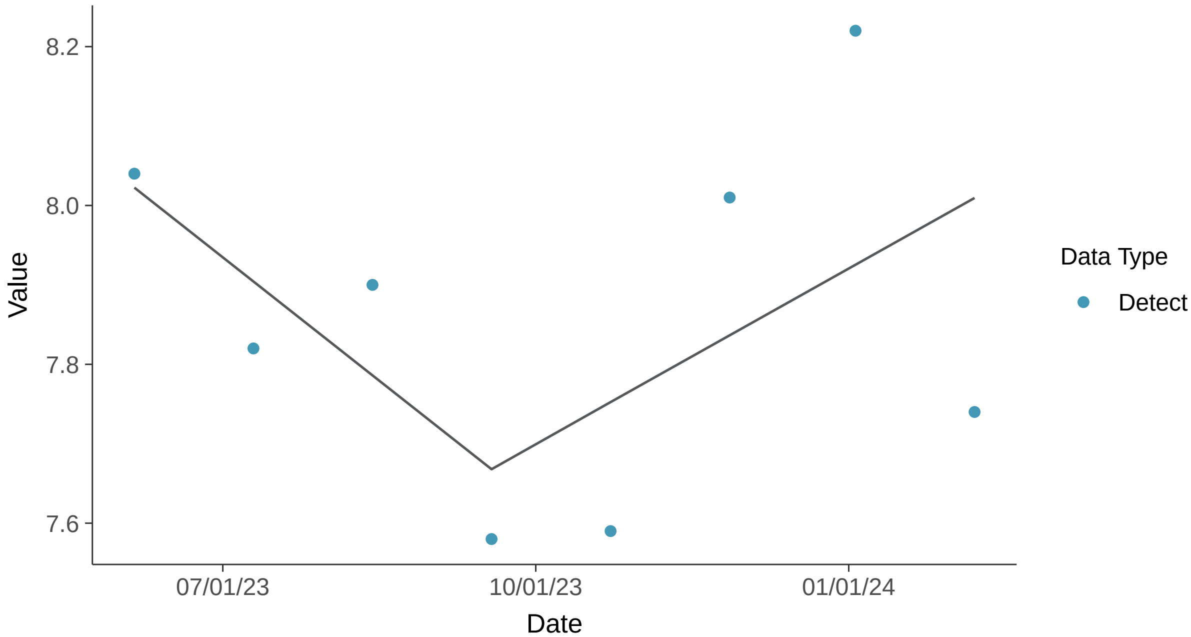

Lognormal Q-Q plot
pH, Field, MW-100D (su)
log(Value)
2.10
2.08
2.06
2.04
2.02
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, Field, MW-100D (su)
Value
8.1
7.9
7.7
7.4
7.6
7.8
8.0
8.2
8.4
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, Field, MW-100D (su)
log(Value)
2.10
2.08
2.06
2.04
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

pH, Field, MW-100D (su)

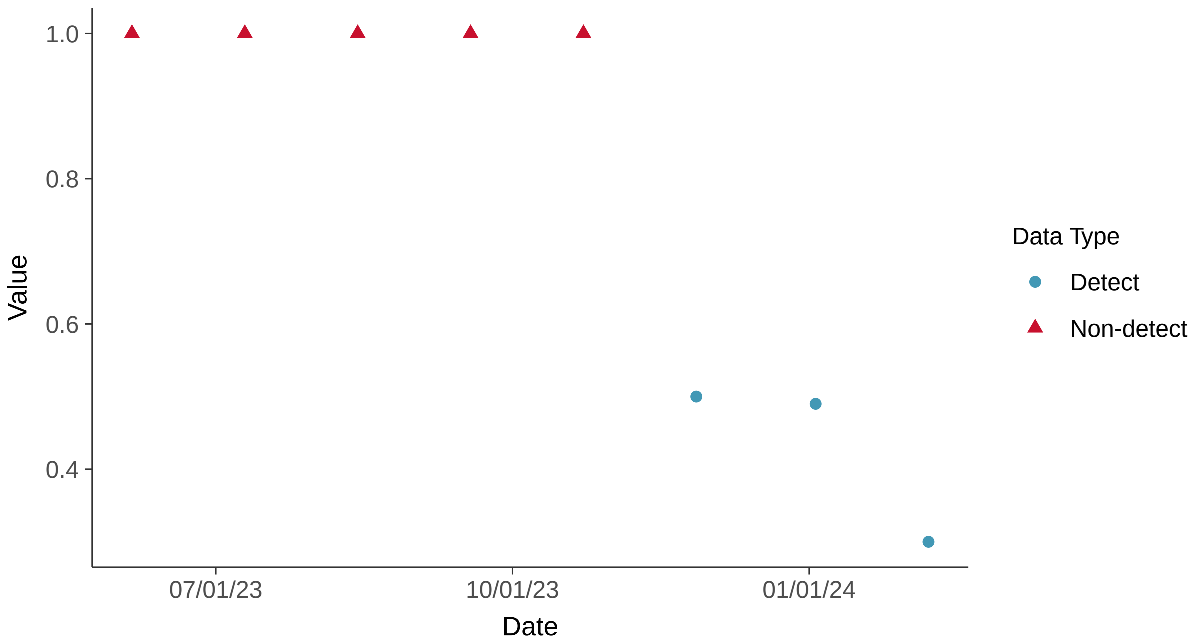


Appendix IV: Fluoride, MW-100D

ID: 100D_2_04

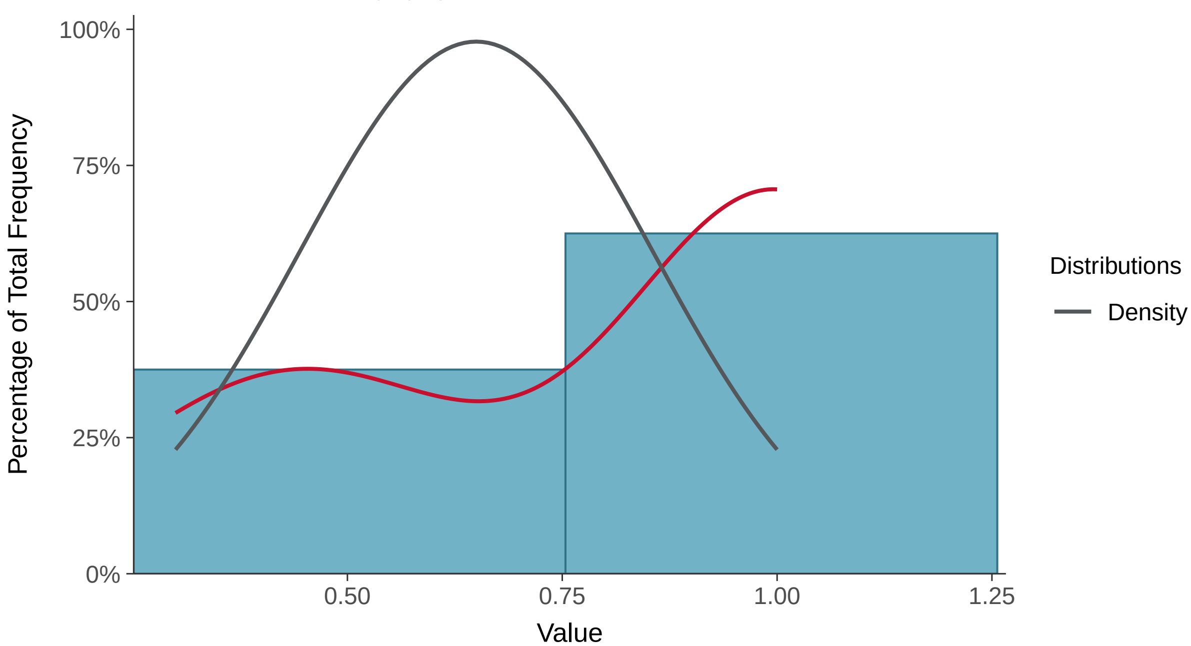
Scatter Plot

Fluoride, MW-100D (mg/L)



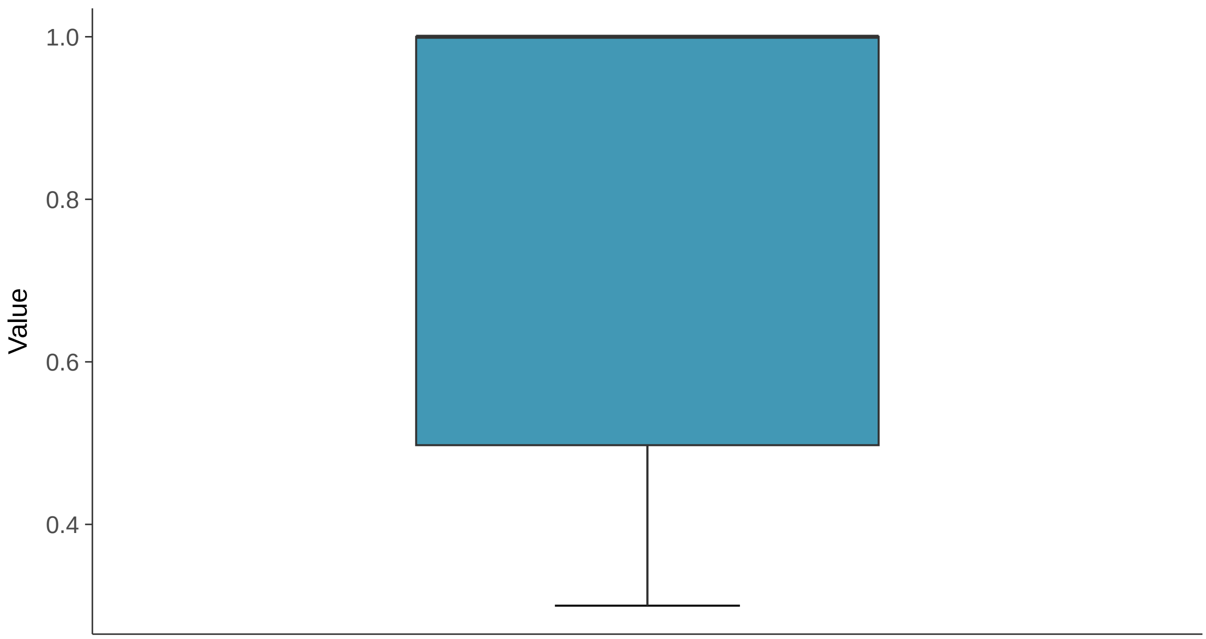
Histogram

Fluoride, MW-100D (mg/L)



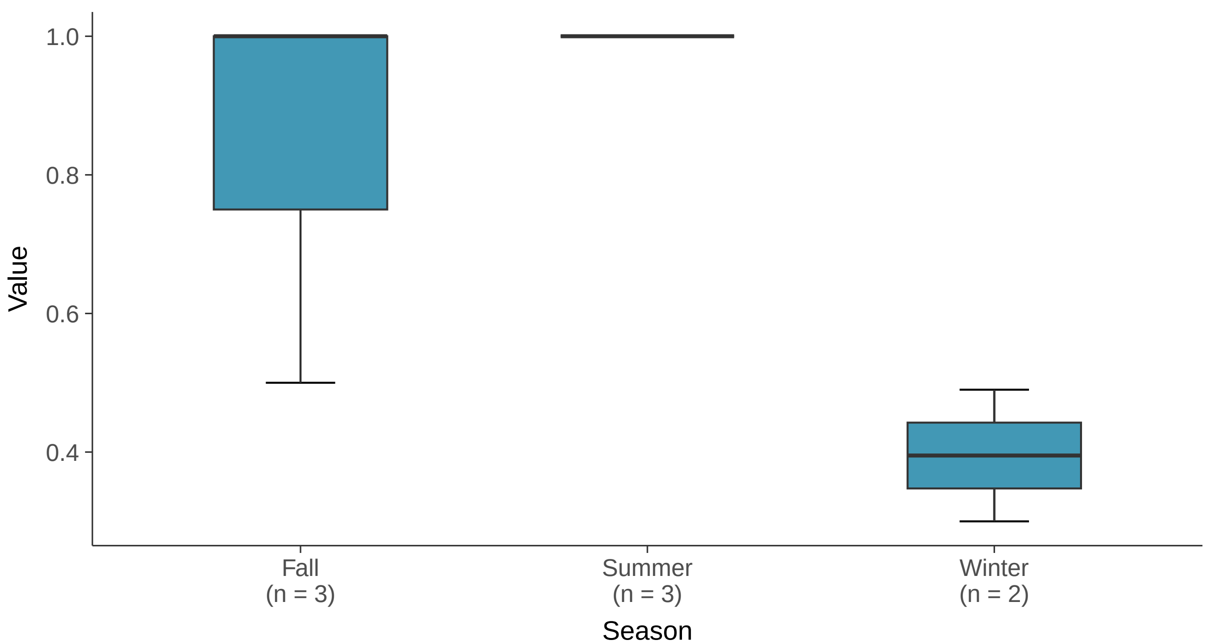
Boxplot

Fluoride, MW-100D (mg/L)



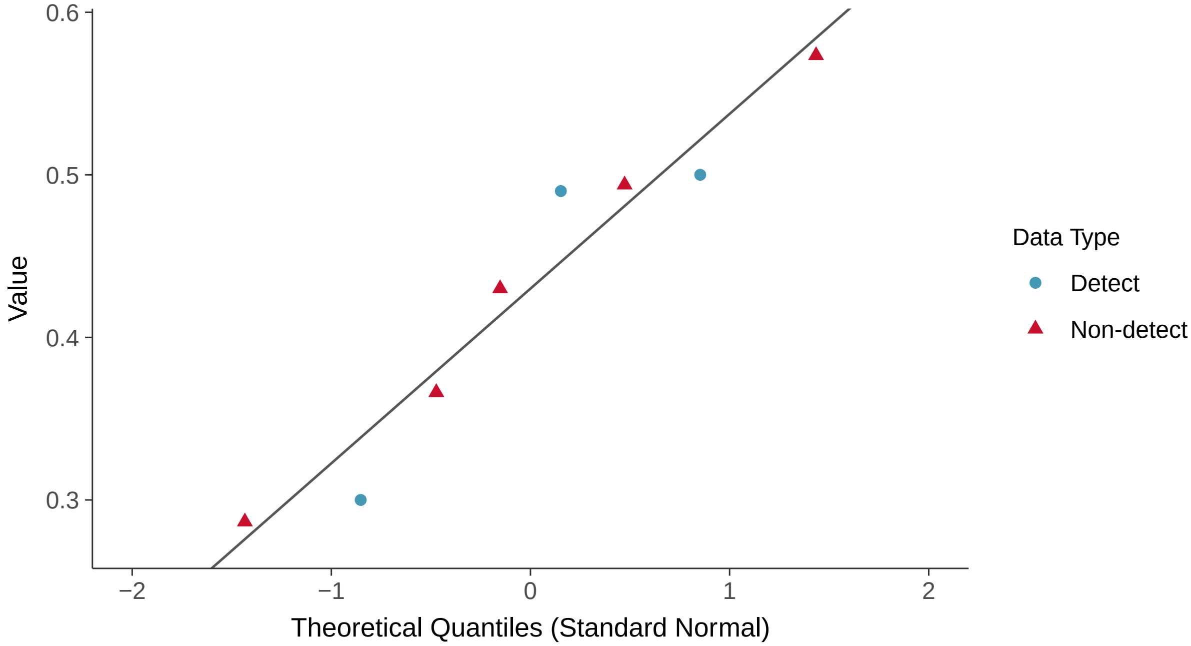
Boxplot by Season

Fluoride, MW-100D (mg/L)



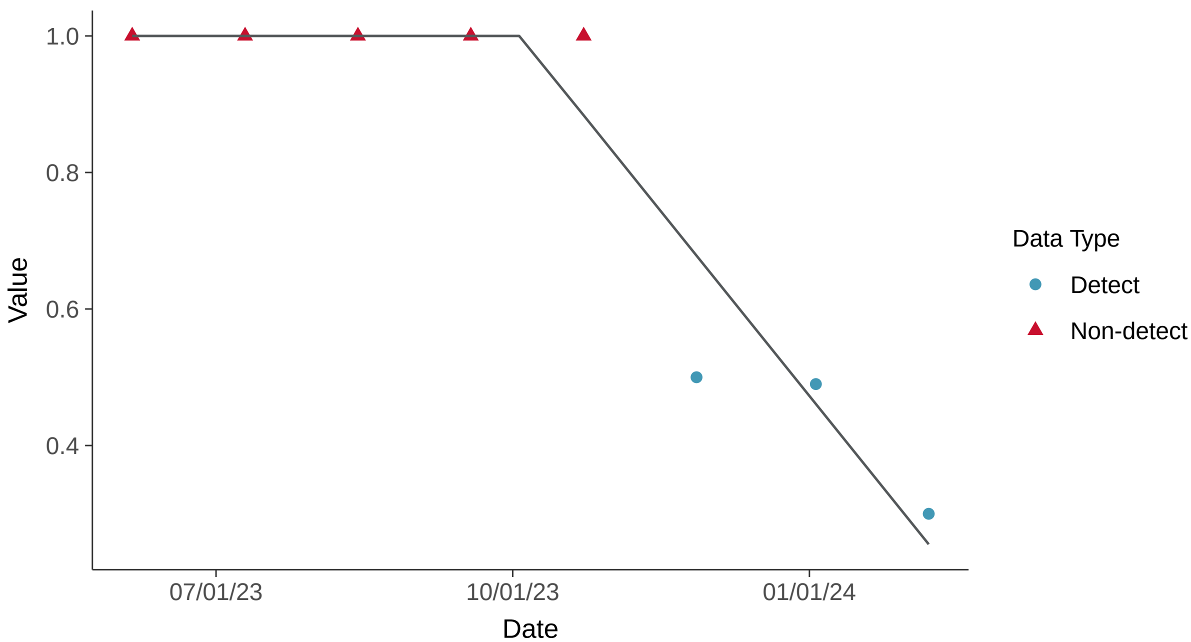
Normal Q-Q plot using ROS Imputed Estimates

Fluoride, MW-100D (mg/L)



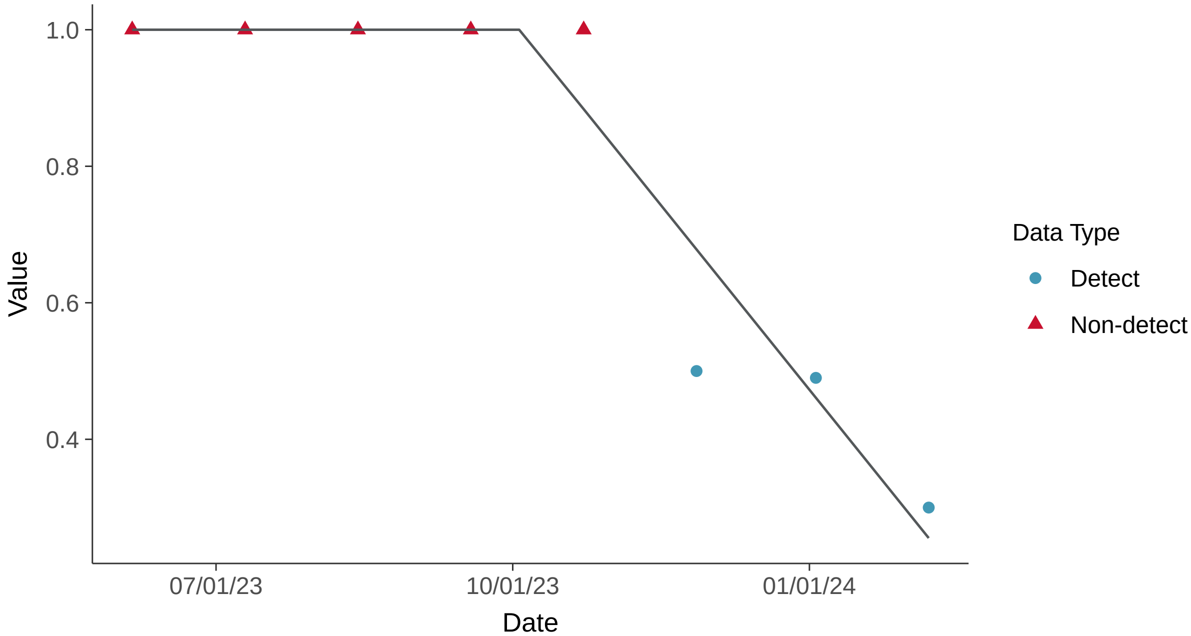
Trend Regression: Piecewise Linear-Linear

Fluoride, MW-100D (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-100D (mg/L)

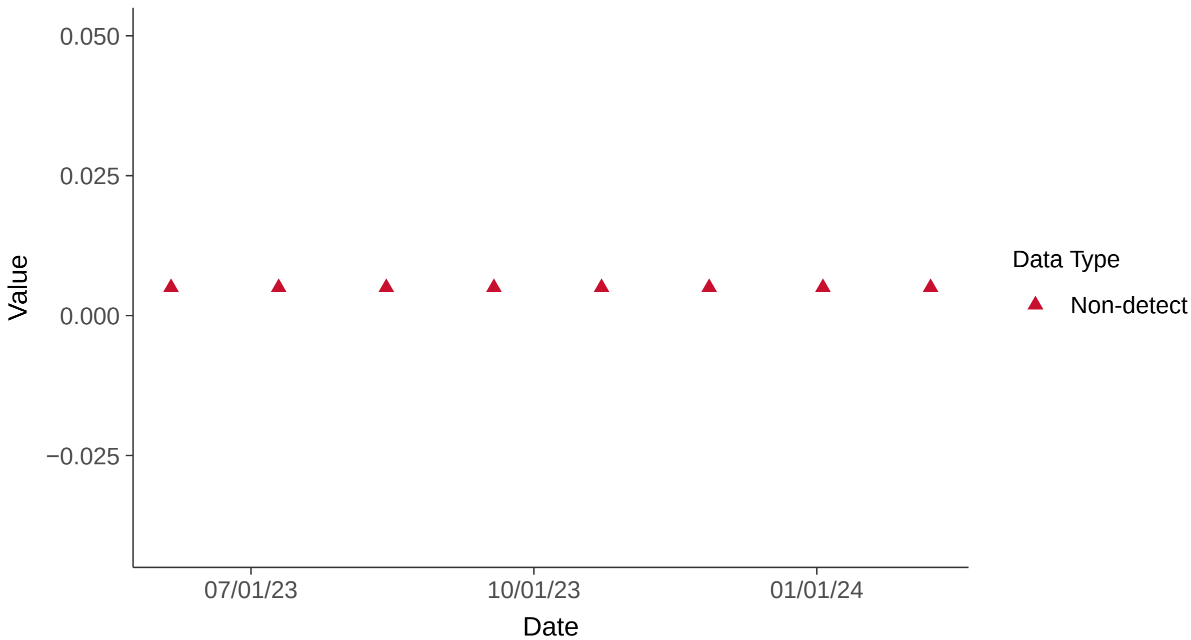


Appendix IV: Antimony, MW-100D

ID: 100D_2_08

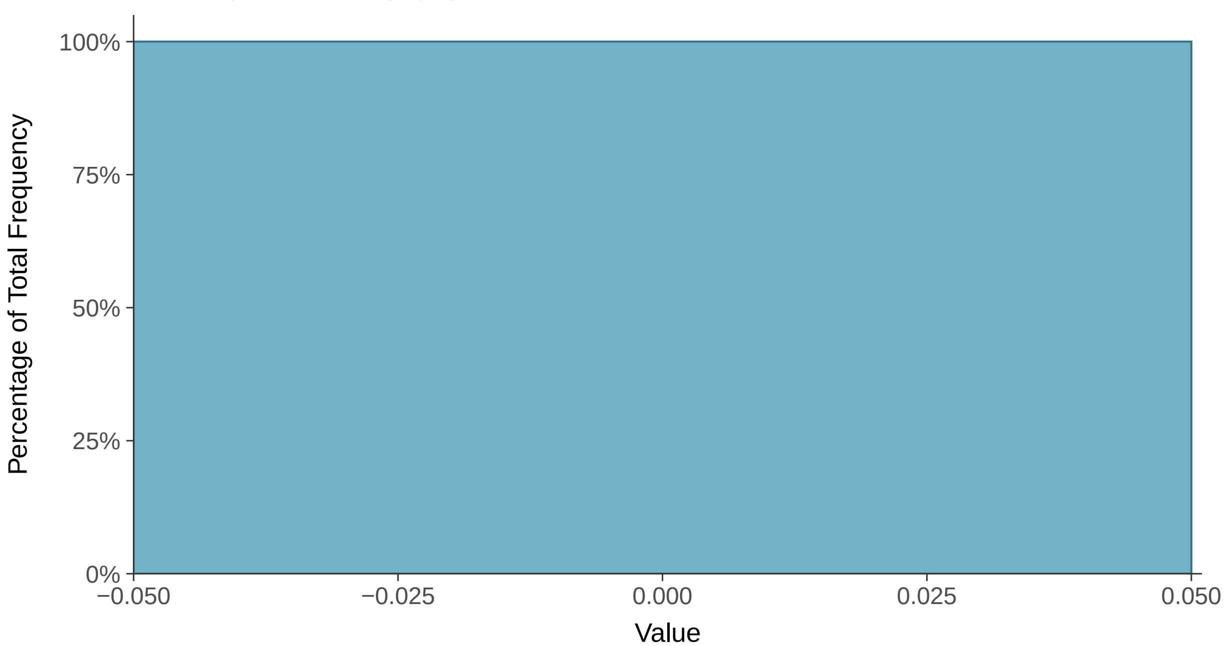
Scatter Plot

Antimony, MW-100D (mg/L)



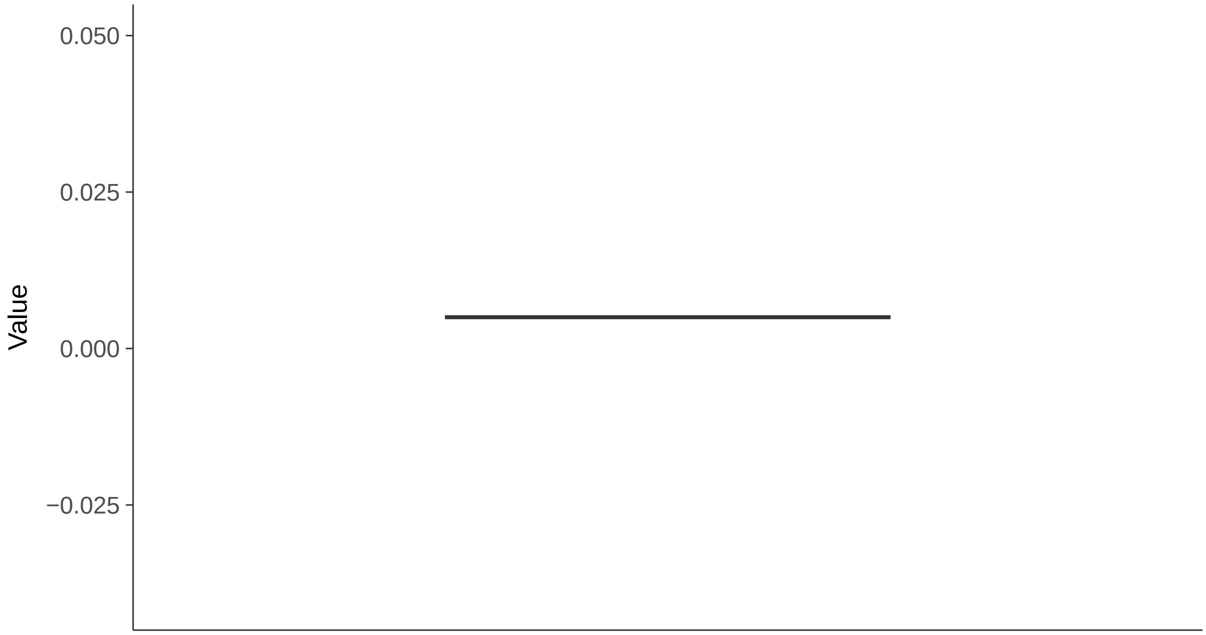
Histogram

Antimony, MW-100D (mg/L)



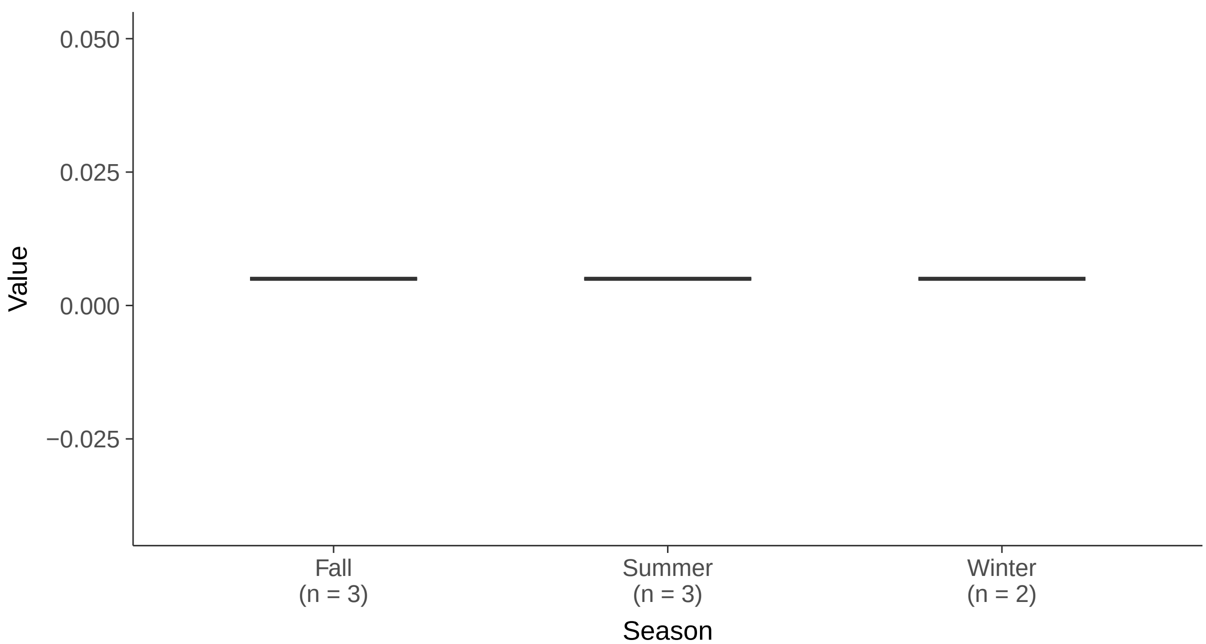
Boxplot

Antimony, MW-100D (mg/L)



Boxplot by Season

Antimony, MW-100D (mg/L)

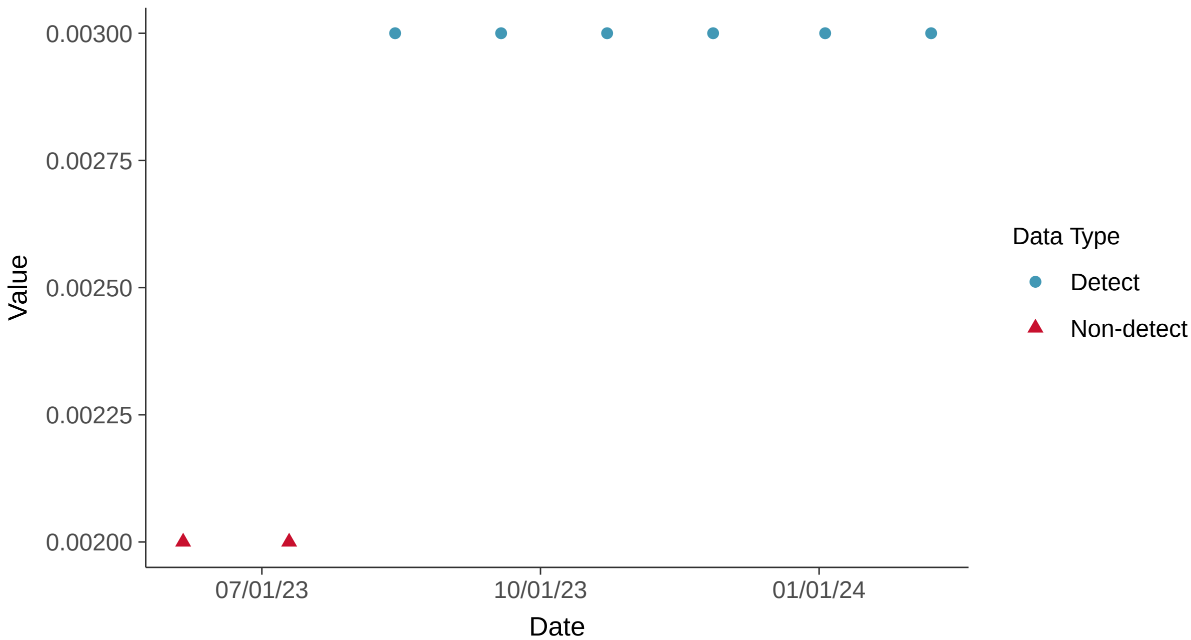


Appendix IV: Arsenic, MW-100D

ID: 100D_2_09

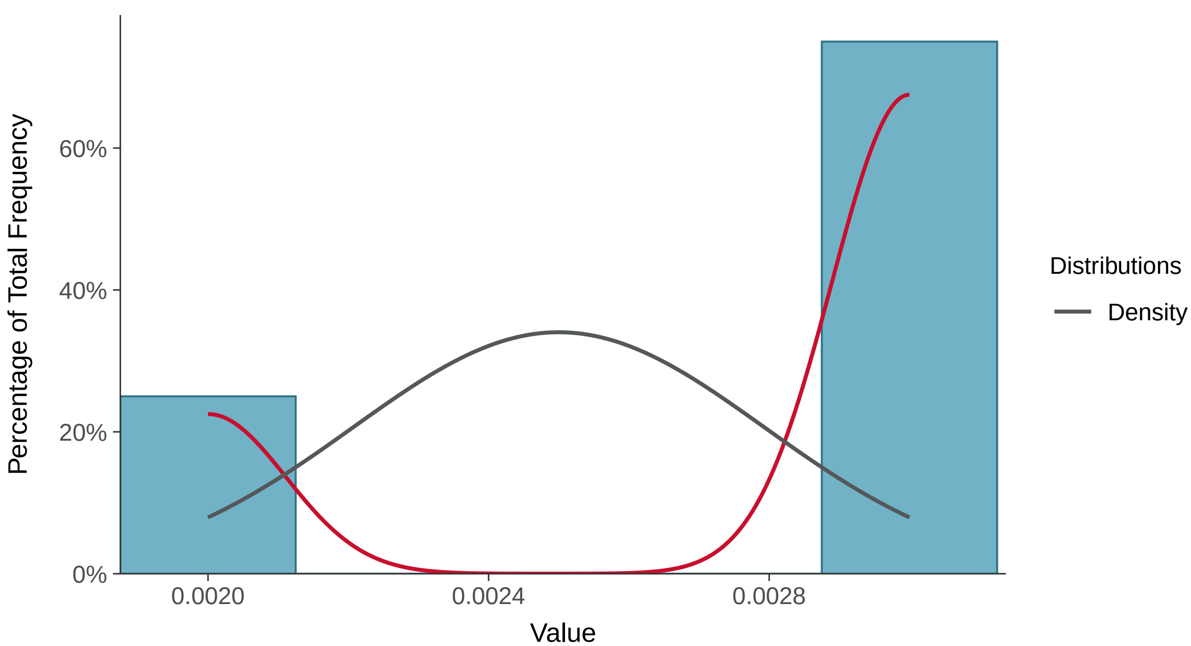
Scatter Plot

Arsenic, MW-100D (mg/L)



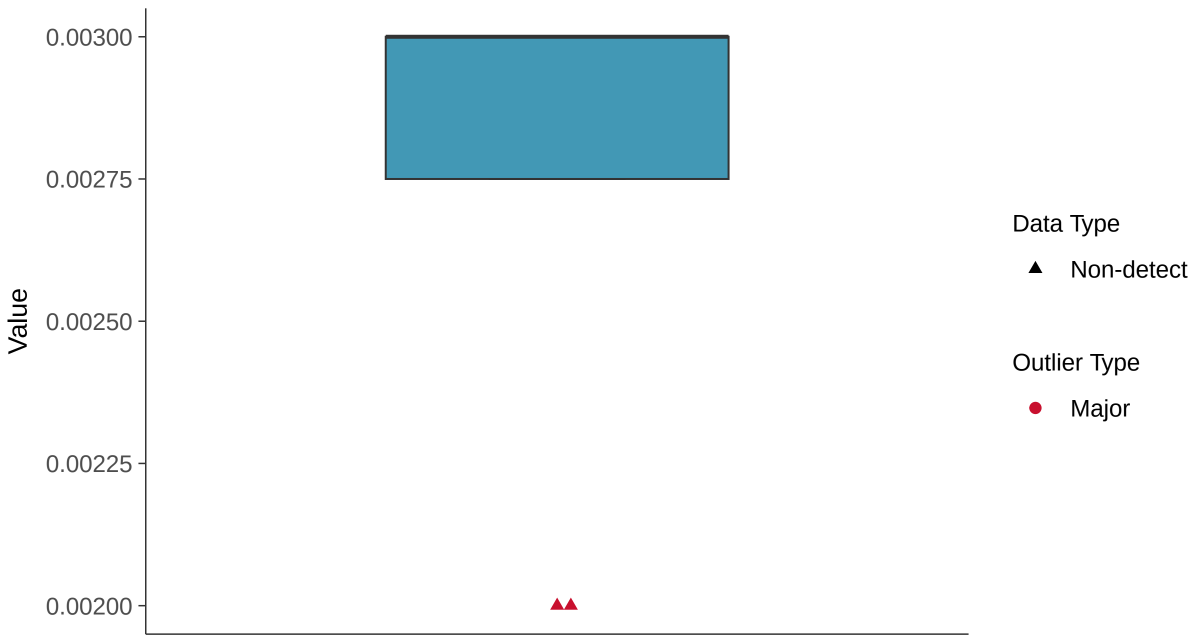
Histogram

Arsenic, MW-100D (mg/L)



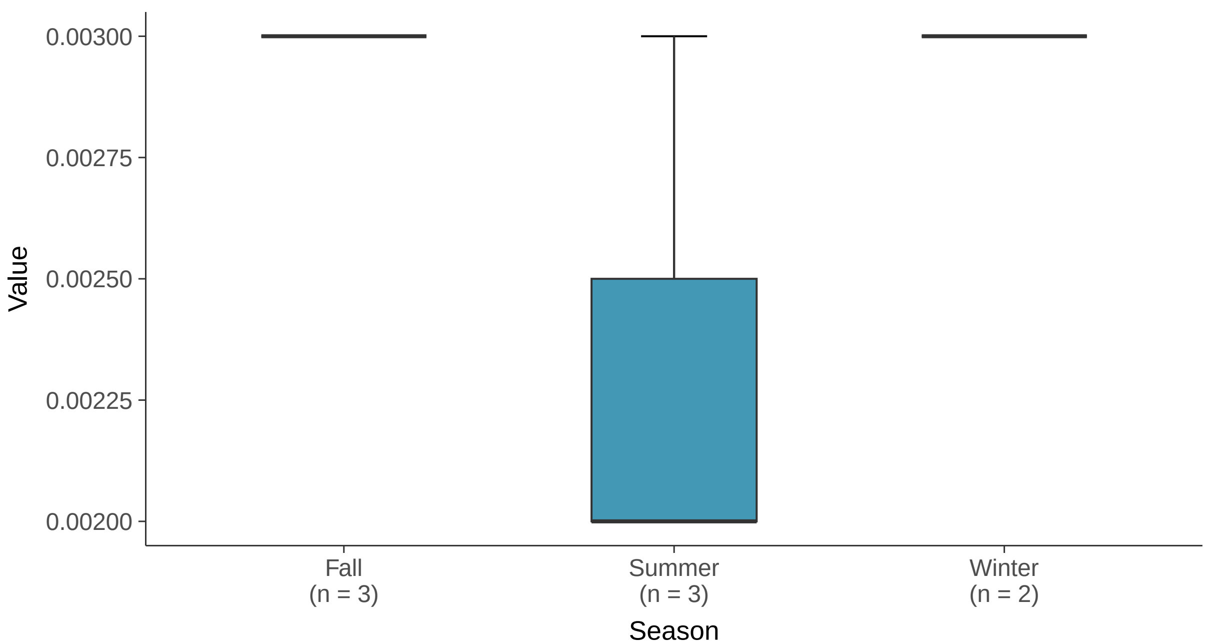
Boxplot

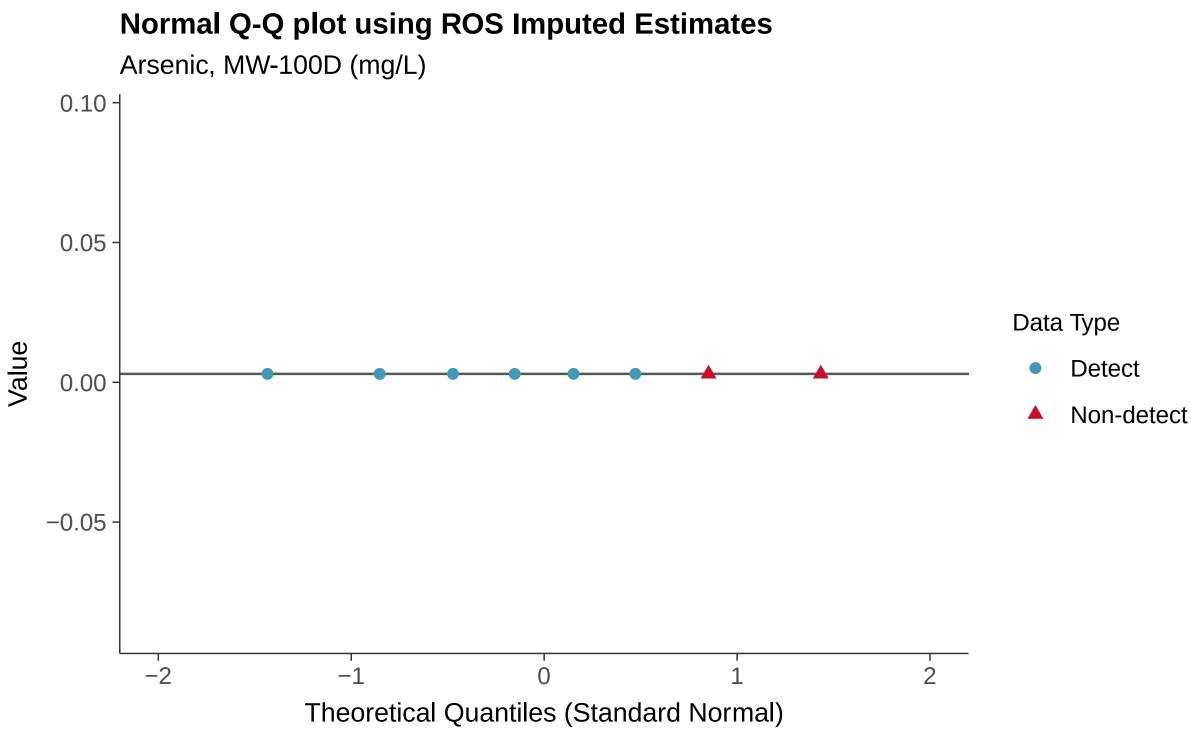
Arsenic, MW-100D (mg/L)

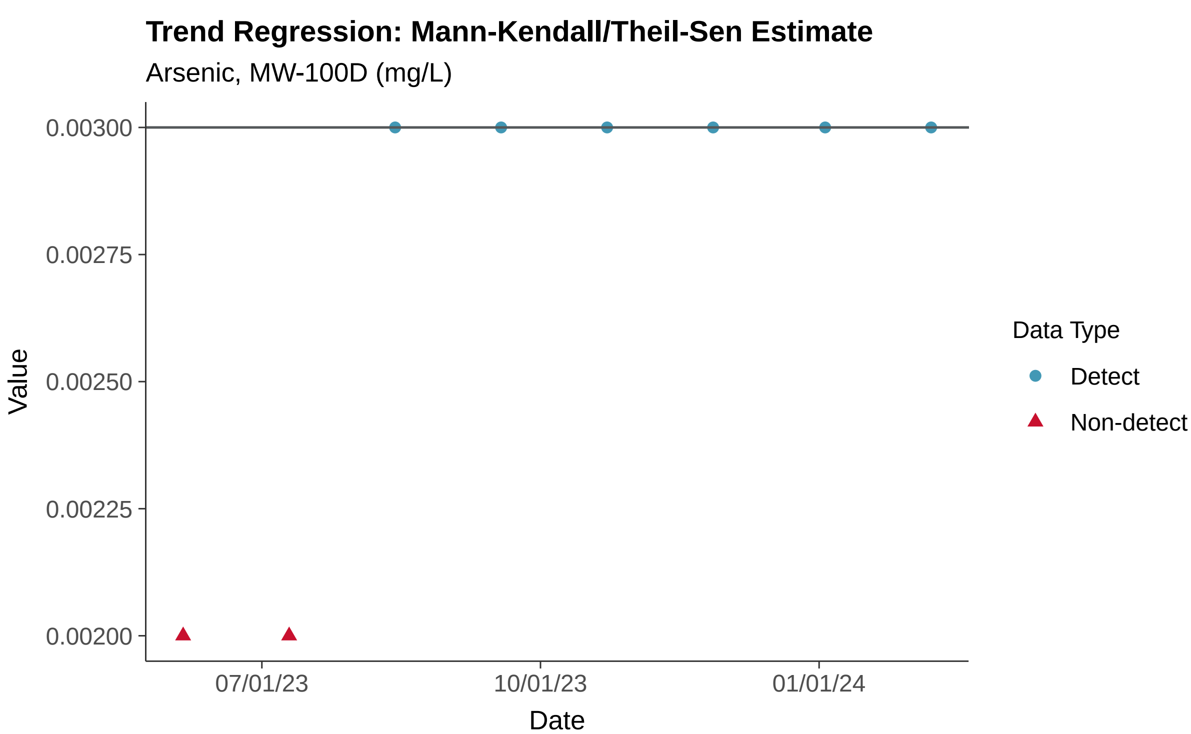


Boxplot by Season

Arsenic, MW-100D (mg/L)

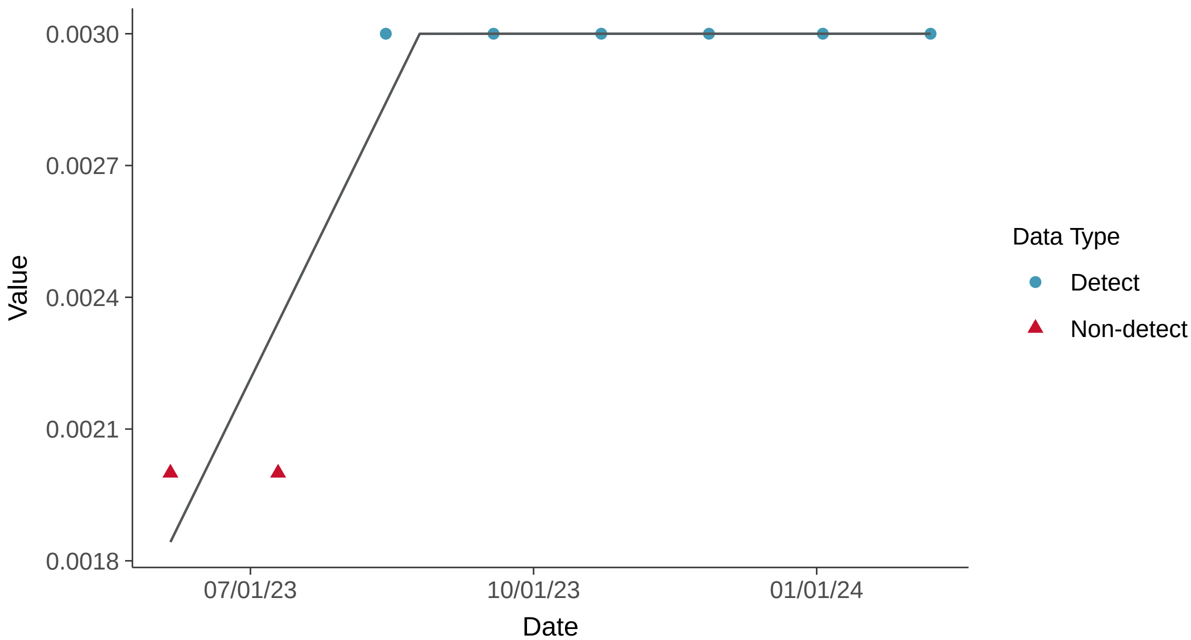



Normal Q-Q plot using ROS Imputed Estimates
Arsenic, MW-100D (mg/L)
Value
0.10
0.05
0.00
−0.05
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Arsenic, MW-100D (mg/L)
Value
0.00300
0.00275
0.00250
0.00225
0.00200
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

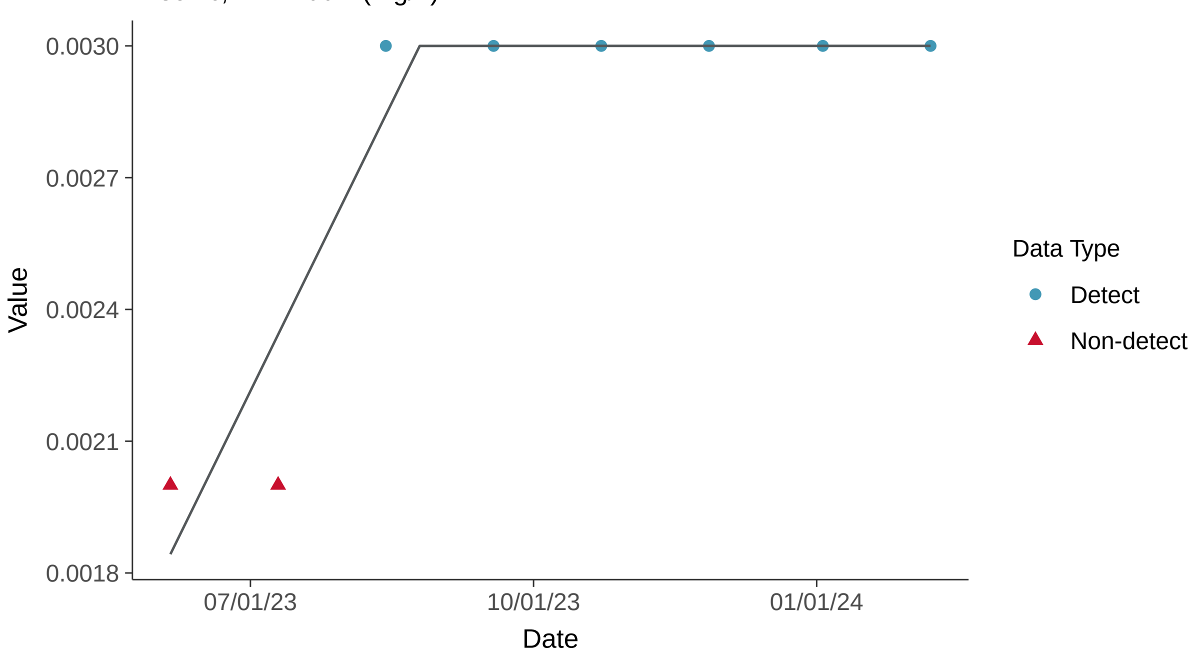
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-100D (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-100D (mg/L)

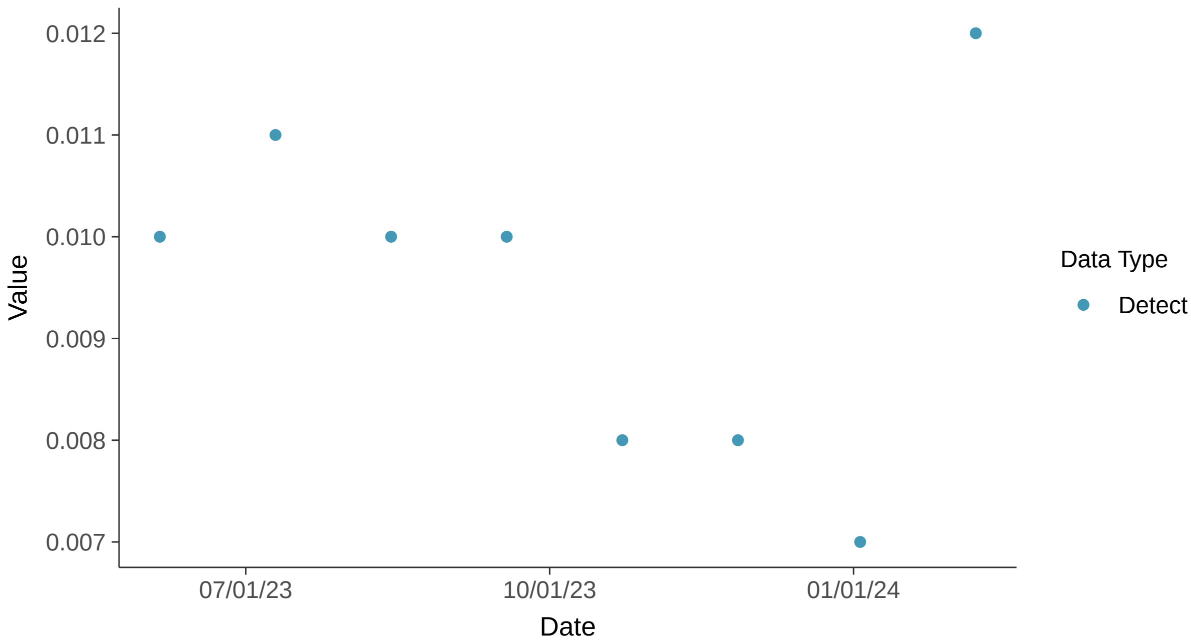


Appendix IV: Barium, MW-100D

ID: 100D_2_10

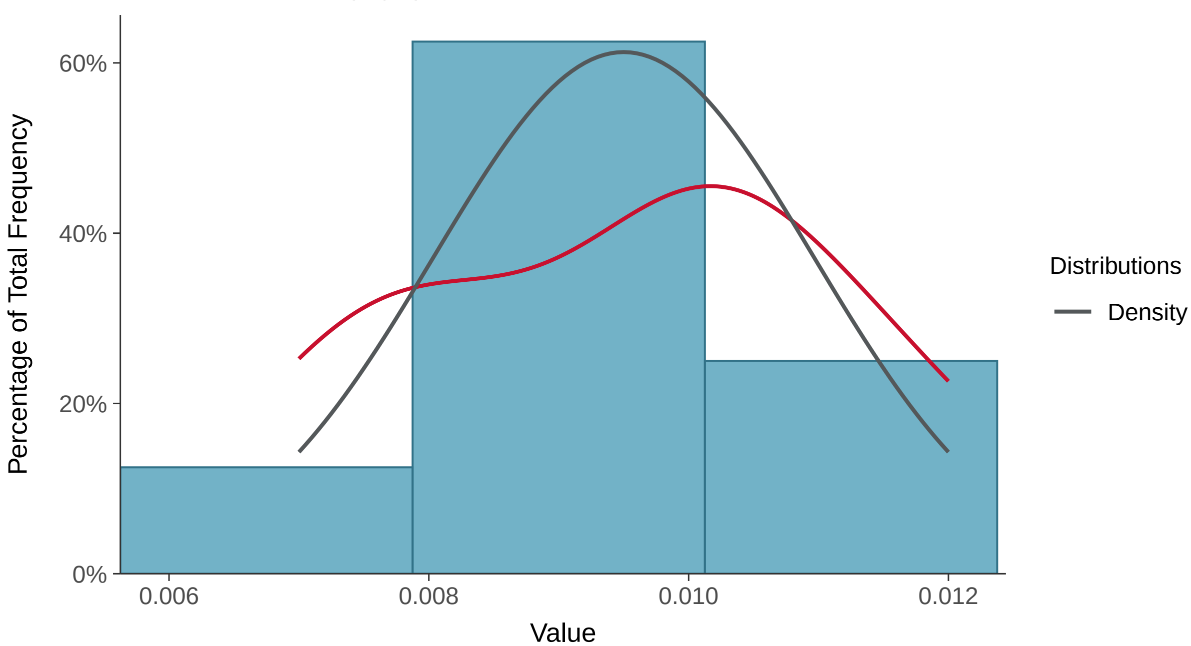
Scatter Plot

Barium, MW-100D (mg/L)



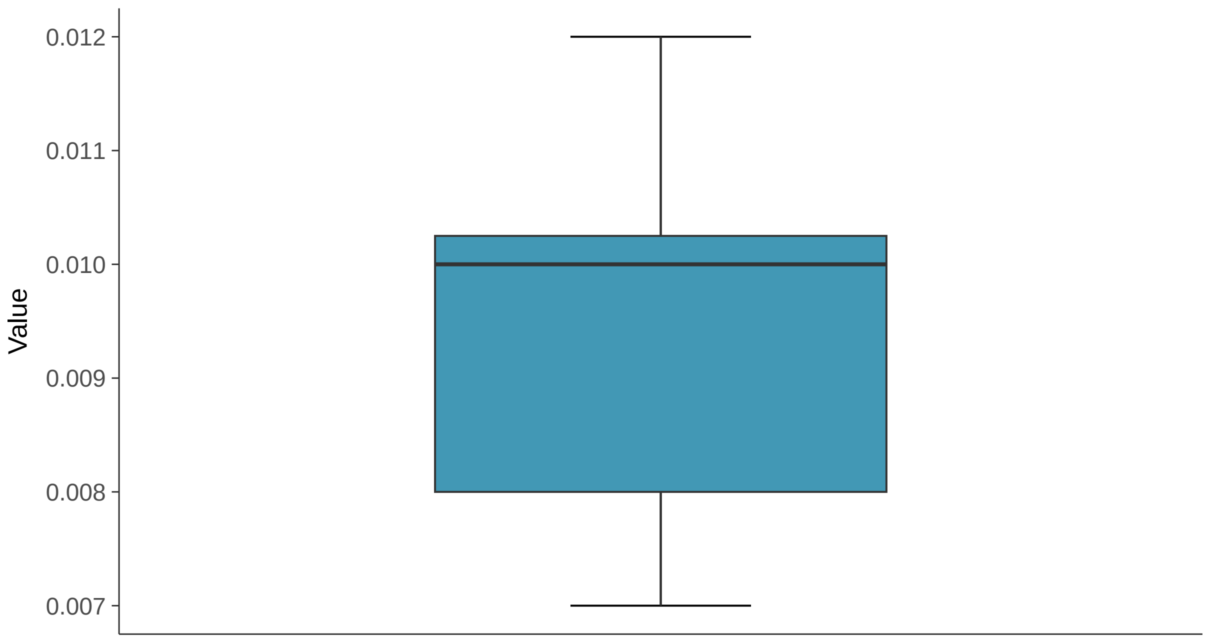
Histogram

Barium, MW-100D (mg/L)



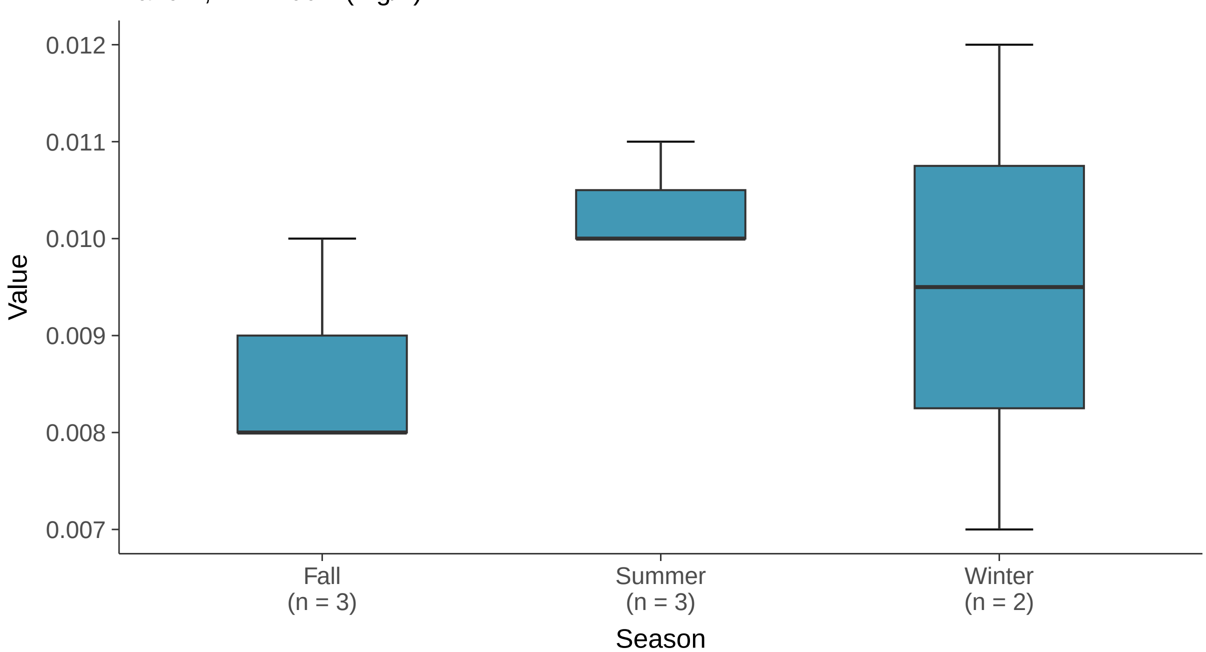
Boxplot

Barium, MW-100D (mg/L)



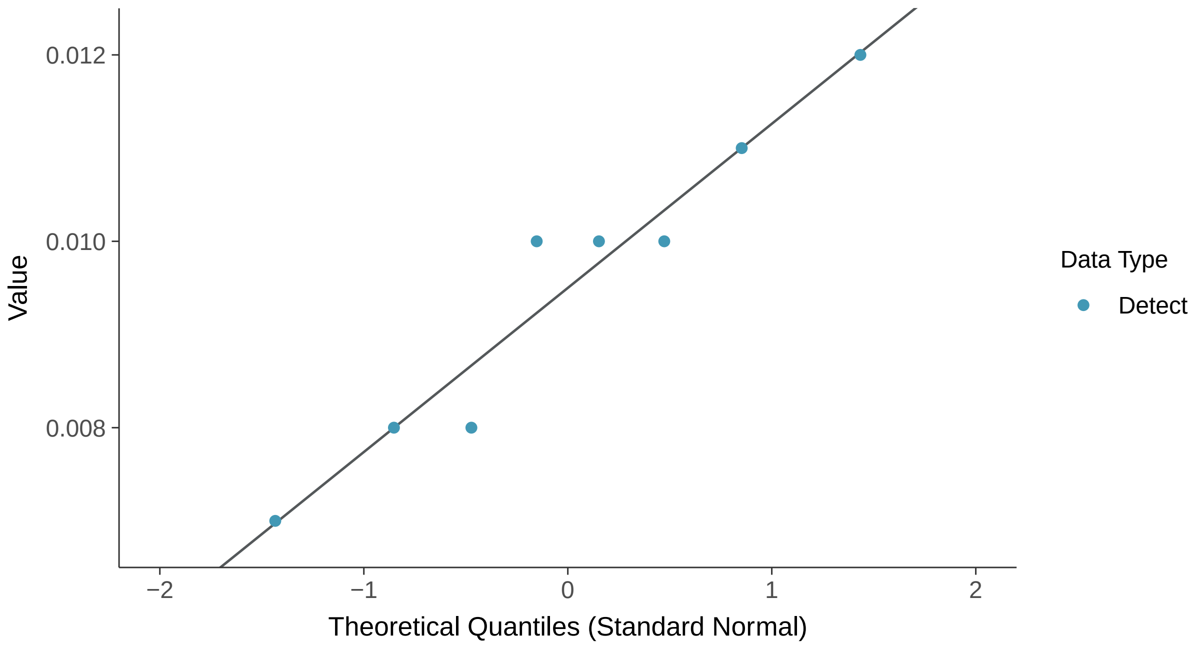
Boxplot by Season

Barium, MW-100D (mg/L)



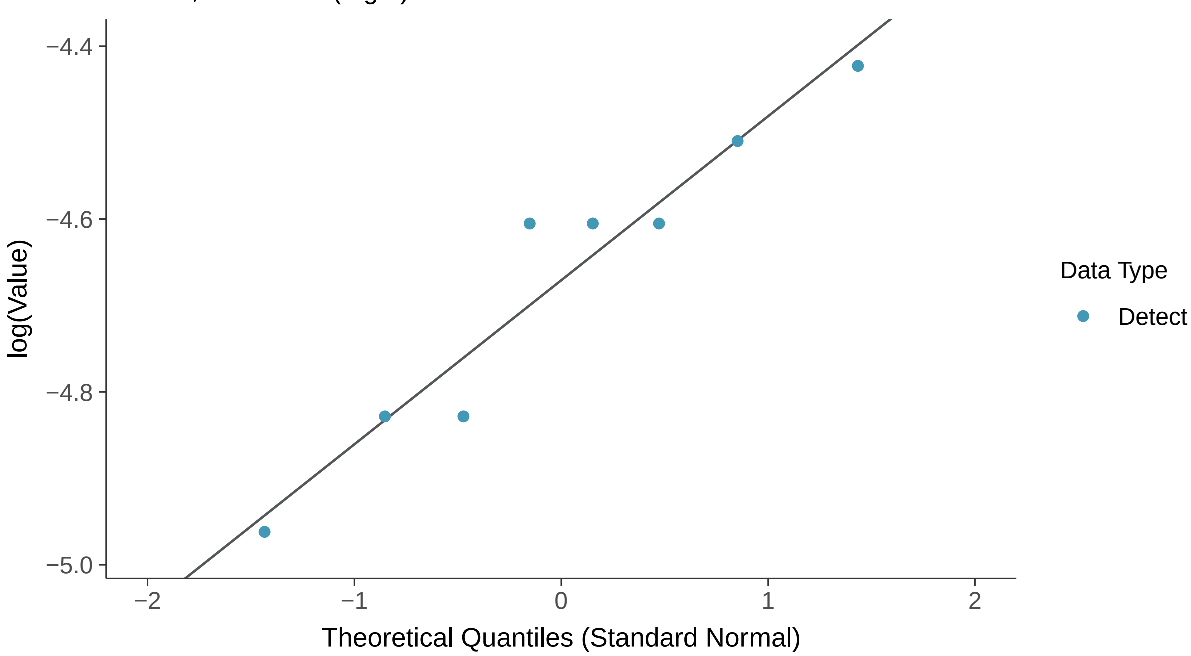
Normal Q-Q plot

Barium, MW-100D (mg/L)



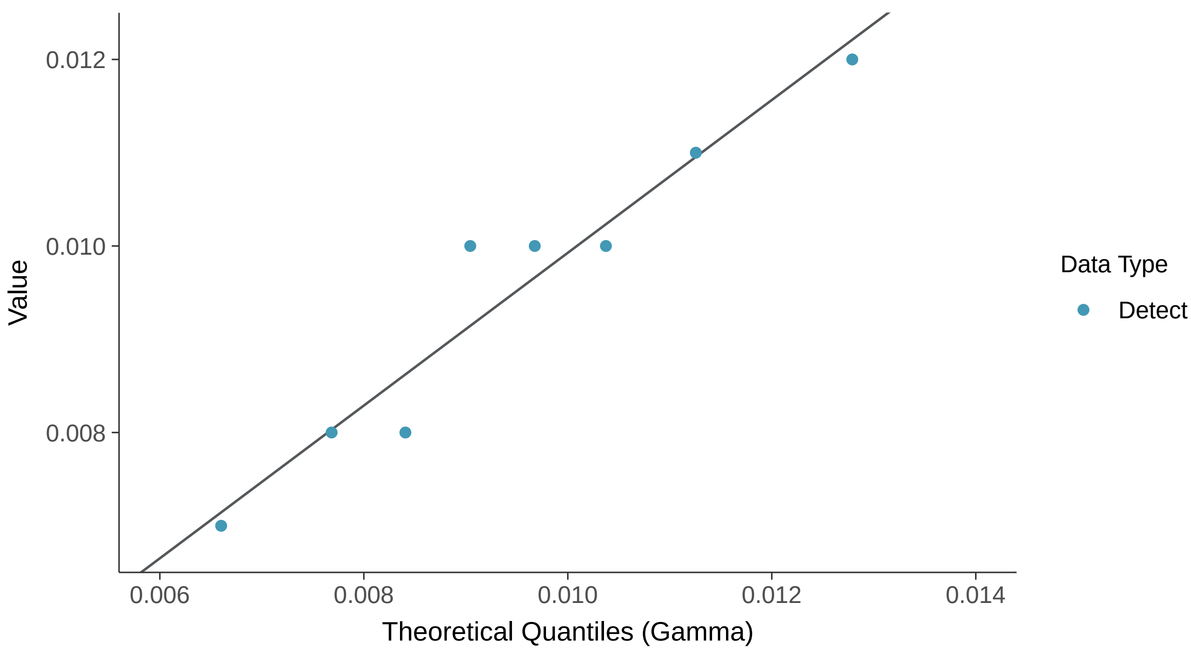
Lognormal Q-Q plot

Barium, MW-100D (mg/L)



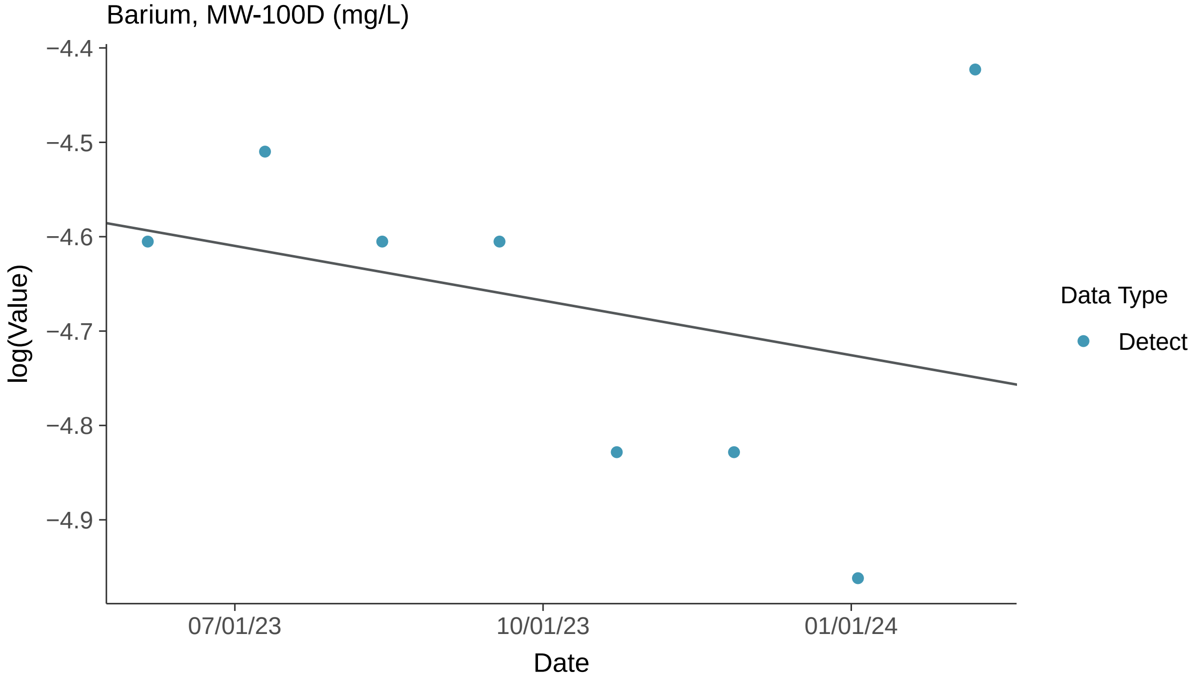
Gamma Q-Q plot

Barium, MW-100D (mg/L)



Trend Regression: Lognormal MLE

Barium, MW-100D (mg/L)

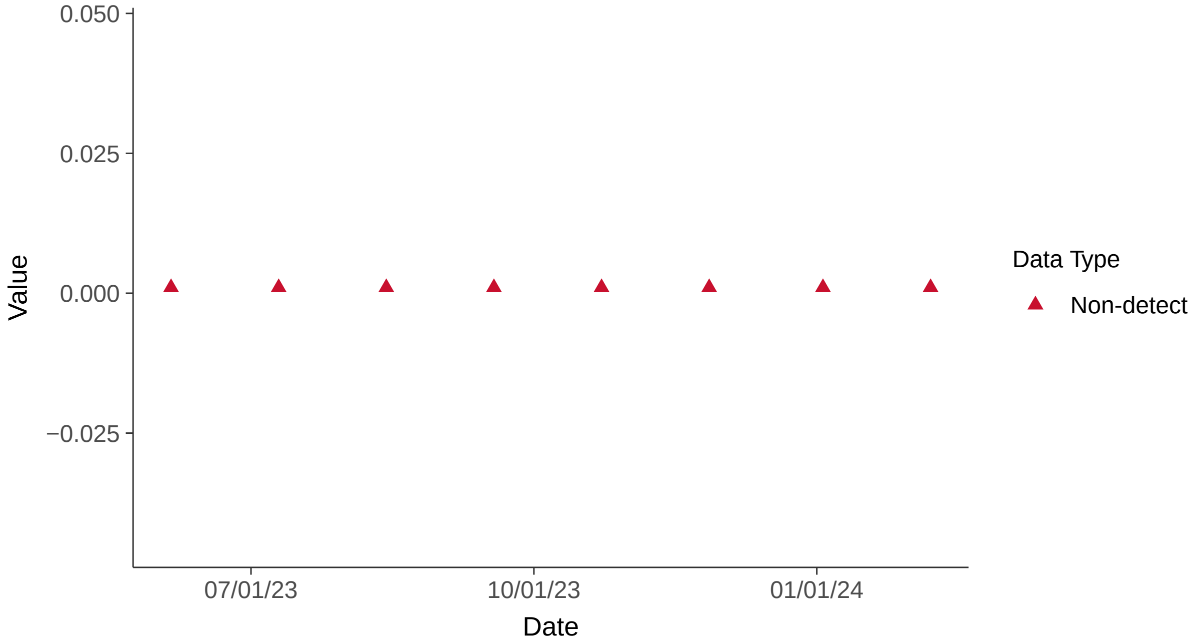


Appendix IV: Beryllium, MW-100D

ID: 100D_2_11

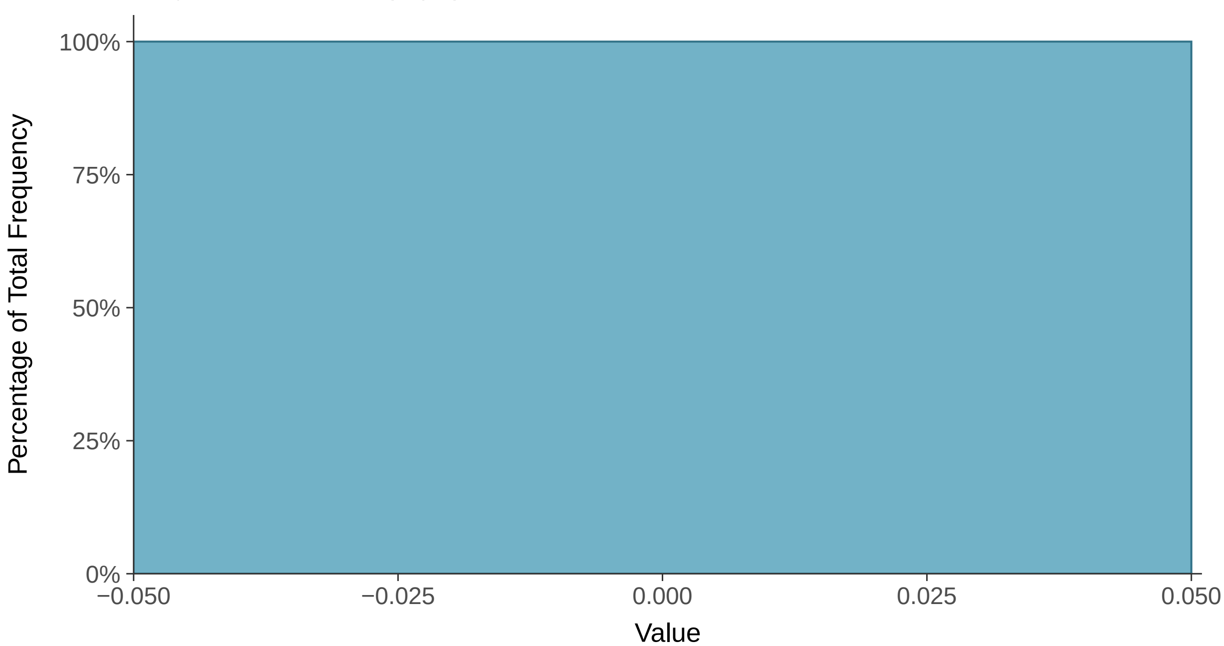
Scatter Plot

Beryllium, MW-100D (mg/L)



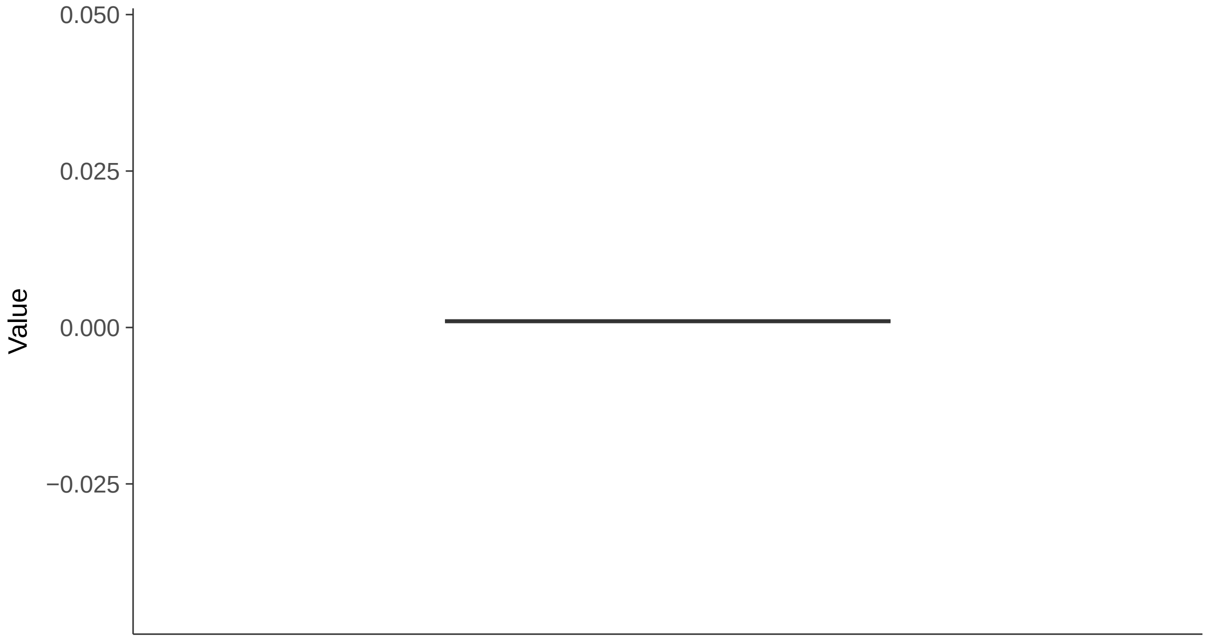
Histogram

Beryllium, MW-100D (mg/L)



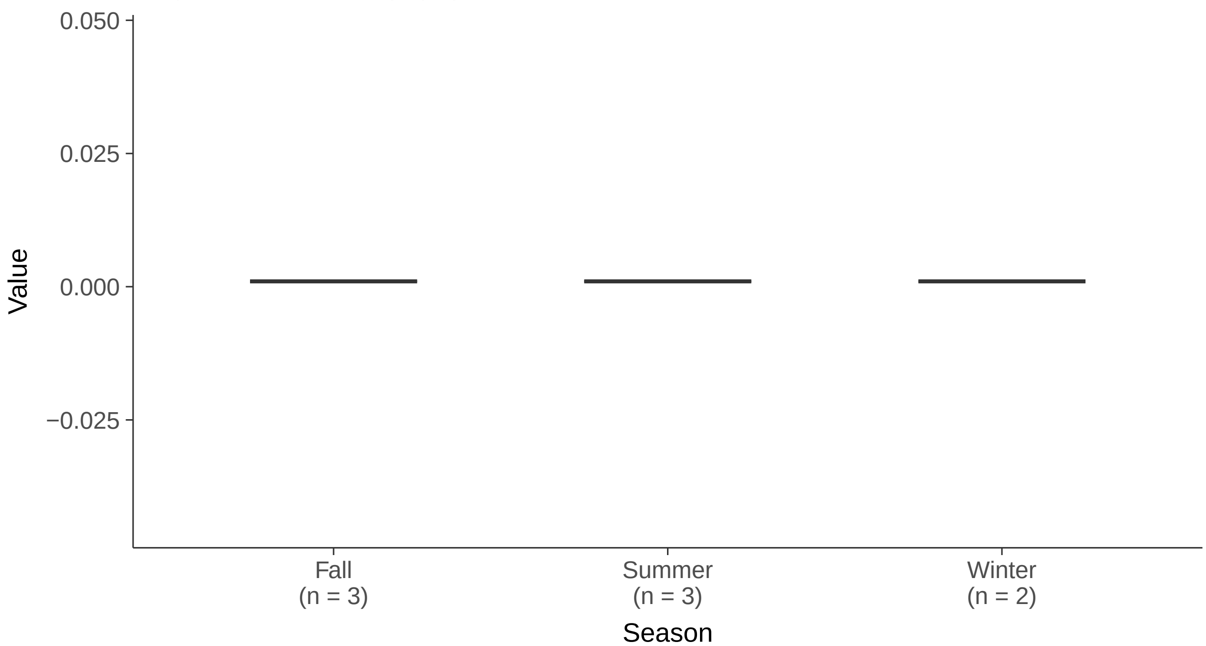
Boxplot

Beryllium, MW-100D (mg/L)



Boxplot by Season

Beryllium, MW-100D (mg/L)

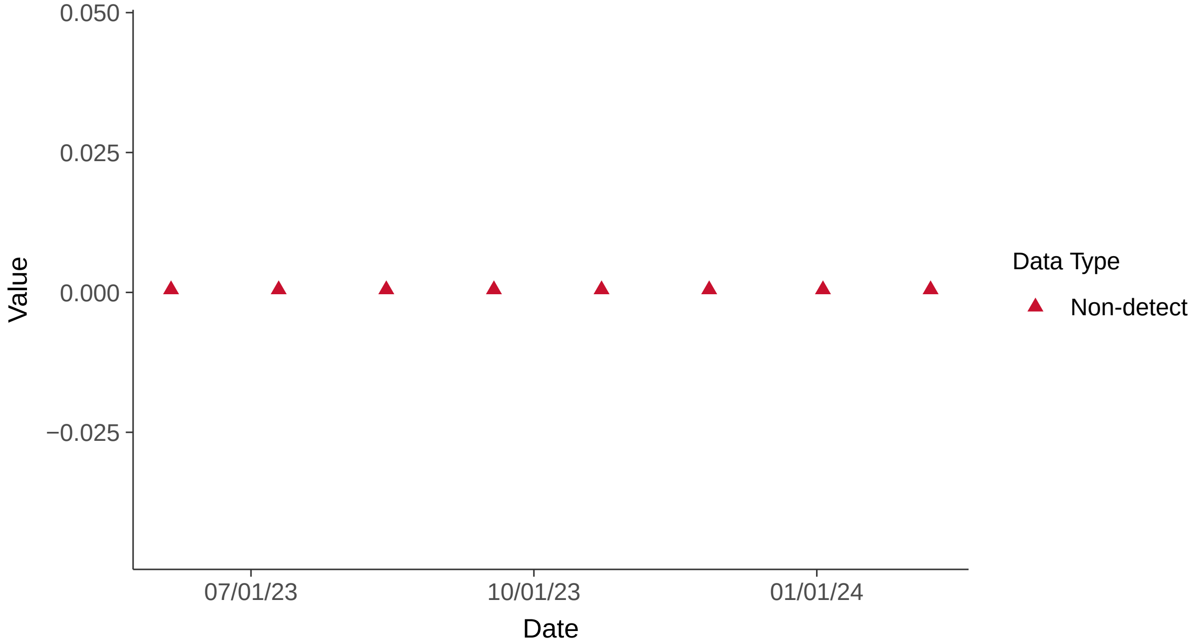


Appendix IV: Cadmium, MW-100D

ID: 100D_2_12

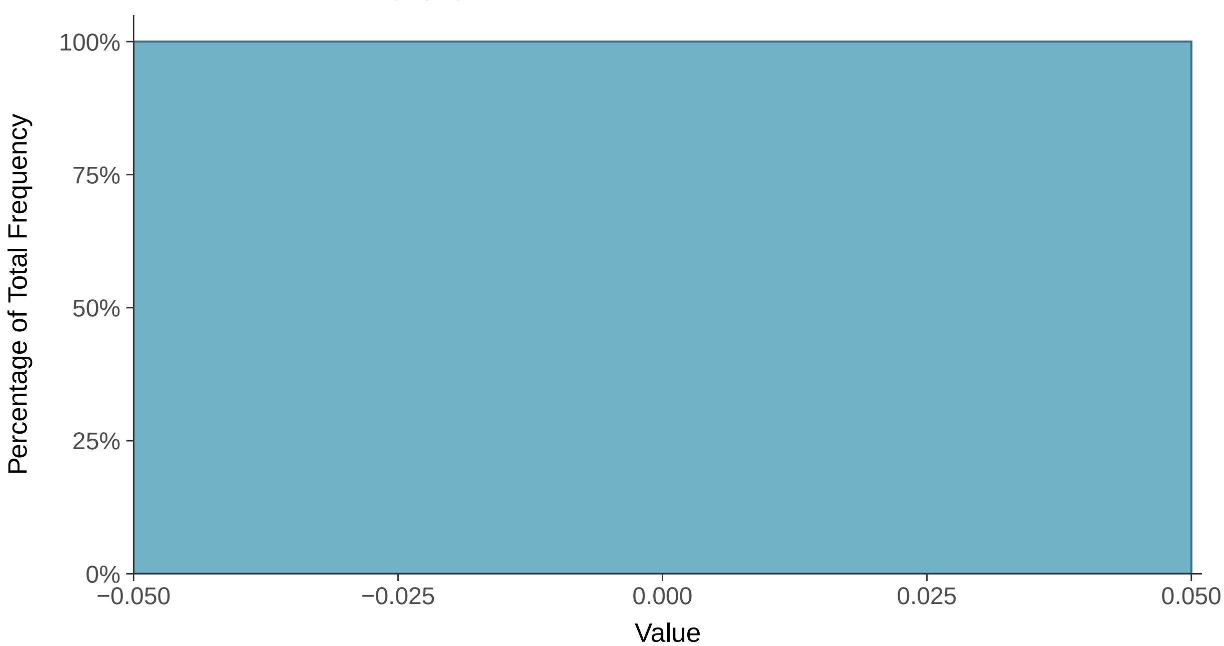
Scatter Plot

Cadmium, MW-100D (mg/L)



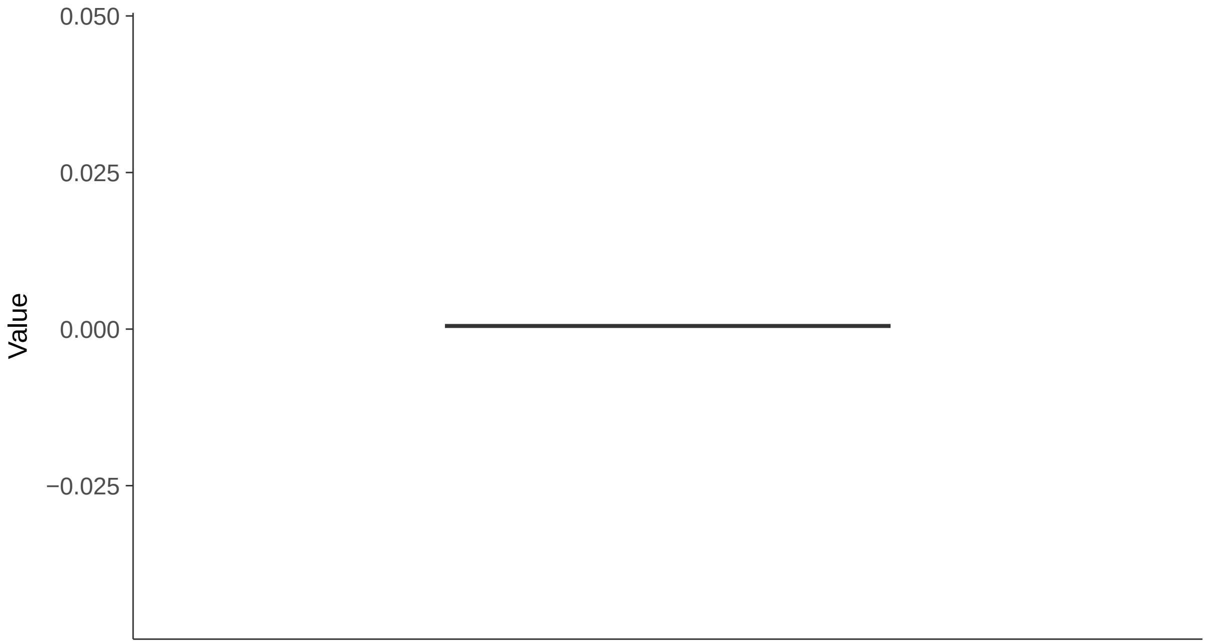
Histogram

Cadmium, MW-100D (mg/L)



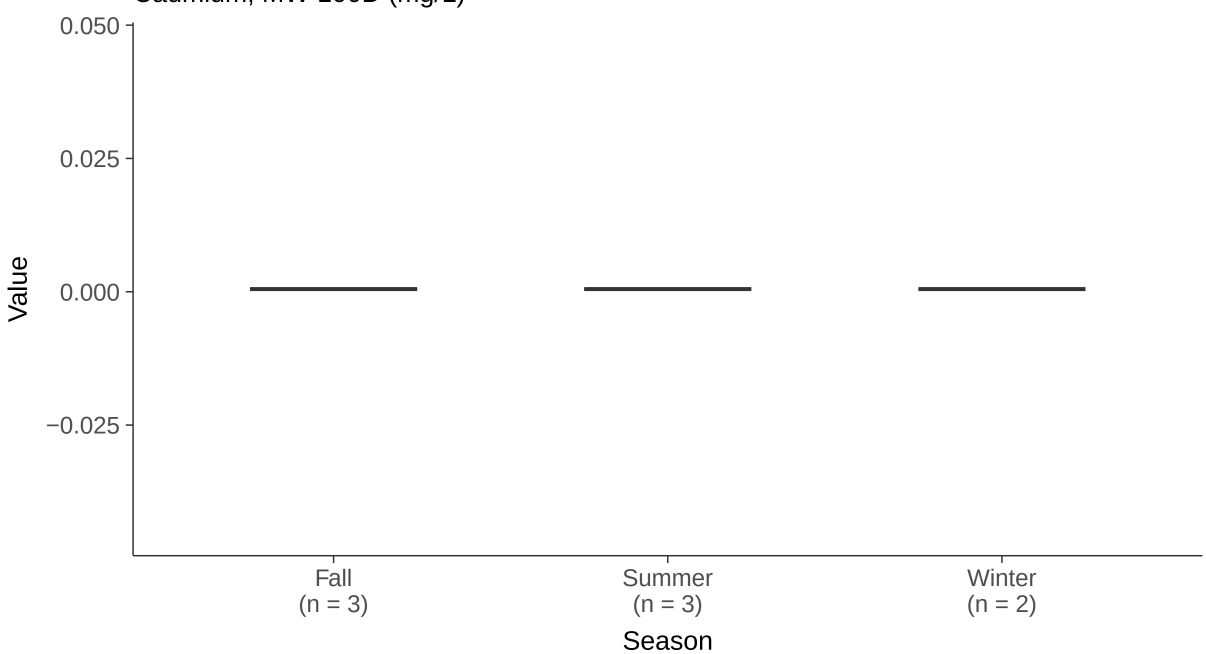
Boxplot

Cadmium, MW-100D (mg/L)



Boxplot by Season

Cadmium, MW-100D (mg/L)

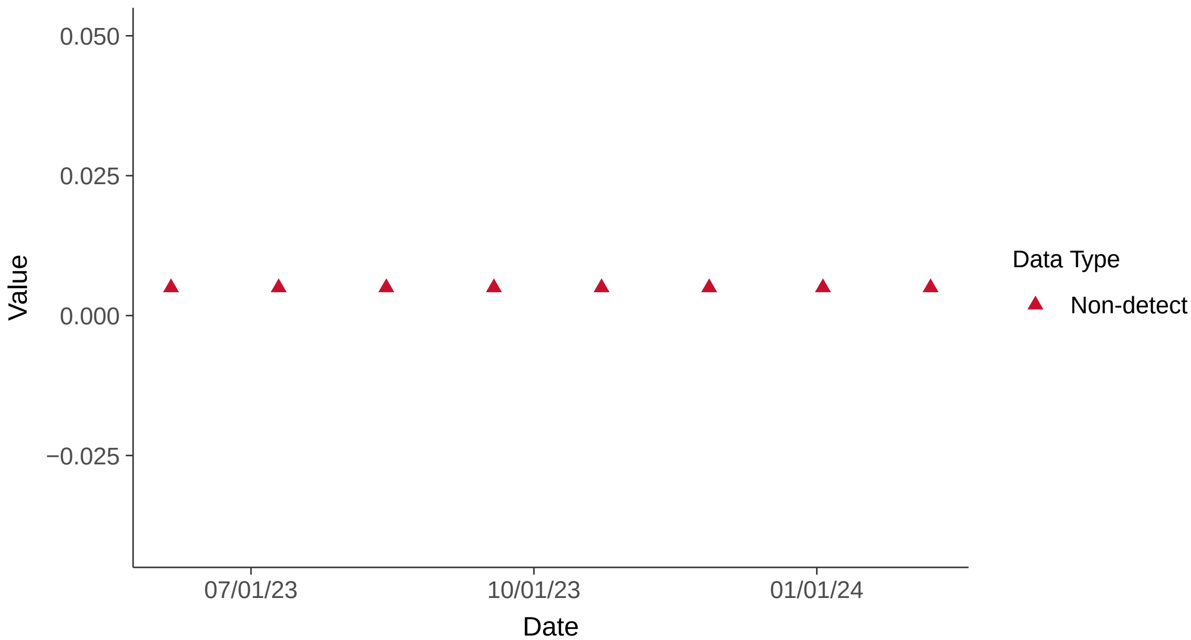


Appendix IV: Chromium, MW-100D

ID: 100D_2_13

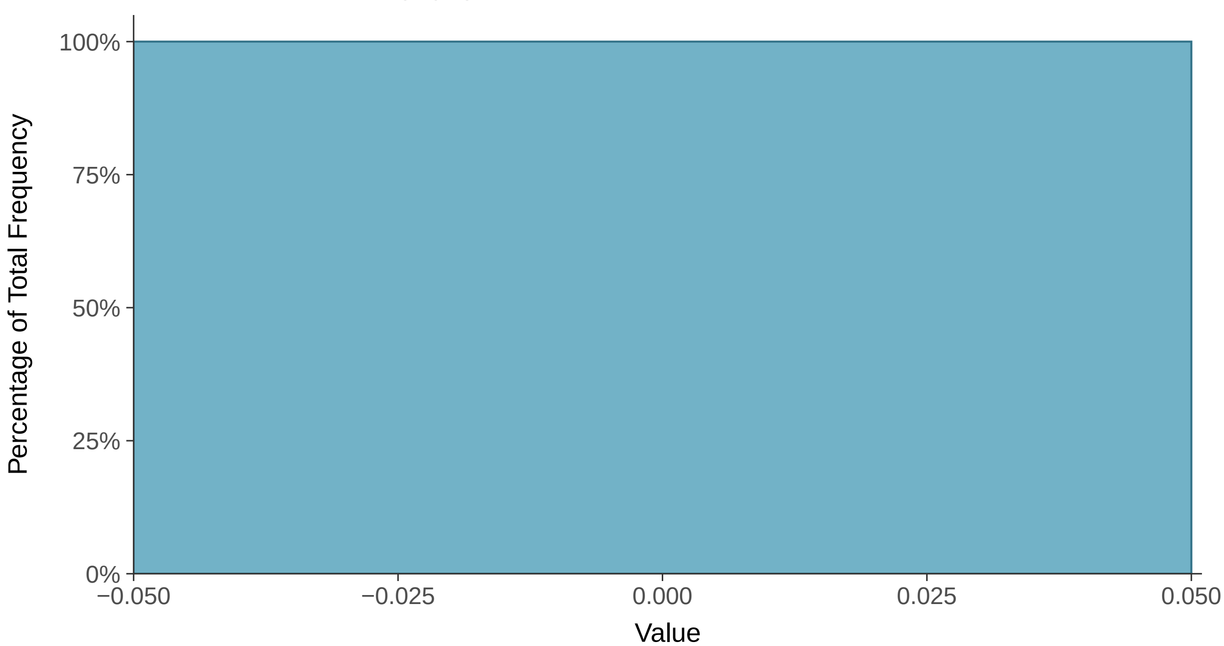
Scatter Plot

Chromium, MW-100D (mg/L)



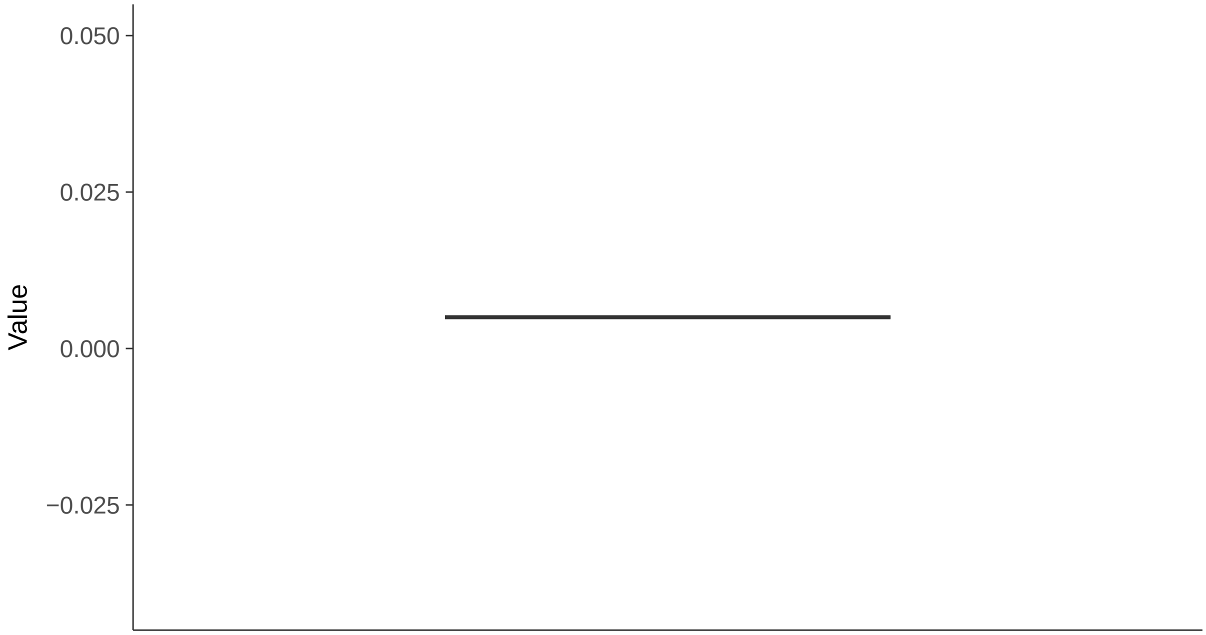
Histogram

Chromium, MW-100D (mg/L)



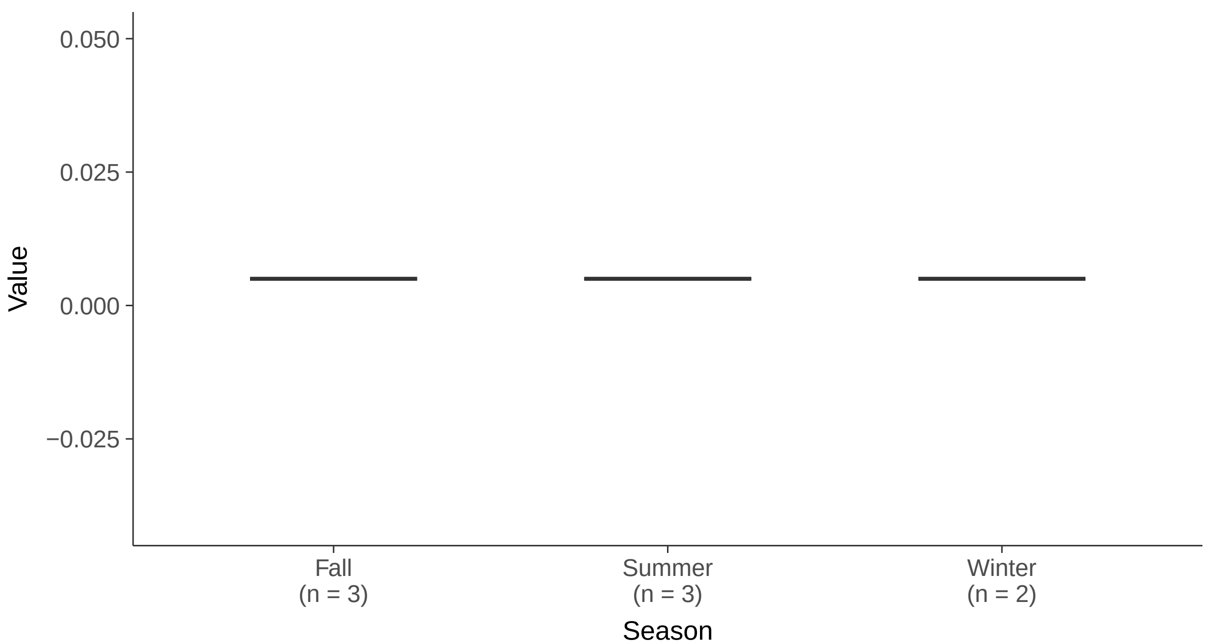
Boxplot

Chromium, MW-100D (mg/L)



Boxplot by Season

Chromium, MW-100D (mg/L)

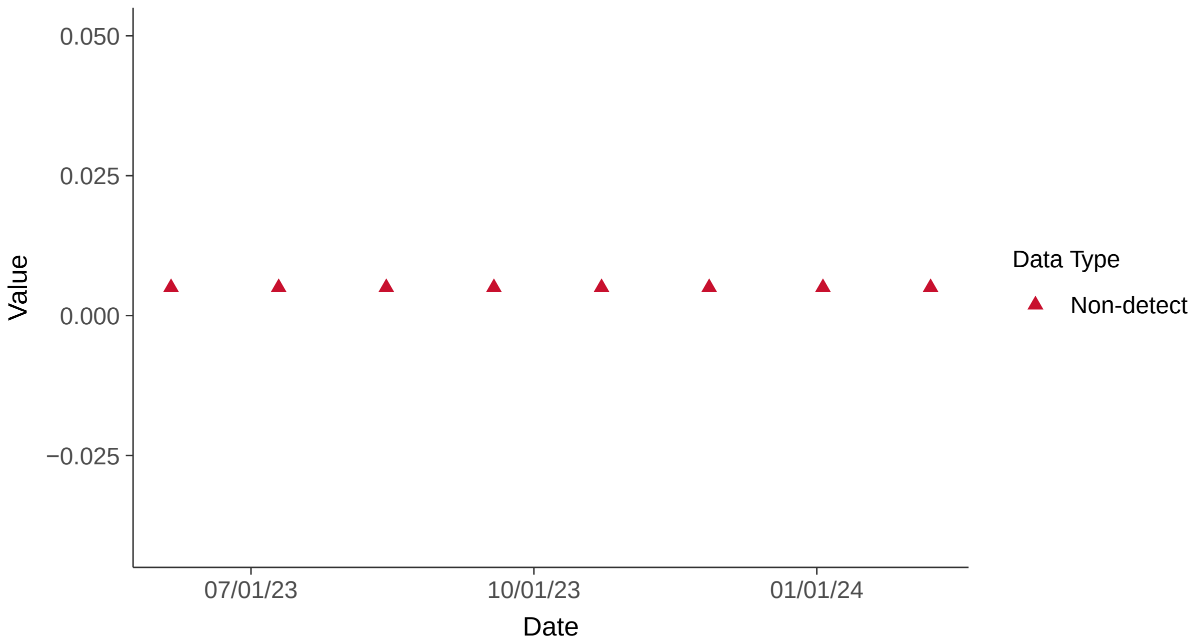


Appendix IV: Cobalt, MW-100D

ID: 100D_2_14

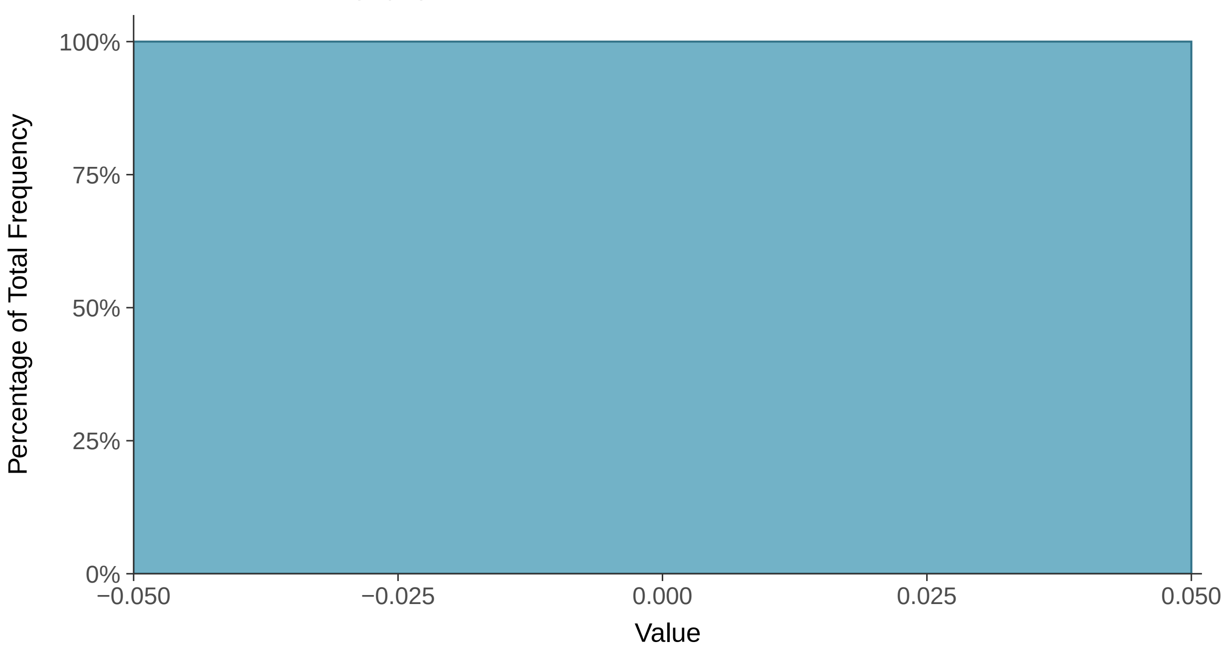
Scatter Plot

Cobalt, MW-100D (mg/L)



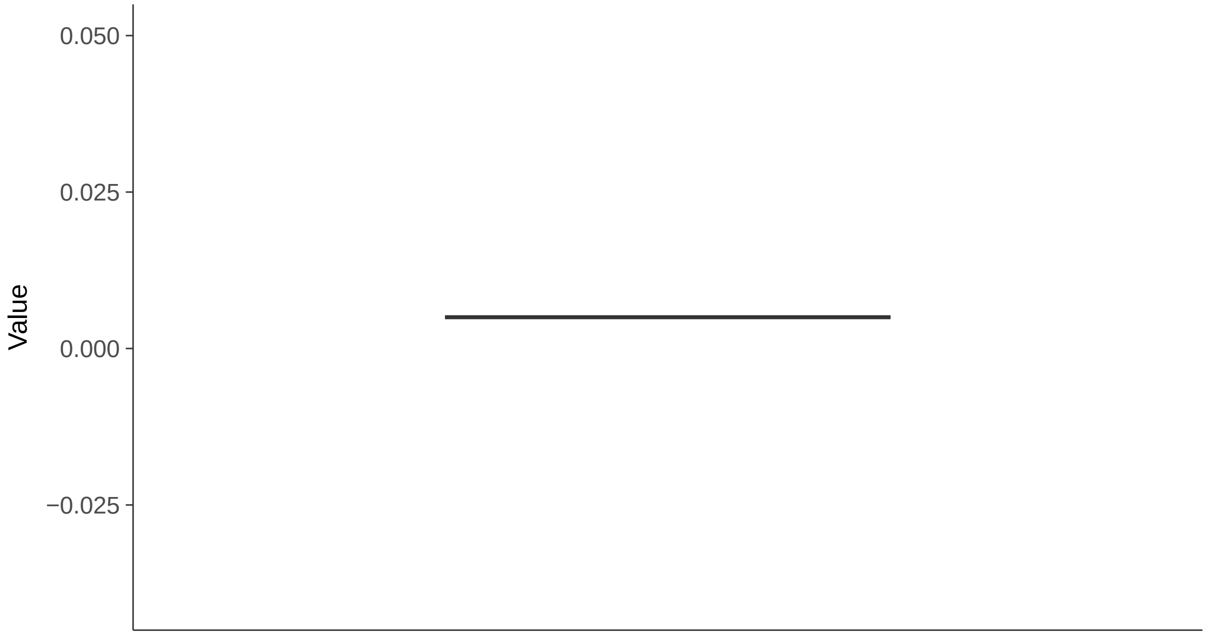
Histogram

Cobalt, MW-100D (mg/L)



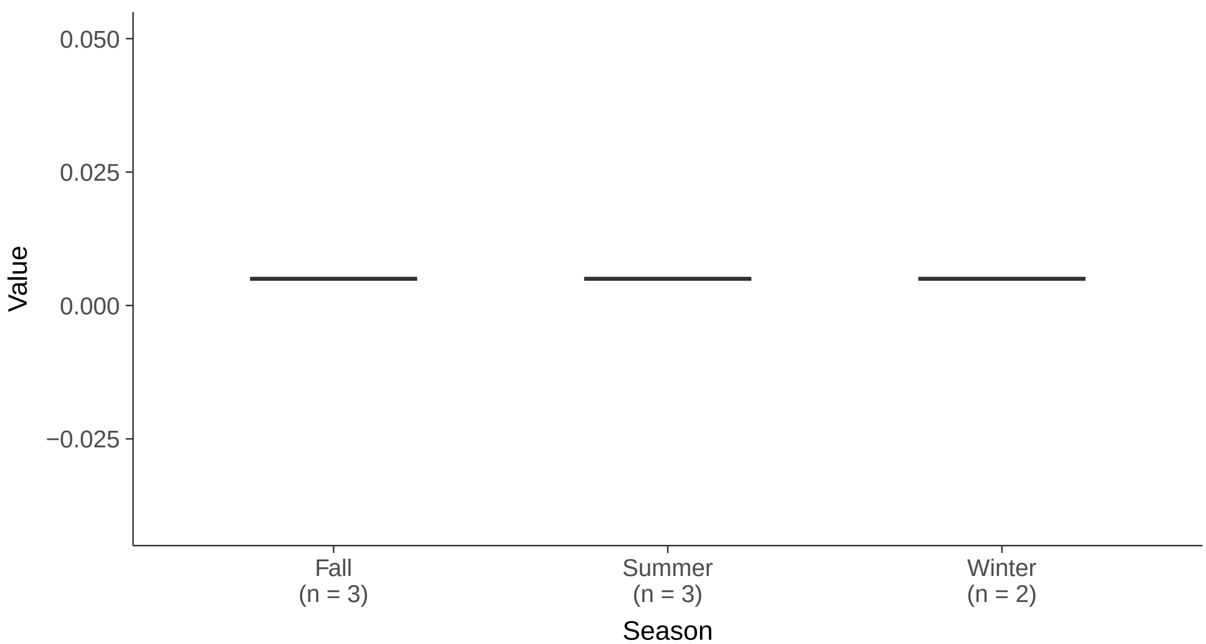
Boxplot

Cobalt, MW-100D (mg/L)



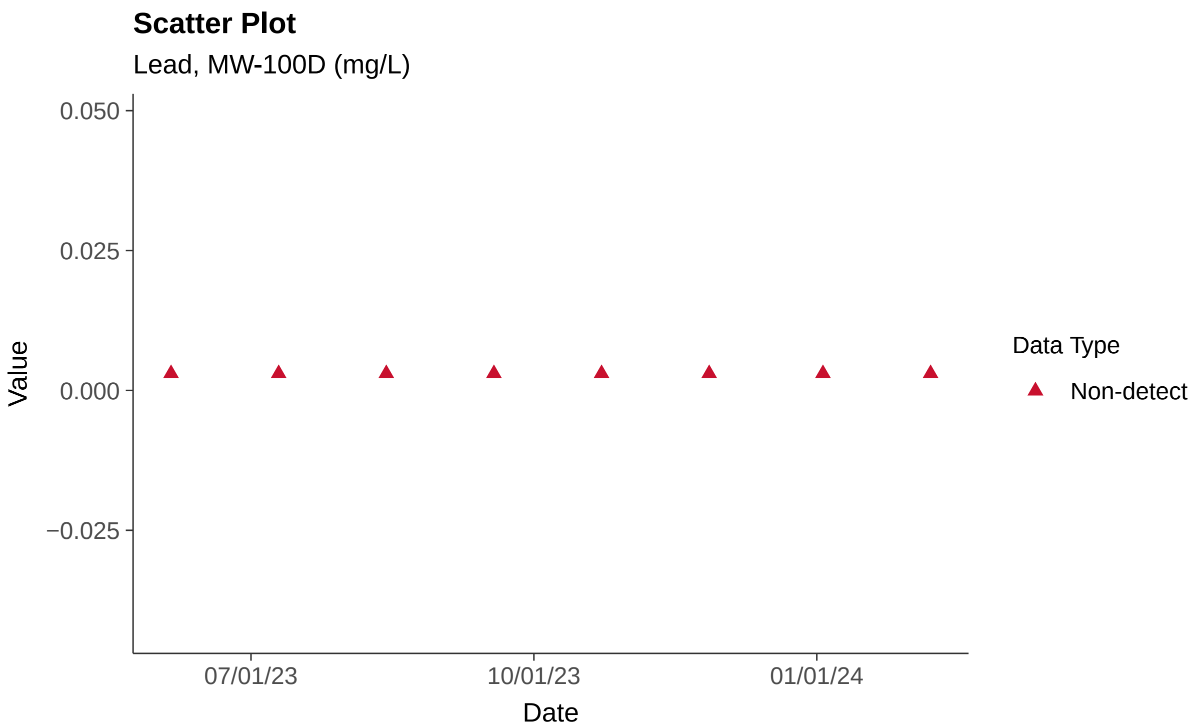
Boxplot by Season

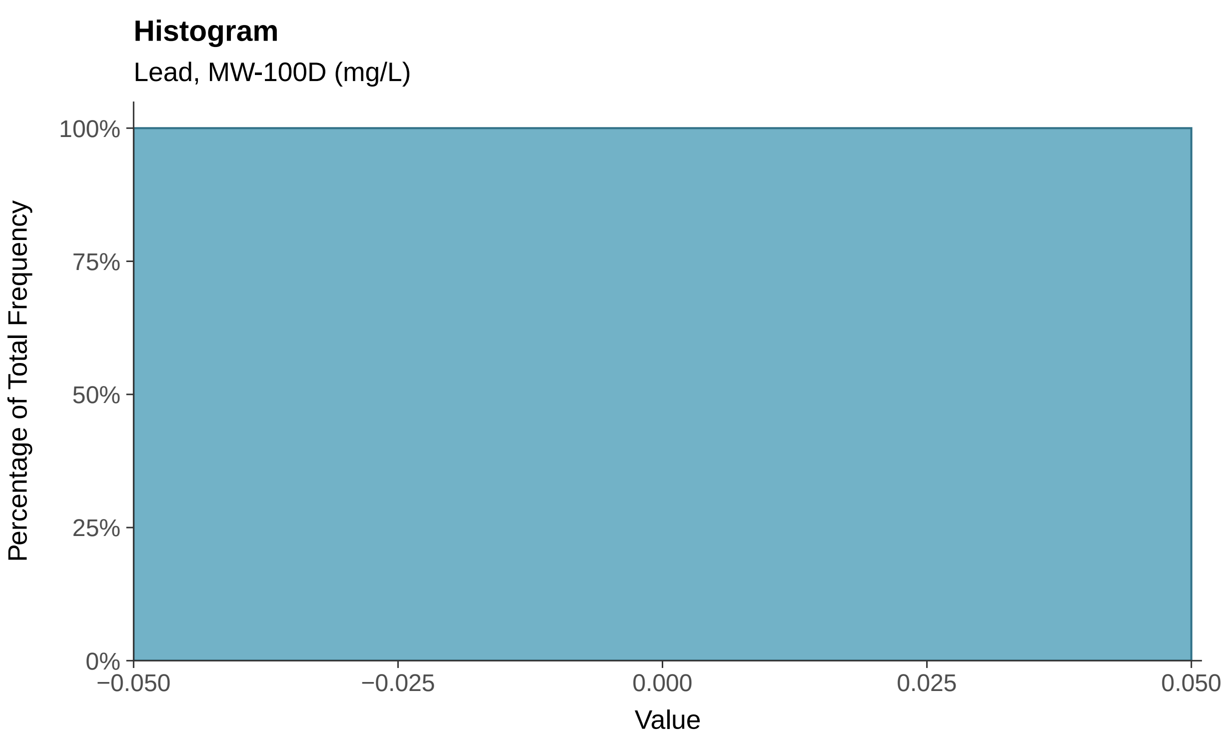
Cobalt, MW-100D (mg/L)



Appendix IV: Lead, MW-100D

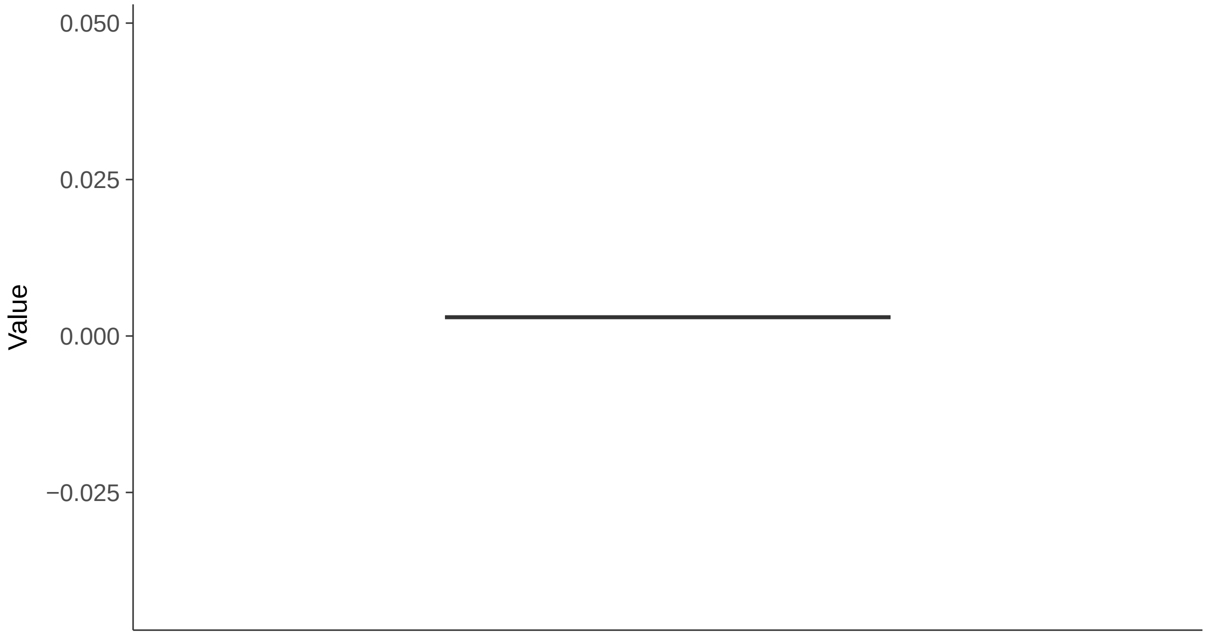
ID: 100D_2_15





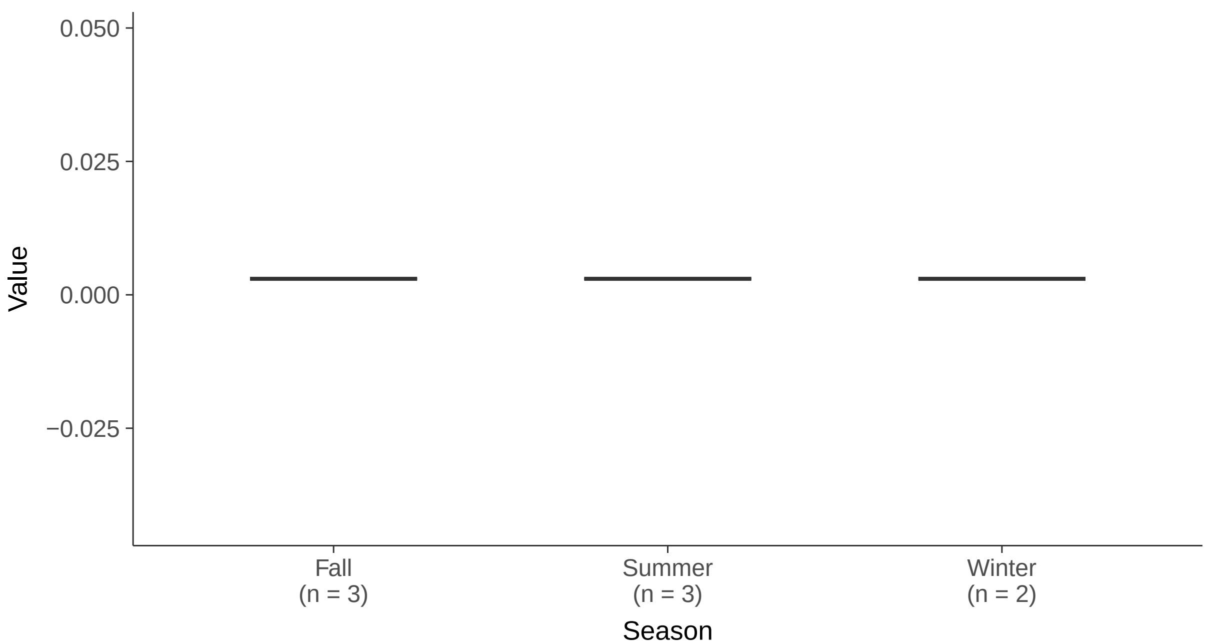
Boxplot

Lead, MW-100D (mg/L)



Boxplot by Season

Lead, MW-100D (mg/L)

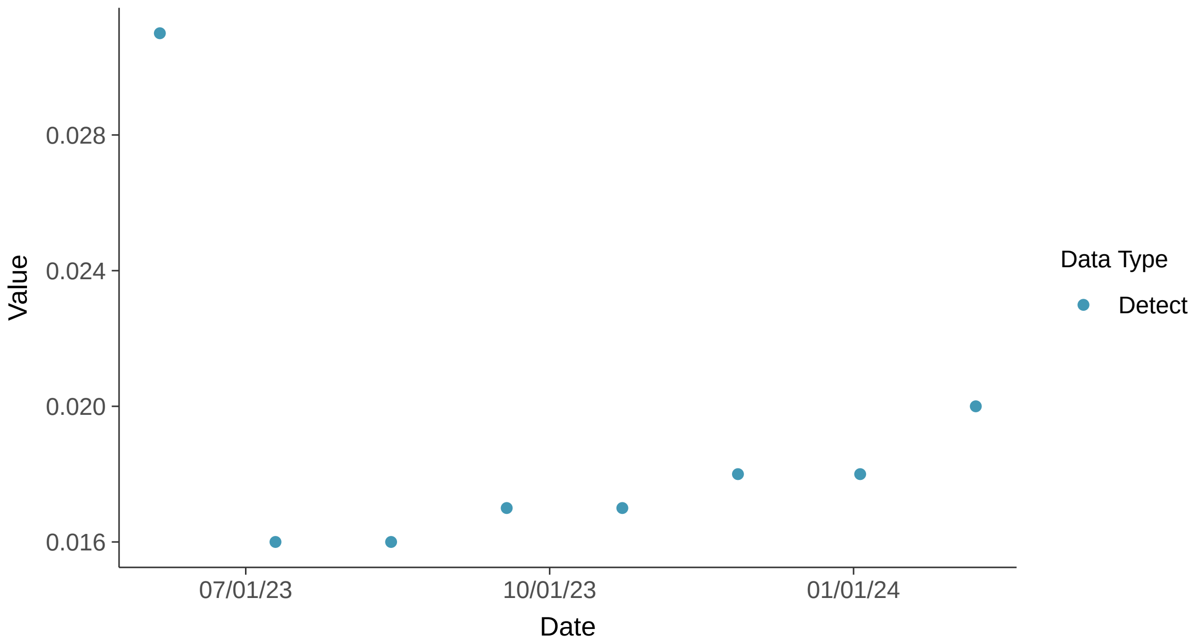


Appendix IV: Lithium, MW-100D

ID: 100D_2_16

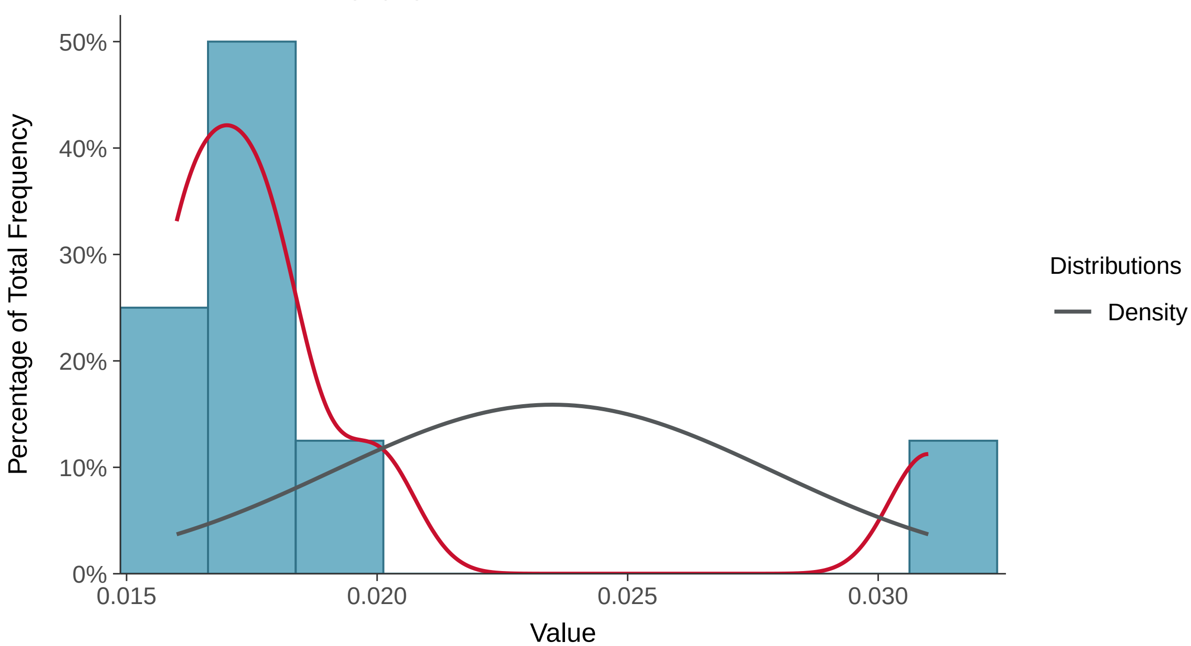
Scatter Plot

Lithium, MW-100D (mg/L)



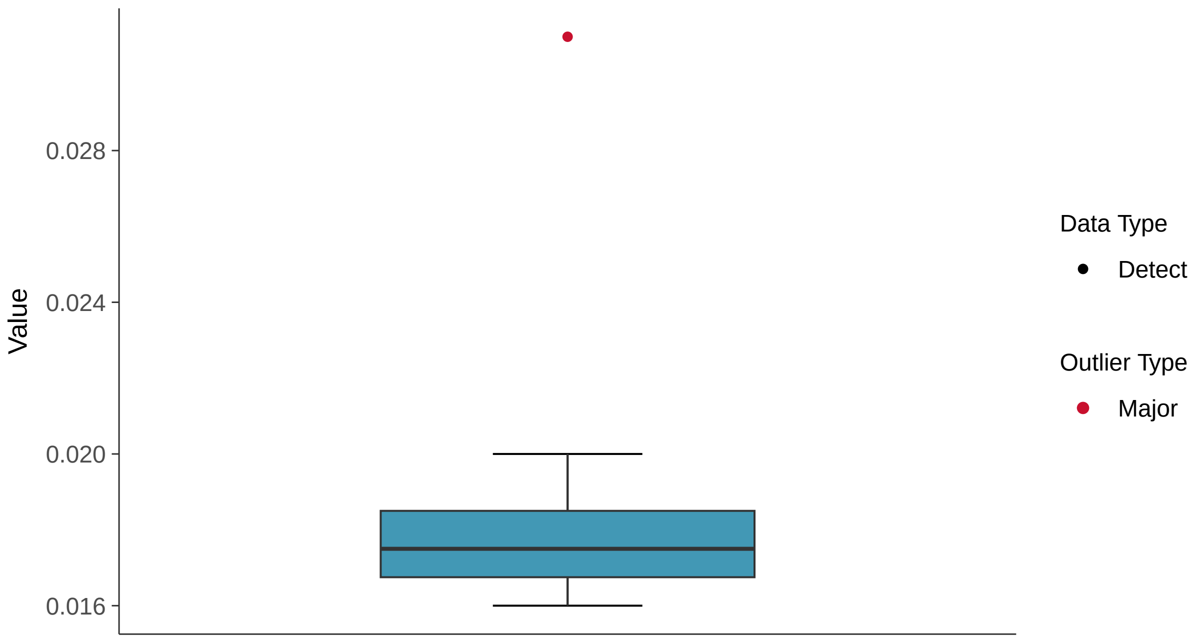
Histogram

Lithium, MW-100D (mg/L)



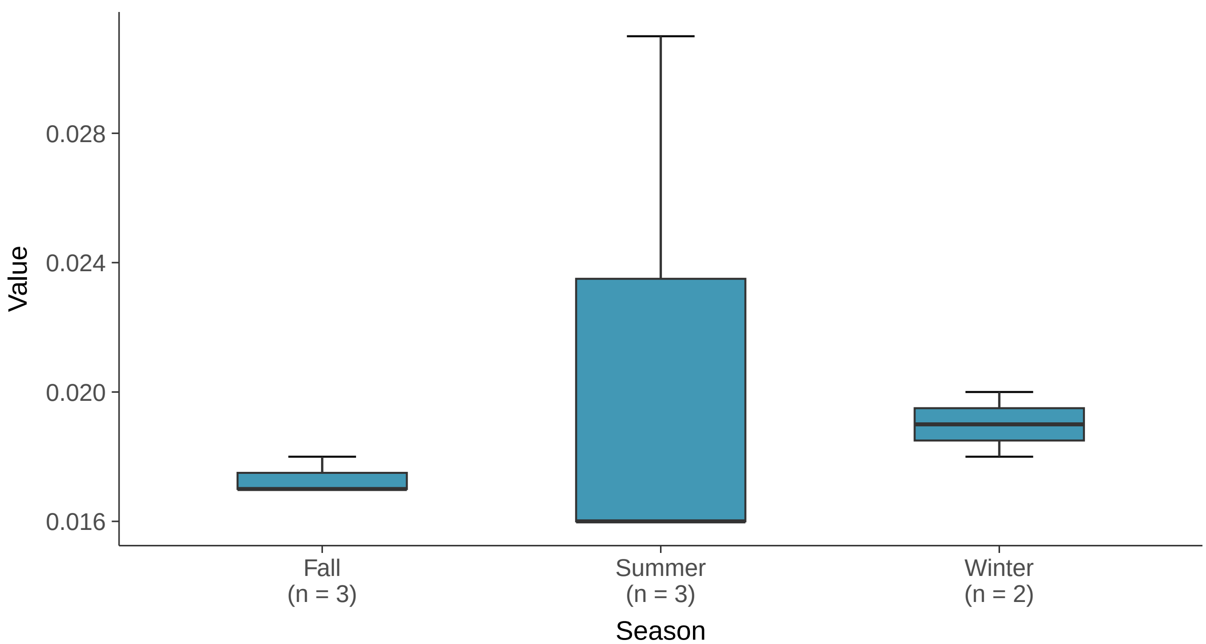
Boxplot

Lithium, MW-100D (mg/L)



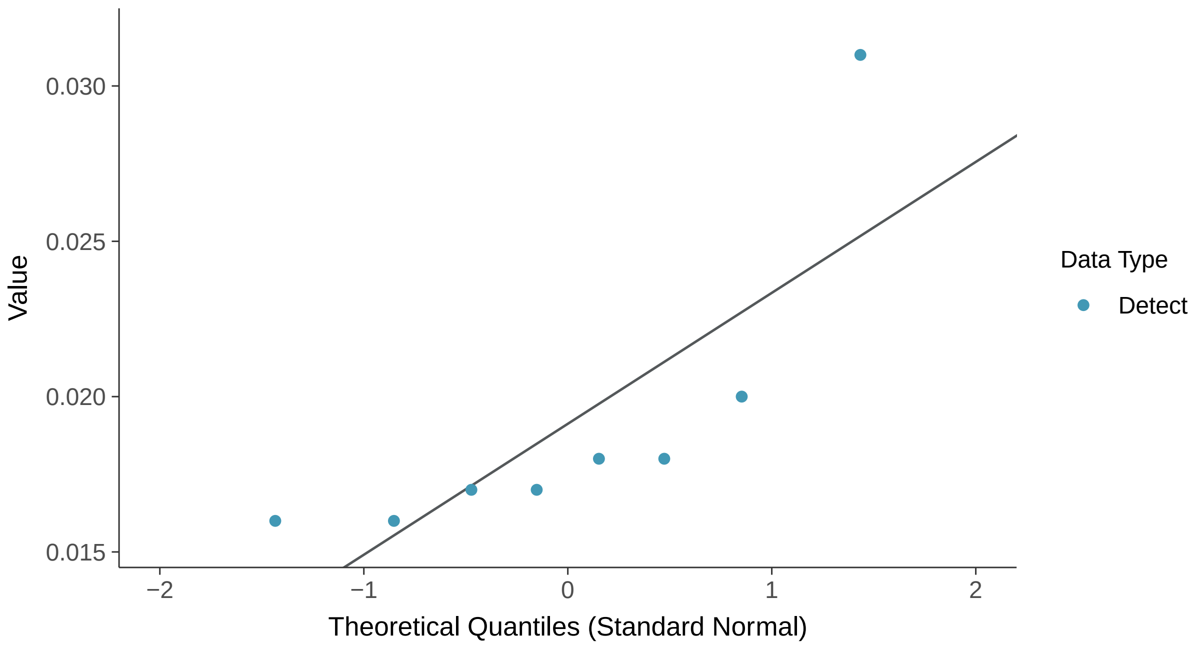
Boxplot by Season

Lithium, MW-100D (mg/L)



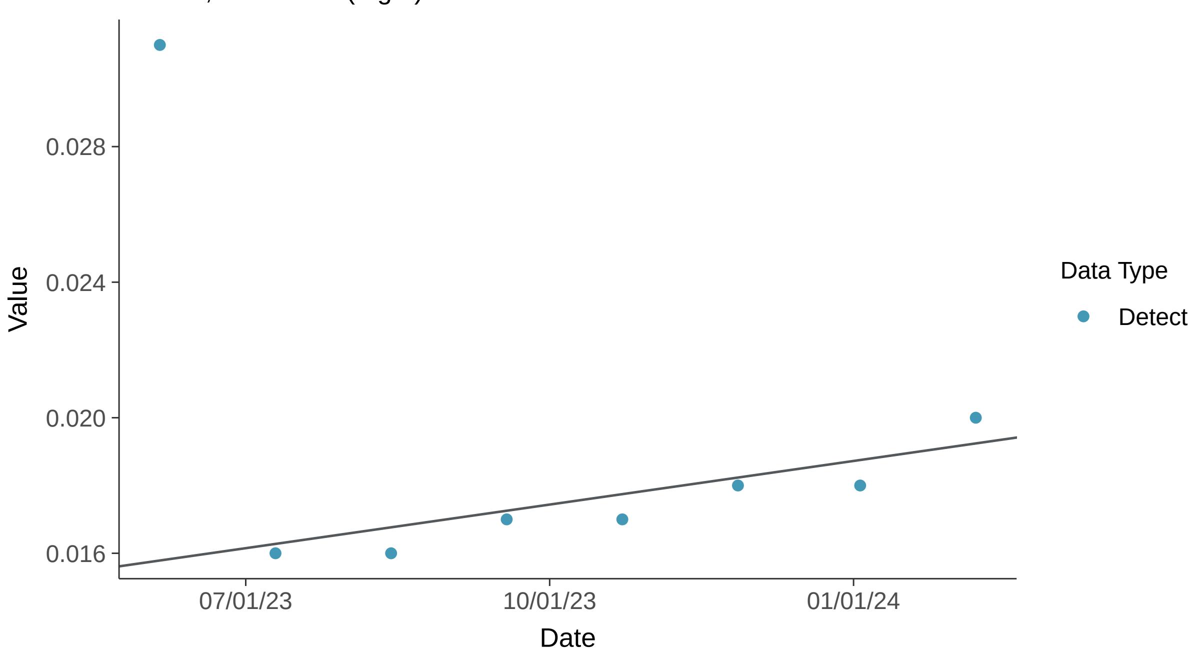
Normal Q-Q plot

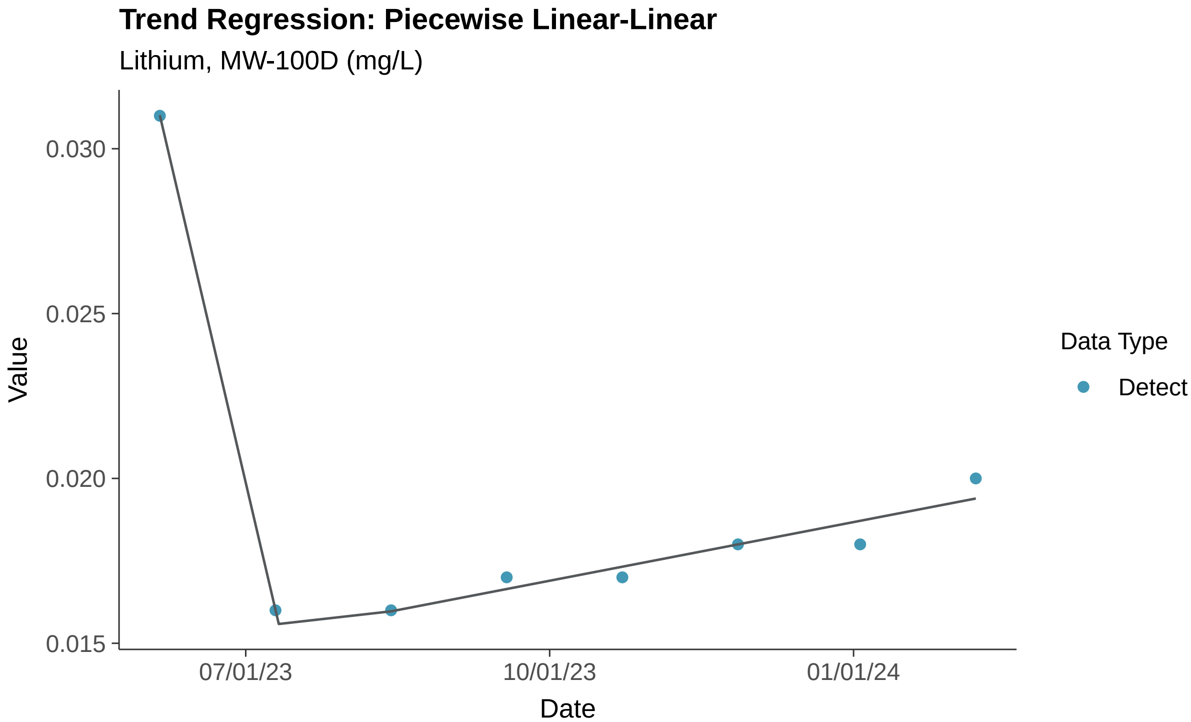
Lithium, MW-100D (mg/L)

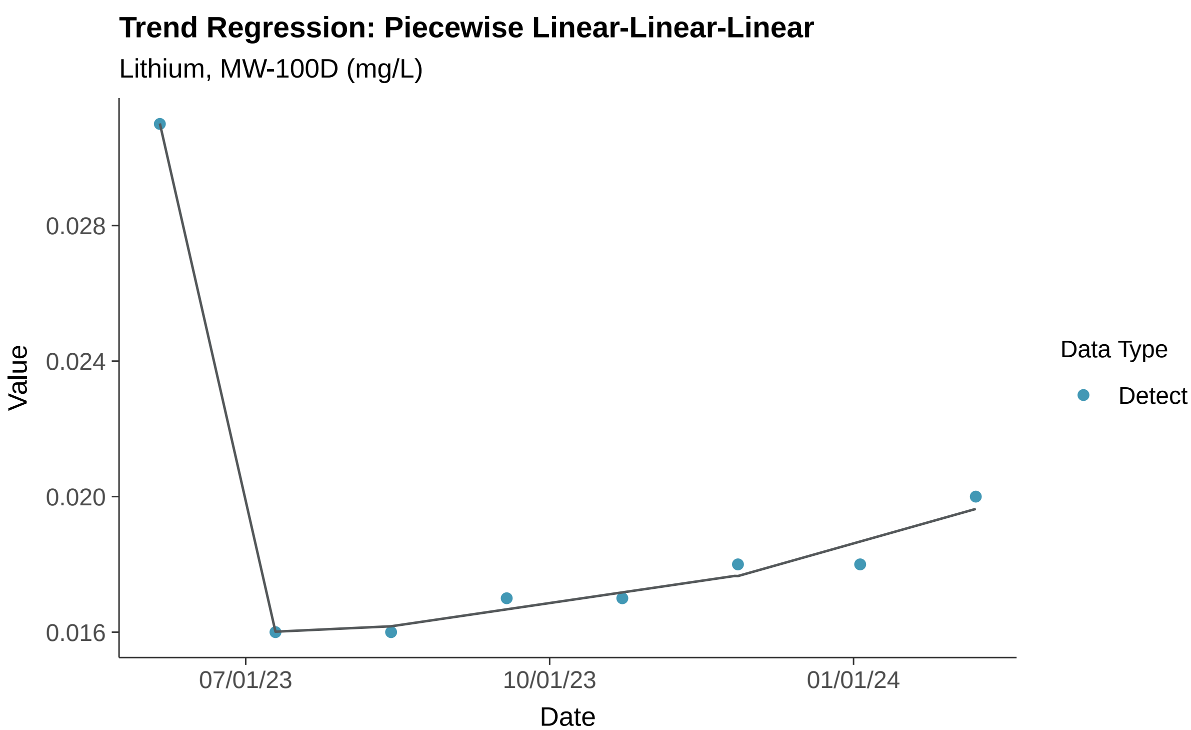


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Lithium, MW-100D (mg/L)




Trend Regression: Piecewise Linear-Linear
Lithium, MW-100D (mg/L)
Value
0.030
0.025
0.020
0.015
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

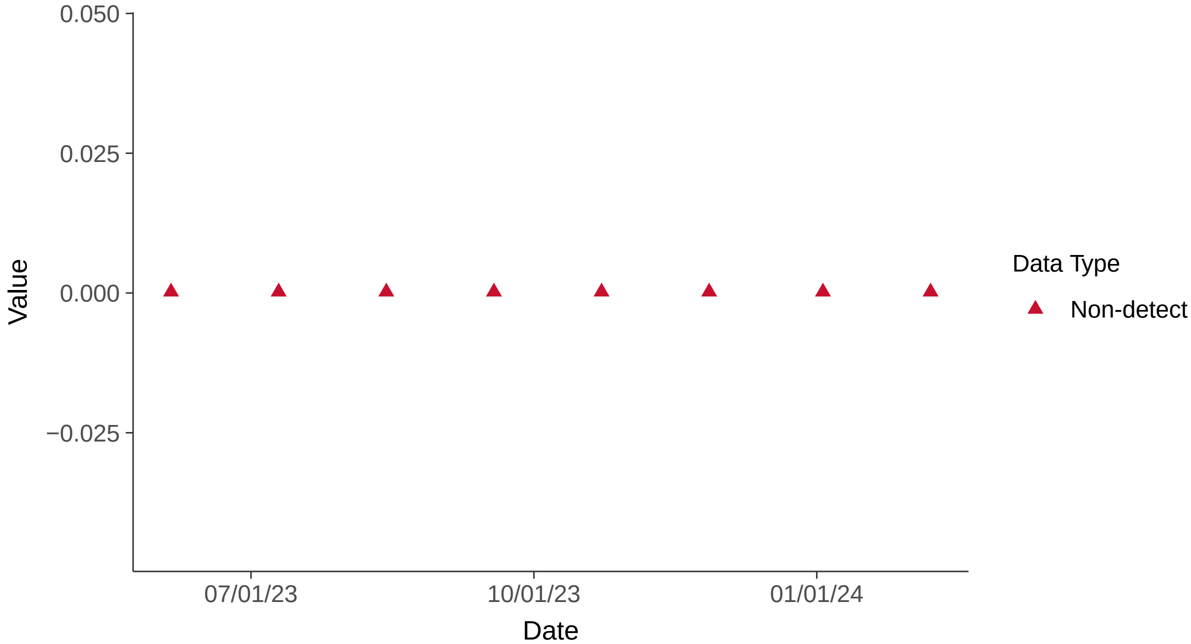

Trend Regression: Piecewise Linear-Linear-Linear
Lithium, MW-100D (mg/L)
Value
0.028
0.024
0.020
0.016
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Mercury, MW-100D

ID: 100D_2_17

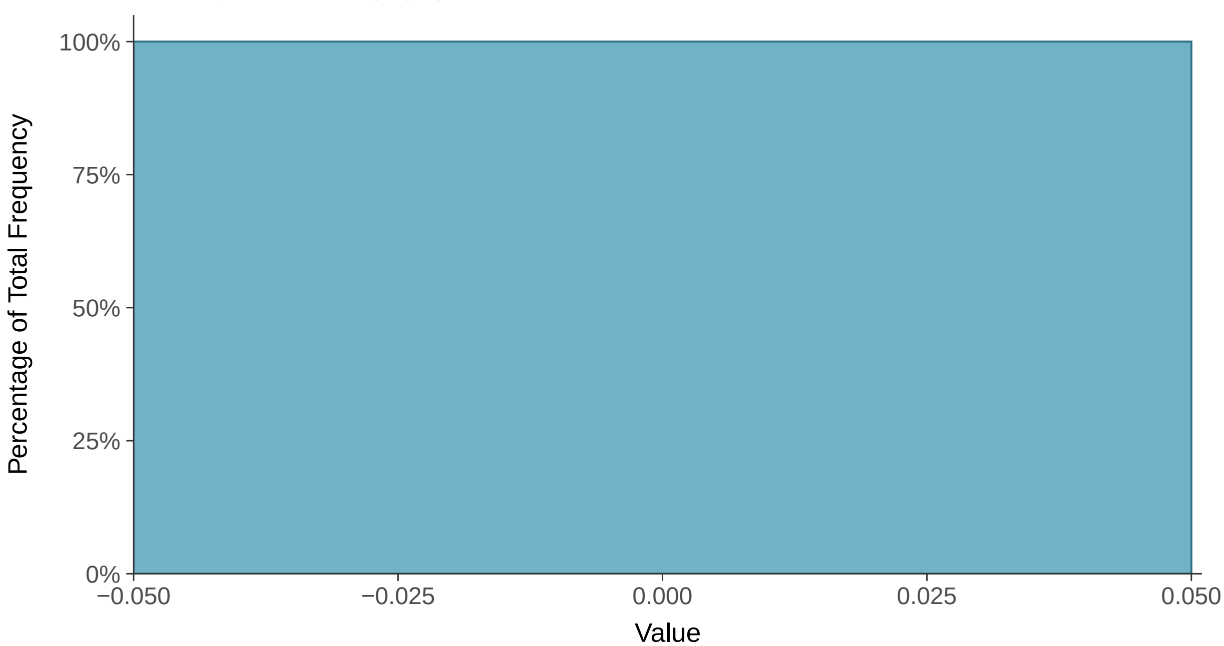
Scatter Plot

Mercury, MW-100D (mg/L)



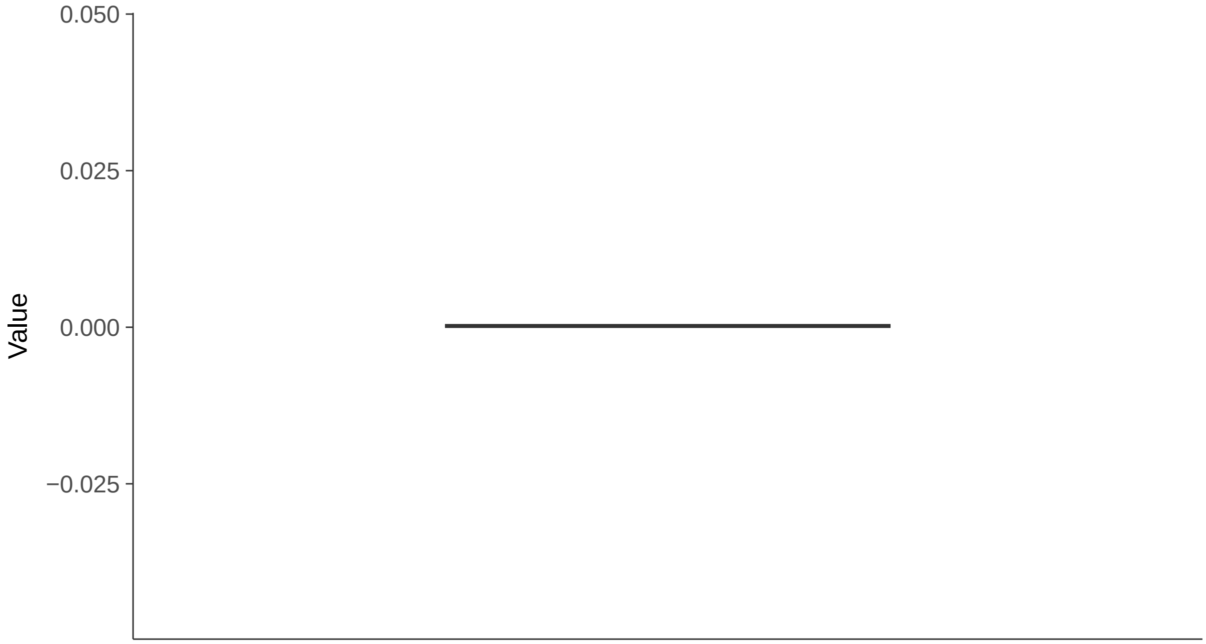
Histogram

Mercury, MW-100D (mg/L)



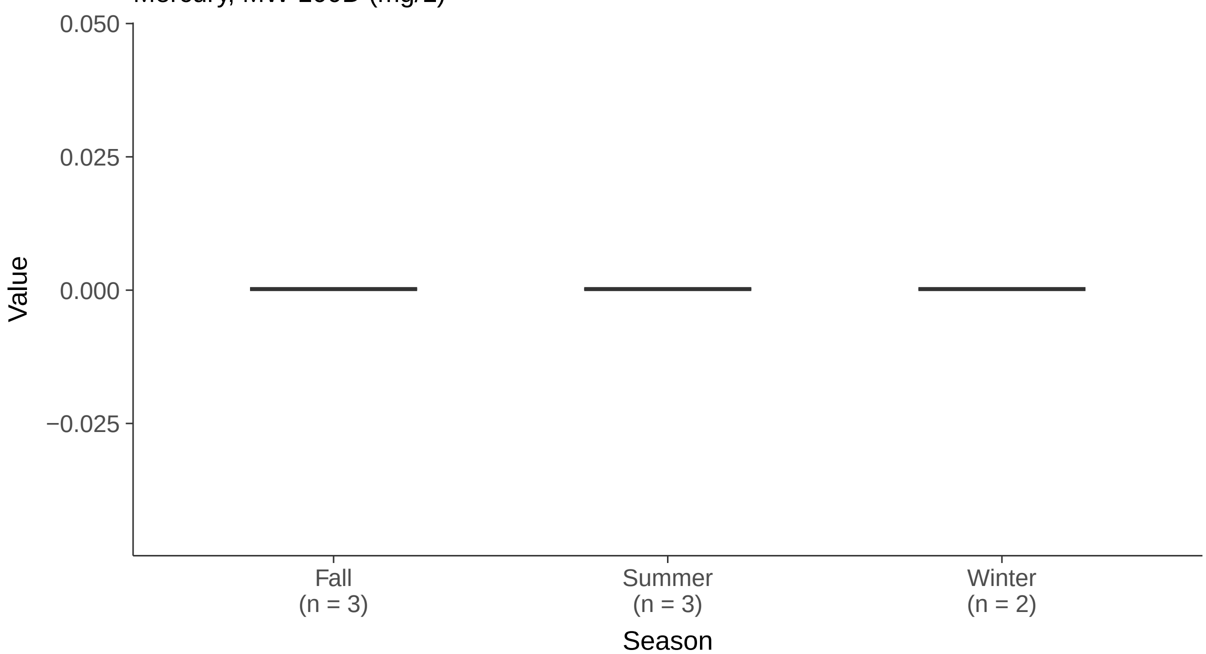
Boxplot

Mercury, MW-100D (mg/L)



Boxplot by Season

Mercury, MW-100D (mg/L)

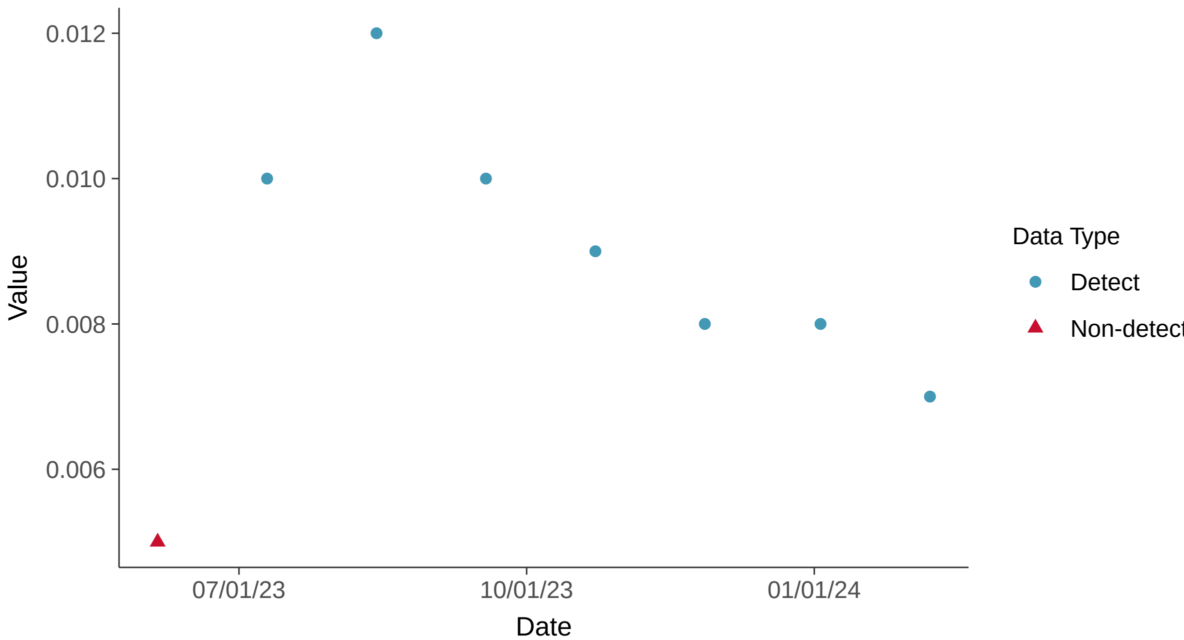


Appendix IV: Molybdenum, MW-100D

ID: 100D_2_18

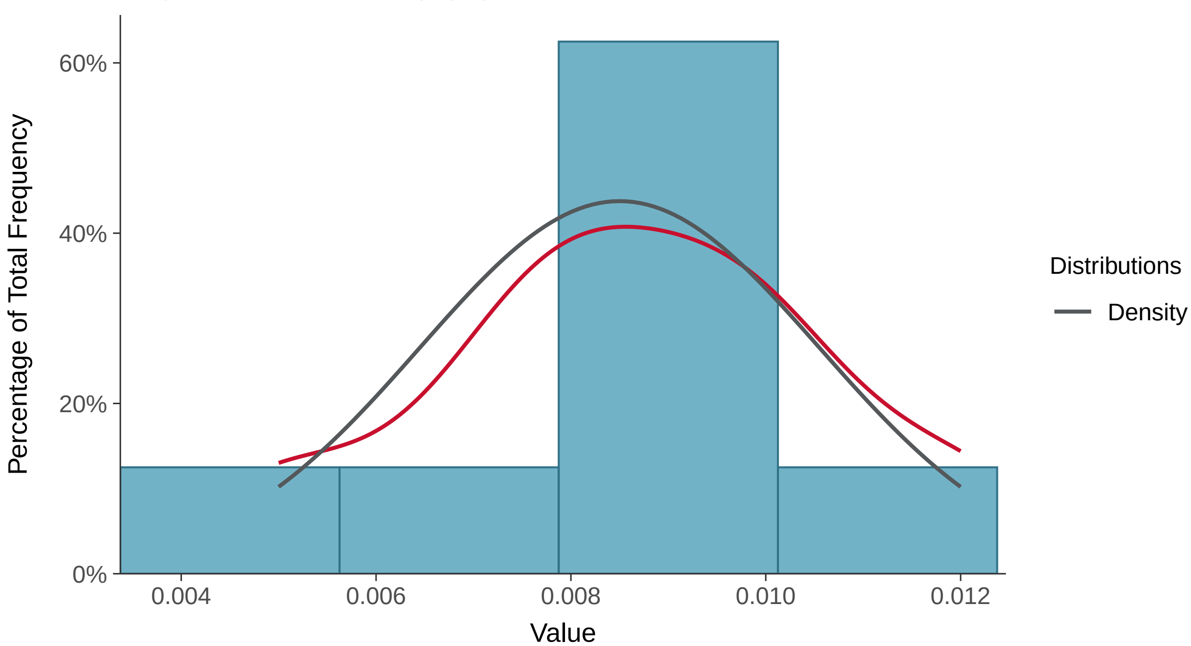
Scatter Plot

Molybdenum, MW-100D (mg/L)



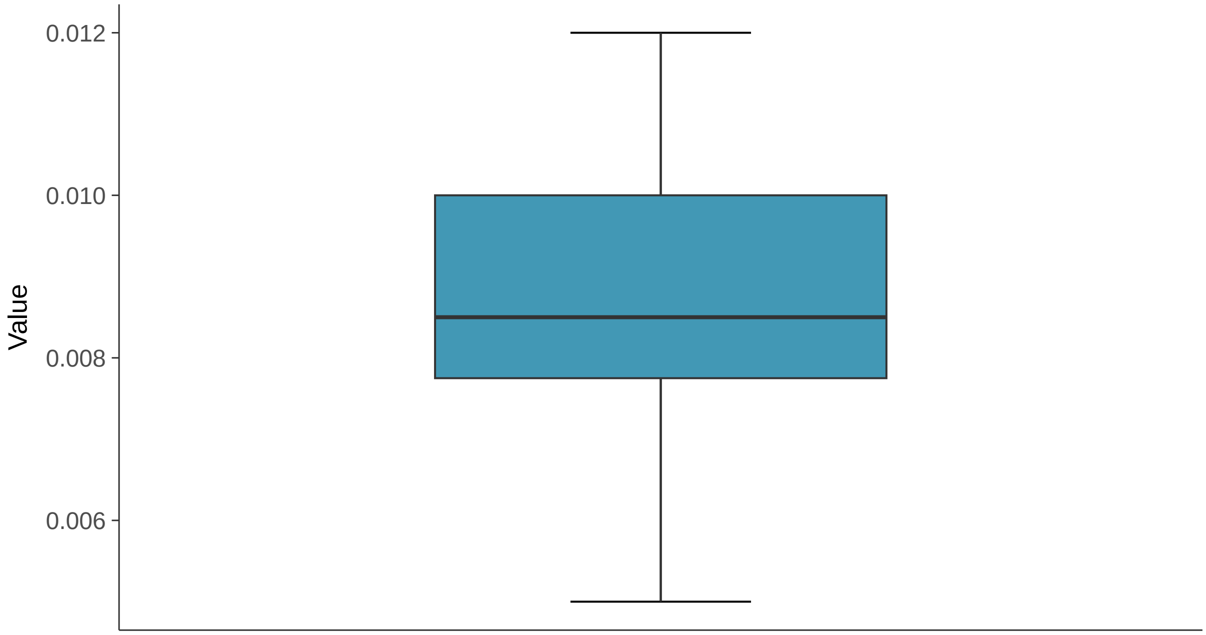
Histogram

Molybdenum, MW-100D (mg/L)



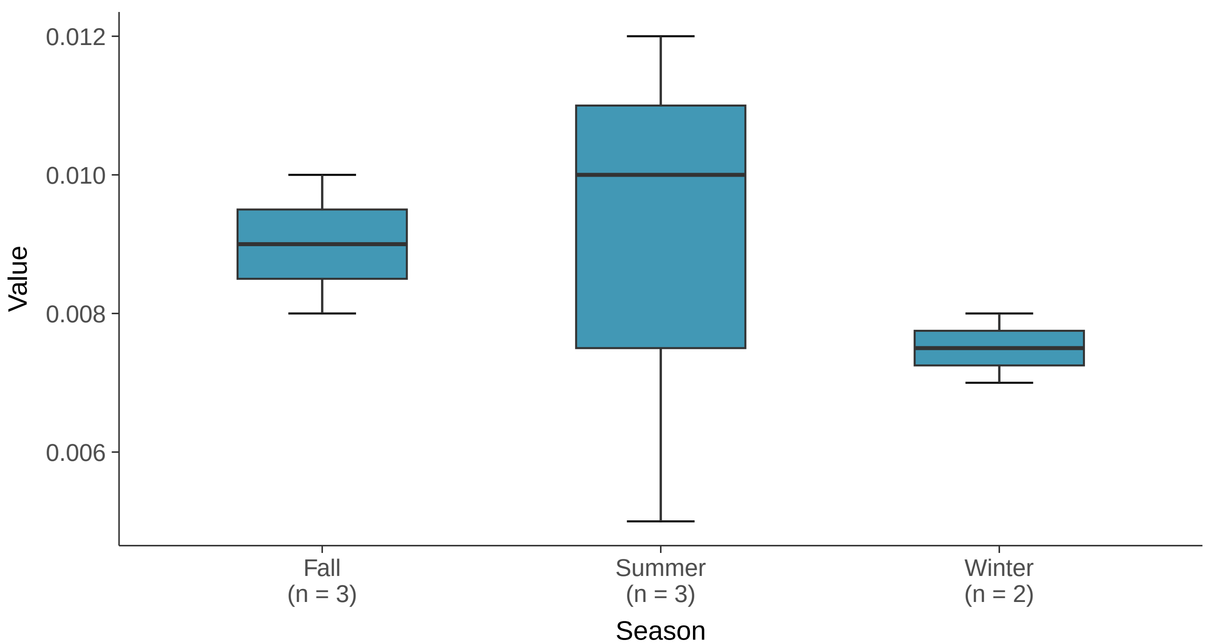
Boxplot

Molybdenum, MW-100D (mg/L)



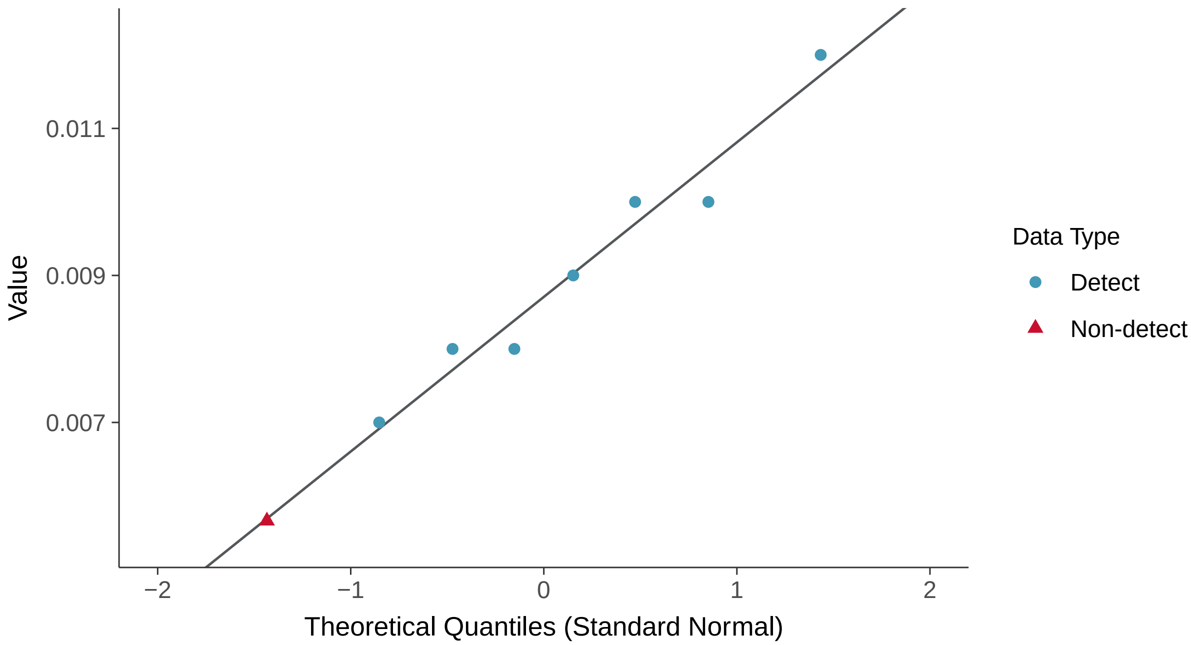
Boxplot by Season

Molybdenum, MW-100D (mg/L)



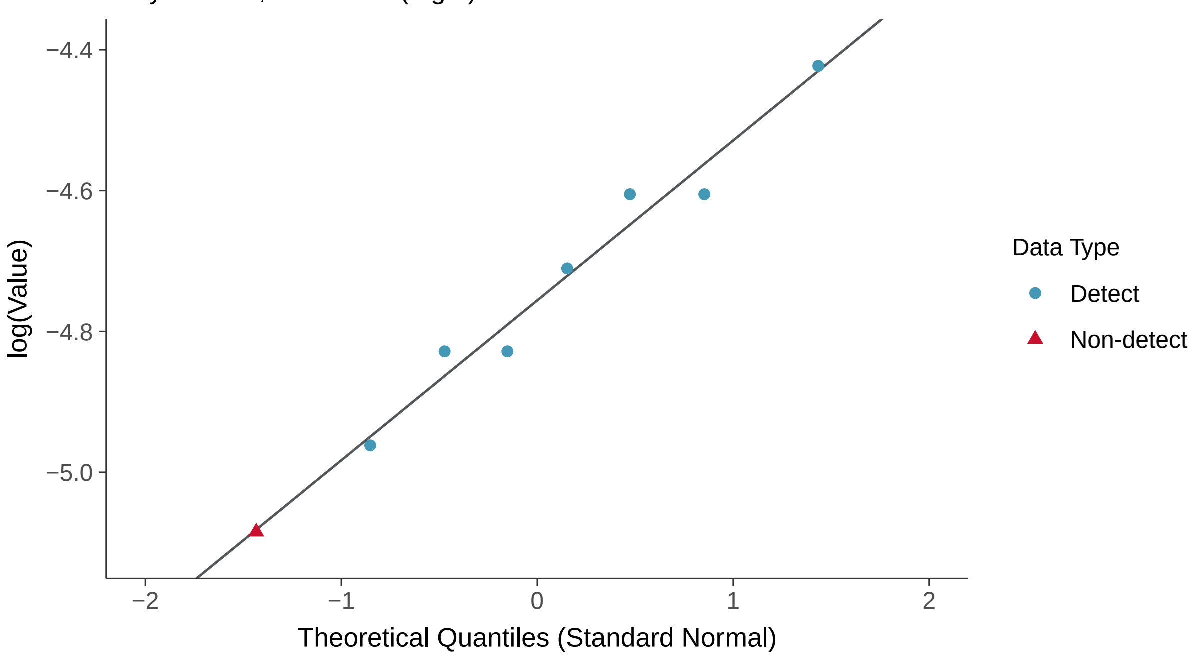
Normal Q-Q plot using ROS Imputed Estimates

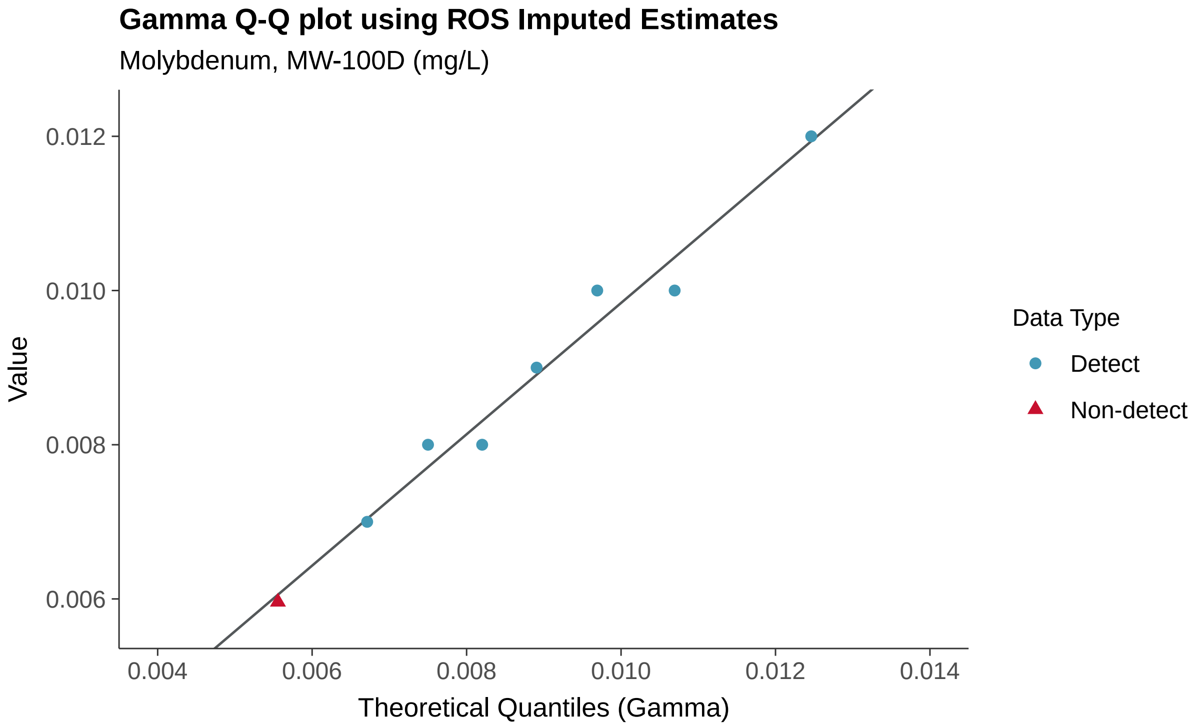
Molybdenum, MW-100D (mg/L)

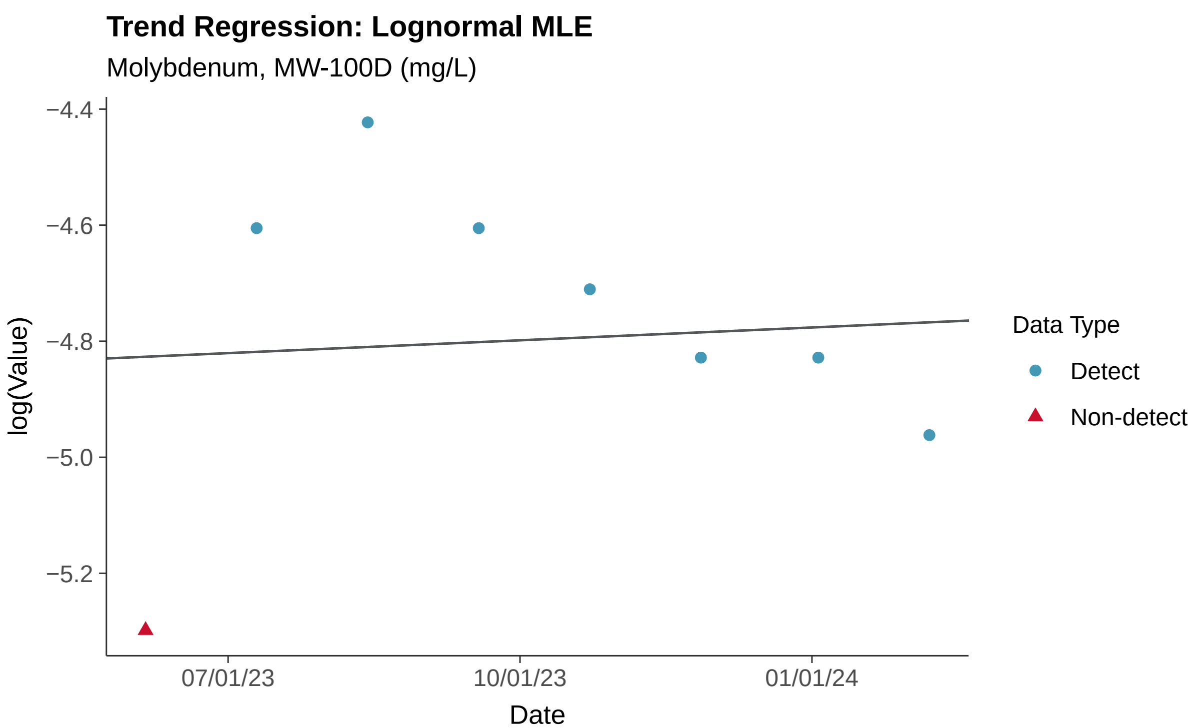


Lognormal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-100D (mg/L)

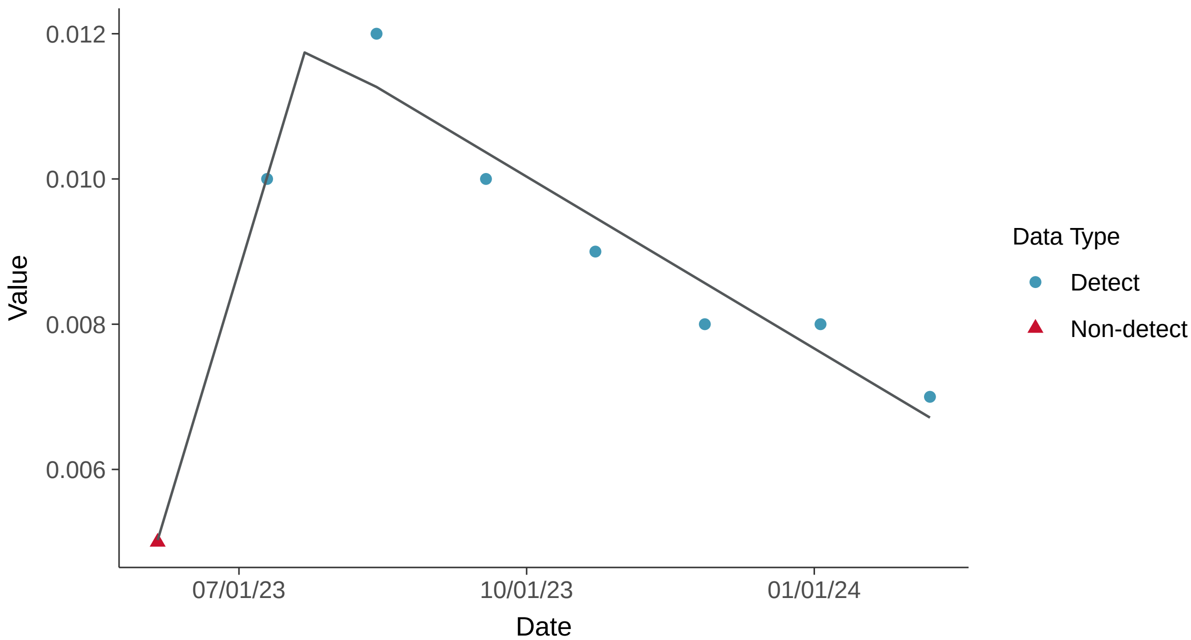



Gamma Q-Q plot using ROS Imputed Estimates
Molybdenum, MW-100D (mg/L)
Value
0.012
0.010
0.008
0.006
0.004
0.006
0.008
0.010
0.012
0.014
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Molybdenum, MW-100D (mg/L)
log(Value)
−4.4
−4.6
−4.8
−5.0
−5.2
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

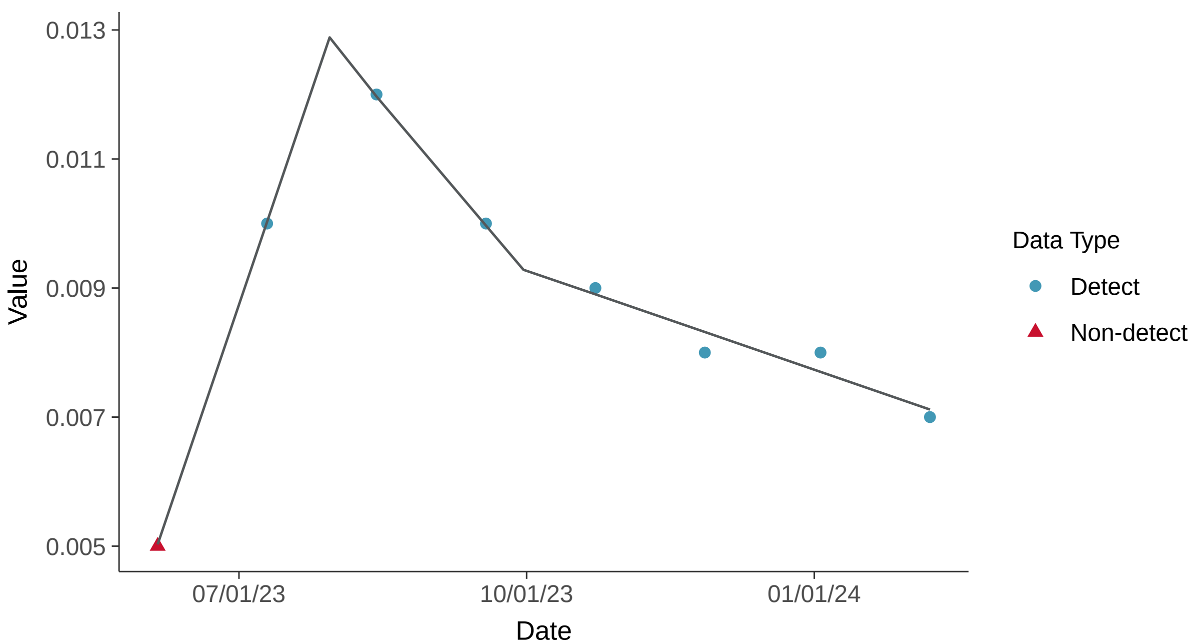
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-100D (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-100D (mg/L)

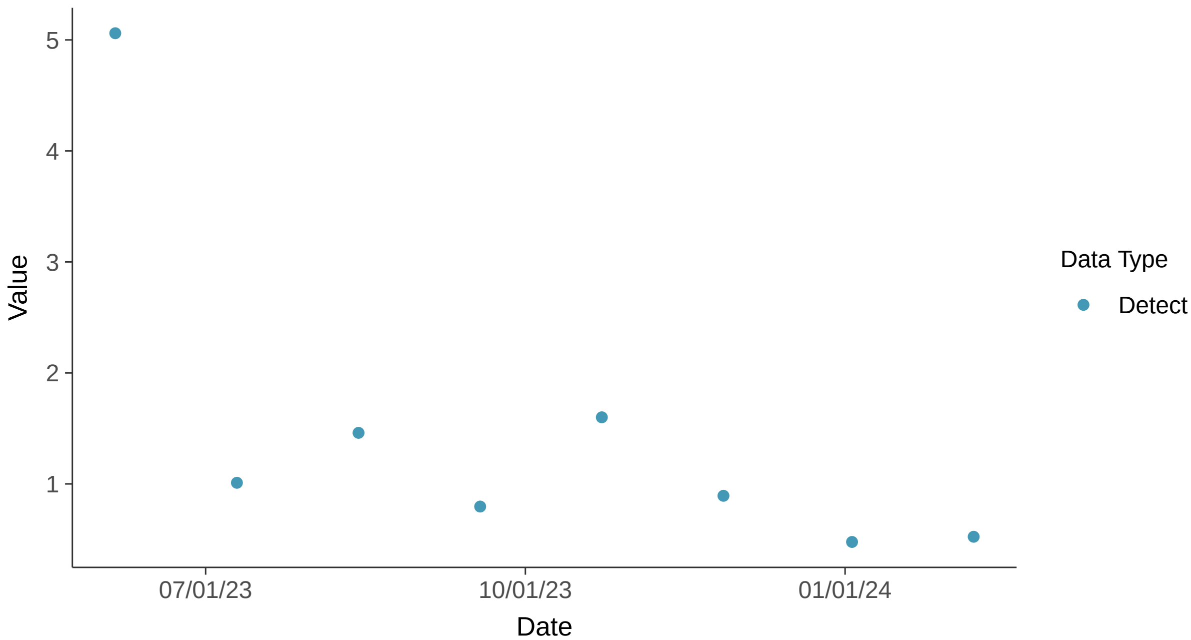


Appendix IV: Radium-226/228, MW-100D

ID: 100D_2_20

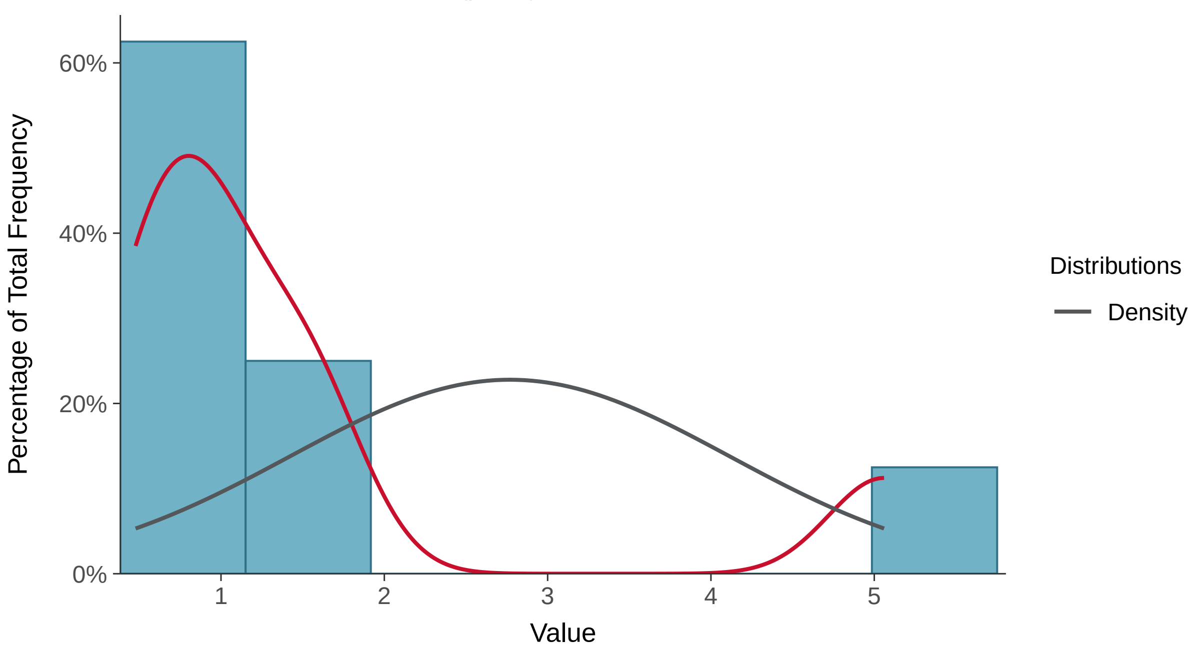
Scatter Plot

Radium-226/228, MW-100D (pCi/L)



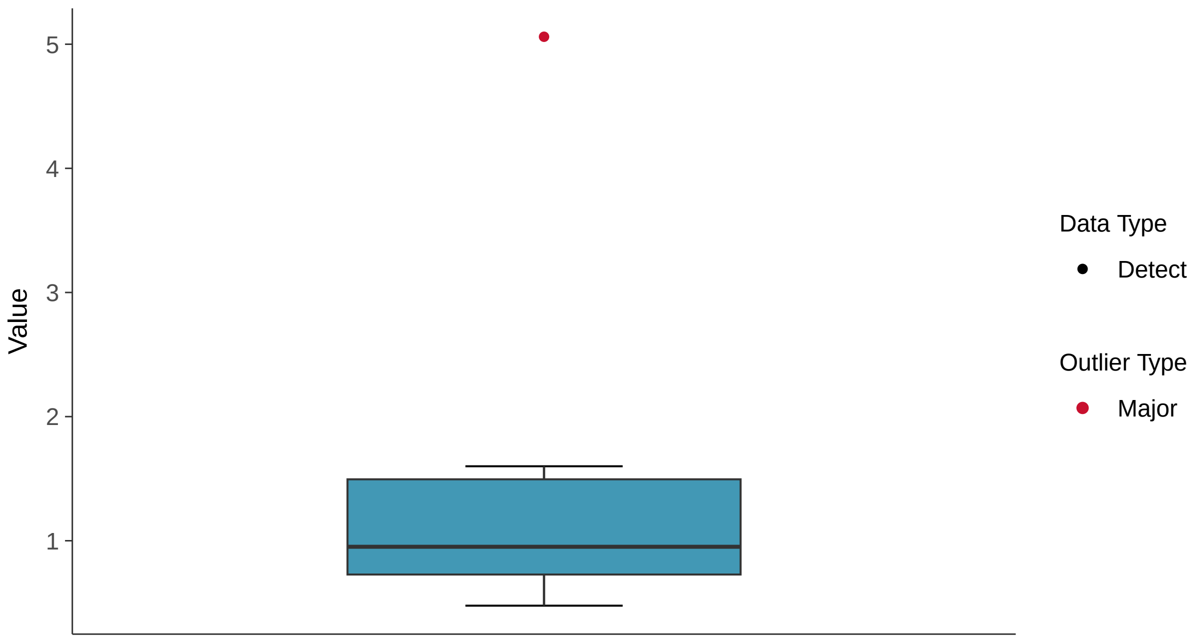
Histogram

Radium-226/228, MW-100D (pCi/L)



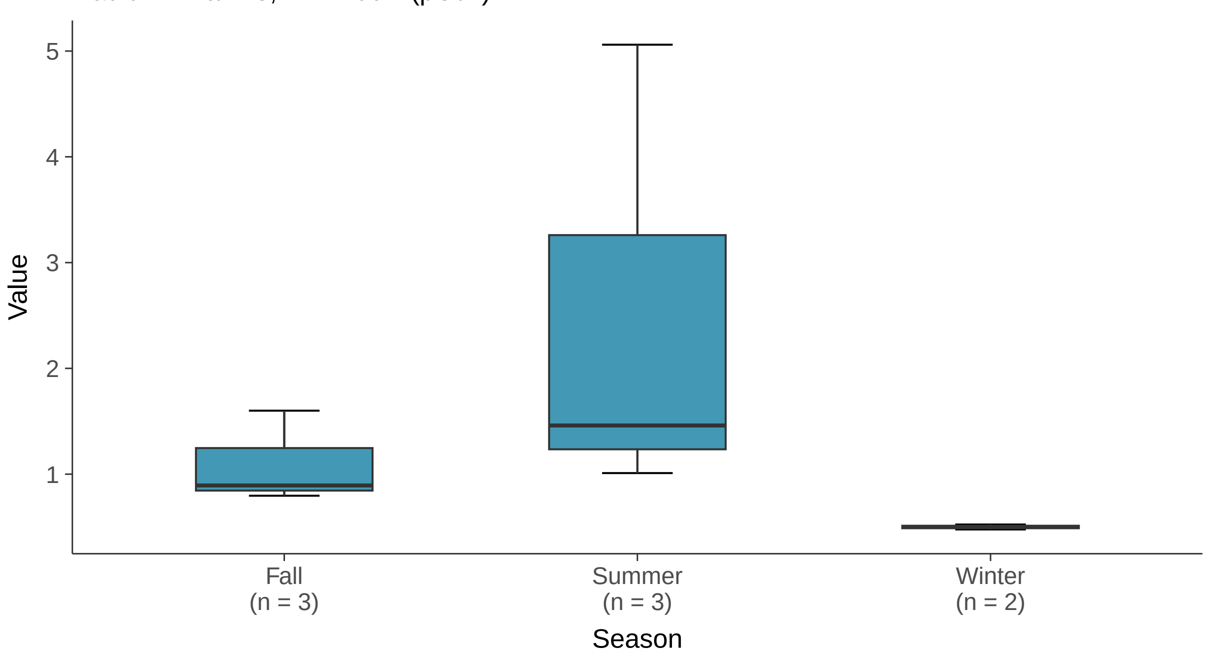
Boxplot

Radium-226/228, MW-100D (pCi/L)



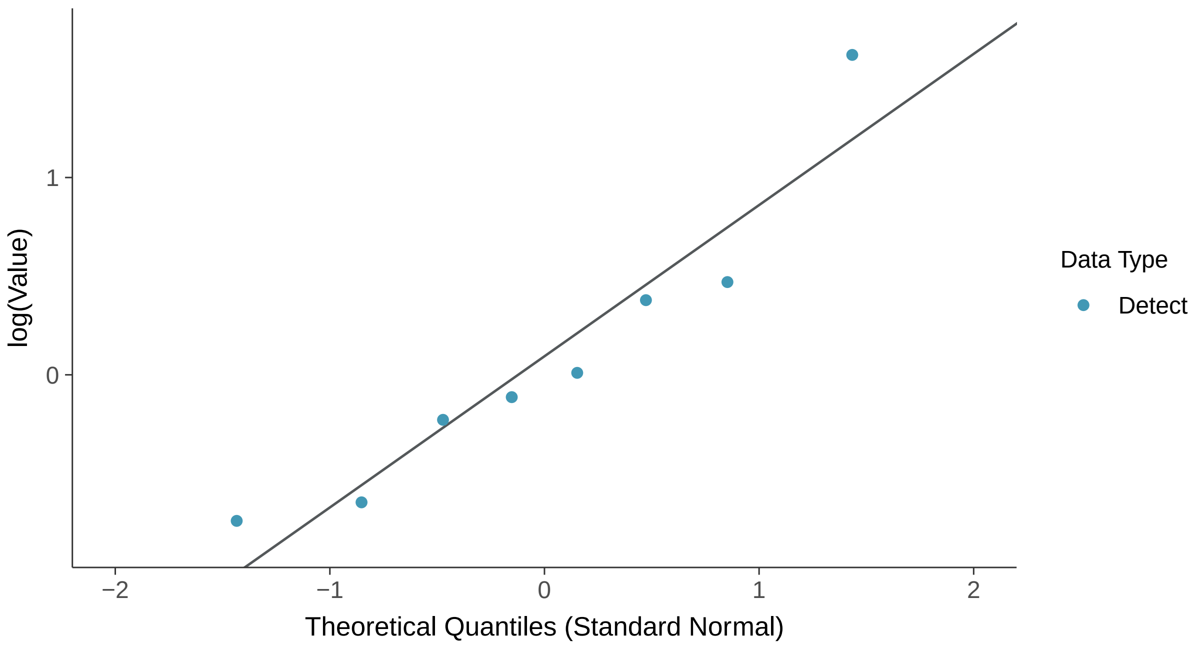
Boxplot by Season

Radium-226/228, MW-100D (pCi/L)



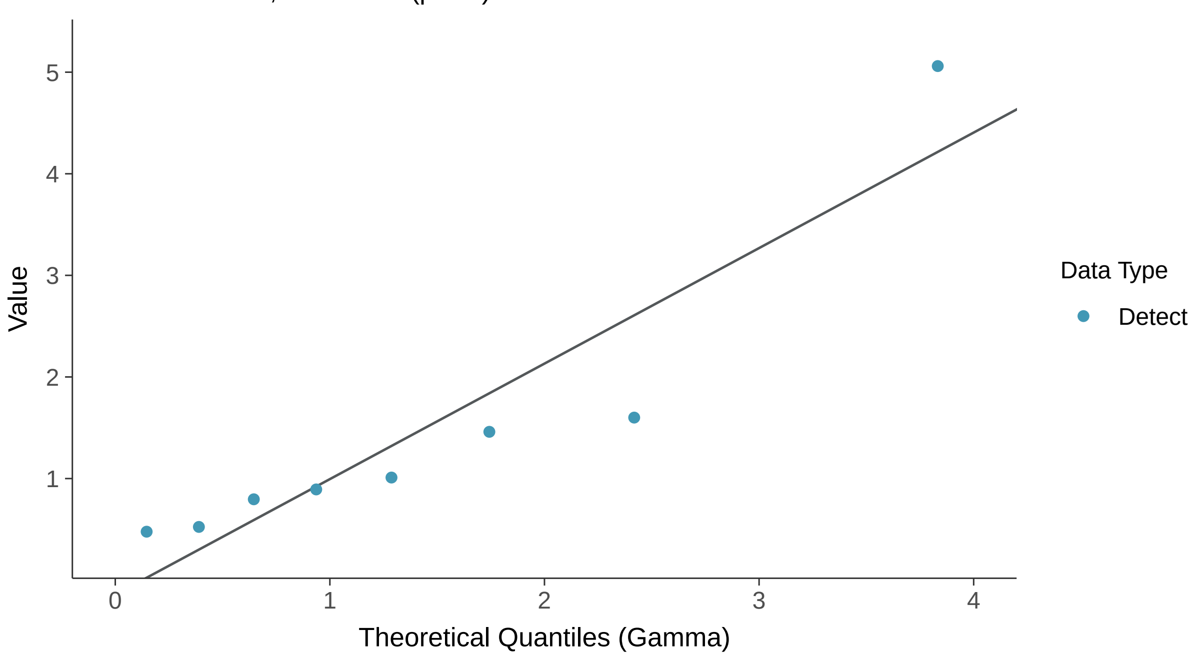
Lognormal Q-Q plot

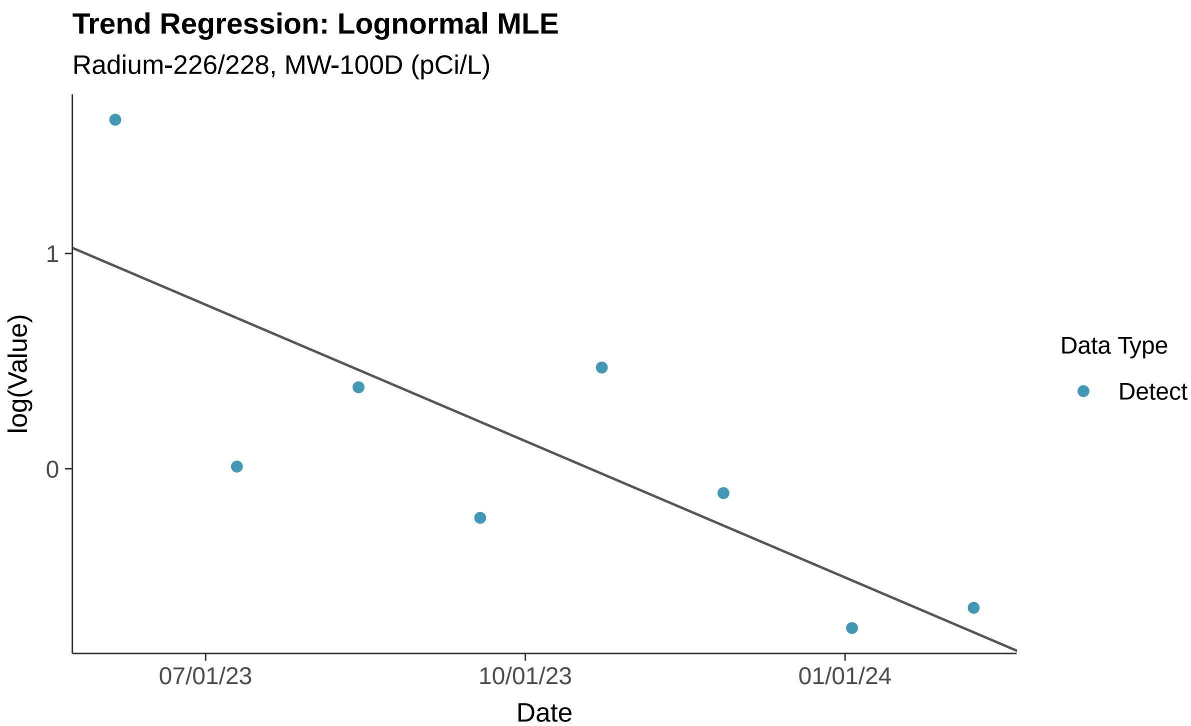
Radium-226/228, MW-100D (pCi/L)



Gamma Q-Q plot

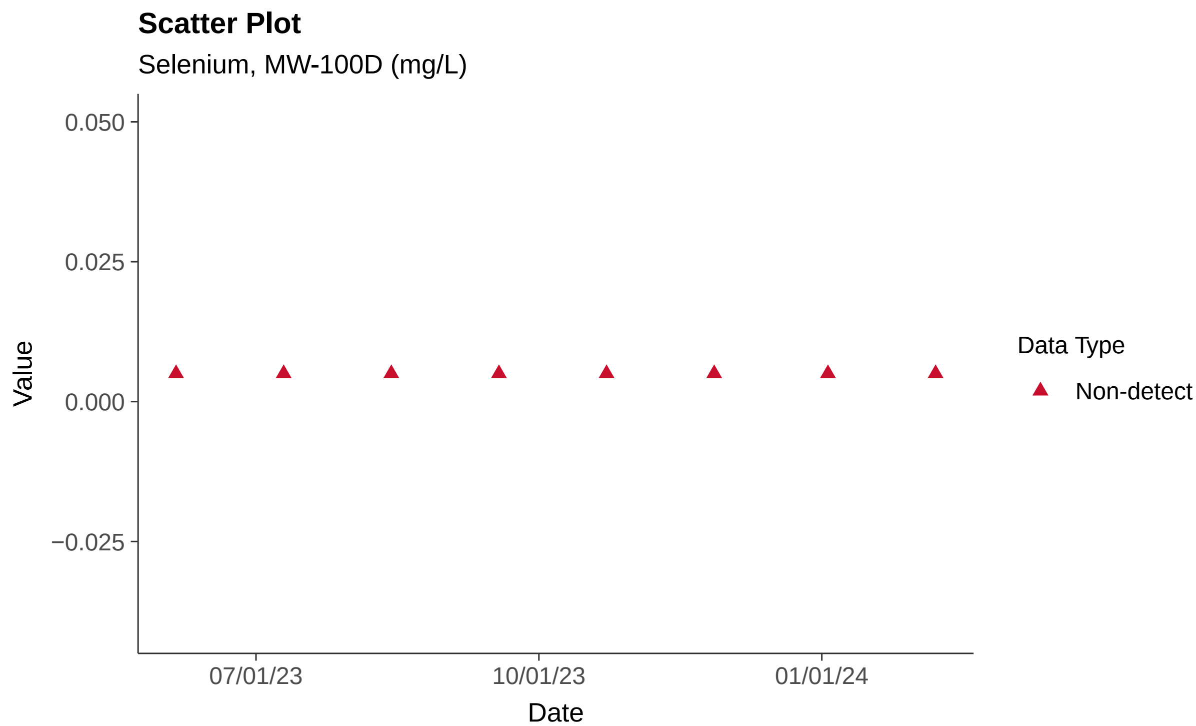
Radium-226/228, MW-100D (pCi/L)

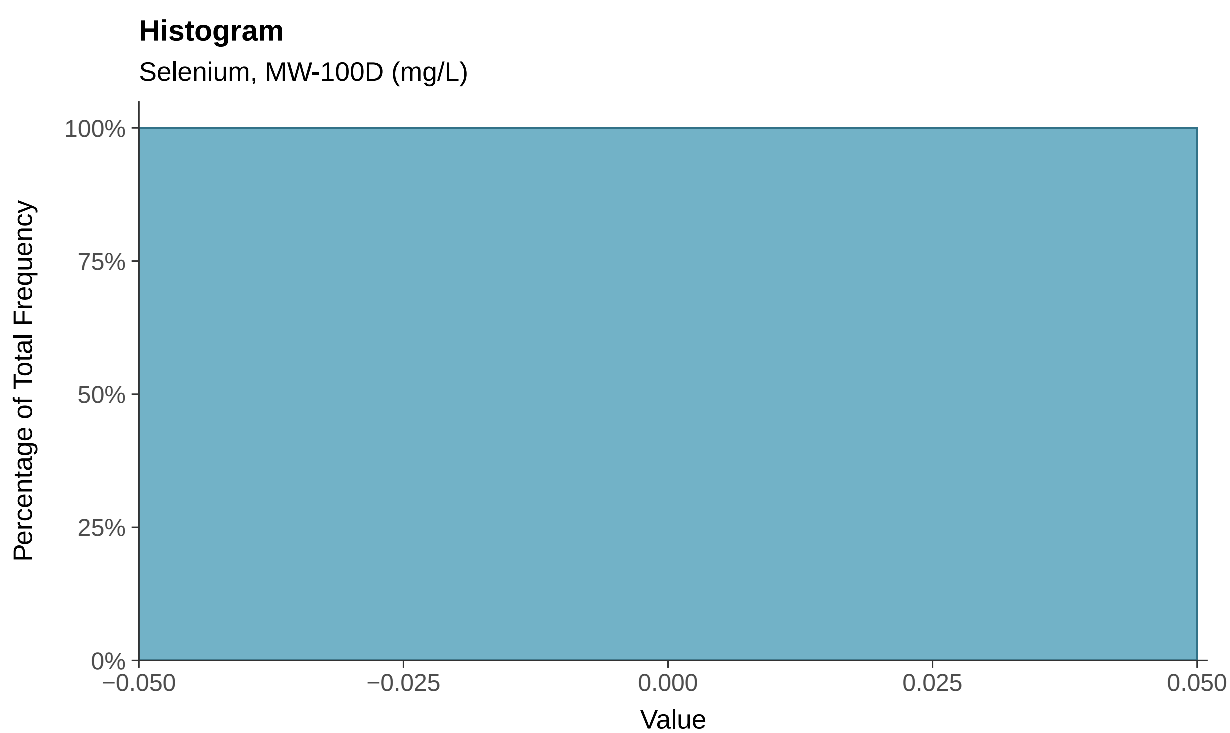



Trend Regression: Lognormal MLE
Radium-226/228, MW-100D (pCi/L)
log(Value)
1
0
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Selenium, MW-100D

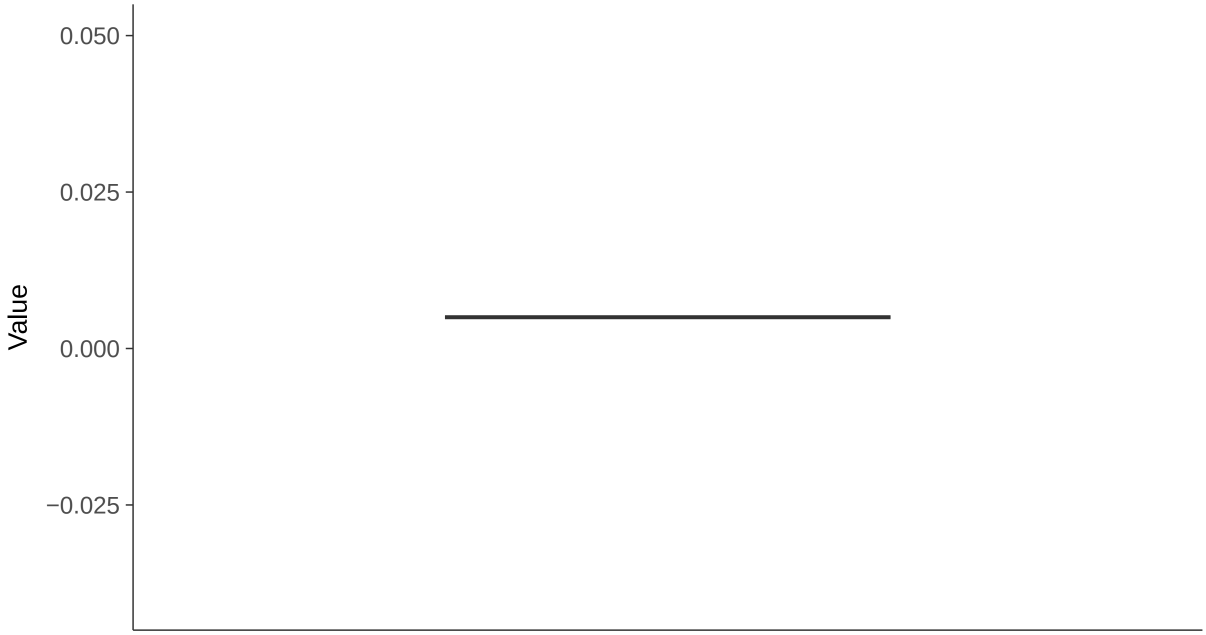
ID: 100D_2_22





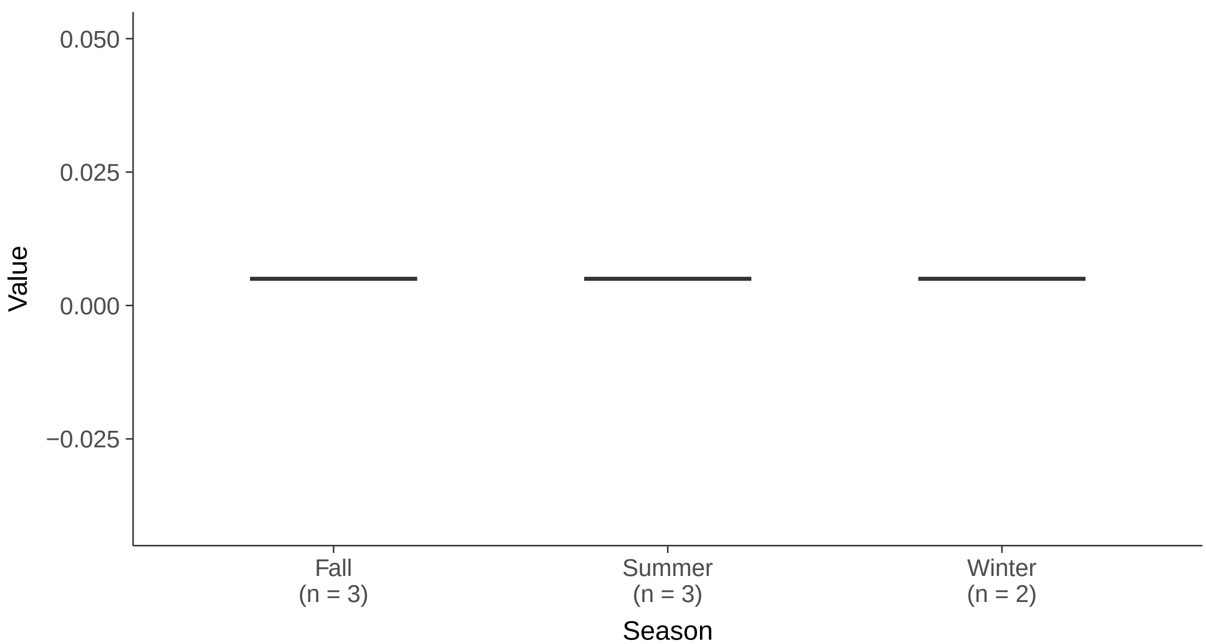
Boxplot

Selenium, MW-100D (mg/L)



Boxplot by Season

Selenium, MW-100D (mg/L)

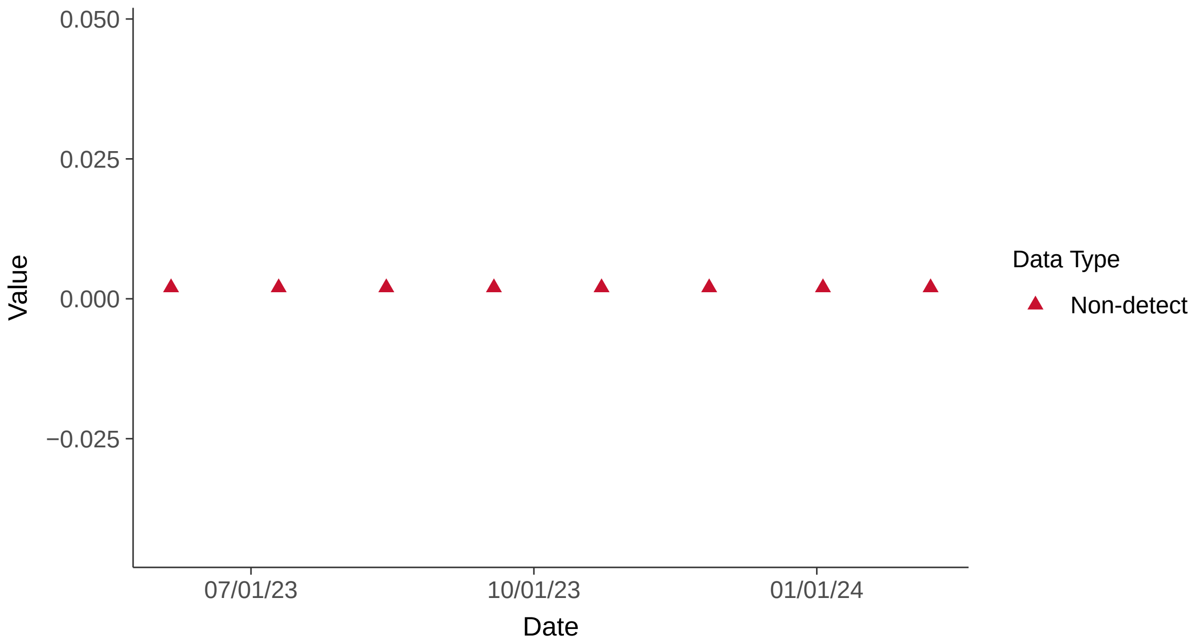


Appendix IV: Thallium, MW-100D

ID: 100D_2_23

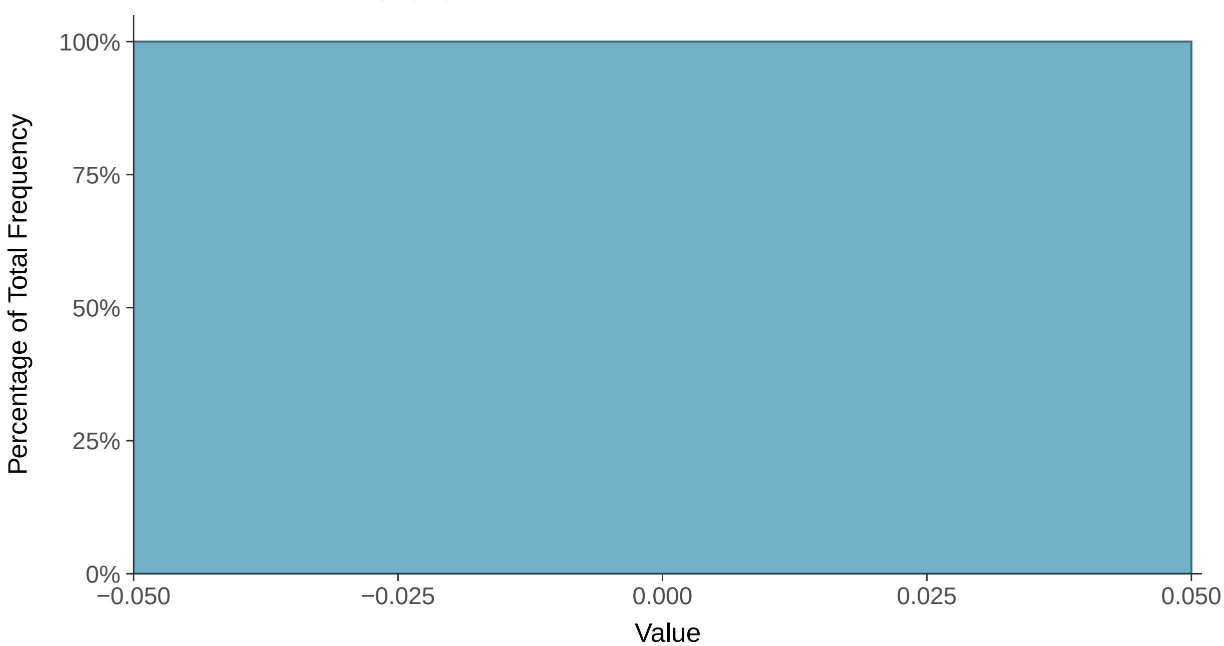
Scatter Plot

Thallium, MW-100D (mg/L)



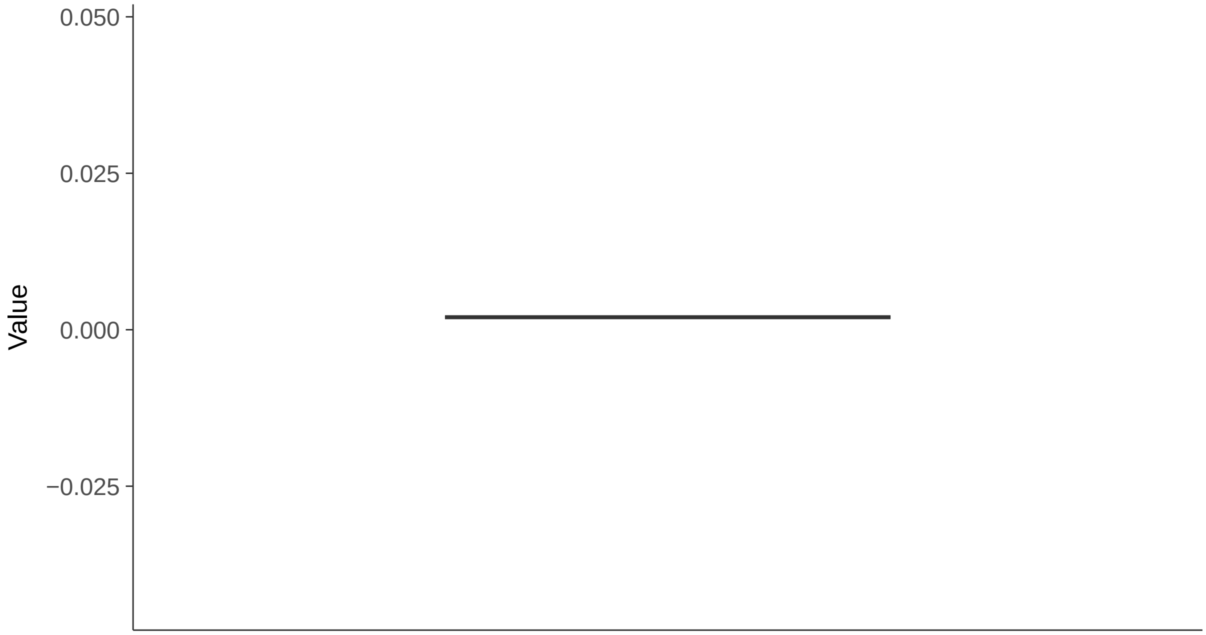
Histogram

Thallium, MW-100D (mg/L)



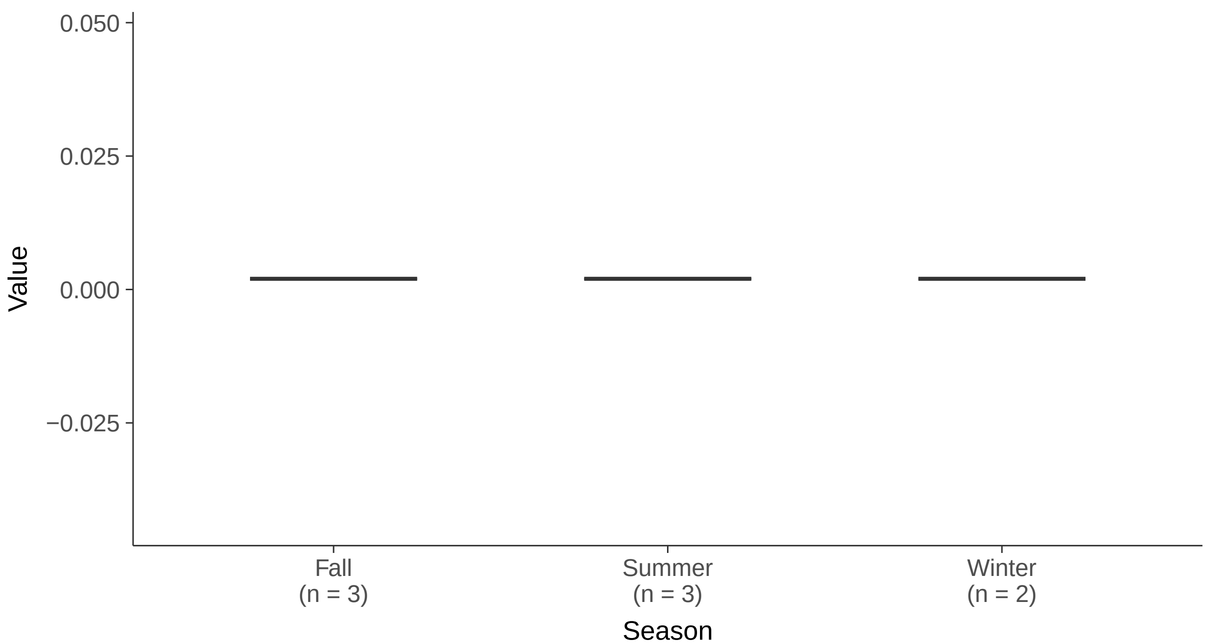
Boxplot

Thallium, MW-100D (mg/L)



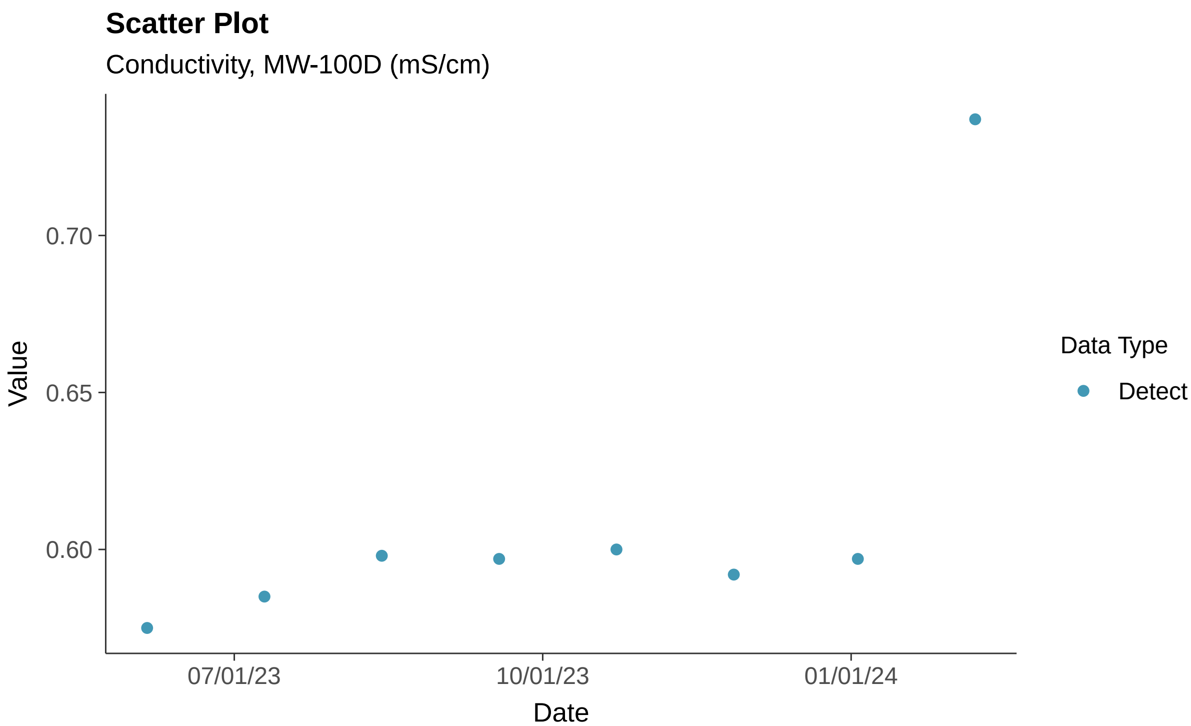
Boxplot by Season

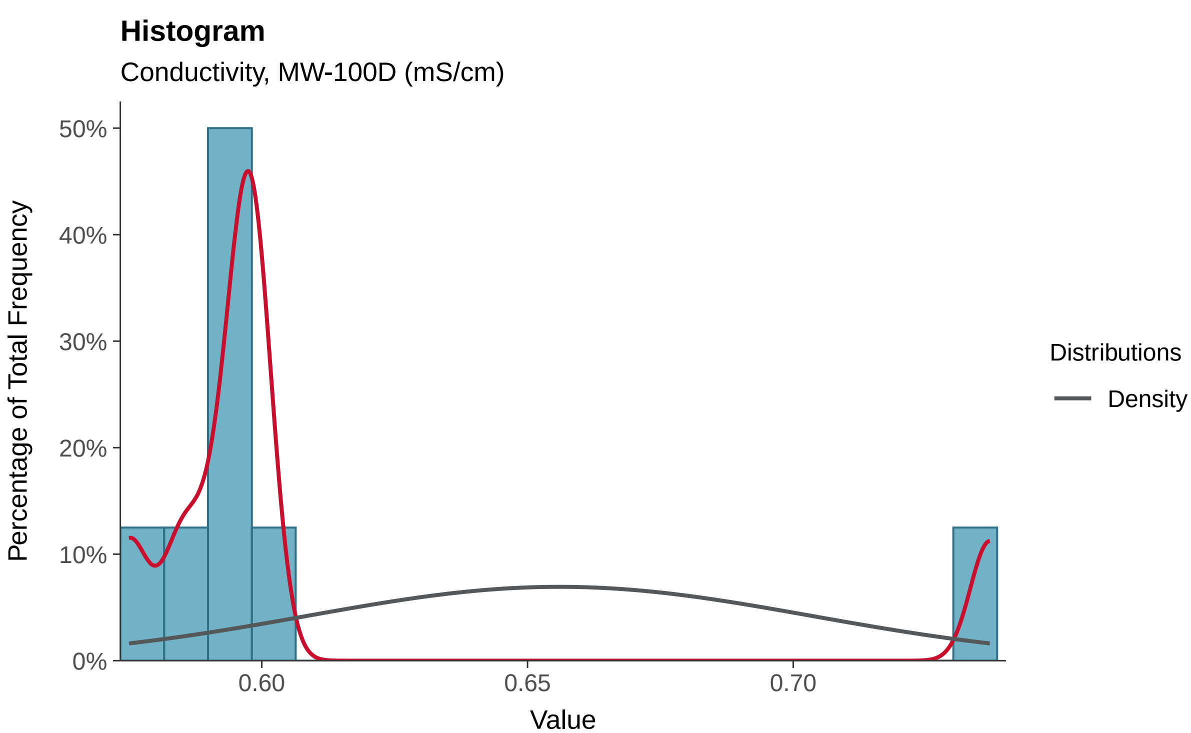
Thallium, MW-100D (mg/L)



Field Parameters: Conductivity, MW-100D

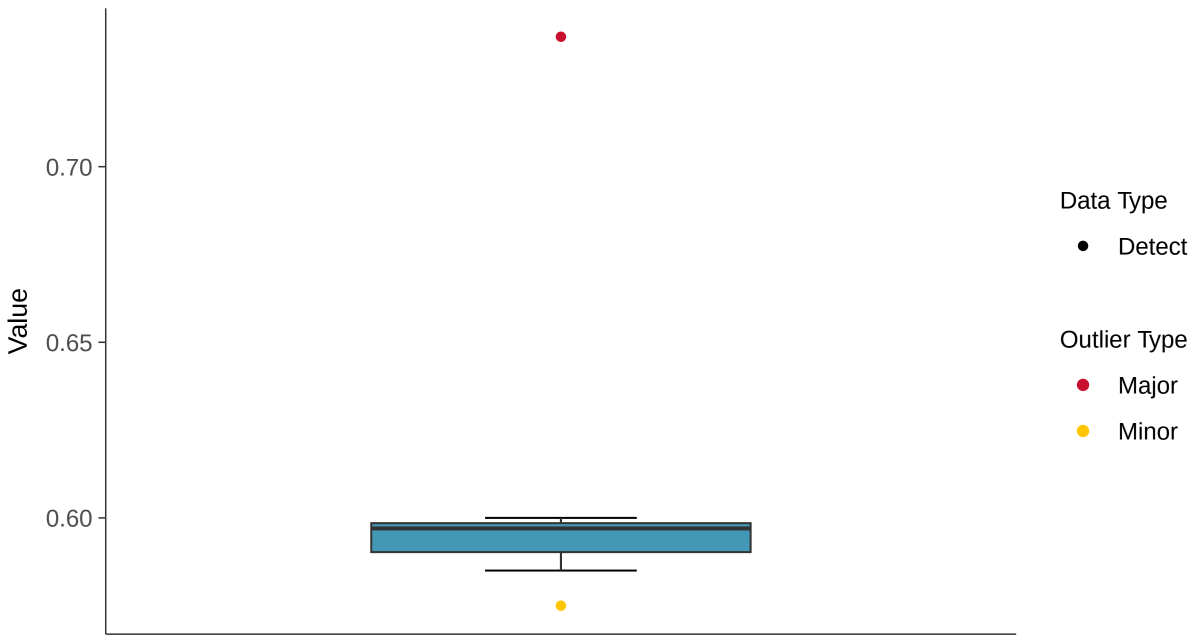
ID: 100D_3_24





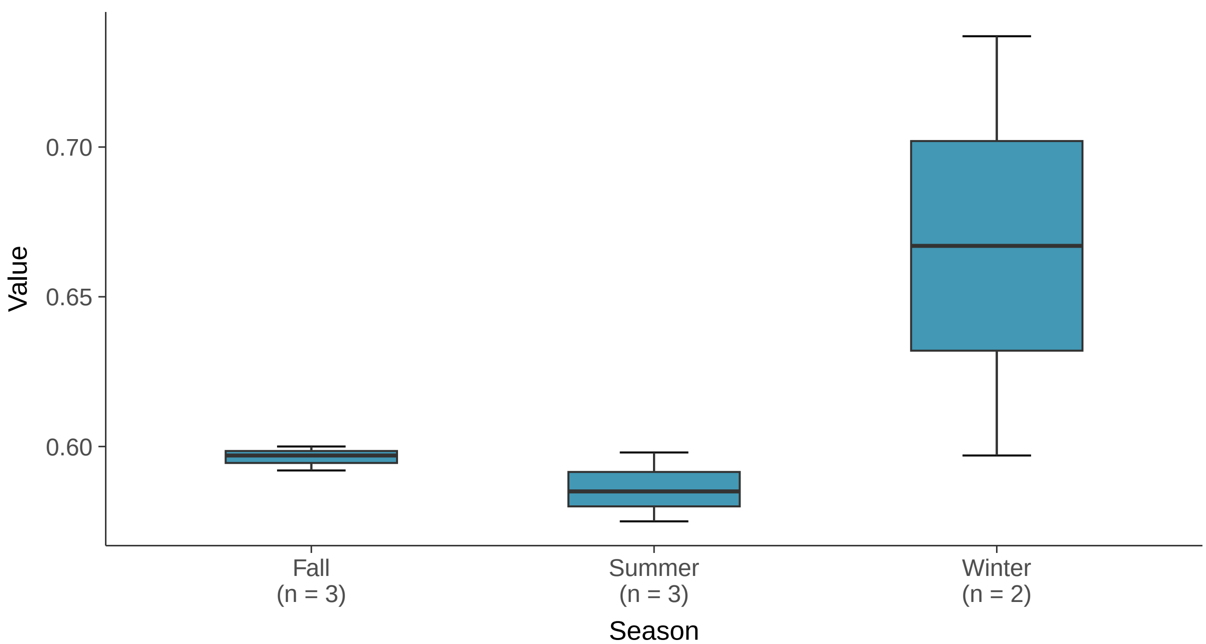
Boxplot

Conductivity, MW-100D (mS/cm)



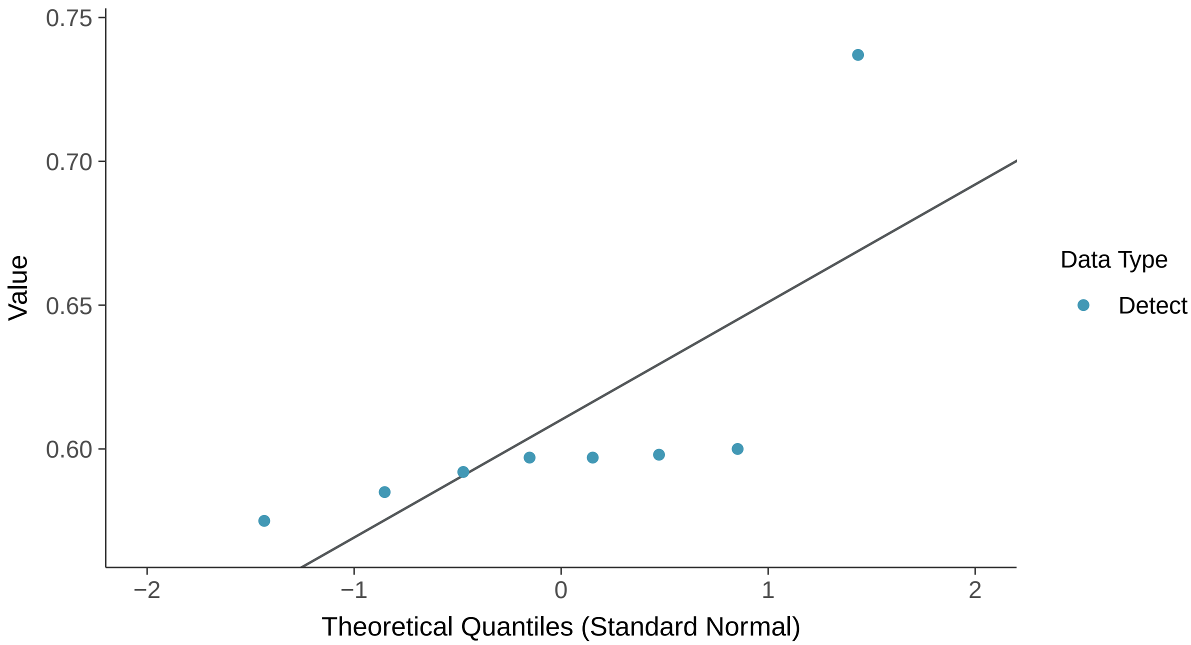
Boxplot by Season

Conductivity, MW-100D (mS/cm)



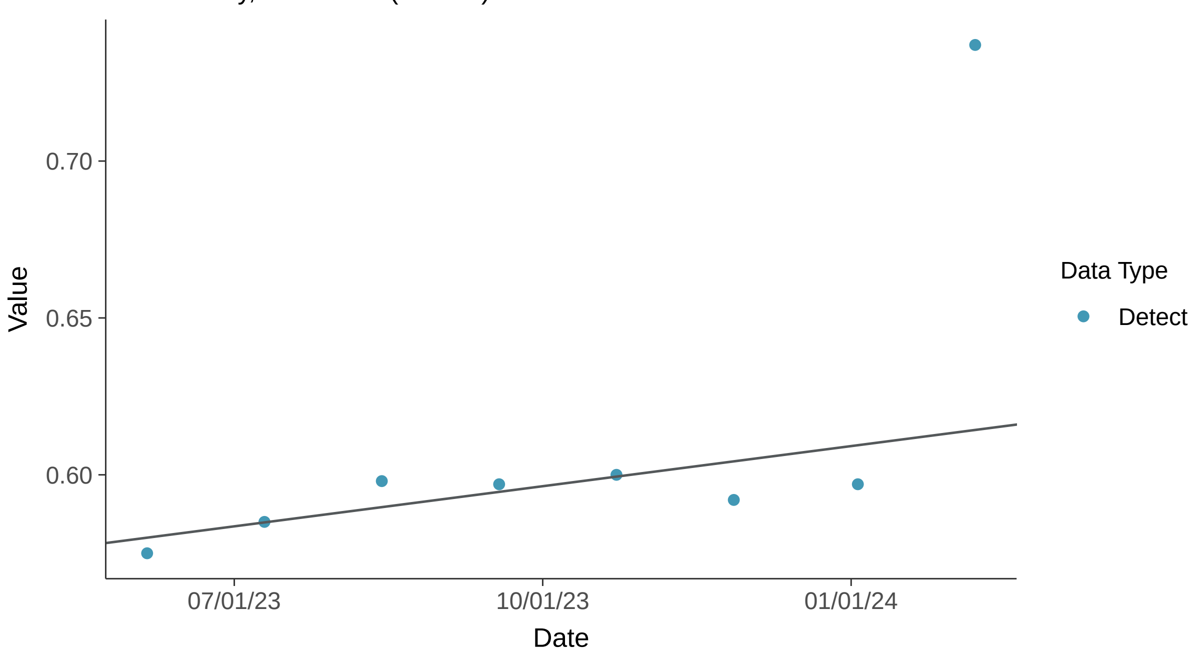
Normal Q-Q plot

Conductivity, MW-100D (mS/cm)



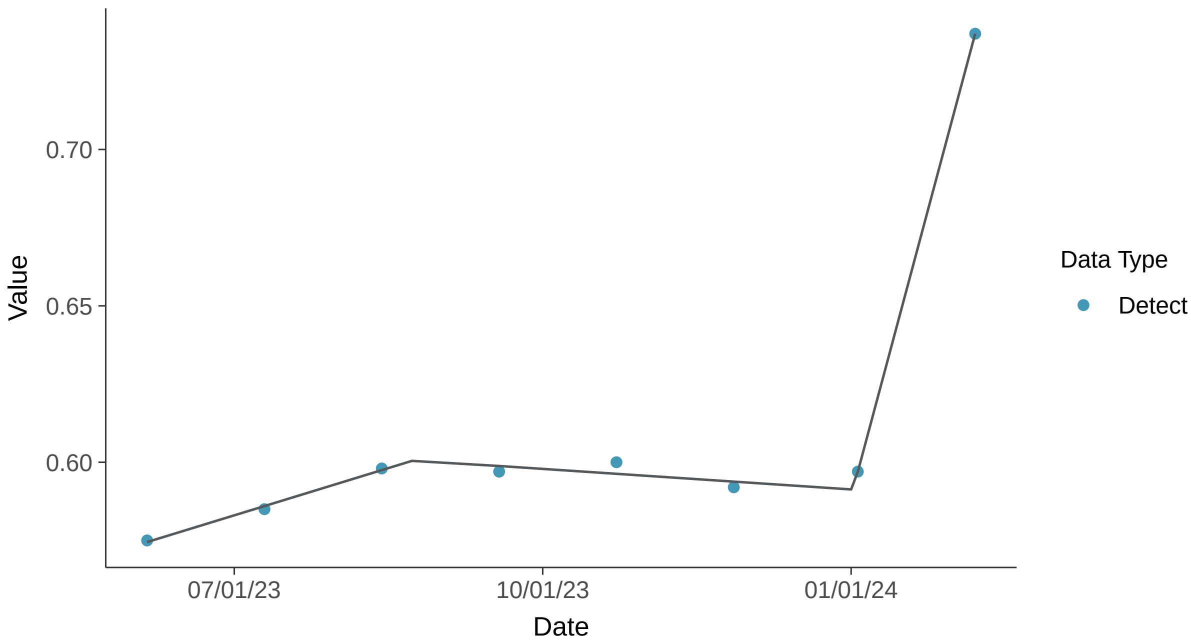
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Conductivity, MW-100D (mS/cm)



Trend Regression: Piecewise Linear-Linear-Linear

Conductivity, MW-100D (mS/cm)

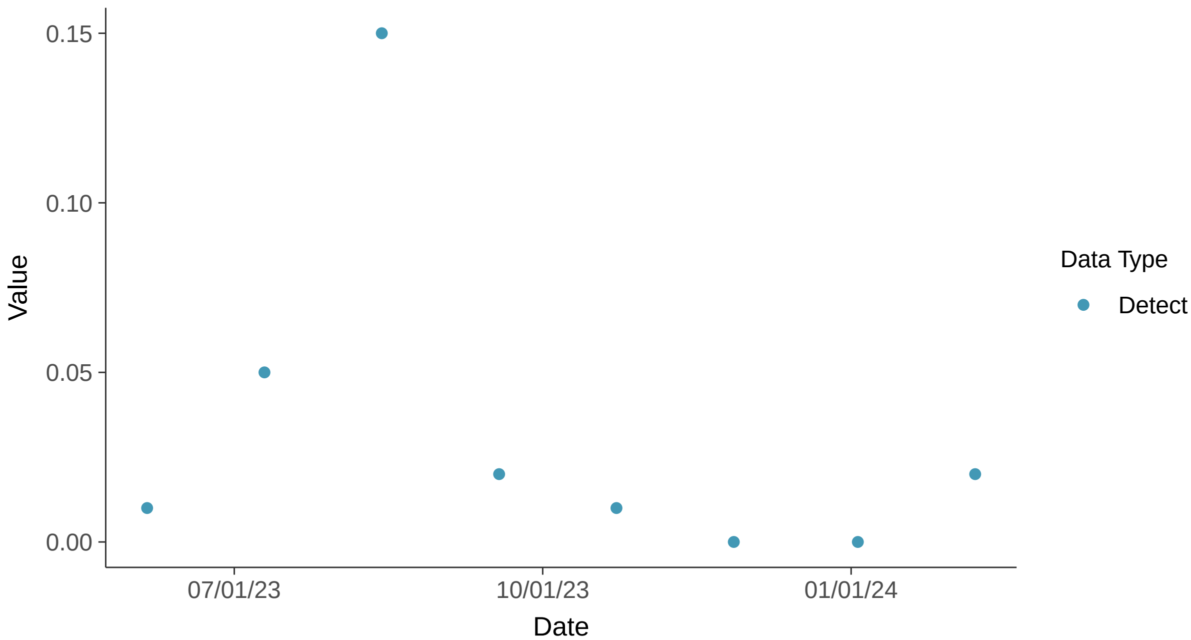


Field Parameters: Dissolved Oxygen, MW-100D

ID: 100D_3_25

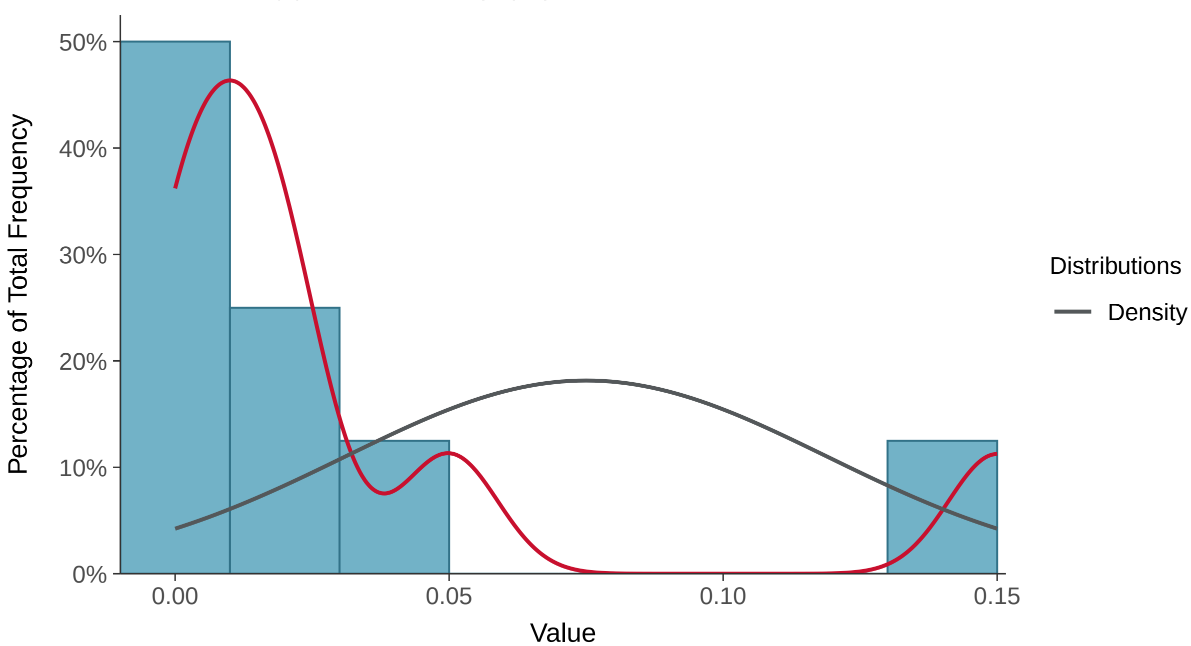
Scatter Plot

Dissolved Oxygen, MW-100D (mg/L)



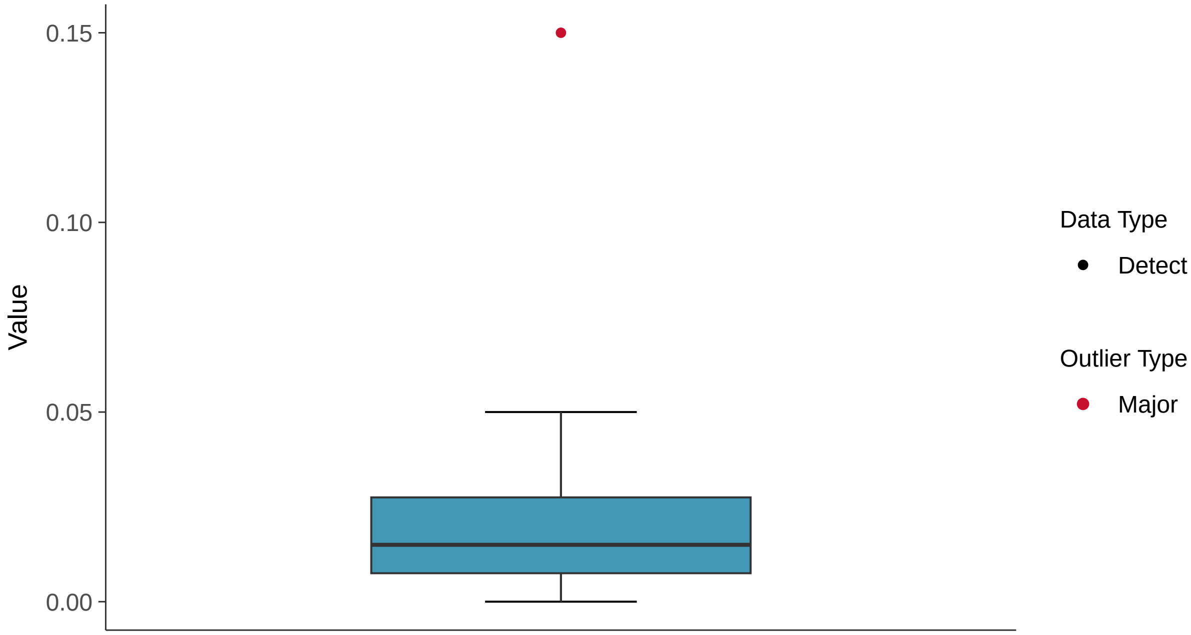
Histogram

Dissolved Oxygen, MW-100D (mg/L)



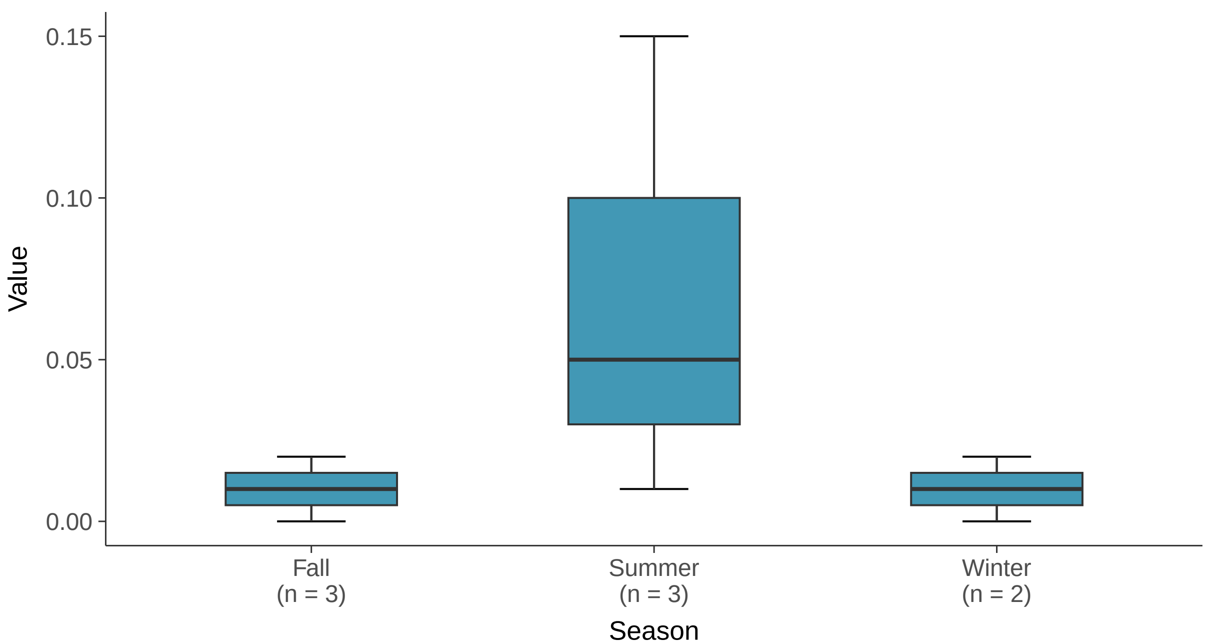
Boxplot

Dissolved Oxygen, MW-100D (mg/L)



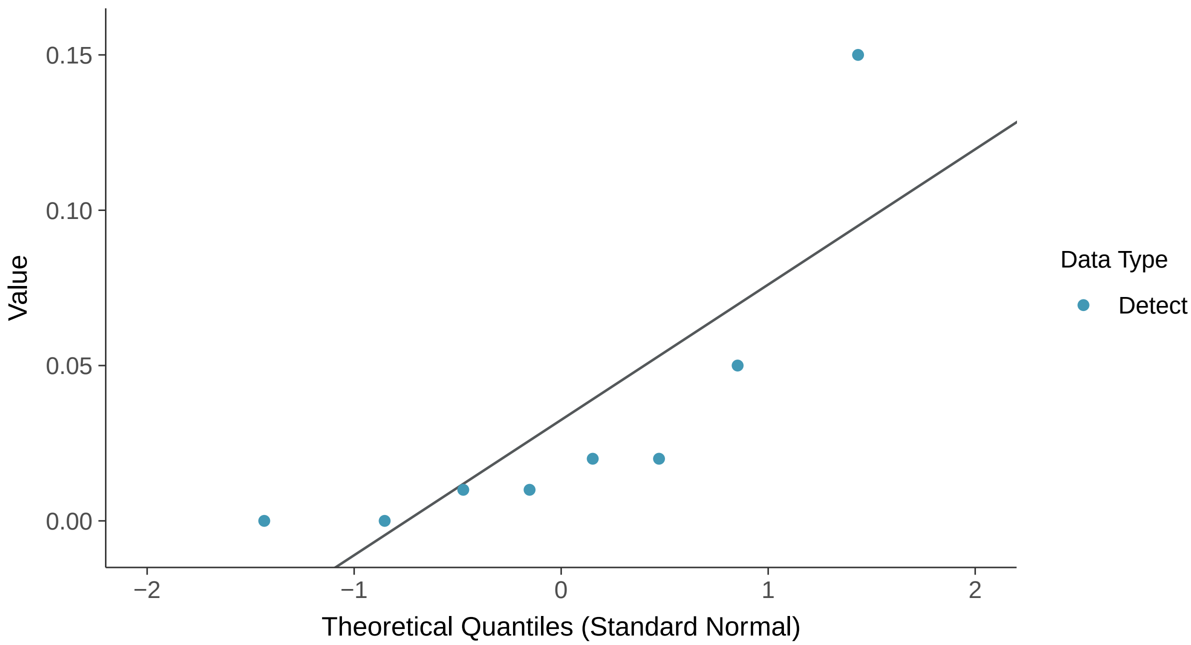
Boxplot by Season

Dissolved Oxygen, MW-100D (mg/L)



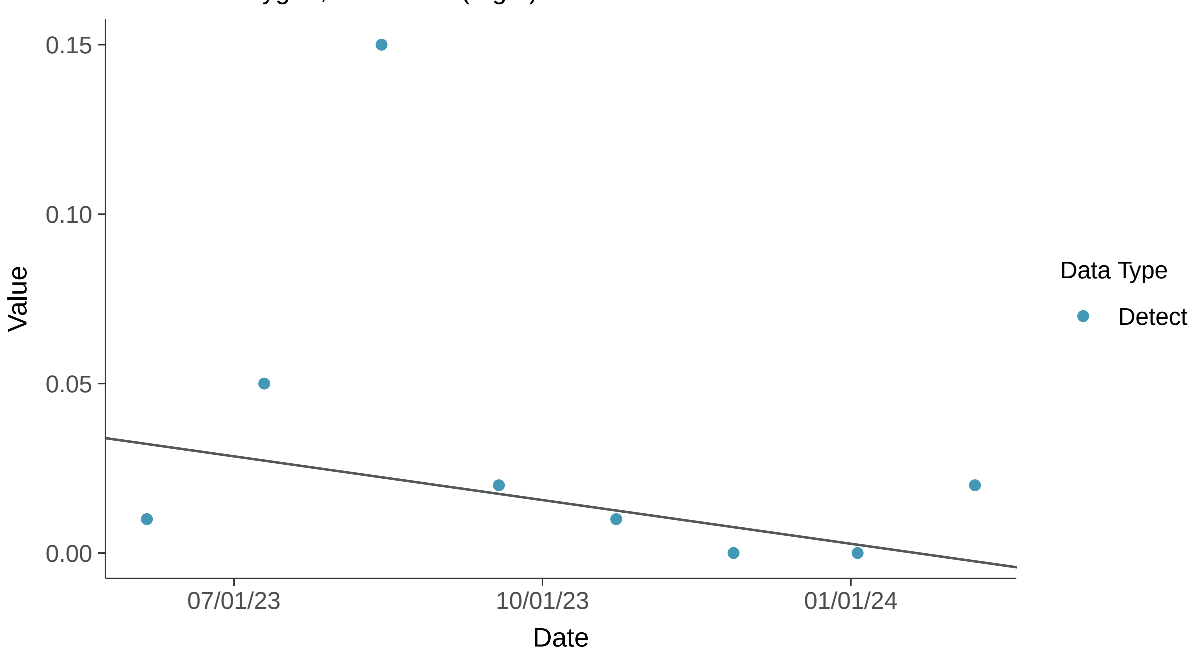
Normal Q-Q plot

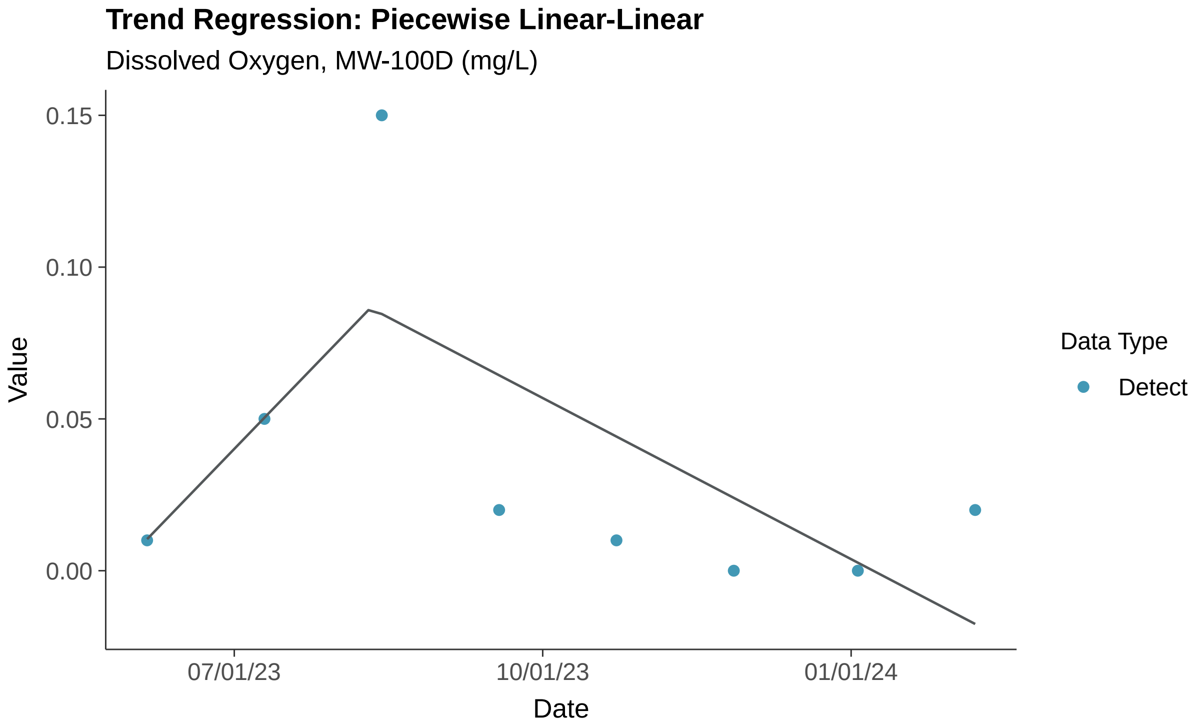
Dissolved Oxygen, MW-100D (mg/L)

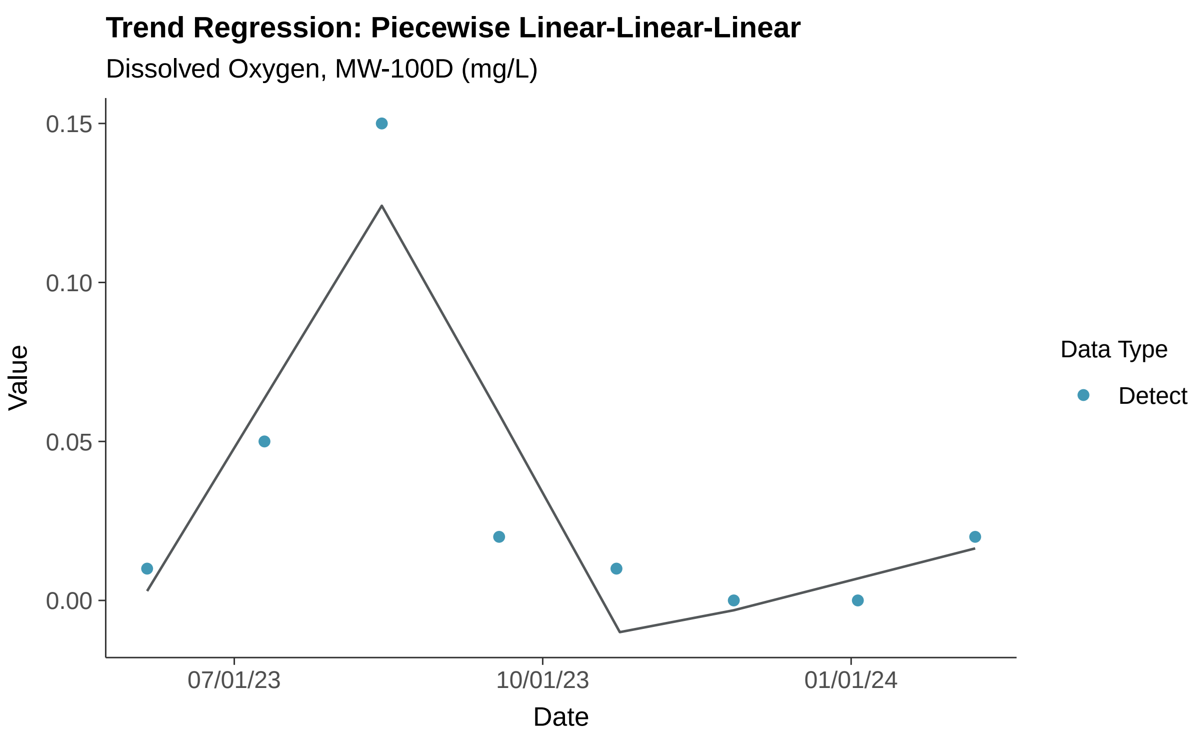


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Dissolved Oxygen, MW-100D (mg/L)




Trend Regression: Piecewise Linear-Linear
Dissolved Oxygen, MW-100D (mg/L)
0.15
0.10
0.05
0.00
Value
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

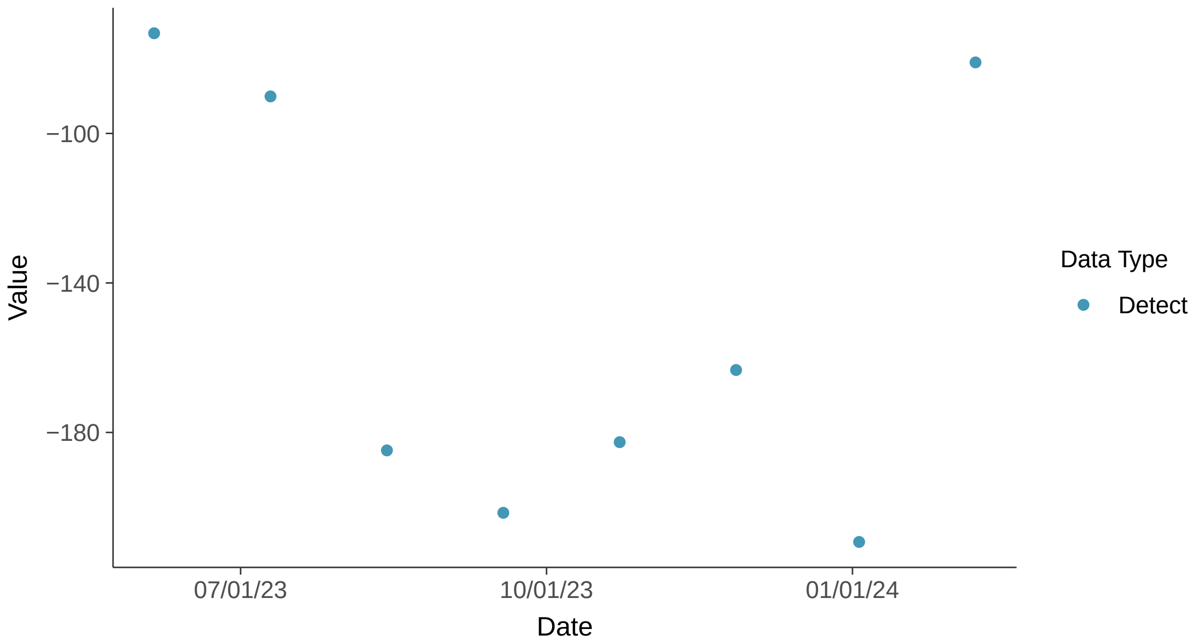

Trend Regression: Piecewise Linear-Linear-Linear
Dissolved Oxygen, MW-100D (mg/L)
0.15
0.10
0.05
0.00
Value
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Oxidation Reduction Potential, MW-100D

ID: 100D_3_26

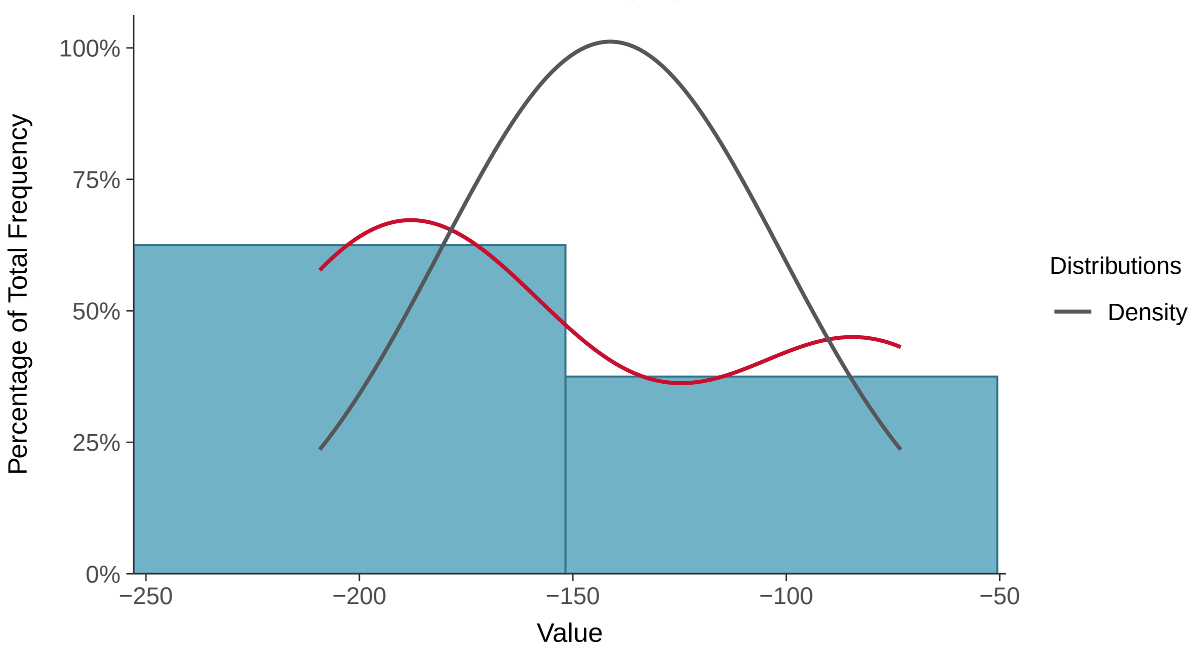
Scatter Plot

Oxidation Reduction Potential, MW-100D (mV)



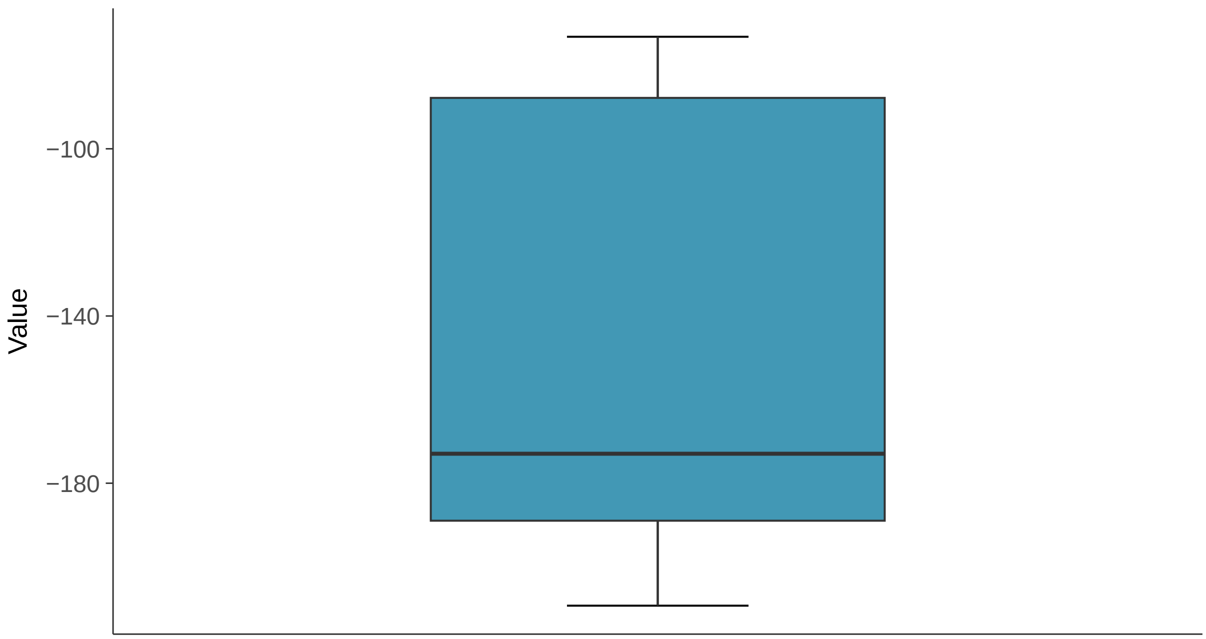
Histogram

Oxidation Reduction Potential, MW-100D (mV)



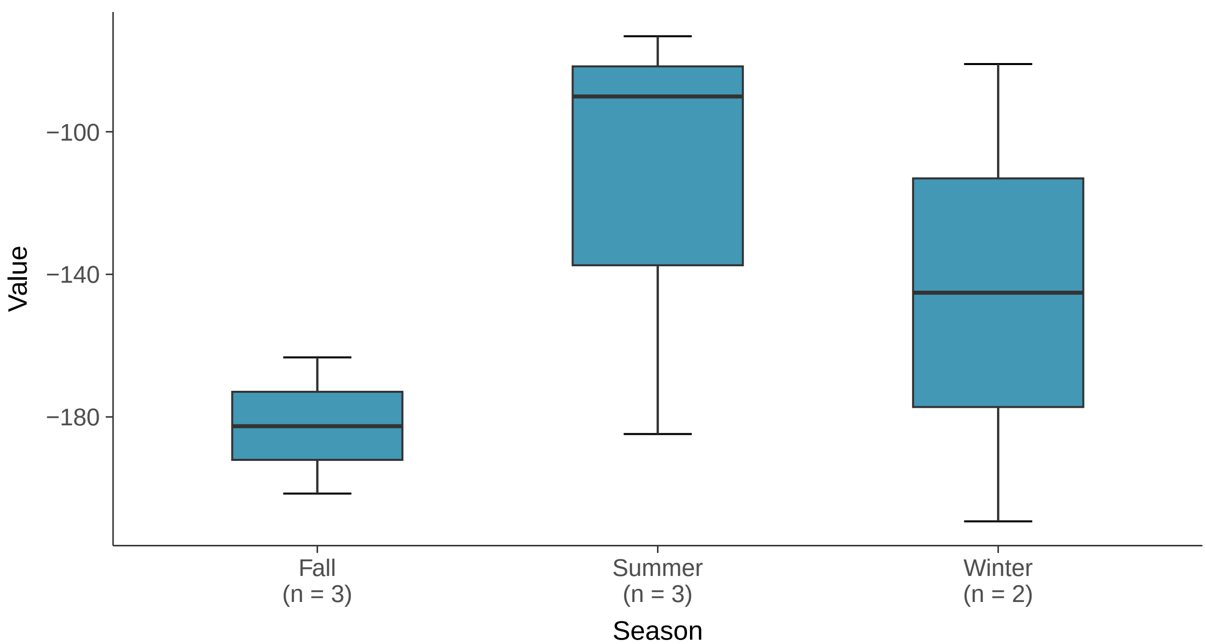
Boxplot

Oxidation Reduction Potential, MW-100D (mV)



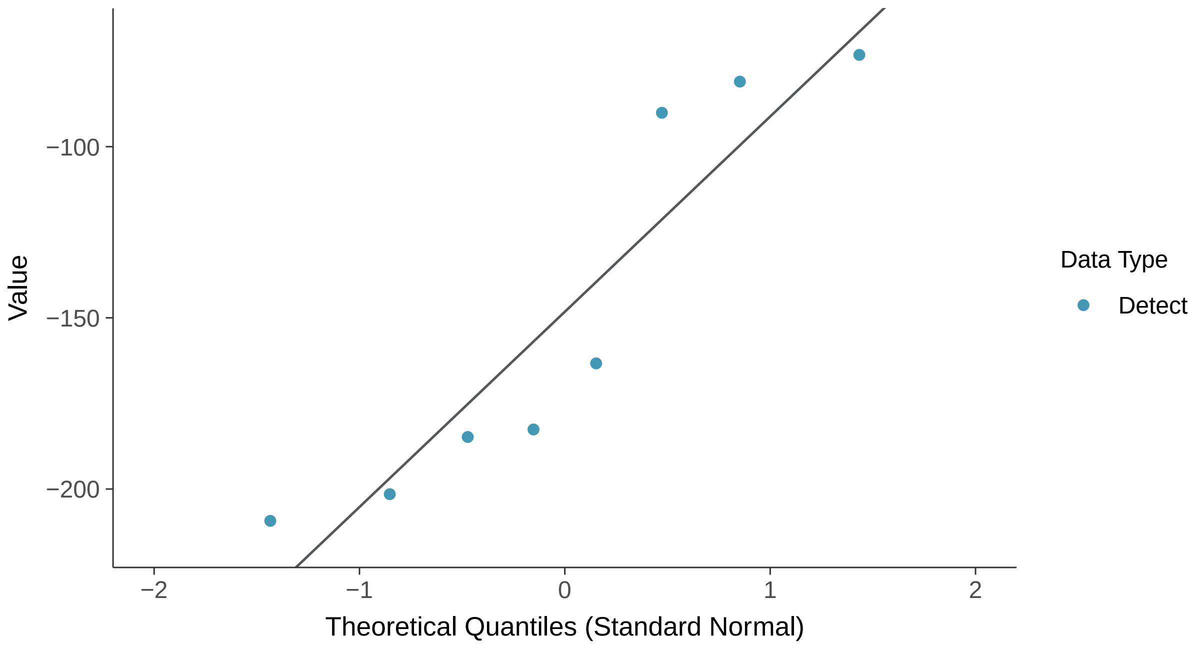
Boxplot by Season

Oxidation Reduction Potential, MW-100D (mV)



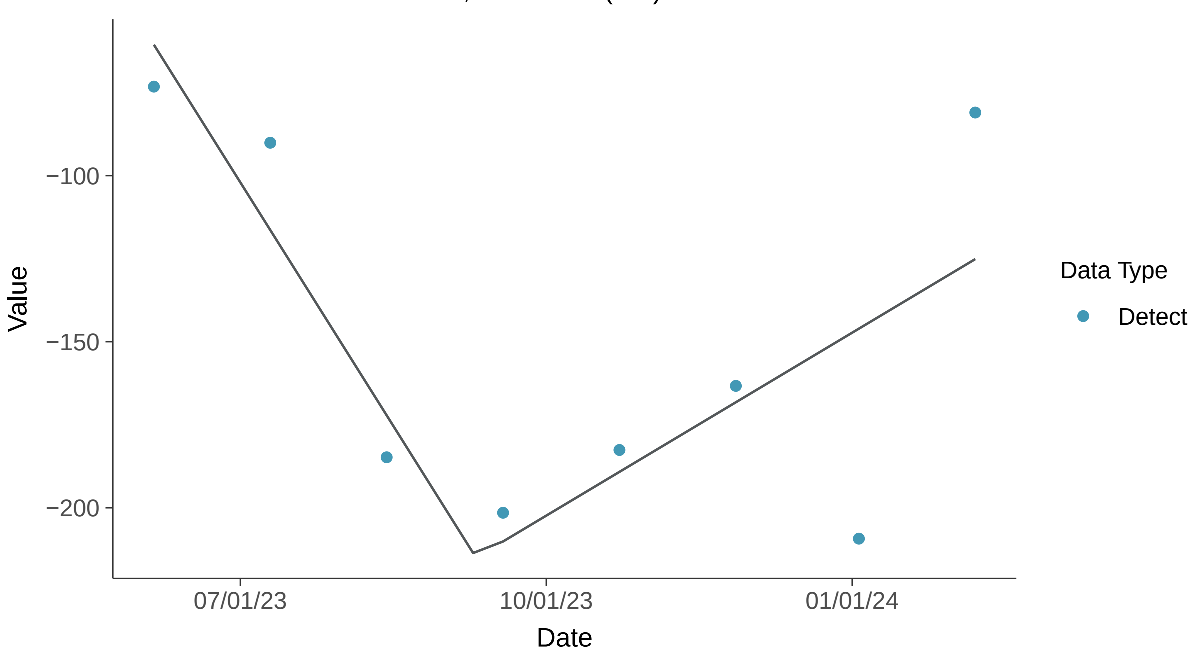
Normal Q-Q plot

Oxidation Reduction Potential, MW-100D (mV)



Trend Regression: Piecewise Linear-Linear

Oxidation Reduction Potential, MW-100D (mV)

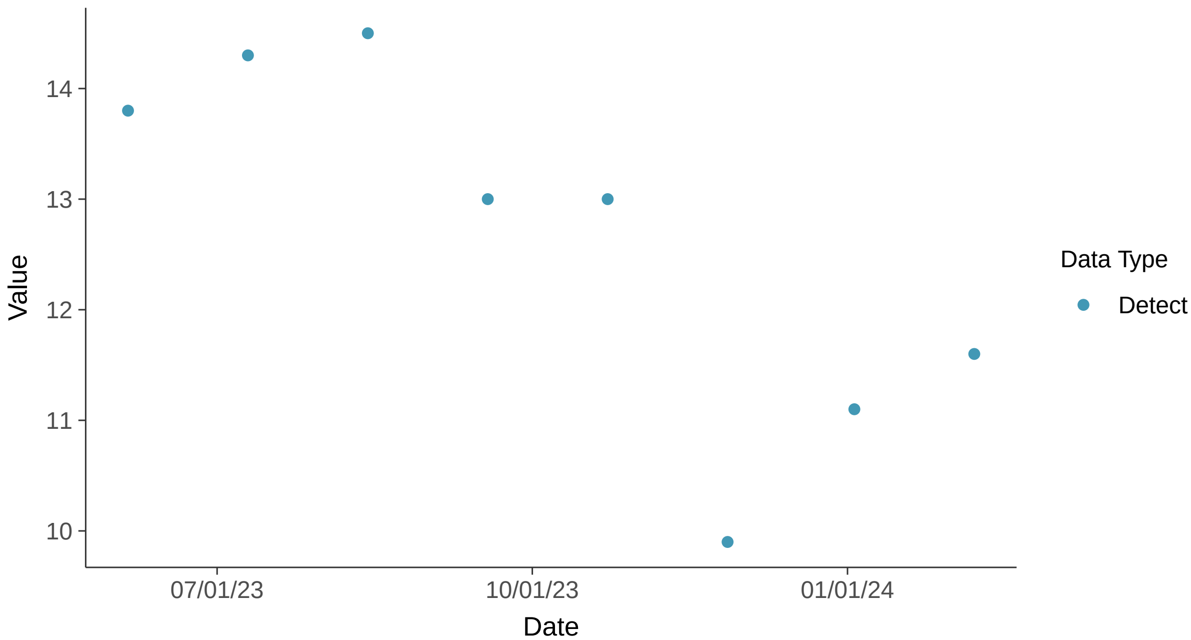


Field Parameters: Temperature, MW-100D

ID: 100D_3_27

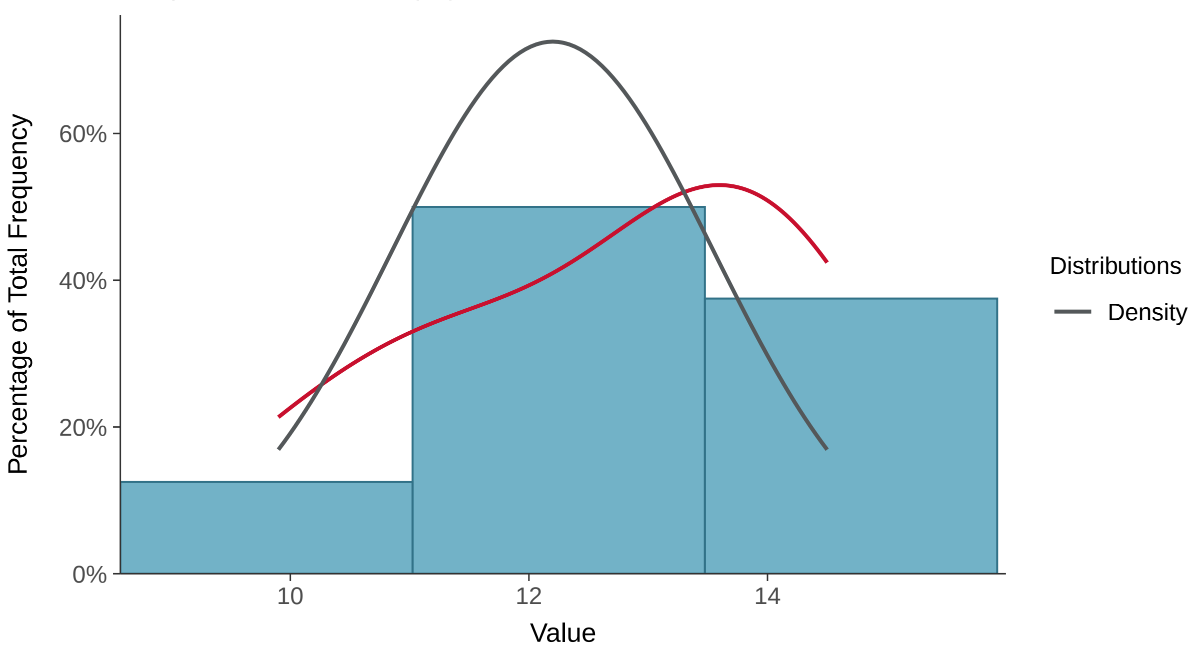
Scatter Plot

Temperature, MW-100D (°C)



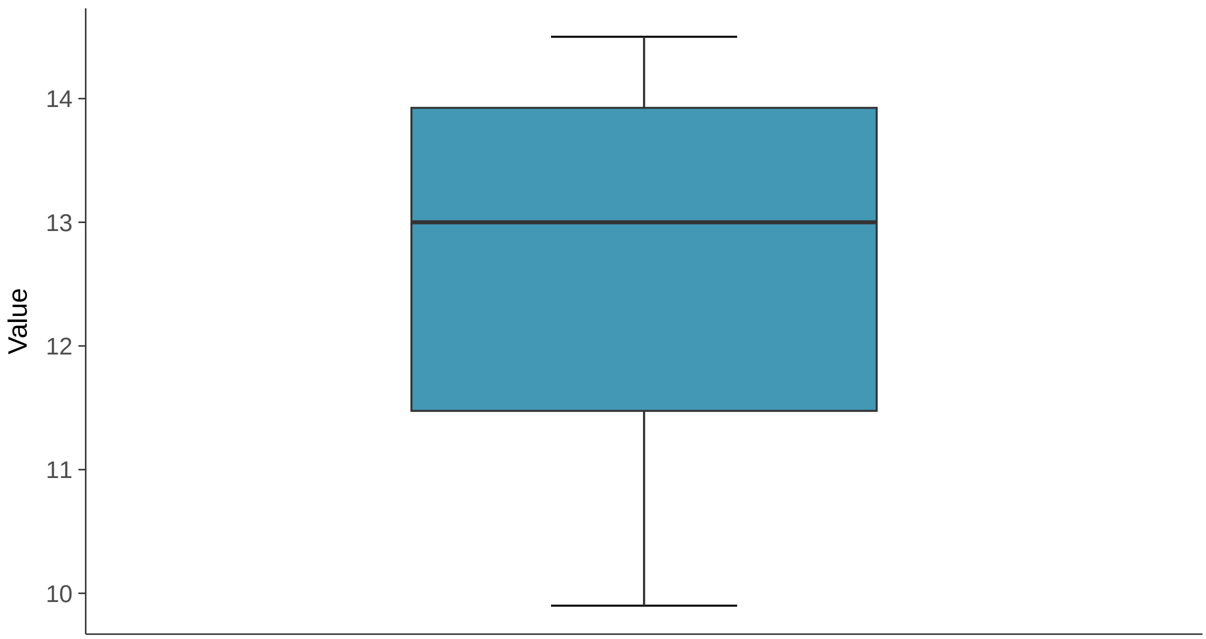
Histogram

Temperature, MW-100D (°C)



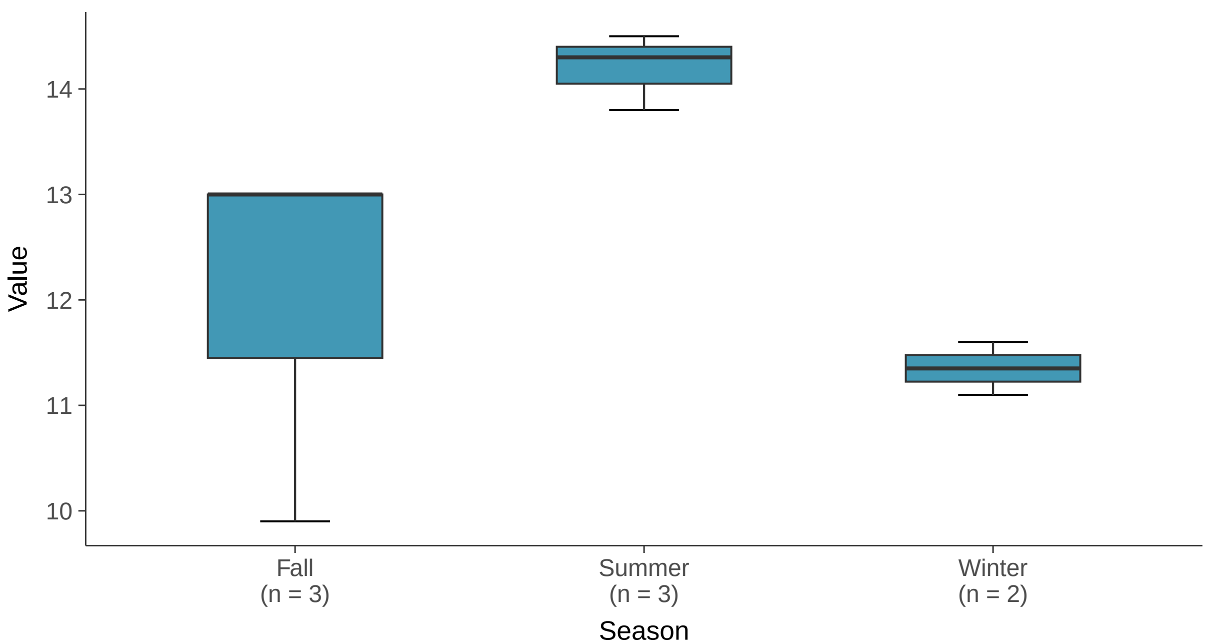
Boxplot

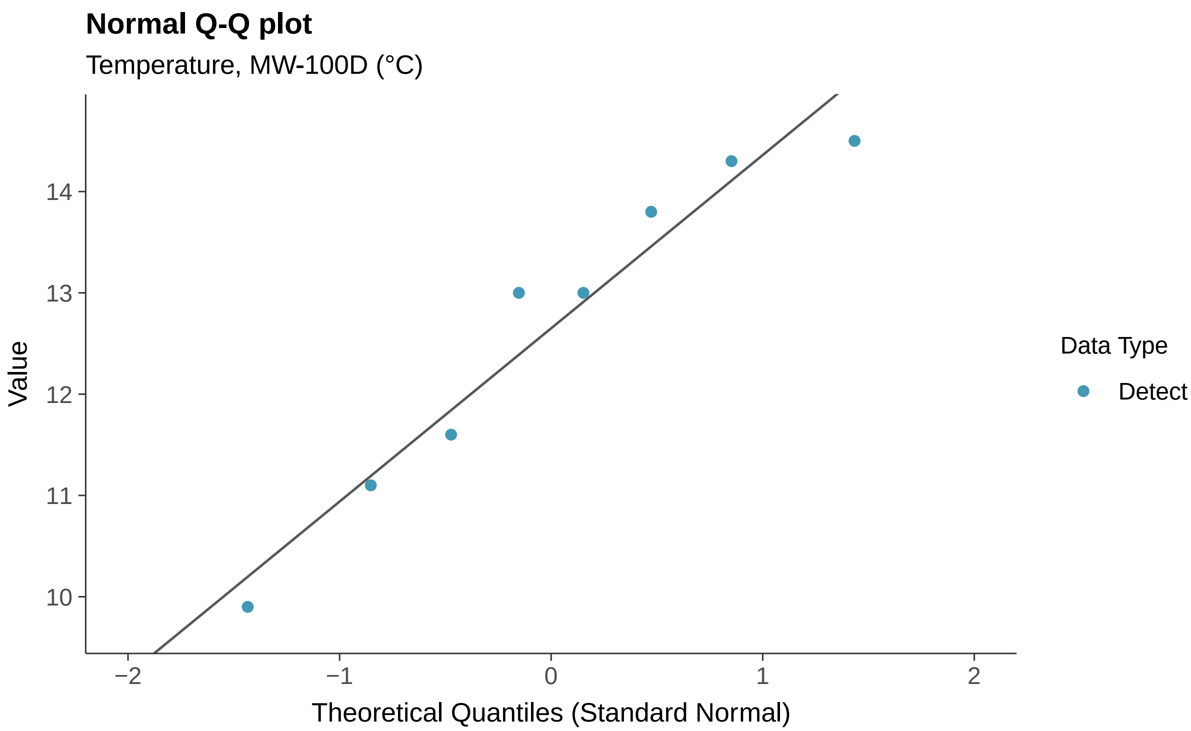
Temperature, MW-100D (°C)

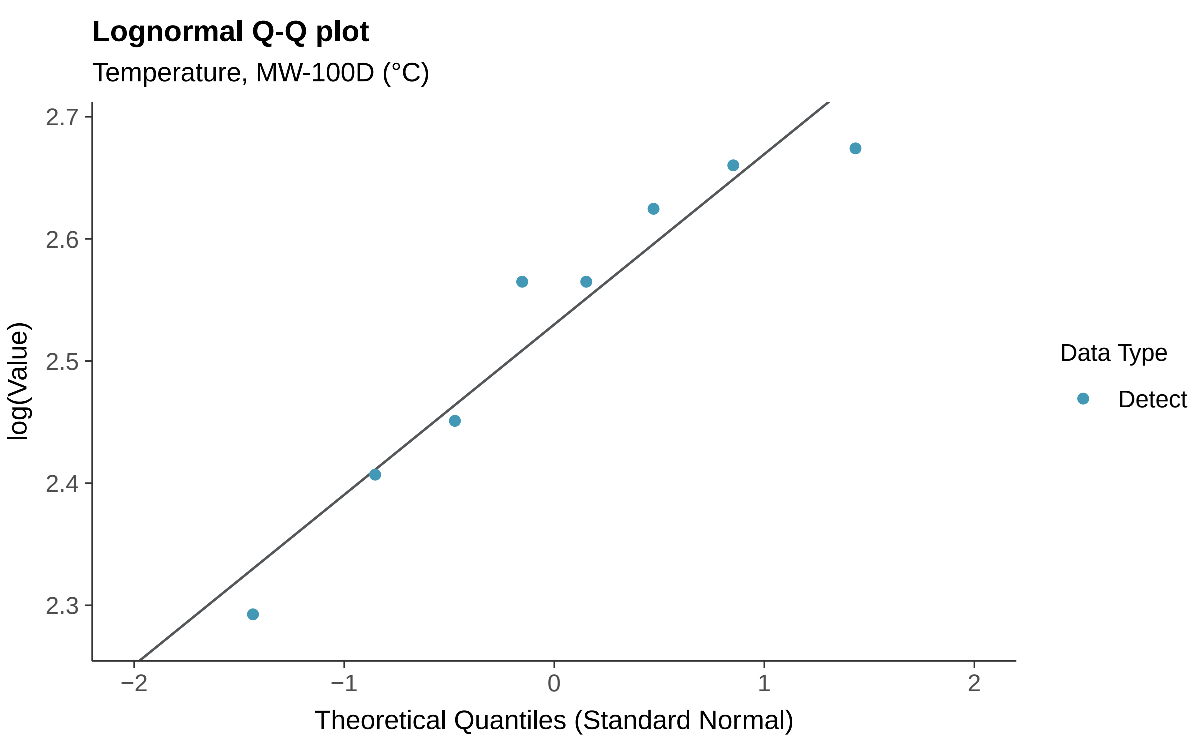


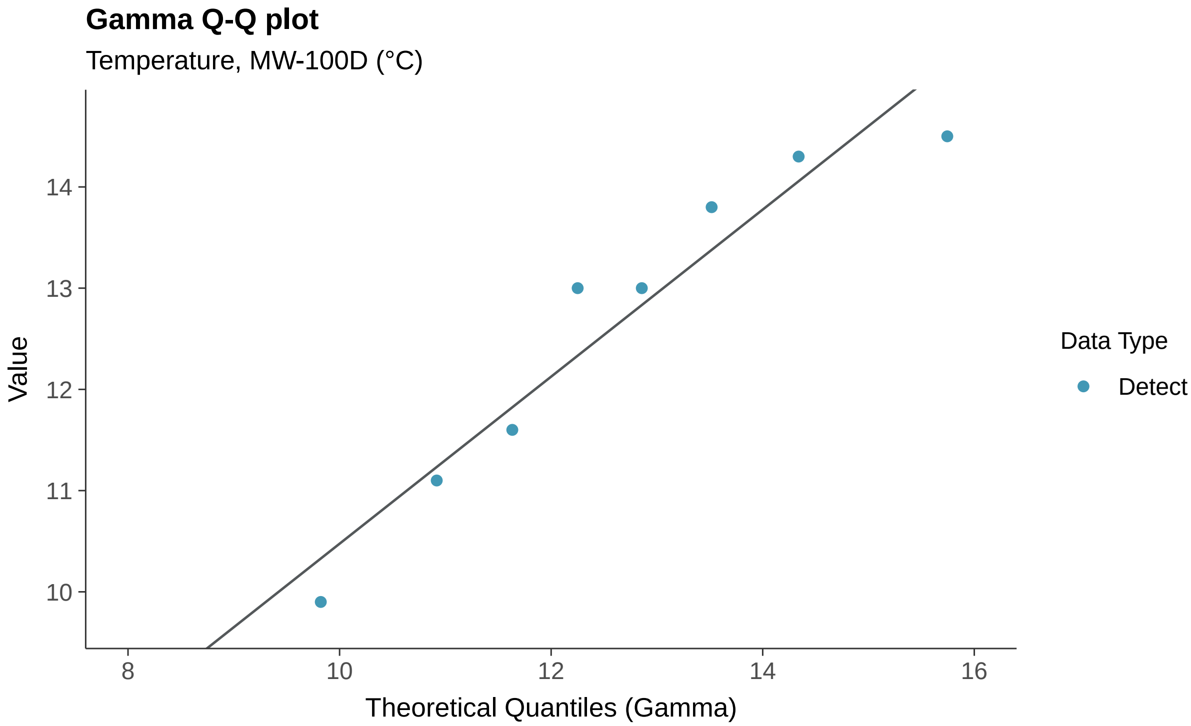
Boxplot by Season

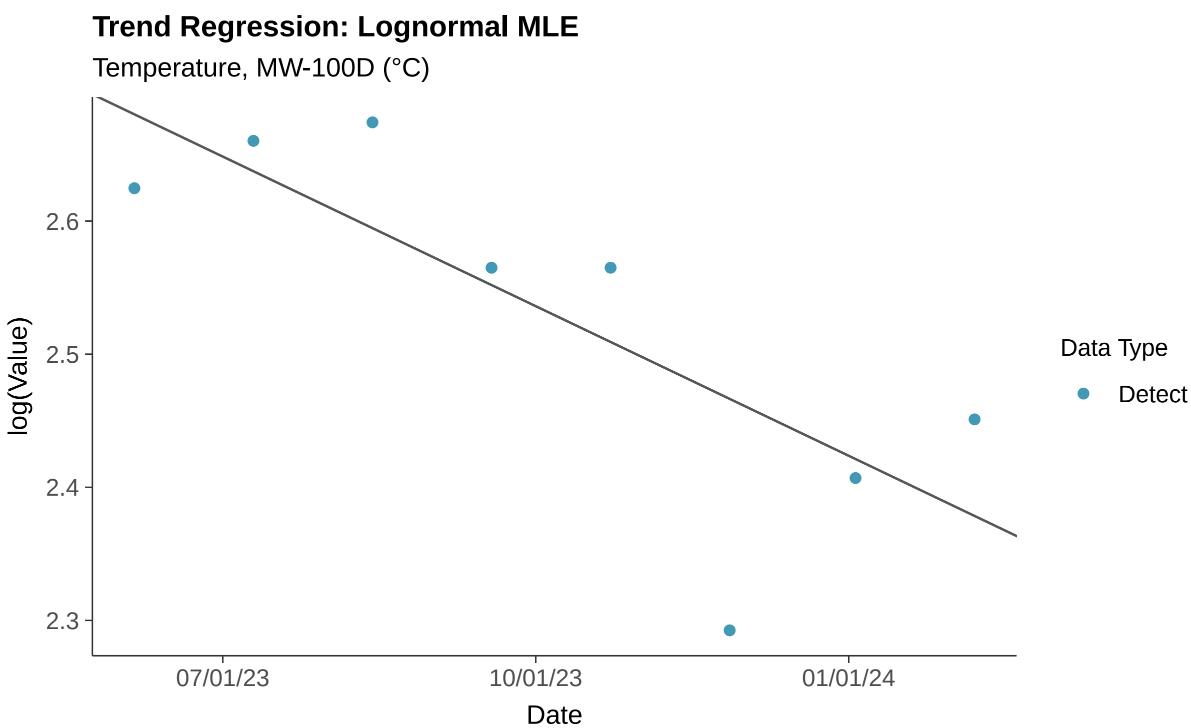
Temperature, MW-100D (°C)




Normal Q-Q plot
Temperature, MW-100D (°C)
Value
14
13
12
11
10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

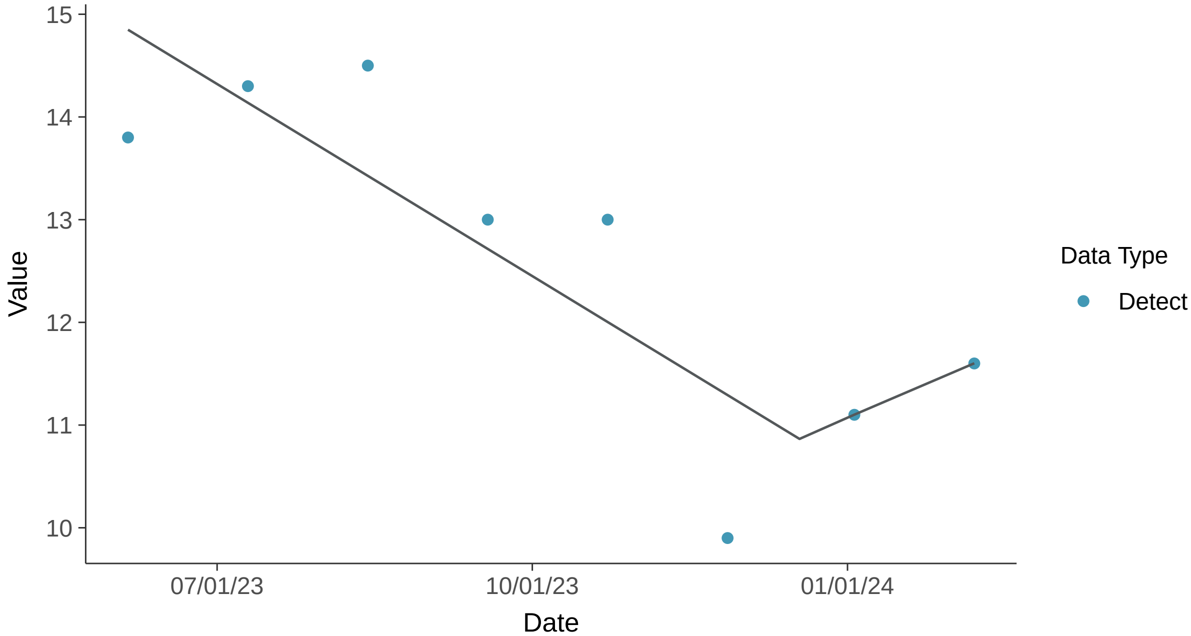

Lognormal Q-Q plot
Temperature, MW-100D (°C)
log(Value)
2.7
2.6
2.5
2.4
2.3
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Temperature, MW-100D (°C)
Value
14
13
12
11
10
8
10
12
14
16
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Temperature, MW-100D (°C)
log(Value)
2.6
2.5
2.4
2.3
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

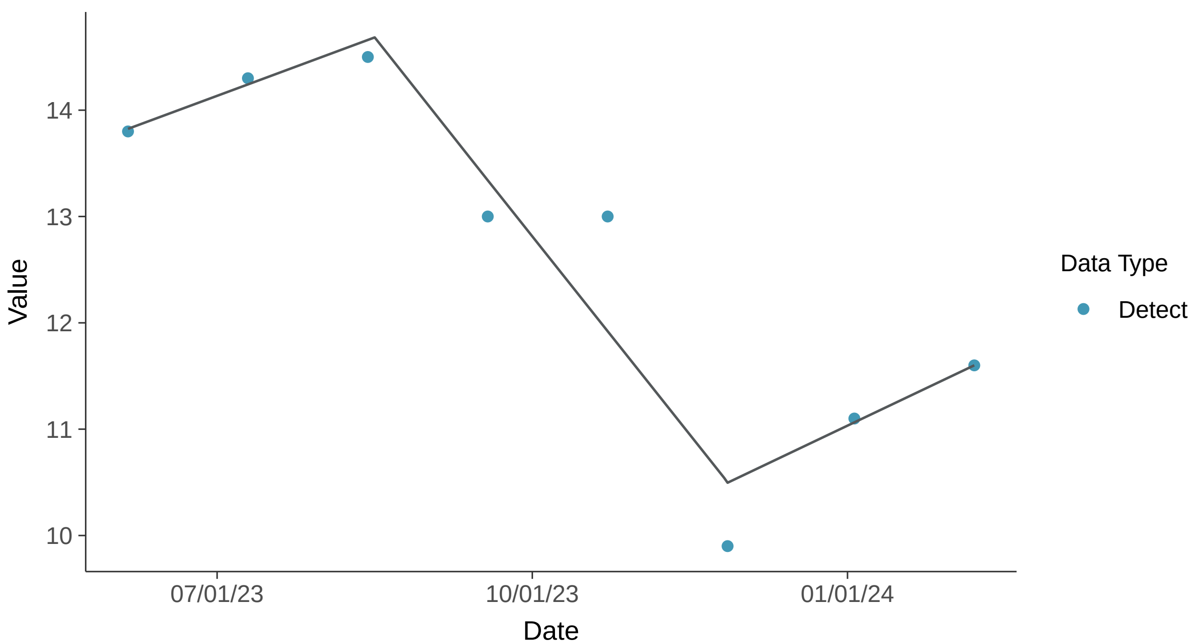
Trend Regression: Piecewise Linear-Linear

Temperature, MW-100D (°C)



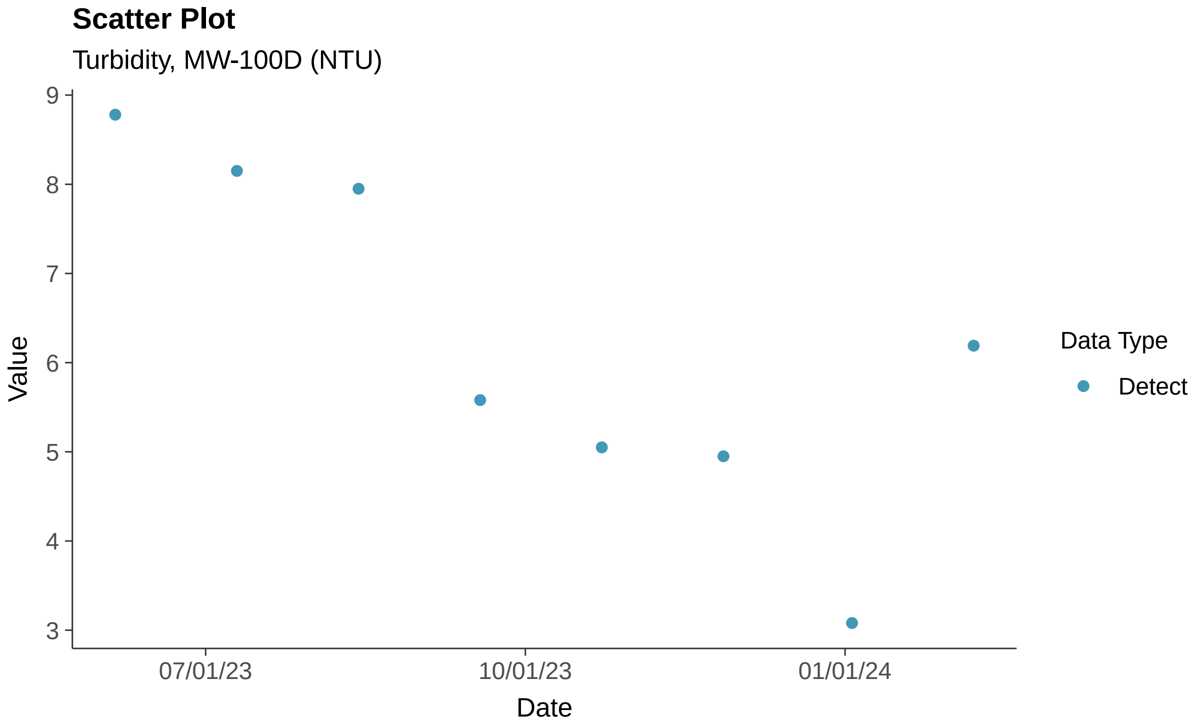
Trend Regression: Piecewise Linear-Linear-Linear

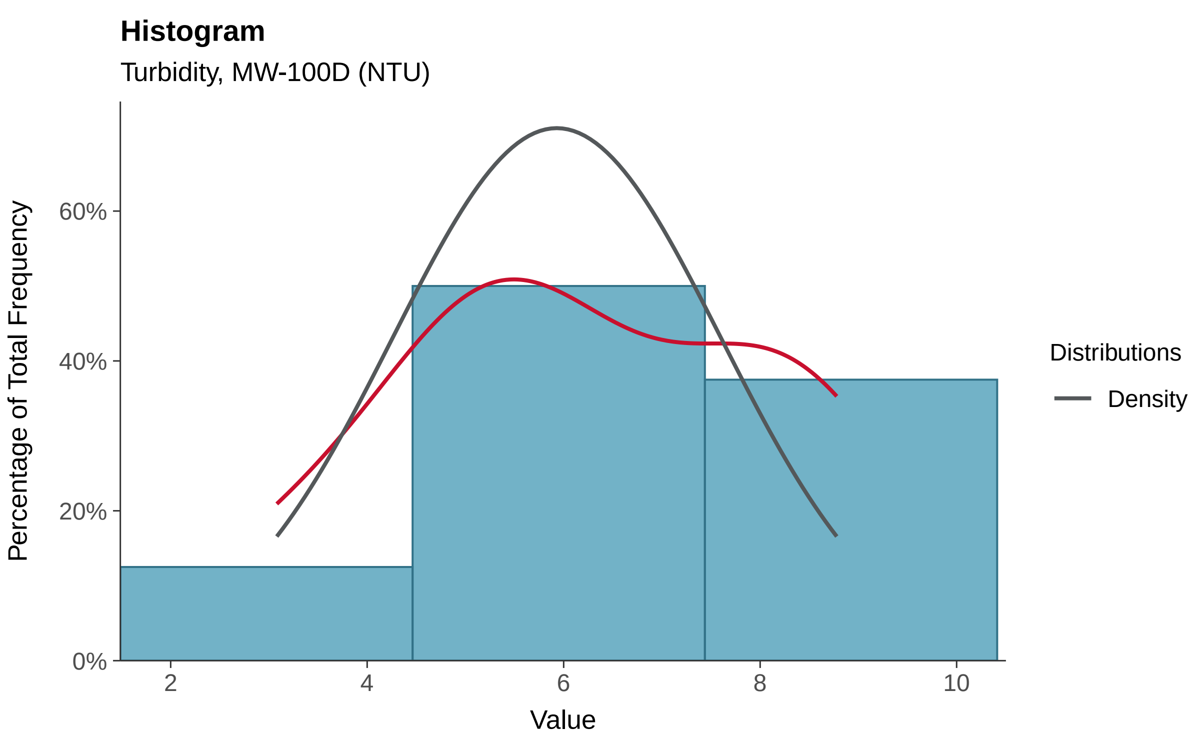
Temperature, MW-100D (°C)



Field Parameters: Turbidity, MW-100D

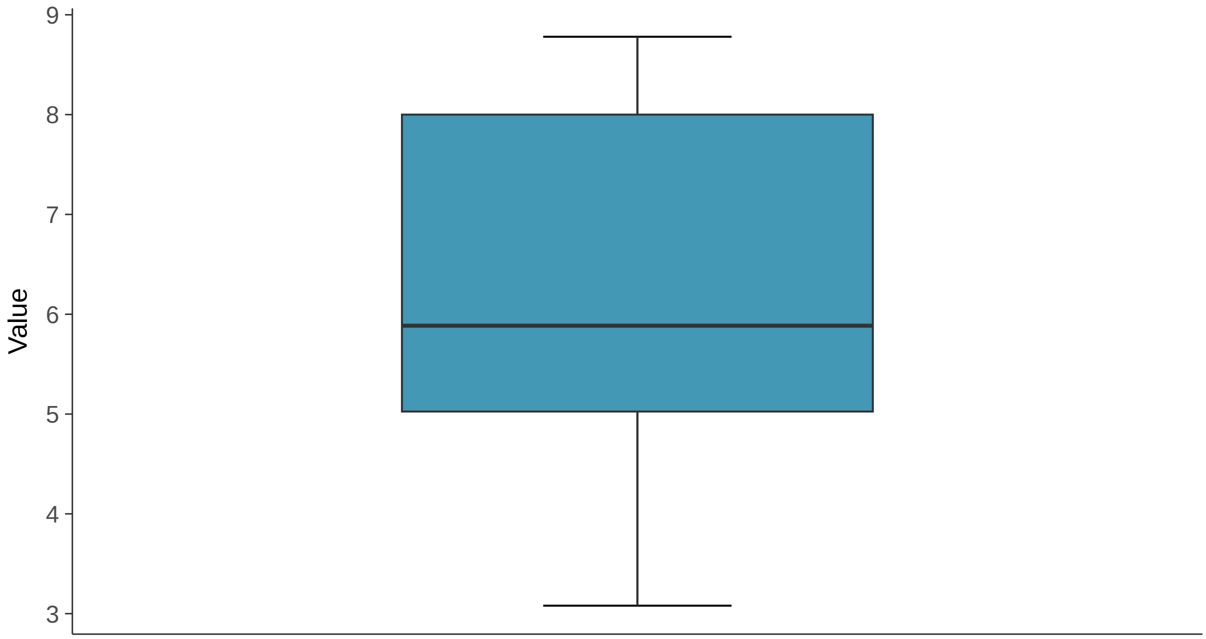
ID: 100D_3_28





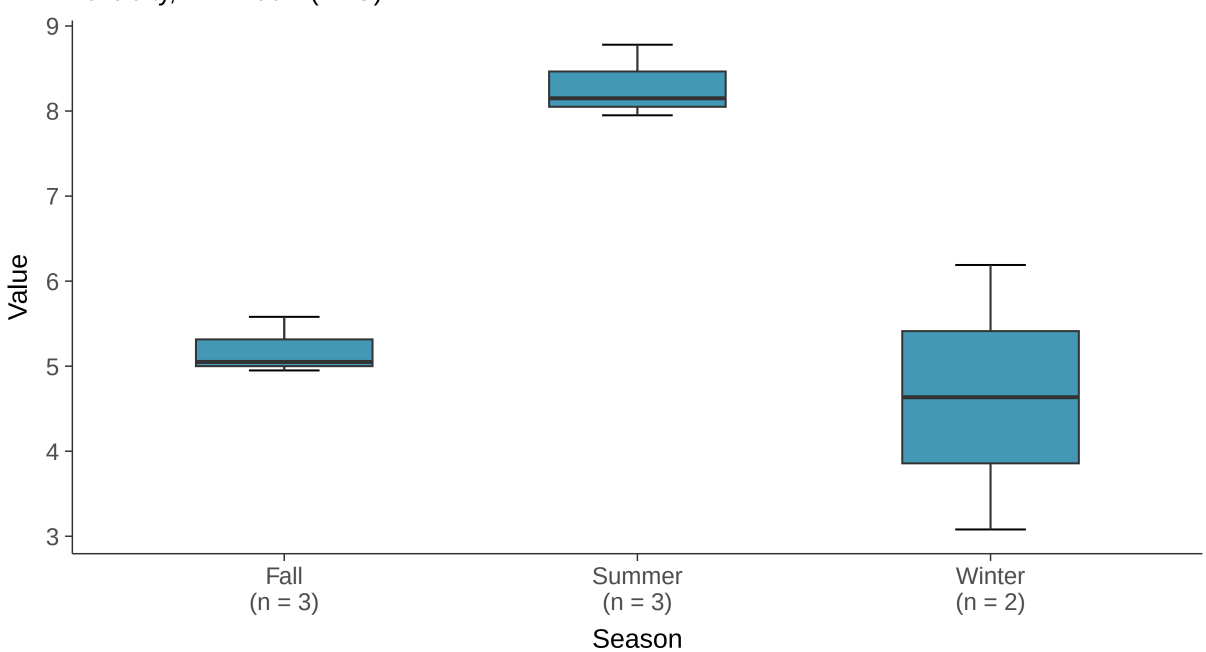
Boxplot

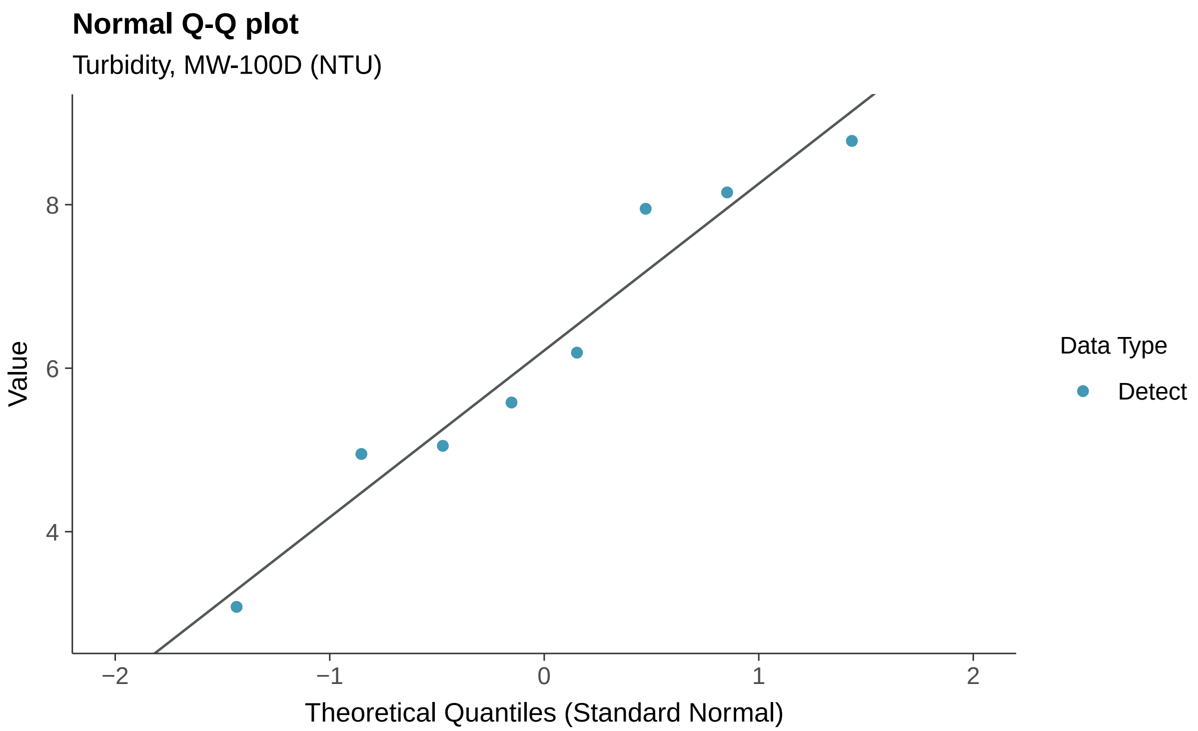
Turbidity, MW-100D (NTU)

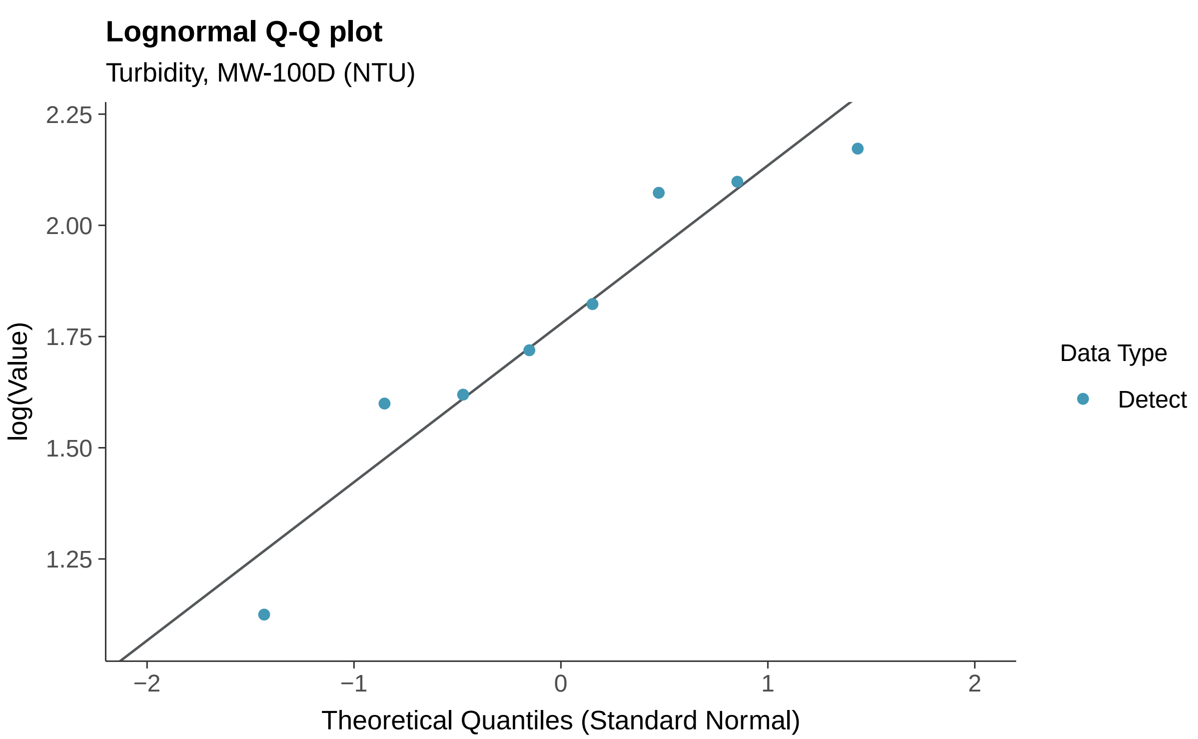


Boxplot by Season

Turbidity, MW-100D (NTU)

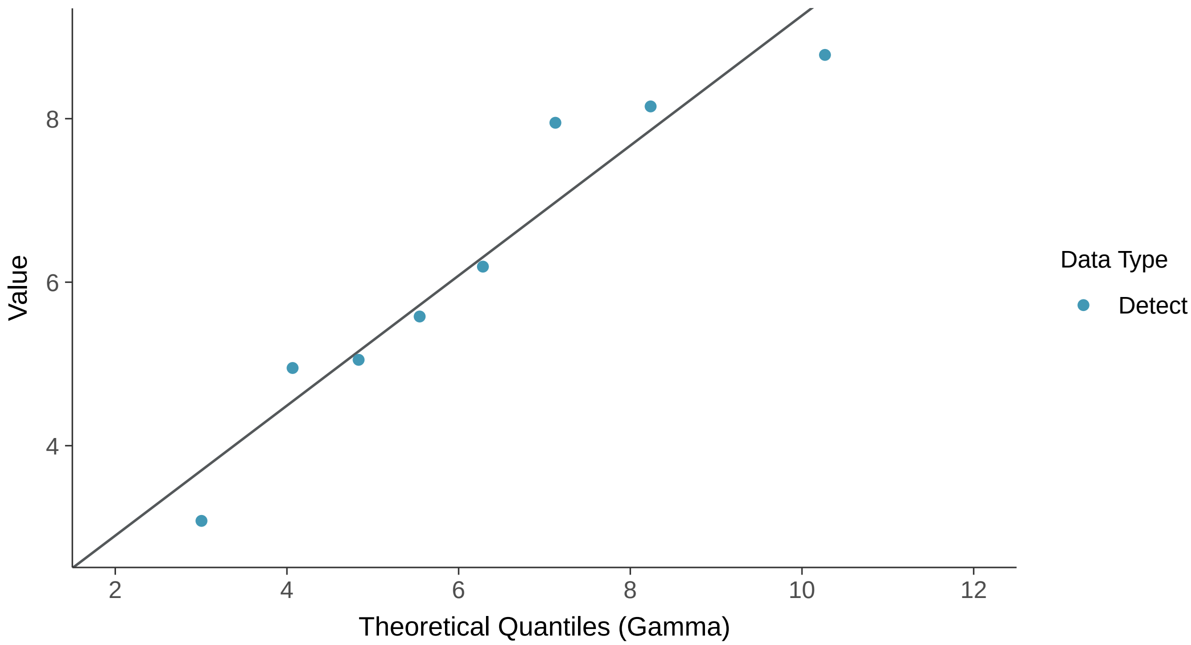



Normal Q-Q plot
Turbidity, MW-100D (NTU)
Value
8
6
4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Turbidity, MW-100D (NTU)
log(Value)
2.25
2.00
1.75
1.50
1.25
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

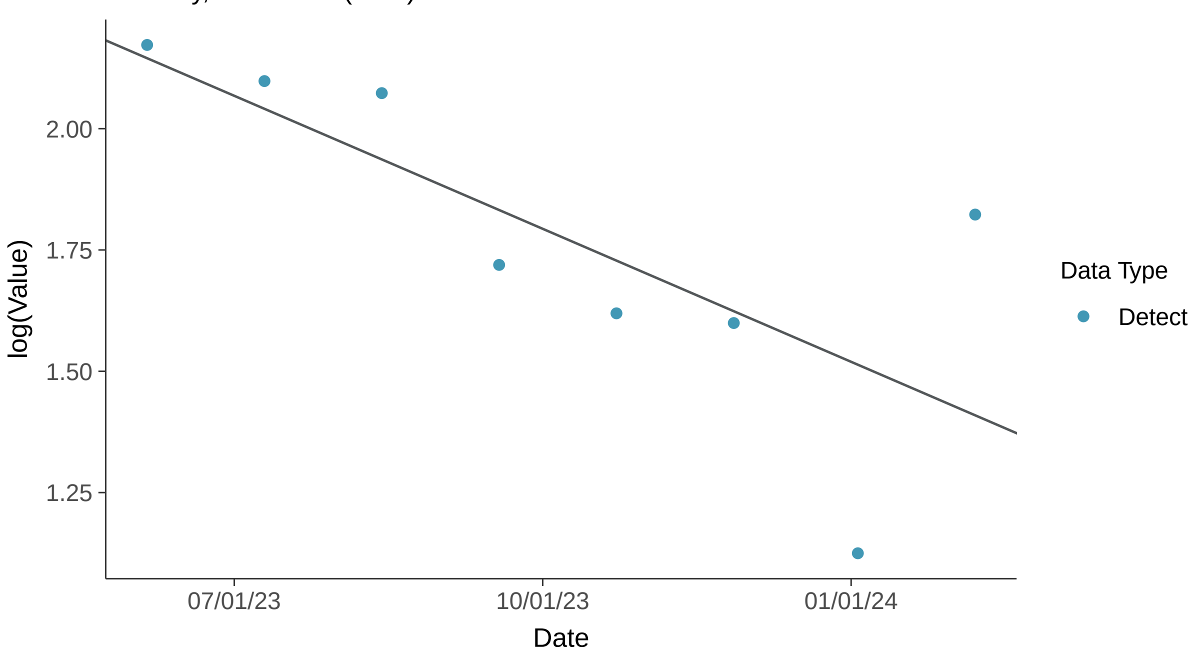
Gamma Q-Q plot

Turbidity, MW-100D (NTU)



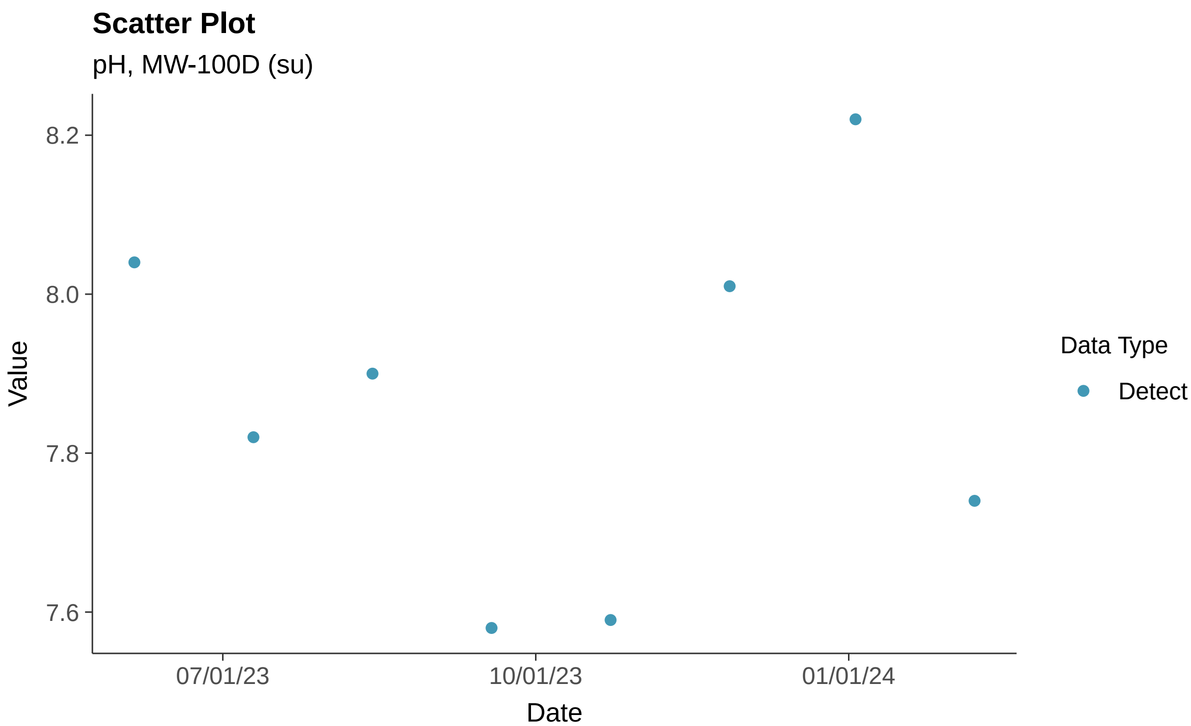
Trend Regression: Lognormal MLE

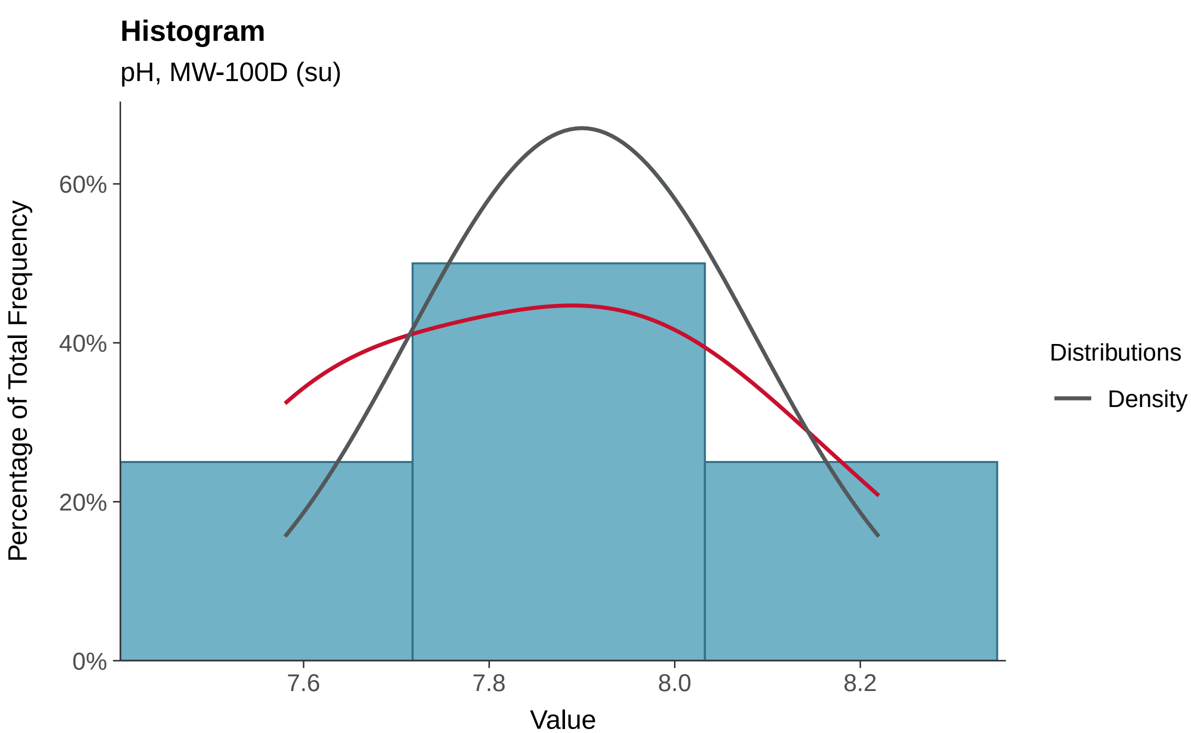
Turbidity, MW-100D (NTU)



Field Parameters: pH, MW-100D

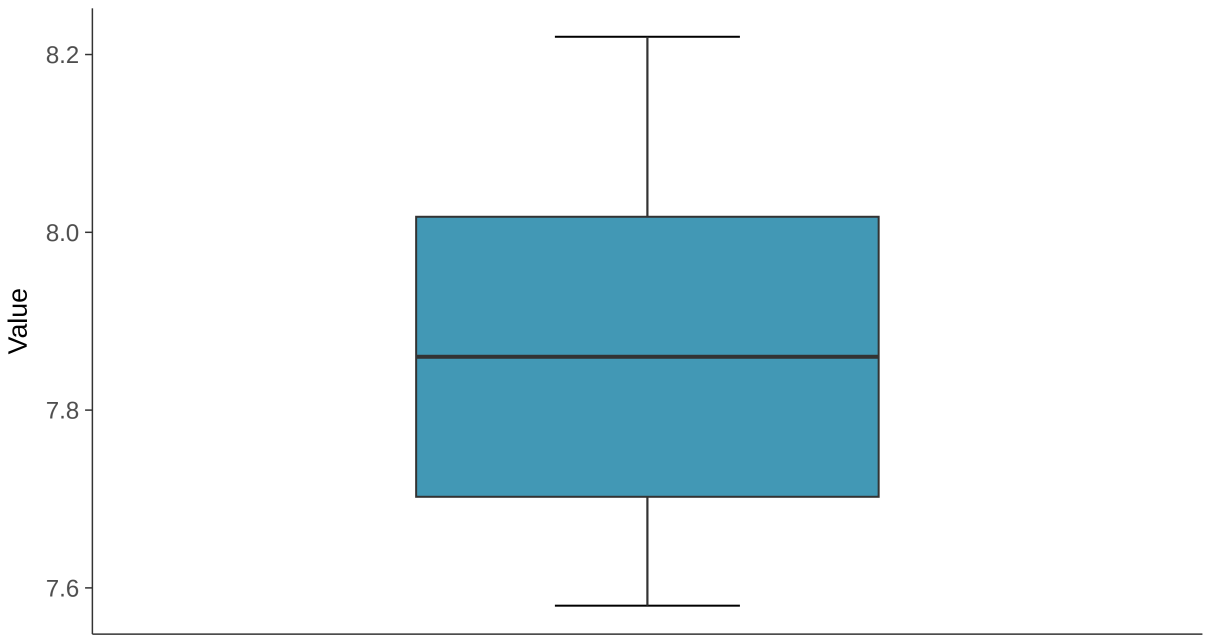
ID: 100D_3_29





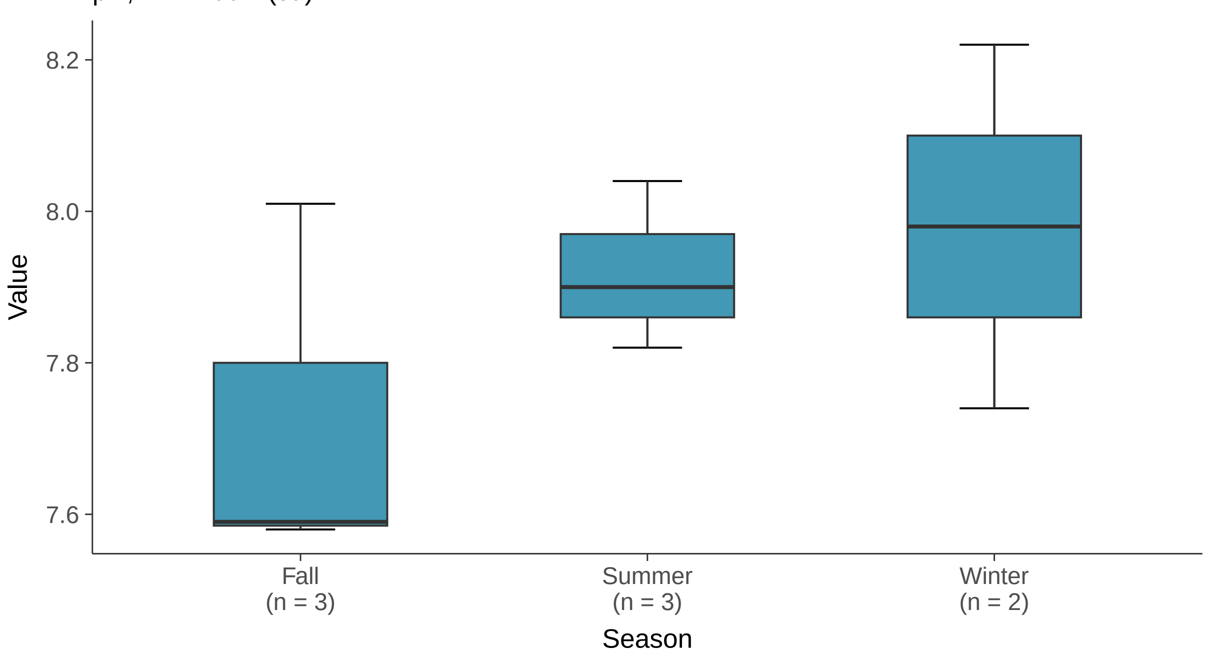
Boxplot

pH, MW-100D (su)



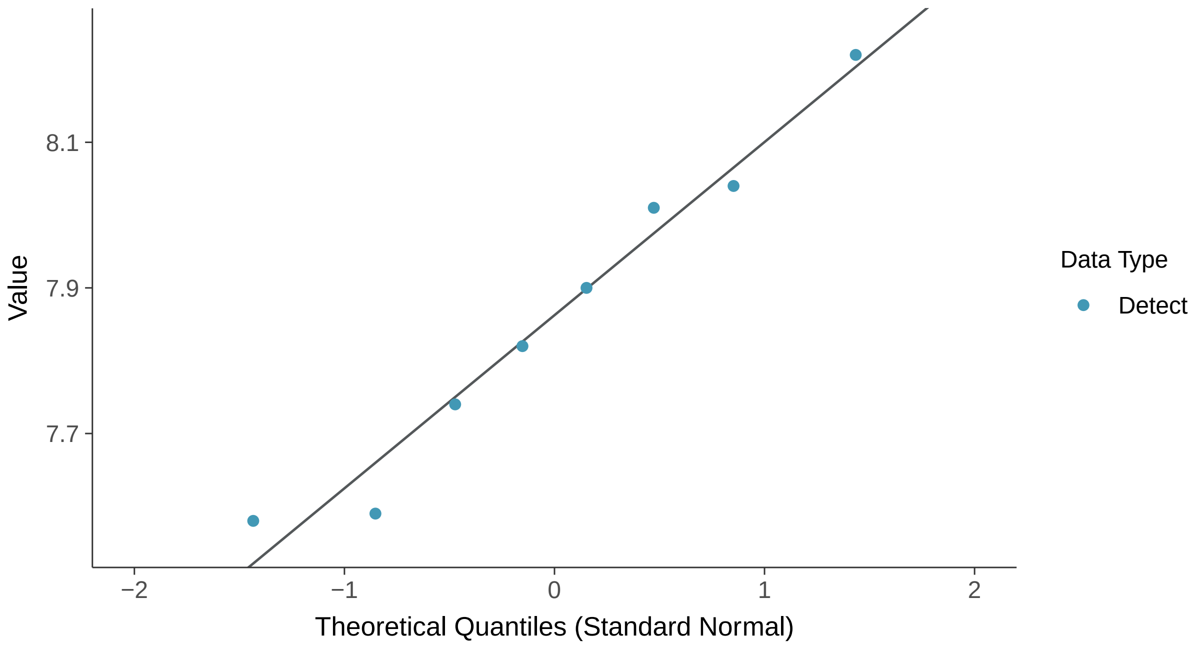
Boxplot by Season

pH, MW-100D (su)



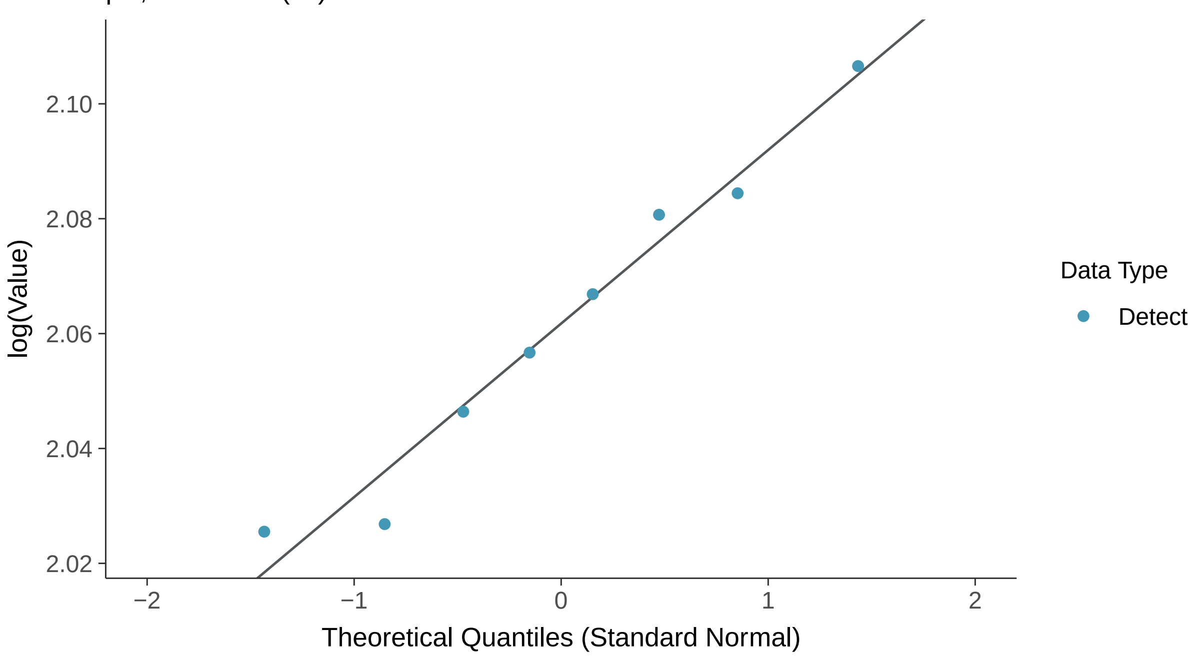
Normal Q-Q plot

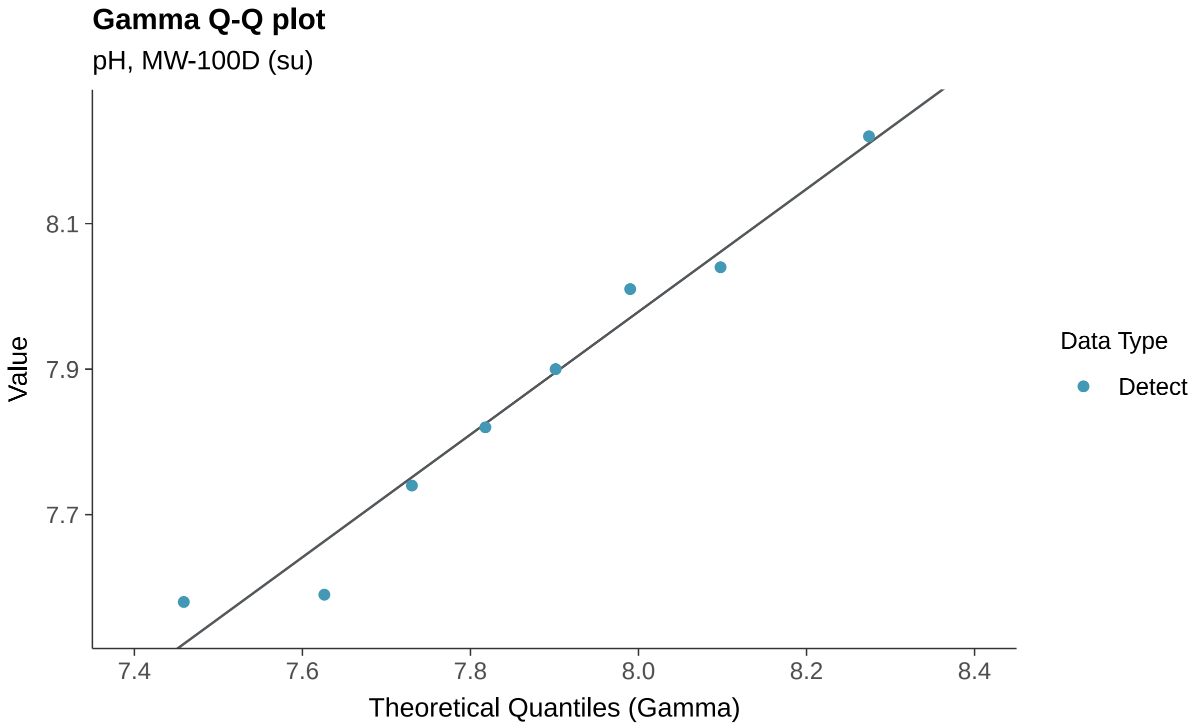
pH, MW-100D (su)

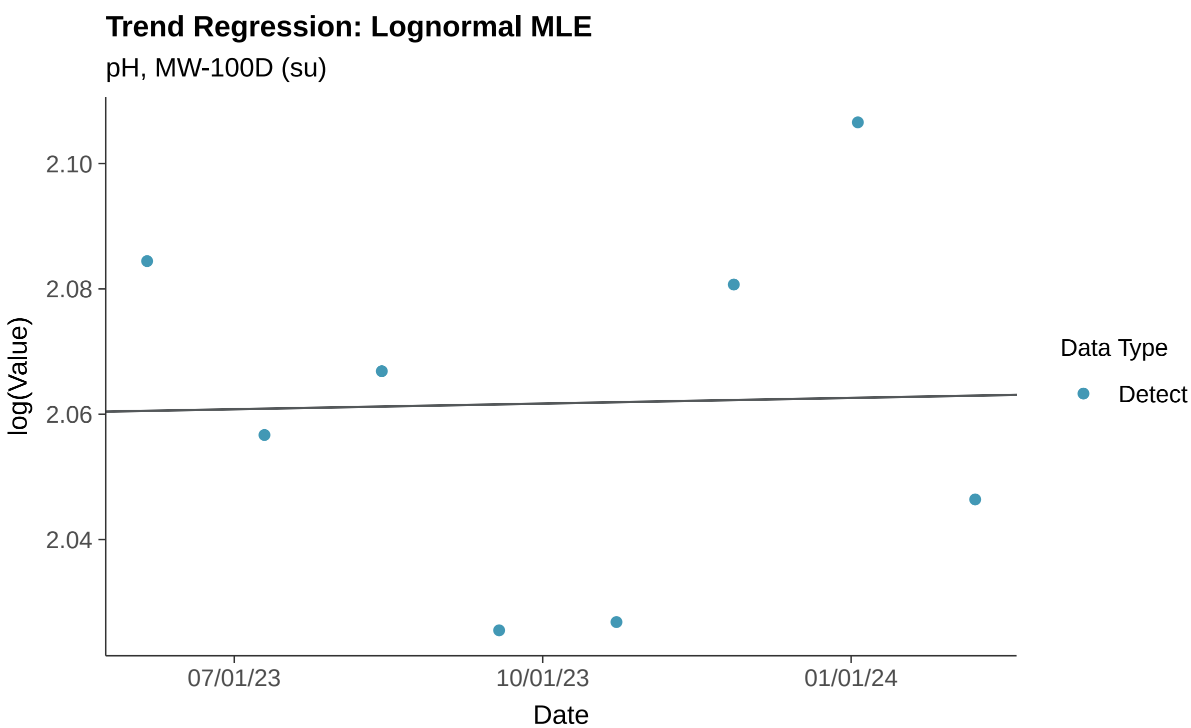


Lognormal Q-Q plot

pH, MW-100D (su)

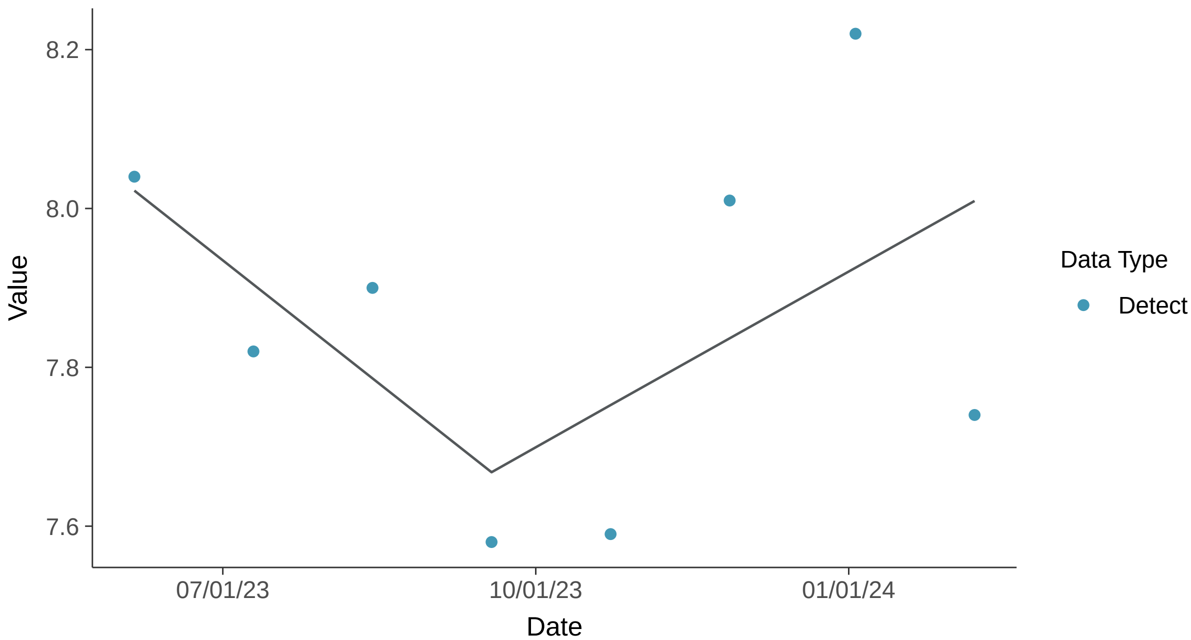



Gamma Q-Q plot
pH, MW-100D (su)
Value
8.1
7.9
7.7
7.4
7.6
7.8
8.0
8.2
8.4
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, MW-100D (su)
log(Value)
2.10
2.08
2.06
2.04
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

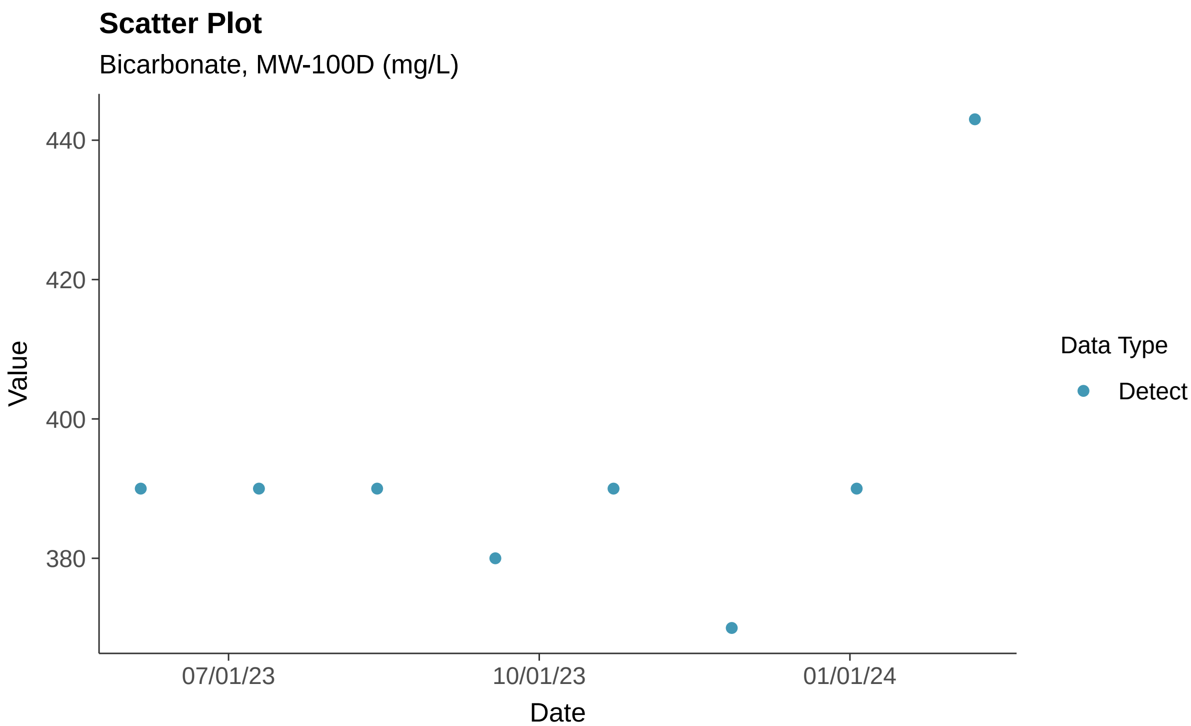
Trend Regression: Piecewise Linear-Linear

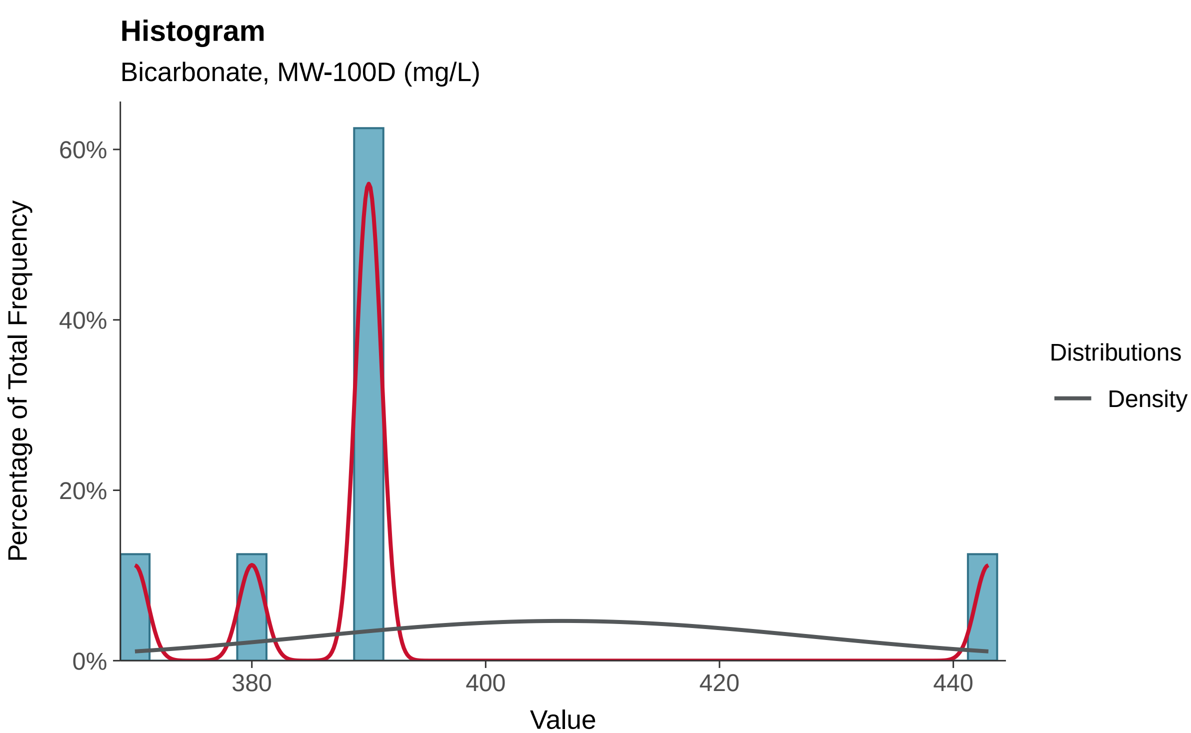
pH, MW-100D (su)



Other: Bicarbonate, MW-100D

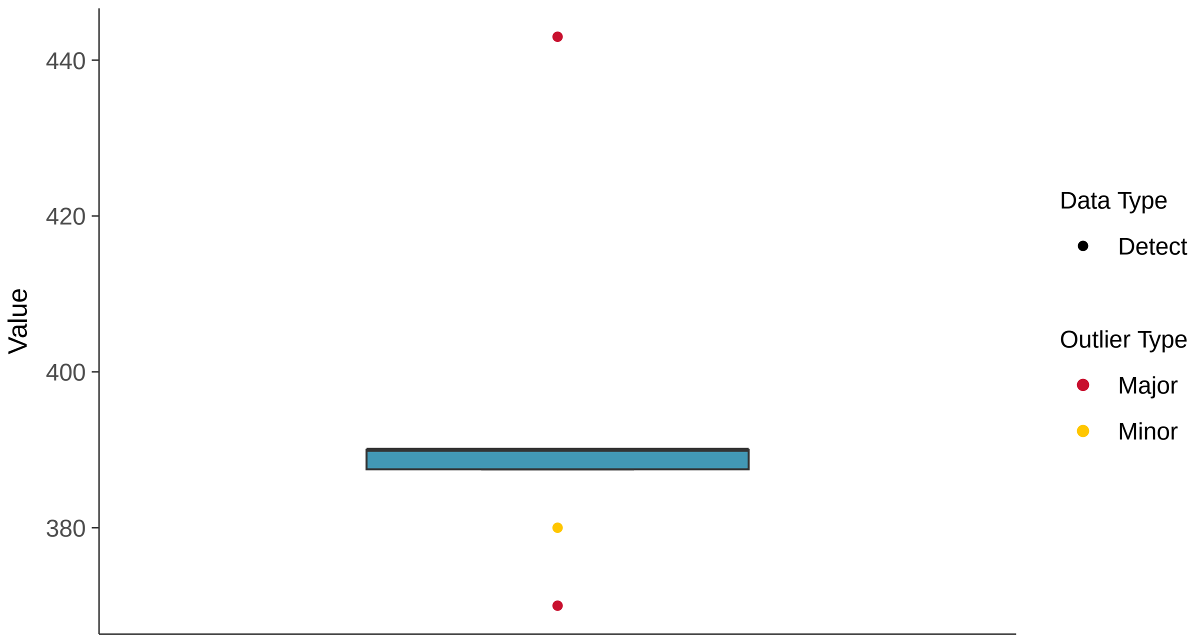
ID: 100D_4_30





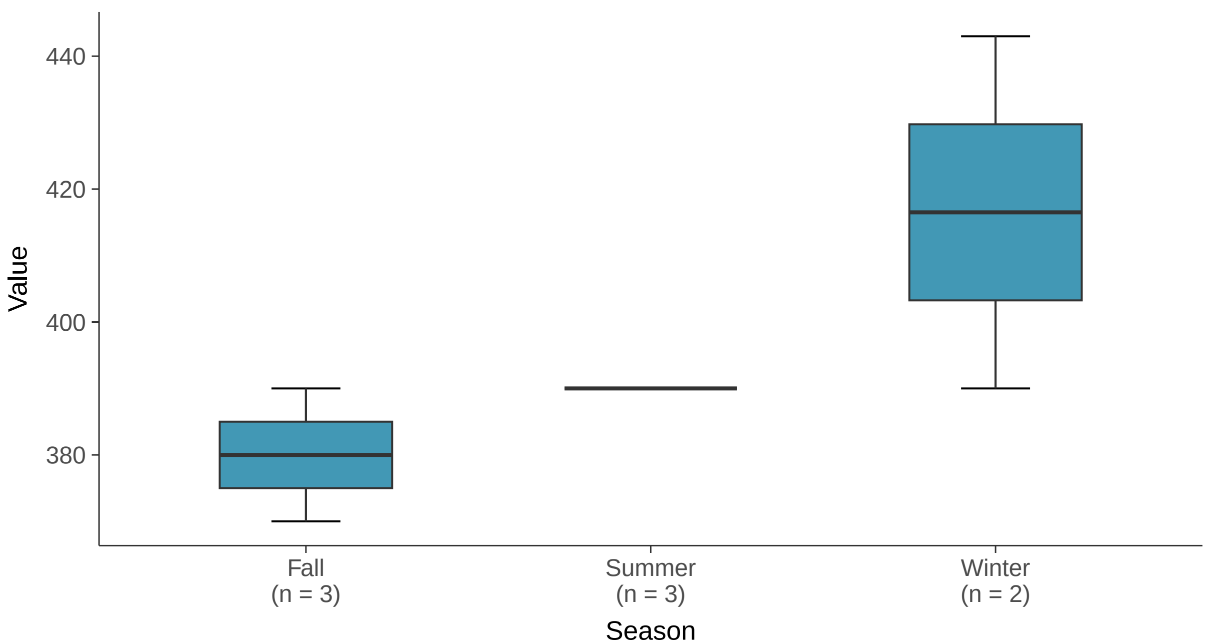
Boxplot

Bicarbonate, MW-100D (mg/L)



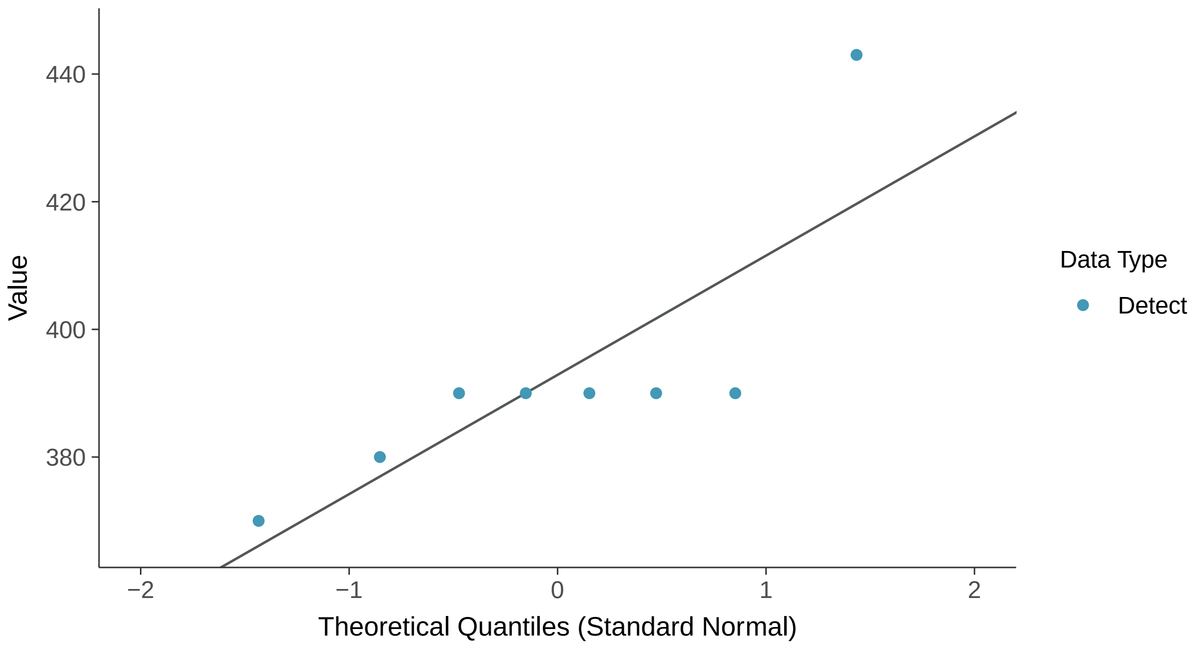
Boxplot by Season

Bicarbonate, MW-100D (mg/L)



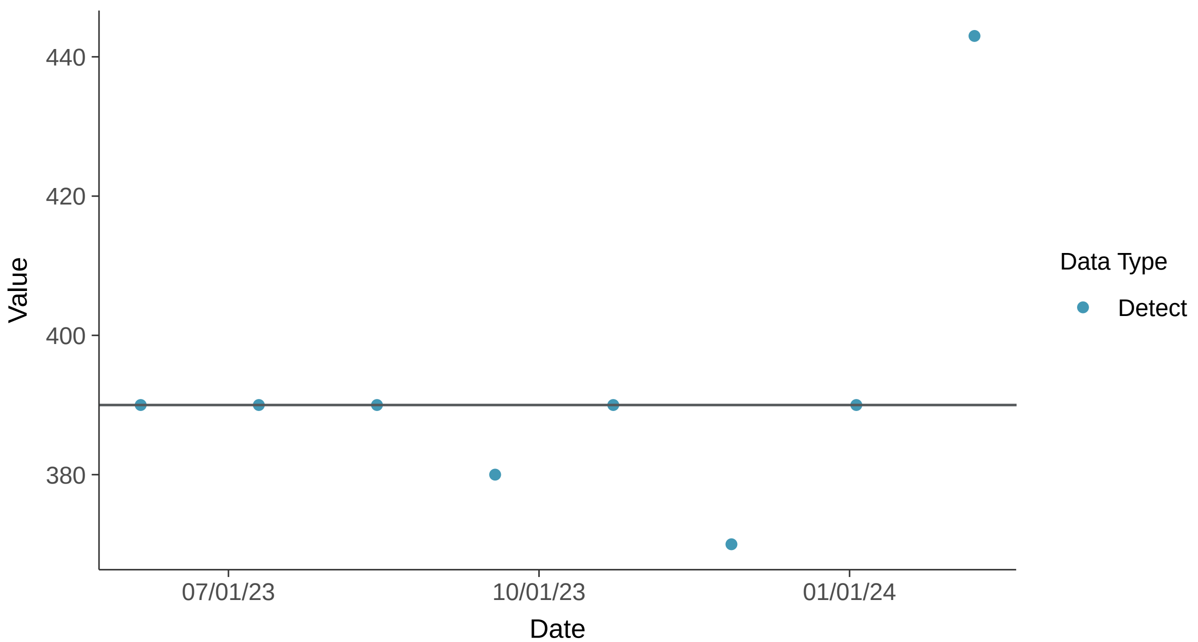
Normal Q-Q plot

Bicarbonate, MW-100D (mg/L)



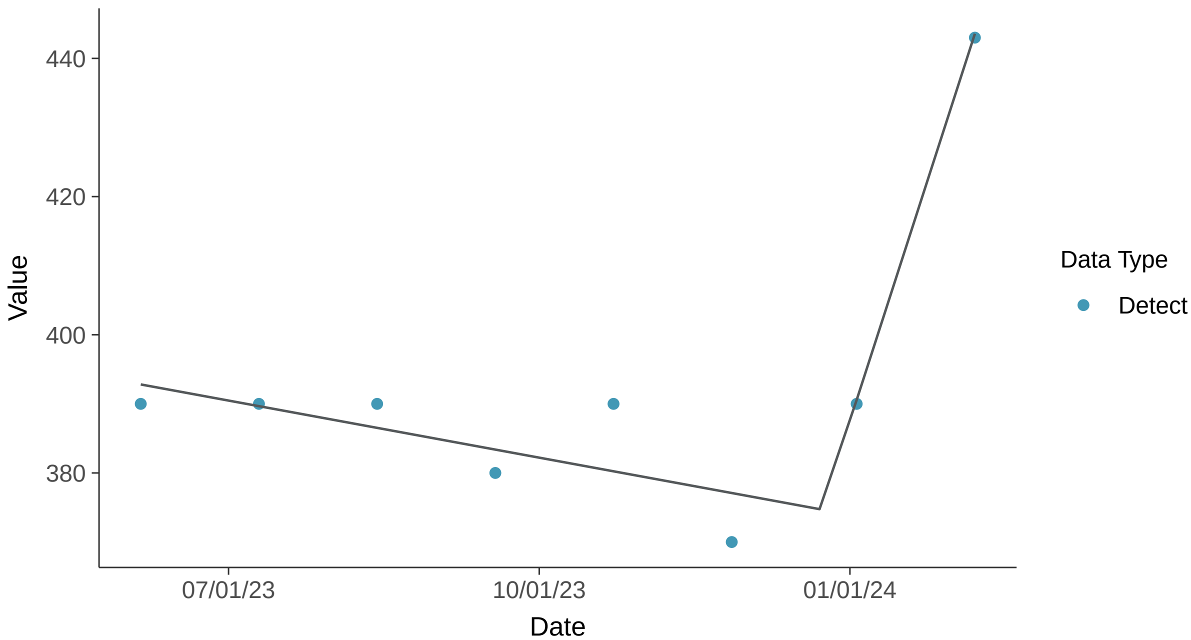
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Bicarbonate, MW-100D (mg/L)



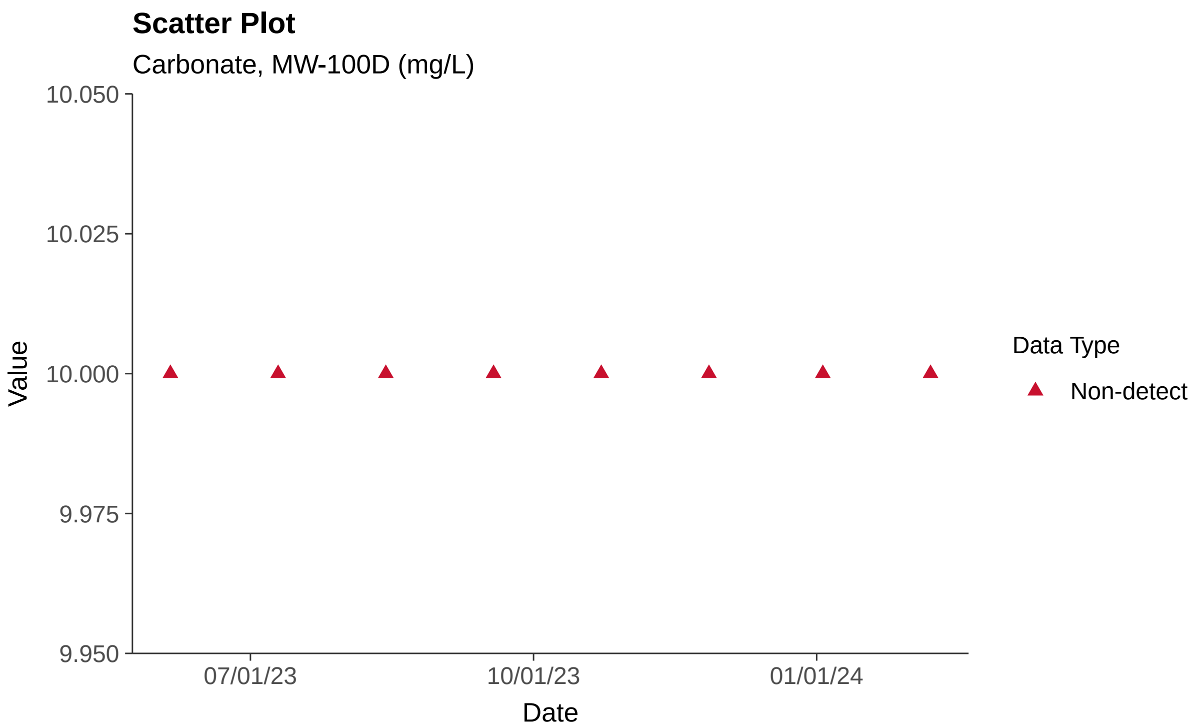
Trend Regression: Piecewise Linear-Linear

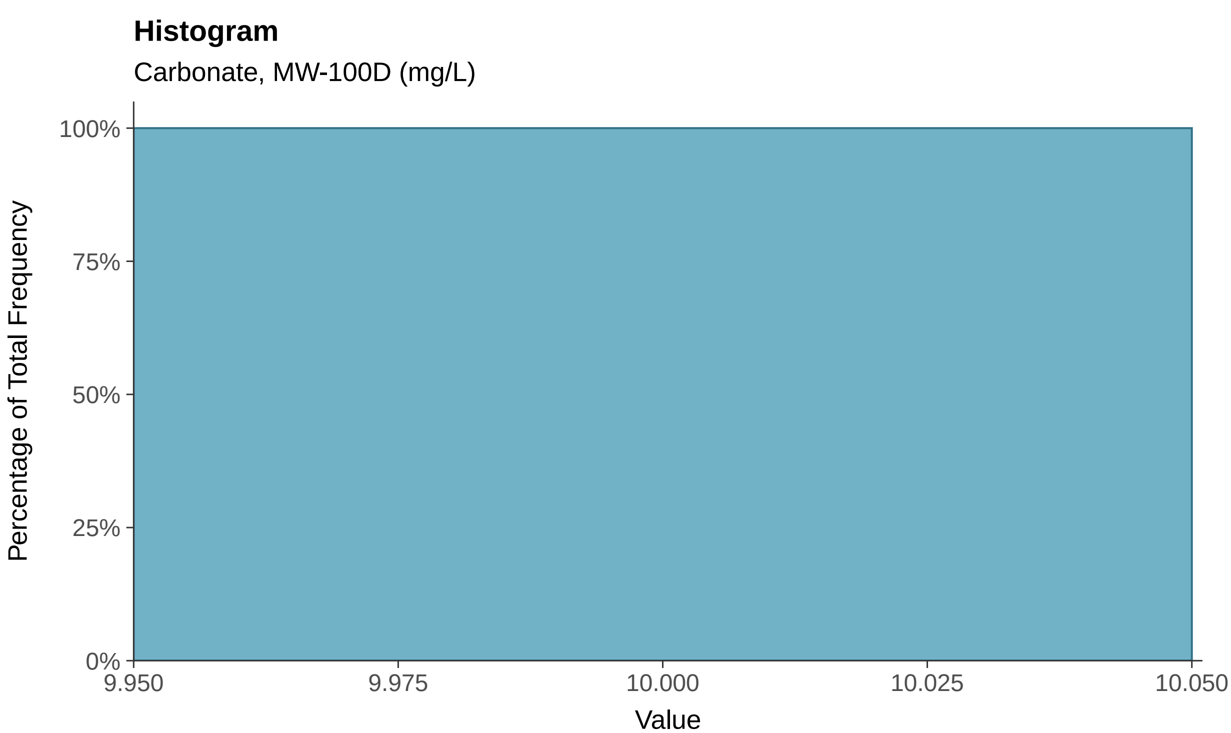
Bicarbonate, MW-100D (mg/L)



Other: Carbonate, MW-100D

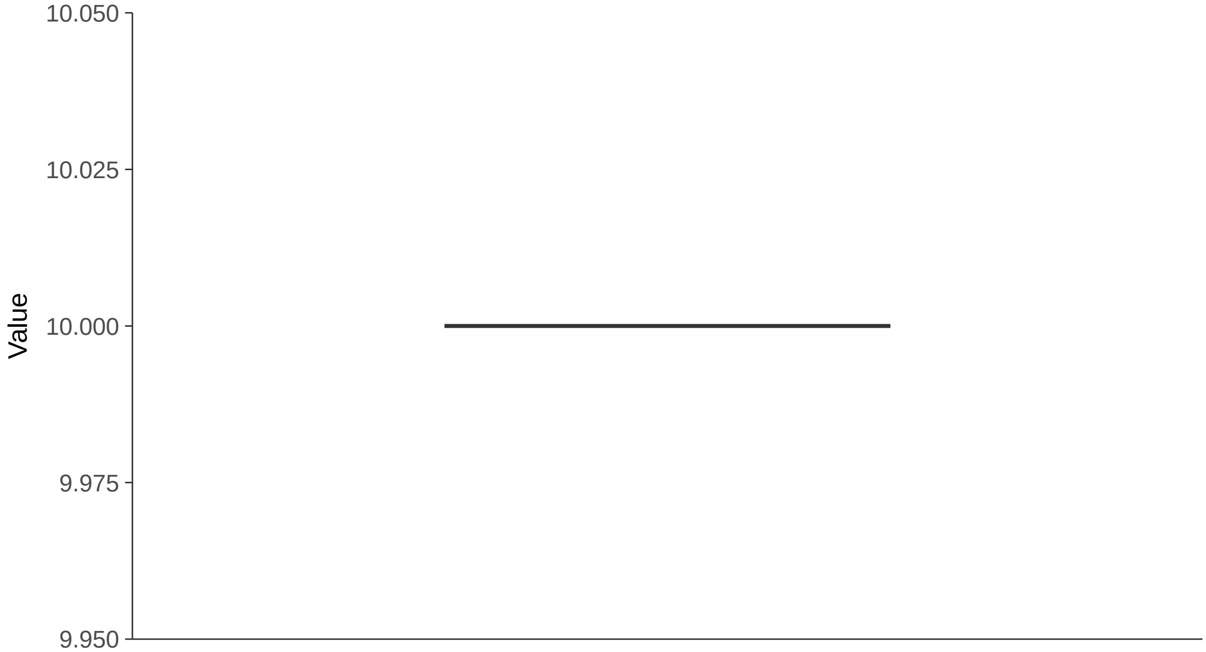
ID: 100D_4_31





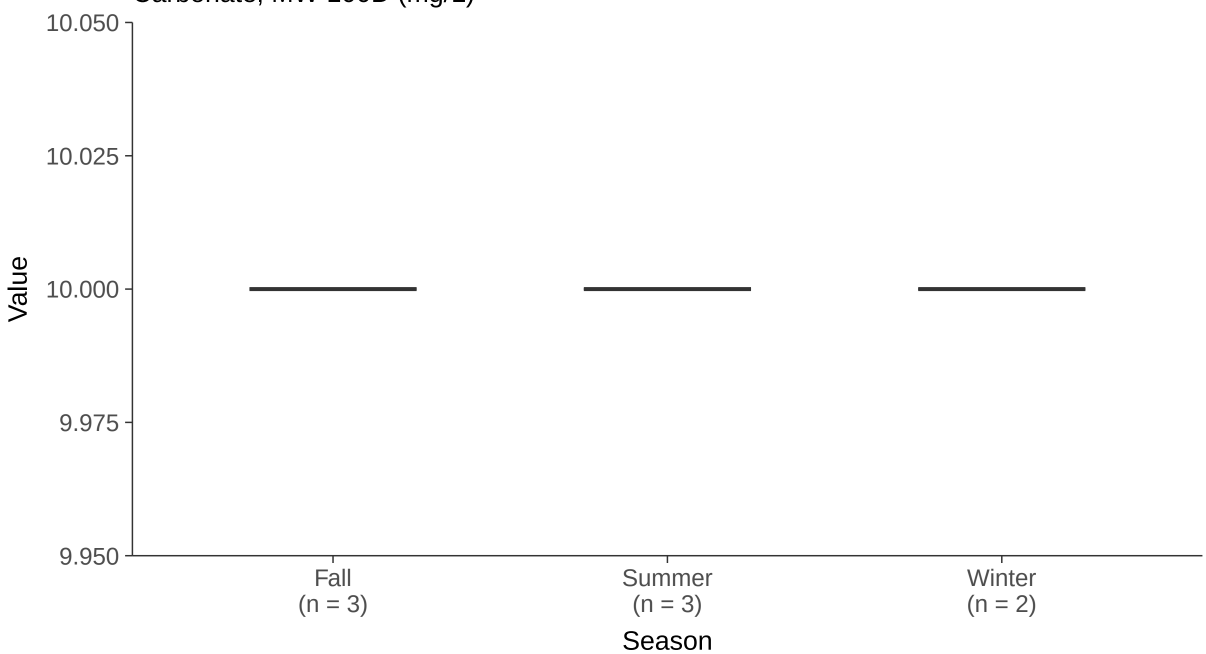
Boxplot

Carbonate, MW-100D (mg/L)



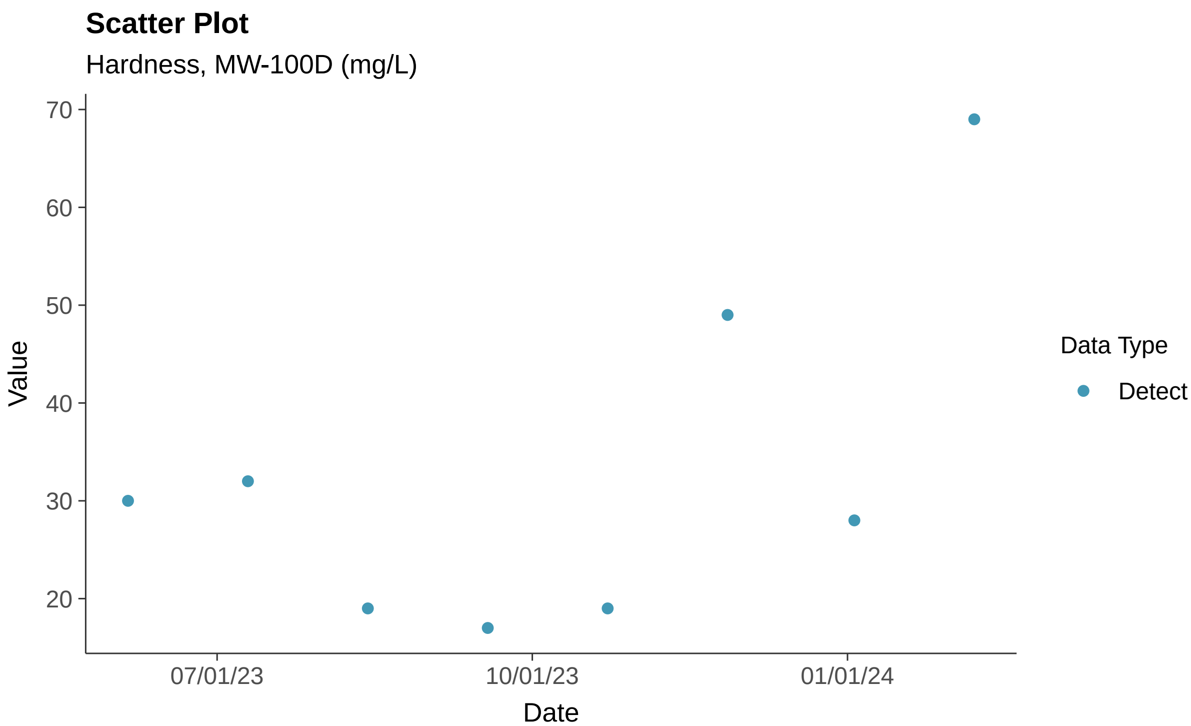
Boxplot by Season

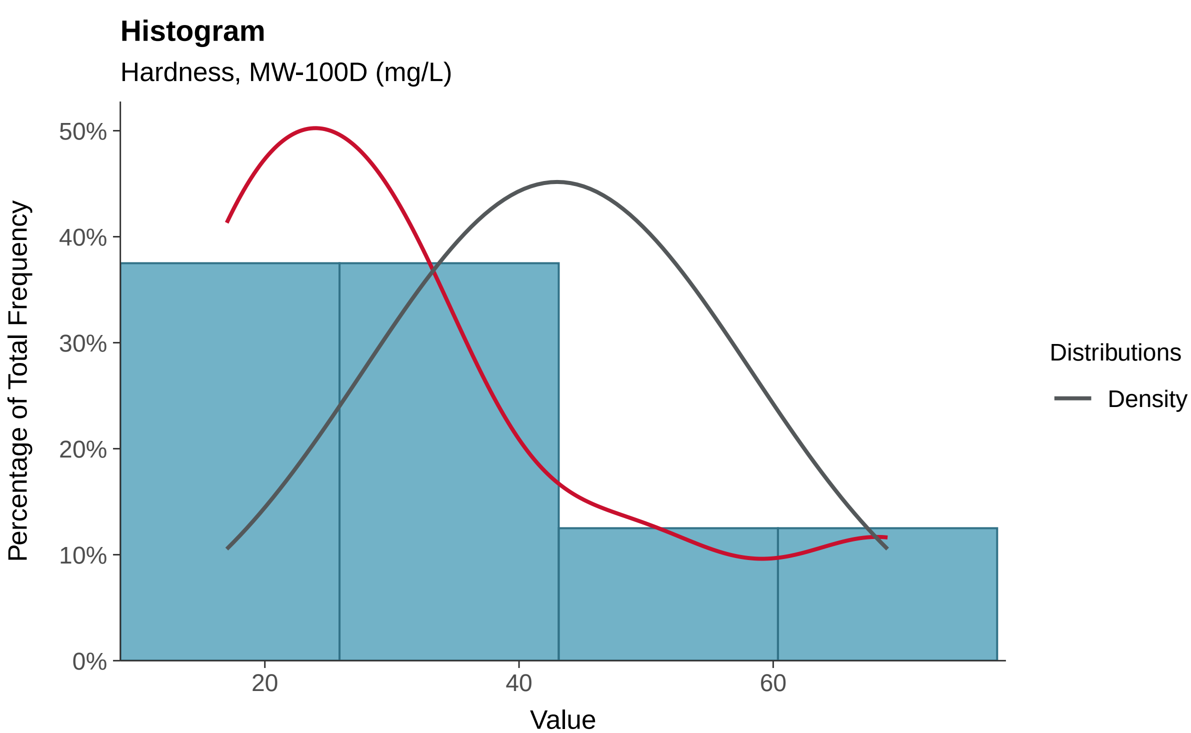
Carbonate, MW-100D (mg/L)



Other: Hardness, MW-100D

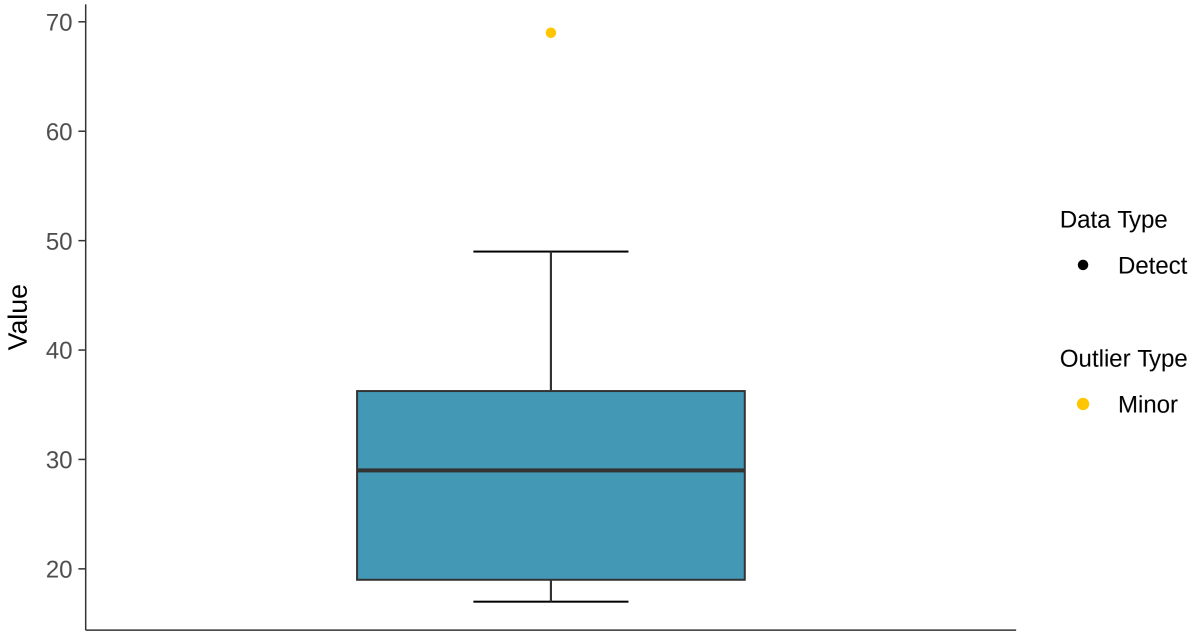
ID: 100D_4_32





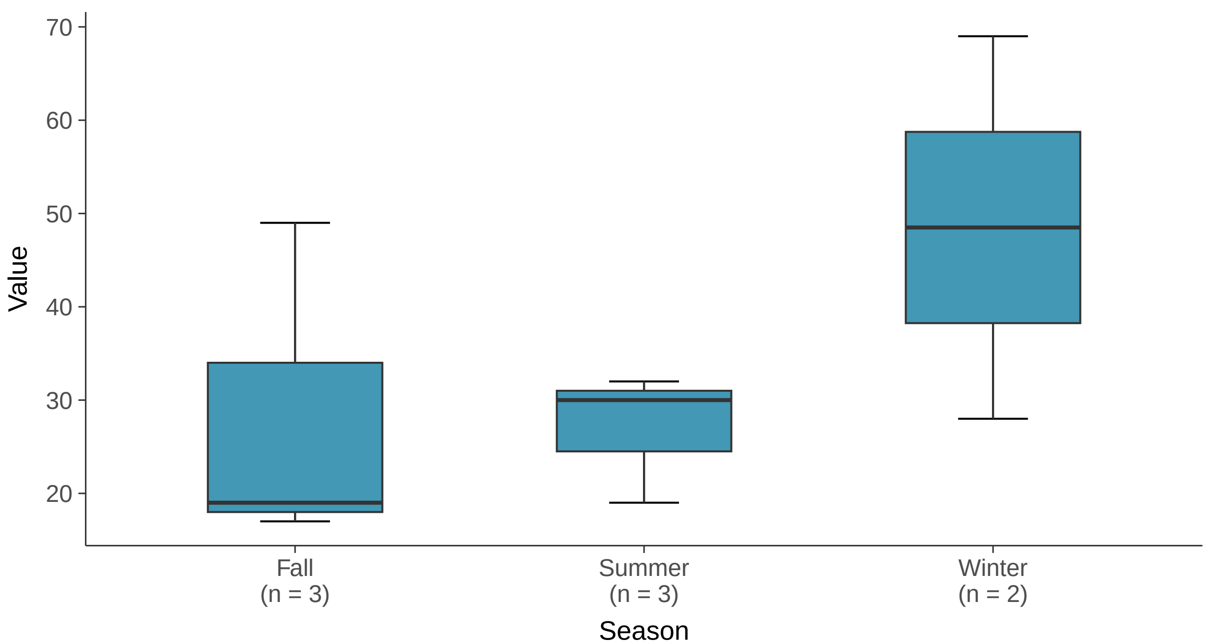
Boxplot

Hardness, MW-100D (mg/L)



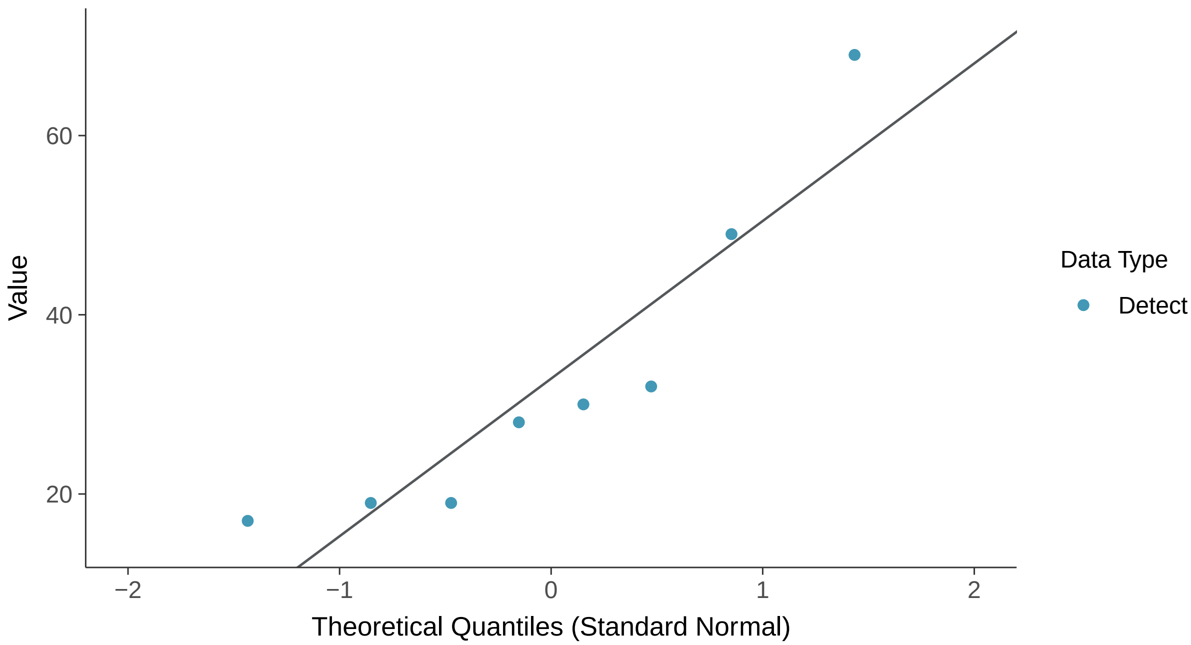
Boxplot by Season

Hardness, MW-100D (mg/L)



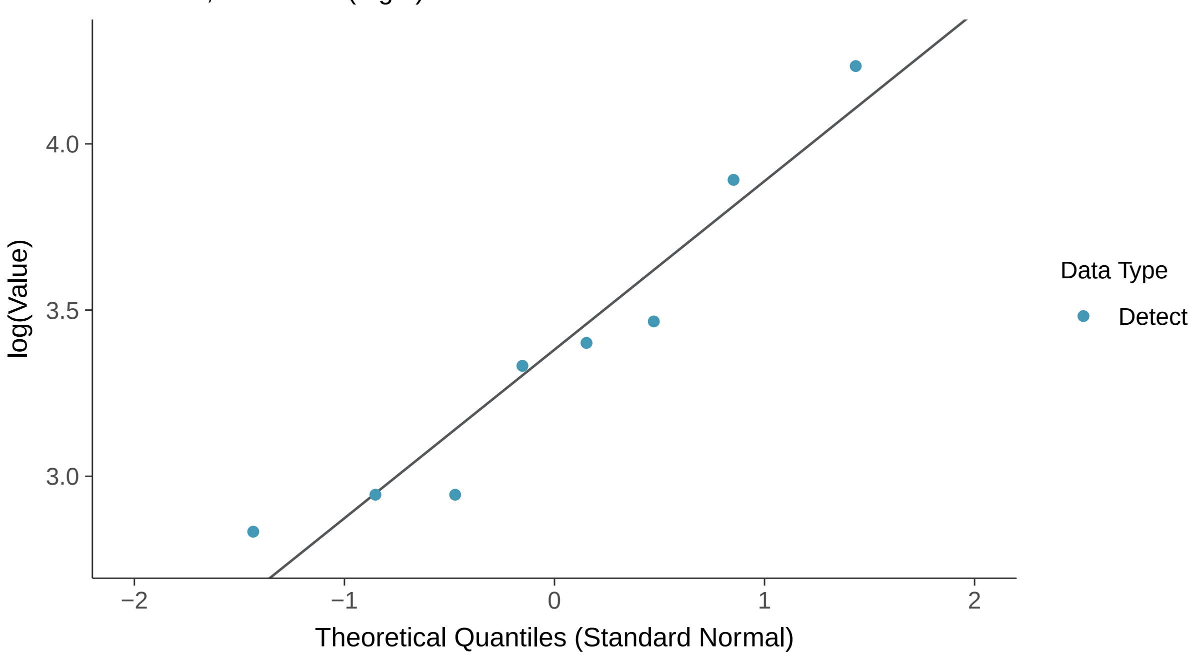
Normal Q-Q plot

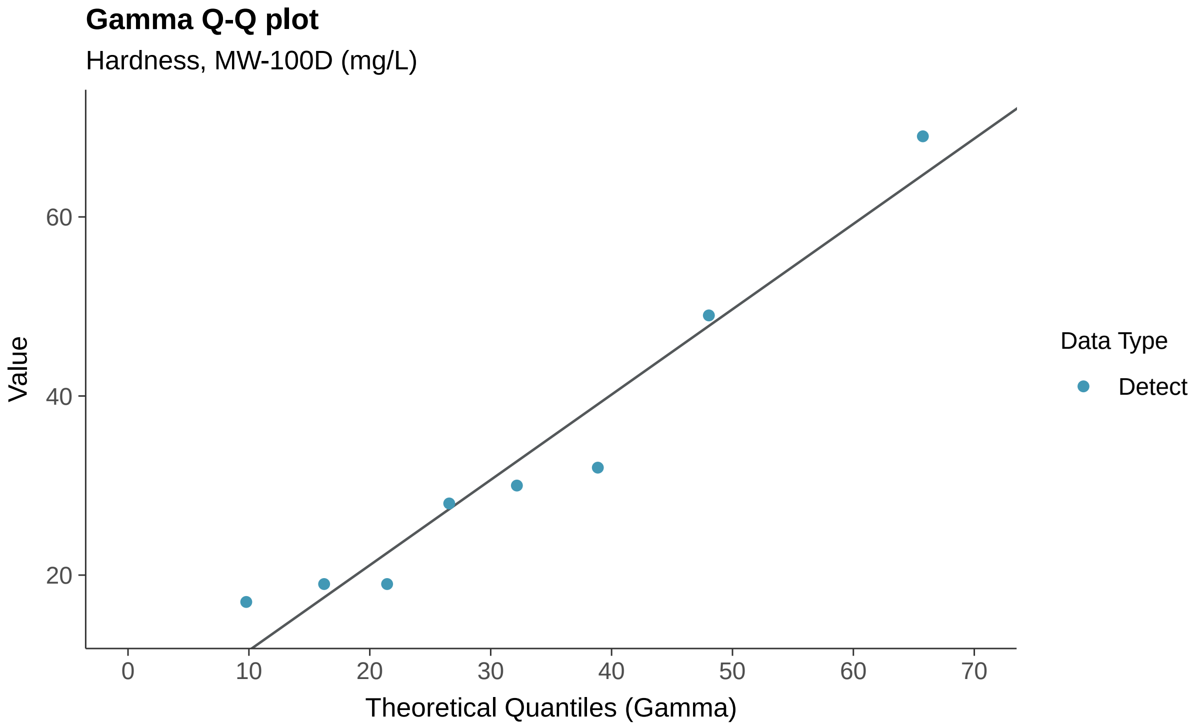
Hardness, MW-100D (mg/L)

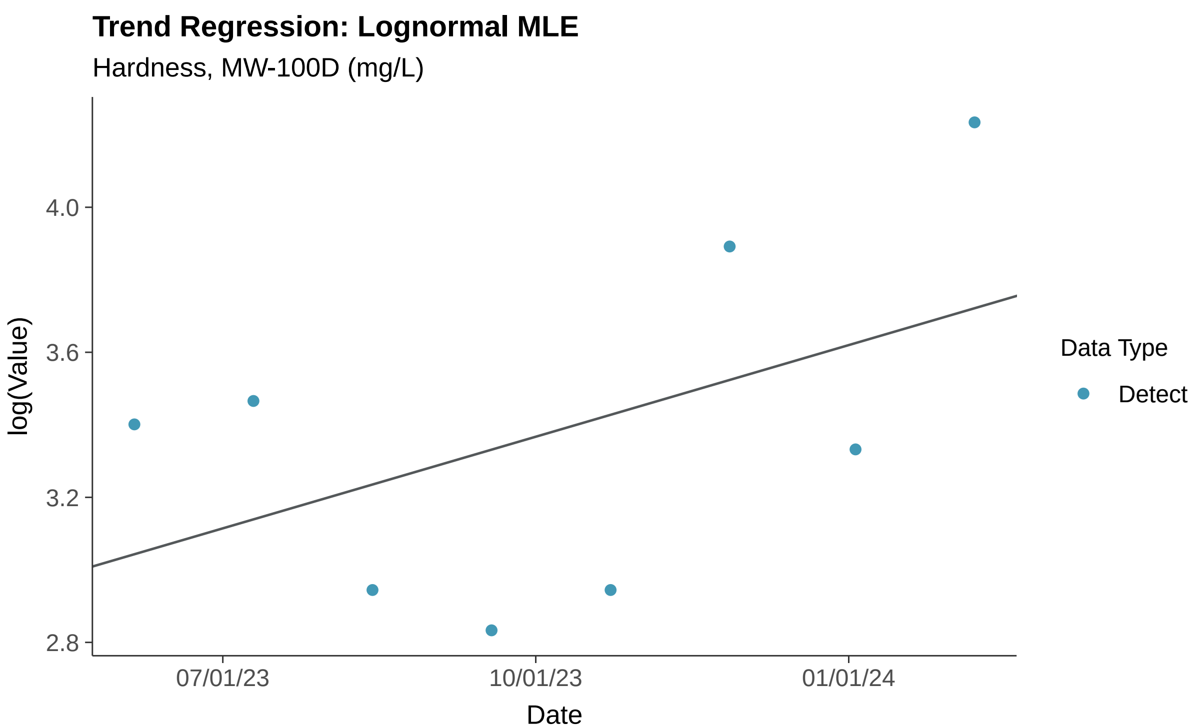


Lognormal Q-Q plot

Hardness, MW-100D (mg/L)

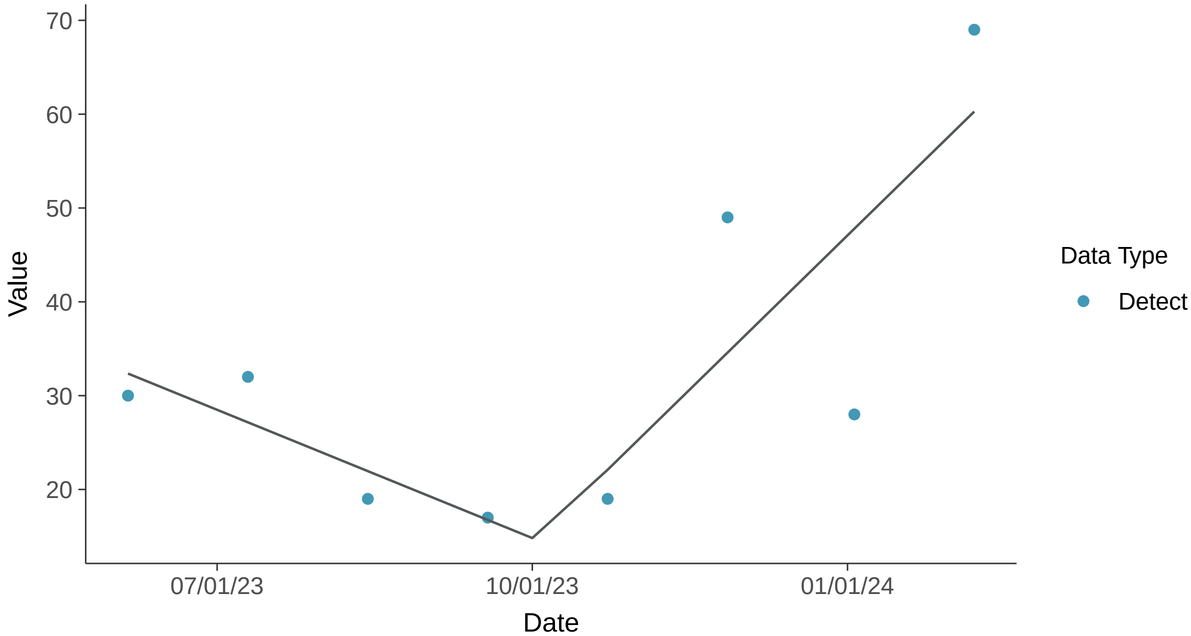



Gamma Q-Q plot
Hardness, MW-100D (mg/L)
Value
60
40
20
0
10
20
30
40
50
60
70
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Hardness, MW-100D (mg/L)
log(Value)
4.0
3.6
3.2
2.8
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

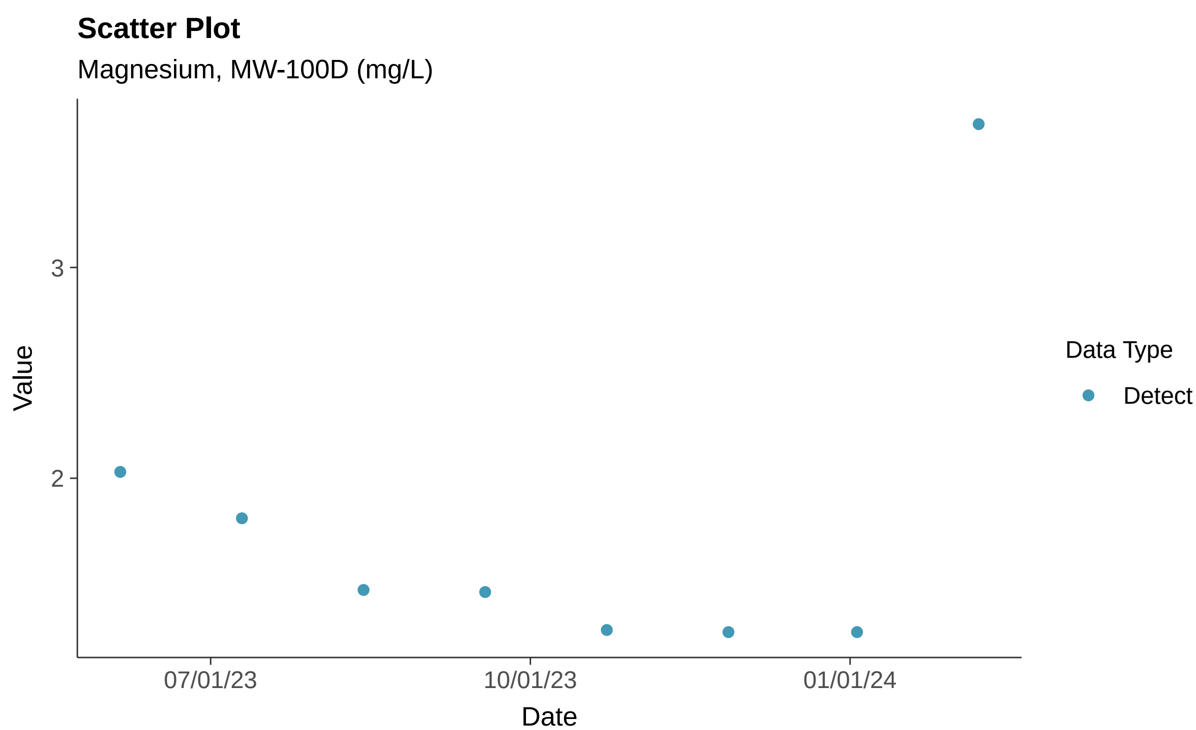
Trend Regression: Piecewise Linear-Linear

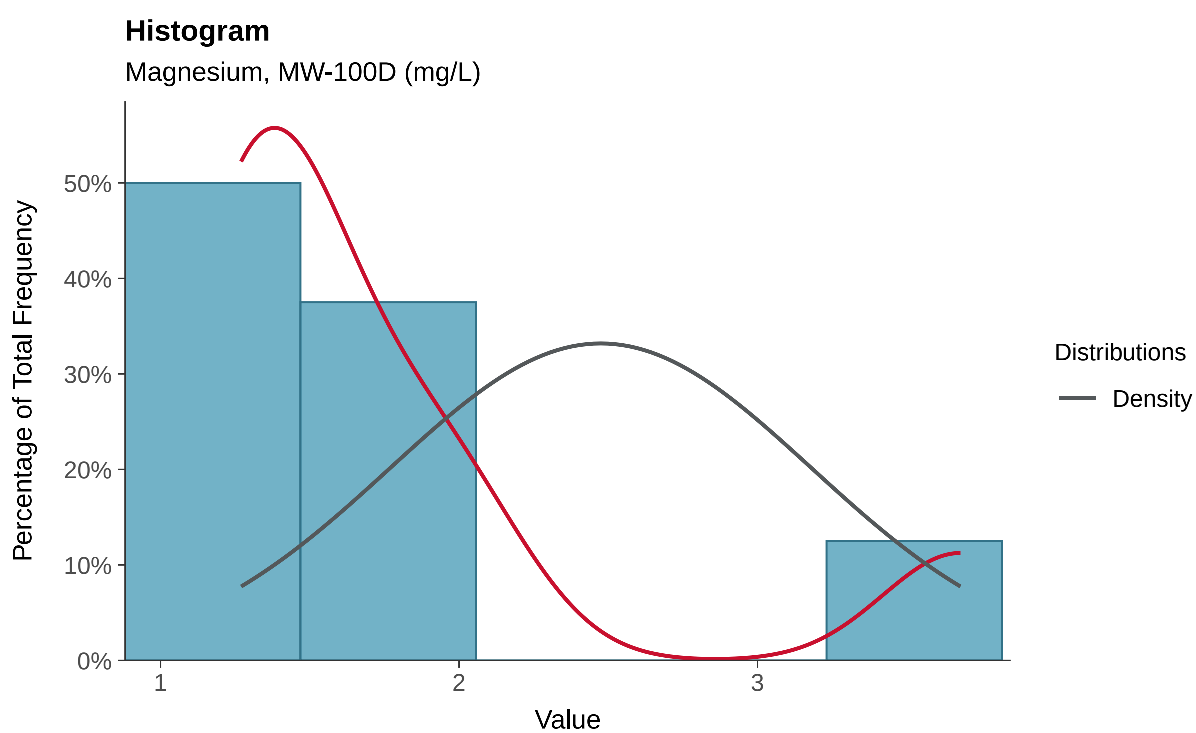
Hardness, MW-100D (mg/L)



Other: Magnesium, MW-100D

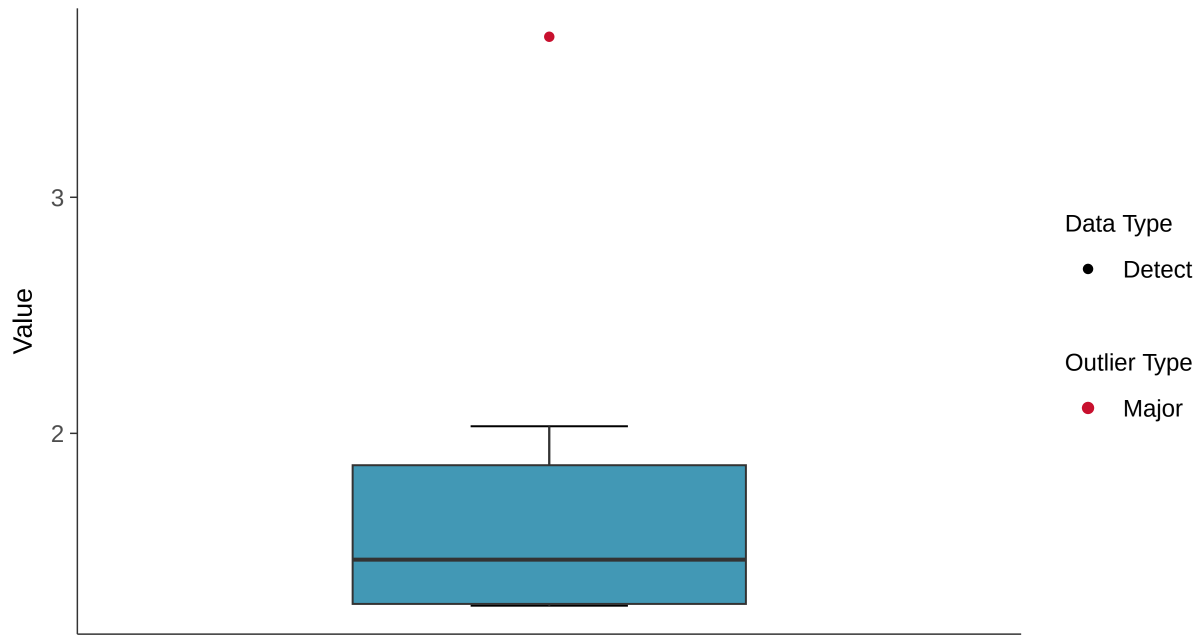
ID: 100D_4_33





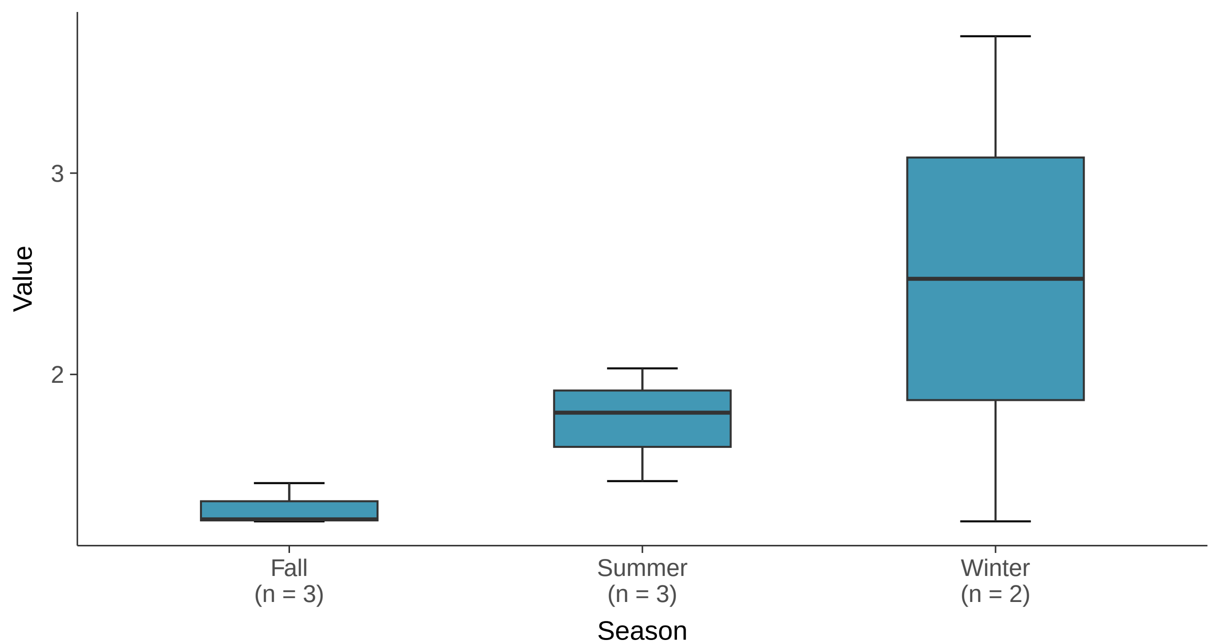
Boxplot

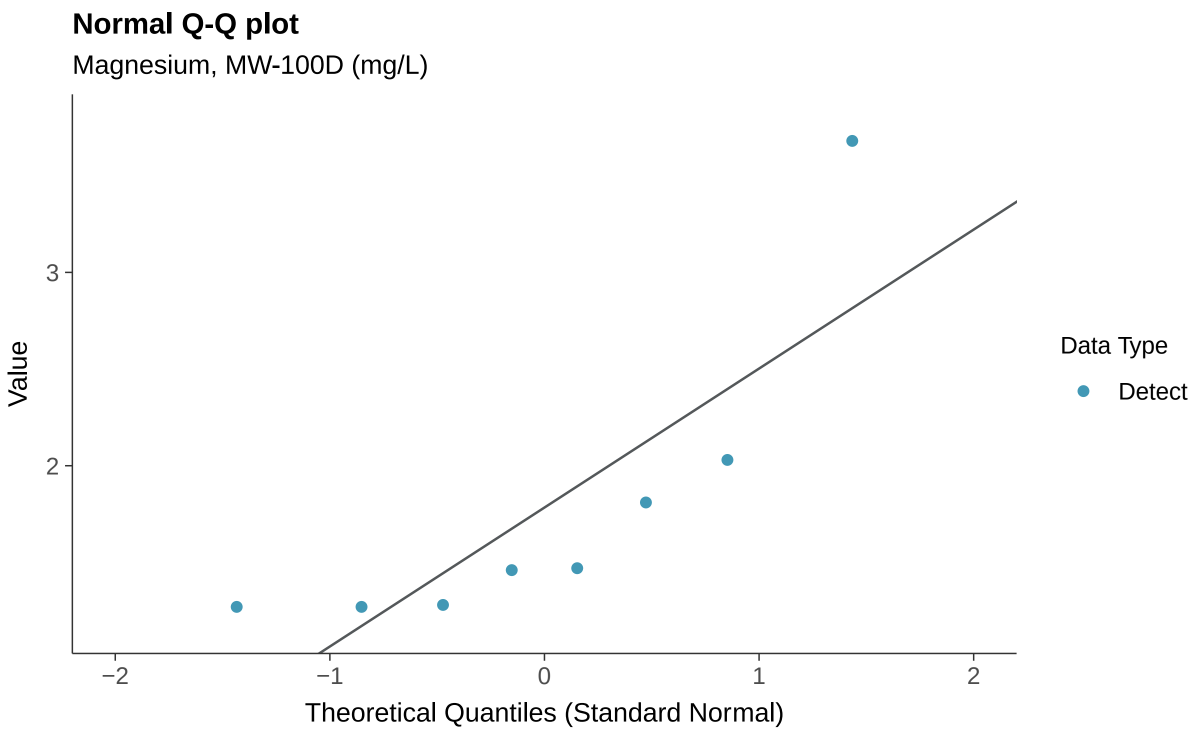
Magnesium, MW-100D (mg/L)

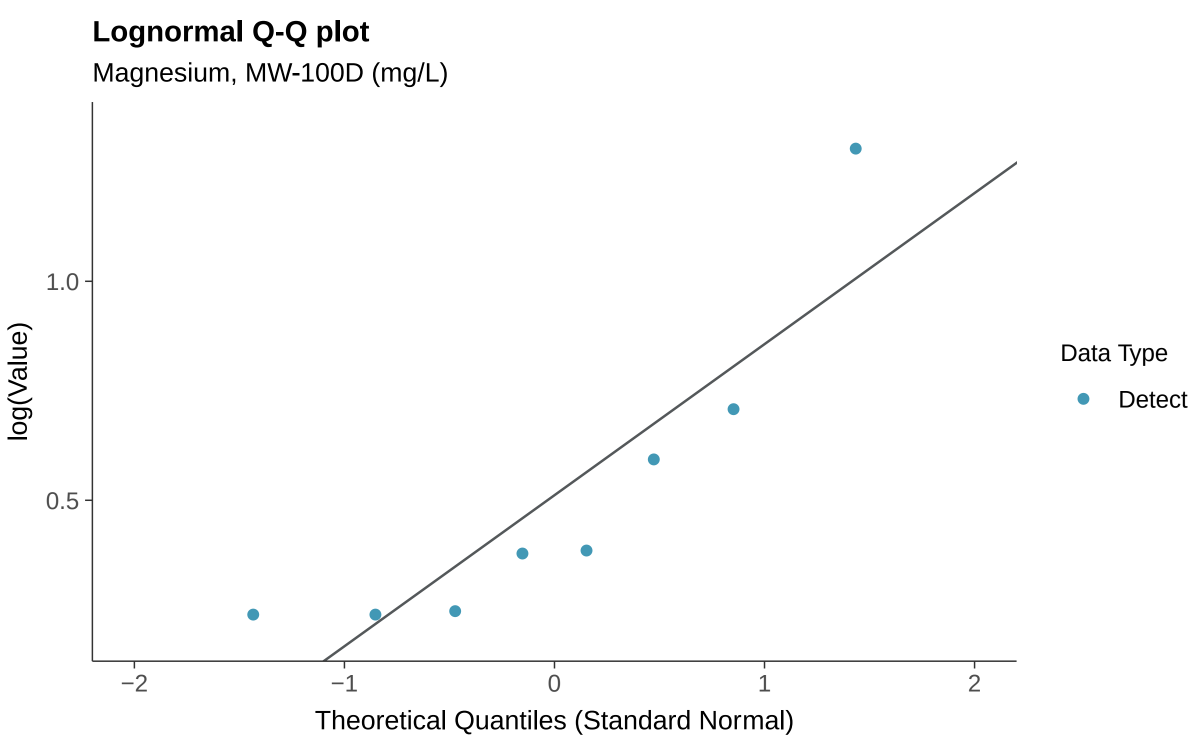


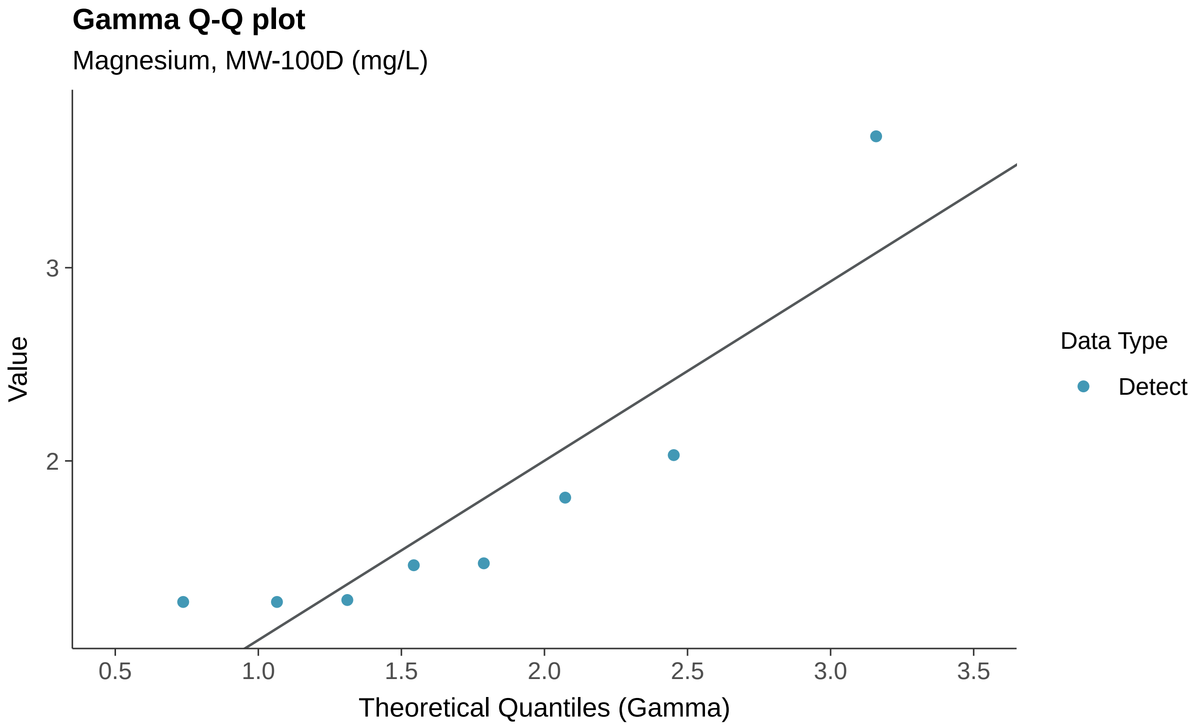
Boxplot by Season

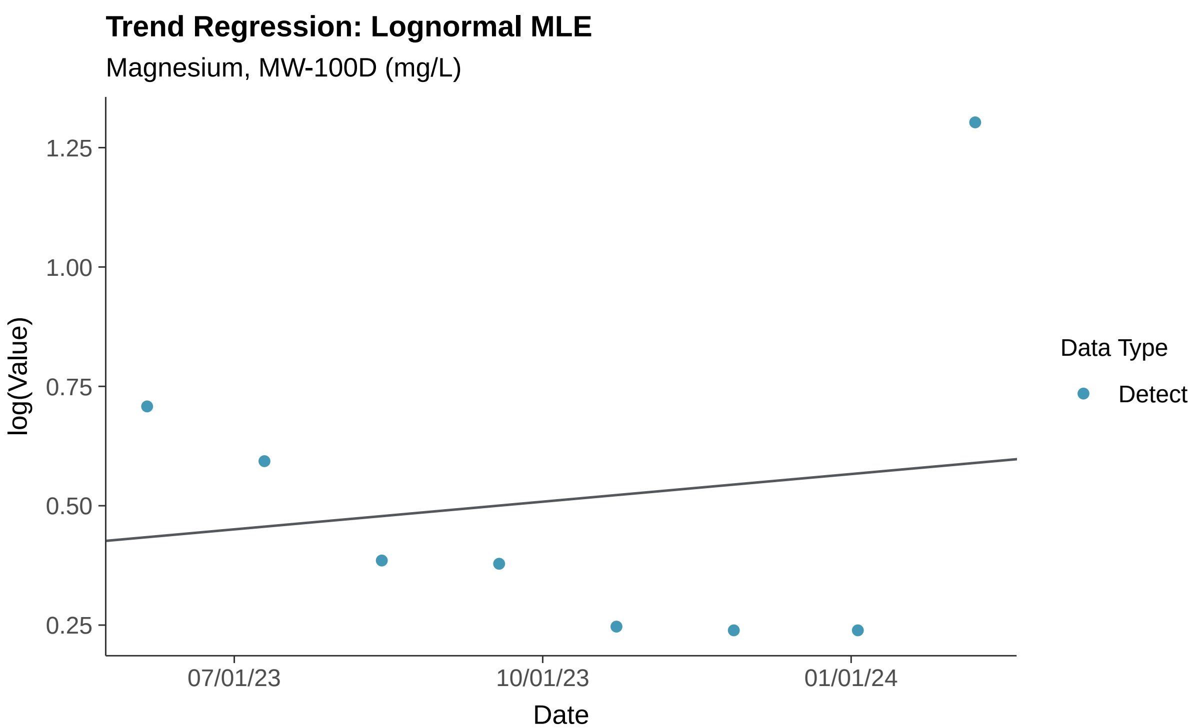
Magnesium, MW-100D (mg/L)

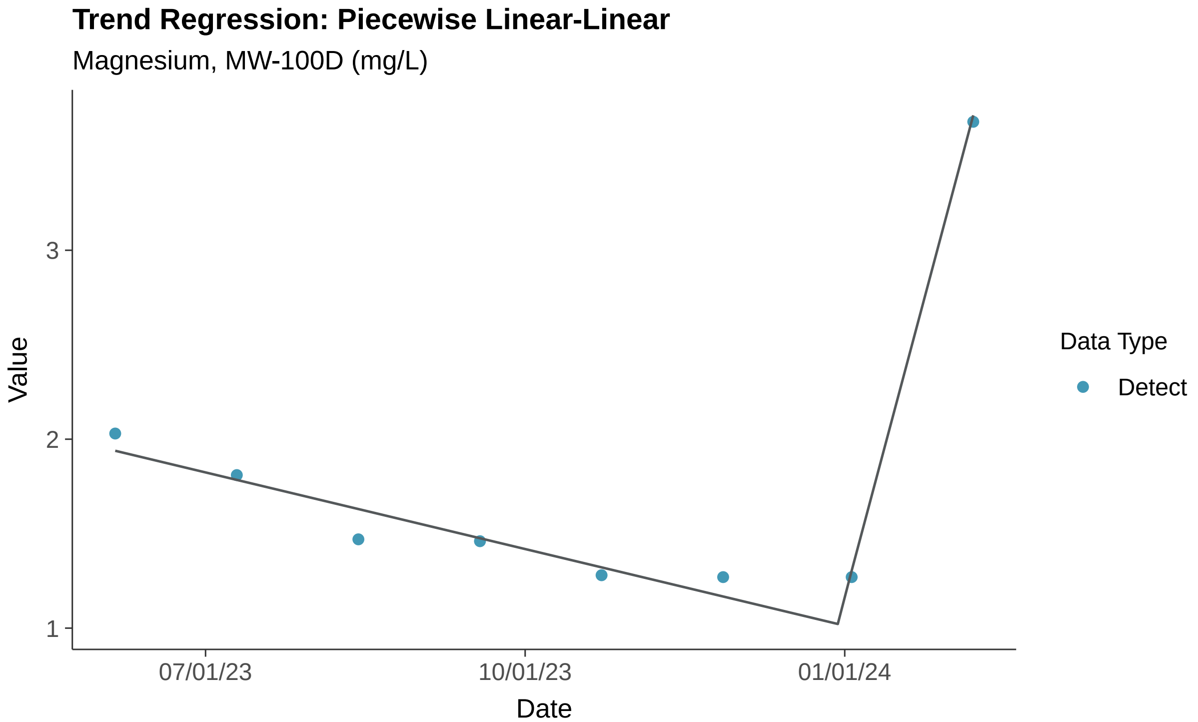


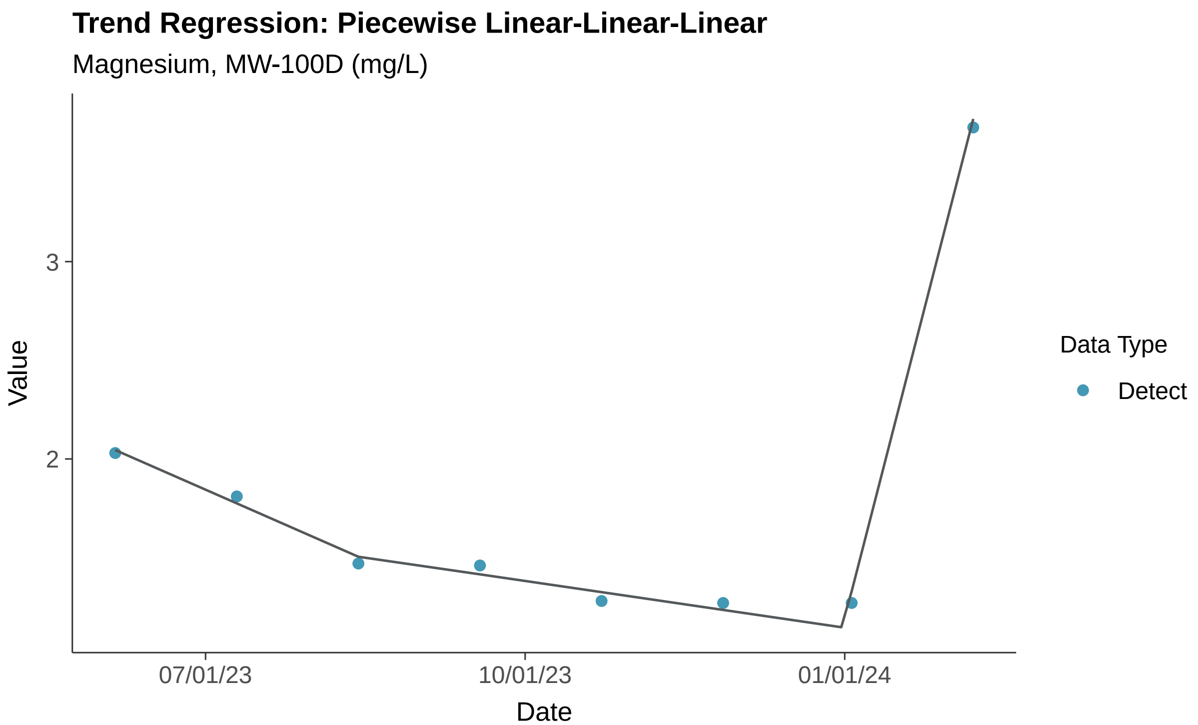

Normal Q-Q plot
Magnesium, MW-100D (mg/L)
Value
3
2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Magnesium, MW-100D (mg/L)
log(Value)
1.0
0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Magnesium, MW-100D (mg/L)
Value
3
2
0.5
1.0
1.5
2.0
2.5
3.0
3.5
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Magnesium, MW-100D (mg/L)
log(Value)
1.25
1.00
0.75
0.50
0.25
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Magnesium, MW-100D (mg/L)
Value
3
2
1
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

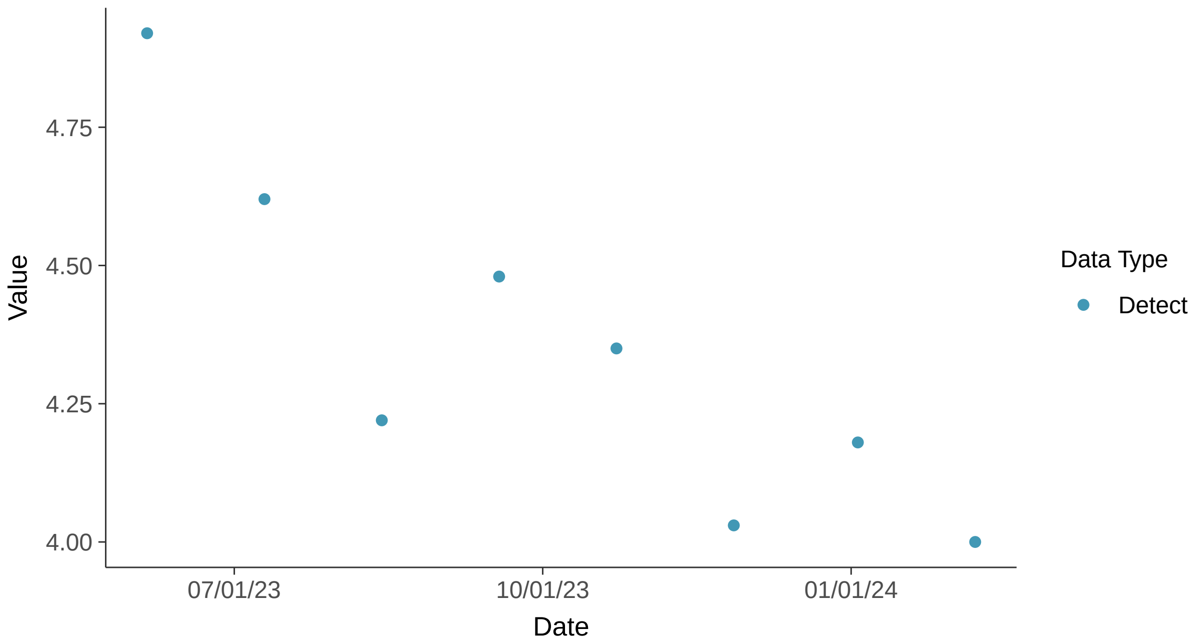

Trend Regression: Piecewise Linear-Linear-Linear
Magnesium, MW-100D (mg/L)
Value
3
2
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Other: Potassium, MW-100D

ID: 100D_4_34

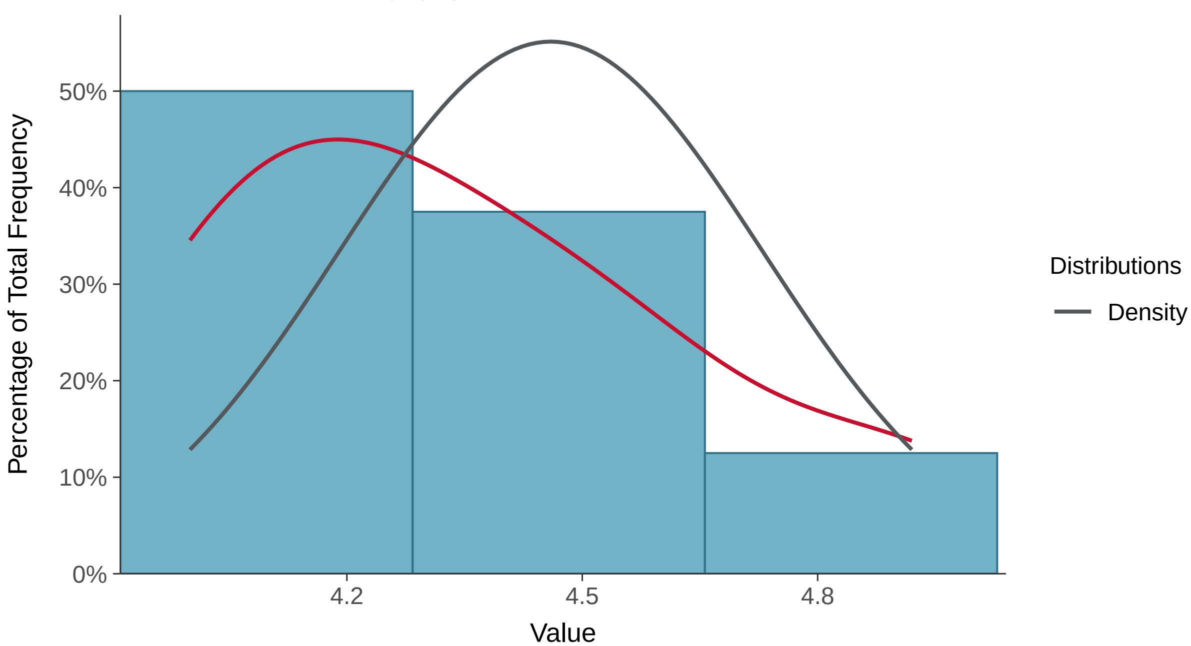
Scatter Plot

Potassium, MW-100D (mg/L)



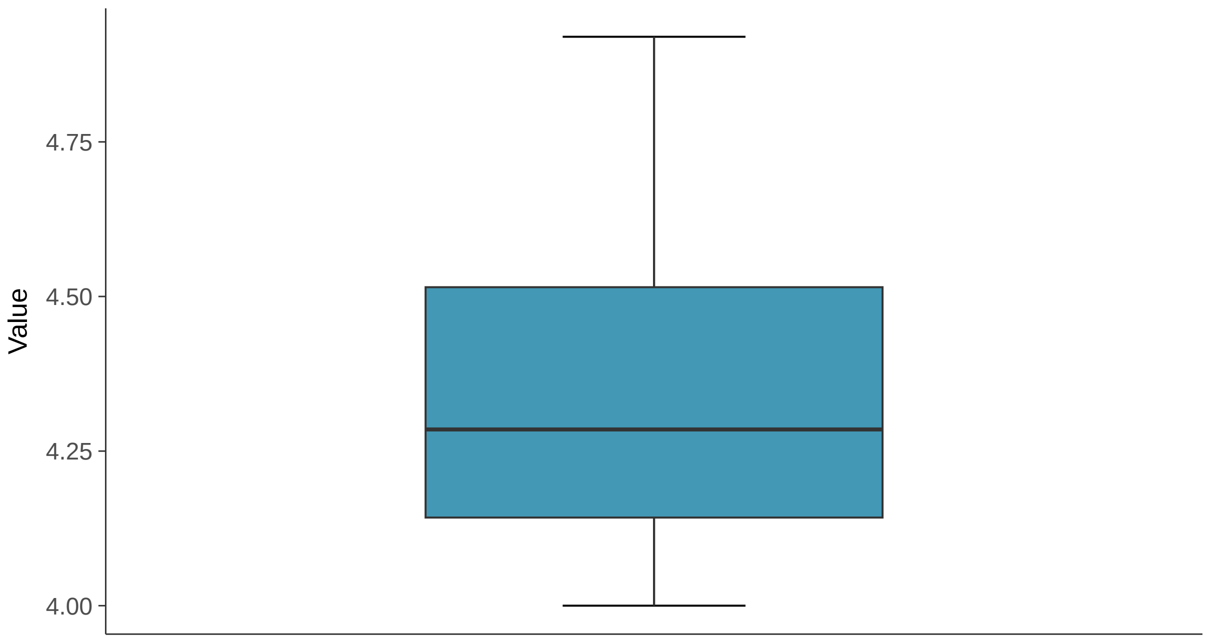
Histogram

Potassium, MW-100D (mg/L)



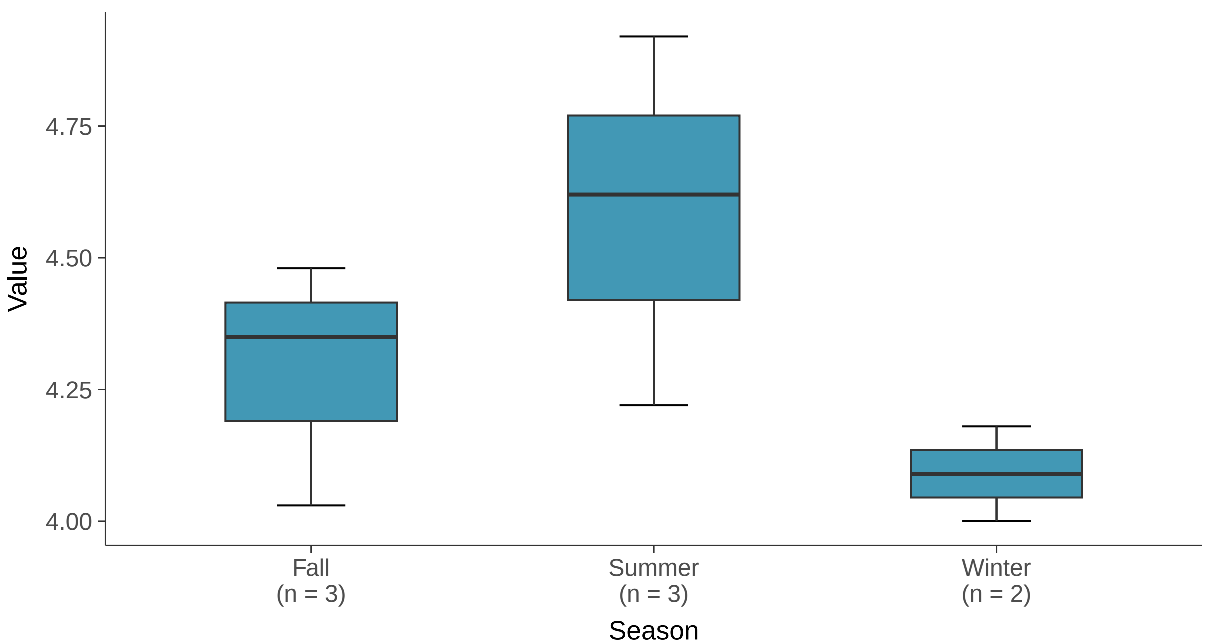
Boxplot

Potassium, MW-100D (mg/L)



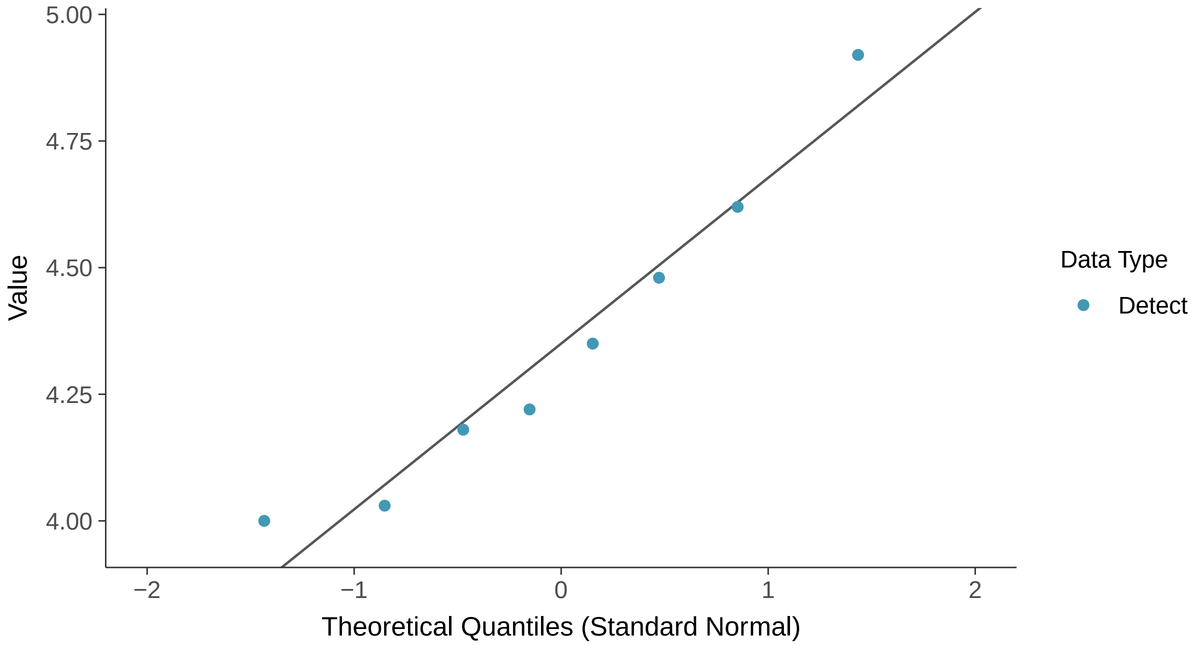
Boxplot by Season

Potassium, MW-100D (mg/L)



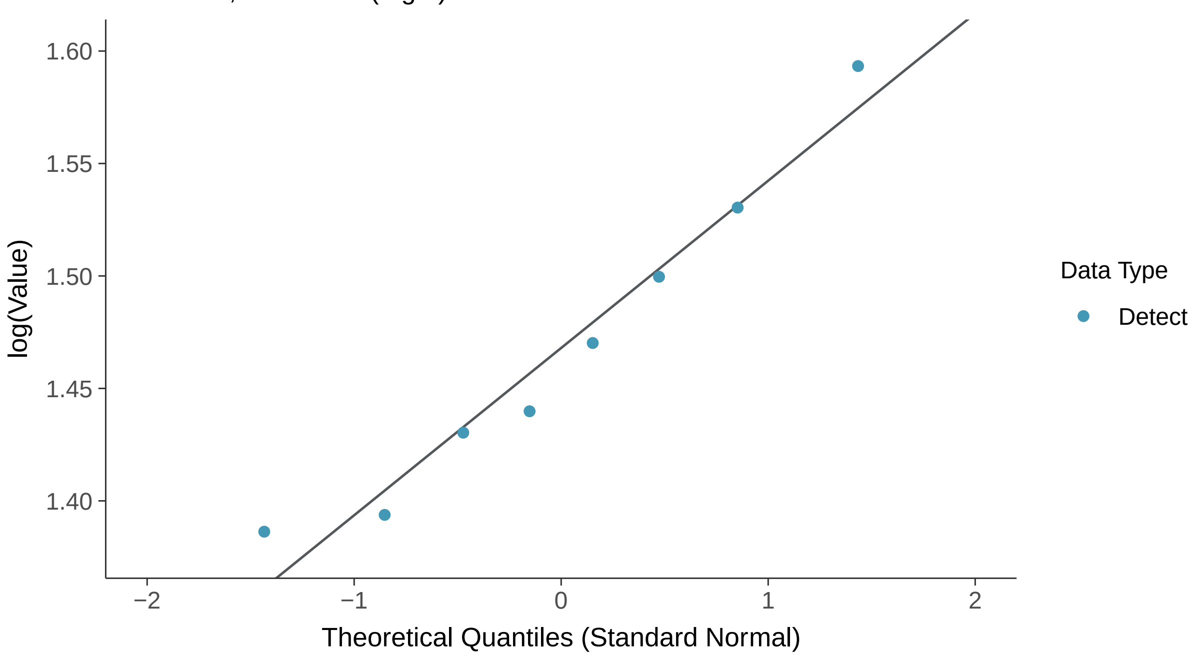
Normal Q-Q plot

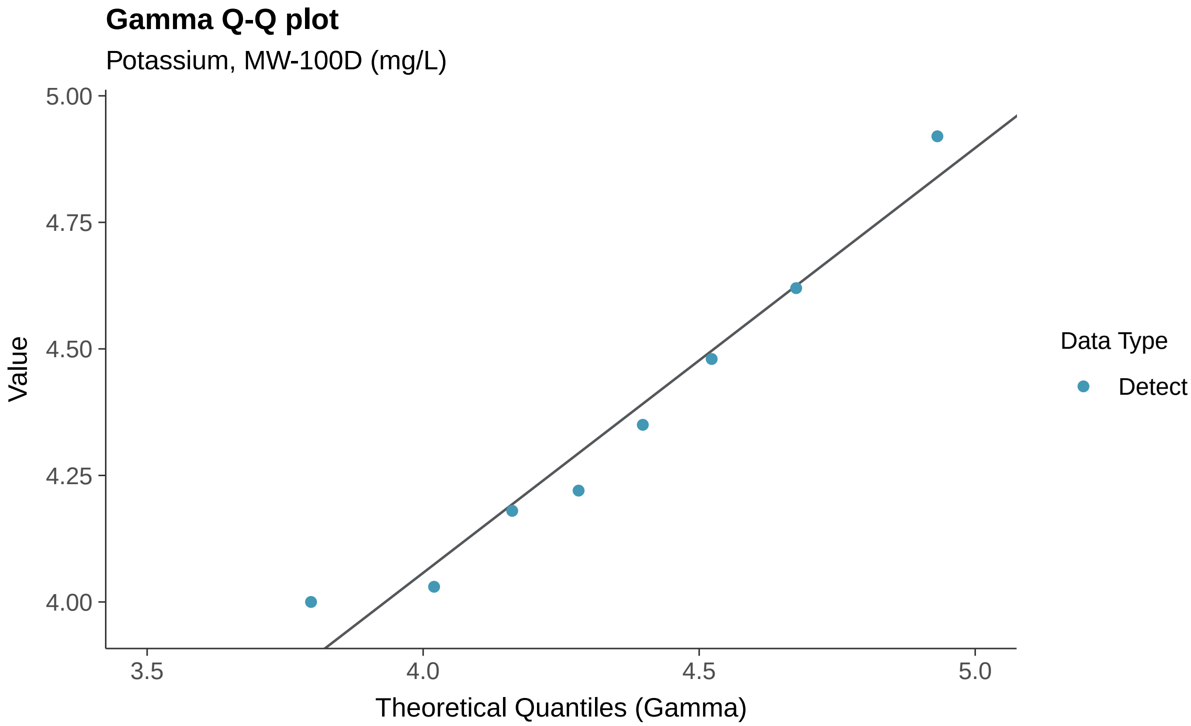
Potassium, MW-100D (mg/L)

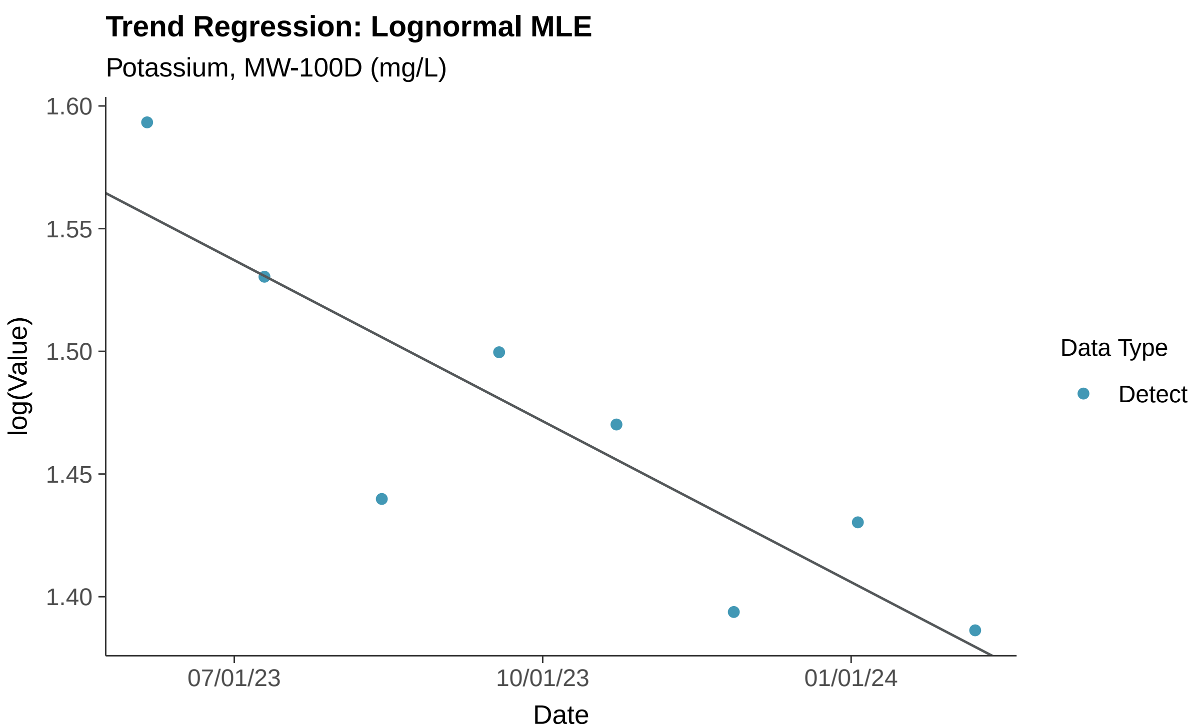


Lognormal Q-Q plot

Potassium, MW-100D (mg/L)

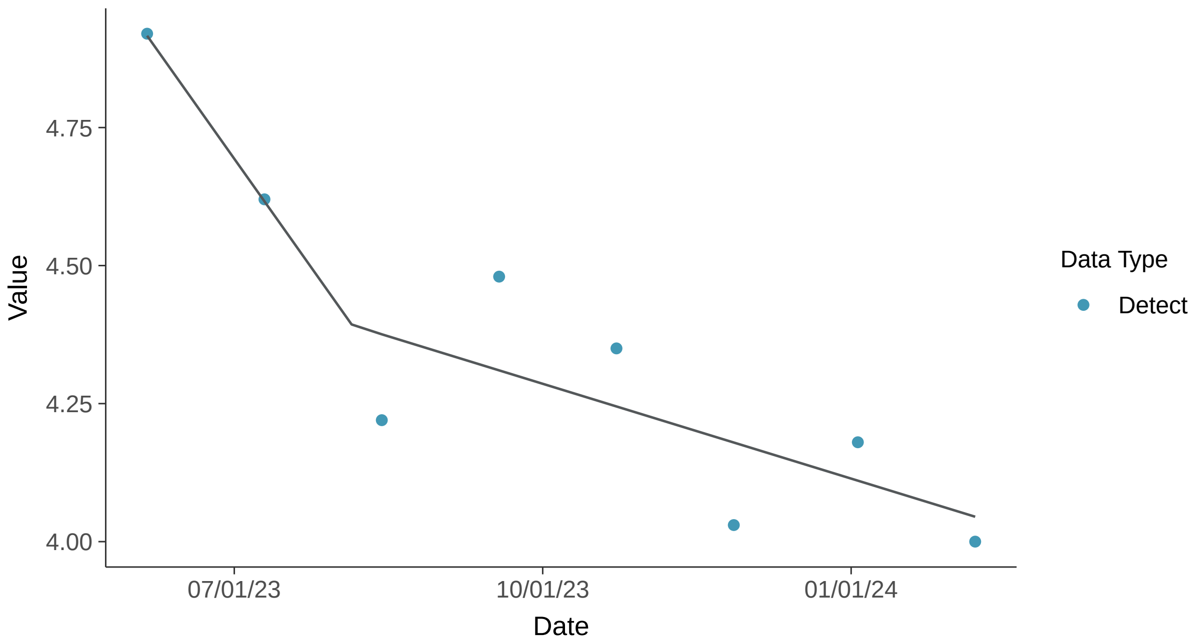



Gamma Q-Q plot
Potassium, MW-100D (mg/L)
Value
5.00
4.75
4.50
4.25
4.00
3.5
4.0
4.5
5.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Potassium, MW-100D (mg/L)
log(Value)
1.60
1.55
1.50
1.45
1.40
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Potassium, MW-100D (mg/L)

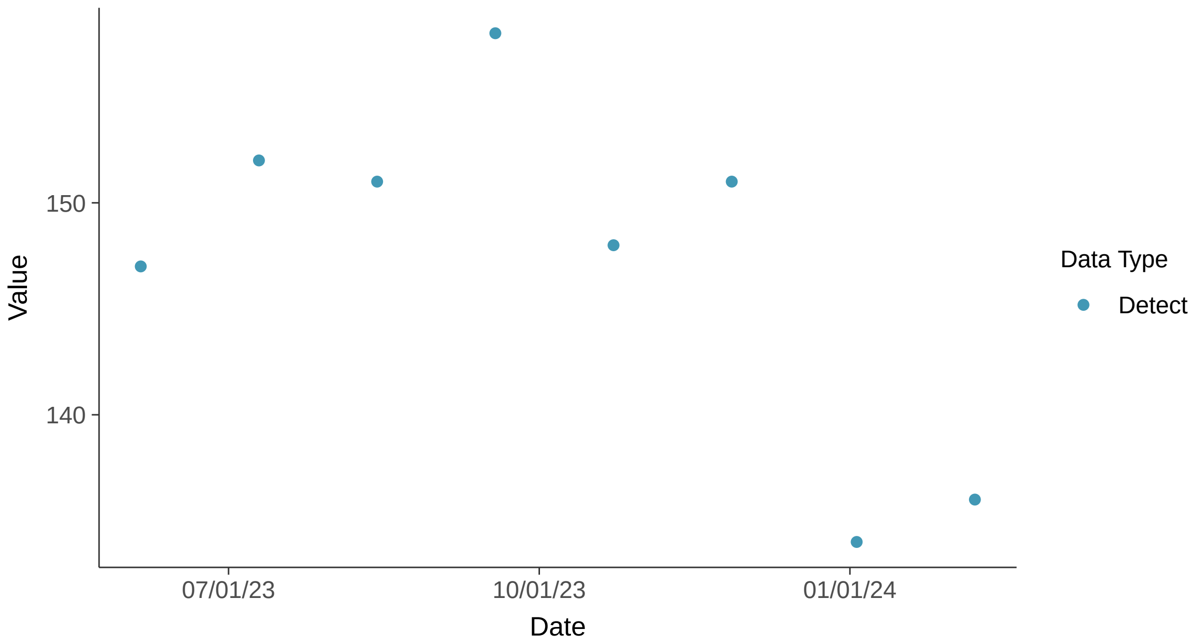


Other: Sodium, MW-100D

ID: 100D_4_35

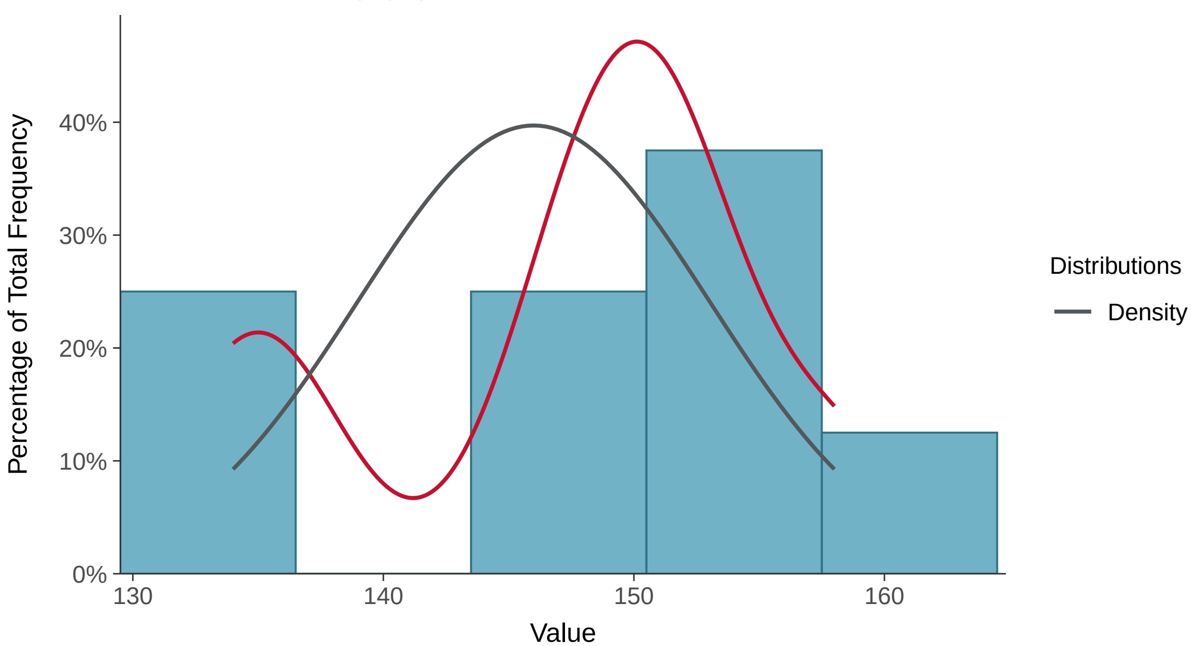
Scatter Plot

Sodium, MW-100D (mg/L)



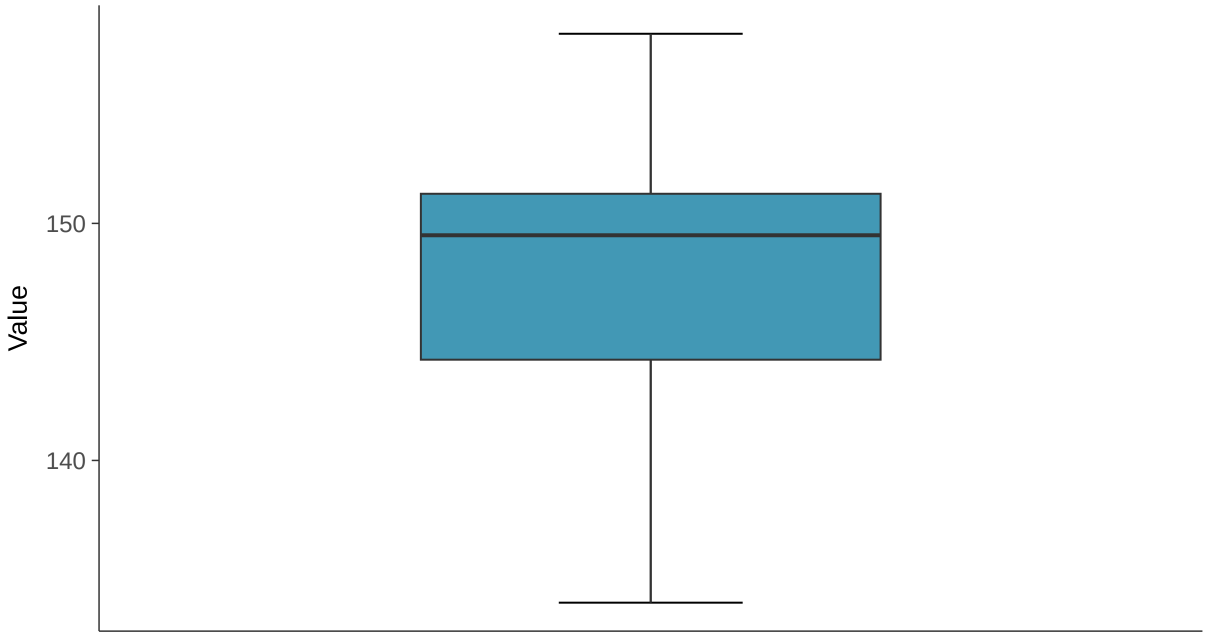
Histogram

Sodium, MW-100D (mg/L)



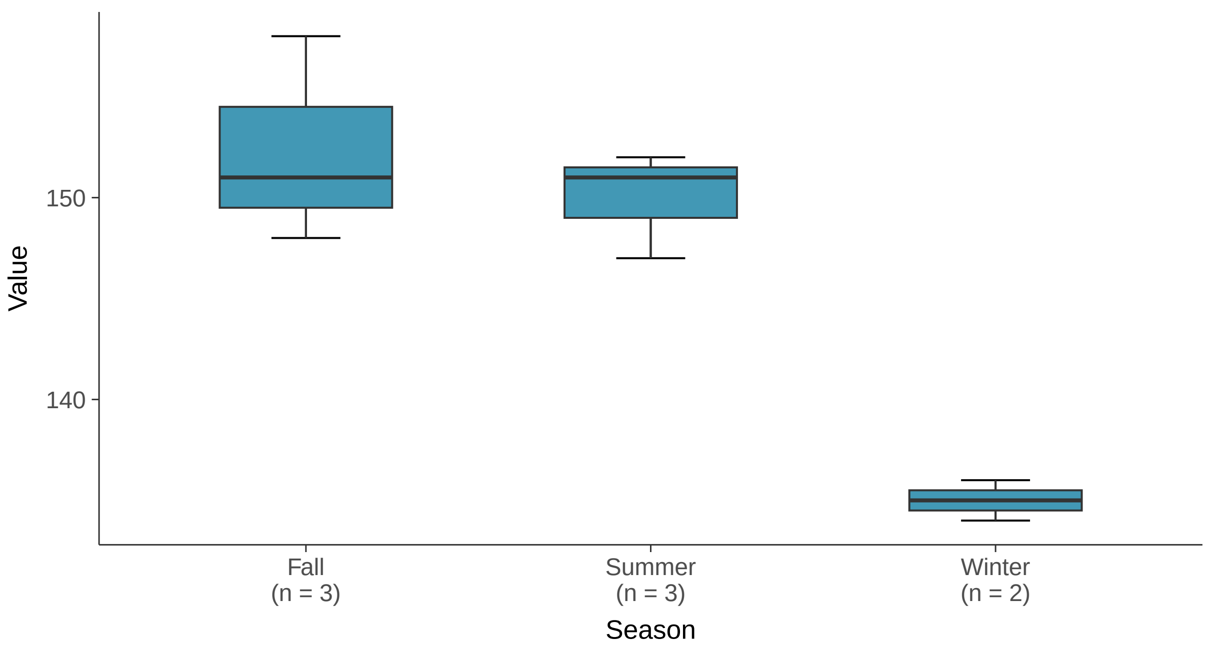
Boxplot

Sodium, MW-100D (mg/L)



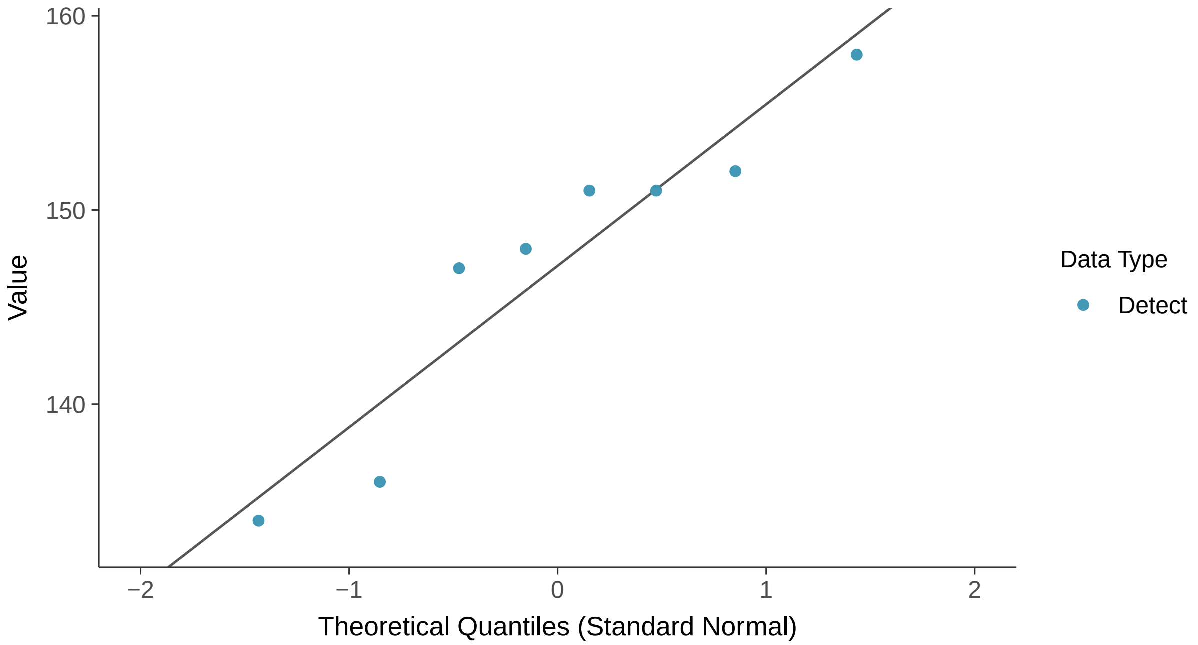
Boxplot by Season

Sodium, MW-100D (mg/L)



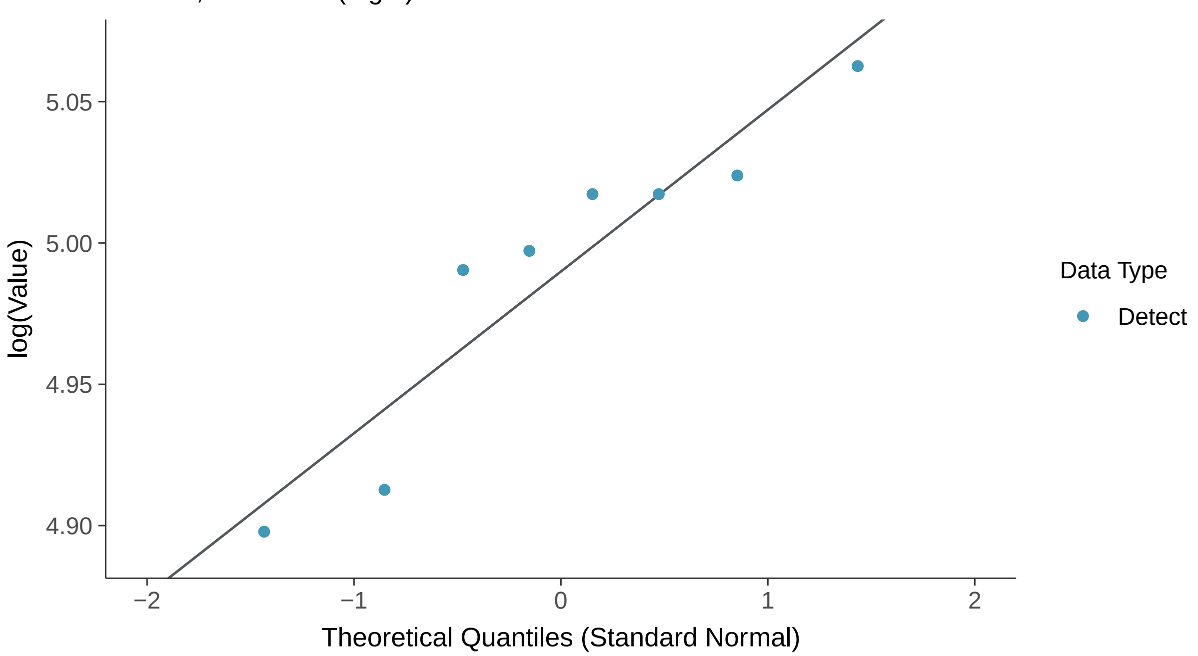
Normal Q-Q plot

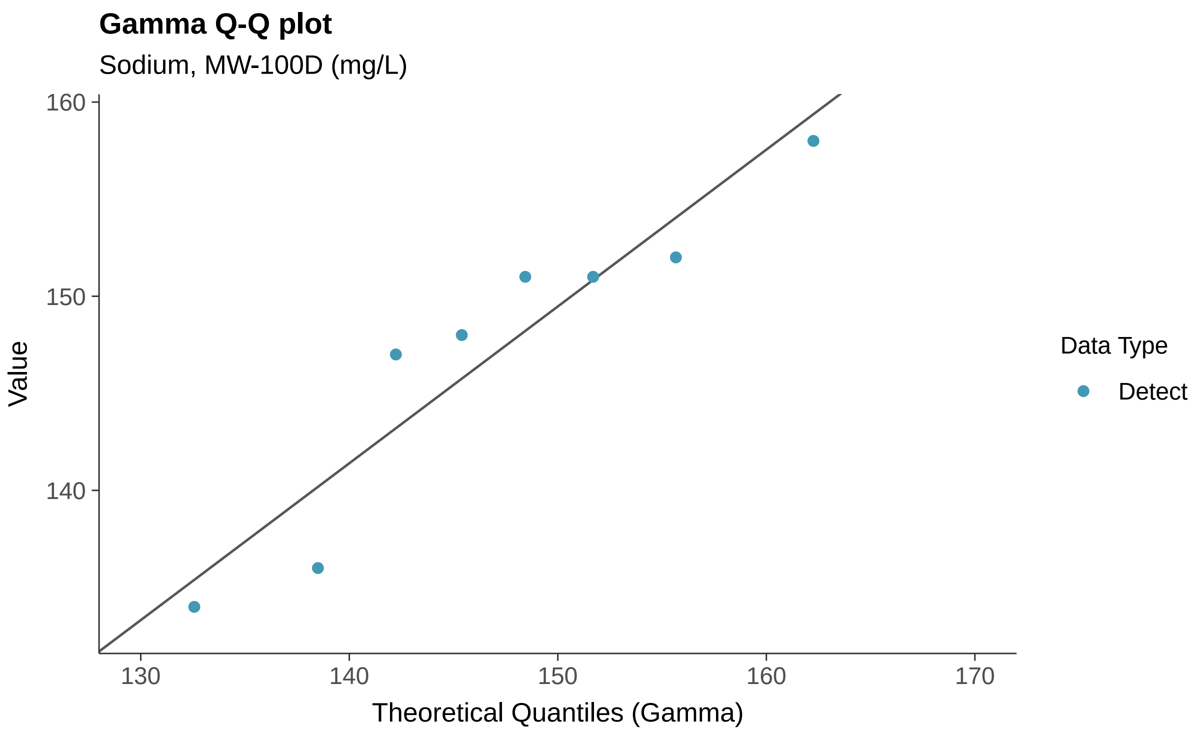
Sodium, MW-100D (mg/L)

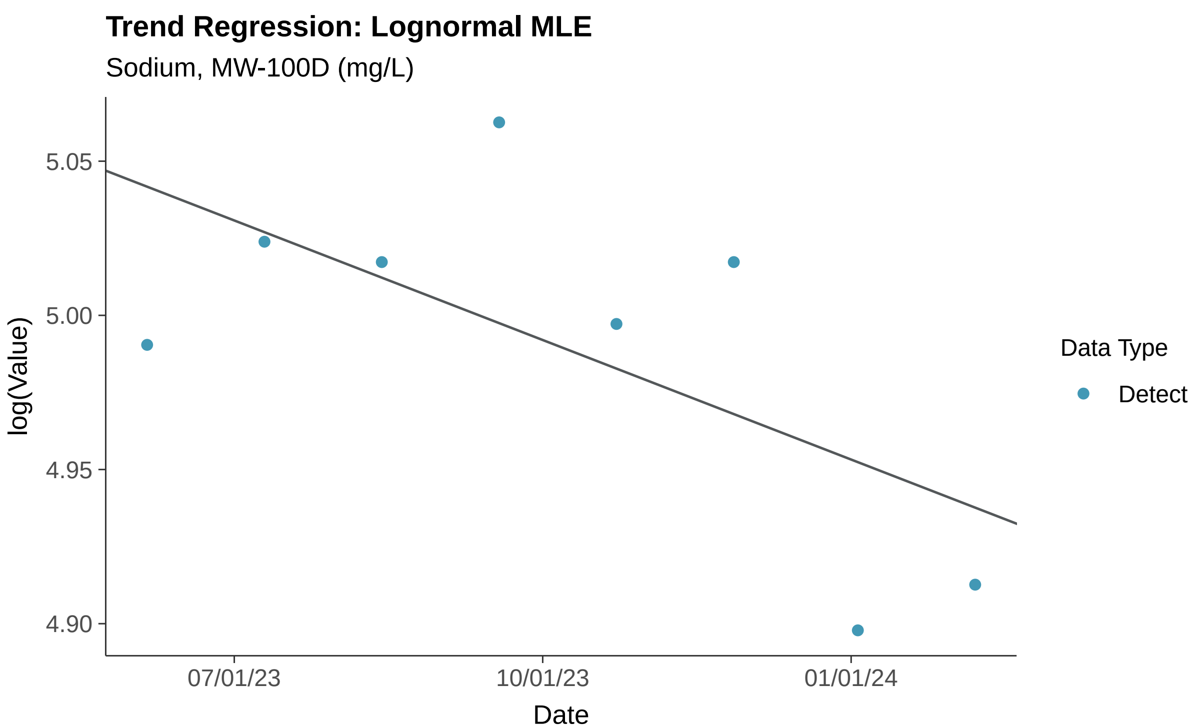


Lognormal Q-Q plot

Sodium, MW-100D (mg/L)

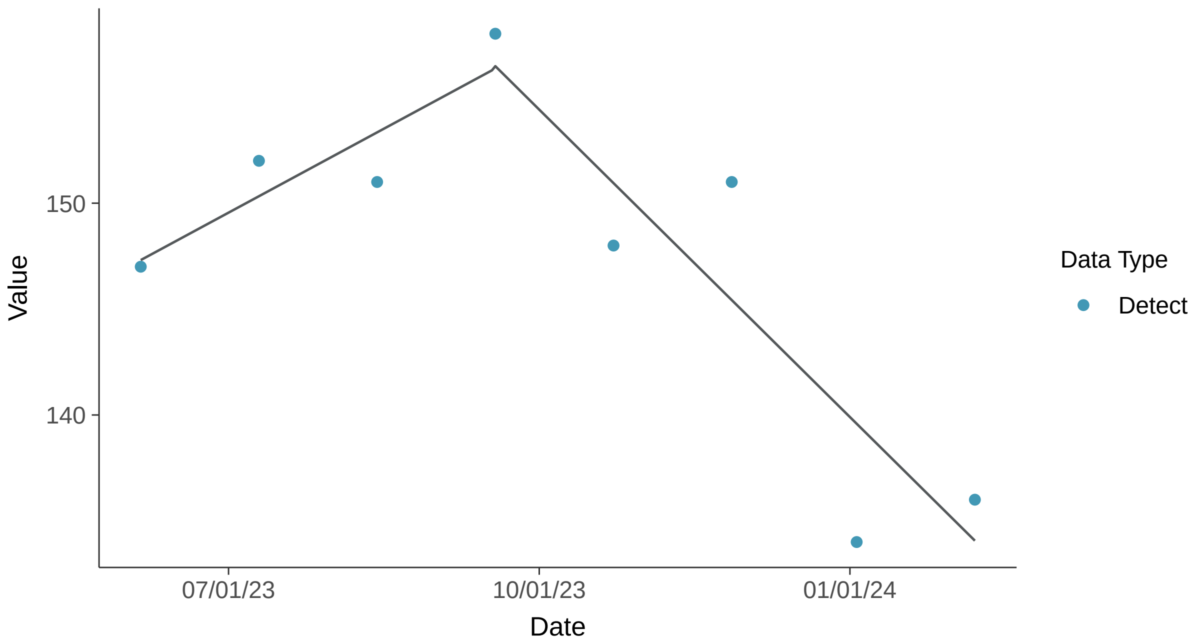



Gamma Q-Q plot
Sodium, MW-100D (mg/L)
Value
160
150
140
130
140
150
160
170
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Sodium, MW-100D (mg/L)
log(Value)
5.05
5.00
4.95
4.90
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

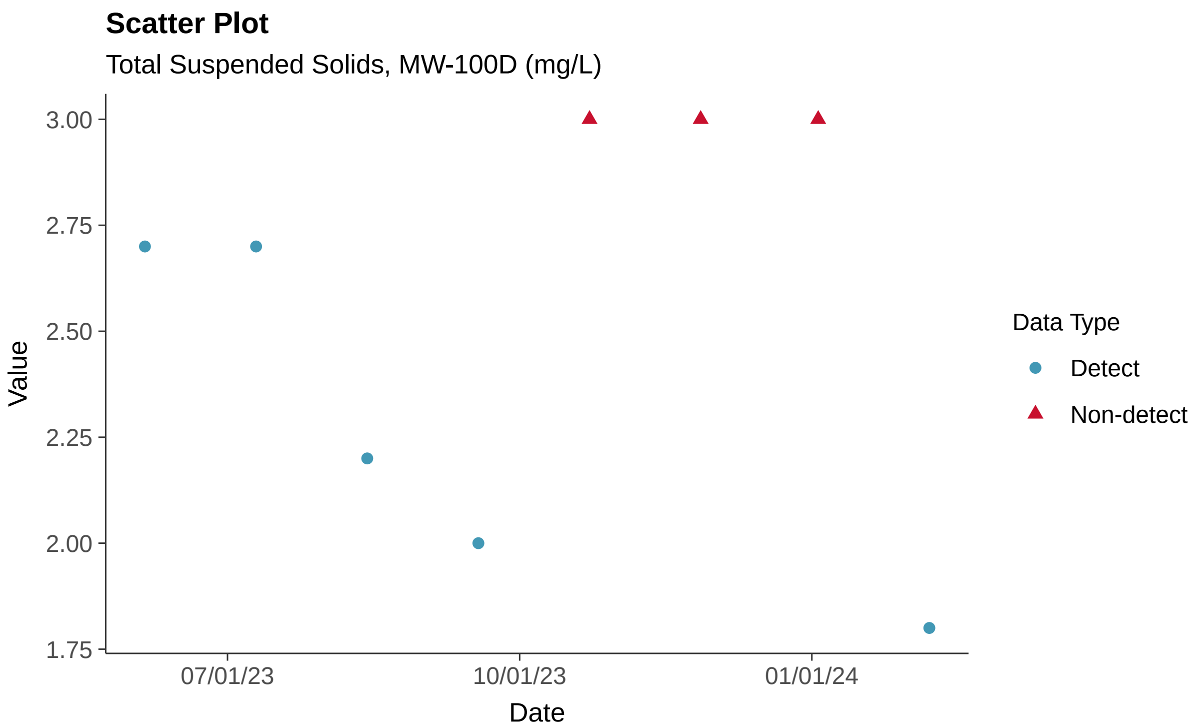
Trend Regression: Piecewise Linear-Linear

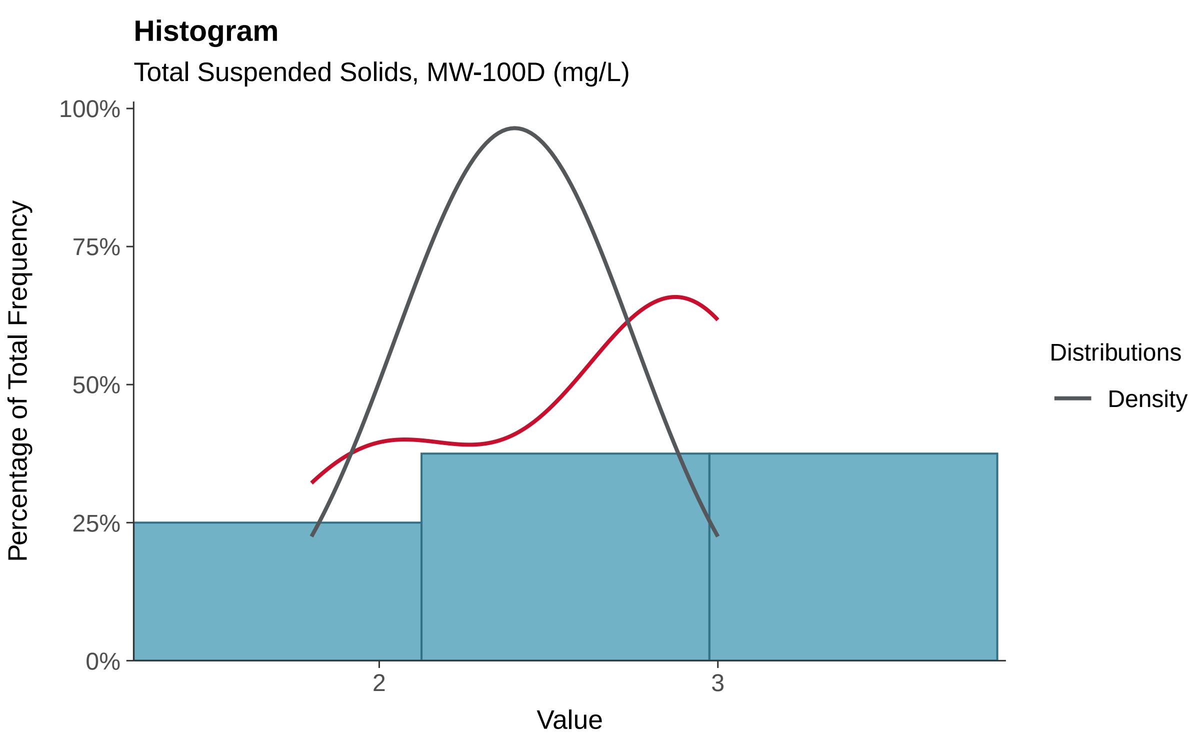
Sodium, MW-100D (mg/L)



Other: Total Suspended Solids, MW-100D

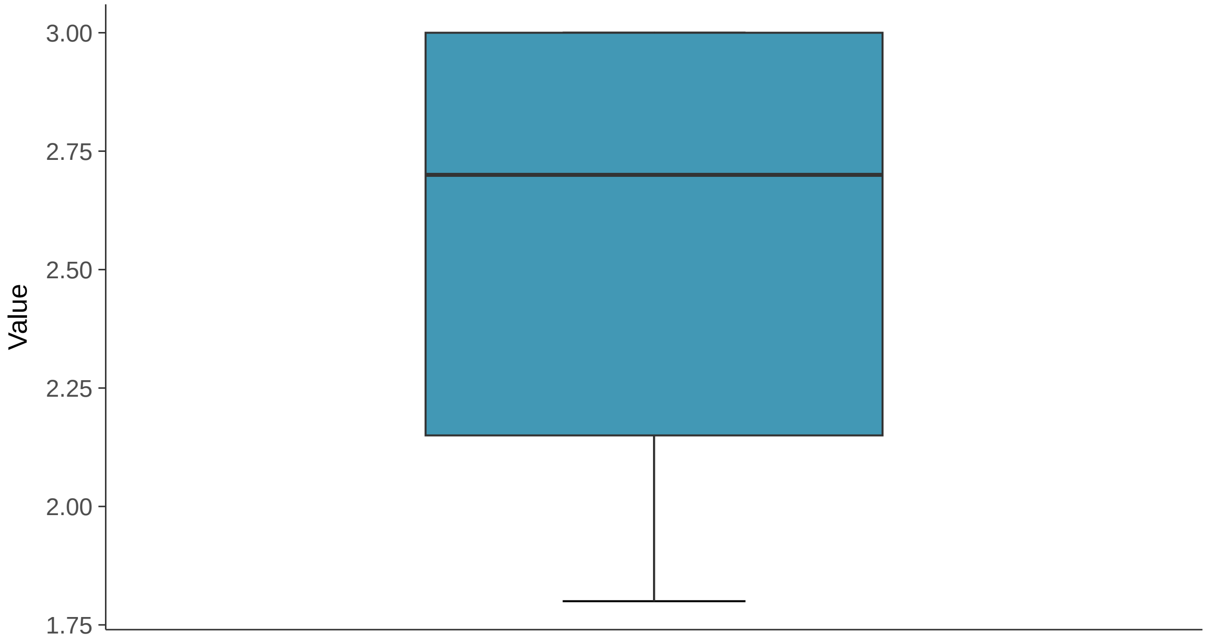
ID: 100D_4_36





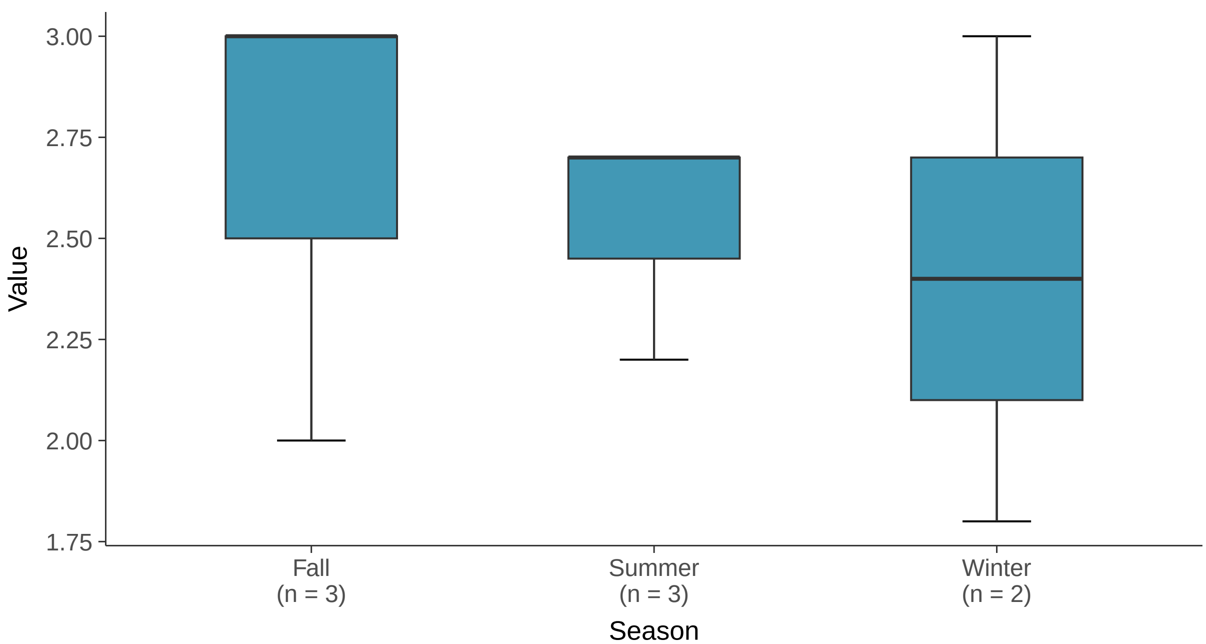
Boxplot

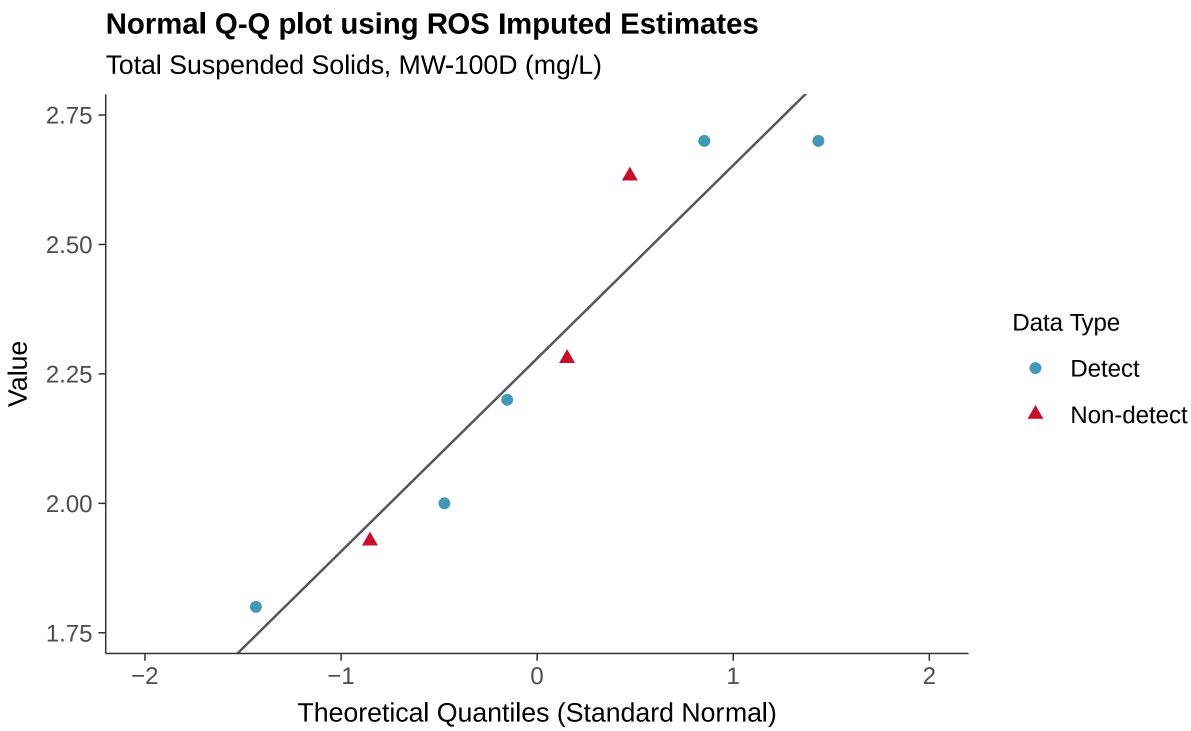
Total Suspended Solids, MW-100D (mg/L)

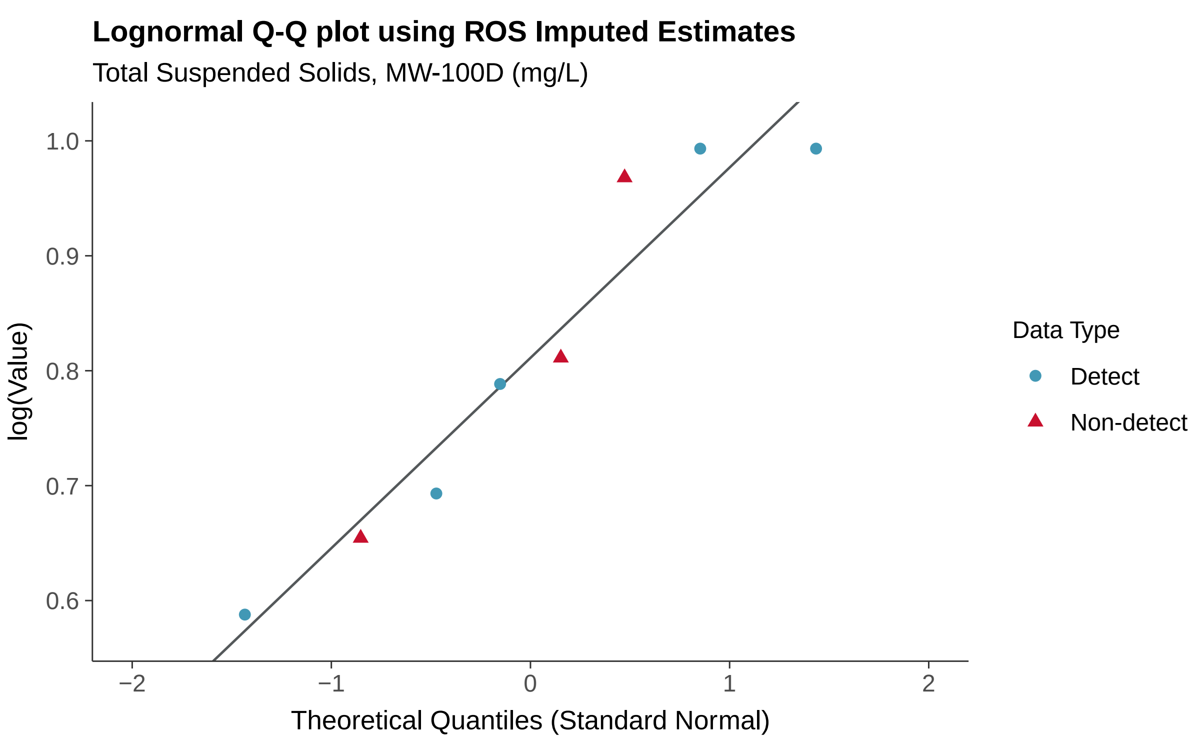


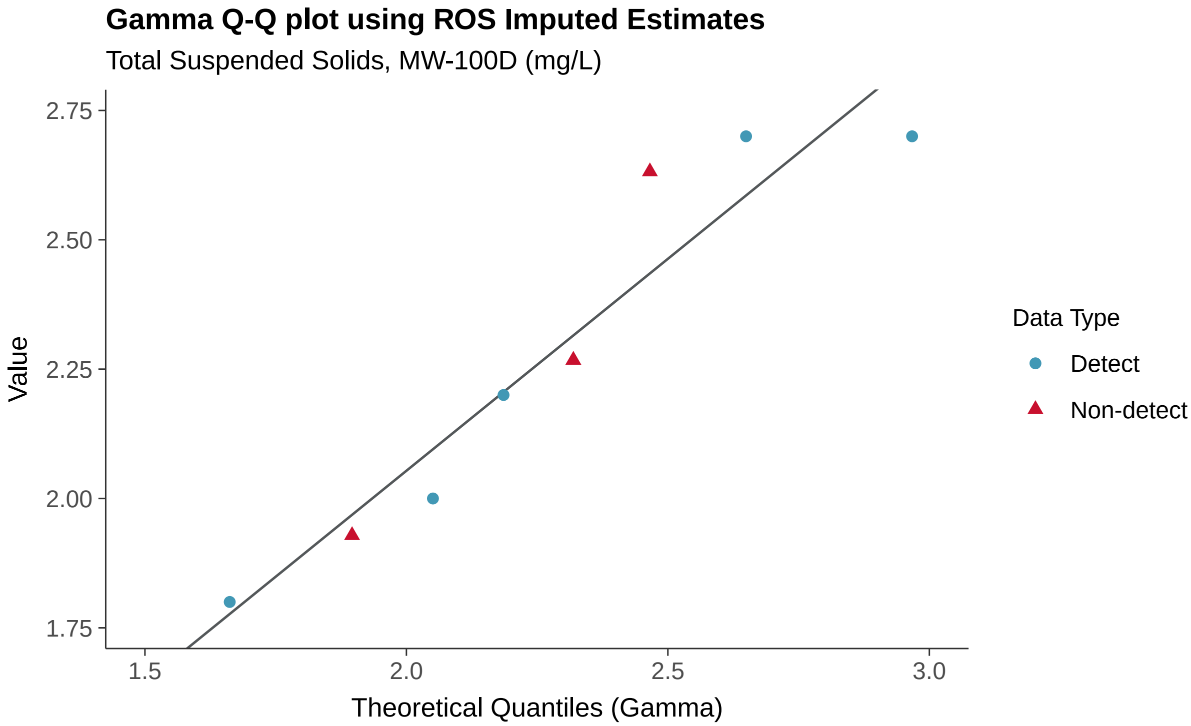
Boxplot by Season

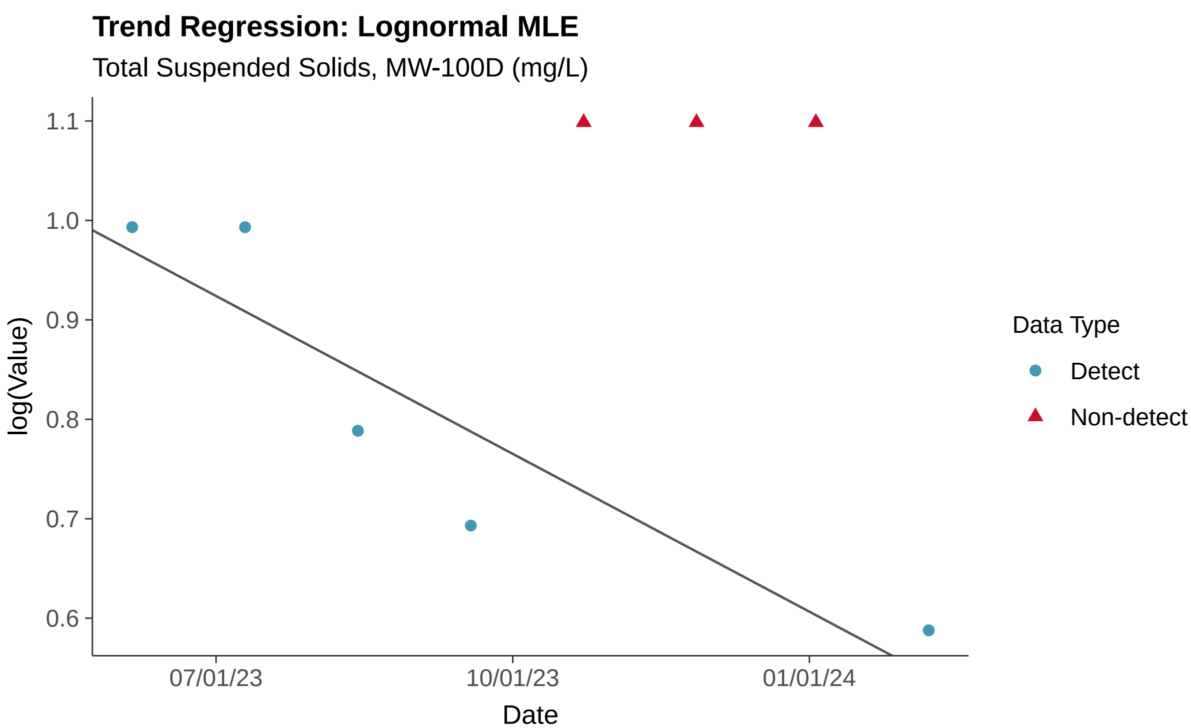
Total Suspended Solids, MW-100D (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-100D (mg/L)
Value
2.75
2.50
2.25
2.00
1.75
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

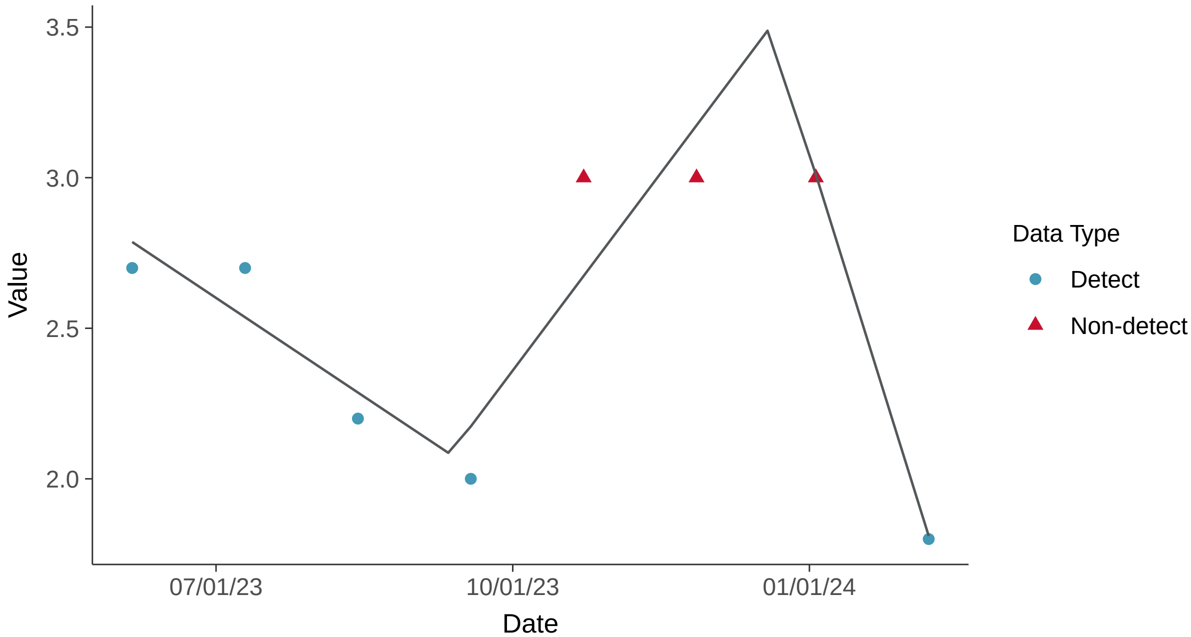

Lognormal Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-100D (mg/L)
log(Value)
1.0
0.9
0.8
0.7
0.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-100D (mg/L)
Value
2.75
2.50
2.25
2.00
1.75
1.5
2.0
2.5
3.0
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Total Suspended Solids, MW-100D (mg/L)
log(Value)
1.1
1.0
0.9
0.8
0.7
0.6
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Trend Regression: Piecewise Linear-Linear-Linear

Total Suspended Solids, MW-100D (mg/L)

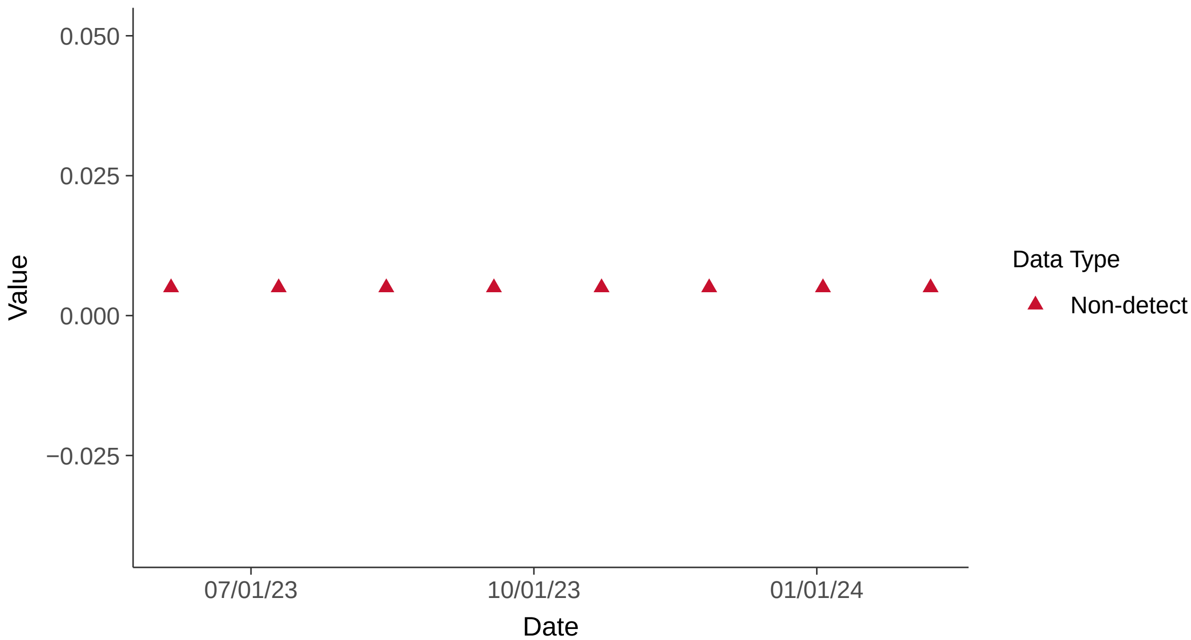


Part 115: Copper, MW-100D

ID: 100D_5_37

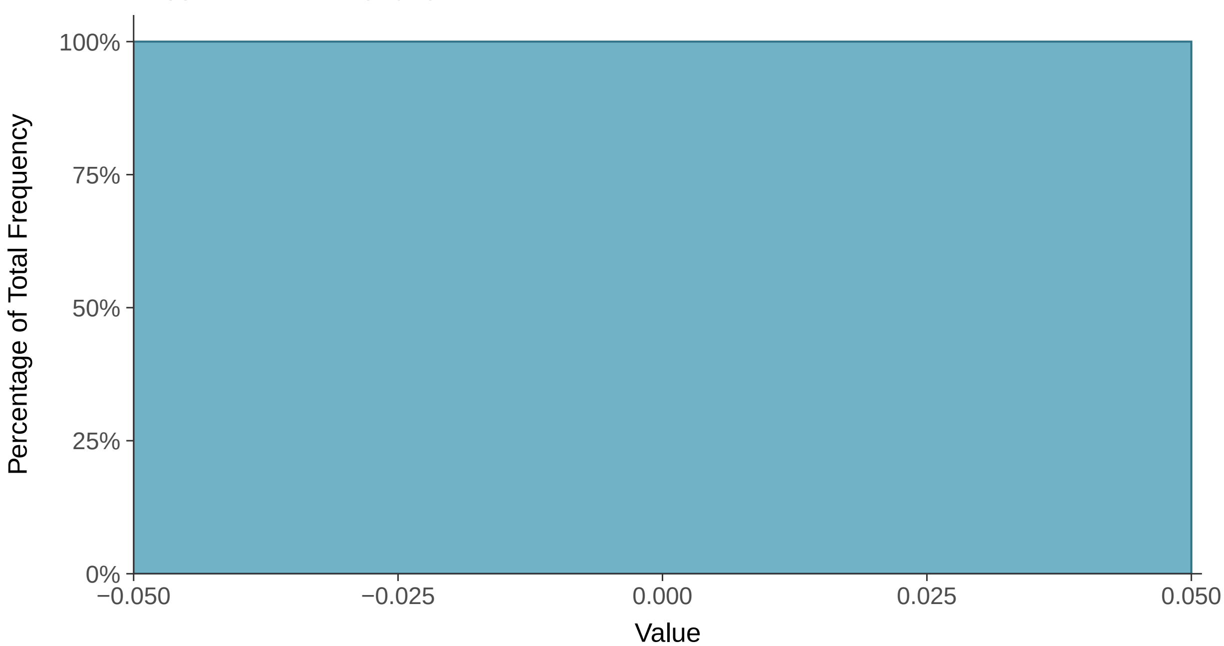
Scatter Plot

Copper, MW-100D (mg/L)



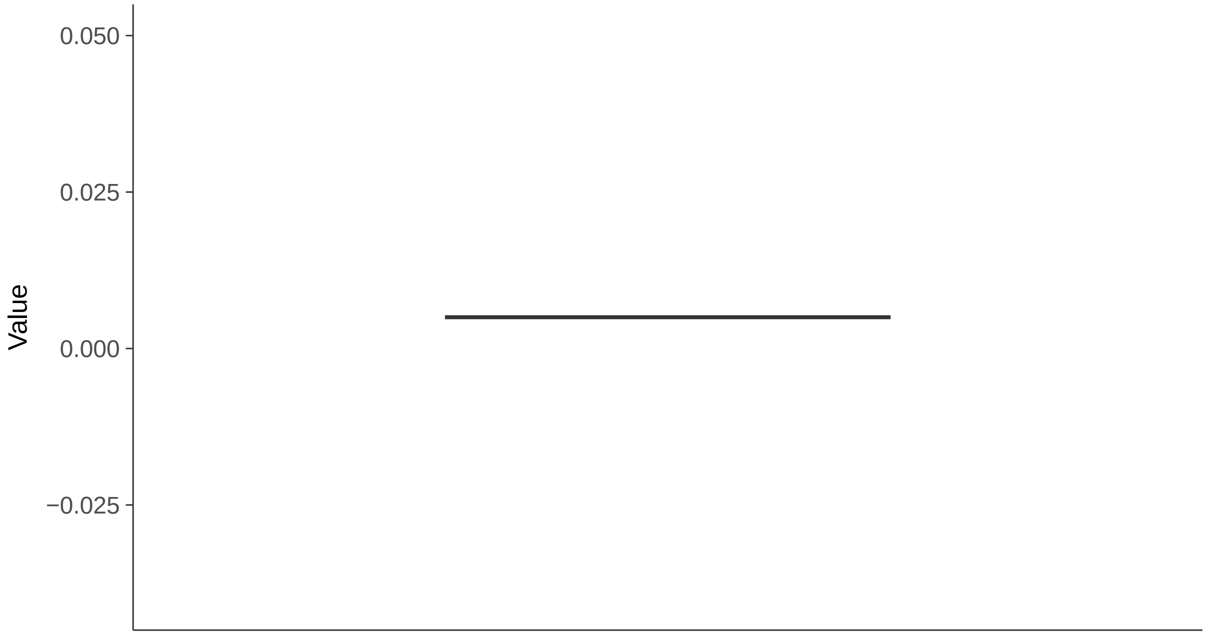
Histogram

Copper, MW-100D (mg/L)



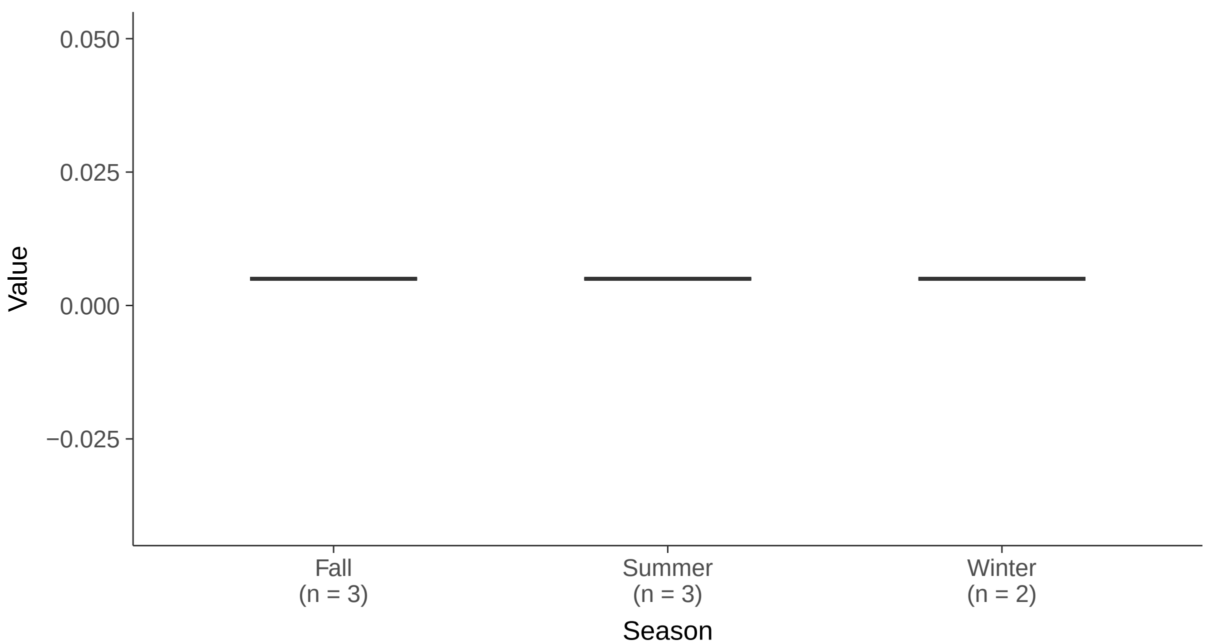
Boxplot

Copper, MW-100D (mg/L)



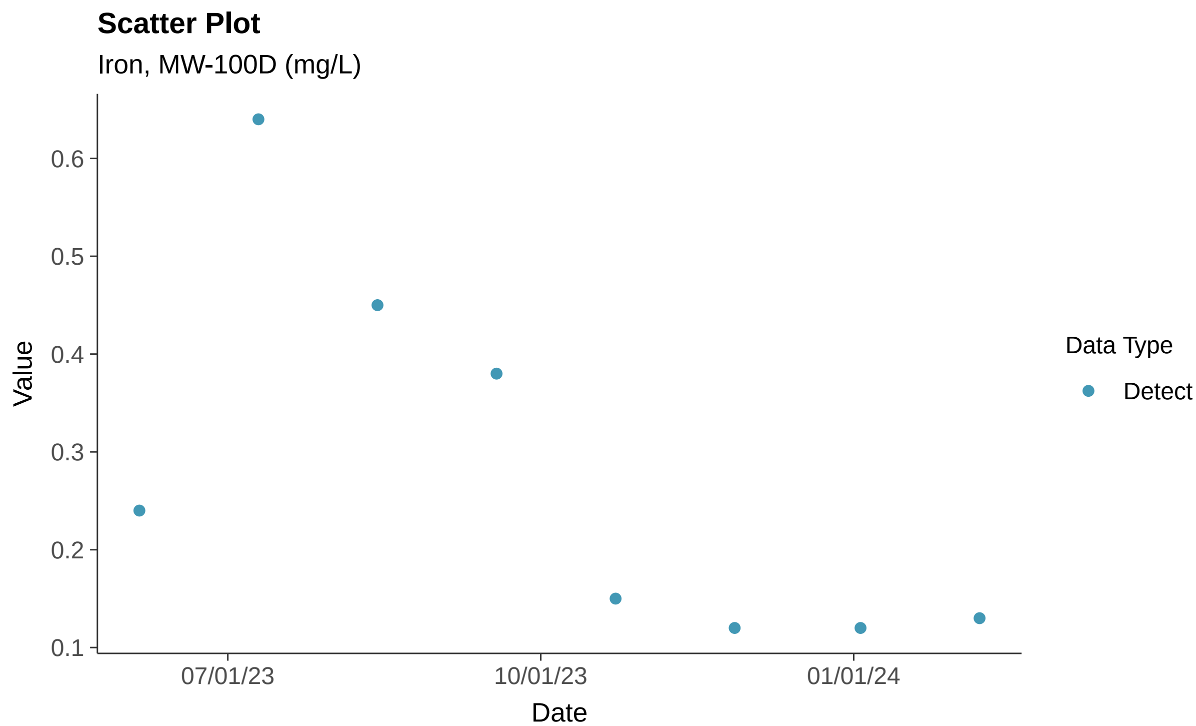
Boxplot by Season

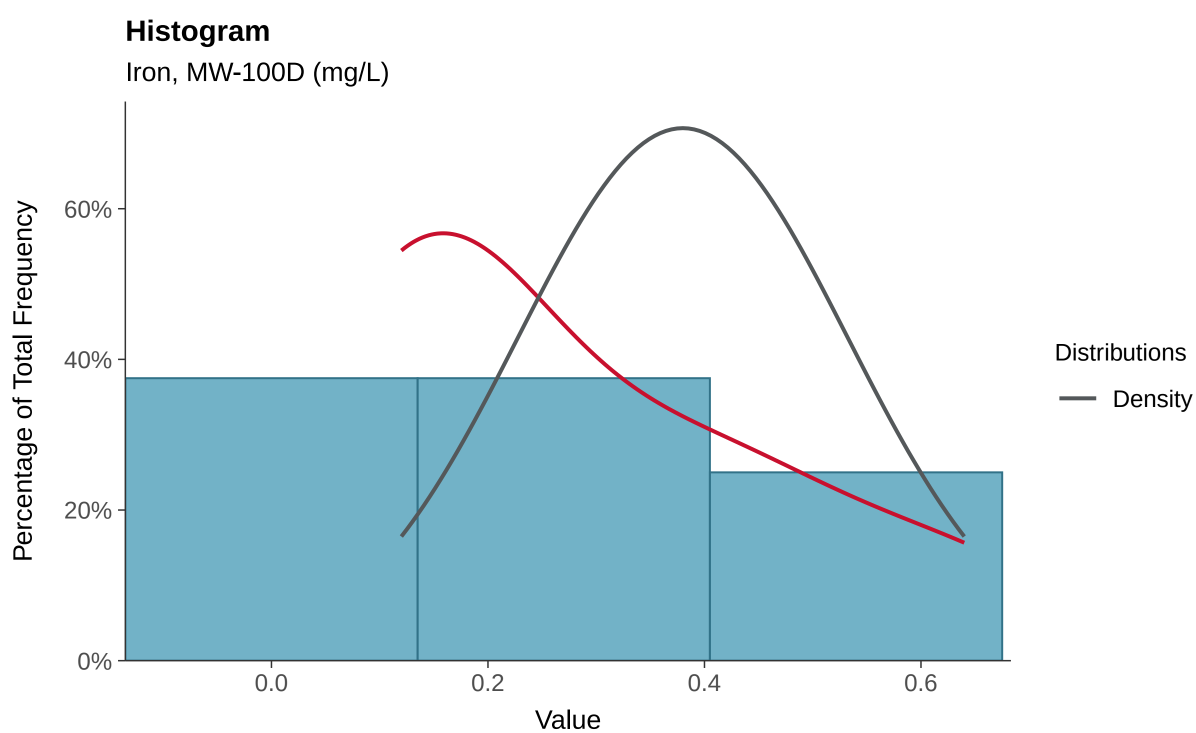
Copper, MW-100D (mg/L)



Part 115: Iron, MW-100D

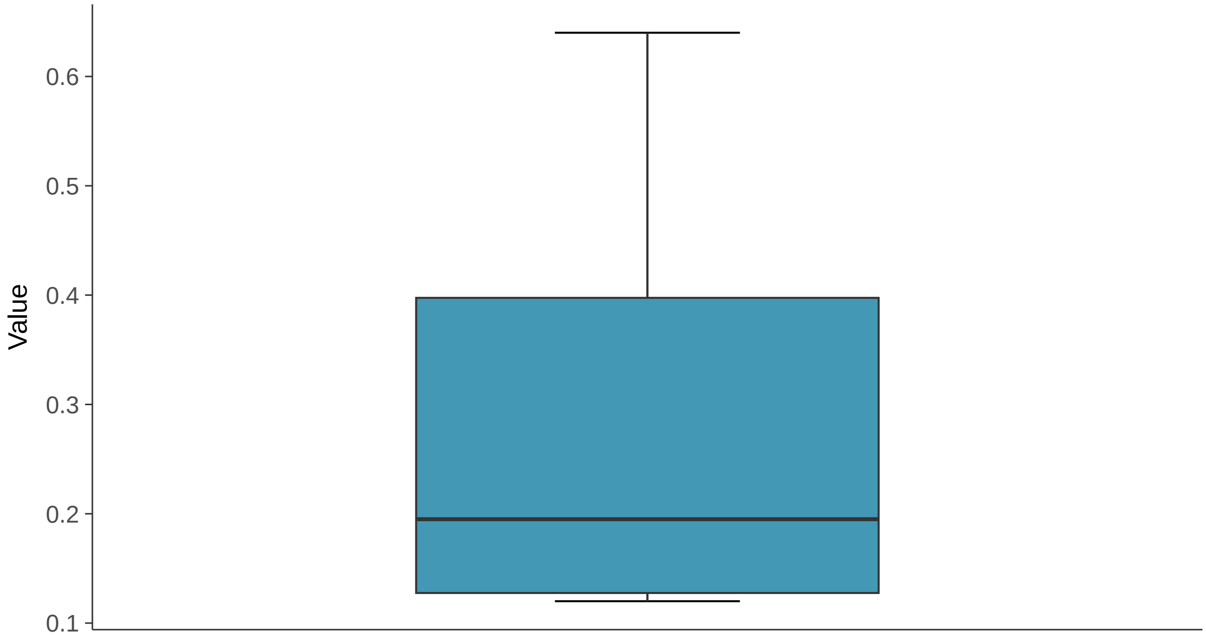
ID: 100D_5_38





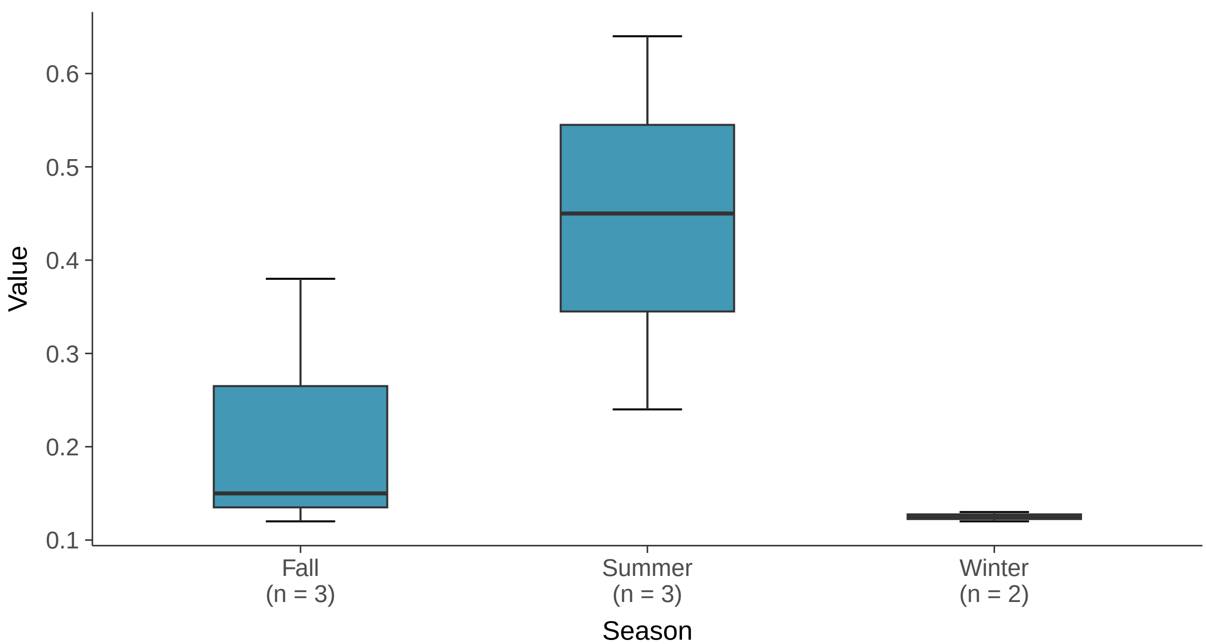
Boxplot

Iron, MW-100D (mg/L)



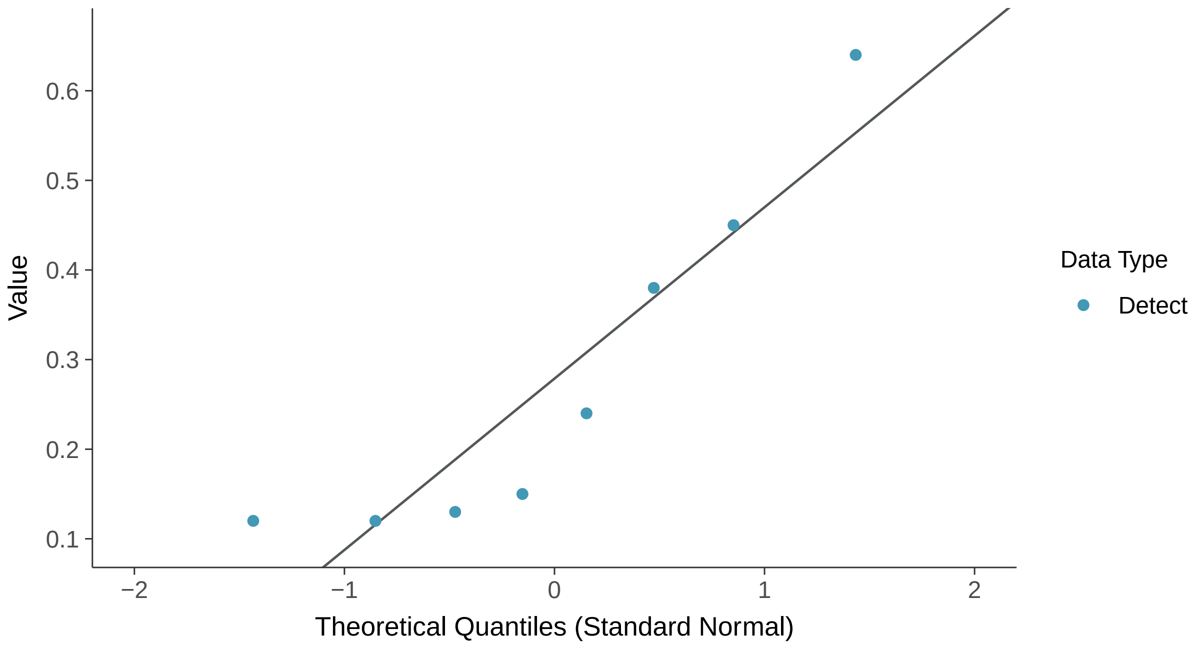
Boxplot by Season

Iron, MW-100D (mg/L)



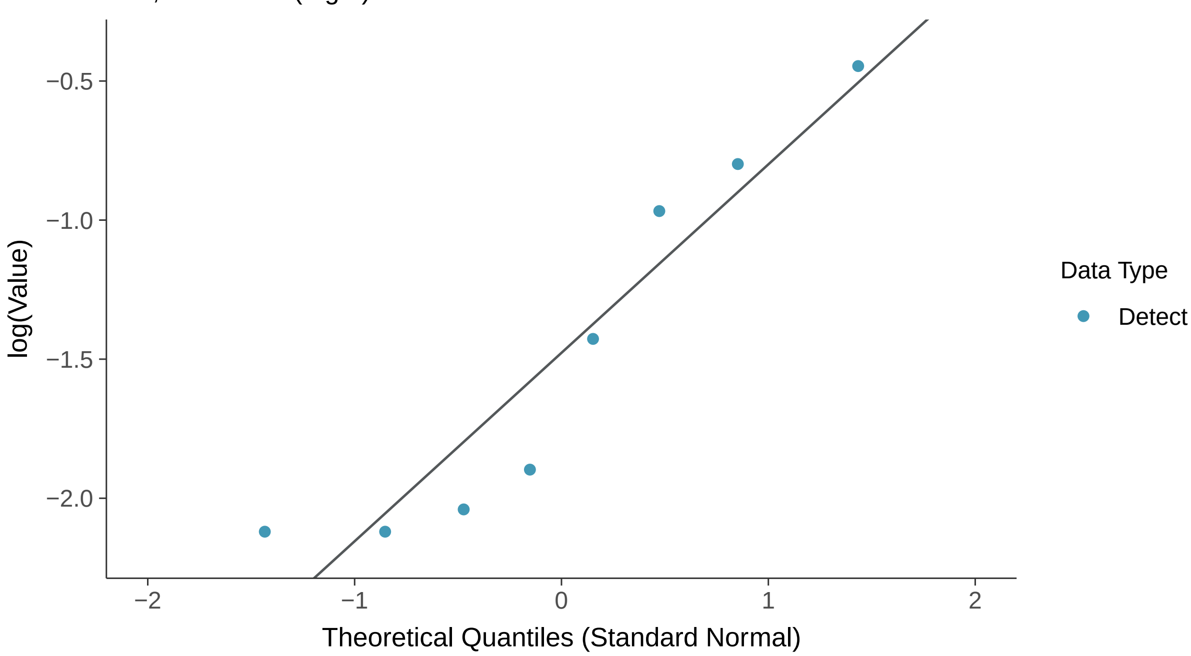
Normal Q-Q plot

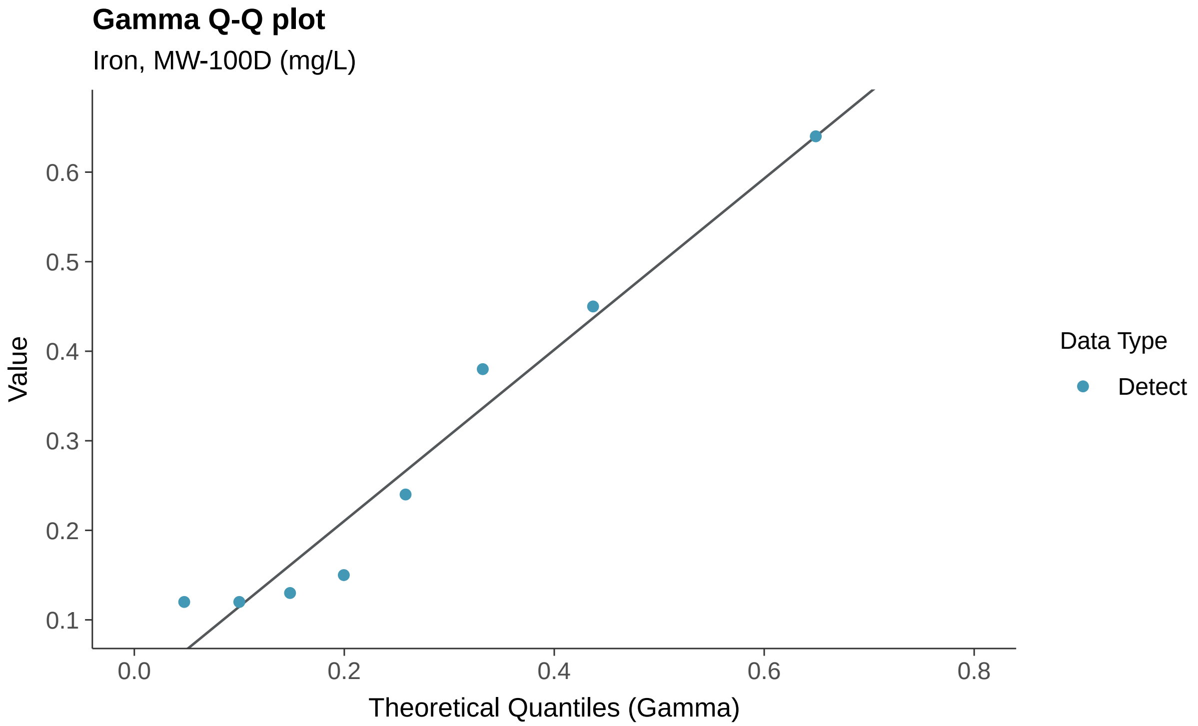
Iron, MW-100D (mg/L)

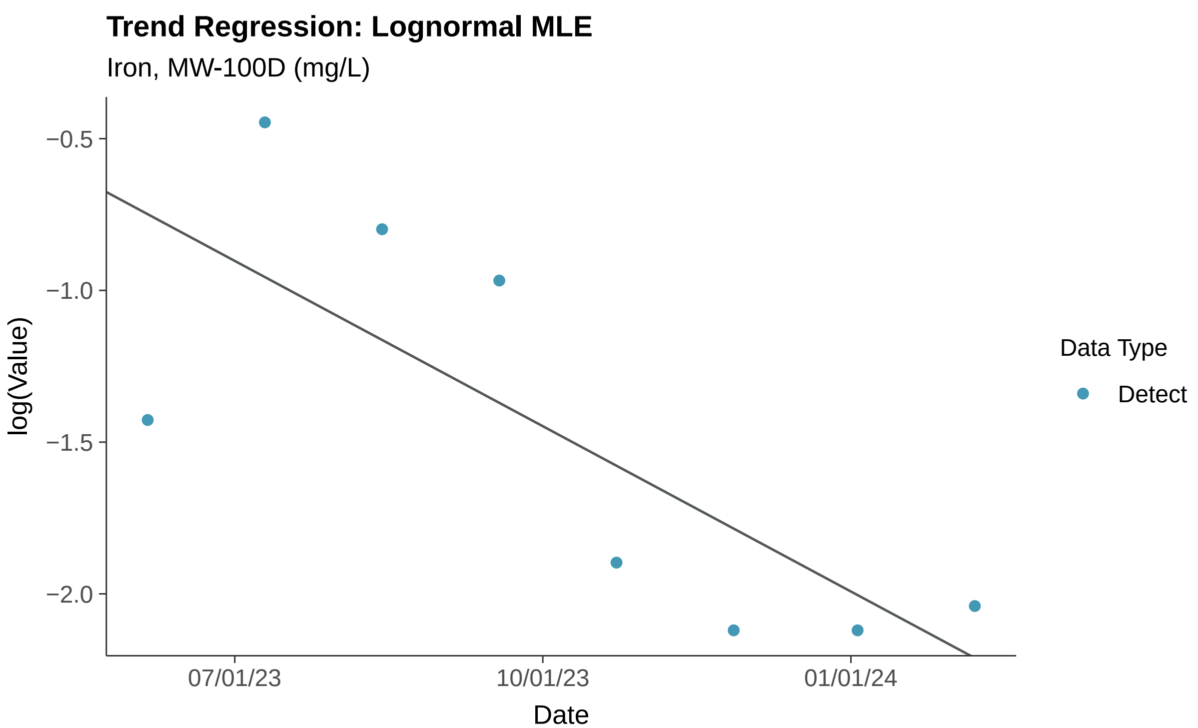


Lognormal Q-Q plot

Iron, MW-100D (mg/L)




Gamma Q-Q plot
Iron, MW-100D (mg/L)
Value
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0.2
0.4
0.6
0.8
Theoretical Quantiles (Gamma)
Data Type
Detect

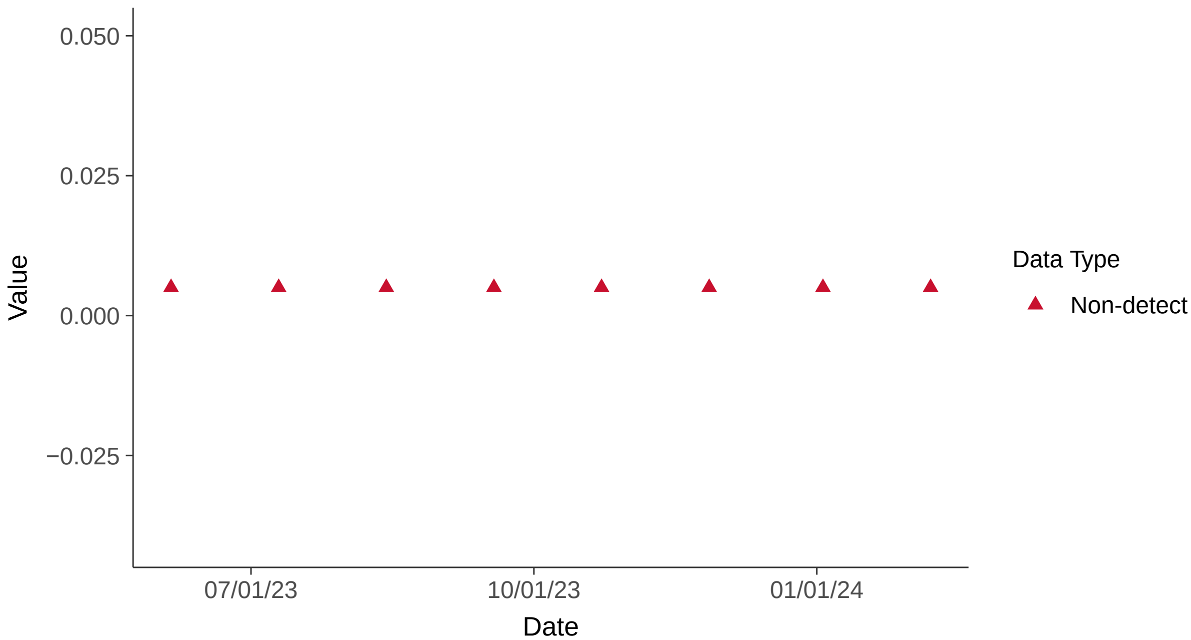

Trend Regression: Lognormal MLE
Iron, MW-100D (mg/L)
log(Value)
−0.5
−1.0
−1.5
−2.0
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Part 115: Nickel, MW-100D

ID: 100D_5_39

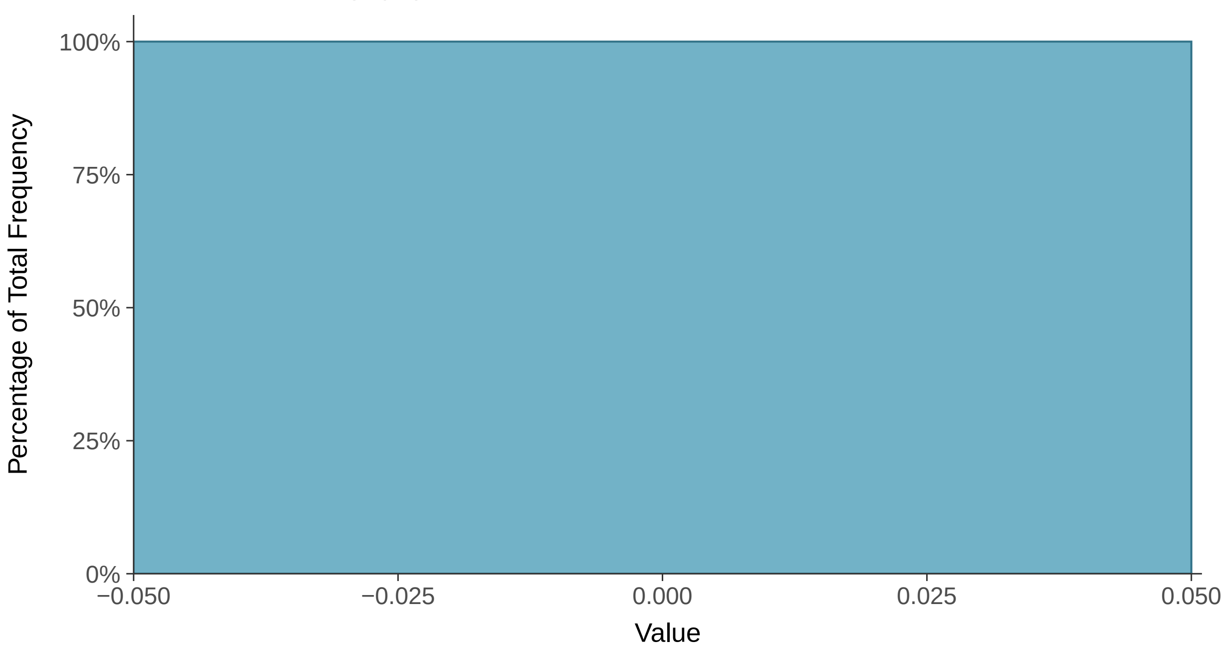
Scatter Plot

Nickel, MW-100D (mg/L)



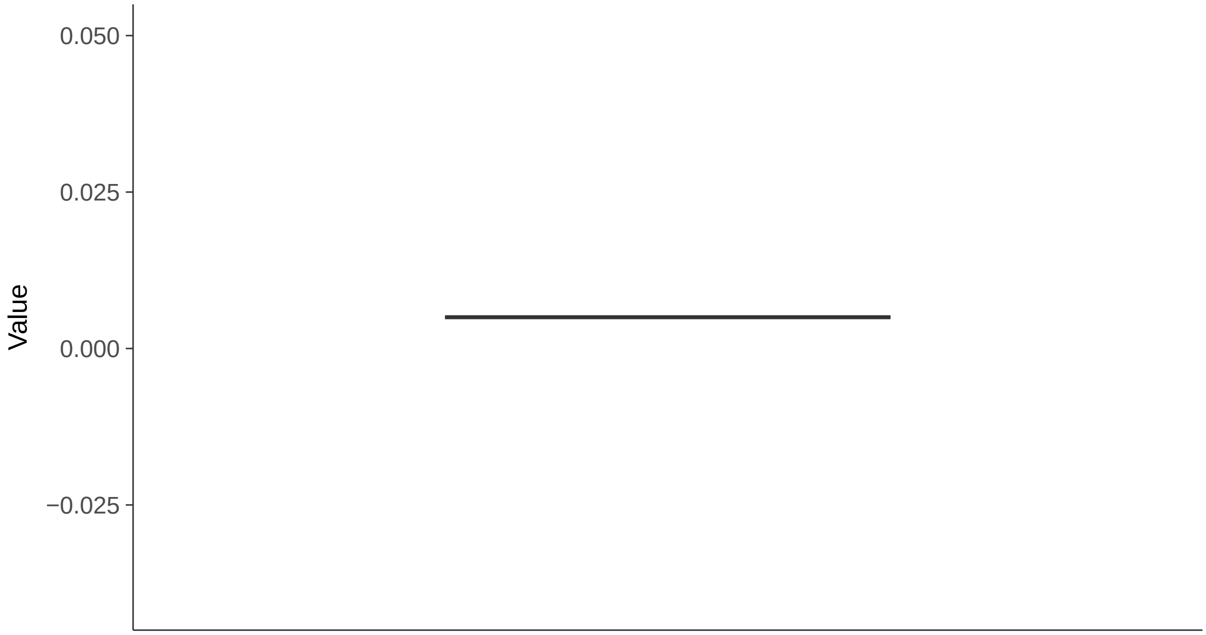
Histogram

Nickel, MW-100D (mg/L)



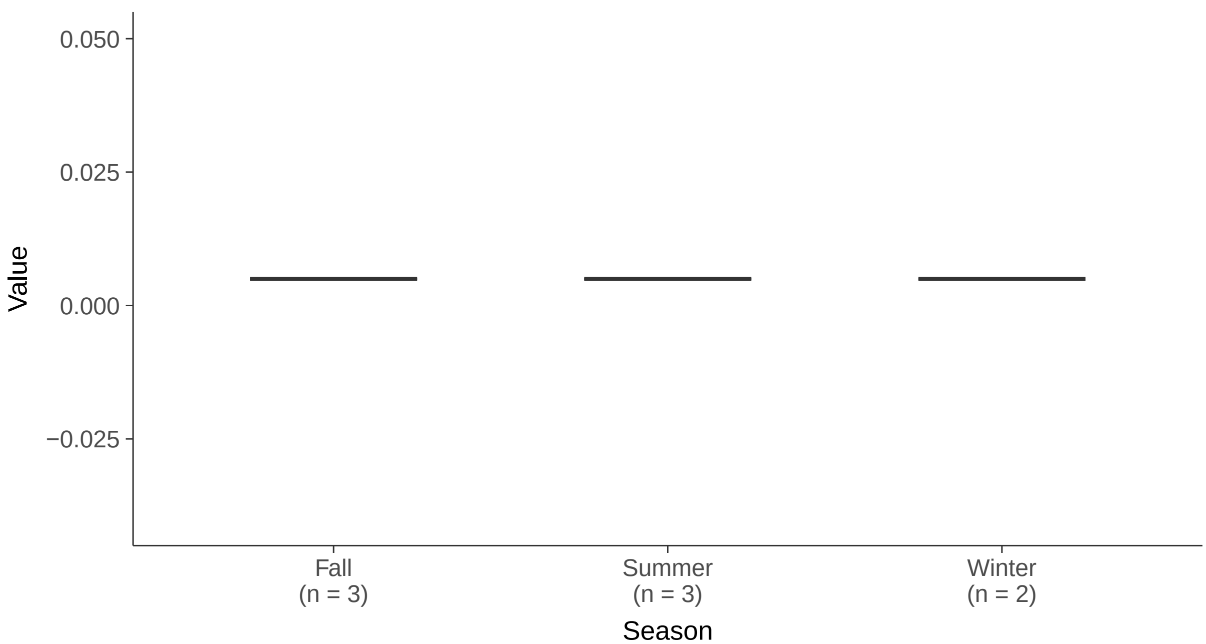
Boxplot

Nickel, MW-100D (mg/L)



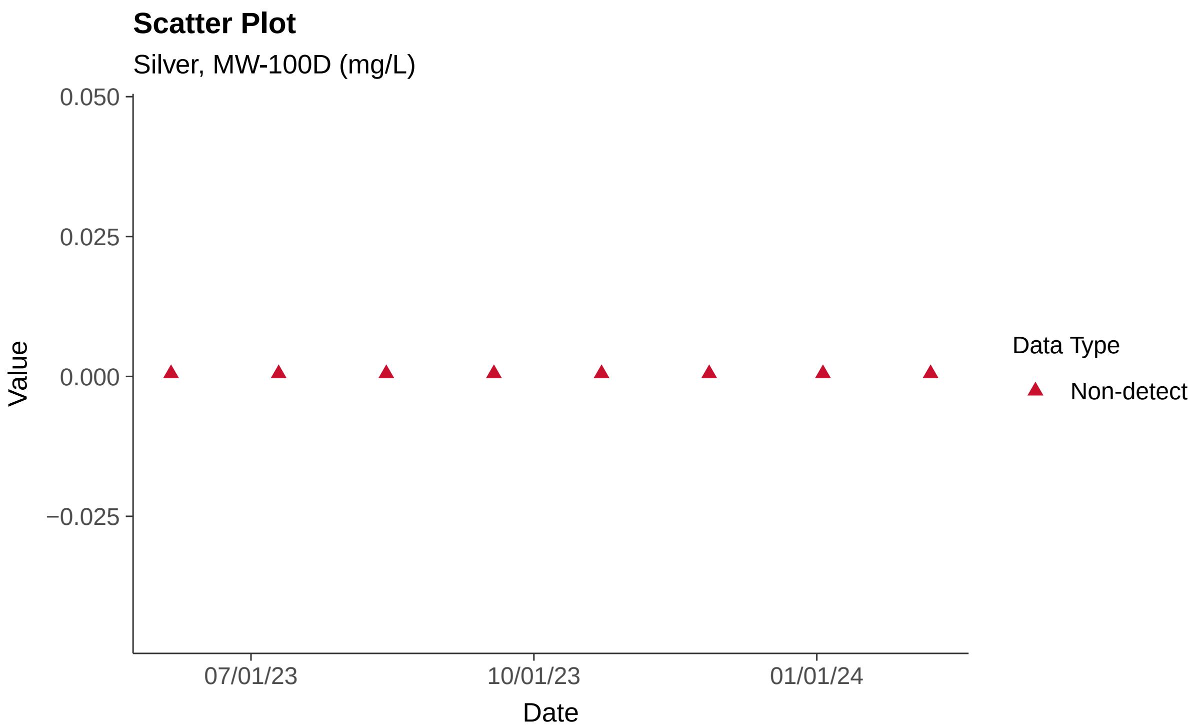
Boxplot by Season

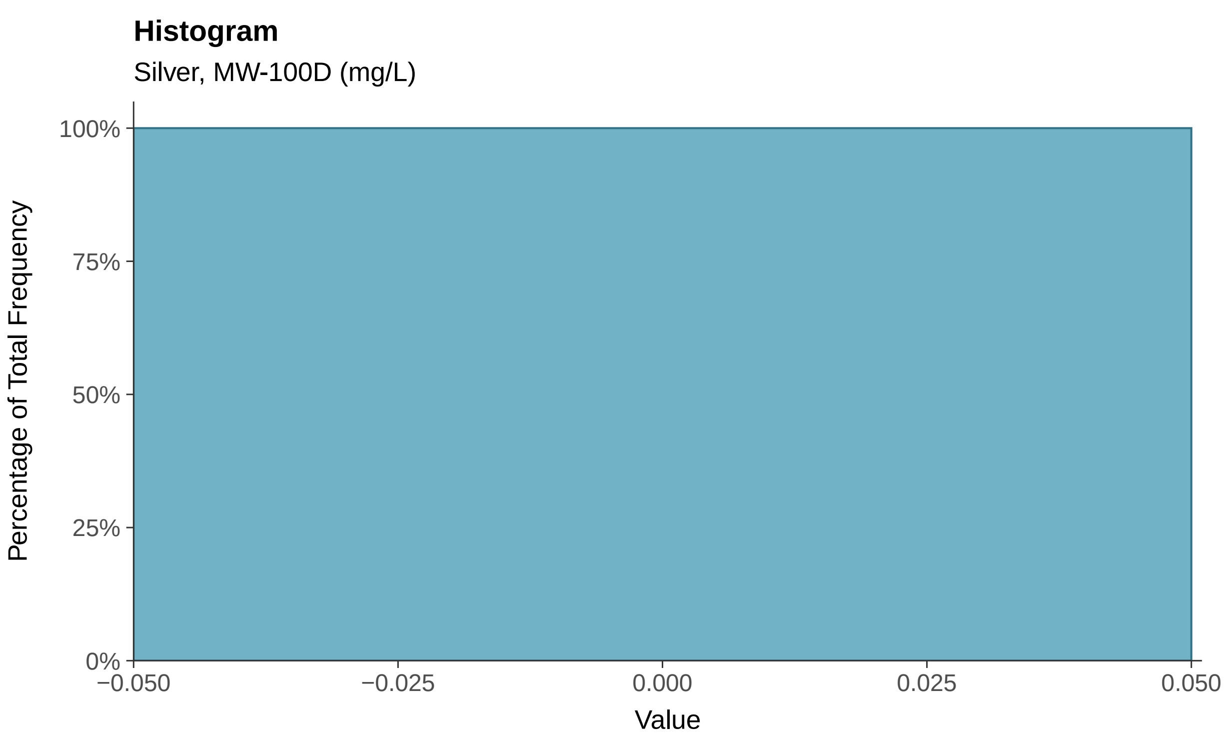
Nickel, MW-100D (mg/L)



Part 115: Silver, MW-100D

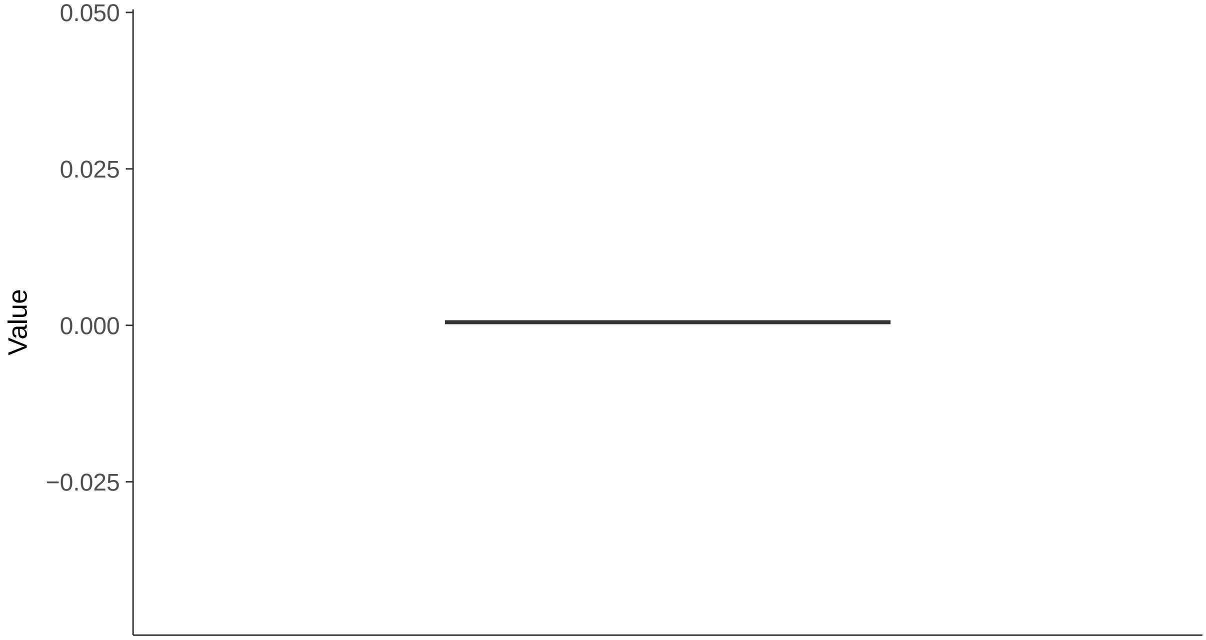
ID: 100D_5_40





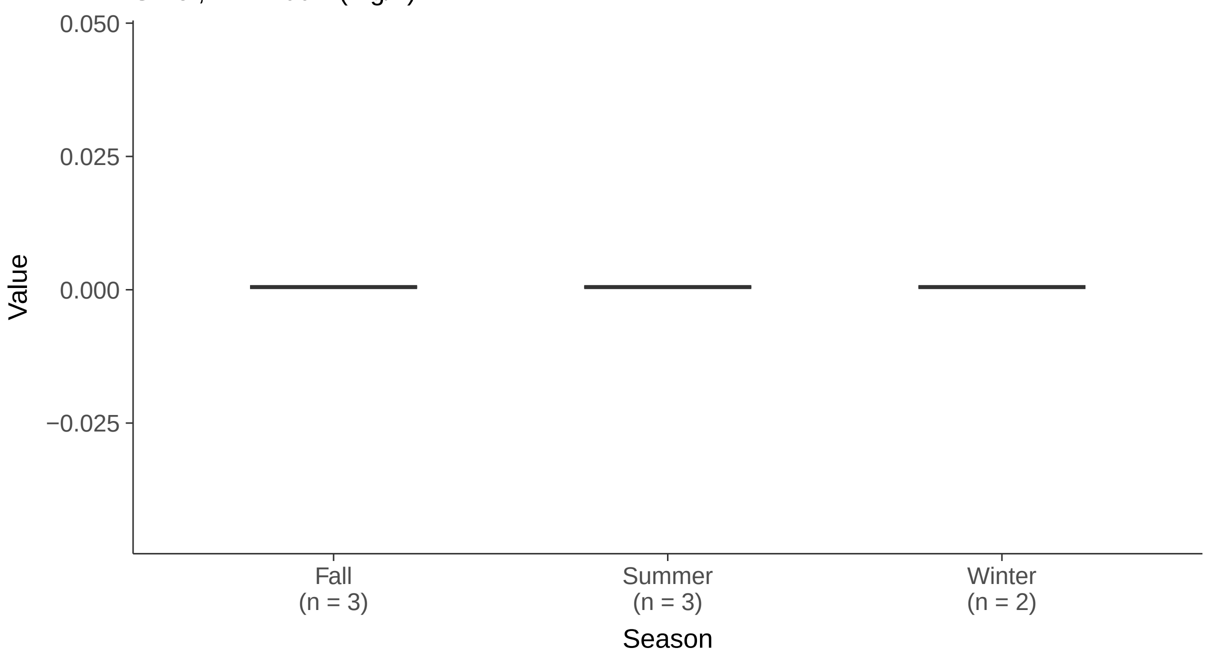
Boxplot

Silver, MW-100D (mg/L)



Boxplot by Season

Silver, MW-100D (mg/L)

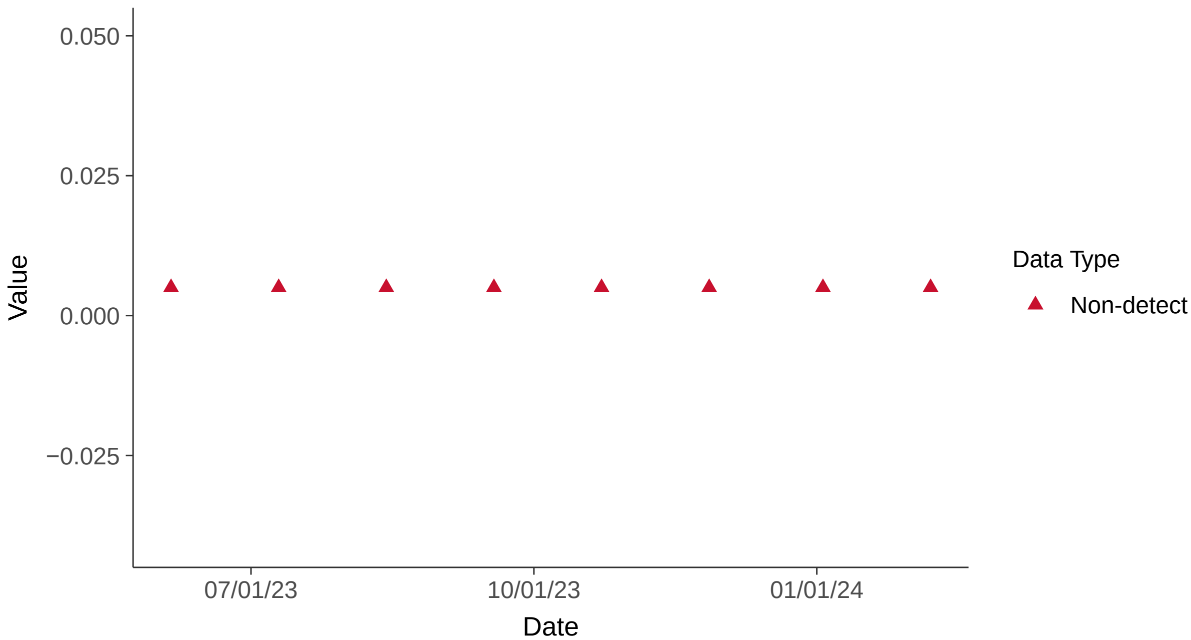


Part 115: Vanadium, MW-100D

ID: 100D_5_41

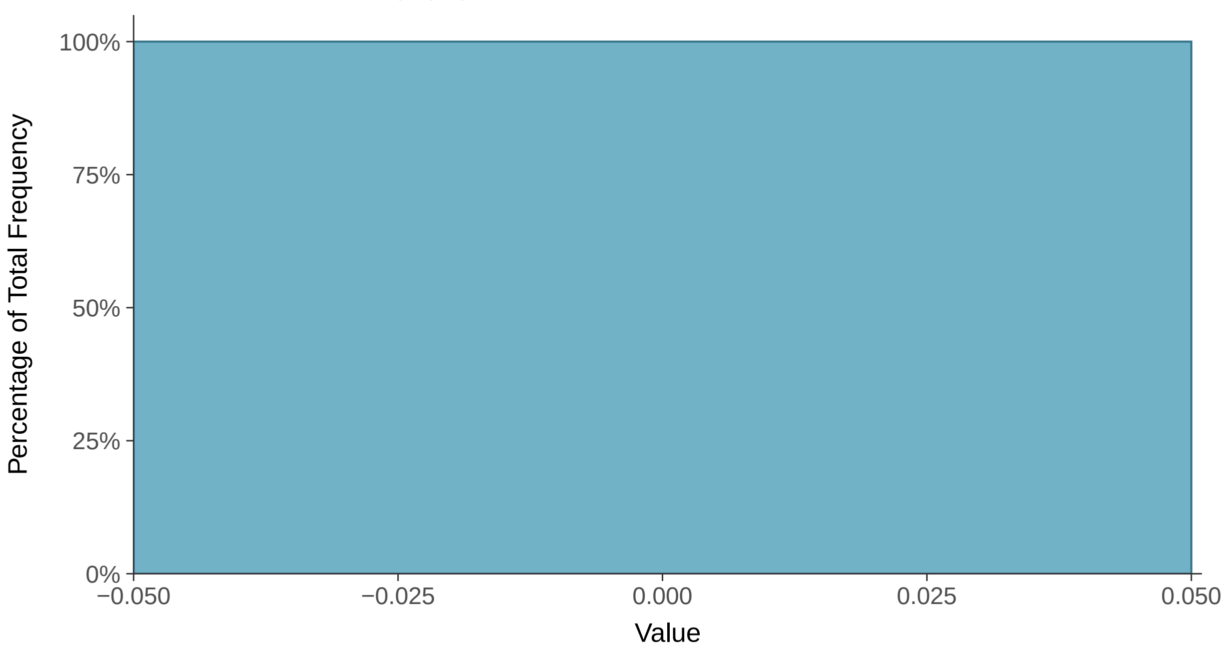
Scatter Plot

Vanadium, MW-100D (mg/L)



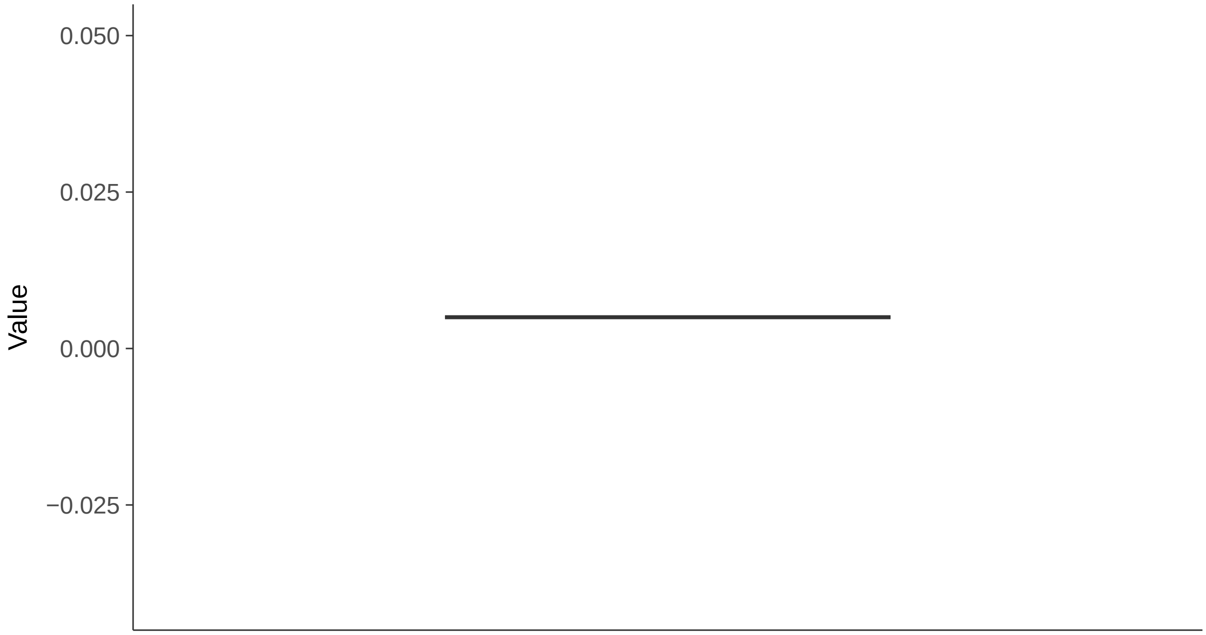
Histogram

Vanadium, MW-100D (mg/L)



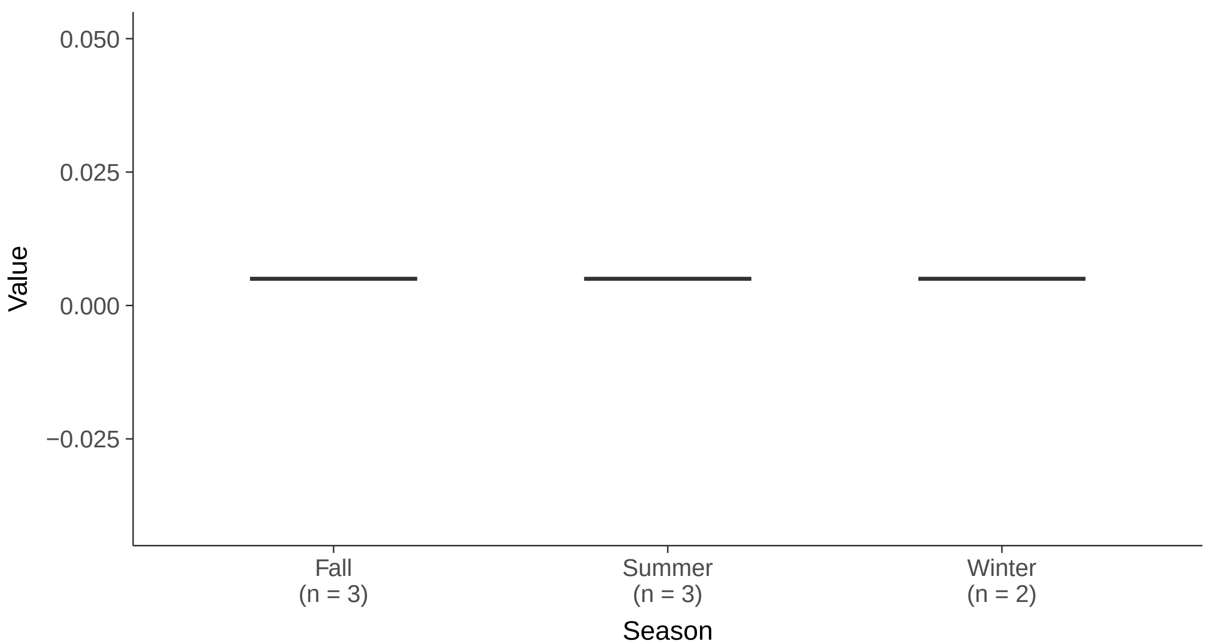
Boxplot

Vanadium, MW-100D (mg/L)



Boxplot by Season

Vanadium, MW-100D (mg/L)

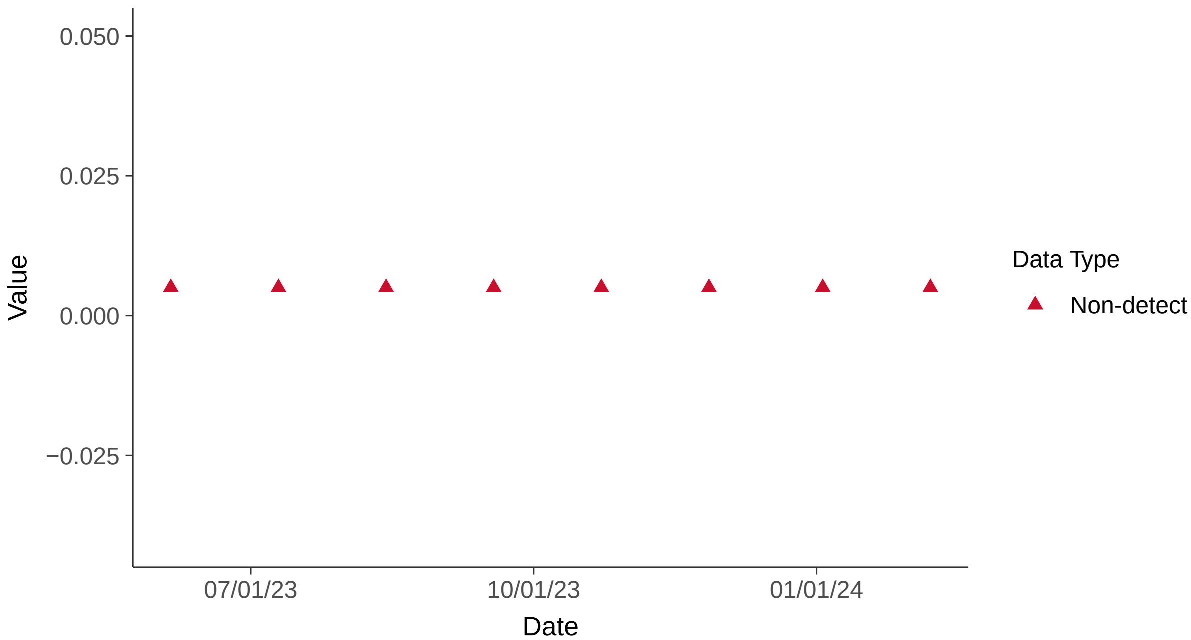


Part 115: Zinc, MW-100D

ID: 100D_5_42

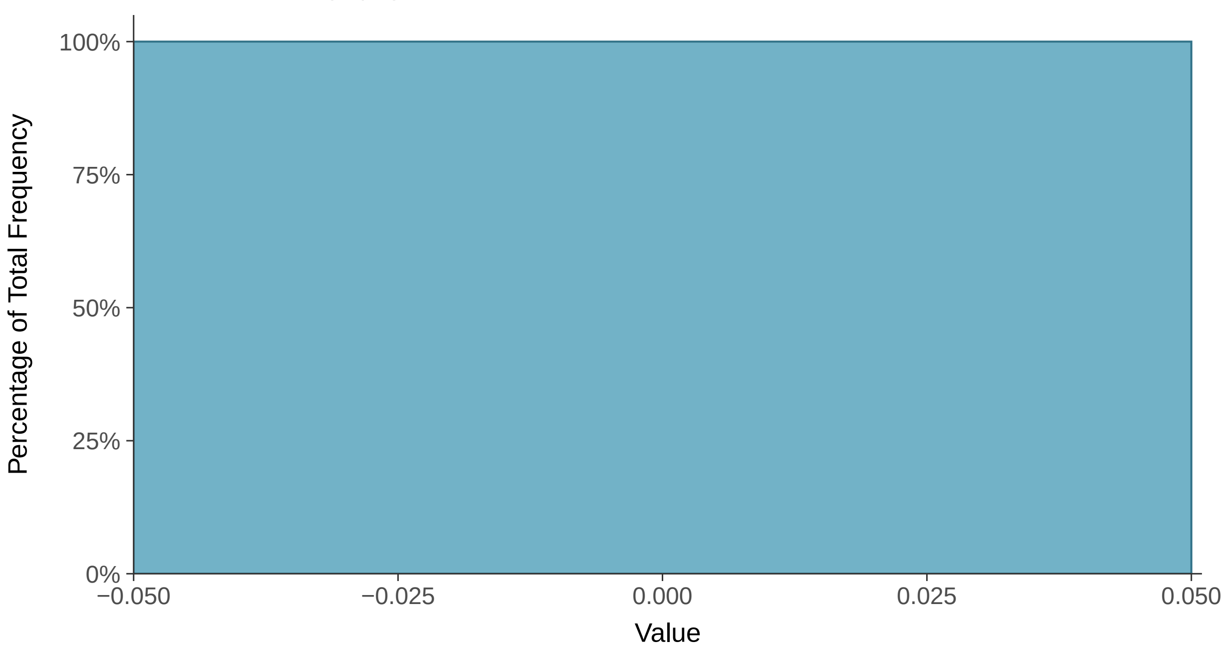
Scatter Plot

Zinc, MW-100D (mg/L)



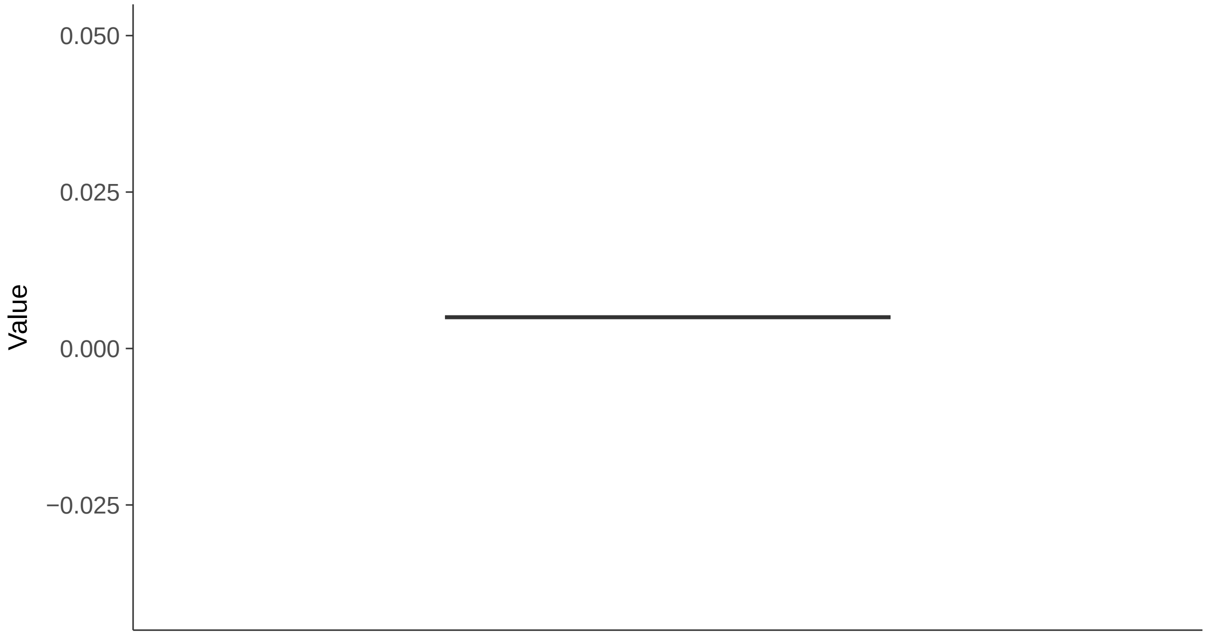
Histogram

Zinc, MW-100D (mg/L)



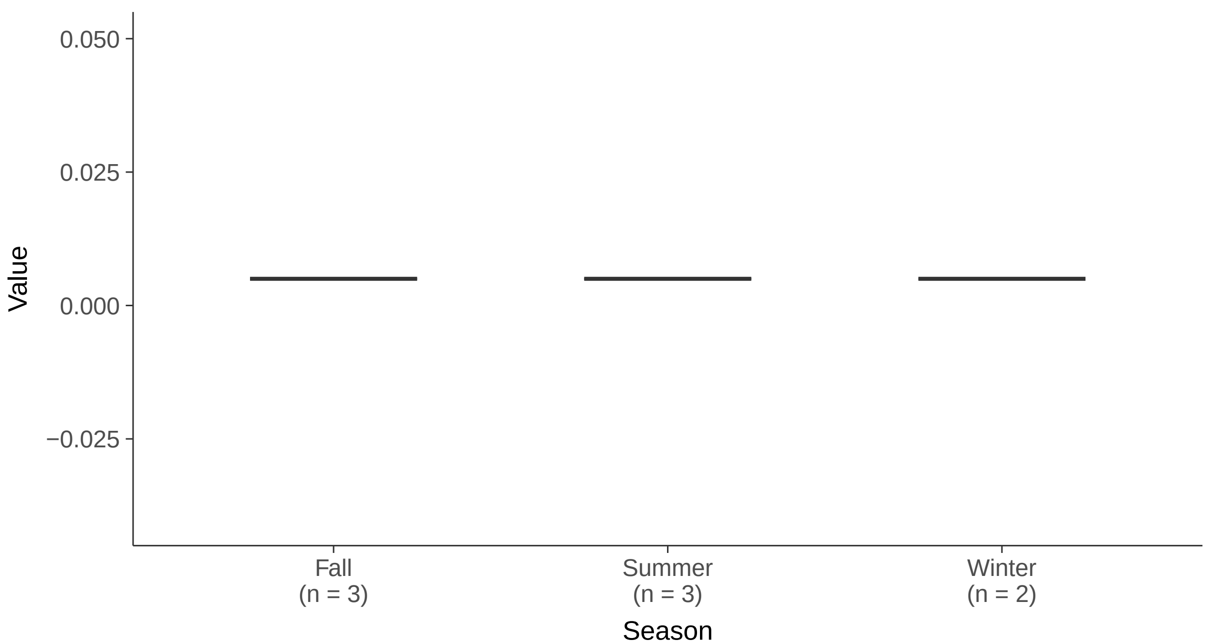
Boxplot

Zinc, MW-100D (mg/L)



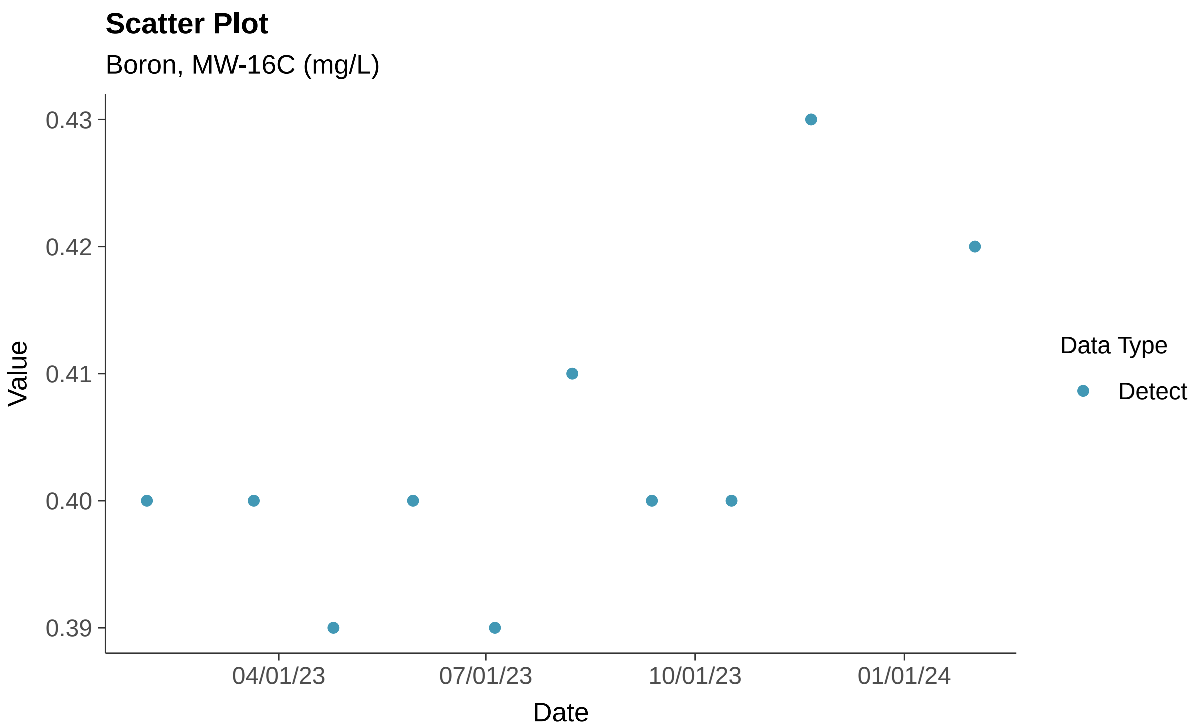
Boxplot by Season

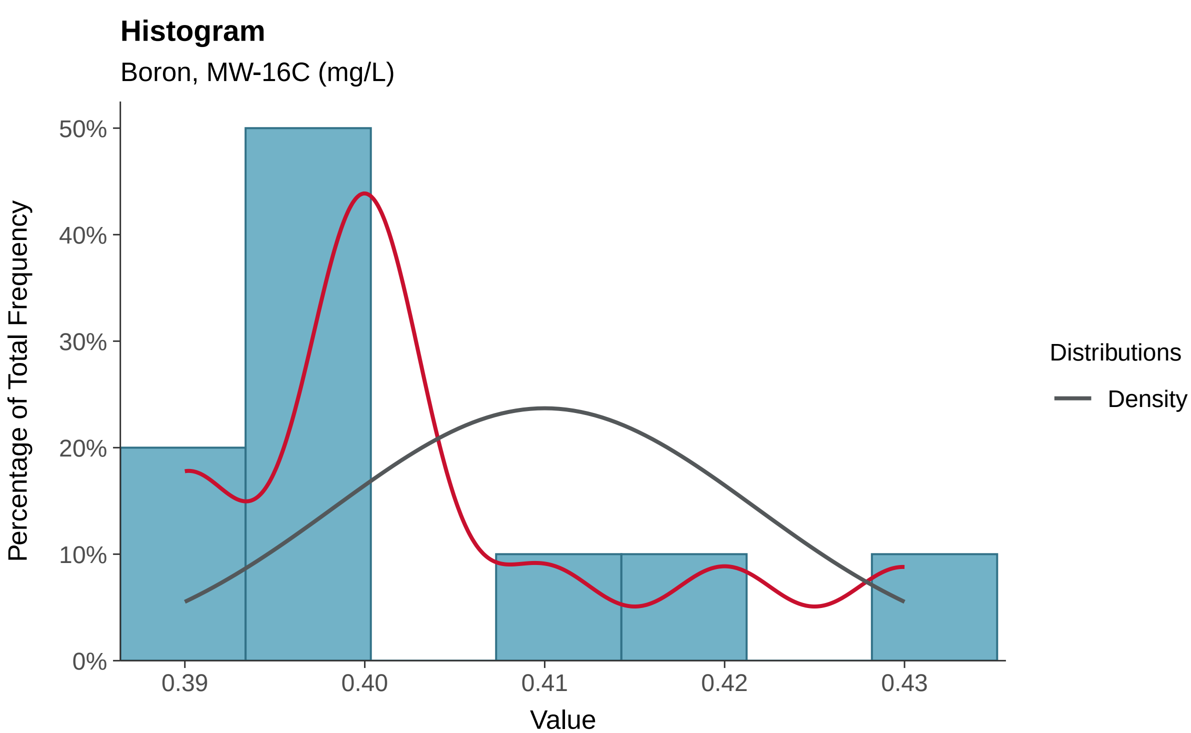
Zinc, MW-100D (mg/L)



Appendix III: Boron, MW-16C

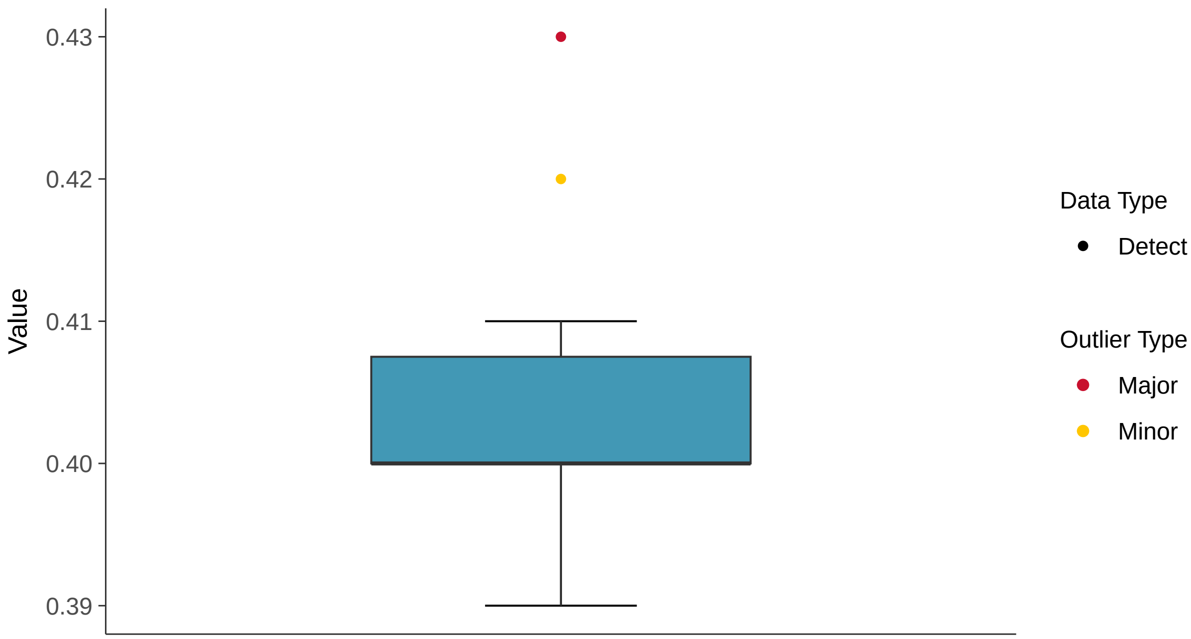
ID: 16C_1_01





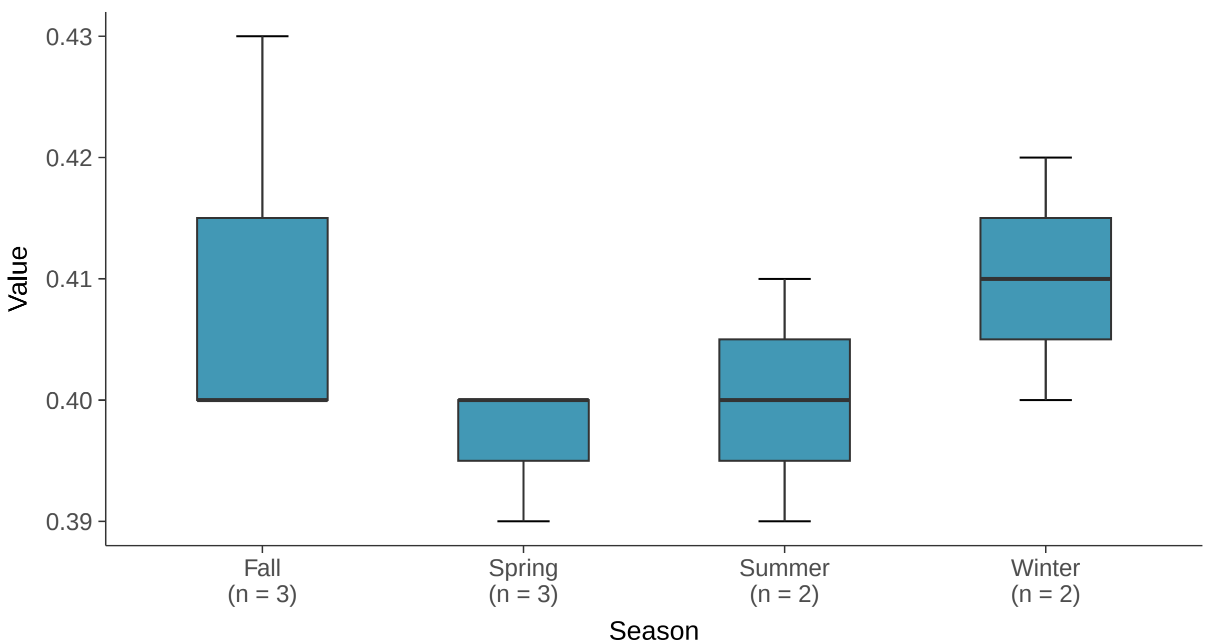
Boxplot

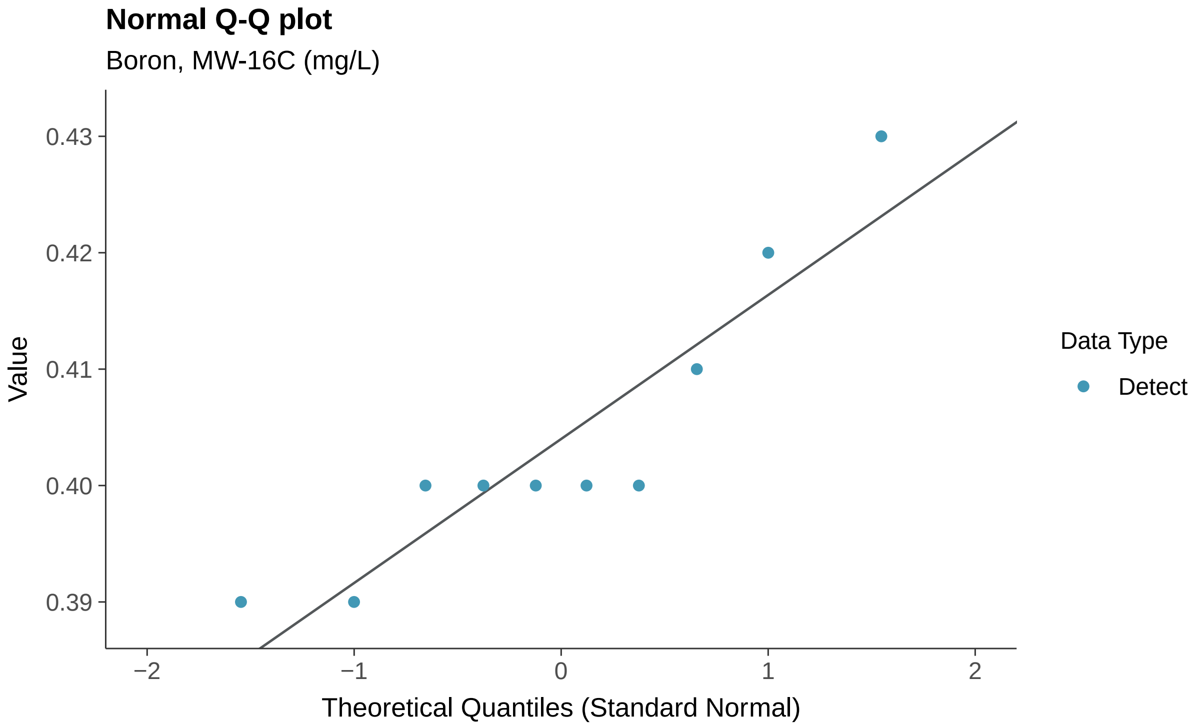
Boron, MW-16C (mg/L)

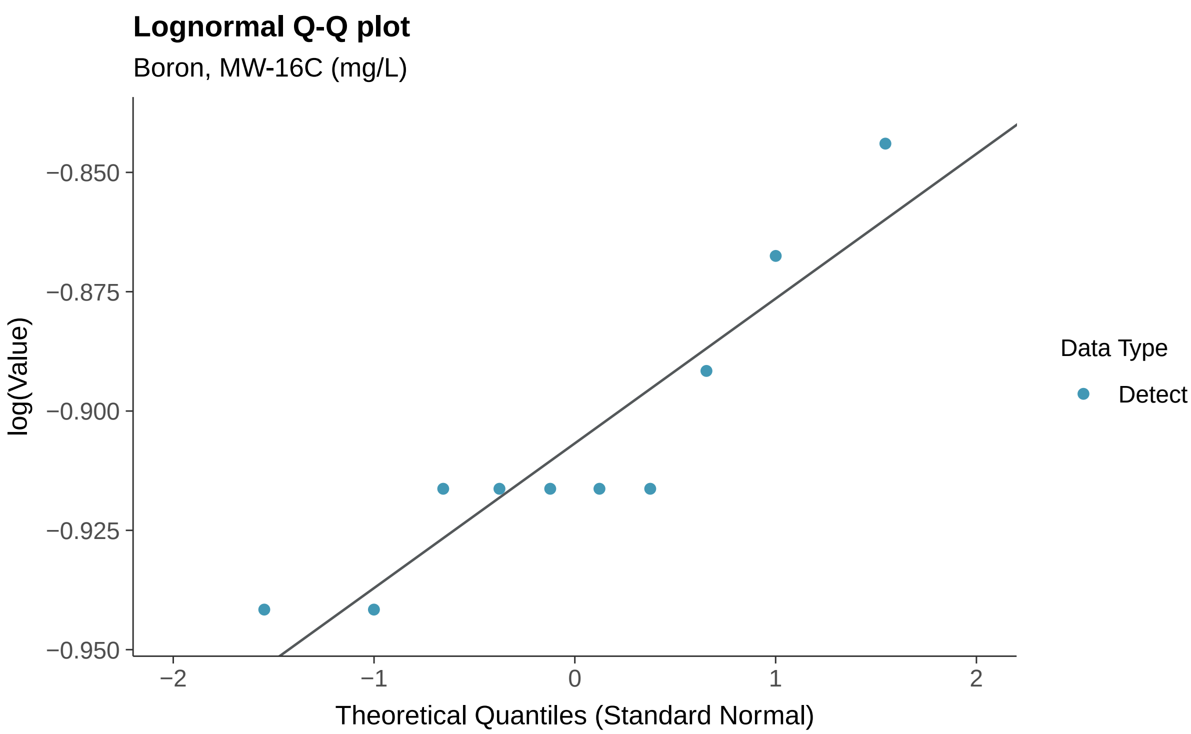


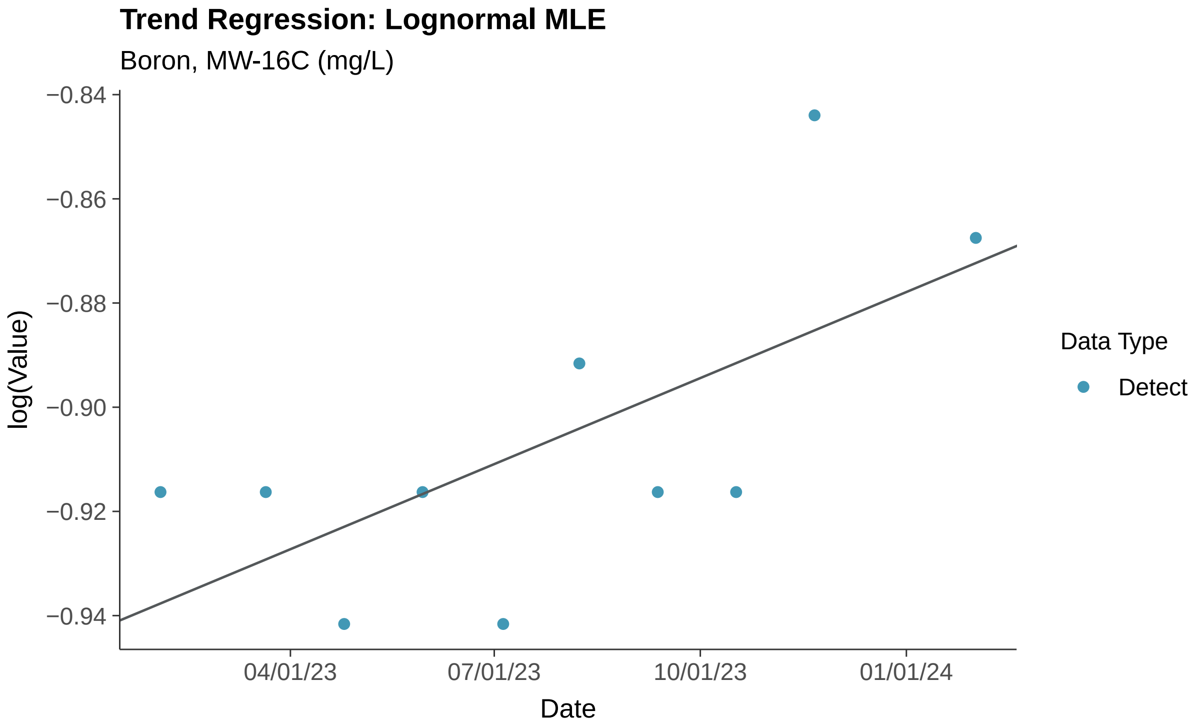
Boxplot by Season

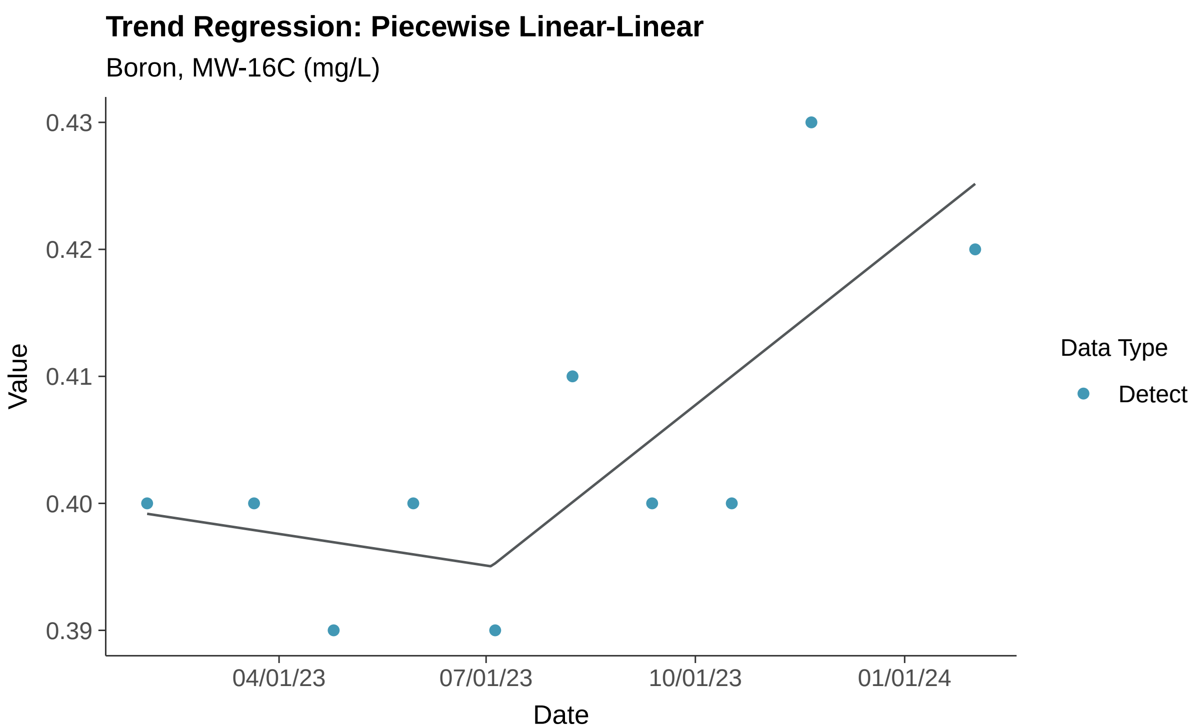
Boron, MW-16C (mg/L)




Normal Q-Q plot
Boron, MW-16C (mg/L)
Value
0.43
0.42
0.41
0.40
0.39
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Boron, MW-16C (mg/L)
log(Value)
−0.850
−0.875
−0.900
−0.925
−0.950
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Boron, MW-16C (mg/L)
−0.84
−0.86
−0.88
−0.90
−0.92
−0.94
log(Value)
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

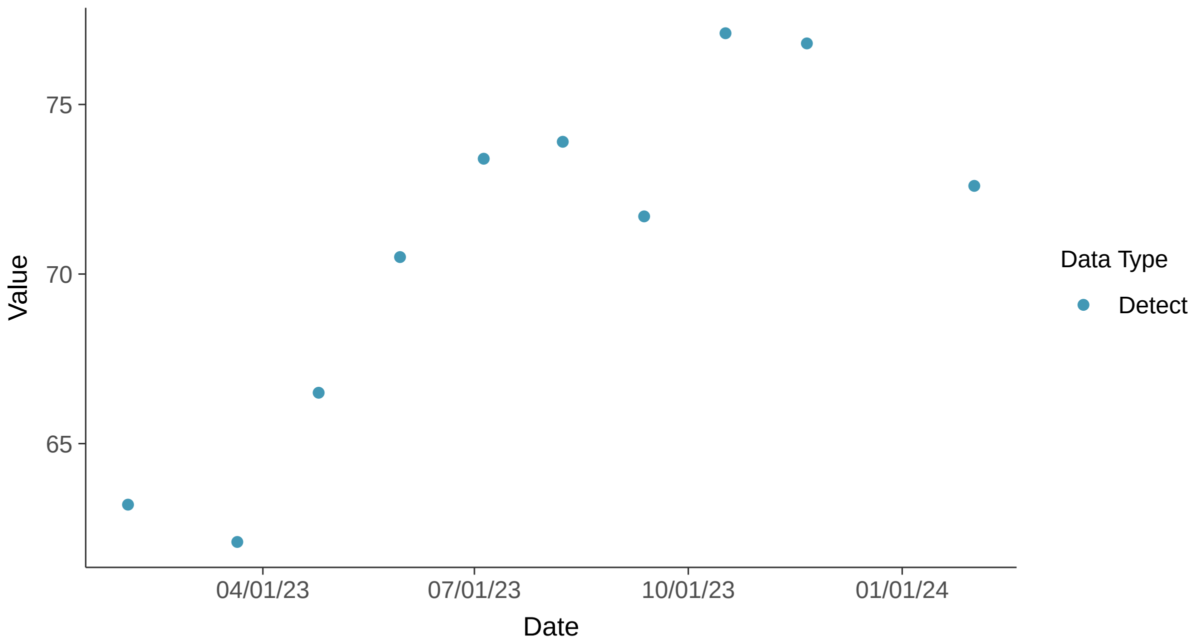

Trend Regression: Piecewise Linear-Linear
Boron, MW-16C (mg/L)
0.43
0.42
0.41
0.40
0.39
Value
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix III: Calcium, MW-16C

ID: 16C_1_02

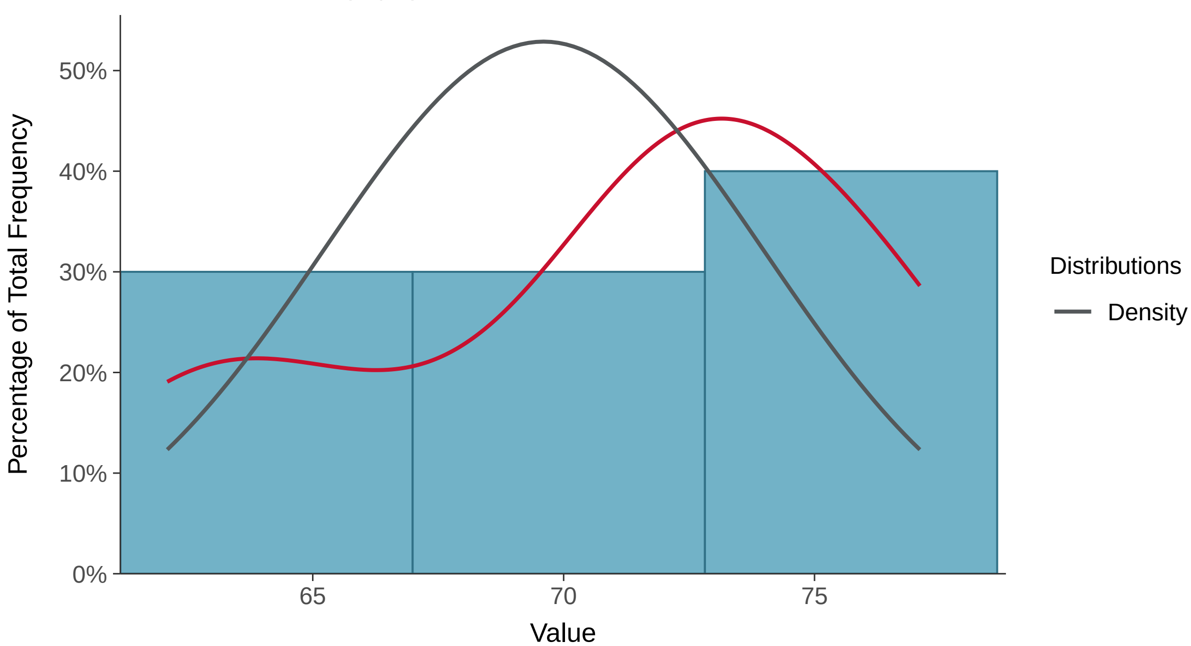
Scatter Plot

Calcium, MW-16C (mg/L)



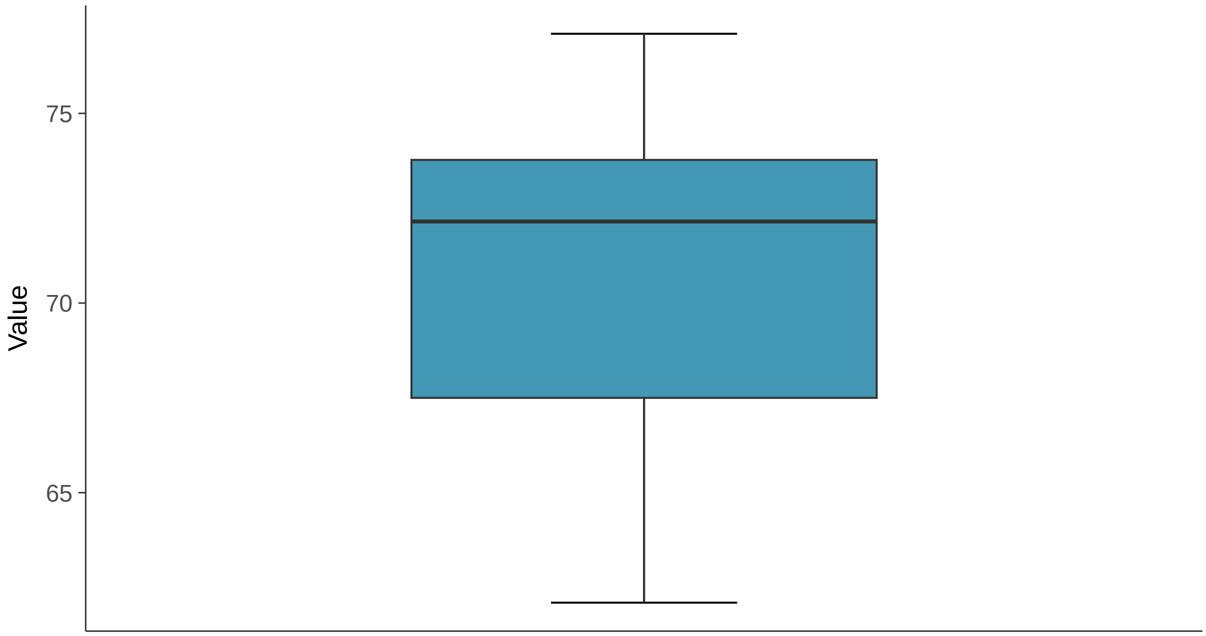
Histogram

Calcium, MW-16C (mg/L)



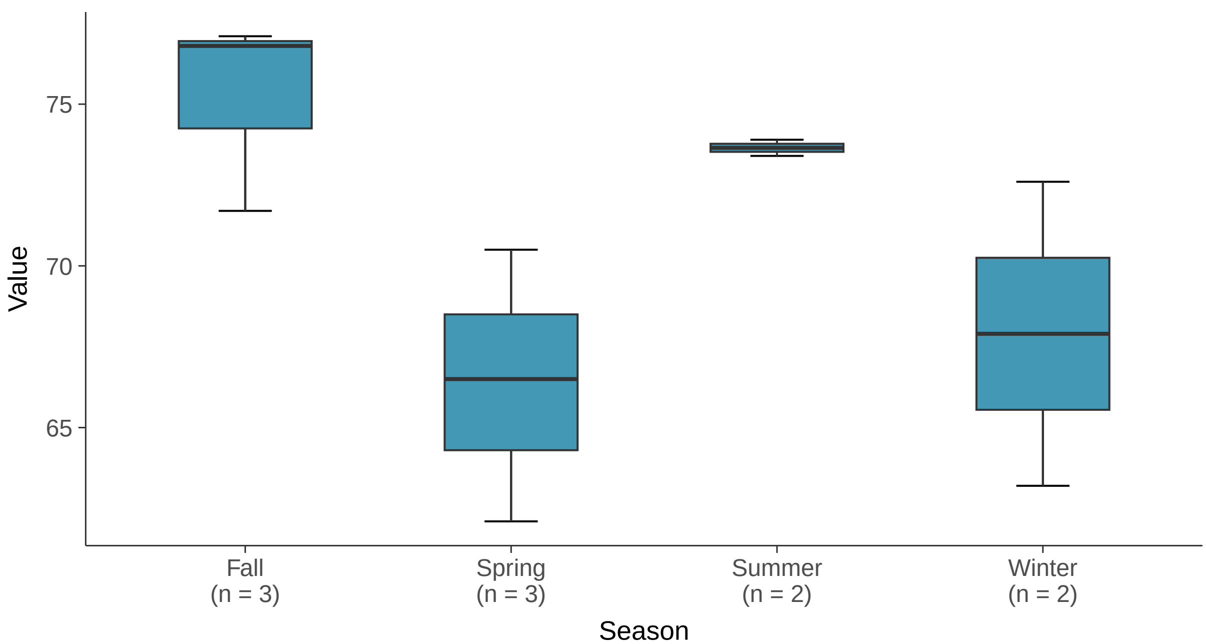
Boxplot

Calcium, MW-16C (mg/L)



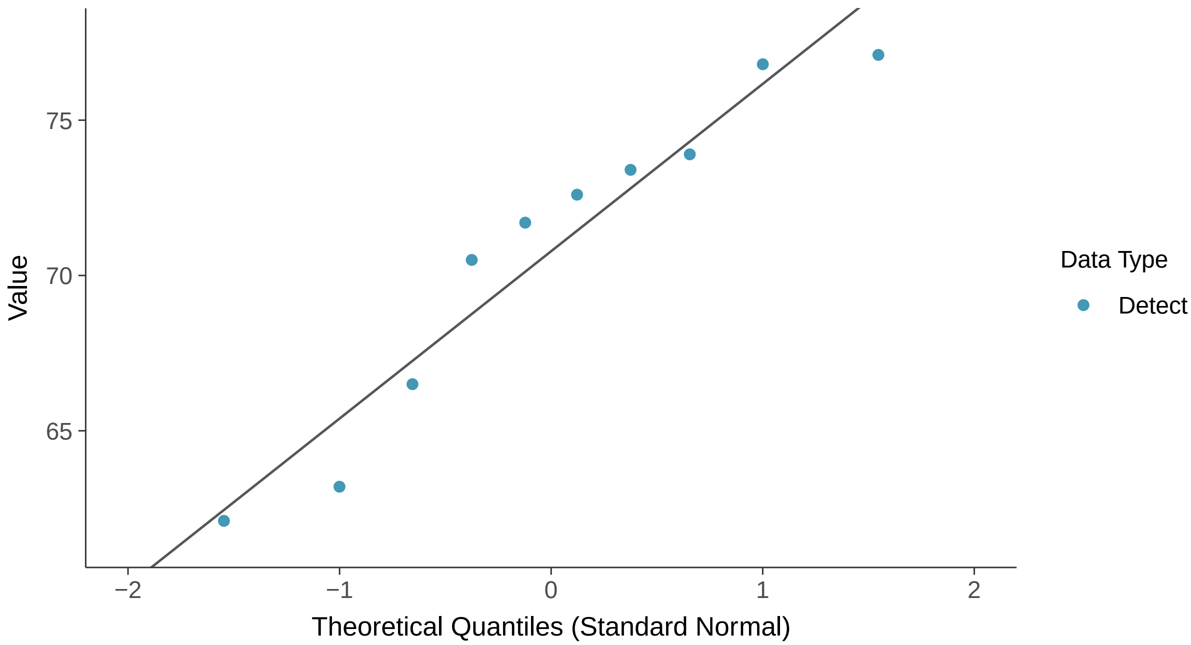
Boxplot by Season

Calcium, MW-16C (mg/L)



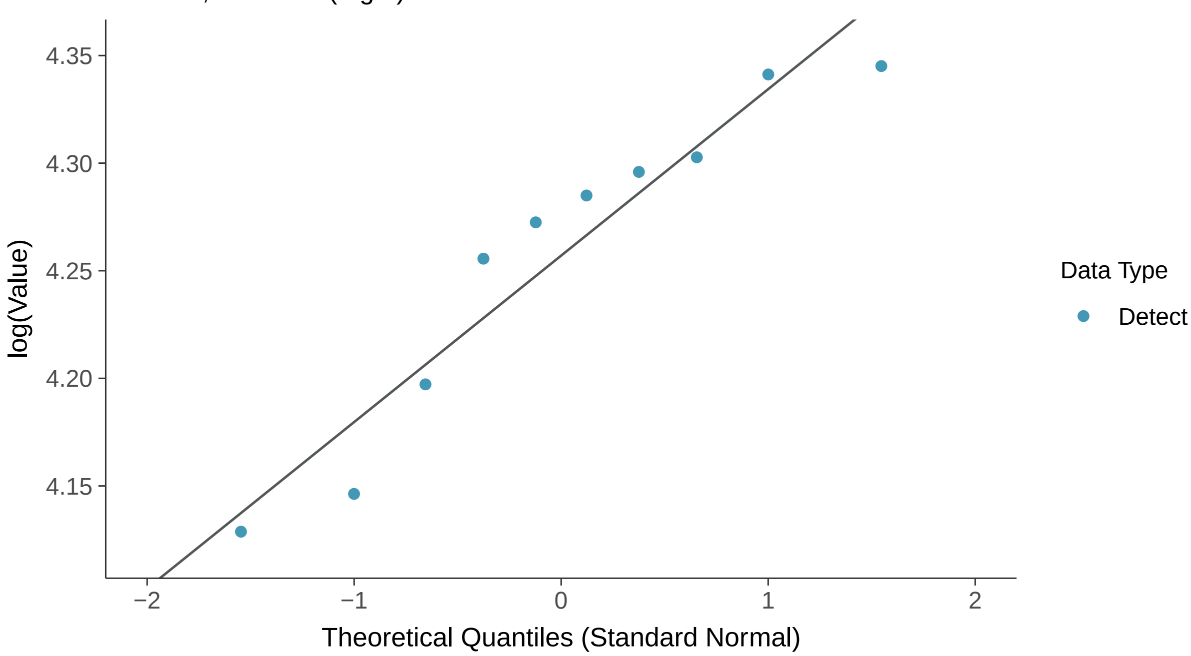
Normal Q-Q plot

Calcium, MW-16C (mg/L)



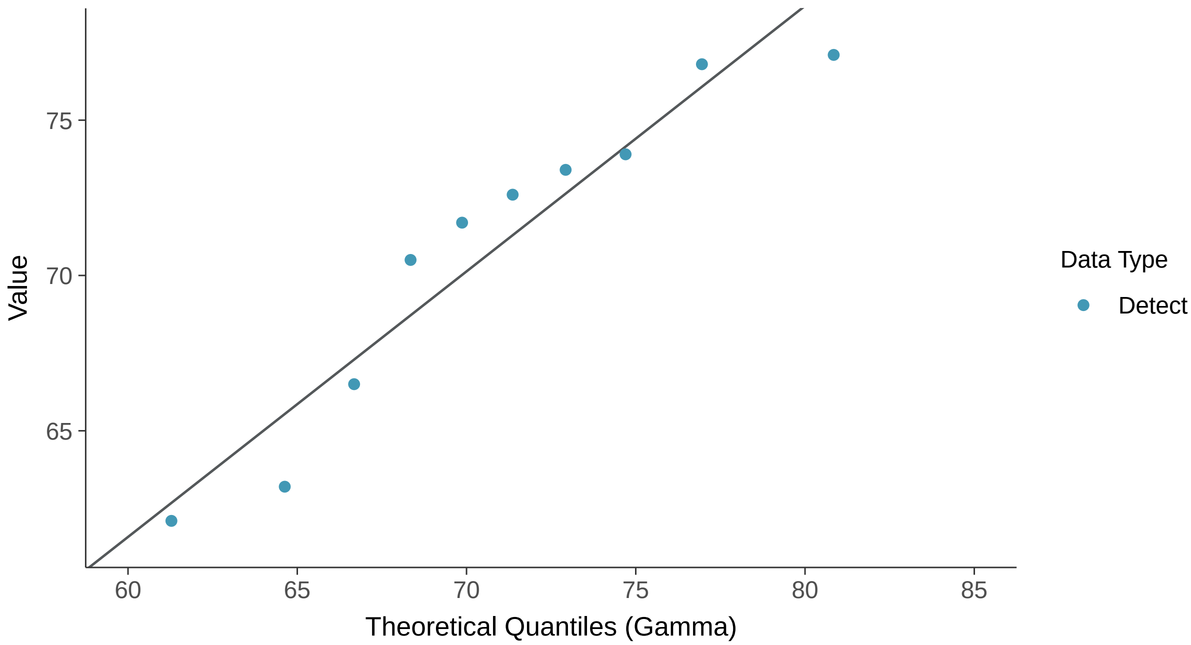
Lognormal Q-Q plot

Calcium, MW-16C (mg/L)



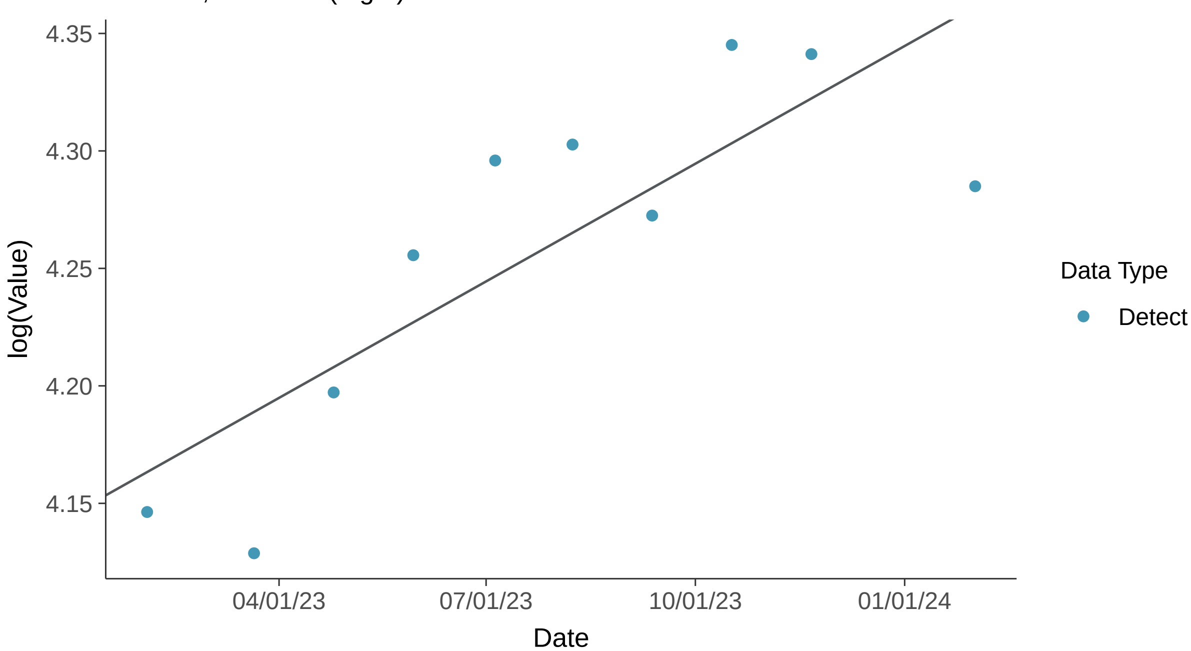
Gamma Q-Q plot

Calcium, MW-16C (mg/L)



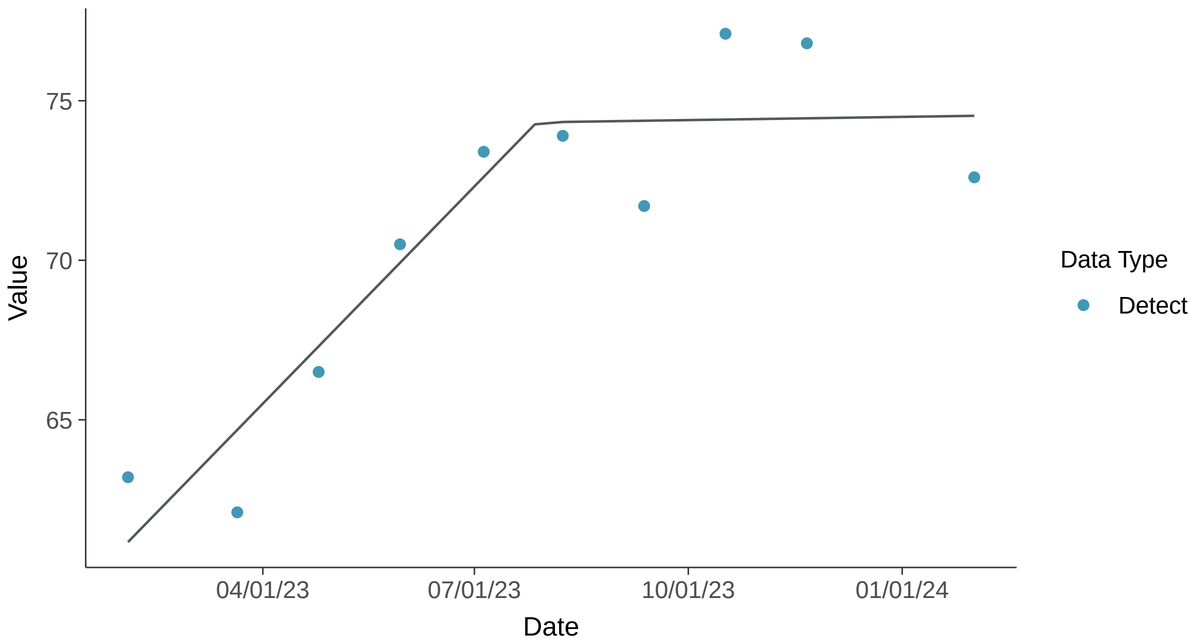
Trend Regression: Lognormal MLE

Calcium, MW-16C (mg/L)



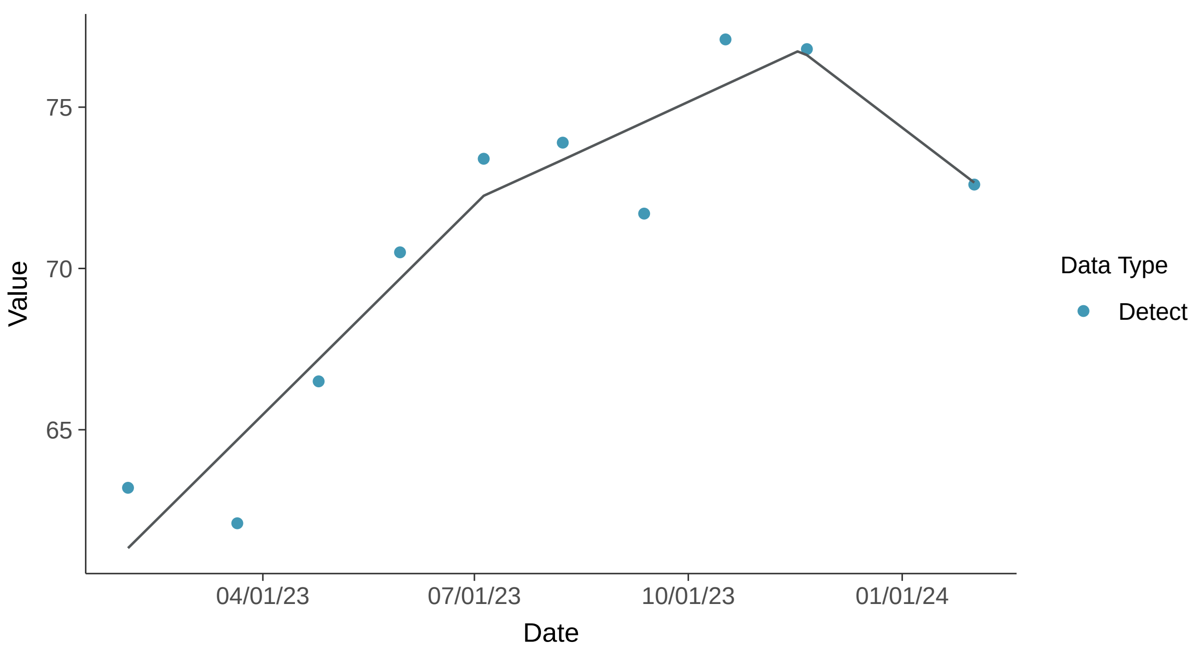
Trend Regression: Piecewise Linear-Linear

Calcium, MW-16C (mg/L)



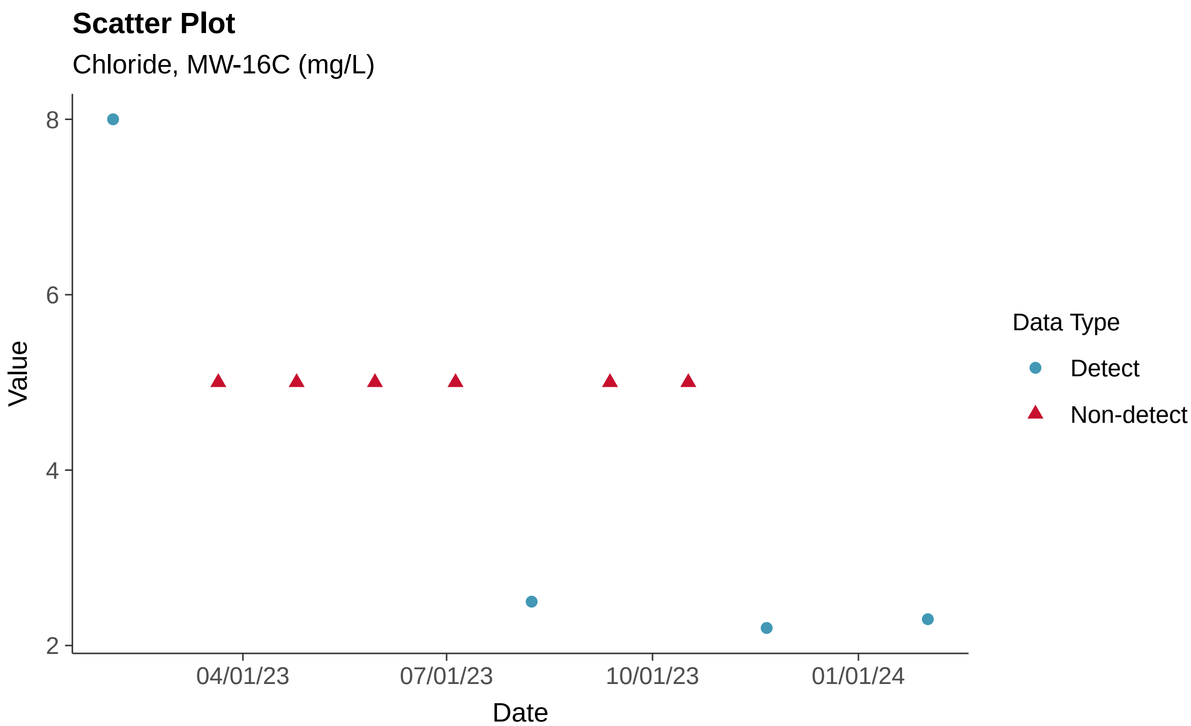
Trend Regression: Piecewise Linear-Linear-Linear

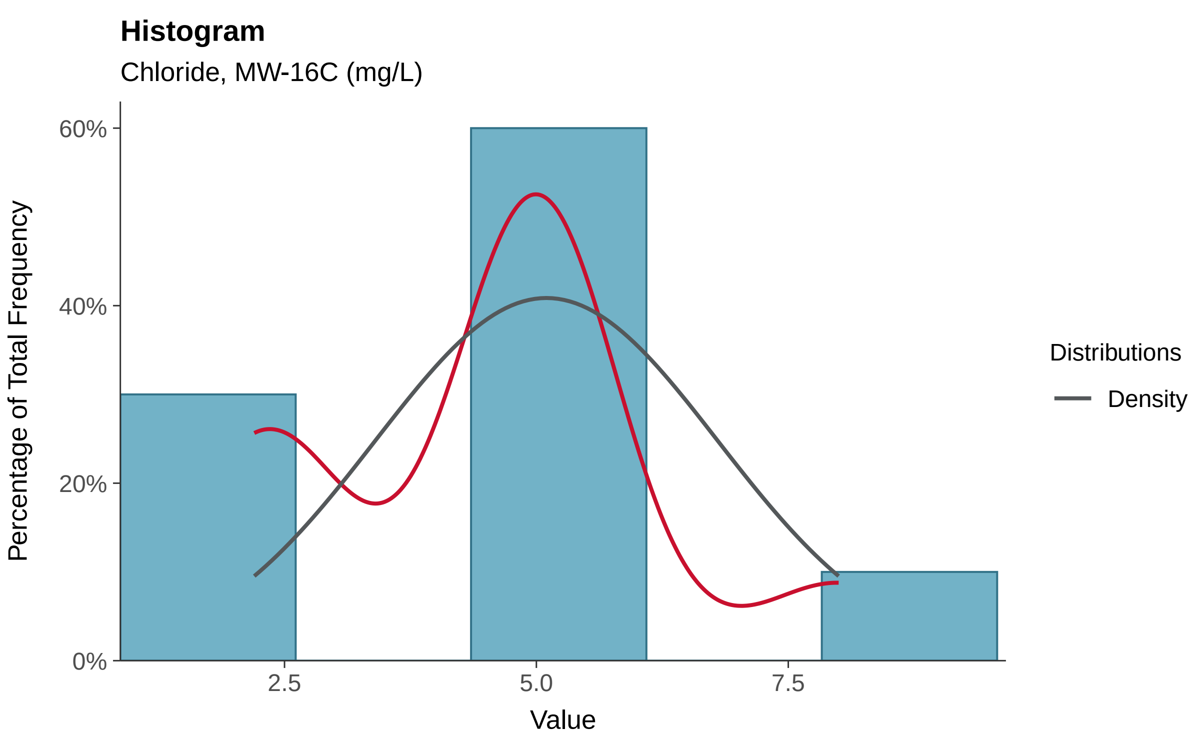
Calcium, MW-16C (mg/L)



Appendix III: Chloride, MW-16C

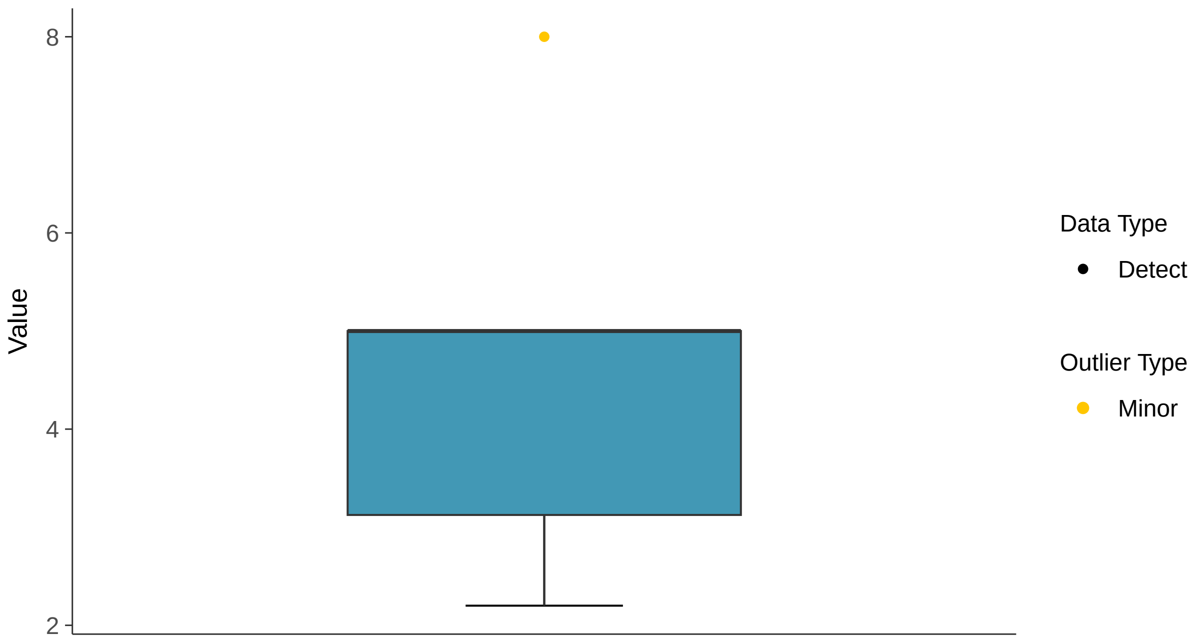
ID: 16C_1_03





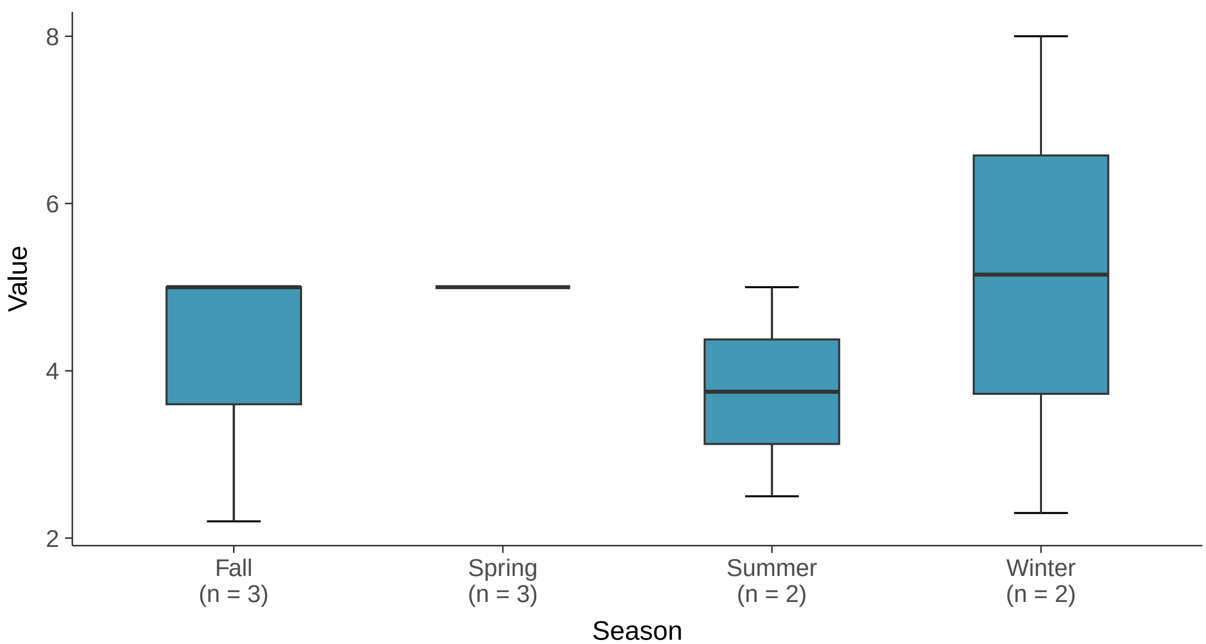
Boxplot

Chloride, MW-16C (mg/L)



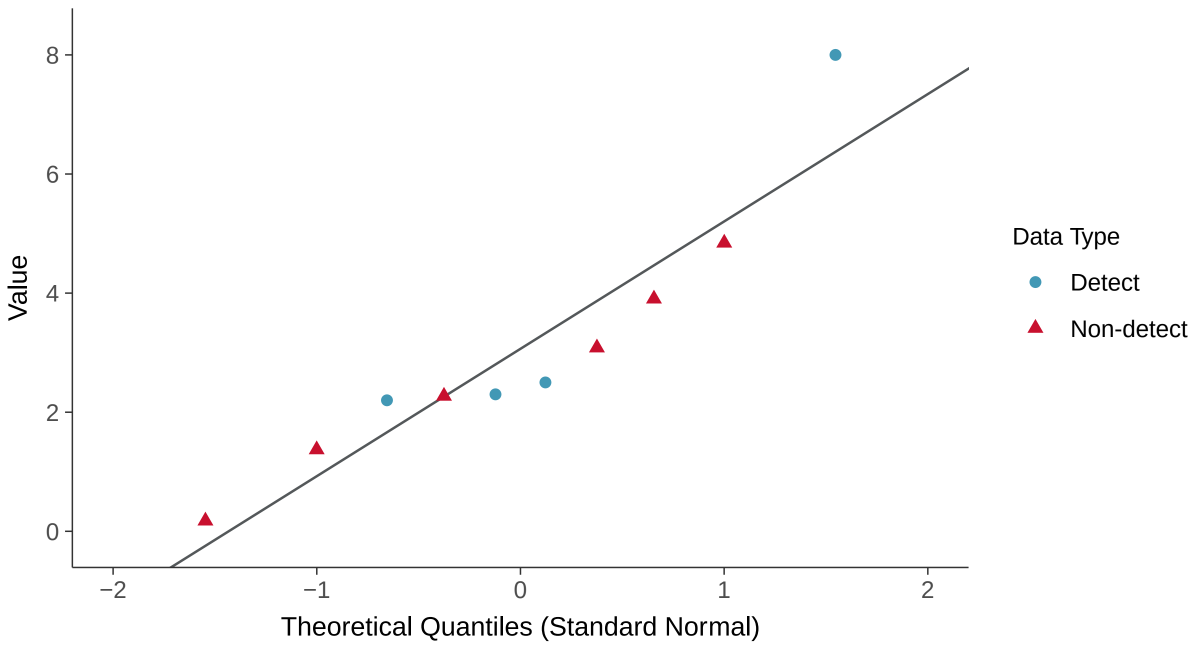
Boxplot by Season

Chloride, MW-16C (mg/L)



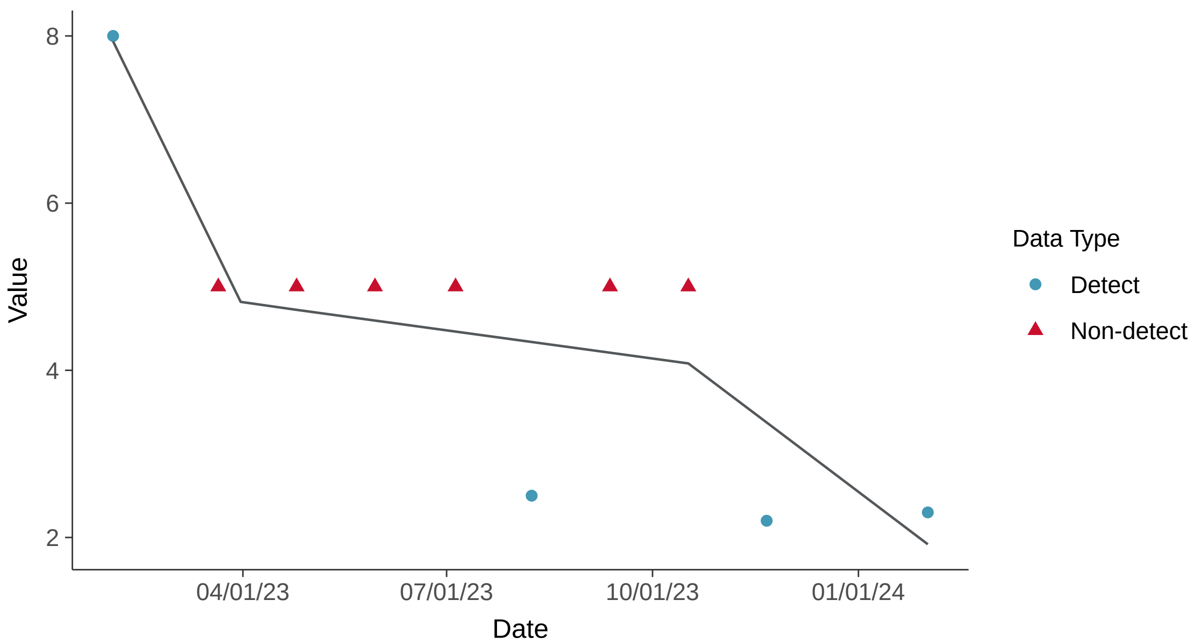
Normal Q-Q plot using ROS Imputed Estimates

Chloride, MW-16C (mg/L)



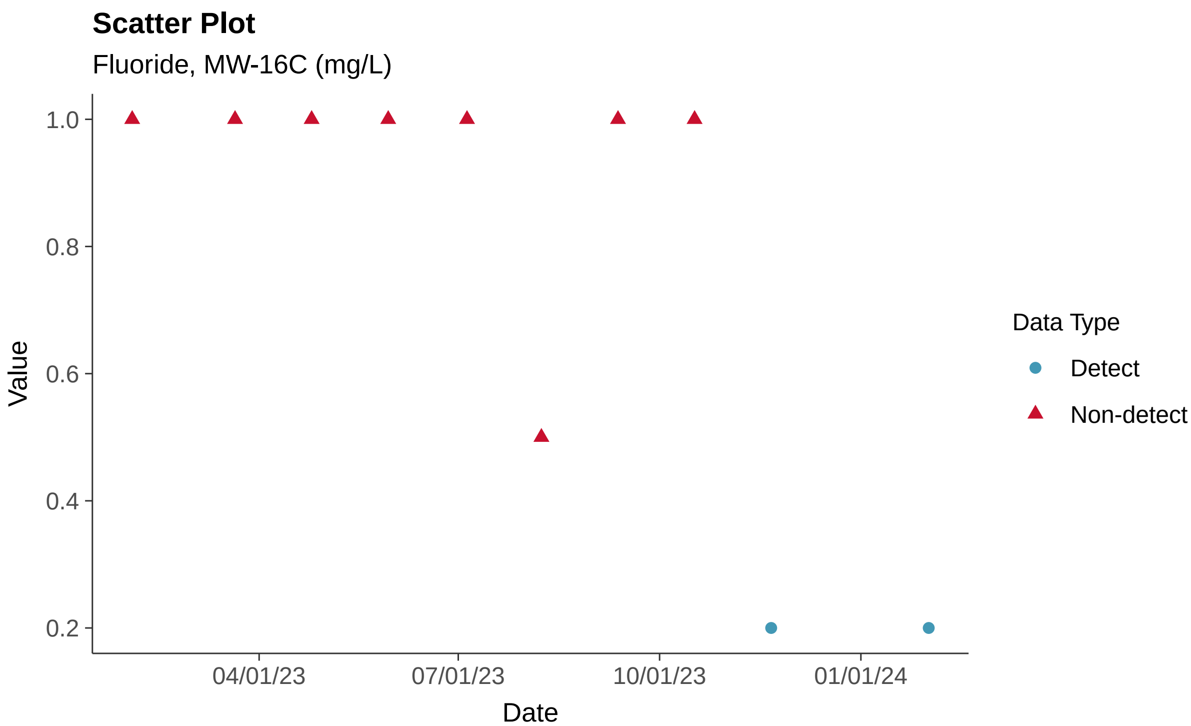
Trend Regression: Piecewise Linear-Linear-Linear

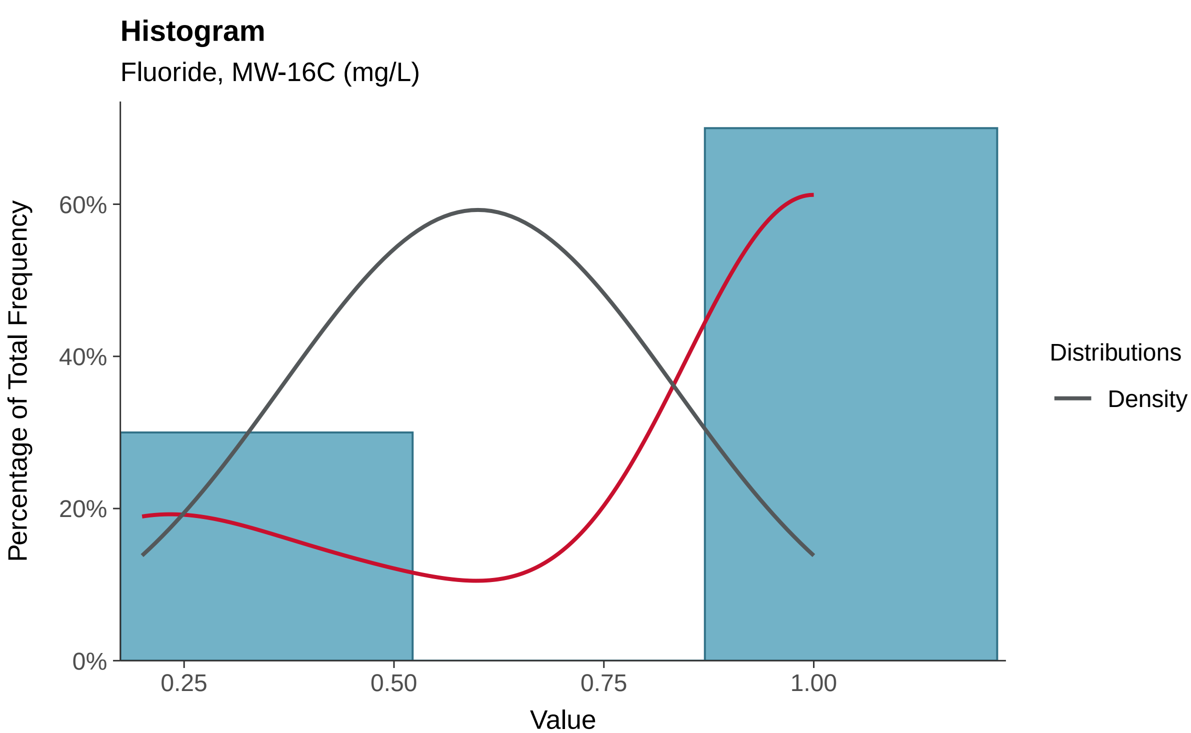
Chloride, MW-16C (mg/L)



Appendix III: Fluoride, MW-16C

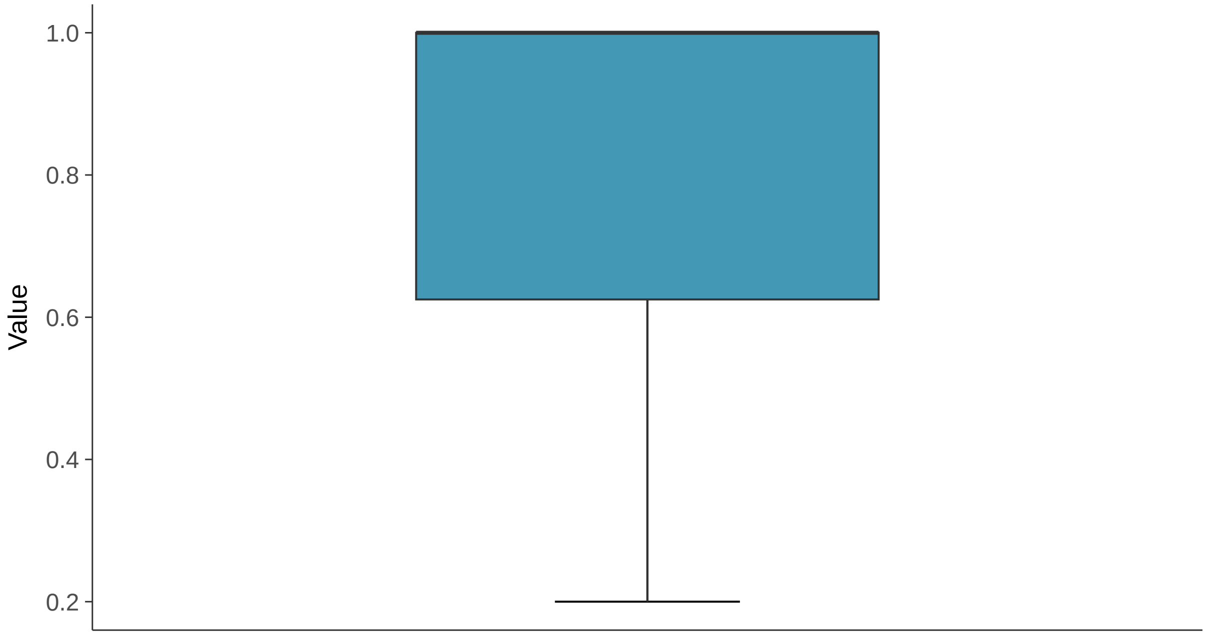
ID: 16C_1_04





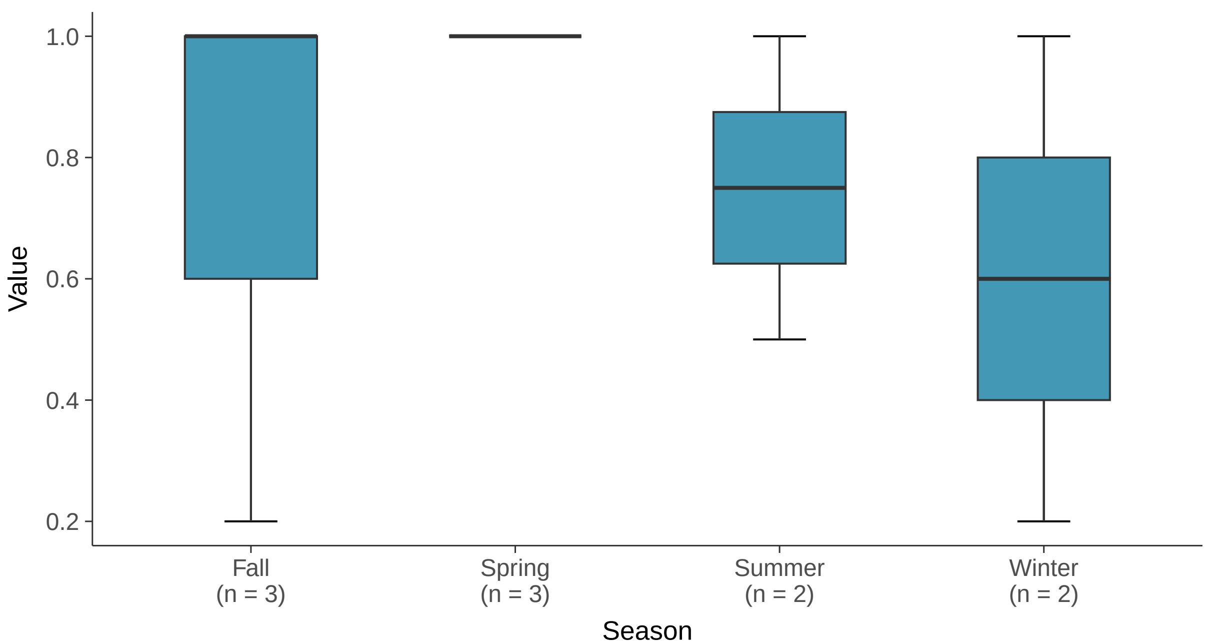
Boxplot

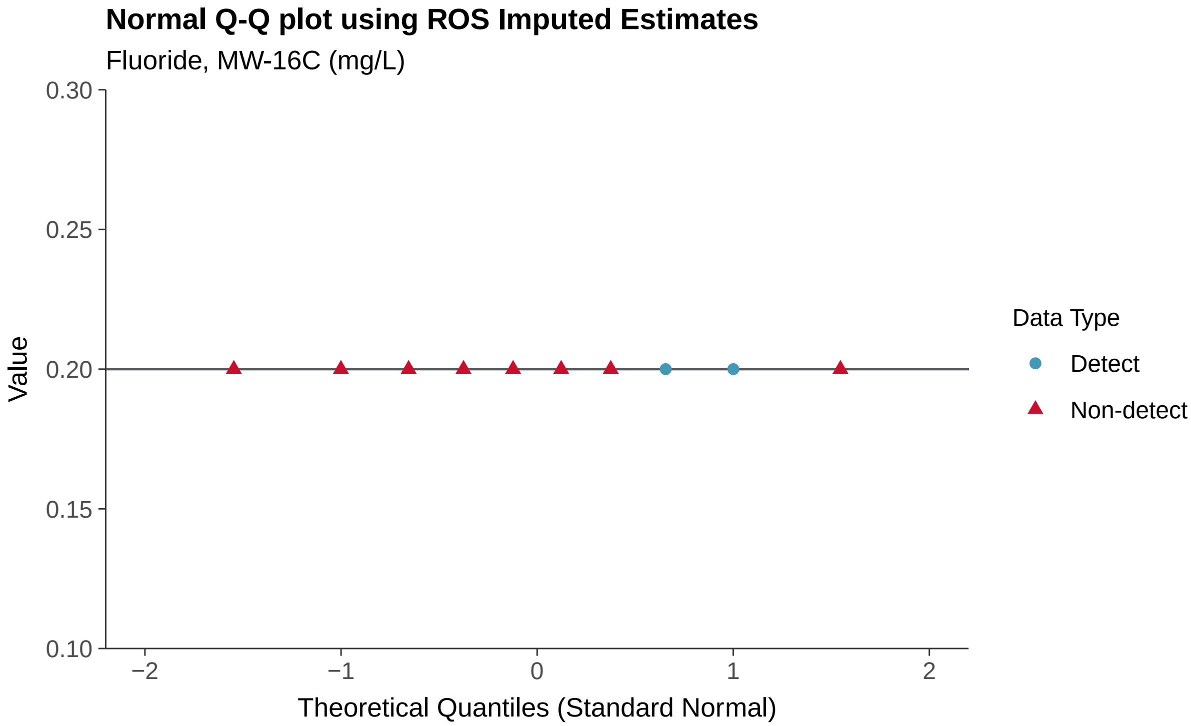
Fluoride, MW-16C (mg/L)

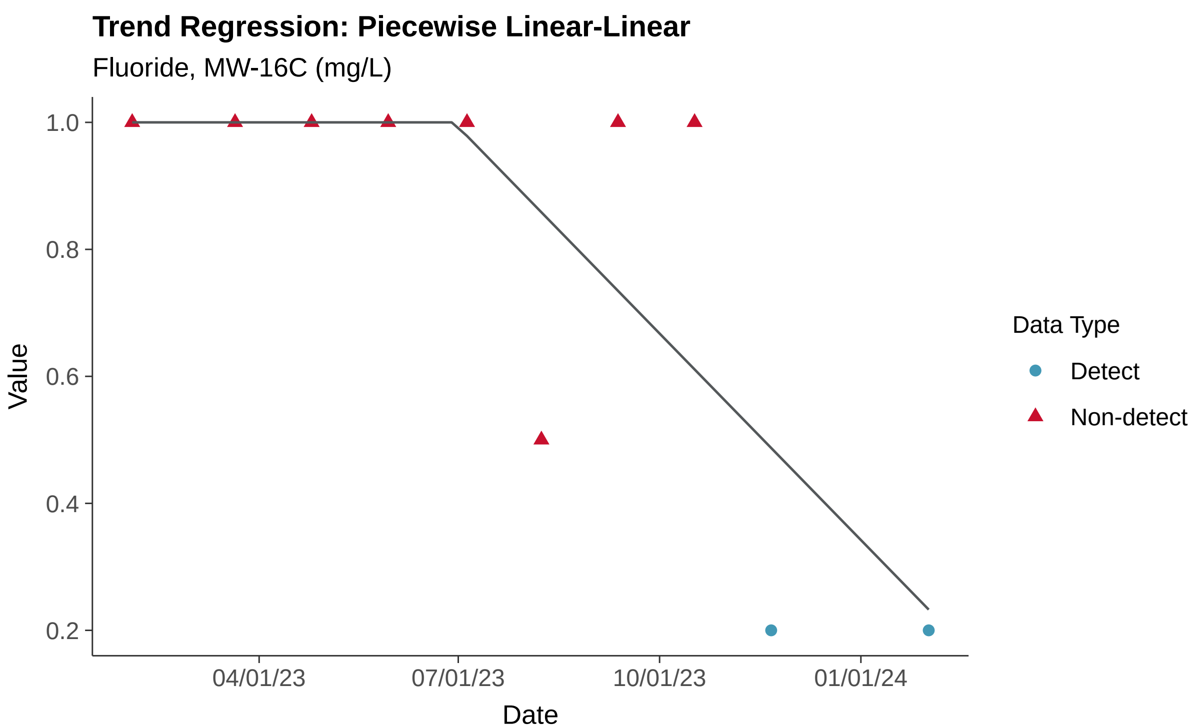


Boxplot by Season

Fluoride, MW-16C (mg/L)

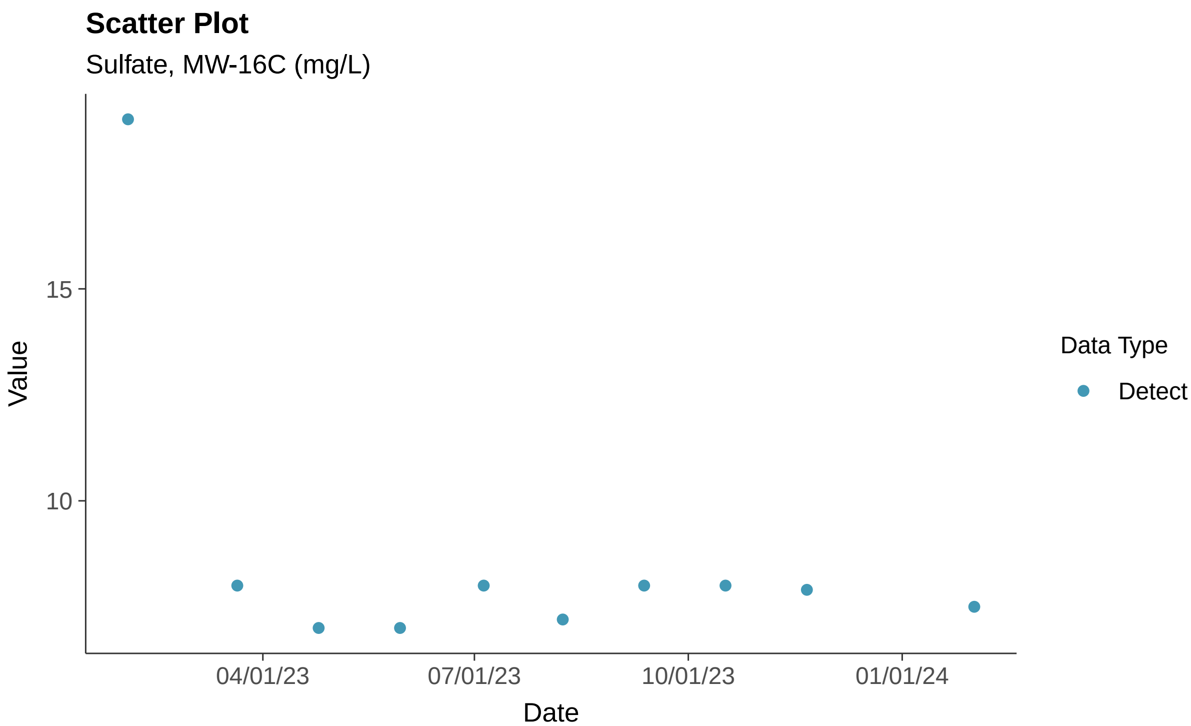


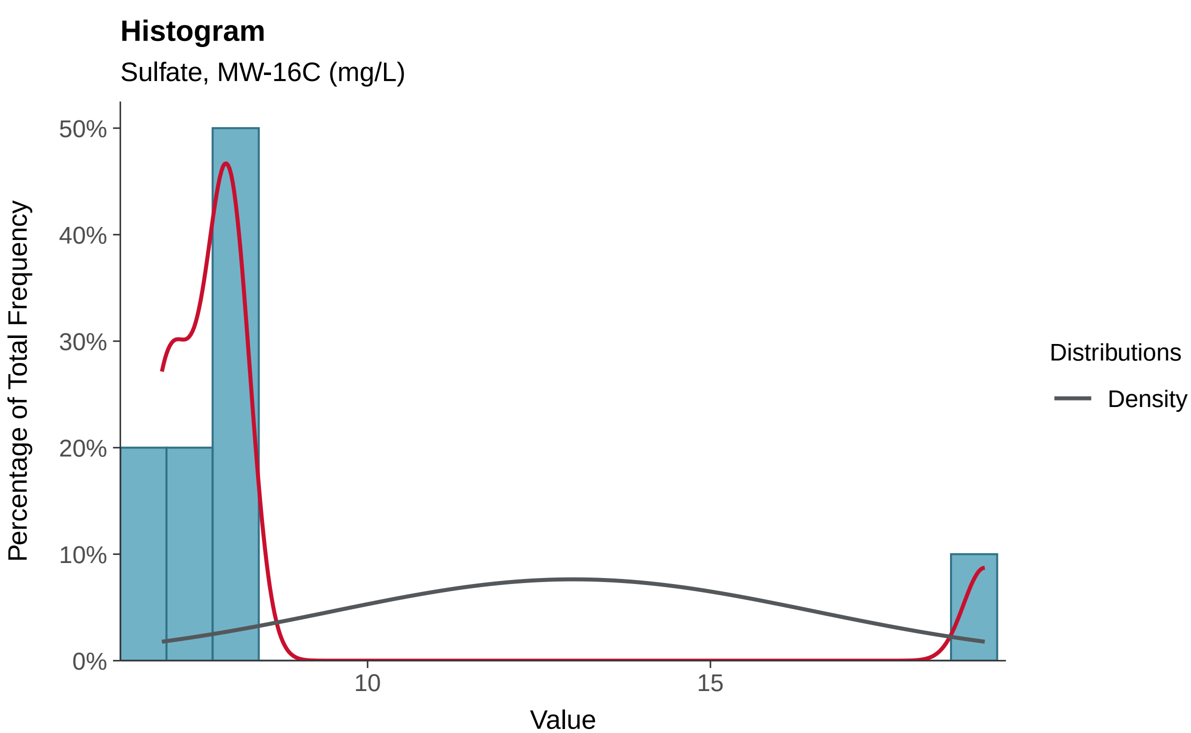

Normal Q-Q plot using ROS Imputed Estimates
Fluoride, MW-16C (mg/L)
Value
0.30
0.25
0.20
0.15
0.10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

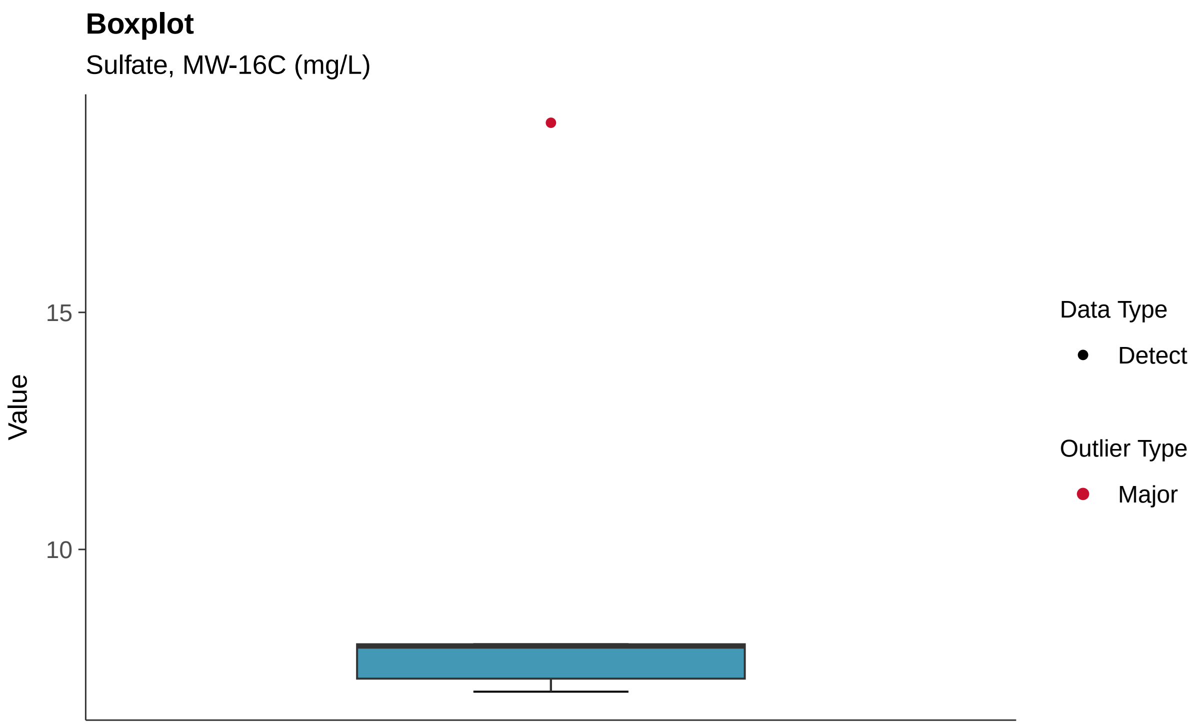

Trend Regression: Piecewise Linear-Linear
Fluoride, MW-16C (mg/L)
Value
1.0
0.8
0.6
0.4
0.2
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

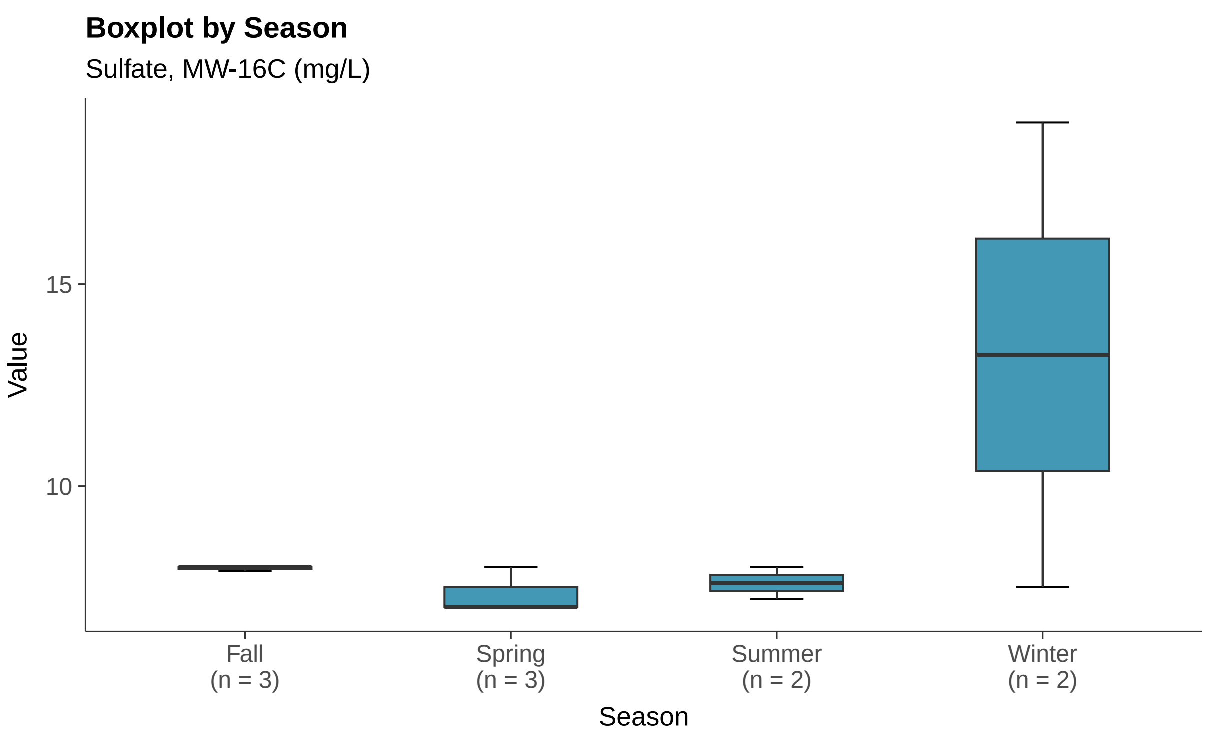
Appendix III: Sulfate, MW-16C

ID: 16C_1_05



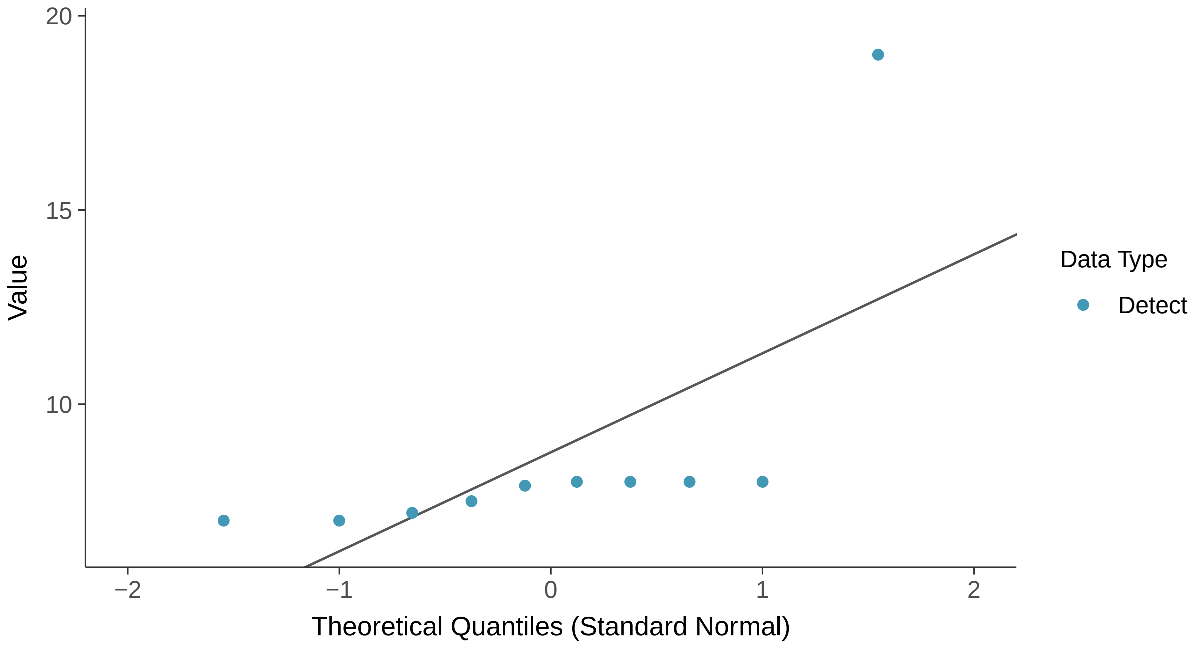



Boxplot
Sulfate, MW-16C (mg/L)
Value
15
10
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Sulfate, MW-16C (mg/L)
Value
15
10
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season

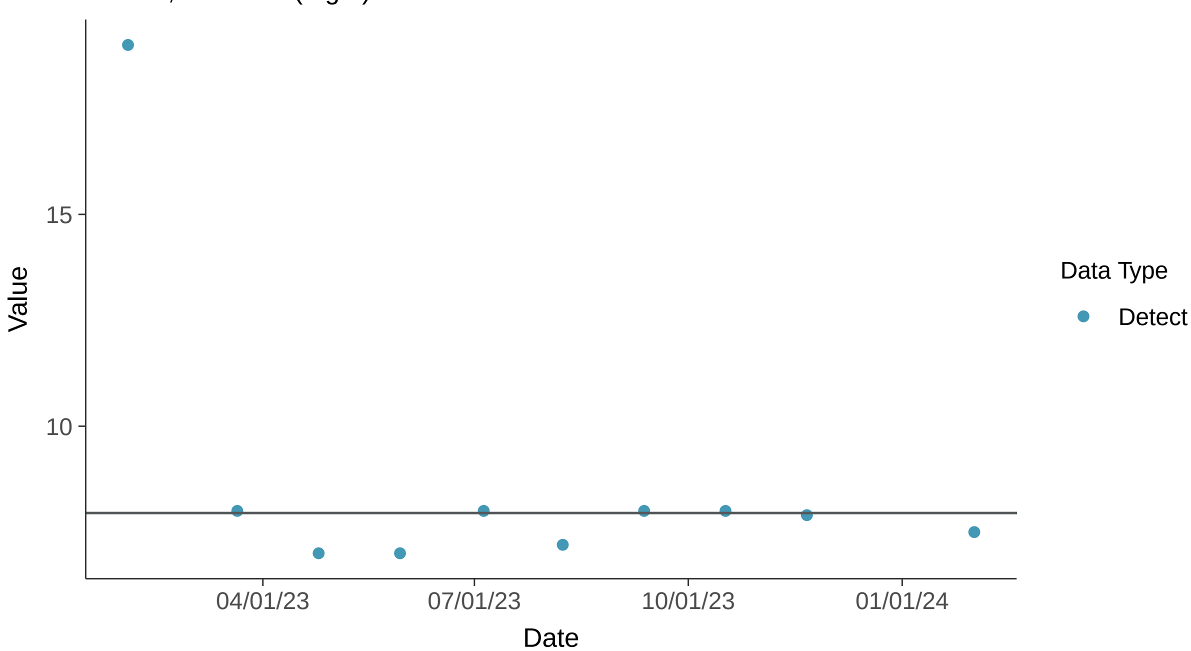
Normal Q-Q plot

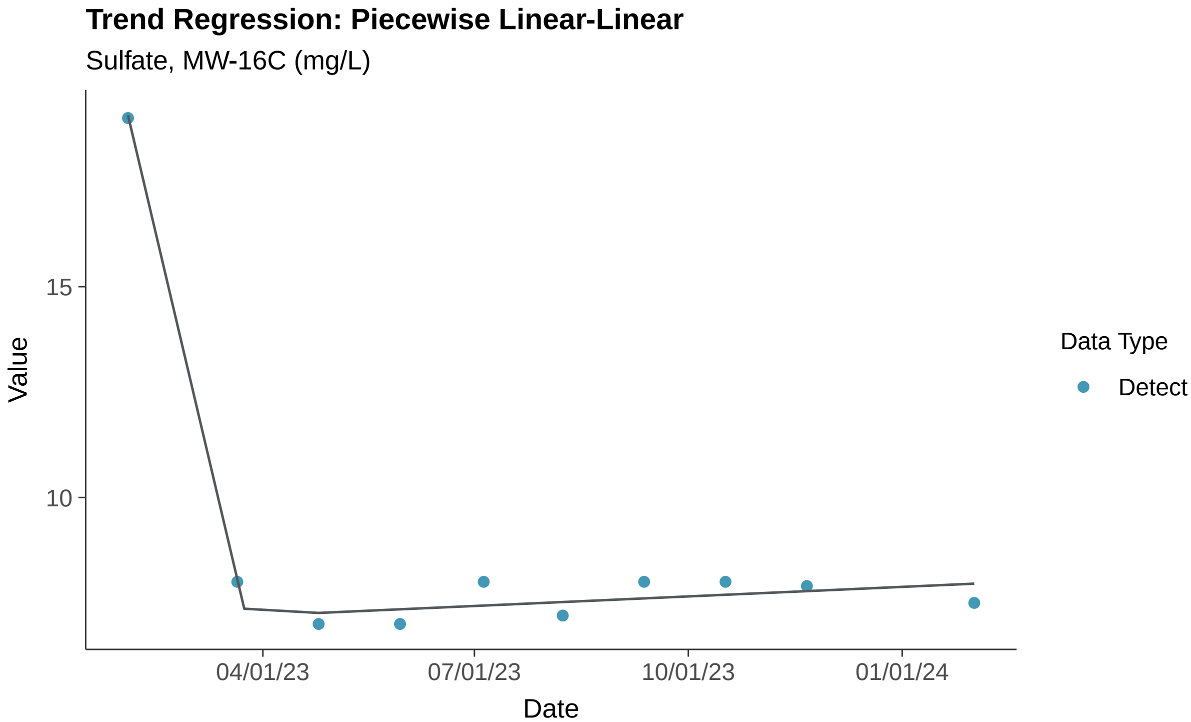
Sulfate, MW-16C (mg/L)

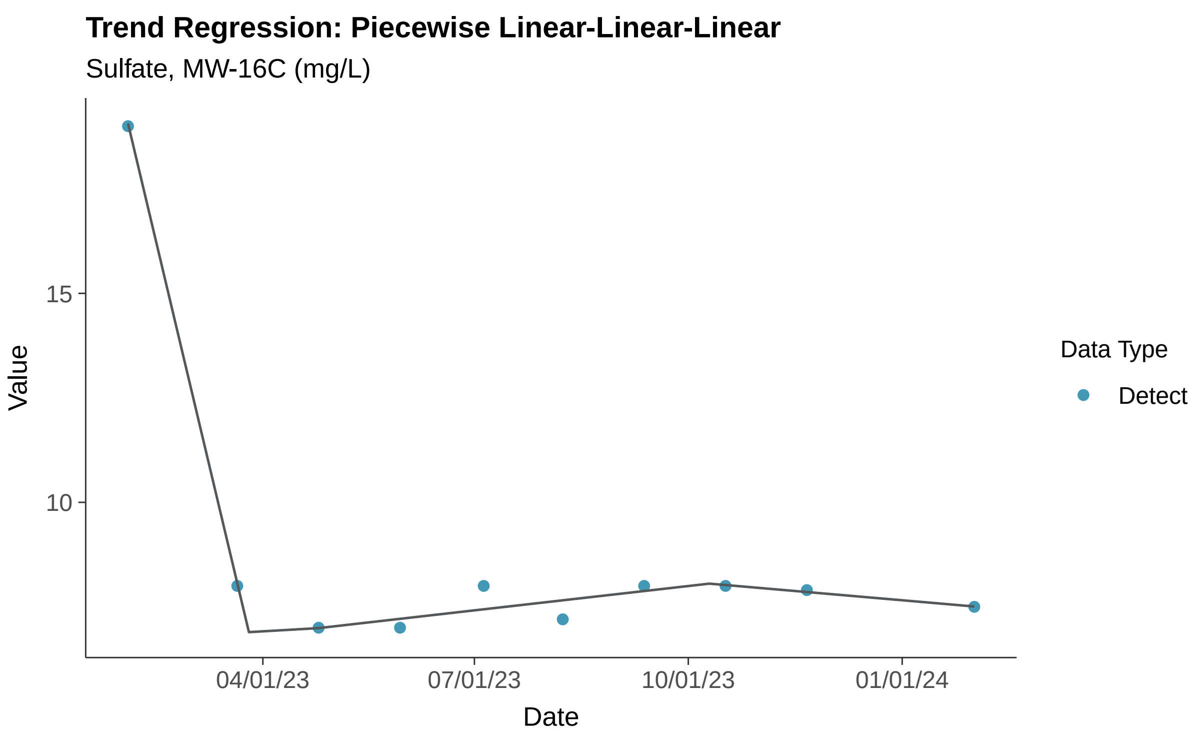


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Sulfate, MW-16C (mg/L)




Trend Regression: Piecewise Linear-Linear
Sulfate, MW-16C (mg/L)
Value
15
10
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

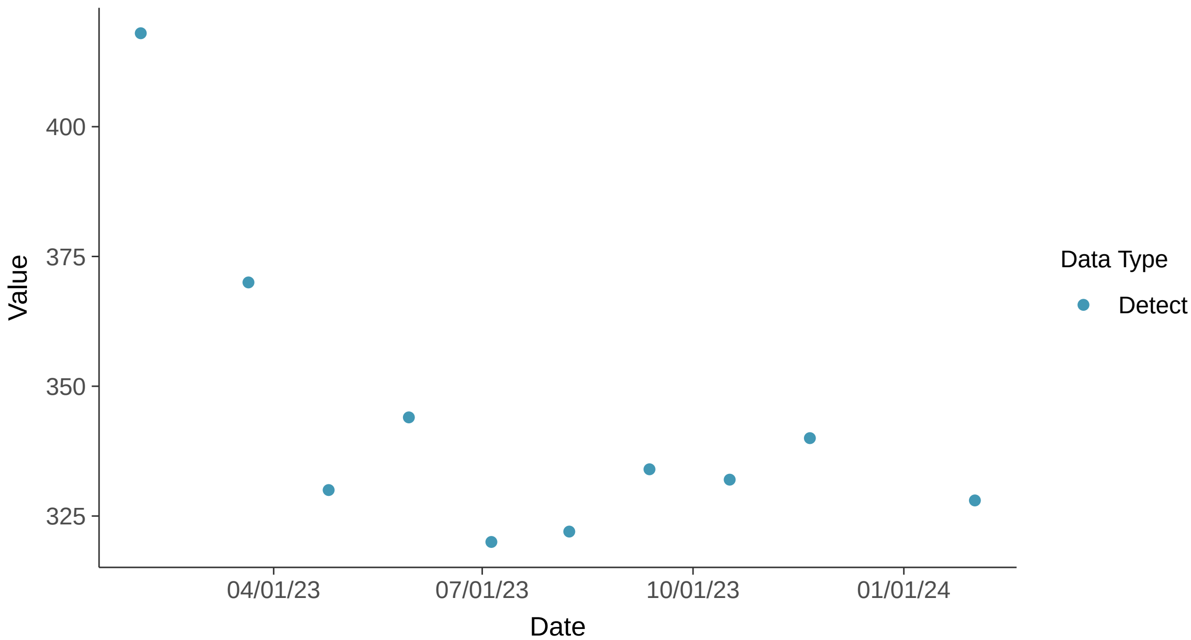

Trend Regression: Piecewise Linear-Linear-Linear
Sulfate, MW-16C (mg/L)
Value
15
10
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix III: Total Dissolved Solids, MW-16C

ID: 16C_1_06

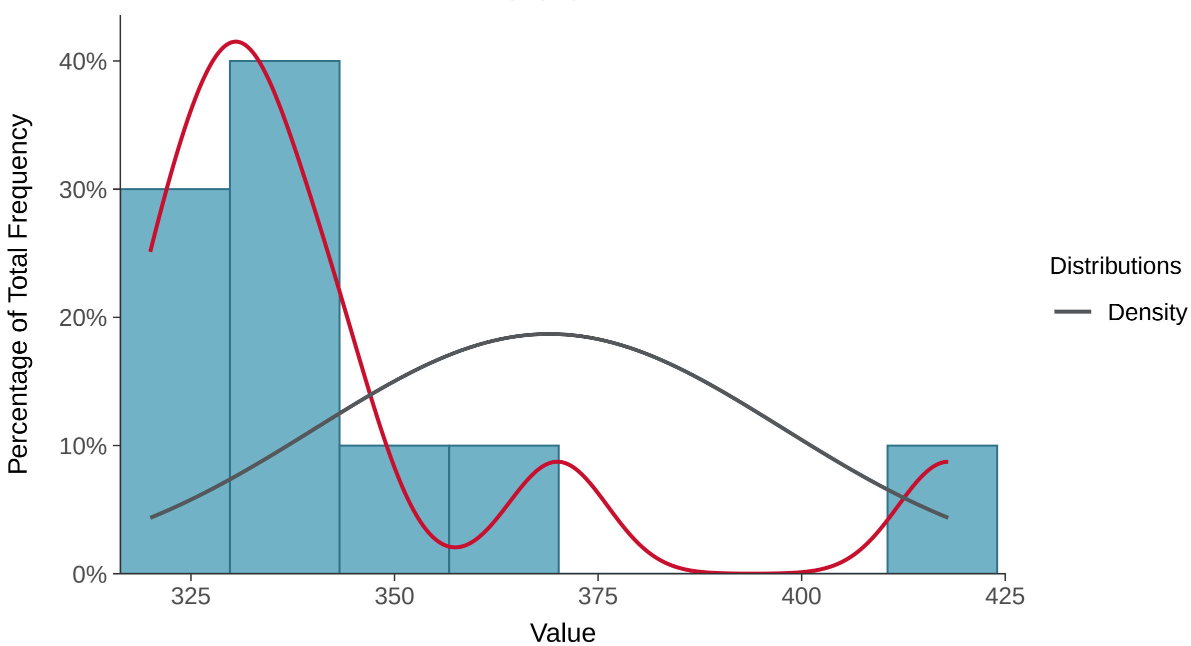
Scatter Plot

Total Dissolved Solids, MW-16C (mg/L)



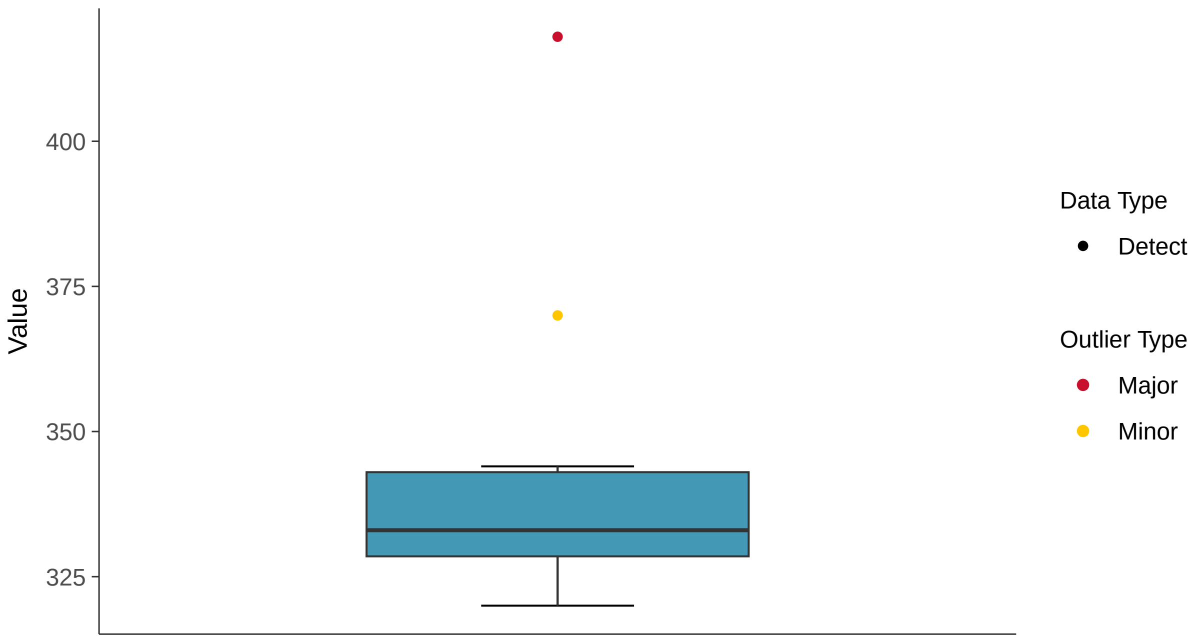
Histogram

Total Dissolved Solids, MW-16C (mg/L)



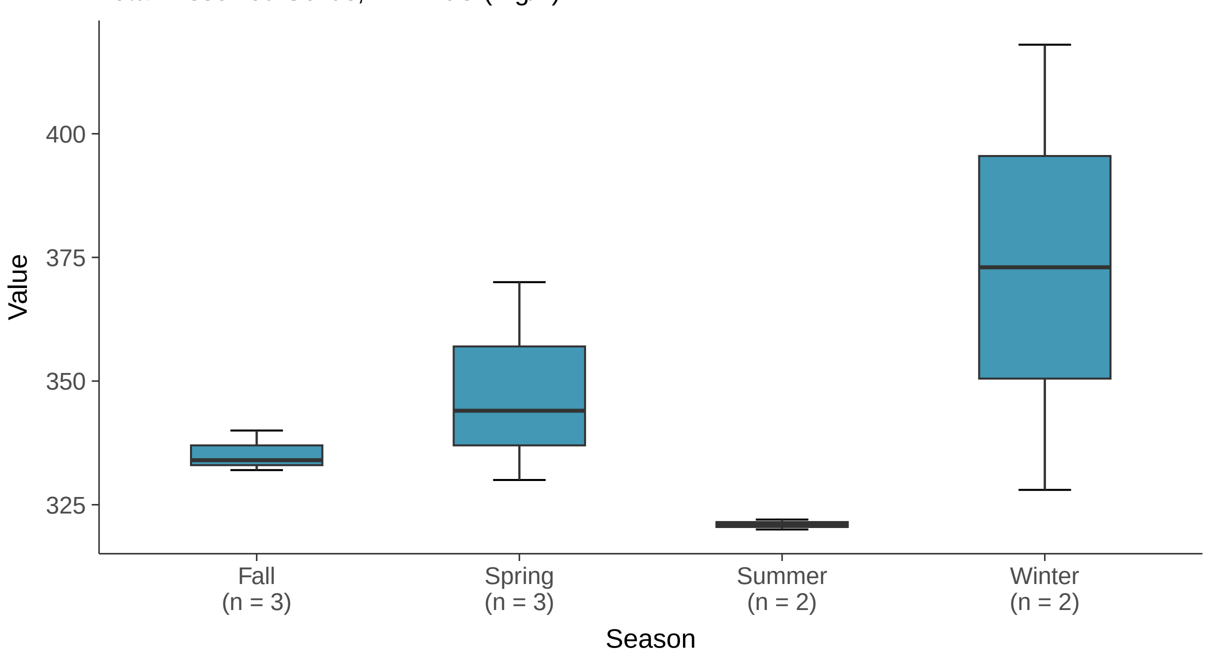
Boxplot

Total Dissolved Solids, MW-16C (mg/L)



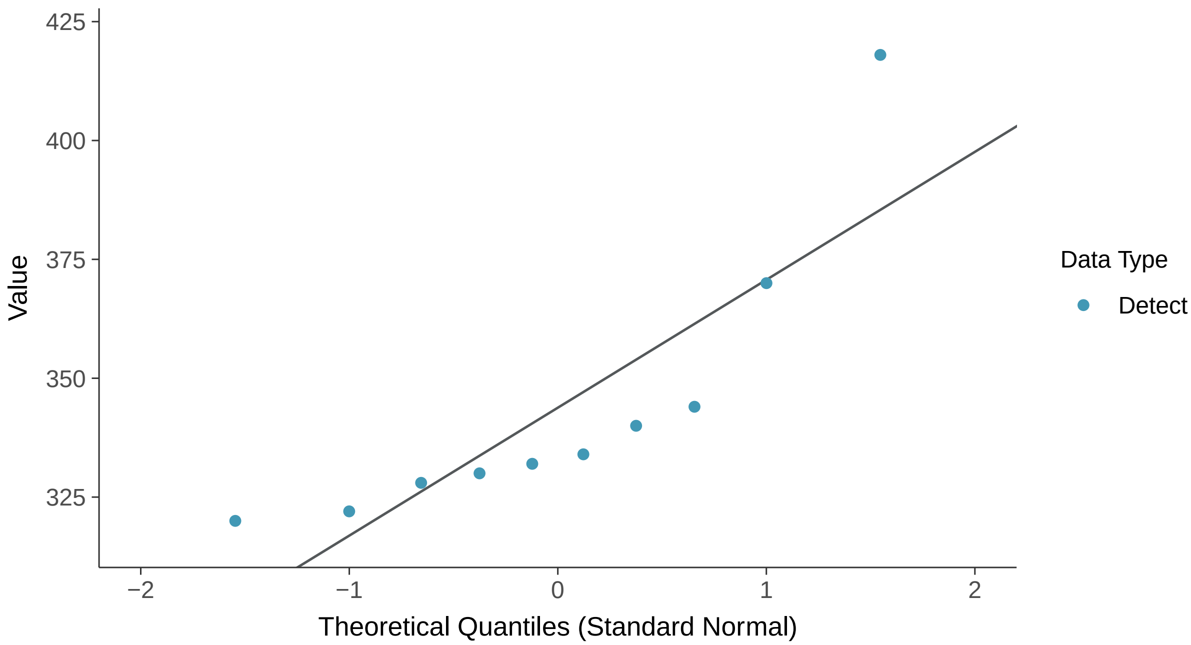
Boxplot by Season

Total Dissolved Solids, MW-16C (mg/L)



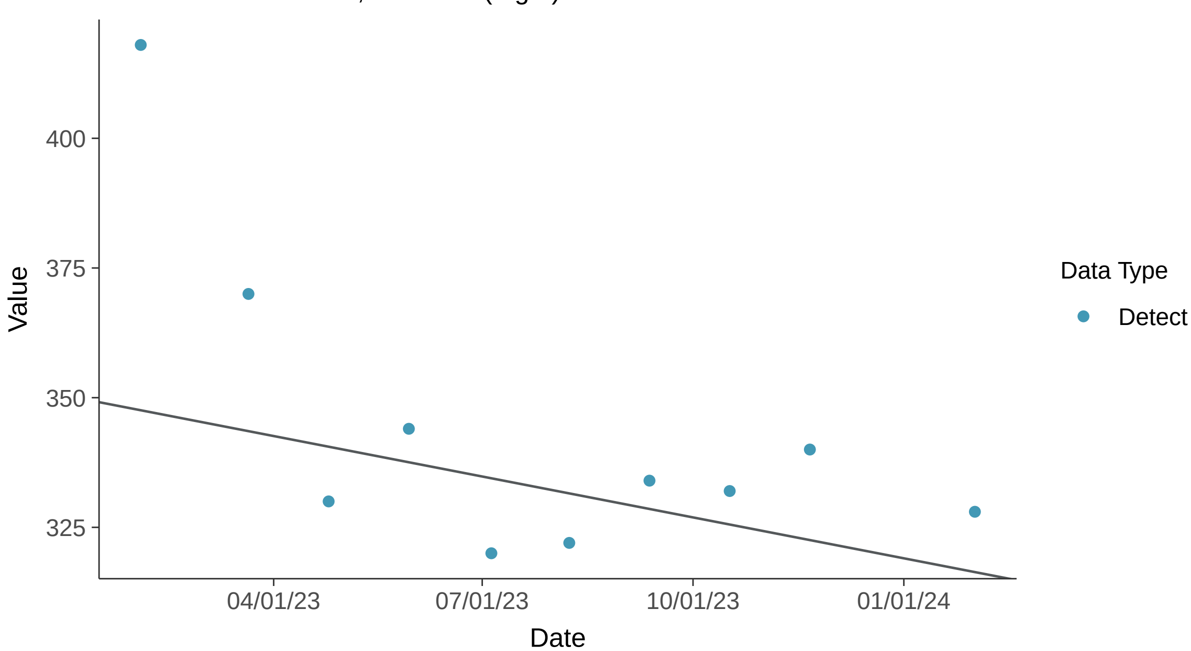
Normal Q-Q plot

Total Dissolved Solids, MW-16C (mg/L)



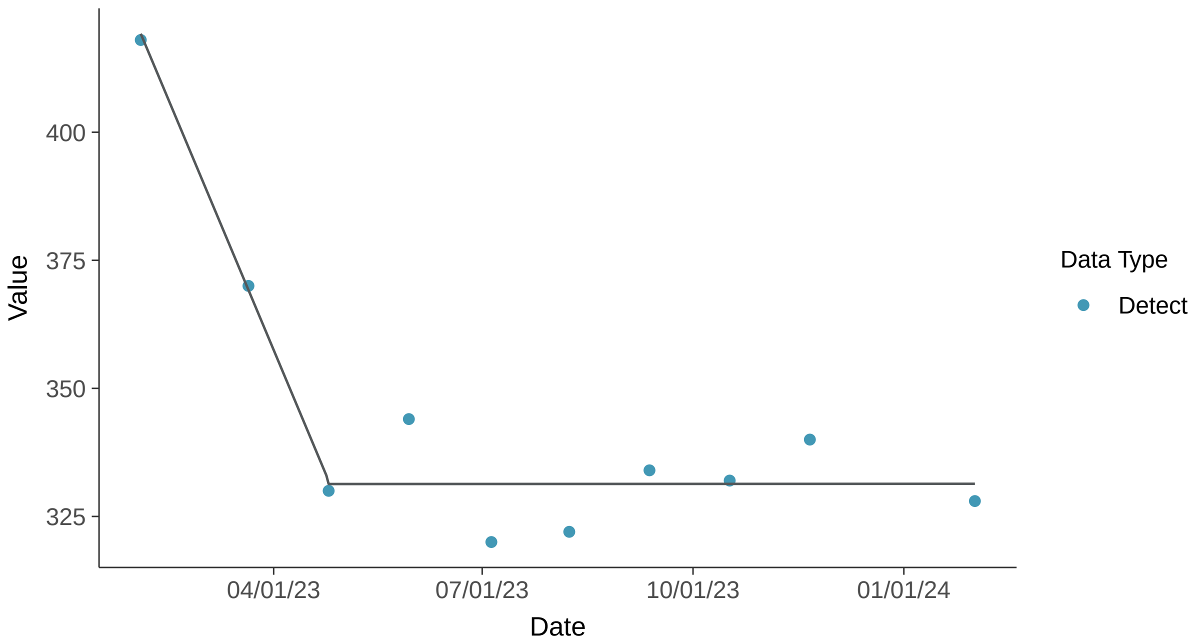
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Total Dissolved Solids, MW-16C (mg/L)



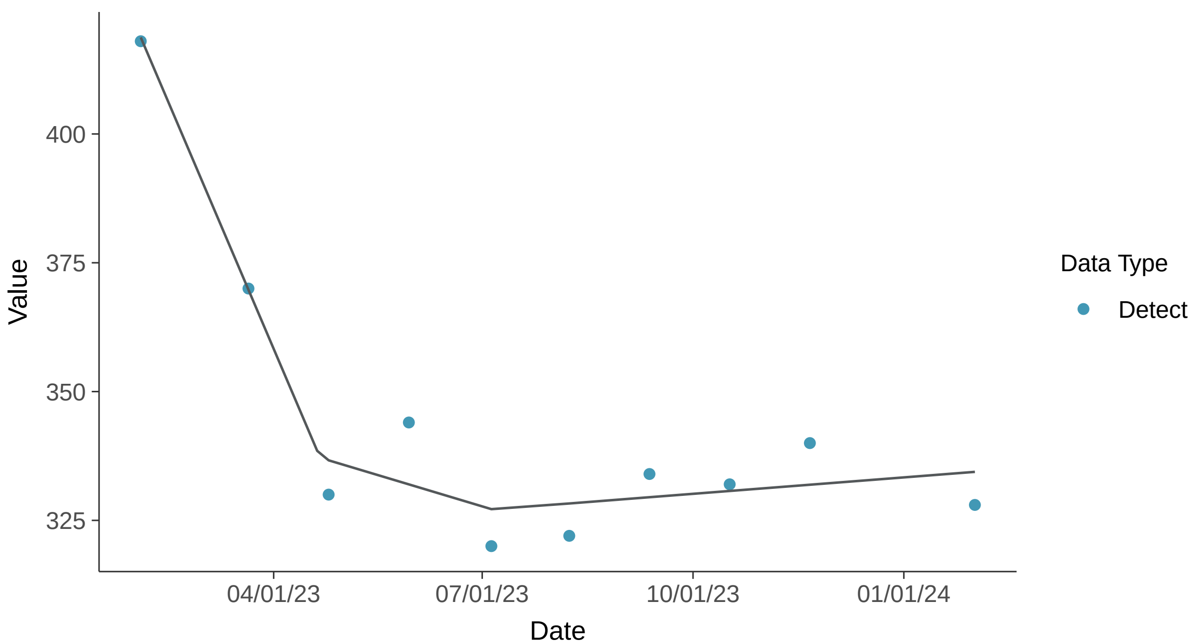
Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-16C (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Total Dissolved Solids, MW-16C (mg/L)

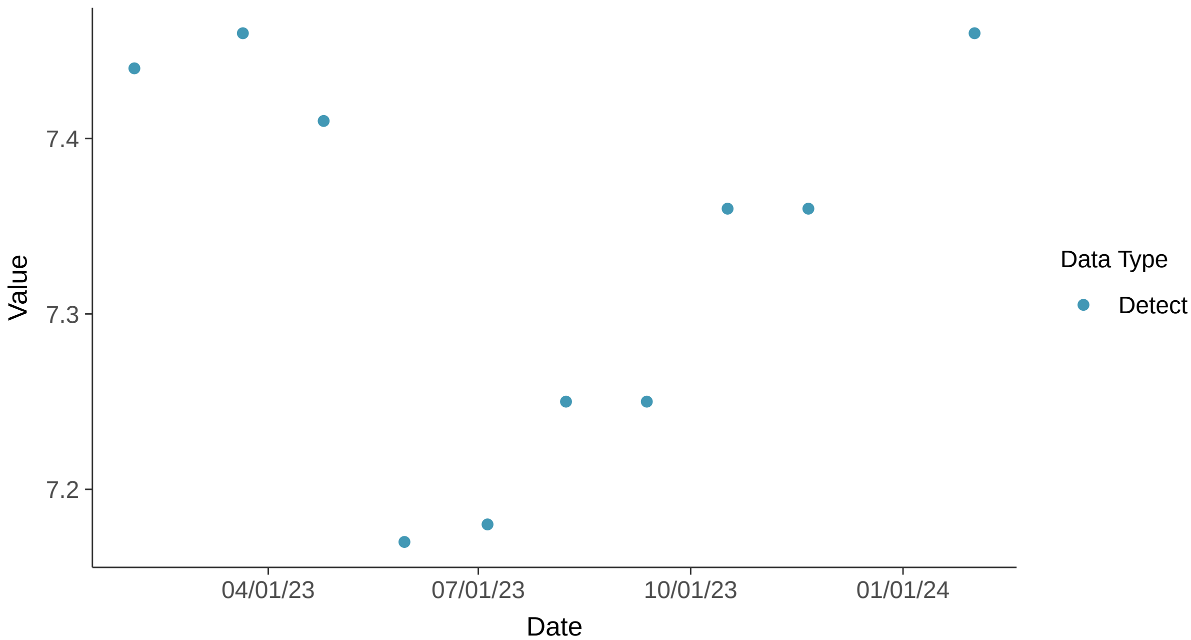


Appendix III: pH, Field, MW-16C

ID: 16C_1_07

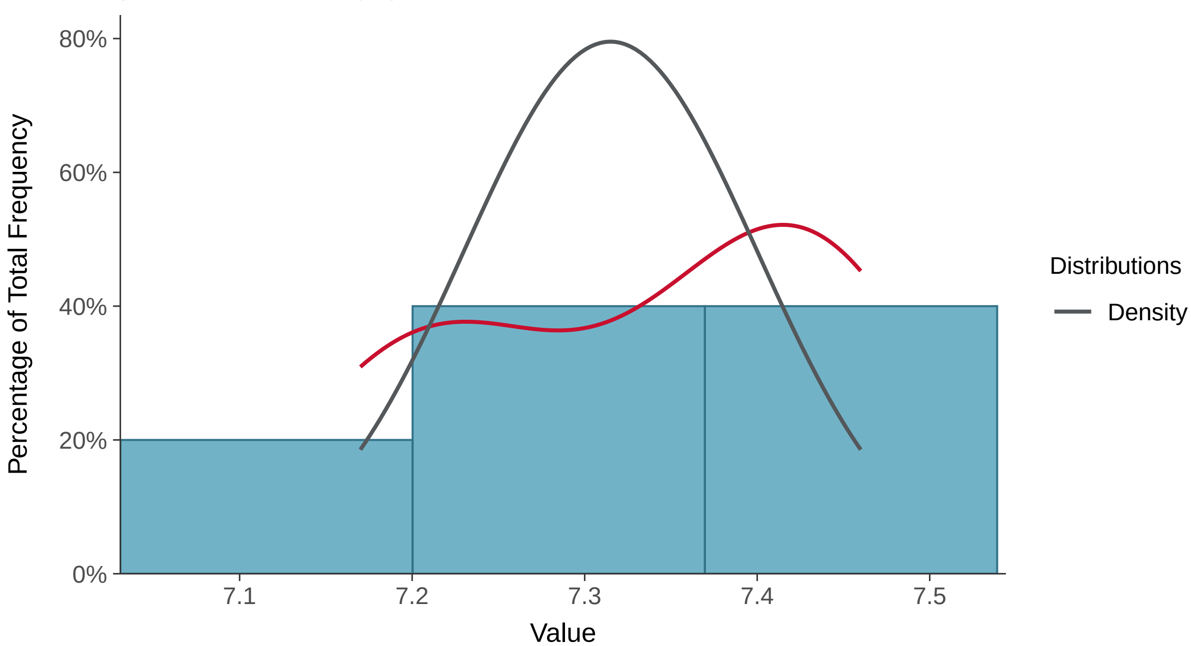
Scatter Plot

pH, Field, MW-16C (su)



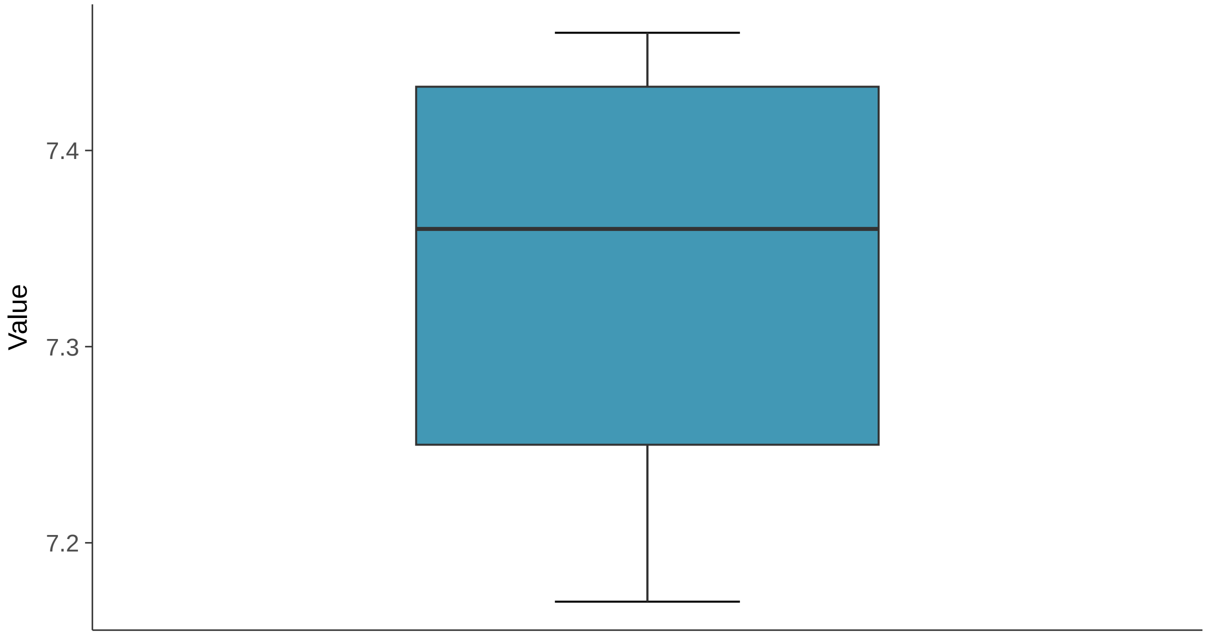
Histogram

pH, Field, MW-16C (su)



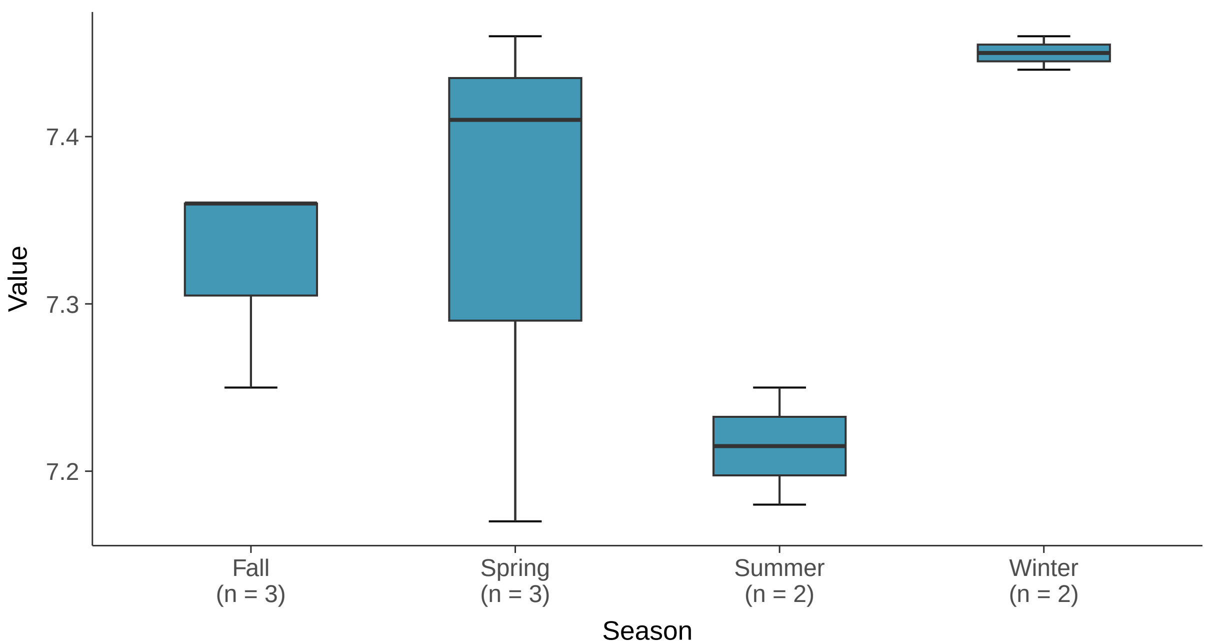
Boxplot

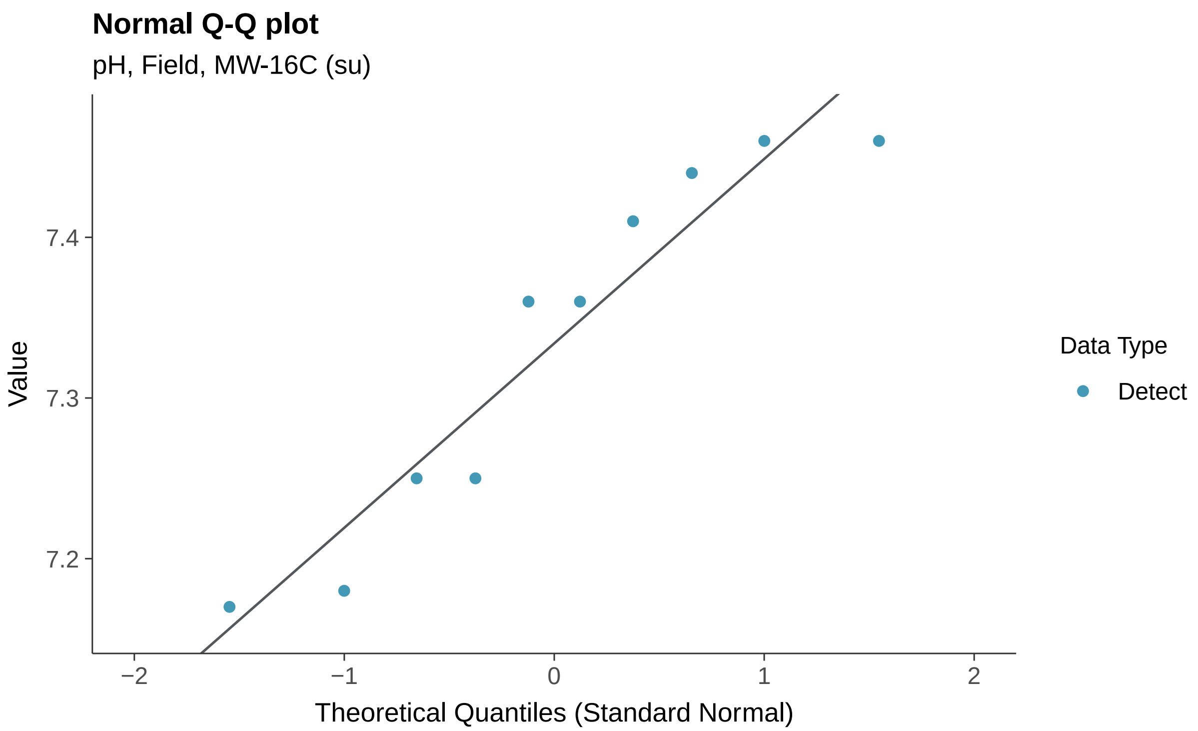
pH, Field, MW-16C (su)

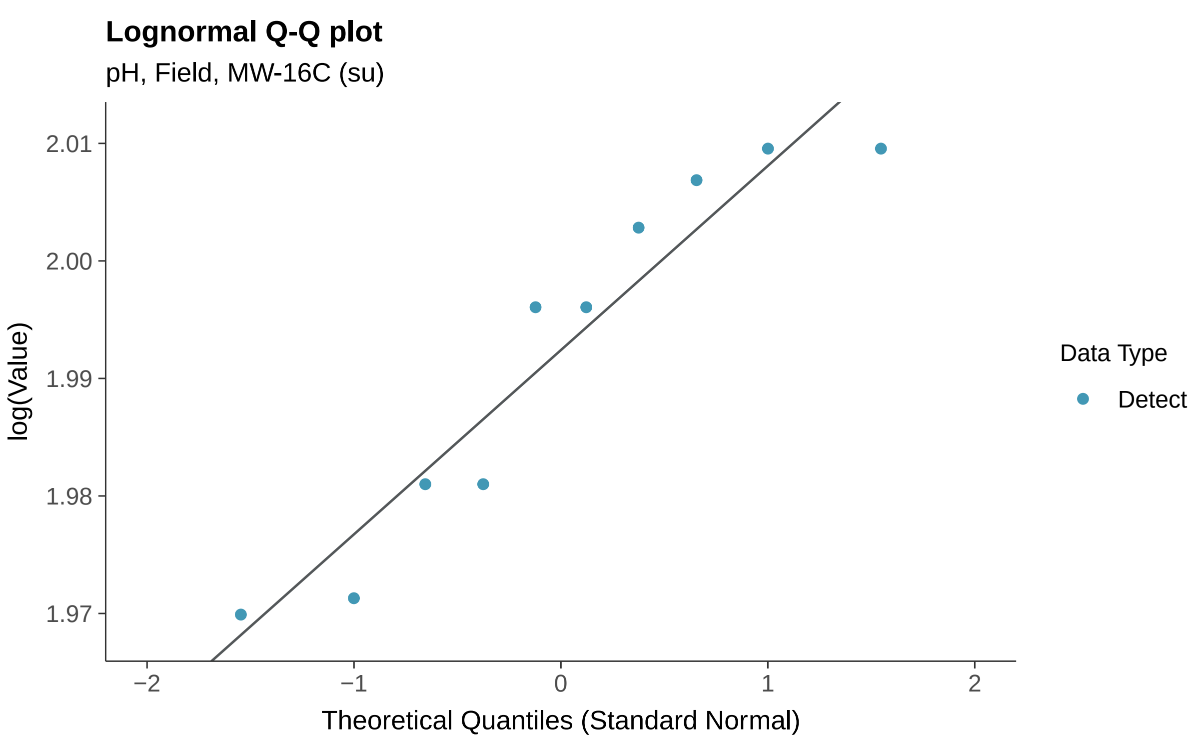


Boxplot by Season

pH, Field, MW-16C (su)

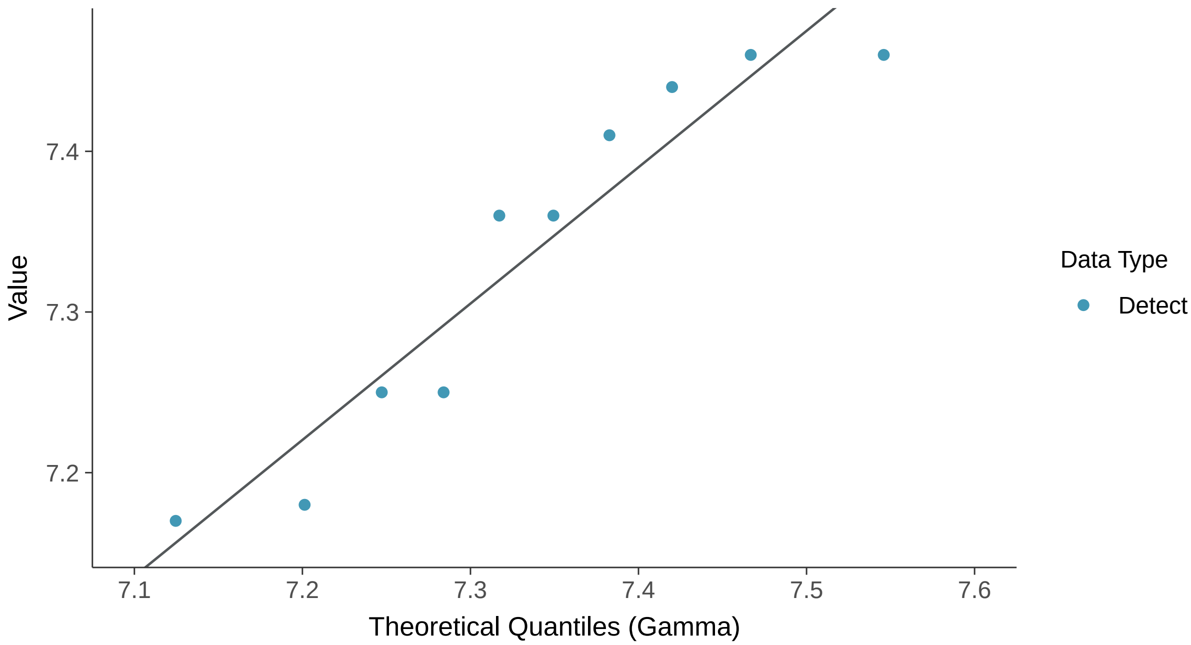



Normal Q-Q plot
pH, Field, MW-16C (su)
Value
7.4
7.3
7.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH, Field, MW-16C (su)
log(Value)
2.01
2.00
1.99
1.98
1.97
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

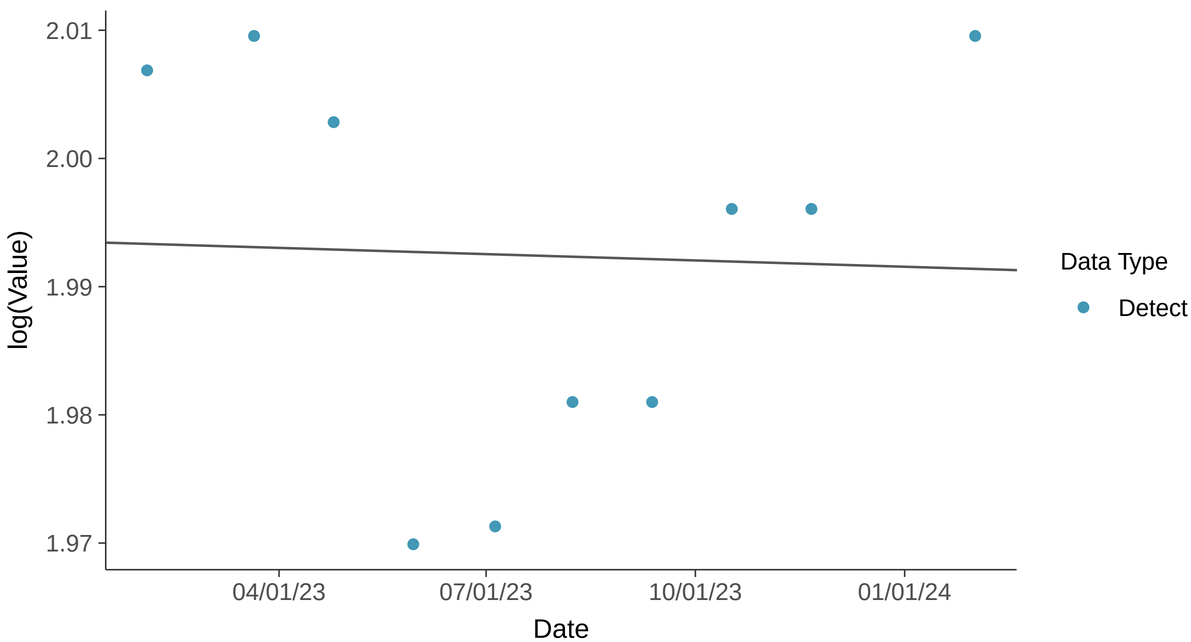
Gamma Q-Q plot

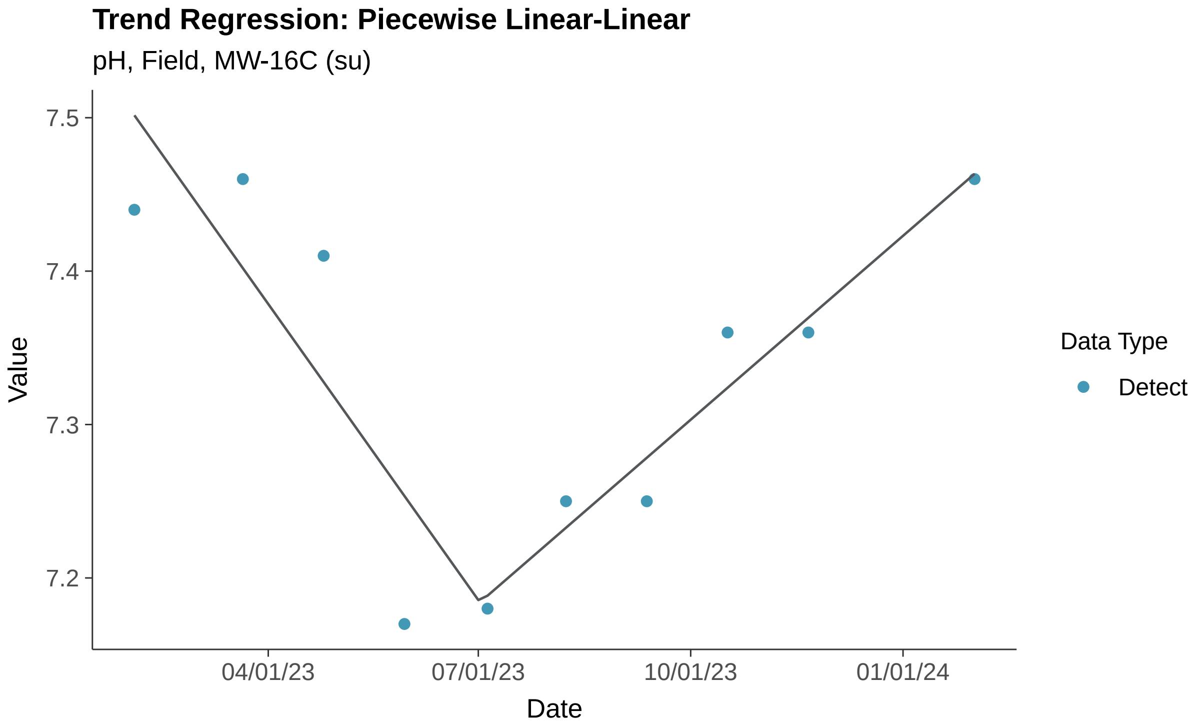
pH, Field, MW-16C (su)

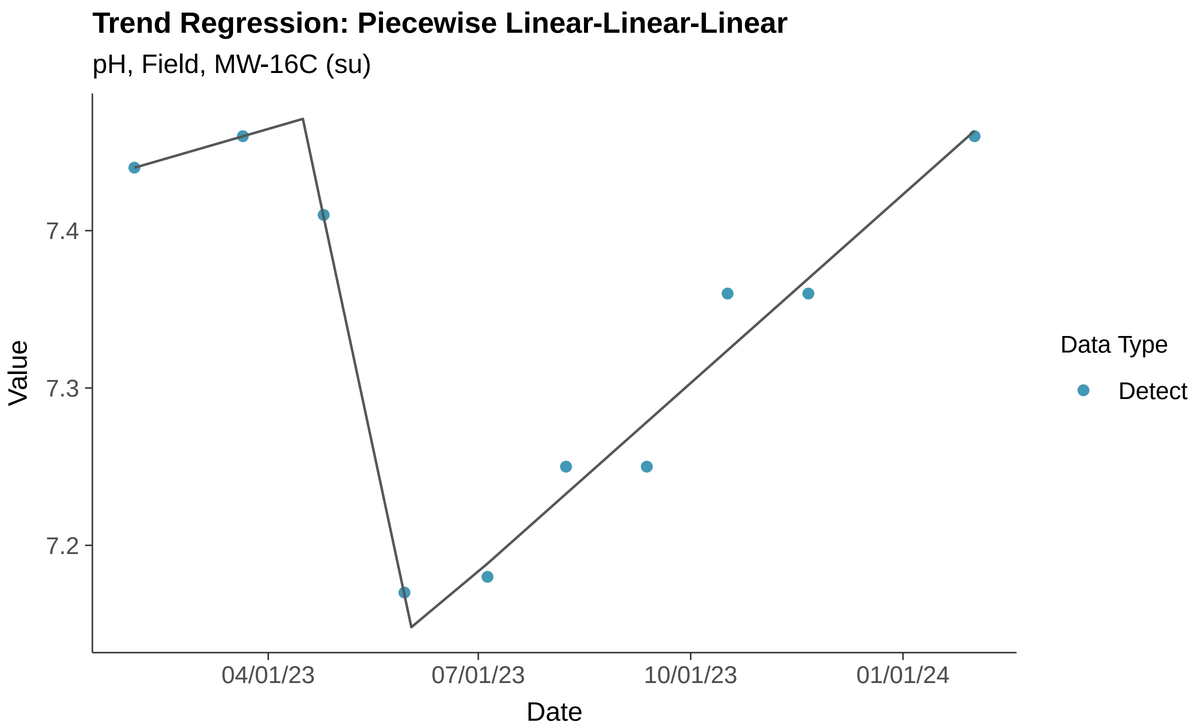


Trend Regression: Lognormal MLE

pH, Field, MW-16C (su)




Trend Regression: Piecewise Linear-Linear
pH, Field, MW-16C (su)
7.5
7.4
7.3
7.2
Value
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

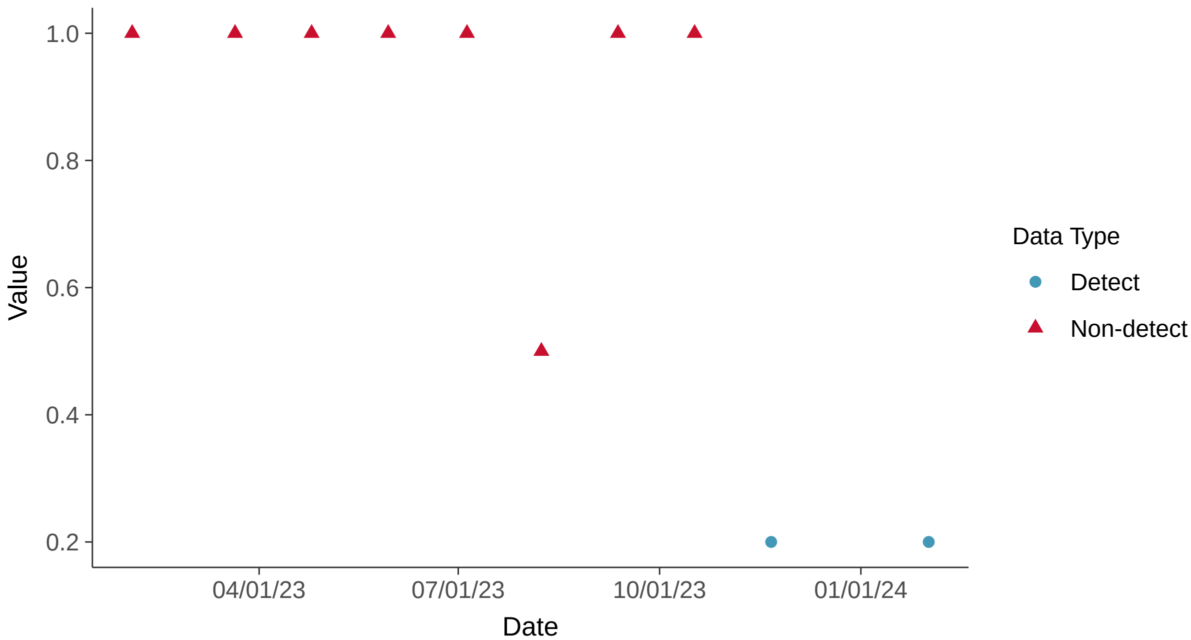

Trend Regression: Piecewise Linear-Linear-Linear
pH, Field, MW-16C (su)
7.4
7.3
7.2
Value
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Fluoride, MW-16C

ID: 16C_2_04

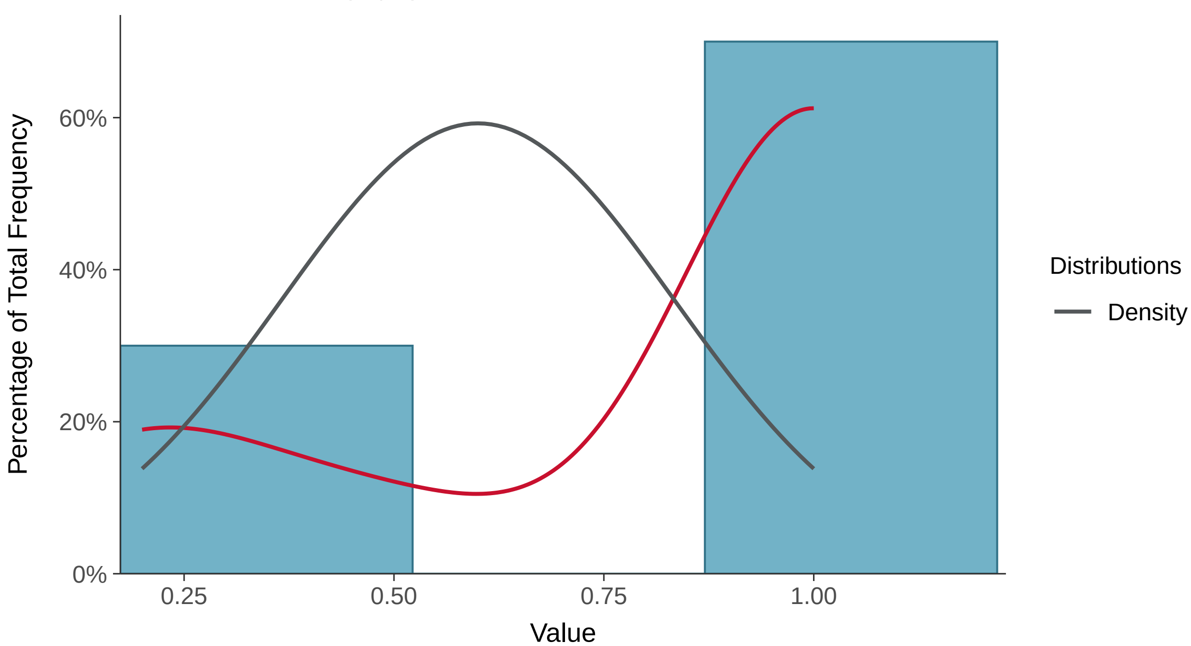
Scatter Plot

Fluoride, MW-16C (mg/L)



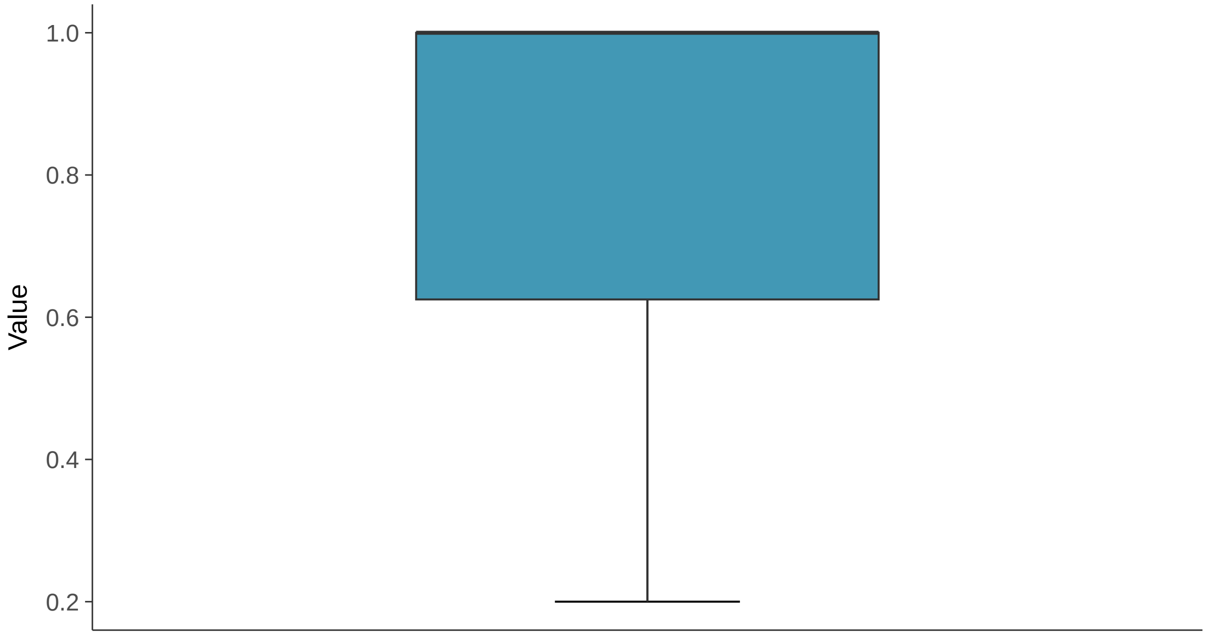
Histogram

Fluoride, MW-16C (mg/L)



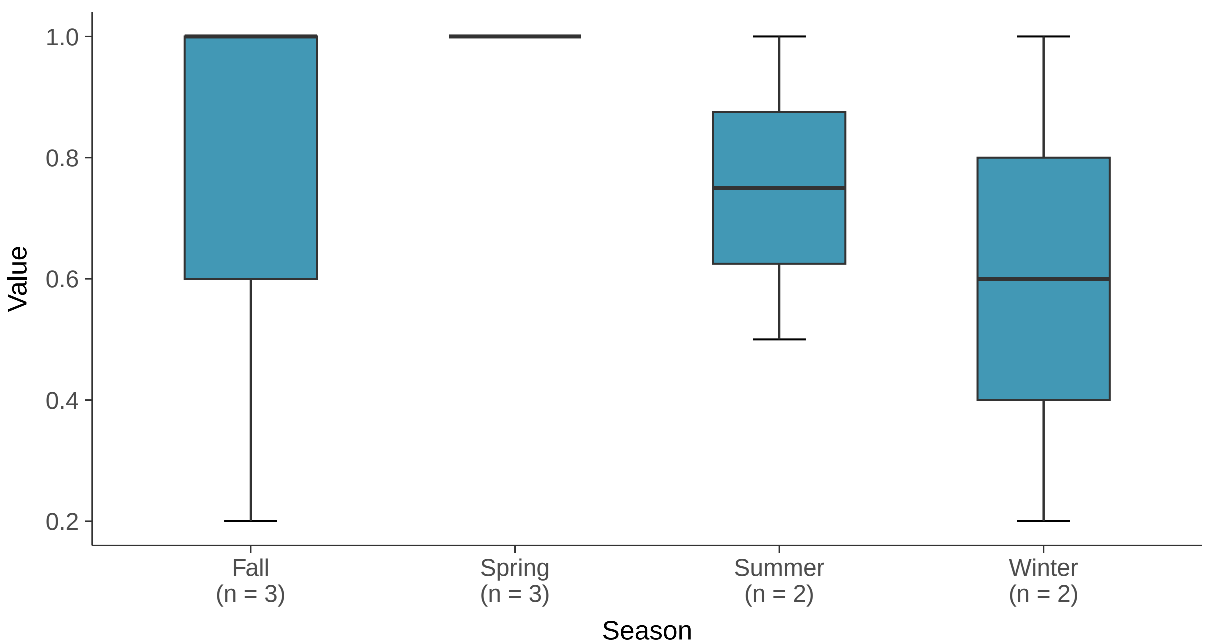
Boxplot

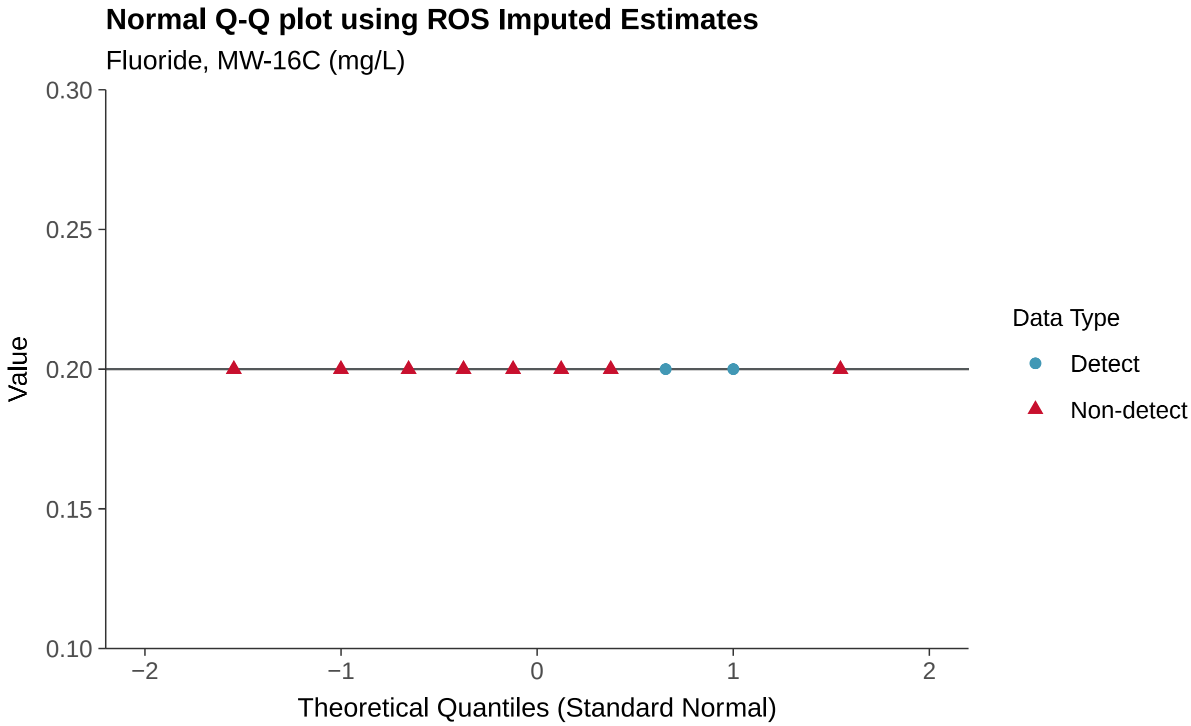
Fluoride, MW-16C (mg/L)

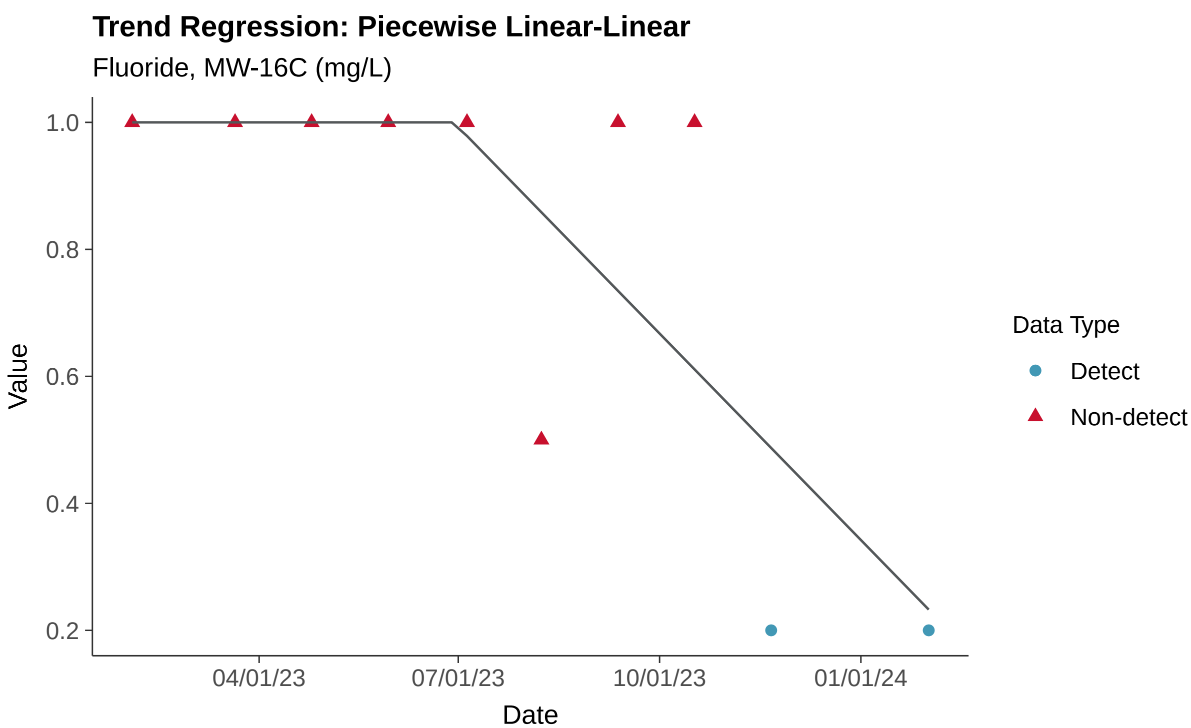


Boxplot by Season

Fluoride, MW-16C (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Fluoride, MW-16C (mg/L)
0.30
0.25
0.20
0.15
0.10
Value
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

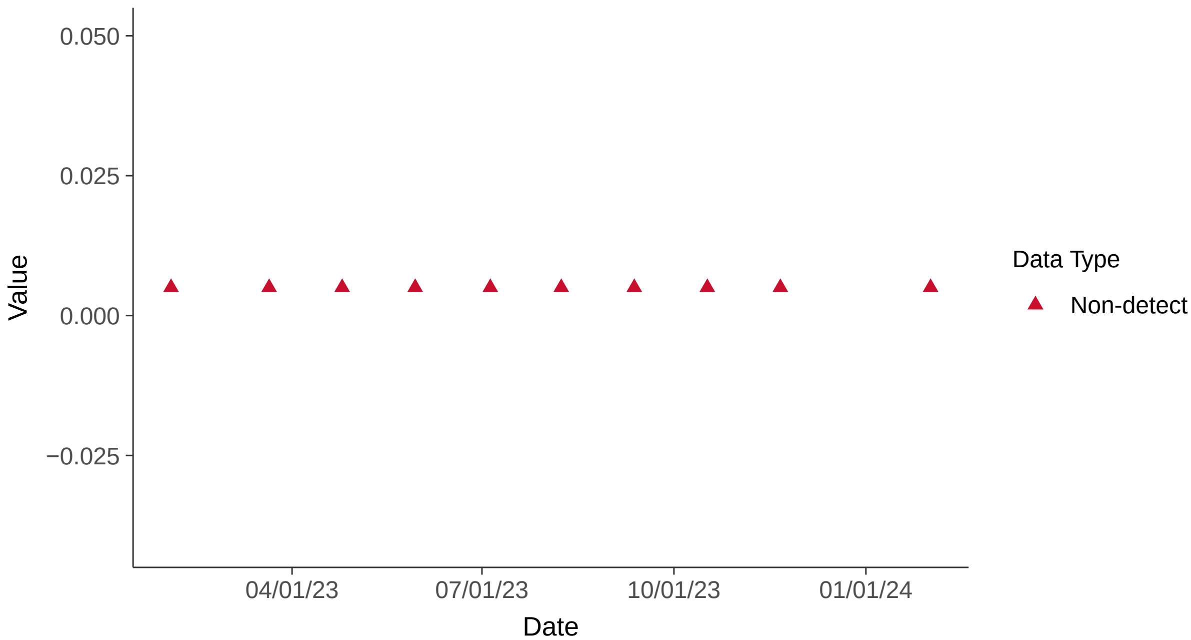

Trend Regression: Piecewise Linear-Linear
Fluoride, MW-16C (mg/L)
1.0
0.8
0.6
0.4
0.2
Value
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Appendix IV: Antimony, MW-16C

ID: 16C_2_08

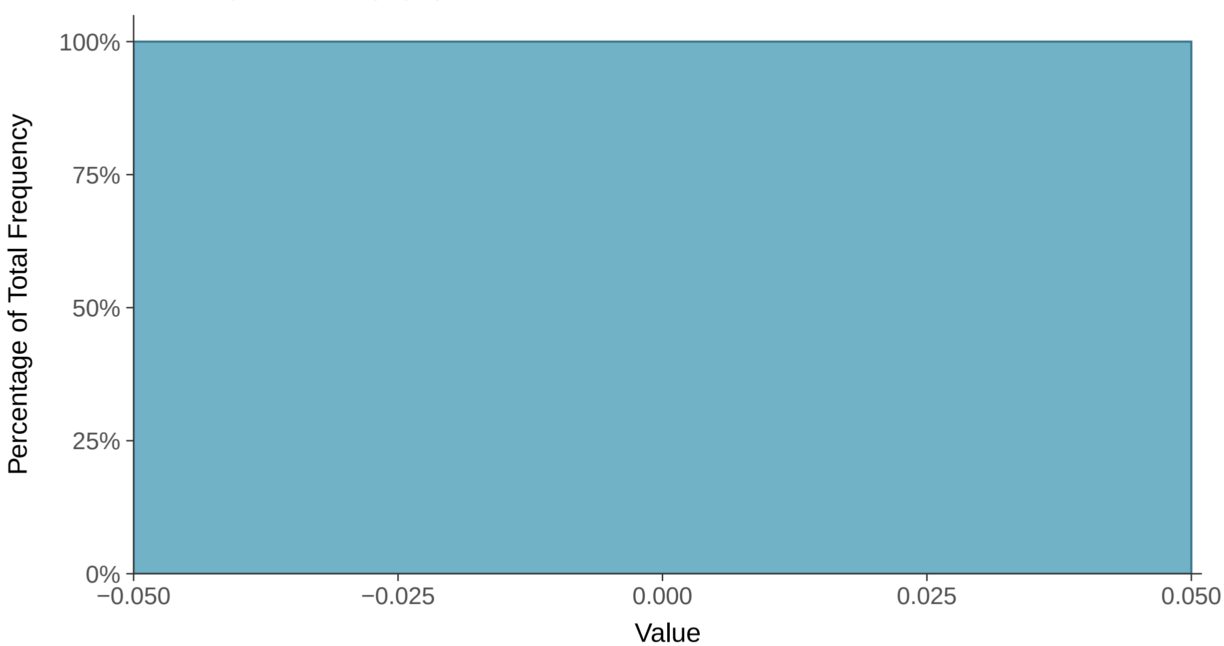
Scatter Plot

Antimony, MW-16C (mg/L)



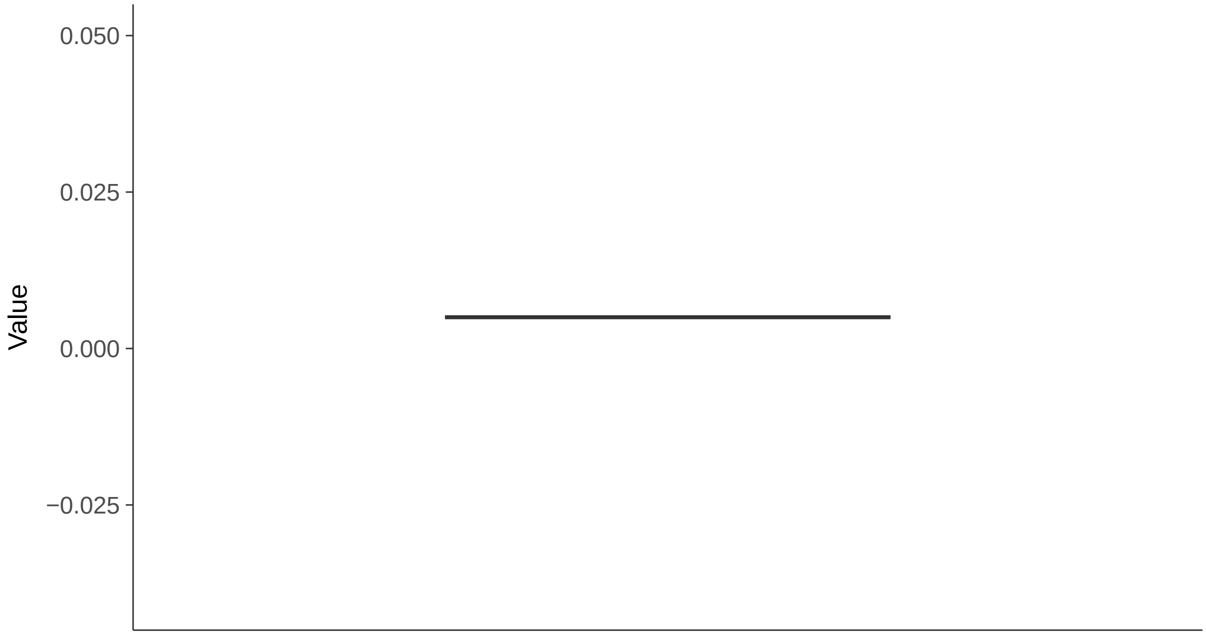
Histogram

Antimony, MW-16C (mg/L)



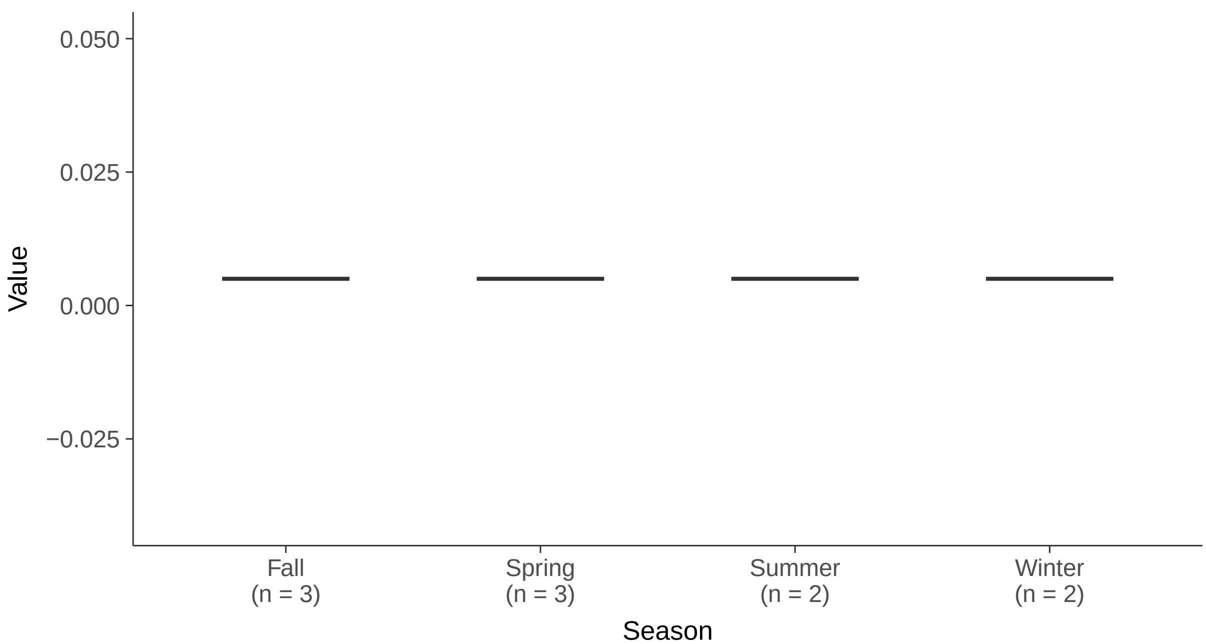
Boxplot

Antimony, MW-16C (mg/L)



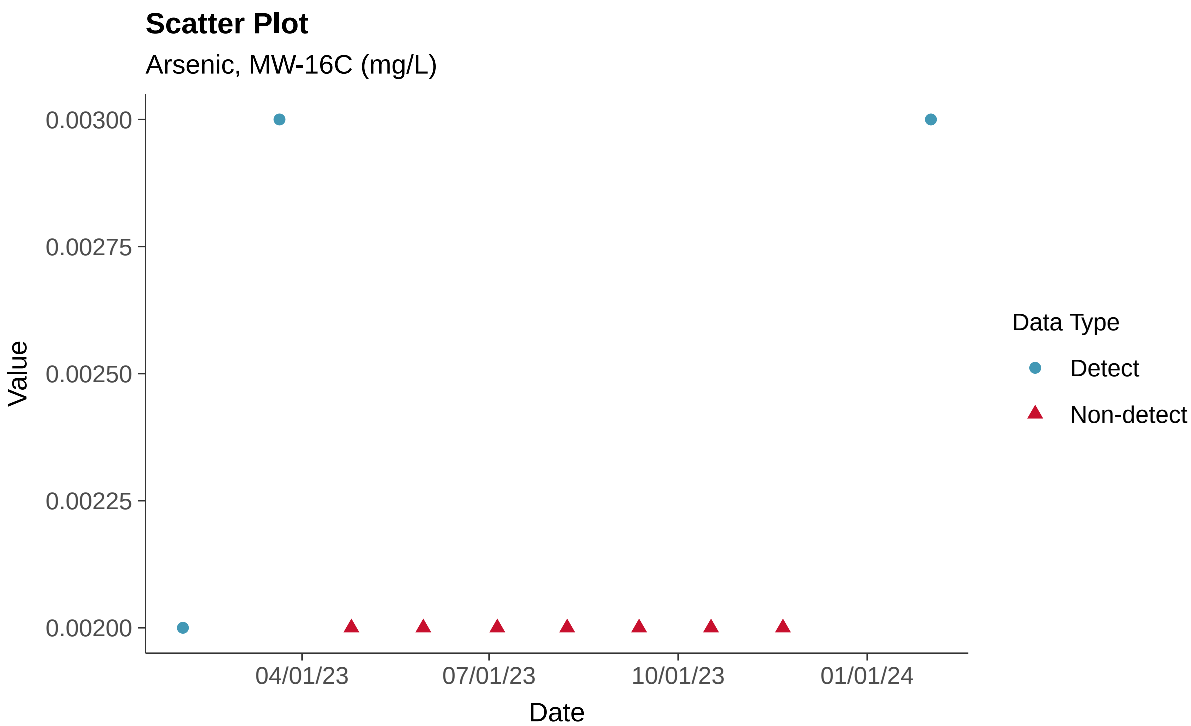
Boxplot by Season

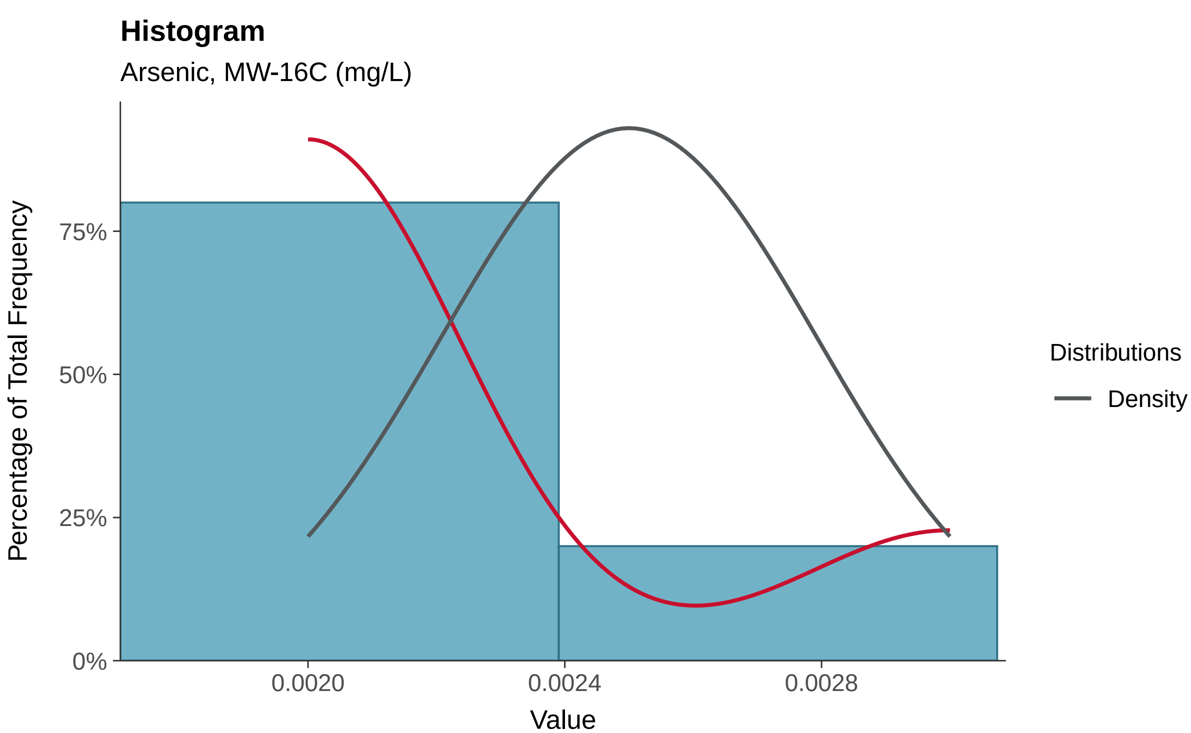
Antimony, MW-16C (mg/L)

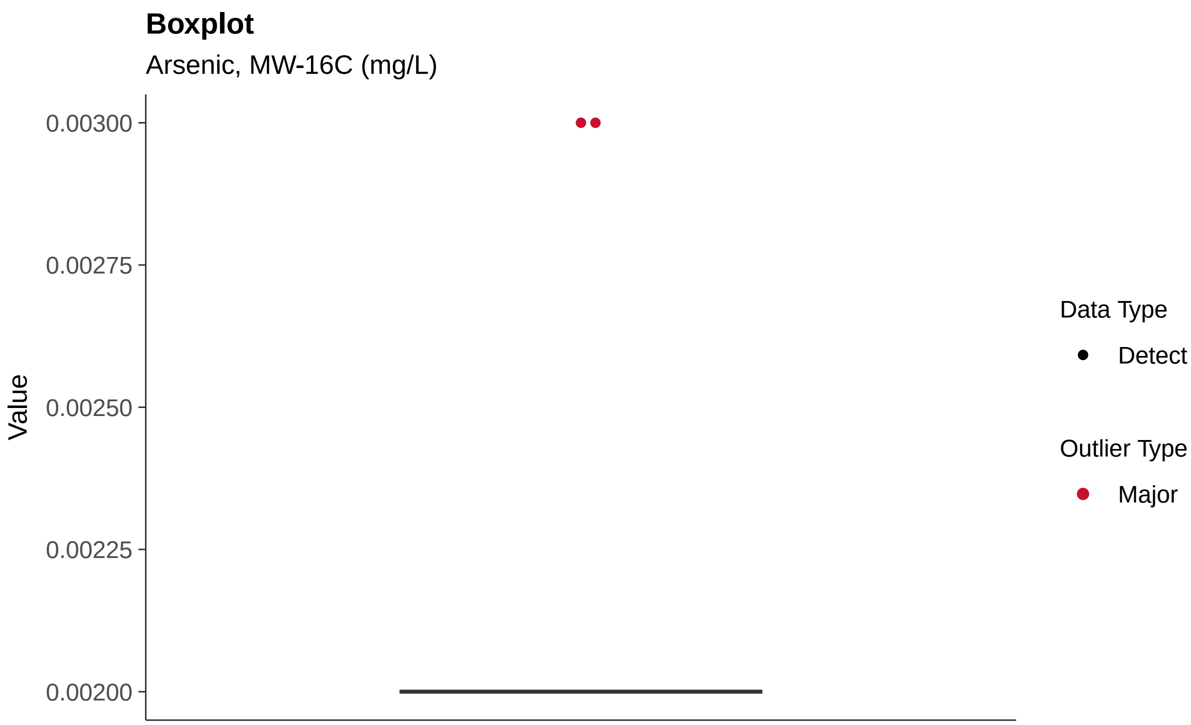


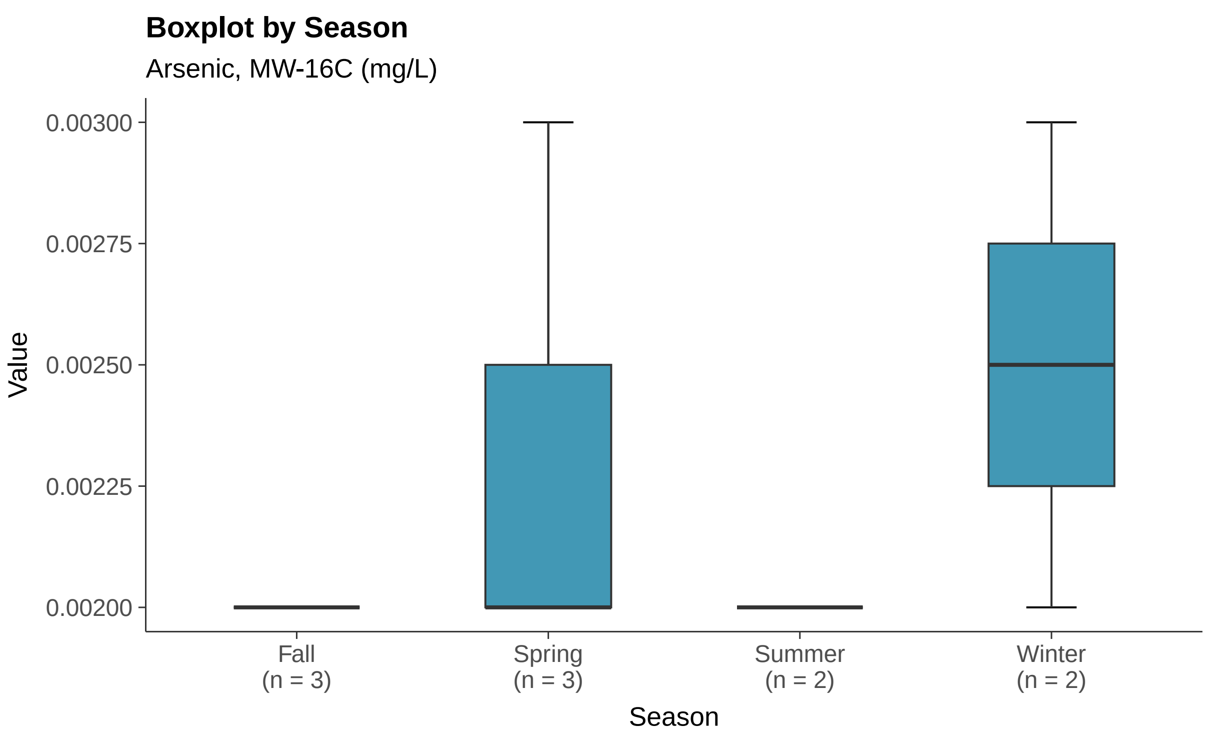
Appendix IV: Arsenic, MW-16C

ID: 16C_2_09



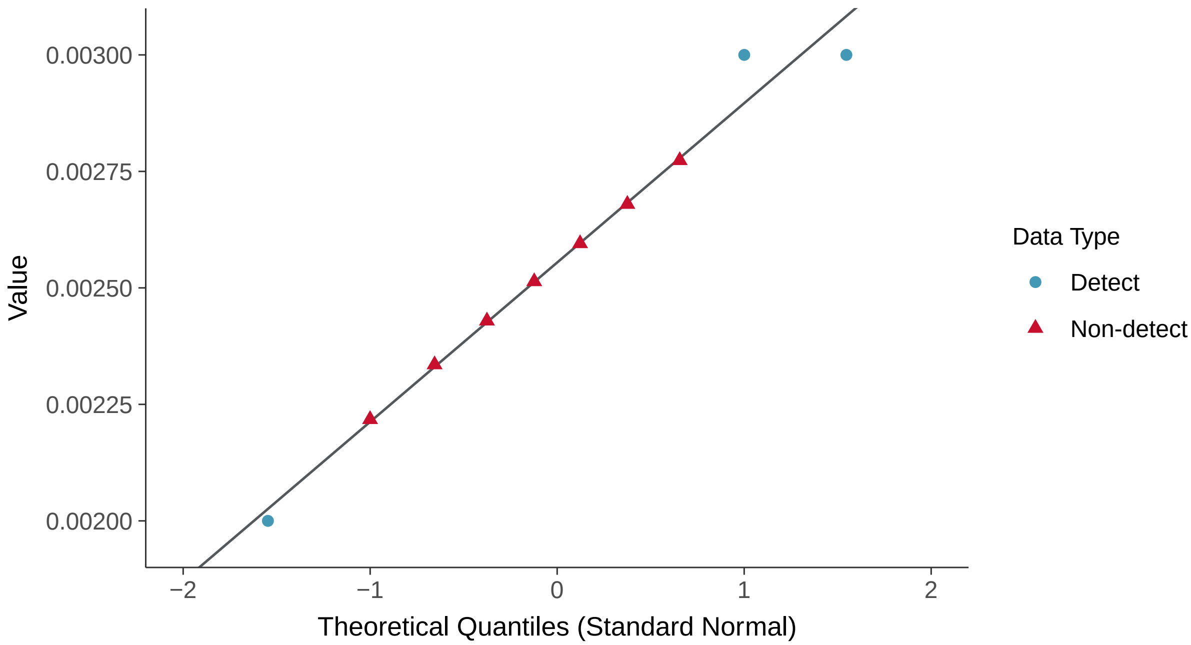



Boxplot
Arsenic, MW-16C (mg/L)
Value
0.00300
0.00275
0.00250
0.00225
0.00200
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Arsenic, MW-16C (mg/L)
Value
0.00300
0.00275
0.00250
0.00225
0.00200
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season

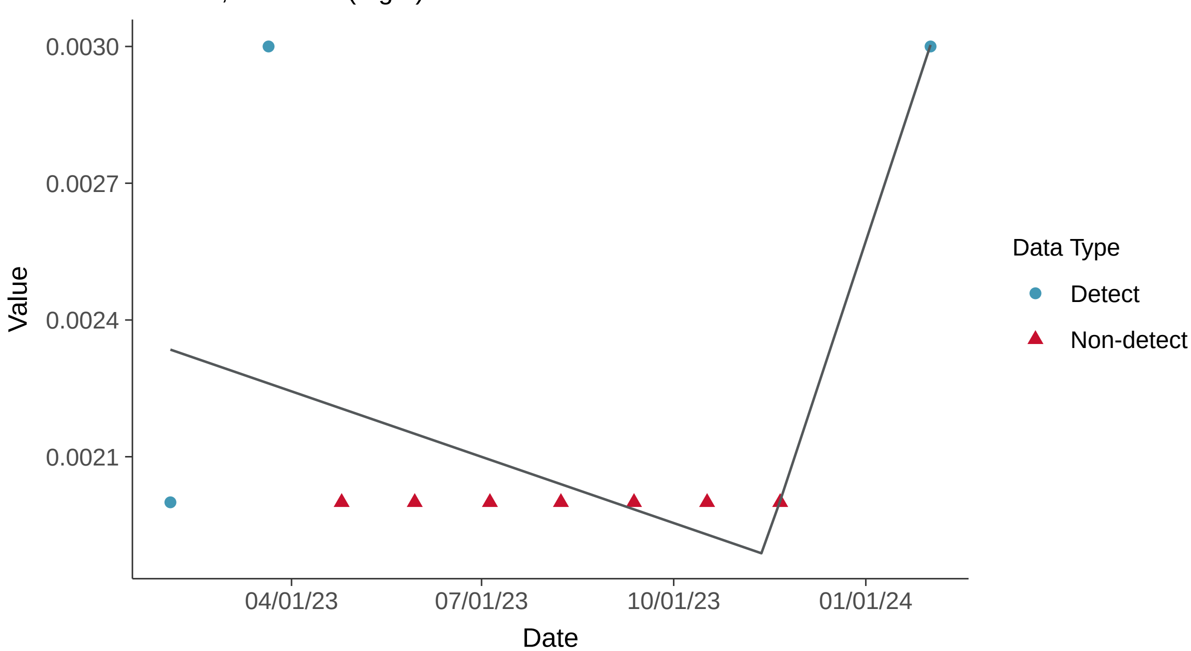
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-16C (mg/L)



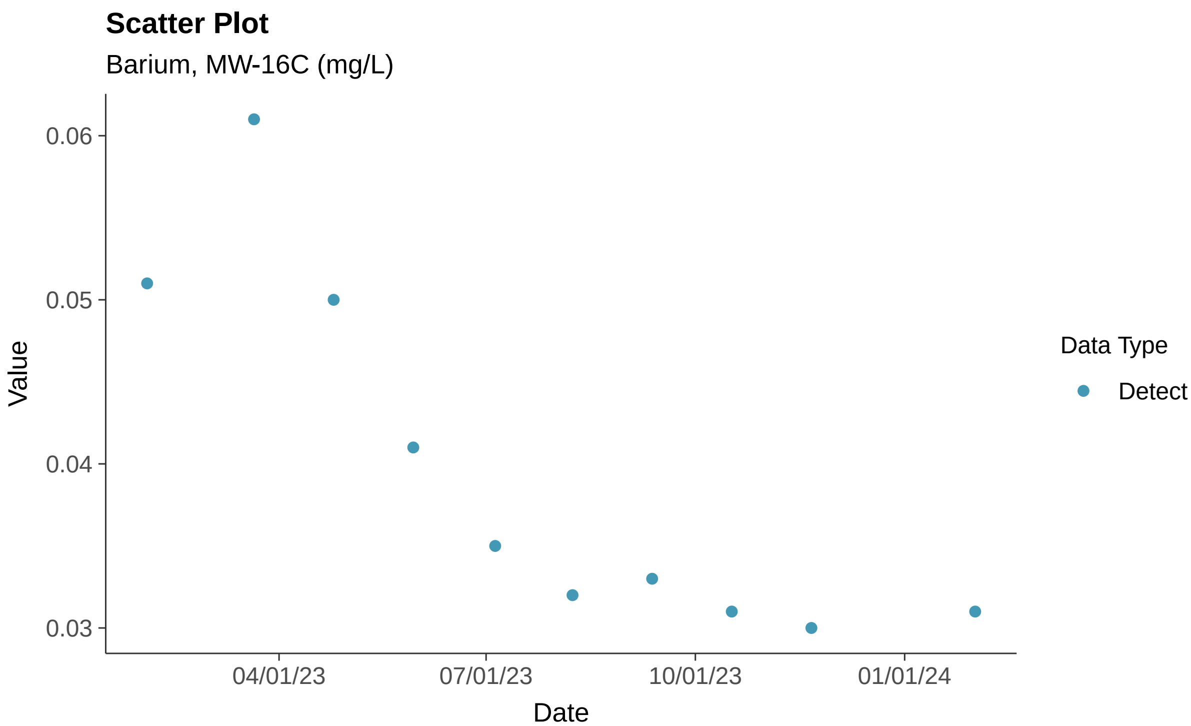
Trend Regression: Piecewise Linear-Linear

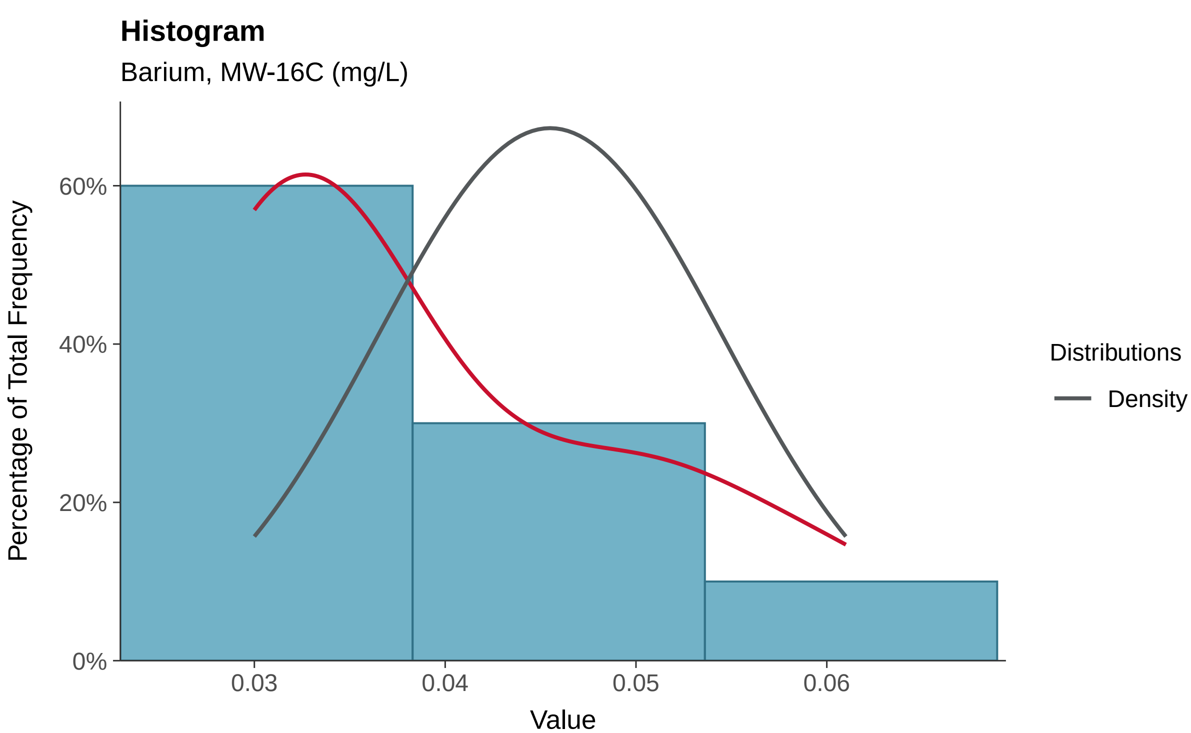
Arsenic, MW-16C (mg/L)



Appendix IV: Barium, MW-16C

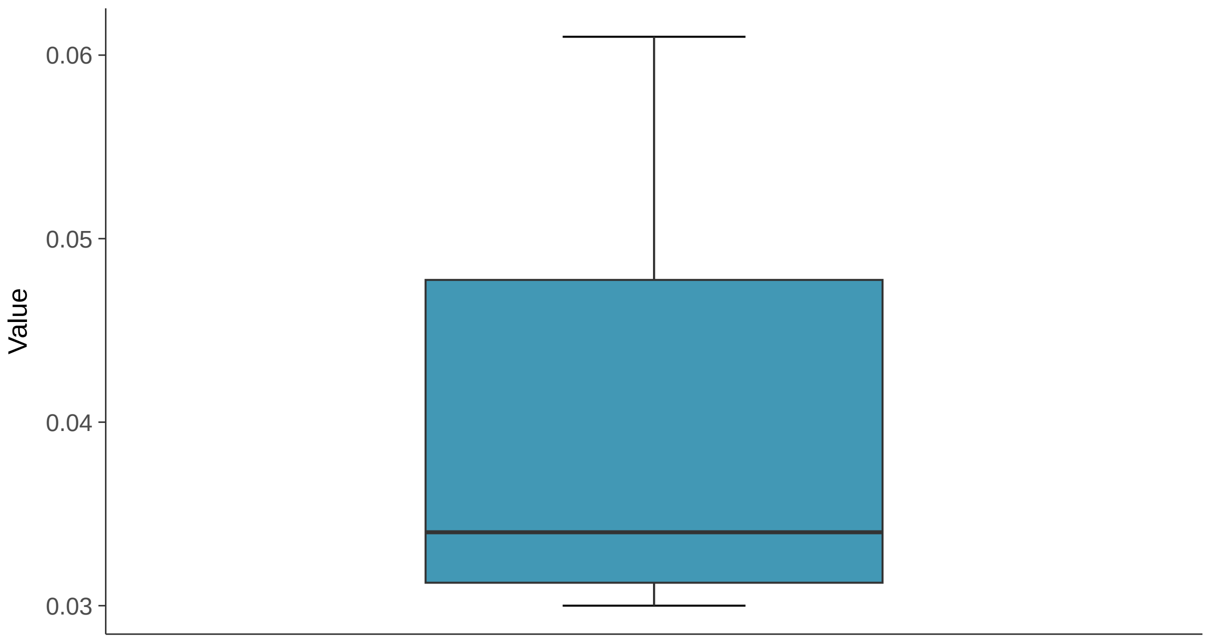
ID: 16C_2_10





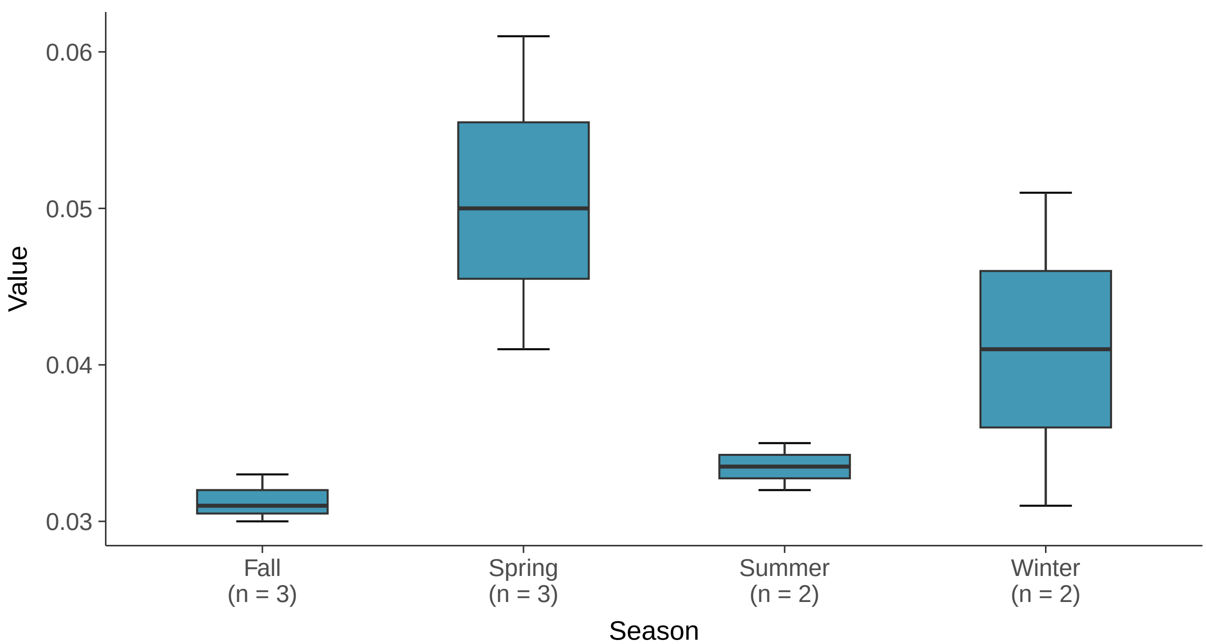
Boxplot

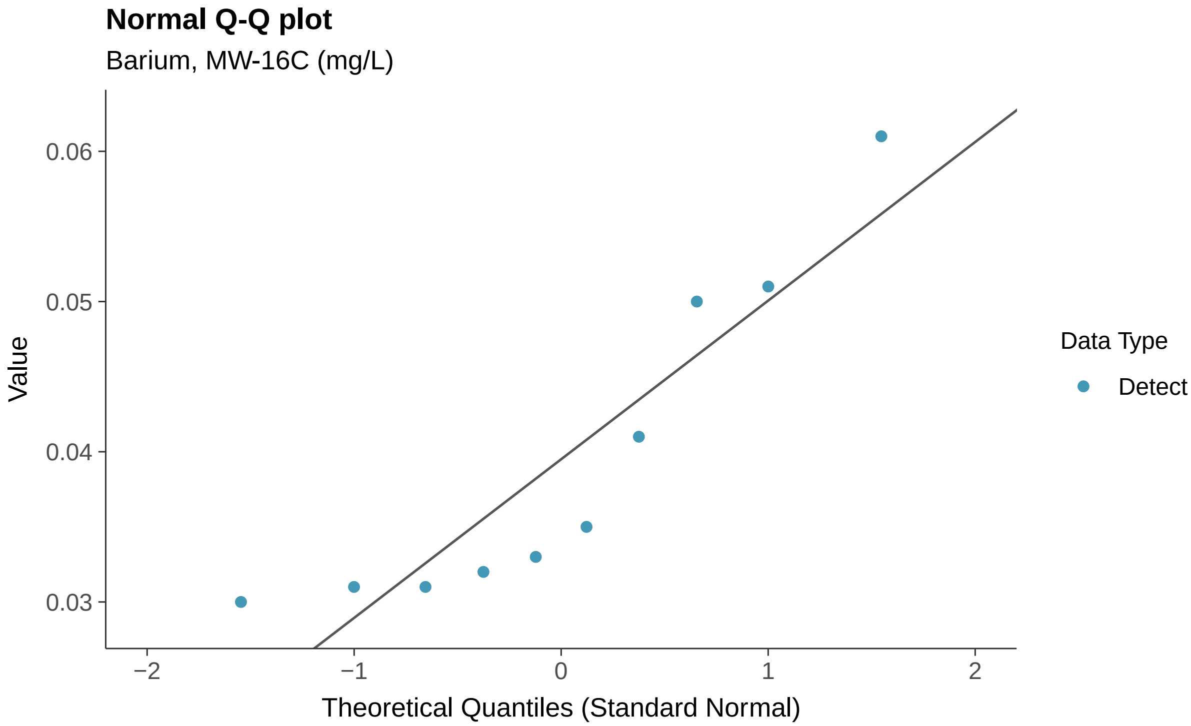
Barium, MW-16C (mg/L)

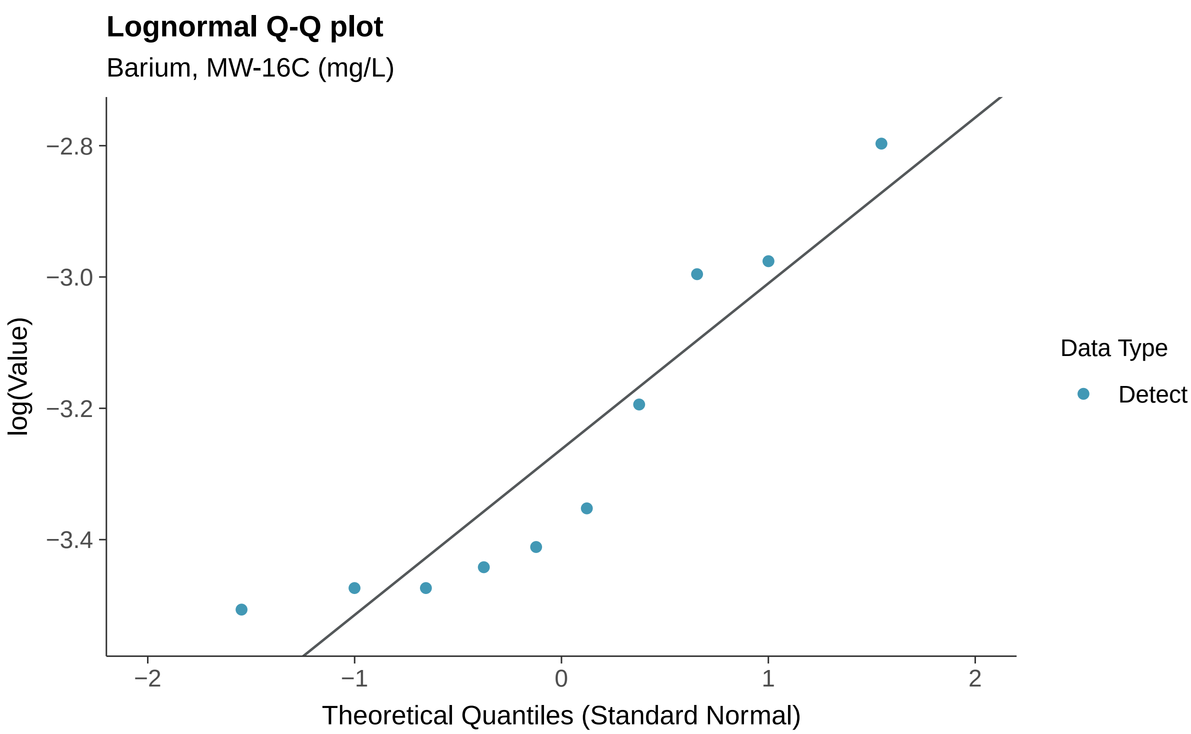


Boxplot by Season

Barium, MW-16C (mg/L)

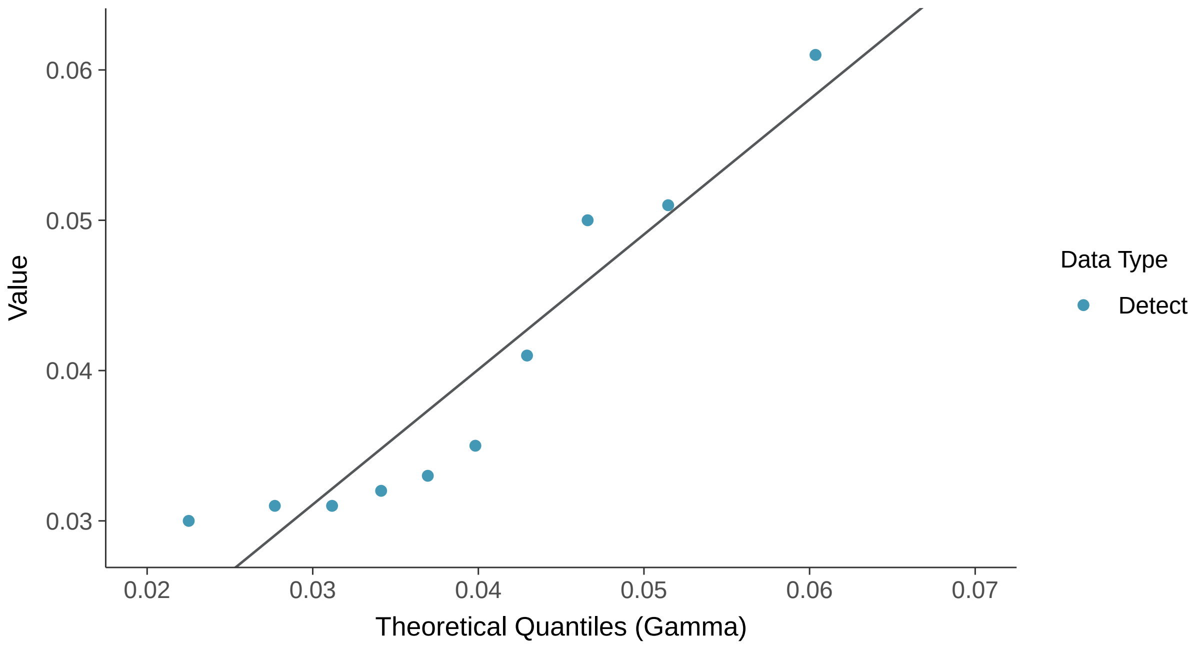



Normal Q-Q plot
Barium, MW-16C (mg/L)
Value
0.06
0.05
0.04
0.03
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-16C (mg/L)
log(Value)
−2.8
−3.0
−3.2
−3.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

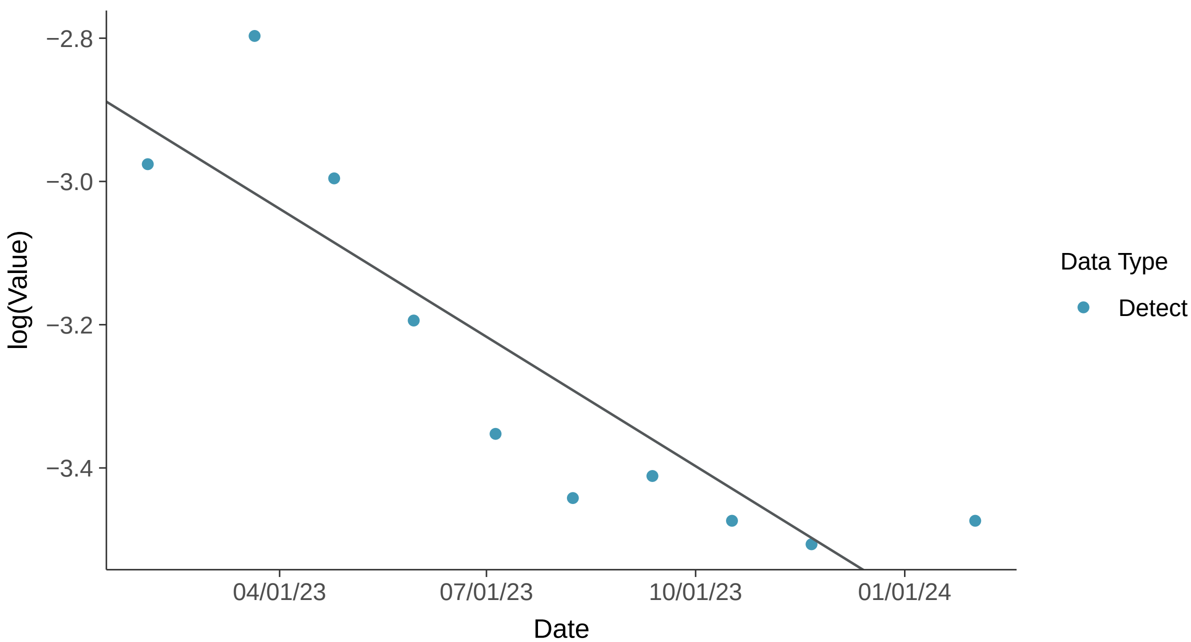
Gamma Q-Q plot

Barium, MW-16C (mg/L)



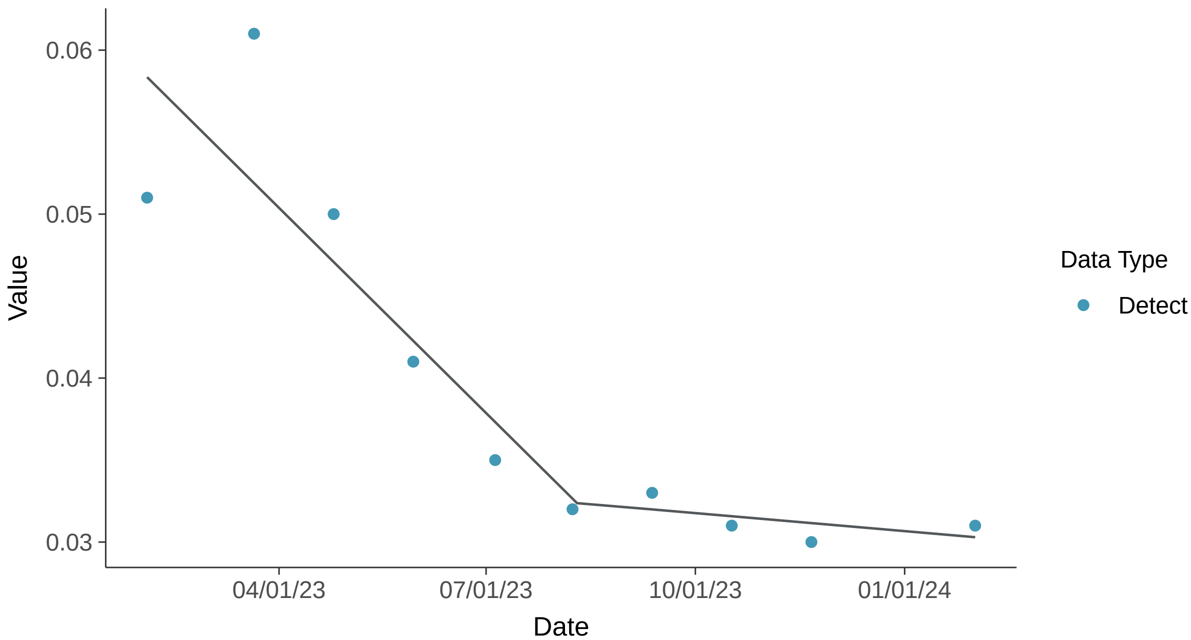
Trend Regression: Lognormal MLE

Barium, MW-16C (mg/L)



Trend Regression: Piecewise Linear-Linear

Barium, MW-16C (mg/L)

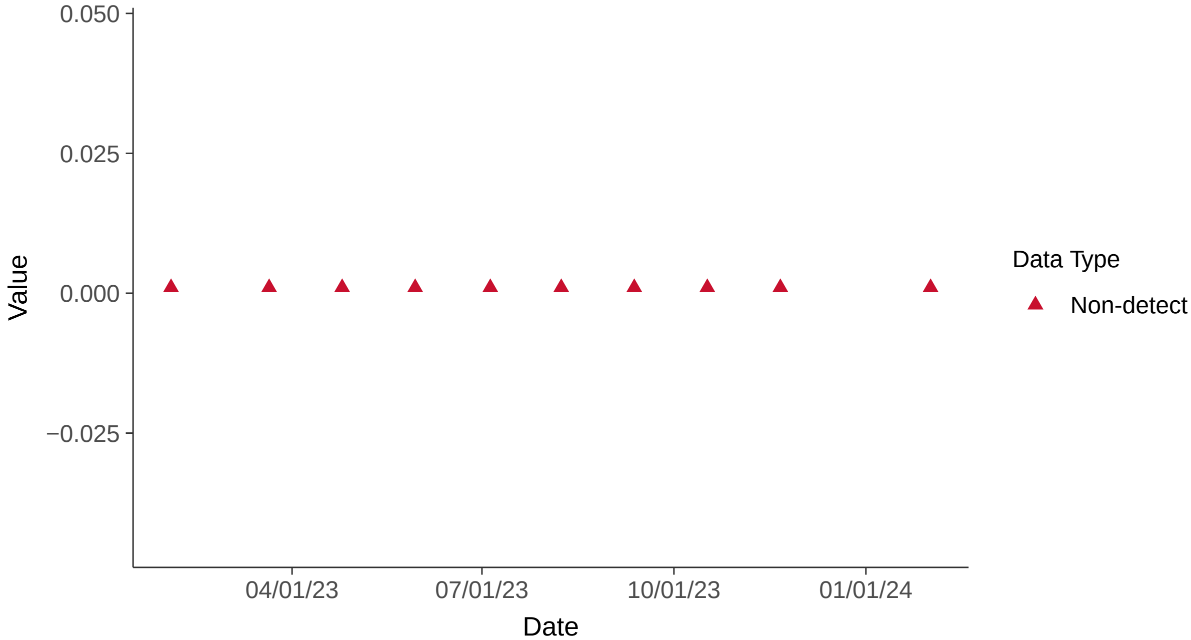


Appendix IV: Beryllium, MW-16C

ID: 16C_2_11

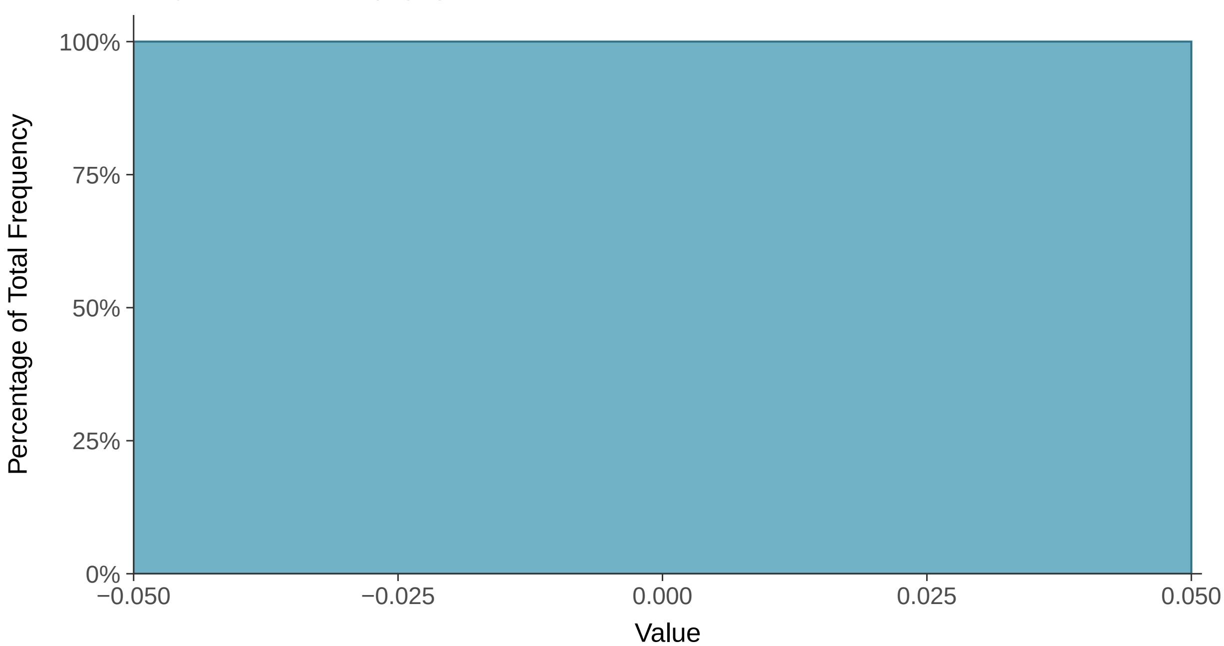
Scatter Plot

Beryllium, MW-16C (mg/L)



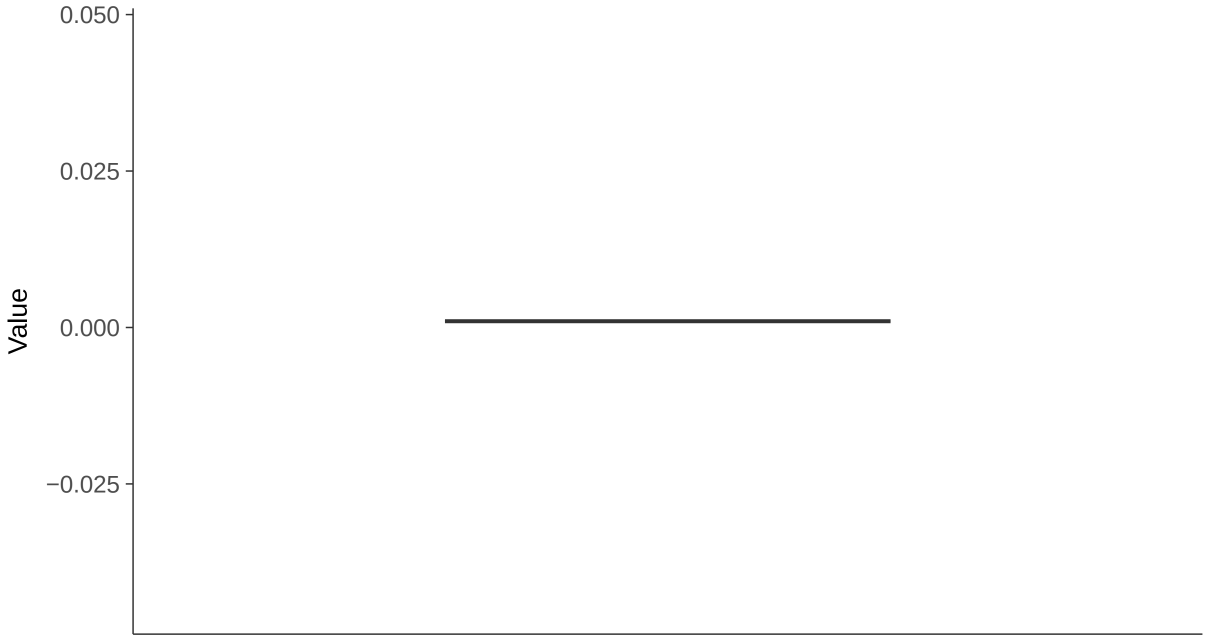
Histogram

Beryllium, MW-16C (mg/L)



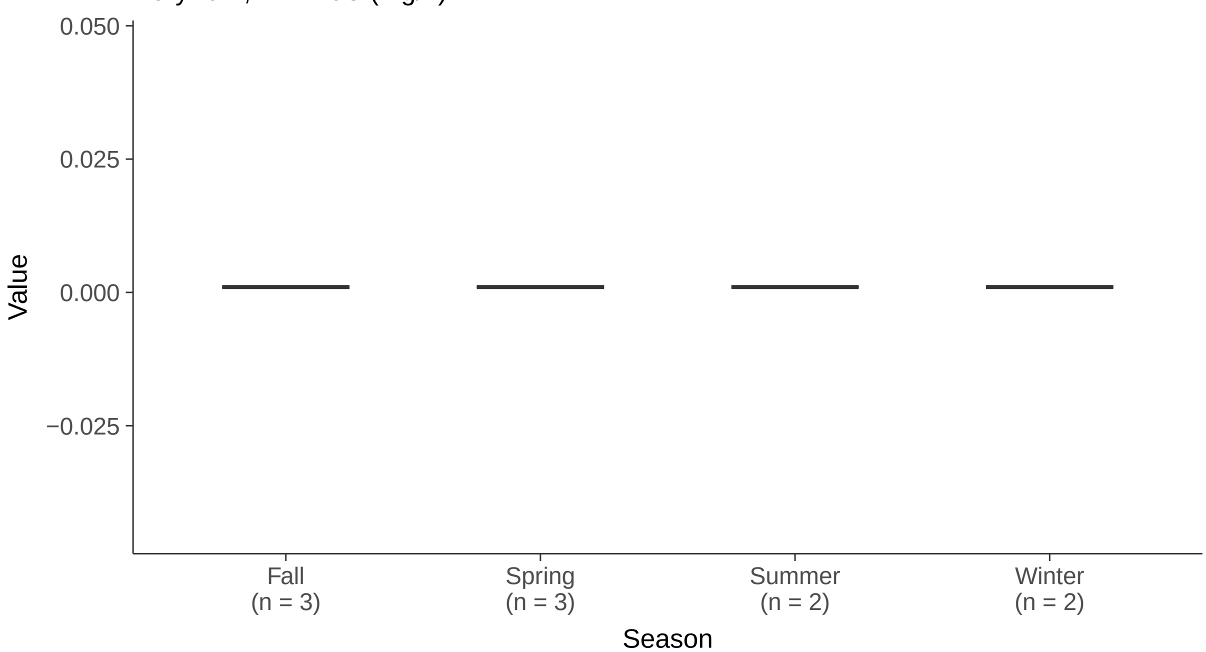
Boxplot

Beryllium, MW-16C (mg/L)



Boxplot by Season

Beryllium, MW-16C (mg/L)

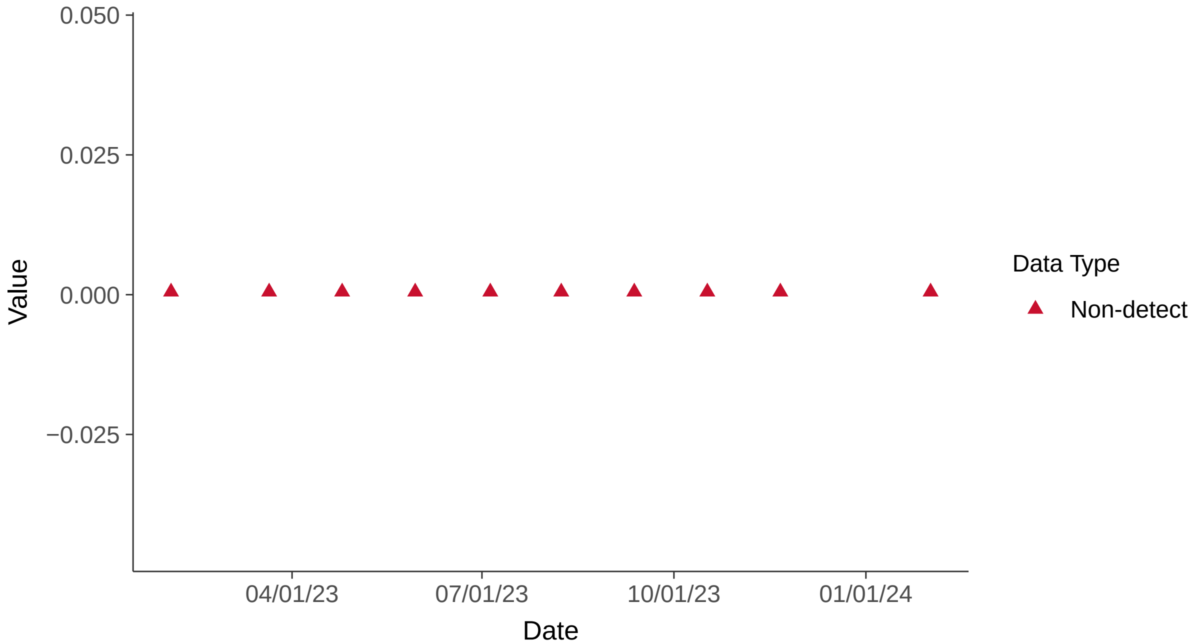


Appendix IV: Cadmium, MW-16C

ID: 16C_2_12

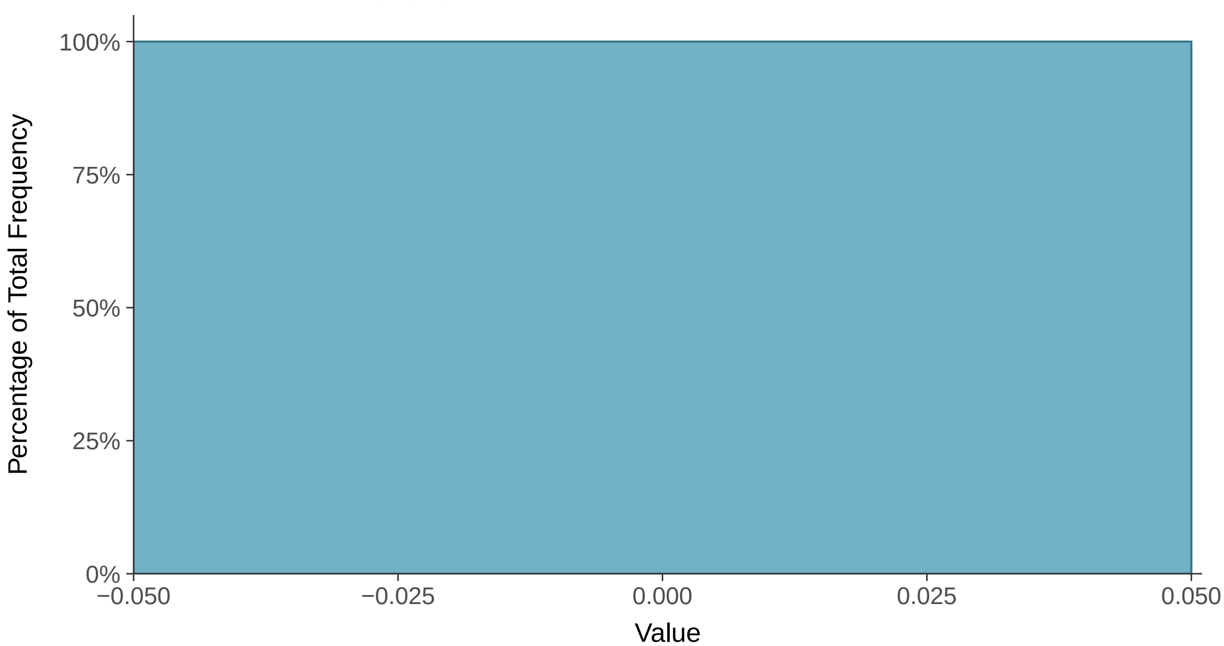
Scatter Plot

Cadmium, MW-16C (mg/L)



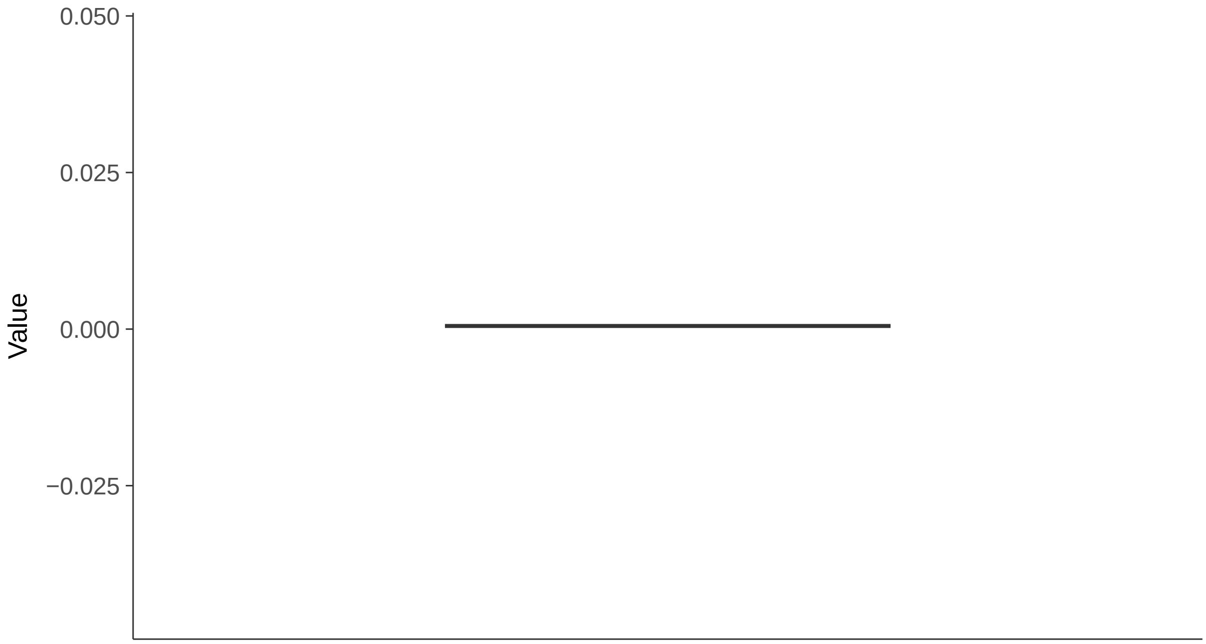
Histogram

Cadmium, MW-16C (mg/L)



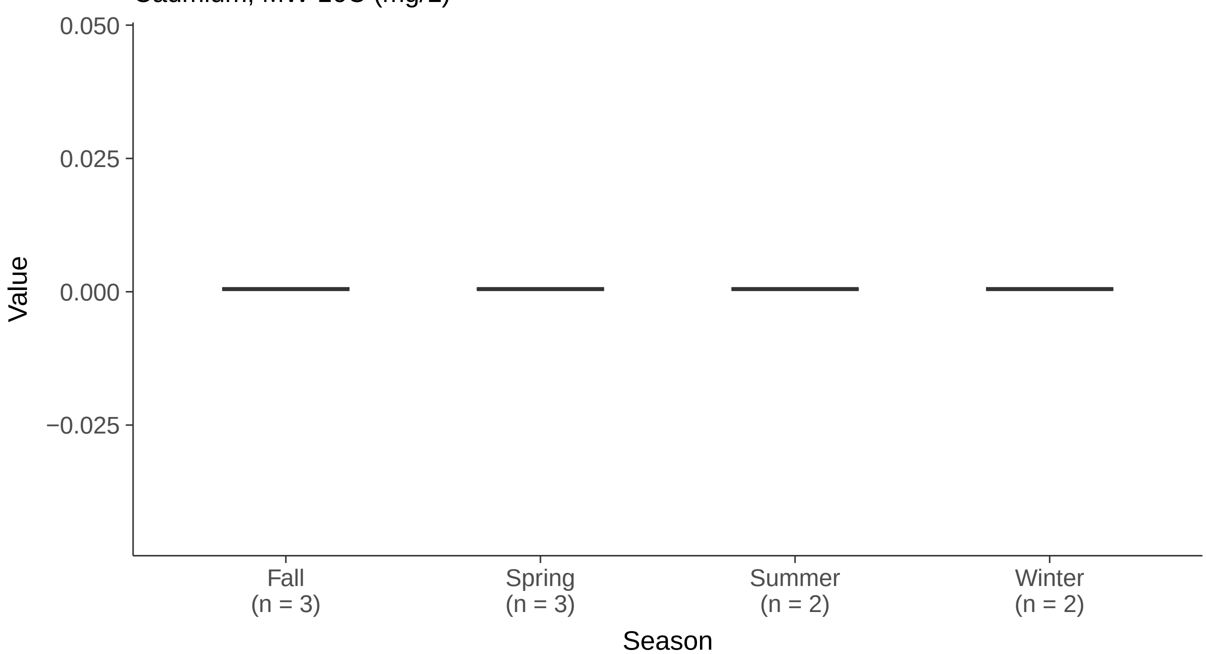
Boxplot

Cadmium, MW-16C (mg/L)



Boxplot by Season

Cadmium, MW-16C (mg/L)

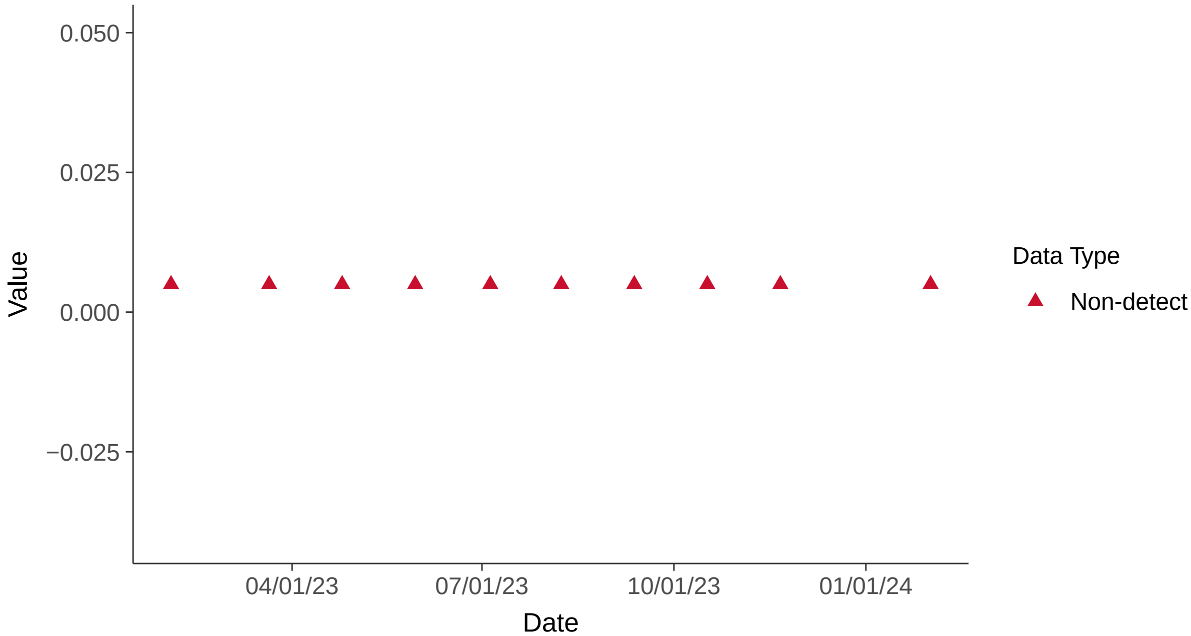


Appendix IV: Chromium, MW-16C

ID: 16C_2_13

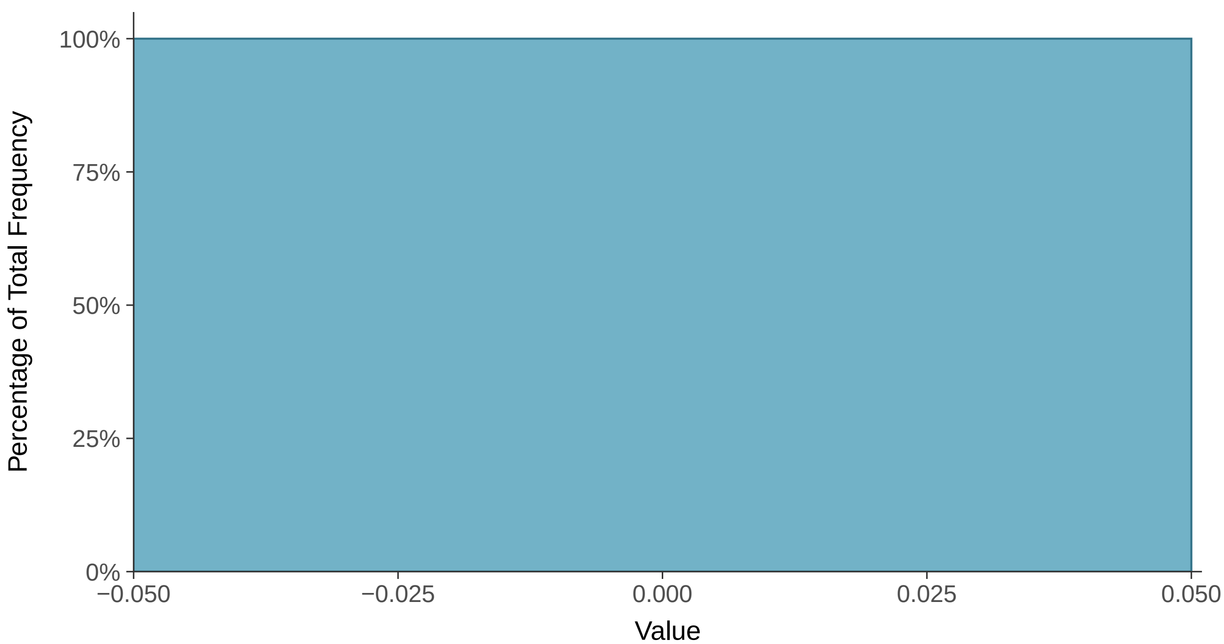
Scatter Plot

Chromium, MW-16C (mg/L)



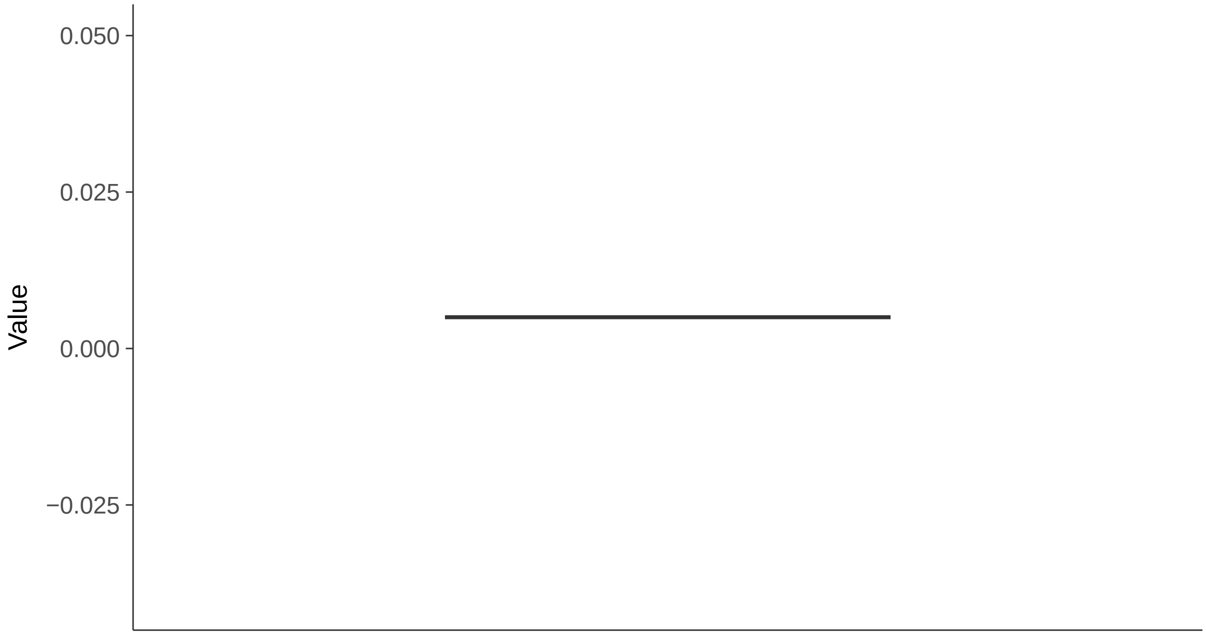
Histogram

Chromium, MW-16C (mg/L)



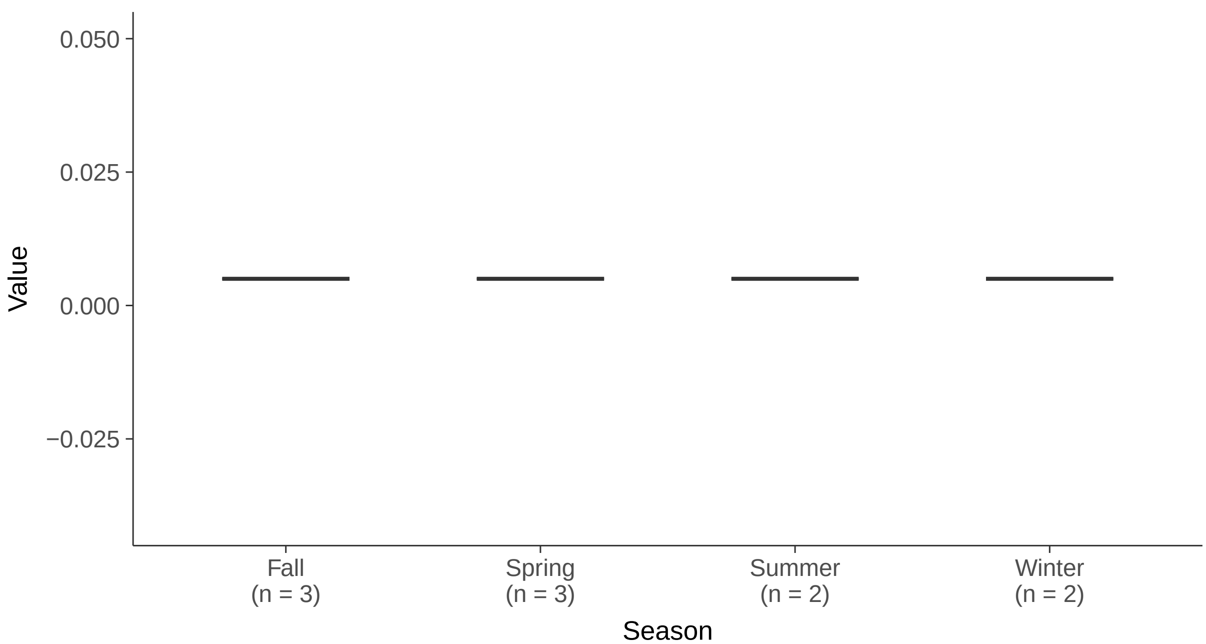
Boxplot

Chromium, MW-16C (mg/L)



Boxplot by Season

Chromium, MW-16C (mg/L)

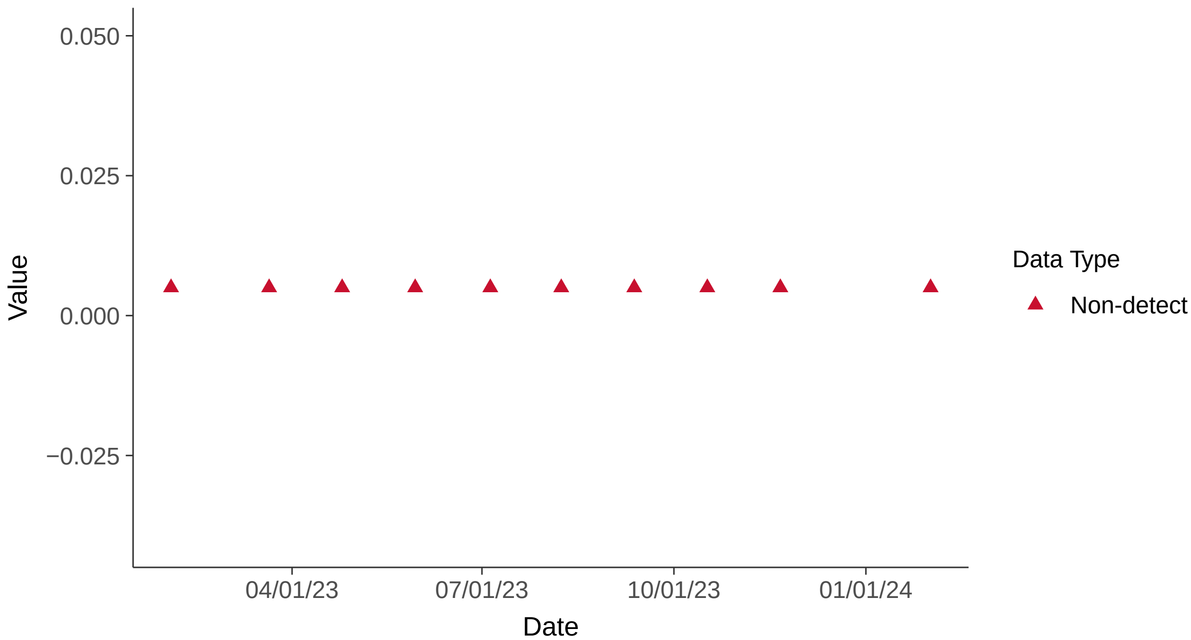


Appendix IV: Cobalt, MW-16C

ID: 16C_2_14

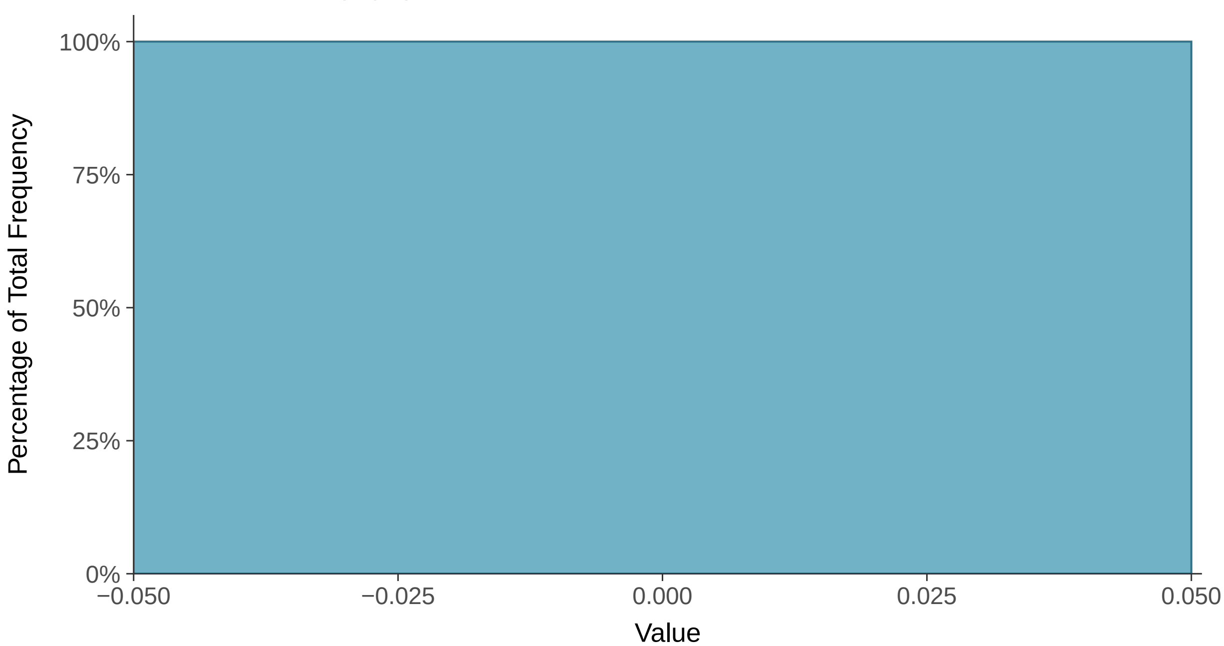
Scatter Plot

Cobalt, MW-16C (mg/L)



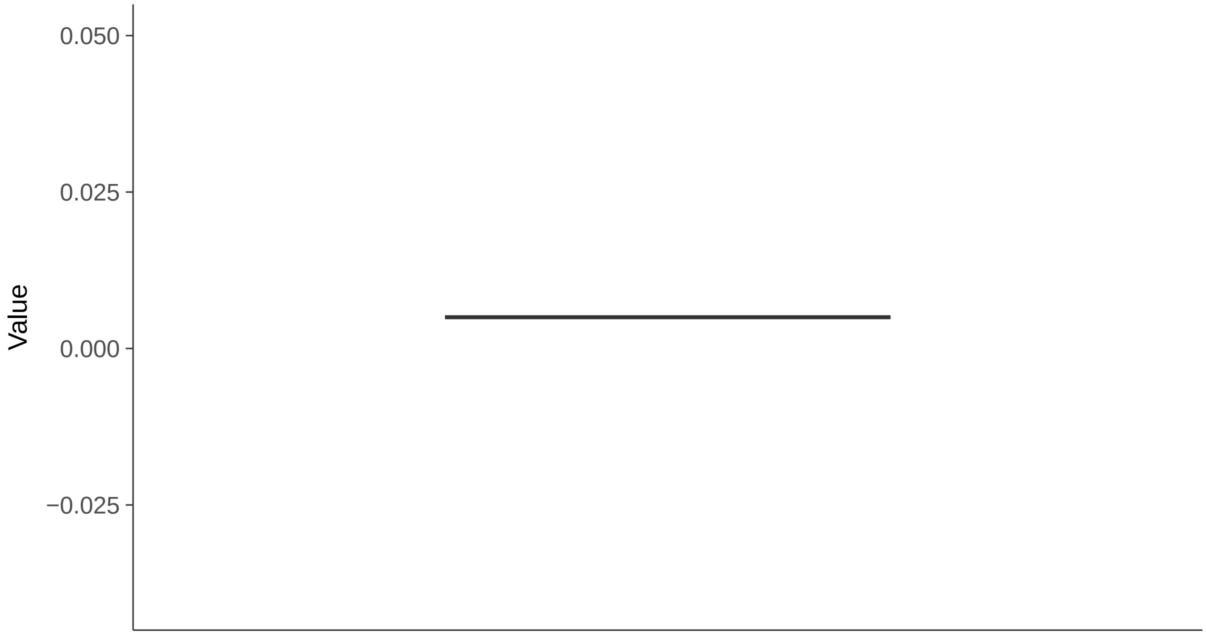
Histogram

Cobalt, MW-16C (mg/L)



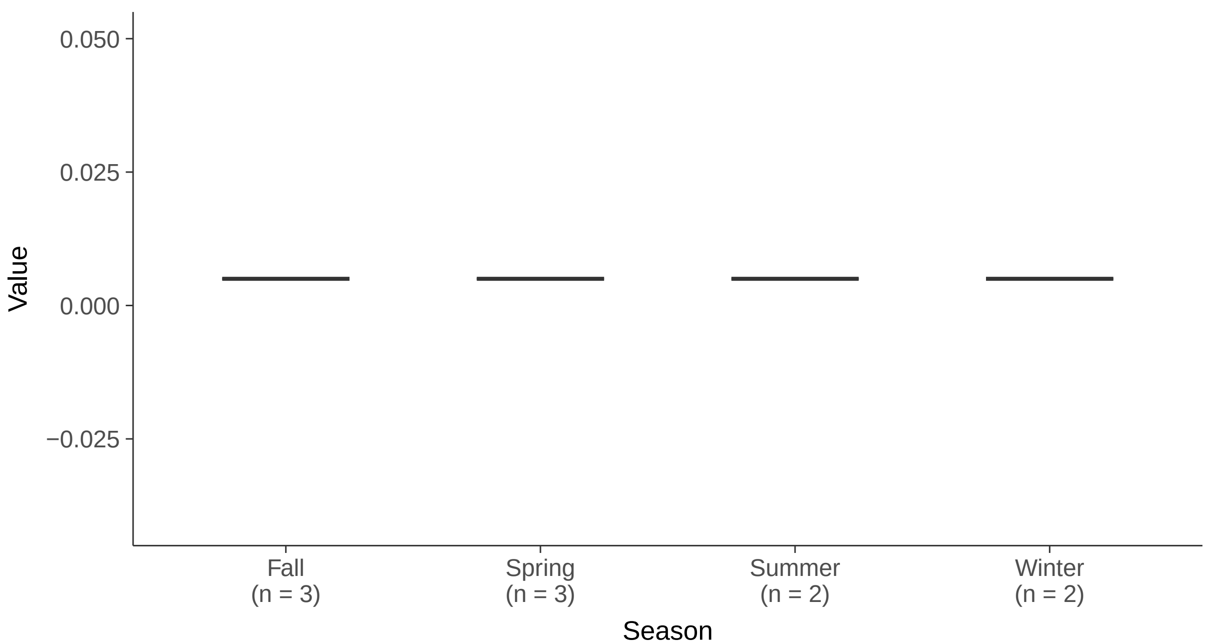
Boxplot

Cobalt, MW-16C (mg/L)



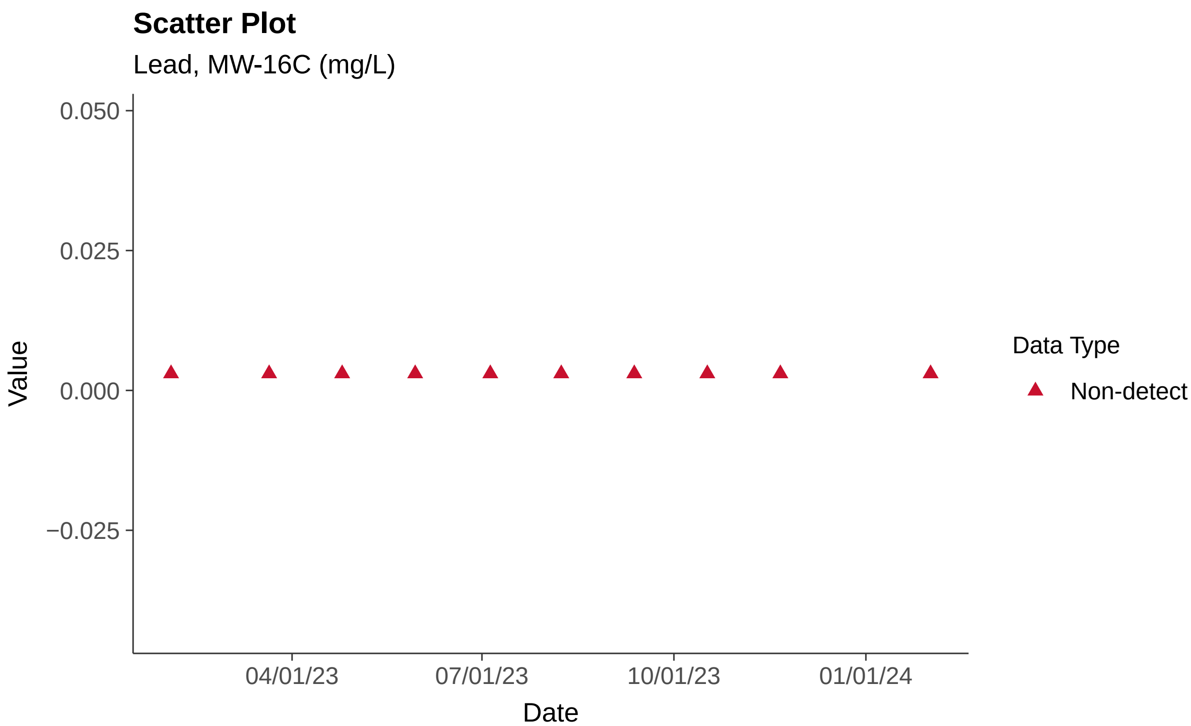
Boxplot by Season

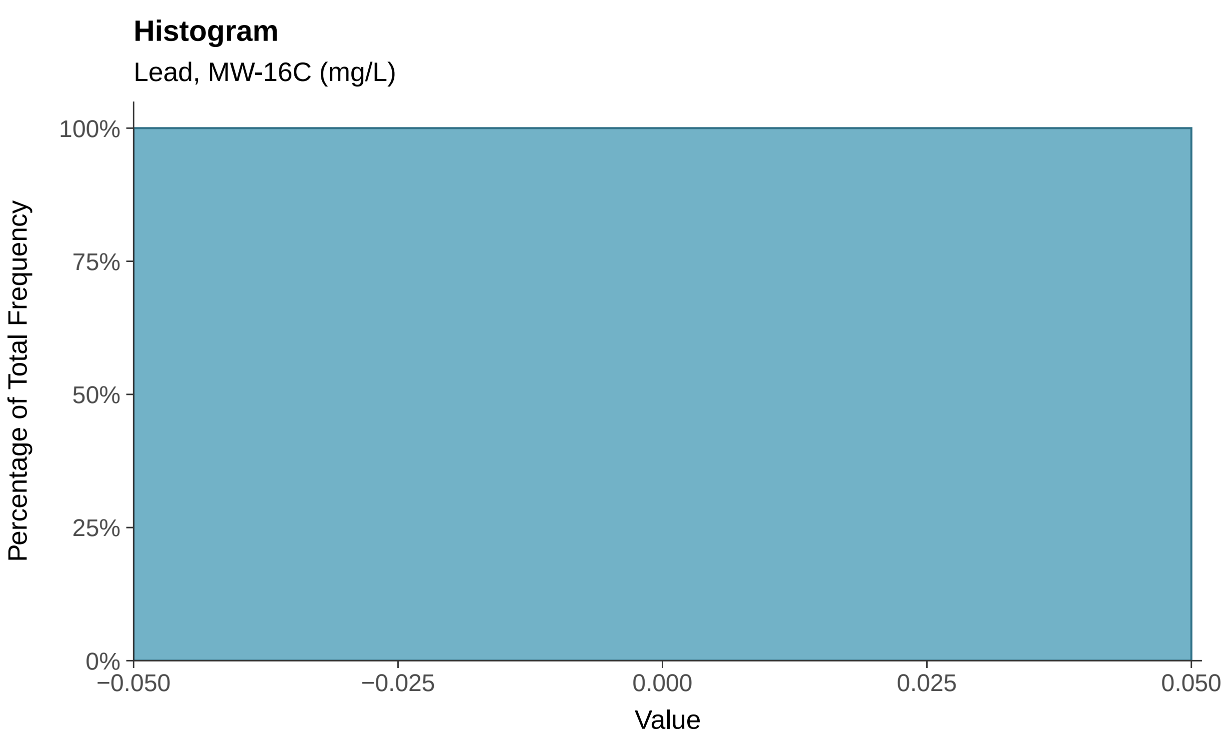
Cobalt, MW-16C (mg/L)



Appendix IV: Lead, MW-16C

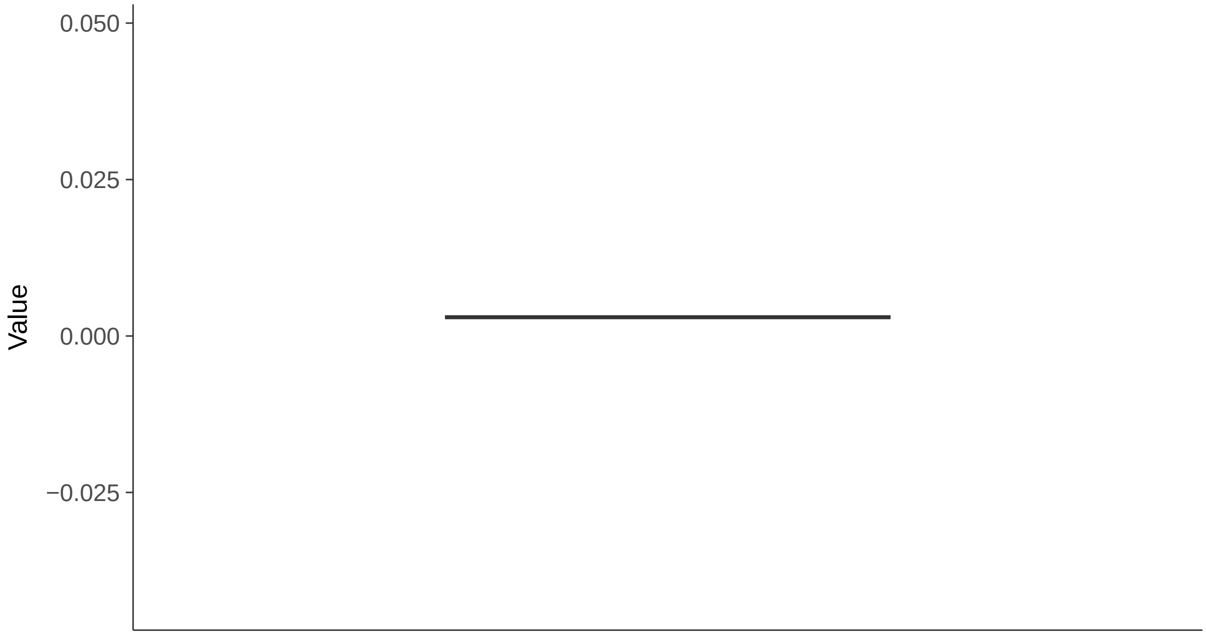
ID: 16C_2_15





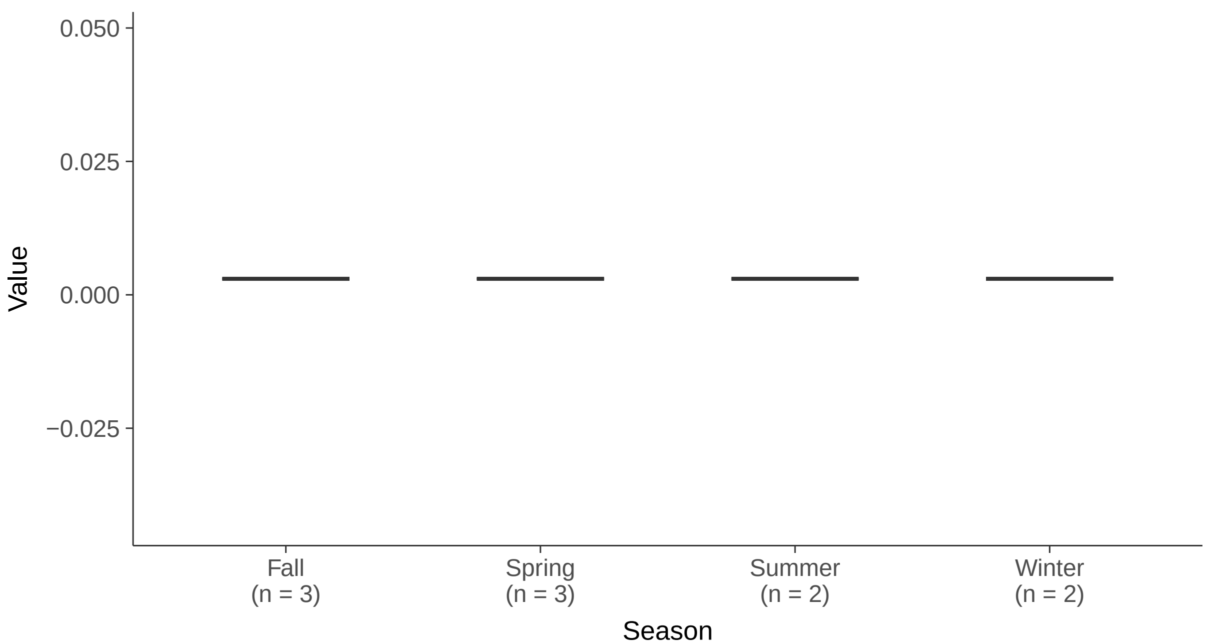
Boxplot

Lead, MW-16C (mg/L)



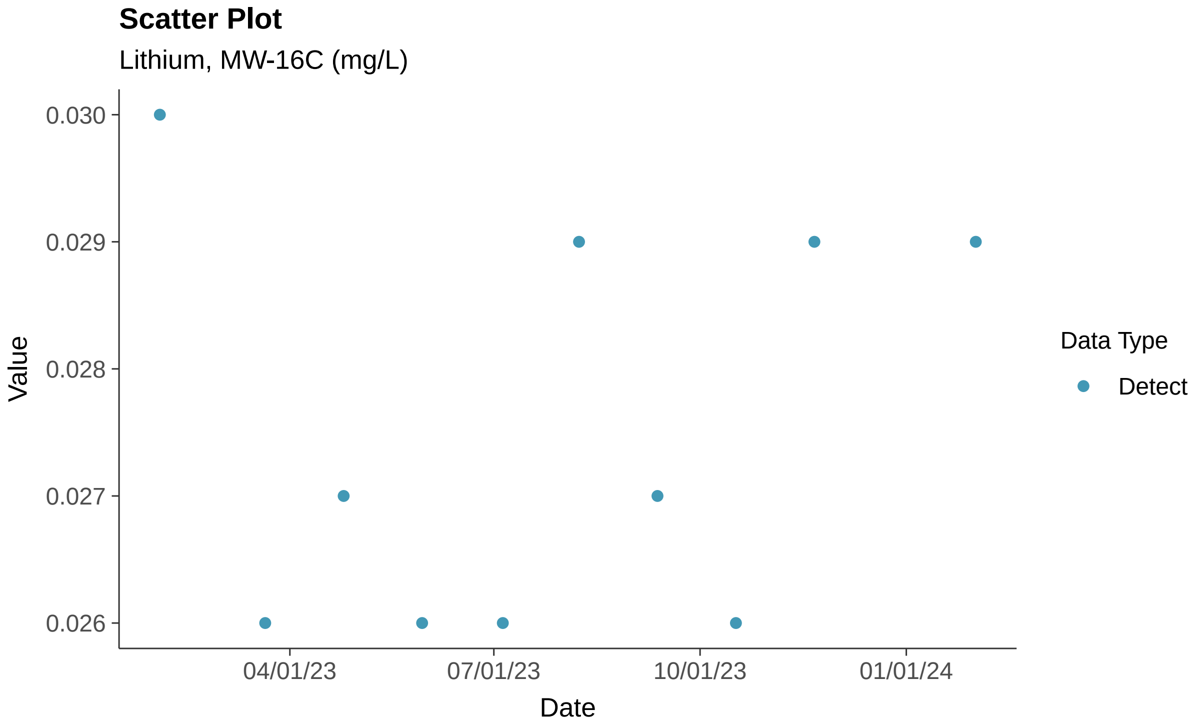
Boxplot by Season

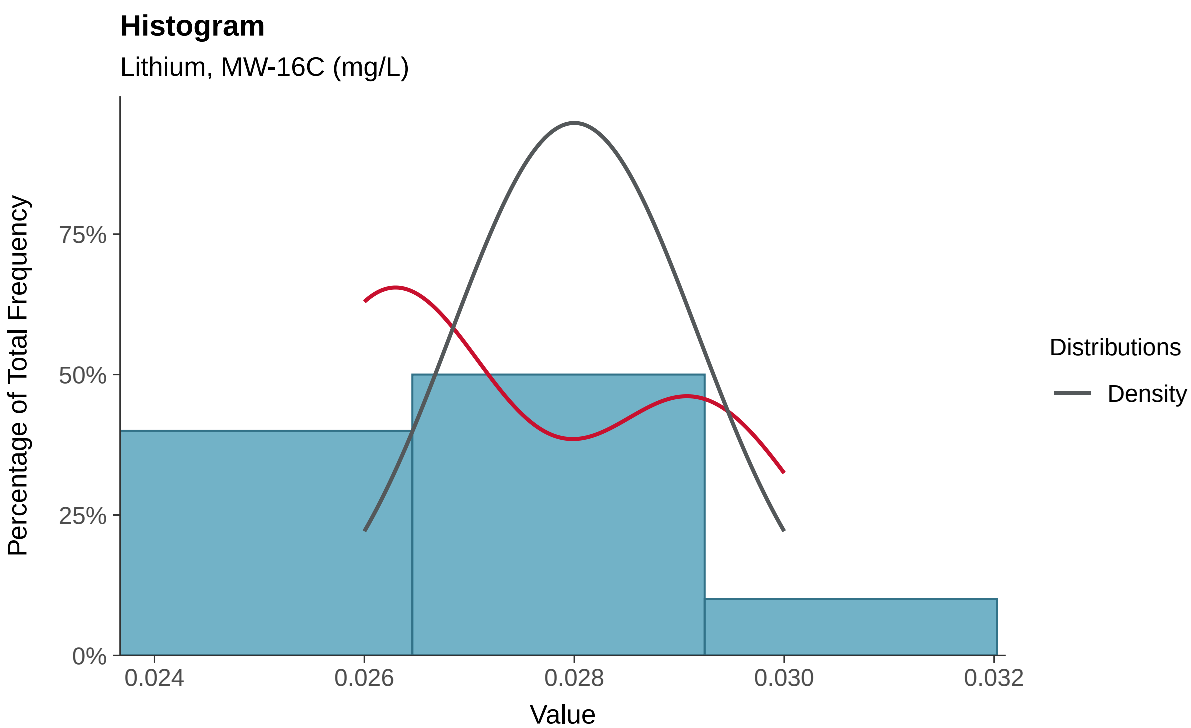
Lead, MW-16C (mg/L)



Appendix IV: Lithium, MW-16C

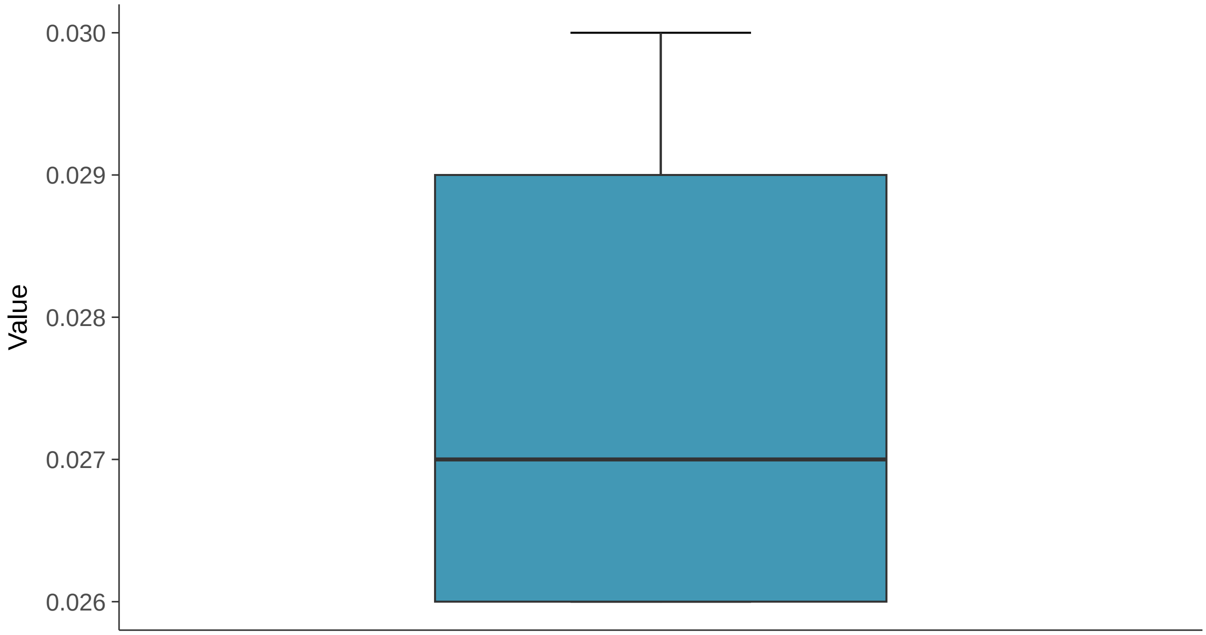
ID: 16C_2_16





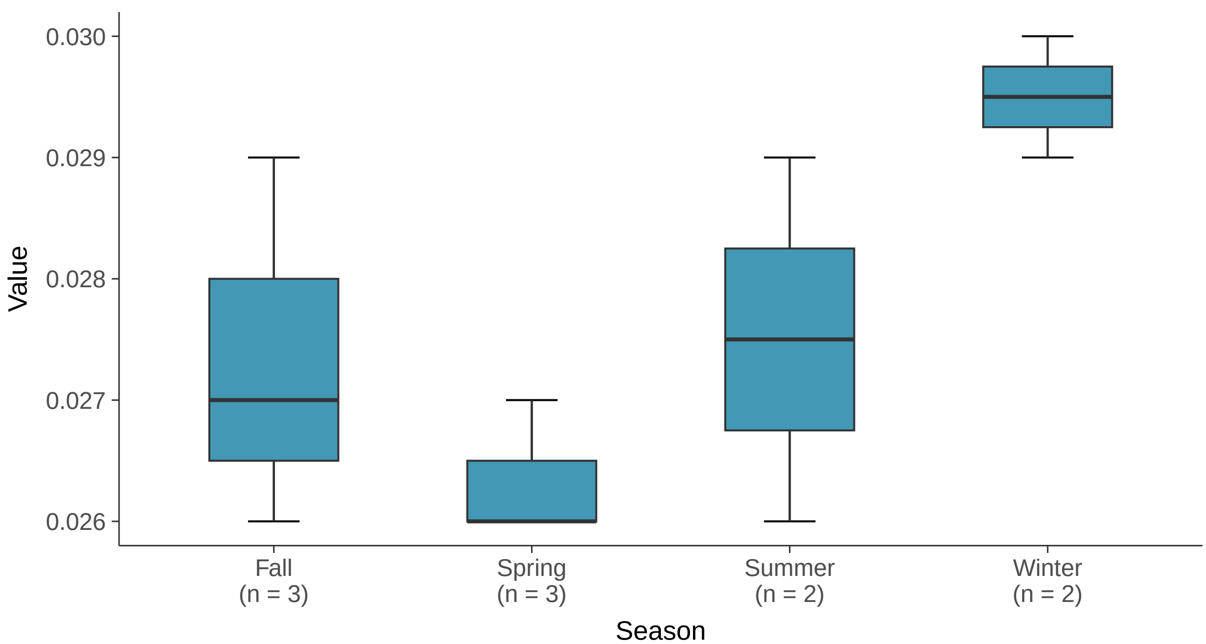
Boxplot

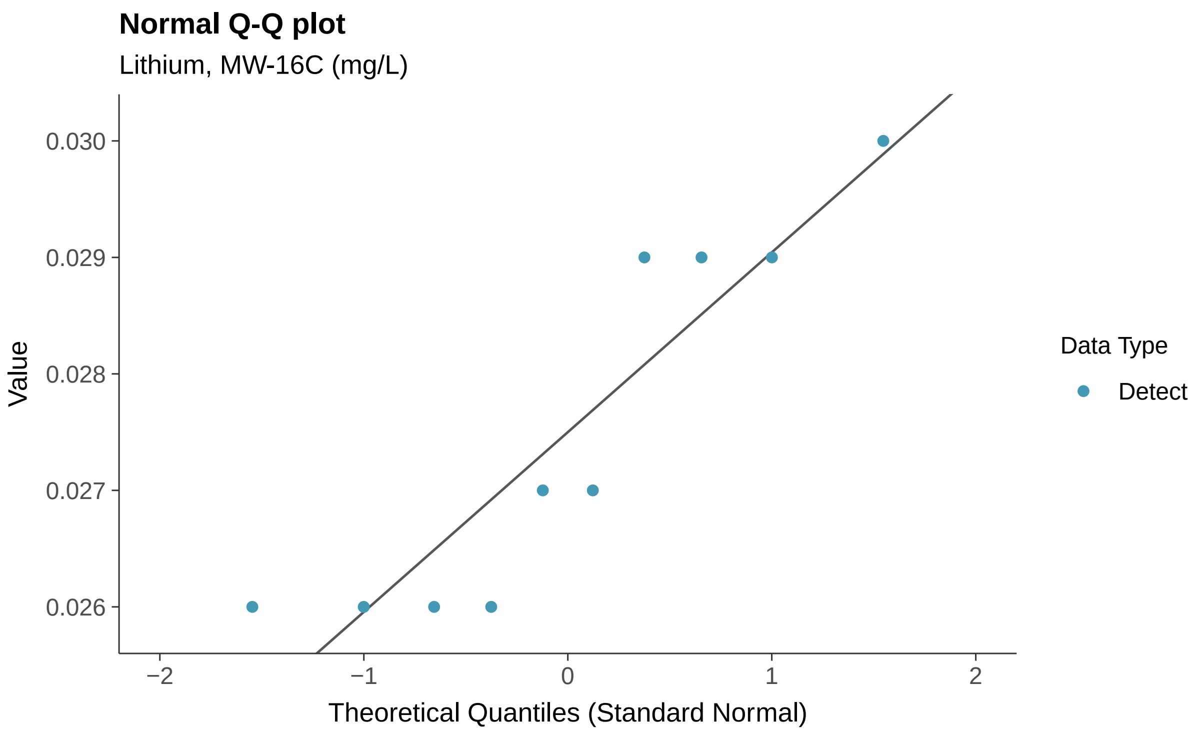
Lithium, MW-16C (mg/L)

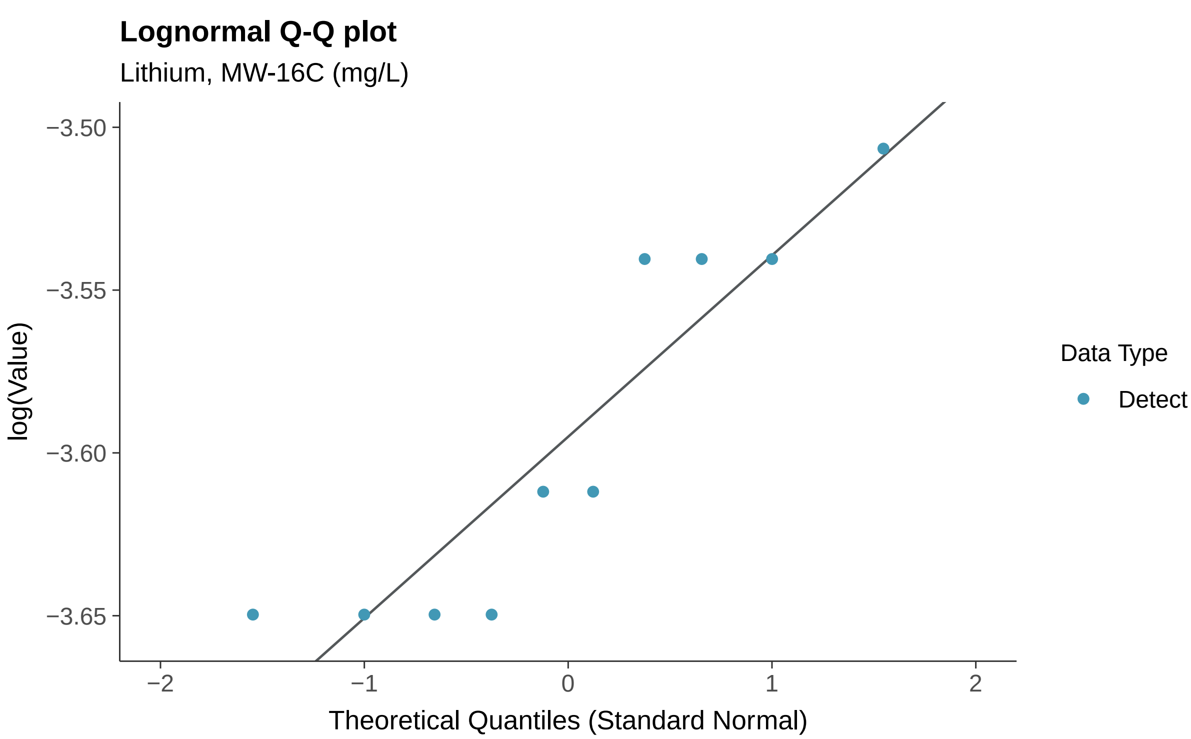


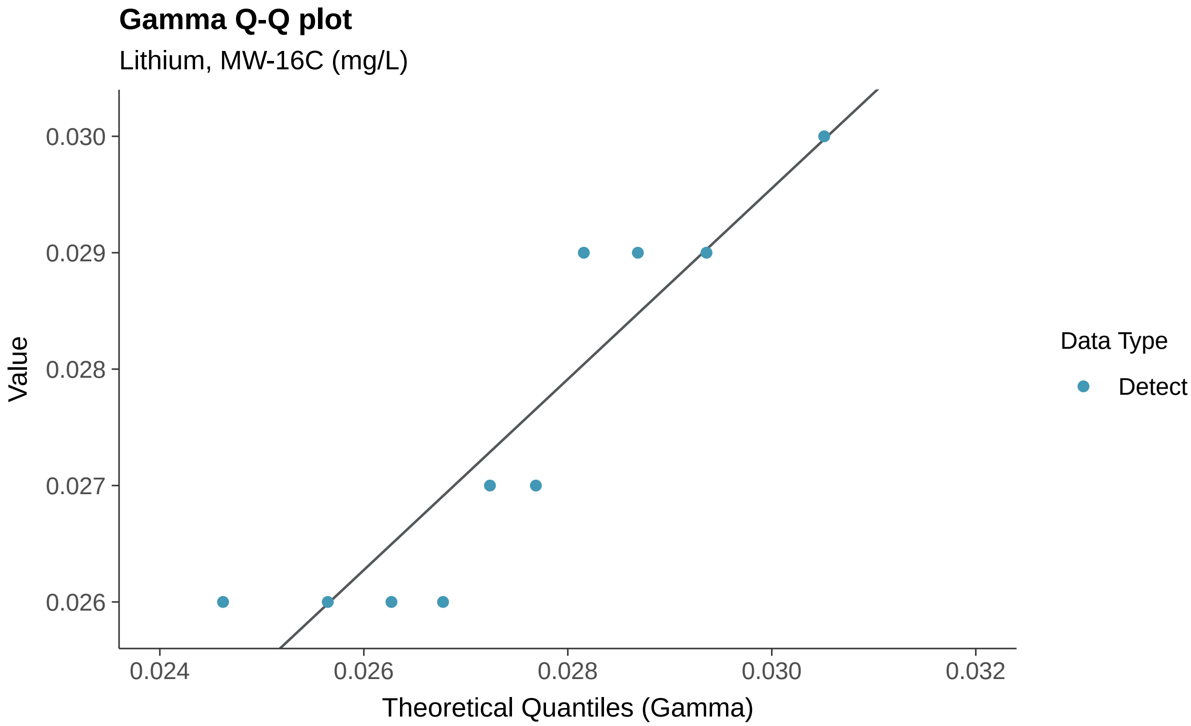
Boxplot by Season

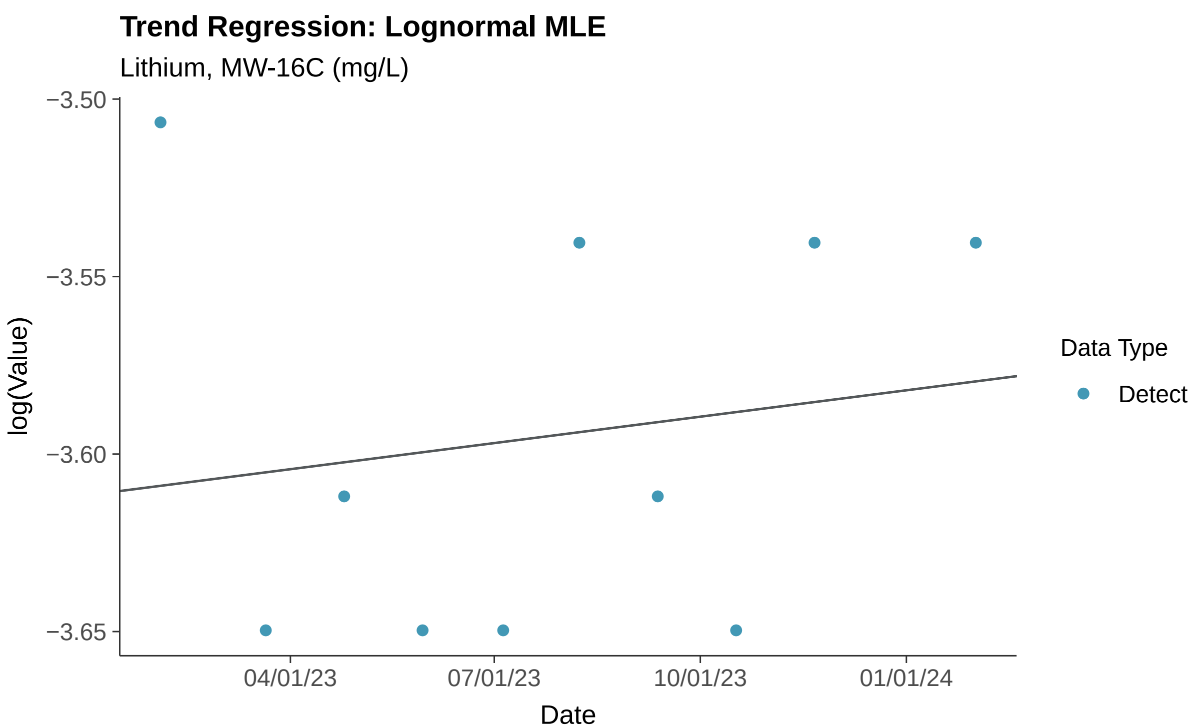
Lithium, MW-16C (mg/L)




Normal Q-Q plot
Lithium, MW-16C (mg/L)
Value
0.030
0.029
0.028
0.027
0.026
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

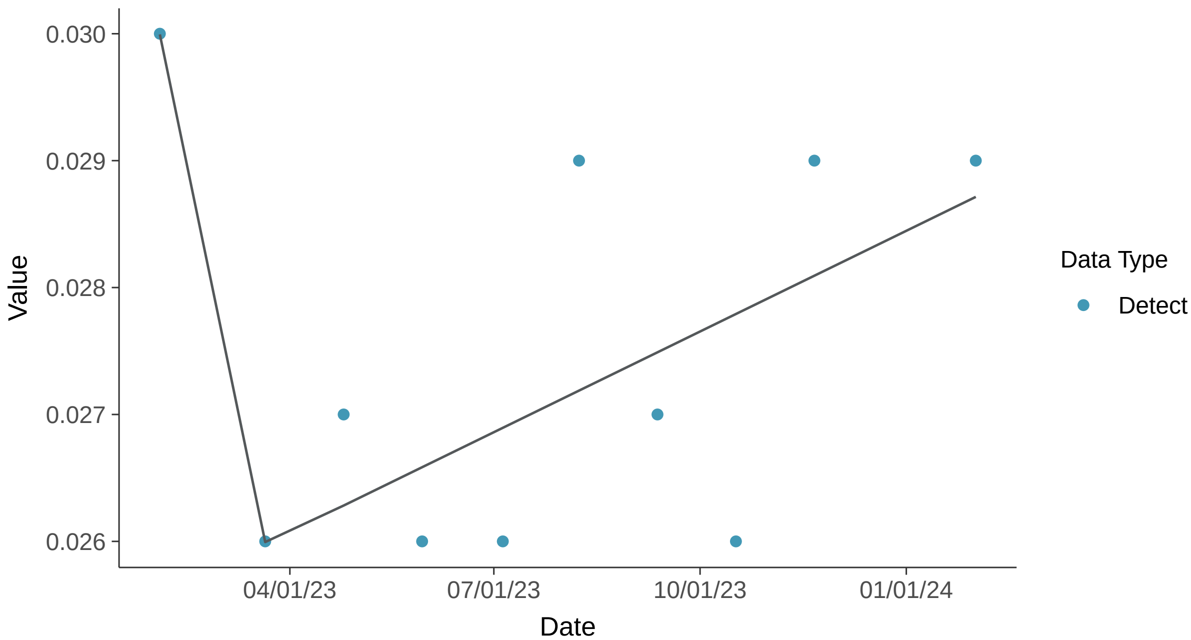

Lognormal Q-Q plot
Lithium, MW-16C (mg/L)
log(Value)
−3.50
−3.55
−3.60
−3.65
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Lithium, MW-16C (mg/L)
Value
0.030
0.029
0.028
0.027
0.026
0.024
0.026
0.028
0.030
0.032
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Lithium, MW-16C (mg/L)
log(Value)
−3.50
−3.55
−3.60
−3.65
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

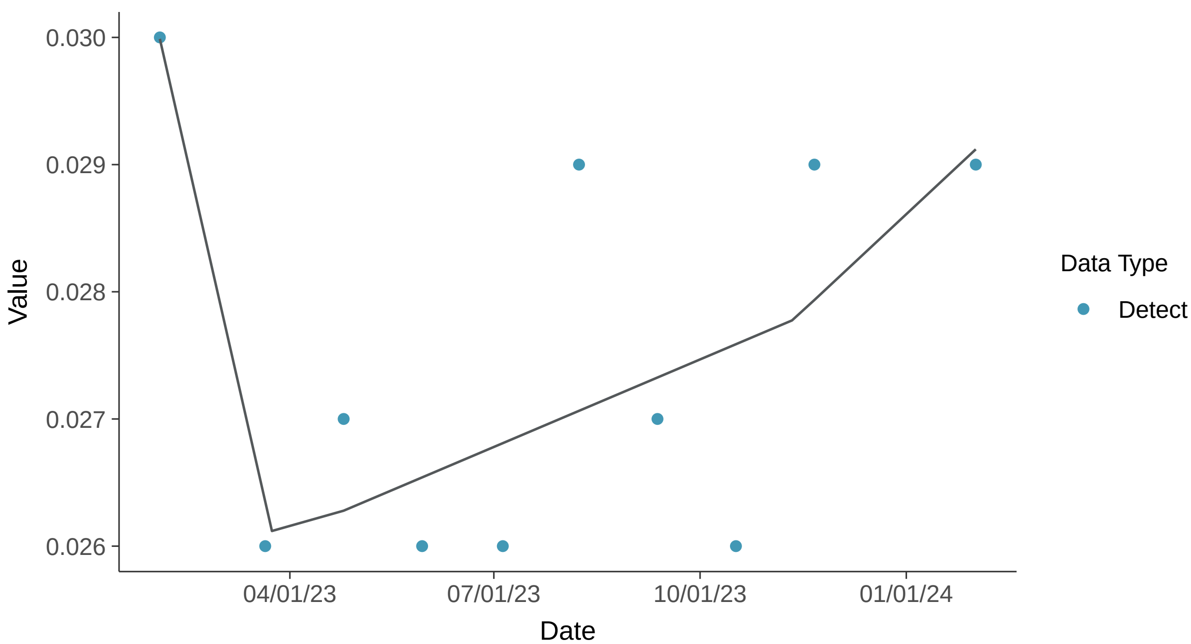
Trend Regression: Piecewise Linear-Linear

Lithium, MW-16C (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lithium, MW-16C (mg/L)

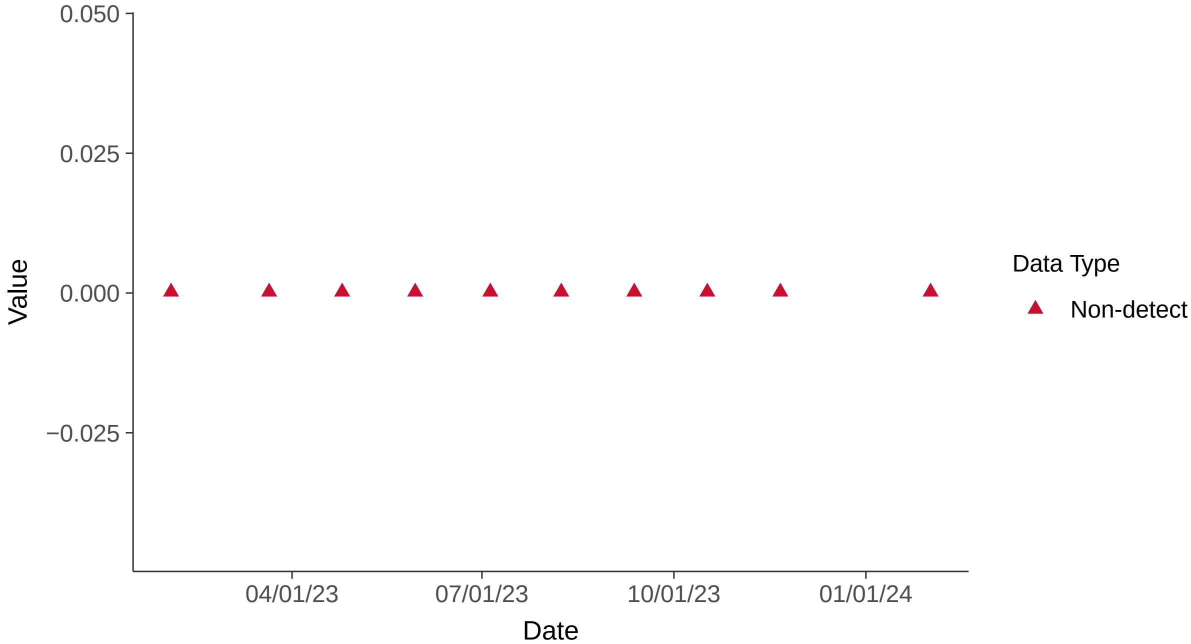


Appendix IV: Mercury, MW-16C

ID: 16C_2_17

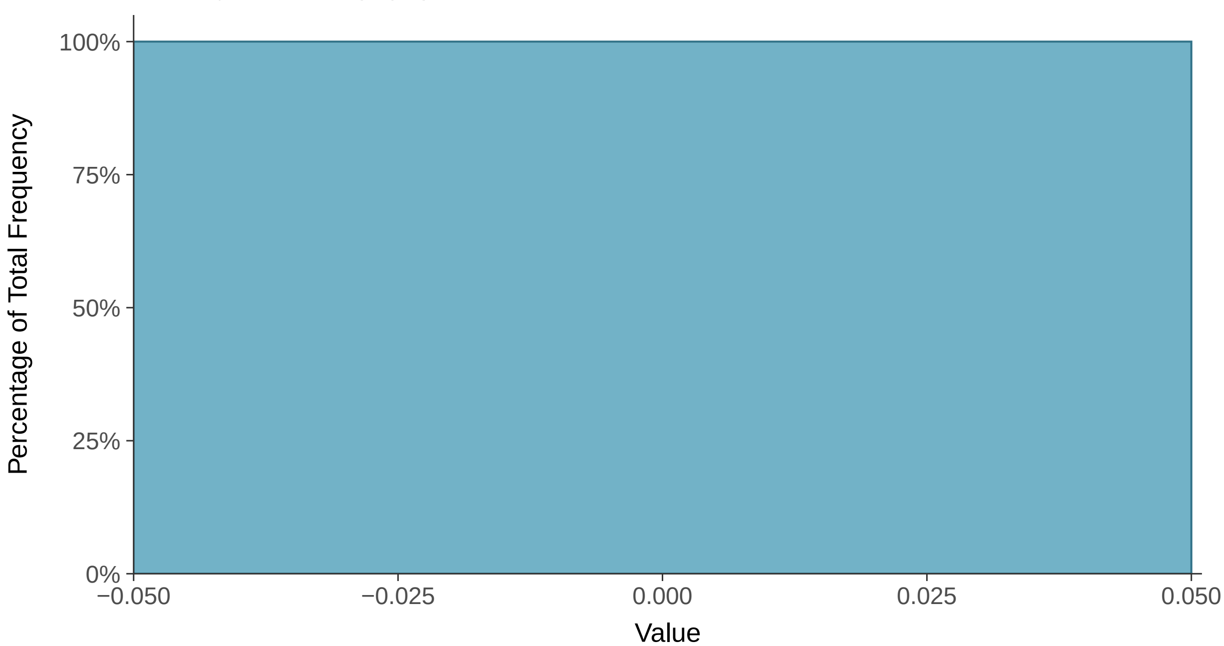
Scatter Plot

Mercury, MW-16C (mg/L)



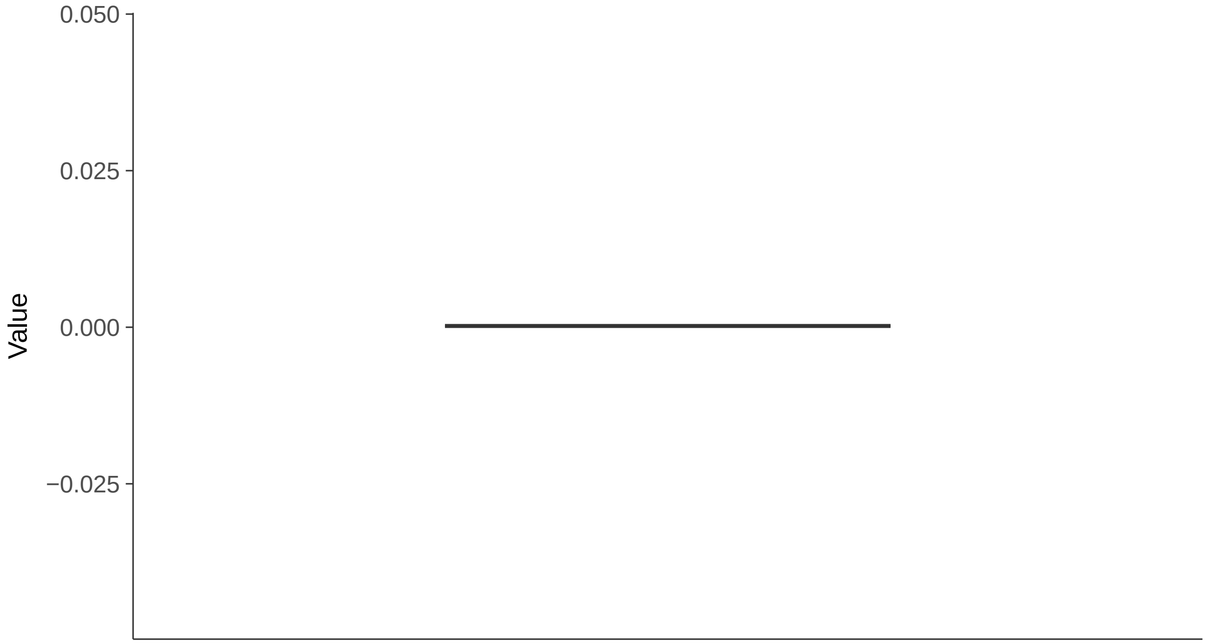
Histogram

Mercury, MW-16C (mg/L)



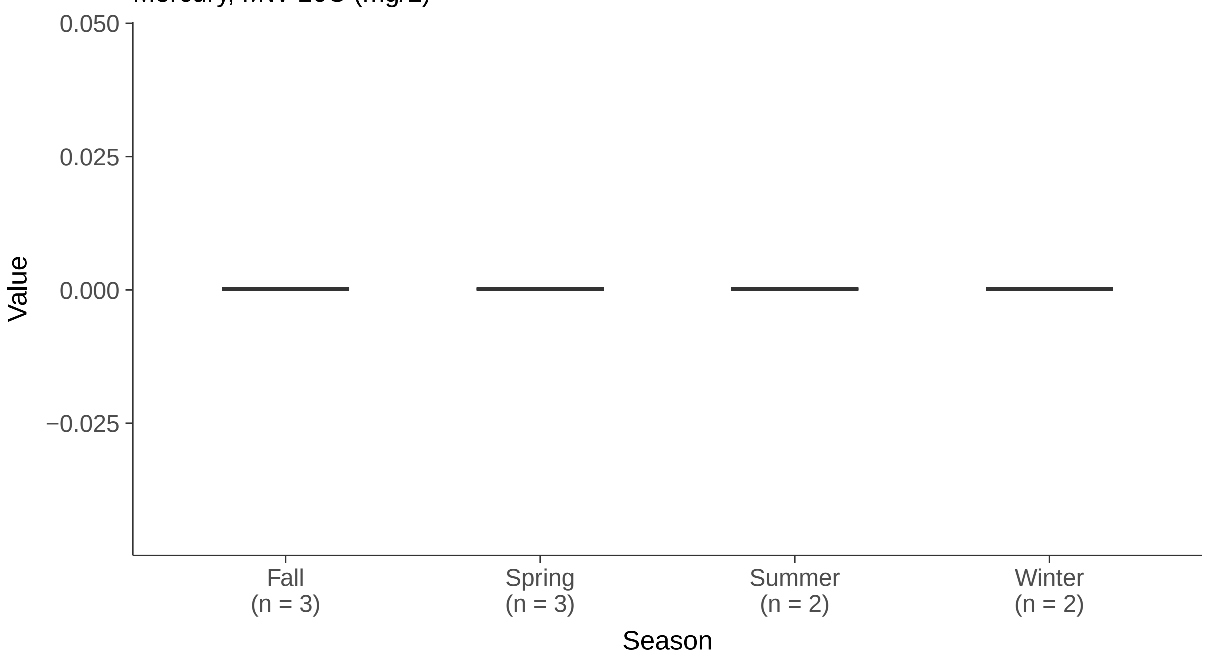
Boxplot

Mercury, MW-16C (mg/L)



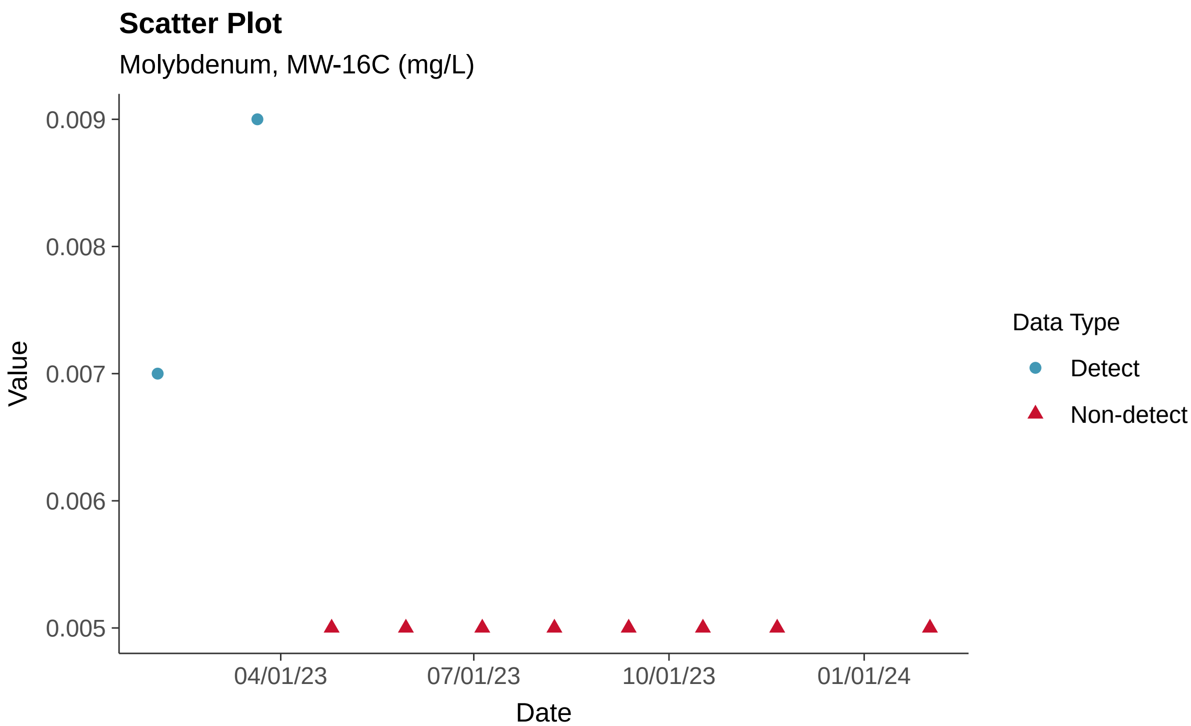
Boxplot by Season

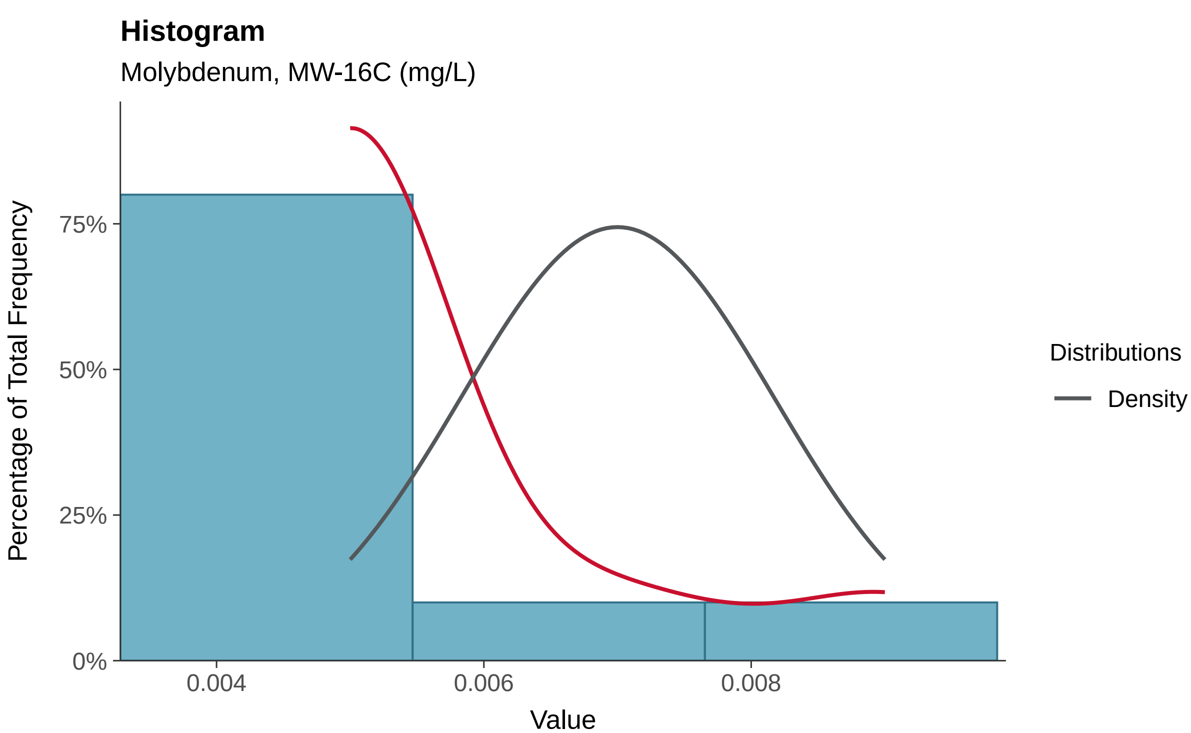
Mercury, MW-16C (mg/L)

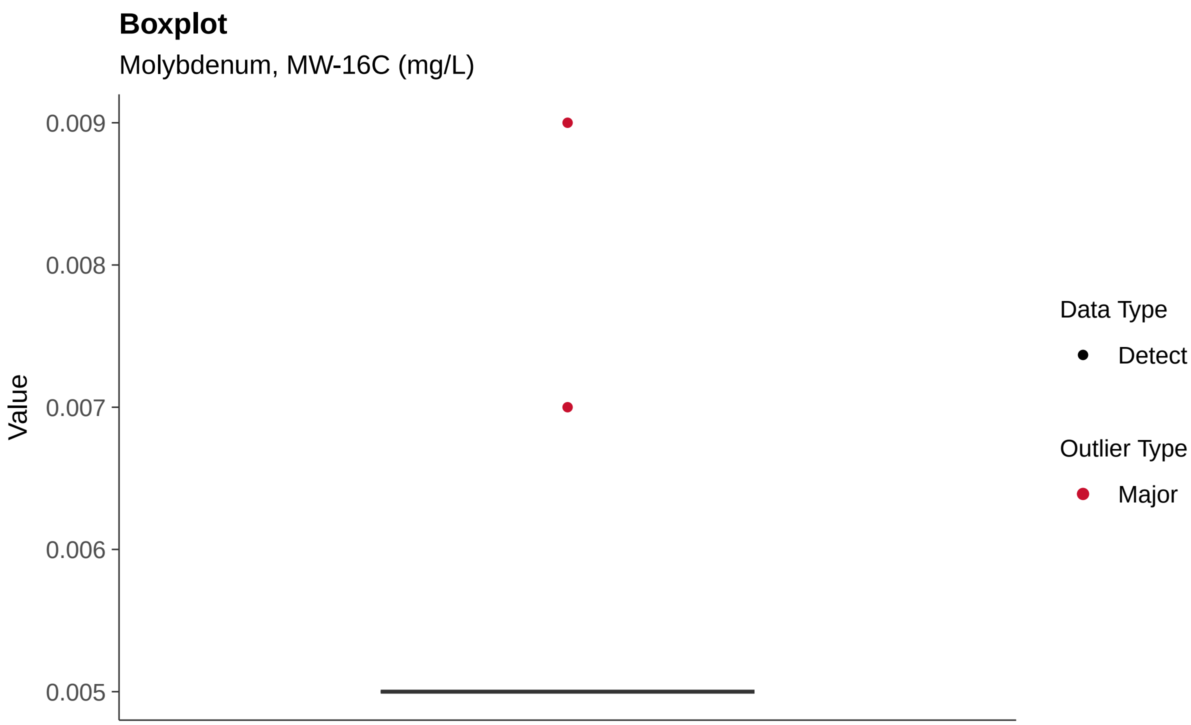


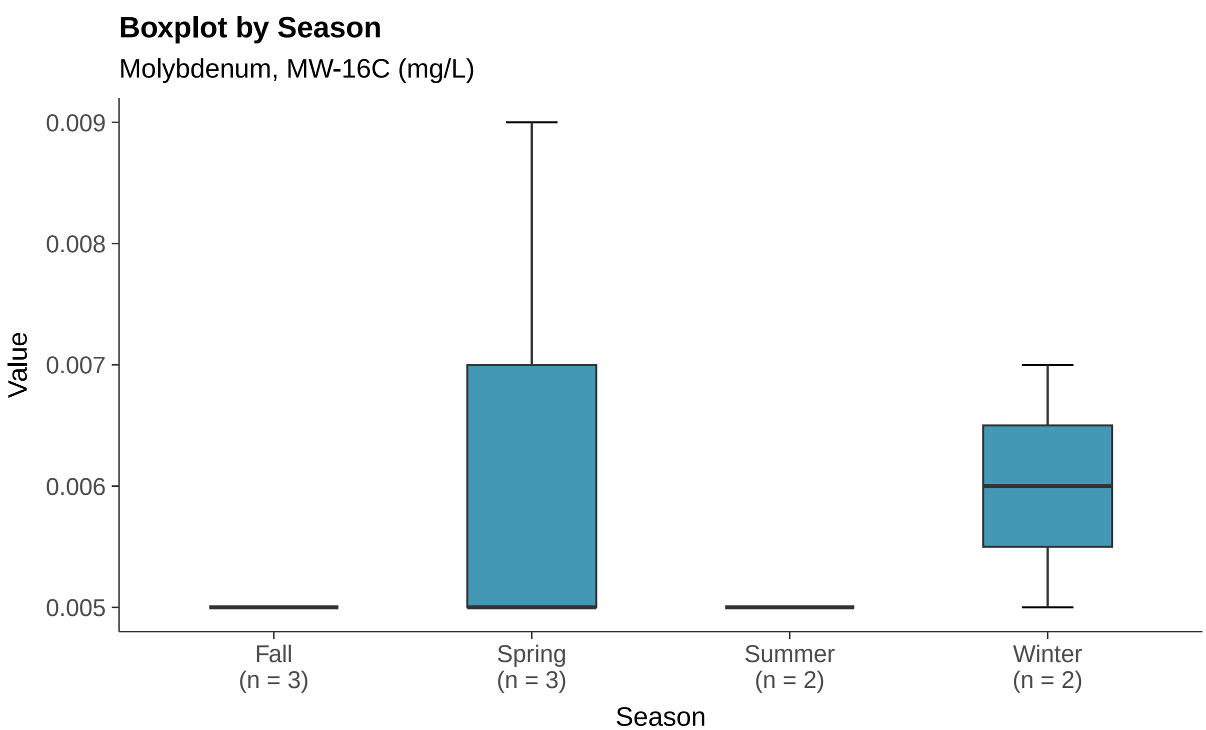
Appendix IV: Molybdenum, MW-16C

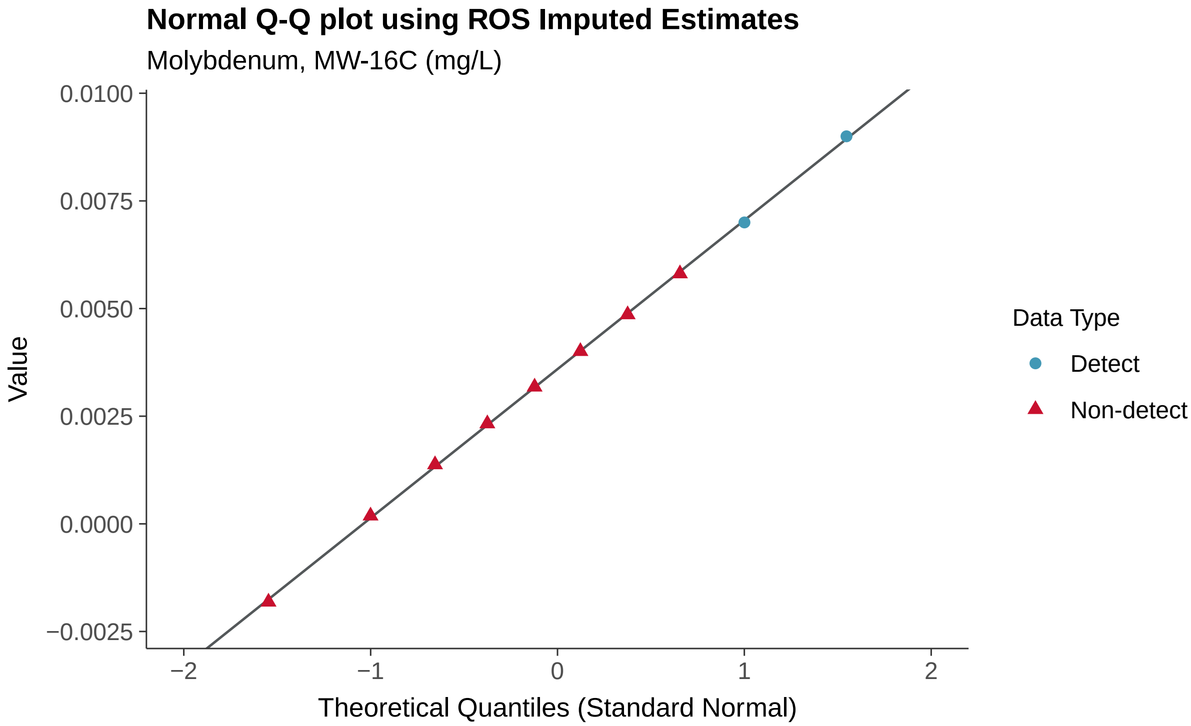
ID: 16C_2_18

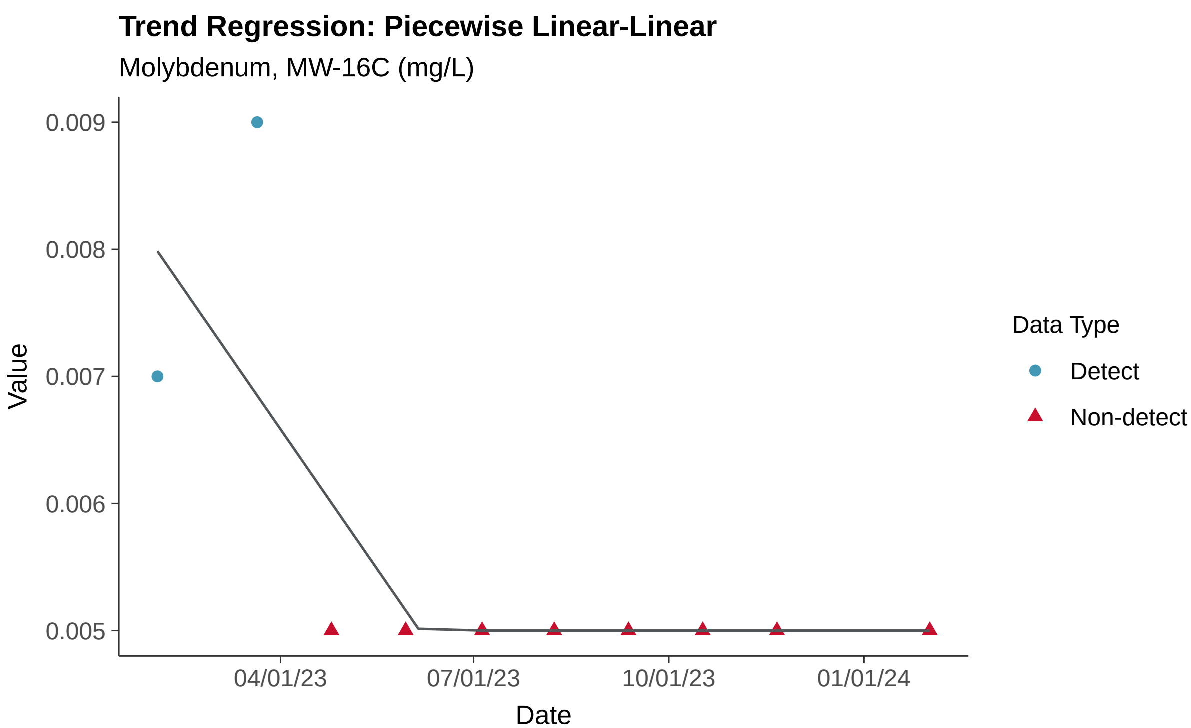





Boxplot
Molybdenum, MW-16C (mg/L)
Value
0.009
0.008
0.007
0.006
0.005
Data Type
Detect
Outlier Type
Major

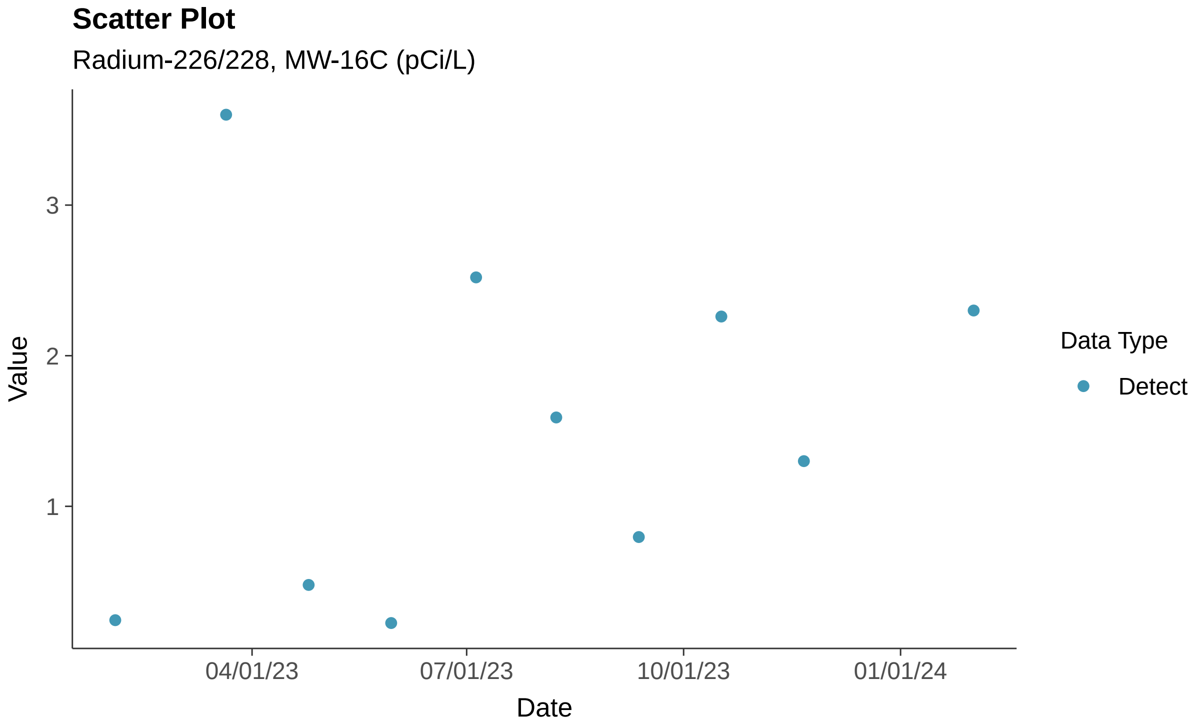

Boxplot by Season
Molybdenum, MW-16C (mg/L)
Value
0.009
0.008
0.007
0.006
0.005
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season

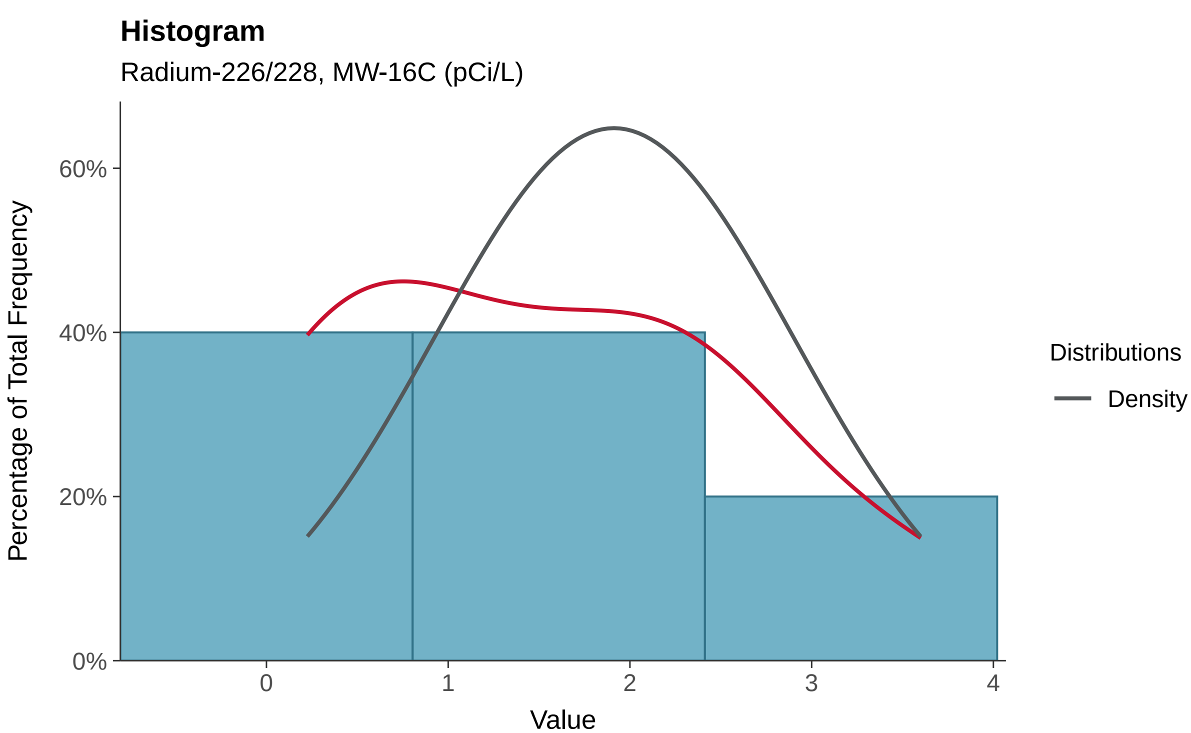

Normal Q-Q plot using ROS Imputed Estimates
Molybdenum, MW-16C (mg/L)
Value
0.0100
0.0075
0.0050
0.0025
0.0000
−0.0025
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Molybdenum, MW-16C (mg/L)
Value
0.009
0.008
0.007
0.006
0.005
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Appendix IV: Radium-226/228, MW-16C

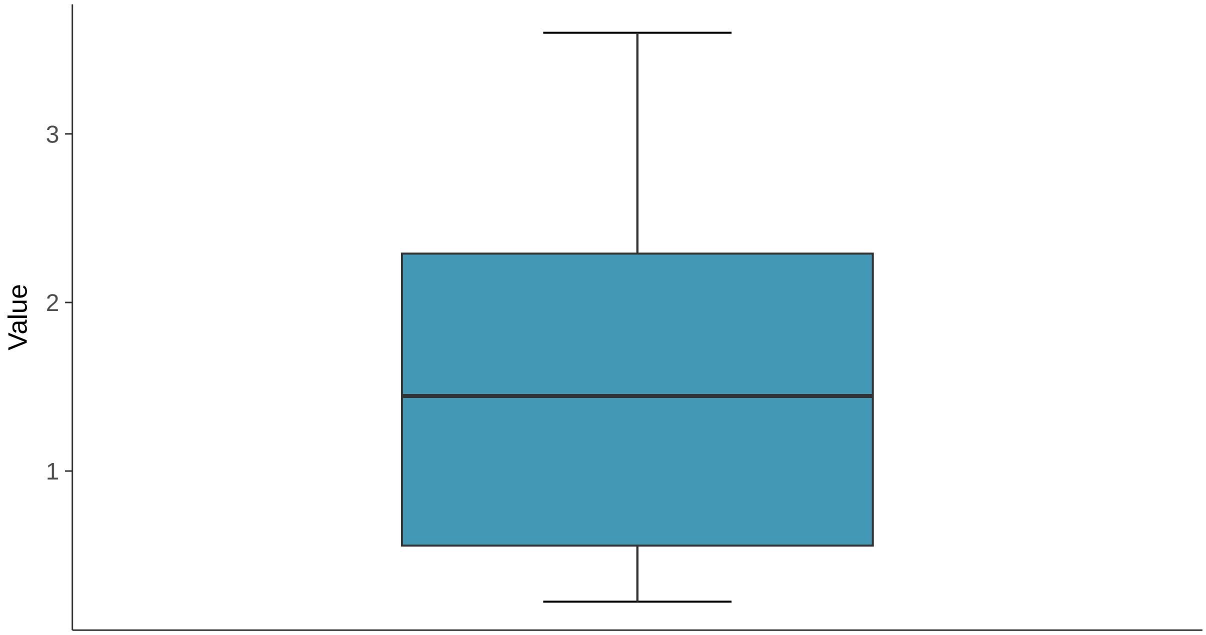
ID: 16C_2_20





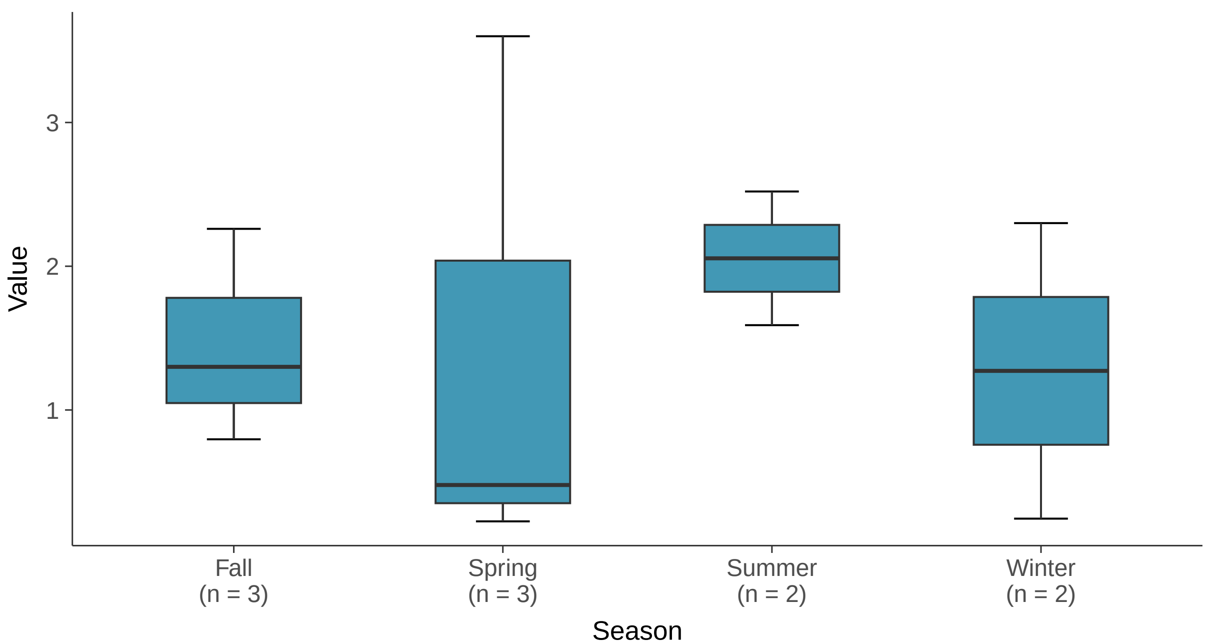
Boxplot

Radium-226/228, MW-16C (pCi/L)



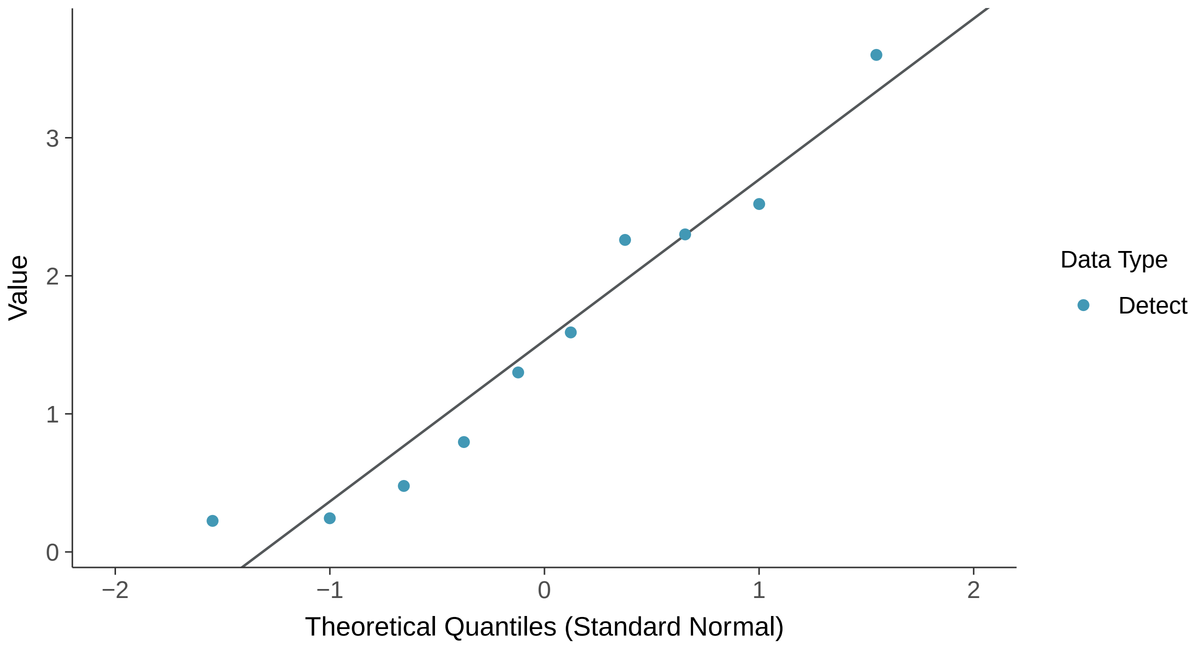
Boxplot by Season

Radium-226/228, MW-16C (pCi/L)



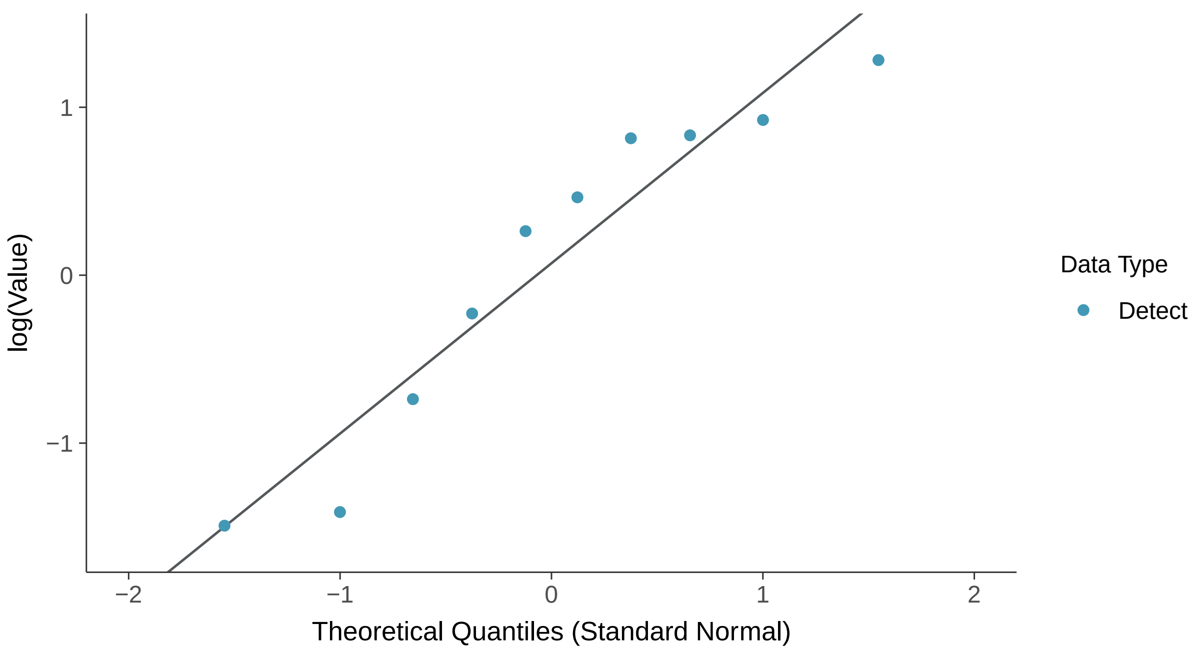
Normal Q-Q plot

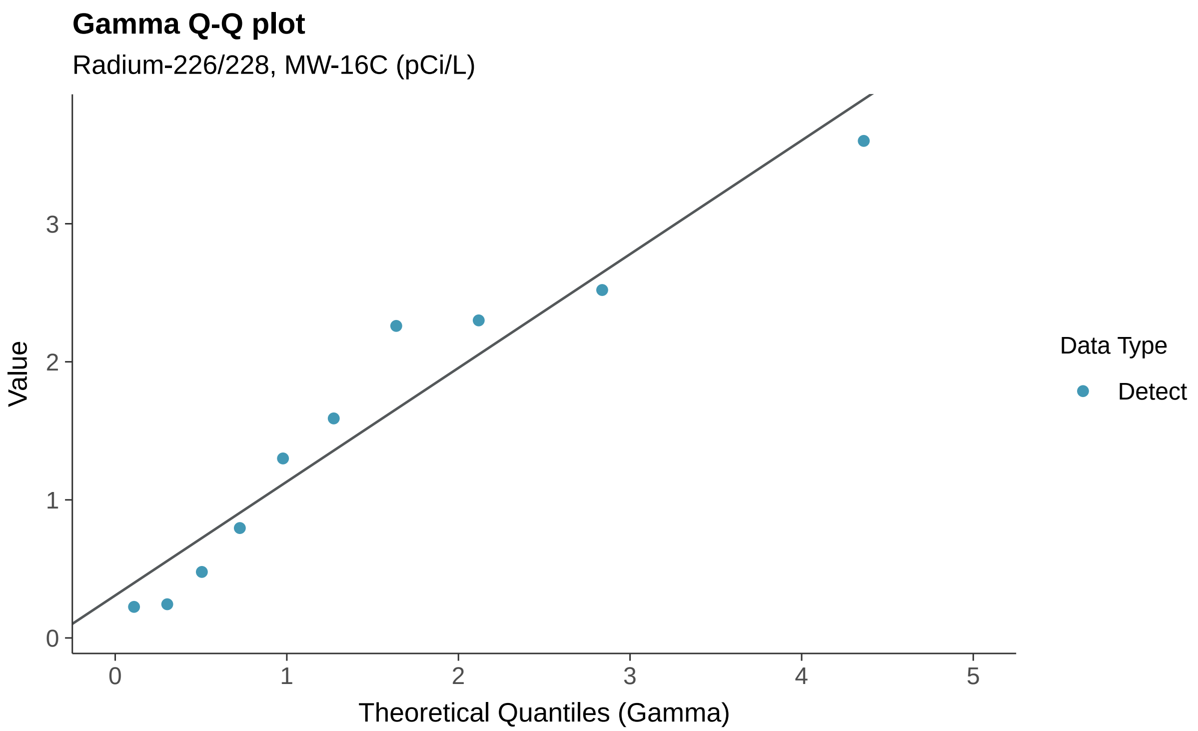
Radium-226/228, MW-16C (pCi/L)

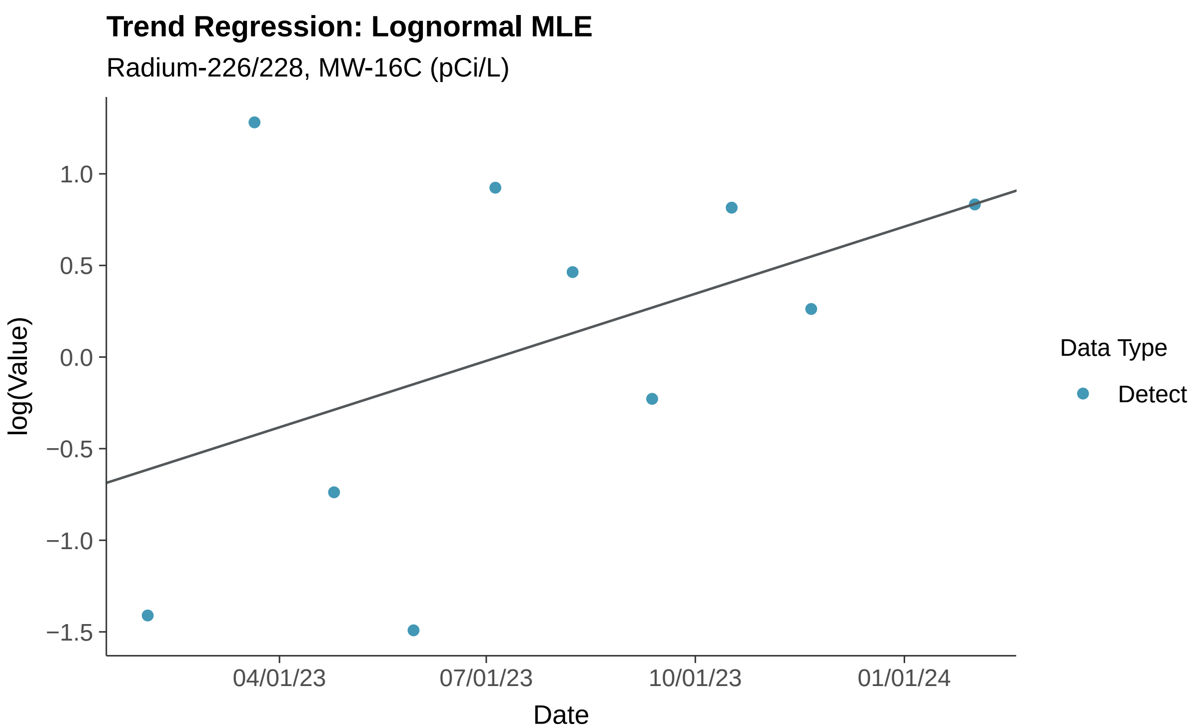


Lognormal Q-Q plot

Radium-226/228, MW-16C (pCi/L)




Gamma Q-Q plot
Radium-226/228, MW-16C (pCi/L)
Value
0
1
2
3
0
1
2
3
4
5
Theoretical Quantiles (Gamma)
Data Type
Detect

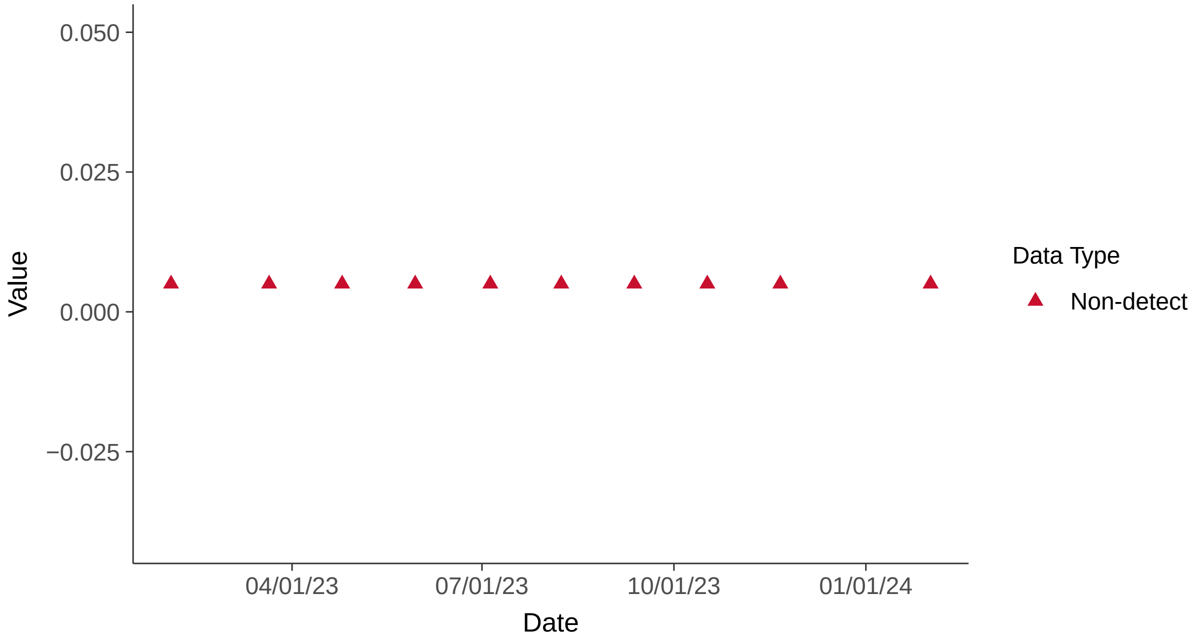

Trend Regression: Lognormal MLE
Radium-226/228, MW-16C (pCi/L)
log(Value)
1.0
0.5
0.0
−0.5
−1.0
−1.5
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Selenium, MW-16C

ID: 16C_2_22

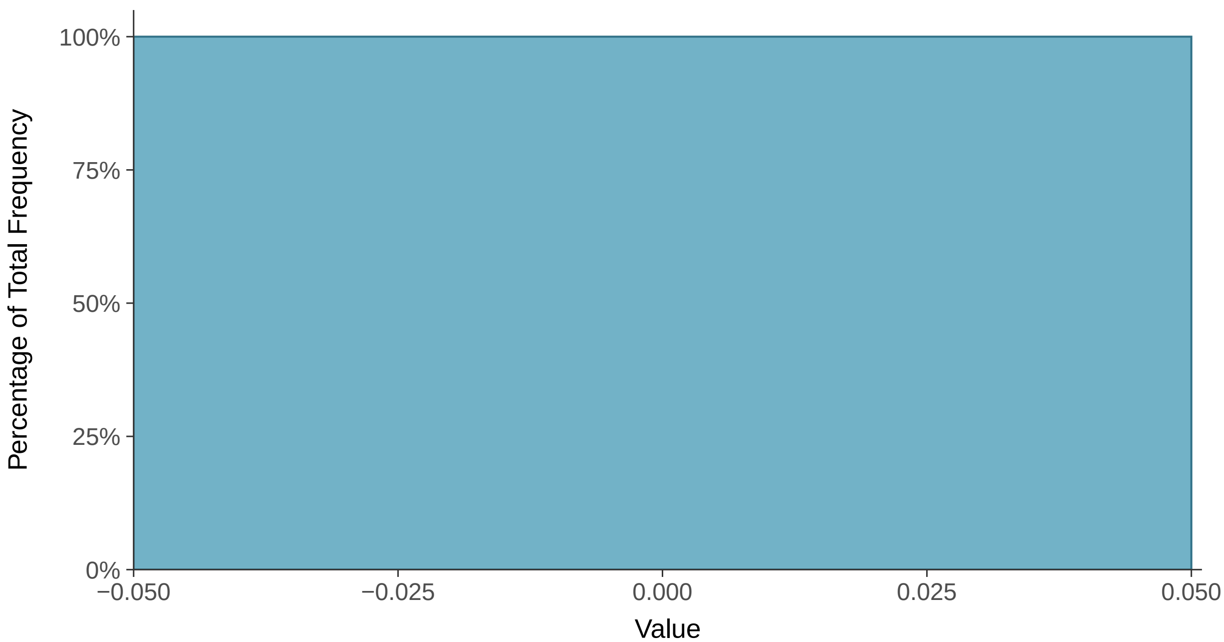
Scatter Plot

Selenium, MW-16C (mg/L)



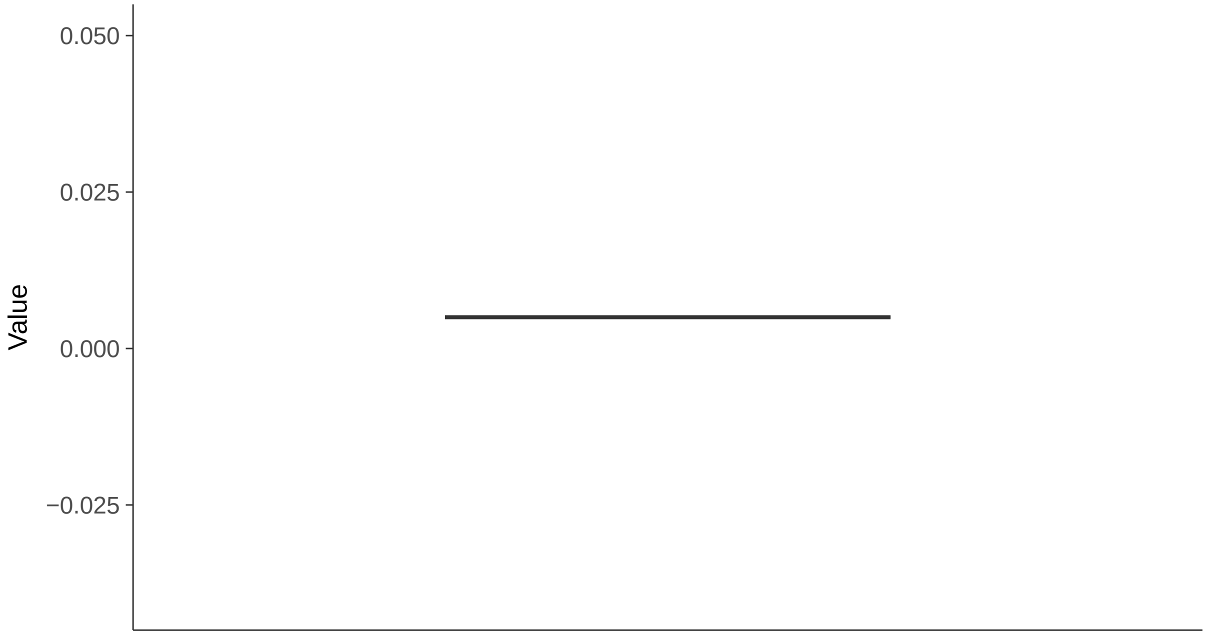
Histogram

Selenium, MW-16C (mg/L)



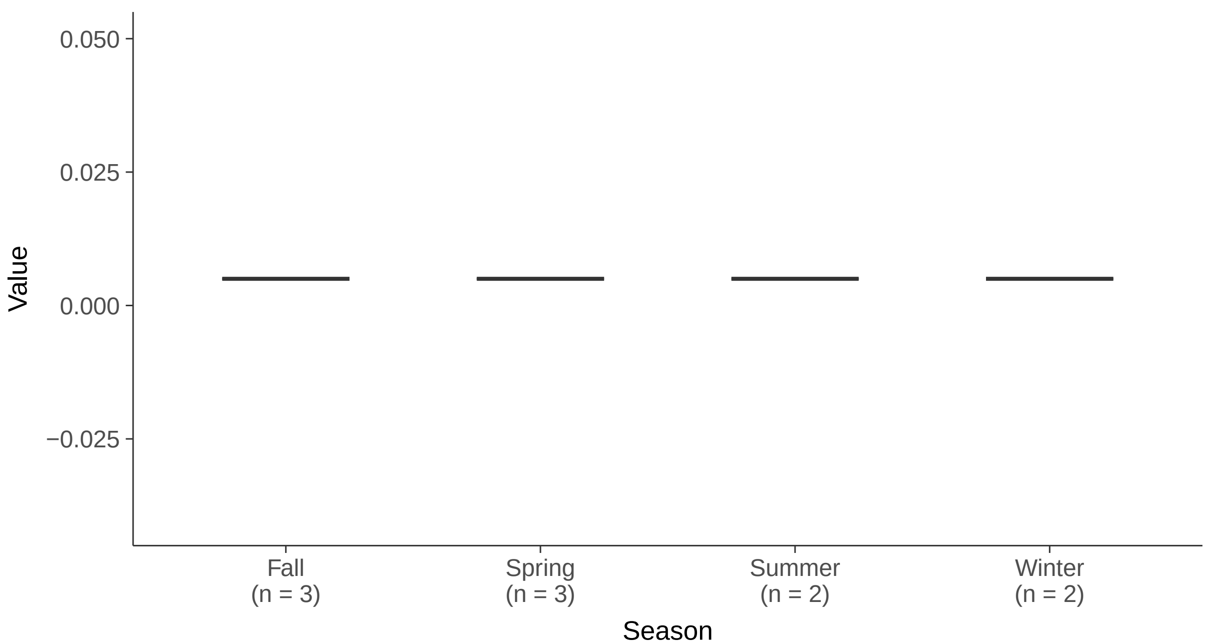
Boxplot

Selenium, MW-16C (mg/L)



Boxplot by Season

Selenium, MW-16C (mg/L)

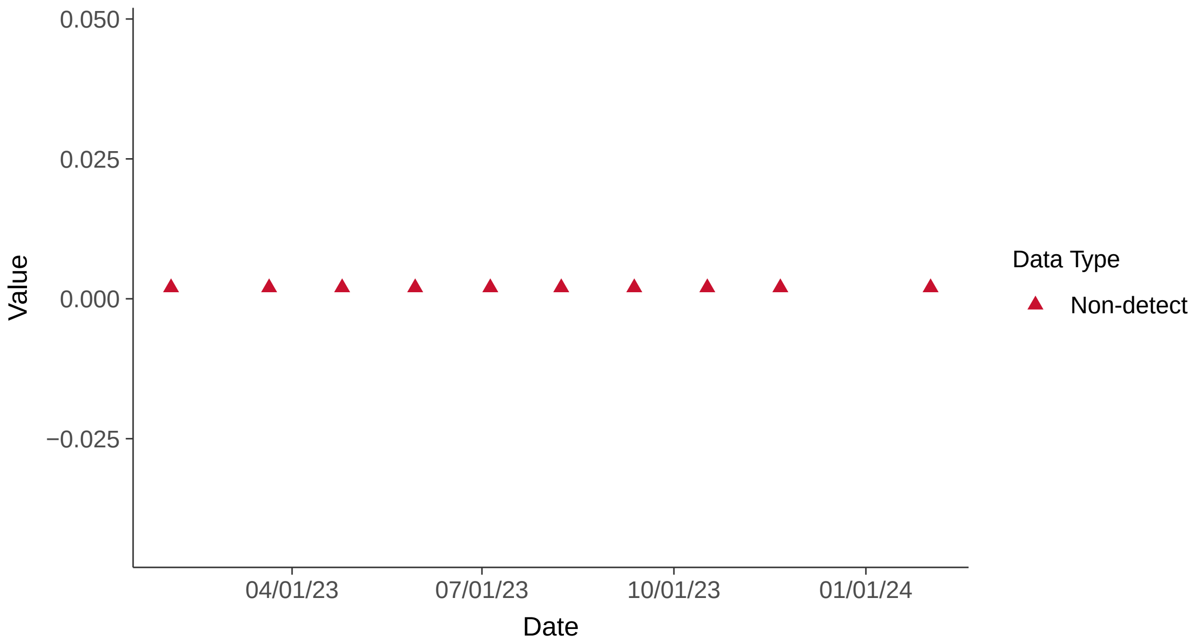


Appendix IV: Thallium, MW-16C

ID: 16C_2_23

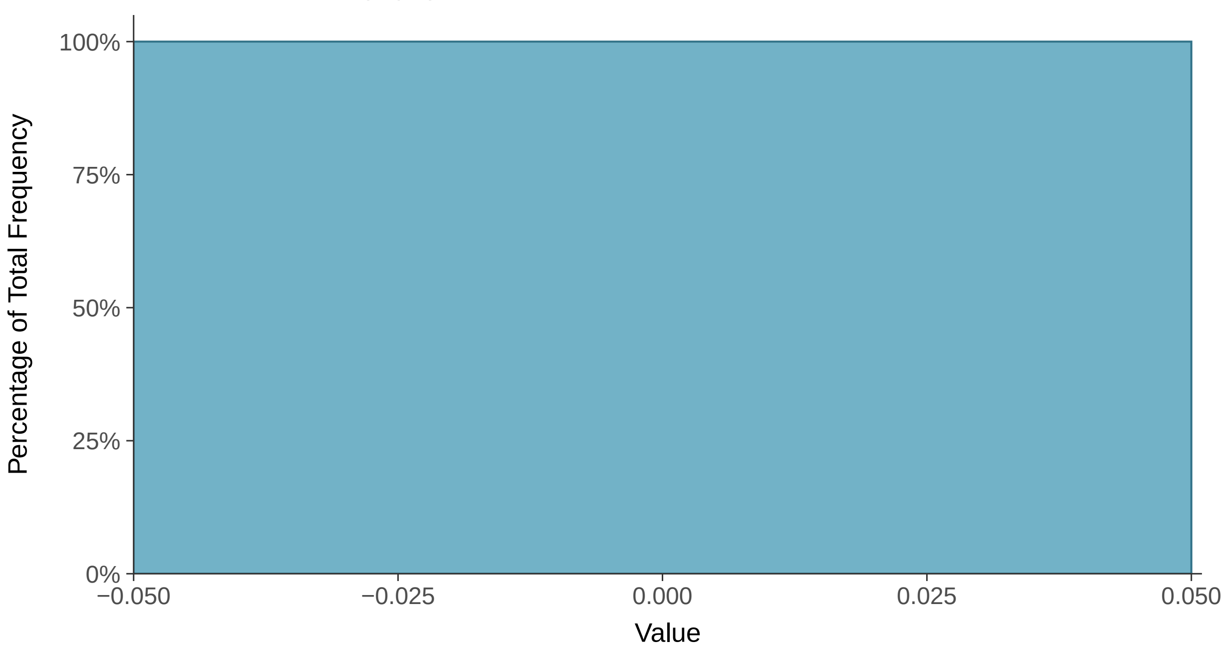
Scatter Plot

Thallium, MW-16C (mg/L)



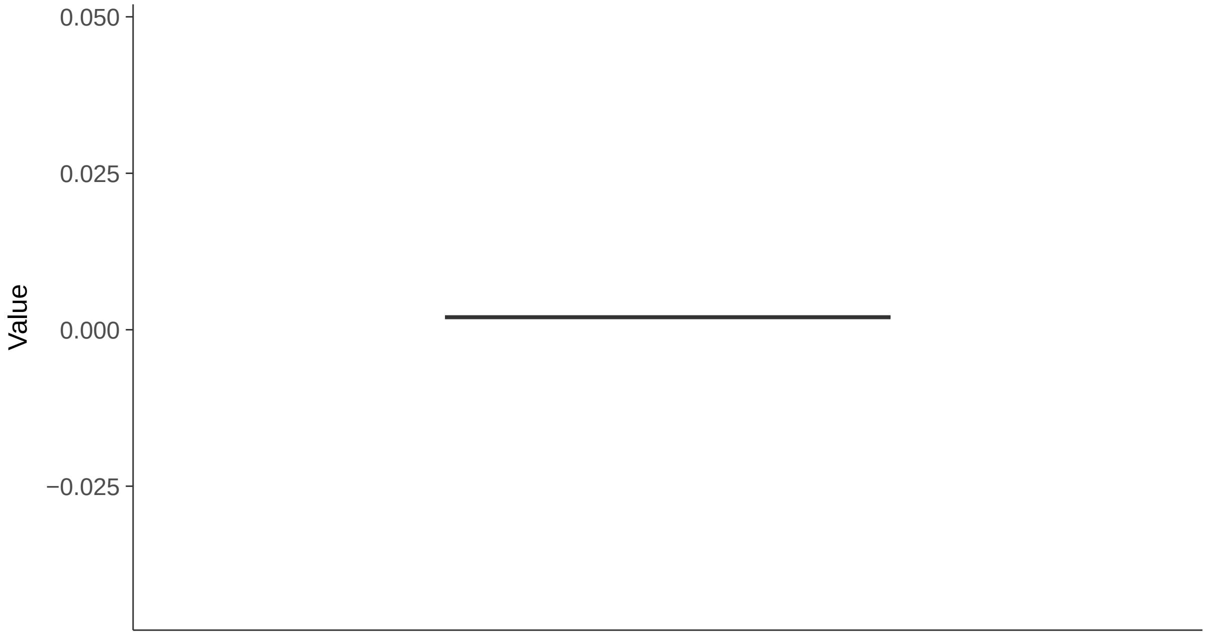
Histogram

Thallium, MW-16C (mg/L)



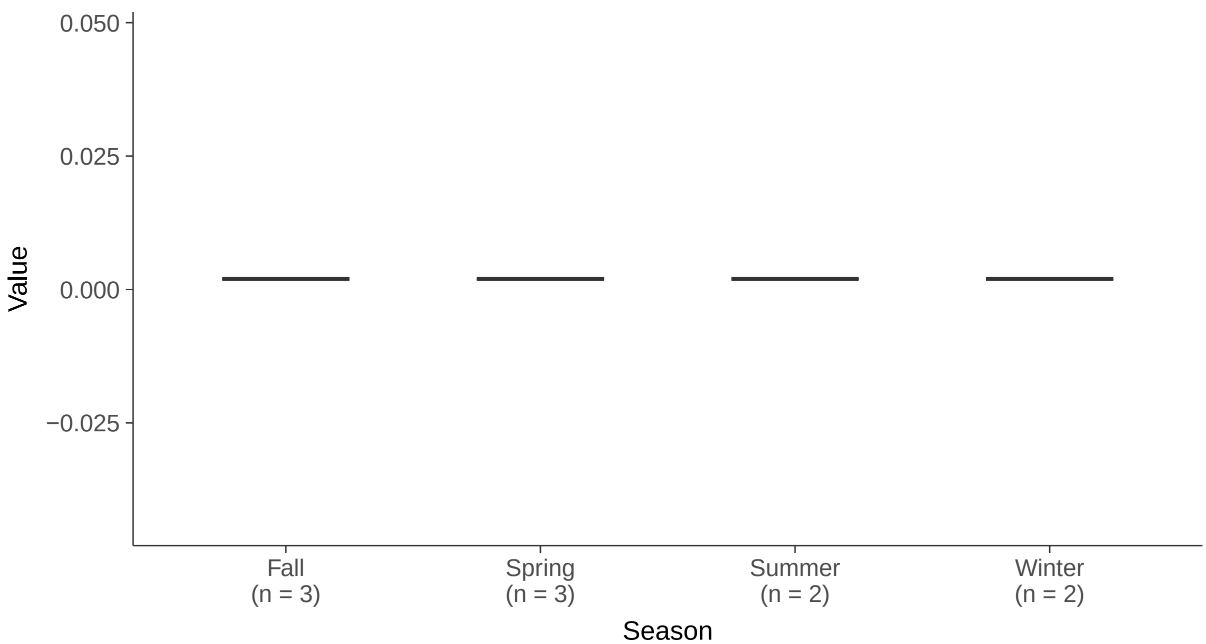
Boxplot

Thallium, MW-16C (mg/L)



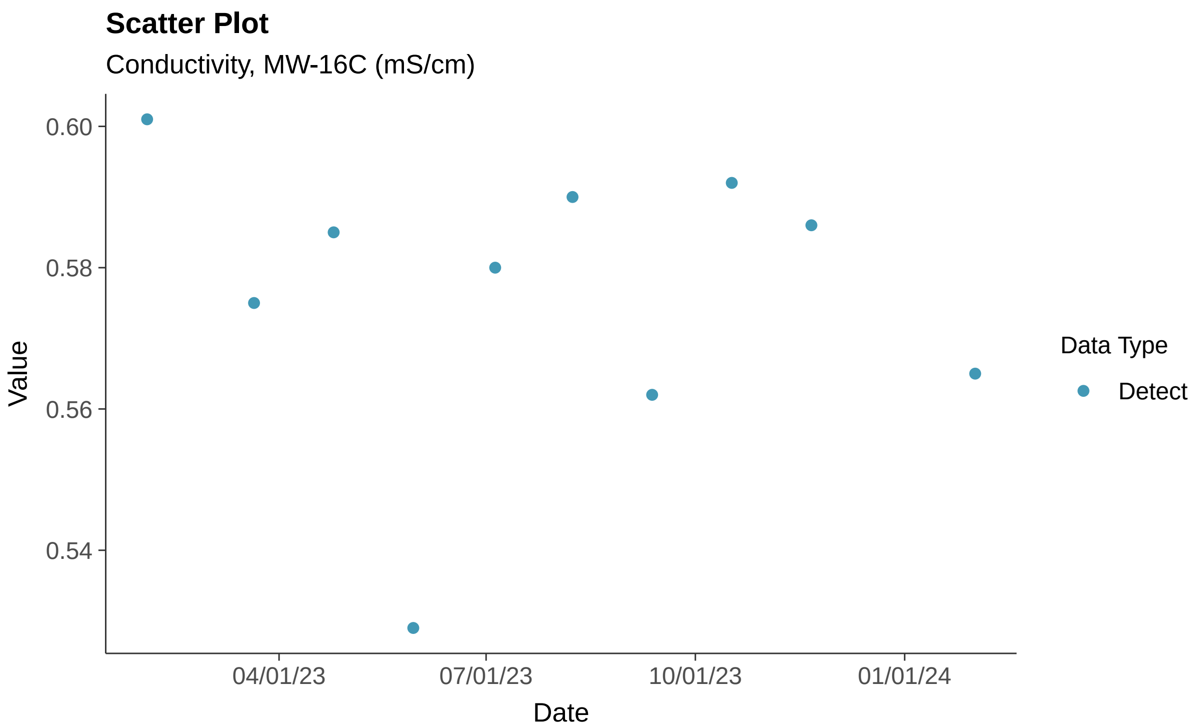
Boxplot by Season

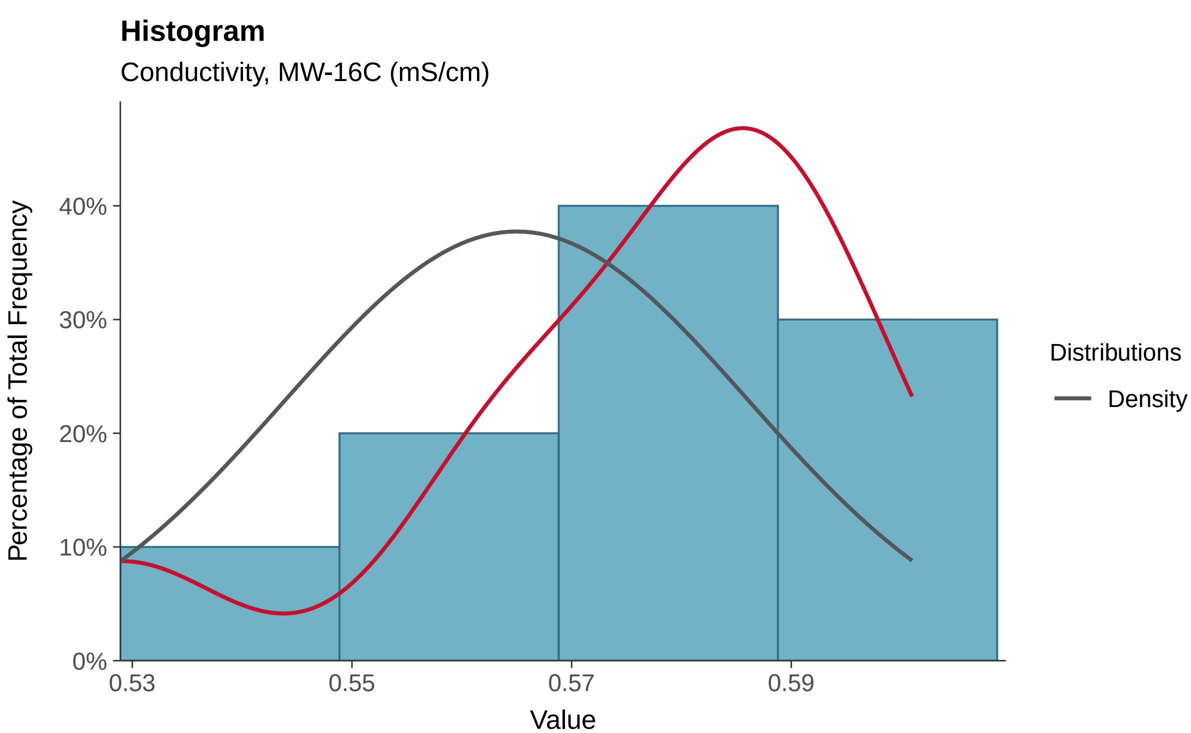
Thallium, MW-16C (mg/L)



Field Parameters: Conductivity, MW-16C

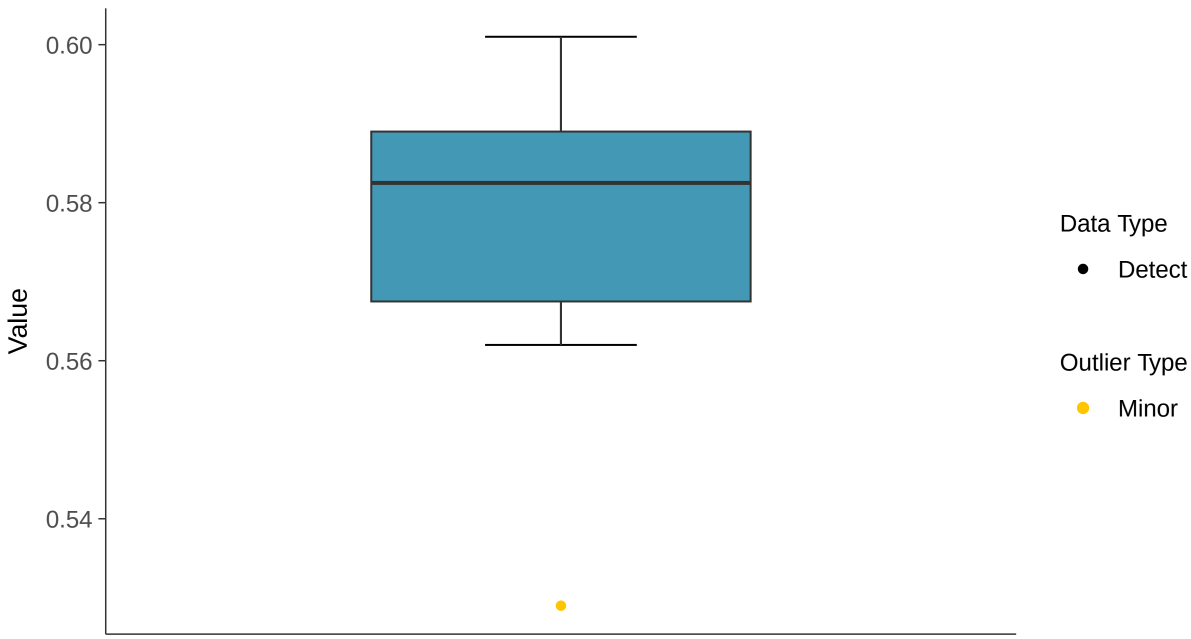
ID: 16C_3_24





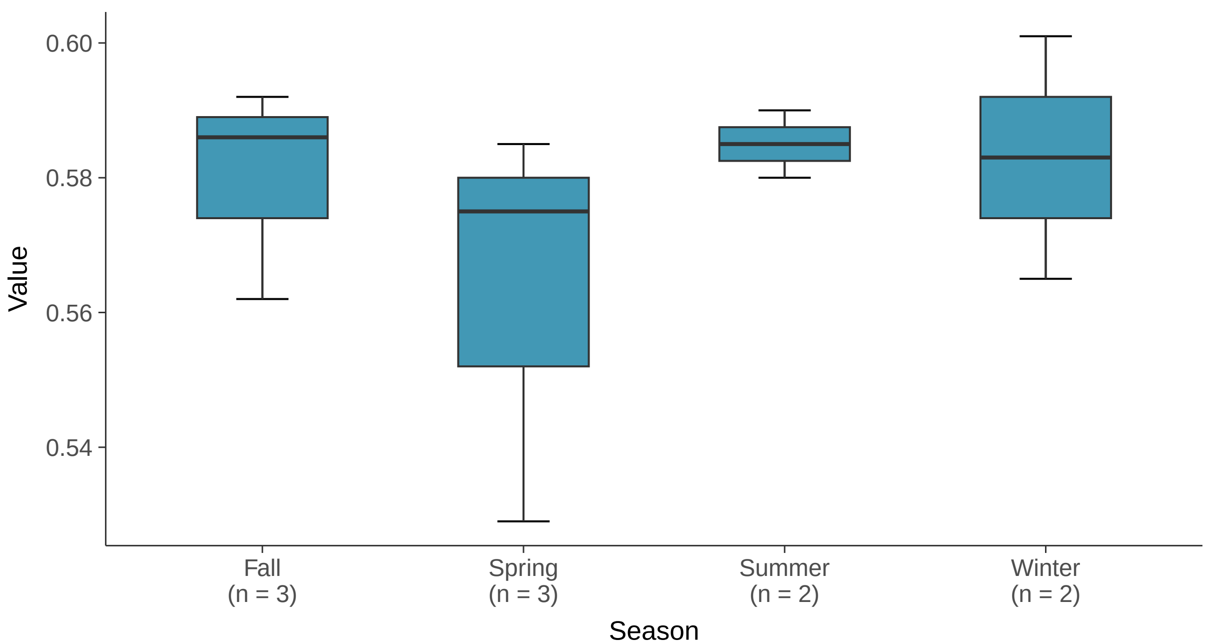
Boxplot

Conductivity, MW-16C (mS/cm)

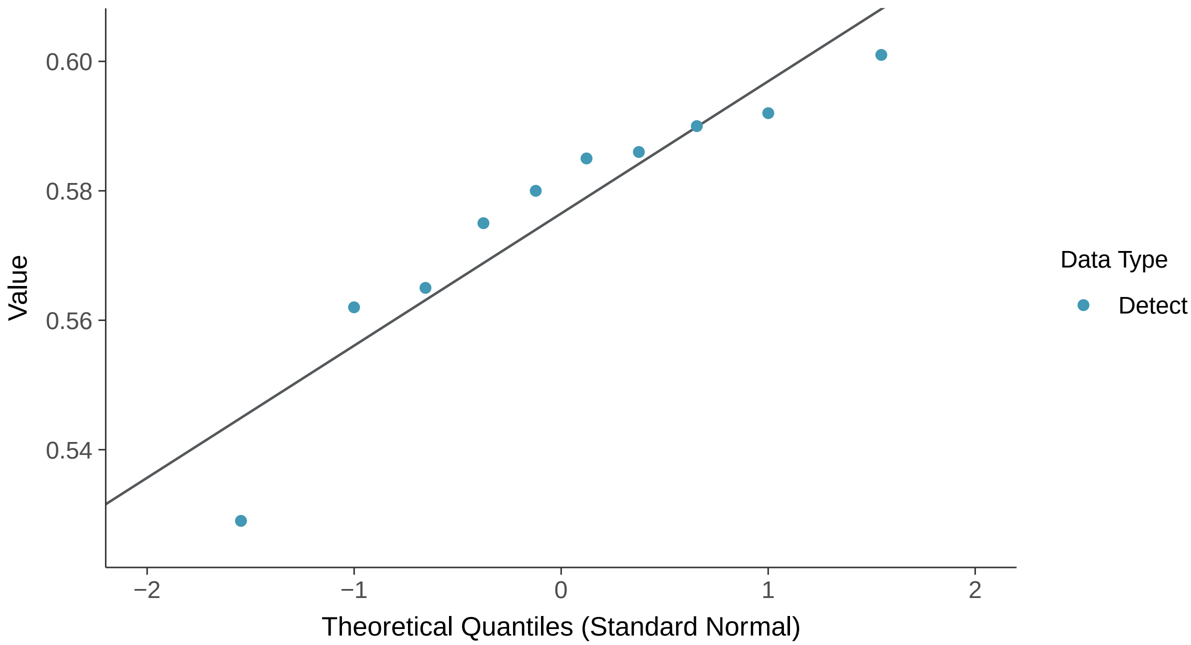


Boxplot by Season

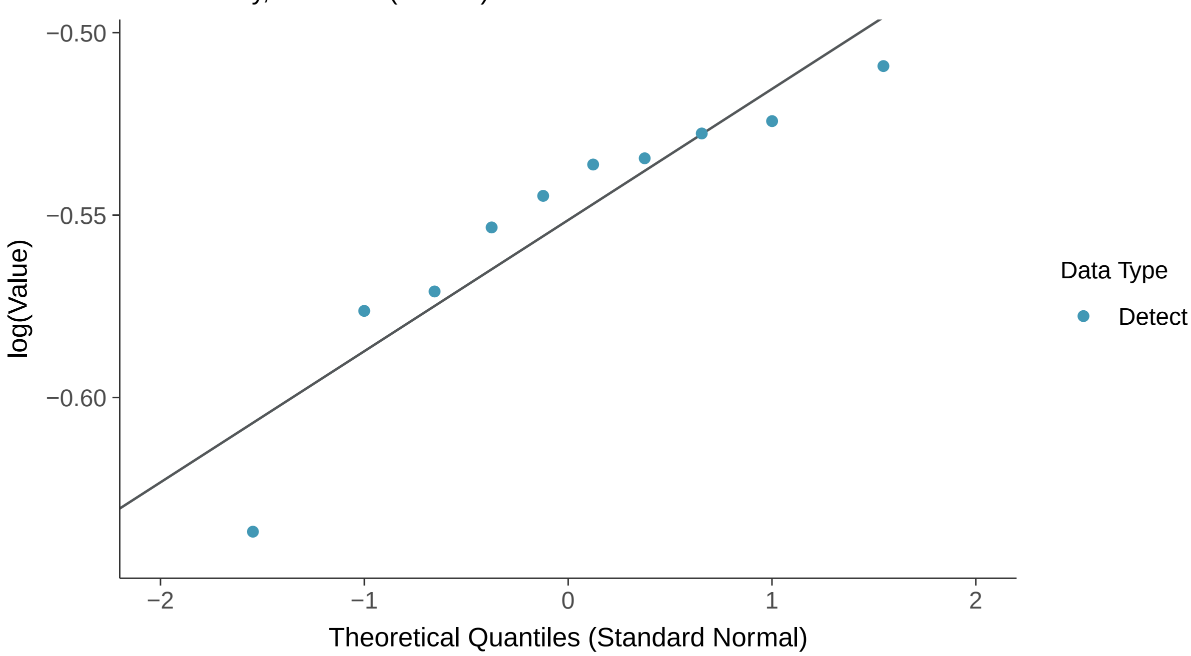
Conductivity, MW-16C (mS/cm)

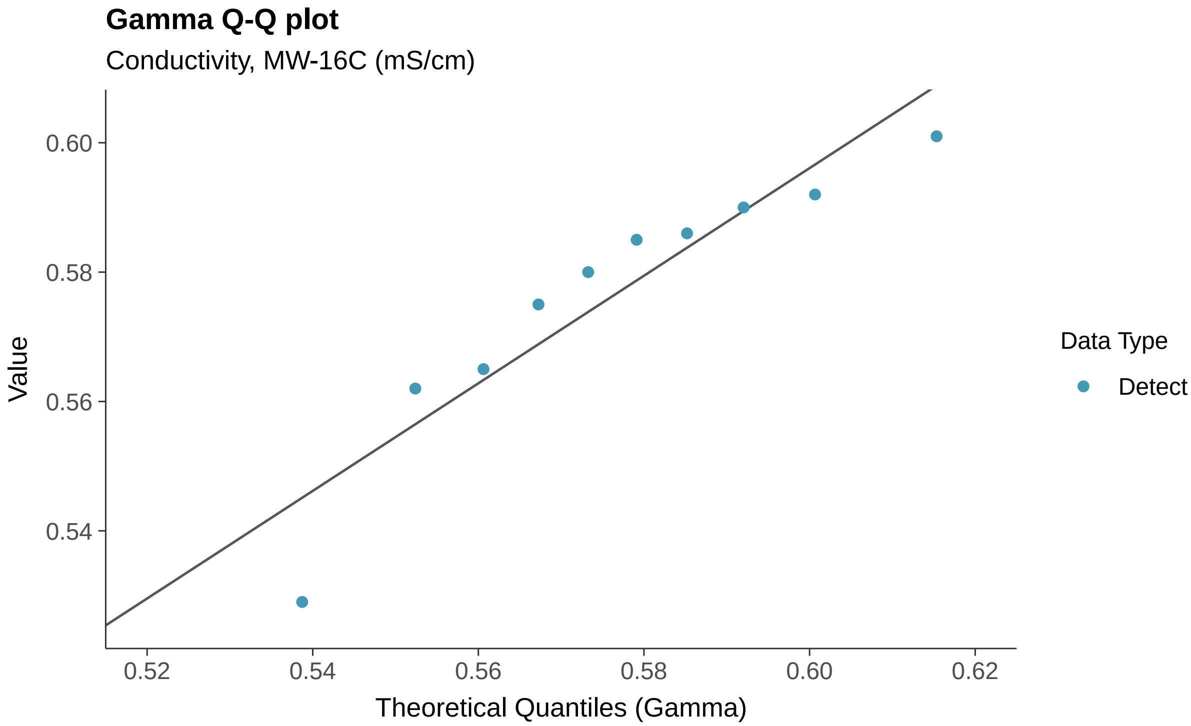


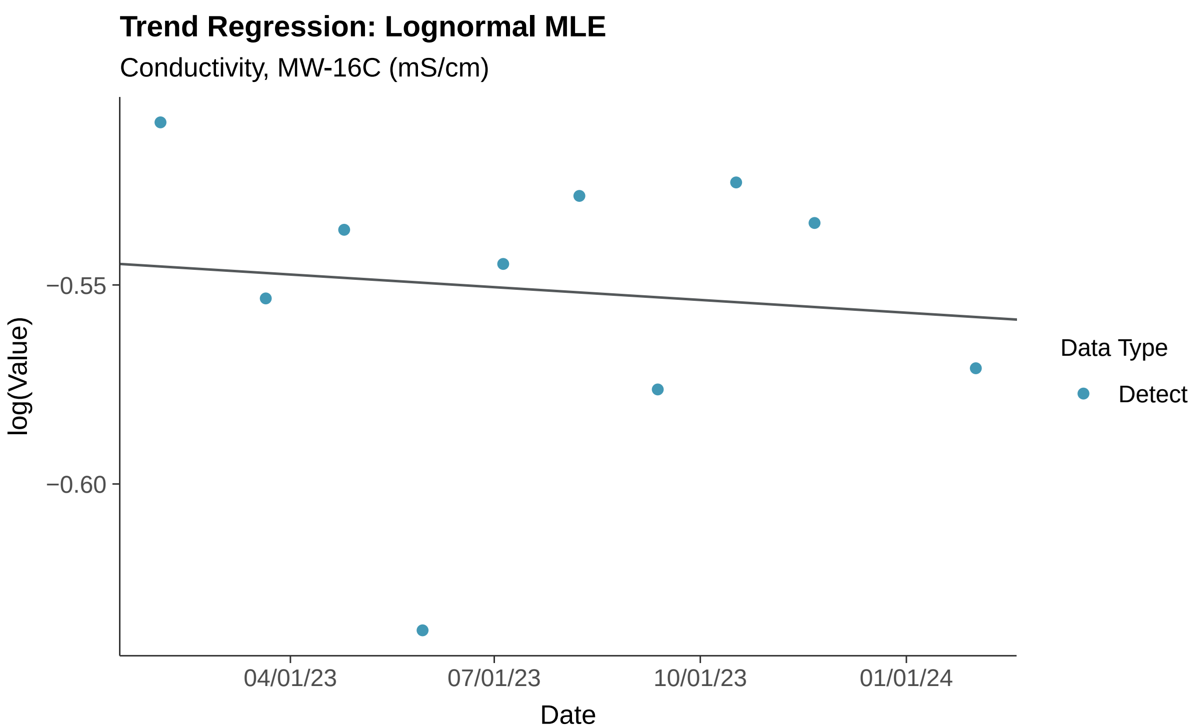
Normal Q-Q plot
Conductivity, MW-16C (mS/cm)

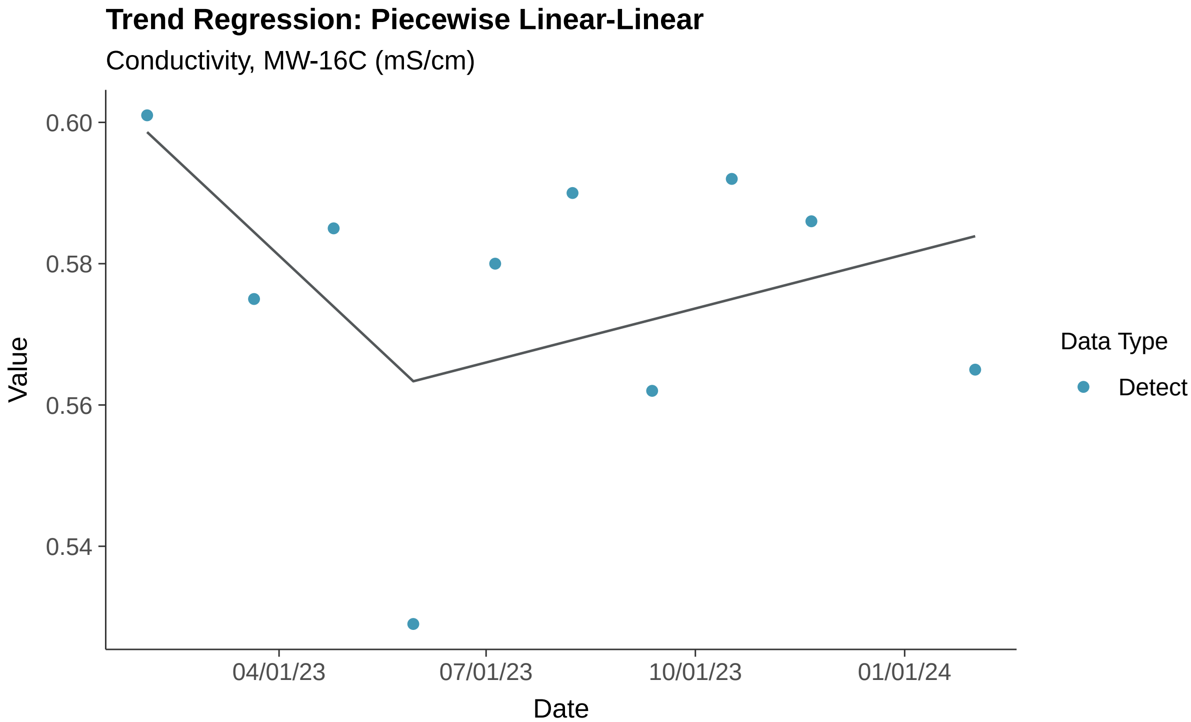


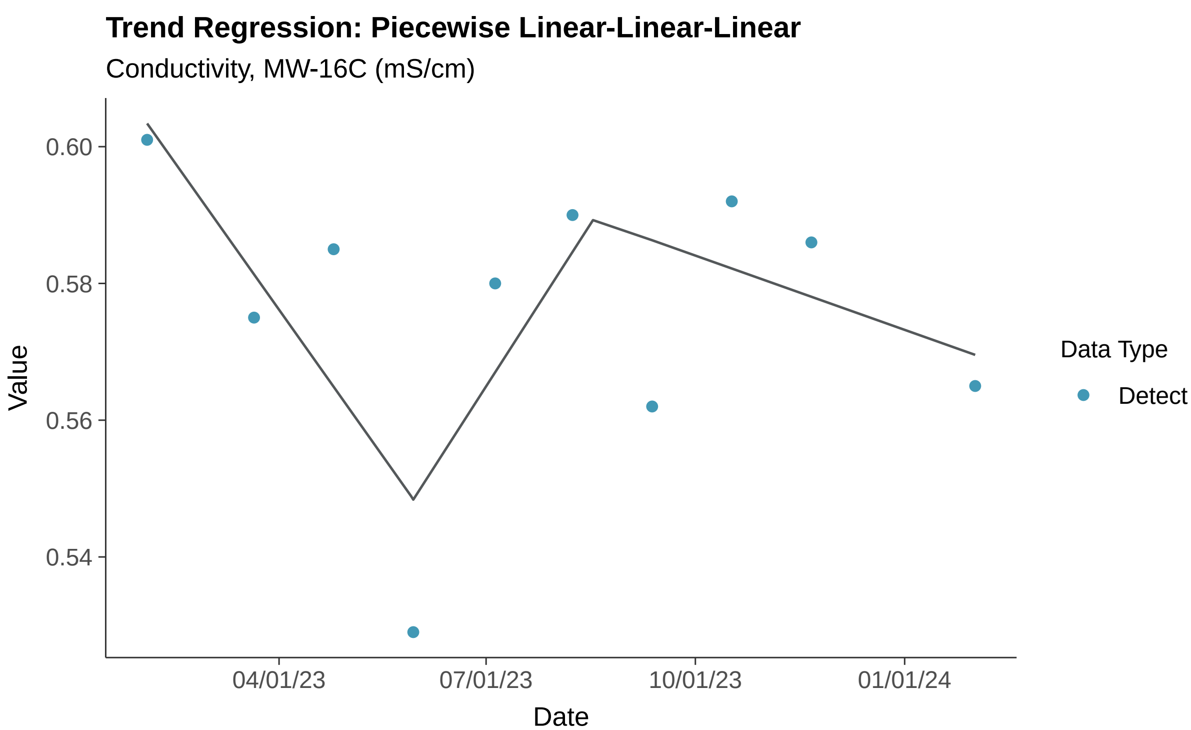
Lognormal Q-Q plot
Conductivity, MW-16C (mS/cm)




Gamma Q-Q plot
Conductivity, MW-16C (mS/cm)
Value
0.60
0.58
0.56
0.54
0.52
0.54
0.56
0.58
0.60
0.62
Theoretical Quantiles (Gamma)
Data Type
Detect

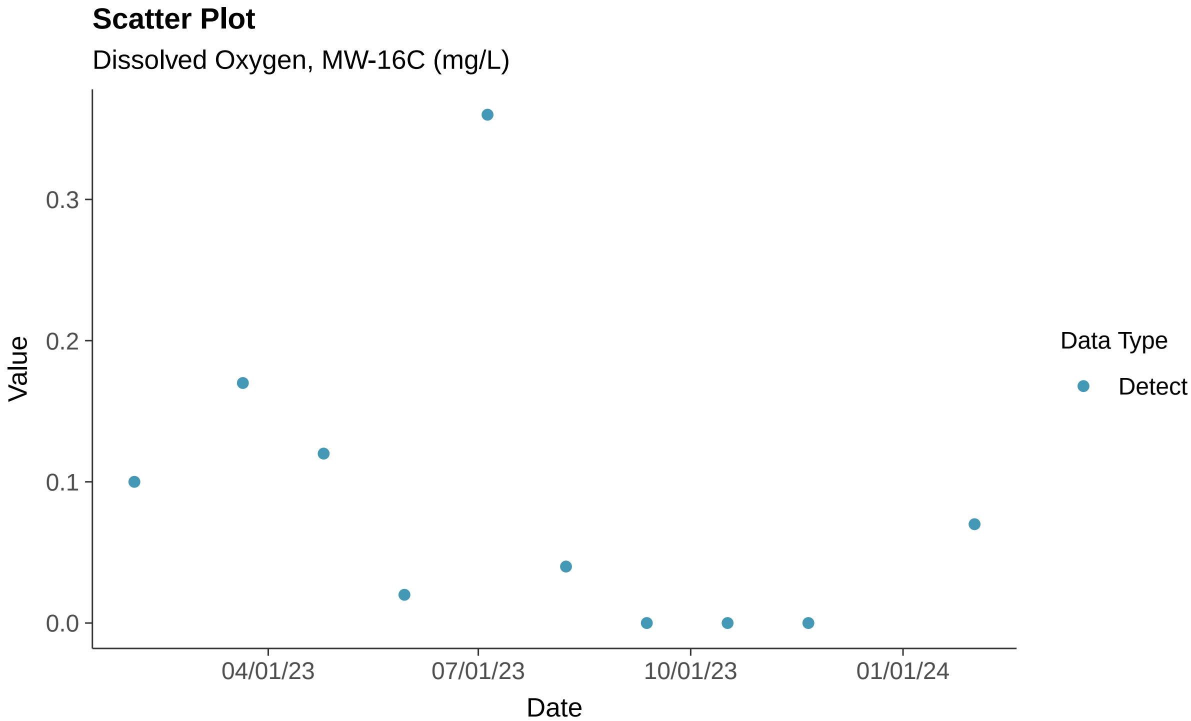

Trend Regression: Lognormal MLE
Conductivity, MW-16C (mS/cm)
log(Value)
−0.55
−0.60
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

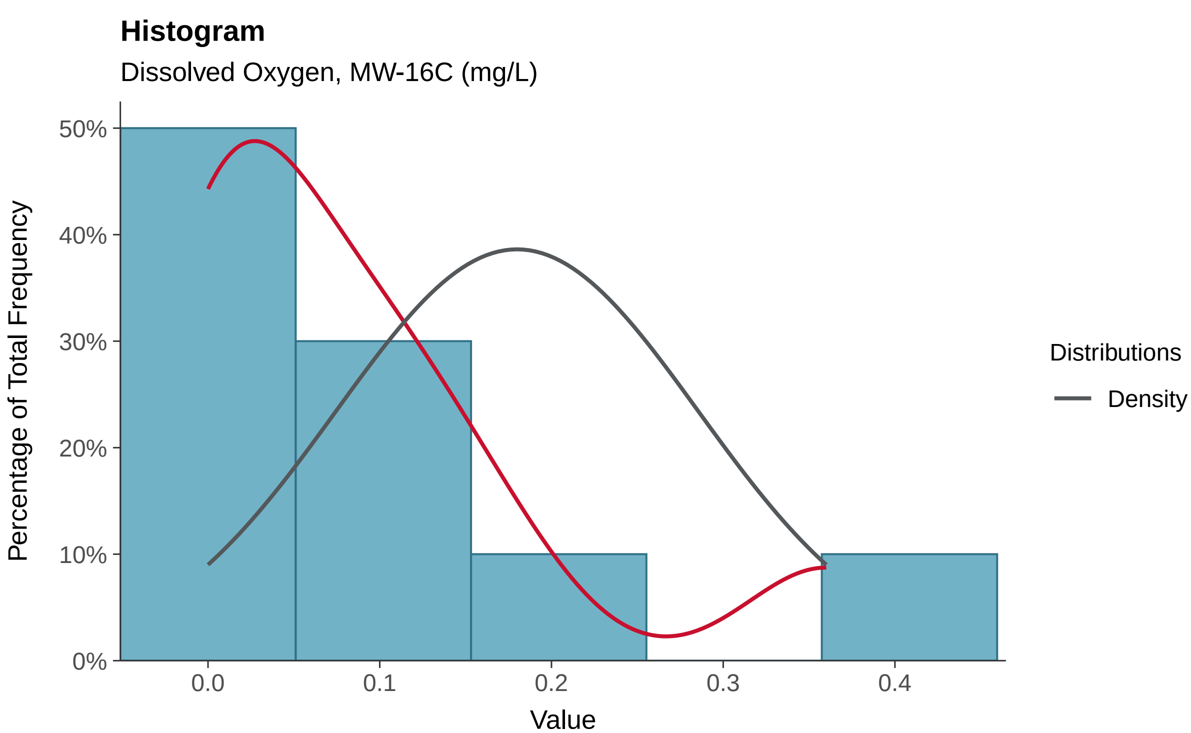

Trend Regression: Piecewise Linear-Linear
Conductivity, MW-16C (mS/cm)
0.60
0.58
0.56
0.54
Value
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Conductivity, MW-16C (mS/cm)
0.60
0.58
0.56
0.54
Value
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Dissolved Oxygen, MW-16C

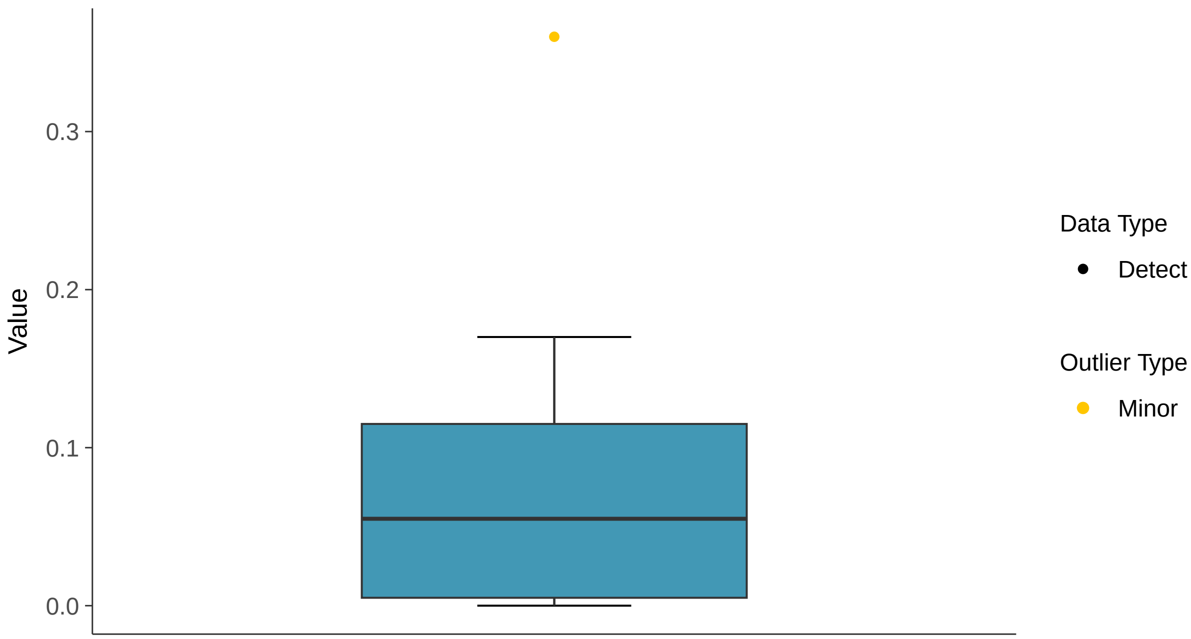
ID: 16C_3_25





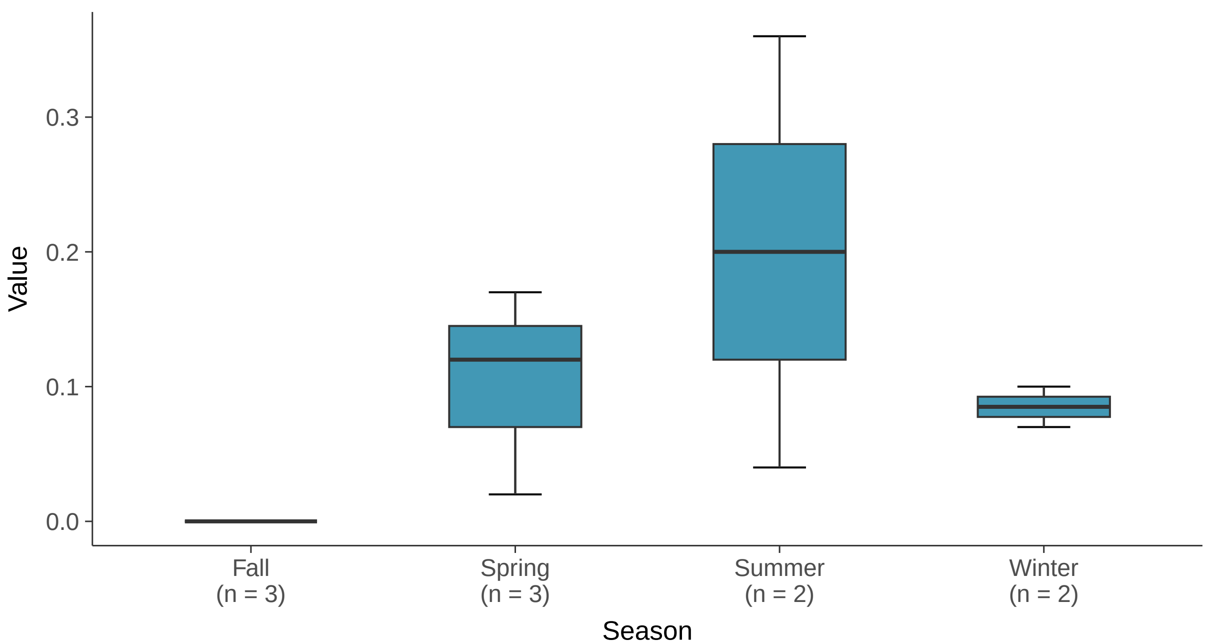
Boxplot

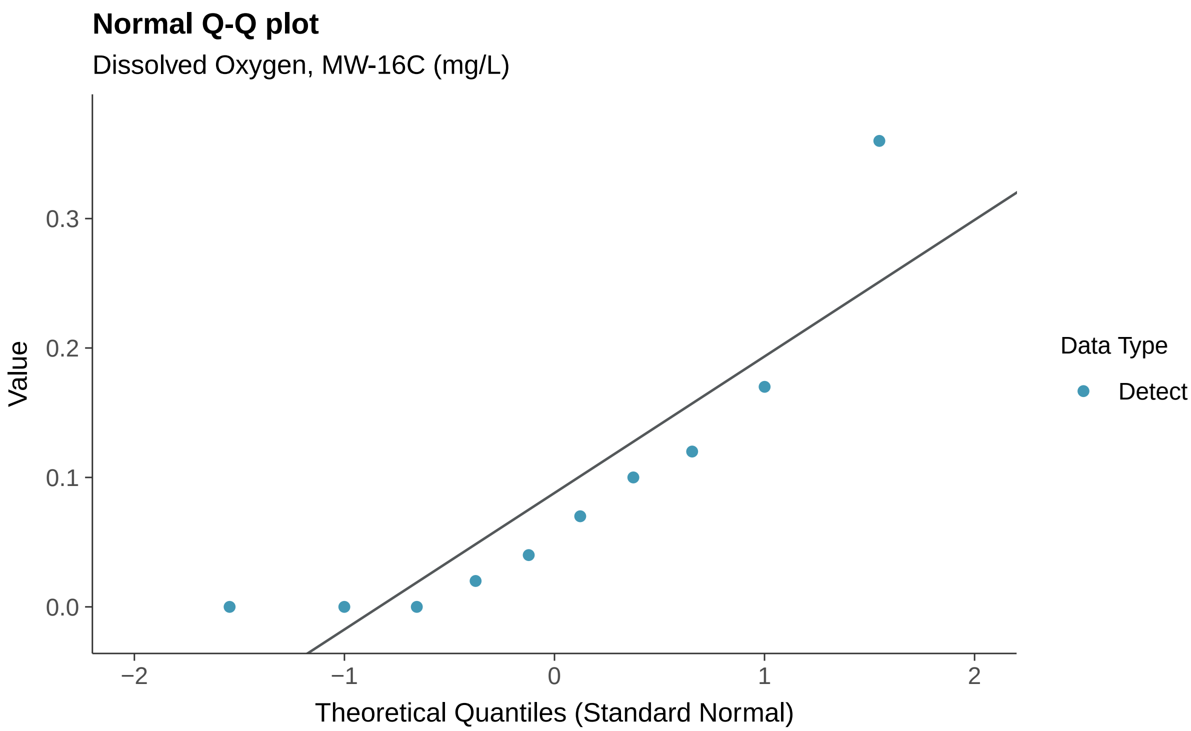
Dissolved Oxygen, MW-16C (mg/L)

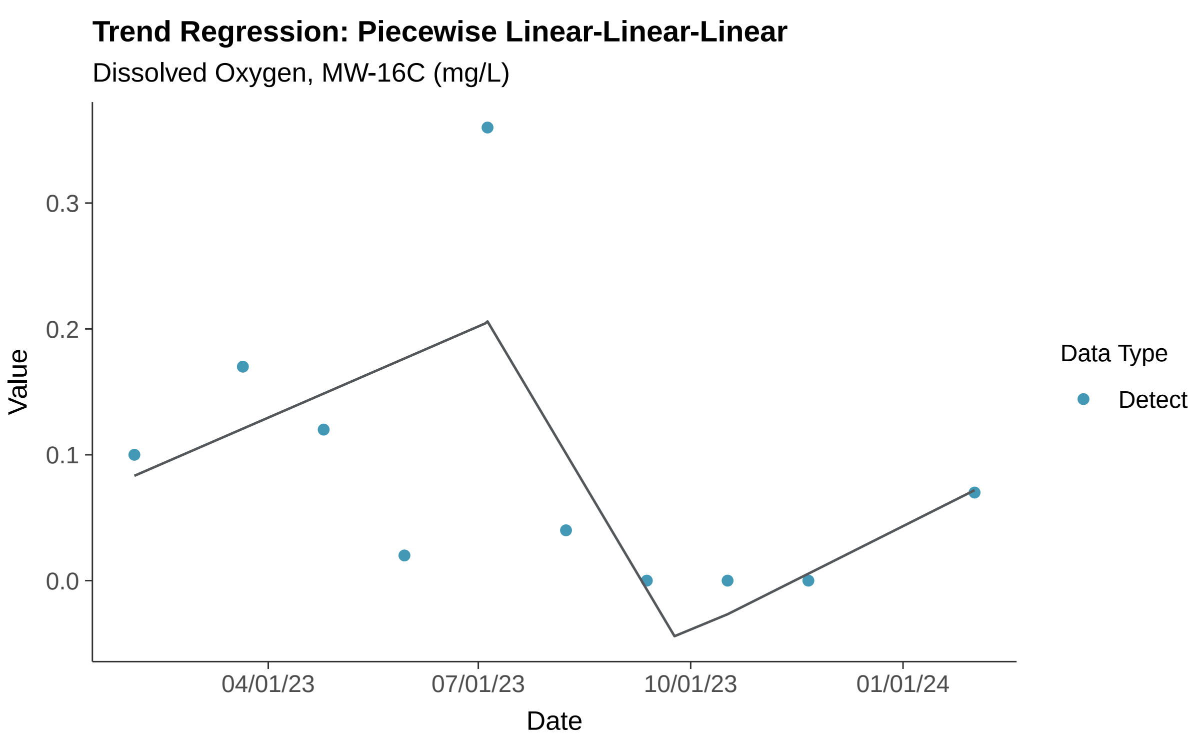


Boxplot by Season

Dissolved Oxygen, MW-16C (mg/L)

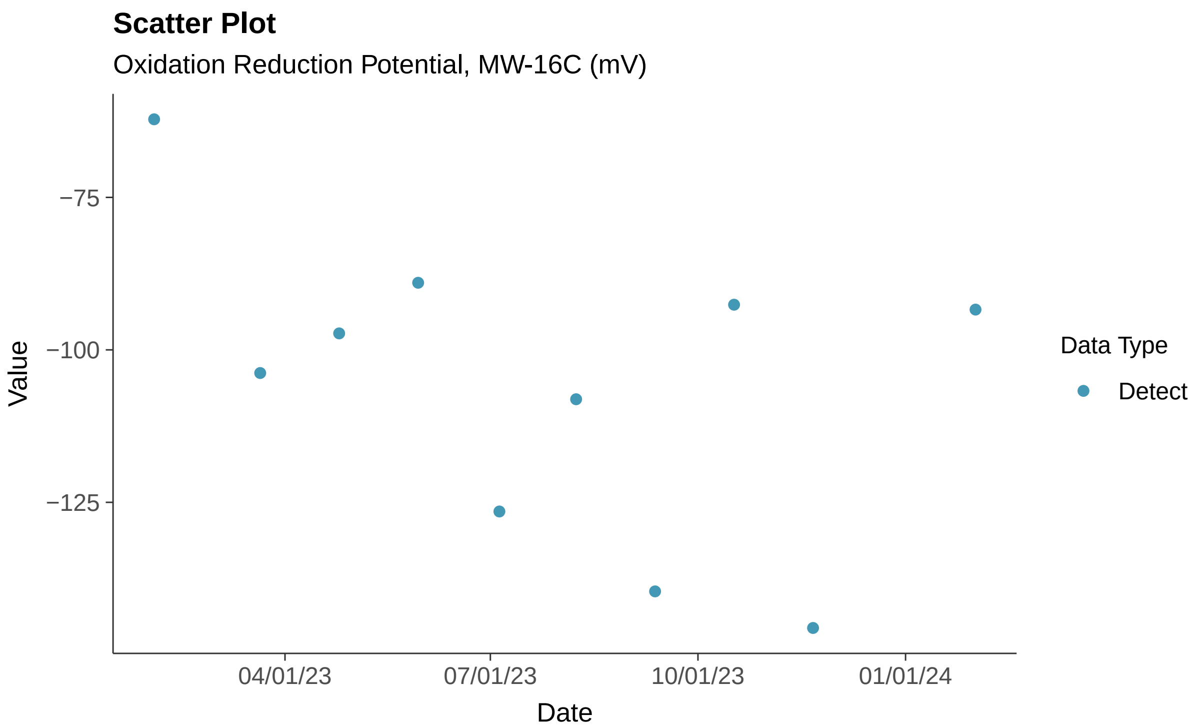


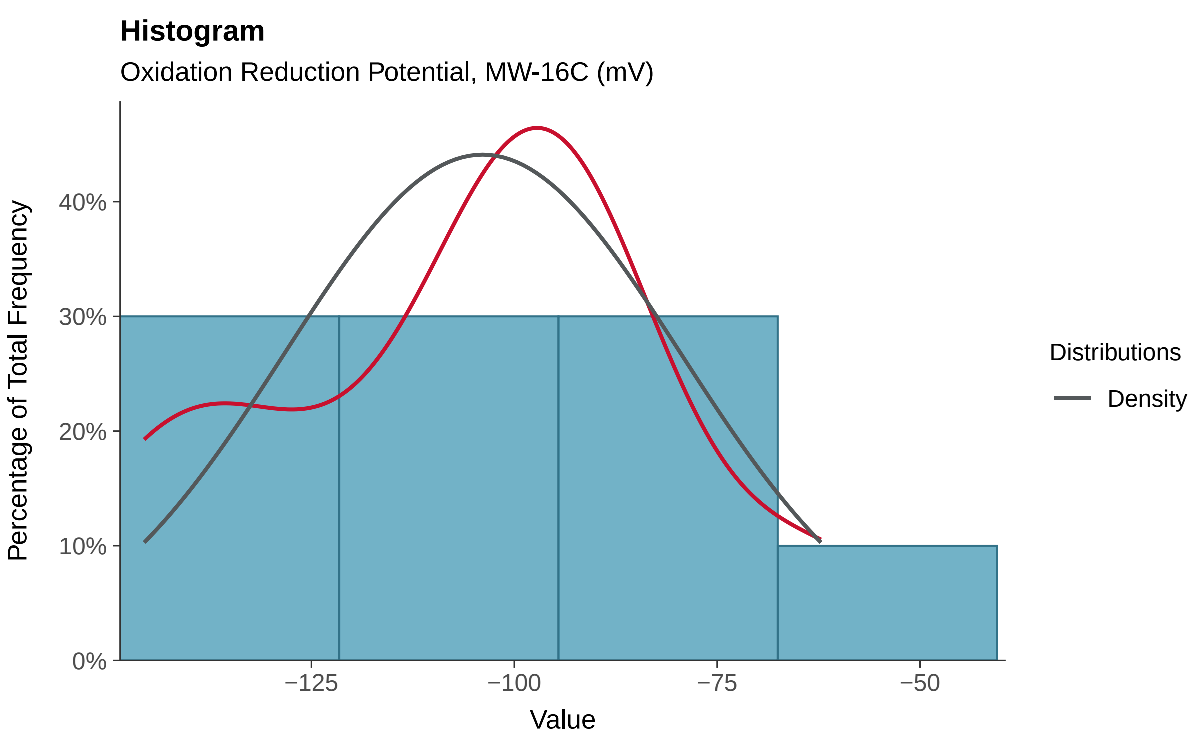

Normal Q-Q plot
Dissolved Oxygen, MW-16C (mg/L)
Value
0.3
0.2
0.1
0.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Dissolved Oxygen, MW-16C (mg/L)
Value
0.3
0.2
0.1
0.0
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Oxidation Reduction Potential, MW-16C

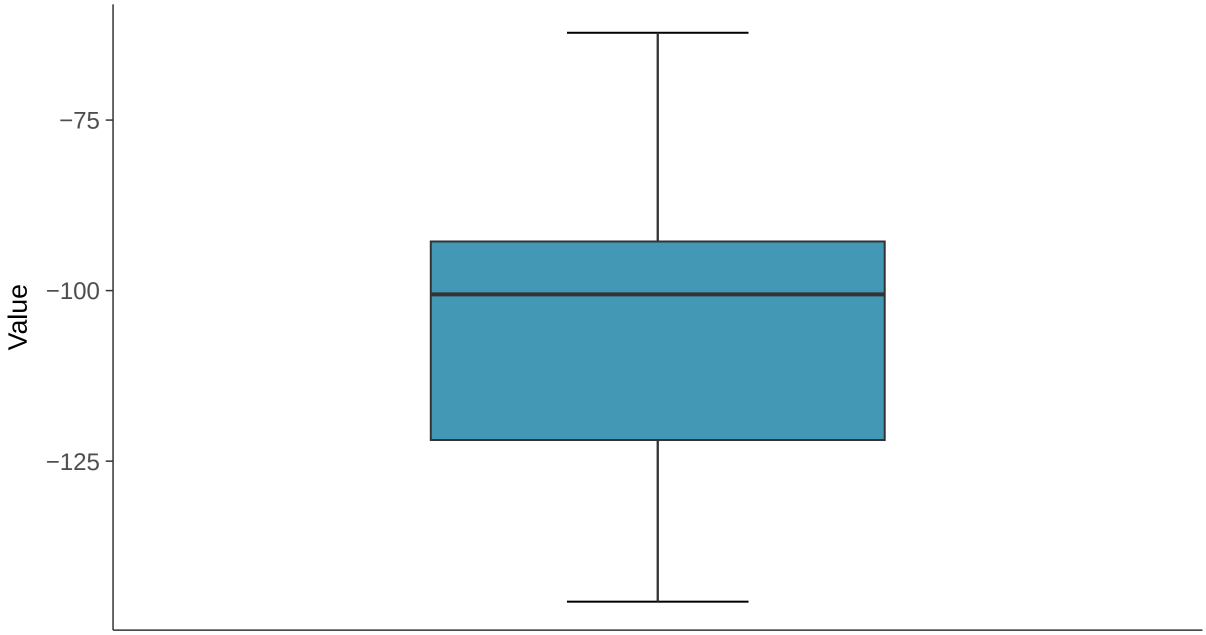
ID: 16C_3_26





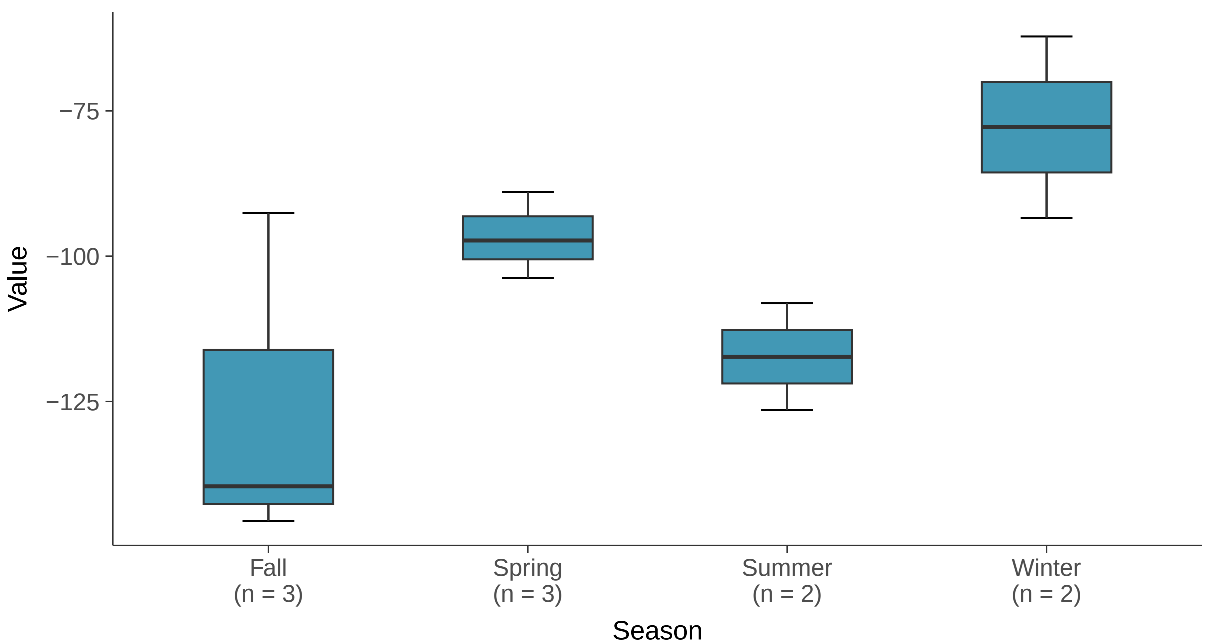
Boxplot

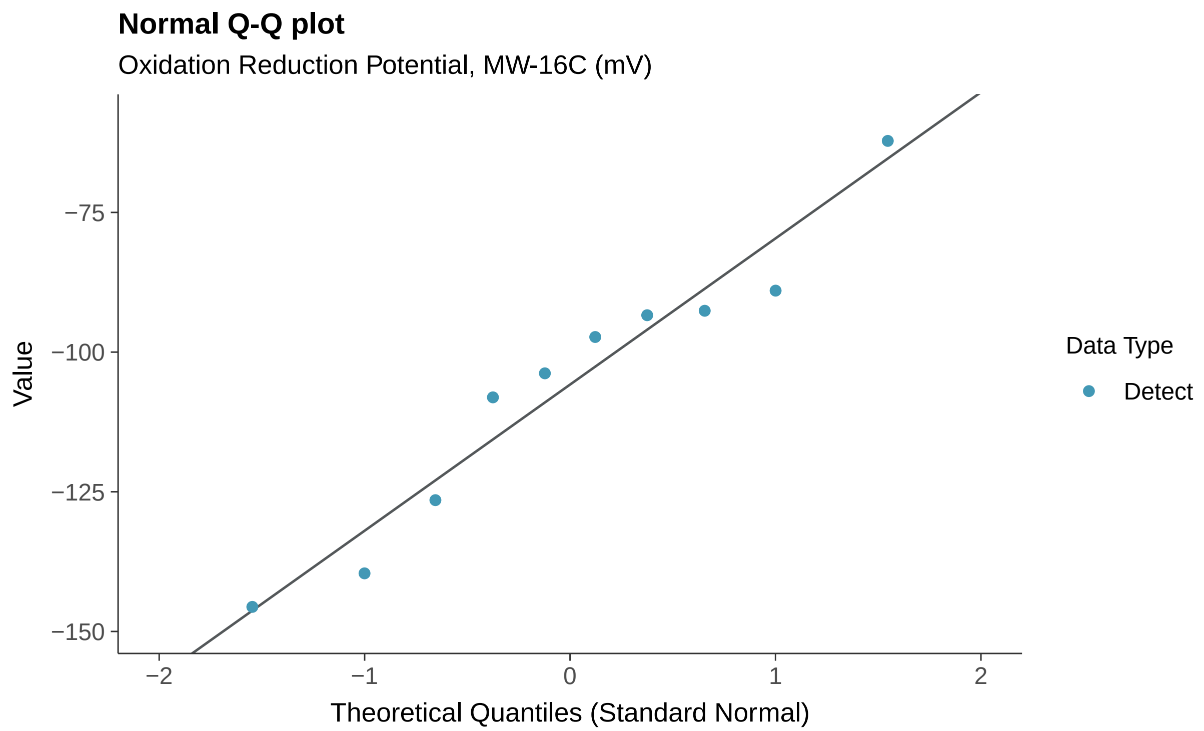
Oxidation Reduction Potential, MW-16C (mV)

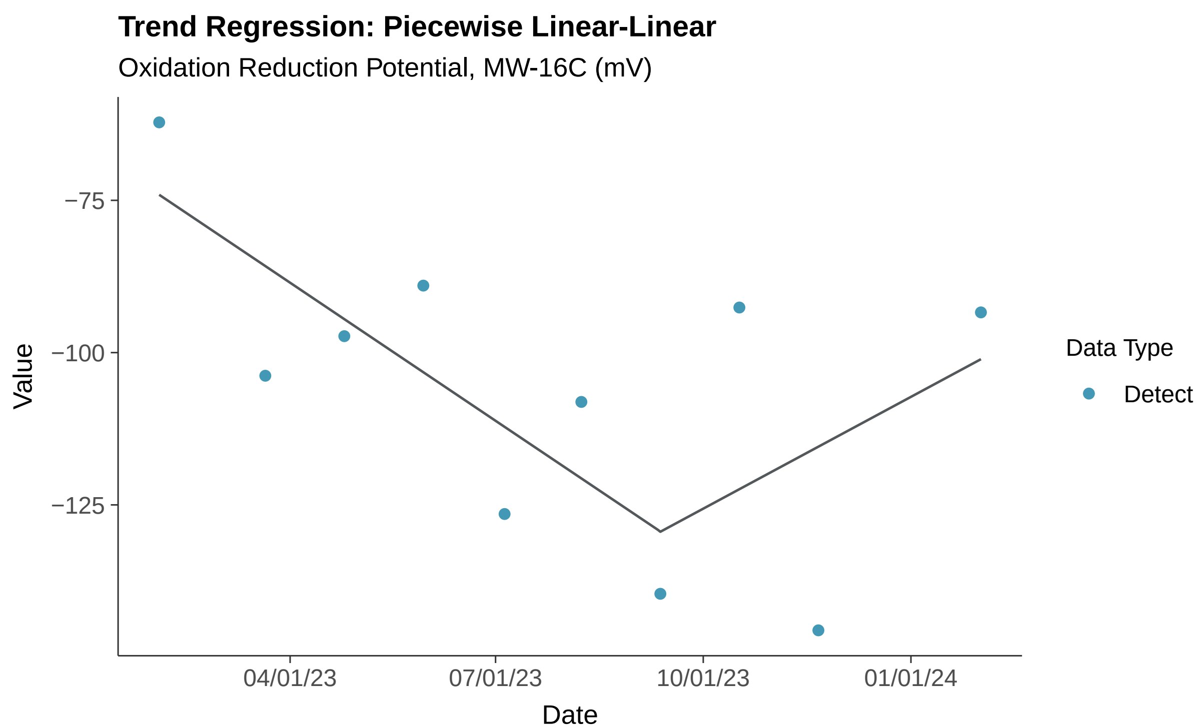


Boxplot by Season

Oxidation Reduction Potential, MW-16C (mV)




Normal Q-Q plot
Oxidation Reduction Potential, MW-16C (mV)
Value
−75
−100
−125
−150
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

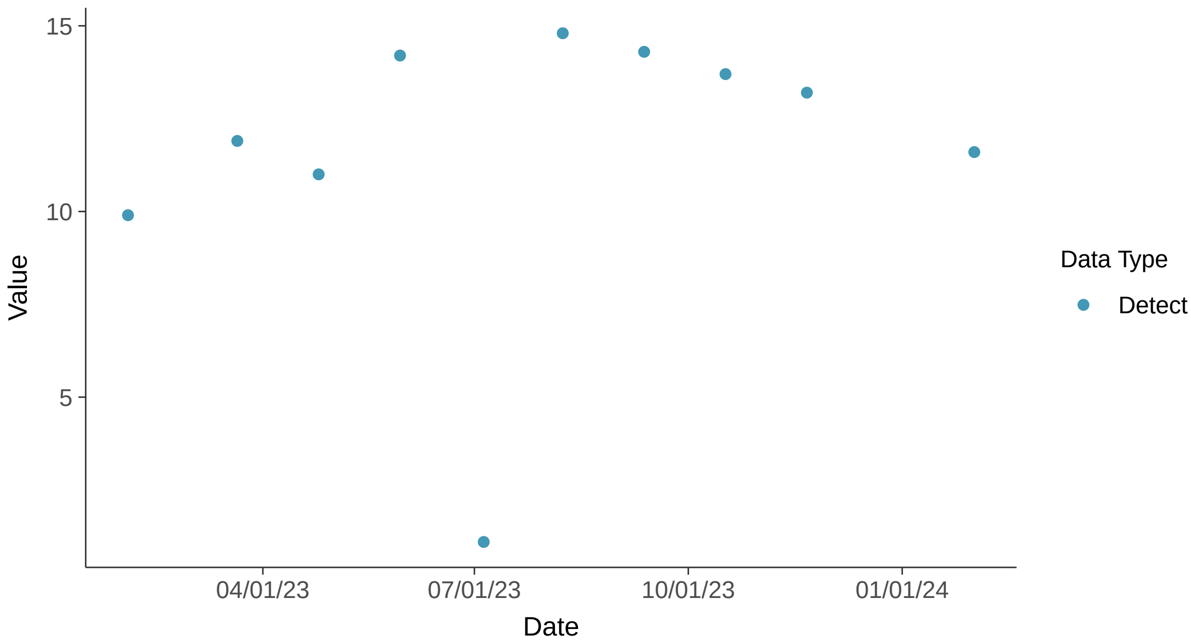

Trend Regression: Piecewise Linear-Linear
Oxidation Reduction Potential, MW-16C (mV)
Value
−75
−100
−125
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Temperature, MW-16C

ID: 16C_3_27

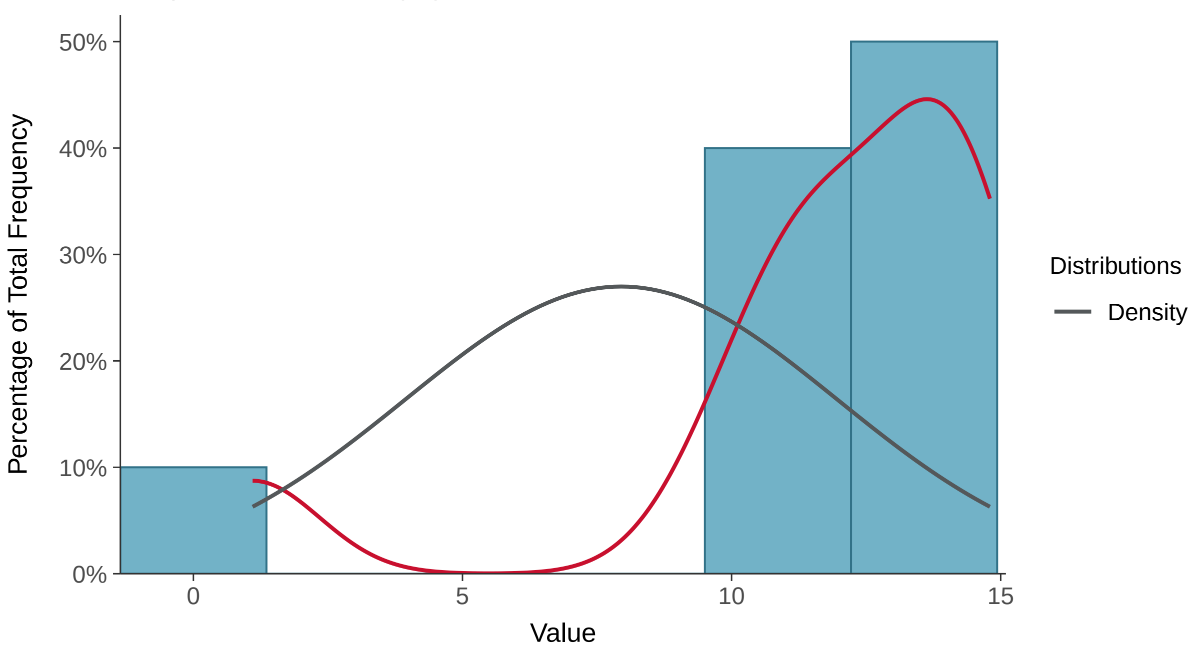
Scatter Plot

Temperature, MW-16C (°C)



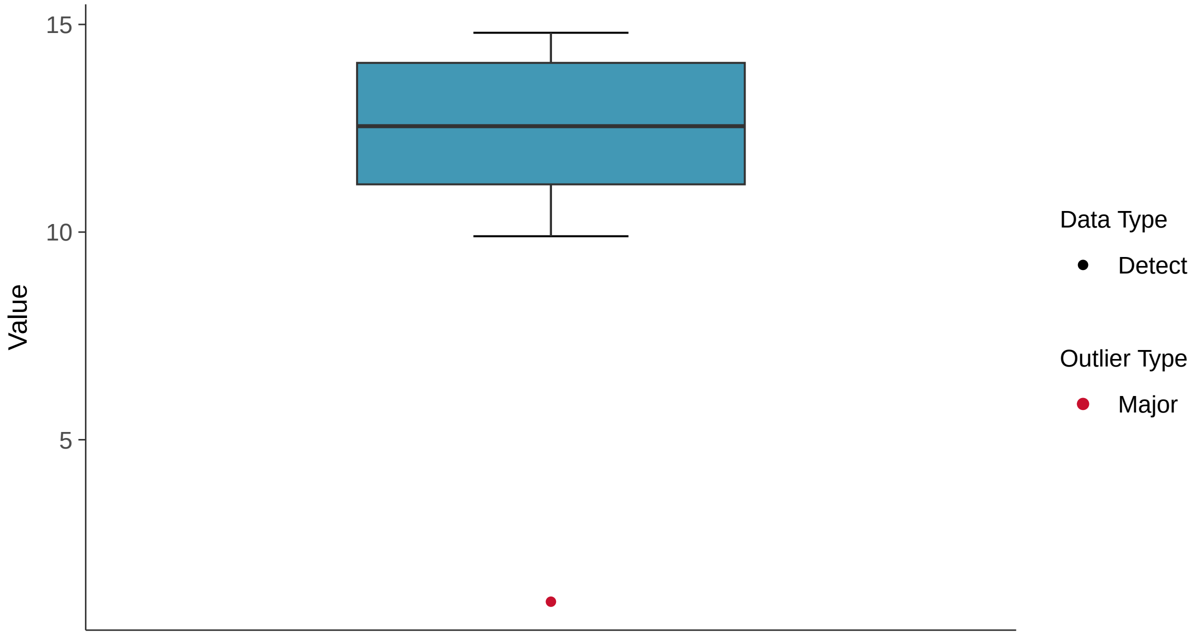
Histogram

Temperature, MW-16C (°C)



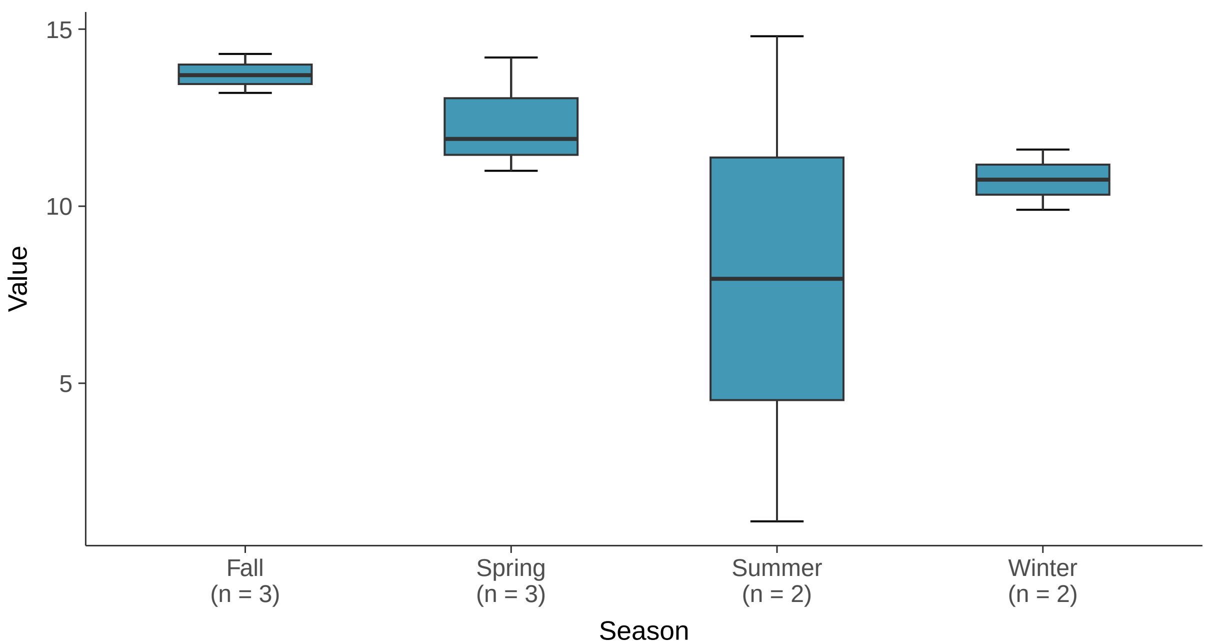
Boxplot

Temperature, MW-16C (°C)



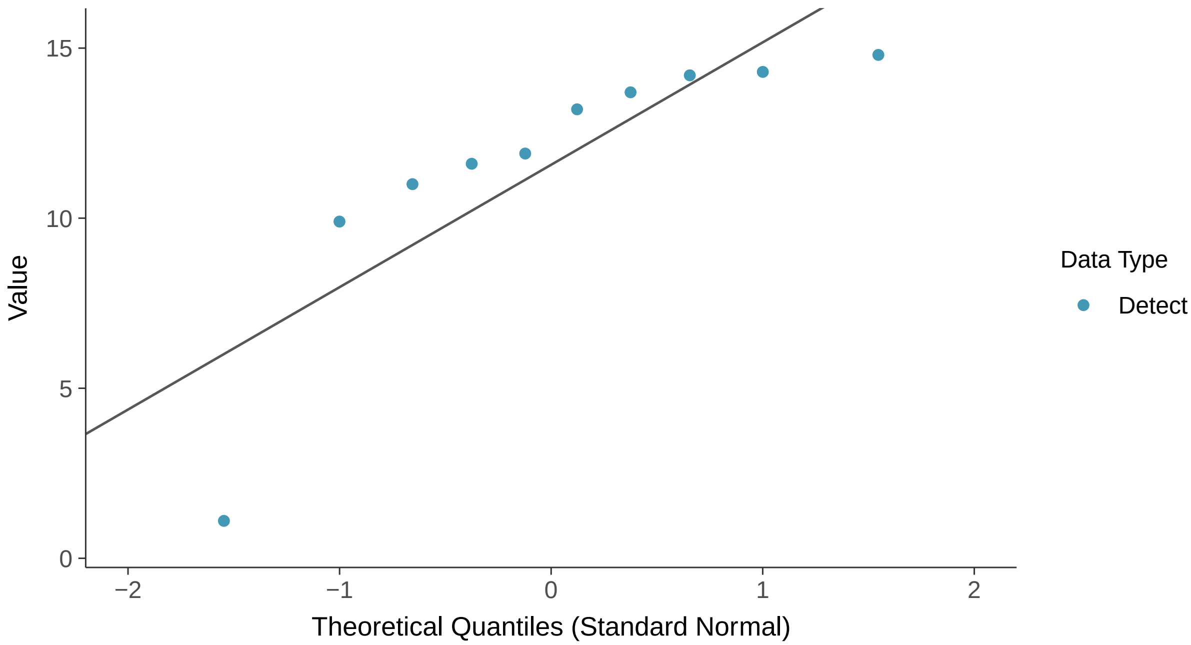
Boxplot by Season

Temperature, MW-16C (°C)



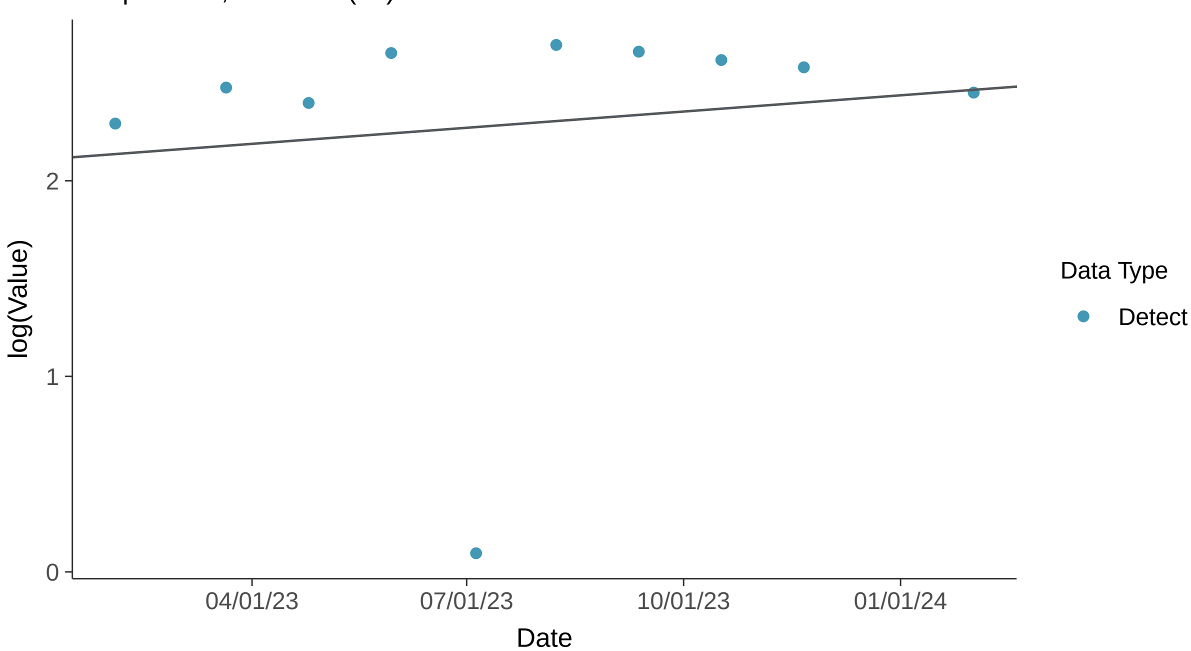
Normal Q-Q plot

Temperature, MW-16C (°C)



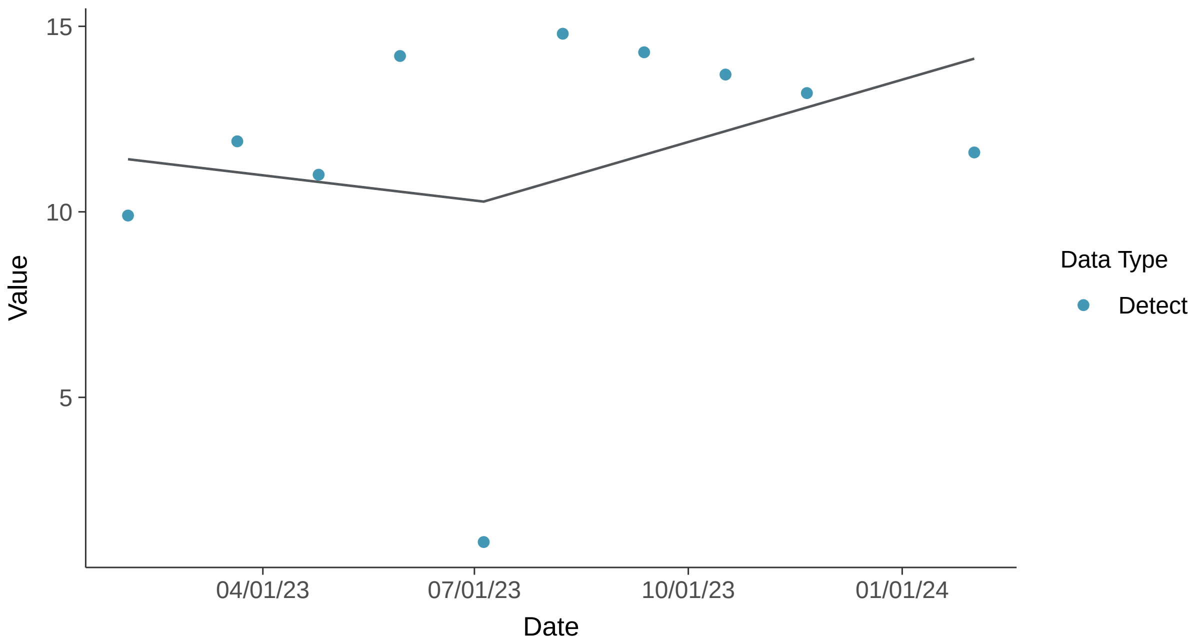
Trend Regression: Lognormal MLE

Temperature, MW-16C (°C)



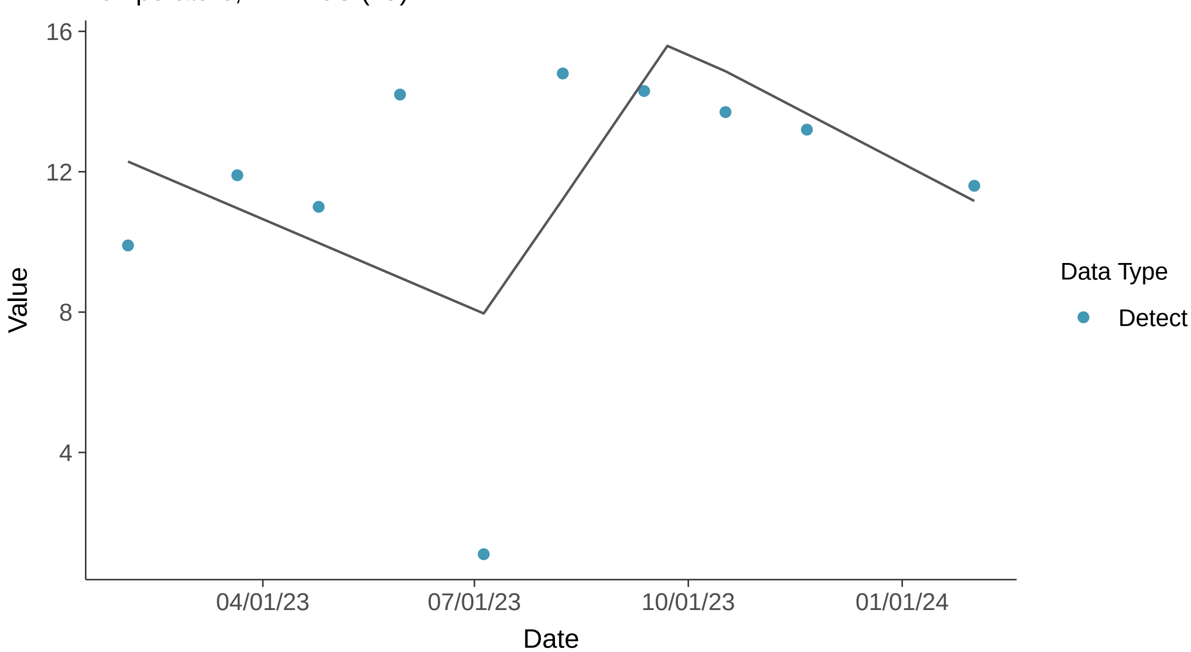
Trend Regression: Piecewise Linear-Linear

Temperature, MW-16C (°C)



Trend Regression: Piecewise Linear-Linear-Linear

Temperature, MW-16C (°C)

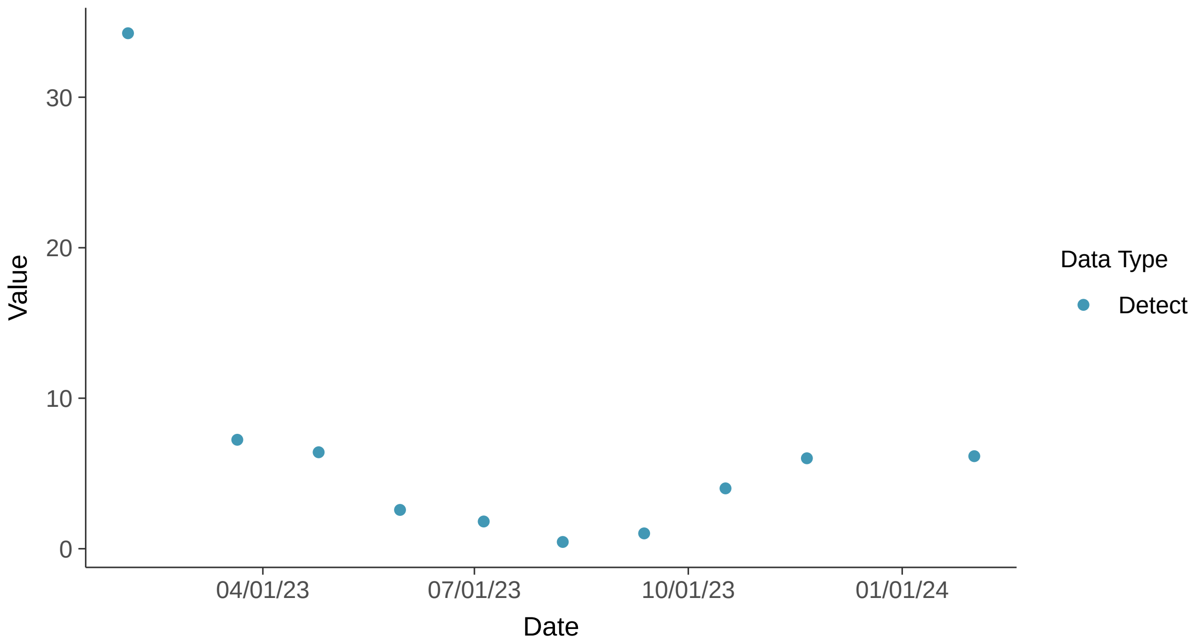


Field Parameters: Turbidity, MW-16C

ID: 16C_3_28

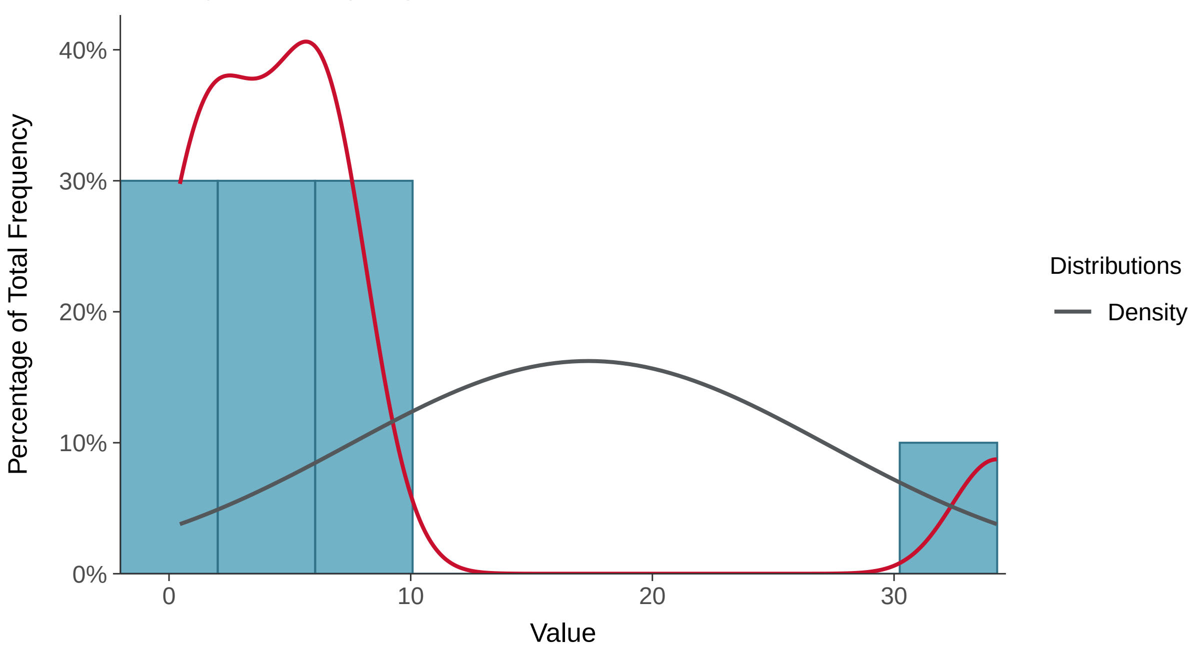
Scatter Plot

Turbidity, MW-16C (NTU)



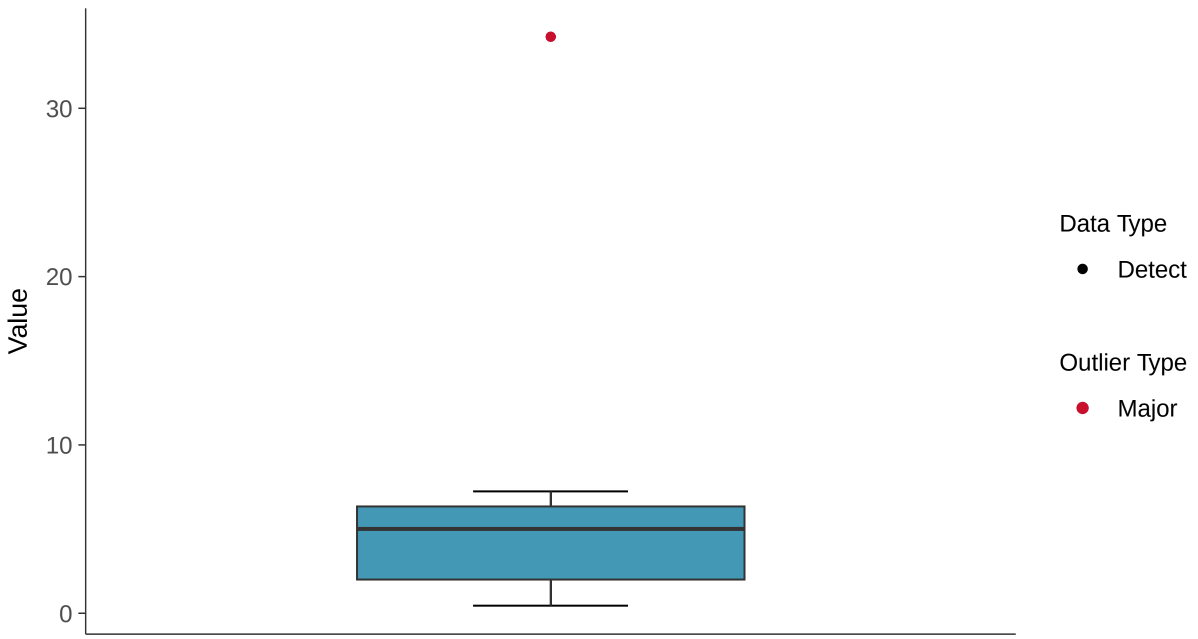
Histogram

Turbidity, MW-16C (NTU)



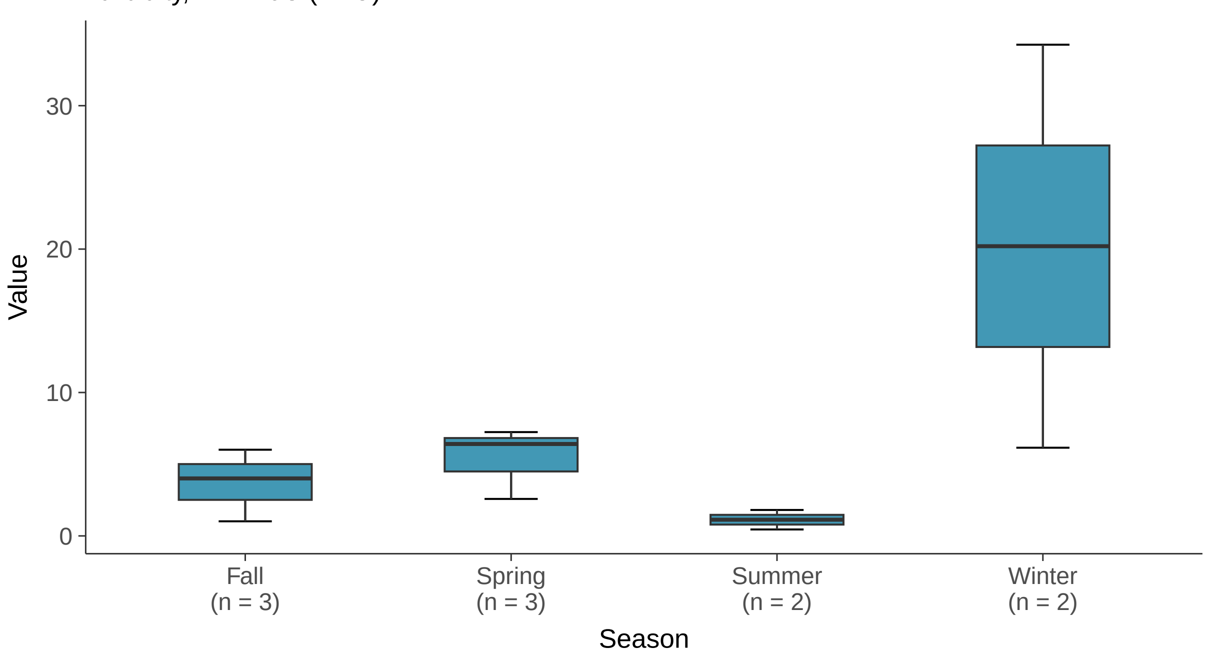
Boxplot

Turbidity, MW-16C (NTU)



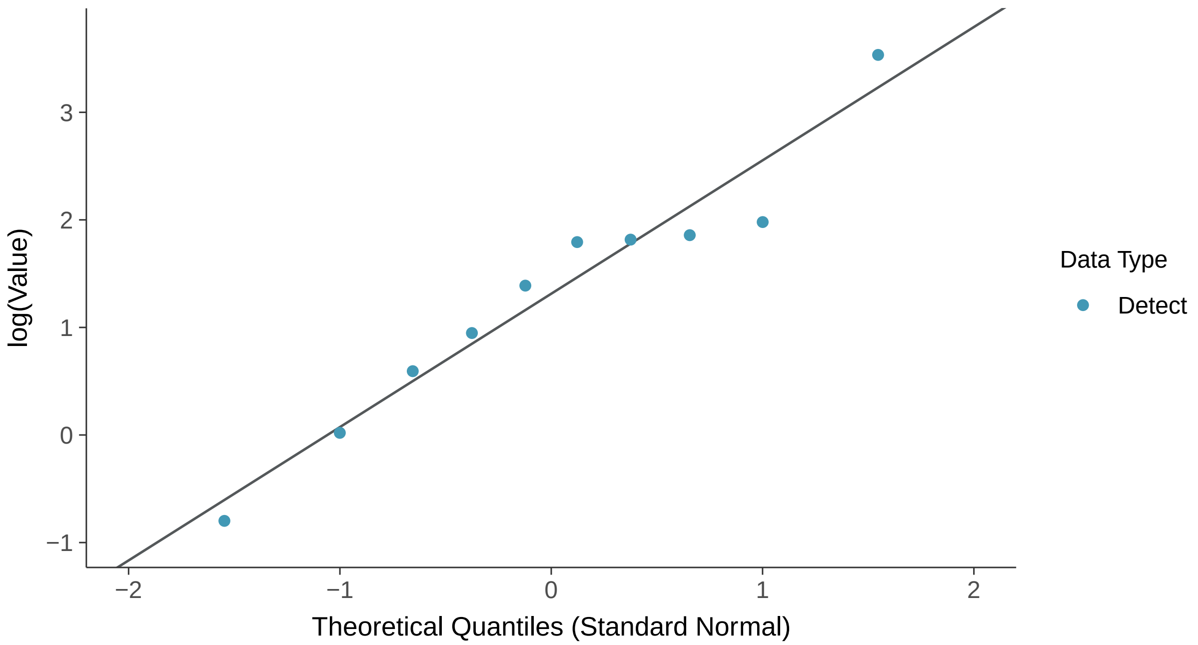
Boxplot by Season

Turbidity, MW-16C (NTU)



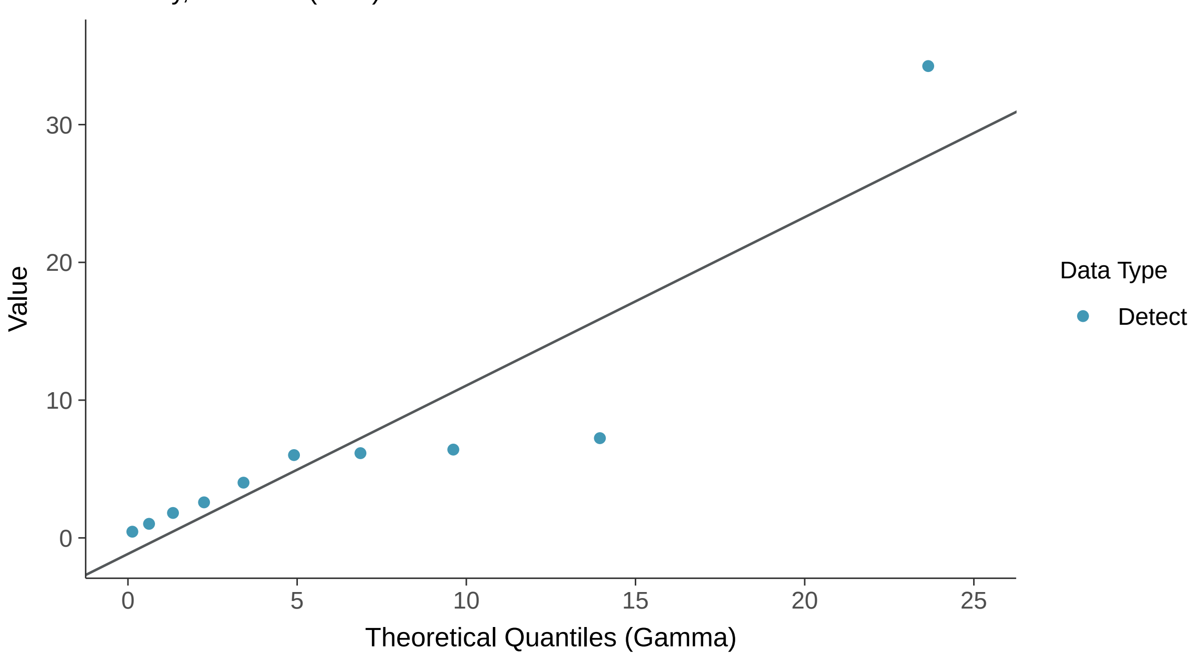
Lognormal Q-Q plot

Turbidity, MW-16C (NTU)



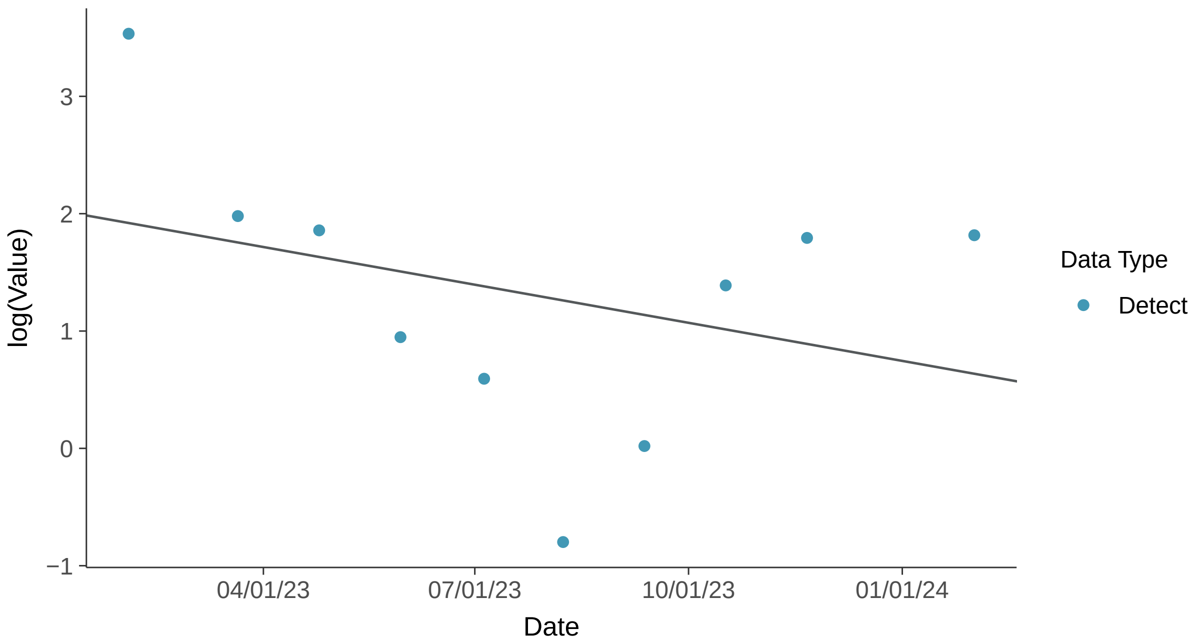
Gamma Q-Q plot

Turbidity, MW-16C (NTU)



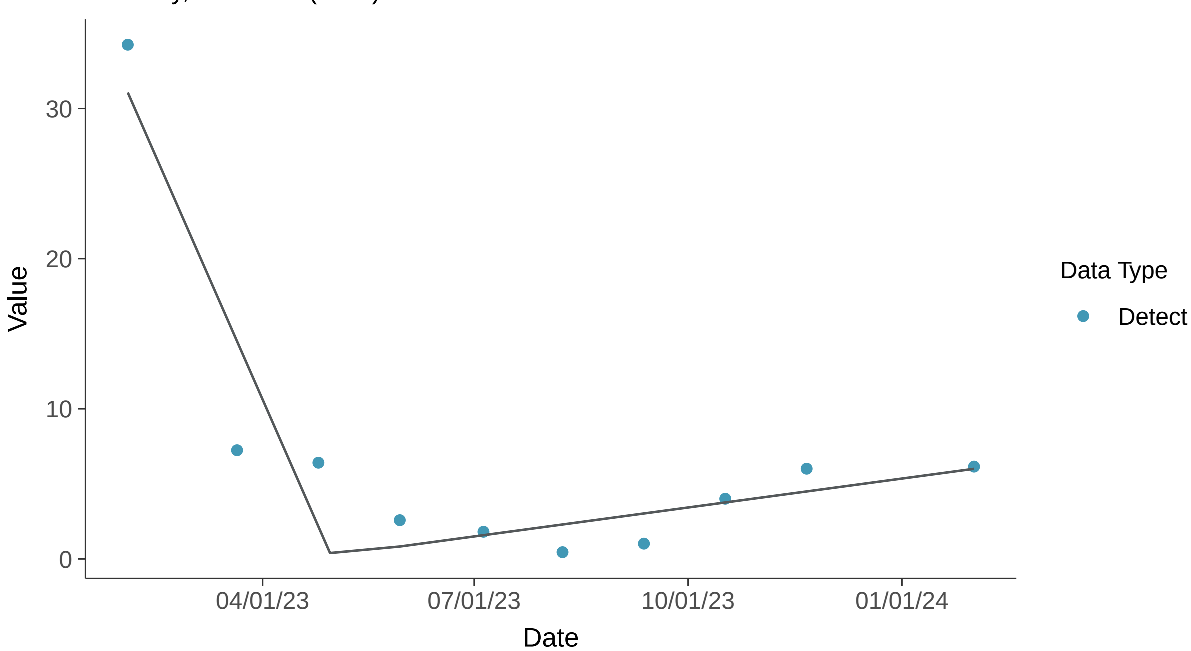
Trend Regression: Lognormal MLE

Turbidity, MW-16C (NTU)



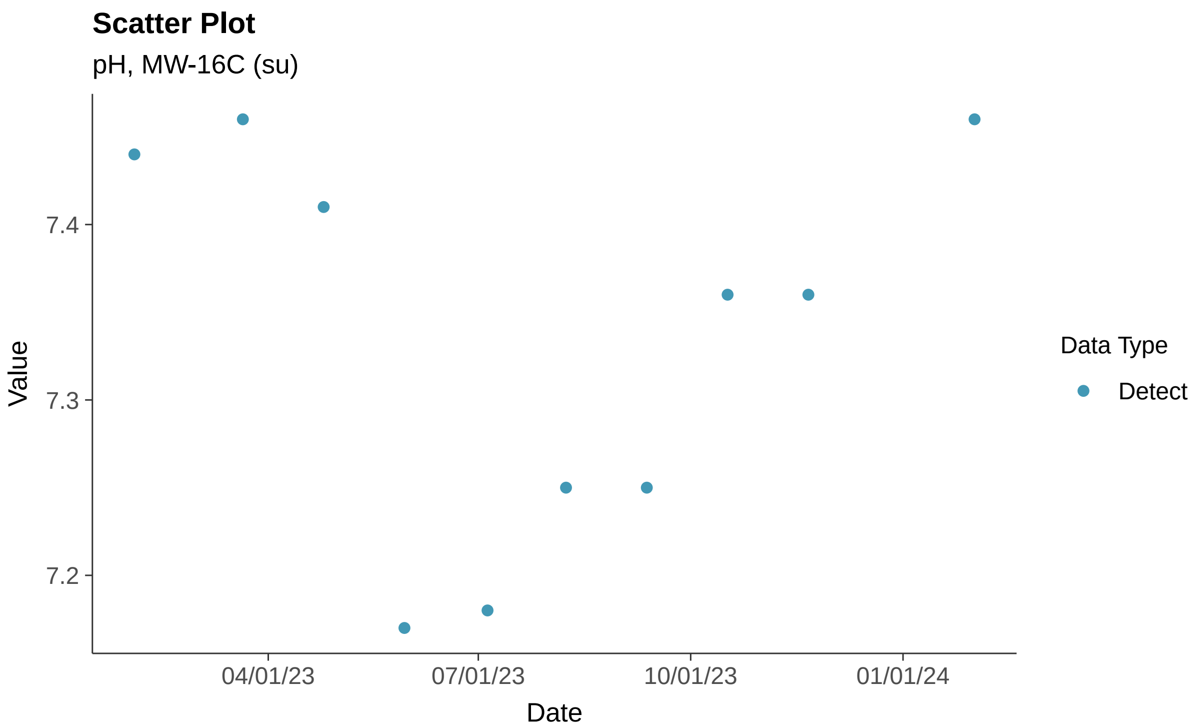
Trend Regression: Piecewise Linear-Linear

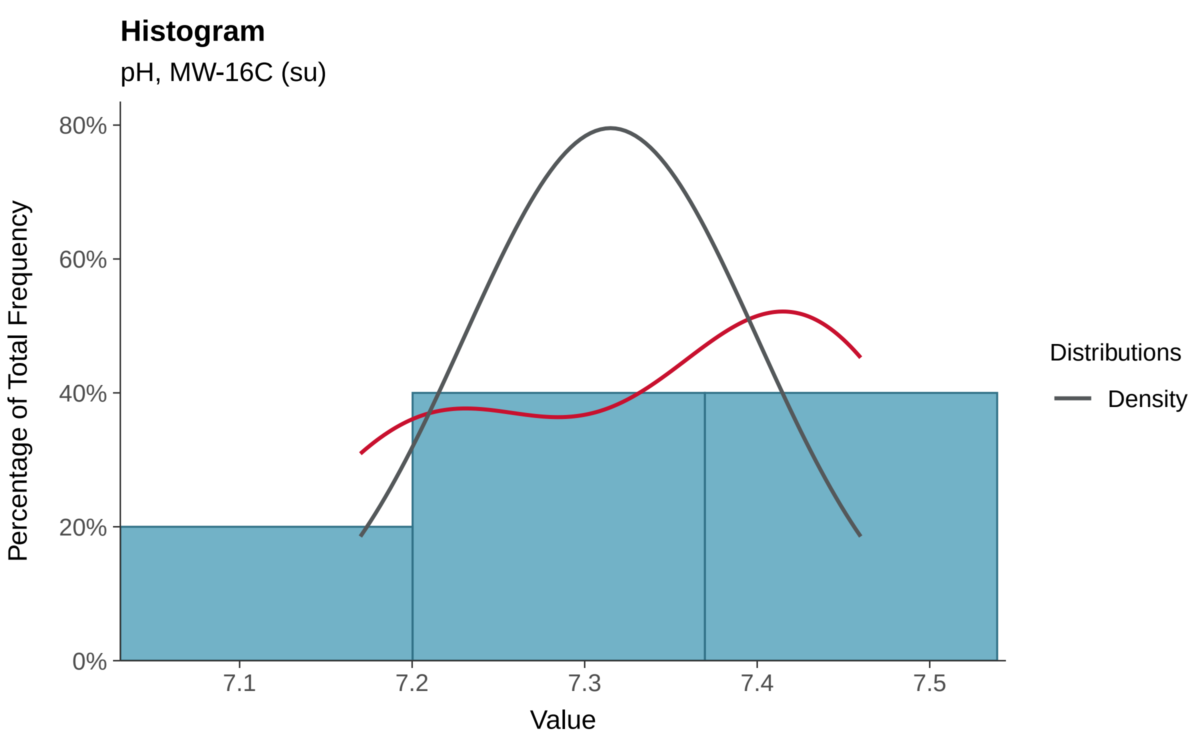
Turbidity, MW-16C (NTU)



Field Parameters: pH, MW-16C

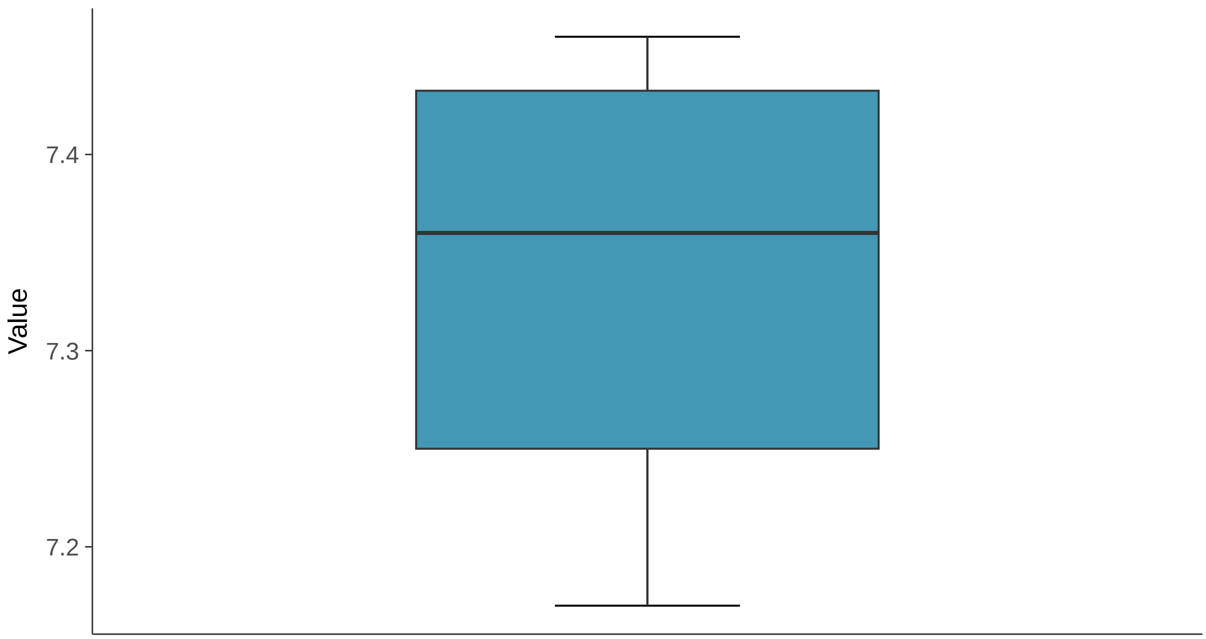
ID: 16C_3_29





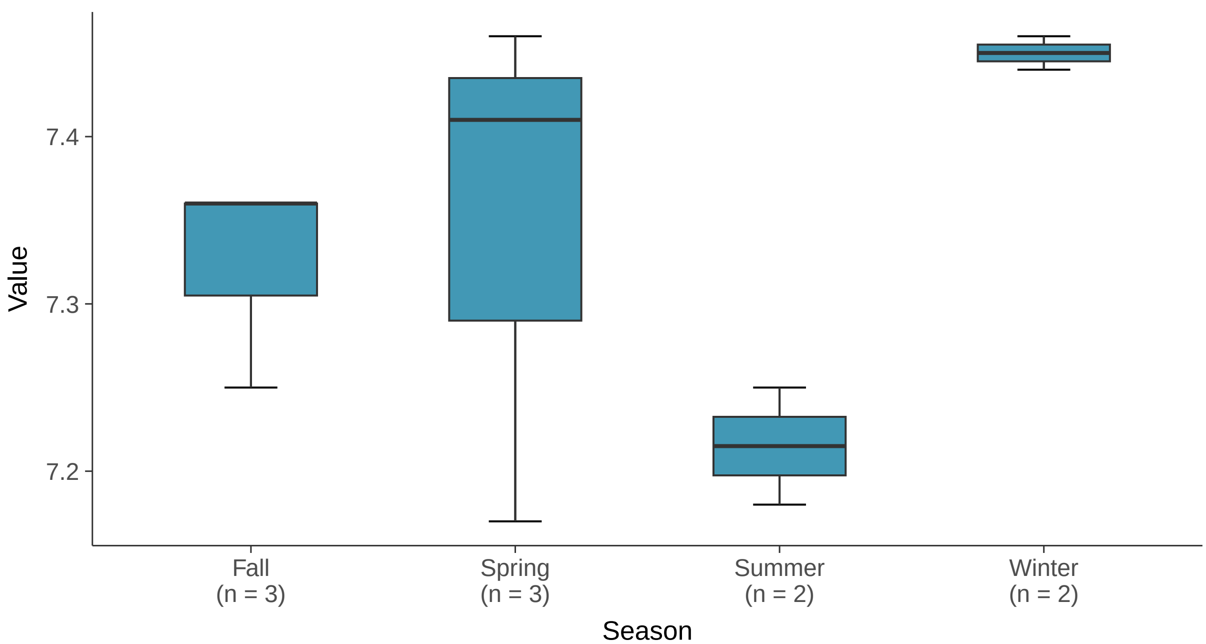
Boxplot

pH, MW-16C (su)



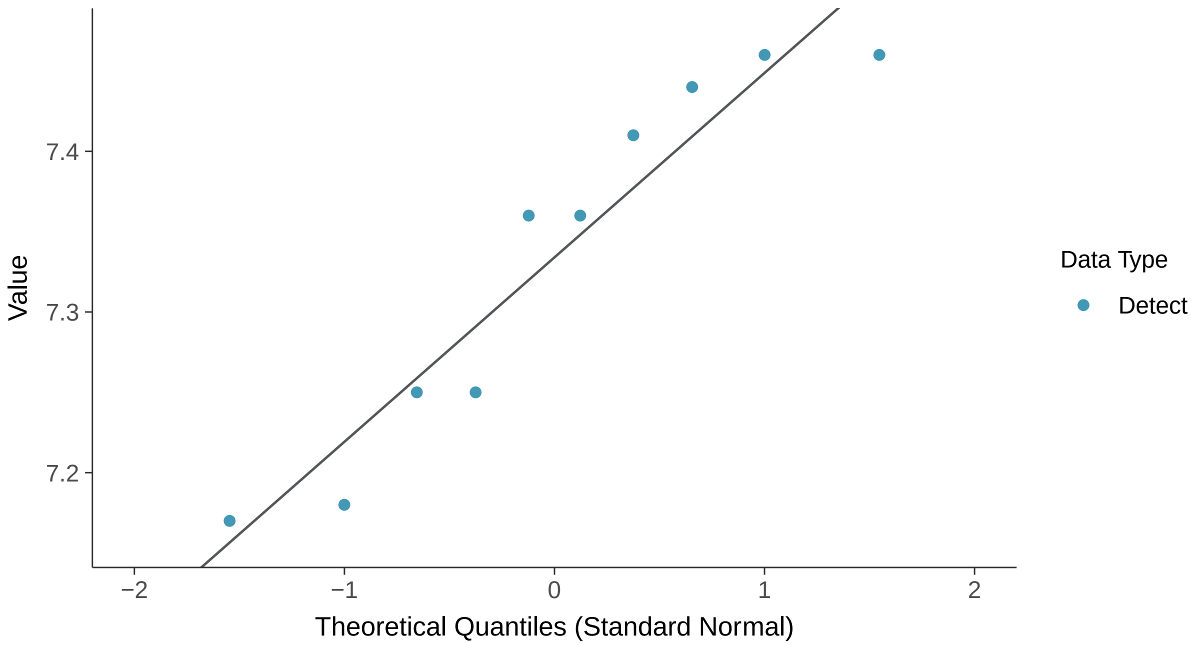
Boxplot by Season

pH, MW-16C (su)



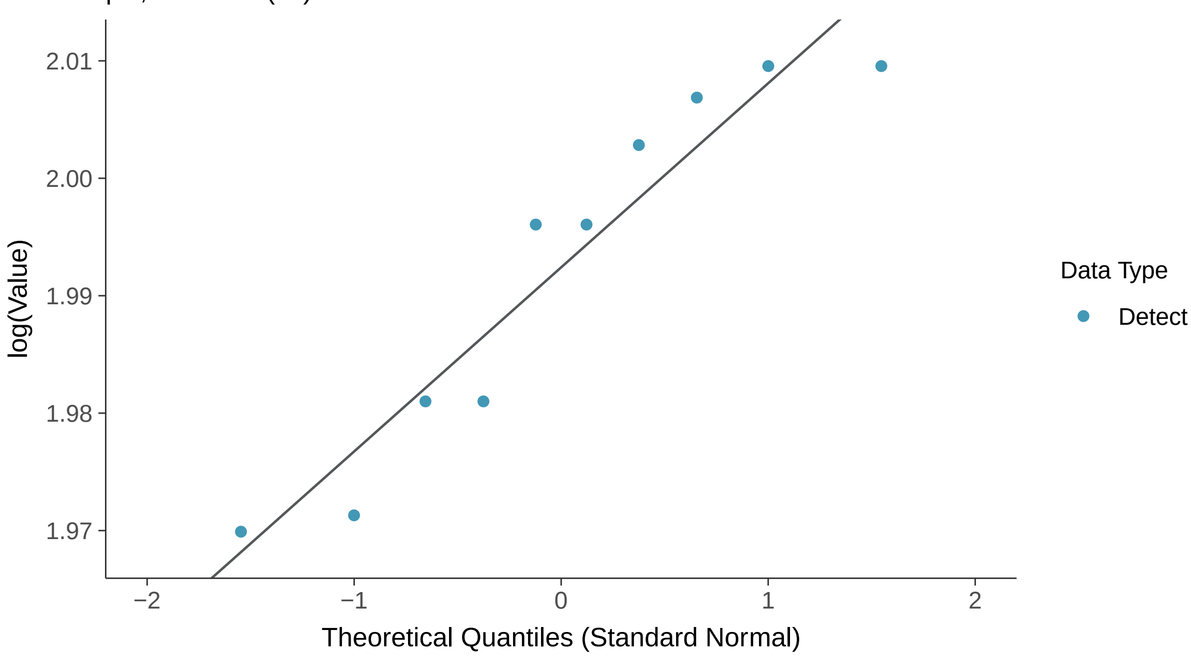
Normal Q-Q plot

pH, MW-16C (su)



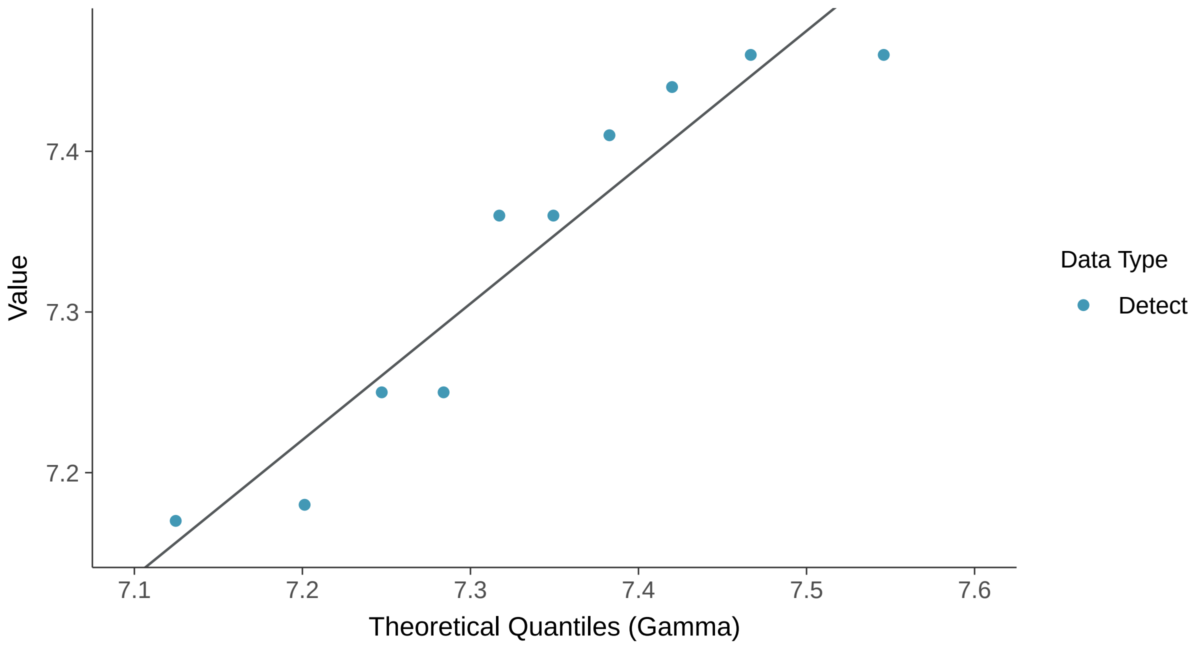
Lognormal Q-Q plot

pH, MW-16C (su)



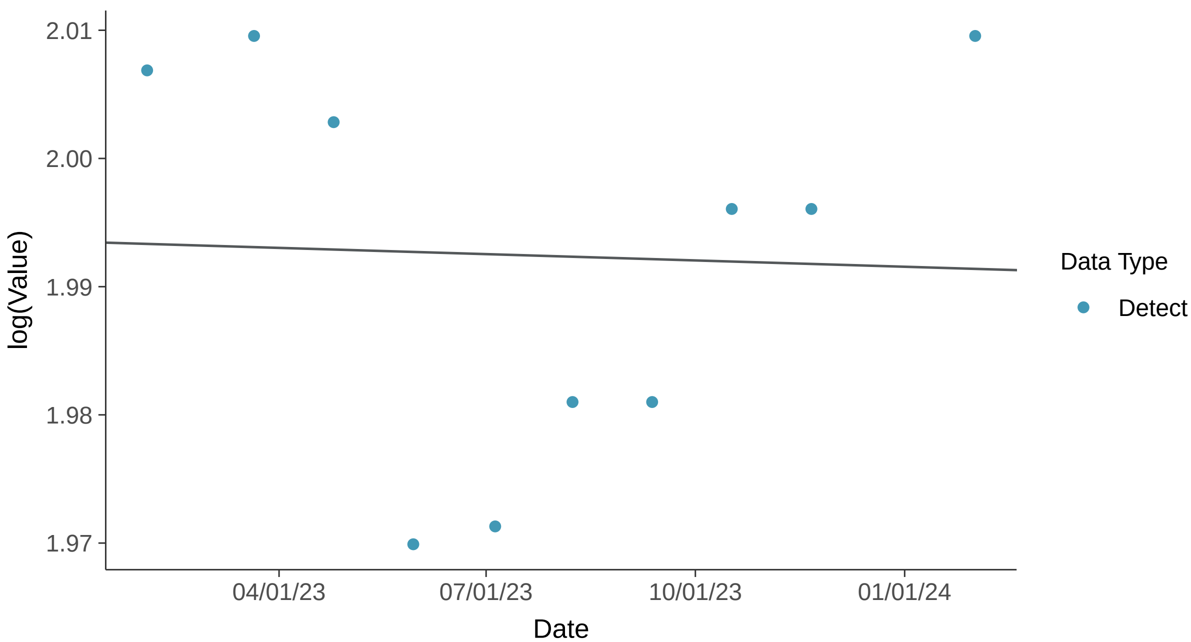
Gamma Q-Q plot

pH, MW-16C (su)



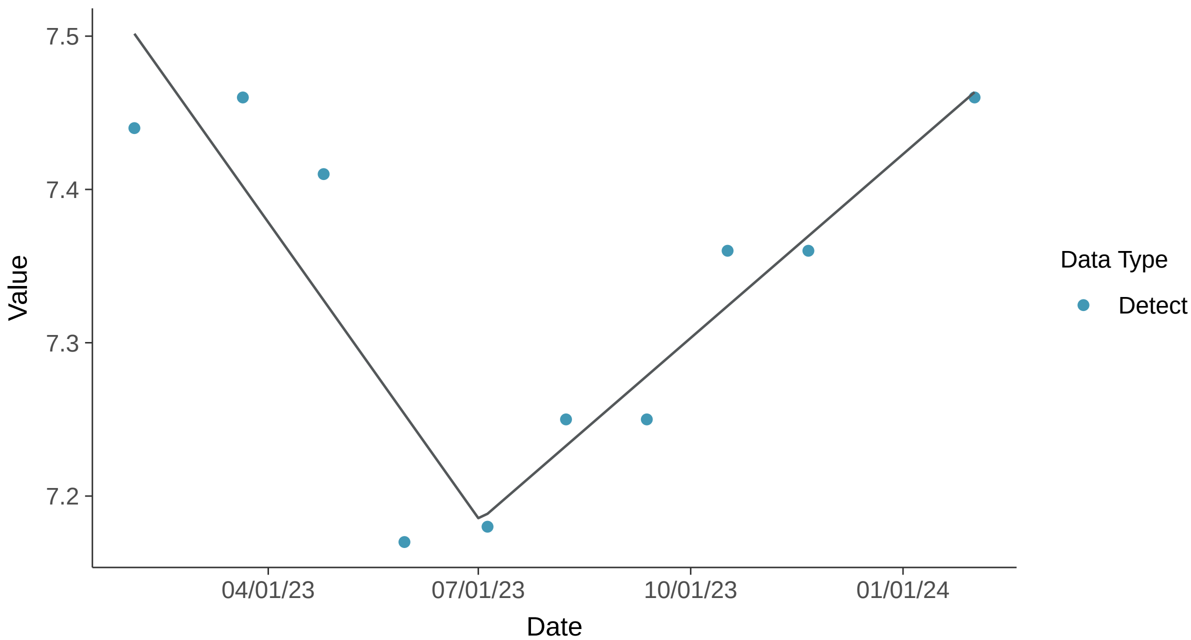
Trend Regression: Lognormal MLE

pH, MW-16C (su)



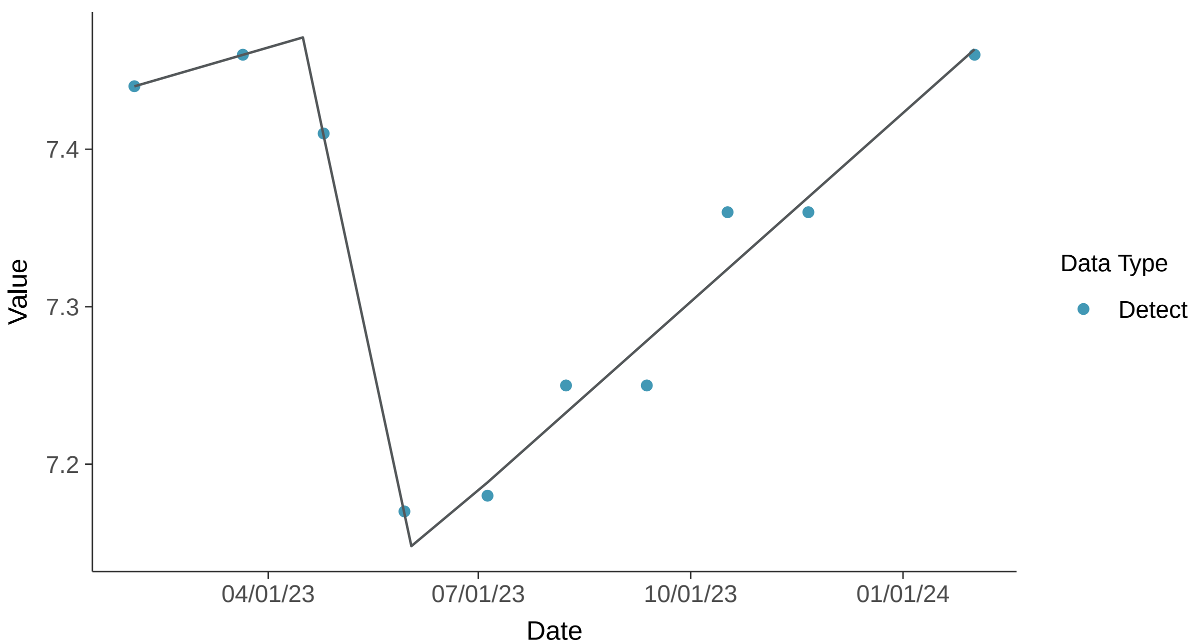
Trend Regression: Piecewise Linear-Linear

pH, MW-16C (su)



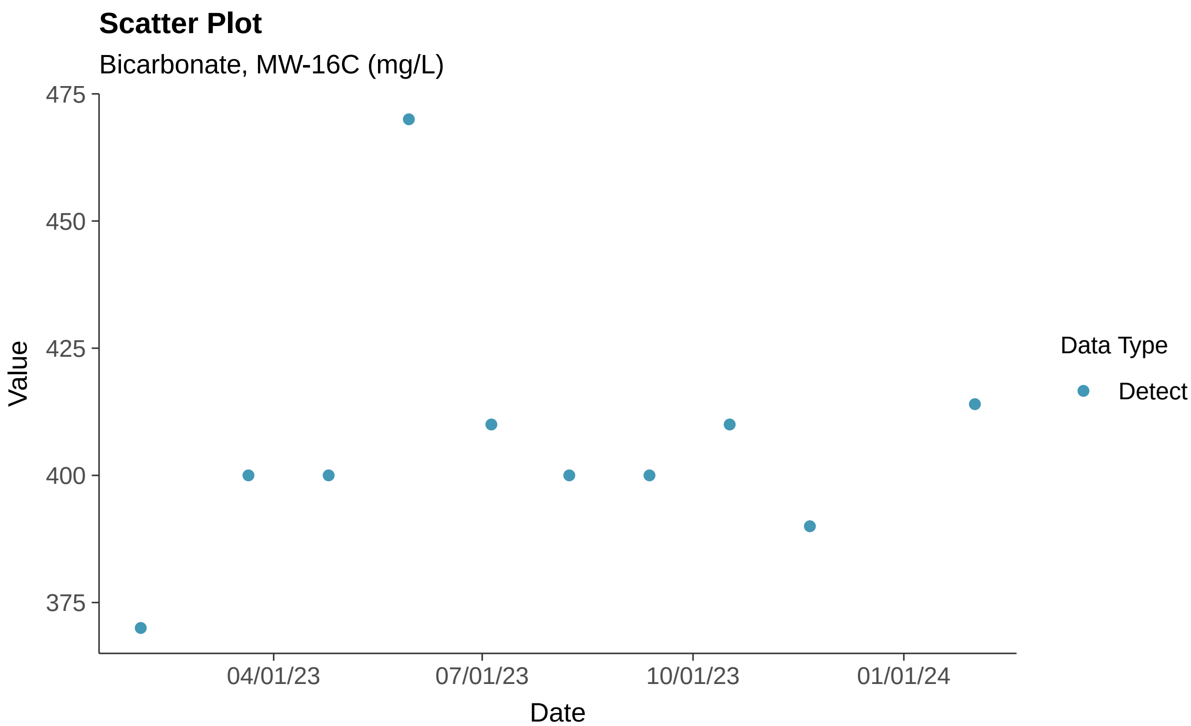
Trend Regression: Piecewise Linear-Linear-Linear

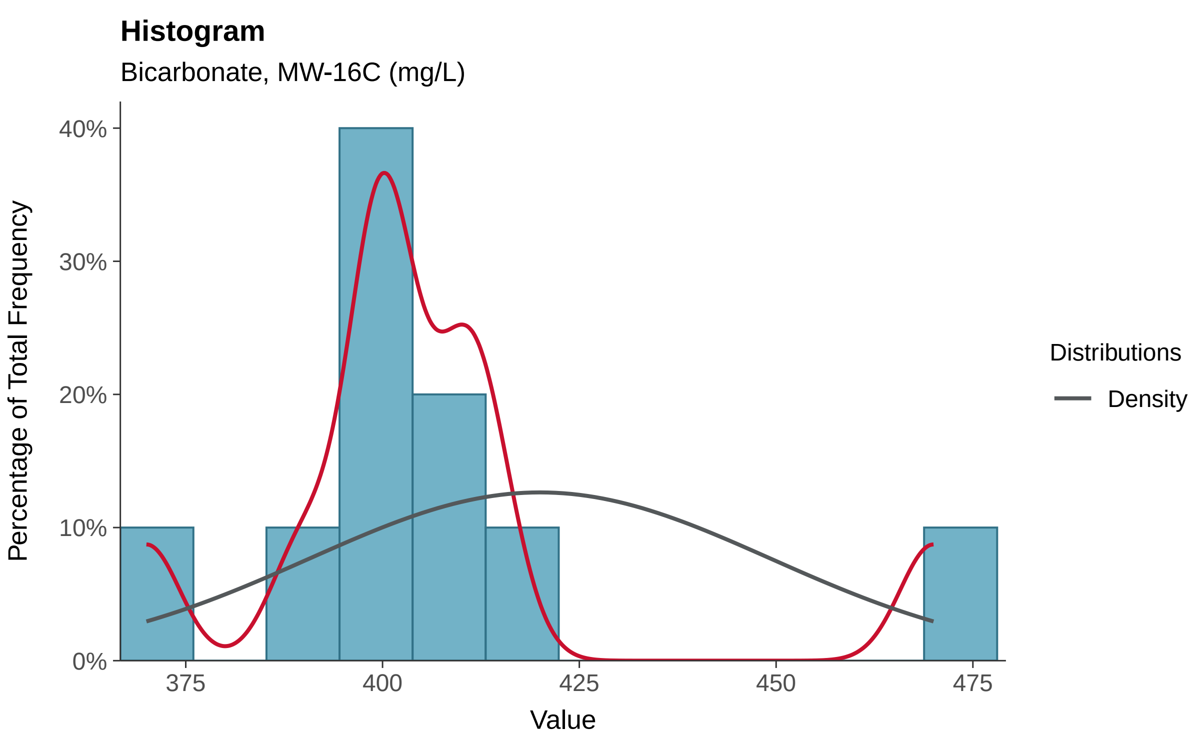
pH, MW-16C (su)



Other: Bicarbonate, MW-16C

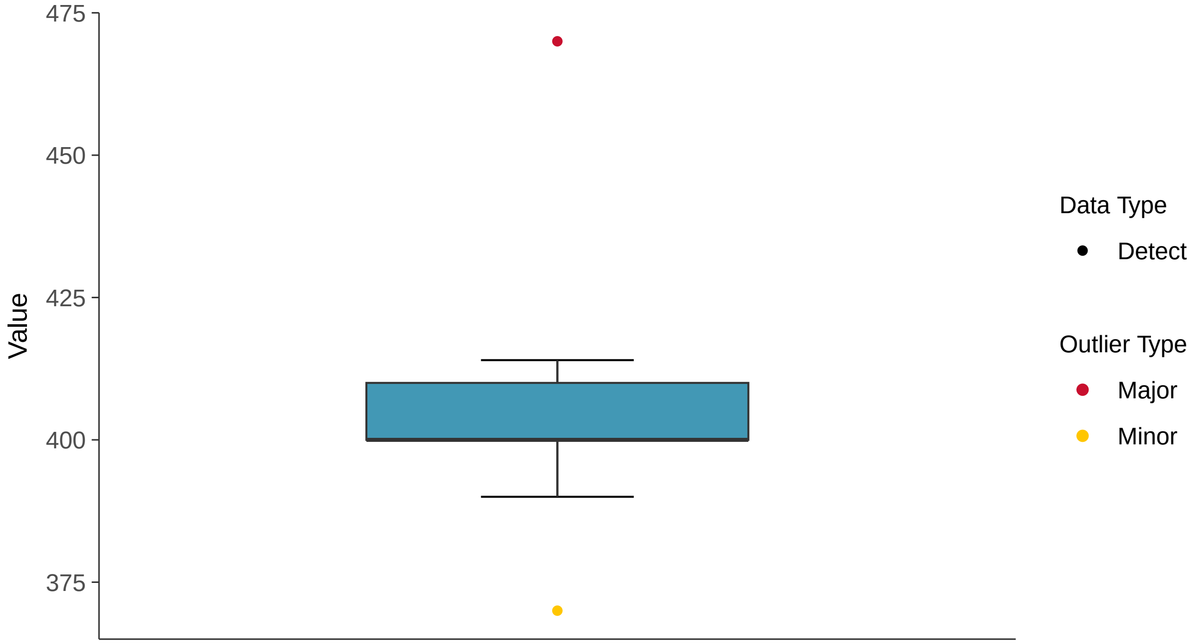
ID: 16C_4_30





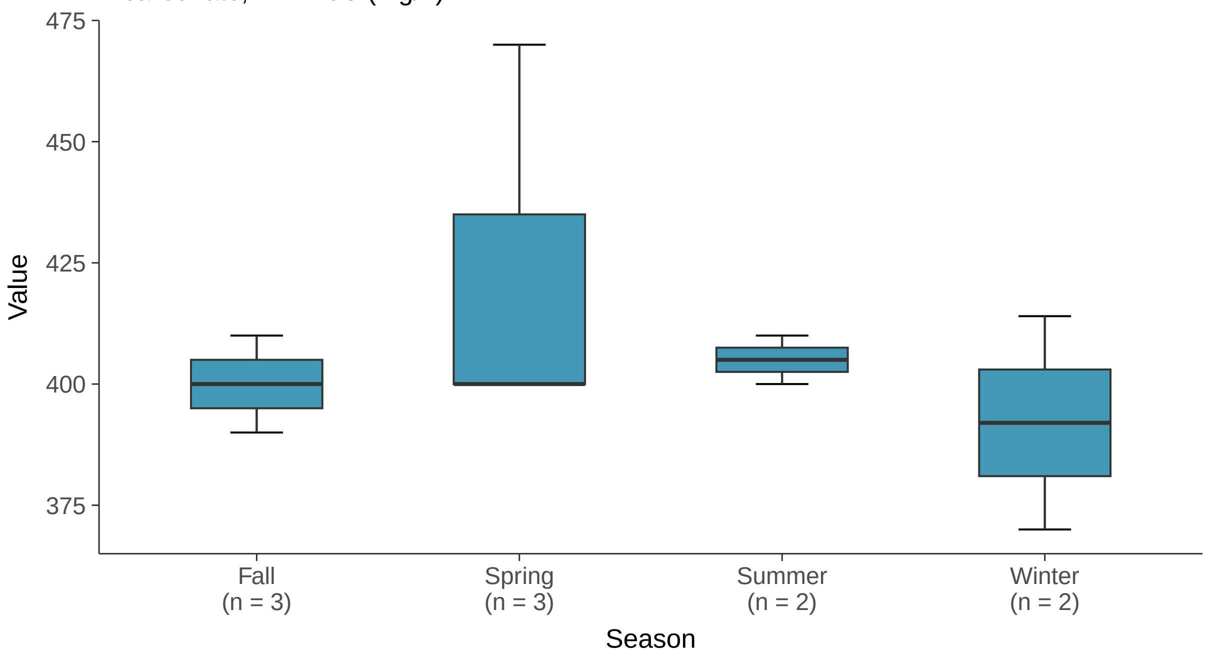
Boxplot

Bicarbonate, MW-16C (mg/L)



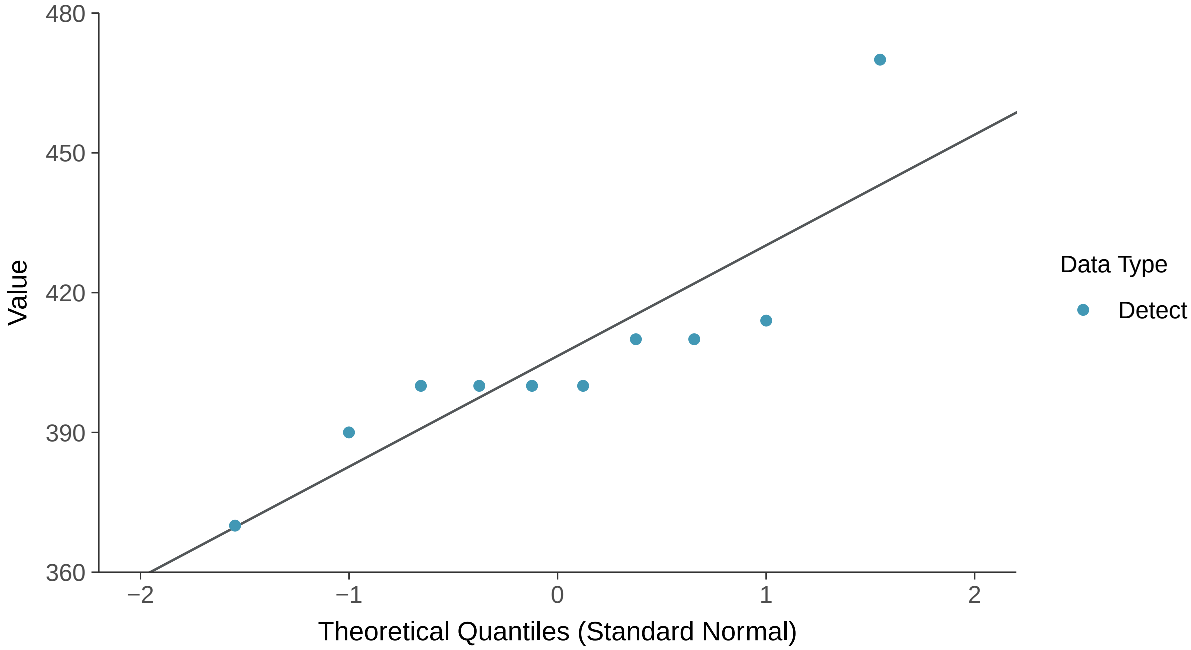
Boxplot by Season

Bicarbonate, MW-16C (mg/L)



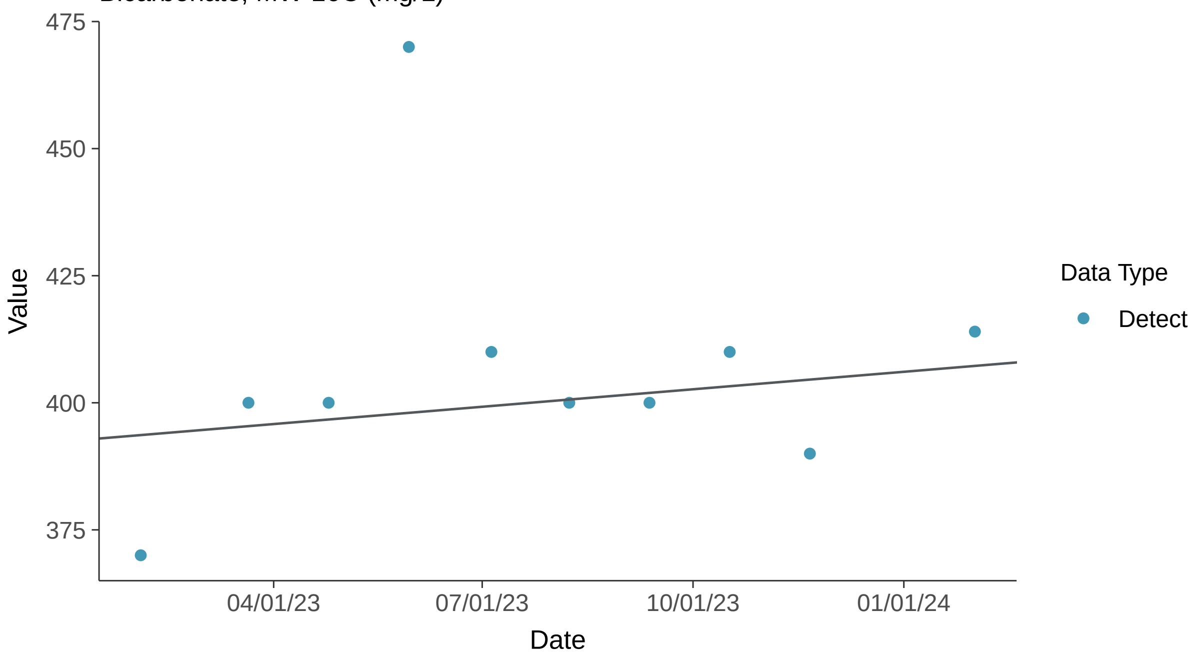
Normal Q-Q plot

Bicarbonate, MW-16C (mg/L)



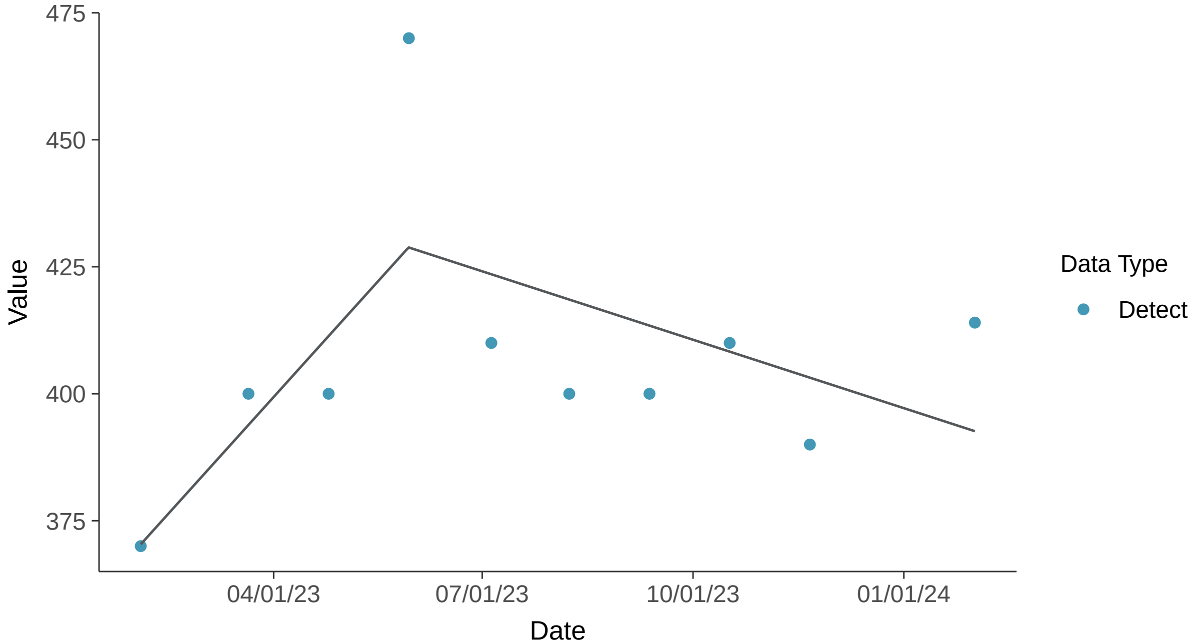
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Bicarbonate, MW-16C (mg/L)



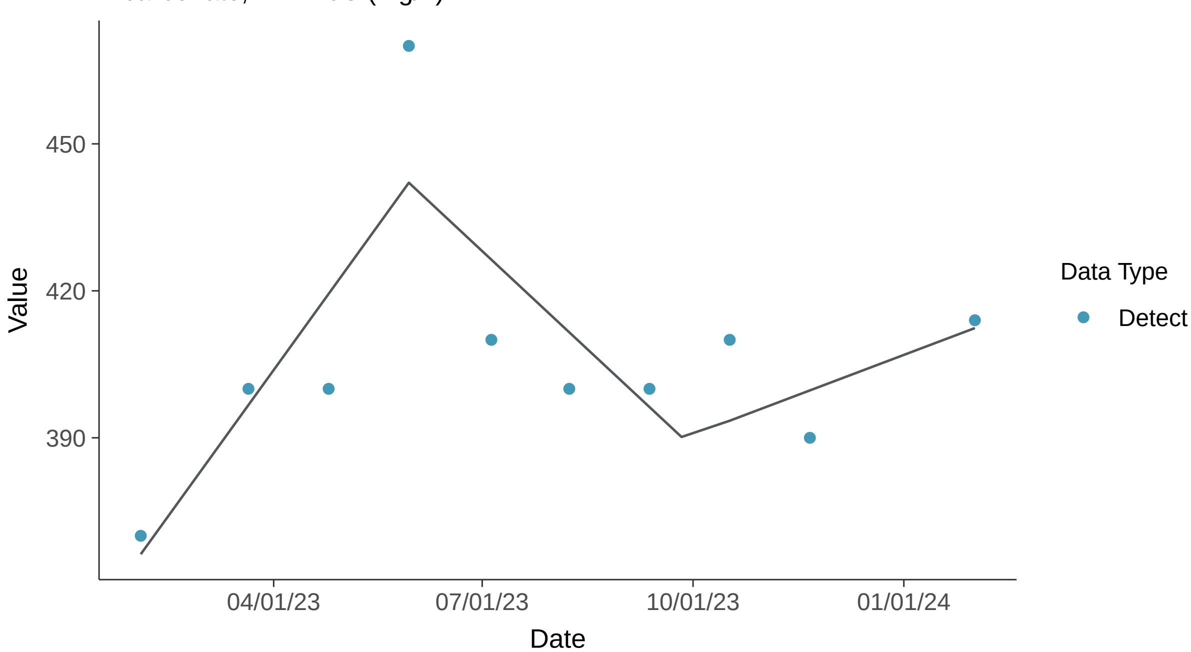
Trend Regression: Piecewise Linear-Linear

Bicarbonate, MW-16C (mg/L)



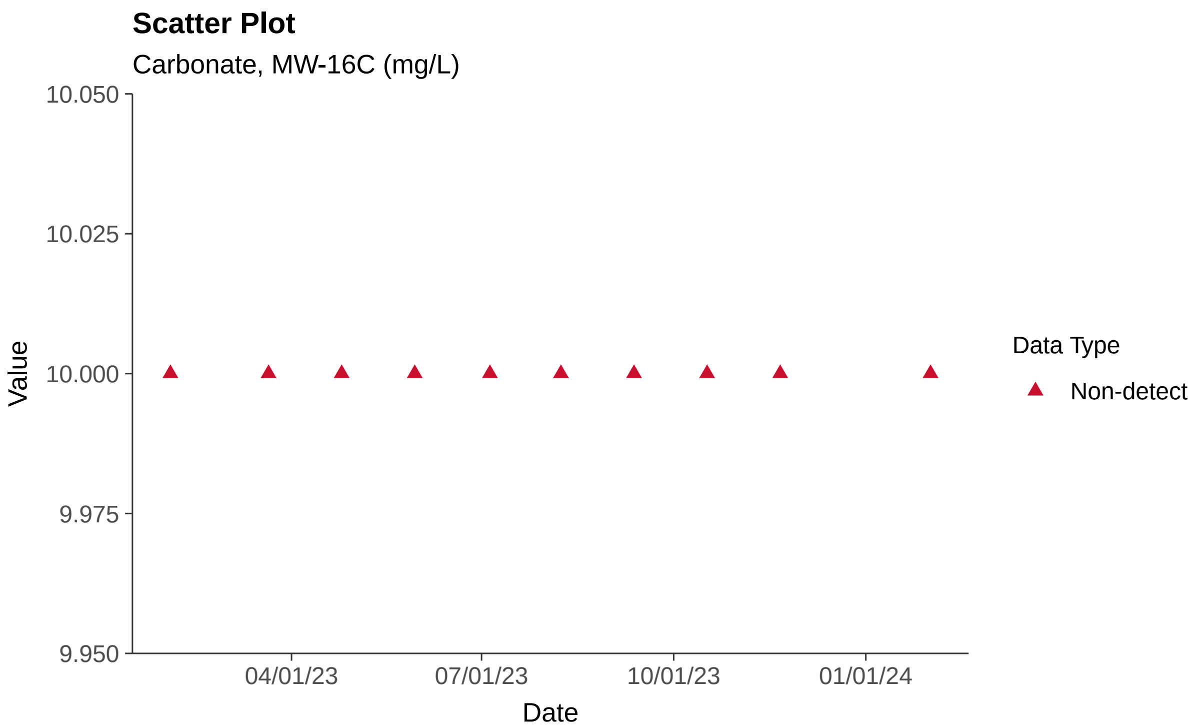
Trend Regression: Piecewise Linear-Linear-Linear

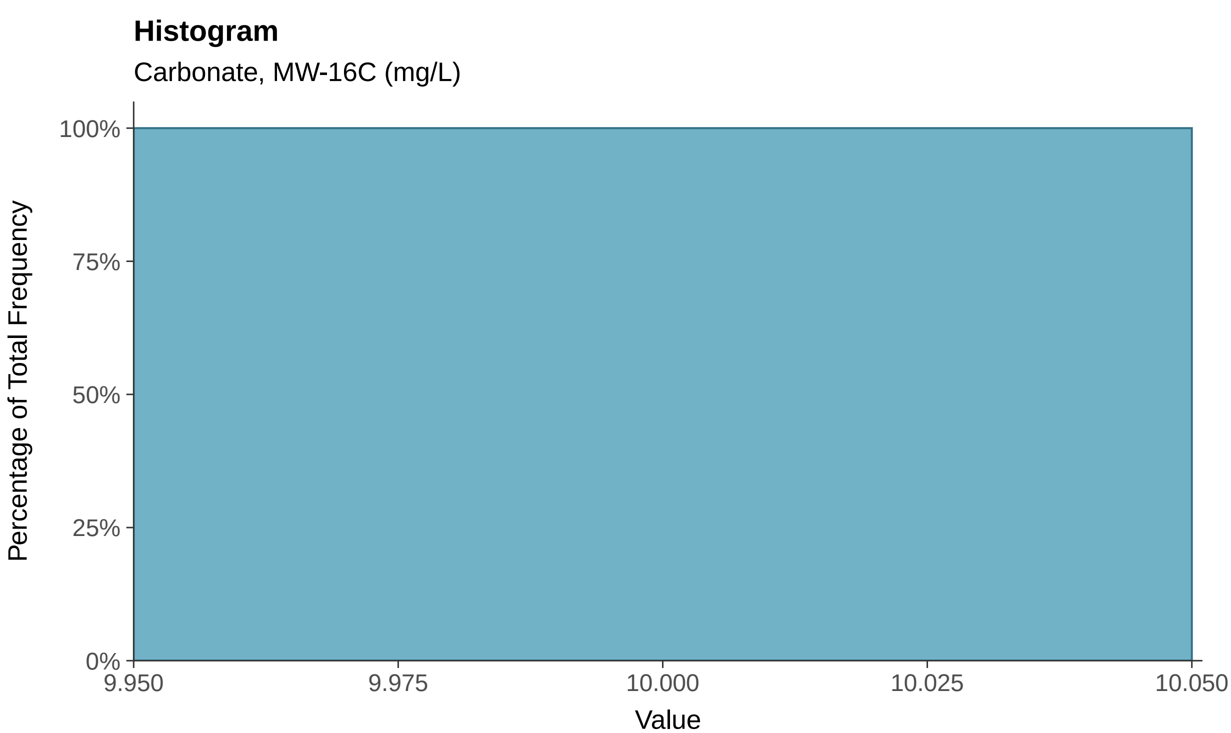
Bicarbonate, MW-16C (mg/L)



Other: Carbonate, MW-16C

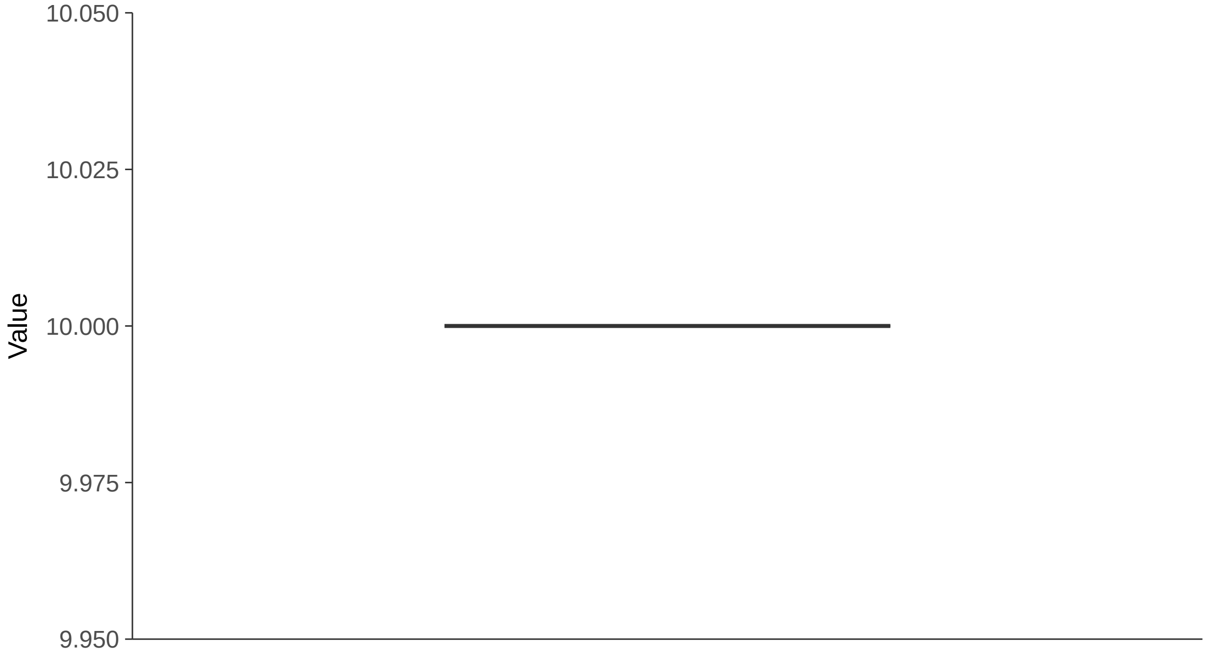
ID: 16C_4_31





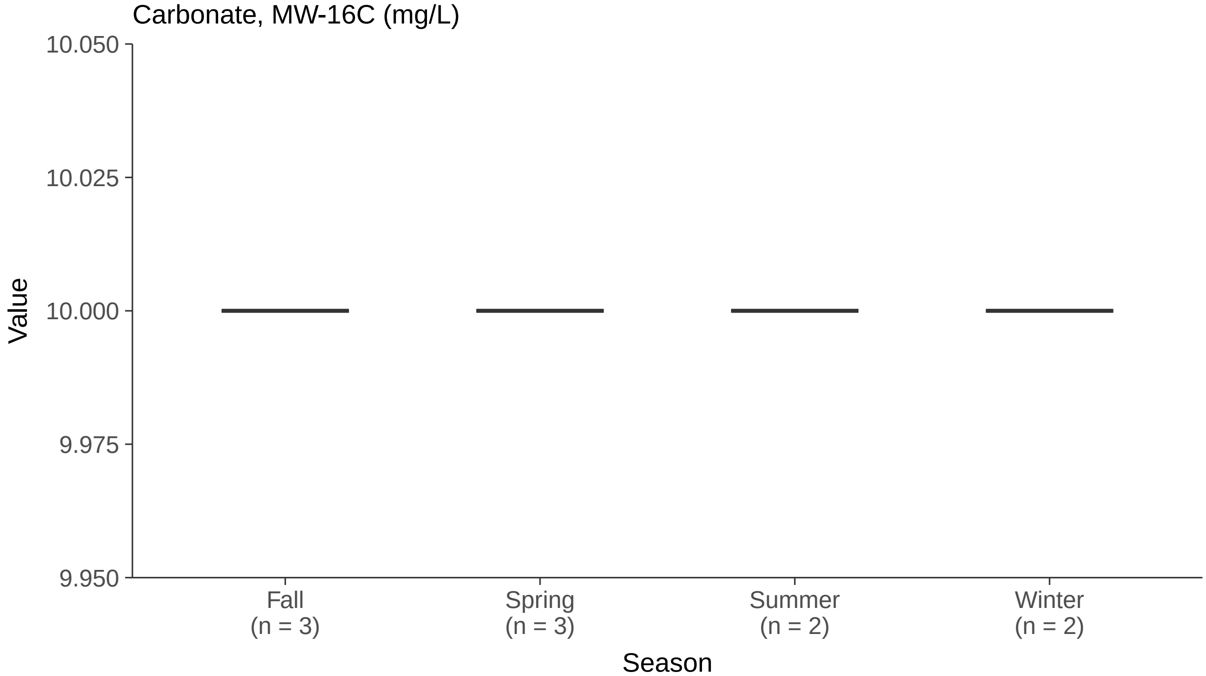
Boxplot

Carbonate, MW-16C (mg/L)



Boxplot by Season

Carbonate, MW-16C (mg/L)

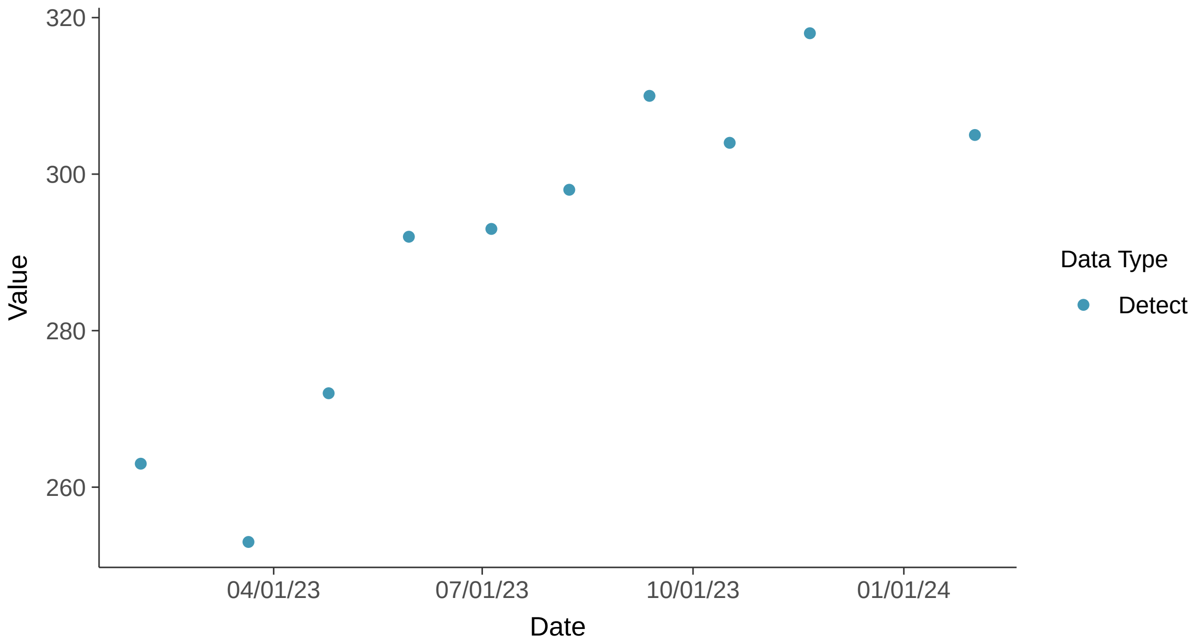


Other: Hardness, MW-16C

ID: 16C_4_32

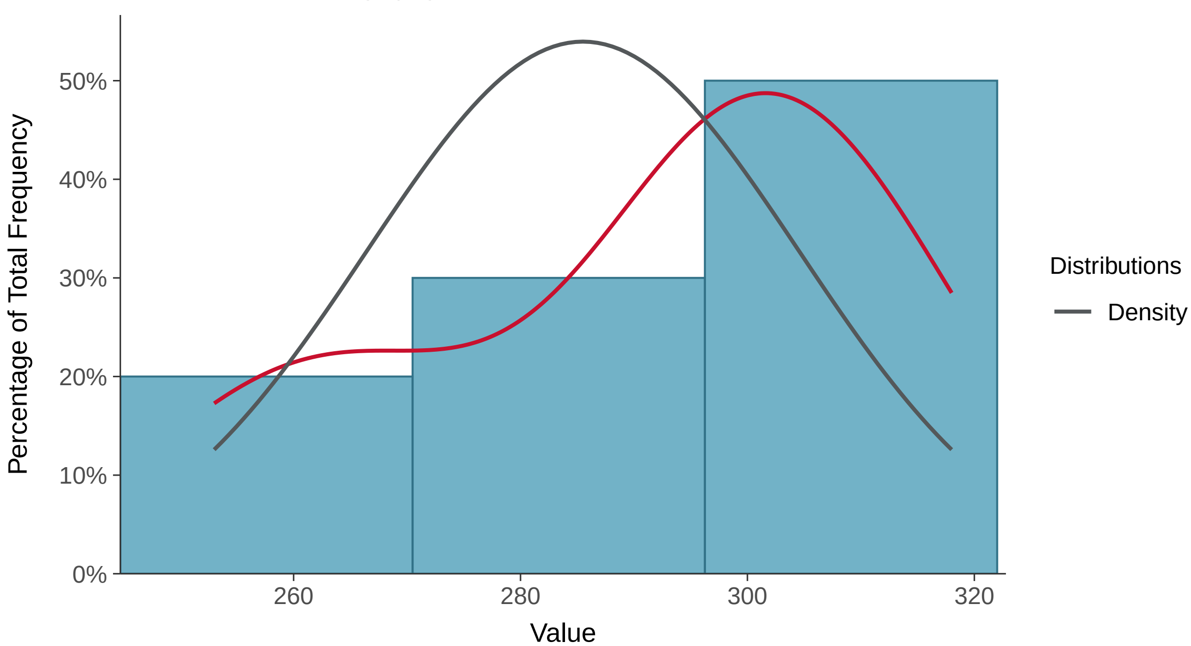
Scatter Plot

Hardness, MW-16C (mg/L)



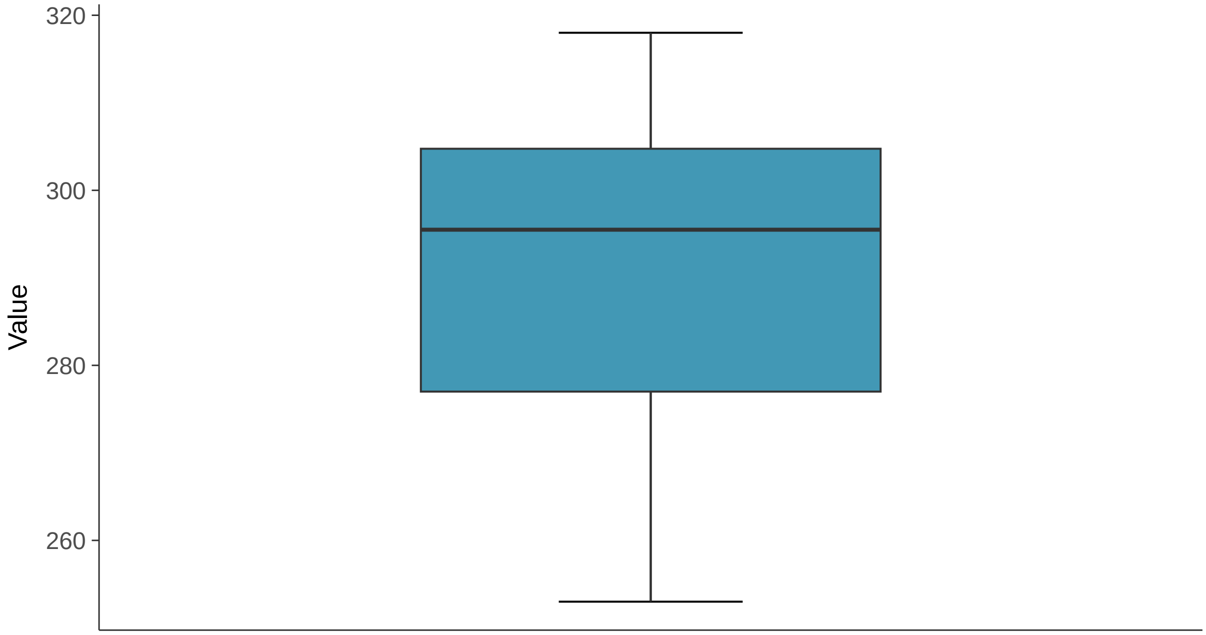
Histogram

Hardness, MW-16C (mg/L)



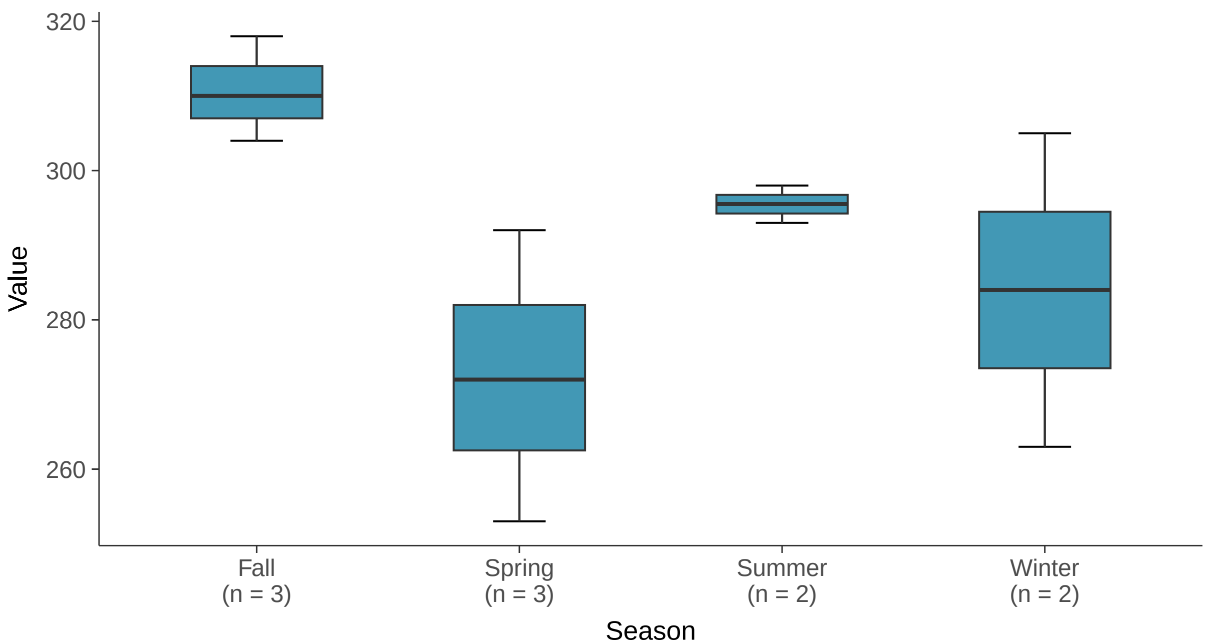
Boxplot

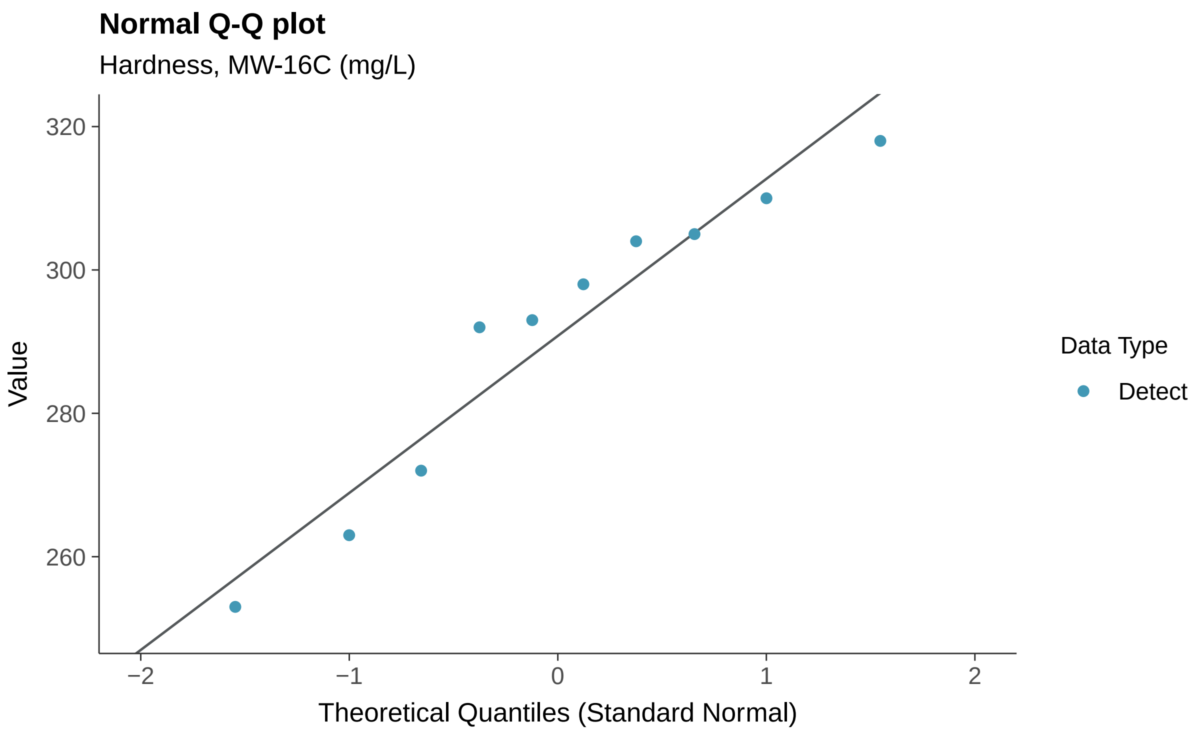
Hardness, MW-16C (mg/L)

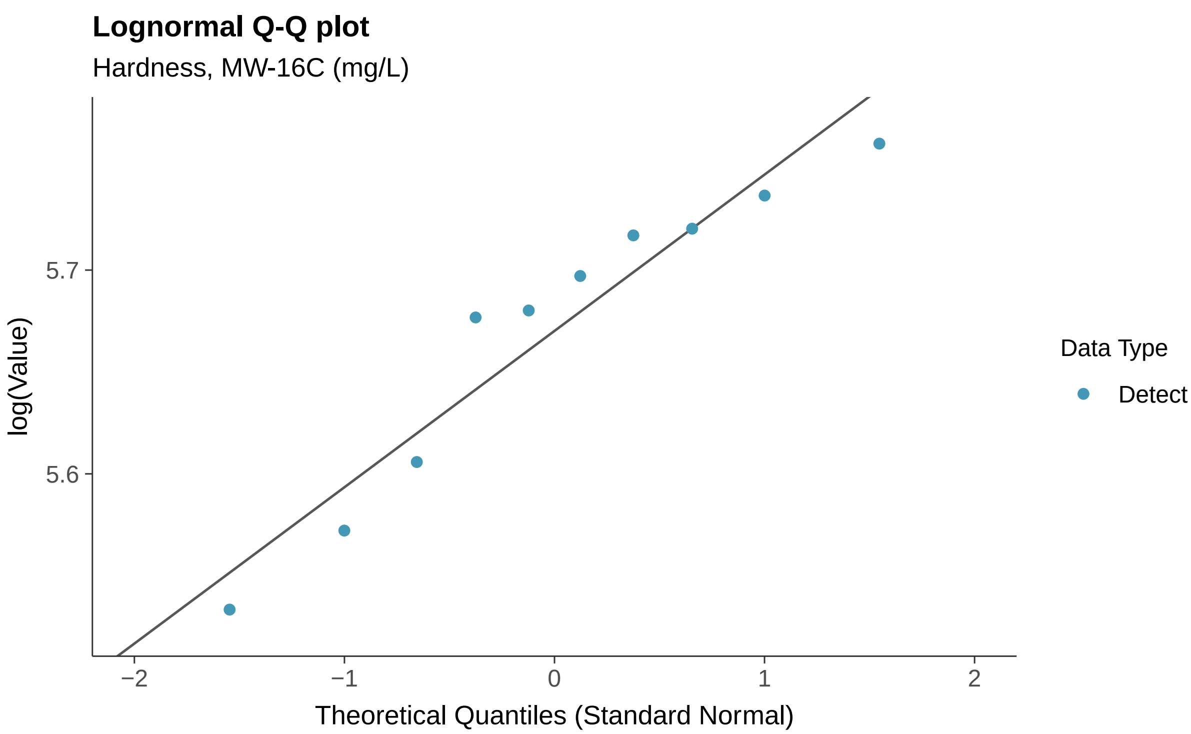


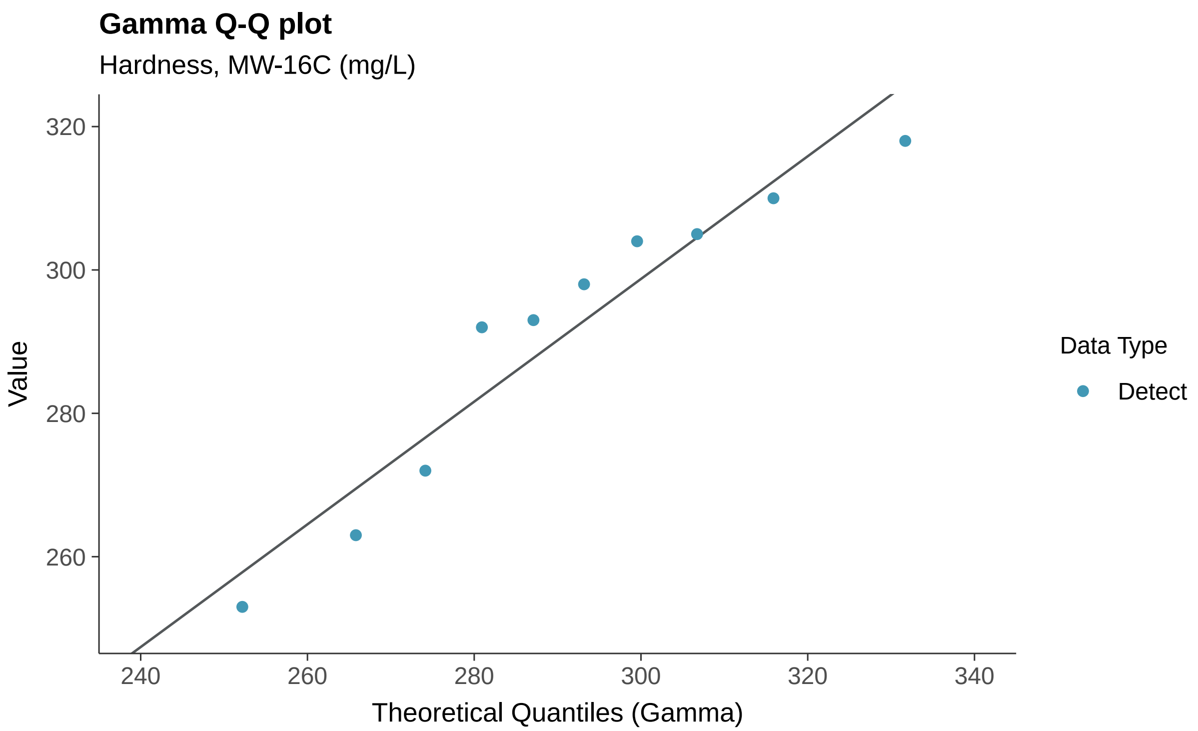
Boxplot by Season

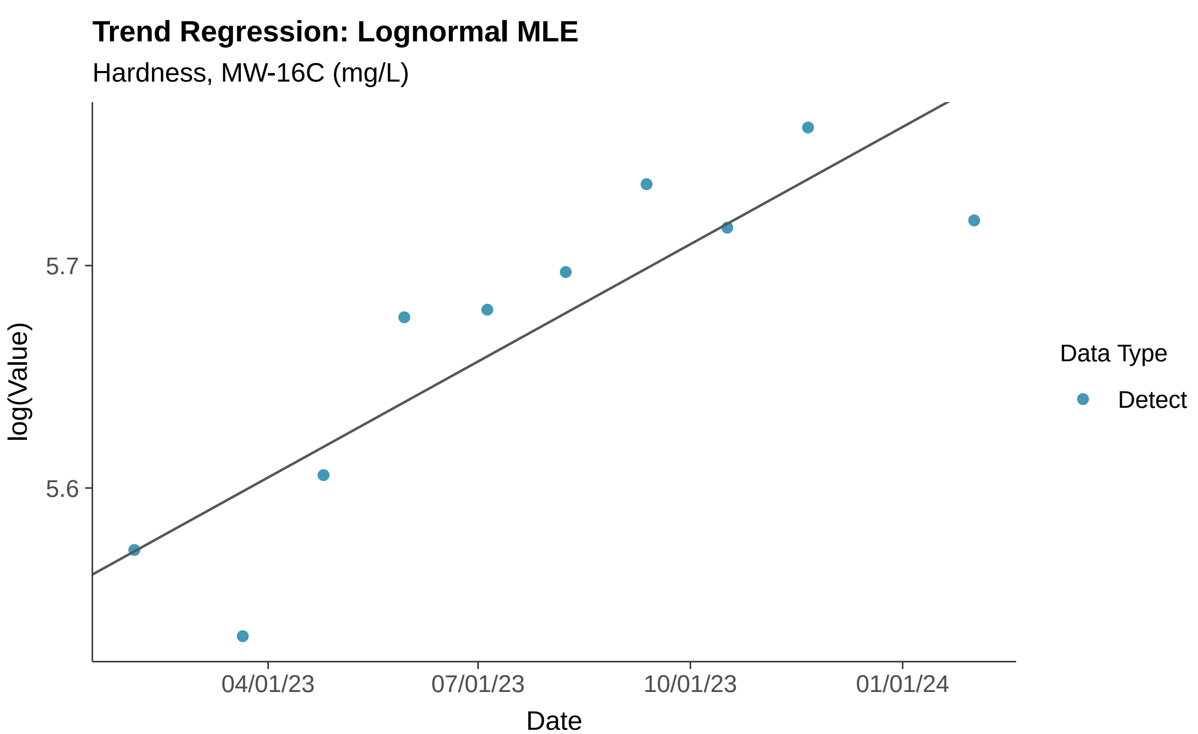
Hardness, MW-16C (mg/L)

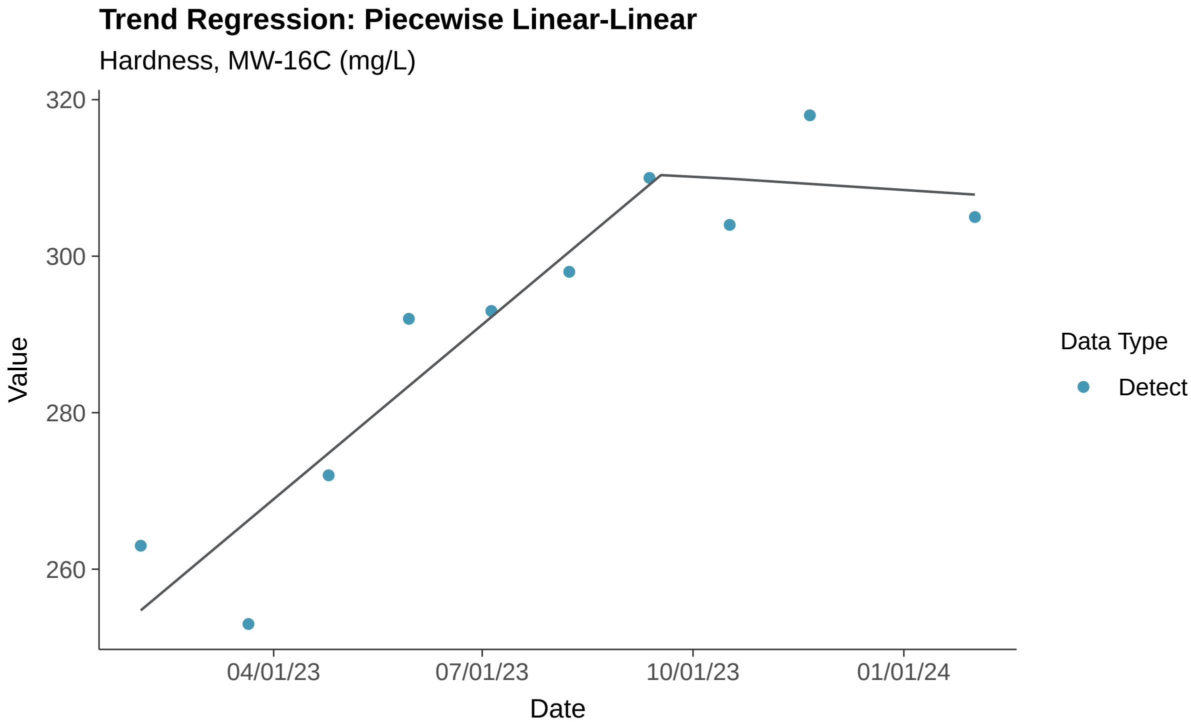


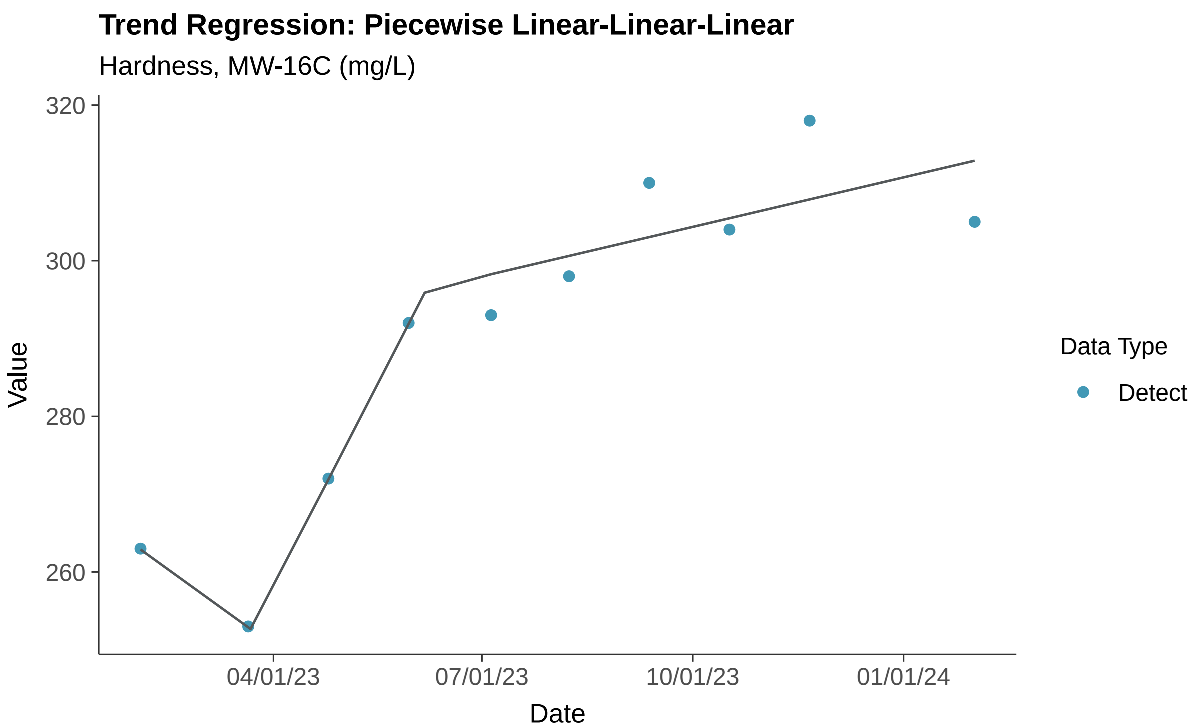

Normal Q-Q plot
Hardness, MW-16C (mg/L)
Value
320
300
280
260
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Hardness, MW-16C (mg/L)
log(Value)
5.7
5.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Hardness, MW-16C (mg/L)
Value
320
300
280
260
240
260
280
300
320
340
Theoretical Quantiles (Gamma)
Data Type
Detect

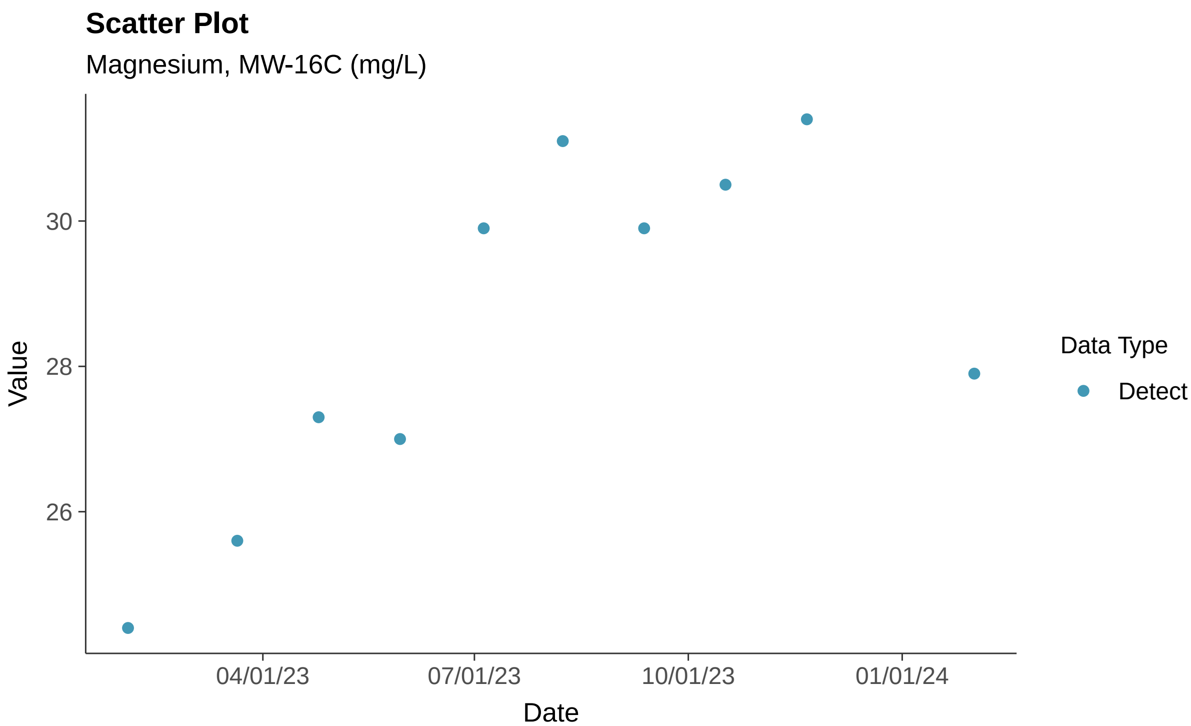

Trend Regression: Lognormal MLE
Hardness, MW-16C (mg/L)
log(Value)
5.7
5.6
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

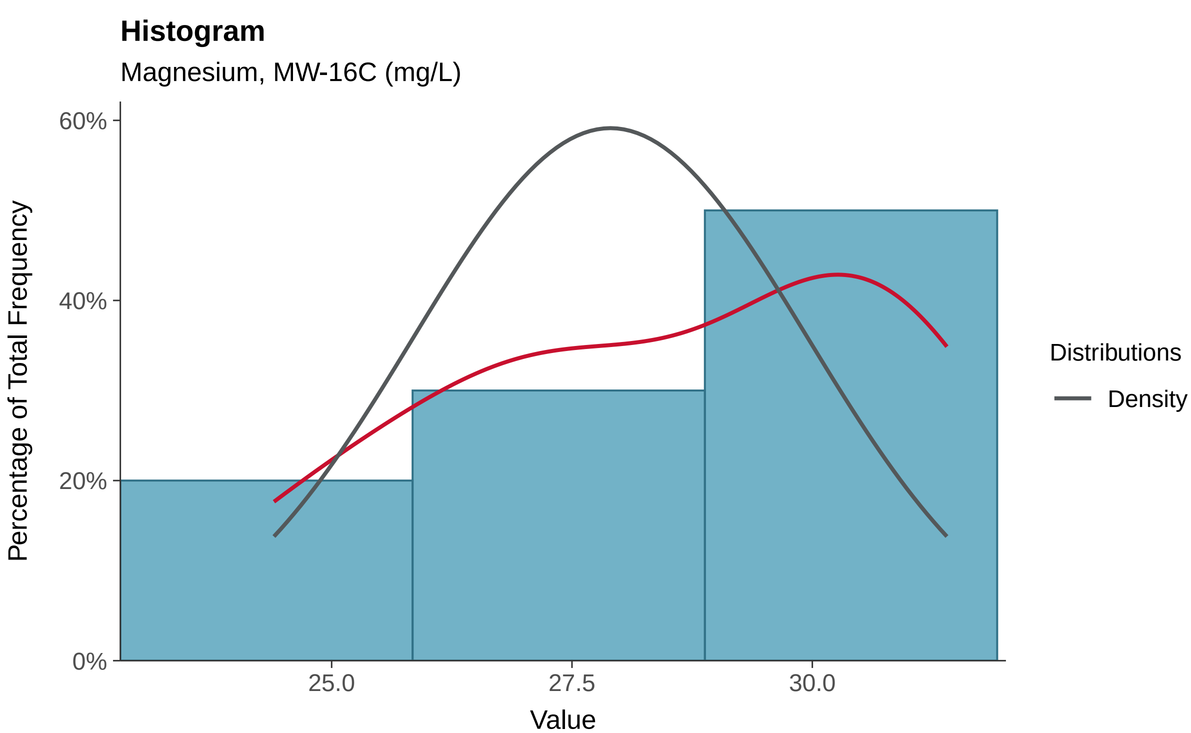

Trend Regression: Piecewise Linear-Linear
Hardness, MW-16C (mg/L)
320
300
280
260
Value
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Hardness, MW-16C (mg/L)
320
300
280
260
Value
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Other: Magnesium, MW-16C

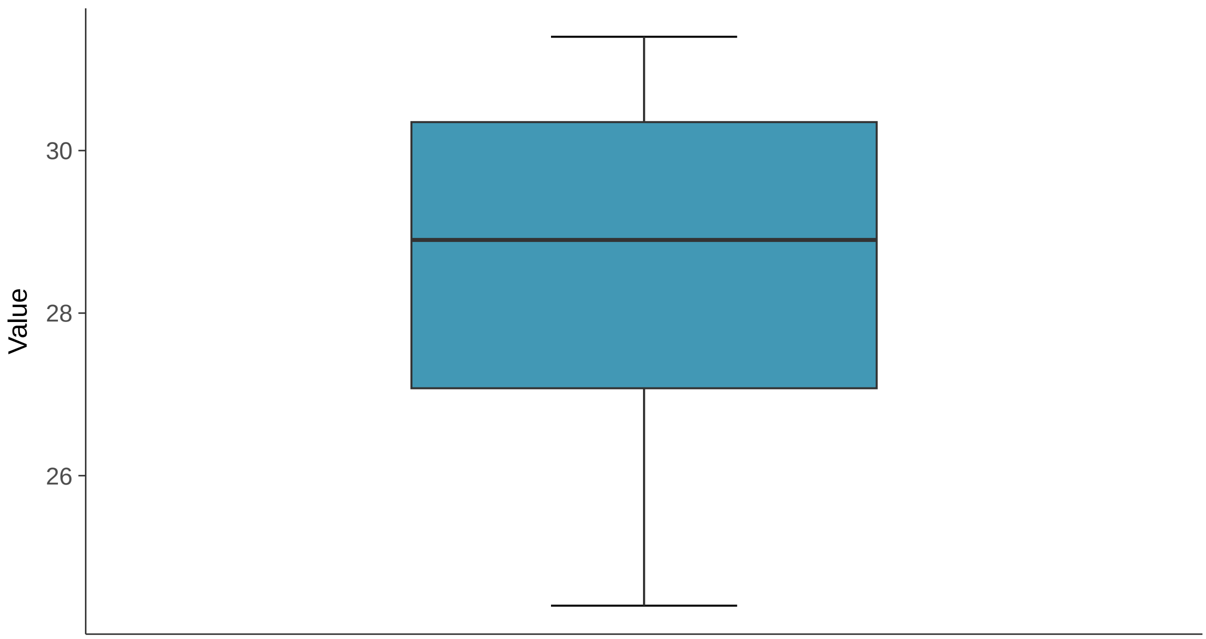
ID: 16C_4_33





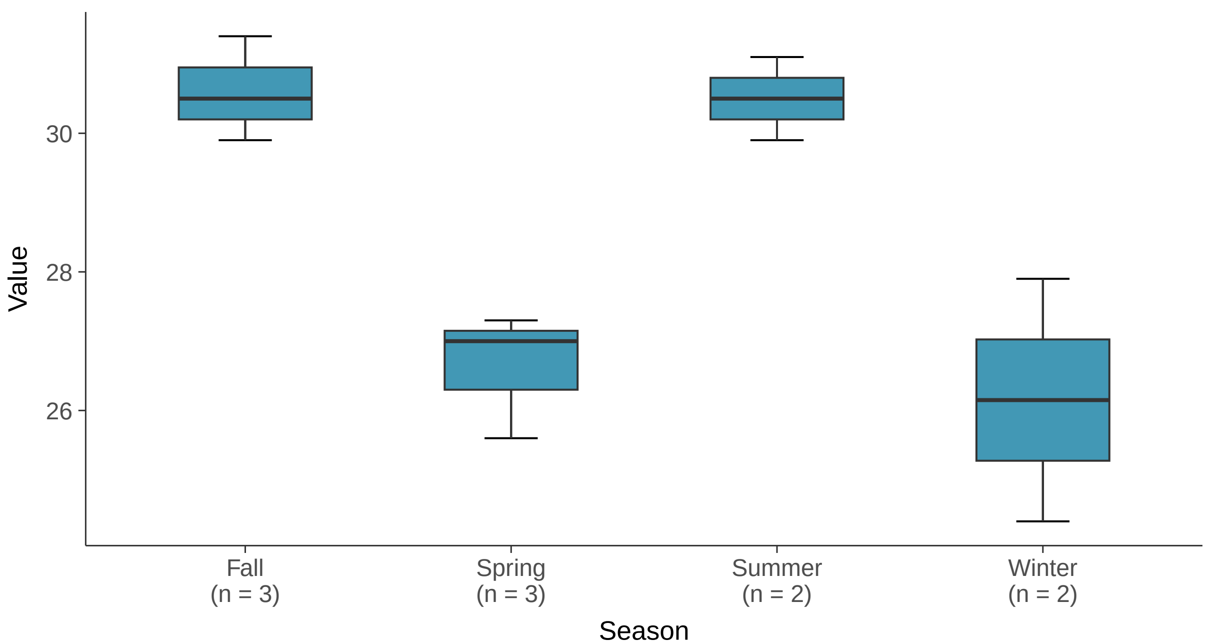
Boxplot

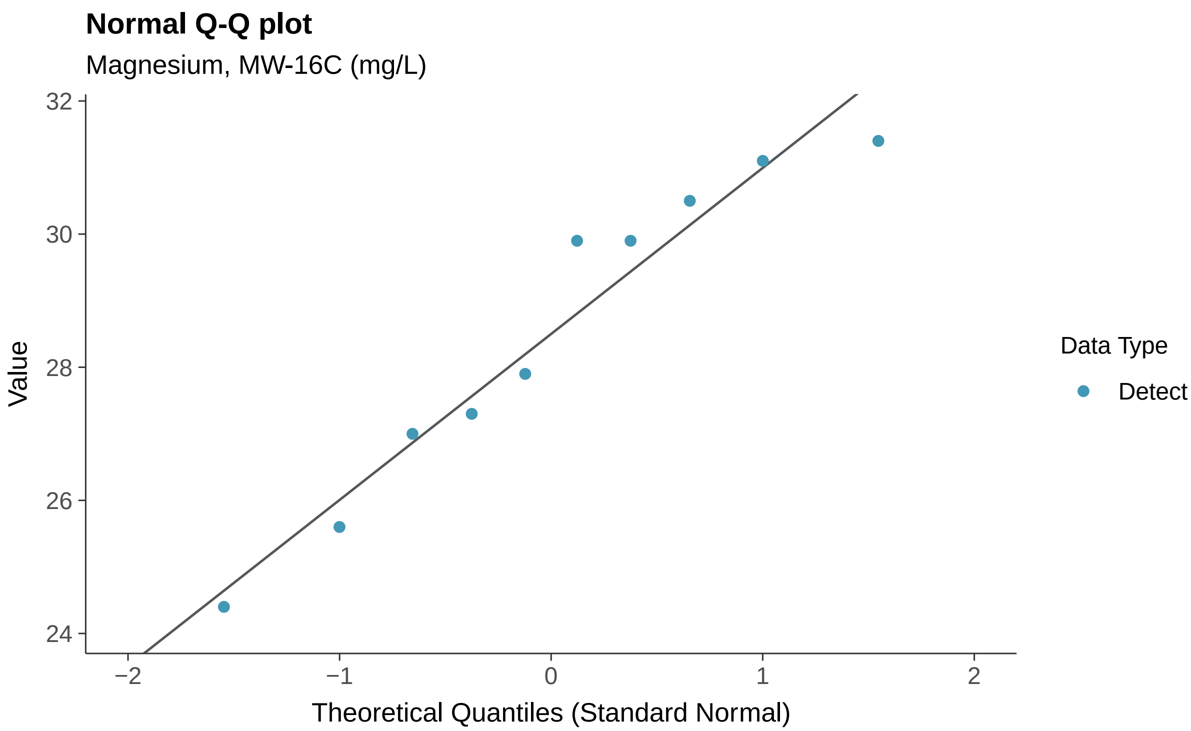
Magnesium, MW-16C (mg/L)

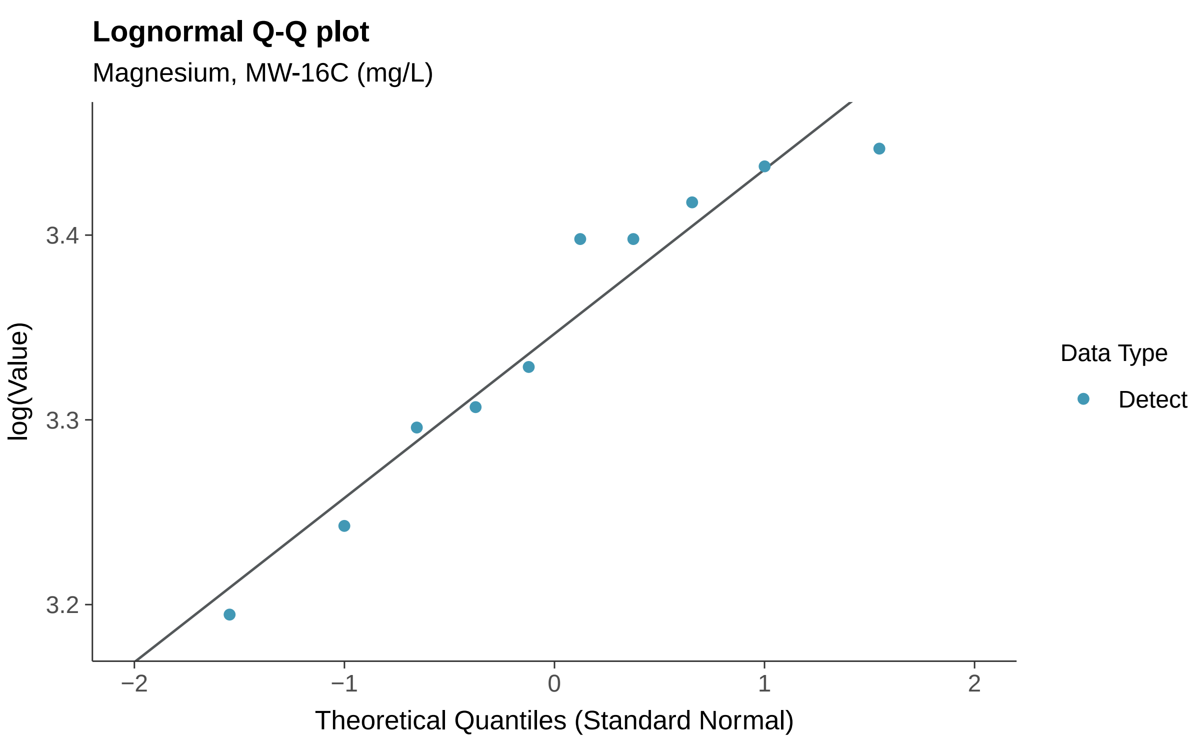


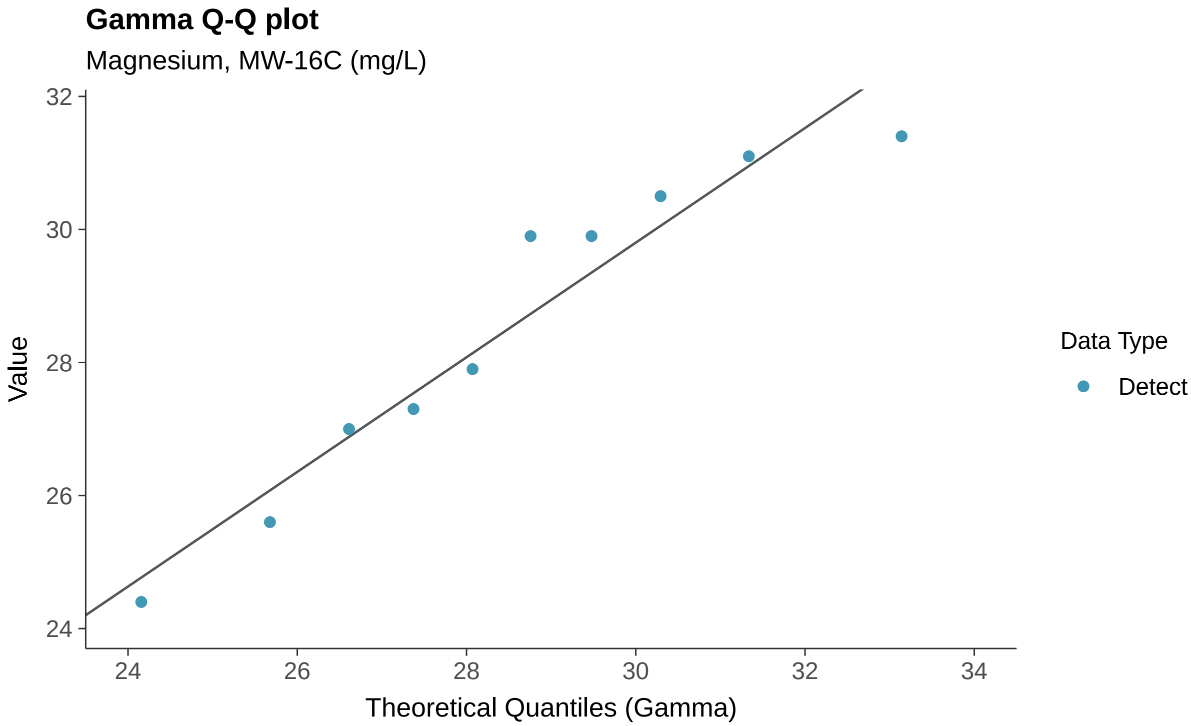
Boxplot by Season

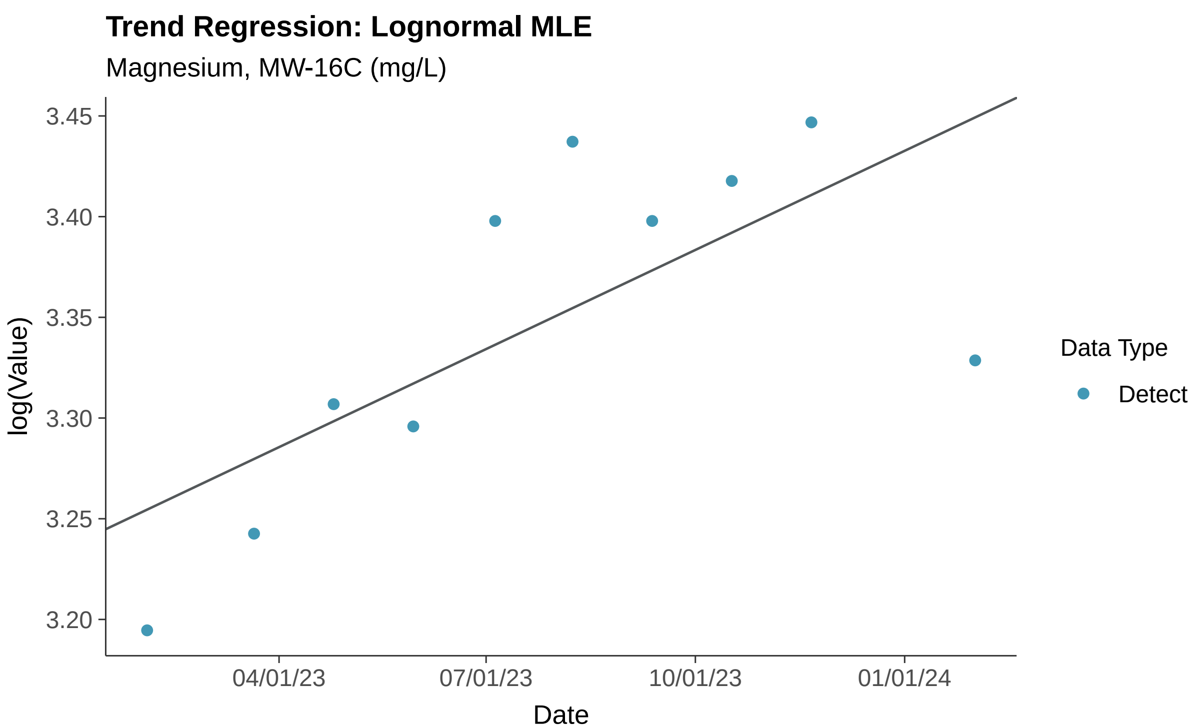
Magnesium, MW-16C (mg/L)




Normal Q-Q plot
Magnesium, MW-16C (mg/L)
Value
32
30
28
26
24
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

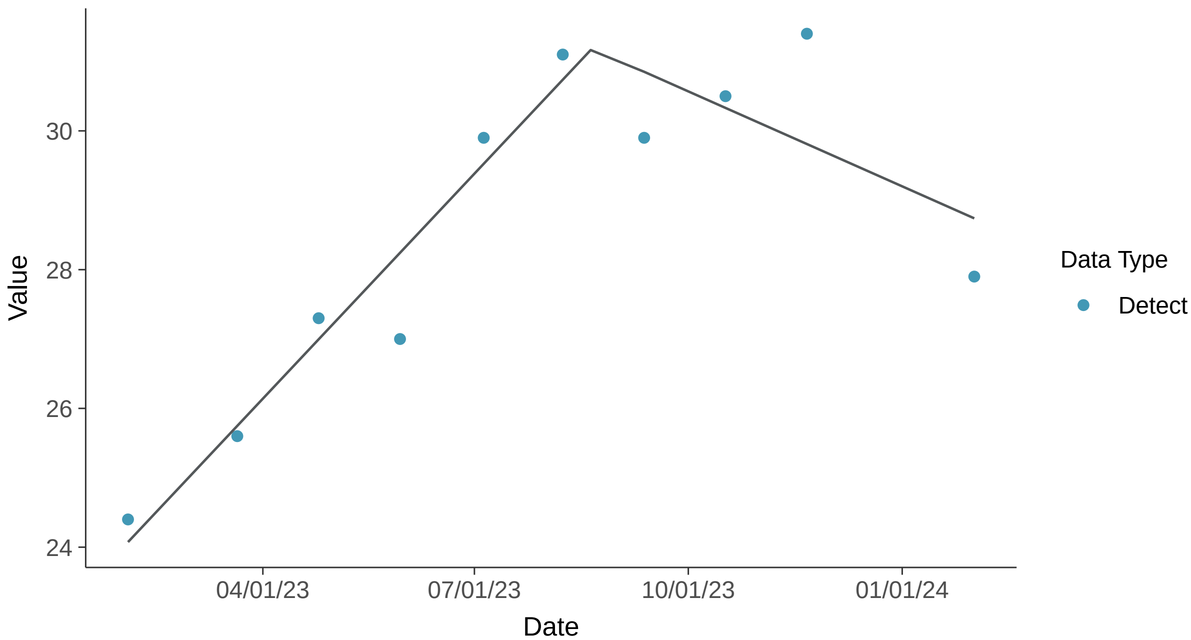

Lognormal Q-Q plot
Magnesium, MW-16C (mg/L)
log(Value)
3.4
3.3
3.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Magnesium, MW-16C (mg/L)
Value
24
26
28
30
32
Theoretical Quantiles (Gamma)
24
26
28
30
32
34
Data Type
Detect


Trend Regression: Lognormal MLE
Magnesium, MW-16C (mg/L)
log(Value)
3.20
3.25
3.30
3.35
3.40
3.45
Date
04/01/23
07/01/23
10/01/23
01/01/24
Data Type
Detect

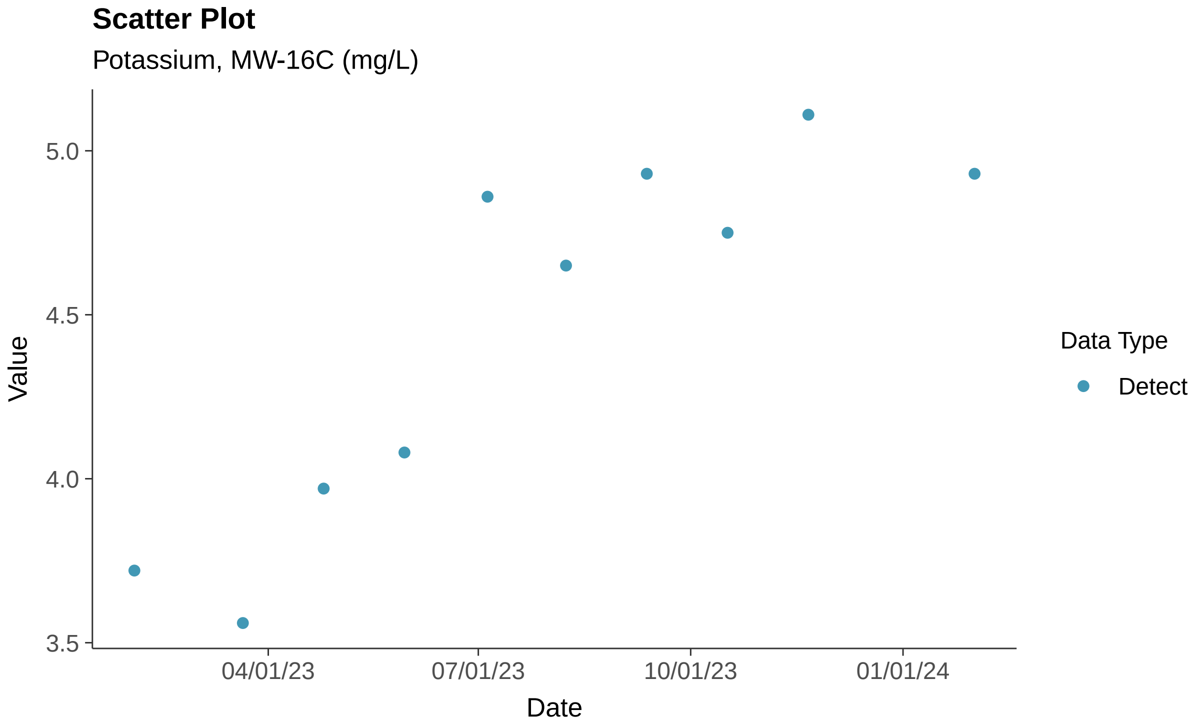
Trend Regression: Piecewise Linear-Linear

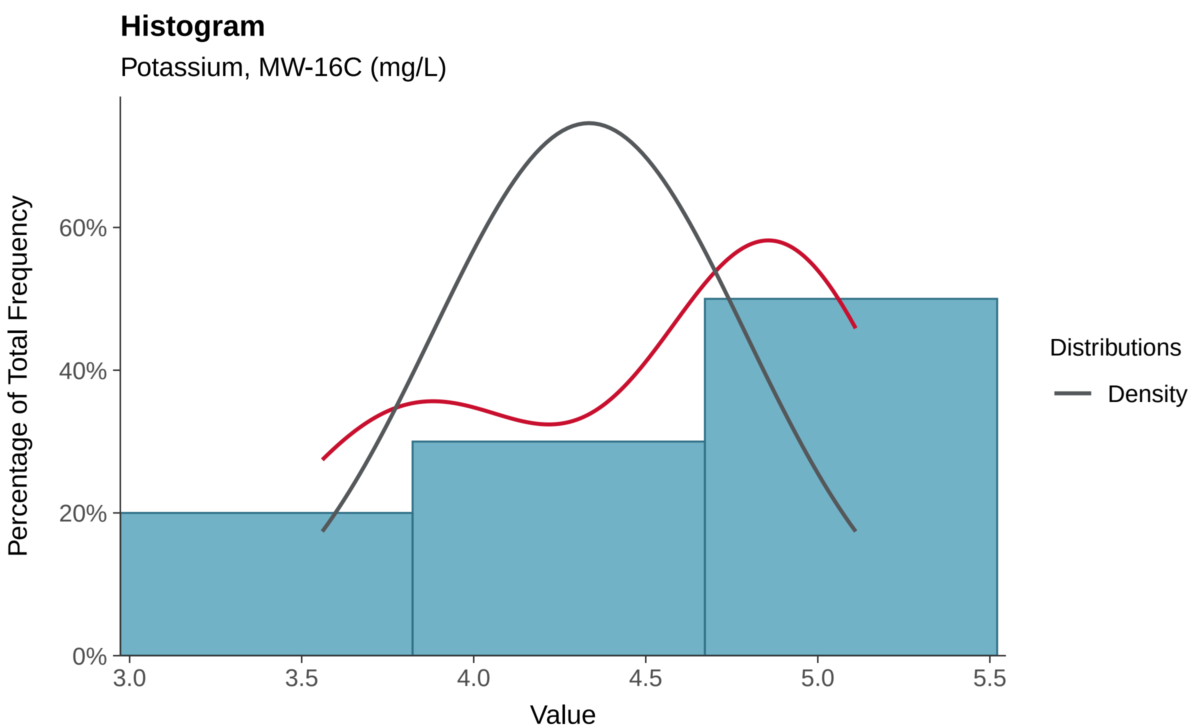
Magnesium, MW-16C (mg/L)



Other: Potassium, MW-16C

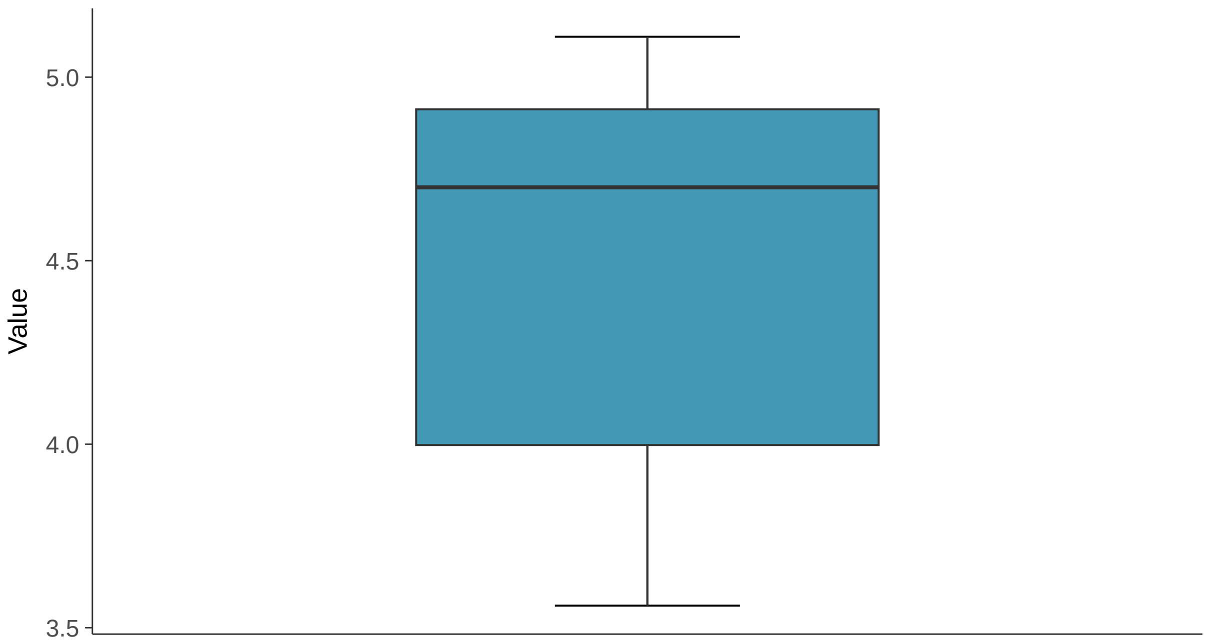
ID: 16C_4_34





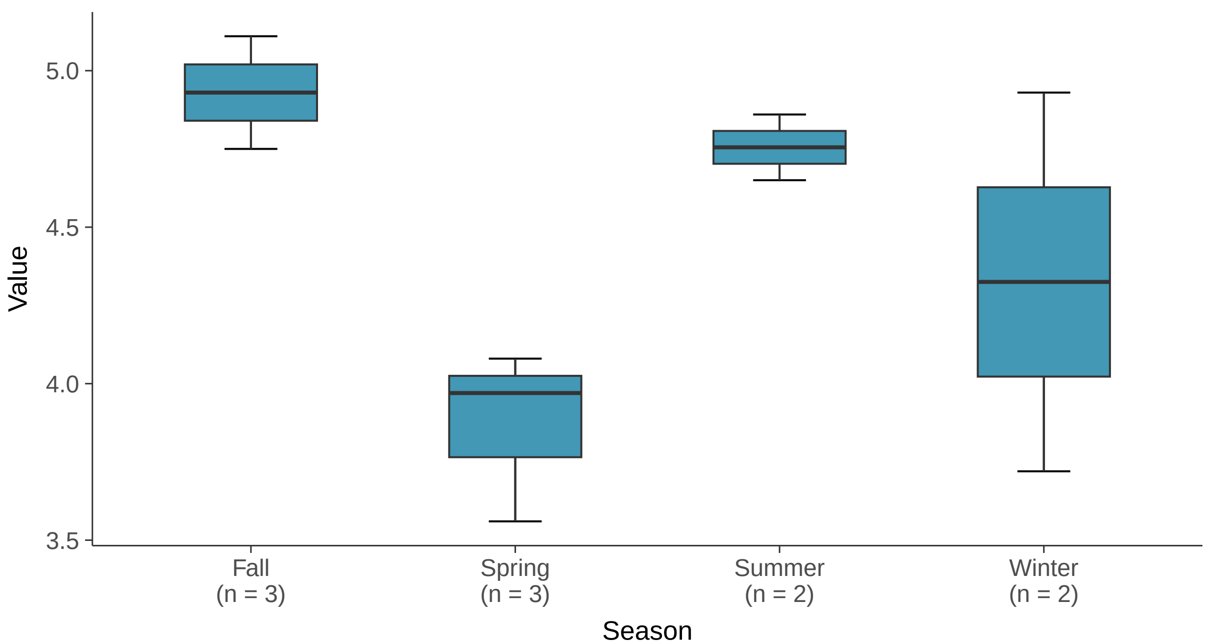
Boxplot

Potassium, MW-16C (mg/L)



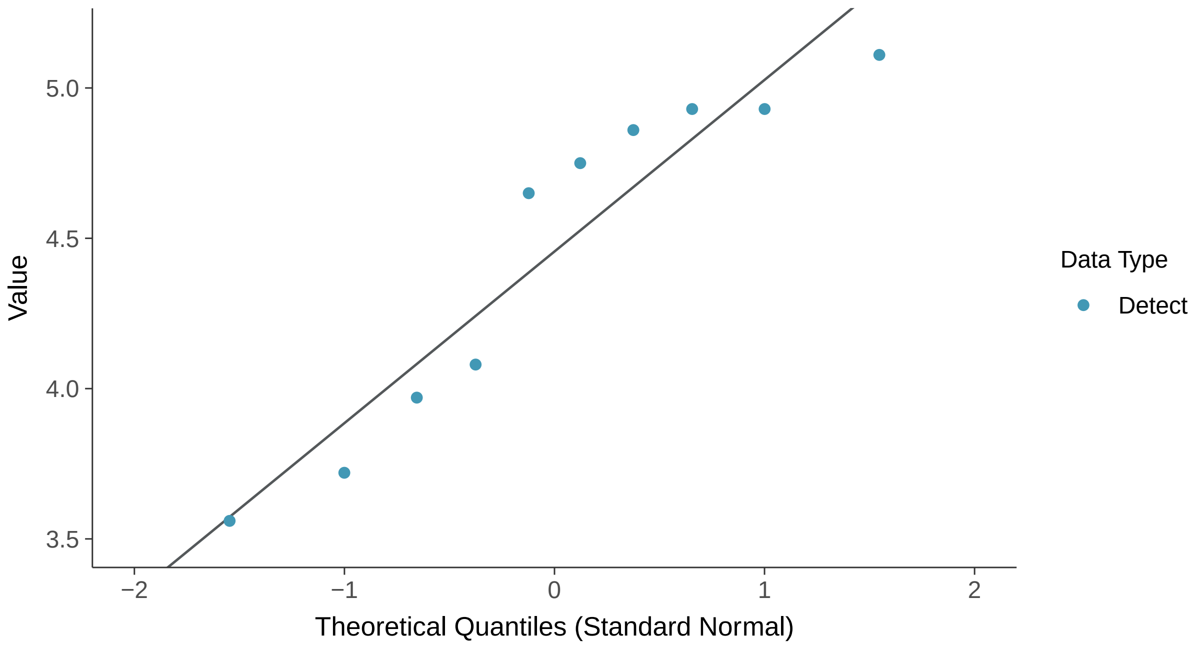
Boxplot by Season

Potassium, MW-16C (mg/L)



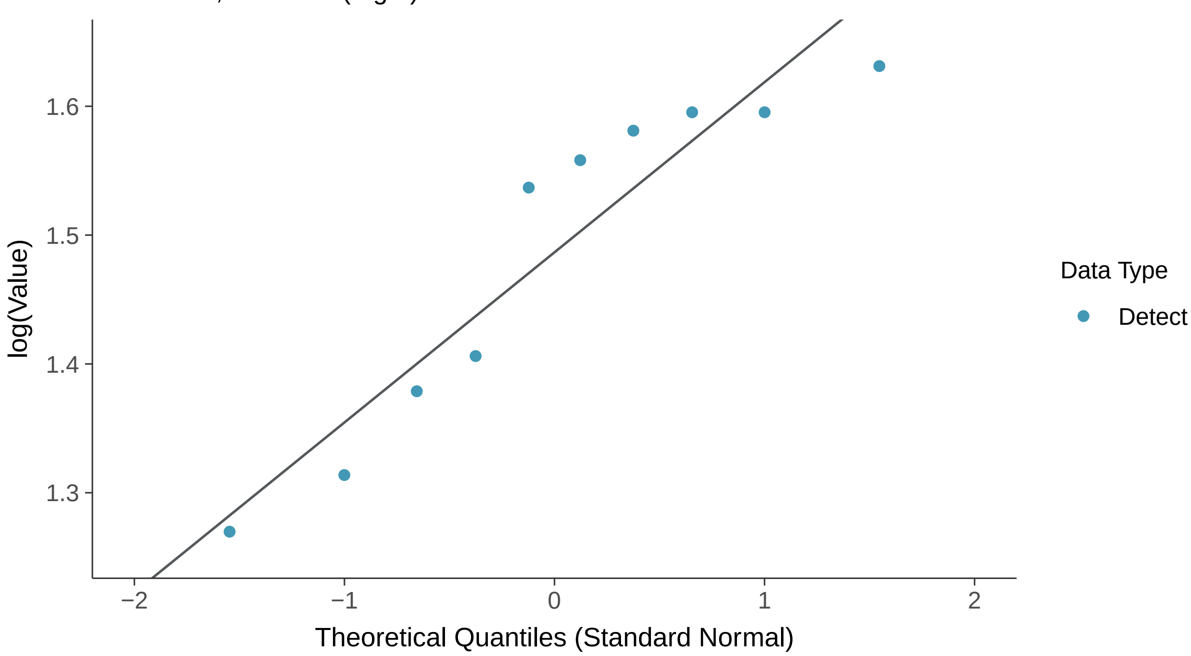
Normal Q-Q plot

Potassium, MW-16C (mg/L)



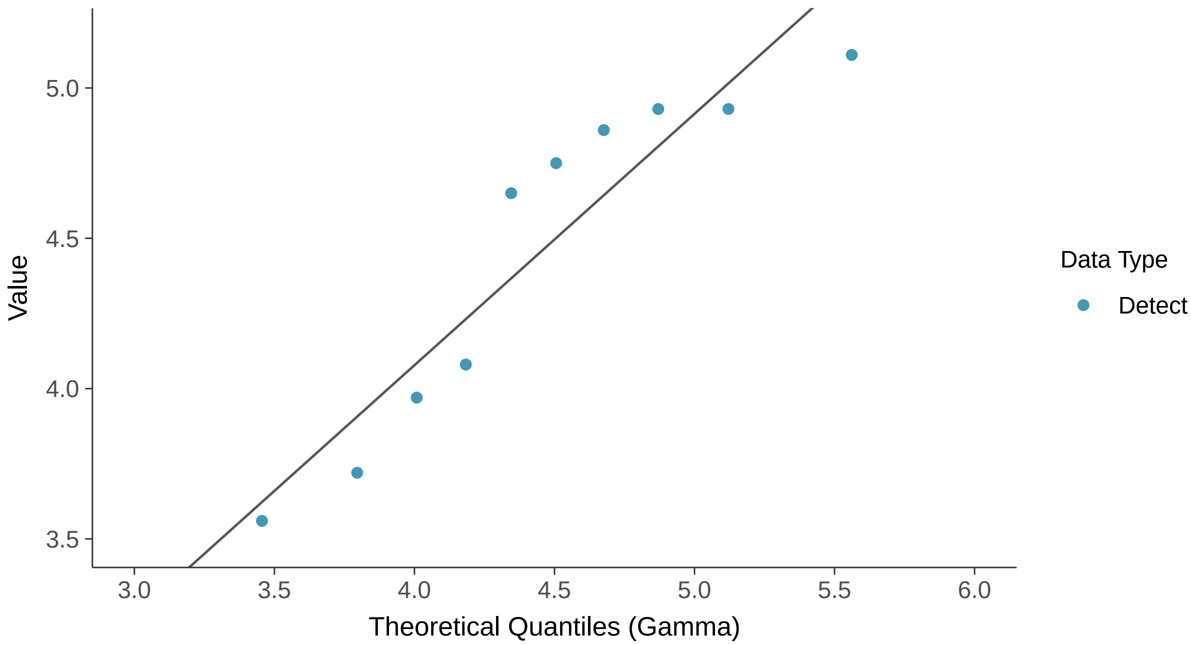
Lognormal Q-Q plot

Potassium, MW-16C (mg/L)



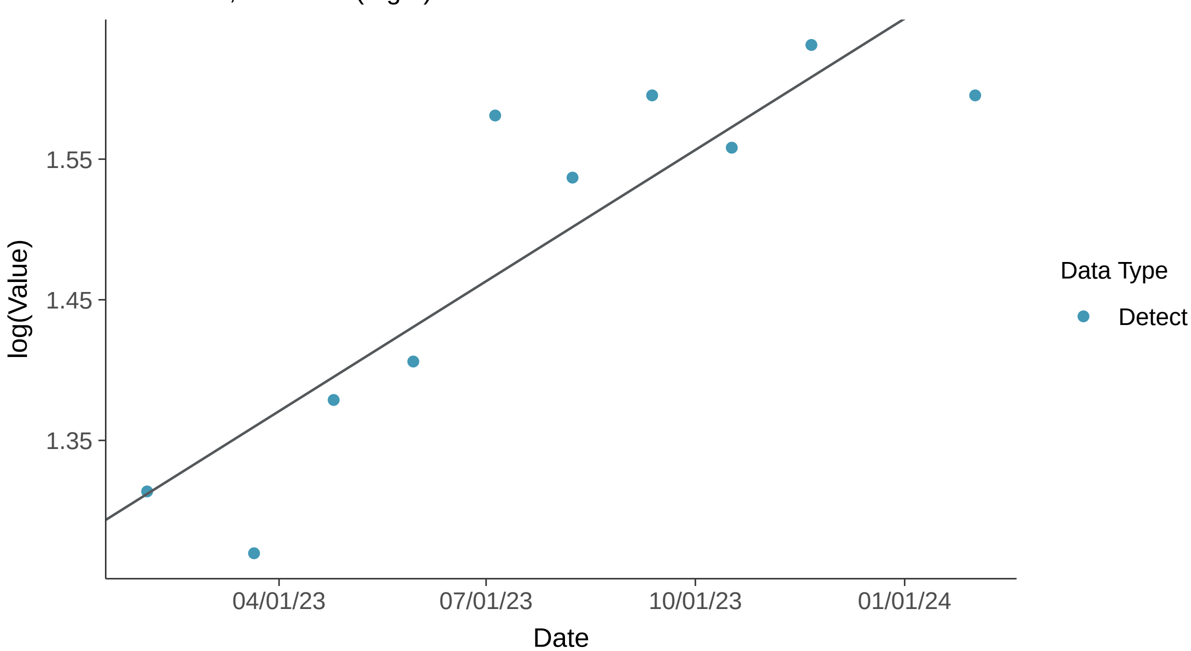
Gamma Q-Q plot

Potassium, MW-16C (mg/L)



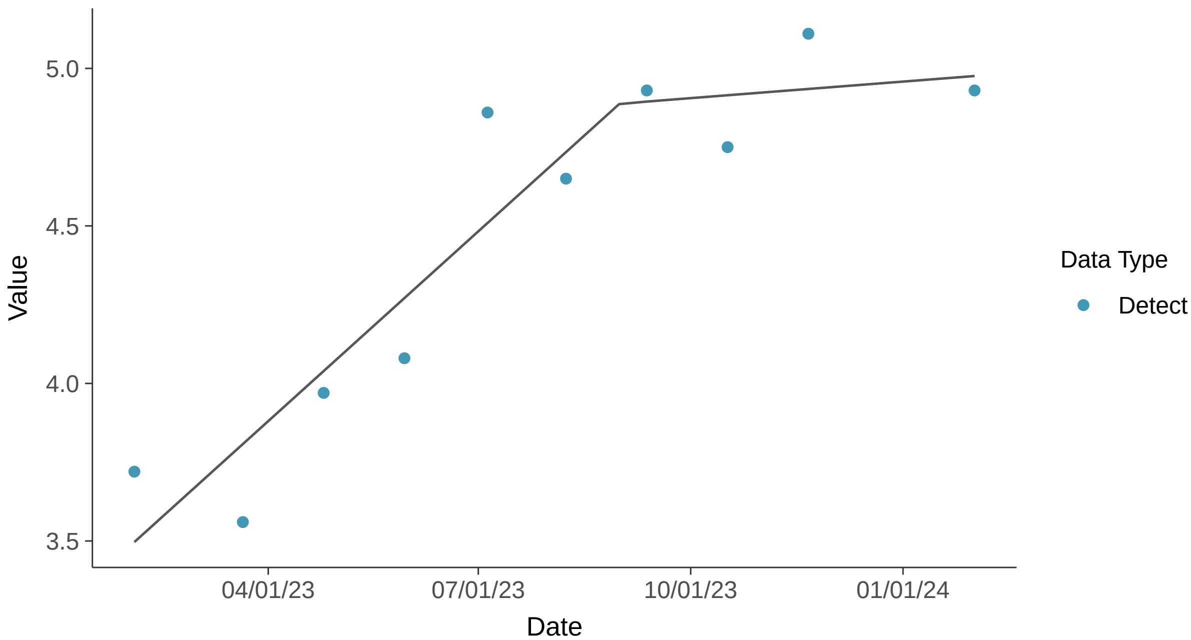
Trend Regression: Lognormal MLE

Potassium, MW-16C (mg/L)



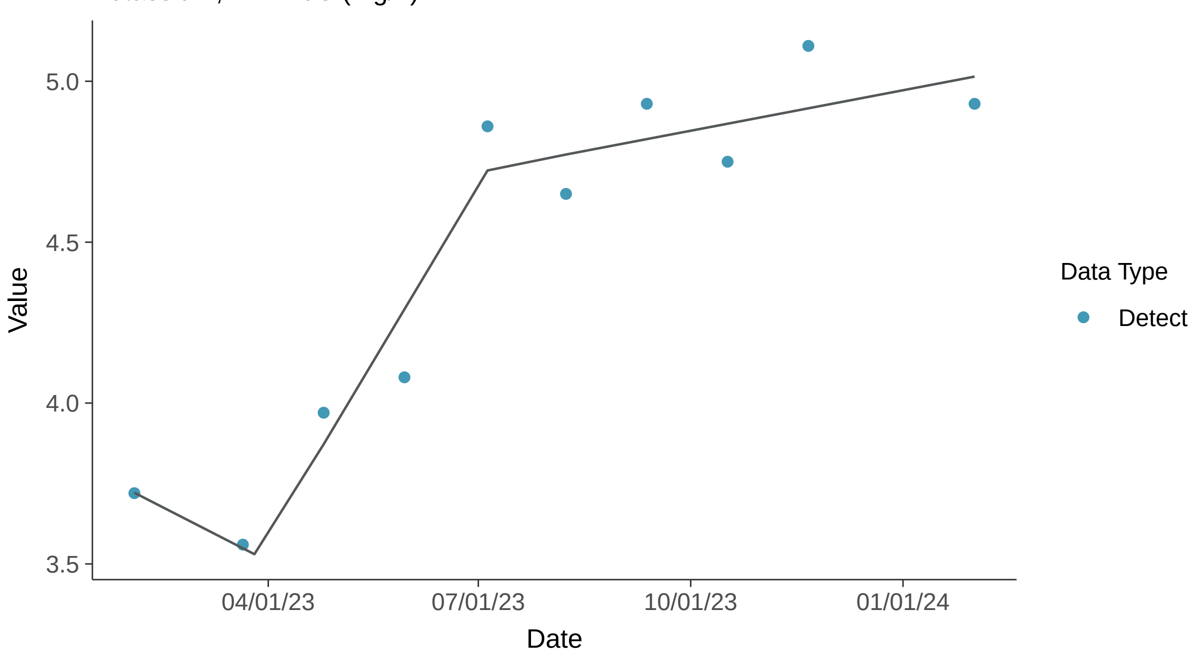
Trend Regression: Piecewise Linear-Linear

Potassium, MW-16C (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Potassium, MW-16C (mg/L)

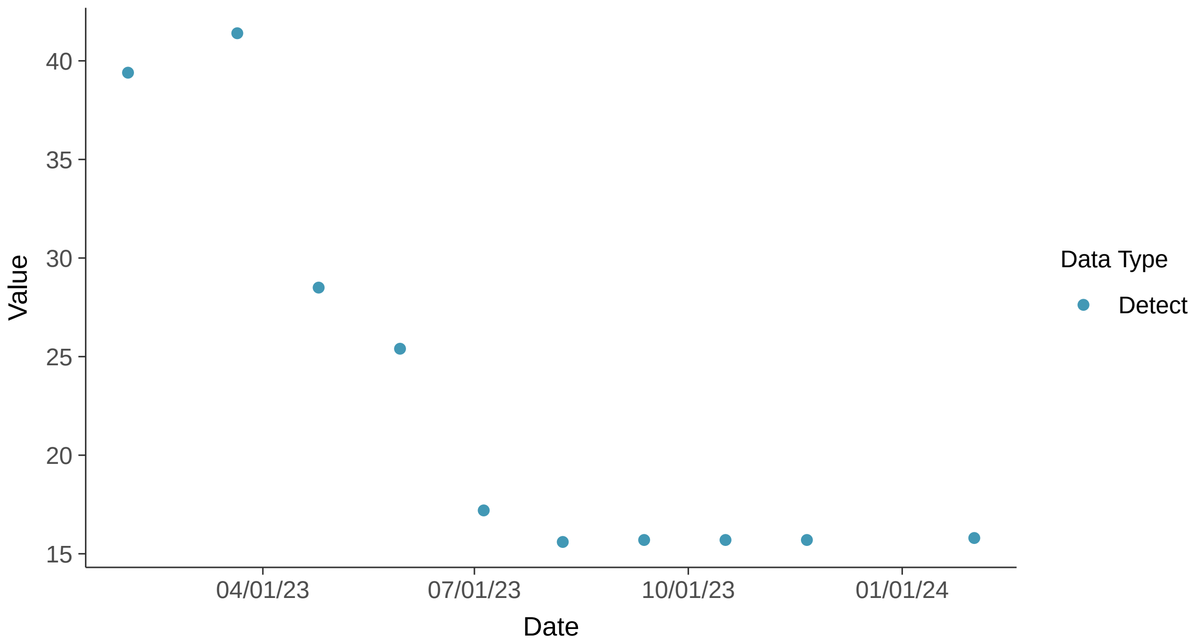


Other: Sodium, MW-16C

ID: 16C_4_35

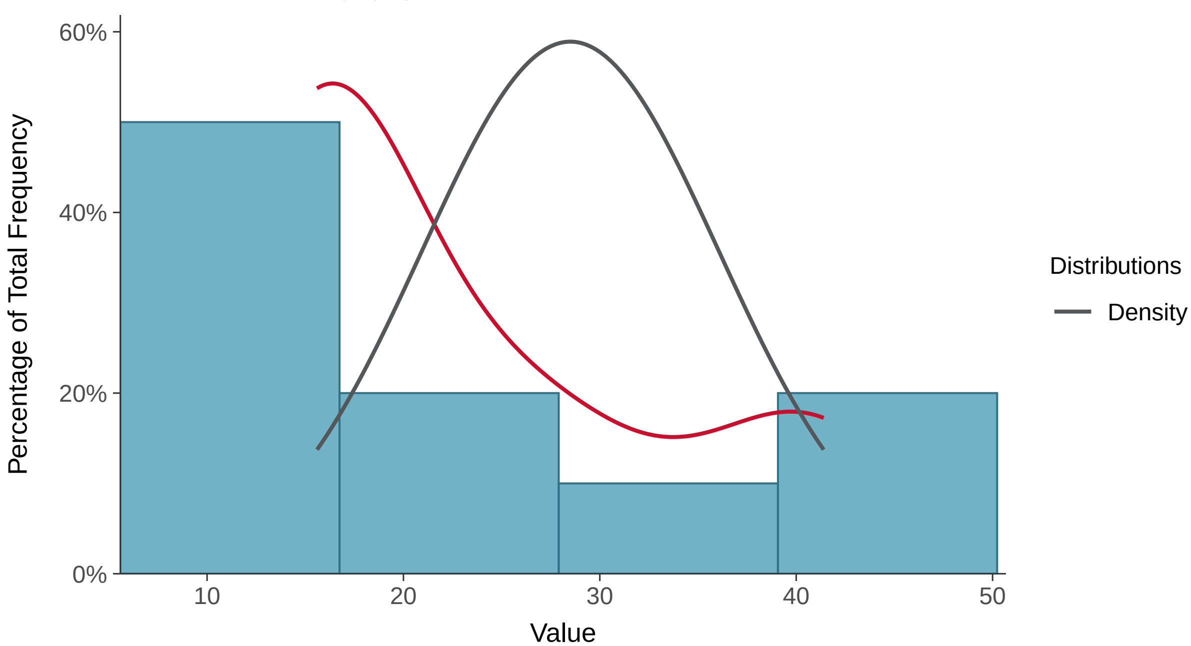
Scatter Plot

Sodium, MW-16C (mg/L)



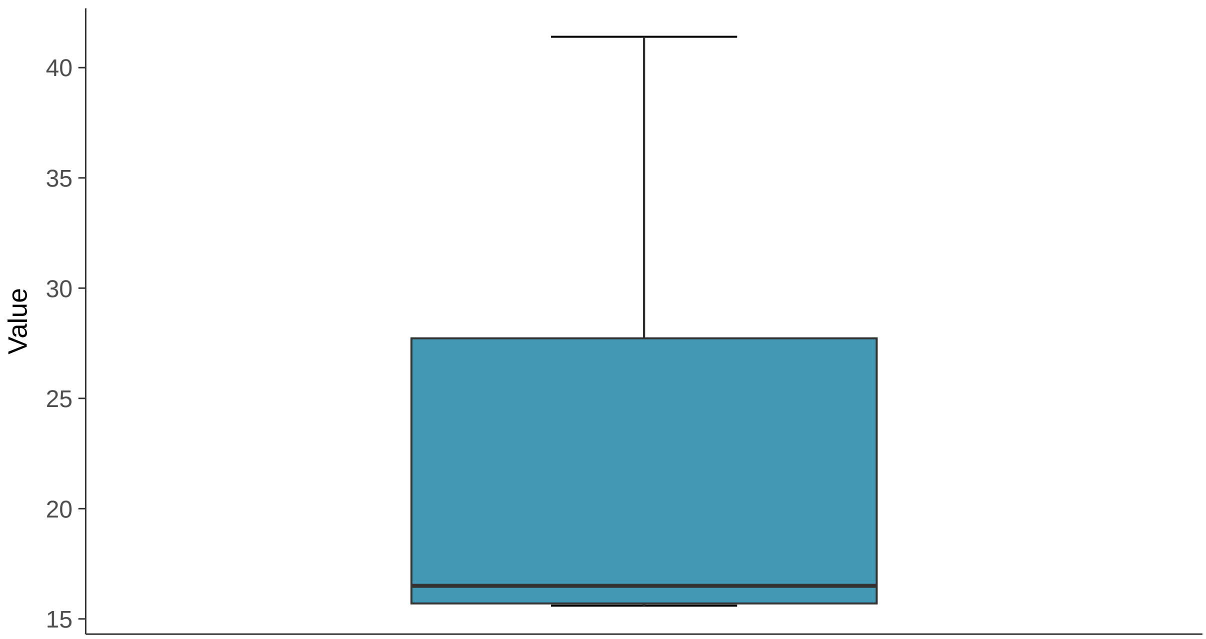
Histogram

Sodium, MW-16C (mg/L)



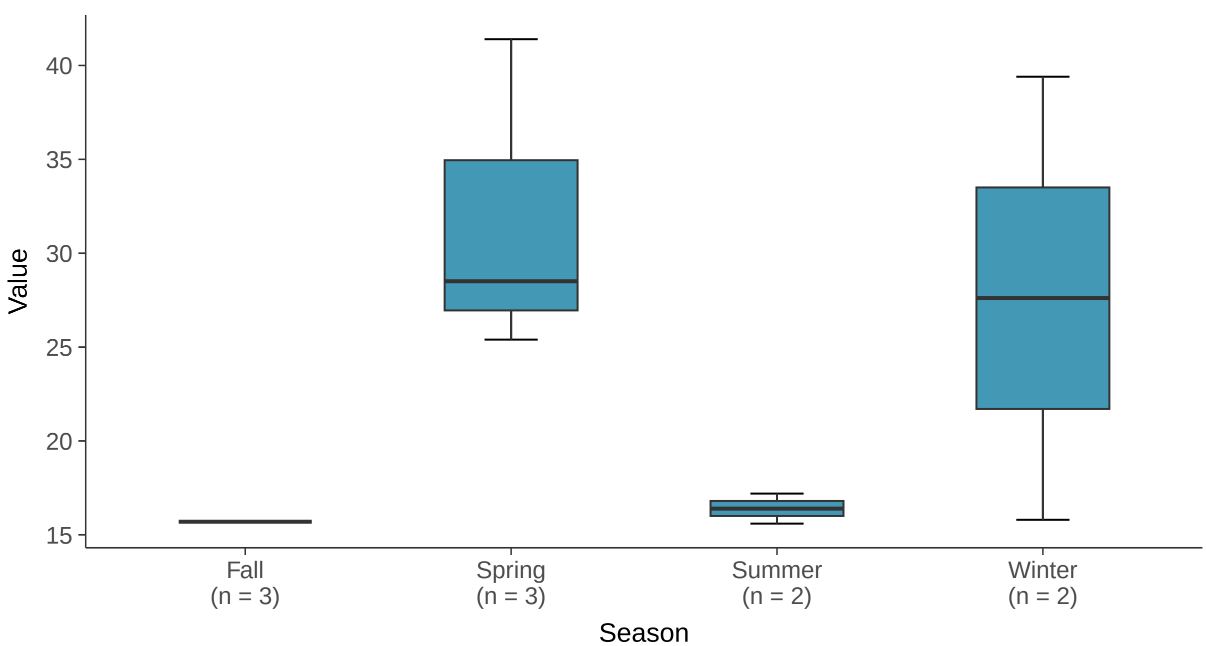
Boxplot

Sodium, MW-16C (mg/L)



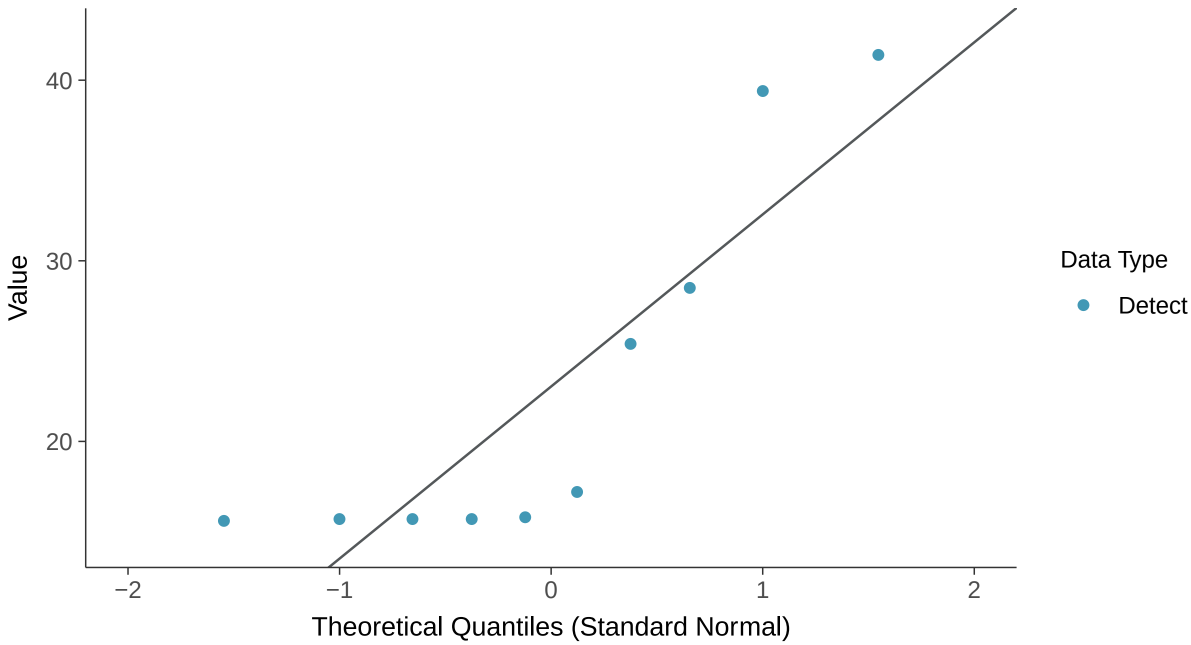
Boxplot by Season

Sodium, MW-16C (mg/L)



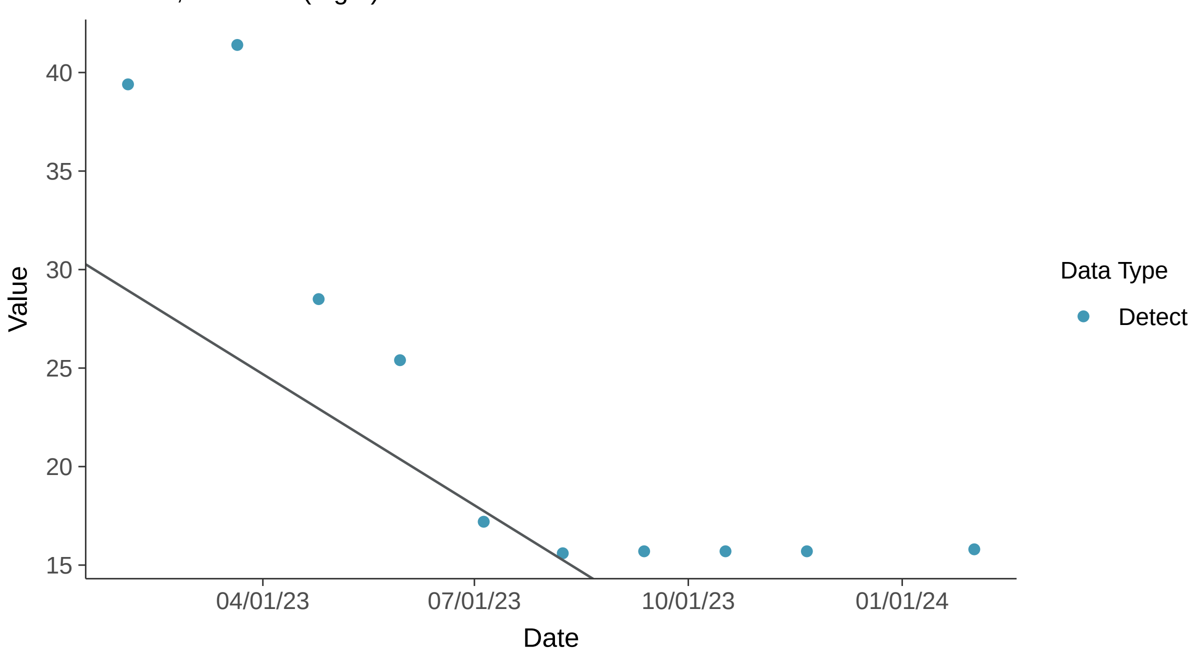
Normal Q-Q plot

Sodium, MW-16C (mg/L)



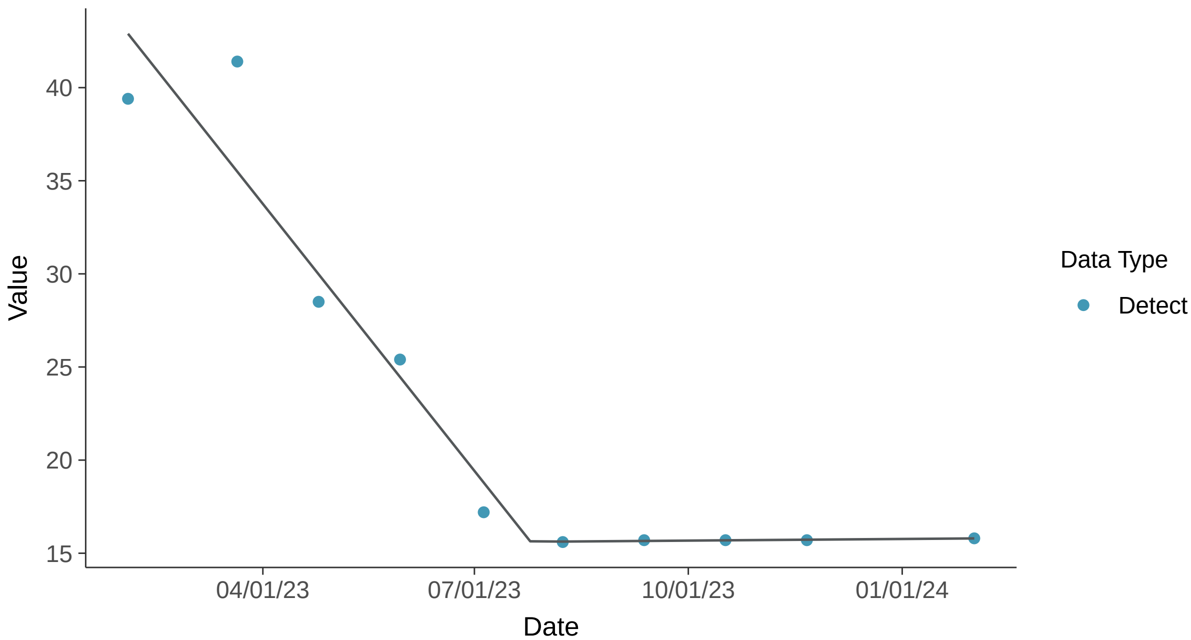
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Sodium, MW-16C (mg/L)



Trend Regression: Piecewise Linear-Linear

Sodium, MW-16C (mg/L)

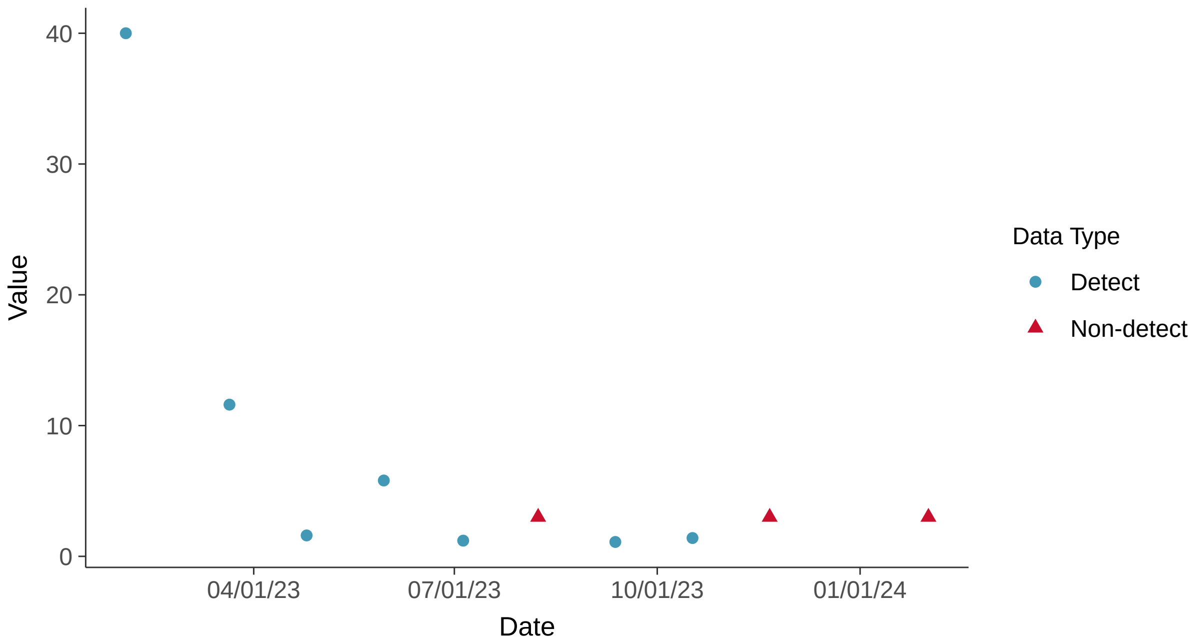


Other: Total Suspended Solids, MW-16C

ID: 16C_4_36

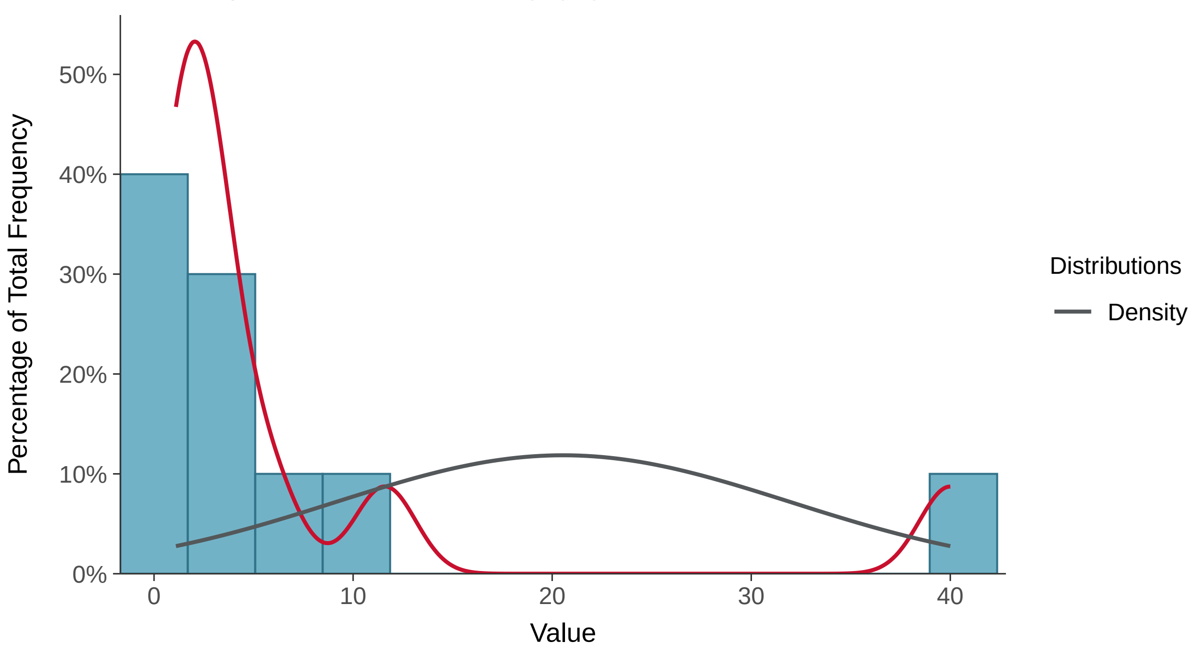
Scatter Plot

Total Suspended Solids, MW-16C (mg/L)



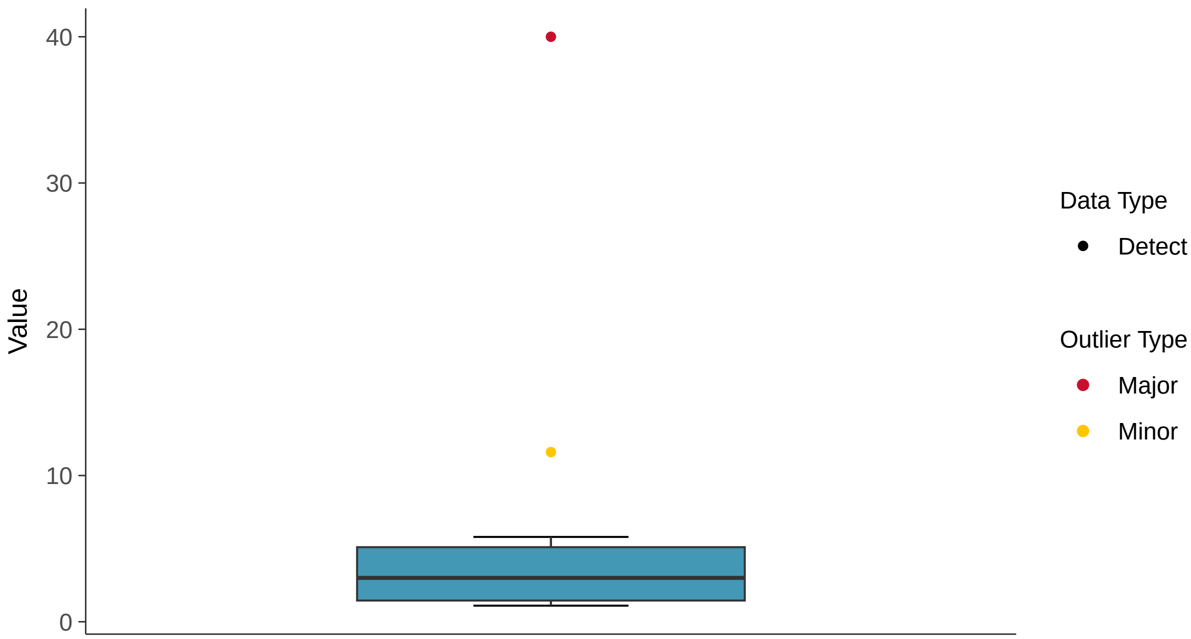
Histogram

Total Suspended Solids, MW-16C (mg/L)



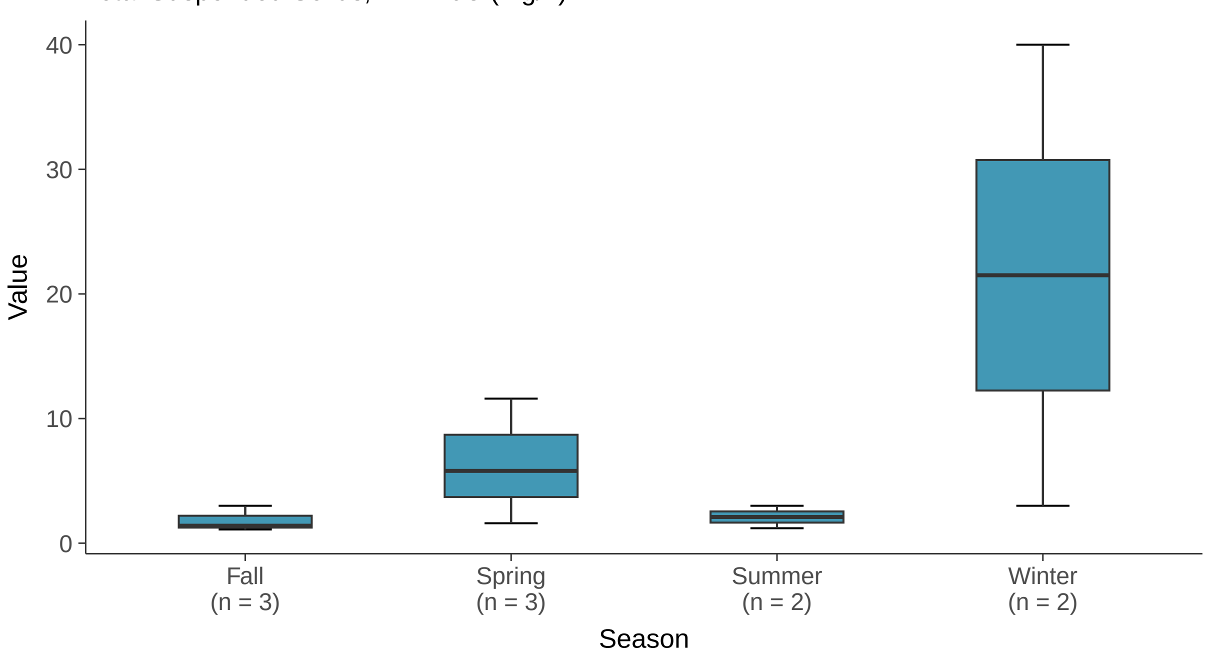
Boxplot

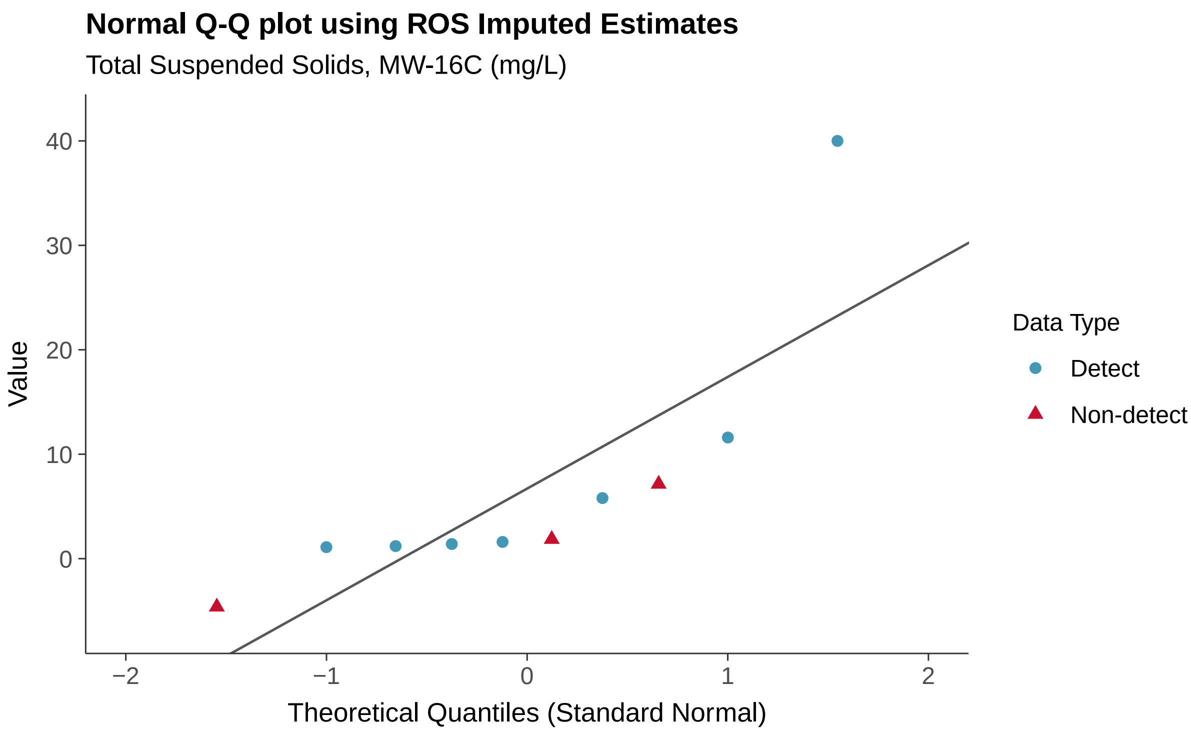
Total Suspended Solids, MW-16C (mg/L)

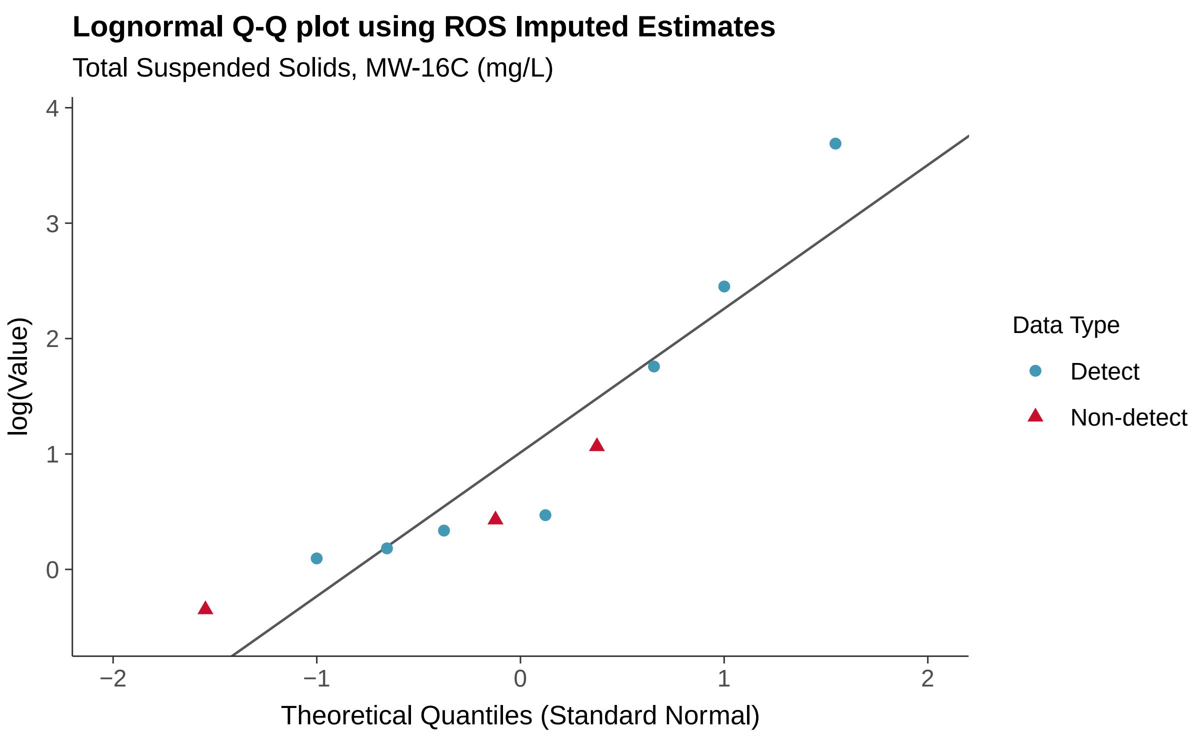


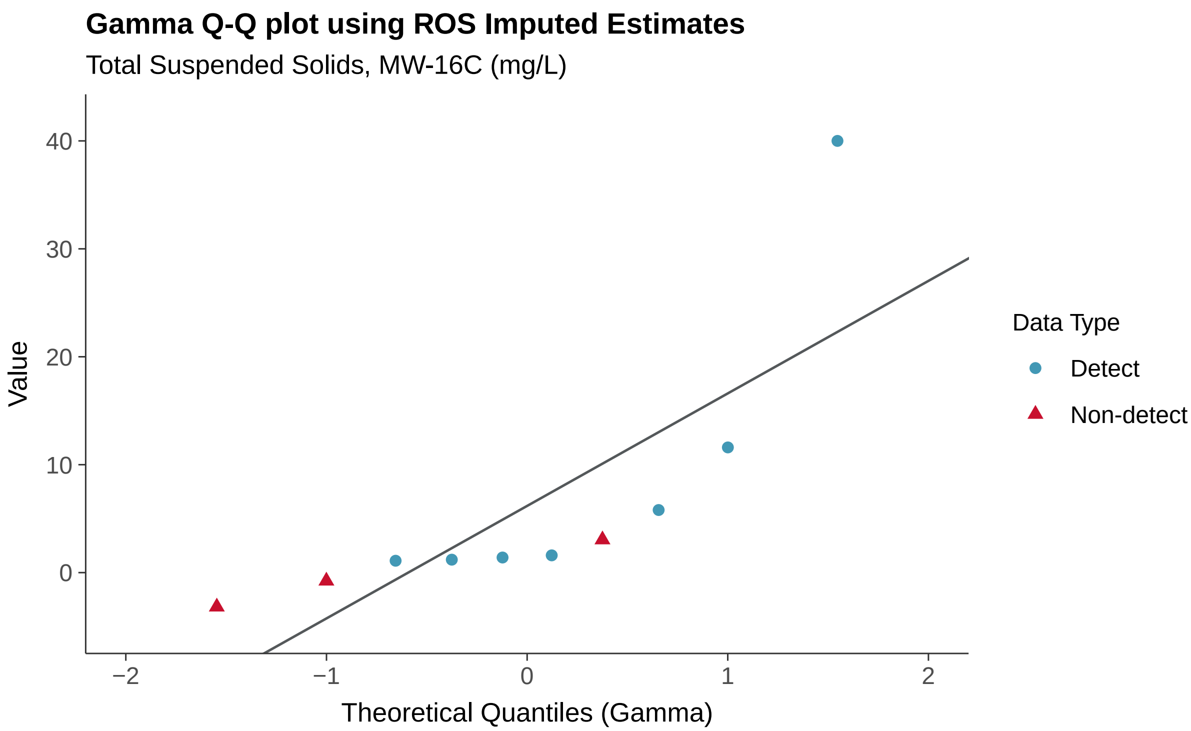
Boxplot by Season

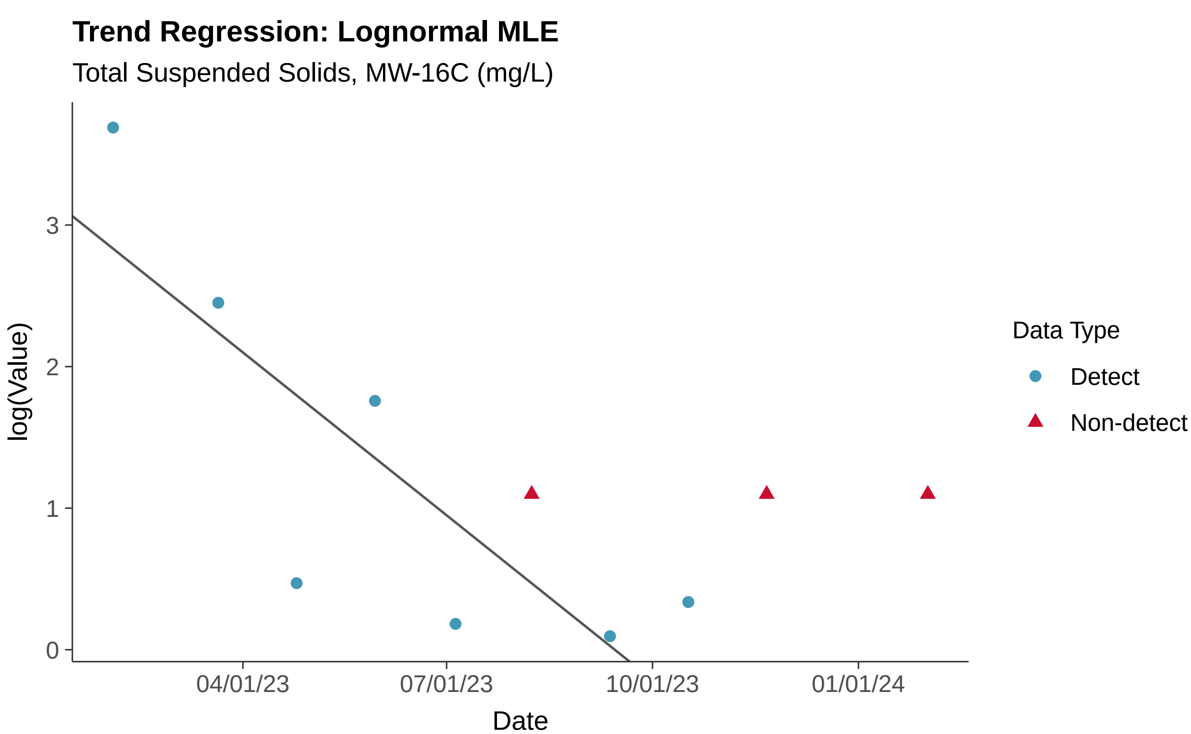
Total Suspended Solids, MW-16C (mg/L)




Normal Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-16C (mg/L)
Value
40
30
20
10
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

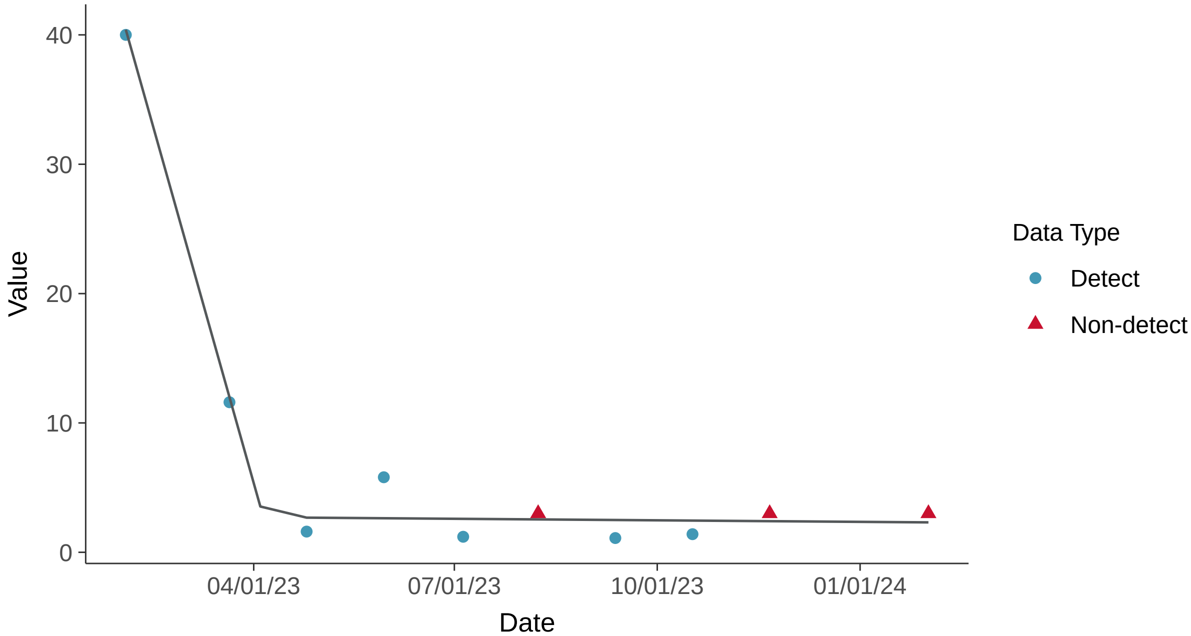

Lognormal Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-16C (mg/L)
log(Value)
4
3
2
1
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Gamma Q-Q plot using ROS Imputed Estimates
Total Suspended Solids, MW-16C (mg/L)
Value
40
30
20
10
0
−2
−1
0
1
2
Theoretical Quantiles (Gamma)
Data Type
Detect
Non-detect


Trend Regression: Lognormal MLE
Total Suspended Solids, MW-16C (mg/L)
log(Value)
3
2
1
0
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

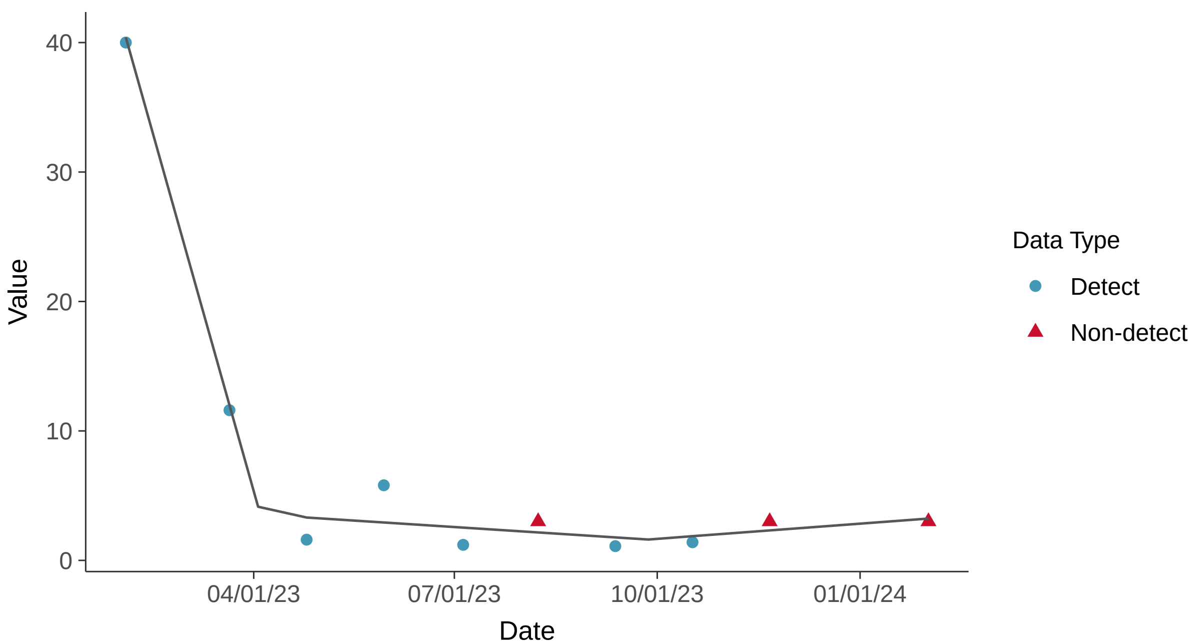
Trend Regression: Piecewise Linear-Linear

Total Suspended Solids, MW-16C (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Total Suspended Solids, MW-16C (mg/L)

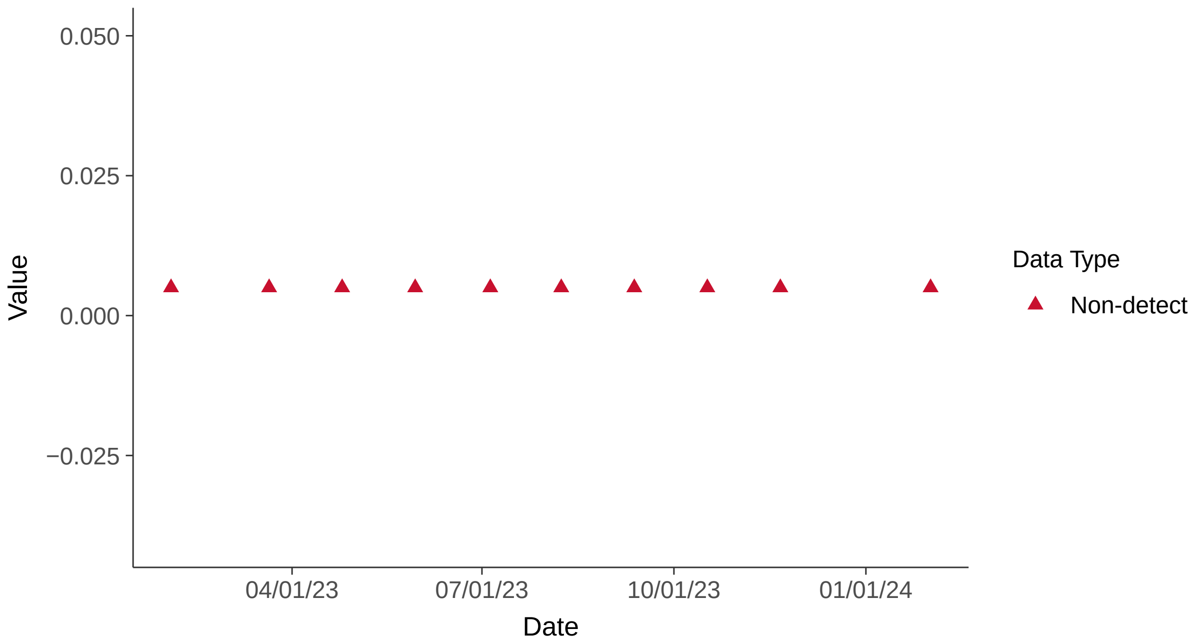


Part 115: Copper, MW-16C

ID: 16C_5_37

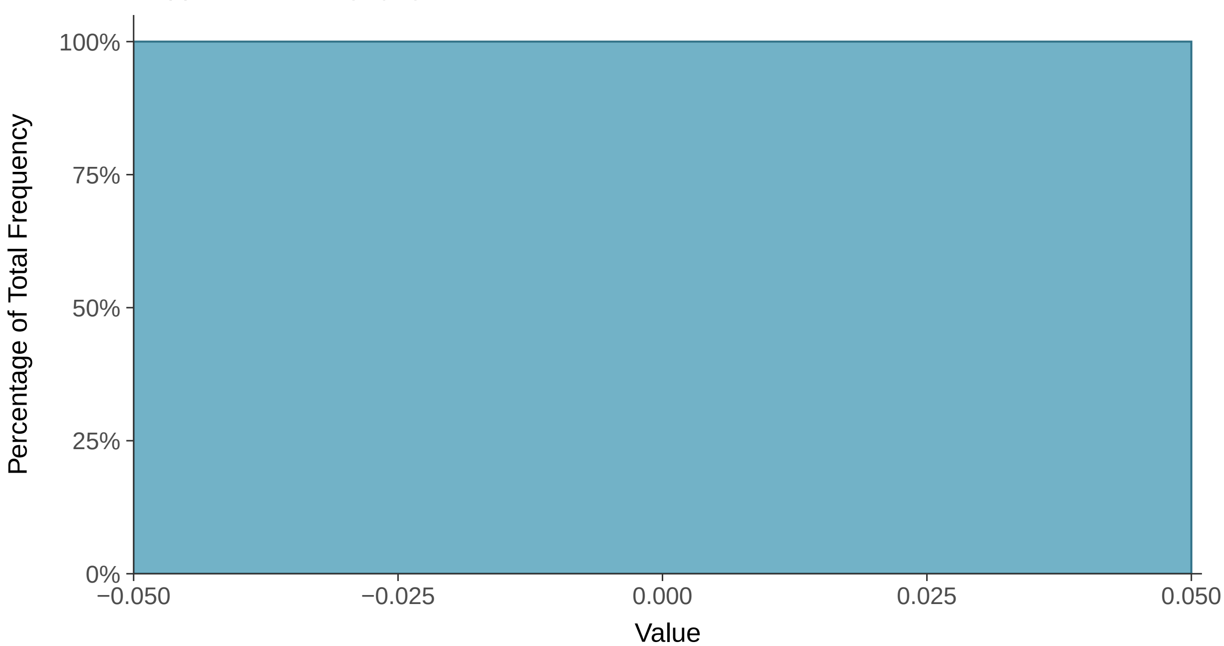
Scatter Plot

Copper, MW-16C (mg/L)



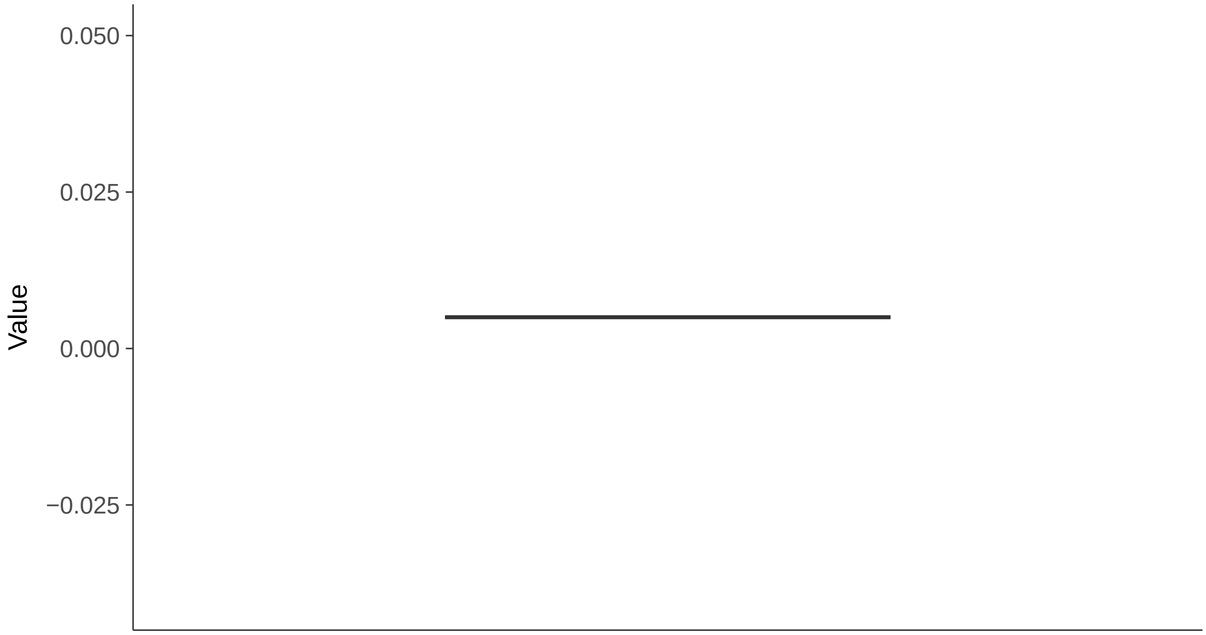
Histogram

Copper, MW-16C (mg/L)



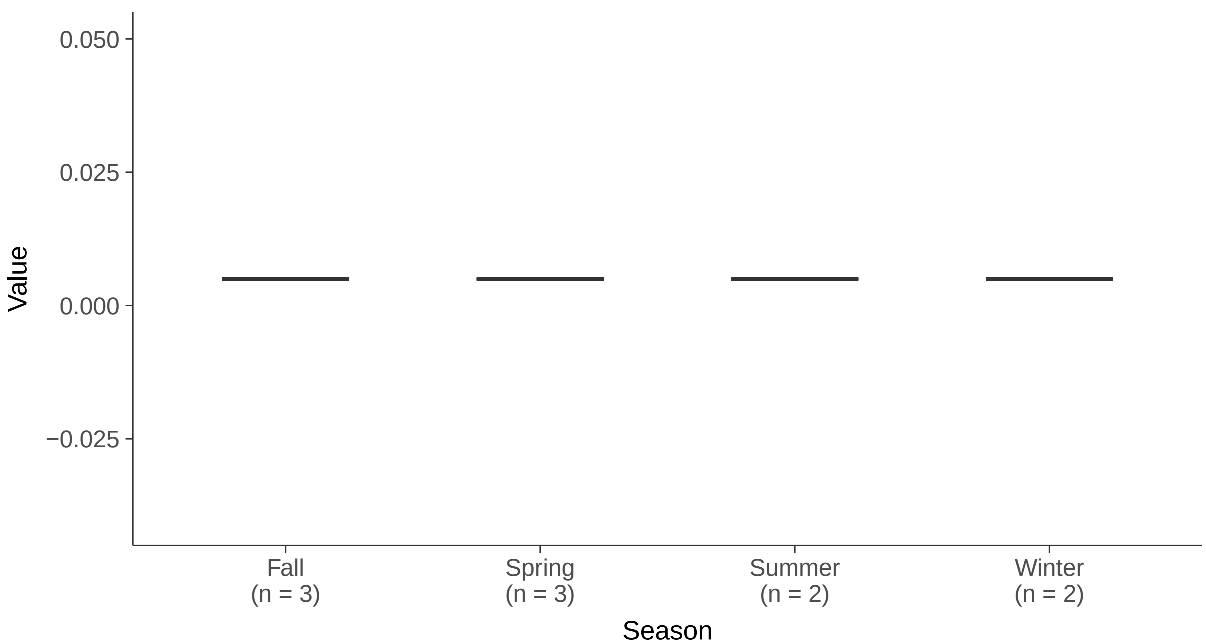
Boxplot

Copper, MW-16C (mg/L)



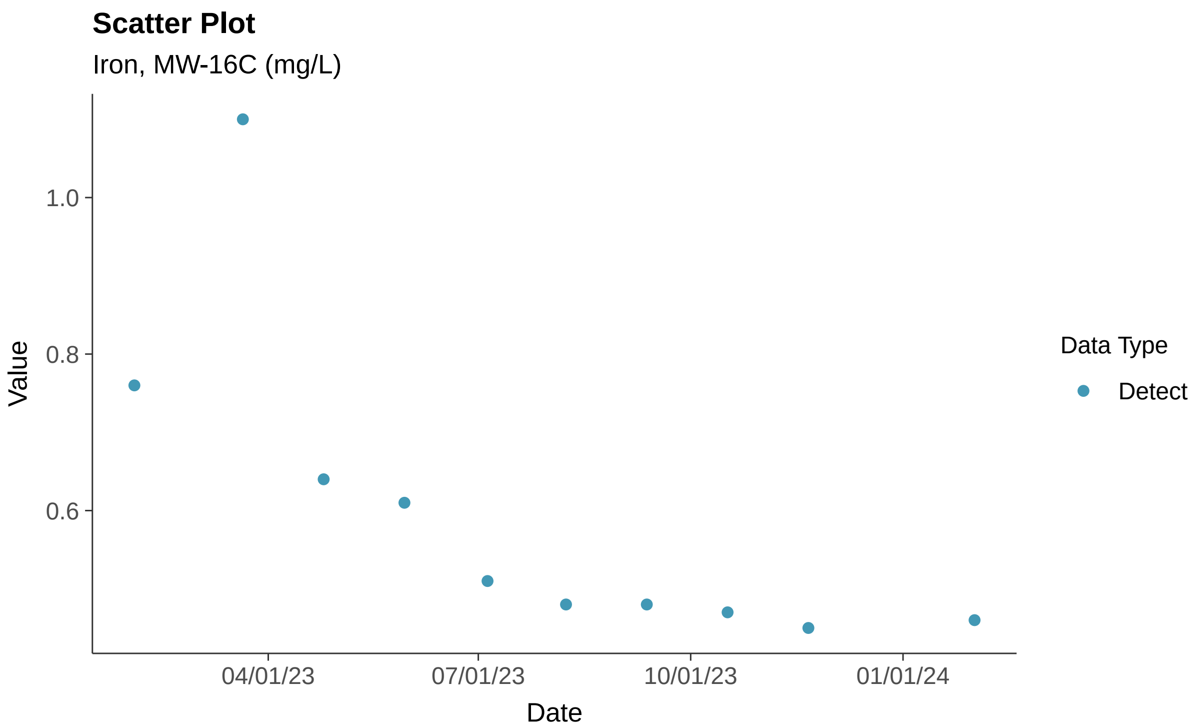
Boxplot by Season

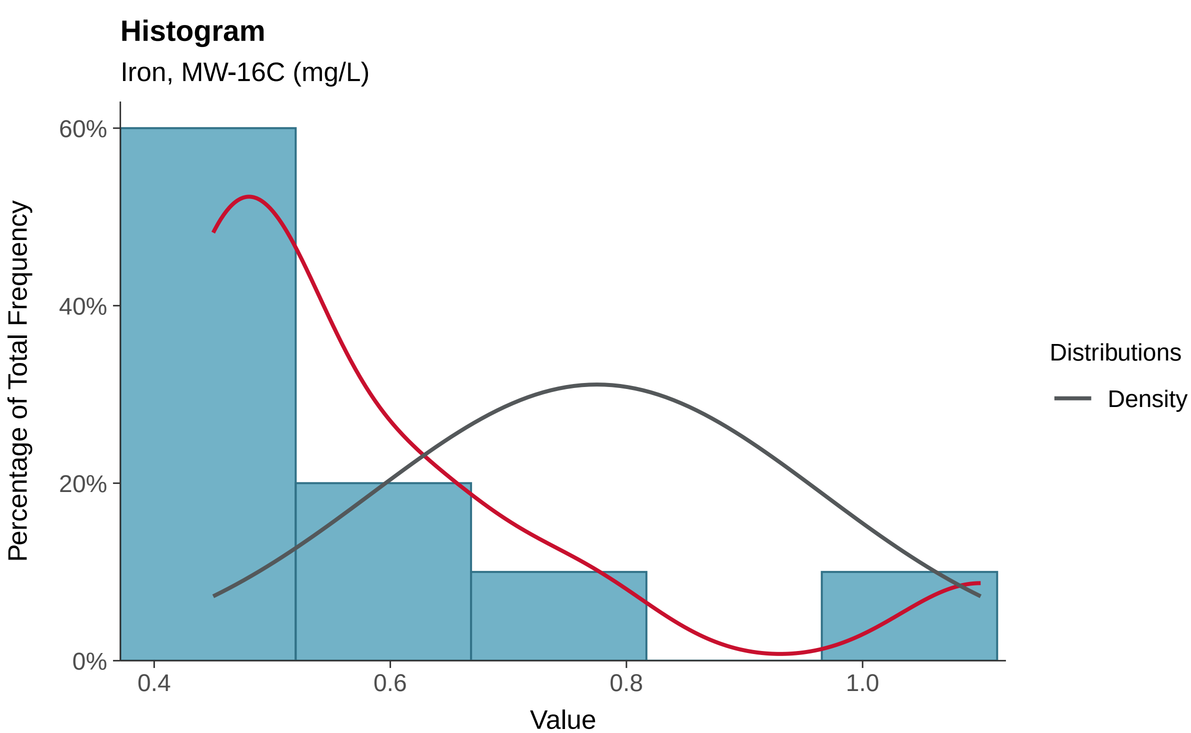
Copper, MW-16C (mg/L)



Part 115: Iron, MW-16C

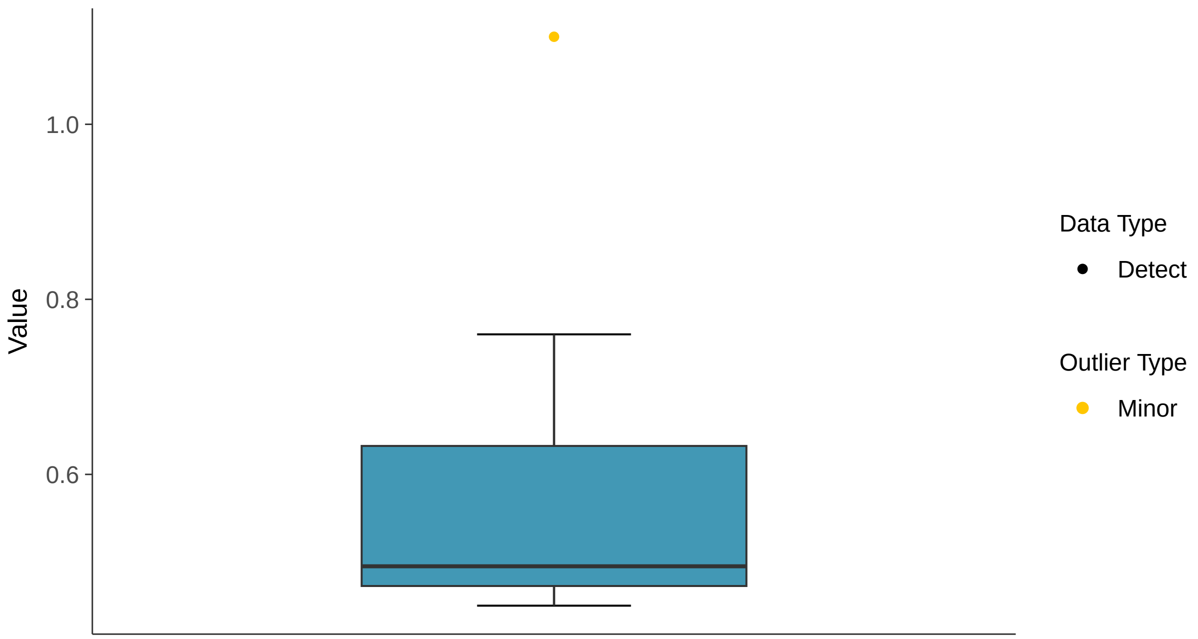
ID: 16C_5_38





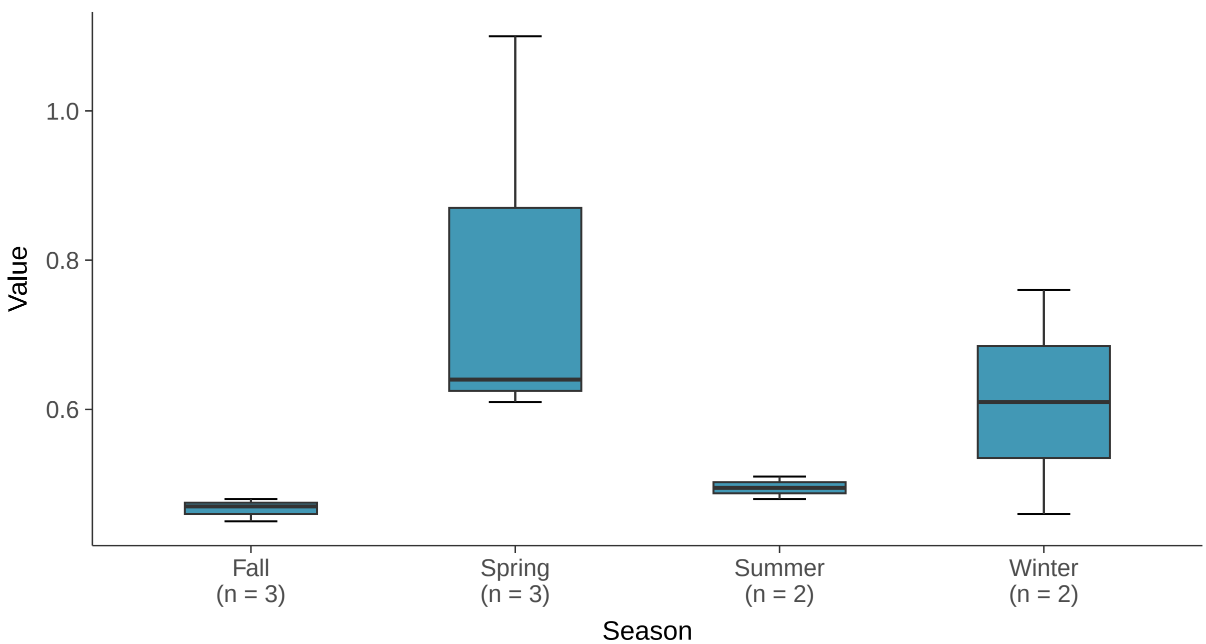
Boxplot

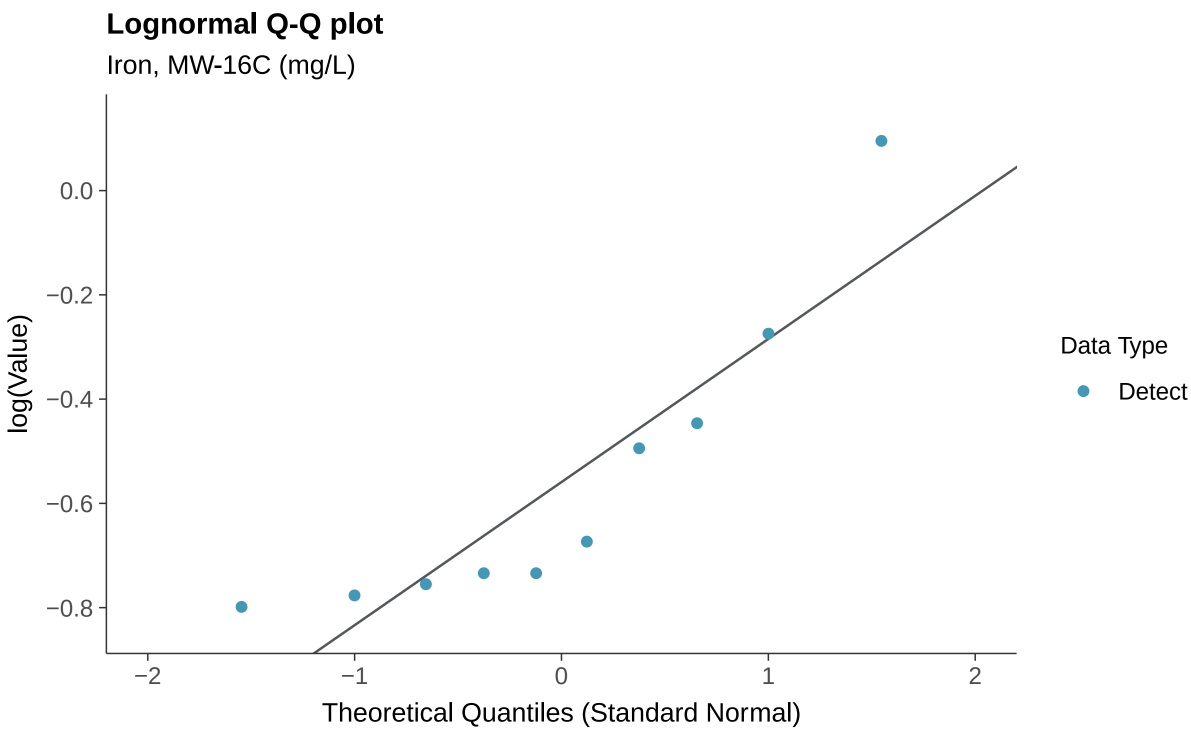
Iron, MW-16C (mg/L)

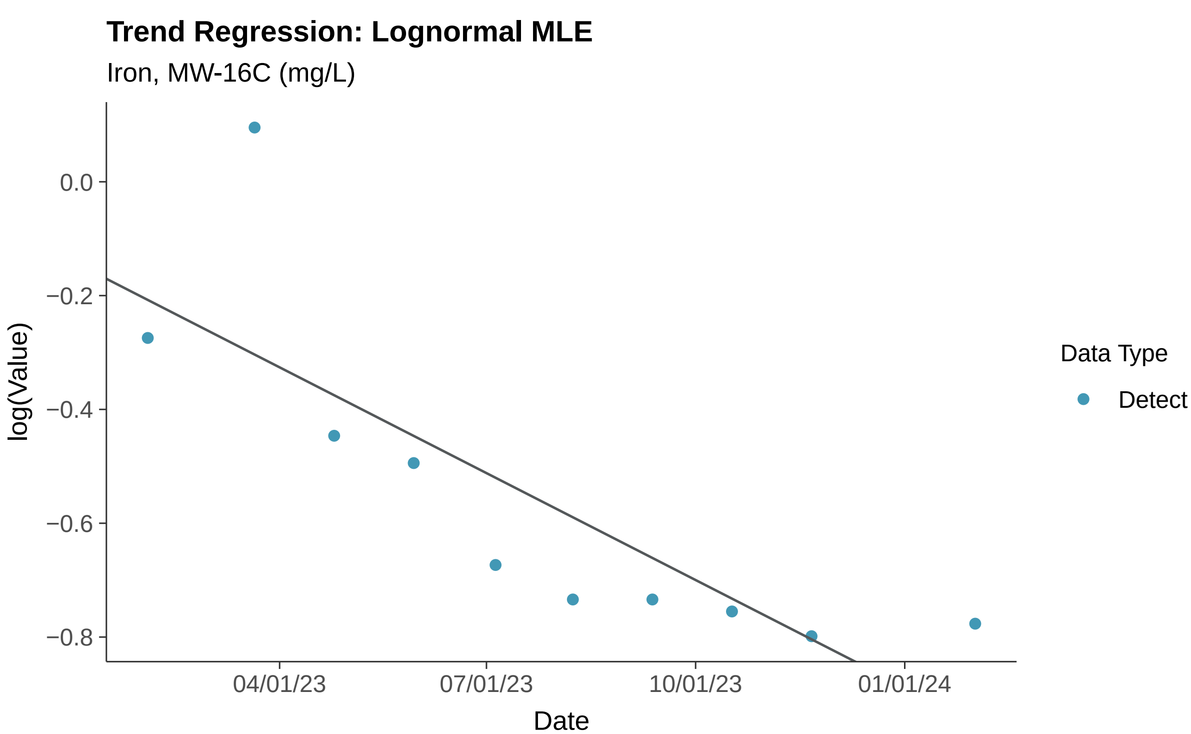


Boxplot by Season

Iron, MW-16C (mg/L)

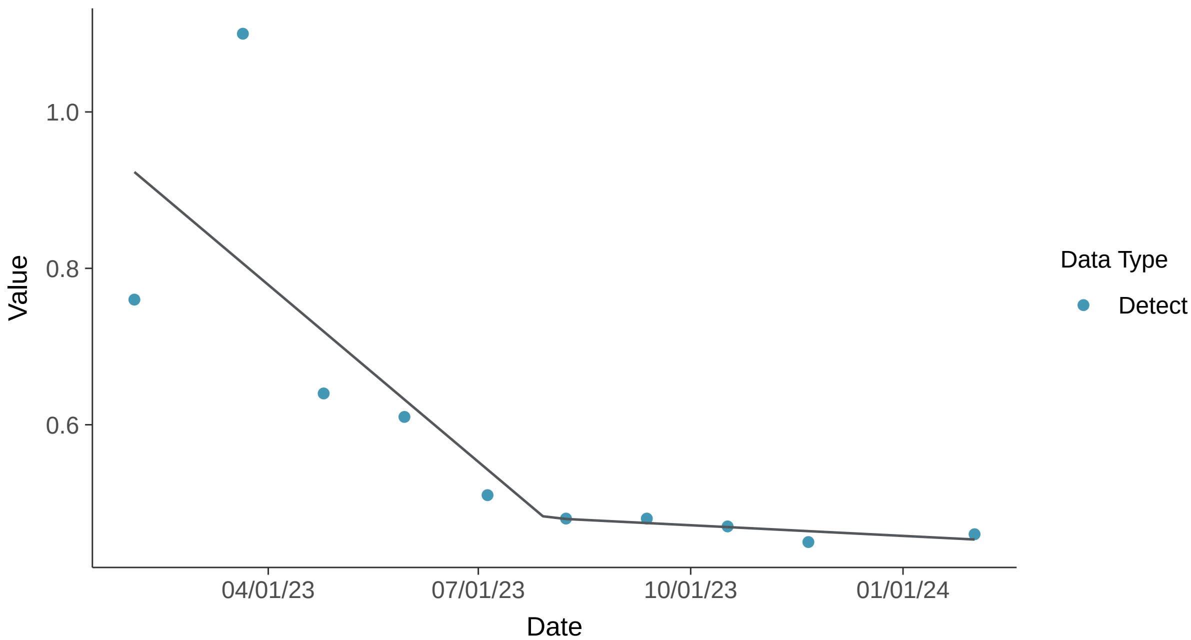



Lognormal Q-Q plot
Iron, MW-16C (mg/L)
log(Value)
0.0
−0.2
−0.4
−0.6
−0.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Iron, MW-16C (mg/L)
log(Value)
0.0
−0.2
−0.4
−0.6
−0.8
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

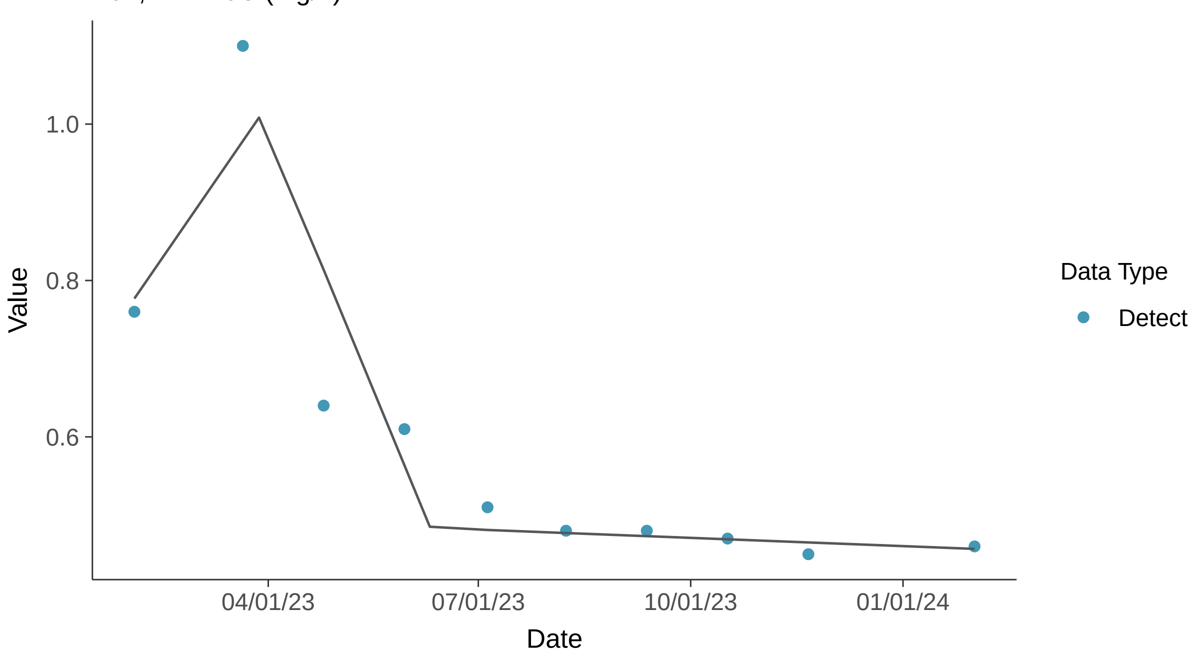
Trend Regression: Piecewise Linear-Linear

Iron, MW-16C (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Iron, MW-16C (mg/L)

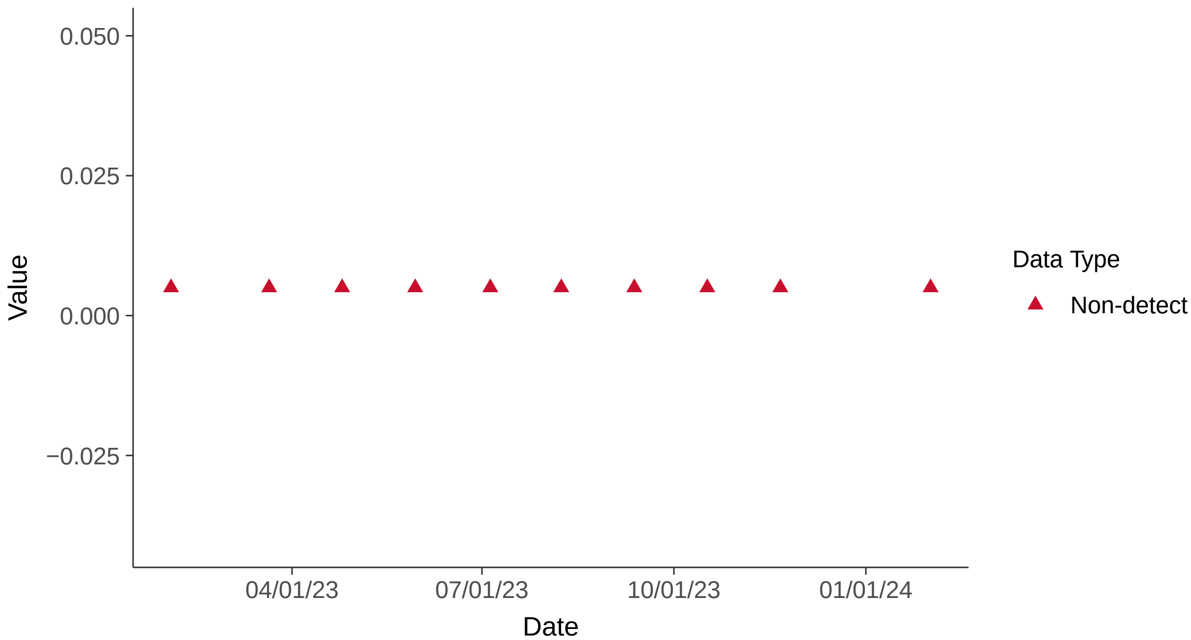


Part 115: Nickel, MW-16C

ID: 16C_5_39

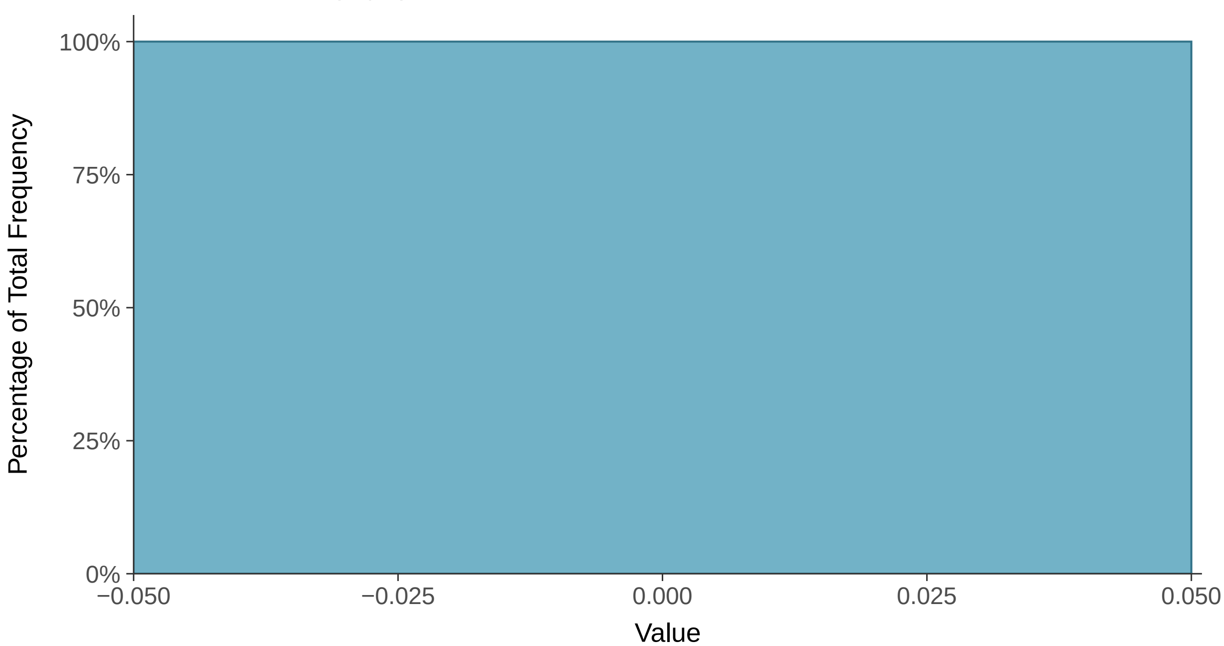
Scatter Plot

Nickel, MW-16C (mg/L)



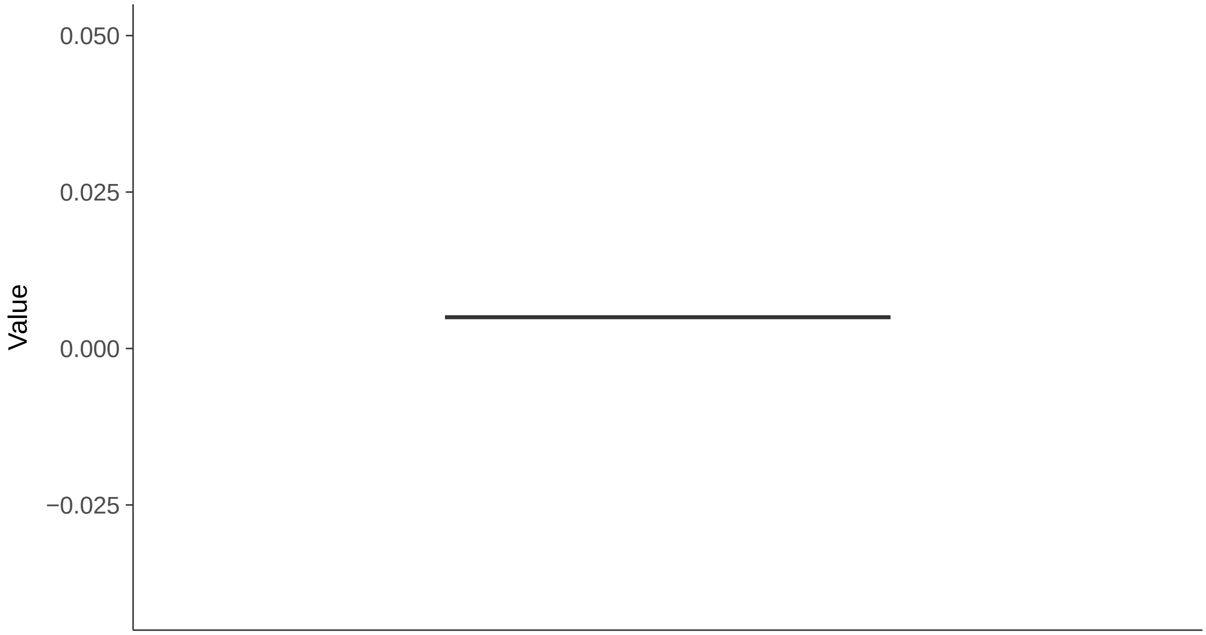
Histogram

Nickel, MW-16C (mg/L)



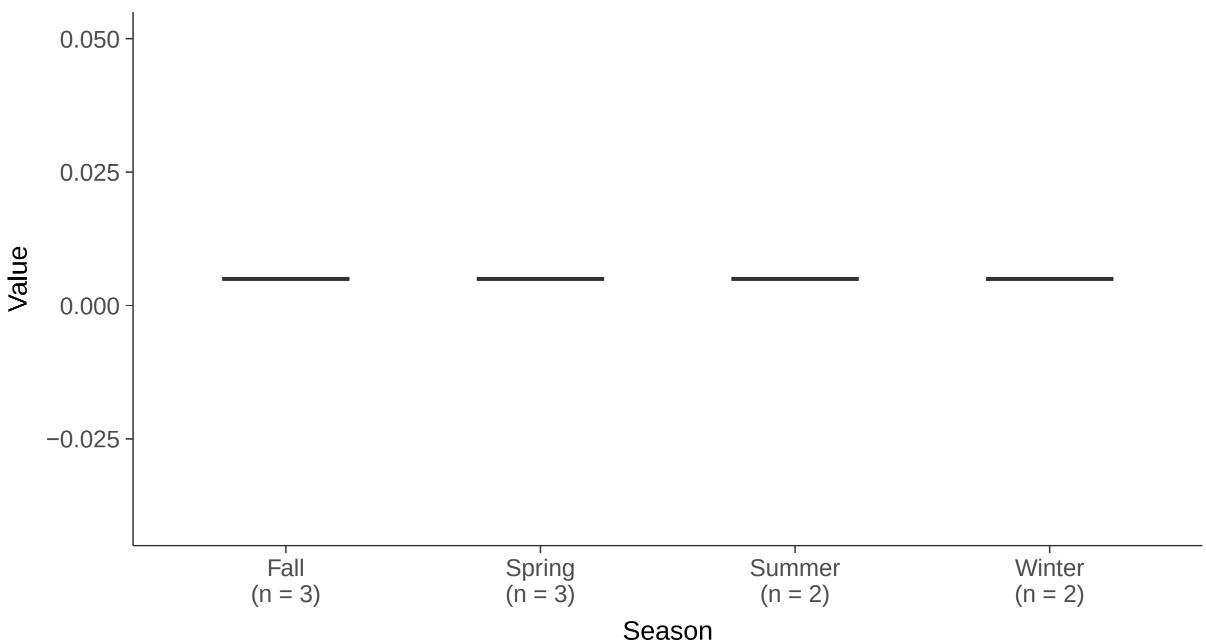
Boxplot

Nickel, MW-16C (mg/L)



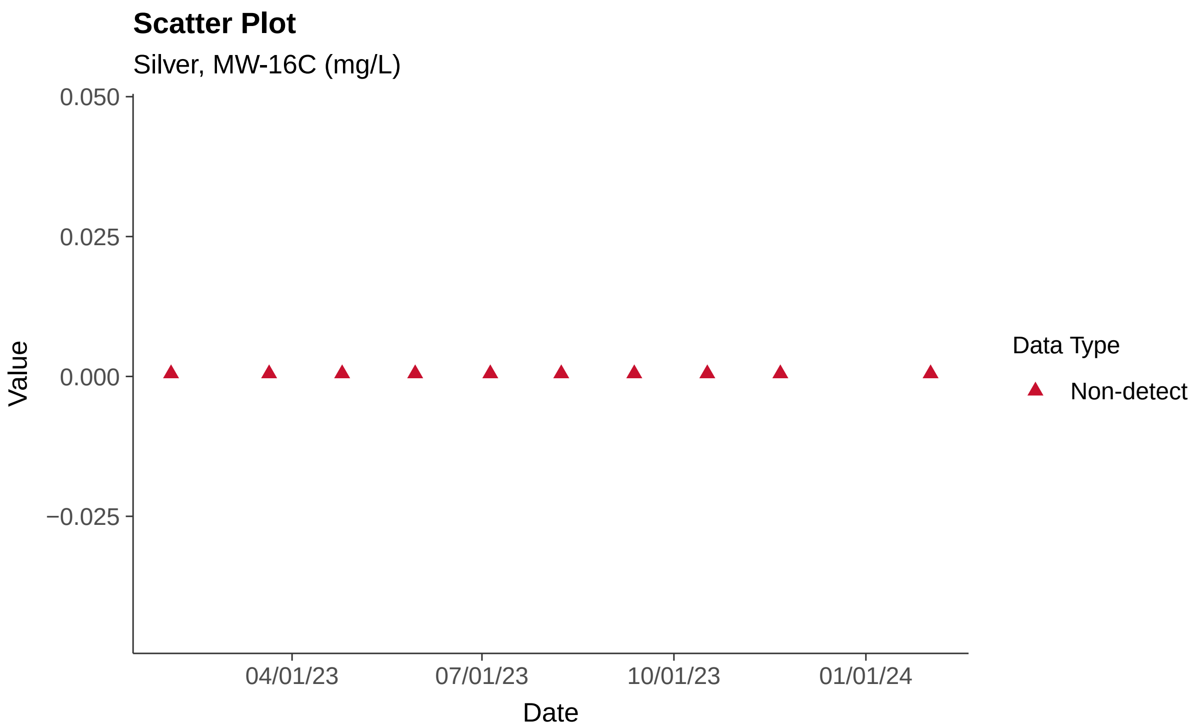
Boxplot by Season

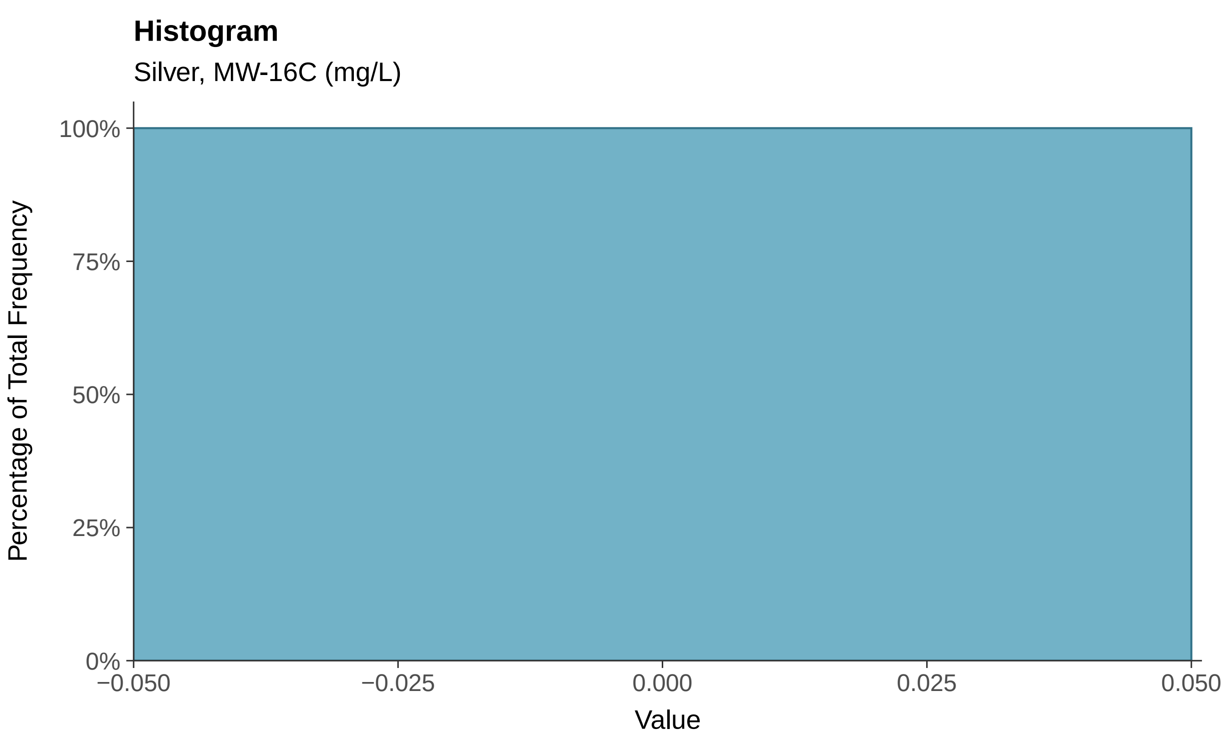
Nickel, MW-16C (mg/L)

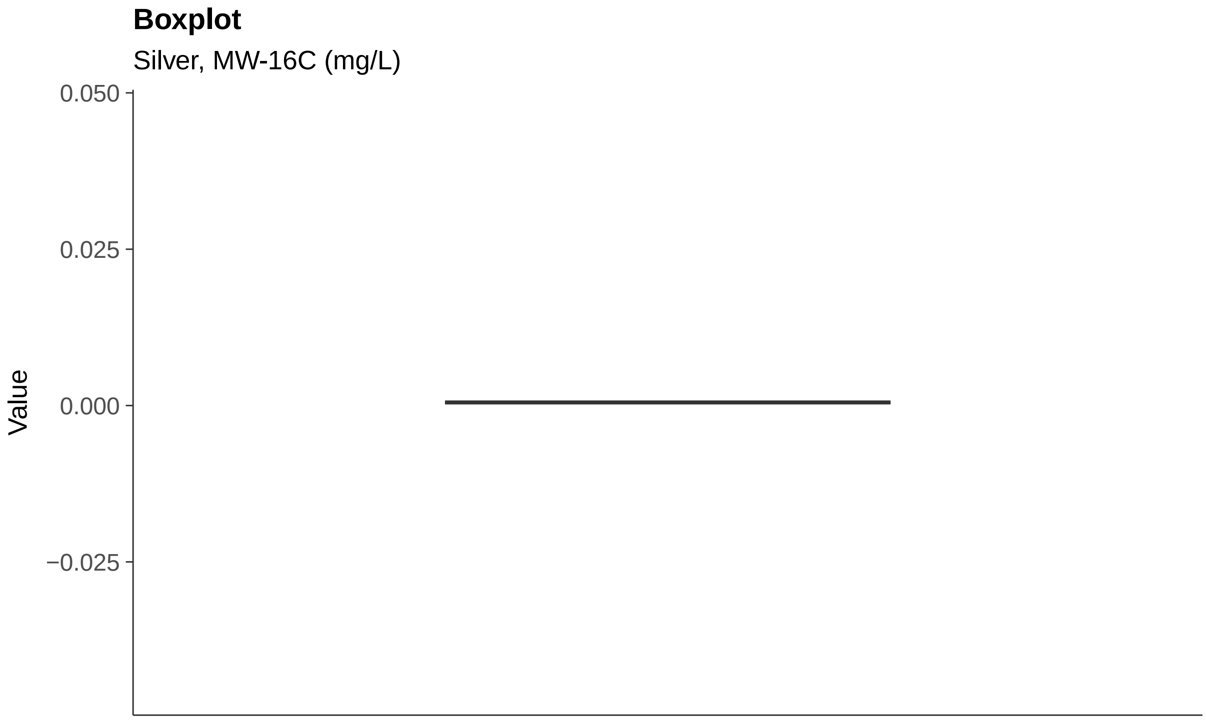


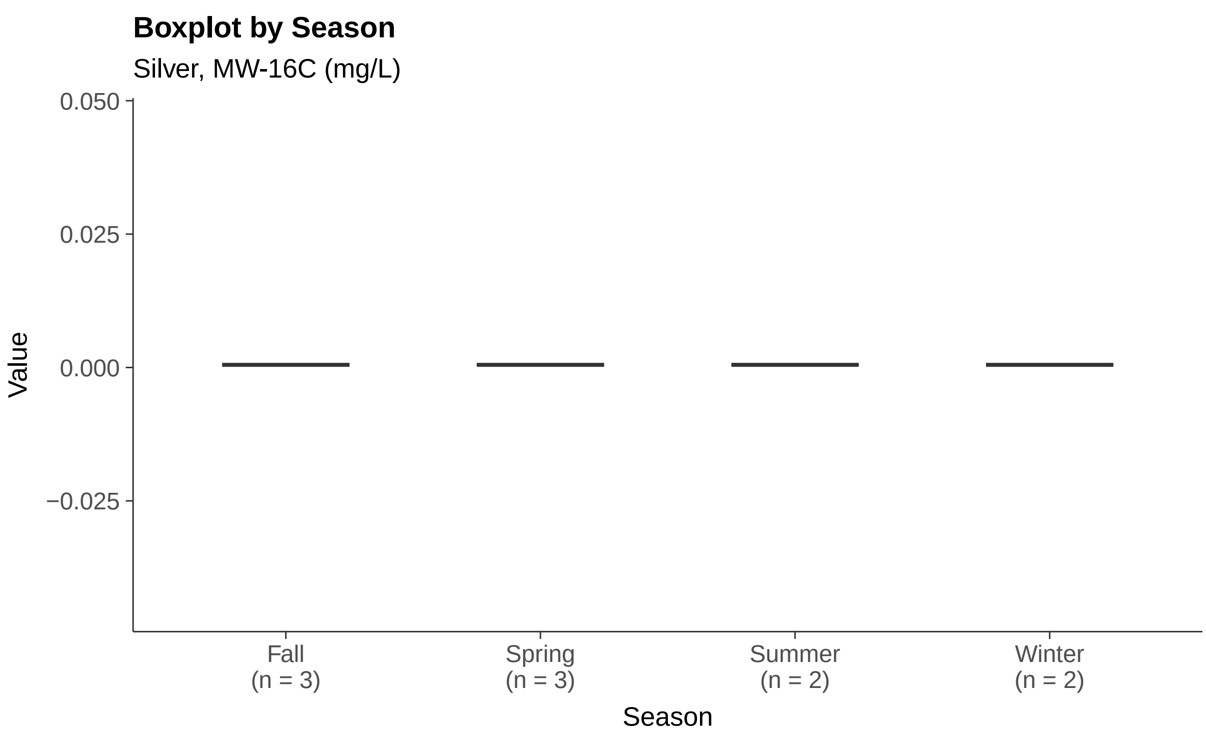
Part 115: Silver, MW-16C

ID: 16C_5_40






Boxplot
Silver, MW-16C (mg/L)
0.050
0.025
0.000
−0.025
Value

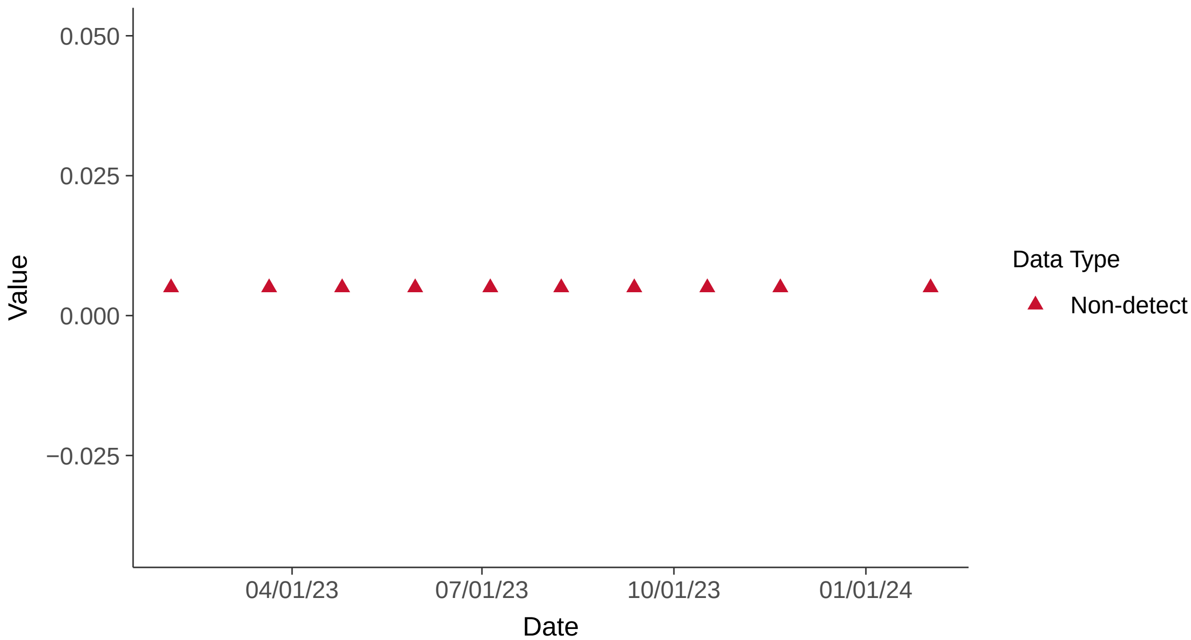

Boxplot by Season
Silver, MW-16C (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season

Part 115: Vanadium, MW-16C

ID: 16C_5_41

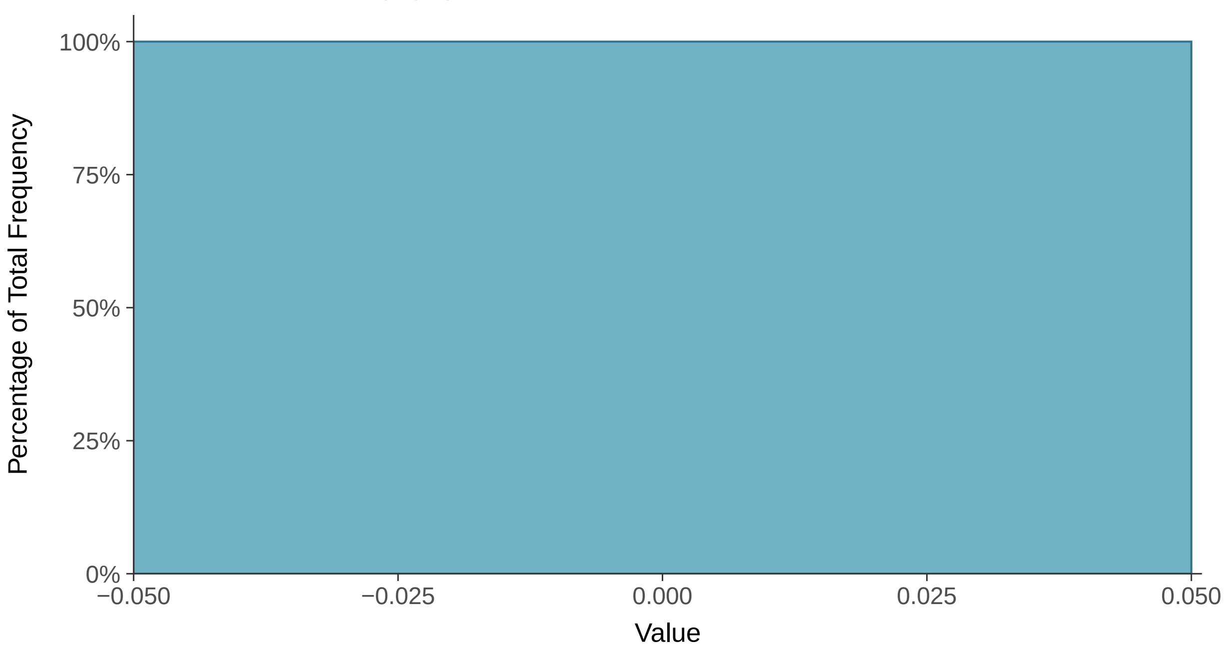
Scatter Plot

Vanadium, MW-16C (mg/L)



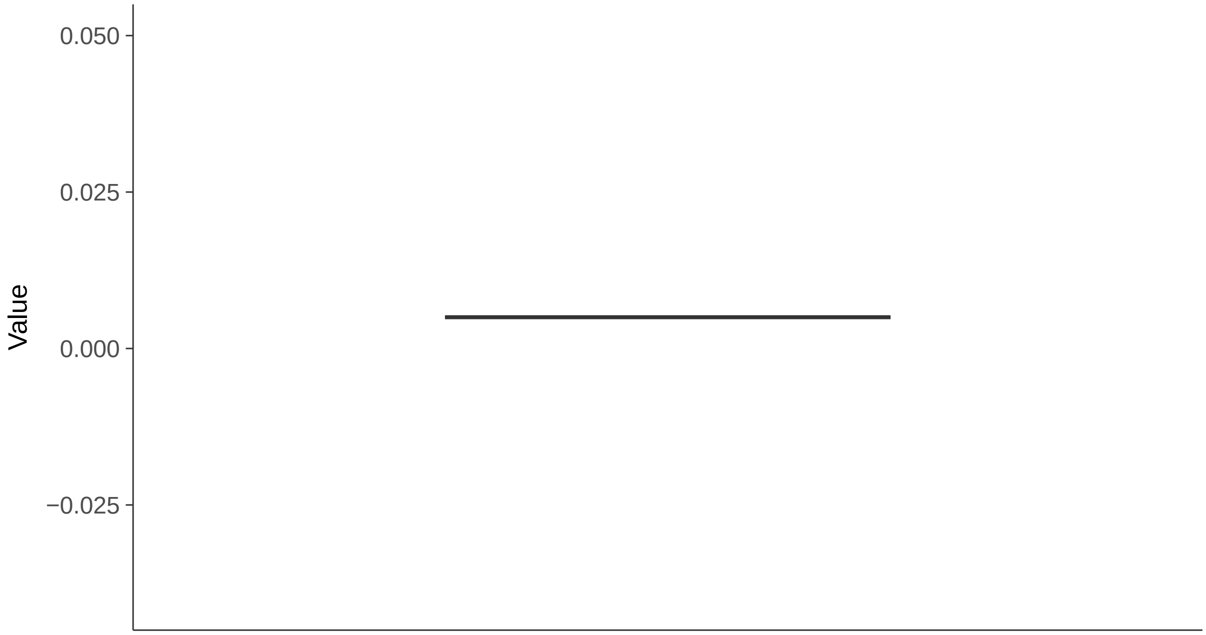
Histogram

Vanadium, MW-16C (mg/L)



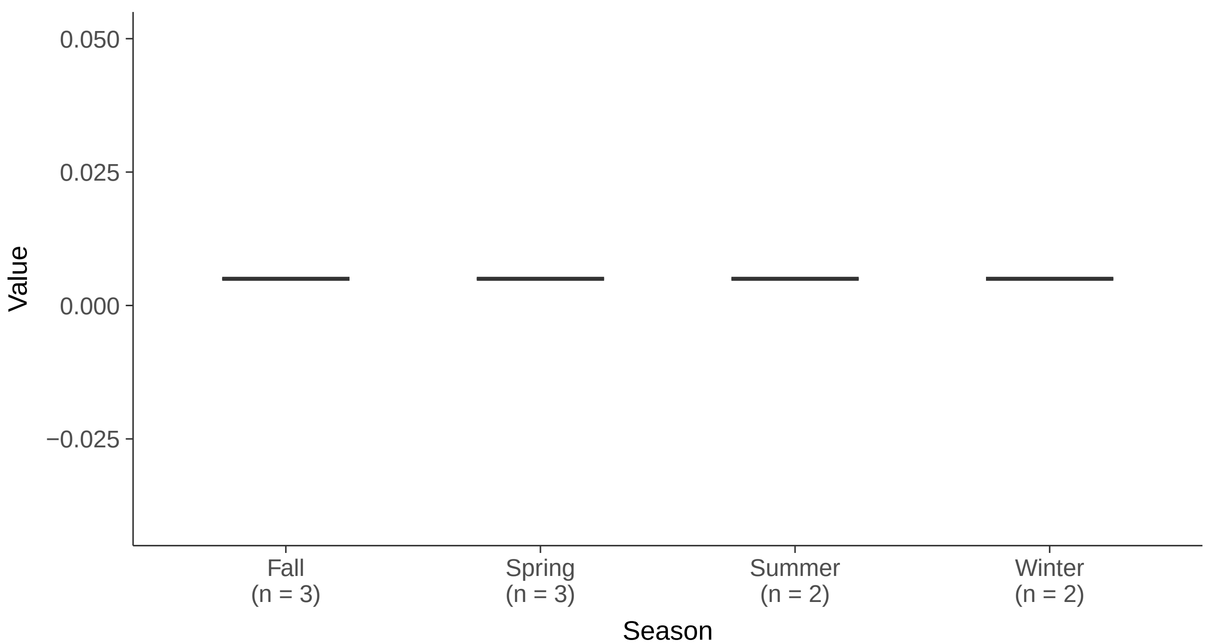
Boxplot

Vanadium, MW-16C (mg/L)



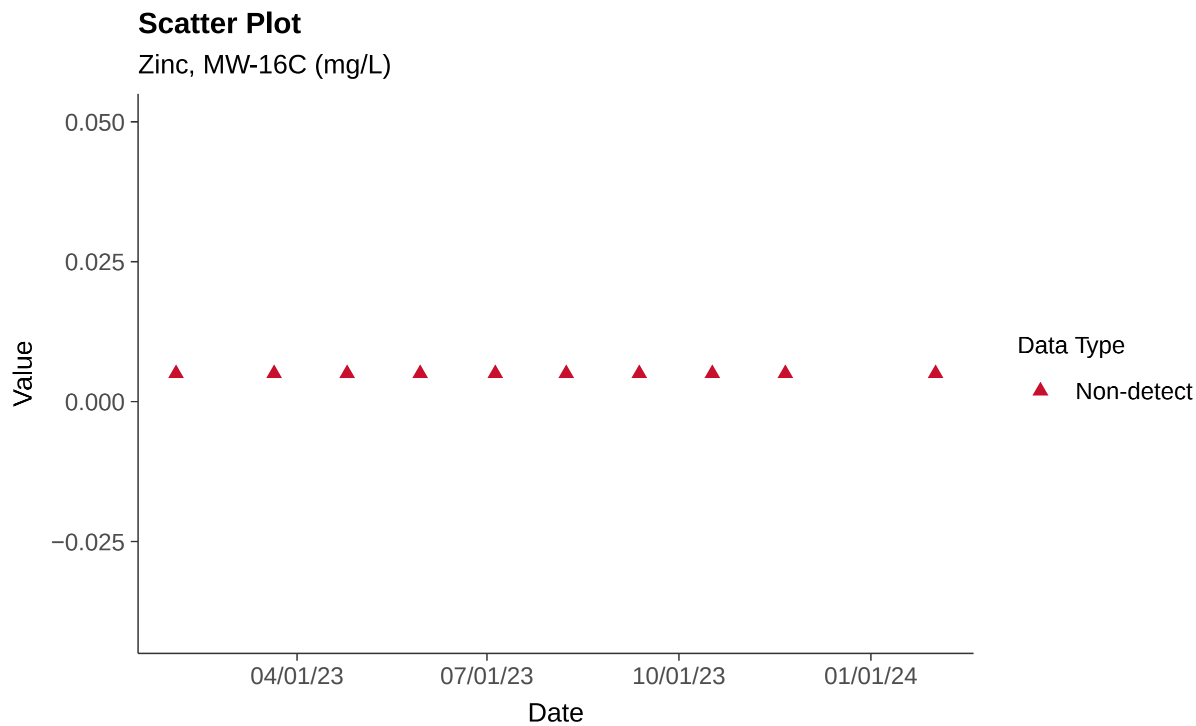
Boxplot by Season

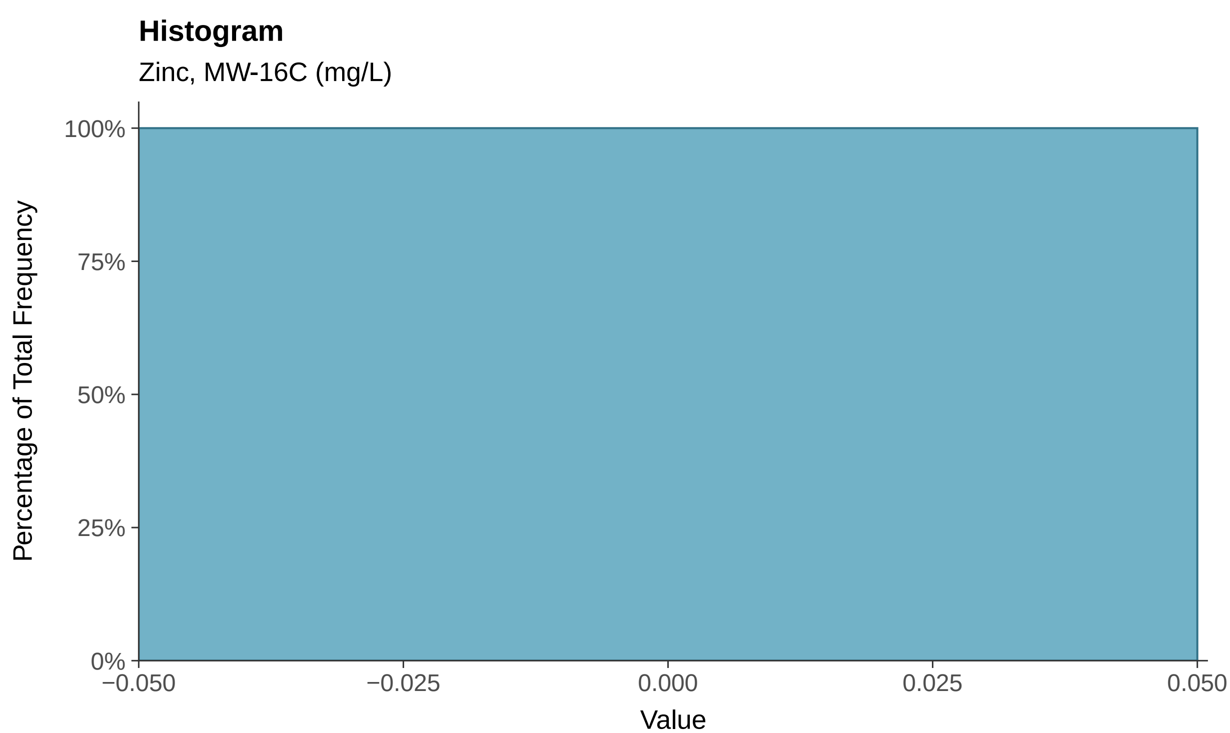
Vanadium, MW-16C (mg/L)

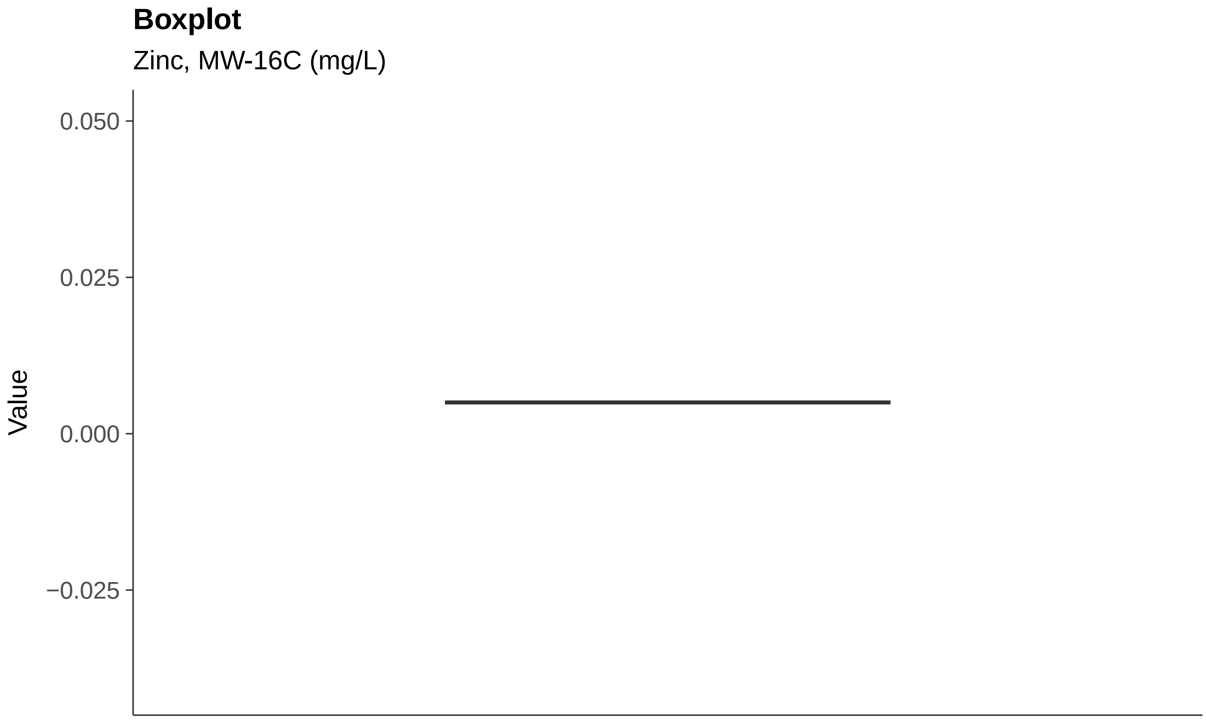


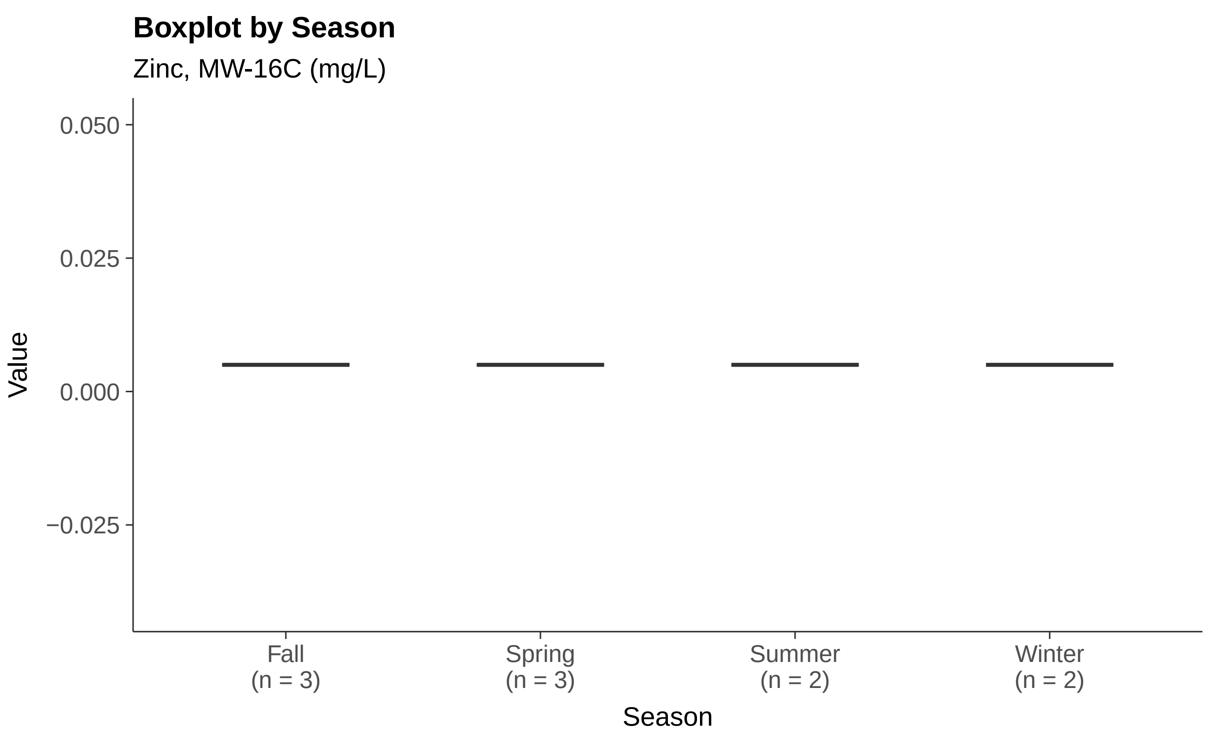
Part 115: Zinc, MW-16C

ID: 16C_5_42



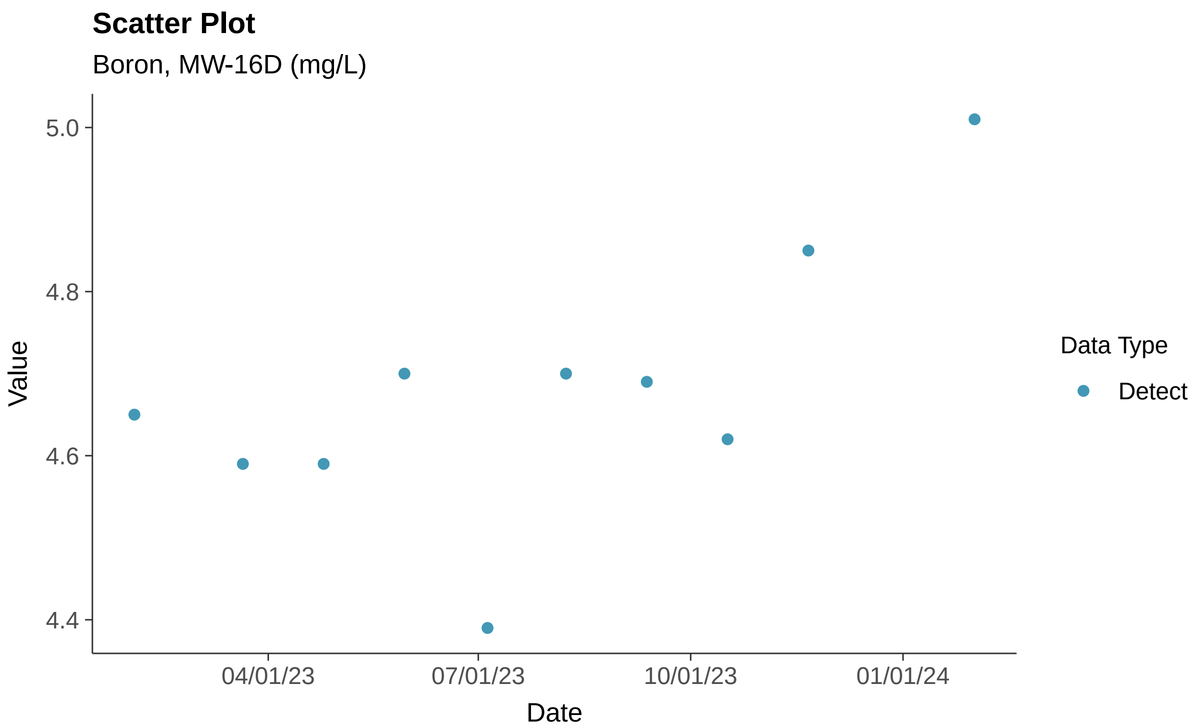


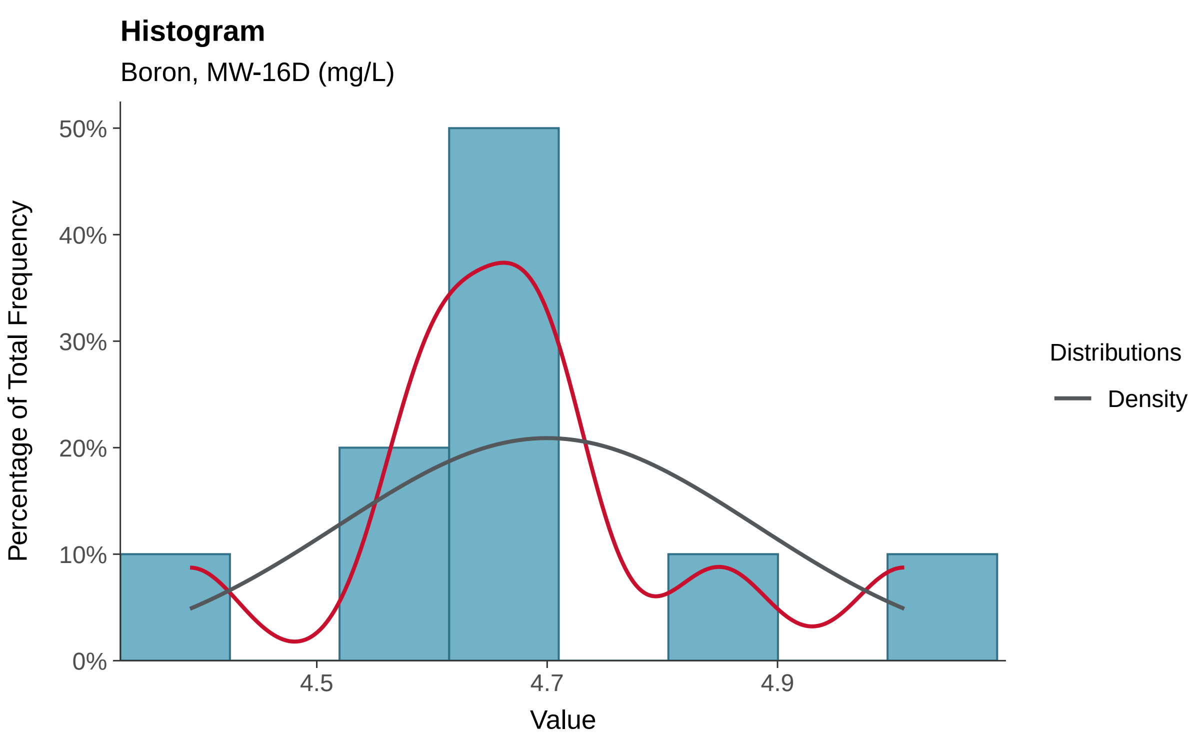

Boxplot
Zinc, MW-16C (mg/L)
Value
0.050
0.025
0.000
−0.025

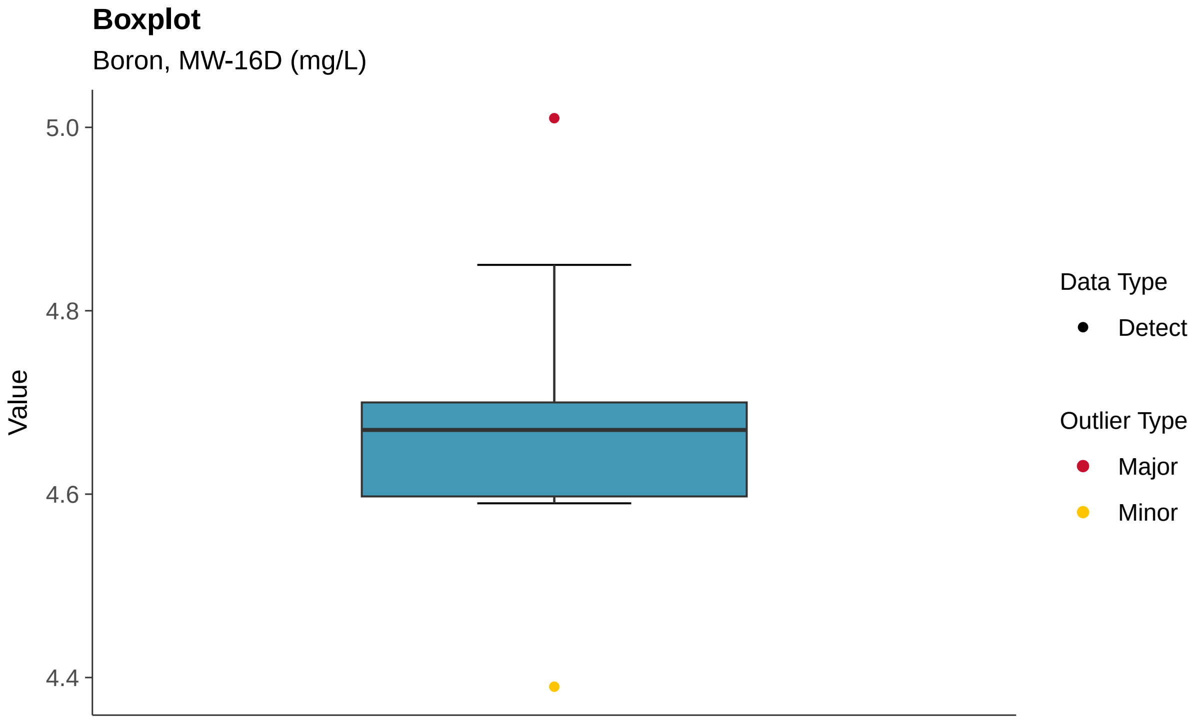

Boxplot by Season
Zinc, MW-16C (mg/L)
Value
0.050
0.025
0.000
−0.025
Fall (n = 3)
Spring (n = 3)
Summer (n = 2)
Winter (n = 2)
Season

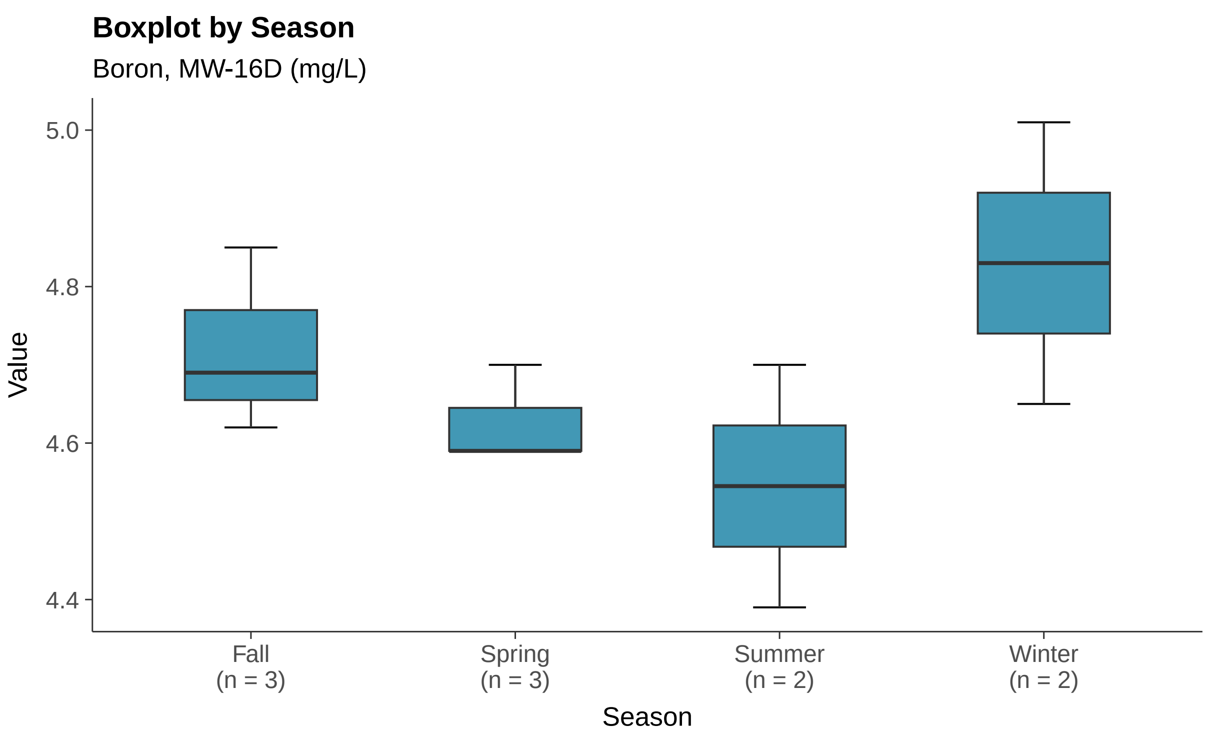
Appendix III: Boron, MW-16D

ID: 16D_1_01



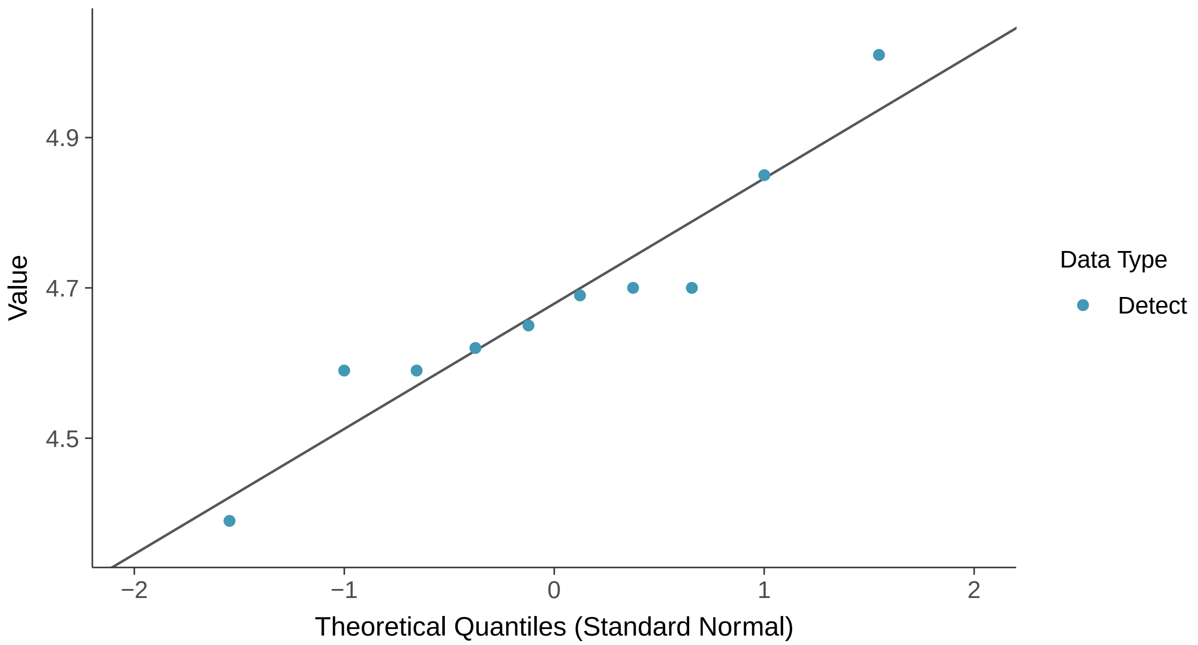



Boxplot
Boron, MW-16D (mg/L)
5.0
4.8
4.6
4.4
Value
Data Type
Detect
Outlier Type
Major
Minor


Boxplot by Season
Boron, MW-16D (mg/L)
5.0
4.8
4.6
4.4
Value
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season

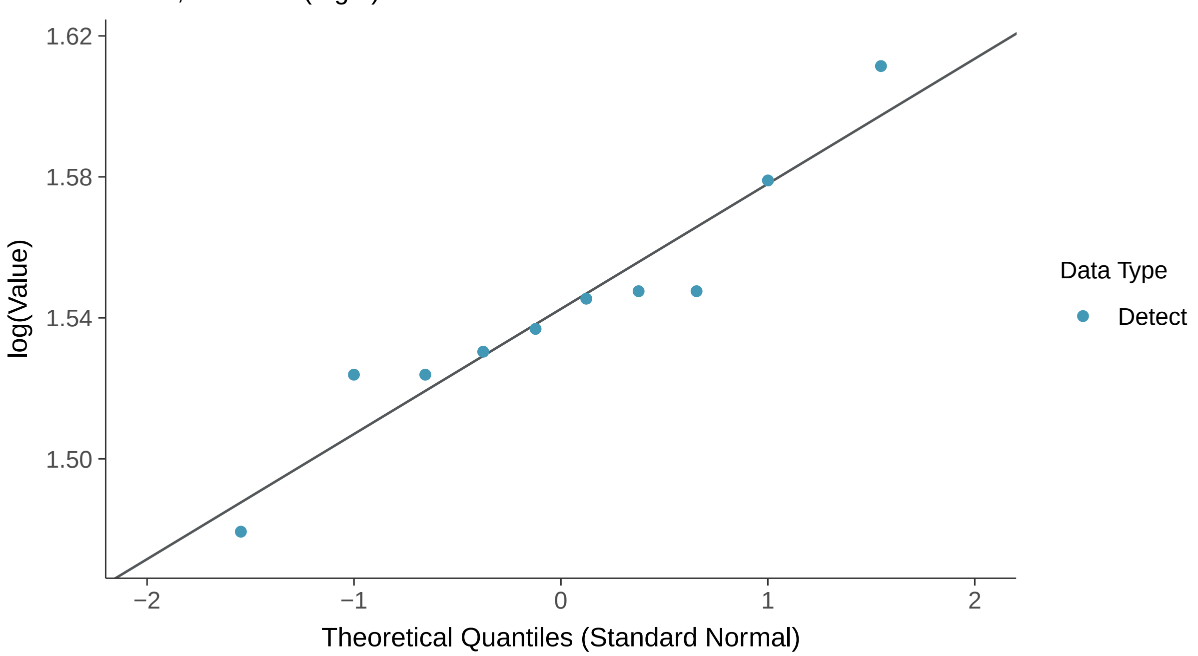
Normal Q-Q plot

Boron, MW-16D (mg/L)



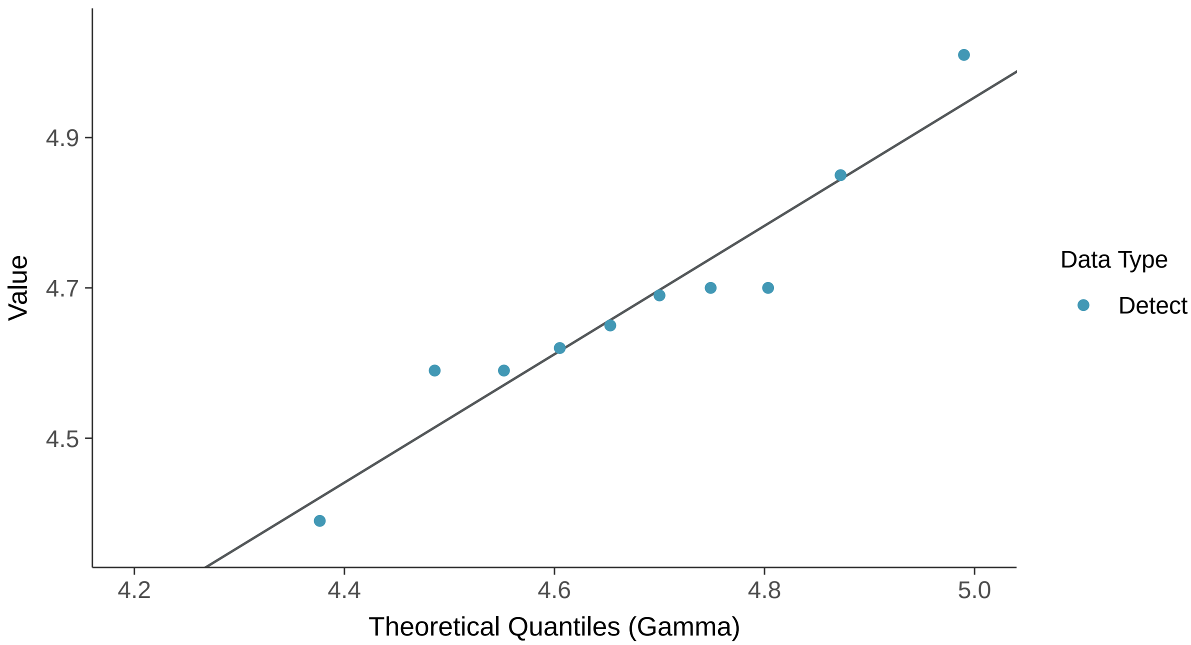
Lognormal Q-Q plot

Boron, MW-16D (mg/L)



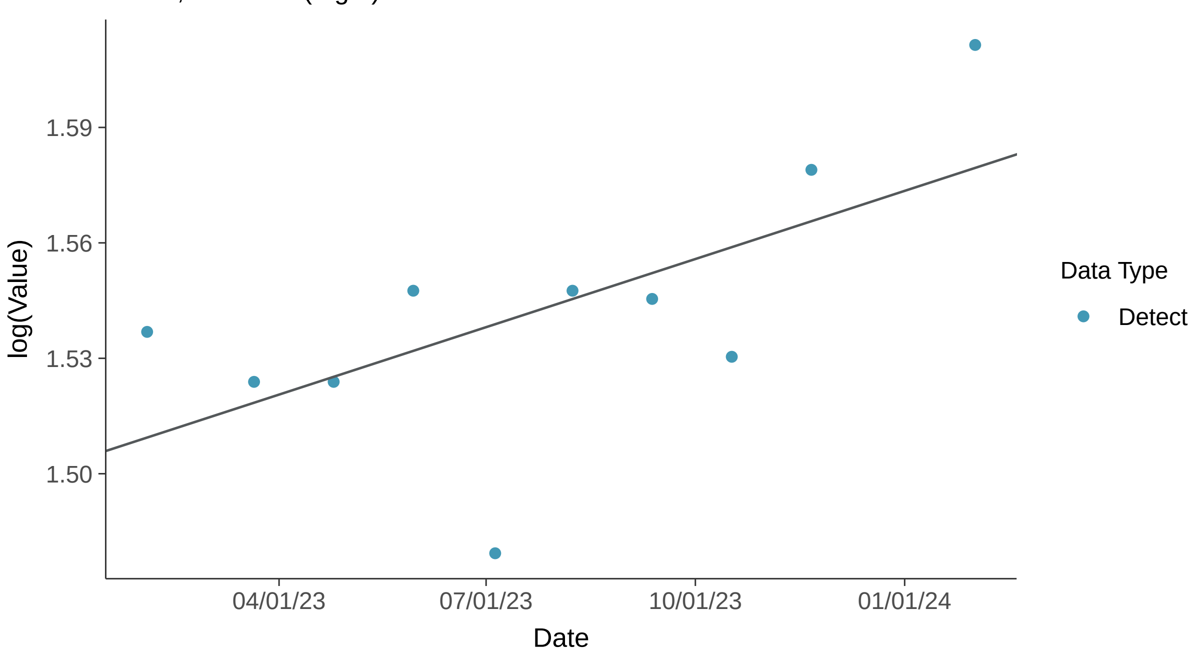
Gamma Q-Q plot

Boron, MW-16D (mg/L)



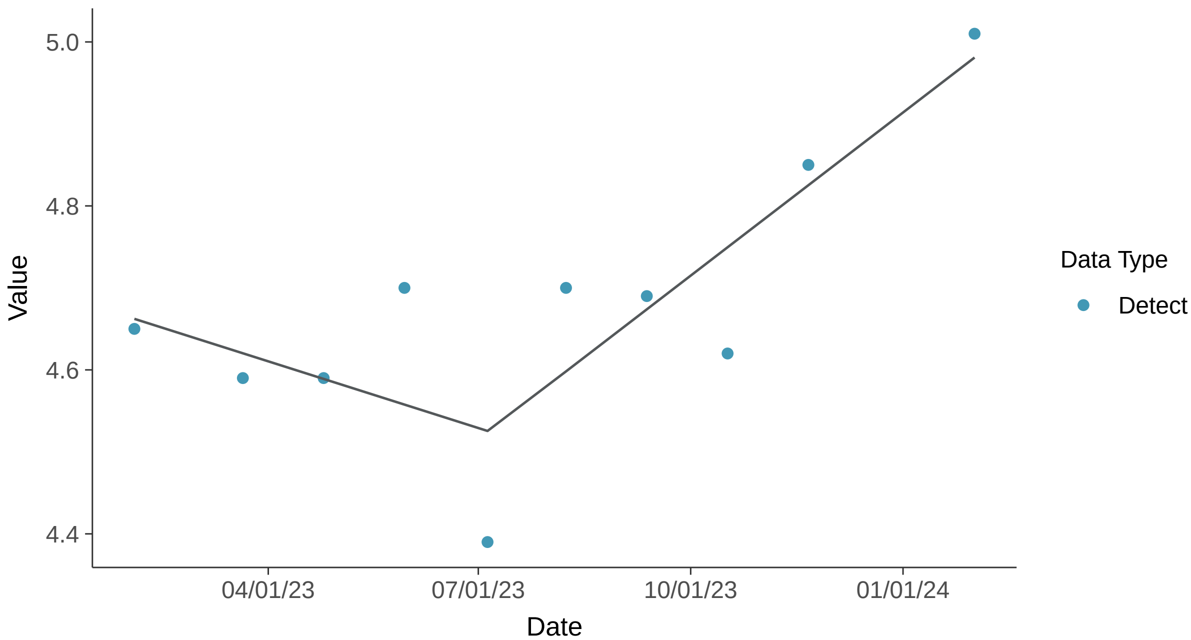
Trend Regression: Lognormal MLE

Boron, MW-16D (mg/L)



Trend Regression: Piecewise Linear-Linear

Boron, MW-16D (mg/L)

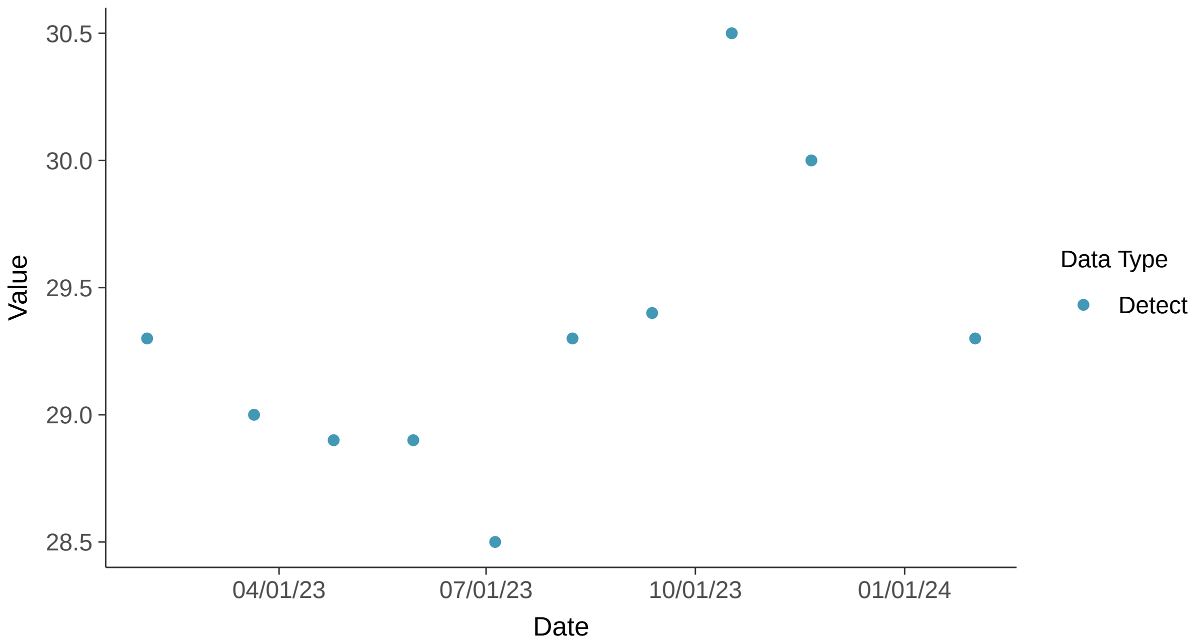


Appendix III: Calcium, MW-16D

ID: 16D_1_02

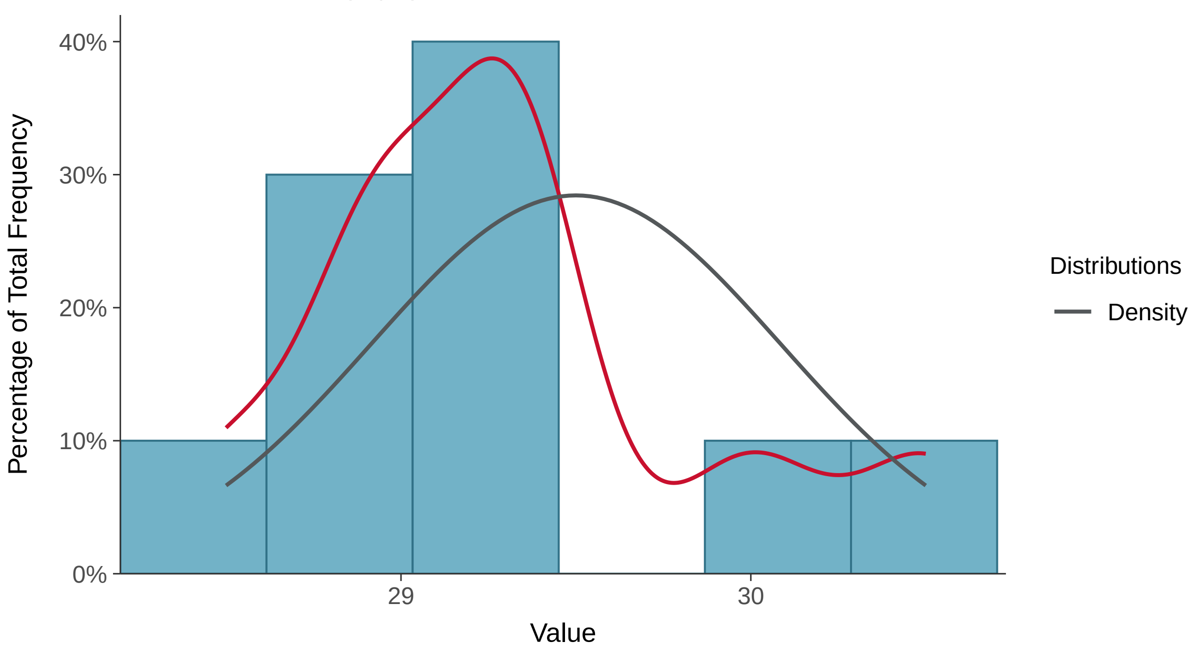
Scatter Plot

Calcium, MW-16D (mg/L)



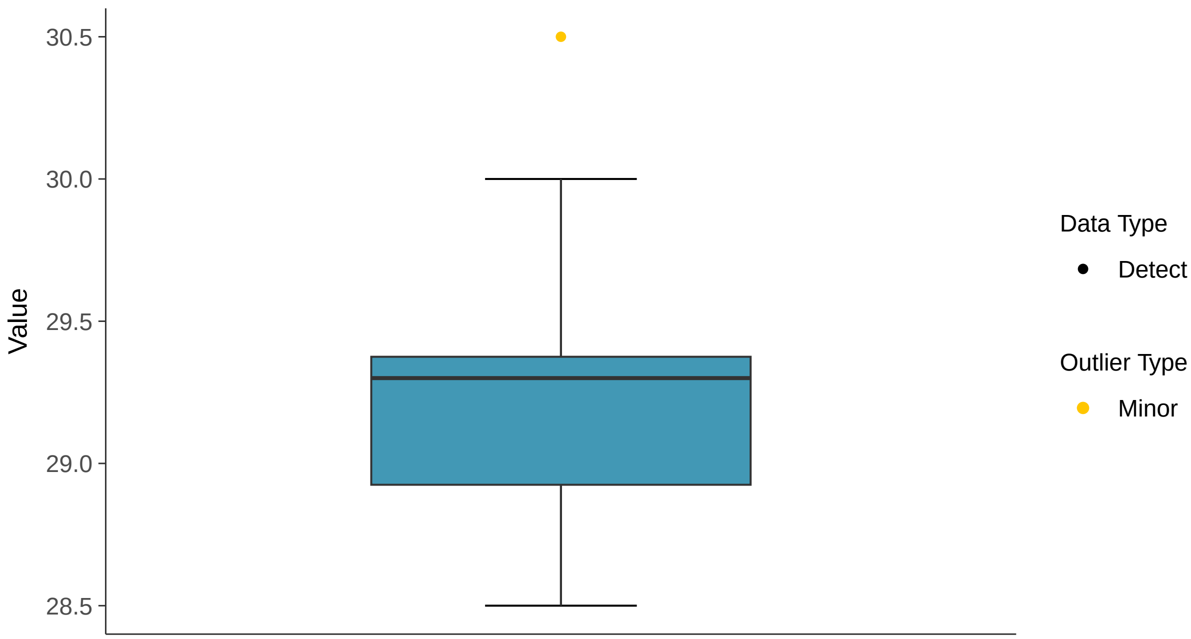
Histogram

Calcium, MW-16D (mg/L)



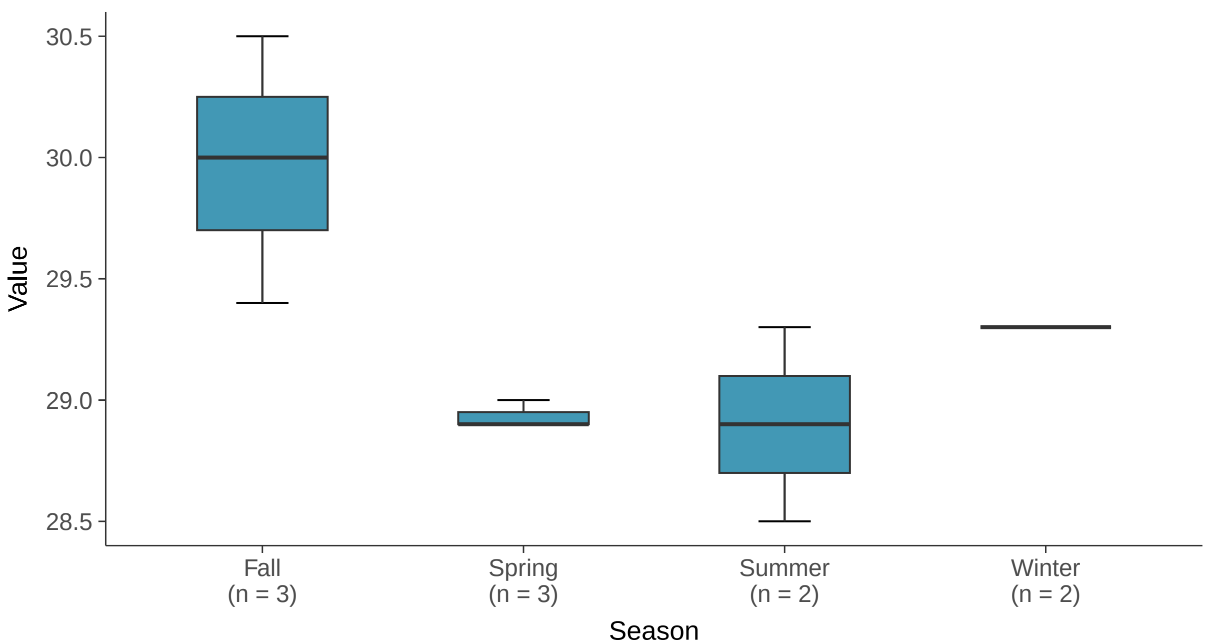
Boxplot

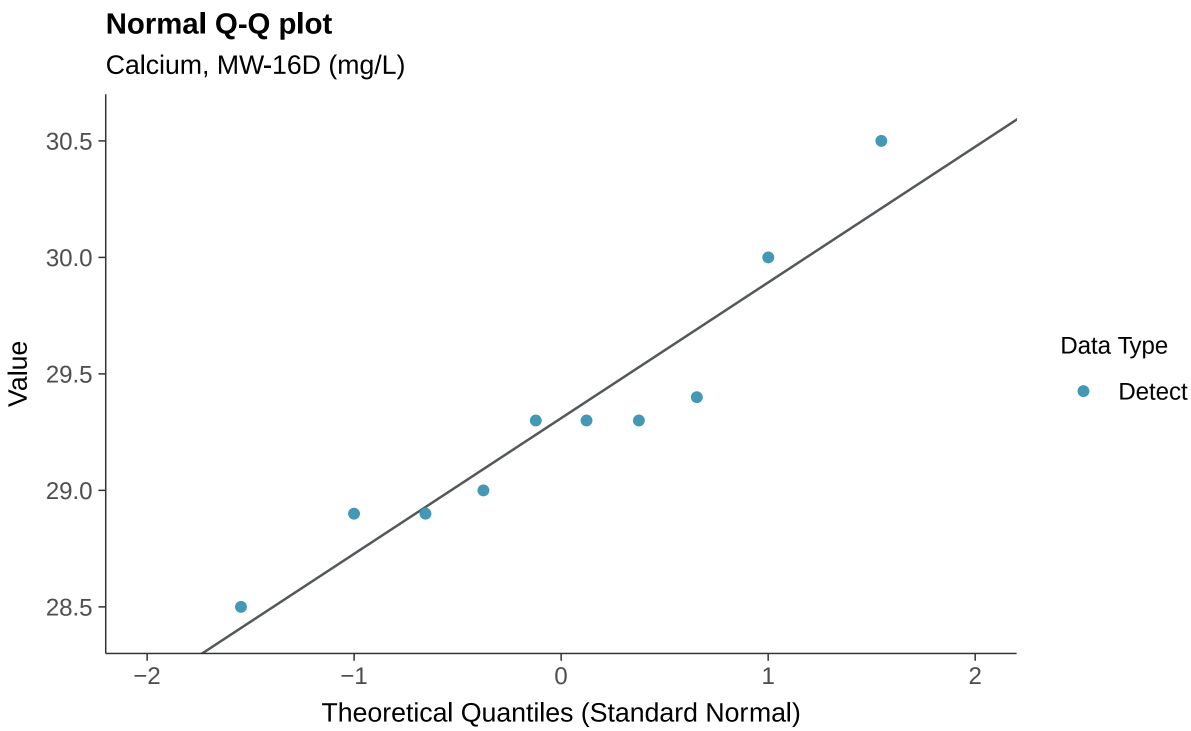
Calcium, MW-16D (mg/L)

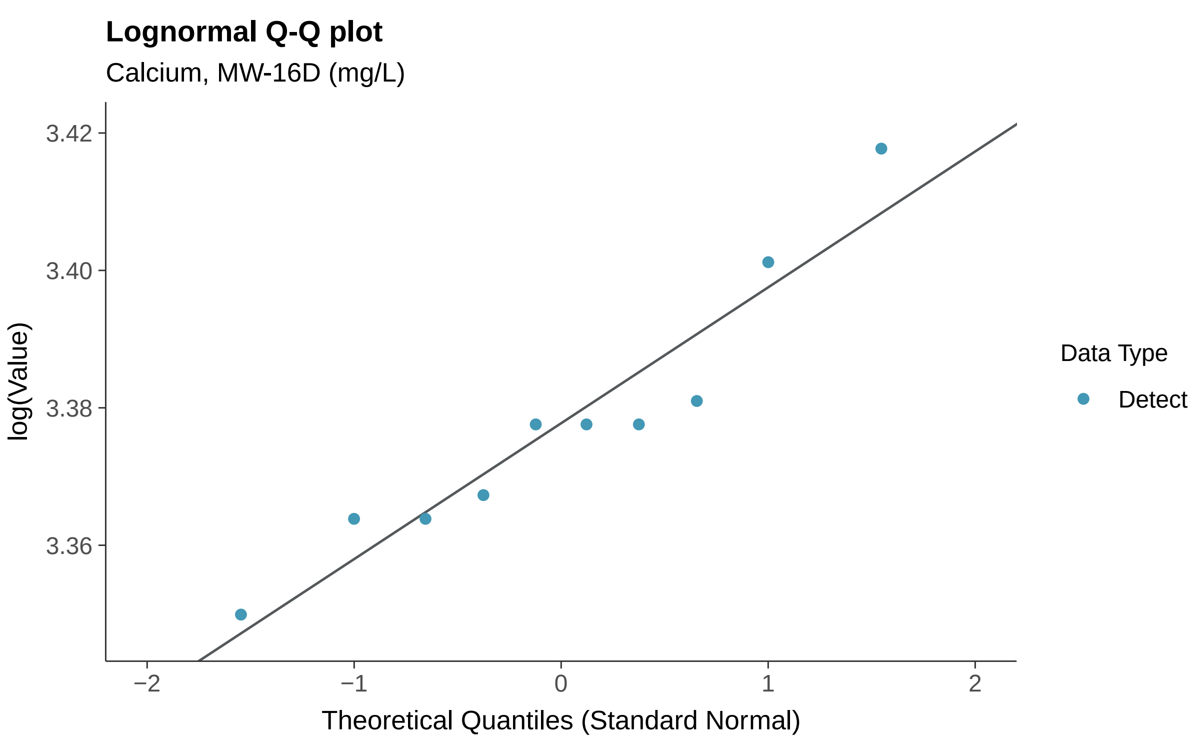


Boxplot by Season

Calcium, MW-16D (mg/L)

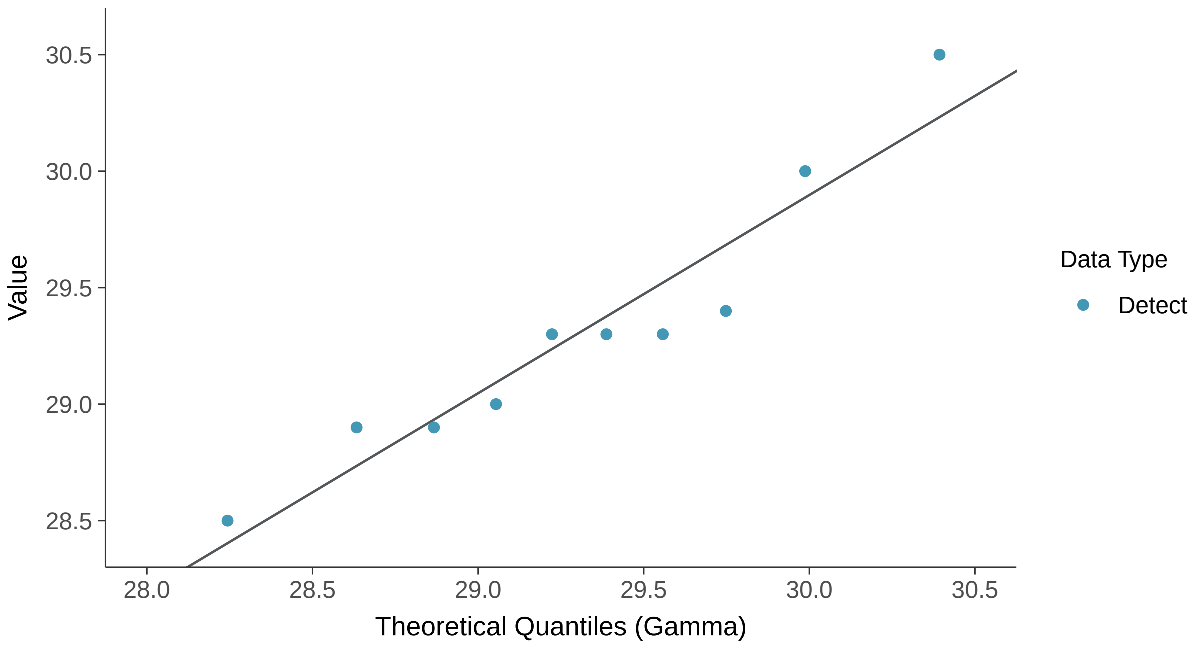



Normal Q-Q plot
Calcium, MW-16D (mg/L)
Value
30.5
30.0
29.5
29.0
28.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-16D (mg/L)
log(Value)
3.42
3.40
3.38
3.36
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

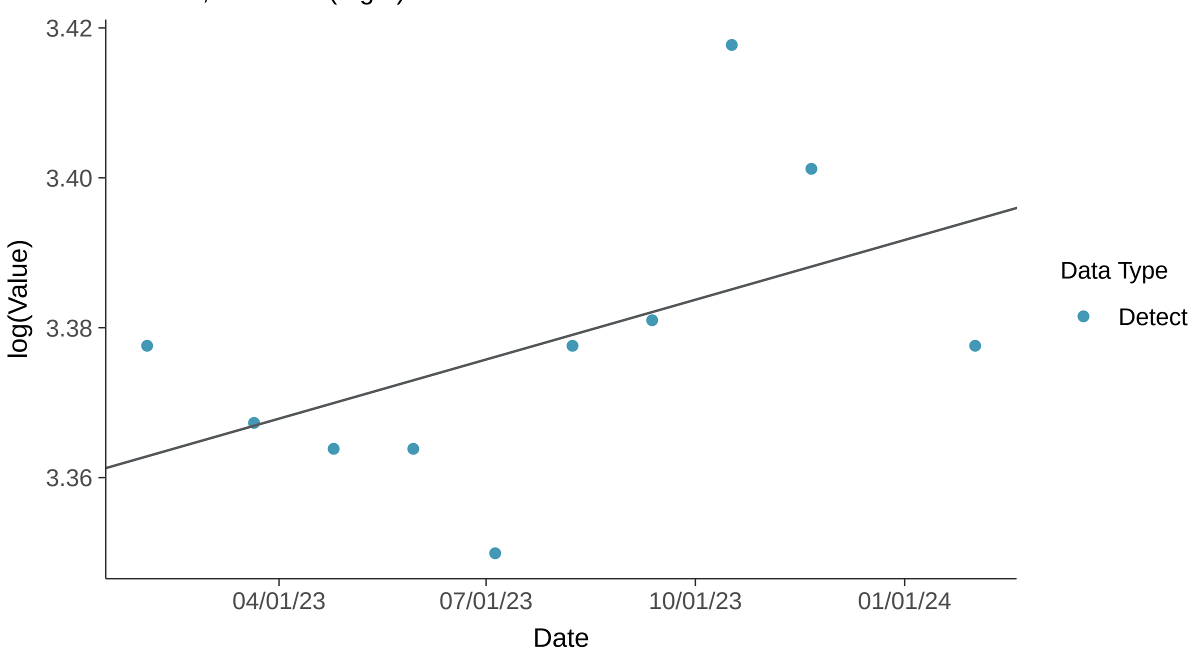
Gamma Q-Q plot

Calcium, MW-16D (mg/L)



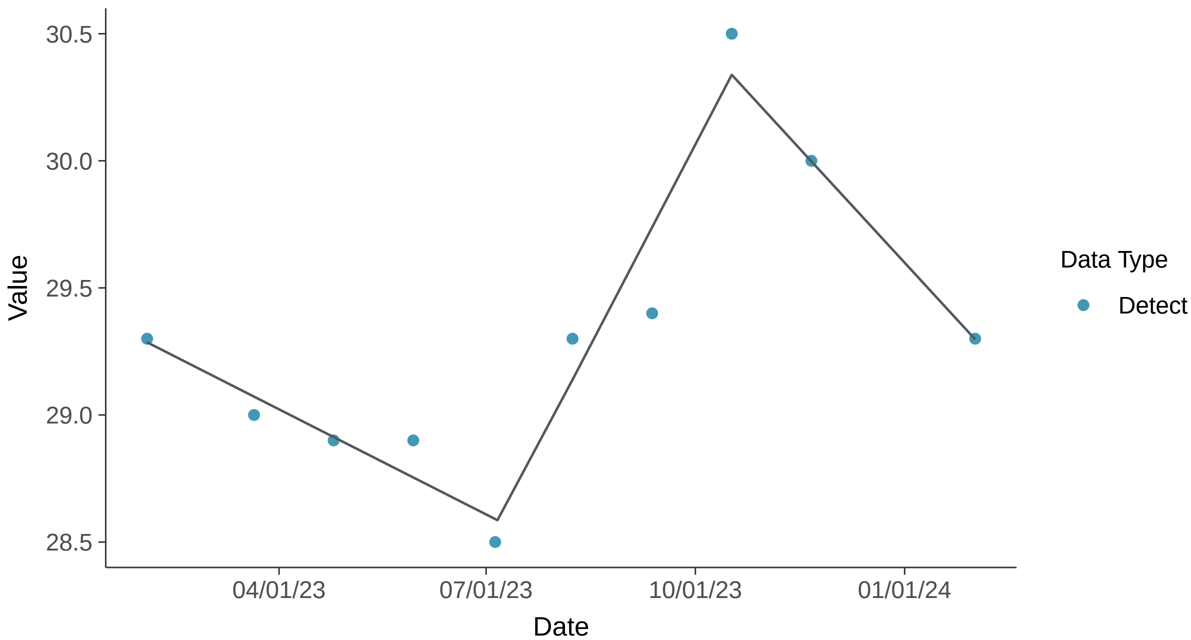
Trend Regression: Lognormal MLE

Calcium, MW-16D (mg/L)



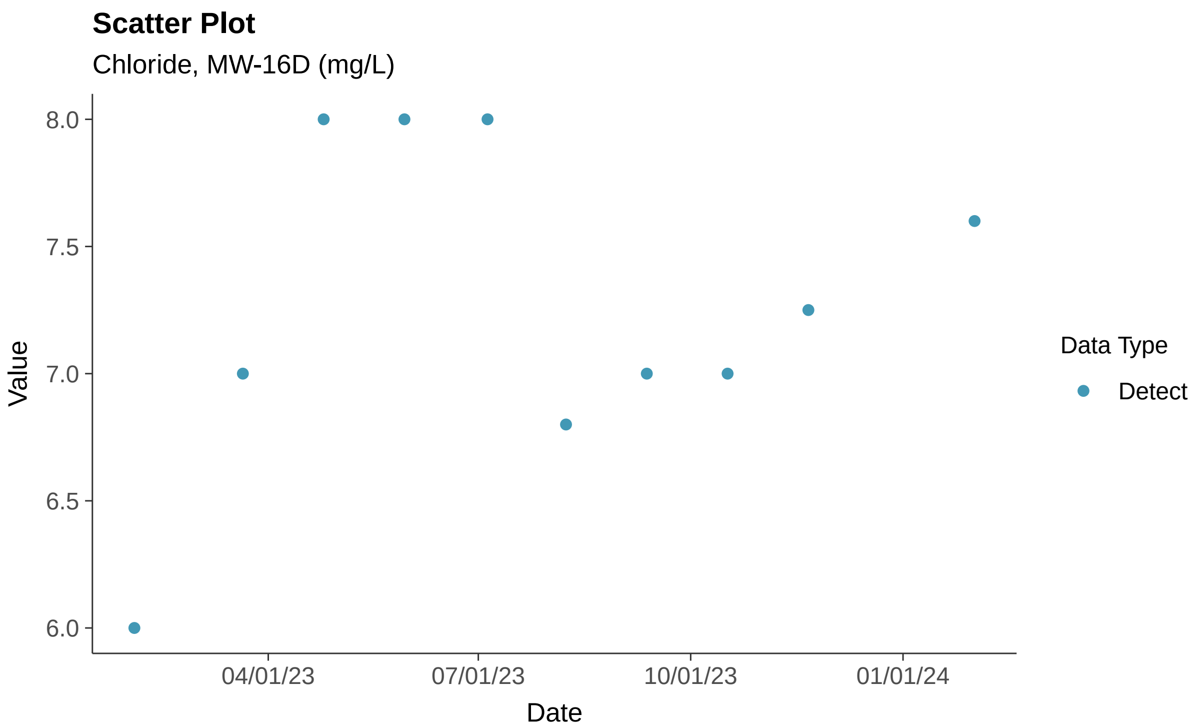
Trend Regression: Piecewise Linear-Linear-Linear

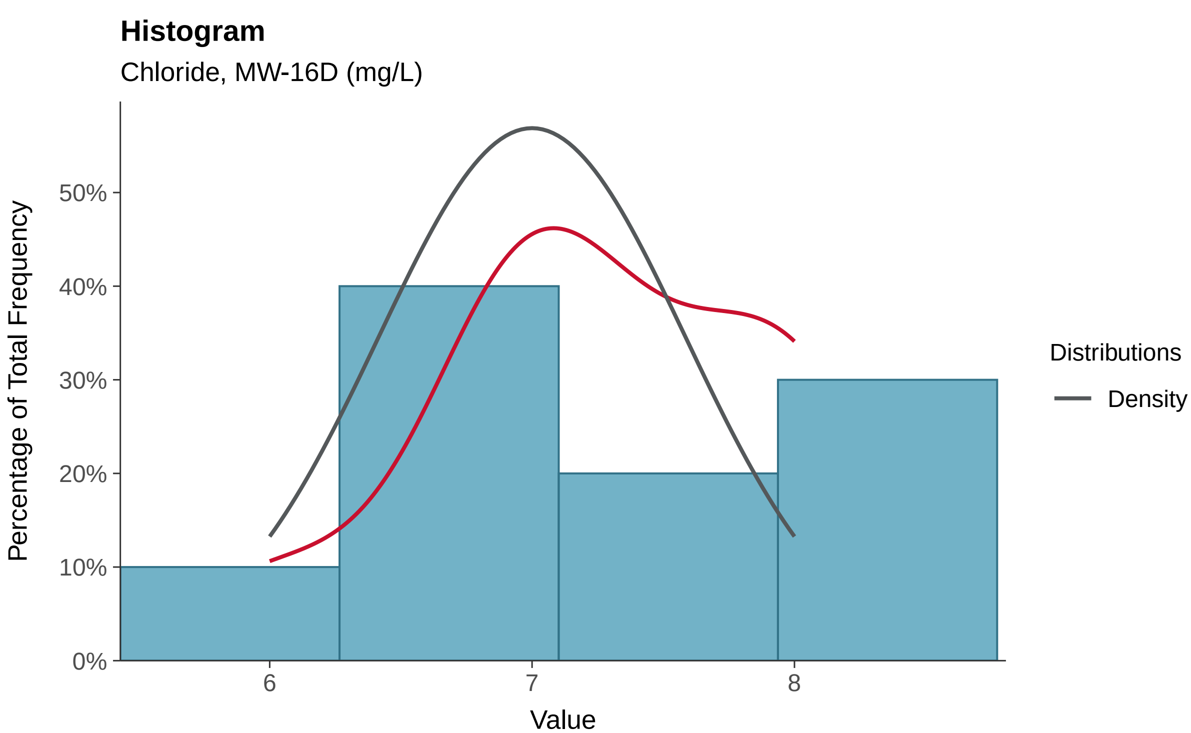
Calcium, MW-16D (mg/L)



Appendix III: Chloride, MW-16D

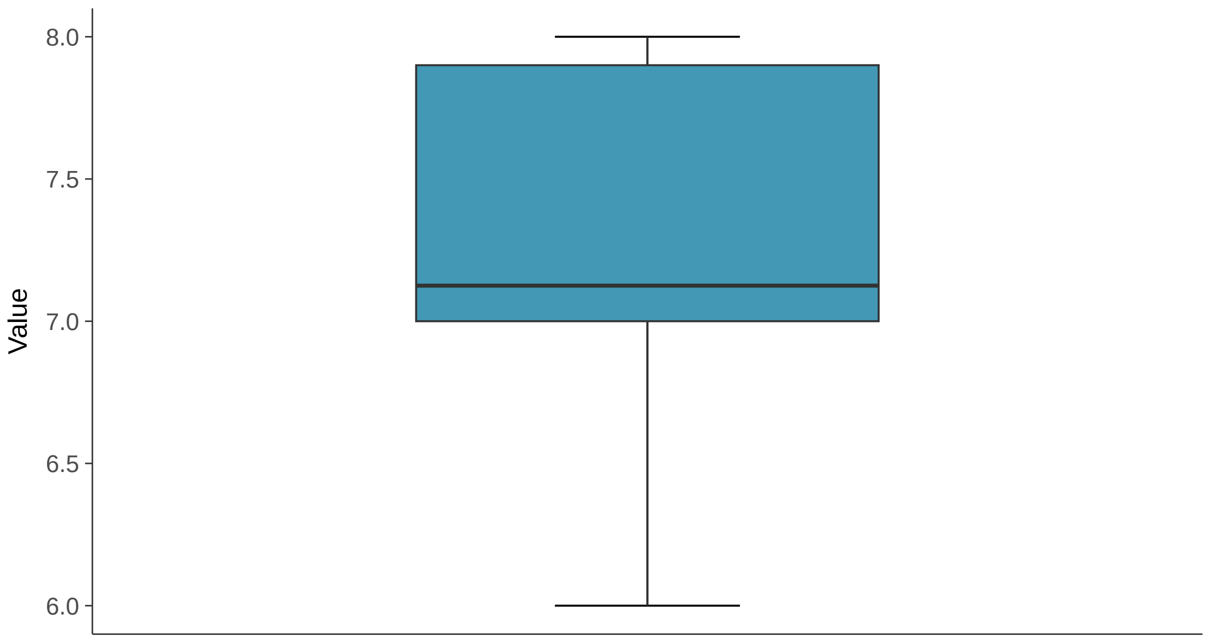
ID: 16D_1_03





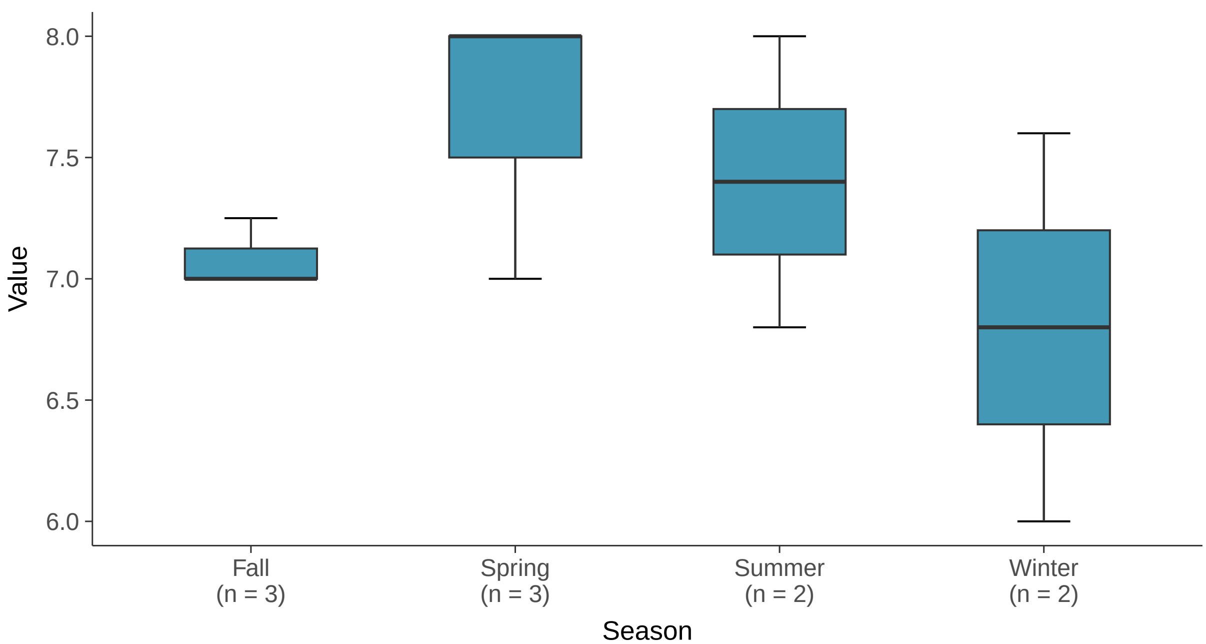
Boxplot

Chloride, MW-16D (mg/L)



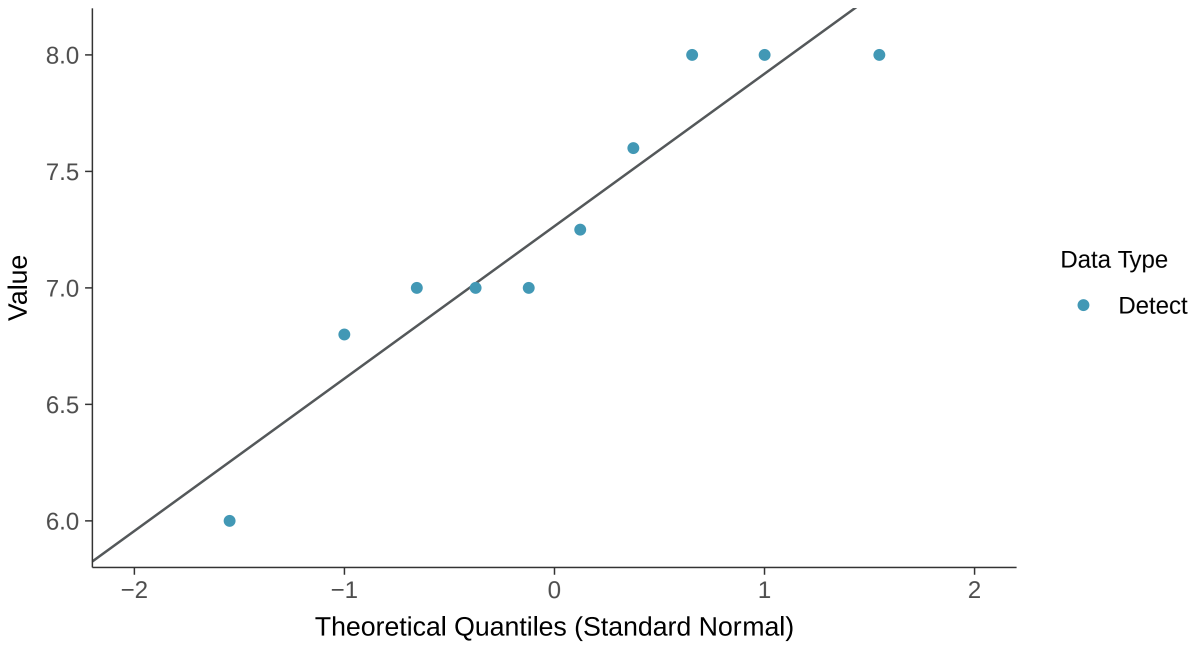
Boxplot by Season

Chloride, MW-16D (mg/L)



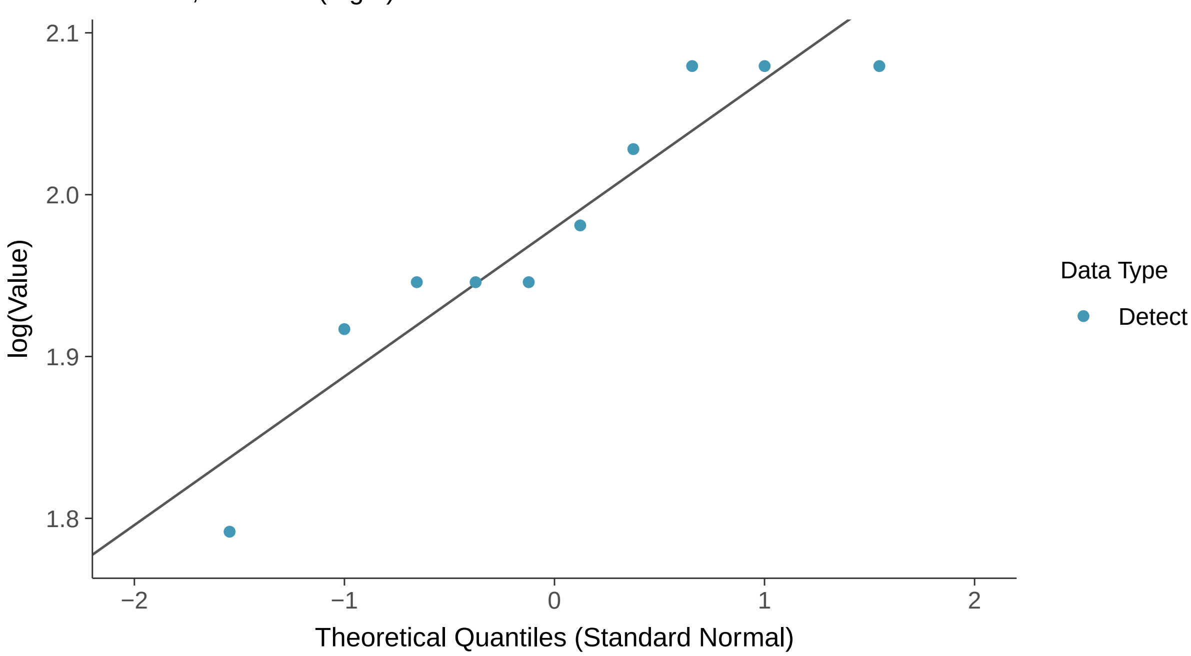
Normal Q-Q plot

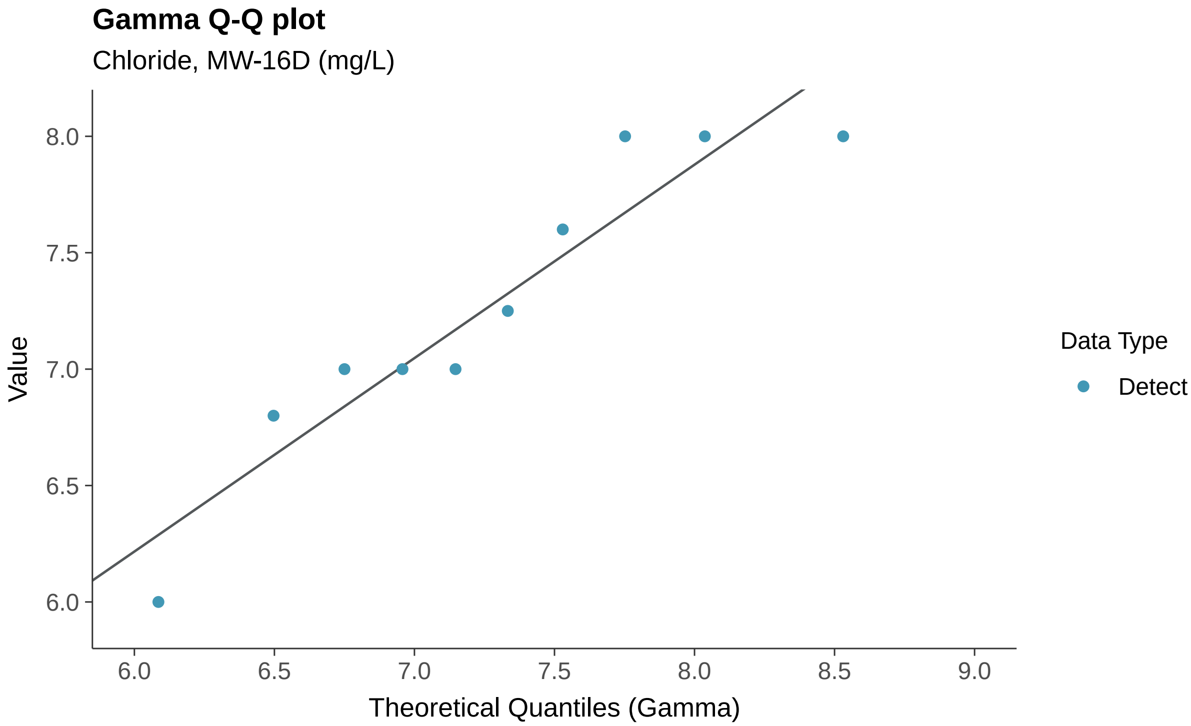
Chloride, MW-16D (mg/L)

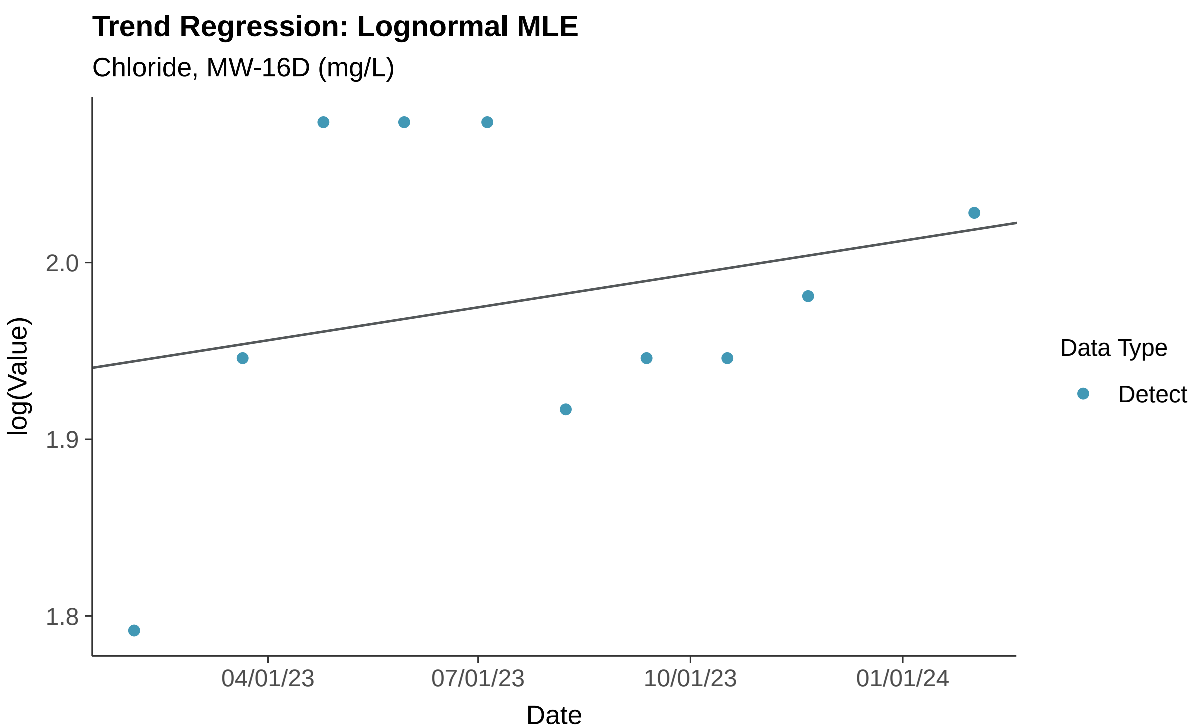


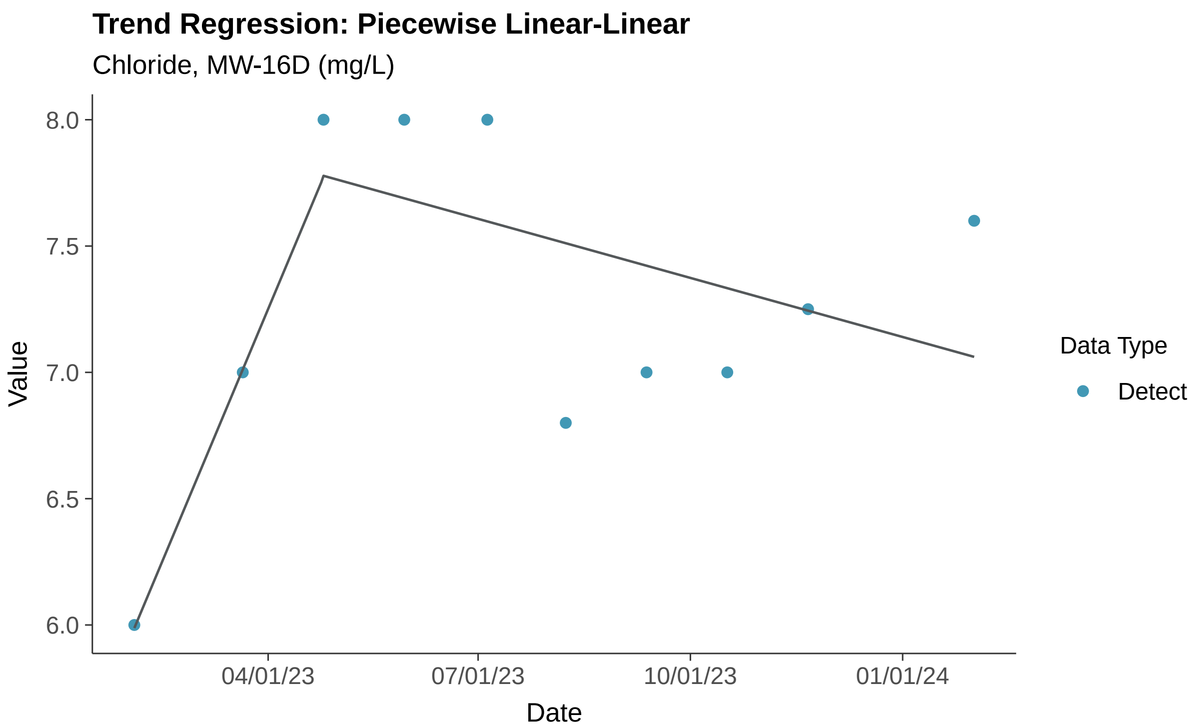
Lognormal Q-Q plot

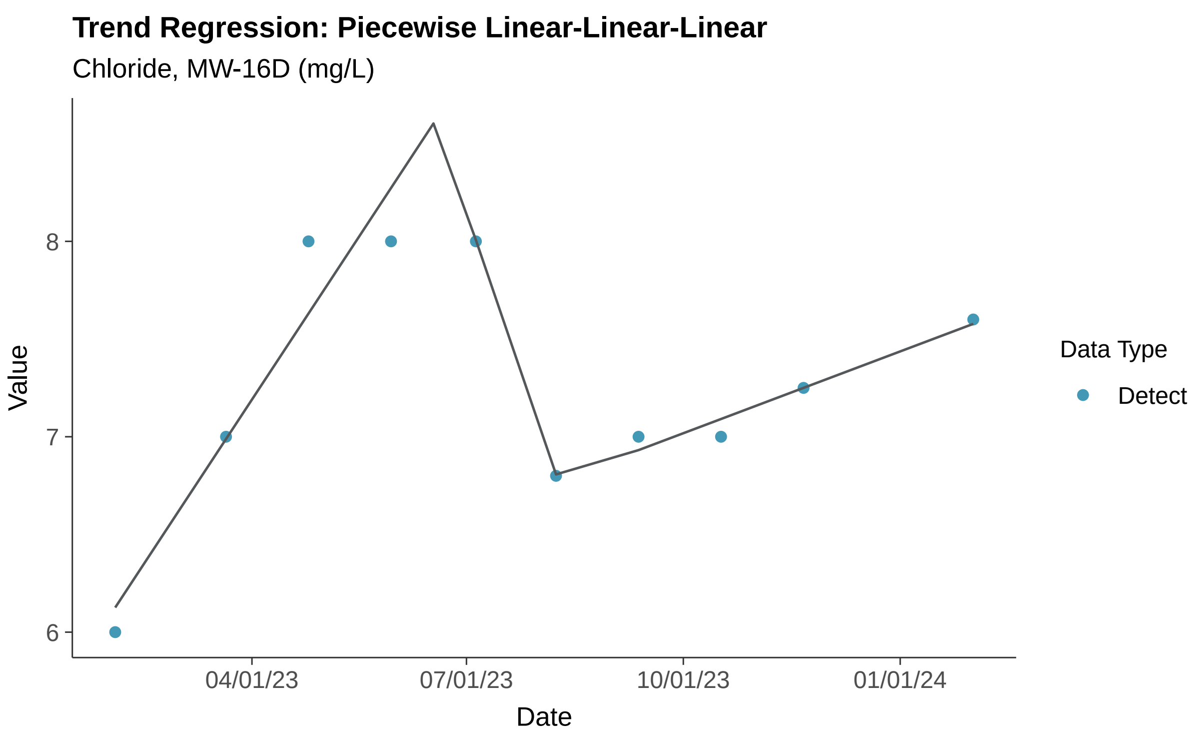
Chloride, MW-16D (mg/L)




Gamma Q-Q plot
Chloride, MW-16D (mg/L)
Value
8.0
7.5
7.0
6.5
6.0
6.0
6.5
7.0
7.5
8.0
8.5
9.0
Theoretical Quantiles (Gamma)
Data Type
Detect

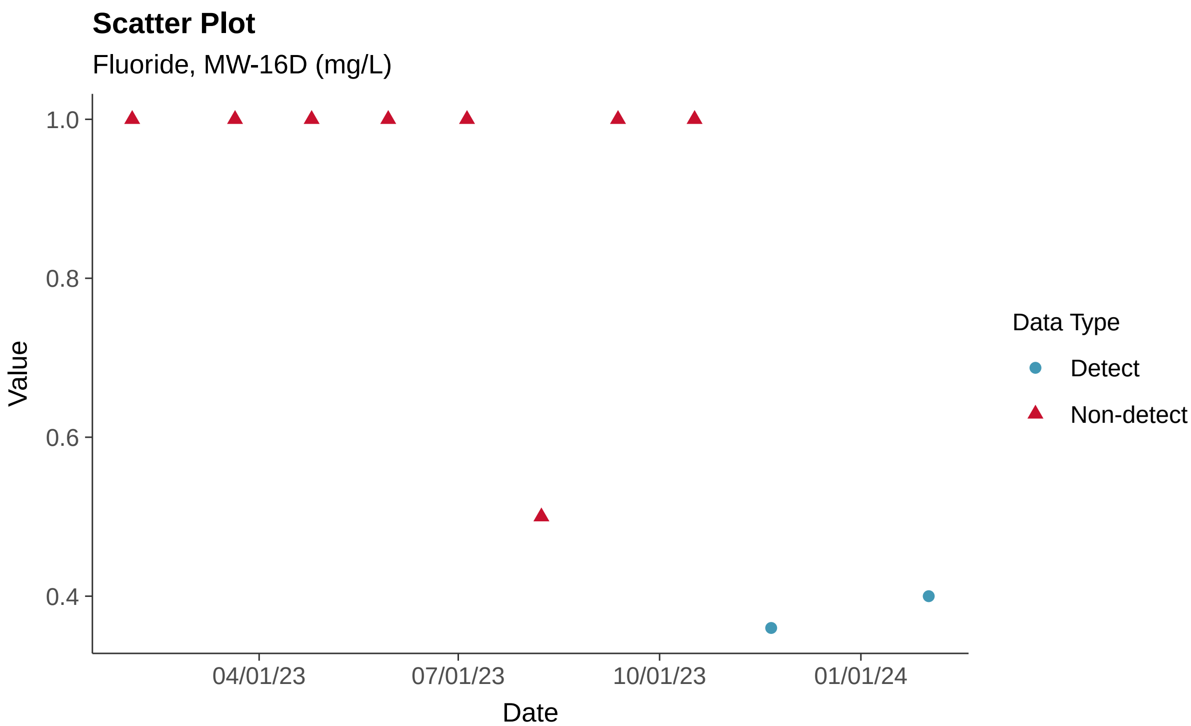

Trend Regression: Lognormal MLE
Chloride, MW-16D (mg/L)
log(Value)
2.0
1.9
1.8
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

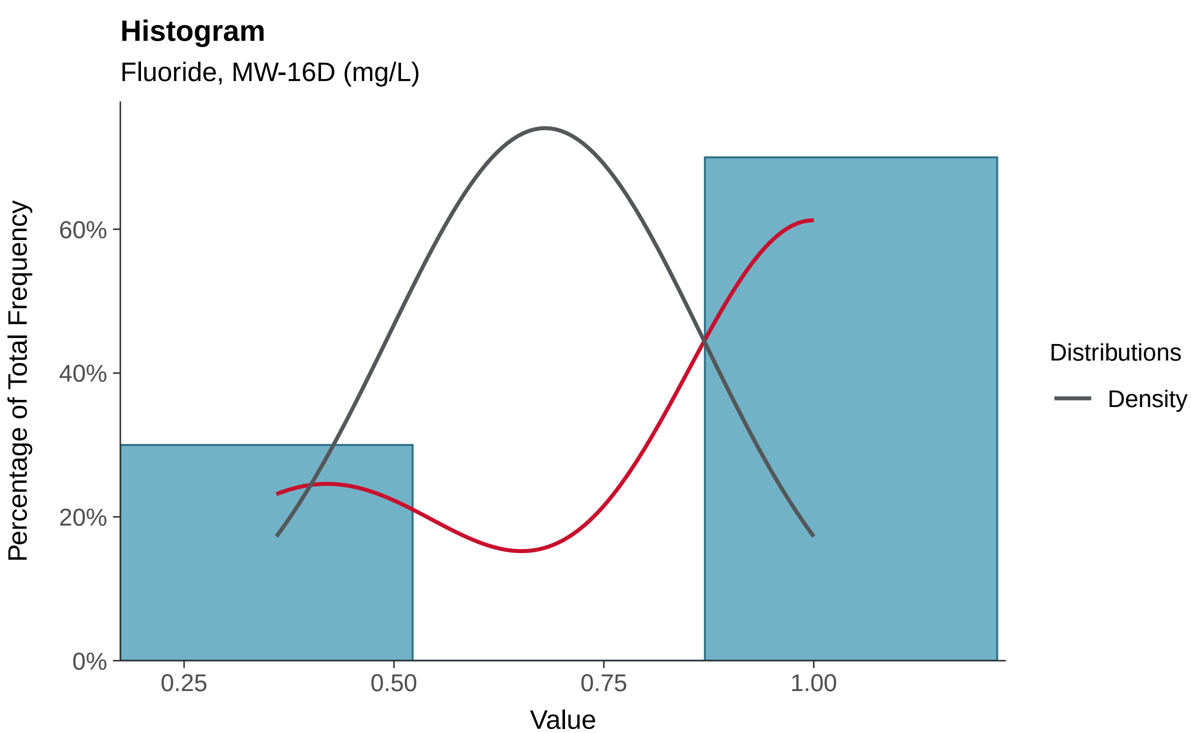

Trend Regression: Piecewise Linear-Linear
Chloride, MW-16D (mg/L)
Value
8.0
7.5
7.0
6.5
6.0
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Chloride, MW-16D (mg/L)
Value
8
7
6
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix III: Fluoride, MW-16D

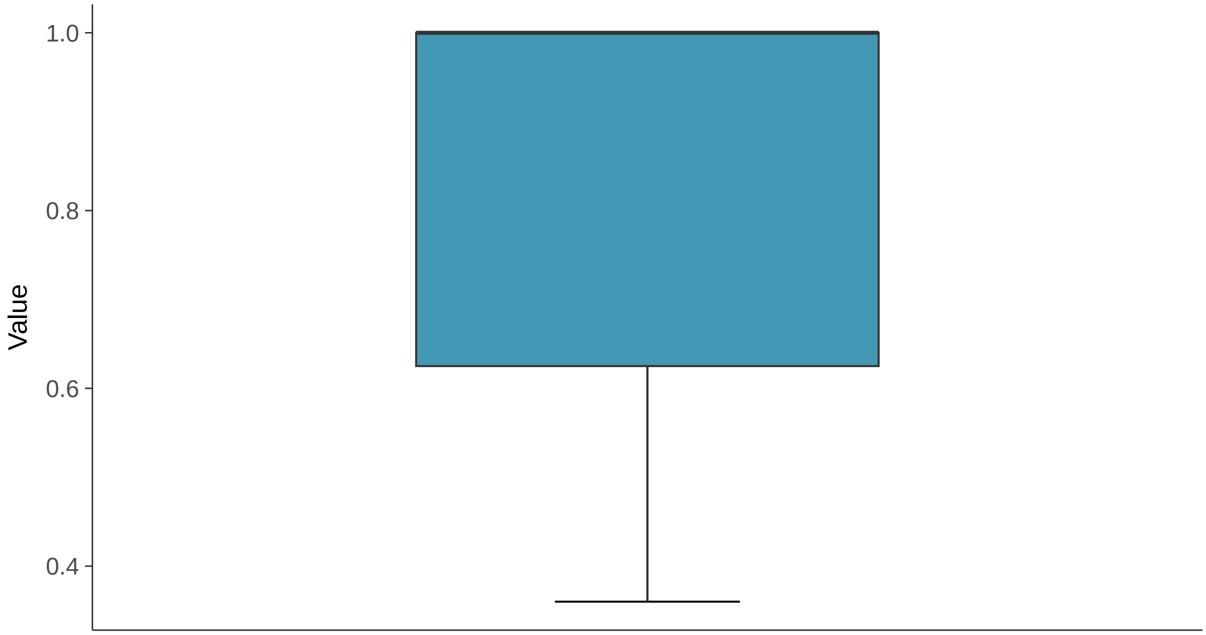
ID: 16D_1_04





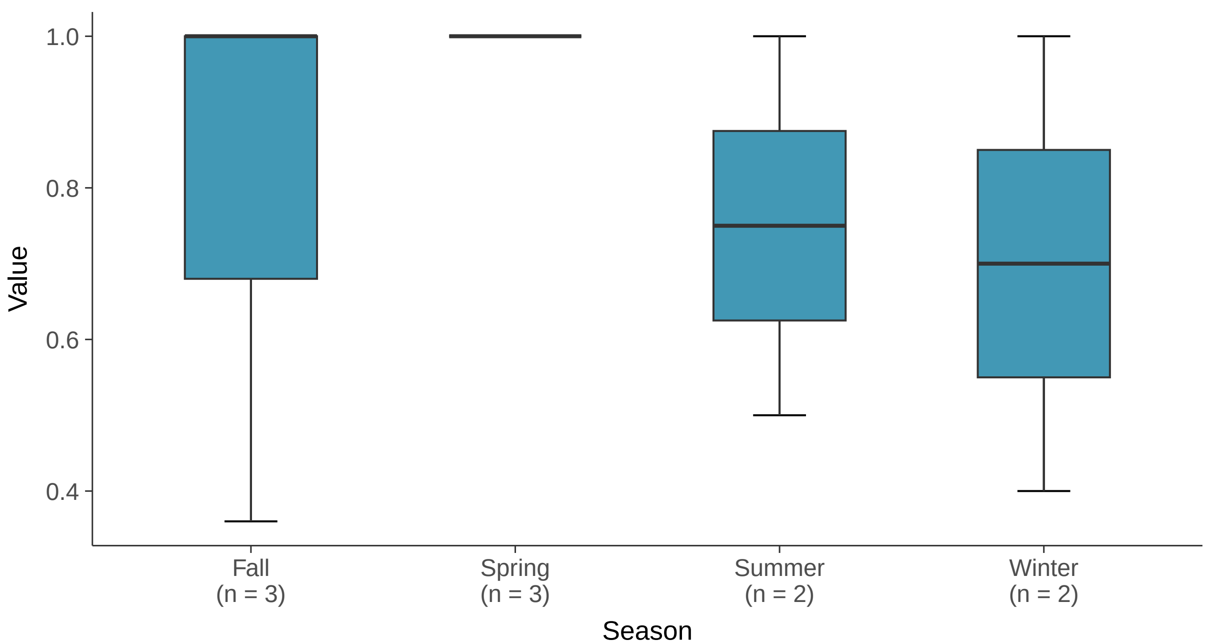
Boxplot

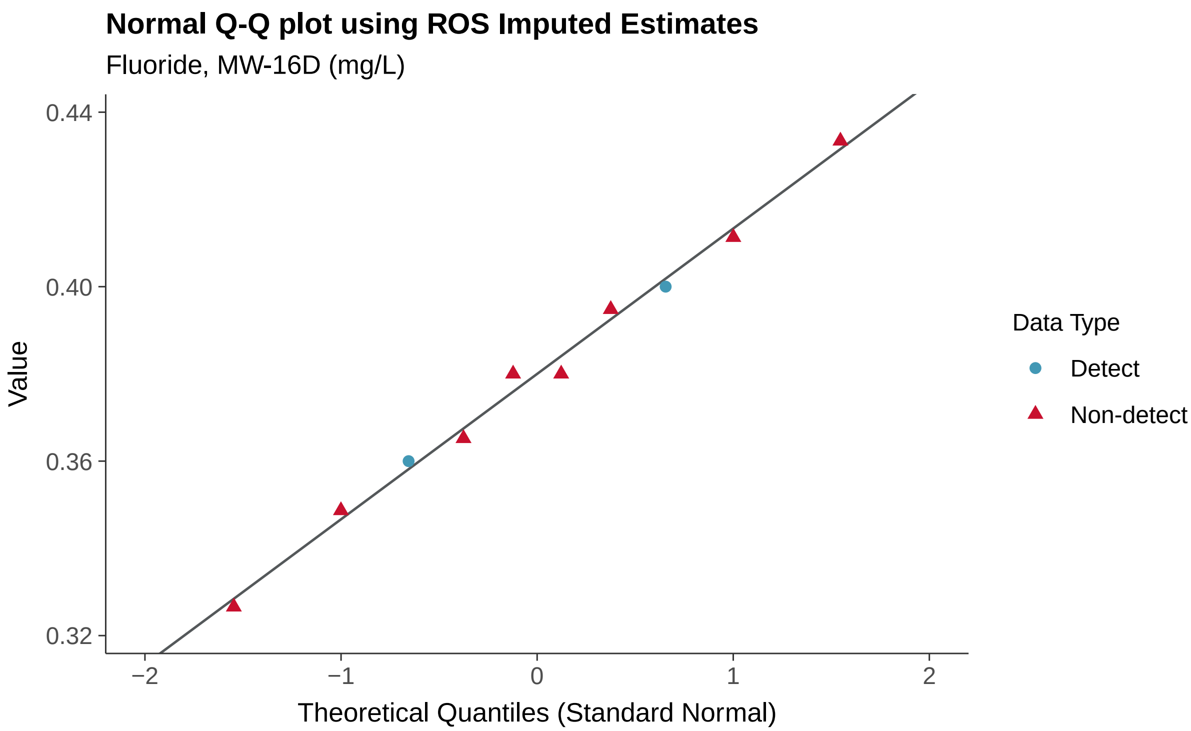
Fluoride, MW-16D (mg/L)

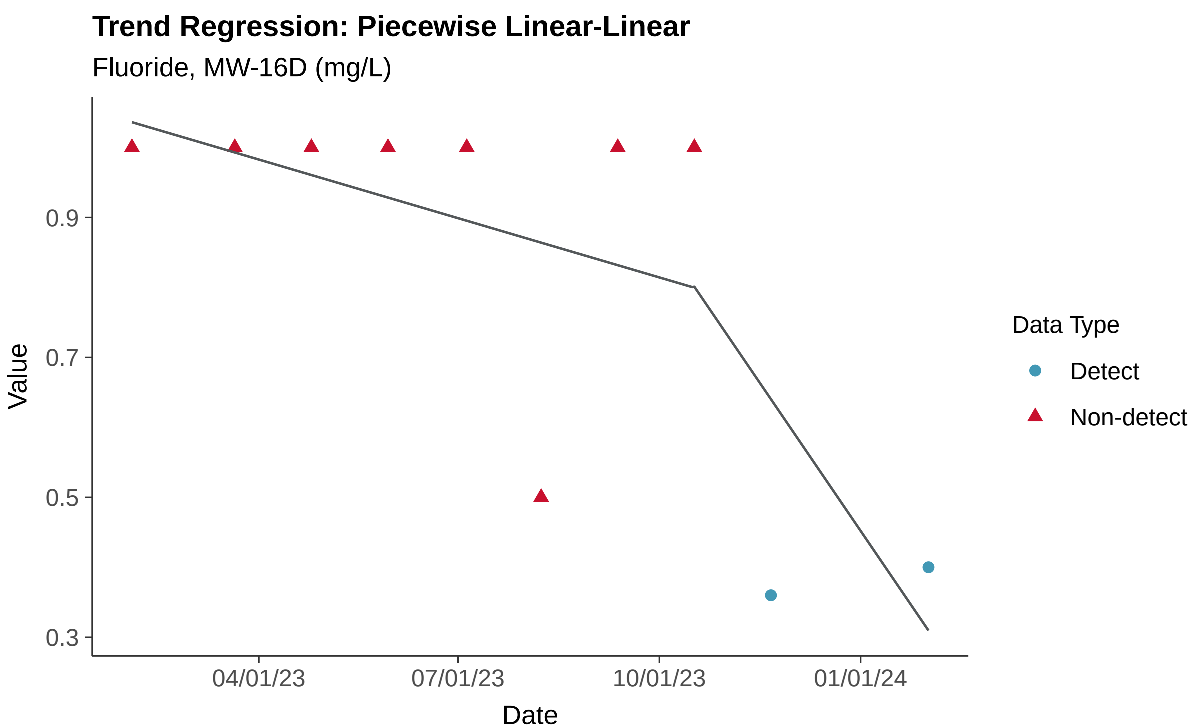


Boxplot by Season

Fluoride, MW-16D (mg/L)

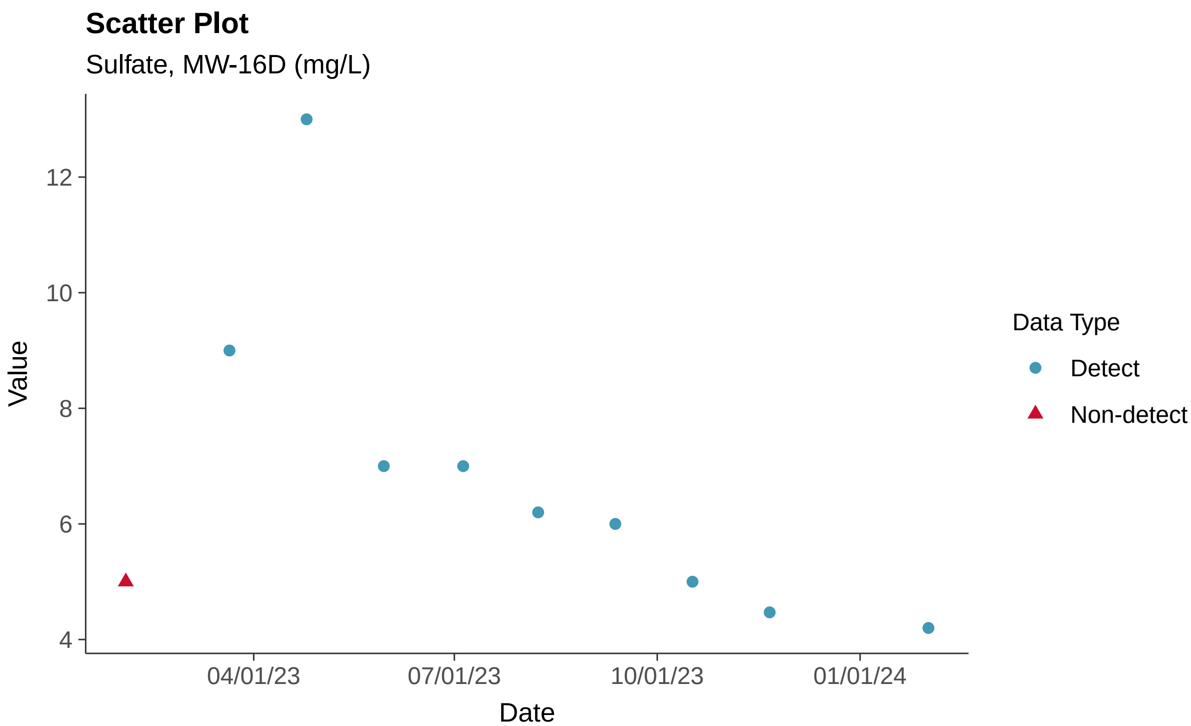


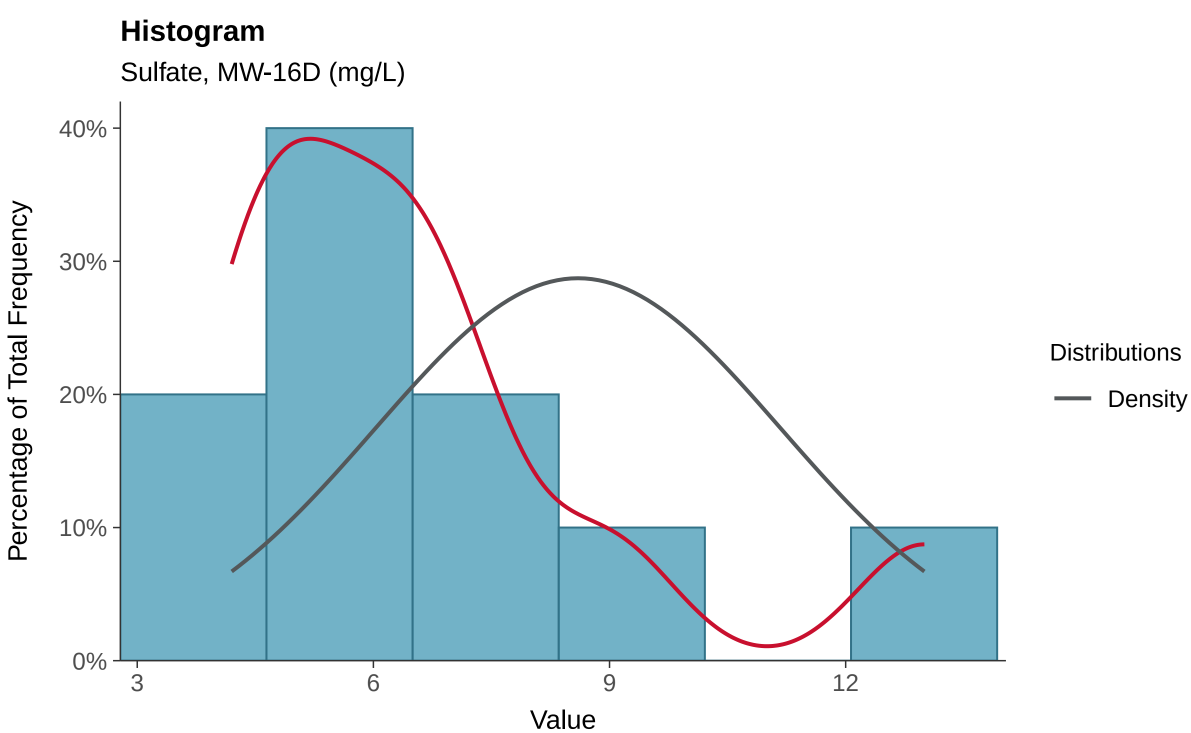

Normal Q-Q plot using ROS Imputed Estimates
Fluoride, MW-16D (mg/L)
Value
0.44
0.40
0.36
0.32
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Trend Regression: Piecewise Linear-Linear
Fluoride, MW-16D (mg/L)
Value
0.9
0.7
0.5
0.3
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect
Non-detect

Appendix III: Sulfate, MW-16D

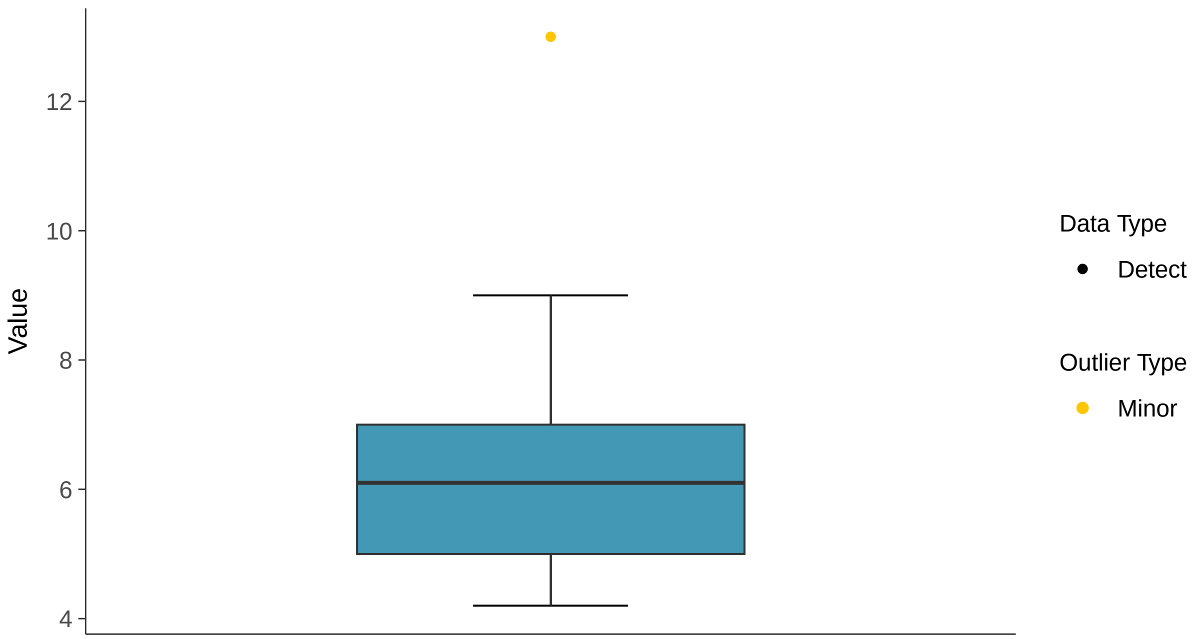
ID: 16D_1_05





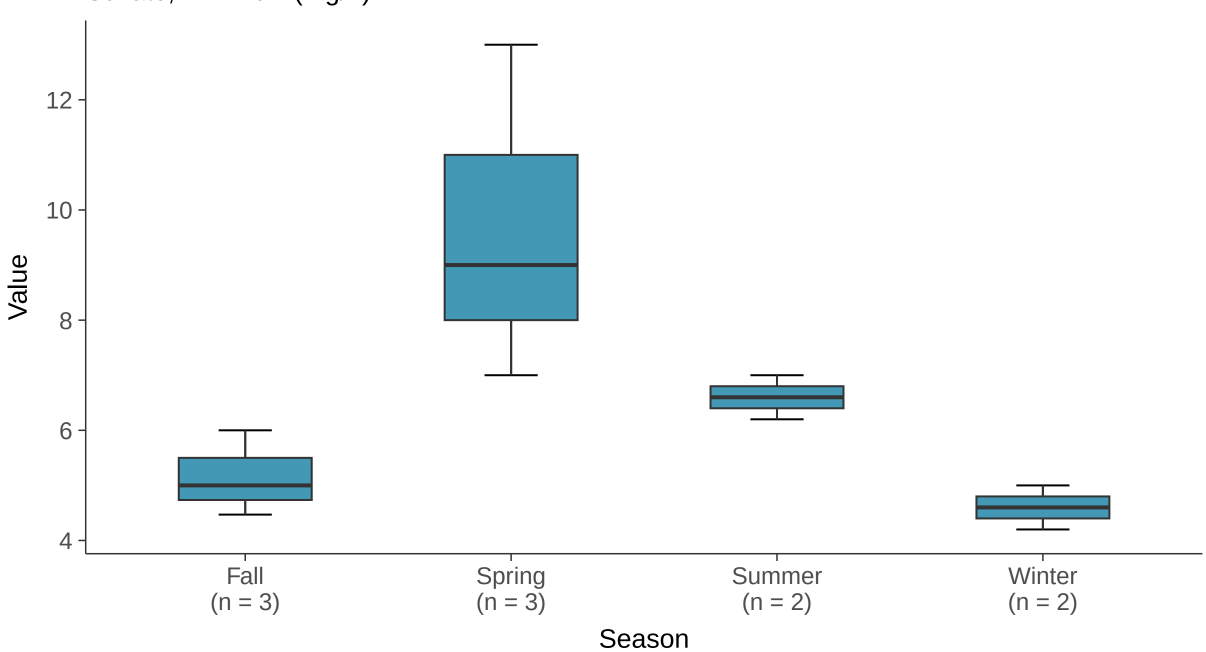
Boxplot

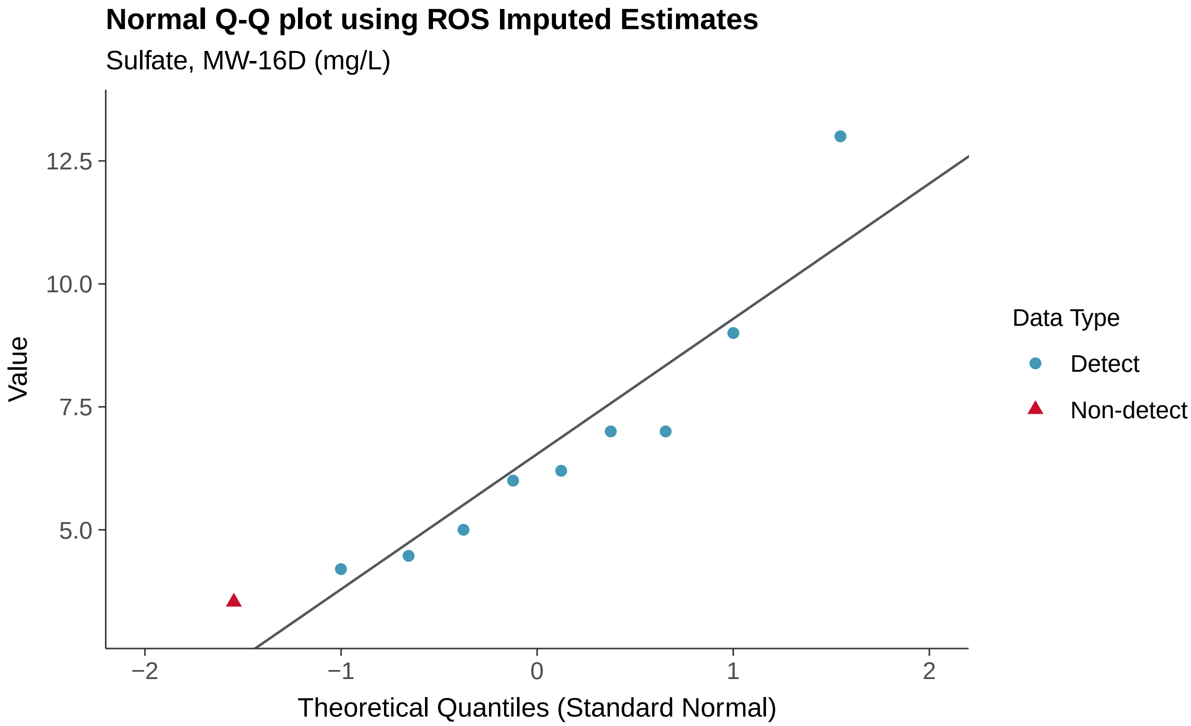
Sulfate, MW-16D (mg/L)

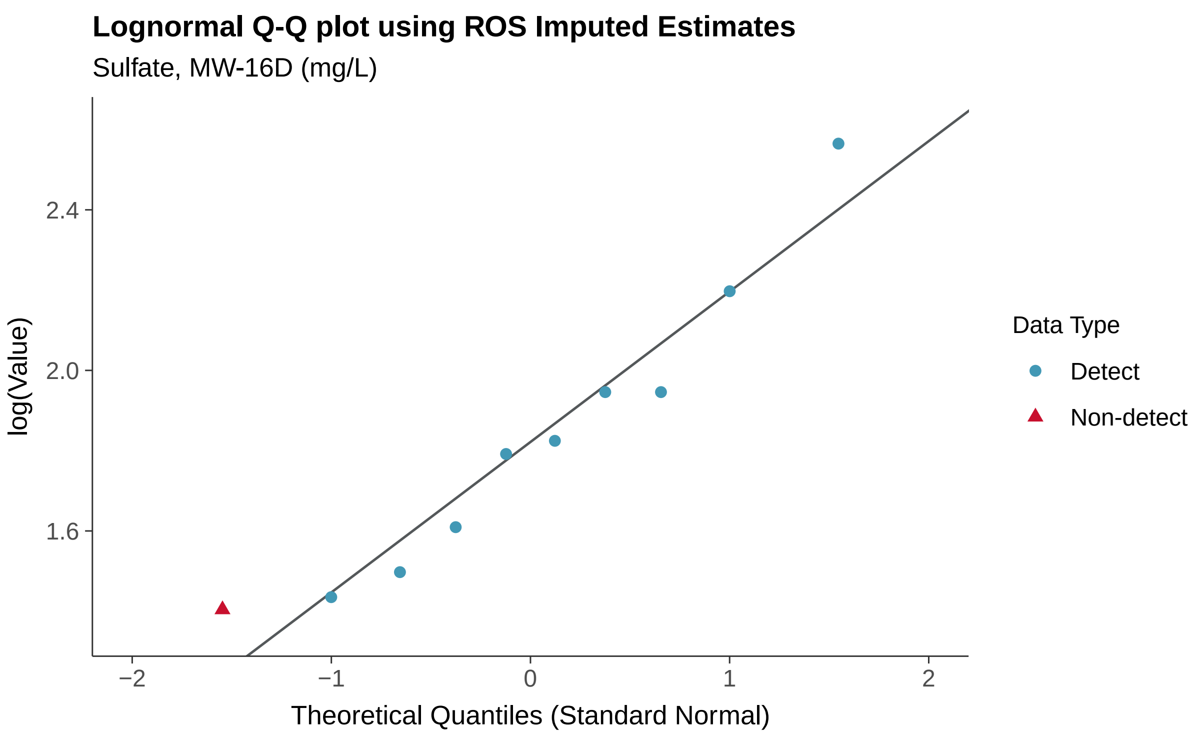


Boxplot by Season

Sulfate, MW-16D (mg/L)

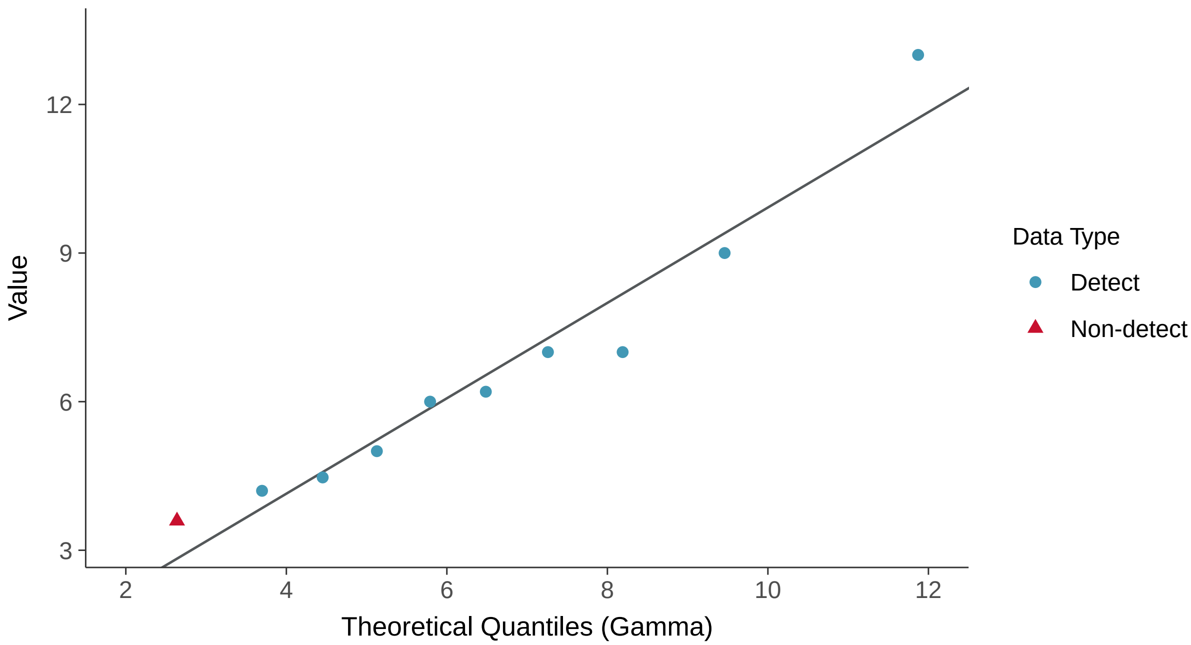



Normal Q-Q plot using ROS Imputed Estimates
Sulfate, MW-16D (mg/L)
Value
12.5
10.0
7.5
5.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect


Lognormal Q-Q plot using ROS Imputed Estimates
Sulfate, MW-16D (mg/L)
log(Value)
2.4
2.0
1.6
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect
Non-detect

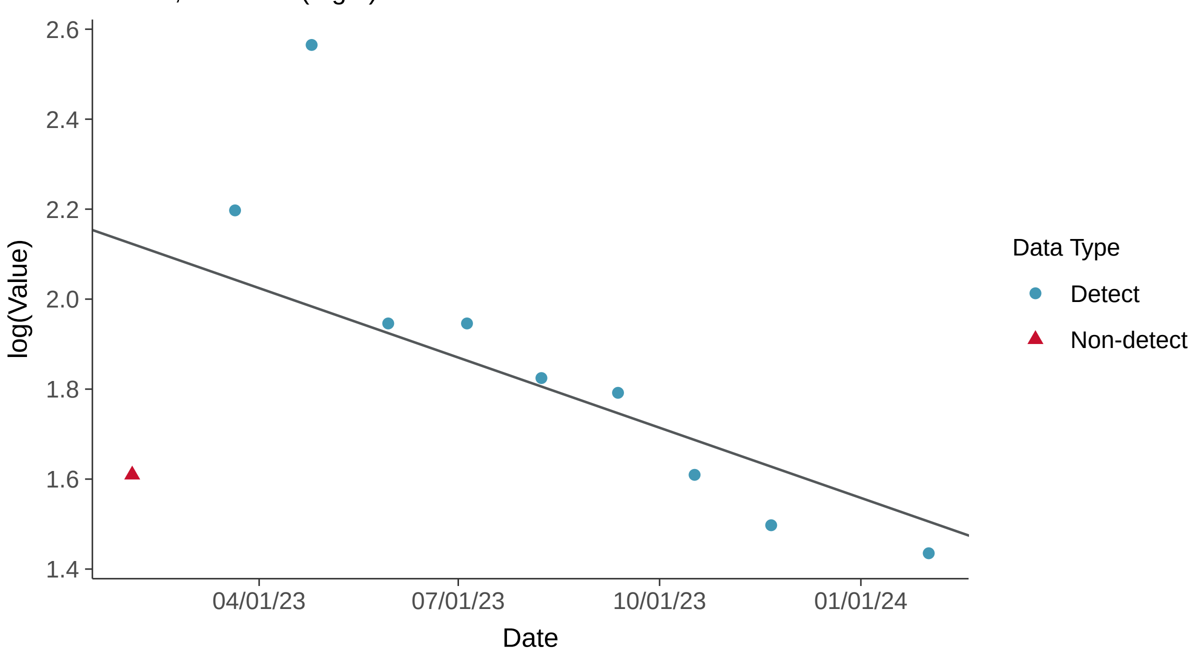
Gamma Q-Q plot using ROS Imputed Estimates

Sulfate, MW-16D (mg/L)



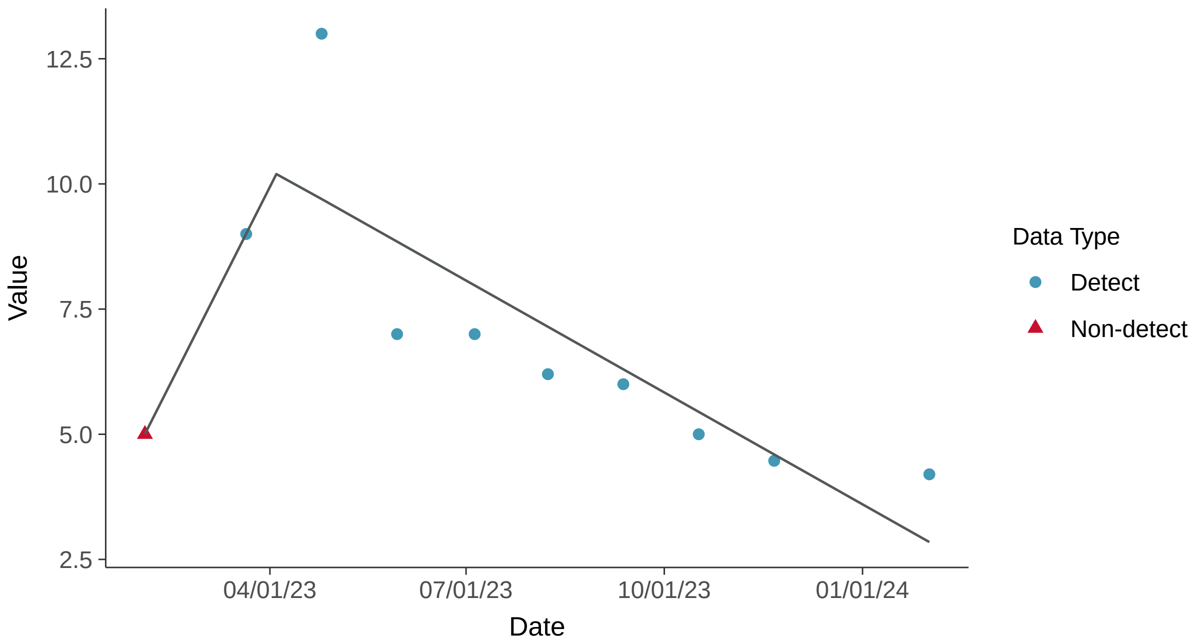
Trend Regression: Lognormal MLE

Sulfate, MW-16D (mg/L)



Trend Regression: Piecewise Linear-Linear

Sulfate, MW-16D (mg/L)

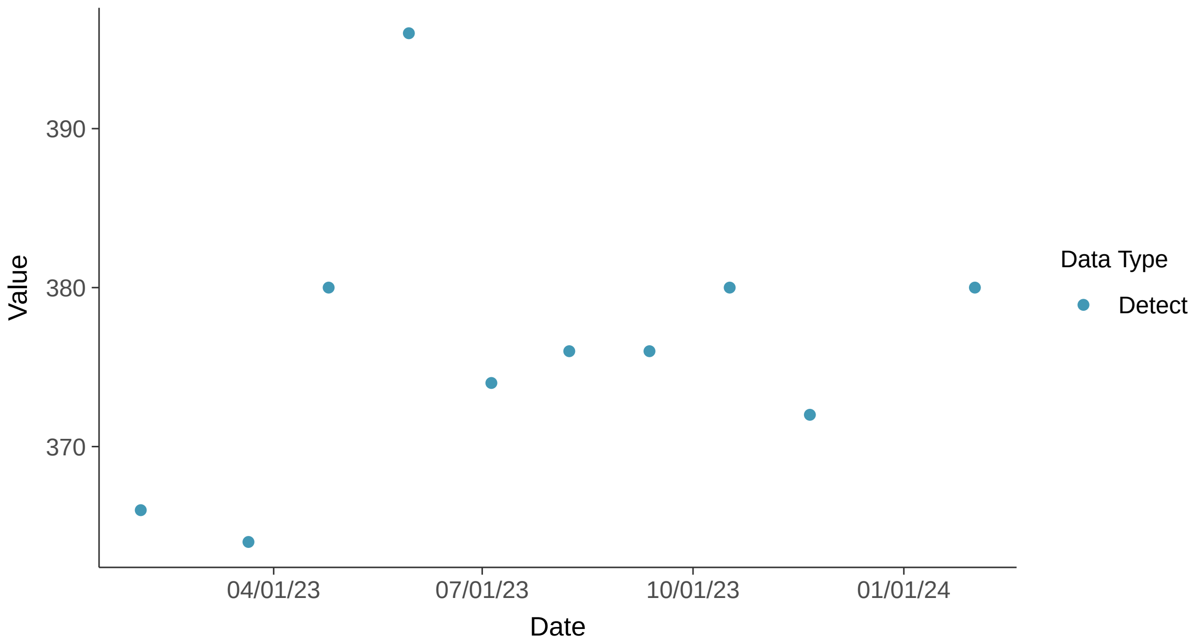


Appendix III: Total Dissolved Solids, MW-16D

ID: 16D_1_06

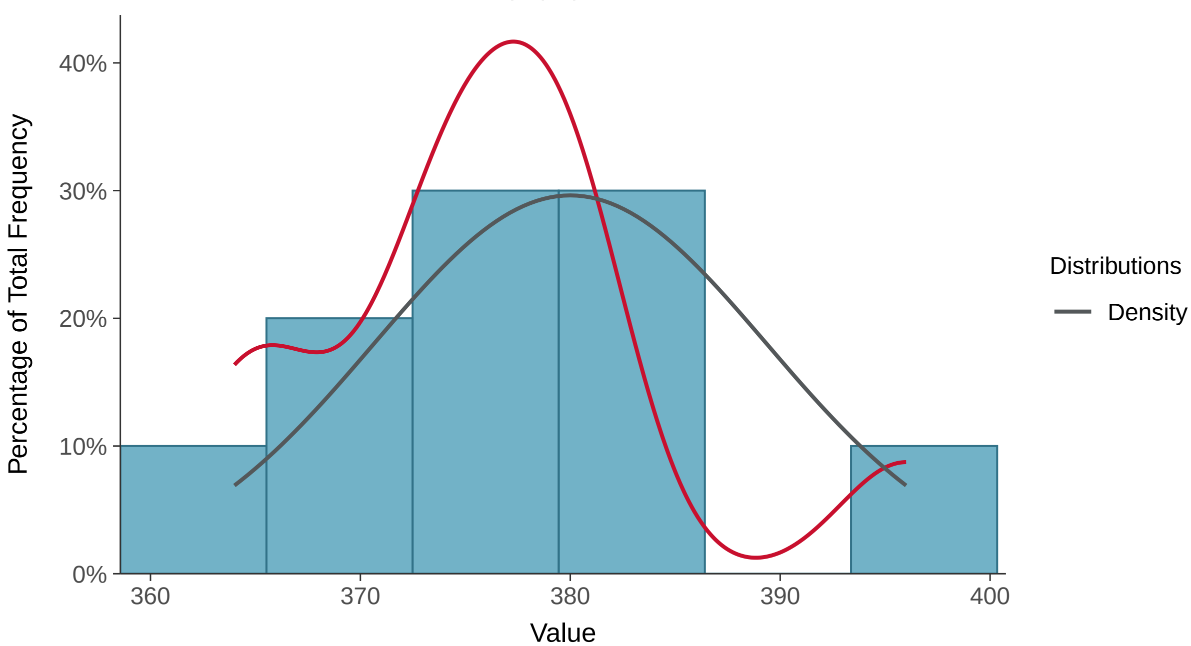
Scatter Plot

Total Dissolved Solids, MW-16D (mg/L)



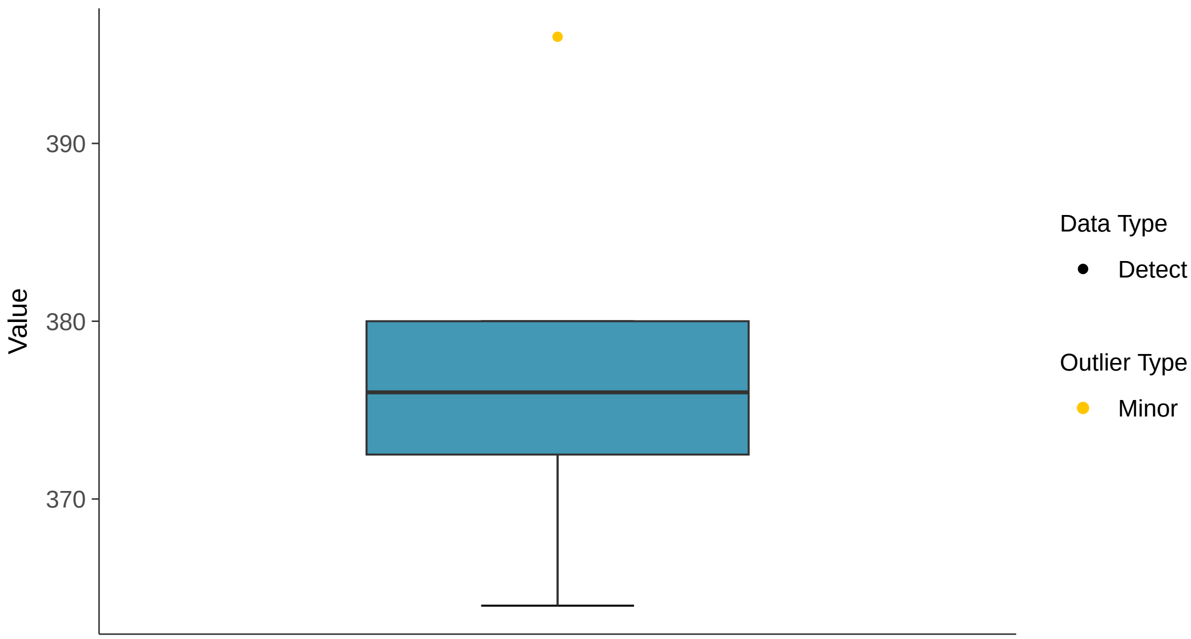
Histogram

Total Dissolved Solids, MW-16D (mg/L)



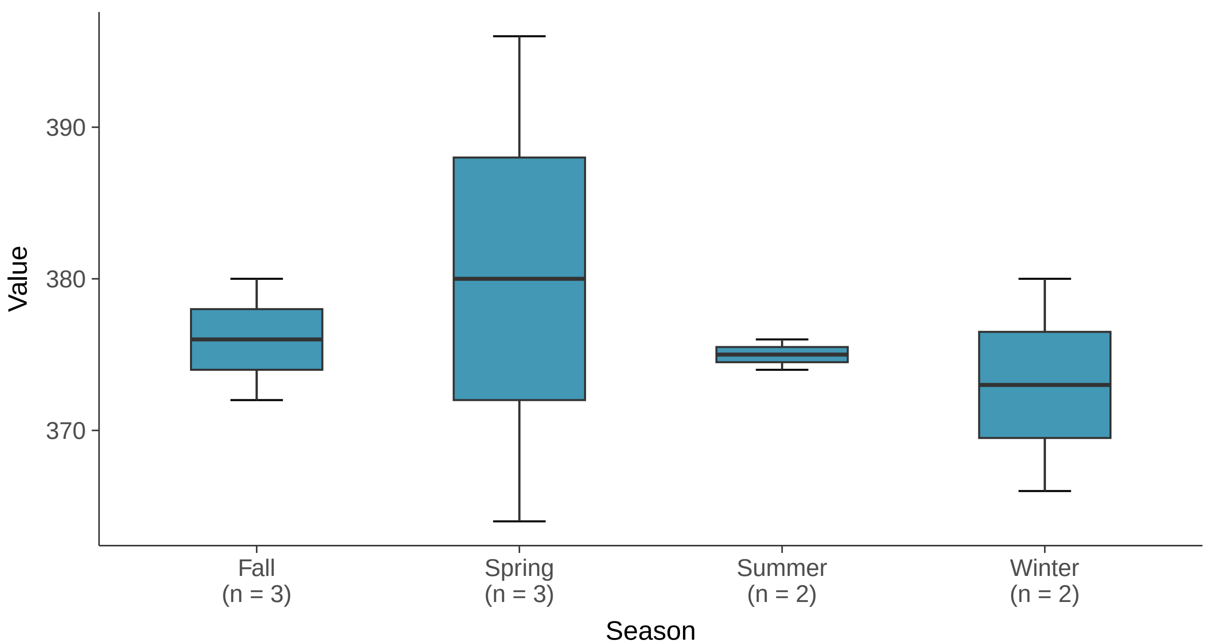
Boxplot

Total Dissolved Solids, MW-16D (mg/L)



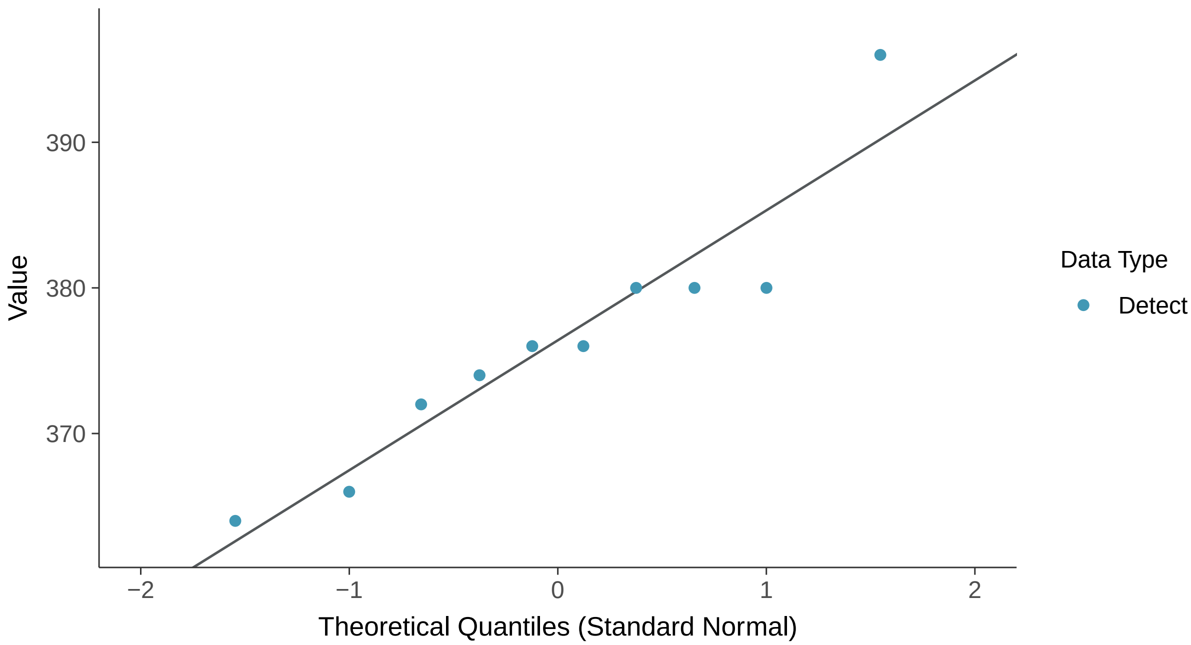
Boxplot by Season

Total Dissolved Solids, MW-16D (mg/L)



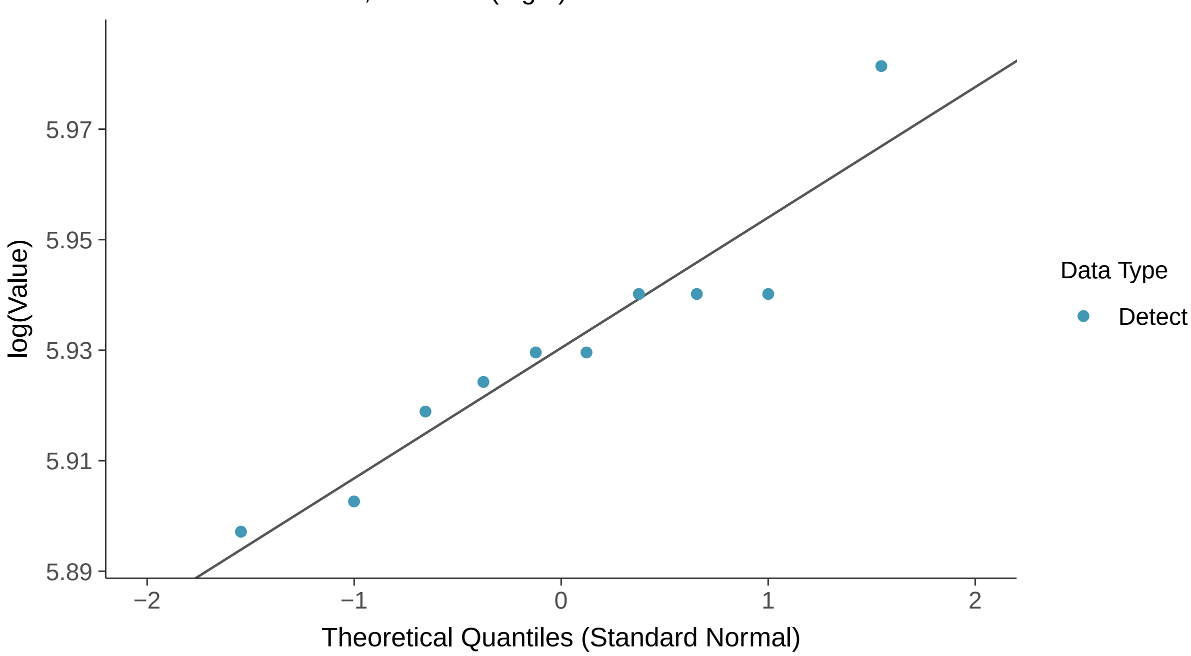
Normal Q-Q plot

Total Dissolved Solids, MW-16D (mg/L)



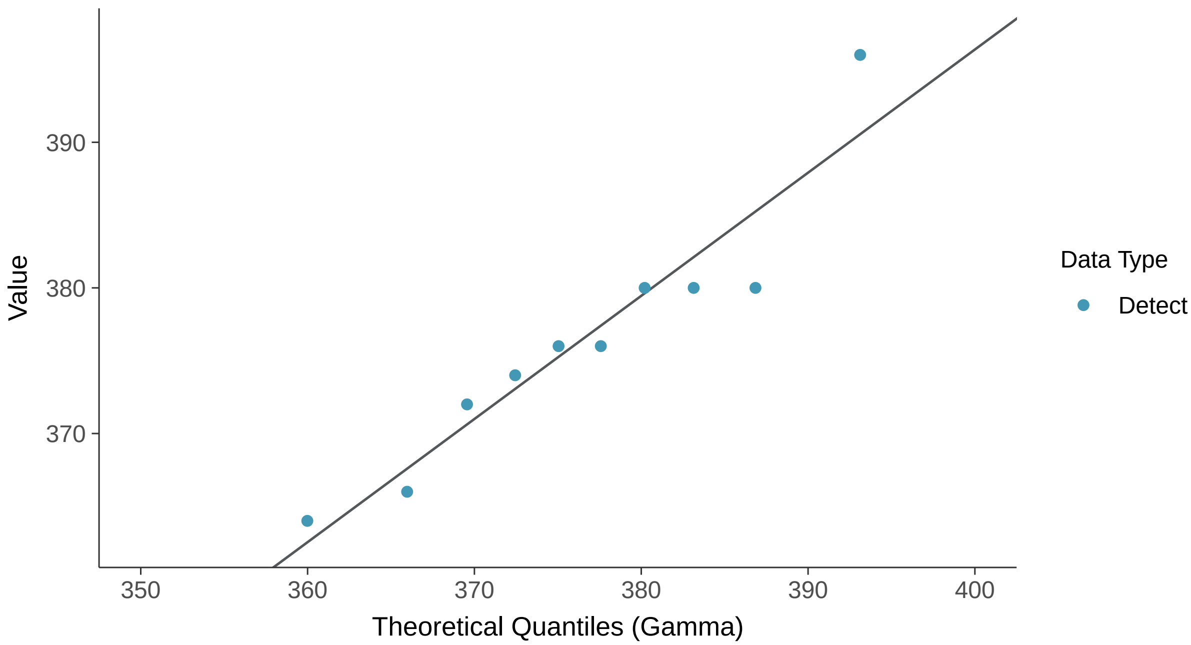
Lognormal Q-Q plot

Total Dissolved Solids, MW-16D (mg/L)



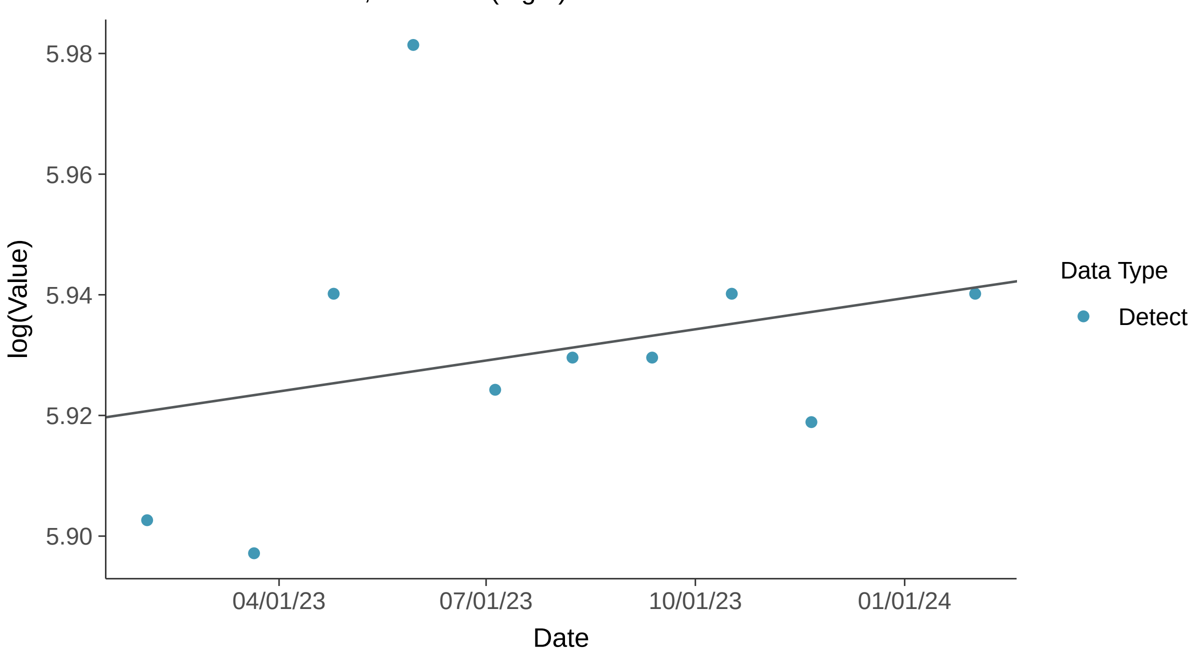
Gamma Q-Q plot

Total Dissolved Solids, MW-16D (mg/L)



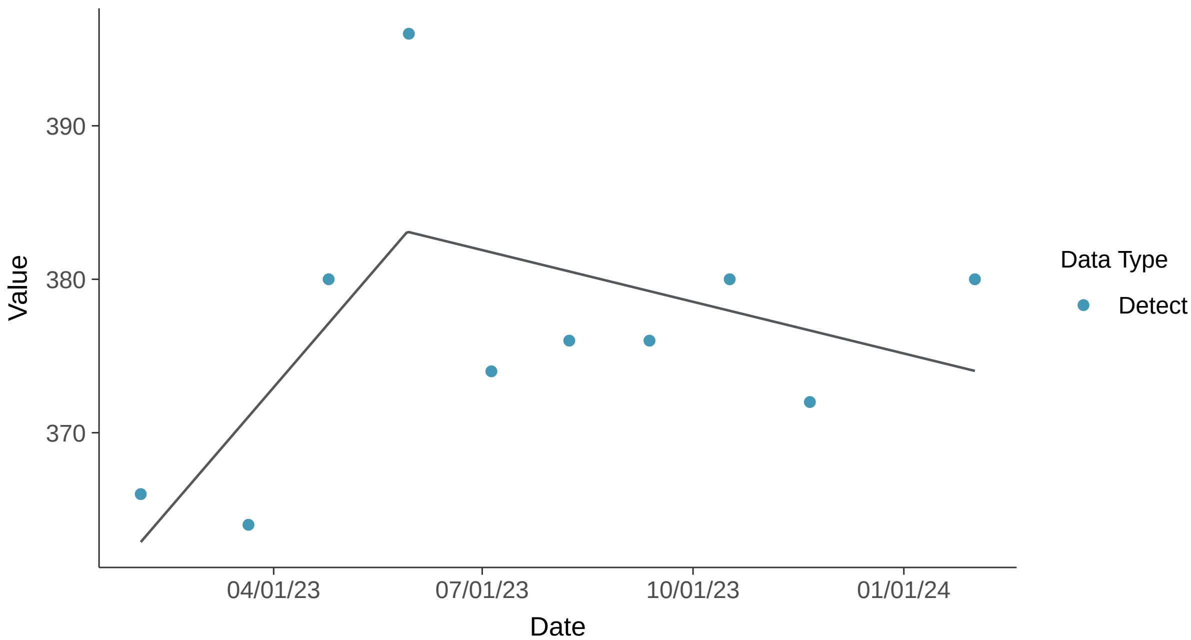
Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-16D (mg/L)



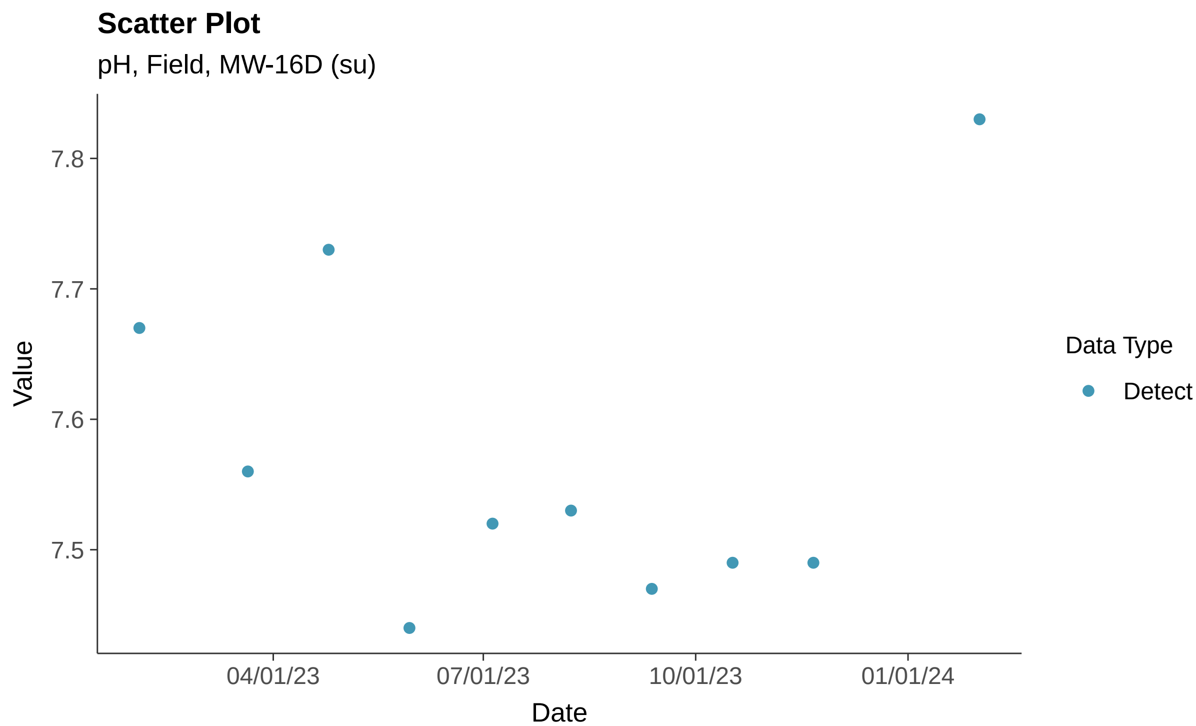
Trend Regression: Piecewise Linear-Linear

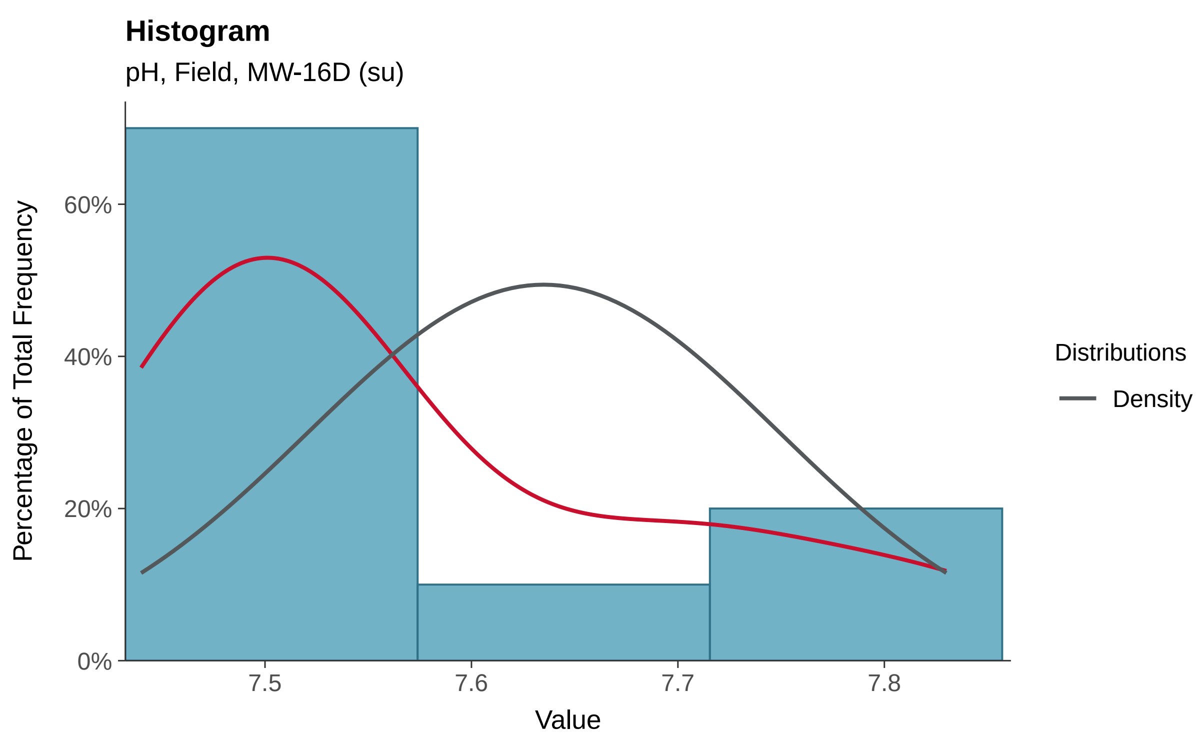
Total Dissolved Solids, MW-16D (mg/L)



Appendix III: pH, Field, MW-16D

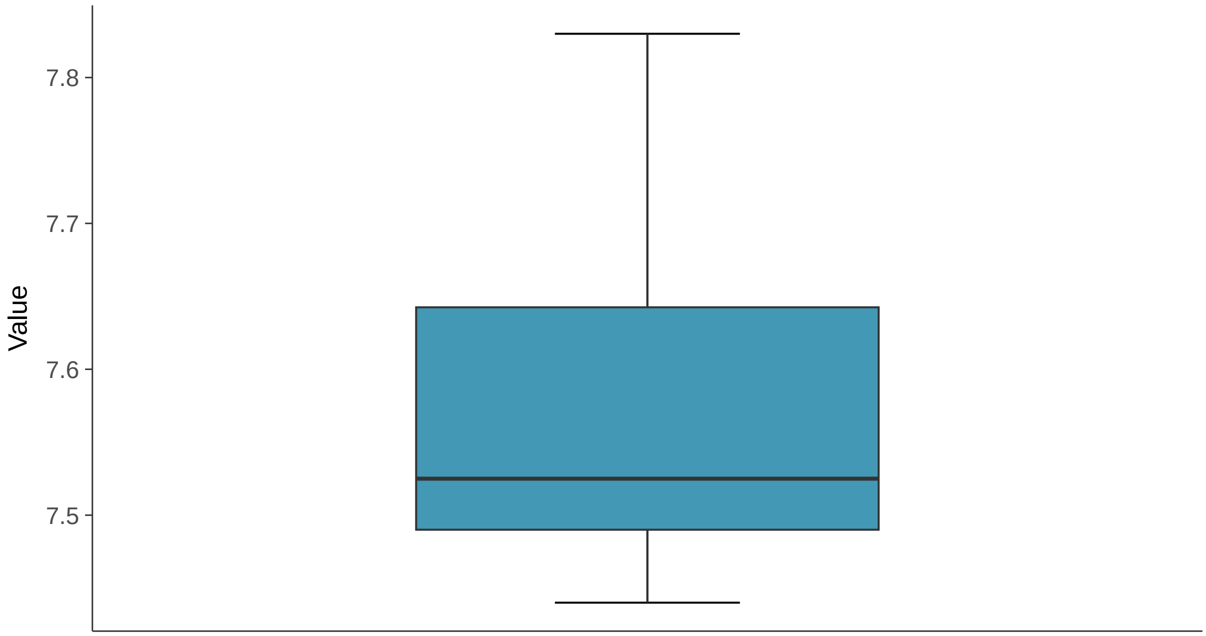
ID: 16D_1_07





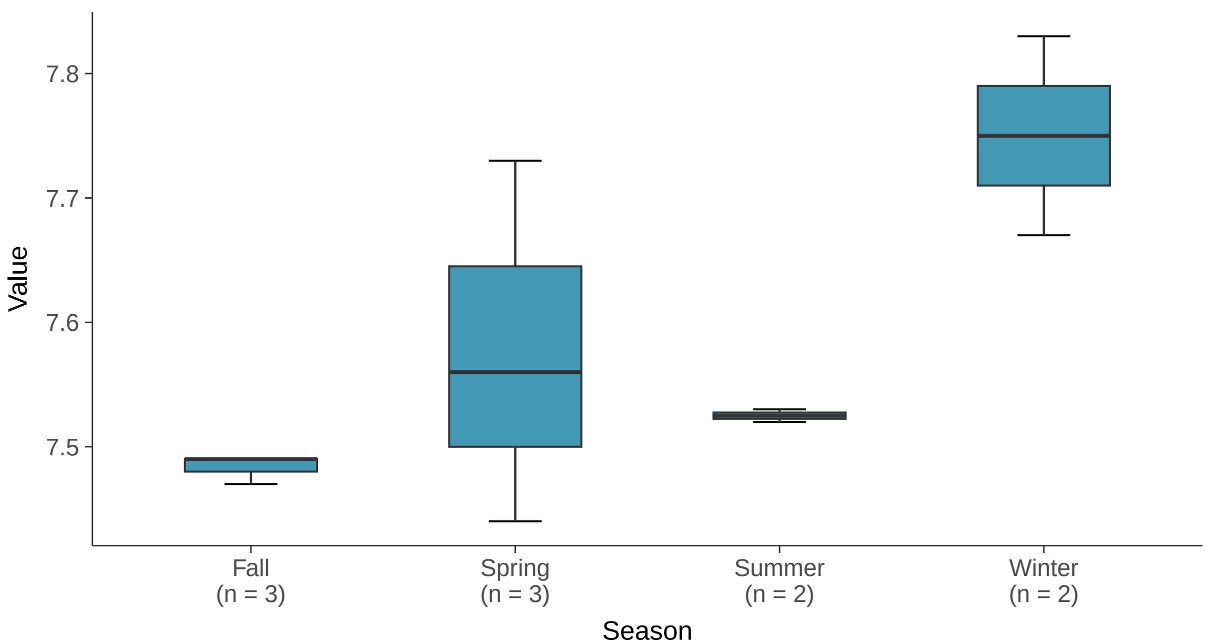
Boxplot

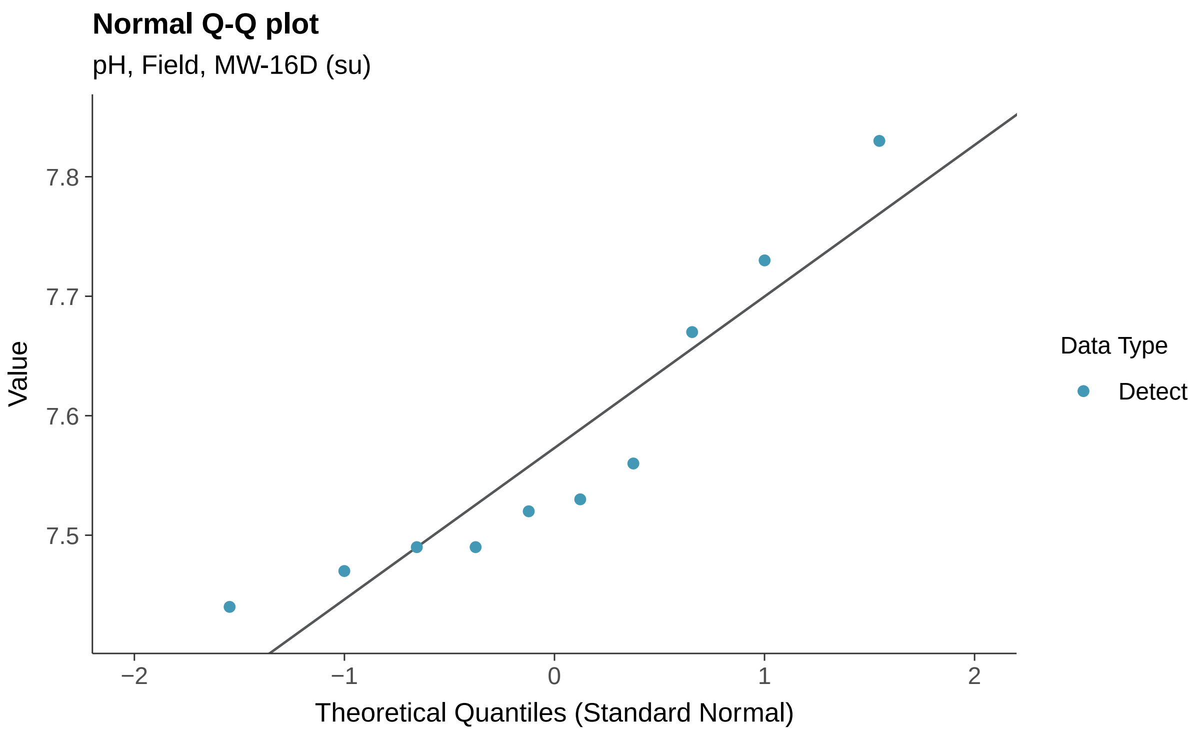
pH, Field, MW-16D (su)

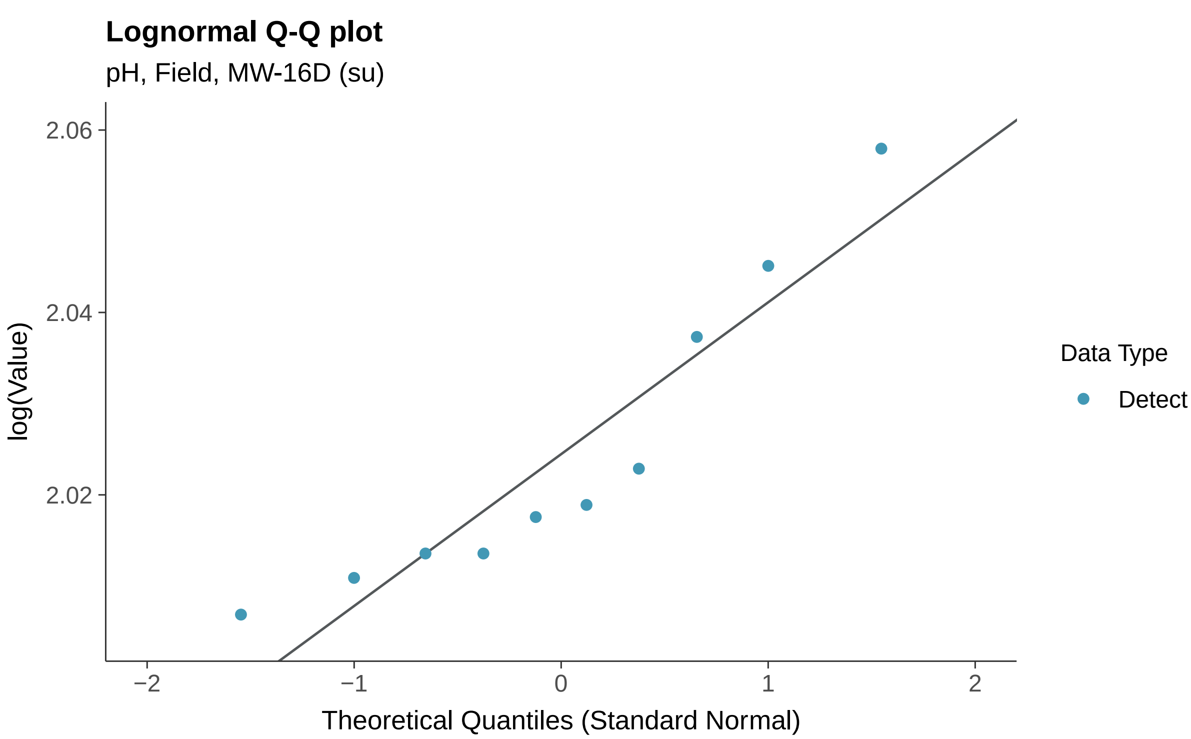


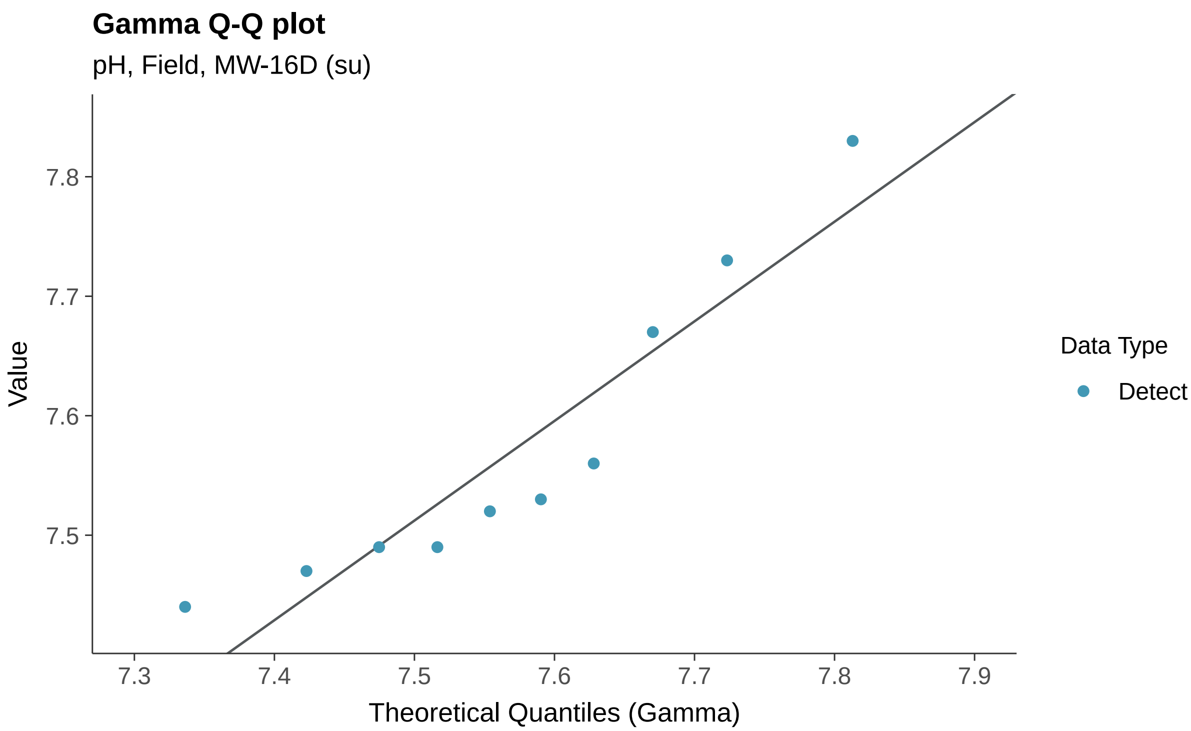
Boxplot by Season

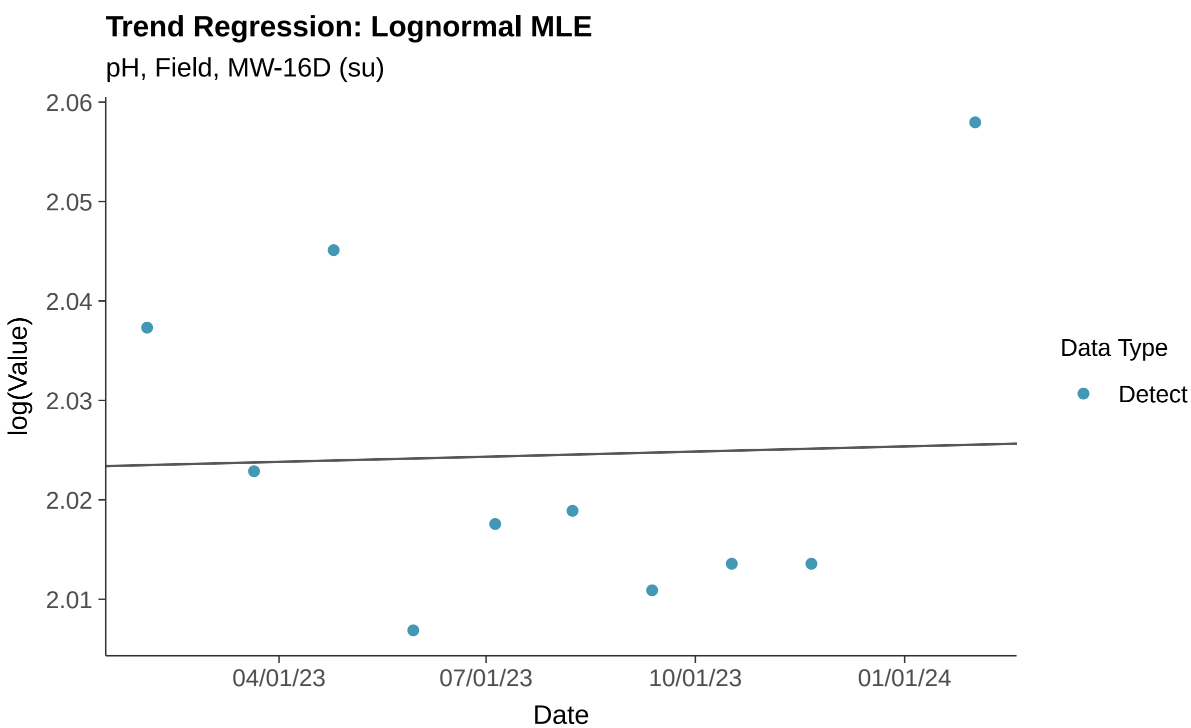
pH, Field, MW-16D (su)

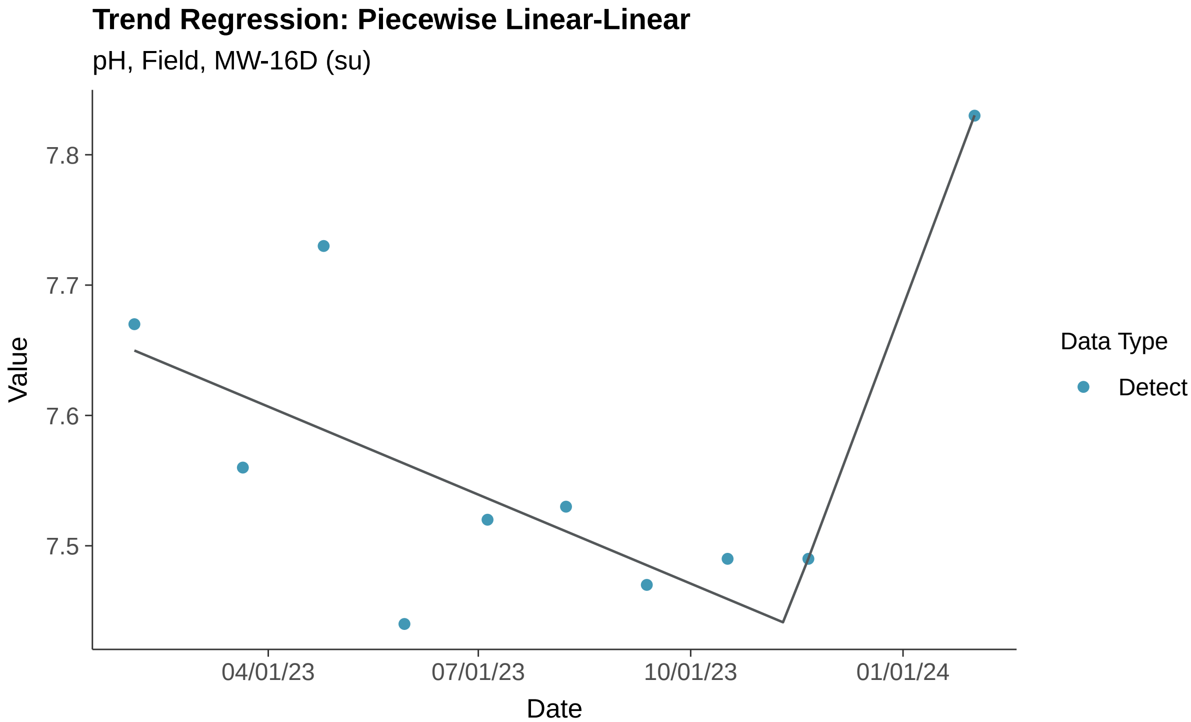


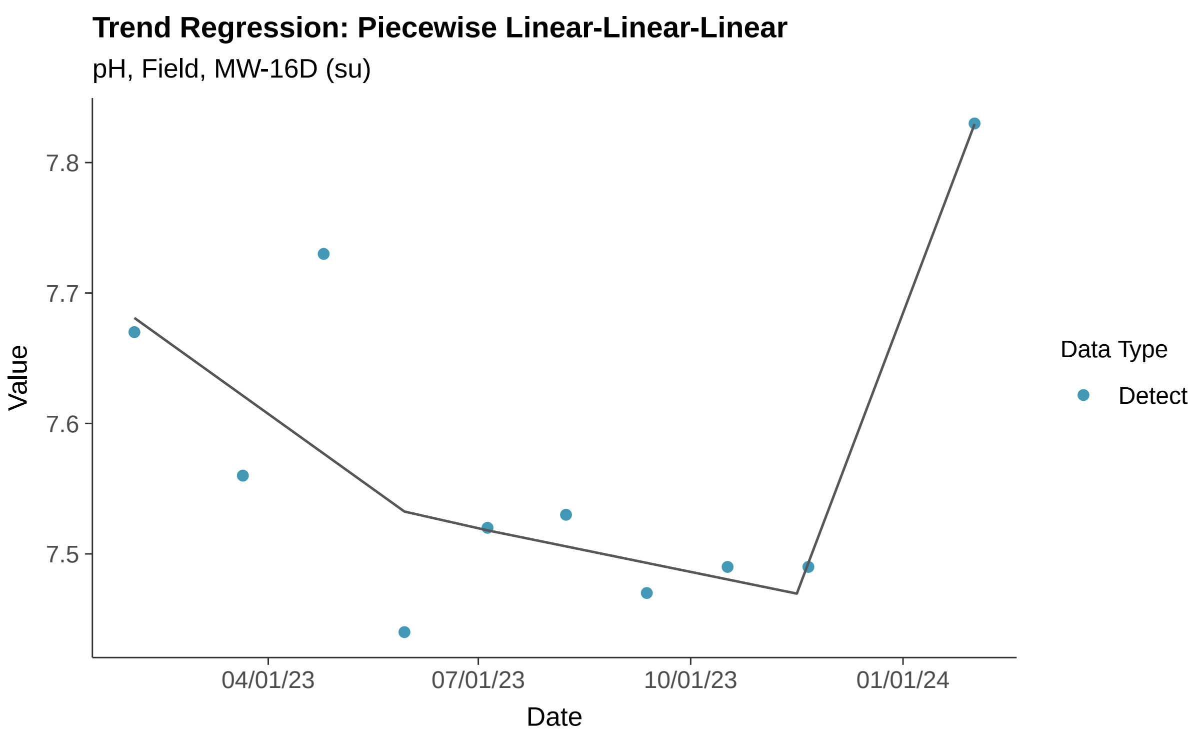

Normal Q-Q plot
pH, Field, MW-16D (su)
Value
7.8
7.7
7.6
7.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
pH, Field, MW-16D (su)
log(Value)
2.06
2.04
2.02
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, Field, MW-16D (su)
Value
7.8
7.7
7.6
7.5
7.3
7.4
7.5
7.6
7.7
7.8
7.9
Theoretical Quantiles (Gamma)
Data Type
Detect

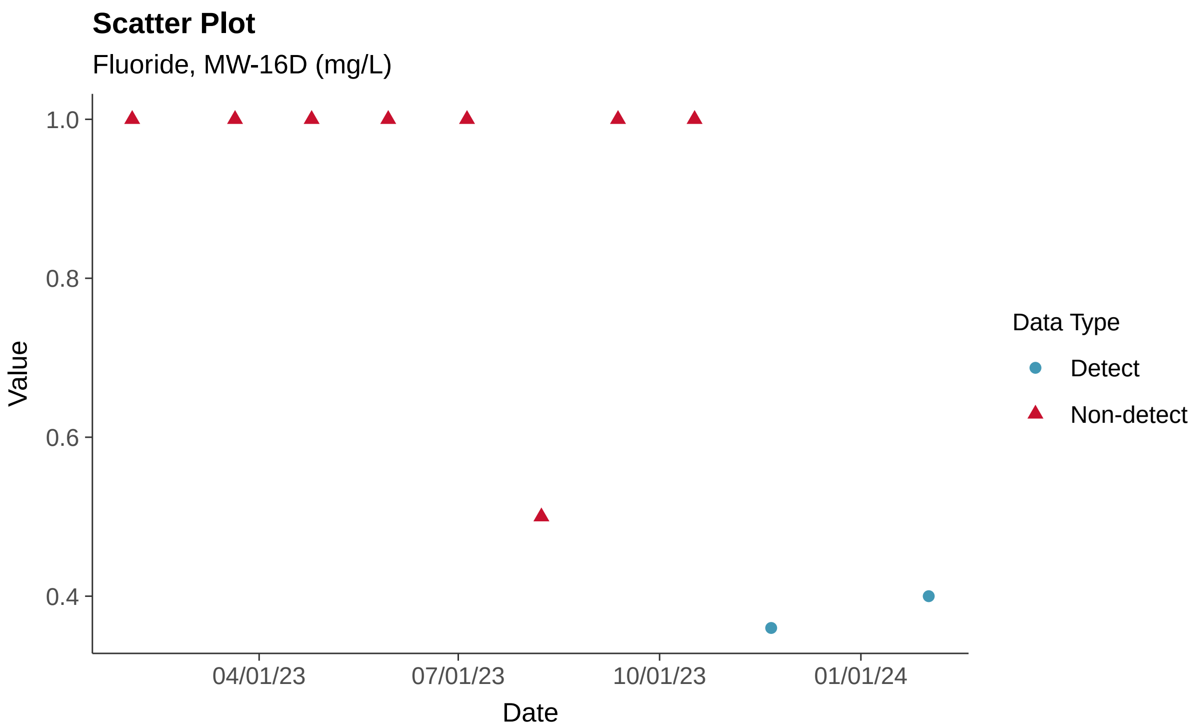

Trend Regression: Lognormal MLE
pH, Field, MW-16D (su)
log(Value)
2.06
2.05
2.04
2.03
2.02
2.01
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

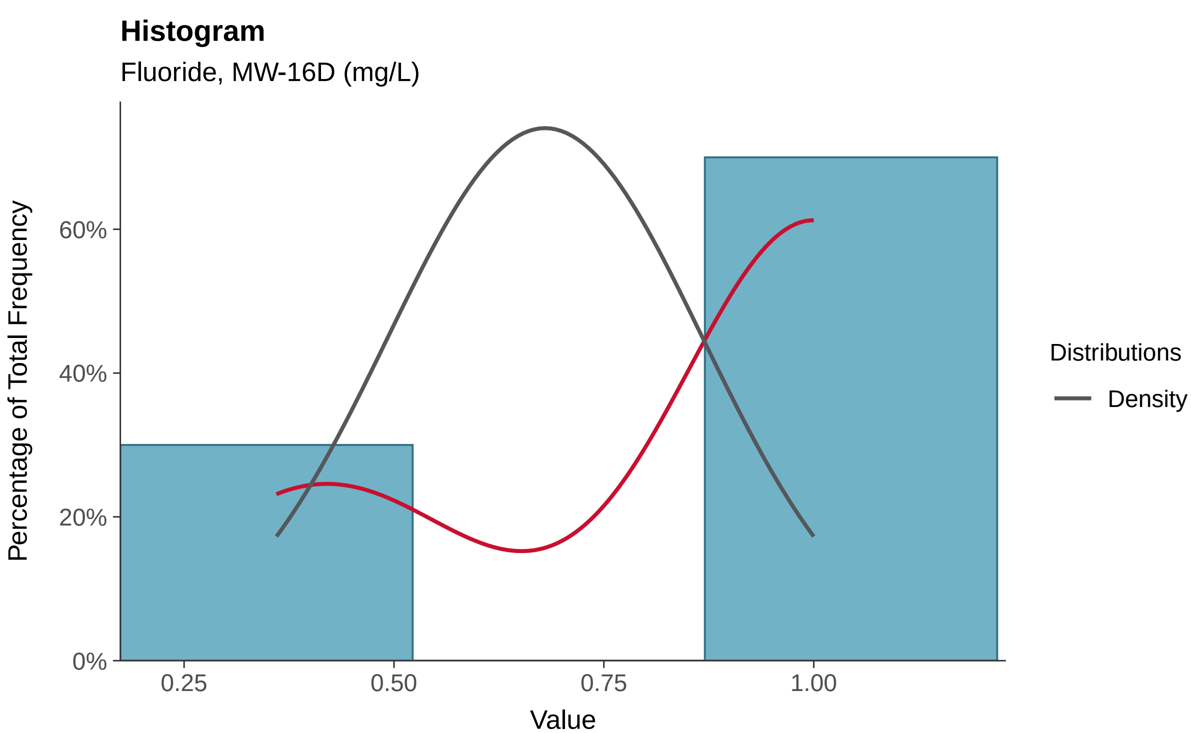

Trend Regression: Piecewise Linear-Linear
pH, Field, MW-16D (su)
Value
7.8
7.7
7.6
7.5
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
pH, Field, MW-16D (su)
Value
7.8
7.7
7.6
7.5
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Fluoride, MW-16D

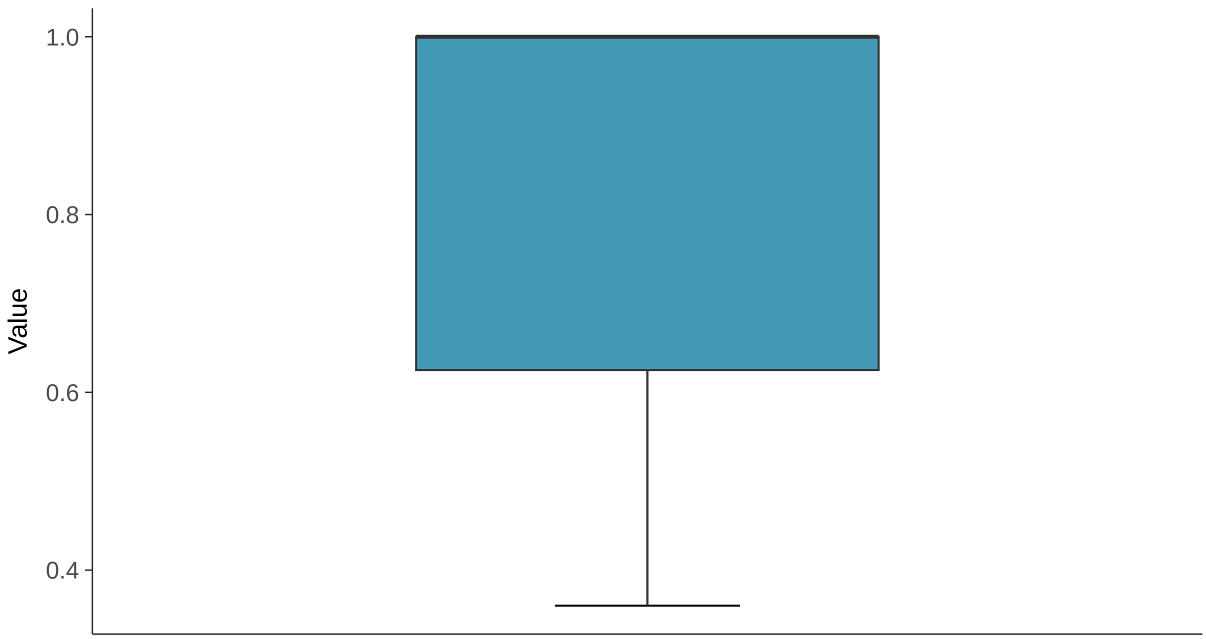
ID: 16D_2_04





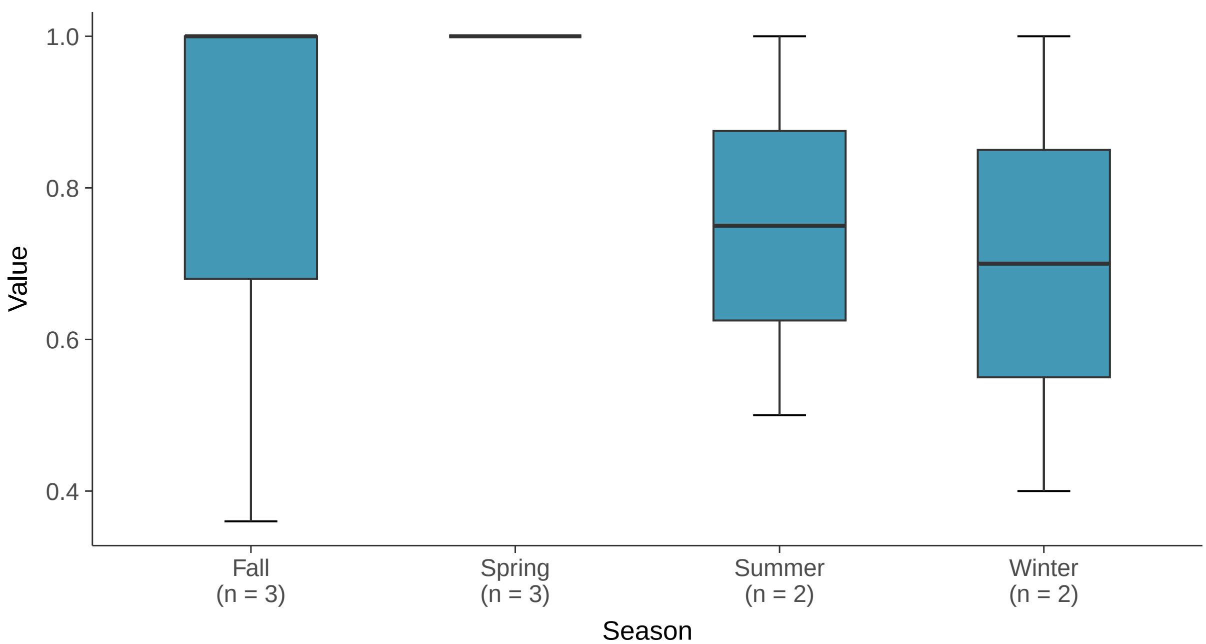
Boxplot

Fluoride, MW-16D (mg/L)



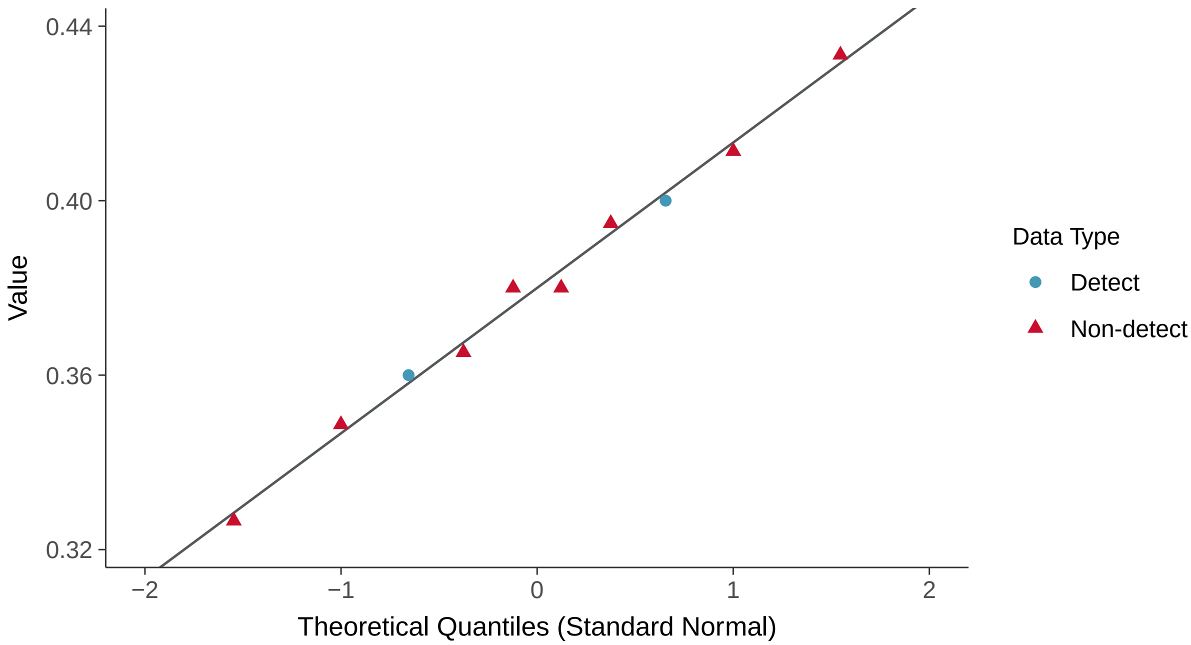
Boxplot by Season

Fluoride, MW-16D (mg/L)



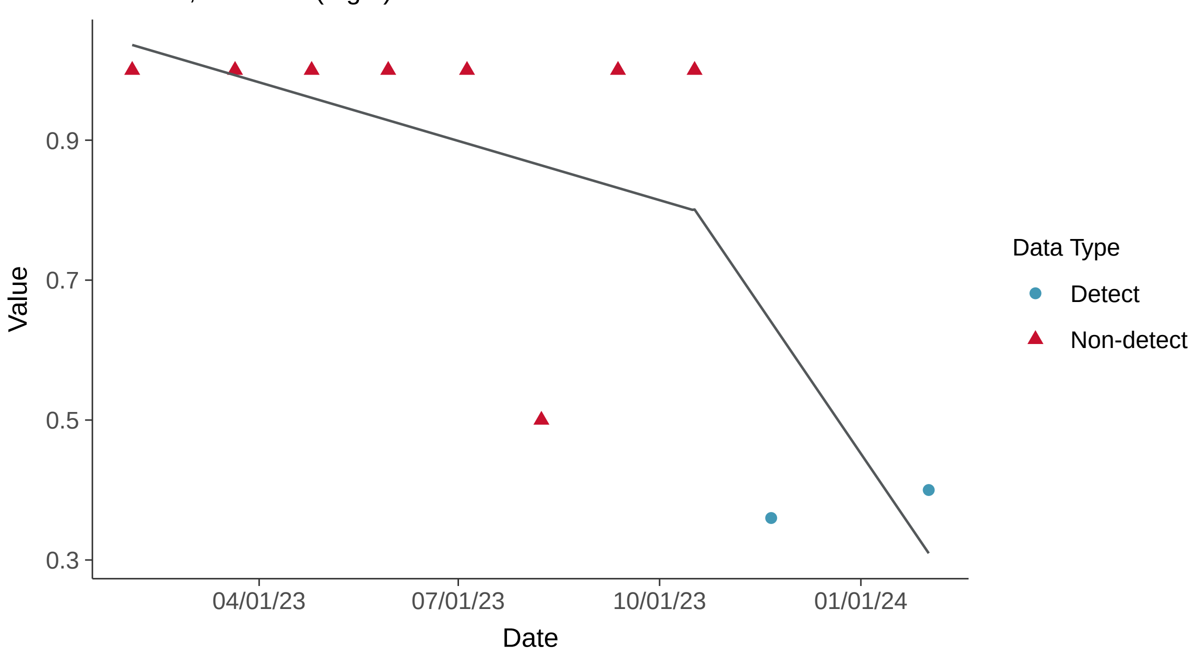
Normal Q-Q plot using ROS Imputed Estimates

Fluoride, MW-16D (mg/L)



Trend Regression: Piecewise Linear-Linear

Fluoride, MW-16D (mg/L)

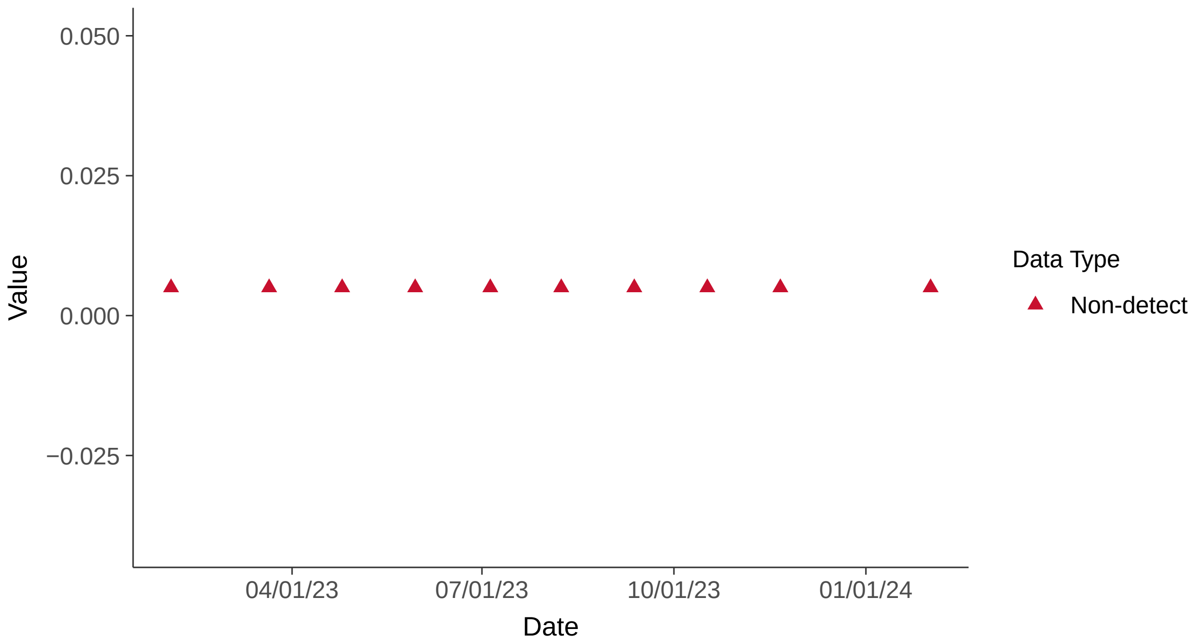


Appendix IV: Antimony, MW-16D

ID: 16D_2_08

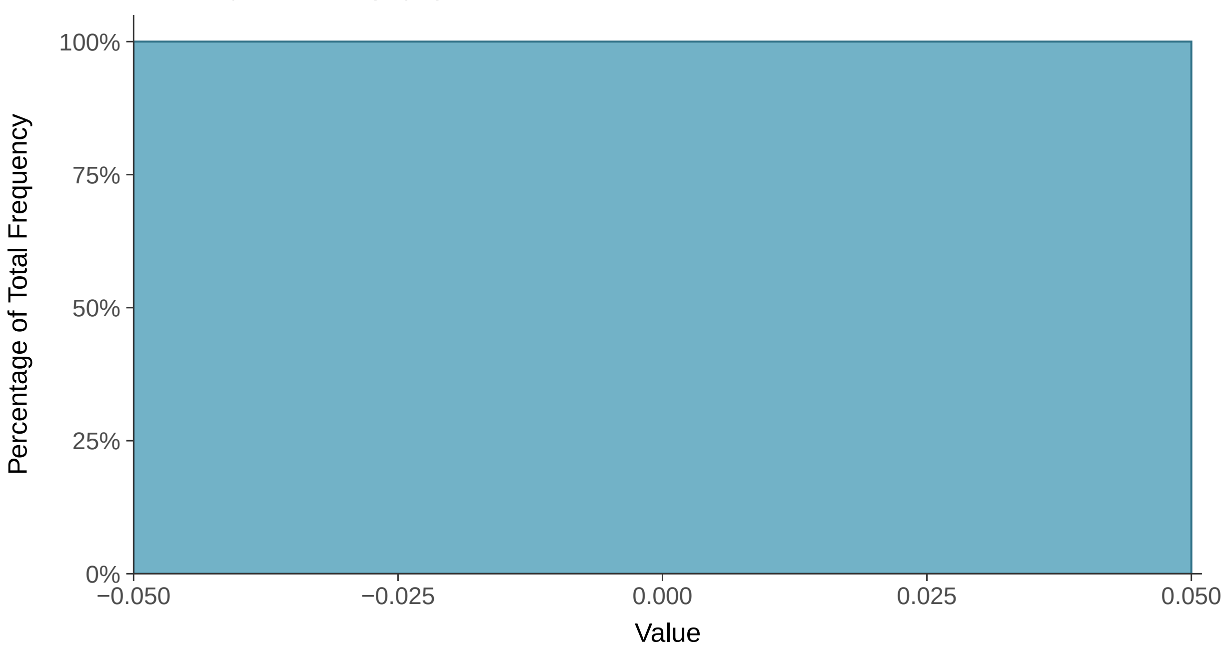
Scatter Plot

Antimony, MW-16D (mg/L)



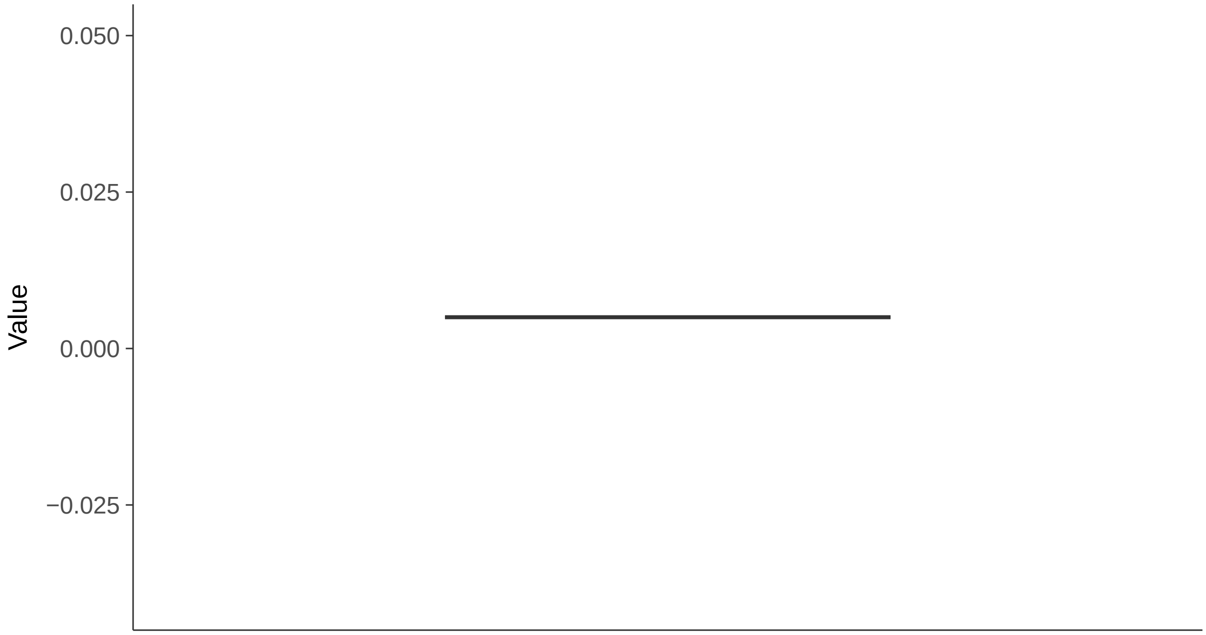
Histogram

Antimony, MW-16D (mg/L)



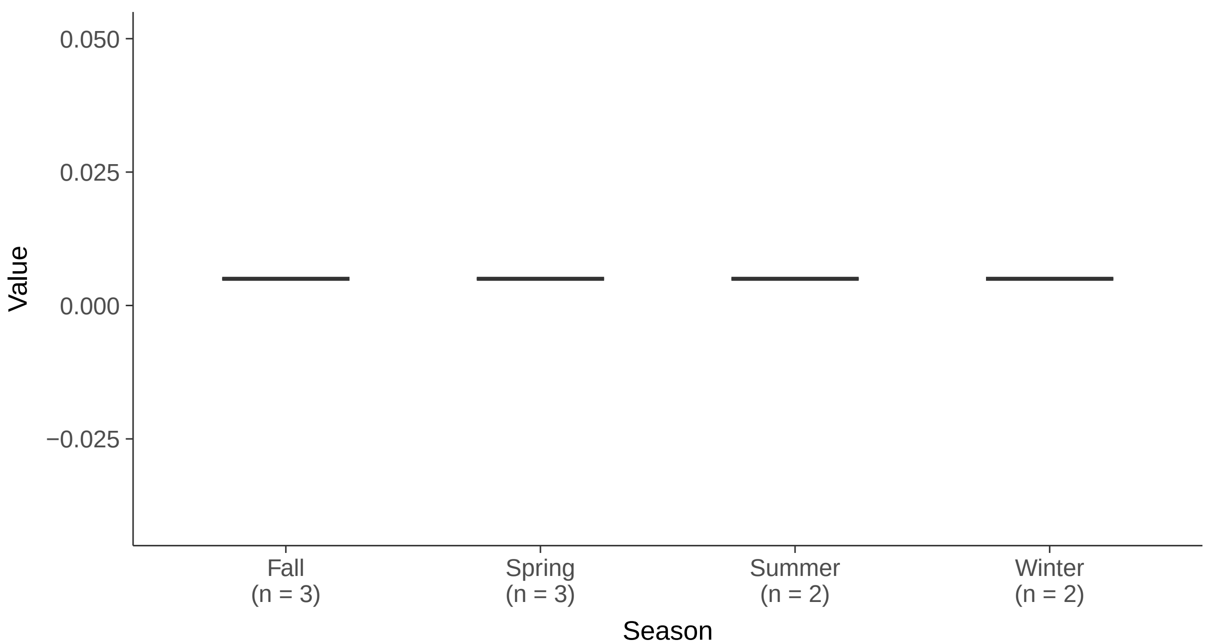
Boxplot

Antimony, MW-16D (mg/L)



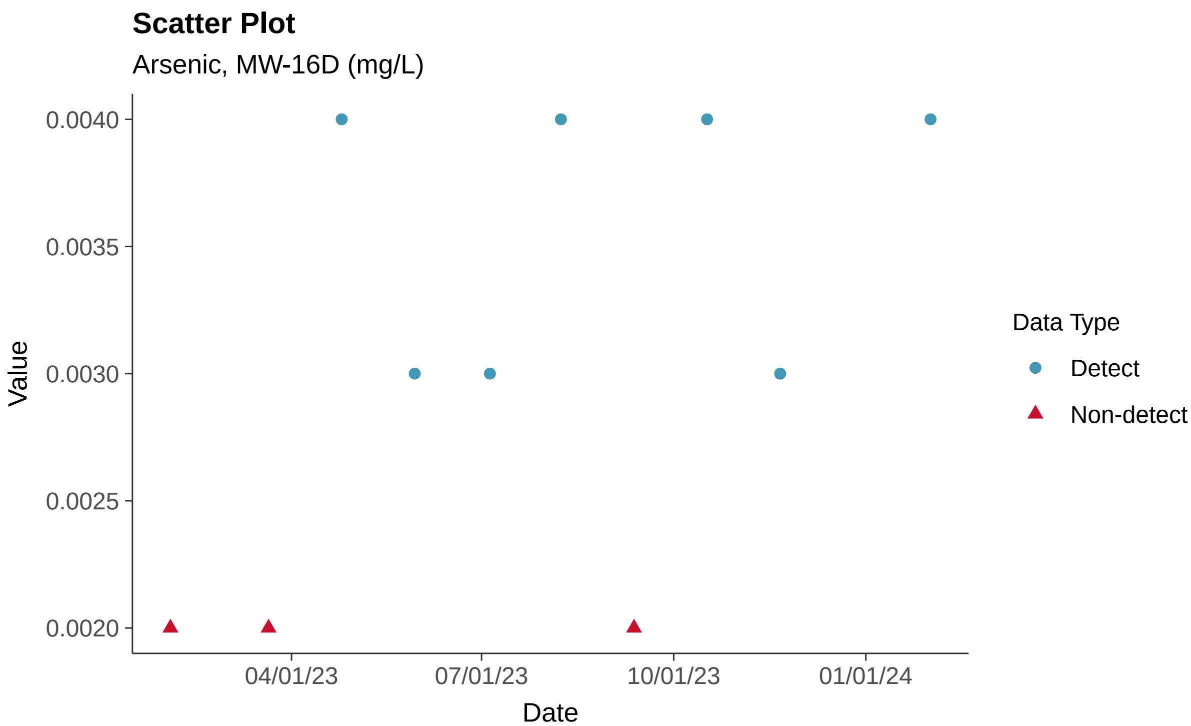
Boxplot by Season

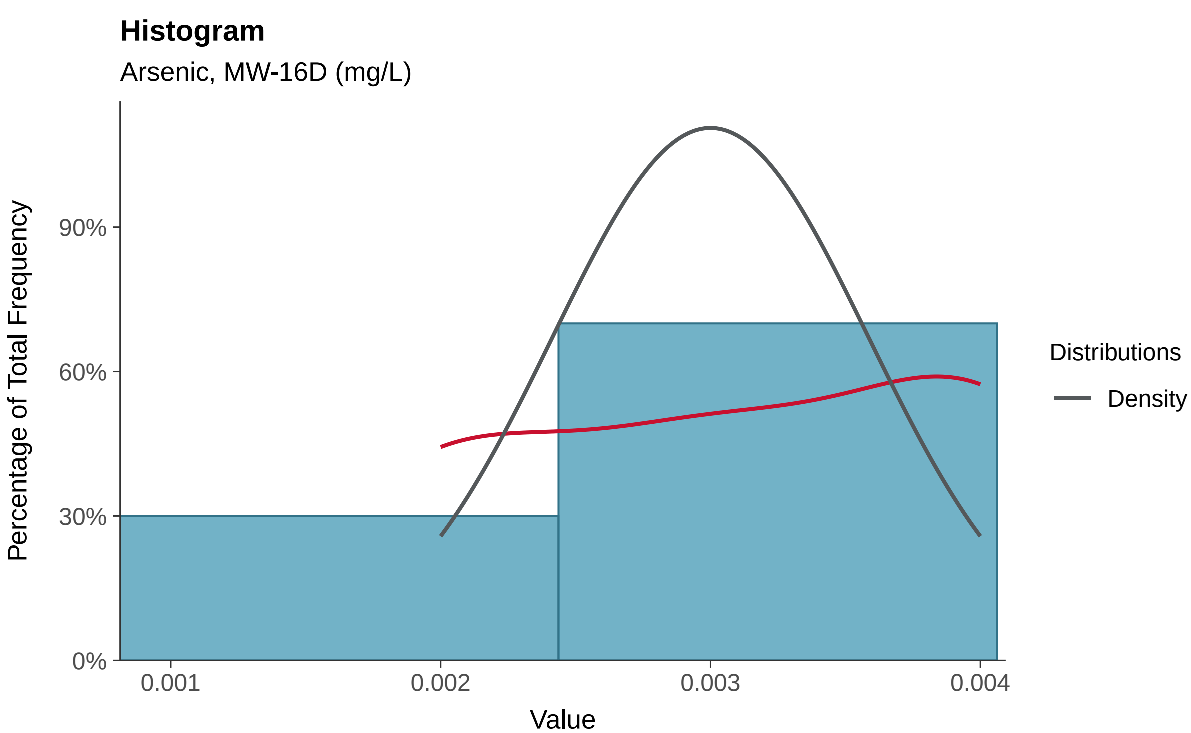
Antimony, MW-16D (mg/L)



Appendix IV: Arsenic, MW-16D

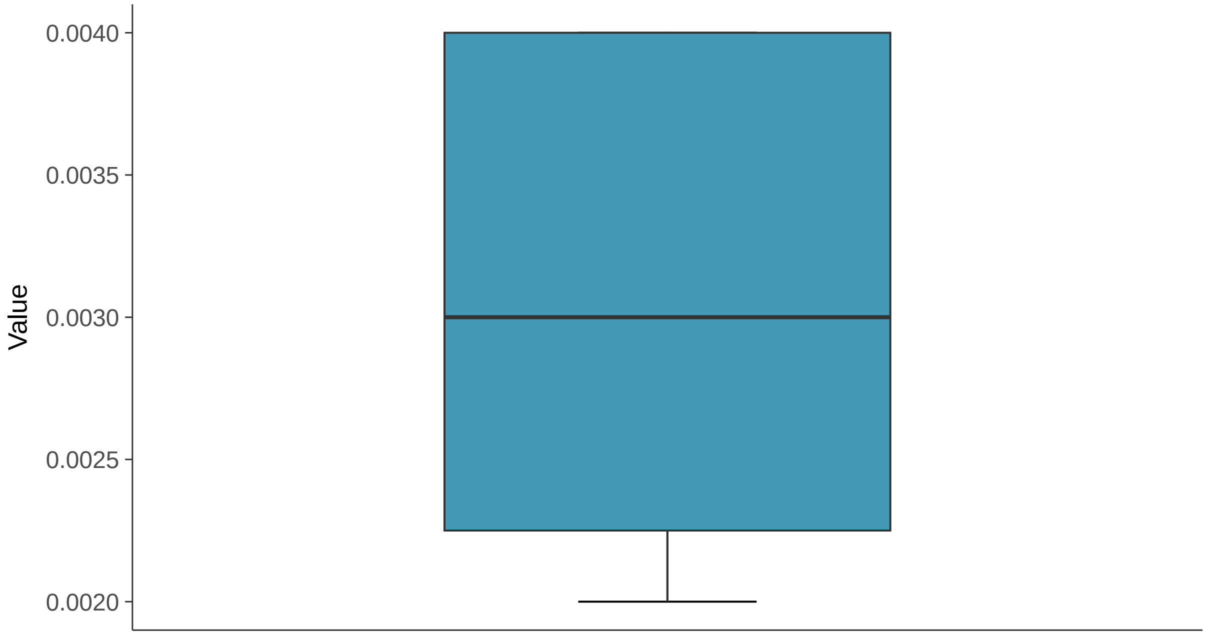
ID: 16D_2_09





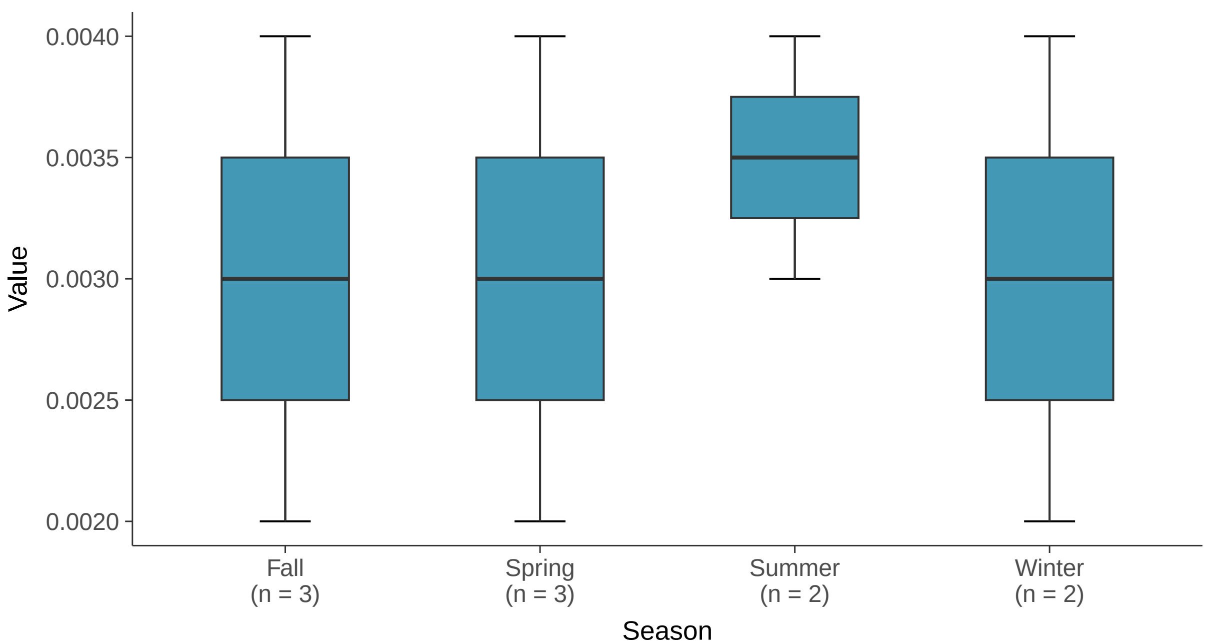
Boxplot

Arsenic, MW-16D (mg/L)



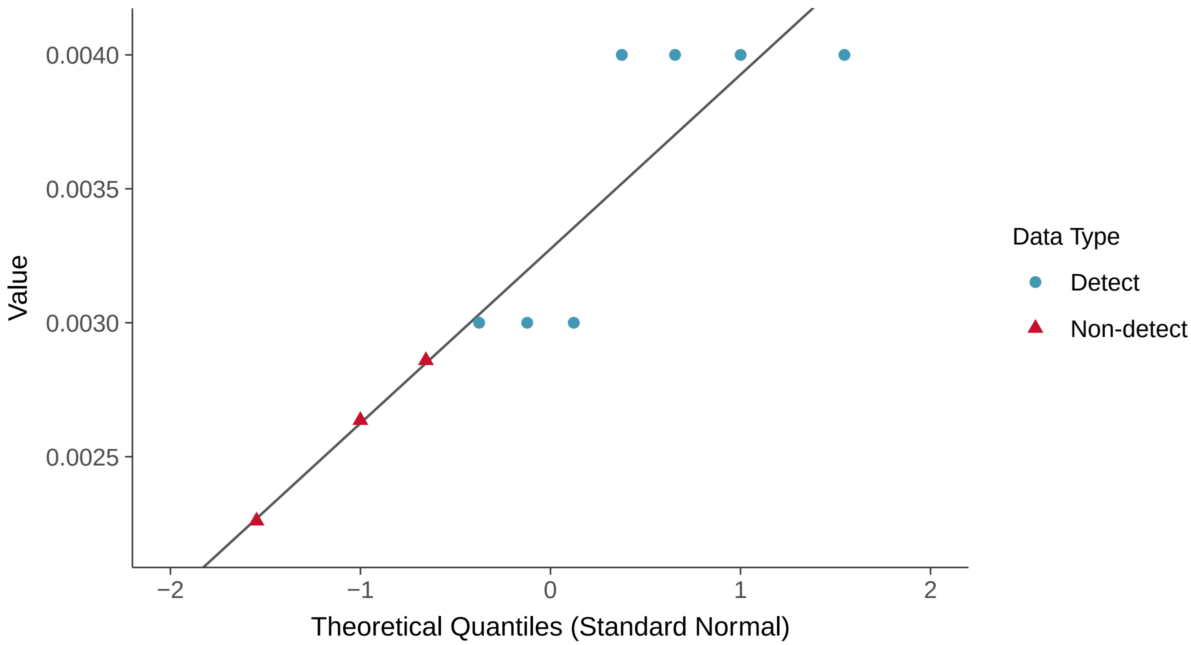
Boxplot by Season

Arsenic, MW-16D (mg/L)



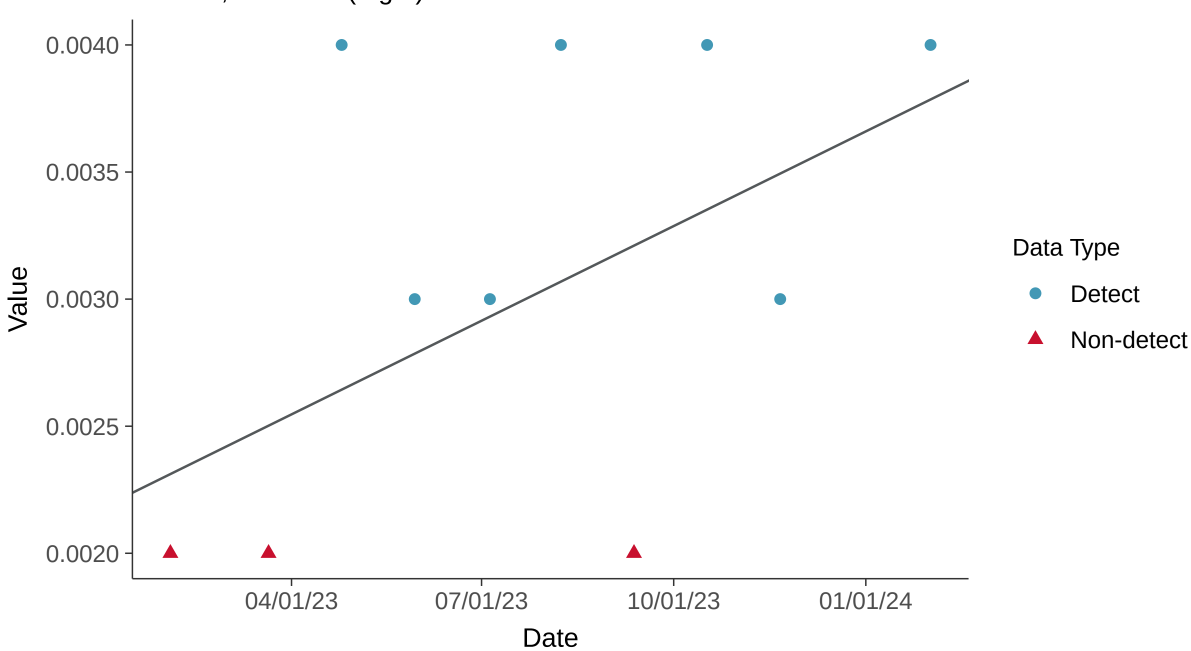
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-16D (mg/L)



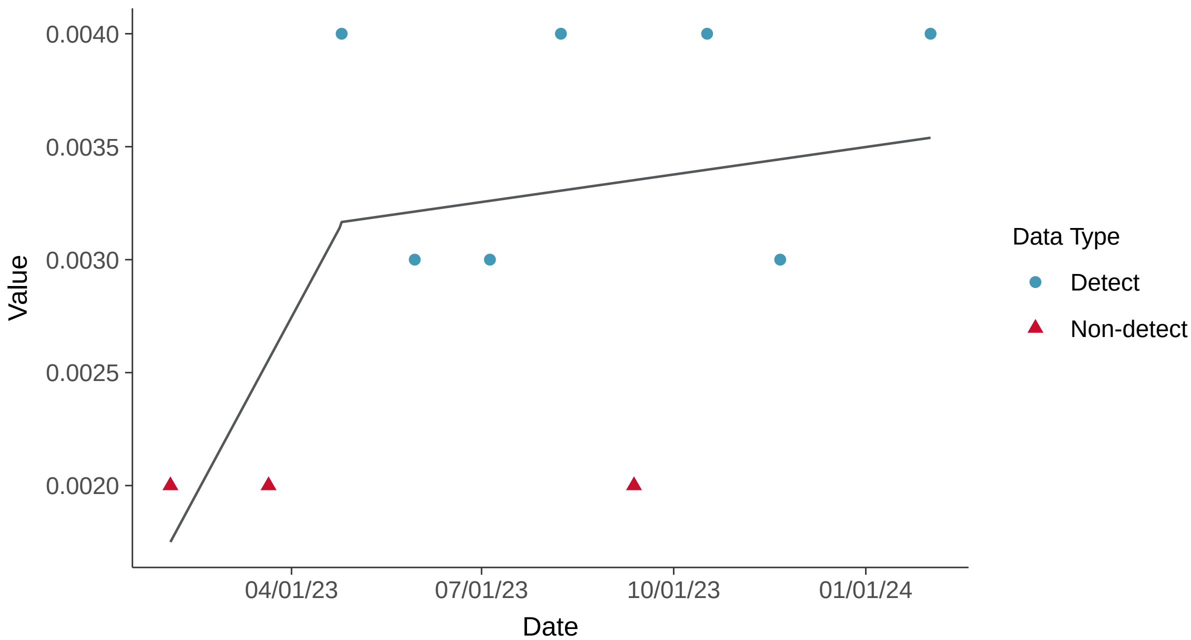
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Arsenic, MW-16D (mg/L)



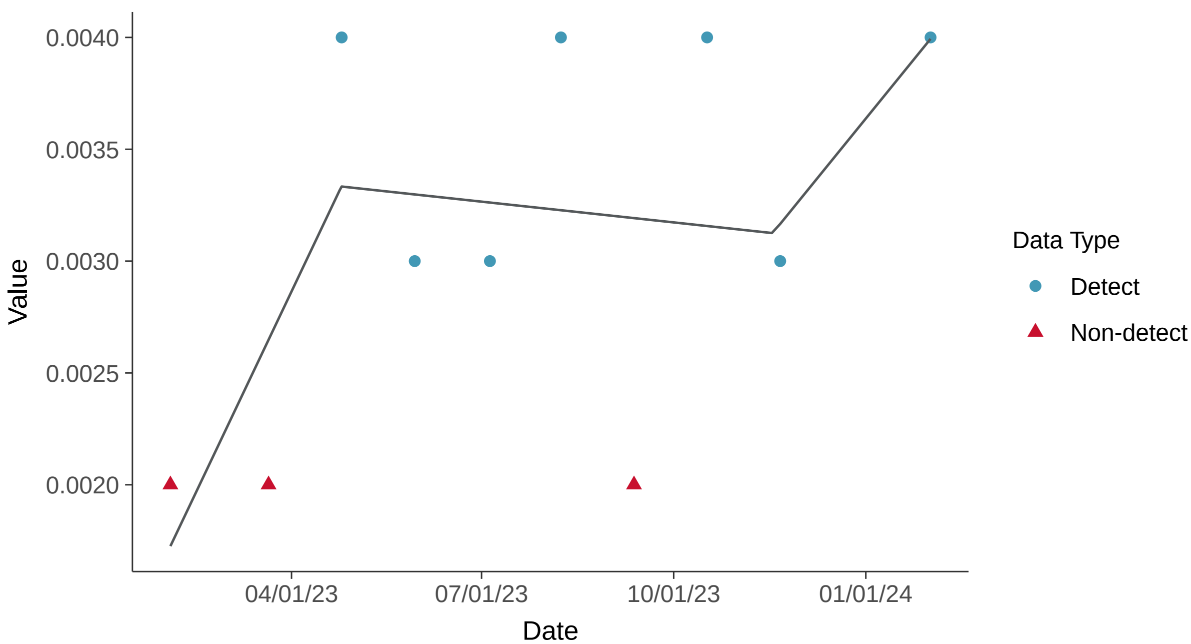
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-16D (mg/L)



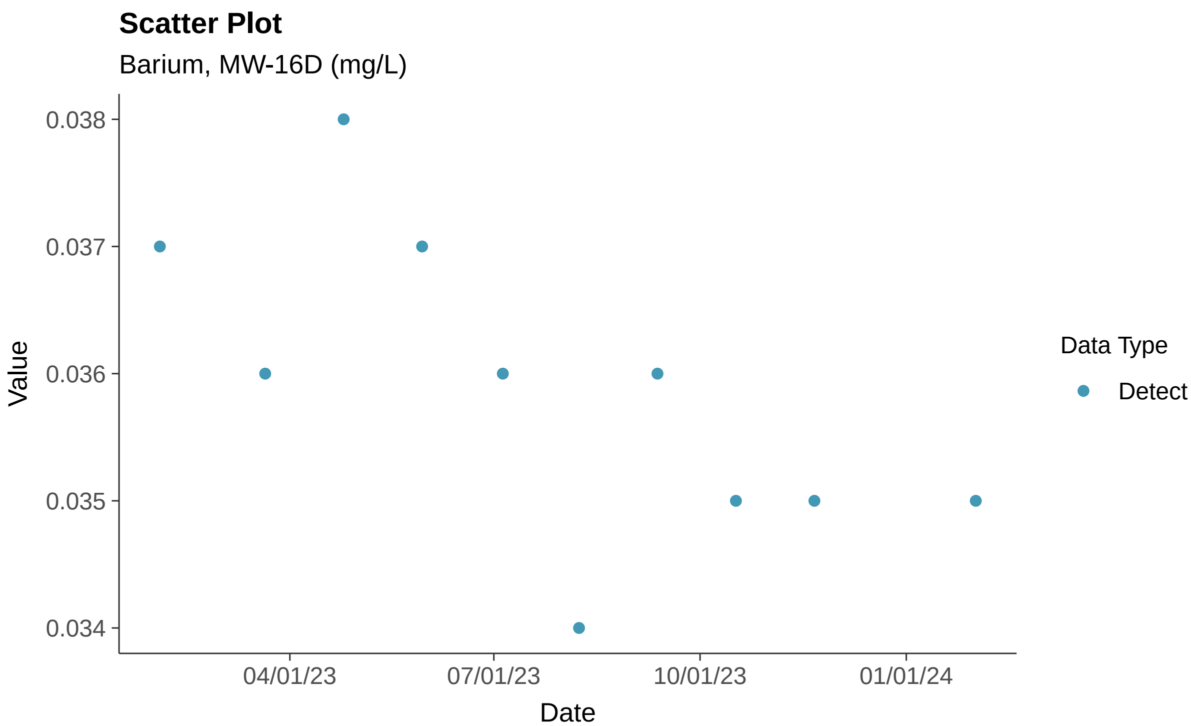
Trend Regression: Piecewise Linear-Linear-Linear

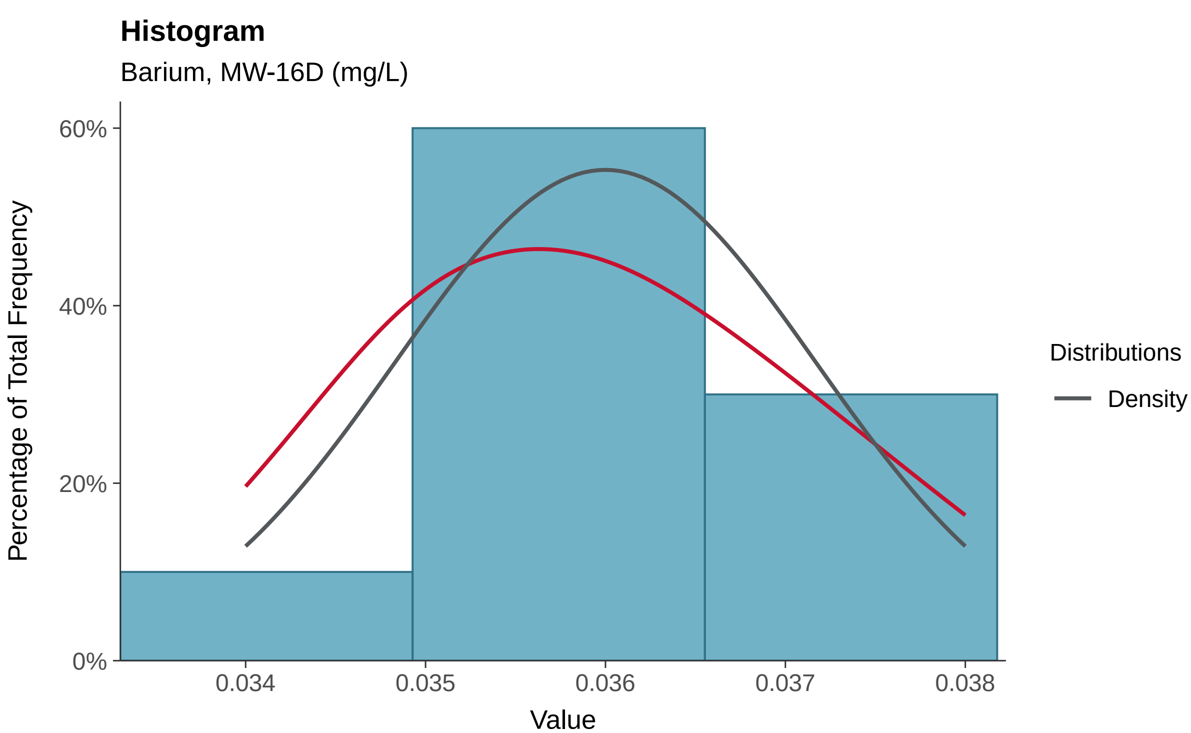
Arsenic, MW-16D (mg/L)



Appendix IV: Barium, MW-16D

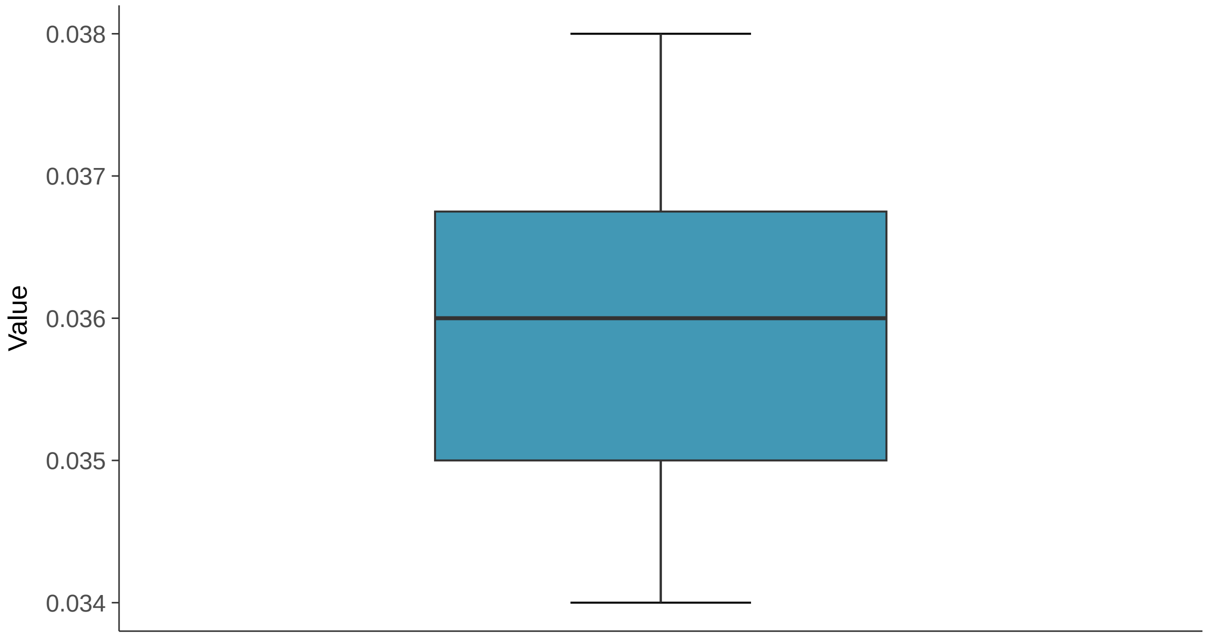
ID: 16D_2_10





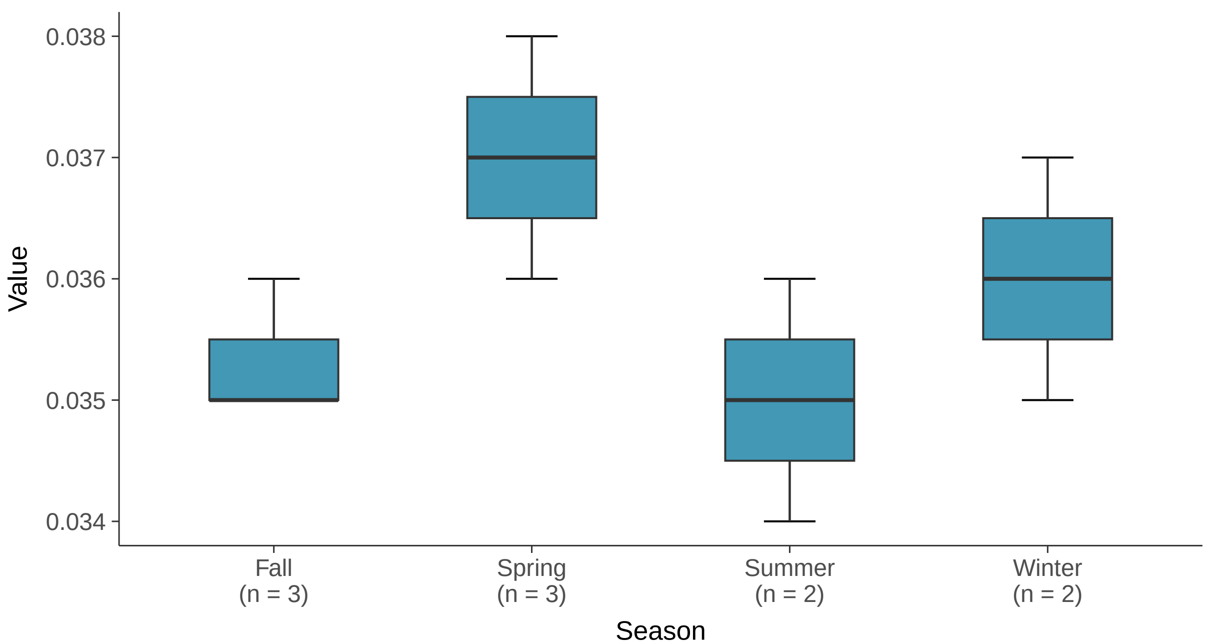
Boxplot

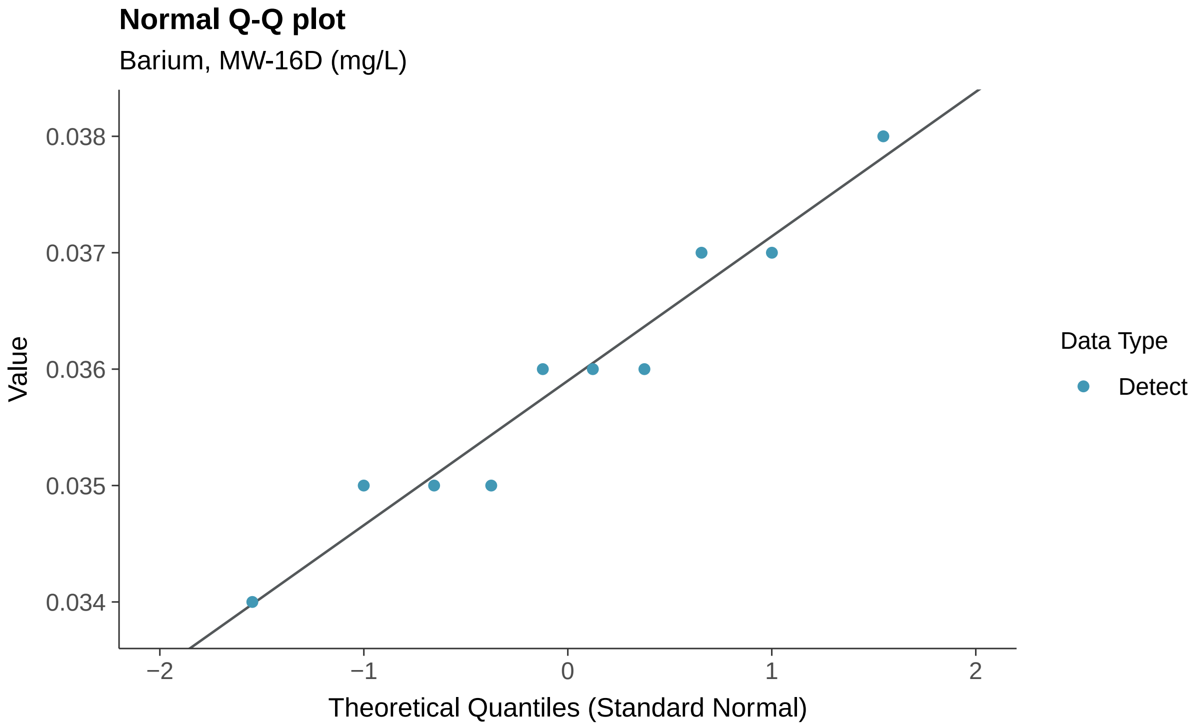
Barium, MW-16D (mg/L)

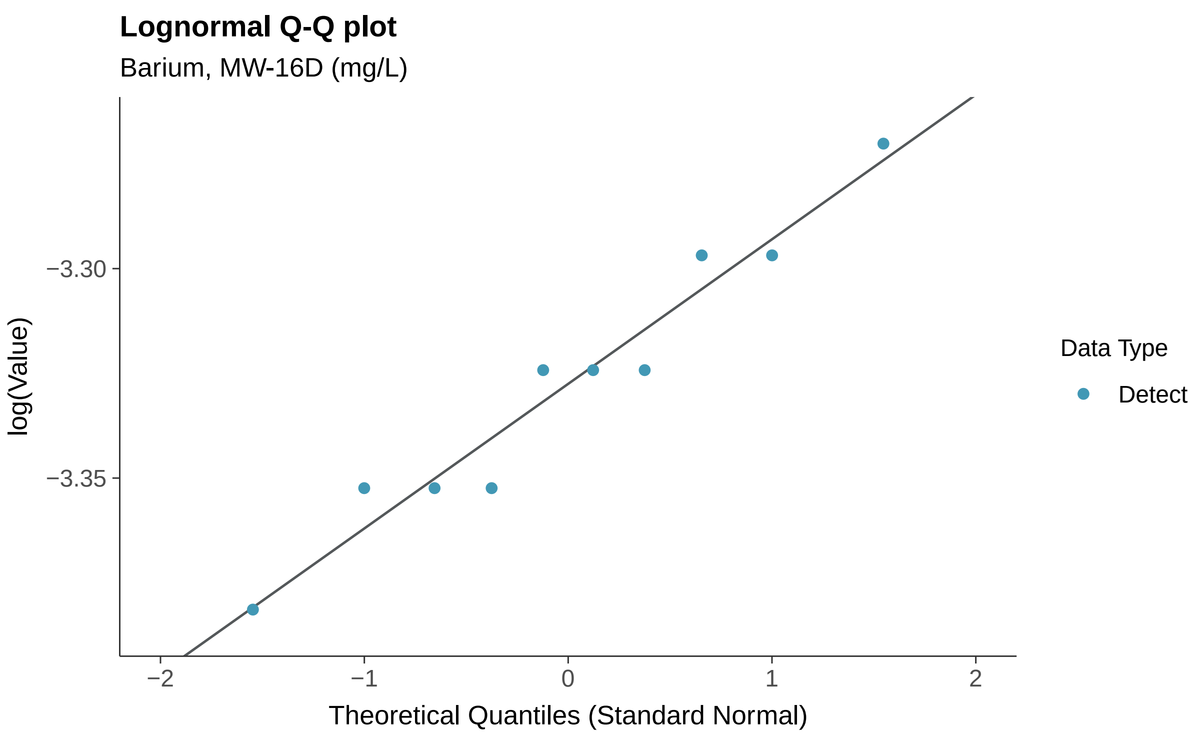


Boxplot by Season

Barium, MW-16D (mg/L)

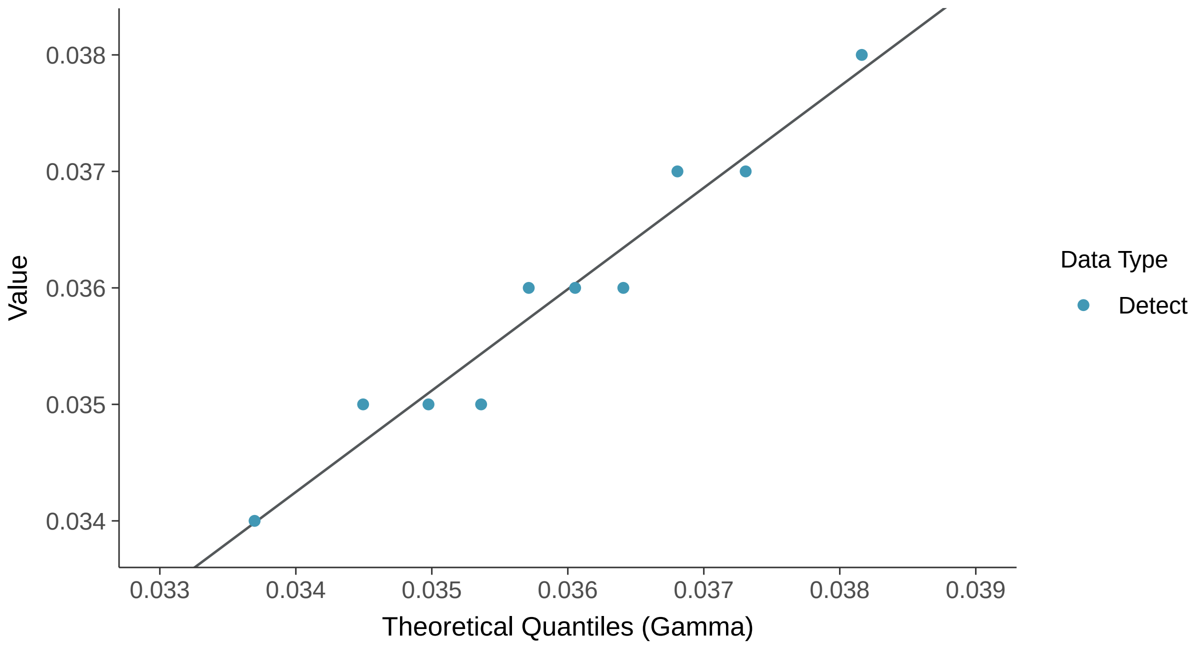



Normal Q-Q plot
Barium, MW-16D (mg/L)
0.038
0.037
0.036
0.035
0.034
Value
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Barium, MW-16D (mg/L)
−3.30
−3.35
log(Value)
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

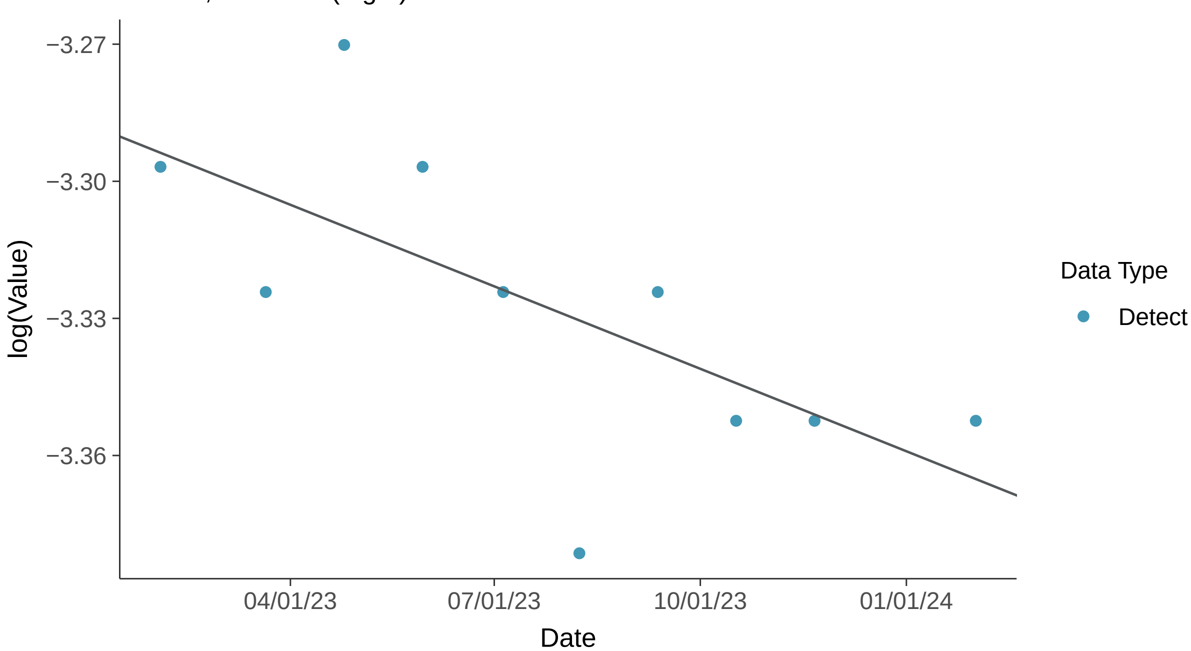
Gamma Q-Q plot

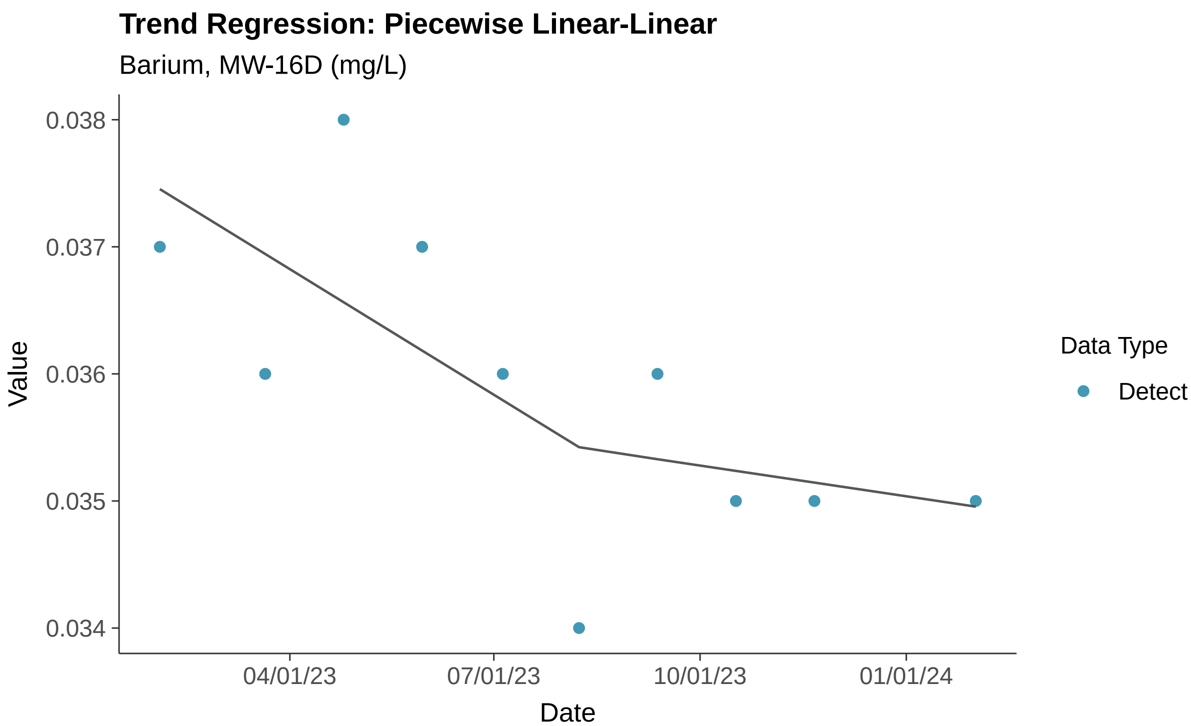
Barium, MW-16D (mg/L)

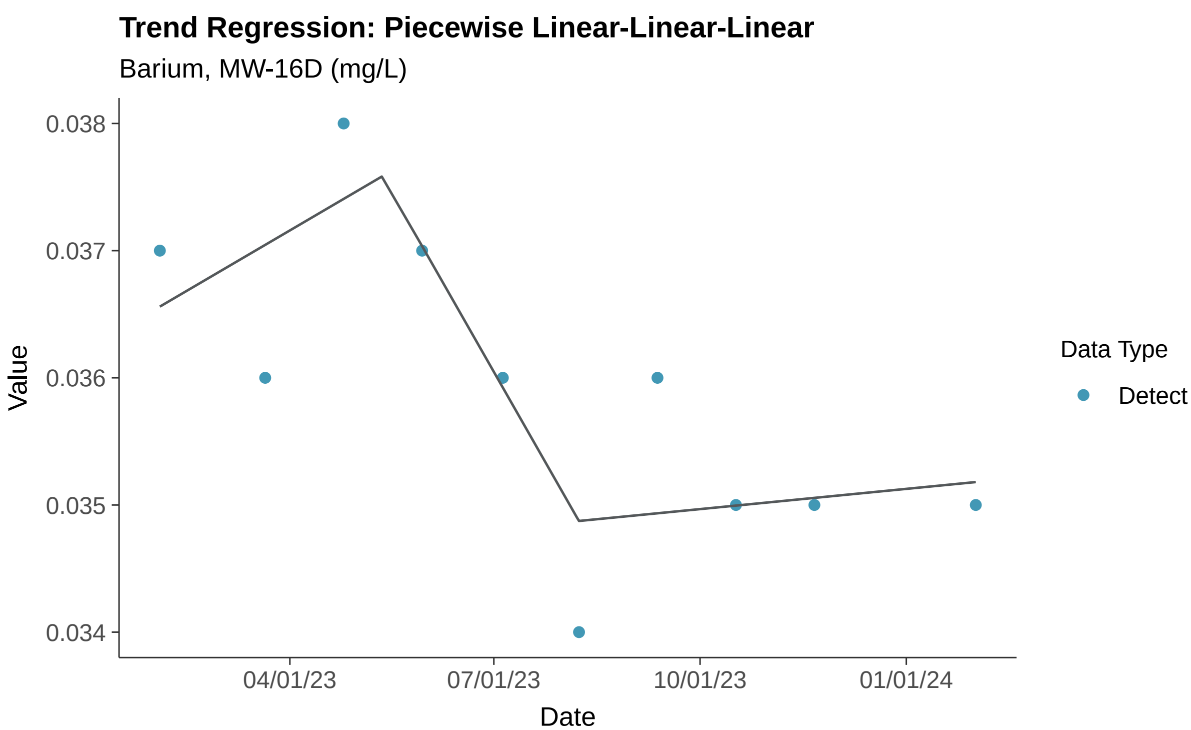


Trend Regression: Lognormal MLE

Barium, MW-16D (mg/L)




Trend Regression: Piecewise Linear-Linear
Barium, MW-16D (mg/L)
0.038
0.037
0.036
0.035
0.034
Value
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

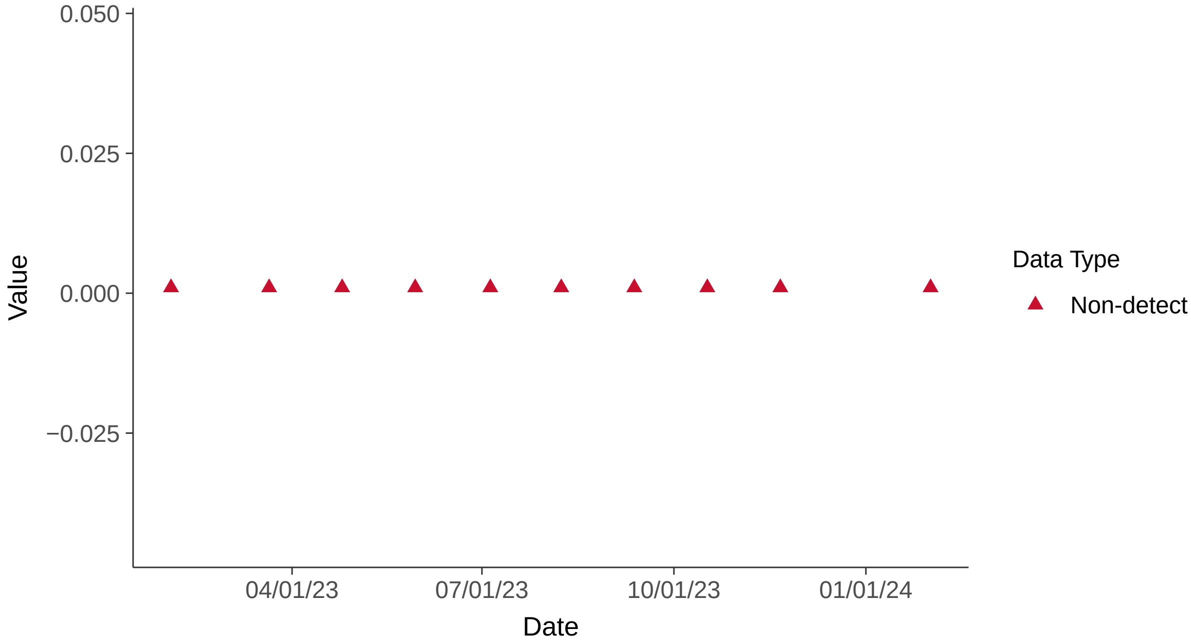

Trend Regression: Piecewise Linear-Linear-Linear
Barium, MW-16D (mg/L)
0.038
0.037
0.036
0.035
0.034
Value
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Beryllium, MW-16D

ID: 16D_2_11

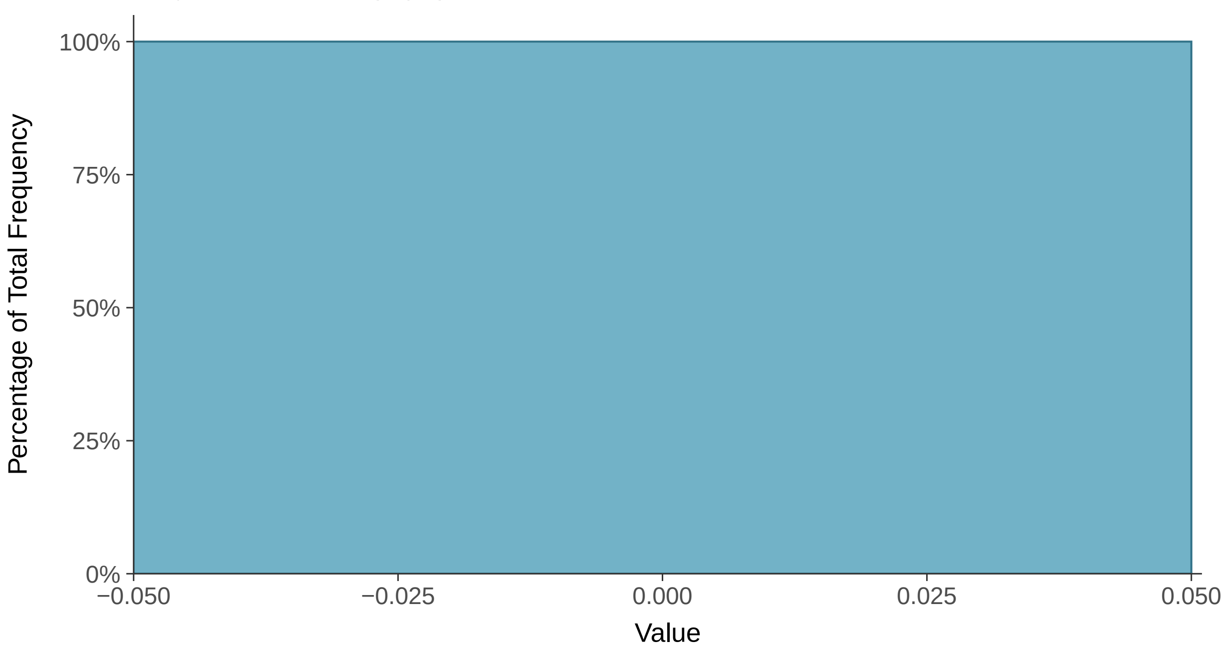
Scatter Plot

Beryllium, MW-16D (mg/L)



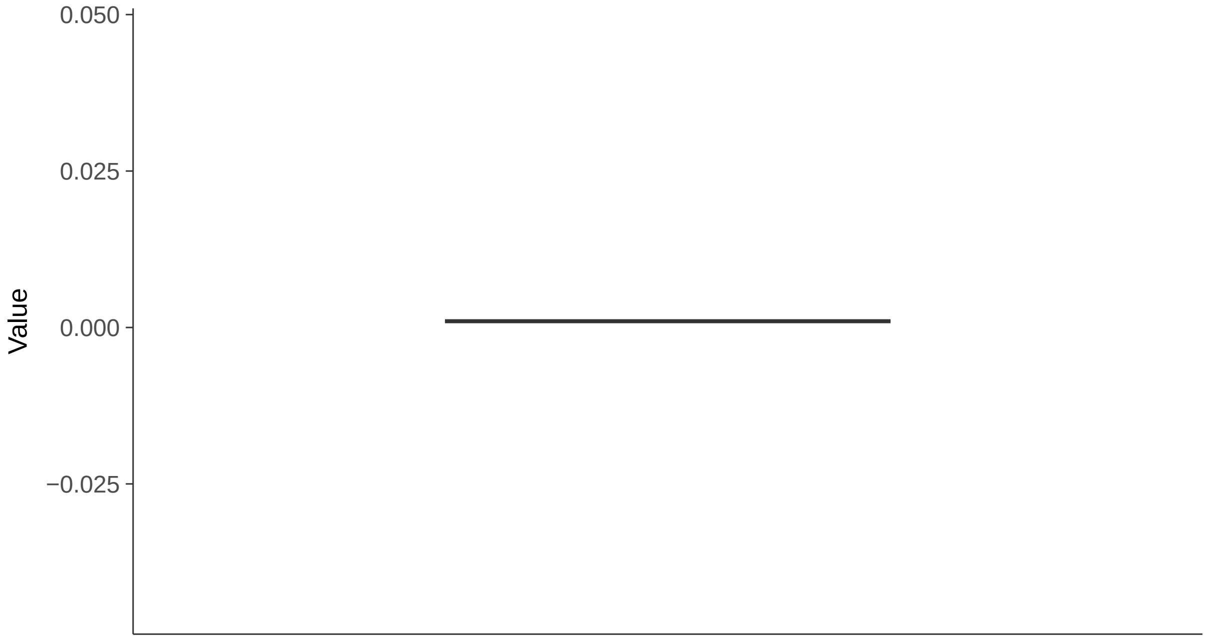
Histogram

Beryllium, MW-16D (mg/L)



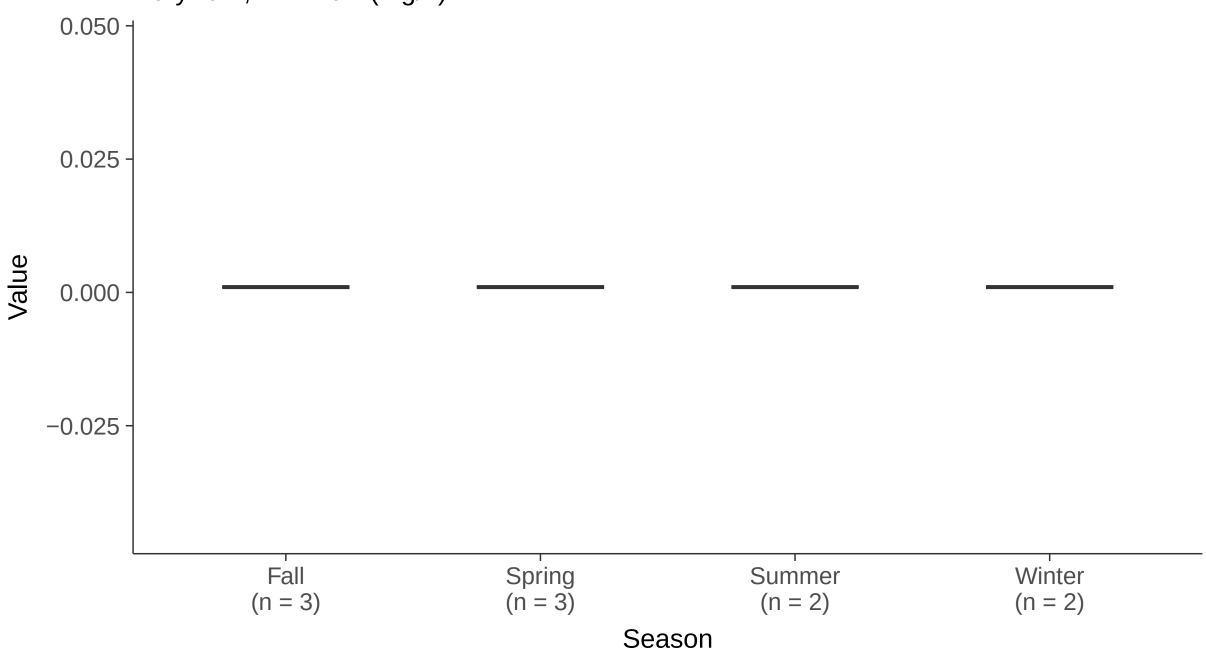
Boxplot

Beryllium, MW-16D (mg/L)



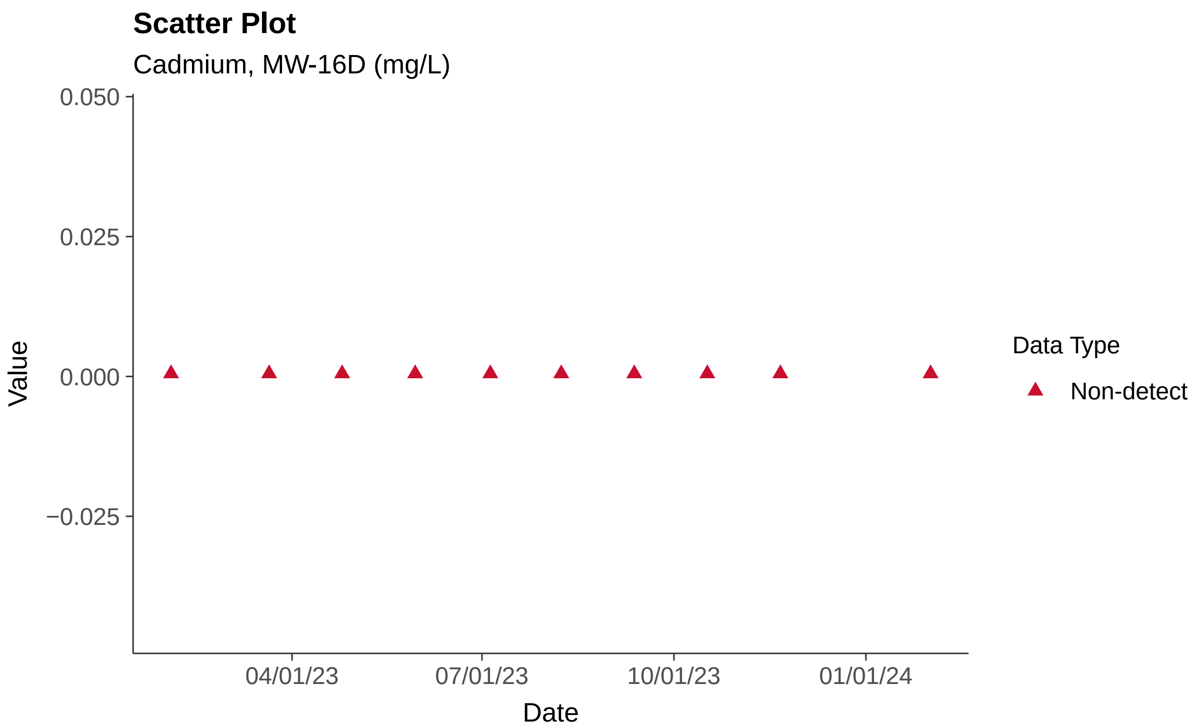
Boxplot by Season

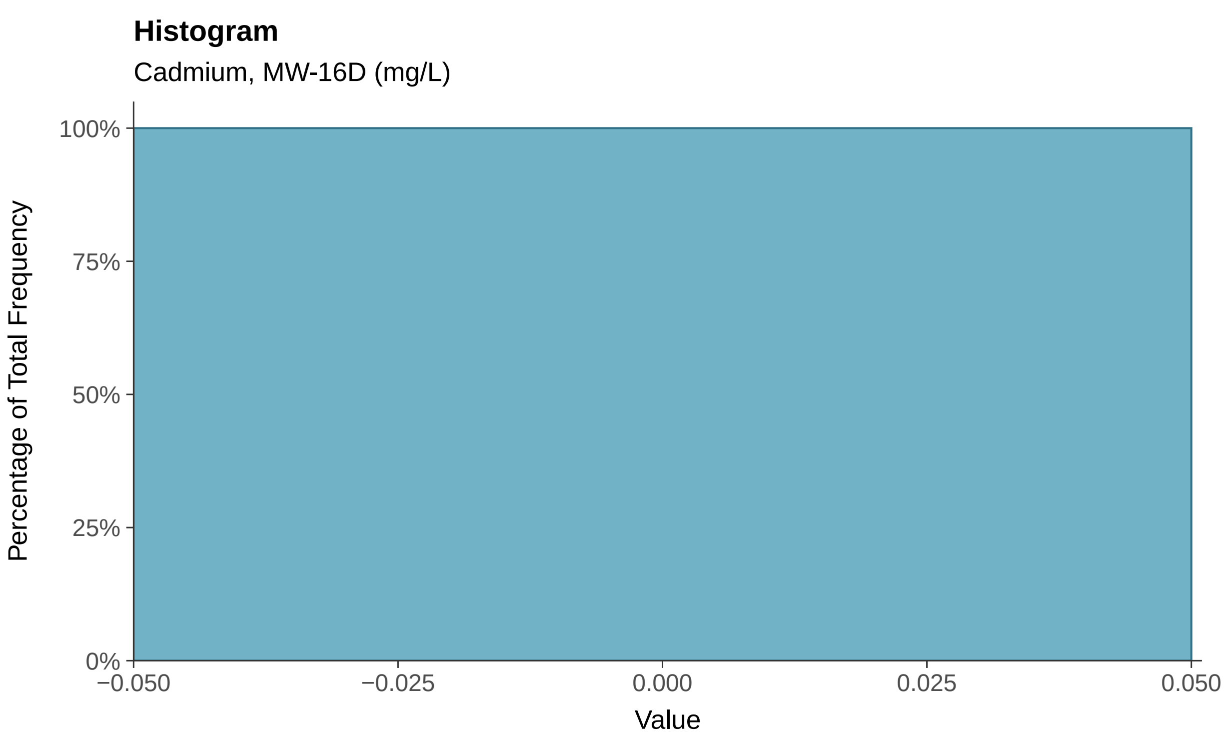
Beryllium, MW-16D (mg/L)



Appendix IV: Cadmium, MW-16D

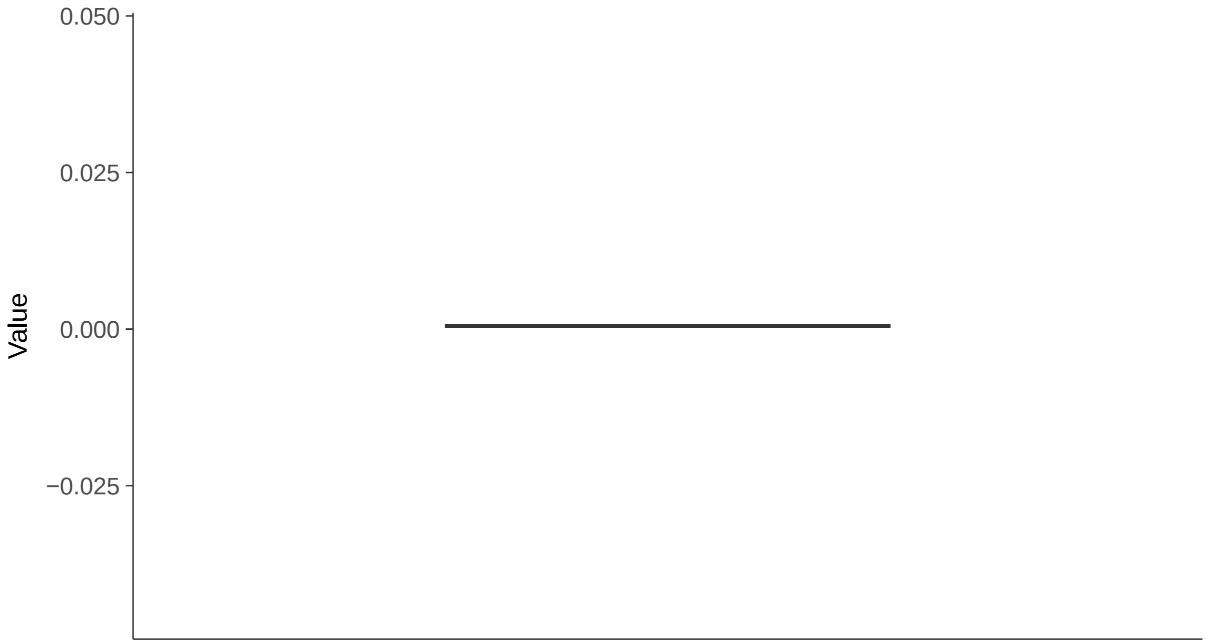
ID: 16D_2_12





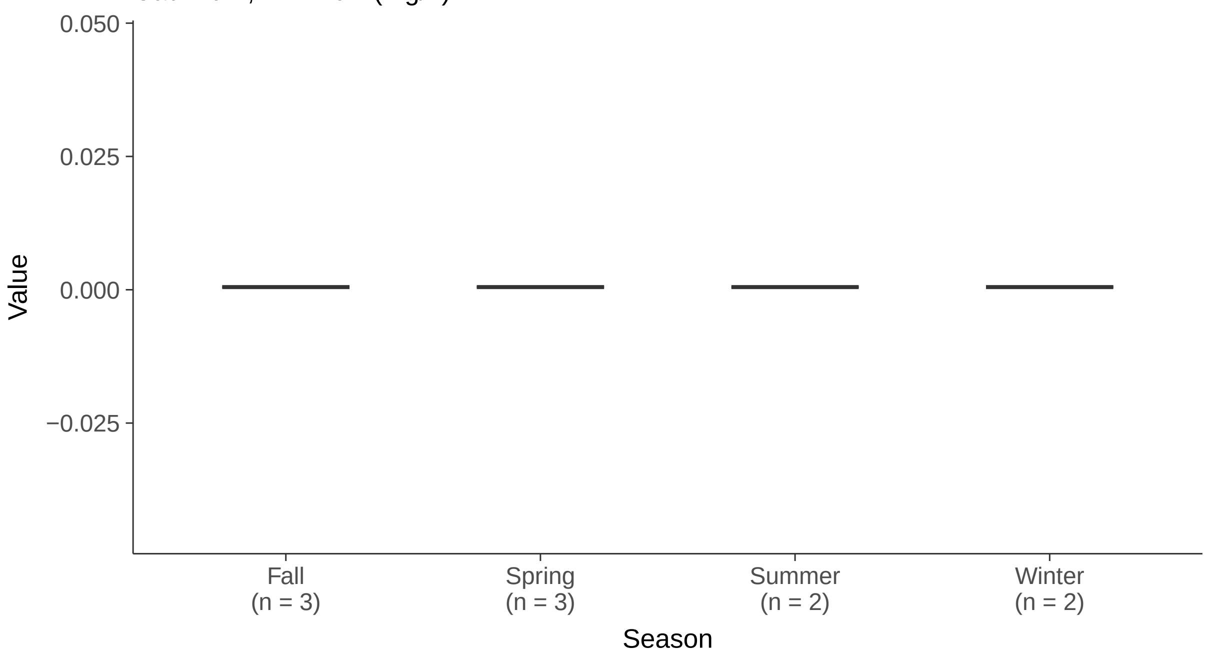
Boxplot

Cadmium, MW-16D (mg/L)



Boxplot by Season

Cadmium, MW-16D (mg/L)

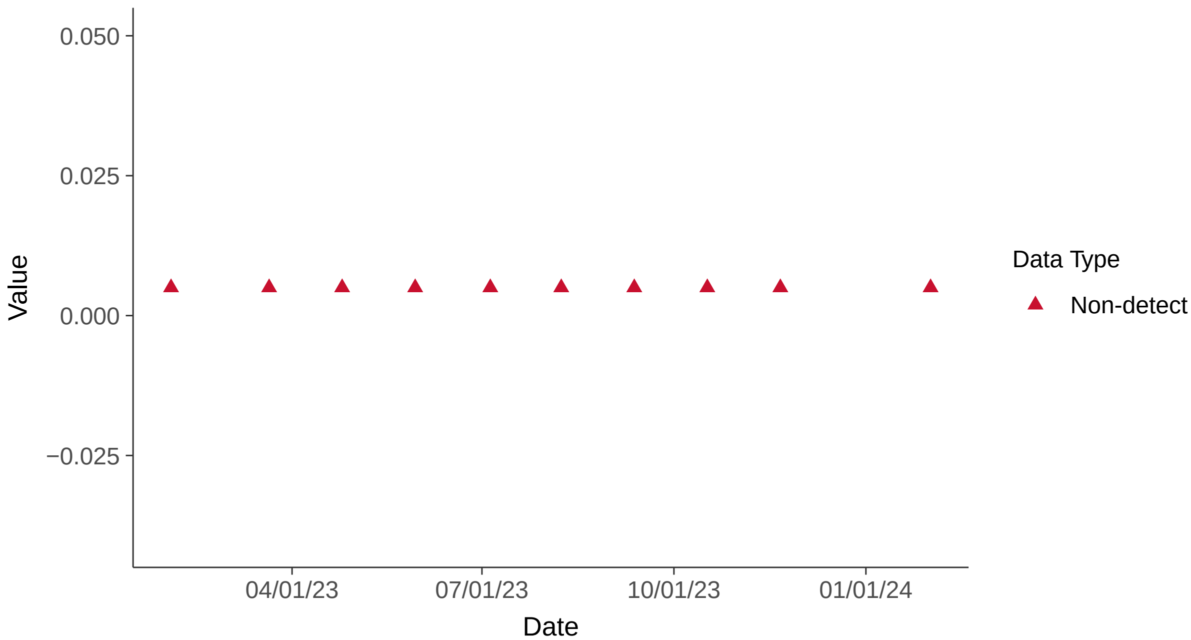


Appendix IV: Chromium, MW-16D

ID: 16D_2_13

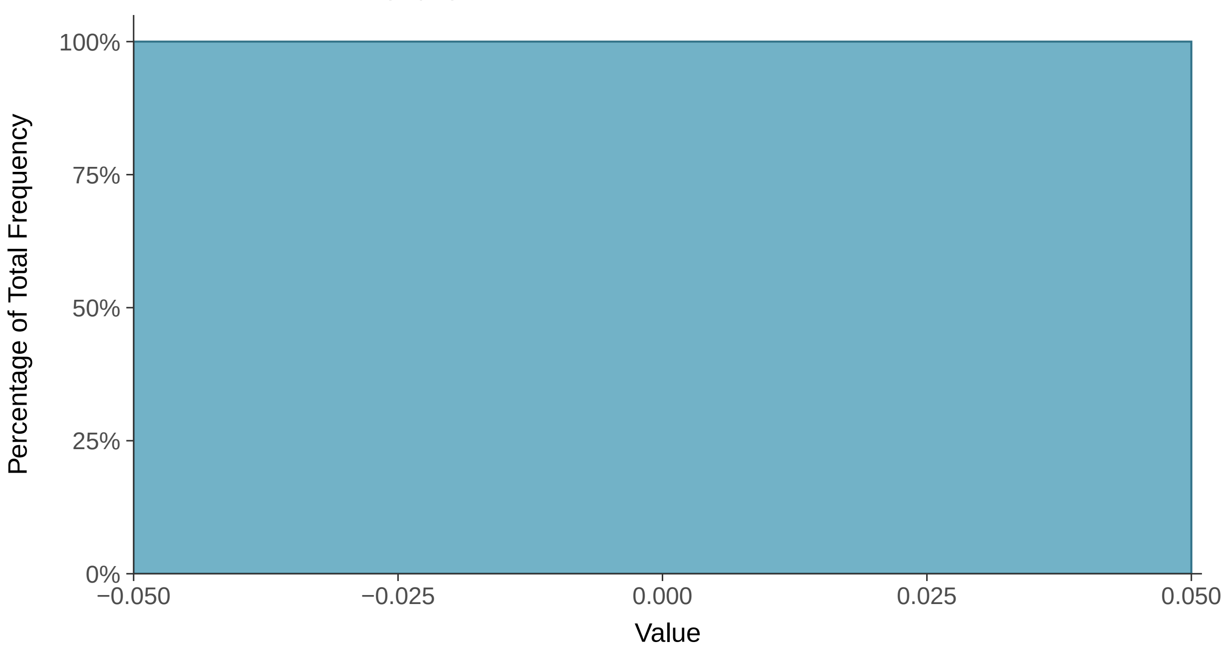
Scatter Plot

Chromium, MW-16D (mg/L)



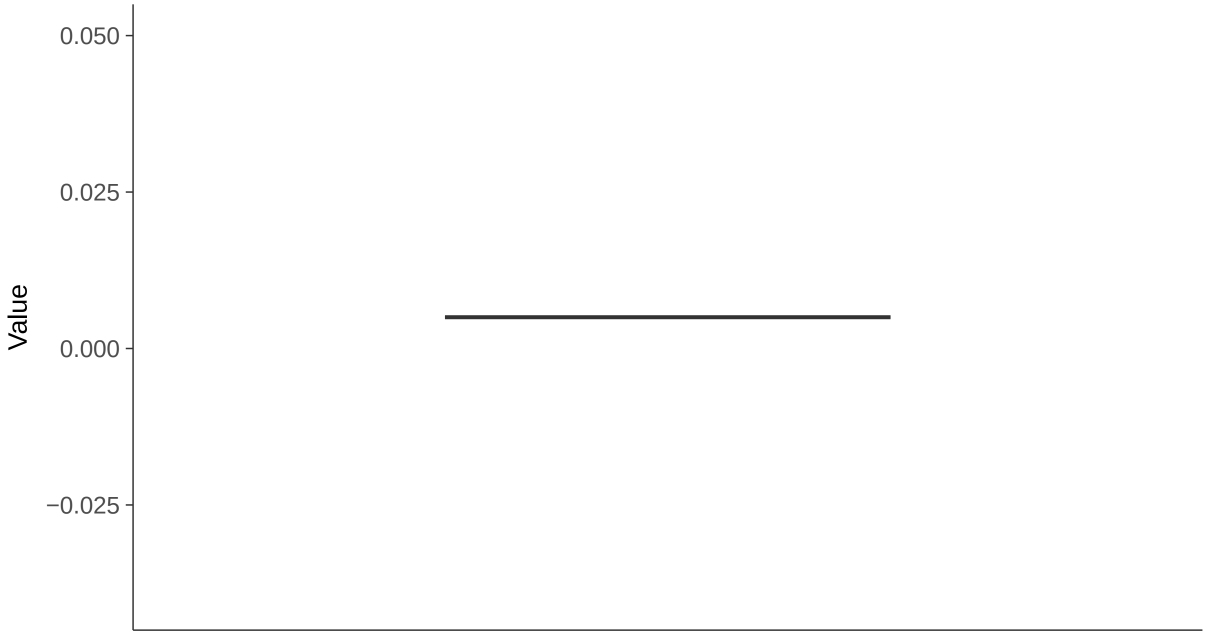
Histogram

Chromium, MW-16D (mg/L)



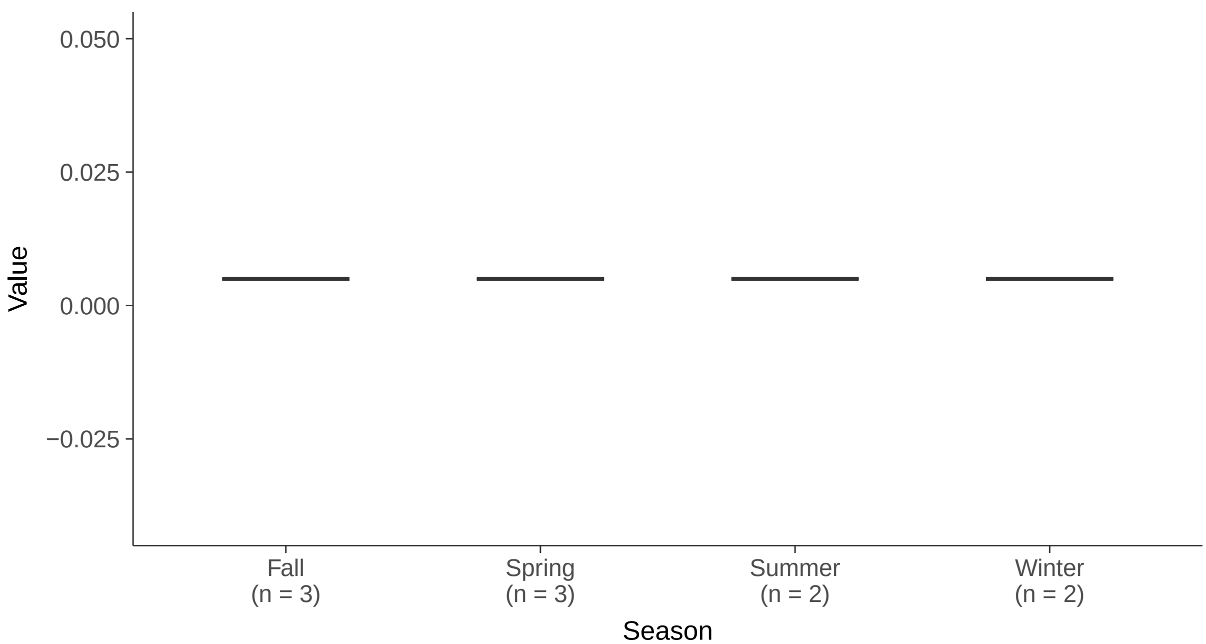
Boxplot

Chromium, MW-16D (mg/L)



Boxplot by Season

Chromium, MW-16D (mg/L)

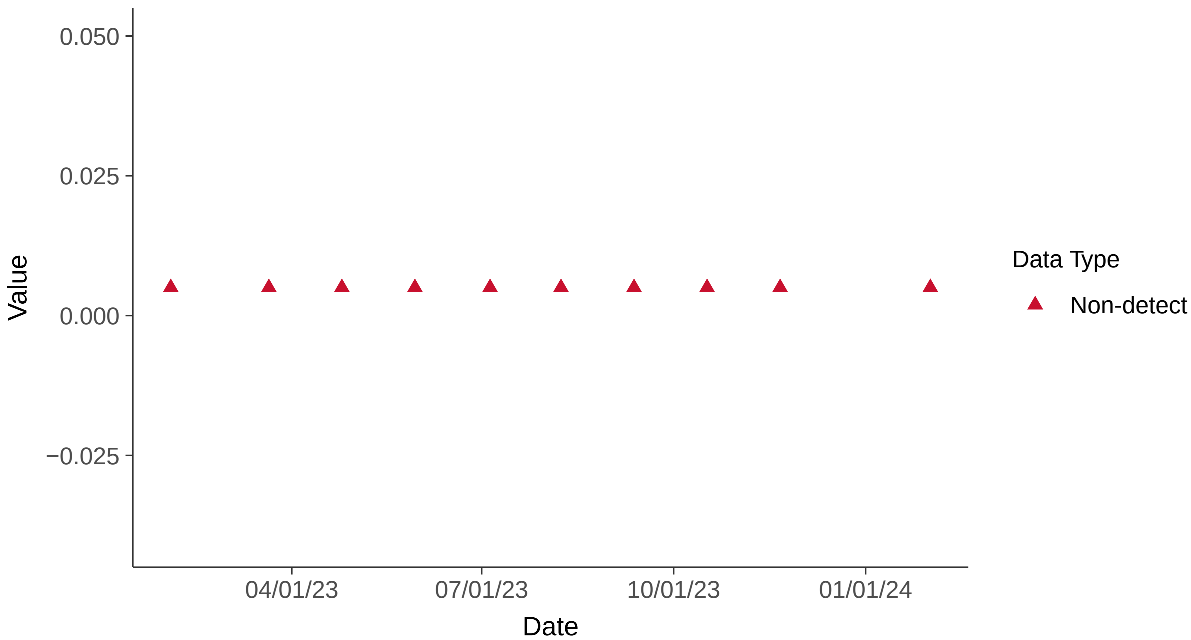


Appendix IV: Cobalt, MW-16D

ID: 16D_2_14

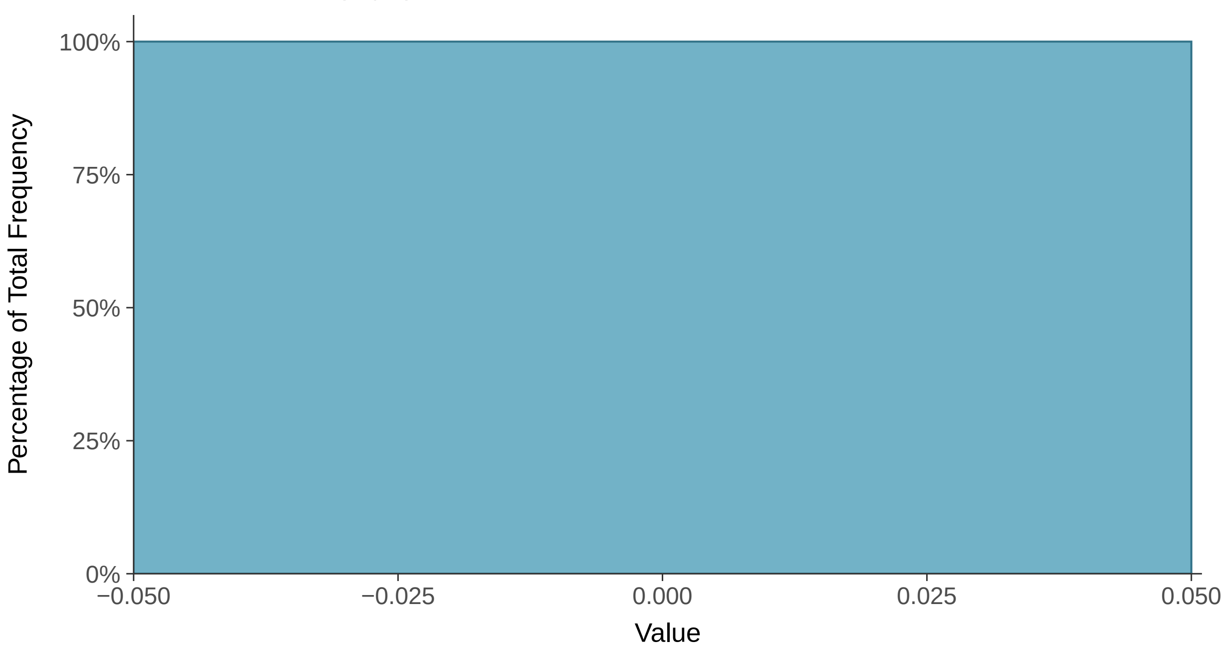
Scatter Plot

Cobalt, MW-16D (mg/L)



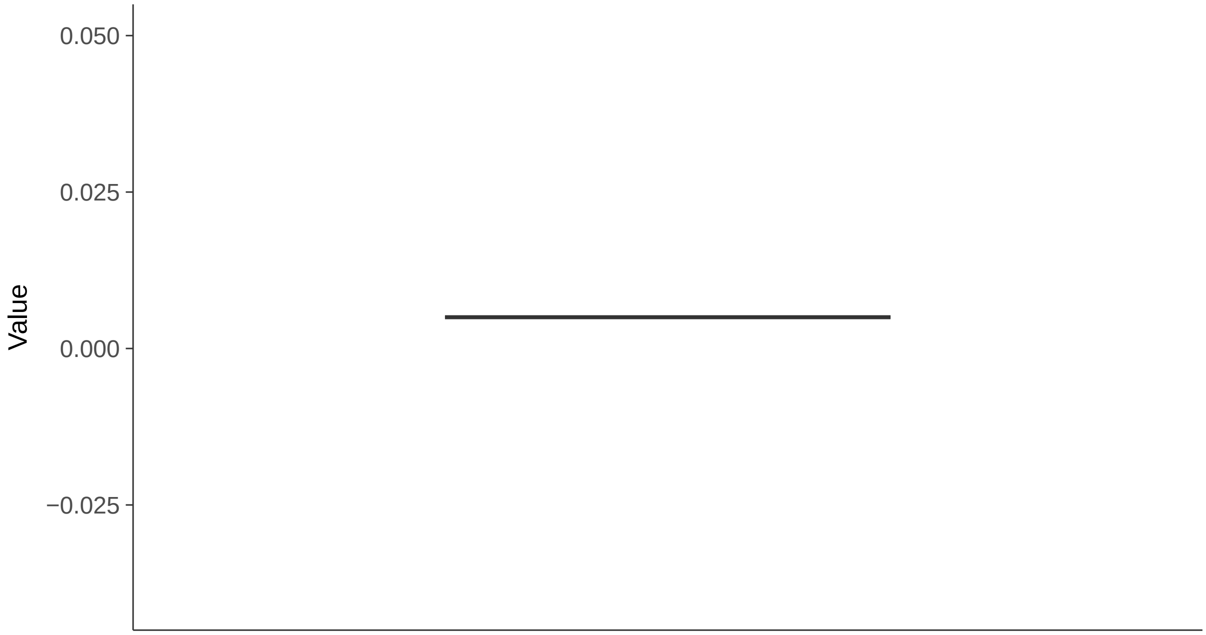
Histogram

Cobalt, MW-16D (mg/L)



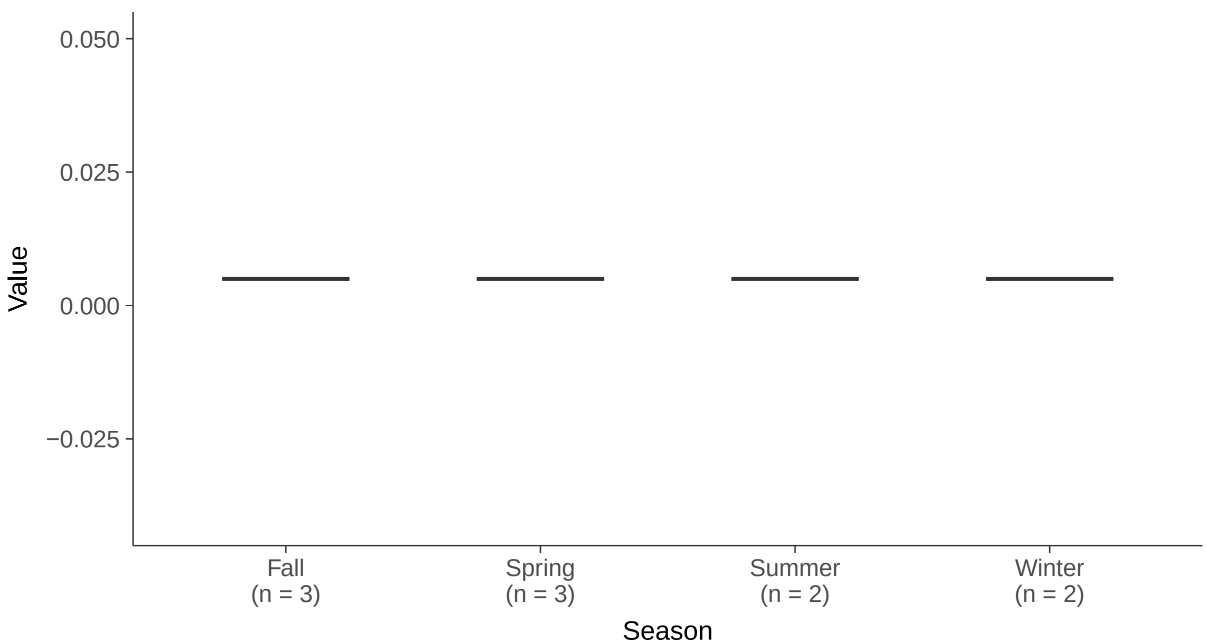
Boxplot

Cobalt, MW-16D (mg/L)



Boxplot by Season

Cobalt, MW-16D (mg/L)

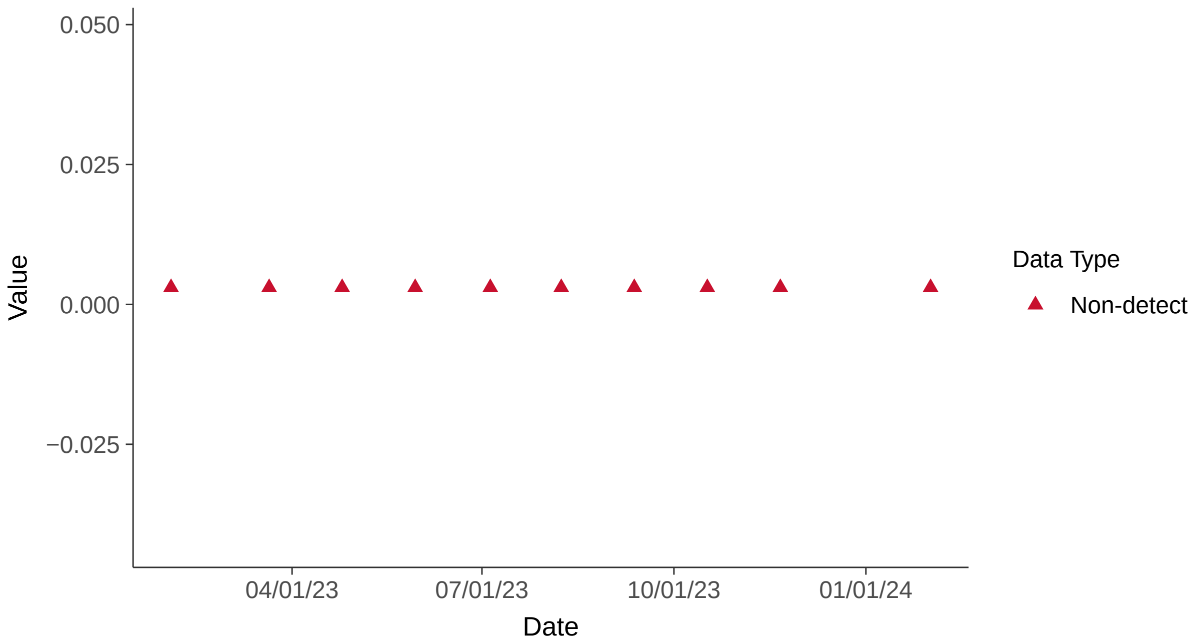


Appendix IV: Lead, MW-16D

ID: 16D_2_15

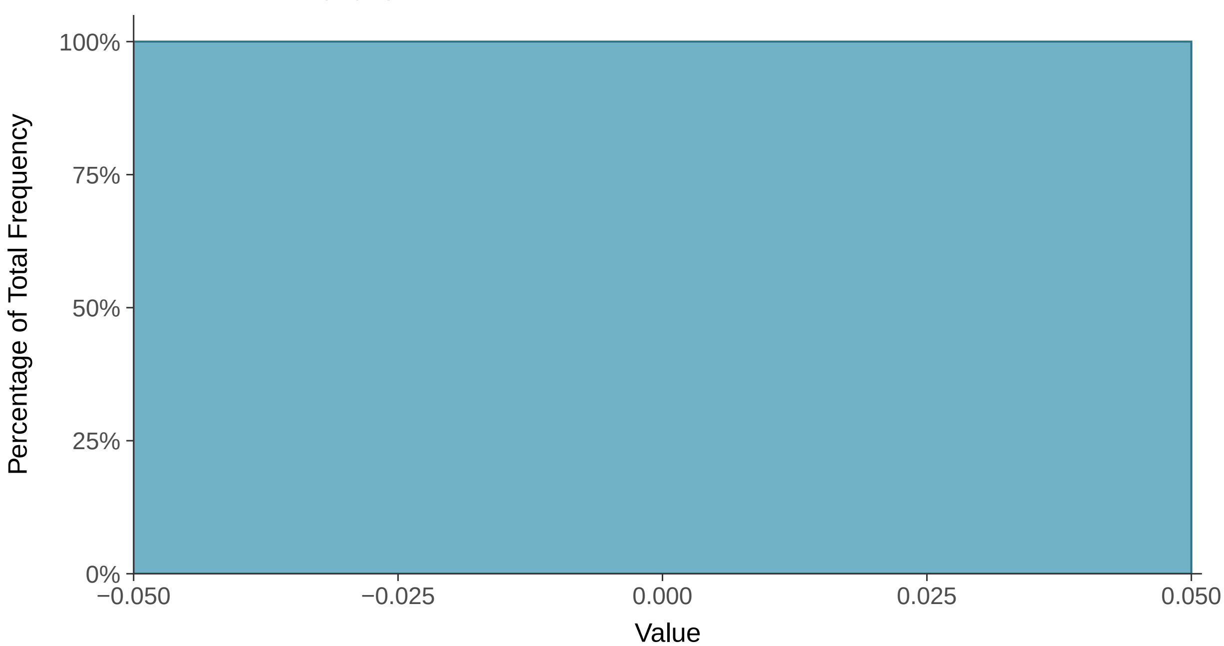
Scatter Plot

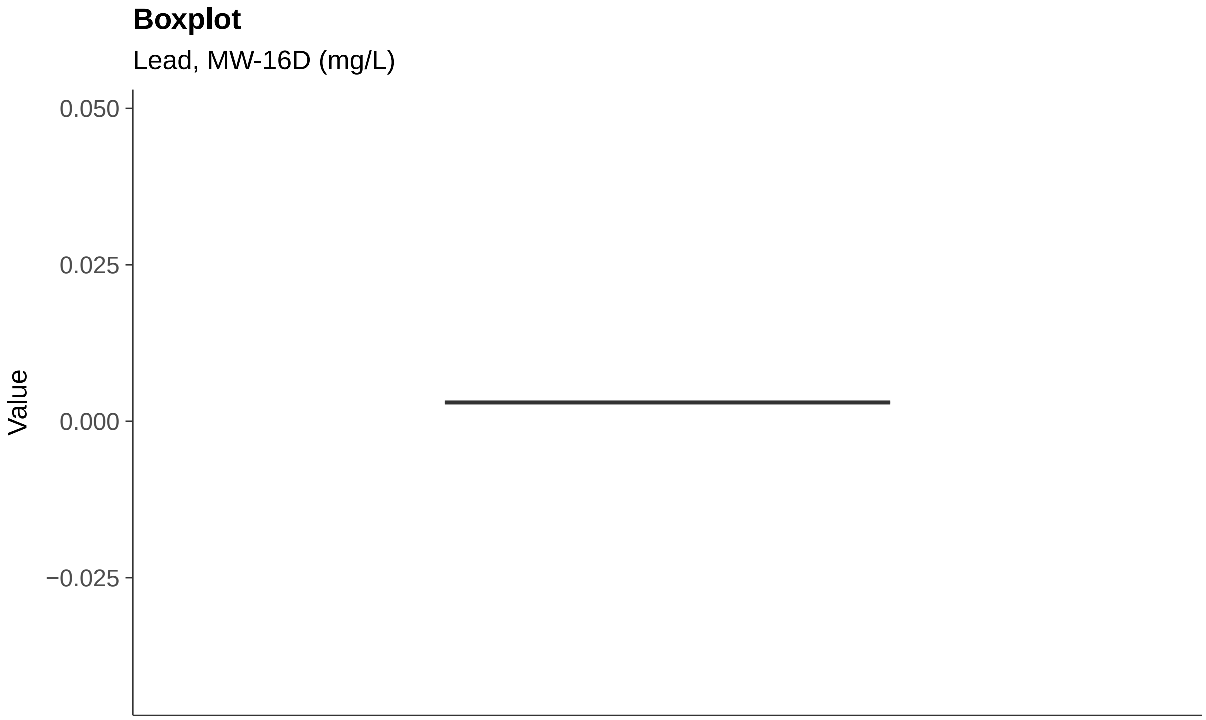
Lead, MW-16D (mg/L)

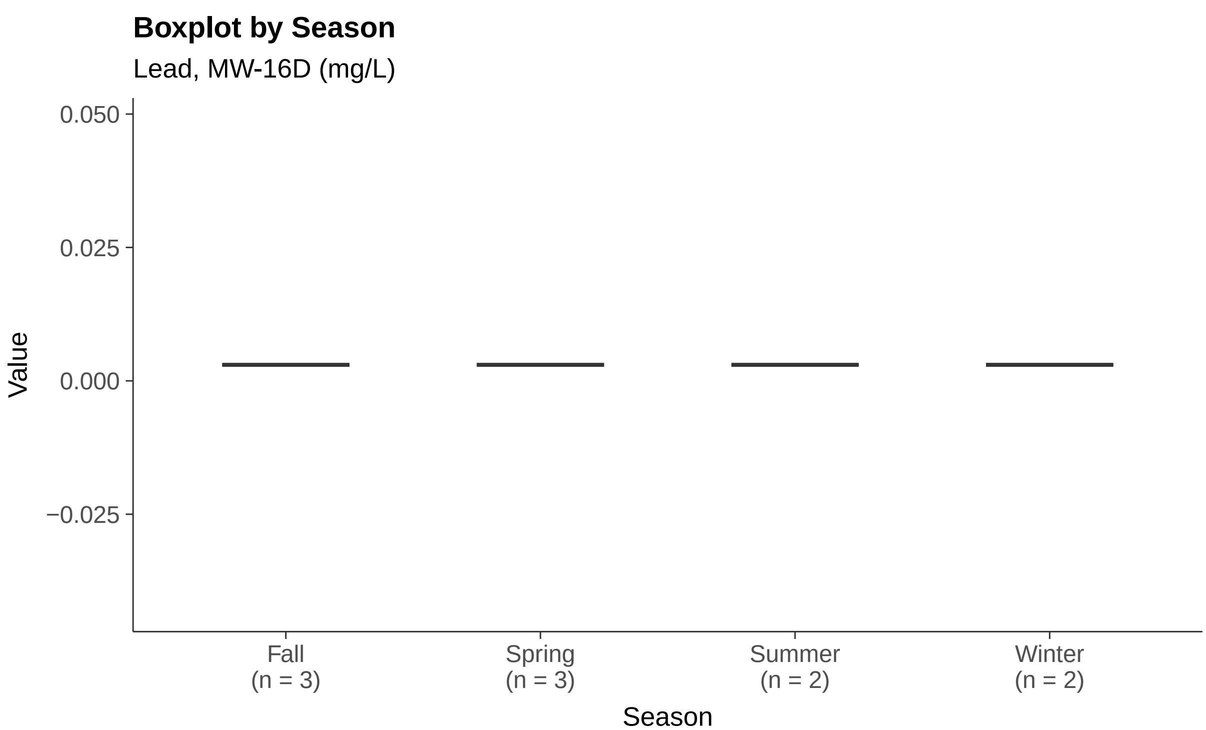


Histogram

Lead, MW-16D (mg/L)

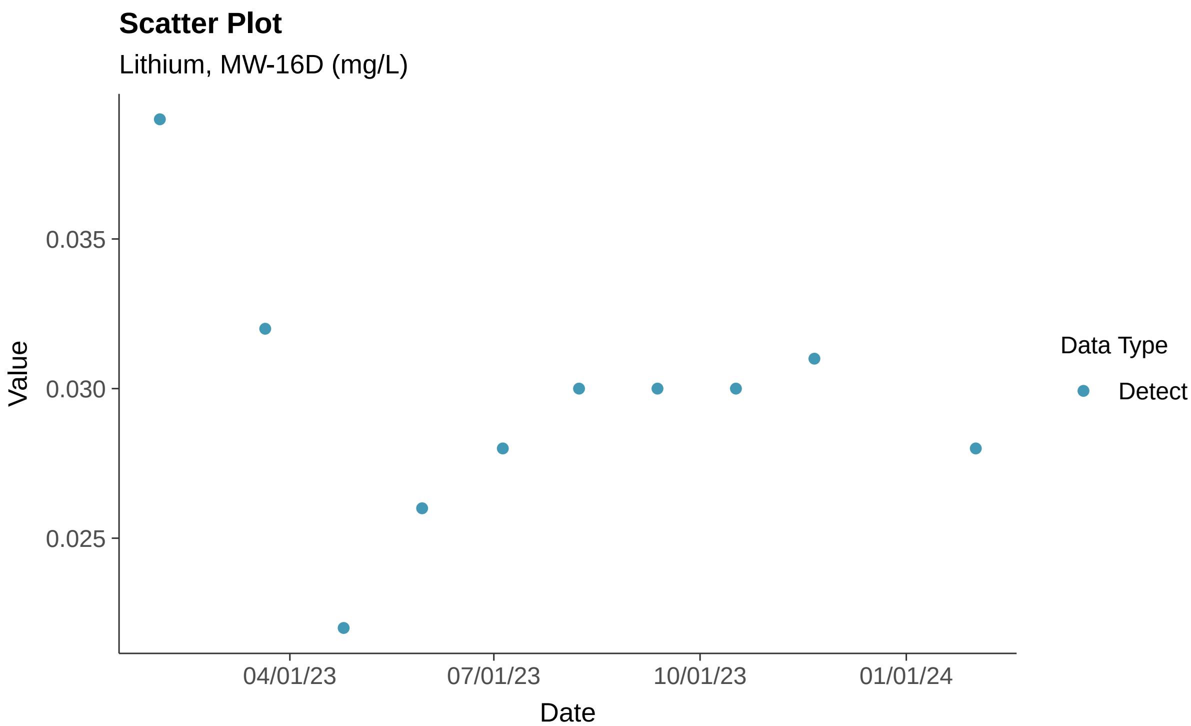


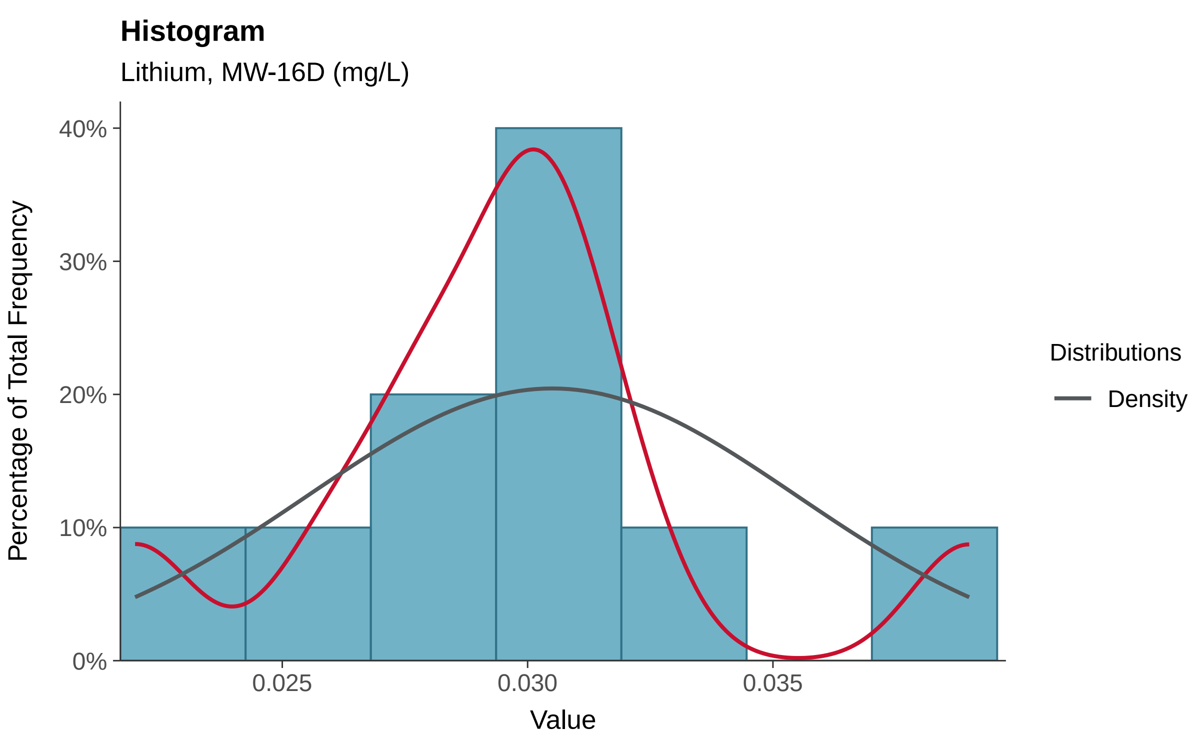

Boxplot
Lead, MW-16D (mg/L)
0.050
0.025
0.000
−0.025
Value


Boxplot by Season
Lead, MW-16D (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season

Appendix IV: Lithium, MW-16D

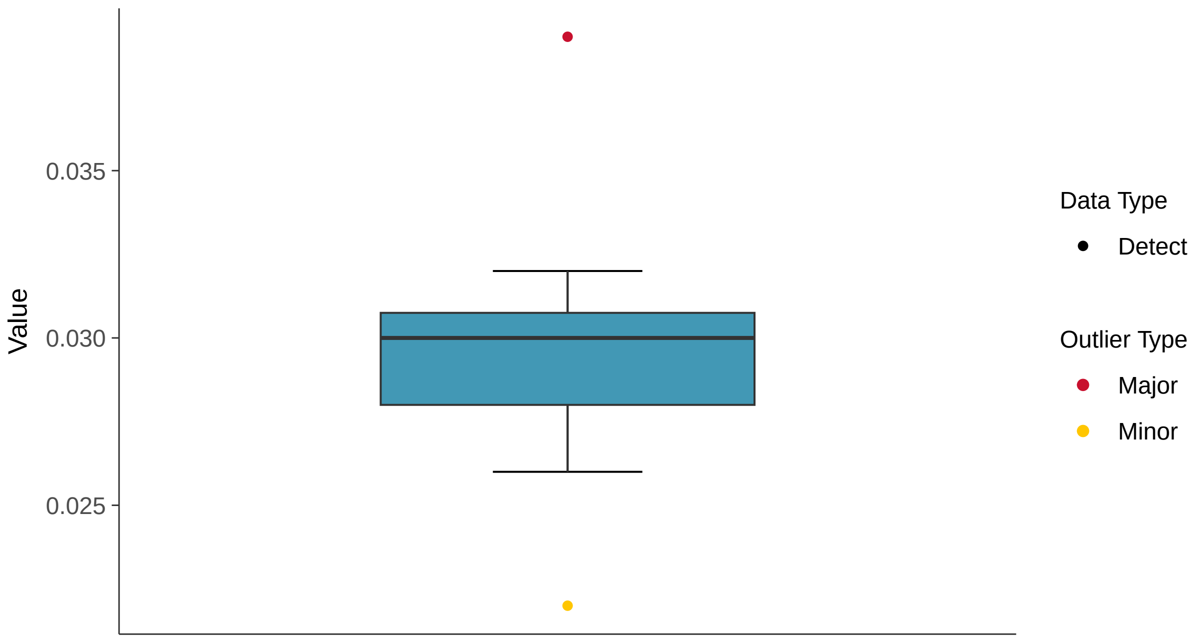
ID: 16D_2_16





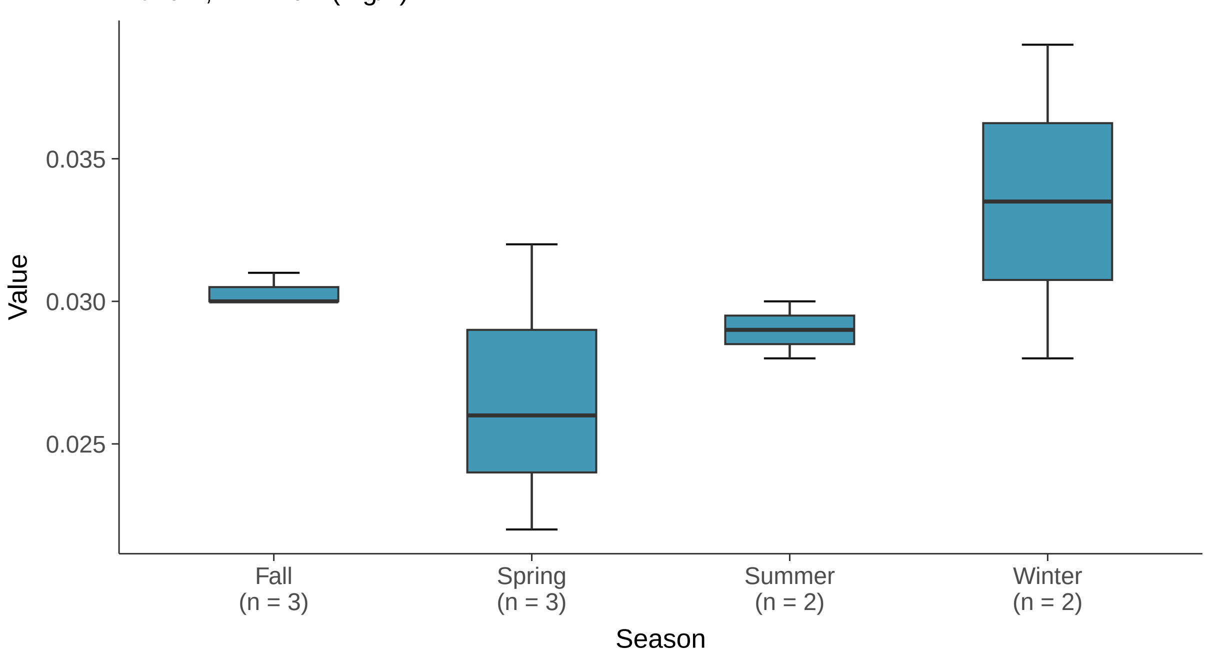
Boxplot

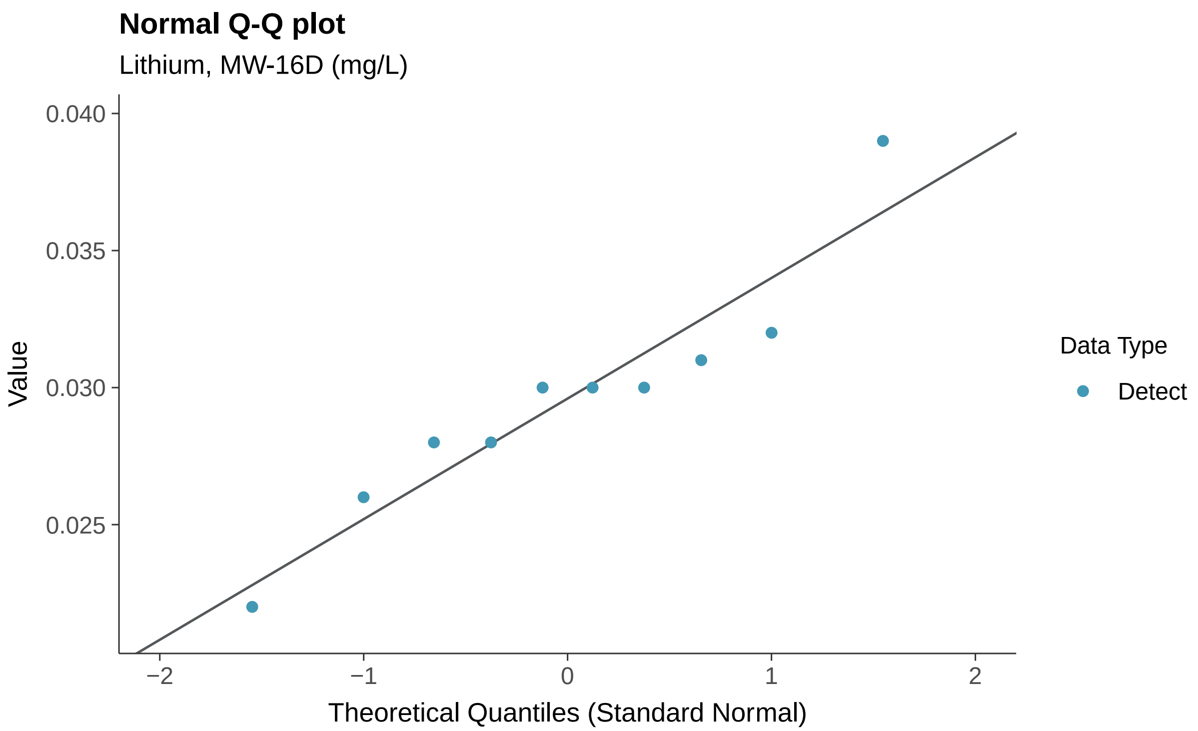
Lithium, MW-16D (mg/L)

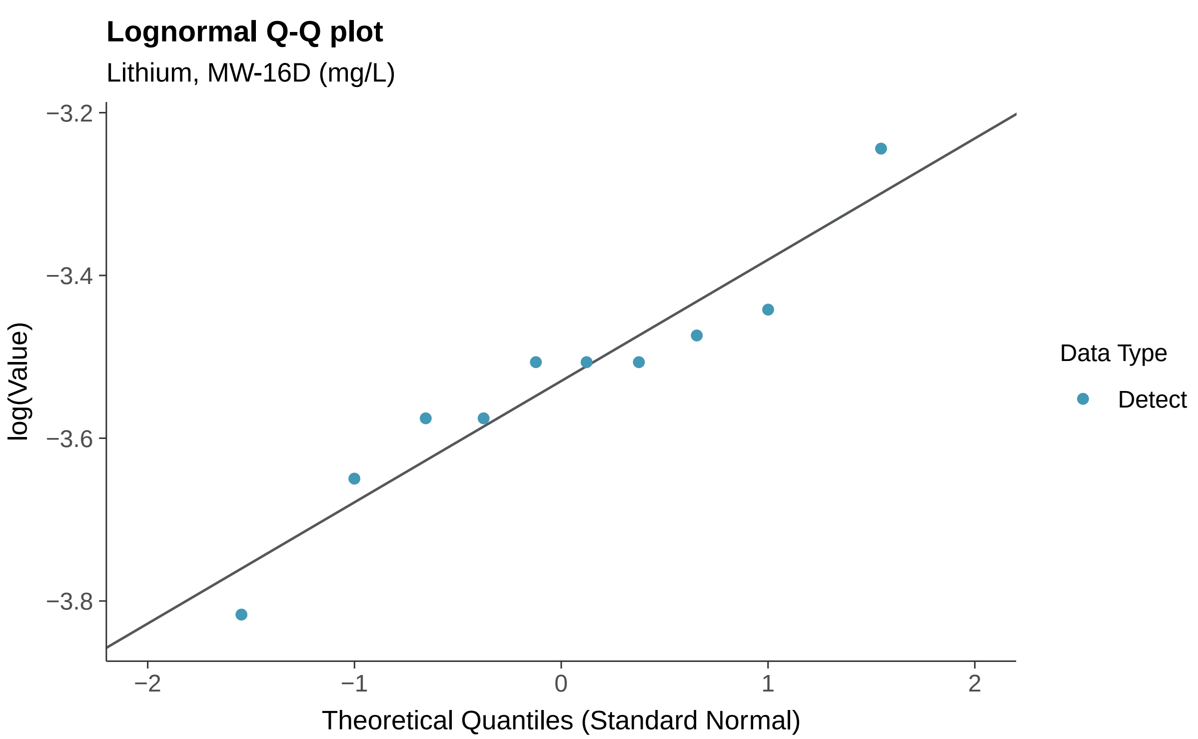


Boxplot by Season

Lithium, MW-16D (mg/L)

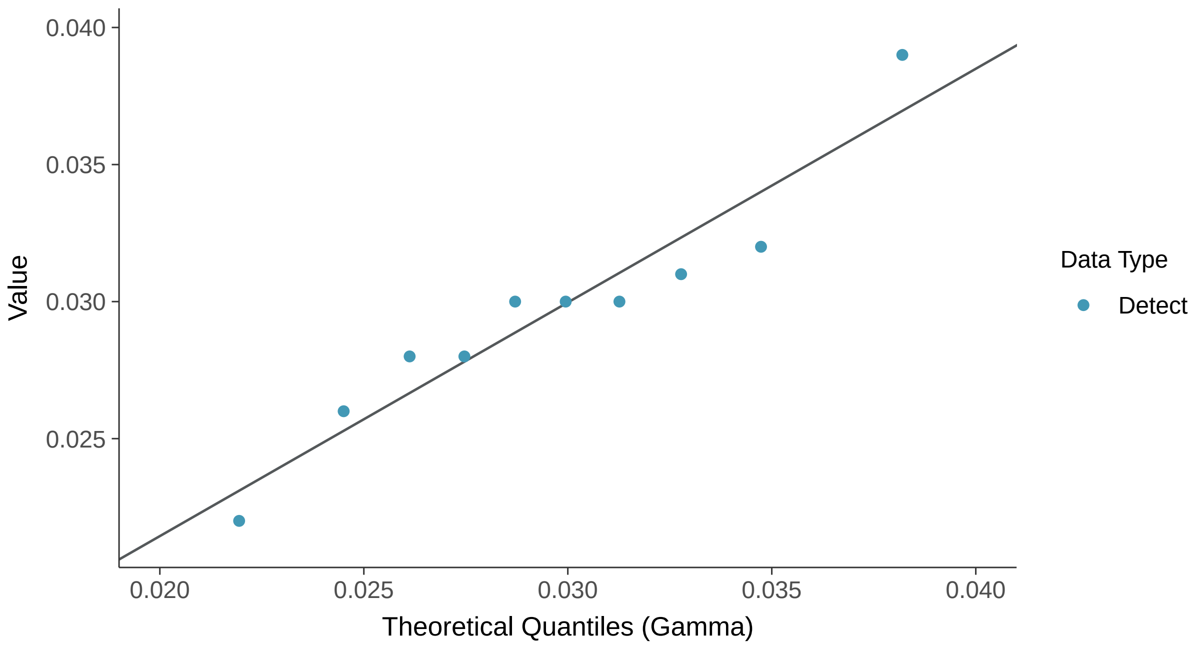



Normal Q-Q plot
Lithium, MW-16D (mg/L)
Value
0.040
0.035
0.030
0.025
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Lithium, MW-16D (mg/L)
log(Value)
−3.2
−3.4
−3.6
−3.8
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

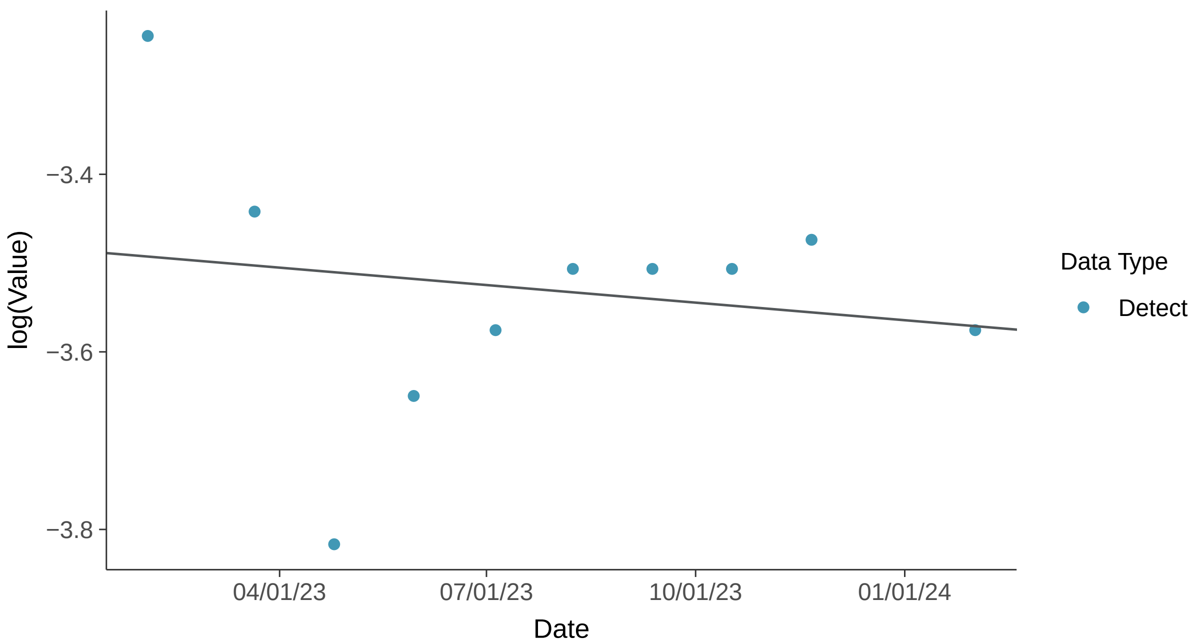
Gamma Q-Q plot

Lithium, MW-16D (mg/L)



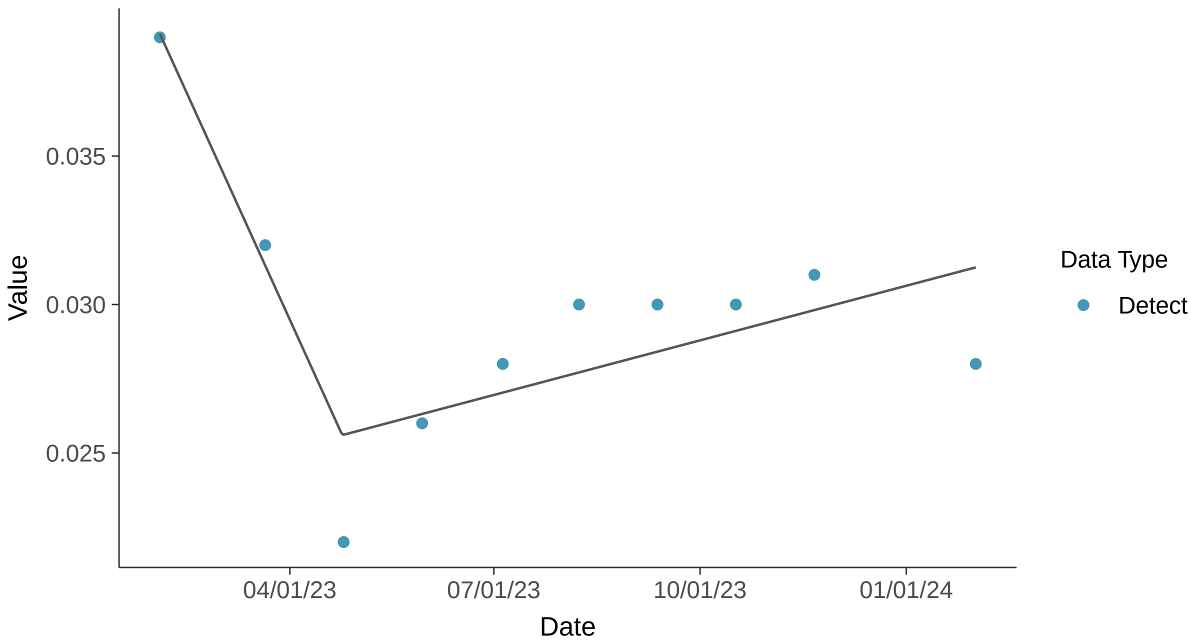
Trend Regression: Lognormal MLE

Lithium, MW-16D (mg/L)



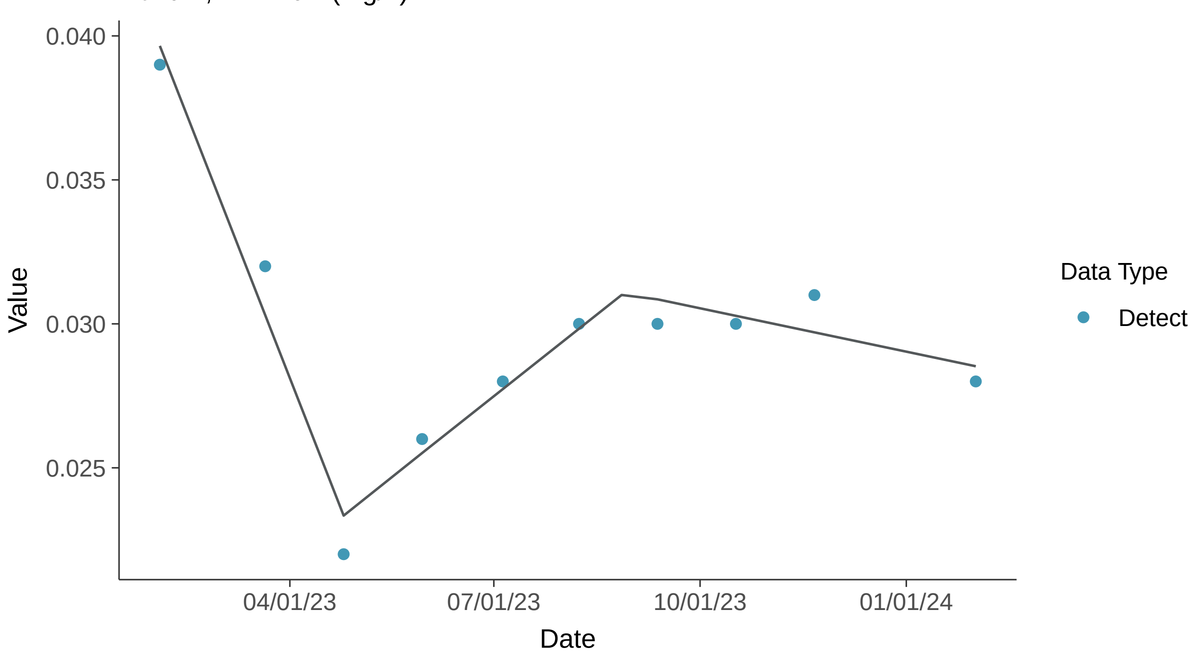
Trend Regression: Piecewise Linear-Linear

Lithium, MW-16D (mg/L)



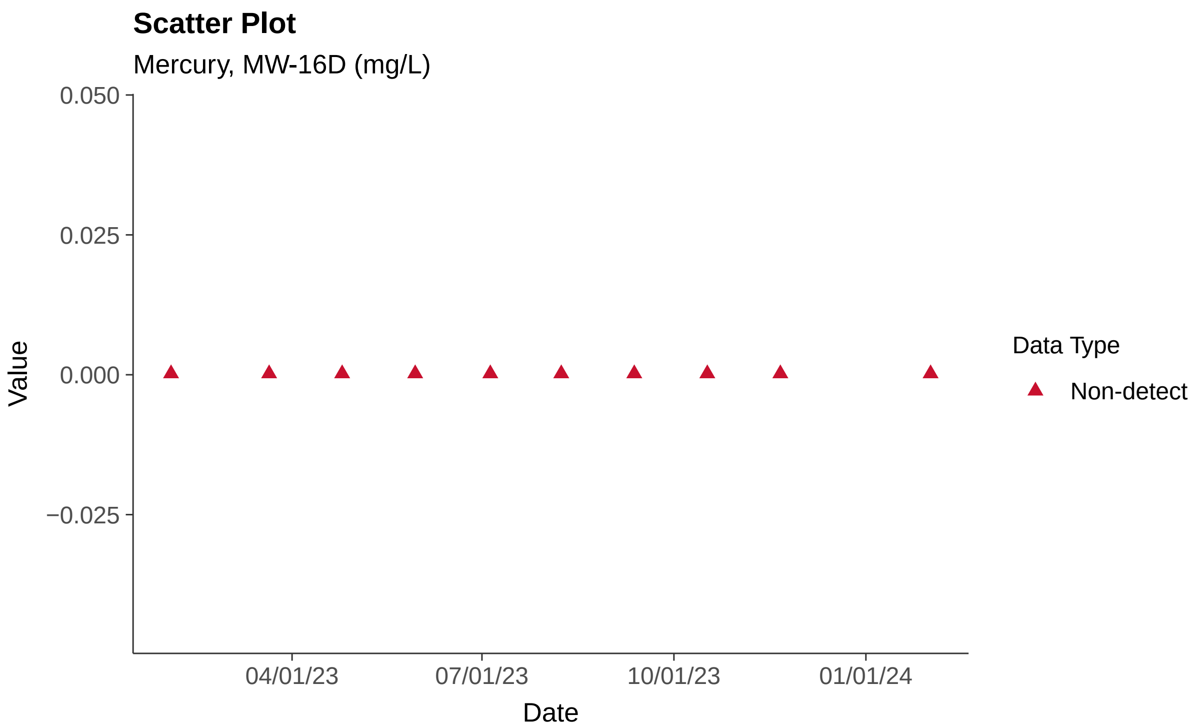
Trend Regression: Piecewise Linear-Linear-Linear

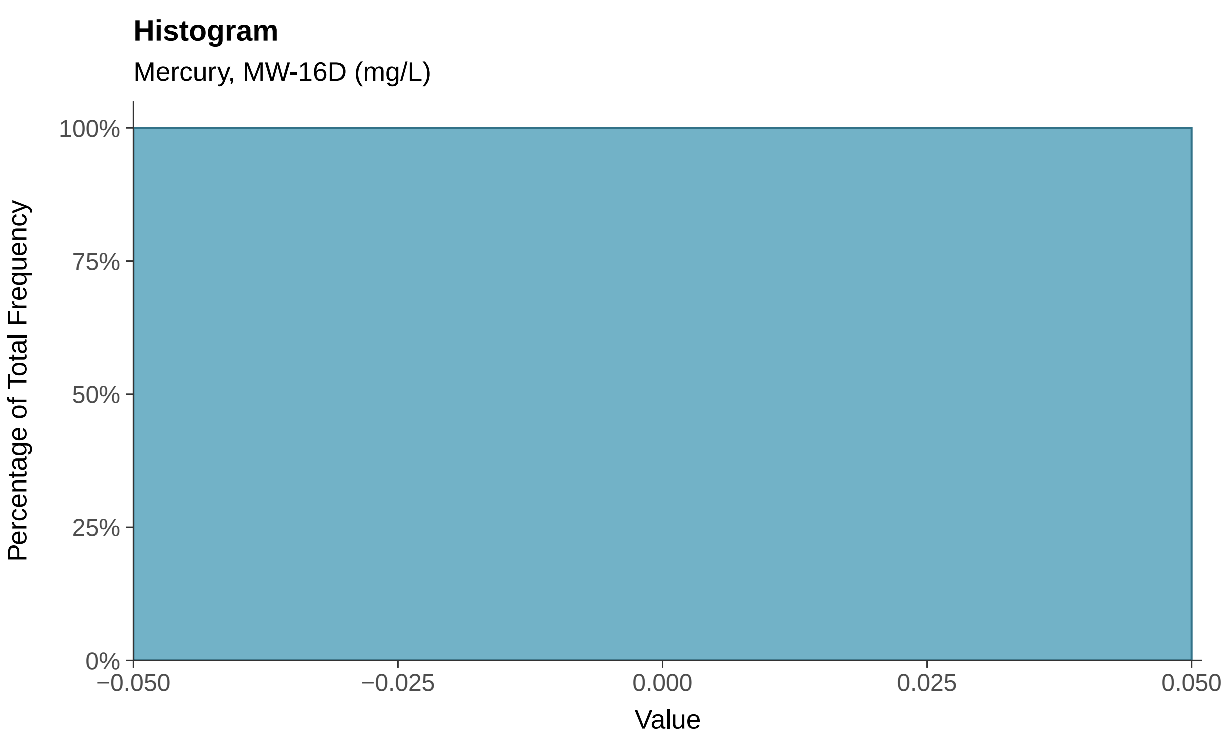
Lithium, MW-16D (mg/L)

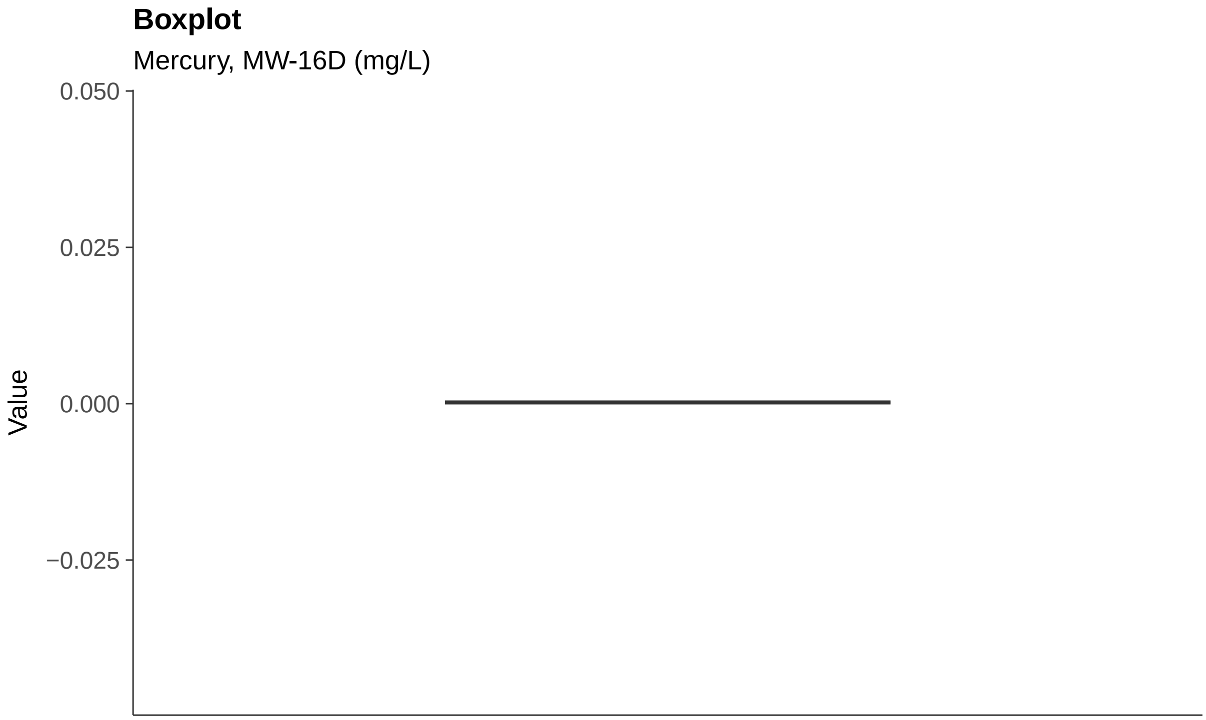


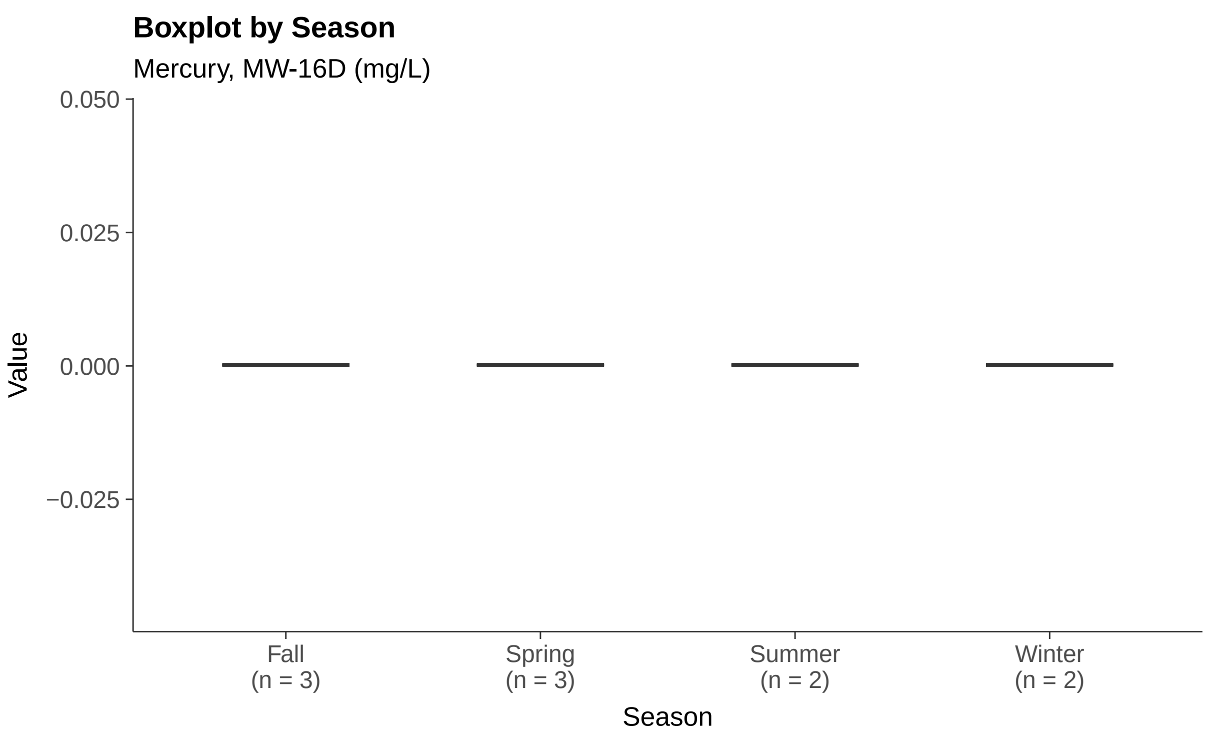
Appendix IV: Mercury, MW-16D

ID: 16D_2_17



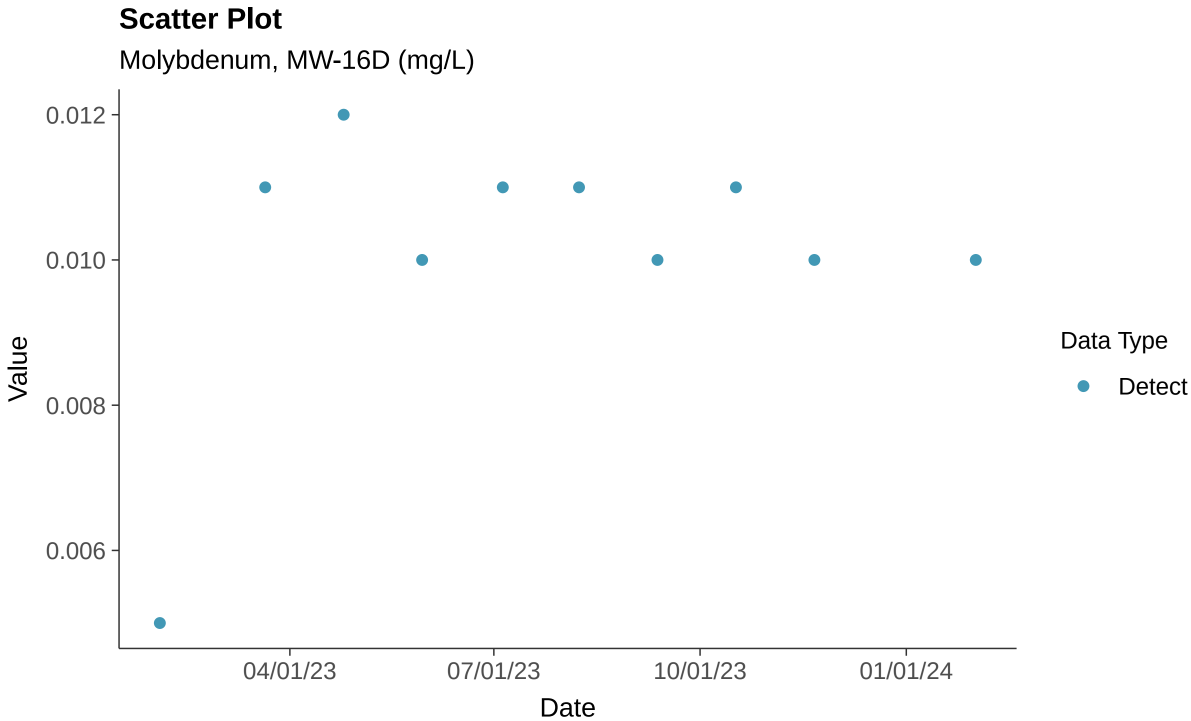


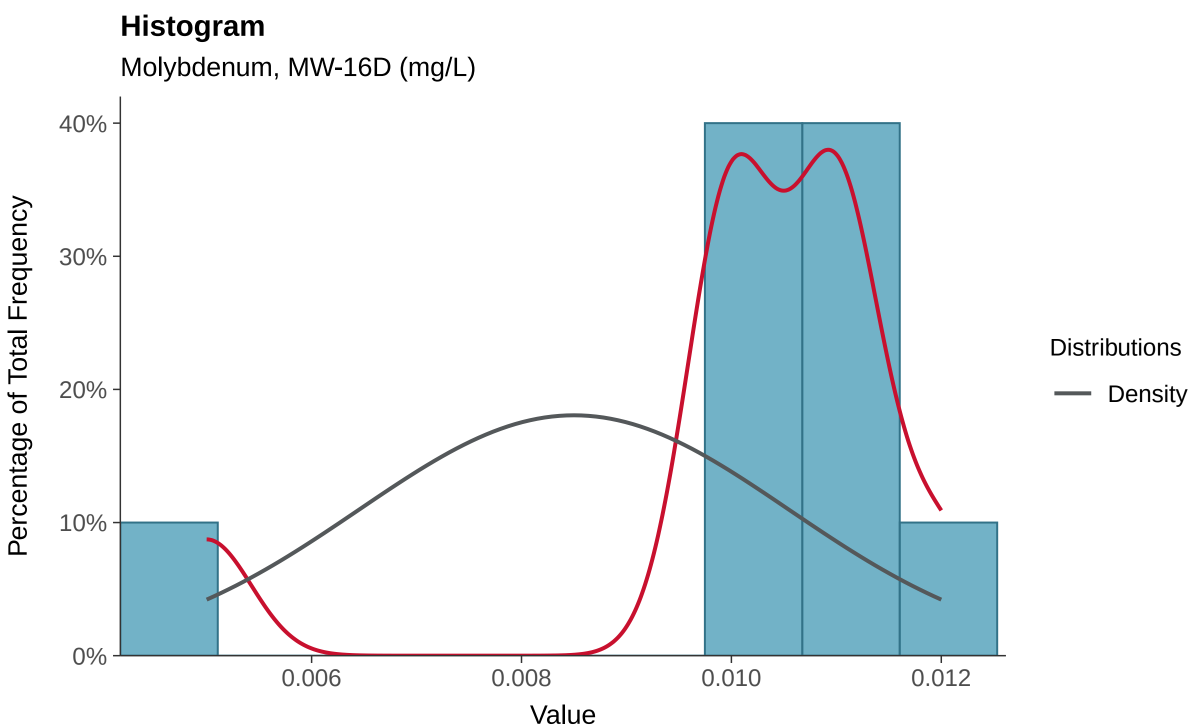

Boxplot
Mercury, MW-16D (mg/L)
Value
0.050
0.025
0.000
−0.025


Boxplot by Season
Mercury, MW-16D (mg/L)
Value
0.050
0.025
0.000
−0.025
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season

Appendix IV: Molybdenum, MW-16D

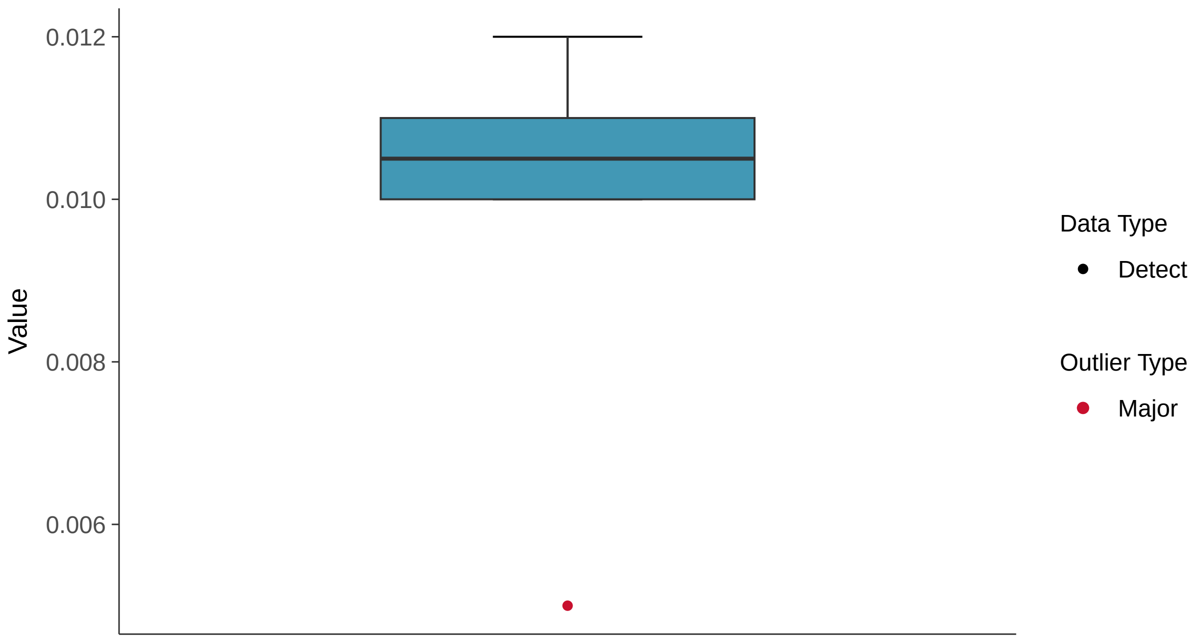
ID: 16D_2_18





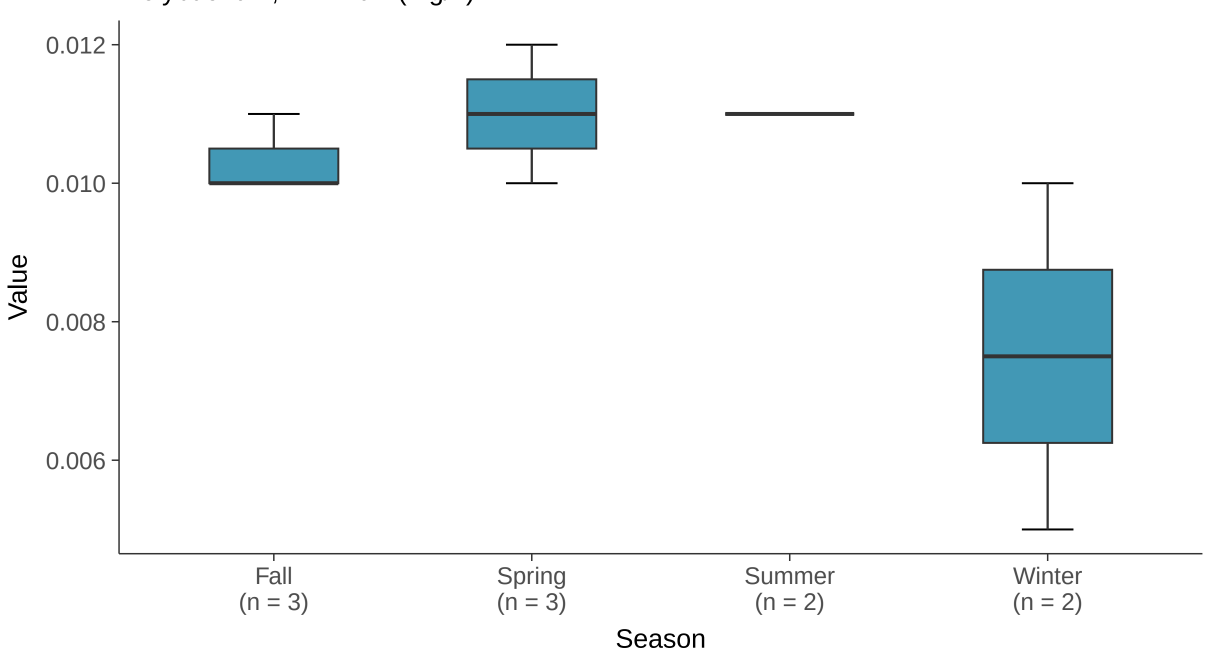
Boxplot

Molybdenum, MW-16D (mg/L)



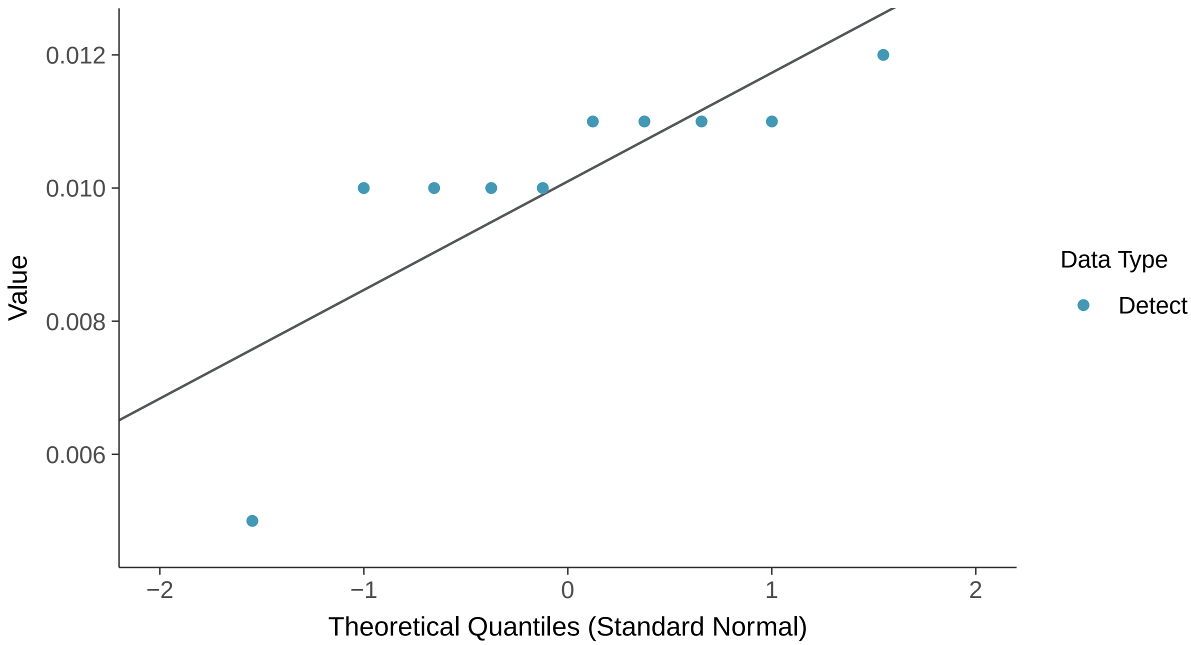
Boxplot by Season

Molybdenum, MW-16D (mg/L)



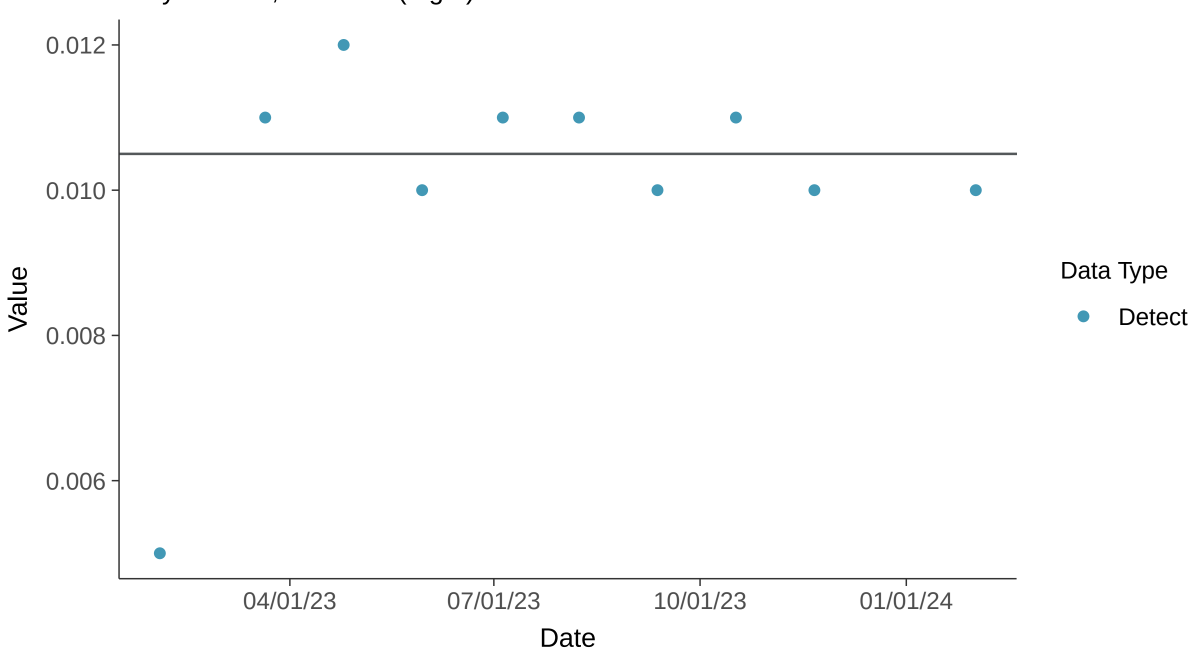
Normal Q-Q plot

Molybdenum, MW-16D (mg/L)



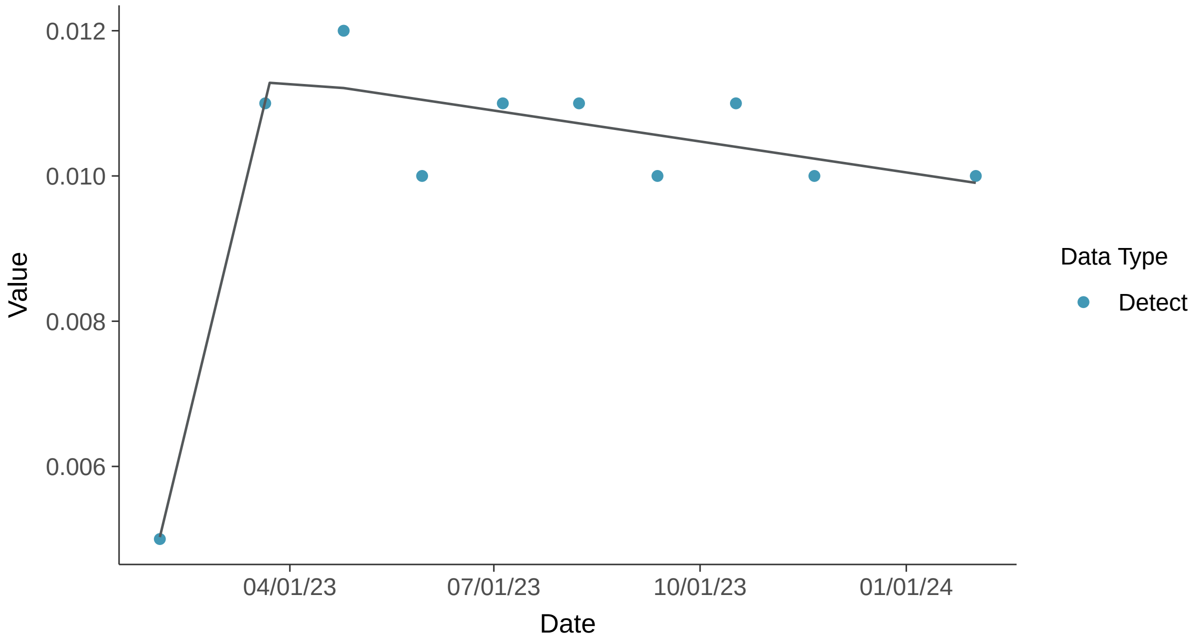
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Molybdenum, MW-16D (mg/L)



Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-16D (mg/L)

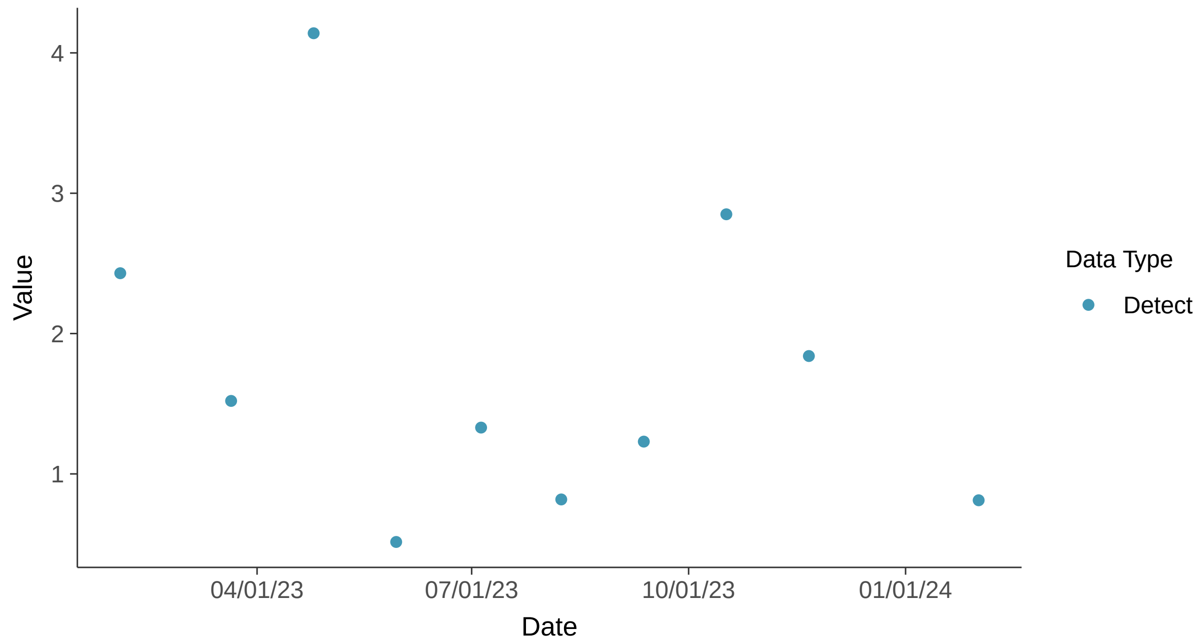


Appendix IV: Radium-226/228, MW-16D

ID: 16D_2_20

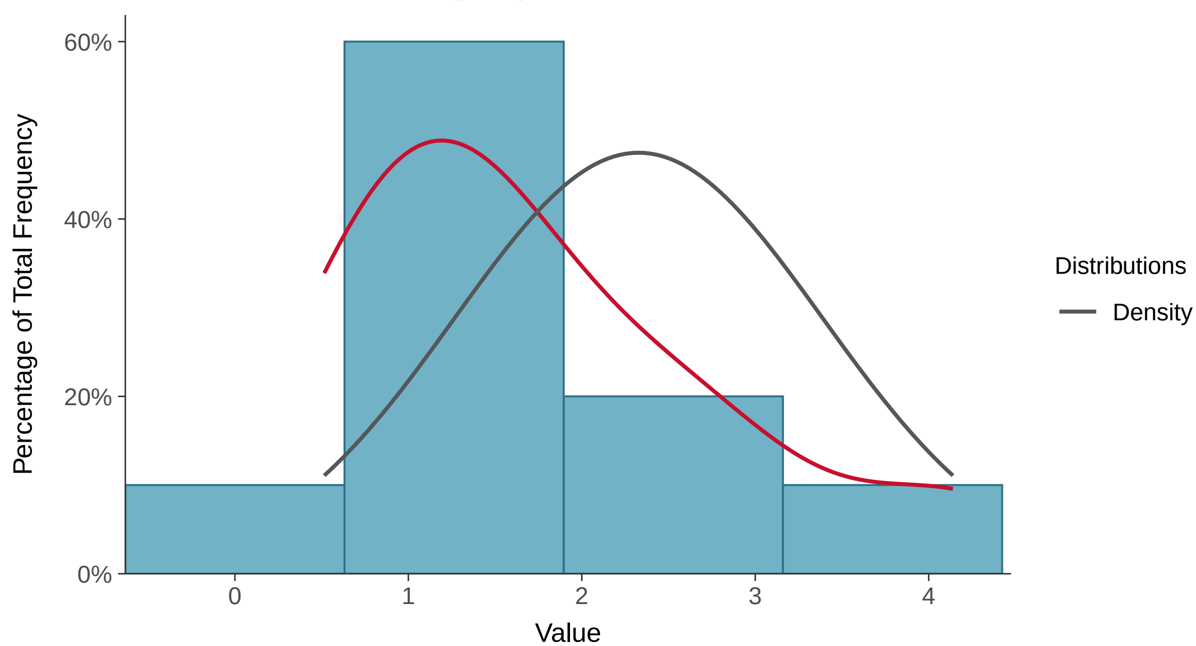
Scatter Plot

Radium-226/228, MW-16D (pCi/L)



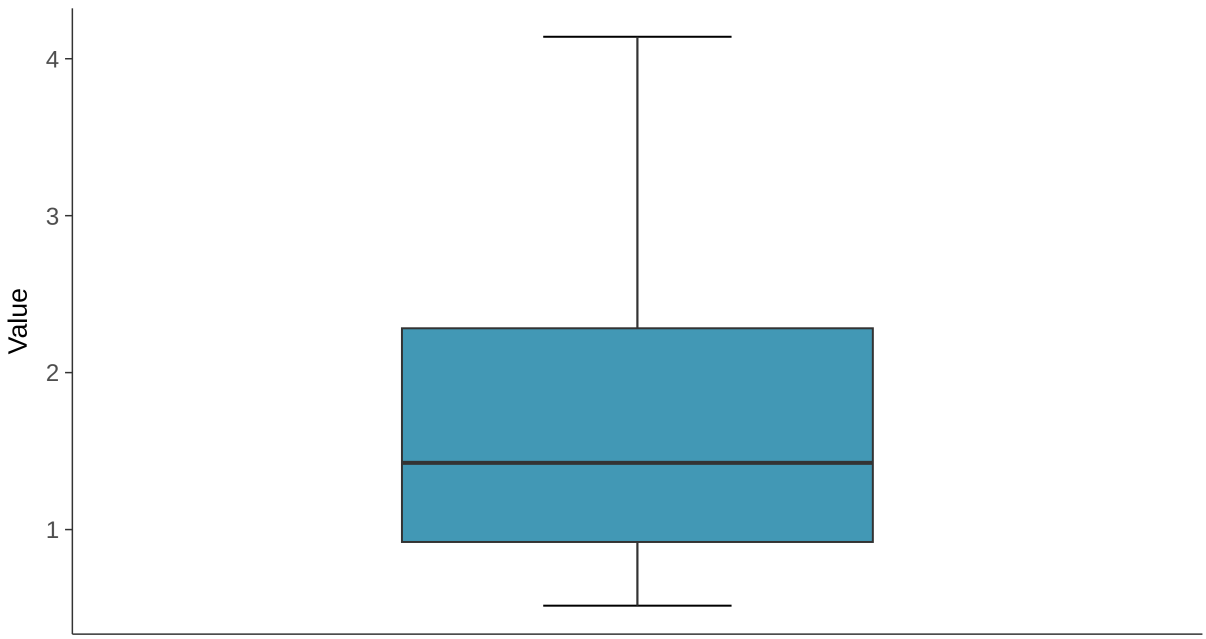
Histogram

Radium-226/228, MW-16D (pCi/L)



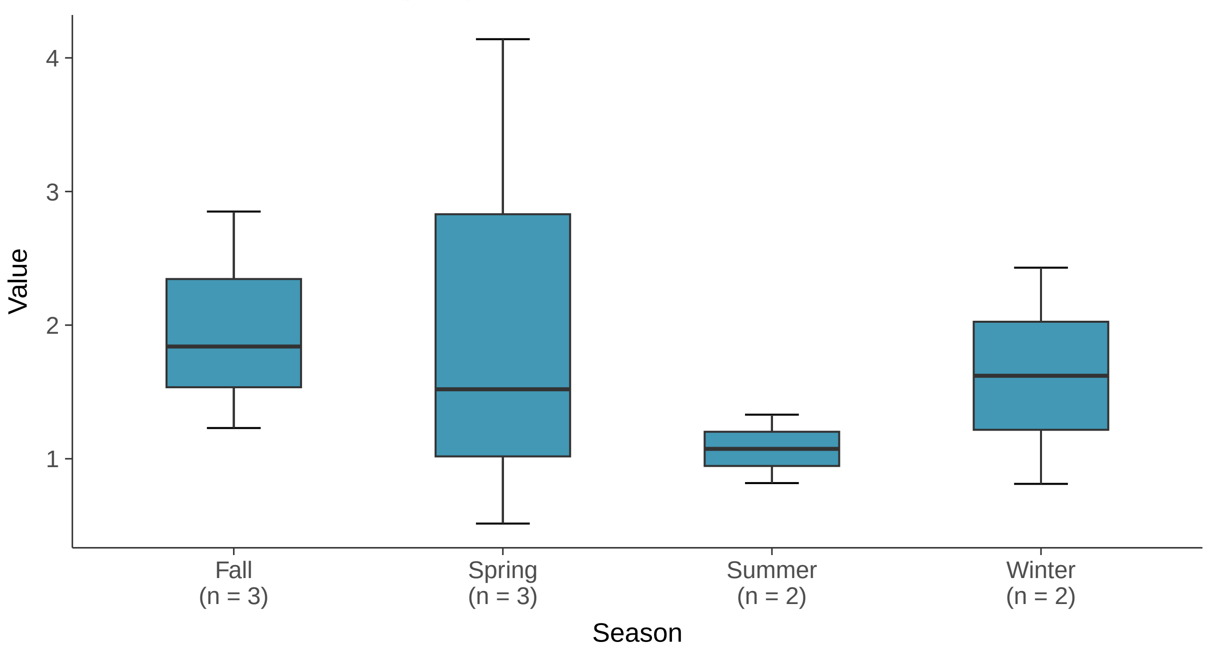
Boxplot

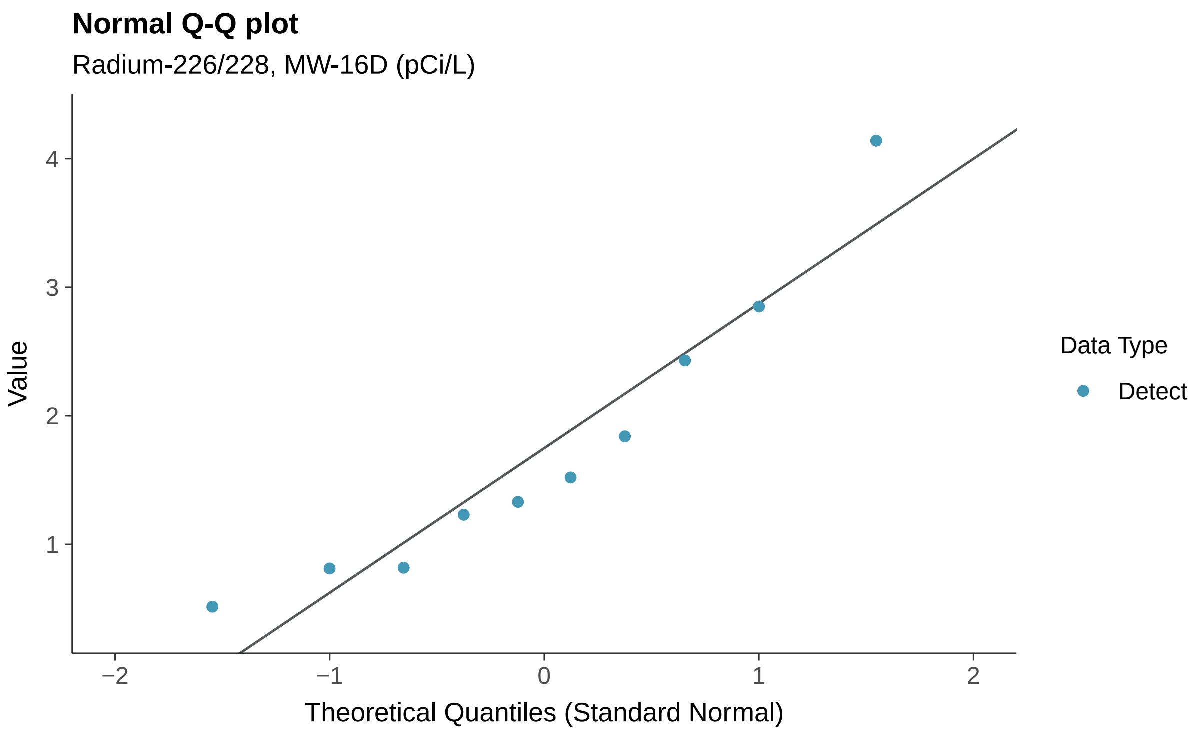
Radium-226/228, MW-16D (pCi/L)

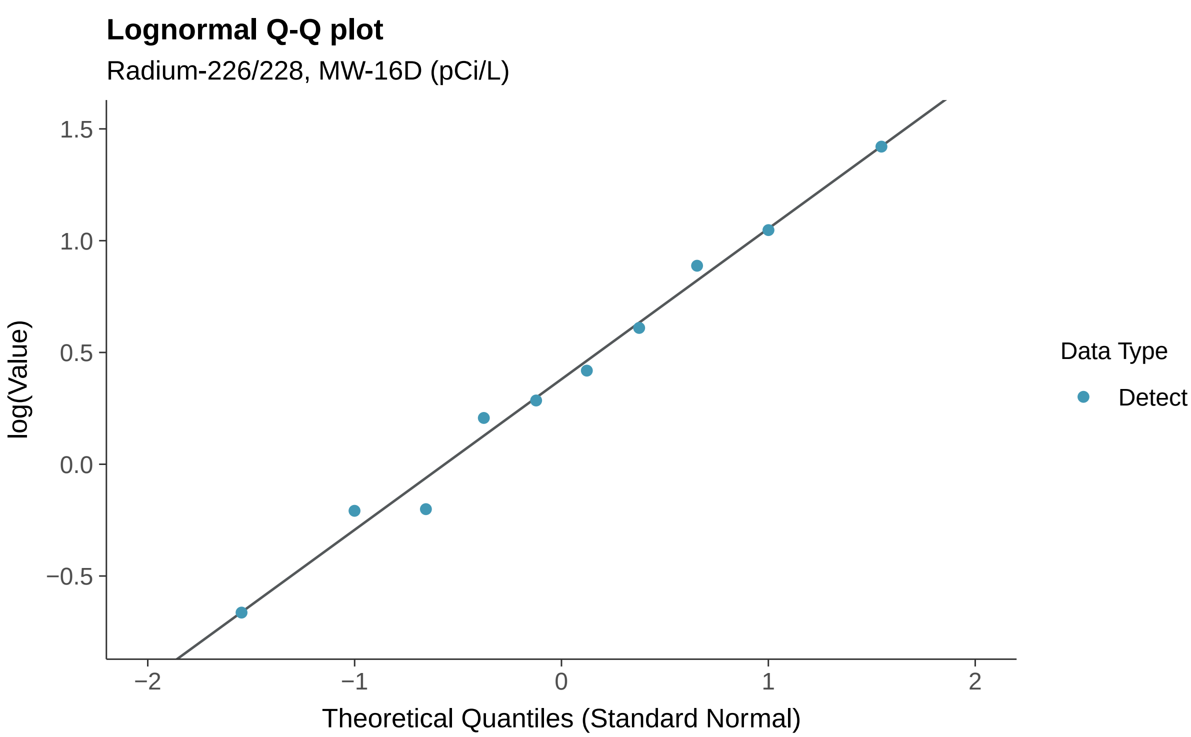


Boxplot by Season

Radium-226/228, MW-16D (pCi/L)

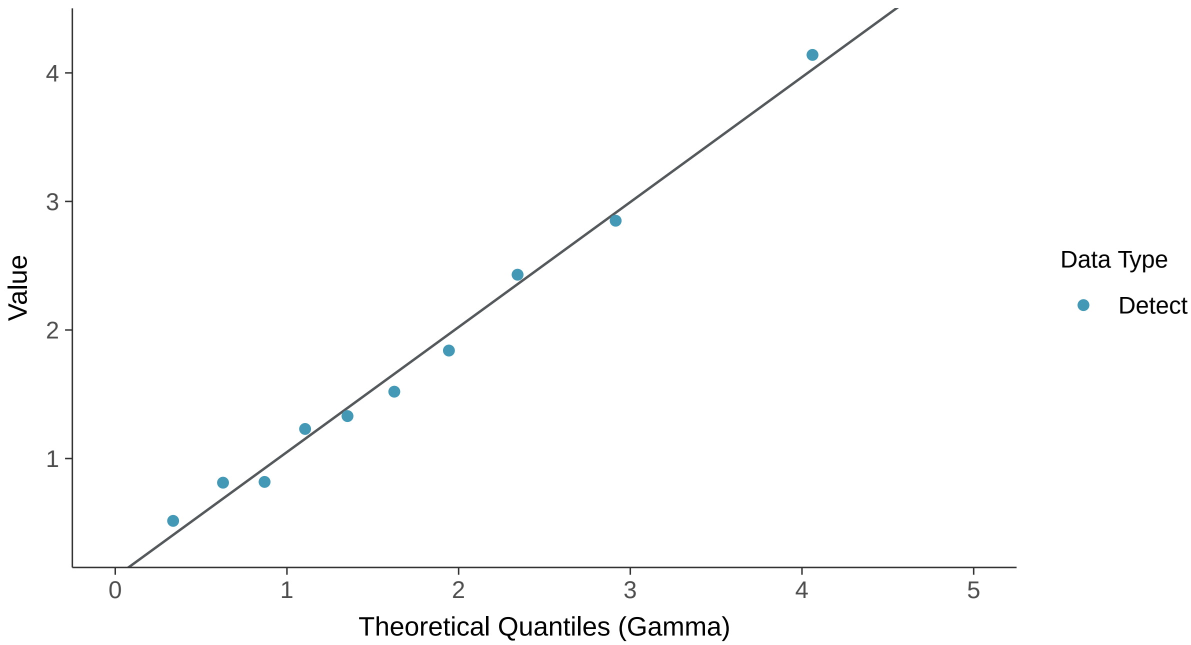



Normal Q-Q plot
Radium-226/228, MW-16D (pCi/L)
Value
4
3
2
1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Radium-226/228, MW-16D (pCi/L)
log(Value)
1.5
1.0
0.5
0.0
−0.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

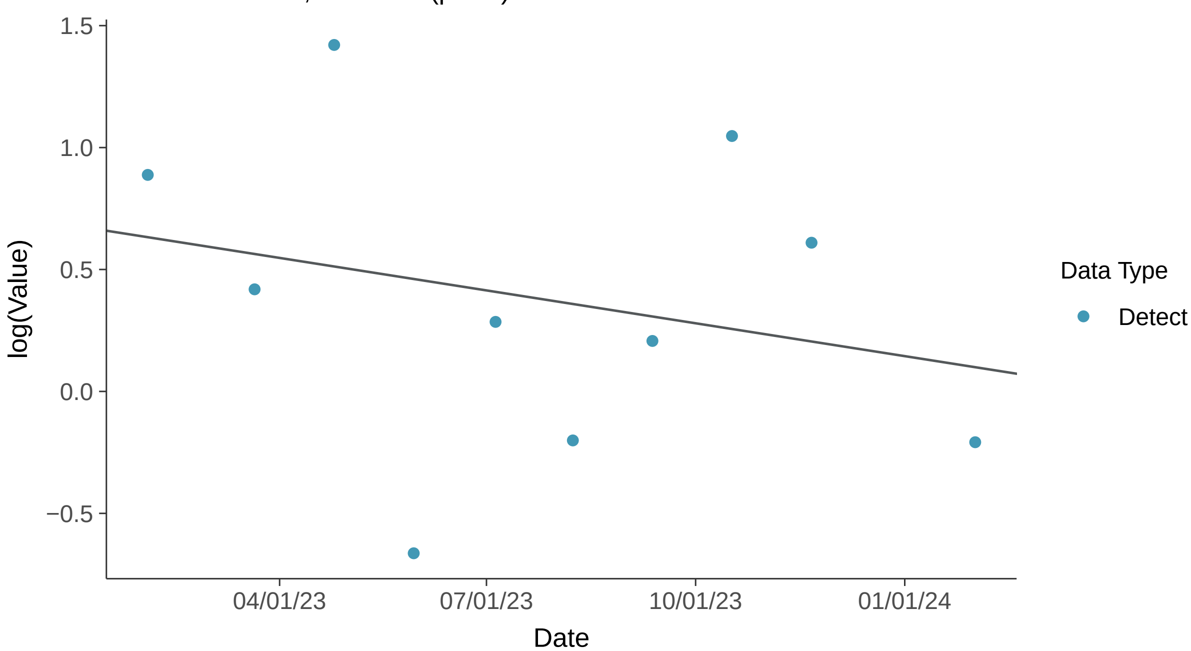
Gamma Q-Q plot

Radium-226/228, MW-16D (pCi/L)



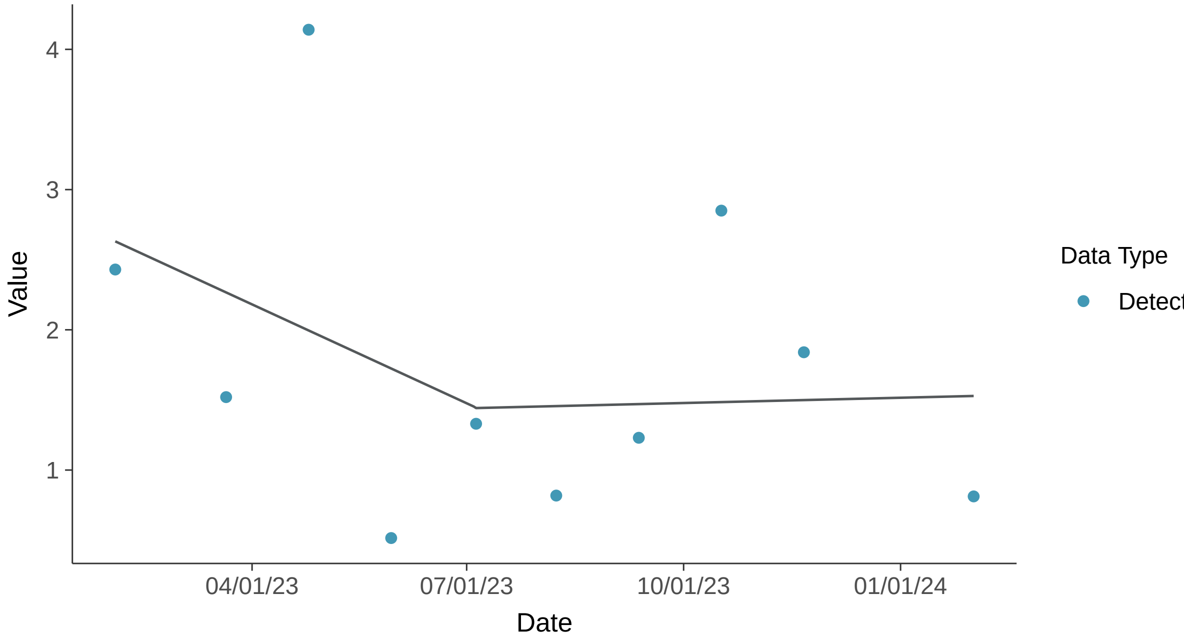
Trend Regression: Lognormal MLE

Radium-226/228, MW-16D (pCi/L)



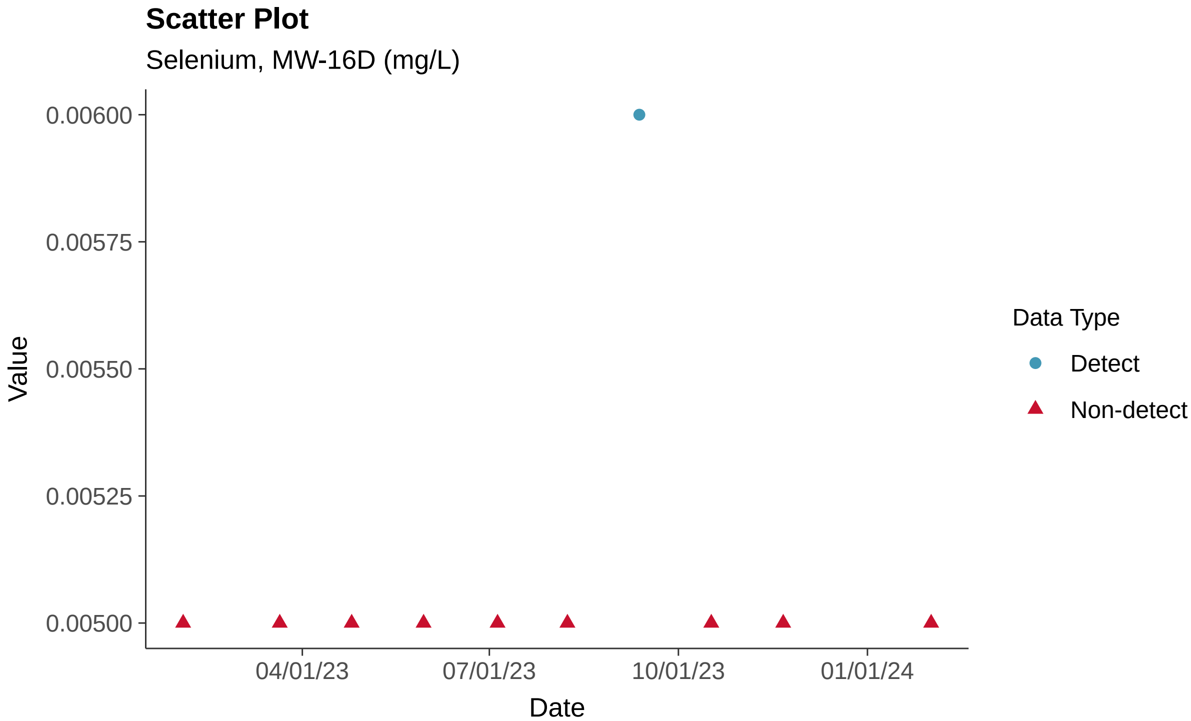
Trend Regression: Piecewise Linear-Linear

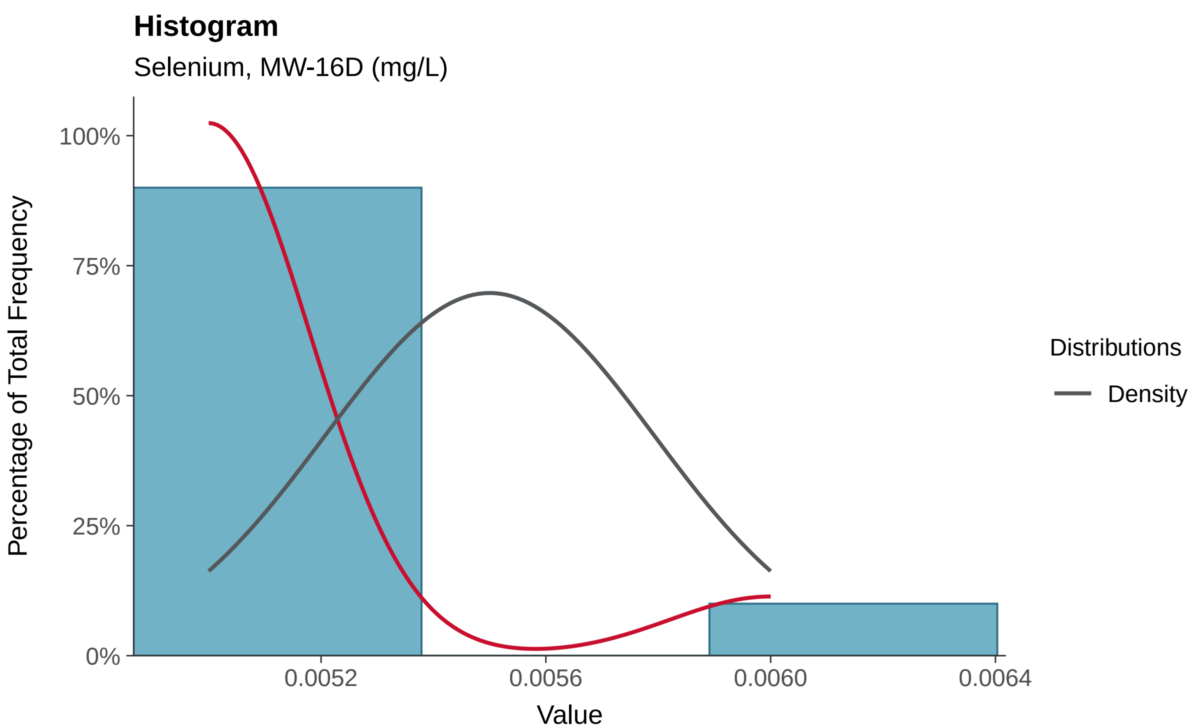
Radium-226/228, MW-16D (pCi/L)



Appendix IV: Selenium, MW-16D

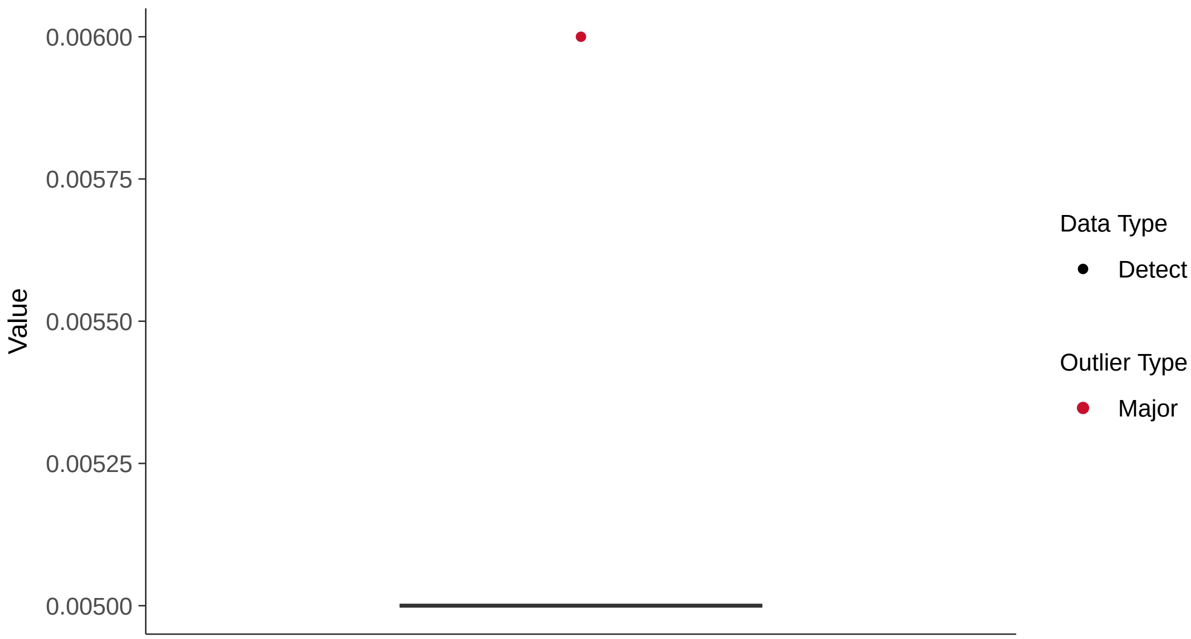
ID: 16D_2_22





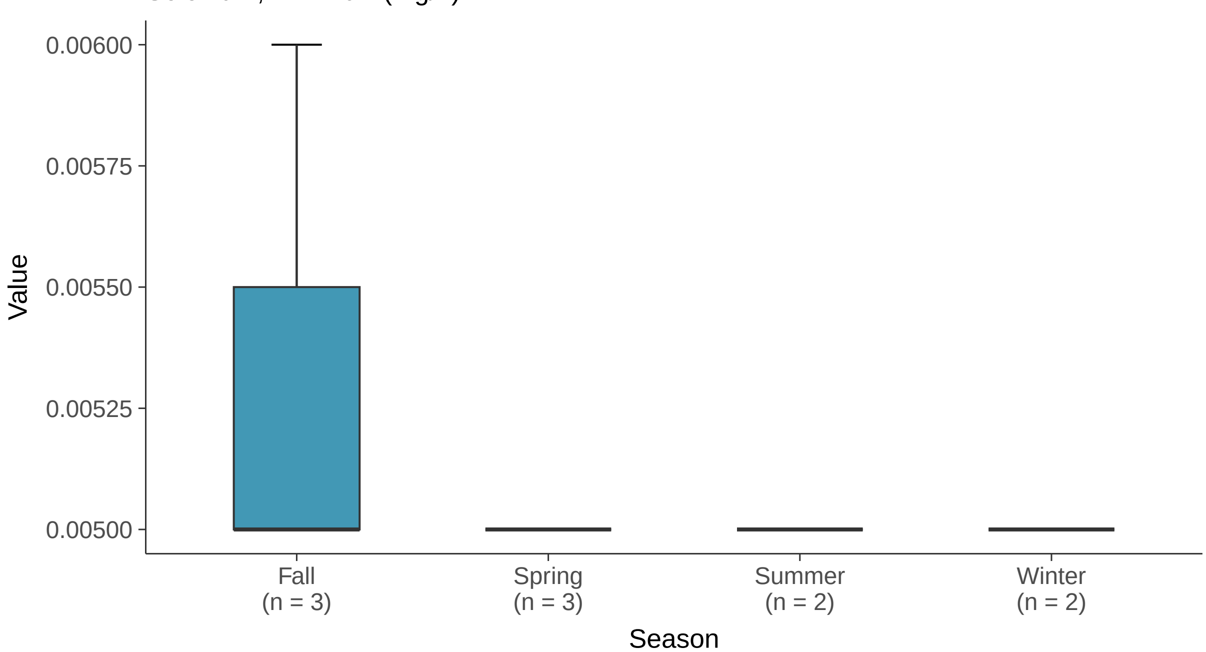
Boxplot

Selenium, MW-16D (mg/L)



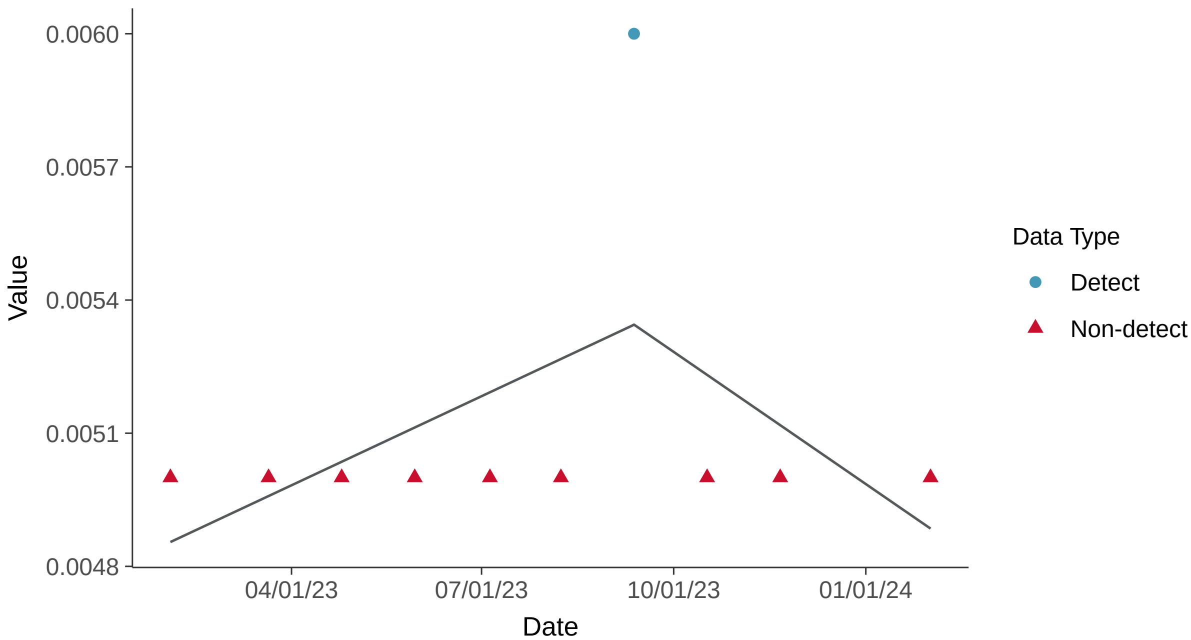
Boxplot by Season

Selenium, MW-16D (mg/L)



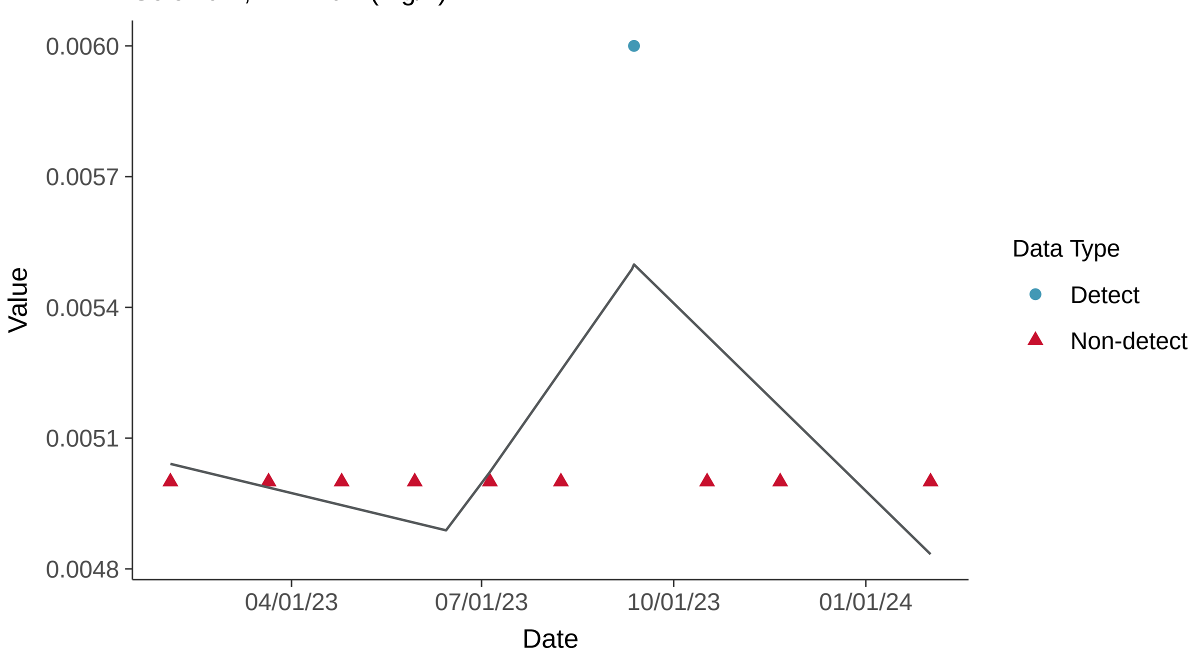
Trend Regression: Piecewise Linear-Linear

Selenium, MW-16D (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Selenium, MW-16D (mg/L)

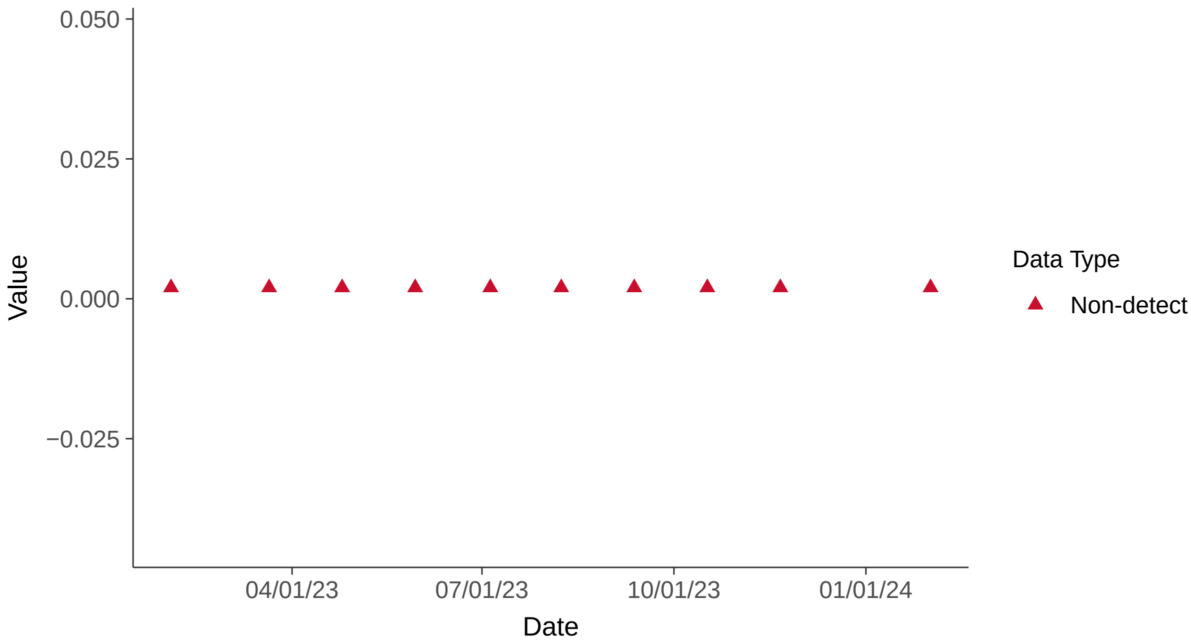


Appendix IV: Thallium, MW-16D

ID: 16D_2_23

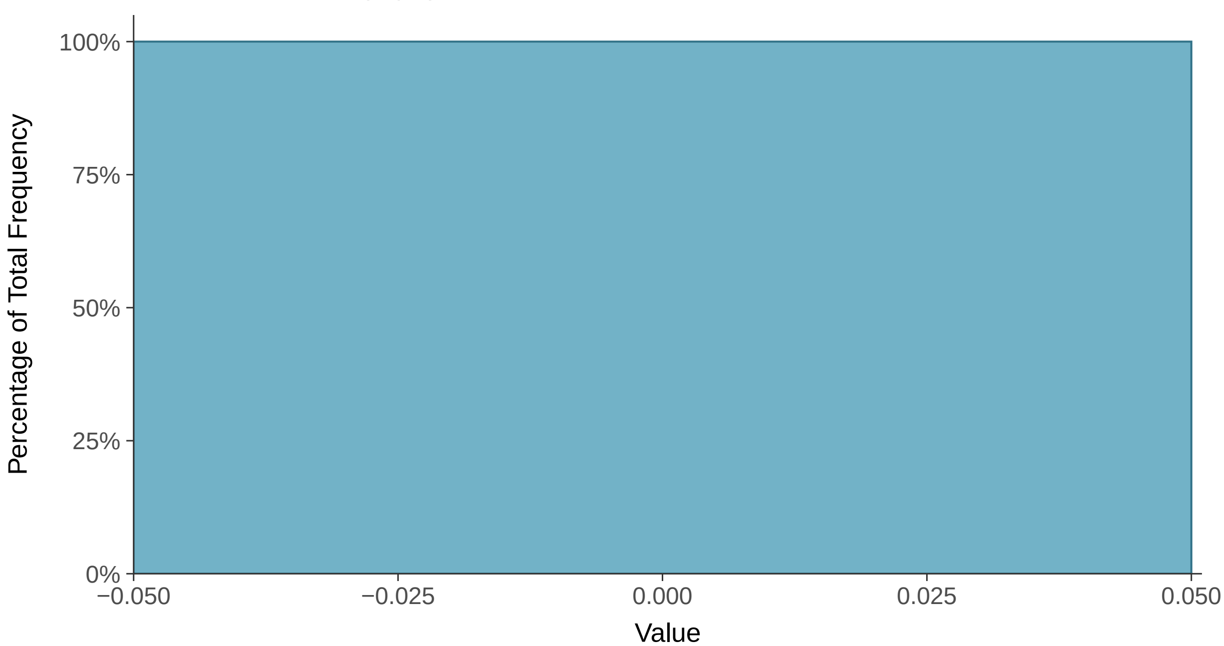
Scatter Plot

Thallium, MW-16D (mg/L)



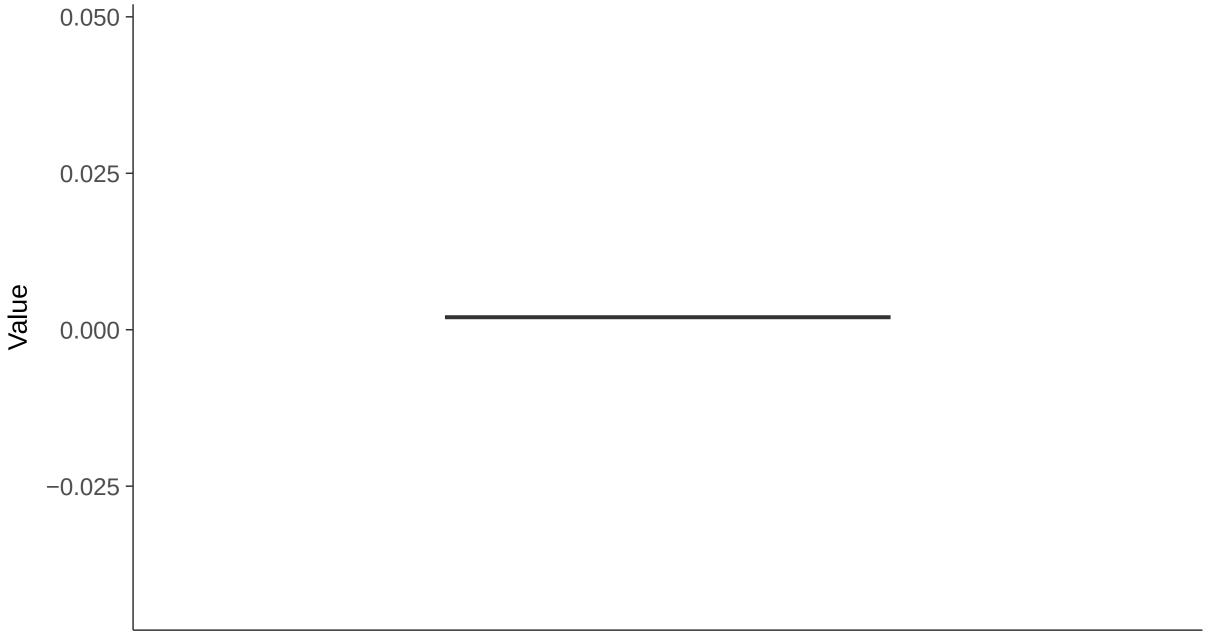
Histogram

Thallium, MW-16D (mg/L)



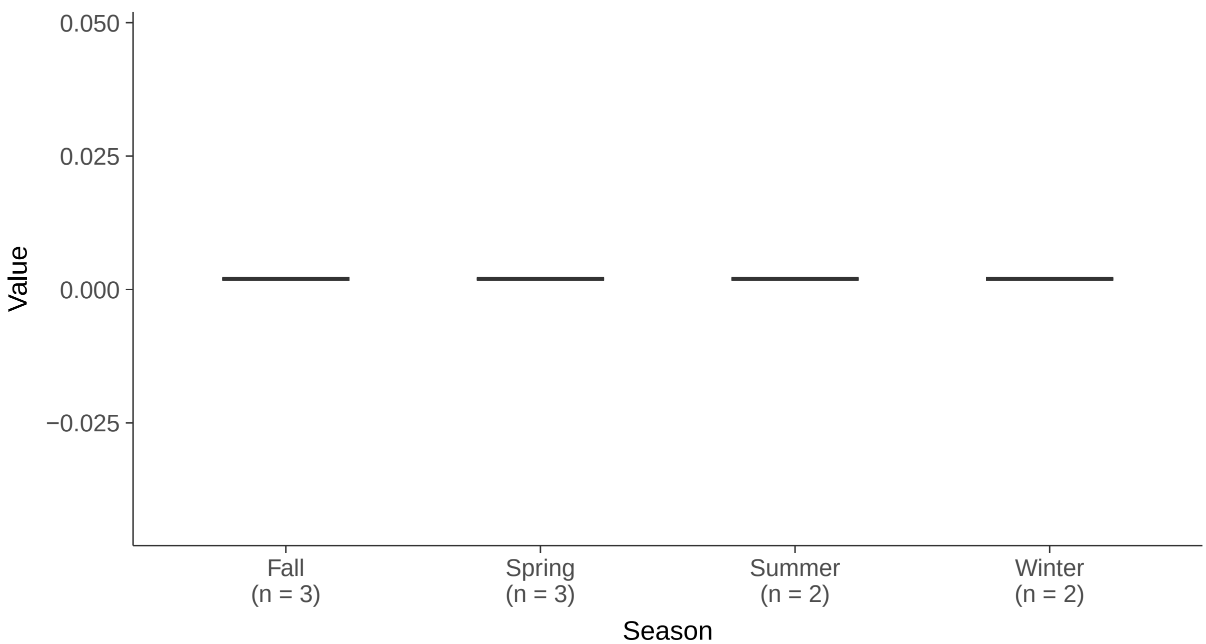
Boxplot

Thallium, MW-16D (mg/L)



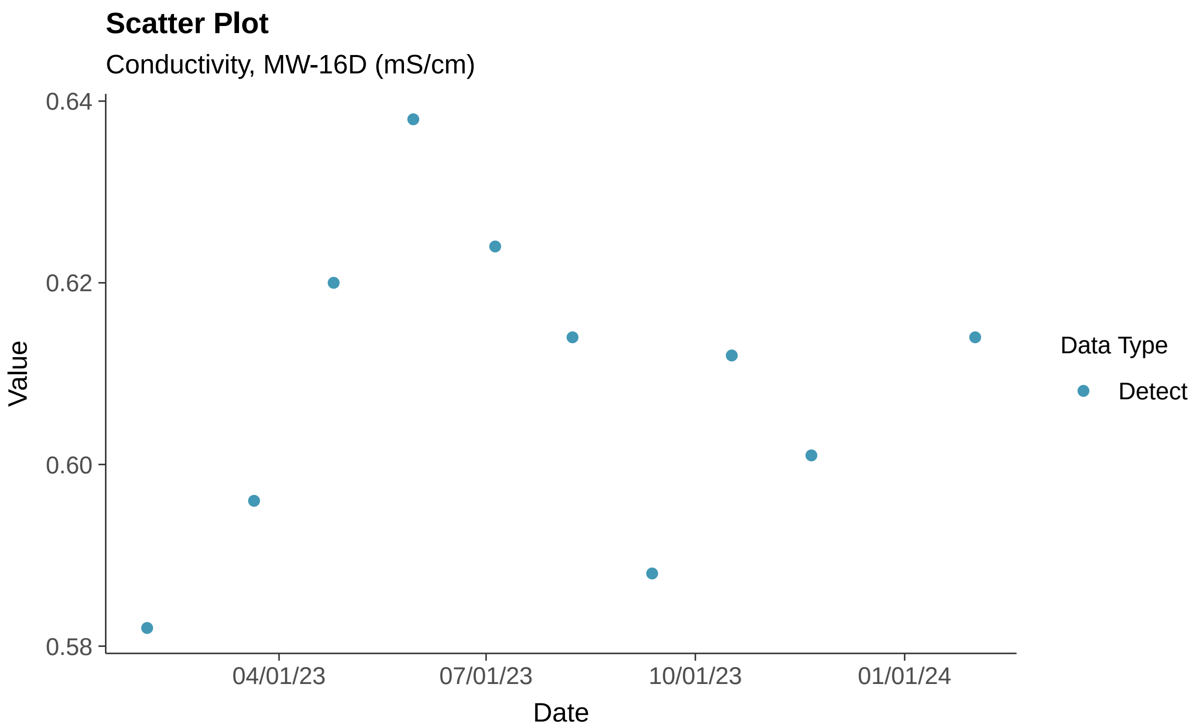
Boxplot by Season

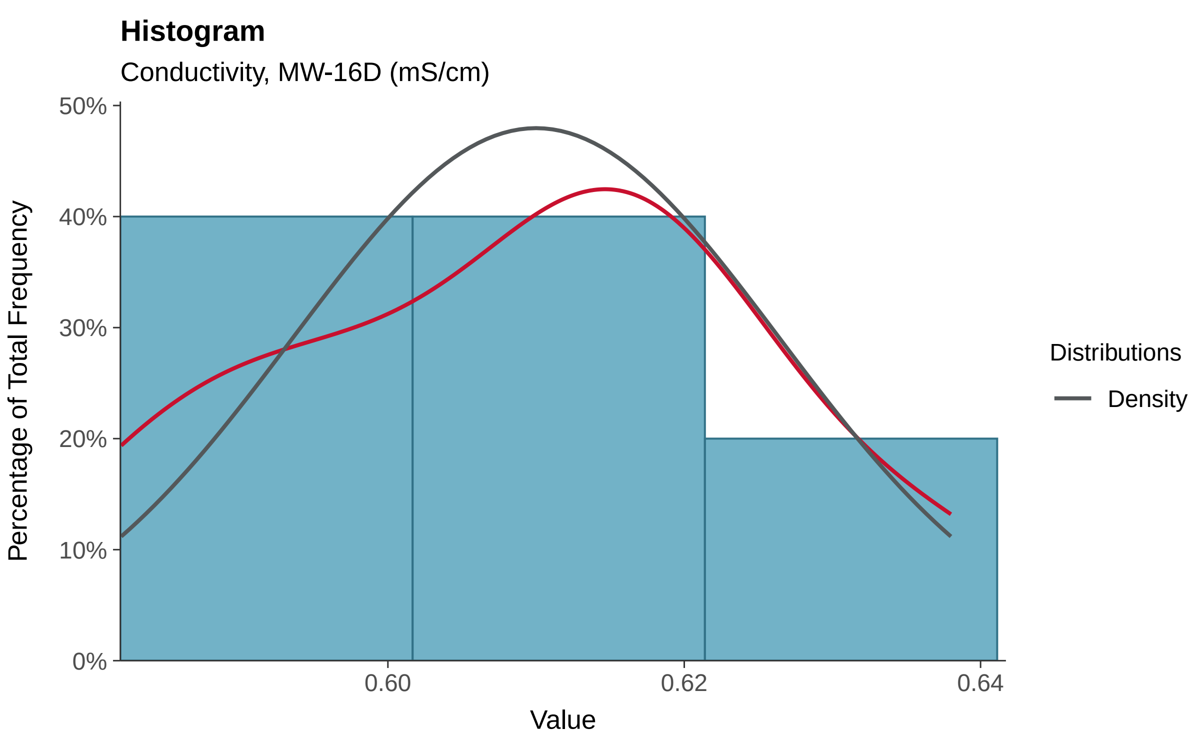
Thallium, MW-16D (mg/L)



Field Parameters: Conductivity, MW-16D

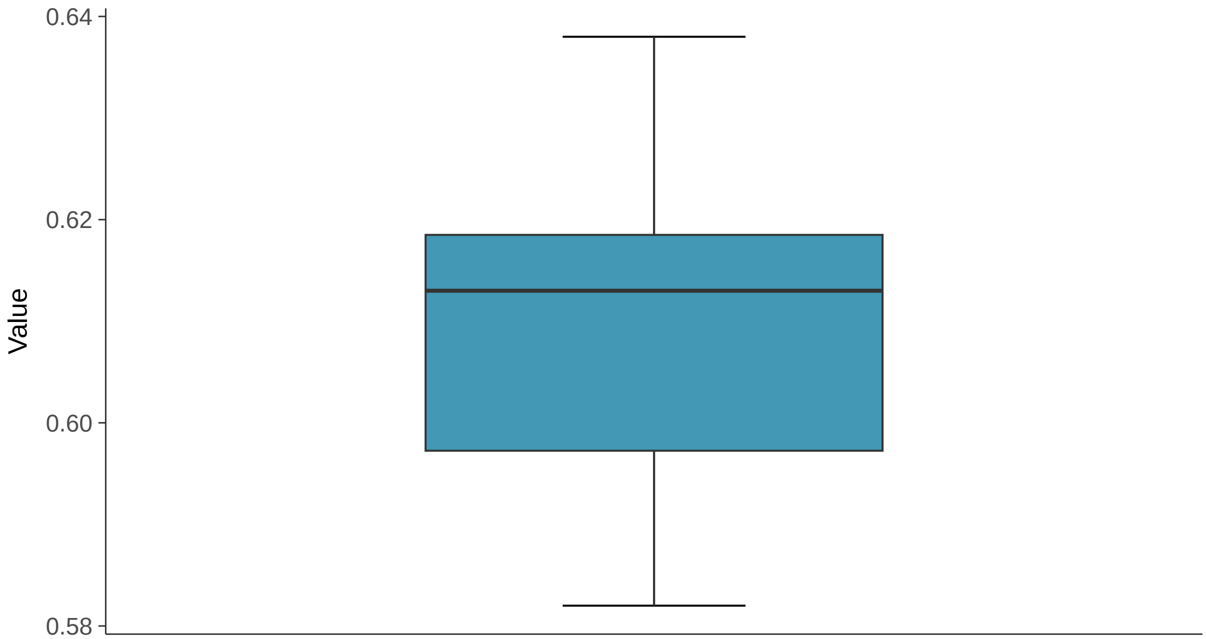
ID: 16D_3_24





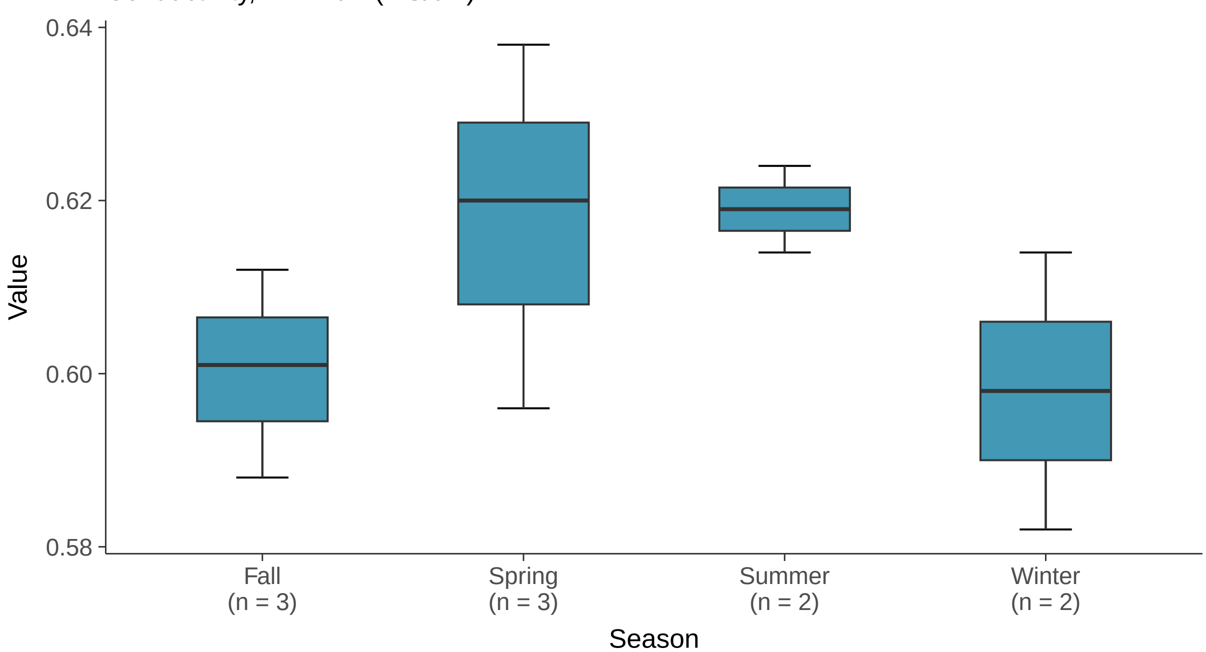
Boxplot

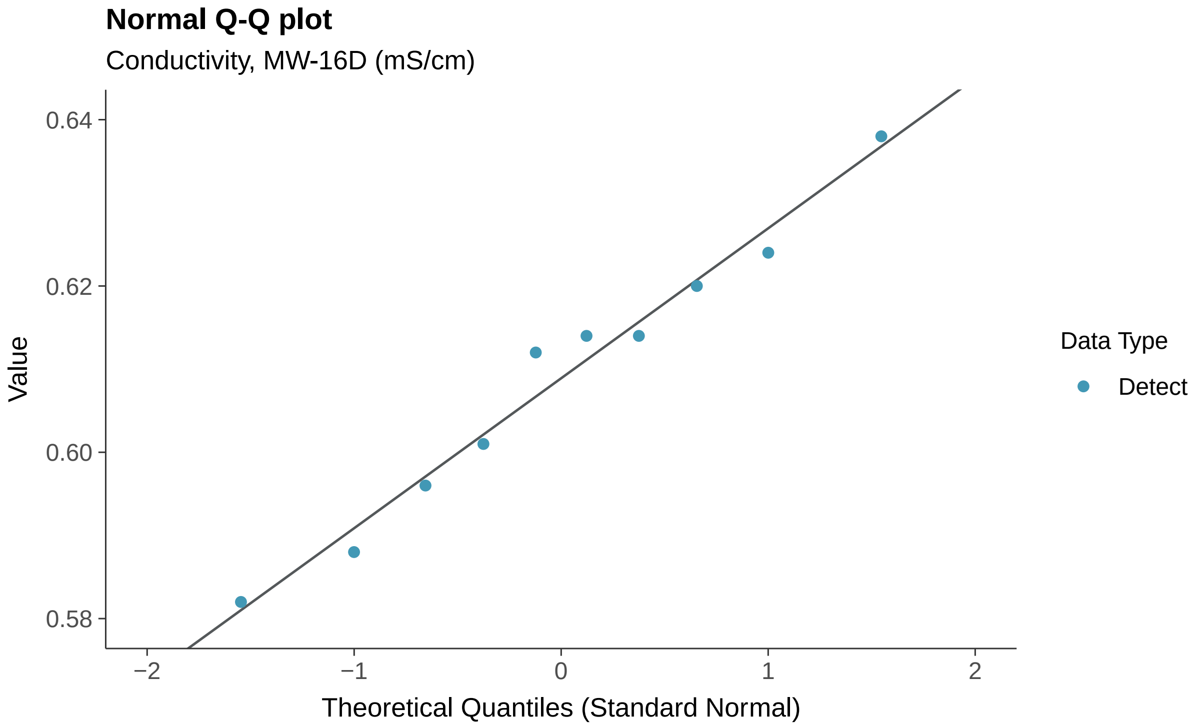
Conductivity, MW-16D (mS/cm)

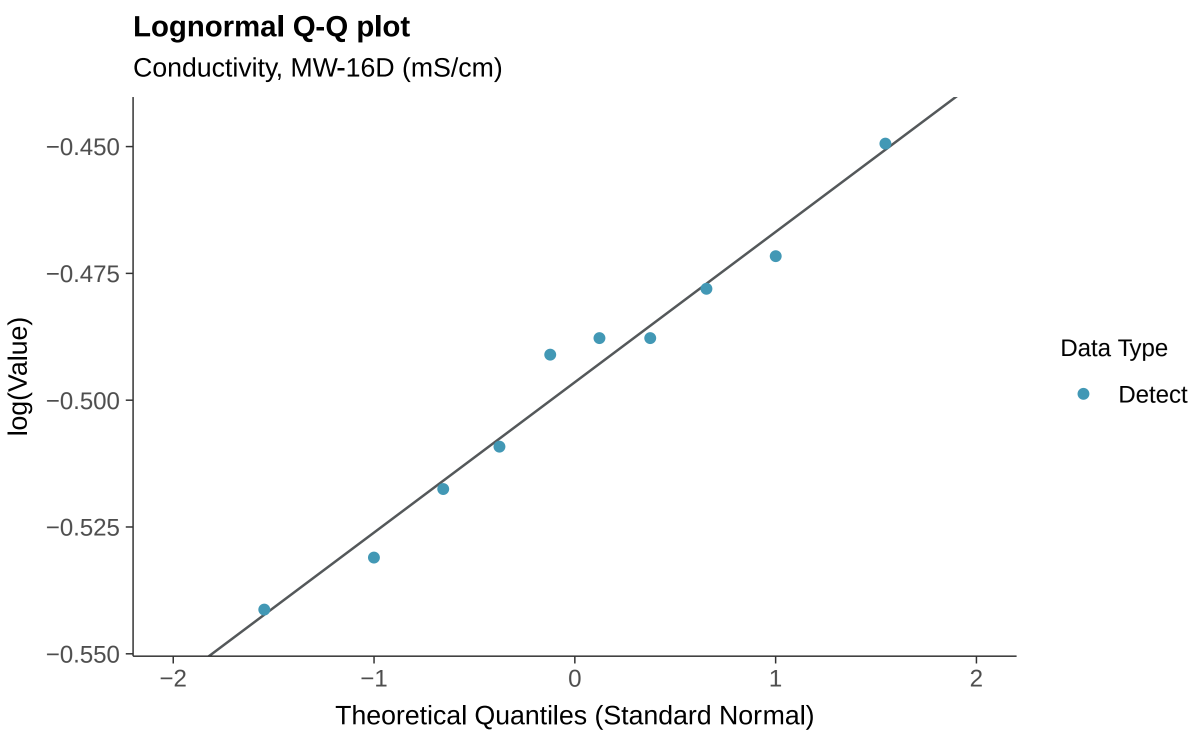


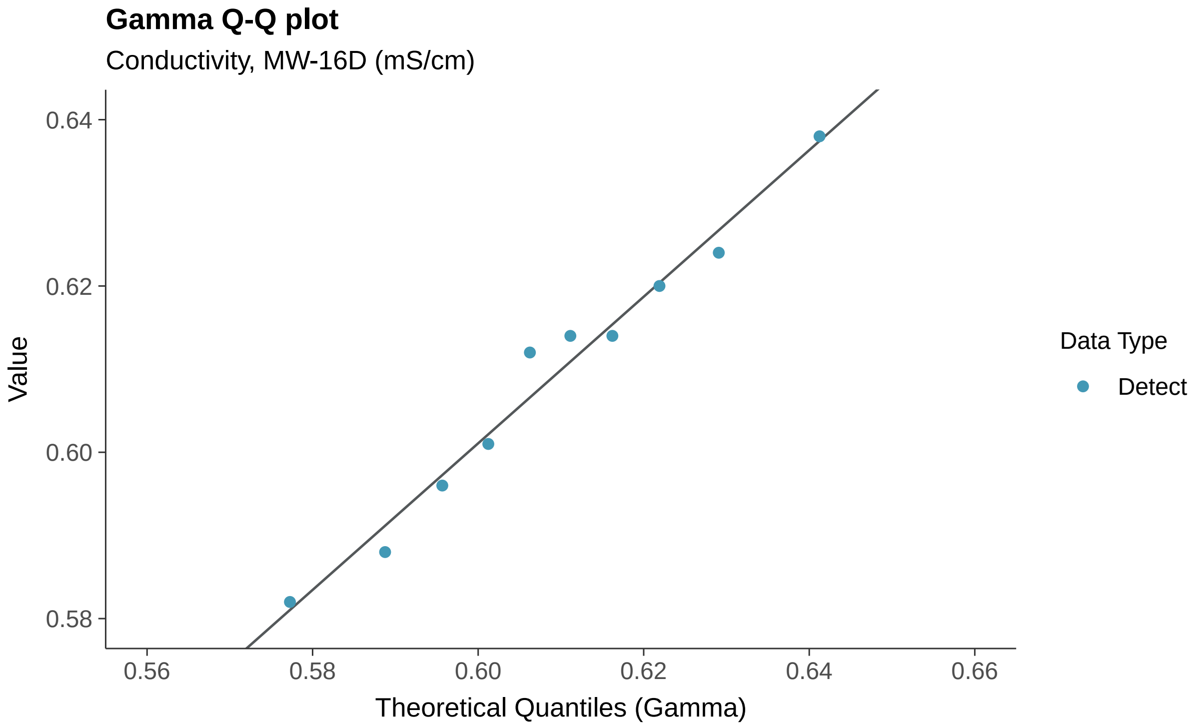
Boxplot by Season

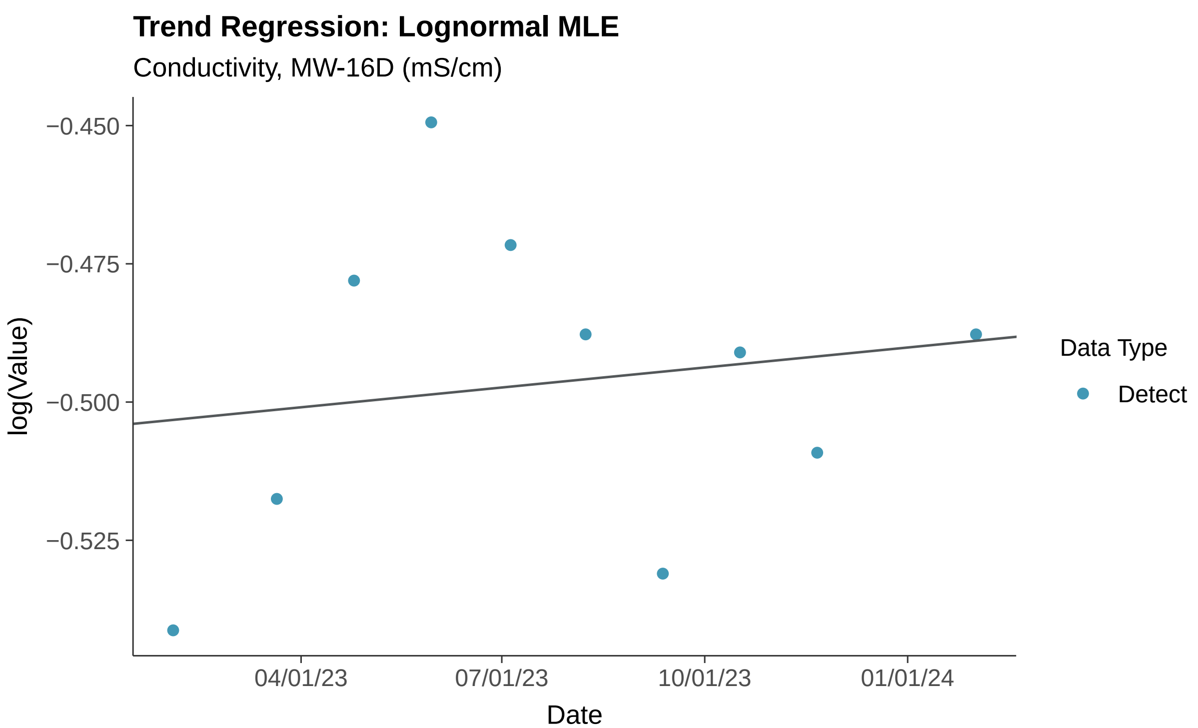
Conductivity, MW-16D (mS/cm)




Normal Q-Q plot
Conductivity, MW-16D (mS/cm)
Value
0.64
0.62
0.60
0.58
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

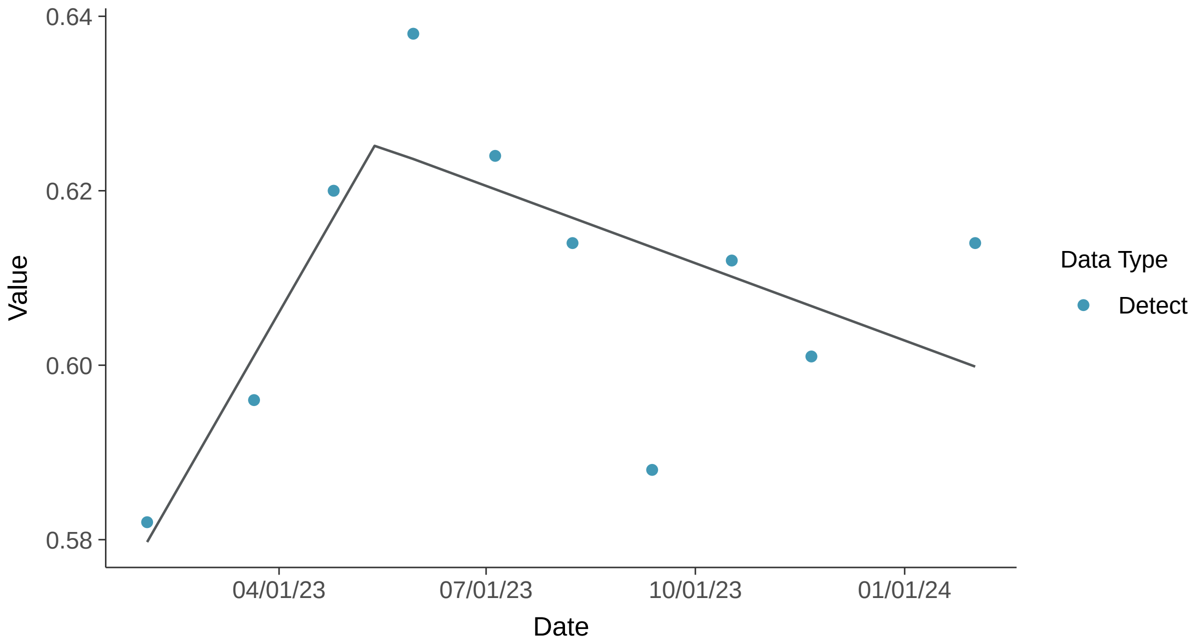

Lognormal Q-Q plot
Conductivity, MW-16D (mS/cm)
log(Value)
−0.450
−0.475
−0.500
−0.525
−0.550
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Conductivity, MW-16D (mS/cm)
Value
0.64
0.62
0.60
0.58
0.56
0.58
0.60
0.62
0.64
0.66
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Conductivity, MW-16D (mS/cm)
log(Value)
−0.450
−0.475
−0.500
−0.525
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

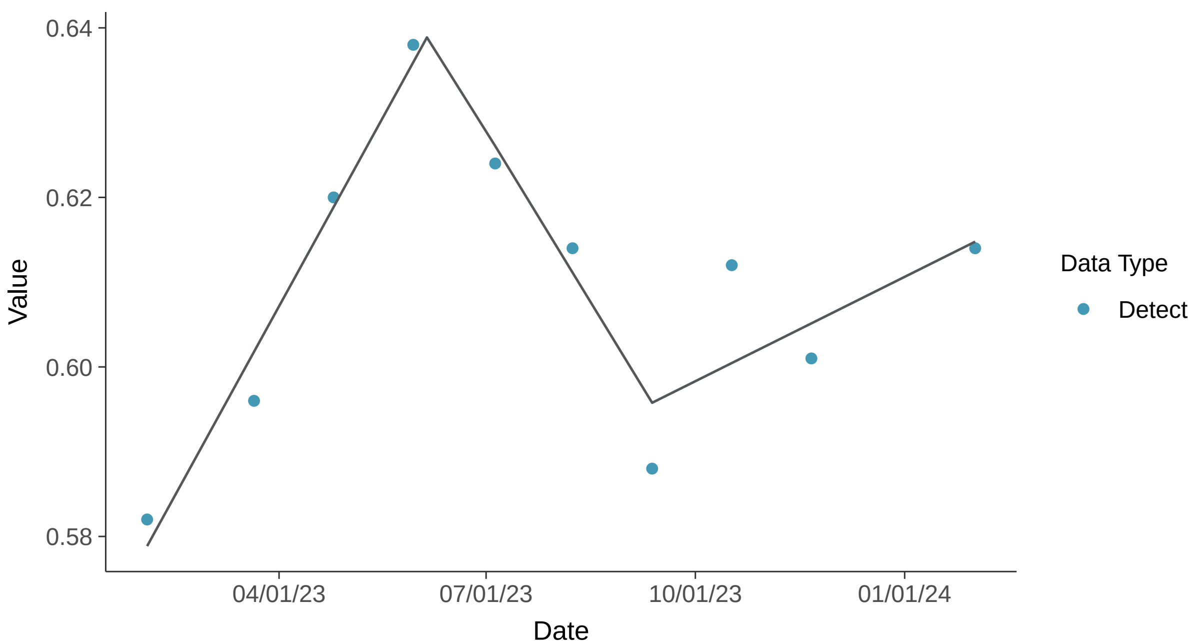
Trend Regression: Piecewise Linear-Linear

Conductivity, MW-16D (mS/cm)



Trend Regression: Piecewise Linear-Linear-Linear

Conductivity, MW-16D (mS/cm)

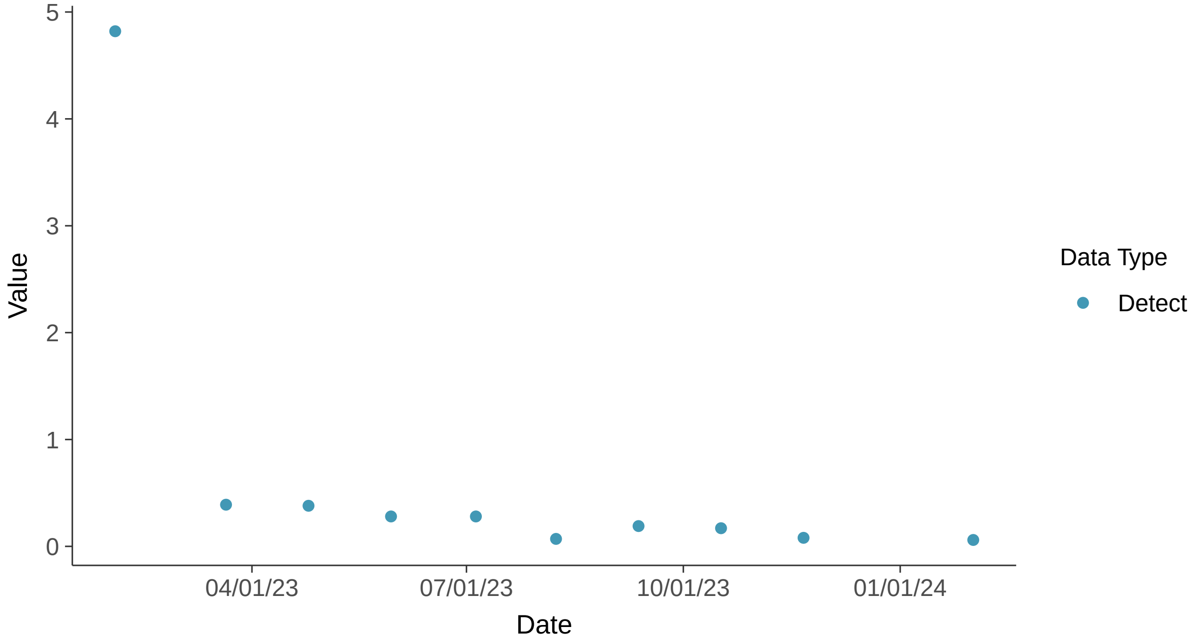


Field Parameters: Dissolved Oxygen, MW-16D

ID: 16D_3_25

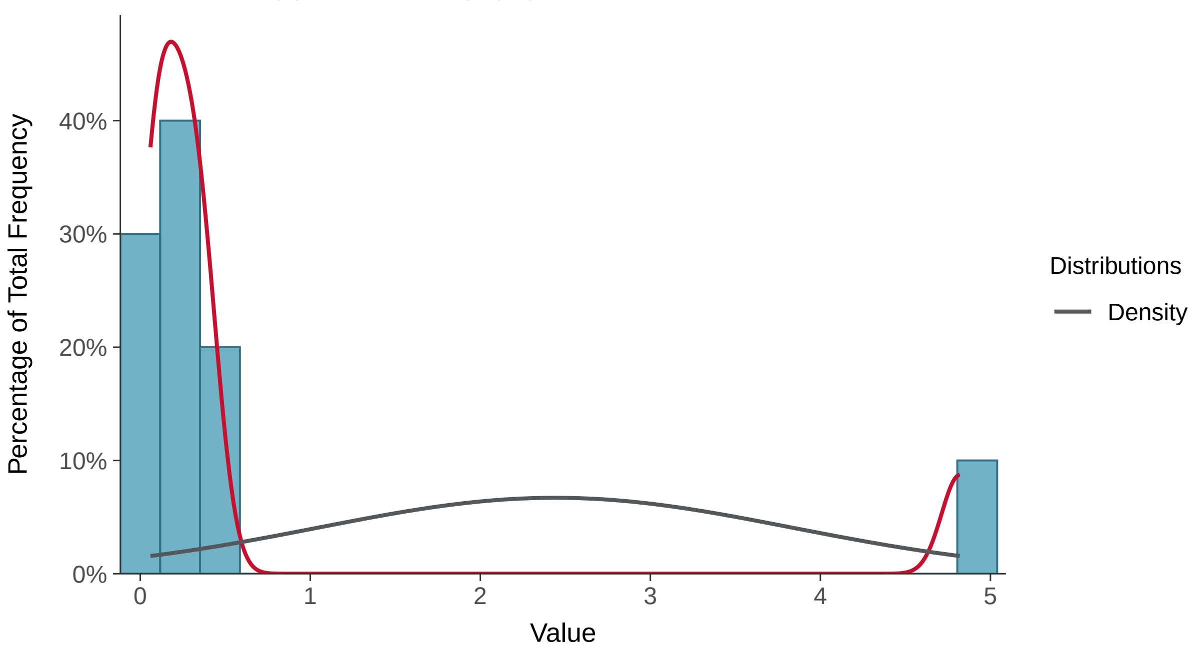
Scatter Plot

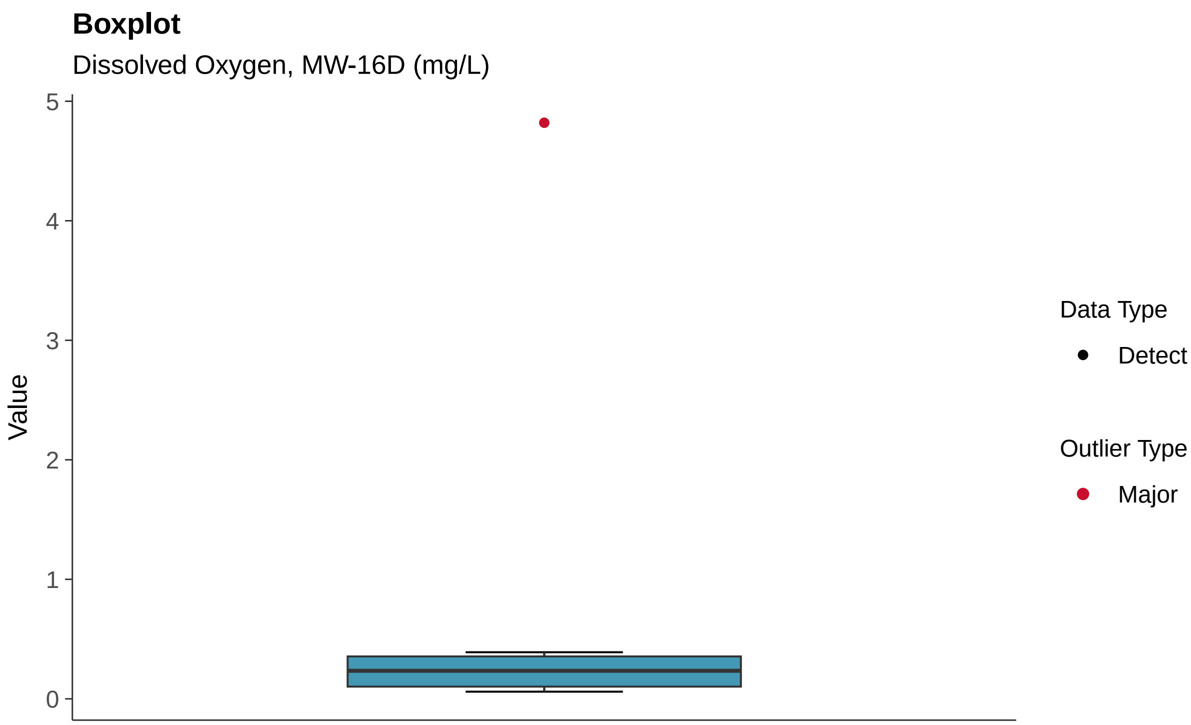
Dissolved Oxygen, MW-16D (mg/L)

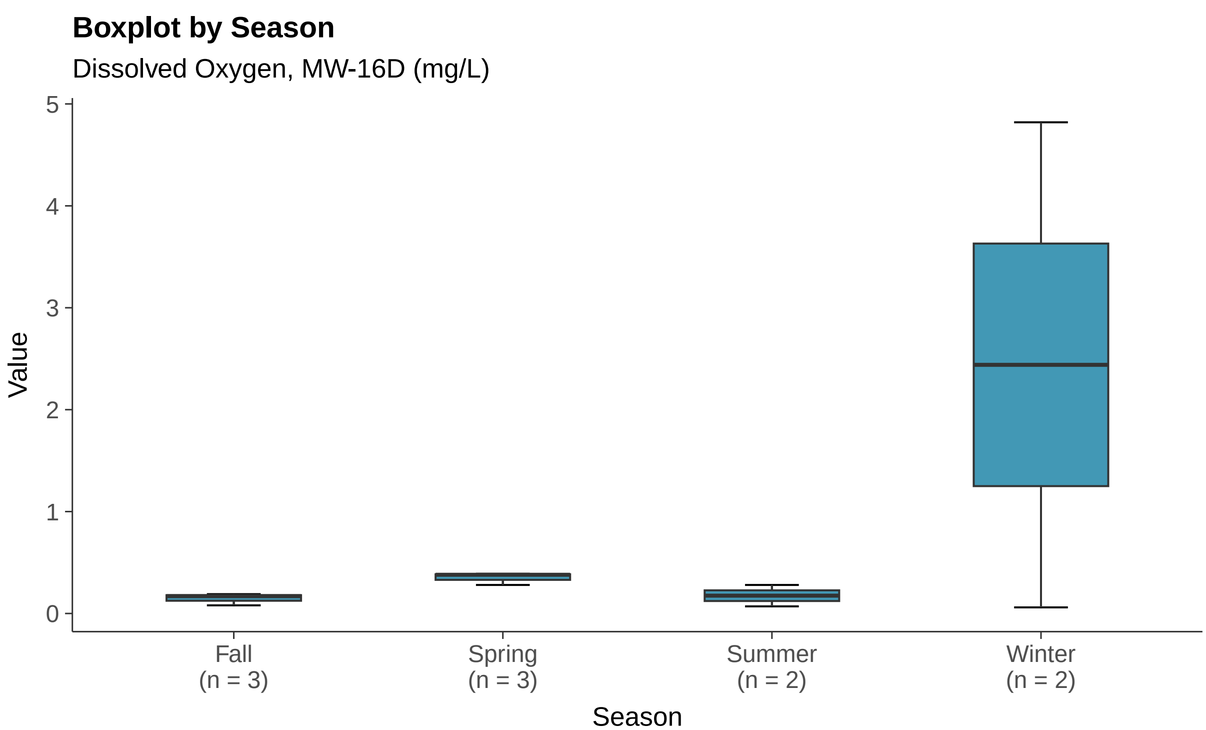


Histogram

Dissolved Oxygen, MW-16D (mg/L)

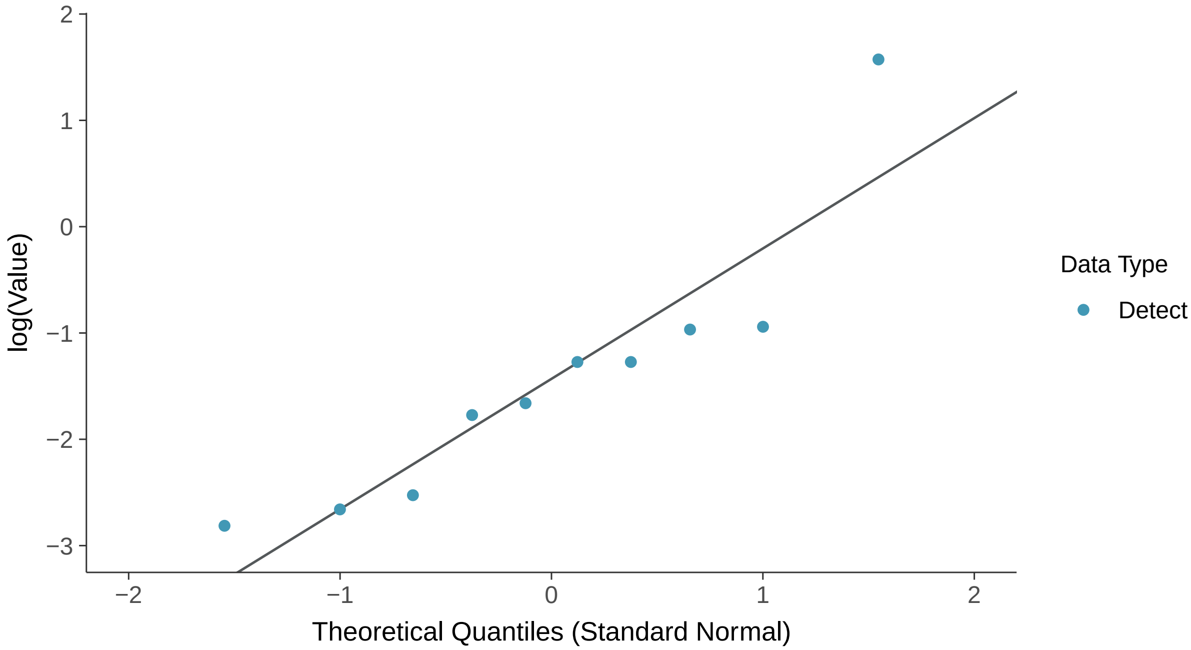



Boxplot
Dissolved Oxygen, MW-16D (mg/L)
Value
0
1
2
3
4
5
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Dissolved Oxygen, MW-16D (mg/L)
Value
0
1
2
3
4
5
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season

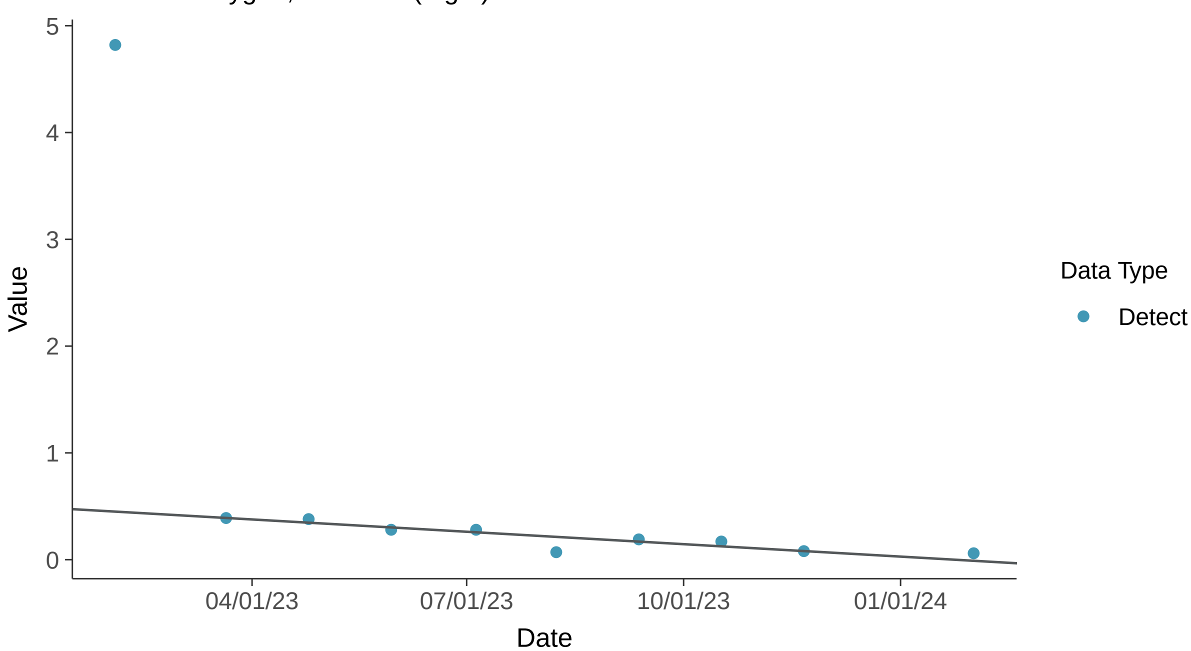
Lognormal Q-Q plot

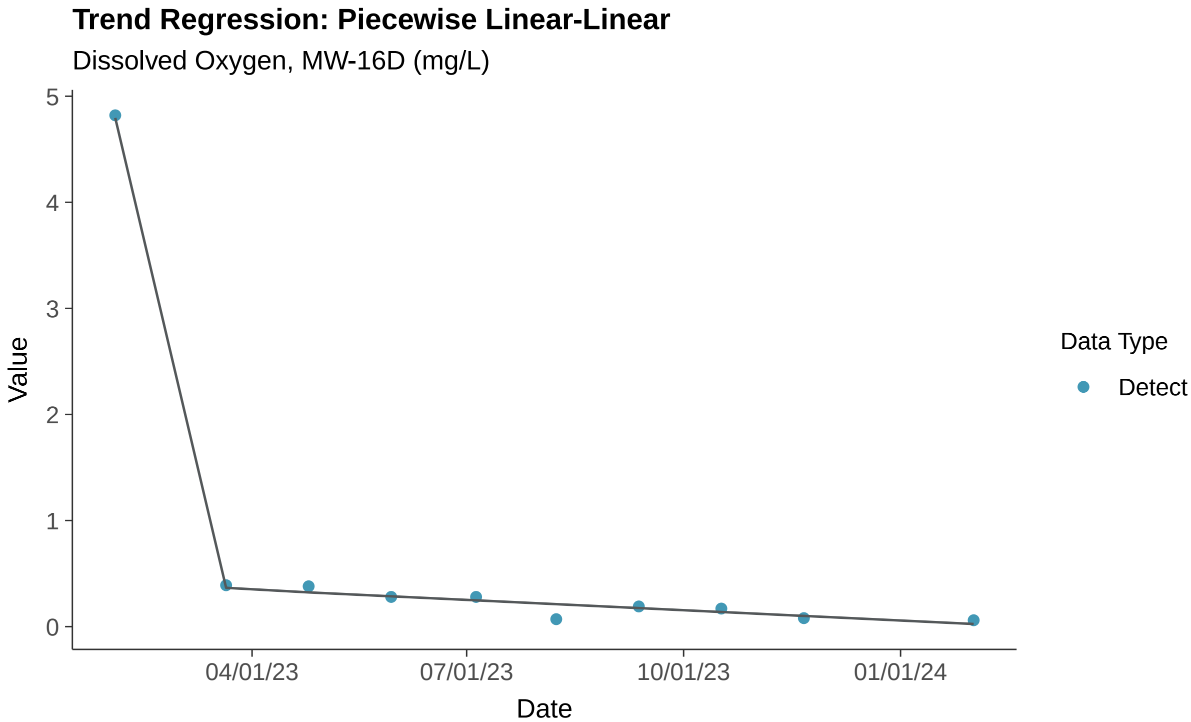
Dissolved Oxygen, MW-16D (mg/L)

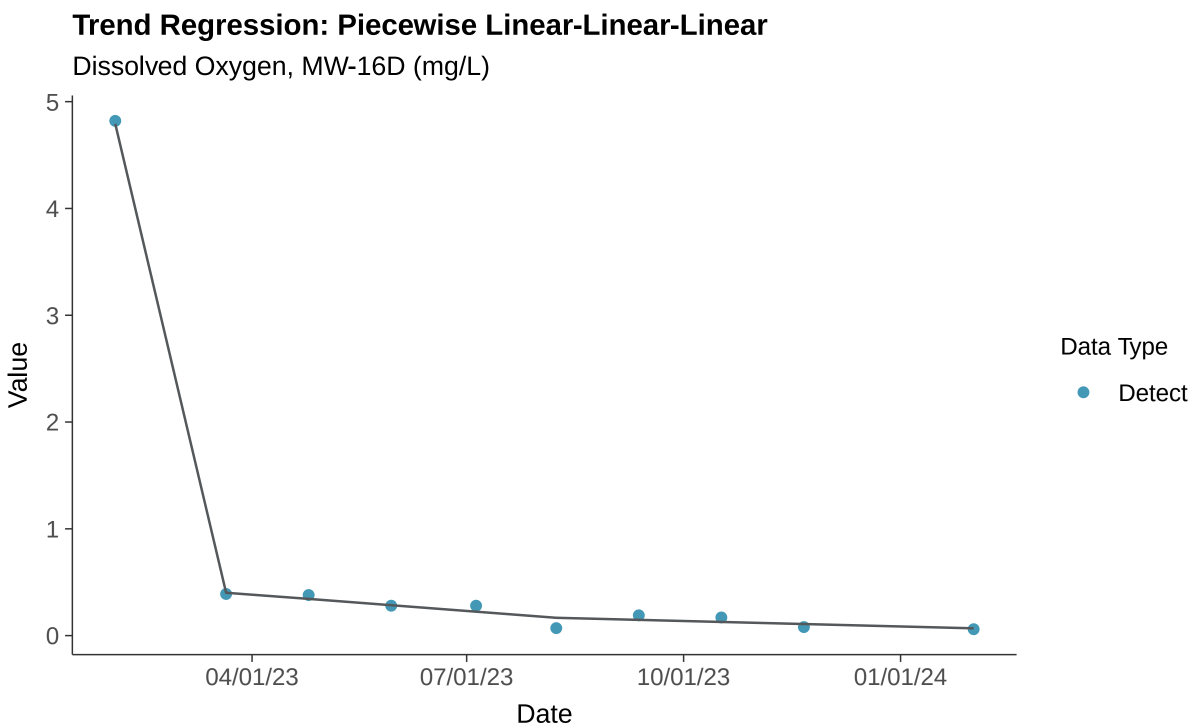


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Dissolved Oxygen, MW-16D (mg/L)

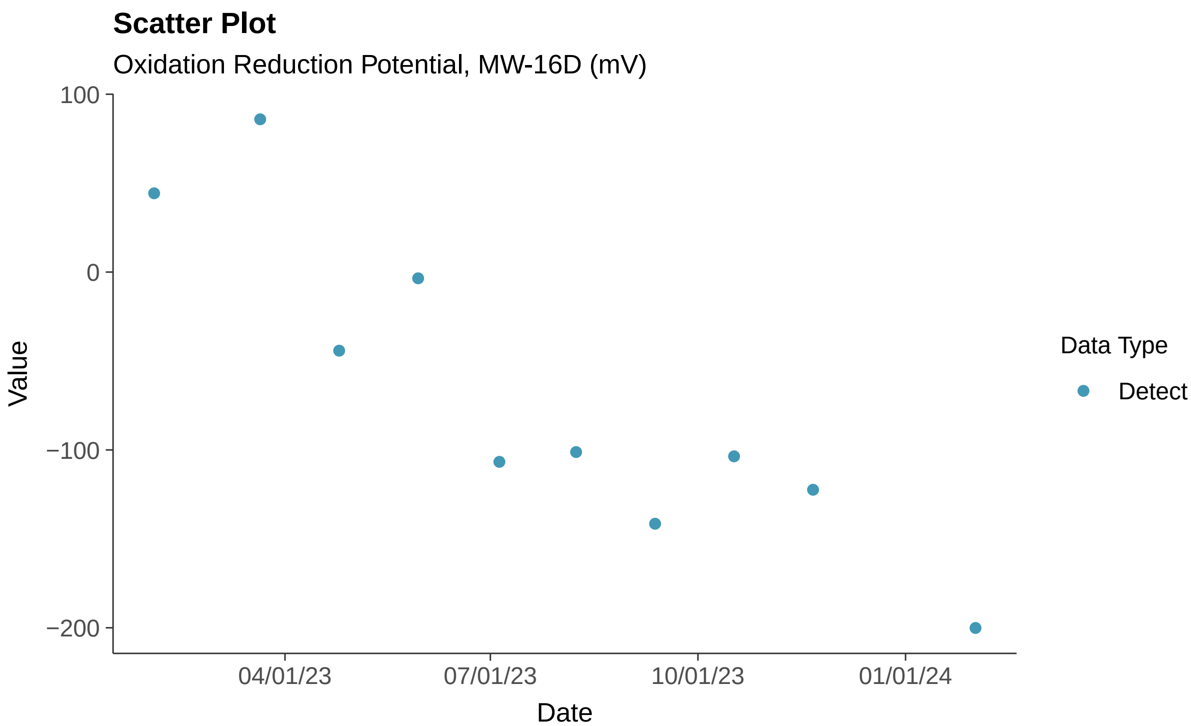


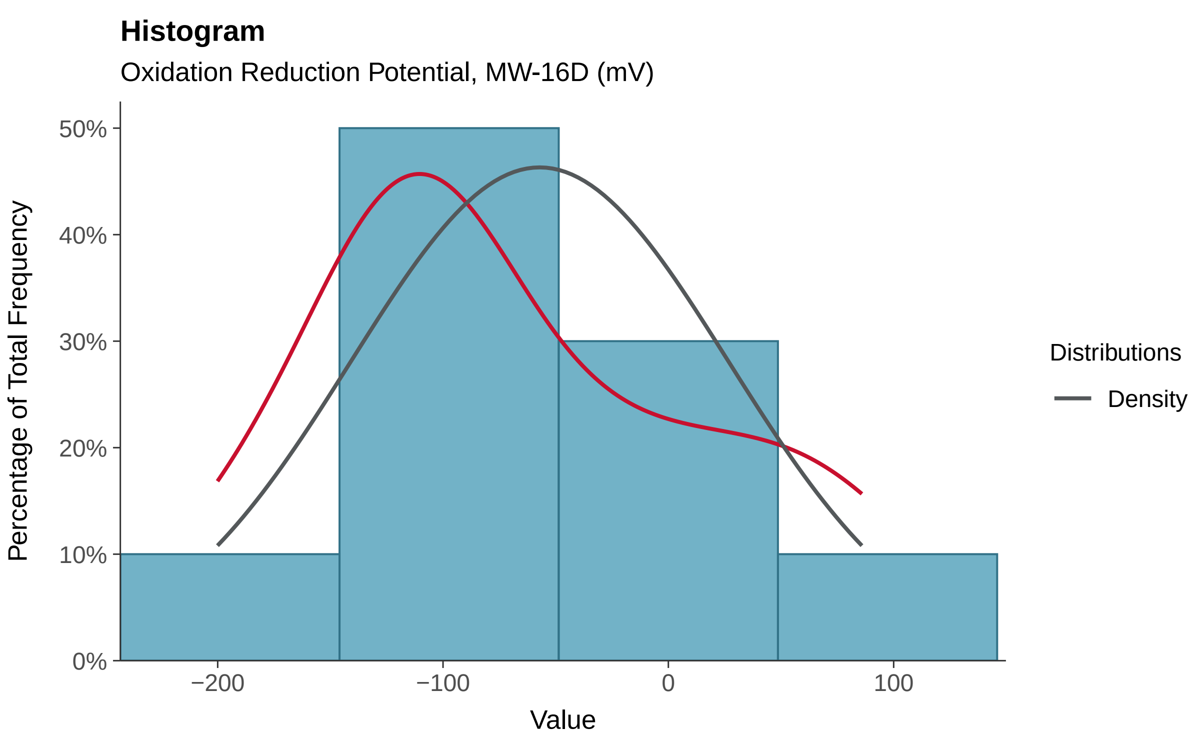

Trend Regression: Piecewise Linear-Linear
Dissolved Oxygen, MW-16D (mg/L)
Value
0
1
2
3
4
5
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear-Linear
Dissolved Oxygen, MW-16D (mg/L)
Value
0
1
2
3
4
5
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Oxidation Reduction Potential, MW-16D

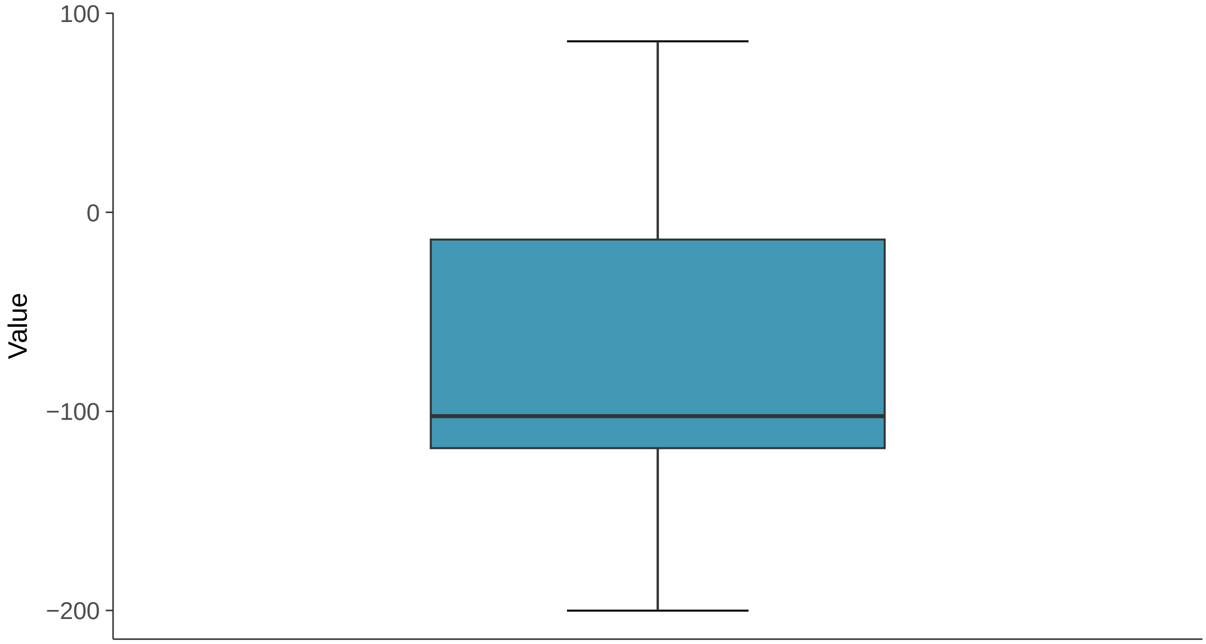
ID: 16D_3_26





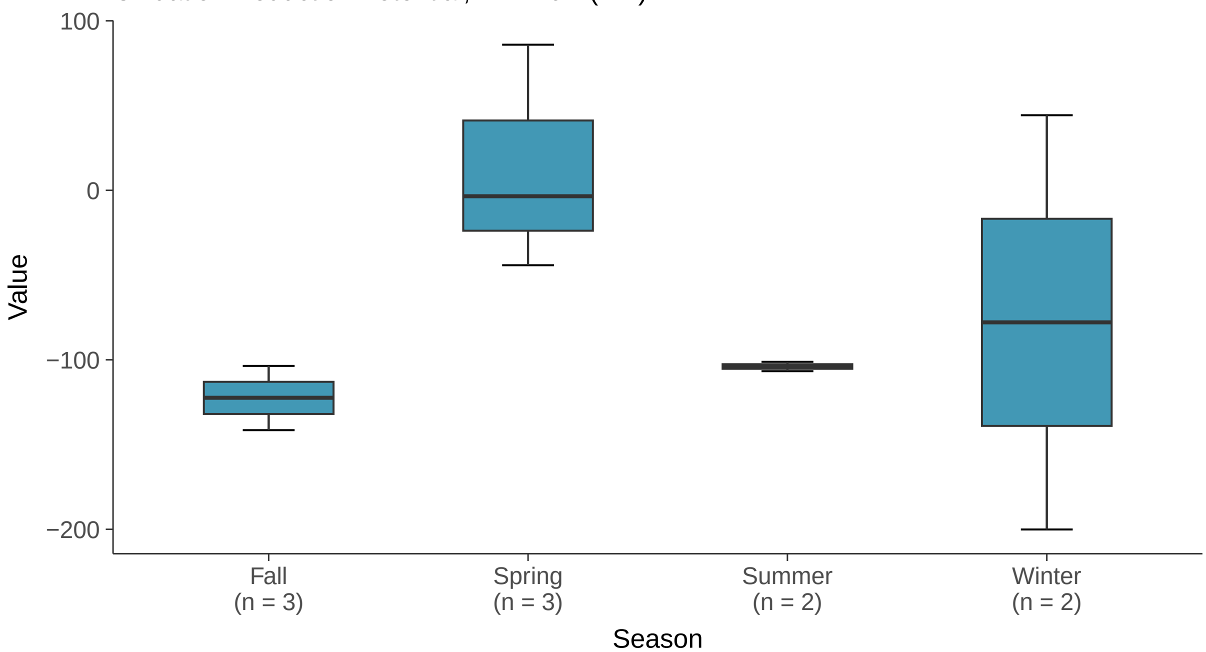
Boxplot

Oxidation Reduction Potential, MW-16D (mV)



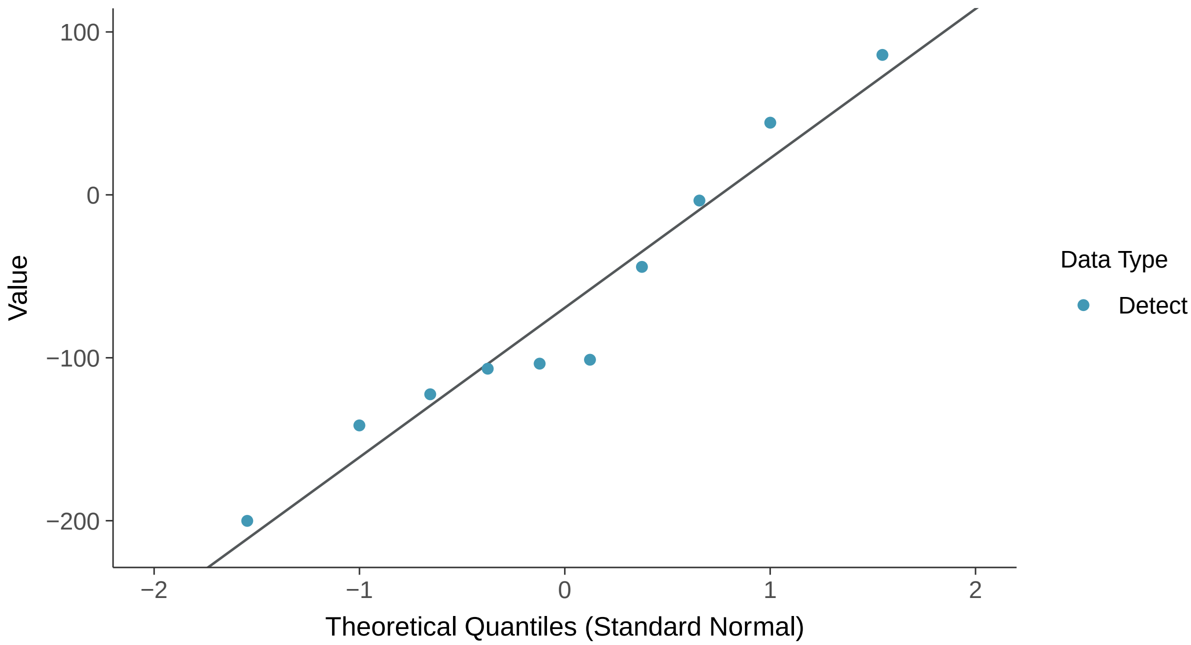
Boxplot by Season

Oxidation Reduction Potential, MW-16D (mV)



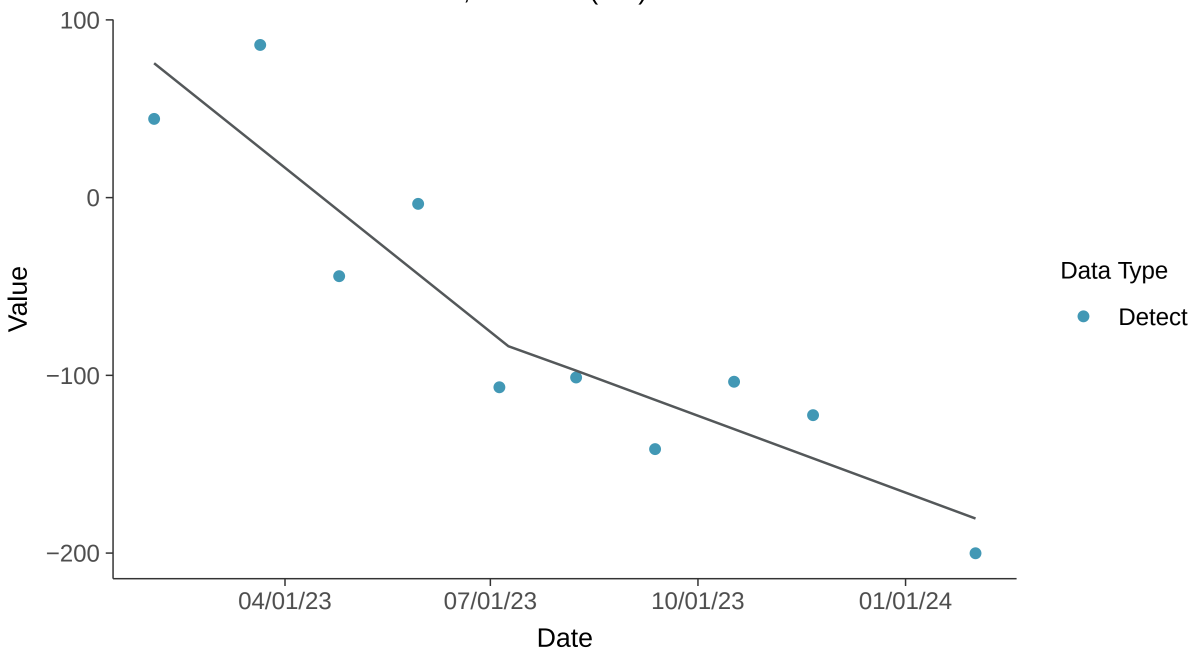
Normal Q-Q plot

Oxidation Reduction Potential, MW-16D (mV)



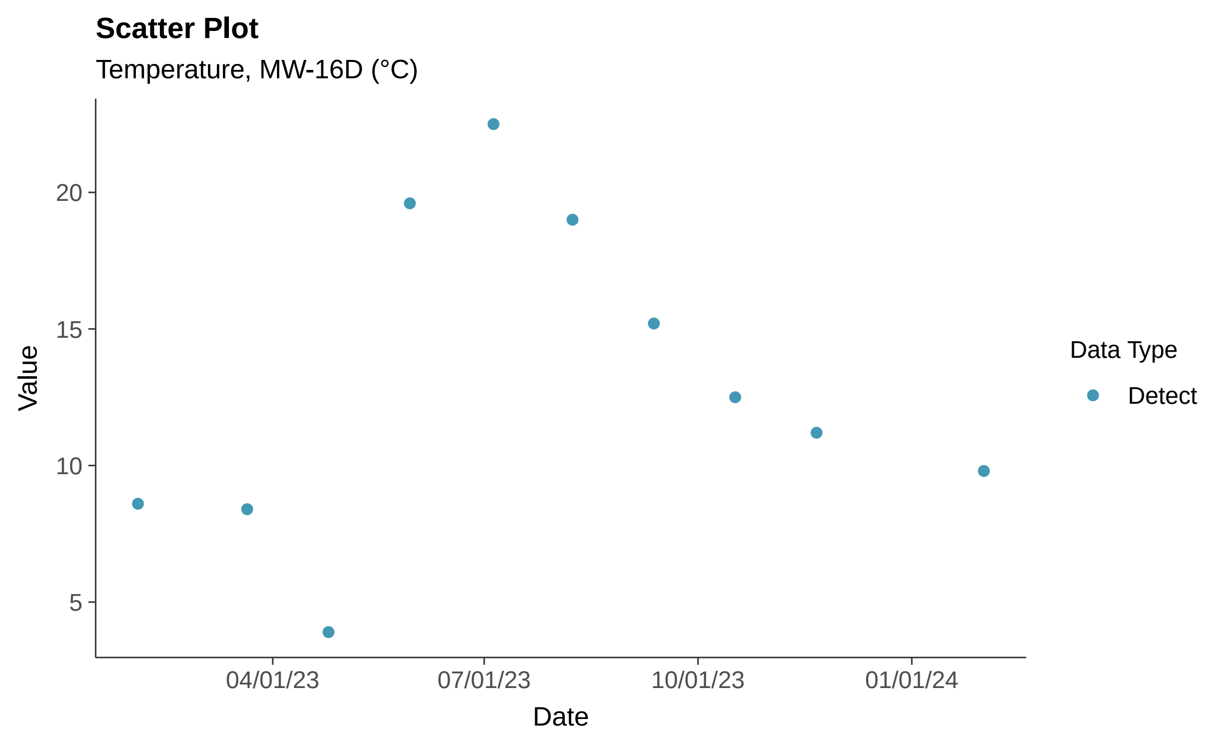
Trend Regression: Piecewise Linear-Linear

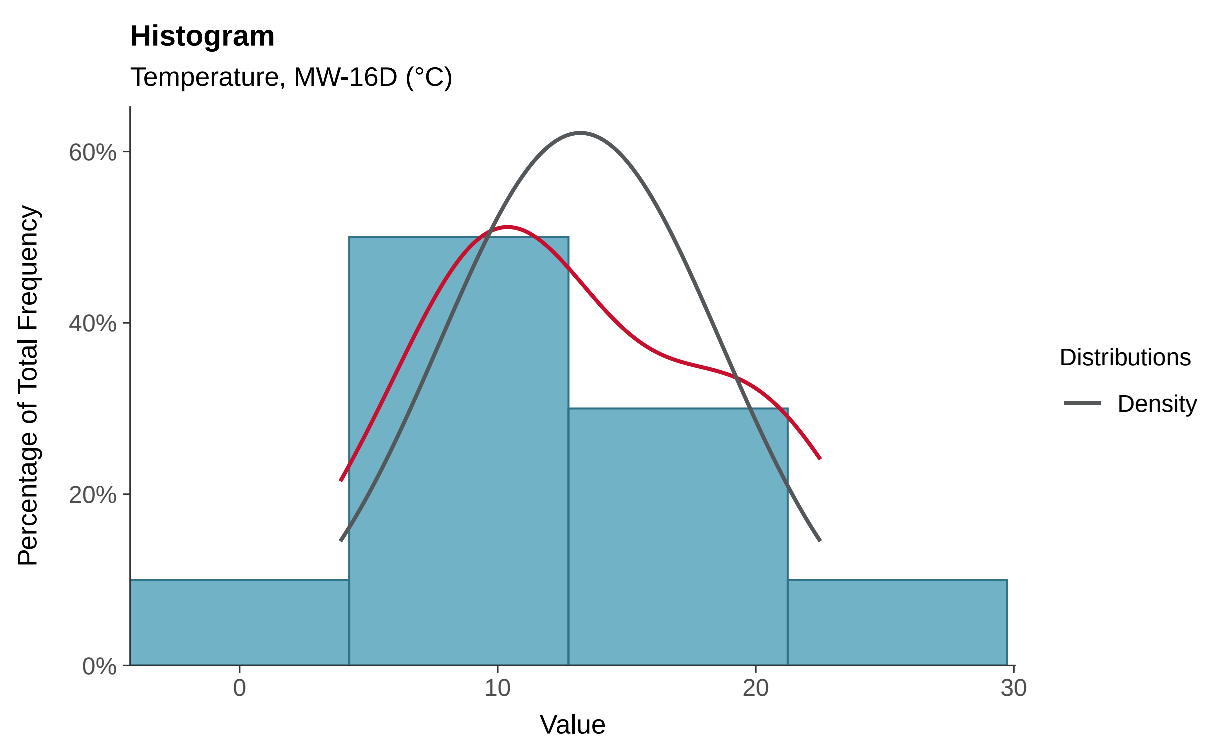
Oxidation Reduction Potential, MW-16D (mV)



Field Parameters: Temperature, MW-16D

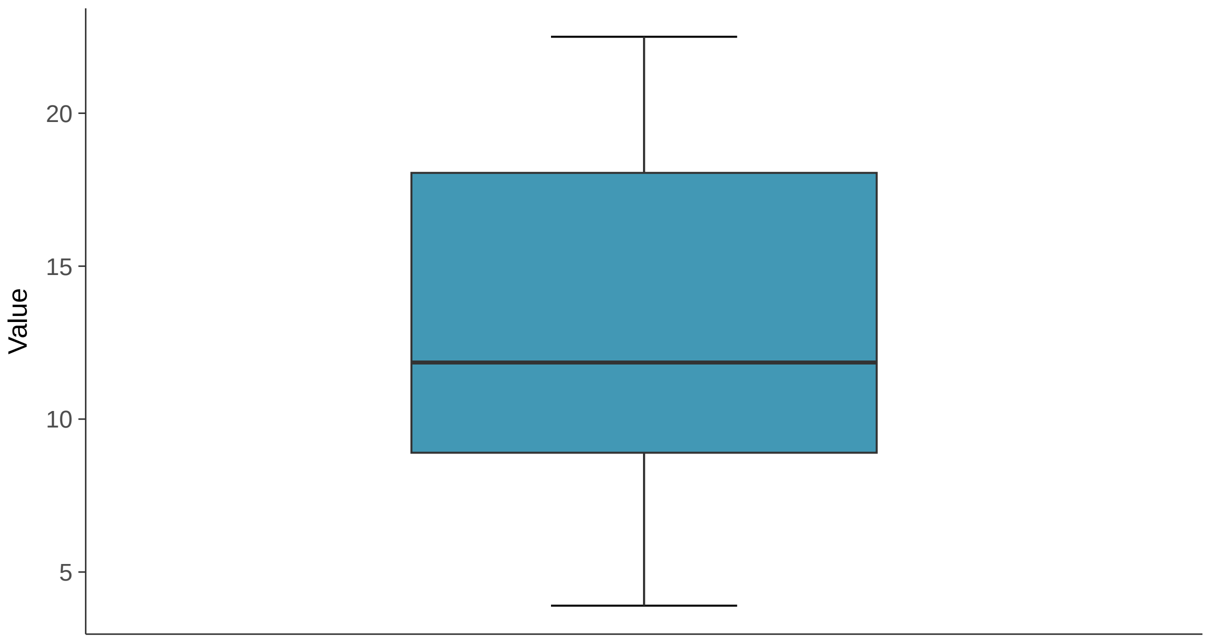
ID: 16D_3_27





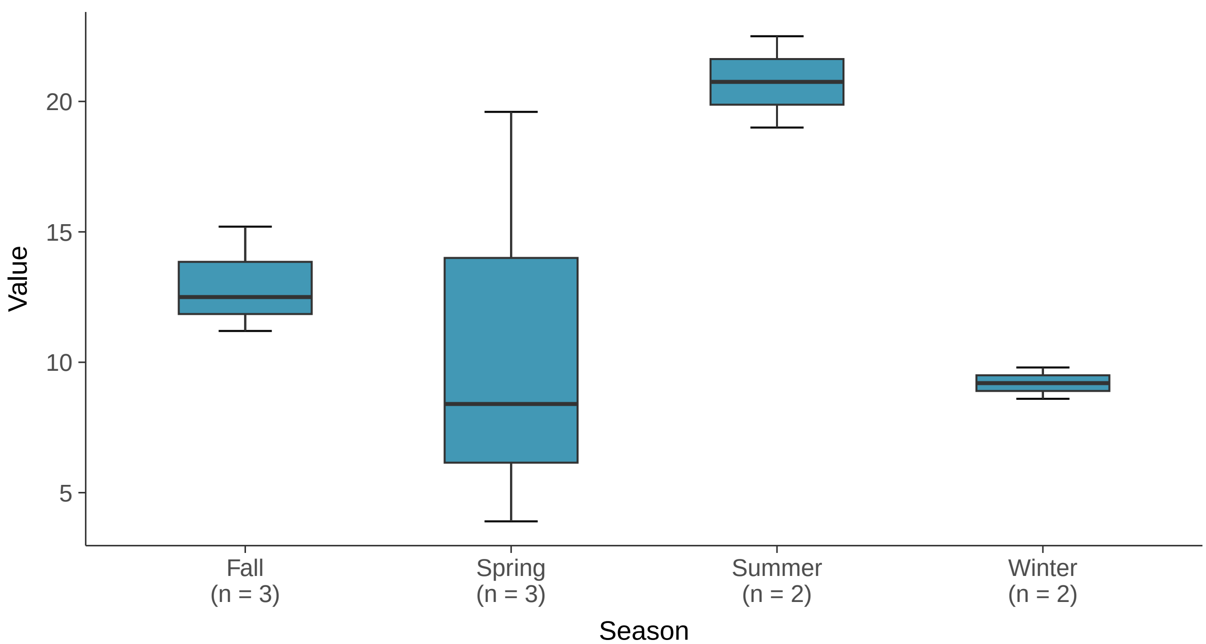
Boxplot

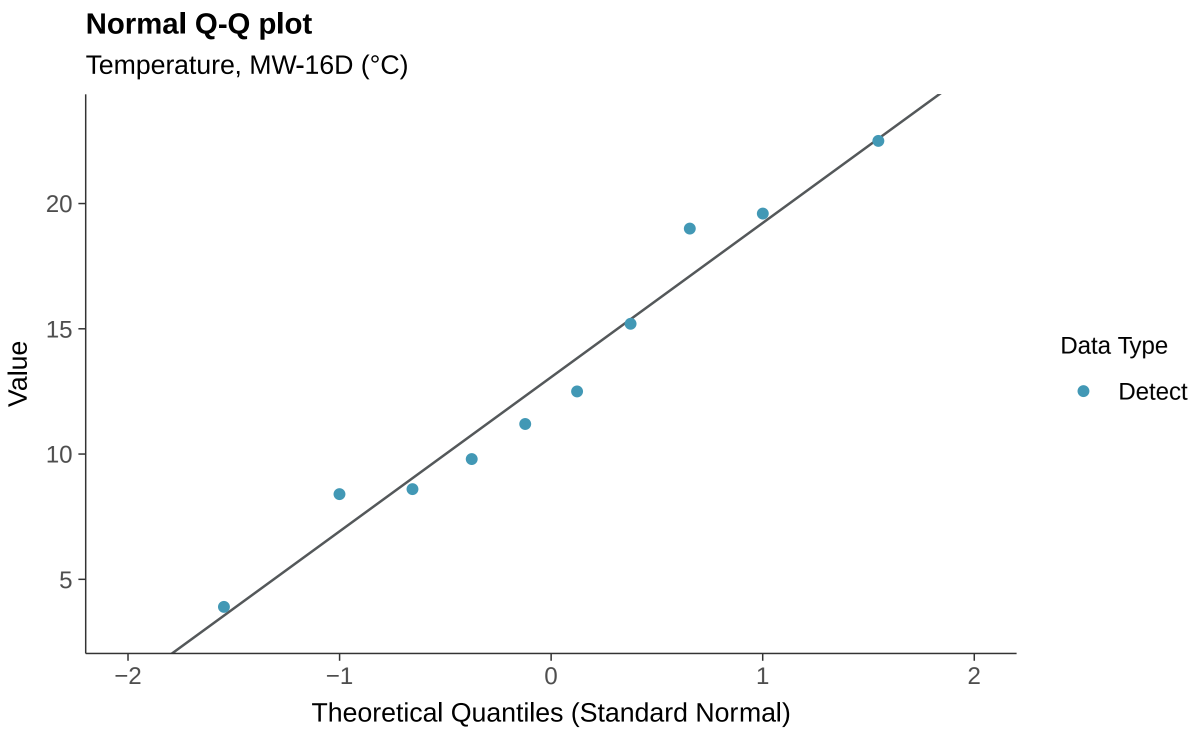
Temperature, MW-16D (°C)

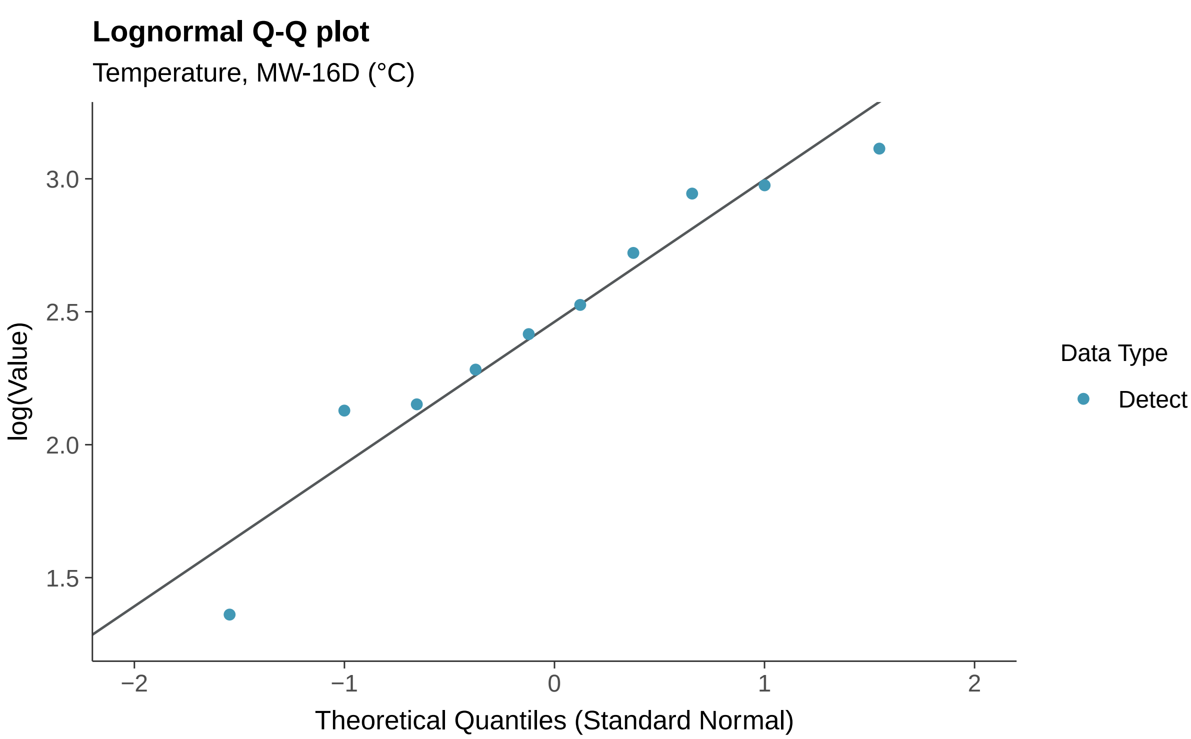


Boxplot by Season

Temperature, MW-16D (°C)

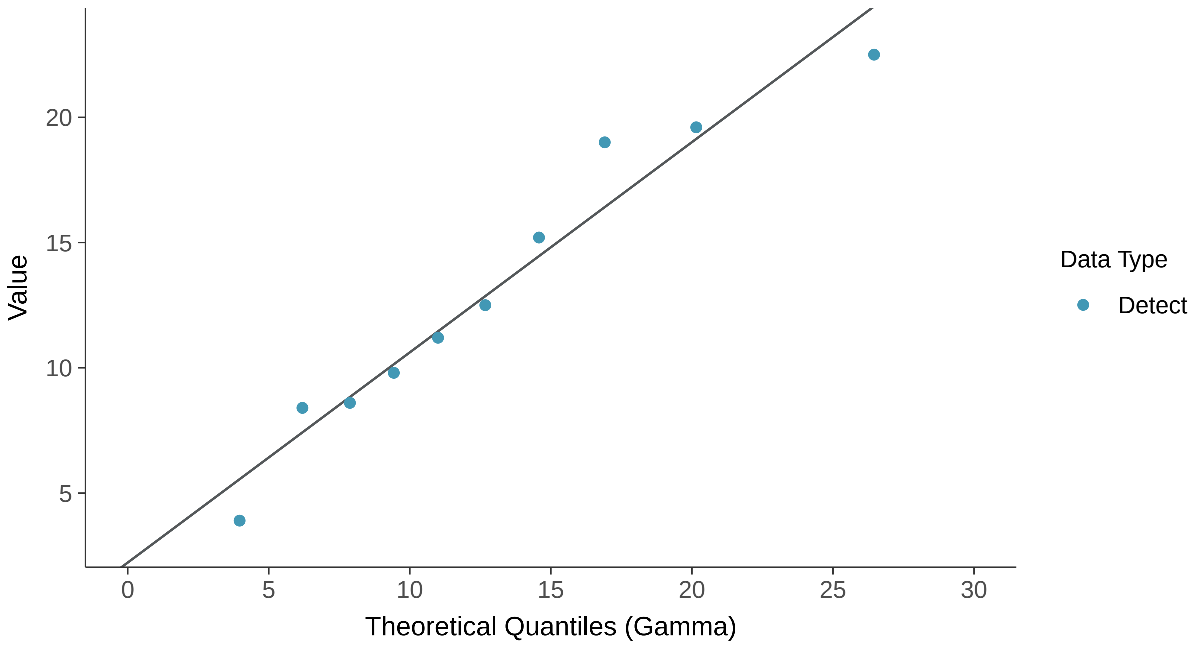



Normal Q-Q plot
Temperature, MW-16D (°C)
Value
20
15
10
5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Temperature, MW-16D (°C)
log(Value)
3.0
2.5
2.0
1.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

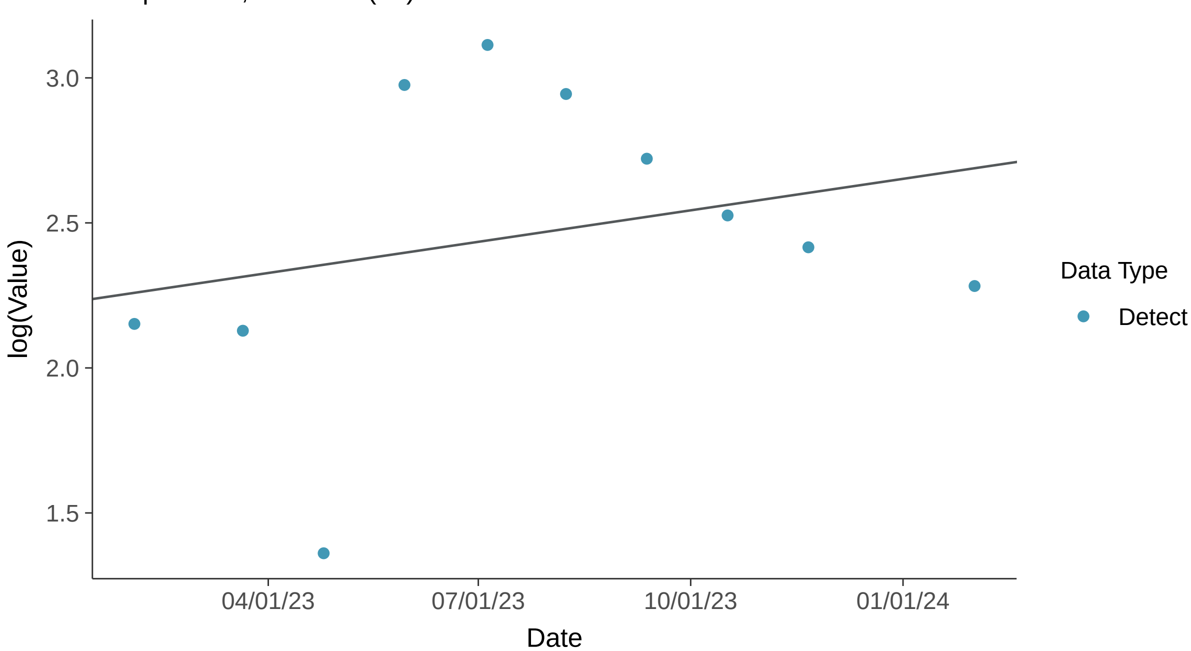
Gamma Q-Q plot

Temperature, MW-16D (°C)



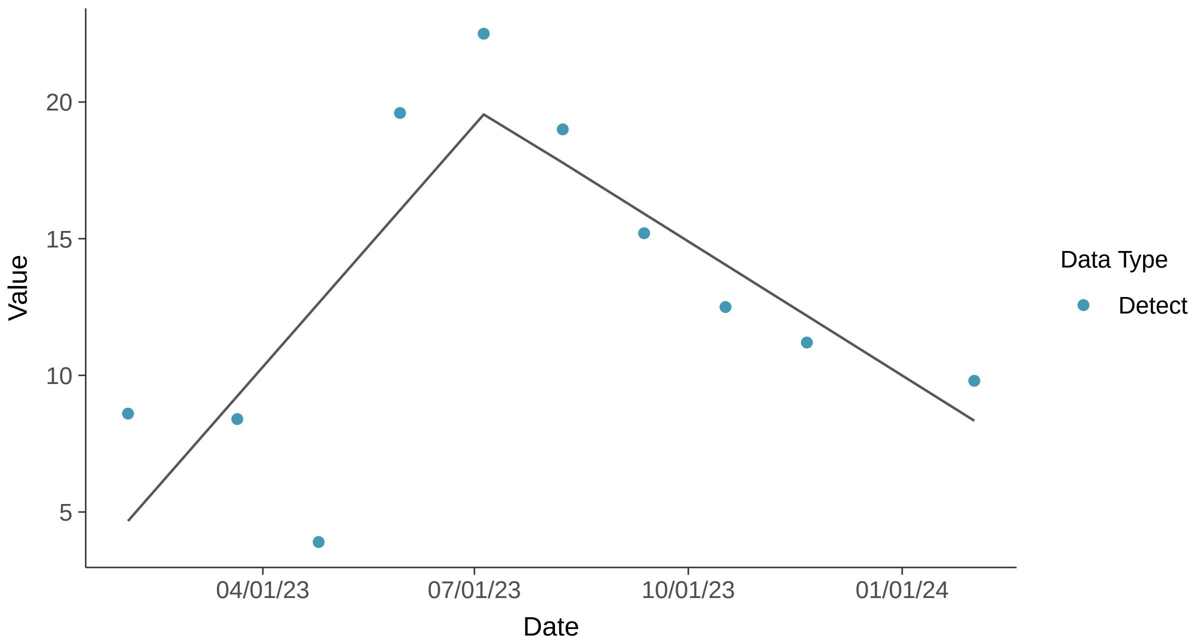
Trend Regression: Lognormal MLE

Temperature, MW-16D (°C)



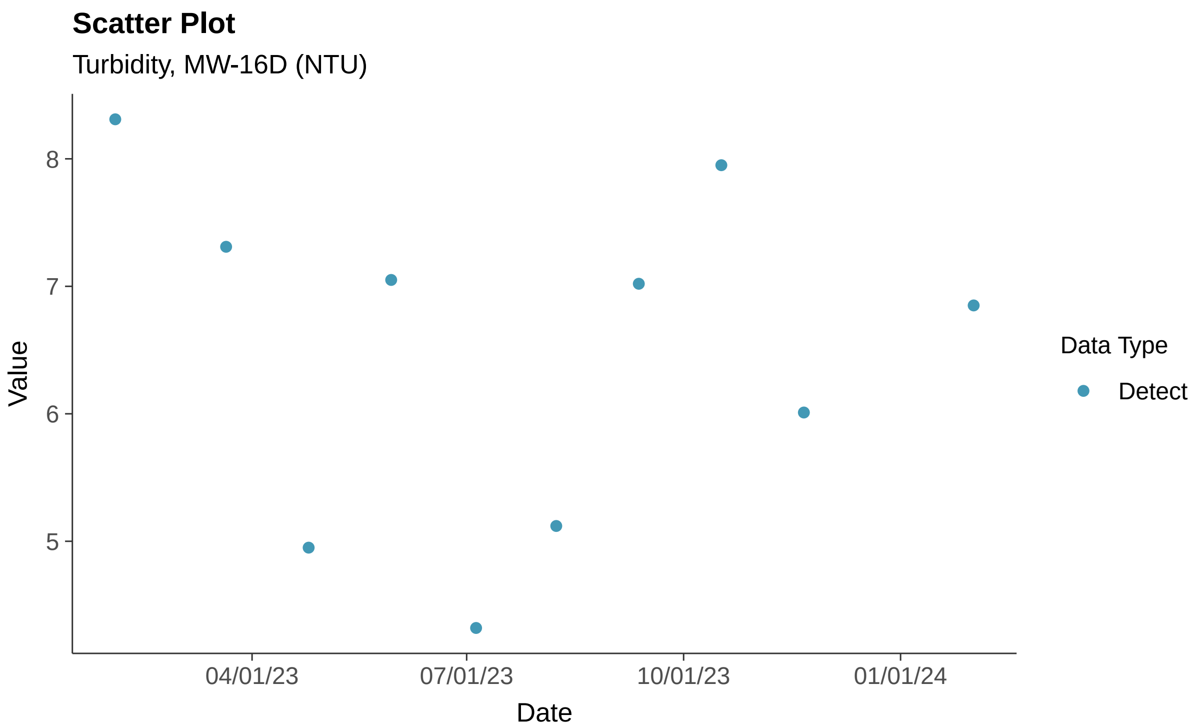
Trend Regression: Piecewise Linear-Linear

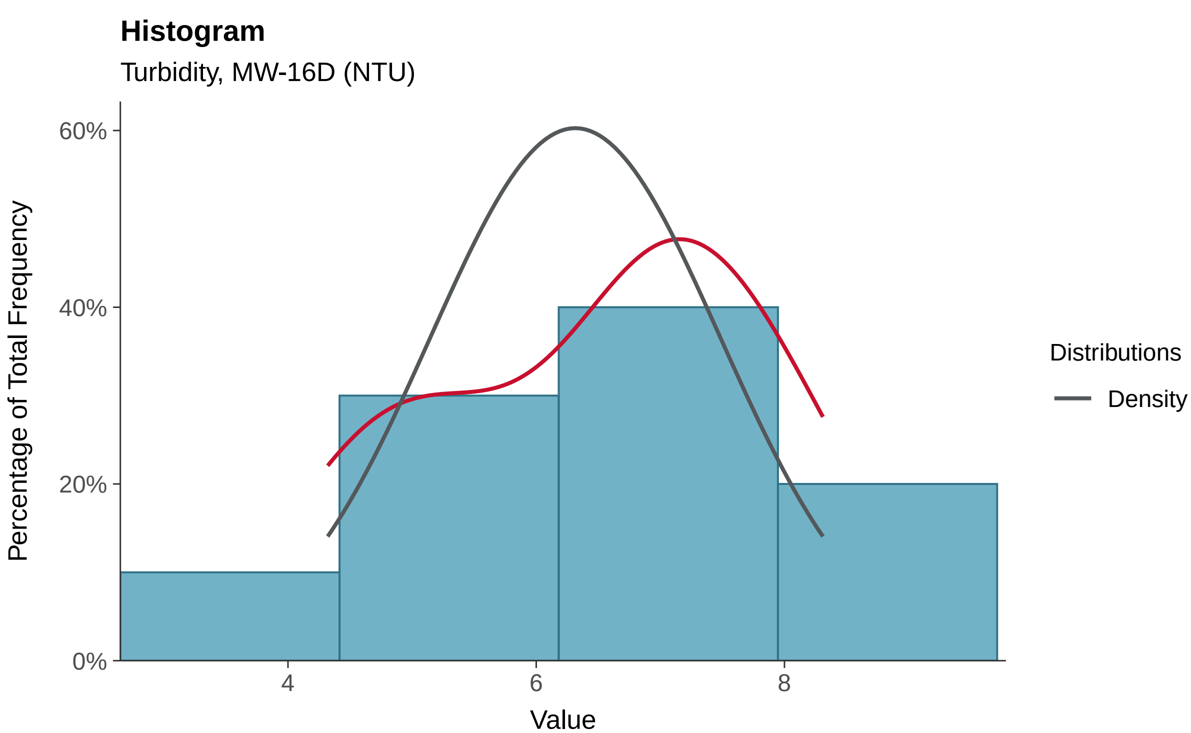
Temperature, MW-16D (°C)



Field Parameters: Turbidity, MW-16D

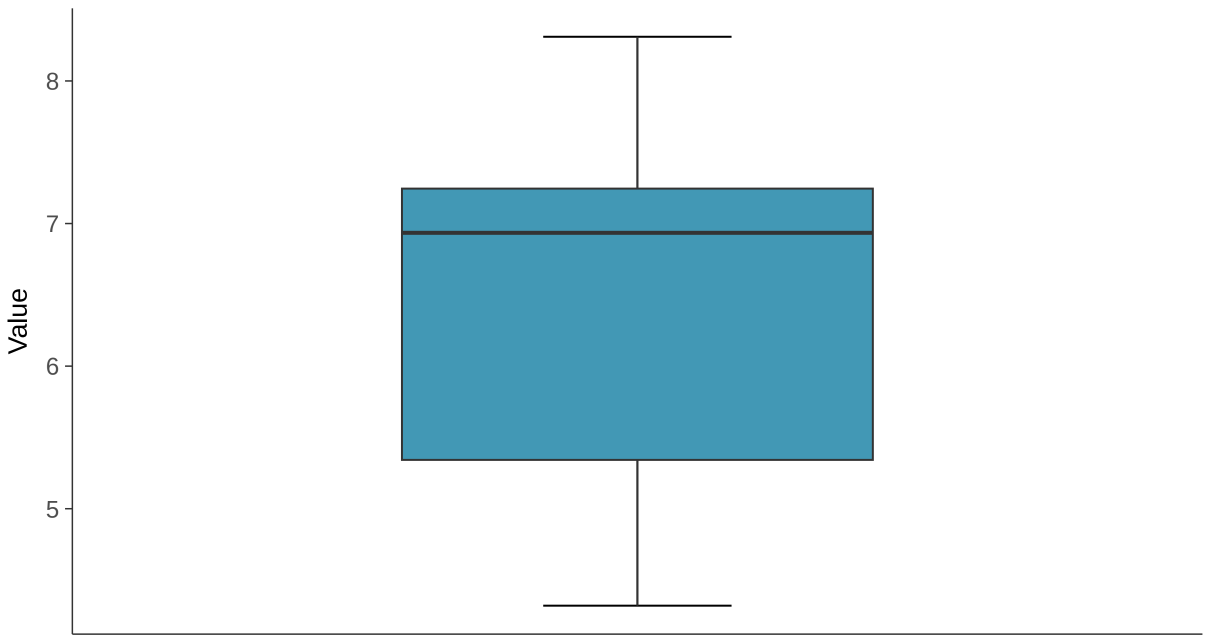
ID: 16D_3_28





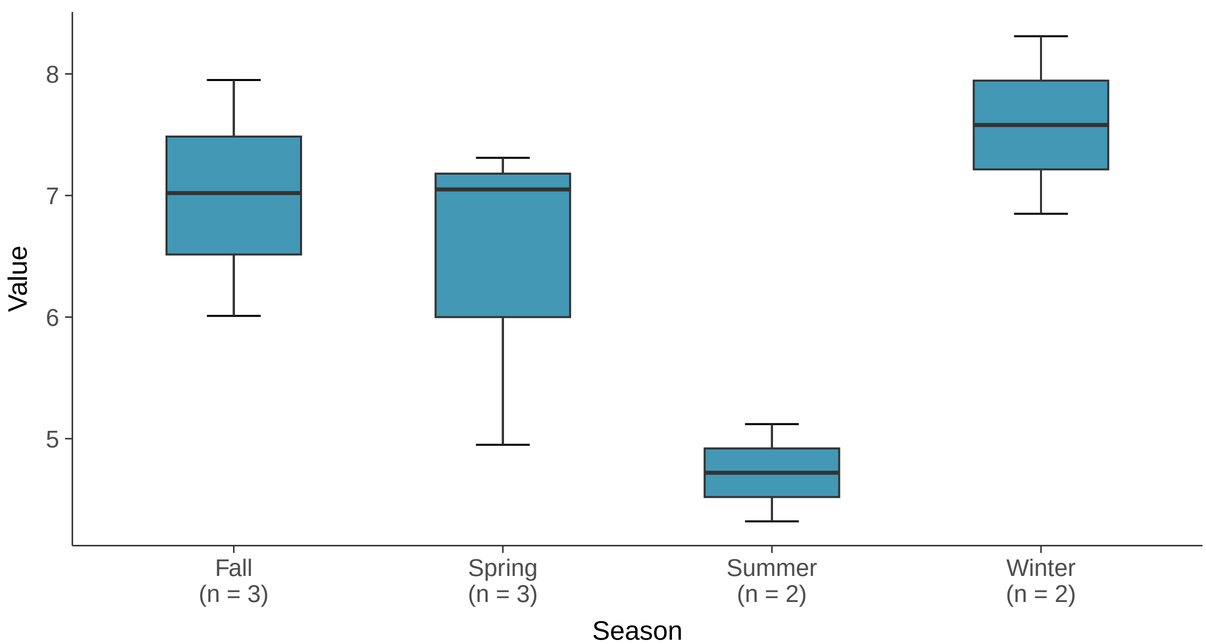
Boxplot

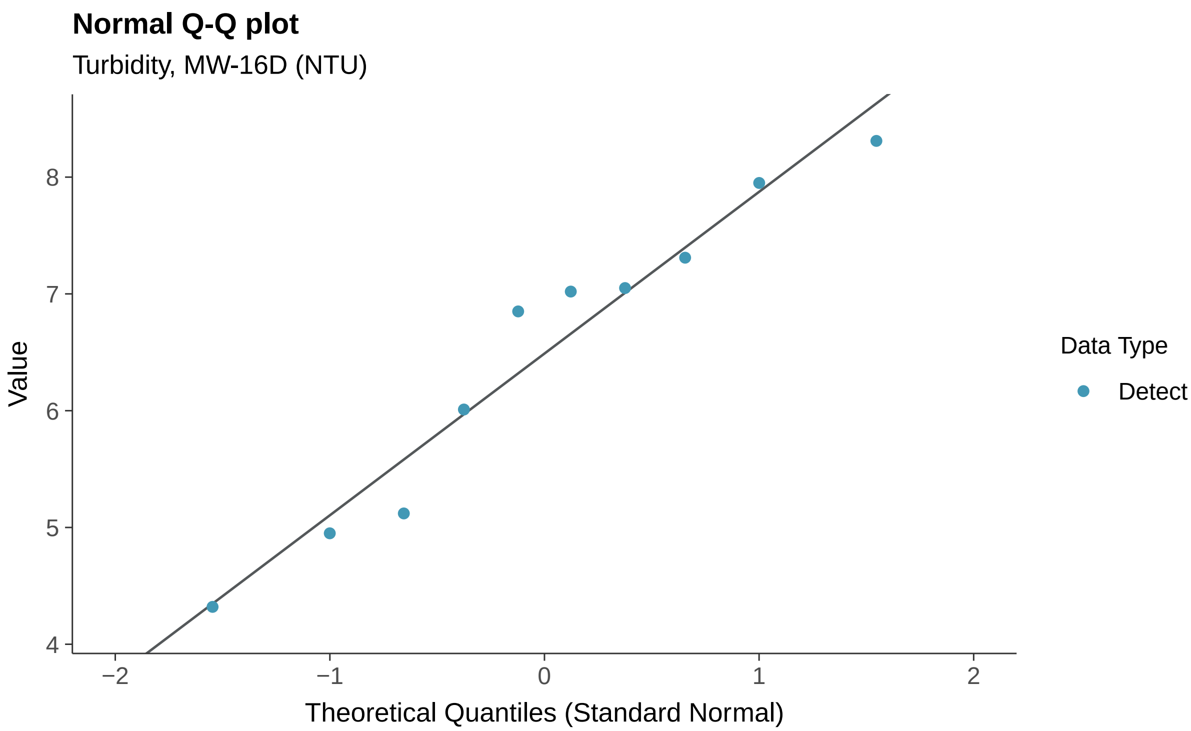
Turbidity, MW-16D (NTU)

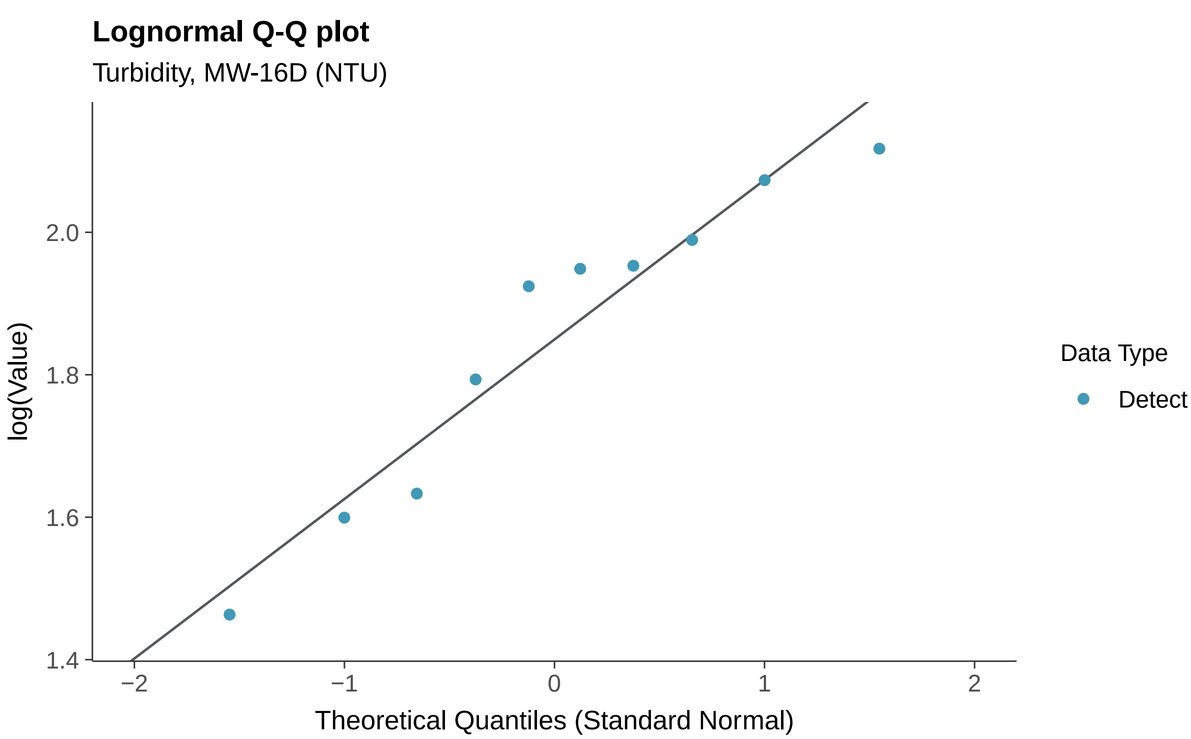


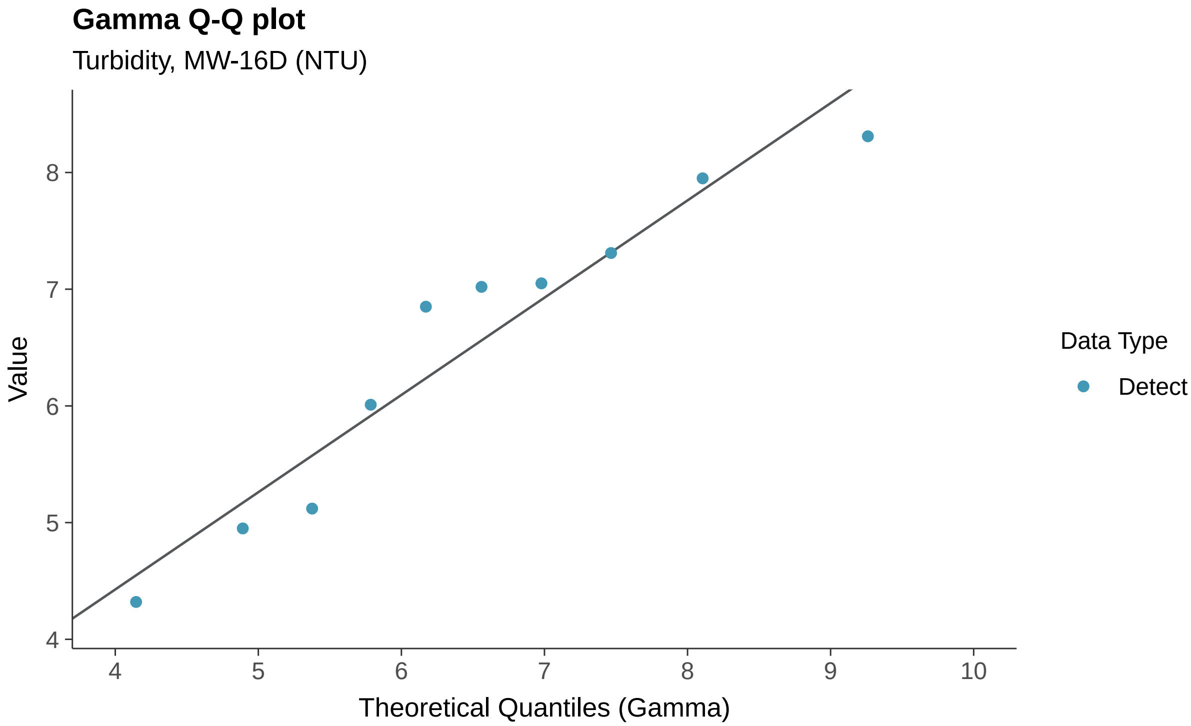
Boxplot by Season

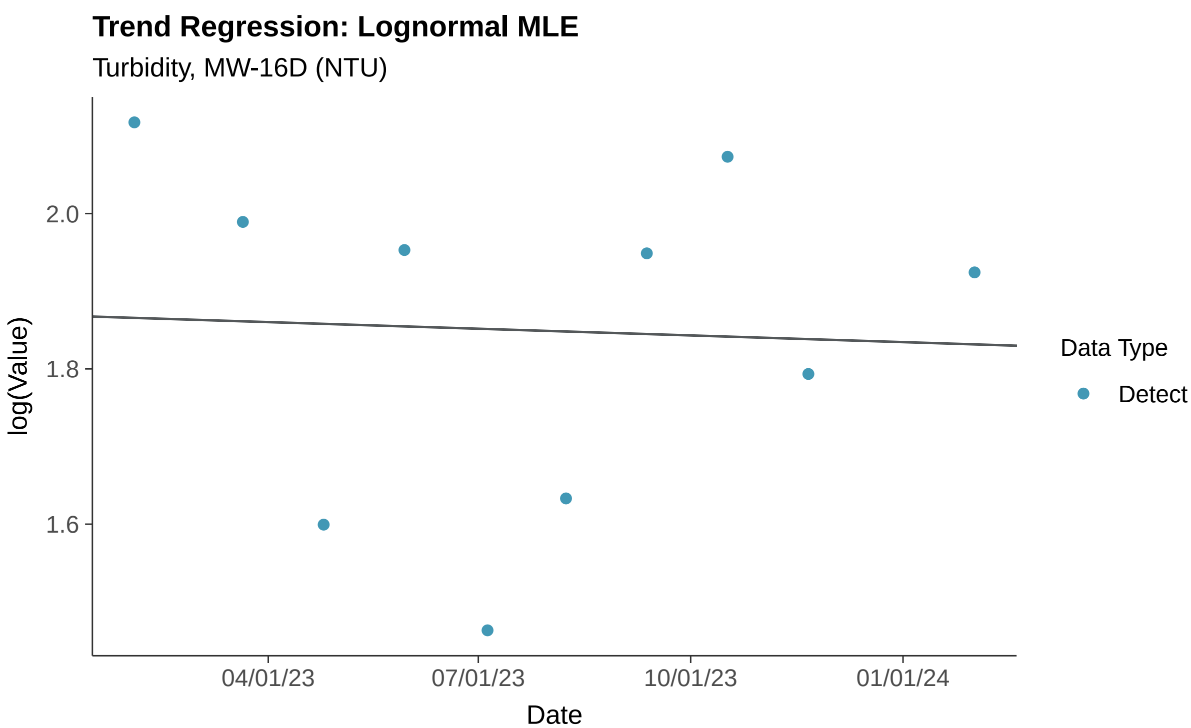
Turbidity, MW-16D (NTU)




Normal Q-Q plot
Turbidity, MW-16D (NTU)
Value
8
7
6
5
4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

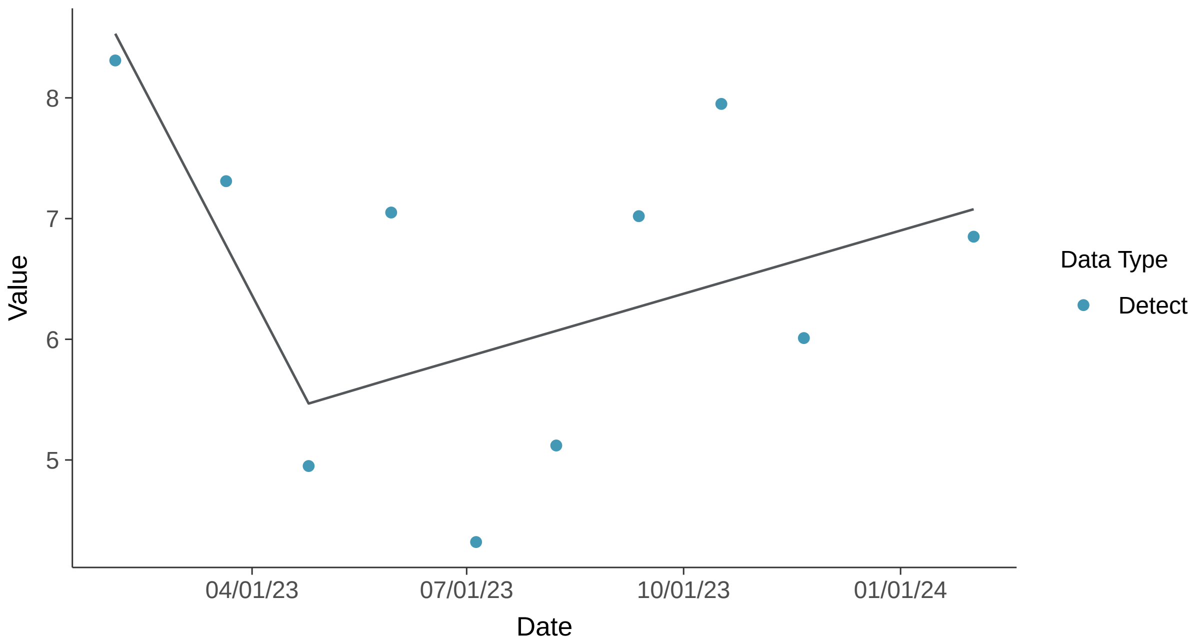

Lognormal Q-Q plot
Turbidity, MW-16D (NTU)
log(Value)
2.0
1.8
1.6
1.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Turbidity, MW-16D (NTU)
Value
8
7
6
5
4
4
5
6
7
8
9
10
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Turbidity, MW-16D (NTU)
log(Value)
2.0
1.8
1.6
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

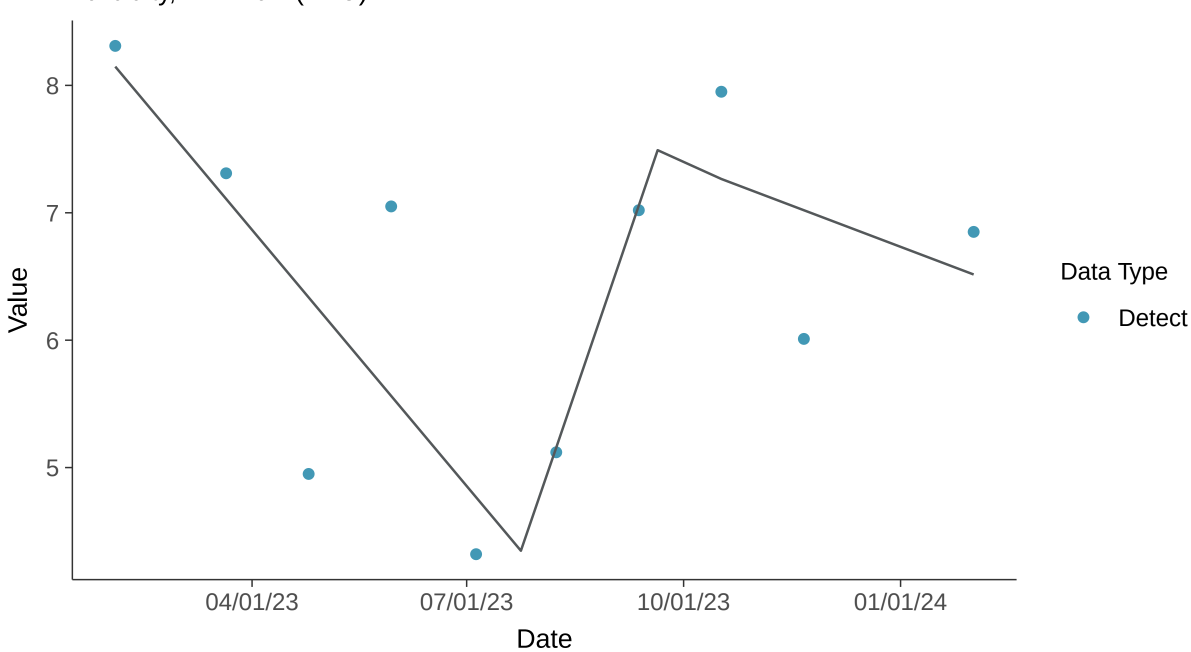
Trend Regression: Piecewise Linear-Linear

Turbidity, MW-16D (NTU)



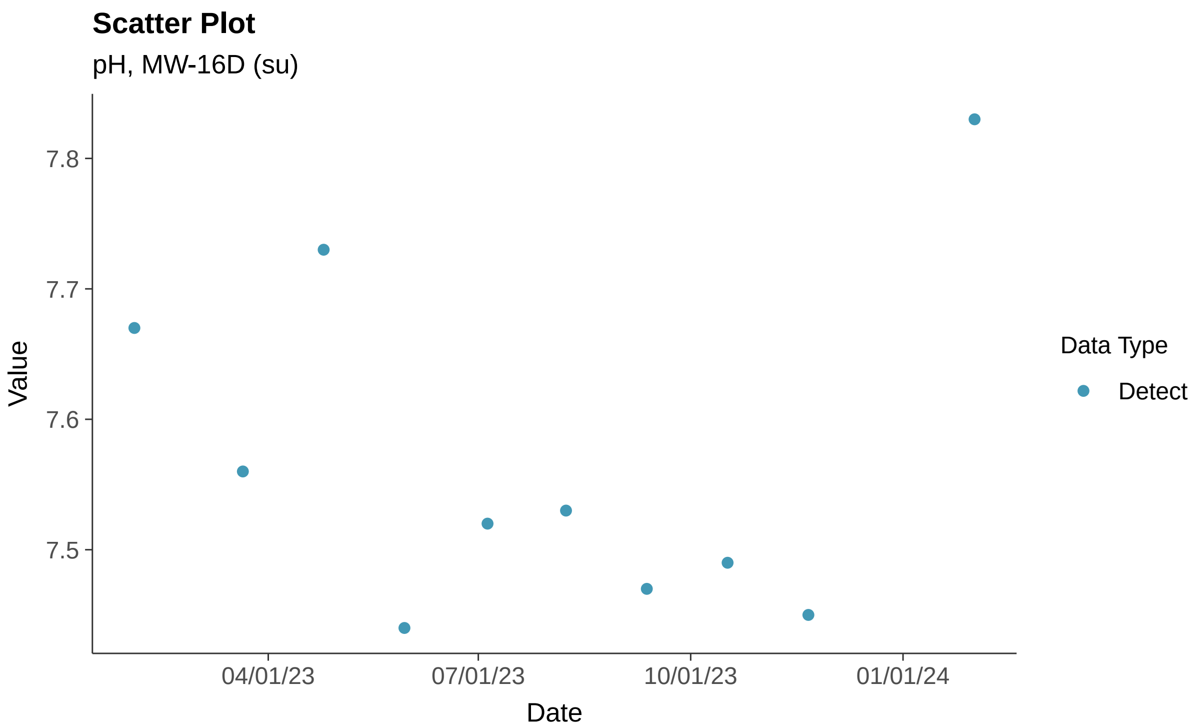
Trend Regression: Piecewise Linear-Linear-Linear

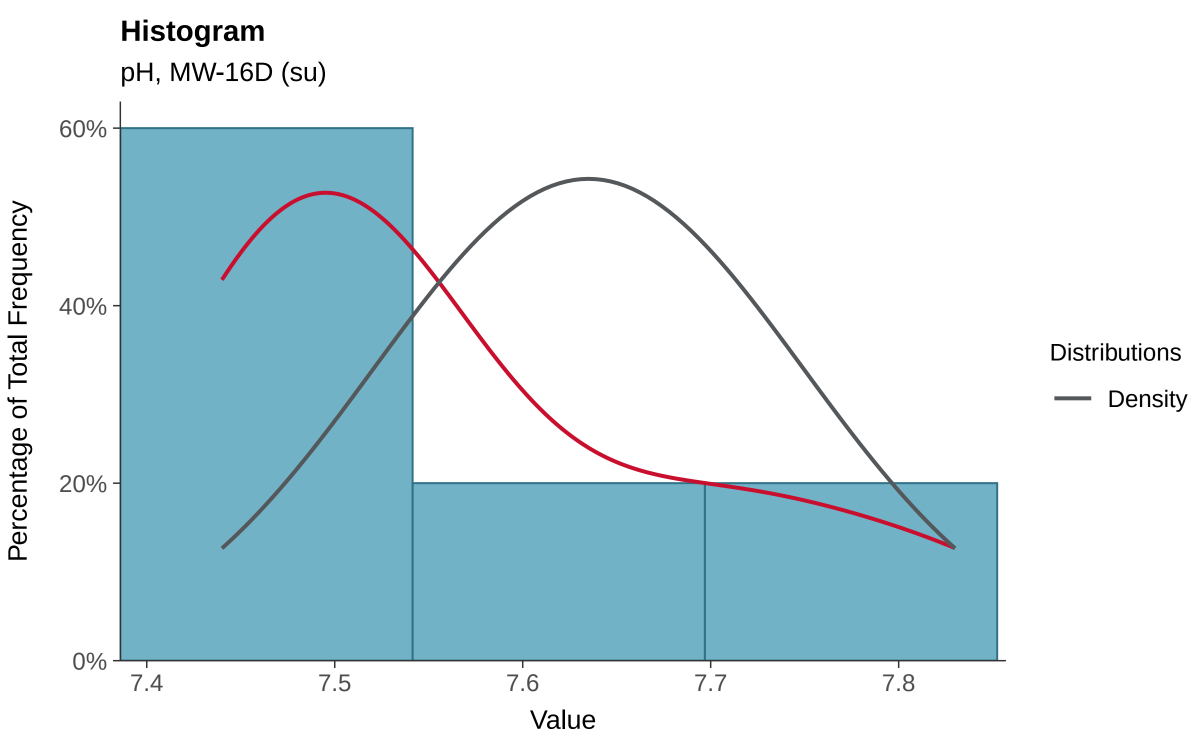
Turbidity, MW-16D (NTU)



Field Parameters: pH, MW-16D

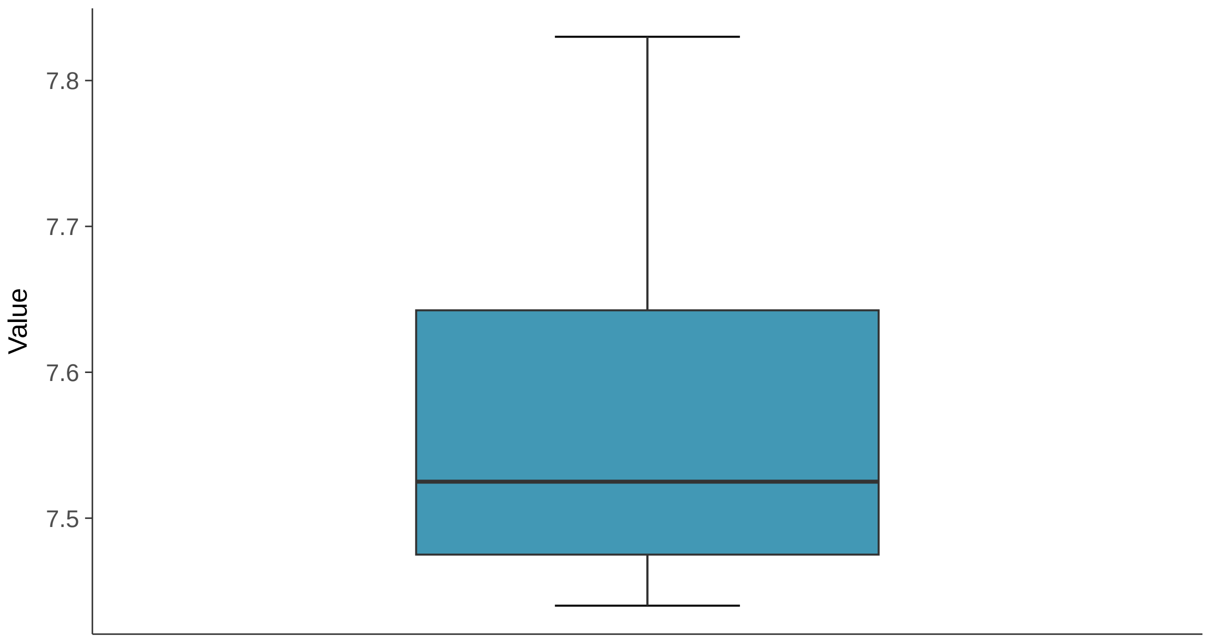
ID: 16D_3_29





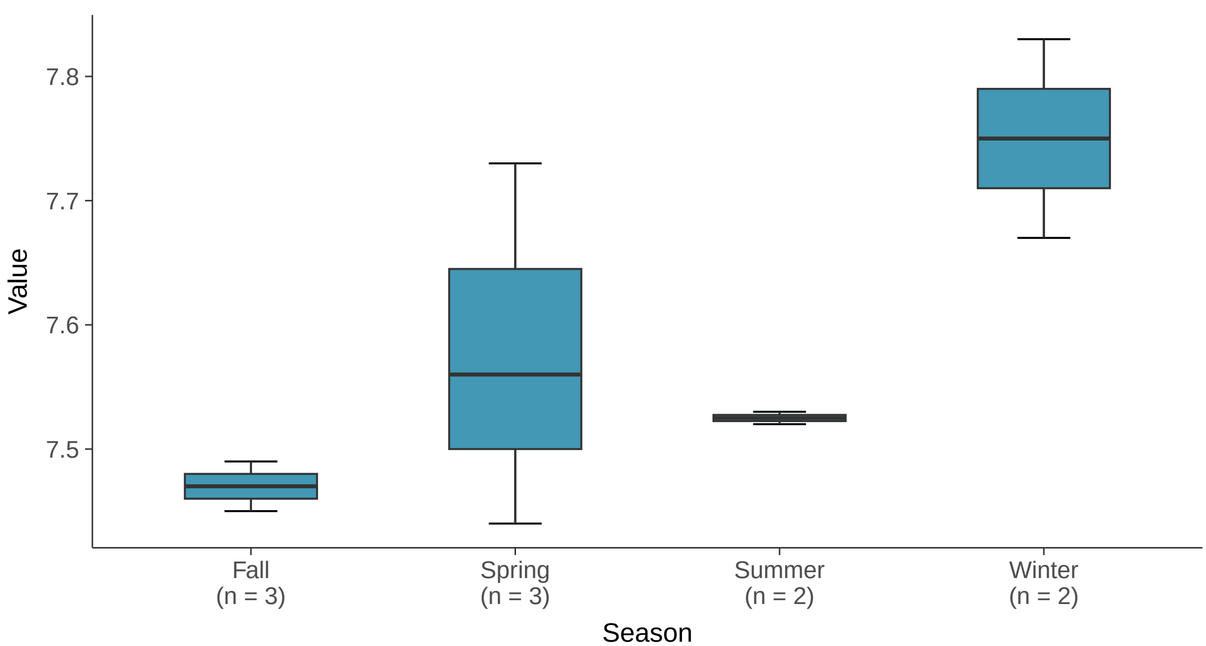
Boxplot

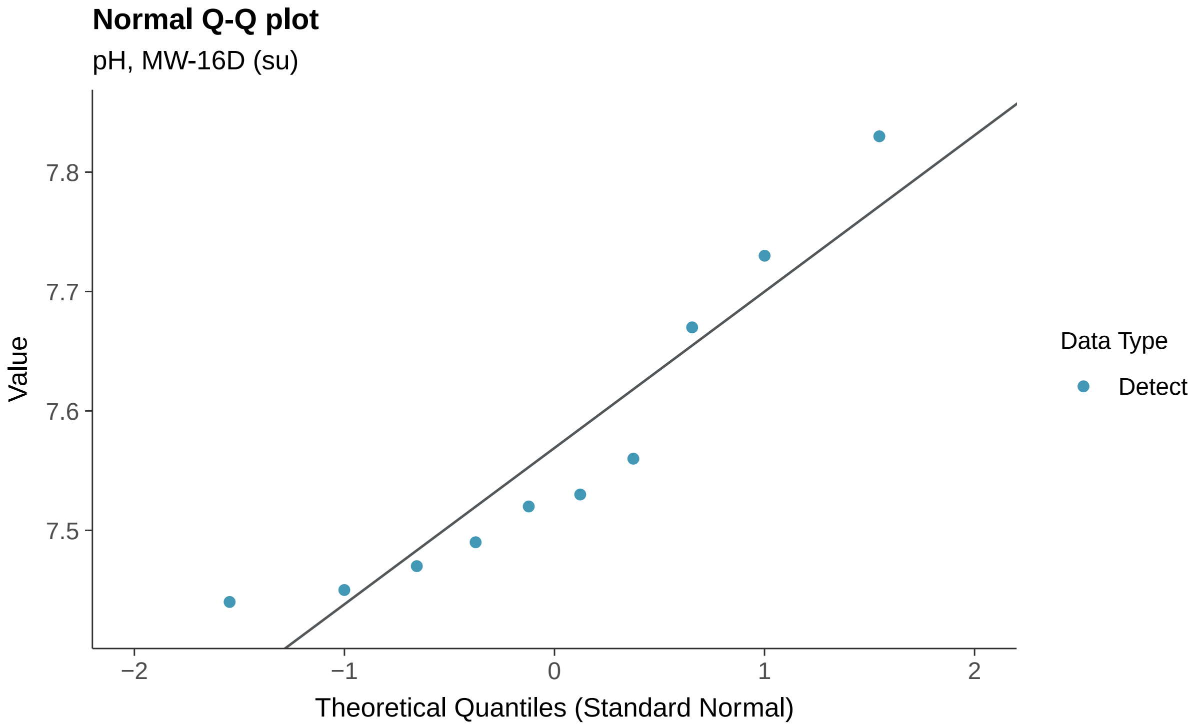
pH, MW-16D (su)

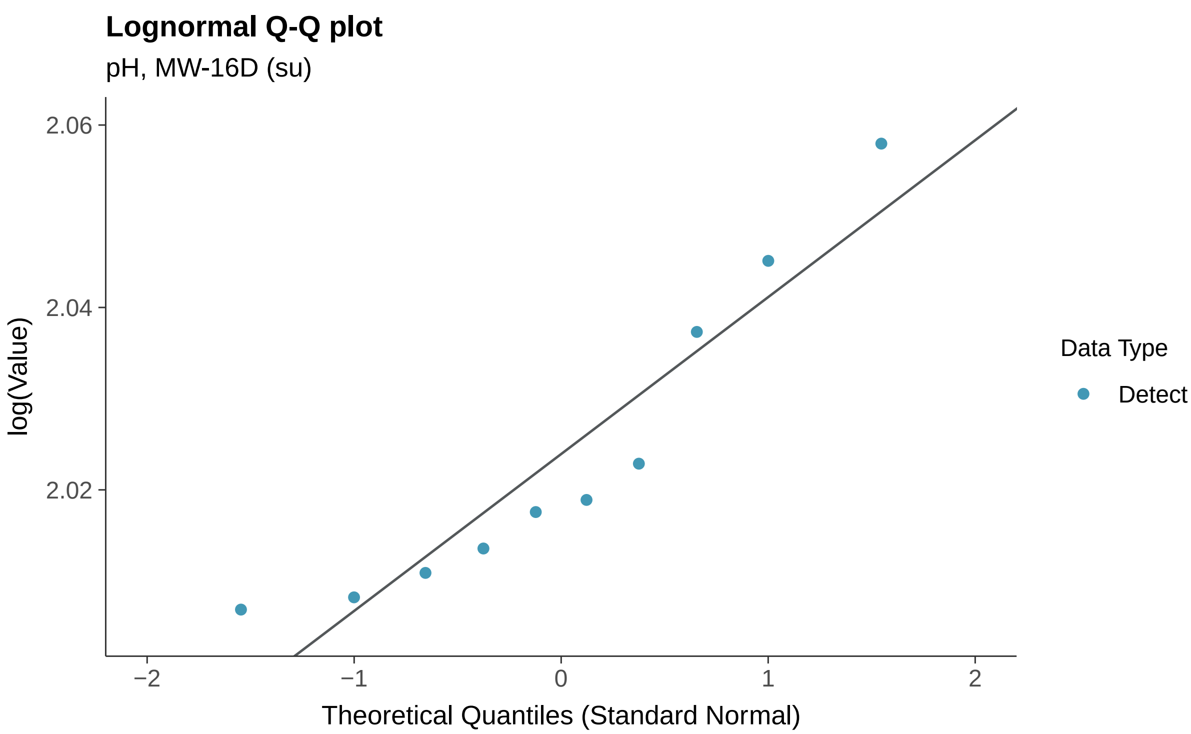


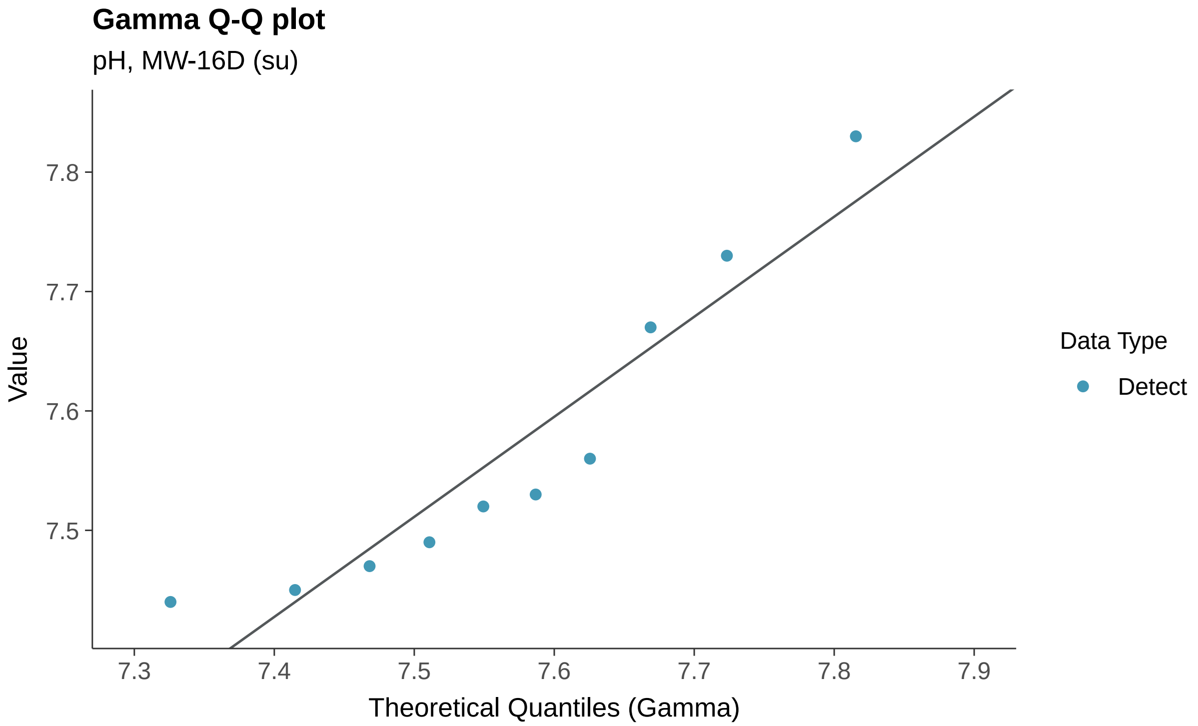
Boxplot by Season

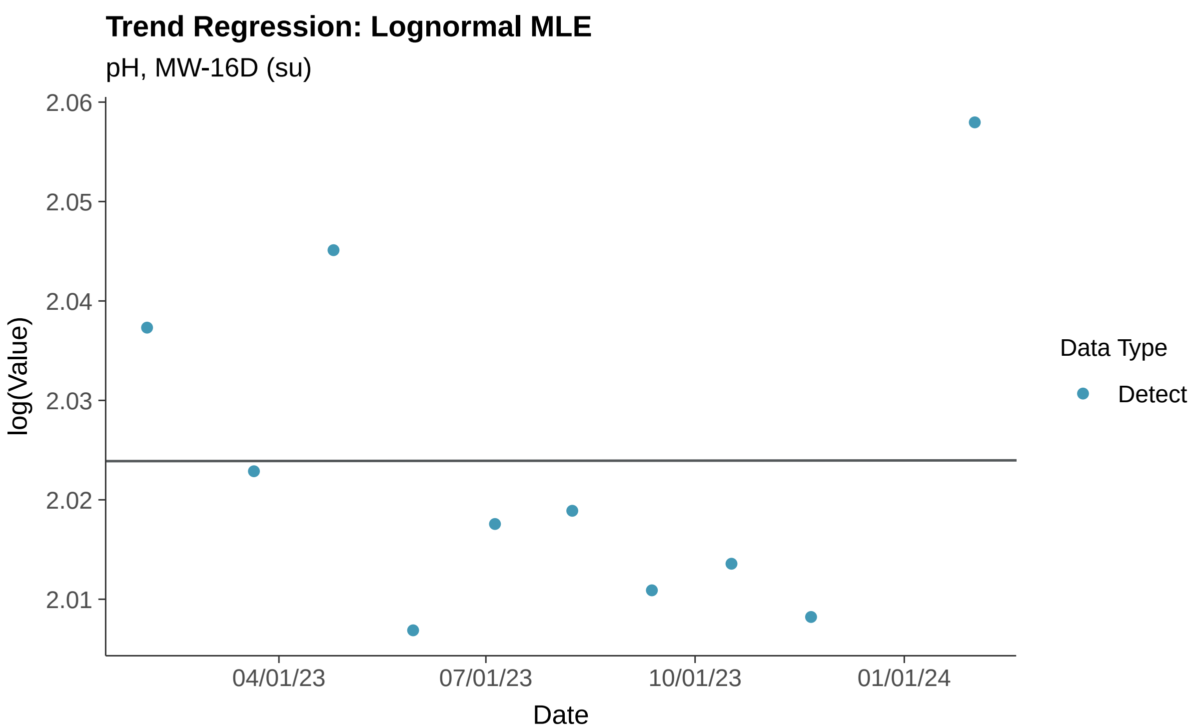
pH, MW-16D (su)




Normal Q-Q plot
pH, MW-16D (su)
Value
7.8
7.7
7.6
7.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

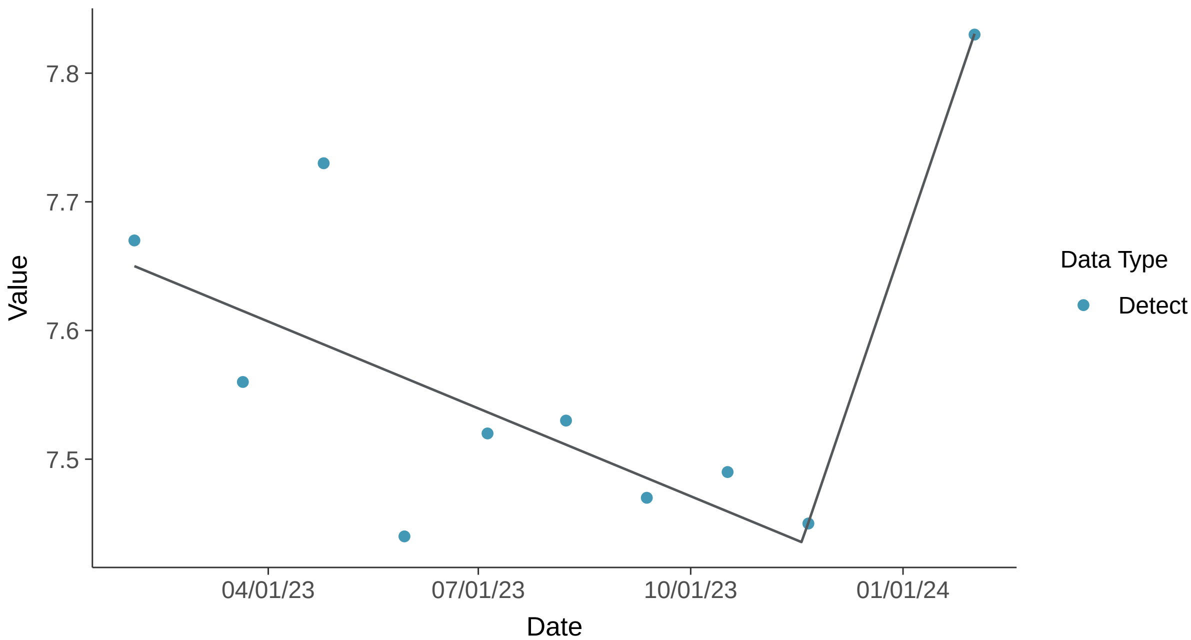

Lognormal Q-Q plot
pH, MW-16D (su)
log(Value)
2.06
2.04
2.02
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, MW-16D (su)
Value
7.8
7.7
7.6
7.5
7.3
7.4
7.5
7.6
7.7
7.8
7.9
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, MW-16D (su)
log(Value)
2.06
2.05
2.04
2.03
2.02
2.01
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

pH, MW-16D (su)

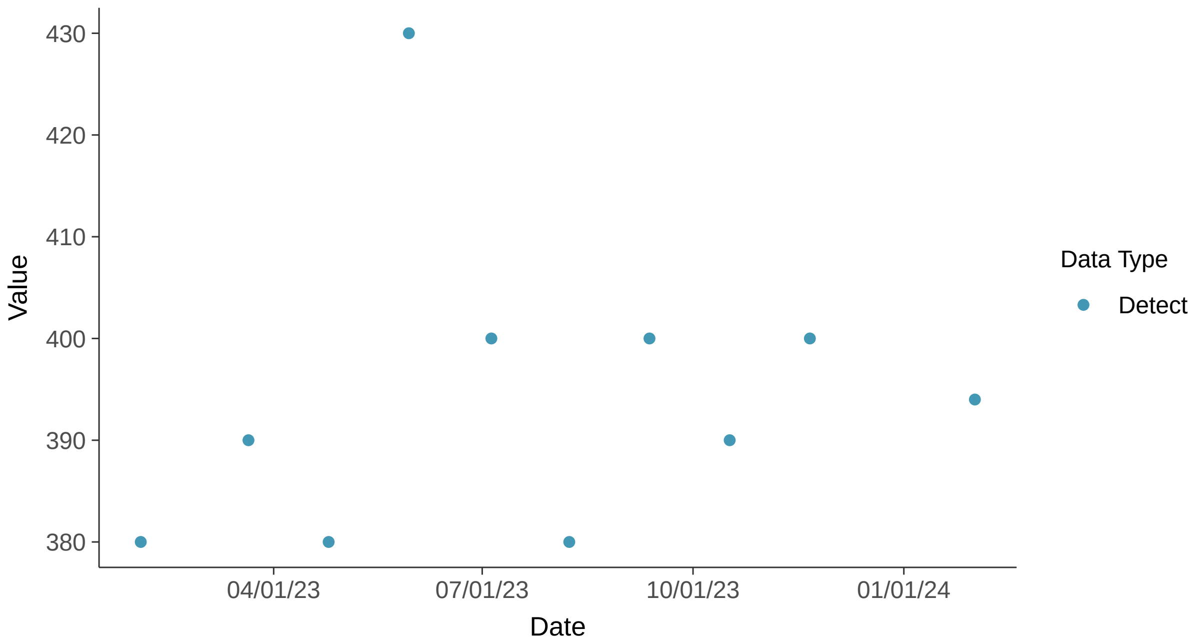


Other: Bicarbonate, MW-16D

ID: 16D_4_30

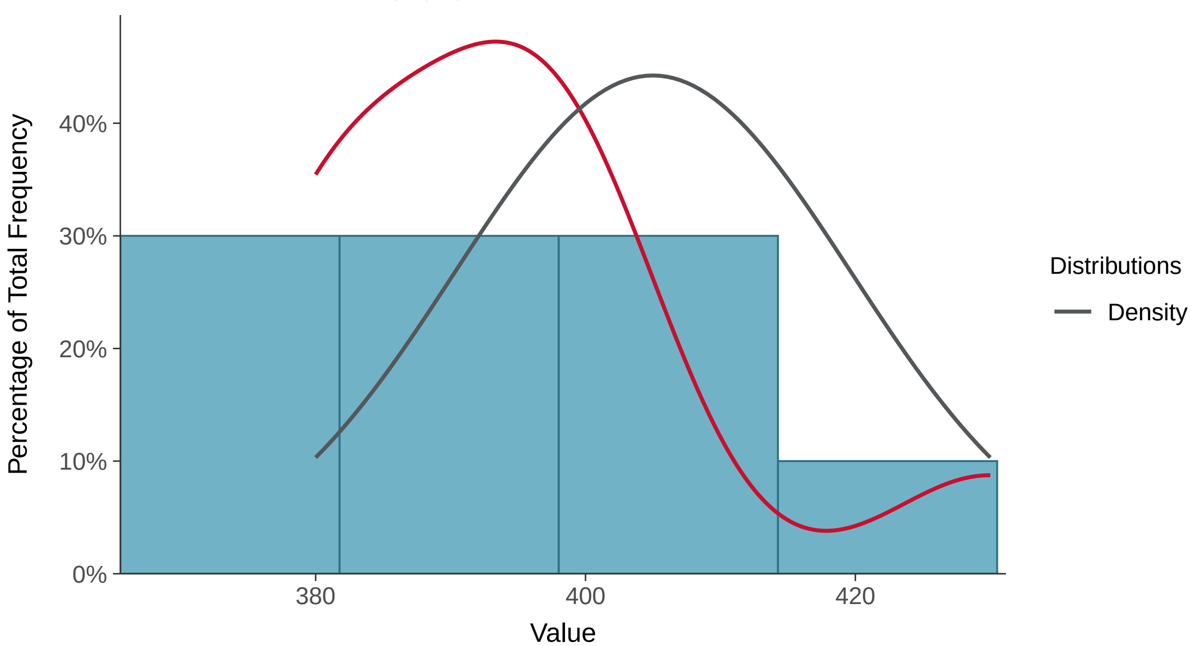
Scatter Plot

Bicarbonate, MW-16D (mg/L)



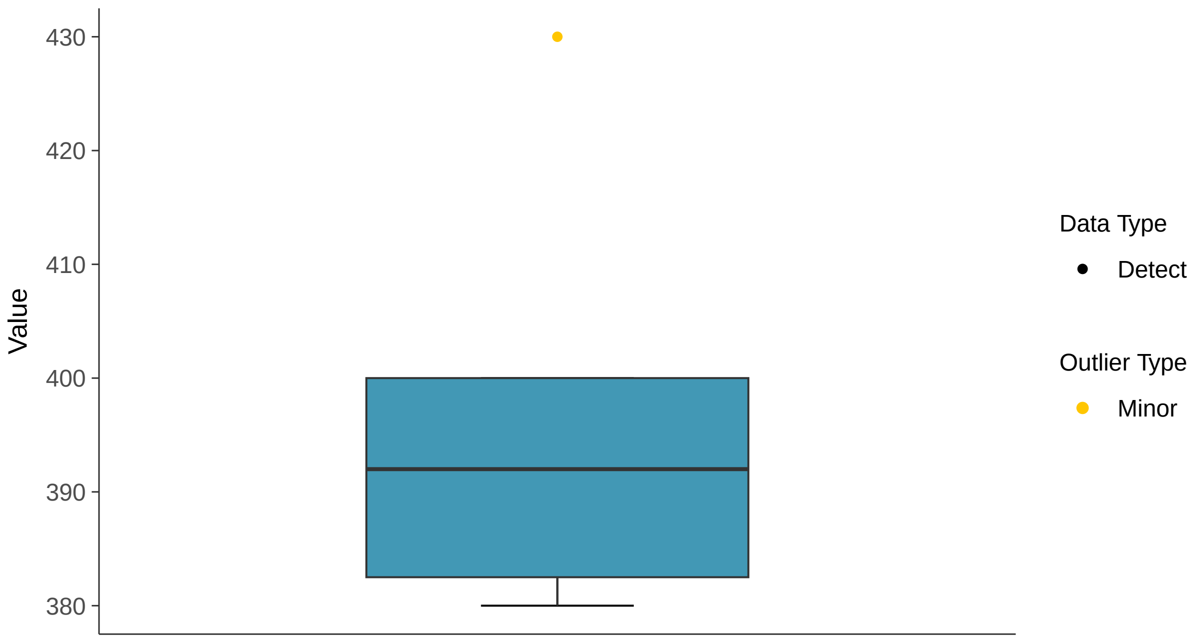
Histogram

Bicarbonate, MW-16D (mg/L)



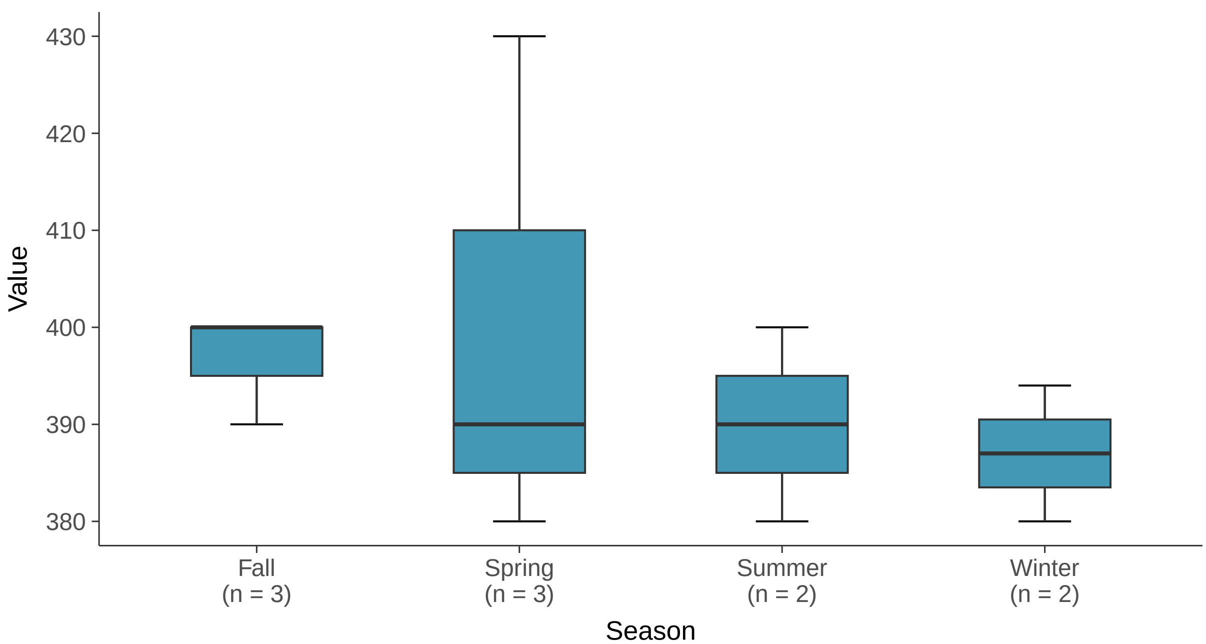
Boxplot

Bicarbonate, MW-16D (mg/L)



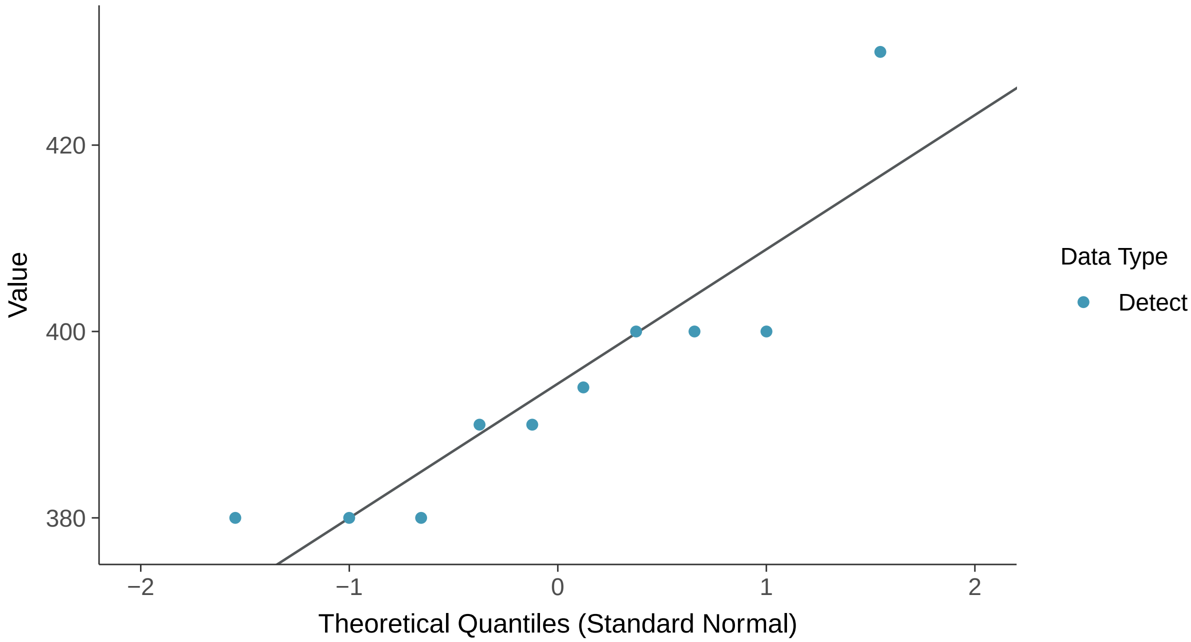
Boxplot by Season

Bicarbonate, MW-16D (mg/L)



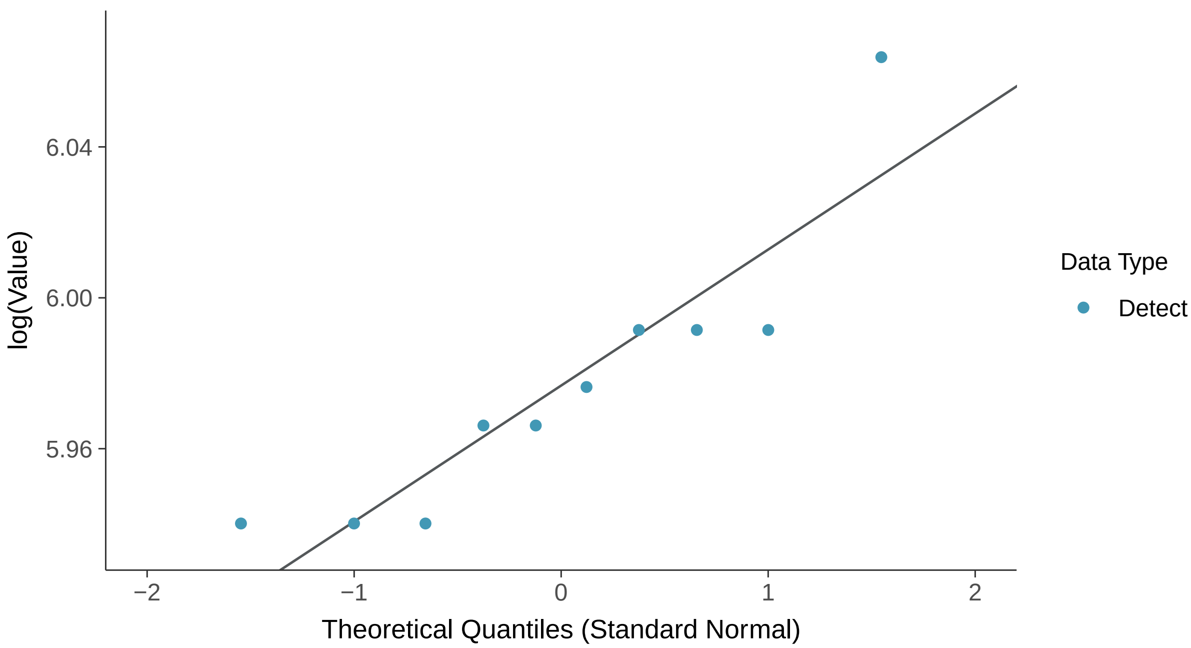
Normal Q-Q plot

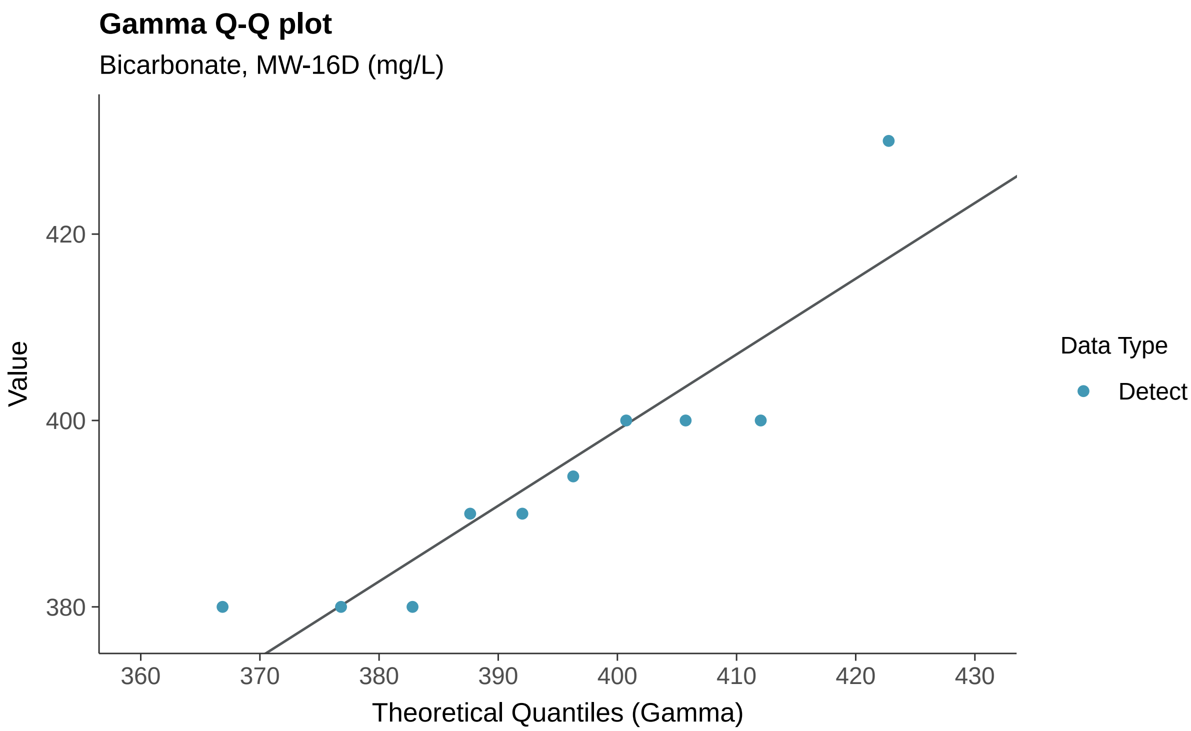
Bicarbonate, MW-16D (mg/L)

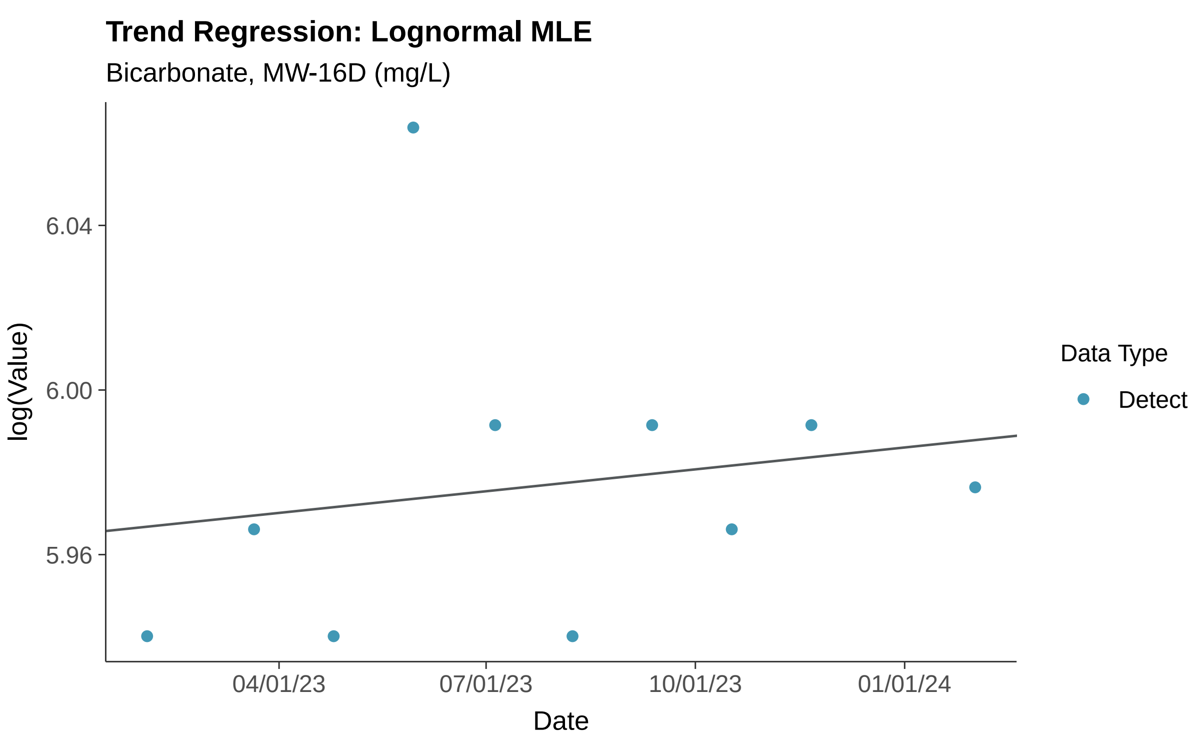


Lognormal Q-Q plot

Bicarbonate, MW-16D (mg/L)

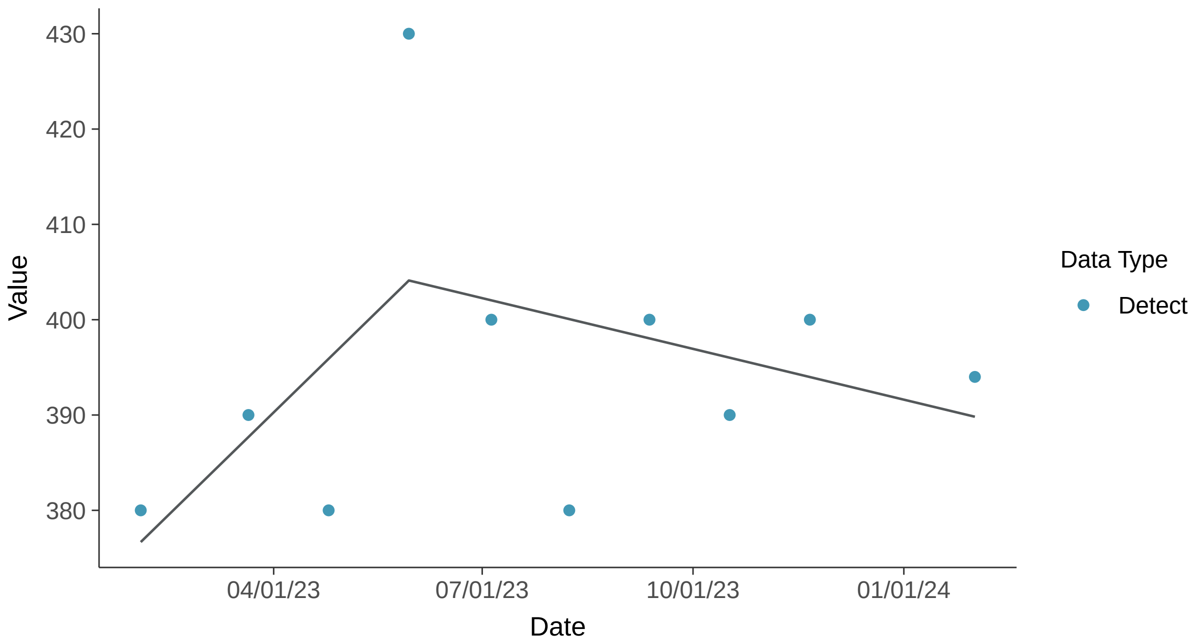



Gamma Q-Q plot
Bicarbonate, MW-16D (mg/L)
Value
420
400
380
360
370
380
390
400
410
420
430
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Bicarbonate, MW-16D (mg/L)
log(Value)
6.04
6.00
5.96
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

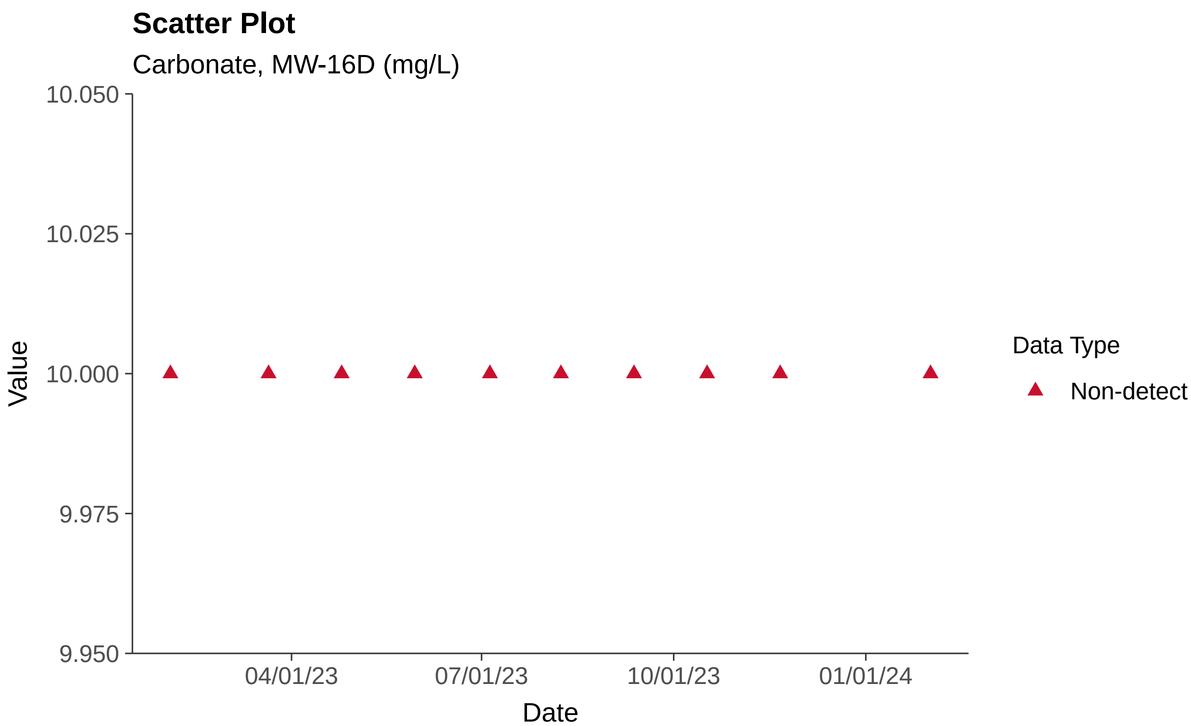
Trend Regression: Piecewise Linear-Linear

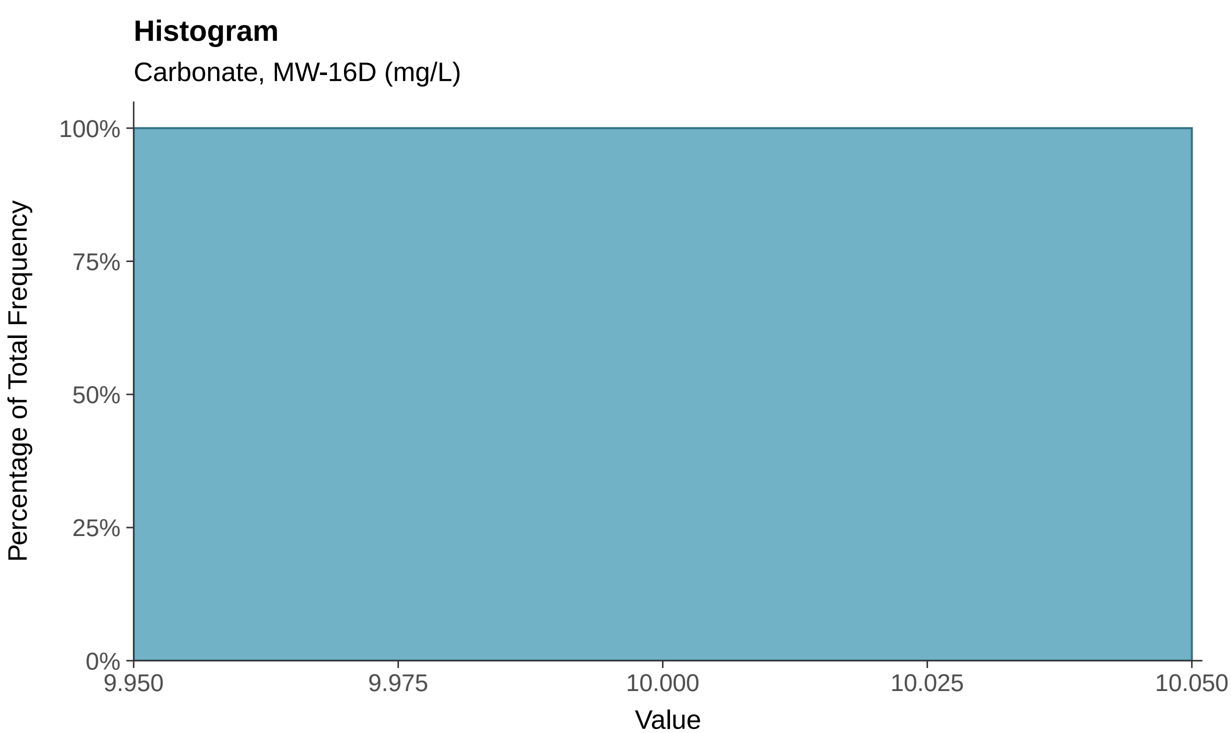
Bicarbonate, MW-16D (mg/L)



Other: Carbonate, MW-16D

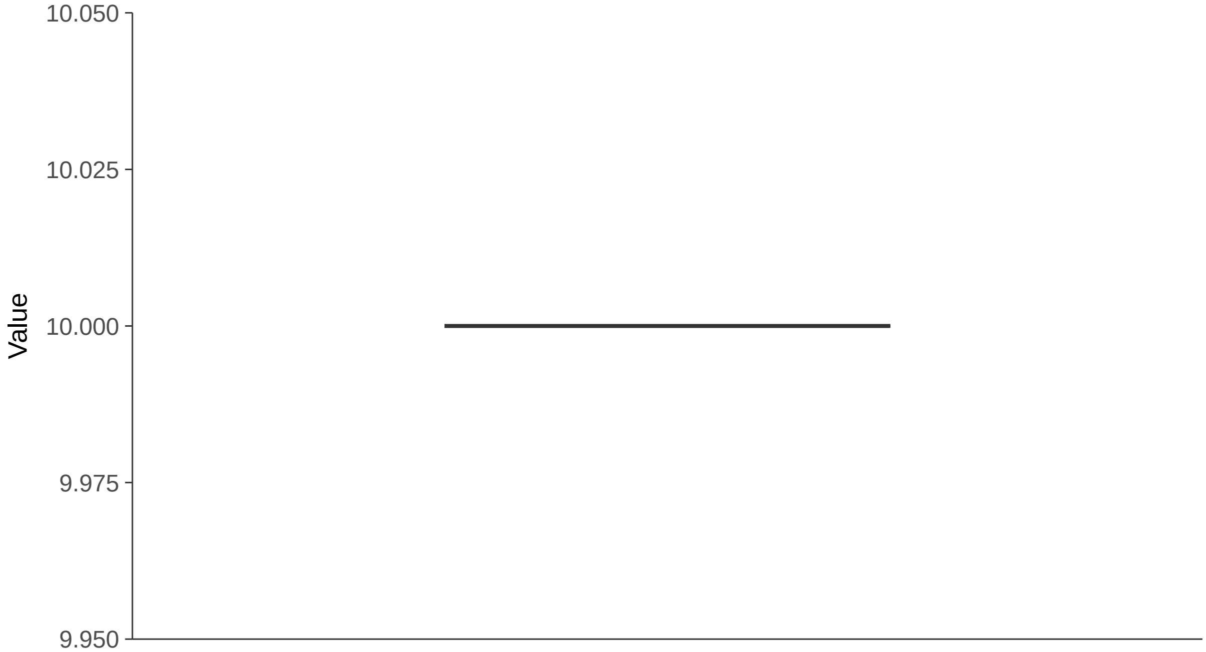
ID: 16D_4_31





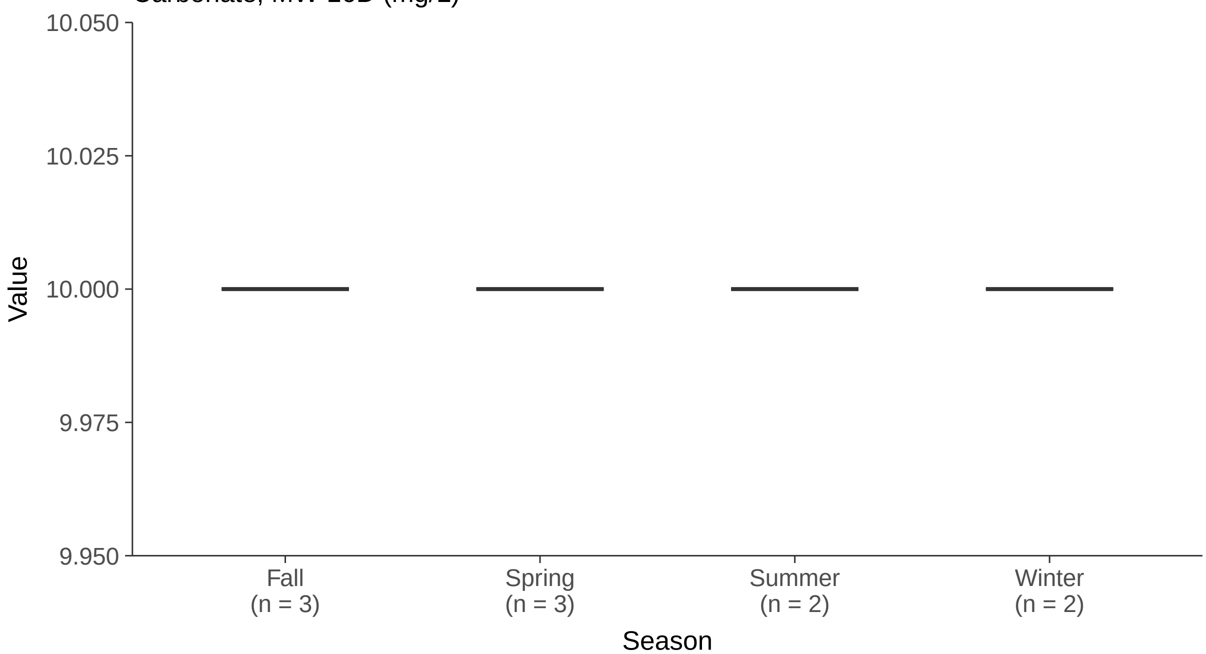
Boxplot

Carbonate, MW-16D (mg/L)



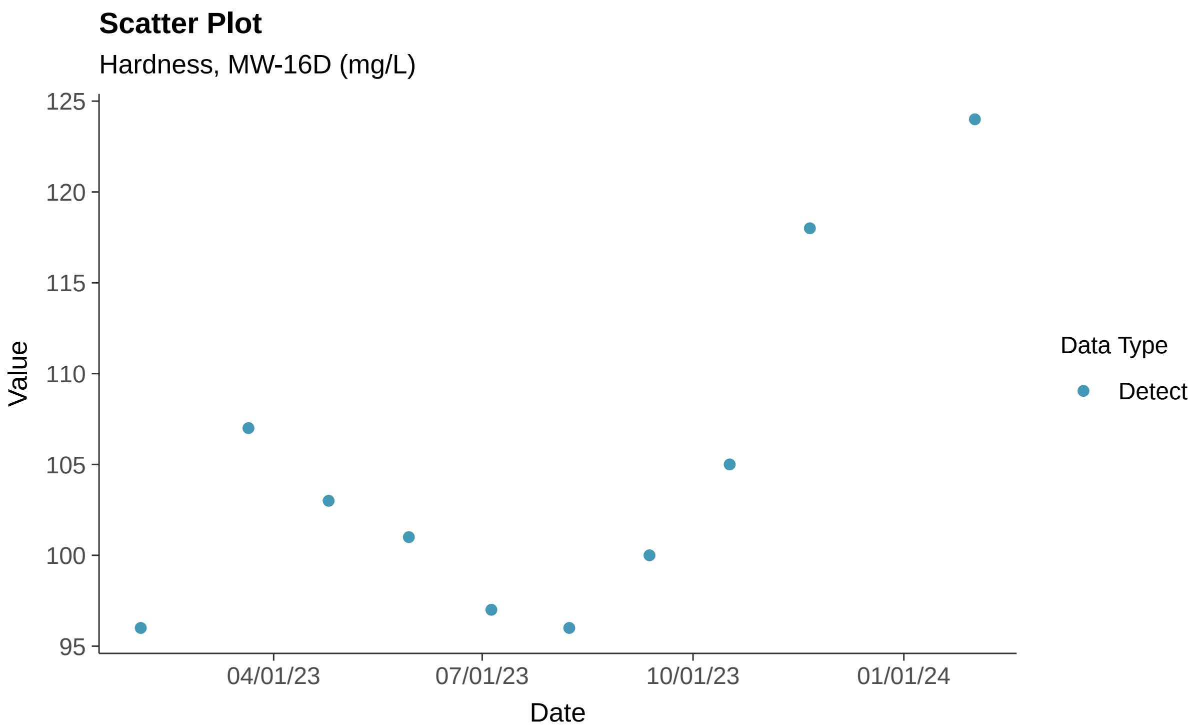
Boxplot by Season

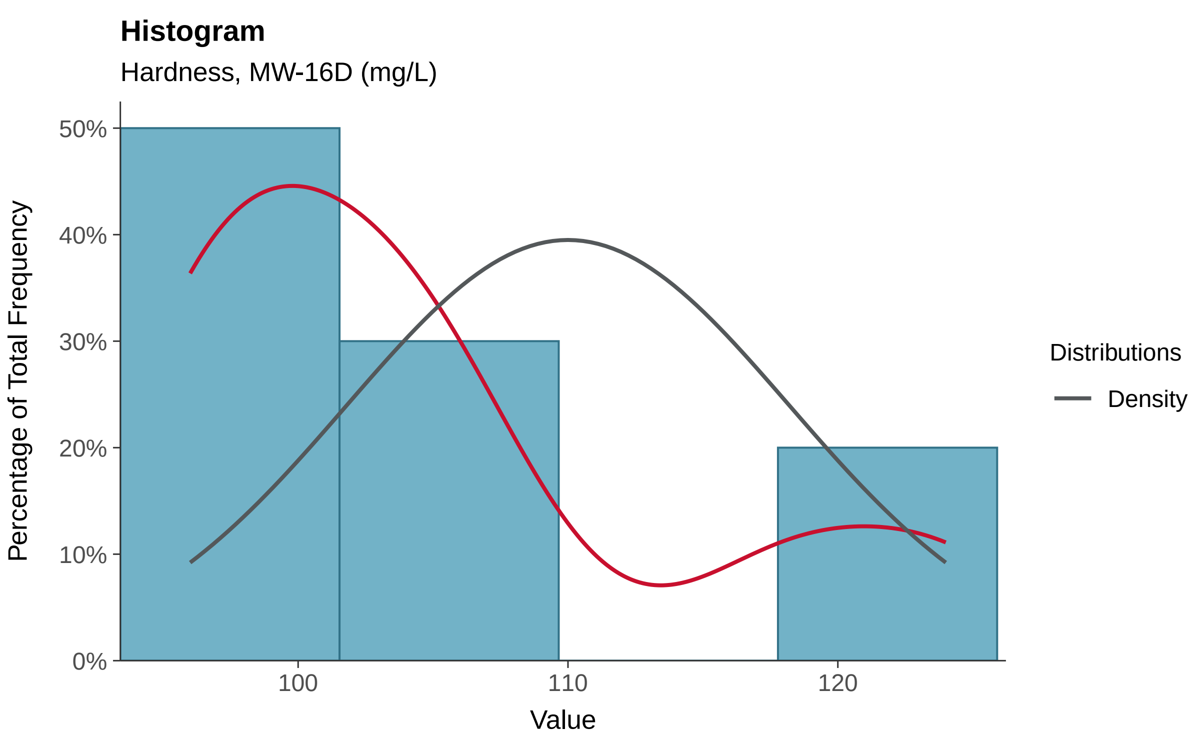
Carbonate, MW-16D (mg/L)

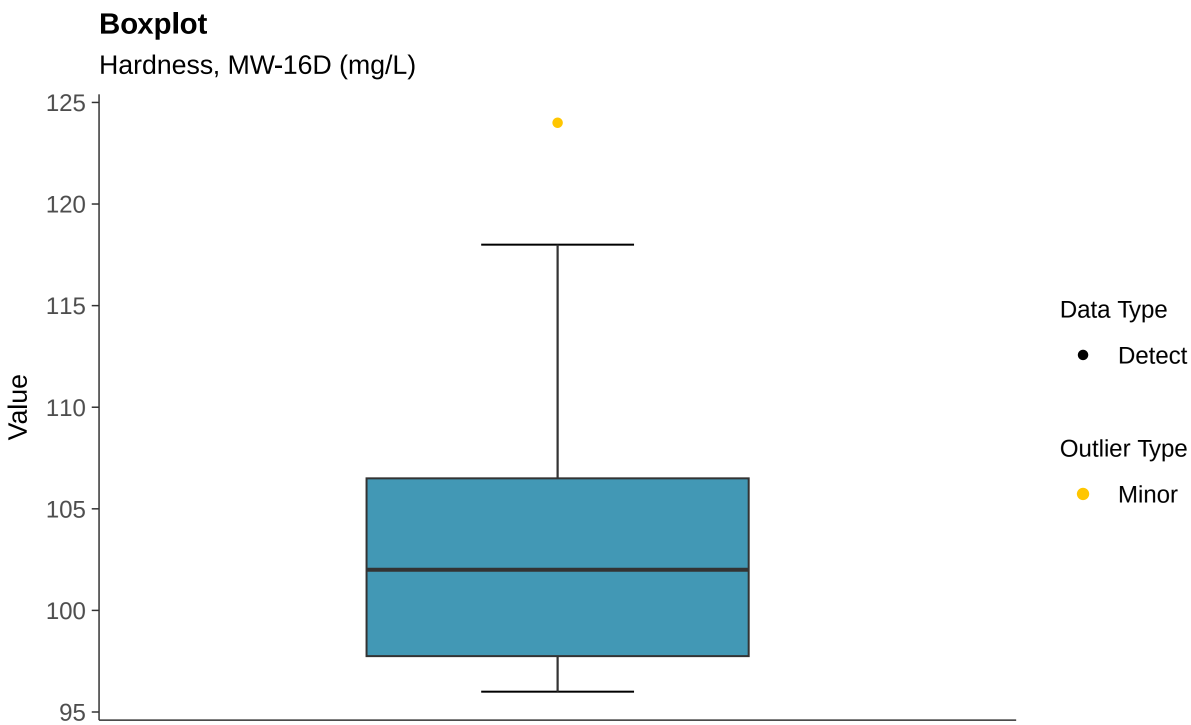


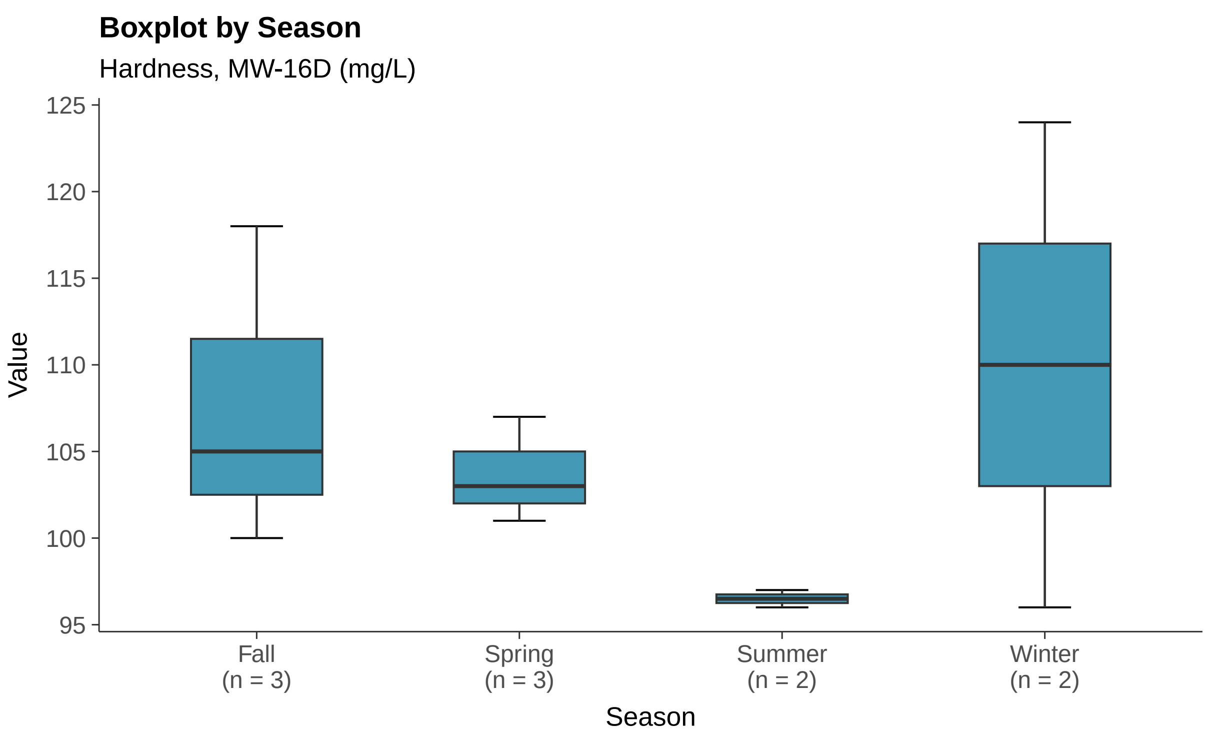
Other: Hardness, MW-16D

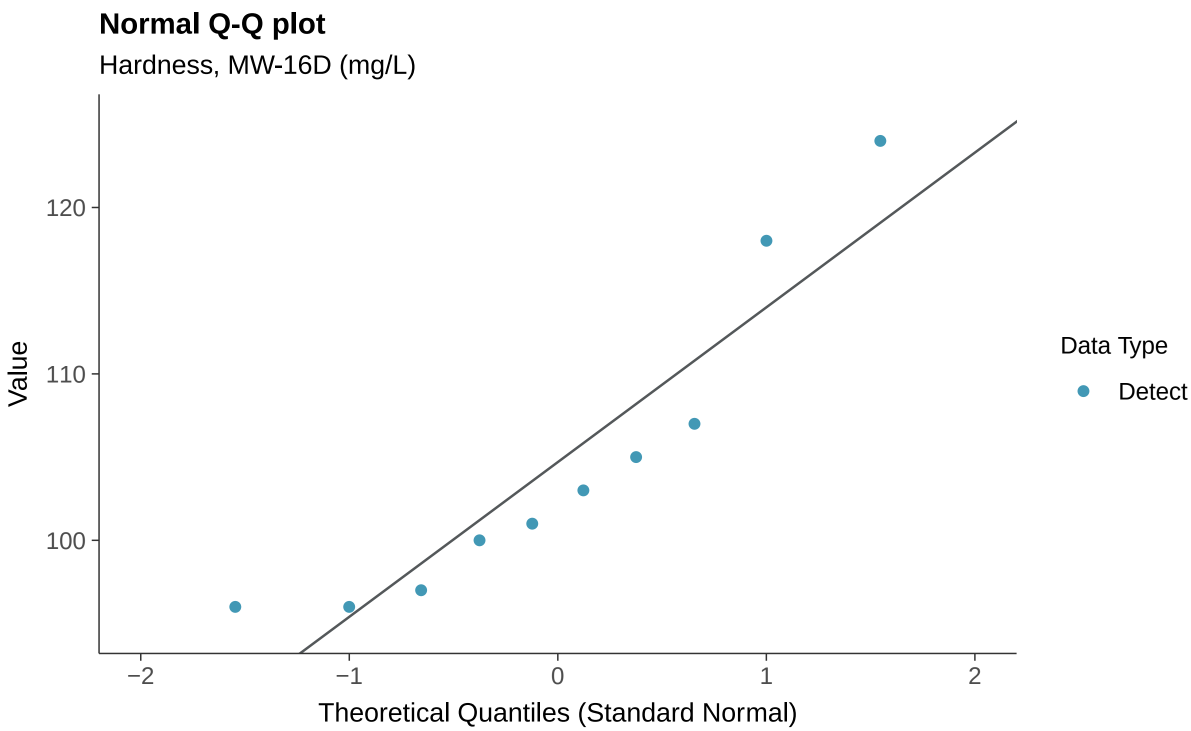
ID: 16D_4_32

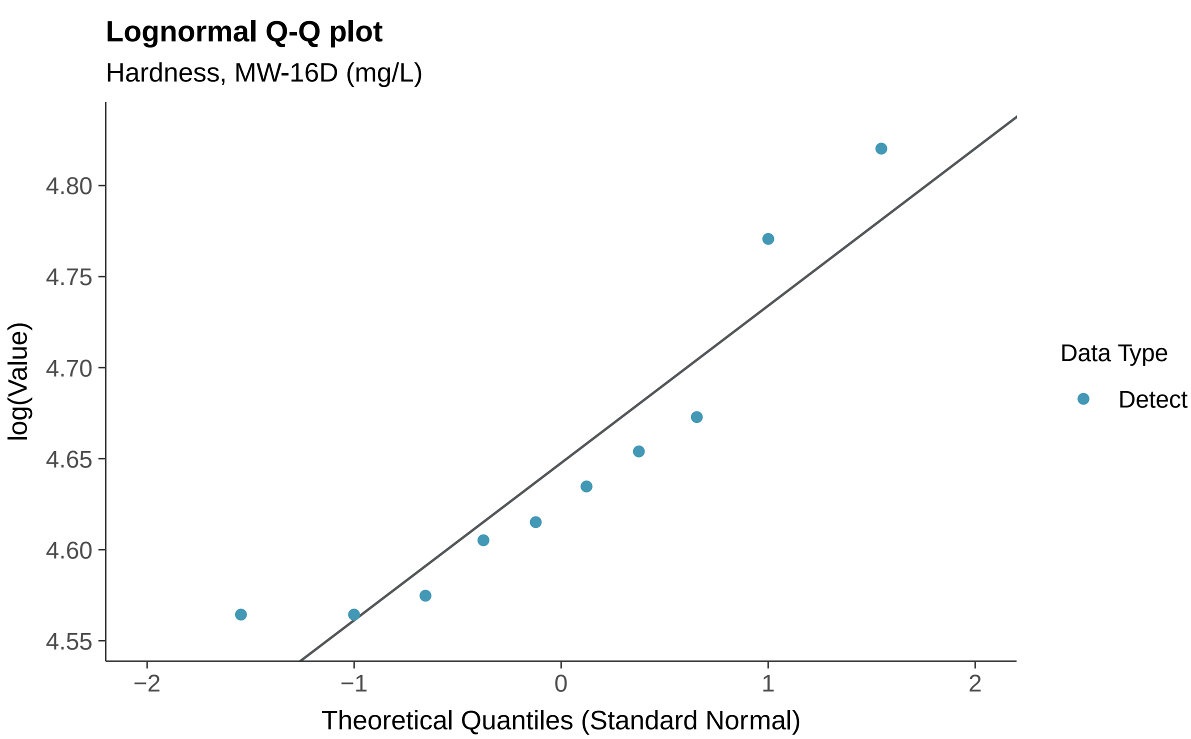





Boxplot
Hardness, MW-16D (mg/L)
Value
125
120
115
110
105
100
95
Data Type
Detect
Outlier Type
Minor

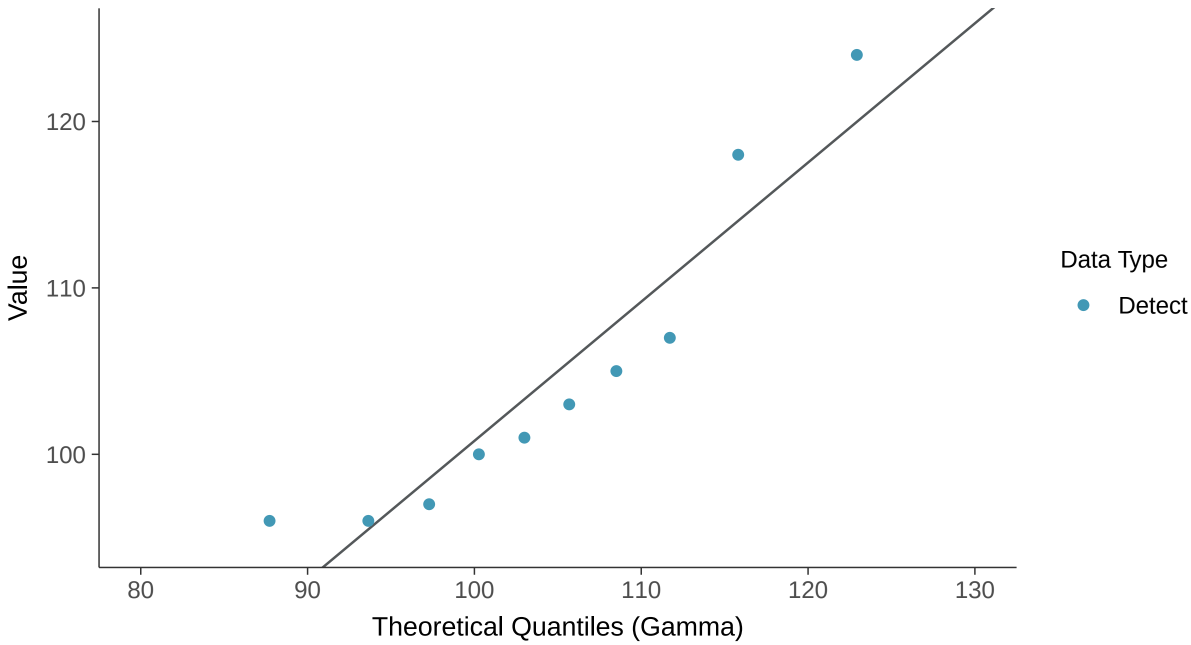

Boxplot by Season
Hardness, MW-16D (mg/L)
Value
125
120
115
110
105
100
95
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season


Normal Q-Q plot
Hardness, MW-16D (mg/L)
Value
120
110
100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Hardness, MW-16D (mg/L)
log(Value)
4.80
4.75
4.70
4.65
4.60
4.55
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

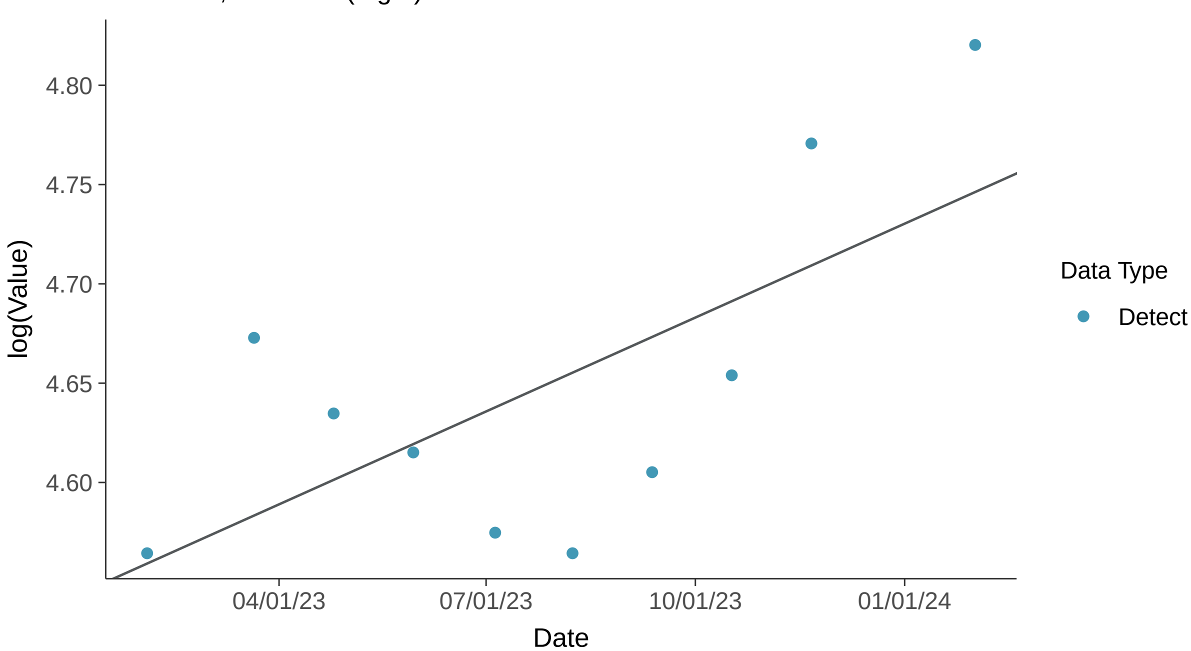
Gamma Q-Q plot

Hardness, MW-16D (mg/L)



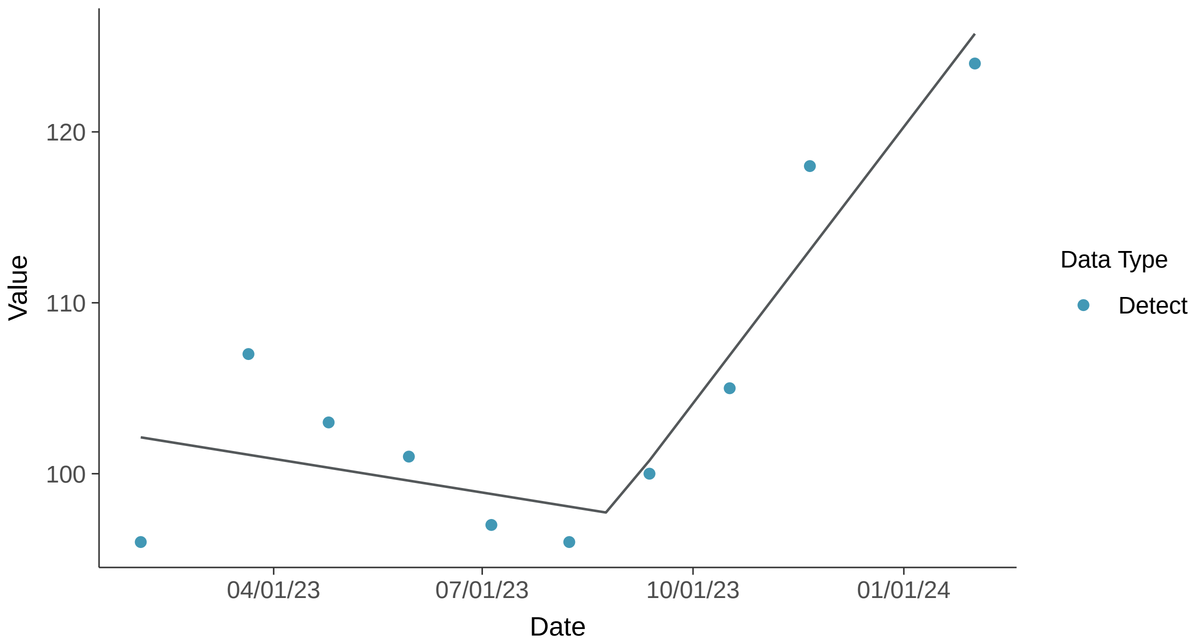
Trend Regression: Lognormal MLE

Hardness, MW-16D (mg/L)



Trend Regression: Piecewise Linear-Linear

Hardness, MW-16D (mg/L)

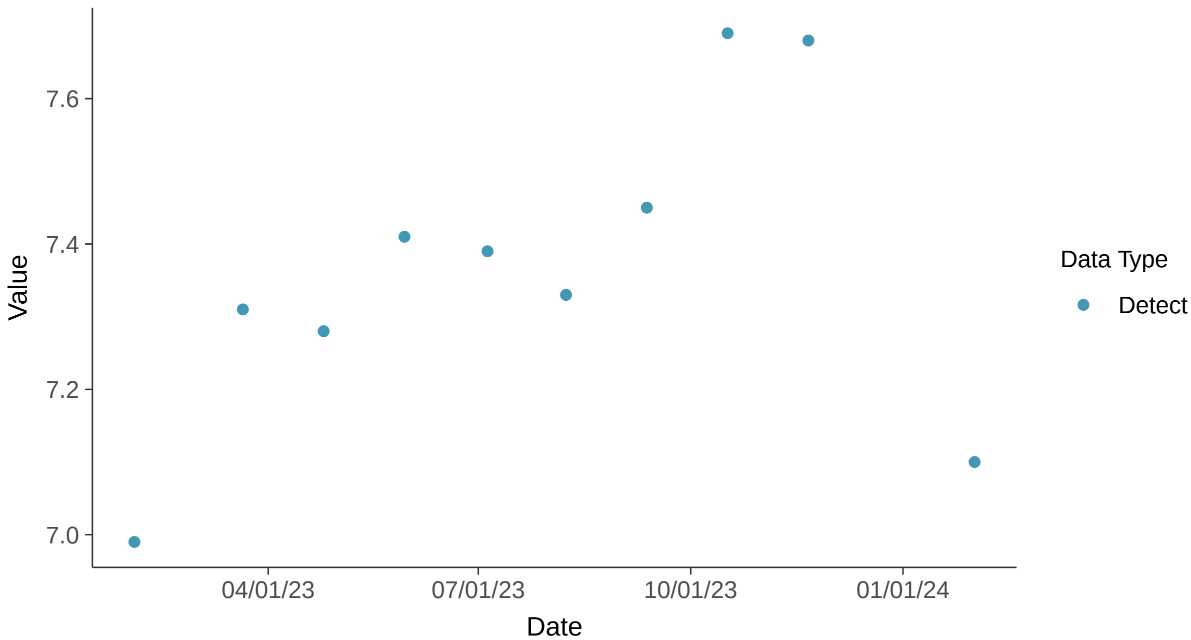


Other: Magnesium, MW-16D

ID: 16D_4_33

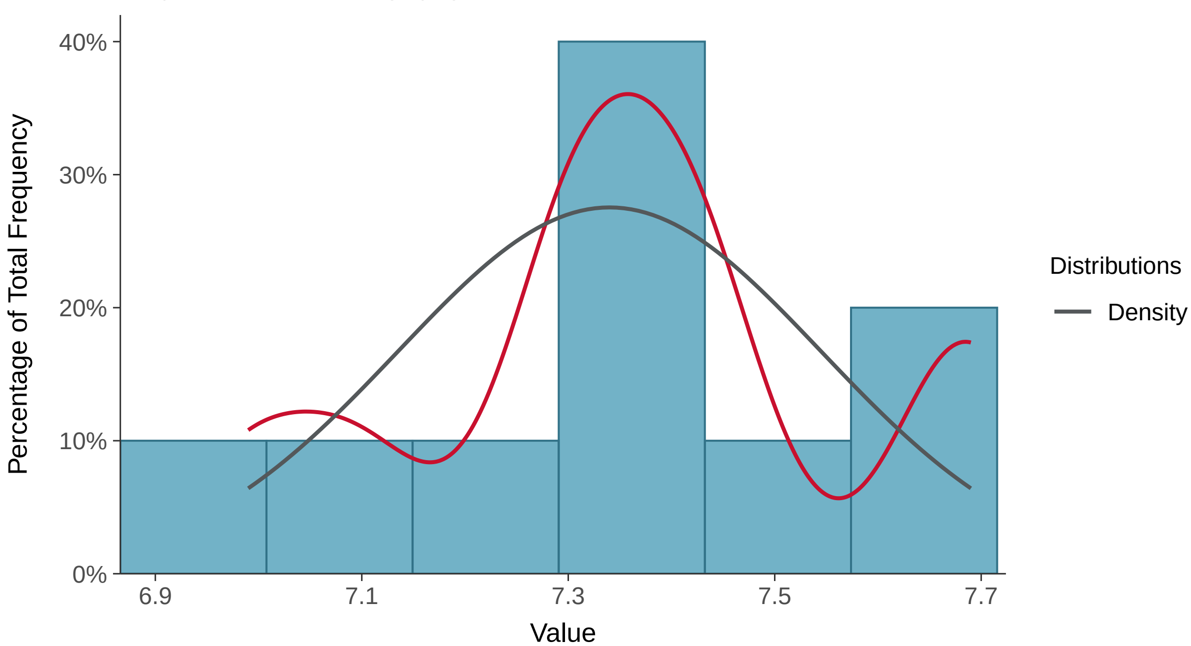
Scatter Plot

Magnesium, MW-16D (mg/L)



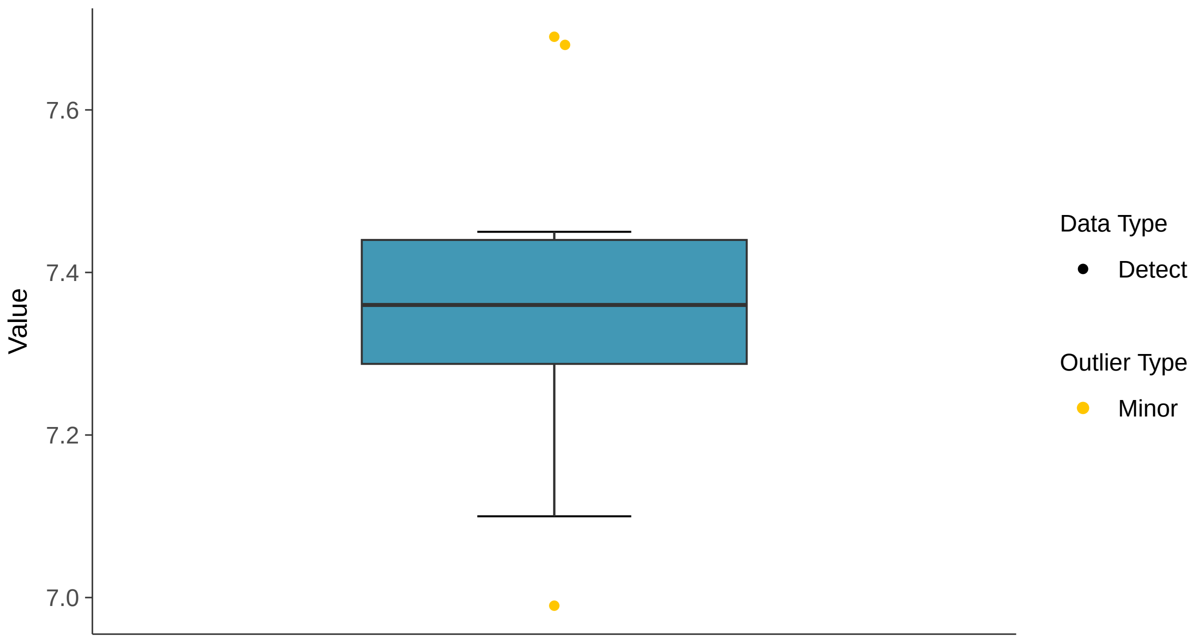
Histogram

Magnesium, MW-16D (mg/L)



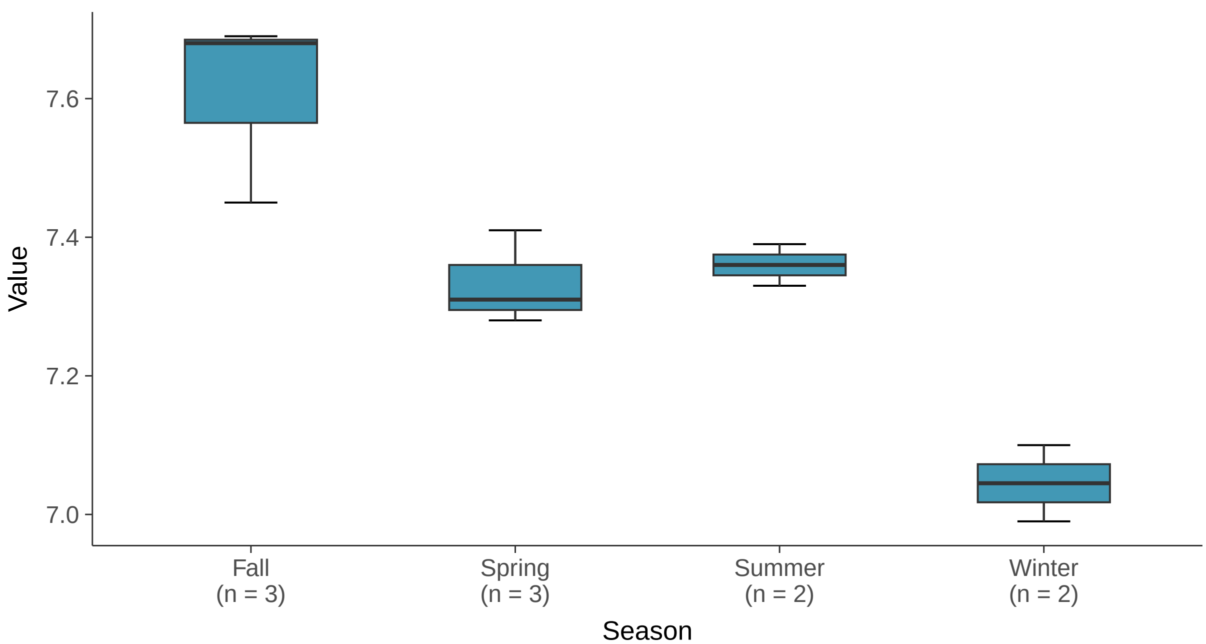
Boxplot

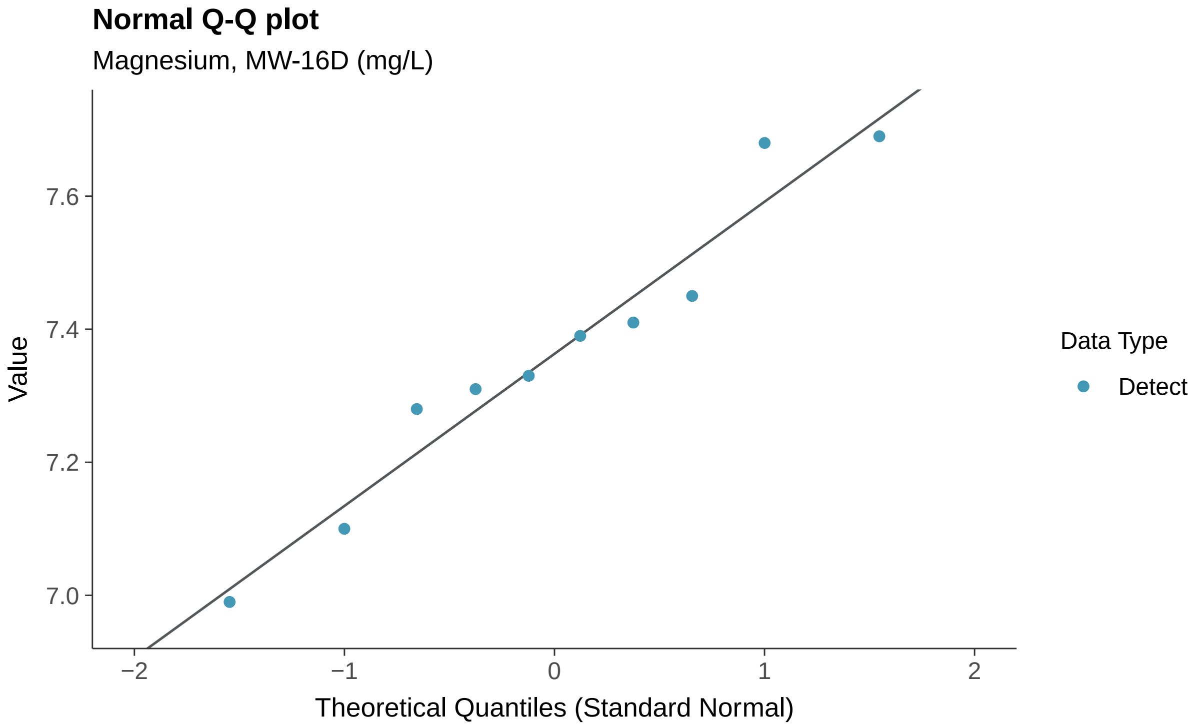
Magnesium, MW-16D (mg/L)

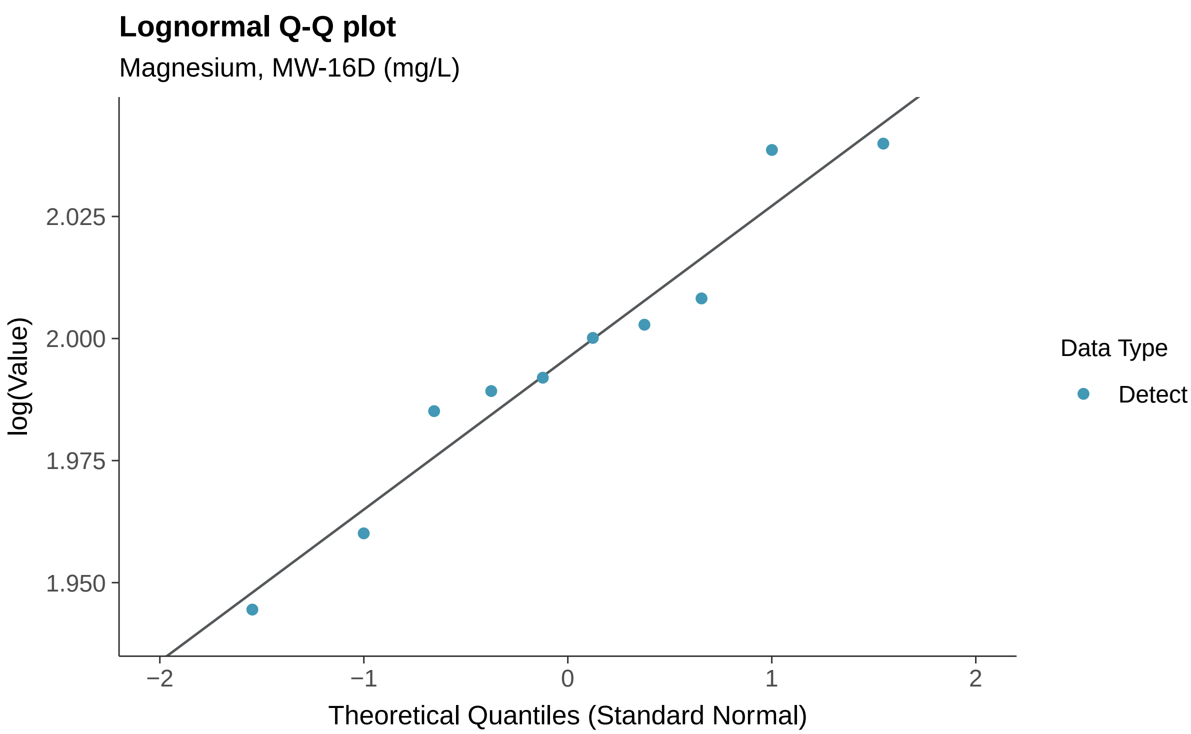


Boxplot by Season

Magnesium, MW-16D (mg/L)

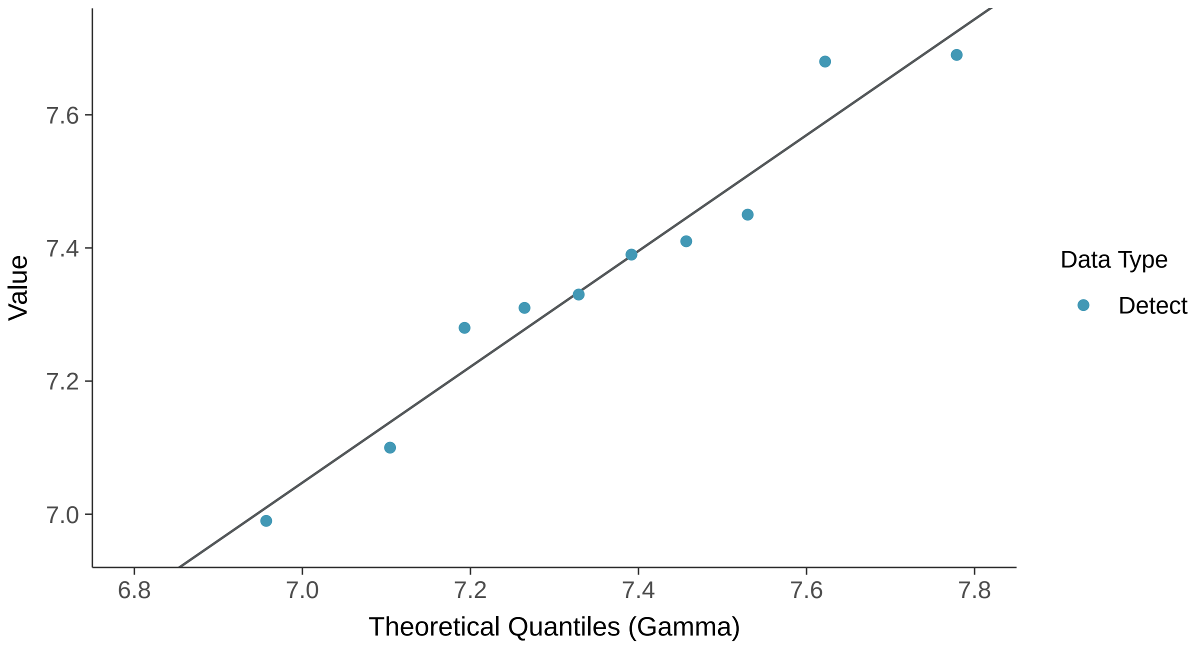



Normal Q-Q plot
Magnesium, MW-16D (mg/L)
Value
7.6
7.4
7.2
7.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Magnesium, MW-16D (mg/L)
log(Value)
2.025
2.000
1.975
1.950
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

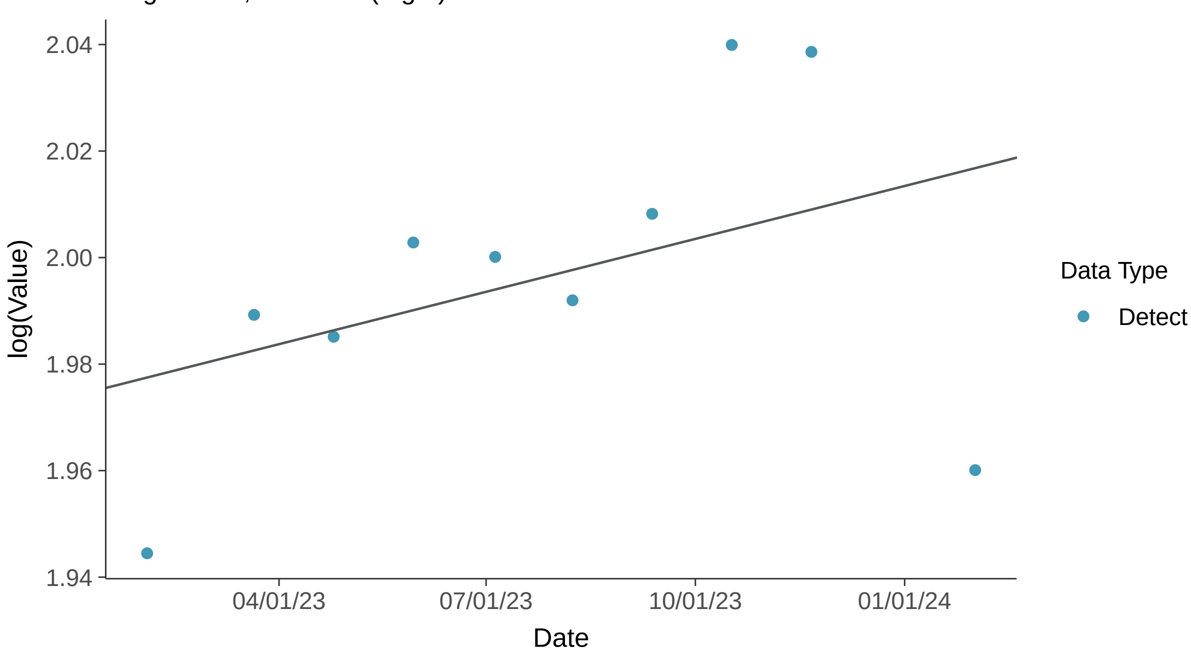
Gamma Q-Q plot

Magnesium, MW-16D (mg/L)



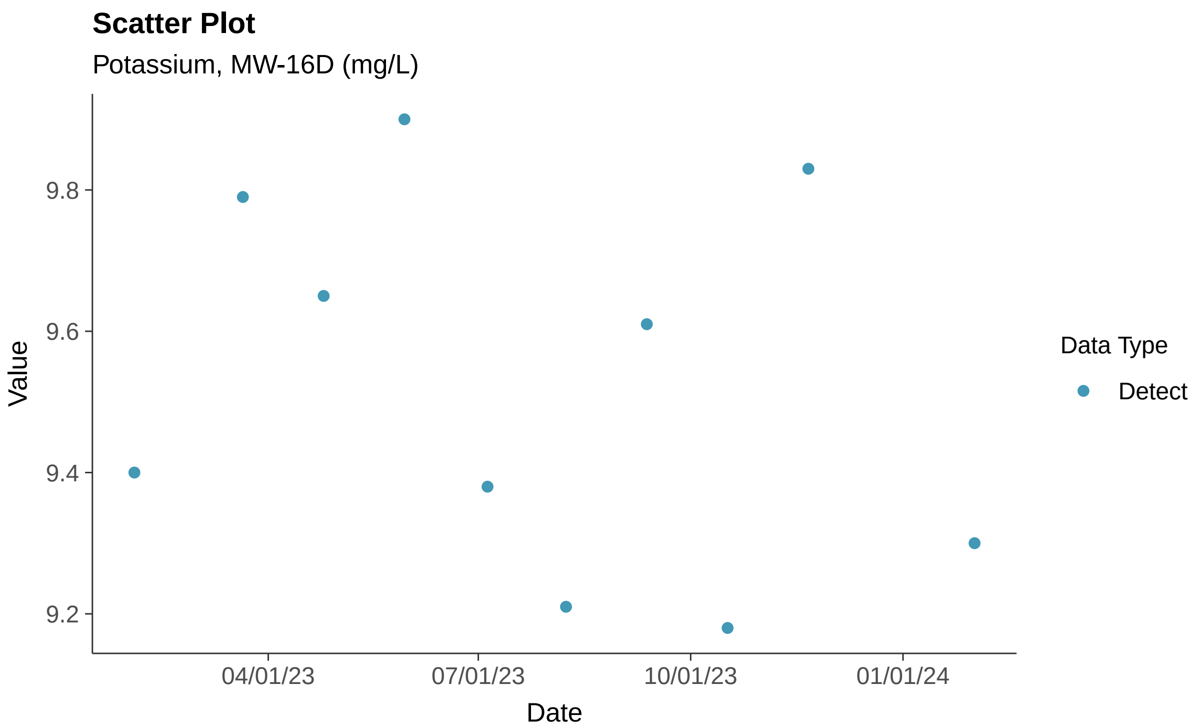
Trend Regression: Lognormal MLE

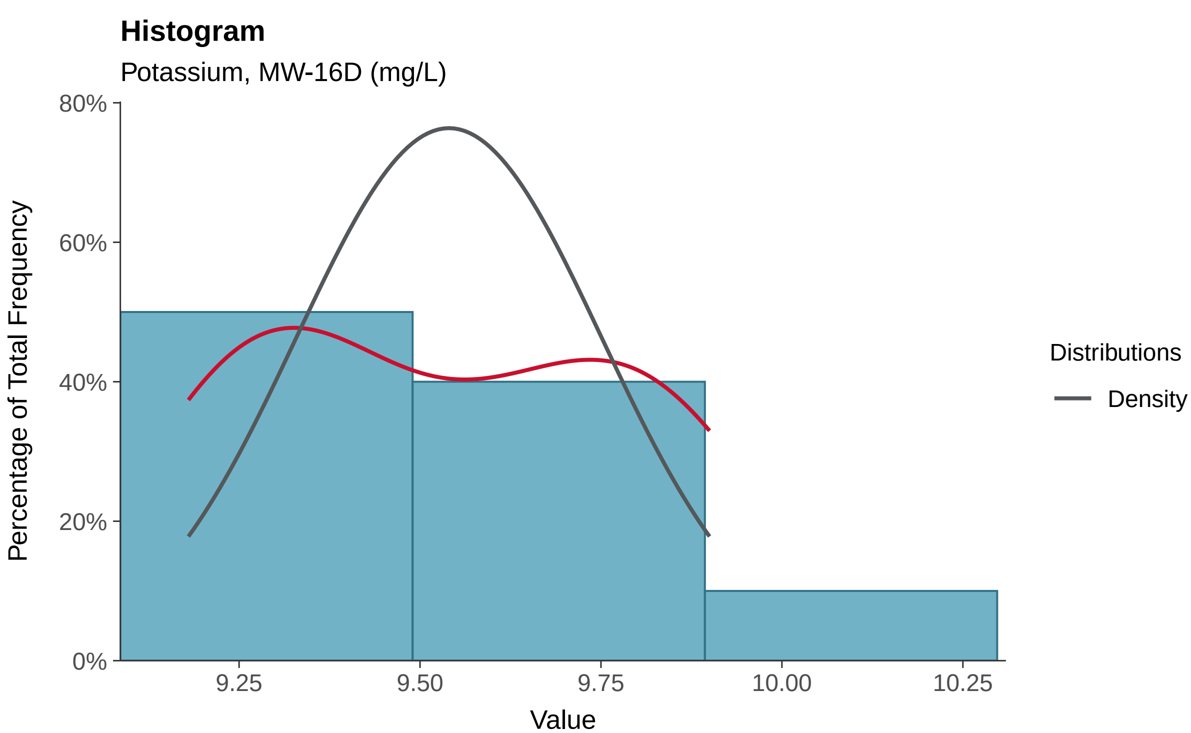
Magnesium, MW-16D (mg/L)

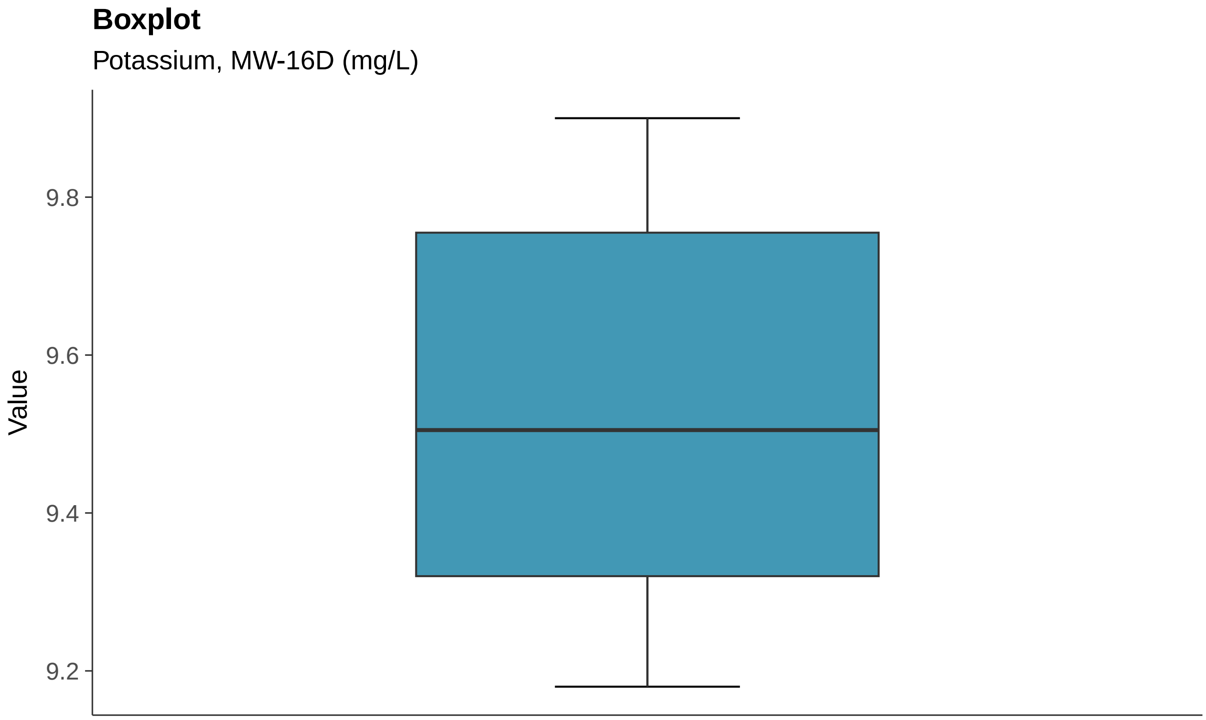


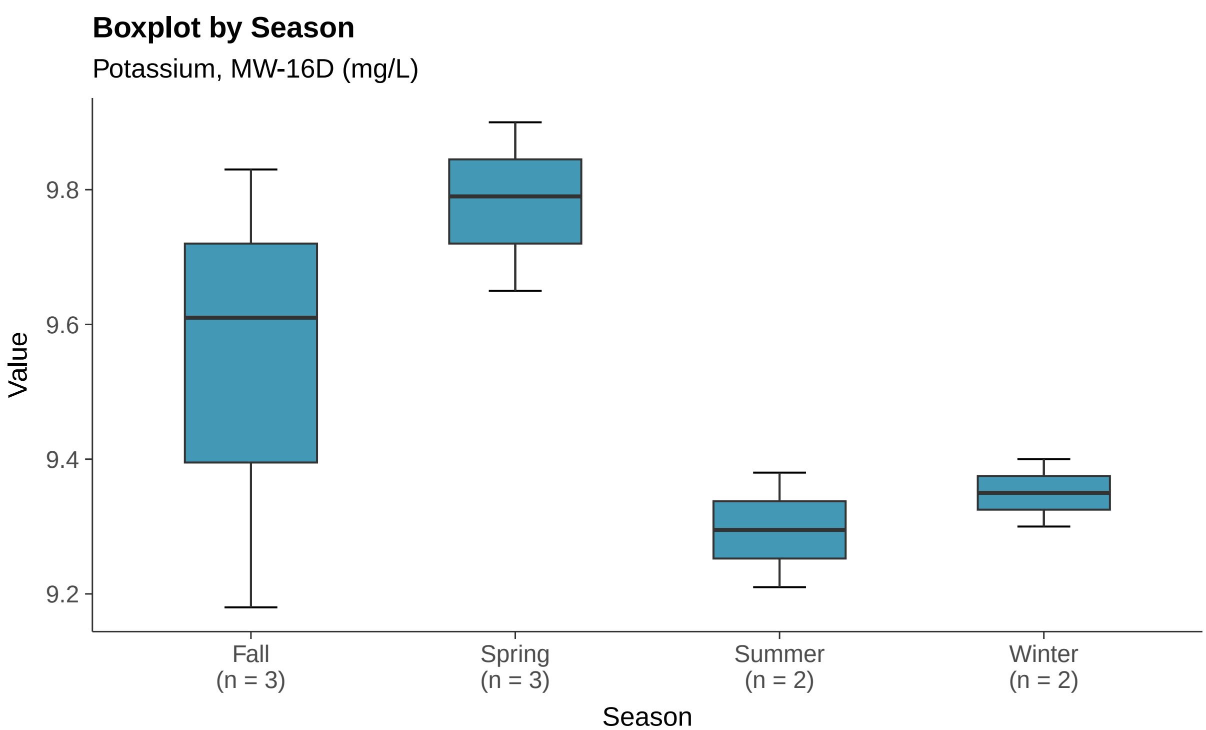
Other: Potassium, MW-16D

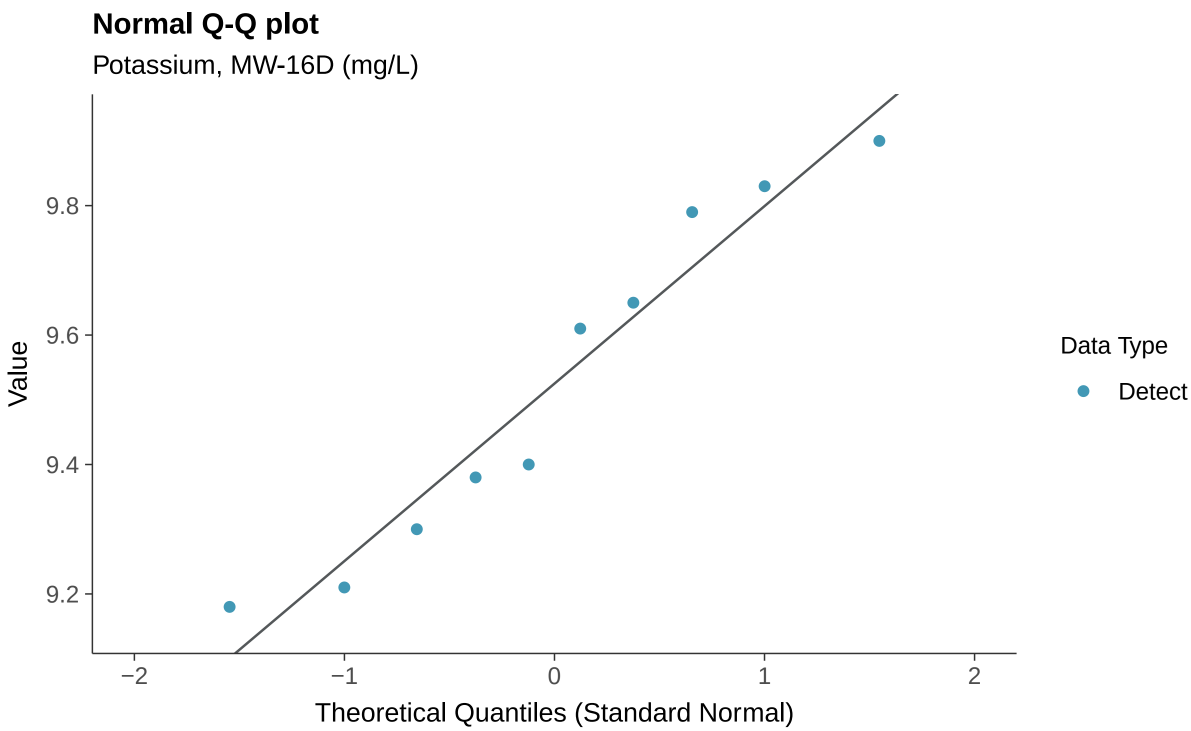
ID: 16D_4_34

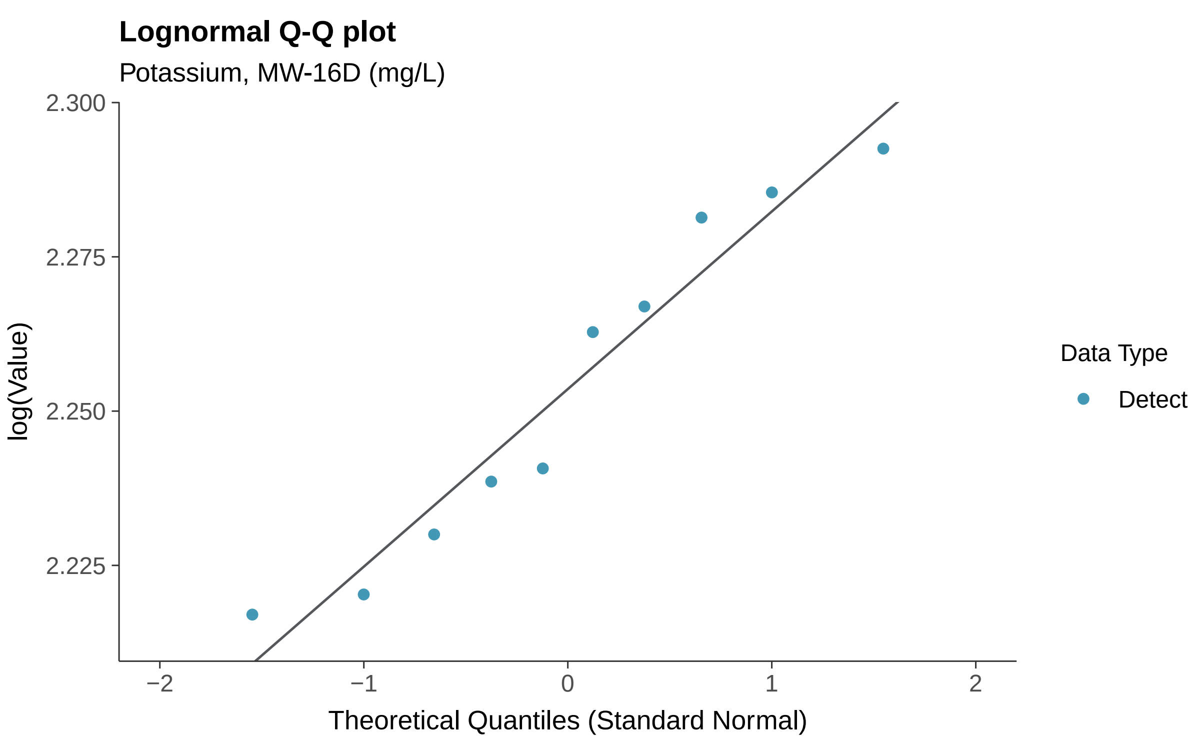


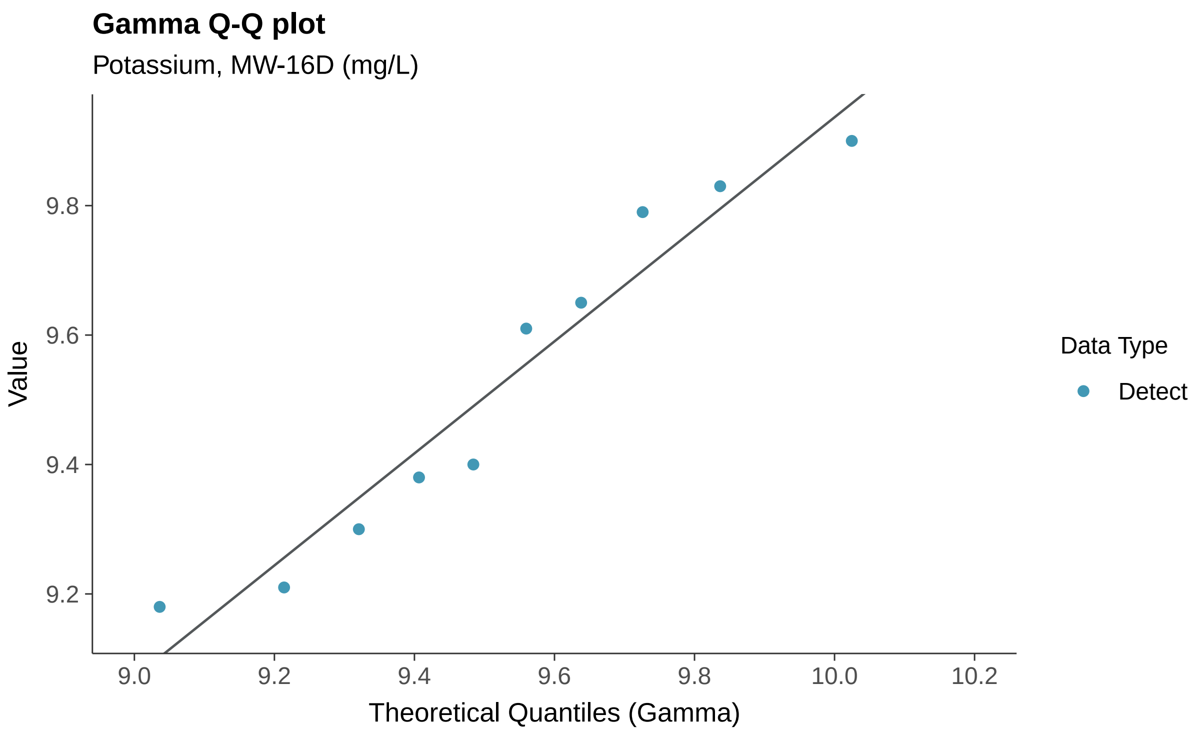


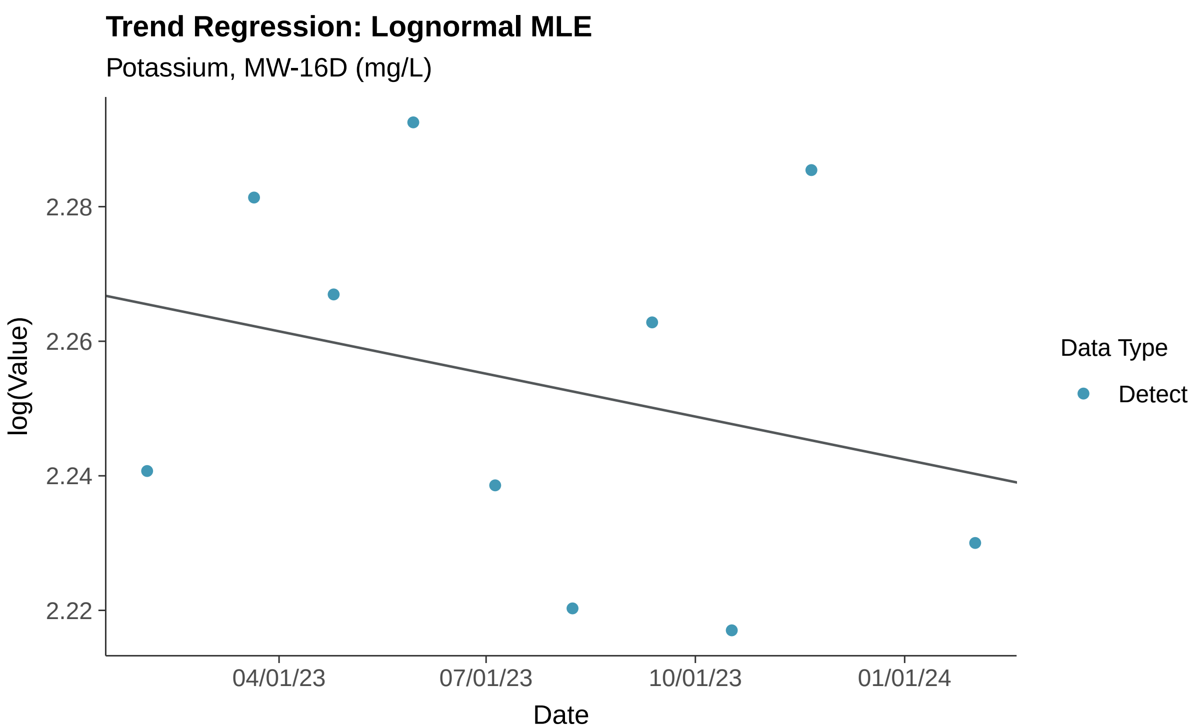

Boxplot
Potassium, MW-16D (mg/L)
Value
9.8
9.6
9.4
9.2


Boxplot by Season
Potassium, MW-16D (mg/L)
Value
9.8
9.6
9.4
9.2
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 2)
Winter
(n = 2)
Season


Normal Q-Q plot
Potassium, MW-16D (mg/L)
Value
9.8
9.6
9.4
9.2
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

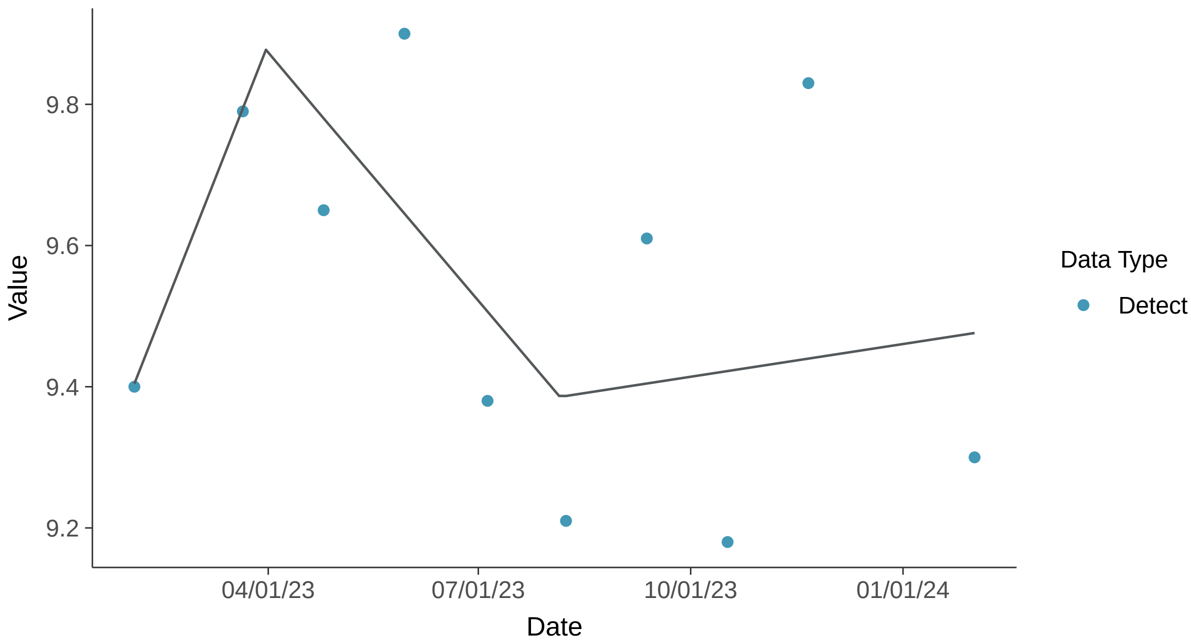

Lognormal Q-Q plot
Potassium, MW-16D (mg/L)
log(Value)
2.300
2.275
2.250
2.225
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Potassium, MW-16D (mg/L)
Value
9.2
9.4
9.6
9.8
9.0
9.2
9.4
9.6
9.8
10.0
10.2
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Potassium, MW-16D (mg/L)
log(Value)
2.22
2.24
2.26
2.28
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

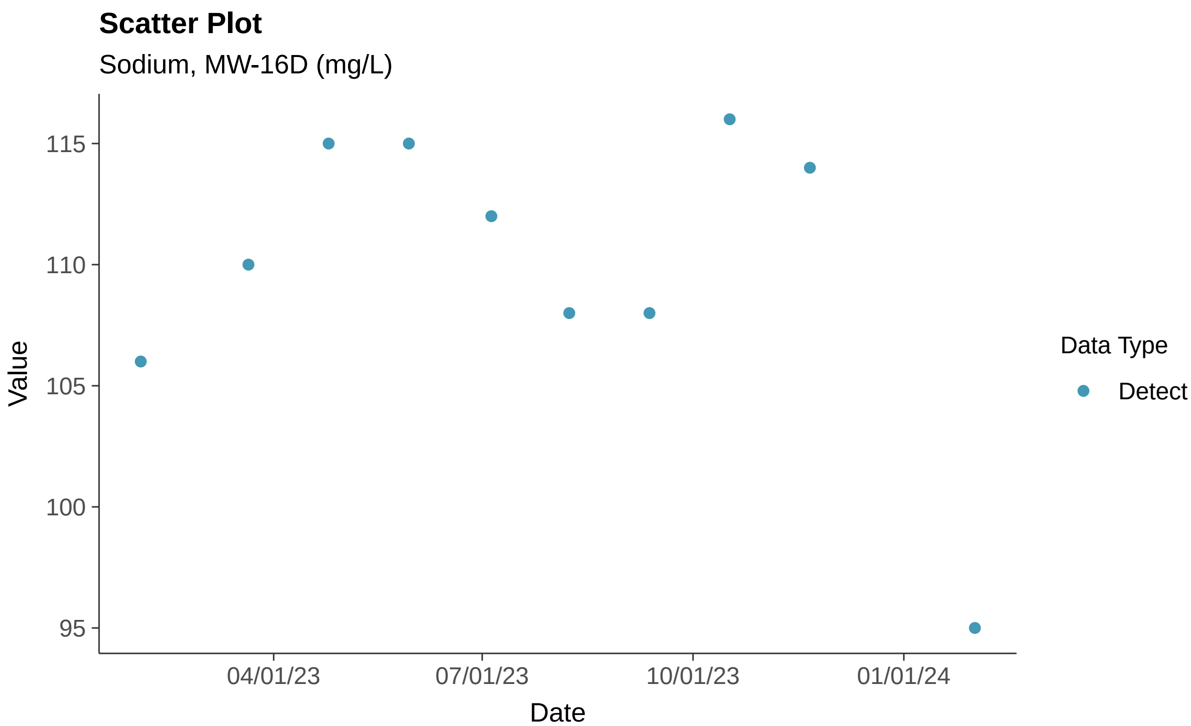
Trend Regression: Piecewise Linear-Linear-Linear

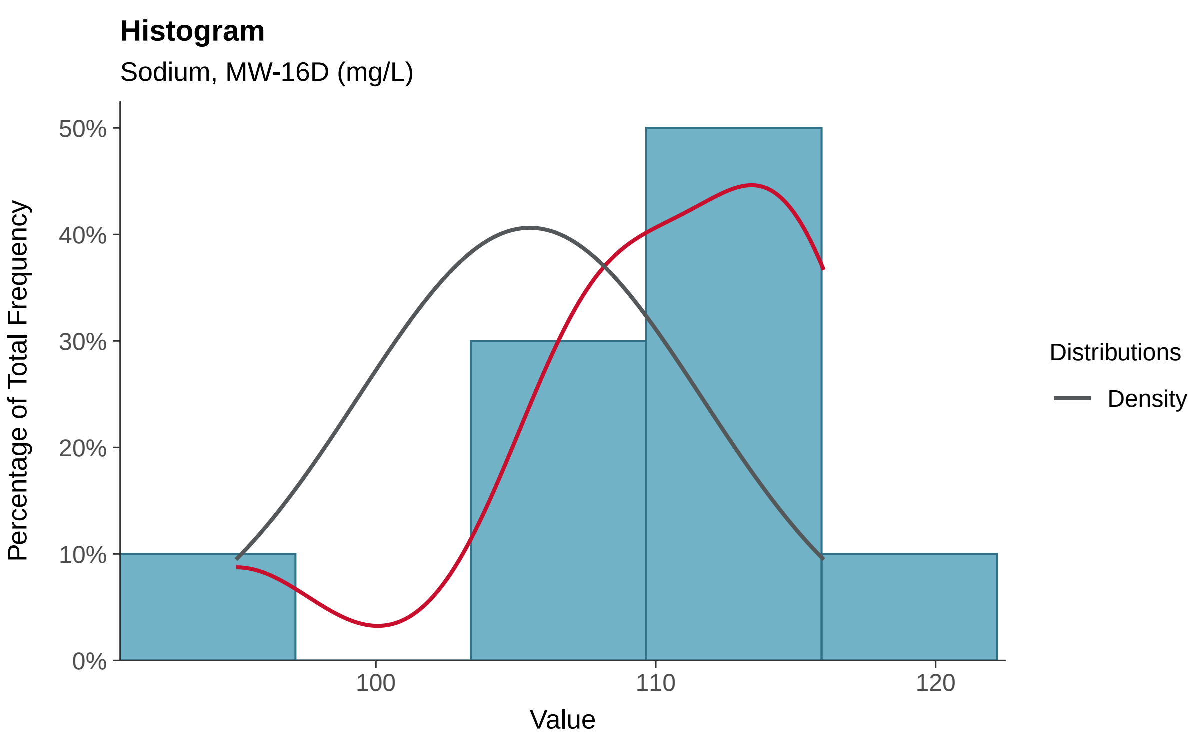
Potassium, MW-16D (mg/L)



Other: Sodium, MW-16D

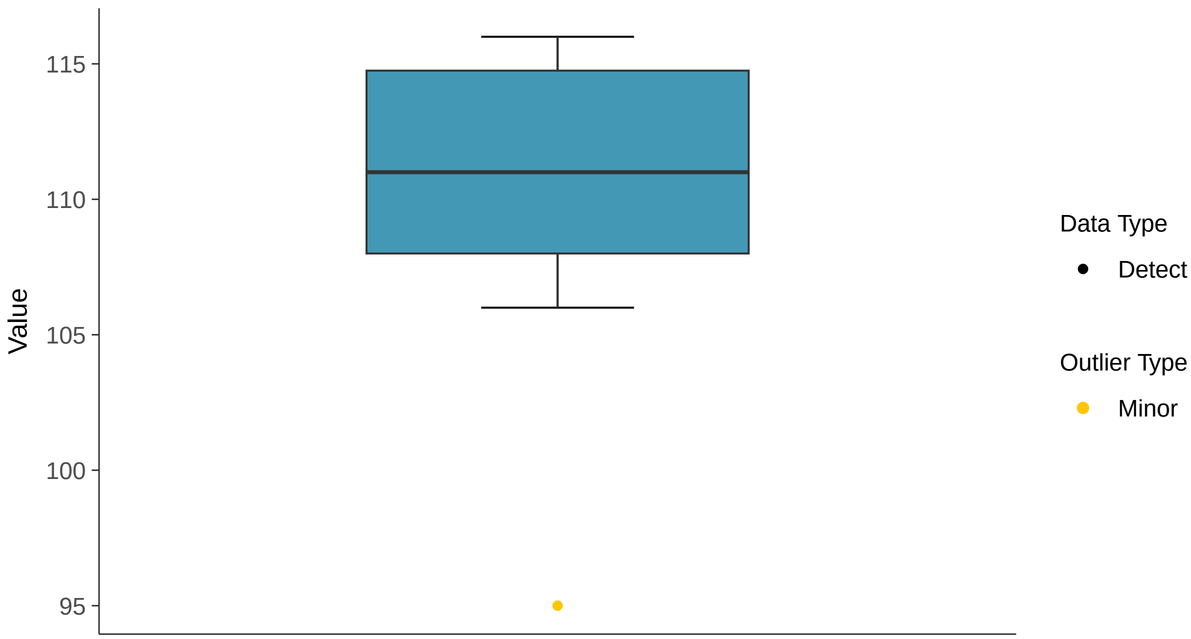
ID: 16D_4_35





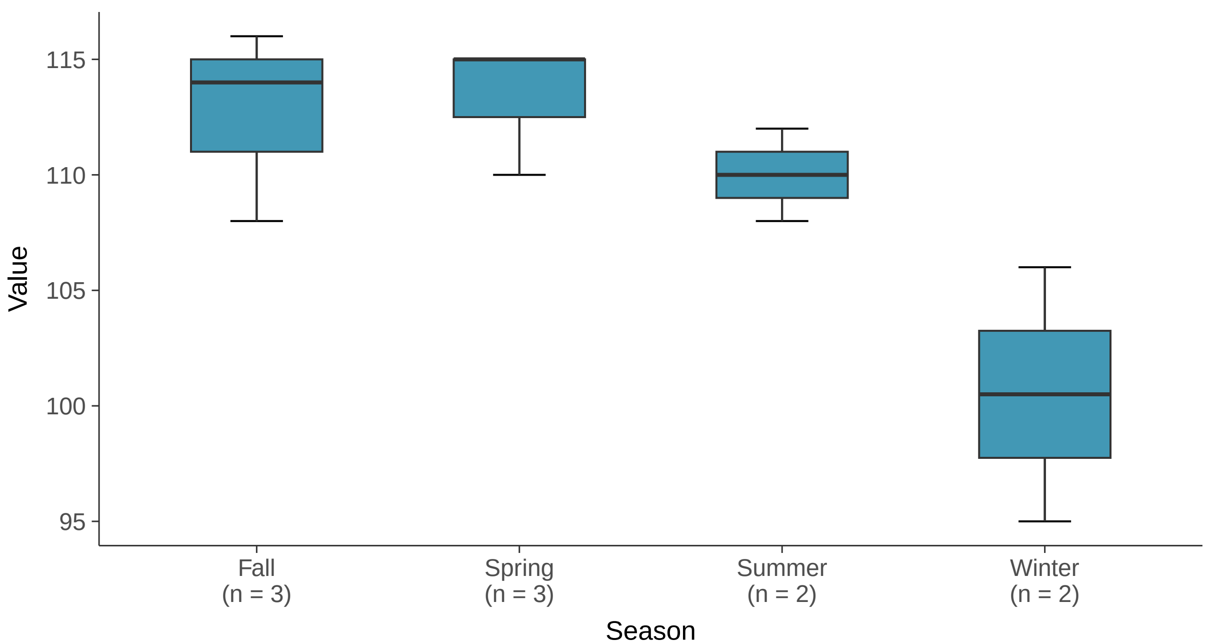
Boxplot

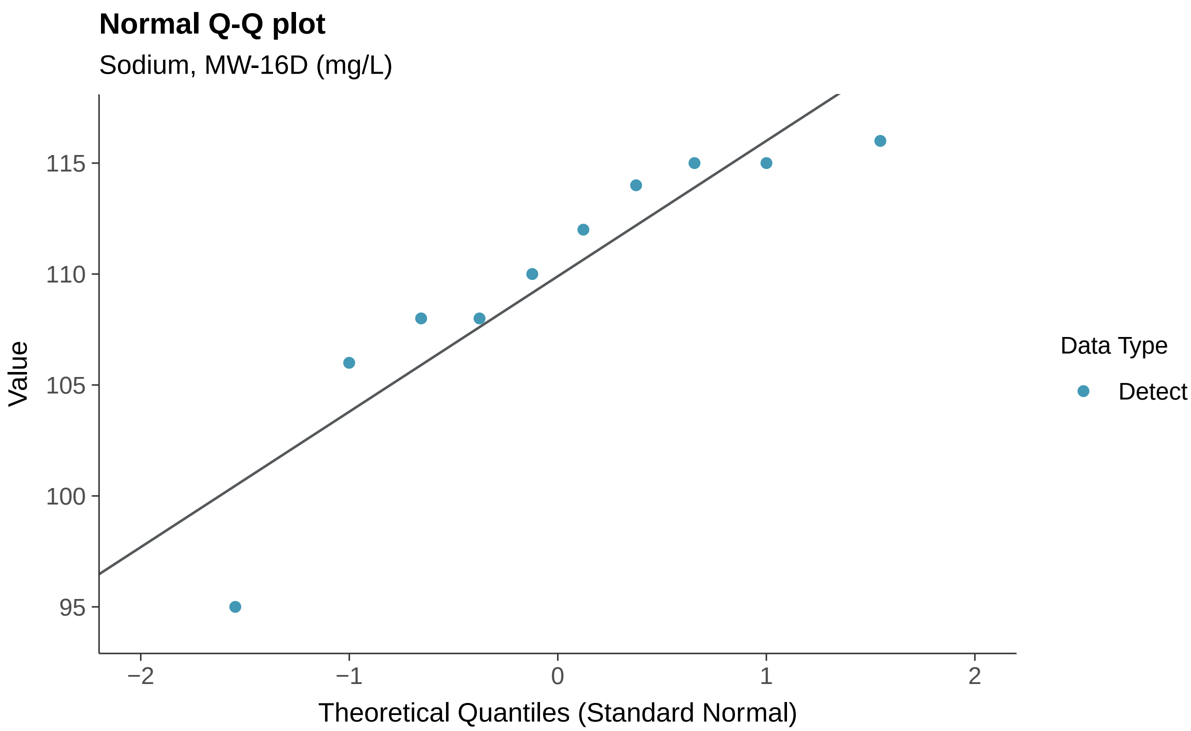
Sodium, MW-16D (mg/L)

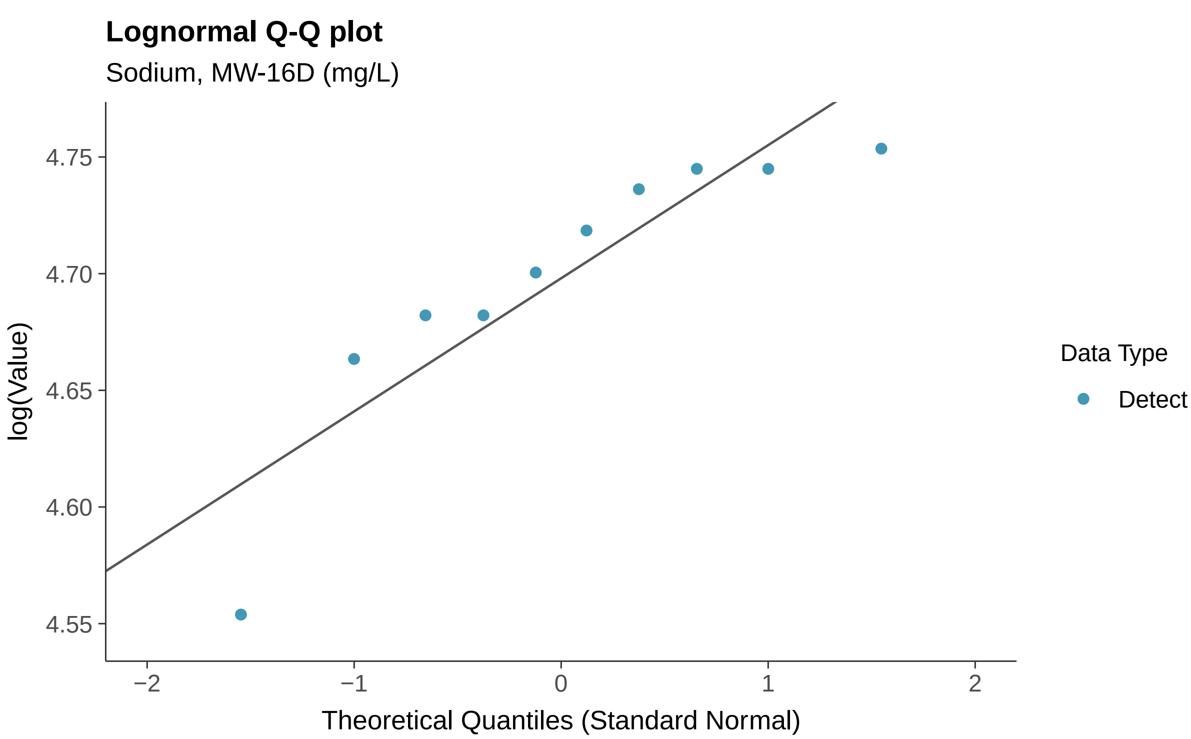


Boxplot by Season

Sodium, MW-16D (mg/L)

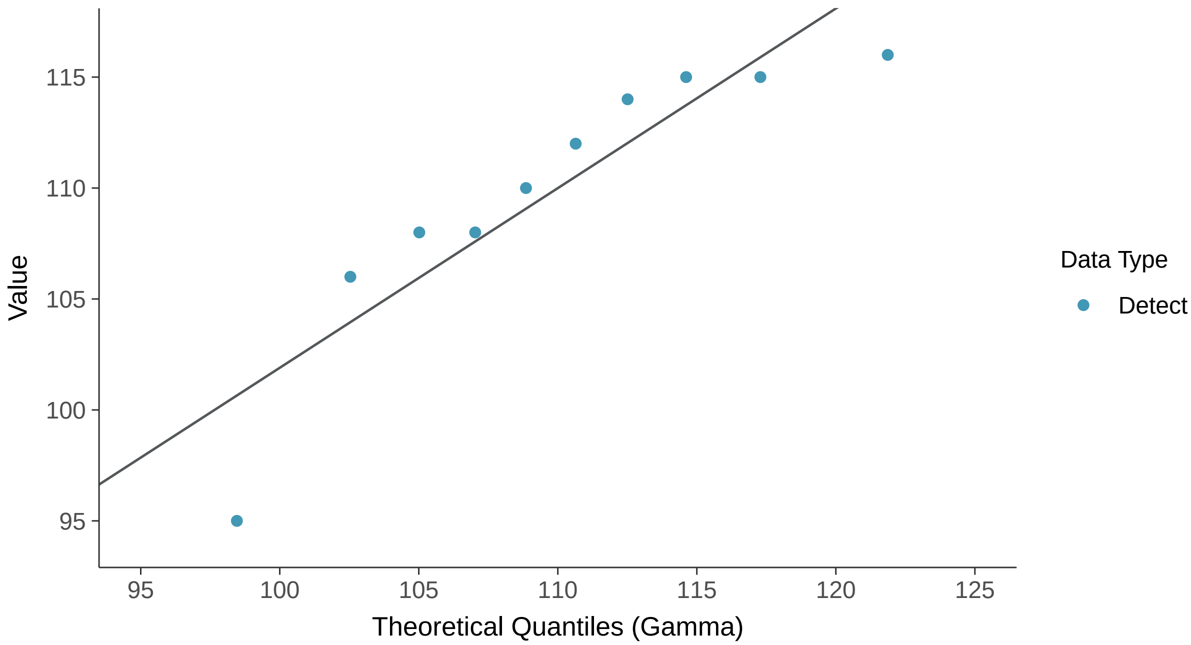



Normal Q-Q plot
Sodium, MW-16D (mg/L)
Value
115
110
105
100
95
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Sodium, MW-16D (mg/L)
log(Value)
4.75
4.70
4.65
4.60
4.55
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

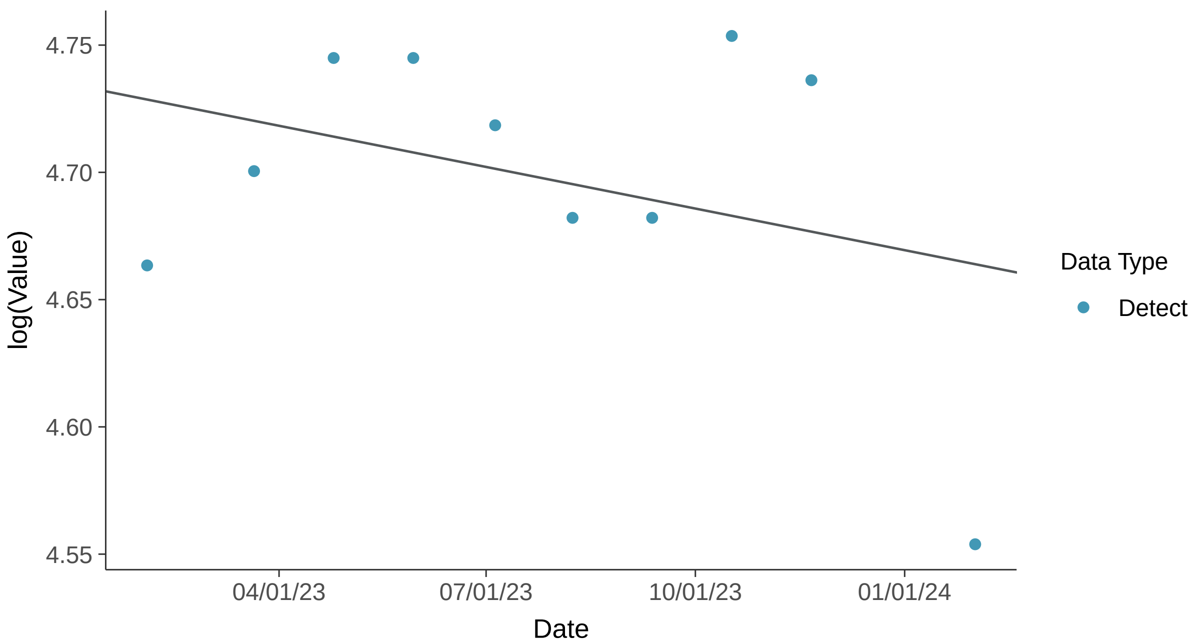
Gamma Q-Q plot

Sodium, MW-16D (mg/L)



Trend Regression: Lognormal MLE

Sodium, MW-16D (mg/L)

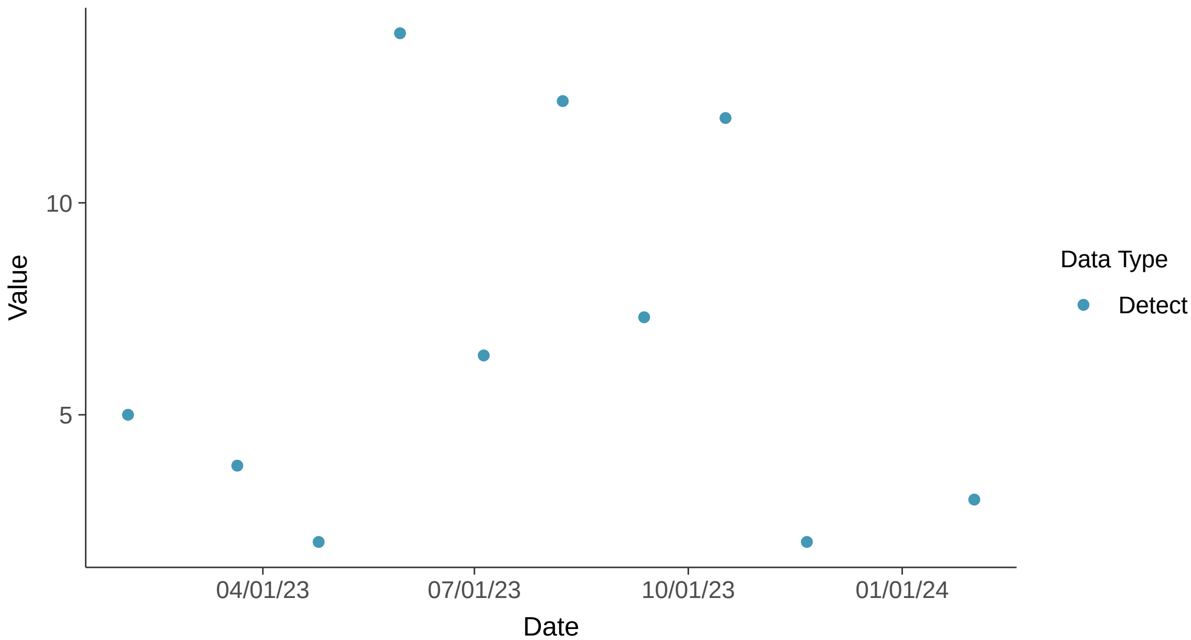


Other: Total Suspended Solids, MW-16D

ID: 16D_4_36

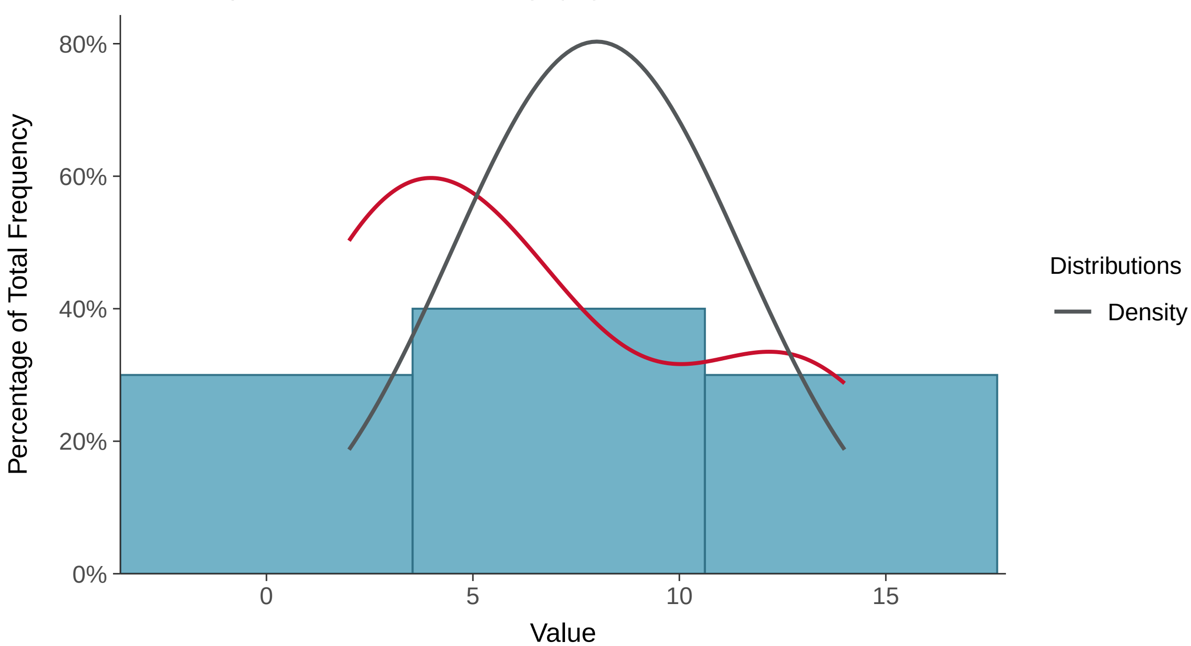
Scatter Plot

Total Suspended Solids, MW-16D (mg/L)



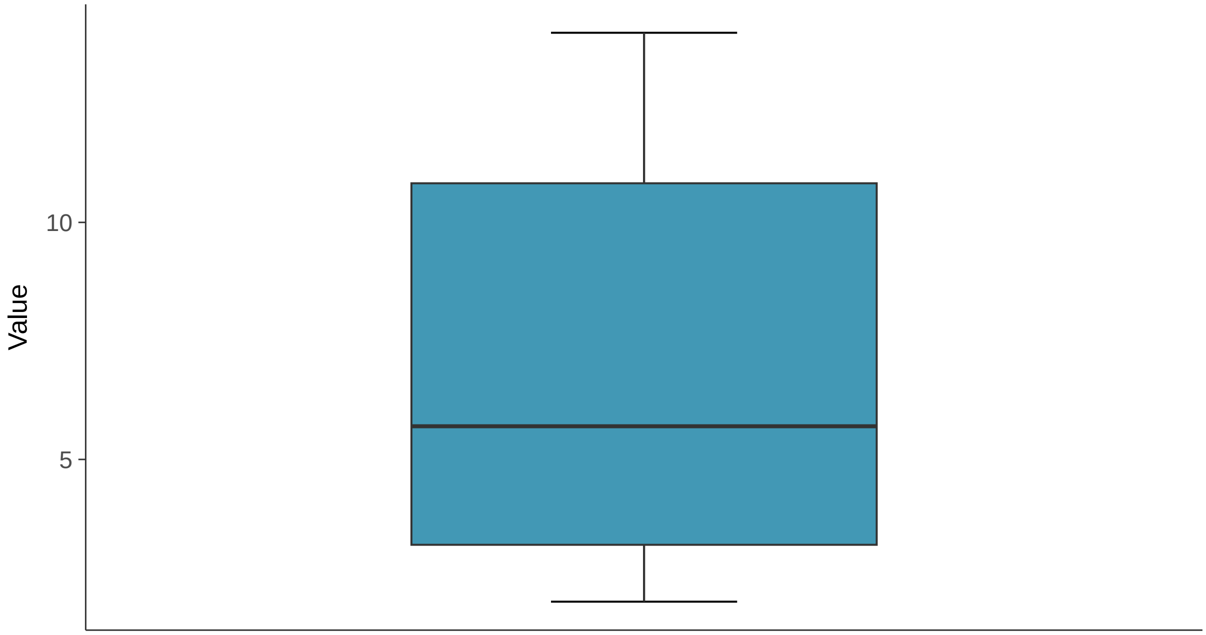
Histogram

Total Suspended Solids, MW-16D (mg/L)



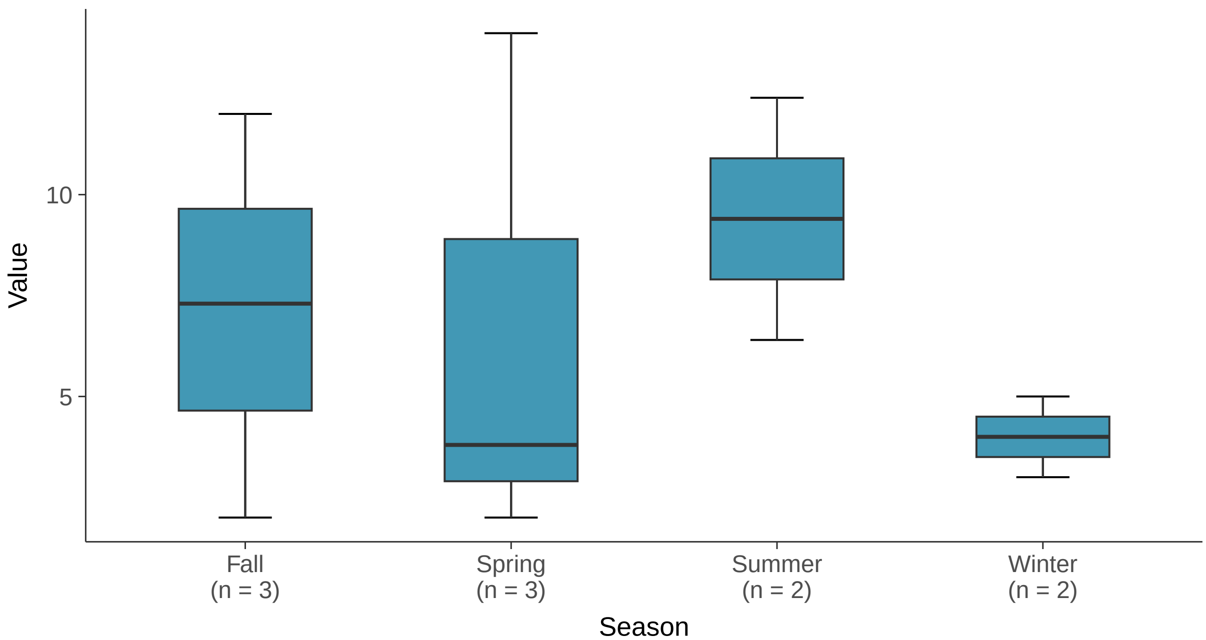
Boxplot

Total Suspended Solids, MW-16D (mg/L)



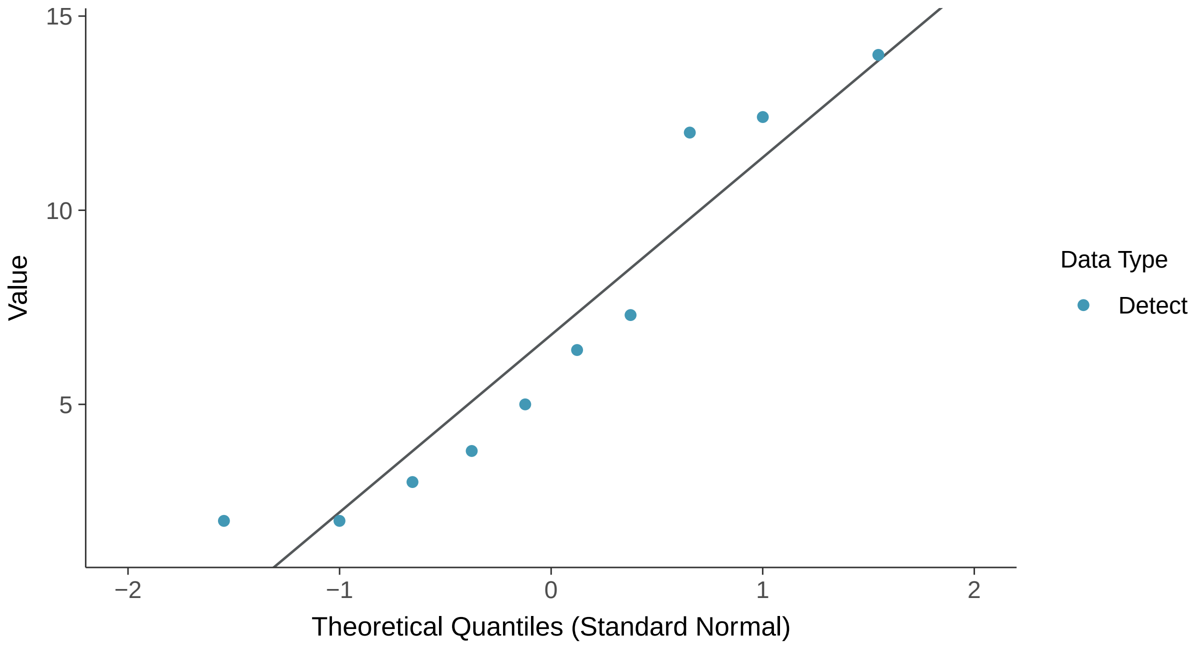
Boxplot by Season

Total Suspended Solids, MW-16D (mg/L)



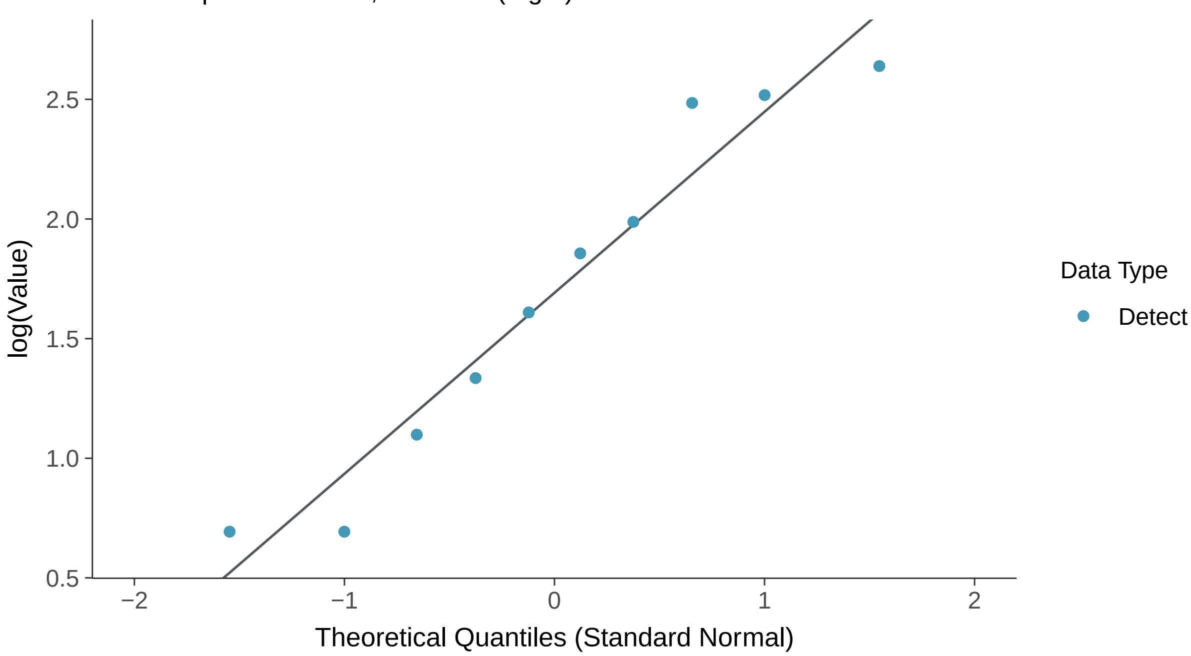
Normal Q-Q plot

Total Suspended Solids, MW-16D (mg/L)



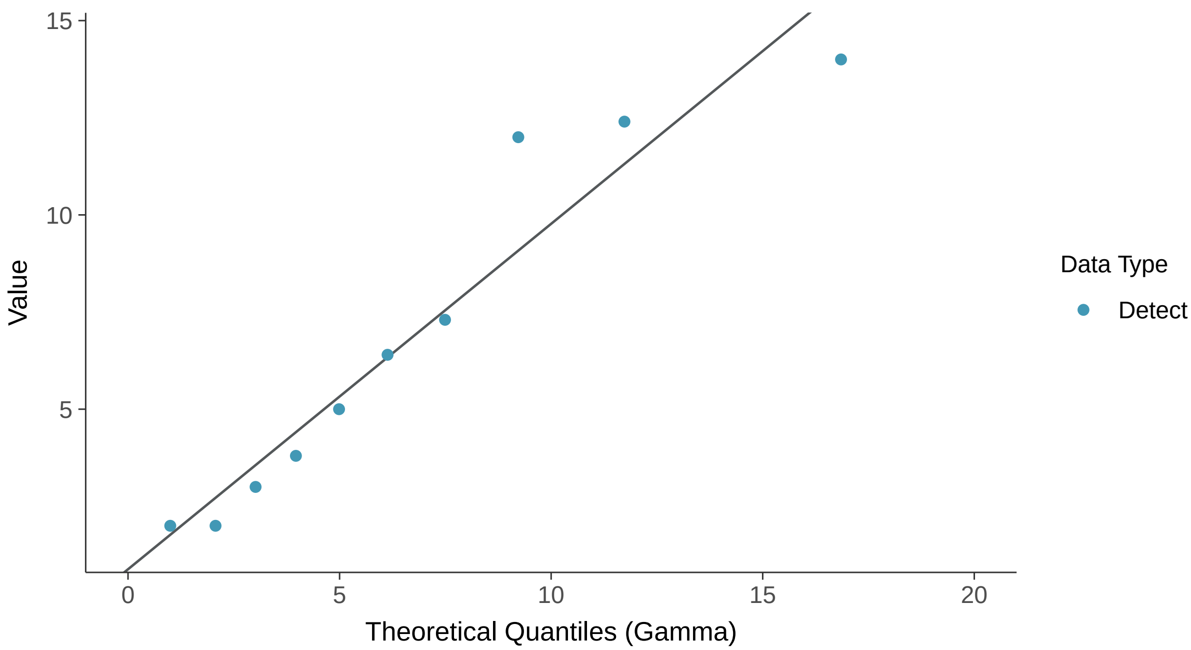
Lognormal Q-Q plot

Total Suspended Solids, MW-16D (mg/L)



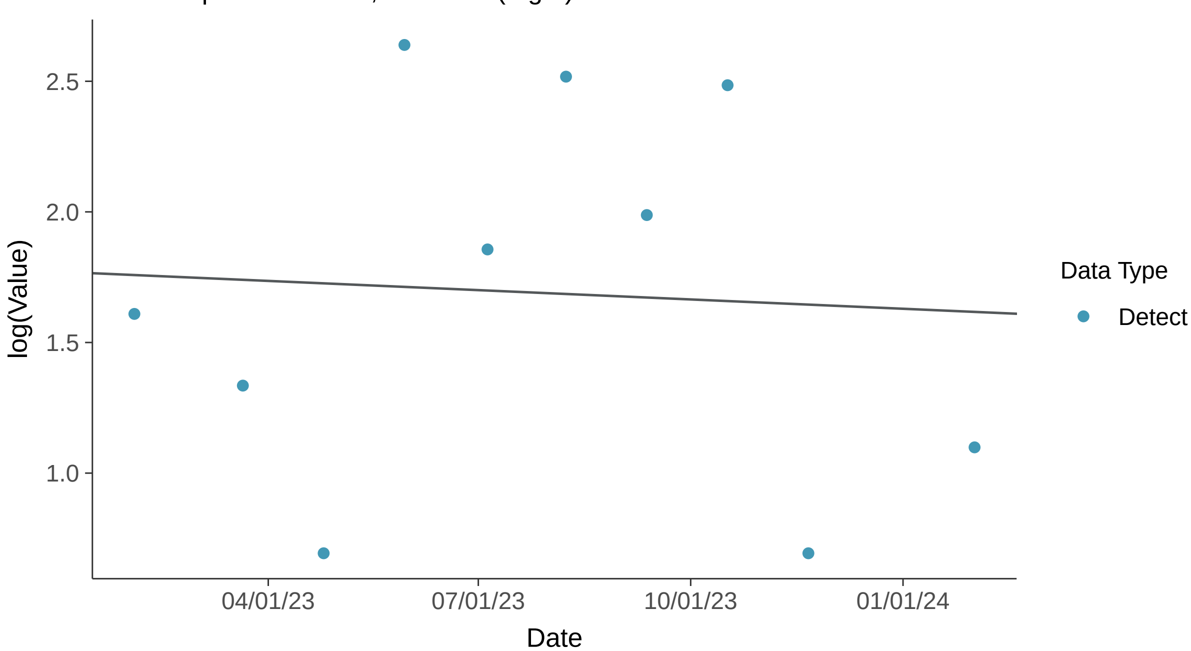
Gamma Q-Q plot

Total Suspended Solids, MW-16D (mg/L)



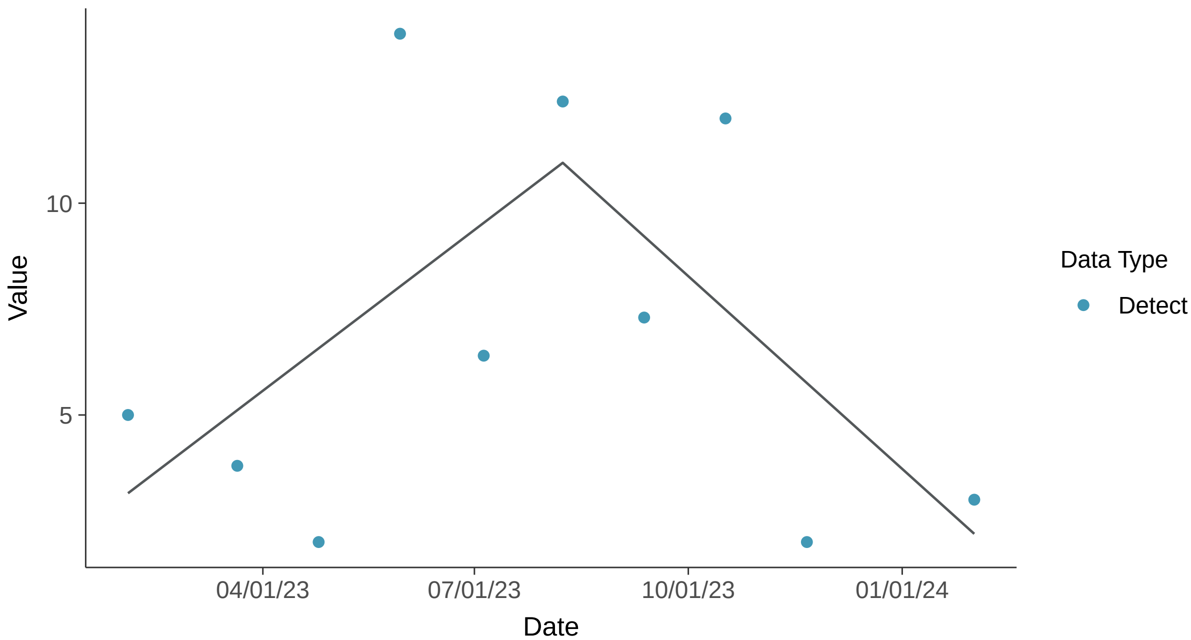
Trend Regression: Lognormal MLE

Total Suspended Solids, MW-16D (mg/L)



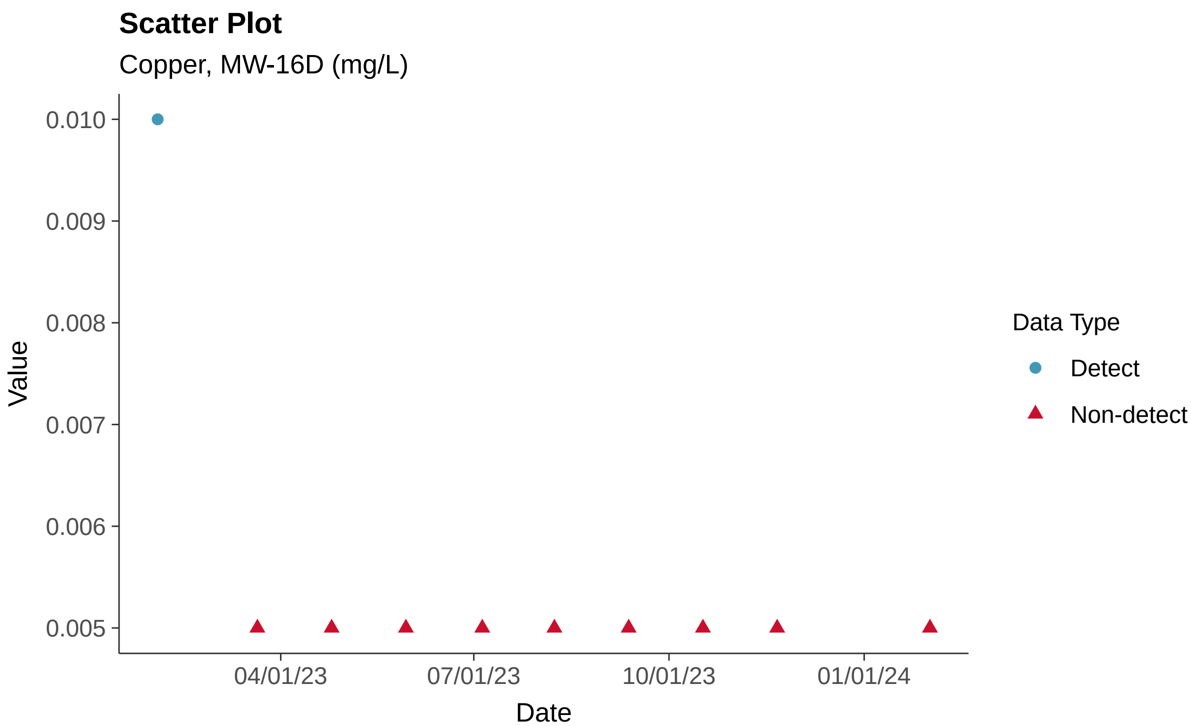
Trend Regression: Piecewise Linear-Linear

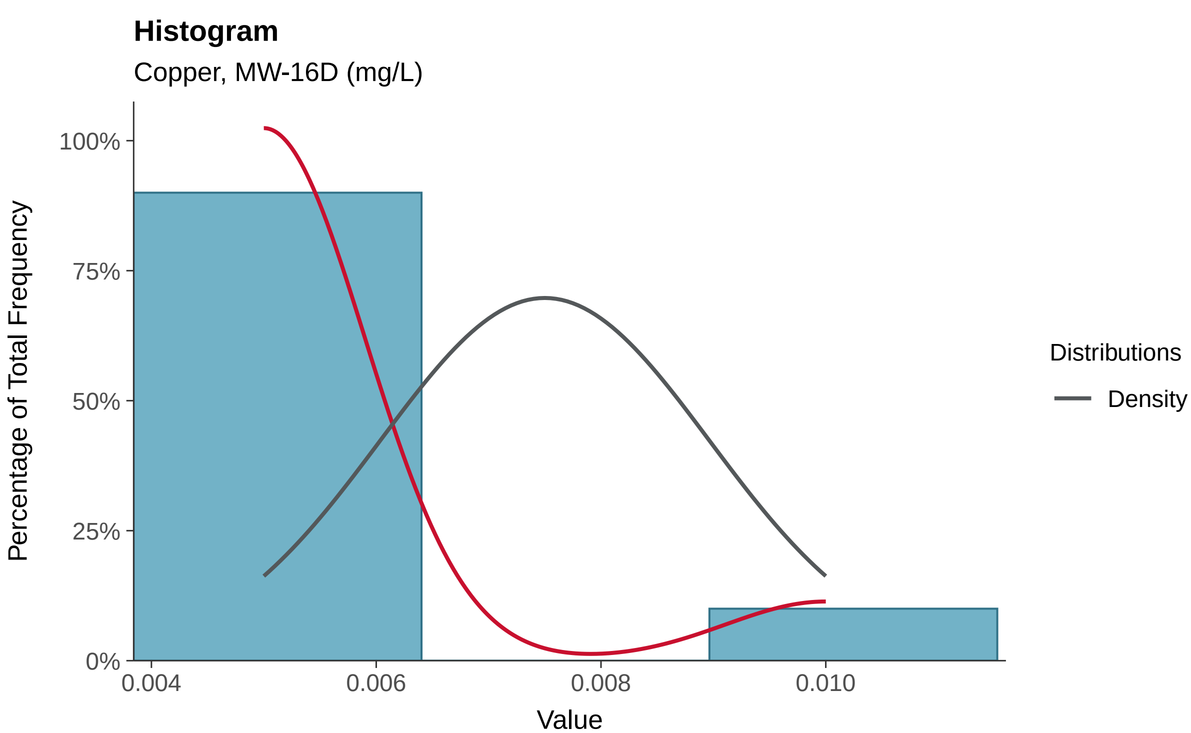
Total Suspended Solids, MW-16D (mg/L)



Part 115: Copper, MW-16D

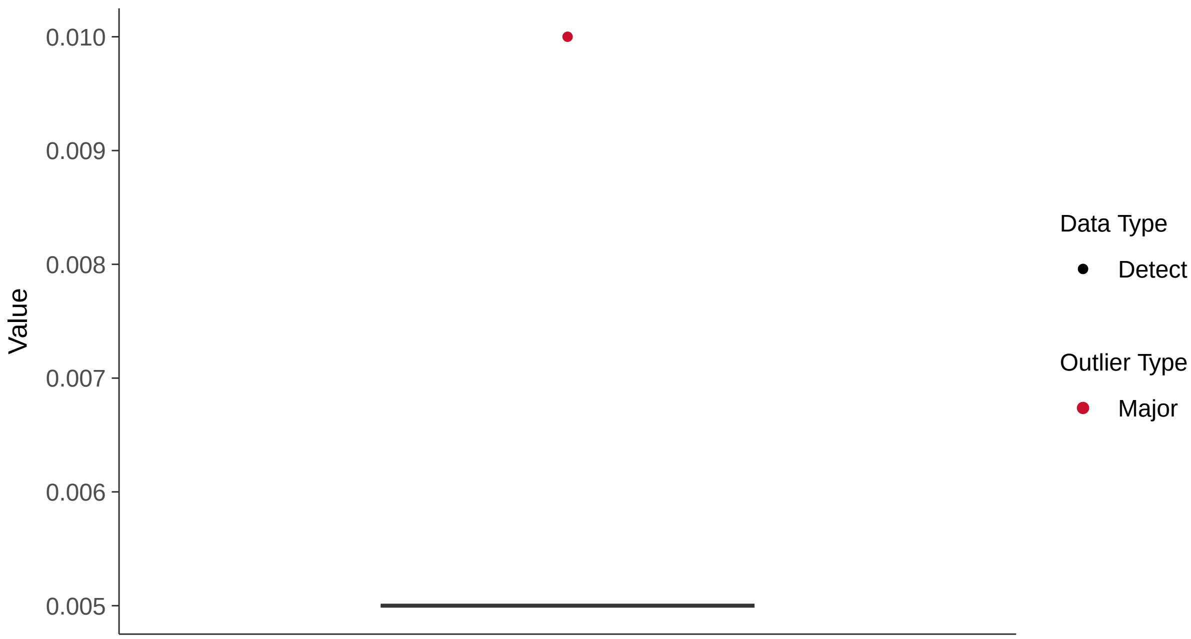
ID: 16D_5_37





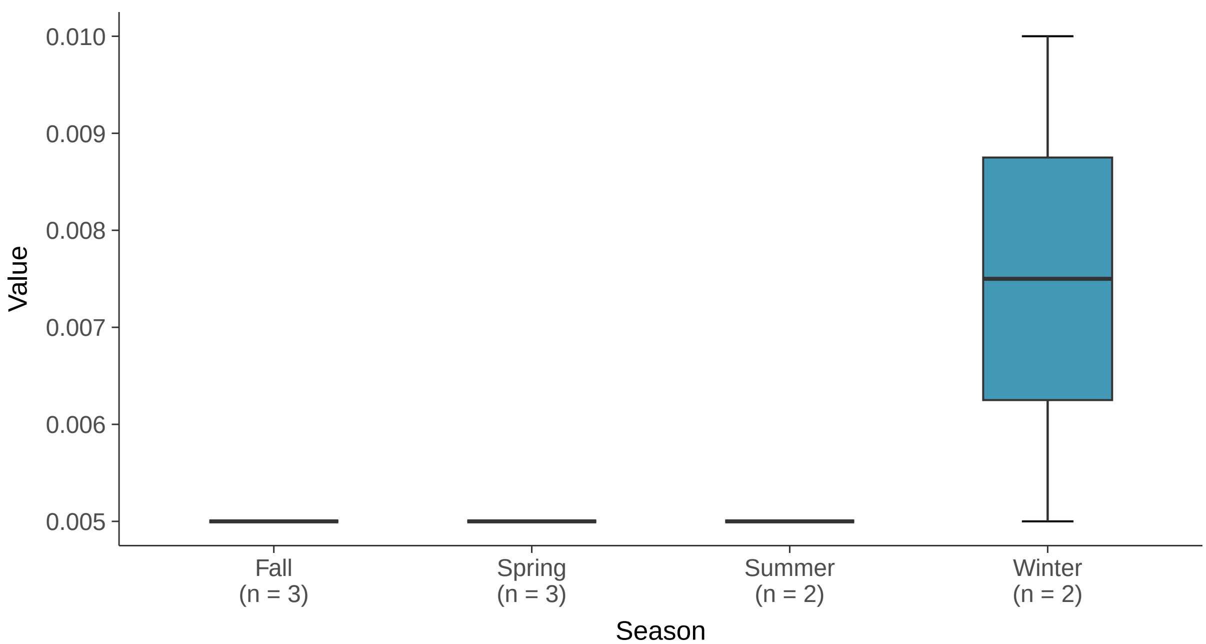
Boxplot

Copper, MW-16D (mg/L)



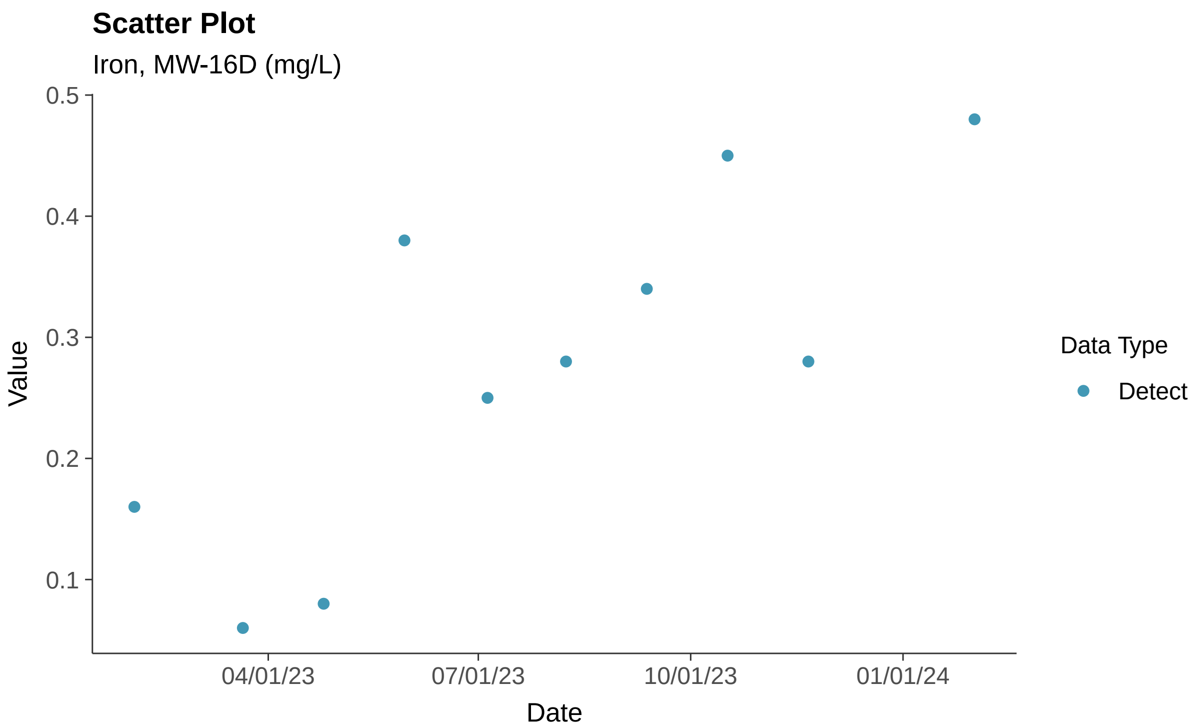
Boxplot by Season

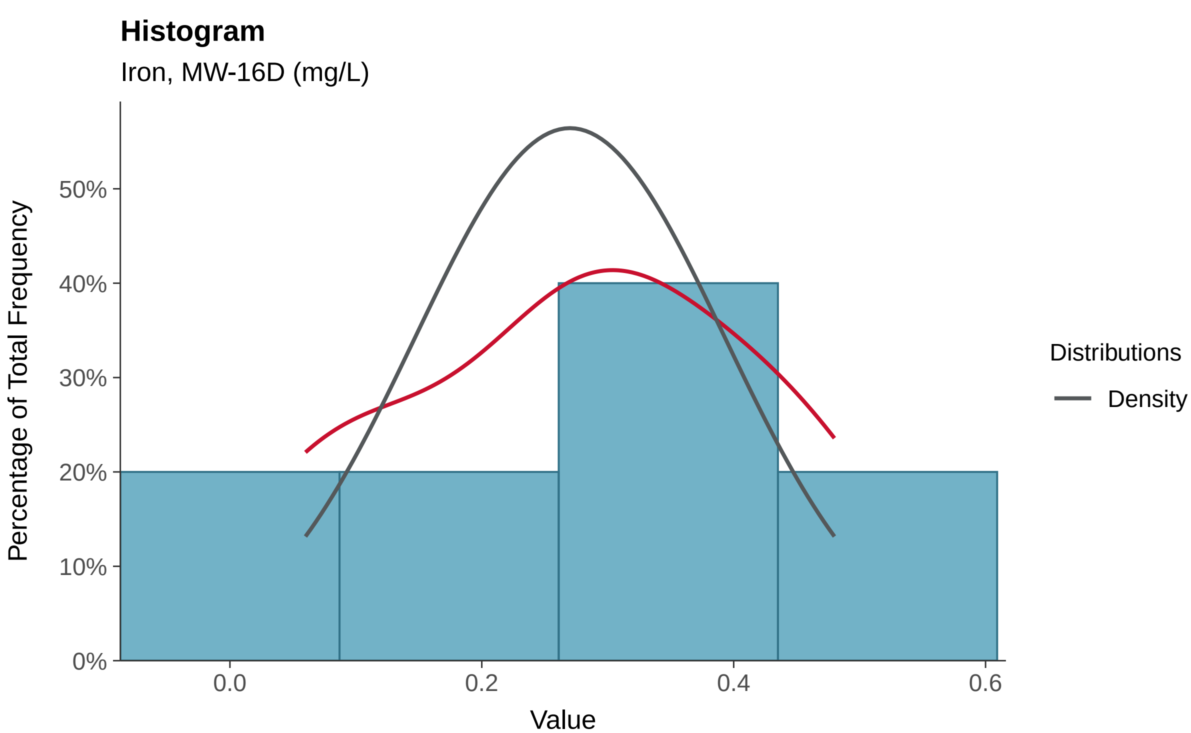
Copper, MW-16D (mg/L)



Part 115: Iron, MW-16D

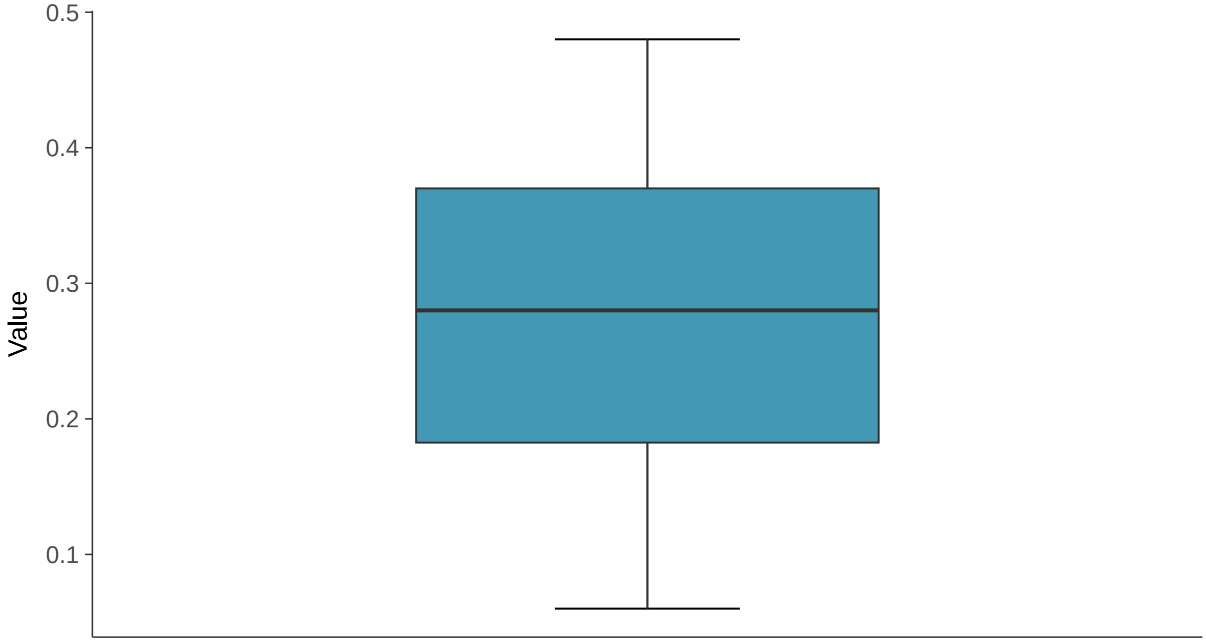
ID: 16D_5_38





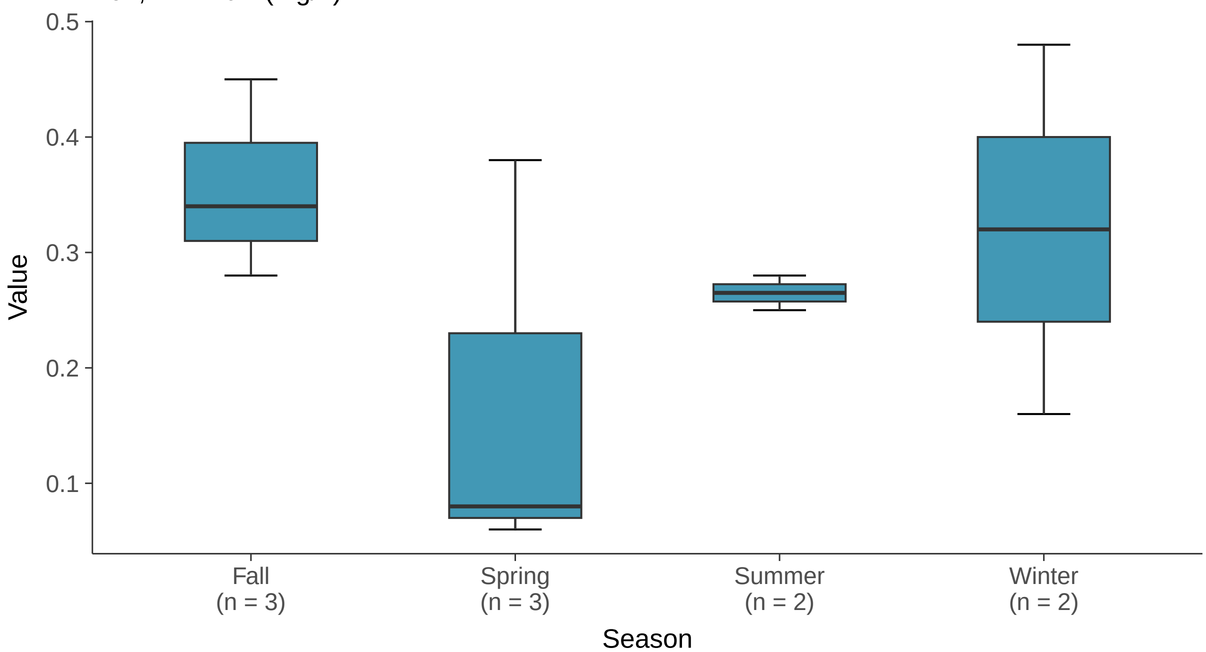
Boxplot

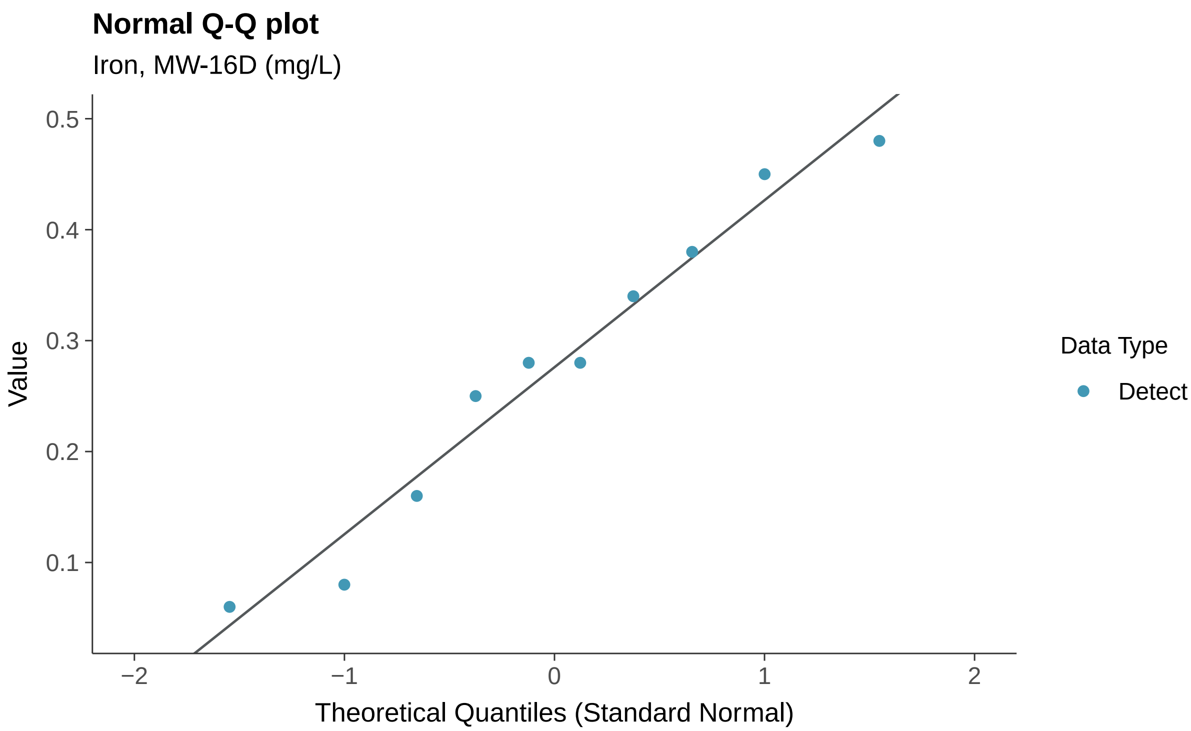
Iron, MW-16D (mg/L)

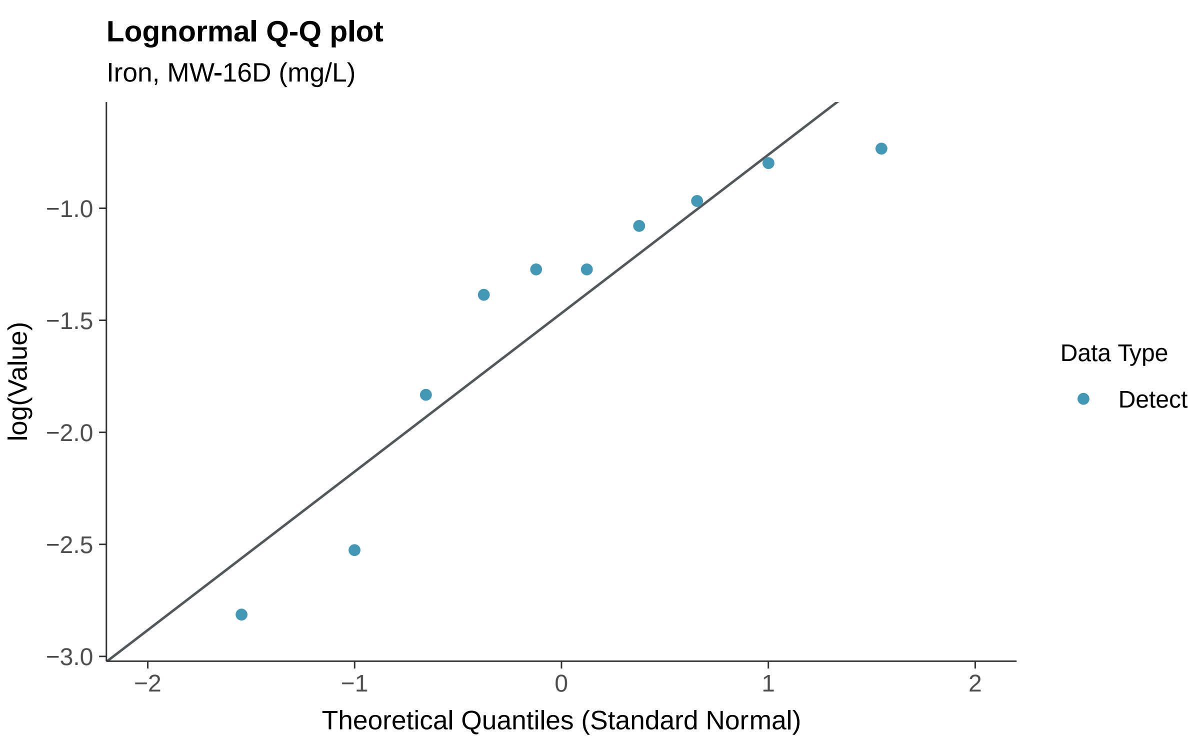


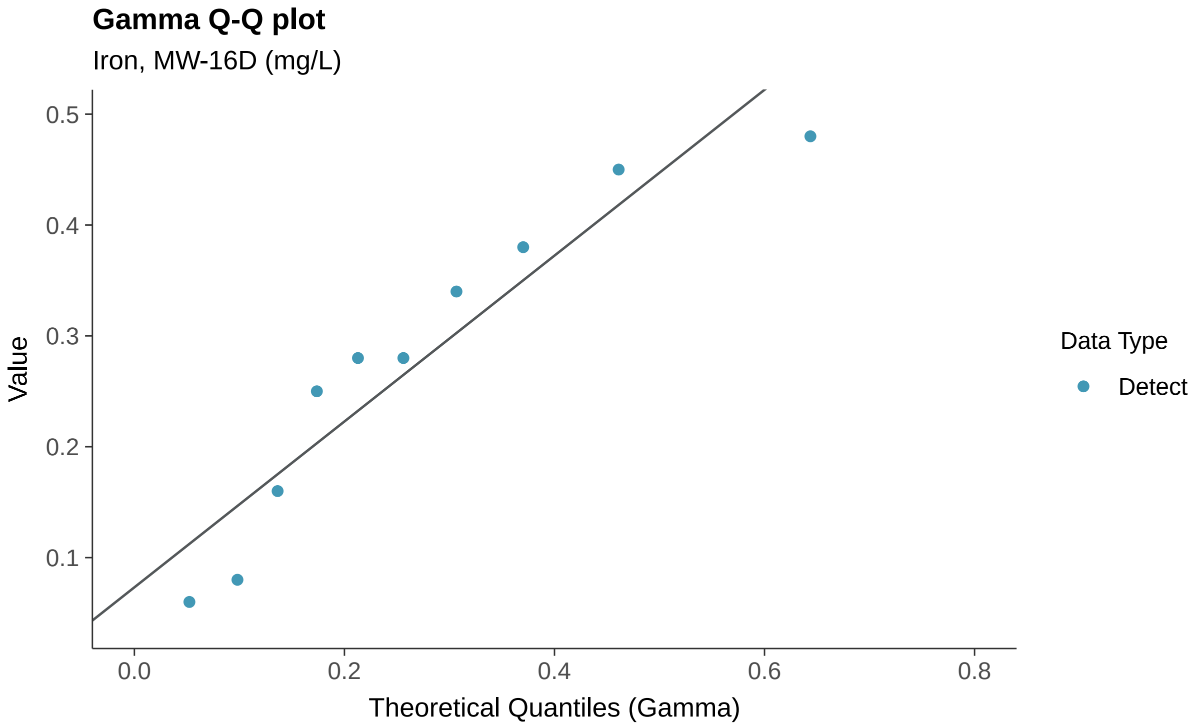
Boxplot by Season

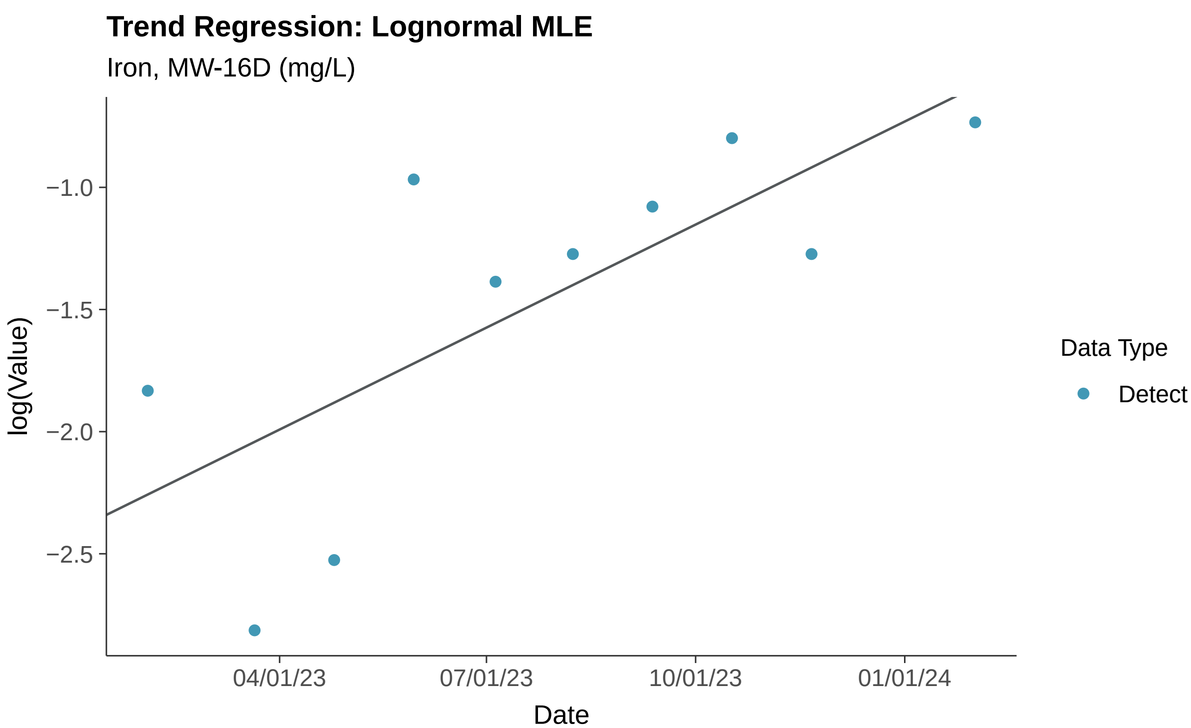
Iron, MW-16D (mg/L)




Normal Q-Q plot
Iron, MW-16D (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Iron, MW-16D (mg/L)
log(Value)
−1.0
−1.5
−2.0
−2.5
−3.0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Iron, MW-16D (mg/L)
Value
0.5
0.4
0.3
0.2
0.1
0.0
0.2
0.4
0.6
0.8
Theoretical Quantiles (Gamma)
Data Type
Detect

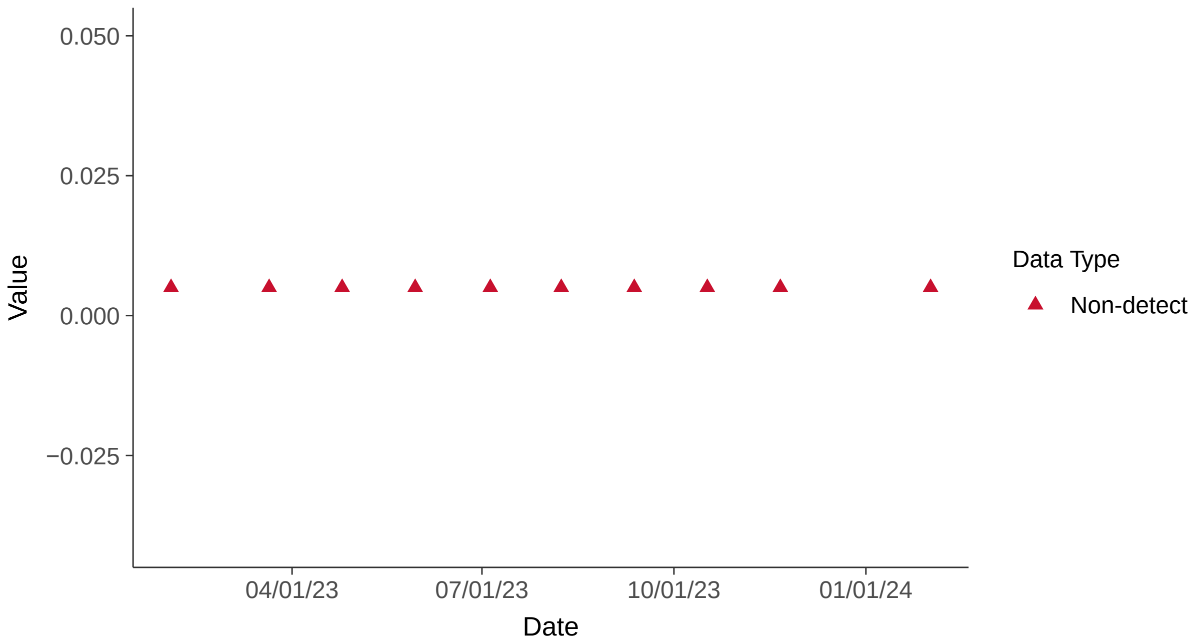

Trend Regression: Lognormal MLE
Iron, MW-16D (mg/L)
log(Value)
−1.0
−1.5
−2.0
−2.5
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

Part 115: Nickel, MW-16D

ID: 16D_5_39

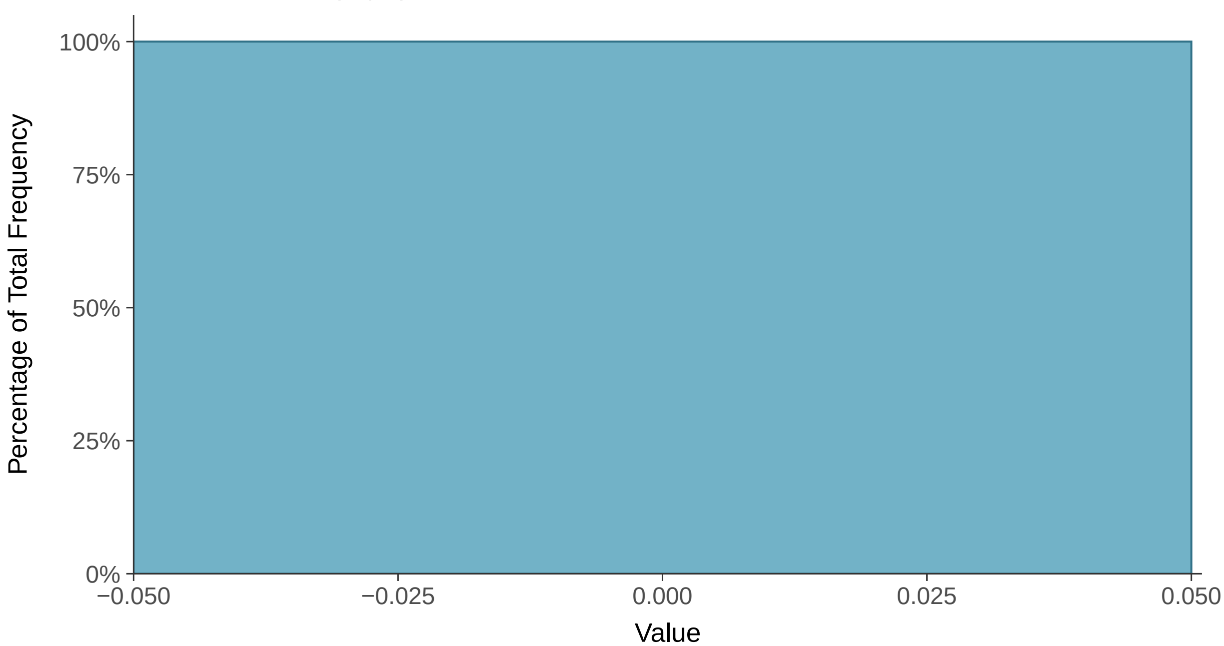
Scatter Plot

Nickel, MW-16D (mg/L)



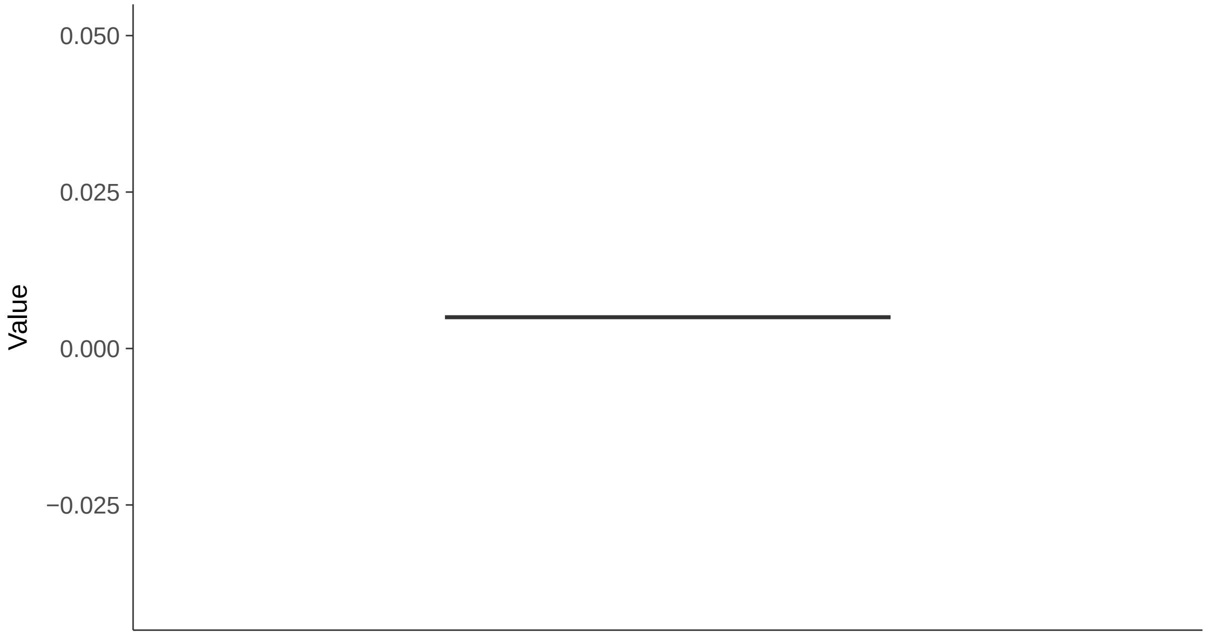
Histogram

Nickel, MW-16D (mg/L)



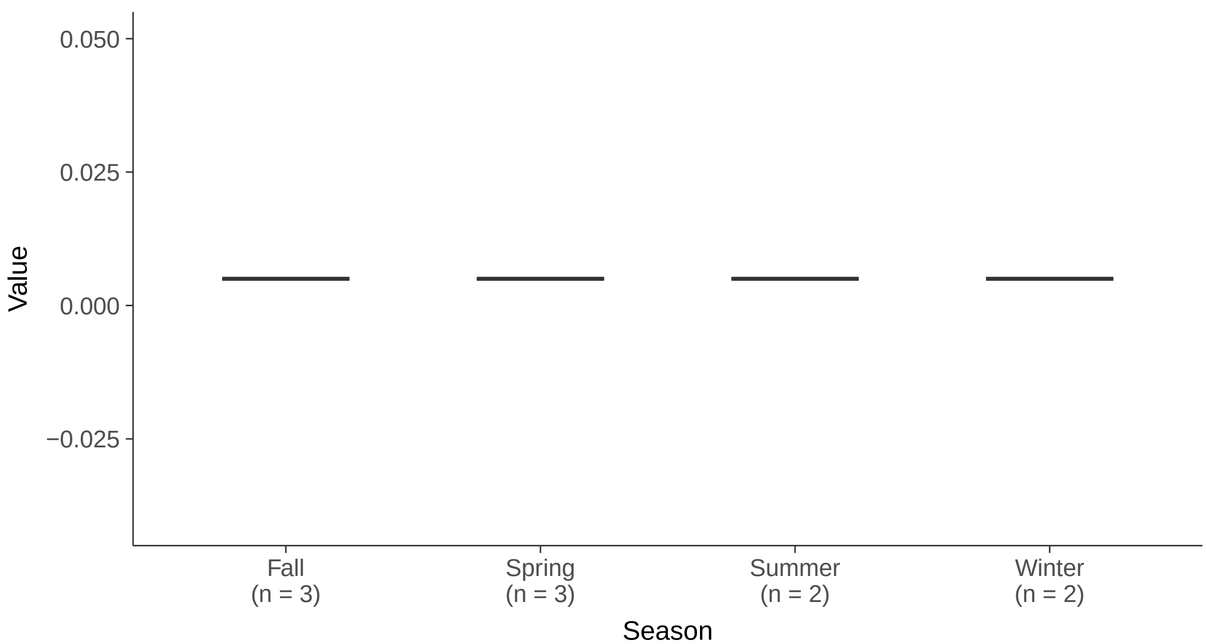
Boxplot

Nickel, MW-16D (mg/L)



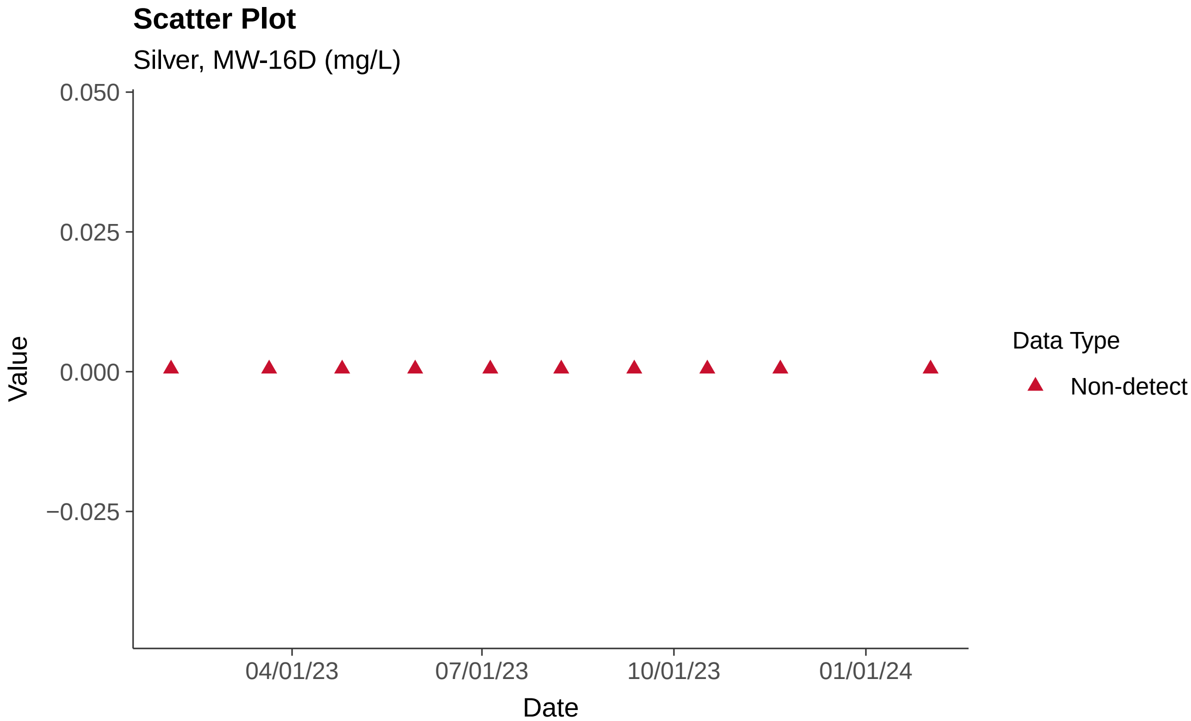
Boxplot by Season

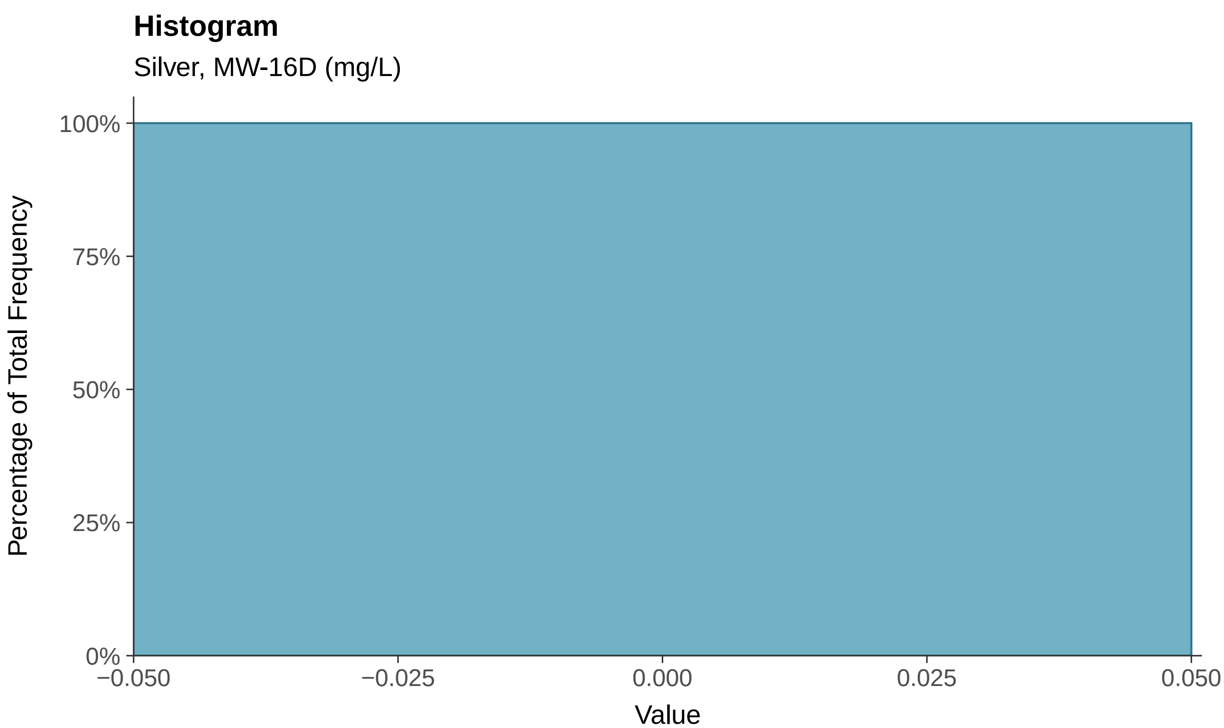
Nickel, MW-16D (mg/L)



Part 115: Silver, MW-16D

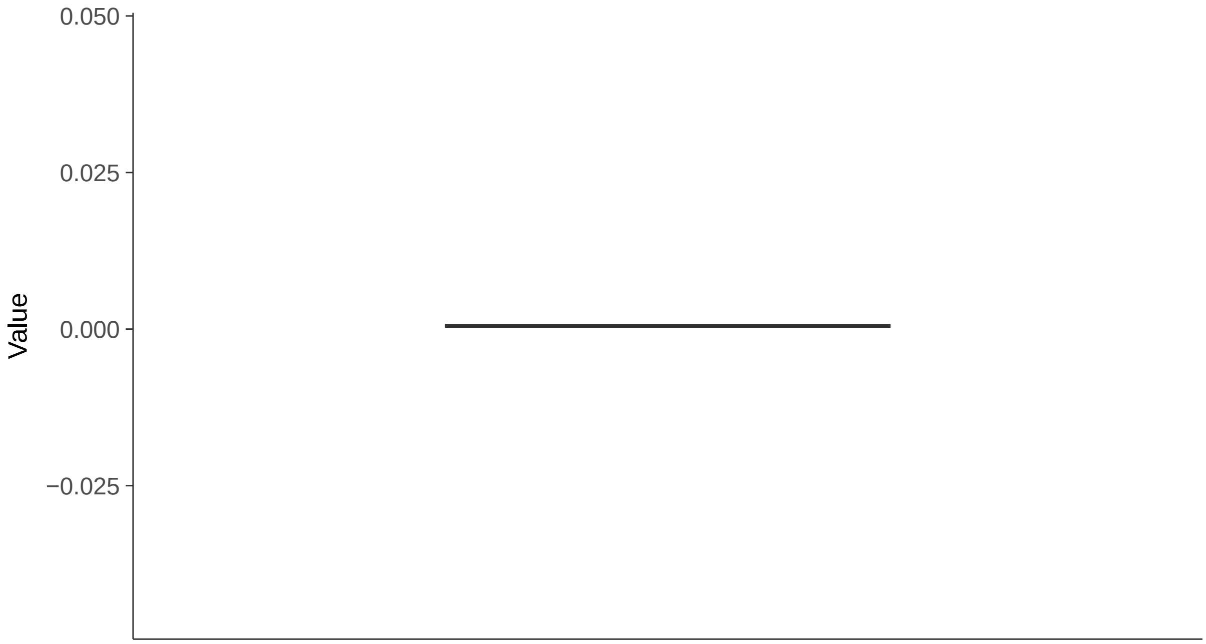
ID: 16D_5_40





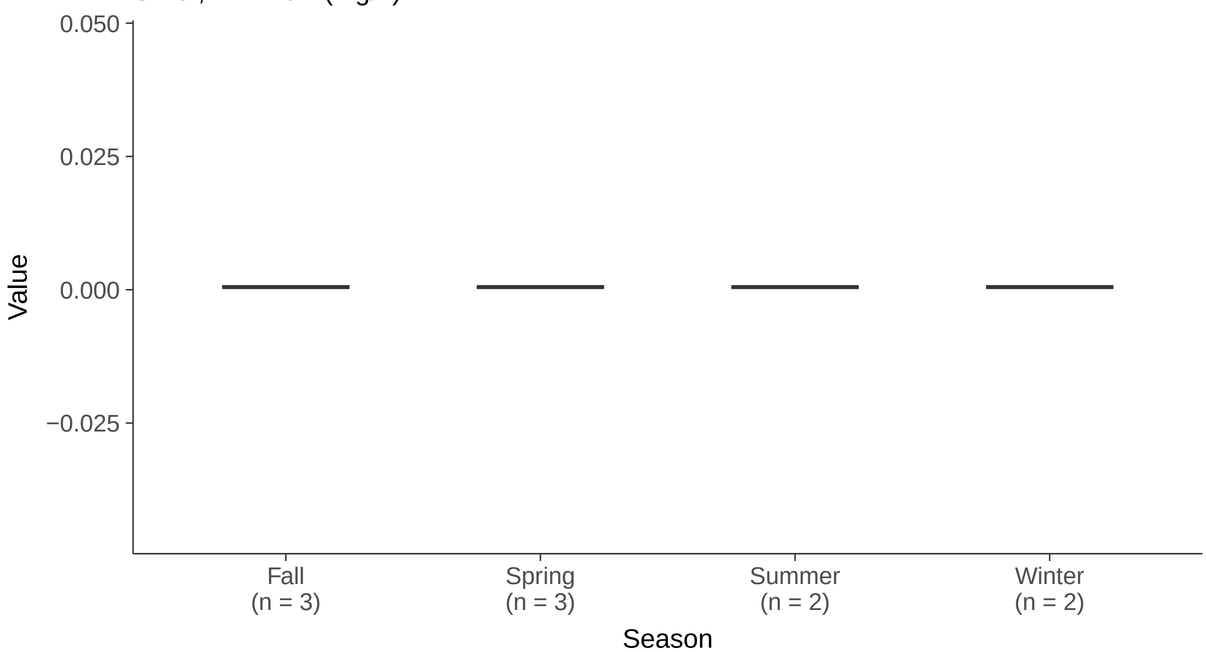
Boxplot

Silver, MW-16D (mg/L)



Boxplot by Season

Silver, MW-16D (mg/L)

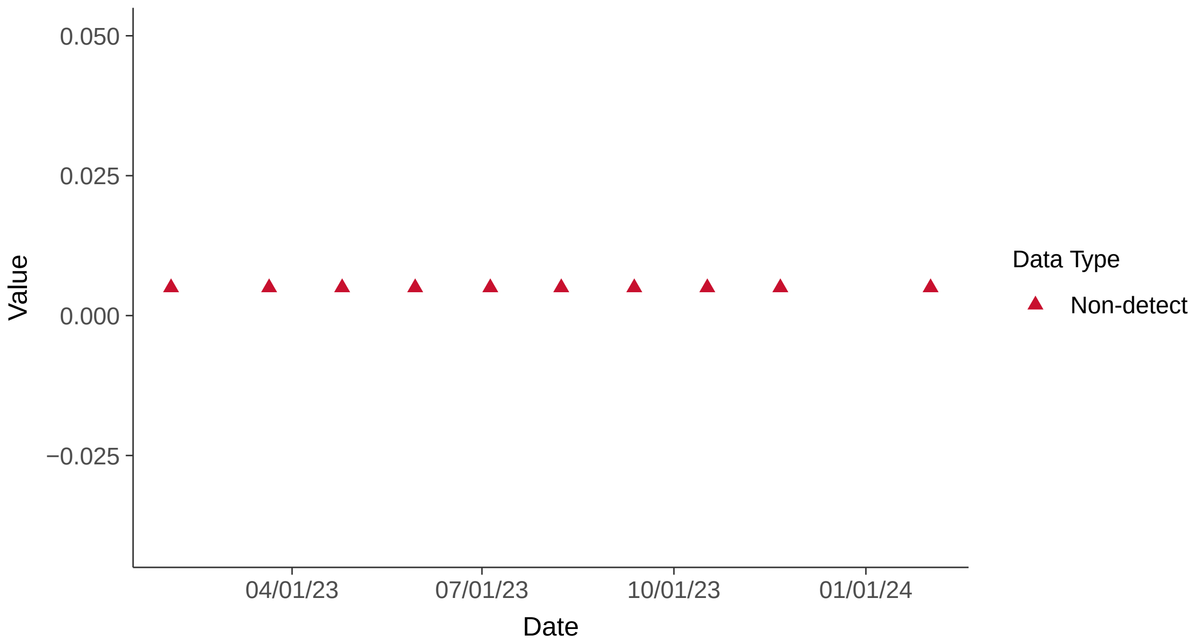


Part 115: Vanadium, MW-16D

ID: 16D_5_41

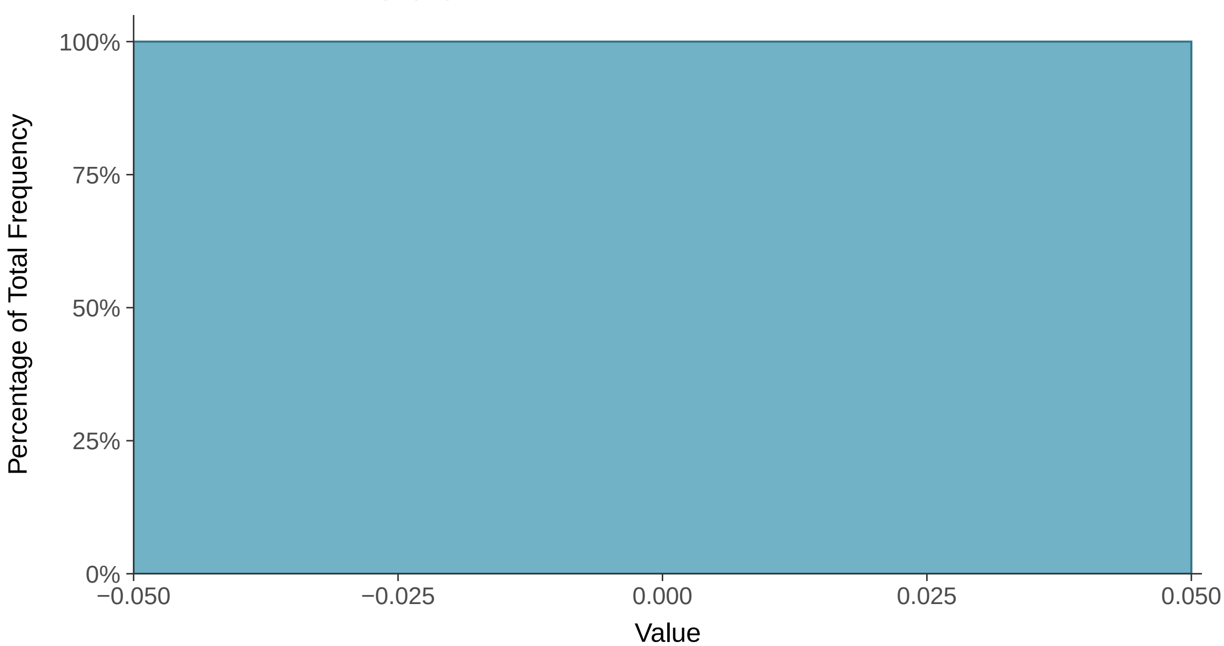
Scatter Plot

Vanadium, MW-16D (mg/L)



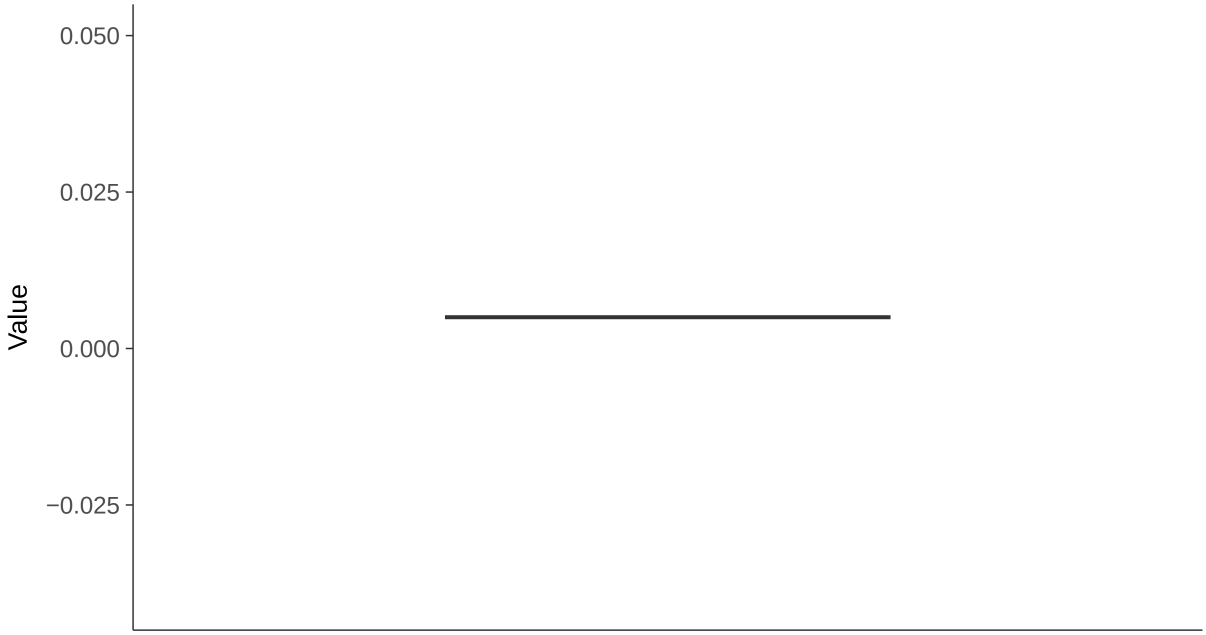
Histogram

Vanadium, MW-16D (mg/L)



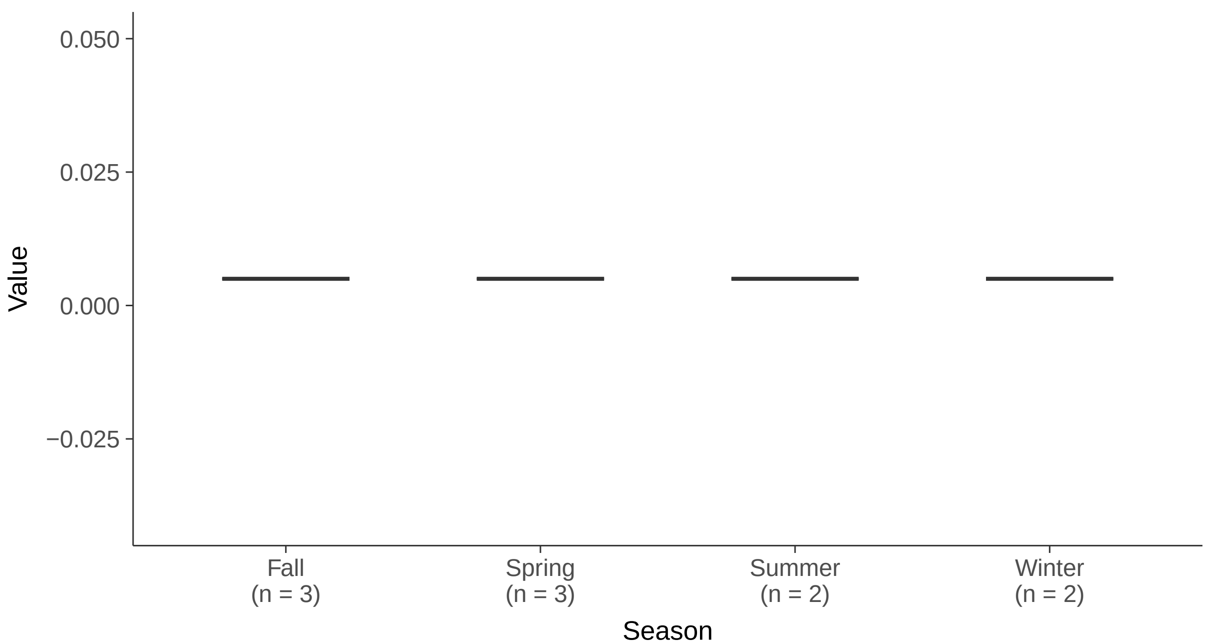
Boxplot

Vanadium, MW-16D (mg/L)



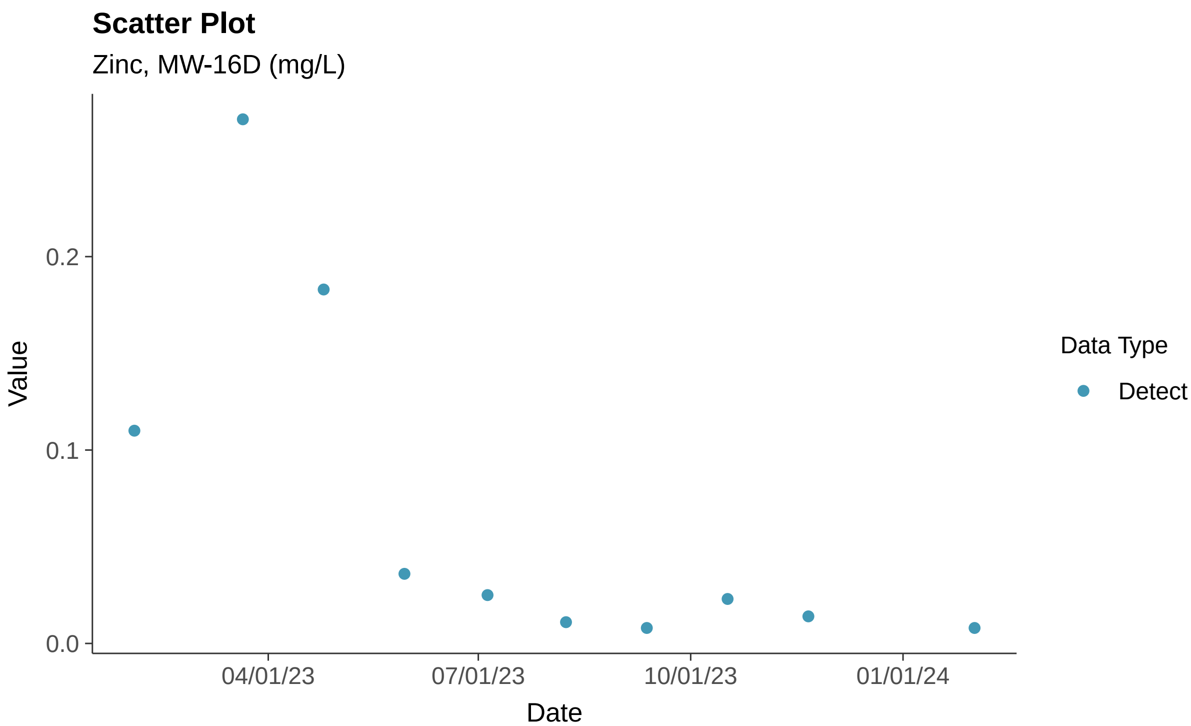
Boxplot by Season

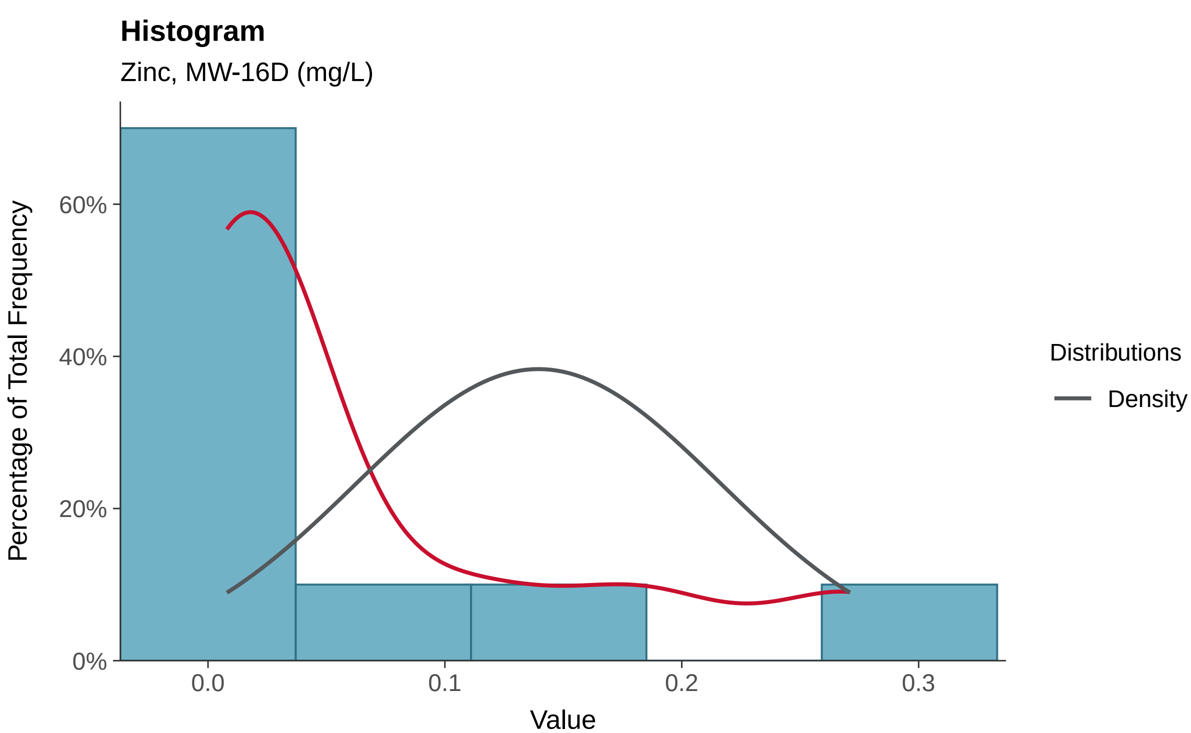
Vanadium, MW-16D (mg/L)



Part 115: Zinc, MW-16D

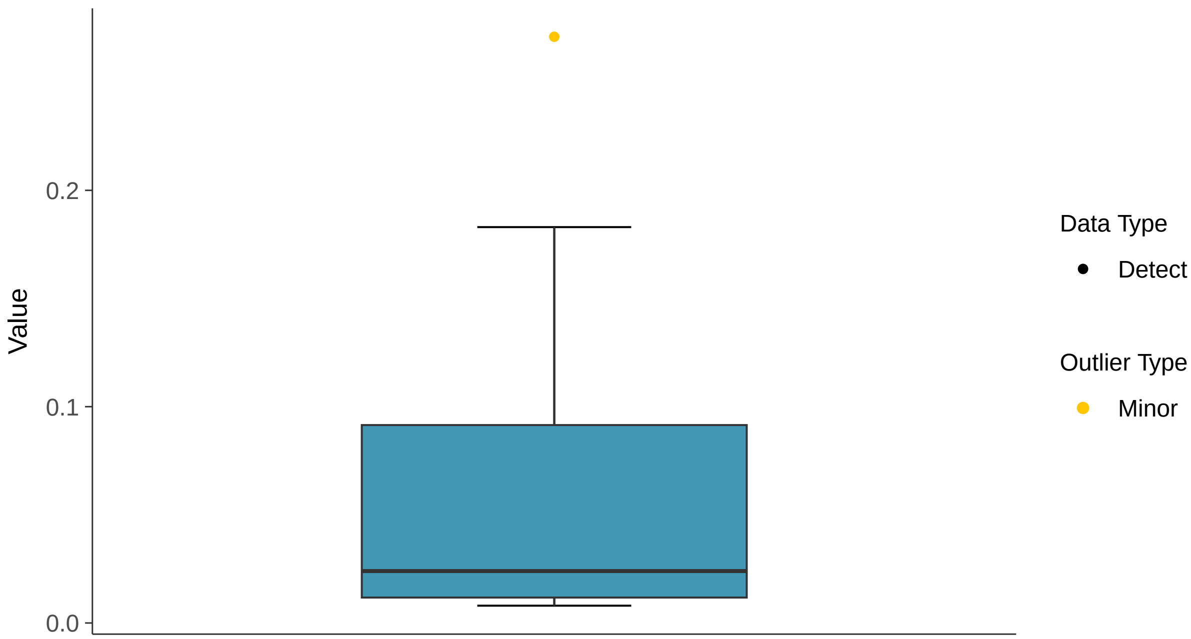
ID: 16D_5_42





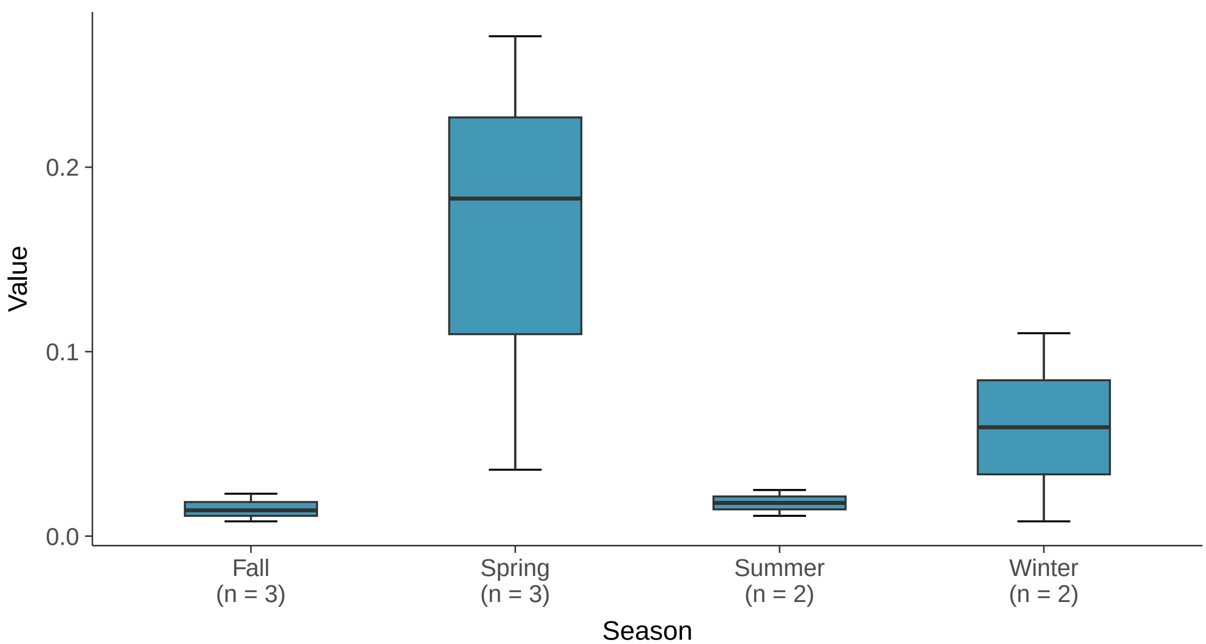
Boxplot

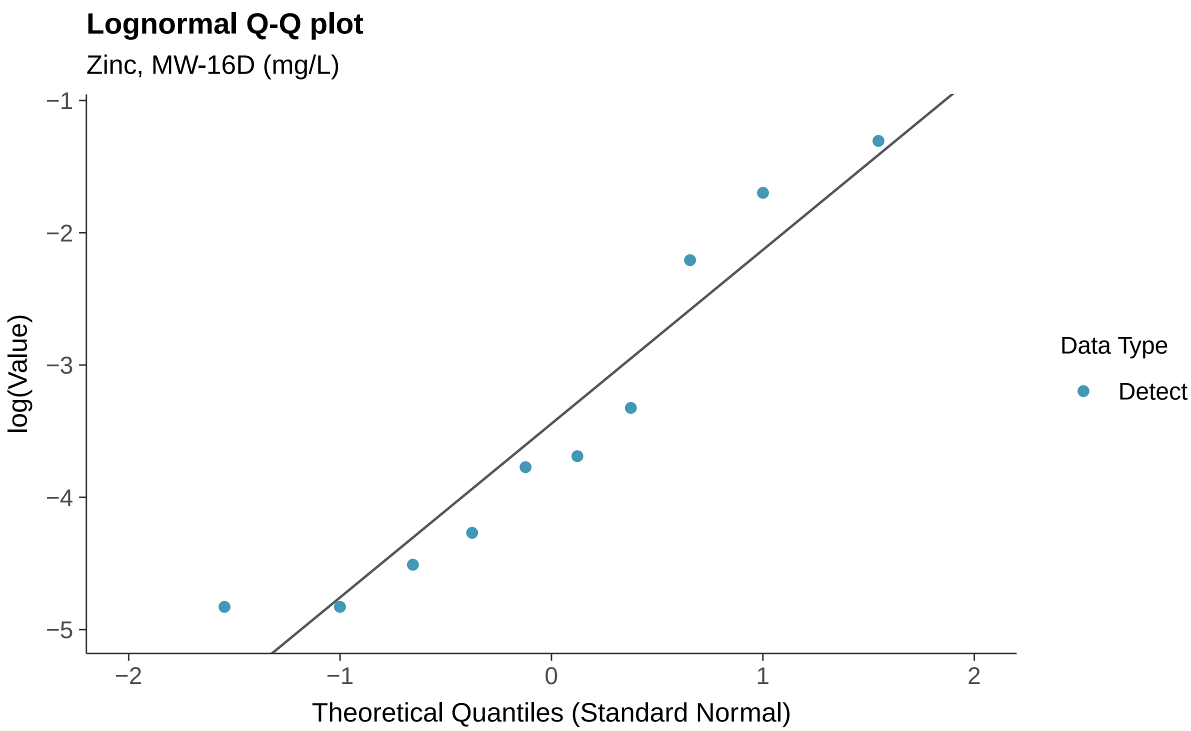
Zinc, MW-16D (mg/L)

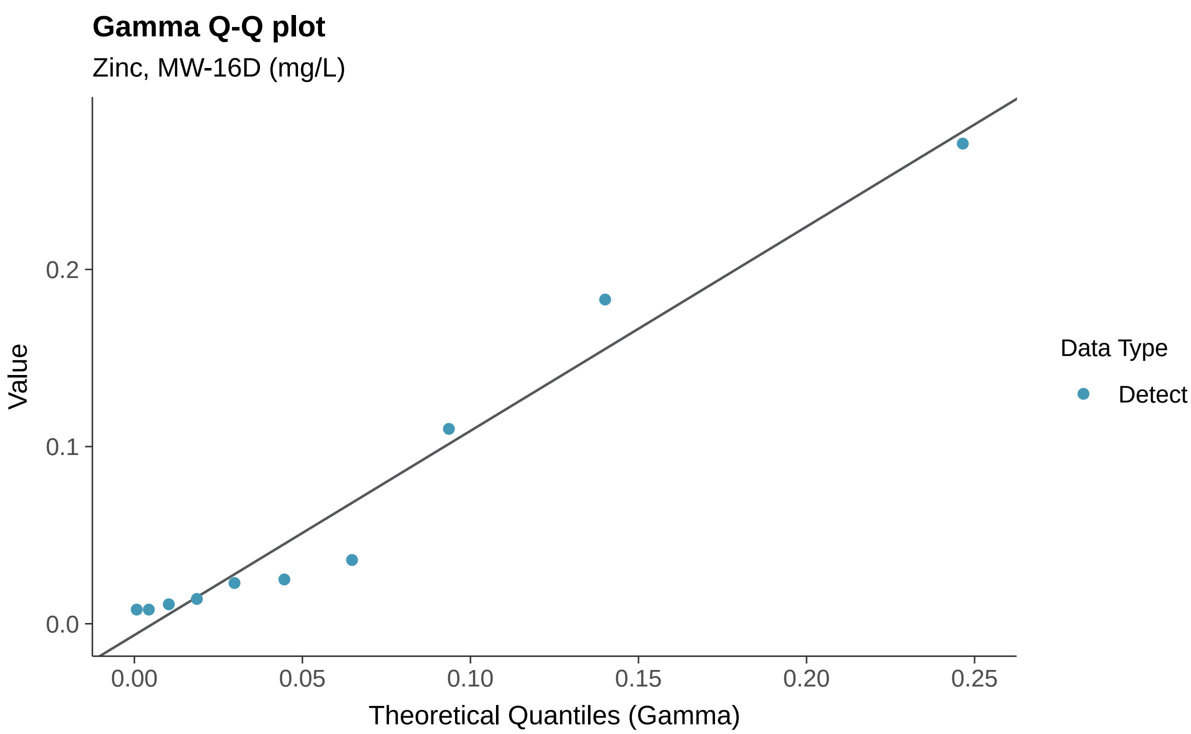


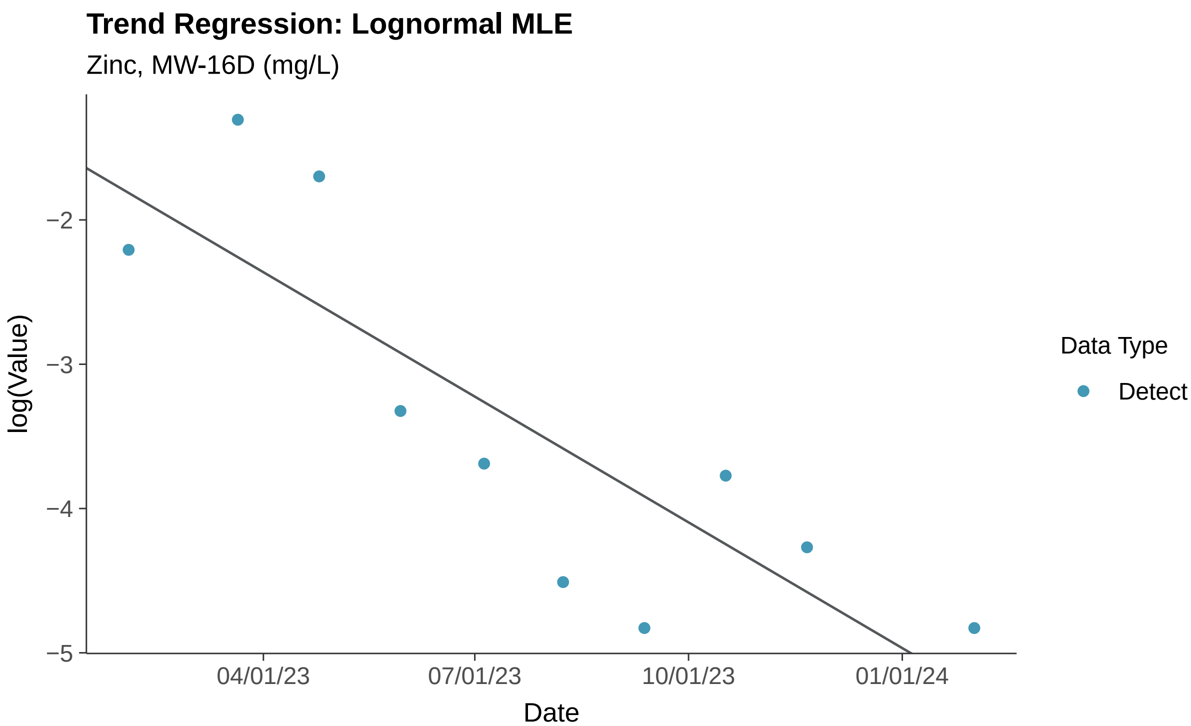
Boxplot by Season

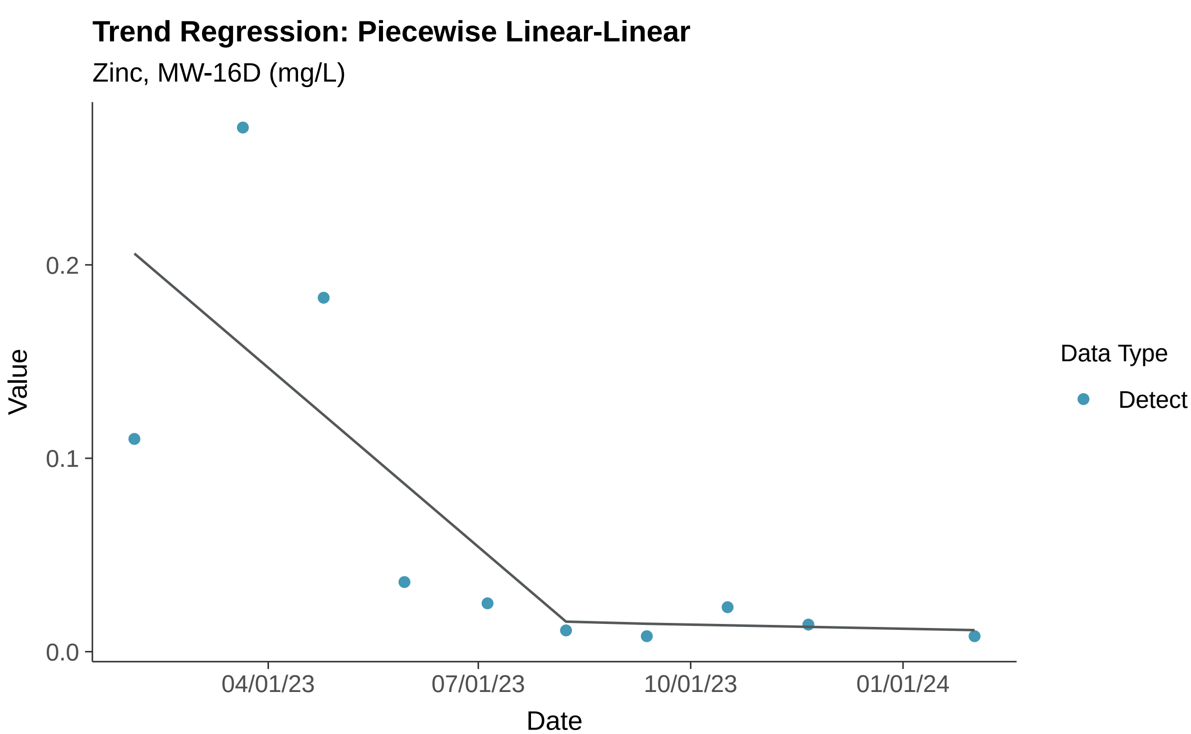
Zinc, MW-16D (mg/L)




Lognormal Q-Q plot
Zinc, MW-16D (mg/L)
log(Value)
−1
−2
−3
−4
−5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

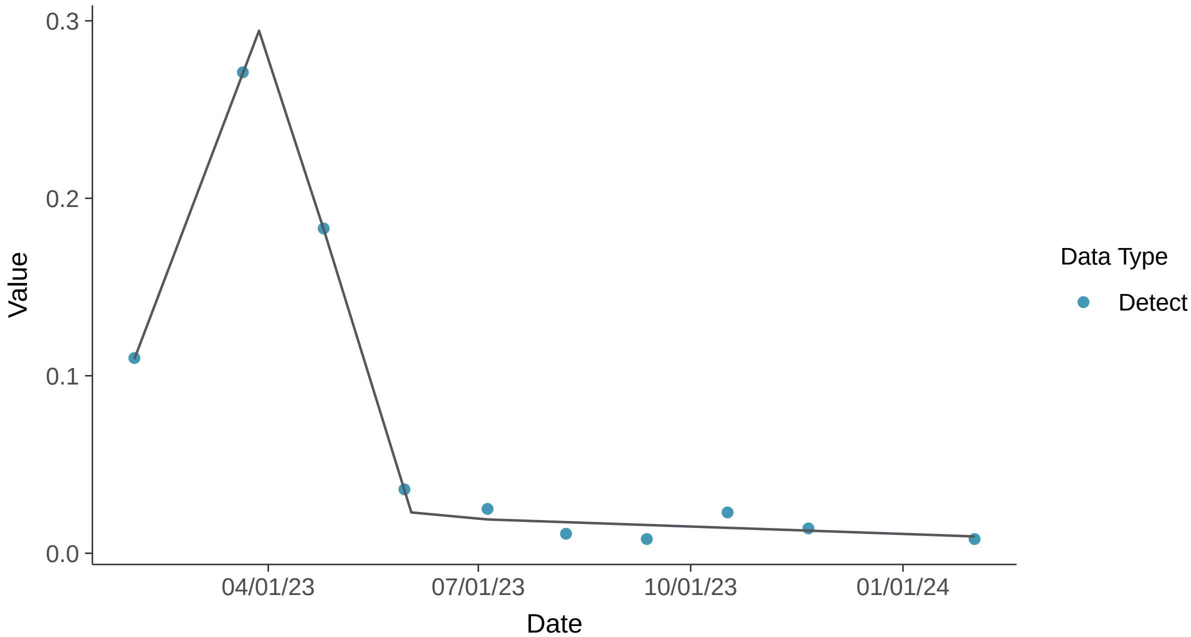

Gamma Q-Q plot
Zinc, MW-16D (mg/L)
Value
0.2
0.1
0.0
0.00
0.05
0.10
0.15
0.20
0.25
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Zinc, MW-16D (mg/L)
log(Value)
−2
−3
−4
−5
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Zinc, MW-16D (mg/L)
Value
0.2
0.1
0.0
04/01/23
07/01/23
10/01/23
01/01/24
Date
Data Type
Detect

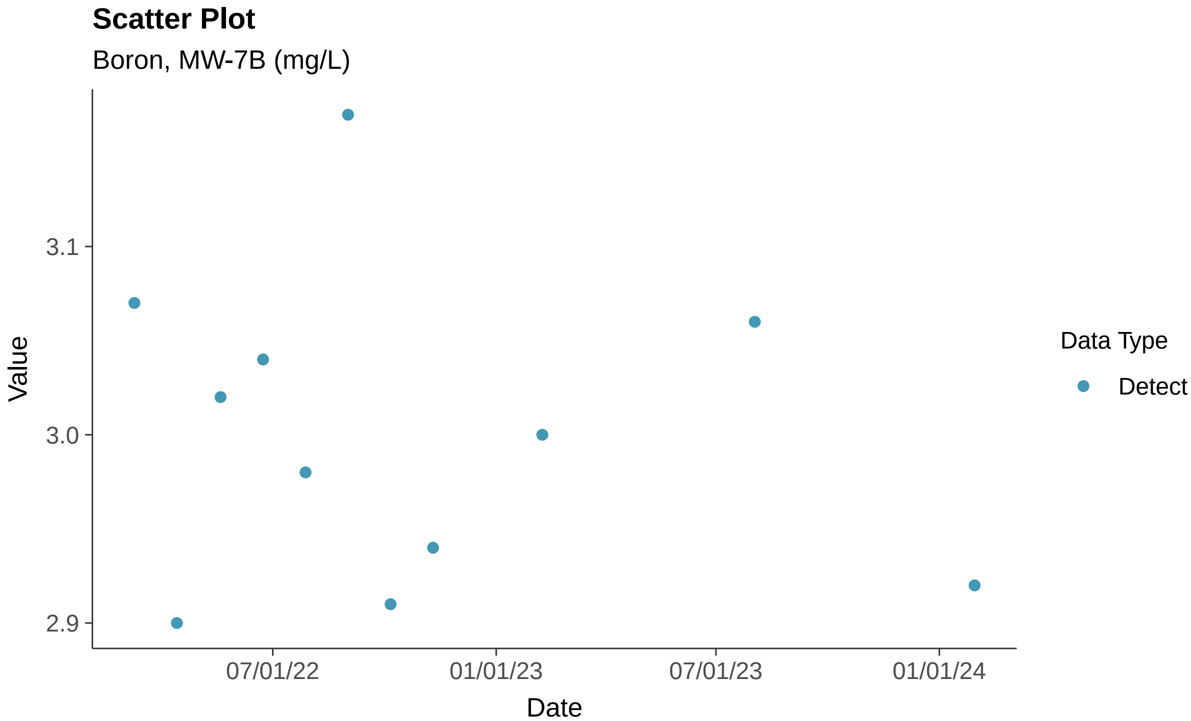
Trend Regression: Piecewise Linear-Linear-Linear

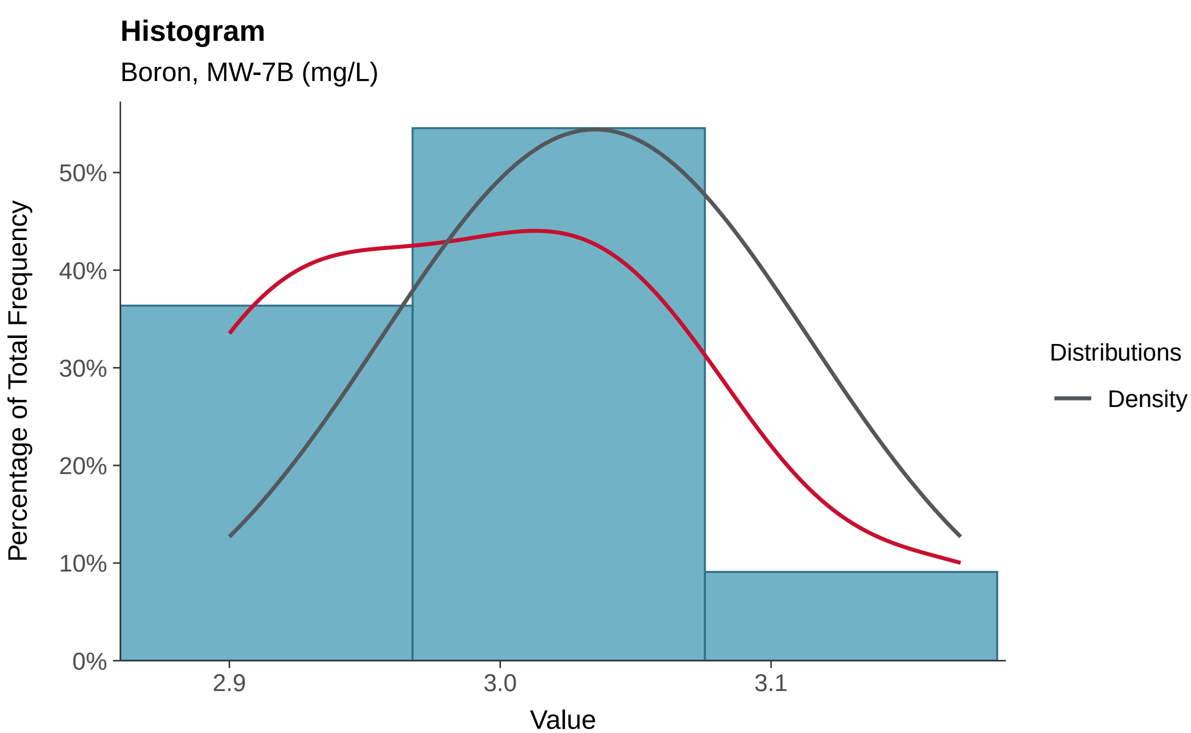
Zinc, MW-16D (mg/L)



Appendix III: Boron, MW-7B

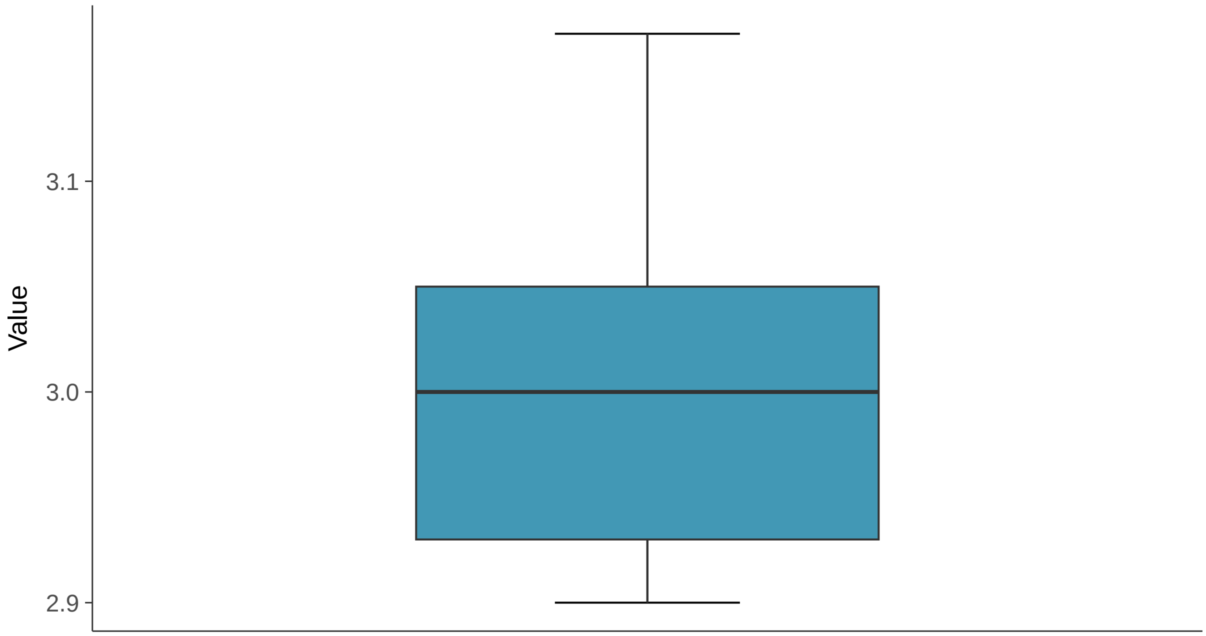
ID: 7B_1_01





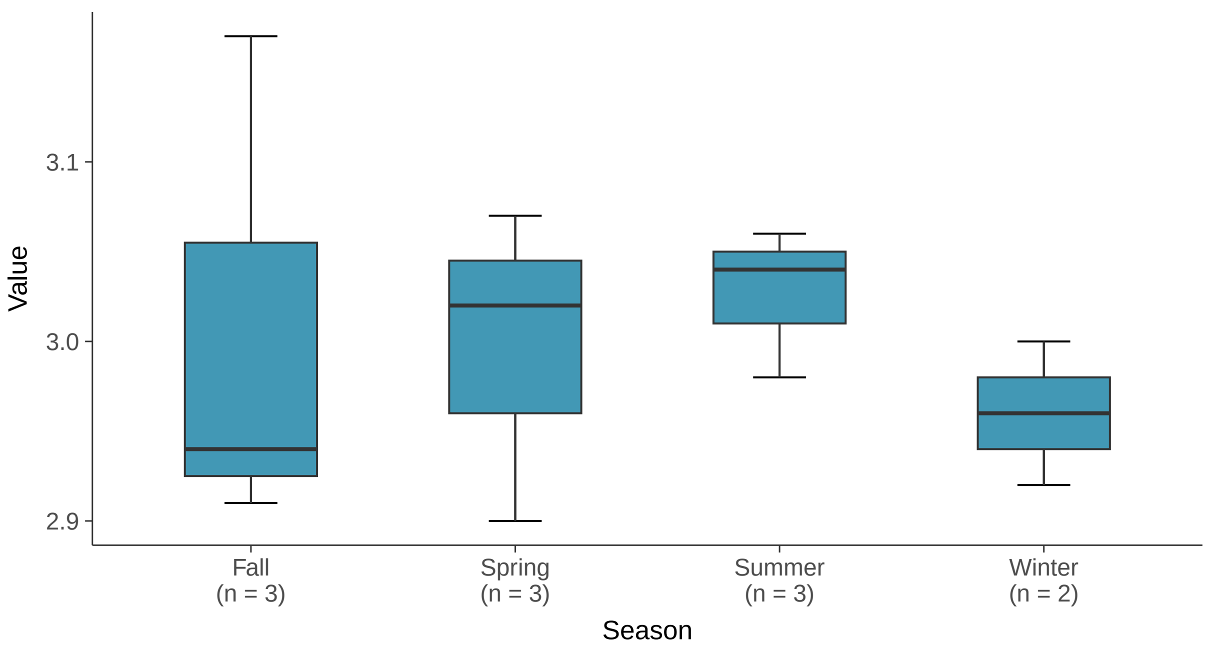
Boxplot

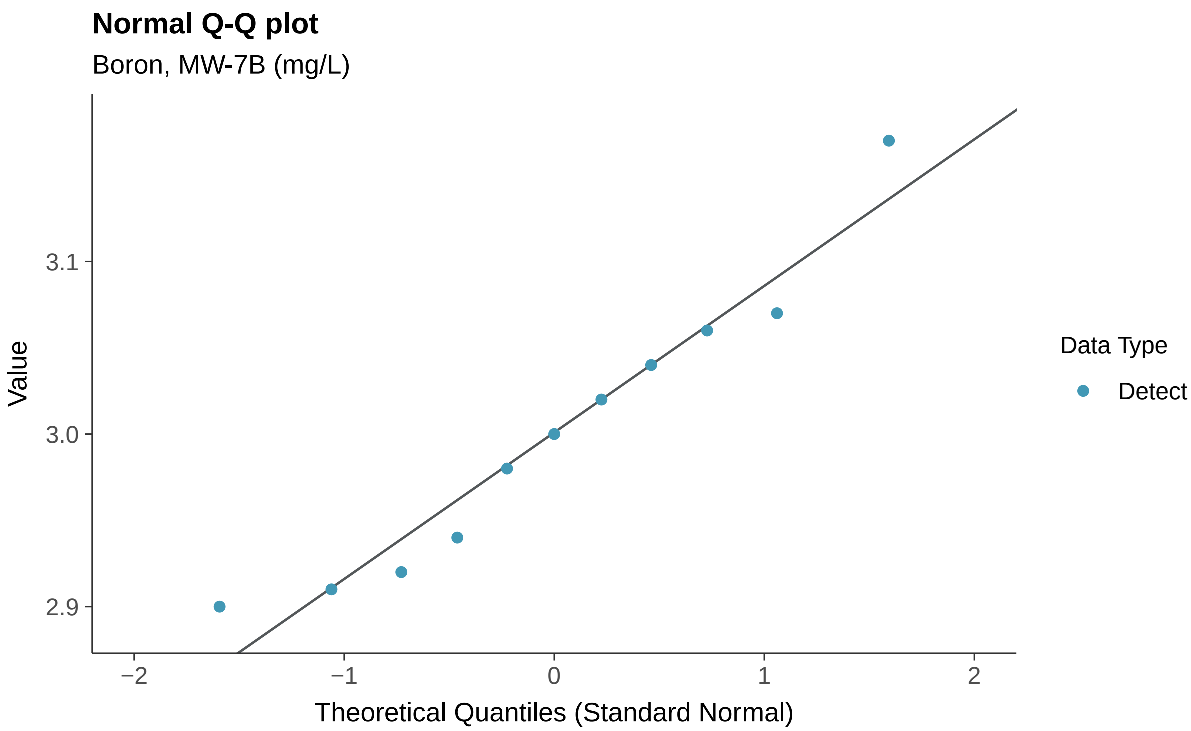
Boron, MW-7B (mg/L)

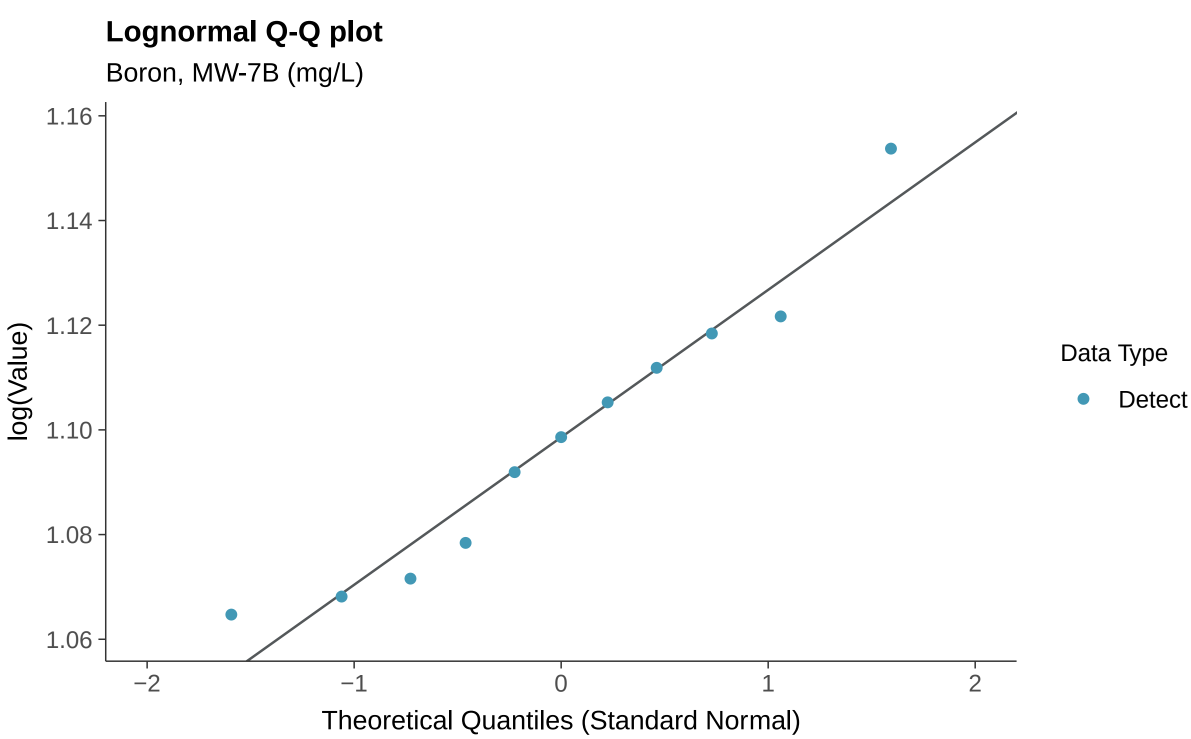


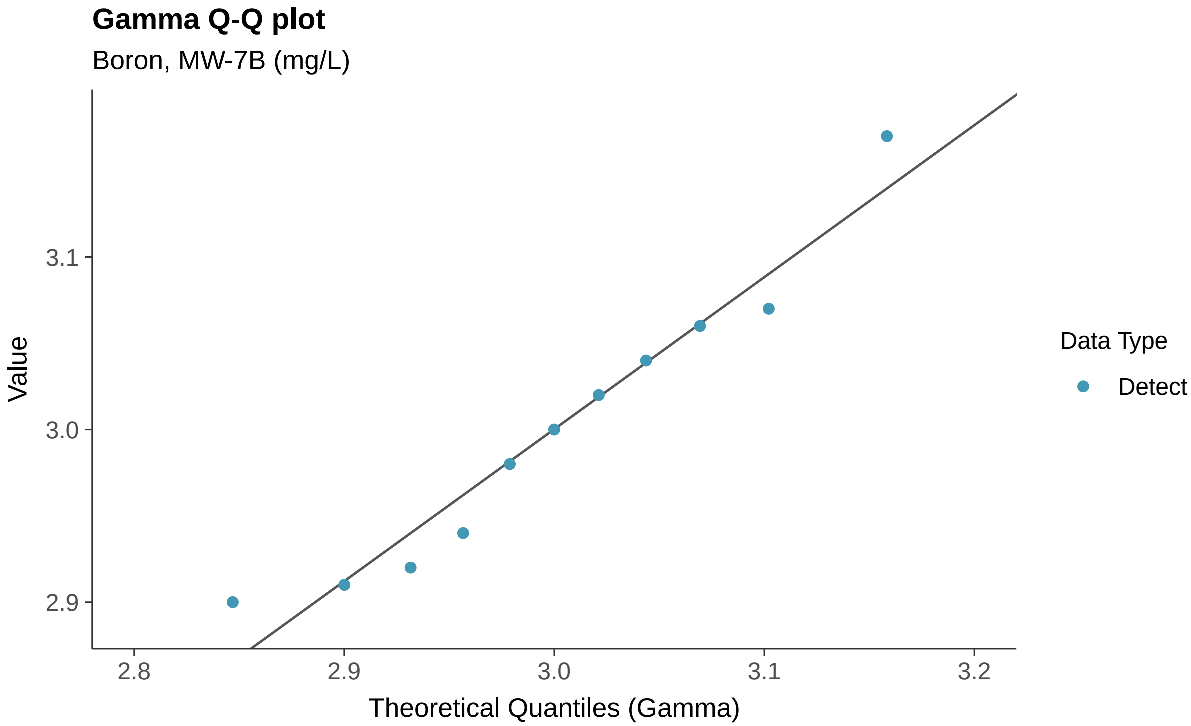
Boxplot by Season

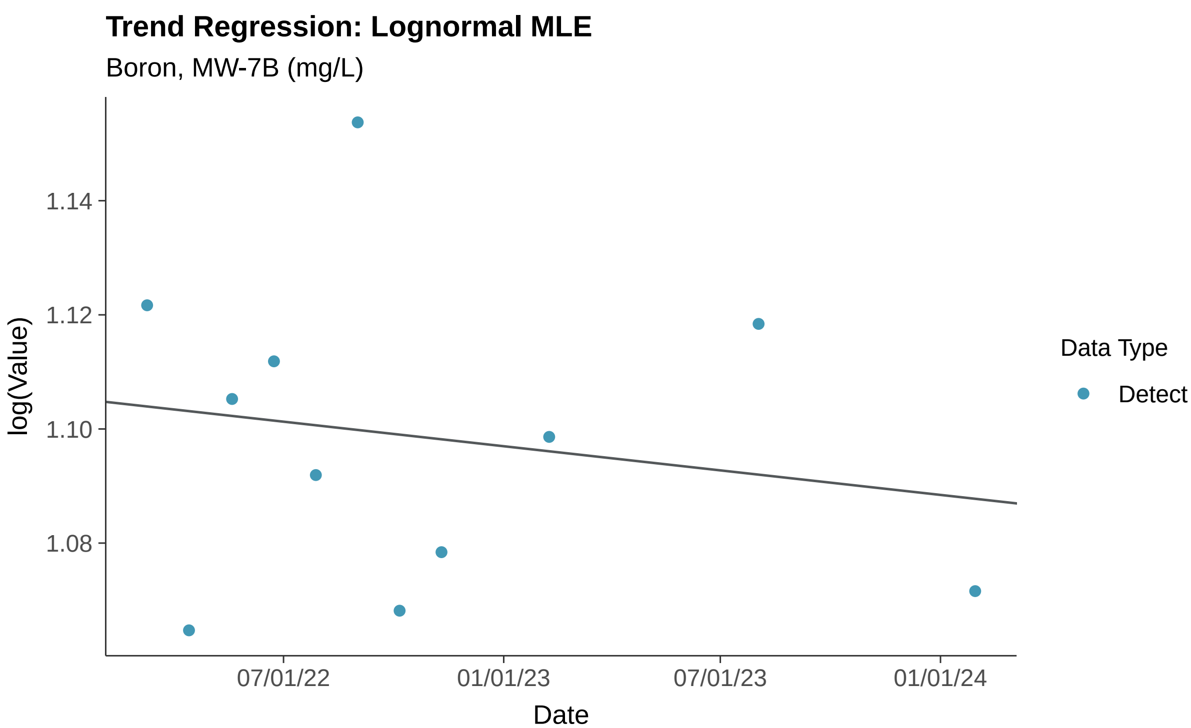
Boron, MW-7B (mg/L)




Normal Q-Q plot
Boron, MW-7B (mg/L)
Value
3.1
3.0
2.9
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Boron, MW-7B (mg/L)
log(Value)
1.16
1.14
1.12
1.10
1.08
1.06
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Boron, MW-7B (mg/L)
Value
3.1
3.0
2.9
2.8
2.9
3.0
3.1
3.2
Theoretical Quantiles (Gamma)
Data Type
Detect

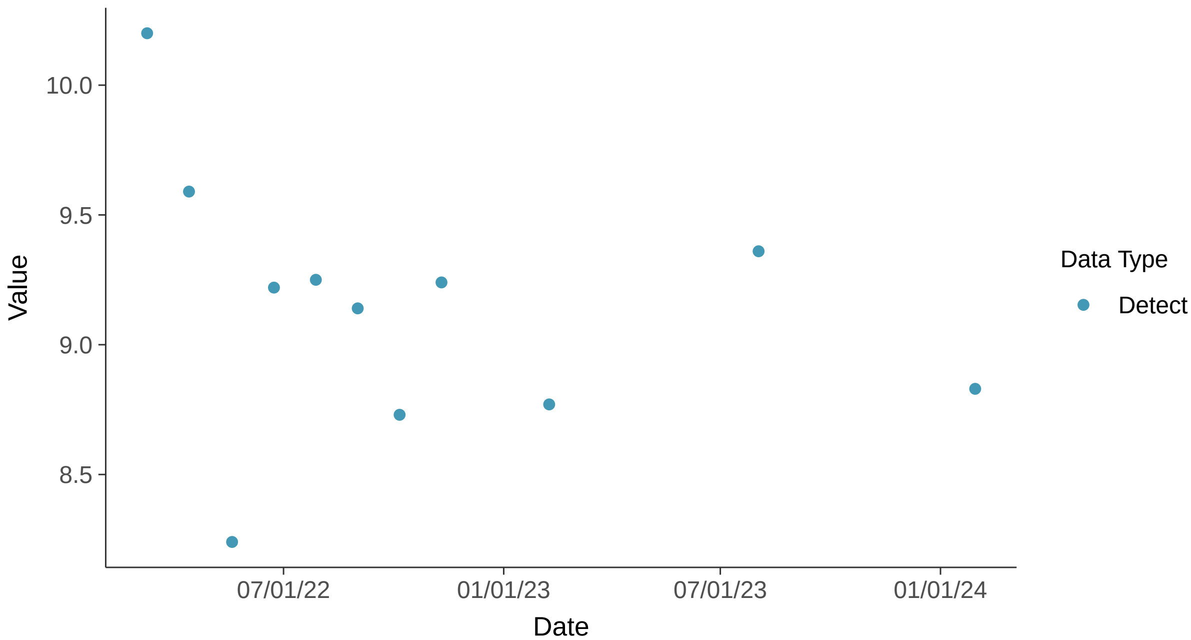

Trend Regression: Lognormal MLE
Boron, MW-7B (mg/L)
log(Value)
1.14
1.12
1.10
1.08
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Appendix III: Calcium, MW-7B

ID: 7B_1_02

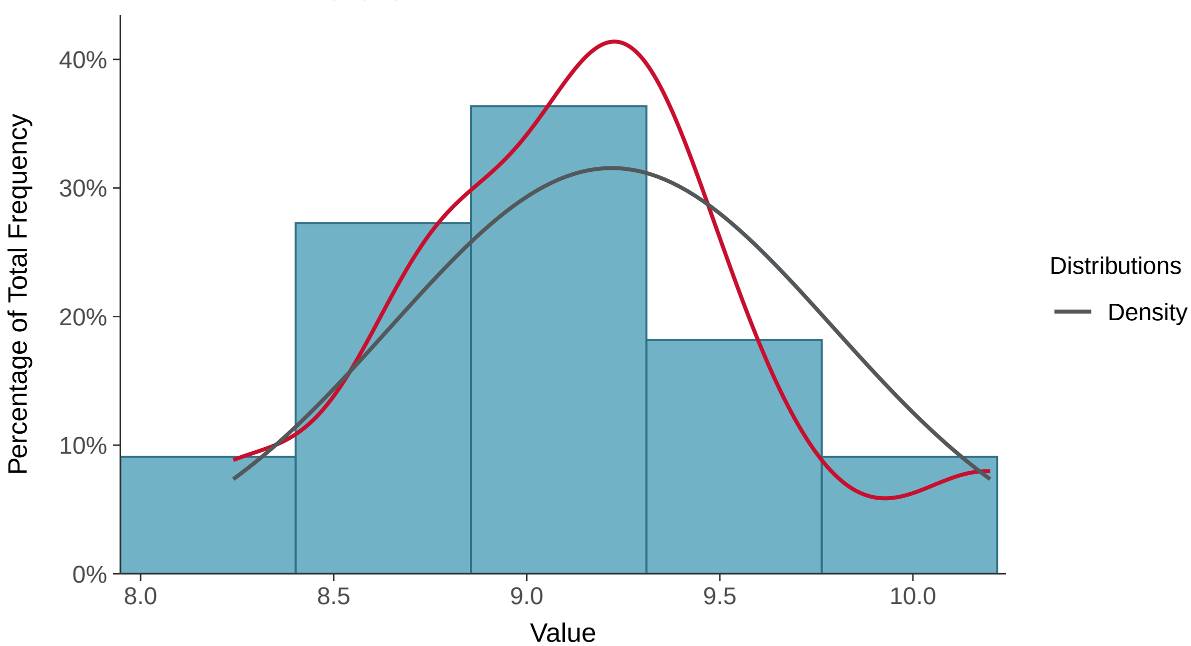
Scatter Plot

Calcium, MW-7B (mg/L)



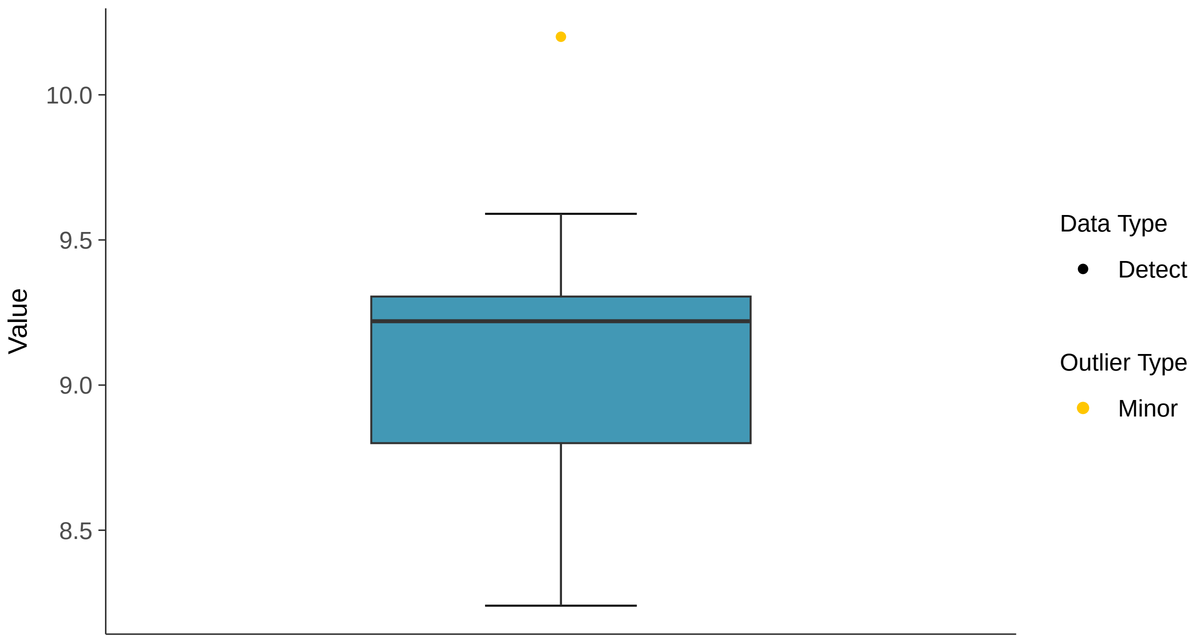
Histogram

Calcium, MW-7B (mg/L)



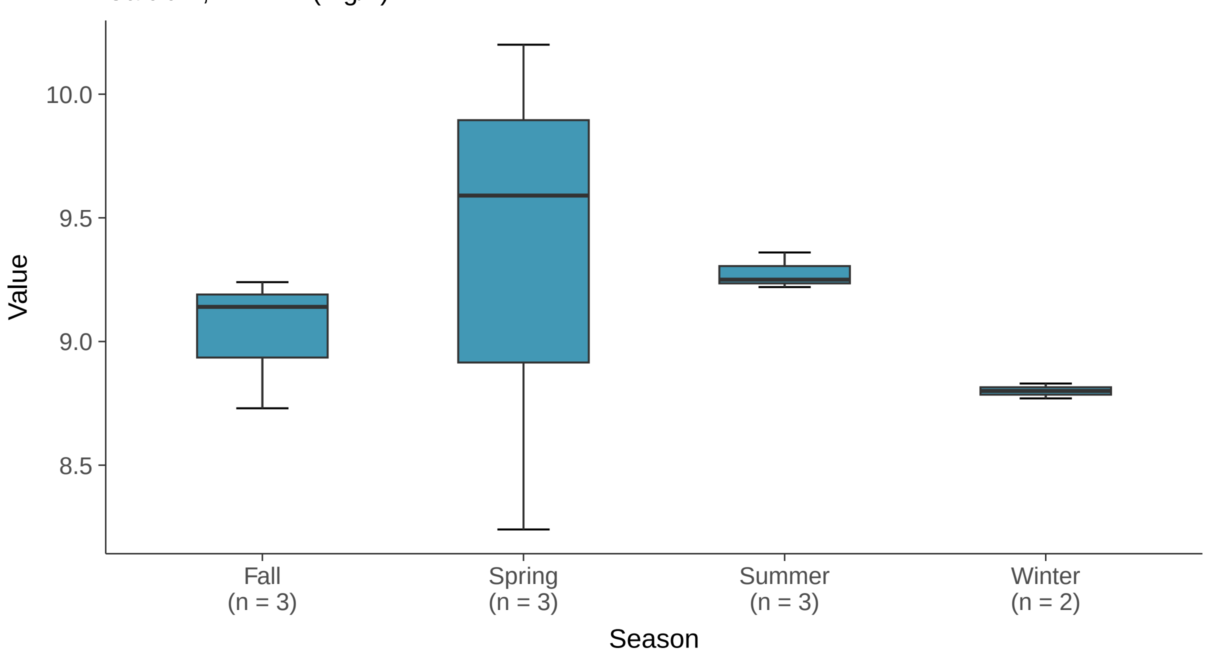
Boxplot

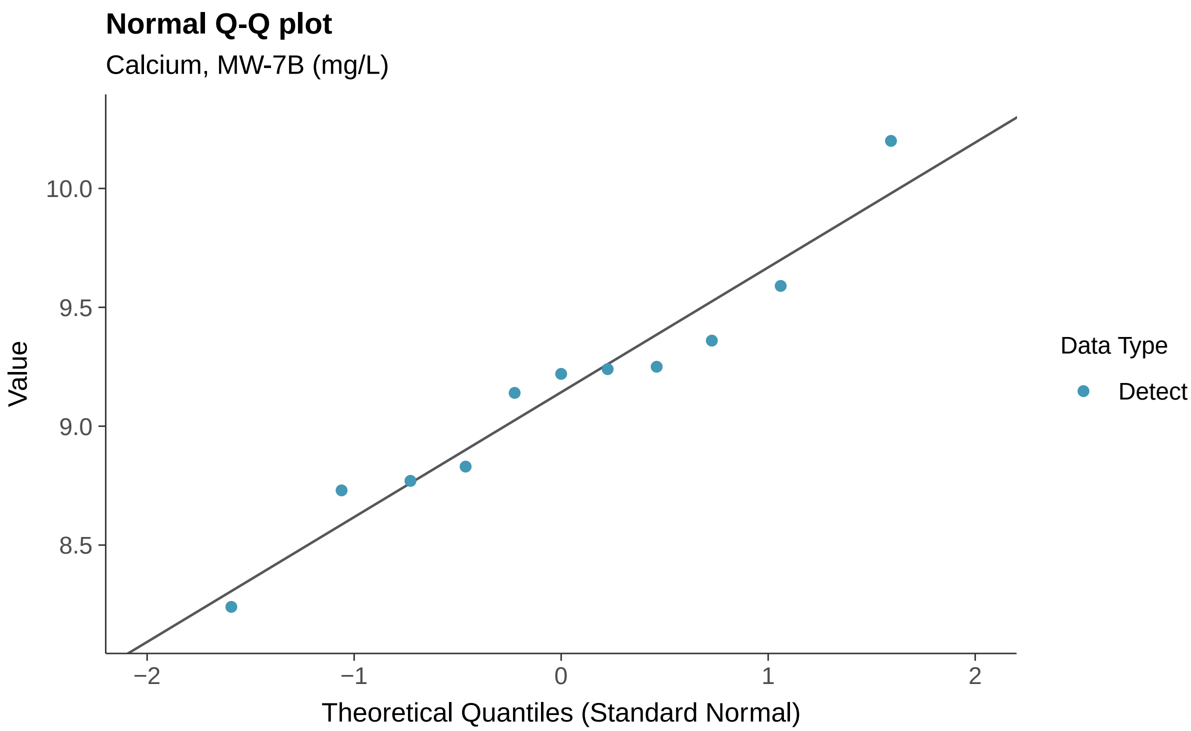
Calcium, MW-7B (mg/L)

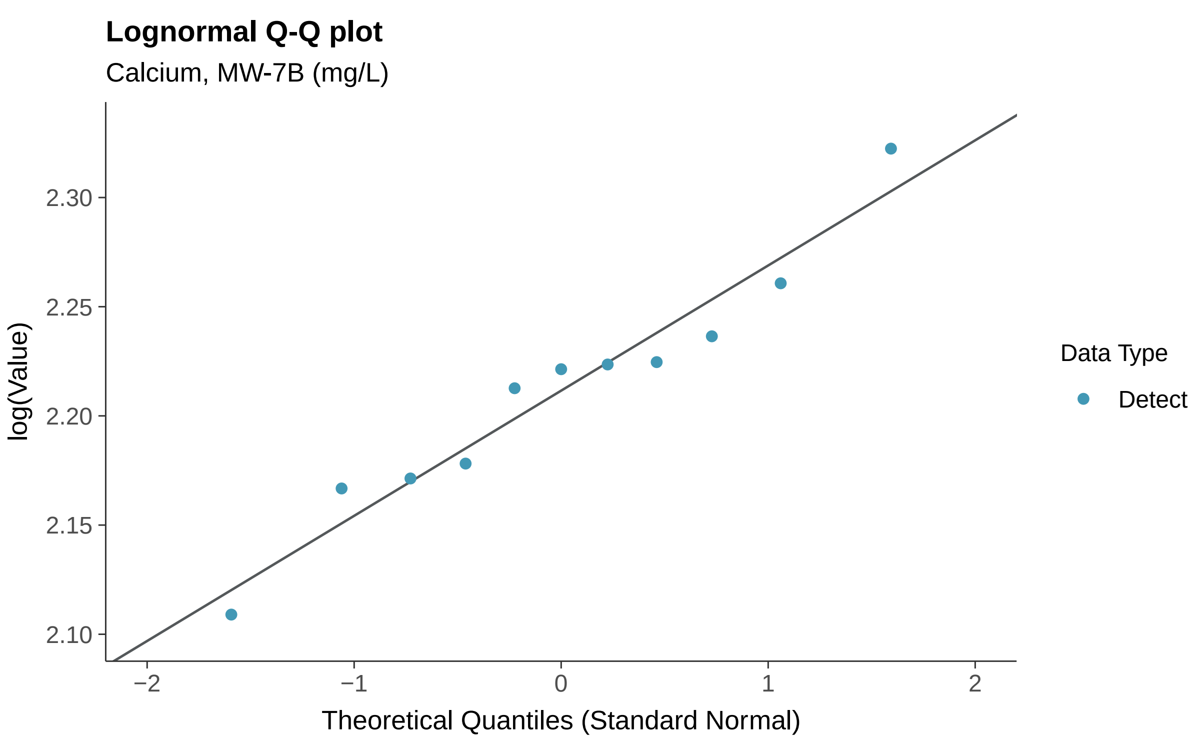


Boxplot by Season

Calcium, MW-7B (mg/L)

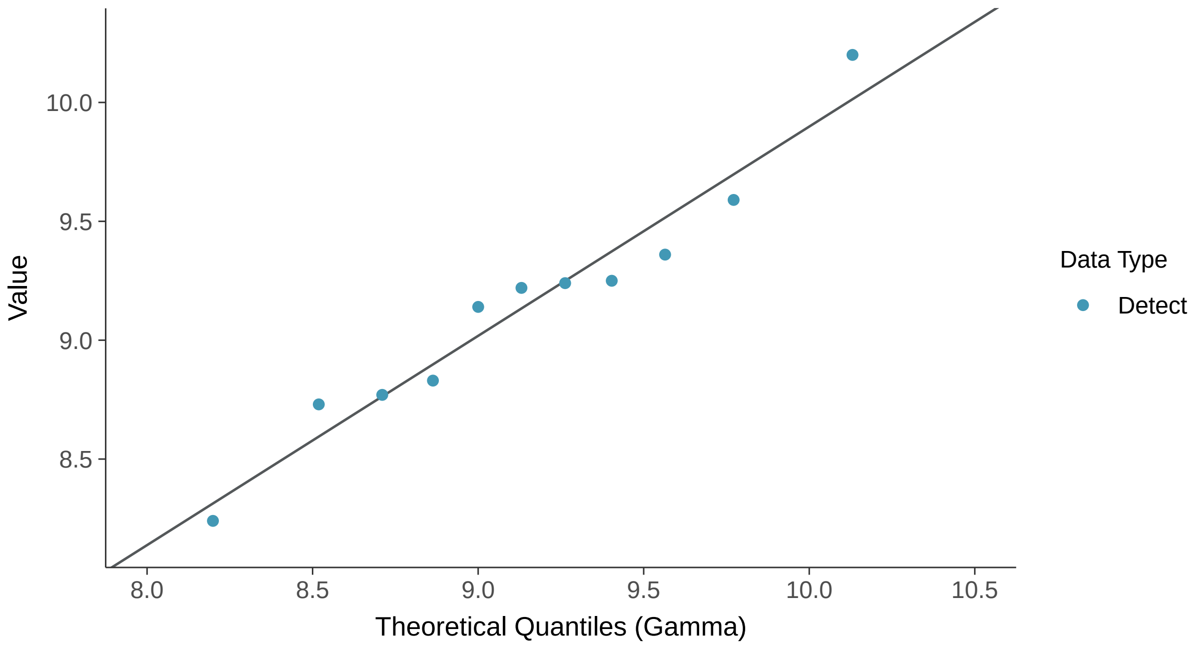



Normal Q-Q plot
Calcium, MW-7B (mg/L)
Value
10.0
9.5
9.0
8.5
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Calcium, MW-7B (mg/L)
log(Value)
2.30
2.25
2.20
2.15
2.10
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

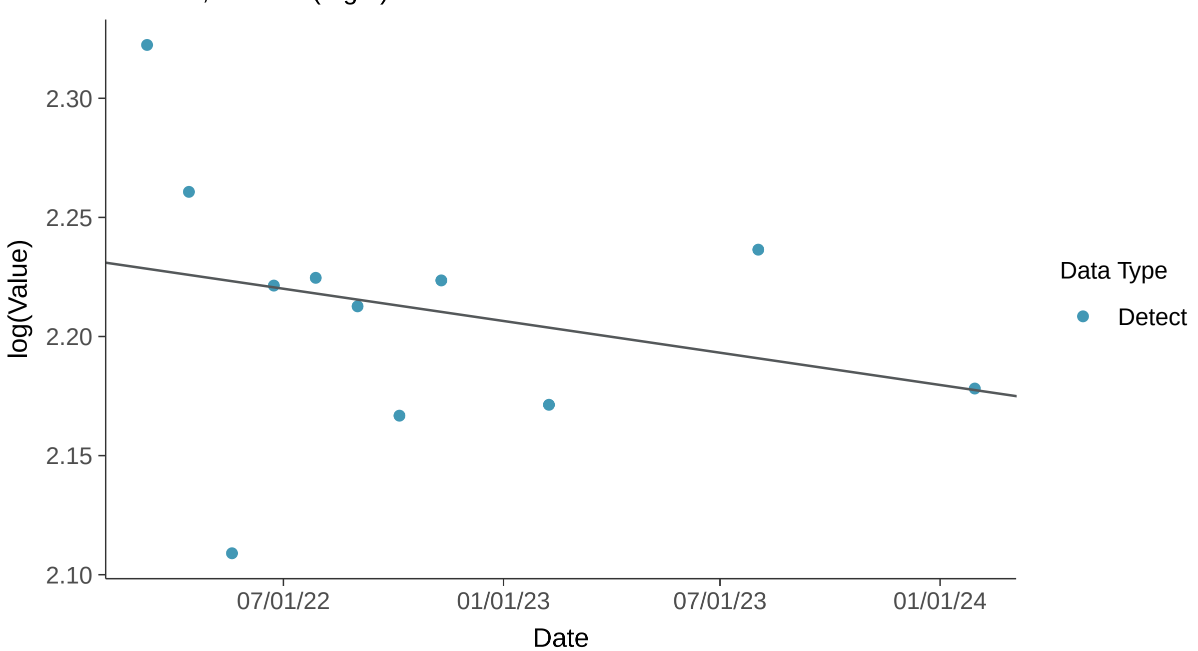
Gamma Q-Q plot

Calcium, MW-7B (mg/L)



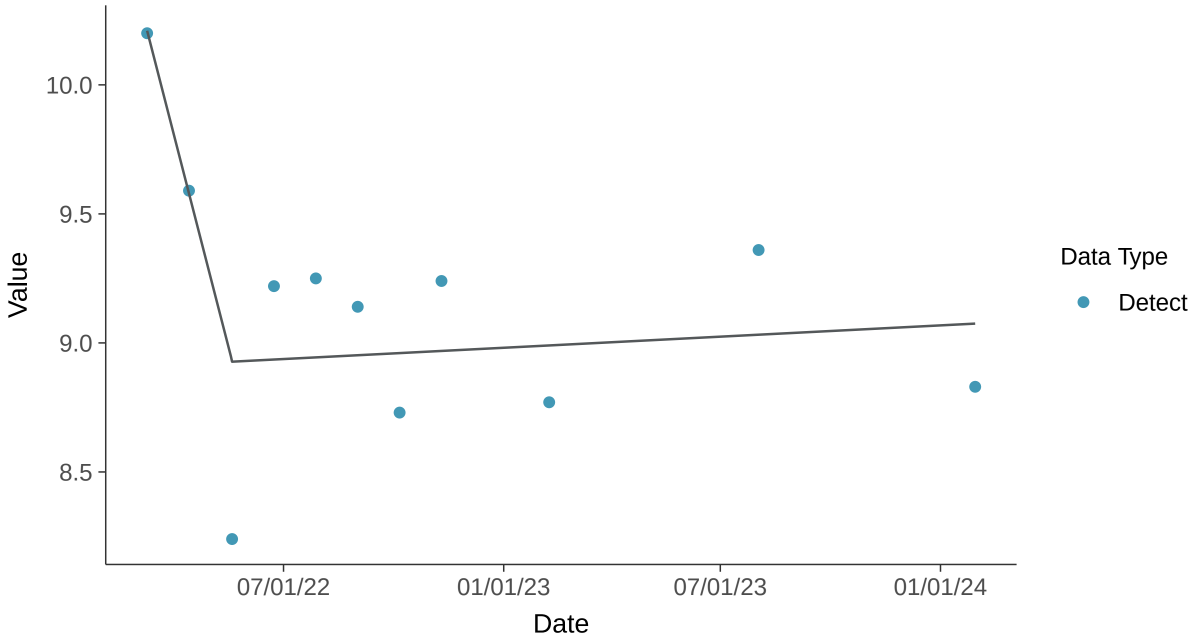
Trend Regression: Lognormal MLE

Calcium, MW-7B (mg/L)



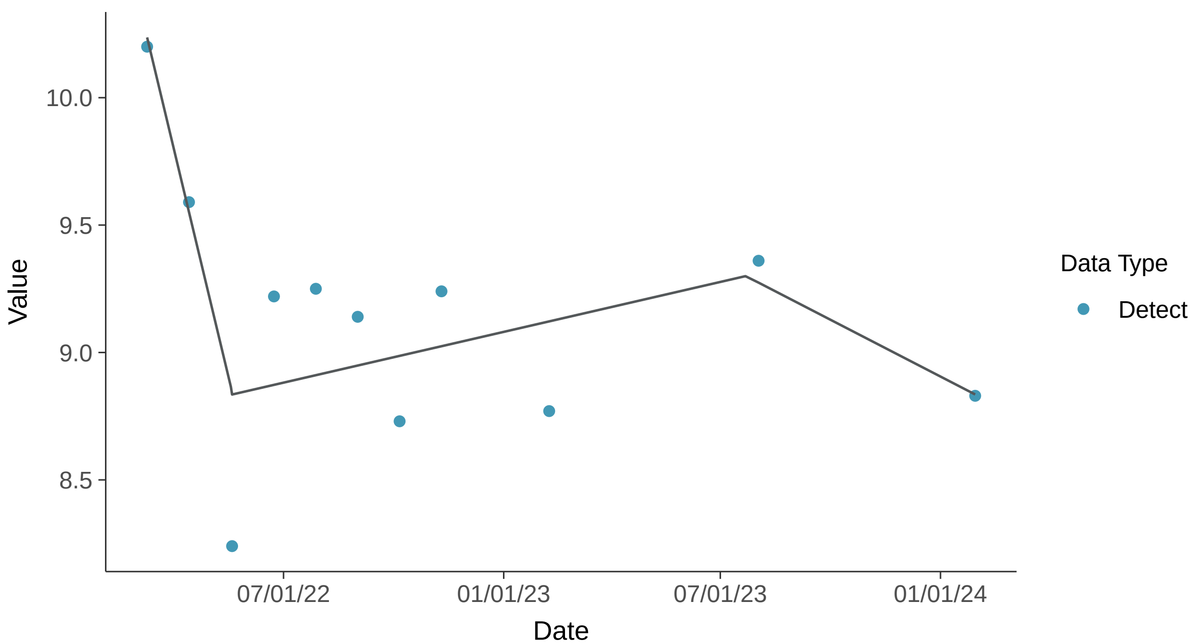
Trend Regression: Piecewise Linear-Linear

Calcium, MW-7B (mg/L)



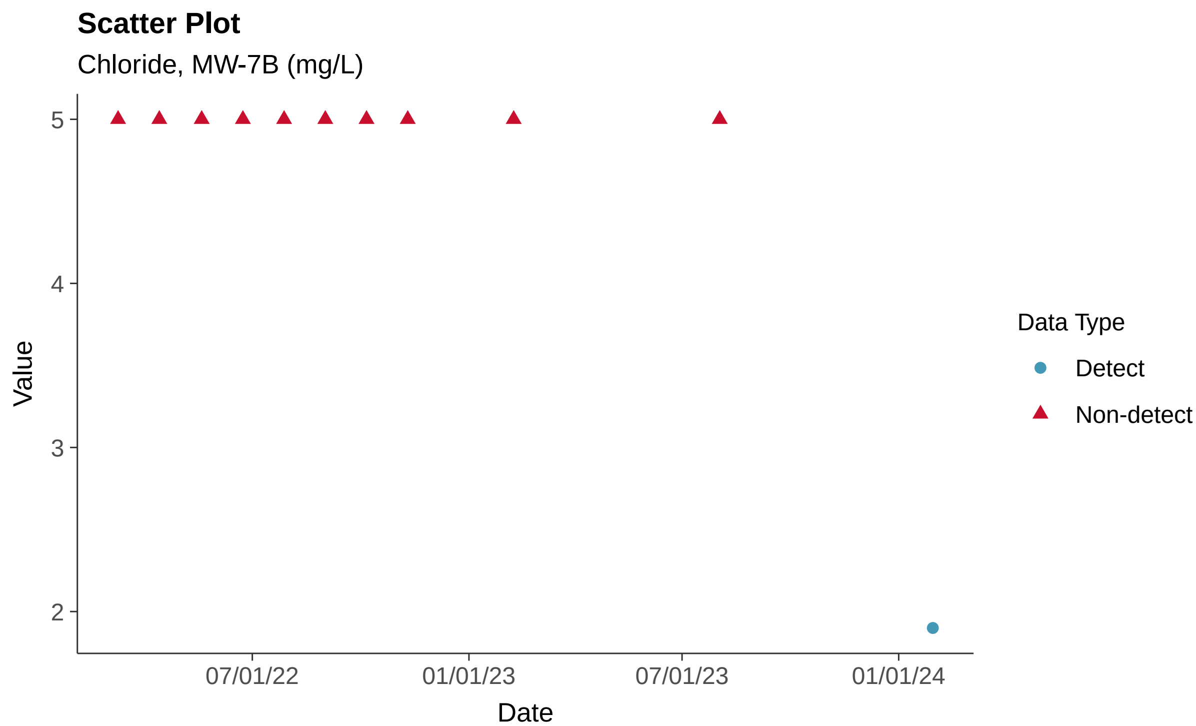
Trend Regression: Piecewise Linear-Linear-Linear

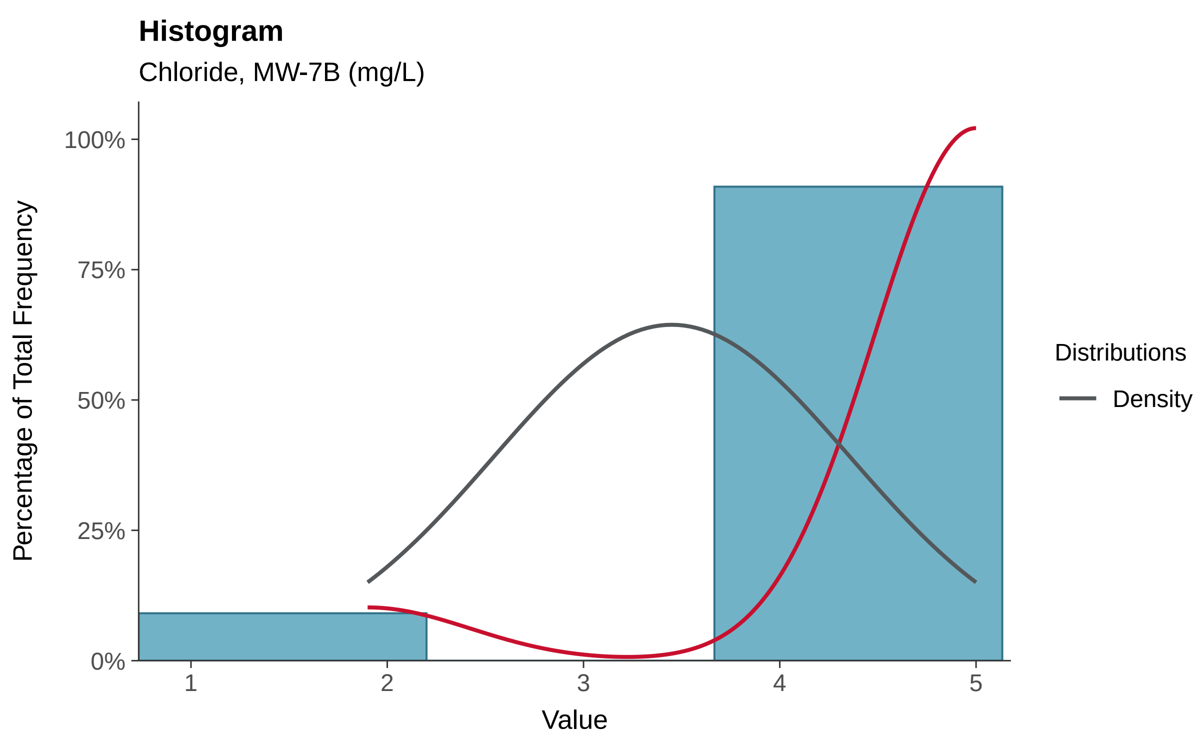
Calcium, MW-7B (mg/L)



Appendix III: Chloride, MW-7B

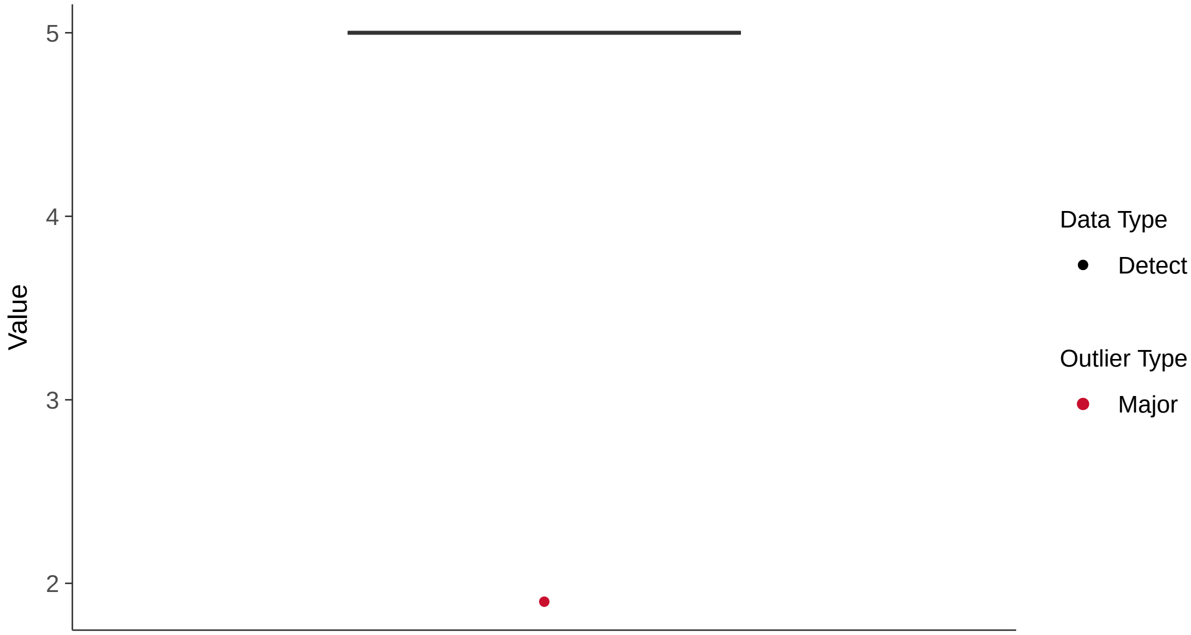
ID: 7B_1_03





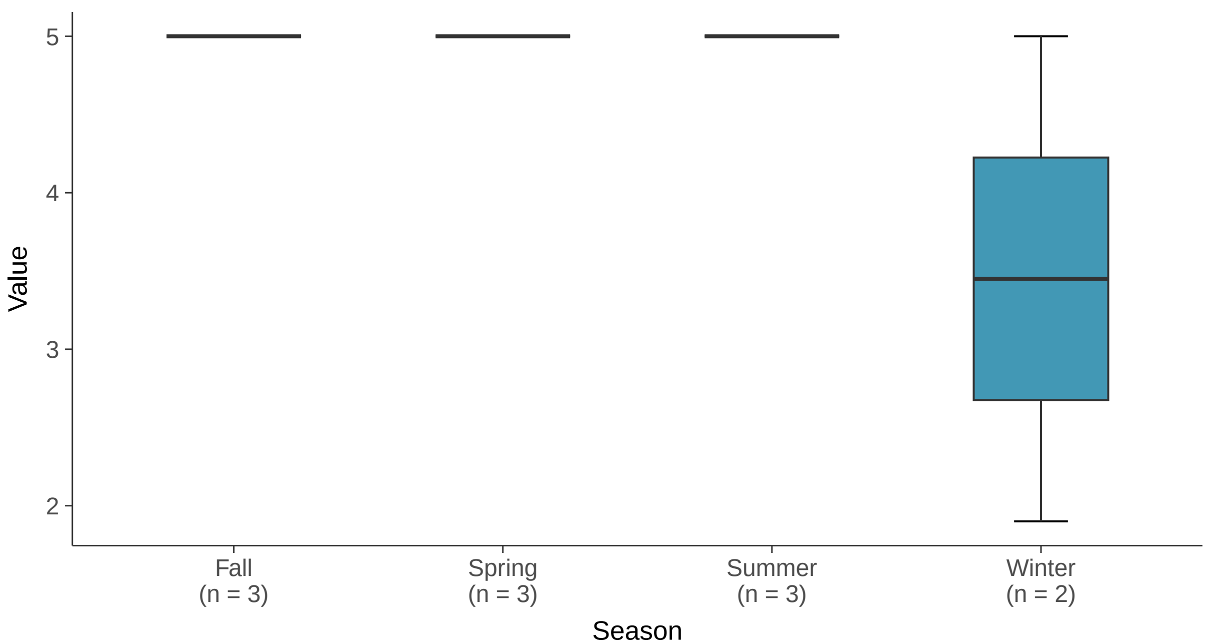
Boxplot

Chloride, MW-7B (mg/L)



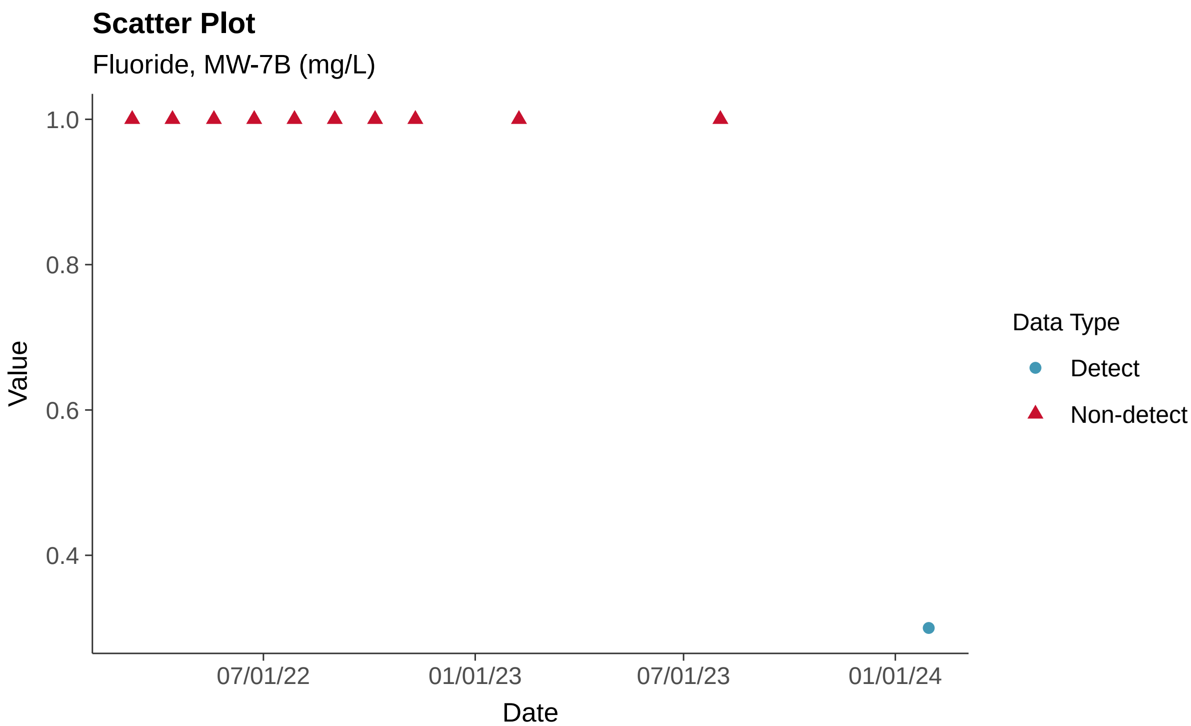
Boxplot by Season

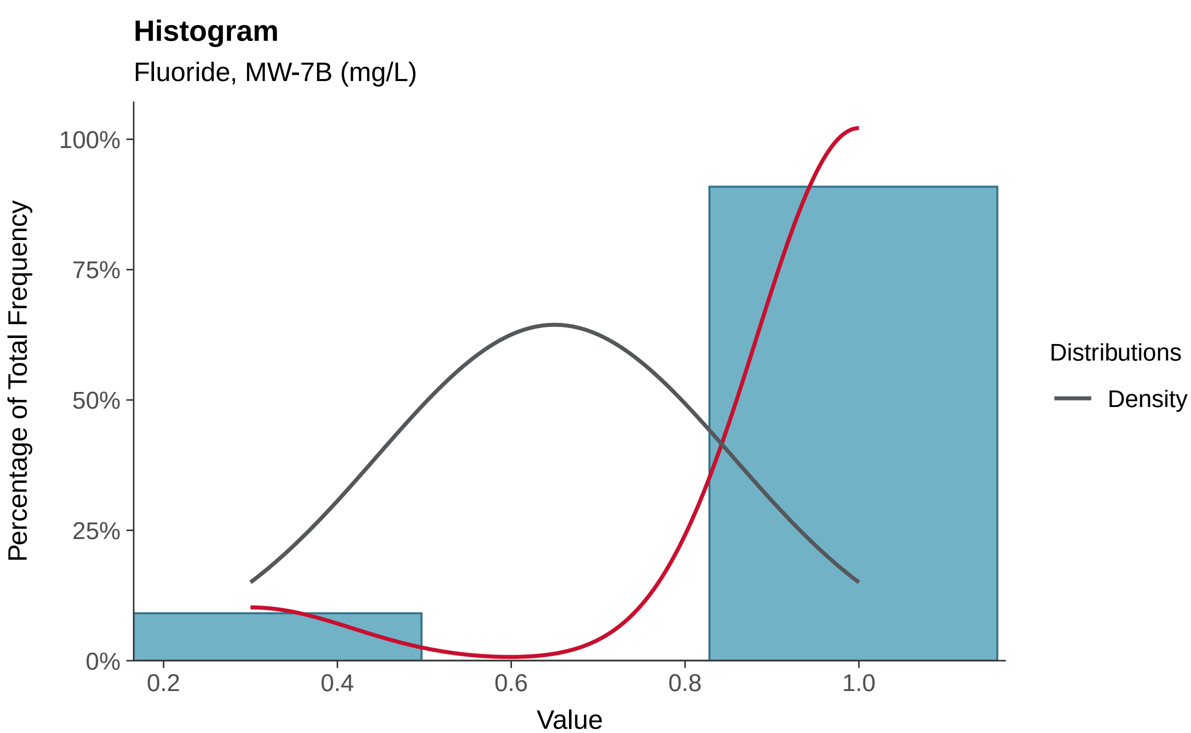
Chloride, MW-7B (mg/L)



Appendix III: Fluoride, MW-7B

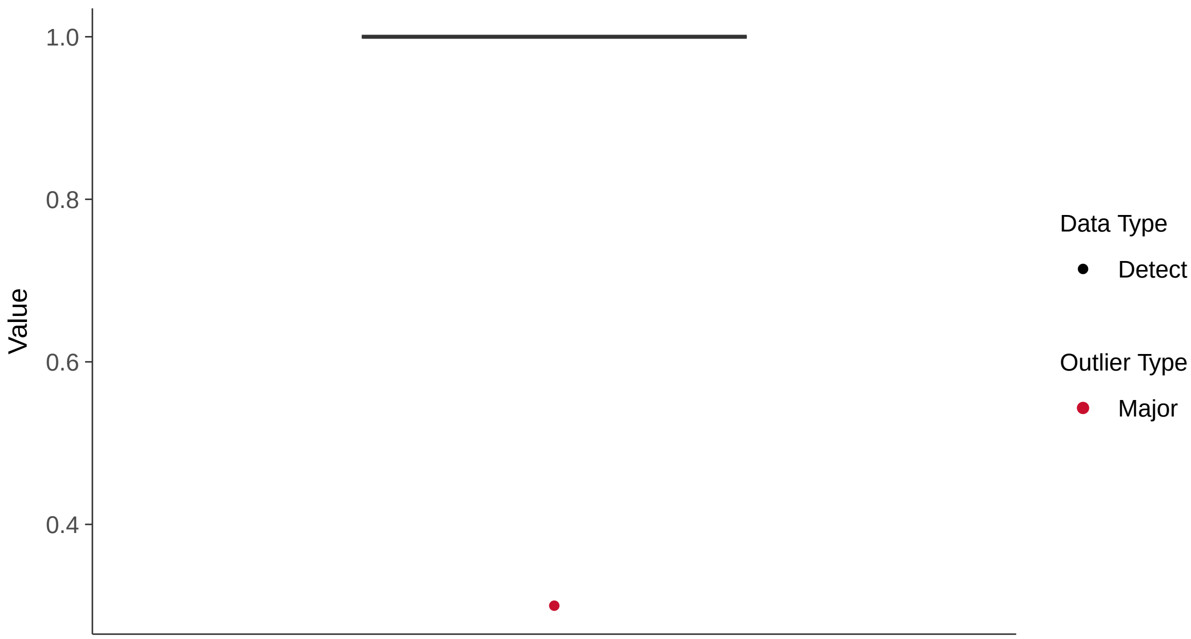
ID: 7B_1_04





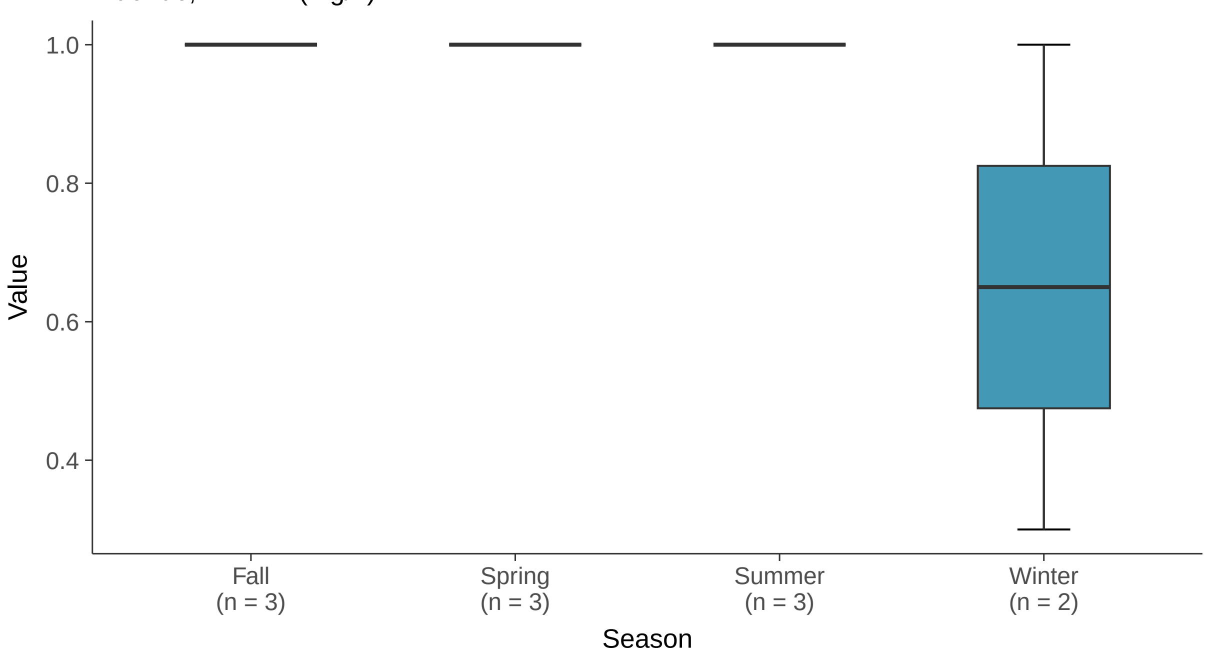
Boxplot

Fluoride, MW-7B (mg/L)



Boxplot by Season

Fluoride, MW-7B (mg/L)

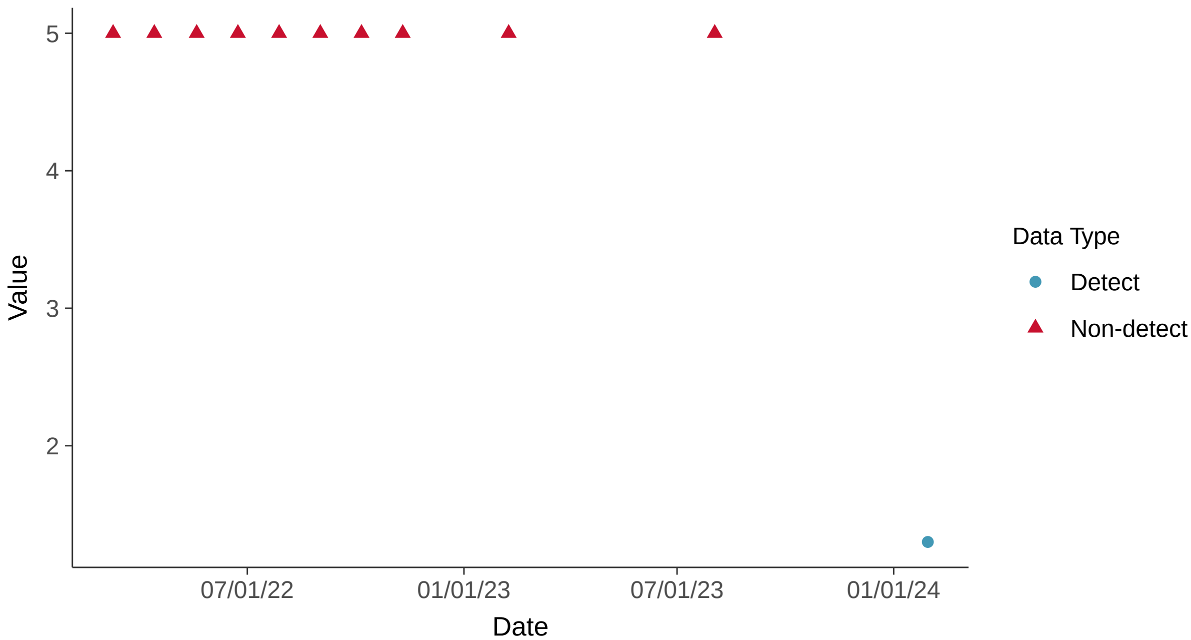


Appendix III: Sulfate, MW-7B

ID: 7B_1_05

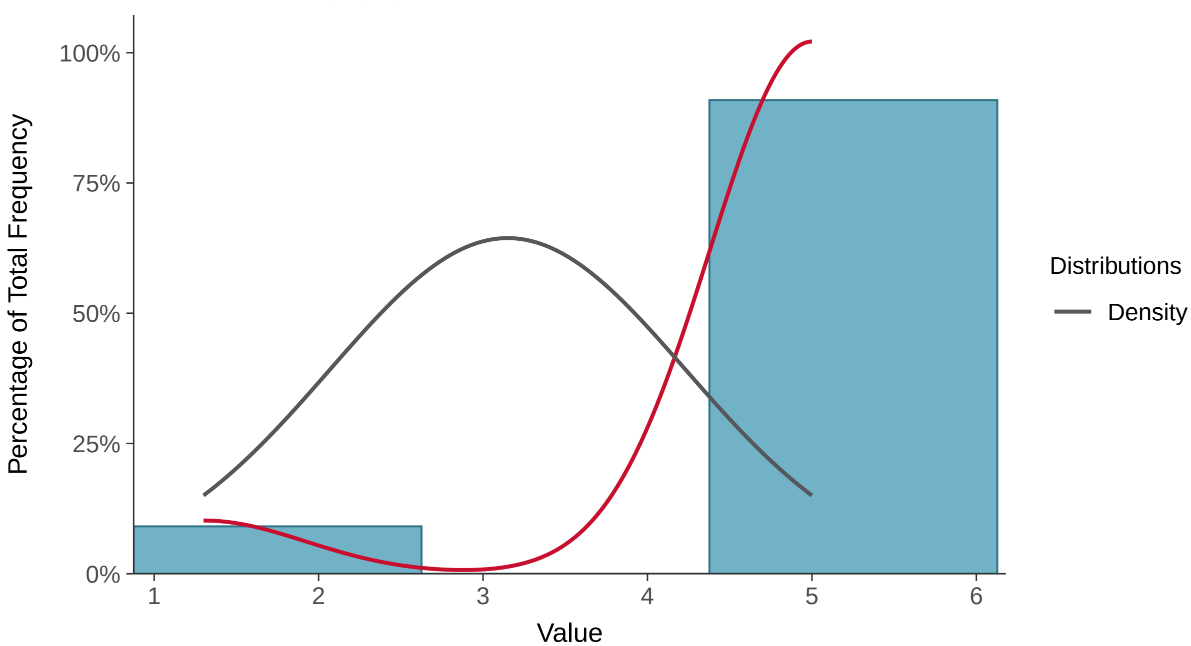
Scatter Plot

Sulfate, MW-7B (mg/L)



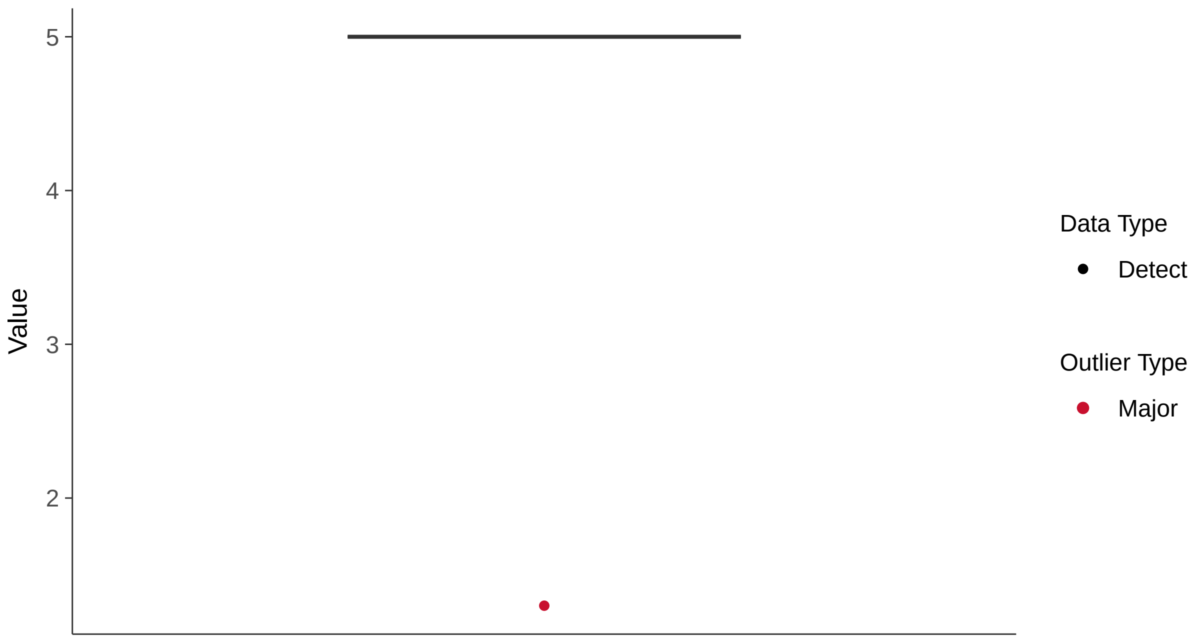
Histogram

Sulfate, MW-7B (mg/L)



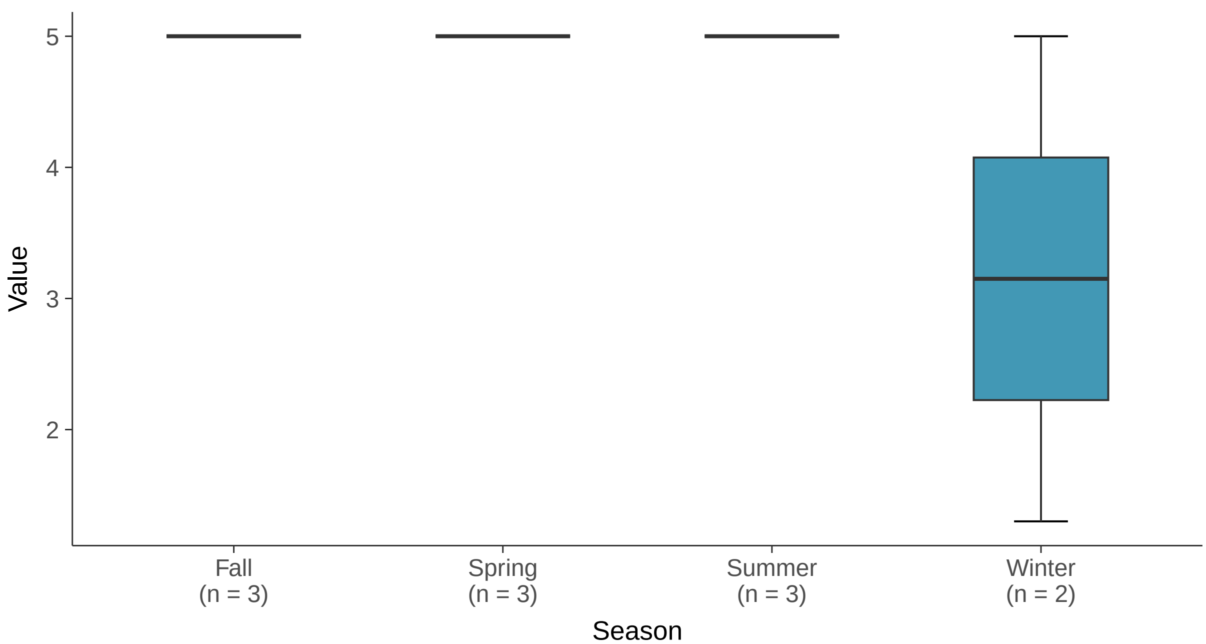
Boxplot

Sulfate, MW-7B (mg/L)



Boxplot by Season

Sulfate, MW-7B (mg/L)

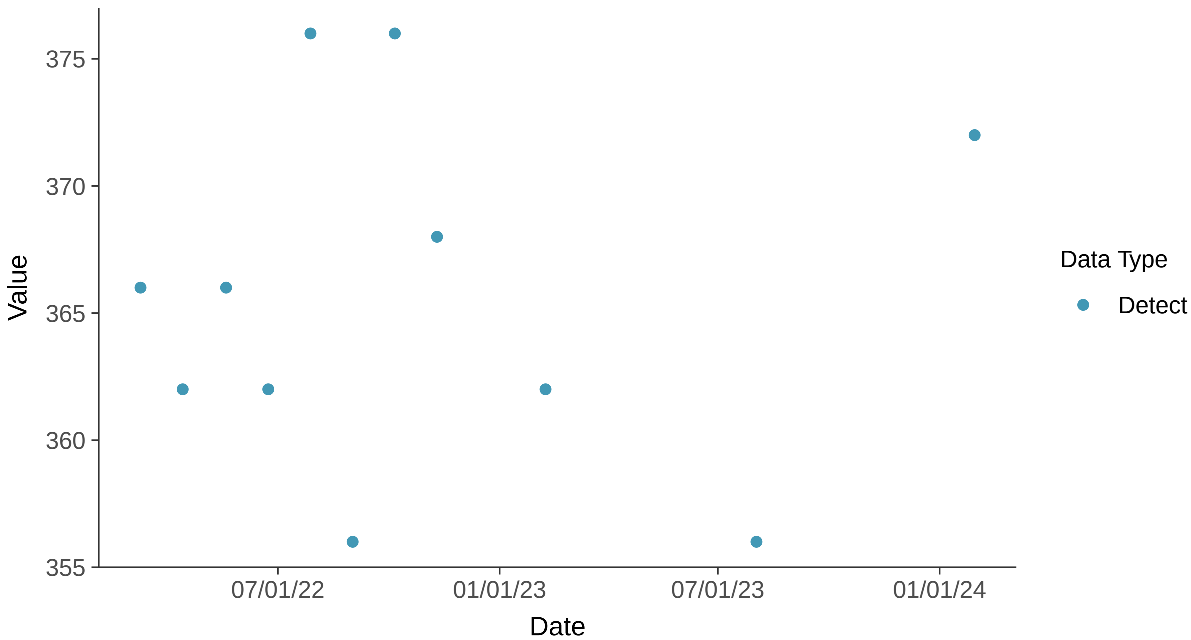


Appendix III: Total Dissolved Solids, MW-7B

ID: 7B_1_06

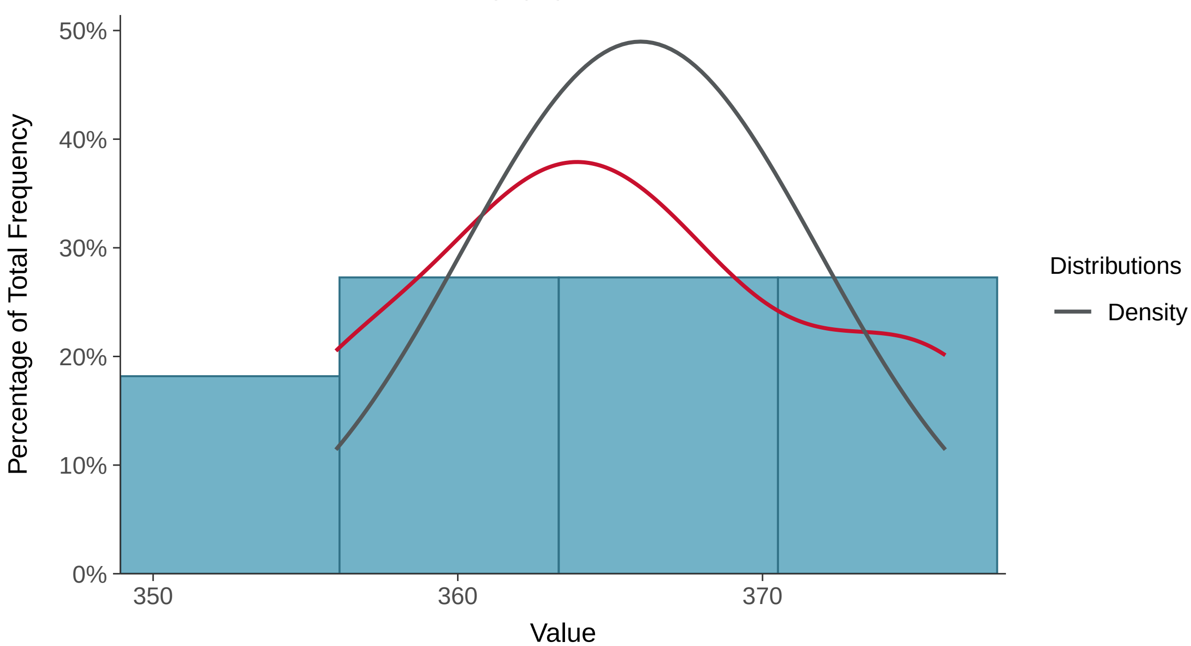
Scatter Plot

Total Dissolved Solids, MW-7B (mg/L)



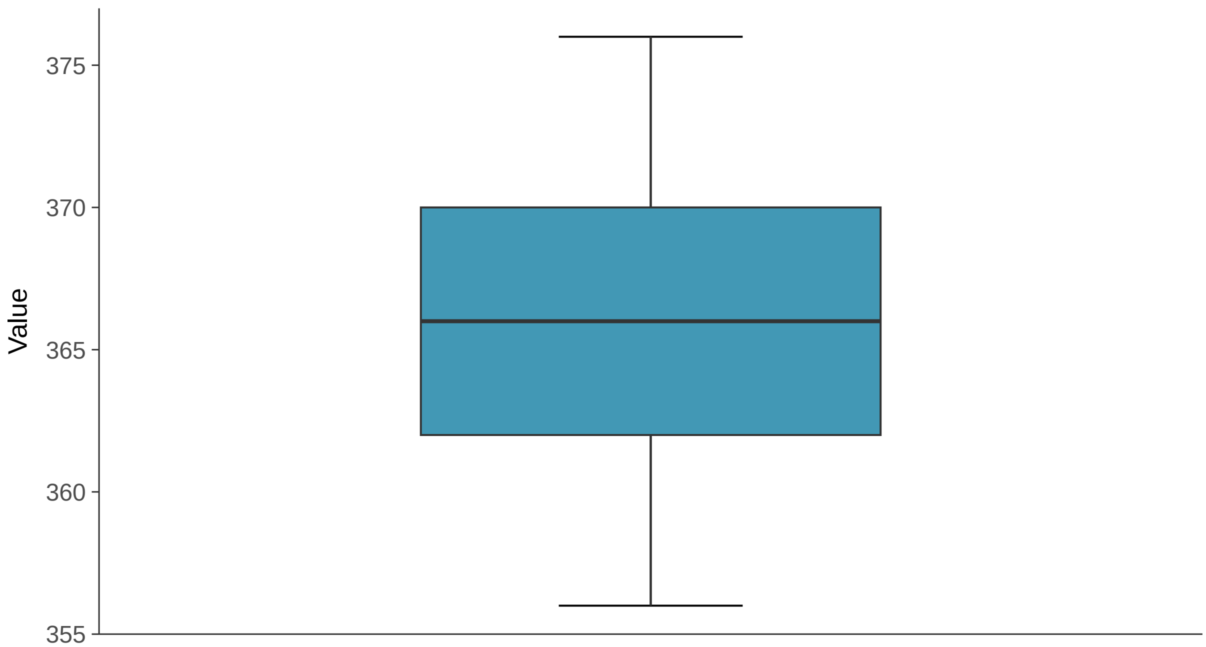
Histogram

Total Dissolved Solids, MW-7B (mg/L)



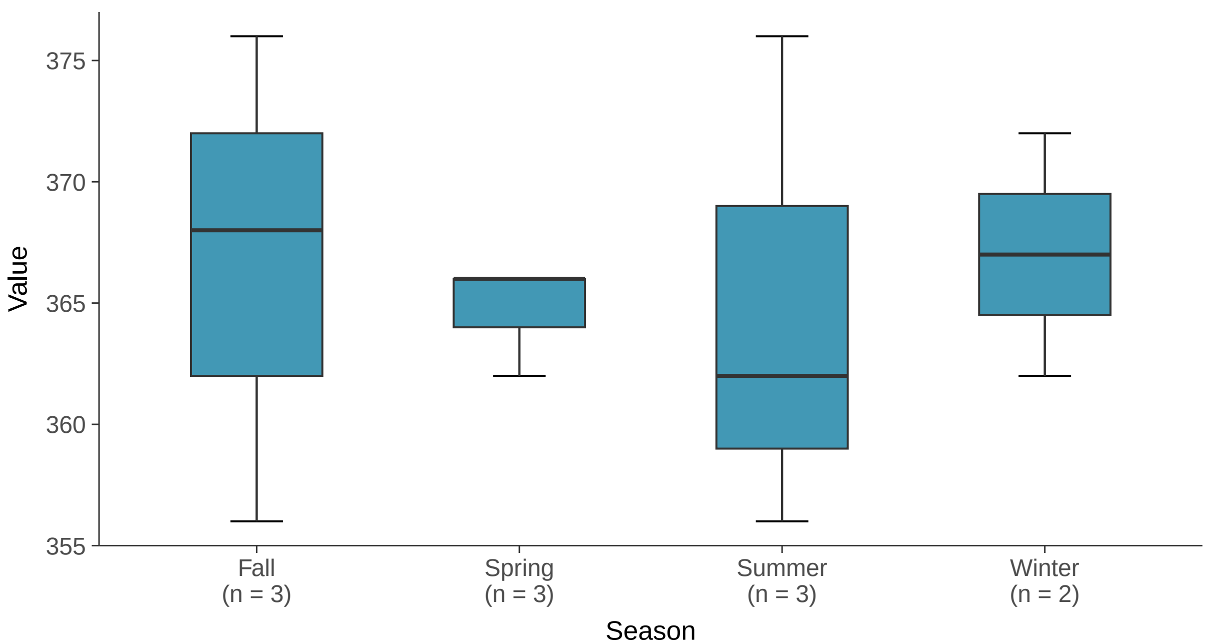
Boxplot

Total Dissolved Solids, MW-7B (mg/L)



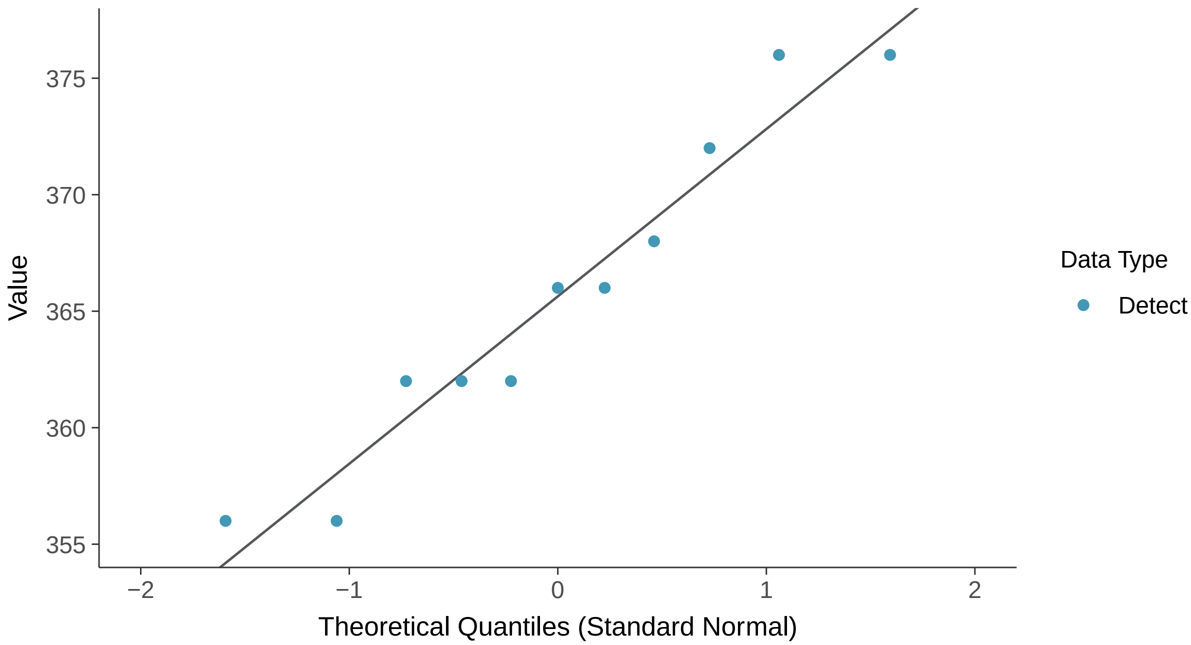
Boxplot by Season

Total Dissolved Solids, MW-7B (mg/L)



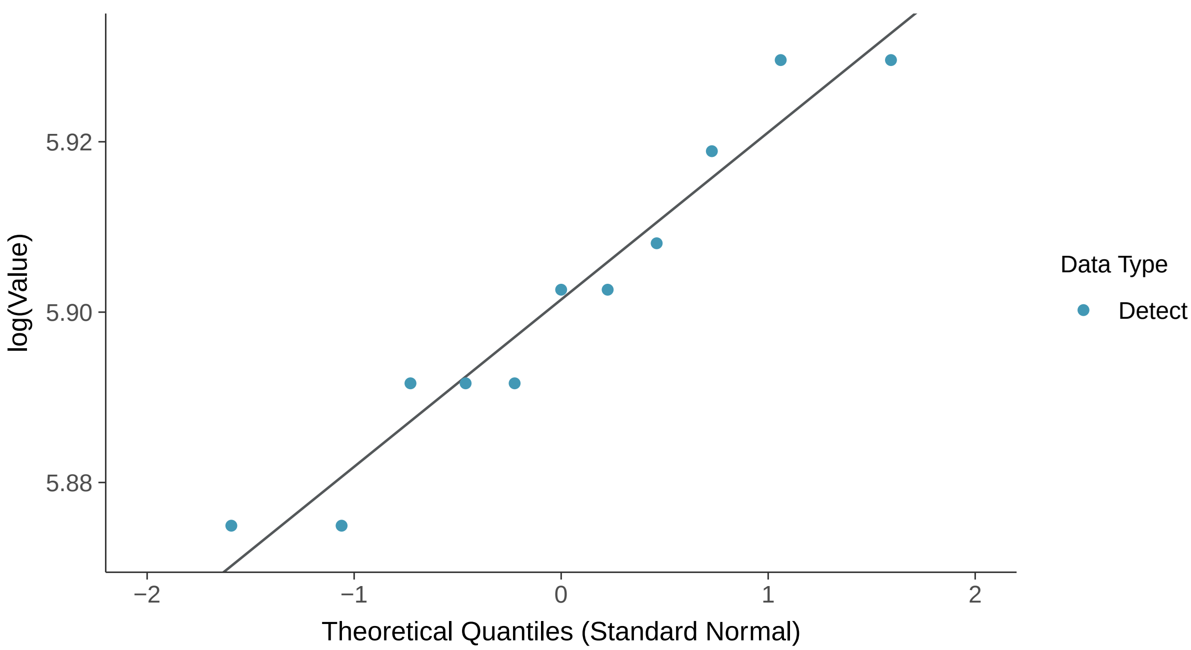
Normal Q-Q plot

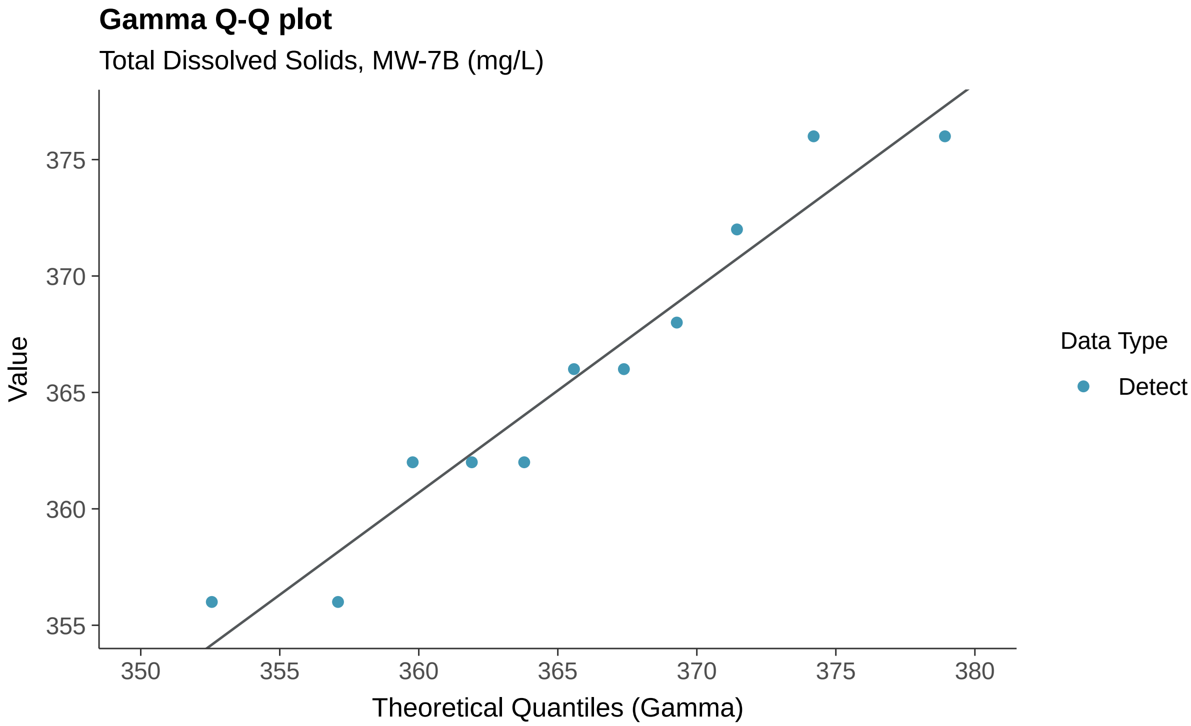
Total Dissolved Solids, MW-7B (mg/L)

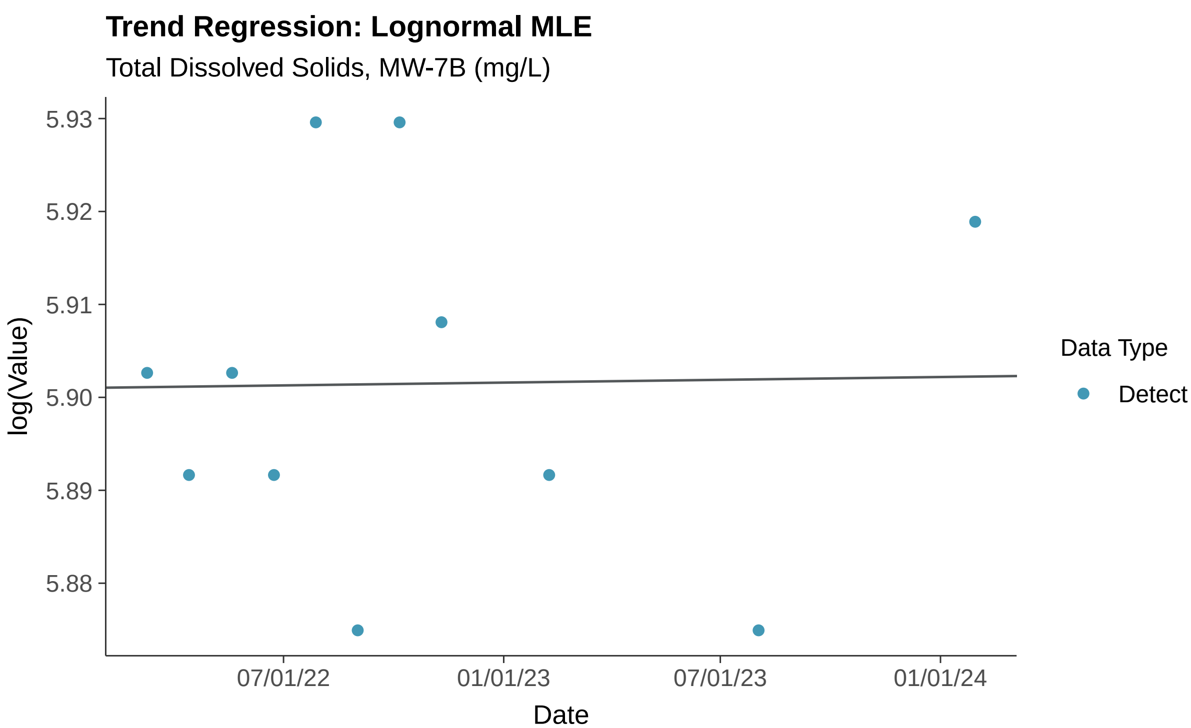


Lognormal Q-Q plot

Total Dissolved Solids, MW-7B (mg/L)

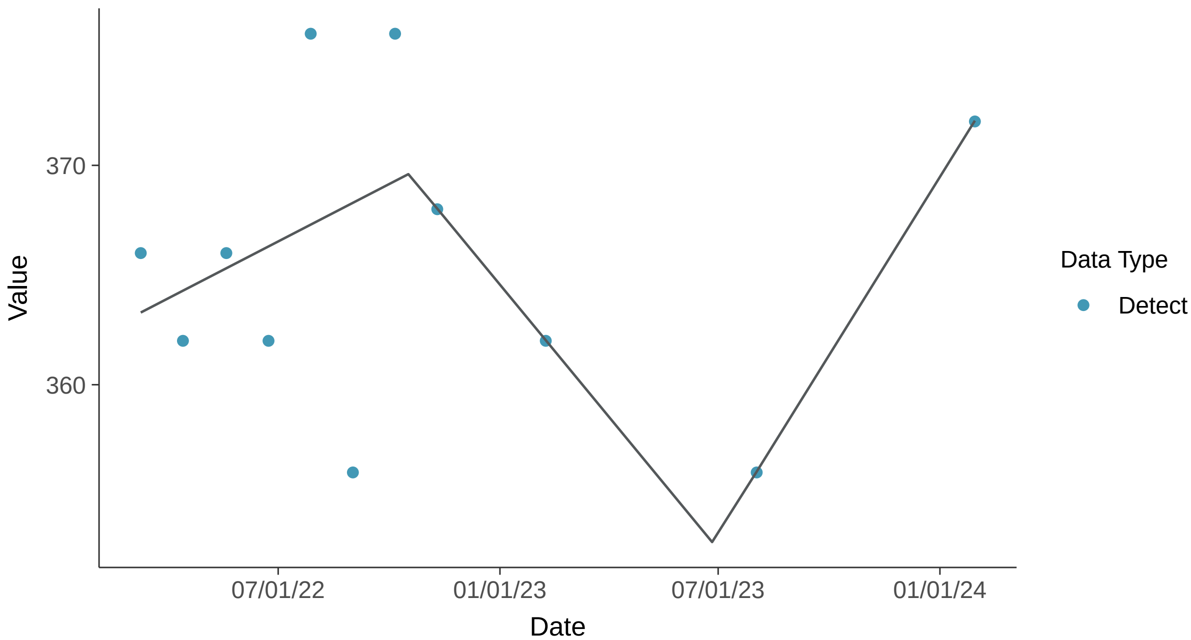



Gamma Q-Q plot
Total Dissolved Solids, MW-7B (mg/L)
Value
375
370
365
360
355
350
355
360
365
370
375
380
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Total Dissolved Solids, MW-7B (mg/L)
log(Value)
5.93
5.92
5.91
5.90
5.89
5.88
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

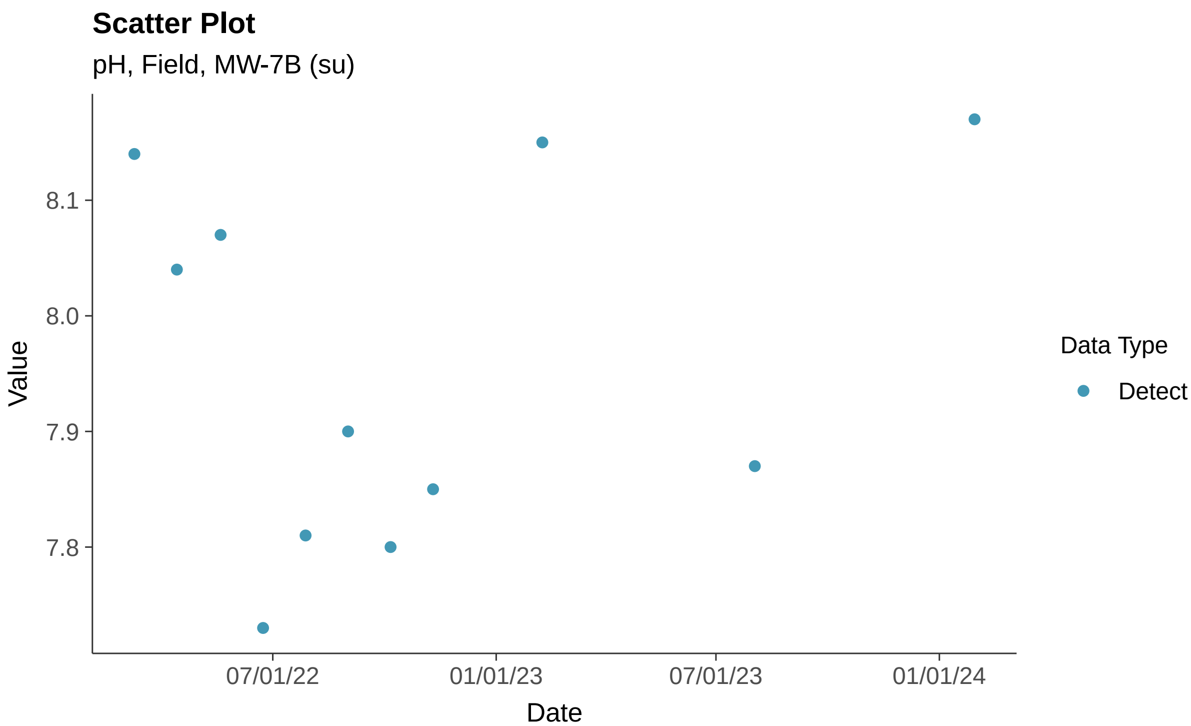
Trend Regression: Piecewise Linear-Linear-Linear

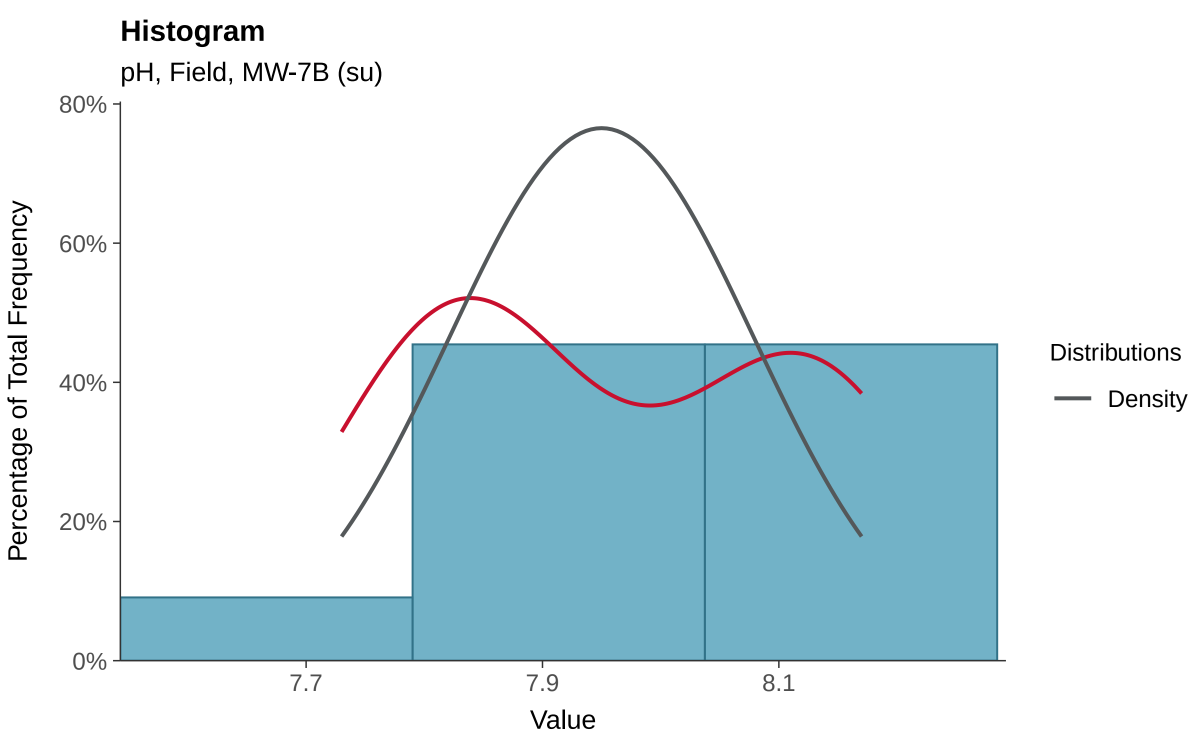
Total Dissolved Solids, MW-7B (mg/L)



Appendix III: pH, Field, MW-7B

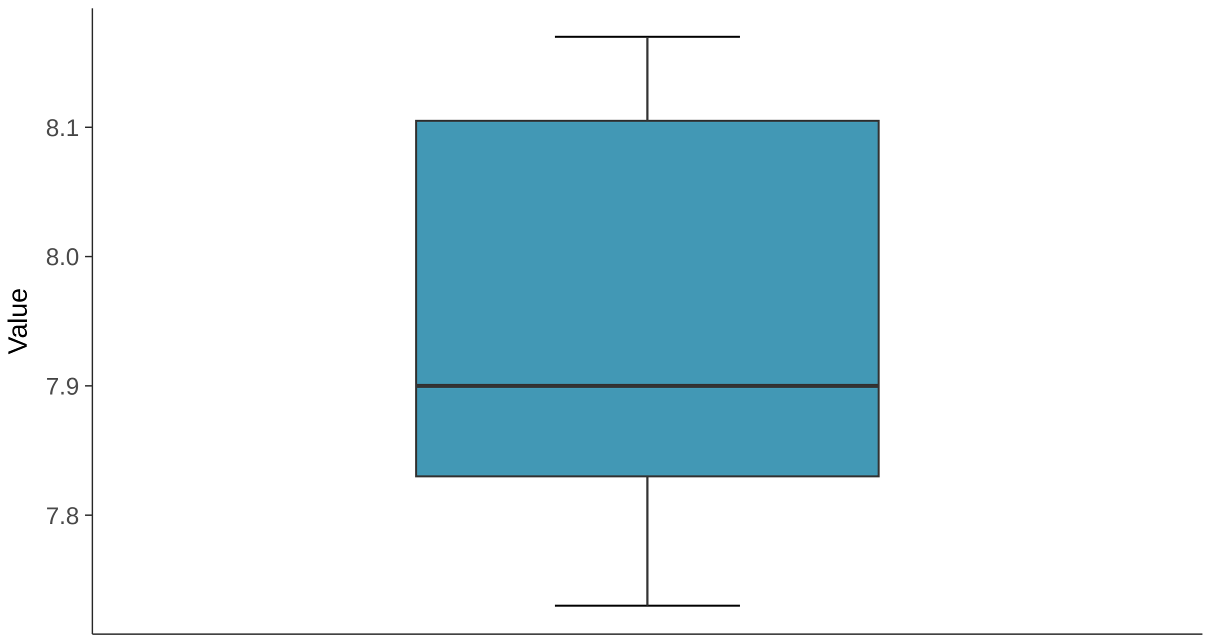
ID: 7B_1_07





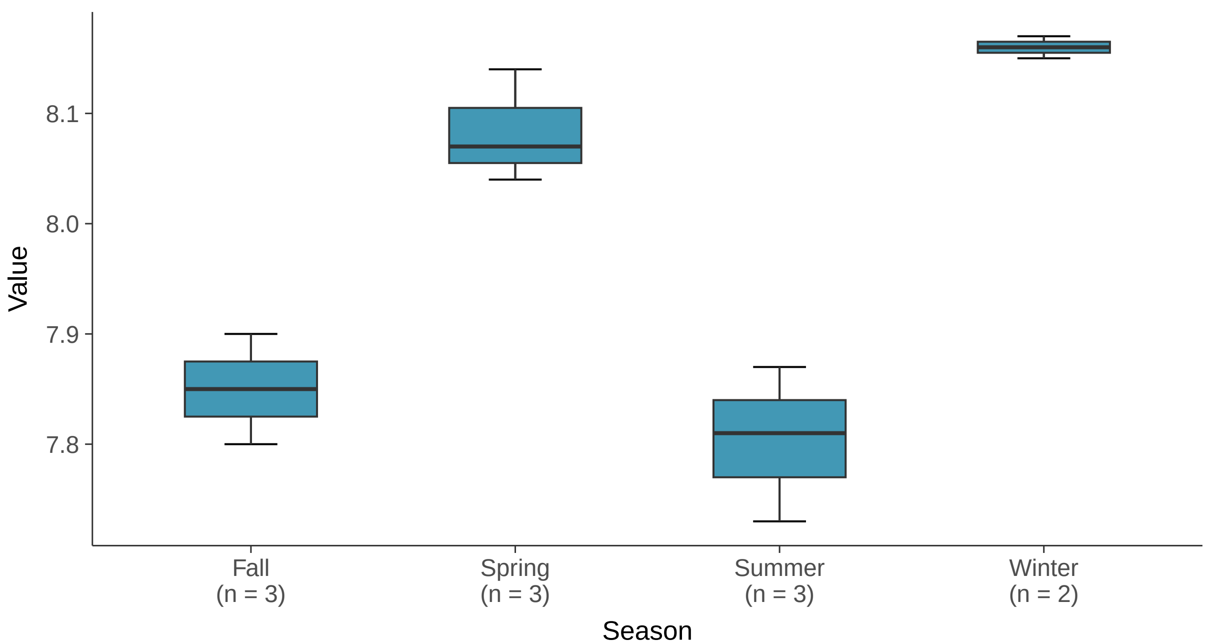
Boxplot

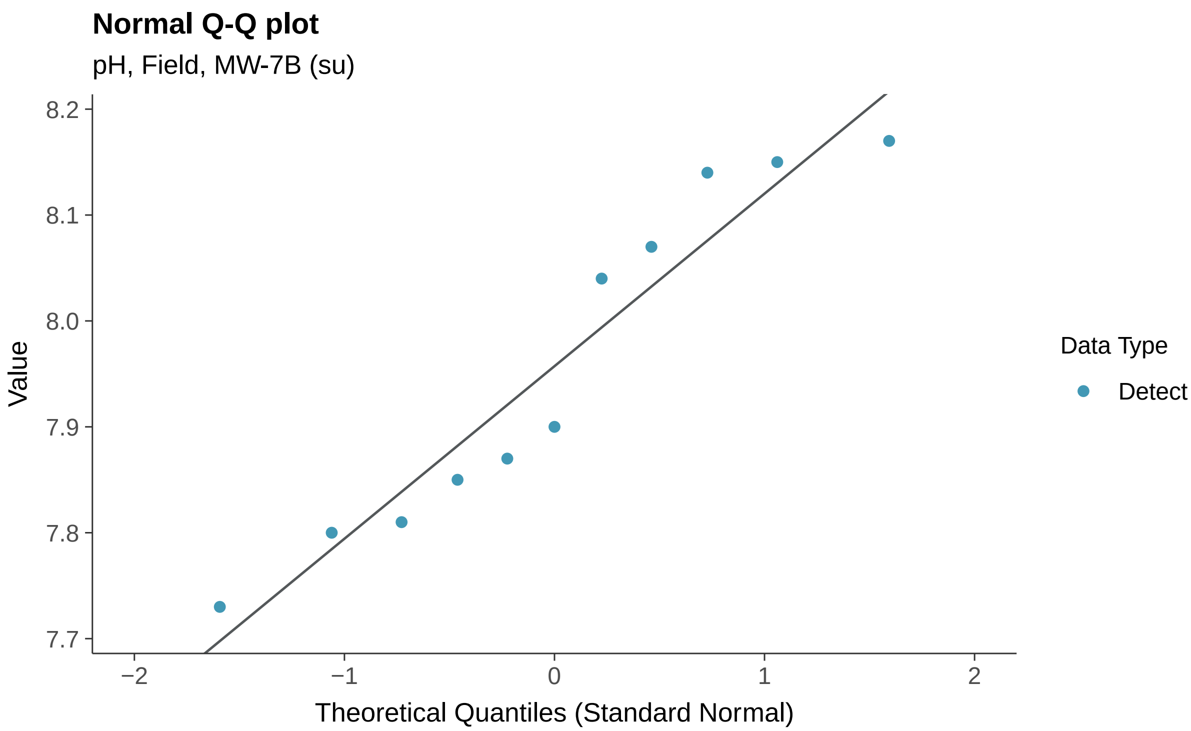
pH, Field, MW-7B (su)

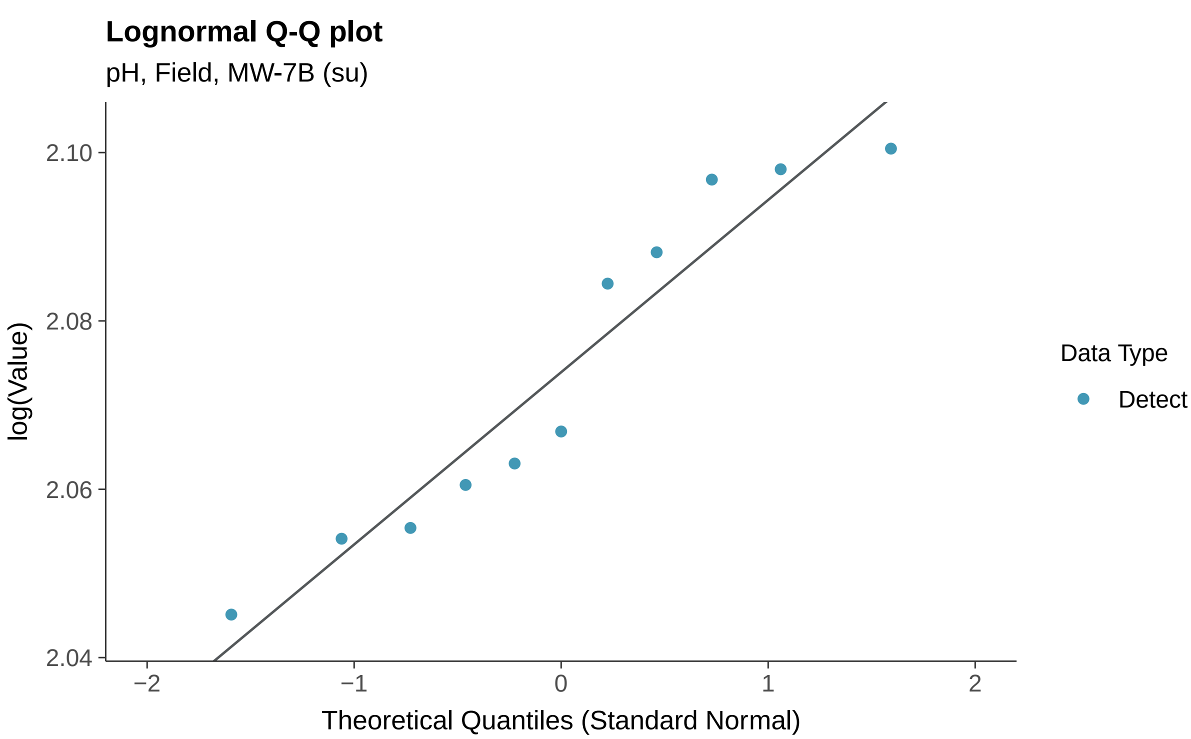


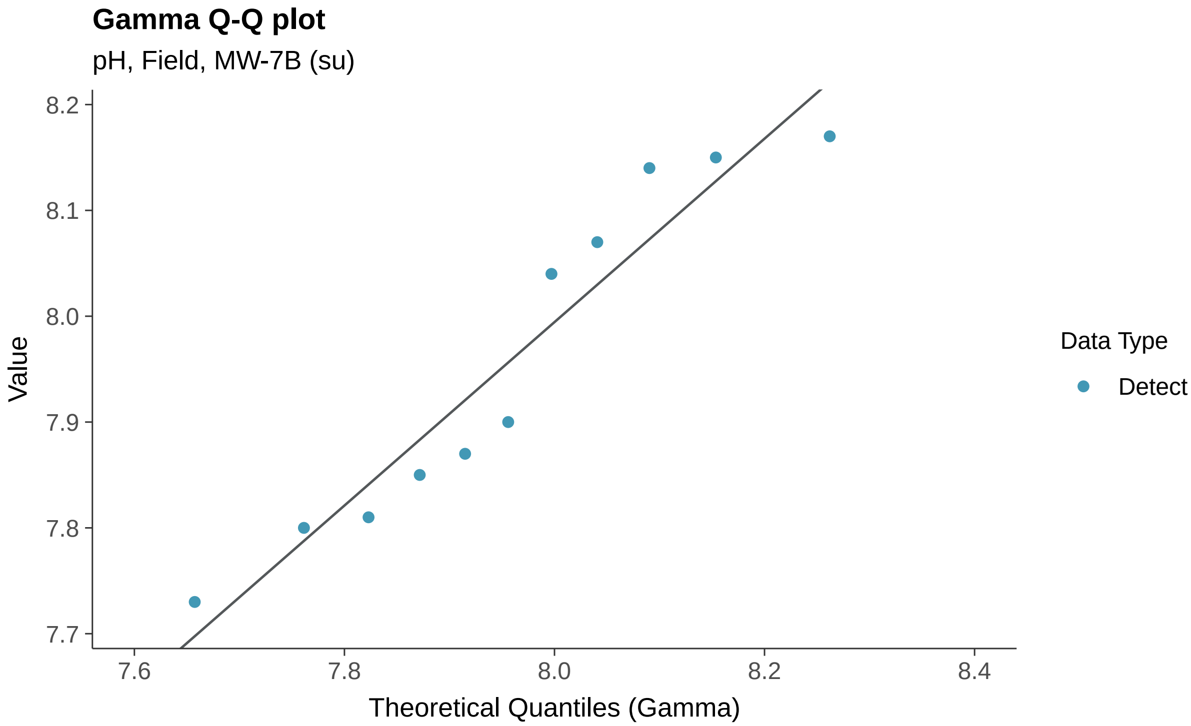
Boxplot by Season

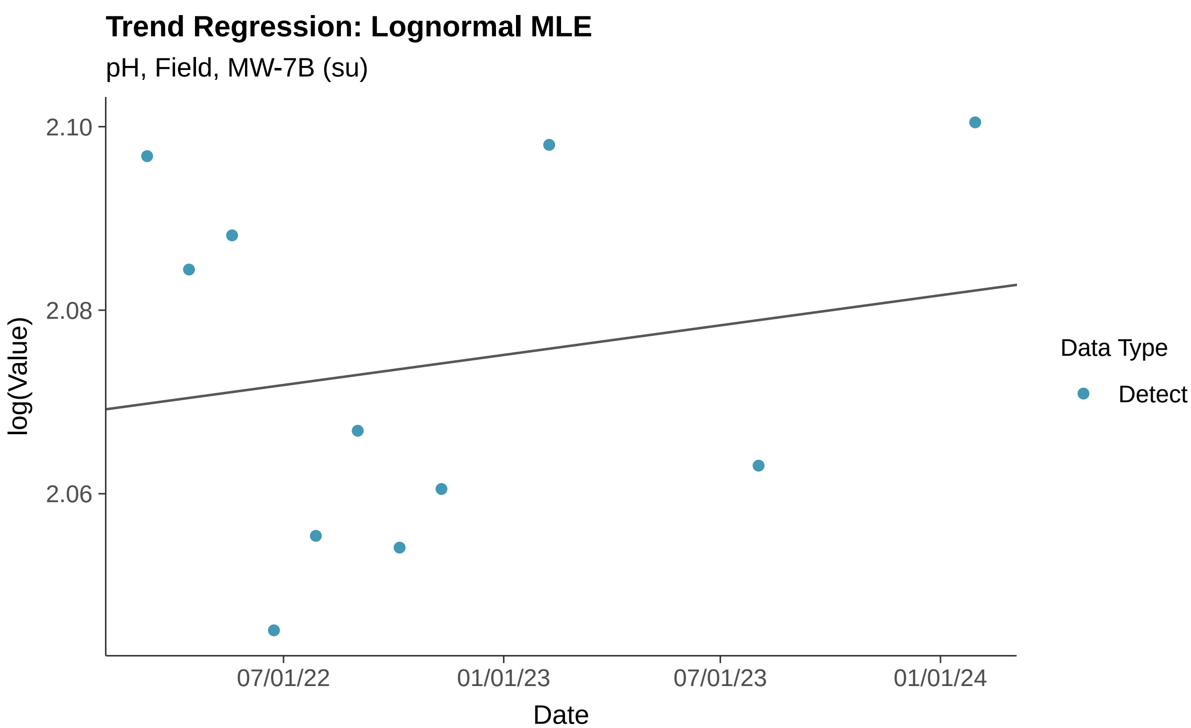
pH, Field, MW-7B (su)




Normal Q-Q plot
pH, Field, MW-7B (su)
Value
8.2
8.1
8.0
7.9
7.8
7.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

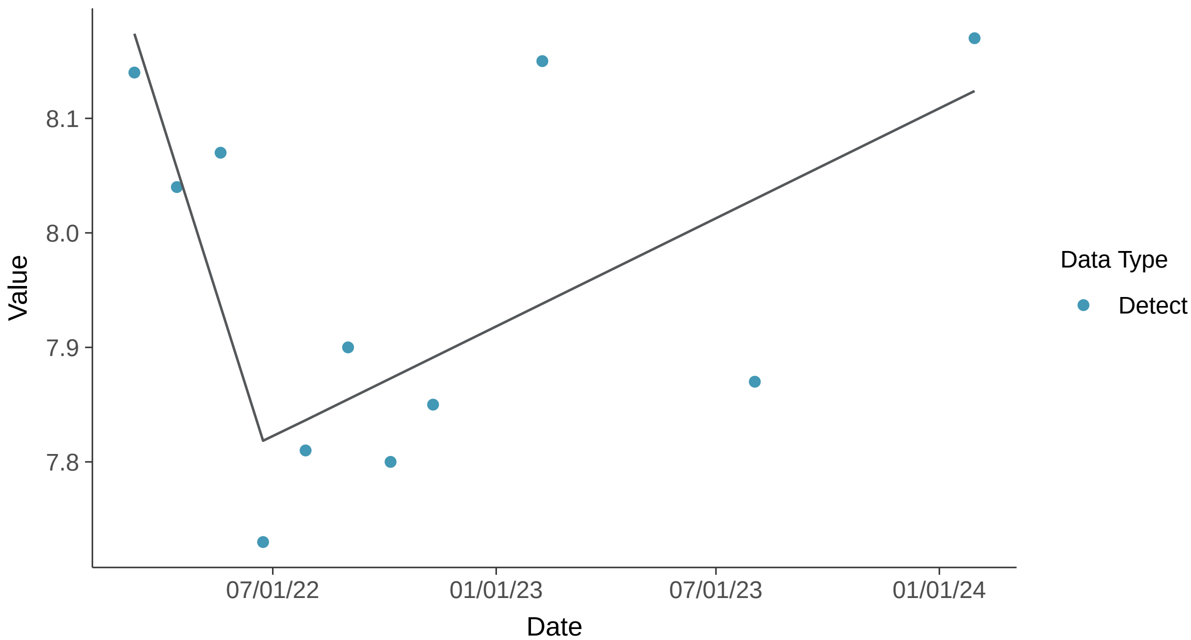

Lognormal Q-Q plot
pH, Field, MW-7B (su)
log(Value)
2.10
2.08
2.06
2.04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, Field, MW-7B (su)
Value
Theoretical Quantiles (Gamma)
8.2
8.1
8.0
7.9
7.8
7.7
7.6
7.8
8.0
8.2
8.4
Data Type
Detect


Trend Regression: Lognormal MLE
pH, Field, MW-7B (su)
log(Value)
Date
2.10
2.08
2.06
07/01/22
01/01/23
07/01/23
01/01/24
Data Type
Detect

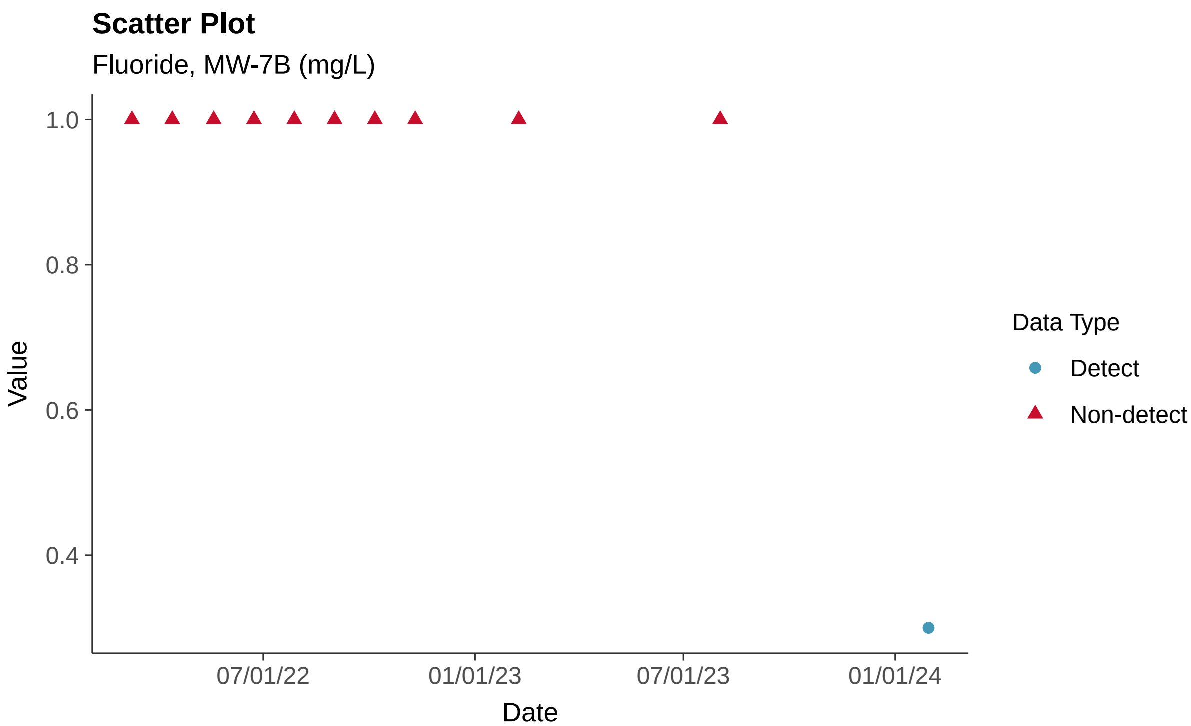
Trend Regression: Piecewise Linear-Linear

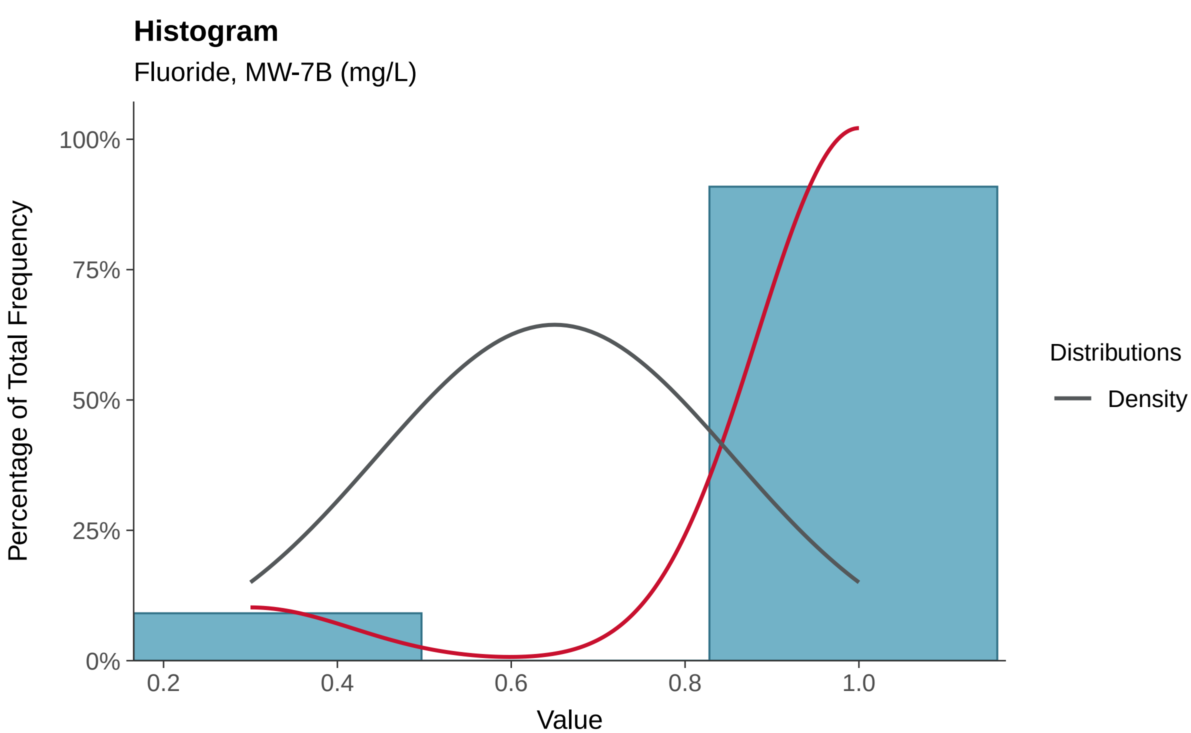
pH, Field, MW-7B (su)



Appendix IV: Fluoride, MW-7B

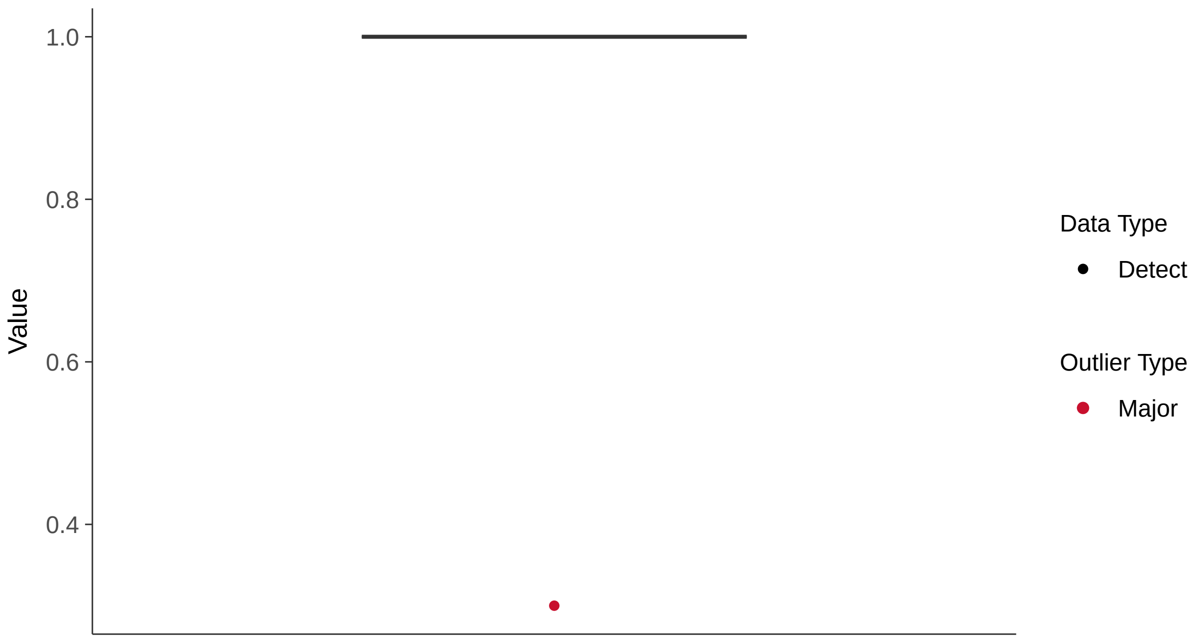
ID: 7B_2_04





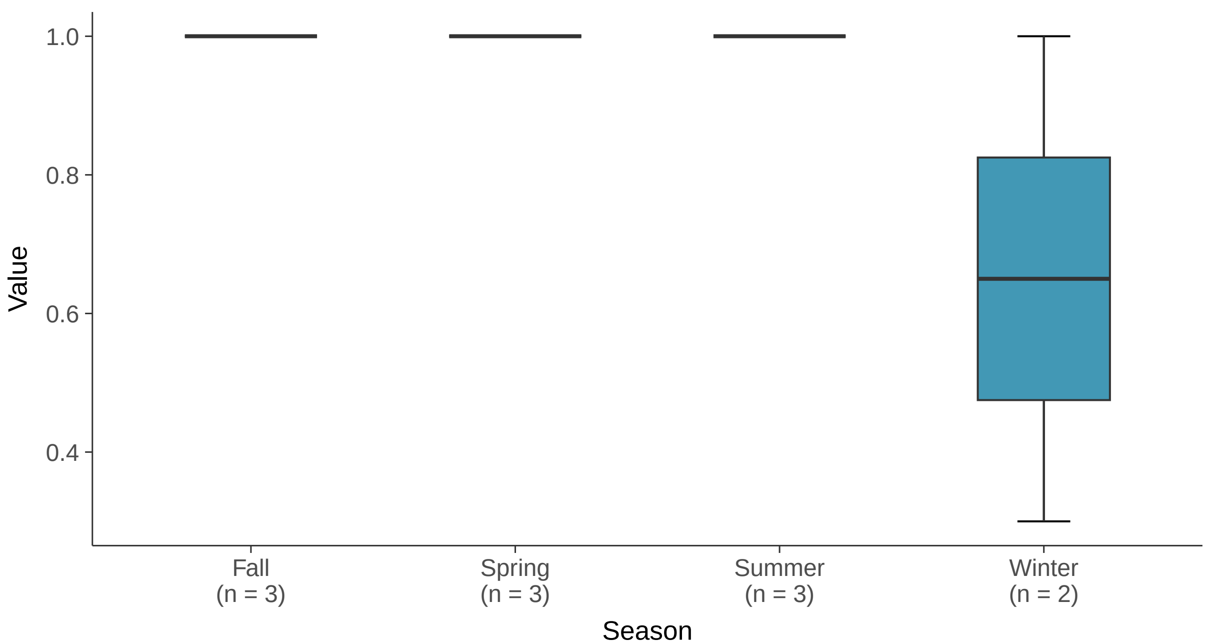
Boxplot

Fluoride, MW-7B (mg/L)



Boxplot by Season

Fluoride, MW-7B (mg/L)

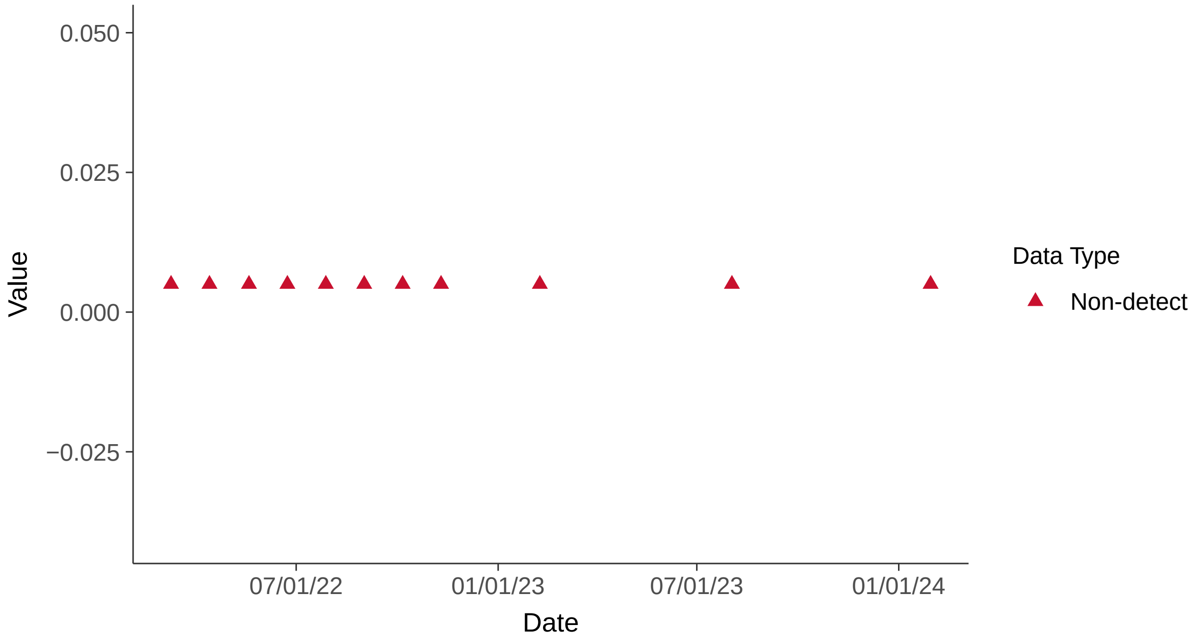


Appendix IV: Antimony, MW-7B

ID: 7B_2_08

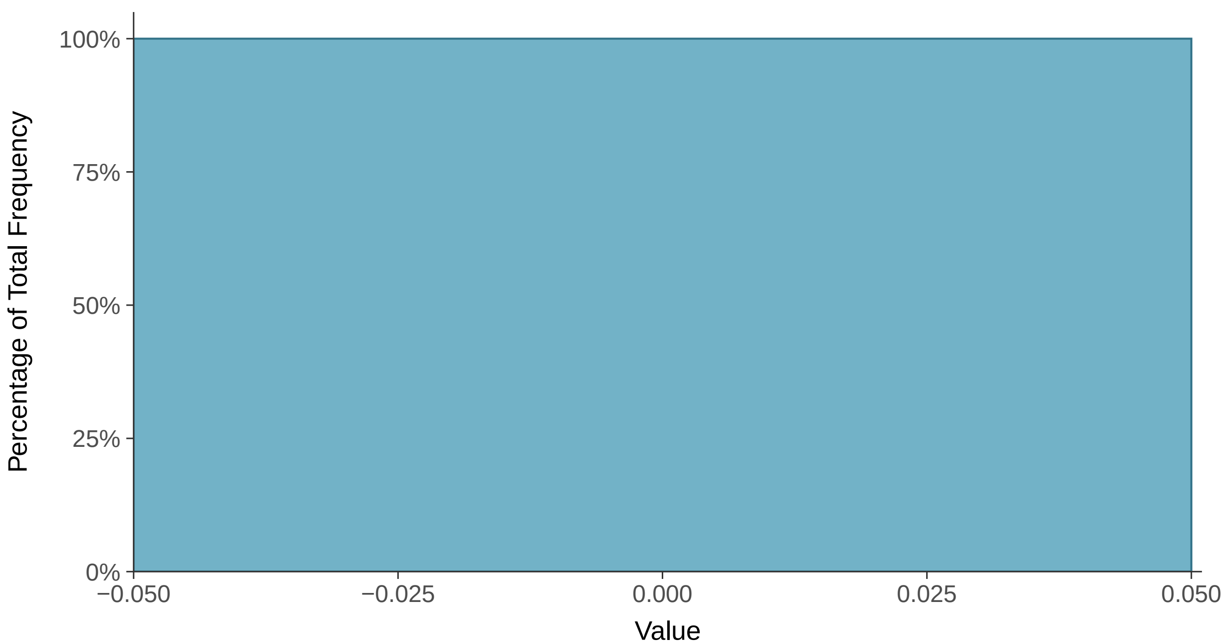
Scatter Plot

Antimony, MW-7B (mg/L)



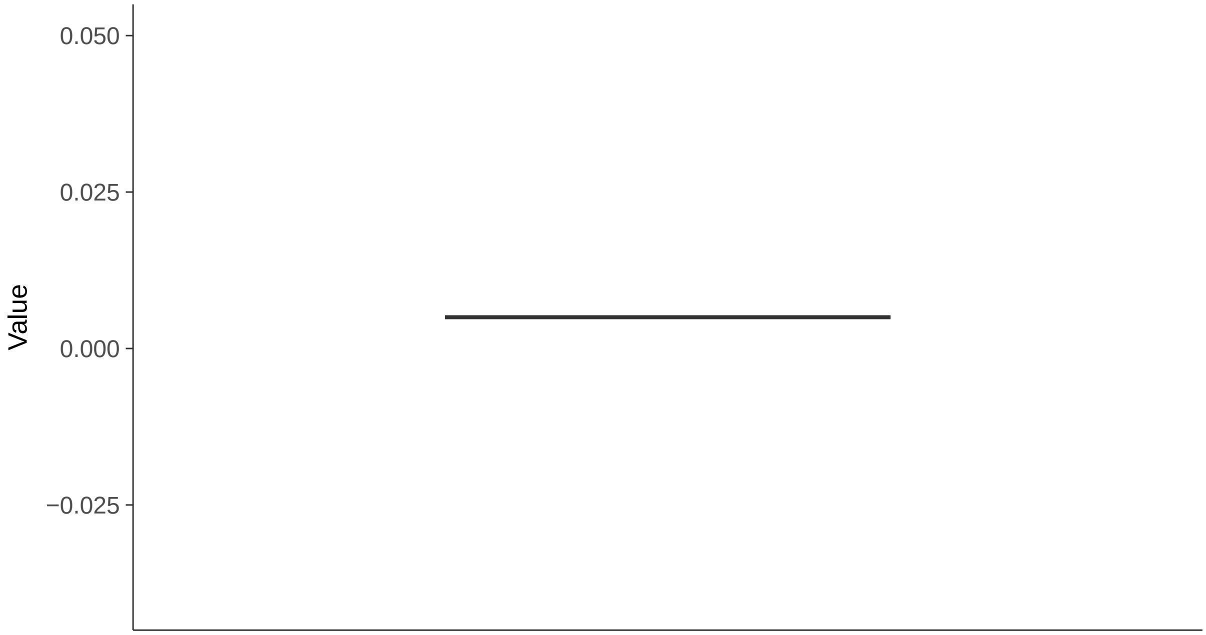
Histogram

Antimony, MW-7B (mg/L)



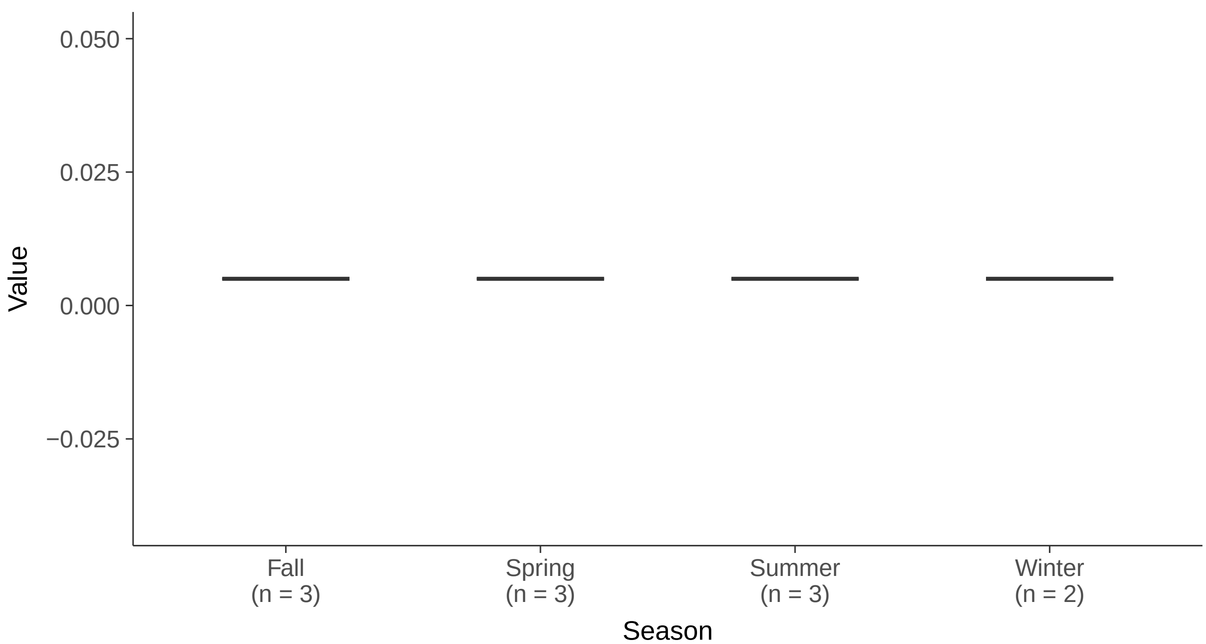
Boxplot

Antimony, MW-7B (mg/L)



Boxplot by Season

Antimony, MW-7B (mg/L)

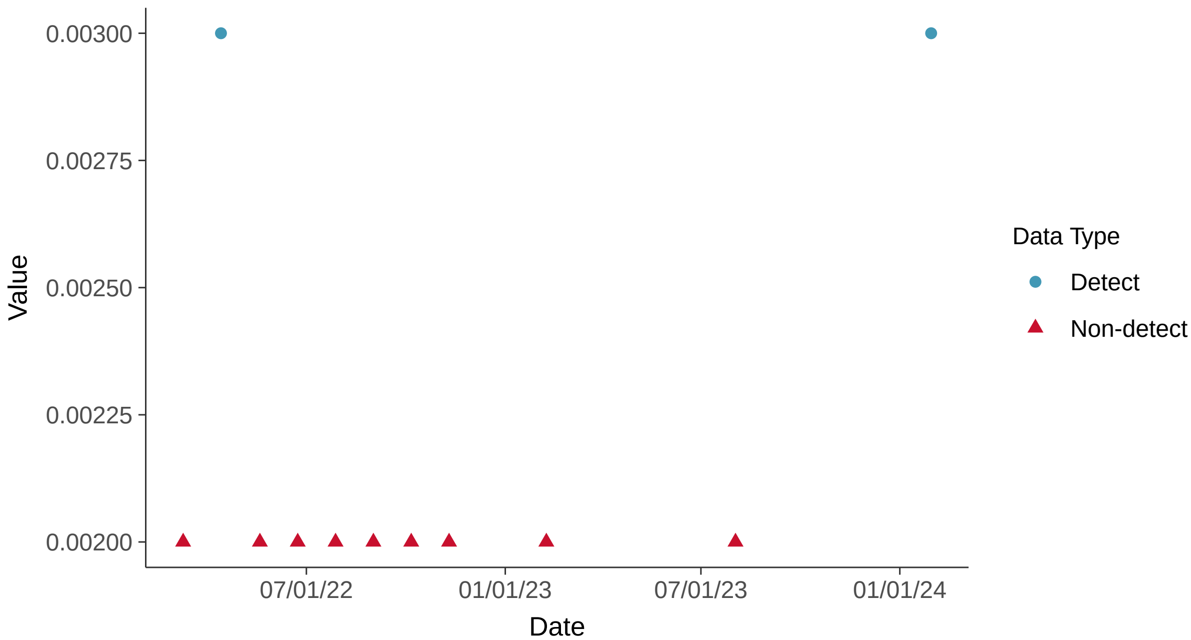


Appendix IV: Arsenic, MW-7B

ID: 7B_2_09

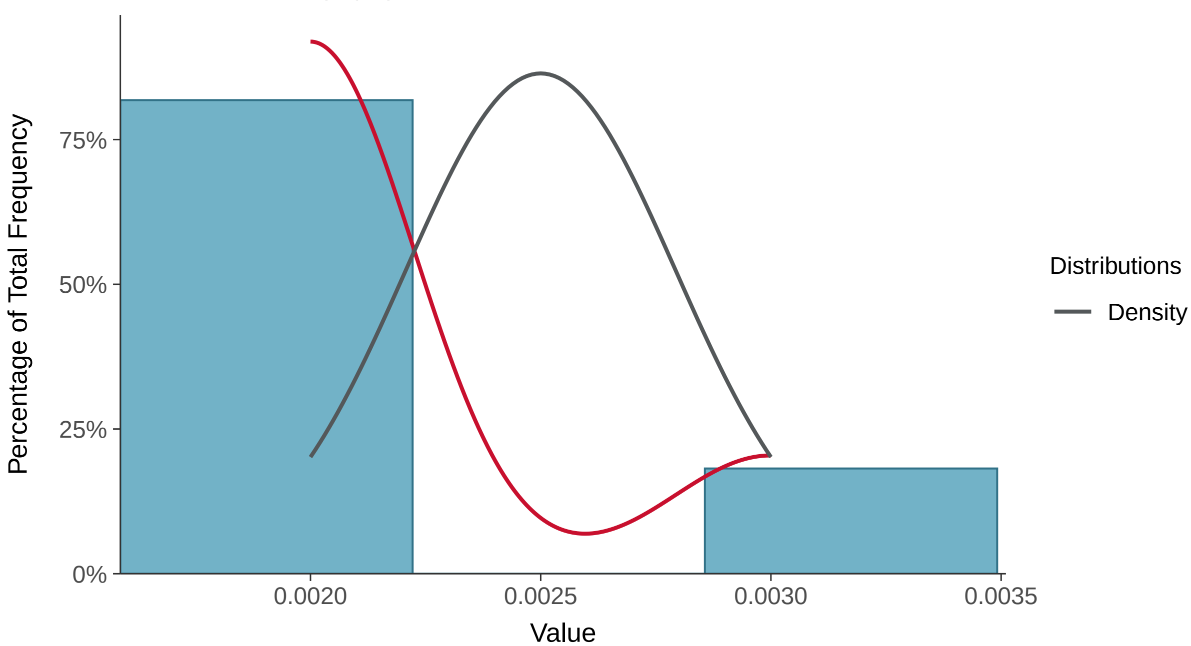
Scatter Plot

Arsenic, MW-7B (mg/L)



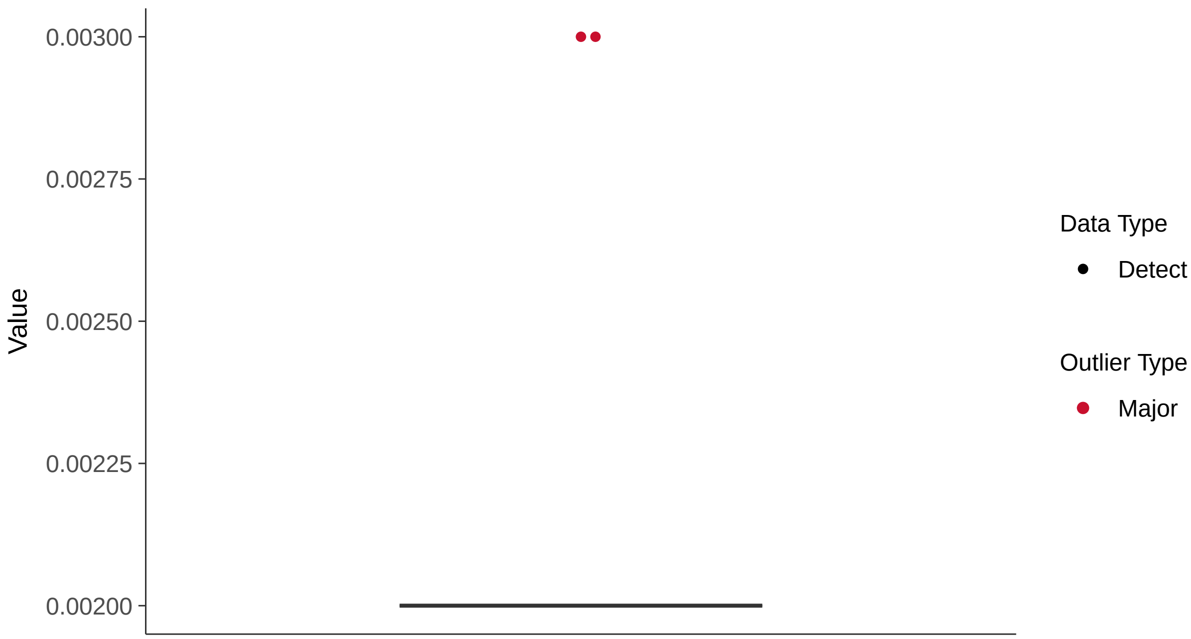
Histogram

Arsenic, MW-7B (mg/L)



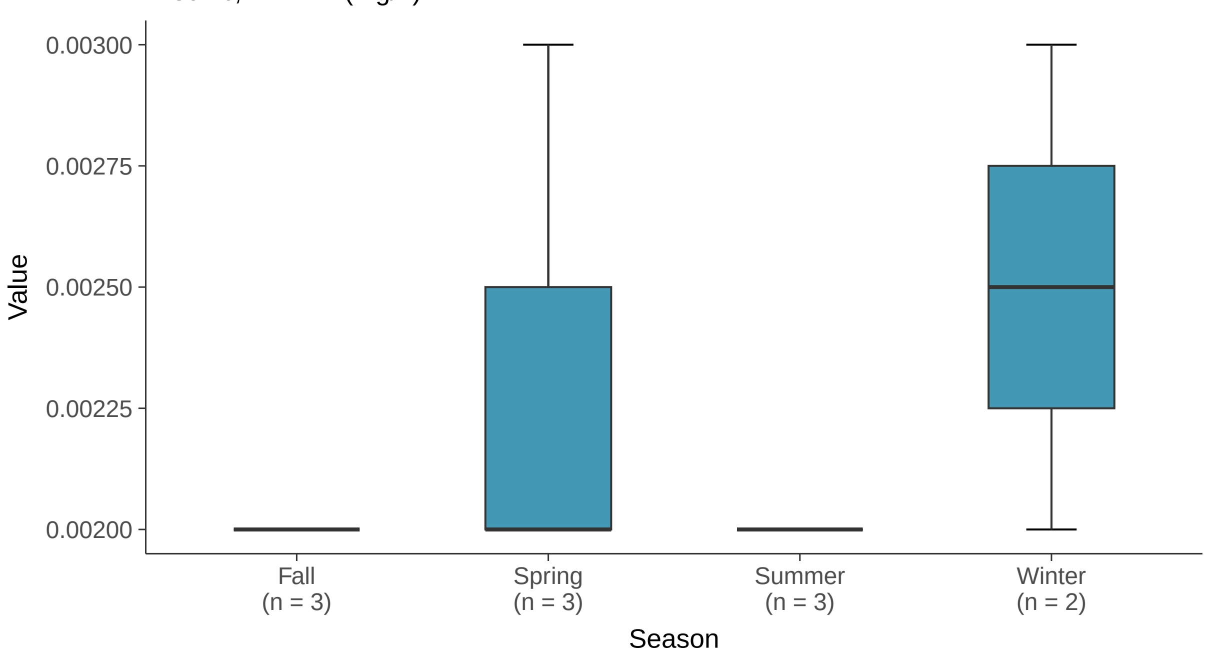
Boxplot

Arsenic, MW-7B (mg/L)



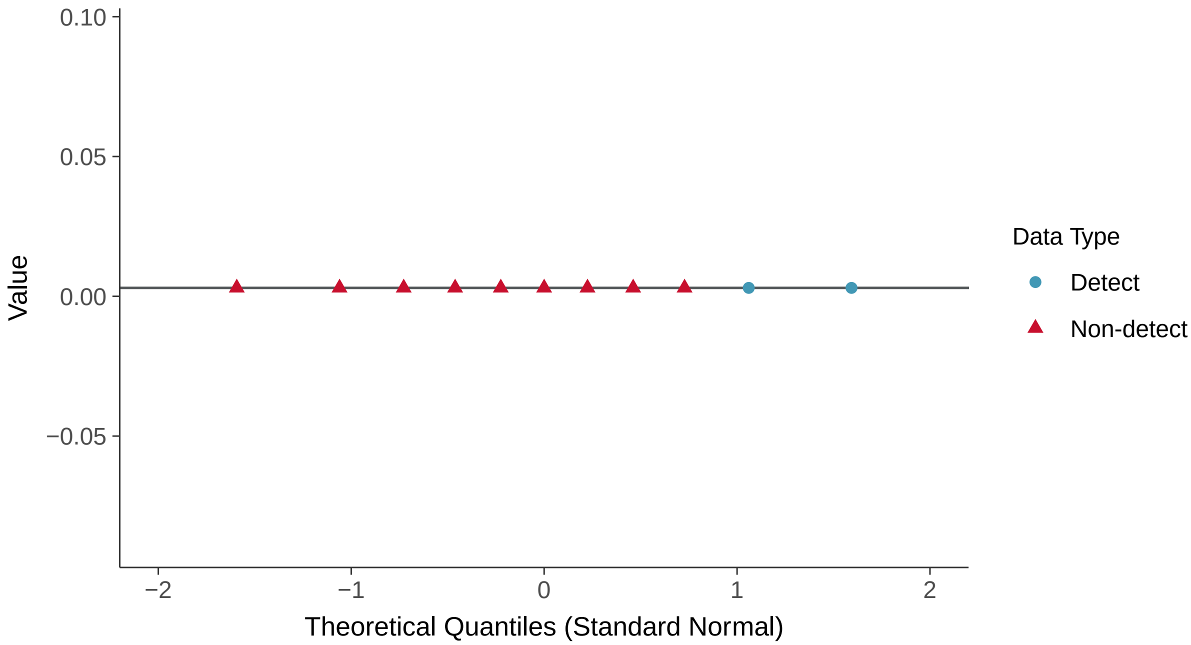
Boxplot by Season

Arsenic, MW-7B (mg/L)



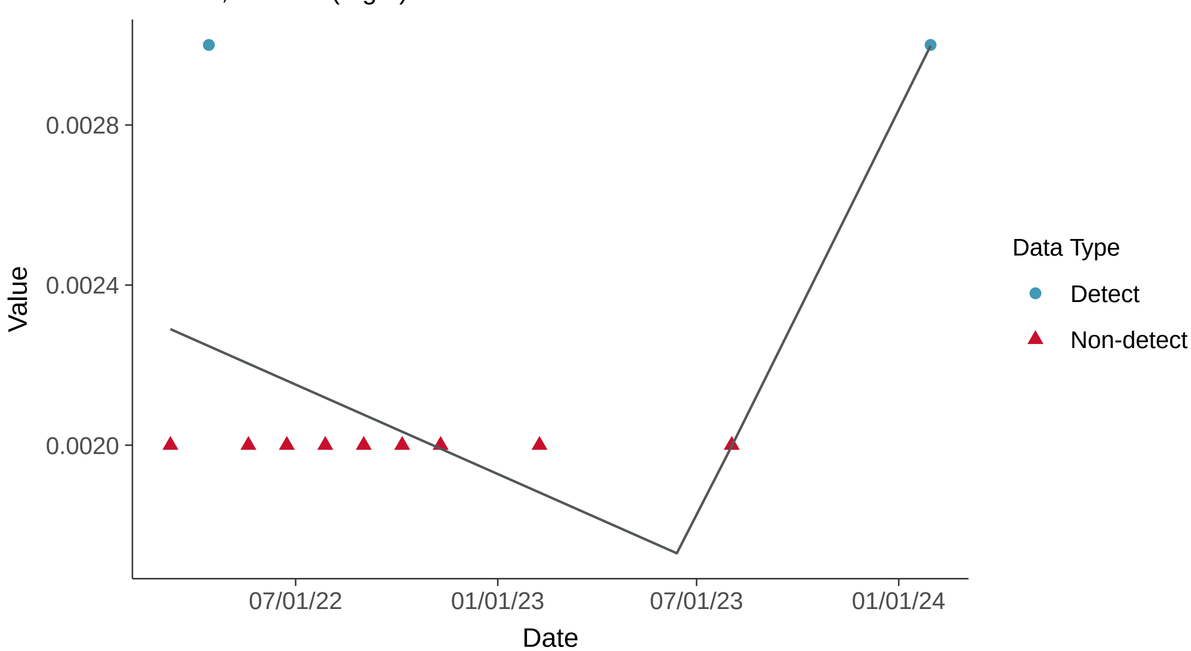
Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-7B (mg/L)



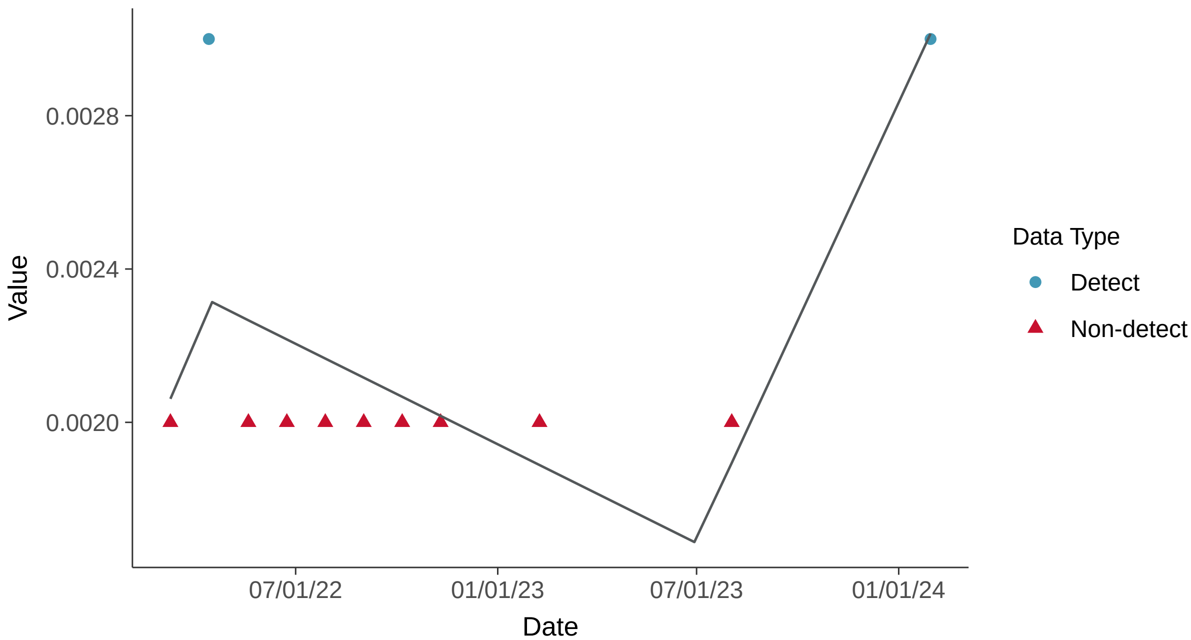
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-7B (mg/L)



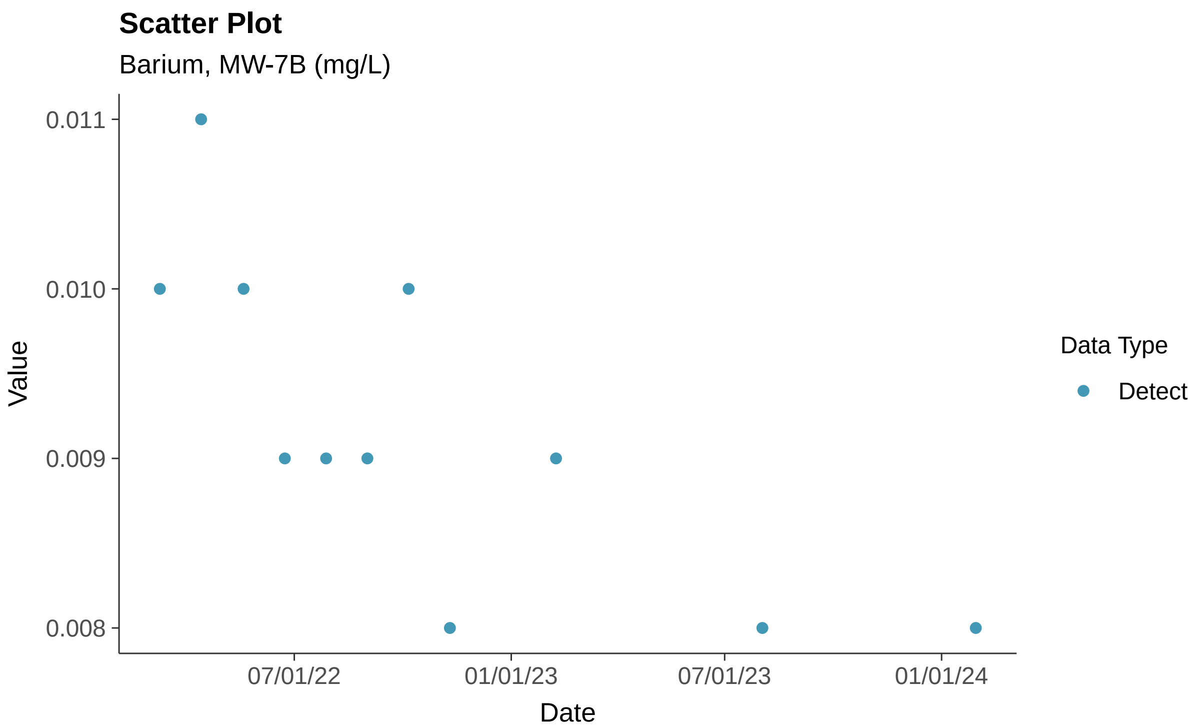
Trend Regression: Piecewise Linear-Linear-Linear

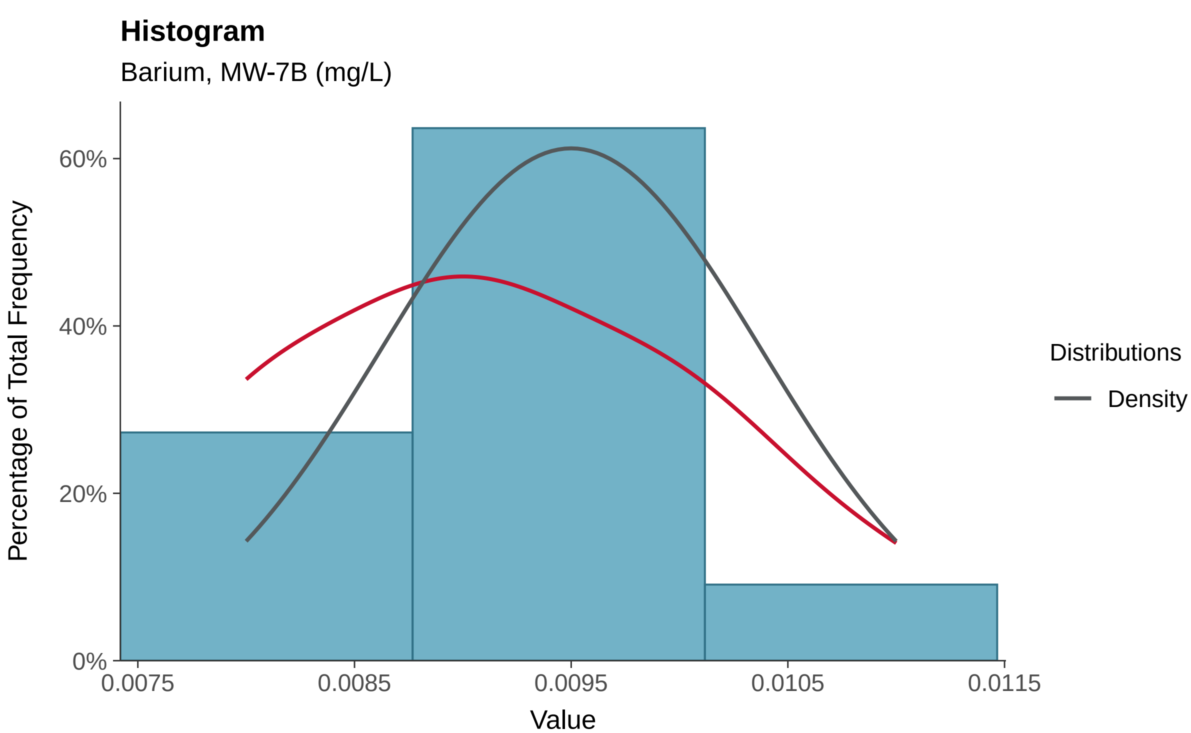
Arsenic, MW-7B (mg/L)



Appendix IV: Barium, MW-7B

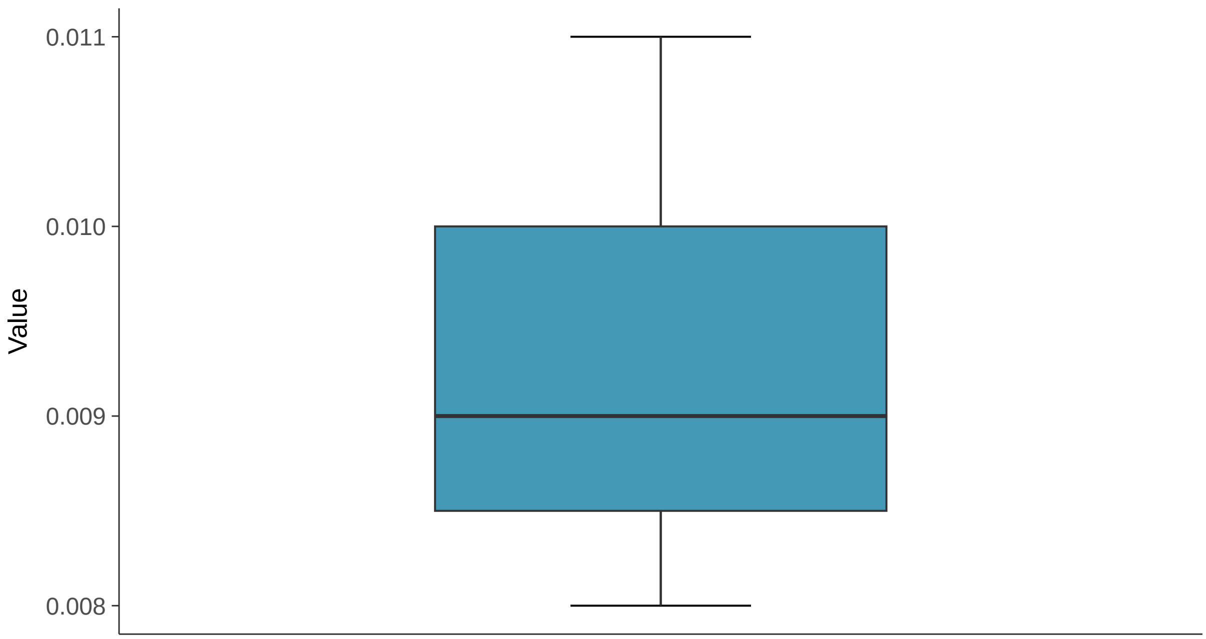
ID: 7B_2_10





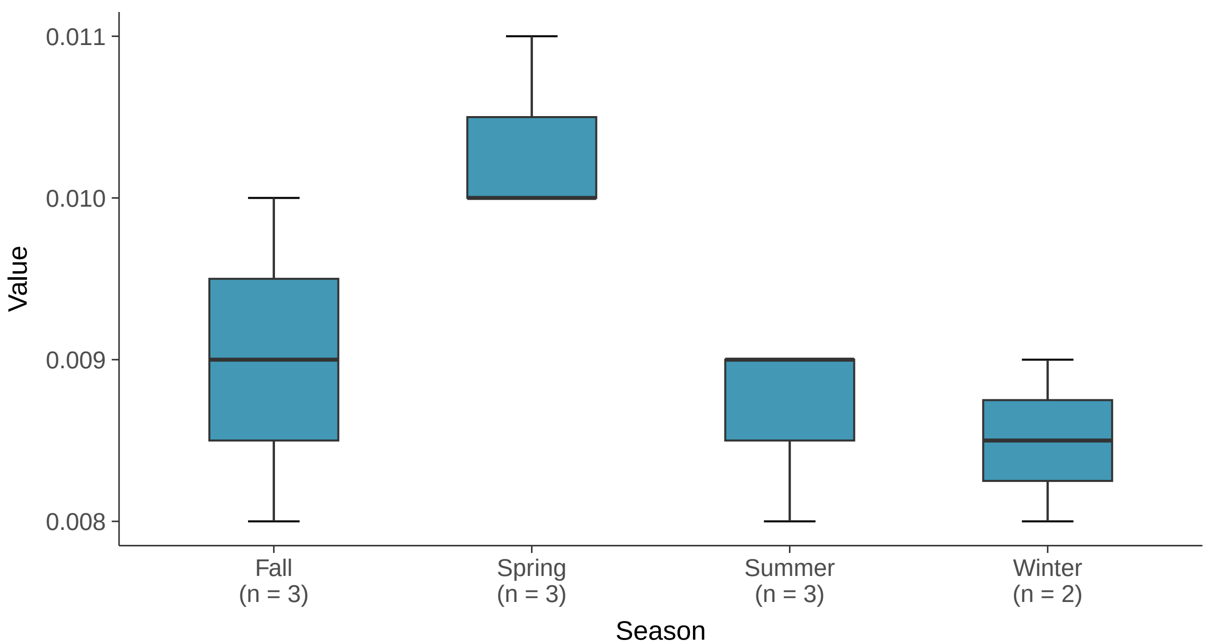
Boxplot

Barium, MW-7B (mg/L)



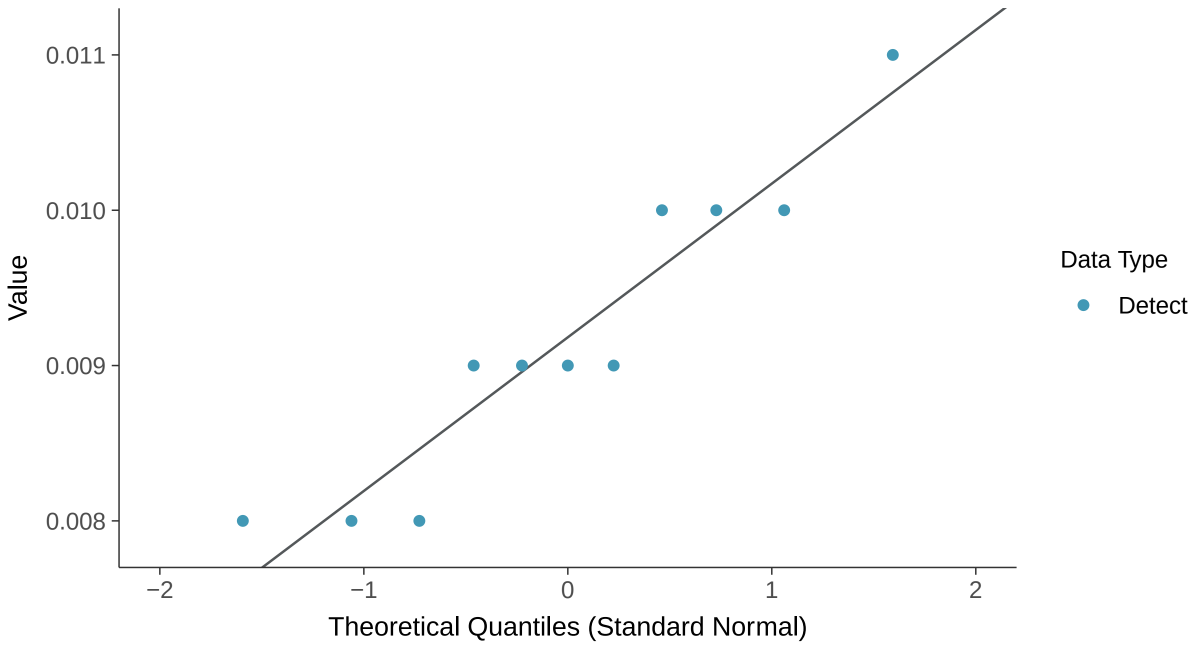
Boxplot by Season

Barium, MW-7B (mg/L)



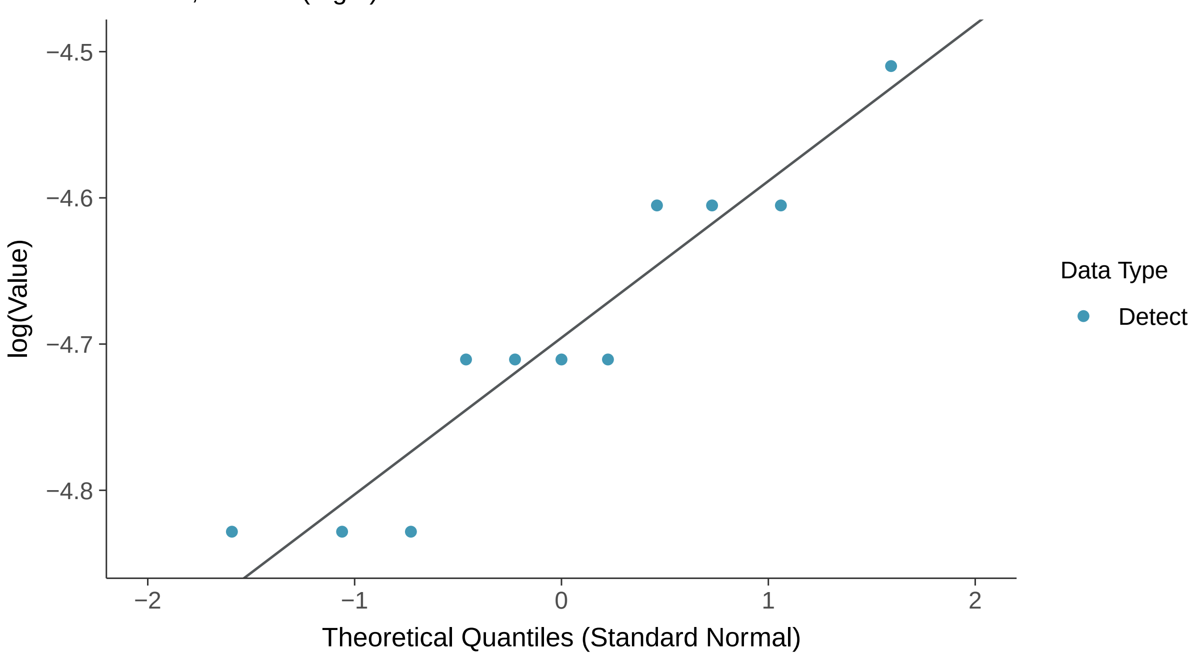
Normal Q-Q plot

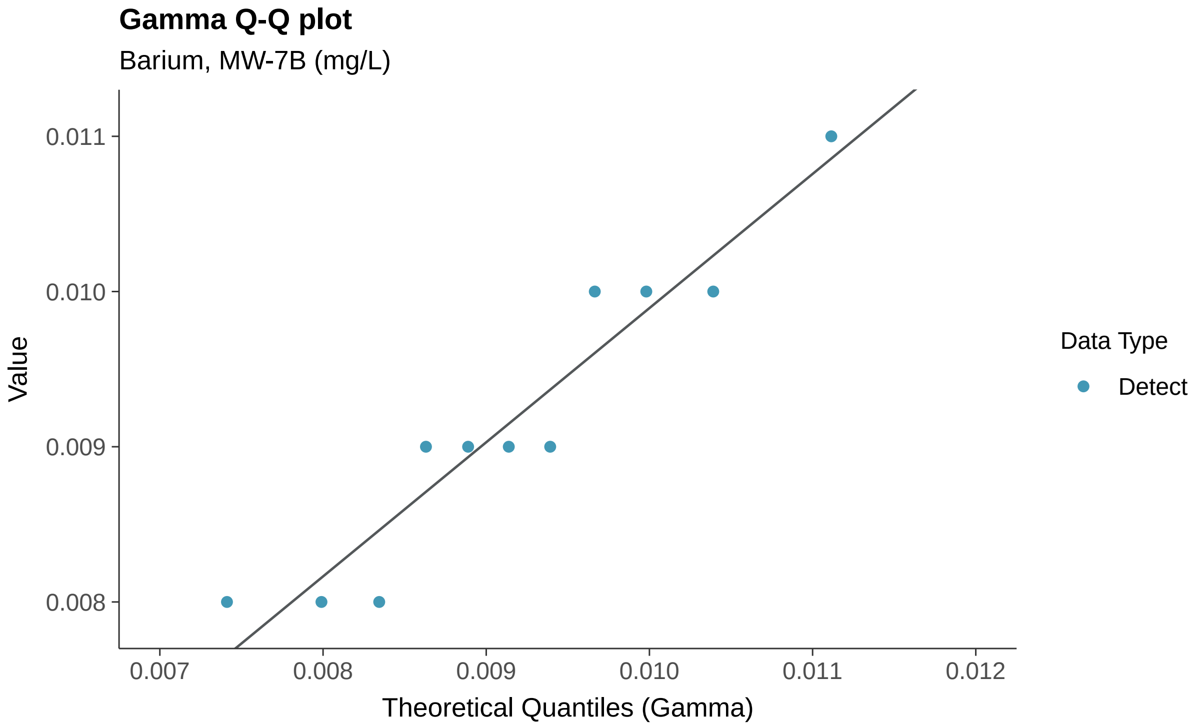
Barium, MW-7B (mg/L)

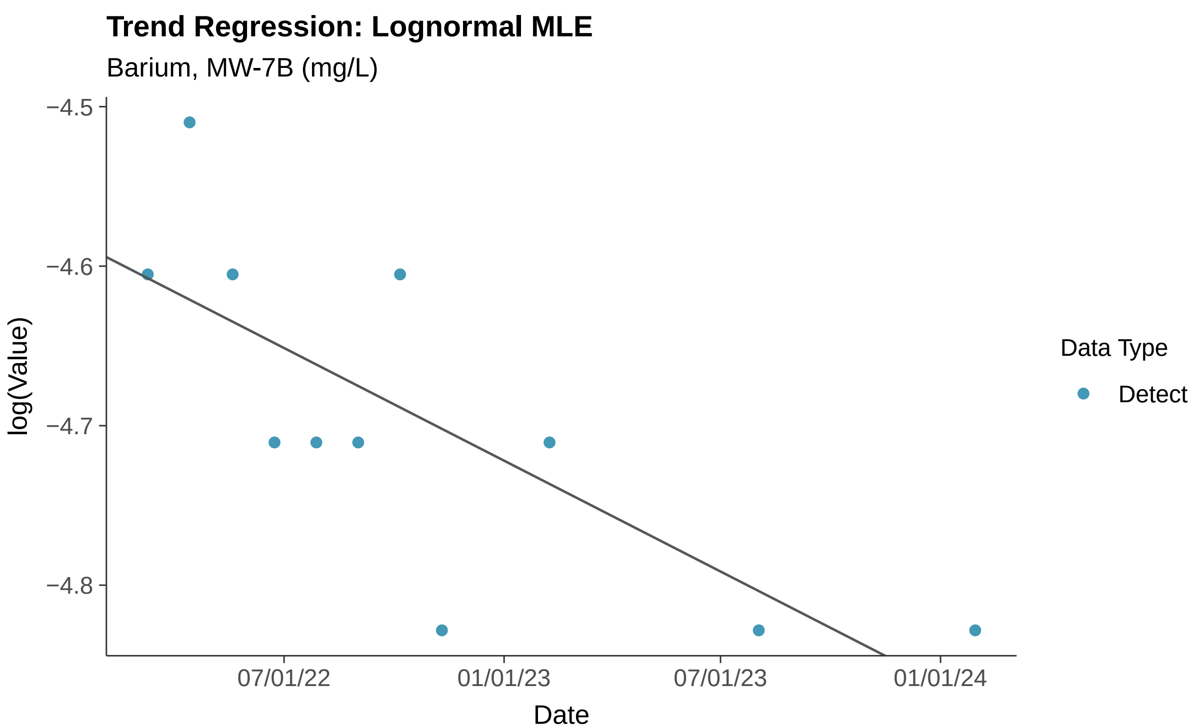


Lognormal Q-Q plot

Barium, MW-7B (mg/L)

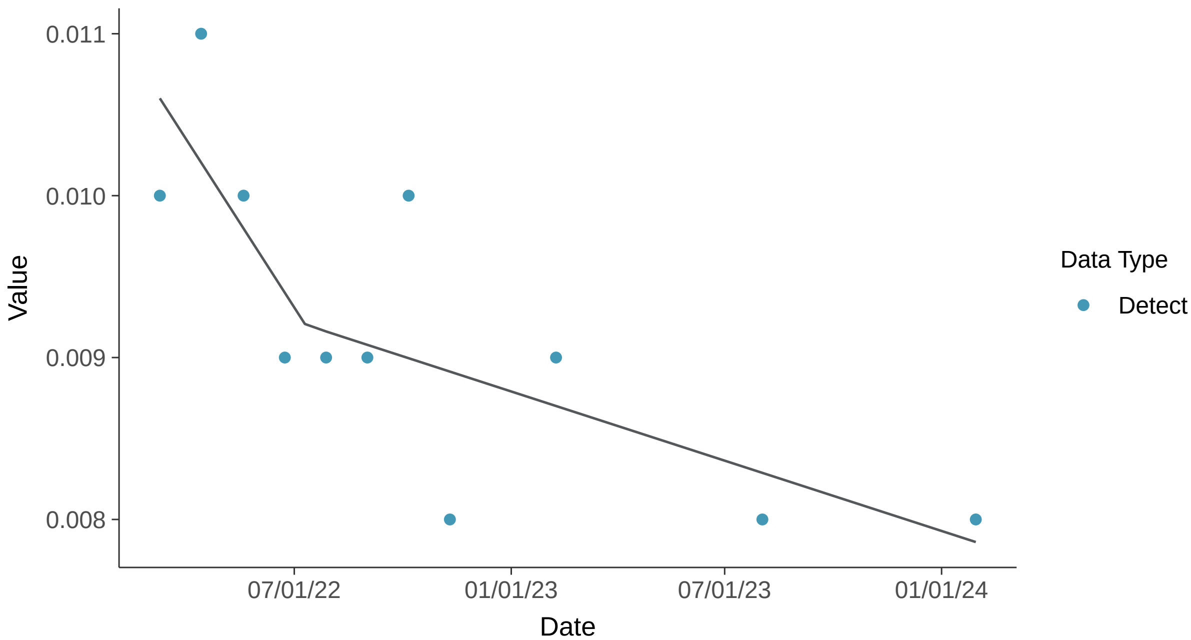



Gamma Q-Q plot
Barium, MW-7B (mg/L)
Value
0.011
0.010
0.009
0.008
0.007
0.008
0.009
0.010
0.011
0.012
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Barium, MW-7B (mg/L)
log(Value)
−4.5
−4.6
−4.7
−4.8
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

Barium, MW-7B (mg/L)

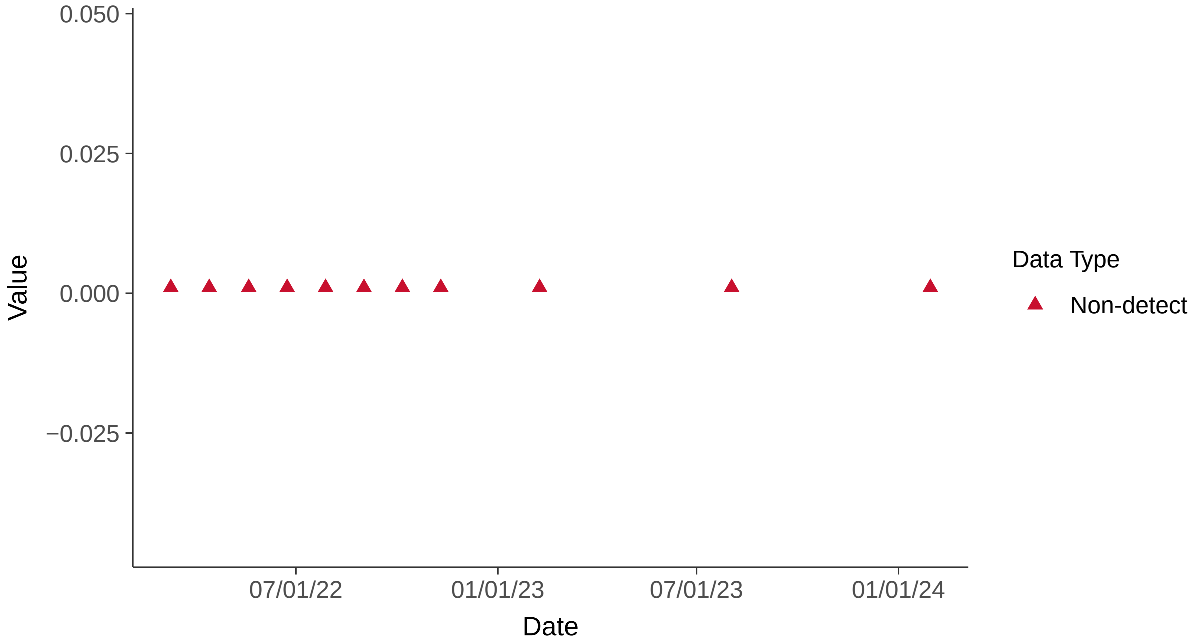


Appendix IV: Beryllium, MW-7B

ID: 7B_2_11

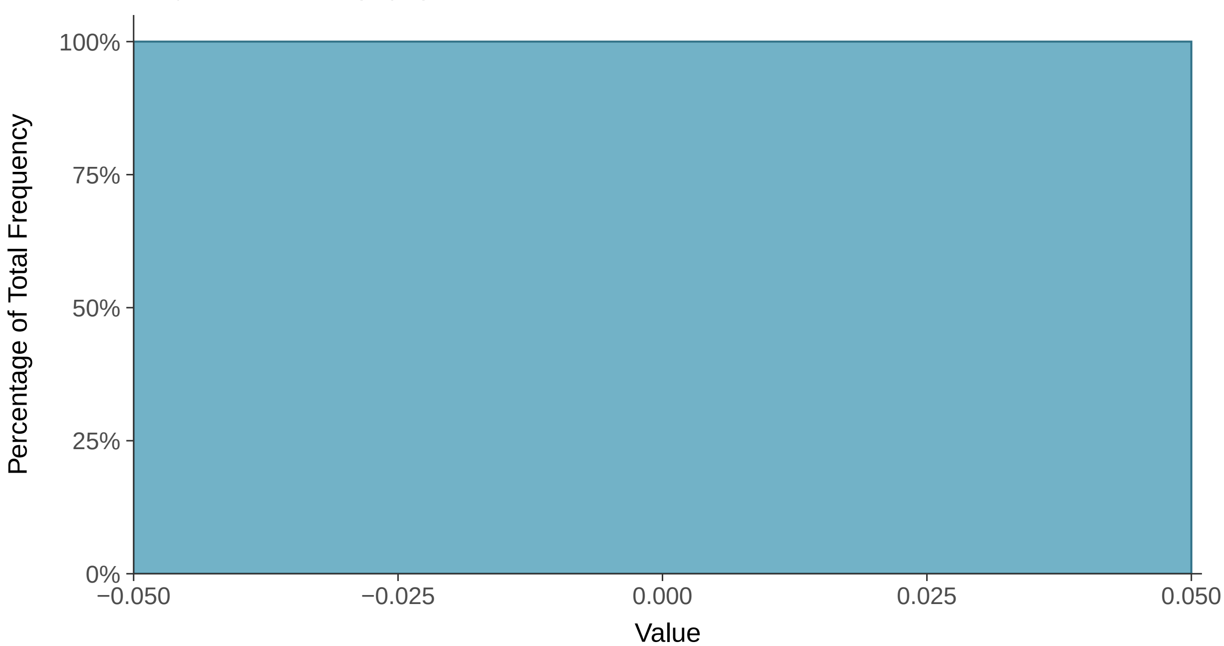
Scatter Plot

Beryllium, MW-7B (mg/L)



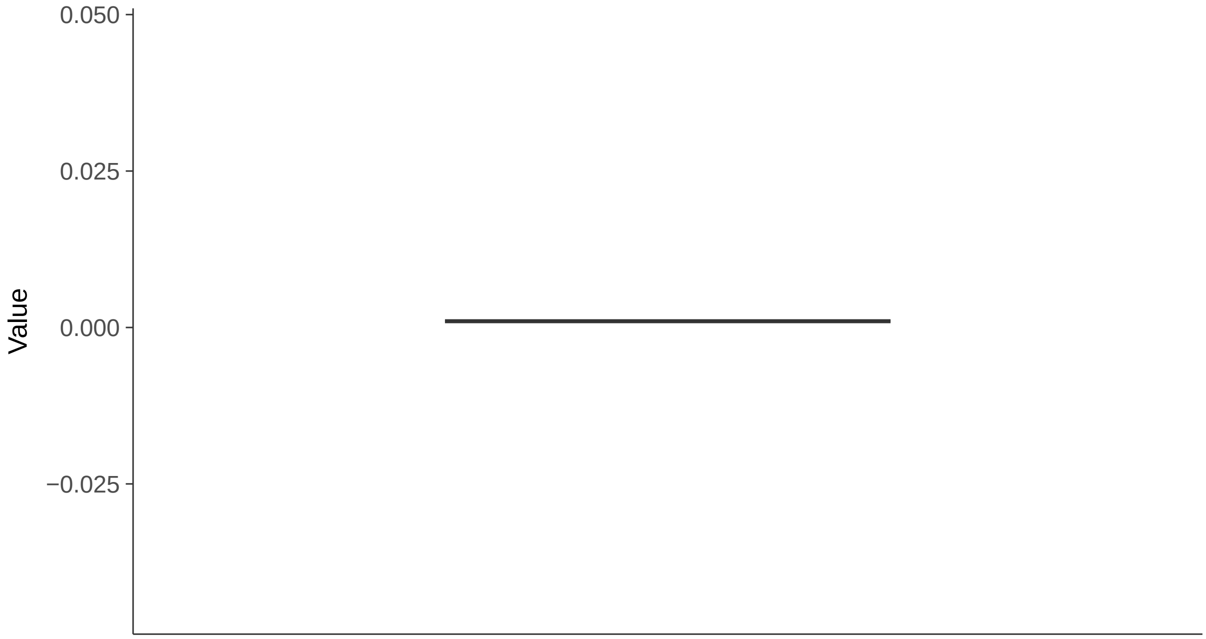
Histogram

Beryllium, MW-7B (mg/L)



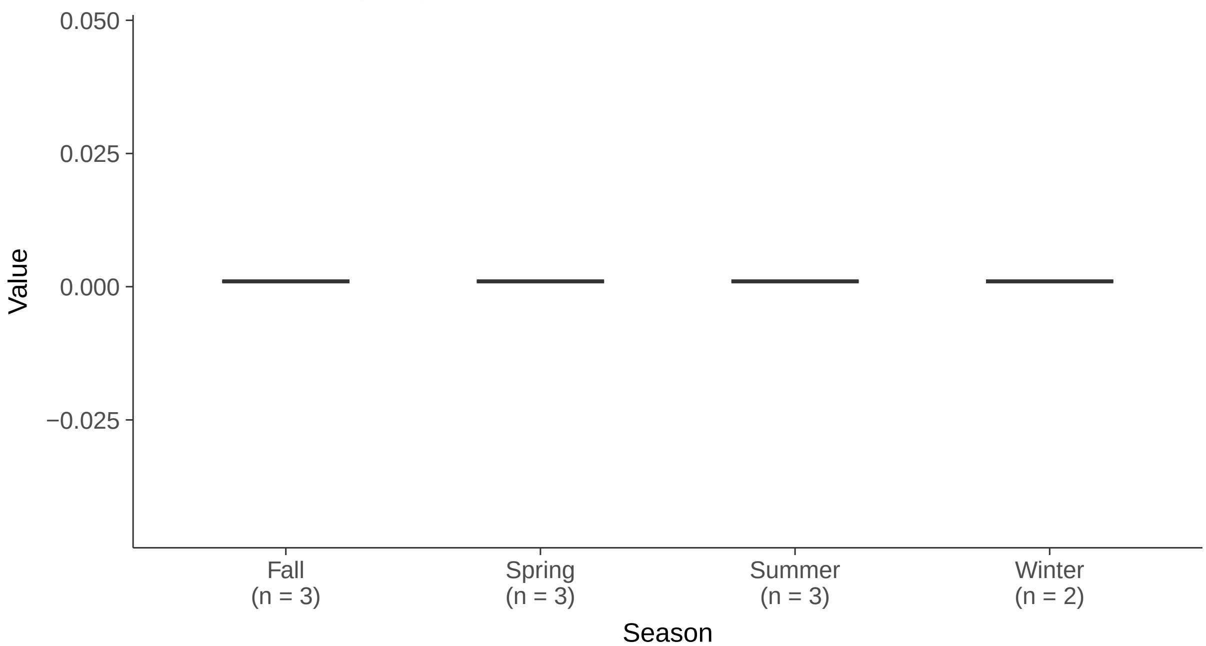
Boxplot

Beryllium, MW-7B (mg/L)



Boxplot by Season

Beryllium, MW-7B (mg/L)

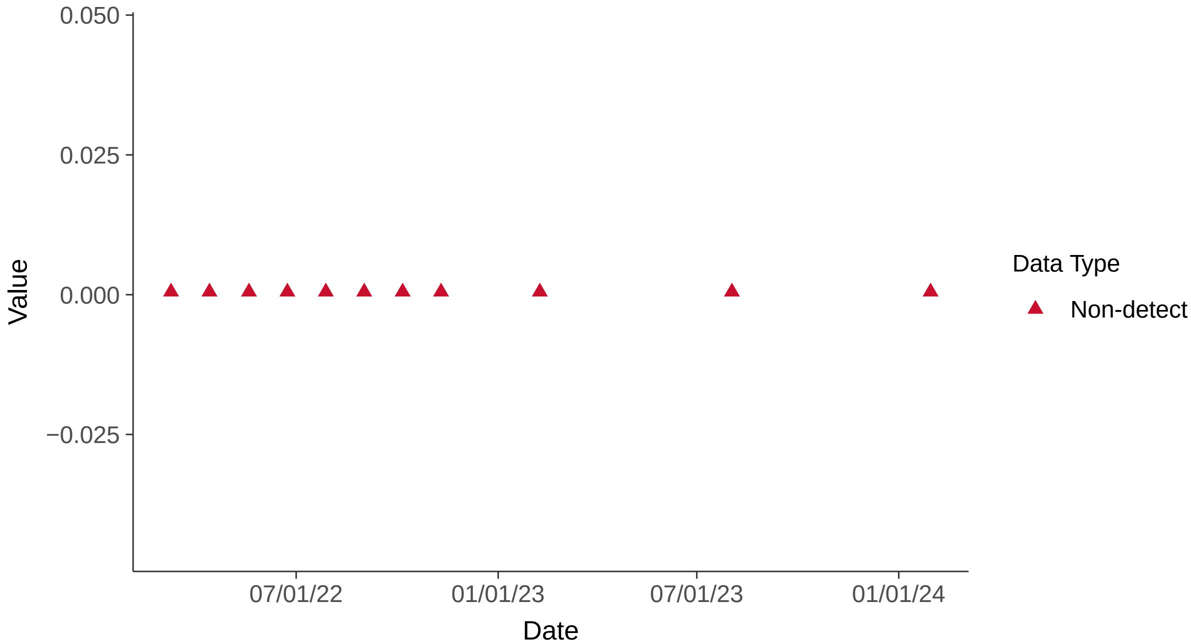


Appendix IV: Cadmium, MW-7B

ID: 7B_2_12

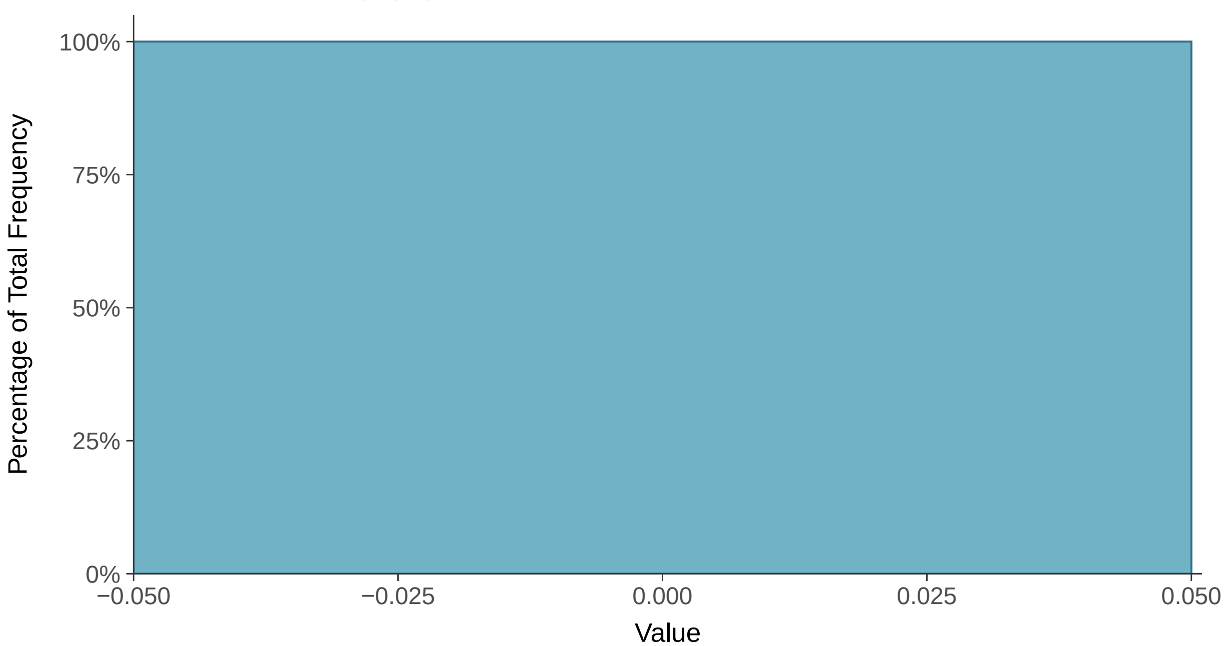
Scatter Plot

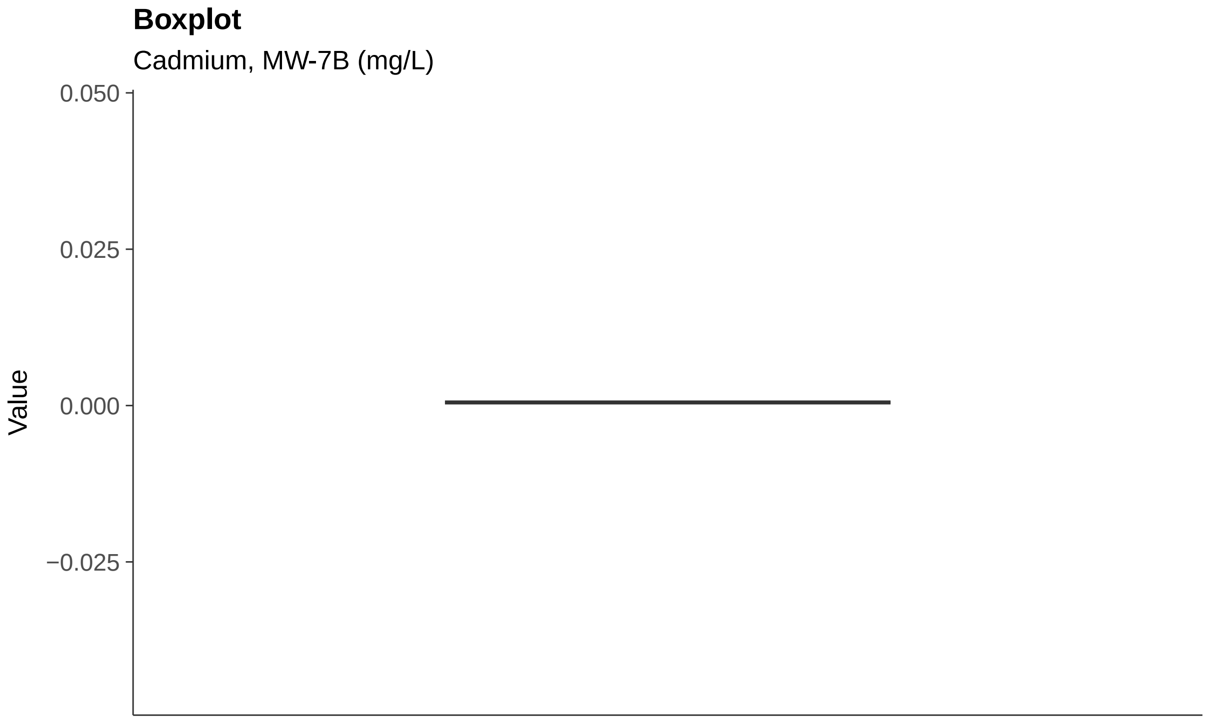
Cadmium, MW-7B (mg/L)

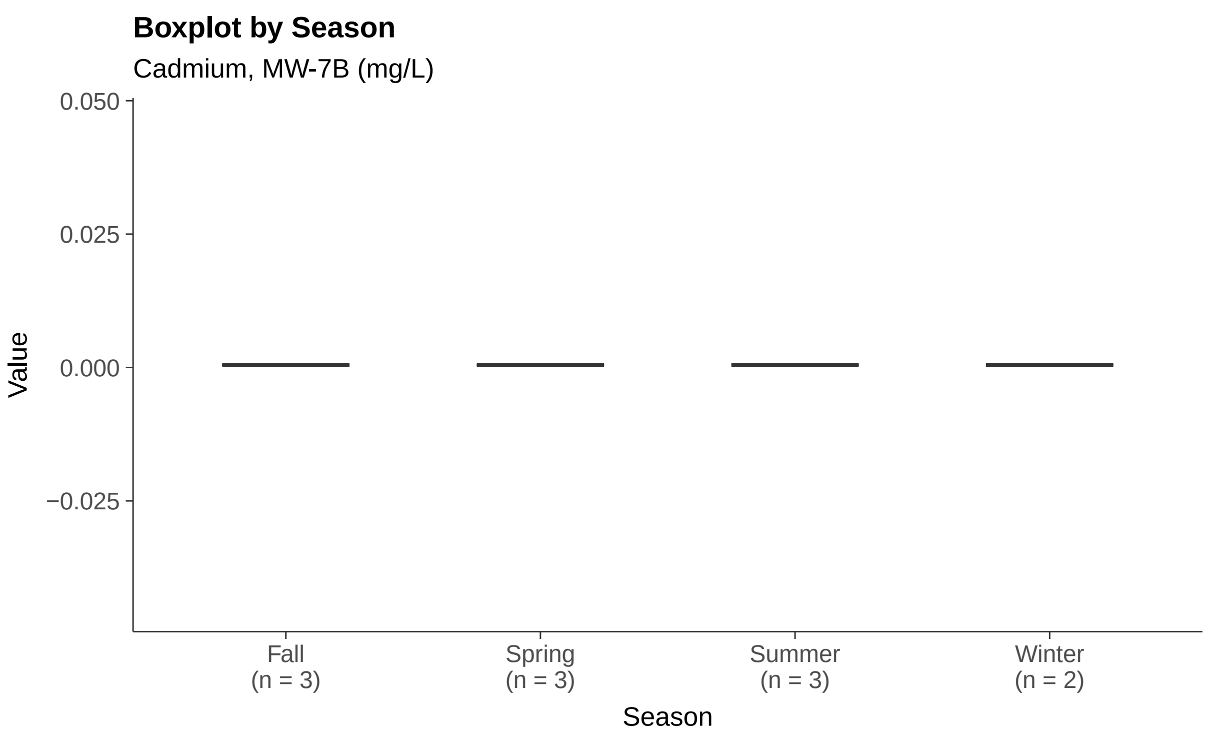


Histogram

Cadmium, MW-7B (mg/L)

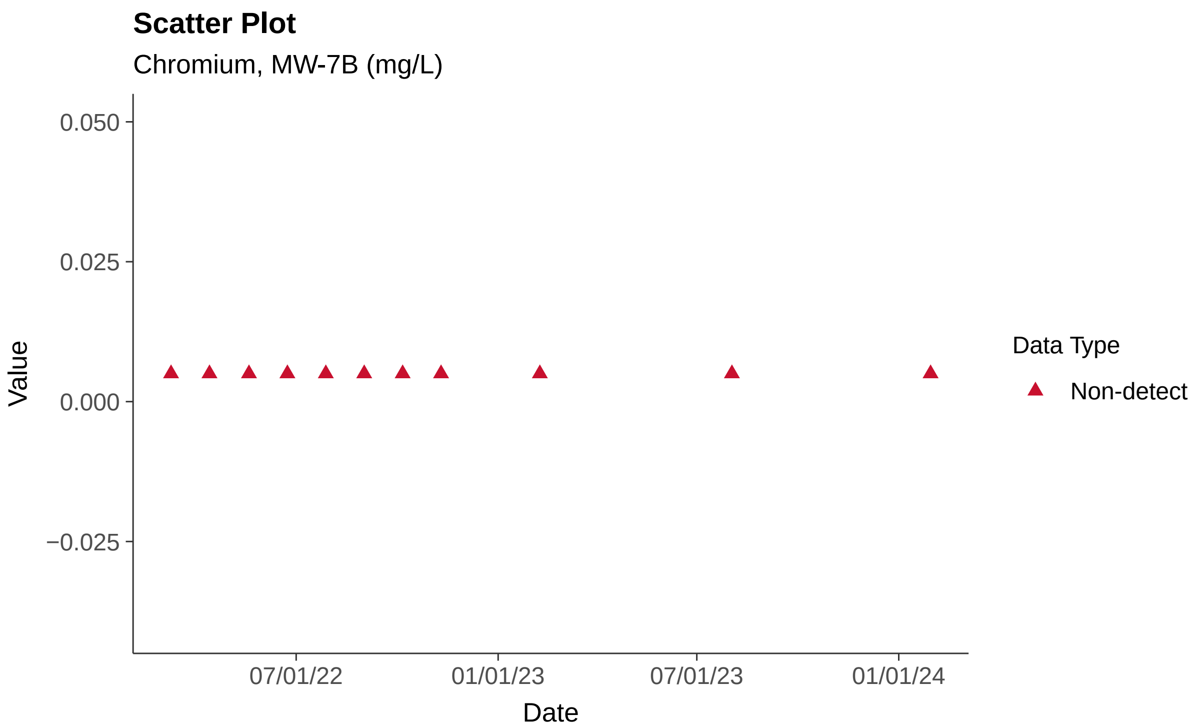


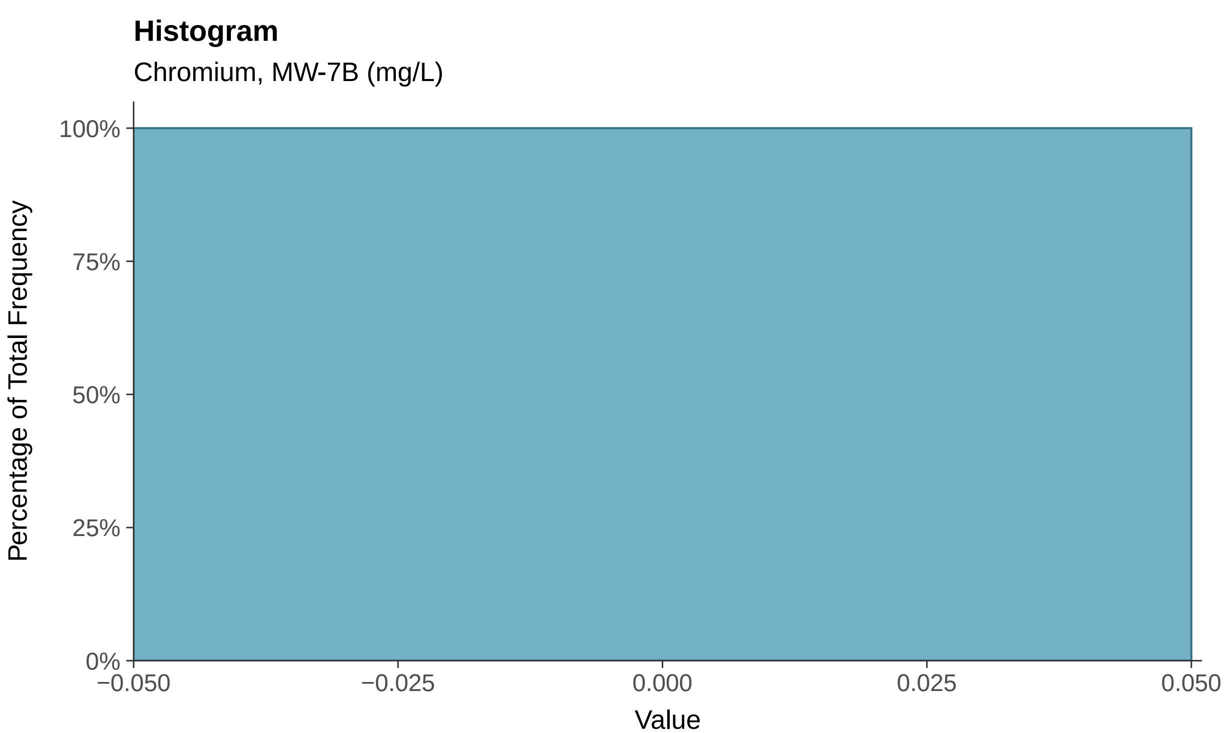

Boxplot
Cadmium, MW-7B (mg/L)
0.050
0.025
0.000
−0.025
Value


Boxplot by Season
Cadmium, MW-7B (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season

Appendix IV: Chromium, MW-7B

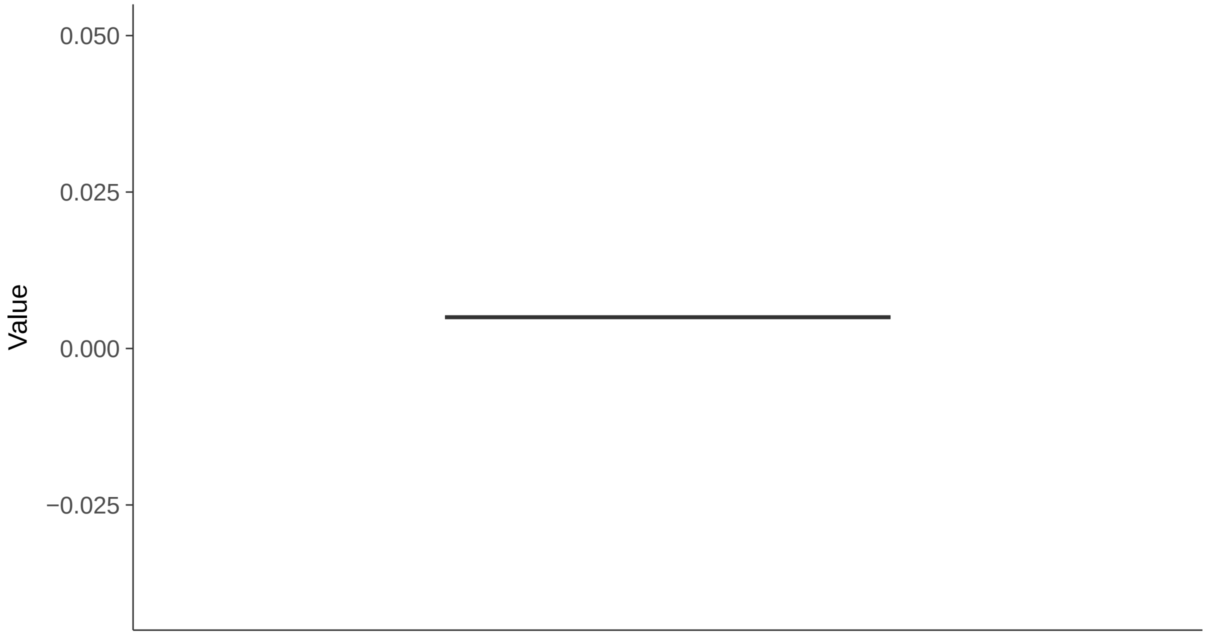
ID: 7B_2_13





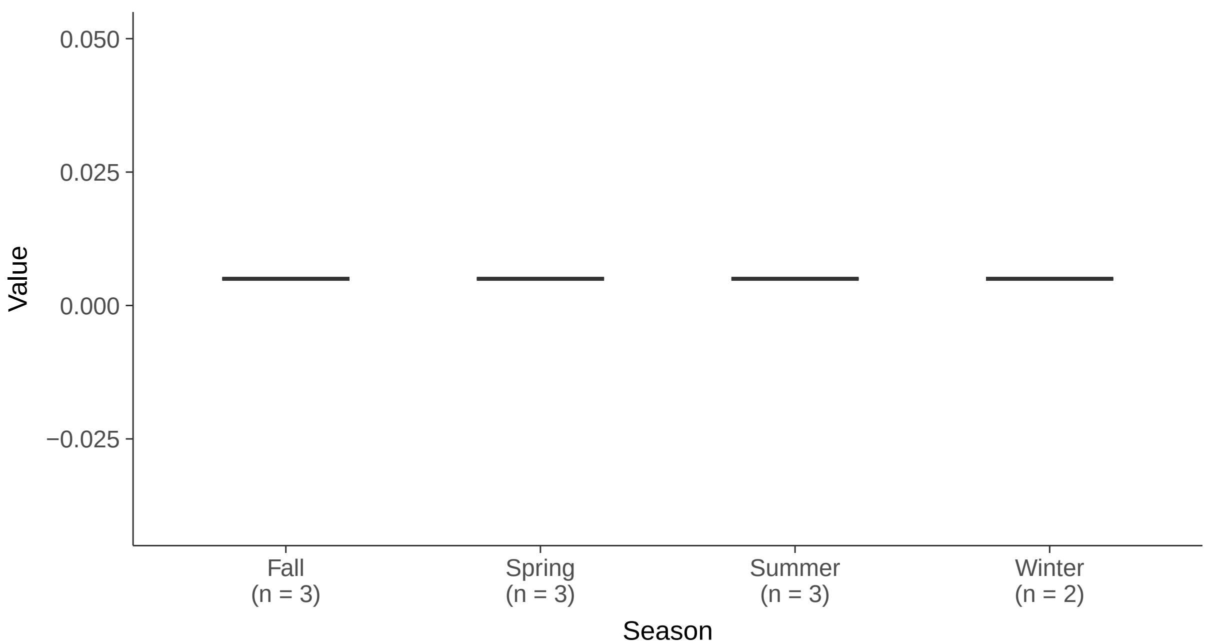
Boxplot

Chromium, MW-7B (mg/L)



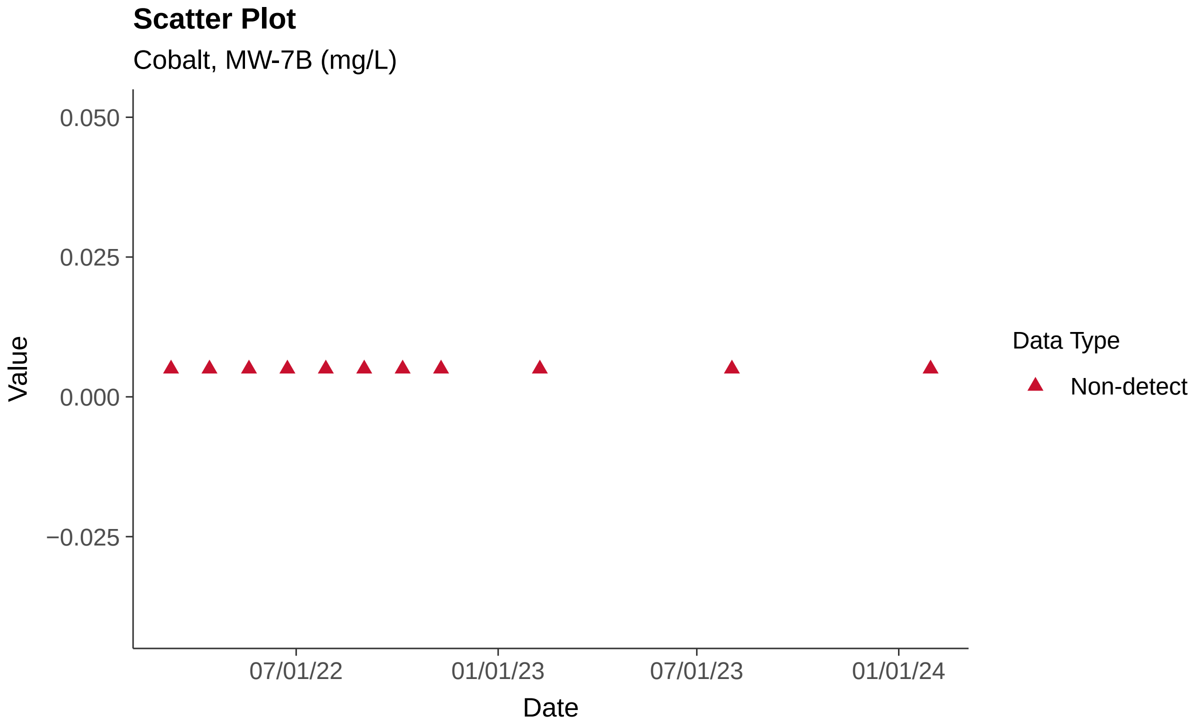
Boxplot by Season

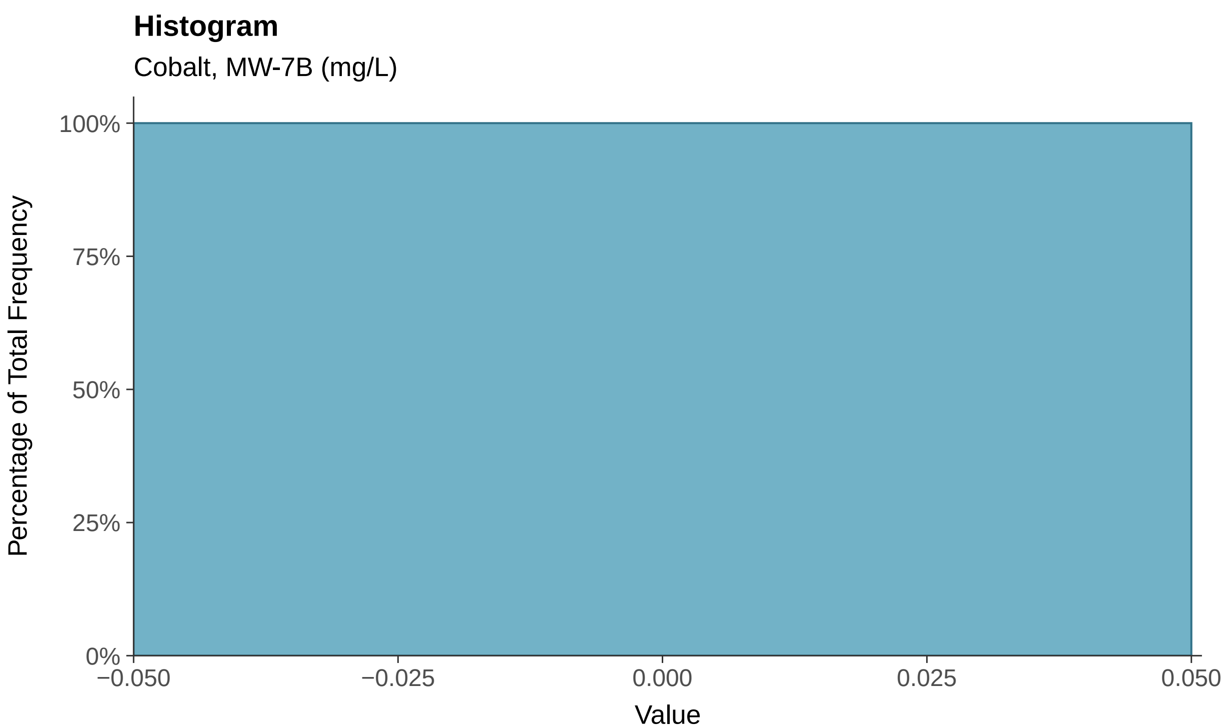
Chromium, MW-7B (mg/L)



Appendix IV: Cobalt, MW-7B

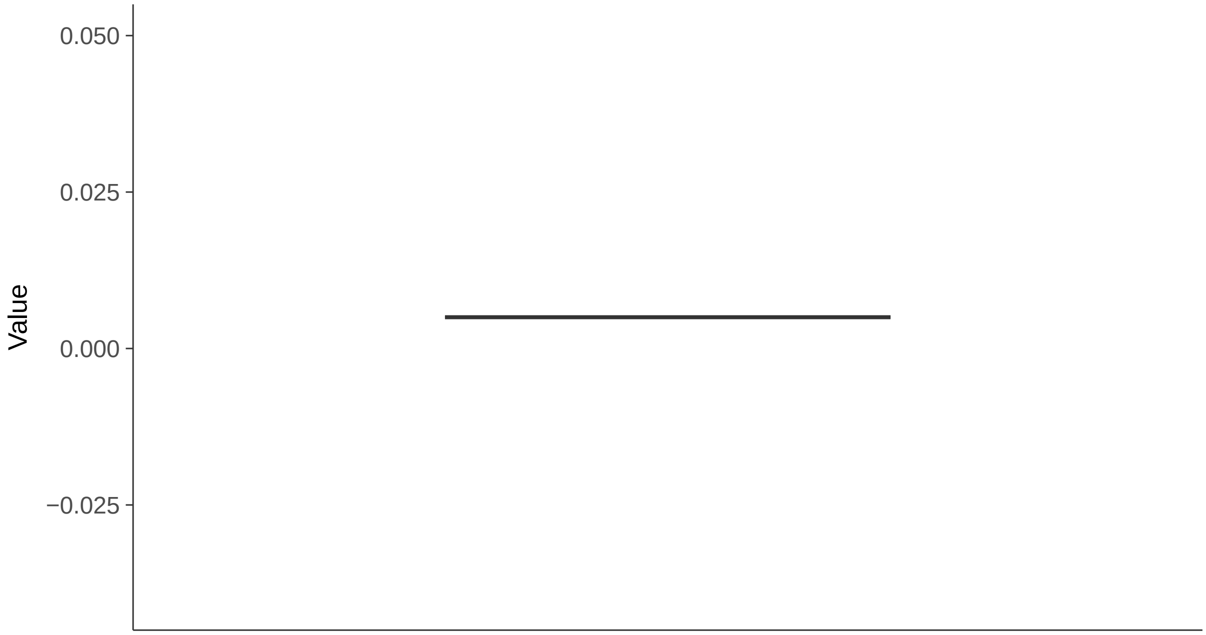
ID: 7B_2_14





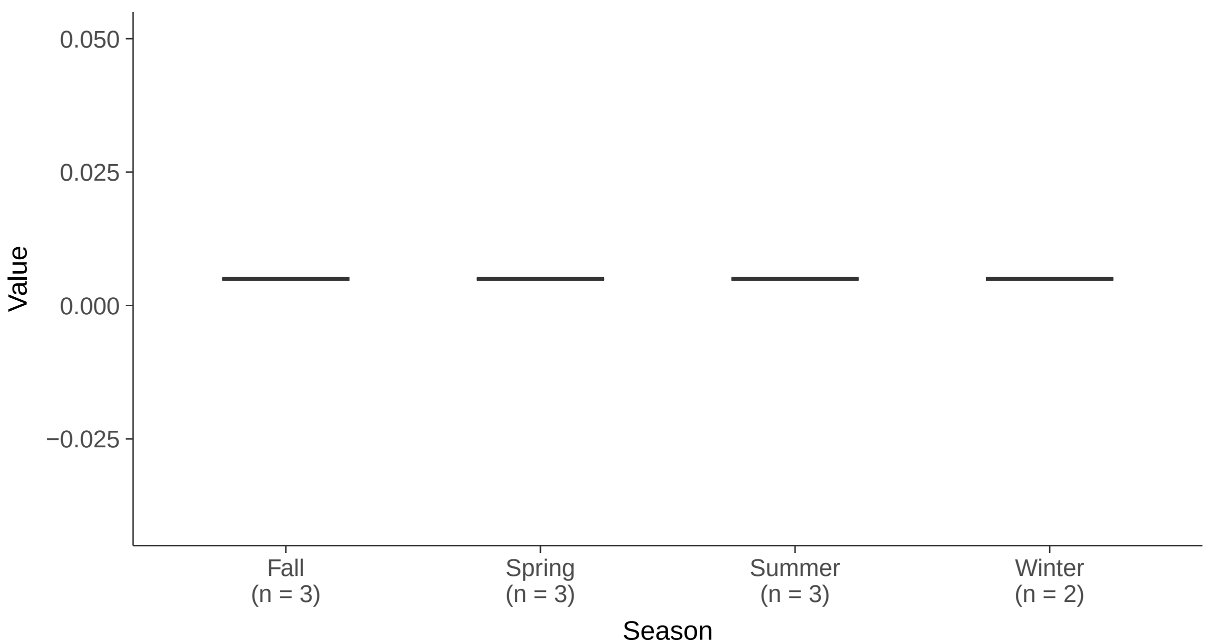
Boxplot

Cobalt, MW-7B (mg/L)



Boxplot by Season

Cobalt, MW-7B (mg/L)

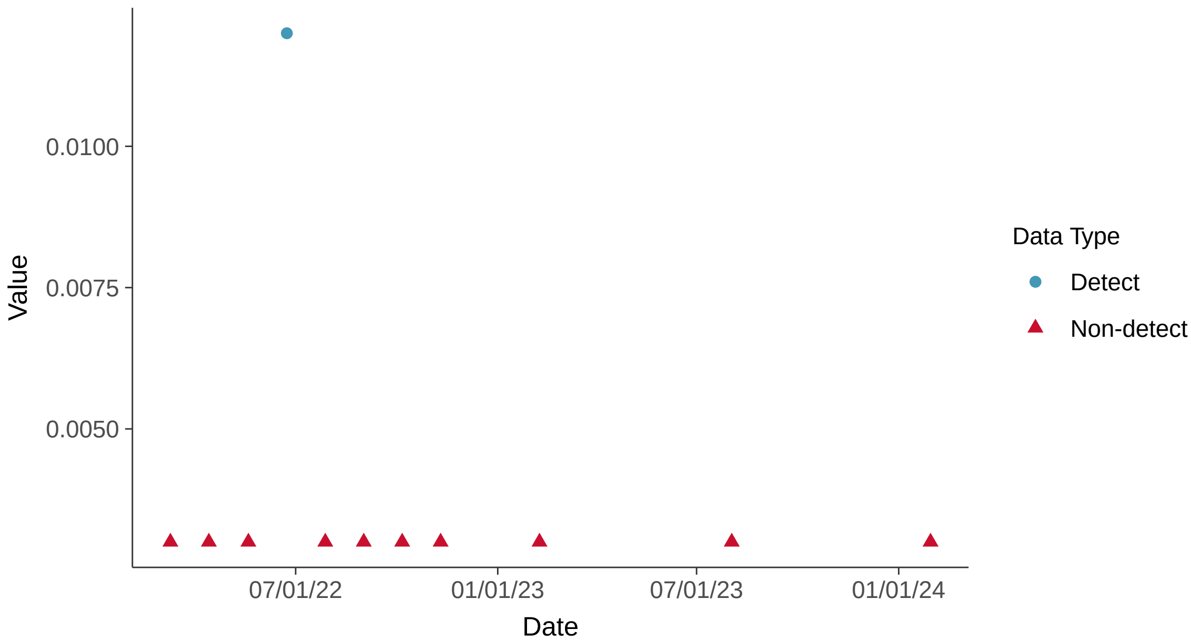


Appendix IV: Lead, MW-7B

ID: 7B_2_15

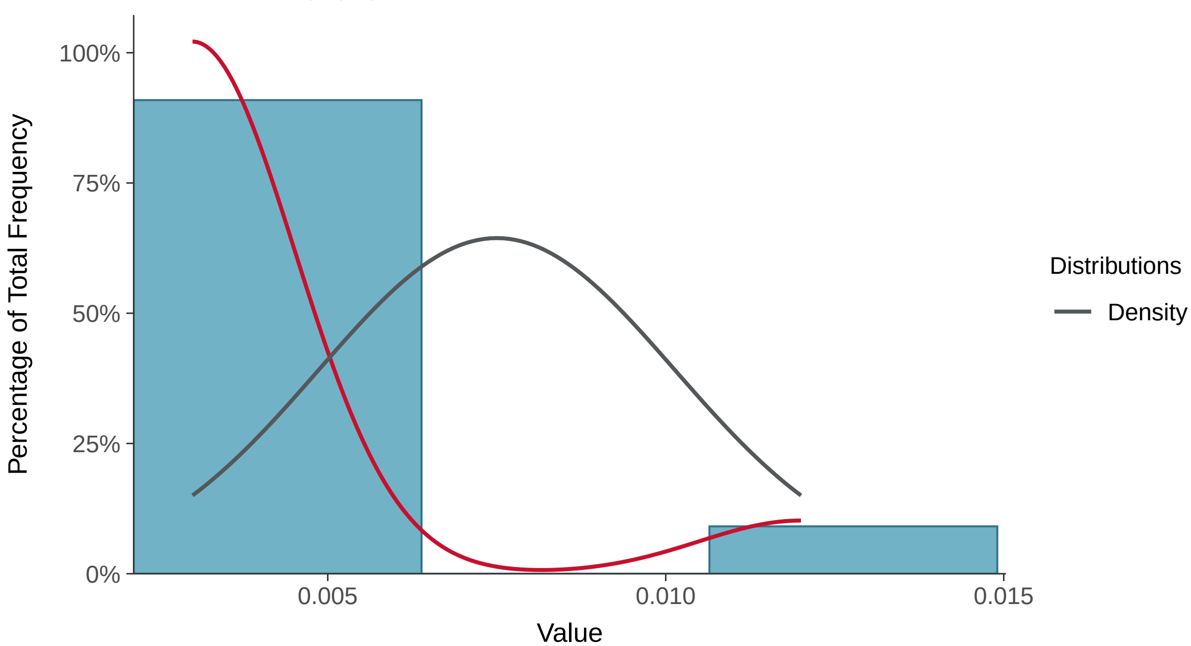
Scatter Plot

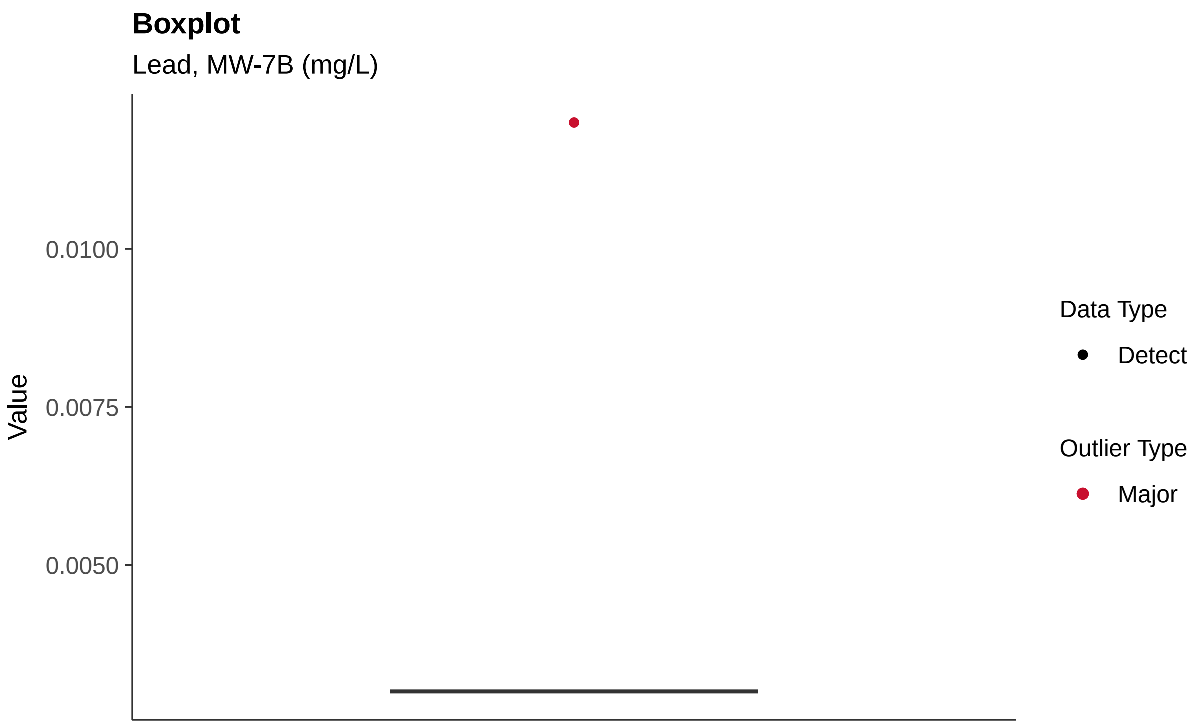
Lead, MW-7B (mg/L)

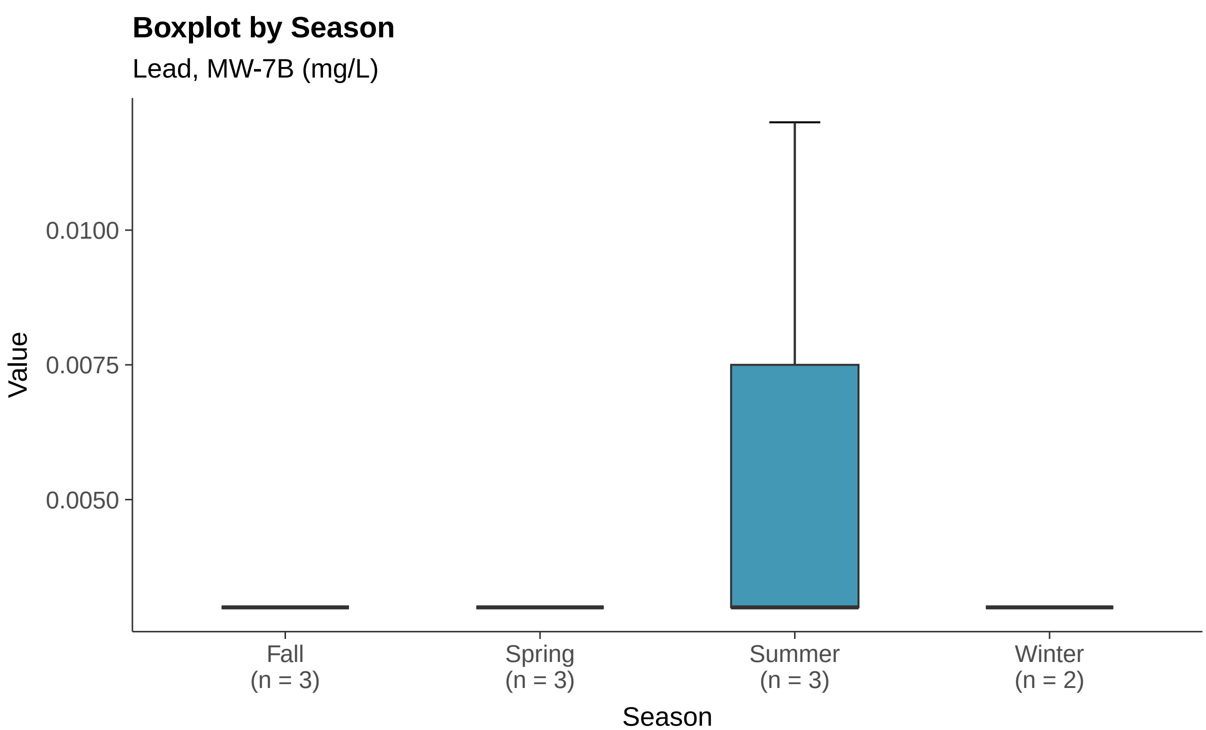


Histogram

Lead, MW-7B (mg/L)

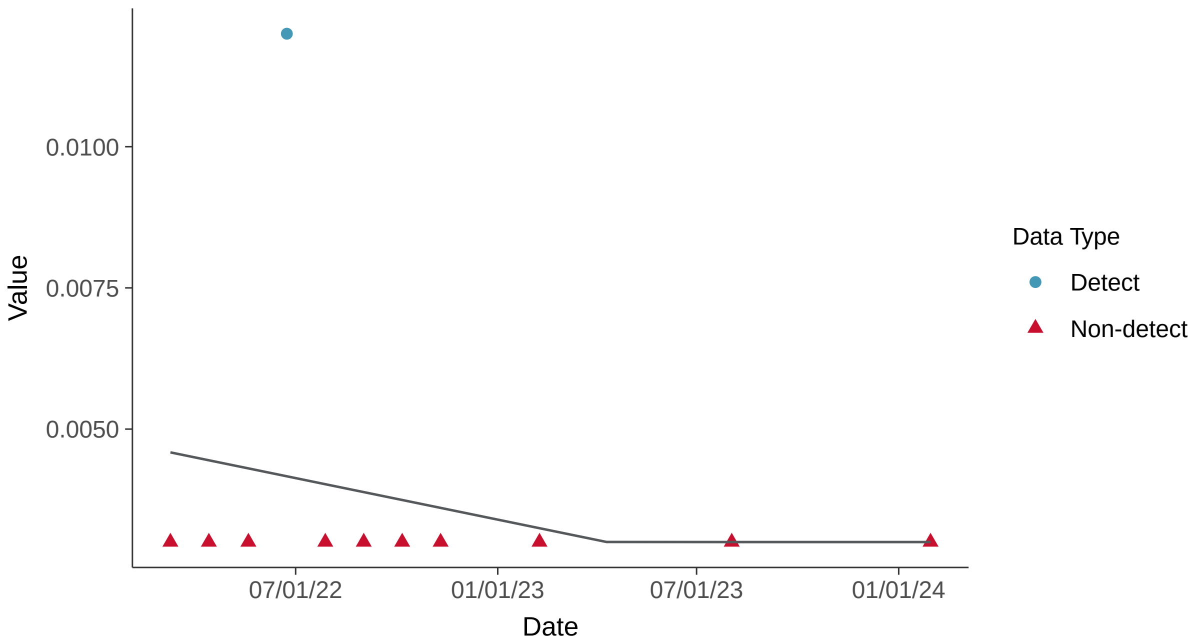



Boxplot
Lead, MW-7B (mg/L)
Value
0.0100
0.0075
0.0050
Data Type
Detect
Outlier Type
Major


Boxplot by Season
Lead, MW-7B (mg/L)
Value
0.0100
0.0075
0.0050
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season

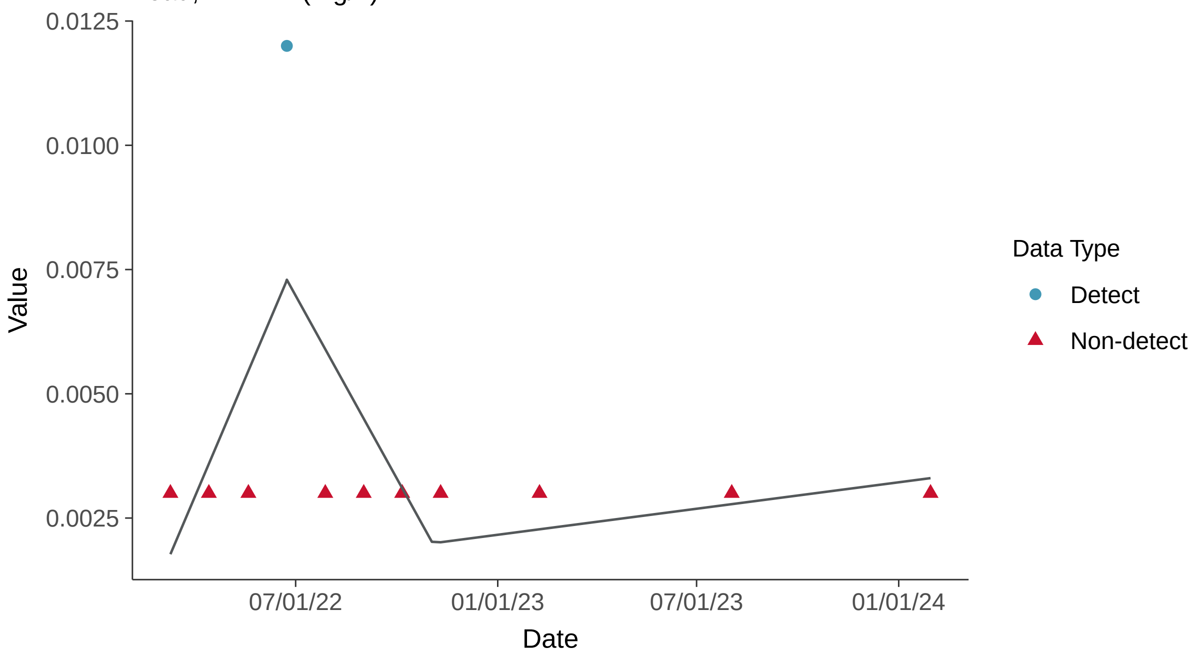
Trend Regression: Piecewise Linear-Linear

Lead, MW-7B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-7B (mg/L)

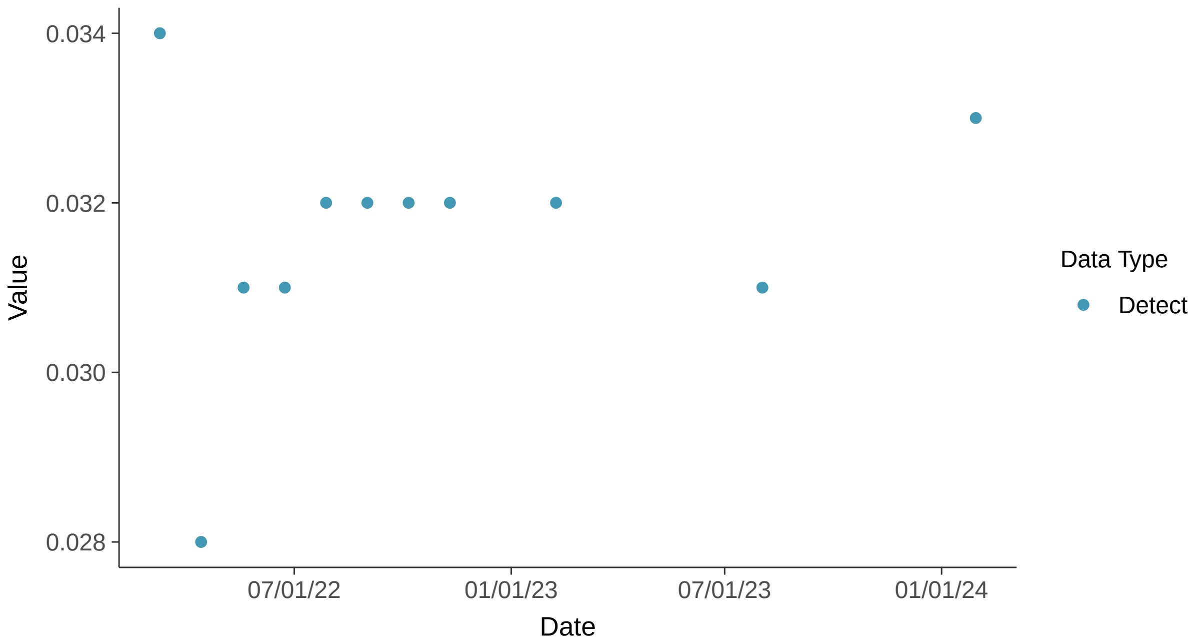


Appendix IV: Lithium, MW-7B

ID: 7B_2_16

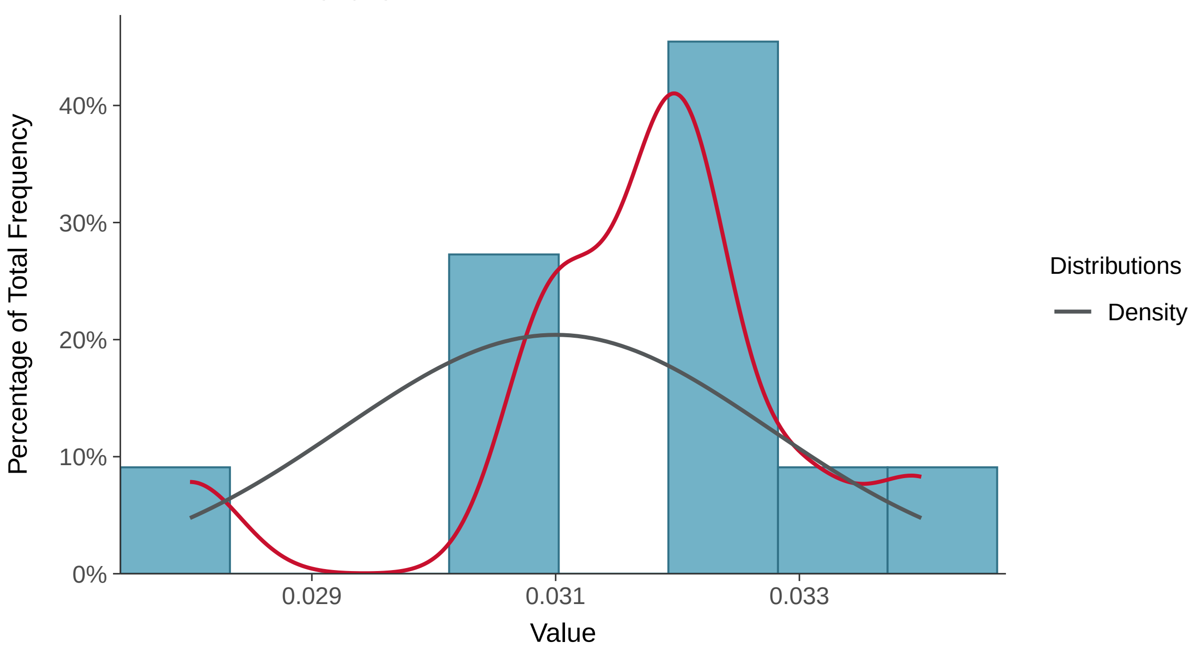
Scatter Plot

Lithium, MW-7B (mg/L)



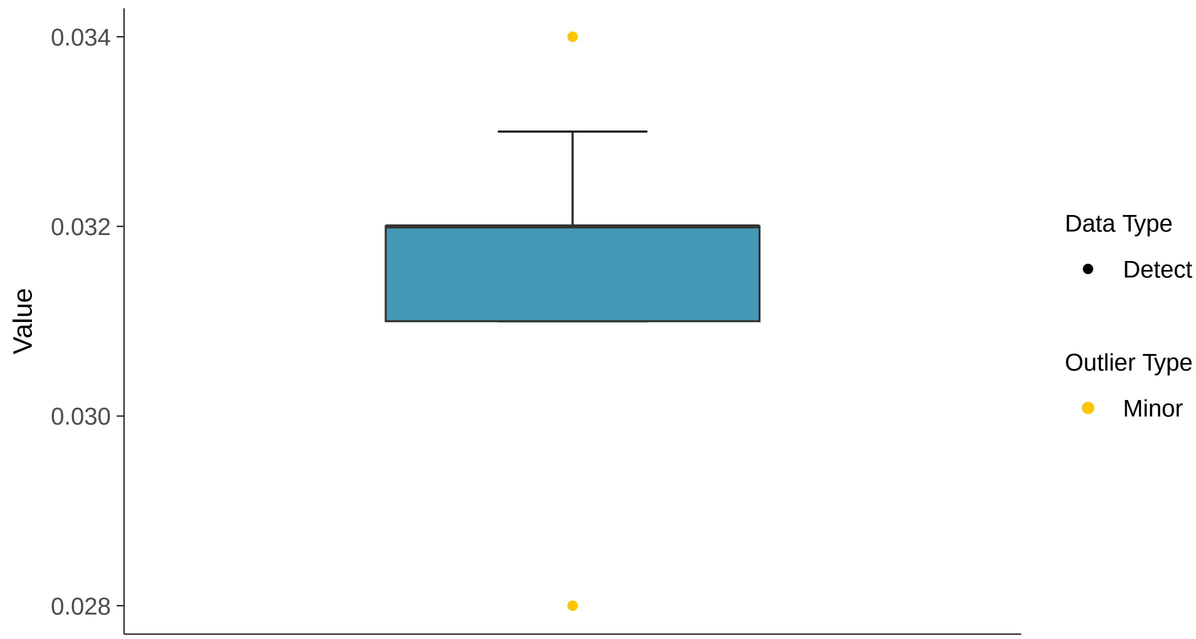
Histogram

Lithium, MW-7B (mg/L)



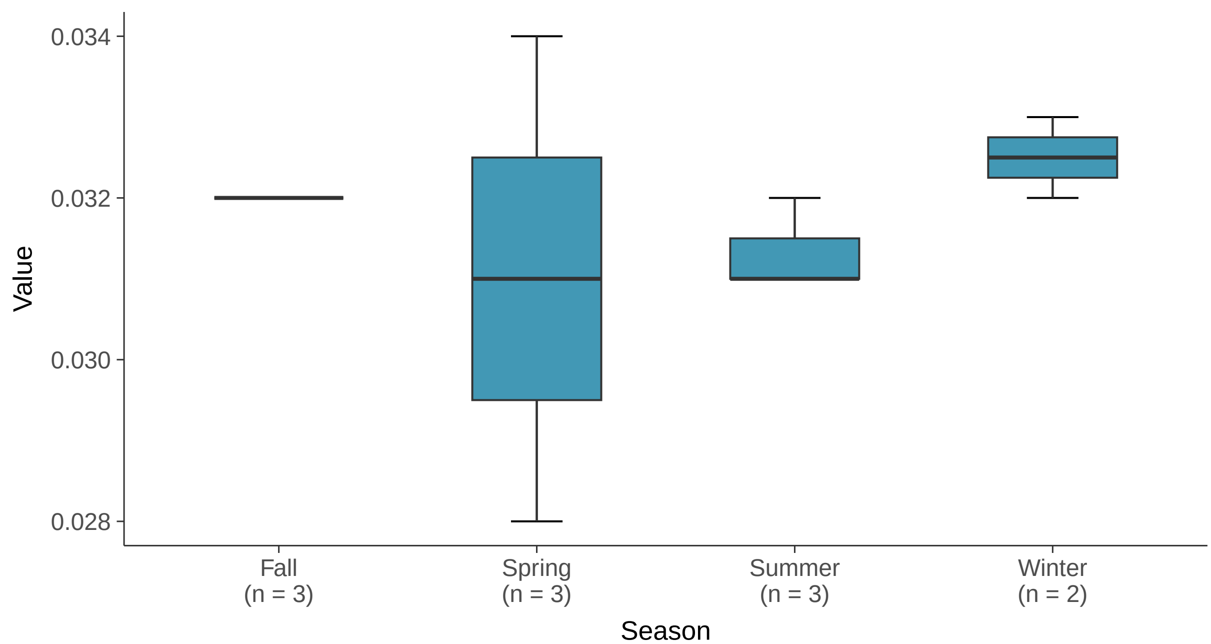
Boxplot

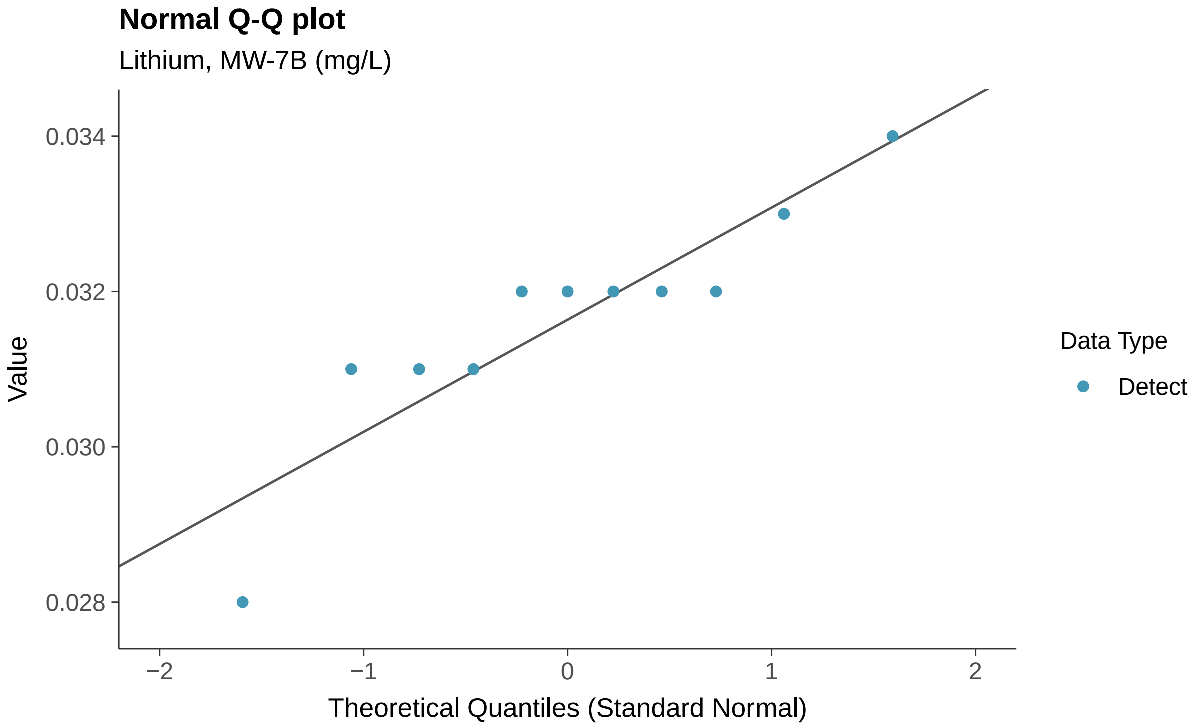
Lithium, MW-7B (mg/L)

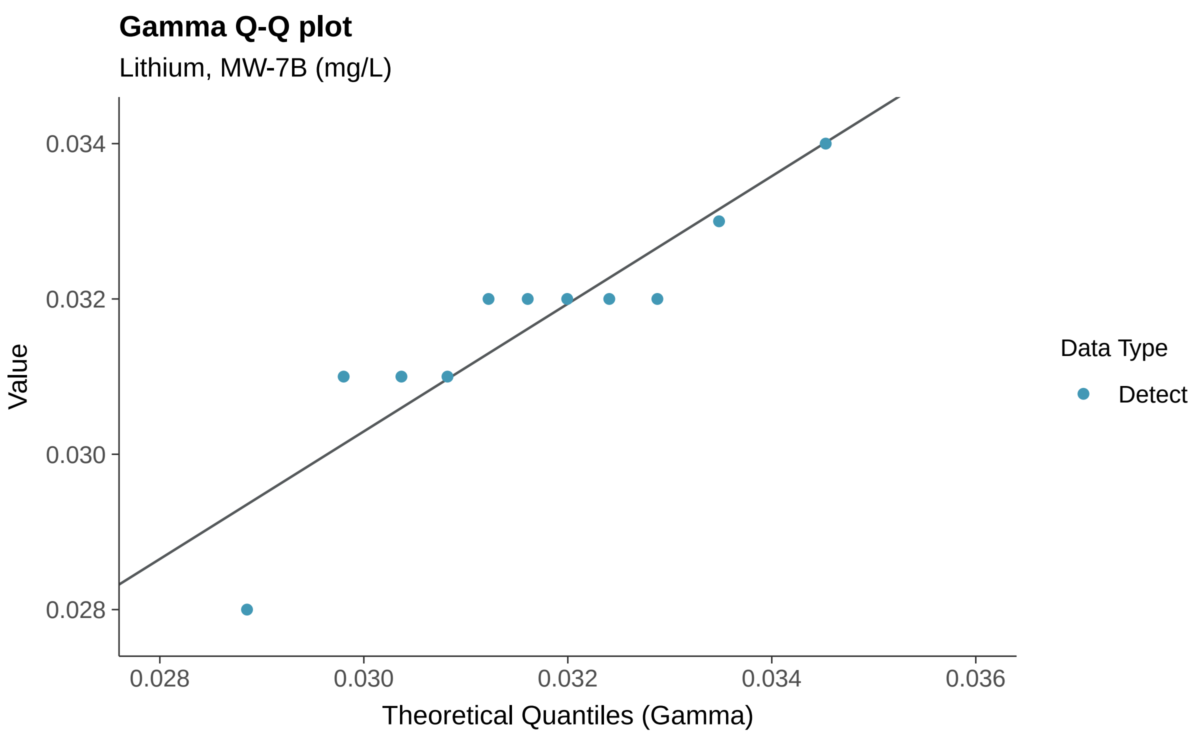


Boxplot by Season

Lithium, MW-7B (mg/L)

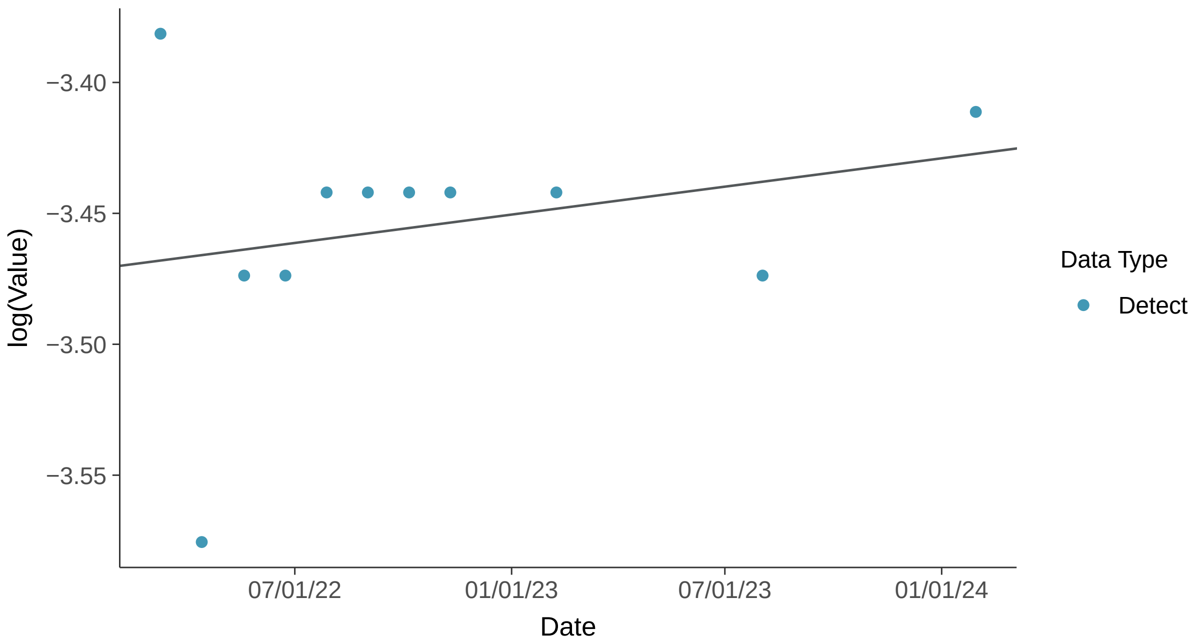



Normal Q-Q plot
Lithium, MW-7B (mg/L)
Value
0.034
0.032
0.030
0.028
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Lithium, MW-7B (mg/L)
Value
0.034
0.032
0.030
0.028
0.028
0.030
0.032
0.034
0.036
Theoretical Quantiles (Gamma)
Data Type
Detect

Trend Regression: Lognormal MLE

Lithium, MW-7B (mg/L)

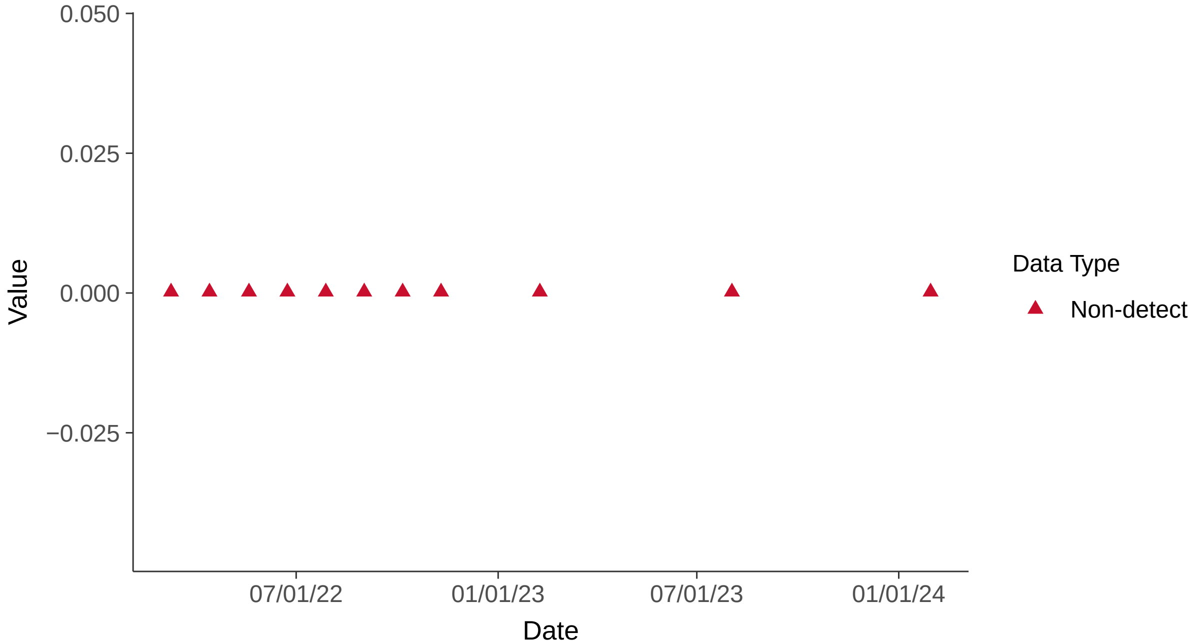


Appendix IV: Mercury, MW-7B

ID: 7B_2_17

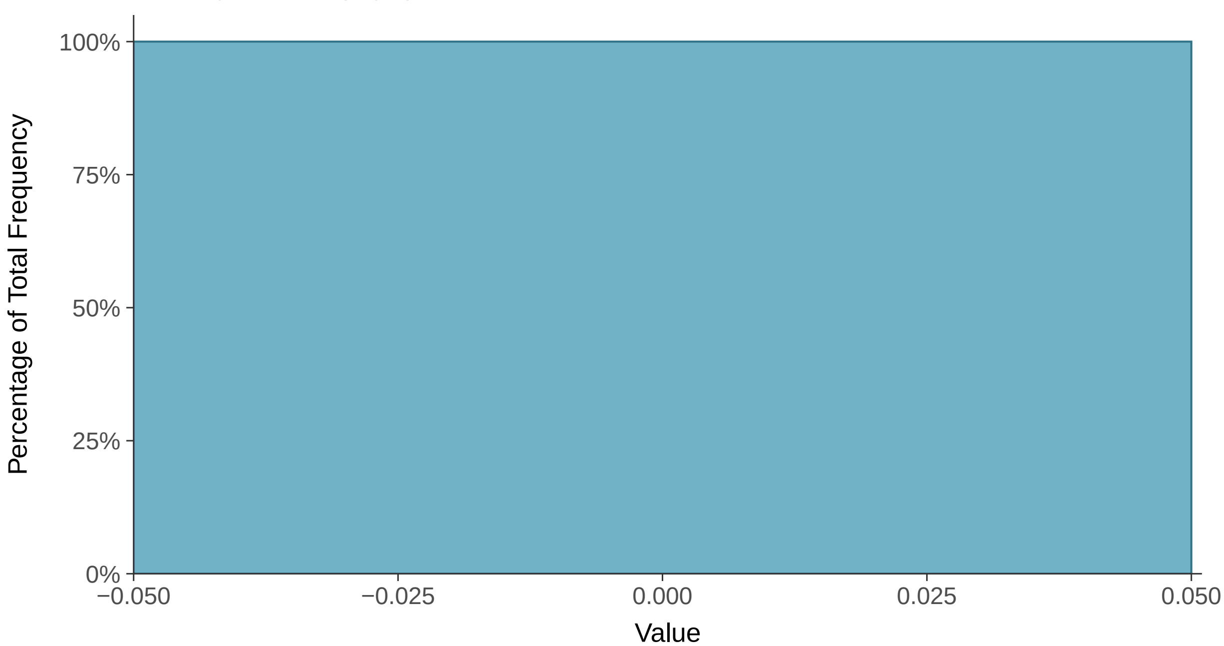
Scatter Plot

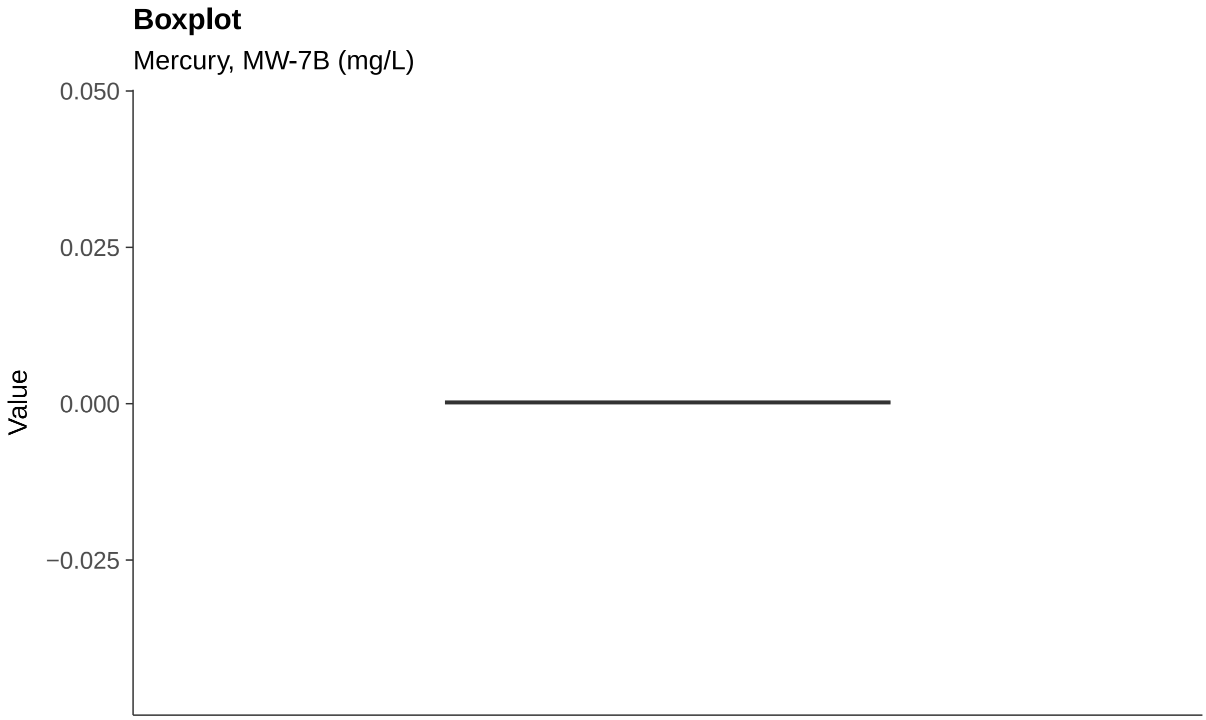
Mercury, MW-7B (mg/L)

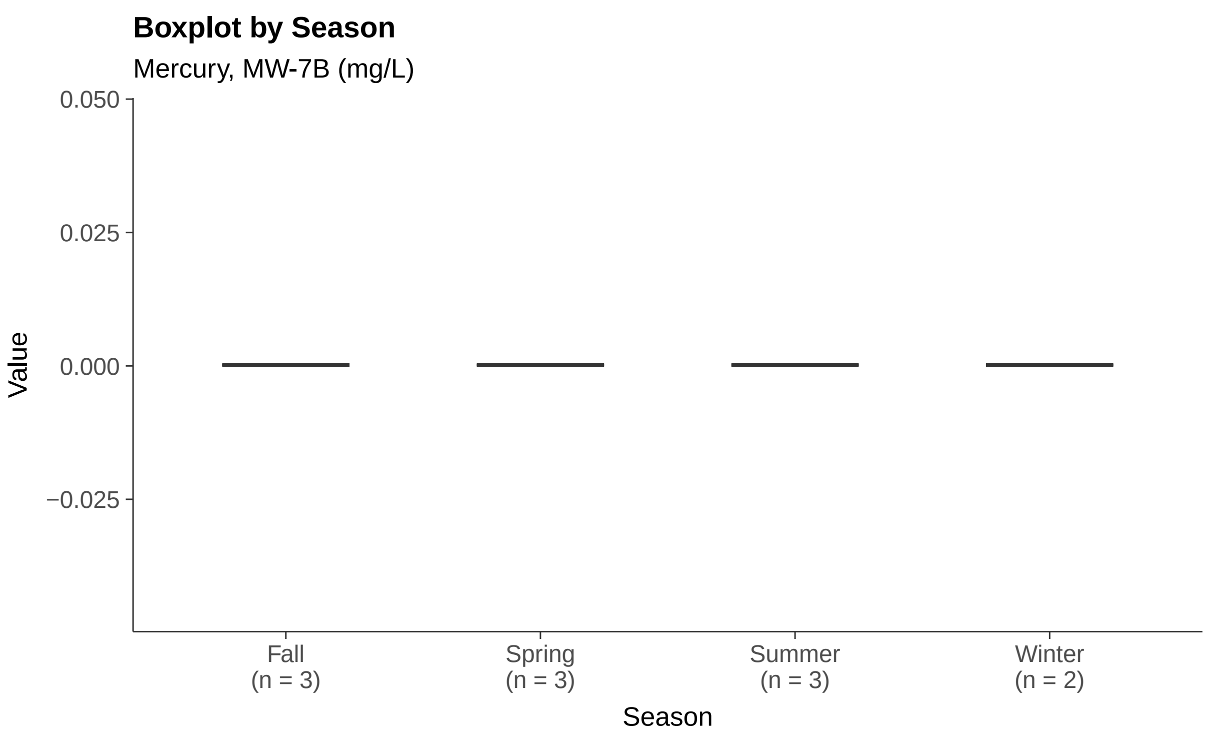


Histogram

Mercury, MW-7B (mg/L)




Boxplot
Mercury, MW-7B (mg/L)
0.050
0.025
0.000
−0.025
Value

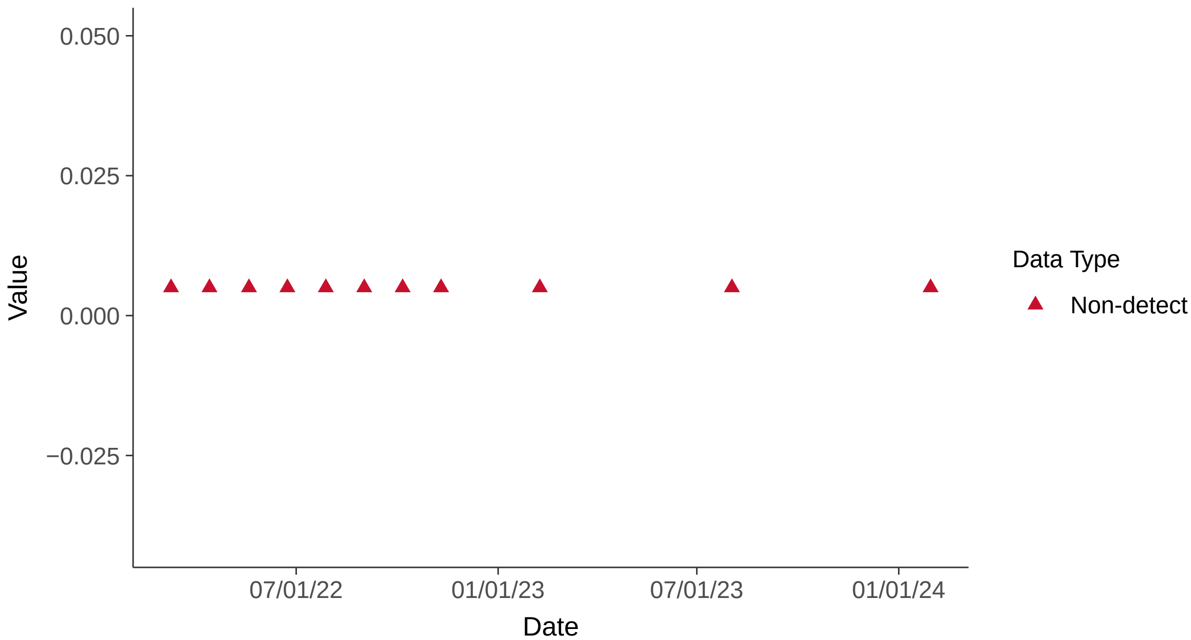

Boxplot by Season
Mercury, MW-7B (mg/L)
0.050
0.025
0.000
−0.025
Value
Fall
(n = 3)
Spring
(n = 3)
Summer
(n = 3)
Winter
(n = 2)
Season

Appendix IV: Molybdenum, MW-7B

ID: 7B_2_18

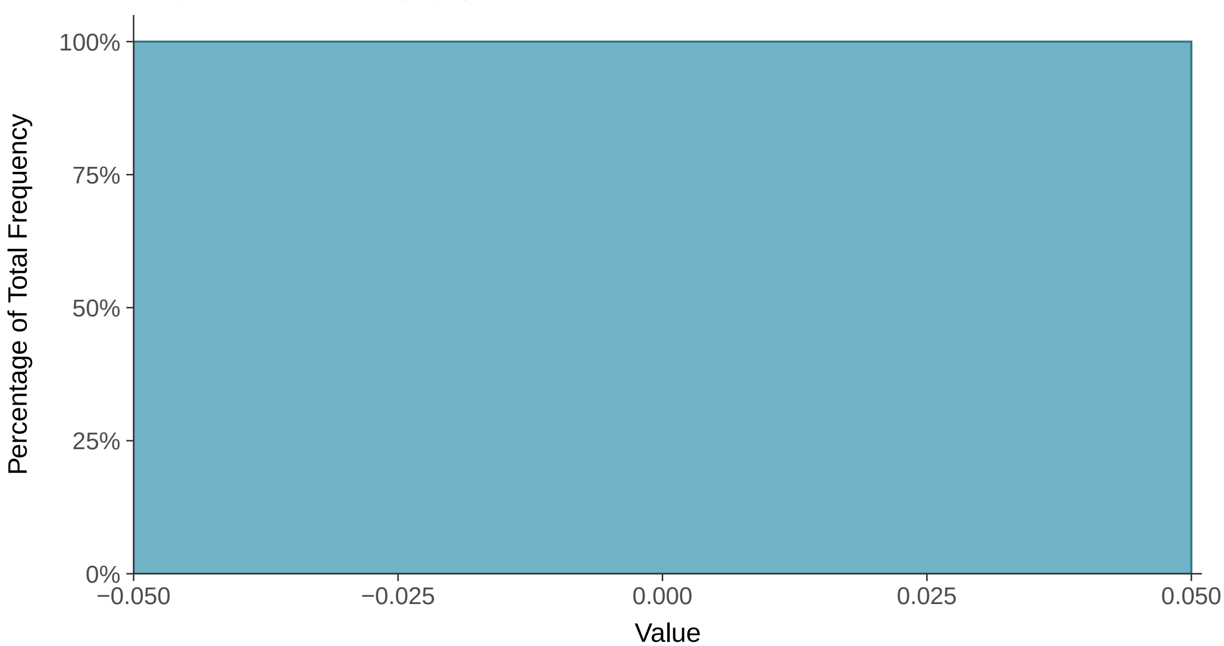
Scatter Plot

Molybdenum, MW-7B (mg/L)



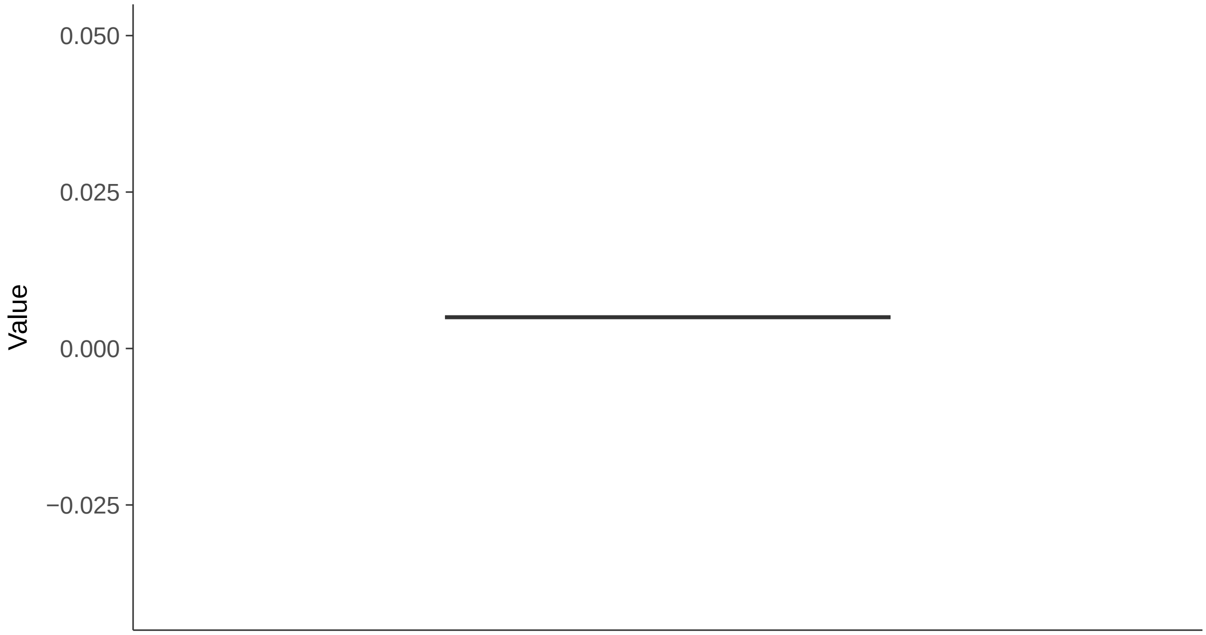
Histogram

Molybdenum, MW-7B (mg/L)



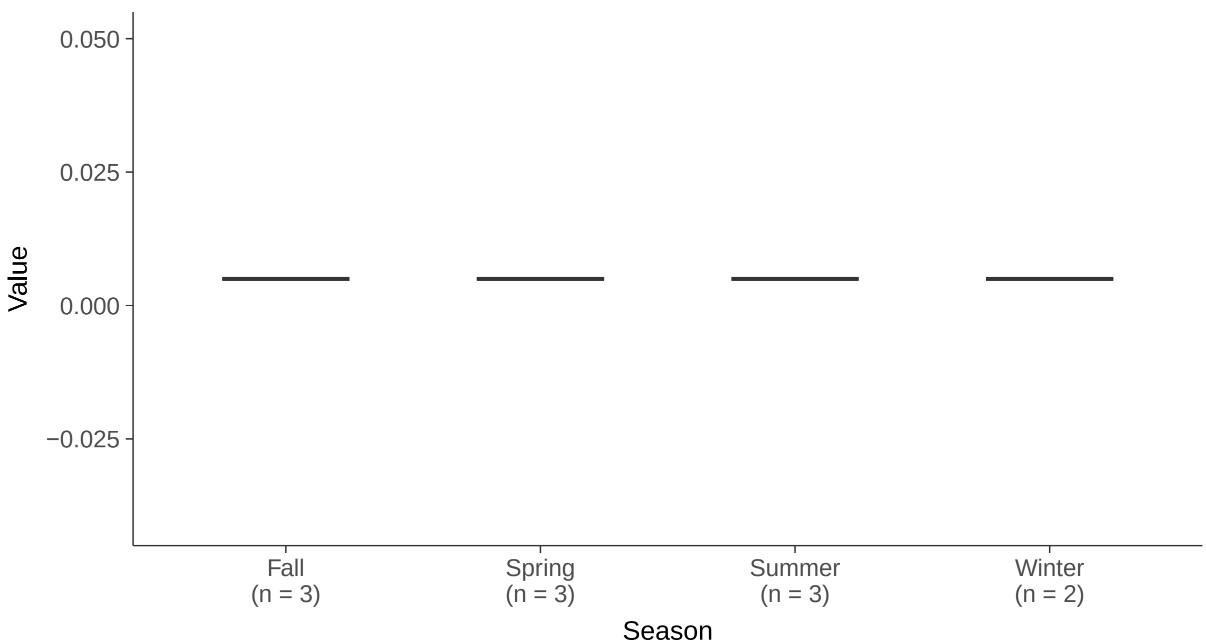
Boxplot

Molybdenum, MW-7B (mg/L)



Boxplot by Season

Molybdenum, MW-7B (mg/L)

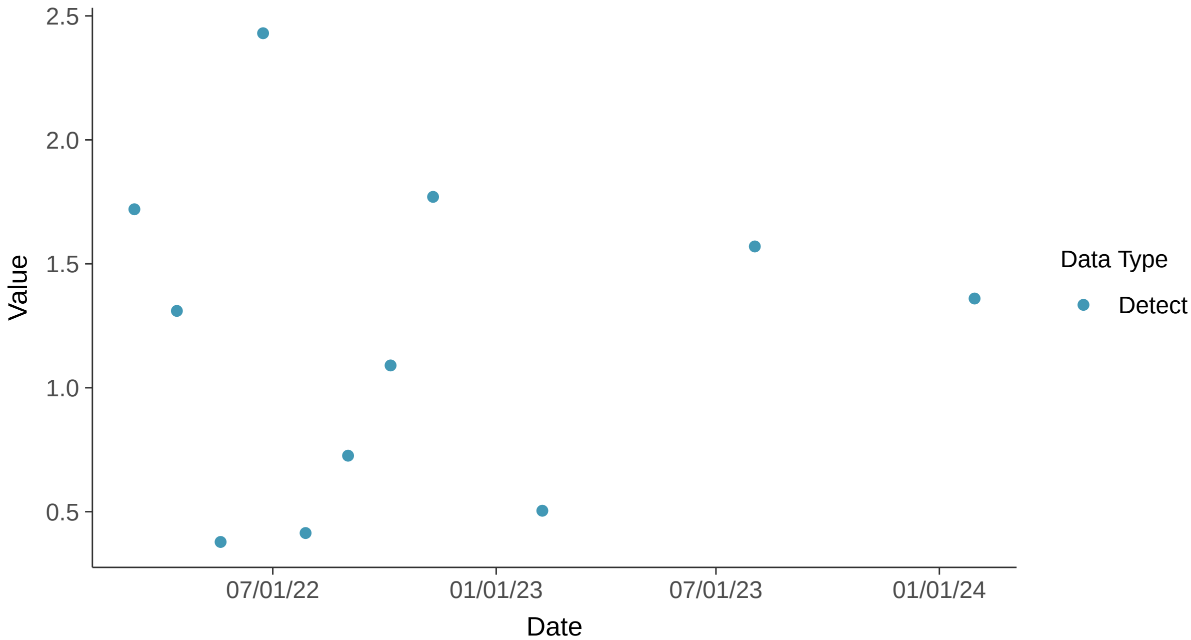


Appendix IV: Radium-226/228, MW-7B

ID: 7B_2_20

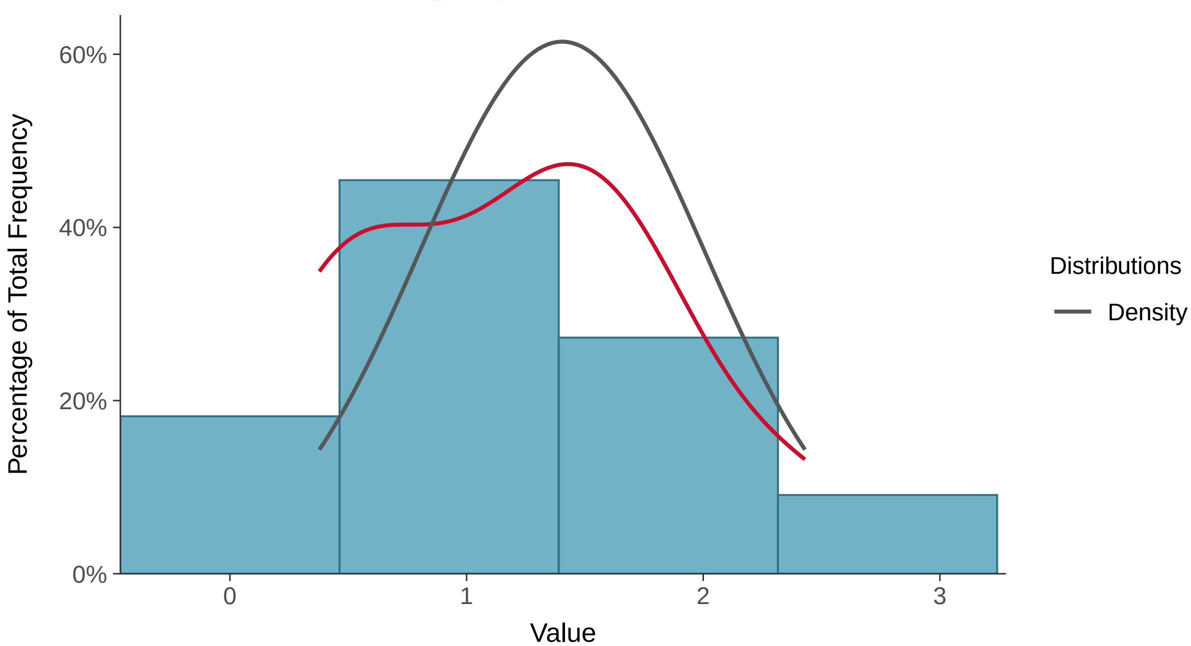
Scatter Plot

Radium-226/228, MW-7B (pCi/L)



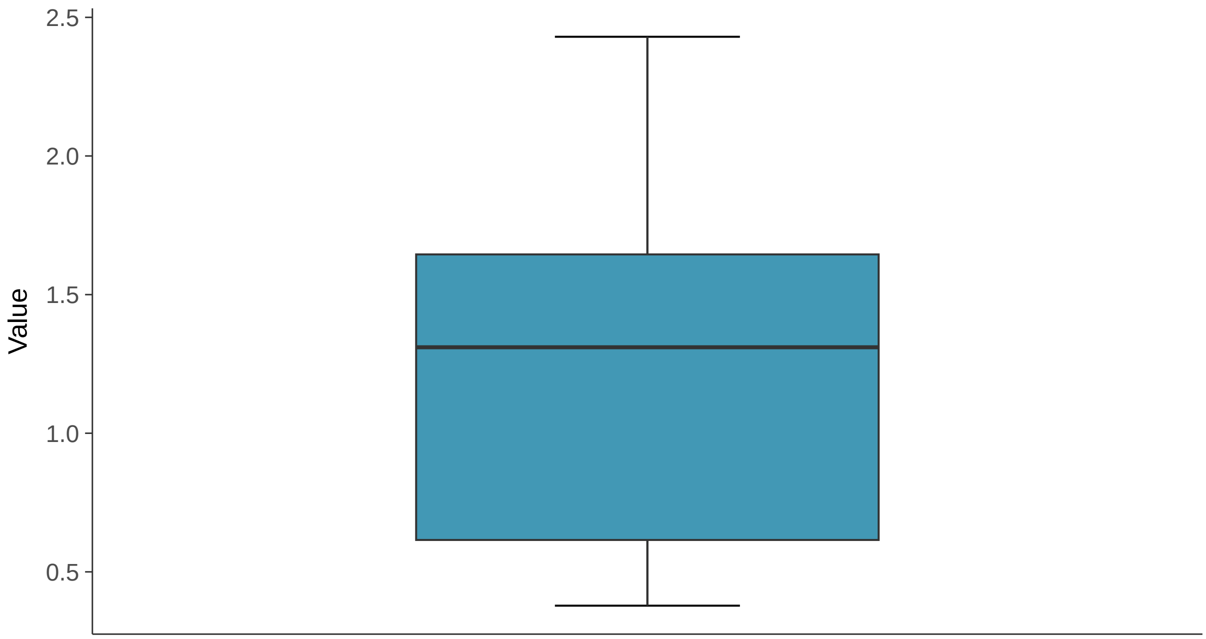
Histogram

Radium-226/228, MW-7B (pCi/L)



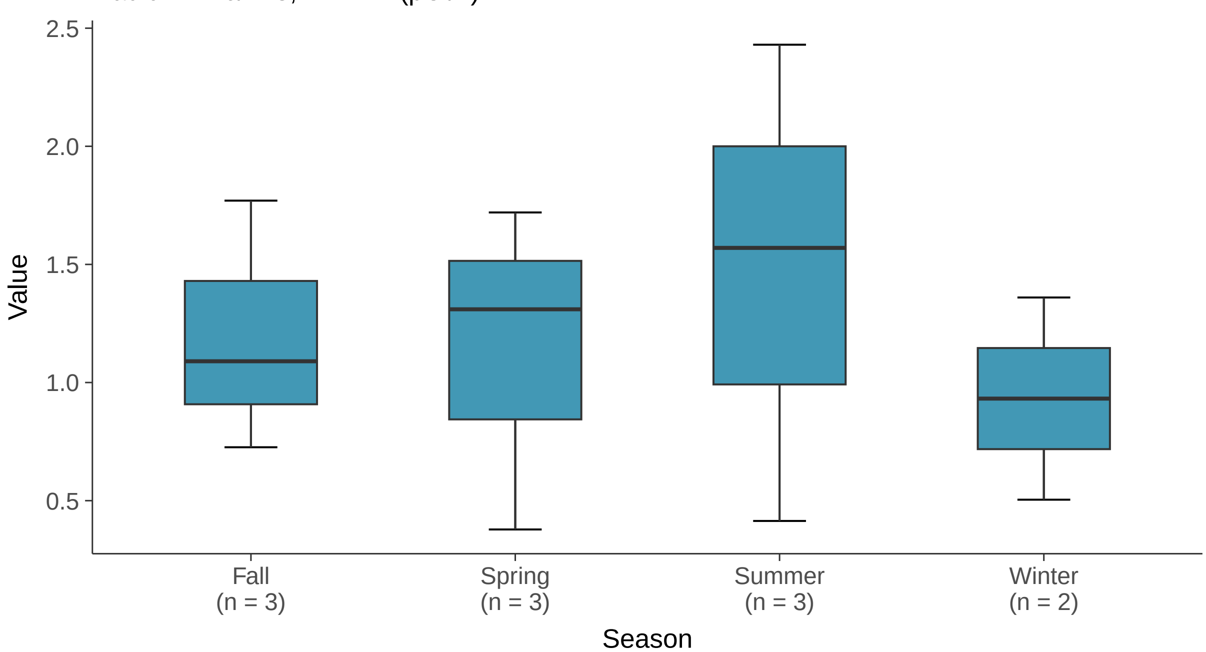
Boxplot

Radium-226/228, MW-7B (pCi/L)



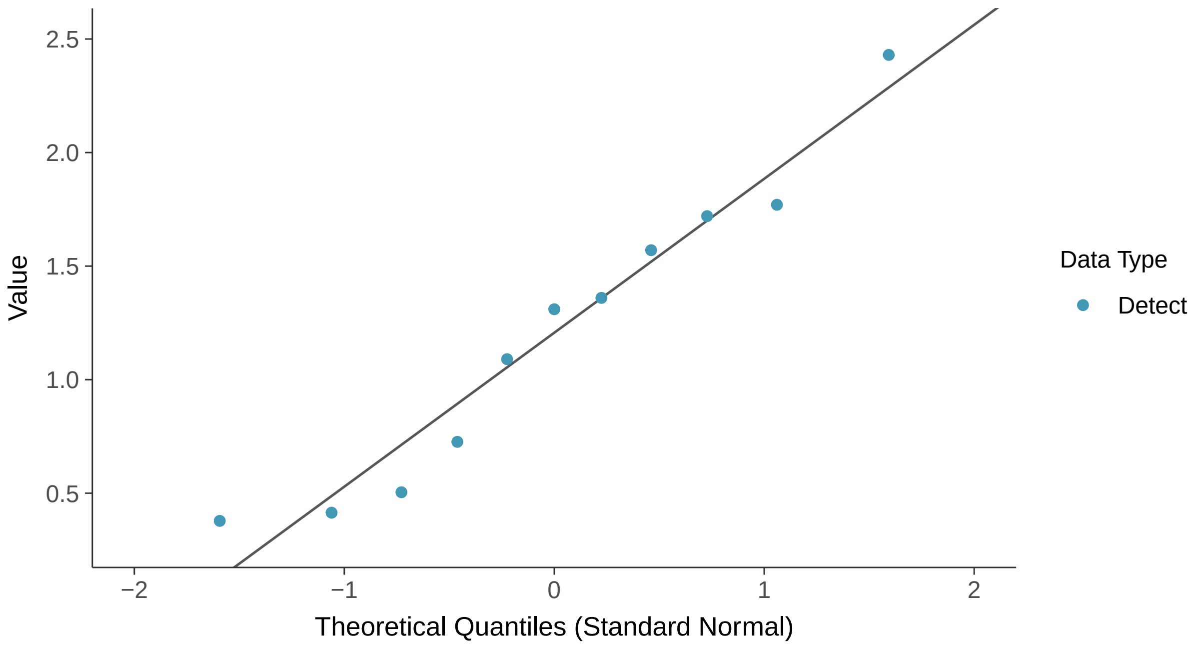
Boxplot by Season

Radium-226/228, MW-7B (pCi/L)



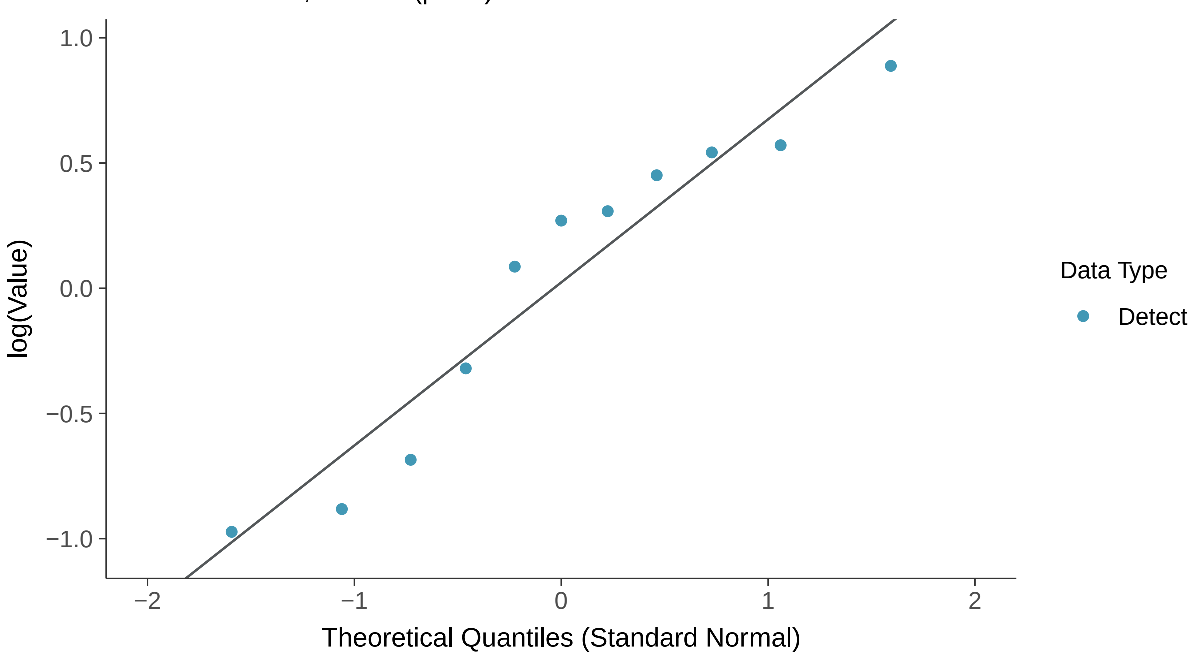
Normal Q-Q plot

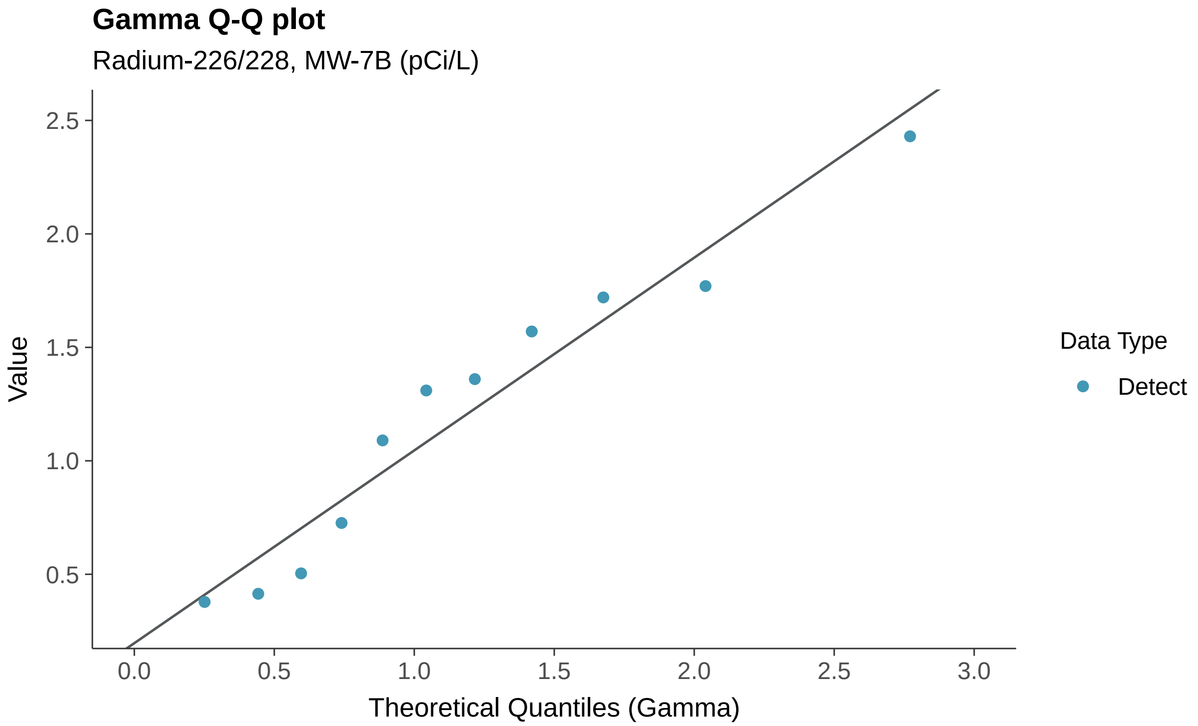
Radium-226/228, MW-7B (pCi/L)

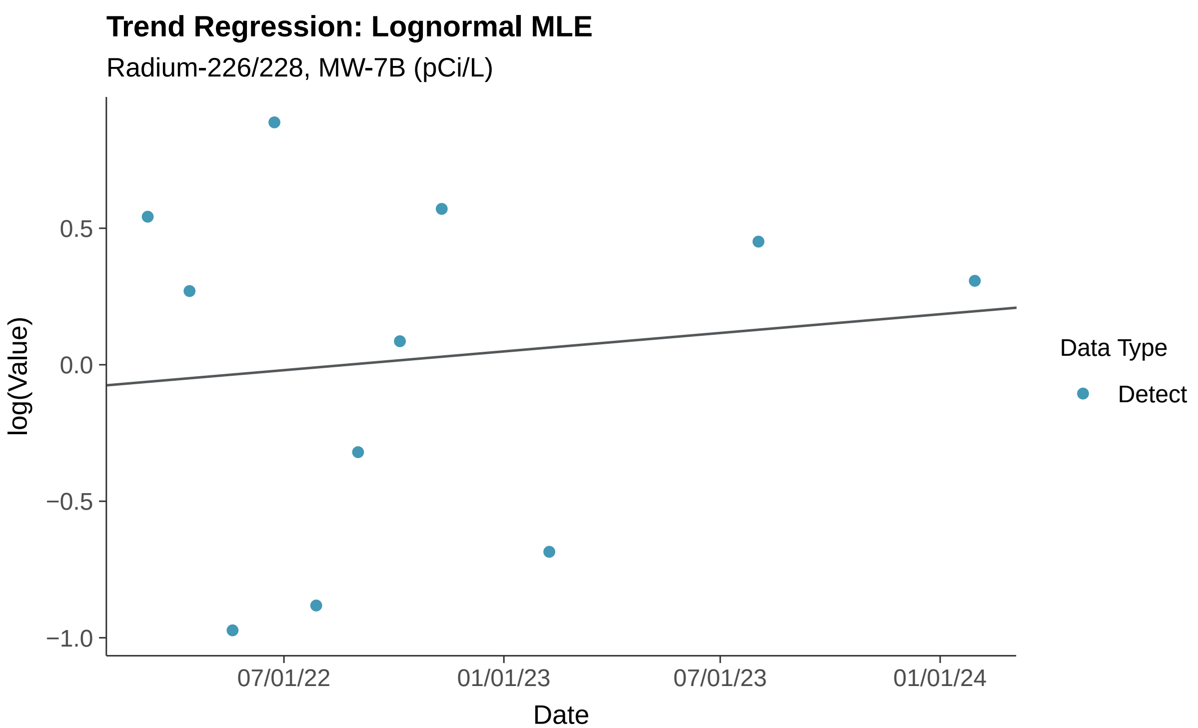


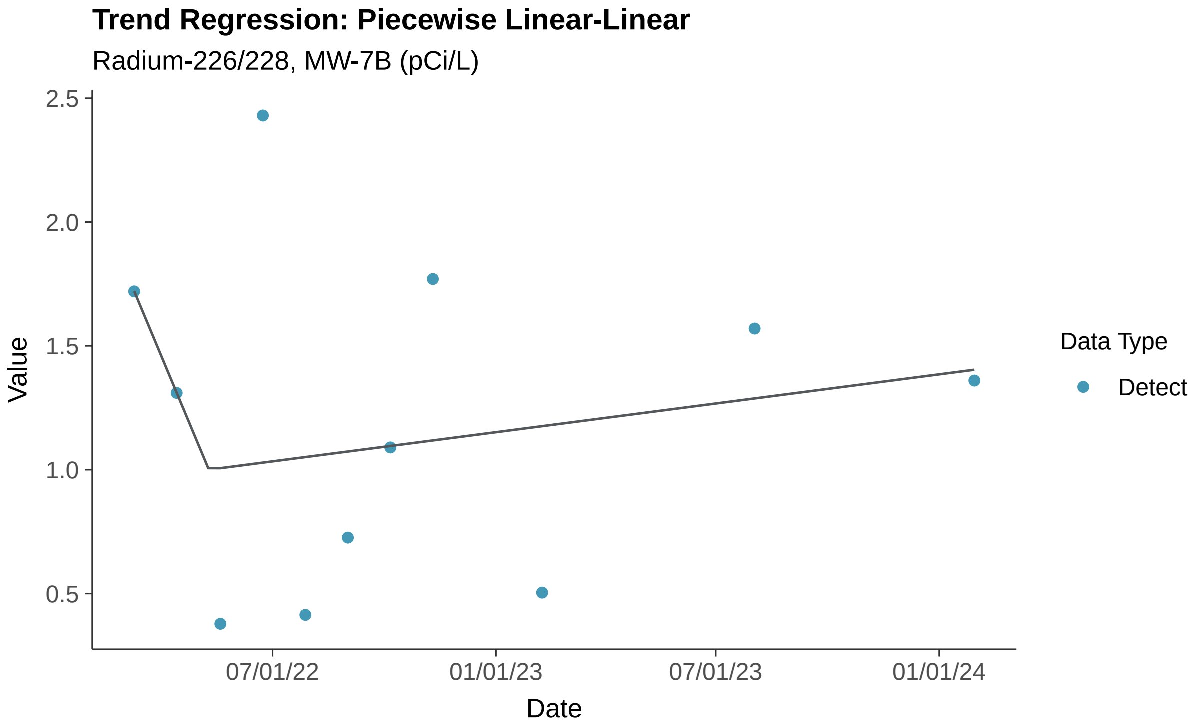
Lognormal Q-Q plot

Radium-226/228, MW-7B (pCi/L)




Gamma Q-Q plot
Radium-226/228, MW-7B (pCi/L)
Value
2.5
2.0
1.5
1.0
0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
Radium-226/228, MW-7B (pCi/L)
log(Value)
0.5
0.0
−0.5
−1.0
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

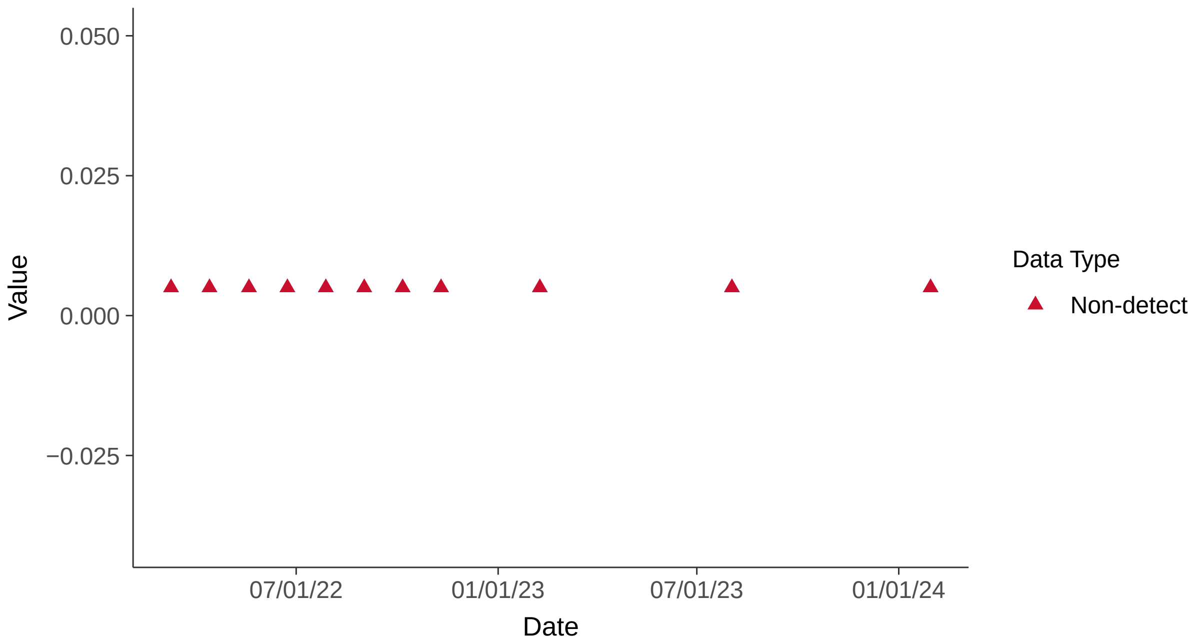

Trend Regression: Piecewise Linear-Linear
Radium-226/228, MW-7B (pCi/L)
Value
2.5
2.0
1.5
1.0
0.5
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Appendix IV: Selenium, MW-7B

ID: 7B_2_22

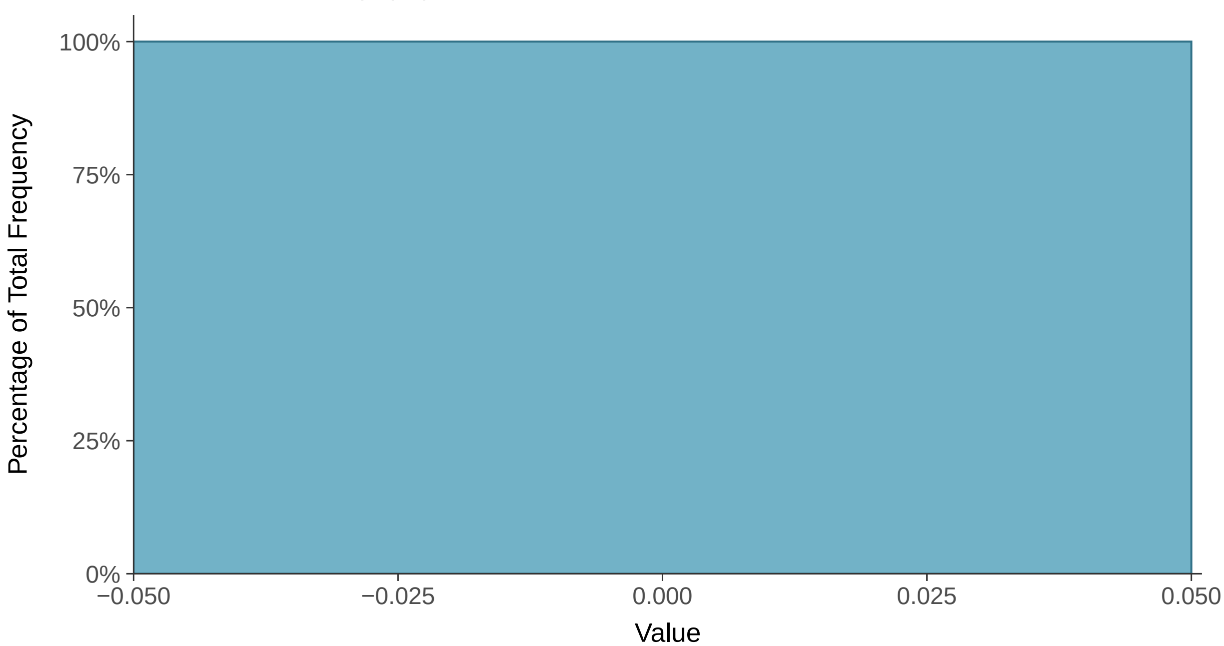
Scatter Plot

Selenium, MW-7B (mg/L)



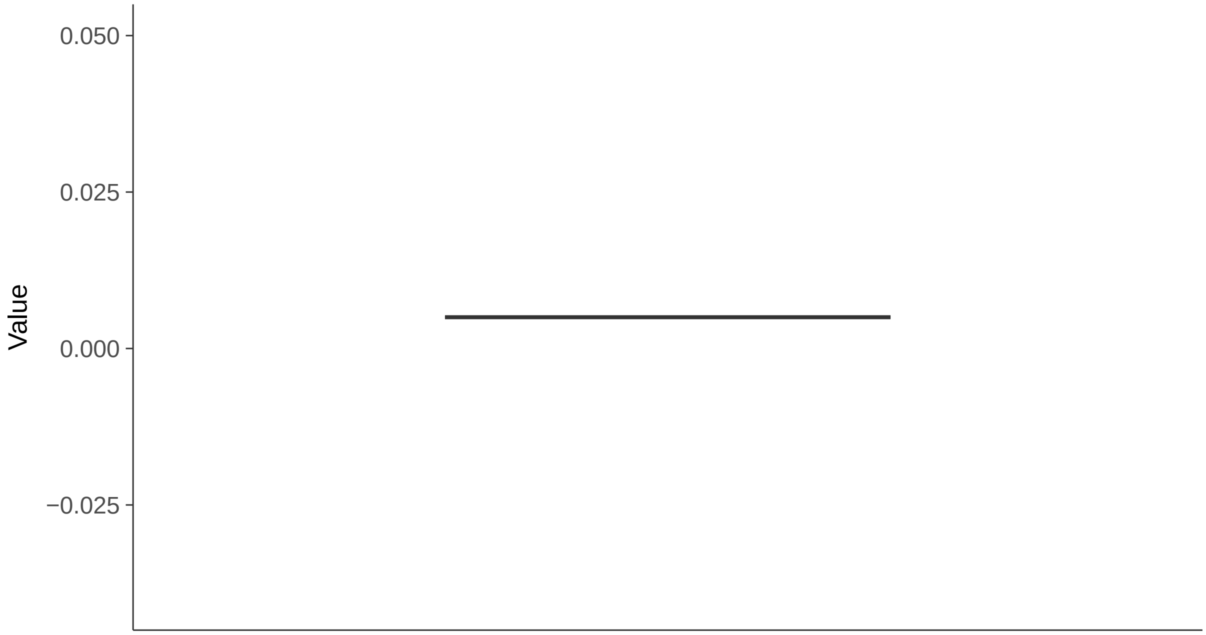
Histogram

Selenium, MW-7B (mg/L)



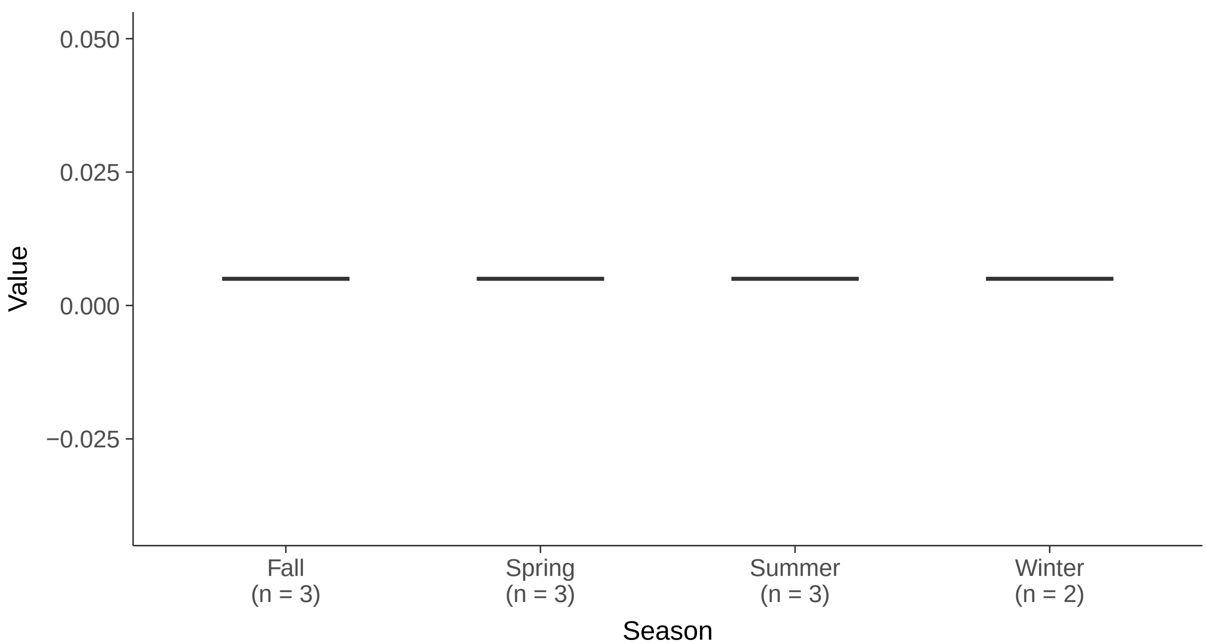
Boxplot

Selenium, MW-7B (mg/L)



Boxplot by Season

Selenium, MW-7B (mg/L)

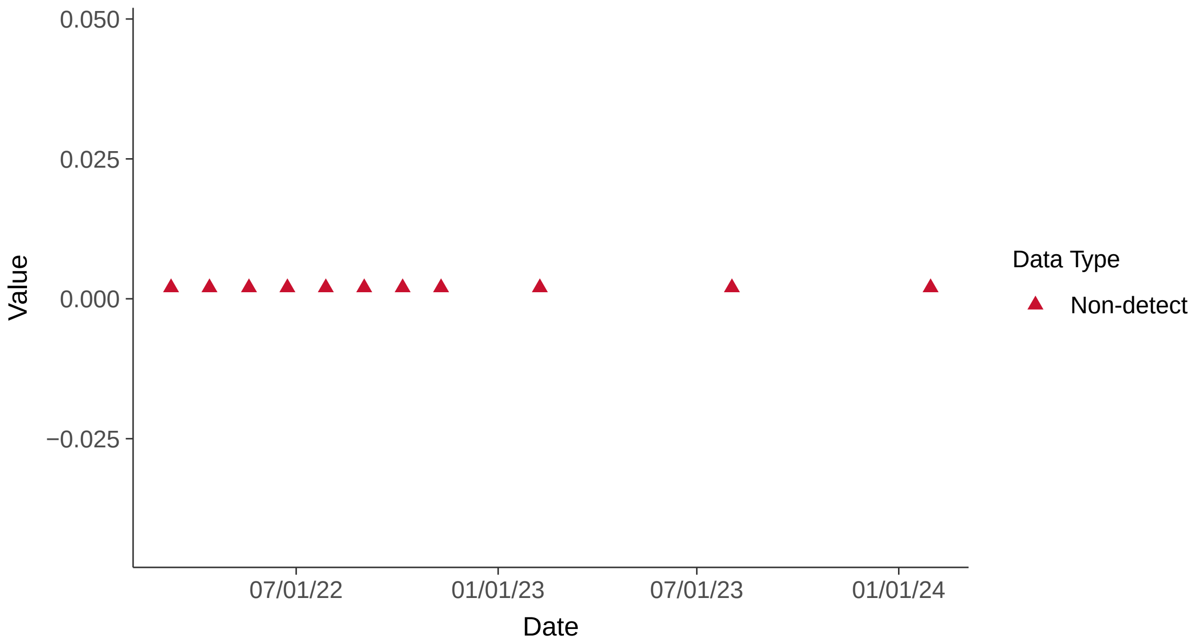


Appendix IV: Thallium, MW-7B

ID: 7B_2_23

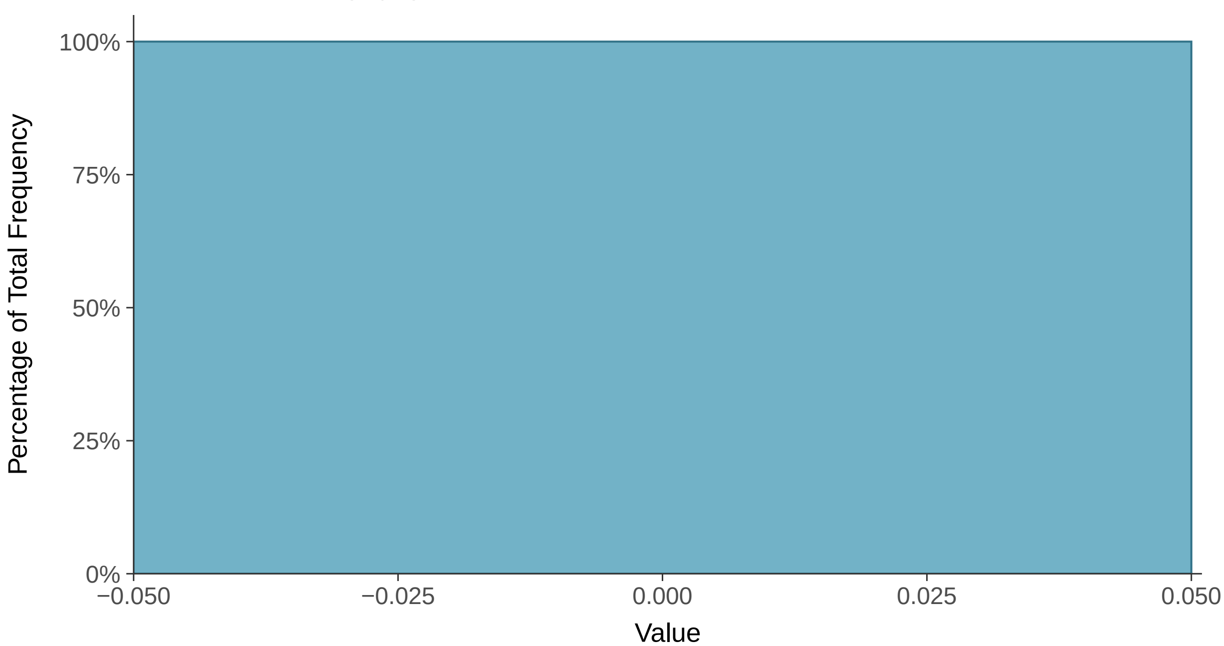
Scatter Plot

Thallium, MW-7B (mg/L)



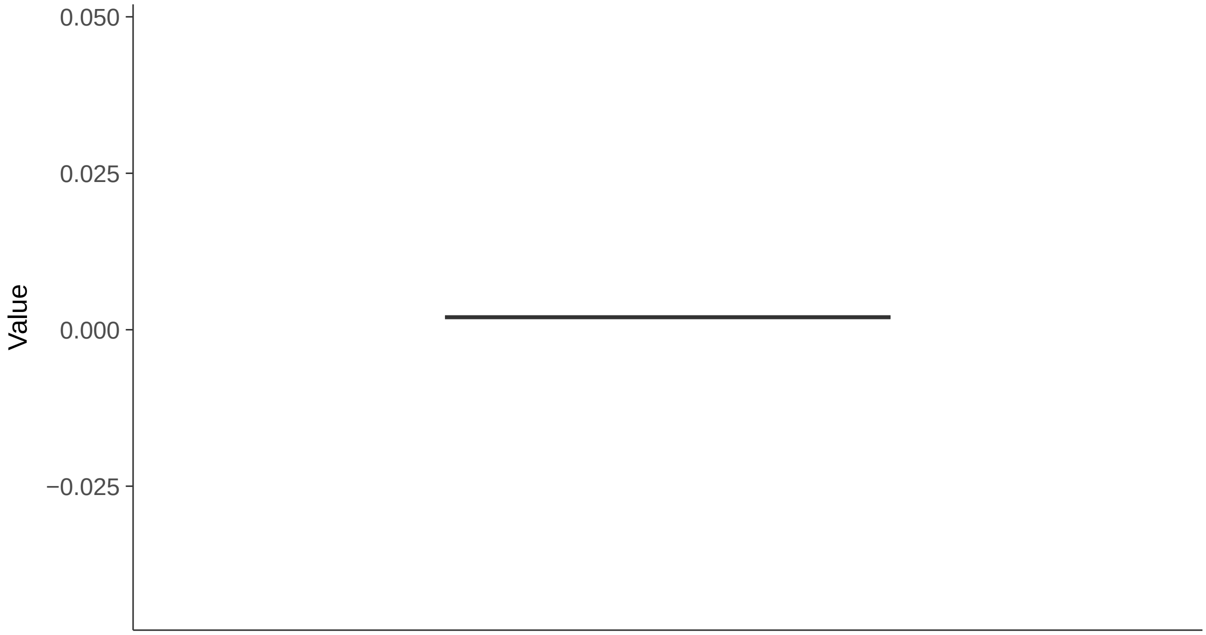
Histogram

Thallium, MW-7B (mg/L)



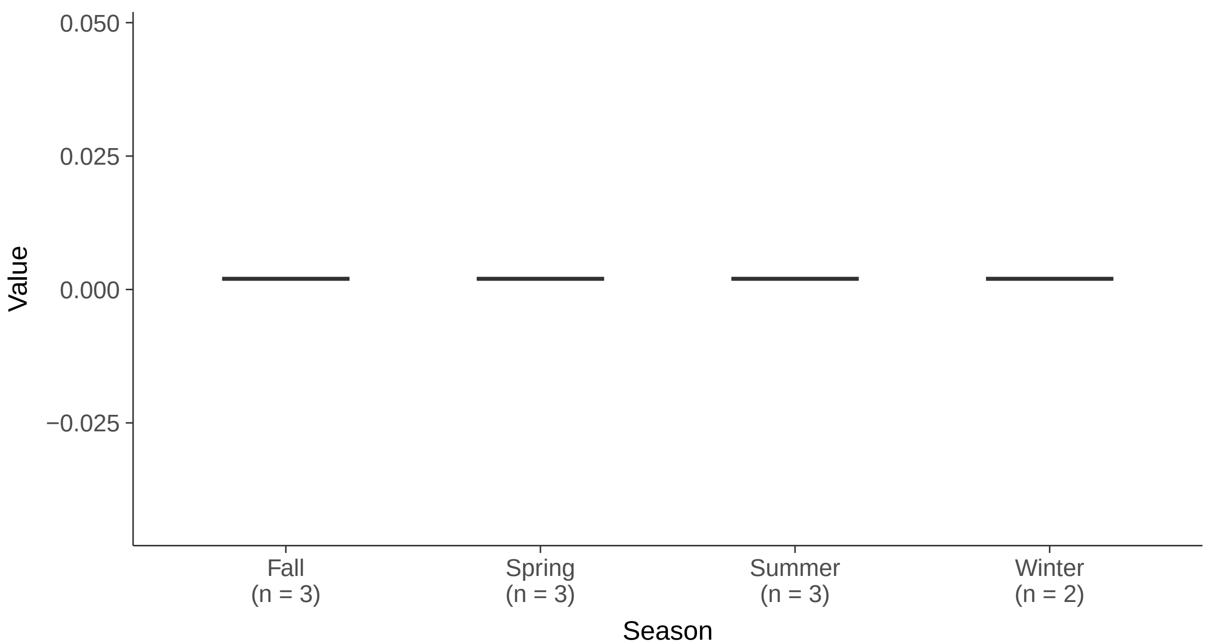
Boxplot

Thallium, MW-7B (mg/L)



Boxplot by Season

Thallium, MW-7B (mg/L)

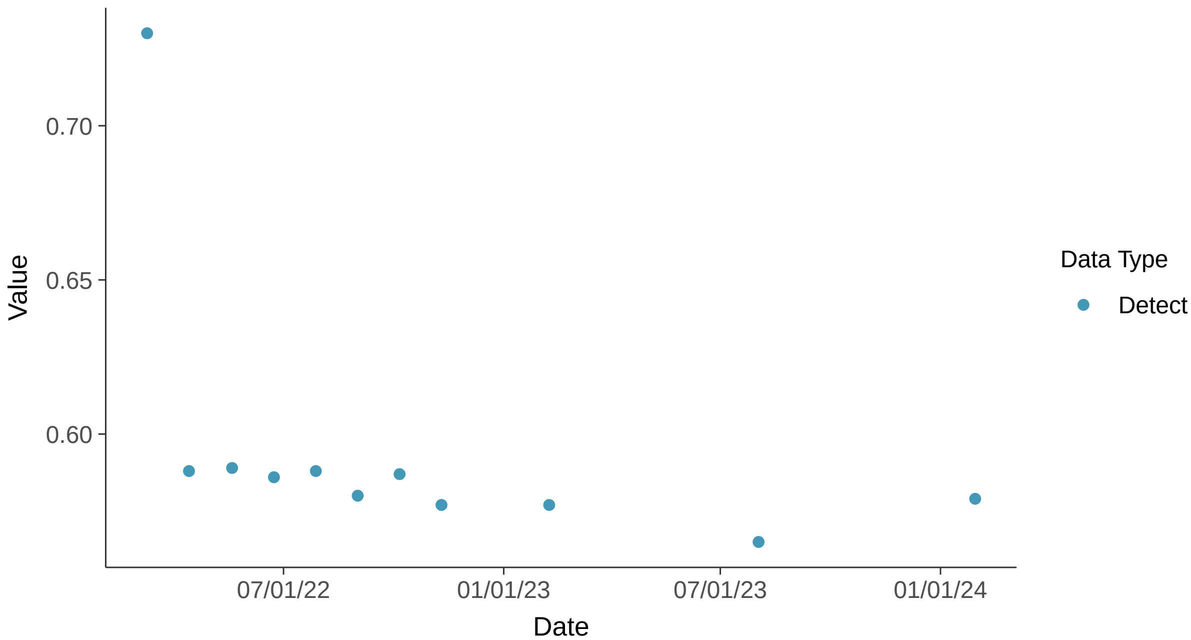


Field Parameters: Conductivity, MW-7B

ID: 7B_3_24

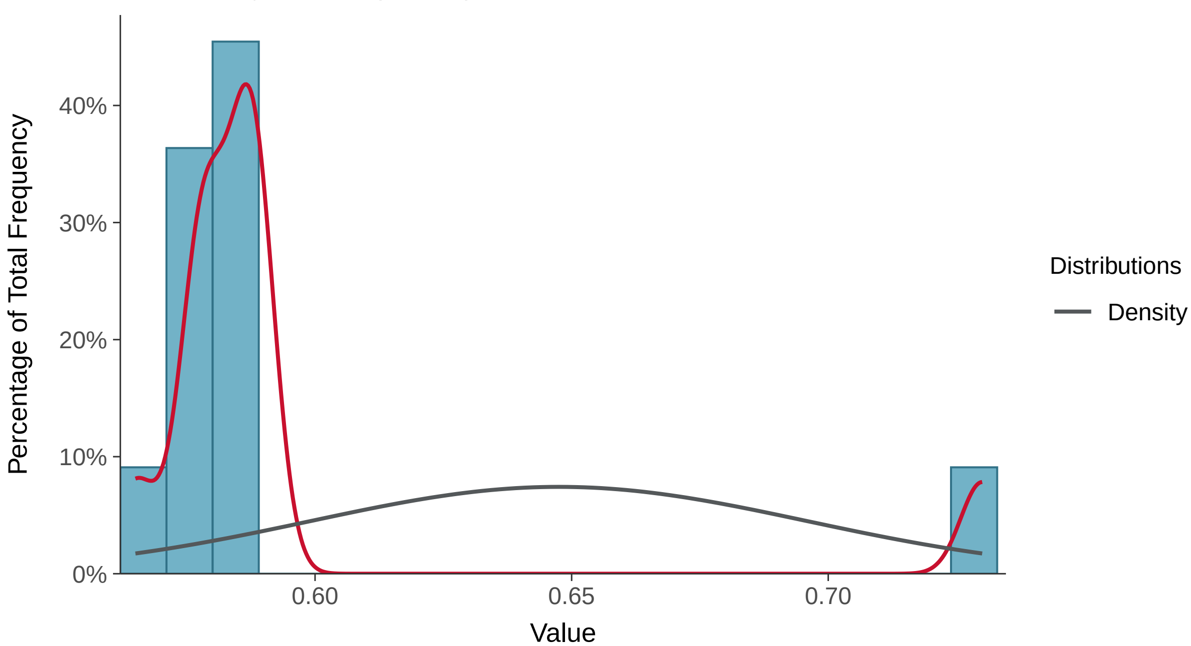
Scatter Plot

Conductivity, MW-7B (mS/cm)



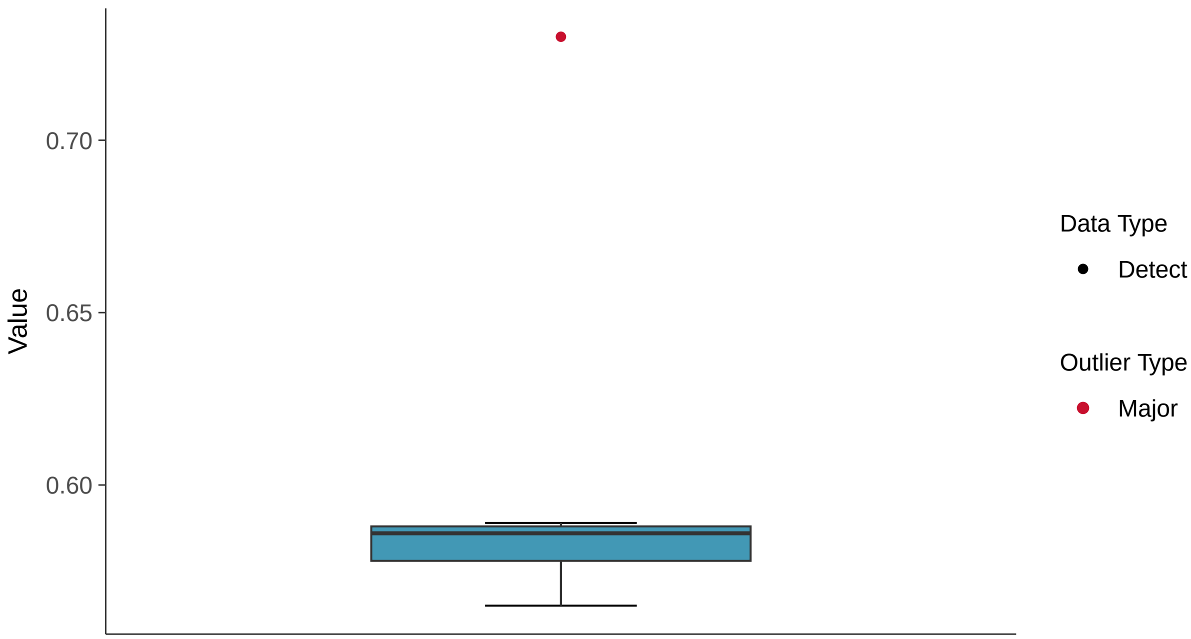
Histogram

Conductivity, MW-7B (mS/cm)



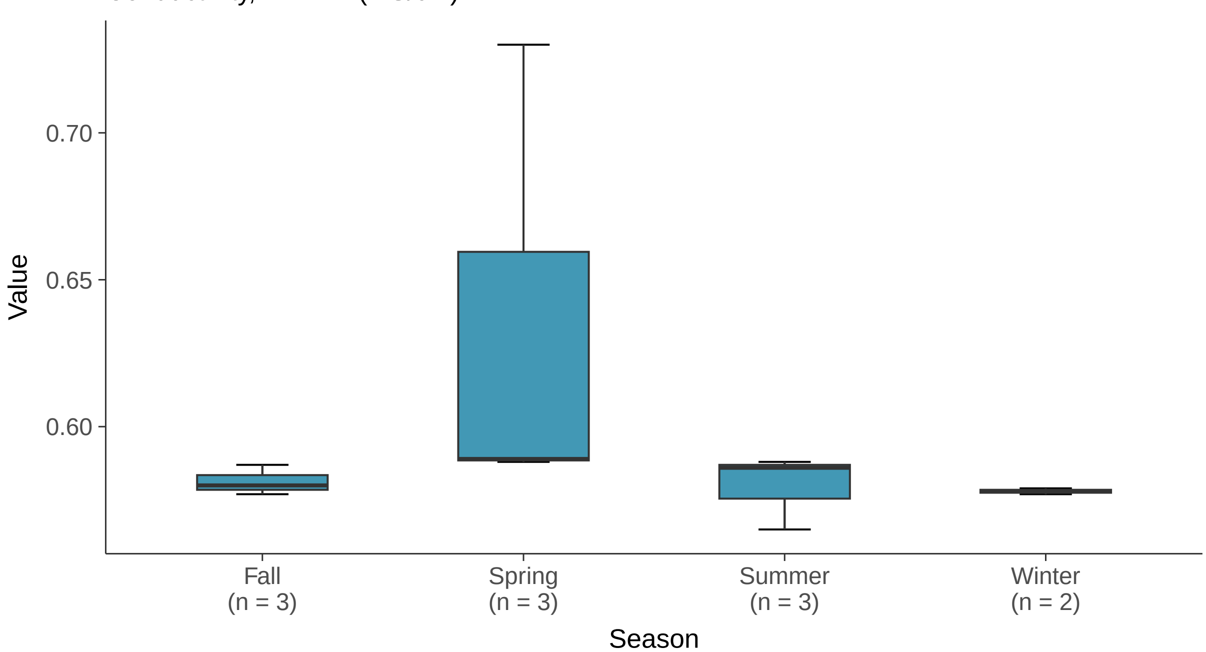
Boxplot

Conductivity, MW-7B (mS/cm)



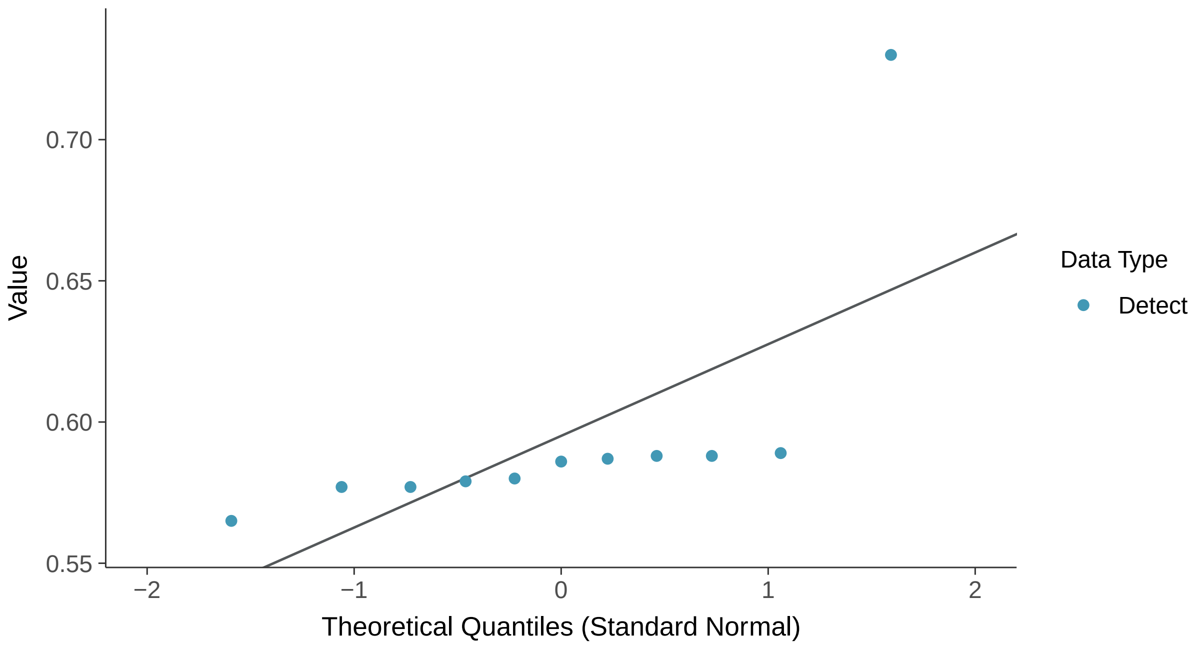
Boxplot by Season

Conductivity, MW-7B (mS/cm)



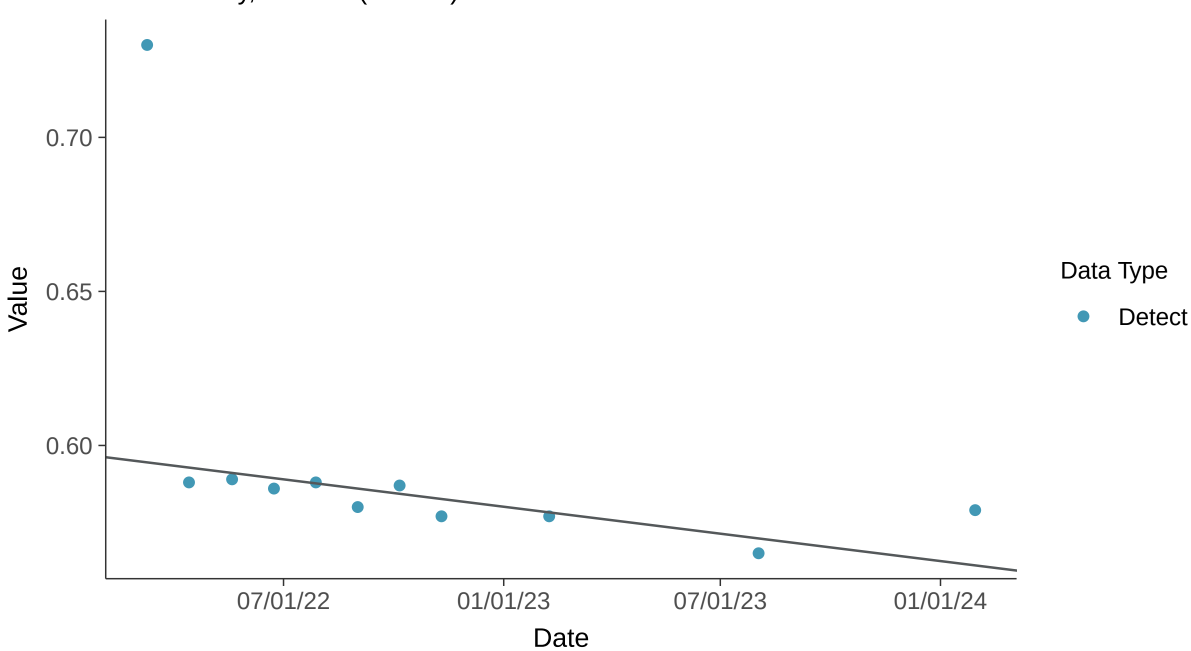
Normal Q-Q plot

Conductivity, MW-7B (mS/cm)



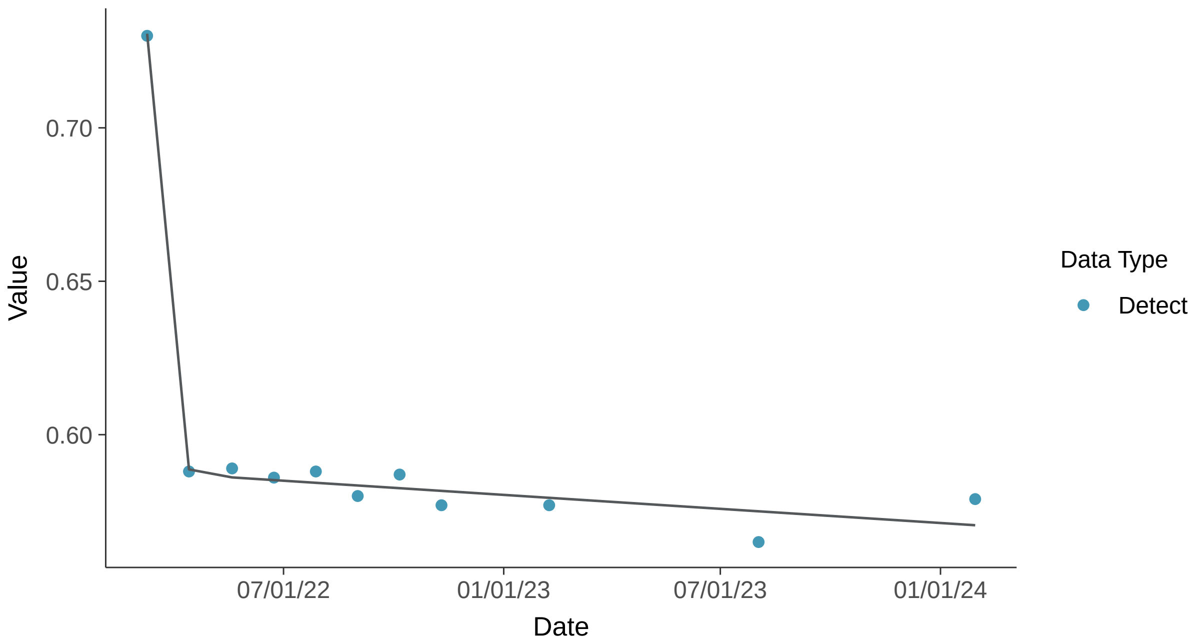
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Conductivity, MW-7B (mS/cm)



Trend Regression: Piecewise Linear-Linear

Conductivity, MW-7B (mS/cm)

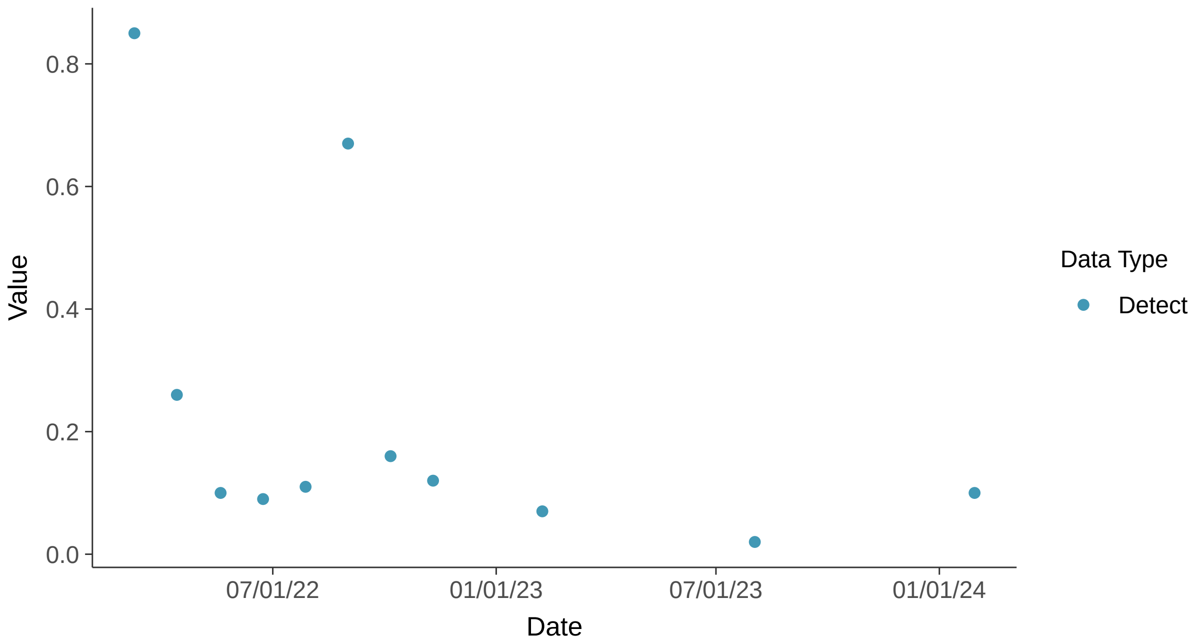


Field Parameters: Dissolved Oxygen, MW-7B

ID: 7B_3_25

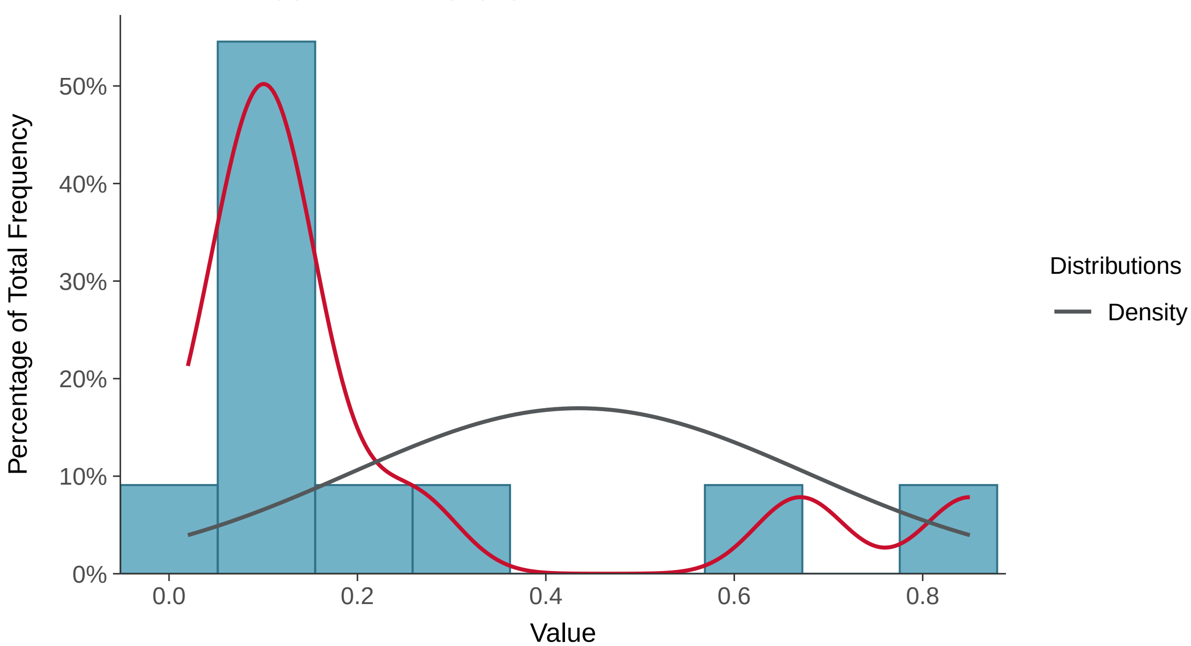
Scatter Plot

Dissolved Oxygen, MW-7B (mg/L)



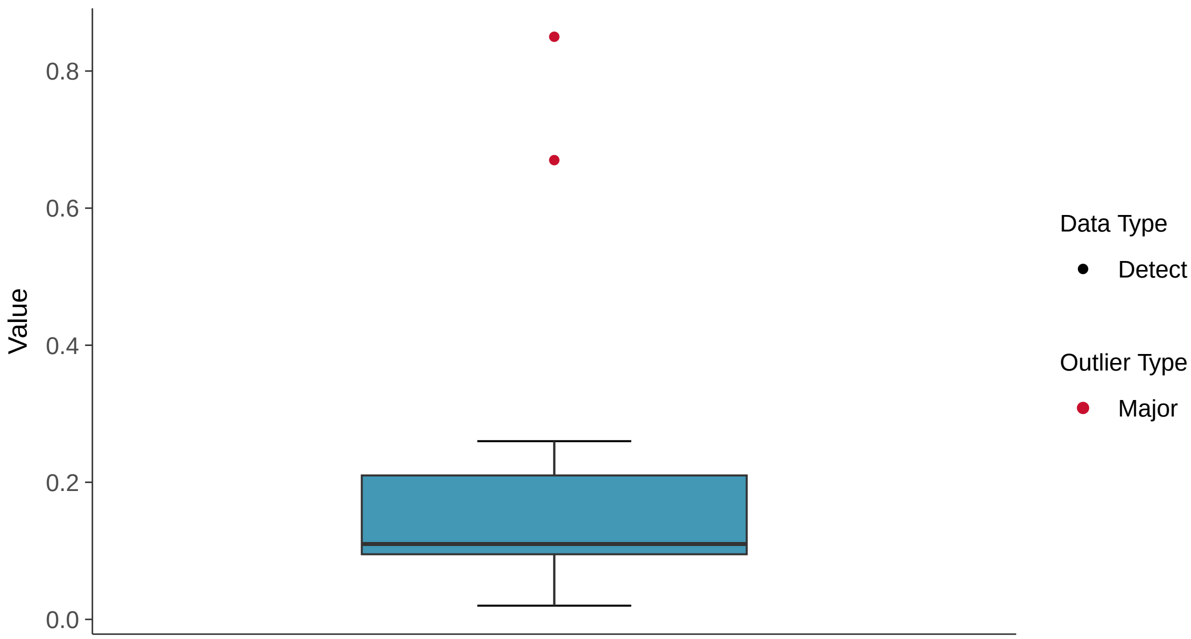
Histogram

Dissolved Oxygen, MW-7B (mg/L)



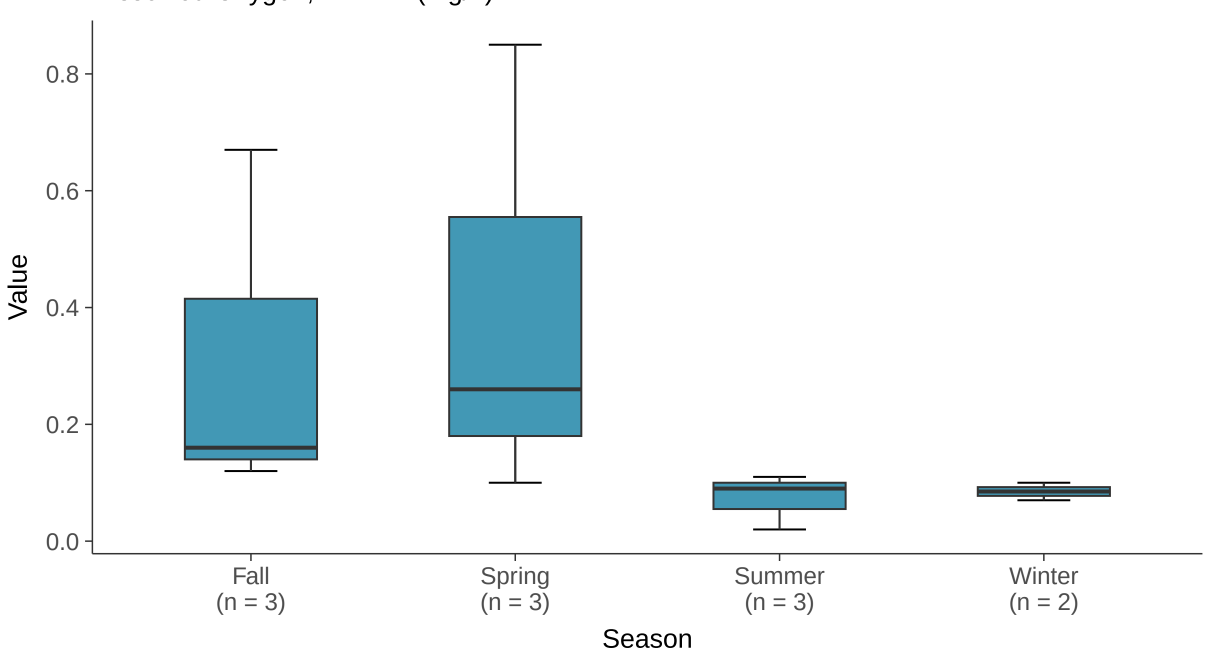
Boxplot

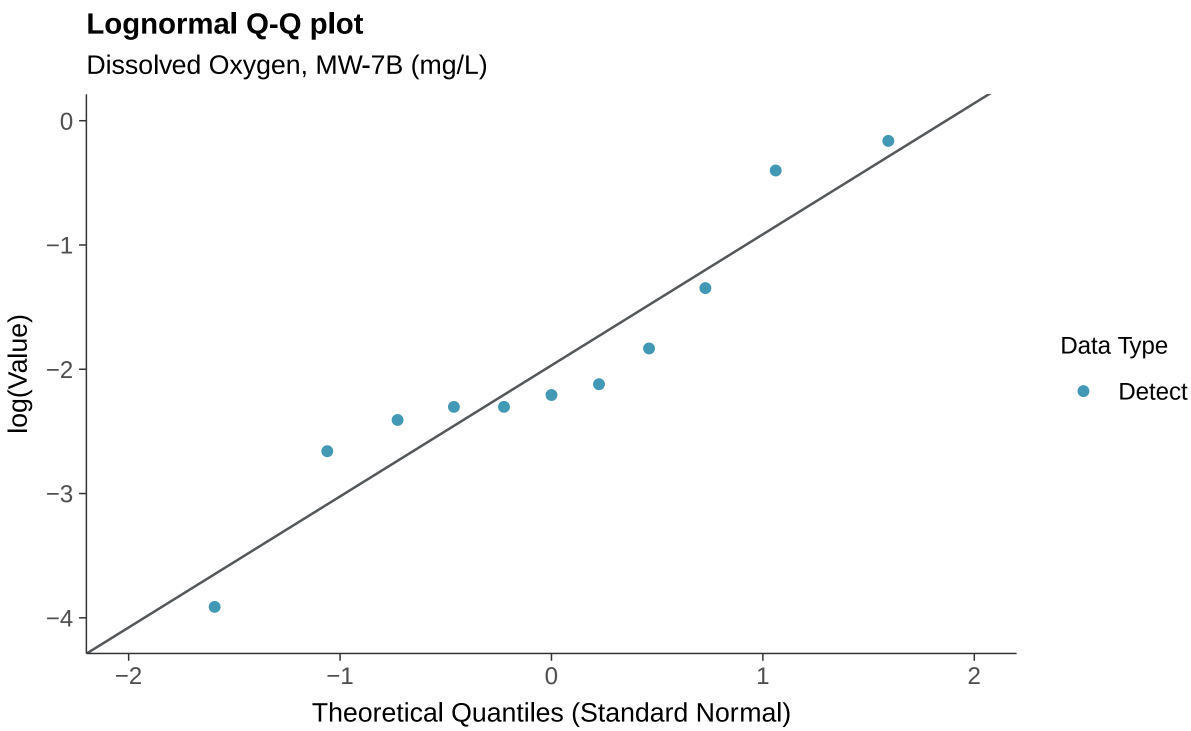
Dissolved Oxygen, MW-7B (mg/L)

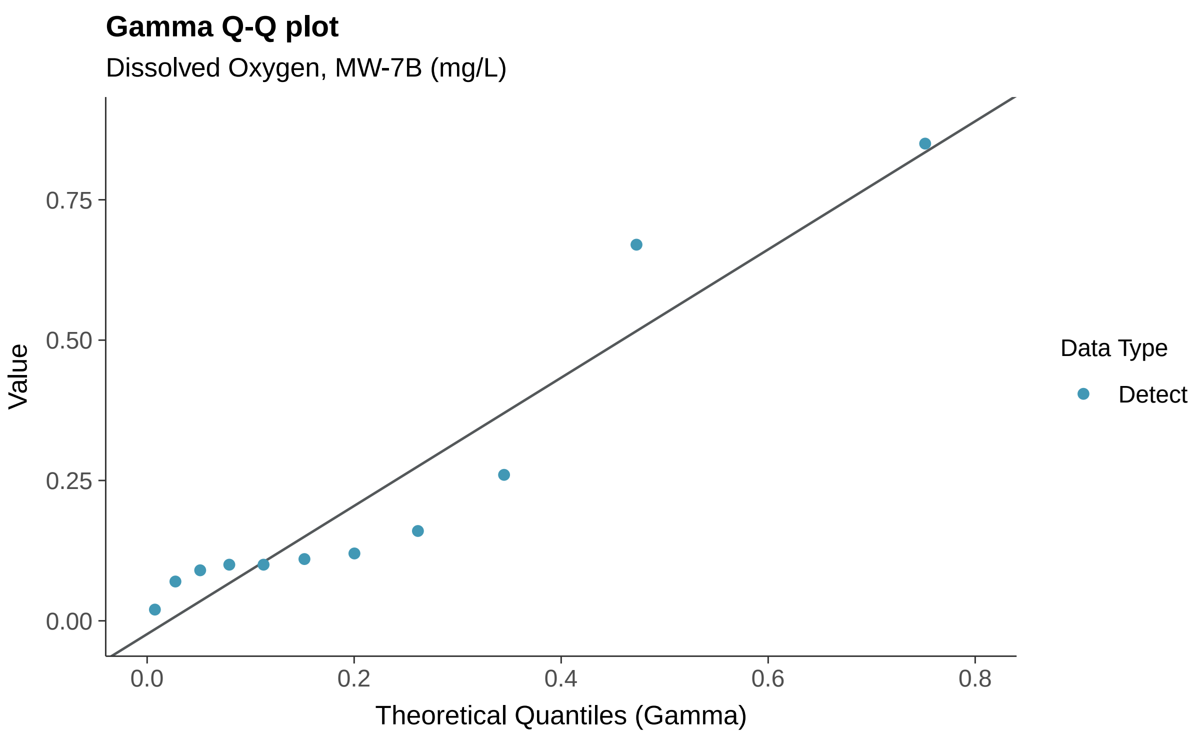


Boxplot by Season

Dissolved Oxygen, MW-7B (mg/L)

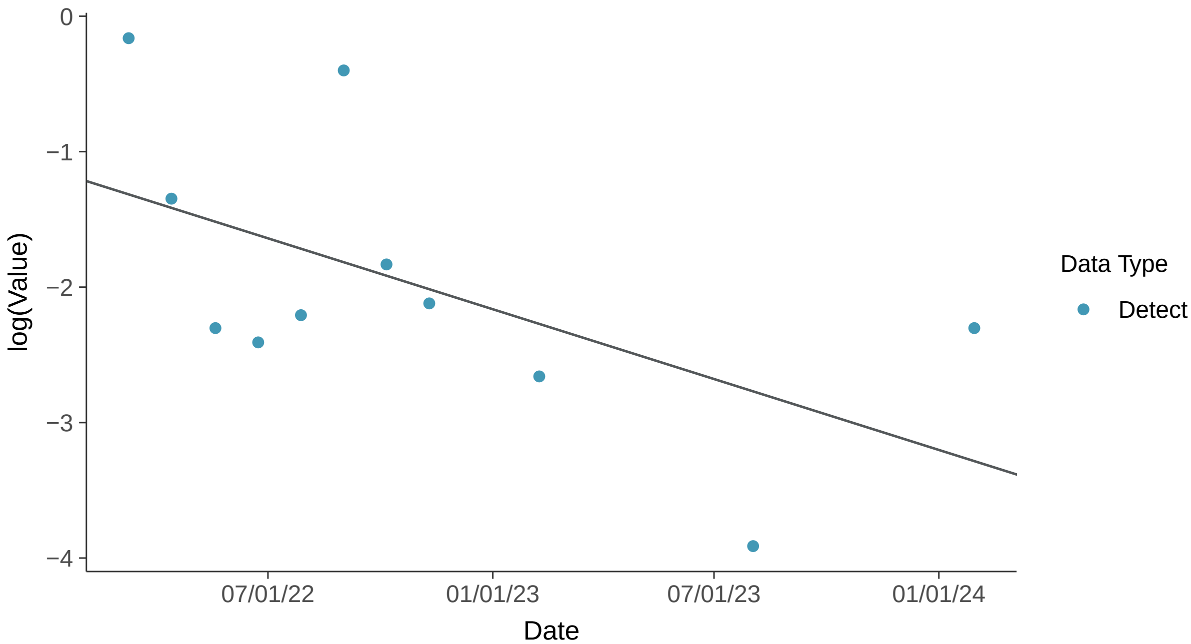



Lognormal Q-Q plot
Dissolved Oxygen, MW-7B (mg/L)
log(Value)
0
−1
−2
−3
−4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
Dissolved Oxygen, MW-7B (mg/L)
Value
0.75
0.50
0.25
0.00
0.0
0.2
0.4
0.6
0.8
Theoretical Quantiles (Gamma)
Data Type
Detect

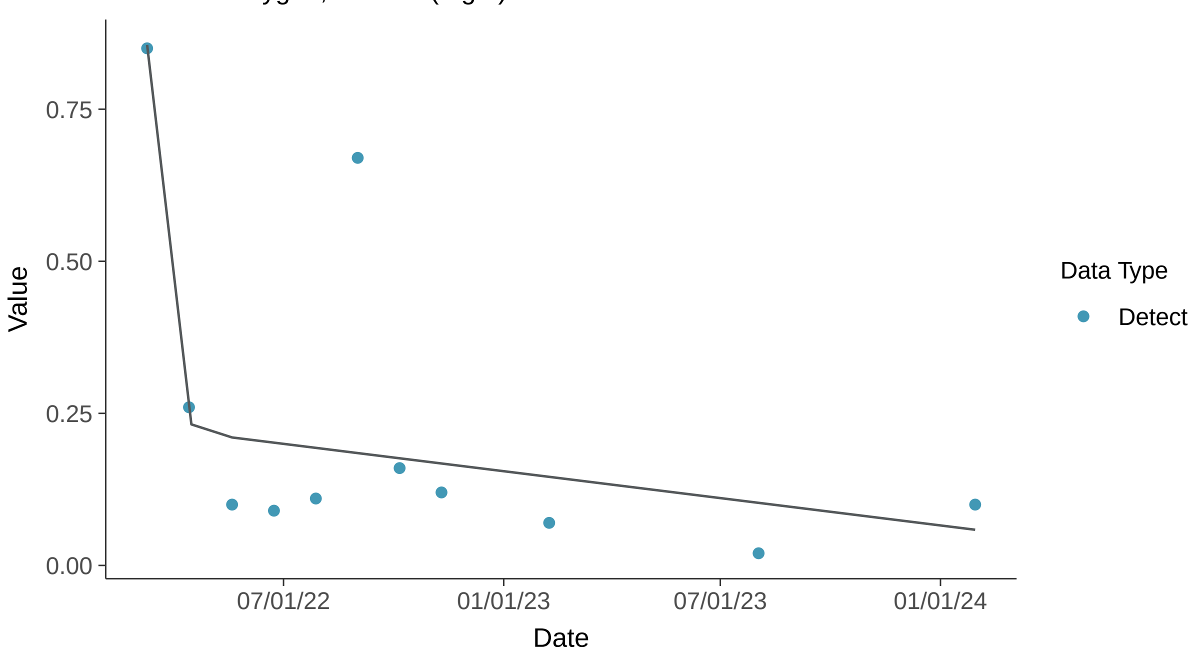
Trend Regression: Lognormal MLE

Dissolved Oxygen, MW-7B (mg/L)



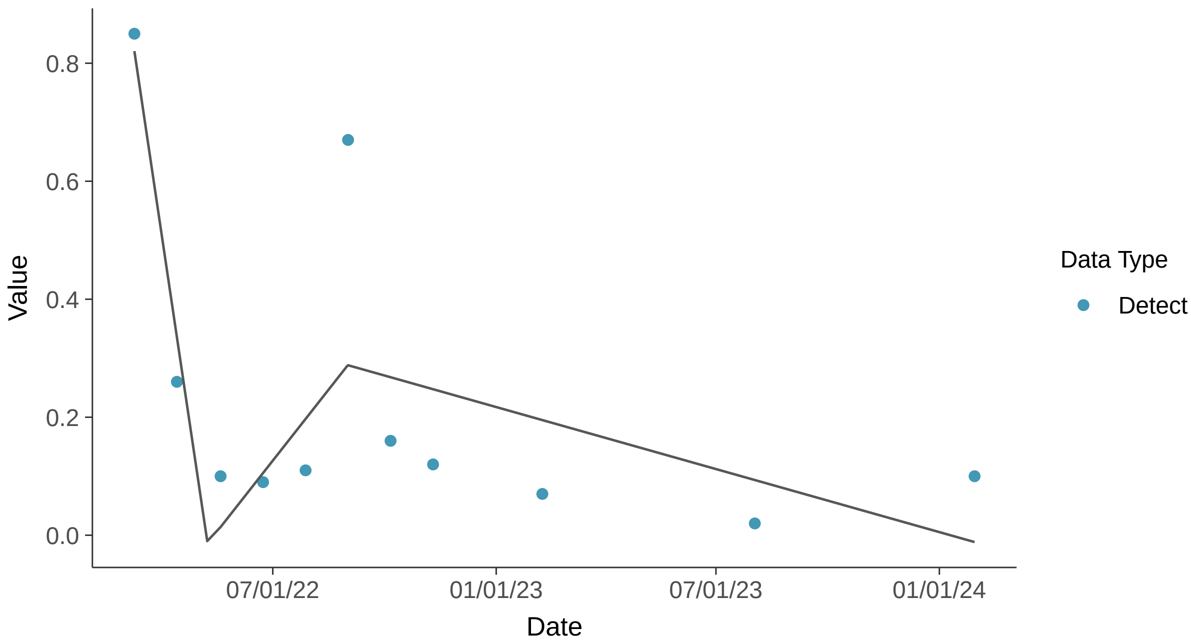
Trend Regression: Piecewise Linear-Linear

Dissolved Oxygen, MW-7B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Dissolved Oxygen, MW-7B (mg/L)

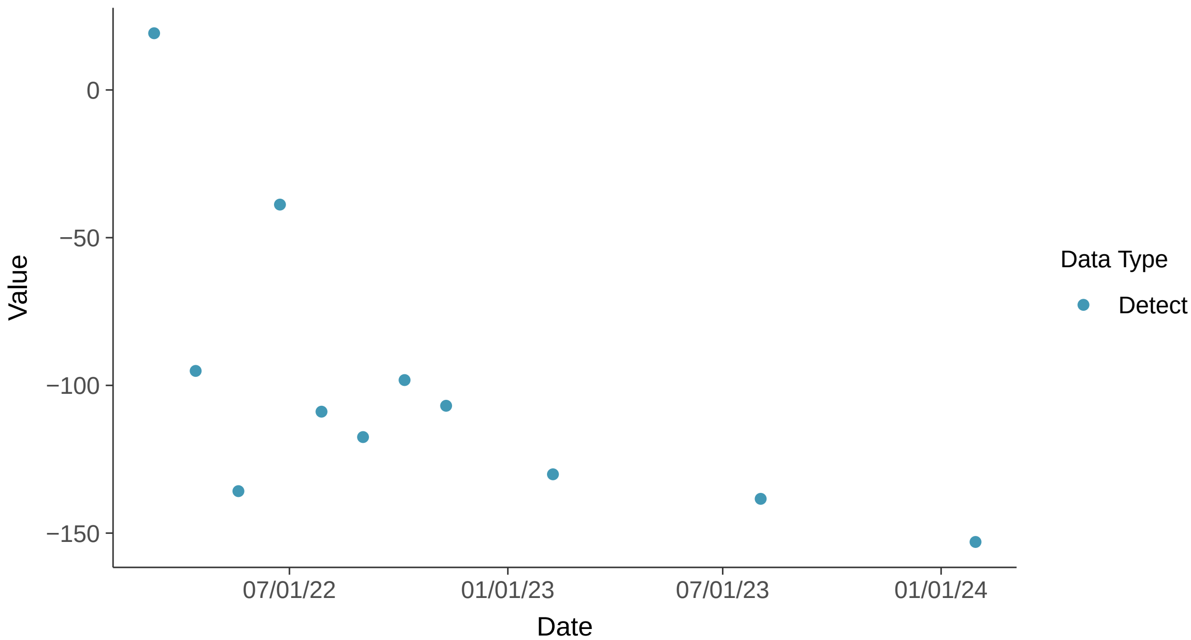


Field Parameters: Oxidation Reduction Potential, MW-7B

ID: 7B_3_26

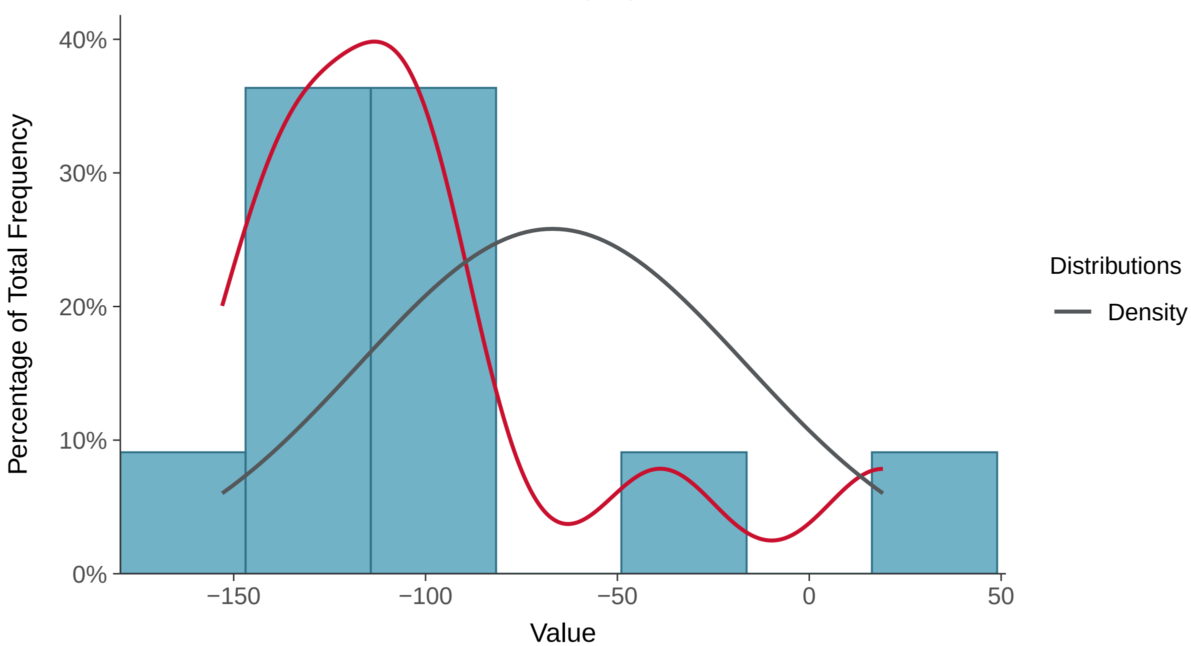
Scatter Plot

Oxidation Reduction Potential, MW-7B (mV)



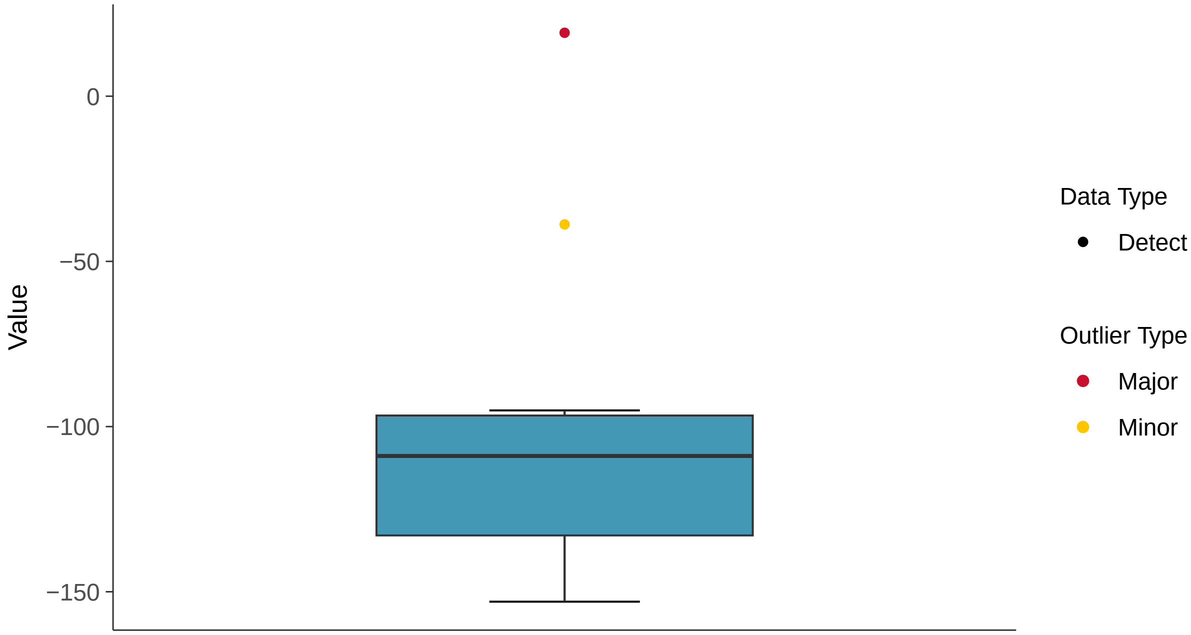
Histogram

Oxidation Reduction Potential, MW-7B (mV)



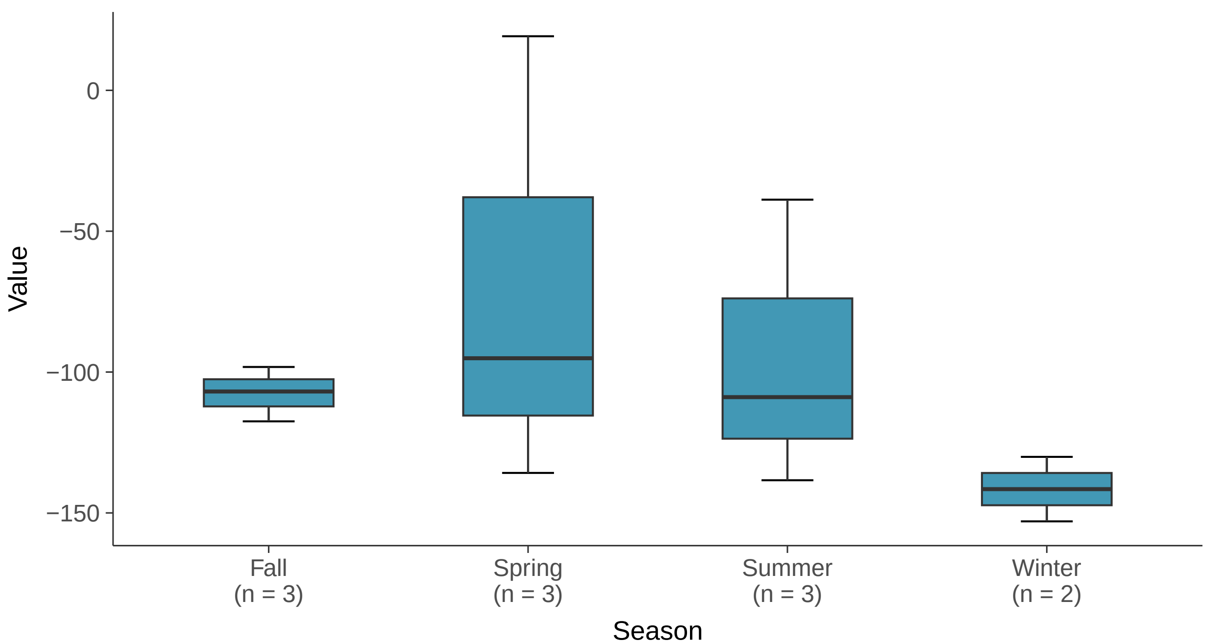
Boxplot

Oxidation Reduction Potential, MW-7B (mV)



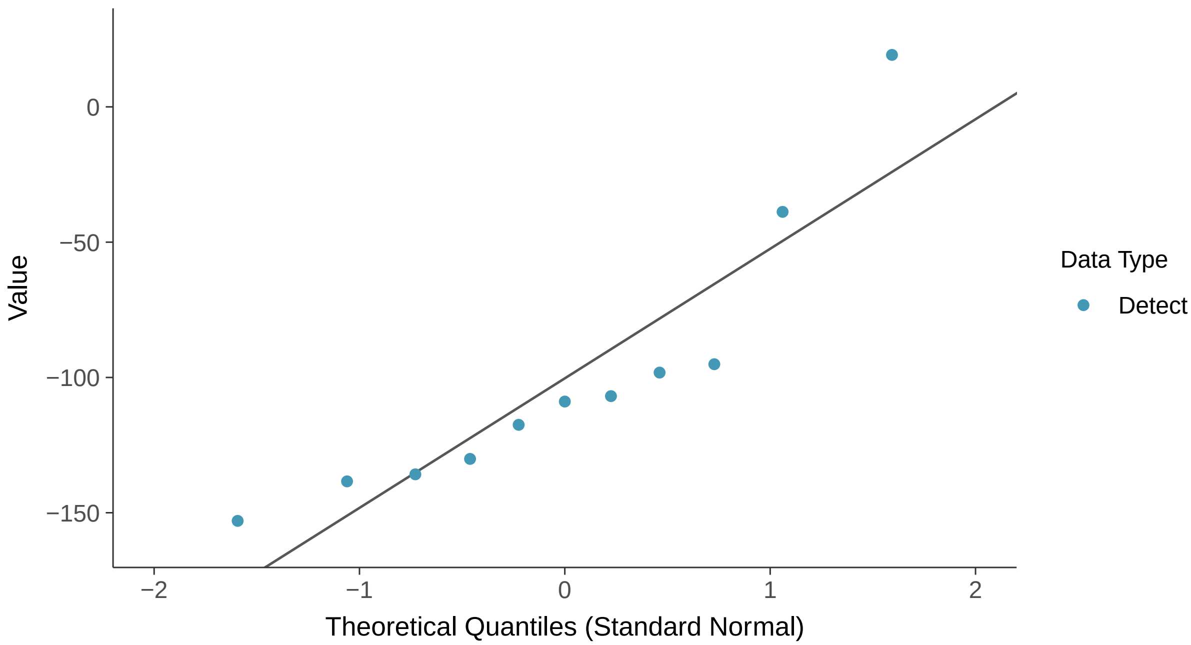
Boxplot by Season

Oxidation Reduction Potential, MW-7B (mV)



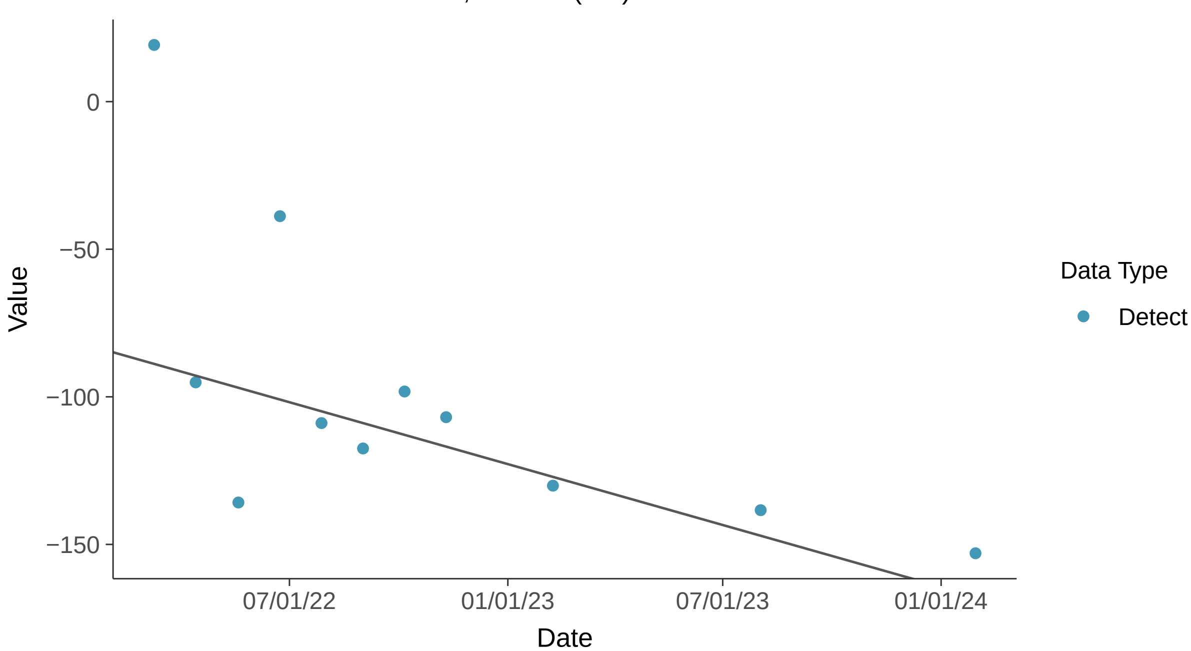
Normal Q-Q plot

Oxidation Reduction Potential, MW-7B (mV)



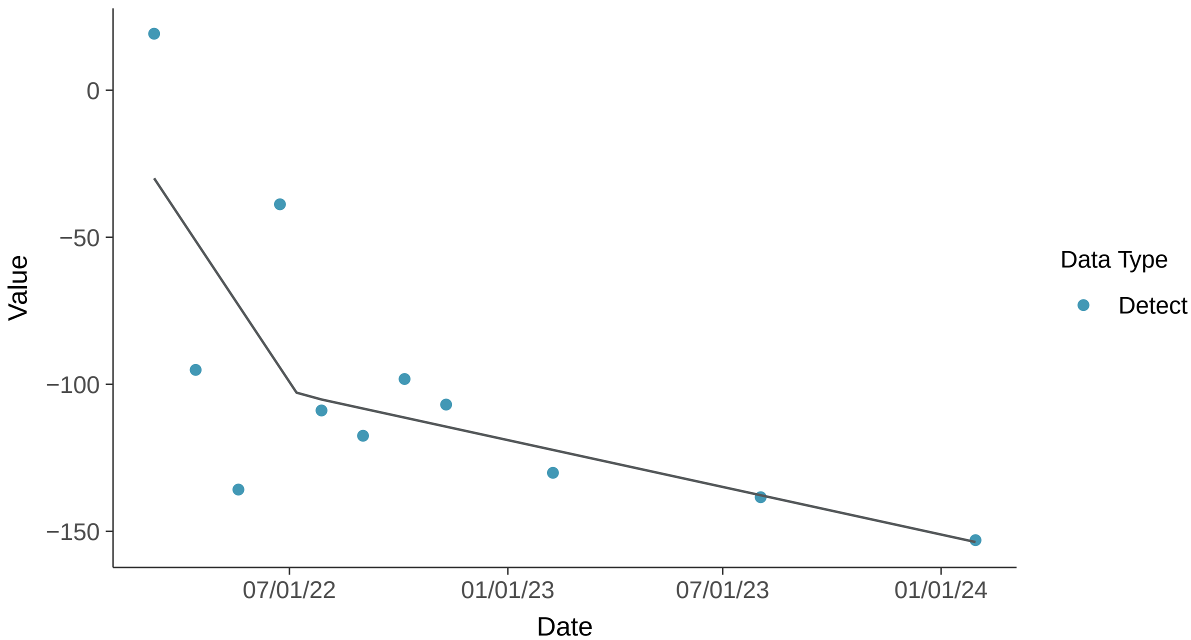
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Oxidation Reduction Potential, MW-7B (mV)



Trend Regression: Piecewise Linear-Linear

Oxidation Reduction Potential, MW-7B (mV)

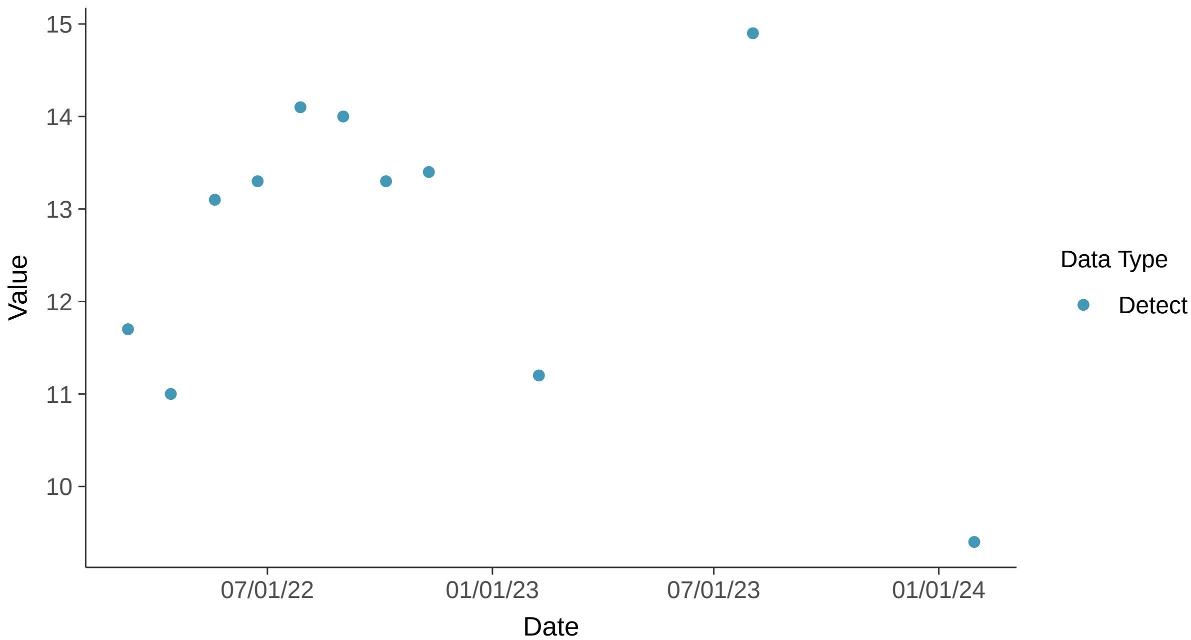


Field Parameters: Temperature, MW-7B

ID: 7B_3_27

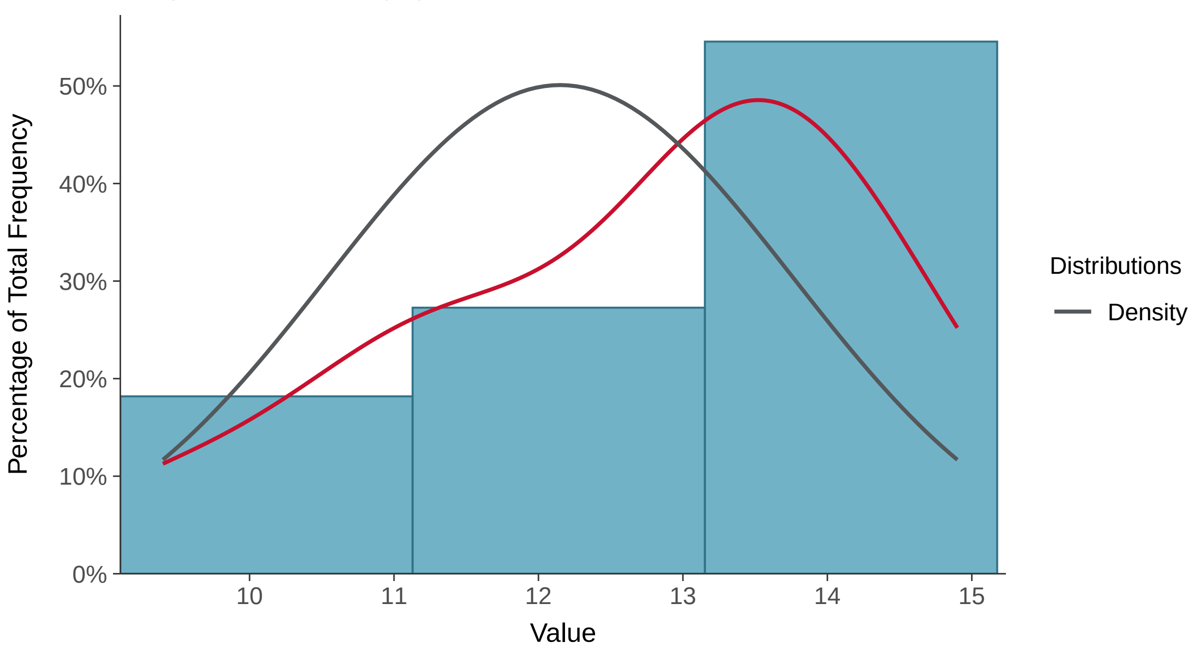
Scatter Plot

Temperature, MW-7B (°C)



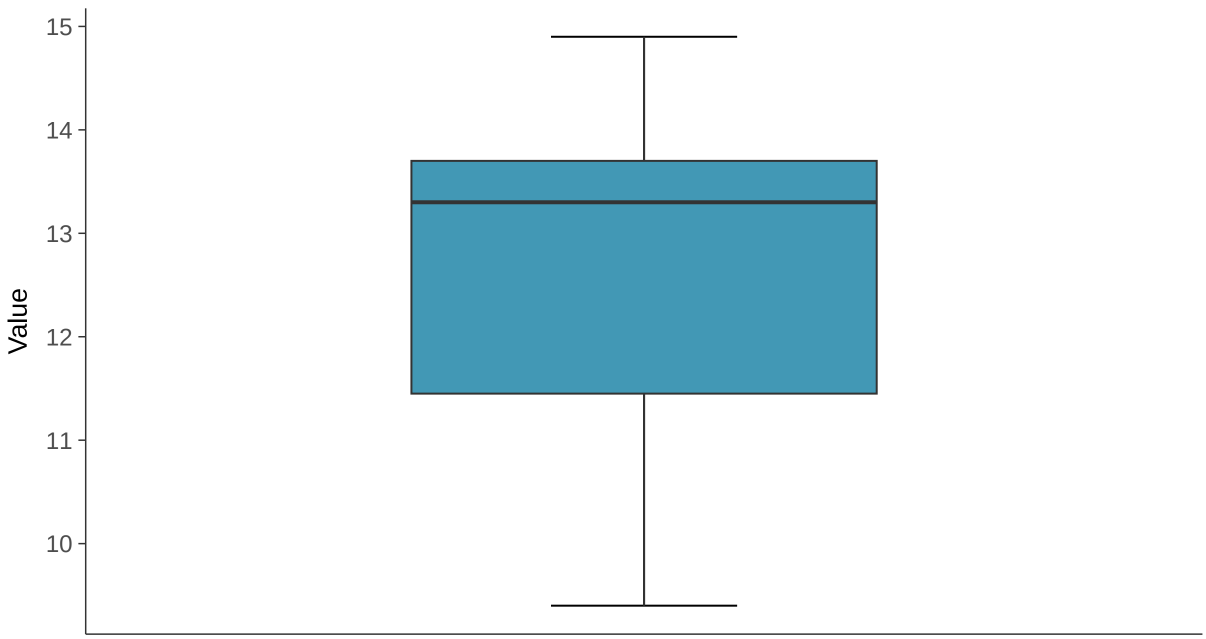
Histogram

Temperature, MW-7B (°C)



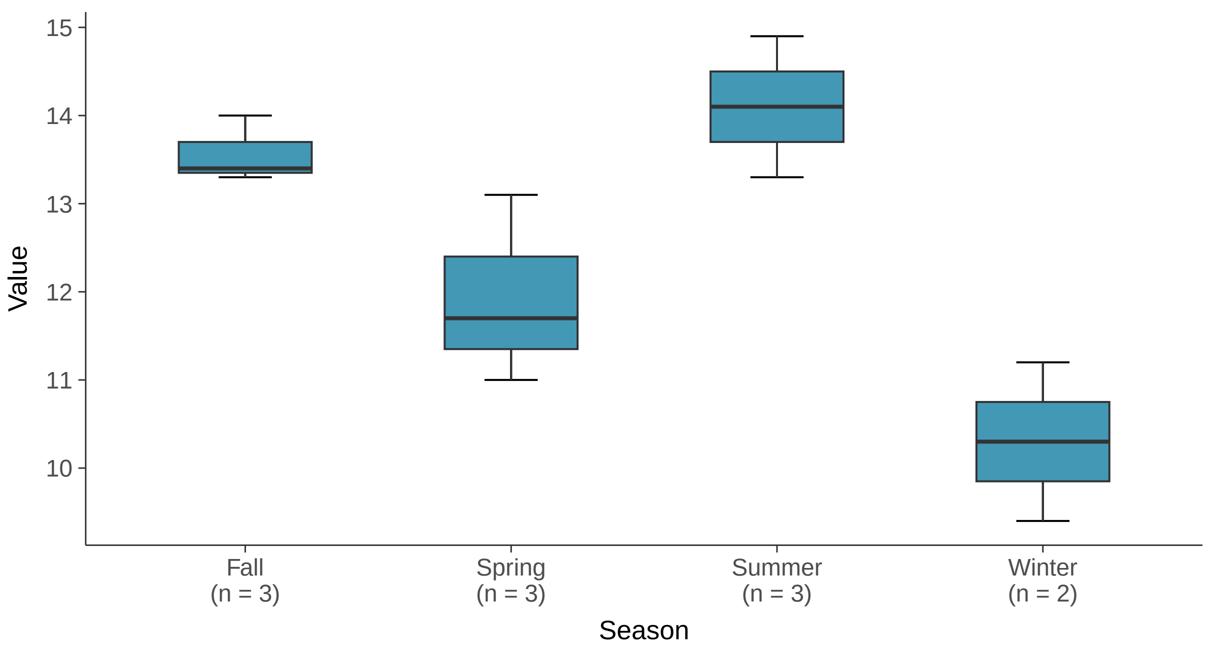
Boxplot

Temperature, MW-7B (°C)



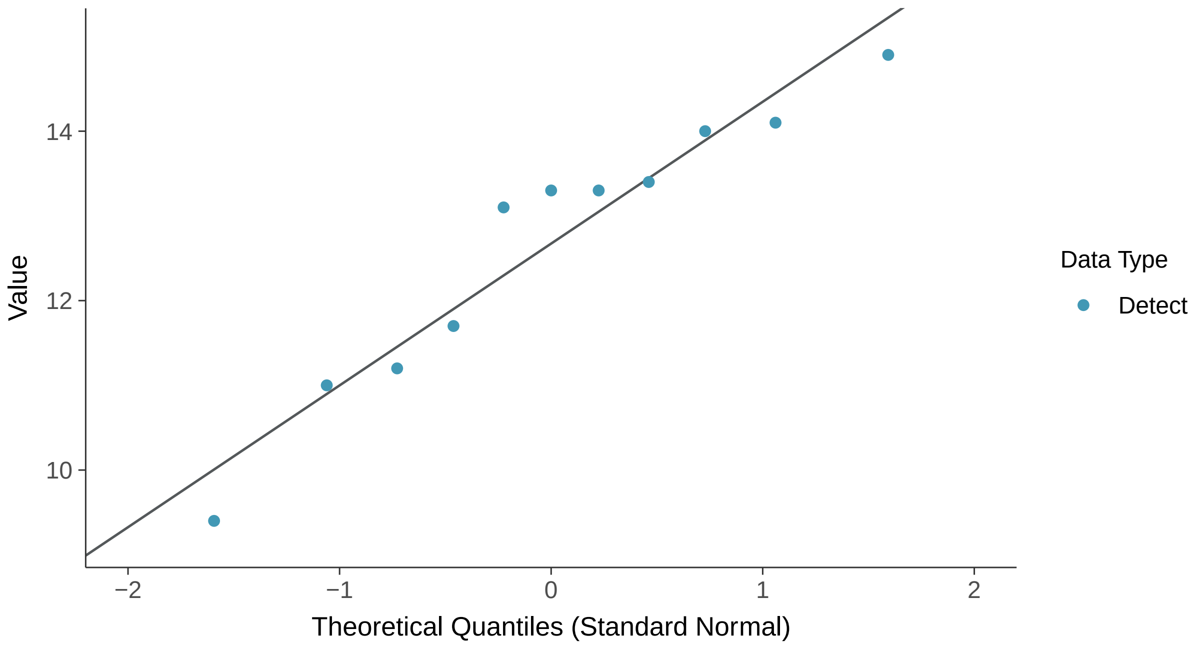
Boxplot by Season

Temperature, MW-7B (°C)



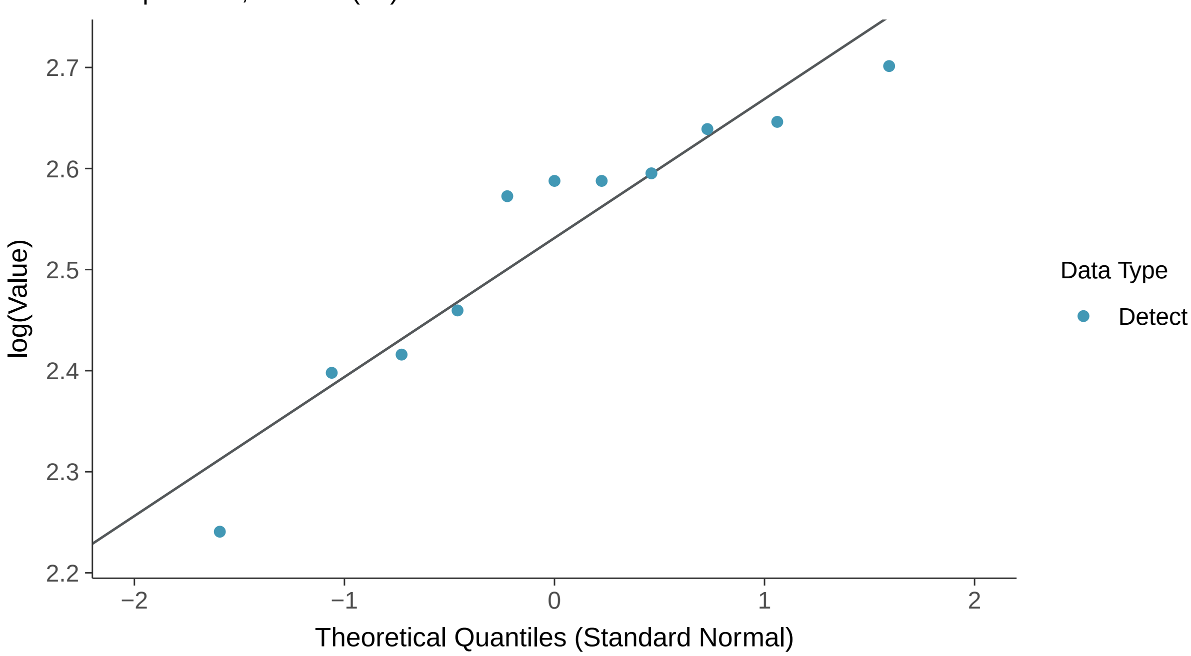
Normal Q-Q plot

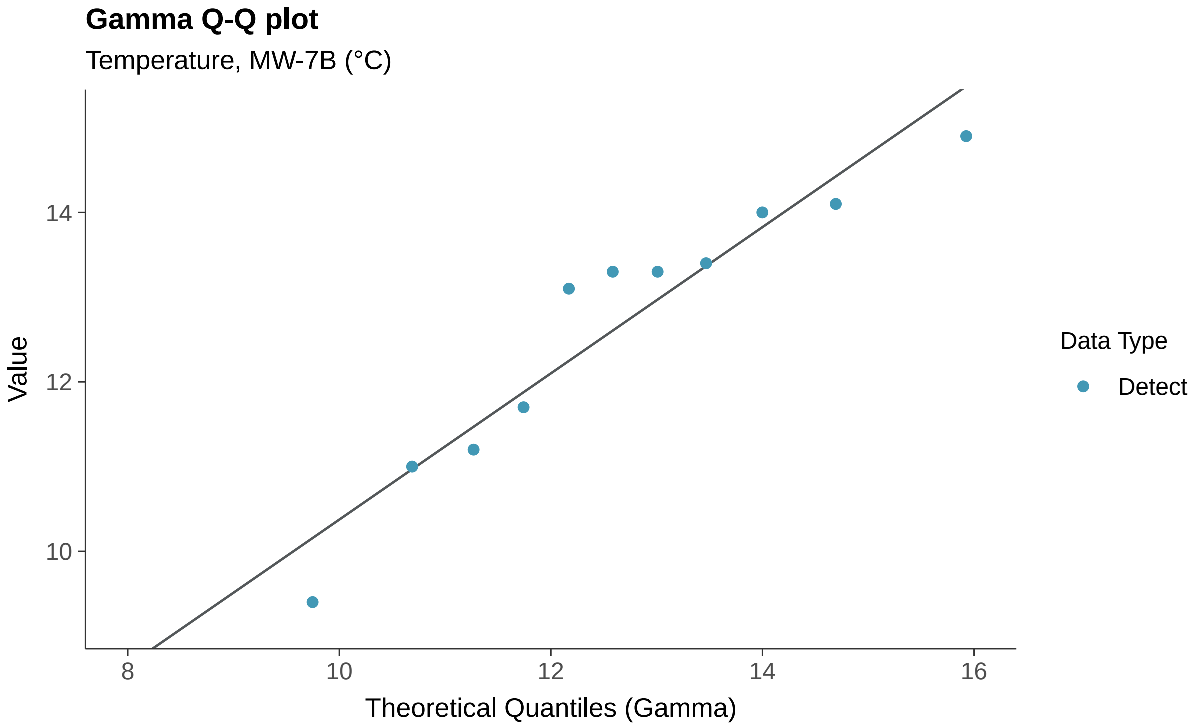
Temperature, MW-7B (°C)

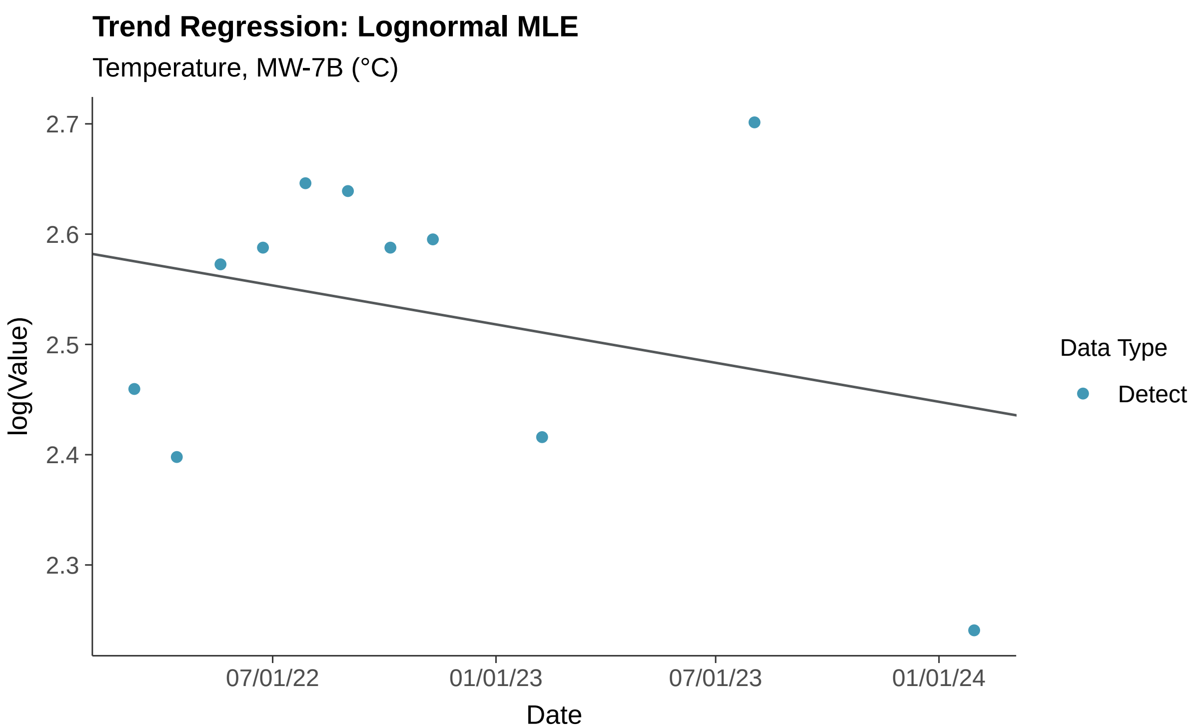


Lognormal Q-Q plot

Temperature, MW-7B (°C)




Gamma Q-Q plot
Temperature, MW-7B (°C)
Value
14
12
10
8
10
12
14
16
Theoretical Quantiles (Gamma)
Data Type
Detect

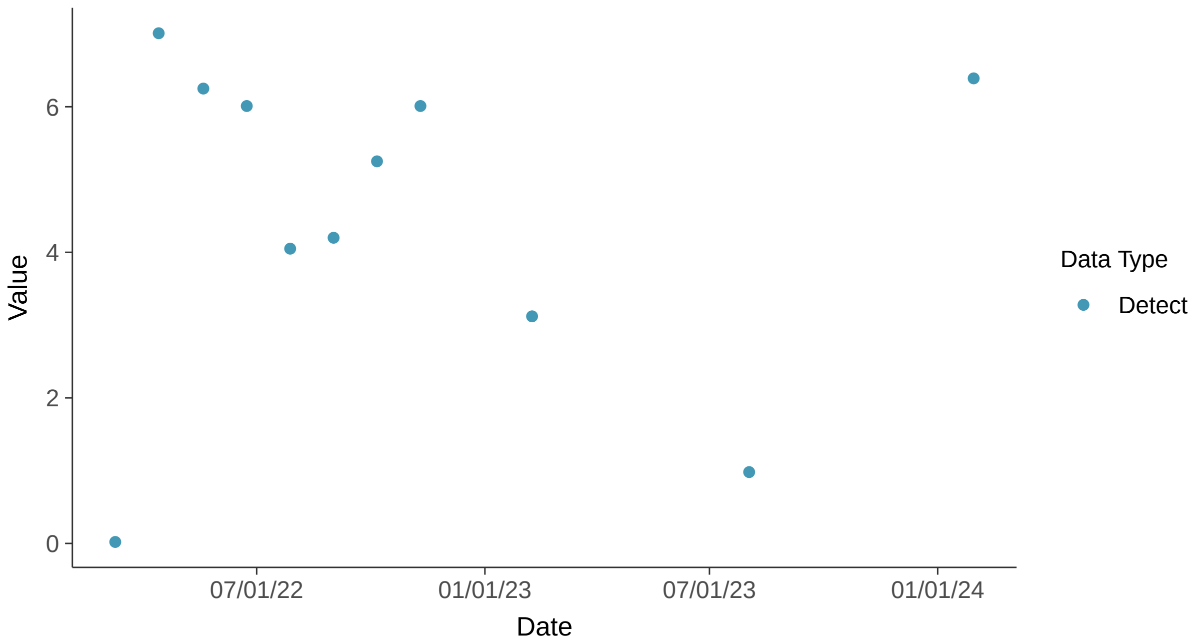

Trend Regression: Lognormal MLE
Temperature, MW-7B (°C)
log(Value)
2.7
2.6
2.5
2.4
2.3
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: Turbidity, MW-7B

ID: 7B_3_28

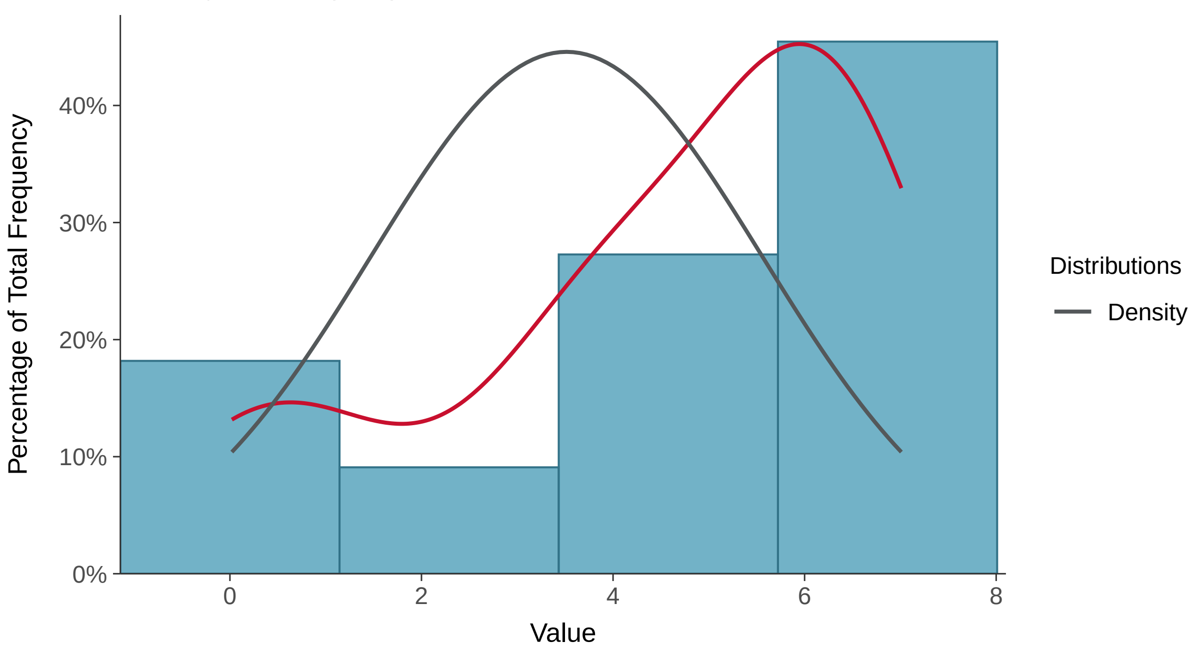
Scatter Plot

Turbidity, MW-7B (NTU)



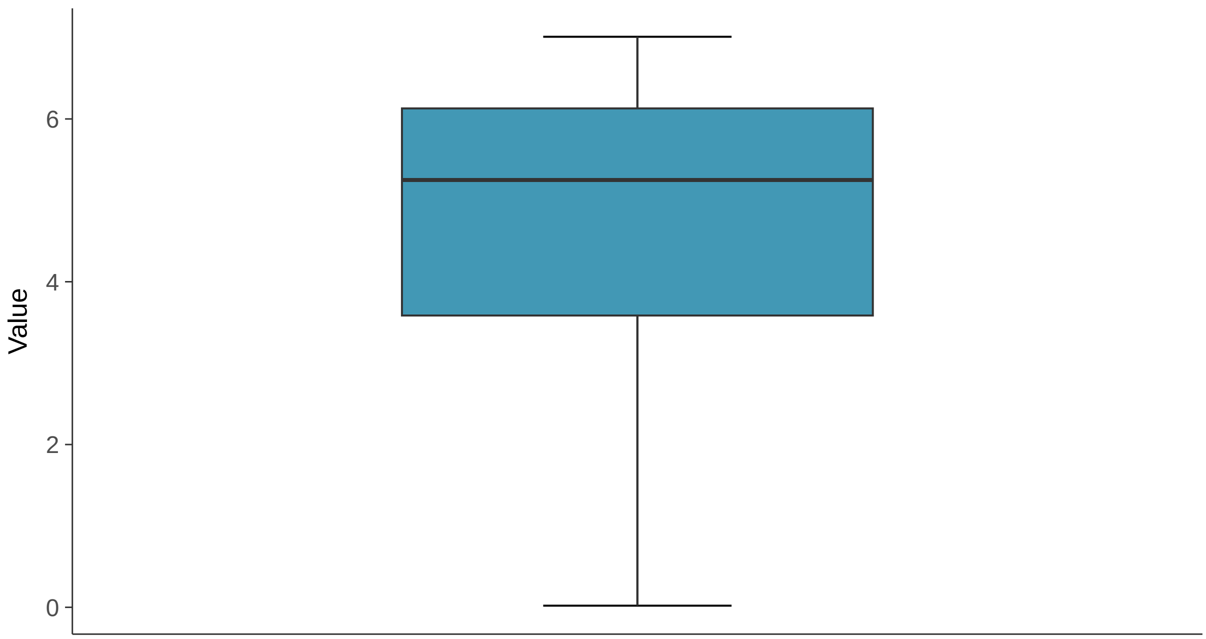
Histogram

Turbidity, MW-7B (NTU)



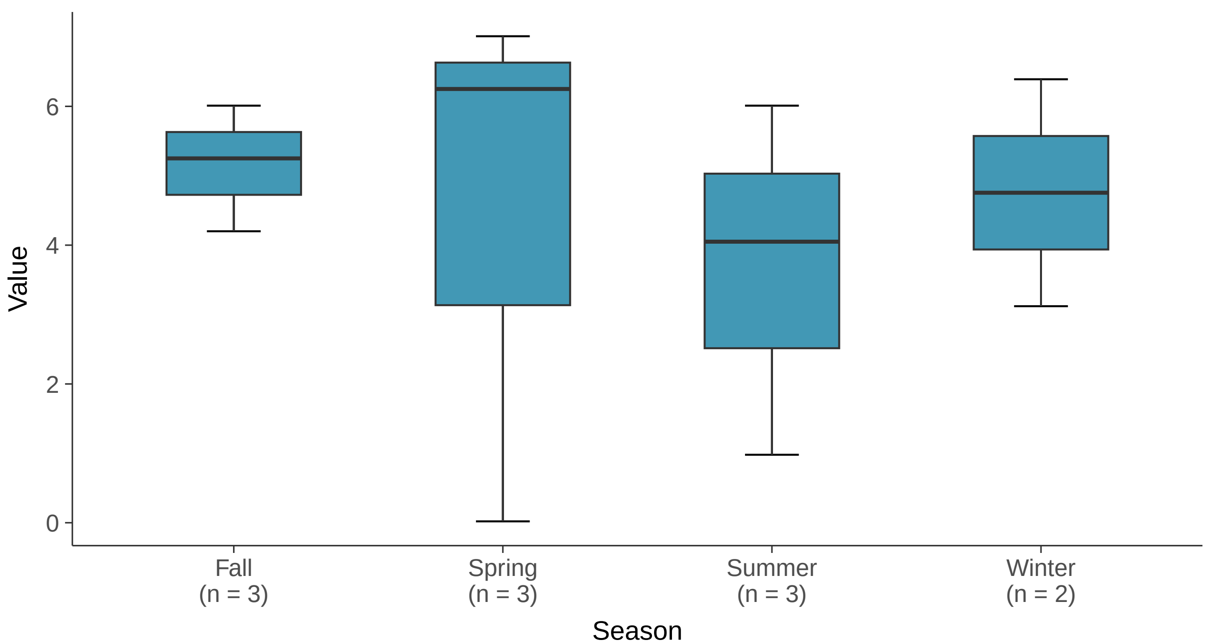
Boxplot

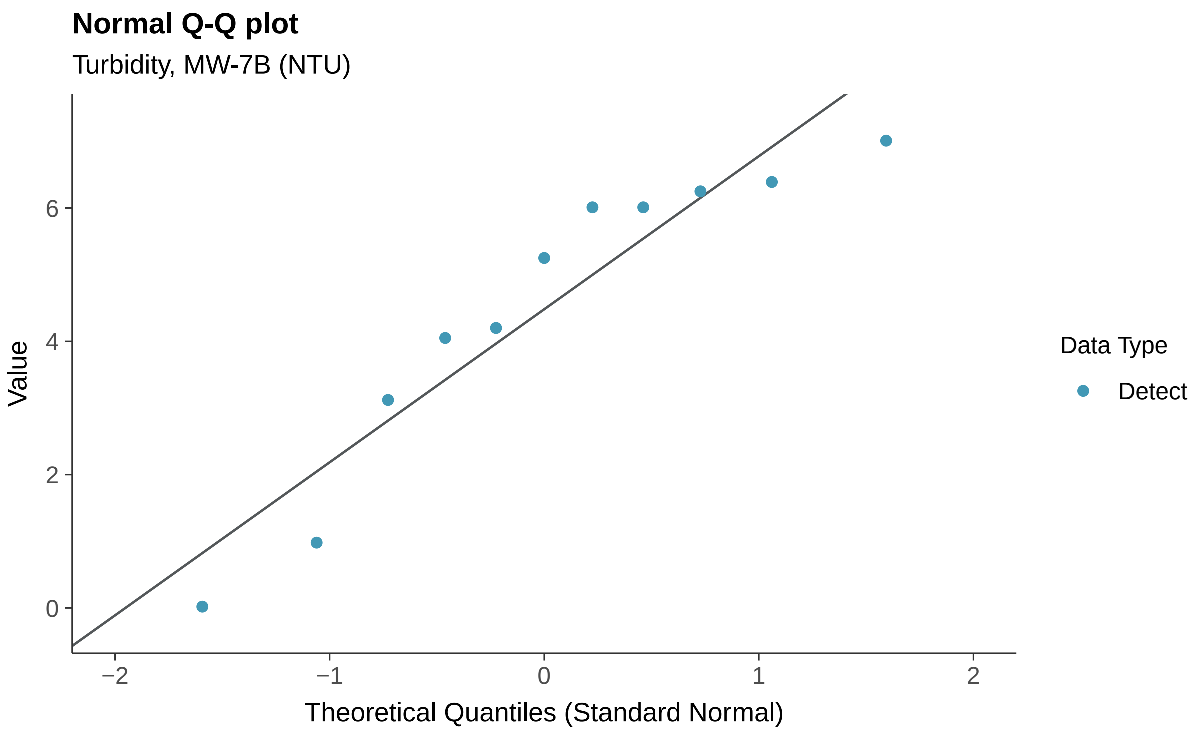
Turbidity, MW-7B (NTU)

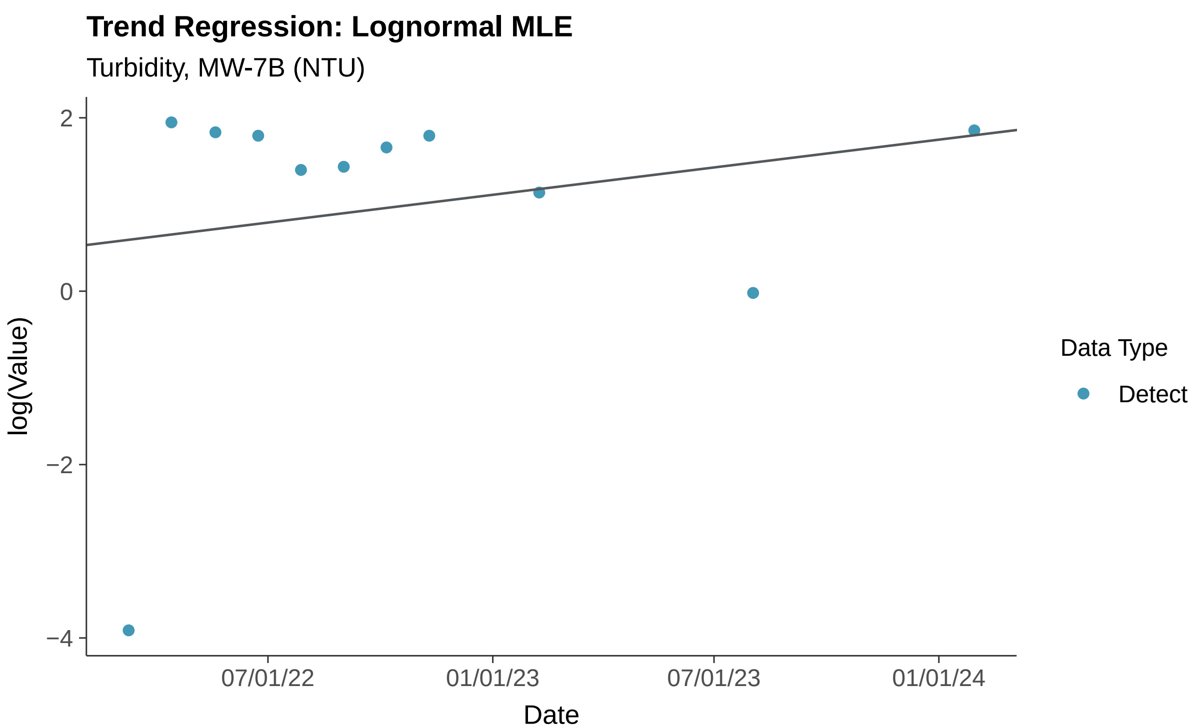


Boxplot by Season

Turbidity, MW-7B (NTU)

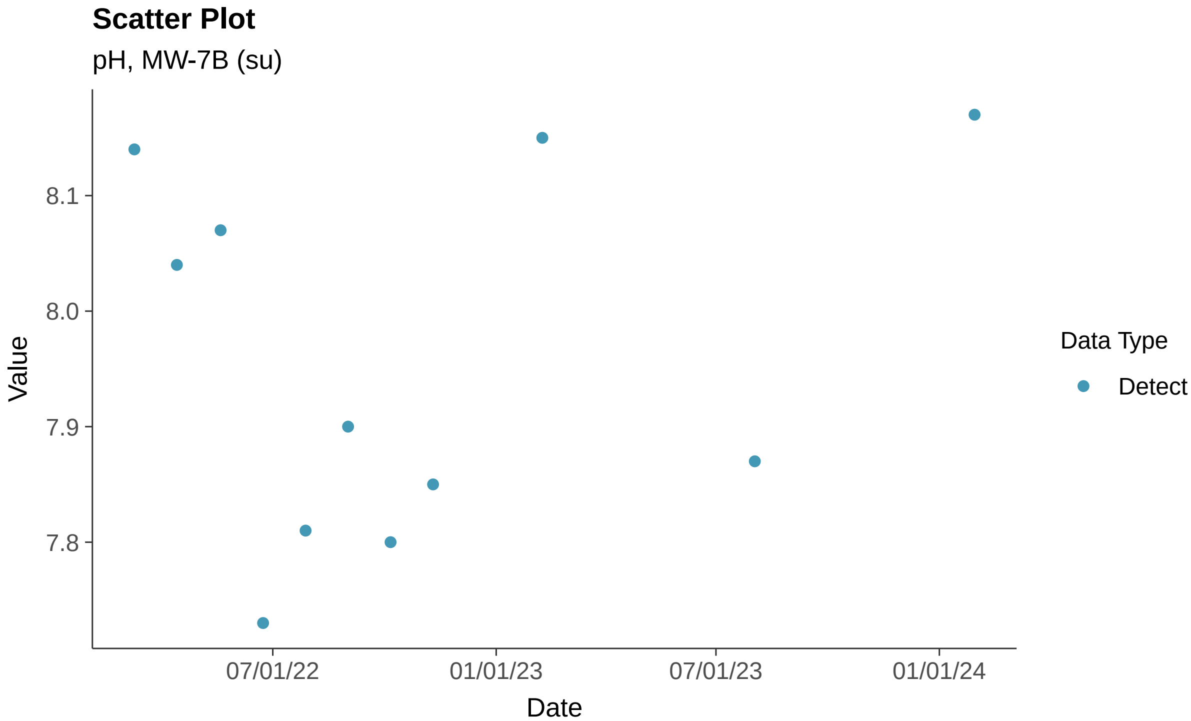


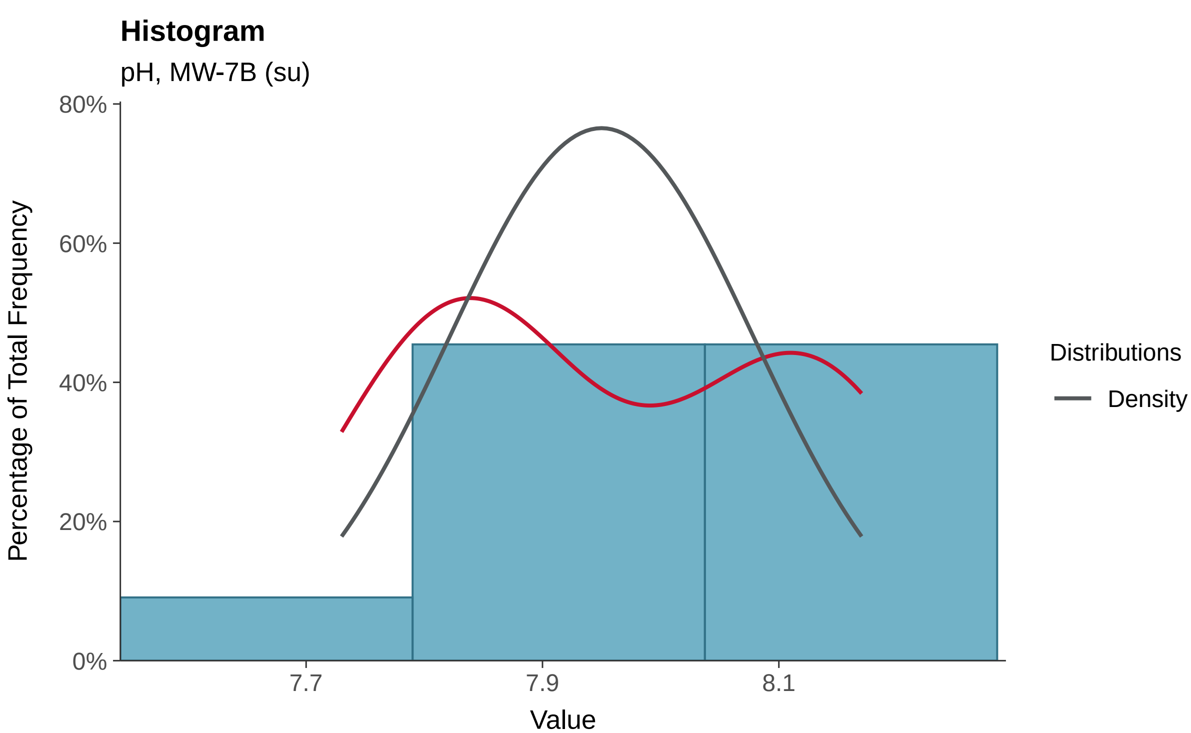

Normal Q-Q plot
Turbidity, MW-7B (NTU)
Value
6
4
2
0
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Lognormal MLE
Turbidity, MW-7B (NTU)
log(Value)
2
0
−2
−4
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Field Parameters: pH, MW-7B

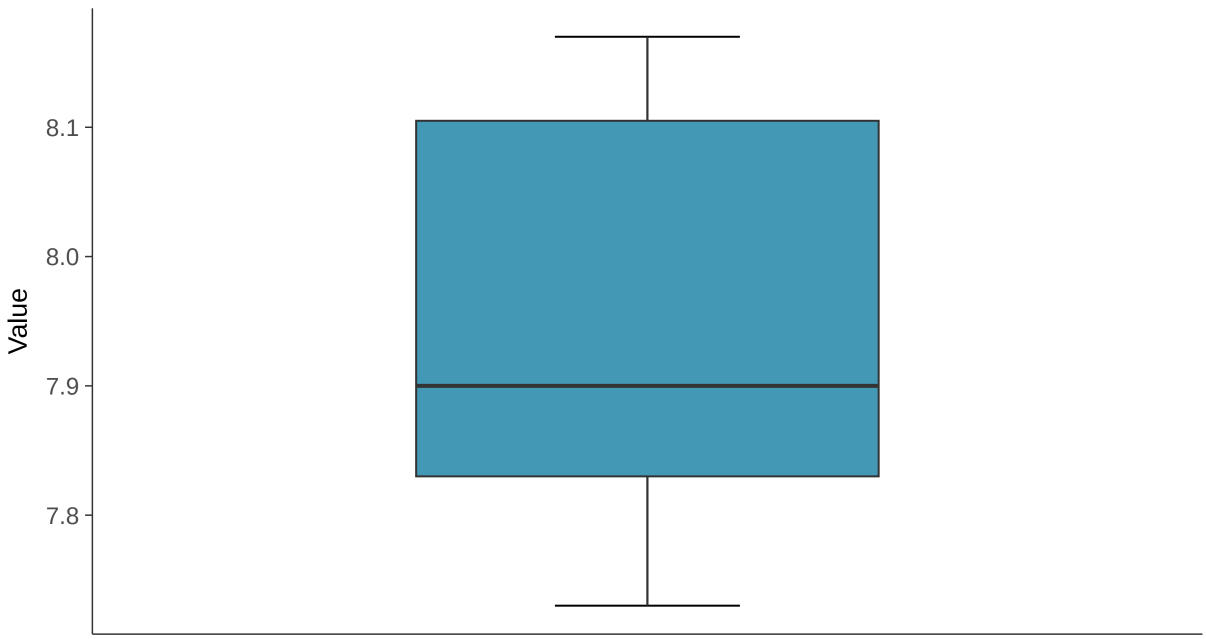
ID: 7B_3_29





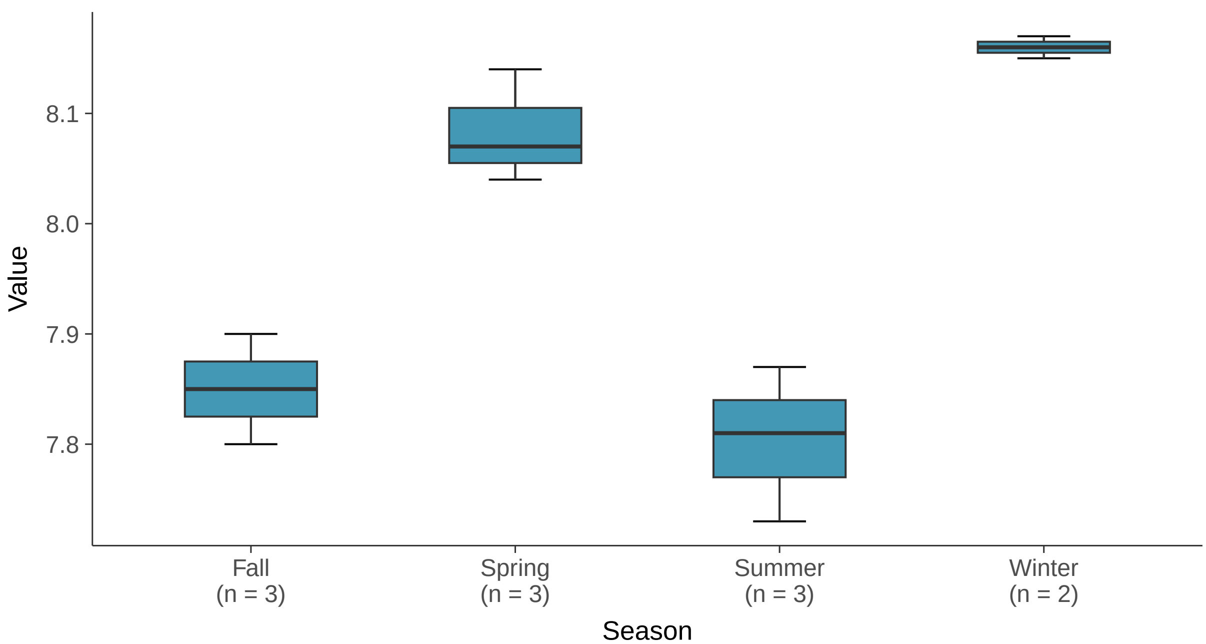
Boxplot

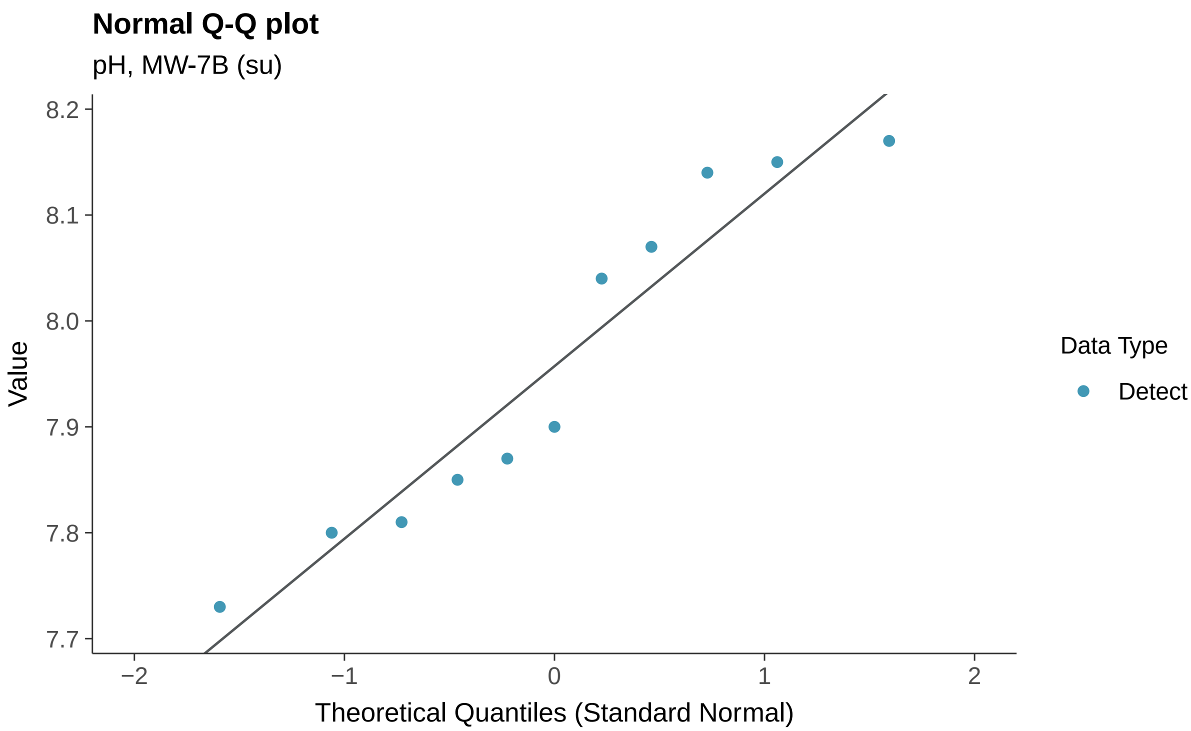
pH, MW-7B (su)

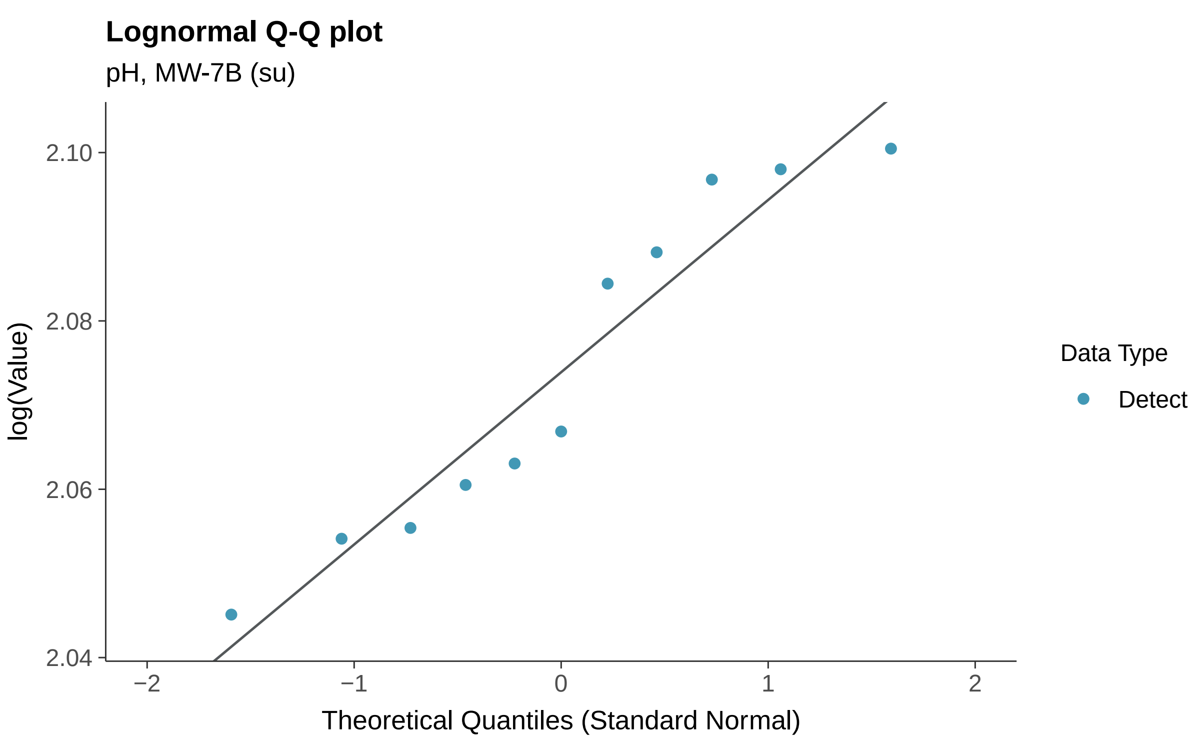


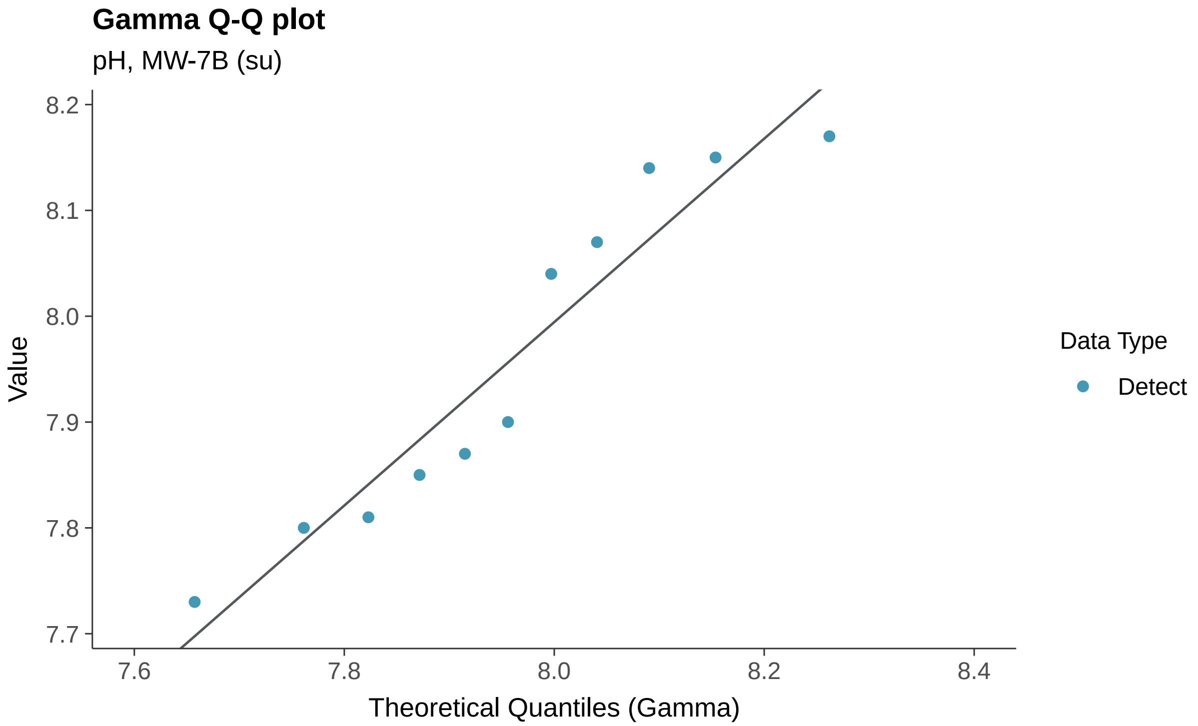
Boxplot by Season

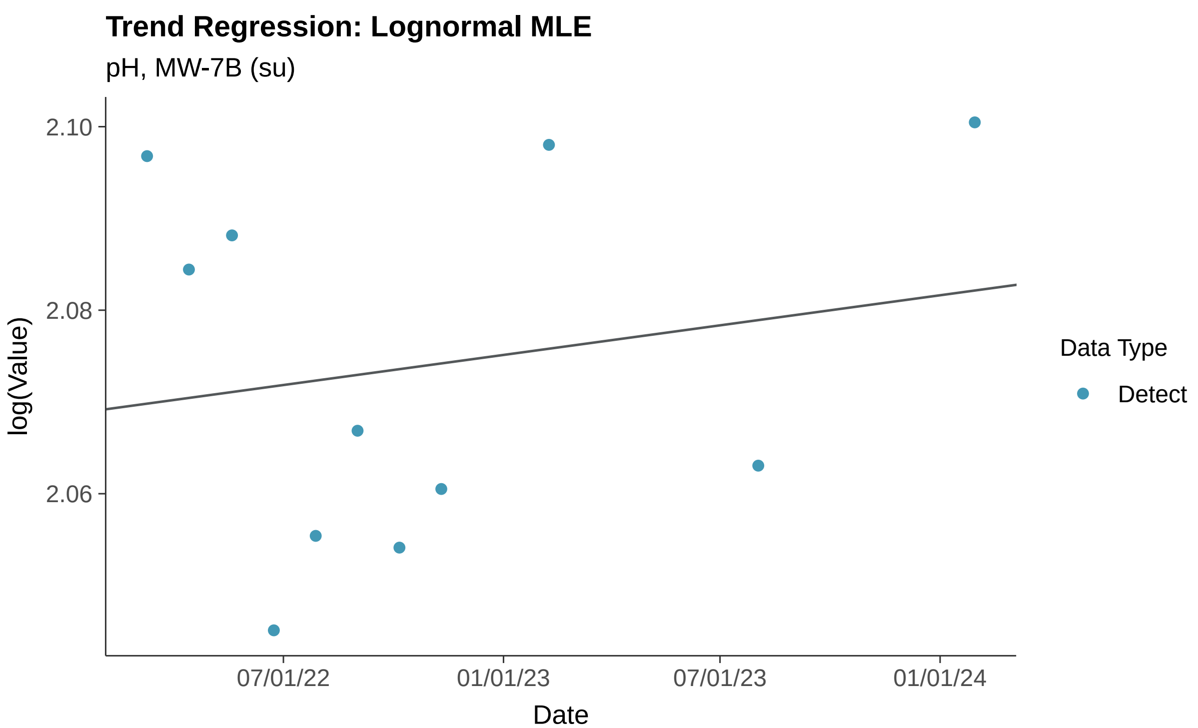
pH, MW-7B (su)




Normal Q-Q plot
pH, MW-7B (su)
Value
8.2
8.1
8.0
7.9
7.8
7.7
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

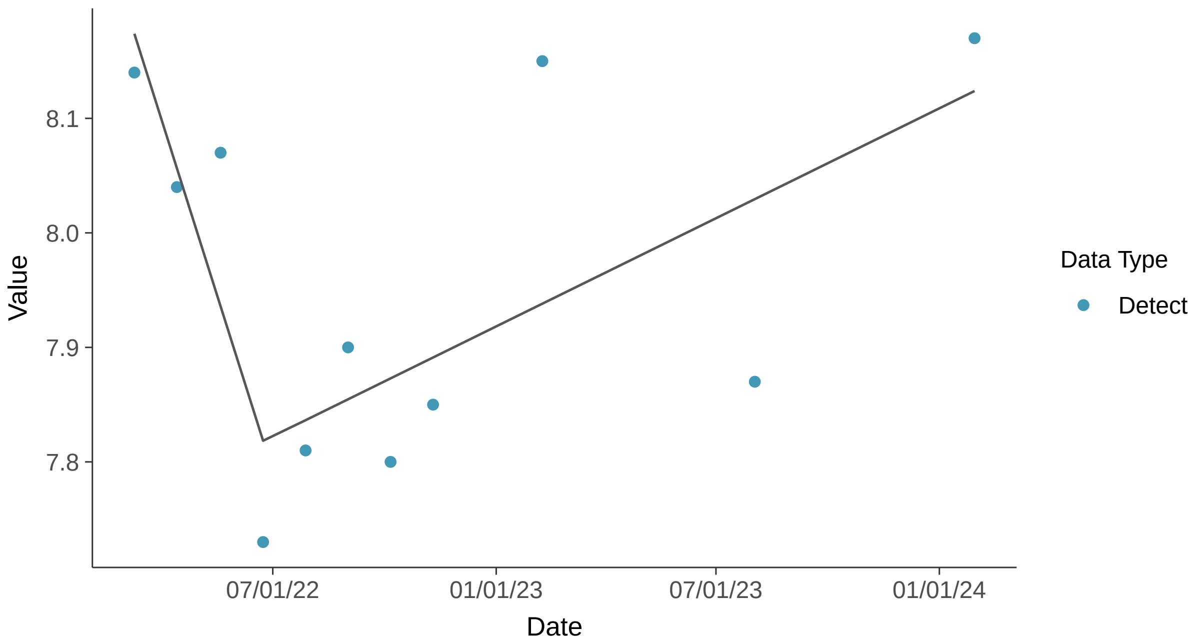

Lognormal Q-Q plot
pH, MW-7B (su)
log(Value)
2.10
2.08
2.06
2.04
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Gamma Q-Q plot
pH, MW-7B (su)
Value
8.2
8.1
8.0
7.9
7.8
7.7
7.6
7.8
8.0
8.2
8.4
Theoretical Quantiles (Gamma)
Data Type
Detect


Trend Regression: Lognormal MLE
pH, MW-7B (su)
log(Value)
2.10
2.08
2.06
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Trend Regression: Piecewise Linear-Linear

pH, MW-7B (su)

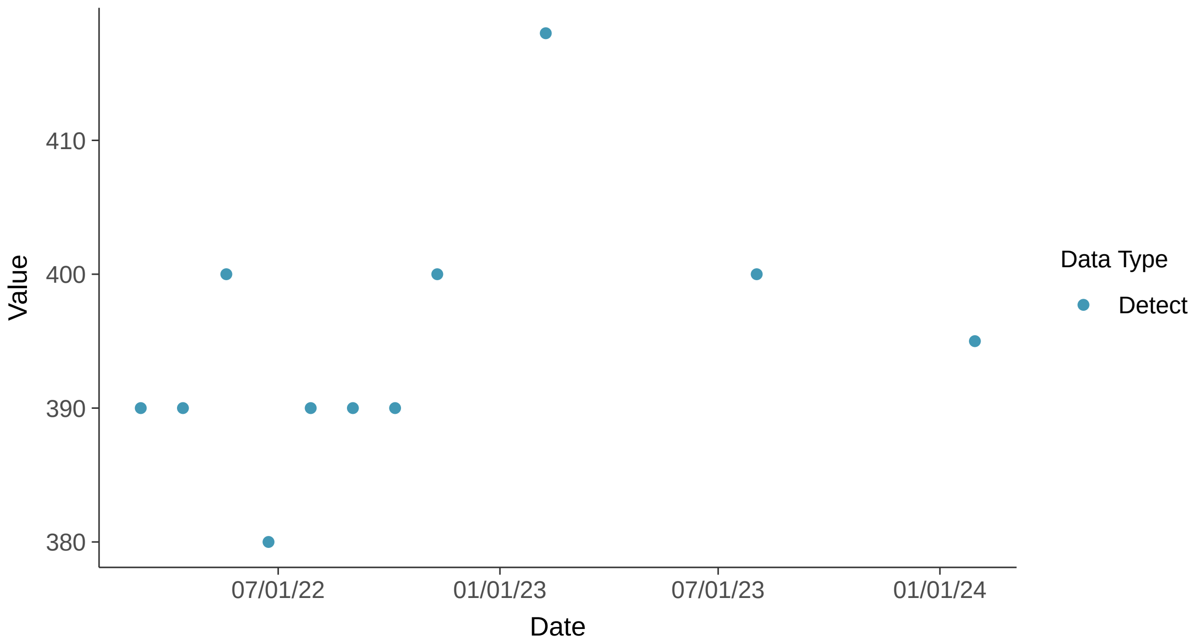


Other: Bicarbonate, MW-7B

ID: 7B_4_30

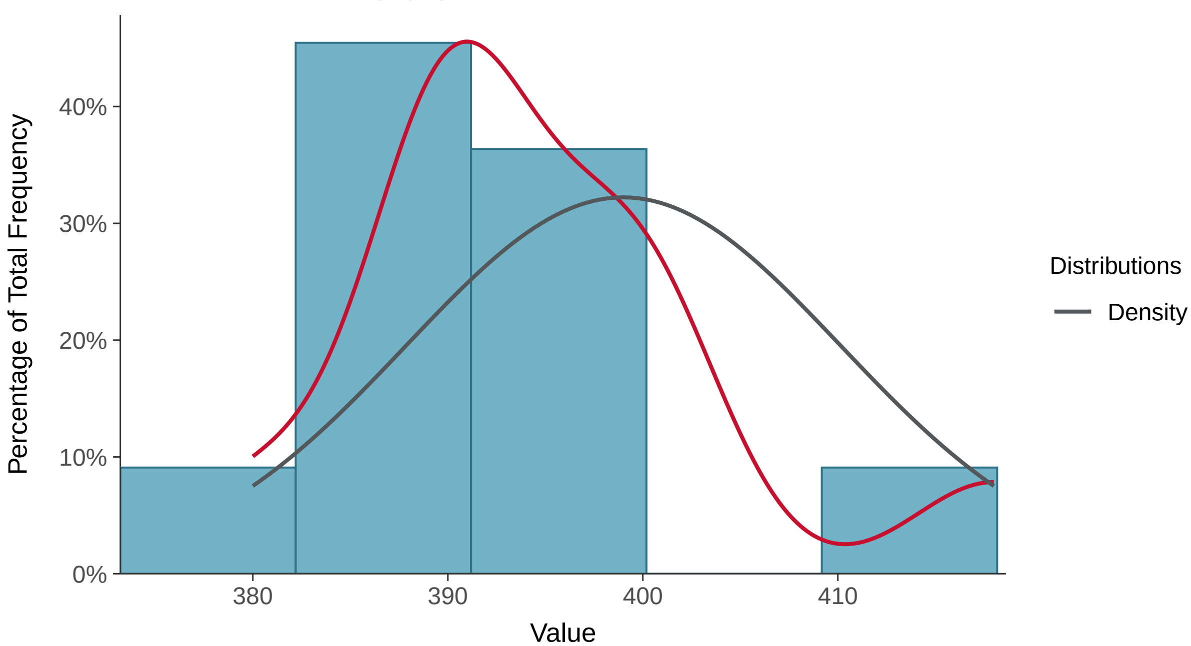
Scatter Plot

Bicarbonate, MW-7B (mg/L)



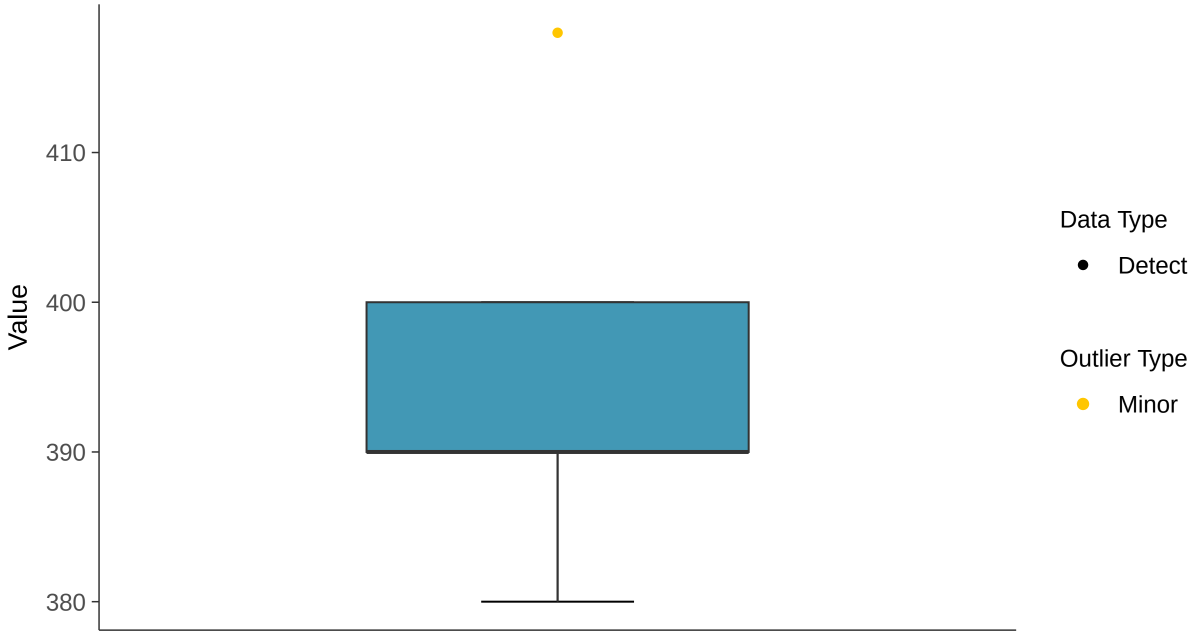
Histogram

Bicarbonate, MW-7B (mg/L)



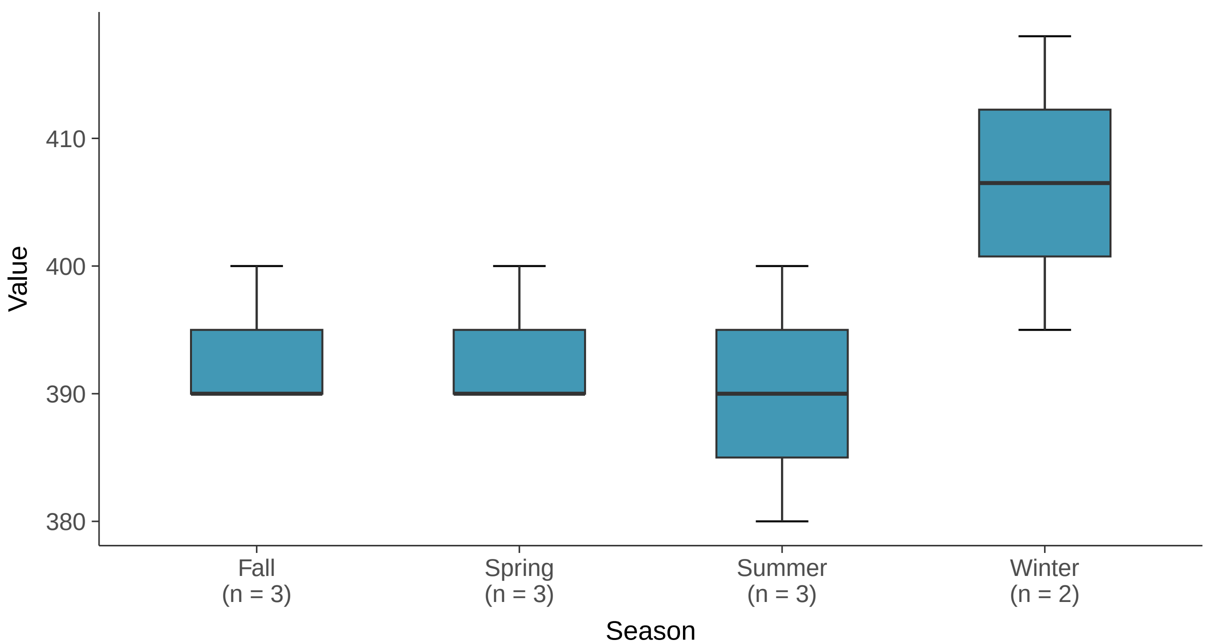
Boxplot

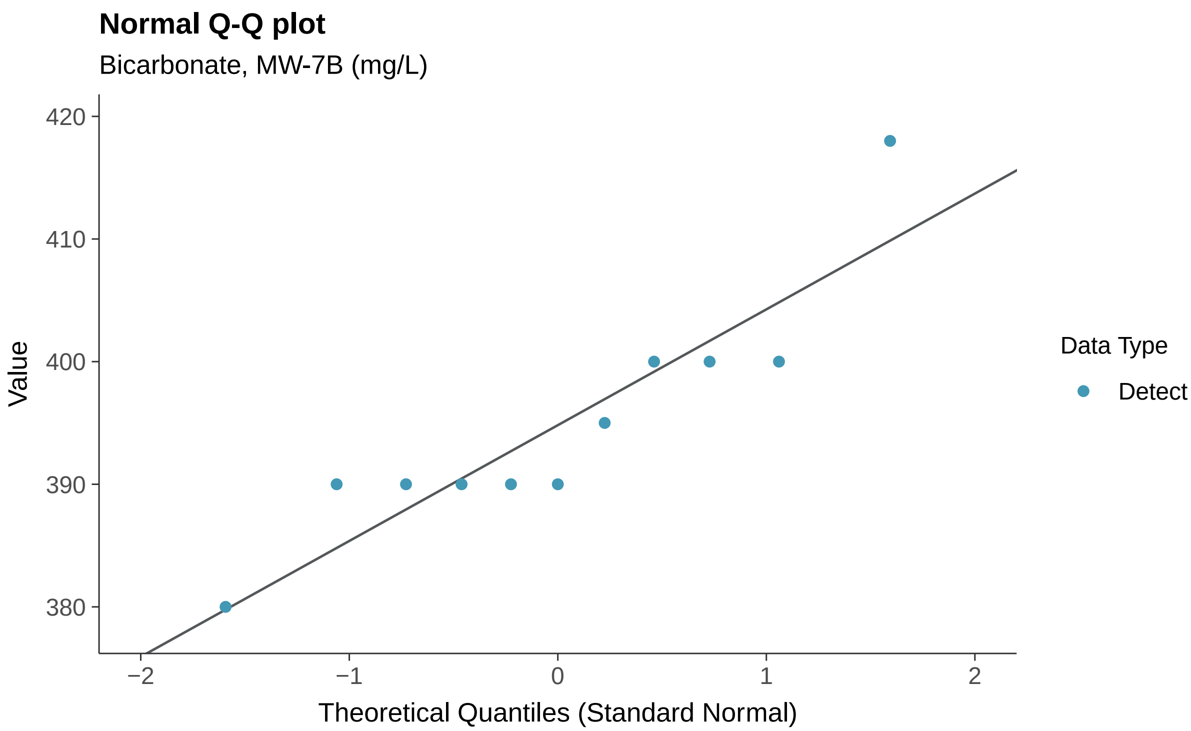
Bicarbonate, MW-7B (mg/L)

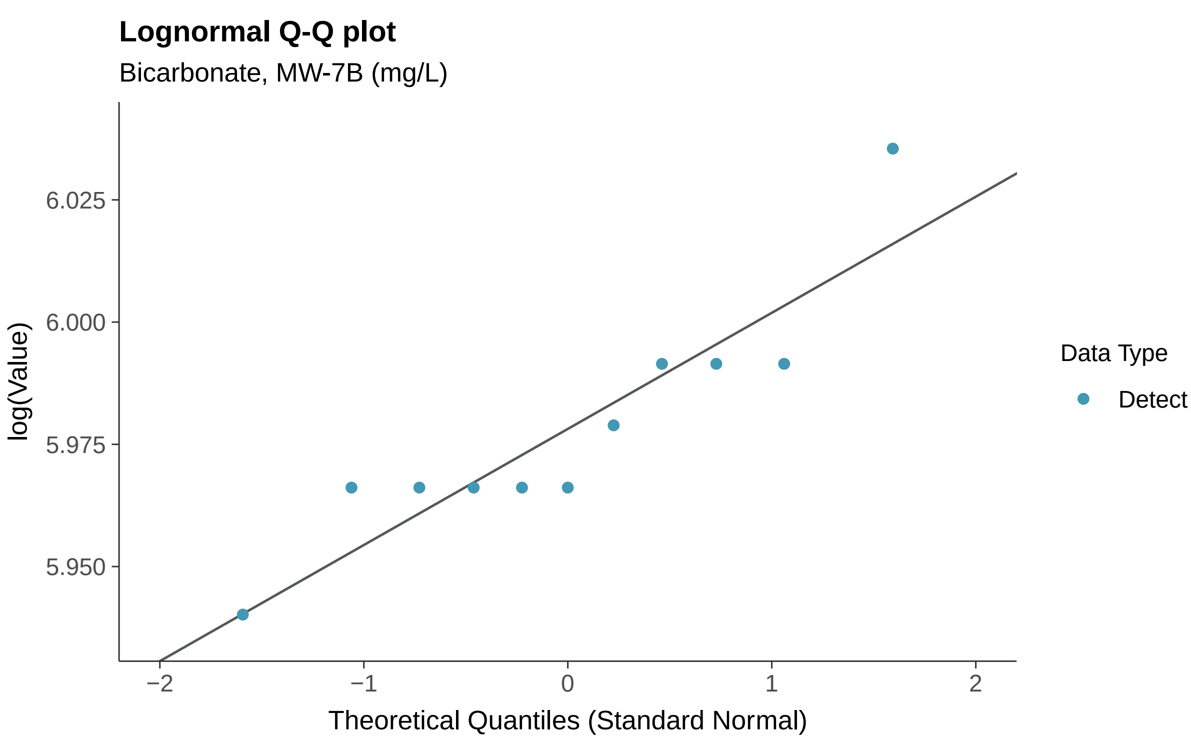


Boxplot by Season

Bicarbonate, MW-7B (mg/L)

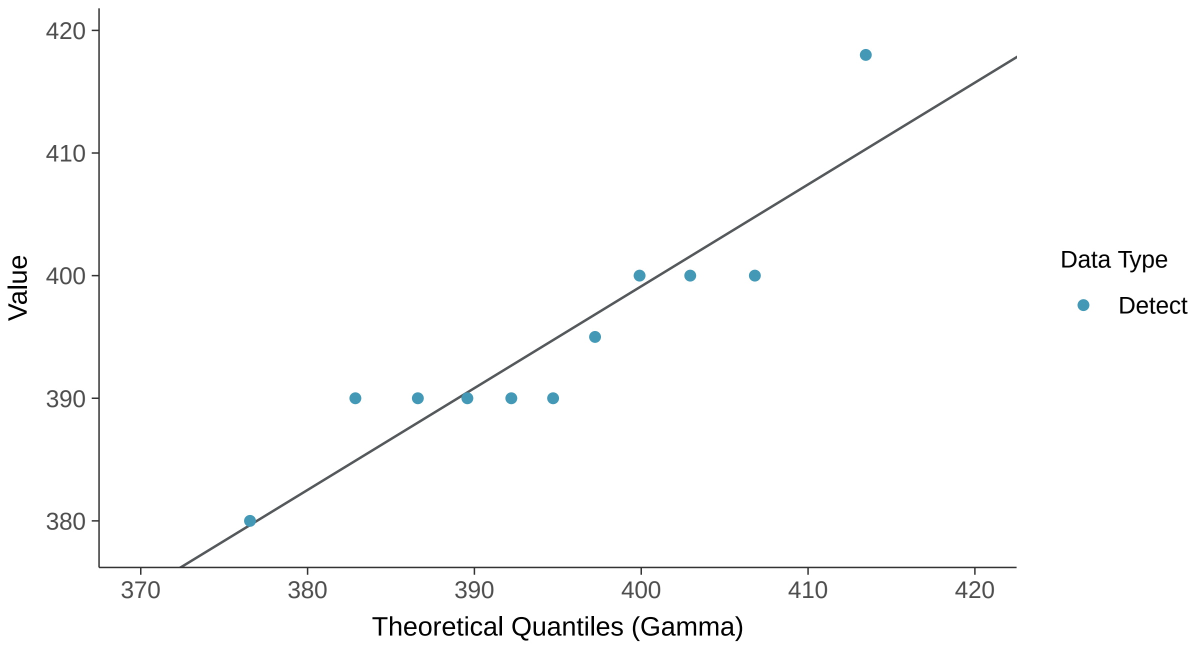



Normal Q-Q plot
Bicarbonate, MW-7B (mg/L)
Value
420
410
400
390
380
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Bicarbonate, MW-7B (mg/L)
log(Value)
6.025
6.000
5.975
5.950
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

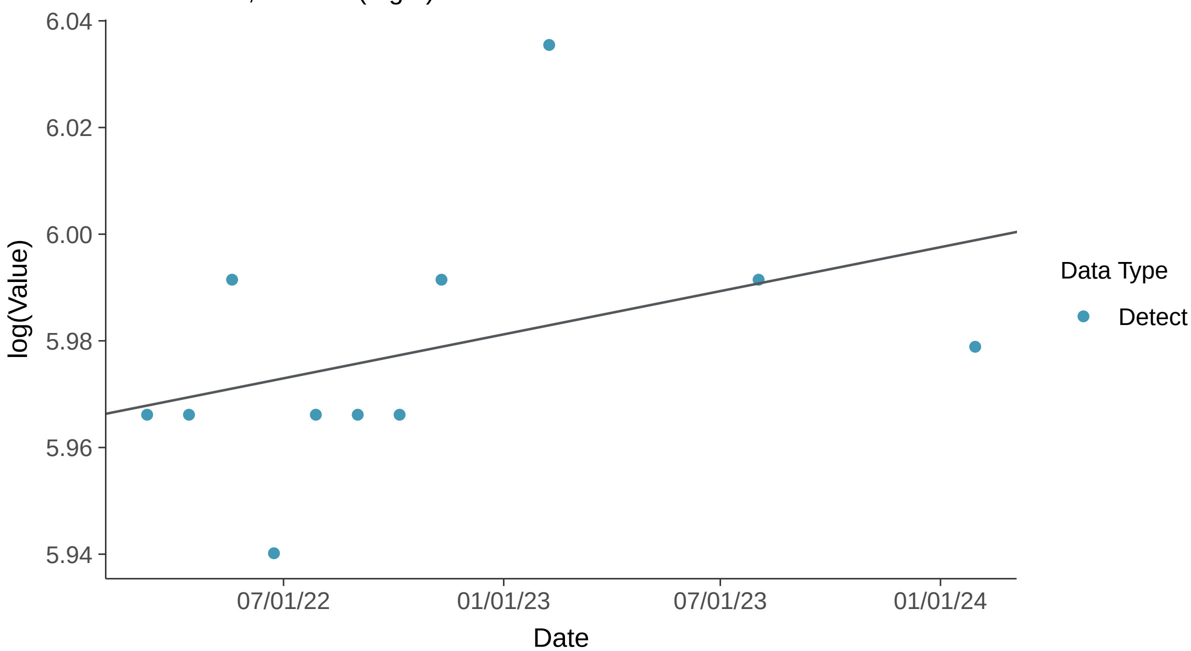
Gamma Q-Q plot

Bicarbonate, MW-7B (mg/L)



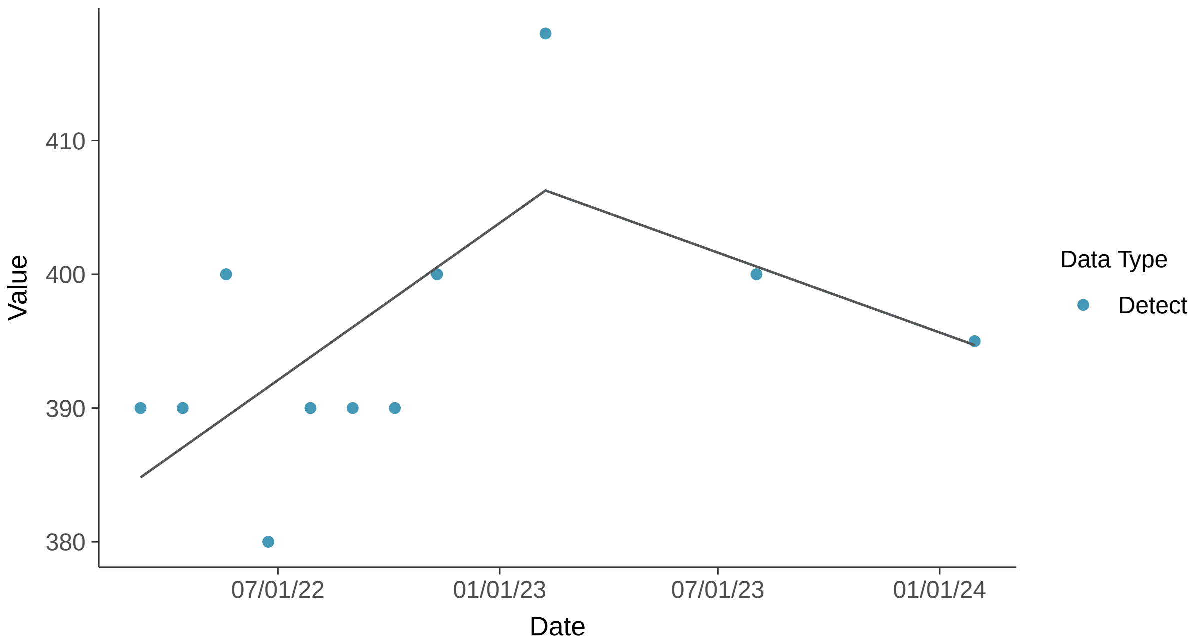
Trend Regression: Lognormal MLE

Bicarbonate, MW-7B (mg/L)



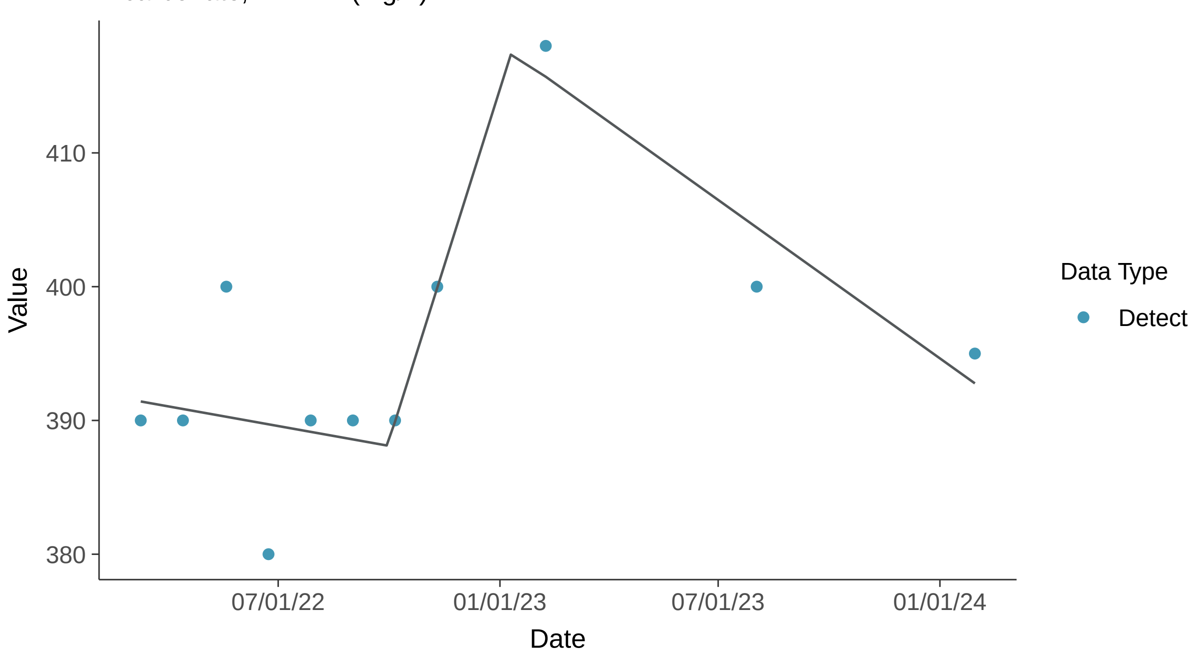
Trend Regression: Piecewise Linear-Linear

Bicarbonate, MW-7B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Bicarbonate, MW-7B (mg/L)

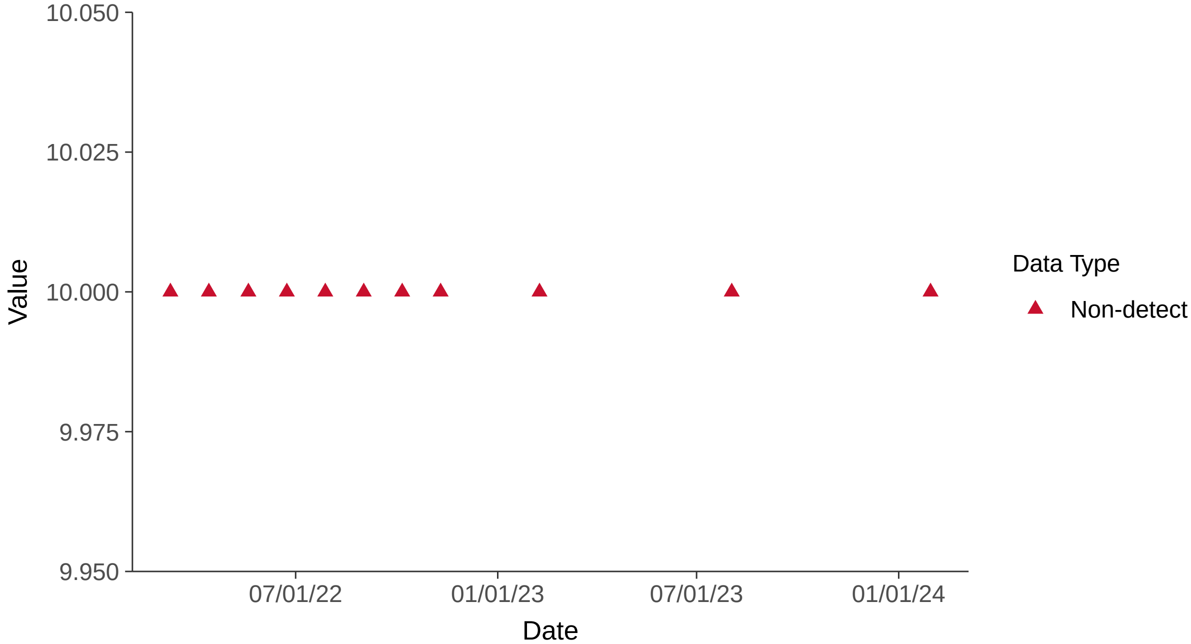


Other: Carbonate, MW-7B

ID: 7B_4_31

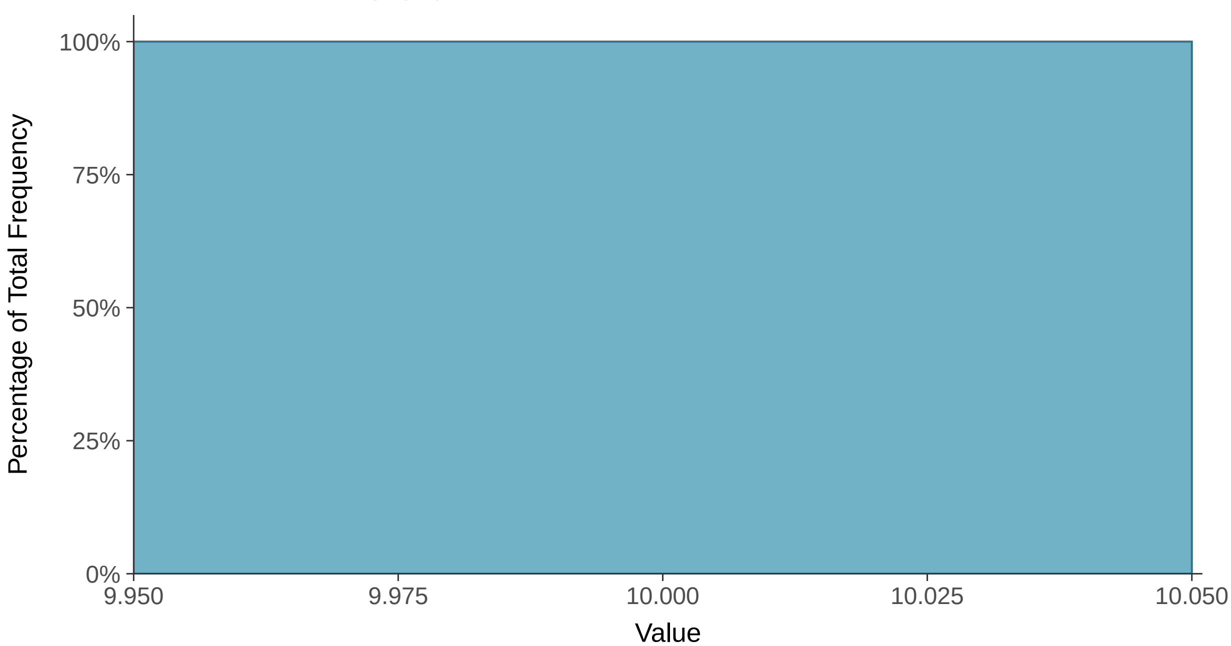
Scatter Plot

Carbonate, MW-7B (mg/L)



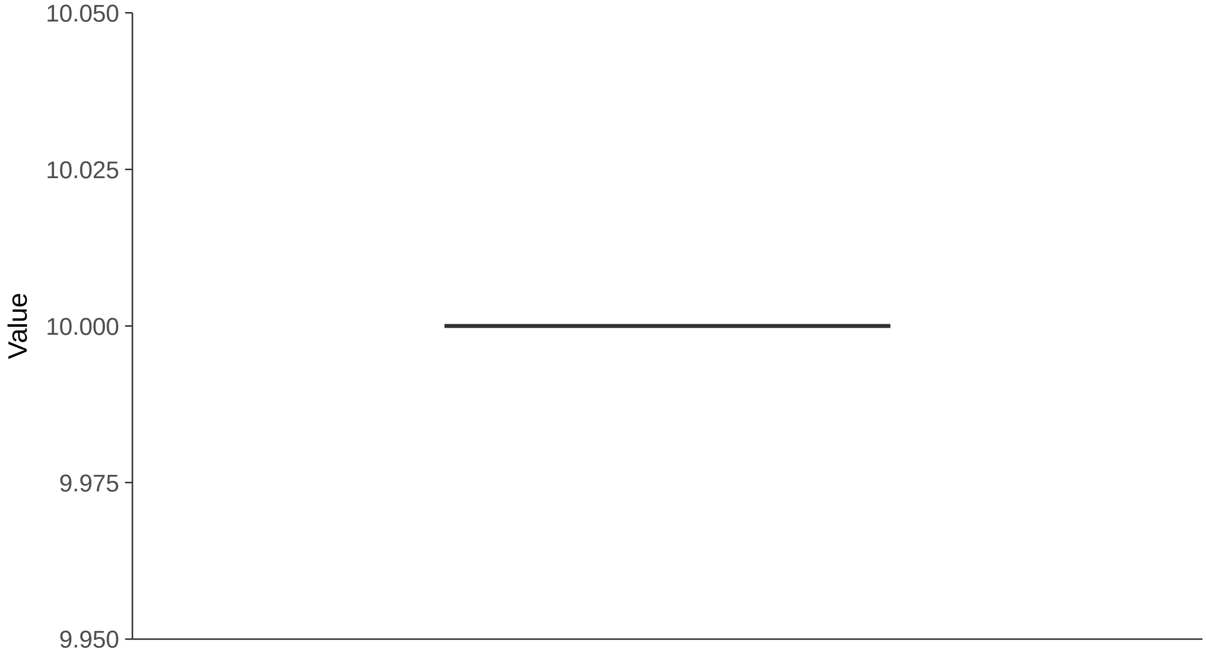
Histogram

Carbonate, MW-7B (mg/L)



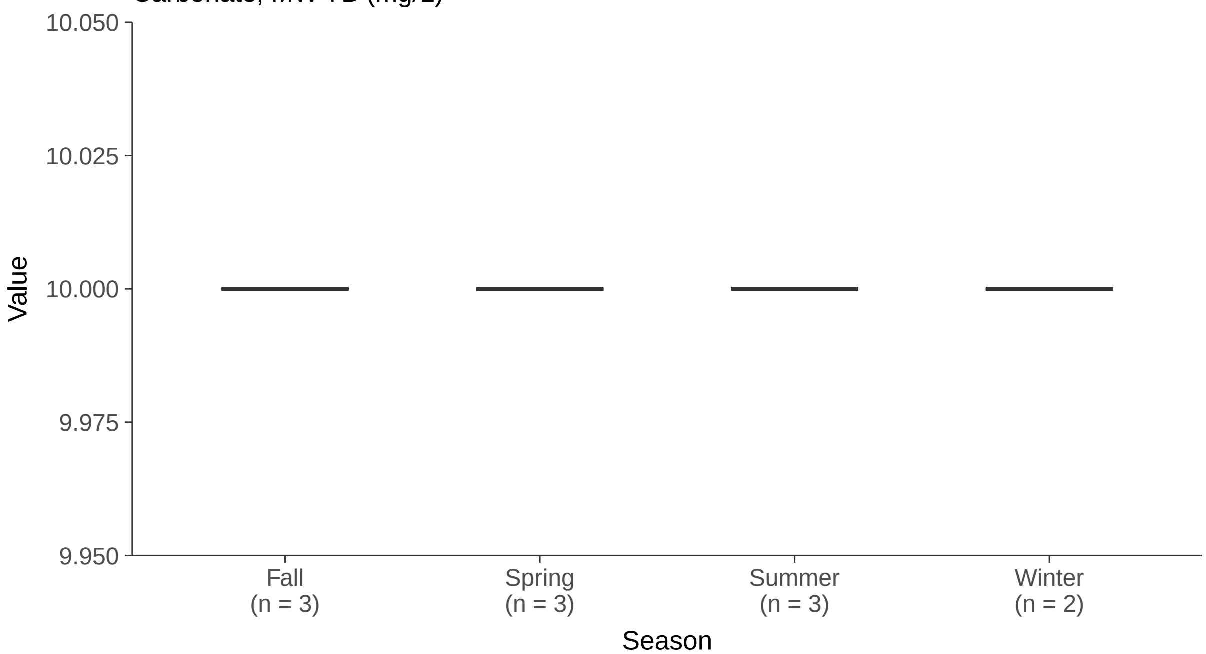
Boxplot

Carbonate, MW-7B (mg/L)



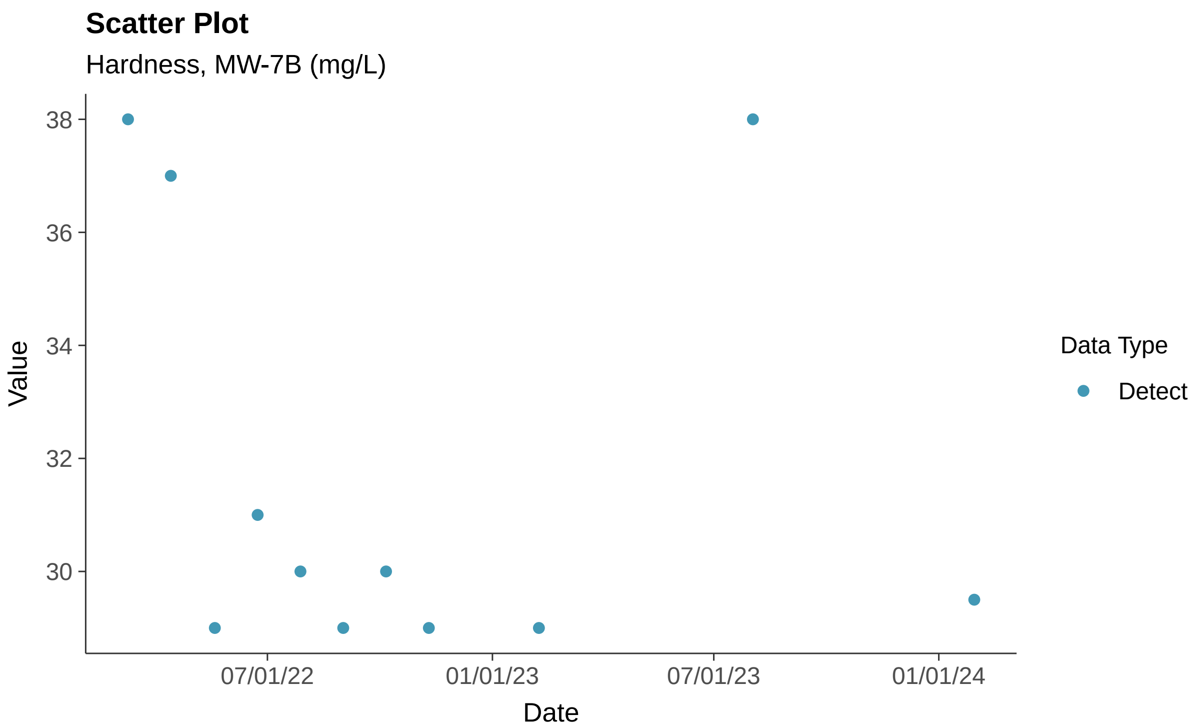
Boxplot by Season

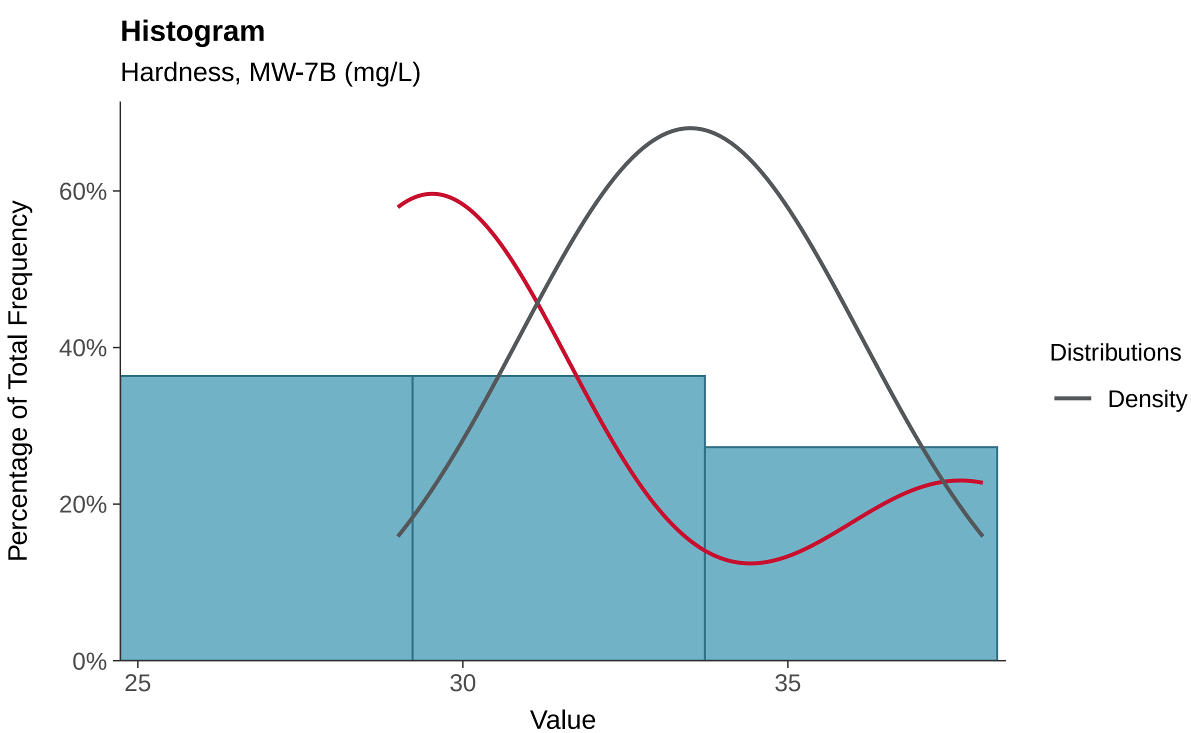
Carbonate, MW-7B (mg/L)



Other: Hardness, MW-7B

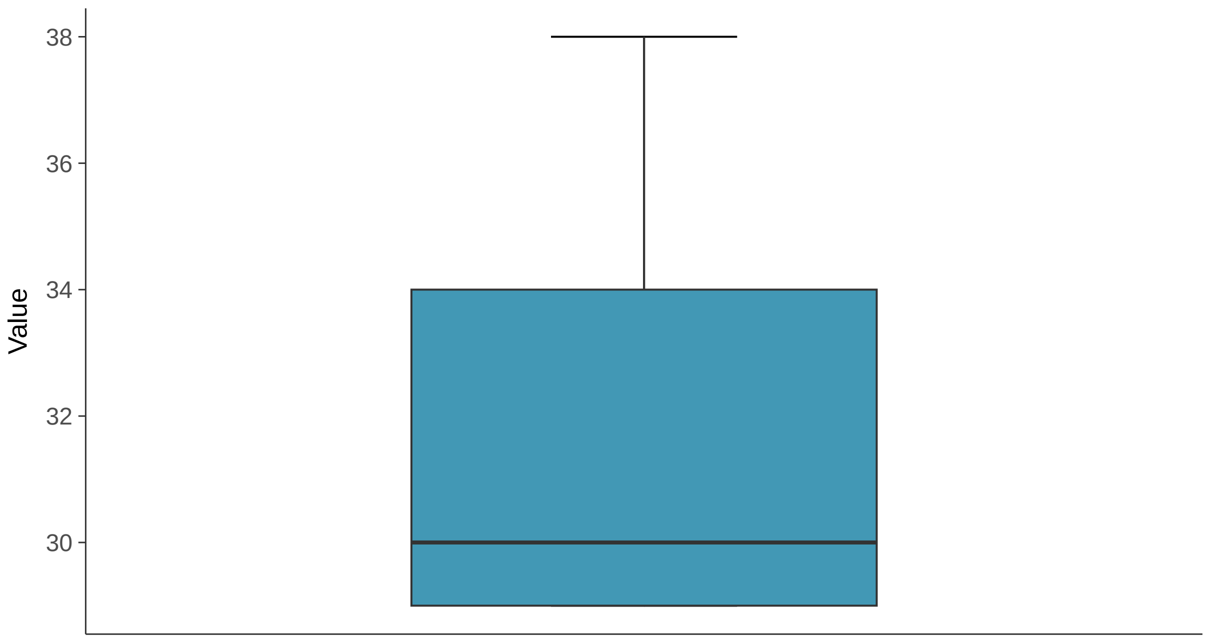
ID: 7B_4_32





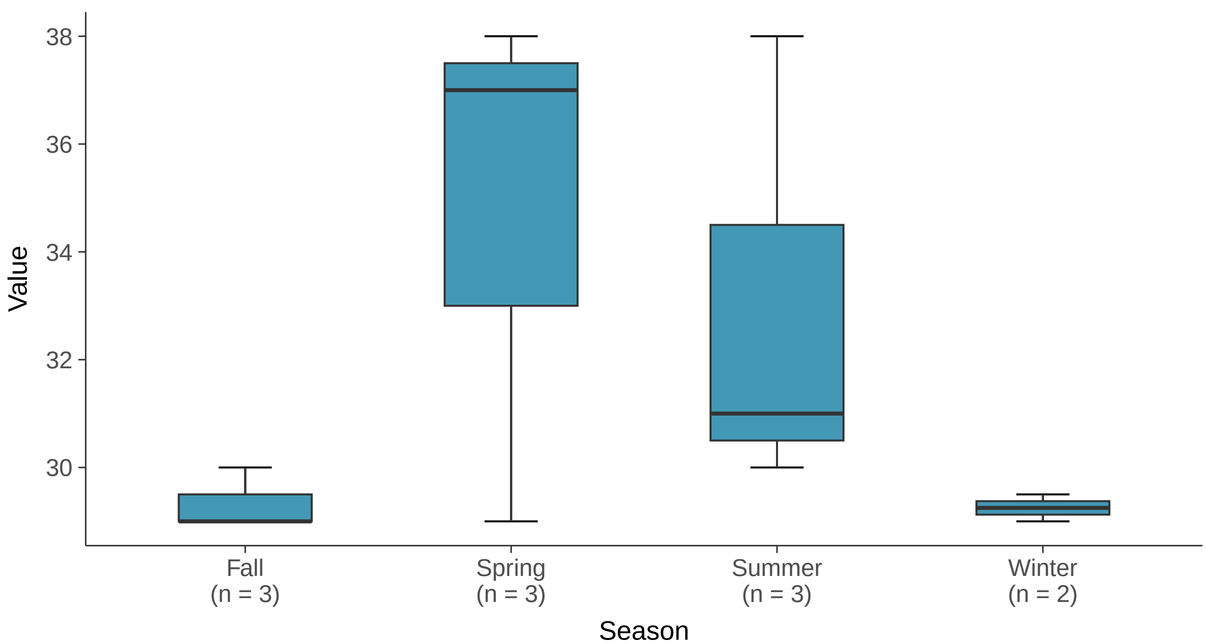
Boxplot

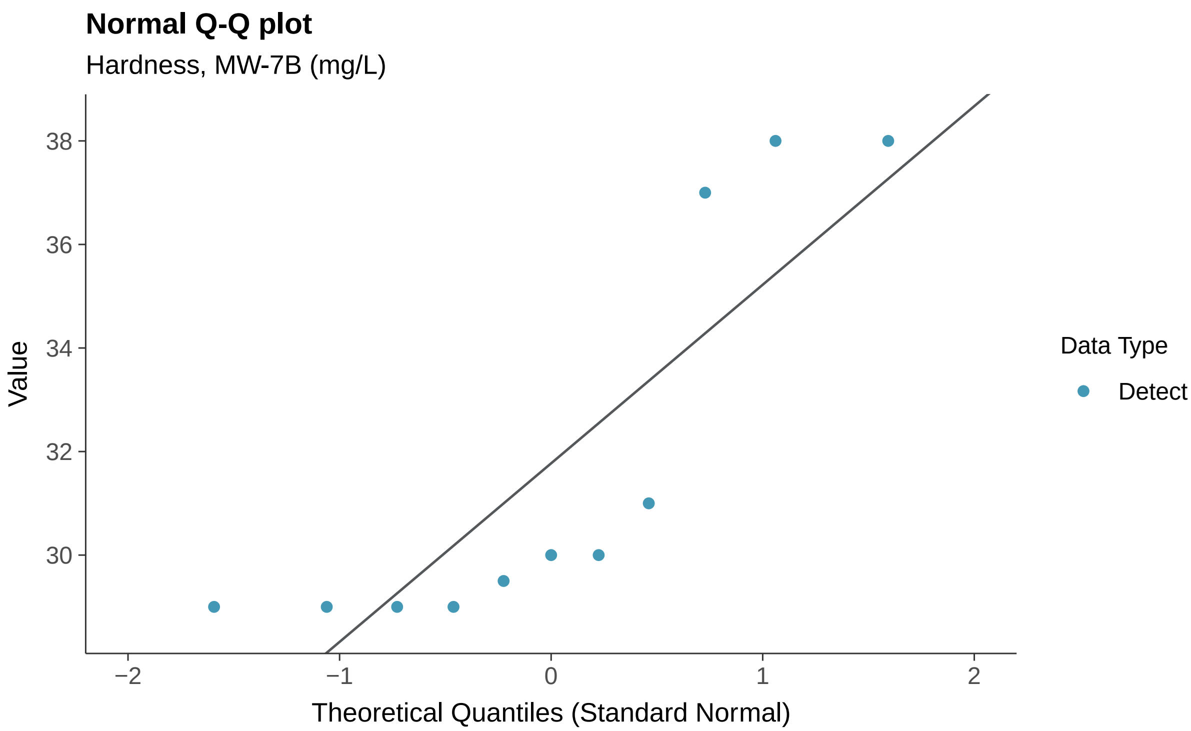
Hardness, MW-7B (mg/L)

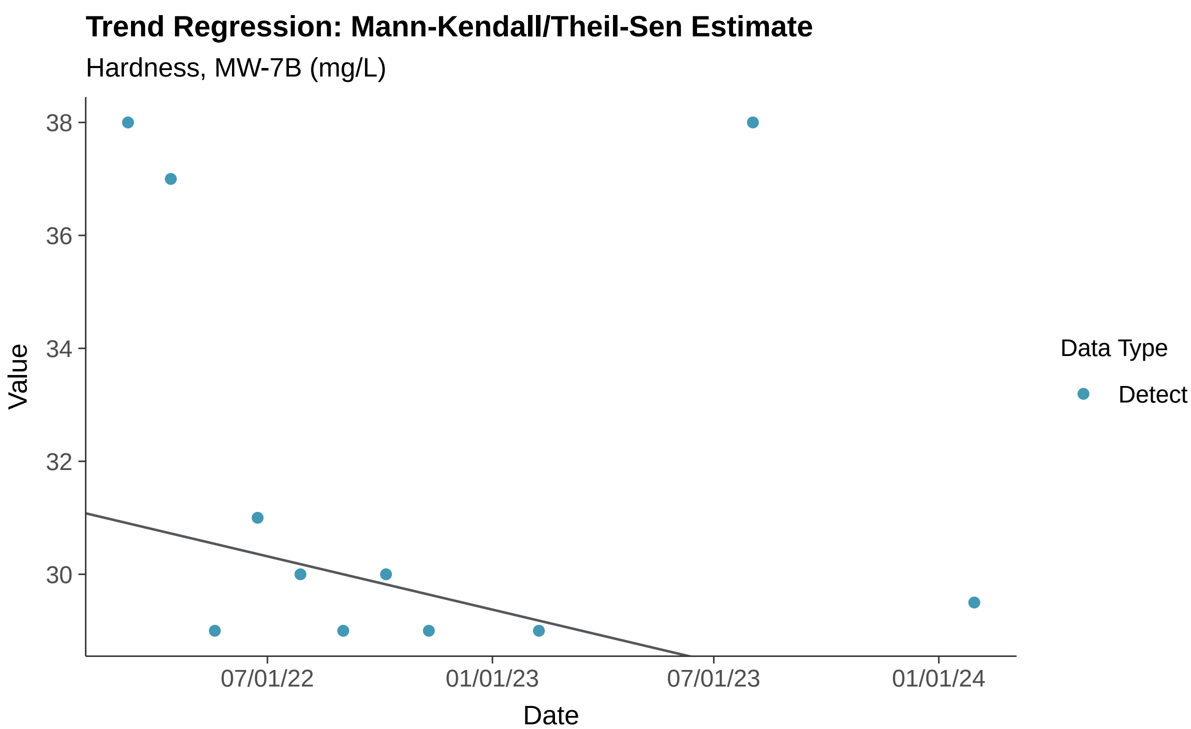


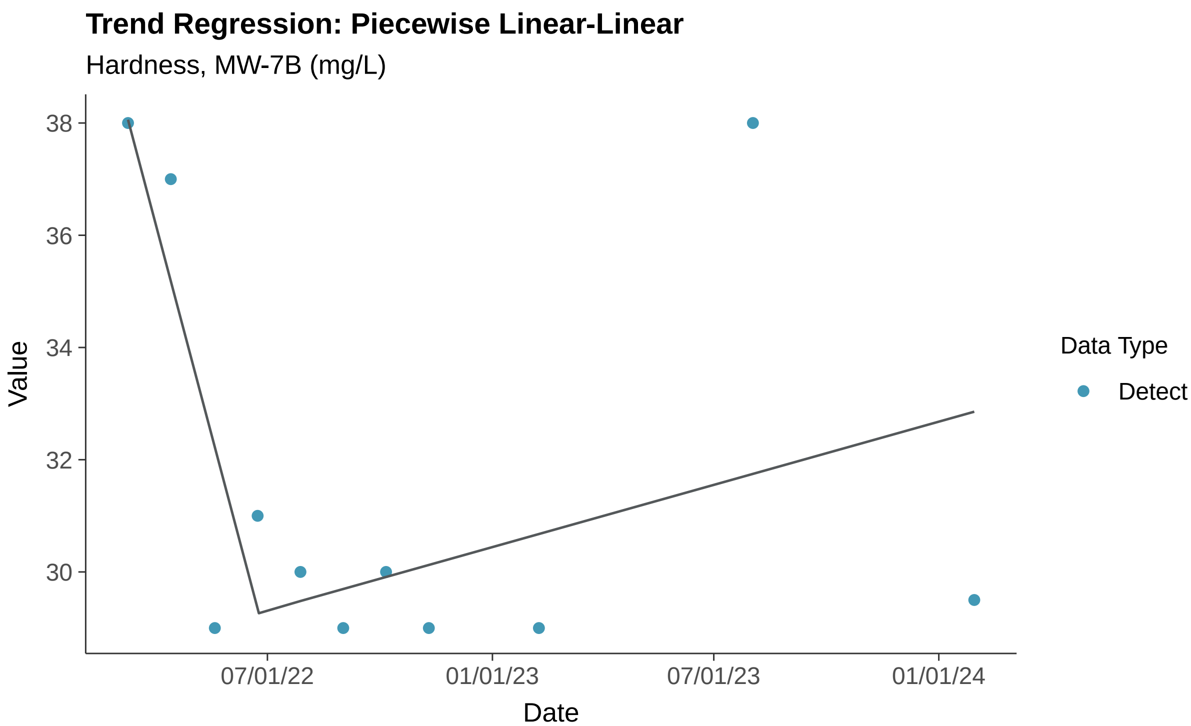
Boxplot by Season

Hardness, MW-7B (mg/L)



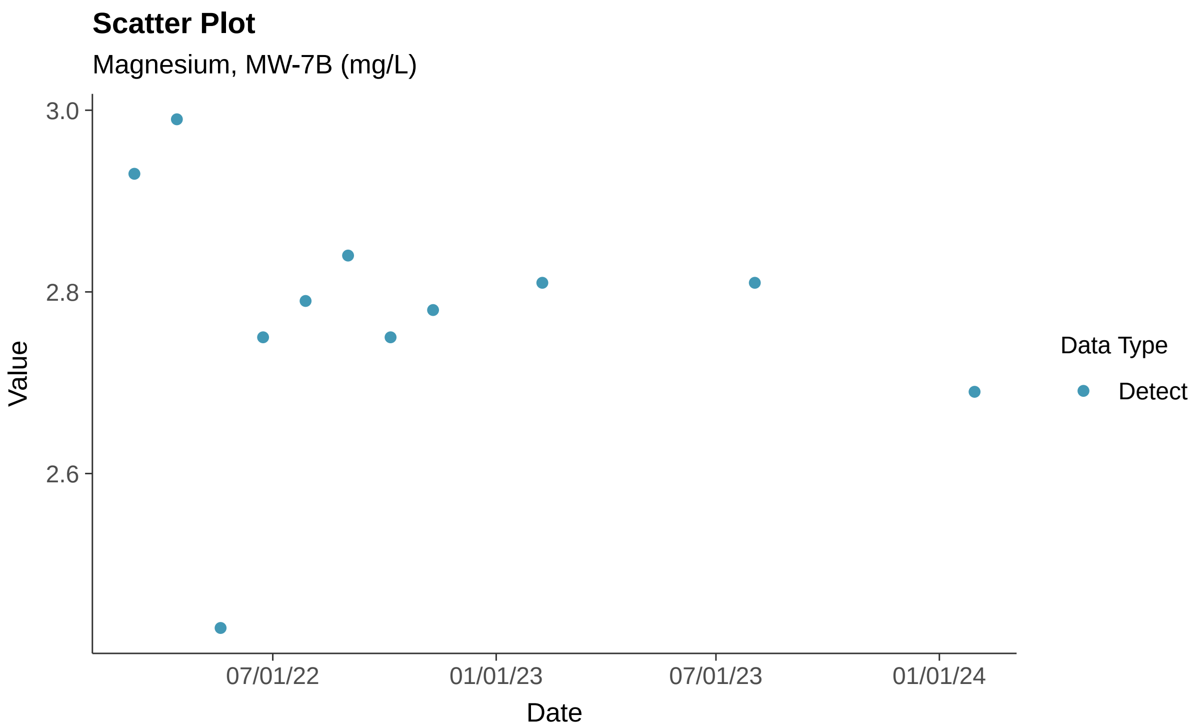

Normal Q-Q plot
Hardness, MW-7B (mg/L)
Value
38
36
34
32
30
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

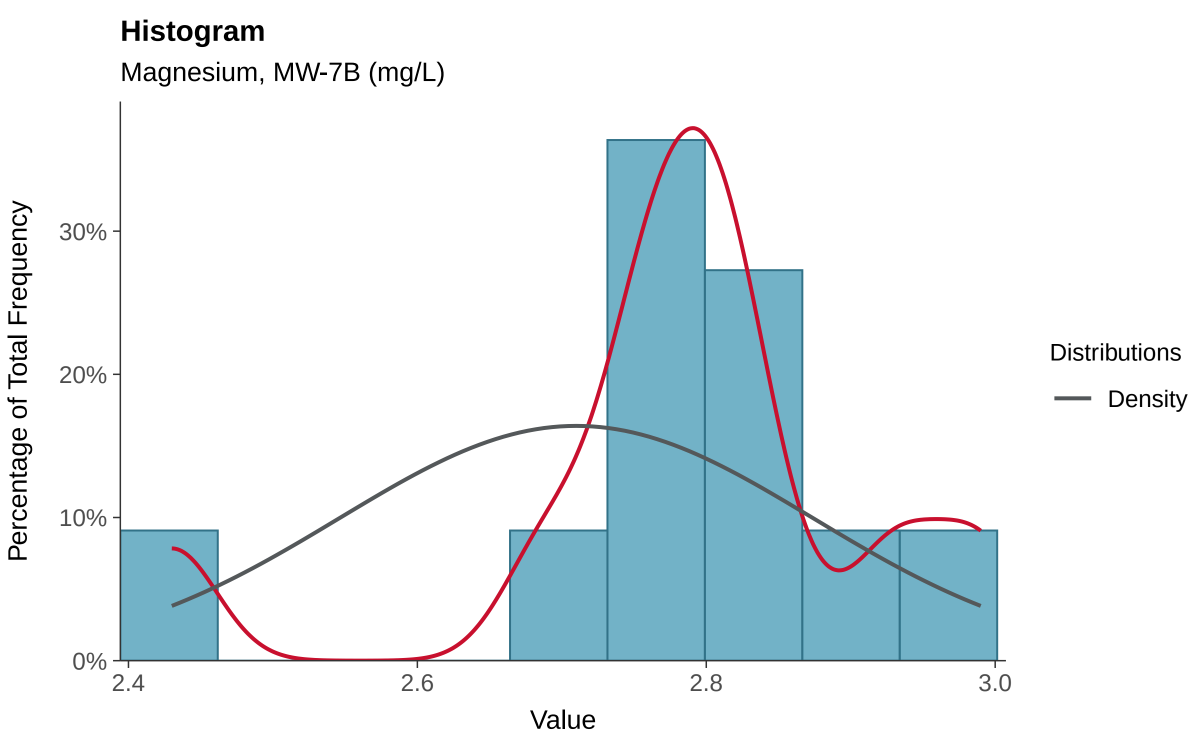

Trend Regression: Mann-Kendall/Theil-Sen Estimate
Hardness, MW-7B (mg/L)
Value
38
36
34
32
30
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect


Trend Regression: Piecewise Linear-Linear
Hardness, MW-7B (mg/L)
Value
38
36
34
32
30
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

Other: Magnesium, MW-7B

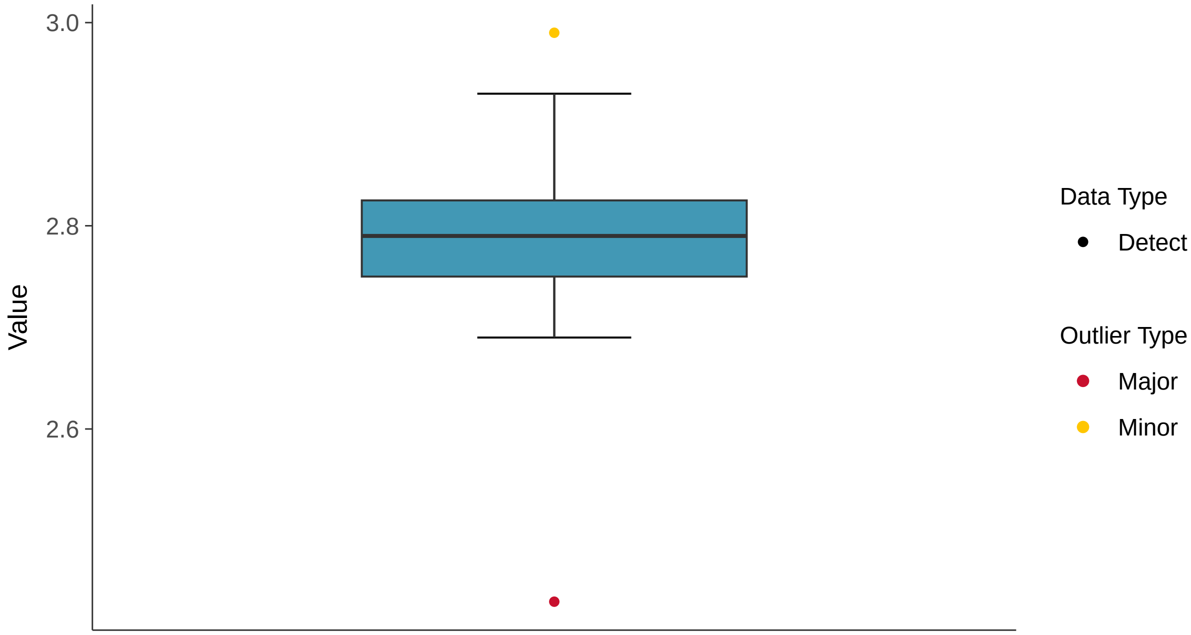
ID: 7B_4_33





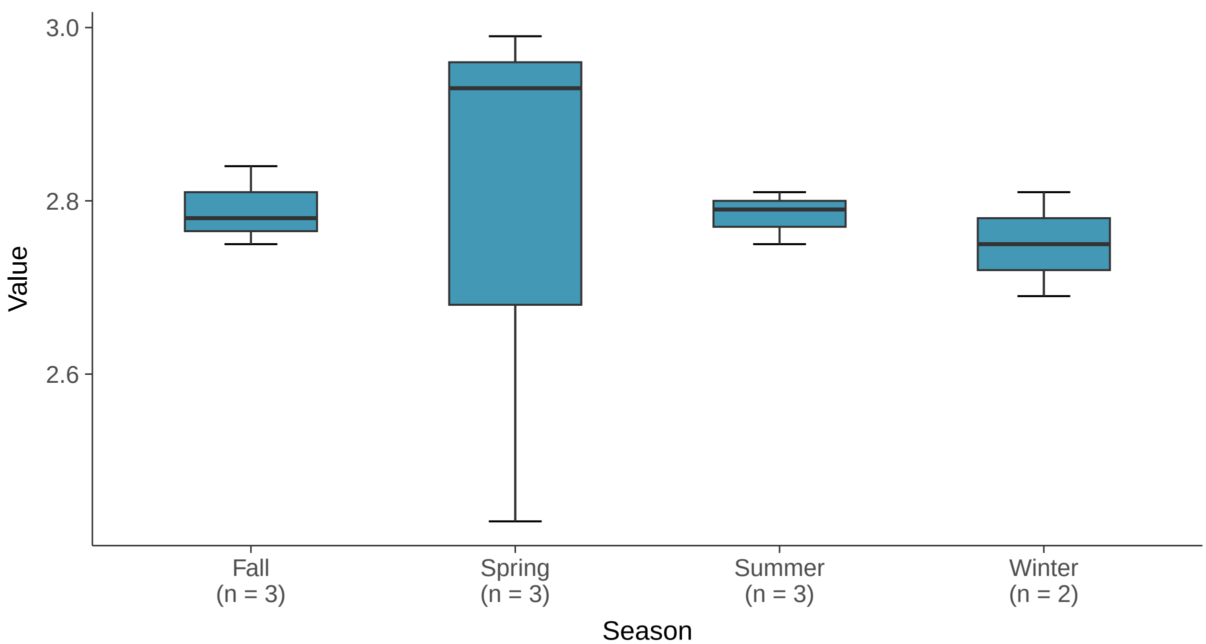
Boxplot

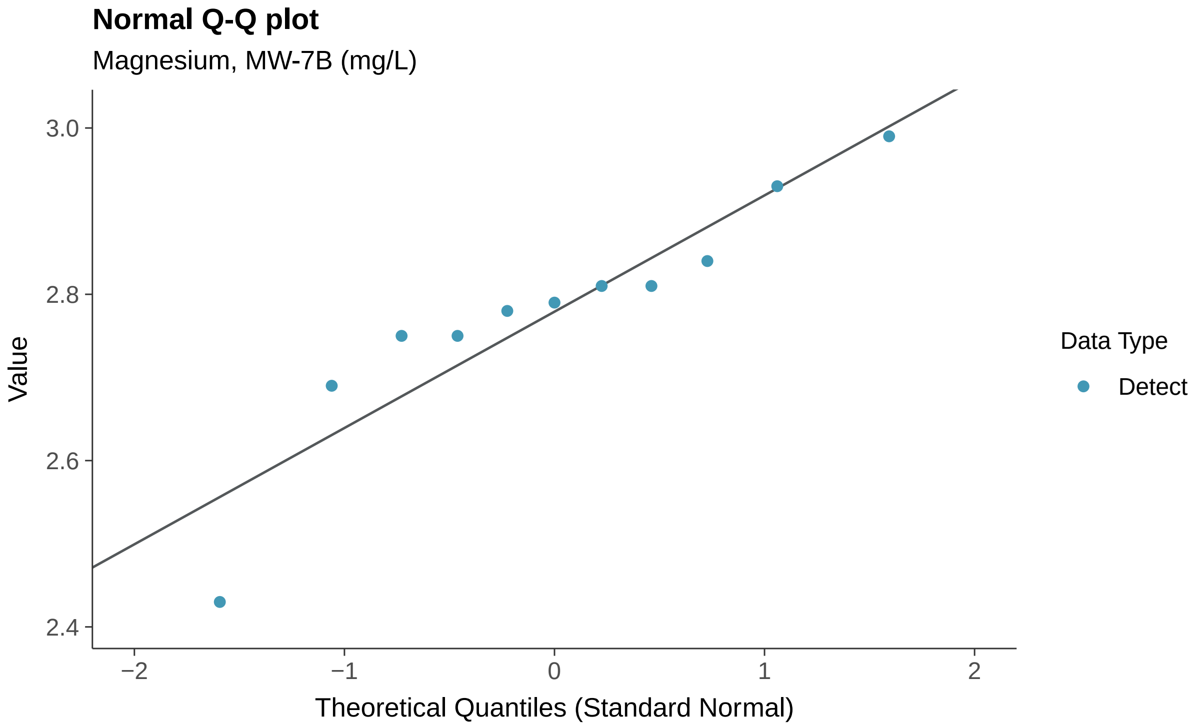
Magnesium, MW-7B (mg/L)

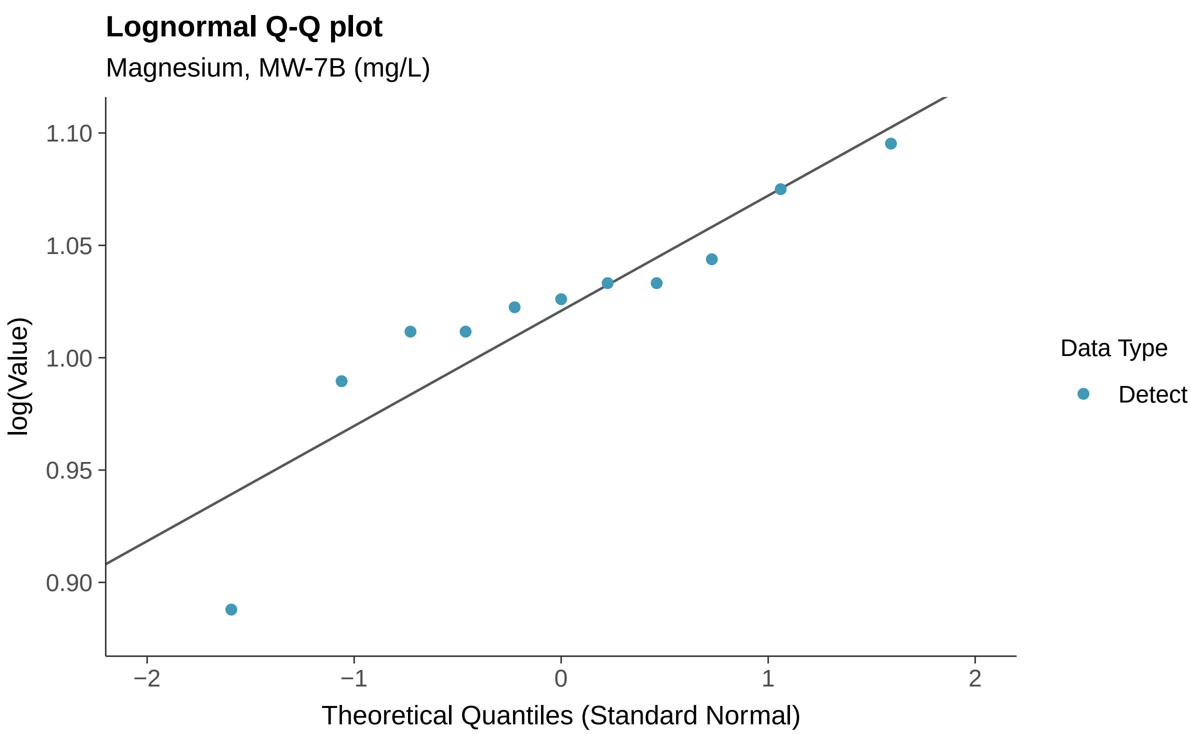


Boxplot by Season

Magnesium, MW-7B (mg/L)

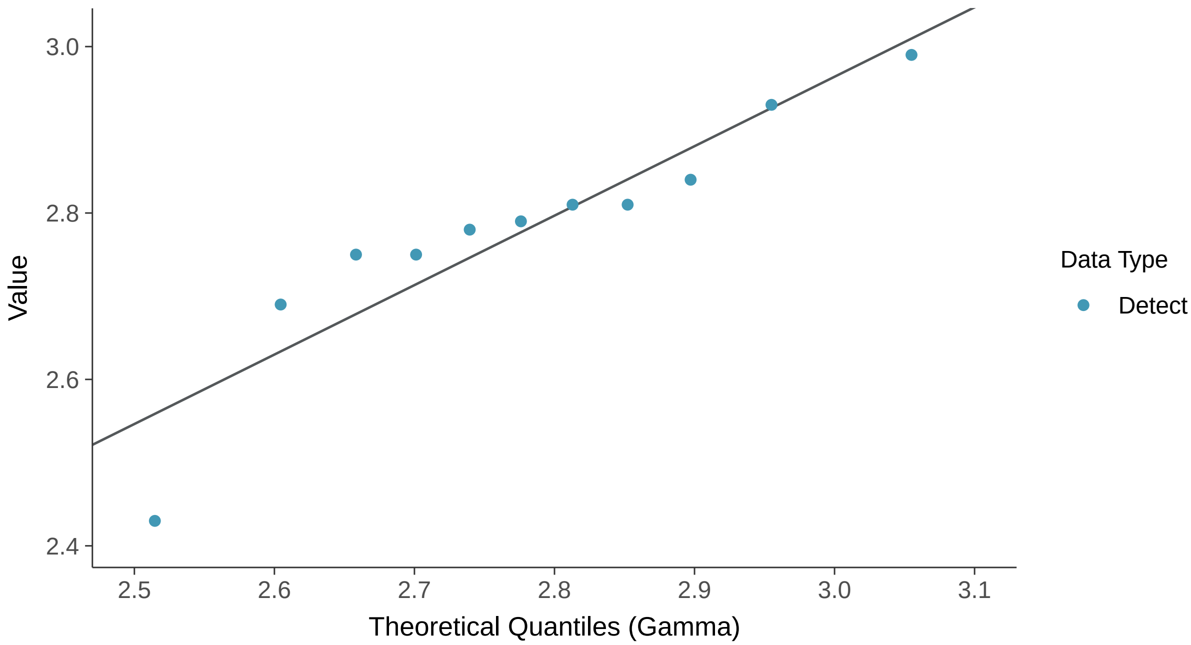



Normal Q-Q plot
Magnesium, MW-7B (mg/L)
Value
3.0
2.8
2.6
2.4
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Magnesium, MW-7B (mg/L)
log(Value)
1.10
1.05
1.00
0.95
0.90
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect

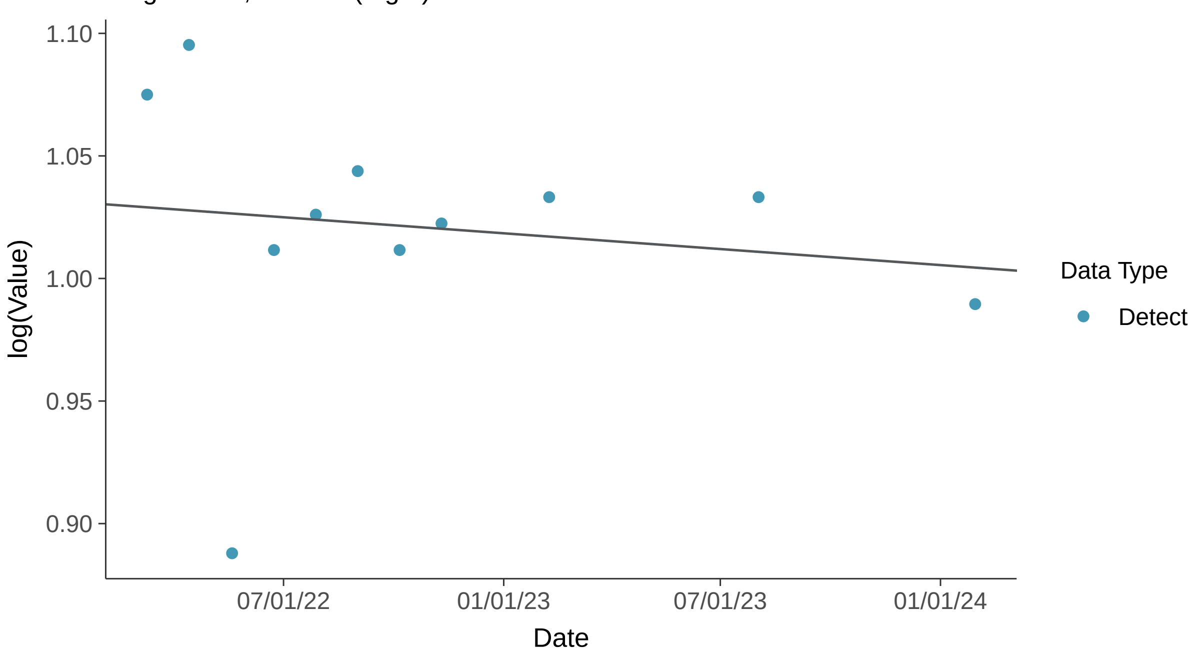
Gamma Q-Q plot

Magnesium, MW-7B (mg/L)



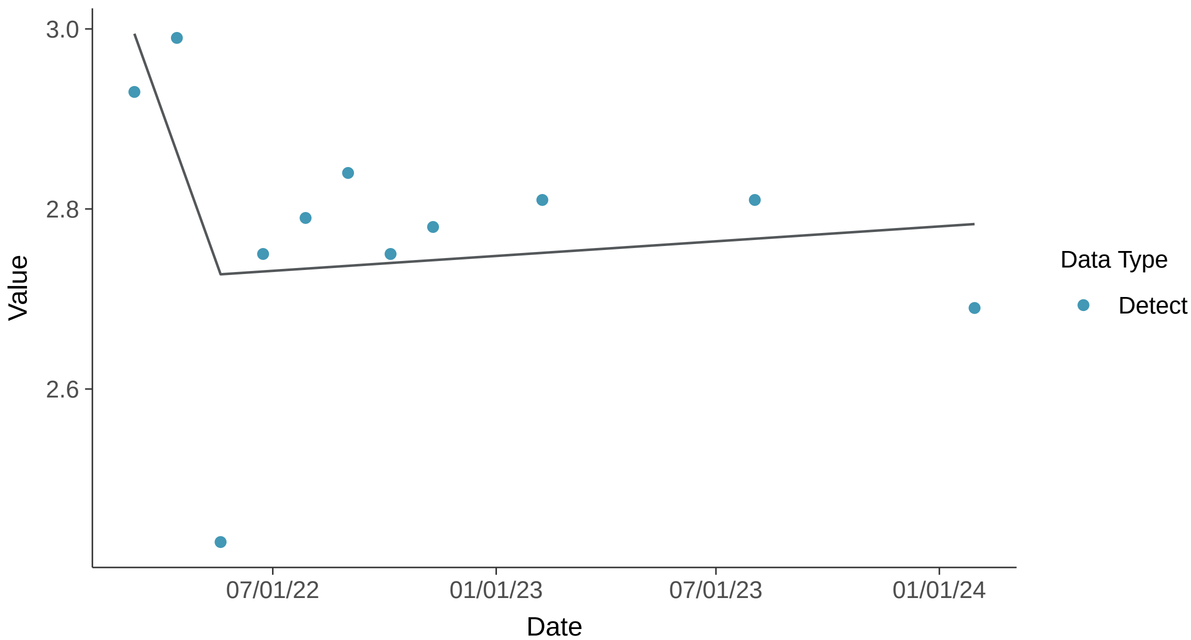
Trend Regression: Lognormal MLE

Magnesium, MW-7B (mg/L)



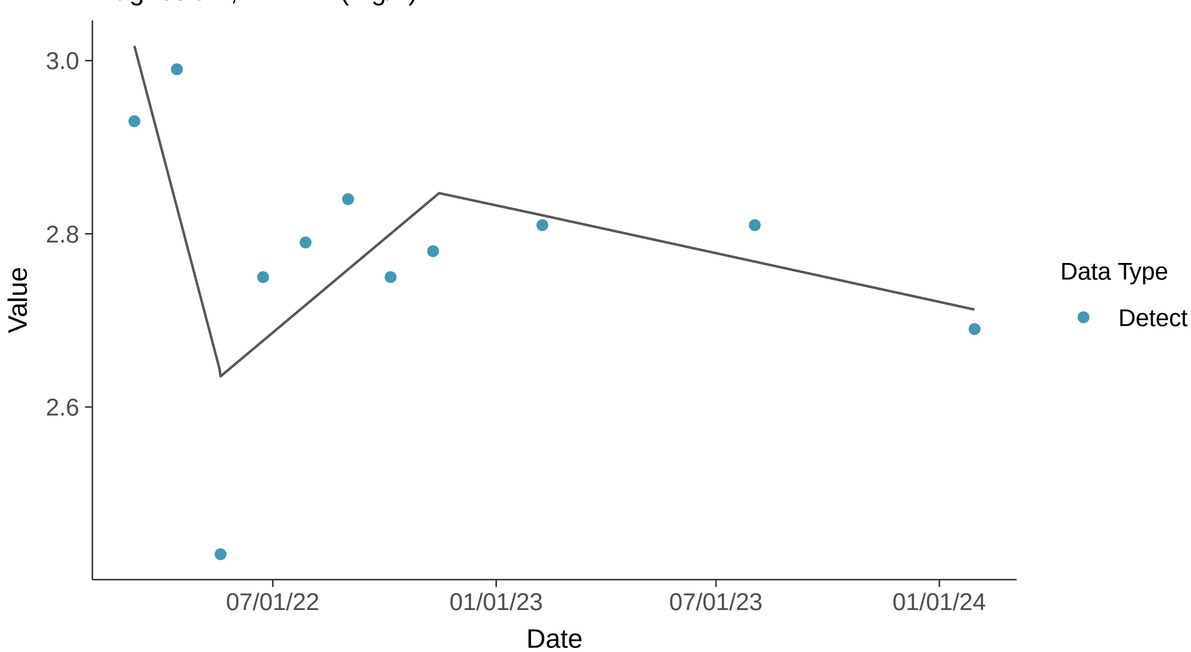
Trend Regression: Piecewise Linear-Linear

Magnesium, MW-7B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Magnesium, MW-7B (mg/L)

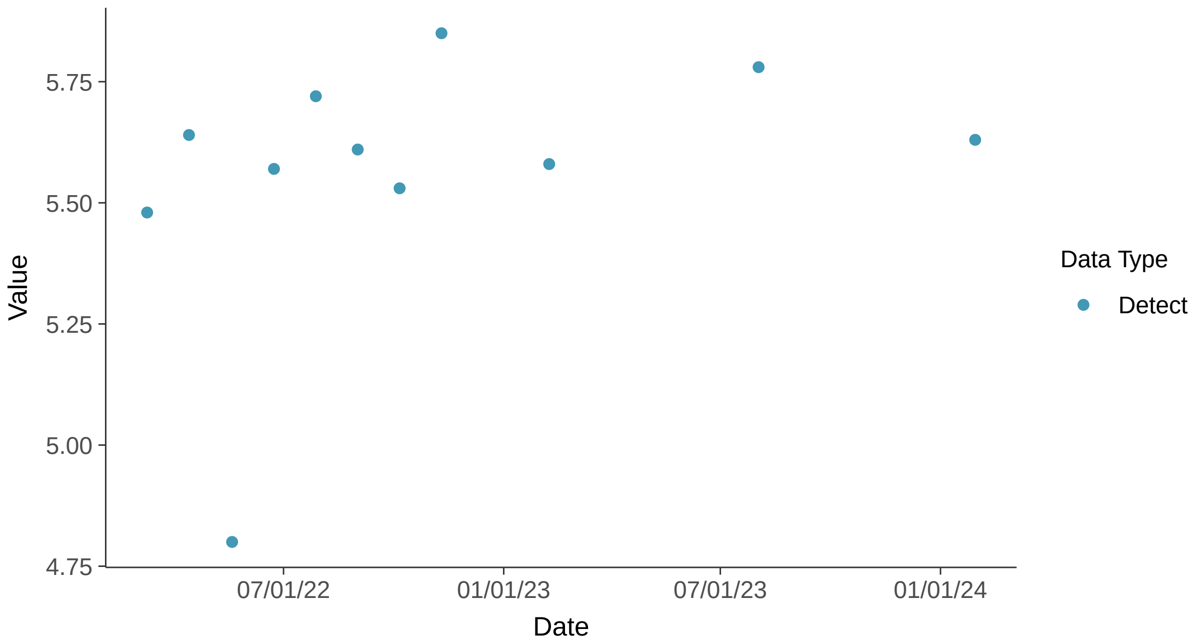


Other: Potassium, MW-7B

ID: 7B_4_34

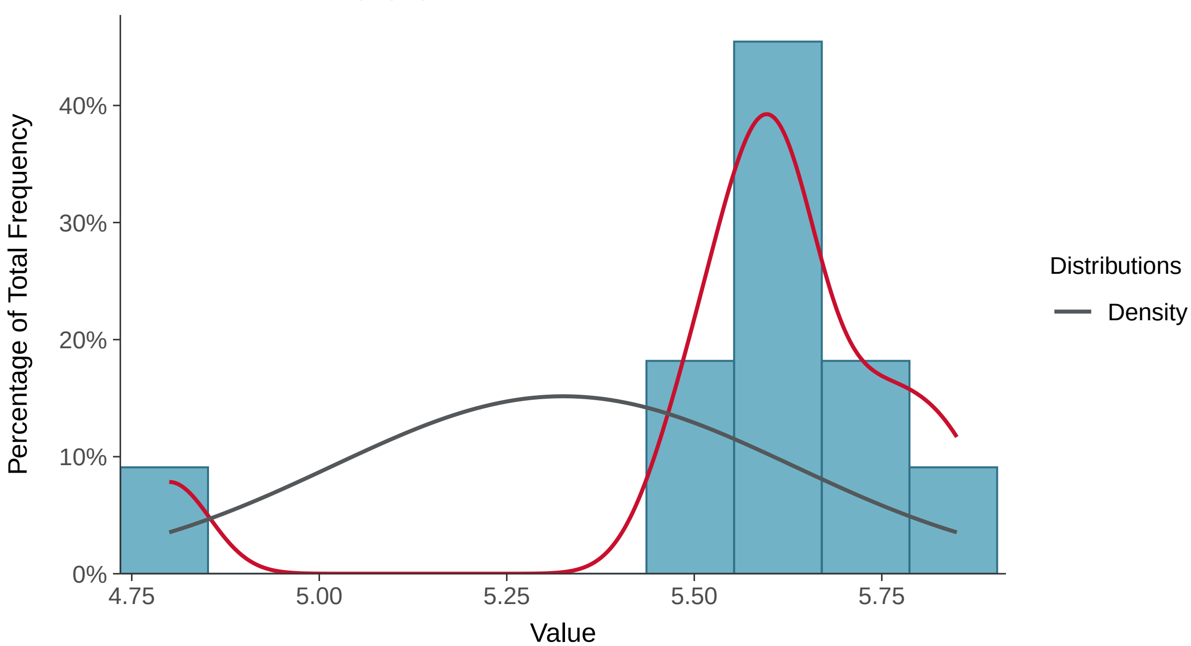
Scatter Plot

Potassium, MW-7B (mg/L)



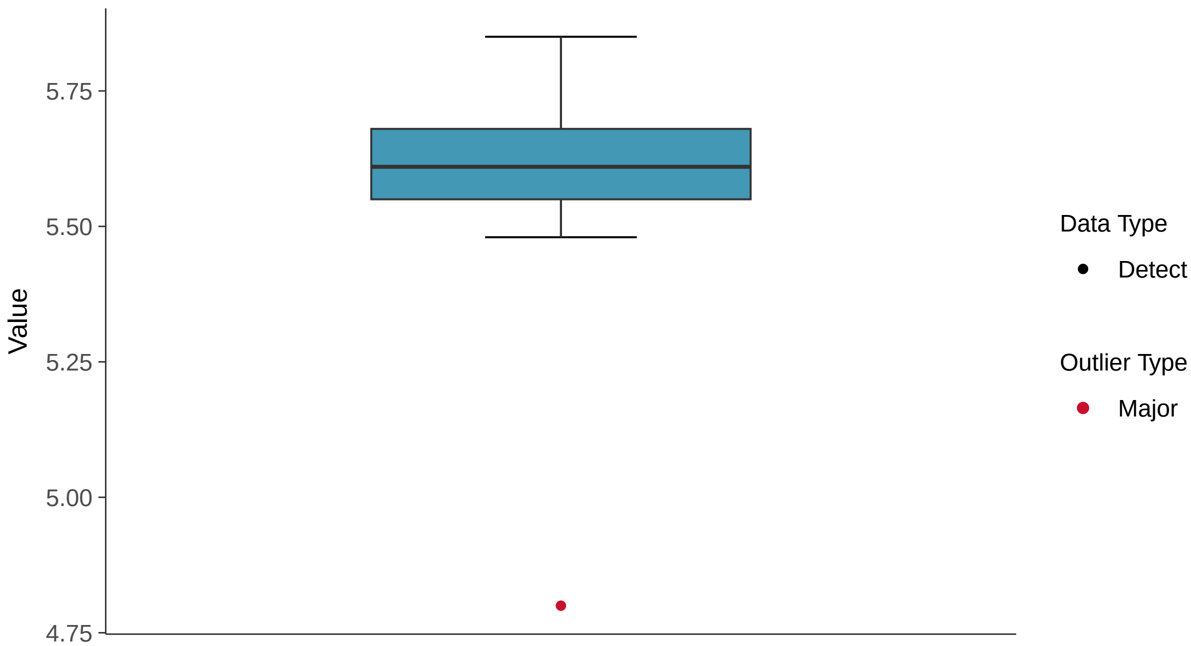
Histogram

Potassium, MW-7B (mg/L)



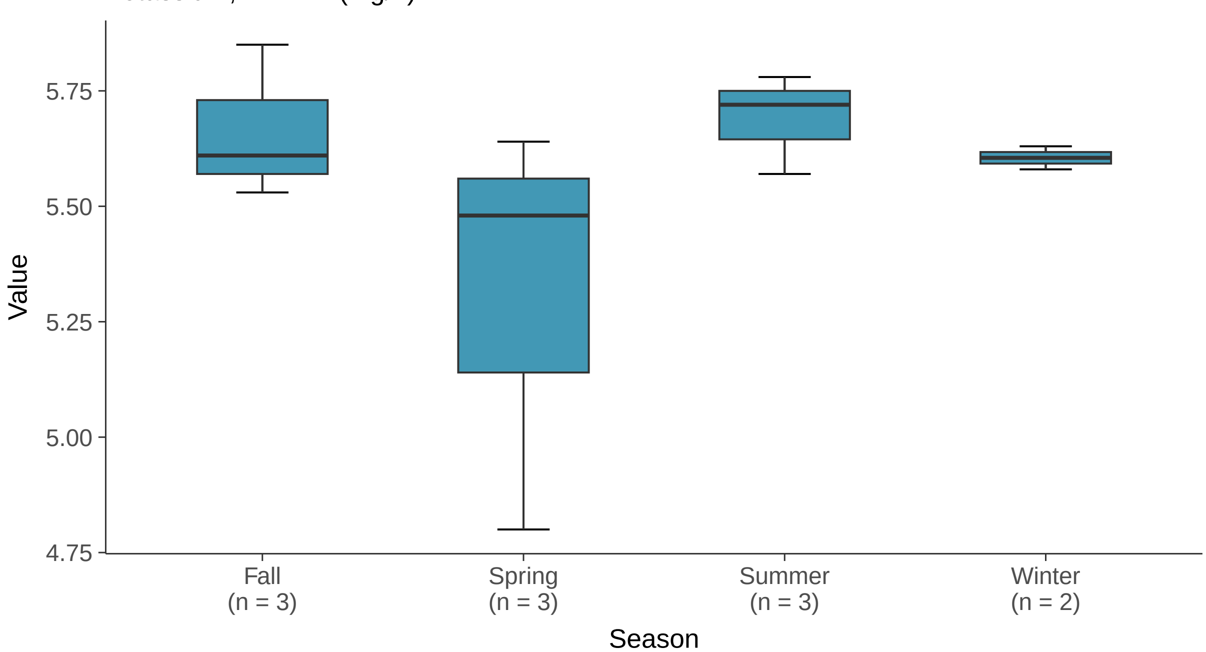
Boxplot

Potassium, MW-7B (mg/L)



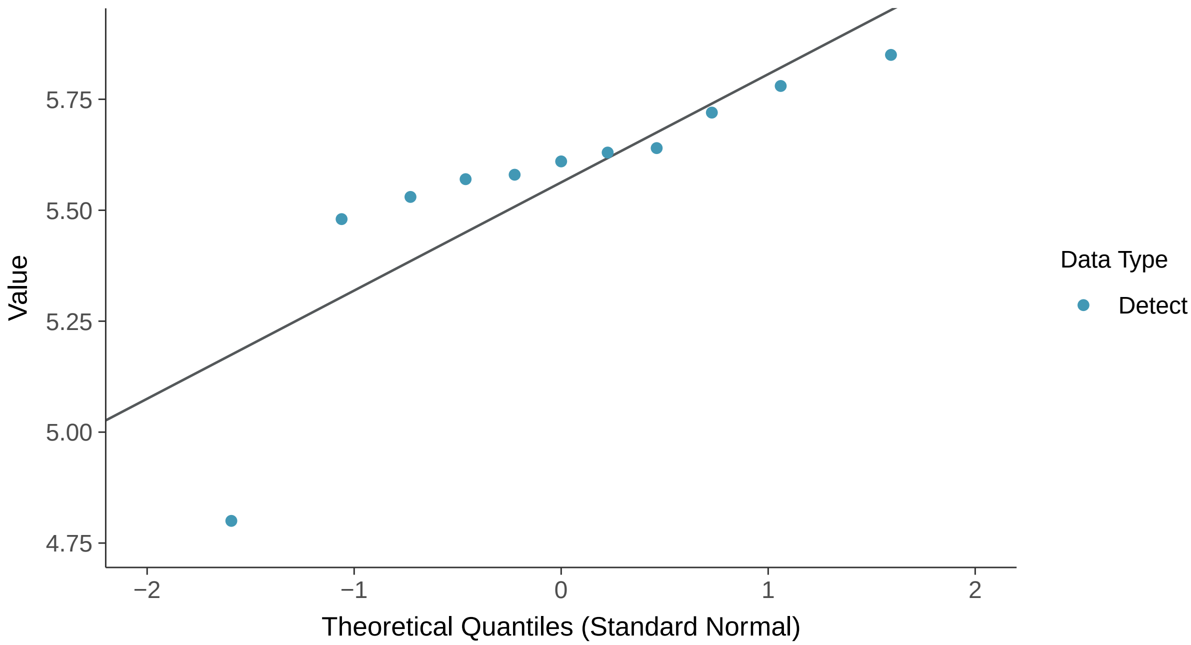
Boxplot by Season

Potassium, MW-7B (mg/L)



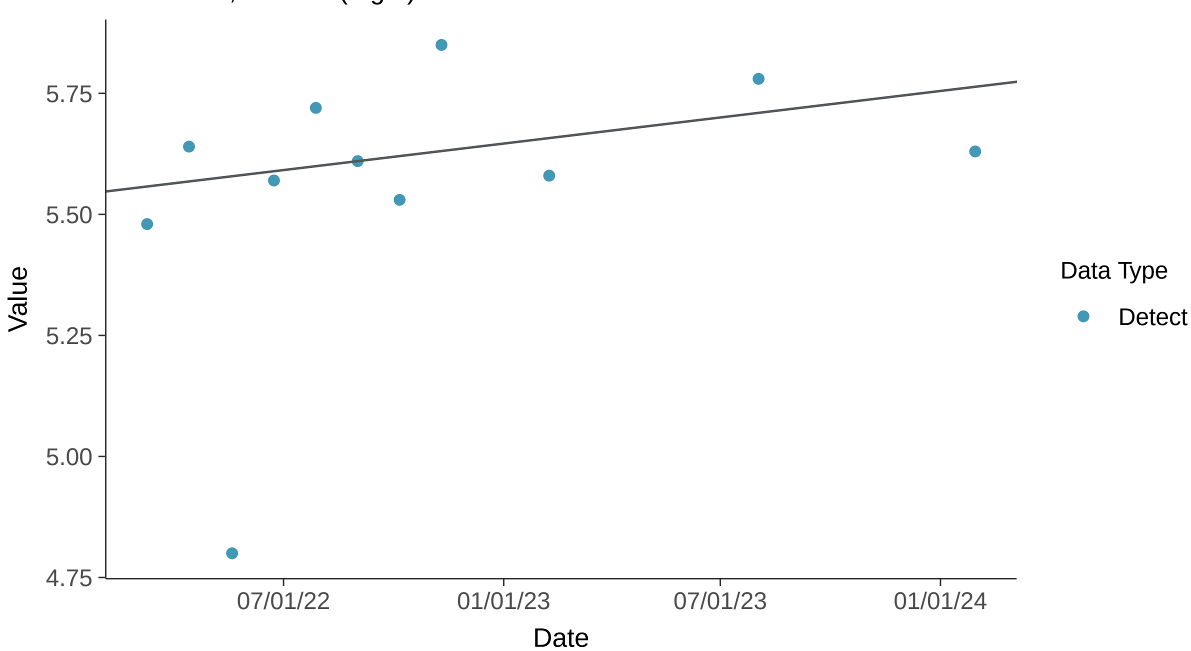
Normal Q-Q plot

Potassium, MW-7B (mg/L)



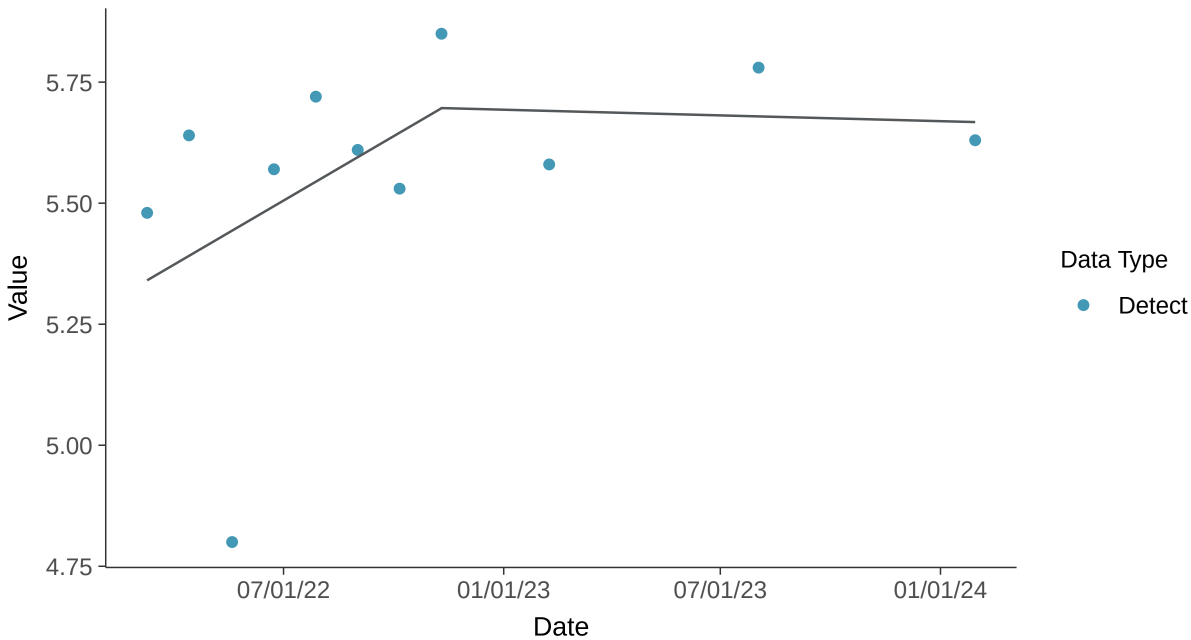
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Potassium, MW-7B (mg/L)



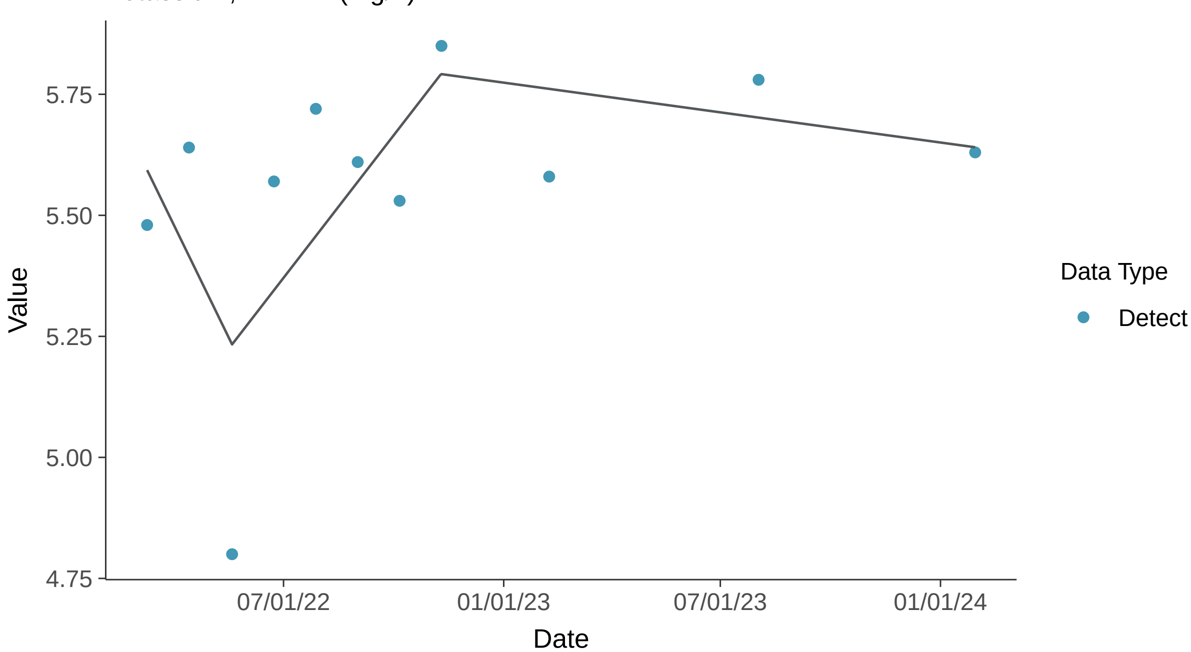
Trend Regression: Piecewise Linear-Linear

Potassium, MW-7B (mg/L)



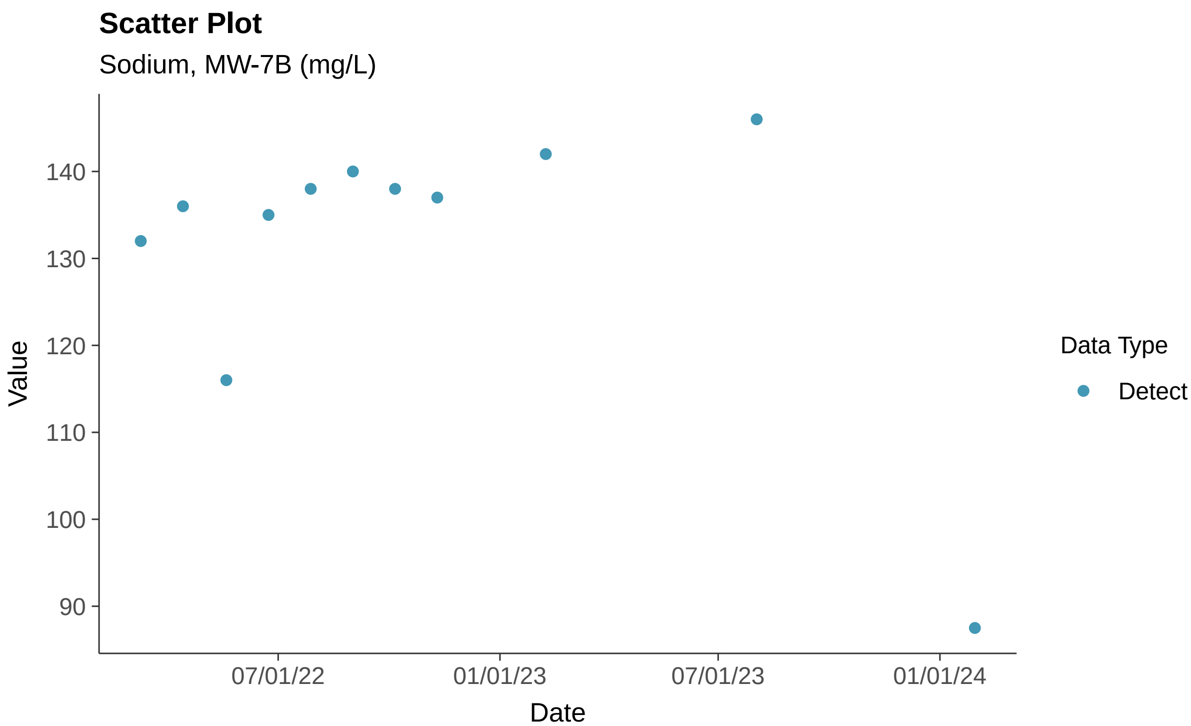
Trend Regression: Piecewise Linear-Linear-Linear

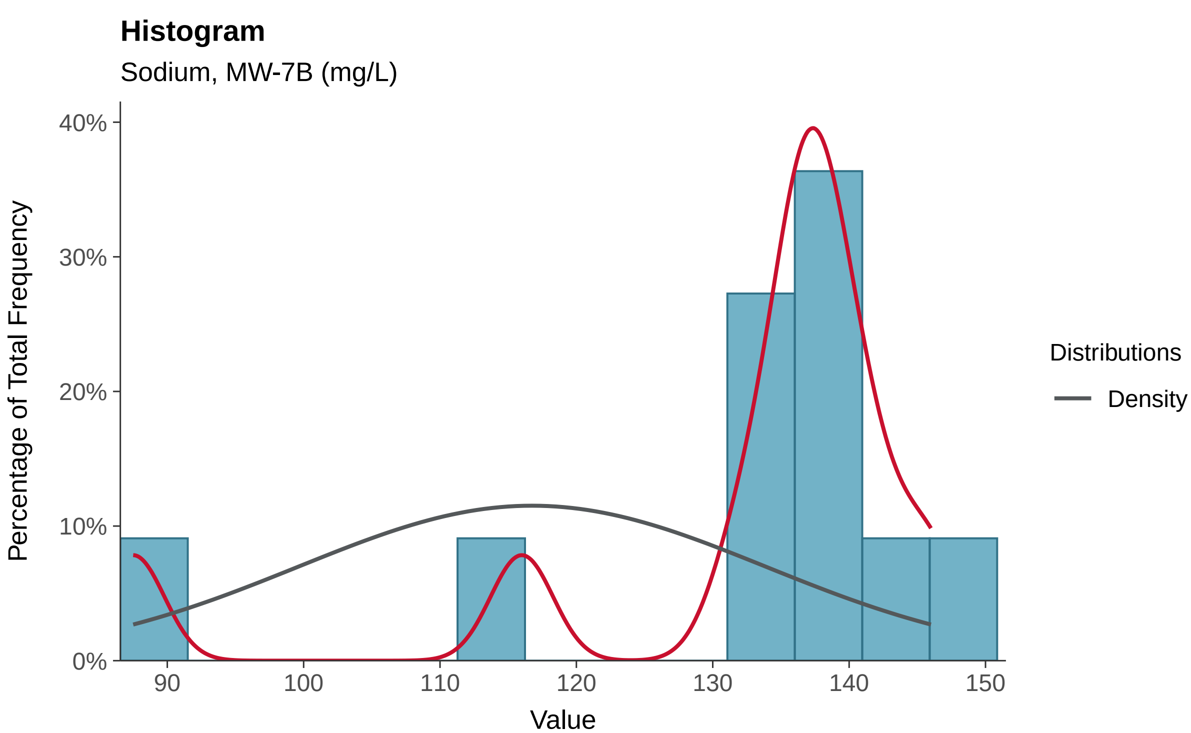
Potassium, MW-7B (mg/L)



Other: Sodium, MW-7B

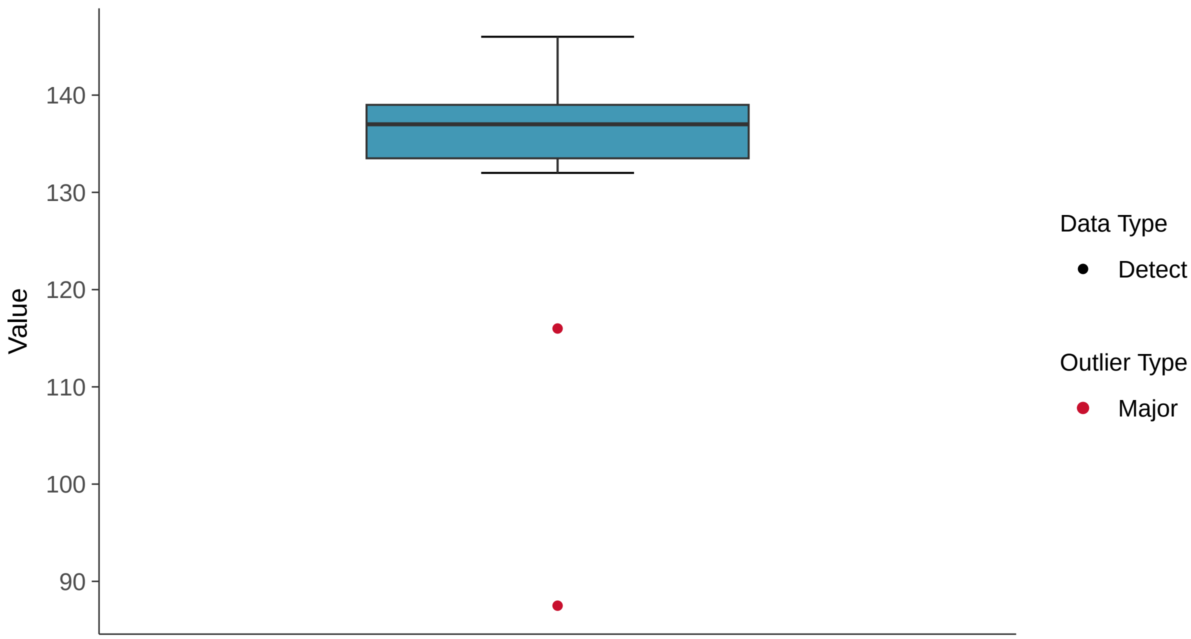
ID: 7B_4_35





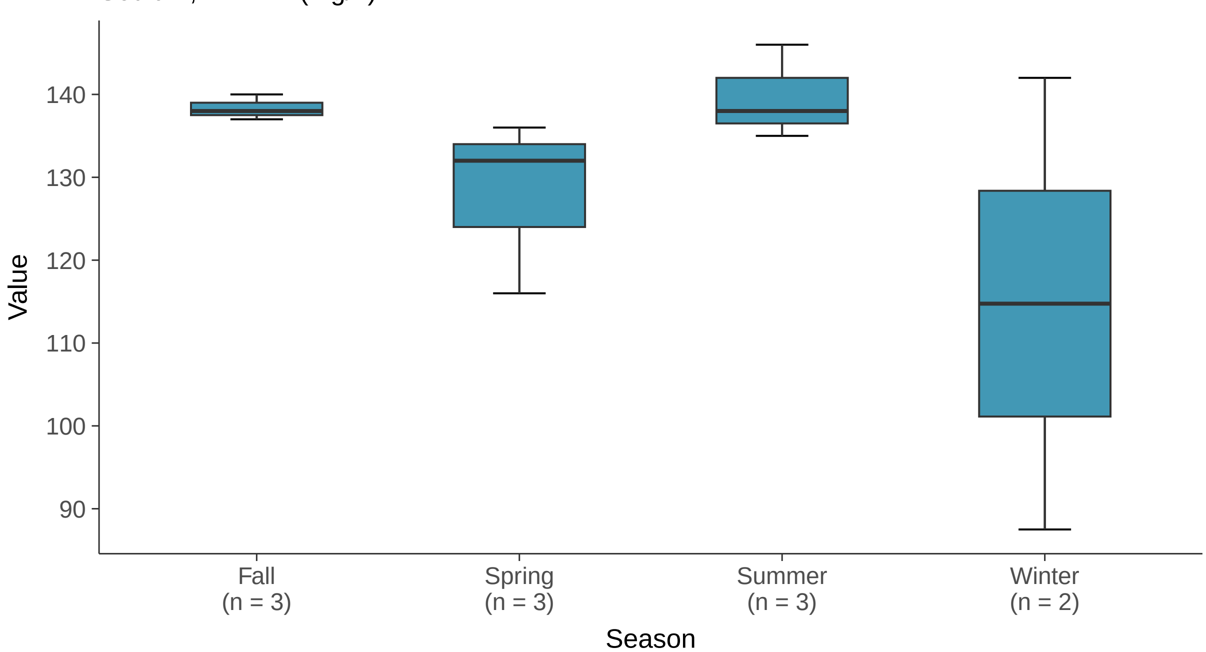
Boxplot

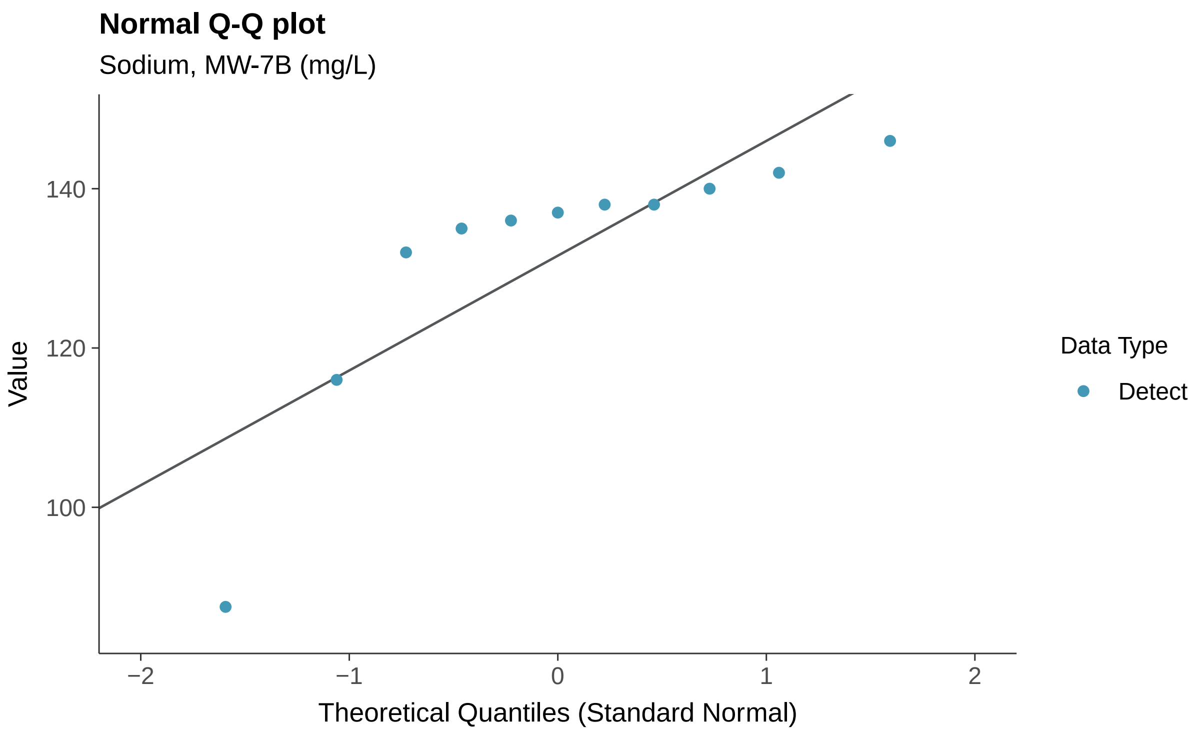
Sodium, MW-7B (mg/L)

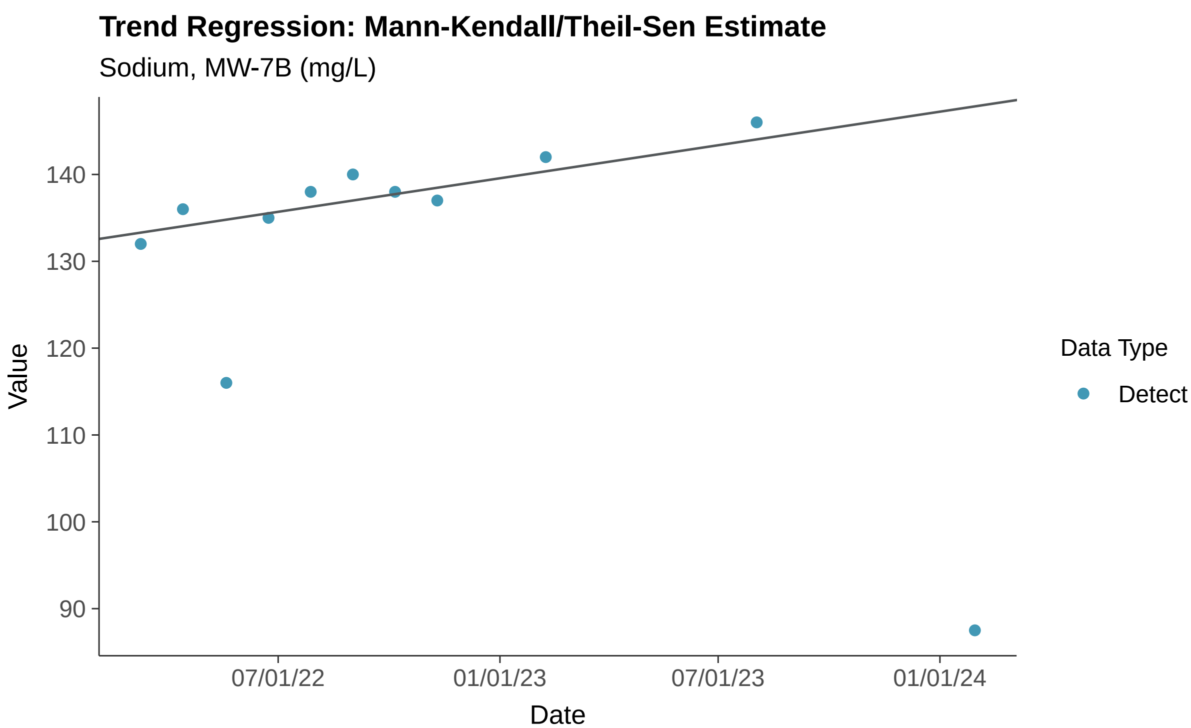


Boxplot by Season

Sodium, MW-7B (mg/L)

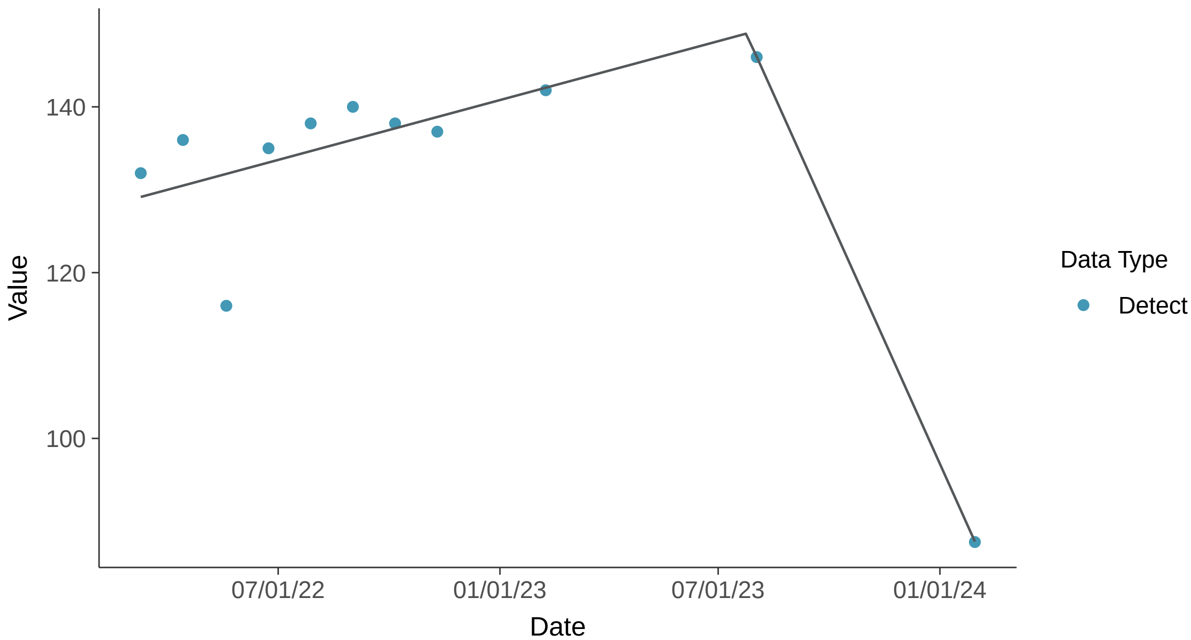



Normal Q-Q plot
Sodium, MW-7B (mg/L)
Value
140
120
100
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Trend Regression: Mann-Kendall/Theil-Sen Estimate
Sodium, MW-7B (mg/L)
Value
140
130
120
110
100
90
07/01/22
01/01/23
07/01/23
01/01/24
Date
Data Type
Detect

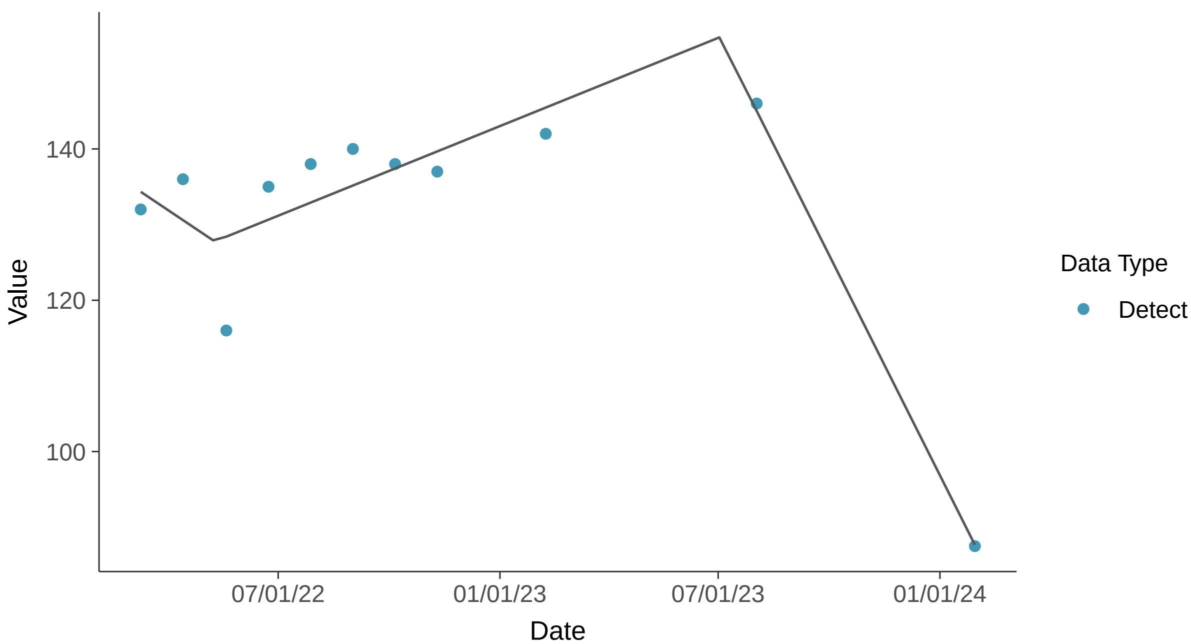
Trend Regression: Piecewise Linear-Linear

Sodium, MW-7B (mg/L)



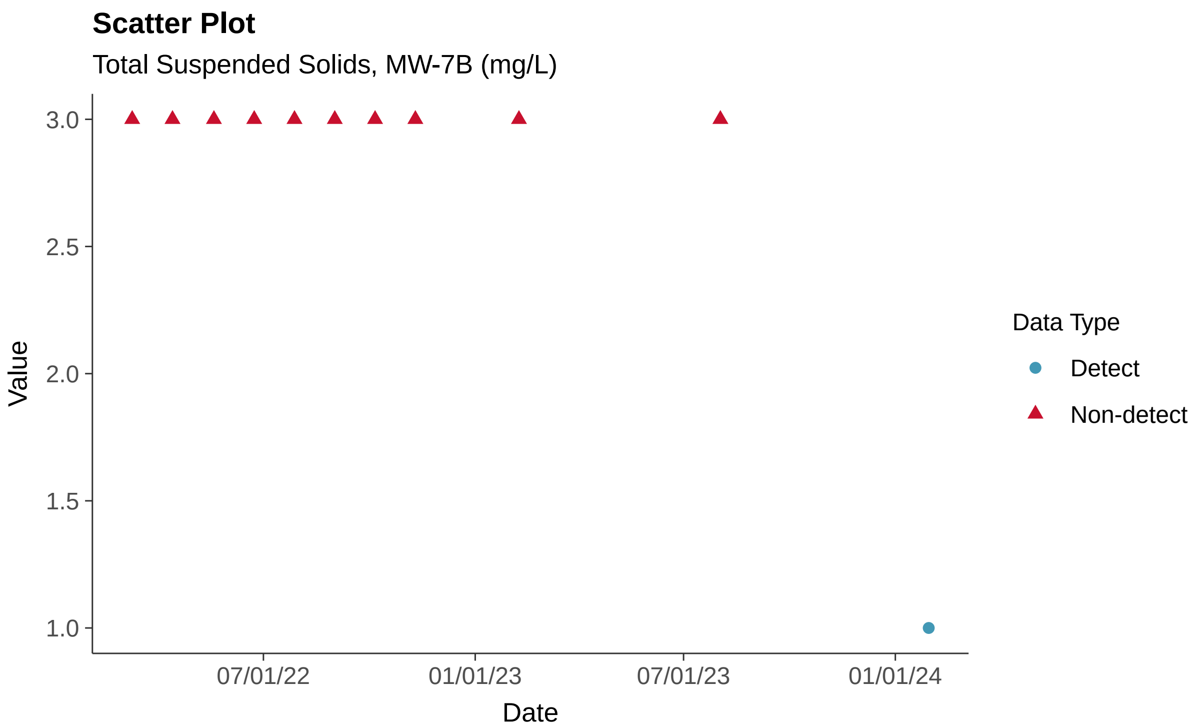
Trend Regression: Piecewise Linear-Linear-Linear

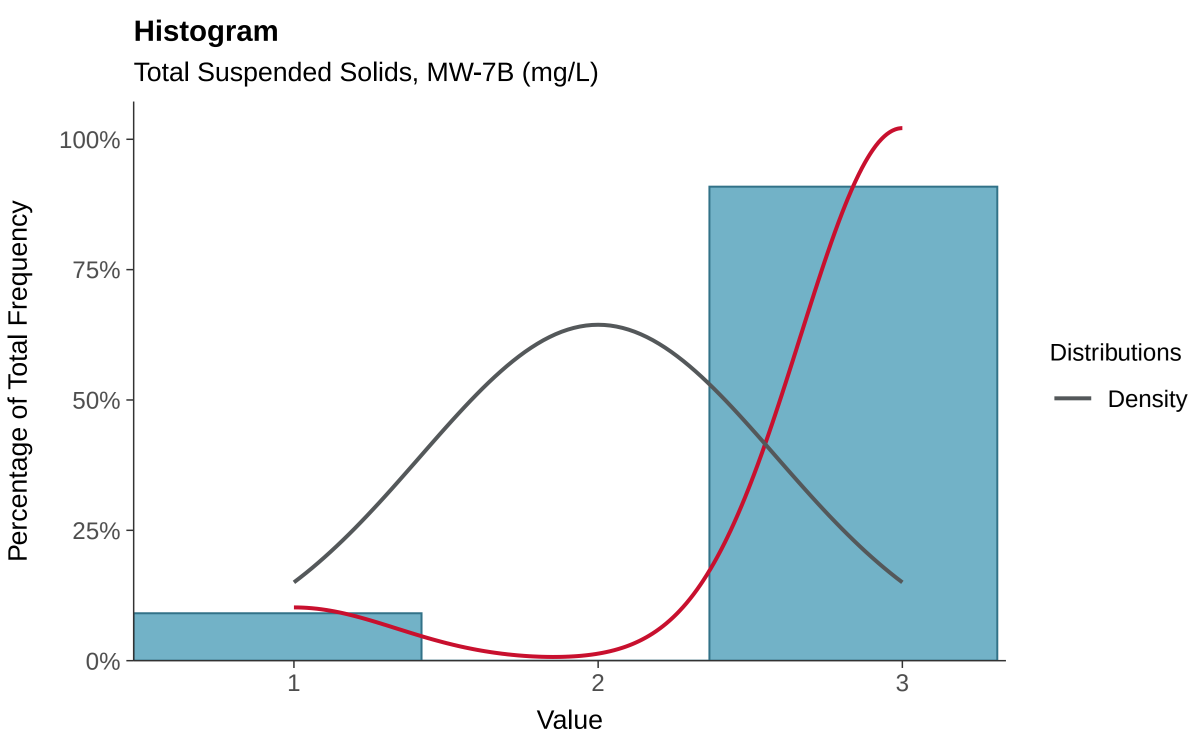
Sodium, MW-7B (mg/L)



Other: Total Suspended Solids, MW-7B

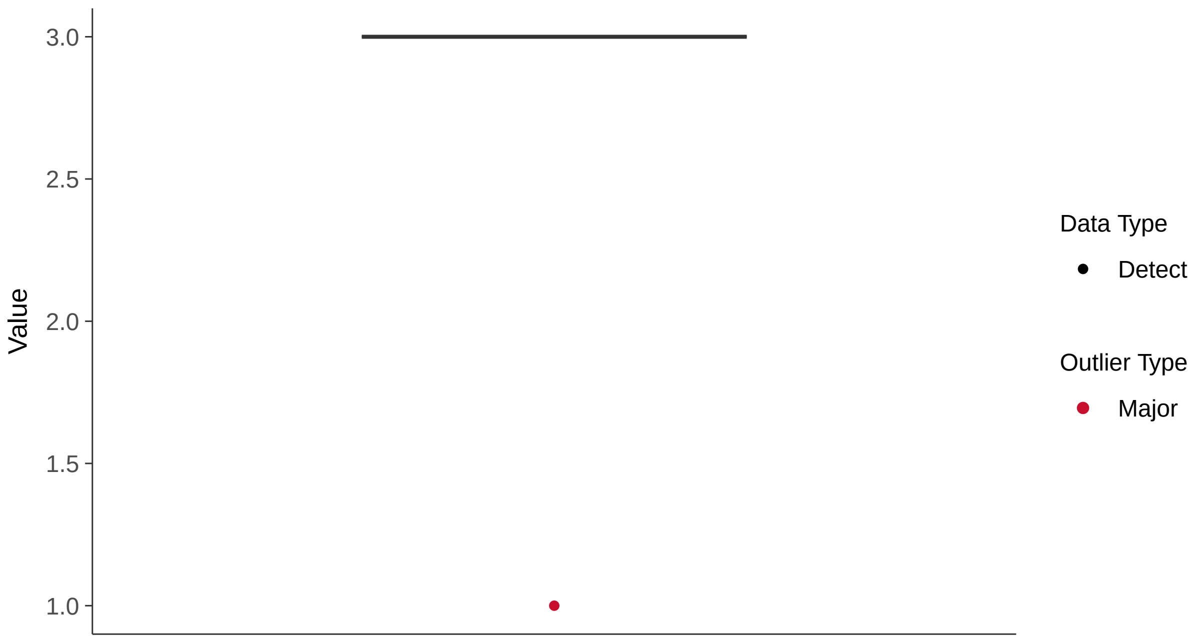
ID: 7B_4_36





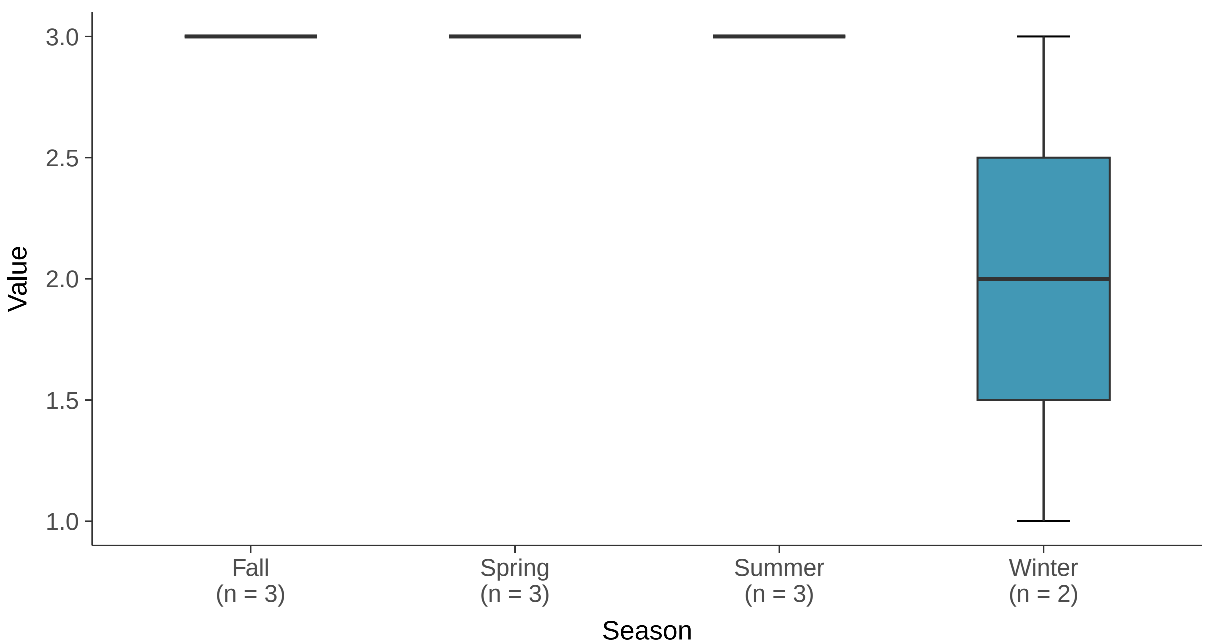
Boxplot

Total Suspended Solids, MW-7B (mg/L)



Boxplot by Season

Total Suspended Solids, MW-7B (mg/L)

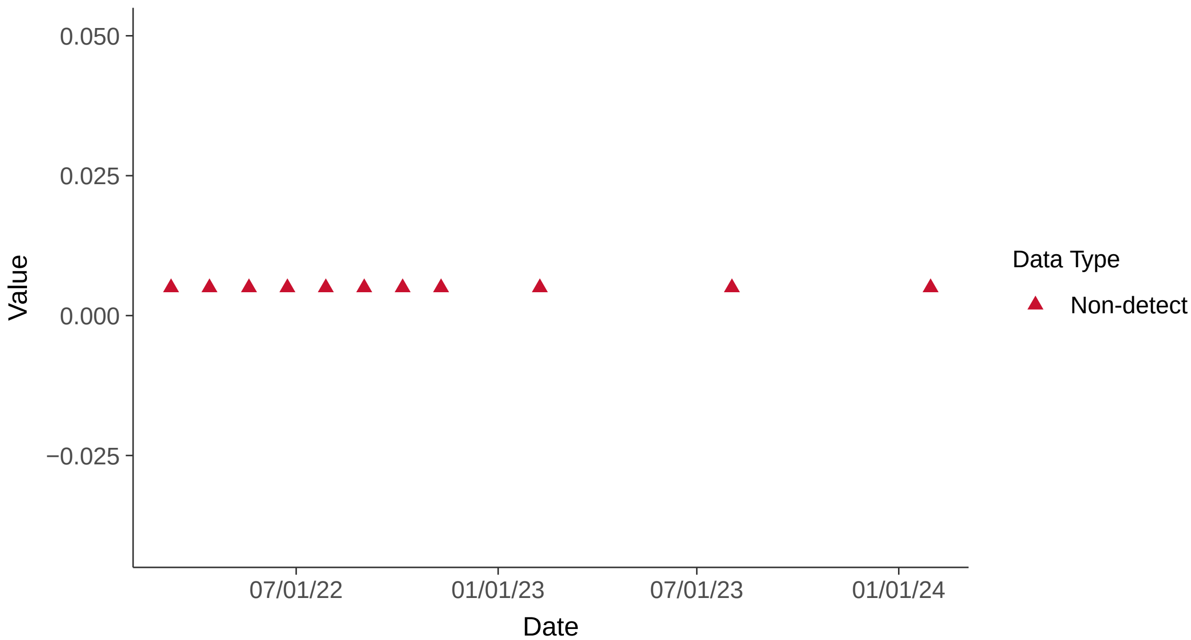


Part 115: Copper, MW-7B

ID: 7B_5_37

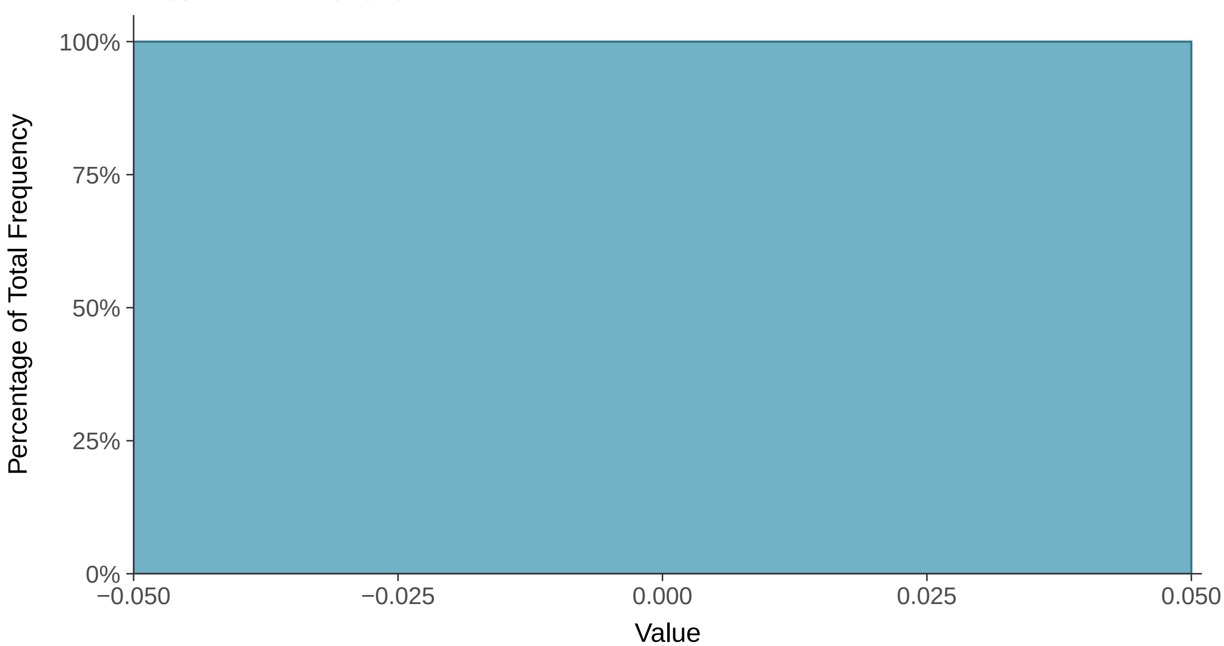
Scatter Plot

Copper, MW-7B (mg/L)



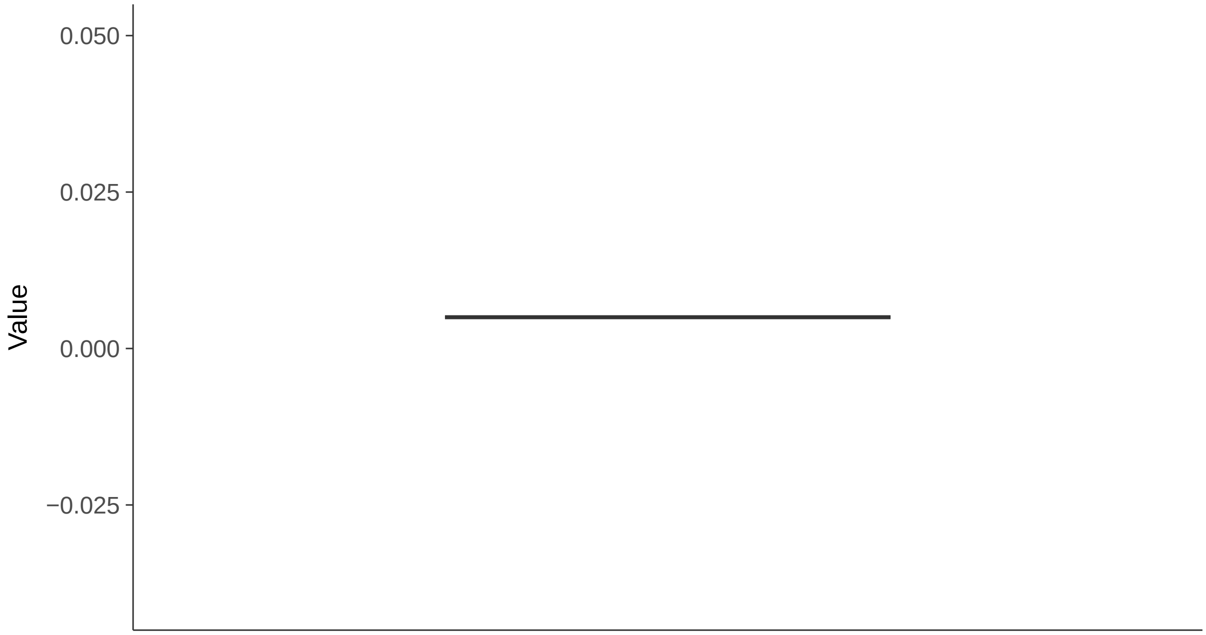
Histogram

Copper, MW-7B (mg/L)



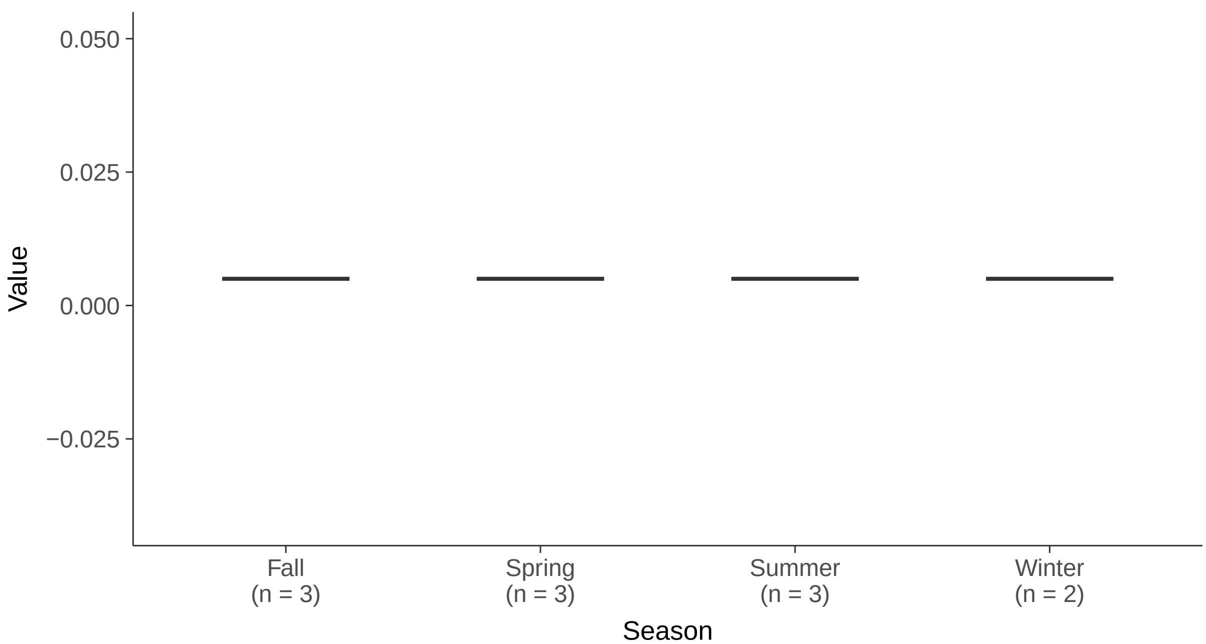
Boxplot

Copper, MW-7B (mg/L)



Boxplot by Season

Copper, MW-7B (mg/L)



Part 115: Iron, MW-7B

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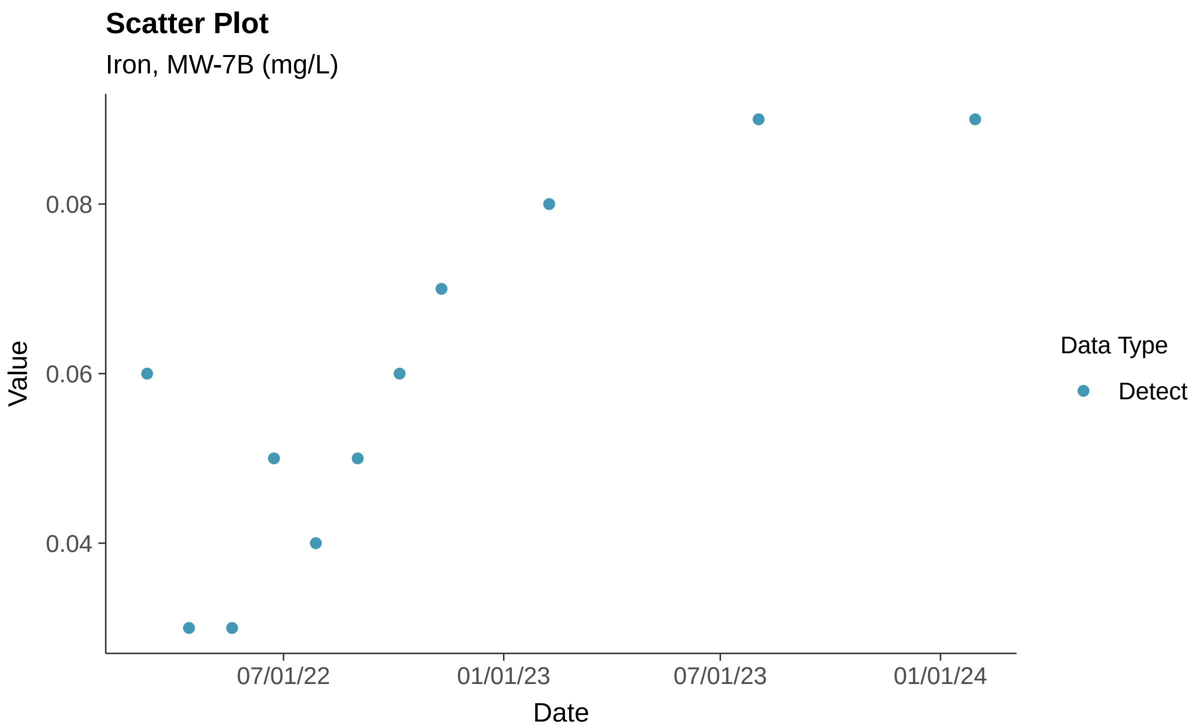

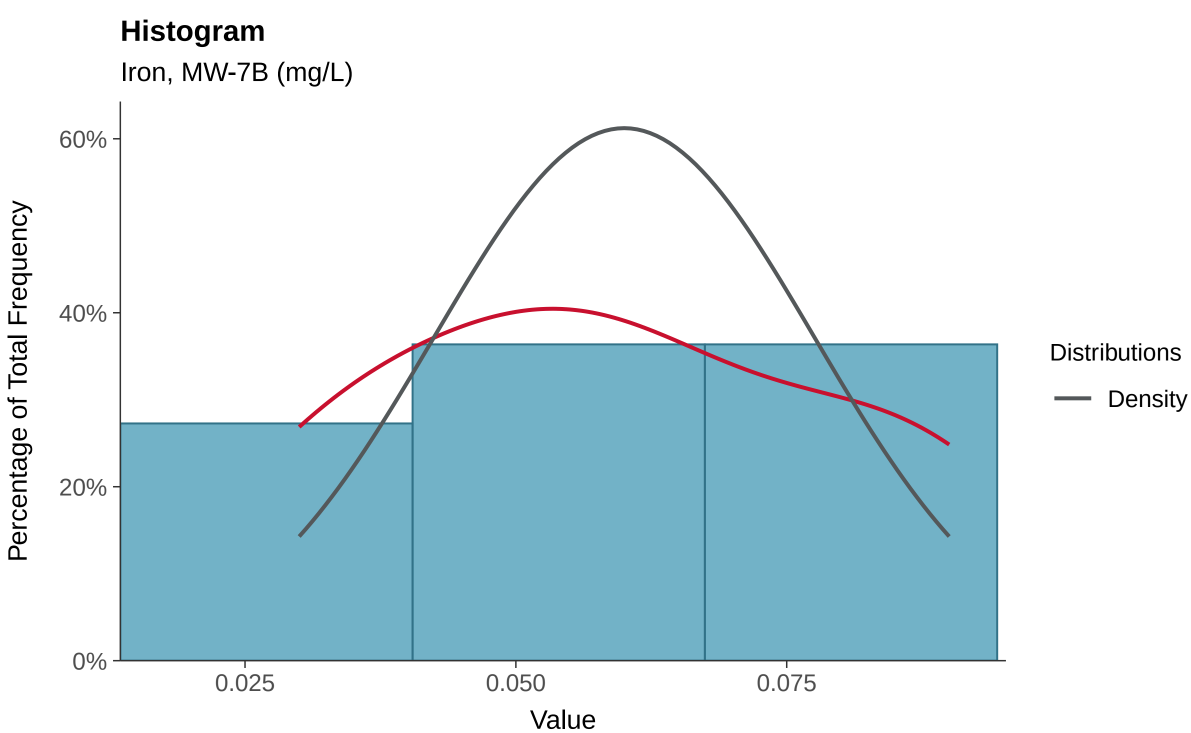

Boxplot

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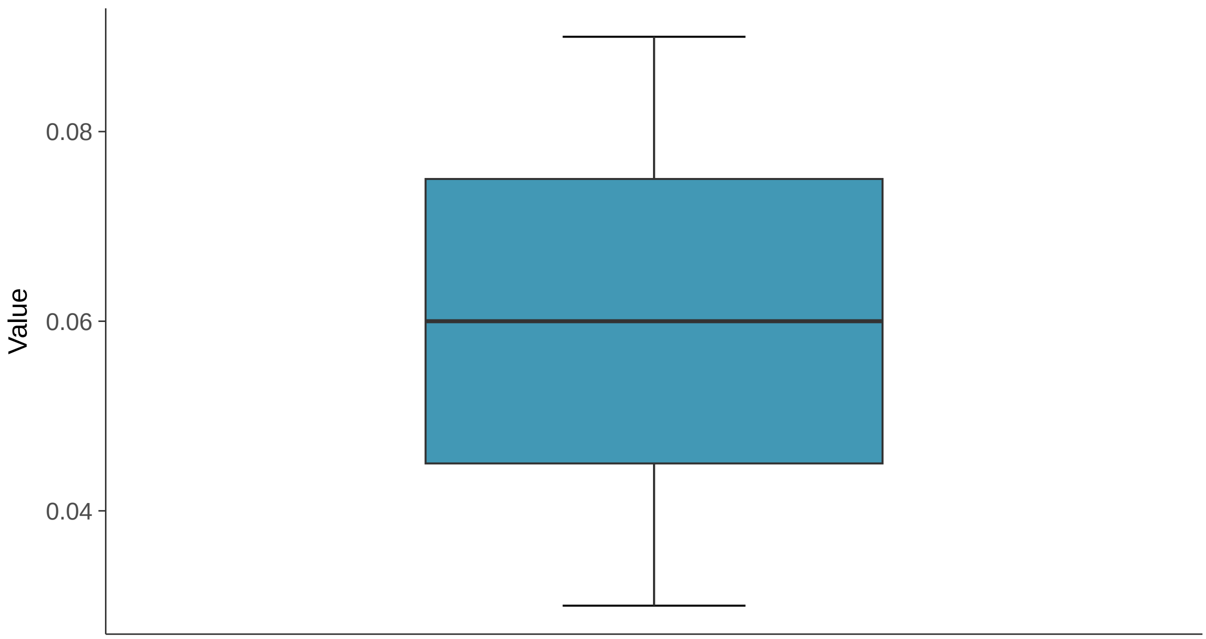
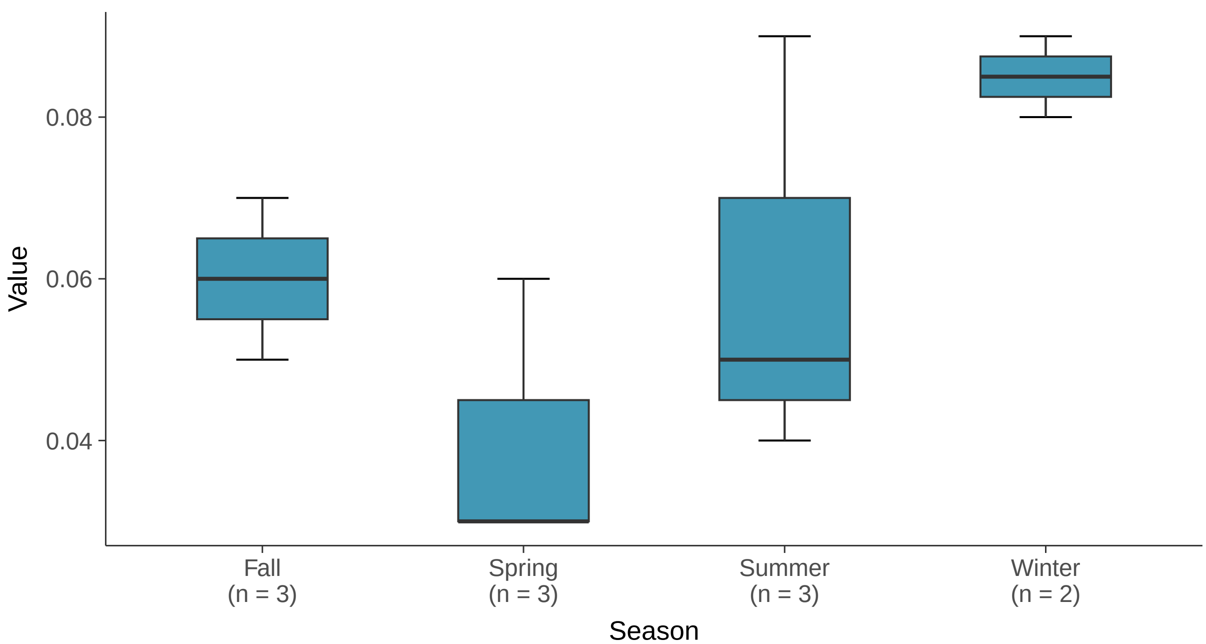
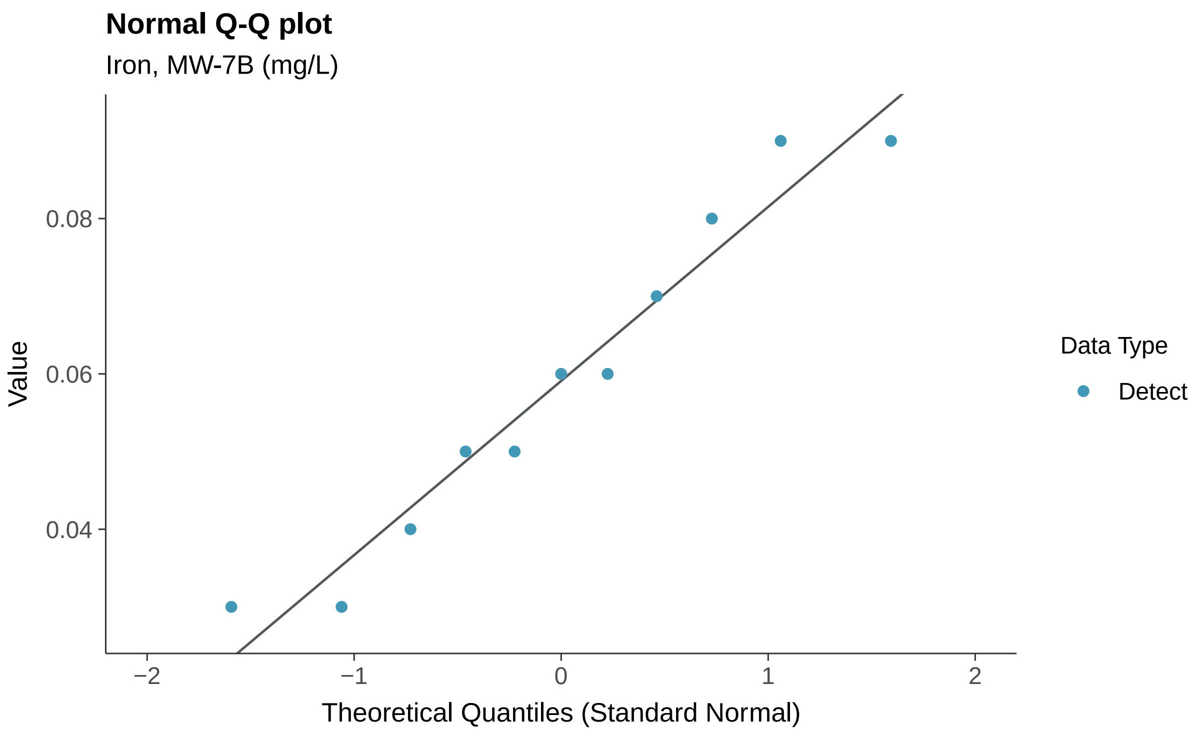


Boxplot by Season

Iron, MW-7B (mg/L)




Normal Q-Q plot
Iron, MW-7B (mg/L)
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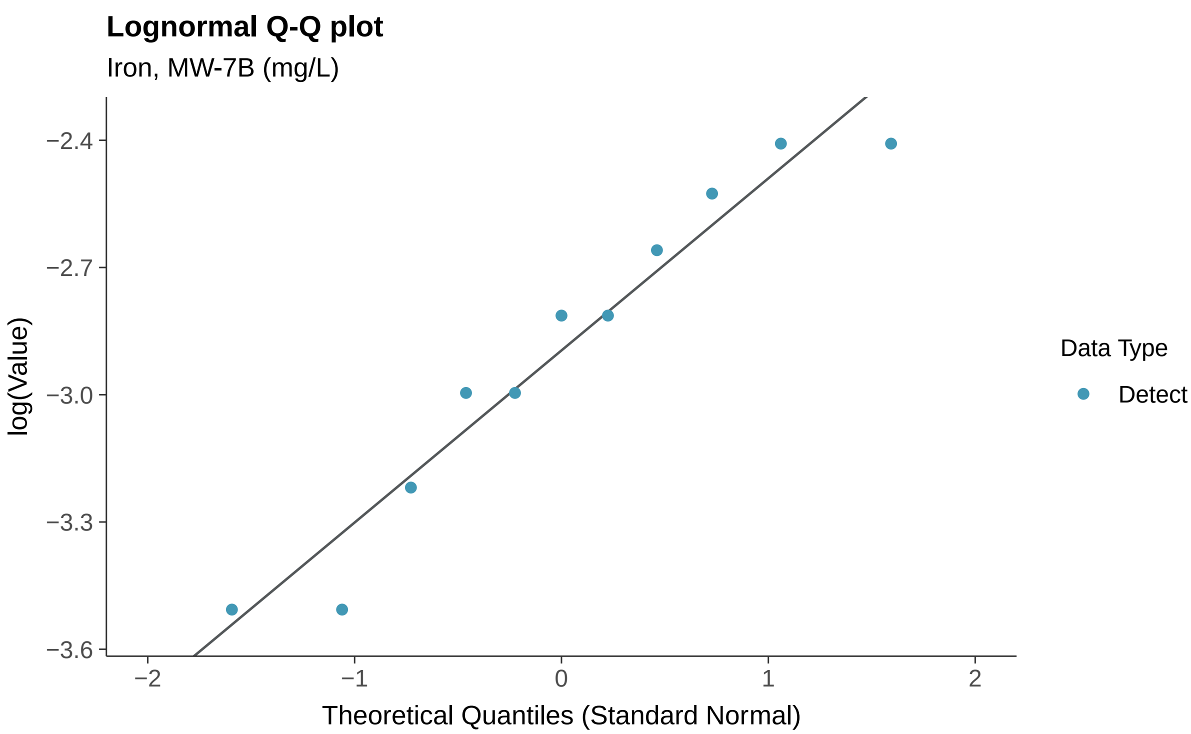
−2
−1
0
1
2
Theoretical Quantiles (Standard Normal)
Data Type
Detect


Lognormal Q-Q plot
Iron, MW-7B (mg/L)
log(Value)
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−1
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2
Theoretical Quantiles (Standard Normal)
Data Type
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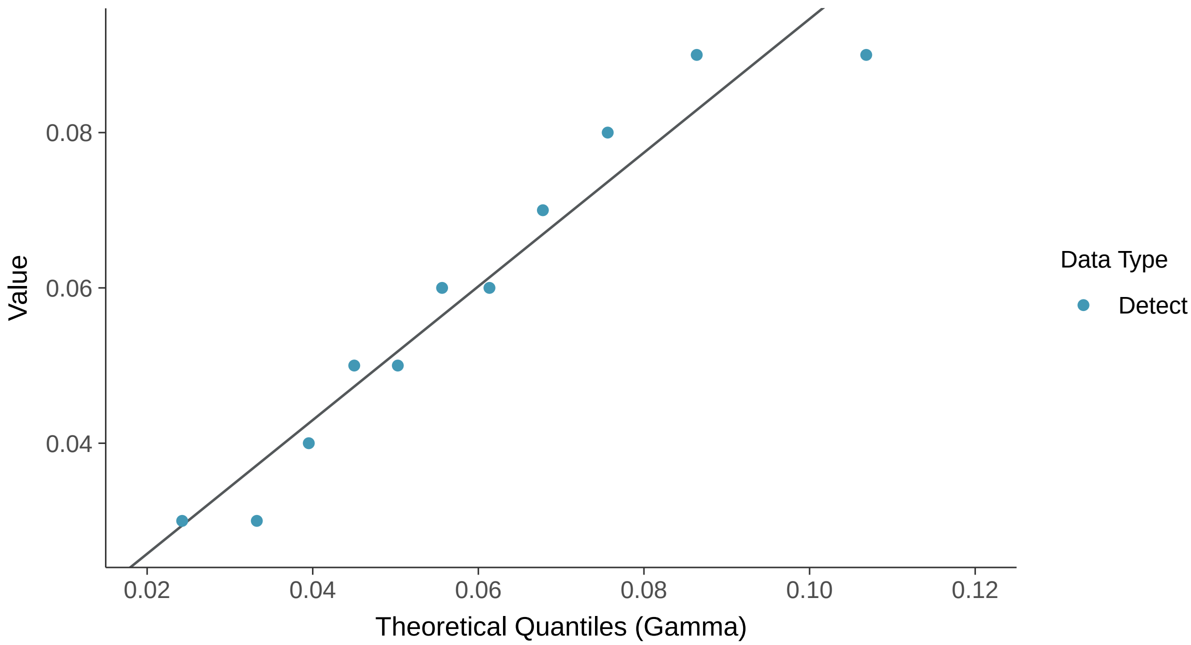
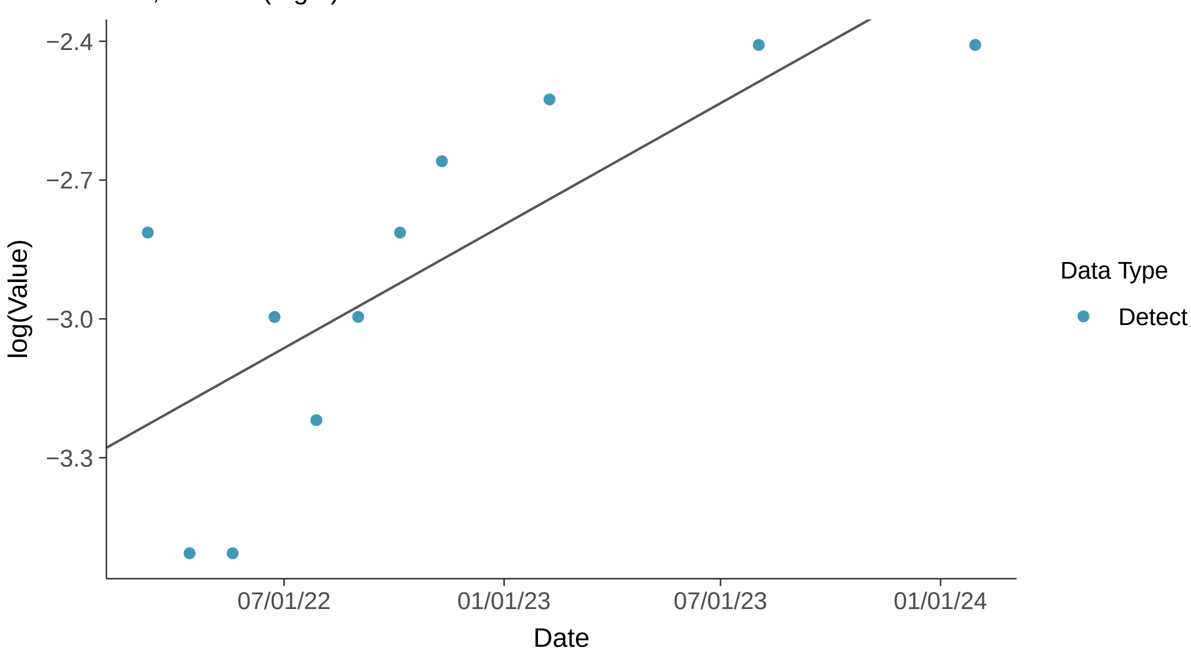
Gamma Q-Q plot

Iron, MW-7B (mg/L)



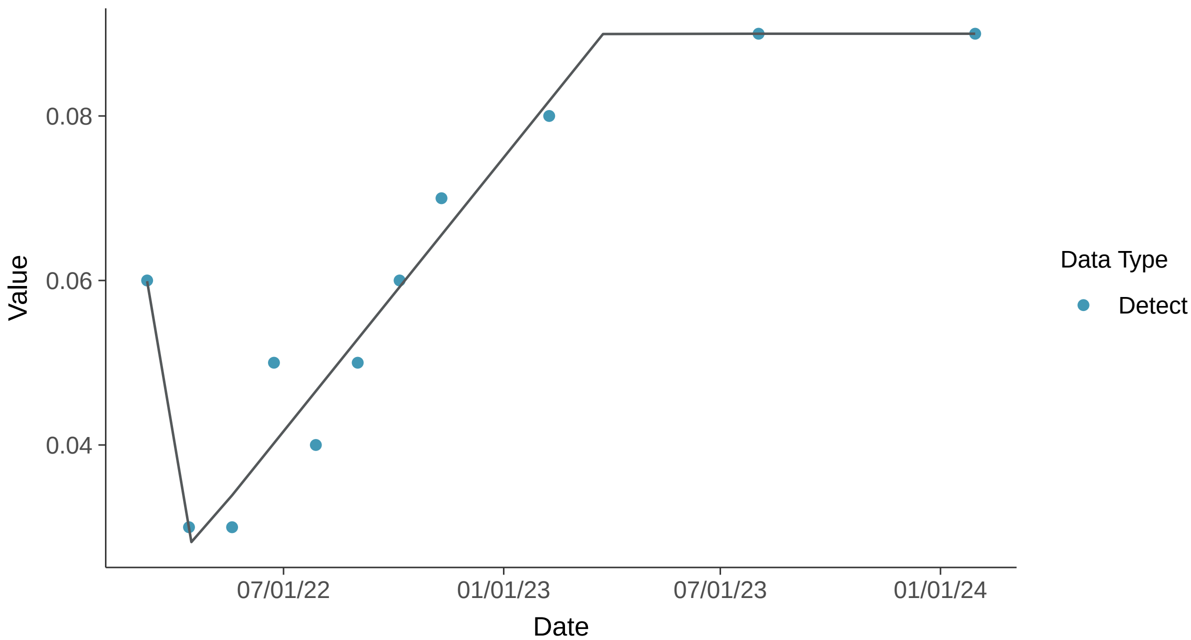
Trend Regression: Lognormal MLE

Iron, MW-7B (mg/L)



Trend Regression: Piecewise Linear-Linear-Linear

Iron, MW-7B (mg/L)



Part 115: Nickel, MW-7B

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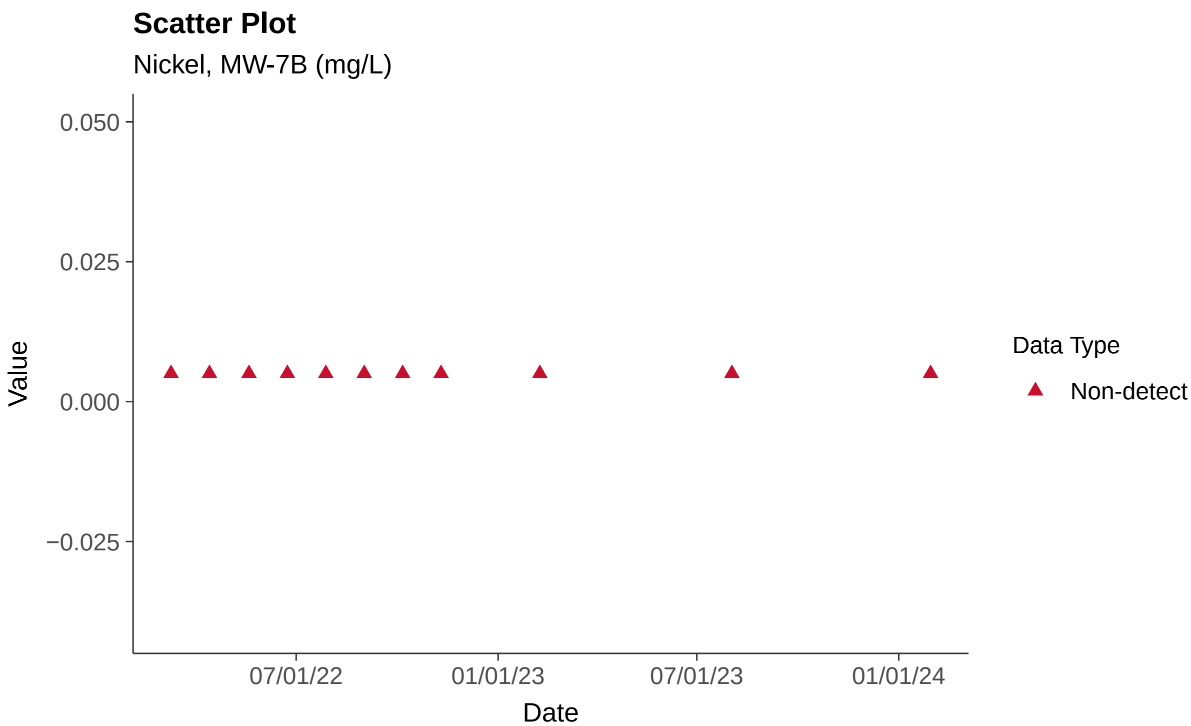
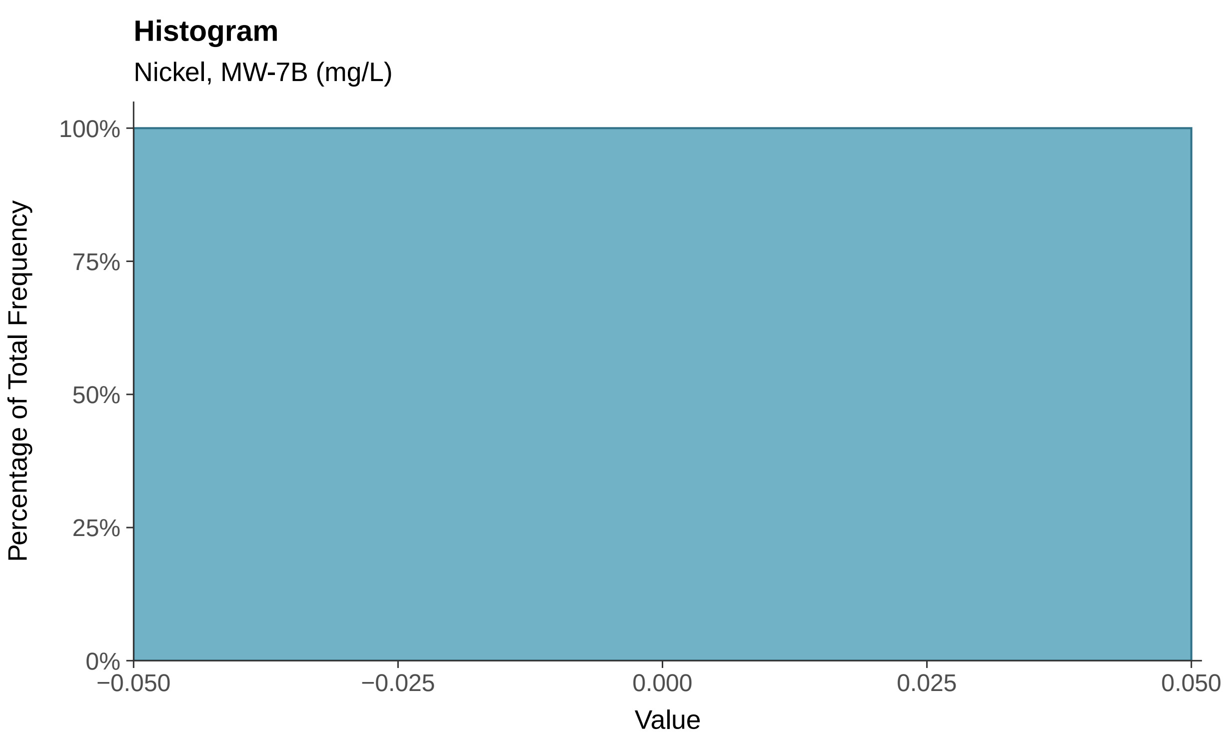
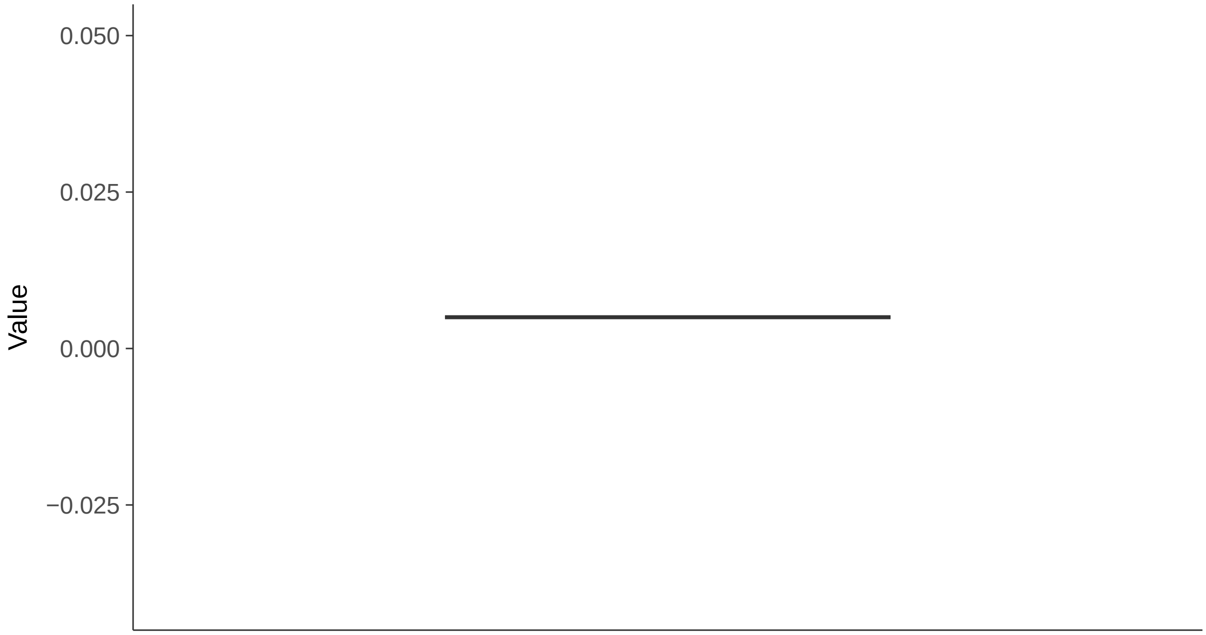




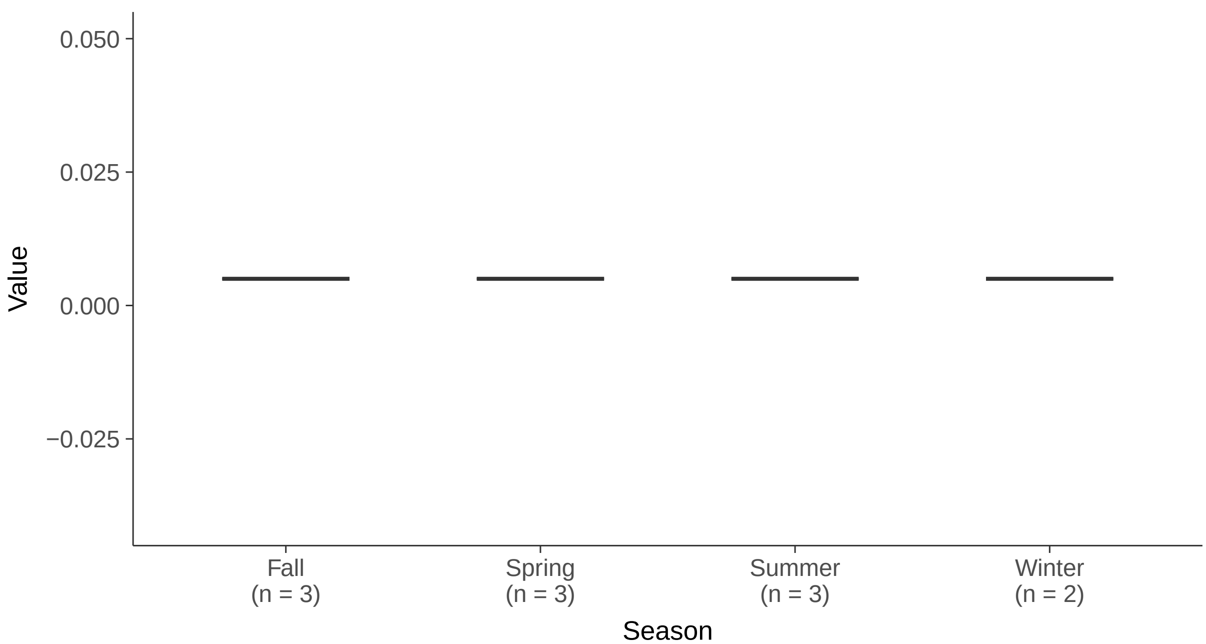
Boxplot

Nickel, MW-7B (mg/L)



Boxplot by Season

Nickel, MW-7B (mg/L)

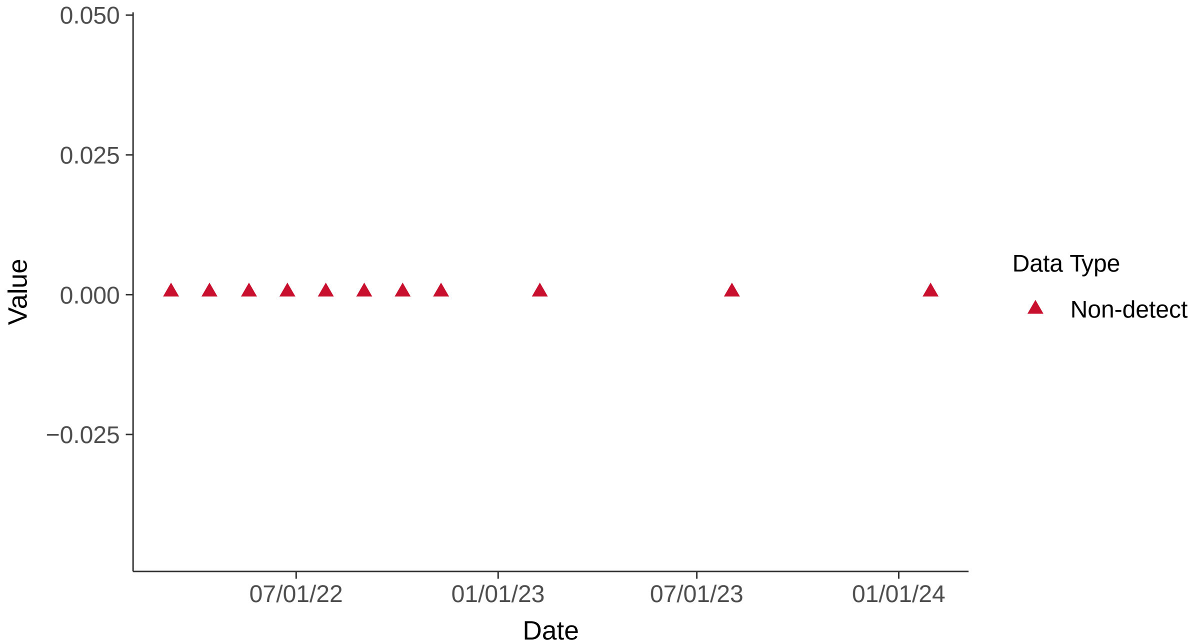


Part 115: Silver, MW-7B

ID: 7B_5_40

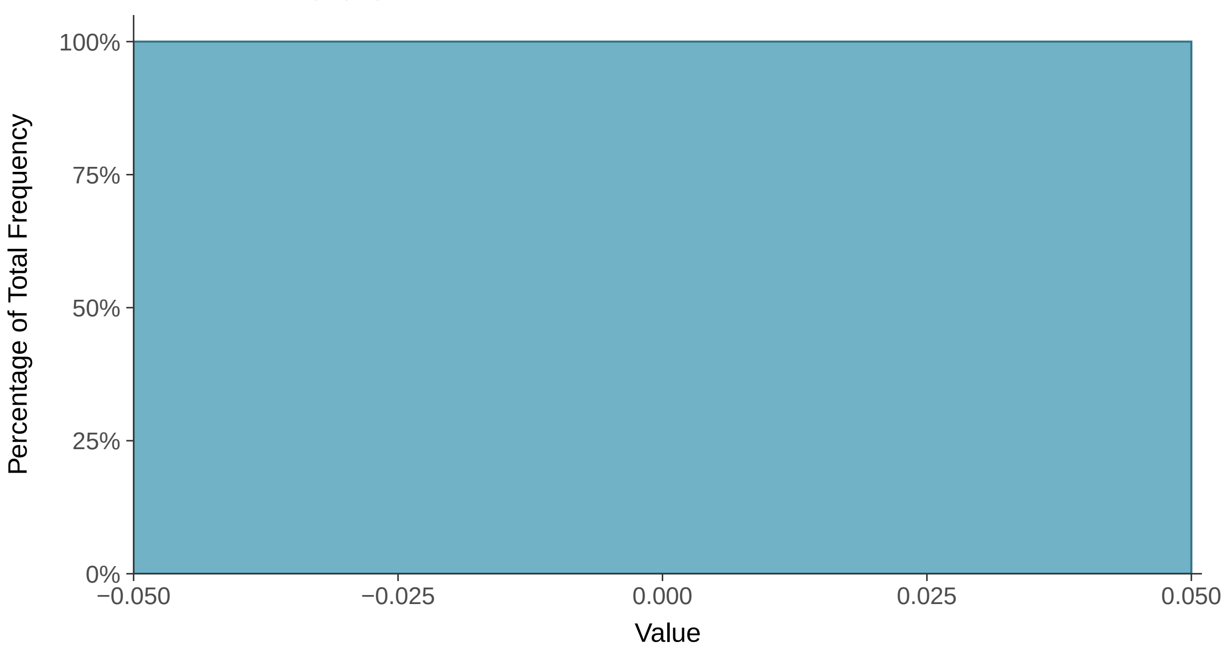
Scatter Plot

Silver, MW-7B (mg/L)



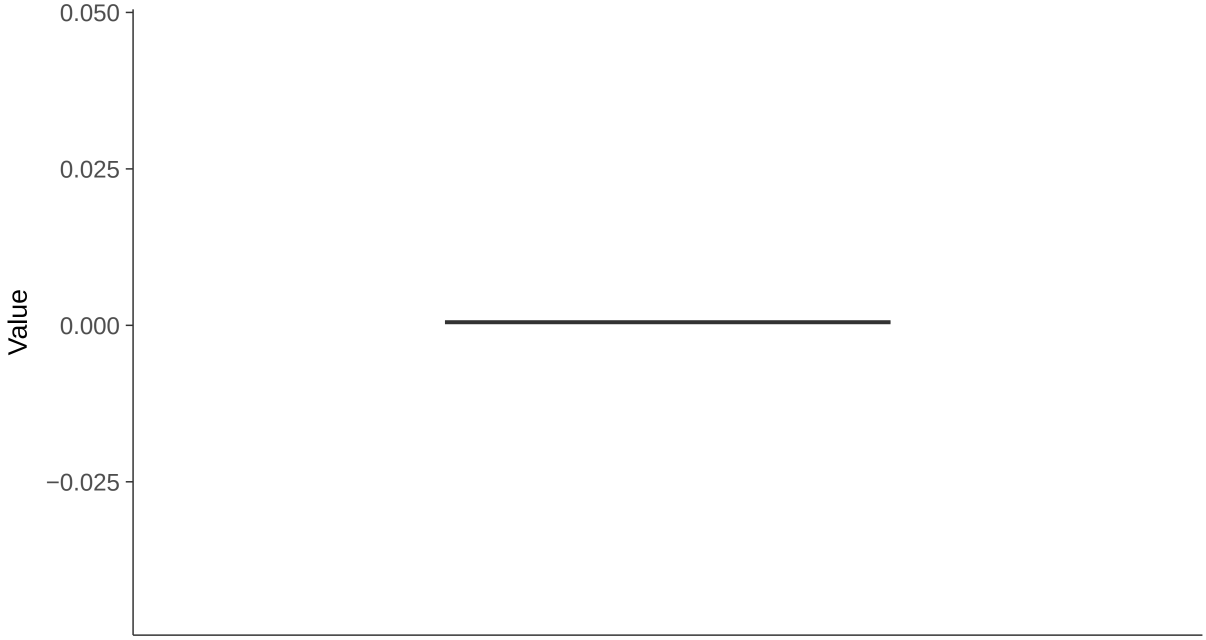
Histogram

Silver, MW-7B (mg/L)



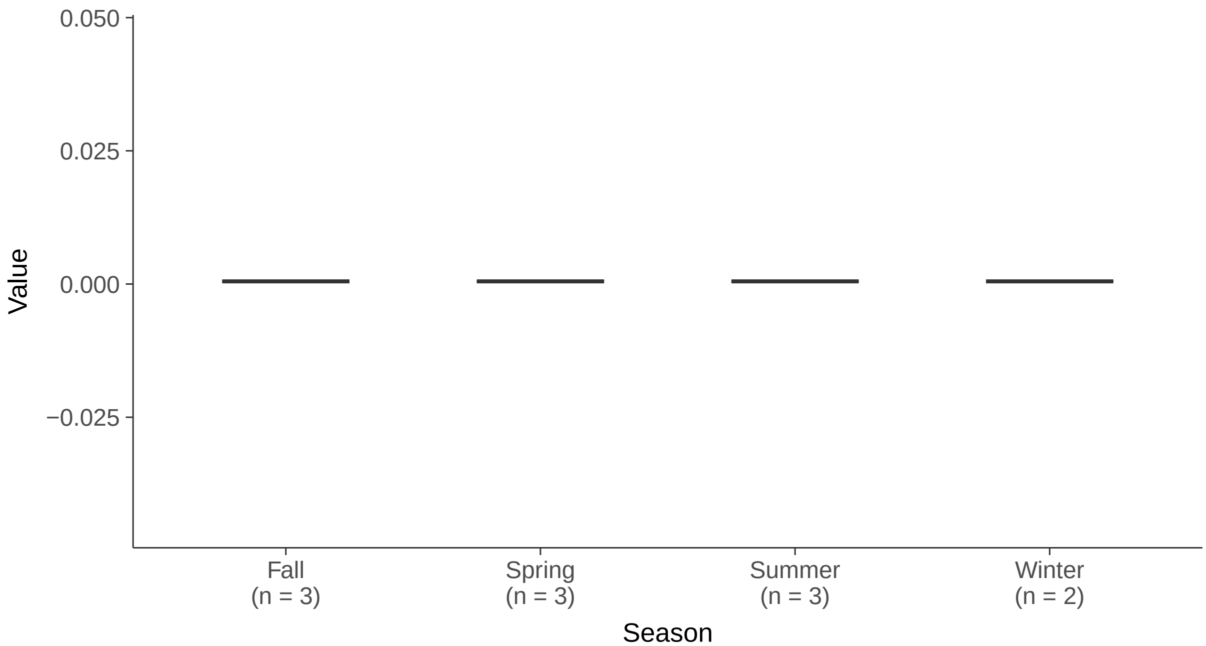
Boxplot

Silver, MW-7B (mg/L)



Boxplot by Season

Silver, MW-7B (mg/L)

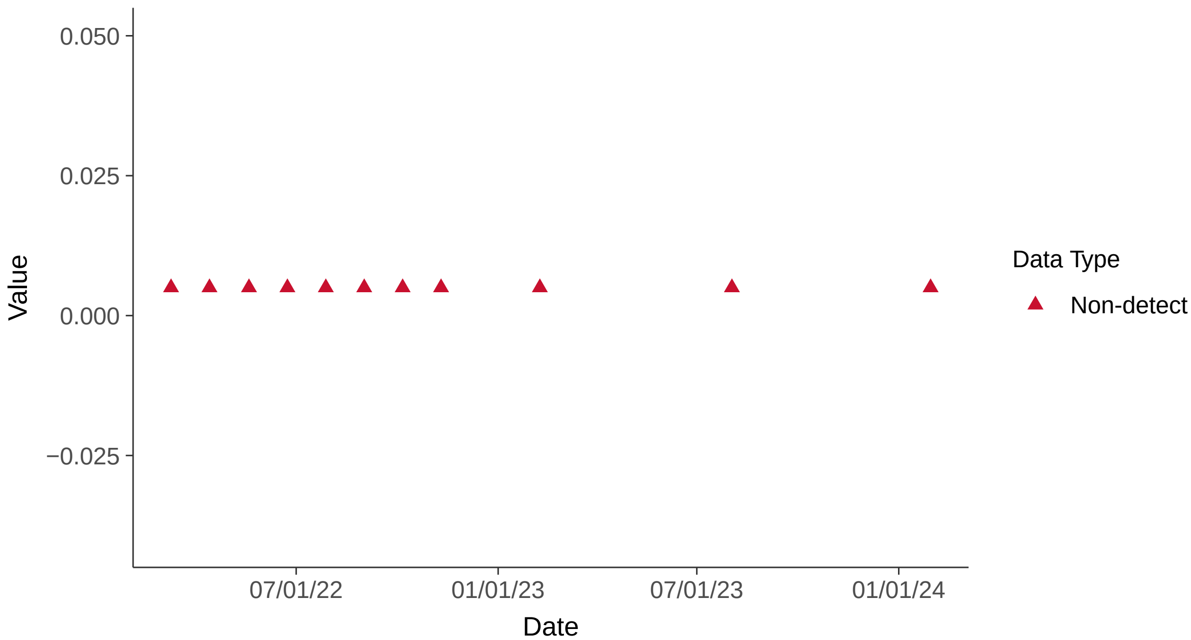


Part 115: Vanadium, MW-7B

ID: 7B_5_41

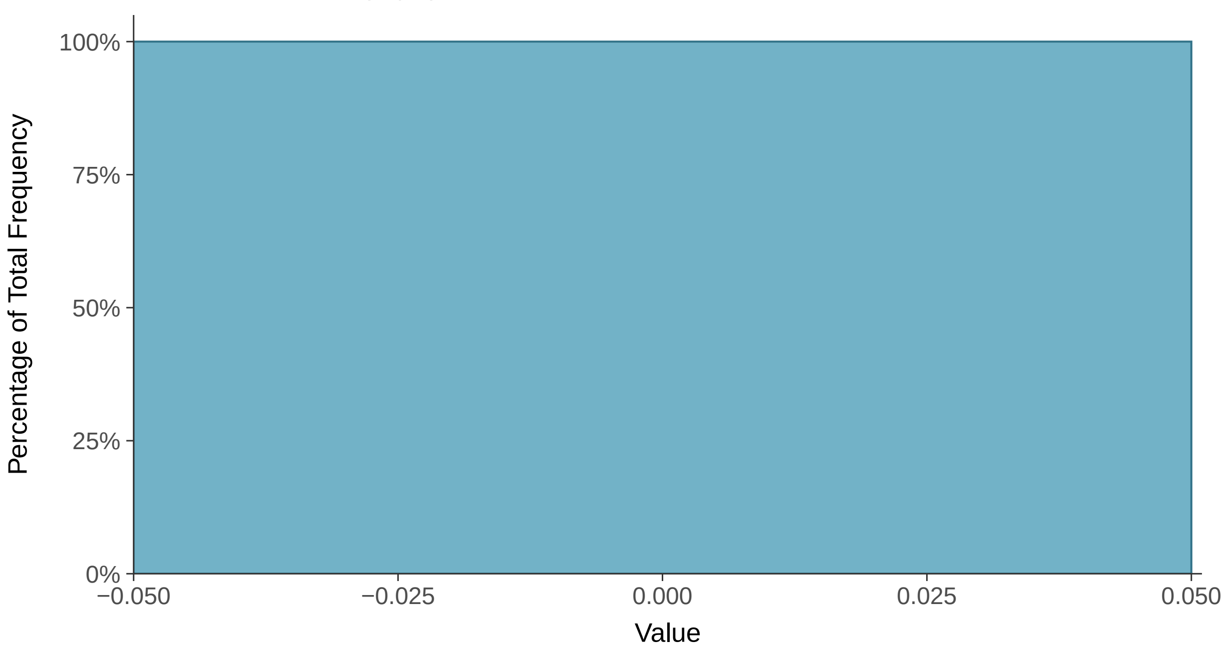
Scatter Plot

Vanadium, MW-7B (mg/L)



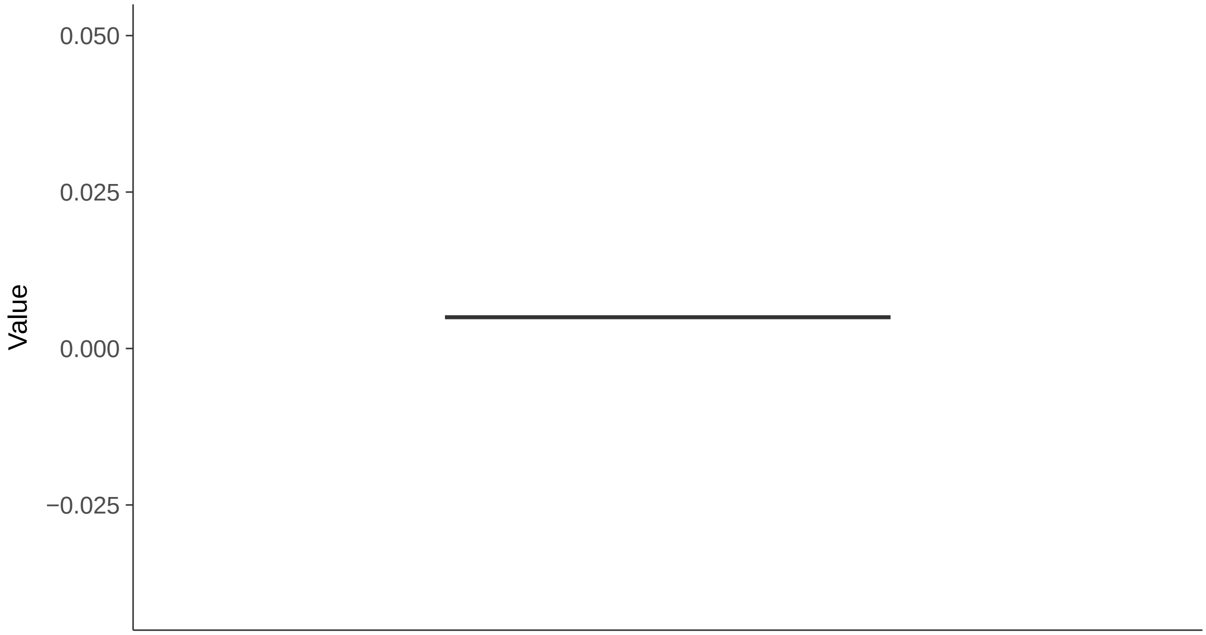
Histogram

Vanadium, MW-7B (mg/L)



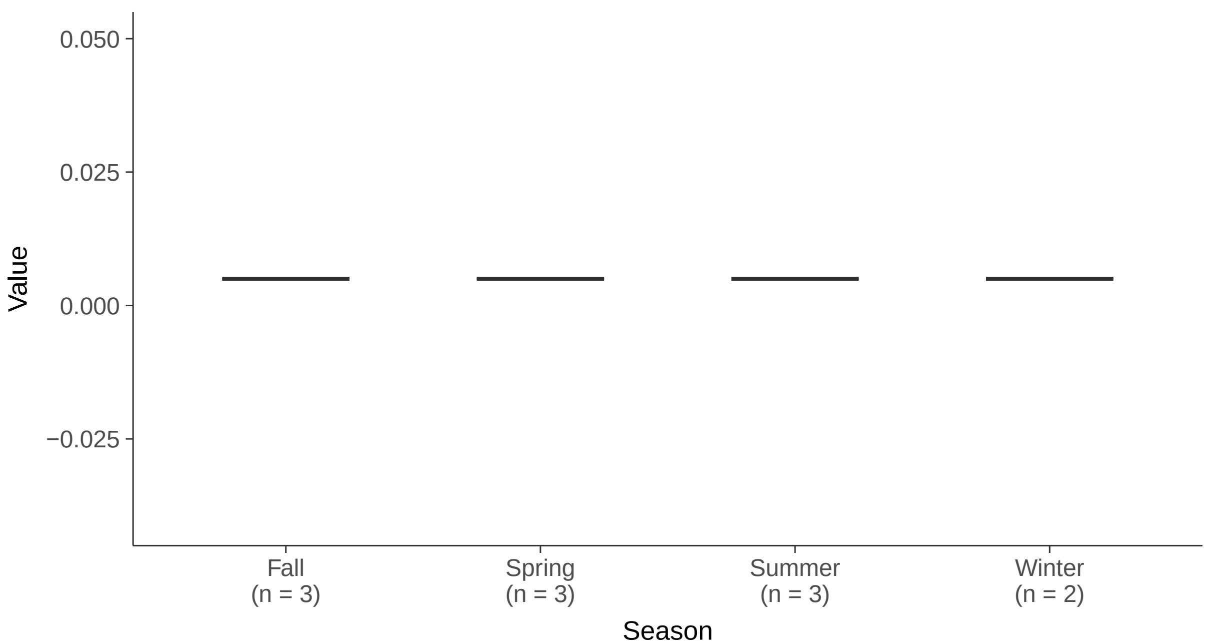
Boxplot

Vanadium, MW-7B (mg/L)



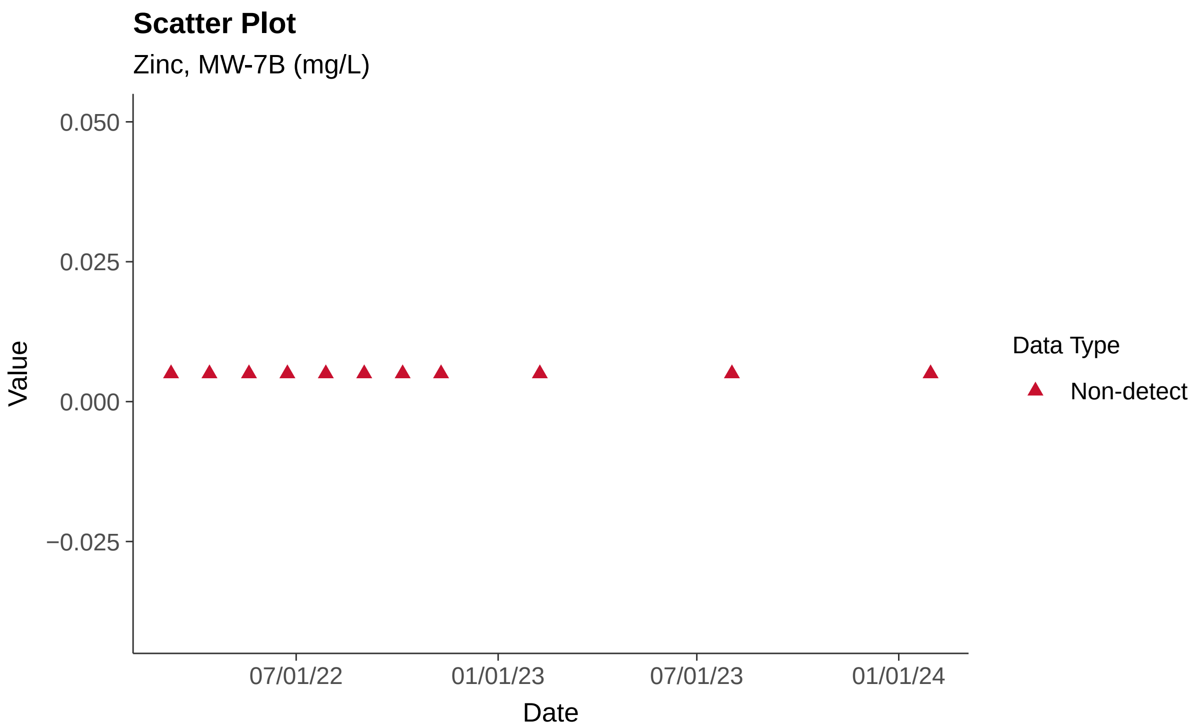
Boxplot by Season

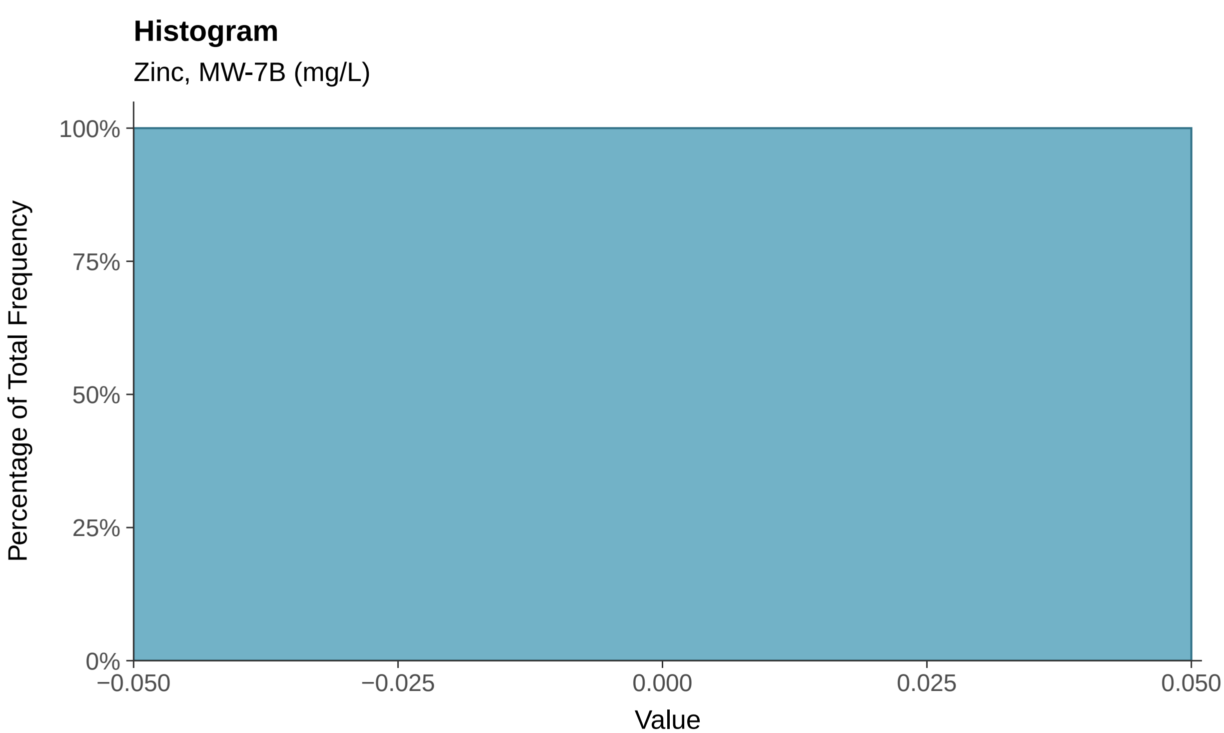
Vanadium, MW-7B (mg/L)



Part 115: Zinc, MW-7B

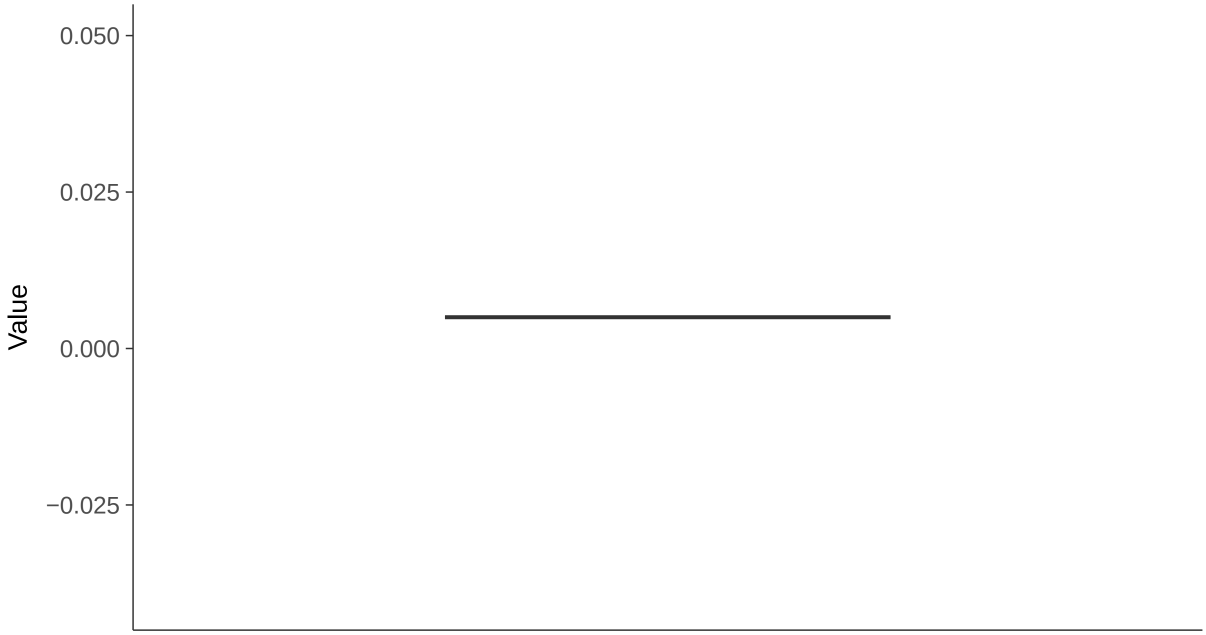
ID: 7B_5_42





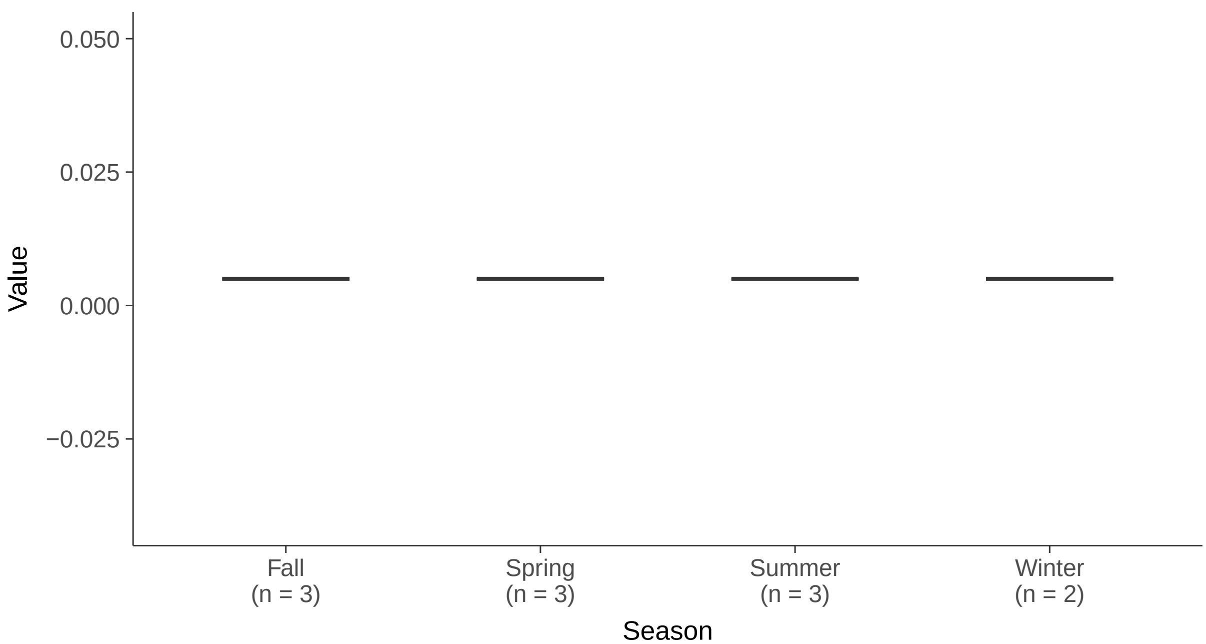
Boxplot

Zinc, MW-7B (mg/L)



Boxplot by Season

Zinc, MW-7B (mg/L)



Appendix E

Ash and Groundwater Isotope Investigation

Memo

Date: Sunday, July 28, 2024

To: Lori Myott, Lansing Board of Water & Light

From: Lara Zawaideh, HDR Michigan, Inc.

Subject: Erickson Power Station CCR Units

Ash and Groundwater Isotope Investigation

The U.S. Environmental Protection Agency's (EPA) final Coal Combustion Residuals (CCR) Rule 40 CFR §257 and Michigan's Part 115 Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451 (Part 115), establishes a comprehensive set of requirements for the management and disposal of CCR (or coal ash) in surface impoundments by electric utilities. The Lansing Board of Water & Light (BWL) Erickson Power Station (Erickson) contains a single coal-fired generator that was capable of producing 165 megawatts of electricity. It was permanently shut down November 2022. Erickson has three regulated CCR impoundments: the Forebay, Retention Basin, and Clear Water Pond (CWP) (**Figure 1**). The three CCR impoundments are currently inactive. The BWL is in the process of investigating the groundwater impacts from the CCR Impoundments and evaluating corrective measures alternatives for Erickson.

BWL has completed numerous tasks to further characterize the potential impact to groundwater for the assessment of corrective measures at Erickson. In 2023, one of those tasks was the sampling and analysis of isotopes in groundwater and ash to evaluate if isotopes could help distinguish naturally occurring boron from ash impacted groundwater. There is groundwater literature for the Lansing area that has demonstrated the presence of naturally occurring boron associated with the shale groundwater aquifer (Rowe, 1999; Rowe et al., 2021; Rowe, 2022; Slayton, 1982; Ravenscroft and McArthur, 2004). The bedrock aquifer beneath Erickson Station and also in the area of private wells that were sampled by BWL has shale and sandstone lithology. The isotopic signature of boron coming from coal ash is typically different from naturally occurring boron, which means it has the potential to be used as a tracer (Ruhl et al, 2014). Knowing that there is potential for the boron concentrations observed in bedrock groundwater to be from naturally occurring sources and not the CCR impoundments, the waters were analyzed for isotopic ratios to evaluate if there was a different isotopic signature of naturally occurring boron in the shale of the Saginaw aquifer versus boron in the shallow groundwater from the Erickson CCR impoundments.

This data was first presented in the July 2023 Erickson Power Station Semiannual Progress Report for Selection of Remedy per 40 CFR §257.97(a); however, after receipt of comments from EGLE, this memo provides more detail for the isotope analyses.

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Figure 1. CCR Units and Monitoring Wells

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Methods

BWL sampled monitoring wells in February 2023 for assessment monitoring and the boron concentrations from that sample event were used for the data table and graphing in **Table 1** and **Figure 2**. The assessment monitoring groundwater is analyzed by Merit Laboratory. The laboratory reports are attached as **Attachment A**. Additionally in March 2023, 12 wells plus two duplicate samples were sampled to collect groundwater for isotope analysis and submitted to Covalent Metrology of Sunnyvale, California. Wells chosen to be sampled were collected from select glacial wells and bedrock background wells to represent the different conditions at the site, glacial versus bedrock groundwater, background groundwater, and wells that have been observed to be impacted by the CCR impoundment versus (e.g. downgradient of the CCR impoundments and multiple CCR constituents of interest with statistically significant exceedances of groundwater protection standards):

- Glacial Background Groundwater: MW-11, MW-12
- Glacial Impacted Groundwater: MW-2, MW-7, MW-7C
- Glacial Unimpacted Groundwater: MW-16A, MW-16B
- Bedrock Background Groundwater: MW-11B, MW-12B
- Bedrock Groundwater: MW-7B, MW-16C, MW-16D

In March 2023 ash was sampled from the Forebay and CWP CCR impoundments before impoundment closure was initiated. Two water samples were prepared from the ash from each impoundment, one leachate was prepared via Synthetic Precipitate Leaching Procedure (SPLP, SW-846 Method 1312), and one was prepared via centrifuge to capture pore water from the ash sample. Ash samples were submitted to Merit Laboratory for leachate/pore water preparation before submittal to the isotope laboratory. Due to miscommunication with the laboratory, the leachate and pore water samples were not analyzed for boron prior to shipment to Covalent. Therefore, the boron concentrations used in Table 1 are from the solids analysis of ash from the Forebay and CWP. Three ash samples from the Forebay had total boron concentrations ranging between 123 and 150 milligrams per kilogram (mg/kg), with an average of 132.7 mg/kg; and three ash samples from the CWP had concentrations of boron between 40.9 and 48.7 mg/kg with an average of 44.7 mg/kg. In order to convert the total solid concentration to a maximum leachate concentration, the “Rule of 20” is used where the leachate from a solid is typically assumed to be approximately 20 times less the solid concentration. Using the average total boron ash concentration and the “Rule of 20”, the Forebay and CWP coal ash leachate was estimated to be 6,630 and 2,240 ug/L, respectively (**Table 1**).

Groundwater and ash leachate and pore water samples were submitted under Chain of Custody to Covalent Metrology of Sunnyvale, California. Samples were analyzed for ^{7}Li, ^{11}B, ^{87}Rb, ^{86}Sr, $^{11}B/^{10}B$, and $^{87}Sr/^{86}Sr$. This memorandum is focusing on the boron isotopic results because there is more literature available regarding the boron isotopes in CCR than the lithium and strontium

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results. Covalent used calibration against Inorganic Ventures 71A standard, a 43 element ICP calibration standard, with a boron isotope distribution of 4.089. The B10 and B11 ratios were calibrated by ion counts on the respective m/z lines given the total boron concentration of the standard and the isotope distribution. Covalent Laboratory boron isotope results are in **Table 1** and the laboratory report is included in Attachment A. Samples identified as MWF-12B and MWT-16-A in the covalent report are field duplicate samples for groundwater samples from MW-12B and MW-16A. The reported $^{11}B/^{10}B$ ratios are included in **Table 1** as are the δ11B values. Boron isotopic composition is typically reported as $\delta^{11}B$, which is the $^{11}B/^{10}B$ ratio of a sample relative to the $^{11}B/^{10}B$ ratio of the laboratory standard. The δ11B calculation is:

$$\delta^{11}B=\{[(^{11}B/^{10}B)_{sample}-(^{11}B/^{10}B)_{standard}]/(^{11}B/^{10}B)_{standard}\}*1000$$

These **Table 1** reported values are graphed in **Figure 2**.

Table 1. Boron Isotope Results and Boron Concentrations

Sample I.D.	Covalent Lab I.D.	Aquifer or Impoundment	^{11}B (ng/ml)	($^{11}B/^{10}B$) (ng/ml)	δ(11B)	Boron Concentration February 2023 (ug/L)
Boron Standard		--	--	4.089	--	--
MW-2	MW-2 3-22-23 1140	Glacial Impacted	4180	4	-21.77	5100
MW-7	MW-7 3-21-23 1732	Glacial Impacted	1720	4.02	-16.87	1360
MW-7B	MW-7B 3-21-23 1830	Bedrock	3110	4.15	14.92	3000
MW-7C	MW-7C 3-21-23 1926	Glacial Impacted	6440	4.03	-14.43	6460
MW-11 (Bckg)	MW-11 3-22-23 1304	Glacial Background	143	4.06	-7.09	200
MW-11B (Bckg)	MW-11B 3-22-23 1404	Bedrock Background	1100	4.11	5.14	820
MW-12 (Bckg)	MW-12 3-22-23	Glacial Background	71.9	4.12	7.58	70
MW-12B (Bckg)	MW-12B 3-22-23 1019	Bedrock Background	3610	4.16	17.36	3330
MW-16A	MW-16A 3-21-23 1108	Glacial Unimpacted	111	4.08	-2.20	210
MW-16B	MW-16B 3-21-23 1444	Glacial Unimpacted	153	4.09	0.24	120
MW-16C	MW-16C 3-21-23 1317	Bedrock	464	4.08	-2.20	400
MW-16D	MW-16D 3-21-23 1406	Bedrock	5040	4.14	12.47	4650
FB Ash 2 Pore Water	L303223-01A	Forebay	618	3.77	-78.01	6630
CWP Ash 2 Pore Water	L303223-02A	Clear Water Pond	1110	4.04	-11.98	2240
FB Ash 1 SPLP	L30322-01A	Forebay	1350	4.02	-16.87	6630
CWP Ash 1 SPLP	L30322-02A	Clear Water Pond	129	4.01	-19.32	2240

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Results

As shown in **Figure 2**, the CCR leachates had lower δ ^{11}B (<-10‰), which is consistent with the literature study on boron isotopic characterization of CCR that showed CCR leachate were lower (Ruhl et al, 2014). Also shown in **Figure 2**, the δ ^{11}B at glacial wells impacted by the CCR impoundments (MW-2, MW-7, and MW-7C) are also lower (<-10‰). Background wells (MW-11, MW-11B, MW-12, and MW-12B) and unimpacted glacial wells (MW-16A and MW-16B) have higher δ ^{11}B (>10‰). Therefore, the data indicate that δ ^{11}B higher than -10‰ appear to indicate naturally occurring boron. All of the bedrock wells sampled had δ ^{11}B greater than -10 and had the highest measured δ ^{11}B (-2.2 and 17.4‰) indicating that the boron isotopes in the bedrock groundwater are more similar to background groundwater and unimpacted groundwater than to coal ash pore water or leachate and impacted groundwater from the CCR units.

The δ ^{11}B values reported in this study for shale bedrock groundwater (-2.2 and 17.4‰) are consistent with those reported by Noireaux et al., 2021 (between 2.2 and 17.4‰). It is recognized that this study did not use the same standards as those used in the cited studies and that may be a limitation in the direct comparison; however relative comparisons with this study and Ruhl show consistent results.

Ruhl et al., 2014 found that the δ ^{11}B increased with depth in pore water at a CCR impacted lake, likely because ^{10}B may preferentially adsorb onto sediment as contamination moves through pores. Therefore, in addition to boron source, depth, distance from source, and lithology is also considered. For example, the positive δ ^{11}B signal in MW-7B should be considered for increasing ^{10}B sorption with increasing depth, rather than a different source of boron.

MW-7C is screened in glacial silt above the bedrock and has a boron concentration (6.46 mg/L) that is elevated and appears to be elevated due to impact from the CCR impoundments, given that it also has high concentrations of other constituents of concern from the CCR, including calcium, lithium, molybdenum, sulfate, and TDS. Given the high boron concentration at MW-7C, if ^{10}B sorption were increasing with depth, it would be expected that the δ ^{11}B value would be higher at MW-7C, which is not the case, the δ ^{11}B value is the same as that from the ash leachate and appears to be further indication that the boron at MW-7C is from the CCR. Additionally, well MW-7B, which is at the same distance from the impoundments and is screened deeper in the shale bedrock has a boron concentration of 3.00 mg/L. If that boron were from the CCR impoundments rather than the shale, the δ ^{11}B values would be unusually low (e.g. <-10‰), which is not the case. The δ ^{11}B value at MW-7B is high, measured as the second highest δ ^{11}B value measured at 14.9‰.

If an observed positive δ ^{11}B signal could be due to increasing adsorption of ^{10}B to clay minerals in the shale or glacial materials, with depth and distance from the CCR source, it would be expected that there would be a difference between the upgradient and downgradient δ ^{11}B signals in bedrock wells, which is not the case. All five of the bedrock wells had quite similar δ ^{11}B values, regardless of their location upgradient or downgradient of the CCR impoundments, and regardless of the distance from the CCR impoundments. The δ ^{11}B values were consistently the highest δ ^{11}B values measured at Erickson and were between -2.2 and 17.4‰.

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Further, the two bedrock wells with the lowest $\delta^{11}B$ value also have the least shale in the well screened interval and the three wells with the highest $\delta^{11}B$ values (>12.5‰) also have the most shale in the well screened interval (80 to 100% of the screen is in shale).

Based on the groundwater flow direction flowing east under the impoundments and then turning north to follow Carrier Creek Drainage and not flow towards wells MW-16A-D, it is inappropriate to compare those wells with distance from the impoundments. But even if groundwater could get to MW-16D from the impoundments, and the boron concentration at MW-16D (4.65 mg/L) was from the CCR impoundments, it would be expected that other CCR constituents of concern would also be observed at MW-16D along with the boron, including calcium, lithium, molybdenum, sulfate, and TDS, which is not the case. These other CCR parameters are not observed at MW-16D, and the $\delta^{11}B$ at MW-16D is quite high, 12.4‰, similar to the glacial background wells, bedrock background wells, and unimpacted glacial wells. The only distance from the impoundments to the wells that could be compared would be MW-2 and MW-7, which are from approximately zero to approximately 370 feet from the Former Impoundment. Both of these wells have elevated concentrations of boron and additional CCR constituents of concern, making groundwater at both wells appear to be impacted from the CCR. Both MW-2 and MW-7 have negative $\delta^{11}B$ values, -21.8 and -16.9 respectively, similar to ash leachate (-12.0 to -78.0‰). The closer well to the impoundment (MW-2) has the higher concentrations of boron and the more negative $\delta^{11}B$ value (-21.8‰). With only two points it is difficult to determined if the slightly higher $\delta^{11}B$ value at MW-7 is the result of increasing adsorption of ^{10}B to clay minerals with distance from the CCR source.

The results of the isotope analysis at Erickson are generally consistent with the Ruhl et al. (2014) and show negative isotopic ratios in for coal ash leachate and known coal ash impacted groundwater. Based on this, the positive boron isotopic ratios reported in the bedrock wells support the hypothesis that the boron in the shale aquifer is naturally occurring.

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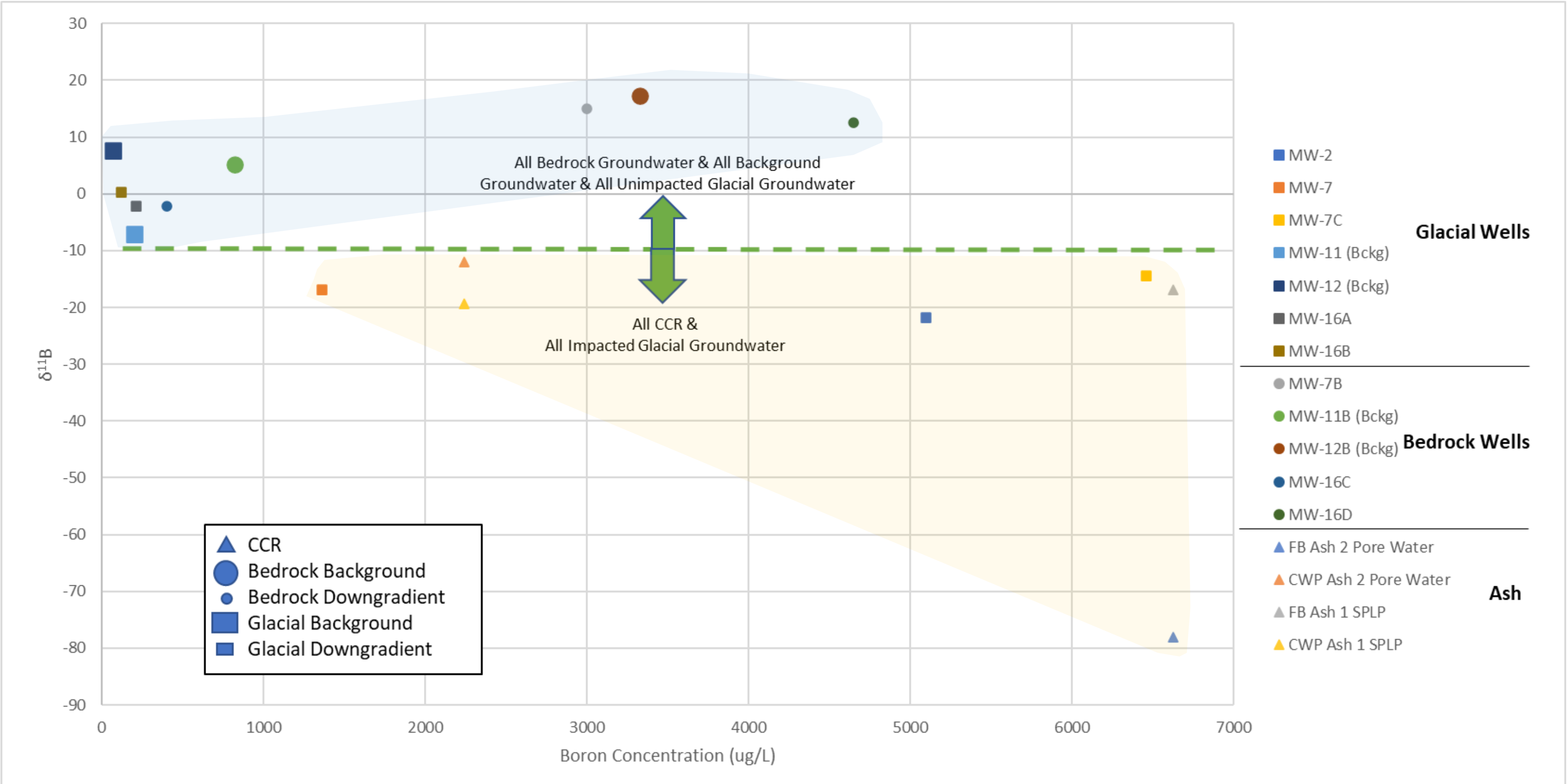

Figure 2. Boron Concentrations and Boron Isotope Ratios of Impoundment CCR, Groundwater from Erickson Wells in the Glacial Aquifer in Areas Known to be Impacted and Unimpacted by the CCR Impoundments, and Groundwater from the Bedrock Aquifer

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Attachment A

Laboratory Reports

Analytical Laboratory Report

Final Report

Report ID: S45134.01(02)
Generated on 03/13/2023
Replaces report S45134.01(01) generated on 02/10/2023

Report to
Attention: Jennifer Caporale
Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Report produced by
Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S45134.01-S45134.08
Project: Erickson AM MI Wells 1-6
Collected Date(s): 02/07/2023
Submitted Date/Time: 02/08/2023 15:45
Sampled by: Marc Wahrer
P.O. #:

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Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

All analyses completed

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
E245.1	EPA Method 245.1 Revision 3.0
E300.0	EPA Method 300.0 Revision 2.1 (1993)
SM2320B	Standard Method 2320 B 2011
SM2340C	Standard Method 2340 C 2011
SM2540C	Standard Method 2540 C 2015
SM2540D	Standard Method 2540 D 2015
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (8 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S45134.01	MW-1 L302144-01	Groundwater	02/07/23 13:52
S45134.02	MW-2 L302144-02	Groundwater	02/07/23 17:00
S45134.03	MW-3 L302144-03	Groundwater	02/07/23 10:18
S45134.04	MW-4 L302144-04	Groundwater	02/07/23 11:49
S45134.05	MW-5 L302144-05	Groundwater	02/07/23 17:35
S45134.06	MW-6 L302144-06	Groundwater	02/07/23 15:29
S45134.07	MWT-4 L302144-07	Groundwater	02/07/23 11:49
S45134.08	Field Blank L302144-08	Groundwater	02/07/23 07:55

Lab Sample ID: S45134.01
Sample Tag: MW-1 L302144-01
Collected Date/Time: 02/07/2023 13:52
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.1	IR
2	1L Plastic	None	Yes	3.1	IR
1	250ml Plastic	HNO3	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/23 12:54	CTV	
Metal Digestion	Completed	SW3015A	02/09/23 10:10	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/23 12:11, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	61	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	31	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 07:06, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	636	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/09/23 18:08, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	546	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/08/23 21:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	686	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 12:20, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	32	3	1	mg/L	4		

Metals

Method: E200.8, Run Date: 02/09/23 11:53, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	0.007	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.140	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.32	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	9.57	0.02	0.00192	mg/L	5	7439-89-6	

Lab Sample ID: S45134.01 (continued)
Sample Tag: MW-1 L302144-01

Method: E200.8, Run Date: 02/09/23 11:53, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.031	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/09/23 14:04, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	150	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	41.3	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	1.08	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	41.0	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/09/23 14:25, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/13/23 08:38, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45134.02
Sample Tag: MW-2 L302144-02
Collected Date/Time: 02/07/2023 17:00
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.1	IR
2	1L Plastic	None	Yes	3.1	IR
1	250ml Plastic	HNO3	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/23 12:54	CTV	
Metal Digestion	Completed	SW3015A	02/09/23 10:10	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/23 12:21, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	

Method: E300.0, Run Date: 02/09/23 13:31, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	88	25	0.32	mg/L	25	16887-00-6	
Sulfate	322	25	2.6	mg/L	25	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 07:10, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	454	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/09/23 18:10, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	708	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/08/23 21:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	1,050	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 12:20, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	22	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/09/23 11:59, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	0.002	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.037	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	5.10	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	

Lab Sample ID: S45134.02 (continued)

Sample Tag: MW-2 L302144-02

Method: E200.8, Run Date: 02/09/23 11:59, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	1.30	0.02	0.00192	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.050	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	0.015	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	0.020	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/09/23 14:05, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	204	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	50.2	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	0.87	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	68.3	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/09/23 14:28, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/13/23 08:38, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45134.03

Sample Tag: MW-3 L302144-03

Collected Date/Time: 02/07/2023 10:18

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.1	IR
2	1L Plastic	None	Yes	3.1	IR
1	250ml Plastic	HNO3	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/23 12:54	CTV	
Metal Digestion	Completed	SW3015A	02/09/23 10:10	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/23 12:31, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	

Method: E300.0, Run Date: 02/09/23 13:41, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	102	50	0.65	mg/L	50	16887-00-6	
Sulfate	727	50	5.2	mg/L	50	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 07:14, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	215	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/09/23 18:12, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	795	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/08/23 21:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	1,450	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 12:20, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/09/23 12:04, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	0.003	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.019	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	5.63	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	

Lab Sample ID: S45134.03 (continued)
Sample Tag: MW-3 L302144-03

Method: E200.8, Run Date: 02/09/23 12:04, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	2.03	0.02	0.00192	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.082	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	0.182	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/09/23 14:07, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	248	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	46.5	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	1.67	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	113	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/09/23 14:38, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/13/23 08:38, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45134.04
Sample Tag: MW-4 L302144-04
Collected Date/Time: 02/07/2023 11:49
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.1	IR
2	1L Plastic	None	Yes	3.1	IR
1	250ml Plastic	HNO3	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/23 12:54	CTV	
Metal Digestion	Completed	SW3015A	02/09/23 10:10	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/23 12:41, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	74	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	56	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 07:16, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	406	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/09/23 18:14, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	420	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/08/23 21:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	532	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 12:20, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/09/23 12:10, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	0.007	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.166	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.06	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	1.31	0.02	0.00192	mg/L	5	7439-89-6	

Lab Sample ID: S45134.04 (continued)
Sample Tag: MW-4 L302144-04

Method: E200.8, Run Date: 02/09/23 12:10, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.011	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/09/23 14:08, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	106	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	38.3	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	1.39	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	28.5	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/09/23 14:42, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/13/23 08:38, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45134.05
Sample Tag: MW-5 L302144-05
Collected Date/Time: 02/07/2023 17:35
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.1	IR
2	1L Plastic	None	Yes	3.1	IR
1	250ml Plastic	HNO3	Yes	3.1	IR
1	250ml Plastic	None	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/23 12:54	CTV	
Mercury Digestion	Completed	E245.1	02/09/23 12:54	CTV	
Metal Digestion	Completed	SW3015A	02/09/23 10:10	CCM	
Metal Digestion	Completed	SW3015A	02/09/23 10:10	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/23 14:41, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	411	25	2.6	mg/L	25	14808-79-8	

Method: E300.0, Run Date: 02/09/23 12:51, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	56	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	

Method: SM2320B, Run Date: 02/10/23 07:18, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	320	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/09/23 18:16, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	629	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/08/23 21:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	984	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 12:20, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	21	3	1	mg/L	1.33		

Metals

Method: E200.8, Run Date: 02/09/23 12:13, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.040	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	

Lab Sample ID: S45134.05 (continued)
Sample Tag: MW-5 L302144-05

Method: E200.8, Run Date: 02/09/23 12:13, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Boron	3.53	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	0.53	0.02	0.00192	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.083	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	0.055	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	0.006	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	0.005	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/09/23 12:17, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony, Dissolved*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	f
Arsenic, Dissolved	Not detected	0.002	0.000255	mg/L	5	7440-38-2	f
Barium, Dissolved	0.036	0.005	0.000162	mg/L	5	7440-39-3	f
Beryllium, Dissolved	Not detected	0.001	0.000215	mg/L	5	7440-41-7	f
Boron, Dissolved	3.26	0.04	0.00175	mg/L	5	7440-42-8	f
Cadmium, Dissolved	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	f
Chromium, Dissolved	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	f
Cobalt, Dissolved	Not detected	0.005	0.000108	mg/L	5	7440-48-4	f
Copper, Dissolved	Not detected	0.005	0.000377	mg/L	5	7440-50-8	f
Iron, Dissolved	Not detected	0.02	0.00192	mg/L	5	7439-89-6	f
Lead, Dissolved	Not detected	0.003	0.000190	mg/L	5	7439-92-1	f
Lithium, Dissolved*	0.085	0.005	0.00163	mg/L	5	7439-93-2	f
Molybdenum, Dissolved	0.055	0.005	0.000217	mg/L	5	7439-98-7	f
Nickel, Dissolved	0.005	0.005	0.000250	mg/L	5	7440-02-0	f
Selenium, Dissolved	Not detected	0.005	0.00209	mg/L	5	7782-49-2	f
Silver, Dissolved	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	f
Thallium, Dissolved	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	f
Vanadium, Dissolved	Not detected	0.005	0.000139	mg/L	5	7440-62-2	f
Zinc, Dissolved	Not detected	0.005	0.000730	mg/L	5	7440-66-6	f

Method: E200.8, Run Date: 02/09/23 14:10, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	187	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	42.3	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	4.44	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	57.4	0.50	0.00850	mg/L	5	7440-23-5	

Method: E200.8, Run Date: 02/09/23 14:11, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium, Dissolved*	176	0.50	0.0435	mg/L	5	7440-70-2	f
Magnesium, Dissolved	39.9	0.50	0.0120	mg/L	5	7439-95-4	f

f-Filtered and preserved in lab

Lab Sample ID: S45134.05 (continued)

Sample Tag: MW-5 L302144-05

Method: E200.8, Run Date: 02/09/23 14:11, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Potassium, Dissolved	4.06	0.50	0.0230	mg/L	5	7440-09-7	f
Sodium, Dissolved	52.3	0.50	0.00850	mg/L	5	7440-23-5	f

Method: E245.1, Run Date: 02/09/23 14:48, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury, Dissolved	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	f

Method: E245.1, Run Date: 02/09/23 14:45, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/13/23 08:38, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

f-Filtered and preserved in lab

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories, Inc.

Analytical Laboratory Report

Final Report

Lab Sample ID: S45134.06
Sample Tag: MW-6 L302144-06
Collected Date/Time: 02/07/2023 15:29
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.1	IR
2	1L Plastic	None	Yes	3.1	IR
1	250ml Plastic	HNO3	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/23 12:54	CTV	
Metal Digestion	Completed	SW3015A	02/09/23 10:10	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/23 14:51, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	233	10	1.0	mg/L	10	14808-79-8	

Method: E300.0, Run Date: 02/09/23 13:01, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	42	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	

Method: SM2320B, Run Date: 02/10/23 07:20, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	543	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/09/23 18:18, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	624	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/08/23 21:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	866	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 12:20, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/09/23 12:21, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.046	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.99	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	

Lab Sample ID: S45134.06 (continued)
Sample Tag: MW-6 L302144-06

Method: E200.8, Run Date: 02/09/23 12:21, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	Not detected	0.02	0.00192	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.054	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	0.027	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	0.006	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/09/23 14:13, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	193	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	39.4	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	6.85	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	43.9	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/09/23 14:52, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/13/23 08:38, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45134.07
Sample Tag: MWT-4 L302144-07
Collected Date/Time: 02/07/2023 11:49
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.1	IR
2	1L Plastic	None	Yes	3.1	IR
1	250ml Plastic	HNO3	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/23 12:54	CTV	
Metal Digestion	Completed	SW3015A	02/09/23 10:10	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/23 13:11, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	75	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	56	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 07:22, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	407	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/09/23 18:26, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	431	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/08/23 21:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	530	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 12:20, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/09/23 12:24, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	0.007	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.163	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.06	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	1.30	0.02	0.00192	mg/L	5	7439-89-6	

Lab Sample ID: S45134.07 (continued)

Sample Tag: MWT-4 L302144-07

Method: E200.8, Run Date: 02/09/23 12:24, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.010	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/09/23 14:21, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	106	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	38.9	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	1.41	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	28.2	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/09/23 14:55, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/13/23 08:38, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45134.08
Sample Tag: Field Blank L302144-08
Collected Date/Time: 02/07/2023 07:55
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	3.1	IR
2	1L Plastic	None	Yes	3.1	IR
1	250ml Plastic	HNO3	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/09/23 12:54	CTV	
Metal Digestion	Completed	SW3015A	02/09/23 10:10	CCM	

Inorganics

Method: E300.0, Run Date: 02/09/23 13:21, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	2.5	0.03	mg/L	2.5	16887-00-6	
Fluoride (Undistilled)	Not detected	0.5	0.04	mg/L	2.5	16984-48-8	
Sulfate	Not detected	2.5	0.26	mg/L	2.5	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 07:24, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	Not detected	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/09/23 18:28, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	Not detected	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/08/23 21:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	Not detected	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 12:20, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/09/23 11:48, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00102	mg/L	2	7440-36-0	
Arsenic	Not detected	0.002	0.000102	mg/L	2	7440-38-2	
Barium	Not detected	0.005	0.0000648	mg/L	2	7440-39-3	
Beryllium	Not detected	0.001	0.0000862	mg/L	2	7440-41-7	
Boron	Not detected	0.04	0.000702	mg/L	2	7440-42-8	
Cadmium	Not detected	0.0005	0.0000760	mg/L	2	7440-43-9	
Chromium	Not detected	0.005	0.0000386	mg/L	2	7440-47-3	
Cobalt	Not detected	0.005	0.0000434	mg/L	2	7440-48-4	
Copper	Not detected	0.005	0.000150	mg/L	2	7440-50-8	
Iron	Not detected	0.02	0.000768	mg/L	2	7439-89-6	

Lab Sample ID: S45134.08 (continued)
Sample Tag: Field Blank L302144-08

Method: E200.8, Run Date: 02/09/23 11:48, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.0000760	mg/L	2	7439-92-1	
Lithium*	Not detected	0.005	0.000654	mg/L	2	7439-93-2	
Molybdenum	Not detected	0.005	0.0000868	mg/L	2	7439-98-7	
Nickel	Not detected	0.005	0.000100	mg/L	2	7440-02-0	
Selenium	Not detected	0.005	0.000838	mg/L	2	7782-49-2	
Silver	Not detected	0.0005	0.0000270	mg/L	2	7440-22-4	
Thallium	Not detected	0.002	0.0000342	mg/L	2	7440-28-0	
Vanadium	Not detected	0.005	0.0000558	mg/L	2	7440-62-2	
Zinc	Not detected	0.005	0.000292	mg/L	2	7440-66-6	

Method: E200.8, Run Date: 02/09/23 14:02, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	Not detected	0.50	0.0174	mg/L	2	7440-70-2	
Magnesium	Not detected	0.50	0.00480	mg/L	2	7439-95-4	
Potassium	Not detected	0.50	0.00920	mg/L	2	7440-09-7	
Sodium	Not detected	0.50	0.00340	mg/L	2	7440-23-5	

Method: E245.1, Run Date: 02/09/23 14:58, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/13/23 08:38, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories Login Checklist

Lab Set ID: S45134
Client: BWL01 (Board of Water & Light)
Project: Erickson AM MI Wells 1-6
Submitted: 02/08/2023 15:45 Login User: PFD

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 3.1
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[X] Yes	[ ] No	[ ] N/A	Did any samples need to be preserved in the lab?	.05 Metals
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[X] Yes	[ ] No	[ ] N/A	Samples require laboratory filtration	.05 Metals
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: ______________________ Date: ____________

Merit Laboratories Bottle Preservation Check

Lab Set ID: S45134 Submitted: 02/08/2023 15:45

Client: BWL01 (Board of Water & Light)

Project: Erickson AM MI Wells 1-6

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Initial Preservation Check: 02/08/2023 16:44 PFD

Preservation Recheck (E200.8): N/A

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S45134.01	1L Plastic HNO3	<2			
S45134.01	1L Plastic HNO3	<2			
S45134.01	250ml Plastic HNO3	<2			
S45134.02	1L Plastic HNO3	<2			
S45134.02	1L Plastic HNO3	<2			
S45134.02	250ml Plastic HNO3	<2			
S45134.03	1L Plastic HNO3	<2			
S45134.03	1L Plastic HNO3	<2			
S45134.03	250ml Plastic HNO3	<2			
S45134.04	1L Plastic HNO3	<2			
S45134.04	1L Plastic HNO3	<2			
S45134.04	250ml Plastic HNO3	<2			
S45134.05	1L Plastic HNO3	<2			
S45134.05	1L Plastic HNO3	<2			
S45134.05	250ml Plastic HNO3	<2			
S45134.06	1L Plastic HNO3	<2			
S45134.06	1L Plastic HNO3	<2			
S45134.06	250ml Plastic HNO3	<2			
S45134.07	1L Plastic HNO3	<2			
S45134.07	1L Plastic HNO3	<2			
S45134.07	250ml Plastic HNO3	<2			
S45134.08	1L Plastic HNO3	<2			
S45134.08	1L Plastic HNO3	<2			
S45134.08	250ml Plastic HNO3	<2			

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME Jennifer Caporale
COMPANY Lansing Board of Water and Light
ADDRESS PO Box 13007 48901-3007
CITY Lansing STATE Mi ZIP CODE 48901
PHONE NO. 517-702-6372 FAX NO. P.O. NO.
E-MAIL ADDRESS Environmental_Laboratory@lbwl.com QUOTE NO.

INVOICE TO

CONTACT NAME Beth Zimpfer ☒ SAME
COMPANY
ADDRESS
CITY STATE ZIP CODE
PHONE NO. E-MAIL ADDRESS Beth.Zimpfer@lbwl.com

PROJECT NO./NAME Erickson AM MI Wells 1-6
SAMPLER(S) - PLEASE PRINT/SIGN NAME Marc Wahrer

TURNAROUND TIME REQUIRED ☐ 1 DAY ☒ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☒ OTHER ASAP

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☒ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION		MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	F- undistilled, Cl-, SO4, TDS	Radium 226	Radium 228	TSS	HCO3, CO3, Hardness	dissolved Metals
45134.01	02/07/23	1352	MW-1	L302144-01	GW	5	2		3					✓	✓	✓	✓	✓	✓	
.02	↓	1700	MW-2	-02	GW	5	2		3					✓	✓	✓	✓	✓	✓	
.03		1018	MW-3	-03	GW	5	2		3					✓	✓	✓	✓	✓	✓	
.04		1149	MW-4	-04	GW	5	2		3					✓	✓	✓	✓	✓	✓	
.05		1735	MW-5	-05	GW	5	2		3					✓	✓	✓	✓	✓	✓	✓
.06		1529	MW-6	-06	GW	5	2		3					✓	✓	✓	✓	✓	✓	
.07		1149	MWT-4	-07	GW	5	2		3					✓	✓	✓	✓	✓	✓	
.08	↓	0755	Field Blank	-08	DI	5	2		3					✓	✓	✓	✓	✓	✓	

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☒ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions
Metals to analyse:Na, Mg, K B, Ca, Sb, As, Ba, Be, Cd, Cr, Co, Li, Hg, Mo,Pb,Se, Tl, Fe, Cu, Ni, Ag, V, Zn
Please send a preliminary report

Dissolved metals are the same as total.

RELINQUISHED BY: SIGNATURE/ORGANIZATION [signature] ☐ Sampler	DATE 2.8.23	TIME 1545	RELINQUISHED BY: SIGNATURE/ORGANIZATION DATE TIME
RECEIVED BY: SIGNATURE/ORGANIZATION M Chitcote	DATE 2/8/23	TIME 1545	RECEIVED BY: SIGNATURE/ORGANIZATION DATE TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME	SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME	SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 3.1

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Reporting Limits to go to Merit with COC

Sb, total	Antimony	250 mL plastic	mg/L	Nitric Acid	200.7	6 mos	0.005
As, total	Arsenic	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
Ba, total		250 mL plastic	mg/L	Nitric Acid	200.8	6mos	0.150
Be, total	Beryllium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.001
B, total	Boron	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.04
Cd, total	Cadmium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
Ca	Calcium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	2.5
Cl	Chloride	250 mL plastic	mg/L	Chill	300.0	28 d	10
Cr, total	Chromium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Co, total	Cobalt	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Cu, total	Copper	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
F	Fluoride	250 mL plastic	mg/L	None	9056	28 d	1.0
Fe, total	Iron	250 mL plastic	mg/L	Nitric Acid	300.0	6 mos	0.02
Pb, total	Lead	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.003
Li, total	Lithium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Hg, total	Mercury	250 mL plastic	mg/L	HNO3	245.1	28 d	0.0002
Mo, total	Molybdenum	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ni, total	Nickel	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
RA226/228	Radium 226 and 228 combined	(2) 1 L plastic	pCi/L	HNO3	SM 7500	6 mos	2.0 combined
Se, total	Selenium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ag, total	Silver	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
SO4	Sulfate	250 mL plastic	mg/L	Chill	300.0	28 d	10
Tl, total	Thallium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
TDS	Total Dissolved Solids	1 L plastic	mg/L	None	SM 2540C	NA	20
TSS	Total Suspended Solids	1 L plastic	mg/L	None	SM 2540D	NA	3
V, total	Vanadium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Zn, total	Zinc	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

March 13, 2023

John Laverty
Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan 48823

Re: Routine Analysis
Work Order: 610687
SDG: S45134

Dear John Laverty:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 13, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1614.

Sincerely,

Jordan Melton

Jordan Melton for
Delaney Stone
Project Manager

Purchase Order: GELP20-0018
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Merit Laboratories, Inc.
SDG: S45134
Work Order: 610687

March 13, 2023

Laboratory Identification:

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

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 13, 2023 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. Sample was received out of pH. Client approved for preservation. *610687004(S45134.04)*.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
610687001	S45134.01
610687002	S45134.02
610687003	S45134.03
610687004	S45134.04
610687005	S45134.05
610687006	S45134.06
610687007	S45134.07
610687008	S45134.08

Case Narrative:

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

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

Jordan Melton

Jordan Melton for
Delaney Stone
Project Manager

Chain of Custody and Supporting Documentation

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

610687

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Project Management Team
COMPANY: Merit Laboratories
ADDRESS: 2680 East Lansing Drive
CITY: East Lansing STATE: MI ZIP CODE: 48823
PHONE NO.: 517-332-0167 FAX NO.: P.O. NO.:
E-MAIL ADDRESS: results@meritlabs.com QUOTE NO.:

INVOICE TO

CONTACT NAME: Julie Teague ☒ SAME
COMPANY: Merit Laboratories
ADDRESS: 2680 East Lansing Drive
CITY: East Lansing STATE: MI ZIP CODE: 48823
PHONE NO.: 517-332-0167 E-MAIL ADDRESS: juliet@meritlabs.com

PROJECT NO./NAME: S45134
SAMPLER(S) - PLEASE PRINT/SIGN NAME:

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☒ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Radium 226*	Radium 228**	Special Instructions
	2/7/23	1352	S45134.01	GW	2			2					✓	✓	* E903.1 Mod.
	2/7/23	1700	S45134.02	GW	2			2					✓	✓	** E904.0/SW 9320 Mod.
	2/7/23	1018	S45134.03	GW	2			2					✓	✓	
	2/7/23	1149	S45134.04	GW	2			2					✓	✓	Please use calculation product &
	2/7/23	1735	S45134.05	GW	2			2					✓	✓	provide Radium 226/228 combined
	2/7/23	1529	S45134.06	GW	2			2					✓	✓	results on the report
	2/7/23	1149	S45134.07	GW	2			2					✓	✓	
	2/7/23	0755	S45134.08	GW	2			2					✓	✓	(No Ice needed)
															** Subcontracted to
															GEL Laboratories, Inc.
															2040 Savage Road
															Charleston, SC 29407

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES
Project Locations: ☐ Detroit ☐ New York ☐ Other

RELINQUISHED BY: SIGNATURE/ORGANIZATION: [signature] ☐ Sampler DATE: 2/9/23 TIME: 1700
RECEIVED BY: SIGNATURE/ORGANIZATION: UPS DATE: 2/9/23 TIME: 1700
RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE: TIME:
RECEIVED BY: SIGNATURE/ORGANIZATION: DATE: TIME:

RELINQUISHED BY: SIGNATURE/ORGANIZATION: DATE: TIME:
RECEIVED BY: SIGNATURE/ORGANIZATION: [signature] DATE: 2/13/23 TIME: 0900
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS NOTES: TEMP. ON ARRIVAL
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM DS

Client: MERI	SDG/AR/COC/Work Order: 610687
Received By: MVH	Date Received: 02.13.2023
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 1Z4C64770362195189

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A) Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		✓		Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 21
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR2-21 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?			✓	Sample ID's and Containers Affected: S45134.04 If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials JM Date 2/14/23 Page 1 of 1

GL-CHL-SR-001 Rev 7

Jordan Melton

From: Patrick Dean <pdean@meritlabs.com>
Sent: Monday, February 13, 2023 2:27 PM
To: Jordan Melton
Cc: John Laverty; RESULTS; Team Stone
Subject: Re: S45134.04 did not hold pH

Follow Up Flag: Follow up
Flag Status: Completed

Jordan,

Will the report be flagged? If it isn't please represerve the sample.

On Mon, Feb 13, 2023 at 2:22 PM Patrick Dean <pdean@meritlabs.com> wrote:

> Jordan,
>
> I will reach out to our client.
>
> On Mon, Feb 13, 2023 at 2:15 PM Jordan Melton <Jordan.Melton@gel.com> wrote:
>
>> Hello Patrick,
>>
>> It may affect results, but we do recommend samples having a pH<2 for Rad 226 and Rad 228 analysis. We can attempt preservation, or we can run as is.
>>
>> Thanks,
>>
>> Jordan Melton
>>
>> GEL Laboratories LLC
>>
>> Project Manager Assistant
>>
>> **From:** Patrick Dean <pdean@meritlabs.com>
>> **Sent:** Monday, February 13, 2023 2:10 PM
>> **To:** John Laverty <johnlaverty@meritlabs.com>; Jordan Melton <Jordan.Melton@gel.com>
>> **Cc:** RESULTS <results@meritlabs.com>; Team Stone <Team.Stone@gel.com>
>> **Subject:** Re: S45134.04 did not hold pH

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Jordan,

Would adding more preservative effect results?

Thanks,
Patrick

On Mon, Feb 13, 2023 at 1:56 PM John Laverty <johnlaverty@meritlabs.com> wrote:

---------- Forwarded message ---------
From: **Jordan Melton** <Jordan.Melton@gel.com>
Date: Mon, Feb 13, 2023 at 1:40 PM
Subject: S45134.04 did not hold pH
To: John Laverty <johnlaverty@meritlabs.com>
CC: Team Stone <Team.Stone@gel.com>

Good afternoon,

GEL received SDG S45134 this morning however, sample S45134.04 did not hold preservation. Please advise on how you would like to proceed.

Thank you,

Jordan Melton
Project Manager Assistant

GEL Laboratories LLC 40

2040 Savage Road, Charleston, SC 29407 | P.O. Box 30712, Charleston, SC 29417
Office Main: 843.556.8171 |Office Fax: 843.769.7383

E-Mail: Jordan.Melton@gel.com | Website: www.gel.com

Follow us on LinkedIn

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John Laverty
Merit Laboratories, Inc.
2680 East Lansing Drive East Lansing, MI 48823
Direct: (517) 827-2730 Cell: (517) 763-6976
johnlaverty@meritlabs.com

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Patrick Dean

Merit Laboratories, Inc.

2680 East Lansing Drive | East Lansing, MI 48823

(517) 332-0167 x128 | Direct: (517) 827-2740

———

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Patrick Dean
Merit Laboratories, Inc.
2680 East Lansing Drive | East Lansing, MI 48823
(517) 332-0167 x128 | Direct: (517) 827-2740

--
Patrick Dean
Merit Laboratories, Inc.
2680 East Lansing Drive | East Lansing, MI 48823
(517) 332-0167 x128 | Direct: (517) 827-2740

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Laboratory Certifications

List of current GEL Certifications as of 13 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
Merit Laboratories, Inc.
SDG #: S45134
Work Order #: 610687

Product: **GFPC Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2387247

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

GEL Sample ID#	Client Sample Identification
610687001	S45134.01
610687002	S45134.02
610687003	S45134.03
610687004	S45134.04
610687005	S45134.05
610687006	S45134.06
610687007	S45134.07
610687008	S45134.08
1205326726	Method Blank (MB)
1205326727	609452001(NonSDG) Sample Duplicate (DUP)
1205326728	Laboratory Control Sample (LCS)

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

Data Summary:

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

Miscellaneous Information

Additional Comments
Sample results verify with historical activity.

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2387198

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

GEL Sample ID#	Client Sample Identification
610687001	S45134.01
610687002	S45134.02

610687003	S45134.03
610687004	S45134.04
610687005	S45134.05
610687006	S45134.06
610687007	S45134.07
610687008	S45134.08
1205326616	Method Blank (MB)
1205326617	609452001(NonSDG) Sample Duplicate (DUP)
1205326618	609452001(NonSDG) Matrix Spike (MS)
1205326619	Laboratory Control Sample (LCS)

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

Data Summary:

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

Miscellaneous Information

Additional Comments

The matrix spike, 1205326618 (Non SDG 609452001MS), aliquot was reduced to conserve sample volume.

Certification Statement

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

GEL LABORATORIES LLC

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

Qualifier Definition Report
for

MERI001 Merit Laboratories, Inc.

Client SDG: S45134 GEL Work Order: 610687

The Qualifiers in this report are defined as follows:

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

Review/Validation

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

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

Signature: **Name: Theresa Austin**

Date: 13 MAR 2023 **Title: Group Leader**

Sample Data Summary

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

Certificate of Analysis

Report Date: March 13, 2023

Company : Merit Laboratories Inc.
Address : 2680 East Lansing Drive

East Lansing, Michigan 48823
Contact: John Laverty
Project: Routine Analysis

Client Sample ID:	S45134.01	Project:	MERI00120
Sample ID:	610687001	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-23 13:52		
Receive Date:	13-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.24	+/-1.39	2.32	3.00	pCi/L			JE1	03/09/23	1043	2387247	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.54	+/-1.41			pCi/L			NXL1	03/13/23	0838	2387244	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.300	+/-0.270	0.411	1.00	pCi/L			LXP1	03/12/23	0917	2387198	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			78.2	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: March 13, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45134.02	Project:	MERI00120
Sample ID:	610687002	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-23 17:00		
Receive Date:	13-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.445	+/-1.20	2.41	3.00	pCi/L			JE1	03/09/23	1043	2387247	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.184	+/-1.22			pCi/L			NXL1	03/13/23	0838	2387244	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.184	+/-0.216	0.352	1.00	pCi/L			LXP1	03/12/23	0917	2387198	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			57.2	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: March 13, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45134.03	Project:	MERI00120
Sample ID:	610687003	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-23 10:18		
Receive Date:	13-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.61	+/-1.48	2.40	3.00	pCi/L			JE1	03/09/23	1043	2387247	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.18	+/-1.51			pCi/L			NXL1	03/13/23	0838	2387244	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.566	+/-0.336	0.387	1.00	pCi/L			LXP1	03/12/23	0917	2387198	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			59.5	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: March 13, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45134.04	Project:	MERI00120
Sample ID:	610687004	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-23 11:49		
Receive Date:	13-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.692	+/-1.27	2.22	3.00	pCi/L			JE1	03/09/23	1043	2387247	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.39	+/-1.31			pCi/L			NXL1	03/13/23	0838	2387244	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.701	+/-0.340	0.369	1.00	pCi/L			LXP1	03/12/23	0917	2387198	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			72.1	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: March 13, 2023

Company : Merit Laboratories Inc.
Address : 2680 East Lansing Drive

East Lansing, Michigan 48823
Contact: John Laverty
Project: Routine Analysis

Client Sample ID:	S45134.05	Project:	MERI00120
Sample ID:	610687005	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-23 17:35		
Receive Date:	13-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.22	+/-1.32	2.21	3.00	pCi/L			JE1	03/09/23	1043	2387247	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.78	+/-1.36			pCi/L			NXL1	03/13/23	0838	2387244	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.558	+/-0.295	0.314	1.00	pCi/L			LXP1	03/12/23	0917	2387198	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			56.6	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: March 13, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45134.06	Project:	MERI00120
Sample ID:	610687006	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-23 15:29		
Receive Date:	13-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-1.09	+/-1.16	2.65	3.00	pCi/L			JE1	03/09/23	1043	2387247	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.961	+/-1.23			pCi/L			NXL1	03/13/23	0838	2387244	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.961	+/-0.419	0.425	1.00	pCi/L			LXP1	03/12/23	0917	2387198	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			45.6	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: March 13, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45134.07	Project:	MERI00120
Sample ID:	610687007	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-23 11:49		
Receive Date:	13-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.593	+/-1.18	2.31	3.00	pCi/L			JE1	03/09/23	1043	2387247	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.898	+/-1.24			pCi/L			NXL1	03/13/23	0838	2387244	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.898	+/-0.377	0.395	1.00	pCi/L			LXP1	03/12/23	0917	2387198	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			76.3	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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

Certificate of Analysis

Report Date: March 13, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45134.08	Project:	MERI00120
Sample ID:	610687008	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	07-FEB-23 07:55		
Receive Date:	13-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.0728	+/-1.11	2.17	3.00	pCi/L			JE1	03/09/23	1043	2387247	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.179	+/-1.13			pCi/L			NXL1	03/13/23	0838	2387244	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.179	+/-0.253	0.441	1.00	pCi/L			LXP1	03/12/23	0949	2387198	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			56.5	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Quality Control Data

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

QC Summary

Report Date: March 13, 2023

Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan
Contact: **John Laverty**

Workorder: **610687**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2387247										
QC1205326727 609452001 DUP										
Radium-228	U	-0.308	U	1.30	pCi/L	N/A		N/A	JE1	03/09/23 10:42
	Uncertainty	+/-1.10		+/-1.38						
QC1205326728 LCS										
Radium-228	62.6			65.2	pCi/L		104	(75%-125%)		03/09/23 10:42
	Uncertainty			+/-4.40						
QC1205326726 MB										
Radium-228			U	-0.360	pCi/L					03/09/23 10:41
	Uncertainty			+/-1.12						
Rad Ra-226										
Batch 2387198										
QC1205326617 609452001 DUP										
Radium-226		0.828		0.696	pCi/L	17.4		(0% - 100%)	LXP1	03/12/23 09:49
	Uncertainty	+/-0.353		+/-0.386						
QC1205326619 LCS										
Radium-226	26.4			25.2	pCi/L		95.6	(75%-125%)		03/12/23 10:21
	Uncertainty			+/-1.91						
QC1205326616 MB										
Radium-226			U	0.225	pCi/L					03/12/23 09:49
	Uncertainty			+/-0.247						
QC1205326618 609452001 MS										
Radium-226	129	0.828		111	pCi/L		84.9	(75%-125%)		03/12/23 09:49
	Uncertainty	+/-0.353		+/-8.55						

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported

QC Summary

Workorder: **610687**

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

UI	Gamma Spectroscopy--Uncertain identification
BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
**	Analyte is a Tracer compound
M	REMP Result > MDC/CL and < RDL
J	See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Gas Flow Raw Data

Batch 2387247 Check-list

This check-list was completed on 09-MAR-23 by Nat Long

This batch was reviewed by Nat Long on 09-MAR-23 and Lois Buist on 10-MAR-23.

Batch ID:	**Product:**	**Description:** Gas Flow Radium 228
2387247	GFC28RAL	GL-RAD-A-063

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
11	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
12	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-228 in Liquid

Batch ID: **2387247**
Analyst: Jacqueline Emond (JE1)
Prep: Lyndsey Pace (LXP1)
Method: EPA 904.0/SW846 9320 Modified
Lab SOP: GL-RAD-A-063 REV# 5
Instrument: LUCAS-C202389980

Due Dates for Lab: 08-MAR-2023 **Package: 12-MAR-2023** **SDG: 10-MAR-2023**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1205326728	228	1952-B	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Separation (date)
1	609452001	03-MAR-2023	3	301.55	301.55	03/06/23 13:52	03/09/23 08:30
2	609452002	03-MAR-2023	3	303.13	303.13	03/06/23 13:52	03/09/23 08:30
3	609452003	03-MAR-2023	3	300.84	300.84	03/06/23 13:52	03/09/23 08:30
4	609452004	03-MAR-2023	3	301.57	301.57	03/06/23 13:52	03/09/23 08:30
5	609452005	03-MAR-2023	3	300.55	300.55	03/06/23 13:52	03/09/23 08:30
6	609452006	03-MAR-2023	3	301.46	301.46	03/06/23 13:52	03/09/23 08:30
7	609452007	03-MAR-2023	3	303.27	303.27	03/06/23 13:52	03/09/23 08:30
8	609452008	03-MAR-2023	3	302.22	302.22	03/06/23 13:52	03/09/23 08:30
9	609452009	03-MAR-2023	3	303.28	303.28	03/06/23 13:52	03/09/23 08:30
10	610687001	03-MAR-2023	3	303.58	303.58	03/06/23 13:52	03/09/23 08:30
11	610687002	03-MAR-2023	3	305.87	305.87	03/06/23 13:52	03/09/23 08:30
12	610687003	03-MAR-2023	3	304.95	304.95	03/06/23 13:52	03/09/23 08:30
13	610687004	03-MAR-2023	3	304.53	304.53	03/06/23 13:52	03/09/23 08:30
14	610687005	03-MAR-2023	3	305.49	305.49	03/06/23 13:52	03/09/23 08:30
15	610687006	03-MAR-2023	3	300.47	300.47	03/06/23 13:52	03/09/23 08:30
16	610687007	03-MAR-2023	3	305.63	305.63	03/06/23 13:52	03/09/23 08:30
17	610687008	03-MAR-2023	3	306.22	306.22	03/06/23 13:52	03/09/23 08:30
18	610893001	03-MAR-2023	3	305.21	305.21	03/06/23 13:52	03/09/23 08:30
19	610893002	03-MAR-2023	3	301.02	301.02	03/06/23 13:52	03/09/23 08:30
20	1205326726 MB	03-MAR-2023	3		306.22	03/06/23 13:52	03/09/23 08:30
21	1205326727 DUP (609452001)	03-MAR-2023	3	305.44	305.44	03/06/23 13:52	03/09/23 08:30
22	1205326728 LCS	03-MAR-2023	3		306.22	03/06/23 13:52	03/09/23 08:30

Reagent/Solvent Lot ID	Description	Amount
WORK 1951-E	Ba-133	.1 mL
REGNT 3873289	RGF-1.5M Ammonium Sulfate	10 mL
REGNT 3862351	RGF-1M Citric Acid	5 mL
REGNT 3873685	2M HCl	20 mL
REGNT 3873277	RGF-50% Potassium Carbonate	2 mL
REGNT 3864851	RGF-7M Nitric Acid	25 mL
REGNT DGA013123	2372406	2 g
REGNT 3418276.6	29M HF (48-50%)	4 mL
REGNT 3528714	500 mg/mL Neodymium Carrier	.2 mL
REGNT 3521298	RGF-Neodymium Subtrate	5 mL
REGNT 3855914.1	Nitric Acid	5 mL
REGNT 3465466	Barium Carrier Ra228 REG	1 mL
REGNT 3857883.6	Acetic Acid Glacial ACS Poly Coated Bottle	10 mL

Comments:
Pipet Id: RAD-GFC-1795419
Data Entry Date2: 03-MAR-2023 00:00

Radium-228 Liquid

Filename : RA228.XLS
File type : Excel
Version # : 1.4.3

Tracer S/N : 1951-E
Tracer Exp Date : 1/10/2024
Tracer Volume Added: 0.10

Batch : 2387247
Analyst : JAC02417
Prep Date : 3/3/2023
Ra-228 Method Uncertainty : 0.1268

Geometry: 25mm Filter

Procedure Code : GFC28RAL
Parmname : Radium-228
Required MDA : 3 pCi/L
Ra-228 Abundance : 1.00
Halflife of Ra-228 : 5.75 years
Halflife of Ac-228 : 6.15 hours

Sample Characteristics Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	**Tracer Calculations** Tracer Ref. Activity (CPM)	Tracer Ref. Count Uncertainty (%)	Tracer Samp. Activity (CPM)	Tracer Samp. Count Uncertainty (%)	Tracer Aliquot (mL)	Tracer Aliquot StDev. (mL)
1	609452001.1	0.3016	1.8485E-05	2/1/2023 9:34	1226.8	1.65%	663.9	2.24%	0.1	0.000200
2	609452002.1	0.3031	1.8512E-05	2/1/2023 11:13	1226.8	1.65%	902.2	1.92%	0.1	0.000200
3	609452003.1	0.3008	1.8473E-05	2/1/2023 12:32	1226.8	1.65%	1040.3	1.79%	0.1	0.000200
4	609452004.1	0.3016	1.8486E-05	2/1/2023 13:44	1226.8	1.65%	622.3	2.31%	0.1	0.000200
5	609452005.1	0.3006	1.8468E-05	2/1/2023 14:52	1226.8	1.65%	858.1	1.97%	0.1	0.000200
6	609452006.1	0.3015	1.8484E-05	2/2/2023 9:42	1226.8	1.65%	1002.5	1.82%	0.1	0.000200
7	609452007.1	0.3033	1.8514E-05	2/2/2023 11:13	1226.8	1.65%	668.6	2.23%	0.1	0.000200
8	609452008.1	0.3022	1.8497E-05	2/2/2023 11:18	1226.8	1.65%	820.0	2.02%	0.1	0.000200
9	609452009.1	0.3033	1.8514E-05	2/2/2023 13:21	1226.8	1.65%	858.0	1.97%	0.1	0.000200
10	610687001.1	0.3036	1.8519E-05	2/7/2023 13:52	1226.8	1.65%	959.9	1.86%	0.1	0.000200
11	610687002.1	0.3059	1.8557E-05	2/7/2023 17:00	1226.8	1.65%	701.2	2.18%	0.1	0.000200
12	610687003.1	0.3050	1.8542E-05	2/7/2023 10:18	1226.8	1.65%	729.3	2.14%	0.1	0.000200
13	610687004.1	0.3045	1.8535E-05	2/7/2023 11:49	1226.8	1.65%	885.1	1.94%	0.1	0.000200
14	610687005.1	0.3055	1.8551E-05	2/7/2023 17:35	1226.8	1.65%	694.7	2.19%	0.1	0.000200
15	610687006.1	0.3005	1.8467E-05	2/7/2023 15:29	1226.8	1.65%	558.9	2.44%	0.1	0.000200
16	610687007.1	0.3056	1.8553E-05	2/7/2023 11:49	1226.8	1.65%	935.6	1.89%	0.1	0.000200
17	610687008.1	0.3062	1.8563E-05	2/7/2023 7:55	1226.8	1.65%	692.5	2.19%	0.1	0.000200
18	610893001.1	0.3052	1.8546E-05	2/8/2023 11:41	1226.8	1.65%	830.9	2.00%	0.1	0.000200
19	610893002.1	0.3010	1.8476E-05	2/8/2023 11:46	1226.8	1.65%	1021.3	1.81%	0.1	0.000200
20	1205326726.1	0.3062	1.8563E-05	3/3/2023 0:00	1226.8	1.65%	806.0	2.03%	0.1	0.000200
21	1205326727.1	0.3054	1.8550E-05	2/1/2023 9:34	1226.8	1.65%	910.7	1.91%	0.1	0.000200
22	1205326728.1	0.3062	1.8563E-05	3/3/2023 0:00	1226.8	1.65%	962.7	1.86%	0.1	0.000200

Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1 ml Stdev : +/- 0.002000 ml

Analytical SOP: GL-RAD-A-063
Instrument SOP: GL-RAD-I-016

Count raw Data

Pos.	Detector ID	Counting Time (min.)	Gross Counts Alpha	Gross Counts Beta	Beta cpm	Count Start Date/Time	Ac-228 Ingrowth Date/Time	Ac-228 Decay Date/Time	Ra-228 Decay	Ac-228 Decay	Ac-228 Ingrowth	Ac-228 Count Correction	Calculated Sample Recovery %	Sample Recovery Error %
1	5D	60	1	29	0.483	3/9/2023 10:42	3/6/2023 13:52	3/9/2023 8:30	0.988	0.780	0.999	1.057	54.1%	2.80%
2	1C	60	6	59	0.983	3/9/2023 10:42	3/6/2023 13:52	3/9/2023 8:30	0.988	0.780	0.999	1.057	73.5%	2.55%
3	2D	60	16	282	4.700	3/9/2023 10:42	3/6/2023 13:52	3/9/2023 8:30	0.988	0.780	0.999	1.057	84.8%	2.45%
4	3B	60	14	40	0.667	3/9/2023 10:42	3/6/2023 13:52	3/9/2023 8:30	0.988	0.780	0.999	1.057	50.7%	2.85%
5	4B	60	15	67	1.117	3/9/2023 10:42	3/6/2023 13:52	3/9/2023 8:30	0.988	0.780	0.999	1.057	69.9%	2.59%
6	8C	60	8	99	1.650	3/9/2023 10:42	3/6/2023 13:52	3/9/2023 8:30	0.988	0.779	0.999	1.057	81.7%	2.47%
7	1D	60	2	59	0.983	3/9/2023 10:42	3/6/2023 13:52	3/9/2023 8:30	0.989	0.779	0.999	1.057	54.5%	2.79%
8	4C	60	2	57	0.950	3/9/2023 10:42	3/6/2023 13:52	3/9/2023 8:30	0.989	0.779	0.999	1.057	66.8%	2.62%
9	6C	60	7	62	1.033	3/9/2023 10:42	3/6/2023 13:52	3/9/2023 8:30	0.989	0.779	0.999	1.057	69.9%	2.59%
10	8B	60	9	105	1.750	3/9/2023 10:43	3/6/2023 13:52	3/9/2023 8:30	0.990	0.779	0.999	1.057	78.2%	2.50%
11	2A	60	4	39	0.650	3/9/2023 10:43	3/6/2023 13:52	3/9/2023 8:30	0.990	0.779	0.999	1.057	57.2%	2.75%
12	2C	60	9	61	1.017	3/9/2023 10:43	3/6/2023 13:52	3/9/2023 8:30	0.990	0.779	0.999	1.057	59.5%	2.72%
13	8A	60	29	74	1.233	3/9/2023 10:43	3/6/2023 13:52	3/9/2023 8:30	0.990	0.778	0.999	1.057	72.1%	2.56%
14	5C	60	9	48	0.800	3/9/2023 10:43	3/6/2023 13:52	3/9/2023 8:30	0.990	0.778	0.999	1.057	56.6%	2.76%
15	1A	60	8	22	0.367	3/9/2023 10:43	3/6/2023 13:52	3/9/2023 8:30	0.990	0.778	0.999	1.057	45.6%	2.96%
16	6A	60	8	70	1.167	3/9/2023 10:43	3/6/2023 13:52	3/9/2023 8:30	0.990	0.778	0.999	1.057	76.3%	2.52%
17	1B	60	9	31	0.517	3/9/2023 10:43	3/6/2023 13:52	3/9/2023 8:30	0.990	0.778	0.999	1.057	56.5%	2.76%
18	5A	60	6	67	1.117	3/9/2023 10:43	3/6/2023 13:52	3/9/2023 8:30	0.990	0.778	0.999	1.057	67.7%	2.61%
19	6B	60	13	125	2.083	3/9/2023 10:44	3/6/2023 13:52	3/9/2023 8:30	0.990	0.777	0.999	1.057	83.2%	2.47%
20	5B	60	13	48	0.800	3/9/2023 10:41	3/6/2023 13:52	3/9/2023 8:30	0.998	0.780	0.999	1.057	65.7%	2.63%
21	3C	60	10	93	1.550	3/9/2023 10:42	3/6/2023 13:52	3/9/2023 8:30	0.988	0.780	0.999	1.057	74.2%	2.54%
22	2B	60	48	1035	17.250	3/9/2023 10:42	3/6/2023 13:52	3/9/2023 8:30	0.998	0.780	0.999	1.057	78.5%	2.50%

Pos.	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Bkg cpm	Weekly Bkg Count Start Date/Time	Bkg Count Time (min.)
Calibration Data								
1	PIC	6/1/2022	5/31/2023	0.6236	0.00925	0.534	3/3/2023 18:13	1000
2	PIC	6/1/2022	5/31/2023	0.6190	0.00847	1.046	3/3/2023 18:12	1000
3	PIC	6/1/2022	5/31/2023	0.6046	0.00745	1.513	3/3/2023 18:12	1000
4	PIC	6/1/2022	5/31/2023	0.6245	0.01614	0.530	3/3/2023 18:12	1000
5	PIC	6/1/2022	5/31/2023	0.6400	0.01519	0.995	3/3/2023 18:12	1000
6	PIC	6/1/2022	5/31/2023	0.6294	0.01955	1.393	3/3/2023 18:11	1000
7	PIC	6/1/2022	5/31/2023	0.6048	0.00692	0.515	3/3/2023 18:12	1000
8	PIC	6/1/2022	5/31/2023	0.6359	0.00889	0.884	3/3/2023 18:13	1000
9	PIC	6/1/2022	5/31/2023	0.6123	0.01970	0.940	3/3/2023 18:08	1000
10	PIC	6/1/2022	5/31/2023	0.6437	0.02148	1.443	3/3/2023 18:11	1000
11	PIC	6/1/2022	5/31/2023	0.6201	0.01914	0.728	3/3/2023 18:12	1000
12	PIC	6/1/2022	5/31/2023	0.6022	0.01274	0.732	3/3/2023 18:12	1000
13	PIC	6/1/2022	5/31/2023	0.6398	0.01579	1.076	3/3/2023 18:11	1000
14	PIC	6/1/2022	5/31/2023	0.6242	0.00657	0.587	3/3/2023 18:13	1000
15	PIC	6/1/2022	5/31/2023	0.6209	0.00738	0.516	3/3/2023 18:12	1000
16	PIC	6/1/2022	5/31/2023	0.6328	0.02228	1.308	3/3/2023 18:08	1000
17	PIC	6/1/2022	5/31/2023	0.6068	0.00711	0.529	3/3/2023 18:12	1000
18	PIC	6/1/2022	5/31/2023	0.6332	0.00851	0.931	3/3/2023 18:13	1000
19	PIC	6/1/2022	5/31/2023	0.6280	0.00851	1.415	3/3/2023 18:08	1000
20	PIC	6/1/2022	5/31/2023	0.6336	0.00426	0.875	3/3/2023 18:13	1000
21	PIC	6/1/2022	5/31/2023	0.6365	0.00988	1.246	3/3/2023 18:12	1000
22	PIC	6/1/2022	5/31/2023	0.6097	0.02111	1.633	3/3/2023 18:12	1000

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N :	N/A
Spike Exp Date :	N/A
Spike Activity (dpm/ml):	N/A
Spike Volume Added:	N/A
LCS S/N :	1952-B
LCS Exp Date :	8/9/2023
LCS Activity (dpm/ml):	425.89
LCS Volume Added:	0.10

Results Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	1.3749	0.9707	3	2.2451	**-0.3078**	182.94%	-0.0507	0.0927	1.1036	1.1039		SAMPLE				
2	1.4194	1.0021	3	2.2283	**-0.2808**	210.72%	-0.0627	0.1320	1.1598	1.1599		SAMPLE				
3	1.5274	1.0784	3	2.3572	**12.7787**	9.23%	3.1870	0.2826	2.2207	3.9280		SAMPLE				
4	1.4597	1.0305	3	2.3848	**0.8848**	79.01%	0.1367	0.1079	1.3691	1.3878		SAMPLE				
5	1.4203	1.0028	3	2.2354	**0.5594**	115.13%	0.1217	0.1400	1.2618	1.2699		SAMPLE				
6	1.4583	1.0296	3	2.2586	**1.0253**	66.21%	0.2570	0.1700	1.3292	1.3549		SAMPLE				
7	1.3757	0.9712	3	2.2520	**2.8989**	27.91%	0.4683	0.1300	1.5774	1.7418		SAMPLE				
8	1.4026	0.9903	3	2.2214	**0.3179**	195.92%	0.0660	0.1293	1.2207	1.2234		SAMPLE				
9	1.4308	1.0102	3	2.2586	**0.4448**	144.43%	0.0933	0.1348	1.2587	1.2639		SAMPLE				
10	1.5034	1.0614	3	2.3249	**1.2407**	57.08%	0.3070	0.1750	1.3858	1.4220		SAMPLE				
11	1.5065	1.0636	3	2.4123	**-0.4447**	137.89%	-0.0780	0.1075	1.2015	1.2018		SAMPLE				
12	1.5004	1.0593	3	2.4018	**1.6120**	46.80%	0.2847	0.1330	1.4756	1.5320		SAMPLE				
13	1.4131	0.9976	3	2.2152	**0.6921**	93.53%	0.1573	0.1471	1.2680	1.2803		SAMPLE				
14	1.3591	0.9595	3	2.2054	**1.2200**	55.46%	0.2130	0.1180	1.3245	1.3605		SAMPLE				
15	1.6192	1.1432	3	2.6502	**-1.0869**	54.60%	-0.1493	0.0814	1.1613	1.1617		SAMPLE				
16	1.4860	1.0491	3	2.3080	**-0.5929**	101.98%	-0.1413	0.1441	1.1846	1.1847		SAMPLE				
17	1.3290	0.9383	3	2.1716	**-0.0728**	775.17%	-0.0123	0.0956	1.1056	1.1059		SAMPLE				
18	1.4126	0.9973	3	2.2311	**0.8777**	75.34%	0.1857	0.1398	1.2953	1.3144		SAMPLE				
19	1.4491	1.0231	3	2.2428	**2.6289**	28.56%	0.6683	0.1901	1.4656	1.6103		SAMPLE				
20	1.3906	0.9818	3	2.2036	**-0.3600**	158.95%	-0.0750	0.1192	1.1215	1.1217		MB				
21	1.4806	1.0453	3	2.3047	**1.3020**	54.20%	0.3040	0.1646	1.3814	1.4205	609452001.1	DUP	* 0.0%			
22	1.6535	1.1674	3	2.5436	**65.2481**	4.75%	15.6170	0.5377	4.4033	17.3169		LCS			62.6486	104.1%

ASSAY	9-Mar-23	9:07:53	
Wizard 2480 s/n 46190630			
Protocol	id	9	Ba-133_1
Time	limit		
Count	limit		
Isotope	Ba-133_1		
Protocol	date	3/9/2023	
Run	id.	6300	

Samp_ID	POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR	% RECOVERY	COUNT TIME
REF	1	94	1	180	3681	1226.8	1.65		09:07:53
609452001	2	94	2	180	1992.13	663.92	2.24	54.12	09:11:07
609452002	3	94	3	180	2707.28	902.19	1.92	73.54	09:14:21
609452003	4	94	4	180	3121	1040.25	1.79	84.79	09:17:35
609452004	5	94	5	180	1867.28	622.28	2.31	50.72	09:20:49
609452005	1	10	1	180	2574.57	858.05	1.97	69.94	09:24:25
609452006	2	10	2	180	3008	1002.47	1.82	81.71	09:27:39
609452007	3	10	3	180	2006	668.6	2.23	54.50	09:30:53
609452008	4	10	4	180	2460.28	819.95	2.02	66.84	09:34:06
609452009	5	10	5	180	2574.44	858	1.97	69.94	09:37:21
610687001	1	11	1	180	2880.28	959.93	1.86	78.25	09:40:58
610687002	2	11	2	180	2104	701.18	2.18	57.16	09:44:12
610687003	3	11	3	180	2188.57	729.34	2.14	59.45	09:47:26
610687004	4	11	4	180	2656	885.11	1.94	72.15	09:50:40
610687005	5	11	5	180	2084.28	694.68	2.19	56.63	09:53:54
610687006	1	14	1	180	1677	558.89	2.44	45.56	09:57:43
610687007	2	14	2	180	2807.28	935.6	1.89	76.26	10:00:57
610687008	3	14	3	180	2078	692.54	2.19	56.45	10:04:11
610893001	4	14	4	180	2493	830.88	2	67.73	10:07:25
610893002	5	14	5	180	3064.28	1021.27	1.81	83.25	10:10:39
1205326726	1	21	1	180	2418.28	806	2.03	65.70	10:14:26
1205326727	2	21	2	180	2732.85	910.73	1.91	74.24	10:17:40
1205326728	3	21	3	180	2888.57	962.7	1.86	78.47	10:20:54

END OF ASSAY

SampleID	Instr	Time (min.)	Alpha Counts	Beta Counts	Count Start Time	Count End Time	Machine	Batch ID
609452001	5D	60	1	29	3/9/2023 10:42	3/9/2023 11:42	PIC	2387247
609452002	1C	60	6	59	3/9/2023 10:42	3/9/2023 11:42	PIC	2387247
609452003	2D	60	16	282	3/9/2023 10:42	3/9/2023 11:42	PIC	2387247
609452004	3B	60	14	40	3/9/2023 10:42	3/9/2023 11:42	PIC	2387247
609452005	4B	60	15	67	3/9/2023 10:42	3/9/2023 11:42	PIC	2387247
609452006	8C	60	8	99	3/9/2023 10:42	3/9/2023 11:42	PIC	2387247
609452007	1D	60	2	59	3/9/2023 10:42	3/9/2023 11:42	PIC	2387247
609452008	4C	60	2	57	3/9/2023 10:42	3/9/2023 11:42	PIC	2387247
609452009	6C	60	7	62	3/9/2023 10:42	3/9/2023 11:42	PIC	2387247
610687001	8B	60	9	105	3/9/2023 10:43	3/9/2023 11:43	PIC	2387247
610687002	2A	60	4	39	3/9/2023 10:43	3/9/2023 11:43	PIC	2387247
610687003	2C	60	9	61	3/9/2023 10:43	3/9/2023 11:43	PIC	2387247
610687004	8A	60	29	74	3/9/2023 10:43	3/9/2023 11:43	PIC	2387247
610687005	5C	60	9	48	3/9/2023 10:43	3/9/2023 11:43	PIC	2387247
610687006	1A	60	8	22	3/9/2023 10:43	3/9/2023 11:43	PIC	2387247
610687007	6A	60	8	70	3/9/2023 10:43	3/9/2023 11:43	PIC	2387247
610687008	1B	60	9	31	3/9/2023 10:43	3/9/2023 11:43	PIC	2387247
610893001	5A	60	6	67	3/9/2023 10:43	3/9/2023 11:43	PIC	2387247
610893002	6B	60	13	125	3/9/2023 10:44	3/9/2023 11:44	PIC	2387247
1205326726	5B	60	13	48	3/9/2023 10:41	3/9/2023 11:41	PIC	2387247
1205326727	3C	60	10	93	3/9/2023 10:42	3/9/2023 11:42	PIC	2387247
1205326728	2B	60	48	1035	3/9/2023 10:42	3/9/2023 11:42	PIC	2387247

Continuing Calibration Data

Gas Flow Proportional Counter Checks for 09-Mar-2023

Detectors LB4100 A1 through I4 and PIC 1A through 14D and G5400W 1W through 1Z and LB4200 OA1 through OA1

Short Name	Status	Parmname	Run Time	Count Time	CPM or dec	Low Limit	High Limit	Stdev
LB4100E2	Above	Beta bkg	09-Mar 04:48	60	2.033	1.385	3.072	-0.69
LB4100F2	Below	Alpha eff	09-Mar 05:57	5	6060	6533	7372	-6.38
LB4100F2	Above	Alpha XTalk	09-Mar 05:57	5	0.382	0.318	0.366	+5.08
LB4100F2	Above	Beta bkg	09-Mar 04:48	60	24.717	1.173	1.833	+211.03
LB4100H1	Above	Beta bkg	09-Mar 04:48	60	2.700	0.216	2.462	+3.64
PIC3D	Below	Alpha XTalk	09-Mar 05:07	5	0.249	0.260	0.381	-3.56
PIC3D	Above	Beta XTalk	09-Mar 05:14	5	0.010	-4.26E-4	0.001	+42.14
PIC13A	Above	Alpha bkg	09-Mar 05:47	60	1.967	-9.05E-2	0.347	+25.21
PIC14D	Below	Beta XTalk	09-Mar 10:46	5	0.012	0.013	0.018	-4.11

INSTRUMENTS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

The following detectors may not have properly transferred to the LIMS system

LB4100A1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100A2	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100A3	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C2	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C3	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C4	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I2	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I3	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I4	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4200OA1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk

Reviewed by ______________________

Date 3-9-23

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: GFPC **Batch ID: 2387247**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1205326726	MB	JE1	PIC5B	MAR-09-23 10:41:58	DONE	25mm Filter	01-JUN-22 00:00
1205326727	DUP	JE1	PIC3C	MAR-09-23 10:42:05	DONE	25mm Filter	01-JUN-22 00:00
1205326728	LCS	JE1	PIC2B	MAR-09-23 10:42:08	DONE	25mm Filter	01-JUN-22 00:00
609452001	SAMPLE	JE1	PIC5D	MAR-09-23 10:42:13	DONE	25mm Filter	01-JUN-22 00:00
609452002	SAMPLE	JE1	PIC1C	MAR-09-23 10:42:18	DONE	25mm Filter	01-JUN-22 00:00
609452003	SAMPLE	JE1	PIC2D	MAR-09-23 10:42:22	DONE	25mm Filter	01-JUN-22 00:00
609452004	SAMPLE	JE1	PIC3B	MAR-09-23 10:42:26	DONE	25mm Filter	01-JUN-22 00:00
609452005	SAMPLE	JE1	PIC4B	MAR-09-23 10:42:33	DONE	25mm Filter	01-JUN-22 00:00
609452006	SAMPLE	JE1	PIC8C	MAR-09-23 10:42:41	DONE	25mm Filter	01-JUN-22 00:00
609452007	SAMPLE	JE1	PIC1D	MAR-09-23 10:42:48	DONE	25mm Filter	01-JUN-22 00:00
609452008	SAMPLE	JE1	PIC4C	MAR-09-23 10:42:52	DONE	25mm Filter	01-JUN-22 00:00
609452009	SAMPLE	JE1	PIC6C	MAR-09-23 10:42:58	DONE	25mm Filter	01-JUN-22 00:00
610687001	SAMPLE	JE1	PIC8B	MAR-09-23 10:43:04	DONE	25mm Filter	01-JUN-22 00:00
610687002	SAMPLE	JE1	PIC2A	MAR-09-23 10:43:11	DONE	25mm Filter	01-JUN-22 00:00
610687003	SAMPLE	JE1	PIC2C	MAR-09-23 10:43:17	DONE	25mm Filter	01-JUN-22 00:00
610687004	SAMPLE	JE1	PIC8A	MAR-09-23 10:43:21	DONE	25mm Filter	01-JUN-22 00:00
610687005	SAMPLE	JE1	PIC5C	MAR-09-23 10:43:29	DONE	25mm Filter	01-JUN-22 00:00
610687006	SAMPLE	JE1	PIC1A	MAR-09-23 10:43:37	DONE	25mm Filter	01-JUN-22 00:00
610687007	SAMPLE	JE1	PIC6A	MAR-09-23 10:43:44	DONE	25mm Filter	01-JUN-22 00:00
610687008	SAMPLE	JE1	PIC1B	MAR-09-23 10:43:50	DONE	25mm Filter	01-JUN-22 00:00
610893001	SAMPLE	JE1	PIC5A	MAR-09-23 10:43:57	DONE	25mm Filter	01-JUN-22 00:00
610893002	SAMPLE	JE1	PIC6B	MAR-09-23 10:44:07	DONE	25mm Filter	01-JUN-22 00:00

Lucas Cell Raw Data

Batch 2387198 Check-list

This check-list was completed on 13-MAR-23 by Lyndsey Pace

This batch was reviewed by Gregory Ramsay on 13-MAR-23 and Lyndsey Pace on 13-MAR-23.

Batch ID:	**Product:**	**Description:** Lucas Cell Radium 226
2387198	LUC26RAL	GL-RAD-A-008

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the matrix spike (MS/MSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-226 in Liquid

Batch ID: 2387198
Analyst: Lyndsey Pace (LXP1)
Method: EPA 903.1 Modified
Lab SOP: GL-RAD-A-008 REV# 15
Instrument: LUCAS-C202389980

Due Dates for Lab: 08-MAR-2023 Package: 12-MAR-2023 SDG: 10-MAR-2023

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1205326619	Radium-226 SPIKE	1715-G	.1	mL
MS	1205326618	Radium-226 SPIKE	1715-G	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	End Degas (date)	CELL #	End Transfer (date)	Start Count Time (date)	Background Counts	Total Counts
1	609452001	03-MAR-2023	1	502.31	502.31	03/08/23 09:45	107	03/12/23 05:45	03/12/23 08:45	1	24
2	609452002	03-MAR-2023	1	502.82	502.82	03/08/23 09:45	208	03/12/23 05:45	03/12/23 08:45	6	25
3	609452003	03-MAR-2023	1	503.56	503.56	03/08/23 09:45	303	03/12/23 05:45	03/12/23 08:45	7	133
4	609452004	03-MAR-2023	1	501.75	501.75	03/08/23 09:45	403	03/12/23 05:45	03/12/23 08:45	3	33
5	609452005	03-MAR-2023	1	506.97	506.97	03/08/23 09:45	502	03/12/23 05:45	03/12/23 08:45	1	18
6	609452006	03-MAR-2023	1	505.4	505.4	03/08/23 09:45	604	03/12/23 05:45	03/12/23 08:45	1	14
7	609452007	03-MAR-2023	1	506.72	506.72	03/08/23 09:45	703	03/12/23 05:45	03/12/23 08:45	5	33
8	609452008	03-MAR-2023	1	501.57	501.57	03/08/23 09:45	802	03/12/23 05:45	03/12/23 08:45	6	28
9	609452009	03-MAR-2023	1	502.31	502.31	03/08/23 09:45	101	03/12/23 06:10	03/12/23 09:17	5	16
10	610687001	03-MAR-2023	1	500.18	500.18	03/08/23 09:45	202	03/12/23 06:10	03/12/23 09:17	4	13
11	610687002	03-MAR-2023	1	507.74	507.74	03/08/23 09:45	301	03/12/23 06:10	03/12/23 09:17	2	7
12	610687003	03-MAR-2023	1	506.5	506.5	03/08/23 09:45	402	03/12/23 06:10	03/12/23 09:17	2	16
13	610687004	03-MAR-2023	1	503.69	503.69	03/08/23 09:45	501	03/12/23 06:10	03/12/23 09:17	3	24
14	610687005	03-MAR-2023	1	501.75	501.75	03/08/23 09:45	602	03/12/23 06:10	03/12/23 09:17	2	19
15	610687006	03-MAR-2023	1	501.71	501.71	03/08/23 09:45	706	03/12/23 06:10	03/12/23 09:17	3	28
16	610687007	03-MAR-2023	1	500.85	500.85	03/08/23 09:45	805	03/12/23 06:10	03/12/23 09:17	4	32
17	610687008	03-MAR-2023	1	502.77	502.77	03/08/23 09:45	106	03/12/23 06:35	03/12/23 09:49	4	9
18	610893001	03-MAR-2023	1	506.68	506.68	03/08/23 09:45	201	03/12/23 06:35	03/12/23 09:49	4	19
19	610893002	03-MAR-2023	1	501.36	501.36	03/08/23 09:45	408	03/12/23 06:35	03/12/23 09:49	1	24
20	1205326616 MB	03-MAR-2023	1		507.74	03/08/23 09:45	503	03/12/23 06:35	03/12/23 09:49	6	14
21	1205326617 DUP (609452001)	03-MAR-2023	1	504.21	504.21	03/08/23 09:45	701	03/12/23 06:35	03/12/23 09:49	6	26
22	1205326618 MS (609452001)	03-MAR-2023	1	103.74	103.74	03/08/23 09:45	801	03/12/23 06:35	03/12/23 09:49	1	645
23	1205326619 LCS	03-MAR-2023	1		507.74	03/08/23 09:45	104	03/12/23 07:00	03/12/23 10:21	4	682

Reagent/Solvent Lot ID	Description	Amount

Comments:
Data Entry Date2: 03-MAR-2023 00:00

Radium-226 Liquid

Filename : RA226.XLS
File type : Excel
Version # : 1.3.2

Batch : 2387198
Analyst : LIN01615
Prep Date : 3/3/2023
Ra-226 Method Uncertainty : 0.073648

Procedure Code : LUC26RAL
Parmname : Radium-226
Required MDA : 1 pCi/L
Halflife of Ra-226 : 1600 years
Ra-226 Abundance : 1.00
Halflife of Rn-222: 3.8235 days

Batch counted on : LUCAS CELL DETECTOR
BKG Count time : 30 min

Sample Characteristics					**Count Raw Data**							
Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	Cell Number	Counting Time (min.)	Gross Counts	Gross CPM	Background Counts	Background CPM	Background Count Time (min.)	Cell Efficiency (cpm/dpm)
1	609452001.1	0.5023	2.0265E-05	2/1/2023 9:34	107	30	24	0.800	1	0.033	30	1.6990
2	609452002.1	0.5028	2.0267E-05	2/1/2023 11:13	208	30	25	0.833	6	0.200	30	1.7740
3	609452003.1	0.5036	2.0270E-05	2/1/2023 12:32	303	30	133	4.433	7	0.233	30	1.7210
4	609452004.1	0.5018	2.0263E-05	2/1/2023 13:44	403	30	33	1.100	3	0.100	30	1.5070
5	609452005.1	0.5070	2.0284E-05	2/1/2023 14:52	502	30	18	0.600	1	0.033	30	1.8630
6	609452006.1	0.5054	2.0278E-05	2/2/2023 9:42	604	30	14	0.467	1	0.033	30	1.6810
7	609452007.1	0.5067	2.0283E-05	2/2/2023 11:13	703	30	33	1.100	5	0.167	30	1.6440
8	609452008.1	0.5016	2.0262E-05	2/2/2023 11:18	802	30	28	0.933	6	0.200	30	2.0910
9	609452009.1	0.5023	2.0265E-05	2/2/2023 13:21	101	30	16	0.533	5	0.167	30	1.5720
10	610687001.1	0.5002	2.0257E-05	2/7/2023 13:52	202	30	13	0.433	4	0.133	30	1.8360
11	610687002.1	0.5077	2.0287E-05	2/7/2023 17:00	301	30	7	0.233	2	0.067	30	1.6430
12	610687003.1	0.5065	2.0282E-05	2/7/2023 10:18	402	30	16	0.533	2	0.067	30	1.4980
13	610687004.1	0.5037	2.0271E-05	2/7/2023 11:49	501	30	24	0.800	3	0.100	30	1.8220
14	610687005.1	0.5018	2.0263E-05	2/7/2023 17:35	602	30	19	0.633	2	0.067	30	1.8620
15	610687006.1	0.5017	2.0263E-05	2/7/2023 15:29	706	30	28	0.933	3	0.100	30	1.5900
16	610687007.1	0.5009	2.0259E-05	2/7/2023 11:49	805	30	32	1.067	4	0.133	30	1.9080
17	610687008.1	0.5028	2.0267E-05	2/7/2023 7:55	106	30	9	0.300	4	0.133	30	1.6990
18	610893001.1	0.5067	2.0283E-05	2/8/2023 11:41	201	30	19	0.633	4	0.133	30	1.7110
19	610893002.1	0.5014	2.0261E-05	2/8/2023 11:46	408	30	24	0.800	1	0.033	30	1.5020
20	1205326616.1	0.5077	2.0287E-05	3/3/2023 0:00	503	30	14	0.467	6	0.200	30	2.1390
21	1205326617.1	0.5042	2.0273E-05	2/1/2023 9:34	701	30	26	0.867	6	0.200	30	1.7440
22	1205326618.1	0.1037	1.1597E-05	2/1/2023 9:34	801	30	645	21.500	1	0.033	30	1.7180
23	1205326619.1	0.5077	2.0287E-05	3/3/2023 0:00	104	30	682	22.733	4	0.133	30	1.6160

Pipet, 0.1 ml Stdev : +/-	0.000200	ml
Pipet, 0.5 ml Stdev : +/-	0.001000	ml
Pipet, 1 ml Stdev : +/-	0.002000	ml

Analytical SOP: GL-RAD-A-008
Instrument SOP: GL-RAD-I-007

Cell Efficiency Error (%)	Cell Calibration Date	Cell Calibration Due Date	De-Gas Date/Time	Rn-222 Ingrow End Date/Time	Count Start Date/Time	Rn-222 Corrections De-Gas to Ingrowth	Ingrowth to Count	During Count	Ra-226 Decay
3.900%	4/28/2022	4/30/2023	3/8/2023 9:45	3/12/2023 5:45	3/12/2023 8:45	0.501	0.978	1.002	1.000
5.500%	8/1/2022	7/31/2023	3/8/2023 9:45	3/12/2023 5:45	3/12/2023 8:45	0.501	0.978	1.002	1.000
7.400%	10/25/2022	10/31/2023	3/8/2023 9:45	3/12/2023 5:45	3/12/2023 8:45	0.501	0.978	1.002	1.000
6.100%	2/1/2023	1/31/2024	3/8/2023 9:45	3/12/2023 5:45	3/12/2023 8:45	0.501	0.978	1.002	1.000
6.700%	6/1/2022	5/31/2023	3/8/2023 9:45	3/12/2023 5:45	3/12/2023 8:45	0.501	0.978	1.002	1.000
6.700%	7/1/2022	6/30/2023	3/8/2023 9:45	3/12/2023 5:45	3/12/2023 8:45	0.501	0.978	1.002	1.000
9.000%	11/1/2022	10/31/2023	3/8/2023 9:45	3/12/2023 5:45	3/12/2023 8:45	0.501	0.978	1.002	1.000
8.000%	4/1/2022	3/31/2023	3/8/2023 9:45	3/12/2023 5:45	3/12/2023 8:45	0.501	0.978	1.002	1.000
1.200%	4/28/2022	4/30/2023	3/8/2023 9:45	3/12/2023 6:10	3/12/2023 9:17	0.502	0.977	1.002	1.000
5.100%	8/1/2022	7/31/2023	3/8/2023 9:45	3/12/2023 6:10	3/12/2023 9:17	0.502	0.977	1.002	1.000
4.500%	10/25/2022	10/31/2023	3/8/2023 9:45	3/12/2023 6:10	3/12/2023 9:17	0.502	0.977	1.002	1.000
5.300%	2/1/2023	1/31/2024	3/8/2023 9:45	3/12/2023 6:10	3/12/2023 9:17	0.502	0.977	1.002	1.000
7.900%	6/1/2022	5/31/2023	3/8/2023 9:45	3/12/2023 6:10	3/12/2023 9:17	0.502	0.977	1.002	1.000
5.700%	7/1/2022	6/30/2023	3/8/2023 9:45	3/12/2023 6:10	3/12/2023 9:17	0.502	0.977	1.002	1.000
2.900%	11/1/2022	10/31/2023	3/8/2023 9:45	3/12/2023 6:10	3/12/2023 9:17	0.502	0.977	1.002	1.000
7.400%	4/1/2022	3/31/2023	3/8/2023 9:45	3/12/2023 6:10	3/12/2023 9:17	0.502	0.977	1.002	1.000
8.800%	4/28/2022	4/30/2023	3/8/2023 9:45	3/12/2023 6:35	3/12/2023 9:49	0.504	0.976	1.002	1.000
8.900%	8/1/2022	7/31/2023	3/8/2023 9:45	3/12/2023 6:35	3/12/2023 9:49	0.504	0.976	1.002	1.000
7.000%	2/1/2023	1/31/2024	3/8/2023 9:45	3/12/2023 6:35	3/12/2023 9:49	0.504	0.976	1.002	1.000
5.000%	6/1/2022	5/31/2023	3/8/2023 9:45	3/12/2023 6:35	3/12/2023 9:49	0.504	0.976	1.002	1.000
6.200%	11/1/2022	10/31/2023	3/8/2023 9:45	3/12/2023 6:35	3/12/2023 9:49	0.504	0.976	1.002	1.000
5.000%	4/1/2022	3/31/2023	3/8/2023 9:45	3/12/2023 6:35	3/12/2023 9:49	0.504	0.976	1.002	1.000
2.000%	4/28/2022	4/30/2023	3/8/2023 9:45	3/12/2023 7:00	3/12/2023 10:21	0.506	0.975	1.002	1.000

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

Spike S/N :	1715-G
Spike Exp Date :	9/8/2023
Spike Activity (dpm/ml):	297.43
Spike Volume Added:	0.10
LCS S/N :	1715-G
LCS Exp Date :	9/8/2023
LCS Activity (dpm/ml):	297.43
LCS Volume Added:	0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	0.1186	0.0837	1	0.2755	**0.8280**	22.09%	0.7667	0.1667	0.3528	0.3778		SAMPLE				
2	0.2780	0.1963	1	0.4959	**0.6544**	29.82%	0.6333	0.1856	0.3759	0.3939		SAMPLE				
3	0.3091	0.2182	1	0.5428	**4.4668**	11.96%	4.2000	0.3944	0.8221	1.2294		SAMPLE				
4	0.2319	0.1637	1	0.4493	**1.2189**	20.91%	1.0000	0.2000	0.4778	0.5296		SAMPLE				
5	0.1072	0.0757	1	0.2489	**0.5530**	26.50%	0.5667	0.1453	0.2779	0.2981		SAMPLE				
6	0.1192	0.0841	1	0.2767	**0.4701**	30.54%	0.4333	0.1291	0.2745	0.2894		SAMPLE				
7	0.2717	0.1918	1	0.4943	**1.0326**	23.78%	0.9333	0.2055	0.4456	0.5039		SAMPLE				
8	0.2364	0.1669	1	0.4217	**0.6445**	27.69%	0.7333	0.1944	0.3348	0.3619		SAMPLE				
9	0.2860	0.2019	1	0.5203	**0.4270**	41.68%	0.3667	0.1528	0.3487	0.3542		SAMPLE				
10	0.2200	0.1553	1	0.4108	**0.3004**	46.10%	0.3000	0.1374	0.2698	0.2749		SAMPLE				
11	0.1712	0.1209	1	0.3520	**0.1837**	60.17%	0.1667	0.1000	0.2161	0.2183		SAMPLE				
12	0.1883	0.1329	1	0.3870	**0.5656**	30.76%	0.4667	0.1414	0.3360	0.3507		SAMPLE				
13	0.1906	0.1346	1	0.3694	**0.7014**	25.97%	0.7000	0.1732	0.3402	0.3712		SAMPLE				
14	0.1529	0.1079	1	0.3143	**0.5578**	27.55%	0.5667	0.1528	0.2947	0.3118		SAMPLE				
15	0.2193	0.1548	1	0.4250	**0.9607**	22.46%	0.8333	0.1856	0.4193	0.4450		SAMPLE				
16	0.2114	0.1492	1	0.3947	**0.8982**	22.67%	0.9333	0.2000	0.3772	0.4196		SAMPLE				
17	0.2360	0.1666	1	0.4406	**0.1790**	72.65%	0.1667	0.1202	0.2530	0.2562		SAMPLE				
18	0.2325	0.1642	1	0.4341	**0.5292**	33.19%	0.5000	0.1599	0.3316	0.3526		SAMPLE				
19	0.1338	0.0945	1	0.3108	**0.9342**	22.84%	0.7667	0.1667	0.3980	0.4394		SAMPLE				
20	0.2273	0.1605	1	0.4054	**0.2253**	56.12%	0.2667	0.1491	0.2468	0.2500		MB				
21	0.2807	0.1982	1	0.5008	**0.6957**	28.96%	0.6667	0.1886	0.3857	0.4074	609452001.1	DUP	17.4%			
22	0.5655	0.3992	1	1.3133	**110.5191**	6.37%	21.4667	0.8472	8.5492	21.0929	609452001.1	MS			129.1530	84.9%
23	0.2451	0.1731	1	0.4577	**25.2171**	4.35%	22.6000	0.8731	1.9093	4.2276		LCS			26.3872	95.6%

Continuing Calibration Data

Ludlum Alpha Scintillation Counter Checks for 12-MAR-2023

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LUCAS1	EFF	07:08	1	1.21E+05	121249	-0.68		
LUCAS2	EFF	07:05	1	1.34E+05	134007	0.24		
LUCAS3	EFF	07:01	1	1.04E+05	104036	-2		
LUCAS4	EFF	06:59	1	1.28E+05	127668	-0.35		
LUCAS5	EFF	06:51	1	1.33E+05	132724	0.12		
LUCAS6	EFF	06:50	1	1.30E+05	129726	-0.95		
LUCAS7	EFF	06:44	1	1.31E+05	130778	0.1		
LUCAS8	EFF	06:33	1	1.24E+05	124265	-1.65		

Reviewed by: Lyndsey Pace **Date:** 13-MAR-23

Lyndsey Pace

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: LUCAS CELL DETECTOR **Batch ID: 2387198**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
609452001	SAMPLE	LXP1	LUCAS1	MAR-12-23 08:45:00	DONE	Lucas Cell	28-APR-22 00:00
609452002	SAMPLE	LXP1	LUCAS2	MAR-12-23 08:45:00	DONE	Lucas Cell	01-AUG-22 00:00
609452003	SAMPLE	LXP1	LUCAS3	MAR-12-23 08:45:00	DONE	Lucas Cell	25-OCT-22 00:00
609452004	SAMPLE	LXP1	LUCAS4	MAR-12-23 08:45:00	DONE	Lucas Cell	01-FEB-23 00:00
609452005	SAMPLE	LXP1	LUCAS5	MAR-12-23 08:45:00	DONE	Lucas Cell	01-JUN-22 00:00
609452006	SAMPLE	LXP1	LUCAS6	MAR-12-23 08:45:00	DONE	Lucas Cell	01-JUL-22 00:00
609452007	SAMPLE	LXP1	LUCAS7	MAR-12-23 08:45:00	DONE	Lucas Cell	01-NOV-22 00:00
609452008	SAMPLE	LXP1	LUCAS8	MAR-12-23 08:45:00	DONE	Lucas Cell	01-APR-22 00:00
609452009	SAMPLE	LXP1	LUCAS1	MAR-12-23 09:17:00	DONE	Lucas Cell	28-APR-22 00:00
610687001	SAMPLE	LXP1	LUCAS2	MAR-12-23 09:17:00	DONE	Lucas Cell	01-AUG-22 00:00
610687002	SAMPLE	LXP1	LUCAS3	MAR-12-23 09:17:00	DONE	Lucas Cell	25-OCT-22 00:00
610687003	SAMPLE	LXP1	LUCAS4	MAR-12-23 09:17:00	DONE	Lucas Cell	01-FEB-23 00:00
610687004	SAMPLE	LXP1	LUCAS5	MAR-12-23 09:17:00	DONE	Lucas Cell	01-JUN-22 00:00
610687005	SAMPLE	LXP1	LUCAS6	MAR-12-23 09:17:00	DONE	Lucas Cell	01-JUL-22 00:00
610687006	SAMPLE	LXP1	LUCAS7	MAR-12-23 09:17:00	DONE	Lucas Cell	01-NOV-22 00:00
610687007	SAMPLE	LXP1	LUCAS8	MAR-12-23 09:17:00	DONE	Lucas Cell	01-APR-22 00:00
610687008	SAMPLE	LXP1	LUCAS1	MAR-12-23 09:49:00	DONE	Lucas Cell	28-APR-22 00:00
610893001	SAMPLE	LXP1	LUCAS2	MAR-12-23 09:49:00	DONE	Lucas Cell	01-AUG-22 00:00
610893002	SAMPLE	LXP1	LUCAS4	MAR-12-23 09:49:00	DONE	Lucas Cell	01-FEB-23 00:00
1205326616	MB	LXP1	LUCAS5	MAR-12-23 09:49:00	DONE	Lucas Cell	01-JUN-22 00:00
1205326617	DUP	LXP1	LUCAS7	MAR-12-23 09:49:00	DONE	Lucas Cell	01-NOV-22 00:00
1205326618	MS	LXP1	LUCAS8	MAR-12-23 09:49:00	DONE	Lucas Cell	01-APR-22 00:00
1205326619	LCS	LXP1	LUCAS1	MAR-12-23 10:21:00	DONE	Lucas Cell	28-APR-22 00:00

Analytical Laboratory Report

Final Report

Report ID: S45182.01(02)
Generated on 03/30/2023
Replaces report S45182.01(01) generated on 02/13/2023

Report to

Attention: Jennifer Caporale
Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S45182.01-S45182.09
Project: Erickson AM MI Wells 7-10
Collected Date(s): 02/08/2023
Submitted Date/Time: 02/09/2023 13:55
Sampled by: Marc Wahrer
P.O. #:

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

All analyses completed

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
E245.1	EPA Method 245.1 Revision 3.0
E300.0	EPA Method 300.0 Revision 2.1 (1993)
SM2320B	Standard Method 2320 B 2011
SM2340C	Standard Method 2340 C 2011
SM2540C	Standard Method 2540 C 2015
SM2540D	Standard Method 2540 D 2015
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (9 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S45182.01	MW-7 L302145-01	Groundwater	02/08/23 13:40
S45182.02	MW-8 L302145-02	Groundwater	02/08/23 12:23
S45182.03	MW-9 L302145-03	Groundwater	02/08/23 11:06
S45182.04	MW-10 L302145-04	Groundwater	02/08/23 09:11
S45182.05	MW-7B L302145-05	Groundwater	02/08/23 14:53
S45182.06	MW-7C L302145-06	Groundwater	02/08/23 16:04
S45182.07	MWT-10 L302145-07	Groundwater	02/08/23 09:11
S45182.08	Field Blank L302145-08	Water	02/08/23 08:15
S45182.09	MW-13 L302145-09	Groundwater	02/08/23 17:22

Lab Sample ID: S45182.01
Sample Tag: MW-7 L302145-01
Collected Date/Time: 02/08/2023 13:40
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.0	IR
2	1L Plastic	None	Yes	2.0	IR
1	250ml Plastic	HNO3	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/13/23 12:07	CTV	
Metal Digestion	Completed	SW3015A	02/10/23 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/10/23 10:48, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	

Method: E300.0, Run Date: 02/10/23 12:49, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	82	10	0.13	mg/L	10	16887-00-6	
Sulfate	198	10	1.0	mg/L	10	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 10:36, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	163	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/13/23 11:28, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	290	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/10/23 20:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	564	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 18:45, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/10/23 12:09, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	0.004	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.049	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	1.36	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	

Lab Sample ID: S45182.01 (continued)
Sample Tag: MW-7 L302145-01

Method: E200.8, Run Date: 02/10/23 12:09, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	1.00	0.02	0.00192	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.073	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	0.173	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/10/23 15:31, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	98.8	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	12.3	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	8.90	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	66.5	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/13/23 13:08, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/30/23 12:06, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45182.02

Sample Tag: MW-8 L302145-02

Collected Date/Time: 02/08/2023 12:23

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.0	IR
2	1L Plastic	None	Yes	2.0	IR
1	250ml Plastic	HNO3	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/13/23 12:07	CTV	
Metal Digestion	Completed	SW3015A	02/10/23 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/10/23 10:58, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	24	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	32	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 10:40, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	440	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/13/23 11:36, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	384	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/10/23 20:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	430	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 18:45, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/10/23 12:13, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.022	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.08	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	Not detected	0.02	0.00192	mg/L	5	7439-89-6	

Lab Sample ID: S45182.02 (continued)
Sample Tag: MW-8 L302145-02

Method: E200.8, Run Date: 02/10/23 12:13, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.007	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/10/23 15:33, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	104	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	31.8	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	0.53	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	14.2	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/13/23 13:18, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/30/23 12:06, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45182.03
Sample Tag: MW-9 L302145-03
Collected Date/Time: 02/08/2023 11:06
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.0	IR
2	1L Plastic	None	Yes	2.0	IR
1	250ml Plastic	HNO3	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/13/23 12:07	CTV	
Metal Digestion	Completed	SW3015A	02/10/23 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/10/23 11:09, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	Not detected	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 10:44, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	336	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/13/23 11:38, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	261	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/10/23 20:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	274	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 18:45, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/10/23 12:17, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.014	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	Not detected	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	Not detected	0.02	0.00192	mg/L	5	7439-89-6	

Lab Sample ID: S45182.03 (continued)

Sample Tag: MW-9 L302145-03

Method: E200.8, Run Date: 02/10/23 12:17, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/10/23 15:34, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	76.9	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	19.4	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	0.93	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	2.86	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/13/23 13:21, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/30/23 12:06, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45182.04

Sample Tag: MW-10 L302145-04

Collected Date/Time: 02/08/2023 09:11

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.0	IR
2	1L Plastic	None	Yes	2.0	IR
1	250ml Plastic	HNO3	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/13/23 12:07	CTV	
Metal Digestion	Completed	SW3015A	02/10/23 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/10/23 11:19, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	13	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 10:46, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	525	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/13/23 11:40, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	461	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/10/23 20:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	494	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 18:45, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/10/23 12:20, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.036	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.04	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	Not detected	0.02	0.00192	mg/L	5	7439-89-6	

Lab Sample ID: S45182.04 (continued)

Sample Tag: MW-10 L302145-04

Method: E200.8, Run Date: 02/10/23 12:20, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/10/23 15:36, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	136	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	29.5	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	0.62	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	2.54	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/13/23 13:25, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/30/23 12:06, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45182.05

Sample Tag: MW-7B L302145-05

Collected Date/Time: 02/08/2023 14:53

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.0	IR
2	1L Plastic	None	Yes	2.0	IR
1	250ml Plastic	HNO3	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/13/23 12:07	CTV	
Metal Digestion	Completed	SW3015A	02/10/23 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/10/23 11:29, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	Not detected	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 10:48, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	418	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/13/23 11:42, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	29	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/10/23 20:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	362	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 18:45, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/10/23 12:23, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.009	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	3.00	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	0.08	0.02	0.00192	mg/L	5	7439-89-6	

Lab Sample ID: S45182.05 (continued)

Sample Tag: MW-7B L302145-05

Method: E200.8, Run Date: 02/10/23 12:23, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.032	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/10/23 15:38, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	8.77	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	2.81	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	5.58	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	142	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/13/23 13:28, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/30/23 12:06, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45182.06
Sample Tag: MW-7C L302145-06
Collected Date/Time: 02/08/2023 16:04
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.0	IR
2	1L Plastic	None	Yes	2.0	IR
1	250ml Plastic	HNO3	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/13/23 12:07	CTV	
Metal Digestion	Completed	SW3015A	02/10/23 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/10/23 11:39, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	

Method: E300.0, Run Date: 02/10/23 13:09, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	94	50	0.65	mg/L	50	16887-00-6	
Sulfate	687	50	5.2	mg/L	50	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 10:50, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	172	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/13/23 11:44, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	742	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/10/23 20:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	1,360	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 18:45, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	7	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/10/23 12:26, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	0.006	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.041	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	6.46	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	

Lab Sample ID: S45182.06 (continued)

Sample Tag: MW-7C L302145-06

Method: E200.8, Run Date: 02/10/23 12:26, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	3.67	0.02	0.00192	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.125	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	0.386	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	0.007	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/10/23 15:39, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	246	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	42.7	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	6.07	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	99.8	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/13/23 13:38, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/30/23 12:06, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45182.07
Sample Tag: MWT-10 L302145-07
Collected Date/Time: 02/08/2023 09:11
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.0	IR
2	1L Plastic	None	Yes	2.0	IR
1	250ml Plastic	HNO3	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/13/23 12:07	CTV	
Metal Digestion	Completed	SW3015A	02/10/23 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/10/23 11:49, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	13	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 10:52, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	522	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/13/23 11:46, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	460	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/10/23 20:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	482	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 18:45, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/10/23 12:32, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.036	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.05	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	Not detected	0.02	0.00192	mg/L	5	7439-89-6	

Lab Sample ID: S45182.07 (continued)
Sample Tag: MWT-10 L302145-07

Method: E200.8, Run Date: 02/10/23 12:32, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/10/23 15:41, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	140	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	29.2	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	0.70	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	2.73	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/13/23 13:41, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/30/23 12:06, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45182.08
Sample Tag: Field Blank L302145-08
Collected Date/Time: 02/08/2023 08:15
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.0	IR
2	1L Plastic	None	Yes	2.0	IR
1	250ml Plastic	HNO3	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/13/23 12:07	CTV	
Metal Digestion	Completed	SW3015A	02/10/23 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/10/23 11:59, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	2.5	0.03	mg/L	2.5	16887-00-6	
Fluoride (Undistilled)	Not detected	0.5	0.04	mg/L	2.5	16984-48-8	
Sulfate	Not detected	2.5	0.26	mg/L	2.5	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 10:54, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	Not detected	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/13/23 11:48, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	Not detected	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/10/23 20:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	Not detected	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 18:45, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/10/23 12:03, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00102	mg/L	2	7440-36-0	
Arsenic	Not detected	0.002	0.000102	mg/L	2	7440-38-2	
Barium	Not detected	0.005	0.0000648	mg/L	2	7440-39-3	
Beryllium	Not detected	0.001	0.0000862	mg/L	2	7440-41-7	
Boron	Not detected	0.04	0.000702	mg/L	2	7440-42-8	
Cadmium	Not detected	0.0005	0.0000760	mg/L	2	7440-43-9	
Chromium	Not detected	0.005	0.0000386	mg/L	2	7440-47-3	
Cobalt	Not detected	0.005	0.0000434	mg/L	2	7440-48-4	
Copper	Not detected	0.005	0.000150	mg/L	2	7440-50-8	
Iron	Not detected	0.02	0.000768	mg/L	2	7439-89-6	

Lab Sample ID: S45182.08 (continued)
Sample Tag: Field Blank L302145-08

Method: E200.8, Run Date: 02/10/23 12:03, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.0000760	mg/L	2	7439-92-1	
Lithium*	Not detected	0.005	0.000654	mg/L	2	7439-93-2	
Molybdenum	Not detected	0.005	0.0000868	mg/L	2	7439-98-7	
Nickel	Not detected	0.005	0.000100	mg/L	2	7440-02-0	
Selenium	Not detected	0.005	0.000838	mg/L	2	7782-49-2	
Silver	Not detected	0.0005	0.0000270	mg/L	2	7440-22-4	
Thallium	Not detected	0.002	0.0000342	mg/L	2	7440-28-0	
Vanadium	Not detected	0.005	0.0000558	mg/L	2	7440-62-2	
Zinc	Not detected	0.005	0.000292	mg/L	2	7440-66-6	

Method: E200.8, Run Date: 02/10/23 15:30, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	Not detected	0.50	0.0174	mg/L	2	7440-70-2	
Magnesium	Not detected	0.50	0.00480	mg/L	2	7439-95-4	
Potassium	Not detected	0.50	0.00920	mg/L	2	7440-09-7	
Sodium	Not detected	0.50	0.00340	mg/L	2	7440-23-5	

Method: E245.1, Run Date: 02/13/23 13:44, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/30/23 12:06, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45182.09

Sample Tag: MW-13 L302145-09

Collected Date/Time: 02/08/2023 17:22

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.0	IR
2	1L Plastic	None	Yes	2.0	IR
1	250ml Plastic	HNO3	Yes	2.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/13/23 12:07	CTV	
Metal Digestion	Completed	SW3015A	02/10/23 10:00	CCM	

Inorganics

Method: E300.0, Run Date: 02/10/23 12:09, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	43	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	37	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/10/23 10:56, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	437	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/13/23 11:50, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	444	10	0.238	mg/L	10		

Method: SM2540C, Run Date: 02/10/23 20:00, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	476	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/10/23 18:45, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/10/23 12:36, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.028	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.18	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	0.06	0.02	0.00192	mg/L	5	7439-89-6	

Lab Sample ID: S45182.09 (continued)

Sample Tag: MW-13 L302145-09

Method: E200.8, Run Date: 02/10/23 12:36, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/10/23 15:42, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	132	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	29.0	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	0.76	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	4.68	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/13/23 13:48, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.0000160	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/30/23 12:06, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories Login Checklist

Lab Set ID: S45182
Client: BWL01 (Board of Water & Light)
Project: Erickson AM MI Wells 7-10
Submitted: 02/09/2023 13:55 Login User: PFD

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 2.0
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[X] Yes	[ ] No	[ ] N/A	Subcontracting needed? Subcontacted to:	GEL
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: ______________________ Date: ____________

Merit Laboratories Bottle Preservation Check

Lab Set ID: S45182 Submitted: 02/09/2023 13:55

Client: BWL01 (Board of Water & Light)

Project: Erickson AM MI Wells 7-10

Initial Preservation Check: 02/09/2023 16:59 PFD

Preservation Recheck (E200.8): N/A

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S45182.01	1L Plastic HNO3	<2			
S45182.01	1L Plastic HNO3	<2			
S45182.01	250ml Plastic HNO3	<2			
S45182.02	1L Plastic HNO3	<2			
S45182.02	1L Plastic HNO3	<2			
S45182.02	250ml Plastic HNO3	<2			
S45182.03	1L Plastic HNO3	<2			
S45182.03	1L Plastic HNO3	<2			
S45182.03	250ml Plastic HNO3	<2			
S45182.04	1L Plastic HNO3	<2			
S45182.04	1L Plastic HNO3	<2			
S45182.04	250ml Plastic HNO3	<2			
S45182.05	1L Plastic HNO3	<2			
S45182.05	1L Plastic HNO3	<2			
S45182.05	250ml Plastic HNO3	<2			
S45182.06	1L Plastic HNO3	<2			
S45182.06	1L Plastic HNO3	<2			
S45182.06	250ml Plastic HNO3	<2			
S45182.07	1L Plastic HNO3	<2			
S45182.07	1L Plastic HNO3	<2			
S45182.07	250ml Plastic HNO3	<2			
S45182.08	1L Plastic HNO3	<2			
S45182.08	1L Plastic HNO3	<2			
S45182.08	250ml Plastic HNO3	<2			
S45182.09	1L Plastic HNO3	<2			
S45182.09	1L Plastic HNO3	<2			
S45182.09	250ml Plastic HNO3	<2			

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Jennifer Caporale
COMPANY: Lansing Board of Water and Light
ADDRESS: PO Box 13007 48901-3007
CITY: Lansing STATE: Mi ZIP CODE: 48901
PHONE NO.: 517-702-6372 FAX NO.: P.O. NO.:
E-MAIL ADDRESS: Environmental_Laboratory@lbwl.com QUOTE NO.:

INVOICE TO

CONTACT NAME: Beth Zimpfer ☒ SAME
COMPANY:
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: E-MAIL ADDRESS: Beth.Zimpfer@lbwl.com

PROJECT NO./NAME: Erickson AM MI Wells 7-10
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Marc Wahrer

TURNAROUND TIME REQUIRED ☐ 1 DAY ☒ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☒ OTHER ASAP

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☒ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	F- undisstiled, Cl-, SO4, TDS	Radium 226	Radium 228	TSS	HCO3, CO3, Hardness			
4518201	02/08/23	1340	MW-7 L302145-01	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.02	↓	1223	MW-8 -02	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.03		1106	MW-9 -03	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.04		0911	MW-10 -04	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.05		1453	MW-7B -05	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.06		1604	MW-7C -06	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.07		0911	MWT-10 -07	GW	5	2		3					✓	✓	✓	✓	✓	✓			
.08		0815	Field Blank -08	DI	5	2		3					✓	✓	✓	✓	✓	✓			
.09	↓	1722	MW-13 -09	GW	5	2		3					✓	✓	✓	✓	✓	✓			

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☒ NPDES

Project Locations: ☐ Detroit ☐ New York ☐ Other

Special Instructions:
Metals to analyse: Na, Mg, K B, Ca, Sb, As, Ba, Be, Cd, Cr, Co, Li, Hg, Mo, Pb, Se, Tl, Fe, Cu, Ni, Ag, V, Zn
Please send a preliminary report

RELINQUISHED BY: SIGNATURE/ORGANIZATION [signature] ☐ Sampler	DATE 2.9.23	TIME 1355	RELINQUISHED BY: SIGNATURE/ORGANIZATION DATE TIME
RECEIVED BY: SIGNATURE/ORGANIZATION [signature]	DATE 2/9/23	TIME 1355	RECEIVED BY: SIGNATURE/ORGANIZATION DATE TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME	SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME	SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 2.0

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Reporting Limits to go to Merit with COC

Sb, total	Antimony	250 mL plastic	mg/L	Nitric Acid	200.7	6 mos	0.005
As, total	Arsenic	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
Ba, total		250 mL plastic	mg/L	Nitric Acid	200.8	6mos	0.150
Be, total	Beryllium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.001
B, total	Boron	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.04
Cd, total	Cadmium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
Ca	Calcium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	2.5
Cl	Chloride	250 mL plastic	mg/L	Chill	300.0	28 d	10
Cr, total	Chromium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Co, total	Cobalt	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Cu, total	Copper	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
F	Fluoride	250 mL plastic	mg/L	None	9056	28 d	1.0
Fe, total	Iron	250 mL plastic	mg/L	Nitric Acid	300.0	6 mos	0.02
Pb, total	Lead	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.003
Li, total	Lithium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Hg, total	Mercury	250 mL plastic	mg/L	HNO3	245.1	28 d	0.0002
Mo, total	Molybdenum	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ni, total	Nickel	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
RA226/228	Radium 226 and 228 combined	(2) 1 L plastic	pCi/L	HNO3	SM 7500	6 mos	2.0 combined
Se, total	Selenium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ag, total	Silver	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
SO4	Sulfate	250 mL plastic	mg/L	Chill	300.0	28 d	10
Tl, total	Thallium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
TDS	Total Dissolved Solids	1 L plastic	mg/L	None	SM 2540C	NA	20
TSS	Total Suspended Solids	1 L plastic	mg/L	None	SM 2540D	NA	3
V, total	Vanadium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Zn, total	Zinc	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

March 23, 2023

John Laverty
Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan 48823

Re: Routine Analysis
Work Order: 612576
SDG: S45182

Dear John Laverty:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 01, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1614.

Sincerely,

Jordan Melton

Jordan Melton for
Delaney Stone
Project Manager

Purchase Order: GELP20-0018
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Merit Laboratories, Inc.
SDG: S45182
Work Order: 612576

March 23, 2023

Laboratory Identification:

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

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on March 01, 2023 for analysis. The samples were delivered with proper chain of custody documentation and signatures. Sample was received half empty*612576008(S45182.08)*. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
612576001	S45182.01
612576002	S45182.02
612576003	S45182.03
612576004	S45182.04
612576005	S45182.05
612576006	S45182.06
612576007	S45182.07
612576008	S45182.08
612576009	S45182.09

Case Narrative:

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

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

Jordan Melton

Jordan Melton for
Delaney Stone
Project Manager

Chain of Custody and Supporting Documentation

612576

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME Project Management Team
COMPANY Merit Laboratories
ADDRESS 2680 East Lansing Drive
CITY East Lansing STATE MI ZIP CODE 48823
PHONE NO. 517-332-0167 FAX NO. P.O. NO.
E-MAIL ADDRESS results@meritlabs.com QUOTE NO.

INVOICE TO ☒ SAME

CONTACT NAME Julie Teague
COMPANY Merit Laboratories
ADDRESS 2680 East Lansing Drive
CITY East Lansing STATE MI ZIP CODE 48823
PHONE NO. 517-332-0167 E-MAIL ADDRESS juliet@meritlabs.com

PROJECT NO./NAME S45182 SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☒ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Radium 226*	Radium 228**	Certifications / Special Instructions
	2/8/23	1340	S45182.01	GW	2			2					✓	✓	* E903.1 Mod.
	2/8/23	1223	S45182.02	GW	2			2					✓	✓	** E904.0/SW 9320 Mod.
	2/8/23	1106	S45182.03	GW	2			2					✓	✓	
	2/8/23	0911	S45182.04	GW	2			2					✓	✓	Please use calculation product &
	2/8/23	1453	S45182.05	GW	2			2					✓	✓	provide Radium 226/228 combined
	2/8/23	1604	S45182.06	GW	2			2					✓	✓	results on the report
	2/8/23	0911	S45182.07	GW	2			2					✓	✓	
	2/8/23	0815	S45182.08	GW	2			2					✓	✓	(No Ice needed)
	2/8/23	1722	S45182.09	GW	2			2					✓	✓	** Subcontracted to
															GEL Laboratories, Inc.
															2040 Savage Road
															Charleston, SC 29407

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES
Project Locations: ☐ Detroit ☐ New York ☐ Other

RELINQUISHED BY: SIGNATURE/ORGANIZATION ☐ Sampler DATE 2/13/23 TIME 1700
RECEIVED BY: SIGNATURE/ORGANIZATION WPS DATE 2/13/23 TIME 1700
RELINQUISHED BY: SIGNATURE/ORGANIZATION DATE TIME
RECEIVED BY: SIGNATURE/ORGANIZATION DATE TIME

RELINQUISHED BY: SIGNATURE/ORGANIZATION DATE TIME
RECEIVED BY: SIGNATURE/ORGANIZATION DATE 3/1/23 TIME 1000
SEAL NO. SEAL INTACT YES☐ NO☐ INITIALS
SEAL NO. SEAL INTACT YES☐ NO☐ INITIALS
NOTES: TEMP. ON ARRIVAL

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 3.18.12

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: MERI	SDG/AR/COC/Work Order: 612576
Received By: Stacy Boone	Date Received: MARCH 1, 2023
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 1Z 466 477 03 6210 0413

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A) Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): ___ CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*			✓	Preservation Method: Wet Ice Ice Packs Dry ice None Other: TEMP: 21C *all temperatures are recorded in Celsius
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR3-22 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?			✓	Circle Applicable: Seals broken Damaged container Leaking container Other (describe) S45182.08 1 of 2 ALMOST EMPTY
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials JM Date 3-1-23 Page 1 of 1

GL-CHL-SR-001 Rev 7

Laboratory Certifications

List of current GEL Certifications as of 23 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
Merit Laboratories, Inc.
SDG #: S45182
Work Order #: 612576

Product: **GFPC Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2397396

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

GEL Sample ID#	Client Sample Identification
612576001	S45182.01
612576002	S45182.02
612576003	S45182.03
612576004	S45182.04
612576005	S45182.05
612576006	S45182.06
612576007	S45182.07
612576008	S45182.08
612576009	S45182.09
1205343479	Method Blank (MB)
1205343480	612576001(S45182.01) Sample Duplicate (DUP)
1205343481	Laboratory Control Sample (LCS)

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

Data Summary:

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

Quality Control (QC) Information

Duplication Criteria between QC Sample and Duplicate Sample
The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample	Analyte	Value
1205343480 (S45182.01DUP)	Radium-228	RPD 103* (0.0%-100.0%) RER 2.77 (0-3)

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified

Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2397378

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

GEL Sample ID#	Client Sample Identification
612576001	S45182.01
612576002	S45182.02
612576003	S45182.03
612576004	S45182.04
612576005	S45182.05
612576006	S45182.06
612576007	S45182.07
612576008	S45182.08
612576009	S45182.09
1205343412	Method Blank (MB)
1205343413	612576001(S45182.01) Sample Duplicate (DUP)
1205343414	612576001(S45182.01) Matrix Spike (MS)
1205343415	Laboratory Control Sample (LCS)

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

Data Summary:

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

Miscellaneous Information

Additional Comments
The matrix spike, 1205343414 (S45182.01MS), aliquot was reduced to conserve sample volume.

Certification Statement

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

GEL LABORATORIES LLC

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

Qualifier Definition Report
for

MERI001 Merit Laboratories, Inc.

Client SDG: S45182 GEL Work Order: 612576

The Qualifiers in this report are defined as follows:

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

Review/Validation

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

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

Signature: **Name:** **Theresa Austin**

Date: **30 MAR 2023**   **Title:** **Group Leader**

Sample Data Summary

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 30, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45182.01	Project:	MERI00120
Sample ID:	612576001	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	08-FEB-23 13:40		
Receive Date:	01-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228		4.38	+/-1.49	1.88	3.00	pCi/L			JE1	03/27/23	1501	2397396	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		5.44	+/-1.62			pCi/L			NXL1	03/30/23	1206	2397753	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.06	+/-0.633	0.540	1.00	pCi/L			LXP1	03/30/23	0933	2397378	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			73.3	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 30, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45182.02	Project:	MERI00120
Sample ID:	612576002	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	08-FEB-23 12:23		
Receive Date:	01-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.133	+/-0.817	1.62	3.00	pCi/L			JE1	03/27/23	1501	2397396	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.118	+/-0.870			pCi/L			NXL1	03/30/23	1206	2397753	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.118	+/-0.299	0.625	1.00	pCi/L			LXP1	03/30/23	0933	2397378	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			78.7	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: March 30, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45182.03	Project:	MERI00120
Sample ID:	612576003	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	08-FEB-23 11:06		
Receive Date:	01-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.60	+/-1.13	1.76	3.00	pCi/L			JE1	03/27/23	1501	2397396	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.97	+/-1.23			pCi/L			NXL1	03/30/23	1206	2397753	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.372	+/-0.482	0.809	1.00	pCi/L			LXP1	03/30/23	0950	2397378	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			82.4	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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

Certificate of Analysis

Report Date: March 30, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45182.04	Project:	MERI00120
Sample ID:	612576004	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	08-FEB-23 09:11		
Receive Date:	01-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.255	+/-0.795	1.63	3.00	pCi/L			JE1	03/27/23	1501	2397396	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.407	+/-0.935			pCi/L			NXL1	03/30/23	1206	2397753	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.407	+/-0.492	0.812	1.00	pCi/L			LXP1	03/30/23	1008	2397378	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			76.5	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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

Certificate of Analysis

Report Date: March 30, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45182.05	Project:	MERI00120
Sample ID:	612576005	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	08-FEB-23 14:53		
Receive Date:	01-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.879	+/-1.16	2.39	3.00	pCi/L			JE1	03/27/23	1501	2397396	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.504	+/-1.26			pCi/L			NXL1	03/30/23	1206	2397753	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.504	+/-0.494	0.731	1.00	pCi/L			LXP1	03/30/23	1008	2397378	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			65.4	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 30, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45182.06	Project:	MERI00120
Sample ID:	612576006	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	08-FEB-23 16:04		
Receive Date:	01-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228		2.17	+/-1.34	2.02	3.00	pCi/L			JE1	03/27/23	1501	2397396	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		3.27	+/-1.55			pCi/L			NXL1	03/30/23	1206	2397753	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.11	+/-0.777	1.00	1.00	pCi/L			LXP1	03/30/23	1008	2397378	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			70.5	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 30, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45182.07	Project:	MERI00120
Sample ID:	612576007	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	08-FEB-23 09:11		
Receive Date:	01-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.758	+/-0.957	1.63	3.00	pCi/L			JE1	03/27/23	1501	2397396	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.20	+/-1.03			pCi/L			NXL1	03/30/23	1206	2397753	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.443	+/-0.394	0.471	1.00	pCi/L			LXP1	03/30/23	1008	2397378	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			76.3	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45182.08	Project:	MERI00120
Sample ID:	612576008	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	08-FEB-23 08:15		
Receive Date:	01-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.909	+/-1.33	2.62	3.00	pCi/L			JE1	03/27/23	1501	2397396	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.46	+/-1.51			pCi/L			NXL1	03/30/23	1206	2397753	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.46	+/-0.701	0.490	1.00	pCi/L			LXP1	03/30/23	1008	2397378	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			71.2	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: March 30, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45182.09	Project:	MERI00120
Sample ID:	612576009	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	08-FEB-23 17:22		
Receive Date:	01-MAR-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.188	+/-0.643	1.22	3.00	pCi/L			JE1	03/27/23	1501	2397396	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.188	+/-0.682			pCi/L			NXL1	03/30/23	1206	2397753	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.000	+/-0.226	0.663	1.00	pCi/L			LXP1	03/30/23	1008	2397378	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			82.5	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Quality Control Data

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

QC Summary

Report Date: March 30, 2023

Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan
Contact: **John Laverty**

Workorder: **612576**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2397396										
QC1205343480 612576001 DUP										
Radium-228		4.38		1.41	pCi/L	103*		(0% - 100%)	JE1	03/27/23 15:01
	Uncertainty	+/-1.49		+/-0.915						
QC1205343481 LCS										
Radium-228	62.5			57.4	pCi/L		91.9	(75%-125%)		03/27/23 15:06
	Uncertainty			+/-3.90						
QC1205343479 MB										
Radium-228			U	0.222	pCi/L					03/27/23 15:01
	Uncertainty			+/-0.791						
Rad Ra-226										
Batch 2397378										
QC1205343413 612576001 DUP										
Radium-226		1.06		1.30	pCi/L	20.1		(0% - 100%)	LXP1	03/30/23 10:26
	Uncertainty	+/-0.633		+/-0.689						
QC1205343415 LCS										
Radium-226	26.5			26.1	pCi/L		98.7	(75%-125%)		03/30/23 10:26
	Uncertainty			+/-2.97						
QC1205343412 MB										
Radium-226			U	0.159	pCi/L					03/30/23 10:26
	Uncertainty			+/-0.292						
QC1205343414 612576001 MS										
Radium-226	133	1.06		105	pCi/L		78.2	(75%-125%)		03/30/23 10:26
	Uncertainty	+/-0.633		+/-12.3						

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported

QC Summary

Workorder: **612576**

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

UI	Gamma Spectroscopy--Uncertain identification
BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
**	Analyte is a Tracer compound
M	REMP Result > MDC/CL and < RDL
J	See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Gas Flow Raw Data

Batch 2397396 Check-list

This check-list was completed on 27-MAR-23 by Nat Long

This batch was reviewed by Nat Long on 27-MAR-23 and Kenshalla Oston on 28-MAR-23.

Batch ID: 2397396

Product: GFC28RAL

Description: Gas Flow Radium 228
GL-RAD-A-063

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous		No	
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?		No	
11	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
12	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-228 in Liquid

Batch ID: **2397396**
Analyst: Jacqueline Emond (JE1)
Method: EPA 904.0/SW846 9320 Modified
Lab SOP: GL-RAD-A-063 REV# 5
Instrument: LUCAS-C202389980

Due Dates for Lab: 26-MAR-2023 **Package: 28-MAR-2023** **SDG: 29-MAR-2023**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1205343481	228	1952-B	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Separation (date)
1	612576001	22-MAR-2023	3	300.88	300.88	03/23/23 18:42	03/27/23 12:58
2	612576002	22-MAR-2023	3	301.77	301.77	03/23/23 18:42	03/27/23 12:58
3	612576003	22-MAR-2023	3	301.42	301.42	03/23/23 18:42	03/27/23 12:58
4	612576004	22-MAR-2023	3	300.08	300.08	03/23/23 18:42	03/27/23 12:58
5	612576005	22-MAR-2023	3	304.65	304.65	03/23/23 18:42	03/27/23 12:58
6	612576006	22-MAR-2023	3	302.42	302.42	03/23/23 18:42	03/27/23 12:58
7	612576007	22-MAR-2023	3	303.15	303.15	03/23/23 18:42	03/27/23 12:58
8	612576008	22-MAR-2023	3	301.25	301.25	03/23/23 18:42	03/27/23 12:58
9	612576009	22-MAR-2023	3	301.8	301.8	03/23/23 18:42	03/27/23 12:58
10	612583001	22-MAR-2023	3	301.47	301.47	03/23/23 18:42	03/27/23 12:58
11	612583002	22-MAR-2023	3	301.62	301.62	03/23/23 18:42	03/27/23 12:58
12	612583003	22-MAR-2023	3	301.84	301.84	03/23/23 18:42	03/27/23 12:58
13	612583004	22-MAR-2023	3	303.63	303.63	03/23/23 18:42	03/27/23 12:58
14	612583005	22-MAR-2023	3	305.11	305.11	03/23/23 18:42	03/27/23 12:58
15	612583006	22-MAR-2023	3	303.97	303.97	03/23/23 18:42	03/27/23 12:58
16	1205343479 MB	22-MAR-2023	3		305.11	03/23/23 18:42	03/27/23 12:58
17	1205343480 DUP (612576001)	22-MAR-2023	3	300.6	300.6	03/23/23 18:42	03/27/23 12:58
18	1205343481 LCS	22-MAR-2023	3		305.11	03/23/23 18:42	03/27/23 12:58

Reagent/Solvent Lot ID	Description	Amount
WORK 1951-E	Ba-133	.1 mL
REGNT 3879554	RGF-1.5M Ammonium Sulfate	10 mL
REGNT 3862351	RGF-1M Citric Acid	5 mL
REGNT 3878183	2M HCl	20 mL
REGNT 3883537	RGF-50% Potassium Carbonate	2 mL
REGNT 3878163	RGF-7M Nitric Acid	25 mL
REGNT 3857893.11	Acetic Acid Glacial ACS Poly Coated Bottle	10 mL
REGNT DGA030723	2396801	2 g
REGNT 3867075.26	RGF-Hydrofluoric Acid	4 mL
REGNT 3528714	500 mg/mL Neodymium Carrier	.2 mL
REGNT 3521298	RGF-Neodymium Subtrate	5 mL
REGNT 3875878.6	Nitric Acid	5 mL
REGNT 3465466	Barium Carrier Ra228 REG	1 mL

Comments:
Pipet Id: RAD-GFC-1795419
Data Entry Date2: 22-MAR-2023 00:00

Radium-228 Liquid

Filename : RA228.XLS
File type : Excel
Version # : 1.4.3

Tracer S/N : 1951-E
Tracer Exp Date : 1/10/2024
Tracer Volume Added: 0.10

Batch : 2397396
Analyst : JAC02417
Prep Date : 3/22/2023
Ra-228 Method Uncertainty : 0.1268

Geometry: 25mm Filter

Procedure Code : GFC28RAL
Parmname : Radium-228
Required MDA : 3 pCi/L
Ra-228 Abundance : 1.00
Halflife of Ra-228 : 5.75 years
Halflife of Ac-228 : 6.15 hours

Sample Characteristics Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	**Tracer Calculations** Tracer Ref. Activity (CPM)	Tracer Ref. Count Uncertainty (%)	Tracer Samp. Activity (CPM)	Tracer Samp. Count Uncertainty (%)	Tracer Aliquot (mL)	Tracer Aliquot StDev. (mL)
1	612576001.1	0.3009	1.8474E-05	2/8/2023 13:40	1218.3	1.65%	892.7	1.93%	0.1	0.000200
2	612576002.1	0.3018	1.8489E-05	2/8/2023 12:23	1218.3	1.65%	959.3	1.86%	0.1	0.000200
3	612576003.1	0.3014	1.8483E-05	2/8/2023 11:06	1218.3	1.65%	1003.8	1.82%	0.1	0.000200
4	612576004.1	0.3001	1.8460E-05	2/8/2023 9:11	1218.3	1.65%	932.0	1.89%	0.1	0.000200
5	612576005.1	0.3047	1.8537E-05	2/8/2023 14:53	1218.3	1.65%	797.1	2.04%	0.1	0.000200
6	612576006.1	0.3024	1.8500E-05	2/8/2023 16:04	1218.3	1.65%	859.0	1.97%	0.1	0.000200
7	612576007.1	0.3032	1.8512E-05	2/8/2023 9:11	1218.3	1.65%	929.3	1.89%	0.1	0.000200
8	612576008.1	0.3013	1.8480E-05	2/8/2023 8:15	1218.3	1.65%	867.5	1.96%	0.1	0.000200
9	612576009.1	0.3018	1.8489E-05	2/8/2023 17:22	1218.3	1.65%	1005.1	1.82%	0.1	0.000200
10	612583001.1	0.3015	1.8484E-05	2/9/2023 12:58	1218.3	1.65%	1072.3	1.76%	0.1	0.000200
11	612583002.1	0.3016	1.8486E-05	2/9/2023 17:10	1218.3	1.65%	871.7	1.96%	0.1	0.000200
12	612583003.1	0.3018	1.8490E-05	2/9/2023 14:23	1218.3	1.65%	819.9	2.02%	0.1	0.000200
13	612583004.1	0.3036	1.8520E-05	2/9/2023 15:40	1218.3	1.65%	797.8	2.04%	0.1	0.000200
14	612583005.1	0.3051	1.8544E-05	2/9/2023 14:23	1218.3	1.65%	898.5	1.93%	0.1	0.000200
15	612583006.1	0.3040	1.8526E-05	2/9/2023 9:30	1218.3	1.65%	897.9	1.93%	0.1	0.000200
16	1205343479.1	0.3051	1.8544E-05	3/22/2023 0:00	1218.3	1.65%	1005.3	1.82%	0.1	0.000200
17	1205343480.1	0.3006	1.8469E-05	2/8/2023 13:40	1218.3	1.65%	1041.3	1.79%	0.1	0.000200
18	1205343481.1	0.3051	1.8544E-05	3/22/2023 0:00	1218.3	1.65%	962.5	1.86%	0.1	0.000200

Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1 ml Stdev : +/- 0.002000 ml

Analytical SOP: GL-RAD-A-063
Instrument SOP: GL-RAD-I-016

Count raw Data

Pos.	Detector ID	Counting Time (min.)	Gross Counts Alpha	Gross Counts Beta	Beta cpm	Count Start Date/Time	Ac-228 Ingrowth Date/Time	Ac-228 Decay Date/Time	Ra-228 Decay	Ac-228 Decay	Ac-228 Ingrowth	Ac-228 Count Correction	Calculated Sample Recovery %	Sample Recovery Error %
1	1A	60	11	100	1.667	3/27/2023 15:01	3/23/2023 18:42	3/27/2023 12:58	0.985	0.793	1.000	1.057	73.3%	2.55%
2	1B	60	13	31	0.517	3/27/2023 15:01	3/23/2023 18:42	3/27/2023 12:58	0.985	0.793	1.000	1.057	78.7%	2.50%
3	1C	60	8	70	1.167	3/27/2023 15:01	3/23/2023 18:42	3/27/2023 12:58	0.985	0.793	1.000	1.057	82.4%	2.47%
4	1D	60	2	27	0.450	3/27/2023 15:01	3/23/2023 18:42	3/27/2023 12:58	0.985	0.793	1.000	1.057	76.5%	2.52%
5	2A	60	8	45	0.750	3/27/2023 15:01	3/23/2023 18:42	3/27/2023 12:58	0.985	0.793	1.000	1.057	65.4%	2.64%
6	2C	60	9	69	1.150	3/27/2023 15:01	3/23/2023 18:42	3/27/2023 12:58	0.985	0.793	1.000	1.057	70.5%	2.59%
7	3B	60	4	44	0.733	3/27/2023 15:01	3/23/2023 18:42	3/27/2023 12:58	0.985	0.792	1.000	1.057	76.3%	2.52%
8	3C	60	5	73	1.217	3/27/2023 15:01	3/23/2023 18:42	3/27/2023 12:58	0.985	0.792	1.000	1.057	71.2%	2.58%
9	3D	60	4	21	0.350	3/27/2023 15:01	3/23/2023 18:42	3/27/2023 12:58	0.985	0.792	1.000	1.057	82.5%	2.47%
10	4A	60	12	53	0.883	3/27/2023 15:02	3/23/2023 18:42	3/27/2023 12:58	0.985	0.792	1.000	1.057	88.0%	2.43%
11	4C	60	4	77	1.283	3/27/2023 15:02	3/23/2023 18:42	3/27/2023 12:58	0.985	0.792	1.000	1.057	71.5%	2.58%
12	4D	60	5	33	0.550	3/27/2023 15:02	3/23/2023 18:42	3/27/2023 12:58	0.985	0.792	1.000	1.057	67.3%	2.62%
13	5A	60	5	93	1.550	3/27/2023 15:02	3/23/2023 18:42	3/27/2023 12:58	0.985	0.792	1.000	1.057	65.5%	2.64%
14	5B	60	14	57	0.950	3/27/2023 15:02	3/23/2023 18:42	3/27/2023 12:58	0.985	0.792	1.000	1.057	73.7%	2.55%
15	5C	60	10	38	0.633	3/27/2023 15:02	3/23/2023 18:42	3/27/2023 12:58	0.985	0.792	1.000	1.057	73.7%	2.55%
16	5D	60	5	36	0.600	3/27/2023 15:01	3/23/2023 18:42	3/27/2023 12:58	0.998	0.793	1.000	1.057	82.5%	2.47%
17	7A	60	6	51	0.850	3/27/2023 15:01	3/23/2023 18:42	3/27/2023 12:58	0.985	0.793	1.000	1.057	85.5%	2.45%
18	7B	60	10	906	15.100	3/27/2023 15:06	3/23/2023 18:42	3/27/2023 12:58	0.998	0.786	1.000	1.057	79.0%	2.50%

Calibration Data

Pos.	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Bkg cpm	Weekly Bkg Count Start Date/Time	Bkg Count Time (min.)
1	PIC	6/1/2022	5/31/2023	0.6209	0.00738	0.684	3/24/2023 18:31	500
2	PIC	6/1/2022	5/31/2023	0.6068	0.00711	0.548	3/24/2023 18:31	500
3	PIC	6/1/2022	5/31/2023	0.6190	0.00847	0.764	3/24/2023 18:31	500
4	PIC	6/1/2022	5/31/2023	0.6048	0.00692	0.508	3/24/2023 18:31	500
5	PIC	6/1/2022	5/31/2023	0.6201	0.01914	0.928	3/24/2023 18:33	500
6	PIC	6/1/2022	5/31/2023	0.6022	0.01274	0.694	3/24/2023 18:33	500
7	PIC	6/1/2022	5/31/2023	0.6245	0.01614	0.554	3/24/2023 18:31	500
8	PIC	6/1/2022	5/31/2023	0.6365	0.00988	1.420	3/24/2023 18:31	500
9	PIC	6/1/2022	5/31/2023	0.5999	0.02297	0.304	3/24/2023 18:32	500
10	PIC	6/1/2022	5/31/2023	0.6013	0.01123	0.668	3/24/2023 18:32	500
11	PIC	6/1/2022	5/31/2023	0.6359	0.00889	0.700	3/24/2023 18:32	500
12	PIC	6/1/2022	5/31/2023	0.5954	0.00773	0.524	3/24/2023 18:32	500
13	PIC	6/1/2022	5/31/2023	0.6332	0.00851	0.868	3/24/2023 18:32	500
14	PIC	6/1/2022	5/31/2023	0.6336	0.00426	0.814	3/24/2023 18:32	500
15	PIC	6/1/2022	5/31/2023	0.6242	0.00657	0.640	3/24/2023 18:32	500
16	PIC	6/1/2022	5/31/2023	0.6236	0.00925	0.542	3/24/2023 18:32	500
17	PIC	6/1/2022	5/31/2023	0.6257	0.00594	0.478	3/24/2023 18:28	500
18	PIC	6/1/2022	5/31/2023	0.6366	0.00627	0.592	3/24/2023 18:29	500

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

Spike S/N : N/A
Spike Exp Date : N/A
Spike Activity (dpm/ml): N/A
Spike Volume Added: N/A

LCS S/N : 1952-B
LCS Exp Date : 8/9/2023
LCS Activity (dpm/ml): 423.23
LCS Volume Added: 0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	1.1733	0.8284	3	1.8796	**4.3793**	17.58%	0.9827	0.1707	1.4912	1.8602		SAMPLE				
2	0.9972	0.7040	3	1.6196	**-0.1326**	314.45%	-0.0313	0.0985	0.8171	0.8173		SAMPLE				
3	1.1046	0.7799	3	1.7582	**1.5985**	36.06%	0.4027	0.1448	1.1268	1.1976		SAMPLE				
4	0.9974	0.7041	3	1.6281	**-0.2550**	159.13%	-0.0580	0.0923	0.7951	0.7953		SAMPLE				
5	1.5143	1.0691	3	2.3851	**-0.8789**	67.39%	-0.1780	0.1198	1.1596	1.1598		SAMPLE				
6	1.2606	0.8900	3	2.0176	**2.1675**	31.57%	0.4560	0.1434	1.3357	1.4454		SAMPLE				
7	1.0018	0.7073	3	1.6260	**0.7582**	64.45%	0.1793	0.1155	0.9568	0.9762		SAMPLE				
8	1.6966	1.1978	3	2.6192	**-0.9094**	74.83%	-0.2033	0.1520	1.3328	1.3329		SAMPLE				
9	0.7174	0.5065	3	1.2174	**0.1880**	174.51%	0.0460	0.0803	0.6430	0.6448		SAMPLE				
10	0.9957	0.7030	3	1.5973	**0.8241**	58.91%	0.2153	0.1267	0.9505	0.9733		SAMPLE				
11	1.1849	0.8365	3	1.8955	**2.5951**	26.02%	0.5833	0.1510	1.3163	1.4723		SAMPLE				
12	1.1635	0.8214	3	1.8953	**0.1313**	388.73%	0.0260	0.1011	1.0002	1.0007		SAMPLE				
13	1.4389	1.0159	3	2.2743	**3.3087**	24.50%	0.6820	0.1660	1.5789	1.7892		SAMPLE				
14	1.2307	0.8689	3	1.9520	**0.5828**	97.20%	0.1360	0.1321	1.1098	1.1196		SAMPLE				
15	1.1130	0.7858	3	1.7900	**-0.0291**	1631.87%	-0.0067	0.1088	0.9319	0.9320		SAMPLE				
16	0.8980	0.6340	3	1.4595	**0.2222**	181.54%	0.0580	0.1053	0.7906	0.7926		MB				
17	0.8351	0.5896	3	1.3689	**1.4115**	33.15%	0.3720	0.1230	0.9145	0.9820	612576001.1	DUP	102.5%	2.7653		
18	0.9695	0.6845	3	1.5669	**57.4284**	4.32%	14.5080	0.5028	3.9013	15.0784		LCS			62.4835	91.9%

SampleID	Instr	Time (min.)	Alpha Counts	Beta Counts	Count Start Time	Count End Time	Machine	Batch ID
612576001	1A	60	11	100	3/27/2023 15:01	3/27/2023 16:01	PIC	2397396
612576002	1B	60	13	31	3/27/2023 15:01	3/27/2023 16:01	PIC	2397396
612576003	1C	60	8	70	3/27/2023 15:01	3/27/2023 16:01	PIC	2397396
612576004	1D	60	2	27	3/27/2023 15:01	3/27/2023 16:01	PIC	2397396
612576005	2A	60	8	45	3/27/2023 15:01	3/27/2023 16:01	PIC	2397396
612576006	2C	60	9	69	3/27/2023 15:01	3/27/2023 16:01	PIC	2397396
612576007	3B	60	4	44	3/27/2023 15:01	3/27/2023 16:01	PIC	2397396
612576008	3C	60	5	73	3/27/2023 15:01	3/27/2023 16:01	PIC	2397396
612576009	3D	60	4	21	3/27/2023 15:01	3/27/2023 16:01	PIC	2397396
612583001	4A	60	12	53	3/27/2023 15:02	3/27/2023 16:02	PIC	2397396
612583002	4C	60	4	77	3/27/2023 15:02	3/27/2023 16:02	PIC	2397396
612583003	4D	60	5	33	3/27/2023 15:02	3/27/2023 16:02	PIC	2397396
612583004	5A	60	5	93	3/27/2023 15:02	3/27/2023 16:02	PIC	2397396
612583005	5B	60	14	57	3/27/2023 15:02	3/27/2023 16:02	PIC	2397396
612583006	5C	60	10	38	3/27/2023 15:02	3/27/2023 16:02	PIC	2397396
1205343479	5D	60	5	36	3/27/2023 15:01	3/27/2023 16:01	PIC	2397396
1205343480	7A	60	6	51	3/27/2023 15:01	3/27/2023 16:01	PIC	2397396
1205343481	7B	60	10	906	3/27/2023 15:06	3/27/2023 16:06	PIC	2397396

ASSAY 27-Mar-23 13:34:27
Wizard 2480 s/n 46190630

Protocol	id	8	Ba-133
Time	limit		
Count	limit		
Isotope	Ba-133		
Protocol	date	3/27/2023	
Run	id.	6396	

Samp_ID	POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR	% RECOVERY	COUNT TIME
REF	1	93	1	180	3655.57	1218.34	1.65		01:34:27
612576001	2	93	2	180	2678.57	892.69	1.93	73.27	01:37:40
612576002	3	93	3	180	2878.28	959.28	1.86	78.74	01:40:54
612576003	4	93	4	180	3012	1003.75	1.82	82.39	01:44:08
612576004	5	93	5	180	2796.57	932.04	1.89	76.50	01:47:23
612576005	1	14	1	180	2391.57	797.06	2.04	65.42	01:50:58
612576006	2	14	2	180	2577.57	859.04	1.97	70.51	01:54:12
612576007	3	14	3	180	2788.57	929.28	1.89	76.27	01:57:26
612576008	4	14	4	180	2603	867.52	1.96	71.21	02:00:40
612576009	5	14	5	180	3016	1005.14	1.82	82.50	02:03:54
612583001	1	2	1	180	3217.57	1072.3	1.76	88.01	02:07:31
612583002	2	2	2	180	2615.57	871.71	1.96	71.55	02:10:45
612583003	3	2	3	180	2460	819.89	2.02	67.30	02:13:58
612583004	4	2	4	180	2393.57	797.8	2.04	65.48	02:17:12
612583005	5	2	5	180	2695.85	898.47	1.93	73.75	02:20:27
612583006	1	10	1	180	2694	897.86	1.93	73.70	02:24:09
1205343479	2	10	2	180	3016.28	1005.27	1.82	82.51	02:27:23
1205343480	3	10	3	180	3124.28	1041.3	1.79	85.47	02:30:37
1205343481	4	10	4	180	2888	962.51	1.86	79.00	02:33:51

END OF ASSAY

Continuing Calibration Data

Gas Flow Proportional Counter Checks for 27-Mar-2023

Detectors LB4100 A1 through I4 and PIC 1A through 14D and G5400W 1W through 1Z and LB4200 OA1 through OA1

Short Name	Status	Parmname	Run Time	Count Time	CPM or dec	Low Limit	High Limit	Stdev
LB4100E2	Above	Beta bkg	27-Mar 06:45	60	2.817	1.385	3.072	+2.09
LB4100E3	Above	Beta bkg	27-Mar 06:45	60	2.600	0.484	2.814	+2.45
LB4100F1	Above	Beta bkg	27-Mar 06:45	60	3.333	0.188	2.691	+4.54
LB4100F2	Below	Alpha eff	27-Mar 05:41	5	6168	6533	7372	-5.61
LB4100F2	Above	Alpha XTalk	27-Mar 05:41	5	0.373	0.318	0.366	+3.86
LB4100F2	Above	Beta bkg	27-Mar 06:45	60	51.550	1.173	1.833	+454.97
LB4100F3	need 2nd	Beta bkg	27-Mar 06:45	60	1.700	0.185	2.570	+0.81
LB4100G1	Above	Beta bkg	27-Mar 06:46	60	3438	0.380	1.675	+15,926.73
LB4100G2	Above	Beta bkg	27-Mar 06:46	60	2.417	1.168	2.328	+3.46
LB4100G3	Above	Beta bkg	27-Mar 06:46	60	2.167	0.987	2.738	+1.04
LB4100H1	Above	Beta bkg	27-Mar 06:45	60	3.200	0.216	2.462	+4.97
LB4100H3	Above	Beta bkg	27-Mar 06:45	60	3.000	-8.10E-1	3.745	+2.02
PIC4B	Above	Alpha bkg	27-Mar 07:00	60	0.450	-9.58E-2	0.436	+3.16
PIC4B	Above	Beta bkg	27-Mar 07:00	60	2.467	-2.76E-1	1.864	+4.69
PIC4B	Below	Beta eff	27-Mar 05:48	5	12957	19730	21460	-26.49
PIC4B	Above	Beta XTalk	27-Mar 05:48	5	0.010	2.14E-4	7.66E-4	+105.36
PIC6B	Above	Beta bkg	27-Mar 10:07	60	3.683	0.389	2.636	+5.80
PIC8A	Above	Beta bkg	27-Mar 06:14	60	3.000	-2.72E-1	2.644	+3.73
PIC12C	Above	Beta bkg	27-Mar 06:26	60	2.433	0.142	2.845	+2.09

INSTRUMENTS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

The following detectors may not have properly transferred to the LIMS system

LB4100A1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100A2	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100A3	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C2	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C3	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C4	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk

LB4100I1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I2	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I3	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I4	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4200OA1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk

Reviewed by Lois Buisl

Date 3/27/2023

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: GFPC **Batch ID: 2397396**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1205343479	MB	JE1	PIC5D	MAR-27-23 15:01:13	DONE	25mm Filter	01-JUN-22 00:00
1205343480	DUP	JE1	PIC7A	MAR-27-23 15:01:24	DONE	25mm Filter	01-JUN-22 00:00
612576001	SAMPLE	JE1	PIC1A	MAR-27-23 15:01:25	DONE	25mm Filter	01-JUN-22 00:00
612576002	SAMPLE	JE1	PIC1B	MAR-27-23 15:01:29	DONE	25mm Filter	01-JUN-22 00:00
612576003	SAMPLE	JE1	PIC1C	MAR-27-23 15:01:33	DONE	25mm Filter	01-JUN-22 00:00
612576004	SAMPLE	JE1	PIC1D	MAR-27-23 15:01:36	DONE	25mm Filter	01-JUN-22 00:00
612576005	SAMPLE	JE1	PIC2A	MAR-27-23 15:01:40	DONE	25mm Filter	01-JUN-22 00:00
612576006	SAMPLE	JE1	PIC2C	MAR-27-23 15:01:46	DONE	25mm Filter	01-JUN-22 00:00
612576007	SAMPLE	JE1	PIC3B	MAR-27-23 15:01:50	DONE	25mm Filter	01-JUN-22 00:00
612576008	SAMPLE	JE1	PIC3C	MAR-27-23 15:01:53	DONE	25mm Filter	01-JUN-22 00:00
612576009	SAMPLE	JE1	PIC3D	MAR-27-23 15:01:56	DONE	25mm Filter	01-JUN-22 00:00
612583001	SAMPLE	JE1	PIC4A	MAR-27-23 15:02:02	DONE	25mm Filter	01-JUN-22 00:00
612583002	SAMPLE	JE1	PIC4C	MAR-27-23 15:02:05	DONE	25mm Filter	01-JUN-22 00:00
612583003	SAMPLE	JE1	PIC4D	MAR-27-23 15:02:11	DONE	25mm Filter	01-JUN-22 00:00
612583004	SAMPLE	JE1	PIC5A	MAR-27-23 15:02:19	DONE	25mm Filter	01-JUN-22 00:00
612583005	SAMPLE	JE1	PIC5B	MAR-27-23 15:02:24	DONE	25mm Filter	01-JUN-22 00:00
612583006	SAMPLE	JE1	PIC5C	MAR-27-23 15:02:27	DONE	25mm Filter	01-JUN-22 00:00
1205343481	LCS	JE1	PIC7B	MAR-27-23 15:06:25	DONE	25mm Filter	01-JUN-22 00:00

Lucas Cell Raw Data

Batch 2397378 Check-list

This check-list was completed on 30-MAR-23 by Lyndsey Pace

This batch was reviewed by Elizabeth Krouse on 30-MAR-23 and Lyndsey Pace on 30-MAR-23.

Batch ID:	**Product:**	**Description:** Lucas Cell Radium 226
2397378	LUC26RAL	GL-RAD-A-008

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous		No	
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the matrix spike (MS/MSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-226 in Liquid

Batch ID: 2397378
Analyst: Lyndsey Pace (LXP1)
Method: EPA 903.1 Modified
Lab SOP: GL-RAD-A-008 REV# 15
Instrument: LUCAS-C202389980

Due Dates for Lab: 26-MAR-2023 Package: 28-MAR-2023 SDG: 29-MAR-2023

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
MS	1205343414	Radium-226 SPIKE	1715-G	.1	mL
LCS	1205343415	Radium-226 SPIKE	1715-G	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	End Degas (date)	CELL #	End Transfer (date)	Start Count Time (date)	Background Counts	Total Counts
1	612576001	22-MAR-2023	1	500.62	500.62	03/27/23 09:15	703	03/30/23 06:12	03/30/23 09:33	1	12
2	612576002	22-MAR-2023	1	506.46	506.46	03/27/23 09:15	804	03/30/23 06:12	03/30/23 09:33	3	3
3	612576003	22-MAR-2023	1	502.08	502.08	03/27/23 09:15	104	03/30/23 06:40	03/30/23 09:50	4	6
4	612576004	22-MAR-2023	1	502.97	502.97	03/27/23 09:15	204	03/30/23 06:40	03/30/23 10:08	6	8
5	612576005	22-MAR-2023	1	500.72	500.72	03/27/23 09:15	302	03/30/23 06:40	03/30/23 10:08	4	8
6	612576006	22-MAR-2023	1	500.23	500.23	03/27/23 09:15	408	03/30/23 06:40	03/30/23 10:08	6	14
7	612576007	22-MAR-2023	1	504.44	504.44	03/27/23 09:15	502	03/30/23 06:40	03/30/23 10:08	1	6
8	612576008	22-MAR-2023	1	500.76	500.76	03/27/23 09:15	607	03/30/23 06:40	03/30/23 10:08	1	18
9	612576009	22-MAR-2023	1	500.34	500.34	03/27/23 09:15	708	03/30/23 06:40	03/30/23 10:08	2	1
10	612583001	22-MAR-2023	1	500.33	500.33	03/27/23 09:15	806	03/30/23 06:40	03/30/23 10:08	3	4
11	612583002	22-MAR-2023	1	501.17	501.17	03/27/23 09:15	106	03/30/23 07:08	03/30/23 10:08	1	10
12	612583003	22-MAR-2023	1	504.54	504.54	03/27/23 09:15	202	03/30/23 07:08	03/30/23 10:26	2	19
13	612583004	22-MAR-2023	1	503.43	503.43	03/27/23 09:15	304	03/30/23 07:08	03/30/23 10:26	3	12
14	612583005	22-MAR-2023	1	505.26	505.26	03/27/23 09:15	402	03/30/23 07:08	03/30/23 10:26	8	18
15	612583006	22-MAR-2023	1	501.2	501.2	03/27/23 09:15	503	03/30/23 07:08	03/30/23 10:26	4	2
16	1205343412 MB	22-MAR-2023	1		506.46	03/27/23 09:15	602	03/30/23 07:08	03/30/23 10:26	2	3
17	1205343413 DUP (612576001)	22-MAR-2023	1	502.64	502.64	03/27/23 09:15	707	03/30/23 07:08	03/30/23 10:26	2	16
18	1205343414 MS (612576001)	22-MAR-2023	1	100.46	100.46	03/27/23 09:15	803	03/30/23 07:08	03/30/23 10:26	2	283
19	1205343415 LCS	22-MAR-2023	1		506.46	03/27/23 09:15	107	03/30/23 07:35	03/30/23 10:26	5	304

Reagent/Solvent Lot ID	Description	Amount

Comments:
Data Entry Date2: 22-MAR-2023 00:00

Radium-226 Liquid

Filename : RA226.XLS
File type : Excel
Version # : 1.3.2

Batch : 2397378
Analyst : LIN01615
Prep Date : 3/22/2023
Ra-226 Method Uncertainty : 0.073648

Procedure Code : LUC26RAL
Parmname : Radium-226
Required MDA : 1 pCi/L
Halflife of Ra-226 : 1600 years
Ra-226 Abundance : 1.00
Halflife of Rn-222: 3.8235 days

Batch counted on : LUCAS CELL DETECTOR
BKG Count time : 30 min

Sample Characteristics					**Count Raw Data**							
Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	Cell Number	Counting Time (min.)	Gross Counts	Gross CPM	Background Counts	Background CPM	Background Count Time (min.)	Cell Efficiency (cpm/dpm)
1	612576001.1	0.5006	2.0258E-05	2/8/2023 13:40	703	15	12	0.800	1	0.033	30	1.6440
2	612576002.1	0.5065	2.0282E-05	2/8/2023 12:23	804	15	3	0.200	3	0.100	30	1.9050
3	612576003.1	0.5021	2.0264E-05	2/8/2023 11:06	104	15	6	0.400	4	0.133	30	1.6160
4	612576004.1	0.5030	2.0268E-05	2/8/2023 9:11	204	15	8	0.533	6	0.200	30	1.8470
5	612576005.1	0.5007	2.0259E-05	2/8/2023 14:53	302	15	8	0.533	4	0.133	30	1.7980
6	612576006.1	0.5002	2.0257E-05	2/8/2023 16:04	408	15	14	0.933	6	0.200	30	1.5020
7	612576007.1	0.5044	2.0274E-05	2/8/2023 9:11	502	15	6	0.400	1	0.033	30	1.8630
8	612576008.1	0.5008	2.0259E-05	2/8/2023 8:15	607	15	18	1.200	1	0.033	30	1.8040
9	612576009.1	0.5003	2.0257E-05	2/8/2023 17:22	708	15	1	0.067	2	0.067	30	1.6020
10	612583001.1	0.5003	2.0257E-05	2/9/2023 12:58	806	15	4	0.267	3	0.100	30	1.9460
11	612583002.1	0.5012	2.0261E-05	2/9/2023 17:10	106	15	10	0.667	1	0.033	30	1.6990
12	612583003.1	0.5045	2.0274E-05	2/9/2023 14:23	202	15	19	1.267	2	0.067	30	1.8360
13	612583004.1	0.5034	2.0270E-05	2/9/2023 15:40	304	15	12	0.800	3	0.100	30	1.8850
14	612583005.1	0.5053	2.0277E-05	2/9/2023 14:23	402	15	18	1.200	8	0.267	30	1.4980
15	612583006.1	0.5012	2.0261E-05	2/9/2023 9:30	503	15	2	0.133	4	0.133	30	2.1390
16	1205343412.1	0.5065	2.0282E-05	3/22/2023 0:00	602	15	3	0.200	2	0.067	30	1.8620
17	1205343413.1	0.5026	2.0267E-05	2/8/2023 13:40	707	15	16	1.067	2	0.067	30	1.7280
18	1205343414.1	0.1005	1.1398E-05	2/8/2023 13:40	803	15	283	18.867	2	0.067	30	2.0020
19	1205343415.1	0.5065	2.0282E-05	3/22/2023 0:00	107	15	304	20.267	5	0.167	30	1.6990

Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1 ml Stdev : +/- 0.002000 ml

Analytical SOP: GL-RAD-A-008
Instrument SOP: GL-RAD-I-007

Cell Efficiency Error (%)	Cell Calibration Date	Cell Calibration Due Date	De-Gas Date/Time	Rn-222 Ingrow End Date/Time	Count Start Date/Time	Rn-222 Corrections De-Gas to Ingrowth	Rn-222 Corrections Ingrowth to Count	Rn-222 Corrections During Count	Ra-226 Decay
9.000%	11/1/2022	10/31/2023	3/27/2023 9:15	3/30/2023 6:12	3/30/2023 9:33	0.406	0.975	1.001	1.000
9.900%	4/1/2022	3/31/2023	3/27/2023 9:15	3/30/2023 6:12	3/30/2023 9:33	0.406	0.975	1.001	1.000
2.000%	4/28/2022	4/30/2023	3/27/2023 9:15	3/30/2023 6:40	3/30/2023 9:50	0.408	0.976	1.001	1.000
7.400%	8/1/2022	7/31/2023	3/27/2023 9:15	3/30/2023 6:40	3/30/2023 10:08	0.408	0.974	1.001	1.000
3.300%	10/25/2022	10/31/2023	3/27/2023 9:15	3/30/2023 6:40	3/30/2023 10:08	0.408	0.974	1.001	1.000
7.000%	2/1/2023	1/31/2024	3/27/2023 9:15	3/30/2023 6:40	3/30/2023 10:08	0.408	0.974	1.001	1.000
6.700%	6/1/2022	5/31/2023	3/27/2023 9:15	3/30/2023 6:40	3/30/2023 10:08	0.408	0.974	1.001	1.000
3.400%	7/1/2022	6/30/2023	3/27/2023 9:15	3/30/2023 6:40	3/30/2023 10:08	0.408	0.974	1.001	1.000
7.700%	11/1/2022	10/31/2023	3/27/2023 9:15	3/30/2023 6:40	3/30/2023 10:08	0.408	0.974	1.001	1.000
7.300%	4/1/2022	3/31/2023	3/27/2023 9:15	3/30/2023 6:40	3/30/2023 10:08	0.408	0.974	1.001	1.000
8.800%	4/28/2022	4/30/2023	3/27/2023 9:15	3/30/2023 7:08	3/30/2023 10:08	0.410	0.978	1.001	1.000
5.100%	8/1/2022	7/31/2023	3/27/2023 9:15	3/30/2023 7:08	3/30/2023 10:26	0.410	0.975	1.001	1.000
8.900%	10/25/2022	10/31/2023	3/27/2023 9:15	3/30/2023 7:08	3/30/2023 10:26	0.410	0.975	1.001	1.000
5.300%	2/1/2023	1/31/2024	3/27/2023 9:15	3/30/2023 7:08	3/30/2023 10:26	0.410	0.975	1.001	1.000
5.000%	6/1/2022	5/31/2023	3/27/2023 9:15	3/30/2023 7:08	3/30/2023 10:26	0.410	0.975	1.001	1.000
5.700%	7/1/2022	6/30/2023	3/27/2023 9:15	3/30/2023 7:08	3/30/2023 10:26	0.410	0.975	1.001	1.000
2.200%	11/1/2022	10/31/2023	3/27/2023 9:15	3/30/2023 7:08	3/30/2023 10:26	0.410	0.975	1.001	1.000
7.300%	4/1/2022	3/31/2023	3/27/2023 9:15	3/30/2023 7:08	3/30/2023 10:26	0.410	0.975	1.001	1.000
3.900%	4/28/2022	4/30/2023	3/27/2023 9:15	3/30/2023 7:35	3/30/2023 10:26	0.412	0.979	1.001	1.000

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

Spike S/N : 1715-G
Spike Exp Date : 9/8/2023
Spike Activity (dpm/ml): 297.43
Spike Volume Added: 0.10

LCS S/N : 1715-G
LCS Exp Date : 9/8/2023
LCS Activity (dpm/ml): 297.43
LCS Volume Added: 0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	0.1862	0.1315	1	0.5397	**1.0612**	31.74%	0.7667	0.2333	0.6330	0.6776		SAMPLE				
2	0.2751	0.1942	1	0.6246	**0.1181**	129.48%	0.1000	0.1291	0.2988	0.3001		SAMPLE				
3	0.3753	0.2650	1	0.8089	**0.3720**	66.17%	0.2667	0.1764	0.4822	0.4854		SAMPLE				
4	0.4023	0.2841	1	0.8123	**0.4070**	62.09%	0.3333	0.2055	0.4918	0.4988		SAMPLE				
5	0.3390	0.2393	1	0.7306	**0.5040**	50.11%	0.4000	0.2000	0.4939	0.5003		SAMPLE				
6	0.4975	0.3512	1	1.0044	**1.1071**	36.47%	0.7333	0.2625	0.7766	0.8073		SAMPLE				
7	0.1624	0.1146	1	0.4707	**0.4426**	45.95%	0.3667	0.1667	0.3943	0.4036		SAMPLE				
8	0.1689	0.1193	1	0.4896	**1.4649**	24.65%	1.1667	0.2848	0.7009	0.7386		SAMPLE				
9	0.2692	0.1901	1	0.6632	**0.000E+00**	0.00%	0.0000	0.0816	0.2265	0.2267		SAMPLE				
10	0.2714	0.1916	1	0.6163	**0.1942**	87.48%	0.1667	0.1453	0.3318	0.3341		SAMPLE				
11	0.1777	0.1254	1	0.5150	**0.8365**	34.83%	0.6333	0.2134	0.5525	0.5837		SAMPLE				
12	0.2315	0.1634	1	0.5702	**1.4601**	25.06%	1.2000	0.2944	0.7021	0.7474		SAMPLE				
13	0.2767	0.1954	1	0.6283	**0.8314**	35.15%	0.7000	0.2380	0.5542	0.5853		SAMPLE				
14	0.5666	0.4000	1	1.0979	**1.3899**	32.38%	0.9333	0.2981	0.8702	0.9046		SAMPLE				
15	0.2829	0.1997	1	0.6097	**0.000E+00**	0.00%	0.0000	0.1155	0.2379	0.2380		SAMPLE				
16	0.2274	0.1605	1	0.5601	**0.1594**	93.71%	0.1333	0.1247	0.2922	0.2936		MB				
17	0.2469	0.1743	1	0.6081	**1.2977**	27.17%	1.0000	0.2708	0.6888	0.7160	612576001.1	DUP	20.1%			
18	1.0662	0.7527	1	2.6263	**105.3599**	9.43%	18.8000	1.1225	12.3299	24.7100	612576001.1	MS			133.3686	78.2%
19	0.3908	0.2759	1	0.8116	**26.1108**	6.98%	20.1000	1.1648	2.9656	5.1947		LCS			26.4533	98.7%

Continuing Calibration Data

Ludlum Alpha Scintillation Counter Checks for 30-MAR-2023

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LUCAS1	EFF	07:37	1	1.19E+05	119307	-1.83		
LUCAS2	EFF	07:36	1	1.34E+05	134035	0.26		
LUCAS3	EFF	07:35	1	1.00E+05	100006	-2.52		
LUCAS4	EFF	07:33	1	1.28E+05	128494	0.9		
LUCAS5	EFF	07:32	1	1.33E+05	133444	0.84		
LUCAS6	EFF	07:31	1	1.29E+05	129492	-1.29		
LUCAS7	EFF	07:29	1	1.34E+05	133959	2.48		
LUCAS8	EFF	07:27	1	1.23E+05	123440	-1.82		

Reviewed by: Lyndsey Pace **Date:** 30-MAR-23

Lyndsey Pace

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: LUCAS CELL DETECTOR **Batch ID: 2397378**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
612576001	SAMPLE	LXP1	LUCAS7	MAR-30-23 09:33:00	DONE	Lucas Cell	01-NOV-22 00:00
612576002	SAMPLE	LXP1	LUCAS8	MAR-30-23 09:33:00	DONE	Lucas Cell	01-APR-22 00:00
612576003	SAMPLE	LXP1	LUCAS1	MAR-30-23 09:50:00	DONE	Lucas Cell	28-APR-22 00:00
612576004	SAMPLE	LXP1	LUCAS2	MAR-30-23 10:08:00	DONE	Lucas Cell	01-AUG-22 00:00
612576005	SAMPLE	LXP1	LUCAS3	MAR-30-23 10:08:00	DONE	Lucas Cell	25-OCT-22 00:00
612576006	SAMPLE	LXP1	LUCAS4	MAR-30-23 10:08:00	DONE	Lucas Cell	01-FEB-23 00:00
612576007	SAMPLE	LXP1	LUCAS5	MAR-30-23 10:08:00	DONE	Lucas Cell	01-JUN-22 00:00
612576008	SAMPLE	LXP1	LUCAS6	MAR-30-23 10:08:00	DONE	Lucas Cell	01-JUL-22 00:00
612576009	SAMPLE	LXP1	LUCAS7	MAR-30-23 10:08:00	DONE	Lucas Cell	01-NOV-22 00:00
612583001	SAMPLE	LXP1	LUCAS8	MAR-30-23 10:08:00	DONE	Lucas Cell	01-APR-22 00:00
612583002	SAMPLE	LXP1	LUCAS1	MAR-30-23 10:08:00	DONE	Lucas Cell	28-APR-22 00:00
612583003	SAMPLE	LXP1	LUCAS2	MAR-30-23 10:26:00	DONE	Lucas Cell	01-AUG-22 00:00
612583004	SAMPLE	LXP1	LUCAS3	MAR-30-23 10:26:00	DONE	Lucas Cell	25-OCT-22 00:00
612583005	SAMPLE	LXP1	LUCAS4	MAR-30-23 10:26:00	DONE	Lucas Cell	01-FEB-23 00:00
612583006	SAMPLE	LXP1	LUCAS5	MAR-30-23 10:26:00	DONE	Lucas Cell	01-JUN-22 00:00
1205343412	MB	LXP1	LUCAS6	MAR-30-23 10:26:00	DONE	Lucas Cell	01-JUL-22 00:00
1205343413	DUP	LXP1	LUCAS7	MAR-30-23 10:26:00	DONE	Lucas Cell	01-NOV-22 00:00
1205343414	MS	LXP1	LUCAS8	MAR-30-23 10:26:00	DONE	Lucas Cell	01-APR-22 00:00
1205343415	LCS	LXP1	LUCAS1	MAR-30-23 10:26:00	DONE	Lucas Cell	28-APR-22 00:00

Analytical Laboratory Report

Final Report

Report ID: S45490.01(02)
Generated on 03/21/2023
Replaces report S45490.01(01) generated on 02/21/2023

Report to

Attention: Jennifer Caporale
Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S45490.01-S45490.04
Project: Erickson AM MI Wells 14-15
Collected Date(s): 02/17/2023
Submitted Date/Time: 02/17/2023 15:02
Sampled by: Marc Wahrer
P.O. #:

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

All analyses completed

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
E245.1	EPA Method 245.1 Revision 3.0
E300.0	EPA Method 300.0 Revision 2.1 (1993)
SM2320B	Standard Method 2320 B 2011
SM2340C	Standard Method 2340 C 2011
SM2540C	Standard Method 2540 C 2015
SM2540D	Standard Method 2540 D 2015
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (4 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S45490.01	MW-14 L302181-01	Groundwater	02/17/23 11:15
S45490.02	MW-15 L302181-02	Groundwater	02/17/23 13:10
S45490.03	MWT-14 L302181-03	Groundwater	02/17/23 11:15
S45490.04	Field Blank L302181-04	Water	02/17/23 10:20

Lab Sample ID: S45490.01
Sample Tag: MW-14 L302181-01
Collected Date/Time: 02/17/2023 11:15
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	5.7	IR
2	1L Plastic	None	Yes	5.7	IR
1	250ml Plastic	HNO3	Yes	5.7	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/20/23 12:58	CTV	
Metal Digestion	Completed	SW3015A	02/20/23 10:10	CCM	

Inorganics

Method: E300.0, Run Date: 02/20/23 10:12, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	111	10	0.13	mg/L	10	16887-00-6	

Method: E300.0, Run Date: 02/20/23 09:27, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	22	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/20/23 08:06, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	601	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/21/23 12:00, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	498	10	0.238	mg/L	1		

Method: SM2540C, Run Date: 02/17/23 19:20, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	732	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/20/23 17:30, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	4	3	1	mg/L	5		

Metals

Method: E200.8, Run Date: 02/20/23 11:33, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	0.006	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.119	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	2.23	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	

Lab Sample ID: S45490.01 (continued)
Sample Tag: MW-14 L302181-01

Method: E200.8, Run Date: 02/20/23 11:33, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	9.46	0.02	0.00192	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.122	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	0.015	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	0.005	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/20/23 13:26, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	144	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	41.3	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	5.82	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	78.3	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/20/23 15:26, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/20/23 13:20, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45490.02
Sample Tag: MW-15 L302181-02
Collected Date/Time: 02/17/2023 13:10
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	5.7	IR
2	1L Plastic	None	Yes	5.7	IR
1	250ml Plastic	HNO3	Yes	5.7	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/20/23 12:58	CTV	
Metal Digestion	Completed	SW3015A	02/20/23 10:10	CCM	

Inorganics

Method: E300.0, Run Date: 02/20/23 09:37, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	

Method: E300.0, Run Date: 02/20/23 10:34, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	84	10	0.13	mg/L	10	16887-00-6	
Sulfate	135	10	1.0	mg/L	10	14808-79-8	

Method: SM2320B, Run Date: 02/20/23 08:10, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	354	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/21/23 13:07, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	473	10	0.238	mg/L	1		

Method: SM2540C, Run Date: 02/17/23 19:20, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	606	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/20/23 17:30, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/20/23 11:38, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.050	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.34	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	

Lab Sample ID: S45490.02 (continued)

Sample Tag: MW-15 L302181-02

Method: E200.8, Run Date: 02/20/23 11:38, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	0.04	0.02	0.00192	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	0.026	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/20/23 13:29, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	140	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	35.1	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	Not detected	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	30.3	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/20/23 15:29, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/20/23 13:20, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45490.03
Sample Tag: MWT-14 L302181-03
Collected Date/Time: 02/17/2023 11:15
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	5.7	IR
2	1L Plastic	None	Yes	5.7	IR
1	250ml Plastic	HNO3	Yes	5.7	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/20/23 12:58	CTV	
Metal Digestion	Completed	SW3015A	02/20/23 10:10	CCM	

Inorganics

Method: E300.0, Run Date: 02/20/23 11:14, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	112	10	0.13	mg/L	10	16887-00-6	

Method: E300.0, Run Date: 02/20/23 09:47, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	21	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/20/23 08:14, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	606	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/21/23 13:14, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	506	10	0.238	mg/L	1		

Method: SM2540C, Run Date: 02/17/23 19:20, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	716	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/20/23 17:30, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	7	3	1	mg/L	2.86		

Metals

Method: E200.8, Run Date: 02/20/23 11:42, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	0.005	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.116	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	2.20	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	

Lab Sample ID: S45490.03 (continued)
Sample Tag: MWT-14 L302181-03

Method: E200.8, Run Date: 02/20/23 11:42, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	9.35	0.02	0.00192	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.126	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	0.014	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/20/23 13:31, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	144	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	41.2	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	5.81	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	77.9	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/20/23 15:33, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/20/23 13:20, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S45490.04
Sample Tag: Field Blank L302181-04
Collected Date/Time: 02/17/2023 10:20
Matrix: Water
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	5.7	IR
2	1L Plastic	None	Yes	5.7	IR
1	250ml Plastic	HNO3	Yes	5.7	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/20/23 12:58	CTV	
Metal Digestion	Completed	SW3015A	02/20/23 10:10	CCM	

Inorganics

Method: E300.0, Run Date: 02/20/23 09:47, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Sulfate	Not detected	2.5	0.26	mg/L	2.5	14808-79-8	

Method: E300.0, Run Date: 02/20/23 09:57, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	2.5	0.03	mg/L	2.5	16887-00-6	
Fluoride (Undistilled)	Not detected	0.5	0.04	mg/L	2.5	16984-48-8	

Method: SM2320B, Run Date: 02/20/23 08:16, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	Not detected	10	0.5	mg/L	1	71-52-3	
Carbonate*	Not detected	10	0.5	mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/21/23 13:17, Analyst: PJH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	Not detected	10	0.238	mg/L	1		

Method: SM2540C, Run Date: 02/17/23 19:20, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	Not detected	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/20/23 17:30, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/20/23 11:23, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00102	mg/L	2	7440-36-0	
Arsenic	Not detected	0.002	0.000102	mg/L	2	7440-38-2	
Barium	Not detected	0.005	0.0000648	mg/L	2	7440-39-3	
Beryllium	Not detected	0.001	0.0000862	mg/L	2	7440-41-7	
Boron	Not detected	0.04	0.000702	mg/L	2	7440-42-8	
Cadmium	Not detected	0.0005	0.0000760	mg/L	2	7440-43-9	
Chromium	Not detected	0.005	0.0000386	mg/L	2	7440-47-3	

Lab Sample ID: S45490.04 (continued)
Sample Tag: Field Blank L302181-04

Method: E200.8, Run Date: 02/20/23 11:23, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.0000434	mg/L	2	7440-48-4	
Copper	Not detected	0.005	0.000150	mg/L	2	7440-50-8	
Iron	Not detected	0.02	0.000768	mg/L	2	7439-89-6	
Lead	Not detected	0.003	0.0000760	mg/L	2	7439-92-1	
Lithium*	Not detected	0.005	0.000654	mg/L	2	7439-93-2	
Molybdenum	Not detected	0.005	0.0000868	mg/L	2	7439-98-7	
Nickel	Not detected	0.005	0.000100	mg/L	2	7440-02-0	
Selenium	Not detected	0.005	0.000838	mg/L	2	7782-49-2	
Silver	Not detected	0.0005	0.0000270	mg/L	2	7440-22-4	
Thallium	Not detected	0.002	0.0000342	mg/L	2	7440-28-0	
Vanadium	Not detected	0.005	0.0000558	mg/L	2	7440-62-2	
Zinc	Not detected	0.005	0.000292	mg/L	2	7440-66-6	

Method: E200.8, Run Date: 02/20/23 13:24, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	Not detected	0.50	0.0174	mg/L	2	7440-70-2	
Magnesium	Not detected	0.50	0.00480	mg/L	2	7439-95-4	
Potassium	Not detected	0.50	0.00920	mg/L	2	7440-09-7	
Sodium	Not detected	0.50	0.00340	mg/L	2	7440-23-5	

Method: E245.1, Run Date: 02/20/23 15:36, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/20/23 13:20, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories Login Checklist

Lab Set ID: S45490
Client: BWL01 (Board of Water & Light)
Project: Erickson AM MI Wells 14-15
Submitted: 02/17/2023 15:02 Login User: MMC

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 5.7
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[X] Yes	[ ] No	[ ] N/A	Subcontracting needed? Subcontacted to:	GEL
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: ________________________ Date: ____________

 Prepared by Merit Laboratories

Merit Laboratories Bottle Preservation Check

Lab Set ID: S45490 Submitted: 02/17/2023 15:02

Client: BWL01 (Board of Water & Light)

Project: Erickson AM MI Wells 14-15

Initial Preservation Check: 02/17/2023 15:20 MMC

Preservation Recheck (E200.8): N/A

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S45490.01	1L Plastic HNO3	<2			
S45490.01	1L Plastic HNO3	<2			
S45490.01	250ml Plastic HNO3	<2			
S45490.02	1L Plastic HNO3	<2			
S45490.02	1L Plastic HNO3	<2			
S45490.02	250ml Plastic HNO3	<2			
S45490.03	1L Plastic HNO3	<2			
S45490.03	1L Plastic HNO3	<2			
S45490.03	250ml Plastic HNO3	<2			
S45490.04	1L Plastic HNO3	<2			
S45490.04	1L Plastic HNO3	<2			
S45490.04	250ml Plastic HNO3	<2			

Merit Laboratories, Inc.
2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME Jennifer Caporale
COMPANY Lansing Board of Water and Light
ADDRESS PO Box 13007 48901-3007
CITY Lansing STATE Mi ZIP CODE 48901
PHONE NO. 517-702-6372 FAX NO. P.O. NO.
E-MAIL ADDRESS Environmental_Laboratory@lbwl.com QUOTE NO.

INVOICE TO

CONTACT NAME Beth Zimpfer ☒ SAME
COMPANY
ADDRESS
CITY STATE ZIP CODE
PHONE NO. E-MAIL ADDRESS Beth.Zimpfer@lbwl.com

PROJECT NO./NAME Erickson AM MI Wells 14-15
SAMPLER(S) - PLEASE PRINT/SIGN NAME Marc Wahrer

TURNAROUND TIME REQUIRED ☐ 1 DAY ☒ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☒ OTHER ASAP

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☒ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. FOR LAB USE ONLY	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	F- undissolved, Cl-, SO4, TDS	Radium 226	Radium 228	TSS	HCO3, CO3, Hardness
45490.01	02/17/23	1115	MW-14 L302181-01	GW	5	2		3					✓	✓	✓	✓	✓	✓
.02	02/17/23	1310	MW-15 L302181-02	GW	5	2		3					✓	✓	✓	✓	✓	✓
.03	02/17/23	1115	MWT-14 L302181-03	GW	5	2		3					✓	✓	✓	✓	✓	✓
.04	02/17/23	1020	Field Blank L302181-04	di	5	2		3					✓	✓	✓	✓	✓	✓

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☒ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions
Metals to analyse:Na, Mg, K
B, Ca, Sb, As, Ba, Be, Cd, Cr,
Co, Li, Hg, Mo,Pb,Se, Tl,
Fe, Cu, Ni, Ag, V, Zn
Please send a preliminary report

RELINQUISHED BY: SIGNATURE/ORGANIZATION [signature] ☒ Sampler	DATE 2-17-23	TIME 1502	RELINQUISHED BY: SIGNATURE/ORGANIZATION DATE TIME
RECEIVED BY: SIGNATURE/ORGANIZATION M Chilcote	DATE 2/17/23	TIME 1502	RECEIVED BY: SIGNATURE/ORGANIZATION DATE TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME	SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME	SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 5.7

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Reporting Limits to go to Merit with COC

Sb, total	Antimony	250 mL plastic	mg/L	Nitric Acid	200.7	6 mos	0.005
As, total	Arsenic	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
Ba, total		250 mL plastic	mg/L	Nitric Acid	200.8	6mos	0.150
Be, total	Beryllium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.001
B, total	Boron	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.04
Cd, total	Cadmium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
Ca	Calcium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	2.5
Cl	Chloride	250 mL plastic	mg/L	Chill	300.0	28 d	10
Cr, total	Chromium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Co, total	Cobalt	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Cu, total	Copper	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
F	Fluoride	250 mL plastic	mg/L	None	9056	28 d	1.0
Fe, total	Iron	250 mL plastic	mg/L	Nitric Acid	300.0	6 mos	0.02
Pb, total	Lead	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.003
Li, total	Lithium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Hg, total	Mercury	250 mL plastic	mg/L	HNO3	245.1	28 d	0.0002
Mo, total	Molybdenum	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ni, total	Nickel	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
RA226/228	Radium 226 and 228 combined	(2) 1 L plastic	pCi/L	HNO3	SM 7500	6 mos	2.0 combined
Se, total	Selenium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ag, total	Silver	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
SO4	Sulfate	250 mL plastic	mg/L	Chill	300.0	28 d	10
Tl, total	Thallium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
TDS	Total Dissolved Solids	1 L plastic	mg/L	None	SM 2540C	NA	20
TSS	Total Suspended Solids	1 L plastic	mg/L	None	SM 2540D	NA	3
V, total	Vanadium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Zn, total	Zinc	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005

GEL Laboratories LLC
a member of **The GEL Group** INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

March 20, 2023

John Laverty
Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan 48823

Re: Routine Analysis
Work Order: 611797
SDG: S45490

Dear John Laverty:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 22, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1614.

Sincerely,

Jordan Melton

Jordan Melton for
Delaney Stone
Project Manager

Purchase Order: GELP20-0018
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Merit Laboratories, Inc.
SDG: S45490
Work Order: 611797

March 20, 2023

Laboratory Identification:

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

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 22, 2023 for analysis. Chain of Custody form did not contain a relinquished signature. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
611797001	S45490.01
611797002	S45490.02
611797003	S45490.03
611797004	S45490.04

Case Narrative:

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

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

Jordan Melton
Jordan Melton for
Delaney Stone
Project Manager

Chain of Custody and Supporting Documentation

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

611797

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME Project Management Team
COMPANY Merit Laboratories
ADDRESS 2680 East Lansing Drive
CITY East Lansing STATE MI ZIP CODE 48823
PHONE NO. 517-332-0167 FAX NO. P.O. NO.
E-MAIL ADDRESS results@meritlabs.com QUOTE NO.

INVOICE TO ☒ SAME

CONTACT NAME Julie Teague
COMPANY Merit Laboratories
ADDRESS 2680 East Lansing Drive
CITY East Lansing STATE MI ZIP CODE 48823
PHONE NO. 517-332-0167 E-MAIL ADDRESS juliet@meritlabs.com

PROJECT NO./NAME S45490
SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☒ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER SL=SLUDGE WW=WASTEWATER DW=DRINKING WATER S=SOIL O=OIL L=LIQUID WP=WIPE A=AIR SD=SOLID W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Radium 226*	Radium 228**
	2/17/23	1115	S45490.01	GW	2			2					✓	✓
	2/17/23	1310	S45490.02	GW	2			2					✓	✓
	2/17/23	1115	S45490.03	GW	2			2					✓	✓
	2/17/23	1020	S45490.04	GW	2			2					✓	✓

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions
* E903.1 Mod.
** E904.0/SW 9320 Mod.

Please use calculation product & provide Radium 226/228 combined results on the report

(No Ice needed)
** Subcontracted to
GEL Laboratories, Inc.
2040 Savage Road
Charleston, SC 29407

RELINQUISHED BY: SIGNATURE/ORGANIZATION	M Dilcot ☐ Sampler	DATE	TIME	
RECEIVED BY: SIGNATURE/ORGANIZATION	UPS	DATE	TIME	
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME	
RECEIVED BY: SIGNATURE/ORGANIZATION	Stacy L Boone	DATE 2/22/23	TIME 1000	

RELINQUISHED BY: SIGNATURE/ORGANIZATION DATE TIME
RECEIVED BY: SIGNATURE/ORGANIZATION DATE TIME
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
NOTES: TEMP. ON ARRIVAL

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: MERI	SDG/AR/COC/Work Order: 611797
Received By: Stacy Boone	Date Received: FEB 22, 2023
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 1Z 466 477 03 6322 6250

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): Ø CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		✓		Preservation Method: Wet Ice Ice Packs Dry ice None Other: TEMP: 19°C *all temperatures are recorded in Celsius
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR3-22 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			✓	
13	COC form is properly signed in relinquished/received sections?	~~✓~~ SB		✓	Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials JM Date 2-22-23 Page 1 of 1

GL-CHL-SR-001 Rev 7

Laboratory Certifications

List of current GEL Certifications as of 20 March 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
Merit Laboratories, Inc.
SDG #: S45490
Work Order #: 611797

Product: **Radium-226+Radium-228 Calculation**
Analytical Method: Calculation
Analytical Procedure: GL-RAD-D-003 REV# 45
Analytical Batch: 2393678

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

GEL Sample ID#	Client Sample Identification
611797001	S45490.01
611797002	S45490.02
611797003	S45490.03
611797004	S45490.04

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

Data Summary:

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

Product: **GFPC Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2393679

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

GEL Sample ID#	Client Sample Identification
611797001	S45490.01
611797002	S45490.02
611797003	S45490.03
611797004	S45490.04
1205336988	Method Blank (MB)
1205336989	611797001(S45490.01) Sample Duplicate (DUP)
1205336990	Laboratory Control Sample (LCS)

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

Data Summary:

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

<u>Product:</u> Lucas Cell, Ra226, Liquid
<u>Analytical Method:</u> EPA 903.1 Modified
<u>Analytical Procedure:</u> GL-RAD-A-008 REV# 15
<u>Analytical Batch:</u> 2393661

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

GEL Sample ID#	Client Sample Identification
611797001	S45490.01
611797002	S45490.02
611797003	S45490.03
611797004	S45490.04
1205336926	Method Blank (MB)
1205336927	611624001(NonSDG) Sample Duplicate (DUP)
1205336928	611624001(NonSDG) Matrix Spike (MS)
1205336929	Laboratory Control Sample (LCS)

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

<u>Data Summary:</u>

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

<u>Miscellaneous Information</u>

Additional Comments
The matrix spike, 1205336928 (Non SDG 611624001MS), aliquot was reduced to conserve sample volume.

<u>Certification Statement</u>

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

GEL LABORATORIES LLC

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

Qualifier Definition Report
for

MERI001 Merit Laboratories, Inc.

Client SDG: S45490 GEL Work Order: 611797

The Qualifiers in this report are defined as follows:

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

Review/Validation

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

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

Signature: **Name:** **Theresa Austin**

Date: **20 MAR 2023** **Title:** **Group Leader**

Sample Data Summary

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 20, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45490.01	Project:	MERI00120
Sample ID:	611797001	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	17-FEB-23 11:15		
Receive Date:	22-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.272	+/-1.04	1.92	3.00	pCi/L			JE1	03/15/23	1121	2393679	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.668	+/-1.10			pCi/L		1	NXL1	03/20/23	1320	2393678	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.396	+/-0.364	0.570	1.00	pCi/L			LXP1	03/17/23	1035	2393661	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			74.6	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 20, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45490.02	Project:	MERI00120
Sample ID:	611797002	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	17-FEB-23 13:10		
Receive Date:	22-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.367	+/-1.06	2.09	3.00	pCi/L			JE1	03/15/23	1121	2393679	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.334	+/-1.09			pCi/L		1	NXL1	03/20/23	1320	2393678	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.334	+/-0.259	0.319	1.00	pCi/L			LXP1	03/17/23	1035	2393661	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			75.3	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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

Certificate of Analysis

Report Date: March 20, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45490.03	Project:	MERI00120
Sample ID:	611797003	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	17-FEB-23 11:15		
Receive Date:	22-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.07	+/-0.988	1.61	3.00	pCi/L			JE1	03/15/23	1121	2393679	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.43	+/-1.06			pCi/L		1	NXL1	03/20/23	1320	2393678	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.363	+/-0.375	0.580	1.00	pCi/L			LXP1	03/17/23	1035	2393661	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			87.6	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 20, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S45490.04	Project:	MERI00120
Sample ID:	611797004	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	17-FEB-23 10:20		
Receive Date:	22-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.896	+/-1.13	1.92	3.00	pCi/L			JE1	03/15/23	1121	2393679	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.27	+/-1.17			pCi/L		1	NXL1	03/20/23	1320	2393678	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.375	+/-0.295	0.399	1.00	pCi/L			LXP1	03/17/23	1035	2393661	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			68.3	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Quality Control Data

GEL LABORATORIES LLC

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

QC Summary

Report Date: March 20, 2023

Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan

Contact: **John Laverty**

Workorder: **611797**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2393679										
QC1205336989 611797001 DUP										
Radium-228	U	0.272	U	0.969	pCi/L	N/A		N/A	JE1	03/15/23 11:21
	Uncertainty	+/-1.04		+/-0.853						
QC1205336990 LCS										
Radium-228	63.4			66.8	pCi/L		105	(75%-125%)		03/15/23 11:21
	Uncertainty			+/-4.53						
QC1205336988 MB										
Radium-228			U	0.668	pCi/L					03/15/23 11:21
	Uncertainty			+/-1.12						
Rad Ra-226										
Batch 2393661										
QC1205336927 611624001 DUP										
Radium-226		1.43		0.491	pCi/L	97.6		(0% - 100%)	LXP1	03/17/23 11:14
	Uncertainty	+/-0.546		+/-0.321						
QC1205336929 LCS										
Radium-226	26.5			22.0	pCi/L		83.2	(75%-125%)		03/17/23 11:17
	Uncertainty			+/-2.00						
QC1205336926 MB										
Radium-226			U	0.492	pCi/L					03/17/23 11:14
	Uncertainty			+/-0.431						
QC1205336928 611624001 MS										
Radium-226	133	1.43		120	pCi/L		88.7	(75%-125%)		03/17/23 11:14
	Uncertainty	+/-0.546		+/-9.89						

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported

QC Summary

Workorder: 611797

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

UI	Gamma Spectroscopy--Uncertain identification
BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
**	Analyte is a Tracer compound
M	REMP Result > MDC/CL and < RDL
J	See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Gas Flow Raw Data

Batch 2393679 Check-list

This check-list was completed on 15-MAR-23 by Kenshalla Oston

This batch was reviewed by Kenshalla Oston on 15-MAR-23 and Rhonda Birch on 15-MAR-23.

Batch ID:	**Product:**	**Description:** Gas Flow Radium 228
2393679	GFC28RAL	GL-RAD-A-063

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?	Yes		
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
11	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
12	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-228 in Liquid

Batch ID: **2393679**
Analyst: Jacqueline Emond (JE1)
Method: EPA 904.0/SW846 9320 Modified
Lab SOP: GL-RAD-A-063 REV# 5
Instrument: LUCAS-C202389980

Due Dates for Lab: 19-MAR-2023 **Package: 21-MAR-2023** **SDG: 21-MAR-2023**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1205336990	228	1952-B	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Separation (date)
1	611797001	09-MAR-2023	3	300.56	300.56	03/13/23 14:03	03/15/23 08:34
2	611797002	09-MAR-2023	3	300.28	300.28	03/13/23 14:03	03/15/23 08:34
3	611797003	09-MAR-2023	3	300.98	300.98	03/13/23 14:03	03/15/23 08:34
4	611797004	09-MAR-2023	3	301.62	301.62	03/13/23 14:03	03/15/23 08:34
5	613018001	09-MAR-2023	3	301.98	301.98	03/13/23 14:03	03/15/23 08:34
6	613018002	09-MAR-2023	3	302.11	302.11	03/13/23 14:03	03/15/23 08:34
7	1205336988 MB	09-MAR-2023	3		302.11	03/13/23 14:03	03/15/23 08:34
8	1205336989 DUP (611797001)	09-MAR-2023	3	301.77	301.77	03/13/23 14:03	03/15/23 08:34
9	1205336990 LCS	09-MAR-2023	3		302.11	03/13/23 14:03	03/15/23 08:34

Reagent/Solvent Lot ID	Description	Amount
WORK 1951-D	Ba-133	.1 mL
REGNT 3877362	RGF-1.5M Ammonium Sulfate	10 mL
REGNT 3862351	RGF-1M Citric Acid	5 mL
REGNT 3878183	2M HCl	20 mL
REGNT 3877480	RGF-50% Potassium Carbonate	2 mL
REGNT 3878163	RGF-7M Nitric Acid	25 mL
REGNT 3857893.11	Acetic Acid Glacial ACS Poly Coated Bottle	10 mL
REGNT DGA030723	2396801	2 g
REGNT 3867075.26	RGF-Hydrofluoric Acid	4 mL
REGNT 3528714	500 mg/mL Neodymium Carrier	.2 mL
REGNT 3521298	RGF-Neodymium Subtrate	5 mL
REGNT 3454413.21	Nitric Acid	5 mL
REGNT 3465466	Barium Carrier Ra228 REG	1 mL

Comments:
Pipet Id: RAD-GFC-1795419
Data Entry Date2: 10-MAR-2023 16:25 LUCAS-C202389980 Jacqueline Emond
Data Entry Date3: 09-MAR-2023 00:00

Radium-228 Liquid

Filename : RA228.XLS
File type : Excel
Version # : 1.4.3

Tracer S/N : 1951-D
Tracer Exp Date : 6/3/2023
Tracer Volume Added: 0.10

Batch : 2393679
Analyst : JAC02417
Prep Date : 3/9/2023
Ra-228 Method Uncertainty : 0.1268

Geometry: 25mm Filter

Procedure Code : GFC28RAL
Parmname : Radium-228
Required MDA : 3 pCi/L
Ra-228 Abundance : 1.00
Halflife of Ra-228 : 5.75 years
Halflife of Ac-228 : 6.15 hours

Sample Characteristics Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	**Tracer Calculations** Tracer Ref. Activity (CPM)	Tracer Ref. Count Uncertainty (%)	Tracer Samp. Activity (CPM)	Tracer Samp. Count Uncertainty (%)	Tracer Aliquot (mL)	Tracer Aliquot StDev. (mL)
1	611797001.1	0.3006	1.8469E-05	2/17/2023 11:15	1174.9	1.68%	876.7	1.95%	0.1	0.000200
2	611797002.1	0.3003	1.8464E-05	2/17/2023 13:10	1174.9	1.68%	884.6	1.94%	0.1	0.000200
3	611797003.1	0.3010	1.8476E-05	2/17/2023 11:15	1174.9	1.68%	1029.8	1.80%	0.1	0.000200
4	611797004.1	0.3016	1.8486E-05	2/17/2023 10:20	1174.9	1.68%	802.0	2.04%	0.1	0.000200
5	613018001.1	0.3020	1.8493E-05	2/21/2023 8:42	1174.9	1.68%	868.1	1.96%	0.1	0.000200
6	613018002.1	0.3021	1.8495E-05	2/21/2023 8:53	1174.9	1.68%	890.2	1.93%	0.1	0.000200
7	1205336988.1	0.3021	1.8495E-05	3/9/2023 0:00	1174.9	1.68%	747.9	2.11%	0.1	0.000200
8	1205336989.1	0.3018	1.8489E-05	2/17/2023 11:15	1174.9	1.68%	1057.5	1.78%	0.1	0.000200
9	1205336990.1	0.3021	1.8495E-05	3/9/2023 0:00	1174.9	1.68%	888.9	1.94%	0.1	0.000200

Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1 ml Stdev : +/- 0.002000 ml

Analytical SOP: GL-RAD-A-063
Instrument SOP: GL-RAD-I-016

Count raw Data

Pos.	Detector ID	Counting Time (min.)	Gross Counts Alpha	Gross Counts Beta	Beta cpm	Count Start Date/Time	Ac-228 Ingrowth Date/Time	Ac-228 Decay Date/Time	Ra-228 Decay	Ac-228 Decay	Ac-228 Ingrowth	Ac-228 Count Correction	Calculated Sample Recovery %	Sample Recovery Error %
1	4D	60	4	37	0.617	3/15/2023 11:21	3/13/2023 14:03	3/15/2023 8:34	0.991	0.730	0.992	1.057	74.6%	2.59%
2	5B	60	9	43	0.717	3/15/2023 11:21	3/13/2023 14:03	3/15/2023 8:34	0.991	0.730	0.992	1.057	75.3%	2.58%
3	5C	60	8	52	0.867	3/15/2023 11:21	3/13/2023 14:03	3/15/2023 8:34	0.991	0.730	0.992	1.057	87.6%	2.48%
4	5D	60	6	41	0.683	3/15/2023 11:21	3/13/2023 14:03	3/15/2023 8:34	0.991	0.730	0.992	1.057	68.3%	2.66%
5	6A	60	16	91	1.517	3/15/2023 11:21	3/13/2023 14:03	3/15/2023 8:34	0.993	0.730	0.992	1.057	73.9%	2.60%
6	6B	60	13	64	1.067	3/15/2023 11:21	3/13/2023 14:03	3/15/2023 8:34	0.993	0.730	0.992	1.057	75.8%	2.57%
7	7A	60	2	36	0.600	3/15/2023 11:21	3/13/2023 14:03	3/15/2023 8:34	0.998	0.731	0.992	1.057	63.7%	2.71%
8	7B	60	10	43	0.717	3/15/2023 11:21	3/13/2023 14:03	3/15/2023 8:34	0.991	0.730	0.992	1.057	90.0%	2.46%
9	7C	60	13	945	15.750	3/15/2023 11:21	3/13/2023 14:03	3/15/2023 8:34	0.998	0.730	0.992	1.057	75.7%	2.58%

Pos.	Calibration Data Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Bkg cpm	Weekly Bkg Count Start Date/Time	Bkg Count Time (min.)
1	PIC	6/1/2022	5/31/2023	0.5954	0.00773	0.562	3/13/2023 18:43	500
2	PIC	6/1/2022	5/31/2023	0.6336	0.00426	0.796	3/10/2023 17:27	500
3	PIC	6/1/2022	5/31/2023	0.6242	0.00657	0.602	3/10/2023 16:28	500
4	PIC	6/1/2022	5/31/2023	0.6236	0.00925	0.510	3/10/2023 17:28	500
5	PIC	6/1/2022	5/31/2023	0.6328	0.02228	1.206	3/10/2023 15:02	1000
6	PIC	6/1/2022	5/31/2023	0.6280	0.00851	1.827	3/11/2023 10:23	1000
7	PIC	6/1/2022	5/31/2023	0.6257	0.00594	0.478	3/10/2023 16:28	500
8	PIC	6/1/2022	5/31/2023	0.6366	0.00627	0.464	3/10/2023 16:28	500
9	PIC	6/1/2022	5/31/2023	0.6407	0.00790	0.906	3/10/2023 16:28	500

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N : N/A
Spike Exp Date : N/A
Spike Activity (dpm/ml): N/A
Spike Volume Added: N/A

LCS S/N : 1952-B
LCS Exp Date : 8/9/2023
LCS Activity (dpm/ml): 425.05
LCS Volume Added: 0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	2 SIGMA Counting Uncertainty pCi/L	2 SIGMA Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	1.1857	0.8371	3	1.9226	**0.2716**	195.35%	0.0547	0.1068	1.0398	1.0421		SAMPLE				
2	1.3155	0.9287	3	2.0891	**-0.3674**	146.68%	-0.0793	0.1163	1.0562	1.0564		SAMPLE				
3	0.9955	0.7028	3	1.6072	**1.0667**	47.33%	0.2647	0.1251	0.9882	1.0245		SAMPLE				
4	1.1752	0.8297	3	1.9179	**0.8960**	64.33%	0.1733	0.1114	1.1286	1.1515		SAMPLE				
5	1.5970	1.1275	3	2.4898	**1.4588**	52.50%	0.3107	0.1627	1.4978	1.5441		SAMPLE				
6	1.9308	1.3632	3	2.9570	**-3.5071**	18.61%	-0.7603	0.1400	1.2658	1.2660		SAMPLE				
7	1.2051	0.8508	3	1.9754	**0.6680**	85.84%	0.1220	0.1047	1.1233	1.1361		MB				
8	0.8317	0.5872	3	1.3662	**0.9691**	44.98%	0.2527	0.1135	0.8529	0.8876	611797001.1	DUP	* 0.0%			
9	1.3637	0.9628	3	2.1506	**66.8048**	4.39%	14.8440	0.5141	4.5349	17.5704		LCS			63.3753	105.4%

SampleID	Instr	Time (min.)	Alpha Counts	Beta Counts	Count Start Time	Count End Time	Machine	Batch ID
611797001	4D	60	4	37	3/15/2023 11:21	3/15/2023 12:21	PIC	2393679
611797002	5B	60	9	43	3/15/2023 11:21	3/15/2023 12:21	PIC	2393679
611797003	5C	60	8	52	3/15/2023 11:21	3/15/2023 12:21	PIC	2393679
611797004	5D	60	6	41	3/15/2023 11:21	3/15/2023 12:21	PIC	2393679
613018001	6A	60	16	91	3/15/2023 11:21	3/15/2023 12:21	PIC	2393679
613018002	6B	60	13	64	3/15/2023 11:21	3/15/2023 12:21	PIC	2393679
1205336988	7A	60	2	36	3/15/2023 11:21	3/15/2023 12:21	PIC	2393679
1205336989	7B	60	10	43	3/15/2023 11:21	3/15/2023 12:21	PIC	2393679
1205336990	7C	60	13	945	3/15/2023 11:21	3/15/2023 12:21	PIC	2393679

ASSAY	15-Mar-23	10:47:49		
Wizard 2480 s/n 46190630				
Protocol	id	8	Ba-133	
Time	limit			
Count	limit			
Isotope	Ba-133			
Protocol	date	3/15/2023		
Run	id.	6336		

Samp_ID	POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR	% RECOVERY	COUNT TIME
REF	1	95	1	180	3525.28	1174.92	1.68		10:47:49
611797001	2	95	2	180	2630.57	876.68	1.95	74.62	10:51:03
611797002	3	95	3	180	2654.28	884.6	1.94	75.29	10:54:17
611797003	4	95	4	180	3090	1029.77	1.8	87.65	10:57:31
611797004	5	95	5	180	2406.57	802.03	2.04	68.26	11:00:45
613018001	1	5	1	180	2604.57	868.05	1.96	73.88	11:04:22
613018002	2	5	2	180	2671	890.17	1.93	75.76	11:07:36
1205336988	3	5	3	180	2244	747.86	2.11	63.65	11:10:50
1205336989	4	5	4	180	3173	1057.52	1.78	90.01	11:14:04
1205336990	5	5	5	180	2667.28	888.87	1.94	75.65	11:17:17

END OF ASSAY

Continuing Calibration Data

Gas Flow Proportional Counter Checks for 15-Mar-2023

Detectors LB4100 A1 through I4 and PIC 1A through 14D and G5400W 1W through 1Z and LB4200 OA1 through OA1

Short Name	Status	Parmname	Run Time	Count Time	CPM or dec	Low Limit	High Limit	Stdev
LB4100E2	Above	Beta bkg	15-Mar 03:30	60	2.150	1.385	3.072	-0.28
LB4100F2	Above	Alpha bkg	15-Mar 03:30	60	0.300	0.042	0.294	+3.16
LB4100F2	Below	Alpha eff	15-Mar 04:40	5	5994	6533	7372	-6.86
LB4100F2	Above	Alpha XTalk	15-Mar 04:40	5	0.388	0.318	0.366	+5.79
LB4100F2	Above	Beta bkg	15-Mar 03:30	60	20.600	1.173	1.833	+173.61
LB4100G1	need 2nd	Beta bkg	15-Mar 03:31	60	1.017	0.380	1.675	-0.05
LB4100G1	Below	Beta eff	15-Mar 04:40	5	12745	12880	18320	-3.15
LB4100G3	Below	Alpha eff	15-Mar 04:33	5	4708	5785	8229	-5.65
LB4100G3	Above	Alpha XTalk	15-Mar 04:33	5	0.556	0.275	0.391	+11.50
LB4100G3	Below	Beta eff	15-Mar 04:40	5	16478	19160	24060	-6.28
LB4100H1	Above	Beta bkg	15-Mar 03:30	60	2.933	0.216	2.462	+4.26
PIC12C	Above	Beta bkg	15-Mar 09:03	60	2.517	0.142	2.845	+2.27
PIC13A	Above	Alpha bkg	15-Mar 12:35	60	0.317	-9.05E-2	0.347	+2.58

INSTRUMENTS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

The following detectors may not have properly transferred to the LIMS system

LB4100A1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100A2	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100A3	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C2	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C3	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C4	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I2	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I3	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I4	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4200OA1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk

Reviewed by ______________________

Date 3/15/23

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: GFPC **Batch ID: 2393679**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1205336988	MB	JE1	PIC7A	MAR-15-23 11:21:08	DONE	25mm Filter	01-JUN-22 00:00
1205336989	DUP	JE1	PIC7B	MAR-15-23 11:21:13	DONE	25mm Filter	01-JUN-22 00:00
1205336990	LCS	JE1	PIC7C	MAR-15-23 11:21:17	DONE	25mm Filter	01-JUN-22 00:00
611797001	SAMPLE	JE1	PIC4D	MAR-15-23 11:21:24	DONE	25mm Filter	01-JUN-22 00:00
611797002	SAMPLE	JE1	PIC5B	MAR-15-23 11:21:28	DONE	25mm Filter	01-JUN-22 00:00
611797003	SAMPLE	JE1	PIC5C	MAR-15-23 11:21:32	DONE	25mm Filter	01-JUN-22 00:00
611797004	SAMPLE	JE1	PIC5D	MAR-15-23 11:21:36	DONE	25mm Filter	01-JUN-22 00:00
613018001	SAMPLE	JE1	PIC6A	MAR-15-23 11:21:40	DONE	25mm Filter	01-JUN-22 00:00
613018002	SAMPLE	JE1	PIC6B	MAR-15-23 11:21:44	DONE	25mm Filter	01-JUN-22 00:00

Lucas Cell Raw Data

Batch 2393661 Check-list

This check-list was completed on 19-MAR-23 by Lyndsey Pace

This batch was reviewed by Gregory Ramsay on 17-MAR-23 and Lyndsey Pace on 19-MAR-23.

Batch ID: 2393661

Product: LUC26RAL

Description: Lucas Cell Radium 226
GL-RAD-A-008

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous		No	
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the matrix spike (MS/MSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-226 in Liquid

Batch ID: 2393661
Analyst: Lyndsey Pace (LXP1)
Method: EPA 903.1 Modified
Lab SOP: GL-RAD-A-008 REV# 15
Instrument: LUCAS-C202389980

Due Dates for Lab: 19-MAR-2023 Package: 21-MAR-2023 SDG: 21-MAR-2023

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
MS	1205336928	Radium-226 SPIKE	1715-G	.1	mL
LCS	1205336929	Radium-226 SPIKE	1715-G	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	End Degas (date)	CELL #	End Transfer (date)	Start Count Time (date)	Background Counts	Total Counts
1	611624001	09-MAR-2023	.999	501.34	501.34	03/14/23 09:20	607	03/17/23 06:10	03/17/23 09:10	5	39
2	611626001	09-MAR-2023	.999	506.04	506.04	03/14/23 09:20	708	03/17/23 06:10	03/17/23 09:10	3	82
3	611627001	09-MAR-2023	.999	500	500	03/14/23 09:20	106	03/17/23 06:41	03/17/23 09:48	4	12
4	611628001	09-MAR-2023	.999	500.6	500.6	03/14/23 09:20	201	03/17/23 06:41	03/17/23 09:48	8	15
5	611629001	09-MAR-2023	.999	503.68	503.68	03/14/23 09:20	308	03/17/23 06:41	03/17/23 09:48	8	15
6	611630001	09-MAR-2023	.999	502.64	502.64	03/14/23 09:20	403	03/17/23 06:41	03/17/23 09:48	4	12
7	611632001	09-MAR-2023	.999	501.18	501.18	03/14/23 09:20	506	03/17/23 06:41	03/17/23 09:48	4	17
8	611634001	09-MAR-2023	.999	503.91	503.91	03/14/23 09:20	604	03/17/23 06:41	03/17/23 09:48	2	26
9	611635001	09-MAR-2023	.999	504.76	504.76	03/14/23 09:20	704	03/17/23 06:41	03/17/23 09:48	5	20
10	611718001	09-MAR-2023	.999	503.84	503.84	03/14/23 09:20	105	03/17/23 07:15	03/17/23 10:35	3	7
11	611797001	09-MAR-2023	1	505.74	505.74	03/14/23 09:20	206	03/17/23 07:15	03/17/23 10:35	6	16
12	611797002	09-MAR-2023	1	500.93	500.93	03/14/23 09:20	302	03/17/23 07:15	03/17/23 10:35	1	9
13	611797003	09-MAR-2023	1	501.65	501.65	03/14/23 09:20	401	03/17/23 07:15	03/17/23 10:35	2	8
14	611797004	09-MAR-2023	1	500.41	500.41	03/14/23 09:20	508	03/17/23 07:15	03/17/23 10:35	2	11
15	611829001	09-MAR-2023	.999	501.97	501.97	03/14/23 09:20	608	03/17/23 07:15	03/17/23 10:35	1	29
16	611846001	09-MAR-2023	.999	500.88	500.88	03/14/23 09:20	707	03/17/23 07:15	03/17/23 10:35	2	17
17	611846002	09-MAR-2023	.999	500.3	500.3	03/14/23 09:20	805	03/17/23 07:15	03/17/23 10:35	3	2
18	611846003	09-MAR-2023	.999	500.17	500.17	03/14/23 09:20	101	03/17/23 07:51	03/17/23 11:14	2	11
19	613018001	09-MAR-2023	1	500.81	500.81	03/14/23 09:20	208	03/17/23 07:51	03/17/23 11:14	3	23
20	613018002	09-MAR-2023	1	500.22	500.22	03/14/23 09:20	303	03/17/23 07:51	03/17/23 11:14	3	43
21	1205336926 MB	09-MAR-2023	.999		506.04	03/14/23 09:20	408	03/17/23 07:51	03/17/23 11:14	5	15
22	1205336927 DUP (611624001)	09-MAR-2023	.999	501.11	501.11	03/14/23 09:20	501	03/17/23 07:51	03/17/23 11:14	2	14
23	1205336928 MS (611624001)	09-MAR-2023	.999	100.52	100.52	03/14/23 09:20	601	03/17/23 07:51	03/17/23 11:14	2	569
24	1205336929 LCS	09-MAR-2023	.999		506.04	03/14/23 09:20	706	03/17/23 07:51	03/17/23 11:17	3	477

Reagent/Solvent Lot ID	Description	Amount

Comments:
Data Entry Date2: 09-MAR-2023 00:00

Radium-226 Liquid

Filename : RA226.XLS
File type : Excel
Version # : 1.3.2

Batch : 2393661
Analyst : LIN01615
Prep Date : 3/9/2023
Ra-226 Method Uncertainty : 0.073648

Procedure Code : LUC26RAL
Parmname : Radium-226
Required MDA : 1 pCi/L
Halflife of Ra-226 : 1600 years
Ra-226 Abundance : 1.00
Halflife of Rn-222: 3.8235 days

Batch counted on : LUCAS CELL DETECTOR
BKG Count time : 30 min

Sample Characteristics					**Count Raw Data**							
Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	Cell Number	Counting Time (min.)	Gross Counts	Gross CPM	Background Counts	Background CPM	Background Count Time (min.)	Cell Efficiency (cpm/dpm)
1	611624001.1	0.5013	2.0261E-05	2/16/2023 12:00	607	30	39	1.300	5	0.167	30	1.8040
2	611626001.1	0.5060	2.0280E-05	2/15/2023 12:00	708	30	82	2.733	3	0.100	30	1.6020
3	611627001.1	0.5000	2.0256E-05	2/15/2023 13:00	106	30	12	0.400	4	0.133	30	1.6990
4	611628001.1	0.5006	2.0258E-05	2/15/2023 10:50	201	30	15	0.500	8	0.267	30	1.7110
5	611629001.1	0.5037	2.0271E-05	2/16/2023 11:30	308	30	15	0.500	8	0.267	30	1.5970
6	611630001.1	0.5026	2.0267E-05	2/15/2023 14:30	403	30	12	0.400	4	0.133	30	1.5070
7	611632001.1	0.5012	2.0261E-05	2/16/2023 13:00	506	30	17	0.567	4	0.133	30	1.7710
8	611634001.1	0.5039	2.0272E-05	2/16/2023 10:30	604	30	26	0.867	2	0.067	30	1.6810
9	611635001.1	0.5048	2.0275E-05	2/15/2023 13:45	704	30	20	0.667	5	0.167	30	1.5870
10	611718001.1	0.5038	2.0272E-05	2/15/2023 10:15	105	30	7	0.233	3	0.100	30	1.5830
11	611797001.1	0.5057	2.0279E-05	2/17/2023 11:15	206	30	16	0.533	6	0.200	30	1.8770
12	611797002.1	0.5009	2.0260E-05	2/17/2023 13:10	302	30	9	0.300	1	0.033	30	1.7980
13	611797003.1	0.5017	2.0263E-05	2/17/2023 11:15	401	30	8	0.267	2	0.067	30	1.2390
14	611797004.1	0.5004	2.0258E-05	2/17/2023 10:20	508	30	11	0.367	2	0.067	30	1.8020
15	611829001.1	0.5020	2.0264E-05	2/16/2023 12:00	608	30	29	0.967	1	0.033	30	1.7970
16	611846001.1	0.5009	2.0259E-05	2/15/2023 12:45	707	30	17	0.567	2	0.067	30	1.7280
17	611846002.1	0.5003	2.0257E-05	2/15/2023 13:30	805	30	2	0.067	3	0.100	30	1.9080
18	611846003.1	0.5002	2.0257E-05	2/15/2023 14:50	101	30	11	0.367	2	0.067	30	1.5720
19	613018001.1	0.5008	2.0259E-05	2/21/2023 8:42	208	30	23	0.767	3	0.100	30	1.7740
20	613018002.1	0.5002	2.0257E-05	2/21/2023 8:53	303	30	43	1.433	3	0.100	30	1.7210
21	1205336926.1	0.5060	2.0280E-05	3/9/2023 0:00	408	30	15	0.500	5	0.167	30	1.5020
22	1205336927.1	0.5011	2.0260E-05	2/16/2023 12:00	501	30	14	0.467	2	0.067	30	1.8220
23	1205336928.1	0.1005	1.1402E-05	2/16/2023 12:00	601	30	569	18.967	2	0.067	30	1.7610
24	1205336929.1	0.5060	2.0280E-05	3/9/2023 0:00	706	30	477	15.900	3	0.100	30	1.5900

Pipet, 0.1 ml Stdev : +/- 0.000200 ml
Pipet, 0.5 ml Stdev : +/- 0.001000 ml
Pipet, 1 ml Stdev : +/- 0.002000 ml

Analytical SOP: GL-RAD-A-008
Instrument SOP: GL-RAD-I-007

Cell Efficiency Error (%)	Cell Calibration Date	Cell Calibration Due Date	De-Gas Date/Time	Rn-222 Ingrow End Date/Time	Count Start Date/Time	Rn-222 Corrections De-Gas to Ingrowth	Rn-222 Corrections Ingrowth to Count	Rn-222 Corrections During Count	Ra-226 Decay
3.400%	7/1/2022	6/30/2023	3/14/2023 9:20	3/17/2023 6:10	3/17/2023 9:10	0.405	0.978	1.002	1.000
7.700%	11/1/2022	10/31/2023	3/14/2023 9:20	3/17/2023 6:10	3/17/2023 9:10	0.405	0.978	1.002	1.000
8.800%	4/28/2022	4/30/2023	3/14/2023 9:20	3/17/2023 6:41	3/17/2023 9:48	0.408	0.977	1.002	1.000
8.900%	8/1/2022	7/31/2023	3/14/2023 9:20	3/17/2023 6:41	3/17/2023 9:48	0.408	0.977	1.002	1.000
9.600%	10/25/2022	10/31/2023	3/14/2023 9:20	3/17/2023 6:41	3/17/2023 9:48	0.408	0.977	1.002	1.000
6.100%	2/1/2023	1/31/2024	3/14/2023 9:20	3/17/2023 6:41	3/17/2023 9:48	0.408	0.977	1.002	1.000
5.300%	6/1/2022	5/31/2023	3/14/2023 9:20	3/17/2023 6:41	3/17/2023 9:48	0.408	0.977	1.002	1.000
6.700%	7/1/2022	6/30/2023	3/14/2023 9:20	3/17/2023 6:41	3/17/2023 9:48	0.408	0.977	1.002	1.000
4.200%	11/1/2022	10/31/2023	3/14/2023 9:20	3/17/2023 6:41	3/17/2023 9:48	0.408	0.977	1.002	1.000
0.500%	4/28/2022	4/30/2023	3/14/2023 9:20	3/17/2023 7:15	3/17/2023 10:35	0.410	0.975	1.002	1.000
2.800%	8/1/2022	7/31/2023	3/14/2023 9:20	3/17/2023 7:15	3/17/2023 10:35	0.410	0.975	1.002	1.000
3.300%	10/25/2022	10/31/2023	3/14/2023 9:20	3/17/2023 7:15	3/17/2023 10:35	0.410	0.975	1.002	1.000
3.100%	2/1/2023	1/31/2024	3/14/2023 9:20	3/17/2023 7:15	3/17/2023 10:35	0.410	0.975	1.002	1.000
4.500%	6/1/2022	5/31/2023	3/14/2023 9:20	3/17/2023 7:15	3/17/2023 10:35	0.410	0.975	1.002	1.000
6.300%	7/1/2022	6/30/2023	3/14/2023 9:20	3/17/2023 7:15	3/17/2023 10:35	0.410	0.975	1.002	1.000
2.200%	11/1/2022	10/31/2023	3/14/2023 9:20	3/17/2023 7:15	3/17/2023 10:35	0.410	0.975	1.002	1.000
7.400%	4/1/2022	3/31/2023	3/14/2023 9:20	3/17/2023 7:15	3/17/2023 10:35	0.410	0.975	1.002	1.000
1.200%	4/28/2022	4/30/2023	3/14/2023 9:20	3/17/2023 7:51	3/17/2023 11:14	0.413	0.975	1.002	1.000
5.500%	8/1/2022	7/31/2023	3/14/2023 9:20	3/17/2023 7:51	3/17/2023 11:14	0.413	0.975	1.002	1.000
7.400%	10/25/2022	10/31/2023	3/14/2023 9:20	3/17/2023 7:51	3/17/2023 11:14	0.413	0.975	1.002	1.000
7.000%	2/1/2023	1/31/2024	3/14/2023 9:20	3/17/2023 7:51	3/17/2023 11:14	0.413	0.975	1.002	1.000
7.900%	6/1/2022	5/31/2023	3/14/2023 9:20	3/17/2023 7:51	3/17/2023 11:14	0.413	0.975	1.002	1.000
9.400%	7/1/2022	6/30/2023	3/14/2023 9:20	3/17/2023 7:51	3/17/2023 11:14	0.413	0.975	1.002	1.000
2.900%	11/1/2022	10/31/2023	3/14/2023 9:20	3/17/2023 7:51	3/17/2023 11:17	0.413	0.974	1.002	1.000

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

Spike S/N :	1715-G
Spike Exp Date :	9/8/2023
Spike Activity (dpm/ml):	297.43
Spike Volume Added:	0.10
LCS S/N :	1715-G
LCS Exp Date :	9/8/2023
LCS Activity (dpm/ml):	297.43
LCS Volume Added:	0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	0.3092	0.2183	1	0.5625	**1.4269**	19.80%	1.1333	0.2211	0.5456	0.5909		SAMPLE				
2	0.2672	0.1887	1	0.5178	**3.6987**	13.98%	2.6333	0.3073	0.8460	1.1456		SAMPLE				
3	0.2930	0.2069	1	0.5472	**0.3557**	50.77%	0.2667	0.1333	0.3486	0.3577		SAMPLE				
4	0.4110	0.2902	1	0.7127	**0.3087**	69.09%	0.2333	0.1599	0.4145	0.4204		SAMPLE				
5	0.4377	0.3090	1	0.7589	**0.3287**	69.18%	0.2333	0.1599	0.4414	0.4482		SAMPLE				
6	0.3286	0.2320	1	0.6136	**0.3989**	50.37%	0.2667	0.1333	0.3910	0.3980		SAMPLE				
7	0.2805	0.1980	1	0.5237	**0.5532**	35.65%	0.4333	0.1528	0.3822	0.3947		SAMPLE				
8	0.2078	0.1467	1	0.4272	**1.0702**	23.04%	0.8000	0.1764	0.4625	0.5075		SAMPLE				
9	0.3474	0.2453	1	0.6320	**0.7073**	33.60%	0.5000	0.1667	0.4621	0.4768		SAMPLE				
10	0.2691	0.1900	1	0.5214	**0.1886**	79.06%	0.1333	0.1054	0.2922	0.2935		SAMPLE				
11	0.3197	0.2257	1	0.5703	**0.3961**	46.99%	0.3333	0.1563	0.3641	0.3693		SAMPLE				
12	0.1376	0.0971	1	0.3195	**0.3340**	39.67%	0.2667	0.1054	0.2588	0.2641		SAMPLE				
13	0.2819	0.1990	1	0.5796	**0.3630**	52.80%	0.2000	0.1054	0.3750	0.3792		SAMPLE				
14	0.1943	0.1372	1	0.3995	**0.3753**	40.31%	0.3000	0.1202	0.2947	0.3014		SAMPLE				
15	0.1374	0.0970	1	0.3190	**1.1672**	20.55%	0.9333	0.1826	0.4475	0.4994		SAMPLE				
16	0.2024	0.1429	1	0.4162	**0.6517**	29.14%	0.5000	0.1453	0.3712	0.3839		SAMPLE				
17	0.2248	0.1587	1	0.4356	**-0.0394**	223.73%	-0.0333	0.0745	0.1726	0.1728		SAMPLE				
18	0.2215	0.1564	1	0.4554	**0.4278**	40.08%	0.3000	0.1202	0.3359	0.3417		SAMPLE				
19	0.2401	0.1695	1	0.4652	**0.8413**	26.08%	0.6667	0.1700	0.4204	0.4469		SAMPLE				
20	0.2478	0.1749	1	0.4801	**1.7365**	18.50%	1.3333	0.2261	0.5771	0.6777		SAMPLE				
21	0.3623	0.2558	1	0.6591	**0.4917**	45.27%	0.3333	0.1491	0.4310	0.4420		MB				
22	0.1907	0.1347	1	0.3921	**0.4912**	34.26%	0.4000	0.1333	0.3209	0.3373	611624001.1	DUP	97.6%			
23	0.9839	0.6946	1	2.0226	**119.7089**	10.30%	18.9000	0.7965	9.8882	29.7121	611624001.1	MS			133.2878	88.7%
24	0.2652	0.1872	1	0.5138	**22.0245**	5.46%	15.8000	0.7303	1.9953	3.9567		LCS			26.4757	83.2%

Continuing Calibration Data

Ludlum Alpha Scintillation Counter Checks for 17-MAR-2023

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LUCAS1	EFF	08:39	1	1.19E+05	119152	-1.98		
LUCAS2	EFF	08:40	1	1.32E+05	132244	-1.13		
LUCAS3	EFF	08:42	1	1.02E+05	102205	-1.41		
LUCAS4	EFF	08:43	1	1.28E+05	127847	-0.08		
LUCAS5	EFF	08:45	1	1.34E+05	133930	1.32		
LUCAS6	EFF	08:46	1	1.29E+05	129167	-1.7		
LUCAS7	EFF	09:46	1	1.31E+05	131183	0.65		
LUCAS8	EFF	08:51	1	1.37E+05	136679	0.93		

Reviewed by: Elizabeth Krouse **Date:** 17-MAR-23

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: LUCAS CELL DETECTOR **Batch ID: 2393661**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
611624001	SAMPLE	LXP1	LUCAS6	MAR-17-23 09:10:00	DONE	Lucas Cell	01-JUL-22 00:00
611626001	SAMPLE	LXP1	LUCAS7	MAR-17-23 09:10:00	DONE	Lucas Cell	01-NOV-22 00:00
611627001	SAMPLE	LXP1	LUCAS1	MAR-17-23 09:48:00	DONE	Lucas Cell	28-APR-22 00:00
611628001	SAMPLE	LXP1	LUCAS2	MAR-17-23 09:48:00	DONE	Lucas Cell	01-AUG-22 00:00
611629001	SAMPLE	LXP1	LUCAS3	MAR-17-23 09:48:00	DONE	Lucas Cell	25-OCT-22 00:00
611630001	SAMPLE	LXP1	LUCAS4	MAR-17-23 09:48:00	DONE	Lucas Cell	01-FEB-23 00:00
611632001	SAMPLE	LXP1	LUCAS5	MAR-17-23 09:48:00	DONE	Lucas Cell	01-JUN-22 00:00
611634001	SAMPLE	LXP1	LUCAS6	MAR-17-23 09:48:00	DONE	Lucas Cell	01-JUL-22 00:00
611635001	SAMPLE	LXP1	LUCAS7	MAR-17-23 09:48:00	DONE	Lucas Cell	01-NOV-22 00:00
611718001	SAMPLE	LXP1	LUCAS1	MAR-17-23 10:35:00	DONE	Lucas Cell	28-APR-22 00:00
611797001	SAMPLE	LXP1	LUCAS2	MAR-17-23 10:35:00	DONE	Lucas Cell	01-AUG-22 00:00
611797002	SAMPLE	LXP1	LUCAS3	MAR-17-23 10:35:00	DONE	Lucas Cell	25-OCT-22 00:00
611797003	SAMPLE	LXP1	LUCAS4	MAR-17-23 10:35:00	DONE	Lucas Cell	01-FEB-23 00:00
611797004	SAMPLE	LXP1	LUCAS5	MAR-17-23 10:35:00	DONE	Lucas Cell	01-JUN-22 00:00
611829001	SAMPLE	LXP1	LUCAS6	MAR-17-23 10:35:00	DONE	Lucas Cell	01-JUL-22 00:00
611846001	SAMPLE	LXP1	LUCAS7	MAR-17-23 10:35:00	DONE	Lucas Cell	01-NOV-22 00:00
611846002	SAMPLE	LXP1	LUCAS8	MAR-17-23 10:35:00	DONE	Lucas Cell	01-APR-22 00:00
611846003	SAMPLE	LXP1	LUCAS1	MAR-17-23 11:14:00	DONE	Lucas Cell	28-APR-22 00:00
613018001	SAMPLE	LXP1	LUCAS2	MAR-17-23 11:14:00	DONE	Lucas Cell	01-AUG-22 00:00
613018002	SAMPLE	LXP1	LUCAS3	MAR-17-23 11:14:00	DONE	Lucas Cell	25-OCT-22 00:00
1205336926	MB	LXP1	LUCAS4	MAR-17-23 11:14:00	DONE	Lucas Cell	01-FEB-23 00:00
1205336927	DUP	LXP1	LUCAS5	MAR-17-23 11:14:00	DONE	Lucas Cell	01-JUN-22 00:00
1205336928	MS	LXP1	LUCAS6	MAR-17-23 11:14:00	DONE	Lucas Cell	01-JUL-22 00:00
1205336929	LCS	LXP1	LUCAS7	MAR-17-23 11:17:00	DONE	Lucas Cell	01-NOV-22 00:00

Analytical Laboratory Report

Final Report

Report ID: S44989.01(02)
Generated on 03/09/2023
Replaces report S44989.01(01) generated on 02/07/2023

Report to

Attention: Jennifer Caporale
Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S44989.01-S44989.07
Project: Erickson AM MI Wells 16A-16D
Collected Date(s): 02/02/2023
Submitted Date/Time: 02/03/2023 10:50
Sampled by: Marc Wahrer
P.O. #:

Table of Contents

Maya Murshak
Technical Director

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.
40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.
QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.
Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.
Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

All analyses completed

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched

Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
E245.1	EPA Method 245.1 Revision 3.0
E300.0	EPA Method 300.0 Revision 2.1 (1993)
SM2320B	Standard Method 2320 B 2011
SM2340C	Standard Method 2340 C 2011
SM2540C	Standard Method 2540 C 2015
SM2540D	Standard Method 2540 D 2015
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (7 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S44989.01	MW-16A L301214-01	Groundwater	02/02/23 09:35
S44989.02	MW-16B L301214-02	Groundwater	02/02/23 11:10
S44989.03	MW-16C L301214-03	Groundwater	02/02/23 14:08
S44989.04	MW-16D L301214-04	Groundwater	02/02/23 16:08
S44989.05	MWT- L301214-05	Groundwater	02/02/23 09:35
S44989.06	Field blank - L301214-06	Groundwater	02/02/23 08:15
S44989.07	Equipment Blank - L301214-07	Groundwater	02/02/23 08:30

Lab Sample ID: S44989.01
Sample Tag: MW-16A L301214-01
Collected Date/Time: 02/02/2023 09:35
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	250ml Plastic	HNO3	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/07/23 12:06	CTV	
Metal Digestion	Completed	SW3015A	02/07/23 09:40	CCM	

Inorganics

Method: E300.0, Run Date: 02/03/23 13:58, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	

Method: E300.0, Run Date: 02/03/23 15:18, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	383	25	0.32	mg/L	25	16887-00-6	
Sulfate	145	25	2.6	mg/L	25	14808-79-8	

Method: SM2320B, Run Date: 02/03/23 15:06, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	610	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/03/23 13:00, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	608	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/03/23 16:30, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	1,360	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/06/23 17:15, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	7	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/23 11:15, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	0.003	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.160	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.21	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	

Lab Sample ID: S44989.01 (continued)
Sample Tag: MW-16A L301214-01

Method: E200.8, Run Date: 02/07/23 11:15, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	3.71	0.02	0.00192	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.005	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/23 13:14, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	179	2.5	0.217	mg/L	25	7440-70-2	
Magnesium	42.4	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	2.12	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	276	2.5	0.0425	mg/L	25	7440-23-5	

Method: E245.1, Run Date: 02/07/23 13:26, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/08/23 14:25, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S44989.02

Sample Tag: MW-16B L301214-02

Collected Date/Time: 02/02/2023 11:10

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	250ml Plastic	HNO3	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/07/23 12:06	CTV	
Metal Digestion	Completed	SW3015A	02/07/23 09:40	CCM	

Inorganics

Method: E300.0, Run Date: 02/03/23 14:08, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	18	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/03/23 15:10, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	390	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/03/23 13:02, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	322	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/03/23 16:30, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	366	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/06/23 17:15, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	7	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/23 11:19, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.090	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.12	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	0.93	0.02	0.00192	mg/L	5	7439-89-6	

Lab Sample ID: S44989.02 (continued)
Sample Tag: MW-16B L301214-02

Method: E200.8, Run Date: 02/07/23 11:19, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.023	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	0.008	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/23 13:17, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	74.5	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	29.7	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	3.81	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	24.5	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/07/23 13:30, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/08/23 14:25, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S44989.03

Sample Tag: MW-16C L301214-03

Collected Date/Time: 02/02/2023 14:08

Matrix: Groundwater

COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	250ml Plastic	HNO3	Yes	2.1	IR
1	250ml Plastic	None	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/07/23 12:06	CTV	
Mercury Digestion	Completed	E245.1	02/07/23 12:06	CTV	
Metal Digestion	Completed	SW3015A	02/07/23 09:40	CCM	
Metal Digestion	Completed	SW3015A	02/07/23 09:40	CCM	

Inorganics

Method: E300.0, Run Date: 02/03/23 14:18, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	8	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	19	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/03/23 15:12, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	370	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/03/23 13:08, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	263	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/03/23 16:30, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	418	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/06/23 17:15, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	40	3	1	mg/L	2		

Metals

Method: E200.8, Run Date: 02/07/23 11:22, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	0.002	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.051	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.40	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	

Lab Sample ID: S44989.03 (continued)
Sample Tag: MW-16C L301214-03

Method: E200.8, Run Date: 02/07/23 11:22, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	0.76	0.02	0.00192	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.030	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	0.007	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/23 11:25, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony, Dissolved*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic, Dissolved	Not detected	0.002	0.000255	mg/L	5	7440-38-2	
Barium, Dissolved	0.048	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium, Dissolved	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron, Dissolved	0.40	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium, Dissolved	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium, Dissolved	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt, Dissolved	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper, Dissolved	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron, Dissolved	0.02	0.02	0.00192	mg/L	5	7439-89-6	
Lead, Dissolved	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium, Dissolved*	0.029	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum, Dissolved	0.007	0.005	0.000217	mg/L	5	7439-98-7	
Nickel, Dissolved	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium, Dissolved	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver, Dissolved	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium, Dissolved	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium, Dissolved	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc, Dissolved	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/23 13:18, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	63.2	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	24.4	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	3.72	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	39.4	0.50	0.00850	mg/L	5	7440-23-5	

Method: E200.8, Run Date: 02/07/23 13:20, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium, Dissolved*	63.5	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium, Dissolved	23.2	0.50	0.0120	mg/L	5	7439-95-4	
Potassium, Dissolved	3.64	0.50	0.0230	mg/L	5	7440-09-7	
Sodium, Dissolved	38.7	0.50	0.00850	mg/L	5	7440-23-5	

Lab Sample ID: S44989.03 (continued)

Sample Tag: MW-16C L301214-03

Method: E245.1, Run Date: 02/07/23 13:43, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury, Dissolved	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Method: E245.1, Run Date: 02/07/23 13:33, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/08/23 14:25, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S44989.04
Sample Tag: MW-16D L301214-04
Collected Date/Time: 02/02/2023 16:08
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	250ml Plastic	HNO3	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/07/23 12:06	CTV	
Metal Digestion	Completed	SW3015A	02/07/23 09:40	CCM	

Inorganics

Method: E300.0, Run Date: 02/03/23 14:28, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	6	5	0.06	mg/L	5	16887-00-6	
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	
Sulfate	Not detected	5	0.52	mg/L	5	14808-79-8	

Method: SM2320B, Run Date: 02/03/23 15:18, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	380	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/03/23 13:10, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	96	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/03/23 16:30, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	366	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/06/23 17:15, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	5	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/23 11:29, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	Not detected	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.037	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	4.65	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	0.010	0.005	0.000377	mg/L	5	7440-50-8	
Iron	0.16	0.02	0.00192	mg/L	5	7439-89-6	

Lab Sample ID: S44989.04 (continued)

Sample Tag: MW-16D L301214-04

Method: E200.8, Run Date: 02/07/23 11:29, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	0.039	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	0.005	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	0.011	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/23 13:21, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	29.3	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	6.99	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	9.40	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	106	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/07/23 13:46, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/08/23 14:25, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S44989.05
Sample Tag: MWT- L301214-05
Collected Date/Time: 02/02/2023 09:35
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	250ml Plastic	HNO3	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/07/23 12:06	CTV	
Metal Digestion	Completed	SW3015A	02/07/23 09:40	CCM	

Inorganics

Method: E300.0, Run Date: 02/03/23 14:38, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Fluoride (Undistilled)	Not detected	1.0	0.08	mg/L	5	16984-48-8	

Method: E300.0, Run Date: 02/03/23 15:39, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	383	25	0.32	mg/L	25	16887-00-6	
Sulfate	146	25	2.6	mg/L	25	14808-79-8	

Method: SM2320B, Run Date: 02/03/23 15:20, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	620	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/03/23 13:12, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	605	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/03/23 16:30, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	1,350	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/06/23 17:15, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	7	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/23 11:32, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00255	mg/L	5	7440-36-0	
Arsenic	0.004	0.002	0.000255	mg/L	5	7440-38-2	
Barium	0.156	0.005	0.000162	mg/L	5	7440-39-3	
Beryllium	Not detected	0.001	0.000215	mg/L	5	7440-41-7	
Boron	0.21	0.04	0.00175	mg/L	5	7440-42-8	
Cadmium	Not detected	0.0005	0.000190	mg/L	5	7440-43-9	
Chromium	Not detected	0.005	0.0000965	mg/L	5	7440-47-3	

Lab Sample ID: S44989.05 (continued)
Sample Tag: MWT- L301214-05

Method: E200.8, Run Date: 02/07/23 11:32, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Cobalt	Not detected	0.005	0.000108	mg/L	5	7440-48-4	
Copper	Not detected	0.005	0.000377	mg/L	5	7440-50-8	
Iron	3.70	0.02	0.00192	mg/L	5	7439-89-6	
Lead	Not detected	0.003	0.000190	mg/L	5	7439-92-1	
Lithium*	Not detected	0.005	0.00163	mg/L	5	7439-93-2	
Molybdenum	Not detected	0.005	0.000217	mg/L	5	7439-98-7	
Nickel	Not detected	0.005	0.000250	mg/L	5	7440-02-0	
Selenium	Not detected	0.005	0.00209	mg/L	5	7782-49-2	
Silver	Not detected	0.0005	0.0000675	mg/L	5	7440-22-4	
Thallium	Not detected	0.002	0.0000855	mg/L	5	7440-28-0	
Vanadium	Not detected	0.005	0.000139	mg/L	5	7440-62-2	
Zinc	Not detected	0.005	0.000730	mg/L	5	7440-66-6	

Method: E200.8, Run Date: 02/07/23 13:23, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	176	0.50	0.0435	mg/L	5	7440-70-2	
Magnesium	42.3	0.50	0.0120	mg/L	5	7439-95-4	
Potassium	2.06	0.50	0.0230	mg/L	5	7440-09-7	
Sodium	281	0.50	0.00850	mg/L	5	7440-23-5	

Method: E245.1, Run Date: 02/07/23 13:49, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/08/23 14:25, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S44989.06
Sample Tag: Field blank - L301214-06
Collected Date/Time: 02/02/2023 08:15
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	250ml Plastic	HNO3	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/07/23 12:06	CTV	
Metal Digestion	Completed	SW3015A	02/07/23 09:40	CCM	

Inorganics

Method: E300.0, Run Date: 02/03/23 14:48, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	2.5	0.03	mg/L	2.5	16887-00-6	
Fluoride (Undistilled)	Not detected	0.5	0.04	mg/L	2.5	16984-48-8	
Sulfate	Not detected	2.5	0.26	mg/L	2.5	14808-79-8	

Method: SM2320B, Run Date: 02/03/23 15:22, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	Not detected	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/03/23 13:14, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	Not detected	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/03/23 16:30, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	Not detected	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/06/23 17:15, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/23 11:10, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00102	mg/L	2	7440-36-0	
Arsenic	Not detected	0.002	0.000102	mg/L	2	7440-38-2	
Barium	Not detected	0.005	0.0000648	mg/L	2	7440-39-3	
Beryllium	Not detected	0.001	0.0000862	mg/L	2	7440-41-7	
Boron	Not detected	0.04	0.000702	mg/L	2	7440-42-8	
Cadmium	Not detected	0.0005	0.0000760	mg/L	2	7440-43-9	
Chromium	Not detected	0.005	0.0000386	mg/L	2	7440-47-3	
Cobalt	Not detected	0.005	0.0000434	mg/L	2	7440-48-4	
Copper	Not detected	0.005	0.000150	mg/L	2	7440-50-8	
Iron	Not detected	0.02	0.000768	mg/L	2	7439-89-6	

Lab Sample ID: S44989.06 (continued)
Sample Tag: Field blank - L301214-06

Method: E200.8, Run Date: 02/07/23 11:10, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.0000760	mg/L	2	7439-92-1	
Lithium*	Not detected	0.005	0.000654	mg/L	2	7439-93-2	
Molybdenum	Not detected	0.005	0.0000868	mg/L	2	7439-98-7	
Nickel	Not detected	0.005	0.000100	mg/L	2	7440-02-0	
Selenium	Not detected	0.005	0.000838	mg/L	2	7782-49-2	
Silver	Not detected	0.0005	0.0000270	mg/L	2	7440-22-4	
Thallium	Not detected	0.002	0.0000342	mg/L	2	7440-28-0	
Vanadium	Not detected	0.005	0.0000558	mg/L	2	7440-62-2	
Zinc	Not detected	0.005	0.000292	mg/L	2	7440-66-6	

Method: E200.8, Run Date: 02/07/23 13:12, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	Not detected	0.50	0.0174	mg/L	2	7440-70-2	
Magnesium	Not detected	0.50	0.00480	mg/L	2	7439-95-4	
Potassium	Not detected	0.50	0.00920	mg/L	2	7440-09-7	
Sodium	Not detected	0.50	0.00340	mg/L	2	7440-23-5	

Method: E245.1, Run Date: 02/07/23 13:53, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/08/23 14:25, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Lab Sample ID: S44989.07
Sample Tag: Equipment Blank - L301214-07
Collected Date/Time: 02/02/2023 08:30
Matrix: Groundwater
COC Reference:

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	1L Plastic	HNO3	Yes	2.1	IR
2	1L Plastic	None	Yes	2.1	IR
1	250ml Plastic	HNO3	Yes	2.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	02/07/23 12:06	CTV	
Metal Digestion	Completed	SW3015A	02/07/23 09:40	CCM	

Inorganics

Method: E300.0, Run Date: 02/03/23 14:58, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chloride	Not detected	2.5	0.03	mg/L	2.5	16887-00-6	
Fluoride (Undistilled)	Not detected	0.5	0.04	mg/L	2.5	16984-48-8	
Sulfate	Not detected	2.5	0.26	mg/L	2.5	14808-79-8	

Method: SM2320B, Run Date: 02/03/23 15:24, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Bicarbonate*	Not detected	10	0.504	mg/L	1	71-52-3	
Carbonate*	Not detected	10		mg/L	1	3812-32-6	

Method: SM2340C, Run Date: 02/03/23 13:16, Analyst: JKB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hardness	Not detected	10	2.38	mg/L	10		

Method: SM2540C, Run Date: 02/03/23 16:30, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Dissolved Solids	Not detected	50	10	mg/L	2		

Method: SM2540D, Run Date: 02/06/23 17:15, Analyst: SSM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	Not detected	3	1	mg/L	1		

Metals

Method: E200.8, Run Date: 02/07/23 11:12, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Antimony*	Not detected	0.005	0.00102	mg/L	2	7440-36-0	
Arsenic	Not detected	0.002	0.000102	mg/L	2	7440-38-2	
Barium	Not detected	0.005	0.0000648	mg/L	2	7440-39-3	
Beryllium	Not detected	0.001	0.0000862	mg/L	2	7440-41-7	
Boron	Not detected	0.04	0.000702	mg/L	2	7440-42-8	
Cadmium	Not detected	0.0005	0.0000760	mg/L	2	7440-43-9	
Chromium	Not detected	0.005	0.0000386	mg/L	2	7440-47-3	
Cobalt	Not detected	0.005	0.0000434	mg/L	2	7440-48-4	
Copper	Not detected	0.005	0.000150	mg/L	2	7440-50-8	
Iron	Not detected	0.02	0.000768	mg/L	2	7439-89-6	

Lab Sample ID: S44989.07 (continued)

Sample Tag: Equipment Blank - L301214-07

Method: E200.8, Run Date: 02/07/23 11:12, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	Not detected	0.003	0.0000760	mg/L	2	7439-92-1	
Lithium*	Not detected	0.005	0.000654	mg/L	2	7439-93-2	
Molybdenum	Not detected	0.005	0.0000868	mg/L	2	7439-98-7	
Nickel	Not detected	0.005	0.000100	mg/L	2	7440-02-0	
Selenium	Not detected	0.005	0.000838	mg/L	2	7782-49-2	
Silver	Not detected	0.0005	0.0000270	mg/L	2	7440-22-4	
Thallium	Not detected	0.002	0.0000342	mg/L	2	7440-28-0	
Vanadium	Not detected	0.005	0.0000558	mg/L	2	7440-62-2	
Zinc	Not detected	0.005	0.000292	mg/L	2	7440-66-6	

Method: E200.8, Run Date: 02/07/23 13:13, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Calcium*	Not detected	0.50	0.0174	mg/L	2	7440-70-2	
Magnesium	Not detected	0.50	0.00480	mg/L	2	7439-95-4	
Potassium	Not detected	0.50	0.00920	mg/L	2	7440-09-7	
Sodium	Not detected	0.50	0.00340	mg/L	2	7440-23-5	

Method: E245.1, Run Date: 02/07/23 13:56, Analyst: CTV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002	0.000016	mg/L	1	7439-97-6	

Other / Misc.

Method: , Run Date: 03/08/23 14:25, Analyst: GEL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Radiological Analyses*	Completed				1		O

O-Analysis performed by outside laboratory. See attached report.

Merit Laboratories Login Checklist

Lab Set ID: S44989
Client: BWL01 (Board of Water & Light)
Project: Erickson AM MI Wells 16A-16D
Submitted: 02/03/2023 10:50   Login User: PFD

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372   FAX:
Email: Environmental_Laboratory@LBWL.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 2.1
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[X] Yes	[ ] No	[ ] N/A	Subcontracting needed? Subcontacted to:	GEL
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[X] Yes	[ ] No	[ ] N/A	Did any samples need to be preserved in the lab?	Sample .03
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[X] Yes	[ ] No	[ ] N/A	Samples require laboratory filtration	Sample .03
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] N/A	Do water VOC or TOX bottles contain headspace	

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: ______________________________ Date:______________

Merit Laboratories Bottle Preservation Check

Lab Set ID: S44989 Submitted: 02/03/2023 10:50

Client: BWL01 (Board of Water & Light)

Project: Erickson AM MI Wells 16A-16D

Initial Preservation Check: 02/03/2023 12:52 PFD

Preservation Recheck (E200.8): N/A

Attention: Jennifer Caporale
Address: Board of Water & Light
P.O. Box 13007
Lansing, MI 48901

Phone: 517-702-6372 FAX:
Email: Environmental_Laboratory@LBWL.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S44989.01	125ml Plastic HNO3	<2			
S44989.01	1L Plastic HNO3	<2			
S44989.01	1L Plastic HNO3	<2			
S44989.02	125ml Plastic HNO3	<2			
S44989.02	1L Plastic HNO3	<2			
S44989.02	1L Plastic HNO3	<2			
S44989.03	125ml Plastic HNO3	<2			
S44989.03	1L Plastic HNO3	<2			
S44989.03	1L Plastic HNO3	<2			
S44989.04	125ml Plastic HNO3	<2			
S44989.04	1L Plastic HNO3	<2			
S44989.04	1L Plastic HNO3	<2			
S44989.05	125ml Plastic HNO3	<2			
S44989.05	1L Plastic HNO3	<2			
S44989.05	1L Plastic HNO3	<2			
S44989.06	125ml Plastic HNO3	<2			
S44989.06	1L Plastic HNO3	<2			
S44989.06	1L Plastic HNO3	<2			
S44989.07	125ml Plastic HNO3	<2			
S44989.07	1L Plastic HNO3	<2			
S44989.07	1L Plastic HNO3	<2			

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME	Jennifer Caporale
COMPANY	Lansing Board of Water and Light
ADDRESS	PO Box 13007 48901-3007
CITY	Lansing
STATE	Mi
ZIP CODE	48901
PHONE NO.	517-702-6372
FAX NO.	
P.O. NO.	
E-MAIL ADDRESS	Environmental_Laboratory@lbwl.com
QUOTE NO.	

INVOICE TO

CONTACT NAME	Beth Zimpfer
[x] SAME	
COMPANY	
ADDRESS	
CITY	
STATE	
ZIP CODE	
PHONE NO.	
E-MAIL ADDRESS	Beth.Zimpfer@lbwl.com

PROJECT NO./NAME: Erickson AM MI Wells 14-15
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Marc Wahrer

TURNAROUND TIME REQUIRED: [ ] 1 DAY [x] 2 DAYS [ ] 3 DAYS [ ] STANDARD [x] OTHER ASAP

DELIVERABLES REQUIRED: [ ] STD [ ] LEVEL II [x] LEVEL III [ ] LEVEL IV [x] EDD [ ] OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	F- undisstiled, Cl-, SO4, TDS	Radium 226	Radium 228	TSS	HCO3, CO3, Hardness	Dissolved Metals			
	2/2/23	935	MW-16A L301214-01	GW	5	2		3					✓	✓	✓	✓	✓	✓				
		1110	MW-16B -02	GW	5	2		3					✓	✓	✓	✓	✓	✓				
		1408	MW-16C -03	GW	5	2		3					✓	✓	✓	✓	✓	✓	✓			
		1608	MW16-D -04	GW	5	2		3					✓	✓	✓	✓	✓	✓				
		935	MWT- -05	GW	5	2		3					✓	✓	✓	✓	✓	✓				
		815	Field Blank -06	DI	5	2		3					✓	✓	✓	✓	✓	✓				
		830	Equipment Blank -07	DI	5	2		3					✓	✓	✓	✓	✓	✓				

Certifications: [ ] OHIO VAP [ ] Drinking Water [ ] DoD [x] NPDES

Project Locations: [ ] Detroit [ ] New York [ ] Other

Special Instructions:
Metals to analyse: Na, Mg, K B, Ca, Sb, As, Ba, Be, Cd, Cr, Co, Li, Hg, Mo, Pb, Se, Tl, Fe, Cu, Ni, Ag, V, Zn
Please send a preliminary report
Dissolved metals = same analyses as t. metals

		DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION	Sampler	2-3-23	1050
RECEIVED BY: SIGNATURE/ORGANIZATION		2/3/23	1050
RELINQUISHED BY: SIGNATURE/ORGANIZATION			
RECEIVED BY: SIGNATURE/ORGANIZATION			
RELINQUISHED BY: SIGNATURE/ORGANIZATION			
RECEIVED BY: SIGNATURE/ORGANIZATION			
RELINQUISHED BY: SIGNATURE/ORGANIZATION			
RECEIVED BY: SIGNATURE/ORGANIZATION			

SEAL NO. SEAL INTACT YES [ ] NO [ ] INITIALS
SEAL NO. SEAL INTACT YES [ ] NO [ ] INITIALS

NOTES: TEMP. ON ARRIVAL 2.1

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

Reporting Limits to go to Merit with COC

Sb, total	Antimony	250 mL plastic	mg/L	Nitric Acid	200.7	6 mos	0.005
As, total	Arsenic	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
Ba, total		250 mL plastic	mg/L	Nitric Acid	200.8	6mos	0.150
Be, total	Beryllium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.001
B, total	Boron	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.04
Cd, total	Cadmium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
Ca	Calcium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	2.5
Cl	Chloride	250 mL plastic	mg/L	Chill	300.0	28 d	10
Cr, total	Chromium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Co, total	Cobalt	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Cu, total	Copper	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
F	Fluoride	250 mL plastic	mg/L	None	9056	28 d	1.0
Fe, total	Iron	250 mL plastic	mg/L	Nitric Acid	300.0	6 mos	0.02
Pb, total	Lead	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.003
Li, total	Lithium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Hg, total	Mercury	250 mL plastic	mg/L	HNO3	245.1	28 d	0.0002
Mo, total	Molybdenum	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ni, total	Nickel	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
RA226/228	Radium 226 and 228 combined	(2) 1 L plastic	pCi/L	HNO3	SM 7500	6 mos	2.0 combined
Se, total	Selenium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Ag, total	Silver	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.0005
SO4	Sulfate	250 mL plastic	mg/L	Chill	300.0	28 d	10
Tl, total	Thallium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.002
TDS	Total Dissolved Solids	1 L plastic	mg/L	None	SM 2540C	NA	20
TSS	Total Suspended Solids	1 L plastic	mg/L	None	SM 2540D	NA	3
V, total	Vanadium	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005
Zn, total	Zinc	250 mL plastic	mg/L	Nitric Acid	200.8	6 mos	0.005

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

February 27, 2023

John Laverty
Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan 48823

Re: Routine Analysis
Work Order: 610325
SDG: S44989

Dear John Laverty:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 09, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1614.

Sincerely,

Jordan Melton

Jordan Melton for
Delaney Stone
Project Manager

Purchase Order: GELP20-0018
Enclosures

Table of Contents

Case Narrative

Receipt Narrative
for
Merit Laboratories, Inc.
SDG: S44989
Work Order: 610325

February 27, 2023

Laboratory Identification:

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

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 09, 2023 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
610325001	S44989.01
610325002	S44989.02
610325003	S44989.03
610325004	S44989.04
610325005	S44989.05
610325006	S44989.06
610325007	S44989.07

Case Narrative:

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

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

Jordan Melton

Jordan Melton for
Delaney Stone
Project Manager

Chain of Custody and Supporting Documentation

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD 610325

REPORT TO		INVOICE TO	
CONTACT NAME	Project Management Team	CONTACT NAME	Julie Teague ☒ SAME
COMPANY	Merit Laboratories	COMPANY	Merit Laboratories
ADDRESS	2680 East Lansing Drive	ADDRESS	2680 East Lansing Drive
CITY / STATE / ZIP CODE	East Lansing / MI / 48823	CITY / STATE / ZIP CODE	East Lansing / MI / 48823
PHONE NO. / FAX NO. / P.O. NO.	517-332-0167 / /	PHONE NO.	517-332-0167
E-MAIL ADDRESS / QUOTE NO.	results@meritlabs.com /	E-MAIL ADDRESS	juliet@meritlabs.com

PROJECT NO./NAME S44989 SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☒ STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD ☐ LEVEL II ☐ LEVEL III ☒ LEVEL IV ☐ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Radium 226*	Radium 228**	Special Instructions
	2/2/23	0935	S44989.01	GW	2			2					✓	✓	* E903.1 Mod.
	2/2/23	1110	S44989.02	GW	2			2					✓	✓	** E904.0/SW 9320 Mod.
	2/2/23	1408	S44989.03	GW	2			2					✓	✓	
	2/2/23	1608	S44989.04	GW	2			2					✓	✓	Please use calculation product &
	2/2/23	0935	S44989.05	GW	2			2					✓	✓	provide Radium 226/228 combined
	2/2/23	0815	S44989.06	GW	2			2					✓	✓	results on the report
	2/2/23	0830	S44989.07	GW	2			2					✓	✓	
															(No Ice needed)
															** Subcontracted to
															GEL Laboratories, Inc.
															2040 Savage Road
															Charleston, SC 29407

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☐ NPDES

Project Locations: ☐ Detroit ☐ New York ☐ Other

		DATE	TIME		DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION	[signature] ☐ Sampler	2/7/23	1700	RELINQUISHED BY: SIGNATURE/ORGANIZATION		
RECEIVED BY: SIGNATURE/ORGANIZATION	UPS	2/7/23	1700	RECEIVED BY: SIGNATURE/ORGANIZATION [signature]	02.09.2023	1000
RELINQUISHED BY: SIGNATURE/ORGANIZATION				SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS	NOTES:	TEMP. ON ARRIVAL
RECEIVED BY: SIGNATURE/ORGANIZATION				SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS		

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev. 5.18.12

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM DS

Client: MERI	SDG/AR/COC/Work Order: 610325
Received By: MVH	Date Received: 02·09·2023
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 1246647703625 66448

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		✓		Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 21
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR2-21 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			✓	
13	COC form is properly signed in relinquished/received sections?	~~✓~~		✓	Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed): MVH 2·10·23

PM (or PMA) review: Initials [signature] Date 2/11/23 Page 1 of 1

GL-CHL-SR-001 Rev 7

Laboratory Certifications

List of current GEL Certifications as of 27 February 2023

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122023-4
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2022-160
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-22-20
Utah NELAP	SC000122022-37
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
Merit Laboratories, Inc.
SDG #: S44989
Work Order #: 610325

Product: **GFPC Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2387212

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

GEL Sample ID#	Client Sample Identification
610325001	S44989.01
610325002	S44989.02
610325003	S44989.03
610325004	S44989.04
610325005	S44989.05
610325006	S44989.06
610325007	S44989.07
1205326653	Method Blank (MB)
1205326654	610267001(NonSDG) Sample Duplicate (DUP)
1205326655	Laboratory Control Sample (LCS)

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

Data Summary:

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

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2387191

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

GEL Sample ID#	Client Sample Identification
610325001	S44989.01
610325002	S44989.02
610325003	S44989.03
610325004	S44989.04
610325005	S44989.05
610325006	S44989.06
610325007	S44989.07
1205326596	Method Blank (MB)

1205326597	609996001(NonSDG) Sample Duplicate (DUP)
1205326598	609996001(NonSDG) Matrix Spike (MS)
1205326599	Laboratory Control Sample (LCS)

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

Data Summary:

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

Preparation Information

Homogenous Matrix
Samples 1205326597 (Non SDG 609996001DUP) and 1205326598 (Non SDG 609996001MS) were non-homogenous matrix.

Miscellaneous Information

Additional Comments
The matrix spike, 1205326598 (Non SDG 609996001MS), aliquot was reduced to conserve sample volume.

Certification Statement

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

GEL LABORATORIES LLC

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

Qualifier Definition Report
for

MERI001 Merit Laboratories, Inc.

Client SDG: S44989 GEL Work Order: 610325

The Qualifiers in this report are defined as follows:

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

Review/Validation

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

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

Signature: **Name:** **Theresa Austin**

Date: **09 MAR 2023** **Title:** **Group Leader**

Sample Data Summary

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 8, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S44989.01	Project:	MERI00120
Sample ID:	610325001	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	02-FEB-23 09:35		
Receive Date:	09-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.178	+/-1.19	2.15	3.00	pCi/L			JE1	03/08/23	0913	2387212	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.562	+/-1.23			pCi/L			NXL1	03/08/23	1425	2387217	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.385	+/-0.300	0.409	1.00	pCi/L			LXP1	03/08/23	1036	2387191	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			94.8	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 8, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S44989.02	Project:	MERI00120
Sample ID:	610325002	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	02-FEB-23 11:10		
Receive Date:	09-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.829	+/-0.959	1.61	3.00	pCi/L			JE1	03/08/23	0913	2387212	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.83	+/-1.04			pCi/L			NXL1	03/08/23	1425	2387217	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.997	+/-0.394	0.296	1.00	pCi/L			LXP1	03/08/23	1100	2387191	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			88.2	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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

Certificate of Analysis

Report Date: March 8, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S44989.03	Project:	MERI00120
Sample ID:	610325003	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	02-FEB-23 14:08		
Receive Date:	09-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.0142	+/-1.25	2.28	3.00	pCi/L			JE1	03/08/23	0914	2387212	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.244	+/-1.27			pCi/L			NXL1	03/08/23	1425	2387217	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.230	+/-0.223	0.321	1.00	pCi/L			LXP1	03/08/23	1100	2387191	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			86.6	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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

Certificate of Analysis

Report Date: March 8, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S44989.04	Project:	MERI00120
Sample ID:	610325004	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	02-FEB-23 16:08		
Receive Date:	09-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	1.84	+/-1.34	2.12	3.00	pCi/L			JE1	03/08/23	0914	2387212	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.43	+/-1.39			pCi/L			NXL1	03/08/23	1425	2387217	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.591	+/-0.391	0.502	1.00	pCi/L			LXP1	03/08/23	1100	2387191	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			77.9	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

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

Certificate of Analysis

Report Date: March 8, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S44989.05	Project:	MERI00120
Sample ID:	610325005	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	02-FEB-23 09:35		
Receive Date:	09-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.723	+/-0.714	1.53	3.00	pCi/L			JE1	03/08/23	0914	2387212	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.325	+/-0.752			pCi/L			NXL1	03/08/23	1425	2387217	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.325	+/-0.235	0.252	1.00	pCi/L			LXP1	03/08/23	1100	2387191	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			96	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 8, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive
	East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S44989.06	Project:	MERI00120
Sample ID:	610325006	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	02-FEB-23 08:15		
Receive Date:	09-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	-0.184	+/-0.947	1.82	3.00	pCi/L			JE1	03/08/23	0914	2387212	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.492	+/-1.00			pCi/L			NXL1	03/08/23	1425	2387217	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.492	+/-0.321	0.397	1.00	pCi/L			LXP1	03/08/23	1100	2387191	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			83.6	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Certificate of Analysis

Report Date: March 8, 2023

Company :	Merit Laboratories Inc.
Address :	2680 East Lansing Drive East Lansing, Michigan 48823
Contact:	John Laverty
Project:	Routine Analysis

Client Sample ID:	S44989.07	Project:	MERI00120
Sample ID:	610325007	Client ID:	MERI001
Matrix:	Ground Water		
Collect Date:	02-FEB-23 08:30		
Receive Date:	09-FEB-23		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC Ra228, Liquid "As Received"													
Radium-228	U	0.438	+/-1.04	1.85	3.00	pCi/L			JE1	03/08/23	0914	2387212	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.850	+/-1.09			pCi/L			NXL1	03/08/23	1425	2387217	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.413	+/-0.322	0.439	1.00	pCi/L			LXP1	03/08/23	1100	2387191	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"			79.6	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

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

Quality Control Data

GEL LABORATORIES LLC

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

QC Summary

Report Date: March 8, 2023

Merit Laboratories Inc.
2680 East Lansing Drive
East Lansing, Michigan

Contact: **John Laverty**

Workorder: **610325**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2387212										
QC1205326654 610267001 DUP										
Radium-228	U	0.876	U	1.52	pCi/L	N/A		N/A	JE1	03/08/23 09:13
	Uncertainty	+/-1.15		+/-1.48						
QC1205326655 LCS										
Radium-228	63.2			63.0	pCi/L		99.8	(75%-125%)		03/08/23 09:13
	Uncertainty			+/-4.18						
QC1205326653 MB										
Radium-228			U	-0.106	pCi/L					03/08/23 09:13
	Uncertainty			+/-1.02						
Rad Ra-226										
Batch 2387191										
QC1205326597 609996001 DUP										
Radium-226		0.983		1.04	pCi/L	5.59		(0% - 100%)	LXP1	03/08/23 11:22
	Uncertainty	+/-0.430		+/-0.419						
QC1205326599 LCS										
Radium-226	26.6			22.1	pCi/L		83.1	(75%-125%)		03/08/23 11:22
	Uncertainty			+/-1.86						
QC1205326596 MB										
Radium-226			U	0.166	pCi/L					03/08/23 11:22
	Uncertainty			+/-0.265						
QC1205326598 609996001 MS										
Radium-226	134	0.983		104	pCi/L		77.3	(75%-125%)		03/08/23 11:22
	Uncertainty	+/-0.430		+/-8.23						

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported

QC Summary

Workorder: 610325

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

UI	Gamma Spectroscopy--Uncertain identification
BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
**	Analyte is a Tracer compound
M	REMP Result > MDC/CL and < RDL
J	See case narrative for an explanation

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Gas Flow Raw Data

Batch 2387212 Check-list

This check-list was completed on 08-MAR-23 by Nat Long

This batch was reviewed by Kenshalla Oston on 08-MAR-23 and Nat Long on 08-MAR-23.

Batch ID:	**Product:**	**Description:** Gas Flow Radium 228
2387212	GFC28RAL	GL-RAD-A-063

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous	Yes		
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
11	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
12	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-228 in Liquid

Batch ID: **2387212**
Analyst: Jacqueline Emond (JE1)
Method: EPA 904.0/SW846 9320 Modified
Lab SOP: GL-RAD-A-063 REV# 5
Instrument: LUCAS-C202389980

Due Dates for Lab: 06-MAR-2023 **Package: 08-MAR-2023** **SDG: 09-MAR-2023**

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1205326655	228	1952-B	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	Ac-228 Ingrow (date)	Ac-228 Separation (date)
1	610267001	01-MAR-2023	3	300.62	300.62	03/02/23 14:42	03/08/23 07:05
2	610325001	01-MAR-2023	3	300.75	300.75	03/02/23 14:42	03/08/23 07:05
3	610325002	01-MAR-2023	3	303.9	303.9	03/02/23 14:42	03/08/23 07:05
4	610325003	01-MAR-2023	3	301.89	301.89	03/02/23 14:42	03/08/23 07:05
5	610325004	01-MAR-2023	3	303.1	303.1	03/02/23 14:42	03/08/23 07:05
6	610325005	01-MAR-2023	3	302.04	302.04	03/02/23 14:42	03/08/23 07:05
7	610325006	01-MAR-2023	3	300.27	300.27	03/02/23 14:42	03/08/23 07:05
8	610325007	01-MAR-2023	3	301.45	301.45	03/02/23 14:42	03/08/23 07:05
9	610447001	01-MAR-2023	3	301.17	301.17	03/02/23 14:42	03/08/23 07:05
10	610447002	01-MAR-2023	3	302.3	302.3	03/02/23 14:42	03/08/23 07:05
11	610447003	01-MAR-2023	3	301.17	301.17	03/02/23 14:42	03/08/23 07:05
12	610449001	01-MAR-2023	3	300.81	300.81	03/02/23 14:42	03/08/23 07:05
13	1205326653 MB	01-MAR-2023	3		303.9	03/02/23 14:42	03/08/23 07:05
14	1205326654 DUP (610267001)	01-MAR-2023	3	302.74	302.74	03/02/23 14:42	03/08/23 07:05
15	1205326655 LCS	01-MAR-2023	3		303.9	03/02/23 14:42	03/08/23 07:05

Reagent/Solvent Lot ID	Description	Amount
WORK 1951-E	Ba-133	.1 mL
REGNT 3862351	RGF-1M Citric Acid	5 mL
REGNT 3850768	2M HCl	20 mL
REGNT 3864851	RGF-7M Nitric Acid	25 mL
REGNT DGA013123	2372406	2 g
REGNT 3418276.6	29M HF (48-50%)	4 mL
REGNT 3528714	500 mg/mL Neodymium Carrier	.2 mL
REGNT 3521298	RGF-Neodymium Subtrate	5 mL
REGNT 3855914.1	Nitric Acid	5 mL
REGNT 3871043	RGF-1.5M Ammonium Sulfate	10 mL
REGNT 3465466	Barium Carrier Ra228 REG	1 mL
REGNT 3869397	RGF-50% Potassium Carbonate	2 mL
REGNT 3857883.6	Acetic Acid Glacial ACS Poly Coated Bottle	10 mL

Comments:
Pipet Id: RAD-GFC-1795419
Data Entry Date2: 01-MAR-2023 00:00

Radium-228 Liquid

Filename : RA228.XLS
File type : Excel
Version # : 1.4.3

Tracer S/N : 1951-E
Tracer Exp Date : 1/10/2024
Tracer Volume Added: 0.10

Batch : 2387212
Analyst : JAC02417
Prep Date : 3/1/2023
Ra-228 Method Uncertainty : 0.1268

Geometry: 25mm Filter

Procedure Code : GFC28RAL
Parmname : Radium-228
Required MDA : 3 pCi/L
Ra-228 Abundance : 1.00
Halflife of Ra-228 : 5.75 years
Halflife of Ac-228 : 6.15 hours

Sample Characteristics Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	**Tracer Calculations** Tracer Ref. Activity (CPM)	Tracer Ref. Count Uncertainty (%)	Tracer Samp. Activity (CPM)	Tracer Samp. Count Uncertainty (%)	Tracer Aliquot (mL)	Tracer Aliquot StDev. (mL)
1	610267001.1	0.3006	1.8470E-05	2/6/2023 15:00	1196.3	1.67%	846.8	1.98%	0.1	0.000200
2	610325001.1	0.3008	1.8472E-05	2/2/2023 9:35	1196.3	1.67%	1134.4	1.71%	0.1	0.000200
3	610325002.1	0.3039	1.8525E-05	2/2/2023 11:10	1196.3	1.67%	1054.8	1.78%	0.1	0.000200
4	610325003.1	0.3019	1.8491E-05	2/2/2023 14:08	1196.3	1.67%	1035.8	1.79%	0.1	0.000200
5	610325004.1	0.3031	1.8511E-05	2/2/2023 16:08	1196.3	1.67%	931.5	1.89%	0.1	0.000200
6	610325005.1	0.3020	1.8494E-05	2/2/2023 9:35	1196.3	1.67%	1148.8	1.70%	0.1	0.000200
7	610325006.1	0.3003	1.8464E-05	2/2/2023 8:15	1196.3	1.67%	1000.4	1.83%	0.1	0.000200
8	610325007.1	0.3015	1.8484E-05	2/2/2023 8:30	1196.3	1.67%	952.2	1.87%	0.1	0.000200
9	610447001.1	0.3012	1.8479E-05	2/2/2023 12:15	1196.3	1.67%	1029.5	1.80%	0.1	0.000200
10	610447002.1	0.3023	1.8498E-05	2/2/2023 12:55	1196.3	1.67%	1004.4	1.82%	0.1	0.000200
11	610447003.1	0.3012	1.8479E-05	2/2/2023 14:40	1196.3	1.67%	926.2	1.90%	0.1	0.000200
12	610449001.1	0.3008	1.8473E-05	2/1/2023 12:25	1196.3	1.67%	1071.3	1.76%	0.1	0.000200
13	1205326653.1	0.3039	1.8525E-05	3/1/2023 0:00	1196.3	1.67%	873.2	1.95%	0.1	0.000200
14	1205326654.1	0.3027	1.8505E-05	2/6/2023 15:00	1196.3	1.67%	882.1	1.94%	0.1	0.000200
15	1205326655.1	0.3039	1.8525E-05	3/1/2023 0:00	1196.3	1.67%	958.9	1.86%	0.1	0.000200

Pipet, 0.1 ml Stdev : +/-	0.000200	ml
Pipet, 0.5 ml Stdev : +/-	0.001000	ml
Pipet, 1 ml Stdev : +/-	0.002000	ml

Analytical SOP: GL-RAD-A-063
Instrument SOP: GL-RAD-I-016

Count raw Data

Pos.	Detector ID	Counting Time (min.)	Gross Counts Alpha	Gross Counts Beta	Beta cpm	Count Start Date/Time	Ac-228 Ingrowth Date/Time	Ac-228 Decay Date/Time	Ra-228 Decay	Ac-228 Decay	Ac-228 Ingrowth	Ac-228 Count Correction	Calculated Sample Recovery %	Sample Recovery Error %
1	2A	60	6	55	0.917	3/8/2023 9:13	3/2/2023 14:42	3/8/2023 7:05	0.990	0.785	1.000	1.057	70.8%	2.61%
2	2B	60	3	101	1.683	3/8/2023 9:13	3/2/2023 14:42	3/8/2023 7:05	0.989	0.785	1.000	1.057	94.8%	2.41%
3	2C	60	9	57	0.950	3/8/2023 9:13	3/2/2023 14:42	3/8/2023 7:05	0.989	0.785	1.000	1.057	88.2%	2.46%
4	2D	60	4	91	1.517	3/8/2023 9:14	3/2/2023 14:42	3/8/2023 7:05	0.989	0.785	1.000	1.057	86.6%	2.46%
5	4A	60	6	86	1.433	3/8/2023 9:14	3/2/2023 14:42	3/8/2023 7:05	0.989	0.785	1.000	1.057	77.9%	2.54%
6	4C	60	3	40	0.667	3/8/2023 9:14	3/2/2023 14:42	3/8/2023 7:05	0.989	0.785	1.000	1.057	96.0%	2.40%
7	5A	60	9	53	0.883	3/8/2023 9:14	3/2/2023 14:42	3/8/2023 7:05	0.989	0.784	1.000	1.057	83.6%	2.49%
8	5B	60	14	59	0.983	3/8/2023 9:14	3/2/2023 14:42	3/8/2023 7:05	0.989	0.784	1.000	1.057	79.6%	2.52%
9	5C	60	10	39	0.650	3/8/2023 9:14	3/2/2023 14:42	3/8/2023 7:05	0.989	0.784	1.000	1.057	86.1%	2.47%
10	6A	60	10	102	1.700	3/8/2023 9:14	3/2/2023 14:42	3/8/2023 7:05	0.989	0.784	1.000	1.057	84.0%	2.49%
11	6C	60	6	64	1.067	3/8/2023 9:14	3/2/2023 14:42	3/8/2023 7:05	0.989	0.784	1.000	1.057	77.4%	2.55%
12	7B	60	5	65	1.083	3/8/2023 9:14	3/2/2023 14:42	3/8/2023 7:05	0.989	0.784	1.000	1.057	89.5%	2.44%
13	7C	60	6	50	0.833	3/8/2023 9:13	3/2/2023 14:42	3/8/2023 7:05	0.998	0.785	1.000	1.057	73.0%	2.58%
14	8B	60	14	108	1.800	3/8/2023 9:13	3/2/2023 14:42	3/8/2023 7:05	0.990	0.785	1.000	1.057	73.7%	2.58%
15	8C	60	51	1037	17.283	3/8/2023 9:13	3/2/2023 14:42	3/8/2023 7:05	0.998	0.785	1.000	1.057	80.1%	2.52%

Pos.	Counted on	Calibration Date	Calibration Due Date	Detector Efficiency (cpm/dpm)	Detector Efficiency Error (cpm/dpm)	Bkg cpm	Weekly Bkg Count Start Date/Time	Bkg Count Time (min.)
Calibration Data								
1	PIC	6/1/2022	5/31/2023	0.6201	0.01914	0.728	3/3/2023 18:12	1000
2	PIC	6/1/2022	5/31/2023	0.6097	0.02111	1.633	3/3/2023 18:12	1000
3	PIC	6/1/2022	5/31/2023	0.6022	0.01274	0.732	3/3/2023 18:12	1000
4	PIC	6/1/2022	5/31/2023	0.6046	0.00745	1.513	3/3/2023 18:12	1000
5	PIC	6/1/2022	5/31/2023	0.6013	0.01123	1.008	3/3/2023 18:12	1000
6	PIC	6/1/2022	5/31/2023	0.6359	0.00889	0.884	3/3/2023 18:13	1000
7	PIC	6/1/2022	5/31/2023	0.6332	0.00851	0.931	3/3/2023 18:13	1000
8	PIC	6/1/2022	5/31/2023	0.6336	0.00426	0.875	3/3/2023 18:13	1000
9	PIC	6/1/2022	5/31/2023	0.6242	0.00657	0.587	3/3/2023 18:13	1000
10	PIC	6/1/2022	5/31/2023	0.6328	0.02228	1.308	3/3/2023 18:08	1000
11	PIC	6/1/2022	5/31/2023	0.6123	0.01970	0.940	3/3/2023 18:08	1000
12	PIC	6/1/2022	5/31/2023	0.6366	0.00627	0.556	3/3/2023 18:10	1000
13	PIC	6/1/2022	5/31/2023	0.6407	0.00790	0.858	3/3/2023 18:10	1000
14	PIC	6/1/2022	5/31/2023	0.6437	0.02148	1.443	3/3/2023 18:11	1000
15	PIC	6/1/2022	5/31/2023	0.6294	0.01955	1.393	3/3/2023 18:11	1000

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

* - RPD changed to 0% due to sample & dup activity below MDA

Spike S/N :	N/A
Spike Exp Date :	N/A
Spike Activity (dpm/ml):	N/A
Spike Volume Added:	N/A
LCS S/N :	1952-B
LCS Exp Date :	8/9/2023
LCS Activity (dpm/ml):	426.17
LCS Volume Added:	0.10

Results Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	**2 SIGMA** Counting Uncertainty pCi/L	**2 SIGMA** Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	1.2269	0.8662	3	1.9645	**0.8760**	67.13%	0.1887	0.1265	1.1513	1.1730		SAMPLE				
2	1.3966	0.9860	3	2.1484	**0.1776**	342.34%	0.0503	0.1723	1.1917	1.1926		SAMPLE				
3	1.0076	0.7114	3	1.6129	**0.8290**	59.10%	0.2180	0.1287	0.9593	0.9822		SAMPLE				
4	1.4796	1.0446	3	2.2834	**0.0142**	4463.97%	0.0037	0.1637	1.2460	1.2462		SAMPLE				
5	1.3450	0.9496	3	2.1155	**1.8399**	37.20%	0.4253	0.1578	1.3378	1.4174		SAMPLE				
6	0.9692	0.6842	3	1.5349	**-0.7234**	50.46%	-0.2173	0.1095	0.7145	0.7146		SAMPLE				
7	1.1542	0.8149	3	1.8228	**-0.1841**	262.49%	-0.0477	0.1251	0.9472	0.9473		SAMPLE				
8	1.1703	0.8263	3	1.8545	**0.4377**	121.31%	0.1083	0.1314	1.0404	1.0463		SAMPLE				
9	0.9010	0.6361	3	1.4620	**0.2392**	169.65%	0.0630	0.1069	0.7953	0.7976		SAMPLE				
10	1.3549	0.9566	3	2.1044	**1.4995**	44.05%	0.3920	0.1722	1.2909	1.3472		SAMPLE				
11	1.2922	0.9123	3	2.0398	**0.5451**	108.06%	0.1267	0.1368	1.1540	1.1625		SAMPLE				
12	0.8280	0.5845	3	1.3484	**1.8907**	25.99%	0.5273	0.1364	0.9587	1.0717		SAMPLE				
13	1.2271	0.8664	3	1.9466	**-0.1055**	492.32%	-0.0247	0.1214	1.0182	1.0183		MB				
14	1.5859	1.1196	3	2.4524	**1.5218**	49.78%	0.3570	0.1773	1.4816	1.5324	610267001.1	DUP	* 0.0%			
15	1.4498	1.0236	3	2.2455	**63.0284**	4.65%	15.8903	0.5380	4.1826	16.6839		LCS			63.1686	99.8%

SampleID	Instr	Time (min.)	Alpha Counts	Beta Counts	Count Start Time	Count End Time	Machine	Batch ID
610267001	2A	60	6	55	3/8/2023 9:13	3/8/2023 10:13	PIC	2387212
610325001	2B	60	3	101	3/8/2023 9:13	3/8/2023 10:13	PIC	2387212
610325002	2C	60	9	57	3/8/2023 9:13	3/8/2023 10:13	PIC	2387212
610325003	2D	60	4	91	3/8/2023 9:14	3/8/2023 10:14	PIC	2387212
610325004	4A	60	6	86	3/8/2023 9:14	3/8/2023 10:14	PIC	2387212
610325005	4C	60	3	40	3/8/2023 9:14	3/8/2023 10:14	PIC	2387212
610325006	5A	60	9	53	3/8/2023 9:14	3/8/2023 10:14	PIC	2387212
610325007	5B	60	14	59	3/8/2023 9:14	3/8/2023 10:14	PIC	2387212
610447001	5C	60	10	39	3/8/2023 9:14	3/8/2023 10:14	PIC	2387212
610447002	6A	60	10	102	3/8/2023 9:14	3/8/2023 10:14	PIC	2387212
610447003	6C	60	6	64	3/8/2023 9:14	3/8/2023 10:14	PIC	2387212
610449001	7B	60	5	65	3/8/2023 9:14	3/8/2023 10:14	PIC	2387212
1205326653	7C	60	6	50	3/8/2023 9:13	3/8/2023 10:13	PIC	2387212
1205326654	8B	60	14	108	3/8/2023 9:13	3/8/2023 10:13	PIC	2387212
1205326655	8C	60	51	1037	3/8/2023 9:13	3/8/2023 10:13	PIC	2387212

ASSAY	8-Mar-23	7:27:45	
Wizard 2480 s/n 46190630			
Protocol	id	9	Ba-133_1
Time	limit		
Count	limit		
Isotope	Ba-133_1		
Protocol	date	3/8/2023	
Run	id.	6289	

Samp_ID	POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR	% RECOVERY	COUNT TIME
REF	1	92	1	180	3589.57	1196.33	1.67		07:27:45
610267001	2	92	2	180	2541	846.84	1.98	70.79	07:30:59
610325001	3	92	3	180	3403.57	1134.43	1.71	94.83	07:34:13
610325002	4	92	4	180	3165	1054.84	1.78	88.17	07:37:27
610325003	5	92	5	180	3107.85	1035.76	1.79	86.58	07:40:41
610325004	1	2	1	180	2795	931.49	1.89	77.86	07:44:17
610325005	2	2	2	180	3447.28	1148.82	1.7	96.03	07:47:31
610325006	3	2	3	180	3001.57	1000.37	1.83	83.62	07:50:45
610325007	4	2	4	180	2857	952.18	1.87	79.59	07:53:59
610447001	5	2	5	180	3089	1029.54	1.8	86.06	07:57:13
610447002	1	15	1	180	3013.57	1004.35	1.82	83.95	08:00:49
610447003	2	15	2	180	2779.28	926.22	1.9	77.42	08:04:02
610449001	3	15	3	180	3214.28	1071.27	1.76	89.55	08:07:16
1205326653	4	15	4	180	2620.28	873.21	1.95	72.99	08:10:30
1205326654	5	15	5	180	2646.57	882.05	1.94	73.73	08:13:45
1205326655	1	5	1	180	2877	958.85	1.86	80.15	08:17:32

END OF ASSAY

Continuing Calibration Data

Gas Flow Proportional Counter Checks for 08-Mar-2023

Detectors LB4100 A1 through I4 and PIC 1A through 14D and G5400W 1W through 1Z and LB4200 OA1 through OA1

Short Name	Status	Parmname	Run Time	Count Time	CPM or dec	Low Limit	High Limit	Stdev
LB4100E2	Above	Beta bkg	08-Mar 04:42	60	2.317	1.385	3.072	+0.31
LB4100F1	Above	Beta bkg	08-Mar 04:42	60	2.550	0.188	2.691	+2.66
LB4100F2	Below	Alpha eff	08-Mar 06:16	5	6207	6533	7372	-5.33
LB4100F2	Above	Alpha XTalk	08-Mar 06:16	5	0.378	0.318	0.366	+4.50
LB4100F2	Above	Beta bkg	08-Mar 04:42	60	27.250	1.173	1.833	+234.06
LB4100G1	need 2nd	Alpha eff	08-Mar 06:09	5	9753	7975	12090	-0.41
LB4100G1	need 2nd	Alpha XTalk	08-Mar 06:09	5	0.269	0.088	0.447	+0.03
LB4100G1	need 2nd	Beta bkg	08-Mar 04:43	60	1.417	0.380	1.675	+1.80
LB4100G2	need 2nd	Beta bkg	08-Mar 04:43	60	1.750	1.168	2.328	+0.01
LB4100G3	need 2nd	Beta bkg	08-Mar 04:43	60	1.733	0.987	2.738	-0.44
LB4100H1	Above	Beta bkg	08-Mar 04:42	60	2.567	0.216	2.462	+3.28
LB4200OA1	need 2nd	Alpha bkg	08-Mar 10:07	60	0.00E+0			#NUM!
LB4200OA1	Above	Beta bkg	08-Mar 10:07	60	0.550			#NUM!
PIC3D	Below	Alpha XTalk	08-Mar 09:04	5	0.242	0.260	0.381	-3.87
PIC3D	Above	Beta XTalk	08-Mar 10:53	5	0.012	-4.26E-4	0.001	+48.92
PIC13A	Above	Alpha bkg	08-Mar 10:46	60	1.950	-9.05E-2	0.347	+24.98

INSTRUMENTS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

The following detectors may not have properly transferred to the LIMS system

LB4100A1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100A2	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100A3	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C2	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C3	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100C4	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I1	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I2	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I3	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4100I4	Alpha bkg, Alpha eff, Alpha XTalk, Beta bkg, Beta eff, Beta XTalk
LB4200OA1	Alpha eff, Alpha XTalk, Beta eff, Beta XTalk

Reviewed by ______________________

Date 3-8-23

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: GFPC **Batch ID: 2387212**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
1205326653	MB	JE1	PIC7C	MAR-08-23 09:13:36	DONE	25mm Filter	01-JUN-22 00:00
1205326654	DUP	JE1	PIC8B	MAR-08-23 09:13:40	DONE	25mm Filter	01-JUN-22 00:00
1205326655	LCS	JE1	PIC8C	MAR-08-23 09:13:44	DONE	25mm Filter	01-JUN-22 00:00
610267001	SAMPLE	JE1	PIC2A	MAR-08-23 09:13:48	DONE	25mm Filter	01-JUN-22 00:00
610325001	SAMPLE	JE1	PIC2B	MAR-08-23 09:13:52	DONE	25mm Filter	01-JUN-22 00:00
610325002	SAMPLE	JE1	PIC2C	MAR-08-23 09:13:55	DONE	25mm Filter	01-JUN-22 00:00
610325003	SAMPLE	JE1	PIC2D	MAR-08-23 09:14:02	DONE	25mm Filter	01-JUN-22 00:00
610325004	SAMPLE	JE1	PIC4A	MAR-08-23 09:14:06	DONE	25mm Filter	01-JUN-22 00:00
610325005	SAMPLE	JE1	PIC4C	MAR-08-23 09:14:09	DONE	25mm Filter	01-JUN-22 00:00
610325006	SAMPLE	JE1	PIC5A	MAR-08-23 09:14:18	DONE	25mm Filter	01-JUN-22 00:00
610325007	SAMPLE	JE1	PIC5B	MAR-08-23 09:14:21	DONE	25mm Filter	01-JUN-22 00:00
610447001	SAMPLE	JE1	PIC5C	MAR-08-23 09:14:27	DONE	25mm Filter	01-JUN-22 00:00
610447002	SAMPLE	JE1	PIC6A	MAR-08-23 09:14:30	DONE	25mm Filter	01-JUN-22 00:00
610447003	SAMPLE	JE1	PIC6C	MAR-08-23 09:14:36	DONE	25mm Filter	01-JUN-22 00:00
610449001	SAMPLE	JE1	PIC7B	MAR-08-23 09:14:45	DONE	25mm Filter	01-JUN-22 00:00

Lucas Cell Raw Data

Batch 2387191 Check-list

This check-list was completed on 08-MAR-23 by Lyndsey Pace

This batch was reviewed by Gregory Ramsay on 08-MAR-23 and Lyndsey Pace on 08-MAR-23.

Batch ID:	**Product:**	**Description:** Lucas Cell Radium 226
2387191	LUC26RAL	GL-RAD-A-008

#	Criteria	Yes	No	Comments
Preparation Information				
1	Were all of the samples homogenous? Include sample description if not homogenous		No	
2	Was the preservation correct for this analysis?	Yes		
Internal Checklist Information				
3	Are instrument source checks within limits?	Yes		
4	Has an Aliquot Correction been completed for this batch?		No	
5	Have sample historical results been reviewed for this batch?	Yes		
Technical Information				
6	Were all the samples prepared/analyzed within the required holding time period?	Yes		
7	Are any sample results more negative than 3xTPU?		No	
Quality Control (QC) Information				
8	Was the method blank (MB) within the acceptance criteria?	Yes		
9	Were the laboratory control sample (LCS/LCSD) recoveries within the acceptance limits?	Yes		
10	Were the matrix spike (MS/MSD) recoveries within the acceptance limits?	Yes		
11	Were the relative percent differences and/or error (RPD/RER) between the sample and its duplicate within acceptable limits?	Yes		
12	Has the method required detection limit been met?	Yes		
Miscellaneous Information				
13	Are sample-specific MDA/MDC calculated and reported?	Yes		

Prep Logbook

Radium-226 in Liquid

Batch ID: 2387191
Analyst: Lyndsey Pace (LXP1)
Prep: Jacqueline Emond (JE1)
Method: EPA 903.1 Modified
Lab SOP: GL-RAD-A-008 REV# 15
Instrument: LUCAS-C202389980

Due Dates for Lab: 05-MAR-2023 Package: 07-MAR-2023 SDG: 08-MAR-2023

Type	Sample Id	Description	Serial Number	Spike Amount	Spike Units
LCS	1205326599	Radium-226 SPIKE	1715-G	.1	mL
MS	1205326598	Radium-226 SPIKE	1715-G	.1	mL

#	Sample ID	Prep Date	Min RDL (pCi/L)	Unadjusted Aliquot (g)	Aliquot (mL)	End Degas (date)	CELL #	End Transfer (date)	Start Count Time (date)	Background Counts	Total Counts
1	609996001	01-MAR-2023	1	502.07	502.07	03/02/23 09:55	703	03/08/23 07:11	03/08/23 10:36	3	25
2	610267001	01-MAR-2023	1	500.96	500.96	03/02/23 09:55	804	03/08/23 07:11	03/08/23 10:36	3	8
3	610325001	01-MAR-2023	1	501.32	501.32	03/02/23 09:55	107	03/08/23 07:38	03/08/23 10:36	4	12
4	610325002	01-MAR-2023	1	501.41	501.41	03/02/23 09:55	206	03/08/23 07:38	03/08/23 11:00	2	28
5	610325003	01-MAR-2023	1	503.94	503.94	03/02/23 09:55	303	03/08/23 07:38	03/08/23 11:00	2	7
6	610325004	01-MAR-2023	1	500.33	500.33	03/02/23 09:55	403	03/08/23 07:38	03/08/23 11:00	5	16
7	610325005	01-MAR-2023	1	500.75	500.75	03/02/23 09:55	508	03/08/23 07:38	03/08/23 11:00	1	9
8	610325006	01-MAR-2023	1	500.63	500.63	03/02/23 09:55	601	03/08/23 07:38	03/08/23 11:00	4	15
9	610325007	01-MAR-2023	1	500.54	500.54	03/02/23 09:55	706	03/08/23 07:38	03/08/23 11:00	4	12
10	610447001	01-MAR-2023	1	501.5	501.5	03/02/23 09:55	803	03/08/23 07:38	03/08/23 11:00	1	22
11	610447002	01-MAR-2023	1	503.49	503.49	03/02/23 09:55	105	03/08/23 08:07	03/08/23 11:00	4	30
12	610447003	01-MAR-2023	1	500.78	500.78	03/02/23 09:55	205	03/08/23 08:07	03/08/23 11:22	4	55
13	610449001	01-MAR-2023	1	500.05	500.05	03/02/23 09:55	308	03/08/23 08:07	03/08/23 11:22	8	7
14	610894001	01-MAR-2023	1	500.41	500.41	03/02/23 09:55	402	03/08/23 08:07	03/08/23 11:22	3	34
15	611029001	01-MAR-2023	1	500.27	500.27	03/02/23 09:55	505	03/08/23 08:07	03/08/23 11:22	4	9
16	1205326596 MB	01-MAR-2023	1		503.94	03/02/23 09:55	604	03/08/23 08:07	03/08/23 11:22	6	8
17	1205326597 DUP (609996001)	01-MAR-2023	1	501.59	501.59	03/02/23 09:55	707	03/08/23 08:07	03/08/23 11:22	2	27
18	1205326598 MS (609996001)	01-MAR-2023	1	100.1	100.1	03/02/23 09:55	802	03/08/23 08:07	03/08/23 11:22	3	625
19	1205326599 LCS	01-MAR-2023	1		503.94	03/02/23 09:55	106	03/08/23 08:35	03/08/23 11:22	2	543

Reagent/Solvent Lot ID	Description	Amount

Comments:
Data Entry Date2: 01-MAR-2023 00:00

Radium-226 Liquid

Filename : RA226.XLS
File type : Excel
Version # : 1.3.2

Batch : 2387191
Analyst : LXP1
Prep Date : 3/1/2023
Ra-226 Method Uncertainty : 0.073648

Procedure Code : LUC26RAL
Parmname : Radium-226
Required MDA : 1 pCi/L
Halflife of Ra-226 : 1600 years
Ra-226 Abundance : 1.00
Halflife of Rn-222: 3.8235 days

Batch counted on : LUCAS CELL DETECTOR
BKG Count time : 30 min

Sample Characteristics Pos.	Sample ID	Sample Aliquot L	Sample Aliquot StDev. L	Sample Date/Time	**Count Raw Data** Cell Number	Counting Time (min.)	Gross Counts	Gross CPM	Background Counts	Background CPM	Background Count Time (min.)	Cell Efficiency (cpm/dpm)
1	609996001.1	0.5021	2.0264E-05	2/7/2023 13:45	703	20	25	1.250	3	0.100	30	1.6440
2	610267001.1	0.5010	2.0260E-05	2/6/2023 15:00	804	20	8	0.400	3	0.100	30	1.9050
3	610325001.1	0.5013	2.0261E-05	2/2/2023 9:35	107	20	12	0.600	4	0.133	30	1.6990
4	610325002.1	0.5014	2.0262E-05	2/2/2023 11:10	206	20	28	1.400	2	0.067	30	1.8770
5	610325003.1	0.5039	2.0272E-05	2/2/2023 14:08	303	20	7	0.350	2	0.067	30	1.7210
6	610325004.1	0.5003	2.0257E-05	2/2/2023 16:08	403	20	16	0.800	5	0.167	30	1.5070
7	610325005.1	0.5008	2.0259E-05	2/2/2023 9:35	508	20	9	0.450	1	0.033	30	1.8020
8	610325006.1	0.5006	2.0258E-05	2/2/2023 8:15	601	20	15	0.750	4	0.133	30	1.7610
9	610325007.1	0.5005	2.0258E-05	2/2/2023 8:30	706	20	12	0.600	4	0.133	30	1.5900
10	610447001.1	0.5015	2.0262E-05	2/2/2023 12:15	803	20	22	1.100	1	0.033	30	2.0020
11	610447002.1	0.5035	2.0270E-05	2/2/2023 12:55	105	20	30	1.500	4	0.133	30	1.5830
12	610447003.1	0.5008	2.0259E-05	2/2/2023 14:40	205	20	55	2.750	4	0.133	30	1.8920
13	610449001.1	0.5001	2.0256E-05	2/1/2023 12:25	308	20	7	0.350	8	0.267	30	1.5970
14	610894001.1	0.5004	2.0258E-05	2/9/2023 12:30	402	20	34	1.700	3	0.100	30	1.4980
15	611029001.1	0.5003	2.0257E-05	2/8/2023 12:30	505	20	9	0.450	4	0.133	30	1.8130
16	1205326596.1	0.5039	2.0272E-05	3/1/2023 0:00	604	20	8	0.400	6	0.200	30	1.6810
17	1205326597.1	0.5016	2.0262E-05	2/7/2023 13:45	707	20	27	1.350	2	0.067	30	1.7280
18	1205326598.1	0.1001	1.1376E-05	2/7/2023 13:45	802	20	625	31.250	3	0.100	30	2.0910
19	1205326599.1	0.5039	2.0272E-05	3/1/2023 0:00	106	20	543	27.150	2	0.067	30	1.6990

Pipet, 0.1 ml Stdev : +/-	0.000200	ml
Pipet, 0.5 ml Stdev : +/-	0.001000	ml
Pipet, 1 ml Stdev : +/-	0.002000	ml

Analytical SOP: GL-RAD-A-008
Instrument SOP: GL-RAD-I-007

Cell Efficiency Error (%)	Cell Calibration Date	Cell Calibration Due Date	De-Gas Date/Time	Rn-222 Ingrow End Date/Time	Count Start Date/Time	Rn-222 Corrections De-Gas to Ingrowth	Rn-222 Corrections Ingrowth to Count	Rn-222 Corrections During Count	Ra-226 Decay
9.000%	11/1/2022	10/31/2023	3/2/2023 9:55	3/8/2023 7:11	3/8/2023 10:36	0.656	0.975	1.001	1.000
9.900%	4/1/2022	3/31/2023	3/2/2023 9:55	3/8/2023 7:11	3/8/2023 10:36	0.656	0.975	1.001	1.000
3.900%	4/28/2022	4/30/2023	3/2/2023 9:55	3/8/2023 7:38	3/8/2023 10:36	0.657	0.978	1.001	1.000
2.800%	8/1/2022	7/31/2023	3/2/2023 9:55	3/8/2023 7:38	3/8/2023 11:00	0.657	0.975	1.001	1.000
7.400%	10/25/2022	10/31/2023	3/2/2023 9:55	3/8/2023 7:38	3/8/2023 11:00	0.657	0.975	1.001	1.000
6.100%	2/1/2023	1/31/2024	3/2/2023 9:55	3/8/2023 7:38	3/8/2023 11:00	0.657	0.975	1.001	1.000
4.500%	6/1/2022	5/31/2023	3/2/2023 9:55	3/8/2023 7:38	3/8/2023 11:00	0.657	0.975	1.001	1.000
9.400%	7/1/2022	6/30/2023	3/2/2023 9:55	3/8/2023 7:38	3/8/2023 11:00	0.657	0.975	1.001	1.000
2.900%	11/1/2022	10/31/2023	3/2/2023 9:55	3/8/2023 7:38	3/8/2023 11:00	0.657	0.975	1.001	1.000
7.300%	4/1/2022	3/31/2023	3/2/2023 9:55	3/8/2023 7:38	3/8/2023 11:00	0.657	0.975	1.001	1.000
0.500%	4/28/2022	4/30/2023	3/2/2023 9:55	3/8/2023 8:07	3/8/2023 11:00	0.658	0.978	1.001	1.000
3.900%	8/1/2022	7/31/2023	3/2/2023 9:55	3/8/2023 8:07	3/8/2023 11:22	0.658	0.976	1.001	1.000
9.600%	10/25/2022	10/31/2023	3/2/2023 9:55	3/8/2023 8:07	3/8/2023 11:22	0.658	0.976	1.001	1.000
5.300%	2/1/2023	1/31/2024	3/2/2023 9:55	3/8/2023 8:07	3/8/2023 11:22	0.658	0.976	1.001	1.000
1.200%	6/1/2022	5/31/2023	3/2/2023 9:55	3/8/2023 8:07	3/8/2023 11:22	0.658	0.976	1.001	1.000
6.700%	7/1/2022	6/30/2023	3/2/2023 9:55	3/8/2023 8:07	3/8/2023 11:22	0.658	0.976	1.001	1.000
2.200%	11/1/2022	10/31/2023	3/2/2023 9:55	3/8/2023 8:07	3/8/2023 11:22	0.658	0.976	1.001	1.000
8.000%	4/1/2022	3/31/2023	3/2/2023 9:55	3/8/2023 8:07	3/8/2023 11:22	0.658	0.976	1.001	1.000
8.800%	4/28/2022	4/30/2023	3/2/2023 9:55	3/8/2023 8:35	3/8/2023 11:22	0.660	0.979	1.001	1.000

Notes:
1 - Results are decay corrected to Sample Date/Time
2 - Reference date for Spike Activity (dpm/ml) is the batch Prep Date
3 - Spike Nominals are decay corrected to Sample Date/Time

Spike S/N :	1715-G
Spike Exp Date :	9/8/2023
Spike Activity (dpm/ml):	297.43
Spike Volume Added:	0.10
LCS S/N :	1715-G
LCS Exp Date :	9/8/2023
LCS Activity (dpm/ml):	297.43
LCS Volume Added:	0.10

Results

Pos.	Decision Level pCi/L	Critical Level pCi/L	Required MDA pCi/L	MDA pCi/L	Sample Act. Conc. pCi/L	Sample Act. Error %	Net Count Rate CPM	Net Count Rate Error CPM	2 SIGMA Counting Uncertainty pCi/L	2 SIGMA Total Prop. Uncertainty pCi/L	Sample QC	Sample Type	RPD	RER	Nominal pCi/L	Recovery
1	0.1818	0.1284	1	0.3849	**0.9830**	24.06%	1.1500	0.2566	0.4299	0.4848		SAMPLE				
2	0.1572	0.1110	1	0.3329	**0.2218**	51.87%	0.3000	0.1528	0.2213	0.2278		SAMPLE				
3	0.2024	0.1429	1	0.4094	**0.3846**	39.96%	0.4667	0.1856	0.2998	0.3063		SAMPLE				
4	0.1299	0.0917	1	0.2956	**0.9974**	20.35%	1.3333	0.2687	0.3940	0.4231		SAMPLE				
5	0.1410	0.0995	1	0.3208	**0.2300**	50.11%	0.2833	0.1404	0.2234	0.2283		SAMPLE				
6	0.2564	0.1810	1	0.5021	**0.5914**	34.25%	0.6333	0.2134	0.3906	0.4060		SAMPLE				
7	0.0958	0.0676	1	0.2523	**0.3251**	37.15%	0.4167	0.1537	0.2350	0.2413		SAMPLE				
8	0.1961	0.1385	1	0.3967	**0.4924**	34.52%	0.6167	0.2048	0.3206	0.3406		SAMPLE				
9	0.2173	0.1534	1	0.4395	**0.4128**	39.88%	0.4667	0.1856	0.3218	0.3281		SAMPLE				
10	0.0861	0.0608	1	0.2268	**0.7480**	23.38%	1.0667	0.2369	0.3256	0.3593		SAMPLE				
11	0.2157	0.1523	1	0.4364	**1.2005**	20.63%	1.3667	0.2819	0.4853	0.5154		SAMPLE				
12	0.1820	0.1285	1	0.3681	**1.9389**	14.92%	2.6167	0.3768	0.5472	0.6322		SAMPLE				
13	0.3054	0.2156	1	0.5630	**0.0733**	195.17%	0.0833	0.1624	0.2799	0.2805		SAMPLE				
14	0.1992	0.1406	1	0.4218	**1.4985**	19.32%	1.6000	0.2972	0.5456	0.6072		SAMPLE				
15	0.1901	0.1342	1	0.3845	**0.2451**	51.85%	0.3167	0.1641	0.2490	0.2516		SAMPLE				
16	0.2493	0.1760	1	0.4763	**0.1657**	81.92%	0.2000	0.1633	0.2653	0.2672		MB				
17	0.1407	0.0993	1	0.3201	**1.0395**	20.69%	1.2833	0.2640	0.4192	0.4475	609996001.1	DUP	5.6%			
18	0.7134	0.5037	1	1.5105	**104.4831**	8.95%	31.1500	1.2513	8.2265	23.7392	609996001.1	MS			133.8484	77.3%
19	0.1416	0.1000	1	0.3223	**22.0888**	9.80%	27.0833	1.1661	1.8640	5.3063		LCS			26.5863	83.1%

Continuing Calibration Data

Ludlum Alpha Scintillation Counter Checks for 08-MAR-2023

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LUCAS1	EFF	07:40	1	1.22E+05	122295	0.41		
LUCAS2	EFF	07:39	1	1.34E+05	133894	0.15		
LUCAS3	EFF	07:36	1	1.05E+05	105087	-1.6		
LUCAS4	EFF	07:35	1	1.28E+05	127949	0.07		
LUCAS5	EFF	07:34	1	1.33E+05	133186	0.58		
LUCAS6	EFF	07:33	1	1.31E+05	131349	0.36		
LUCAS7	EFF	07:32	1	1.32E+05	131538	1.13		
LUCAS8	EFF	07:30	1	1.36E+05	136054	0.8		

Reviewed by: Lyndsey Pace **Date:** 08-MAR-23

Lyndsey Pace

GEL Laboratories LLC

Runlogs

Instrument Run Log

Instrument Type: LUCAS CELL DETECTOR **Batch ID: 2387191**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
609996001	SAMPLE	LXP1	LUCAS7	MAR-08-23 10:36:00	DONE	Lucas Cell	01-NOV-22 00:00
610267001	SAMPLE	LXP1	LUCAS8	MAR-08-23 10:36:00	DONE	Lucas Cell	01-APR-22 00:00
610325001	SAMPLE	LXP1	LUCAS1	MAR-08-23 10:36:00	DONE	Lucas Cell	28-APR-22 00:00
610325002	SAMPLE	LXP1	LUCAS2	MAR-08-23 11:00:00	DONE	Lucas Cell	01-AUG-22 00:00
610325003	SAMPLE	LXP1	LUCAS3	MAR-08-23 11:00:00	DONE	Lucas Cell	25-OCT-22 00:00
610325004	SAMPLE	LXP1	LUCAS4	MAR-08-23 11:00:00	DONE	Lucas Cell	01-FEB-23 00:00
610325005	SAMPLE	LXP1	LUCAS5	MAR-08-23 11:00:00	DONE	Lucas Cell	01-JUN-22 00:00
610325006	SAMPLE	LXP1	LUCAS6	MAR-08-23 11:00:00	DONE	Lucas Cell	01-JUL-22 00:00
610325007	SAMPLE	LXP1	LUCAS7	MAR-08-23 11:00:00	DONE	Lucas Cell	01-NOV-22 00:00
610447001	SAMPLE	LXP1	LUCAS8	MAR-08-23 11:00:00	DONE	Lucas Cell	01-APR-22 00:00
610447002	SAMPLE	LXP1	LUCAS1	MAR-08-23 11:00:00	DONE	Lucas Cell	28-APR-22 00:00
610447003	SAMPLE	LXP1	LUCAS2	MAR-08-23 11:22:00	DONE	Lucas Cell	01-AUG-22 00:00
610449001	SAMPLE	LXP1	LUCAS3	MAR-08-23 11:22:00	DONE	Lucas Cell	25-OCT-22 00:00
610894001	SAMPLE	LXP1	LUCAS4	MAR-08-23 11:22:00	DONE	Lucas Cell	01-FEB-23 00:00
611029001	SAMPLE	LXP1	LUCAS5	MAR-08-23 11:22:00	DONE	Lucas Cell	01-JUN-22 00:00
1205326596	MB	LXP1	LUCAS6	MAR-08-23 11:22:00	DONE	Lucas Cell	01-JUL-22 00:00
1205326597	DUP	LXP1	LUCAS7	MAR-08-23 11:22:00	DONE	Lucas Cell	01-NOV-22 00:00
1205326598	MS	LXP1	LUCAS8	MAR-08-23 11:22:00	DONE	Lucas Cell	01-APR-22 00:00
1205326599	LCS	LXP1	LUCAS1	MAR-08-23 11:22:00	DONE	Lucas Cell	28-APR-22 00:00

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Lansing Board of Water and Light
Environmental Services Laboratory (MI00079)
Cert ID: 3760
1232 Haco Dr.
Lansing, Michigan 48901

03 April 2023

BWL - Erickson Station

Attn: Cheryl Louden

3725 S. Canal

Lansing, MI 48917

Project: General Lab

Dear Cheryl Louden,

Enclosed is a copy of the laboratory report for the following work order(s) received by Lansing Board of Water and Light Environmental Services Laboratory:

Work Order	Received	Account Number
L303217	3/22/2023 8:30:00AM	30926 10021
L303220	3/22/2023 3:23:00PM	30926 10021
L303222	3/23/2023 3:00:00PM	30926 10021
L303223	3/23/2023 3:00:00PM	30926 10021

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

Sincerely,

Jennifer Caporale

Jennifer Caporale, Supervisor

Note: Added additional report to the end of original report on 06/29/23 JSC

CM000027054
ICP-MS Analysis Report

03/31/2023

Created by: Adlai Katzenberg, Ph.D.

Reviewed by: Nanette Jarenwattananon, Ph.D.

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Table of Contents

COVALENT METROLOGY

Results Summary

Sample Description and Objective

- 20 sample of groundwater were received for analysis by ICPMS:
  Goal: Quantify ^{7}Li, ^{11}B, ^{86}Sr, ^{87}Sr, and $^{87}Sr/^{86}Sr$ ratio
- Sample was diluted 100X in deionized water
- Deionized water was used as a process blank to assess impurities that are due to sample preparation steps and reagents - and is used for background correction of samples.
- All concentrations are reported with respect to the as-received (un-diluted) samples

Results Summary

- Li concentrations were below 100 ng/mL, except in one sample: L30322-01A
- Average $^{87}Sr/^{86}Sr$ ratio was 0.52, with a low of 0.51 and a high of 0.55

Analytical Results

All results are listed in ppb (ng/mL)

Element / Isotope	Instrument Mode	FieldBlank 3-22-23 0815	MW-11 3-22-23 1304	MW-16D 3-21-23 1406	MW-12B 3-22-23 1019	MW-16B 3-21-23 1444	MW-12 3-22-23	L303223-01A
^{7}Li	SQ-KED	*N.D.*	67.68	31.29	34.69	17.45	12.56	*N.D.*
^{11}B	SQ-KED	*N.D.*	*N.D.*	4418.66	3111.84	154.31	65.20	1334.04
^{86}Sr	SQ-KED	*N.D.*	492.01	1211.11	775.78	888.43	391.79	2903.30
^{87}Sr	SQ-KED	*N.D.*	270.32	616.22	411.06	456.29	201.82	1517.54
$^{87}Sr/^{86}Sr$ Ratio		-----	0.55	0.51	0.53	0.51	0.52	0.52

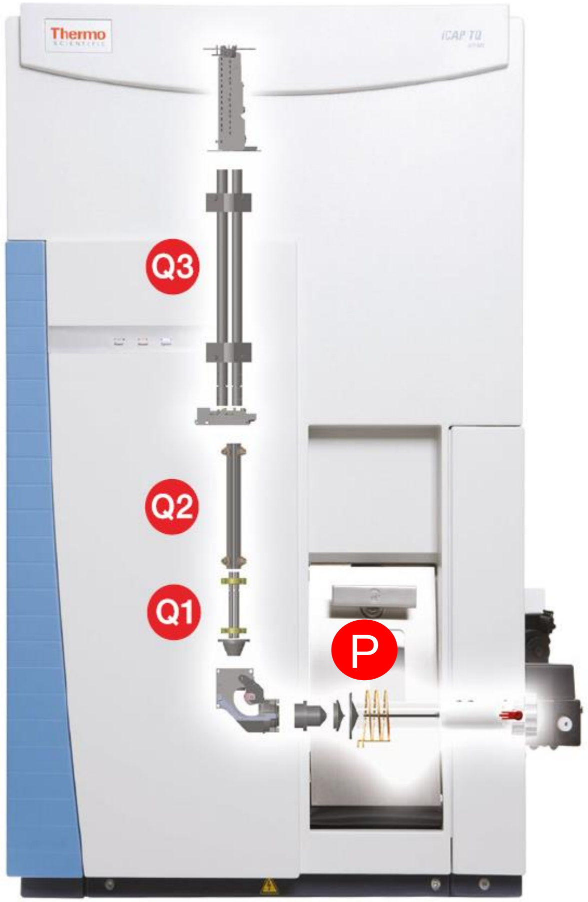
Element / Isotope	Instrument Mode	MW-11B 3-22-23 1404	MWF-12B 3-22-23 1019	MW-7 3-21-23 1732	MW-16C 3-21-23 1317	MW-7B 3-21-23 1830	MW-16A 3-21-23 1108	L303223-02A
^{7}Li	SQ-KED	19.58	31.92	52.57	18.30	13.62	*N.D.*	*N.D.*
^{11}B	SQ-KED	996.08	3153.90	1448.23	386.16	2842.92	108.79	1026.18
^{86}Sr	SQ-KED	1320.00	758.88	1103.10	914.80	298.39	453.62	2656.78
^{87}Sr	SQ-KED	682.51	397.79	575.61	477.04	153.94	236.39	1394.17
$^{87}Sr/^{86}Sr$ Ratio		0.52	0.52	0.52	0.52	0.52	0.52	0.52

Element / Isotope	Instrument Mode	MW-7C 3-21-23 1926	MWT-16A 3-21-23 1108	L30322-01A	FB 3-21-23 0805	L30322-02A	MW-2 3-22-23 1140
^{7}Li	SQ-KED	93.00	*N.D.*	1126.74	*N.D.*	45.33	23.62
^{11}B	SQ-KED	5864.84	145.05	644.25	10.03	125.76	5017.11
^{86}Sr	SQ-KED	1579.83	469.46	332.68	*N.D.*	586.08	445.73
^{87}Sr	SQ-KED	821.03	244.43	174.32	*N.D.*	305.79	234.40
$^{87}Sr/^{86}Sr$ Ratio		0.52	0.52	0.52	-----	0.52	0.53

N.D. = not detected at or above the method detection limit

TQ-ICP-MS Instrument Description

- Analytical work was performed on a Thermo Scientific iCAP triple quadrupole inductively coupled plasma mass spectrometer – TQ-ICP-MS.
- To remove interferences from analysis matrix, instrument can use a variety of instrument modes as described below and on next page.
  - After ionization in plasma (P), quadrupole 1 (Q1) works as a selective mass filter for ions entering instrument.
  - Using hydrogen, helium, oxygen or ammonia gas, selective reaction chemistry- or collision interference removal takes place in Q2. When no gases are used, cell is in pass-through mode.
  - Q3 is the final mass filter after collisions/reactions in Q2 before the product (analyte) ions are counted by detector.
    - Reactive gases either form a product ion with the analyte that is interference free (mass shift mode) or reacts with the interference to remove the interference signal from the analyte (on mass mode).
    - The mass analyzer quadrupole (Q3) is either set to the original analyte mass (on-mass analysis) or the product ion mass (mass shift mode).



The Thermo Scientific iCAP TQ ICP-MS System

TQ-ICP-MS Instrument Description – Instrument Modes

- The dual mode detector has a linear dynamic range of ~10 orders of magnitude, making it possible to determine ppt- to ppm concentrations in one analysis run with appropriate standard curve set up.
- For most analytical work, instrument is used in pulse counting mode for ppt to ppb (pg/mL to ng/mL) trace element analysis.
- Semi-quantitative analysis was performed for the following element set:

Li, B, Sr.

TQ-ICP-MS Instrument Description – Instrument Modes

COVALENT METROLOGY

Table A: TQ-ICP-MS Instrument Modes

Instrument Mode	Description	Reaction Mechanism
SQ-N/A	Single quadrupole mode, no collision or reaction gases	(none)
SQ-KED	SQ mode using helium as collision gas with kinetic energy discrimination	Gas collisions, remove polyatomic interferences
SQ-He	SQ mode using helium as collision gas	Gas collisions, remove polyatomic interferences
SQ-H_2	SQ mode using hydrogen as reaction gas	Gas reaction, remove polyatomic interferences
TQ-O_2	Triple quadrupole mode using oxygen as reaction gas	On-mass or mass shift
TQ-NH_3	Triple quadrupole mode using ammonia as reaction gas	On-mass or mass shift

Analytical Terminology

Table B: Analytical Terminology

SD	Standard deviation for *n* replicate measurements	$SD = \sqrt{\frac{1}{n-1} \cdot \sum_{i=1}^{n} (x_i - \bar{x})^2}$
MQL	Method quantitation limit where SD_{Blank} is the standard deviation for the calibration blank measured 10 times	$MQL = \left(\frac{10 \times SD_{Blank}}{a_1}\right) \times TDF$
a_1, a_0	Slope and intercept of the calibration function	$f(x) = a_1 x + a_0$
TDF	Total dilution factor	$TDF = \frac{V_S + V_D}{V_S} = \frac{\textit{Total volume of sample + diluent}}{\textit{Volume of sample}}$
$C_{m,i}$	Measured concentration or mass fraction where X_i is the mean value of *n* replicate measurements of element (or isotope) *i*	$C_{m,i} = X_i \pm U_{m,i}$
$U_{m,i}$	Measurement uncertainty, expressed as a 95% confidence interval of the mean measured value X_i. *t* = Student's *t*-value for *n-1* replicate measurements; SD_i is the standard deviation for element (or isotope) *i*.	$U_{m,i} = \frac{t \cdot SD_i}{\sqrt{n}}$

Analytical Terminology - Units

Table C: Commonly Used Concentration or Mass Fraction Units

Common Name	Description	Fraction	Liquid Concentration		Solids Mass Fractions	
ppq	Parts per quadrillion	10^{-15}	fg/mL	pg/L	fg/g	pg/kg
ppt	Parts per trillion	10^{-12}	pg/mL	ng/L	pg/g	ng/kg
ppb	Parts per billion	10^{-9}	ng/mL	ug/L	ng/g	ug/kg
ppm	Parts per million	10^{-6}	ug/mL	mg/L	ug/g	mg/kg
% wt	Weight percent	10^{-2}	n/a	n/a	10,000 ug/g	10,000 mg/kg

Metrology Summary

COVALENT METROLOGY

1. All sample preparation and analysis was done by according to ISO/IEC 17025 - *General requirements for the competence of testing and calibration laboratories* – by trained personnel familiar with this standard.
2. Class A glass volumetric flasks are calibrated according to ASTM-E288 - *Standard Specification for Laboratory Glass Volumetric Flasks.*
3. Polymethyl pentene PMP Class A volumetric flasks are calibrated according to ISO 4787 - *Laboratory glassware - Volumetric instruments - Methods for testing of capacity and for use.*
4. Pipettes were checked before use and met specifications using a balance calibrated using ISO/IEC 17025 and ANSI/NCLS-Z540.3 accredited calibration weights.
5. Analytical standards are all NIST-traceable.

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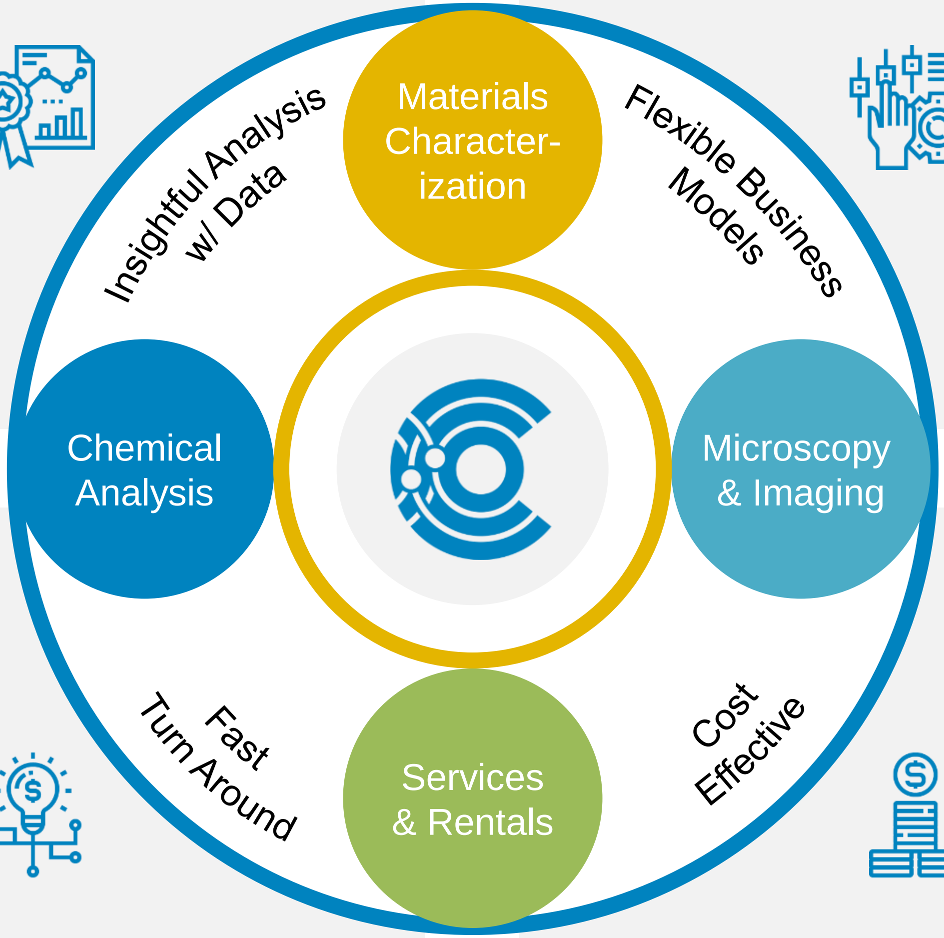
- Expert Advisory Services



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1232 Haco Drive
Lansing
Michigan, 48910

CHAIN OF CUSTODY

Phone: (517)702-6372

Page 1 of 1

Lab Work Order Number L303217

Client Name: BWL - Erickson Station	Project Name: General Lab
Client Contact: Cheryl Louden	Project Number: [none]
Address: 3725 S. Canal	Project Description: General Lab Analysis
City: Lansing	PO Number:
State/Zip: MI, 48917	Shipped By:
Phone: (517) 702-6396 Fax: (517) 702-6373	Tracking Number:
Sampler: Marc Wahrer	

Requested Analyses: δ(11)B, (7)Li, (87)Sr,(86)Sr,(87)Sr/(86)Sr ratio

Requested Turn Around: Rush requests subject to additional charge. Rush requests subject to lab approval.

Sample Name or Field ID	Sampled Date	Sampled Time	Sample Type Grab/Composite	Matrix Code	Container Count	Preservation Code a	Sample Comments
MW-16A	03/21/2023	11:08	G	GW	1	1	Send to Covalent Metrology
MW-16B	03/21/2023	14:44	G	GW	1	1	Send to Covalent Metrology
MW-16C	03/21/2023	13:17	G	GW	1	1	Send to Covalent Metrology
MW-16D	03/21/2023	14:06	G	GW	1	1	Send to Covalent Metrology
MWT-16A	03/21/2023	11:08	G	GW	1	1	Send to Covalent Metrology
MW-7	03/21/2023	17:32	G	GW	1	1	Send to Covalent Metrology
MW-7B	03/21/2023	18:30	G	GW	1	1	Send to Covalent Metrology
MW-7C	03/21/2023	19:26	G	GW	1	1	Send to Covalent Metrology
Field Blank	03/21/2023	08:05	G	GW	1	1	Send to Covalent Metrology

Relinquished By	Date/Time	Received By	Date/Time
MAW	3/21/23 1945	Jennifer Caporale	3/22/2023 8:30

Comments:

Cooler Numbers and Temperatures: E0776 at 1 ºC

Matrix Codes: GW=Ground Water

Preserv. Codes: a=None

LANSING BWL Hometown People. Hometown Power.

Environmental Laboratory
1232 Haco Drive
Lansing
Michigan, 48910

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Phone: (517)702-6372

Page 1 of 1

Lab Work Order Number L303220

Client Name: BWL - Erickson Station	Project Name: General Lab
Client Contact: Cheryl Louden	Project Number: [none]
Address: 3725 S. Canal	Project Description: General Lab Analysis
City: Lansing	PO Number:
State/Zip: MI, 48917	Shipped By:
Phone: (517) 702-6396 / Fax: (517) 702-6373	Tracking Number:
Sampler: Marc Wahrer	

Requested Analyses: δ(11)B, (7)Li, (87)Sr,(86)Sr,(87)Sr/(86)Sr ratio

Requested Turn Around: Rush requests subject to additional charge. Rush requests subject to lab approval.

Sample Name or Field ID	Sampled Date	Sampled Time	Sample Type Grab/Composite	Matrix Code	Container Count	Preservation Code a	Sample Comments
MW-2	03/22/2023	11:40	G	GW	1	1	Send to Covalent Metrology
MW-11	03/22/2023	13:04	G	GW	1	1	Send to Covalent Metrology
MW-11B	03/22/2023	14:04	G	GW	1	1	Send to Covalent Metrology
MW-12	03/22/2023	14:20	G	GW	1	1	Send to Covalent Metrology
MW-12B	03/22/2023	10:19	G	GW	1	1	Send to Covalent Metrology
MWT-12B	03/22/2023	10:19	G	GW	1	1	Send to Covalent Metrology
Field blank	03/22/2023	08:15	G	GW	1	1	Send to Covalent Metrology

Relinquished By	Date/Time	Received By	Date/Time
[signature]	3/22/2023 15:23	Jennifer Caporale	3/22/2023 15:23

Comments

Cooler Numbers and Temperatures: E0776 at 1.3 ºC

Matrix Codes: GW=Ground Water

Preserv. Codes: a=None

Hometown People. Hometown Power.

Environmental Laboratory
1232 Haco Drive
Lansing
Michigan, 48910

CHAIN OF CUSTODY

Phone: (517)702-6372

Lab Work Order Number L303222

Client Name	BWL - Erickson Station	Project Name	General Lab
Client Contact	Cheryl Louden	Project Number	(none)
Address	3725 S. Canal	Project Description	General Lab Analysis
City	Lansing	PO Number	
State/Zip	MI, 48917	Shipped By	
Phone	(517) 702-6396	Tracking Number	
Fax	(517) 702-6373		
Sampler	HDR		

Requested Analyses: To Merit for SPLP; Isotope Analysis sent to Covalent Metrology

Requested Turn Around: Rush requests subject to additional charge. Rush requests subject to lab approval.

Sample Name or Field ID	Sampled Date	Sampled Time	Sample Type Grab/Composite	Matrix Code	Container Count	To Merit for SPLP (Preservation Code: a)	Isotope Analysis sent to Covalent Metrology (Preservation Code: a)	Sample Comments
FB Ash 1	3/23/2023	1345	G	S	1	x	x	
CWP Ash 1	3/23/2023	1405	G	S	1	x	x	

Relinquished By	Date/Time	Received By	Date/Time
[signature]	3/23/23 15:00	[signature] EJA	3-23-23 1500

Comments

Cooler Numbers and Temperatures
E0776 E0776 8.6 C

Matrix Codes:

Preserv. Codes:

LANSING BWL
Hometown People. Hometown Power.

Environmental Laboratory
1232 Haco Drive
Lansing
Michigan, 48910

CHAIN OF CUSTODY

Phone: (517)702-6372

Page 1 of 1

Lab Work Order Number L303223

Client Name: BWL - Erickson Station	Project Name: General Lab
Client Contact: Cheryl Louden	Project Number: [none]
Address: 3725 S. Canal	Project Description: General Lab Analysis
City: Lansing	PO Number:
State/Zip: MI, 48917	Shipped By:
Phone: (517) 702-6396 Fax: (517) 702-6373	Tracking Number:
Sampler: HDR	

Requested Analyses: Centrifuge before going to Covalent Metrology; Isotope Analysis sent to Covalent Metrology

Requested Turn Around: Rush requests subject to additional charge. Rush requests subject to lab approval.

Sample Name or Field ID	Sampled Date	Sampled Time	Sample Type Grab/Composite	Matrix Code	Container Count	Centrifuge before going to Covalent Metrology (Preservation Code: a)	Isotope Analysis sent to Covalent Metrology (Preservation Code: a)	Sample Comments
FB Ash 2	3/23/2023	1350	G	S	1	x	x	
CWP Ash 2	3/23/2023	1415	G	S	1	x	x	

Relinquished By	Date/Time	Received By	Date/Time
[signature]	3/23/23 15:00	[signature]	3-23-23 1500

Comments:

Cooler Numbers and Temperatures: E0776 E0776 8.6°C

Matrix Codes:

Preserv. Codes:

Merit Laboratories, Inc.

2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

CHAIN OF CUSTODY RECORD

REPORT TO	
CONTACT NAME	Jennifer Caporale
COMPANY	Lansing Board of Water and Light
ADDRESS	PO Box 13007 48901-3007
CITY	Lansing STATE Mi ZIP CODE 48901
PHONE NO.	517-702-6372 FAX NO. P.O. NO.
E-MAIL ADDRESS	Environmental_Laboratery@lbwl.com QUOTE NO.

INVOICE TO	
CONTACT NAME	Beth Zimpfer
COMPANY	
ADDRESS	
CITY	STATE ZIP CODE
PHONE NO.	E-MAIL ADDRESS Beth.Zimpfer@lbwl.com

PROJECT NO./NAME Erickson SPLP SAMPLER(S) - PLEASE PRINT/SIGN NAME

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS ☐ STANDARD ☒ OTHER ASAP

DELIVERABLES REQUIRED ☒ STD ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☒ EDD ☐ OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

MERIT LAB NO. (FOR LAB USE ONLY)	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO3	H2SO4	NaOH	MeOH	OTHER	SPLP, Send back to LBWL
46672.01	3-23-23	1345	FB Ash 1 L303222-01	S	1	1							✓
.02	3-23-23	1405	CWP Ash 1 L303222-02	S	1	1							✓

Certifications: ☐ OHIO VAP ☐ Drinking Water ☐ DoD ☒ NPDES
Project Locations: ☐ Detroit ☐ New York ☐ Other

Special Instructions:

SPLP ASTM Leach Performed

Return COC

	SIGNATURE/ORGANIZATION	DATE	TIME
RELINQUISHED BY:	[signature] ☐ Sampler	3.24.23	1543
RECEIVED BY:	M Ackroth	3/24/23	1543
RELINQUISHED BY:	[signature]	3.28.23	1505
RECEIVED BY:	J Caporale Temp 2.1 tbml	03/28/23	1505
RELINQUISHED BY:	M Ackroth	3/28/23	1430
RECEIVED BY:			

SEAL NO. SEAL INTACT YES☐ NO☐ INITIALS
SEAL NO. SEAL INTACT YES☐ NO☐ INITIALS

NOTES: TEMP. ON ARRIVAL 13.6

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

Rev 6.18.12

Sending to Covalent Metrology 03/29/23 JSC 03/28/23

Covalent Internal Chain of Custody			
Analysis by ICPMS	**Qty**	**Description of Sample**	**Date/Time Sampled**
δ(11)B,b(7)Li, (87)Sr,(86)Sr (87)Sr/(86)Sr ratio	1	MW-16A L303217-01	3/21/23 1108
	1	MW-16B L303217-02	3/21/23 1444
	1	MW-16C L303217-03	3/21/23 1317
	1	MW-16D L303217-04	3/21/23 1406
	1	MWT-16A L303217-05	3/21/23 1108
	1	MW-7 L303217-06	3/21/23 1732
	1	MW-7B L303217-07	3/21/23 1830
	1	MW-7C L303217-08	3/21/23 1926
	1	Field Blank L303217-09	3/21/23 0805

Client ID	Date/Time	Released by	Received By	Comments
CM000027054				
Quote Q-10878				

1. To be kept with Client Sample
2. File with sample until;
    a. Return of Sample/Job
    b. Disposal per request

Covalent Internal Chain of Custody			
Analysis by ICPMS	Qty	Description of Sample	Date/Time Sampled
δ(11)B,b(7)Li, (87)Sr,(86)Sr (87)Sr/(86)Sr ratio	1	MW-2 L303220-01	3/22/23 1140
	1	MW-11 L303220-02	3/22/23 1304
	1	MW-11B L303220-03	3/22/23 1404
	1	MW-12 L303220-04	3/22/23 1420
	1	MW-12B L303220-05	3/22/23 1019
	1	MWT-12B L303220-06	3/22/23 1019
	1	Field Blank L303220-07	3/22/23 0815
	1	FB Ash 1 SPLP L303222-01	3/23/23 1345
	1	CWP Ash 1 SPLP L303222-02	3/23/23 1405
	1	FB Ash 2 L303223-01	3/23/23 1350
	1	CWP Ash 2 L303223-02	3/23/23 1415

Client ID	Date/Time	Released by	Received By	Comments
CM000027054				
Quote Q-10878				

1. To be kept with Client Sample
2. File with sample until;
   a. Return of Sample/Job
   b. Disposal per request

CM000028749
ICP-MS Analysis Report

06/15/2023

Created by: Joern T. Larsen, M.S.

Reviewed by: Adlai Katzenberg, Ph.D.

covalentmetrology.com

Table of Contents

COVALENT METROLOGY

Results Summary

Sample Description and Objective

- 20 sample of groundwater were received for analysis by ICPMS:

  Goal: Quantify ^{7}Li, ^{11}B, ^{86}Sr, ^{87}Sr, $^{87}Sr/^{86}Sr$ ratio, and $^{11}B/^{10}B$ ratio.
- Sample was diluted 100X in deionized water
- Deionized water was used as a process blank to assess impurities that are due to sample preparation steps and reagents - and is used for background correction of samples.
- All concentrations are reported with respect to the as-received (un-diluted) samples

Analytical Results

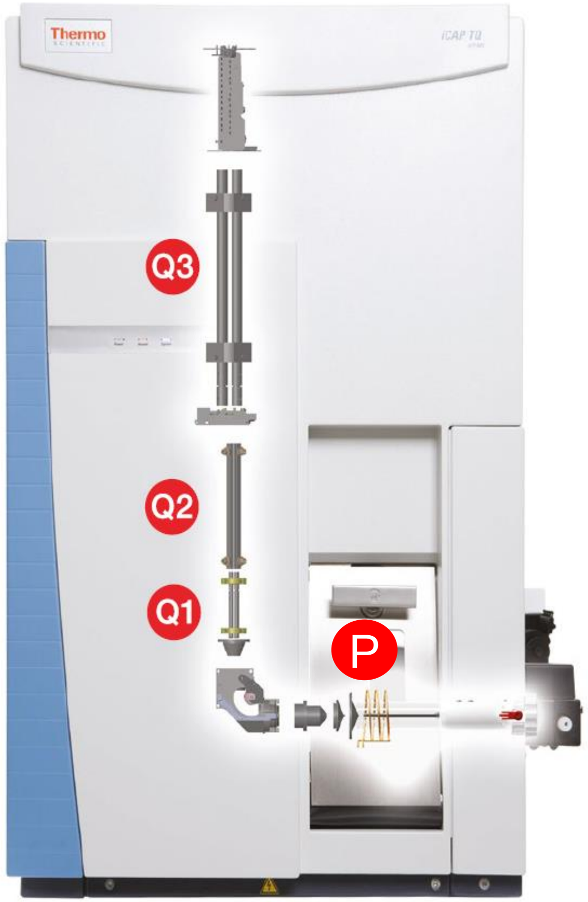
Element / Isotope	Instrument Mode	FieldBlank 3-22-23 0815			MW-11 3-22-23 1304			MW-16D 3-21-23 1406			MW-12B 3-22-23 1019			MW-16B 3-21-23 1444			MW-12 3-22-23			L303223-01A		
		C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)
^{7}Li	SQ-N/A	Trace	> 0.044	-	3.58	0.03	0.84	19.7	0.3	1.5	21.8	0.4	2	14	0.6	4.3	12.2	0.2	1.4	0.819	0.04	4.9
^{11}B	SQ-N/A	2.29	0.39	17	143	4	2.7	**5040**	60	1.2	3610	60	1.8	153	3	2.1	71.9	1.8	2.5	618	9	1.4
^{87}Rb	SQ-KED	< 0.3	-	-	81.7	3.4	4.1	168	5	3.2	108	3	2.6	113	4	3.3	53.5	1.7	3.1	47.7	1.5	3.1
^{86}Sr	TQ-O2	< 2	-	-	286	13	4.7	825	37	4.5	522	19	3.7	561	15	2.6	268	14	5.3	235	10	4.1
$\delta(^{11}B/^{10}B)$	SQ-N/A IR Mode	4.03	0.02	0.5	4.06	0.02	0.5	4.14	0.02	0.5	4.16	0.02	0.5	4.09	0.02	0.5	4.12	0.02	0.5	3.77	0.02	0.5
$\delta(^{87}Sr/^{86}Sr)$	TQ-O2-IR Mode	-	-	-	0.717	0.001	0.2	0.709	0.001	0.2	0.714	0.001	0.2	0.712	0.001	0.2	0.718	0.001	0.2	0.724	0.001	0.2

Element / Isotope	Instrument Mode	MW-11B 3-22-23 1404			MWF-12B 3-22-23 1019			MW-7 3-21-23 1732			MW-16C 3-21-23 1317			MW-7B 3-21-23 1830			MW-16A 3-21-23 1108			L303223-02A		
		C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)
^{7}Li	SQ-N/A	21.4	0.5	2.2	22.9	0.5	2.4	48.2	1.3	2.7	16.4	0.5	3.3	18.1	0.1	0.82	1.77	0.02	0.86	8.20	0.42	5.1
^{11}B	SQ-N/A	1100	10	1.3	3040	40	1.5	1720	20	1.1	464	6	1.4	3110	50	1.5	111	3	2.5	1110	10	1.2
^{87}Rb	SQ-KED	169	4	2.1	89.5	3.3	3.6	171	6	3.3	127	4	3.2	46.0	1.6	3.5	63.3	2.1	3.4	390	14	3.6
^{86}Sr	TQ-O2	830	29	3.5	429	19	4.5	856	24	2.9	623	20	3.3	223	10	4.4	316	13	4.2	1880	50	2.9
$\delta(^{11}B/^{10}B)$	SQ-N/A IR Mode	4.11	0.02	0.5	4.17	0.02	0.5	4.02	0.02	0.5	4.08	0.02	0.5	4.15	0.02	0.5	4.08	0.02	0.5	4.04	0.02	0.5
$\delta(^{87}Sr/^{86}Sr)$	TQ-O2-IR Mode	0.709	0.001	0.2	0.710	0.001	0.2	0.711	0.001	0.2	0.713	0.001	0.2	0.711	0.001	0.2	0.720	0.001	0.2	0.715	0.001	0.2

Element / Isotope	Instrument Mode	MW-7C 3-21-23 1926			MWT-16A 3-21-23 1108			L30322-01A			FB 3-21-23 0805			L30322-02A			MW-2 3-22-23 1140		
		C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)	C_m (ng/mL)	U_m (ng/mL)	U_m (%)
^{7}Li	SQ-N/A	72.8	1.7	2.4	1.75	0.02	1.3	0.792	0.020	2.5	< 0.05	-	-	44.8	2.0	4.4	25.3	0.3	1.3
^{11}B	SQ-N/A	**6440**	60	0.88	110	3	3.1	1350	30	2	6.69	0.63	9.4	129	3	2	4180	50	1.2
^{87}Rb	SQ-KED	239	7	2.9	63.6	1.9	3	391	10	2.5	< 0.3	-	-	78.4	2.8	3.6	52.1	2.4	4.6
^{86}Sr	TQ-O2	1170	30	2.9	316	14	4.6	1890	50	2.8	< 2	-	-	386	14	3.8	256	10	3.9
$\delta(^{11}B/^{10}B)$	SQ-N/A IR Mode	4.03	0.02	0.5	4.05	0.02	0.5	4.02	0.02	0.5	4.03	0.02	0.5	4.01	0.02	0.5	4.00	0.02	0.5
$\delta(^{87}Sr/^{86}Sr)$	TQ-O2-IR Mode	0.715	0.001	0.2	0.710	0.001	0.2	0.716	0.001	0.2	-	-	-	0.719	0.001	0.2	0.717	0.001	0.2

TQ-ICP-MS Instrument Description

- Analytical work was performed on a Thermo Scientific iCAP triple quadrupole inductively coupled plasma mass spectrometer – TQ-ICP-MS.
- To remove interferences from analysis matrix, instrument can use a variety of instrument modes as described below and on next page.
  - After ionization in plasma (P), quadrupole 1 (Q1) works as a selective mass filter for ions entering instrument.
  - Using hydrogen, helium, oxygen or ammonia gas, selective reaction chemistry- or collision interference removal takes place in Q2. When no gases are used, cell is in pass-through mode.
  - Q3 is the final mass filter after collisions/reactions in Q2 before the product (analyte) ions are counted by detector.
    - Reactive gases either form a product ion with the analyte that is interference free (mass shift mode) or reacts with the interference to remove the interference signal from the analyte (on mass mode).
    - The mass analyzer quadrupole (Q3) is either set to the original analyte mass (on-mass analysis) or the product ion mass (mass shift mode).



The Thermo Scientific iCAP TQ ICP-MS System

TQ-ICP-MS Instrument Description – Instrument Modes

COVALENT METROLOGY

- The dual mode detector has a linear dynamic range of ~10 orders of magnitude, making it possible to determine ppt- to ppm concentrations in one analysis run with appropriate standard curve set up.
- For most analytical work, instrument is used in pulse counting mode for ppt to ppb (pg/mL to ng/mL) trace element analysis.
- Semi-quantitative analysis was performed for the following element set:

Li, B, Sr.

TQ-ICP-MS Instrument Description – Instrument Modes

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Table A: TQ-ICP-MS Instrument Modes

Instrument Mode	Description	Reaction Mechanism
SQ-N/A	Single quadrupole mode, no collision or reaction gases	(none)
SQ-KED	SQ mode using helium as collision gas with kinetic energy discrimination	Gas collisions, remove polyatomic interferences
SQ-He	SQ mode using helium as collision gas	Gas collisions, remove polyatomic interferences
SQ-H_2	SQ mode using hydrogen as reaction gas	Gas reaction, remove polyatomic interferences
TQ-O_2	Triple quadrupole mode using oxygen as reaction gas	On-mass or mass shift
TQ-NH_3	Triple quadrupole mode using ammonia as reaction gas	On-mass or mass shift

Table B: Analytical Terminology

SD	Standard deviation for *n* replicate measurements	$SD = \sqrt{\frac{1}{n-1} \cdot \sum_{i=1}^{n} (x_i - \bar{x})^2}$
MQL	Method quantitation limit where SD_{Blank} is the standard deviation for the calibration blank measured 10 times	$MQL = \left(\frac{10 \times SD_{Blank}}{a_1}\right) \times TDF$
a_1, a_0	Slope and intercept of the calibration function	$f(x) = a_1 x + a_0$
TDF	Total dilution factor	$TDF = \frac{V_S + V_D}{V_S} = \frac{\text{Total volume of sample + diluent}}{\text{Volume of sample}}$
$C_{m,i}$	Measured concentration or mass fraction where X_i is the mean value of *n* replicate measurements of element (or isotope) *i*	$C_{m,i} = X_i \pm U_{m,i}$
$U_{m,i}$	Measurement uncertainty, expressed as a 95% confidence interval of the mean measured value X_i. *t* = Student's *t*-value for *n-1* replicate measurements; SD_i is the standard deviation for element (or isotope) *i*.	$U_{m,i} = \frac{t \cdot SD_i}{\sqrt{n}}$

Analytical Terminology - Units

Table C: Commonly Used Concentration or Mass Fraction Units

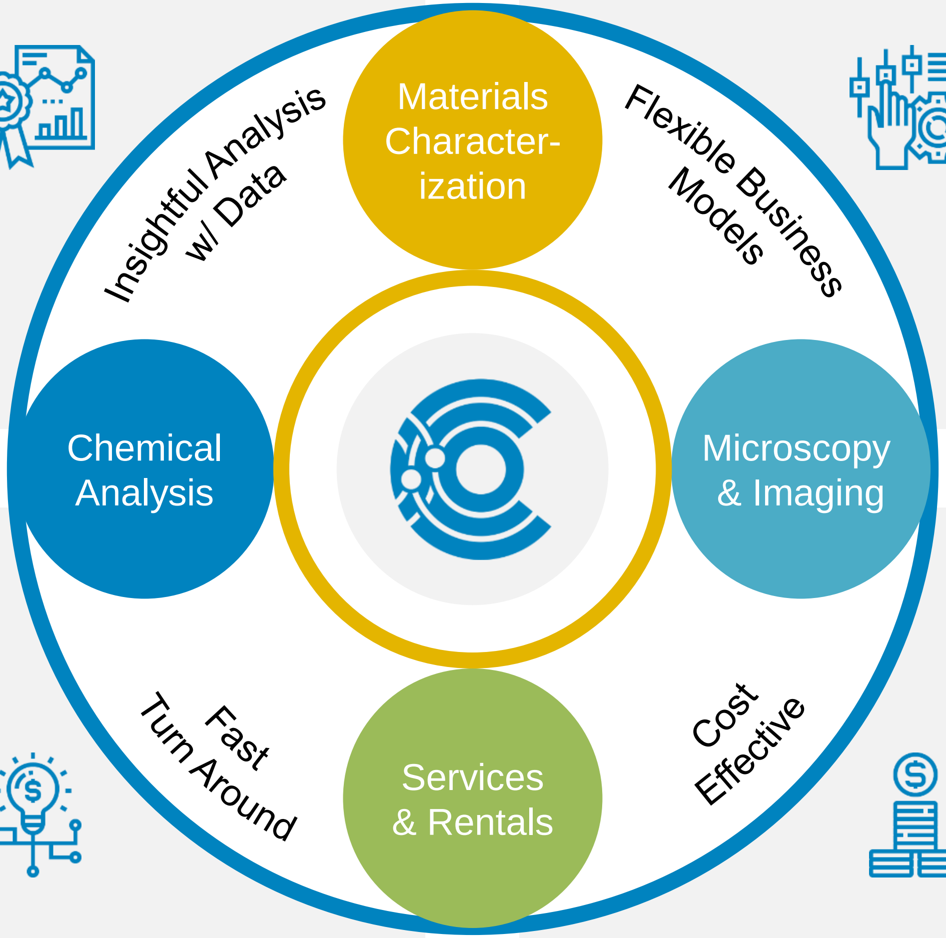
Common Name	Description	Fraction	Liquid Concentration		Solids Mass Fractions	
ppq	Parts per quadrillion	10^{-15}	fg/mL	pg/L	fg/g	pg/kg
ppt	Parts per trillion	10^{-12}	pg/mL	ng/L	pg/g	ng/kg
ppb	Parts per billion	10^{-9}	ng/mL	ug/L	ng/g	ug/kg
ppm	Parts per million	10^{-6}	ug/mL	mg/L	ug/g	mg/kg
% wt	Weight percent	10^{-2}	n/a	n/a	10,000 ug/g	10,000 mg/kg

Metrology Summary

1. All sample preparation and analysis was done by according to ISO/IEC 17025 - *General requirements for the competence of testing and calibration laboratories* – by trained personnel familiar with this standard.
2. Class A glass volumetric flasks are calibrated according to ASTM-E288 - *Standard Specification for Laboratory Glass Volumetric Flasks.*
3. Polymethyl pentene PMP Class A volumetric flasks are calibrated according to ISO 4787 - *Laboratory glassware - Volumetric instruments - Methods for testing of capacity and for use.*
4. Pipettes were checked before use and met specifications using a balance calibrated using ISO/IEC 17025 and ANSI/NCLS-Z540.3 accredited calibration weights.
5. Analytical standards are all NIST-traceable.

The Covalent Way

- Domain Experts in Every Technique
- Advanced Analysis and Interpretation
- Expert Advisory Services



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- Strong Partnerships with Global Instrument Leaders
- Operational excellence
- Value & Cost Savings Directly to Our Customers

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covalentmetrology.com
(408) 498-4611
hello@covalentmetrology.com