



2022 Annual Groundwater Monitoring and Corrective Action Report

for Compliance with the Coal Combustion
Residuals (CCR) Rule

Cherokee Station

Public Service Company of Colorado



January 31, 2023



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Table of Abbreviations and Acronyms

Abbreviation	Definition
BTV	background threshold value
CCR	Coal Combustion Residuals
COI	constituent of interest
CTRP	Cooling Tower Retention Pond
EPA	Environmental Protection Agency
GPS	Groundwater Protection Standard
LCL	lower confidence limit
LCS	Laboratory Control Samples
MCL	Maximum Contaminant Level
MS/MSD	Matrix Spike/Duplicate
PSCo	Public Service Company of Colorado
QC	quality control
RPD	relative percent difference
SOP	Standard Operating Procedure
SSI	statistically significant increase
SSL	statistically significant level
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UTL	upper tolerance limit

Certification

2022 Groundwater Monitoring Annual Report for Cherokee Station

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

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



Signed January 31, 2023

Matthew Rohr, PE

Colorado PE License 0053467

License renewal date October 31, 2023

Summary of 40 CFR Section § 257.90(e)(6) Groundwater Monitoring System Requirements and Site-Specific Compliance at Cherokee Station			
§ 257.90(e)(6) A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:		(Closed) Ash Impoundments Multiunit Status	(Closed) Cooling Tower Retention Pond Status
§257.90(e)(6)(i)	At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95.	Assessment Monitoring Program	Assessment Monitoring Program
§257.90(e)(6)(ii)	At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95.	Assessment Monitoring Program	Assessment Monitoring Program
§257.90(e)(6)(iii)	If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to § 257.94(e):	Yes	Yes
§257.90(e)(6)(iii)(A)	Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase. These SSIs are from the original triggering event.	• MW-7 – boron, calcium, chloride, fluoride, sulfate, TDS • MW-9 – boron, calcium, chloride, fluoride, sulfate, TDS • MW-10 - boron, calcium, chloride, fluoride, pH, sulfate, TDS	• MW-15 - chloride, sulfate, TDS • MW-16 –sulfate and TDS
§257.90(e)(6)(iii)(B)	Provide the date when the assessment monitoring program was initiated for the CCR unit.	March 7, 2018	July 22-23, 2019
§257.90(e)(6)(iv)	If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in appendix IV to this part pursuant to § 257.95(g) include all of the following:	No	No
§257.90(e)(6)(iv) (A)	Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase.	N/A	N/A
§257.90(e)(6)(iv) (B)	Provide the date when the assessment of corrective measures was initiated for the CCR unit.	N/A	N/A
§257.90(e)(6)(iv)(C)	Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit.	N/A	N/A
§257.90(e)(6)(iv)(D)	Provide the date when the assessment of corrective measures was completed for the CCR unit.	N/A	N/A
§257.90(e)(6)(v)	Whether a remedy was selected pursuant to § 257.97 during the current annual reporting period, and if so, the date of remedy selection.	N/A	N/A
§257.90(e)(6)(vi)	(vi) Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.	N/A	N/A

1.0 Introduction

The U.S. Environmental Protection Agency's (EPA's) final Coal Combustion Residuals (CCR) Rule establishes a comprehensive set of requirements for the management and disposal of CCR (or coal ash) in landfills and surface impoundments by electric utilities. Cherokee Station, located in Denver, Colorado (**Figure 1**), is owned and operated by Public Service Company of Colorado (PSCo), an Xcel Energy Company. Cherokee Station has four CCR units subject to the CCR Rule: the former West, Center, and East ash impoundments, and the former incised Cooling Tower Retention Pond (CTRP) (**Figure 2**). The CTRP was categorized as inactive as of the October 2015 effective date of the CCR Rule and became subject to the groundwater monitoring requirements under the Direct Final Rule effective October 4, 2016 (Extension Rule). The CTRP was closed in 2017 and the three ash impoundments were closed in 2018; all were physically closed by removal of CCR, with ongoing groundwater monitoring.

In 2022, groundwater monitoring was conducted at Cherokee Station to collect assessment monitoring samples at the (closed) CCR Ash Impoundments and the (closed) CTRP as specified under Part 257.95. This Annual Groundwater Monitoring Report presents the sampling and analysis completed in 2022:

- The status of the groundwater monitoring program for the (closed) West, Center, and East ash impoundments at the end of 2022 is in assessment monitoring.
- The status of the groundwater monitoring program for the (closed) CTRP at the end of 2022 is in assessment monitoring.

2.0 Facility Description

Historically, Cherokee Station was a coal-fired, steam turbine electric generating station; the fuel source for the coal-fired units was sub-bituminous, low-sulfur coal supplied by several mines in western Colorado. Cherokee Station ceased burning coal in August 2017 and is now reconfigured to natural gas. During the active coal operations, the former West, Center, and East ash impoundments (described herein as ash impoundments) were used for temporary storage of bottom ash (**Figure 2**). The three ash impoundments are considered a single CCR unit for groundwater monitoring due to the proximities of the impoundments to each other and the configuration relative to the groundwater flow direction. Fly ash was handled dry and collected in on-site silos. Both bottom ash and fly ash were hauled off site to facilities permitted for either beneficial use or disposal. The ash impoundments were physically closed by removal of all CCR, which was completed in December 2018; completion of CCR removal was certified by a Professional Engineer.

The CTRP historically received overflow from Cooling Tower 4 and CCR (**Figure 2**). The CTRP ceased receiving CCR prior to the October 2015 effective date of the CCR Rule and therefore met the definition of an inactive impoundment. The CTRP became subject to the groundwater monitoring requirements under the Direct Final Rule effective October 4, 2016. The pond was

physically closed by removal of all CCR, which was completed in March 2017; completion of CCR removal was certified by a Professional Engineer.

The operation and monitoring of the CCR units are described further in the Cherokee Station Groundwater Monitoring System Certification (HDR, 2019).

2.1 Hydrogeology

The uppermost aquifer under Cherokee Station is the alluvial aquifer associated with the nearby South Platte River and is present across the site. Groundwater under the CCR facilities flows east, perpendicular to the South Platte River, where it ultimately discharges to the river (GeoTrans, Inc., 2009). In the area of the ash impoundments, the alluvial aquifer is between 8 and 38 feet thick, mostly sandy, and is underlain by the low permeability claystone deposits of the Denver Formation that inhibit vertical downward flow to the deeper, regional Arapahoe Aquifer (GeoTrans, Inc., 2009). The Denver Formation is over 70 feet thick in this area (CDH, 1993). Further hydrogeologic characterization of the site is provided in the Cherokee Station Groundwater Monitoring System Certification (HDR, 2019).

2.2 Monitoring Well Network

2.2.1 West, Center, and East Ash Impoundments

The CCR Rule requires, at a minimum, one upgradient and three downgradient monitoring wells per CCR unit to be completed in the uppermost aquifer. Section 257.91 of the Rule states that the operator: “...*may install a multiunit groundwater monitoring system instead of separate groundwater monitoring systems for each CCR unit.*” In addition, the CCR Rule states that downgradient monitoring wells should be installed to: “*accurately represent the quality of groundwater passing the waste boundary of the CCR unit. The downgradient monitoring system must be installed at the waste boundary that ensures detection of groundwater contamination in the uppermost aquifer.*” The flow of groundwater under the CCR impoundments is eastward, perpendicular to the length of the impoundments. Five wells were sited in 2015 for CCR compliance for a multiunit monitoring network of all three impoundments, two hydraulically upgradient monitoring wells (MW-7 and MW-13) and three downgradient monitoring wells (MW-8, MW-9, and MW-10) (**Figure 2**). The MW-7 well location on the west side of the former West Impoundment is hydraulically upgradient of the impoundments (GeoTrans, Inc., 2009); however, the monitoring performed to date has identified that the ponds may have influenced well MW-7; therefore, the MW-7 well is not representative of background water. Monitoring well MW-13 is located upgradient of the CCR impoundments and serves as the background monitoring well for the former West, Center, and East ash impoundments (**Figure 2**).

The three ash impoundments were closed in December 2018 by removal of all CCR after first dewatering the impoundments. The CCR was removed from each impoundment, exposing the native shale bedrock and native sands above the bedrock. Minor amounts of groundwater were observed on top of the native subgrade. During this time, three of the four monitoring wells adjacent to the impoundments were intermittently dry. These observations indicate that the water in the former ash impoundments was causing some groundwater mounding beneath the ponds and controlling water levels in the monitoring wells surrounding the ponds.

No wells were installed or abandoned in 2022.

2.2.2 Cooling Tower Retention Pond

In 2018 four wells (MW-14, MW-15, MW-16, MW-17) were installed around the perimeter of the (closed) CTRP for CCR compliance (**Figure 2**). The groundwater flow direction beneath the pond is to the east. Monitoring wells MW-15, MW-16, and MW-17 were located along the perimeter of the east side of the pond to serve as downgradient wells at the waste boundary (**Figure 2**). MW-17 was observed to be damaged during the October 2021 sampling event. The well casing was repaired and HDR returned to collect a sample on December 8, 2021. MW-15 was observed to be damaged during the April 2022 sampling event. The well was repaired, and a sample was collected during the next semi-annual event in October 2022. The well installation report will be updated to reflect the new survey data for both wells.

No additional wells were installed or abandoned in 2022.



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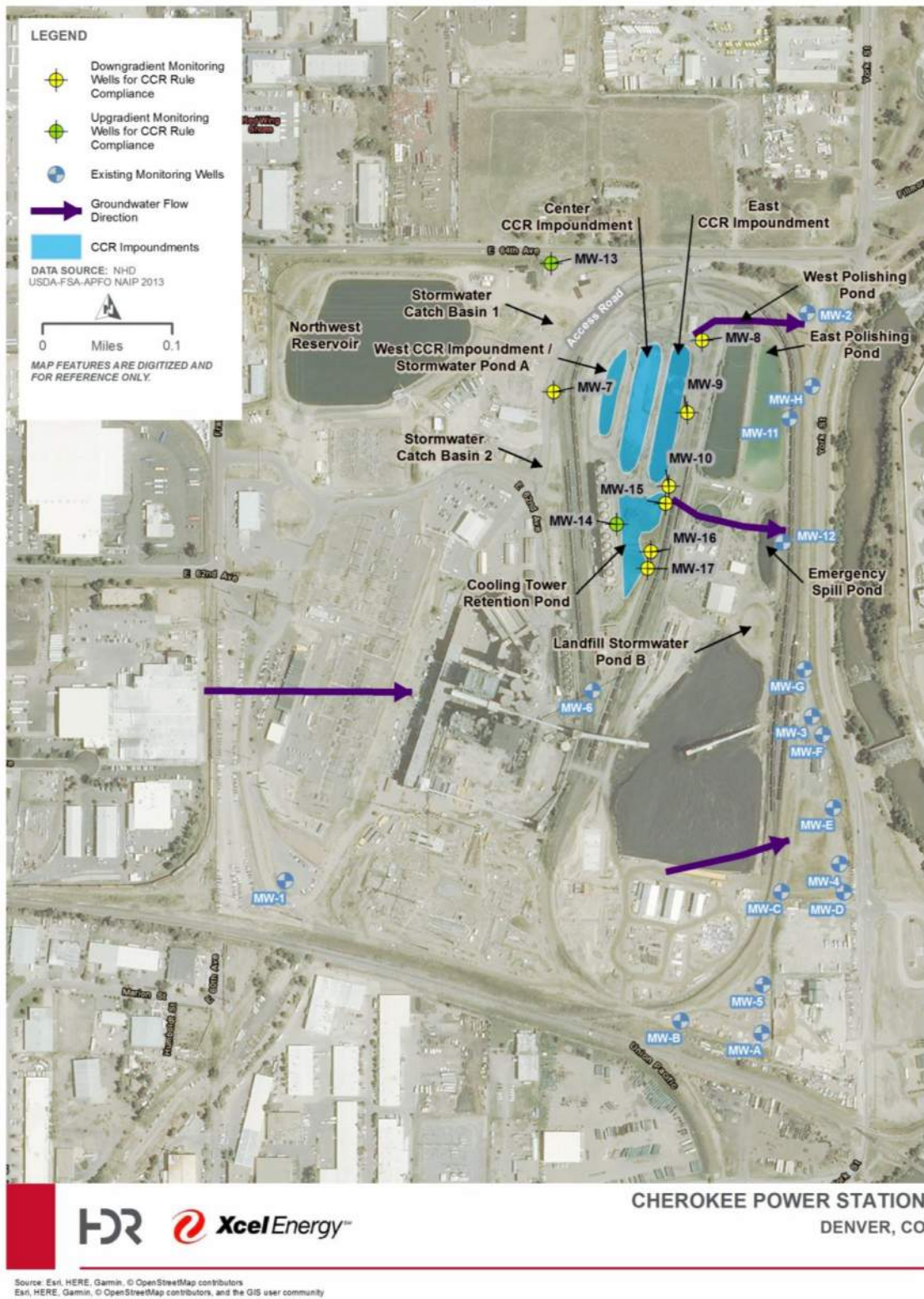


Figure 2. Cherokee Station – CCR unit and monitoring well location map.

3.0 Monitoring

3.1 Frequency

3.1.1 West, Center, and East Ash Impoundments

Assessment monitoring continued in 2022 for the former Ash Impoundments. An annual assessment monitoring event was completed on April 19-20, 2022 to sample all the monitoring wells around the impoundments for all Appendix III and IV constituents plus TSS (**Table 1**). Monitoring was performed at all the certified monitoring network of wells (MW-7, MW-8, MW-9, MW-10, and MW-13); however, MW-7, MW-8, and MW-9 were dry, thus samples were collected from MW-10 and MW-13. **Table 2** provides the well identification, number of samples collected, dates samples were collected in 2022, and the respective assessment monitoring programs (per (257.90(e)(3))).

On October 25, 2022, semi-annual assessment monitoring was conducted at the former Ash Impoundments certified monitoring network wells. Samples were analyzed for all Appendix III and Appendix IV constituents plus TSS. Monitoring wells MW-7, MW-8, and MW-9 were dry. Samples were collected from MW-10 and MW-13 (**Table 2**).

Table 1. Groundwater quality parameters.	
Appendix III Constituents for Detection Monitoring	Appendix IV Constituents for Assessment Monitoring
Boron	Antimony
Calcium	Arsenic
Chloride	Barium
Fluoride	Beryllium
pH	Cadmium
Sulfate	Chromium
Total Dissolved Solids (TDS)	Cobalt
Additional Parameters	Fluoride
Total Suspended Solids (TSS)	Lead
	Lithium
	Mercury
	Molybdenum
	Selenium
	Thallium
	Radium 226 and 228 combined

Table 2. Number and dates of groundwater samples collected in 2022 for each well and the required monitoring programs for the Cherokee Ash Ponds (257.90(e)(3))			
Monitoring Well I.D.	Well Location	Dates Monitored	CCR Rule Monitoring Purpose
MW-7	Upgradient ¹	April 19, 2022*	Annual Assessment Monitoring
		October 25, 2022*	Semi-annual Assessment Monitoring
MW-8	Downgradient	April 19, 2022*	Annual Assessment Monitoring
		October 25, 2022*	Semi-annual Assessment Monitoring
MW-9	Downgradient	April 19, 2022*	Annual Assessment Monitoring
		October 25, 2022*	Semi-annual Assessment Monitoring
MW-10	Downgradient	April 19, 2022	Annual Assessment Monitoring
		October 25, 2021	Semi-annual Assessment Monitoring
MW-13	Upgradient / Background	April 20, 2022	Annual Assessment Monitoring
		October 25, 2021	Semi-annual Assessment Monitoring

¹Hydraulically upgradient though potentially influenced by impoundments

*Well was monitored and found to be dry, no sample could be collected

3.1.2 Cooling Tower Retention Pond

Assessment monitoring continued in 2022 for the CTRP. In 2022, PSCo completed an annual assessment monitoring event on April 20, 2022, and a semi-annual event from October 25-26, 2022. **Table 3** provides the well identification, number of samples collected, dates samples were collected in 2022, and whether the sample was required by the annual or semi-annual assessment monitoring programs (per (257.90(e)(3))).

Table 3. Number and dates of groundwater samples collected in 2022 for each well and the required monitoring programs for the Cherokee (closed) Cooling Tower Retention Pond (257.90(e)(3))			
Monitoring Well I.D.	Well Location	Dates Monitored	CCR Rule Monitoring Purpose
MW-14	Upgradient / Background	April 20, 2022	Annual Assessment Monitoring
		October 26, 2022	Semi-annual Assessment Monitoring
MW-15	Downgradient	April 20, 2022*	Annual Assessment Monitoring
		October 26, 2022	Semi-annual Assessment Monitoring
MW-16	Downgradient	April 20, 2022	Annual Assessment Monitoring
		October 25, 2022	Semi-annual Assessment Monitoring
MW-17	Downgradient	April 20, 2022	Annual Assessment Monitoring
		October 25, 2022	Semi-annual Assessment Monitoring

* MW-15 was found to be damaged during the April 2022 sampling event. The well was repaired and sampled during the next semi-annual event in October 2022.

3.2 Water Levels and Sample Collection

Water levels were collected in each well prior to sample collection. Groundwater quality samples were collected in all monitoring wells unless wells were dry. Groundwater sample collection protocols follow the Groundwater Sample Collection Standard Operating Procedure (SOP) (HDR, 2016). The water samples were collected using a submersible Geotech SS Geosub pump, and the pump and hose were decontaminated between wells following protocols outlined in the Sampling SOP. Each well was purged until field parameters stabilized in accordance with the Sampling SOP. In accordance with the CCR Rule, groundwater samples were not field filtered. The field parameters of turbidity, pH, and temperature were measured using a YSI Professional Plus (or an equivalent) portable water quality instrument that was calibrated prior to use each day of sampling. The results of field measurements were recorded on a field data form, which is maintained as part of the field sampling records. For quality control (QC), one field duplicate sample and one field equipment blank sample was collected during each sample event. Water samples were delivered under Chain of Custody to Eurofins Environment Testing America (Eurofins) in Denver, Colorado.

3.3 Analytical Testing

Groundwater samples were analyzed for the COIs shown in **Table 1**. The assessment monitoring samples were analyzed for Appendix III and Appendix IV COIs, plus TSS.

3.4 Data Validation and Data Management

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

All samples and quality control (QC) were reviewed and evaluated, and no samples were rejected. Most QC analyses were within reportable limits; however, when QC was outside limit controls, samples were reported as estimated. Relative percent difference (RPD) results for field duplicate analyses were generally within the control limit criterion of 20%. Lead was outside the control limit and required qualification of the parent and field duplicate samples in the October 2022 event. Lab duplicate analyses were within the control limit criterion except TSS (three instances) and pH (one instance). Laboratory Control Sample (LCS)/LCS duplicates recoveries and RPDs were all within control limits except Rad-228 and combined radium (two instances). Matrix Spike/Duplicate (MS/MSD) recoveries and RPDs were generally within control limits, with outliers found for thallium (one instance), chloride (one instance), and sulfate (one instance) in the April 2022 event. Data analyses required minimal qualifications, and all data were usable, even when qualified.

4.0 Monitoring Results

4.1 Water Levels and Groundwater Flow Direction

The water levels at monitoring wells were recorded during monitoring events. During the April 2022 annual assessment monitoring event, well MW-15 was observed as damaged during the event. The well was repaired and sampled during the next semi-annual event in October 2022. In both 2022 assessment monitoring events, wells MW-7, MW-8, and MW-9 were dry. These observations indicate that the water in the former ash impoundments was causing some groundwater mounding beneath the ponds and controlling water levels in the monitoring wells surrounding the ponds. The monitoring wells are completed at the bottom of the alluvial aquifer, which is underlain by the low permeability claystone deposits of the Denver Formation. The Denver Formation is over 70 feet thick in this area and inhibits vertical downward flow to the deeper, regional Arapahoe Aquifer (CDH 1993; GeoTrans, Inc. 2009). Drilling wells deeper in the location of these dry downgradient wells would result in wells completed in the claystone confining unit and no longer in the upper aquifer and is therefore not recommended.

The contour maps in **Appendix A** reflect water level data from October 2022 and is consistent with the water level data from April 2022. Groundwater flow under the ash ponds is to the southeast. The water levels and contour maps (**Appendix A**) confirm that monitoring well MW-13 is located upgradient of the ash ponds and remains appropriate to represent background water quality for the West, Center, and East ash impoundments. The MW-7 well location on the

west side of the West Impoundment is hydraulically upgradient of the impoundments; however, the monitoring performed to date has identified that the ponds may have influenced water quality at well MW-7; therefore, the MW-7 well is not representative of background water.

After closure of the three ash impoundments, the combined footprint of the impoundments has been used for the construction of a large lined non-CCR waste impoundment. The lack of water in MW-7 during the latter half of 2021 and both 2022 sampling events coincides with the construction and completion of the lined impoundment which further supports the earlier theory of MW-7 being potentially impacted by historical ash impoundment mounding.

The water levels and contour maps (**Appendix A**) confirm that monitoring well MW-14 is located upgradient of the CTRP and remains appropriate to represent background water quality for the CTRP. Groundwater flow under the CTRP is to the east. Therefore, the selected downgradient wells are appropriately located to monitor the CCR impoundments.

4.2 Water Quality

4.2.1 West, Center, and East Ash Impoundments

As stipulated in the CCR Rule, eight rounds of background groundwater sampling and detection monitoring were completed before October 17, 2017 for the former West, Center, and East ash impoundments. The background sampling was described in detail in the *Background Water Quality Statistical Certification* (HDR 2020). The first detection monitoring event was conducted on September 12-14, 2017. In the January 15, 2018 PSCo memorandum, *Determination of Statistically Significant Increases over Background per 257.93(h)(2)*, concentrations of Appendix III COIs from downgradient monitoring well MW-10 (MW-7, MW-8, and MW-9 were dry) was compared against the BTVs and several COIs were shown to have SSIs over BTVs (upper prediction limit). These SSIs triggered the assessment monitoring program for the impoundments.

In accordance with CCR Rule 257.95(h), Groundwater Protection Standards (GPS) were established for each detected Appendix IV COI and documented in the October 10, 2018 memorandum *Groundwater Protection Standards and Determination of no SSIs per 257.95(g)*. For each detected COI, **Table 4** lists the EPA established MCL from 40 CFR 141.62 and 141.66, the BTV (upper tolerance level) for the Cherokee ash impoundments, and the GPS.

Table 4. Groundwater Protection Standards for Detected Appendix IV COIs for the Ash Impoundments 257.95(d)(3)				
Constituent	Unit	MCL	Background Value (UTL)	GPS
Antimony	mg/l	0.00600	0.000570	0.00600
Arsenic	mg/l	0.0100	0.00135	0.0100
Barium	mg/l	2.00	0.136	2.00
Cadmium	mg/l	0.00500	0.000310	0.00500
Chromium, Total	mg/l	0.100	0.0118	0.100
Cobalt	mg/l	0.00600	0.000970	0.00600

Table 4. Groundwater Protection Standards for Detected Appendix IV COIs for the Ash Impoundments 257.95(d)(3)

Constituent	Unit	MCL	Background Value (UTL)	GPS
Fluoride	mg/l	4.00	1.20	4.00
Lead	mg/l	0.0150	0.00130	0.0150
Lithium	mg/l	0.0400	0.159	0.159
Mercury	mg/l	0.00200	0.0000270	0.00200
Molybdenum	mg/l	0.100	0.00473	0.100
Radium-226-228	pci/l	5.0^	1.23	5.0
Selenium	pci/l	0.0500	0.0109	0.0500

*EPA adopted health-based value in place of MCL.

^Colorado Water Quality Regulation

Closure of the former West, Center, and East ash impoundments was completed in December 2018 through removal of CCR per 257.102(e)(i). The CCR material has been removed from the former impoundments, and concentrations of CCR constituents are expected to decrease through natural attenuation. All groundwater monitoring at the impoundments occurring after December 2018 reflects new conditions (post-closure) after the CCR waste was removed. In 2022, PSCo continued to monitor groundwater in accordance with the assessment monitoring program and consistent with 257.93(e) to evaluate whether clean closure criteria in groundwater have been met. Assessment monitoring samples were collected and analyzed for all Appendix III and Appendix IV COIs in April and October 2022. Laboratory reports for the 2022 assessment monitoring events are provided in **Appendix B**.

After the April 2022 annual assessment monitoring event, in accordance with CCR Rule 257.95(e), downgradient well concentrations were compared against background values, and some concentrations were found to be above background values. In accordance with CCR Rule 257.95(f), detected Appendix IV COI concentrations in downgradient wells were compared against GPS and lithium was found to be greater than the GPS for this event with a concentration of 0.19 mg/L in MW-10 and a GPS of 0.159 mg/L. Therefore, in accordance with CCR Rule 257.95(g), the downgradient well data from April 2022 was statistically evaluated to calculate lower confidence limits (LCLs) and compared to GPS. No concentrations were found to be at statistically significant levels (SSLs) above the GPS. Therefore, in accordance with CCR Rule 257.95(f), the CCR unit continues in assessment monitoring.

After the October 2022 semi-annual assessment monitoring event and in accordance with CCR Rule 257.95(e), downgradient well concentrations were compared against background values, and some concentrations were found to be above background values. In accordance with CCR Rule 257.95(f), detected Appendix IV COI concentrations in downgradient wells were compared against GPS and cobalt was found to be greater than the GPS for this event with a concentration of 0.0061 mg/L in MW-10 and a GPS of 0.006 mg/L. Therefore, in accordance with CCR Rule 257.95(g), the downgradient well data from October 2022 was statistically evaluated to calculate LCLs and compared to GPS. No concentrations were found to be at

SSLs above the GPS. Therefore, in accordance with CCR Rule 257.95(f), the CCR unit continues in assessment monitoring.

The statistical analysis for the 2022 sampling events is provided in **Appendix C**. In 2023 PSCo will continue to sample and evaluate assessment monitoring data in accordance with CCR Rule 257.95.

4.2.2 Cooling Tower Retention Pond

Removal of CCR and all areas affected by releases of CCR at the CTRP was completed in March 2017. The CCR material has been completely removed from the pond. Therefore, it is important to note that all groundwater monitoring occurring after March 2017 at the CTRP reflect post-CCR removal conditions.

The first detection monitoring event was conducted on February 11, 2019. Detection monitoring verification samples were also collected on April 9, May 7, and June 3, 2019. In the June 13, 2019 PSCo memorandum, *Determination of Statistically Significant Increases over Background per 257.93(h)(2)*, concentrations of Appendix III COIs from downgradient monitoring wells at the former CTRP were compared against the BTVs and several were shown to have SSLs over BTVs. These SSLs triggered the assessment monitoring program for the former CTRP.

The initial assessment monitoring event was completed July 22-23, 2019, to sample all the CTRP certified monitoring network wells for Appendix IV constituents. On October 22, 2019, the first semi-annual assessment monitoring samples were collected from all wells in the CTRP well network (MW-14, MW-15, MW-16, and MW-17); however, MW-15 was dry.

In accordance with CCR Rule 257.95(h), GPS were established for each detected Appendix IV COI and documented in the June 13, 2019, memorandum *Groundwater Protection Standards and Determination of no SSLs per 257.95(g)*. For each detected COI, **Table 5** lists the EPA established MCL from 40 CFR 141.62 and 141.66, the BTV (upper tolerance level) for the Cherokee CTRP, and the GPS.

Table 5. Groundwater Protection Standards for Detected Appendix IV COIs for the CTRP 257.95(d)(3)				
Constituent	Unit	MCL	Background Value (UTL)	GPS
Antimony	mg/l	0.00600	0.00089	0.00600
Arsenic	mg/l	0.0100	0.0031	0.0100
Barium	mg/l	2.00	0.260	2.00
Cadmium	mg/l	0.00500	0.00048	0.00500
Chromium, Total	mg/l	0.100	0.0340	0.100
Cobalt	mg/l	0.00600	0.0110	0.0110
Fluoride	mg/l	4.00	4.08	4.08
Lead	mg/l	0.0150	0.0140	0.0150
Lithium	mg/l	0.0400	0.0940	0.0940
Molybdenum	mg/l	0.100	0.0720	0.100
Radium-226-228	pci/l	5.0^	1.34	5.0

Table 5. Groundwater Protection Standards for Detected Appendix IV COIs for the CTRP 257.95(d)(3)				
Constituent	Unit	MCL	Background Value (UTL)	GPS
Selenium	pci/l	0.0500	0.0110	0.0500
Thallium	mg/l	0.0020	0.000540	0.0020

*EPA adopted health-based value in place of MCL.

^Colorado Water Quality Regulation

Assessment monitoring continued in 2020 and 2021 as described in the 2020 and 2021 Annual Monitoring Report. Annual and semi-annual assessment monitoring samples were collected from the former CTRP monitoring wells (MW-14, MW-15, MW-16, and MW-17) in April and October of 2022 (MW-15 was observed as damaged during the April 2022 event). MW-15 was repaired and sampled during the next semi-annual event in October 2022. Samples were analyzed for Appendix III and detected Appendix IV COIs plus TSS. Laboratory reports are provided in **Appendix B**. Statistics were completed after each assessment monitoring sample event. After the April 2022 assessment monitoring event, in accordance with CCR Rule 257.95(e), downgradient well concentrations were compared against background values, and some concentrations were found to be above background values. In accordance with CCR Rule 257.95(f), detected Appendix IV COI concentrations in downgradient wells were compared against GPS and no concentrations were found to be greater than the GPS. Therefore, in accordance with CCR Rule 257.95(g), the CCR unit continued in assessment monitoring.

After the October 2022 assessment monitoring event, in accordance with CCR Rule 257.95(e), downgradient well concentrations were compared against background values, and some concentrations were found to be above background values. In accordance with CCR Rule 257.95(f), detected Appendix IV COI concentrations in downgradient wells were compared against GPS and lithium was found to be greater than the GPS for this event with a concentration of 0.21 mg/L in MW-15 and a GPS of 0.094 mg/L. Therefore, in accordance with CCR Rule 257.95(g), the downgradient well data from October 2022 was statistically evaluated to calculate LCLs and compared to GPS. No concentrations were found to be at SSLs above the GPS. Therefore, in accordance with CCR Rule 257.95(f), the CCR unit continues in assessment monitoring.

5.0 Summary

The following observations are based on CCR Rule compliance monitoring data collected during the 2022 and prior sample events:

(Closed) West, Center, and East Ash Impoundments

- CCR waste was removed from the three ash impoundments by December 2018. Groundwater monitoring continues to evaluate the post-closure groundwater quality.
- The certified well network wells for the ash impoundments were sampled April 19-20, 2022, for annual assessment monitoring for Appendix III and IV COIs (MW-7, MW-8, and MW-9 were dry). Concentrations of some Appendix III COIs remained above BTVs.

Concentrations of lithium in MW-10 was observed above the GPS, but not a statistical exceedance.

- The certified well network wells for the impoundments were sampled October 25, 2022, for semiannual assessment monitoring for Appendix III and IV COIs (MW-7, MW-8, and MW-9 were dry). Concentrations of some Appendix III COIs remained above BTVs. Concentrations of cobalt in MW-10 were observed above the GPS, but not a statistical exceedance.
- Cherokee Station Ash Impoundments status at the end of 2022 is assessment monitoring. Assessment monitoring will continue in 2023 while continuing to evaluate whether clean closure criteria in groundwater have been met.

(Closed) Cooling Tower Retention Pond

- CCR waste was removed from the CTRP by March 30, 2017. Groundwater monitoring continues to evaluate the post-closure groundwater quality.
- The certified well network for the CTRP was sampled April 19-20, 2022, for annual assessment monitoring for Appendix III and IV COIs (MW-15 was damaged). Concentrations of some Appendix III COIs exceeded BTVs. No concentrations were observed above the GPS.
- The certified well network for the CTRP was sampled October 25-26, 2022, for semiannual assessment monitoring for Appendix III and IV COIs. Some concentrations were found to be above background values. Concentrations of some Appendix III COIs exceeded BTVs. Concentrations of lithium in MW-15 were observed above the GPS, but not a statistical exceedance.
- Cherokee Station CTRP status at the end of 2022 is in assessment monitoring; however, because the pond has been closed all monitoring reflects post-CCR removal. Assessment monitoring will continue to evaluate whether clean closure criteria in groundwater have been met.

6.0 References

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GeoTrans, Inc., 2009. Letter to Christine Johnston, Xcel Energy. Groundwater/Surface-Ponds Data Evaluation, Cherokee Station, Denver, Colorado. March 2009.

HDR, 2019. Groundwater Monitoring System Certification - Compliance with the Coal Combustion Residuals Rule Cherokee Station. April 26, 2016.

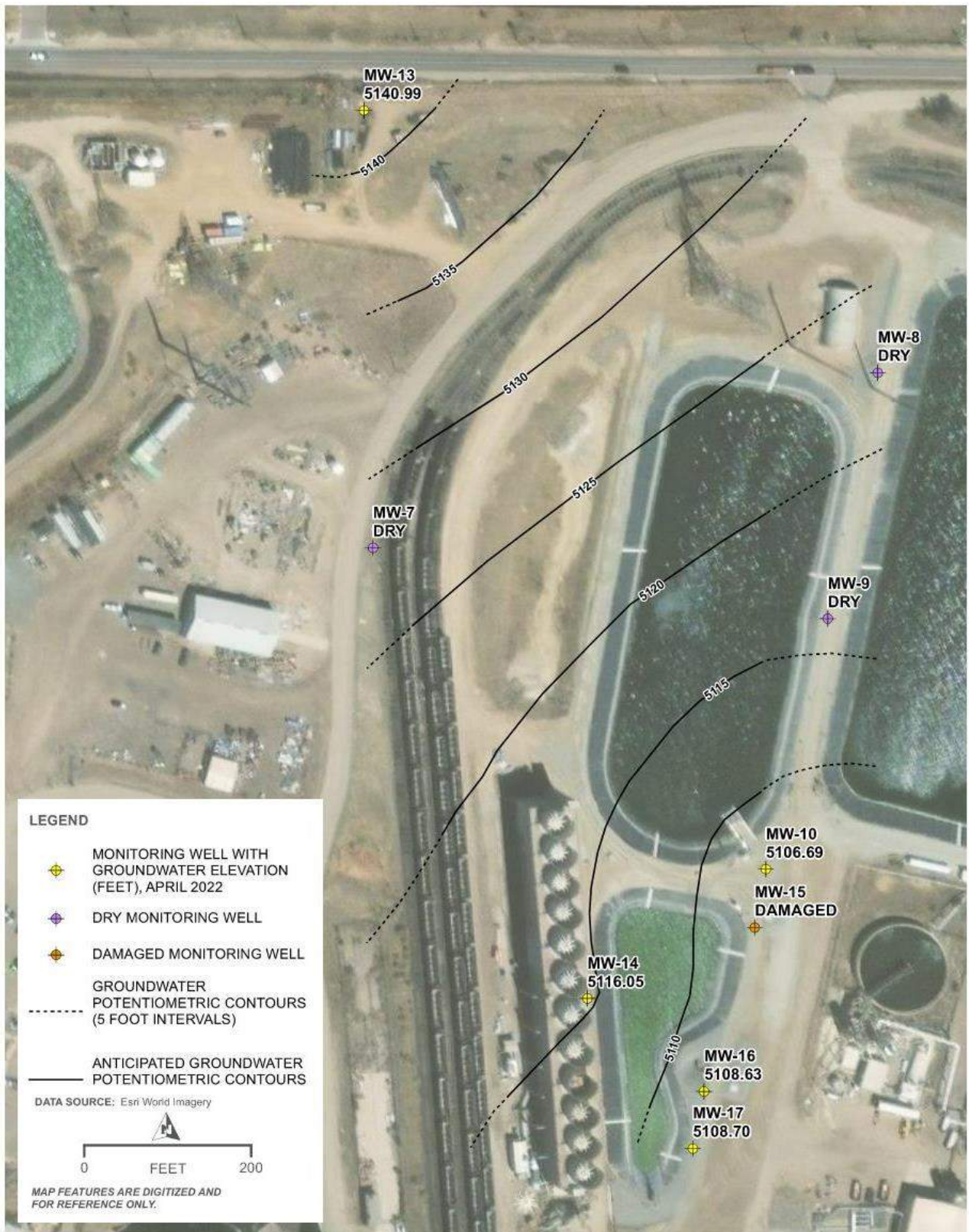
HDR, 2019. Data Management and Statistical Procedures Plan for Compliance with the Coal Combustion Residuals Rule. Updated July 19, 2019.

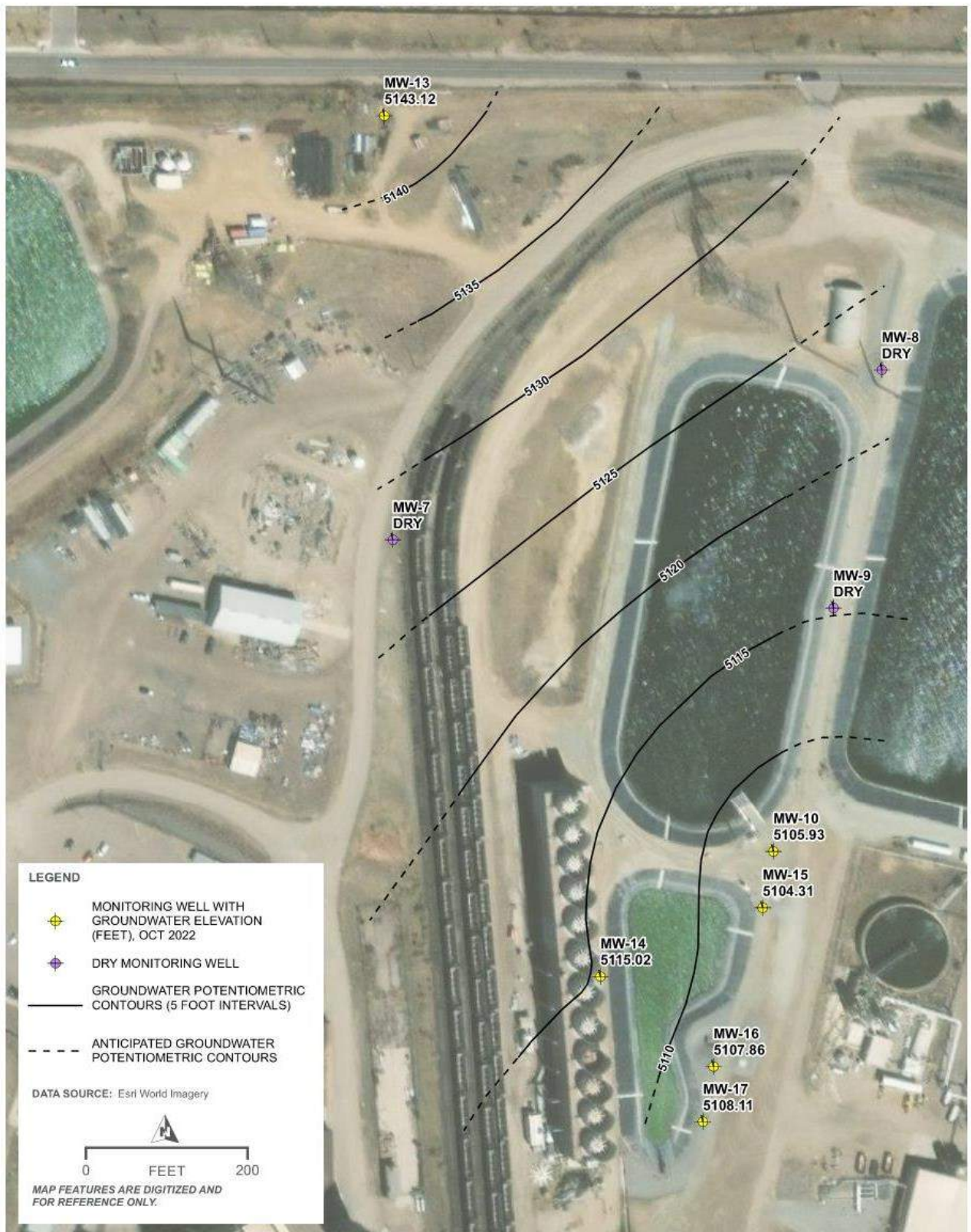
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Tetra Tech, 2013. Inventory and Preliminary Classification Report, Waste Impoundments, Cherokee Station, Denver, Colorado. March 29, 2013.

Appendix A

Potentiometric Surface Maps





CHEROKEE POWER STATION
ADAMS COUNTY, CO

Appendix B

Laboratory Reports & Data Validation

ANALYTICAL REPORT

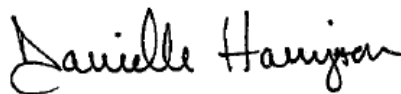
Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-161282-1

Client Project/Site: Xcel Energy GW CCR Monitoring -
Cherokee

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

Attn: Molly Reeves



Authorized for release by:
5/31/2022 2:13:55 PM

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

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

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

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F3	Duplicate RPD exceeds the control limit
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

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

Glossary

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

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Job ID: 280-161282-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Cherokee

Report Number: 280-161282-1

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

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

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

RECEIPT

The samples were received on 04/20/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt were 2.6°C, 5.3°C, 10.3°C and 13.0°C, which is above the EPA's recommended temperature of 6°C.

Receipt Exceptions

The following samples were received at the laboratory outside the required temperature criteria: MW-10 (280-161282-1), MW-10D (280-161282-2), MW-13 (280-161282-3), MW-13EB (280-161282-4), MW-14 (280-161282-5), MW-16 (280-161282-6) and MW-17 (280-161282-7). The sample(s) is considered acceptable since it was collected and submitted to the laboratory on the same day and there is evidence that the chilling process has begun.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): MW-14 (280-161282-5). 1 of 6 500 ml poly unpreserved have no sample time and date. Logged per COC.

1 of 4 500 ml poly unpreserved filled to 350 ml for sample MW-13EB (280-161282-4). There is sufficient volume for request analyses.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): MW-13EB (280-161282-4). Container label read sample time 1120. COC reads 1130. Logged per COC.

TOTAL RECOVERABLE METALS- Method 6010C/6020A

Due to sample matrix effect on the internal standard (ISTD), samples MW-10 (280-161282-1) and MW-10D (280-161282-2) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The accuracy and precision of the Calcium and Sodium MS/MSD performed on a sample MW-10 could not be reliably evaluated, as the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

MS/MSD analyses were performed on sample MW-10. The MS/MSD for Thallium method 6020A exhibited spike compound recoveries outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Job ID: 280-161282-1 (Continued)

Laboratory: Eurofins Denver (Continued)

TOTAL MERCURY

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

GENERAL CHEMISTRY - VARIOUS

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

Alkalinity and Bicarbonate Alkalinity as CaCO₃ were detected in method blank MB 280-573241/32 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. Because the concentration in the method blank is not present at a level greater than the reporting limit, corrective action is deemed unnecessary.

Alkalinity and Bicarbonate Alkalinity as CaCO₃ was detected in method blank MB 280-573241/6 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. Because the concentration in the method blank is not present at a level greater than the reporting limit, corrective action is deemed unnecessary.

The Total Suspended Solids sample duplicate analysis data associated with QC batch 280-572637 exhibited RPD data outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

The Total Dissolved Solids sample duplicate analysis data performed on sample MW-14 exhibited RPD data outside the QC limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

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

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

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

RADIUM-226 (GFPC)- METHOD 9315

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

RADIUM-228- METHOD 9320

Method 9320_Ra228: Radium-228 prep batch 160-562026: The following sample(s) exhibited a negative result greater in magnitude than the 3 sigma TPU. This occurrence was evaluated and determined to be random in nature. Sporadic occurrences such as this are statistically expected. No further action is required. MW-10 (280-161282-1) and MW-10D (280-161282-2)

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

RADIUM-226/RADIUM-228 (GFPC)

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Client Sample ID: MW-10

Lab Sample ID: 280-161282-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.5		0.20	0.056	mg/L	1		6010C	Total
									Recoverable
Antimony	0.0031	J	0.0080	0.0028	mg/L	4		6020A	Total
									Recoverable
Arsenic	0.0042	J	0.0080	0.0030	mg/L	4		6020A	Total
									Recoverable
Barium	0.031		0.0080	0.0035	mg/L	4		6020A	Total
									Recoverable
Cadmium	0.0014		0.00040	0.00022	mg/L	4		6020A	Total
									Recoverable
Calcium	160		2.0	0.76	mg/L	4		6020A	Total
									Recoverable
Cobalt	0.0021		0.0020	0.00076	mg/L	4		6020A	Total
									Recoverable
Lead	0.0013	J	0.0020	0.00096	mg/L	4		6020A	Total
									Recoverable
Lithium	0.19		0.040	0.010	mg/L	4		6020A	Total
									Recoverable
Molybdenum	0.033		0.0080	0.0048	mg/L	4		6020A	Total
									Recoverable
Selenium	0.018	J	0.020	0.0038	mg/L	4		6020A	Total
									Recoverable
Thallium	0.0093	F1	0.0040	0.0010	mg/L	4		6020A	Total
									Recoverable
Sodium	540		4.0	2.4	mg/L	4		6020A	Total
									Recoverable
Potassium	51		2.0	0.60	mg/L	4		6020A	Total
									Recoverable
Magnesium	39		2.0	0.60	mg/L	4		6020A	Total
									Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.5	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	470		60	20	mg/L	20		9056A	Total/NA
Fluoride	2.0		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	750		100	21	mg/L	20		9056A	Total/NA
Alkalinity	170	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	170	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	2300		20	9.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-10D

Lab Sample ID: 280-161282-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.5		0.20	0.056	mg/L	1		6010C	Total
									Recoverable
Antimony	0.0031	J	0.0080	0.0028	mg/L	4		6020A	Total
									Recoverable
Arsenic	0.0040	J	0.0080	0.0030	mg/L	4		6020A	Total
									Recoverable
Barium	0.029		0.0080	0.0035	mg/L	4		6020A	Total
									Recoverable
Cadmium	0.0015		0.00040	0.00022	mg/L	4		6020A	Total
									Recoverable
Calcium	150		2.0	0.76	mg/L	4		6020A	Total
									Recoverable
Cobalt	0.0020		0.0020	0.00076	mg/L	4		6020A	Total
									Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Client Sample ID: MW-10D (Continued)

Lab Sample ID: 280-161282-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0014	J	0.0020	0.00096	mg/L	4		6020A	Total
									Recoverable
Lithium	0.18		0.040	0.010	mg/L	4		6020A	Total
									Recoverable
Molybdenum	0.032		0.0080	0.0048	mg/L	4		6020A	Total
									Recoverable
Selenium	0.019	J	0.020	0.0038	mg/L	4		6020A	Total
									Recoverable
Thallium	0.0097		0.0040	0.0010	mg/L	4		6020A	Total
									Recoverable
Sodium	530		4.0	2.4	mg/L	4		6020A	Total
									Recoverable
Potassium	50		2.0	0.60	mg/L	4		6020A	Total
									Recoverable
Magnesium	37		2.0	0.60	mg/L	4		6020A	Total
									Recoverable
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	510		30	10	mg/L	10		9056A	Total/NA
Fluoride	2.0		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	830		50	10	mg/L	10		9056A	Total/NA
Alkalinity	170	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	170	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	2300		20	9.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-13

Lab Sample ID: 280-161282-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.44		0.20	0.056	mg/L	1		6010C	Total
									Recoverable
Barium	0.068		0.0020	0.00088	mg/L	1		6020A	Total
									Recoverable
Calcium	130		0.50	0.19	mg/L	1		6020A	Total
									Recoverable
Cobalt	0.00043	J	0.00050	0.00019	mg/L	1		6020A	Total
									Recoverable
Lithium	0.037		0.010	0.0025	mg/L	1		6020A	Total
									Recoverable
Molybdenum	0.0027		0.0020	0.0012	mg/L	1		6020A	Total
									Recoverable
Selenium	0.0038	J	0.0050	0.00096	mg/L	1		6020A	Total
									Recoverable
Sodium	150		1.0	0.61	mg/L	1		6020A	Total
									Recoverable
Potassium	2.5		0.50	0.15	mg/L	1		6020A	Total
									Recoverable
Magnesium	22		0.50	0.15	mg/L	1		6020A	Total
									Recoverable
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.6	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	170		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.1		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	170		25	5.2	mg/L	5		9056A	Total/NA
Alkalinity	290	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	290	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	860		10	4.7	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Client Sample ID: MW-13 (Continued)

Lab Sample ID: 280-161282-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	4.8		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-13EB

Lab Sample ID: 280-161282-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Alkalinity	4.5	J B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	4.5	J B	10	3.1	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-14

Lab Sample ID: 280-161282-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.88		0.20	0.056	mg/L	1		6010C	Total Recoverable
Arsenic	0.0011	J	0.0020	0.00075	mg/L	1		6020A	Total Recoverable
Barium	0.046		0.0020	0.00088	mg/L	1		6020A	Total Recoverable
Cadmium	0.00016		0.00010	0.000055	mg/L	1		6020A	Total Recoverable
Calcium	180		0.50	0.19	mg/L	1		6020A	Total Recoverable
Chromium	0.0021	J	0.0050	0.0011	mg/L	1		6020A	Total Recoverable
Cobalt	0.0010		0.00050	0.00019	mg/L	1		6020A	Total Recoverable
Lead	0.0014		0.00050	0.00024	mg/L	1		6020A	Total Recoverable
Lithium	0.074		0.010	0.0025	mg/L	1		6020A	Total Recoverable
Molybdenum	0.017		0.0020	0.0012	mg/L	1		6020A	Total Recoverable
Selenium	0.0066		0.0050	0.00096	mg/L	1		6020A	Total Recoverable
Sodium	250		1.0	0.61	mg/L	1		6020A	Total Recoverable
Potassium	11		0.50	0.15	mg/L	1		6020A	Total Recoverable
Magnesium	30		0.50	0.15	mg/L	1		6020A	Total Recoverable
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.9	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	270		60	20	mg/L	20		9056A	Total/NA
Fluoride	1.8		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	290		100	21	mg/L	20		9056A	Total/NA
Alkalinity	360	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	360	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	1500		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	130		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-16

Lab Sample ID: 280-161282-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.51		0.20	0.056	mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Client Sample ID: MW-16 (Continued)

Lab Sample ID: 280-161282-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0025		0.0020	0.00075	mg/L	1		6020A	Total
Barium	0.10		0.0020	0.00088	mg/L	1		6020A	Recoverable
Cadmium	0.00041		0.00010	0.000055	mg/L	1		6020A	Total
Calcium	220		0.50	0.19	mg/L	1		6020A	Recoverable
Cobalt	0.00033	J	0.00050	0.00019	mg/L	1		6020A	Total
Lithium	0.079		0.010	0.0025	mg/L	1		6020A	Recoverable
Molybdenum	0.011		0.0020	0.0012	mg/L	1		6020A	Total
Selenium	0.0071		0.0050	0.00096	mg/L	1		6020A	Recoverable
Sodium	270		1.0	0.61	mg/L	1		6020A	Total
Potassium	30		0.50	0.15	mg/L	1		6020A	Recoverable
Magnesium	46		0.50	0.15	mg/L	1		6020A	Total
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU	1		9040B	Recoverable
Temperature	20.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	300		60	20	mg/L	20		9056A	Total/NA
Fluoride	1.8		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	500		100	21	mg/L	20		9056A	Total/NA
Alkalinity	190	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	190	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	1700		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	8.0		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-17

Lab Sample ID: 280-161282-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.60		0.20	0.056	mg/L	1		6010C	Total
Arsenic	0.0032		0.0020	0.00075	mg/L	1		6020A	Recoverable
Barium	0.046		0.0020	0.00088	mg/L	1		6020A	Total
Cadmium	0.0014		0.00010	0.000055	mg/L	1		6020A	Recoverable
Calcium	90		0.50	0.19	mg/L	1		6020A	Total
Lithium	0.030		0.010	0.0025	mg/L	1		6020A	Recoverable
Molybdenum	0.0086		0.0020	0.0012	mg/L	1		6020A	Total
Selenium	0.0062		0.0050	0.00096	mg/L	1		6020A	Recoverable
Sodium	120		1.0	0.61	mg/L	1		6020A	Total
Potassium	5.9		0.50	0.15	mg/L	1		6020A	Recoverable
Magnesium	13		0.50	0.15	mg/L	1		6020A	Total

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Client Sample ID: MW-17 (Continued)

Lab Sample ID: 280-161282-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH adj. to 25 deg C	7.0	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	20.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	120		3.0	1.0	mg/L	1		9056A	Total/NA
Fluoride	1.7		0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	180		50	10	mg/L	10		9056A	Total/NA
Alkalinity	140	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	140	B	10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	690		10	4.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	1.6	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
7470A	Mercury (CVAA)	SW846	TAL CF
9040B	pH	SW846	TAL DEN
9056A	Anions, Ion Chromatography	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CF
7470A	Preparation, Mercury	SW846	TAL CF
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

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

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

Laboratory References:

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

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

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

Sample Summary

Client: HDR Inc

Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-161282-1	MW-10	Water	04/19/22 14:10	04/20/22 16:07
280-161282-2	MW-10D	Water	04/19/22 14:10	04/20/22 16:07
280-161282-3	MW-13	Water	04/20/22 10:00	04/20/22 16:07
280-161282-4	MW-13EB	Water	04/20/22 11:30	04/20/22 16:07
280-161282-5	MW-14	Water	04/20/22 10:30	04/20/22 16:07
280-161282-6	MW-16	Water	04/19/22 16:20	04/20/22 16:07
280-161282-7	MW-17	Water	04/19/22 16:10	04/20/22 16:07

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

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

Client Sample ID: MW-10
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.5		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 10:56	1

Client Sample ID: MW-10D
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.5		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:10	1

Client Sample ID: MW-13
Date Collected: 04/20/22 10:00
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.44		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:12	1

Client Sample ID: MW-13EB
Date Collected: 04/20/22 11:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:14	1

Client Sample ID: MW-14
Date Collected: 04/20/22 10:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.88		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:16	1

Client Sample ID: MW-16
Date Collected: 04/19/22 16:20
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.51		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:18	1

Client Sample ID: MW-17
Date Collected: 04/19/22 16:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.60		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 11:19	1

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

Client Sample ID: MW-10
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0031	J	0.0080	0.0028	mg/L		05/17/22 09:00	05/25/22 00:08	4
Arsenic	0.0042	J	0.0080	0.0030	mg/L		05/17/22 09:00	05/25/22 00:08	4
Barium	0.031		0.0080	0.0035	mg/L		05/17/22 09:00	05/25/22 00:08	4
Beryllium	ND		0.0040	0.0011	mg/L		05/17/22 09:00	05/25/22 00:08	4
Cadmium	0.0014		0.00040	0.00022	mg/L		05/17/22 09:00	05/25/22 00:08	4
Calcium	160		2.0	0.76	mg/L		05/17/22 09:00	05/25/22 00:08	4
Chromium	ND		0.020	0.0044	mg/L		05/17/22 09:00	05/25/22 00:08	4

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

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

Client Sample ID: MW-10
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0021		0.0020	0.00076	mg/L		05/17/22 09:00	05/25/22 00:08	4
Lead	0.0013	J	0.0020	0.00096	mg/L		05/17/22 09:00	05/25/22 00:08	4
Lithium	0.19		0.040	0.010	mg/L		05/17/22 09:00	05/25/22 00:08	4
Molybdenum	0.033		0.0080	0.0048	mg/L		05/17/22 09:00	05/25/22 00:08	4
Selenium	0.018	J	0.020	0.0038	mg/L		05/17/22 09:00	05/25/22 00:08	4
Thallium	0.0093	F1	0.0040	0.0010	mg/L		05/17/22 09:00	05/25/22 00:08	4
Sodium	540		4.0	2.4	mg/L		05/17/22 09:00	05/25/22 00:08	4
Potassium	51		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 00:08	4
Magnesium	39		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 00:08	4

Client Sample ID: MW-10D
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0031	J	0.0080	0.0028	mg/L		05/17/22 09:00	05/25/22 00:18	4
Arsenic	0.0040	J	0.0080	0.0030	mg/L		05/17/22 09:00	05/25/22 00:18	4
Barium	0.029		0.0080	0.0035	mg/L		05/17/22 09:00	05/25/22 00:18	4
Beryllium	ND		0.0040	0.0011	mg/L		05/17/22 09:00	05/25/22 00:18	4
Cadmium	0.0015		0.00040	0.00022	mg/L		05/17/22 09:00	05/25/22 00:18	4
Calcium	150		2.0	0.76	mg/L		05/17/22 09:00	05/25/22 00:18	4
Chromium	ND		0.020	0.0044	mg/L		05/17/22 09:00	05/25/22 00:18	4
Cobalt	0.0020		0.0020	0.00076	mg/L		05/17/22 09:00	05/25/22 00:18	4
Lead	0.0014	J	0.0020	0.00096	mg/L		05/17/22 09:00	05/25/22 00:18	4
Lithium	0.18		0.040	0.010	mg/L		05/17/22 09:00	05/25/22 00:18	4
Molybdenum	0.032		0.0080	0.0048	mg/L		05/17/22 09:00	05/25/22 00:18	4
Selenium	0.019	J	0.020	0.0038	mg/L		05/17/22 09:00	05/25/22 00:18	4
Thallium	0.0097		0.0040	0.0010	mg/L		05/17/22 09:00	05/25/22 00:18	4
Sodium	530		4.0	2.4	mg/L		05/17/22 09:00	05/25/22 00:18	4
Potassium	50		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 00:18	4
Magnesium	37		2.0	0.60	mg/L		05/17/22 09:00	05/25/22 00:18	4

Client Sample ID: MW-13
Date Collected: 04/20/22 10:00
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/17/22 09:00	05/25/22 00:21	1
Arsenic	ND		0.0020	0.00075	mg/L		05/17/22 09:00	05/25/22 00:21	1
Barium	0.068		0.0020	0.00088	mg/L		05/17/22 09:00	05/25/22 00:21	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:00	05/25/22 00:21	1
Cadmium	ND		0.00010	0.000055	mg/L		05/17/22 09:00	05/25/22 00:21	1
Calcium	130		0.50	0.19	mg/L		05/17/22 09:00	05/25/22 00:21	1
Chromium	ND		0.0050	0.0011	mg/L		05/17/22 09:00	05/25/22 00:21	1
Cobalt	0.00043	J	0.00050	0.00019	mg/L		05/17/22 09:00	05/25/22 00:21	1
Lead	ND		0.00050	0.00024	mg/L		05/17/22 09:00	05/25/22 00:21	1
Lithium	0.037		0.010	0.0025	mg/L		05/17/22 09:00	05/25/22 00:21	1
Molybdenum	0.0027		0.0020	0.0012	mg/L		05/17/22 09:00	05/25/22 00:21	1
Selenium	0.0038	J	0.0050	0.00096	mg/L		05/17/22 09:00	05/25/22 00:21	1
Thallium	ND		0.0010	0.00026	mg/L		05/17/22 09:00	05/25/22 00:21	1
Sodium	150		1.0	0.61	mg/L		05/17/22 09:00	05/25/22 00:21	1
Potassium	2.5		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:21	1

Eurofins Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

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

Client Sample ID: MW-13
Date Collected: 04/20/22 10:00
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	22		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:21	1

Client Sample ID: MW-13EB
Date Collected: 04/20/22 11:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/17/22 09:00	05/25/22 00:37	1
Arsenic	ND		0.0020	0.00075	mg/L		05/17/22 09:00	05/25/22 00:37	1
Barium	ND		0.0020	0.00088	mg/L		05/17/22 09:00	05/25/22 00:37	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:00	05/25/22 00:37	1
Cadmium	ND		0.00010	0.000055	mg/L		05/17/22 09:00	05/25/22 00:37	1
Calcium	ND		0.50	0.19	mg/L		05/17/22 09:00	05/25/22 00:37	1
Chromium	ND		0.0050	0.0011	mg/L		05/17/22 09:00	05/25/22 00:37	1
Cobalt	ND		0.00050	0.00019	mg/L		05/17/22 09:00	05/25/22 00:37	1
Lead	ND		0.00050	0.00024	mg/L		05/17/22 09:00	05/25/22 00:37	1
Lithium	ND		0.010	0.0025	mg/L		05/17/22 09:00	05/25/22 00:37	1
Molybdenum	ND		0.0020	0.0012	mg/L		05/17/22 09:00	05/25/22 00:37	1
Selenium	ND		0.0050	0.00096	mg/L		05/17/22 09:00	05/25/22 00:37	1
Thallium	ND		0.0010	0.00026	mg/L		05/17/22 09:00	05/25/22 00:37	1
Sodium	ND		1.0	0.61	mg/L		05/17/22 09:00	05/25/22 00:37	1
Potassium	ND		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:37	1
Magnesium	ND		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:37	1

Client Sample ID: MW-14
Date Collected: 04/20/22 10:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/17/22 09:00	05/25/22 00:41	1
Arsenic	0.0011	J	0.0020	0.00075	mg/L		05/17/22 09:00	05/25/22 00:41	1
Barium	0.046		0.0020	0.00088	mg/L		05/17/22 09:00	05/25/22 00:41	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:00	05/25/22 00:41	1
Cadmium	0.00016		0.00010	0.000055	mg/L		05/17/22 09:00	05/25/22 00:41	1
Calcium	180		0.50	0.19	mg/L		05/17/22 09:00	05/25/22 00:41	1
Chromium	0.0021	J	0.0050	0.0011	mg/L		05/17/22 09:00	05/25/22 00:41	1
Cobalt	0.0010		0.00050	0.00019	mg/L		05/17/22 09:00	05/25/22 00:41	1
Lead	0.0014		0.00050	0.00024	mg/L		05/17/22 09:00	05/25/22 00:41	1
Lithium	0.074		0.010	0.0025	mg/L		05/17/22 09:00	05/25/22 00:41	1
Molybdenum	0.017		0.0020	0.0012	mg/L		05/17/22 09:00	05/25/22 00:41	1
Selenium	0.0066		0.0050	0.00096	mg/L		05/17/22 09:00	05/25/22 00:41	1
Thallium	ND		0.0010	0.00026	mg/L		05/17/22 09:00	05/25/22 00:41	1
Sodium	250		1.0	0.61	mg/L		05/17/22 09:00	05/25/22 00:41	1
Potassium	11		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:41	1
Magnesium	30		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:41	1

Client Sample ID: MW-16
Date Collected: 04/19/22 16:20
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/17/22 09:00	05/25/22 00:44	1
Arsenic	0.0025		0.0020	0.00075	mg/L		05/17/22 09:00	05/25/22 00:44	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

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

Client Sample ID: MW-16
Date Collected: 04/19/22 16:20
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.10		0.0020	0.00088	mg/L		05/17/22 09:00	05/25/22 00:44	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:00	05/25/22 00:44	1
Cadmium	0.00041		0.00010	0.000055	mg/L		05/17/22 09:00	05/25/22 00:44	1
Calcium	220		0.50	0.19	mg/L		05/17/22 09:00	05/25/22 00:44	1
Chromium	ND		0.0050	0.0011	mg/L		05/17/22 09:00	05/25/22 00:44	1
Cobalt	0.00033	J	0.00050	0.00019	mg/L		05/17/22 09:00	05/25/22 00:44	1
Lead	ND		0.00050	0.00024	mg/L		05/17/22 09:00	05/25/22 00:44	1
Lithium	0.079		0.010	0.0025	mg/L		05/17/22 09:00	05/25/22 00:44	1
Molybdenum	0.011		0.0020	0.0012	mg/L		05/17/22 09:00	05/25/22 00:44	1
Selenium	0.0071		0.0050	0.00096	mg/L		05/17/22 09:00	05/25/22 00:44	1
Thallium	ND		0.0010	0.00026	mg/L		05/17/22 09:00	05/25/22 00:44	1
Sodium	270		1.0	0.61	mg/L		05/17/22 09:00	05/25/22 00:44	1
Potassium	30		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:44	1
Magnesium	46		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:44	1

Client Sample ID: MW-17
Date Collected: 04/19/22 16:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00069	mg/L		05/17/22 09:00	05/25/22 00:47	1
Arsenic	0.0032		0.0020	0.00075	mg/L		05/17/22 09:00	05/25/22 00:47	1
Barium	0.046		0.0020	0.00088	mg/L		05/17/22 09:00	05/25/22 00:47	1
Beryllium	ND		0.0010	0.00027	mg/L		05/17/22 09:00	05/25/22 00:47	1
Cadmium	0.0014		0.00010	0.000055	mg/L		05/17/22 09:00	05/25/22 00:47	1
Calcium	90		0.50	0.19	mg/L		05/17/22 09:00	05/25/22 00:47	1
Chromium	ND		0.0050	0.0011	mg/L		05/17/22 09:00	05/25/22 00:47	1
Cobalt	ND		0.00050	0.00019	mg/L		05/17/22 09:00	05/25/22 00:47	1
Lead	ND		0.00050	0.00024	mg/L		05/17/22 09:00	05/25/22 00:47	1
Lithium	0.030		0.010	0.0025	mg/L		05/17/22 09:00	05/25/22 00:47	1
Molybdenum	0.0086		0.0020	0.0012	mg/L		05/17/22 09:00	05/25/22 00:47	1
Selenium	0.0062		0.0050	0.00096	mg/L		05/17/22 09:00	05/25/22 00:47	1
Thallium	ND		0.0010	0.00026	mg/L		05/17/22 09:00	05/25/22 00:47	1
Sodium	120		1.0	0.61	mg/L		05/17/22 09:00	05/25/22 00:47	1
Potassium	5.9		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:47	1
Magnesium	13		0.50	0.15	mg/L		05/17/22 09:00	05/25/22 00:47	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-10
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/16/22 14:29	05/17/22 14:17	1

Client Sample ID: MW-10D
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/16/22 14:29	05/17/22 14:19	1

Eurofins Denver

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Method: 7470A - Mercury (CVAA)

Client Sample ID: MW-13
Date Collected: 04/20/22 10:00
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/16/22 14:29	05/17/22 14:21	1

Client Sample ID: MW-13EB
Date Collected: 04/20/22 11:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/16/22 14:29	05/17/22 14:23	1

Client Sample ID: MW-14
Date Collected: 04/20/22 10:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/16/22 14:29	05/17/22 14:30	1

Client Sample ID: MW-16
Date Collected: 04/19/22 16:20
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/16/22 14:29	05/17/22 14:32	1

Client Sample ID: MW-17
Date Collected: 04/19/22 16:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/16/22 14:29	05/17/22 14:34	1

General Chemistry

Client Sample ID: MW-10
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU			05/09/22 18:44	1
Temperature	20.5	HF	1.0	1.0	Degrees C			05/09/22 18:44	1
Chloride	470		60	20	mg/L			05/13/22 21:22	20
Fluoride	2.0		0.50	0.17	mg/L			05/13/22 21:06	1
Sulfate	750		100	21	mg/L			05/13/22 21:22	20
Alkalinity	170	B	10	3.1	mg/L			04/27/22 15:37	1
Bicarbonate Alkalinity as CaCO3	170	B	10	3.1	mg/L			04/27/22 15:37	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			04/27/22 15:37	1
Total Dissolved Solids (TDS)	2300		20	9.4	mg/L			04/21/22 14:53	1
Total Suspended Solids	ND		4.0	1.1	mg/L			04/21/22 09:49	1

Client Sample ID: MW-10D
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.0	HF	0.1	0.1	SU			05/09/22 18:48	1
Temperature	20.9	HF	1.0	1.0	Degrees C			05/09/22 18:48	1
Chloride	510		30	10	mg/L			05/13/22 20:18	10
Fluoride	2.0		0.50	0.17	mg/L			05/13/22 20:02	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

General Chemistry (Continued)

Client Sample ID: MW-10D
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	830		50	10	mg/L			05/13/22 20:18	10
Alkalinity	170	B	10	3.1	mg/L			04/27/22 15:44	1
Bicarbonate Alkalinity as CaCO3	170	B	10	3.1	mg/L			04/27/22 15:44	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			04/27/22 15:44	1
Total Dissolved Solids (TDS)	2300		20	9.4	mg/L			04/21/22 14:53	1
Total Suspended Solids	ND		4.0	1.1	mg/L			04/21/22 09:49	1

Client Sample ID: MW-13
Date Collected: 04/20/22 10:00
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU			05/09/22 18:52	1
Temperature	21.6	HF	1.0	1.0	Degrees C			05/09/22 18:52	1
Chloride	170		3.0	1.0	mg/L			05/13/22 17:24	1
Fluoride	1.1		0.50	0.17	mg/L			05/13/22 17:24	1
Sulfate	170		25	5.2	mg/L			05/13/22 17:40	5
Alkalinity	290	B	10	3.1	mg/L			04/27/22 15:52	1
Bicarbonate Alkalinity as CaCO3	290	B	10	3.1	mg/L			04/27/22 15:52	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			04/27/22 15:52	1
Total Dissolved Solids (TDS)	860		10	4.7	mg/L			04/21/22 14:53	1
Total Suspended Solids	4.8		4.0	1.1	mg/L			04/21/22 16:53	1

Client Sample ID: MW-13EB
Date Collected: 04/20/22 11:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU			05/10/22 14:37	1
Temperature	20.3	HF	1.0	1.0	Degrees C			05/10/22 14:37	1
Chloride	ND		3.0	1.0	mg/L			05/13/22 17:08	1
Fluoride	ND		0.50	0.17	mg/L			05/13/22 17:08	1
Sulfate	ND		5.0	1.0	mg/L			05/13/22 17:08	1
Alkalinity	4.5	J B	10	3.1	mg/L			04/27/22 15:57	1
Bicarbonate Alkalinity as CaCO3	4.5	J B	10	3.1	mg/L			04/27/22 15:57	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			04/27/22 15:57	1
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			04/21/22 14:53	1
Total Suspended Solids	ND		4.0	1.1	mg/L			04/21/22 16:53	1

Client Sample ID: MW-14
Date Collected: 04/20/22 10:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			05/09/22 19:07	1
Temperature	20.9	HF	1.0	1.0	Degrees C			05/09/22 19:07	1
Chloride	270		60	20	mg/L			05/13/22 23:29	20
Fluoride	1.8		0.50	0.17	mg/L			05/13/22 23:13	1
Sulfate	290		100	21	mg/L			05/13/22 23:29	20
Alkalinity	360	B	10	3.1	mg/L			04/27/22 16:05	1
Bicarbonate Alkalinity as CaCO3	360	B	10	3.1	mg/L			04/27/22 16:05	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			04/27/22 16:05	1
Total Dissolved Solids (TDS)	1500		20	9.4	mg/L			04/26/22 11:35	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

General Chemistry (Continued)

Client Sample ID: MW-14
Date Collected: 04/20/22 10:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	130		4.0	1.1	mg/L			04/25/22 12:19	1

Client Sample ID: MW-16
Date Collected: 04/19/22 16:20
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.4	HF	0.1	0.1	SU			05/09/22 19:11	1
Temperature	20.3	HF	1.0	1.0	Degrees C			05/09/22 19:11	1
Chloride	300		60	20	mg/L			05/14/22 00:00	20
Fluoride	1.8		0.50	0.17	mg/L			05/13/22 23:44	1
Sulfate	500		100	21	mg/L			05/14/22 00:00	20
Alkalinity	190	B	10	3.1	mg/L			04/27/22 16:11	1
Bicarbonate Alkalinity as CaCO3	190	B	10	3.1	mg/L			04/27/22 16:11	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			04/27/22 16:11	1
Total Dissolved Solids (TDS)	1700		20	9.4	mg/L			04/21/22 14:53	1
Total Suspended Solids	8.0		4.0	1.1	mg/L			04/21/22 16:53	1

Client Sample ID: MW-17
Date Collected: 04/19/22 16:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	7.0	HF	0.1	0.1	SU			05/09/22 19:15	1
Temperature	20.4	HF	1.0	1.0	Degrees C			05/09/22 19:15	1
Chloride	120		3.0	1.0	mg/L			05/13/22 20:34	1
Fluoride	1.7		0.50	0.17	mg/L			05/13/22 20:34	1
Sulfate	180		50	10	mg/L			05/13/22 20:50	10
Alkalinity	140	B	10	3.1	mg/L			04/27/22 16:17	1
Bicarbonate Alkalinity as CaCO3	140	B	10	3.1	mg/L			04/27/22 16:17	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			04/27/22 16:17	1
Total Dissolved Solids (TDS)	690		10	4.7	mg/L			04/21/22 14:53	1
Total Suspended Solids	1.6	J	4.0	1.1	mg/L			04/21/22 16:53	1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-10
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0456	U	0.0715	0.0716	1.00	0.123	pCi/L	04/26/22 10:15	05/23/22 14:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					04/26/22 10:15	05/23/22 14:37	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-10D
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0759	U	0.0848	0.0850	1.00	0.138	pCi/L	04/26/22 10:15	05/23/22 14:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.7		40 - 110					04/26/22 10:15	05/23/22 14:37	1

Client Sample ID: MW-13
Date Collected: 04/20/22 10:00
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.172		0.0873	0.0887	1.00	0.109	pCi/L	04/26/22 10:15	05/23/22 14:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.6		40 - 110					04/26/22 10:15	05/23/22 14:37	1

Client Sample ID: MW-13EB
Date Collected: 04/20/22 11:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0280	U	0.0877	0.0877	1.00	0.178	pCi/L	04/26/22 10:15	05/23/22 14:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.4		40 - 110					04/26/22 10:15	05/23/22 14:37	1

Client Sample ID: MW-14
Date Collected: 04/20/22 10:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.136	U	0.114	0.115	1.00	0.173	pCi/L	04/26/22 10:15	05/23/22 16:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.7		40 - 110					04/26/22 10:15	05/23/22 16:20	1

Client Sample ID: MW-16
Date Collected: 04/19/22 16:20
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.354		0.121	0.125	1.00	0.129	pCi/L	04/26/22 10:15	05/23/22 16:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.6		40 - 110					04/26/22 10:15	05/23/22 16:20	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Method: 9315 - Radium-226 (GFPC)

Client Sample ID: MW-17
Date Collected: 04/19/22 16:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0793	U	0.0791	0.0795	1.00	0.125	pCi/L	04/26/22 10:15	05/23/22 16:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	78.6		40 - 110					04/26/22 10:15	05/23/22 16:20	1

Method: 9320 - Radium-228 (GFPC)

Client Sample ID: MW-10
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.883	U	0.0953	0.125	1.00	0.407	pCi/L	04/26/22 11:01	05/12/22 13:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					04/26/22 11:01	05/12/22 13:10	1
Y Carrier	86.0		40 - 110					04/26/22 11:01	05/12/22 13:10	1

Client Sample ID: MW-10D
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.862	U	0.0956	0.124	1.00	0.409	pCi/L	04/26/22 11:01	05/12/22 13:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.7		40 - 110					04/26/22 11:01	05/12/22 13:11	1
Y Carrier	86.4		40 - 110					04/26/22 11:01	05/12/22 13:11	1

Client Sample ID: MW-13
Date Collected: 04/20/22 10:00
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.158	U	0.259	0.259	1.00	0.436	pCi/L	04/26/22 11:01	05/12/22 13:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.6		40 - 110					04/26/22 11:01	05/12/22 13:11	1
Y Carrier	86.7		40 - 110					04/26/22 11:01	05/12/22 13:11	1

Client Sample ID: MW-13EB
Date Collected: 04/20/22 11:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.161	U	0.302	0.302	1.00	0.514	pCi/L	04/26/22 11:01	05/12/22 13:11	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Method: 9320 - Radium-228 (GFPC)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	75.4		40 - 110	04/26/22 11:01	05/12/22 13:11	1
Y Carrier	85.2		40 - 110	04/26/22 11:01	05/12/22 13:11	1

Client Sample ID: MW-14
Date Collected: 04/20/22 10:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.456	U	0.387	0.390	1.00	0.618	pCi/L	04/26/22 11:01	05/12/22 13:11	1
Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac				
Ba Carrier	85.7		40 - 110	04/26/22 11:01	05/12/22 13:11	1				
Y Carrier	84.5		40 - 110	04/26/22 11:01	05/12/22 13:11	1				

Client Sample ID: MW-16
Date Collected: 04/19/22 16:20
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.37		0.325	0.348	1.00	0.373	pCi/L	04/26/22 11:01	05/12/22 13:11	1
Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac				
Ba Carrier	96.6		40 - 110	04/26/22 11:01	05/12/22 13:11	1				
Y Carrier	86.0		40 - 110	04/26/22 11:01	05/12/22 13:11	1				

Client Sample ID: MW-17
Date Collected: 04/19/22 16:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.350	U	0.292	0.294	1.00	0.463	pCi/L	04/26/22 11:01	05/12/22 13:11	1
Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac				
Ba Carrier	78.6		40 - 110	04/26/22 11:01	05/12/22 13:11	1				
Y Carrier	86.4		40 - 110	04/26/22 11:01	05/12/22 13:11	1				

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

Client Sample ID: MW-10
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.837	U	0.119	0.144	5.00	0.407	pCi/L		05/24/22 12:05	1

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

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

Client Sample ID: MW-10D
Date Collected: 04/19/22 14:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.786	U	0.128	0.150	5.00	0.409	pCi/L		05/24/22 12:05	1

Client Sample ID: MW-13
Date Collected: 04/20/22 10:00
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.330	U	0.273	0.274	5.00	0.436	pCi/L		05/24/22 12:05	1

Client Sample ID: MW-13EB
Date Collected: 04/20/22 11:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.133	U	0.314	0.314	5.00	0.514	pCi/L		05/24/22 12:05	1

Client Sample ID: MW-14
Date Collected: 04/20/22 10:30
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.592	U	0.403	0.407	5.00	0.618	pCi/L		05/24/22 12:05	1

Client Sample ID: MW-16
Date Collected: 04/19/22 16:20
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.72		0.347	0.370	5.00	0.373	pCi/L		05/24/22 12:05	1

Client Sample ID: MW-17
Date Collected: 04/19/22 16:10
Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.430	U	0.303	0.305	5.00	0.463	pCi/L		05/24/22 12:05	1

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 310-353255/1-A
Matrix: Water
Analysis Batch: 353499

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 353255

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.20	0.056	mg/L		05/17/22 09:00	05/18/22 10:52	1

Lab Sample ID: LCS 310-353255/2-A
Matrix: Water
Analysis Batch: 353499

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 353255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.89		mg/L		94	80 - 120

Lab Sample ID: 280-161282-1 MS
Matrix: Water
Analysis Batch: 353499

Client Sample ID: MW-10
Prep Type: Total Recoverable
Prep Batch: 353255

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.5		2.00	3.46		mg/L		99	75 - 125

Lab Sample ID: 280-161282-1 MSD
Matrix: Water
Analysis Batch: 353499

Client Sample ID: MW-10
Prep Type: Total Recoverable
Prep Batch: 353255

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	1.5		2.00	3.46		mg/L		99	75 - 125	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-353255/1-A
Matrix: Water
Analysis Batch: 354250

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 353255

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

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

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

Lab Sample ID: LCS 310-353255/2-A ^10

Matrix: Water

Analysis Batch: 354250

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 353255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	2.00	1.99		mg/L		99	80 - 120
Arsenic	2.00	1.84		mg/L		92	80 - 120
Barium	1.00	0.986		mg/L		99	80 - 120
Beryllium	1.00	0.900		mg/L		90	80 - 120
Cadmium	1.00	1.00		mg/L		100	80 - 120
Calcium	20.0	17.7		mg/L		88	80 - 120
Chromium	1.00	0.912		mg/L		91	80 - 120
Cobalt	1.00	0.978		mg/L		98	80 - 120
Lead	2.00	2.06		mg/L		103	80 - 120
Lithium	2.00	1.81		mg/L		91	80 - 120
Molybdenum	2.00	1.85		mg/L		92	80 - 120
Selenium	4.00	3.77		mg/L		94	80 - 120
Sodium	20.0	19.4		mg/L		97	80 - 120
Potassium	20.0	18.3		mg/L		91	80 - 120
Magnesium	20.0	18.5		mg/L		92	80 - 120

Lab Sample ID: LCS 310-353255/2-A ^10

Matrix: Water

Analysis Batch: 354398

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 353255

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	2.00	2.06		mg/L		103	80 - 120

Lab Sample ID: 280-161282-1 MS

Matrix: Water

Analysis Batch: 354250

Client Sample ID: MW-10

Prep Type: Total Recoverable

Prep Batch: 353255

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0031	J	2.00	1.94		mg/L		97	75 - 125
Arsenic	0.0042	J	2.00	1.97		mg/L		98	75 - 125
Barium	0.031		1.00	0.982		mg/L		95	75 - 125
Beryllium	ND		1.00	0.949		mg/L		95	75 - 125
Cadmium	0.0014		1.00	1.04		mg/L		104	75 - 125
Calcium	160		20.0	172	4	mg/L		75	75 - 125
Chromium	ND		1.00	0.964		mg/L		96	75 - 125
Cobalt	0.0021		1.00	0.959		mg/L		96	75 - 125
Lead	0.0013	J	2.00	1.97		mg/L		98	75 - 125
Lithium	0.19		2.00	2.09		mg/L		95	75 - 125
Molybdenum	0.033		2.00	1.82		mg/L		89	75 - 125
Selenium	0.018	J	4.00	3.99		mg/L		99	75 - 125
Thallium	0.0093	F1	2.00	1.47	F1	mg/L		73	75 - 125
Sodium	540		20.0	547	4	mg/L		34	75 - 125
Potassium	51		20.0	71.6		mg/L		101	75 - 125
Magnesium	39		20.0	58.1		mg/L		97	75 - 125

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

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

Lab Sample ID: 280-161282-1 MSD

Matrix: Water

Analysis Batch: 354250

Client Sample ID: MW-10

Prep Type: Total Recoverable

Prep Batch: 353255

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.0031	J	2.00	1.99		mg/L		99	75 - 125	2	20
Arsenic	0.0042	J	2.00	2.00		mg/L		100	75 - 125	2	20
Barium	0.031		1.00	1.01		mg/L		98	75 - 125	3	20
Beryllium	ND		1.00	0.961		mg/L		96	75 - 125	1	20
Cadmium	0.0014		1.00	1.06		mg/L		106	75 - 125	2	20
Calcium	160		20.0	174	4	mg/L		87	75 - 125	1	20
Chromium	ND		1.00	0.977		mg/L		98	75 - 125	1	20
Cobalt	0.0021		1.00	0.957		mg/L		95	75 - 125	0	20
Lead	0.0013	J	2.00	2.02		mg/L		101	75 - 125	3	20
Lithium	0.19		2.00	2.12		mg/L		97	75 - 125	1	20
Molybdenum	0.033		2.00	1.89		mg/L		93	75 - 125	4	20
Selenium	0.018	J	4.00	4.06		mg/L		101	75 - 125	2	20
Thallium	0.0093	F1	2.00	1.54		mg/L		77	75 - 125	4	20
Sodium	540		20.0	565	4	mg/L		122	75 - 125	3	20
Potassium	51		20.0	72.8		mg/L		107	75 - 125	2	20
Magnesium	39		20.0	59.4		mg/L		104	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-353222/1-A

Matrix: Water

Analysis Batch: 353386

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 353222

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00011	mg/L		05/16/22 14:29	05/17/22 13:51	1

Lab Sample ID: LCS 310-353222/2-A

Matrix: Water

Analysis Batch: 353386

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 353222

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.00172		mg/L		103	80 - 120

Method: 9040B - pH

Lab Sample ID: LCS 280-574377/50

Matrix: Water

Analysis Batch: 574377

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

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

Lab Sample ID: LCS 280-574470/27

Matrix: Water

Analysis Batch: 574470

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

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

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-574677/6

Matrix: Water

Analysis Batch: 574677

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			05/12/22 17:36	1
Fluoride	ND		0.50	0.17	mg/L			05/12/22 17:36	1
Sulfate	ND		5.0	1.0	mg/L			05/12/22 17:36	1

Lab Sample ID: LCS 280-574677/4

Matrix: Water

Analysis Batch: 574677

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	100	99.7		mg/L		100	90 - 110
Fluoride	5.00	4.95		mg/L		99	90 - 110
Sulfate	100	97.0		mg/L		97	90 - 110

Lab Sample ID: LCSD 280-574677/5

Matrix: Water

Analysis Batch: 574677

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	100	99.3		mg/L		99	90 - 110	0	10
Fluoride	5.00	4.96		mg/L		99	90 - 110	0	10
Sulfate	100	96.3		mg/L		96	90 - 110	1	10

Lab Sample ID: MRL 280-574677/3

Matrix: Water

Analysis Batch: 574677

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5.00	4.23		mg/L		85	50 - 150
Fluoride	0.500	0.534		mg/L		107	50 - 150
Sulfate	5.00	4.37	J	mg/L		87	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-573241/32

Matrix: Water

Analysis Batch: 573241

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	3.13	J	10	3.1	mg/L			04/27/22 13:52	1
Bicarbonate Alkalinity as CaCO3	3.13	J	10	3.1	mg/L			04/27/22 13:52	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			04/27/22 13:52	1

Lab Sample ID: MB 280-573241/6

Matrix: Water

Analysis Batch: 573241

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	7.05	J	10	3.1	mg/L			04/27/22 10:51	1
Bicarbonate Alkalinity as CaCO3	7.05	J	10	3.1	mg/L			04/27/22 10:51	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			04/27/22 10:51	1

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 280-573241/31

Matrix: Water

Analysis Batch: 573241

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	200	199		mg/L		99	89 - 109

Lab Sample ID: LCSD 280-573241/5

Matrix: Water

Analysis Batch: 573241

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Alkalinity	200	199		mg/L		100	89 - 109	0	10

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

Lab Sample ID: MB 280-572613/1

Matrix: Water

Analysis Batch: 572613

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			04/21/22 13:53	1

Lab Sample ID: LCS 280-572613/2

Matrix: Water

Analysis Batch: 572613

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	505	499		mg/L		99	88 - 114

Lab Sample ID: LCSD 280-572613/3

Matrix: Water

Analysis Batch: 572613

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	505	498		mg/L		99	88 - 114	0	20

Lab Sample ID: MB 280-573019/1

Matrix: Water

Analysis Batch: 573019

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			04/26/22 10:34	1

Lab Sample ID: LCS 280-573019/2

Matrix: Water

Analysis Batch: 573019

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	502	498		mg/L		99	88 - 114

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

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

Lab Sample ID: 280-161282-5 DU
Matrix: Water
Analysis Batch: 573019

Client Sample ID: MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	1500		1250	F3	mg/L		20	10

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

Lab Sample ID: MB 280-572528/2
Matrix: Water
Analysis Batch: 572528

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			04/21/22 09:49	1

Lab Sample ID: LCS 280-572528/1
Matrix: Water
Analysis Batch: 572528

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	84.0		mg/L		84	79 - 114

Lab Sample ID: MB 280-572637/2
Matrix: Water
Analysis Batch: 572637

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			04/21/22 16:53	1

Lab Sample ID: LCS 280-572637/1
Matrix: Water
Analysis Batch: 572637

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	102		mg/L		102	79 - 114

Lab Sample ID: MB 280-572902/2
Matrix: Water
Analysis Batch: 572902

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			04/25/22 12:19	1

Lab Sample ID: LCS 280-572902/1
Matrix: Water
Analysis Batch: 572902

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	90.8		mg/L		91	79 - 114

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-562023/24-A

Matrix: Water

Analysis Batch: 566897

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 562023

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01179	U	0.0671	0.0671	1.00	0.128	pCi/L	04/26/22 10:15	05/23/22 18:10	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.0		40 - 110					04/26/22 10:15	05/23/22 18:10	1

Lab Sample ID: LCS 160-562023/1-A

Matrix: Water

Analysis Batch: 566860

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 562023

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226		11.3	9.485		1.00	1.00	0.113	pCi/L	84	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	90.6		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-562026/24-A

Matrix: Water

Analysis Batch: 565375

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 562026

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2066	U	0.226	0.227	1.00	0.370	pCi/L	04/26/22 11:01	05/12/22 13:12	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.0		40 - 110					04/26/22 11:01	05/12/22 13:12	1
Y Carrier	89.0		40 - 110					04/26/22 11:01	05/12/22 13:12	1

Lab Sample ID: LCS 160-562026/1-A

Matrix: Water

Analysis Batch: 565228

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 562026

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228		8.63	9.147		1.10	1.00	0.424	pCi/L	106	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	90.6		40 - 110							
Y Carrier	87.5		40 - 110							

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QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Metals

Prep Batch: 353222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-1	MW-10	Total/NA	Water	7470A	
280-161282-2	MW-10D	Total/NA	Water	7470A	
280-161282-3	MW-13	Total/NA	Water	7470A	
280-161282-4	MW-13EB	Total/NA	Water	7470A	
280-161282-5	MW-14	Total/NA	Water	7470A	
280-161282-6	MW-16	Total/NA	Water	7470A	
280-161282-7	MW-17	Total/NA	Water	7470A	
MB 310-353222/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-353222/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 353255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-1	MW-10	Total Recoverable	Water	3005A	
280-161282-2	MW-10D	Total Recoverable	Water	3005A	
280-161282-3	MW-13	Total Recoverable	Water	3005A	
280-161282-4	MW-13EB	Total Recoverable	Water	3005A	
280-161282-5	MW-14	Total Recoverable	Water	3005A	
280-161282-6	MW-16	Total Recoverable	Water	3005A	
280-161282-7	MW-17	Total Recoverable	Water	3005A	
MB 310-353255/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 310-353255/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 310-353255/2-A ^10	Lab Control Sample	Total Recoverable	Water	3005A	
280-161282-1 MS	MW-10	Total Recoverable	Water	3005A	
280-161282-1 MSD	MW-10	Total Recoverable	Water	3005A	

Analysis Batch: 353386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-1	MW-10	Total/NA	Water	7470A	353222
280-161282-2	MW-10D	Total/NA	Water	7470A	353222
280-161282-3	MW-13	Total/NA	Water	7470A	353222
280-161282-4	MW-13EB	Total/NA	Water	7470A	353222
280-161282-5	MW-14	Total/NA	Water	7470A	353222
280-161282-6	MW-16	Total/NA	Water	7470A	353222
280-161282-7	MW-17	Total/NA	Water	7470A	353222
MB 310-353222/1-A	Method Blank	Total/NA	Water	7470A	353222
LCS 310-353222/2-A	Lab Control Sample	Total/NA	Water	7470A	353222

Analysis Batch: 353499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-1	MW-10	Total Recoverable	Water	6010C	353255
280-161282-2	MW-10D	Total Recoverable	Water	6010C	353255
280-161282-3	MW-13	Total Recoverable	Water	6010C	353255
280-161282-4	MW-13EB	Total Recoverable	Water	6010C	353255
280-161282-5	MW-14	Total Recoverable	Water	6010C	353255
280-161282-6	MW-16	Total Recoverable	Water	6010C	353255
280-161282-7	MW-17	Total Recoverable	Water	6010C	353255
MB 310-353255/1-A	Method Blank	Total Recoverable	Water	6010C	353255
LCS 310-353255/2-A	Lab Control Sample	Total Recoverable	Water	6010C	353255
280-161282-1 MS	MW-10	Total Recoverable	Water	6010C	353255
280-161282-1 MSD	MW-10	Total Recoverable	Water	6010C	353255

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QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Metals

Analysis Batch: 354250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-1	MW-10	Total Recoverable	Water	6020A	353255
280-161282-2	MW-10D	Total Recoverable	Water	6020A	353255
280-161282-3	MW-13	Total Recoverable	Water	6020A	353255
280-161282-4	MW-13EB	Total Recoverable	Water	6020A	353255
280-161282-5	MW-14	Total Recoverable	Water	6020A	353255
280-161282-6	MW-16	Total Recoverable	Water	6020A	353255
280-161282-7	MW-17	Total Recoverable	Water	6020A	353255
MB 310-353255/1-A	Method Blank	Total Recoverable	Water	6020A	353255
LCS 310-353255/2-A ^10	Lab Control Sample	Total Recoverable	Water	6020A	353255
280-161282-1 MS	MW-10	Total Recoverable	Water	6020A	353255
280-161282-1 MSD	MW-10	Total Recoverable	Water	6020A	353255

Analysis Batch: 354398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-353255/2-A ^10	Lab Control Sample	Total Recoverable	Water	6020A	353255

General Chemistry

Analysis Batch: 572528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-1	MW-10	Total/NA	Water	SM 2540D	
280-161282-2	MW-10D	Total/NA	Water	SM 2540D	
MB 280-572528/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-572528/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 572613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-1	MW-10	Total/NA	Water	SM 2540C	
280-161282-2	MW-10D	Total/NA	Water	SM 2540C	
280-161282-3	MW-13	Total/NA	Water	SM 2540C	
280-161282-4	MW-13EB	Total/NA	Water	SM 2540C	
280-161282-6	MW-16	Total/NA	Water	SM 2540C	
280-161282-7	MW-17	Total/NA	Water	SM 2540C	
MB 280-572613/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-572613/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-572613/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 572637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-3	MW-13	Total/NA	Water	SM 2540D	
280-161282-4	MW-13EB	Total/NA	Water	SM 2540D	
280-161282-6	MW-16	Total/NA	Water	SM 2540D	
280-161282-7	MW-17	Total/NA	Water	SM 2540D	
MB 280-572637/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-572637/1	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 572902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-5	MW-14	Total/NA	Water	SM 2540D	
MB 280-572902/2	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-572902/1	Lab Control Sample	Total/NA	Water	SM 2540D	

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QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

General Chemistry

Analysis Batch: 573019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-5	MW-14	Total/NA	Water	SM 2540C	
MB 280-573019/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-573019/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-161282-5 DU	MW-14	Total/NA	Water	SM 2540C	

Analysis Batch: 573241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-1	MW-10	Total/NA	Water	SM 2320B	
280-161282-2	MW-10D	Total/NA	Water	SM 2320B	
280-161282-3	MW-13	Total/NA	Water	SM 2320B	
280-161282-4	MW-13EB	Total/NA	Water	SM 2320B	
280-161282-5	MW-14	Total/NA	Water	SM 2320B	
280-161282-6	MW-16	Total/NA	Water	SM 2320B	
280-161282-7	MW-17	Total/NA	Water	SM 2320B	
MB 280-573241/32	Method Blank	Total/NA	Water	SM 2320B	
MB 280-573241/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-573241/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-573241/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 574377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-1	MW-10	Total/NA	Water	9040B	
280-161282-2	MW-10D	Total/NA	Water	9040B	
280-161282-3	MW-13	Total/NA	Water	9040B	
280-161282-5	MW-14	Total/NA	Water	9040B	
280-161282-6	MW-16	Total/NA	Water	9040B	
280-161282-7	MW-17	Total/NA	Water	9040B	
LCS 280-574377/50	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 574470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-4	MW-13EB	Total/NA	Water	9040B	
LCS 280-574470/27	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 574677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-1	MW-10	Total/NA	Water	9056A	
280-161282-1	MW-10	Total/NA	Water	9056A	
280-161282-2	MW-10D	Total/NA	Water	9056A	
280-161282-2	MW-10D	Total/NA	Water	9056A	
280-161282-3	MW-13	Total/NA	Water	9056A	
280-161282-3	MW-13	Total/NA	Water	9056A	
280-161282-4	MW-13EB	Total/NA	Water	9056A	
280-161282-5	MW-14	Total/NA	Water	9056A	
280-161282-5	MW-14	Total/NA	Water	9056A	
280-161282-6	MW-16	Total/NA	Water	9056A	
280-161282-6	MW-16	Total/NA	Water	9056A	
280-161282-7	MW-17	Total/NA	Water	9056A	
280-161282-7	MW-17	Total/NA	Water	9056A	
MB 280-574677/6	Method Blank	Total/NA	Water	9056A	
LCS 280-574677/4	Lab Control Sample	Total/NA	Water	9056A	

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QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

General Chemistry (Continued)

Analysis Batch: 574677 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 280-574677/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-574677/3	Lab Control Sample	Total/NA	Water	9056A	

Rad

Prep Batch: 562023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-1	MW-10	Total/NA	Water	PrecSep-21	
280-161282-2	MW-10D	Total/NA	Water	PrecSep-21	
280-161282-3	MW-13	Total/NA	Water	PrecSep-21	
280-161282-4	MW-13EB	Total/NA	Water	PrecSep-21	
280-161282-5	MW-14	Total/NA	Water	PrecSep-21	
280-161282-6	MW-16	Total/NA	Water	PrecSep-21	
280-161282-7	MW-17	Total/NA	Water	PrecSep-21	
MB 160-562023/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-562023/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 562026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-161282-1	MW-10	Total/NA	Water	PrecSep_0	
280-161282-2	MW-10D	Total/NA	Water	PrecSep_0	
280-161282-3	MW-13	Total/NA	Water	PrecSep_0	
280-161282-4	MW-13EB	Total/NA	Water	PrecSep_0	
280-161282-5	MW-14	Total/NA	Water	PrecSep_0	
280-161282-6	MW-16	Total/NA	Water	PrecSep_0	
280-161282-7	MW-17	Total/NA	Water	PrecSep_0	
MB 160-562026/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-562026/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Client Sample ID: MW-10

Date Collected: 04/19/22 14:10

Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 10:56	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		4			354250	05/25/22 00:08	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353222	05/16/22 14:29	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 14:17	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 18:44	KEG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	574677	05/13/22 21:06	RAF	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	574677	05/13/22 21:22	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			573241	04/27/22 15:37	KEG	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	572613	04/21/22 14:53	ABW	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	572528	04/21/22 09:49	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			999.77 mL	1.0 g	562023	04/26/22 10:15	MS	TAL SL
Total/NA	Analysis	9315		1			566897	05/23/22 14:37	SCB	TAL SL
Total/NA	Prep	PrecSep_0			999.77 mL	1.0 g	562026	04/26/22 11:01	MS	TAL SL
Total/NA	Analysis	9320		1			565375	05/12/22 13:10	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567045	05/24/22 12:05	CAH	TAL SL

Client Sample ID: MW-10D

Date Collected: 04/19/22 14:10

Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:10	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		4			354250	05/25/22 00:18	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353222	05/16/22 14:29	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 14:19	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 18:48	KEG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	574677	05/13/22 20:02	RAF	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	574677	05/13/22 20:18	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			573241	04/27/22 15:44	KEG	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	572613	04/21/22 14:53	ABW	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	572528	04/21/22 09:49	ABW	TAL DEN
Total/NA	Prep	PrecSep-21			1003.18 mL	1.0 g	562023	04/26/22 10:15	MS	TAL SL
Total/NA	Analysis	9315		1			566897	05/23/22 14:37	SCB	TAL SL
Total/NA	Prep	PrecSep_0			1003.18 mL	1.0 g	562026	04/26/22 11:01	MS	TAL SL
Total/NA	Analysis	9320		1			565375	05/12/22 13:11	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567045	05/24/22 12:05	CAH	TAL SL

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Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Client Sample ID: MW-13

Date Collected: 04/20/22 10:00

Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:12	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		1			354250	05/25/22 00:21	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353222	05/16/22 14:29	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 14:21	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 18:52	KEG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	574677	05/13/22 17:24	RAF	TAL DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	574677	05/13/22 17:40	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			573241	04/27/22 15:52	KEG	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	572613	04/21/22 14:53	ABW	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	572637	04/21/22 16:53	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			1006.29 mL	1.0 g	562023	04/26/22 10:15	MS	TAL SL
Total/NA	Analysis	9315		1			566897	05/23/22 14:37	SCB	TAL SL
Total/NA	Prep	PrecSep_0			1006.29 mL	1.0 g	562026	04/26/22 11:01	MS	TAL SL
Total/NA	Analysis	9320		1			565375	05/12/22 13:11	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567045	05/24/22 12:05	CAH	TAL SL

Client Sample ID: MW-13EB

Date Collected: 04/20/22 11:30

Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:14	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		1			354250	05/25/22 00:37	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353222	05/16/22 14:29	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 14:23	EAM	TAL CF
Total/NA	Analysis	9040B		1			574470	05/10/22 14:37	KEG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	574677	05/13/22 17:08	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			573241	04/27/22 15:57	KEG	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	572613	04/21/22 14:53	ABW	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	572637	04/21/22 16:53	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			993.28 mL	1.0 g	562023	04/26/22 10:15	MS	TAL SL
Total/NA	Analysis	9315		1			566897	05/23/22 14:37	SCB	TAL SL
Total/NA	Prep	PrecSep_0			993.28 mL	1.0 g	562026	04/26/22 11:01	MS	TAL SL
Total/NA	Analysis	9320		1			565375	05/12/22 13:11	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567045	05/24/22 12:05	CAH	TAL SL

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Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Client Sample ID: MW-14

Date Collected: 04/20/22 10:30

Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:16	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		1			354250	05/25/22 00:41	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353222	05/16/22 14:29	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 14:30	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 19:07	KEG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	574677	05/13/22 23:13	RAF	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	574677	05/13/22 23:29	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			573241	04/27/22 16:05	KEG	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	573019	04/26/22 11:35	LRB	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	572902	04/25/22 12:19	LRB	TAL DEN
Total/NA	Prep	PrecSep-21			748.57 mL	1.0 g	562023	04/26/22 10:15	MS	TAL SL
Total/NA	Analysis	9315		1			566897	05/23/22 16:20	SCB	TAL SL
Total/NA	Prep	PrecSep_0			748.57 mL	1.0 g	562026	04/26/22 11:01	MS	TAL SL
Total/NA	Analysis	9320		1			565375	05/12/22 13:11	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567045	05/24/22 12:05	CAH	TAL SL

Client Sample ID: MW-16

Date Collected: 04/19/22 16:20

Date Received: 04/20/22 16:07

Lab Sample ID: 280-161282-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:18	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		1			354250	05/25/22 00:44	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353222	05/16/22 14:29	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 14:32	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 19:11	KEG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	574677	05/13/22 23:44	RAF	TAL DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	574677	05/14/22 00:00	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			573241	04/27/22 16:11	KEG	TAL DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	572613	04/21/22 14:53	ABW	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	572637	04/21/22 16:53	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			996.83 mL	1.0 g	562023	04/26/22 10:15	MS	TAL SL
Total/NA	Analysis	9315		1			566897	05/23/22 16:20	SCB	TAL SL
Total/NA	Prep	PrecSep_0			996.83 mL	1.0 g	562026	04/26/22 11:01	MS	TAL SL
Total/NA	Analysis	9320		1			565375	05/12/22 13:11	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567045	05/24/22 12:05	CAH	TAL SL

Eurofins Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Client Sample ID: MW-17

Lab Sample ID: 280-161282-7

Date Collected: 04/19/22 16:10

Matrix: Water

Date Received: 04/20/22 16:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6010C		1			353499	05/18/22 11:19	CTB	TAL CF
Total Recoverable	Prep	3005A			50 mL	50 mL	353255	05/17/22 09:00	ACM2	TAL CF
Total Recoverable	Analysis	6020A		1			354250	05/25/22 00:47	A6US	TAL CF
Total/NA	Prep	7470A			30 mL	40 mL	353222	05/16/22 14:29	EAM	TAL CF
Total/NA	Analysis	7470A		1			353386	05/17/22 14:34	EAM	TAL CF
Total/NA	Analysis	9040B		1			574377	05/09/22 19:15	KEG	TAL DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	574677	05/13/22 20:34	RAF	TAL DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	574677	05/13/22 20:50	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			573241	04/27/22 16:17	KEG	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	572613	04/21/22 14:53	ABW	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	572637	04/21/22 16:53	SVC	TAL DEN
Total/NA	Prep	PrecSep-21			995.85 mL	1.0 g	562023	04/26/22 10:15	MS	TAL SL
Total/NA	Analysis	9315		1			566897	05/23/22 16:20	SCB	TAL SL
Total/NA	Prep	PrecSep_0			995.85 mL	1.0 g	562026	04/26/22 11:01	MS	TAL SL
Total/NA	Analysis	9320		1			565375	05/12/22 13:11	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			567045	05/24/22 12:05	CAH	TAL SL

Laboratory References:

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

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

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

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Laboratory: Eurofins Denver

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4025-011	01-09-23
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
9040B		Water	Temperature
SM 2320B		Water	Bicarbonate Alkalinity as CaCO3
SM 2320B		Water	Carbonate Alkalinity as CaCO3

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-22
Georgia	State	IA100001 (OR)	09-29-22
Illinois	NELAP	200024	11-29-22
Iowa	State	007	12-01-21 *
Kansas	NELAP	E-10341	01-31-23
Minnesota	NELAP	019-999-319	12-31-22
Minnesota (Petrofund)	State	3349	01-18-24
North Dakota	State	R-186	09-29-22
Oregon	NELAP	IA100001	09-29-22

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	07-01-22
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-23

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

Eurofins Denver

Accreditation/Certification Summary

Client: HDR Inc

Job ID: 280-161282-1

Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

Ver: 01/16/2019	2
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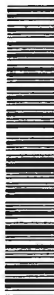
Phone: 303-736-0100 Fax: 303-431-7171

Eurofins Denver

4955 Yarrow Street
Arvada, CO 80002

Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record



**Environment Testing
America**

Client Information (Sub Contract Lab)				Lab PM: Harrington, Danielle M		Carrier Tracking No(s): 280-611325.1								
Client Contact Shipping/Receiving Company: TestAmerica Laboratories, Inc.				E-Mail: Danielle.Harrington@et.eurofinsus.com		State of Origin: Colorado								
				Phone:		Page 1 of 1								
Address: 13715 Rider Trail North, City: Earth City State Zip: MO 63045 Phone: 314-298-8566(Tel) 314-298-8757(Fax) Email:				Accreditations Required (See note) NELAP - Oregon		Job # 280-161282-1								
Project Name: Xcel Energy GW CCR Monitoring - Cherokee Site: Xcel Energy CCR - Cherokee Station				Due Date Requested: 5/19/2022 TAT Requested (days):		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify) Other:								
Sample Identification - Client ID (Lab ID)				Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Newster, S-solid, On-water, Oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Radium-226 - 1/3 - SUB	9320_Ra228/PrecSep_0 Radium-228 - 2/3 - SUB	Ra226Ra228_GFPc/(MOD) Local Method	Total Number of Containers	Special Instructions/Note:
MW-10 (280-161282-1)	4/19/22	14:10 Mountain	Water	X	X	X	X	X	X	X	X	X	2	
MW-10D (280-161282-2)	4/19/22	14:10 Mountain	Water	X	X	X	X	X	X	X	X	X	2	
MW-13 (280-161282-3)	4/20/22	10:00 Mountain	Water	X	X	X	X	X	X	X	X	X	2	
MW-13EB (280-161282-4)	4/20/22	11:30 Mountain	Water	X	X	X	X	X	X	X	X	X	2	
MW-14 (280-161282-5)	4/20/22	10:30 Mountain	Water	X	X	X	X	X	X	X	X	X	2	
MW-16 (280-161282-6)	4/19/22	16:20 Mountain	Water	X	X	X	X	X	X	X	X	X	2	
MW-17 (280-161282-7)	4/19/22	16:10 Mountain	Water	X	X	X	X	X	X	X	X	X	2	
Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.														
Possible Hazard Identification														
Unconfirmed														
Deliverable Requested: I, II, III, IV, Other (specify)														
Primary Deliverable Rank: 4														
Empty Kit Relinquished by:														
Relinquished by: [Signature]														
Date/Time: 4/21/22 1555														
Relinquished by: [Signature]														
Date/Time: 4/21/22 1555														
Relinquished by: [Signature]														
Date/Time: 4/21/22 1555														
Relinquished by: [Signature]														
Date/Time: 4/21/22 1555														
Custody Seal No.: Δ Yes Δ No														
Custody Seals Intact: Δ Yes Δ No														
Cooler Temperature(s) °C and Other Remarks:														
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months Special Instructions/QC Requirements:														
Received by: [Signature] Company: [Blank] Date/Time: 4/21/22 1555 Received by: [Signature] Company: [Blank] Date/Time: 4/21/22 1555 Received by: [Signature] Company: [Blank] Date/Time: 4/21/22 1555														



Environment Testing
America



280-161282 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>Denver</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>4/22/22</u>	TIME <u>1310</u>	Received By: <u>LR</u>
Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID: _____
Multiple Coolers?		☐ Yes ☒ No	If yes: Cooler # _____ of _____
Cooler Custody Seals Present?		☐ Yes ☒ No	If yes: Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes: Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☐ Yes ☒ No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>R</u>		Correction Factor (°C): <u>+0.2</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.1</u>		Corrected Temp (°C): <u>0.3</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161282-1

Login Number: 161282

List Source: Eurofins Denver

List Number: 1

Creator: Lee, Jerry

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161282-1

Login Number: 161282

List Number: 3

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

List Creation: 04/27/22 11:53 AM

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-161282-1

Login Number: 161282

List Number: 2

Creator: Worthington, Sierra M

List Source: Eurofins St. Louis

List Creation: 04/25/22 03:44 PM

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

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-161282-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	
280-161282-1	MW-10	91.4	
280-161282-2	MW-10D	88.7	
280-161282-3	MW-13	91.6	
280-161282-4	MW-13EB	75.4	
280-161282-5	MW-14	85.7	
280-161282-6	MW-16	96.6	
280-161282-7	MW-17	78.6	
LCS 160-562023/1-A	Lab Control Sample	90.6	
MB 160-562023/24-A	Method Blank	97.0	
Tracer/Carrier Legend			
Ba = Ba Carrier			

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-161282-1	MW-10	91.4	86.0
280-161282-2	MW-10D	88.7	86.4
280-161282-3	MW-13	91.6	86.7
280-161282-4	MW-13EB	75.4	85.2
280-161282-5	MW-14	85.7	84.5
280-161282-6	MW-16	96.6	86.0
280-161282-7	MW-17	78.6	86.4
LCS 160-562026/1-A	Lab Control Sample	90.6	87.5
MB 160-562026/24-A	Method Blank	97.0	89.0
Tracer/Carrier Legend			
Ba = Ba Carrier			
Y = Y Carrier			

ANALYTICAL REPORT

PREPARED FOR

Attn: Molly Reeves
HDR Inc
1670 Broadway
Suite 3400
Denver, Colorado 80202
Generated 12/13/2022 3:26:58 PM

JOB DESCRIPTION

Xcel Energy GW CCR Monitoring - Cherokee

JOB NUMBER

280-168243-1

Eurofins Denver

Job Notes

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the Eurofins TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins TestAmerica Project Manager.

Authorization



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Authorized for release by
Nicole Ryan, Project Manager I
Nicole.Ryan@ET.eurofinsus.com
(303)736-0100

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Definitions/Glossary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

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

Rad

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
U	Result is less than the sample detection limit.

Glossary

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

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Job ID: 280-168243-1

Laboratory: Eurofins Denver

Narrative

CASE NARRATIVE

Client: HDR Inc

Project: Xcel Energy GW CCR Monitoring - Cherokee

Report Number: 280-168243-1

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

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

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

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Receipt

The samples were received on 10/26/2022 2:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.1° C, 1.6° C, 1.6° C and 5.0° C.

DISSOLVED METALS

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for Dissolved Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/18/2022, 11/21/2022 and 11/22/2022 and analyzed on 11/21/2022, 11/23/2022 and 11/29/2022.

Boron was detected in method blank MB 280-593927/1-H at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

TOTAL RECOVERABLE METALS

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for Total Recoverable Metals in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/13/2022 and analyzed on 11/15/2022.

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

DISSOLVED METALS (ICP/MS)

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for Dissolved Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 11/20/2022, 11/21/2022 and 11/23/2022 and analyzed on 11/21/2022, 11/22/2022 and 11/23/2022.

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Job ID: 280-168243-1 (Continued)

Laboratory: Eurofins Denver (Continued)

Several analytes failed the recovery criteria low for the MS and MSD of sample MW-13 (280-168243-1) in batch 280-594670.

Calcium failed the recovery criteria high for the MS and MSD of sample MW-14 (280-168243-8) in batch 280-594561.

Samples MW-10 (280-168243-2)[50X], MW-16 (280-168243-3)[50X], MW-17 (280-168243-4)[50X], MW-15 (280-168243-5)[50X], MW-15-DUP (280-168243-6)[50X] and MW-14 (280-168243-8)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

TOTAL RECOVERABLE METALS (ICP/MS)

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for Total Recoverable Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 10/27/2022 and analyzed on 10/27/2022, 10/28/2022 and 11/02/2022.

The following samples was digested at half volume due to limited sample volume, then re-volumed to full volume: MW-13 (280-168243-1), (280-168243-C-1-A MS) and (280-168243-C-1-A MSD).

Barium and Chromium were detected in method blank MB 280-591368/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

The instrument blank for analytical batch 280-591577 contained 115 ug/L Na greater than one-half the reporting limit (RL) of 150 ug/L, and were not re-analyzed because sample > 10x the blank. The data have been qualified and reported.

The instrument blank for analytical batch 280-591577 contained 179 ug/L Na greater than the reporting limit (RL) of 150 ug/L, and were not reanalyzed because sample > 10x the blank. The data have been qualified and reported.

The instrument blank for analytical batch 280-591577 contained 88.6 ug/L K greater than one-half the reporting limit (RL) of 120 ug/L, and were not re-analyzed because sample > 10x the blank. The data have been qualified and reported.

Several analytes failed the recovery criteria high for the MS of sample 280-168162-1 in batch 280-591577.

Barium, Magnesium and Sodium failed the recovery criteria low for the MSD of sample 280-168162-1 in batch 280-591577. Calcium failed the recovery criteria high.

Samples MW-13 (280-168243-1)[50X], MW-10 (280-168243-2)[50X], MW-16 (280-168243-3)[50X], MW-17 (280-168243-4)[50X], MW-15 (280-168243-5)[50X], MW-15-DUP (280-168243-6)[50X] and MW-14 (280-168243-8)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

DISSOLVED MERCURY

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for dissolved mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 11/21/2022.

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

TOTAL MERCURY

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 11/17/2022 and analyzed on 11/18/2022.

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Job ID: 280-168243-1 (Continued)

Laboratory: Eurofins Denver (Continued)

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

ALKALINITY

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 10/27/2022.

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

TOTAL DISSOLVED SOLIDS

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for total dissolved solids in accordance with SM20 2540C. The samples were analyzed on 10/31/2022, 11/01/2022 and 11/02/2022.

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

TOTAL SUSPENDED SOLIDS

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for total suspended solids in accordance with SM20 2540D. The samples were analyzed on 10/28/2022, 10/31/2022 and 11/01/2022.

Total Suspended Solids exceeded the RPD limit for the duplicate of sample 160-47687-2. Total Suspended Solids exceeded the RPD limit for the duplicate of sample 280-168353-5. Refer to the QC report for details.

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

CORROSIVITY (PH)

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9040B. The samples were analyzed on 11/01/2022 and 11/03/2022.

The following sample did not equilibrate to within 0.05 pH units after three measurements: MW-15-EB (280-168243-7). This was observed in a previous analysis thus the sample was not rerun.

pH adj. to 25 deg C exceeded the RPD limit for the duplicate of sample 280-168473-8. Refer to the QC report for details.

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

ANIONS (28 DAYS)

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for anions (28 days) in accordance with EPA SW-846 Method 9056A (28 Days). The samples were analyzed on 12/09/2022, 12/10/2022 and 12/13/2022.

Reanalysis of the following sample(s) was performed outside of the analytical holding time due to instrument issues caused an increased backlog which lead to extended turn around times. : MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8).

Reanalysis of the following samples were performed outside of the analytical holding time due to instrument issues leading to QC failures which caused an increased turn around time : MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6) and MW-15-EB (280-168243-7).

Samples MW-13 (280-168243-1)[5X], MW-10 (280-168243-2)[10X], MW-10 (280-168243-2)[20X], MW-16 (280-168243-3)[10X], MW-17 (280-168243-4)[10X], MW-15 (280-168243-5)[10X], MW-15 (280-168243-5)[20X], MW-15-DUP (280-168243-6)[10X], MW-15-DUP (280-168243-6)[20X], MW-14 (280-168243-8)[10X] and MW-14 (280-168243-8)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Case Narrative

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Job ID: 280-168243-1 (Continued)

Laboratory: Eurofins Denver (Continued)

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

RADIUM-226 (GFPC)

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for Radium-226 (GFPC) in accordance with SW 846 9315. The samples were prepared on 11/03/2022 and analyzed on 11/29/2022 and 11/30/2022.

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

RADIUM-228

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for Radium-228 in accordance with 9320. The samples were prepared on 11/03/2022 and 11/22/2022 and analyzed on 11/17/2022 and 11/28/2022.

Radium-228 was detected in method blank MB 160-588355/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Radium-228 was detected in method blank MB 160-590917/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Radium-228 failed the recovery criteria high for LCS 160-588355/2-A. Refer to the QC report for details.

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

RADIUM-226/RADIUM-228 (GFPC)

Samples MW-13 (280-168243-1), MW-10 (280-168243-2), MW-16 (280-168243-3), MW-17 (280-168243-4), MW-15 (280-168243-5), MW-15-DUP (280-168243-6), MW-15-EB (280-168243-7) and MW-14 (280-168243-8) were analyzed for Radium-226/Radium-228 (GFPC) in accordance with 9315/9320. The samples were analyzed on 11/29/2022 and 12/02/2022.

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

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-13

Lab Sample ID: 280-168243-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.30		0.10	0.0015	mg/L	1		6010C	Total
									Recoverable
Lithium	37		20	9.1	ug/L	1		6010C	Total
									Recoverable
Boron	0.31	B	0.20	0.0029	mg/L	1		6010C	Dissolved
Lithium	33	J	40	18	ug/L	1		6010C	Dissolved
Magnesium	22		2.5	1.1	mg/L	50		6020B	Total
									Recoverable
Sodium	140		7.5	3.2	mg/L	50		6020B	Total
									Recoverable
Barium	0.062	B	0.0010	0.00029	mg/L	1		6020B	Total
									Recoverable
Potassium	2.2		0.12	0.052	mg/L	1		6020B	Total
									Recoverable
Chromium	0.00062	J B	0.0020	0.00050	mg/L	1		6020B	Total
									Recoverable
Cobalt	0.00051	J	0.0010	0.000092	mg/L	1		6020B	Total
									Recoverable
Molybdenum	0.0027		0.0020	0.00014	mg/L	1		6020B	Total
									Recoverable
Selenium	0.0023	J	0.0050	0.00037	mg/L	1		6020B	Total
									Recoverable
Calcium	120		10	1.9	mg/L	50		6020B	Total
									Recoverable
Barium	0.060	F1	0.0010	0.00029	mg/L	1		6020B	Dissolved
Chromium	0.0011	J B	0.0020	0.00050	mg/L	1		6020B	Dissolved
Cobalt	0.00046	J F1	0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	120000		10000	1900	ug/L	50		6020B	Dissolved
Molybdenum	0.0026		0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.0019	J	0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.7	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	160	H	15	5.1	mg/L	5		9056A	Total/NA
Fluoride	1.4	H	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	140	H	25	5.2	mg/L	5		9056A	Total/NA
Alkalinity	280		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	280		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	770		10	4.7	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-10

Lab Sample ID: 280-168243-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3.0		0.10	0.0015	mg/L	1		6010C	Total
									Recoverable
Lithium	150		20	9.1	ug/L	1		6010C	Total
									Recoverable
Boron	3.0		0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	150		20	9.1	ug/L	1		6010C	Dissolved
Antimony	0.00096	J	0.0020	0.00040	mg/L	1		6020B	Total
									Recoverable
Magnesium	50		2.5	1.1	mg/L	50		6020B	Total
									Recoverable
Arsenic	0.0020	J	0.0050	0.00033	mg/L	1		6020B	Total
									Recoverable
Sodium	530		7.5	3.2	mg/L	50		6020B	Total
									Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-10 (Continued)

Lab Sample ID: 280-168243-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.075	B	0.0010	0.00029	mg/L	1		6020B	Total
Potassium	39		0.12	0.052	mg/L	1		6020B	Recoverable
Cadmium	0.00032	J	0.0010	0.00027	mg/L	1		6020B	Total
Chromium	0.0026	B	0.0020	0.00050	mg/L	1		6020B	Recoverable
Cobalt	0.0061		0.0010	0.000092	mg/L	1		6020B	Total
Lead	0.00023	J	0.0010	0.00018	mg/L	1		6020B	Recoverable
Molybdenum	0.052		0.0020	0.00014	mg/L	1		6020B	Total
Selenium	0.022		0.0050	0.00037	mg/L	1		6020B	Recoverable
Calcium	340		10	1.9	mg/L	50		6020B	Total
Antimony	0.00095	J	0.0020	0.00040	mg/L	1		6020B	Recoverable
Arsenic	0.0020	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.075		0.0010	0.00029	mg/L	1		6020B	Dissolved
Chromium	0.0026		0.0020	0.00050	mg/L	1		6020B	Dissolved
Cobalt	0.0061		0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	370000		10000	1900	ug/L	50		6020B	Dissolved
Molybdenum	0.054		0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.023		0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.9	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	600	H	30	10	mg/L	10		9056A	Total/NA
Fluoride	1.9	H	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	1100	H	100	21	mg/L	20		9056A	Total/NA
Alkalinity	190		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	190		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	2800		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	7.6		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-16

Lab Sample ID: 280-168243-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.1		0.10	0.0015	mg/L	1		6010C	Total
Lithium	88		20	9.1	ug/L	1		6010C	Recoverable
Boron	1.0		0.10	0.0015	mg/L	1		6010C	Total
Lithium	87		20	9.1	ug/L	1		6010C	Recoverable
Antimony	0.00041	J	0.0020	0.00040	mg/L	1		6020B	Dissolved
Magnesium	62		2.5	1.1	mg/L	50		6020B	Total
Arsenic	0.0021	J	0.0050	0.00033	mg/L	1		6020B	Recoverable
Sodium	460		7.5	3.2	mg/L	50		6020B	Total
Barium	0.088	B	0.0010	0.00029	mg/L	1		6020B	Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-16 (Continued)

Lab Sample ID: 280-168243-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	28		6.0	2.6	mg/L	50		6020B	Total
									Recoverable
Cadmium	0.00045	J	0.0010	0.00027	mg/L	1		6020B	Total
									Recoverable
Chromium	0.00094	J B	0.0020	0.00050	mg/L	1		6020B	Total
									Recoverable
Cobalt	0.00041	J	0.0010	0.000092	mg/L	1		6020B	Total
									Recoverable
Molybdenum	0.011		0.0020	0.00014	mg/L	1		6020B	Total
									Recoverable
Selenium	0.0024	J	0.0050	0.00037	mg/L	1		6020B	Total
									Recoverable
Calcium	310		10	1.9	mg/L	50		6020B	Total
									Recoverable
Arsenic	0.0019	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.095		0.0010	0.00029	mg/L	1		6020B	Dissolved
Cadmium	0.00047	J	0.0010	0.00027	mg/L	1		6020B	Dissolved
Chromium	0.00085	J	0.0020	0.00050	mg/L	1		6020B	Dissolved
Cobalt	0.00041	J	0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	350000		10000	1900	ug/L	50		6020B	Dissolved
Molybdenum	0.012		0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.0026	J	0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.1	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	19.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	590	H	30	10	mg/L	10		9056A	Total/NA
Fluoride	1.9	H	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	950	H	50	10	mg/L	10		9056A	Total/NA
Alkalinity	170		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	170		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	2600		20	9.4	mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-17

Lab Sample ID: 280-168243-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.51		0.10	0.0015	mg/L	1		6010C	Total
									Recoverable
Lithium	34		20	9.1	ug/L	1		6010C	Total
									Recoverable
Boron	0.48		0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	30		20	9.1	ug/L	1		6010C	Dissolved
Magnesium	20		2.5	1.1	mg/L	50		6020B	Total
									Recoverable
Arsenic	0.0025	J	0.0050	0.00033	mg/L	1		6020B	Total
									Recoverable
Sodium	160		7.5	3.2	mg/L	50		6020B	Total
									Recoverable
Barium	0.066	B	0.0010	0.00029	mg/L	1		6020B	Total
									Recoverable
Potassium	6.4		0.12	0.052	mg/L	1		6020B	Total
									Recoverable
Cadmium	0.0015		0.0010	0.00027	mg/L	1		6020B	Total
									Recoverable
Chromium	0.0013	J B	0.0020	0.00050	mg/L	1		6020B	Total
									Recoverable
Cobalt	0.00018	J	0.0010	0.000092	mg/L	1		6020B	Total
									Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-17 (Continued)

Lab Sample ID: 280-168243-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Molybdenum	0.015		0.0020	0.00014	mg/L	1			6020B	Total Recoverable
Selenium	0.0048	J	0.0050	0.00037	mg/L	1			6020B	Total Recoverable
Calcium	130		10	1.9	mg/L	50			6020B	Total Recoverable
Arsenic	0.0025	J	0.0050	0.00033	mg/L	1			6020B	Dissolved
Barium	0.068		0.0010	0.00029	mg/L	1			6020B	Dissolved
Cadmium	0.0015		0.0010	0.00027	mg/L	1			6020B	Dissolved
Chromium	0.00078	J	0.0020	0.00050	mg/L	1			6020B	Dissolved
Cobalt	0.00012	J	0.0010	0.000092	mg/L	1			6020B	Dissolved
Calcium	140000		10000	1900	ug/L	50			6020B	Dissolved
Molybdenum	0.015		0.0020	0.00014	mg/L	1			6020B	Dissolved
Selenium	0.0053		0.0050	0.00037	mg/L	1			6020B	Dissolved
pH adj. to 25 deg C	7.0	HF	0.1	0.1	SU	1			9040B	Total/NA
Temperature	22.2	HF	1.0	1.0	Degrees C	1			9040B	Total/NA
Chloride	230	H	30	10	mg/L	10			9056A	Total/NA
Fluoride	2.2	H	0.50	0.17	mg/L	1			9056A	Total/NA
Sulfate	240	H	50	10	mg/L	10			9056A	Total/NA
Alkalinity	160		10	3.1	mg/L	1			SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	160		10	3.1	mg/L	1			SM 2320B	Total/NA
Total Dissolved Solids (TDS)	900		20	9.4	mg/L	1			SM 2540C	Total/NA
Total Suspended Solids	1.2	J	4.0	1.1	mg/L	1			SM 2540D	Total/NA

Client Sample ID: MW-15

Lab Sample ID: 280-168243-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Boron	1.4		0.10	0.0015	mg/L	1			6010C	Total Recoverable
Lithium	210		20	9.1	ug/L	1			6010C	Total Recoverable
Boron	1.3		0.10	0.0015	mg/L	1			6010C	Dissolved
Lithium	210		20	9.1	ug/L	1			6010C	Dissolved
Antimony	0.0019	J	0.0020	0.00040	mg/L	1			6020B	Total Recoverable
Magnesium	65		2.5	1.1	mg/L	50			6020B	Total Recoverable
Arsenic	0.0034	J	0.0050	0.00033	mg/L	1			6020B	Total Recoverable
Sodium	680		7.5	3.2	mg/L	50			6020B	Total Recoverable
Barium	0.078	B	0.0010	0.00029	mg/L	1			6020B	Total Recoverable
Potassium	73		6.0	2.6	mg/L	50			6020B	Total Recoverable
Cadmium	0.00052	J	0.0010	0.00027	mg/L	1			6020B	Total Recoverable
Chromium	0.0011	J B	0.0020	0.00050	mg/L	1			6020B	Total Recoverable
Cobalt	0.0044		0.0010	0.000092	mg/L	1			6020B	Total Recoverable
Molybdenum	0.047		0.0020	0.00014	mg/L	1			6020B	Total Recoverable
Selenium	0.0027	J	0.0050	0.00037	mg/L	1			6020B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-15 (Continued)

Lab Sample ID: 280-168243-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	310		10	1.9	mg/L	50		6020B	Total
									Recoverable
Antimony	0.0020		0.0020	0.00040	mg/L	1		6020B	Dissolved
Arsenic	0.0035	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.084		0.0010	0.00029	mg/L	1		6020B	Dissolved
Beryllium	0.000092	J	0.0010	0.000080	mg/L	1		6020B	Dissolved
Cadmium	0.00044	J	0.0010	0.00027	mg/L	1		6020B	Dissolved
Chromium	0.00052	J	0.0020	0.00050	mg/L	1		6020B	Dissolved
Cobalt	0.0042		0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	330000		10000	1900	ug/L	50		6020B	Dissolved
Molybdenum	0.050		0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.0025	J	0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.2	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	800	H	30	10	mg/L	10		9056A	Total/NA
Fluoride	2.4	H	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	1200	H	100	21	mg/L	20		9056A	Total/NA
Alkalinity	200		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	200		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	3200		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.4		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-15-DUP

Lab Sample ID: 280-168243-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	1.4		0.10	0.0015	mg/L	1		6010C	Total
									Recoverable
Lithium	210		20	9.1	ug/L	1		6010C	Total
									Recoverable
Boron	1.3		0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	200		20	9.1	ug/L	1		6010C	Dissolved
Antimony	0.0019	J	0.0020	0.00040	mg/L	1		6020B	Total
									Recoverable
Magnesium	66		2.5	1.1	mg/L	50		6020B	Total
									Recoverable
Arsenic	0.0033	J	0.0050	0.00033	mg/L	1		6020B	Total
									Recoverable
Sodium	690		7.5	3.2	mg/L	50		6020B	Total
									Recoverable
Barium	0.078	B	0.0010	0.00029	mg/L	1		6020B	Total
									Recoverable
Potassium	73		6.0	2.6	mg/L	50		6020B	Total
									Recoverable
Cadmium	0.00059	J	0.0010	0.00027	mg/L	1		6020B	Total
									Recoverable
Chromium	0.00095	J B	0.0020	0.00050	mg/L	1		6020B	Total
									Recoverable
Cobalt	0.0044		0.0010	0.000092	mg/L	1		6020B	Total
									Recoverable
Lead	0.00051	J	0.0010	0.00018	mg/L	1		6020B	Total
									Recoverable
Molybdenum	0.046		0.0020	0.00014	mg/L	1		6020B	Total
									Recoverable
Selenium	0.0027	J	0.0050	0.00037	mg/L	1		6020B	Total
									Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-15-DUP (Continued)

Lab Sample ID: 280-168243-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	310		10	1.9	mg/L	50		6020B	Total
									Recoverable
Antimony	0.0021		0.0020	0.00040	mg/L	1		6020B	Dissolved
Arsenic	0.0034	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.082		0.0010	0.00029	mg/L	1		6020B	Dissolved
Beryllium	0.00017	J	0.0010	0.000080	mg/L	1		6020B	Dissolved
Cadmium	0.00051	J	0.0010	0.00027	mg/L	1		6020B	Dissolved
Cobalt	0.0043		0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	320000		10000	1900	ug/L	50		6020B	Dissolved
Molybdenum	0.048		0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.0026	J	0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	21.7	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	790	H	30	10	mg/L	10		9056A	Total/NA
Fluoride	2.4	H	0.50	0.17	mg/L	1		9056A	Total/NA
Sulfate	1200	H	100	21	mg/L	20		9056A	Total/NA
Alkalinity	200		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	200		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	3000		40	19	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	5.2		4.0	1.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: MW-15-EB

Lab Sample ID: 280-168243-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.0034	J	0.10	0.0015	mg/L	1		6010C	Total
									Recoverable
Boron	0.0026	J	0.10	0.0015	mg/L	1		6010C	Dissolved
Magnesium	0.034	J	0.050	0.021	mg/L	1		6020B	Total
									Recoverable
Calcium	0.33		0.20	0.038	mg/L	1		6020B	Total
									Recoverable
Chromium	0.00050	J	0.0020	0.00050	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	6.6	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	23.3	HF	1.0	1.0	Degrees C	1		9040B	Total/NA

Client Sample ID: MW-14

Lab Sample ID: 280-168243-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.82		0.10	0.0015	mg/L	1		6010C	Total
									Recoverable
Lithium	68		20	9.1	ug/L	1		6010C	Total
									Recoverable
Boron	0.84		0.10	0.0015	mg/L	1		6010C	Dissolved
Lithium	72		20	9.1	ug/L	1		6010C	Dissolved
Magnesium	31		2.5	1.1	mg/L	50		6020B	Total
									Recoverable
Arsenic	0.00057	J	0.0050	0.00033	mg/L	1		6020B	Total
									Recoverable
Sodium	260		7.5	3.2	mg/L	50		6020B	Total
									Recoverable
Barium	0.039	B	0.0010	0.00029	mg/L	1		6020B	Total
									Recoverable
Potassium	9.2		0.12	0.052	mg/L	1		6020B	Total
									Recoverable

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Detection Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-14 (Continued)

Lab Sample ID: 280-168243-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0013	J B	0.0020	0.00050	mg/L	1		6020B	Total
									Recoverable
Cobalt	0.00026	J	0.0010	0.000092	mg/L	1		6020B	Total
									Recoverable
Lead	0.00019	J	0.0010	0.00018	mg/L	1		6020B	Total
									Recoverable
Molybdenum	0.019		0.0020	0.00014	mg/L	1		6020B	Total
									Recoverable
Selenium	0.0046	J	0.0050	0.00037	mg/L	1		6020B	Total
									Recoverable
Calcium	180		10	1.9	mg/L	50		6020B	Total
									Recoverable
Arsenic	0.00046	J	0.0050	0.00033	mg/L	1		6020B	Dissolved
Barium	0.037		0.0010	0.00029	mg/L	1		6020B	Dissolved
Beryllium	0.000098	J	0.0010	0.000080	mg/L	1		6020B	Dissolved
Chromium	0.0012	J	0.0020	0.00050	mg/L	1		6020B	Dissolved
Cobalt	0.00021	J	0.0010	0.000092	mg/L	1		6020B	Dissolved
Calcium	190000		10000	1900	ug/L	50		6020B	Dissolved
Molybdenum	0.021		0.0020	0.00014	mg/L	1		6020B	Dissolved
Selenium	0.0043	J	0.0050	0.00037	mg/L	1		6020B	Dissolved
pH adj. to 25 deg C	7.1	HF	0.1	0.1	SU	1		9040B	Total/NA
Temperature	22.4	HF	1.0	1.0	Degrees C	1		9040B	Total/NA
Chloride	310	H	30	10	mg/L	10		9056A	Total/NA
Sulfate	260	H	50	10	mg/L	10		9056A	Total/NA
Alkalinity	400		10	3.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	400		10	3.1	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids (TDS)	1300		20	9.4	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2.4	J	4.0	1.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Denver

Method Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	EET DEN
6020B	Metals (ICP/MS)	SW846	EET DEN
7470A	Mercury (CVAA)	SW846	EET DEN
9040B	pH	SW846	EET DEN
9056A	Anions, Ion Chromatography	SW846	EET DEN
SM 2320B	Alkalinity	SM	EET DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	EET DEN
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET DEN
7470A	Preparation, Mercury	SW846	EET DEN
FILTRATION	Sample Filtration	None	EET DEN
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

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

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

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

Laboratory References:

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

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

Sample Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-168243-1	MW-13	Water	10/25/22 09:00	10/26/22 14:45
280-168243-2	MW-10	Ground Water	10/25/22 11:28	10/26/22 14:45
280-168243-3	MW-16	Water	10/25/22 14:13	10/26/22 14:45
280-168243-4	MW-17	Water	10/25/22 14:30	10/26/22 14:45
280-168243-5	MW-15	Water	10/26/22 12:42	10/26/22 14:45
280-168243-6	MW-15-DUP	Water	10/26/22 12:55	10/26/22 14:45
280-168243-7	MW-15-EB	Water	10/26/22 13:50	10/26/22 14:45
280-168243-8	MW-14	Water	10/26/22 10:15	10/26/22 14:45

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 6010C - Metals (ICP) - Total Recoverable

Client Sample ID: MW-13
Date Collected: 10/25/22 09:00
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.30		0.10	0.0015	mg/L		11/13/22 23:28	11/15/22 19:30	1
Lithium	37		20	9.1	ug/L		11/13/22 23:28	11/15/22 19:30	1

Client Sample ID: MW-10
Date Collected: 10/25/22 11:28
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.0		0.10	0.0015	mg/L		11/13/22 23:28	11/15/22 19:34	1
Lithium	150		20	9.1	ug/L		11/13/22 23:28	11/15/22 19:34	1

Client Sample ID: MW-16
Date Collected: 10/25/22 14:13
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.1		0.10	0.0015	mg/L		11/13/22 23:28	11/15/22 19:38	1
Lithium	88		20	9.1	ug/L		11/13/22 23:28	11/15/22 19:38	1

Client Sample ID: MW-17
Date Collected: 10/25/22 14:30
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.51		0.10	0.0015	mg/L		11/13/22 23:28	11/15/22 19:42	1
Lithium	34		20	9.1	ug/L		11/13/22 23:28	11/15/22 19:42	1

Client Sample ID: MW-15
Date Collected: 10/26/22 12:42
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4		0.10	0.0015	mg/L		11/13/22 23:28	11/15/22 19:46	1
Lithium	210		20	9.1	ug/L		11/13/22 23:28	11/15/22 19:46	1

Client Sample ID: MW-15-DUP
Date Collected: 10/26/22 12:55
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4		0.10	0.0015	mg/L		11/13/22 23:28	11/15/22 19:50	1
Lithium	210		20	9.1	ug/L		11/13/22 23:28	11/15/22 19:50	1

Client Sample ID: MW-15-EB
Date Collected: 10/26/22 13:50
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0034	J	0.10	0.0015	mg/L		11/13/22 23:28	11/15/22 19:54	1
Lithium	ND		20	9.1	ug/L		11/13/22 23:28	11/15/22 19:54	1

Client Sample ID: MW-14
Date Collected: 10/26/22 10:15
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.82		0.10	0.0015	mg/L		11/13/22 23:28	11/15/22 19:58	1
Lithium	68		20	9.1	ug/L		11/13/22 23:28	11/15/22 19:58	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 6010C - Metals (ICP) - Dissolved

Client Sample ID: MW-13
Date Collected: 10/25/22 09:00
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.31	B	0.20	0.0029	mg/L		11/22/22 18:22	11/23/22 17:18	1
Lithium	33	J	40	18	ug/L		11/22/22 18:22	11/29/22 10:43	1

Client Sample ID: MW-10
Date Collected: 10/25/22 11:28
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.0		0.10	0.0015	mg/L		11/18/22 21:51	11/21/22 15:59	1
Lithium	150		20	9.1	ug/L		11/18/22 21:51	11/21/22 15:59	1

Client Sample ID: MW-16
Date Collected: 10/25/22 14:13
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.0		0.10	0.0015	mg/L		11/18/22 21:51	11/21/22 16:04	1
Lithium	87		20	9.1	ug/L		11/18/22 21:51	11/21/22 16:04	1

Client Sample ID: MW-17
Date Collected: 10/25/22 14:30
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.48		0.10	0.0015	mg/L		11/18/22 21:51	11/21/22 16:08	1
Lithium	30		20	9.1	ug/L		11/18/22 21:51	11/21/22 16:08	1

Client Sample ID: MW-15
Date Collected: 10/26/22 12:42
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.10	0.0015	mg/L		11/18/22 21:51	11/21/22 16:13	1
Lithium	210		20	9.1	ug/L		11/18/22 21:51	11/21/22 16:13	1

Client Sample ID: MW-15-DUP
Date Collected: 10/26/22 12:55
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.10	0.0015	mg/L		11/18/22 21:51	11/21/22 16:17	1
Lithium	200		20	9.1	ug/L		11/18/22 21:51	11/21/22 16:17	1

Client Sample ID: MW-15-EB
Date Collected: 10/26/22 13:50
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0026	J	0.10	0.0015	mg/L		11/21/22 17:39	11/23/22 16:30	1
Lithium	ND		20	9.1	ug/L		11/21/22 17:39	11/23/22 16:30	1

Client Sample ID: MW-14
Date Collected: 10/26/22 10:15
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.84		0.10	0.0015	mg/L		11/21/22 17:39	11/23/22 16:50	1
Lithium	72		20	9.1	ug/L		11/21/22 17:39	11/23/22 16:50	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-13
Date Collected: 10/25/22 09:00
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/27/22 09:13	10/28/22 01:39	1
Magnesium	22		2.5	1.1	mg/L		10/27/22 09:13	10/27/22 17:32	50
Arsenic	ND		0.0050	0.00033	mg/L		10/27/22 09:13	10/28/22 01:39	1
Sodium	140		7.5	3.2	mg/L		10/27/22 09:13	10/27/22 17:32	50
Barium	0.062	B	0.0010	0.00029	mg/L		10/27/22 09:13	10/28/22 01:39	1
Potassium	2.2		0.12	0.052	mg/L		10/27/22 09:13	10/28/22 01:39	1
Beryllium	ND		0.0010	0.000080	mg/L		10/27/22 09:13	10/28/22 01:39	1
Cadmium	ND		0.0010	0.00027	mg/L		10/27/22 09:13	10/28/22 01:39	1
Chromium	0.00062	J B	0.0020	0.00050	mg/L		10/27/22 09:13	10/28/22 01:39	1
Cobalt	0.00051	J	0.0010	0.000092	mg/L		10/27/22 09:13	10/28/22 01:39	1
Lead	ND		0.0010	0.00018	mg/L		10/27/22 09:13	10/28/22 01:39	1
Molybdenum	0.0027		0.0020	0.00014	mg/L		10/27/22 09:13	10/28/22 01:39	1
Selenium	0.0023	J	0.0050	0.00037	mg/L		10/27/22 09:13	10/28/22 01:39	1
Thallium	ND		0.0010	0.000089	mg/L		10/27/22 09:13	10/27/22 18:43	1
Calcium	120		10	1.9	mg/L		10/27/22 09:13	10/27/22 17:32	50

Client Sample ID: MW-10
Date Collected: 10/25/22 11:28
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00096	J	0.0020	0.00040	mg/L		10/27/22 09:13	10/28/22 01:43	1
Magnesium	50		2.5	1.1	mg/L		10/27/22 09:13	10/27/22 17:36	50
Arsenic	0.0020	J	0.0050	0.00033	mg/L		10/27/22 09:13	10/28/22 01:43	1
Sodium	530		7.5	3.2	mg/L		10/27/22 09:13	10/27/22 17:36	50
Barium	0.075	B	0.0010	0.00029	mg/L		10/27/22 09:13	10/28/22 01:43	1
Potassium	39		0.12	0.052	mg/L		10/27/22 09:13	10/28/22 01:43	1
Beryllium	ND		0.0010	0.000080	mg/L		10/27/22 09:13	10/28/22 01:43	1
Cadmium	0.00032	J	0.0010	0.00027	mg/L		10/27/22 09:13	10/28/22 01:43	1
Chromium	0.0026	B	0.0020	0.00050	mg/L		10/27/22 09:13	10/28/22 01:43	1
Cobalt	0.0061		0.0010	0.000092	mg/L		10/27/22 09:13	10/28/22 01:43	1
Lead	0.00023	J	0.0010	0.00018	mg/L		10/27/22 09:13	10/28/22 01:43	1
Molybdenum	0.052		0.0020	0.00014	mg/L		10/27/22 09:13	10/28/22 01:43	1
Selenium	0.022		0.0050	0.00037	mg/L		10/27/22 09:13	10/28/22 01:43	1
Thallium	ND		0.0010	0.000089	mg/L		10/27/22 09:13	10/27/22 18:47	1
Calcium	340		10	1.9	mg/L		10/27/22 09:13	10/27/22 17:36	50

Client Sample ID: MW-16
Date Collected: 10/25/22 14:13
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00041	J	0.0020	0.00040	mg/L		10/27/22 09:13	10/28/22 01:47	1
Magnesium	62		2.5	1.1	mg/L		10/27/22 09:13	10/27/22 17:40	50
Arsenic	0.0021	J	0.0050	0.00033	mg/L		10/27/22 09:13	10/28/22 01:47	1
Sodium	460		7.5	3.2	mg/L		10/27/22 09:13	10/27/22 17:40	50
Barium	0.088	B	0.0010	0.00029	mg/L		10/27/22 09:13	10/28/22 01:47	1
Potassium	28		6.0	2.6	mg/L		10/27/22 09:13	10/27/22 17:40	50
Beryllium	ND		0.0010	0.000080	mg/L		10/27/22 09:13	10/28/22 01:47	1
Cadmium	0.00045	J	0.0010	0.00027	mg/L		10/27/22 09:13	10/28/22 01:47	1
Chromium	0.00094	J B	0.0020	0.00050	mg/L		10/27/22 09:13	10/28/22 01:47	1
Cobalt	0.00041	J	0.0010	0.000092	mg/L		10/27/22 09:13	10/28/22 01:47	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-16
Date Collected: 10/25/22 14:13
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0010	0.00018	mg/L		10/27/22 09:13	10/28/22 01:47	1
Molybdenum	0.011		0.0020	0.00014	mg/L		10/27/22 09:13	10/28/22 01:47	1
Selenium	0.0024	J	0.0050	0.00037	mg/L		10/27/22 09:13	10/28/22 01:47	1
Thallium	ND		0.0010	0.000089	mg/L		10/27/22 09:13	10/27/22 18:51	1
Calcium	310		10	1.9	mg/L		10/27/22 09:13	10/27/22 17:40	50

Client Sample ID: MW-17
Date Collected: 10/25/22 14:30
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/27/22 09:13	10/28/22 01:50	1
Magnesium	20		2.5	1.1	mg/L		10/27/22 09:13	10/27/22 17:43	50
Arsenic	0.0025	J	0.0050	0.00033	mg/L		10/27/22 09:13	10/28/22 01:50	1
Sodium	160		7.5	3.2	mg/L		10/27/22 09:13	10/27/22 17:43	50
Barium	0.066	B	0.0010	0.00029	mg/L		10/27/22 09:13	10/28/22 01:50	1
Potassium	6.4		0.12	0.052	mg/L		10/27/22 09:13	10/28/22 01:50	1
Beryllium	ND		0.0010	0.000080	mg/L		10/27/22 09:13	10/28/22 01:50	1
Cadmium	0.0015		0.0010	0.00027	mg/L		10/27/22 09:13	10/28/22 01:50	1
Chromium	0.0013	J B	0.0020	0.00050	mg/L		10/27/22 09:13	10/28/22 01:50	1
Cobalt	0.00018	J	0.0010	0.000092	mg/L		10/27/22 09:13	10/28/22 01:50	1
Lead	ND		0.0010	0.00018	mg/L		10/27/22 09:13	10/28/22 01:50	1
Molybdenum	0.015		0.0020	0.00014	mg/L		10/27/22 09:13	10/28/22 01:50	1
Selenium	0.0048	J	0.0050	0.00037	mg/L		10/27/22 09:13	10/28/22 01:50	1
Thallium	ND		0.0010	0.000089	mg/L		10/27/22 09:13	10/27/22 18:55	1
Calcium	130		10	1.9	mg/L		10/27/22 09:13	10/27/22 17:43	50

Client Sample ID: MW-15
Date Collected: 10/26/22 12:42
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0019	J	0.0020	0.00040	mg/L		10/27/22 09:13	10/28/22 01:54	1
Magnesium	65		2.5	1.1	mg/L		10/27/22 09:13	10/27/22 17:47	50
Arsenic	0.0034	J	0.0050	0.00033	mg/L		10/27/22 09:13	10/28/22 01:54	1
Sodium	680		7.5	3.2	mg/L		10/27/22 09:13	10/27/22 17:47	50
Barium	0.078	B	0.0010	0.00029	mg/L		10/27/22 09:13	10/28/22 01:54	1
Potassium	73		6.0	2.6	mg/L		10/27/22 09:13	10/27/22 17:47	50
Beryllium	ND		0.0010	0.000080	mg/L		10/27/22 09:13	10/28/22 01:54	1
Cadmium	0.00052	J	0.0010	0.00027	mg/L		10/27/22 09:13	10/28/22 01:54	1
Chromium	0.0011	J B	0.0020	0.00050	mg/L		10/27/22 09:13	10/28/22 01:54	1
Cobalt	0.0044		0.0010	0.000092	mg/L		10/27/22 09:13	10/28/22 01:54	1
Lead	ND		0.0010	0.00018	mg/L		10/27/22 09:13	10/28/22 01:54	1
Molybdenum	0.047		0.0020	0.00014	mg/L		10/27/22 09:13	10/28/22 01:54	1
Selenium	0.0027	J	0.0050	0.00037	mg/L		10/27/22 09:13	10/28/22 01:54	1
Thallium	ND		0.0010	0.000089	mg/L		10/27/22 09:13	10/27/22 18:58	1
Calcium	310		10	1.9	mg/L		10/27/22 09:13	10/27/22 17:47	50

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Client Sample ID: MW-15-DUP
Date Collected: 10/26/22 12:55
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0019	J	0.0020	0.00040	mg/L		10/27/22 09:13	10/28/22 01:58	1
Magnesium	66		2.5	1.1	mg/L		10/27/22 09:13	10/27/22 17:51	50
Arsenic	0.0033	J	0.0050	0.00033	mg/L		10/27/22 09:13	10/28/22 01:58	1
Sodium	690		7.5	3.2	mg/L		10/27/22 09:13	10/27/22 17:51	50
Barium	0.078	B	0.0010	0.00029	mg/L		10/27/22 09:13	10/28/22 01:58	1
Potassium	73		6.0	2.6	mg/L		10/27/22 09:13	10/27/22 17:51	50
Beryllium	ND		0.0010	0.000080	mg/L		10/27/22 09:13	10/28/22 01:58	1
Cadmium	0.00059	J	0.0010	0.00027	mg/L		10/27/22 09:13	10/28/22 01:58	1
Chromium	0.00095	J B	0.0020	0.00050	mg/L		10/27/22 09:13	10/28/22 01:58	1
Cobalt	0.0044		0.0010	0.000092	mg/L		10/27/22 09:13	10/28/22 01:58	1
Lead	0.00051	J	0.0010	0.00018	mg/L		10/27/22 09:13	10/28/22 01:58	1
Molybdenum	0.046		0.0020	0.00014	mg/L		10/27/22 09:13	10/28/22 01:58	1
Selenium	0.0027	J	0.0050	0.00037	mg/L		10/27/22 09:13	10/28/22 01:58	1
Thallium	ND		0.0010	0.000089	mg/L		10/27/22 09:13	10/27/22 19:02	1
Calcium	310		10	1.9	mg/L		10/27/22 09:13	10/27/22 17:51	50

Client Sample ID: MW-15-EB
Date Collected: 10/26/22 13:50
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/27/22 09:13	10/28/22 02:02	1
Magnesium	0.034	J	0.050	0.021	mg/L		10/27/22 09:13	10/28/22 02:02	1
Arsenic	ND		0.0050	0.00033	mg/L		10/27/22 09:13	10/28/22 02:02	1
Sodium	ND		0.15	0.065	mg/L		10/27/22 09:13	11/02/22 09:10	1
Barium	ND		0.0010	0.00029	mg/L		10/27/22 09:13	10/28/22 02:02	1
Potassium	ND		0.12	0.052	mg/L		10/27/22 09:13	11/02/22 09:10	1
Beryllium	ND		0.0010	0.000080	mg/L		10/27/22 09:13	10/28/22 02:02	1
Cadmium	ND		0.0010	0.00027	mg/L		10/27/22 09:13	10/28/22 02:02	1
Chromium	ND		0.0020	0.00050	mg/L		10/27/22 09:13	10/28/22 02:02	1
Cobalt	ND		0.0010	0.000092	mg/L		10/27/22 09:13	10/28/22 02:02	1
Lead	ND		0.0010	0.00018	mg/L		10/27/22 09:13	10/28/22 02:02	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/27/22 09:13	10/28/22 02:02	1
Selenium	ND		0.0050	0.00037	mg/L		10/27/22 09:13	10/28/22 02:02	1
Thallium	ND		0.0010	0.000089	mg/L		10/27/22 09:13	10/27/22 19:06	1
Calcium	0.33		0.20	0.038	mg/L		10/27/22 09:13	10/28/22 02:02	1

Client Sample ID: MW-14
Date Collected: 10/26/22 10:15
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/27/22 09:13	10/28/22 00:13	1
Magnesium	31		2.5	1.1	mg/L		10/27/22 09:13	10/27/22 17:58	50
Arsenic	0.00057	J	0.0050	0.00033	mg/L		10/27/22 09:13	10/28/22 00:13	1
Sodium	260		7.5	3.2	mg/L		10/27/22 09:13	10/27/22 17:58	50
Barium	0.039	B	0.0010	0.00029	mg/L		10/27/22 09:13	10/28/22 00:13	1
Potassium	9.2		0.12	0.052	mg/L		10/27/22 09:13	10/28/22 00:13	1
Beryllium	ND		0.0010	0.000080	mg/L		10/27/22 09:13	10/28/22 00:13	1
Cadmium	ND		0.0010	0.00027	mg/L		10/27/22 09:13	10/28/22 00:13	1
Chromium	0.0013	J B	0.0020	0.00050	mg/L		10/27/22 09:13	10/28/22 00:13	1
Cobalt	0.00026	J	0.0010	0.000092	mg/L		10/27/22 09:13	10/28/22 00:13	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: MW-14
Date Collected: 10/26/22 10:15
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.00019	J	0.0010	0.00018	mg/L		10/27/22 09:13	10/28/22 00:13	1
Molybdenum	0.019		0.0020	0.00014	mg/L		10/27/22 09:13	10/28/22 00:13	1
Selenium	0.0046	J	0.0050	0.00037	mg/L		10/27/22 09:13	10/28/22 00:13	1
Thallium	ND		0.0010	0.000089	mg/L		10/27/22 09:13	10/28/22 00:13	1
Calcium	180		10	1.9	mg/L		10/27/22 09:13	10/27/22 17:58	50

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Client Sample ID: MW-13
Date Collected: 10/25/22 09:00
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/23/22 07:07	11/23/22 14:23	1
Arsenic	ND	F1	0.0050	0.00033	mg/L		11/23/22 07:07	11/23/22 14:23	1
Barium	0.060	F1	0.0010	0.00029	mg/L		11/23/22 07:07	11/23/22 14:23	1
Beryllium	ND		0.0010	0.000080	mg/L		11/23/22 07:07	11/23/22 14:23	1
Cadmium	ND	F1	0.0010	0.00027	mg/L		11/23/22 07:07	11/23/22 14:23	1
Chromium	0.0011	J B	0.0020	0.00050	mg/L		11/23/22 07:07	11/23/22 14:23	1
Cobalt	0.00046	J F1	0.0010	0.000092	mg/L		11/23/22 07:07	11/23/22 14:23	1
Lead	ND	F1	0.0010	0.00018	mg/L		11/23/22 07:07	11/23/22 14:23	1
Calcium	120000		10000	1900	ug/L		11/23/22 07:07	11/23/22 14:09	50
Molybdenum	0.0026		0.0020	0.00014	mg/L		11/23/22 07:07	11/23/22 14:23	1
Selenium	0.0019	J	0.0050	0.00037	mg/L		11/23/22 07:07	11/23/22 14:23	1
Thallium	ND	F1	0.0010	0.000089	mg/L		11/23/22 07:07	11/23/22 14:23	1

Client Sample ID: MW-10
Date Collected: 10/25/22 11:28
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00095	J	0.0020	0.00040	mg/L		11/20/22 14:00	11/21/22 21:03	1
Arsenic	0.0020	J	0.0050	0.00033	mg/L		11/20/22 14:00	11/21/22 21:03	1
Barium	0.075		0.0010	0.00029	mg/L		11/20/22 14:00	11/22/22 20:06	1
Beryllium	ND		0.0010	0.000080	mg/L		11/20/22 14:00	11/21/22 21:03	1
Cadmium	ND		0.0010	0.00027	mg/L		11/20/22 14:00	11/21/22 21:03	1
Chromium	0.0026		0.0020	0.00050	mg/L		11/20/22 14:00	11/21/22 21:03	1
Cobalt	0.0061		0.0010	0.000092	mg/L		11/20/22 14:00	11/21/22 21:03	1
Lead	ND		0.0010	0.00018	mg/L		11/20/22 14:00	11/21/22 21:03	1
Calcium	370000		10000	1900	ug/L		11/20/22 14:00	11/23/22 09:09	50
Molybdenum	0.054		0.0020	0.00014	mg/L		11/20/22 14:00	11/21/22 21:03	1
Selenium	0.023		0.0050	0.00037	mg/L		11/20/22 14:00	11/21/22 21:03	1
Thallium	ND		0.0010	0.000089	mg/L		11/20/22 14:00	11/21/22 21:03	1

Client Sample ID: MW-16
Date Collected: 10/25/22 14:13
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/20/22 14:00	11/21/22 21:07	1
Arsenic	0.0019	J	0.0050	0.00033	mg/L		11/20/22 14:00	11/21/22 21:07	1
Barium	0.095		0.0010	0.00029	mg/L		11/20/22 14:00	11/22/22 20:08	1
Beryllium	ND		0.0010	0.000080	mg/L		11/20/22 14:00	11/21/22 21:07	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Client Sample ID: MW-16
Date Collected: 10/25/22 14:13
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00047	J	0.0010	0.00027	mg/L		11/20/22 14:00	11/21/22 21:07	1
Chromium	0.00085	J	0.0020	0.00050	mg/L		11/20/22 14:00	11/21/22 21:07	1
Cobalt	0.00041	J	0.0010	0.000092	mg/L		11/20/22 14:00	11/21/22 21:07	1
Lead	ND		0.0010	0.00018	mg/L		11/20/22 14:00	11/21/22 21:07	1
Calcium	350000		10000	1900	ug/L		11/20/22 14:00	11/23/22 09:10	50
Molybdenum	0.012		0.0020	0.00014	mg/L		11/20/22 14:00	11/21/22 21:07	1
Selenium	0.0026	J	0.0050	0.00037	mg/L		11/20/22 14:00	11/21/22 21:07	1
Thallium	ND		0.0010	0.000089	mg/L		11/20/22 14:00	11/21/22 21:07	1

Client Sample ID: MW-17
Date Collected: 10/25/22 14:30
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/20/22 14:00	11/21/22 21:11	1
Arsenic	0.0025	J	0.0050	0.00033	mg/L		11/20/22 14:00	11/21/22 21:11	1
Barium	0.068		0.0010	0.00029	mg/L		11/20/22 14:00	11/22/22 20:10	1
Beryllium	ND		0.0010	0.000080	mg/L		11/20/22 14:00	11/21/22 21:11	1
Cadmium	0.0015		0.0010	0.00027	mg/L		11/20/22 14:00	11/21/22 21:11	1
Chromium	0.00078	J	0.0020	0.00050	mg/L		11/20/22 14:00	11/21/22 21:11	1
Cobalt	0.00012	J	0.0010	0.000092	mg/L		11/20/22 14:00	11/21/22 21:11	1
Lead	ND		0.0010	0.00018	mg/L		11/20/22 14:00	11/21/22 21:11	1
Calcium	140000		10000	1900	ug/L		11/20/22 14:00	11/23/22 09:12	50
Molybdenum	0.015		0.0020	0.00014	mg/L		11/20/22 14:00	11/21/22 21:11	1
Selenium	0.0053		0.0050	0.00037	mg/L		11/20/22 14:00	11/21/22 21:11	1
Thallium	ND		0.0010	0.000089	mg/L		11/20/22 14:00	11/21/22 21:11	1

Client Sample ID: MW-15
Date Collected: 10/26/22 12:42
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0020		0.0020	0.00040	mg/L		11/20/22 14:00	11/21/22 21:14	1
Arsenic	0.0035	J	0.0050	0.00033	mg/L		11/20/22 14:00	11/21/22 21:14	1
Barium	0.084		0.0010	0.00029	mg/L		11/20/22 14:00	11/22/22 20:12	1
Beryllium	0.000092	J	0.0010	0.000080	mg/L		11/20/22 14:00	11/21/22 21:14	1
Cadmium	0.00044	J	0.0010	0.00027	mg/L		11/20/22 14:00	11/21/22 21:14	1
Chromium	0.00052	J	0.0020	0.00050	mg/L		11/20/22 14:00	11/21/22 21:14	1
Cobalt	0.0042		0.0010	0.000092	mg/L		11/20/22 14:00	11/21/22 21:14	1
Lead	ND		0.0010	0.00018	mg/L		11/20/22 14:00	11/21/22 21:14	1
Calcium	330000		10000	1900	ug/L		11/20/22 14:00	11/23/22 09:14	50
Molybdenum	0.050		0.0020	0.00014	mg/L		11/20/22 14:00	11/21/22 21:14	1
Selenium	0.0025	J	0.0050	0.00037	mg/L		11/20/22 14:00	11/21/22 21:14	1
Thallium	ND		0.0010	0.000089	mg/L		11/20/22 14:00	11/21/22 21:14	1

Client Sample ID: MW-15-DUP
Date Collected: 10/26/22 12:55
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0021		0.0020	0.00040	mg/L		11/20/22 14:00	11/21/22 21:18	1
Arsenic	0.0034	J	0.0050	0.00033	mg/L		11/20/22 14:00	11/21/22 21:18	1
Barium	0.082		0.0010	0.00029	mg/L		11/20/22 14:00	11/22/22 20:14	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Client Sample ID: MW-15-DUP
Date Collected: 10/26/22 12:55
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00017	J	0.0010	0.000080	mg/L		11/20/22 14:00	11/21/22 21:18	1
Cadmium	0.00051	J	0.0010	0.00027	mg/L		11/20/22 14:00	11/21/22 21:18	1
Chromium	ND		0.0020	0.00050	mg/L		11/20/22 14:00	11/21/22 21:18	1
Cobalt	0.0043		0.0010	0.000092	mg/L		11/20/22 14:00	11/21/22 21:18	1
Lead	ND		0.0010	0.00018	mg/L		11/20/22 14:00	11/21/22 21:18	1
Calcium	320000		10000	1900	ug/L		11/20/22 14:00	11/23/22 09:16	50
Molybdenum	0.048		0.0020	0.00014	mg/L		11/20/22 14:00	11/21/22 21:18	1
Selenium	0.0026	J	0.0050	0.00037	mg/L		11/20/22 14:00	11/21/22 21:18	1
Thallium	ND		0.0010	0.000089	mg/L		11/20/22 14:00	11/21/22 21:18	1

Client Sample ID: MW-15-EB
Date Collected: 10/26/22 13:50
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/21/22 14:08	11/22/22 15:40	1
Arsenic	ND		0.0050	0.00033	mg/L		11/21/22 14:08	11/22/22 15:40	1
Barium	ND		0.0010	0.00029	mg/L		11/21/22 14:08	11/22/22 15:40	1
Beryllium	ND		0.0010	0.000080	mg/L		11/21/22 14:08	11/22/22 15:40	1
Cadmium	ND		0.0010	0.00027	mg/L		11/21/22 14:08	11/22/22 15:40	1
Chromium	0.00050	J	0.0020	0.00050	mg/L		11/21/22 14:08	11/22/22 15:40	1
Cobalt	ND		0.0010	0.000092	mg/L		11/21/22 14:08	11/22/22 15:40	1
Lead	ND		0.0010	0.00018	mg/L		11/21/22 14:08	11/22/22 15:40	1
Calcium	ND		200	38	ug/L		11/21/22 14:08	11/23/22 10:09	1
Molybdenum	ND		0.0020	0.00014	mg/L		11/21/22 14:08	11/22/22 15:40	1
Selenium	ND		0.0050	0.00037	mg/L		11/21/22 14:08	11/22/22 15:40	1
Thallium	ND		0.0010	0.000089	mg/L		11/21/22 14:08	11/22/22 15:40	1

Client Sample ID: MW-14
Date Collected: 10/26/22 10:15
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/21/22 14:08	11/22/22 15:42	1
Arsenic	0.00046	J	0.0050	0.00033	mg/L		11/21/22 14:08	11/22/22 15:42	1
Barium	0.037		0.0010	0.00029	mg/L		11/21/22 14:08	11/22/22 15:42	1
Beryllium	0.000098	J	0.0010	0.000080	mg/L		11/21/22 14:08	11/22/22 15:42	1
Cadmium	ND		0.0010	0.00027	mg/L		11/21/22 14:08	11/22/22 15:42	1
Chromium	0.0012	J	0.0020	0.00050	mg/L		11/21/22 14:08	11/22/22 15:42	1
Cobalt	0.00021	J	0.0010	0.000092	mg/L		11/21/22 14:08	11/22/22 15:42	1
Lead	ND		0.0010	0.00018	mg/L		11/21/22 14:08	11/22/22 15:42	1
Calcium	190000		10000	1900	ug/L		11/21/22 14:08	11/23/22 10:15	50
Molybdenum	0.021		0.0020	0.00014	mg/L		11/21/22 14:08	11/22/22 15:42	1
Selenium	0.0043	J	0.0050	0.00037	mg/L		11/21/22 14:08	11/22/22 15:42	1
Thallium	ND		0.0010	0.000089	mg/L		11/21/22 14:08	11/22/22 15:42	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 7470A - Mercury (CVAA)

Client Sample ID: MW-13
Date Collected: 10/25/22 09:00
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		11/17/22 17:30	11/18/22 23:21	1

Client Sample ID: MW-10
Date Collected: 10/25/22 11:28
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		11/17/22 17:30	11/18/22 23:24	1

Client Sample ID: MW-16
Date Collected: 10/25/22 14:13
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		11/17/22 17:30	11/18/22 23:26	1

Client Sample ID: MW-17
Date Collected: 10/25/22 14:30
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		11/17/22 17:30	11/18/22 23:29	1

Client Sample ID: MW-15
Date Collected: 10/26/22 12:42
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		11/17/22 17:30	11/18/22 23:31	1

Client Sample ID: MW-15-DUP
Date Collected: 10/26/22 12:55
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		11/17/22 17:30	11/18/22 23:34	1

Client Sample ID: MW-15-EB
Date Collected: 10/26/22 13:50
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		11/17/22 17:30	11/18/22 23:42	1

Client Sample ID: MW-14
Date Collected: 10/26/22 10:15
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		11/17/22 17:30	11/18/22 23:44	1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: MW-13
Date Collected: 10/25/22 09:00
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/21/22 13:33	11/21/22 21:12	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 7470A - Mercury (CVAA) - Dissolved

Client Sample ID: MW-10
Date Collected: 10/25/22 11:28
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/21/22 13:33	11/21/22 21:14	1

Client Sample ID: MW-16
Date Collected: 10/25/22 14:13
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/21/22 13:33	11/21/22 21:17	1

Client Sample ID: MW-17
Date Collected: 10/25/22 14:30
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/21/22 13:33	11/21/22 21:19	1

Client Sample ID: MW-15
Date Collected: 10/26/22 12:42
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/21/22 13:33	11/21/22 21:27	1

Client Sample ID: MW-15-DUP
Date Collected: 10/26/22 12:55
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/21/22 13:33	11/21/22 21:29	1

Client Sample ID: MW-15-EB
Date Collected: 10/26/22 13:50
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/21/22 13:33	11/21/22 21:37	1

Client Sample ID: MW-14
Date Collected: 10/26/22 10:15
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/21/22 13:33	11/21/22 21:40	1

General Chemistry

Client Sample ID: MW-13
Date Collected: 10/25/22 09:00
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.7	HF	0.1	0.1	SU			11/01/22 13:24	1
Temperature (SW846 9040B)	22.1	HF	1.0	1.0	Degrees C			11/01/22 13:24	1
Chloride (SW846 9056A)	160	H	15	5.1	mg/L			12/09/22 18:51	5
Fluoride (SW846 9056A)	1.4	H	0.50	0.17	mg/L			12/09/22 18:35	1
Sulfate (SW846 9056A)	140	H	25	5.2	mg/L			12/09/22 18:51	5
Alkalinity (SM 2320B)	280		10	3.1	mg/L			10/27/22 20:12	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	280		10	3.1	mg/L			10/27/22 20:12	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

General Chemistry (Continued)

Client Sample ID: MW-13
Date Collected: 10/25/22 09:00
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbonate Alkalinity as CaCO ₃ (SM 2320B)	ND		10	3.1	mg/L			10/27/22 20:12	1
Total Dissolved Solids (TDS) (SM 2540C)	770		10	4.7	mg/L			10/31/22 19:35	1
Total Suspended Solids (SM 2540D)	ND		4.0	1.1	mg/L			10/28/22 11:15	1

Client Sample ID: MW-10
Date Collected: 10/25/22 11:28
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-2
Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.9	HF	0.1	0.1	SU			11/01/22 13:28	1
Temperature (SW846 9040B)	21.7	HF	1.0	1.0	Degrees C			11/01/22 13:28	1
Chloride (SW846 9056A)	600	H	30	10	mg/L			12/09/22 19:55	10
Fluoride (SW846 9056A)	1.9	H	0.50	0.17	mg/L			12/13/22 04:08	1
Sulfate (SW846 9056A)	1100	H	100	21	mg/L			12/09/22 20:11	20
Alkalinity (SM 2320B)	190		10	3.1	mg/L			10/27/22 20:25	1
Bicarbonate Alkalinity as CaCO ₃ (SM 2320B)	190		10	3.1	mg/L			10/27/22 20:25	1
Carbonate Alkalinity as CaCO ₃ (SM 2320B)	ND		10	3.1	mg/L			10/27/22 20:25	1
Total Dissolved Solids (TDS) (SM 2540C)	2800		20	9.4	mg/L			10/31/22 19:35	1
Total Suspended Solids (SM 2540D)	7.6		4.0	1.1	mg/L			10/28/22 11:15	1

Client Sample ID: MW-16
Date Collected: 10/25/22 14:13
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.1	HF	0.1	0.1	SU			11/01/22 13:08	1
Temperature (SW846 9040B)	19.4	HF	1.0	1.0	Degrees C			11/01/22 13:08	1
Chloride (SW846 9056A)	590	H	30	10	mg/L			12/09/22 20:43	10
Fluoride (SW846 9056A)	1.9	H	0.50	0.17	mg/L			12/13/22 04:32	1
Sulfate (SW846 9056A)	950	H	50	10	mg/L			12/09/22 20:43	10
Alkalinity (SM 2320B)	170		10	3.1	mg/L			10/27/22 20:31	1
Bicarbonate Alkalinity as CaCO ₃ (SM 2320B)	170		10	3.1	mg/L			10/27/22 20:31	1
Carbonate Alkalinity as CaCO ₃ (SM 2320B)	ND		10	3.1	mg/L			10/27/22 20:31	1
Total Dissolved Solids (TDS) (SM 2540C)	2600		20	9.4	mg/L			10/31/22 19:35	1
Total Suspended Solids (SM 2540D)	ND		4.0	1.1	mg/L			10/31/22 19:41	1

Client Sample ID: MW-17
Date Collected: 10/25/22 14:30
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.0	HF	0.1	0.1	SU			11/01/22 12:52	1
Temperature (SW846 9040B)	22.2	HF	1.0	1.0	Degrees C			11/01/22 12:52	1
Chloride (SW846 9056A)	230	H	30	10	mg/L			12/09/22 21:31	10
Fluoride (SW846 9056A)	2.2	H	0.50	0.17	mg/L			12/13/22 04:40	1
Sulfate (SW846 9056A)	240	H	50	10	mg/L			12/09/22 21:31	10

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

General Chemistry (Continued)

Client Sample ID: MW-17
Date Collected: 10/25/22 14:30
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity (SM 2320B)	160		10	3.1	mg/L			10/27/22 20:37	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	160		10	3.1	mg/L			10/27/22 20:37	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/27/22 20:37	1
Total Dissolved Solids (TDS) (SM 2540C)	900		20	9.4	mg/L			10/31/22 19:35	1
Total Suspended Solids (SM 2540D)	1.2	J	4.0	1.1	mg/L			10/31/22 19:41	1

Client Sample ID: MW-15
Date Collected: 10/26/22 12:42
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.6	HF	0.1	0.1	SU			11/01/22 13:21	1
Temperature (SW846 9040B)	21.2	HF	1.0	1.0	Degrees C			11/01/22 13:21	1
Chloride (SW846 9056A)	800	H	30	10	mg/L			12/09/22 22:03	10
Fluoride (SW846 9056A)	2.4	H	0.50	0.17	mg/L			12/13/22 04:48	1
Sulfate (SW846 9056A)	1200	H	100	21	mg/L			12/09/22 22:51	20
Alkalinity (SM 2320B)	200		10	3.1	mg/L			10/27/22 20:44	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	200		10	3.1	mg/L			10/27/22 20:44	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/27/22 20:44	1
Total Dissolved Solids (TDS) (SM 2540C)	3200		20	9.4	mg/L			11/01/22 10:16	1
Total Suspended Solids (SM 2540D)	4.4		4.0	1.1	mg/L			11/01/22 13:13	1

Client Sample ID: MW-15-DUP
Date Collected: 10/26/22 12:55
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.6	HF	0.1	0.1	SU			11/01/22 12:59	1
Temperature (SW846 9040B)	21.7	HF	1.0	1.0	Degrees C			11/01/22 12:59	1
Chloride (SW846 9056A)	790	H	30	10	mg/L			12/09/22 23:23	10
Fluoride (SW846 9056A)	2.4	H	0.50	0.17	mg/L			12/13/22 04:56	1
Sulfate (SW846 9056A)	1200	H	100	21	mg/L			12/09/22 23:39	20
Alkalinity (SM 2320B)	200		10	3.1	mg/L			10/27/22 20:50	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	200		10	3.1	mg/L			10/27/22 20:50	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/27/22 20:50	1
Total Dissolved Solids (TDS) (SM 2540C)	3000		40	19	mg/L			11/02/22 12:00	1
Total Suspended Solids (SM 2540D)	5.2		4.0	1.1	mg/L			11/01/22 13:13	1

Client Sample ID: MW-15-EB
Date Collected: 10/26/22 13:50
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	6.6	HF	0.1	0.1	SU			11/03/22 16:39	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

General Chemistry (Continued)

Client Sample ID: MW-15-EB
Date Collected: 10/26/22 13:50
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature (SW846 9040B)	23.3	HF	1.0	1.0	Degrees C			11/03/22 16:39	1
Chloride (SW846 9056A)	ND	H	3.0	1.0	mg/L			12/09/22 23:55	1
Fluoride (SW846 9056A)	ND	H	0.50	0.17	mg/L			12/13/22 05:04	1
Sulfate (SW846 9056A)	ND	H	5.0	1.0	mg/L			12/09/22 23:55	1
Alkalinity (SM 2320B)	ND		10	3.1	mg/L			10/27/22 20:56	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/27/22 20:56	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/27/22 20:56	1
Total Dissolved Solids (TDS) (SM 2540C)	ND		10	4.7	mg/L			11/02/22 12:00	1
Total Suspended Solids (SM 2540D)	ND		4.0	1.1	mg/L			11/01/22 13:13	1

Client Sample ID: MW-14
Date Collected: 10/26/22 10:15
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C (SW846 9040B)	7.1	HF	0.1	0.1	SU			11/01/22 12:56	1
Temperature (SW846 9040B)	22.4	HF	1.0	1.0	Degrees C			11/01/22 12:56	1
Chloride (SW846 9056A)	310	H	30	10	mg/L			12/10/22 01:15	10
Fluoride (SW846 9056A)	ND	H	10	3.3	mg/L			12/10/22 02:03	20
Sulfate (SW846 9056A)	260	H	50	10	mg/L			12/10/22 01:15	10
Alkalinity (SM 2320B)	400		10	3.1	mg/L			10/27/22 21:04	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	400		10	3.1	mg/L			10/27/22 21:04	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	ND		10	3.1	mg/L			10/27/22 21:04	1
Total Dissolved Solids (TDS) (SM 2540C)	1300		20	9.4	mg/L			11/02/22 12:00	1
Total Suspended Solids (SM 2540D)	2.4	J	4.0	1.1	mg/L			11/01/22 13:13	1

Method: SW846 9315 - Radium-226 (GFPC)

Client Sample ID: MW-13
Date Collected: 10/25/22 09:00
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.241		0.0981	0.100	1.00	0.114	pCi/L	11/03/22 10:22	11/29/22 21:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.2		40 - 110					11/03/22 10:22	11/29/22 21:02	1

Client Sample ID: MW-10
Date Collected: 10/25/22 11:28
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.157		0.0853	0.0865	1.00	0.108	pCi/L	11/03/22 10:22	11/29/22 21:02	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 9315 - Radium-226 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.3		40 - 110					11/03/22 10:22	11/29/22 21:02	1
Client Sample ID: MW-16								Lab Sample ID: 280-168243-3		
Date Collected: 10/25/22 14:13								Matrix: Water		
Date Received: 10/26/22 14:45										
Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.347		0.111	0.115	1.00	0.104	pCi/L	11/03/22 10:22	11/29/22 21:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.2		40 - 110					11/03/22 10:22	11/29/22 21:02	1
Client Sample ID: MW-17								Lab Sample ID: 280-168243-4		
Date Collected: 10/25/22 14:30								Matrix: Water		
Date Received: 10/26/22 14:45										
Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.183		0.0897	0.0912	1.00	0.108	pCi/L	11/03/22 10:22	11/29/22 09:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.2		40 - 110					11/03/22 10:22	11/29/22 09:17	1
Client Sample ID: MW-15								Lab Sample ID: 280-168243-5		
Date Collected: 10/26/22 12:42								Matrix: Water		
Date Received: 10/26/22 14:45										
Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.400		0.125	0.130	1.00	0.127	pCi/L	11/03/22 10:22	11/29/22 21:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.0		40 - 110					11/03/22 10:22	11/29/22 21:02	1
Client Sample ID: MW-15-DUP								Lab Sample ID: 280-168243-6		
Date Collected: 10/26/22 12:55								Matrix: Water		
Date Received: 10/26/22 14:45										
Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.419		0.125	0.130	1.00	0.117	pCi/L	11/03/22 10:22	11/29/22 21:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.2		40 - 110					11/03/22 10:22	11/29/22 21:02	1
Client Sample ID: MW-15-EB								Lab Sample ID: 280-168243-7		
Date Collected: 10/26/22 13:50								Matrix: Water		
Date Received: 10/26/22 14:45										
Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0462	U	0.0673	0.0675	1.00	0.114	pCi/L	11/03/22 10:22	11/30/22 15:55	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 9315 - Radium-226 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	87.4		40 - 110	11/03/22 10:22	11/30/22 15:55	1

Client Sample ID: MW-14
Date Collected: 10/26/22 10:15
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0998	U	0.0755	0.0760	1.00	0.109	pCi/L	11/03/22 10:22	11/30/22 15:55	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	84.1		40 - 110	11/03/22 10:22	11/30/22 15:55	1

Method: SW846 9320 - Radium-228 (GFPC)

Client Sample ID: MW-13
Date Collected: 10/25/22 09:00
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.40		0.519	0.564	1.00	0.504	pCi/L	11/22/22 10:53	11/28/22 12:25	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110	11/22/22 10:53	11/28/22 12:25	1
Y Carrier	84.1		40 - 110	11/22/22 10:53	11/28/22 12:25	1

Client Sample ID: MW-10
Date Collected: 10/25/22 11:28
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.57		0.437	0.461	1.00	0.475	pCi/L	11/22/22 10:53	11/28/22 12:25	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110	11/22/22 10:53	11/28/22 12:25	1
Y Carrier	85.2		40 - 110	11/22/22 10:53	11/28/22 12:25	1

Client Sample ID: MW-16
Date Collected: 10/25/22 14:13
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.49		0.524	0.572	1.00	0.488	pCi/L	11/22/22 10:53	11/28/22 12:25	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.1		40 - 110	11/22/22 10:53	11/28/22 12:25	1
Y Carrier	83.0		40 - 110	11/22/22 10:53	11/28/22 12:25	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 9320 - Radium-228 (GFPC)

Client Sample ID: MW-17
Date Collected: 10/25/22 14:30
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.63	*	0.505	0.527	1.00	0.595	pCi/L	11/03/22 10:50	11/17/22 11:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.2		40 - 110					11/03/22 10:50	11/17/22 11:54	1
Y Carrier	83.0		40 - 110					11/03/22 10:50	11/17/22 11:54	1

Client Sample ID: MW-15
Date Collected: 10/26/22 12:42
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.57		0.549	0.597	1.00	0.502	pCi/L	11/22/22 10:53	11/28/22 12:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.7		40 - 110					11/22/22 10:53	11/28/22 12:25	1
Y Carrier	78.5		40 - 110					11/22/22 10:53	11/28/22 12:25	1

Client Sample ID: MW-15-DUP
Date Collected: 10/26/22 12:55
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.57		0.521	0.572	1.00	0.442	pCi/L	11/22/22 10:53	11/28/22 12:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.4		40 - 110					11/22/22 10:53	11/28/22 12:25	1
Y Carrier	82.6		40 - 110					11/22/22 10:53	11/28/22 12:25	1

Client Sample ID: MW-15-EB
Date Collected: 10/26/22 13:50
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.201	U *	0.359	0.360	1.00	0.616	pCi/L	11/03/22 10:50	11/17/22 11:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.4		40 - 110					11/03/22 10:50	11/17/22 11:55	1
Y Carrier	81.9		40 - 110					11/03/22 10:50	11/17/22 11:55	1

Client Sample ID: MW-14
Date Collected: 10/26/22 10:15
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.10		0.506	0.542	1.00	0.504	pCi/L	11/22/22 10:53	11/28/22 12:25	1

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Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SW846 9320 - Radium-228 (GFPC) (Continued)

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.8		40 - 110	11/22/22 10:53	11/28/22 12:25	1
Y Carrier	82.2		40 - 110	11/22/22 10:53	11/28/22 12:25	1

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

Client Sample ID: MW-13
Date Collected: 10/25/22 09:00
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.64		0.528	0.573	5.00	0.504	pCi/L		12/02/22 14:13	1

Client Sample ID: MW-10
Date Collected: 10/25/22 11:28
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-2
Matrix: Ground Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.72		0.445	0.469	5.00	0.475	pCi/L		12/02/22 14:13	1

Client Sample ID: MW-16
Date Collected: 10/25/22 14:13
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.84		0.536	0.583	5.00	0.488	pCi/L		12/02/22 14:13	1

Client Sample ID: MW-17
Date Collected: 10/25/22 14:30
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.82		0.513	0.535	5.00	0.595	pCi/L		11/29/22 16:08	1

Client Sample ID: MW-15
Date Collected: 10/26/22 12:42
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-5
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.97		0.563	0.611	5.00	0.502	pCi/L		12/02/22 14:13	1

Client Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

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

Client Sample ID: MW-15-DUP
Date Collected: 10/26/22 12:55
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-6
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.99		0.536	0.587	5.00	0.442	pCi/L		12/02/22 14:13	1

Client Sample ID: MW-15-EB
Date Collected: 10/26/22 13:50
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-7
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.248	U	0.365	0.366	5.00	0.616	pCi/L		12/02/22 14:13	1

Client Sample ID: MW-14
Date Collected: 10/26/22 10:15
Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-8
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.20		0.512	0.547	5.00	0.504	pCi/L		12/02/22 14:13	1

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-592788/1-A

Matrix: Water

Analysis Batch: 593627

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 592788

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		11/13/22 23:28	11/15/22 18:33	1
Lithium	ND		20	9.1	ug/L		11/13/22 23:28	11/15/22 18:33	1

Lab Sample ID: LCS 280-592788/2-A

Matrix: Water

Analysis Batch: 593627

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 592788

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	1.93		mg/L		96	86 - 110
Lithium	1000	956		ug/L		96	90 - 112

Lab Sample ID: MB 280-593927/1-B

Matrix: Water

Analysis Batch: 594348

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 593932

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		11/18/22 21:51	11/21/22 15:45	1
Lithium	ND		20	9.1	ug/L		11/18/22 21:51	11/21/22 15:45	1

Lab Sample ID: LCS 280-593927/2-B

Matrix: Water

Analysis Batch: 594348

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 593932

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	2.00		mg/L		100	86 - 110
Lithium	1000	999		ug/L		100	90 - 112

Lab Sample ID: MB 280-593927/1-E

Matrix: Water

Analysis Batch: 594645

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 594165

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.10	0.0015	mg/L		11/21/22 17:39	11/23/22 16:22	1
Lithium	ND		20	9.1	ug/L		11/21/22 17:39	11/23/22 16:22	1

Lab Sample ID: LCS 280-593927/2-E

Matrix: Water

Analysis Batch: 594645

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 594165

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	2.06		mg/L		103	86 - 110
Lithium	1000	1040		ug/L		104	90 - 112

Lab Sample ID: 280-168243-7 MS

Matrix: Water

Analysis Batch: 594645

Client Sample ID: MW-15-EB

Prep Type: Dissolved

Prep Batch: 594165

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.0026	J	2.00	2.07		mg/L		103	87 - 113
Lithium	ND		1000	1050		ug/L		105	89 - 114

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: 6010C - Metals (ICP)

Lab Sample ID: 280-168243-7 MSD

Matrix: Water

Analysis Batch: 594645

Client Sample ID: MW-15-EB

Prep Type: Dissolved

Prep Batch: 594165

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.0026	J	2.00	2.05		mg/L		103	87 - 113	1	20
Lithium	ND		1000	1040		ug/L		104	89 - 114	1	20

Lab Sample ID: MB 280-593927/1-H

Matrix: Water

Analysis Batch: 594645

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 594291

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.00158	J	0.10	0.0015	mg/L		11/22/22 18:22	11/23/22 16:54	1
Lithium	ND		20	9.1	ug/L		11/22/22 18:22	11/23/22 16:54	1

Lab Sample ID: MB 280-593927/1-H

Matrix: Water

Analysis Batch: 594935

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 594291

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		20	9.1	ug/L		11/22/22 18:22	11/29/22 10:34	1

Lab Sample ID: LCS 280-593927/2-H

Matrix: Water

Analysis Batch: 594645

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 594291

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	2.00	2.06		mg/L		103	86 - 110
Lithium	1000	1040		ug/L		104	90 - 112

Lab Sample ID: LCS 280-593927/2-H

Matrix: Water

Analysis Batch: 594935

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 594291

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	1000	998		ug/L		100	90 - 112

Lab Sample ID: 280-168243-1 MS

Matrix: Water

Analysis Batch: 594645

Client Sample ID: MW-13

Prep Type: Dissolved

Prep Batch: 594291

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.31	B	4.00	4.45		mg/L		103	87 - 113

Lab Sample ID: 280-168243-1 MS

Matrix: Water

Analysis Batch: 594935

Client Sample ID: MW-13

Prep Type: Dissolved

Prep Batch: 594291

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Lithium	33	J	2000	2070		ug/L		102	89 - 114

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 280-168243-1 MSD

Matrix: Water

Analysis Batch: 594645

Client Sample ID: MW-13

Prep Type: Dissolved

Prep Batch: 594291

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.31	B	4.00	4.41		mg/L		102	87 - 113	1	20

Lab Sample ID: 280-168243-1 MSD

Matrix: Water

Analysis Batch: 594935

Client Sample ID: MW-13

Prep Type: Dissolved

Prep Batch: 594291

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lithium	33	J	2000	2040		ug/L		100	89 - 114	1	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-591368/1-A

Matrix: Water

Analysis Batch: 591577

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 591368

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		10/27/22 09:13	10/27/22 17:25	1
Magnesium	ND		50	21	ug/L		10/27/22 09:13	10/27/22 17:25	1
Arsenic	ND		0.0050	0.00033	mg/L		10/27/22 09:13	10/27/22 17:25	1
Sodium	ND		150	65	ug/L		10/27/22 09:13	10/27/22 17:25	1
Barium	0.000861	J	0.0010	0.00029	mg/L		10/27/22 09:13	10/27/22 17:25	1
Potassium	ND		120	52	ug/L		10/27/22 09:13	10/27/22 17:25	1
Beryllium	ND		0.0010	0.000080	mg/L		10/27/22 09:13	10/27/22 17:25	1
Cadmium	ND		0.0010	0.00027	mg/L		10/27/22 09:13	10/27/22 17:25	1
Chromium	0.000721	J	0.0020	0.00050	mg/L		10/27/22 09:13	10/27/22 17:25	1
Cobalt	ND		0.0010	0.000092	mg/L		10/27/22 09:13	10/27/22 17:25	1
Lead	ND		0.0010	0.00018	mg/L		10/27/22 09:13	10/27/22 17:25	1
Molybdenum	ND		0.0020	0.00014	mg/L		10/27/22 09:13	10/27/22 17:25	1
Selenium	ND		0.0050	0.00037	mg/L		10/27/22 09:13	10/27/22 17:25	1
Calcium	ND		0.20	0.038	mg/L		10/27/22 09:13	10/27/22 17:25	1
Thallium	ND		0.0010	0.000089	mg/L		10/27/22 09:13	10/27/22 17:25	1

Lab Sample ID: LCS 280-591368/2-A

Matrix: Water

Analysis Batch: 591577

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 591368

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0400	0.0399		mg/L		100	85 - 115
Magnesium	800	831		ug/L		104	80 - 120
Arsenic	0.0400	0.0398		mg/L		100	85 - 117
Barium	0.0400	0.0406		mg/L		102	85 - 118
Potassium	800	796		ug/L		99	80 - 120
Beryllium	0.0400	0.0407		mg/L		102	80 - 125
Cadmium	0.0400	0.0392		mg/L		98	85 - 115
Chromium	0.0400	0.0396		mg/L		99	84 - 121
Cobalt	0.0400	0.0394		mg/L		99	85 - 120
Lead	0.0400	0.0403		mg/L		101	85 - 118
Molybdenum	0.0400	0.0398		mg/L		100	85 - 119
Selenium	0.0400	0.0413		mg/L		103	77 - 122

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

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

Lab Sample ID: LCS 280-591368/2-A
Matrix: Water
Analysis Batch: 591577

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591368

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	0.800	0.864		mg/L		108	80 - 120
Thallium	0.0400	0.0396		mg/L		99	85 - 118

Lab Sample ID: LCS 280-591368/2-A
Matrix: Water
Analysis Batch: 591763

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 591368

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	800	853		ug/L		107	80 - 120

Lab Sample ID: MB 280-593927/1-C
Matrix: Water
Analysis Batch: 594349

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 593970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	0.00040	mg/L		11/20/22 14:00	11/21/22 18:26	1
Arsenic	ND		0.0050	0.00033	mg/L		11/20/22 14:00	11/21/22 18:26	1
Beryllium	ND		0.0010	0.000080	mg/L		11/20/22 14:00	11/21/22 18:26	1
Cadmium	ND		0.0010	0.00027	mg/L		11/20/22 14:00	11/21/22 18:26	1
Chromium	ND		0.0020	0.00050	mg/L		11/20/22 14:00	11/21/22 18:26	1
Cobalt	ND		0.0010	0.000092	mg/L		11/20/22 14:00	11/21/22 18:26	1
Lead	ND		0.0010	0.00018	mg/L		11/20/22 14:00	11/21/22 18:26	1
Molybdenum	ND		0.0020	0.00014	mg/L		11/20/22 14:00	11/21/22 18:26	1
Selenium	ND		0.0050	0.00037	mg/L		11/20/22 14:00	11/21/22 18:26	1
Thallium	ND		0.0010	0.000089	mg/L		11/20/22 14:00	11/21/22 18:26	1

Lab Sample ID: LCS 280-593927/2-C
Matrix: Water
Analysis Batch: 594349

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 593970

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.0800	0.0836		mg/L		105	85 - 115
Arsenic	0.0800	0.0808		mg/L		101	85 - 117
Beryllium	0.0800	0.0808		mg/L		101	80 - 125
Cadmium	0.0800	0.0795		mg/L		99	85 - 115
Chromium	0.0800	0.0831		mg/L		104	84 - 121
Cobalt	0.0800	0.0811		mg/L		101	85 - 120
Lead	0.0800	0.0822		mg/L		103	85 - 118
Molybdenum	0.0800	0.0808		mg/L		101	85 - 119
Selenium	0.0800	0.0807		mg/L		101	77 - 122
Thallium	0.0800	0.0811		mg/L		101	85 - 118

Lab Sample ID: MB 280-593927/1-D
Matrix: Water
Analysis Batch: 594514

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 594164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.0010	0.00029	mg/L		11/21/22 14:08	11/22/22 15:36	1

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

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

Lab Sample ID: MB 280-593927/1-D

Matrix: Water

Analysis Batch: 594561

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 594164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		200	38	ug/L		11/21/22 14:08	11/23/22 10:05	1

Lab Sample ID: LCS 280-593927/2-D

Matrix: Water

Analysis Batch: 594514

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 594164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.0400	0.0401		mg/L		100	85 - 118

Lab Sample ID: LCS 280-593927/2-D

Matrix: Water

Analysis Batch: 594561

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 594164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	800	832		ug/L		104	80 - 120

Lab Sample ID: 280-168243-8 MS

Matrix: Water

Analysis Batch: 594514

Client Sample ID: MW-14

Prep Type: Dissolved

Prep Batch: 594164

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	ND		0.0400	0.0419		mg/L		105	80 - 111
Arsenic	0.00046	J	0.0400	0.0437		mg/L		108	92 - 112
Barium	0.037		0.0400	0.0794		mg/L		105	92 - 117
Beryllium	0.000098	J	0.0400	0.0455		mg/L		113	87 - 118
Cadmium	ND		0.0400	0.0398		mg/L		99	91 - 114
Chromium	0.0012	J	0.0400	0.0432		mg/L		105	91 - 114
Cobalt	0.00021	J	0.0400	0.0420		mg/L		104	94 - 115
Lead	ND		0.0400	0.0433		mg/L		108	95 - 116
Molybdenum	0.021		0.0400	0.0619		mg/L		102	84 - 117
Selenium	0.0043	J	0.0400	0.0447		mg/L		101	90 - 115
Thallium	ND		0.0400	0.0434		mg/L		109	94 - 115

Lab Sample ID: 280-168243-8 MS

Matrix: Water

Analysis Batch: 594561

Client Sample ID: MW-14

Prep Type: Dissolved

Prep Batch: 594164

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	190000		800	188000	4	ug/L		165	80 - 120

Lab Sample ID: 280-168243-8 MSD

Matrix: Water

Analysis Batch: 594514

Client Sample ID: MW-14

Prep Type: Dissolved

Prep Batch: 594164

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		0.0400	0.0407		mg/L		102	80 - 111	3	20
Arsenic	0.00046	J	0.0400	0.0415		mg/L		103	92 - 112	5	20
Barium	0.037		0.0400	0.0768		mg/L		99	92 - 117	3	20
Beryllium	0.000098	J	0.0400	0.0434		mg/L		108	87 - 118	5	20
Cadmium	ND		0.0400	0.0400		mg/L		100	91 - 114	1	20

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

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

Lab Sample ID: 280-168243-8 MSD

Matrix: Water

Analysis Batch: 594514

Client Sample ID: MW-14

Prep Type: Dissolved

Prep Batch: 594164

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium	0.0012	J	0.0400	0.0410		mg/L		100	91 - 114	5	20
Cobalt	0.00021	J	0.0400	0.0401		mg/L		100	94 - 115	5	20
Lead	ND		0.0400	0.0418		mg/L		105	95 - 116	3	20
Molybdenum	0.021		0.0400	0.0606		mg/L		99	84 - 117	2	20
Selenium	0.0043	J	0.0400	0.0441		mg/L		100	90 - 115	1	20
Thallium	ND		0.0400	0.0418		mg/L		104	94 - 115	4	20

Lab Sample ID: 280-168243-8 MSD

Matrix: Water

Analysis Batch: 594561

Client Sample ID: MW-14

Prep Type: Dissolved

Prep Batch: 594164

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	190000		800	191000	4	ug/L		514	80 - 120	1	20

Lab Sample ID: 280-168243-1 MS

Matrix: Water

Analysis Batch: 594670

Client Sample ID: MW-13

Prep Type: Dissolved

Prep Batch: 594283

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium	120000		800	112000	4	ug/L		-734	80 - 120		

Lab Sample ID: 280-168243-1 MS

Matrix: Water

Analysis Batch: 594670

Client Sample ID: MW-13

Prep Type: Dissolved

Prep Batch: 594283

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony	ND		0.0400	0.0369		mg/L		92	80 - 111		
Arsenic	ND	F1	0.0400	0.0365	F1	mg/L		91	92 - 112		
Barium	0.060	F1	0.0400	0.0955	F1	mg/L		88	92 - 117		
Beryllium	ND		0.0400	0.0393		mg/L		98	87 - 118		
Cadmium	ND	F1	0.0400	0.0353	F1	mg/L		88	91 - 114		
Chromium	0.0011	J B	0.0400	0.0379		mg/L		92	91 - 114		
Cobalt	0.00046	J F1	0.0400	0.0366	F1	mg/L		90	94 - 115		
Lead	ND	F1	0.0400	0.0370	F1	mg/L		93	95 - 116		
Molybdenum	0.0026		0.0400	0.0400		mg/L		93	84 - 117		
Selenium	0.0019	J	0.0400	0.0392		mg/L		93	90 - 115		
Thallium	ND	F1	0.0400	0.0372	F1	mg/L		93	94 - 115		

Lab Sample ID: 280-168243-1 MSD

Matrix: Water

Analysis Batch: 594670

Client Sample ID: MW-13

Prep Type: Dissolved

Prep Batch: 594283

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	120000		800	115000	4	ug/L		-342	80 - 120	3	20

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

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

Lab Sample ID: 280-168243-1 MSD

Matrix: Water

Analysis Batch: 594670

Client Sample ID: MW-13

Prep Type: Dissolved

Prep Batch: 594283

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	ND		0.0400	0.0369		mg/L		92	80 - 111	0	20
Arsenic	ND	F1	0.0400	0.0364	F1	mg/L		91	92 - 112	0	20
Barium	0.060	F1	0.0400	0.0942	F1	mg/L		84	92 - 117	1	20
Beryllium	ND		0.0400	0.0388		mg/L		97	87 - 118	1	20
Cadmium	ND	F1	0.0400	0.0353	F1	mg/L		88	91 - 114	0	20
Chromium	0.0011	J B	0.0400	0.0375		mg/L		91	91 - 114	1	20
Cobalt	0.00046	J F1	0.0400	0.0363	F1	mg/L		90	94 - 115	1	20
Lead	ND	F1	0.0400	0.0366	F1	mg/L		91	95 - 116	1	20
Molybdenum	0.0026		0.0400	0.0397		mg/L		93	84 - 117	1	20
Selenium	0.0019	J	0.0400	0.0395		mg/L		94	90 - 115	1	20
Thallium	ND	F1	0.0400	0.0372	F1	mg/L		93	94 - 115	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-593889/1-A

Matrix: Water

Analysis Batch: 594307

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 593889

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000061	mg/L		11/17/22 17:30	11/18/22 22:43	1

Lab Sample ID: LCS 280-593889/2-A

Matrix: Water

Analysis Batch: 594307

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 593889

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00497		mg/L		99	84 - 120

Lab Sample ID: MB 280-593927/1-F

Matrix: Water

Analysis Batch: 594358

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 594191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.061	ug/L		11/21/22 13:33	11/21/22 21:07	1

Lab Sample ID: LCS 280-593927/2-F

Matrix: Water

Analysis Batch: 594358

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 594191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	5.00	4.94		ug/L		99	84 - 120

Lab Sample ID: 280-168243-6 MS

Matrix: Water

Analysis Batch: 594358

Client Sample ID: MW-15-DUP

Prep Type: Dissolved

Prep Batch: 594191

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		5.00	4.51		ug/L		90	75 - 125

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

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

Lab Sample ID: 280-168243-6 MSD
Matrix: Water
Analysis Batch: 594358

Client Sample ID: MW-15-DUP
Prep Type: Dissolved
Prep Batch: 594191

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		5.00	4.54		ug/L		91	75 - 125	1	20

Method: 9040B - pH

Lab Sample ID: LCS 280-592061/27
Matrix: Water
Analysis Batch: 592061

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: LCS 280-592061/4
Matrix: Water
Analysis Batch: 592061

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Lab Sample ID: 280-168243-3 DU
Matrix: Water
Analysis Batch: 592061

Client Sample ID: MW-16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH adj. to 25 deg C	7.1	HF	7.1		SU		0.3	5
Temperature	19.4	HF	19.5		Degrees C		0.4	10

Lab Sample ID: LCS 280-592368/27
Matrix: Water
Analysis Batch: 592368

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH adj. to 25 deg C	7.00	7.1		SU		101	99 - 101

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 280-596213/6
Matrix: Water
Analysis Batch: 596213

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			12/09/22 16:00	1
Fluoride	ND		0.50	0.17	mg/L			12/09/22 16:00	1
Sulfate	ND		5.0	1.0	mg/L			12/09/22 16:00	1

Lab Sample ID: LCS 280-596213/4
Matrix: Water
Analysis Batch: 596213

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.0		mg/L		100	90 - 110

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 280-596213/4

Matrix: Water

Analysis Batch: 596213

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.50	2.32		mg/L		93	90 - 110
Sulfate	50.0	47.4		mg/L		95	90 - 110

Lab Sample ID: LCSD 280-596213/5

Matrix: Water

Analysis Batch: 596213

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	50.1		mg/L		100	90 - 110	0	10
Fluoride	2.50	2.31		mg/L		92	90 - 110	1	10
Sulfate	50.0	47.5		mg/L		95	90 - 110	0	10

Lab Sample ID: MRL 280-596213/3

Matrix: Water

Analysis Batch: 596213

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.50	2.22	J	mg/L		89	50 - 150
Fluoride	0.250	0.233	J	mg/L		93	50 - 150
Sulfate	2.50	1.59	J	mg/L		63	50 - 150

Lab Sample ID: 280-168243-7 MS

Matrix: Water

Analysis Batch: 596213

Client Sample ID: MW-15-EB

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	ND	H	50.0	55.4		mg/L		111	80 - 120
Sulfate	ND	H	50.0	52.1		mg/L		104	80 - 120

Lab Sample ID: 280-168243-7 MSD

Matrix: Water

Analysis Batch: 596213

Client Sample ID: MW-15-EB

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	ND	H	50.0	56.3		mg/L		113	80 - 120	2	20
Sulfate	ND	H	50.0	53.1		mg/L		106	80 - 120	2	20

Lab Sample ID: 280-168243-7 DU

Matrix: Water

Analysis Batch: 596213

Client Sample ID: MW-15-EB

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	ND	H	ND		mg/L		NC	15
Sulfate	ND	H	ND		mg/L		NC	15

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 280-596437/44

Matrix: Water

Analysis Batch: 596437

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	1.0	mg/L			12/13/22 03:05	1
Fluoride	ND		0.50	0.17	mg/L			12/13/22 03:05	1
Sulfate	ND		5.0	1.0	mg/L			12/13/22 03:05	1

Lab Sample ID: LCS 280-596437/40

Matrix: Water

Analysis Batch: 596437

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	47.6		mg/L		95	90 - 110
Fluoride	2.50	2.38		mg/L		95	90 - 110
Sulfate	50.0	47.9		mg/L		96	90 - 110

Lab Sample ID: LCSD 280-596437/43

Matrix: Water

Analysis Batch: 596437

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	47.6		mg/L		95	90 - 110	0	10
Fluoride	2.50	2.39		mg/L		96	90 - 110	0	10
Sulfate	50.0	47.9		mg/L		96	90 - 110	0	10

Lab Sample ID: MRL 280-596437/3

Matrix: Water

Analysis Batch: 596437

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.50	2.11	J	mg/L		84	50 - 150
Fluoride	0.250	0.249	J	mg/L		100	50 - 150
Sulfate	2.50	2.15	J	mg/L		86	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-591609/32

Matrix: Water

Analysis Batch: 591609

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			10/27/22 20:05	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 20:05	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 20:05	1

Lab Sample ID: MB 280-591609/6

Matrix: Water

Analysis Batch: 591609

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10	3.1	mg/L			10/27/22 16:31	1
Bicarbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 16:31	1
Carbonate Alkalinity as CaCO3	ND		10	3.1	mg/L			10/27/22 16:31	1

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 280-591609/31
Matrix: Water
Analysis Batch: 591609

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	200	202		mg/L		101	89 - 109

Lab Sample ID: LCSD 280-591609/5
Matrix: Water
Analysis Batch: 591609

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Alkalinity	200	193		mg/L		96	89 - 109	7	10

Lab Sample ID: 280-168243-1 DU
Matrix: Water
Analysis Batch: 591609

Client Sample ID: MW-13
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	280		282		mg/L		0.7	10
Bicarbonate Alkalinity as CaCO3	280		282		mg/L		0.7	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20

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

Lab Sample ID: MB 280-591871/1
Matrix: Water
Analysis Batch: 591871

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			10/31/22 19:35	1

Lab Sample ID: LCS 280-591871/2
Matrix: Water
Analysis Batch: 591871

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	501	483		mg/L		96	88 - 114

Lab Sample ID: LCSD 280-591871/3
Matrix: Water
Analysis Batch: 591871

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	482		mg/L		96	88 - 114	0	20

Lab Sample ID: MB 280-591938/1
Matrix: Water
Analysis Batch: 591938

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			11/01/22 10:16	1

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

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

Lab Sample ID: LCS 280-591938/2
Matrix: Water
Analysis Batch: 591938

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	501	486		mg/L		97	88 - 114

Lab Sample ID: MB 280-592120/1
Matrix: Water
Analysis Batch: 592120

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	ND		10	4.7	mg/L			11/02/22 12:00	1

Lab Sample ID: LCS 280-592120/2
Matrix: Water
Analysis Batch: 592120

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids (TDS)	501	481		mg/L		96	88 - 114

Lab Sample ID: LCSD 280-592120/3
Matrix: Water
Analysis Batch: 592120

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids (TDS)	501	477		mg/L		95	88 - 114	1	20

Lab Sample ID: 280-168243-7 DU
Matrix: Water
Analysis Batch: 592120

Client Sample ID: MW-15-EB
Prep Type: Total/NA

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

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

Lab Sample ID: MB 280-591612/3
Matrix: Water
Analysis Batch: 591612

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			10/28/22 11:14	1

Lab Sample ID: LCS 280-591612/1
Matrix: Water
Analysis Batch: 591612

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	505	445		mg/L		88	79 - 114

QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

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

Lab Sample ID: LCSD 280-591612/2

Matrix: Water

Analysis Batch: 591612

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	505	481		mg/L		95	79 - 114	8	20

Lab Sample ID: MB 280-591872/3

Matrix: Water

Analysis Batch: 591872

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			10/31/22 19:41	1

Lab Sample ID: LCS 280-591872/1

Matrix: Water

Analysis Batch: 591872

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	505	455		mg/L		90	79 - 114

Lab Sample ID: LCSD 280-591872/2

Matrix: Water

Analysis Batch: 591872

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	505	504		mg/L		100	79 - 114	10	20

Lab Sample ID: MB 280-591988/3

Matrix: Water

Analysis Batch: 591988

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		4.0	1.1	mg/L			11/01/22 13:13	1

Lab Sample ID: LCS 280-591988/1

Matrix: Water

Analysis Batch: 591988

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	503	451		mg/L		90	79 - 114

Lab Sample ID: LCSD 280-591988/2

Matrix: Water

Analysis Batch: 591988

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	503	468		mg/L		93	79 - 114	4	20

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-588349/1-A

Matrix: Water

Analysis Batch: 591518

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 588349

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.05752	U	0.0547	0.0550	1.00	0.0829	pCi/L	11/03/22 10:22	11/29/22 09:16	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.7		40 - 110					11/03/22 10:22	11/29/22 09:16	1

Lab Sample ID: LCS 160-588349/2-A

Matrix: Water

Analysis Batch: 591518

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 588349

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226		11.3	10.38		1.09	1.00	0.106	pCi/L	92	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	84.3		40 - 110							

Lab Sample ID: 280-168243-4 DU

Matrix: Water

Analysis Batch: 591518

Client Sample ID: MW-17

Prep Type: Total/NA

Prep Batch: 588349

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.183		0.2008		0.0868	1.00	0.0818	pCi/L	0.10	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	85.7		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-588355/1-A

Matrix: Water

Analysis Batch: 590422

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 588355

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.7325		0.369	0.375	1.00	0.516	pCi/L	11/03/22 10:50	11/17/22 11:50	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.7		40 - 110					11/03/22 10:50	11/17/22 11:50	1
Y Carrier	88.2		40 - 110					11/03/22 10:50	11/17/22 11:50	1

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

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

Lab Sample ID: LCS 160-588355/2-A
Matrix: Water
Analysis Batch: 590420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 588355

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228		8.44	13.31	*	1.69	1.00	0.520	pCi/L	158	75 - 125
	LCS	LCS								
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	84.3		40 - 110							
Y Carrier	84.1		40 - 110							

Lab Sample ID: 280-168243-4 DU
Matrix: Water
Analysis Batch: 590420

Client Sample ID: MW-17
Prep Type: Total/NA
Prep Batch: 588355

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	1.63	*	1.013		0.456	1.00	0.596	pCi/L	0.63	1
	DU	DU								
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	85.7		40 - 110							
Y Carrier	81.9		40 - 110							

Lab Sample ID: MB 160-590917/1-A
Matrix: Water
Analysis Batch: 591362

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 590917

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.8021		0.336	0.344	1.00	0.423	pCi/L	11/22/22 10:53	11/28/22 12:24	1
	MB	MB								
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					11/22/22 10:53	11/28/22 12:24	1
Y Carrier	85.2		40 - 110					11/22/22 10:53	11/28/22 12:24	1

Lab Sample ID: LCS 160-590917/2-A
Matrix: Water
Analysis Batch: 591362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 590917

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228		8.41	9.796		1.30	1.00	0.447	pCi/L	117	75 - 125
	LCS	LCS								
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	98.3		40 - 110							
Y Carrier	78.5		40 - 110							

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QC Sample Results

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

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

Lab Sample ID: LCSD 160-590917/3-A

Matrix: Water

Analysis Batch: 591362

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 590917

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228	8.41	10.93		1.41	1.00	0.496	pCi/L	130	75 - 125	0.42	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	93.2		40 - 110
Y Carrier	84.5		40 - 110

QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Metals

Prep Batch: 591368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total Recoverable	Water	3005A	
280-168243-2	MW-10	Total Recoverable	Ground Water	3005A	
280-168243-3	MW-16	Total Recoverable	Water	3005A	
280-168243-4	MW-17	Total Recoverable	Water	3005A	
280-168243-5	MW-15	Total Recoverable	Water	3005A	
280-168243-6	MW-15-DUP	Total Recoverable	Water	3005A	
280-168243-7	MW-15-EB	Total Recoverable	Water	3005A	
280-168243-8	MW-14	Total Recoverable	Water	3005A	
MB 280-591368/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-591368/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 591577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total Recoverable	Water	6020B	591368
280-168243-1	MW-13	Total Recoverable	Water	6020B	591368
280-168243-1	MW-13	Total Recoverable	Water	6020B	591368
280-168243-2	MW-10	Total Recoverable	Ground Water	6020B	591368
280-168243-2	MW-10	Total Recoverable	Ground Water	6020B	591368
280-168243-2	MW-10	Total Recoverable	Ground Water	6020B	591368
280-168243-3	MW-16	Total Recoverable	Water	6020B	591368
280-168243-3	MW-16	Total Recoverable	Water	6020B	591368
280-168243-3	MW-16	Total Recoverable	Water	6020B	591368
280-168243-4	MW-17	Total Recoverable	Water	6020B	591368
280-168243-4	MW-17	Total Recoverable	Water	6020B	591368
280-168243-4	MW-17	Total Recoverable	Water	6020B	591368
280-168243-5	MW-15	Total Recoverable	Water	6020B	591368
280-168243-5	MW-15	Total Recoverable	Water	6020B	591368
280-168243-5	MW-15	Total Recoverable	Water	6020B	591368
280-168243-6	MW-15-DUP	Total Recoverable	Water	6020B	591368
280-168243-6	MW-15-DUP	Total Recoverable	Water	6020B	591368
280-168243-6	MW-15-DUP	Total Recoverable	Water	6020B	591368
280-168243-7	MW-15-EB	Total Recoverable	Water	6020B	591368
280-168243-7	MW-15-EB	Total Recoverable	Water	6020B	591368
280-168243-8	MW-14	Total Recoverable	Water	6020B	591368
280-168243-8	MW-14	Total Recoverable	Water	6020B	591368
MB 280-591368/1-A	Method Blank	Total Recoverable	Water	6020B	591368
LCS 280-591368/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591368

Analysis Batch: 591763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-591368/2-A	Lab Control Sample	Total Recoverable	Water	6020B	591368

Analysis Batch: 592086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-7	MW-15-EB	Total Recoverable	Water	6020B	591368

Prep Batch: 592788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total Recoverable	Water	3005A	
280-168243-2	MW-10	Total Recoverable	Ground Water	3005A	
280-168243-3	MW-16	Total Recoverable	Water	3005A	

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QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Metals (Continued)

Prep Batch: 592788 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-4	MW-17	Total Recoverable	Water	3005A	
280-168243-5	MW-15	Total Recoverable	Water	3005A	
280-168243-6	MW-15-DUP	Total Recoverable	Water	3005A	
280-168243-7	MW-15-EB	Total Recoverable	Water	3005A	
280-168243-8	MW-14	Total Recoverable	Water	3005A	
MB 280-592788/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-592788/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 593627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total Recoverable	Water	6010C	592788
280-168243-2	MW-10	Total Recoverable	Ground Water	6010C	592788
280-168243-3	MW-16	Total Recoverable	Water	6010C	592788
280-168243-4	MW-17	Total Recoverable	Water	6010C	592788
280-168243-5	MW-15	Total Recoverable	Water	6010C	592788
280-168243-6	MW-15-DUP	Total Recoverable	Water	6010C	592788
280-168243-7	MW-15-EB	Total Recoverable	Water	6010C	592788
280-168243-8	MW-14	Total Recoverable	Water	6010C	592788
MB 280-592788/1-A	Method Blank	Total Recoverable	Water	6010C	592788
LCS 280-592788/2-A	Lab Control Sample	Total Recoverable	Water	6010C	592788

Prep Batch: 593889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total/NA	Water	7470A	
280-168243-2	MW-10	Total/NA	Ground Water	7470A	
280-168243-3	MW-16	Total/NA	Water	7470A	
280-168243-4	MW-17	Total/NA	Water	7470A	
280-168243-5	MW-15	Total/NA	Water	7470A	
280-168243-6	MW-15-DUP	Total/NA	Water	7470A	
280-168243-7	MW-15-EB	Total/NA	Water	7470A	
280-168243-8	MW-14	Total/NA	Water	7470A	
MB 280-593889/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-593889/2-A	Lab Control Sample	Total/NA	Water	7470A	

Filtration Batch: 593927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Dissolved	Water	FILTRATION	
280-168243-2	MW-10	Dissolved	Ground Water	FILTRATION	
280-168243-3	MW-16	Dissolved	Water	FILTRATION	
280-168243-4	MW-17	Dissolved	Water	FILTRATION	
280-168243-5	MW-15	Dissolved	Water	FILTRATION	
280-168243-6	MW-15-DUP	Dissolved	Water	FILTRATION	
280-168243-7	MW-15-EB	Dissolved	Water	FILTRATION	
280-168243-8	MW-14	Dissolved	Water	FILTRATION	
MB 280-593927/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 280-593927/1-C	Method Blank	Dissolved	Water	FILTRATION	
MB 280-593927/1-D	Method Blank	Dissolved	Water	FILTRATION	
MB 280-593927/1-E	Method Blank	Dissolved	Water	FILTRATION	
MB 280-593927/1-F	Method Blank	Dissolved	Water	FILTRATION	
MB 280-593927/1-H	Method Blank	Dissolved	Water	FILTRATION	
LCS 280-593927/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	

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QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Metals (Continued)

Filtration Batch: 593927 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-593927/2-C	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-593927/2-D	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-593927/2-E	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-593927/2-F	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 280-593927/2-H	Lab Control Sample	Dissolved	Water	FILTRATION	
280-168243-1 MS	MW-13	Dissolved	Water	FILTRATION	
280-168243-1 MSD	MW-13	Dissolved	Water	FILTRATION	
280-168243-6 MS	MW-15-DUP	Dissolved	Water	FILTRATION	
280-168243-6 MSD	MW-15-DUP	Dissolved	Water	FILTRATION	
280-168243-7 MS	MW-15-EB	Dissolved	Water	FILTRATION	
280-168243-7 MSD	MW-15-EB	Dissolved	Water	FILTRATION	
280-168243-8 MS	MW-14	Dissolved	Water	FILTRATION	
280-168243-8 MSD	MW-14	Dissolved	Water	FILTRATION	

Prep Batch: 593932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-2	MW-10	Dissolved	Ground Water	3005A	593927
280-168243-3	MW-16	Dissolved	Water	3005A	593927
280-168243-4	MW-17	Dissolved	Water	3005A	593927
280-168243-5	MW-15	Dissolved	Water	3005A	593927
280-168243-6	MW-15-DUP	Dissolved	Water	3005A	593927
MB 280-593927/1-B	Method Blank	Dissolved	Water	3005A	593927
LCS 280-593927/2-B	Lab Control Sample	Dissolved	Water	3005A	593927

Prep Batch: 593970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-2	MW-10	Dissolved	Ground Water	3005A	593927
280-168243-3	MW-16	Dissolved	Water	3005A	593927
280-168243-4	MW-17	Dissolved	Water	3005A	593927
280-168243-5	MW-15	Dissolved	Water	3005A	593927
280-168243-6	MW-15-DUP	Dissolved	Water	3005A	593927
MB 280-593927/1-C	Method Blank	Dissolved	Water	3005A	593927
LCS 280-593927/2-C	Lab Control Sample	Dissolved	Water	3005A	593927

Prep Batch: 594164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-7	MW-15-EB	Dissolved	Water	3005A	593927
280-168243-8	MW-14	Dissolved	Water	3005A	593927
MB 280-593927/1-D	Method Blank	Dissolved	Water	3005A	593927
LCS 280-593927/2-D	Lab Control Sample	Dissolved	Water	3005A	593927
280-168243-8 MS	MW-14	Dissolved	Water	3005A	593927
280-168243-8 MSD	MW-14	Dissolved	Water	3005A	593927

Prep Batch: 594165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-7	MW-15-EB	Dissolved	Water	3005A	593927
280-168243-8	MW-14	Dissolved	Water	3005A	593927
MB 280-593927/1-E	Method Blank	Dissolved	Water	3005A	593927
LCS 280-593927/2-E	Lab Control Sample	Dissolved	Water	3005A	593927
280-168243-7 MS	MW-15-EB	Dissolved	Water	3005A	593927
280-168243-7 MSD	MW-15-EB	Dissolved	Water	3005A	593927

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QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Metals

Prep Batch: 594191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Dissolved	Water	7470A	593927
280-168243-2	MW-10	Dissolved	Ground Water	7470A	593927
280-168243-3	MW-16	Dissolved	Water	7470A	593927
280-168243-4	MW-17	Dissolved	Water	7470A	593927
280-168243-5	MW-15	Dissolved	Water	7470A	593927
280-168243-6	MW-15-DUP	Dissolved	Water	7470A	593927
280-168243-7	MW-15-EB	Dissolved	Water	7470A	593927
280-168243-8	MW-14	Dissolved	Water	7470A	593927
MB 280-593927/1-F	Method Blank	Dissolved	Water	7470A	593927
LCS 280-593927/2-F	Lab Control Sample	Dissolved	Water	7470A	593927
280-168243-6 MS	MW-15-DUP	Dissolved	Water	7470A	593927
280-168243-6 MSD	MW-15-DUP	Dissolved	Water	7470A	593927

Prep Batch: 594283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Dissolved	Water	3005A	593927
280-168243-1 MS	MW-13	Dissolved	Water	3005A	593927
280-168243-1 MSD	MW-13	Dissolved	Water	3005A	593927

Prep Batch: 594291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Dissolved	Water	3005A	593927
MB 280-593927/1-H	Method Blank	Dissolved	Water	3005A	593927
LCS 280-593927/2-H	Lab Control Sample	Dissolved	Water	3005A	593927
280-168243-1 MS	MW-13	Dissolved	Water	3005A	593927
280-168243-1 MSD	MW-13	Dissolved	Water	3005A	593927

Analysis Batch: 594307

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total/NA	Water	7470A	593889
280-168243-2	MW-10	Total/NA	Ground Water	7470A	593889
280-168243-3	MW-16	Total/NA	Water	7470A	593889
280-168243-4	MW-17	Total/NA	Water	7470A	593889
280-168243-5	MW-15	Total/NA	Water	7470A	593889
280-168243-6	MW-15-DUP	Total/NA	Water	7470A	593889
280-168243-7	MW-15-EB	Total/NA	Water	7470A	593889
280-168243-8	MW-14	Total/NA	Water	7470A	593889
MB 280-593889/1-A	Method Blank	Total/NA	Water	7470A	593889
LCS 280-593889/2-A	Lab Control Sample	Total/NA	Water	7470A	593889

Analysis Batch: 594348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-2	MW-10	Dissolved	Ground Water	6010C	593932
280-168243-3	MW-16	Dissolved	Water	6010C	593932
280-168243-4	MW-17	Dissolved	Water	6010C	593932
280-168243-5	MW-15	Dissolved	Water	6010C	593932
280-168243-6	MW-15-DUP	Dissolved	Water	6010C	593932
MB 280-593927/1-B	Method Blank	Dissolved	Water	6010C	593932
LCS 280-593927/2-B	Lab Control Sample	Dissolved	Water	6010C	593932

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QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Metals

Analysis Batch: 594349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-2	MW-10	Dissolved	Ground Water	6020B	593970
280-168243-3	MW-16	Dissolved	Water	6020B	593970
280-168243-4	MW-17	Dissolved	Water	6020B	593970
280-168243-5	MW-15	Dissolved	Water	6020B	593970
280-168243-6	MW-15-DUP	Dissolved	Water	6020B	593970
MB 280-593927/1-C	Method Blank	Dissolved	Water	6020B	593970
LCS 280-593927/2-C	Lab Control Sample	Dissolved	Water	6020B	593970

Analysis Batch: 594358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Dissolved	Water	7470A	594191
280-168243-2	MW-10	Dissolved	Ground Water	7470A	594191
280-168243-3	MW-16	Dissolved	Water	7470A	594191
280-168243-4	MW-17	Dissolved	Water	7470A	594191
280-168243-5	MW-15	Dissolved	Water	7470A	594191
280-168243-6	MW-15-DUP	Dissolved	Water	7470A	594191
280-168243-7	MW-15-EB	Dissolved	Water	7470A	594191
280-168243-8	MW-14	Dissolved	Water	7470A	594191
MB 280-593927/1-F	Method Blank	Dissolved	Water	7470A	594191
LCS 280-593927/2-F	Lab Control Sample	Dissolved	Water	7470A	594191
280-168243-6 MS	MW-15-DUP	Dissolved	Water	7470A	594191
280-168243-6 MSD	MW-15-DUP	Dissolved	Water	7470A	594191

Analysis Batch: 594514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-7	MW-15-EB	Dissolved	Water	6020B	594164
280-168243-8	MW-14	Dissolved	Water	6020B	594164
MB 280-593927/1-D	Method Blank	Dissolved	Water	6020B	594164
LCS 280-593927/2-D	Lab Control Sample	Dissolved	Water	6020B	594164
280-168243-8 MS	MW-14	Dissolved	Water	6020B	594164
280-168243-8 MSD	MW-14	Dissolved	Water	6020B	594164

Analysis Batch: 594529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-2	MW-10	Dissolved	Ground Water	6020B	593970
280-168243-3	MW-16	Dissolved	Water	6020B	593970
280-168243-4	MW-17	Dissolved	Water	6020B	593970
280-168243-5	MW-15	Dissolved	Water	6020B	593970
280-168243-6	MW-15-DUP	Dissolved	Water	6020B	593970

Analysis Batch: 594561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-2	MW-10	Dissolved	Ground Water	6020B	593970
280-168243-3	MW-16	Dissolved	Water	6020B	593970
280-168243-4	MW-17	Dissolved	Water	6020B	593970
280-168243-5	MW-15	Dissolved	Water	6020B	593970
280-168243-6	MW-15-DUP	Dissolved	Water	6020B	593970
280-168243-7	MW-15-EB	Dissolved	Water	6020B	594164
280-168243-8	MW-14	Dissolved	Water	6020B	594164
MB 280-593927/1-D	Method Blank	Dissolved	Water	6020B	594164
LCS 280-593927/2-D	Lab Control Sample	Dissolved	Water	6020B	594164

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QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Metals (Continued)

Analysis Batch: 594561 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-8 MS	MW-14	Dissolved	Water	6020B	594164
280-168243-8 MSD	MW-14	Dissolved	Water	6020B	594164

Analysis Batch: 594645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Dissolved	Water	6010C	594291
280-168243-7	MW-15-EB	Dissolved	Water	6010C	594165
280-168243-8	MW-14	Dissolved	Water	6010C	594165
MB 280-593927/1-E	Method Blank	Dissolved	Water	6010C	594165
MB 280-593927/1-H	Method Blank	Dissolved	Water	6010C	594291
LCS 280-593927/2-E	Lab Control Sample	Dissolved	Water	6010C	594165
LCS 280-593927/2-H	Lab Control Sample	Dissolved	Water	6010C	594291
280-168243-1 MS	MW-13	Dissolved	Water	6010C	594291
280-168243-1 MSD	MW-13	Dissolved	Water	6010C	594291
280-168243-7 MS	MW-15-EB	Dissolved	Water	6010C	594165
280-168243-7 MSD	MW-15-EB	Dissolved	Water	6010C	594165

Analysis Batch: 594670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Dissolved	Water	6020B	594283
280-168243-1	MW-13	Dissolved	Water	6020B	594283
280-168243-1 MS	MW-13	Dissolved	Water	6020B	594283
280-168243-1 MS	MW-13	Dissolved	Water	6020B	594283
280-168243-1 MSD	MW-13	Dissolved	Water	6020B	594283
280-168243-1 MSD	MW-13	Dissolved	Water	6020B	594283

Analysis Batch: 594935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Dissolved	Water	6010C	594291
MB 280-593927/1-H	Method Blank	Dissolved	Water	6010C	594291
LCS 280-593927/2-H	Lab Control Sample	Dissolved	Water	6010C	594291
280-168243-1 MS	MW-13	Dissolved	Water	6010C	594291
280-168243-1 MSD	MW-13	Dissolved	Water	6010C	594291

General Chemistry

Analysis Batch: 591609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total/NA	Water	SM 2320B	
280-168243-2	MW-10	Total/NA	Ground Water	SM 2320B	
280-168243-3	MW-16	Total/NA	Water	SM 2320B	
280-168243-4	MW-17	Total/NA	Water	SM 2320B	
280-168243-5	MW-15	Total/NA	Water	SM 2320B	
280-168243-6	MW-15-DUP	Total/NA	Water	SM 2320B	
280-168243-7	MW-15-EB	Total/NA	Water	SM 2320B	
280-168243-8	MW-14	Total/NA	Water	SM 2320B	
MB 280-591609/32	Method Blank	Total/NA	Water	SM 2320B	
MB 280-591609/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-591609/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-591609/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
280-168243-1 DU	MW-13	Total/NA	Water	SM 2320B	

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QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

General Chemistry

Analysis Batch: 591612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total/NA	Water	SM 2540D	
280-168243-2	MW-10	Total/NA	Ground Water	SM 2540D	
MB 280-591612/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-591612/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-591612/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 591871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total/NA	Water	SM 2540C	
280-168243-2	MW-10	Total/NA	Ground Water	SM 2540C	
280-168243-3	MW-16	Total/NA	Water	SM 2540C	
280-168243-4	MW-17	Total/NA	Water	SM 2540C	
MB 280-591871/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-591871/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-591871/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 591872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-3	MW-16	Total/NA	Water	SM 2540D	
280-168243-4	MW-17	Total/NA	Water	SM 2540D	
MB 280-591872/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-591872/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-591872/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 591938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-5	MW-15	Total/NA	Water	SM 2540C	
MB 280-591938/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-591938/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 591988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-5	MW-15	Total/NA	Water	SM 2540D	
280-168243-6	MW-15-DUP	Total/NA	Water	SM 2540D	
280-168243-7	MW-15-EB	Total/NA	Water	SM 2540D	
280-168243-8	MW-14	Total/NA	Water	SM 2540D	
MB 280-591988/3	Method Blank	Total/NA	Water	SM 2540D	
LCS 280-591988/1	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 280-591988/2	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 592061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total/NA	Water	9040B	
280-168243-2	MW-10	Total/NA	Ground Water	9040B	
280-168243-3	MW-16	Total/NA	Water	9040B	
280-168243-4	MW-17	Total/NA	Water	9040B	
280-168243-5	MW-15	Total/NA	Water	9040B	
280-168243-6	MW-15-DUP	Total/NA	Water	9040B	
280-168243-8	MW-14	Total/NA	Water	9040B	
LCS 280-592061/27	Lab Control Sample	Total/NA	Water	9040B	
LCS 280-592061/4	Lab Control Sample	Total/NA	Water	9040B	

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QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

General Chemistry (Continued)

Analysis Batch: 592061 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-3 DU	MW-16	Total/NA	Water	9040B	

Analysis Batch: 592120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-6	MW-15-DUP	Total/NA	Water	SM 2540C	
280-168243-7	MW-15-EB	Total/NA	Water	SM 2540C	
280-168243-8	MW-14	Total/NA	Water	SM 2540C	
MB 280-592120/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 280-592120/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 280-592120/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
280-168243-7 DU	MW-15-EB	Total/NA	Water	SM 2540C	

Analysis Batch: 592368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-7	MW-15-EB	Total/NA	Water	9040B	
LCS 280-592368/27	Lab Control Sample	Total/NA	Water	9040B	

Analysis Batch: 596213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total/NA	Water	9056A	
280-168243-1	MW-13	Total/NA	Water	9056A	
280-168243-2	MW-10	Total/NA	Ground Water	9056A	
280-168243-2	MW-10	Total/NA	Ground Water	9056A	
280-168243-3	MW-16	Total/NA	Water	9056A	
280-168243-4	MW-17	Total/NA	Water	9056A	
280-168243-5	MW-15	Total/NA	Water	9056A	
280-168243-5	MW-15	Total/NA	Water	9056A	
280-168243-6	MW-15-DUP	Total/NA	Water	9056A	
280-168243-6	MW-15-DUP	Total/NA	Water	9056A	
280-168243-7	MW-15-EB	Total/NA	Water	9056A	
280-168243-8	MW-14	Total/NA	Water	9056A	
280-168243-8	MW-14	Total/NA	Water	9056A	
MB 280-596213/6	Method Blank	Total/NA	Water	9056A	
LCS 280-596213/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-596213/5	Lab Control Sample Dup	Total/NA	Water	9056A	
MRL 280-596213/3	Lab Control Sample	Total/NA	Water	9056A	
280-168243-7 MS	MW-15-EB	Total/NA	Water	9056A	
280-168243-7 MSD	MW-15-EB	Total/NA	Water	9056A	
280-168243-7 DU	MW-15-EB	Total/NA	Water	9056A	

Analysis Batch: 596437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-2	MW-10	Total/NA	Ground Water	9056A	
280-168243-3	MW-16	Total/NA	Water	9056A	
280-168243-4	MW-17	Total/NA	Water	9056A	
280-168243-5	MW-15	Total/NA	Water	9056A	
280-168243-6	MW-15-DUP	Total/NA	Water	9056A	
280-168243-7	MW-15-EB	Total/NA	Water	9056A	
MB 280-596437/44	Method Blank	Total/NA	Water	9056A	
LCS 280-596437/40	Lab Control Sample	Total/NA	Water	9056A	
LCSD 280-596437/43	Lab Control Sample Dup	Total/NA	Water	9056A	

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QC Association Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

General Chemistry (Continued)

Analysis Batch: 596437 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 280-596437/3	Lab Control Sample	Total/NA	Water	9056A	

Rad

Prep Batch: 588349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total/NA	Water	PrecSep-21	
280-168243-2	MW-10	Total/NA	Ground Water	PrecSep-21	
280-168243-3	MW-16	Total/NA	Water	PrecSep-21	
280-168243-4	MW-17	Total/NA	Water	PrecSep-21	
280-168243-5	MW-15	Total/NA	Water	PrecSep-21	
280-168243-6	MW-15-DUP	Total/NA	Water	PrecSep-21	
280-168243-7	MW-15-EB	Total/NA	Water	PrecSep-21	
280-168243-8	MW-14	Total/NA	Water	PrecSep-21	
MB 160-588349/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-588349/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
280-168243-4 DU	MW-17	Total/NA	Water	PrecSep-21	

Prep Batch: 588355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-4	MW-17	Total/NA	Water	PrecSep_0	
280-168243-7	MW-15-EB	Total/NA	Water	PrecSep_0	
MB 160-588355/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-588355/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
280-168243-4 DU	MW-17	Total/NA	Water	PrecSep_0	

Prep Batch: 590917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-168243-1	MW-13	Total/NA	Water	PrecSep_0	
280-168243-2	MW-10	Total/NA	Ground Water	PrecSep_0	
280-168243-3	MW-16	Total/NA	Water	PrecSep_0	
280-168243-5	MW-15	Total/NA	Water	PrecSep_0	
280-168243-6	MW-15-DUP	Total/NA	Water	PrecSep_0	
280-168243-8	MW-14	Total/NA	Water	PrecSep_0	
MB 160-590917/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-590917/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-590917/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-13

Lab Sample ID: 280-168243-1

Date Collected: 10/25/22 09:00

Matrix: Water

Date Received: 10/26/22 14:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			25 mL	50 mL	594291	11/22/22 18:22	LJS	EET DEN
Dissolved	Analysis	6010C		1			594645	11/23/22 17:18	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			25 mL	50 mL	594291	11/22/22 18:22	LJS	EET DEN
Dissolved	Analysis	6010C		1			594935	11/29/22 10:43	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592788	11/13/22 23:28	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			593627	11/15/22 19:30	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	594283	11/23/22 07:07	LJS	EET DEN
Dissolved	Analysis	6020B		50			594670	11/23/22 14:09	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	594283	11/23/22 07:07	LJS	EET DEN
Dissolved	Analysis	6020B		1			594670	11/23/22 14:23	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		50			591577	10/27/22 17:32	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/27/22 18:43	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/28/22 01:39	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	594191	11/21/22 13:33	PFM	EET DEN
Dissolved	Analysis	7470A		1			594358	11/21/22 21:12	PFM	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	593889	11/17/22 17:30	KMS	EET DEN
Total/NA	Analysis	7470A		1			594307	11/18/22 23:21	KMS	EET DEN
Total/NA	Analysis	9040B		1			592061	11/01/22 13:24	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	596213	12/09/22 18:35	MEC	EET DEN
Total/NA	Analysis	9056A		5	5 mL	5 mL	596213	12/09/22 18:51	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/27/22 20:12	KEG	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	591871	10/31/22 19:35	ABW	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591612	10/28/22 11:15	LRB	EET DEN
Total/NA	Prep	PrecSep-21			1003.82 mL	1.0 g	588349	11/03/22 10:22	ZR	EET SL
Total/NA	Analysis	9315		1			591520	11/29/22 21:02	FLC	EET SL
Total/NA	Prep	PrecSep_0			999.57 mL	1.0 g	590917	11/22/22 10:53	DJP	EET SL
Total/NA	Analysis	9320		1			591362	11/28/22 12:25	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592082	12/02/22 14:13	SCB	EET SL

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Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-10

Date Collected: 10/25/22 11:28

Date Received: 10/26/22 14:45

Lab Sample ID: 280-168243-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593932	11/18/22 21:51	MCR	EET DEN
Dissolved	Analysis	6010C		1			594348	11/21/22 15:59	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592788	11/13/22 23:28	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			593627	11/15/22 19:34	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		1			594349	11/21/22 21:03	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		1			594529	11/22/22 20:06	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		50			594561	11/23/22 09:09	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		50			591577	10/27/22 17:36	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/27/22 18:47	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/28/22 01:43	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	594191	11/21/22 13:33	PFM	EET DEN
Dissolved	Analysis	7470A		1			594358	11/21/22 21:14	PFM	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	593889	11/17/22 17:30	KMS	EET DEN
Total/NA	Analysis	7470A		1			594307	11/18/22 23:24	KMS	EET DEN
Total/NA	Analysis	9040B		1			592061	11/01/22 13:28	KEG	EET DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	596213	12/09/22 19:55	MEC	EET DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	596213	12/09/22 20:11	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	596437	12/13/22 04:08	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/27/22 20:25	KEG	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	591871	10/31/22 19:35	ABW	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591612	10/28/22 11:15	LRB	EET DEN
Total/NA	Prep	PrecSep-21			1004.78 mL	1.0 g	588349	11/03/22 10:22	ZR	EET SL
Total/NA	Analysis	9315		1			591520	11/29/22 21:02	FLC	EET SL
Total/NA	Prep	PrecSep_0			1000.48 mL	1.0 g	590917	11/22/22 10:53	DJP	EET SL
Total/NA	Analysis	9320		1			591362	11/28/22 12:25	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592082	12/02/22 14:13	SCB	EET SL

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Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-16

Lab Sample ID: 280-168243-3

Date Collected: 10/25/22 14:13

Matrix: Water

Date Received: 10/26/22 14:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593932	11/18/22 21:51	MCR	EET DEN
Dissolved	Analysis	6010C		1			594348	11/21/22 16:04	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592788	11/13/22 23:28	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			593627	11/15/22 19:38	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		1			594349	11/21/22 21:07	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		1			594529	11/22/22 20:08	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		50			594561	11/23/22 09:10	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		50			591577	10/27/22 17:40	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/27/22 18:51	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/28/22 01:47	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	594191	11/21/22 13:33	PFM	EET DEN
Dissolved	Analysis	7470A		1			594358	11/21/22 21:17	PFM	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	593889	11/17/22 17:30	KMS	EET DEN
Total/NA	Analysis	7470A		1			594307	11/18/22 23:26	KMS	EET DEN
Total/NA	Analysis	9040B		1			592061	11/01/22 13:08	KEG	EET DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	596213	12/09/22 20:43	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	596437	12/13/22 04:32	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/27/22 20:31	KEG	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	591871	10/31/22 19:35	ABW	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591872	10/31/22 19:41	ABW	EET DEN
Total/NA	Prep	PrecSep-21			998.39 mL	1.0 g	588349	11/03/22 10:22	ZR	EET SL
Total/NA	Analysis	9315		1			591520	11/29/22 21:02	FLC	EET SL
Total/NA	Prep	PrecSep_0			996.75 mL	1.0 g	590917	11/22/22 10:53	DJP	EET SL
Total/NA	Analysis	9320		1			591362	11/28/22 12:25	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592082	12/02/22 14:13	SCB	EET SL

Eurofins Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-17

Lab Sample ID: 280-168243-4

Date Collected: 10/25/22 14:30

Matrix: Water

Date Received: 10/26/22 14:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593932	11/18/22 21:51	MCR	EET DEN
Dissolved	Analysis	6010C		1			594348	11/21/22 16:08	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592788	11/13/22 23:28	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			593627	11/15/22 19:42	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		1			594349	11/21/22 21:11	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		1			594529	11/22/22 20:10	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		50			594561	11/23/22 09:12	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		50			591577	10/27/22 17:43	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/27/22 18:55	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/28/22 01:50	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	594191	11/21/22 13:33	PFM	EET DEN
Dissolved	Analysis	7470A		1			594358	11/21/22 21:19	PFM	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	593889	11/17/22 17:30	KMS	EET DEN
Total/NA	Analysis	7470A		1			594307	11/18/22 23:29	KMS	EET DEN
Total/NA	Analysis	9040B		1			592061	11/01/22 12:52	KEG	EET DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	596213	12/09/22 21:31	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	596437	12/13/22 04:40	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/27/22 20:37	KEG	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	591871	10/31/22 19:35	ABW	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591872	10/31/22 19:41	ABW	EET DEN
Total/NA	Prep	PrecSep-21			996.48 mL	1.0 g	588349	11/03/22 10:22	ZR	EET SL
Total/NA	Analysis	9315		1			591518	11/29/22 09:17	FLC	EET SL
Total/NA	Prep	PrecSep_0			996.48 mL	1.0 g	588355	11/03/22 10:50	ZR	EET SL
Total/NA	Analysis	9320		1			590420	11/17/22 11:54	SCB	EET SL
Total/NA	Analysis	Ra226_Ra228		1			591550	11/29/22 16:08	EMH	EET SL

Eurofins Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-15

Lab Sample ID: 280-168243-5

Date Collected: 10/26/22 12:42

Matrix: Water

Date Received: 10/26/22 14:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593932	11/18/22 21:51	MCR	EET DEN
Dissolved	Analysis	6010C		1			594348	11/21/22 16:13	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592788	11/13/22 23:28	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			593627	11/15/22 19:46	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		1			594349	11/21/22 21:14	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		1			594529	11/22/22 20:12	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		50			594561	11/23/22 09:14	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		50			591577	10/27/22 17:47	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/27/22 18:58	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/28/22 01:54	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	594191	11/21/22 13:33	PFM	EET DEN
Dissolved	Analysis	7470A		1			594358	11/21/22 21:27	PFM	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	593889	11/17/22 17:30	KMS	EET DEN
Total/NA	Analysis	7470A		1			594307	11/18/22 23:31	KMS	EET DEN
Total/NA	Analysis	9040B		1			592061	11/01/22 13:21	KEG	EET DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	596213	12/09/22 22:03	MEC	EET DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	596213	12/09/22 22:51	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	596437	12/13/22 04:48	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/27/22 20:44	KEG	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	591938	11/01/22 10:16	ASP	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591988	11/01/22 13:13	ASP	EET DEN
Total/NA	Prep	PrecSep-21			1000.00 mL	1.0 g	588349	11/03/22 10:22	ZR	EET SL
Total/NA	Analysis	9315		1			591520	11/29/22 21:02	FLC	EET SL
Total/NA	Prep	PrecSep_0			993.13 mL	1.0 g	590917	11/22/22 10:53	DJP	EET SL
Total/NA	Analysis	9320		1			591362	11/28/22 12:25	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592082	12/02/22 14:13	SCB	EET SL

Eurofins Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-15-DUP

Lab Sample ID: 280-168243-6

Date Collected: 10/26/22 12:55

Matrix: Water

Date Received: 10/26/22 14:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593932	11/18/22 21:51	MCR	EET DEN
Dissolved	Analysis	6010C		1			594348	11/21/22 16:17	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592788	11/13/22 23:28	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			593627	11/15/22 19:50	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		1			594349	11/21/22 21:18	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		1			594529	11/22/22 20:14	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	593970	11/20/22 14:00	MCR	EET DEN
Dissolved	Analysis	6020B		50			594561	11/23/22 09:16	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		50			591577	10/27/22 17:51	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/27/22 19:02	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/28/22 01:58	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/17/22 16:20	PFM	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	594191	11/21/22 13:33	PFM	EET DEN
Dissolved	Analysis	7470A		1			594358	11/21/22 21:29	PFM	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	593889	11/17/22 17:30	KMS	EET DEN
Total/NA	Analysis	7470A		1			594307	11/18/22 23:34	KMS	EET DEN
Total/NA	Analysis	9040B		1			592061	11/01/22 12:59	KEG	EET DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	596213	12/09/22 23:23	MEC	EET DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	596213	12/09/22 23:39	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	596437	12/13/22 04:56	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/27/22 20:50	KEG	EET DEN
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	592120	11/02/22 12:00	ASP	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591988	11/01/22 13:13	ASP	EET DEN
Total/NA	Prep	PrecSep-21			1004.02 mL	1.0 g	588349	11/03/22 10:22	ZR	EET SL
Total/NA	Analysis	9315		1			591520	11/29/22 21:02	FLC	EET SL
Total/NA	Prep	PrecSep_0			996.07 mL	1.0 g	590917	11/22/22 10:53	DJP	EET SL
Total/NA	Analysis	9320		1			591362	11/28/22 12:25	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592082	12/02/22 14:13	SCB	EET SL

Eurofins Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-15-EB

Lab Sample ID: 280-168243-7

Date Collected: 10/26/22 13:50

Matrix: Water

Date Received: 10/26/22 14:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/18/22 09:29	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	594165	11/21/22 17:39	MCR	EET DEN
Dissolved	Analysis	6010C		1			594645	11/23/22 16:30	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592788	11/13/22 23:28	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			593627	11/15/22 19:54	KRP	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/18/22 09:29	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	594164	11/21/22 14:08	MCR	EET DEN
Dissolved	Analysis	6020B		1			594514	11/22/22 15:40	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/18/22 09:29	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	594164	11/21/22 14:08	MCR	EET DEN
Dissolved	Analysis	6020B		1			594561	11/23/22 10:09	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/27/22 19:06	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/28/22 02:02	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			592086	11/02/22 09:10	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/18/22 09:29	PFM	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	594191	11/21/22 13:33	PFM	EET DEN
Dissolved	Analysis	7470A		1			594358	11/21/22 21:37	PFM	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	593889	11/17/22 17:30	KMS	EET DEN
Total/NA	Analysis	7470A		1			594307	11/18/22 23:42	KMS	EET DEN
Total/NA	Analysis	9040B		1			592368	11/03/22 16:39	KEG	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	596213	12/09/22 23:55	MEC	EET DEN
Total/NA	Analysis	9056A		1	5 mL	5 mL	596437	12/13/22 05:04	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/27/22 20:56	KEG	EET DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	592120	11/02/22 12:00	ASP	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591988	11/01/22 13:13	ASP	EET DEN
Total/NA	Prep	PrecSep-21			999.11 mL	1.0 g	588349	11/03/22 10:22	ZR	EET SL
Total/NA	Analysis	9315		1			591653	11/30/22 15:55	FLC	EET SL
Total/NA	Prep	PrecSep_0			999.11 mL	1.0 g	588355	11/03/22 10:50	ZR	EET SL
Total/NA	Analysis	9320		1			590420	11/17/22 11:55	SCB	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592082	12/02/22 14:13	SCB	EET SL

Client Sample ID: MW-14

Lab Sample ID: 280-168243-8

Date Collected: 10/26/22 10:15

Matrix: Water

Date Received: 10/26/22 14:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/18/22 09:29	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	594165	11/21/22 17:39	MCR	EET DEN
Dissolved	Analysis	6010C		1			594645	11/23/22 16:50	KRP	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	592788	11/13/22 23:28	MCR	EET DEN
Total Recoverable	Analysis	6010C		1			593627	11/15/22 19:58	KRP	EET DEN

Eurofins Denver

Lab Chronicle

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Client Sample ID: MW-14

Lab Sample ID: 280-168243-8

Date Collected: 10/26/22 10:15

Matrix: Water

Date Received: 10/26/22 14:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/18/22 09:29	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	594164	11/21/22 14:08	MCR	EET DEN
Dissolved	Analysis	6020B		1			594514	11/22/22 15:42	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/18/22 09:29	PFM	EET DEN
Dissolved	Prep	3005A			50 mL	50 mL	594164	11/21/22 14:08	MCR	EET DEN
Dissolved	Analysis	6020B		50			594561	11/23/22 10:15	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		50			591577	10/27/22 17:58	LMT	EET DEN
Total Recoverable	Prep	3005A			50 mL	50 mL	591368	10/27/22 09:13	PFM	EET DEN
Total Recoverable	Analysis	6020B		1			591577	10/28/22 00:13	LMT	EET DEN
Dissolved	Filtration	FILTRATION			250 mL	200 mL	593927	11/18/22 09:29	PFM	EET DEN
Dissolved	Prep	7470A			30 mL	50 mL	594191	11/21/22 13:33	PFM	EET DEN
Dissolved	Analysis	7470A		1			594358	11/21/22 21:40	PFM	EET DEN
Total/NA	Prep	7470A			30 mL	50 mL	593889	11/17/22 17:30	KMS	EET DEN
Total/NA	Analysis	7470A		1			594307	11/18/22 23:44	KMS	EET DEN
Total/NA	Analysis	9040B		1			592061	11/01/22 12:56	KEG	EET DEN
Total/NA	Analysis	9056A		10	5 mL	5 mL	596213	12/10/22 01:15	MEC	EET DEN
Total/NA	Analysis	9056A		20	5 mL	5 mL	596213	12/10/22 02:03	MEC	EET DEN
Total/NA	Analysis	SM 2320B		1			591609	10/27/22 21:04	KEG	EET DEN
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	592120	11/02/22 12:00	ASP	EET DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	591988	11/01/22 13:13	ASP	EET DEN
Total/NA	Prep	PrecSep-21			999.02 mL	1.0 g	588349	11/03/22 10:22	ZR	EET SL
Total/NA	Analysis	9315		1			591653	11/30/22 15:55	FLC	EET SL
Total/NA	Prep	PrecSep_0			1010.40 mL	1.0 g	590917	11/22/22 10:53	DJP	EET SL
Total/NA	Analysis	9320		1			591362	11/28/22 12:25	FLC	EET SL
Total/NA	Analysis	Ra226_Ra228		1			592082	12/02/22 14:13	SCB	EET SL

Laboratory References:

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

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

Accreditation/Certification Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Laboratory: Eurofins Denver

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

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4025-011	01-09-23
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
9040B		Ground Water	Temperature
9040B		Water	Temperature
SM 2320B		Ground Water	Bicarbonate Alkalinity as CaCO3
SM 2320B		Ground Water	Carbonate Alkalinity as CaCO3
SM 2320B		Water	Bicarbonate Alkalinity as CaCO3
SM 2320B		Water	Carbonate Alkalinity as CaCO3

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	12-07-22
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23

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

Eurofins Denver

Accreditation/Certification Summary

Client: HDR Inc

Job ID: 280-168243-1

Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

Chain of Custody Record

Client Information Client Contact: Matthew Rohr Company: HDR Inc			Sampler: MHB + TB Phone: (720) 385-4021 PWSID:			Lab PM: Ryan, Nicole C E-Mail: Nicole.Ryan@ET.eurofinsus.com State of Origin:			Carrier Tracking No(s): 280-123639-34268.1 Page: Page 1 of 1 Job #:					
Address: 1670 Broadway Suite 3400 City: Denver State: CO, 80202 Phone: 734-263-7138(Tel) Email: Matthew.Rohr@hdrinc.com			Due Date Requested: TAT Requested (days): Compliance Project: ☐ Yes ☒ No PO #: DEN-021 WO #:			Project #: 28014371 SSOW#:			Project Name: Xcel Energy GW CCR Monitoring - Cherokee Site: Colorado					
Sample Identification			Sample Date			Sample Time			Sample Type (C=Comp, G=grab)			Matrix (Water, Sediment, Other)		
MW-13			10/25/2022			0900			G			Water		
MW-10			10/25/2022			1128			G			Water		
MW-16			10/25/2022			1413			G			Water		
MW-17			10/25/2022			1430			G			Water		
MW-15			10/26/2022			1242			G			Water		
MW-15-DUP			10/26/2022			1255			G			Water		
MW-15-B3			10/26/2022			1350			G			Water		
MW-14			10/26/2022			1015			G			Water		
												Water		
												Water		
												Water		

Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological				Deliverable Requested: I, II, III, IV, Other (specify)			
Relinquished by: Matthew Rohr				Relinquished by:			
Relinquished by:				Relinquished by:			

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For Months		Special Instructions/OC Requirements:	
Special Instructions/Note:		Total Number of Containers:	

Analysis Requested		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify)	
Field Filtered Sample (Yes or No)		Other:	

Date/Time: 10/26/2022 1445 Received by: APR		Date/Time: 10/26/2022 1445 Received by: APR	
Date/Time: 10/26/2022 1445 Received by: APR		Date/Time: 10/26/2022 1445 Received by: APR	

Date: 10/26/2022 1445 Company: HDR		Date: 10/26/2022 1445 Company: HDR	
Date: 10/26/2022 1445 Company: HDR		Date: 10/26/2022 1445 Company: HDR	

Relinquished by: Matthew Rohr		Relinquished by:	
Relinquished by:		Relinquished by:	

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Eurofins Denver

4955 Yarrow Street

Arvada, CO 80002

Phone: 303-736-0100 Fax: 303-431-7171

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact:		Phone:	Ryan, Nicole C		280-633833 1
Shipping/Receiving		E-Mail:		State of Origin:	Page
Company:			Nicole Ryan@ET.eurofins.com	Colorado	Page 1 of 1
TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #	280-168243-1
Address:		Due Date Requested:		Preservation Codes:	
13715 Rider Trail North,		11/28/2022		A - HCL M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Y - Trizma Z - other (specify)	
City:		TAT Requested (days):		Other:	
Earth City		1			
State, Zip:		PO #			
MO, 63045					
Phone:		WO #			
314-298-8566(Tel) 314-298-8757(Fax)					
Email:		Project #			
		28014371			
Project Name:		SSOW#			
Xcel Energy GW CCR Monitoring - Cherokee					
Site:		Xcel Energy CCR - Cherokee Station			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (G=Grab, B=Batch)	Matrix (W=Water, S=Soil, O=Other)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9320_Ra228/PreSep_0 Ra228 (2/3) - SUB	Total Number of Containers	Special Instructions/Note:
MW-13 (280-168243-1)	10/25/22	09:00	Mountain	Water	X	X		2	
MW-10 (280-168243-2)	10/25/22	11:28	Mountain	Water	X	X		2	
MW-16 (280-168243-3)	10/25/22	14:13	Mountain	Water	X	X		2	
MW-17 (280-168243-4)	10/25/22	14:30	Mountain	Water	X	X		2	
MW-15 (280-168243-5)	10/26/22	12:42	Mountain	Water	X	X		2	
MW-15-DUP (280-168243-6)	10/26/22	12:55	Mountain	Water	X	X		2	
MW-15-EB (280-168243-7)	10/26/22	13:50	Mountain	Water	X	X		2	
MW-14 (280-168243-8)	10/26/22	10:15	Mountain	Water	X	X		2	

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

Possible Hazard Identification

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

Primary Deliverable Rank: 4

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

Special Instructions/QC Requirements:

Empty Kit Relinquished by: _____ Date: _____

Relinquished by: **AXE** Date/Time: **10/27/2022 15:48** Company: **EX per**

Relinquished by: **FED EX** Date/Time: **10/27/2022 13:10** Company: **EX per**

Relinquished by: **FED EX** Date/Time: **10/27/2022 13:10** Company: **EX per**

Custody Seals Intact: ☐ Yes ☐ No
Custody Seal No.: _____

Method of Shipment: **FED EX** Date/Time: **10/27/2022 13:10** Company: **EX per**

Received by: **Autumn R. Johnson** Date/Time: **10/27/2022 13:10** Company: **EX per**

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168243-1

Login Number: 168243

List Number: 1

Creator: Rystrom, Joshua R

List Source: Eurofins Denver

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

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 280-168243-1

Login Number: 168243

List Number: 2

Creator: Booker, Autumn R

List Source: Eurofins St. Louis

List Creation: 10/28/22 03:26 PM

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

Tracer/Carrier Summary

Client: HDR Inc
Project/Site: Xcel Energy GW CCR Monitoring - Cherokee

Job ID: 280-168243-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)					
		Ba					
Lab Sample ID	Client Sample ID	(40-110)					
280-168243-4 DU	MW-17	85.7					
LCS 160-588349/2-A	Lab Control Sample	84.3					
MB 160-588349/1-A	Method Blank	93.7					
Tracer/Carrier Legend							
Ba = Ba Carrier							

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)					
		Ba	Y				
Lab Sample ID	Client Sample ID	(40-110)	(40-110)				
280-168243-4 DU	MW-17	85.7	81.9				
LCS 160-588355/2-A	Lab Control Sample	84.3	84.1				
LCS 160-590917/2-A	Lab Control Sample	98.3	78.5				
LCSD 160-590917/3-A	Lab Control Sample Dup	93.2	84.5				
MB 160-588355/1-A	Method Blank	93.7	88.2				
MB 160-590917/1-A	Method Blank	97.3	85.2				
Tracer/Carrier Legend							
Ba = Ba Carrier							
Y = Y Carrier							

DATA VALIDATION AND USABILITY REPORT

Metals by USEPA SW-846 Method 6010C/6020A

Mercury by USEPA SW-846 Method 7470A

Anions by USEPA SW-846 Method 9056A

Total Dissolved Solids (TDS) by Standard Method SM2540C

Total Suspended Solids (TSS) by Standard Method SM2540D

Radium-226 (Ra-226) by USEPA SW-846 Method 9315

Radium-228 (Ra-228) by USEPA SW-846 Method 9320

pH by USEPA SW-846 Method 9040B

Project: Xcel Energy Coal Combustion Residuals (CCR) Project – Cherokee - April 2022

Project/Task Number: 10279353-001

Sample Data Package: 280-161282-1
Lab Report Dates: 5/31/22
Data Validation Report Date: 6/21/22

Laboratory: TestAmerica Denver, Arvada, Colorado (anions, TDS, TSS, pH);
TestAmerica Cedar Falls, Cedar Falls, Iowa (metals);
TestAmerica Saint Louis, Earth City, Missouri (radiochem)

Sample Matrix: Groundwater

Sampling Dates: April 19-20, 2022

Validation Guidelines: Project Plan (*Statistical Method Certification for Compliance with the Coal Combustion Residuals [CCR] Rule, for Xcel Energy [HDR, December 7, 2015]*), United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd edition (SW-846); USEPA *National Functional Guidelines for Inorganic Data Review*, USEPA-540-R-10-011, January 2010; USEPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*, USEPA 540-R-08-005, January 13, 2009; and professional judgment

Validation Level: Stage 2BVM (100%)

Data Reviewer: Aryka Thomson, HDR

Sample ID	Matrix	Lab ID	Date Collected	Metals Mercury	Anions	TDS TSS	RA-226 RA-228	Alkalinity
MW-10	GW	280-161282-1	04/19/2022	X	X	X	X	X
MW-13	GW	280-161282-3	04/20/2022	X	X	X	X	X
MW-14	GW	280-161282-5	04/20/2022	X	X	X	X	X
MW-16	GW	280-161282-6	04/19/2022	X	X	X	X	X
MW-17	GW	280-161282-7	04/19/2022	X	X	X	X	X
MW-10D	QC	280-161282-2	04/19/2022	X	X	X	X	X
MW-13EB	QC	280-161282-4	04/20/2022	X	X	X	X	X

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

Samples were shipped or hand-delivered to the TestAmerica Denver facility, who then forwarded the appropriate sample containers to the other facilities. Samples were received at 2.6°C, 5.3°C, 10.3°C, and 13.0°C. 10.3°C, and 13.0°C are above the EPA recommended temperature range of 0-6°C. All samples were affected. However, the sample(s) were considered “acceptable since it was collected and submitted to the laboratory on the same day and there is evidence that the chilling process has begun”. The chains of custody (COCs) from the field and for transfer to the different lab facilities were filled out and signed. Other receipt exceptions according to the case narrative:

- The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): MW-14 (280-161282-5).
- 1 of 6 500 ml poly unpreserved have no sample time and date. Logged per COC.
- 1 of 4 500 ml poly unpreserved filled to 350 ml for sample MW-13EB (280-161282-4). There is sufficient volume for request analyses.
- The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): MW-13EB (280-161282-4). Container label read sample time 1120. COC reads 1130. Logged per COC.

II. HOLDING TIMES

Holding time criteria were generally met except as noted below.

Metals: Sample was analyzed within 180 days of collection.

Mercury: Samples MW-10, MW-10D, MW-16, and MW-17 were analyzed for mercury outside the 28-day holding time. Mercury was non-detect in all four samples and has been qualified as estimated (UJ).

Anions: Samples were analyzed within 28 days of collection

Alkalinity: Samples were analyzed within 28 days of collection

TDS: Sample was analyzed within 7 days of collection.

TSS: Sample was analyzed within 7 days of collection.

Radium-226: Sample had ingrowth times of at least 21 days.

Radium-228: Sample had ingrowth times of at least 36 hours.

pH: Sample was analyzed more than 24 hours after collection. The method states the samples are to be analyzed “as soon as possible.” All sample results have been qualified as estimated (J).

III. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Metals: Initial calibration criteria were met. One standard and a blank comprised the calibration. No qualification was required.

Mercury: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Anions: Initial calibration criteria were met. No qualification was required.

Alkalinity: Initial calibration criteria were met. No qualification was required.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: The instrument was properly standardized using five buffer solutions. The correlation coefficient of the curve was 1.000. No qualification was required.

SECOND SOURCE STANDARDS

Metals: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Mercury: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: Second source standard criteria were met. pH results were within limits. No qualification was required.

CONTINUING CALIBRATIONS

Metals: Continuing calibration criteria were met. All analytes had %D values less than 10% except CCV 310-353499/10 had %D of 12% from the ICV for boron. The CCV was still within 10% of expected recovery and no qualification was required.

Mercury: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: Continuing calibration criteria were met. pH results were within limits. No qualification was required.

IV. BLANKS

Target analytes were not detected in the blanks except as noted below.

METHOD BLANKS (MB) AND EQUIPMENT BLANK (EB)

Metals: Metals were not detected in the MBs or the EB. No qualification was required.

Mercury: Mercury was not detected in the MBs or the EB. No qualification was required.

Anions: Anions were not detected in the MBs or the EB. No qualification was required.

Alkalinity: Bicarbonate and alkalinity were detected in MB 280-573241/32 at 3.13 mg/L and MB 280-573241/6 at 7.05 mg/L. Bicarbonate and alkalinity were detected in the EB MW-13EB at 4.5 mg/L. Sample results were much higher and no qualification was required regarding the MB or EB.

TDS: TDS was not detected in the MBs or the EB. No qualification was required.

TSS: TSS was not detected in the MBs or the EB. No qualification was required.

Radium-226: Ra-226 was not detected in the MBs or the EB. No qualification was required.

Radium-228: Ra-228 was not detected in the MBs or the EB. No qualification was required.

pH: Not applicable.

INITIAL AND CONTINUING CALIBRATION BLANKS (ICB and CCB)

Metals: Metals were not detected in the ICBs or CCBs except cadmium was detected in CCB 310-354250/123 at 0.0000650 mg/L and in CCB 310-354250/147 at 0.0000720 mg/L. All samples were qualified as estimated with potential for high bias (J+) for cadmium or UJ if non-detect.

Mercury: Mercury was not detected in the ICBs or CCBs. No qualification was required.

Anions: Anions were not detected in the ICBs or CCBs. No qualification was required.

Alkalinity: Bicarbonate and alkalinity were detected in CCB 573241/18 at 6.34 mg/L, CCB

573241/30 at 7.31 mg/L, and CCB 573241/56 at 3.30 mg/L. All samples were qualified as estimated with potential for high bias (J+).

TDS: Not applicable.

TSS: Not applicable.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: Not applicable.

V. LABORATORY CONTROL SAMPLES (LCS) and LABORATORY CONTROL SAMPLES DUPLICATE (LCSD)

Metals: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Mercury: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Anions: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Alkalinity: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TDS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TSS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-226: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-228: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

pH: LCS results were within the control limits of 99-101%. No qualification was required.

VI. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

No samples were designated on the COC for MS/MSD analysis.

Metals: The lab spiked sample MW-10 from this project for metals. Results were within the control limits except thallium had a recovery of 73%. All samples have been qualified as estimated (J) or UJ if non-detect for thallium. The accuracy and precision of the calcium and sodium MS/MSD could not be reliably evaluated because the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS data analysis indicated that no action was necessary and therefore required no qualification.

Mercury: MS/MSD analysis was not performed on samples from this project for mercury. The results of the laboratory-generated spike analysis were within the control limits and no qualification was required.

Anions: The lab did not spike samples from this project. The results of the laboratory-generated spike analysis for chloride and sulfate were outside control limits and required qualification as estimated (J) or (UJ) if non-detect. The accuracy and precision of the sulfate MS/MSD could not be reliably evaluated because the concentrations present in the parent sample were 4 times greater than the matrix spike concentration. The acceptable LCS data analysis indicated that no action was necessary.

Radium-226: MS/MSD analysis was not performed for Rad-226.

Radium-228: MS/MSD analysis was not performed for Rad-228.

VII. DUPLICATES

FIELD DUPLICATES

Sample MW-10D was collected as a field duplicate of MW-10.

Metals: FD results were within control limits. No qualification was required.

Anions: FD results were within control limits. No qualification was required.

Alkalinity: FD results were within control limits. No qualification was required.

TDS: FD results were within control limits. No qualification was required.

TSS: FD results were within control limits. No qualification was required.

Radium-226: FD results were within control limits. No qualification was required.

Radium-228: FD results were within control limits. No qualification was required.

pH: FD results were within control limits. No qualification was required.

LABORATORY DUPLICATES

Metals: Lab duplicate analysis was not performed on a sample from this project for metals. The laboratory-generated duplicate results were within control limits and no qualification was required.

Anions: Lab duplicate analysis was not performed on a sample from this project for anions. The laboratory-generated duplicate results were within control limits and no qualification was required.

Alkalinity: Lab duplicate analysis was not performed on a sample from this project for alkalinity. The laboratory-generated duplicate results were within control limits and no qualification was required.

TDS: Lab duplicate analysis was not performed on sample MW-14 from this project for TDS. Results were within control limits and no qualification was required.

TSS: Lab duplicate analysis was not performed on a sample from this project for TSS. The laboratory-generated duplicate results were within control limits and no qualification was required.

pH: Lab duplicate analysis was not performed on a sample from this project for pH. The laboratory-generated duplicate results were within control limits and no qualification was required.

Radium-226: Lab duplicate analysis was not performed for Rad-226.

Radium-228: Lab duplicate analysis was not performed for Rad-228.

VIII. INTERNAL STANDARDS (ISTD) OR TRACERS

All ISTD and tracer criteria were met except as noted below.

Metals: Due to sample matrix effect on the internal standard (ISTD), samples MW-10 (280-161282-1) and MW-10D (280-161282-2) required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Radium-226: Tracer recoveries in all samples were within limits.

Radium-228: Tracer recoveries in all samples were within limits.

IX. POST DIGESTION SPIKE AND DILUTION TEST

Post-digestion spike (PDS) analyses and serial dilution tests were performed for boron only. Results were within control limits and no qualification was required. The dilution tests were not applicable unless sample results were greater than 50 times the MDL.

Metals: The dilution test was performed on boron. Results were within control limits and no qualification was required.

X. INTERFERENCE CHECK SAMPLES (ICS)

ICS results were applicable to the Method 6010C and 6020A metals analyses. Results were within required limits of 80-120% except as noted below.

Metals: Recoveries were within required limits. No qualifications were required.

XI. REPORTING LIMITS (RL) AND METHOD DETECTION LIMITS (MDL)

This phase of the project is the establishment of baseline contaminant levels. RLs are compared, **for internal use only**, against the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs should be below these levels. MDLs are compared against GPS to ensure that the analyses are detecting at least as low as the GPS.

Metals: The RLs are compared to the MCLs, MCLGs, ALs and secondary MCLs in the table below.

Analyte	RL (mg/L)	MDL (mg/L)	MCL or AL (mg/L)	MCLG (mg/L)	GPS (mg/L)	
					Ash Impoundments	Cooling Tower Retention Pond
Antimony	0.002	0.00057	0.006 (MCL)	0.006	0.00600	0.00600
Arsenic	0.005	0.00075	0.010 (MCL)	Zero	0.0100	0.0100
Barium	0.005	0.0022	2 (MCL)	2	2.00	2.00
Beryllium	0.001	0.00062	0.004 (MCL)	0.004	None	None
Boron	0.1	0.057	Not Listed	Not Listed	None	None
Cadmium	0.001	0.0002	0.005 (MCL)	0.005	0.00500	0.00500
Calcium	1	0.58	Not Listed	Not Listed	None	None
Chromium	0.0025	0.0025	0.1 (MCL)	0.1	0.100	0.100
Cobalt	0.001	0.00019	Not Listed	Not Listed	0.00600	0.0110
Lead	0.001	0.00045	0.015 (AL)	Zero	0.0150	0.0150
Lithium	0.008	0.0017	Not Listed	Not Listed	0.159	0.0940
Molybdenum	0.01	0.0011	Not Listed	Not Listed	0.100	0.100
Selenium	0.005	0.00089	0.05 (MCL)	0.05	0.0500	0.0500
Thallium	0.001	0.0002	0.002 (MCL)	0.0005	None	0.0020

Mercury: The RL of 0.2 µg/L is below the MCL and MCLG of 0.02 mg/L (20 µg/L). RL is above the MDL of 0.11 µg/L.

Anions: The RLs of 3 mg/L, 0.5 mg/L and 5 mg/L for chloride, fluoride and sulfate respectively are below the secondary MCLs of 250 mg/L, 2.0 mg/L, and 250 mg/L, respectively. The RLs are above the MDLs of 1 mg/L, 0.17 mg/L, and 1 mg/L, respectively. The GPS for fluoride is 4.0 mg/L for the Ash Impoundments and 4.08 mg/L for the CTRP.

TDS: The RL is 10 mg/L; The Colorado drinking water standard is 400 mg/L or 1.25 times the background level, whichever is least restrictive. The RL is above the MDL of 4.7 mg/L.

TSS: The RL is 4 mg/L; there are no Colorado drinking water standards for TSS. The RL is above the MDL of 1.1 mg/L.

Radium 226: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

Radium 228: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228.

pH: The Colorado drinking water standard is pH value of 6.5 to 8.5.

XII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data package and the EDDs was verified. Sample results reported between the MDL and RL were qualified as estimated (J).

Metals: No issues.

Mercury: No issues.

Anions: No issues.

Alkalinity:

TDS: No issues.

TSS: No issues.

Radium-226: No issues.

Radium-228: The following sample(s) exhibited a negative result greater in magnitude than the 3 sigma TPU. This occurrence was evaluated and determined to be random in nature. Sporadic occurrences such as this are statistically expected. No further action is required for MW-10 (280-161282-1) and MW-10D (280-161282-2).

pH: No issues.

XIII. PARCCS PARAMETERS AND DATA USABILITY

Data were usable as discussed below.

The data quality indicators (DQIs), expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS parameters), were assessed. This included the evaluation of sample integrity, holding times, trip blanks, rinsate blanks, method blanks, internal standards, surrogate recoveries, MS/MSD recoveries, LCS/Ds, and field duplicate precision. The results of the DQI assessment are provided below.

PRECISION

Field duplicates are collected to assess sampling precision. Lab duplicates, LCS/Ds, and MS/Ds are analyzed to assess analysis precision. Precision is best expressed in terms of relative percent difference (RPD).

Lab precision goals were met. Lab duplicates, LCS/LCSD, and MS/MSD RPDs were within control limits.

Field precision goals were met in that field duplicate/parent pair RPDs were within control limits.

ACCURACY

Accuracy or bias is measured through the analyses of LCS/Ds and MS/MSDs. Sample specific accuracy is measured through surrogate recovery. Accuracy is expressed as percent recovery (%R).

Field accuracy goals were met in that MS/MSD recoveries were within control limits except thallium, chloride, and sulfate.

Lab accuracy goals were met in that LCS/LCSD recoveries were within control limits.

REPRESENTATIVENESS

Representativeness refers to the degree sample data accurately and precisely describes the population of samples at a sampling point or under certain environmental conditions. Samples that are not properly preserved or are analyzed beyond holding times may not be considered representative. Review of sampling procedures, laboratory preparation, analysis holding times, trip blank and rinsate blank analysis help in providing this assessment.

Representativeness goals were generally met. Samples were collected at predetermined locations according to the project plan.

Representativeness goals were not met in these instances:

- All pH and temperature results required qualification as estimated (J) due to analysis past the holding time;
- Mercury results in four samples required qualification as estimated (UJ) due to analysis past the holding time but all non-detect;
- Cadmium in all samples required qualification as estimated with potential for high bias (J+) or UJ if non-detect due to detection in a CCB;
- Bicarbonate and alkalinity in all samples required qualification as estimated with potential for high bias (J+) or UJ if non-detect due to detection in a CCB;
- Thallium in all samples required qualification as estimated (J) or UJ if non-detect due to MS/MSD recoveries outside control limits;
- Chloride and sulfate in all samples required qualification as estimated (J) or UJ if non-detect due to MS/MSD recoveries outside control limits;
- Sulfate accuracy could not be verified.

COMPARABILITY

The selection of standardized methods and consistent laboratory practices facilitates the comparison of data between sampling events.

Comparability goals were met. Samples were analyzed by standardized methods (SW-846 and Standards Methods). Future sampling events will be analyzed by the same methods at the same labs to achieve comparability.

COMPLETENESS

Completeness is determined for both field and analytical objectives. Field completeness is calculated from the number of samples proposed versus the actual number of samples collected. Analytical completeness is expressed in terms of usable data.

Field completeness goals were not met. Five of the nine planned wells were sampled. MW-7, MW-

8, MW-9, and MW-15 were dry. This results in a field completeness of 56%.

Lab completeness goals were met. No data were rejected. Of the planned seven samples for analysis, all seven were analyzed for all analytes.

SENSITIVITY

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. Analytical sensitivity is expressed in terms of the RL, which is provided by the respective laboratories as their reasonable and defensible quantitation limit for environmental samples above the MDL, which is established by each laboratory using pure water or clean matrix.

Sensitivity goals were met. The MDLs were $\leq$ one-half the RLs except for cadmium, molybdenum, sodium, mercury, and Ra-228. This phase of the project is the establishment of baseline contaminant levels, and project RLs were compared to the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs were at or below these levels.

Metals: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Mercury: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Anions: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Alkalinity: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TDS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TSS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-226: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-228: No data were rejected. Data required minimal qualification. All data are usable as qualified.

pH: No data were rejected. All data are usable as qualified.

DATA VALIDATION AND USABILITY REPORT

Metals by USEPA SW-846 Method 6010C/6020A

Mercury by USEPA SW-846 Method 7470A

Anions by USEPA SW-846 Method 9056A

Total Dissolved Solids (TDS) by Standard Method SM2540C

Total Suspended Solids (TSS) by Standard Method SM2540D

Radium-226 (Ra-226) by USEPA SW-846 Method 9315

Radium-228 (Ra-228) by USEPA SW-846 Method 9320

pH by USEPA SW-846 Method 9040B

Alkalinity by Standard Method SM2320B

Project: Xcel Energy Coal Combustion Residuals (CCR) Project – Cherokee - October 2022

Project/Task Number: 10279353-001

Sample Data Package: 280-168243-1
Lab Report Dates: 12/13/22
Data Validation Report Date: 12/20/22

Laboratory: TestAmerica Denver, Arvada, Colorado (metals, anions, TDS, TSS, pH, alkalinity);
TestAmerica Saint Louis, Earth City, Missouri (radiochem)

Sample Matrix: Groundwater

Sampling Dates: October 25-26, 2022

Validation Guidelines: Project Plan (*Statistical Method Certification for Compliance with the Coal Combustion Residuals [CCR] Rule, for Xcel Energy [HDR, December 7, 2015]*), United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd edition (SW-846); USEPA *National Functional Guidelines for Inorganic Data Review*, USEPA-540-R-10- 011, January 2010; USEPA *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*, USEPA 540-R-08-005, January 13, 2009; and professional judgment

Validation Level: Stage 2BVM (100%)

Data Reviewer: Aryka Thomson, HDR

Sample ID	Matrix	Lab ID	Date Collected	Metals Mercury	Anions	TDS TSS	RA-226 RA-228	Alkalinity
MW-10	GW	280-168243-2	10/25/2022	X	X	X	X	X
MW-13	GW	280-168243-1	10/25/2022	X	X	X	X	X
MW-14	GW	280-168243-8	10/26/2022	X	X	X	X	X
MW-15	GW	280-168243-5	10/26/2022	X	X	X	X	X
MW-16	GW	280-168243-3	10/25/2022	X	X	X	X	X
MW-17	GW	280-168243-4	10/25/2022	X	X	X	X	X
MW-15-DUP	QC	280-168243-6	10/26/2022	X	X	X	X	X
MW-15-EB	QC	280-168243-7	10/26/2022	X	X	X	X	X

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

Samples were shipped or hand-delivered to the TestAmerica Denver facility, who then forwarded the appropriate sample containers to the other facilities. Samples were received at 1.1°C, 1.6°C, 1.6°C, and 5.0°C, within the EPA recommended temperature range of 0-6°C.

II. HOLDING TIMES

Holding time criteria were generally met except as noted below.

Metals: Samples were analyzed within 180 days of collection.

Mercury: Samples were analyzed within 28 days of collection.

Anions: Samples were not analyzed within 28 days of collection. All samples required qualification as estimated (J or UJ if non-detect) for chloride, fluoride, and sulfate. Reanalysis of samples outside of holding time was due to instrument issues that caused a backlog and increased turnaround time.

Alkalinity: Samples were analyzed within 14 days of collection

TDS: Samples were analyzed within 7 days of collection except MW-14, MW-15-DUP, and MW-15-EB, which required qualification as estimated (J or UJ if non-detect).

TSS: Samples were analyzed within 7 days of collection.

Radium-226: Sample had ingrowth times of at least 21 days.

Radium-228: Sample had ingrowth times of at least 36 hours.

pH: Sample was analyzed more than 24 hours after collection. The method states the samples are to be analyzed “as soon as possible.” All sample results have been qualified as estimated (J).

III. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Metals: Initial calibration criteria were met. One standard and a blank comprised the calibration. No qualification was required.

Mercury: Initial calibration criteria were met. The fit of the curve was ≥ 0.995 and the low standard was below the RL. No qualification was required.

Anions: Initial calibration criteria were met. No qualification was required.

Alkalinity: Initial calibration criteria were met. No qualification was required.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: The instrument was properly standardized using five buffer solutions. The correlation coefficient of the curve was 1.000. No qualification was required.

SECOND SOURCE STANDARDS

Metals: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Mercury: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Second source standard criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Not applicable.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: Second source standard criteria were met. pH results were within limits. No qualification was required.

CONTINUING CALIBRATIONS

Metals: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Mercury: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Anions: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

Alkalinity: Continuing calibration criteria were met. All analytes had %D values less than 10%. No qualification was required.

TDS: Not applicable. Analysis was gravimetric.

TSS: Not applicable. Analysis was gravimetric.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: Continuing calibration criteria were met. pH results were within limits. No qualification was

required.

IV. BLANKS

Target analytes were not detected in the blanks except as noted below.

METHOD BLANKS (MB) AND EQUIPMENT BLANK (EB)

Metals: Metals were detected in the MBs or the EB as indicated below.

Method Blank or Equipment Blank	Analyte	Result (mg/L)	Affected Samples	Qualifier
MB 280-5913681-A	Barium	0.000861	MW-10, MW-13, MW-14, MW-15, MW-15-DUP, MW-15-EB, MW-16, MW-17	J+ (or UJ if non-detect)
MW-15-EB	Boron	0.0034	MW-15	None (sample results much higher)
MW-15-EB	Calcium	0.33	MW-15	None (sample results much higher)
MB 280-5913681-A	Chromium	0.000721	MW-10, MW-13, MW-14, MW-15, MW-15-DUP, MW-15-EB, MW-16, MW-17	J+ (or UJ if non-detect)
MW-15-EB	Magnesium	0.034	MW-15	None (sample results much higher)

Mercury: Mercury was not detected in the MBs or the EB. No qualification was required.

Anions: Anions were not detected in the MBs or the EB. No qualification was required.

Alkalinity: Bicarbonate and alkalinity were not detected in the MBs or the EB. No qualification was required.

TDS: TDS was not detected in the MBs or the EB. No qualification was required.

TSS: TSS was not detected in the MBs or the EB. No qualification was required.

Radium-226: Rad-226 was not detected in the MBs or the EB. No qualification was required.

Radium-228: Rad-228 was detected in the MB 160-5883551-A and MB 160-5909171-A at 0.7325 pCi/L and 0.8021 pCi/L, respectively. All samples required qualification as estimated with high bias (J+ or UJ if non-detect) for Rad-228 and consequently for combined radium. Rad-228 was not detected in the EB.

pH: Not applicable.

INITIAL AND CONTINUING CALIBRATION BLANKS (ICB and CCB)

Metals: Metals were detected in the ICBs or CCBs as indicated below:

Analyte	ICB or CCB	Associated Samples	Result (mg/L)	Qualification
Barium	CCB 280-591577/65	None	0.000448	None
Beryllium	CCB 280-591577/56	None	0.000204	None
	CCB 280-594349/36	None	0.000102	None
	CCB 280-594349/45		0.000084	
	ICB 280-594514/23	None	0.000093	None
	CCB 280-593627/18	All	0.00345	J+ (MW-15-EB only, other sample results much higher)
Boron	CCB 280-593627/32		0.00171	
	CCB 280-593627/46		0.00339	
	CCB 280-594348/47	None	0.0174	None
Calcium	CCB 280-591577/44	All except MW-15-EB	0.0634	None (sample results much higher)
	CCB 280-591577/65		0.0496	
Lead	CCB 280-594514/32	None	0.000226	None
Lithium	CCB 280-594348/19	None	0.0102	None
	CCB 280-594348/33		0.0195	
	CCB 280-594345/20	None	0.00392	None
	CCB 280-594345/31		0.00156	
	CCB 280-594514/32	None	0.000163	None
Molybdenum	CCB 280-591577/120	MW-10, MW-13, MW-14, MW-17	0.0886	None (sample results much higher)
Potassium				
Sodium	CCB 280-591577/44	All except MW-15-EB	0.115	None (sample results much higher)
	CCB 280-591577/65		0.179	

Mercury: Mercury was not detected in the ICBs or CCBs. No qualification was required.

Anions: Anions were not detected in the ICBs or CCBs. No qualification was required.

Alkalinity: Alkalinity was not detected in the ICBs or CCBs. No qualification was required.

TDS: Not applicable.

TSS: Not applicable.

Radium-226: Not applicable.

Radium-228: Not applicable.

pH: Not applicable.

V. LABORATORY CONTROL SAMPLES (LCS) and LABORATORY CONTROL SAMPLES DUPLICATE (LCSD)

Metals: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Mercury: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Anions: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Alkalinity: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TDS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

TSS: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-226: LCS and LCSD recoveries were within the project control limits of 75-125%. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines. No qualification was required.

Radium-228: LCS and LCSD recoveries were within the project control limits of 75-125% except LCS 160-5883552-A had a recovery of 158%. MW-15-EB and MW-17 required qualification as estimated (J or UJ if non-detect) for Rad-228 and consequently for combined radium. The RPDs were within the control limit of 20% as suggested in the Functional Guidelines.

pH: LCS results were within the control limits of 99-101%. No qualification was required.

VI. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

No samples were designated on the COC for MS/MSD analysis.

Metals: The lab did not spike samples from this project for metals. Laboratory-generated MS/MSD analyses were outside control limits for barium, calcium, magnesium, potassium, and sodium because the concentration in the unspiked sample exceeded four times the spike amount. RPDs were within control limits. No qualification was required.

Mercury: MS/MSD analysis was not performed on samples from this project for mercury. The results of the laboratory-generated spike analyses were within the control limits and no qualification was required.

Anions: The lab spiked sample MW-15-EB from this project for chloride and sulfate. Results were within control limits and no qualification was required. The results of the laboratory-generated spike analyses were within the control limits and no qualification was required.

Radium-226: MS/MSD analysis was not performed for Rad-226.

Radium-228: MS/MSD analysis was not performed for Rad-228.

VII. DUPLICATES

FIELD DUPLICATES

Sample MW-15-DUP was collected as a field duplicate of MW-15.

Metals: FD results were within control limits except lead was non-detect in the parent sample and detected in the field duplicate. The parent sample required qualification as estimated but not detected (UJ) and the field duplicate required qualification as estimated with high bias (J+).

Anions: FD results were within control limits. No qualification was required.

Alkalinity: FD results were within control limits. No qualification was required.

TDS: FD results were within control limits. No qualification was required.

TSS: FD results were within control limits. No qualification was required.

Radium-226: FD results were within control limits. No qualification was required.

Radium-228: FD results were within control limits. No qualification was required.

pH: FD results were within control limits. No qualification was required.

LABORATORY DUPLICATES

Metals: Lab duplicate analysis was not performed for metals.

Anions: Lab duplicate analysis was performed on sample MW-15-EB from this project for chloride and sulfate. The laboratory-generated duplicate results were within control limits and no qualification was required.

Alkalinity: Lab duplicate analysis was performed on sample MW-13 from this project for alkalinity. Results were within control limits.

TDS: Lab duplicate analysis was performed on sample MW-15-EB from this project for TDS. Results were within control limits and no qualification was required. The laboratory-generated duplicate results were within control limits and no qualification was required.

TSS: Lab duplicate analysis was not performed on a sample from this project for TSS. Two laboratory-generated duplicate results were outside control limits. Associated samples MW-14, MW-15, MW-15-DUP, and MW-15-EB required qualification as estimated (J or UJ if non-detect).

pH: Lab duplicate analysis was performed on sample MW-16 from this project for pH. Results were within control limits and no qualification was required. The laboratory-generated duplicate RPD results were outside control limits. Associated sample MW-15-EB required qualification as estimated (J).

Radium-226: Lab duplicate analysis was performed on sample MW-17 for Rad-226. Results were within control limits and no qualification was required.

Radium-228: Lab duplicate analysis was performed on sample MW-17 for Rad-226. Results were within control limits and no qualification was required.

VIII. INTERNAL STANDARDS (ISTD) OR TRACERS

All ISTD and tracer criteria were met except as noted below.

Metals: ISTD areas were greater than 30% of the initial calibration ISTD areas. No qualification was required.

Radium-226: Tracer recoveries in all samples were within limits.

Radium-228: Tracer recoveries in all samples were within limits.

IX. POST DIGESTION SPIKE AND DILUTION TEST

Post-digestion spike (PDS) analyses and serial dilution tests were performed for boron only. Results were within control limits and no qualification was required. The dilution tests were not applicable unless sample results were greater than 50 times the MDL.

Metals: The dilution test was performed on boron, barium, calcium, cobalt, magnesium, molybdenum, potassium, selenium, and sodium. Results were within control limits and no qualification was required.

X. INTERFERENCE CHECK SAMPLES (ICS)

ICS results were applicable to the Method 6010C and 6020A metals analyses. Results were within required limits of 80-120% except as noted below.

Metals: Recoveries were within required limits. No qualifications were required.

XI. REPORTING LIMITS (RL) AND METHOD DETECTION LIMITS (MDL)

This phase of the project is the establishment of baseline contaminant levels. RLs are compared, **for internal use only**, against the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs should be below these levels. MDLs are compared against GPS to ensure that the analyses are detecting at least as low as the GPS.

Metals: The RLs are compared to the MCLs, MCLGs, ALs and secondary MCLs in the table below.

Analyte	RL (mg/L)	MDL (mg/L)	MCL or AL (mg/L)	MCLG (mg/L)	GPS (mg/L)	
					Ash Impoundments	Cooling Tower Retention Pond
Antimony	0.002	0.0004	0.006 (MCL)	0.006	0.00600	0.00600
Arsenic	0.005	0.00033	0.010 (MCL)	Zero	0.0100	0.0100
Barium	0.001	0.00029	2 (MCL)	2	2.00	2.00
Beryllium	0.001	0.00008	0.004 (MCL)	0.004	None	None
Boron	0.1	0.0015	Not Listed	Not Listed	None	None
Cadmium	0.001	0.00027	0.005 (MCL)	0.005	0.00500	0.00500
Calcium	0.2	0.038	Not Listed	Not Listed	None	None
Chromium	0.002	0.0005	0.1 (MCL)	0.1	0.100	0.100
Cobalt	0.001	0.000092	Not Listed	Not Listed	0.00600	0.0110
Lead	0.001	0.00018	0.015 (AL)	Zero	0.0150	0.0150
Lithium	0.02	0.0091	Not Listed	Not Listed	0.159	0.0940
Molybdenum	0.002	0.00014	Not Listed	Not Listed	0.100	0.100
Selenium	0.005	0.00037	0.05 (MCL)	0.05	0.0500	0.0500
Thallium	0.001	0.000089	0.002 (MCL)	0.0005	None	0.0020

Mercury: The RL of 0.2 µg/L is below the MCL and MCLG of 0.02 mg/L (20 µg/L). RL is above the MDL of 0.11 µg/L. The GPS is 0.002 mg/L for the Ash Impoundments. There is no GPS for the CTRP.

Anions: The RLs of 3 mg/L, 0.5 mg/L and 5 mg/L for chloride, fluoride and sulfate respectively are below the secondary MCLs of 250 mg/L, 2.0 mg/L, and 250 mg/L, respectively. The RLs are above the MDLs of 1 mg/L, 0.17 mg/L, and 1 mg/L, respectively. The GPS for fluoride is 4.0 mg/L for the Ash Impoundments and 4.08 mg/L for the CTRP.

TDS: The RL is 10 mg/L; The Colorado drinking water standard is 400 mg/L or 1.25 times the background level, whichever is least restrictive. The RL is above the MDL of 4.7 mg/L.

TSS: The RL is 4 mg/L; there are no Colorado drinking water standards for TSS. The RL is above the MDL of 1.1 mg/L.

Radium 226: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228. The GPS is 5.0 pCi/L for both CCR units.

Radium 228: The RL of 1.0 picocurie per liter (pCi/L) is below the MCL of 5.0 pCi/L for combined radium 226 and radium 228. The GPS is 5.0 pCi/L for both CCR units.

pH: The Colorado drinking water standard is pH value of 6.5 to 8.5.

XII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data package and the EDDs was verified. Sample results reported between the MDL and RL were qualified as estimated (J).

Metals: The following samples was digested at half volume due to limited sample volume, then re-volumed to full volume: MW-13 (280-168243-1), (280-168243-C-1-A MS) and (280-168243-C-1-A MSD).

Mercury: No issues.

Anions: No issues.

Alkalinity:

TDS: No issues.

TSS: No issues.

Radium-226: No issues.

Radium-228: No issues.

pH: The following sample did not equilibrate to within 0.05 pH units after three measurements: MW-15-EB (280-168243-7). This was observed in a previous analysis thus the sample was not rerun.

XIII. PARCCS PARAMETERS AND DATA USABILITY

Data were usable as discussed below.

The data quality indicators (DQIs), expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS parameters), were assessed. This included the evaluation of sample integrity, holding times, trip blanks, rinsate blanks, method blanks, internal standards, surrogate recoveries, MS/MSD recoveries, LCS/Ds, and field duplicate precision. The results of the DQI assessment are provided below.

PRECISION

Field duplicates are collected to assess sampling precision. Lab duplicates, LCS/Ds, and MS/Ds are analyzed to assess analysis precision. Precision is best expressed in terms of relative percent difference (RPD).

Lab precision goals were nearly met. Lab duplicates, LCS/LCSD, and MS/MSD RPDs were within control limits except lab duplicate RPDs for TSS and pH.

Field precision goals were nearly met in that field duplicate/parent pair RPDs were within control limits except lead was non-detect in the parent sample and detected in the field duplicate..

ACCURACY

Accuracy or bias is measured through the analyses of LCS/Ds and MS/MSDs. Sample specific accuracy is measured through surrogate recovery. Accuracy is expressed as percent recovery (%R).

Field accuracy goals were met in that MS/MSD recoveries were within control limits except barium, calcium, magnesium, potassium, and sodium could not be verified.

Lab accuracy goals were nearly met in that LCS/LCSD recoveries were within control limits except Rad-228 in two samples.

REPRESENTATIVENESS

Representativeness refers to the degree sample data accurately and precisely describes the population of samples at a sampling point or under certain environmental conditions. Samples that are not properly preserved or are analyzed beyond holding times may not be considered representative. Review of sampling procedures, laboratory preparation, analysis holding times, trip blank and rinsate blank analysis help in providing this assessment.

Representativeness goals were generally met. Samples were collected at predetermined locations according to the project plan.

Representativeness goals were not met in these instances:

- All pH and temperature results required qualification as estimated (J) due to analysis past the holding time;
- Anion results in all samples required qualification as estimated (J) or UJ if non-detect due to analysis past the holding time;
- TDS results in three samples required qualification as estimated (J) or UJ if non-detect due to analysis past the holding time;
- Barium and chromium in all samples required qualification as estimated with high bias (J+) or UJ if non-detect due to detection in a MB;
- Rad-228 and consequently combined radium in all samples required qualification as estimated with high bias (J+ or UJ if non-detect) due to detection in a MB;
- Boron in one sample required qualification as estimated with potential for high bias (J+) due to detection in a CCB;
- Rad-228 and consequently combined radium in two samples required qualification as estimated (J) due to LCS recovery outside control limits;
- Lead in the parent sample required qualification as estimated but not detected (UJ) and the field duplicate as estimated with high bias (J+) due to detection in the field duplicate but not in the parent sample of a field duplicate/parent pair;
- TSS in three samples required qualification as estimated (J) or UJ if non-detect due to lab duplicate RPDs outside control limits;
- pH in one sample required qualification as estimated (J) due to lab duplicate RPDs outside control limits;
- Barium, calcium, magnesium, potassium, and sodium accuracy could not be verified.

COMPARABILITY

The selection of standardized methods and consistent laboratory practices facilitates the comparison of data between sampling events.

Comparability goals were met. Samples were analyzed by standardized methods (SW-846 and Standards Methods). Future sampling events will be analyzed by the same methods at the same labs to achieve comparability.

COMPLETENESS

Completeness is determined for both field and analytical objectives. Field completeness is calculated from the number of samples proposed versus the actual number of samples collected. Analytical completeness is expressed in terms of usable data.

Field completeness goals were not met. Six of the nine planned wells were sampled. MW-7, MW-8, and MW-9 were dry. This results in a field completeness of 67%.

Lab completeness goals were met. No data were rejected. Of the planned eight samples for analysis, all eight were analyzed for all analytes.

SENSITIVITY

Analytical sensitivity is the concentration at which the measurement system can quantitate target analytes in the environmental matrices of concern. Analytical sensitivity is expressed in terms of the RL, which is provided by the respective laboratories as their reasonable and defensible quantitation limit for environmental samples above the MDL, which is established by each laboratory using pure water or clean matrix.

Sensitivity goals were met. The MDLs were $\leq$ one-half the RLs except for pH. This phase of the project is the establishment of baseline contaminant levels, and project RLs were compared to the Colorado drinking water maximum contaminant levels (MCLs), MCL goals (MCLGs), secondary MCLs, and/or action levels (ALs). RLs were at or below these levels.

Metals: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Mercury: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Anions: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Alkalinity: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TDS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

TSS: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-226: No data were rejected. Data required minimal qualification. All data are usable as qualified.

Radium-228: No data were rejected. Data required minimal qualification. All data are usable as qualified.

pH: No data were rejected. All data are usable as qualified.

Appendix C

Statistical Analysis

West, Center, and East Ash Impoundments

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
1_1_108	MW-10	Appendix III	Boron	mg/l	17	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	2.48	2.50	1.00	4.20	0.955	0.386	1.33	0.241	-0.912
1_1_110	MW-10	Appendix III	Calcium	mg/l	17	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	288	290	160	390	63.6	0.221	44.4	-0.244	-0.0557
1_1_111	MW-10	Appendix III	Chloride (as Cl)	mg/l	17	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	428	410	260	660	113	0.263	104	0.593	-0.465
1_1_115	MW-10	Appendix III	Fluoride	mg/l	19	1	5%	2015-12-08 to 2022-04-19	Normal	Normal	1.94	2.00	0.890	2.90	0.604	0.312	0.741	-0.307	-1.12
1_1_123	MW-10	Appendix III	pH (field)	su	18	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	8.64	8.68	7.89	10.1	0.557	0.0645	0.556	0.894	1.59
1_1_124	MW-10	Appendix III	pH (lab)	su	16	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	8.53	8.45	7.10	10.9	0.954	0.112	0.593	0.906	1.68
1_1_131	MW-10	Appendix III	Sulfate (as SO4)	mg/l	17	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	954	920	580	1300	222	0.232	252	0.221	-0.821
1_1_135	MW-10	Appendix III	Total Dissolved Solids	mg/l	17	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	2212	2200	1500	3000	387	0.175	148	0.0163	0.644
1_2_104	MW-10	Appendix IV	Antimony	mg/l	19	1	5%	2015-12-08 to 2022-04-19	Gamma	Gamma	0.00151	0.00110	0.000570	0.00310	0.000816	0.542	0.000622	0.514	-1.31
1_2_105	MW-10	Appendix IV	Arsenic	mg/l	19	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00334	0.00300	0.000970	0.00810	0.00215	0.644	0.00178	1.23	0.658
1_2_106	MW-10	Appendix IV	Barium	mg/l	19	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0649	0.0660	0.0310	0.120	0.0188	0.290	0.0133	0.958	3.50
1_2_107	MW-10	Appendix IV	Beryllium	mg/l	18	14	74%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Nonparametric	0.000423	0.000310	0.0000530	0.00110	0.000251	0.594	0.000133	1.57	2.70
1_2_109	MW-10	Appendix IV	Cadmium	mg/l	19	4	20%	2015-12-08 to 2022-04-19	Gamma; Lognormal	Gamma	0.000486	0.000260	0.000150	0.00140	0.000394	0.811	0.0000889	1.32	0.552
1_2_112	MW-10	Appendix IV	Chromium, Total	mg/l	19	2	10%	2015-12-08 to 2022-04-19	Gamma; Lognormal	Gamma	0.00362	0.00240	0.000430	0.0180	0.00412	1.14	0.00210	2.70	8.35
1_2_113	MW-10	Appendix IV	Cobalt	mg/l	19	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00312	0.00290	0.000430	0.00660	0.00195	0.626	0.00252	0.265	-1.12
1_2_116	MW-10	Appendix IV	Fluoride (App IV)	mg/l	19	1	5%	2015-12-08 to 2022-04-19	Normal	Normal	1.94	2.00	0.890	2.90	0.604	0.312	0.741	-0.307	-1.12
1_2_117	MW-10	Appendix IV	Lead	mg/l	19	13	65%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Nonparametric	0.000453	0.000450	0.000110	0.00130	0.000249	0.550	0	2.04	7.52
1_2_118	MW-10	Appendix IV	Lithium	mg/l	19	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0904	0.0870	0.0250	0.190	0.0377	0.417	0.0326	0.726	1.69
1_2_120	MW-10	Appendix IV	Mercury	mg/l	19	20	100%	2015-12-08 to 2022-04-19		Nonparametric	0.0000693	0.0000270	0.0000270	0.000130	0.0000512	0.738	0	0.370	-2.07
1_2_121	MW-10	Appendix IV	Molybdenum	mg/l	19	0	0%	2015-12-08 to 2022-04-19	Normal	Normal	0.0491	0.0530	0.0170	0.0830	0.0191	0.390	0.0237	-0.0522	-1.35
1_2_127	MW-10	Appendix IV	Radium-226+228	pci/l	19	4	20%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.759	0.679	0.312	1.64	0.404	0.531	0.465	0.764	-0.418
1_2_129	MW-10	Appendix IV	Selenium	mg/l	19	0	0%	2015-12-08 to 2022-04-19	Nonparametric	Nonparametric	0.0126	0.00540	0.00300	0.0780	0.0176	1.40	0.00281	3.18	11.3
1_2_134	MW-10	Appendix IV	Thallium	mg/l	18	16	84%	2015-12-08 to 2022-04-19		Nonparametric	0.000715	0.000200	0.0000740	0.00930	0.00214	3.0	0.0000593	4.23	17.9
1_3_101	MW-10	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	170	170	170	170	NA	NA	0	NA	NA
1_3_102	MW-10	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	2	100%	2022-04-19 to 2022-04-19		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
1_3_103	MW-10	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	170	170	170	170	NA	NA	0	NA	NA
1_3_114	MW-10	Supplemental	Conductivity (field)	us/cm	18	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	3067	2959	2012	4232	534	0.174	291	0.280	1.02
1_3_119	MW-10	Supplemental	Magnesium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	39.0	39.0	39.0	39.0	NA	NA	0	NA	NA
1_3_122	MW-10	Supplemental	Oxidation-reduction Potential (field)	mV	18	0	0%	2015-12-08 to 2022-04-19	Nonparametric	Nonparametric	49.3	94.5	-440	202	151	3.06	62.4	-2.20	5.98
1_3_125	MW-10	Supplemental	Potassium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	51.0	51.0	51.0	51.0	NA	NA	0	NA	NA
1_3_126	MW-10	Supplemental	Radium-226	pci/l	19	8	40%	2015-12-08 to 2022-04-19	Lognormal	Lognormal	0.196	0.124	0.0720	0.917	0.199	1.02	0.0222	3.08	10.2
1_3_128	MW-10	Supplemental	Radium-228	pci/l	19	8	40%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.630	0.623	0.312	1.15	0.282	0.447	0.376	0.462	-1.32
1_3_130	MW-10	Supplemental	Sodium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	540	540	540	540	NA	NA	0	NA	NA
1_3_132	MW-10	Supplemental	Temperature (field)	deg c	18	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	17.7	18.4	8.80	22.4	3.61	0.204	3.70	-0.763	0.554
1_3_133	MW-10	Supplemental	Temperature (lab)	deg c	16	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	21.7	21.4	19.8	24.4	1.39	0.0640	1.56	0.399	-0.996
1_3_136	MW-10	Supplemental	Total Suspended Solids	mg/l	18	2	11%	2015-12-08 to 2022-04-19	Gamma; Lognormal	Gamma	11.4	5.20	1.10	64.0	15.6	1.37	6.00	2.52	7.39
1_3_137	MW-10	Supplemental	Turbidity (field)	ntu	17	0	0%	2016-03-01 to 2022-04-19	Gamma	Gamma	3.45	2.30	0.0200	8.66	3.24	0.938	3.38	0.643	-1.15
2_1_108	MW-7	Appendix III	Boron	mg/l	10	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	1.43	1.35	1.00	2.00	0.353	0.247	0.370	0.695	-0.534
2_1_110	MW-7	Appendix III	Calcium	mg/l	11	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	187	190	70.0	300	80	0.427	74.1	-0.326	-1.29
2_1_111	MW-7	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2015-12-11 to 2021-04-23	Normal	Normal	477	575	110	730	234	0.490	141	-0.759	-1.25
2_1_115	MW-7	Appendix III	Fluoride	mg/l	10	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	1.38	1.30	0.870	2.30	0.445	0.324	0.222	1.29	1.13
2_1_123	MW-7	Appendix III	pH (field)	su	8	0	0%	2015-12-11 to 2020-04-22	Gamma; Lognormal; Normal	Gamma	7.10	7.09	6.87	7.31	0.160	0.0226	0.200	-0.0189	-1.49

(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
2_1_124	MW-7	Appendix III	pH (lab)	su	10	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	7.64	7.68	7.30	7.90	0.202	0.0264	0.215	-0.521	-0.704
2_1_131	MW-7	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	446	445	210	620	123	0.276	141	-0.435	0.114
2_1_135	MW-7	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2015-12-11 to 2021-04-23	Nonparametric	Nonparametric	1705	1900	750	2200	527	0.309	370	-0.941	-0.659
2_2_104	MW-7	Appendix IV	Antimony	mg/l	11	4	36%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.000623	0.000570	0.000330	0.00110	0.000239	0.383	0.000178	0.795	0.220
2_2_105	MW-7	Appendix IV	Arsenic	mg/l	11	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal	Gamma	0.00456	0.00290	0.00130	0.0130	0.00395	0.866	0.00237	1.23	0.499
2_2_106	MW-7	Appendix IV	Barium	mg/l	11	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.110	0.0970	0.0310	0.270	0.0745	0.678	0.0726	1.08	0.691
2_2_107	MW-7	Appendix IV	Beryllium	mg/l	10	3	30%	2015-12-11 to 2021-04-23	Gamma; Normal	Gamma	0.00108	0.00105	0.0000530	0.00310	0.000953	0.883	0.00110	0.962	0.861
2_2_109	MW-7	Appendix IV	Cadmium	mg/l	11	2	18%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.000381	0.000290	0.0000980	0.000890	0.000261	0.685	0.000267	0.837	-0.426
2_2_112	MW-7	Appendix IV	Chromium, Total	mg/l	11	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.0231	0.0180	0.00180	0.0880	0.0259	1.12	0.0201	1.79	3.47
2_2_113	MW-7	Appendix IV	Cobalt	mg/l	12	0	0%	2015-12-11 to 2021-09-15	Gamma; Lognormal	Gamma	0.00511	0.00370	0.000280	0.0170	0.00521	1.02	0.00415	1.42	1.42
2_2_116	MW-7	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	1.38	1.30	0.870	2.30	0.445	0.324	0.222	1.29	1.13
2_2_117	MW-7	Appendix IV	Lead	mg/l	12	0	0%	2015-12-11 to 2021-09-15	Gamma; Lognormal; Normal	Gamma	0.0118	0.00605	0.000390	0.0450	0.0141	1.19	0.00711	1.53	1.74
2_2_118	MW-7	Appendix IV	Lithium	mg/l	11	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.0583	0.0480	0.0280	0.110	0.0264	0.453	0.0207	0.894	-0.218
2_2_120	MW-7	Appendix IV	Mercury	mg/l	11	8	73%	2015-12-11 to 2021-04-23		Nonparametric	0.0000805	0.0000430	0.0000270	0.000250	0.0000721	0.895	0.0000237	1.44	1.85
2_2_121	MW-7	Appendix IV	Molybdenum	mg/l	11	0	0%	2015-12-11 to 2021-04-23	Lognormal	Lognormal	0.0137	0.0110	0.00780	0.0260	0.00673	0.491	0.00370	1.17	-0.197
2_2_127	MW-7	Appendix IV	Radium-226+228	pci/l	11	1	9%	2015-12-11 to 2021-04-23	Gamma; Lognormal	Gamma	1.90	1.33	0.702	5.08	1.43	0.751	0.698	1.45	1.27
2_2_129	MW-7	Appendix IV	Selenium	mg/l	12	0	0%	2015-12-11 to 2021-09-15	Gamma; Lognormal; Normal	Gamma	0.00700	0.00740	0.00110	0.0140	0.00423	0.604	0.00504	0.0773	-1.21
2_2_134	MW-7	Appendix IV	Thallium	mg/l	10	4	40%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.000378	0.000345	0.0000740	0.000910	0.000263	0.695	0.000281	0.744	0.332
2_3_114	MW-7	Supplemental	Conductivity (field)	us/cm	8	0	0%	2015-12-11 to 2020-04-22	Gamma; Lognormal; Normal	Gamma	3069	3302	1628	3591	662	0.216	397	-1.72	3.17
2_3_122	MW-7	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	2015-12-11 to 2020-04-22	Gamma; Lognormal; Normal	Gamma	136	144	29.6	247	79.1	0.581	74.8	-0.262	-1.11
2_3_126	MW-7	Supplemental	Radium-226	pci/l	11	2	18%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.658	0.364	0.240	2.03	0.563	0.855	0.184	1.72	2.72
2_3_128	MW-7	Supplemental	Radium-228	pci/l	11	5	45%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	1.32	1.01	0.451	3.04	0.838	0.636	0.444	1.37	0.839
2_3_132	MW-7	Supplemental	Temperature (field)	deg c	8	0	0%	2015-12-11 to 2020-04-22	Gamma; Lognormal; Normal	Gamma	17.6	13.6	10.6	30.4	8.40	0.478	4.04	1.04	-0.746
2_3_133	MW-7	Supplemental	Temperature (lab)	deg c	10	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	21.9	21.7	20.2	24.4	1.20	0.0548	0.815	0.986	1.14
2_3_136	MW-7	Supplemental	Total Suspended Solids	mg/l	11	0	0%	2015-12-11 to 2021-09-15	Gamma; Lognormal; Normal	Gamma	780	420	4.40	3000	914	1.17	614	1.54	2.65
2_3_137	MW-7	Supplemental	Turbidity (field)	ntu	7	0	0%	2015-12-11 to 2020-04-22	Nonparametric	Nonparametric	162	9.40	6.10	1000	371	2.30	0.889	2.61	6.86
3_1_108	MW-8	Appendix III	Boron	mg/l	5	0	0%	2015-12-08 to 2017-02-27	Gamma; Lognormal; Normal	Nonparametric	3.30	3.00	2.50	4.40	0.897	0.272	0.741	0.457	-2.79
3_1_110	MW-8	Appendix III	Calcium	mg/l	6	0	0%	2015-12-08 to 2018-06-07	Nonparametric	Nonparametric	337	355	160	420	90.5	0.269	22.2	-1.96	4.47
3_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	470	465	390	570	62.3	0.133	51.9	0.551	0.469
3_1_115	MW-8	Appendix III	Fluoride	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	1.28	1.20	0.940	1.80	0.318	0.249	0.296	0.807	-0.575
3_1_123	MW-8	Appendix III	pH (field)	su	5	0	0%	2015-12-08 to 2017-02-27	Gamma; Lognormal; Normal	Nonparametric	7.43	7.40	7.14	7.81	0.266	0.0358	0.237	0.573	-0.598
3_1_124	MW-8	Appendix III	pH (lab)	su	6	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	7.72	7.70	7.58	7.85	0.0939	0.0122	0.0741	-0.101	0.165
3_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	1400	1450	1200	1500	126	0.0904	74.1	-0.889	-0.781
3_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	2015-12-08 to 2018-06-07		Nonparametric	2933	2950	2800	3000	81.6	0.0278	74.1	-0.857	-0.300
3_2_104	MW-8	Appendix IV	Antimony	mg/l	7	2	29%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.000574	0.000550	0.000200	0.00160	0.000481	0.837	0.000370	2.03	4.62
3_2_105	MW-8	Appendix IV	Arsenic	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.00190	0.00170	0.000790	0.00300	0.000815	0.429	0.000296	0.520	-0.643
3_2_106	MW-8	Appendix IV	Barium	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.0399	0.0410	0.0330	0.0500	0.00677	0.170	0.0104	0.332	-1.48
3_2_107	MW-8	Appendix IV	Beryllium	mg/l	6	4	67%	2015-12-08 to 2018-03-07		Nonparametric	0.000302	0.000335	0.0000530	0.000400	0.000130	0.431	0.0000815	-1.82	3.61
3_2_109	MW-8	Appendix IV	Cadmium	mg/l	7	1	14%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.00118	0.000900	0.000210	0.00320	0.00101	0.860	0.000889	1.46	2.71
3_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	7	1	14%	2015-12-08 to 2018-06-07	Gamma; Lognormal	Nonparametric	0.00464	0.00110	0.000600	0.0140	0.00608	1.31	0.000741	1.22	-0.800
3_2_113	MW-8	Appendix IV	Cobalt	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.00411	0.00400	0.00270	0.00650	0.00126	0.306	0.000741	1.05	1.77
3_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	1.28	1.20	0.940	1.80	0.318	0.249	0.296	0.807	-0.575

(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
3_2_117	MW-8	Appendix IV	Lead	mg/l	7	1	14%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.000769	0.000790	0.000110	0.00220	0.000715	0.930	0.000652	1.51	2.75
3_2_118	MW-8	Appendix IV	Lithium	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.0991	0.100	0.0870	0.110	0.0111	0.111	0.0148	-0.0873	-2.52
3_2_120	MW-8	Appendix IV	Mercury	mg/l	7	7	100%	2015-12-08 to 2018-06-07		Nonparametric	0.0000417	0.0000270	0.0000270	0.000130	0.0000389	0.933	0	2.65	7.00
3_2_121	MW-8	Appendix IV	Molybdenum	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.0565	0.0490	0.00850	0.150	0.0548	0.970	0.0563	0.960	-0.321
3_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	7	1	14%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.886	0.756	0.499	1.73	0.428	0.483	0.204	1.57	2.22
3_2_129	MW-8	Appendix IV	Selenium	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal	Nonparametric	0.0344	0.0190	0.00910	0.120	0.0390	1.13	0.00593	2.32	5.52
3_2_134	MW-8	Appendix IV	Thallium	mg/l	6	5	83%	2015-12-08 to 2018-03-07		Nonparametric	0.000185	0.000200	0.0000740	0.000280	0.0000929	0.503	0.000119	-0.363	-1.88
3_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	5	0	0%	2015-12-08 to 2017-02-27	Gamma; Lognormal; Normal	Nonparametric	4154	4068	3865	4774	365	0.0879	228	1.71	3.12
3_3_122	MW-8	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	2015-12-08 to 2017-02-27	Gamma; Lognormal; Normal	Nonparametric	186	200	135	247	46.9	0.252	69.0	0.0763	-1.73
3_3_126	MW-8	Supplemental	Radium-226	pci/l	7	1	14%	2015-12-08 to 2018-06-07	Gamma; Lognormal	Nonparametric	0.245	0.233	0.105	0.504	0.126	0.514	0.0681	1.68	3.82
3_3_128	MW-8	Supplemental	Radium-228	pci/l	7	3	43%	2015-12-08 to 2018-06-07		Nonparametric	0.708	0.618	0.426	1.54	0.380	0.537	0.108	2.27	5.56
3_3_132	MW-8	Supplemental	Temperature (field)	deg c	5	0	0%	2015-12-08 to 2017-02-27	Gamma; Lognormal; Normal	Nonparametric	15.6	14.2	13.2	20.4	2.99	0.191	1.48	1.38	1.27
3_3_133	MW-8	Supplemental	Temperature (lab)	deg c	6	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	22.4	22.7	20.3	23.4	1.22	0.0544	1.04	-1.09	0.476
3_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	20.3	16.0	1.60	59.0	19.6	0.967	19	1.45	2.42
3_3_137	MW-8	Supplemental	Turbidity (field)	ntu	4	0	0%	2016-02-29 to 2017-02-27		Nonparametric	5.47	4.55	0.100	12.7	5.85	1.07	5.63	0.550	-2.51
4_1_108	MW-9	Appendix III	Boron	mg/l	6	0	0%	2015-12-08 to 2017-09-06	Gamma; Lognormal; Normal	Nonparametric	2.58	2.50	2.20	3.10	0.354	0.137	0.370	0.569	-1.35
4_1_110	MW-9	Appendix III	Calcium	mg/l	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	303	290	170	410	95.9	0.317	133	-0.164	-1.83
4_1_111	MW-9	Appendix III	Chloride (as Cl)	mg/l	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	540	490	270	800	235	0.435	326	0.100	-2.44
4_1_115	MW-9	Appendix III	Fluoride	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	2.36	2.40	1.60	3.30	0.540	0.228	0.444	0.289	0.0792
4_1_123	MW-9	Appendix III	pH (field)	su	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	7.76	7.73	7.29	8.45	0.415	0.0535	0.593	0.589	-0.291
4_1_124	MW-9	Appendix III	pH (lab)	su	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	7.94	7.90	7.73	8.24	0.165	0.0208	0.148	0.866	1.33
4_1_131	MW-9	Appendix III	Sulfate (as SO4)	mg/l	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	1040	960	640	1400	292	0.281	474	0.0110	-1.88
4_1_135	MW-9	Appendix III	Total Dissolved Solids	mg/l	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	2514	2300	1600	3400	765	0.304	1037	0.138	-2.39
4_2_104	MW-9	Appendix IV	Antimony	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.00195	0.00180	0.00120	0.00350	0.000721	0.370	0.000593	1.56	3.0
4_2_105	MW-9	Appendix IV	Arsenic	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.00391	0.00330	0.00260	0.00660	0.00135	0.345	0.000667	1.38	1.23
4_2_106	MW-9	Appendix IV	Barium	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.0644	0.0595	0.0320	0.120	0.0269	0.418	0.0141	1.31	2.31
4_2_107	MW-9	Appendix IV	Beryllium	mg/l	7	4	57%	2015-12-08 to 2018-03-07		Nonparametric	0.000325	0.000310	0.0000530	0.000540	0.000151	0.464	0.000133	-0.649	1.56
4_2_109	MW-9	Appendix IV	Cadmium	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal	Gamma	0.00194	0.00155	0.000710	0.00470	0.00132	0.680	0.000593	1.63	2.27
4_2_112	MW-9	Appendix IV	Chromium, Total	mg/l	8	2	25%	2015-12-08 to 2018-06-06	Gamma; Lognormal	Gamma	0.00320	0.000955	0.000260	0.0180	0.00604	1.89	0.000526	2.73	7.54
4_2_113	MW-9	Appendix IV	Cobalt	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.00254	0.00230	0.000600	0.00490	0.00164	0.645	0.00193	0.281	-1.76
4_2_116	MW-9	Appendix IV	Fluoride (App IV)	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	2.36	2.40	1.60	3.30	0.540	0.228	0.444	0.289	0.0792
4_2_117	MW-9	Appendix IV	Lead	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.00347	0.00245	0.000620	0.0120	0.00376	1.08	0.00227	2.00	4.46
4_2_118	MW-9	Appendix IV	Lithium	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.104	0.0955	0.0530	0.170	0.0407	0.390	0.0348	0.527	-0.915
4_2_120	MW-9	Appendix IV	Mercury	mg/l	8	8	100%	2015-12-08 to 2018-06-06		Nonparametric	0.0000399	0.0000270	0.0000270	0.000130	0.0000364	0.913	0	2.83	8.00
4_2_121	MW-9	Appendix IV	Molybdenum	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.0366	0.0370	0.0200	0.0530	0.00929	0.254	0.00593	-0.0459	1.97
4_2_127	MW-9	Appendix IV	Radium-226+228	pci/l	8	1	12%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.686	0.568	0.419	1.26	0.310	0.452	0.213	1.06	0.0170
4_2_129	MW-9	Appendix IV	Selenium	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.00781	0.00660	0.00490	0.0160	0.00367	0.470	0.00252	1.89	3.93
4_2_134	MW-9	Appendix IV	Thallium	mg/l	7	6	86%	2015-12-08 to 2018-03-07		Nonparametric	0.000183	0.000200	0.0000740	0.000280	0.0000850	0.465	0.000119	-0.267	-1.30
4_3_114	MW-9	Supplemental	Conductivity (field)	us/cm	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	3405	3445	2180	4765	1049	0.308	1631	0.134	-1.91
4_3_122	MW-9	Supplemental	Oxidation-reduction Potential (field)	mV	7	0	0%	2015-12-08 to 2018-06-06	Normal	Nonparametric	94.3	103	-12.7	184	74.5	0.790	92.0	-0.379	-1.30
4_3_126	MW-9	Supplemental	Radium-226	pci/l	8	1	12%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.185	0.150	0.0868	0.444	0.111	0.601	0.0593	2.18	5.37
4_3_128	MW-9	Supplemental	Radium-228	pci/l	8	4	50%	2015-12-08 to 2018-06-06		Nonparametric	0.564	0.491	0.391	0.868	0.185	0.328	0.134	1.00	-0.621

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^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
4_3_132	MW-9	Supplemental	Temperature (field)	deg c	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	18.5	18.7	9.60	25.1	4.82	0.261	2.81	-0.786	1.70
4_3_133	MW-9	Supplemental	Temperature (lab)	deg c	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	22.1	22.1	20.7	23.5	1.20	0.0544	1.78	0.0131	-2.29
4_3_136	MW-9	Supplemental	Total Suspended Solids	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal	Gamma	26.0	5.40	1.20	140	47.6	1.83	5.93	2.51	6.51
4_3_137	MW-9	Supplemental	Turbidity (field)	ntu	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal	Nonparametric	3.00	2.60	0.0200	10.0	3.36	1.12	1.19	1.79	3.96

^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
1_1_108	MW-10	Appendix III	Boron	mg/l	17	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	2.48	2.50	1.00	4.20	0.955	0.386	1.33	0.241	-0.912
1_1_110	MW-10	Appendix III	Calcium	mg/l	17	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	288	290	160	390	63.6	0.221	44.4	-0.244	-0.0557
1_1_111	MW-10	Appendix III	Chloride (as Cl)	mg/l	17	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	428	410	260	660	113	0.263	104	0.593	-0.465
1_1_115	MW-10	Appendix III	Fluoride	mg/l	19	1	5%	2015-12-08 to 2022-04-19	Normal	Normal	1.98	2.05	0.890	2.90	0.594	0.300	0.667	-0.451	-0.862
1_1_123	MW-10	Appendix III	pH (field)	su	18	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	8.64	8.68	7.89	10.1	0.557	0.0645	0.556	0.894	1.59
1_1_124	MW-10	Appendix III	pH (lab)	su	16	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	8.53	8.45	7.10	10.9	0.954	0.112	0.593	0.906	1.68
1_1_131	MW-10	Appendix III	Sulfate (as SO4)	mg/l	17	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	954	920	580	1300	222	0.232	252	0.221	-0.821
1_1_135	MW-10	Appendix III	Total Dissolved Solids	mg/l	17	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	2212	2200	1500	3000	387	0.175	148	0.0163	0.644
1_2_104	MW-10	Appendix IV	Antimony	mg/l	19	1	5%	2015-12-08 to 2022-04-19	Gamma	Gamma	0.00156	0.00130	0.000680	0.00310	0.000807	0.518	0.000793	0.452	-1.39
1_2_105	MW-10	Appendix IV	Arsenic	mg/l	19	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00334	0.00300	0.000970	0.00810	0.00215	0.644	0.00178	1.23	0.658
1_2_106	MW-10	Appendix IV	Barium	mg/l	19	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0649	0.0660	0.0310	0.120	0.0188	0.290	0.0133	0.958	3.50
1_2_107	MW-10	Appendix IV	Beryllium	mg/l	18	14	74%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Nonparametric	0.000494	0.000480	0.000200	0.000930	0.000285	0.576	0.000281	0.893	0.638
1_2_109	MW-10	Appendix IV	Cadmium	mg/l	19	4	20%	2015-12-08 to 2022-04-19	Gamma; Lognormal	Gamma	0.000561	0.000340	0.000150	0.00140	0.000413	0.737	0.000178	0.982	-0.304
1_2_112	MW-10	Appendix IV	Chromium, Total	mg/l	19	2	10%	2015-12-08 to 2022-04-19	Gamma; Lognormal	Gamma	0.00373	0.00240	0.000430	0.0180	0.00431	1.16	0.00178	2.61	7.62
1_2_113	MW-10	Appendix IV	Cobalt	mg/l	19	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00312	0.00290	0.000430	0.00660	0.00195	0.626	0.00252	0.265	-1.12
1_2_116	MW-10	Appendix IV	Fluoride (App IV)	mg/l	19	1	5%	2015-12-08 to 2022-04-19	Normal	Normal	1.98	2.05	0.890	2.90	0.594	0.300	0.667	-0.451	-0.862
1_2_117	MW-10	Appendix IV	Lead	mg/l	19	13	65%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Nonparametric	0.000563	0.000560	0.000160	0.00130	0.000410	0.727	0.000296	1.25	2.16
1_2_118	MW-10	Appendix IV	Lithium	mg/l	19	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0904	0.0870	0.0250	0.190	0.0377	0.417	0.0326	0.726	1.69
1_2_121	MW-10	Appendix IV	Molybdenum	mg/l	19	0	0%	2015-12-08 to 2022-04-19	Normal	Normal	0.0491	0.0530	0.0170	0.0830	0.0191	0.390	0.0237	-0.0522	-1.35
1_2_127	MW-10	Appendix IV	Radium-226+228	pci/l	19	4	20%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.857	0.747	0.322	1.64	0.399	0.466	0.493	0.459	-0.637
1_2_129	MW-10	Appendix IV	Selenium	mg/l	19	0	0%	2015-12-08 to 2022-04-19	Nonparametric	Nonparametric	0.0126	0.00540	0.00300	0.0780	0.0176	1.40	0.00281	3.18	11.3
1_2_134	MW-10	Appendix IV	Thallium	mg/l	18	16	84%	2015-12-08 to 2022-04-19		Nonparametric	0.00334	0.000380	0.000330	0.00930	0.00516	1.55	0.0000741	1.73	NA
1_3_101	MW-10	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	170	170	170	170	NA	NA	0	NA	NA
1_3_103	MW-10	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	170	170	170	170	NA	NA	0	NA	NA
1_3_114	MW-10	Supplemental	Conductivity (field)	us/cm	18	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	3067	2959	2012	4232	534	0.174	291	0.280	1.02
1_3_119	MW-10	Supplemental	Magnesium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	39.0	39.0	39.0	39.0	NA	NA	0	NA	NA
1_3_122	MW-10	Supplemental	Oxidation-reduction Potential (field)	mV	18	0	0%	2015-12-08 to 2022-04-19	Nonparametric	Nonparametric	49.3	94.5	-440	202	151	3.06	62.4	-2.20	5.98
1_3_125	MW-10	Supplemental	Potassium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	51.0	51.0	51.0	51.0	NA	NA	0	NA	NA
1_3_126	MW-10	Supplemental	Radium-226	pci/l	19	8	40%	2015-12-08 to 2022-04-19	Lognormal	Lognormal	0.244	0.132	0.0720	0.917	0.251	1.03	0.0326	2.37	5.64
1_3_128	MW-10	Supplemental	Radium-228	pci/l	19	8	40%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.746	0.794	0.340	1.15	0.293	0.392	0.273	-0.247	-1.52
1_3_130	MW-10	Supplemental	Sodium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	540	540	540	540	NA	NA	0	NA	NA
1_3_132	MW-10	Supplemental	Temperature (field)	deg c	18	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	17.7	18.4	8.80	22.4	3.61	0.204	3.70	-0.763	0.554
1_3_133	MW-10	Supplemental	Temperature (lab)	deg c	16	0	0%	2015-12-08 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	21.7	21.4	19.8	24.4	1.39	0.0640	1.56	0.399	-0.996
1_3_136	MW-10	Supplemental	Total Suspended Solids	mg/l	18	2	11%	2015-12-08 to 2022-04-19	Gamma; Lognormal	Gamma	12.7	6.20	1.20	64.0	16.2	1.27	7.41	2.40	6.67
1_3_137	MW-10	Supplemental	Turbidity (field)	ntu	17	0	0%	2016-03-01 to 2022-04-19	Gamma	Gamma	3.45	2.30	0.0200	8.66	3.24	0.938	3.38	0.643	-1.15
2_1_108	MW-7	Appendix III	Boron	mg/l	10	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	1.43	1.35	1.00	2.00	0.353	0.247	0.370	0.695	-0.534
2_1_110	MW-7	Appendix III	Calcium	mg/l	11	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	187	190	70.0	300	80	0.427	74.1	-0.326	-1.29
2_1_111	MW-7	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	2015-12-11 to 2021-04-23	Normal	Normal	477	575	110	730	234	0.490	141	-0.759	-1.25
2_1_115	MW-7	Appendix III	Fluoride	mg/l	10	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	1.38	1.30	0.870	2.30	0.445	0.324	0.222	1.29	1.13
2_1_123	MW-7	Appendix III	pH (field)	su	8	0	0%	2015-12-11 to 2020-04-22	Gamma; Lognormal; Normal	Gamma	7.10	7.09	6.87	7.31	0.160	0.0226	0.200	-0.0189	-1.49
2_1_124	MW-7	Appendix III	pH (lab)	su	10	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	7.64	7.68	7.30	7.90	0.202	0.0264	0.215	-0.521	-0.704
2_1_131	MW-7	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	446	445	210	620	123	0.276	141	-0.435	0.114
2_1_135	MW-7	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	2015-12-11 to 2021-04-23	Nonparametric	Nonparametric	1705	1900	750	2200	527	0.309	370	-0.941	-0.659

(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
2_2_104	MW-7	Appendix IV	Antimony	mg/l	11	4	36%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.000653	0.000620	0.000330	0.00110	0.000303	0.465	0.000430	0.325	-1.55
2_2_105	MW-7	Appendix IV	Arsenic	mg/l	11	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal	Gamma	0.00456	0.00290	0.00130	0.0130	0.00395	0.866	0.00237	1.23	0.499
2_2_106	MW-7	Appendix IV	Barium	mg/l	11	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.110	0.0970	0.0310	0.270	0.0745	0.678	0.0726	1.08	0.691
2_2_107	MW-7	Appendix IV	Beryllium	mg/l	10	3	30%	2015-12-11 to 2021-04-23	Gamma; Normal	Gamma	0.00145	0.00130	0.000130	0.00310	0.000913	0.631	0.000593	0.662	1.70
2_2_109	MW-7	Appendix IV	Cadmium	mg/l	11	2	18%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.000420	0.000320	0.0000980	0.000890	0.000275	0.655	0.000311	0.472	-0.942
2_2_112	MW-7	Appendix IV	Chromium, Total	mg/l	11	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.0231	0.0180	0.00180	0.0880	0.0259	1.12	0.0201	1.79	3.47
2_2_113	MW-7	Appendix IV	Cobalt	mg/l	12	0	0%	2015-12-11 to 2021-09-15	Gamma; Lognormal	Gamma	0.00511	0.00370	0.000280	0.0170	0.00521	1.02	0.00415	1.42	1.42
2_2_116	MW-7	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	1.38	1.30	0.870	2.30	0.445	0.324	0.222	1.29	1.13
2_2_117	MW-7	Appendix IV	Lead	mg/l	12	0	0%	2015-12-11 to 2021-09-15	Gamma; Lognormal; Normal	Gamma	0.0118	0.00605	0.000390	0.0450	0.0141	1.19	0.00711	1.53	1.74
2_2_118	MW-7	Appendix IV	Lithium	mg/l	11	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.0583	0.0480	0.0280	0.110	0.0264	0.453	0.0207	0.894	-0.218
2_2_120	MW-7	Appendix IV	Mercury	mg/l	11	8	73%	2015-12-11 to 2021-04-23		Nonparametric	0.000120	0.0000680	0.0000430	0.000250	0.000113	0.939	0.0000370	1.64	NA
2_2_121	MW-7	Appendix IV	Molybdenum	mg/l	11	0	0%	2015-12-11 to 2021-04-23	Lognormal	Lognormal	0.0137	0.0110	0.00780	0.0260	0.00673	0.491	0.00370	1.17	-0.197
2_2_127	MW-7	Appendix IV	Radium-226+228	pci/l	11	1	9%	2015-12-11 to 2021-04-23	Gamma; Lognormal	Gamma	2.01	1.47	0.702	5.08	1.46	0.729	0.923	1.33	0.864
2_2_129	MW-7	Appendix IV	Selenium	mg/l	12	0	0%	2015-12-11 to 2021-09-15	Gamma; Lognormal; Normal	Gamma	0.00700	0.00740	0.00110	0.0140	0.00423	0.604	0.00504	0.0773	-1.21
2_2_134	MW-7	Appendix IV	Thallium	mg/l	10	4	40%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.000538	0.000535	0.000300	0.000910	0.000209	0.388	0.000126	1.14	2.15
2_3_114	MW-7	Supplemental	Conductivity (field)	us/cm	8	0	0%	2015-12-11 to 2020-04-22	Gamma; Lognormal; Normal	Gamma	3069	3302	1628	3591	662	0.216	397	-1.72	3.17
2_3_122	MW-7	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	2015-12-11 to 2020-04-22	Gamma; Lognormal; Normal	Gamma	136	144	29.6	247	79.1	0.581	74.8	-0.262	-1.11
2_3_126	MW-7	Supplemental	Radium-226	pci/l	11	2	18%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	0.744	0.569	0.249	2.03	0.592	0.796	0.407	1.47	1.87
2_3_128	MW-7	Supplemental	Radium-228	pci/l	11	5	45%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	1.80	1.50	1.01	3.04	0.876	0.487	0.711	0.719	-1.66
2_3_132	MW-7	Supplemental	Temperature (field)	deg c	8	0	0%	2015-12-11 to 2020-04-22	Gamma; Lognormal; Normal	Gamma	17.6	13.6	10.6	30.4	8.40	0.478	4.04	1.04	-0.746
2_3_133	MW-7	Supplemental	Temperature (lab)	deg c	10	0	0%	2015-12-11 to 2021-04-23	Gamma; Lognormal; Normal	Gamma	21.9	21.7	20.2	24.4	1.20	0.0548	0.815	0.986	1.14
2_3_136	MW-7	Supplemental	Total Suspended Solids	mg/l	11	0	0%	2015-12-11 to 2021-09-15	Gamma; Lognormal; Normal	Gamma	780	420	4.40	3000	914	1.17	614	1.54	2.65
2_3_137	MW-7	Supplemental	Turbidity (field)	ntu	7	0	0%	2015-12-11 to 2020-04-22	Nonparametric	Nonparametric	162	9.40	6.10	1000	371	2.30	0.889	2.61	6.86
3_1_108	MW-8	Appendix III	Boron	mg/l	5	0	0%	2015-12-08 to 2017-02-27	Gamma; Lognormal; Normal	Nonparametric	3.30	3.00	2.50	4.40	0.897	0.272	0.741	0.457	-2.79
3_1_110	MW-8	Appendix III	Calcium	mg/l	6	0	0%	2015-12-08 to 2018-06-07	Nonparametric	Nonparametric	337	355	160	420	90.5	0.269	22.2	-1.96	4.47
3_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	470	465	390	570	62.3	0.133	51.9	0.551	0.469
3_1_115	MW-8	Appendix III	Fluoride	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	1.28	1.20	0.940	1.80	0.318	0.249	0.296	0.807	-0.575
3_1_123	MW-8	Appendix III	pH (field)	su	5	0	0%	2015-12-08 to 2017-02-27	Gamma; Lognormal; Normal	Nonparametric	7.43	7.40	7.14	7.81	0.266	0.0358	0.237	0.573	-0.598
3_1_124	MW-8	Appendix III	pH (lab)	su	6	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	7.72	7.70	7.58	7.85	0.0939	0.0122	0.0741	-0.101	0.165
3_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	1400	1450	1200	1500	126	0.0904	74.1	-0.889	-0.781
3_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	2015-12-08 to 2018-06-07		Nonparametric	2933	2950	2800	3000	81.6	0.0278	74.1	-0.857	-0.300
3_2_104	MW-8	Appendix IV	Antimony	mg/l	7	2	29%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.000576	0.000300	0.000200	0.00160	0.000589	1.02	0.000148	1.96	3.86
3_2_105	MW-8	Appendix IV	Arsenic	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.00190	0.00170	0.000790	0.00300	0.000815	0.429	0.000296	0.520	-0.643
3_2_106	MW-8	Appendix IV	Barium	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.0399	0.0410	0.0330	0.0500	0.00677	0.170	0.0104	0.332	-1.48
3_2_107	MW-8	Appendix IV	Beryllium	mg/l	6	4	67%	2015-12-08 to 2018-03-07		Nonparametric	0.000325	0.000325	0.000290	0.000360	0.0000495	0.152	0.0000519	NA	NA
3_2_109	MW-8	Appendix IV	Cadmium	mg/l	7	1	14%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.00134	0.00110	0.000250	0.00320	0.00101	0.752	0.000452	1.46	2.91
3_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	7	1	14%	2015-12-08 to 2018-06-07	Gamma; Lognormal	Nonparametric	0.00531	0.00155	0.000860	0.0140	0.00637	1.20	0.000993	0.961	-1.81
3_2_113	MW-8	Appendix IV	Cobalt	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.00411	0.00400	0.00270	0.00650	0.00126	0.306	0.000741	1.05	1.77
3_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	1.28	1.20	0.940	1.80	0.318	0.249	0.296	0.807	-0.575
3_2_117	MW-8	Appendix IV	Lead	mg/l	7	1	14%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.000878	0.000805	0.000160	0.00220	0.000715	0.814	0.000444	1.47	2.83
3_2_118	MW-8	Appendix IV	Lithium	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.0991	0.100	0.0870	0.110	0.0111	0.111	0.0148	-0.0873	-2.52
3_2_121	MW-8	Appendix IV	Molybdenum	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.0565	0.0490	0.00850	0.150	0.0548	0.970	0.0563	0.960	-0.321
3_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	7	1	14%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	0.930	0.780	0.499	1.73	0.450	0.484	0.317	1.35	1.51

(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
3_2_129	MW-8	Appendix IV	Selenium	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal	Nonparametric	0.0344	0.0190	0.00910	0.120	0.0390	1.13	0.00593	2.32	5.52
3_2_134	MW-8	Appendix IV	Thallium	mg/l	6	5	83%	2015-12-08 to 2018-03-07		Nonparametric	0.000200	0.000200	0.000200	0.000200	NA	NA	0	NA	NA
3_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	5	0	0%	2015-12-08 to 2017-02-27	Gamma; Lognormal; Normal	Nonparametric	4154	4068	3865	4774	365	0.0879	228	1.71	3.12
3_3_122	MW-8	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	2015-12-08 to 2017-02-27	Gamma; Lognormal; Normal	Nonparametric	186	200	135	247	46.9	0.252	69.0	0.0763	-1.73
3_3_126	MW-8	Supplemental	Radium-226	pci/l	7	1	14%	2015-12-08 to 2018-06-07	Gamma; Lognormal	Nonparametric	0.268	0.235	0.180	0.504	0.120	0.448	0.0578	2.06	4.56
3_3_128	MW-8	Supplemental	Radium-228	pci/l	7	3	43%	2015-12-08 to 2018-06-07		Nonparametric	0.804	0.613	0.453	1.54	0.498	0.618	0.153	1.83	3.45
3_3_132	MW-8	Supplemental	Temperature (field)	deg c	5	0	0%	2015-12-08 to 2017-02-27	Gamma; Lognormal; Normal	Nonparametric	15.6	14.2	13.2	20.4	2.99	0.191	1.48	1.38	1.27
3_3_133	MW-8	Supplemental	Temperature (lab)	deg c	6	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	22.4	22.7	20.3	23.4	1.22	0.0544	1.04	-1.09	0.476
3_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	7	0	0%	2015-12-08 to 2018-06-07	Gamma; Lognormal; Normal	Nonparametric	20.3	16.0	1.60	59.0	19.6	0.967	19	1.45	2.42
3_3_137	MW-8	Supplemental	Turbidity (field)	ntu	4	0	0%	2016-02-29 to 2017-02-27		Nonparametric	5.47	4.55	0.100	12.7	5.85	1.07	5.63	0.550	-2.51
4_1_108	MW-9	Appendix III	Boron	mg/l	6	0	0%	2015-12-08 to 2017-09-06	Gamma; Lognormal; Normal	Nonparametric	2.58	2.50	2.20	3.10	0.354	0.137	0.370	0.569	-1.35
4_1_110	MW-9	Appendix III	Calcium	mg/l	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	303	290	170	410	95.9	0.317	133	-0.164	-1.83
4_1_111	MW-9	Appendix III	Chloride (as Cl)	mg/l	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	540	490	270	800	235	0.435	326	0.100	-2.44
4_1_115	MW-9	Appendix III	Fluoride	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	2.36	2.40	1.60	3.30	0.540	0.228	0.444	0.289	0.0792
4_1_123	MW-9	Appendix III	pH (field)	su	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	7.76	7.73	7.29	8.45	0.415	0.0535	0.593	0.589	-0.291
4_1_124	MW-9	Appendix III	pH (lab)	su	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	7.94	7.90	7.73	8.24	0.165	0.0208	0.148	0.866	1.33
4_1_131	MW-9	Appendix III	Sulfate (as SO4)	mg/l	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	1040	960	640	1400	292	0.281	474	0.0110	-1.88
4_1_135	MW-9	Appendix III	Total Dissolved Solids	mg/l	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	2514	2300	1600	3400	765	0.304	1037	0.138	-2.39
4_2_104	MW-9	Appendix IV	Antimony	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.00195	0.00180	0.00120	0.00350	0.000721	0.370	0.000593	1.56	3.0
4_2_105	MW-9	Appendix IV	Arsenic	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.00391	0.00330	0.00260	0.00660	0.00135	0.345	0.000667	1.38	1.23
4_2_106	MW-9	Appendix IV	Barium	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.0644	0.0595	0.0320	0.120	0.0269	0.418	0.0141	1.31	2.31
4_2_107	MW-9	Appendix IV	Beryllium	mg/l	7	4	57%	2015-12-08 to 2018-03-07		Nonparametric	0.000370	0.000310	0.000260	0.000540	0.000149	0.404	0.0000741	1.52	NA
4_2_109	MW-9	Appendix IV	Cadmium	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal	Gamma	0.00194	0.00155	0.000710	0.00470	0.00132	0.680	0.000593	1.63	2.27
4_2_112	MW-9	Appendix IV	Chromium, Total	mg/l	8	2	25%	2015-12-08 to 2018-06-06	Gamma; Lognormal	Gamma	0.00406	0.00109	0.000260	0.0180	0.00689	1.70	0.000733	2.36	5.62
4_2_113	MW-9	Appendix IV	Cobalt	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.00254	0.00230	0.000600	0.00490	0.00164	0.645	0.00193	0.281	-1.76
4_2_116	MW-9	Appendix IV	Fluoride (App IV)	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	2.36	2.40	1.60	3.30	0.540	0.228	0.444	0.289	0.0792
4_2_117	MW-9	Appendix IV	Lead	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.00347	0.00245	0.000620	0.0120	0.00376	1.08	0.00227	2.00	4.46
4_2_118	MW-9	Appendix IV	Lithium	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.104	0.0955	0.0530	0.170	0.0407	0.390	0.0348	0.527	-0.915
4_2_121	MW-9	Appendix IV	Molybdenum	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.0366	0.0370	0.0200	0.0530	0.00929	0.254	0.00593	-0.0459	1.97
4_2_127	MW-9	Appendix IV	Radium-226+228	pci/l	8	1	12%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.721	0.623	0.419	1.26	0.317	0.440	0.286	0.853	-0.421
4_2_129	MW-9	Appendix IV	Selenium	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.00781	0.00660	0.00490	0.0160	0.00367	0.470	0.00252	1.89	3.93
4_2_134	MW-9	Appendix IV	Thallium	mg/l	7	6	86%	2015-12-08 to 2018-03-07		Nonparametric	0.000170	0.000170	0.000170	0.000170	NA	NA	0	NA	NA
4_3_114	MW-9	Supplemental	Conductivity (field)	us/cm	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	3405	3445	2180	4765	1049	0.308	1631	0.134	-1.91
4_3_122	MW-9	Supplemental	Oxidation-reduction Potential (field)	mV	7	0	0%	2015-12-08 to 2018-06-06	Normal	Nonparametric	94.3	103	-12.7	184	74.5	0.790	92.0	-0.379	-1.30
4_3_126	MW-9	Supplemental	Radium-226	pci/l	8	1	12%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Gamma	0.184	0.139	0.0868	0.444	0.120	0.654	0.0341	2.19	5.18
4_3_128	MW-9	Supplemental	Radium-228	pci/l	8	4	50%	2015-12-08 to 2018-06-06		Nonparametric	0.694	0.711	0.484	0.868	0.181	0.262	0.197	-0.293	-3.71
4_3_132	MW-9	Supplemental	Temperature (field)	deg c	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	18.5	18.7	9.60	25.1	4.82	0.261	2.81	-0.786	1.70
4_3_133	MW-9	Supplemental	Temperature (lab)	deg c	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal; Normal	Nonparametric	22.1	22.1	20.7	23.5	1.20	0.0544	1.78	0.0131	-2.29
4_3_136	MW-9	Supplemental	Total Suspended Solids	mg/l	8	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal	Gamma	26.0	5.40	1.20	140	47.6	1.83	5.93	2.51	6.51
4_3_137	MW-9	Supplemental	Turbidity (field)	ntu	7	0	0%	2015-12-08 to 2018-06-06	Gamma; Lognormal	Nonparametric	3.00	2.60	0.0200	10.0	3.36	1.12	1.19	1.79	3.96

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Normal				Lognormal				Gamma				Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
								Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value			
1_1_108	MW-10	Appendix III	Boron	mg/l	17	0	0%	0.957	0.576	0.115	0.799	0.956	0.550	0.170	0.212	0.149	>= 0.10	0.291	>= 0.10	0.416	Gamma; Lognormal; Normal	Gamma
1_1_110	MW-10	Appendix III	Calcium	mg/l	17	0	0%	0.957	0.585	0.129	0.638	0.922	0.160	0.141	0.492	0.122	>= 0.10	0.403	>= 0.10	0.240	Gamma; Lognormal; Normal	Gamma
1_1_111	MW-10	Appendix III	Chloride (as Cl)	mg/l	17	0	0%	0.950	0.455	0.168	0.227	0.974	0.890	0.156	0.330	0.168	>= 0.10	0.280	>= 0.10	0.259	Gamma; Lognormal; Normal	Gamma
1_1_115	MW-10	Appendix III	Fluoride	mg/l	19	1	5%	0.936	0.251	0.182	0.119	0.889	0.038	0.239	0.008	0.223	0.01 <= p < 0.05	0.766	0.01 <= p < 0.05	0.346	Normal	Normal
1_1_123	MW-10	Appendix III	pH (field)	su	18	0	0%	0.928	0.181	0.124	0.657	0.942	0.318	0.118	0.727	0.116	>= 0.10	0.311	>= 0.10	0.063	Gamma; Lognormal; Normal	Gamma
1_1_124	MW-10	Appendix III	pH (lab)	su	16	0	0%	0.927	0.215	0.137	0.584	0.947	0.445	0.133	0.632	0.130	>= 0.10	0.405	>= 0.10	0.109	Gamma; Lognormal; Normal	Gamma
1_1_131	MW-10	Appendix III	Sulfate (as SO4)	mg/l	17	0	0%	0.947	0.412	0.118	0.760	0.959	0.605	0.114	0.807	0.116	>= 0.10	0.271	>= 0.10	0.237	Gamma; Lognormal; Normal	Gamma
1_1_135	MW-10	Appendix III	Total Dissolved Solids	mg/l	17	0	0%	0.939	0.308	0.175	0.183	0.917	0.132	0.185	0.128	0.168	>= 0.10	0.611	>= 0.10	0.182	Gamma; Lognormal; Normal	Gamma
1_2_104	MW-10	Appendix IV	Antimony	mg/l	19	1	5%	0.857	0.011	0.215	0.028	0.869	0.017	0.204	0.047	0.203	0.05 <= p < 0.10	1.074	< 0.01	0.532	Gamma	Gamma
1_2_105	MW-10	Appendix IV	Arsenic	mg/l	19	0	0%	0.840	0.005	0.186	0.083	0.956	0.491	0.131	0.532	0.143	>= 0.10	0.492	>= 0.10	0.612	Gamma; Lognormal; Normal	Gamma
1_2_106	MW-10	Appendix IV	Barium	mg/l	19	0	0%	0.895	0.039	0.191	0.068	0.921	0.116	0.178	0.117	0.169	>= 0.10	0.643	0.05 <= p < 0.10	0.296	Gamma; Lognormal; Normal	Gamma
1_2_107	MW-10	Appendix IV	Beryllium	mg/l	18	14	74%	0.943	0.685	0.195	0.770	0.983	0.949	0.173	0.894	0.180	>= 0.10	0.199	>= 0.10	0.597	Gamma; Lognormal; Normal	Nonparametric
1_2_109	MW-10	Appendix IV	Cadmium	mg/l	19	4	20%	0.834	0.010	0.237	0.024	0.908	0.128	0.199	0.112	0.219	0.05 <= p < 0.10	0.780	0.01 <= p < 0.05	0.722	Gamma; Lognormal	Gamma
1_2_112	MW-10	Appendix IV	Chromium, Total	mg/l	19	2	10%	0.684	0.000	0.277	0.001	0.987	0.995	0.098	0.934	0.163	>= 0.10	0.465	>= 0.10	0.948	Gamma; Lognormal	Gamma
1_2_113	MW-10	Appendix IV	Cobalt	mg/l	19	0	0%	0.943	0.293	0.155	0.271	0.918	0.105	0.162	0.214	0.145	>= 0.10	0.396	>= 0.10	0.823	Gamma; Lognormal; Normal	Gamma
1_2_116	MW-10	Appendix IV	Fluoride (App IV)	mg/l	19	1	5%	0.936	0.251	0.182	0.119	0.889	0.038	0.239	0.008	0.223	0.01 <= p < 0.05	0.766	0.01 <= p < 0.05	0.346	Normal	Normal
1_2_117	MW-10	Appendix IV	Lead	mg/l	19	13	65%	0.855	0.173	0.298	0.098	0.908	0.421	0.273	0.172	0.241	>= 0.10	0.402	>= 0.10	0.779	Gamma; Lognormal; Normal	Nonparametric
1_2_118	MW-10	Appendix IV	Lithium	mg/l	19	0	0%	0.956	0.494	0.111	0.774	0.929	0.168	0.155	0.268	0.123	>= 0.10	0.340	>= 0.10	0.473	Gamma; Lognormal; Normal	Gamma
1_2_120	MW-10	Appendix IV	Mercury	mg/l	19	20	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
1_2_121	MW-10	Appendix IV	Molybdenum	mg/l	19	0	0%	0.916	0.094	0.190	0.070	0.900	0.049	0.203	0.038	0.201	0.01 <= p < 0.05	0.882	0.01 <= p < 0.05	0.440	Normal	Normal
1_2_127	MW-10	Appendix IV	Radium-226+228	pci/l	19	4	20%	0.939	0.365	0.142	0.570	0.949	0.506	0.182	0.200	0.172	>= 0.10	0.343	>= 0.10	0.498	Gamma; Lognormal; Normal	Gamma
1_2_129	MW-10	Appendix IV	Selenium	mg/l	19	0	0%	0.566	0.000	0.293	0.000	0.866	0.012	0.214	0.022	0.260	< 0.01	1.563	< 0.01	0.894	Nonparametric	Nonparametric
1_2_134	MW-10	Appendix IV	Thallium	mg/l	18	16	84%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		1.888		Nonparametric
1_3_101	MW-10	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
1_3_102	MW-10	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	2	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
1_3_103	MW-10	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
1_3_114	MW-10	Supplemental	Conductivity (field)	us/cm	18	0	0%	0.933	0.223	0.190	0.083	0.926	0.166	0.215	0.028	0.199	0.05 <= p < 0.10	0.634	0.05 <= p < 0.10	0.178	Gamma; Lognormal; Normal	Gamma
1_3_119	MW-10	Supplemental	Magnesium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
1_3_122	MW-10	Supplemental	Oxidation-reduction Potential (field)	mV	18	0	0%	0.768	0.001	0.282	0.001	NA	NA	NA	NA	NA		NA		NA	Nonparametric	Nonparametric
1_3_125	MW-10	Supplemental	Potassium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
1_3_126	MW-10	Supplemental	Radium-226	pci/l	19	8	40%	0.647	0.000	0.353	0.000	0.859	0.055	0.244	0.065	0.279	0.01 <= p < 0.05	1.100	< 0.01	0.734	Lognormal	Lognormal
1_3_128	MW-10	Supplemental	Radium-228	pci/l	19	8	40%	0.904	0.209	0.209	0.199	0.867	0.070	0.218	0.154	0.227	>= 0.10	0.613	>= 0.10	0.451	Gamma; Lognormal; Normal	Gamma
1_3_130	MW-10	Supplemental	Sodium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
1_3_132	MW-10	Supplemental	Temperature (field)	deg c	18	0	0%	0.939	0.281	0.125	0.646	0.876	0.022	0.151	0.342	0.145	>= 0.10	0.512	>= 0.10	0.233	Gamma; Lognormal; Normal	Gamma
1_3_133	MW-10	Supplemental	Temperature (lab)	deg c	16	0	0%	0.944	0.400	0.152	0.414	0.948	0.461	0.144	0.502	0.150	>= 0.10	0.387	>= 0.10	0.063	Gamma; Lognormal; Normal	Gamma
1_3_136	MW-10	Supplemental	Total Suspended Solids	mg/l	18	2	11%	0.710	0.000	0.238	0.016	0.953	0.543	0.127	0.701	0.128	>= 0.10	0.391	>= 0.10	1.221	Gamma; Lognormal	Gamma
1_3_137	MW-10	Supplemental	Turbidity (field)	ntu	17	0	0%	0.850	0.011	0.227	0.020	0.745	0.000	0.291	0.000	0.202	0.05 <= p < 0.10	1.114	< 0.01	2.354	Gamma	Gamma
2_1_108	MW-7	Appendix III	Boron	mg/l	10	0	0%	0.902	0.230	0.147	0.783	0.934	0.492	0.138	0.854	0.148	>= 0.10	0.341	>= 0.10	0.240	Gamma; Lognormal; Normal	Gamma
2_1_110	MW-7	Appendix III	Calcium	mg/l	11	0	0%	0.913	0.264	0.200	0.254	0.859	0.056	0.229	0.110	0.218	>= 0.10	0.654	0.05 <= p < 0.10	0.518	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.

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Normal				Lognormal				Gamma				Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
								Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value			
2_1_111	MW-7	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.838	0.042	0.223	0.172	0.776	0.007	0.313	0.006	0.295	0.01 <= p < 0.05	1.056	< 0.01	0.699	Normal	Normal
2_1_115	MW-7	Appendix III	Fluoride	mg/l	10	0	0%	0.853	0.063	0.278	0.028	0.923	0.383	0.220	0.184	0.239	>= 0.10	0.533	>= 0.10	0.296	Gamma; Lognormal; Normal	Gamma
2_1_123	MW-7	Appendix III	pH (field)	su	8	0	0%	0.938	0.591	0.180	0.627	0.938	0.592	0.179	0.631	0.195	>= 0.10	0.312	>= 0.10	0.023	Gamma; Lognormal; Normal	Gamma
2_1_124	MW-7	Appendix III	pH (lab)	su	10	0	0%	0.942	0.576	0.147	0.779	0.939	0.540	0.152	0.740	0.153	>= 0.10	0.305	>= 0.10	0.027	Gamma; Lognormal; Normal	Gamma
2_1_131	MW-7	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.953	0.704	0.148	0.771	0.894	0.190	0.205	0.272	0.187	>= 0.10	0.373	>= 0.10	0.316	Gamma; Lognormal; Normal	Gamma
2_1_135	MW-7	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.843	0.048	0.271	0.035	0.802	0.015	0.315	0.006	0.308	< 0.01	0.886	0.01 <= p < 0.05	0.377	Nonparametric	Nonparametric
2_2_104	MW-7	Appendix IV	Antimony	mg/l	11	4	36%	0.919	0.463	0.177	0.731	0.910	0.393	0.168	0.795	0.178	>= 0.10	0.330	>= 0.10	0.491	Gamma; Lognormal; Normal	Gamma
2_2_105	MW-7	Appendix IV	Arsenic	mg/l	11	0	0%	0.820	0.017	0.290	0.010	0.904	0.205	0.182	0.394	0.232	>= 0.10	0.553	>= 0.10	0.837	Gamma; Lognormal	Gamma
2_2_106	MW-7	Appendix IV	Barium	mg/l	11	0	0%	0.905	0.214	0.174	0.464	0.975	0.931	0.095	0.996	0.121	>= 0.10	0.172	>= 0.10	0.695	Gamma; Lognormal; Normal	Gamma
2_2_107	MW-7	Appendix IV	Beryllium	mg/l	10	3	30%	0.949	0.721	0.207	0.487	0.805	0.046	0.325	0.024	0.268	>= 0.10	0.454	>= 0.10	1.008	Gamma; Normal	Gamma
2_2_109	MW-7	Appendix IV	Cadmium	mg/l	11	2	18%	0.934	0.523	0.197	0.397	0.926	0.442	0.154	0.781	0.148	>= 0.10	0.272	>= 0.10	0.785	Gamma; Lognormal; Normal	Gamma
2_2_112	MW-7	Appendix IV	Chromium, Total	mg/l	11	0	0%	0.802	0.010	0.214	0.171	0.962	0.796	0.161	0.594	0.177	>= 0.10	0.234	>= 0.10	1.257	Gamma; Lognormal; Normal	Gamma
2_2_113	MW-7	Appendix IV	Cobalt	mg/l	12	0	0%	0.837	0.026	0.251	0.035	0.956	0.727	0.156	0.576	0.123	>= 0.10	0.178	>= 0.10	1.271	Gamma; Lognormal	Gamma
2_2_116	MW-7	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	0.853	0.063	0.278	0.028	0.923	0.383	0.220	0.184	0.239	>= 0.10	0.533	>= 0.10	0.296	Gamma; Lognormal; Normal	Gamma
2_2_117	MW-7	Appendix IV	Lead	mg/l	12	0	0%	0.802	0.010	0.218	0.118	0.942	0.528	0.119	0.911	0.149	>= 0.10	0.228	>= 0.10	1.559	Gamma; Lognormal; Normal	Gamma
2_2_118	MW-7	Appendix IV	Lithium	mg/l	11	0	0%	0.908	0.231	0.197	0.273	0.965	0.829	0.141	0.781	0.168	>= 0.10	0.292	>= 0.10	0.436	Gamma; Lognormal; Normal	Gamma
2_2_120	MW-7	Appendix IV	Mercury	mg/l	11	8	73%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.913		Nonparametric
2_2_121	MW-7	Appendix IV	Molybdenum	mg/l	11	0	0%	0.787	0.006	0.327	0.002	0.857	0.053	0.261	0.035	0.289	0.01 <= p < 0.05	0.838	0.01 <= p < 0.05	0.439	Lognormal	Lognormal
2_2_127	MW-7	Appendix IV	Radium-226+228	pci/l	11	1	9%	0.831	0.034	0.288	0.018	0.938	0.532	0.180	0.477	0.224	>= 0.10	0.430	>= 0.10	0.670	Gamma; Lognormal	Gamma
2_2_129	MW-7	Appendix IV	Selenium	mg/l	12	0	0%	0.949	0.625	0.147	0.671	0.897	0.146	0.183	0.324	0.172	>= 0.10	0.400	>= 0.10	0.824	Gamma; Lognormal; Normal	Gamma
2_2_134	MW-7	Appendix IV	Thallium	mg/l	10	4	40%	0.899	0.368	0.292	0.112	0.956	0.787	0.229	0.413	0.242	>= 0.10	0.311	>= 0.10	0.375	Gamma; Lognormal; Normal	Gamma
2_3_114	MW-7	Supplemental	Conductivity (field)	us/cm	8	0	0%	0.797	0.027	0.215	0.337	0.728	0.005	0.266	0.099	0.238	>= 0.10	0.860	0.01 <= p < 0.05	0.265	Gamma; Lognormal; Normal	Gamma
2_3_122	MW-7	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	0.928	0.501	0.161	0.782	0.813	0.039	0.255	0.130	0.210	>= 0.10	0.585	>= 0.10	0.839	Gamma; Lognormal; Normal	Gamma
2_3_126	MW-7	Supplemental	Radium-226	pci/l	11	2	18%	0.815	0.030	0.264	0.069	0.919	0.381	0.182	0.527	0.202	>= 0.10	0.473	>= 0.10	0.731	Gamma; Lognormal; Normal	Gamma
2_3_128	MW-7	Supplemental	Radium-228	pci/l	11	5	45%	0.855	0.172	0.216	0.513	0.885	0.293	0.189	0.717	0.210	>= 0.10	0.430	>= 0.10	0.477	Gamma; Lognormal; Normal	Gamma
2_3_132	MW-7	Supplemental	Temperature (field)	deg c	8	0	0%	0.774	0.015	0.285	0.055	0.828	0.057	0.242	0.180	0.268	>= 0.10	0.733	0.01 <= p < 0.05	0.438	Gamma; Lognormal; Normal	Gamma
2_3_133	MW-7	Supplemental	Temperature (lab)	deg c	10	0	0%	0.924	0.391	0.200	0.309	0.936	0.508	0.190	0.385	0.193	>= 0.10	0.394	>= 0.10	0.054	Gamma; Lognormal; Normal	Gamma
2_3_136	MW-7	Supplemental	Total Suspended Solids	mg/l	11	0	0%	0.824	0.020	0.199	0.260	0.868	0.073	0.249	0.055	0.170	>= 0.10	0.390	>= 0.10	2.345	Gamma; Lognormal; Normal	Gamma
2_3_137	MW-7	Supplemental	Turbidity (field)	ntu	7	0	0%	0.501	0.000	0.436	0.000	0.717	0.006	0.391	0.002	0.422	< 0.01	1.320	< 0.01	1.872	Nonparametric	Nonparametric
3_1_108	MW-8	Appendix III	Boron	mg/l	5	0	0%	0.844	0.178	0.231	0.512	0.849	0.190	0.222	0.573	0.247	>= 0.10	0.486	>= 0.10	0.269	Gamma; Lognormal; Normal	Nonparametric
3_1_110	MW-8	Appendix III	Calcium	mg/l	6	0	0%	0.761	0.025	0.392	0.004	0.680	0.004	0.426	0.001	0.425	< 0.01	0.982	< 0.01	0.350	Nonparametric	Nonparametric
3_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	0.982	0.962	0.148	0.947	0.994	0.997	0.132	0.985	0.126	>= 0.10	0.159	>= 0.10	0.131	Gamma; Lognormal; Normal	Nonparametric
3_1_115	MW-8	Appendix III	Fluoride	mg/l	7	0	0%	0.918	0.456	0.186	0.659	0.946	0.694	0.143	0.935	0.154	>= 0.10	0.281	>= 0.10	0.240	Gamma; Lognormal; Normal	Nonparametric
3_1_123	MW-8	Appendix III	pH (field)	su	5	0	0%	0.967	0.855	0.163	0.934	0.970	0.874	0.162	0.935	0.187	>= 0.10	0.210	>= 0.10	0.036	Gamma; Lognormal; Normal	Nonparametric
3_1_124	MW-8	Appendix III	pH (lab)	su	6	0	0%	0.923	0.524	0.258	0.241	0.922	0.522	0.256	0.250	0.265	>= 0.10	0.406	>= 0.10	0.012	Gamma; Lognormal; Normal	Nonparametric
3_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	0.831	0.110	0.285	0.131	0.828	0.104	0.282	0.142	0.309	0.05 <= p < 0.10	0.594	>= 0.10	0.093	Gamma; Lognormal; Normal	Nonparametric
3_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.028		Nonparametric
3_2_104	MW-8	Appendix IV	Antimony	mg/l	7	2	29%	0.732	0.020	0.318	0.099	0.878	0.303	0.248	0.399	0.286	>= 0.10	0.517	>= 0.10	0.850	Gamma; Lognormal; Normal	Nonparametric
3_2_105	MW-8	Appendix IV	Arsenic	mg/l	7	0	0%	0.855	0.138	0.311	0.040	0.884	0.246	0.237	0.273	0.266	>= 0.10	0.514	>= 0.10	0.456	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*)

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Normal				Lognormal				Gamma				Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
								Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value			
3_2_106	MW-8	Appendix IV	Barium	mg/l	7	0	0%	0.892	0.287	0.235	0.285	0.887	0.258	0.236	0.280	0.253	>= 0.10	0.431	>= 0.10	0.169	Gamma; Lognormal; Normal	Nonparametric
3_2_107	MW-8	Appendix IV	Beryllium	mg/l	6	4	67%	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.153		Nonparametric	
3_2_109	MW-8	Appendix IV	Cadmium	mg/l	7	1	14%	0.872	0.236	0.270	0.184	0.938	0.643	0.261	0.227	0.209	>= 0.10	0.282	>= 0.10	0.840	Gamma; Lognormal; Normal	Nonparametric
3_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	7	1	14%	0.702	0.006	0.365	0.012	0.785	0.043	0.246	0.305	0.313	>= 0.10	0.806	0.01 <= p < 0.05	1.310	Gamma; Lognormal	Nonparametric
3_2_113	MW-8	Appendix IV	Cobalt	mg/l	7	0	0%	0.907	0.378	0.237	0.276	0.948	0.714	0.190	0.627	0.193	>= 0.10	0.292	>= 0.10	0.294	Gamma; Lognormal; Normal	Nonparametric
3_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	7	0	0%	0.918	0.456	0.186	0.659	0.946	0.694	0.143	0.935	0.154	>= 0.10	0.281	>= 0.10	0.240	Gamma; Lognormal; Normal	Nonparametric
3_2_117	MW-8	Appendix IV	Lead	mg/l	7	1	14%	0.859	0.187	0.293	0.108	0.952	0.758	0.252	0.273	0.211	>= 0.10	0.279	>= 0.10	0.902	Gamma; Lognormal; Normal	Nonparametric
3_2_118	MW-8	Appendix IV	Lithium	mg/l	7	0	0%	0.794	0.036	0.266	0.142	0.796	0.037	0.263	0.150	0.284	>= 0.10	0.736	0.01 <= p < 0.05	0.112	Gamma; Lognormal; Normal	Nonparametric
3_2_120	MW-8	Appendix IV	Mercury	mg/l	7	7	100%	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric	
3_2_121	MW-8	Appendix IV	Molybdenum	mg/l	7	0	0%	0.857	0.141	0.225	0.349	0.887	0.260	0.240	0.257	0.259	>= 0.10	0.420	>= 0.10	1.171	Gamma; Lognormal; Normal	Nonparametric
3_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	7	1	14%	0.879	0.265	0.277	0.158	0.961	0.826	0.220	0.485	0.249	>= 0.10	0.297	>= 0.10	0.445	Gamma; Lognormal; Normal	Nonparametric
3_2_129	MW-8	Appendix IV	Selenium	mg/l	7	0	0%	0.660	0.001	0.349	0.010	0.890	0.273	0.273	0.119	0.322	0.01 <= p < 0.05	0.700	0.05 <= p < 0.10	0.844	Gamma; Lognormal	Nonparametric
3_2_134	MW-8	Appendix IV	Thallium	mg/l	6	5	83%	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric	
3_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	5	0	0%	0.820	0.117	0.305	0.132	0.838	0.160	0.291	0.177	0.295	>= 0.10	0.498	>= 0.10	0.084	Gamma; Lognormal; Normal	Nonparametric
3_3_122	MW-8	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	0.914	0.490	0.224	0.564	0.902	0.419	0.250	0.383	0.256	>= 0.10	0.383	>= 0.10	0.258	Gamma; Lognormal; Normal	Nonparametric
3_3_126	MW-8	Supplemental	Radium-226	pci/l	7	1	14%	0.738	0.015	0.343	0.026	0.836	0.120	0.275	0.166	0.297	>= 0.10	0.631	0.05 <= p < 0.10	0.373	Gamma; Lognormal	Nonparametric
3_3_128	MW-8	Supplemental	Radium-228	pci/l	7	3	43%	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.535		Nonparametric	
3_3_132	MW-8	Supplemental	Temperature (field)	deg c	5	0	0%	0.847	0.186	0.279	0.226	0.872	0.274	0.271	0.264	0.293	>= 0.10	0.446	>= 0.10	0.180	Gamma; Lognormal; Normal	Nonparametric
3_3_133	MW-8	Supplemental	Temperature (lab)	deg c	6	0	0%	0.873	0.240	0.227	0.432	0.867	0.213	0.227	0.432	0.249	>= 0.10	0.443	>= 0.10	0.056	Gamma; Lognormal; Normal	Nonparametric
3_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	7	0	0%	0.873	0.199	0.199	0.548	0.942	0.659	0.215	0.423	0.156	>= 0.10	0.198	>= 0.10	1.259	Gamma; Lognormal; Normal	Nonparametric
3_3_137	MW-8	Supplemental	Turbidity (field)	ntu	4	0	0%	NA	NA	NA	NA	NA	NA	NA	NA		NA		2.186		Nonparametric	
4_1_108	MW-9	Appendix III	Boron	mg/l	6	0	0%	0.931	0.586	0.197	0.655	0.941	0.667	0.187	0.731	0.205	>= 0.10	0.275	>= 0.10	0.135	Gamma; Lognormal; Normal	Nonparametric
4_1_110	MW-9	Appendix III	Calcium	mg/l	7	0	0%	0.910	0.398	0.218	0.400	0.911	0.405	0.218	0.401	0.237	>= 0.10	0.351	>= 0.10	0.341	Gamma; Lognormal; Normal	Nonparametric
4_1_111	MW-9	Appendix III	Chloride (as Cl)	mg/l	7	0	0%	0.845	0.112	0.243	0.242	0.869	0.182	0.244	0.234	0.263	>= 0.10	0.516	>= 0.10	0.464	Gamma; Lognormal; Normal	Nonparametric
4_1_115	MW-9	Appendix III	Fluoride	mg/l	8	0	0%	0.978	0.953	0.141	0.911	0.979	0.959	0.134	0.940	0.132	>= 0.10	0.177	>= 0.10	0.232	Gamma; Lognormal; Normal	Gamma
4_1_123	MW-9	Appendix III	pH (field)	su	7	0	0%	0.938	0.620	0.199	0.547	0.942	0.658	0.190	0.623	0.191	>= 0.10	0.270	>= 0.10	0.053	Gamma; Lognormal; Normal	Nonparametric
4_1_124	MW-9	Appendix III	pH (lab)	su	7	0	0%	0.939	0.627	0.209	0.472	0.943	0.663	0.205	0.500	0.195	>= 0.10	0.291	>= 0.10	0.021	Gamma; Lognormal; Normal	Nonparametric
4_1_131	MW-9	Appendix III	Sulfate (as SO4)	mg/l	7	0	0%	0.903	0.348	0.242	0.246	0.912	0.407	0.241	0.254	0.260	>= 0.10	0.414	>= 0.10	0.292	Gamma; Lognormal; Normal	Nonparametric
4_1_135	MW-9	Appendix III	Total Dissolved Solids	mg/l	7	0	0%	0.852	0.129	0.244	0.237	0.869	0.184	0.246	0.224	0.264	>= 0.10	0.550	>= 0.10	0.311	Gamma; Lognormal; Normal	Nonparametric
4_2_104	MW-9	Appendix IV	Antimony	mg/l	8	0	0%	0.858	0.115	0.239	0.194	0.947	0.678	0.178	0.645	0.186	>= 0.10	0.340	>= 0.10	0.333	Gamma; Lognormal; Normal	Gamma
4_2_105	MW-9	Appendix IV	Arsenic	mg/l	8	0	0%	0.841	0.076	0.273	0.081	0.900	0.286	0.245	0.167	0.265	>= 0.10	0.539	>= 0.10	0.311	Gamma; Lognormal; Normal	Gamma
4_2_106	MW-9	Appendix IV	Barium	mg/l	8	0	0%	0.880	0.190	0.300	0.033	0.954	0.749	0.234	0.222	0.258	>= 0.10	0.367	>= 0.10	0.396	Gamma; Lognormal; Normal	Gamma
4_2_107	MW-9	Appendix IV	Beryllium	mg/l	7	4	57%	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.381		Nonparametric	
4_2_109	MW-9	Appendix IV	Cadmium	mg/l	8	0	0%	0.802	0.030	0.351	0.004	0.938	0.589	0.267	0.098	0.305	0.01 <= p < 0.05	0.491	>= 0.10	0.595	Gamma; Lognormal	Gamma
4_2_112	MW-9	Appendix IV	Chromium, Total	mg/l	8	2	25%	0.607	0.001	0.395	0.004	0.927	0.560	0.243	0.327	0.312	>= 0.10	0.635	0.05 <= p < 0.10	1.426	Gamma; Lognormal	Gamma
4_2_113	MW-9	Appendix IV	Cobalt	mg/l	8	0	0%	0.912	0.371	0.196	0.490	0.923	0.457	0.181	0.612	0.190	>= 0.10	0.349	>= 0.10	0.765	Gamma; Lognormal; Normal	Gamma
4_2_116	MW-9	Appendix IV	Fluoride (App IV)	mg/l	8	0	0%	0.978	0.953	0.141	0.911	0.979	0.959	0.134	0.940	0.132	>= 0.10	0.177	>= 0.10	0.232	Gamma; Lognormal; Normal	Gamma
4_2_117	MW-9	Appendix IV	Lead	mg/l	8	0	0%	0.760	0.011	0.247	0.162	0.951	0.726	0.158	0.803	0.174	>= 0.10	0.342	>= 0.10	1.012	Gamma; Lognormal; Normal	Gamma
4_2_118	MW-9	Appendix IV	Lithium	mg/l	8	0	0%	0.939	0.605	0.216	0.331	0.963	0.835	0.180	0.628	0.206	>= 0.10	0.254	>= 0.10	0.396	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)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Normal				Lognormal				Gamma				Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
								Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value			
4_2_120	MW-9	Appendix IV	Mercury	mg/l	8	8	100%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA	Nonparametric	
4_2_121	MW-9	Appendix IV	Molybdenum	mg/l	8	0	0%	0.936	0.572	0.223	0.284	0.893	0.247	0.271	0.085	0.247	>= 0.10	0.440	>= 0.10	0.278	Gamma; Lognormal; Normal	Gamma
4_2_127	MW-9	Appendix IV	Radium-226+228	pci/l	8	1	12%	0.901	0.339	0.193	0.599	0.931	0.559	0.158	0.862	0.181	>= 0.10	0.305	>= 0.10	0.425	Gamma; Lognormal; Normal	Gamma
4_2_129	MW-9	Appendix IV	Selenium	mg/l	8	0	0%	0.790	0.023	0.223	0.284	0.897	0.272	0.173	0.686	0.198	>= 0.10	0.468	>= 0.10	0.397	Gamma; Lognormal; Normal	Gamma
4_2_134	MW-9	Appendix IV	Thallium	mg/l	7	6	86%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA	Nonparametric	
4_3_114	MW-9	Supplemental	Conductivity (field)	us/cm	7	0	0%	0.914	0.422	0.191	0.612	0.914	0.421	0.171	0.775	0.195	>= 0.10	0.341	>= 0.10	0.317	Gamma; Lognormal; Normal	Nonparametric
4_3_122	MW-9	Supplemental	Oxidation-reduction Potential (field)	mV	7	0	0%	0.942	0.660	0.153	0.887	NA	NA	NA	NA	NA		NA		NA	Normal	Nonparametric
4_3_126	MW-9	Supplemental	Radium-226	pci/l	8	1	12%	0.729	0.008	0.303	0.052	0.900	0.332	0.208	0.477	0.243	>= 0.10	0.576	>= 0.10	0.518	Gamma; Lognormal; Normal	Gamma
4_3_128	MW-9	Supplemental	Radium-228	pci/l	8	4	50%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		0.274		Nonparametric
4_3_132	MW-9	Supplemental	Temperature (field)	deg c	7	0	0%	0.948	0.710	0.223	0.368	0.866	0.172	0.281	0.100	0.255	>= 0.10	0.418	>= 0.10	0.305	Gamma; Lognormal; Normal	Nonparametric
4_3_133	MW-9	Supplemental	Temperature (lab)	deg c	7	0	0%	0.876	0.211	0.205	0.499	0.877	0.213	0.203	0.518	0.221	>= 0.10	0.465	>= 0.10	0.054	Gamma; Lognormal; Normal	Nonparametric
4_3_136	MW-9	Supplemental	Total Suspended Solids	mg/l	8	0	0%	0.602	0.000	0.325	0.013	0.918	0.410	0.189	0.548	0.255	>= 0.10	0.590	>= 0.10	1.693	Gamma; Lognormal	Gamma
4_3_137	MW-9	Supplemental	Turbidity (field)	ntu	7	0	0%	0.798	0.039	0.310	0.040	0.833	0.085	0.335	0.017	0.281	>= 0.10	0.479	>= 0.10	2.234	Gamma; Lognormal	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.
1_1_108	MW-10	Appendix III	Boron	mg/l	17	0	0%	0.286	0.198	
1_1_110	MW-10	Appendix III	Calcium	mg/l	17	0	0%	0.208	0.349	
1_1_111	MW-10	Appendix III	Chloride (as Cl)	mg/l	17	0	0%	0.538	0.016	*
1_1_115	MW-10	Appendix III	Fluoride	mg/l	19	1	5%	0.337	0.121	
1_1_123	MW-10	Appendix III	pH (field)	su	18	0	0%	0.577	0.008	**
1_1_124	MW-10	Appendix III	pH (lab)	su	16	0	0%	-0.006	0.978	
1_1_131	MW-10	Appendix III	Sulfate (as SO4)	mg/l	17	0	0%	0.258	0.246	
1_1_135	MW-10	Appendix III	Total Dissolved Solids	mg/l	17	0	0%	0.370	0.097	
1_2_104	MW-10	Appendix IV	Antimony	mg/l	19	1	5%	0.342	0.116	
1_2_105	MW-10	Appendix IV	Arsenic	mg/l	19	0	0%	0.426	0.045	*
1_2_106	MW-10	Appendix IV	Barium	mg/l	19	0	0%	0.243	0.253	
1_2_107	MW-10	Appendix IV	Beryllium	mg/l	18	14	74%	0.094	0.781	
1_2_109	MW-10	Appendix IV	Cadmium	mg/l	19	4	20%	0.043	0.856	
1_2_112	MW-10	Appendix IV	Chromium, Total	mg/l	19	2	10%	-0.253	0.256	
1_2_113	MW-10	Appendix IV	Cobalt	mg/l	19	0	0%	0.544	0.010	*
1_2_116	MW-10	Appendix IV	Fluoride (App IV)	mg/l	19	1	5%	0.337	0.121	
1_2_117	MW-10	Appendix IV	Lead	mg/l	19	13	65%	0.186	0.564	
1_2_118	MW-10	Appendix IV	Lithium	mg/l	19	0	0%	0.049	0.817	
1_2_121	MW-10	Appendix IV	Molybdenum	mg/l	19	0	0%	0.494	0.020	*
1_2_127	MW-10	Appendix IV	Radium-226+228	pci/l	19	4	20%	-0.374	0.111	
1_2_129	MW-10	Appendix IV	Selenium	mg/l	19	0	0%	0.376	0.077	
1_2_134	MW-10	Appendix IV	Thallium	mg/l	18	16	84%	-0.164	0.654	
1_3_101	MW-10	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	
1_3_103	MW-10	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	
1_3_114	MW-10	Supplemental	Conductivity (field)	us/cm	18	0	0%	0.331	0.127	
1_3_119	MW-10	Supplemental	Magnesium	mg/l	1	0	0%	NA	NA	
1_3_122	MW-10	Supplemental	Oxidation-reduction Potential (field)	mV	18	0	0%	-0.160	0.461	
1_3_125	MW-10	Supplemental	Potassium	mg/l	1	0	0%	NA	NA	
1_3_126	MW-10	Supplemental	Radium-226	pci/l	19	8	40%	0.022	0.934	
1_3_128	MW-10	Supplemental	Radium-228	pci/l	19	8	40%	0.086	0.746	
1_3_130	MW-10	Supplemental	Sodium	mg/l	1	0	0%	NA	NA	
1_3_132	MW-10	Supplemental	Temperature (field)	deg c	18	0	0%	-0.029	0.894	
1_3_133	MW-10	Supplemental	Temperature (lab)	deg c	16	0	0%	0.054	0.815	
1_3_136	MW-10	Supplemental	Total Suspended Solids	mg/l	18	2	11%	-0.148	0.517	
1_3_137	MW-10	Supplemental	Turbidity (field)	ntu	17	0	0%	0.040	0.856	
2_1_108	MW-7	Appendix III	Boron	mg/l	10	0	0%	0.397	0.147	
2_1_110	MW-7	Appendix III	Calcium	mg/l	11	0	0%	0.624	0.018	*
2_1_111	MW-7	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.609	0.026	*
2_1_115	MW-7	Appendix III	Fluoride	mg/l	10	0	0%	0.154	0.573	
2_1_123	MW-7	Appendix III	pH (field)	su	8	0	0%	-0.302	0.308	
2_1_124	MW-7	Appendix III	pH (lab)	su	10	0	0%	-0.124	0.650	
2_1_131	MW-7	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.398	0.146	

(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.
2_1_135	MW-7	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.444	0.105	
2_2_104	MW-7	Appendix IV	Antimony	mg/l	11	4	36%	0.019	0.952	
2_2_105	MW-7	Appendix IV	Arsenic	mg/l	11	0	0%	-0.113	0.669	
2_2_106	MW-7	Appendix IV	Barium	mg/l	11	0	0%	0.050	0.849	
2_2_107	MW-7	Appendix IV	Beryllium	mg/l	10	3	30%	0.133	0.667	
2_2_109	MW-7	Appendix IV	Cadmium	mg/l	11	2	18%	0.162	0.569	
2_2_112	MW-7	Appendix IV	Chromium, Total	mg/l	11	0	0%	-0.095	0.720	
2_2_113	MW-7	Appendix IV	Cobalt	mg/l	12	0	0%	0.033	0.899	
2_2_116	MW-7	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	0.154	0.573	
2_2_117	MW-7	Appendix IV	Lead	mg/l	12	0	0%	-0.168	0.511	
2_2_118	MW-7	Appendix IV	Lithium	mg/l	11	0	0%	0.198	0.455	
2_2_120	MW-7	Appendix IV	Mercury	mg/l	11	8	73%	-0.107	0.769	
2_2_121	MW-7	Appendix IV	Molybdenum	mg/l	11	0	0%	0.373	0.159	
2_2_127	MW-7	Appendix IV	Radium-226+228	pci/l	11	1	9%	-0.361	0.187	
2_2_129	MW-7	Appendix IV	Selenium	mg/l	12	0	0%	0.121	0.636	
2_2_134	MW-7	Appendix IV	Thallium	mg/l	10	4	40%	0.019	0.953	
2_3_114	MW-7	Supplemental	Conductivity (field)	us/cm	8	0	0%	-0.145	0.624	
2_3_122	MW-7	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	0.348	0.239	
2_3_126	MW-7	Supplemental	Radium-226	pci/l	11	2	18%	-0.431	0.130	
2_3_128	MW-7	Supplemental	Radium-228	pci/l	11	5	45%	-0.520	0.107	
2_3_132	MW-7	Supplemental	Temperature (field)	deg c	8	0	0%	0.150	0.612	
2_3_133	MW-7	Supplemental	Temperature (lab)	deg c	10	0	0%	-0.230	0.400	
2_3_136	MW-7	Supplemental	Total Suspended Solids	mg/l	11	0	0%	-0.216	0.414	
2_3_137	MW-7	Supplemental	Turbidity (field)	ntu	7	0	0%	-0.042	0.891	
3_1_108	MW-8	Appendix III	Boron	mg/l	5	0	0%	-0.472	0.163	
3_1_110	MW-8	Appendix III	Calcium	mg/l	6	0	0%	-0.477	0.139	
3_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	6	0	0%	-0.351	0.277	
3_1_115	MW-8	Appendix III	Fluoride	mg/l	7	0	0%	0.563	0.068	
3_1_123	MW-8	Appendix III	pH (field)	su	5	0	0%	0.145	0.668	
3_1_124	MW-8	Appendix III	pH (lab)	su	6	0	0%	-0.001	0.998	
3_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	6	0	0%	0.125	0.699	
3_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	6	0	0%	-0.133	0.680	
3_2_104	MW-8	Appendix IV	Antimony	mg/l	7	2	29%	-0.029	0.932	
3_2_105	MW-8	Appendix IV	Arsenic	mg/l	7	0	0%	-0.487	0.115	
3_2_106	MW-8	Appendix IV	Barium	mg/l	7	0	0%	-0.114	0.711	
3_2_107	MW-8	Appendix IV	Beryllium	mg/l	6	4	67%	-0.500	0.157	
3_2_109	MW-8	Appendix IV	Cadmium	mg/l	7	1	14%	-0.538	0.096	
3_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	7	1	14%	0.396	0.220	
3_2_113	MW-8	Appendix IV	Cobalt	mg/l	7	0	0%	-0.084	0.786	
3_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	7	0	0%	0.563	0.068	
3_2_117	MW-8	Appendix IV	Lead	mg/l	7	1	14%	-0.170	0.599	
3_2_118	MW-8	Appendix IV	Lithium	mg/l	7	0	0%	0.144	0.642	

(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.
3_2_121	MW-8	Appendix IV	Molybdenum	mg/l	7	0	0%	0.428	0.165	
3_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	7	1	14%	-0.367	0.255	
3_2_129	MW-8	Appendix IV	Selenium	mg/l	7	0	0%	-0.034	0.912	
3_2_134	MW-8	Appendix IV	Thallium	mg/l	6	5	83%	NA	NA	
3_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	5	0	0%	-0.064	0.850	
3_3_122	MW-8	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	-0.440	0.193	
3_3_126	MW-8	Supplemental	Radium-226	pci/l	7	1	14%	-0.268	0.406	
3_3_128	MW-8	Supplemental	Radium-228	pci/l	7	3	43%	-0.516	0.145	
3_3_132	MW-8	Supplemental	Temperature (field)	deg c	5	0	0%	-0.485	0.151	
3_3_133	MW-8	Supplemental	Temperature (lab)	deg c	6	0	0%	-0.268	0.407	
3_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	7	0	0%	-0.318	0.303	
3_3_137	MW-8	Supplemental	Turbidity (field)	ntu	4	0	0%	0.083	0.814	
4_1_108	MW-9	Appendix III	Boron	mg/l	6	0	0%	0.519	0.108	
4_1_110	MW-9	Appendix III	Calcium	mg/l	7	0	0%	-0.043	0.888	
4_1_111	MW-9	Appendix III	Chloride (as Cl)	mg/l	7	0	0%	-0.105	0.734	
4_1_115	MW-9	Appendix III	Fluoride	mg/l	8	0	0%	-0.188	0.524	
4_1_123	MW-9	Appendix III	pH (field)	su	7	0	0%	-0.021	0.947	
4_1_124	MW-9	Appendix III	pH (lab)	su	7	0	0%	-0.283	0.360	
4_1_131	MW-9	Appendix III	Sulfate (as SO4)	mg/l	7	0	0%	0.047	0.879	
4_1_135	MW-9	Appendix III	Total Dissolved Solids	mg/l	7	0	0%	-0.027	0.932	
4_2_104	MW-9	Appendix IV	Antimony	mg/l	8	0	0%	-0.267	0.366	
4_2_105	MW-9	Appendix IV	Arsenic	mg/l	8	0	0%	-0.127	0.668	
4_2_106	MW-9	Appendix IV	Barium	mg/l	8	0	0%	-0.105	0.722	
4_2_107	MW-9	Appendix IV	Beryllium	mg/l	7	4	57%	-0.271	0.457	
4_2_109	MW-9	Appendix IV	Cadmium	mg/l	8	0	0%	-0.168	0.569	
4_2_112	MW-9	Appendix IV	Chromium, Total	mg/l	8	2	25%	-0.131	0.685	
4_2_113	MW-9	Appendix IV	Cobalt	mg/l	8	0	0%	-0.122	0.679	
4_2_116	MW-9	Appendix IV	Fluoride (App IV)	mg/l	8	0	0%	-0.188	0.524	
4_2_117	MW-9	Appendix IV	Lead	mg/l	8	0	0%	0.142	0.632	
4_2_118	MW-9	Appendix IV	Lithium	mg/l	8	0	0%	-0.026	0.930	
4_2_121	MW-9	Appendix IV	Molybdenum	mg/l	8	0	0%	-0.121	0.682	
4_2_127	MW-9	Appendix IV	Radium-226+228	pci/l	8	1	12%	0.297	0.335	
4_2_129	MW-9	Appendix IV	Selenium	mg/l	8	0	0%	-0.303	0.306	
4_2_134	MW-9	Appendix IV	Thallium	mg/l	7	6	86%	NA	NA	
4_3_114	MW-9	Supplemental	Conductivity (field)	us/cm	7	0	0%	-0.010	0.973	
4_3_122	MW-9	Supplemental	Oxidation-reduction Potential (field)	mV	7	0	0%	0.082	0.790	
4_3_126	MW-9	Supplemental	Radium-226	pci/l	8	1	12%	-0.181	0.558	
4_3_128	MW-9	Supplemental	Radium-228	pci/l	8	4	50%	-0.207	0.559	
4_3_132	MW-9	Supplemental	Temperature (field)	deg c	7	0	0%	-0.104	0.737	
4_3_133	MW-9	Supplemental	Temperature (lab)	deg c	7	0	0%	-0.101	0.743	
4_3_136	MW-9	Supplemental	Total Suspended Solids	mg/l	8	0	0%	-0.022	0.939	
4_3_137	MW-9	Supplemental	Turbidity (field)	ntu	7	0	0%	-0.265	0.390	

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 5: Outlier Counts by Date

Date	Count
2015-12-08	1
2016-08-23	1
2016-11-07	1
2016-11-08	2
2017-09-06	2
2018-03-07	1
2018-06-05	1
2020-04-22	1
2021-10-19	2
2022-04-19	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
1_2_106	MW-10	Appendix IV	Barium	mg/l	19	0	0%	19	2018-06-05	0.120
1_2_112	MW-10	Appendix IV	Chromium, Total	mg/l	19	2	10%	17	2016-08-23	0.0180
1_2_129	MW-10	Appendix IV	Selenium	mg/l	19	0	0%	19	2021-10-19	0.0780
1_2_134	MW-10	Appendix IV	Thallium	mg/l	18	16	84%	2	2022-04-19	0.00930
1_3_122	MW-10	Supplemental	Oxidation-reduction Potential (field)	mV	18	0	0%	18	2022-04-19	-440
1_3_126	MW-10	Supplemental	Radium-226	pci/l	19	8	40%	11	2021-10-19	0.917
2_3_137	MW-7	Supplemental	Turbidity (field)	ntu	7	0	0%	7	2020-04-22	1000
3_1_110	MW-8	Appendix III	Calcium	mg/l	6	0	0%	6	2016-11-08	160
3_2_129	MW-8	Appendix IV	Selenium	mg/l	7	0	0%	7	2018-03-07	0.120
3_3_126	MW-8	Supplemental	Radium-226	pci/l	7	1	14%	6	2016-11-08	0.504
4_2_112	MW-9	Appendix IV	Chromium, Total	mg/l	8	2	25%	6	2017-09-06	0.0180
4_3_126	MW-9	Supplemental	Radium-226	pci/l	8	1	12%	7	2016-11-07	0.444
4_3_136	MW-9	Supplemental	Total Suspended Solids	mg/l	8	0	0%	8	2017-09-06	140
4_3_137	MW-9	Supplemental	Turbidity (field)	ntu	7	0	0%	7	2015-12-08	10.0

Table 7: Seasonality Tests

ID	Well	Constituent Type	Constituent	Unit	% NDs	Full							Without Non-Detects									
						Sample Size					p-Value		Sample Size					p-Value				
						Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	
1_1_108	MW-10	Appendix III	Boron	mg/l	0%	4	6	3	4	17	0.682	0.643	0.637	4	6	3	4	17	0.682	0.643	0.637	
1_1_110	MW-10	Appendix III	Calcium	mg/l	0%	3	6	4	4	17	0.274	0.503	0.583	3	6	4	4	17	0.274	0.503	0.583	
1_1_111	MW-10	Appendix III	Chloride (as Cl)	mg/l	0%	3	6	4	4	17	0.413	0.310	0.336	3	6	4	4	17	0.413	0.310	0.336	
1_1_115	MW-10	Appendix III	Fluoride	mg/l	5%	4	7	4	4	19	0.308	0.264	0.255	4	7	3	4	18	0.444	0.423	0.409	
1_1_123	MW-10	Appendix III	pH (field)	su	0%	3	7	4	4	18	0.646	0.491	0.510	3	7	4	4	18	0.646	0.491	0.510	
1_1_124	MW-10	Appendix III	pH (lab)	su	0%	2	6	4	4	16	0.674	0.649	0.664	2	6	4	4	16	0.674	0.649	0.664	
1_1_131	MW-10	Appendix III	Sulfate (as SO4)	mg/l	0%	3	6	4	4	17	0.652	0.680	0.747	3	6	4	4	17	0.652	0.680	0.747	
1_1_135	MW-10	Appendix III	Total Dissolved Solids	mg/l	0%	3	6	4	4	17	0.813	0.583	0.587	3	6	4	4	17	0.813	0.583	0.587	
1_2_104	MW-10	Appendix IV	Antimony	mg/l	5%	4	7	4	4	19	0.820	0.724	0.837	4	7	4	3	18	0.904	0.778	0.888	
1_2_105	MW-10	Appendix IV	Arsenic	mg/l	0%	4	7	4	4	19	0.951	0.886	0.918	4	7	4	4	19	0.951	0.886	0.918	
1_2_106	MW-10	Appendix IV	Barium	mg/l	0%	4	7	4	4	19	0.775	0.516	0.631	4	7	4	4	19	0.775	0.516	0.631	
1_2_107	MW-10	Appendix IV	Beryllium	mg/l	74%	4	7	3	4	18	0.870	0.976	0.948	2	2	1	0	5	1.000	0.943	0.987	
1_2_109	MW-10	Appendix IV	Cadmium	mg/l	20%	4	7	4	4	19	0.511	0.378	0.456	4	6	3	2	15	0.517	0.406	0.446	
1_2_112	MW-10	Appendix IV	Chromium, Total	mg/l	10%	4	7	4	4	19	0.690	0.467	0.547	4	5	4	4	17	0.690	0.517	0.570	
1_2_113	MW-10	Appendix IV	Cobalt	mg/l	0%	4	7	4	4	19	0.724	0.672	0.905	4	7	4	4	19	0.724	0.672	0.905	
1_2_116	MW-10	Appendix IV	Fluoride (App IV)	mg/l	5%	4	7	4	4	19	0.308	0.264	0.255	4	7	3	4	18	0.444	0.423	0.409	
1_2_117	MW-10	Appendix IV	Lead	mg/l	65%	4	7	4	4	19	0.507	0.851	0.782	1	3	2	0	6	0.651	0.997	0.817	
1_2_118	MW-10	Appendix IV	Lithium	mg/l	0%	4	7	4	4	19	0.640	0.474	0.482	4	7	4	4	19	0.640	0.474	0.482	
1_2_120	MW-10	Appendix IV	Mercury	mg/l	100%	4	7	4	4	19	0.866	0.897	0.901	NA	NA	NA	NA	NA	NA	NA	NA	
1_2_121	MW-10	Appendix IV	Molybdenum	mg/l	0%	4	7	4	4	19	0.808	0.833	0.789	4	7	4	4	19	0.808	0.833	0.789	
1_2_127	MW-10	Appendix IV	Radium-226+228	pci/l	20%	4	7	4	4	19	0.836	0.553	0.793	4	4	3	4	15	0.254	0.339	0.303	
1_2_129	MW-10	Appendix IV	Selenium	mg/l	0%	4	7	4	4	19	0.215	0.257	0.130	4	7	4	4	19	0.215	0.257	0.130	
1_2_134	MW-10	Appendix IV	Thallium	mg/l	84%	4	7	3	4	18	0.774	0.721	0.903	0	2	0	1	3	0.221	0.664	0.643	
1_3_101	MW-10	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA	
1_3_102	MW-10	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	1	0	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1_3_103	MW-10	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA	
1_3_114	MW-10	Supplemental	Conductivity (field)	us/cm	0%	3	7	4	4	18	0.865	0.775	0.790	3	7	4	4	18	0.865	0.775	0.790	
1_3_119	MW-10	Supplemental	Magnesium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA	
1_3_122	MW-10	Supplemental	Oxidation-reduction Potential (field)	mV	0%	3	7	4	4	18	0.566	0.379	NA	3	7	4	4	18	0.566	0.379	NA	
1_3_125	MW-10	Supplemental	Potassium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA	
1_3_126	MW-10	Supplemental	Radium-226	pci/l	40%	4	7	4	4	19	0.422	0.038	*	0.077	2	3	3	3	11	0.436	0.259	0.469
1_3_128	MW-10	Supplemental	Radium-228	pci/l	40%	4	7	4	4	19	0.545	0.519	0.530	2	3	3	3	11	0.296	0.276	0.233	
1_3_130	MW-10	Supplemental	Sodium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA	NA	
1_3_132	MW-10	Supplemental	Temperature (field)	deg c	0%	3	7	4	4	18	0.041	*	0.094	0.170	3	7	4	4	18	0.041	*	0.094
1_3_133	MW-10	Supplemental	Temperature (lab)	deg c	0%	2	6	4	4	16	0.192	0.188	0.196	2	6	4	4	16	0.192	0.188	0.196	
1_3_136	MW-10	Supplemental	Total Suspended Solids	mg/l	11%	3	7	4	4	18	0.577	0.806	0.640	2	6	4	4	16	0.628	0.803	0.705	
1_3_137	MW-10	Supplemental	Turbidity (field)	ntu	0%	2	7	4	4	17	0.149	0.049	*	0.112	2	7	4	4	17	0.149	0.049	*
2_1_108	MW-7	Appendix III	Boron	mg/l	0%	1	5	3	1	10	0.202	0.107	0.130	1	5	3	1	10	0.202	0.107	0.130	
2_1_110	MW-7	Appendix III	Calcium	mg/l	0%	1	5	4	1	11	0.648	0.812	0.834	1	5	4	1	11	0.648	0.812	0.834	

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

ID	Well	Constituent Type	Constituent	Unit	% NDs	Full									Without Non-Detects										
						Sample Size					p-Value				Sample Size					p-Value					
						Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA				
2_1_111	MW-7	Appendix III	Chloride (as Cl)	mg/l	0%	1	5	3	1	10	0.907	0.963	0.922	1	5	3	1	10	0.907	0.963	0.922				
2_1_115	MW-7	Appendix III	Fluoride	mg/l	0%	1	5	3	1	10	0.831	0.945	0.950	1	5	3	1	10	0.831	0.945	0.950				
2_1_123	MW-7	Appendix III	pH (field)	su	0%	1	4	2	1	8	0.149	0.054	0.053	1	4	2	1	8	0.149	0.054	0.053				
2_1_124	MW-7	Appendix III	pH (lab)	su	0%	1	5	3	1	10	0.891	0.945	0.944	1	5	3	1	10	0.891	0.945	0.944				
2_1_131	MW-7	Appendix III	Sulfate (as SO4)	mg/l	0%	1	5	3	1	10	0.755	0.803	0.814	1	5	3	1	10	0.755	0.803	0.814				
2_1_135	MW-7	Appendix III	Total Dissolved Solids	mg/l	0%	1	5	3	1	10	0.554	0.829	0.856	1	5	3	1	10	0.554	0.829	0.856				
2_2_104	MW-7	Appendix IV	Antimony	mg/l	36%	1	5	4	1	11	0.360	0.432	0.307	1	4	2	0	7	0.199	0.198	0.194				
2_2_105	MW-7	Appendix IV	Arsenic	mg/l	0%	1	5	4	1	11	0.342	0.428	0.396	1	5	4	1	11	0.342	0.428	0.396				
2_2_106	MW-7	Appendix IV	Barium	mg/l	0%	1	5	4	1	11	0.602	0.627	0.693	1	5	4	1	11	0.602	0.627	0.693				
2_2_107	MW-7	Appendix IV	Beryllium	mg/l	30%	1	5	3	1	10	0.442	0.697	0.617	1	3	2	1	7	0.365	0.451	0.058				
2_2_109	MW-7	Appendix IV	Cadmium	mg/l	18%	1	5	4	1	11	0.513	0.615	0.447	1	4	3	1	9	0.622	0.669	0.519				
2_2_112	MW-7	Appendix IV	Chromium, Total	mg/l	0%	1	5	4	1	11	0.281	0.672	0.357	1	5	4	1	11	0.281	0.672	0.357				
2_2_113	MW-7	Appendix IV	Cobalt	mg/l	0%	1	5	4	2	12	0.415	0.719	0.266	1	5	4	2	12	0.415	0.719	0.266				
2_2_116	MW-7	Appendix IV	Fluoride (App IV)	mg/l	0%	1	5	3	1	10	0.831	0.945	0.950	1	5	3	1	10	0.831	0.945	0.950				
2_2_117	MW-7	Appendix IV	Lead	mg/l	0%	1	5	4	2	12	0.395	0.713	0.380	1	5	4	2	12	0.395	0.713	0.380				
2_2_118	MW-7	Appendix IV	Lithium	mg/l	0%	1	5	4	1	11	0.448	0.231	0.411	1	5	4	1	11	0.448	0.231	0.411				
2_2_120	MW-7	Appendix IV	Mercury	mg/l	73%	1	5	4	1	11	0.777	0.892	0.870	0	2	0	1	3	1.000	0.737	0.828				
2_2_121	MW-7	Appendix IV	Molybdenum	mg/l	0%	1	5	4	1	11	0.360	0.744	0.635	1	5	4	1	11	0.360	0.744	0.635				
2_2_127	MW-7	Appendix IV	Radium-226+228	pci/l	9%	1	5	4	1	11	0.194	0.074	0.171	1	5	3	1	10	0.162	0.073	0.132				
2_2_129	MW-7	Appendix IV	Selenium	mg/l	0%	1	5	4	2	12	0.135	0.063	0.081	1	5	4	2	12	0.135	0.063	0.081				
2_2_134	MW-7	Appendix IV	Thallium	mg/l	40%	1	5	3	1	10	0.345	0.673	0.367	0	3	2	1	6	0.651	0.996	0.938				
2_3_114	MW-7	Supplemental	Conductivity (field)	us/cm	0%	1	4	2	1	8	0.581	0.785	0.820	1	4	2	1	8	0.581	0.785	0.820				
2_3_122	MW-7	Supplemental	Oxidation-reduction Potential (field)	mV	0%	1	4	2	1	8	0.149	0.119	0.090	1	4	2	1	8	0.149	0.119	0.090				
2_3_126	MW-7	Supplemental	Radium-226	pci/l	18%	1	5	4	1	11	0.367	0.039	*	0.222	1	4	3	1	9	0.283	0.083	0.270			
2_3_128	MW-7	Supplemental	Radium-228	pci/l	45%	1	5	4	1	11	0.178	0.084	0.081	0	3	2	1	6	0.213	0.193	0.237				
2_3_132	MW-7	Supplemental	Temperature (field)	deg c	0%	1	4	2	1	8	0.113	0.032	*	0.019	*	1	4	2	1	8	0.113	0.032	*	0.019	*
2_3_133	MW-7	Supplemental	Temperature (lab)	deg c	0%	1	5	3	1	10	0.500	0.424	0.427	1	5	3	1	10	0.500	0.424	0.427				
2_3_136	MW-7	Supplemental	Total Suspended Solids	mg/l	0%	1	5	3	2	11	0.434	0.836	0.388	1	5	3	2	11	0.434	0.836	0.388				
2_3_137	MW-7	Supplemental	Turbidity (field)	ntu	0%	1	3	2	1	7	0.742	0.791	0.650	1	3	2	1	7	0.742	0.791	0.650				
3_1_108	MW-8	Appendix III	Boron	mg/l	0%	3	1	0	1	5	0.755	0.747	0.738	3	1	0	1	5	0.755	0.747	0.738				
3_1_110	MW-8	Appendix III	Calcium	mg/l	0%	3	1	1	1	6	0.254	0.017	*	0.009	**	3	1	1	1	6	0.254	0.017	*	0.009	**
3_1_111	MW-8	Appendix III	Chloride (as Cl)	mg/l	0%	3	1	1	1	6	0.300	0.538	0.474	3	1	1	1	6	0.300	0.538	0.474				
3_1_115	MW-8	Appendix III	Fluoride	mg/l	0%	3	2	1	1	7	0.488	0.546	0.547	3	2	1	1	7	0.488	0.546	0.547				
3_1_123	MW-8	Appendix III	pH (field)	su	0%	3	1	0	1	5	0.202	0.302	0.291	3	1	0	1	5	0.202	0.302	0.291				
3_1_124	MW-8	Appendix III	pH (lab)	su	0%	3	1	1	1	6	0.321	0.369	0.365	3	1	1	1	6	0.321	0.369	0.365				
3_1_131	MW-8	Appendix III	Sulfate (as SO4)	mg/l	0%	3	1	1	1	6	0.490	0.731	0.748	3	1	1	1	6	0.490	0.731	0.748				
3_1_135	MW-8	Appendix III	Total Dissolved Solids	mg/l	0%	3	1	1	1	6	0.517	0.747	0.751	3	1	1	1	6	0.517	0.747	0.751				
3_2_104	MW-8	Appendix IV	Antimony	mg/l	29%	3	2	1	1	7	0.795	0.848	0.861	3	1	0	1	5	0.344	0.741	0.654				
3_2_105	MW-8	Appendix IV	Arsenic	mg/l	0%	3	2	1	1	7	0.183	0.160	0.081	3	2	1	1	7	0.183	0.160	0.081				

(Table continues on next page)

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

ID	Well	Constituent Type	Constituent	Unit	% NDs	Full									Without Non-Detects										
						Sample Size					p-Value				Sample Size					p-Value					
Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA										
3_2_106	MW-8	Appendix IV	Barium	mg/l	0%	3	2	1	1	7	0.155	0.018	*	0.015	*	3	2	1	1	7	0.155	0.018	*	0.015	*
3_2_107	MW-8	Appendix IV	Beryllium	mg/l	67%	3	2	0	1	6	0.273	0.315		0.385		2	0	0	0	2	NA	NA		NA	
3_2_109	MW-8	Appendix IV	Cadmium	mg/l	14%	3	2	1	1	7	0.162	0.362		0.212		3	1	1	1	6	0.219	0.570		0.193	
3_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	14%	3	2	1	1	7	0.162	0.276		0.255		2	2	1	1	6	0.232	0.475		0.483	
3_2_113	MW-8	Appendix IV	Cobalt	mg/l	0%	3	2	1	1	7	0.141	0.297		0.202		3	2	1	1	7	0.141	0.297		0.202	
3_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	0%	3	2	1	1	7	0.488	0.546		0.547		3	2	1	1	7	0.488	0.546		0.547	
3_2_117	MW-8	Appendix IV	Lead	mg/l	14%	3	2	1	1	7	0.277	0.094		0.482		3	1	1	1	6	0.219	0.120		0.431	
3_2_118	MW-8	Appendix IV	Lithium	mg/l	0%	3	2	1	1	7	0.466	0.671		0.667		3	2	1	1	7	0.466	0.671		0.667	
3_2_120	MW-8	Appendix IV	Mercury	mg/l	100%	3	2	1	1	7	0.112	0.000	***	0.000	***	NA	NA	NA	NA	NA	NA	NA		NA	
3_2_121	MW-8	Appendix IV	Molybdenum	mg/l	0%	3	2	1	1	7	0.258	0.301		0.183		3	2	1	1	7	0.258	0.301		0.183	
3_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	14%	3	2	1	1	7	0.203	0.427		0.312		2	2	1	1	6	0.312	0.622		0.506	
3_2_129	MW-8	Appendix IV	Selenium	mg/l	0%	3	2	1	1	7	0.488	0.626		0.573		3	2	1	1	7	0.488	0.626		0.573	
3_2_134	MW-8	Appendix IV	Thallium	mg/l	83%	3	2	0	1	6	0.392	0.566		0.660		1	0	0	0	1	NA	NA		NA	
3_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	0%	3	1	0	1	5	0.202	0.042	*	0.050	*	3	1	0	1	5	0.202	0.042	*	0.050	*
3_3_122	MW-8	Supplemental	Oxidation-reduction Potential (field)	mV	0%	3	1	0	1	5	0.344	0.344		0.396		3	1	0	1	5	0.344	0.344		0.396	
3_3_126	MW-8	Supplemental	Radium-226	pci/l	14%	3	2	1	1	7	0.408	0.091		0.299		2	2	1	1	6	0.463	0.096		0.206	
3_3_128	MW-8	Supplemental	Radium-228	pci/l	43%	3	2	1	1	7	0.180	0.424		0.338		1	1	1	1	4	0.392	NA		NA	
3_3_132	MW-8	Supplemental	Temperature (field)	deg c	0%	3	1	0	1	5	0.344	0.187		0.231		3	1	0	1	5	0.344	0.187		0.231	
3_3_133	MW-8	Supplemental	Temperature (lab)	deg c	0%	3	1	1	1	6	0.794	0.951		0.954		3	1	1	1	6	0.794	0.951		0.954	
3_3_136	MW-8	Supplemental	Total Suspended Solids	mg/l	0%	3	2	1	1	7	0.658	0.813		0.889		3	2	1	1	7	0.658	0.813		0.889	
3_3_137	MW-8	Supplemental	Turbidity (field)	ntu	0%	2	1	0	1	4	0.407	0.530		0.811		2	1	0	1	4	0.407	0.530		0.811	
4_1_108	MW-9	Appendix III	Boron	mg/l	0%	2	2	0	2	6	0.368	0.480		0.461		2	2	0	2	6	0.368	0.480		0.461	
4_1_110	MW-9	Appendix III	Calcium	mg/l	0%	2	2	1	2	7	0.290	0.304		0.264		2	2	1	2	7	0.290	0.304		0.264	
4_1_111	MW-9	Appendix III	Chloride (as Cl)	mg/l	0%	2	2	1	2	7	0.587	0.434		0.485		2	2	1	2	7	0.587	0.434		0.485	
4_1_115	MW-9	Appendix III	Fluoride	mg/l	0%	2	3	1	2	8	0.193	0.194		0.229		2	3	1	2	8	0.193	0.194		0.229	
4_1_123	MW-9	Appendix III	pH (field)	su	0%	2	3	1	1	7	0.767	0.828		0.837		2	3	1	1	7	0.767	0.828		0.837	
4_1_124	MW-9	Appendix III	pH (lab)	su	0%	2	2	1	2	7	0.459	0.432		0.434		2	2	1	2	7	0.459	0.432		0.434	
4_1_131	MW-9	Appendix III	Sulfate (as SO4)	mg/l	0%	2	2	1	2	7	0.200	0.168		0.144		2	2	1	2	7	0.200	0.168		0.144	
4_1_135	MW-9	Appendix III	Total Dissolved Solids	mg/l	0%	2	2	1	2	7	0.263	0.261		0.249		2	2	1	2	7	0.263	0.261		0.249	
4_2_104	MW-9	Appendix IV	Antimony	mg/l	0%	2	3	1	2	8	0.998	0.962		0.992		2	3	1	2	8	0.998	0.962		0.992	
4_2_105	MW-9	Appendix IV	Arsenic	mg/l	0%	2	3	1	2	8	0.749	0.634		0.626		2	3	1	2	8	0.749	0.634		0.626	
4_2_106	MW-9	Appendix IV	Barium	mg/l	0%	2	3	1	2	8	0.338	0.589		0.568		2	3	1	2	8	0.338	0.589		0.568	
4_2_107	MW-9	Appendix IV	Beryllium	mg/l	57%	2	3	0	2	7	0.100	0.140		0.321		1	1	0	1	3	0.368	NA		NA	
4_2_109	MW-9	Appendix IV	Cadmium	mg/l	0%	2	3	1	2	8	0.475	0.670		0.553		2	3	1	2	8	0.475	0.670		0.553	
4_2_112	MW-9	Appendix IV	Chromium, Total	mg/l	25%	2	3	1	2	8	0.903	0.562		0.932		1	2	1	2	6	0.986	0.812		0.989	
4_2_113	MW-9	Appendix IV	Cobalt	mg/l	0%	2	3	1	2	8	0.670	0.832		0.779		2	3	1	2	8	0.670	0.832		0.779	
4_2_116	MW-9	Appendix IV	Fluoride (App IV)	mg/l	0%	2	3	1	2	8	0.193	0.194		0.229		2	3	1	2	8	0.193	0.194		0.229	
4_2_117	MW-9	Appendix IV	Lead	mg/l	0%	2	3	1	2	8	0.480	0.685		0.665		2	3	1	2	8	0.480	0.685		0.665	
4_2_118	MW-9	Appendix IV	Lithium	mg/l	0%	2	3	1	2	8	0.480	0.624		0.483		2	3	1	2	8	0.480	0.624		0.483	

(Table continues on next page)

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 7: Seasonality Tests (continued)

ID	Well	Constituent Type	Constituent	Unit	% NDs	Full									Without Non-Detects									
						Sample Size					p-Value				Sample Size					p-Value				
						Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA			
4_2_120	MW-9	Appendix IV	Mercury	mg/l	100%	2	3	1	2	8	0.072	0.000	***	0.000	***	NA	NA	NA	NA	NA	NA	NA	NA	
4_2_121	MW-9	Appendix IV	Molybdenum	mg/l	0%	2	3	1	2	8	0.499	0.469		0.542		2	3	1	2	8	0.499	0.469	0.542	
4_2_127	MW-9	Appendix IV	Radium-226+228	pci/l	12%	2	3	1	2	8	0.689	0.664		0.680		2	3	0	2	7	0.651	0.611	0.659	
4_2_129	MW-9	Appendix IV	Selenium	mg/l	0%	2	3	1	2	8	0.908	0.781		0.886		2	3	1	2	8	0.908	0.781	0.886	
4_2_134	MW-9	Appendix IV	Thallium	mg/l	86%	2	3	0	2	7	0.246	0.210		0.192		1	0	0	0	1	NA	NA	NA	
4_3_114	MW-9	Supplemental	Conductivity (field)	us/cm	0%	2	3	1	1	7	0.733	0.849		0.838		2	3	1	1	7	0.733	0.849	0.838	
4_3_122	MW-9	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	3	1	1	7	0.414	0.514		NA		2	3	1	1	7	0.414	0.514	NA	
4_3_126	MW-9	Supplemental	Radium-226	pci/l	12%	2	3	1	2	8	0.423	0.453		0.462		1	3	1	2	7	0.414	0.543	0.542	
4_3_128	MW-9	Supplemental	Radium-228	pci/l	50%	2	3	1	2	8	0.572	0.671		0.662		1	2	0	1	4	0.407	0.599	0.546	
4_3_132	MW-9	Supplemental	Temperature (field)	deg c	0%	2	3	1	1	7	0.691	0.926		0.897		2	3	1	1	7	0.691	0.926	0.897	
4_3_133	MW-9	Supplemental	Temperature (lab)	deg c	0%	2	2	1	2	7	0.212	0.253		0.262		2	2	1	2	7	0.212	0.253	0.262	
4_3_136	MW-9	Supplemental	Total Suspended Solids	mg/l	0%	2	3	1	2	8	0.324	0.571		0.525		2	3	1	2	8	0.324	0.571	0.525	
4_3_137	MW-9	Supplemental	Turbidity (field)	ntu	0%	2	3	1	1	7	0.733	0.606		0.505		2	3	1	1	7	0.733	0.606	0.505	

*** 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
1_1_108	MW-10	Appendix III	Boron	mg/l	17	0	0%	Parametric	Lognormal MLE	0.000261	0.024	↔
1_1_110	MW-10	Appendix III	Calcium	mg/l	17	0	0%	Parametric	Lognormal MLE	-0.000176	0.005	↓
1_1_111	MW-10	Appendix III	Chloride (as Cl)	mg/l	17	0	0%	Parametric	Lognormal MLE	-0.000112	0.146	↔
1_1_115	MW-10	Appendix III	Fluoride	mg/l	19	1	5%	Parametric	Lognormal MLE	-0.000124	0.272	↔
1_1_123	MW-10	Appendix III	pH (field)	su	18	0	0%	Parametric	Lognormal MLE	-0.0000766	0.000	↓
1_1_124	MW-10	Appendix III	pH (lab)	su	16	0	0%	Parametric	Lognormal MLE	-0.0000816	0.003	↓
1_1_131	MW-10	Appendix III	Sulfate (as SO4)	mg/l	17	0	0%	Parametric	Lognormal MLE	-0.0000764	0.294	↔
1_1_135	MW-10	Appendix III	Total Dissolved Solids	mg/l	17	0	0%	Parametric	Lognormal MLE	-0.0000315	0.581	↔
1_2_104	MW-10	Appendix IV	Antimony	mg/l	19	1	5%	Parametric	Lognormal MLE	-0.000388	0.019	↔
1_2_105	MW-10	Appendix IV	Arsenic	mg/l	19	0	0%	Parametric	Lognormal MLE	-0.000529	0.000	↓
1_2_106	MW-10	Appendix IV	Barium	mg/l	19	0	0%	Parametric	Lognormal MLE	-0.000120	0.178	↔
1_2_109	MW-10	Appendix IV	Cadmium	mg/l	19	4	20%	Parametric	Lognormal MLE	-0.000292	0.285	↔
1_2_112	MW-10	Appendix IV	Chromium, Total	mg/l	19	2	10%	Parametric	Lognormal MLE	0.000551	0.056	↔
1_2_113	MW-10	Appendix IV	Cobalt	mg/l	19	0	0%	Parametric	Lognormal MLE	0.000566	0.012	↔
1_2_116	MW-10	Appendix IV	Fluoride (App IV)	mg/l	19	1	5%	Parametric	Lognormal MLE	-0.000124	0.272	↔
1_2_118	MW-10	Appendix IV	Lithium	mg/l	19	0	0%	Parametric	Lognormal MLE	0.000120	0.414	↔
1_2_121	MW-10	Appendix IV	Molybdenum	mg/l	19	0	0%	Parametric	Lognormal MLE	0.000280	0.023	↔
1_2_127	MW-10	Appendix IV	Radium-226+228	pci/l	19	4	20%	Parametric	Lognormal MLE	-0.000447	0.027	↔
1_2_129	MW-10	Appendix IV	Selenium	mg/l	19	0	0%	Nonparametric	MK	0.00000512	0.195	↔
1_3_114	MW-10	Supplemental	Conductivity (field)	us/cm	18	0	0%	Parametric	Lognormal MLE	-0.0000283	0.613	↔
1_3_122	MW-10	Supplemental	Oxidation-reduction Potential (field)	mV	18	0	0%	Nonparametric	MK	-0.0339	0.306	↔
1_3_126	MW-10	Supplemental	Radium-226	pci/l	19	8	40%	Parametric	Lognormal MLE	-0.000236	0.502	↔
1_3_128	MW-10	Supplemental	Radium-228	pci/l	19	8	40%	Parametric	Lognormal MLE	-0.000519	0.026	↔
1_3_132	MW-10	Supplemental	Temperature (field)	deg c	18	0	0%	Parametric	Lognormal MLE	-0.0000364	0.620	↔
1_3_133	MW-10	Supplemental	Temperature (lab)	deg c	16	0	0%	Parametric	Lognormal MLE	-0.0000389	0.027	↔
1_3_136	MW-10	Supplemental	Total Suspended Solids	mg/l	18	2	11%	Parametric	Lognormal MLE	-0.000527	0.237	↔
1_3_137	MW-10	Supplemental	Turbidity (field)	ntu	17	0	0%	Parametric	Lognormal MLE	-0.00131	0.067	↔
2_1_108	MW-7	Appendix III	Boron	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000155	0.122	↔
2_1_110	MW-7	Appendix III	Calcium	mg/l	11	0	0%	Parametric	Lognormal MLE	-0.000679	0.000	↓
2_1_111	MW-7	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000930	0.000	↓
2_1_115	MW-7	Appendix III	Fluoride	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000366	0.000	↑
2_1_123	MW-7	Appendix III	pH (field)	su	8	0	0%	Parametric	Lognormal MLE	0.0000144	0.329	↔
2_1_124	MW-7	Appendix III	pH (lab)	su	10	0	0%	Parametric	Lognormal MLE	-0.00000590	0.630	↔
2_1_131	MW-7	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	Parametric	Lognormal MLE	-0.000343	0.001	↓
2_1_135	MW-7	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	Nonparametric	MK	-0.414	0.526	↔
2_2_104	MW-7	Appendix IV	Antimony	mg/l	11	4	36%	Parametric	Lognormal MLE	0.000268	0.188	↔
2_2_105	MW-7	Appendix IV	Arsenic	mg/l	11	0	0%	Parametric	Lognormal MLE	0.000206	0.594	↔
2_2_106	MW-7	Appendix IV	Barium	mg/l	11	0	0%	Parametric	Lognormal MLE	-0.000319	0.304	↔
2_2_107	MW-7	Appendix IV	Beryllium	mg/l	10	3	30%	Parametric	Lognormal MLE	0.000583	0.462	↔
2_2_109	MW-7	Appendix IV	Cadmium	mg/l	11	2	18%	Parametric	Lognormal MLE	-0.0000958	0.812	↔
2_2_112	MW-7	Appendix IV	Chromium, Total	mg/l	11	0	0%	Parametric	Lognormal MLE	0.000327	0.572	↔
2_2_113	MW-7	Appendix IV	Cobalt	mg/l	12	0	0%	Parametric	Lognormal MLE	0.000223	0.654	↔
2_2_116	MW-7	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	Parametric	Lognormal MLE	0.000366	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
2_2_117	MW-7	Appendix IV	Lead	mg/l	12	0	0%	Parametric	Lognormal MLE	0.000416	0.489	↔
2_2_118	MW-7	Appendix IV	Lithium	mg/l	11	0	0%	Parametric	Lognormal MLE	-0.000313	0.082	↔
2_2_121	MW-7	Appendix IV	Molybdenum	mg/l	11	0	0%	Parametric	Lognormal MLE	0.000555	0.000	↑
2_2_127	MW-7	Appendix IV	Radium-226+228	pci/l	11	1	9%	Parametric	Lognormal MLE	-0.000318	0.327	↔
2_2_129	MW-7	Appendix IV	Selenium	mg/l	12	0	0%	Parametric	Lognormal MLE	-0.0000516	0.873	↔
2_2_134	MW-7	Appendix IV	Thallium	mg/l	10	4	40%	Parametric	Lognormal MLE	0.000473	0.442	↔
2_3_114	MW-7	Supplemental	Conductivity (field)	us/cm	8	0	0%	Parametric	Lognormal MLE	-0.000398	0.001	↓
2_3_122	MW-7	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	Parametric	Lognormal MLE	-0.000551	0.314	↔
2_3_126	MW-7	Supplemental	Radium-226	pci/l	11	2	18%	Parametric	Lognormal MLE	-0.000696	0.096	↔
2_3_128	MW-7	Supplemental	Radium-228	pci/l	11	5	45%	Parametric	Lognormal MLE	-0.000332	0.509	↔
2_3_132	MW-7	Supplemental	Temperature (field)	deg c	8	0	0%	Parametric	Lognormal MLE	0.0000460	0.879	↔
2_3_133	MW-7	Supplemental	Temperature (lab)	deg c	10	0	0%	Parametric	Lognormal MLE	-0.0000339	0.135	↔
2_3_136	MW-7	Supplemental	Total Suspended Solids	mg/l	11	0	0%	Parametric	Lognormal MLE	0.000897	0.307	↔
4_1_115	MW-9	Appendix III	Fluoride	mg/l	8	0	0%	Parametric	Lognormal MLE	-0.000291	0.180	↔
4_2_104	MW-9	Appendix IV	Antimony	mg/l	8	0	0%	Parametric	Lognormal MLE	-0.000211	0.530	↔
4_2_105	MW-9	Appendix IV	Arsenic	mg/l	8	0	0%	Parametric	Lognormal MLE	0.000273	0.372	↔
4_2_106	MW-9	Appendix IV	Barium	mg/l	8	0	0%	Parametric	Lognormal MLE	0.000705	0.030	↔
4_2_109	MW-9	Appendix IV	Cadmium	mg/l	8	0	0%	Parametric	Lognormal MLE	-0.000650	0.254	↔
4_2_112	MW-9	Appendix IV	Chromium, Total	mg/l	8	2	25%	Parametric	Lognormal MLE	0.00327	0.029	↔
4_2_113	MW-9	Appendix IV	Cobalt	mg/l	8	0	0%	Parametric	Lognormal MLE	0.0000944	0.905	↔
4_2_116	MW-9	Appendix IV	Fluoride (App IV)	mg/l	8	0	0%	Parametric	Lognormal MLE	-0.000291	0.180	↔
4_2_117	MW-9	Appendix IV	Lead	mg/l	8	0	0%	Parametric	Lognormal MLE	0.000524	0.610	↔
4_2_118	MW-9	Appendix IV	Lithium	mg/l	8	0	0%	Parametric	Lognormal MLE	-0.000589	0.094	↔
4_2_121	MW-9	Appendix IV	Molybdenum	mg/l	8	0	0%	Parametric	Lognormal MLE	-0.000309	0.244	↔
4_2_127	MW-9	Appendix IV	Radium-226+228	pci/l	8	1	12%	Parametric	Lognormal MLE	-0.000788	0.074	↔
4_2_129	MW-9	Appendix IV	Selenium	mg/l	8	0	0%	Parametric	Lognormal MLE	-0.000134	0.741	↔
4_3_126	MW-9	Supplemental	Radium-226	pci/l	8	1	12%	Parametric	Lognormal MLE	-0.000562	0.250	↔
4_3_136	MW-9	Supplemental	Total Suspended Solids	mg/l	8	0	0%	Parametric	Lognormal MLE	0.00212	0.181	↔

Table 9: Trend Tests: Piecewise Linear-Linear

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Line 1			Line 2			Break 1	R-Squared	Overall Trend
								Slope	p-Value	Trend	Slope	p-Value	Trend			
1_1_108	MW-10	Appendix III	Boron	mg/l	17	0	0%	0.00112	0.002	↑	-0.00769	0.176	↔	2021-06-13	0.574	↔
1_1_110	MW-10	Appendix III	Calcium	mg/l	17	0	0%	0.0781	0.713	↔	-0.0642	0.023	↔	2017-02-26	0.377	↔
1_1_111	MW-10	Appendix III	Chloride (as Cl)	mg/l	17	0	0%	-0.149	0.077	↔	0.182	0.333	↔	2020-01-11	0.312	↔
1_1_115	MW-10	Appendix III	Fluoride	mg/l	19	1	5%	-0.000669	0.055	↔	0.00126	0.388	↔	2020-04-22	0.256	↔
1_1_123	MW-10	Appendix III	pH (field)	su	18	0	0%	-0.0117	0.000	↓	-0.000549	0.000	↓	2016-03-10	0.951	↓
1_1_124	MW-10	Appendix III	pH (lab)	su	16	0	0%	-0.00952	0.510	↔	-0.000585	0.078	↔	2016-03-24	0.391	↔
1_1_131	MW-10	Appendix III	Sulfate (as SO4)	mg/l	17	0	0%	0.550	0.512	↔	-0.168	0.111	↔	2017-02-26	0.207	↔
1_1_135	MW-10	Appendix III	Total Dissolved Solids	mg/l	17	0	0%	2.38	0.737	↔	-0.138	0.375	↔	2016-05-04	0.080	↔

(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			Line 2			Break 1	R-Squared	Overall Trend
								Slope	p-Value	Trend	Slope	p-Value	Trend			
1_2_104	MW-10	Appendix IV	Antimony	mg/l	19	1	5%	-0.000000954	0.002	↓	0.00000640	0.188	↔	2021-04-22	0.554	↔
1_2_105	MW-10	Appendix IV	Arsenic	mg/l	19	0	0%	-0.00000225	0.008	↓	0.0000177	0.219	↔	2021-09-21	0.428	↔
1_2_106	MW-10	Appendix IV	Barium	mg/l	19	0	0%	0.0000291	0.180	↔	-0.0000292	0.024	↔	2018-06-04	0.365	↔
1_2_107	MW-10	Appendix IV	Beryllium	mg/l	18	14	74%	0.000000107	0.153	↔	0.00000110	0.077	↔	2020-10-27	0.717	↔
1_2_109	MW-10	Appendix IV	Cadmium	mg/l	19	4	20%	-0.000000347	0.039	↔	0.00000318	0.023	↔	2021-04-19	0.447	↔
1_2_112	MW-10	Appendix IV	Chromium, Total	mg/l	19	2	10%	0.0000120	0.778	↔	0.000000266	0.877	↔	2016-08-22	0.054	↔
1_2_113	MW-10	Appendix IV	Cobalt	mg/l	19	0	0%	0.00000222	0.003	↑	-0.0000181	0.142	↔	2021-09-18	0.505	↔
1_2_116	MW-10	Appendix IV	Fluoride (App IV)	mg/l	19	1	5%	-0.000669	0.055	↔	0.00126	0.388	↔	2020-04-22	0.256	↔
1_2_117	MW-10	Appendix IV	Lead	mg/l	19	13	65%	0.0000000726	0.301	↔	0.00000238	0.079	↔	2021-06-27	0.643	↔
1_2_118	MW-10	Appendix IV	Lithium	mg/l	19	0	0%	-0.0000190	0.351	↔	0.000157	0.093	↔	2020-09-29	0.279	↔
1_2_120	MW-10	Appendix IV	Mercury	mg/l	19	20	100%	0.0000000753	0.000	↑	-0.0000000335	0.658	↔	2020-09-08	0.717	↔
1_2_121	MW-10	Appendix IV	Molybdenum	mg/l	19	0	0%	0.0000217	0.003	↑	-0.000198	0.103	↔	2021-09-08	0.512	↔
1_2_127	MW-10	Appendix IV	Radium-226+228	pci/l	19	4	20%	-0.000307	0.136	↔	0.000713	0.660	↔	2020-10-27	0.155	↔
1_2_129	MW-10	Appendix IV	Selenium	mg/l	19	0	0%	-0.00000394	0.779	↔	0.0000338	0.006	↑	2018-11-28	0.550	↔
1_2_134	MW-10	Appendix IV	Thallium	mg/l	18	16	84%	-0.000000437	0.458	↔	0.0000178	0.002	↑	2021-02-18	0.747	↔
1_3_114	MW-10	Supplemental	Conductivity (field)	us/cm	18	0	0%	-0.964	0.103	↔	0.415	0.396	↔	2018-06-05	0.223	↔
1_3_122	MW-10	Supplemental	Oxidation-reduction Potential (field)	mV	18	0	0%	0.0330	0.809	↔	-0.193	0.300	↔	2019-05-07	0.159	↔
1_3_126	MW-10	Supplemental	Radium-226	pci/l	19	8	40%	-0.0000762	0.568	↔	0.000371	0.291	↔	2019-09-14	0.208	↔
1_3_128	MW-10	Supplemental	Radium-228	pci/l	19	8	40%	0.000491	0.744	↔	-0.000199	0.103	↔	2016-11-06	0.180	↔
1_3_132	MW-10	Supplemental	Temperature (field)	deg c	18	0	0%	0.0428	0.217	↔	-0.00182	0.199	↔	2016-05-15	0.228	↔
1_3_133	MW-10	Supplemental	Temperature (lab)	deg c	16	0	0%	0.00187	0.602	↔	-0.00124	0.076	↔	2017-02-27	0.302	↔
1_3_136	MW-10	Supplemental	Total Suspended Solids	mg/l	18	2	11%	0.134	0.618	↔	-0.00900	0.134	↔	2016-05-04	0.180	↔
1_3_137	MW-10	Supplemental	Turbidity (field)	ntu	17	0	0%	0.000857	0.624	↔	-0.0106	0.420	↔	2020-10-27	0.183	↔
2_1_108	MW-7	Appendix III	Boron	mg/l	10	0	0%	0.000993	0.026	↔	-0.000726	0.152	↔	2017-09-07	0.751	↔
2_1_110	MW-7	Appendix III	Calcium	mg/l	11	0	0%	0.137	0.542	↔	-0.160	0.001	↓	2017-04-07	0.825	↔
2_1_111	MW-7	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.276	0.591	↔	-0.453	0.001	↓	2017-04-25	0.899	↔
2_1_115	MW-7	Appendix III	Fluoride	mg/l	10	0	0%	-0.000318	0.911	↔	0.000635	0.012	↔	2016-08-22	0.738	↔
2_1_124	MW-7	Appendix III	pH (lab)	su	10	0	0%	0.000215	0.228	↔	-0.00109	0.157	↔	2019-11-06	0.497	↔
2_1_131	MW-7	Appendix III	Sulfate (as SO4)	mg/l	10	0	0%	0.315	0.030	↔	-0.257	0.000	↓	2017-05-21	0.911	↔
2_1_135	MW-7	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	0.672	0.217	↔	-1.04	0.001	↓	2017-05-15	0.907	↔
2_2_104	MW-7	Appendix IV	Antimony	mg/l	11	4	36%	0.00000155	0.489	↔	0.0000000385	0.791	↔	2016-08-22	0.414	↔
2_2_105	MW-7	Appendix IV	Arsenic	mg/l	11	0	0%	0.0000147	0.525	↔	-0.00000235	0.462	↔	2017-01-27	0.240	↔
2_2_106	MW-7	Appendix IV	Barium	mg/l	11	0	0%	0.000318	0.419	↔	-0.0000965	0.099	↔	2017-01-06	0.396	↔
2_2_107	MW-7	Appendix IV	Beryllium	mg/l	10	3	30%	0.00000282	0.610	↔	-0.000000492	0.522	↔	2017-05-14	0.298	↔
2_2_109	MW-7	Appendix IV	Cadmium	mg/l	11	2	18%	0.00000174	0.237	↔	-0.000000254	0.214	↔	2016-09-01	0.342	↔
2_2_112	MW-7	Appendix IV	Chromium, Total	mg/l	11	0	0%	0.000114	0.431	↔	-0.0000251	0.223	↔	2017-01-02	0.314	↔
2_2_113	MW-7	Appendix IV	Cobalt	mg/l	12	0	0%	0.0000243	0.361	↔	-0.00000513	0.105	↔	2017-02-01	0.410	↔
2_2_116	MW-7	Appendix IV	Fluoride (App IV)	mg/l	10	0	0%	-0.000318	0.911	↔	0.000635	0.012	↔	2016-08-22	0.738	↔
2_2_117	MW-7	Appendix IV	Lead	mg/l	12	0	0%	0.0000522	0.495	↔	-0.0000118	0.185	↔	2017-03-08	0.314	↔
2_2_118	MW-7	Appendix IV	Lithium	mg/l	11	0	0%	0.000123	0.324	↔	-0.0000409	0.037	↔	2016-12-16	0.526	↔
2_2_120	MW-7	Appendix IV	Mercury	mg/l	11	8	73%	0.000000000000314	1.000	↔	0.000000124	0.000	↑	2017-01-05	0.901	↔
2_2_121	MW-7	Appendix IV	Molybdenum	mg/l	11	0	0%	0.00000279	0.673	↔	0.0000131	0.040	↔	2018-02-24	0.749	↔

(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			Line 2			Break 1	R-Squared	Overall Trend
								Slope	p-Value	Trend	Slope	p-Value	Trend			
2_2_127	MW-7	Appendix IV	Radium-226+228	pci/l	11	1	9%	0.00835	0.563	↔	-0.00147	0.149	↔	2016-08-22	0.316	↔
2_2_129	MW-7	Appendix IV	Selenium	mg/l	12	0	0%	-0.0000205	0.400	↔	0.00000319	0.253	↔	2016-10-20	0.238	↔
2_2_134	MW-7	Appendix IV	Thallium	mg/l	10	4	40%	0.00000147	0.302	↔	-0.000000189	0.335	↔	2016-12-12	0.426	↔
2_3_126	MW-7	Supplemental	Radium-226	pci/l	11	2	18%	0.00234	0.483	↔	-0.000530	0.261	↔	2016-09-05	0.230	↔
2_3_128	MW-7	Supplemental	Radium-228	pci/l	11	5	45%	0.00567	0.495	↔	-0.000830	0.154	↔	2016-08-22	0.346	↔
2_3_133	MW-7	Supplemental	Temperature (lab)	deg c	10	0	0%	-0.0000953	0.937	↔	-0.00383	0.461	↔	2019-12-26	0.269	↔
2_3_136	MW-7	Supplemental	Total Suspended Solids	mg/l	11	0	0%	5.27	0.335	↔	-0.597	0.338	↔	2016-08-23	0.237	↔
2_3_137	MW-7	Supplemental	Turbidity (field)	ntu	7	0	0%	-0.0501	0.596	↔	1.03	0.000	↑	2017-09-01	0.995	↔
3_1_110	MW-8	Appendix III	Calcium	mg/l	6	0	0%	-0.394	0.768	↔	0.162	0.626	↔	2016-10-18	0.267	↔
3_1_115	MW-8	Appendix III	Fluoride	mg/l	7	0	0%	-0.00333	0.010	↓	-0.000374	0.054	↔	2016-06-03	0.983	↔
3_1_123	MW-8	Appendix III	pH (field)	su	5	0	0%	-0.00193	0.666	↔	0.00234	0.692	↔	2016-10-14	0.567	↔
3_1_124	MW-8	Appendix III	pH (lab)	su	6	0	0%	-0.00181	0.402	↔	0.000114	0.588	↔	2016-03-25	0.542	↔
3_2_104	MW-8	Appendix IV	Antimony	mg/l	7	2	29%	0.00000204	0.244	↔	-0.00000119	0.892	↔	2017-02-27	0.414	↔
3_2_106	MW-8	Appendix IV	Barium	mg/l	7	0	0%	0.0000516	0.504	↔	-0.000000522	0.974	↔	2016-07-18	0.442	↔
3_2_107	MW-8	Appendix IV	Beryllium	mg/l	6	4	67%	-0.000000591	0.872	↔	0.000000219	0.628	↔	2016-05-03	0.150	↔
3_2_109	MW-8	Appendix IV	Cadmium	mg/l	7	1	14%	0.00000292	0.326	↔	-0.00000478	0.757	↔	2017-02-27	0.589	↔
3_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	7	1	14%	0.00000180	0.493	↔	0.0000283	0.120	↔	2017-02-27	0.990	↔
3_2_113	MW-8	Appendix IV	Cobalt	mg/l	7	0	0%	0.00000390	0.336	↔	-0.0000120	0.580	↔	2017-08-25	0.501	↔
3_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	7	0	0%	-0.00333	0.010	↓	-0.000374	0.054	↔	2016-06-03	0.983	↔
3_2_117	MW-8	Appendix IV	Lead	mg/l	7	1	14%	0.00000476	0.155	↔	-0.00000127	0.528	↔	2016-11-08	0.620	↔
3_2_118	MW-8	Appendix IV	Lithium	mg/l	7	0	0%	0.0000433	0.155	↔	-0.000250	0.149	↔	2018-01-11	0.710	↔
3_2_120	MW-8	Appendix IV	Mercury	mg/l	7	7	100%	-0.0000000000000000000926	0.243	↔	0.00000112	0.000	↑	2018-03-06	1.000	↔
3_2_121	MW-8	Appendix IV	Molybdenum	mg/l	7	0	0%	-0.000635	0.040	↔	-0.0000250	0.569	↔	2016-06-18	0.940	↔
3_3_114	MW-8	Supplemental	Conductivity (field)	us/cm	5	0	0%	5.62	0.271	↔	-2.64	0.581	↔	2016-05-04	0.866	↔
3_3_122	MW-8	Supplemental	Oxidation-reduction Potential (field)	mV	5	0	0%	0.226	0.809	↔	-0.520	0.688	↔	2016-08-27	0.336	↔
3_3_126	MW-8	Supplemental	Radium-226	pci/l	7	1	14%	0.000535	0.733	↔	-0.000283	0.427	↔	2016-11-07	0.289	↔
4_1_108	MW-9	Appendix III	Boron	mg/l	6	0	0%	-0.00331	0.019	↔	-0.000645	0.106	↔	2016-06-19	0.992	↔
4_1_110	MW-9	Appendix III	Calcium	mg/l	7	0	0%	0.151	0.594	↔	-0.457	0.414	↔	2017-02-27	0.527	↔
4_1_111	MW-9	Appendix III	Chloride (as Cl)	mg/l	7	0	0%	5.71	0.134	↔	-0.619	0.118	↔	2016-03-09	0.749	↔
4_1_115	MW-9	Appendix III	Fluoride	mg/l	8	0	0%	0.000969	0.281	↔	-0.00504	0.484	↔	2017-09-06	0.652	↔
4_1_123	MW-9	Appendix III	pH (field)	su	7	0	0%	0.00379	0.627	↔	0.000344	0.630	↔	2016-05-04	0.496	↔
4_1_124	MW-9	Appendix III	pH (lab)	su	7	0	0%	0.00310	0.340	↔	-0.000313	0.342	↔	2016-04-01	0.515	↔
4_1_131	MW-9	Appendix III	Sulfate (as SO4)	mg/l	7	0	0%	5.36	0.188	↔	-0.940	0.061	↔	2016-03-18	0.794	↔
4_1_135	MW-9	Appendix III	Total Dissolved Solids	mg/l	7	0	0%	15.5	0.189	↔	-2.28	0.092	↔	2016-03-14	0.748	↔
4_2_104	MW-9	Appendix IV	Antimony	mg/l	8	0	0%	0.00000966	0.214	↔	-0.00000168	0.303	↔	2016-05-05	0.476	↔
4_2_105	MW-9	Appendix IV	Arsenic	mg/l	8	0	0%	0.00000407	0.178	↔	-0.00000989	0.662	↔	2017-10-06	0.428	↔
4_2_106	MW-9	Appendix IV	Barium	mg/l	8	0	0%	0.0000862	0.142	↔	-0.0000825	0.846	↔	2017-09-06	0.482	↔
4_2_107	MW-9	Appendix IV	Beryllium	mg/l	7	4	57%	-0.00000333	0.267	↔	0.000000253	0.432	↔	2016-03-19	0.533	↔
4_2_109	MW-9	Appendix IV	Cadmium	mg/l	8	0	0%	0.00000443	0.253	↔	-0.00000620	0.375	↔	2017-02-27	0.509	↔
4_2_112	MW-9	Appendix IV	Chromium, Total	mg/l	8	2	25%	0.0000211	0.101	↔	-0.0000390	0.665	↔	2017-09-06	0.545	↔
4_2_113	MW-9	Appendix IV	Cobalt	mg/l	8	0	0%	0.00000400	0.248	↔	-0.0000127	0.637	↔	2017-09-06	0.452	↔
4_2_116	MW-9	Appendix IV	Fluoride (App IV)	mg/l	8	0	0%	0.000969	0.281	↔	-0.00504	0.484	↔	2017-09-06	0.652	↔

(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			Line 2			Break 1	R-Squared	Overall Trend
								Slope	p-Value	Trend	Slope	p-Value	Trend			
4_2_117	MW-9	Appendix IV	Lead	mg/l	8	0	0%	0.0000134	0.074	↔	-0.0000448	0.393	↔	2017-11-18	0.632	↔
4_2_118	MW-9	Appendix IV	Lithium	mg/l	8	0	0%	0.000526	0.386	↔	-0.000122	0.068	↔	2016-05-04	0.643	↔
4_2_120	MW-9	Appendix IV	Mercury	mg/l	8	8	100%	-0.000000000000000000704	0.245	↔	0.00000113	0.000	↑	2018-03-06	1.000	↔
4_2_121	MW-9	Appendix IV	Molybdenum	mg/l	8	0	0%	0.0000217	0.453	↔	-0.0000383	0.477	↔	2017-02-27	0.389	↔
4_2_127	MW-9	Appendix IV	Radium-226+228	pci/l	8	1	12%	0.00385	0.111	↔	-0.00119	0.045	↔	2016-06-14	0.762	↔
4_2_129	MW-9	Appendix IV	Selenium	mg/l	8	0	0%	0.00000643	0.609	↔	-0.0000201	0.406	↔	2017-09-05	0.227	↔
4_2_134	MW-9	Appendix IV	Thallium	mg/l	7	6	86%	0.000000430	0.272	↔	-0.000000216	0.522	↔	2017-02-06	0.570	↔
4_3_114	MW-9	Supplemental	Conductivity (field)	us/cm	7	0	0%	12.8	0.164	↔	-3.37	0.113	↔	2016-05-16	0.753	↔
4_3_122	MW-9	Supplemental	Oxidation-reduction Potential (field)	mV	7	0	0%	-0.0771	0.627	↔	-0.264	0.768	↔	2017-02-27	0.751	↔
4_3_126	MW-9	Supplemental	Radium-226	pci/l	8	1	12%	0.000435	0.691	↔	-0.000403	0.143	↔	2016-11-06	0.466	↔
4_3_128	MW-9	Supplemental	Radium-228	pci/l	8	4	50%	0.00287	0.051	↔	-0.000604	0.056	↔	2016-05-05	0.799	↔
4_3_133	MW-9	Supplemental	Temperature (lab)	deg c	7	0	0%	0.00159	0.693	↔	-0.00483	0.538	↔	2017-02-27	0.374	↔
4_3_136	MW-9	Supplemental	Total Suspended Solids	mg/l	8	0	0%	0.160	0.123	↔	-0.330	0.657	↔	2017-09-27	0.504	↔

Table 10: Trend Tests: Piecewise Linear-Linear-Linear

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Line 1			Line 2			Line 3			Break 1	Break 2	R-Squared	Overall Trend
								Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend				
1_1_108	MW-10	Appendix III	Boron	mg/l	17	0	0%	0.00545	0.439	↔	0.000935	0.027	↔	-0.00769	0.195	↔	2016-06-07	2021-06-28	0.613	↔
1_1_115	MW-10	Appendix III	Fluoride	mg/l	19	1	5%	0.00124	0.412	↔	-0.00142	0.073	↔	0.00161	0.113	↔	2017-03-29	2020-02-03	0.413	↔
1_1_123	MW-10	Appendix III	pH (field)	su	18	0	0%	-0.0117	0.000	↓	-0.000673	0.000	↓	-0.000310	0.212	↔	2016-03-04	2019-12-14	0.959	↔
1_1_124	MW-10	Appendix III	pH (lab)	su	16	0	0%	-0.0103	0.513	↔	0.000232	0.912	↔	-0.000742	0.341	↔	2016-04-11	2017-09-06	0.404	↔
1_2_107	MW-10	Appendix IV	Beryllium	mg/l	18	14	74%	0.000000185	0.153	↔	-0.000000440	0.519	↔	0.00000116	0.009	↑	2019-05-29	2020-06-30	0.745	↔
1_2_109	MW-10	Appendix IV	Cadmium	mg/l	19	4	20%	-0.000000460	0.216	↔	-0.000000183	0.669	↔	0.00000369	0.176	↔	2018-11-10	2021-06-12	0.487	↔
1_2_112	MW-10	Appendix IV	Chromium, Total	mg/l	19	2	10%	0.0000138	0.760	↔	-0.000000589	0.866	↔	0.00000325	0.785	↔	2016-08-22	2020-07-24	0.065	↔
1_2_113	MW-10	Appendix IV	Cobalt	mg/l	19	0	0%	-0.000000459	0.802	↔	0.0000119	0.045	↔	-0.00000290	0.263	↔	2018-05-22	2019-06-28	0.617	↔
1_2_116	MW-10	Appendix IV	Fluoride (App IV)	mg/l	19	1	5%	0.00124	0.412	↔	-0.00142	0.073	↔	0.00161	0.113	↔	2017-03-29	2020-02-03	0.413	↔
1_2_117	MW-10	Appendix IV	Lead	mg/l	19	13	65%	0.000000363	0.038	↔	-0.0000000810	0.547	↔	0.00000484	0.000	↑	2018-04-12	2021-10-18	0.819	↔
1_2_118	MW-10	Appendix IV	Lithium	mg/l	19	0	0%	0.00101	0.066	↔	-0.0000513	0.056	↔	0.000117	0.044	↔	2016-03-10	2020-01-01	0.544	↔
1_2_120	MW-10	Appendix IV	Mercury	mg/l	19	20	100%	0.000000000000665	1.000	↔	0.000000143	0.018	↔	-0.0000000232	0.643	↔	2017-08-24	2019-10-15	0.783	↔
1_2_121	MW-10	Appendix IV	Molybdenum	mg/l	19	0	0%	0.00000814	0.680	↔	0.0000412	0.071	↔	-0.0000914	0.152	↔	2018-04-14	2020-12-20	0.535	↔
1_2_127	MW-10	Appendix IV	Radium-226+228	pci/l	19	4	20%	0.000133	0.768	↔	-0.00171	0.615	↔	0.000551	0.459	↔	2018-06-05	2019-07-28	0.242	↔
1_3_114	MW-10	Supplemental	Conductivity (field)	us/cm	18	0	0%	2.67	0.073	↔	-4.77	0.085	↔	0.684	0.013	↔	2017-01-29	2018-01-18	0.674	↔
1_3_126	MW-10	Supplemental	Radium-226	pci/l	19	8	40%	0.000550	0.488	↔	-0.000817	0.699	↔	0.000196	0.112	↔	2016-11-07	2017-09-05	0.225	↔
1_3_128	MW-10	Supplemental	Radium-228	pci/l	19	8	40%	0.000144	0.635	↔	-0.00390	0.544	↔	0.000167	0.620	↔	2018-10-20	2019-02-21	0.292	↔
1_3_132	MW-10	Supplemental	Temperature (field)	deg c	18	0	0%	0.0428	0.241	↔	-0.0263	0.707	↔	-0.00122	0.464	↔	2016-07-26	2017-01-04	0.271	↔
1_3_136	MW-10	Supplemental	Total Suspended Solids	mg/l	18	2	11%	0.146	0.614	↔	-0.0119	0.229	↔	0.00969	0.884	↔	2016-05-04	2020-12-23	0.196	↔
2_1_110	MW-7	Appendix III	Calcium	mg/l	11	0	0%	0.183	0.034	↔	-0.355	0.018	↔	-0.0248	0.655	↔	2017-05-15	2018-11-16	0.949	↔
2_1_111	MW-7	Appendix III	Chloride (as Cl)	mg/l	10	0	0%	0.363	0.066	↔	-1.54	0.389	↔	-0.103	0.440	↔	2017-06-12	2018-05-06	0.972	↔
2_1_124	MW-7	Appendix III	pH (lab)	su	10	0	0%	-0.00171	0.611	↔	0.000343	0.163	↔	-0.00121	0.151	↔	2016-05-03	2019-10-26	0.657	↔

(Table continues on next page)

Table 10: Trend Tests: Piecewise Linear-Linear-Linear *(continued)*

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Line 1			Line 2			Line 3			Break 1	Break 2	R-Squared	Overall Trend
								Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend				
2_1_135	MW-7	Appendix III	Total Dissolved Solids	mg/l	10	0	0%	1.16	0.337	↔	-2.19	0.423	↔	-0.552	0.250	↔	2017-04-08	2018-06-17	0.936	↔
2_2_104	MW-7	Appendix IV	Antimony	mg/l	11	4	36%	0.00000280	0.043	↔	-0.00000104	0.680	↔	0.000000247	0.369	↔	2016-08-23	2017-09-13	0.669	↔
2_2_105	MW-7	Appendix IV	Arsenic	mg/l	11	0	0%	0.0000158	0.442	↔	-0.0000151	0.262	↔	0.0000105	0.209	↔	2017-05-14	2019-03-06	0.599	↔
2_2_106	MW-7	Appendix IV	Barium	mg/l	11	0	0%	0.000318	0.410	↔	-0.000221	0.093	↔	0.000180	0.512	↔	2017-03-27	2019-10-28	0.606	↔
2_2_109	MW-7	Appendix IV	Cadmium	mg/l	11	2	18%	0.00000174	0.274	↔	-0.00000247	0.483	↔	0.0000000157	0.965	↔	2017-02-27	2017-11-23	0.480	↔
2_2_113	MW-7	Appendix IV	Cobalt	mg/l	12	0	0%	0.0000247	0.313	↔	-0.0000242	0.139	↔	0.00000407	0.552	↔	2017-05-14	2018-10-22	0.645	↔
2_2_117	MW-7	Appendix IV	Lead	mg/l	12	0	0%	0.0000596	0.125	↔	-0.0000564	0.343	↔	0.0000104	0.635	↔	2017-05-15	2018-10-30	0.498	↔
2_2_118	MW-7	Appendix IV	Lithium	mg/l	11	0	0%	0.000123	0.324	↔	-0.0000801	0.065	↔	0.0000383	0.659	↔	2017-02-24	2019-10-01	0.680	↔
2_2_121	MW-7	Appendix IV	Molybdenum	mg/l	11	0	0%	0.0000281	0.556	↔	-0.00000189	0.909	↔	0.0000131	0.077	↔	2016-05-06	2017-11-25	0.768	↔
2_2_127	MW-7	Appendix IV	Radium-226+228	pci/l	11	1	9%	0.00961	0.320	↔	-0.00232	0.417	↔	0.0000468	0.994	↔	2016-08-27	2019-06-04	0.350	↔
2_2_134	MW-7	Appendix IV	Thallium	mg/l	10	4	40%	0.00000219	0.220	↔	-0.00000176	0.795	↔	-0.000000119	0.702	↔	2016-12-29	2017-07-17	0.485	↔
2_3_122	MW-7	Supplemental	Oxidation-reduction Potential (field)	mV	8	0	0%	0.0954	0.918	↔	-0.327	0.440	↔	0.0740	0.612	↔	2016-05-06	2017-09-06	0.676	↔
2_3_128	MW-7	Supplemental	Radium-228	pci/l	11	5	45%	0.00707	0.210	↔	-0.00177	0.594	↔	-0.0000681	0.973	↔	2016-08-23	2018-09-21	0.397	↔
2_3_133	MW-7	Supplemental	Temperature (lab)	deg c	10	0	0%	-0.00772	0.600	↔	0.00361	0.492	↔	-0.00250	0.433	↔	2016-07-20	2018-02-24	0.398	↔
3_1_115	MW-8	Appendix III	Fluoride	mg/l	7	0	0%	-0.00328	0.124	↔	-0.000792	0.528	↔	0.000487	0.722	↔	2016-05-04	2017-11-13	0.992	↔
3_2_113	MW-8	Appendix IV	Cobalt	mg/l	7	0	0%	-0.00000962	0.413	↔	0.0000225	0.260	↔	-0.0000120	0.495	↔	2016-08-20	2017-04-19	0.938	↔
3_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	7	0	0%	-0.00328	0.124	↔	-0.000792	0.528	↔	0.000487	0.722	↔	2016-05-04	2017-11-13	0.992	↔
3_2_120	MW-8	Appendix IV	Mercury	mg/l	7	7	100%	0.00000000000704	0.781	↔	-0.00000000000228	0.544	↔	0.00000112	0.000	↑	2016-10-03	2018-03-06	1.000	↔
4_1_111	MW-9	Appendix III	Chloride (as Cl)	mg/l	7	0	0%	5.61	0.449	↔	-0.409	0.880	↔	-0.732	0.551	↔	2016-03-05	2017-02-04	0.758	↔
4_1_115	MW-9	Appendix III	Fluoride	mg/l	8	0	0%	-0.0000868	0.989	↔	0.00171	0.587	↔	-0.00546	0.605	↔	2016-08-28	2017-09-06	0.672	↔
4_1_123	MW-9	Appendix III	pH (field)	su	7	0	0%	0.00328	0.806	↔	0.000914	0.806	↔	-0.00568	0.660	↔	2016-04-10	2018-03-06	0.630	↔
4_1_131	MW-9	Appendix III	Sulfate (as SO4)	mg/l	7	0	0%	5.40	0.498	↔	-0.663	0.734	↔	-1.09	0.629	↔	2016-03-09	2017-02-27	0.802	↔
4_1_135	MW-9	Appendix III	Total Dissolved Solids	mg/l	7	0	0%	15.1	0.511	↔	-1.67	0.852	↔	-2.64	0.519	↔	2016-03-10	2017-02-15	0.755	↔
4_2_104	MW-9	Appendix IV	Antimony	mg/l	8	0	0%	0.0000117	0.526	↔	-0.00000358	0.490	↔	-0.000000503	0.923	↔	2016-05-04	2017-03-15	0.544	↔
4_2_105	MW-9	Appendix IV	Arsenic	mg/l	8	0	0%	-0.000000606	0.975	↔	0.00000744	0.462	↔	-0.0000142	0.661	↔	2016-09-07	2017-10-23	0.499	↔
4_2_107	MW-9	Appendix IV	Beryllium	mg/l	7	4	57%	-0.00000333	0.114	↔	0.00000187	0.092	↔	-0.000000243	0.324	↔	2016-05-03	2016-11-13	0.991	↔
4_2_112	MW-9	Appendix IV	Chromium, Total	mg/l	8	2	25%	-0.00000760	0.633	↔	0.0000674	0.113	↔	-0.0000681	0.322	↔	2016-12-14	2017-09-18	0.912	↔
4_2_116	MW-9	Appendix IV	Fluoride (App IV)	mg/l	8	0	0%	-0.0000868	0.989	↔	0.00171	0.587	↔	-0.00546	0.605	↔	2016-08-28	2017-09-06	0.672	↔
4_2_117	MW-9	Appendix IV	Lead	mg/l	8	0	0%	-0.00000266	0.664	↔	0.0000435	0.046	↔	-0.0000448	0.157	↔	2016-12-27	2017-09-15	0.966	↔
4_2_118	MW-9	Appendix IV	Lithium	mg/l	8	0	0%	0.000512	0.561	↔	-0.0000854	0.562	↔	-0.000220	0.778	↔	2016-04-27	2017-10-22	0.666	↔
4_2_120	MW-9	Appendix IV	Mercury	mg/l	8	8	100%	0.00000000000122	0.721	↔	-0.000000000000394	0.542	↔	0.00000113	0.000	↑	2016-11-16	2018-03-06	1.000	↔
4_2_127	MW-9	Appendix IV	Radium-226+228	pci/l	8	1	12%	0.00385	0.009	↑	-0.00569	0.007	↓	-0.000310	0.256	↔	2016-09-18	2017-03-10	0.996	↔
4_2_129	MW-9	Appendix IV	Selenium	mg/l	8	0	0%	-0.0000185	0.595	↔	0.0000354	0.133	↔	-0.0000359	0.537	↔	2016-10-30	2017-09-06	0.793	↔
4_2_134	MW-9	Appendix IV	Thallium	mg/l	7	6	86%	-0.00000114	0.279	↔	0.00000111	0.137	↔	-0.000000216	0.324	↔	2016-04-01	2016-11-15	0.977	↔
4_3_114	MW-9	Supplemental	Conductivity (field)	us/cm	7	0	0%	13.7	0.591	↔	-0.351	0.956	↔	-4.56	0.832	↔	2016-04-05	2017-02-27	0.821	↔
4_3_132	MW-9	Supplemental	Temperature (field)	deg c	7	0	0%	0.0398	0.520	↔	-0.0295	0.695	↔	0.129	0.316	↔	2016-06-16	2018-02-13	0.856	↔

Cherokee – Lower Confidence Limits for Assessment Monitoring

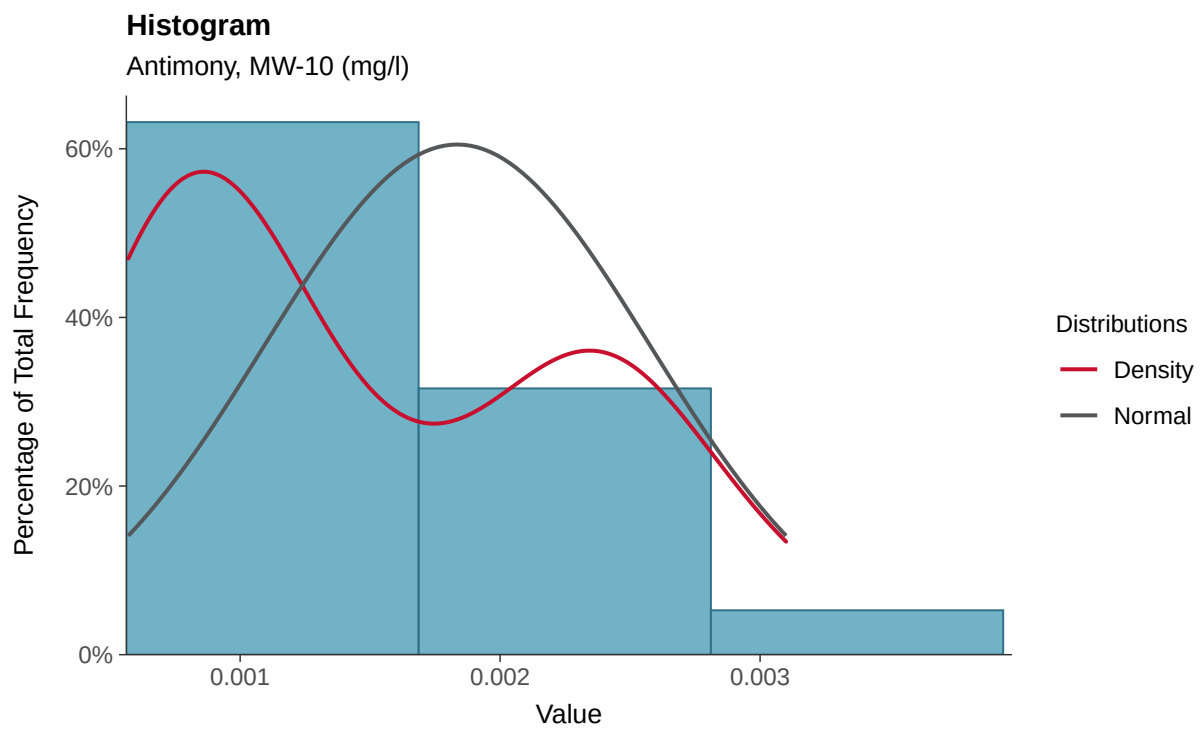
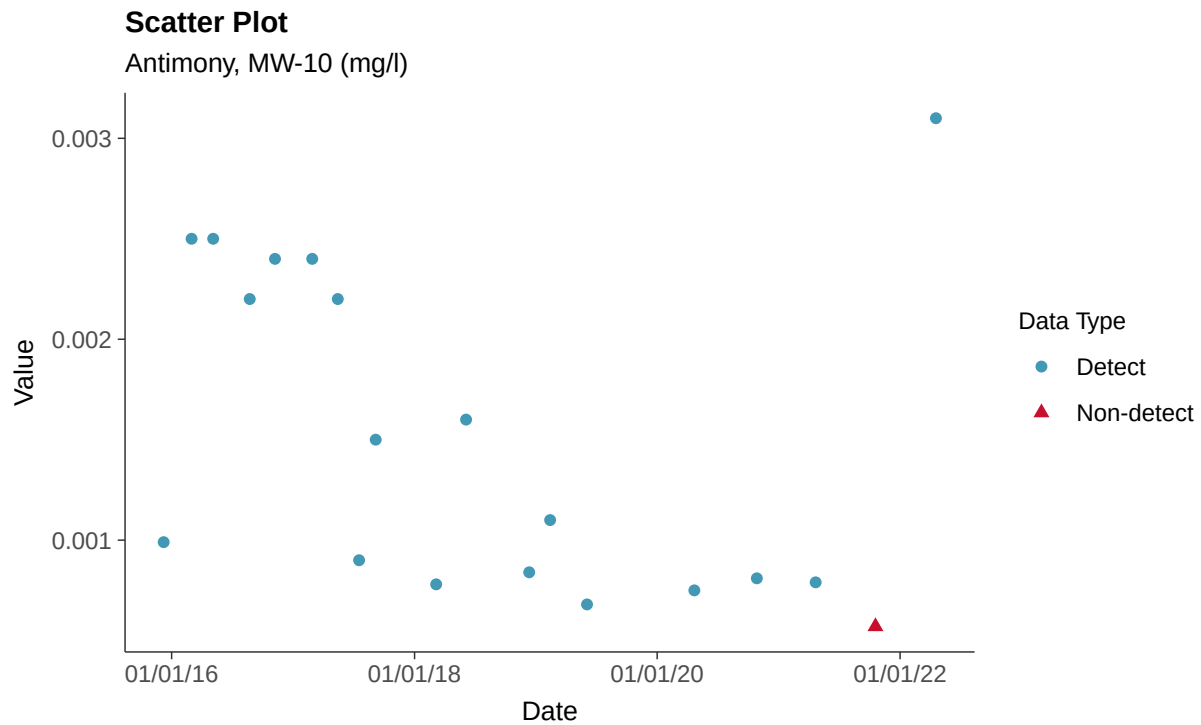
Code	Well	Type	Constituent	Unit	n	% NDs	Range of Sampling Period	Method	LCL
1_2_104	MW-10	Appendix IV	Antimony	mg/l	19	5%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.0012
1_2_105	MW-10	Appendix IV	Arsenic	mg/l	19	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0026
1_2_106	MW-10	Appendix IV	Barium	mg/l	19	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.057
1_2_107	MW-10	Appendix IV	Beryllium	mg/l	18	74%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00031
1_2_109	MW-10	Appendix IV	Cadmium	mg/l	19	20%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.00032
1_2_112	MW-10	Appendix IV	Chromium, Total	mg/l	19	10%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.0021
1_2_113	MW-10	Appendix IV	Cobalt	mg/l	19	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0023
1_2_116	MW-10	Appendix IV	Fluoride (App IV)	mg/l	19	5%	12-08-2015 to 04-09-2022	Normal MLE UCL	1.7
1_2_117	MW-10	Appendix IV	Lead	mg/l	19	65%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00045
1_2_118	MW-10	Appendix IV	Lithium	mg/l	19	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.075
1_2_120	MW-10	Appendix IV	Mercury	mg/l	19	100%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.000027
1_2_121	MW-10	Appendix IV	Molybdenum	mg/l	19	0%	12-08-2015 to 04-09-2022	Normal UCL	0.041
1_2_127	MW-10	Appendix IV	Radium-226+228	pci/l	19	20%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.57
1_2_129	MW-10	Appendix IV	Selenium	mg/l	19	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.0045
1_2_134	MW-10	Appendix IV	Thallium	mg/l	18	84%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00020
2_2_104	MW-7	Appendix IV	Antimony	mg/l	11	36%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.00042
2_2_105	MW-7	Appendix IV	Arsenic	mg/l	11	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0029
2_2_106	MW-7	Appendix IV	Barium	mg/l	11	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.075
2_2_107	MW-7	Appendix IV	Beryllium	mg/l	10	30%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.00057
2_2_109	MW-7	Appendix IV	Cadmium	mg/l	11	18%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.00024
2_2_112	MW-7	Appendix IV	Chromium, Total	mg/l	11	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.013
2_2_113	MW-7	Appendix IV	Cobalt	mg/l	12	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0030
2_2_116	MW-7	Appendix IV	Fluoride (App IV)	mg/l	10	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	1.1
2_2_117	MW-7	Appendix IV	Lead	mg/l	12	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0065
2_2_118	MW-7	Appendix IV	Lithium	mg/l	11	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.045
2_2_120	MW-7	Appendix IV	Mercury	mg/l	11	73%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.000027
2_2_121	MW-7	Appendix IV	Molybdenum	mg/l	11	0%	12-08-2015 to 04-09-2022	Lognormal H-UCL	0.011
2_2_127	MW-7	Appendix IV	Radium-226+228	pci/l	11	9%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	1.3
2_2_129	MW-7	Appendix IV	Selenium	mg/l	12	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0048
2_2_134	MW-7	Appendix IV	Thallium	mg/l	10	40%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.00020
3_2_104	MW-8	Appendix IV	Antimony	mg/l	7	29%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00020
3_2_105	MW-8	Appendix IV	Arsenic	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00079
3_2_106	MW-8	Appendix IV	Barium	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.033
3_2_107	MW-8	Appendix IV	Beryllium	mg/l	6	67%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.000053
3_2_109	MW-8	Appendix IV	Cadmium	mg/l	7	14%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00021
3_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	7	14%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00060
3_2_113	MW-8	Appendix IV	Cobalt	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.0027
3_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.94
3_2_117	MW-8	Appendix IV	Lead	mg/l	7	14%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00011
3_2_118	MW-8	Appendix IV	Lithium	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.087
3_2_120	MW-8	Appendix IV	Mercury	mg/l	7	100%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.000027
3_2_121	MW-8	Appendix IV	Molybdenum	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.0085
3_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	7	14%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.50
3_2_129	MW-8	Appendix IV	Selenium	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.0091
3_2_134	MW-8	Appendix IV	Thallium	mg/l	6	83%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.000074
4_2_104	MW-9	Appendix IV	Antimony	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0015
4_2_105	MW-9	Appendix IV	Arsenic	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0030
4_2_106	MW-9	Appendix IV	Barium	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.047
4_2_107	MW-9	Appendix IV	Beryllium	mg/l	7	57%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.000053
4_2_109	MW-9	Appendix IV	Cadmium	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0012
4_2_112	MW-9	Appendix IV	Chromium, Total	mg/l	8	25%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.00066
4_2_113	MW-9	Appendix IV	Cobalt	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0015
4_2_116	MW-9	Appendix IV	Fluoride (App IV)	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	2.0
4_2_117	MW-9	Appendix IV	Lead	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0018
4_2_118	MW-9	Appendix IV	Lithium	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.077
4_2_120	MW-9	Appendix IV	Mercury	mg/l	8	100%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.000027
4_2_121	MW-9	Appendix IV	Molybdenum	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.029
4_2_127	MW-9	Appendix IV	Radium-226+228	pci/l	8	12%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.50
4_2_129	MW-9	Appendix IV	Selenium	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0056
4_2_134	MW-9	Appendix IV	Thallium	mg/l	7	86%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.000074

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Code	Well	Type	Constituent	Unit	n	% NDs	Range of Sampling Period	Method	UCL
1_2_104	MW-10	Appendix IV	Antimony	mg/l	19	5%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.0018
1_2_105	MW-10	Appendix IV	Arsenic	mg/l	19	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0044
1_2_106	MW-10	Appendix IV	Barium	mg/l	19	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.074
1_2_107	MW-10	Appendix IV	Beryllium	mg/l	18	74%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00040
1_2_109	MW-10	Appendix IV	Cadmium	mg/l	19	20%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.00062
1_2_112	MW-10	Appendix IV	Chromium, Total	mg/l	19	10%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.0052
1_2_113	MW-10	Appendix IV	Cobalt	mg/l	19	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0044
1_2_116	MW-10	Appendix IV	Fluoride (App IV)	mg/l	19	5%	12-08-2015 to 04-09-2022	Normal MLE UCL	2.2
1_2_117	MW-10	Appendix IV	Lead	mg/l	19	65%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00045
1_2_118	MW-10	Appendix IV	Lithium	mg/l	19	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.11
1_2_120	MW-10	Appendix IV	Mercury	mg/l	19	100%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00013
1_2_121	MW-10	Appendix IV	Molybdenum	mg/l	19	0%	12-08-2015 to 04-09-2022	Normal UCL	0.057
1_2_127	MW-10	Appendix IV	Radium-226+228	pci/l	19	20%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.89
1_2_129	MW-10	Appendix IV	Selenium	mg/l	19	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.011
1_2_134	MW-10	Appendix IV	Thallium	mg/l	18	84%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00028
2_2_104	MW-7	Appendix IV	Antimony	mg/l	11	36%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.00069
2_2_105	MW-7	Appendix IV	Arsenic	mg/l	11	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0082
2_2_106	MW-7	Appendix IV	Barium	mg/l	11	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.18
2_2_107	MW-7	Appendix IV	Beryllium	mg/l	10	30%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.0015
2_2_109	MW-7	Appendix IV	Cadmium	mg/l	11	18%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.00050
2_2_112	MW-7	Appendix IV	Chromium, Total	mg/l	11	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.052
2_2_113	MW-7	Appendix IV	Cobalt	mg/l	12	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.011
2_2_116	MW-7	Appendix IV	Fluoride (App IV)	mg/l	10	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	1.7
2_2_117	MW-7	Appendix IV	Lead	mg/l	12	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.028
2_2_118	MW-7	Appendix IV	Lithium	mg/l	11	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.079
2_2_120	MW-7	Appendix IV	Mercury	mg/l	11	73%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00013
2_2_121	MW-7	Appendix IV	Molybdenum	mg/l	11	0%	12-08-2015 to 04-09-2022	Lognormal H-UCL	0.018
2_2_127	MW-7	Appendix IV	Radium-226+228	pci/l	11	9%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	2.6
2_2_129	MW-7	Appendix IV	Selenium	mg/l	12	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.011
2_2_134	MW-7	Appendix IV	Thallium	mg/l	10	40%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.00050
3_2_104	MW-8	Appendix IV	Antimony	mg/l	7	29%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.0016
3_2_105	MW-8	Appendix IV	Arsenic	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.0030
3_2_106	MW-8	Appendix IV	Barium	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.050
3_2_107	MW-8	Appendix IV	Beryllium	mg/l	6	67%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00040
3_2_109	MW-8	Appendix IV	Cadmium	mg/l	7	14%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.0032
3_2_112	MW-8	Appendix IV	Chromium, Total	mg/l	7	14%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.014
3_2_113	MW-8	Appendix IV	Cobalt	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.0065
3_2_116	MW-8	Appendix IV	Fluoride (App IV)	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	1.8
3_2_117	MW-8	Appendix IV	Lead	mg/l	7	14%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.0022
3_2_118	MW-8	Appendix IV	Lithium	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.11
3_2_120	MW-8	Appendix IV	Mercury	mg/l	7	100%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00013
3_2_121	MW-8	Appendix IV	Molybdenum	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.15
3_2_127	MW-8	Appendix IV	Radium-226+228	pci/l	7	14%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	1.7
3_2_129	MW-8	Appendix IV	Selenium	mg/l	7	0%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.12
3_2_134	MW-8	Appendix IV	Thallium	mg/l	6	83%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00028
4_2_104	MW-9	Appendix IV	Antimony	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0027
4_2_105	MW-9	Appendix IV	Arsenic	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0052
4_2_106	MW-9	Appendix IV	Barium	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.093
4_2_107	MW-9	Appendix IV	Beryllium	mg/l	7	57%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00054
4_2_109	MW-9	Appendix IV	Cadmium	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0035
4_2_112	MW-9	Appendix IV	Chromium, Total	mg/l	8	25%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.0071
4_2_113	MW-9	Appendix IV	Cobalt	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0050
4_2_116	MW-9	Appendix IV	Fluoride (App IV)	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	2.9
4_2_117	MW-9	Appendix IV	Lead	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.0092
4_2_118	MW-9	Appendix IV	Lithium	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.15
4_2_120	MW-9	Appendix IV	Mercury	mg/l	8	100%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.000027
4_2_121	MW-9	Appendix IV	Molybdenum	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.047
4_2_127	MW-9	Appendix IV	Radium-226+228	pci/l	8	12%	12-08-2015 to 04-09-2022	Gamma MLE Bootstrap UCL	0.86
4_2_129	MW-9	Appendix IV	Selenium	mg/l	8	0%	12-08-2015 to 04-09-2022	Adjusted Gamma UCL	0.012
4_2_134	MW-9	Appendix IV	Thallium	mg/l	7	86%	12-08-2015 to 04-09-2022	Nonparametric UCL around the Median	0.00028

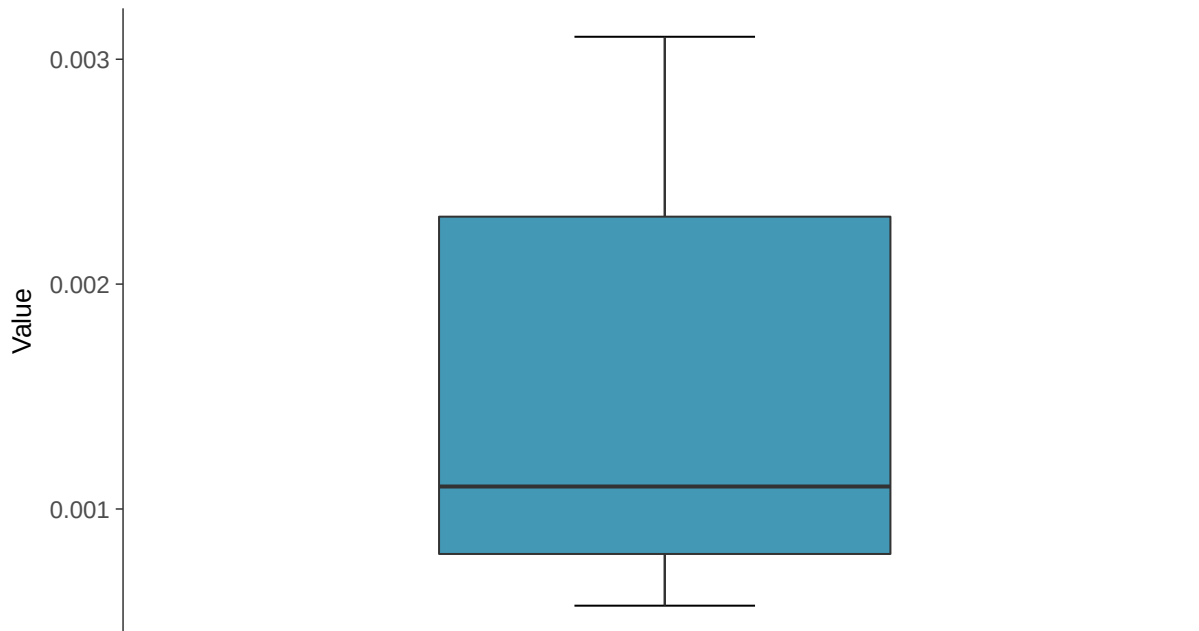
Appendix IV: Antimony, MW-10

ID: 1_2_104



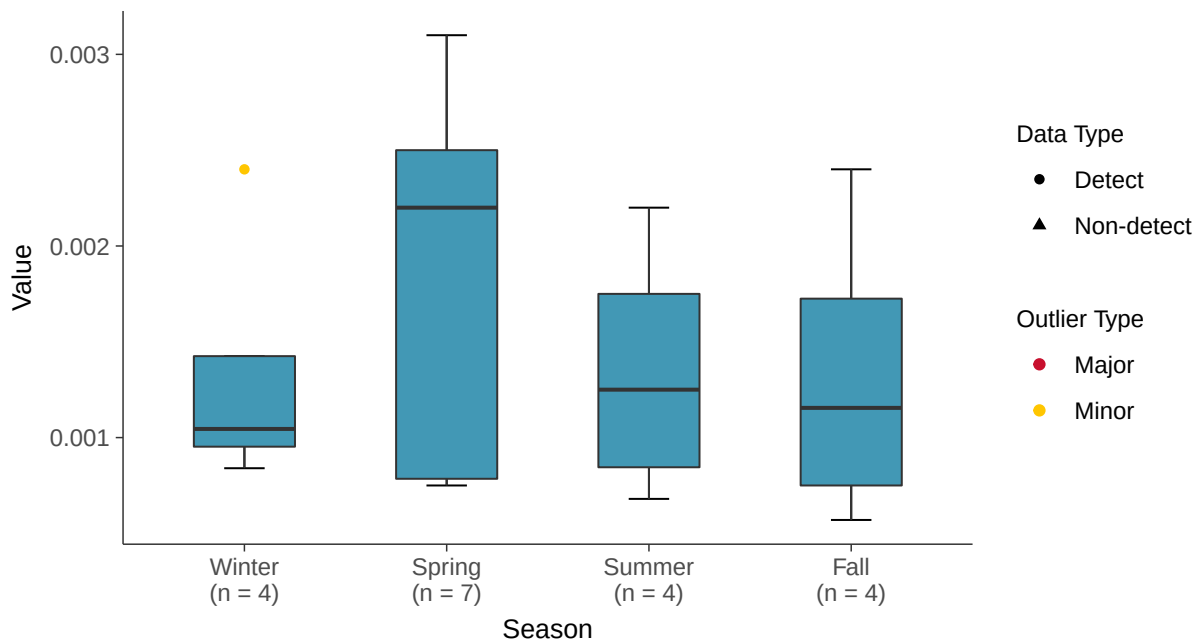
Boxplot

Antimony, MW-10 (mg/l)



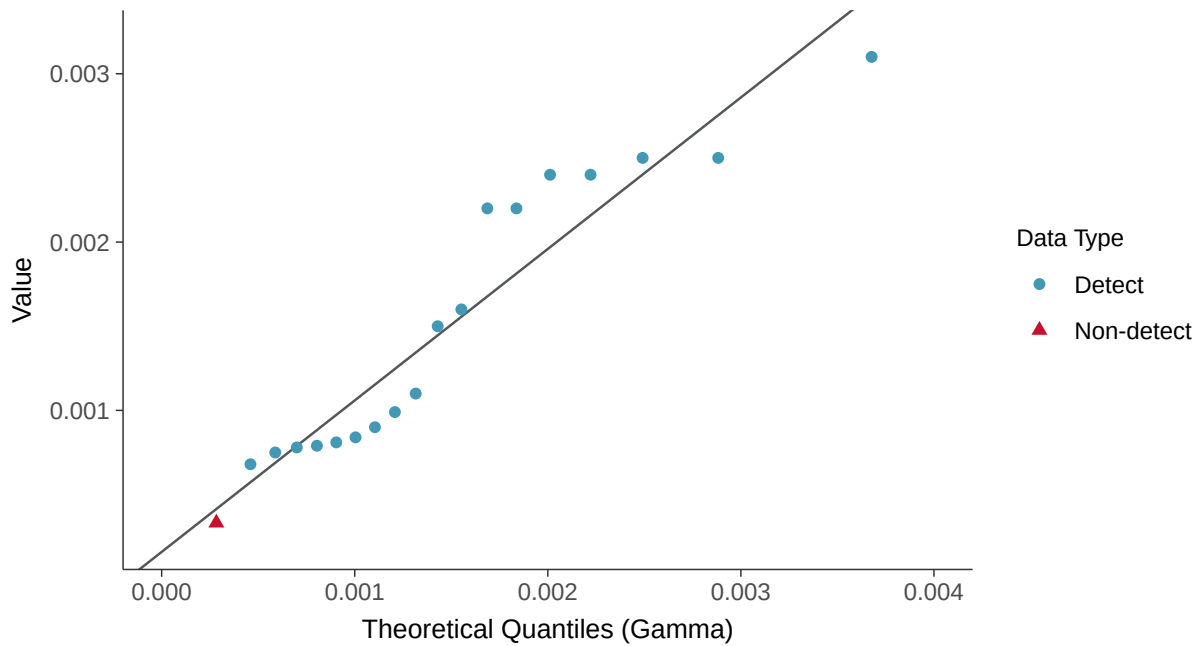
Boxplot by Season

Antimony, MW-10 (mg/l)



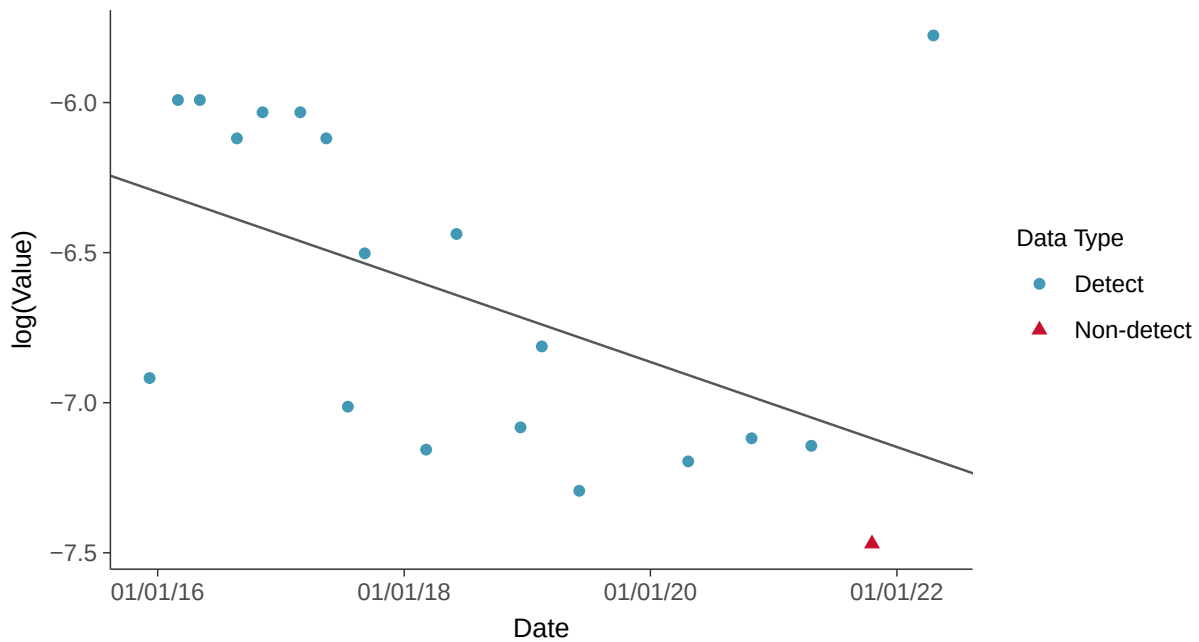
Gamma Q-Q plot using ROS Imputed Estimates

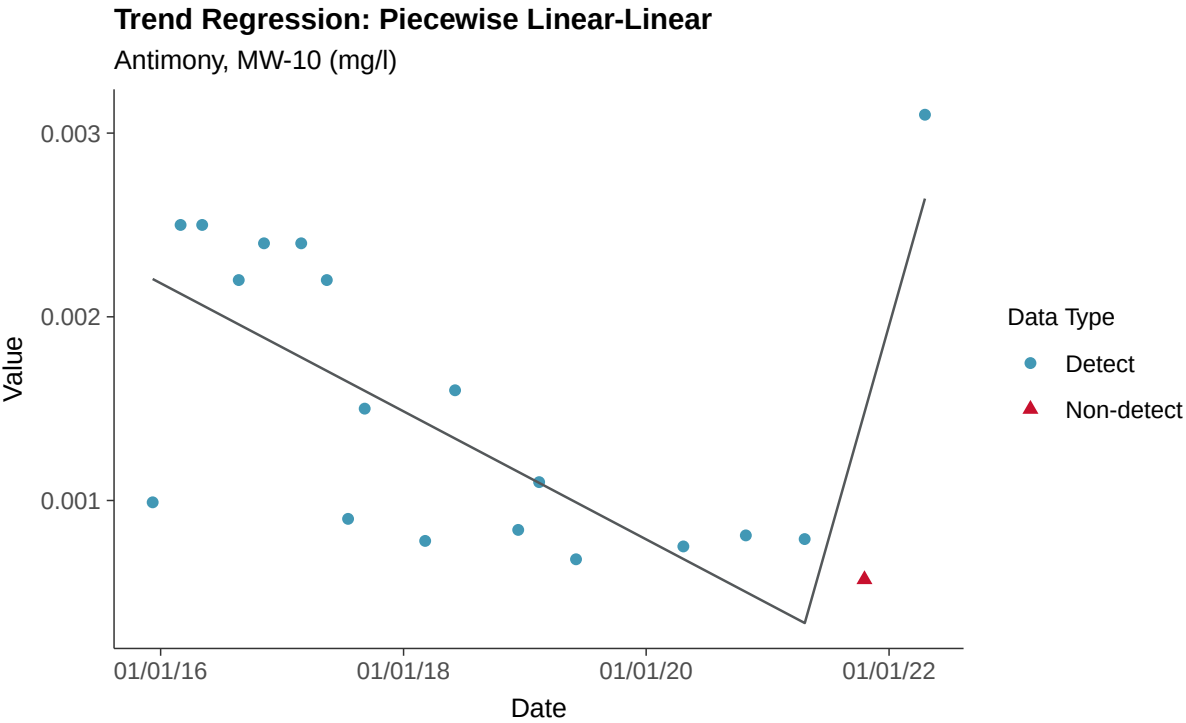
Antimony, MW-10 (mg/l)



Trend Regression: Lognormal MLE

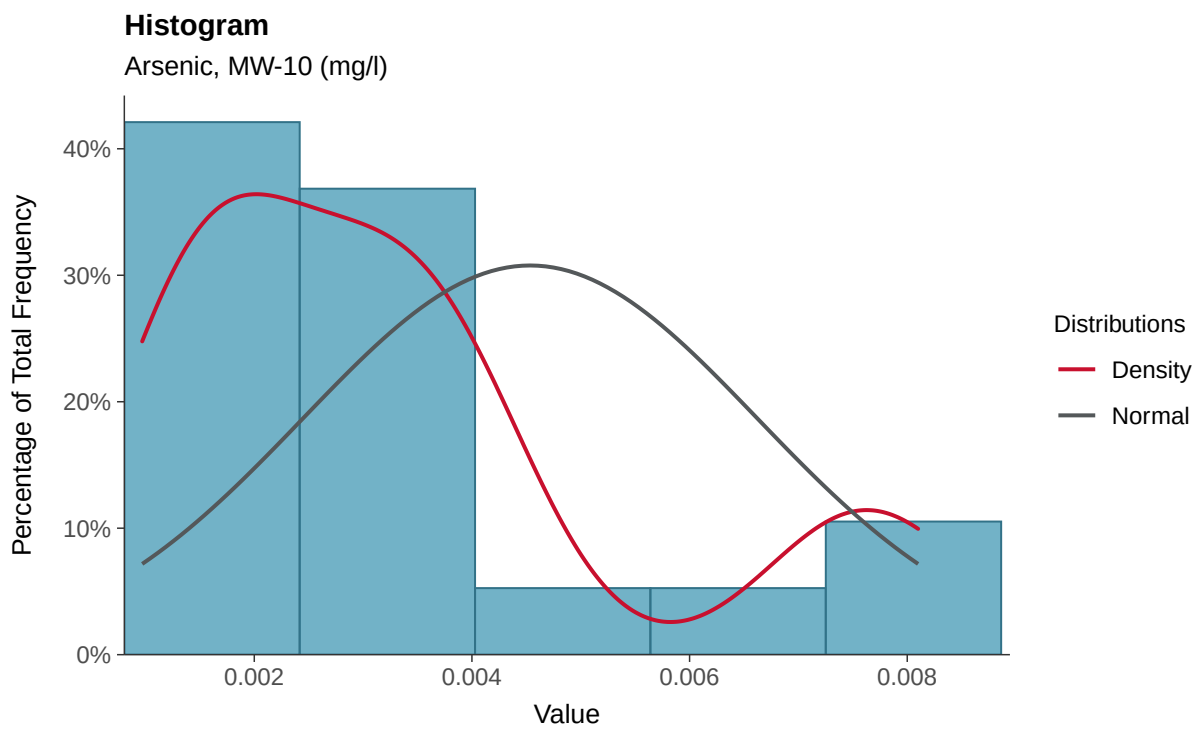
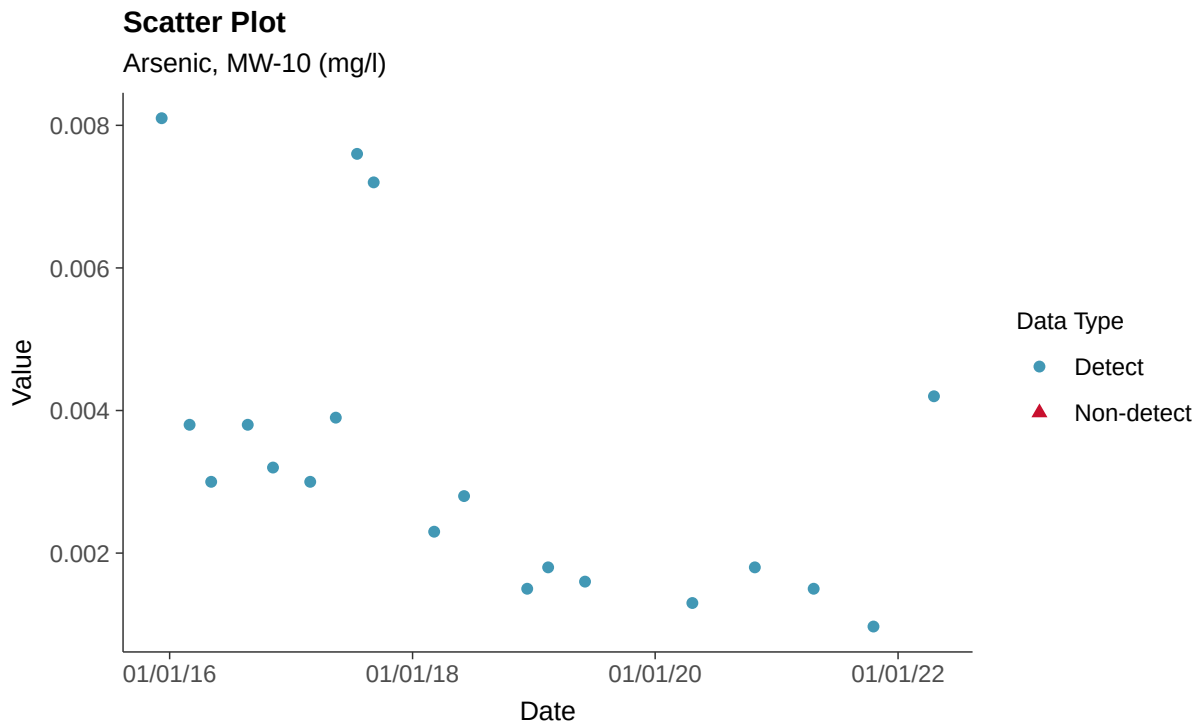
Antimony, MW-10 (mg/l)





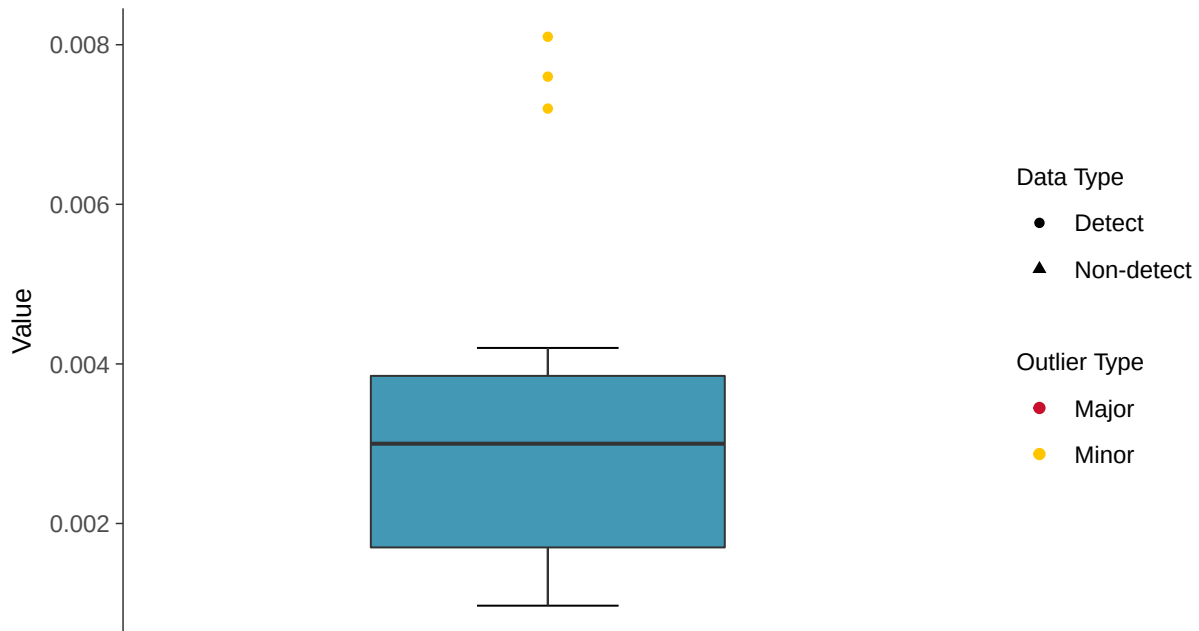
Appendix IV: Arsenic, MW-10

ID: 1_2_105



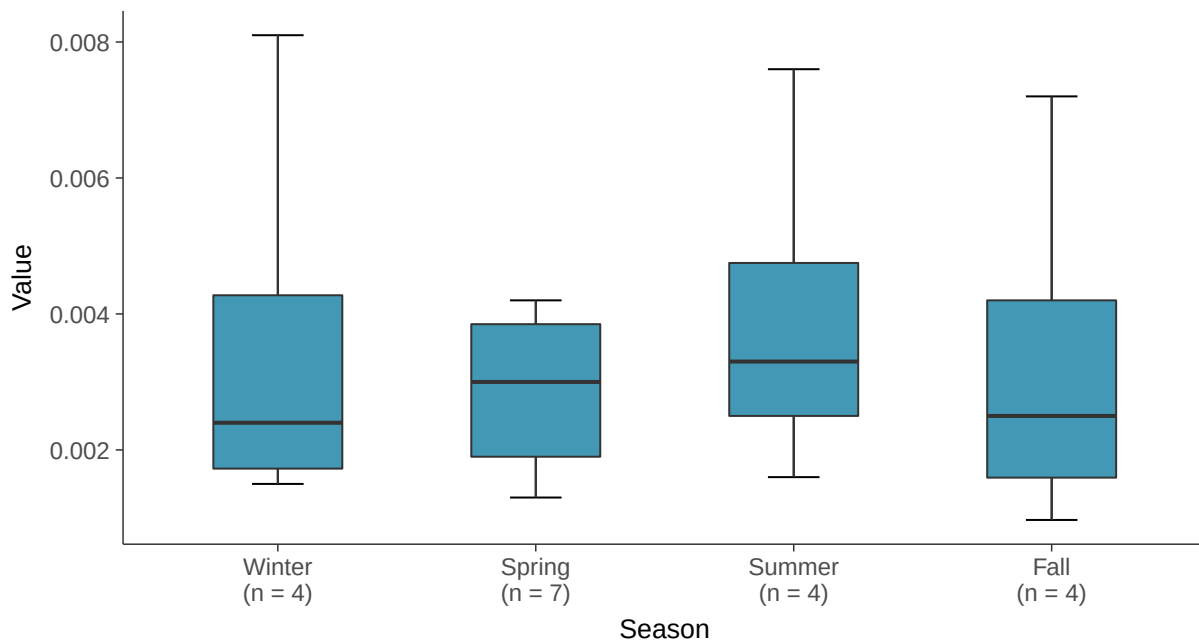
Boxplot

Arsenic, MW-10 (mg/l)



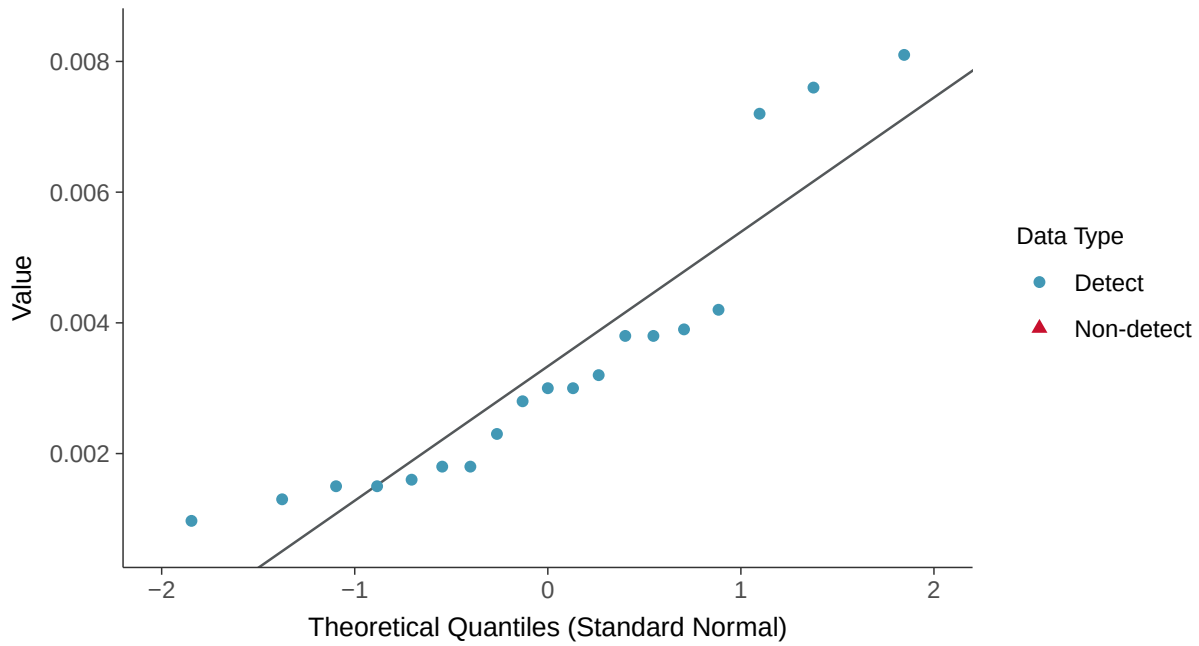
Boxplot by Season

Arsenic, MW-10 (mg/l)



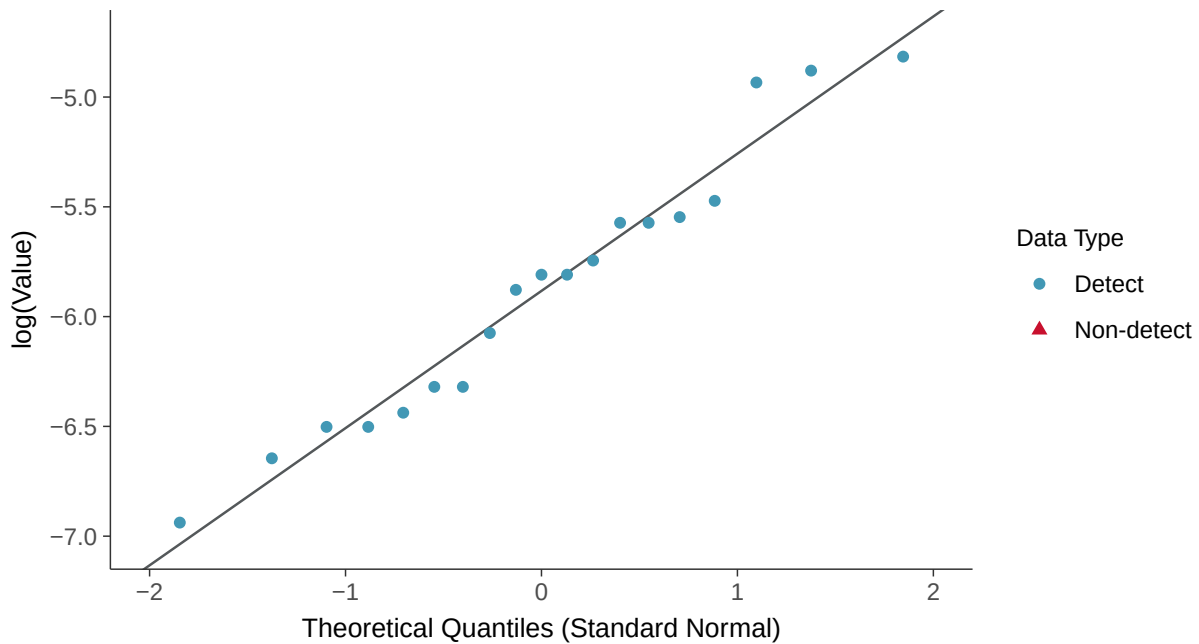
Normal Q-Q plot

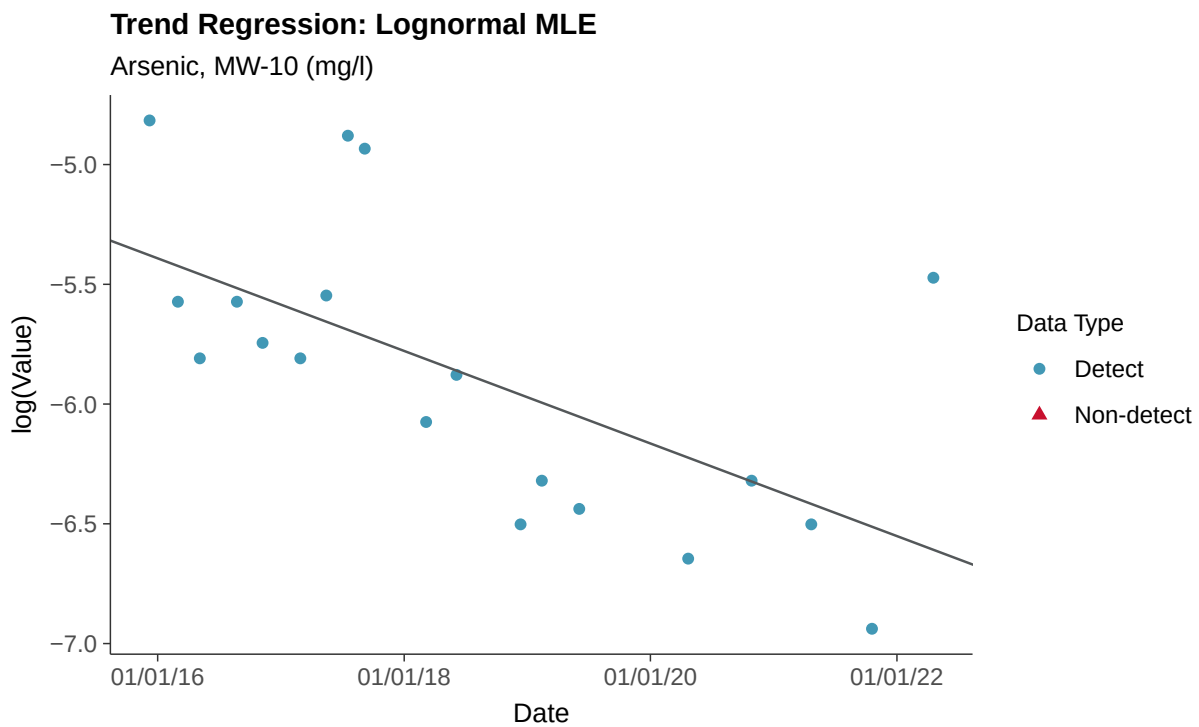
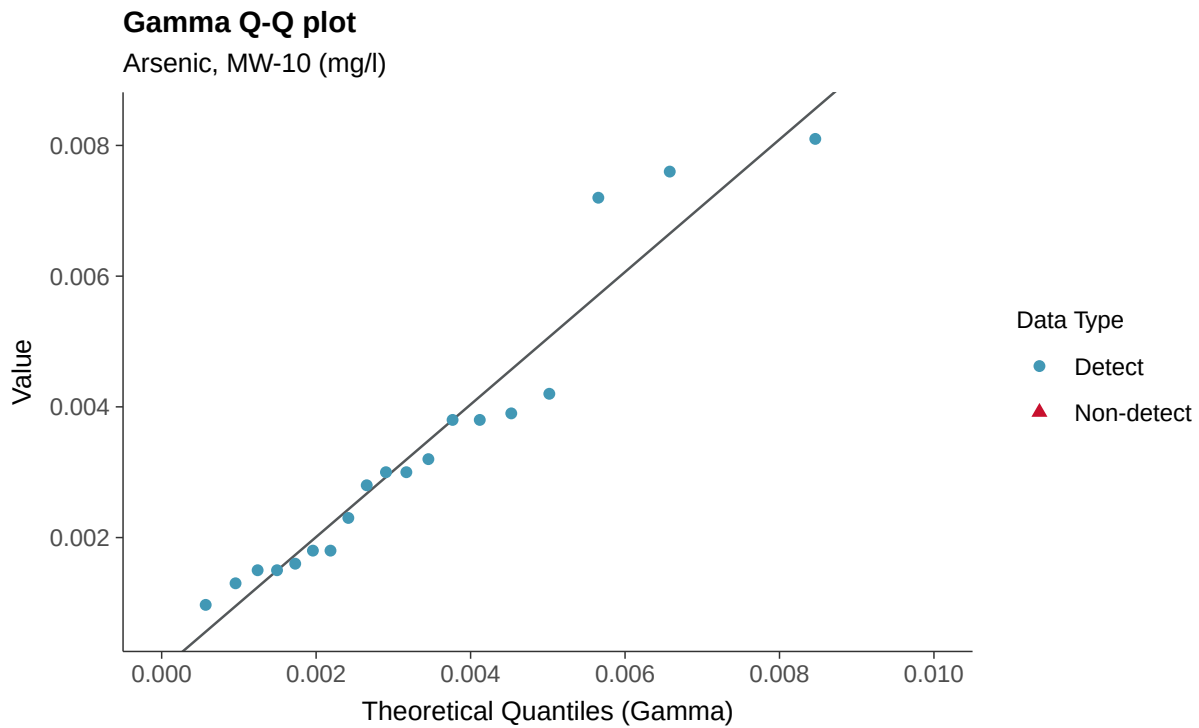
Arsenic, MW-10 (mg/l)

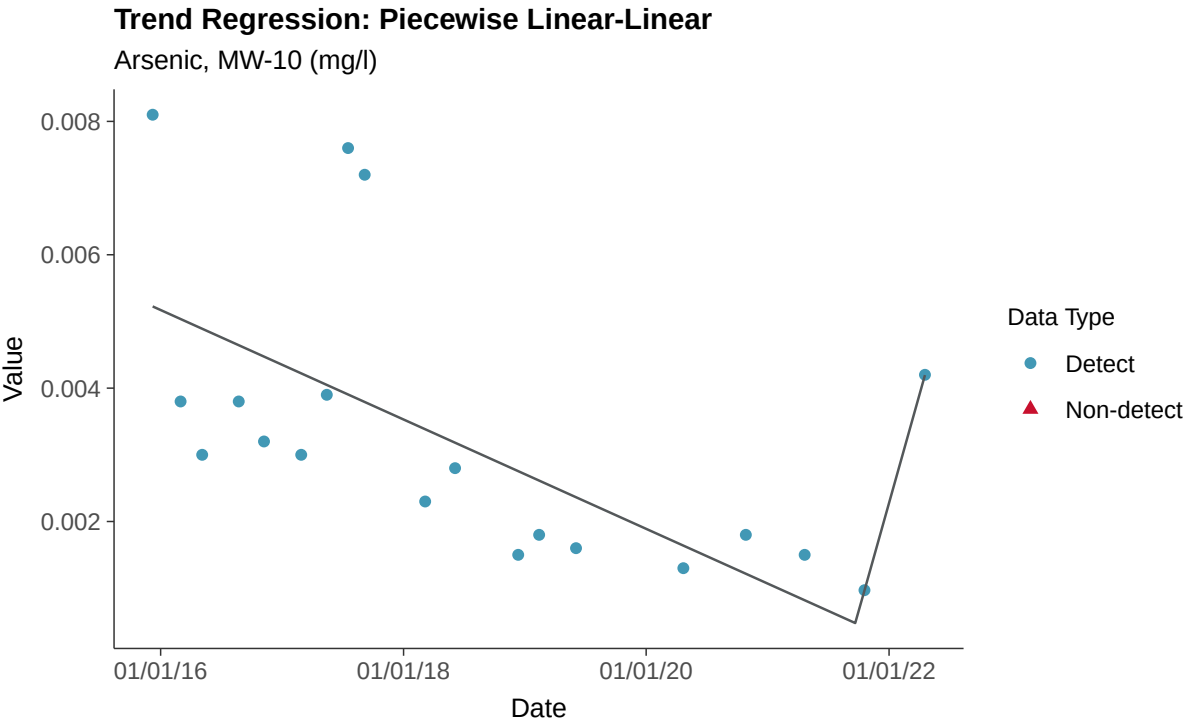


Lognormal Q-Q plot

Arsenic, MW-10 (mg/l)

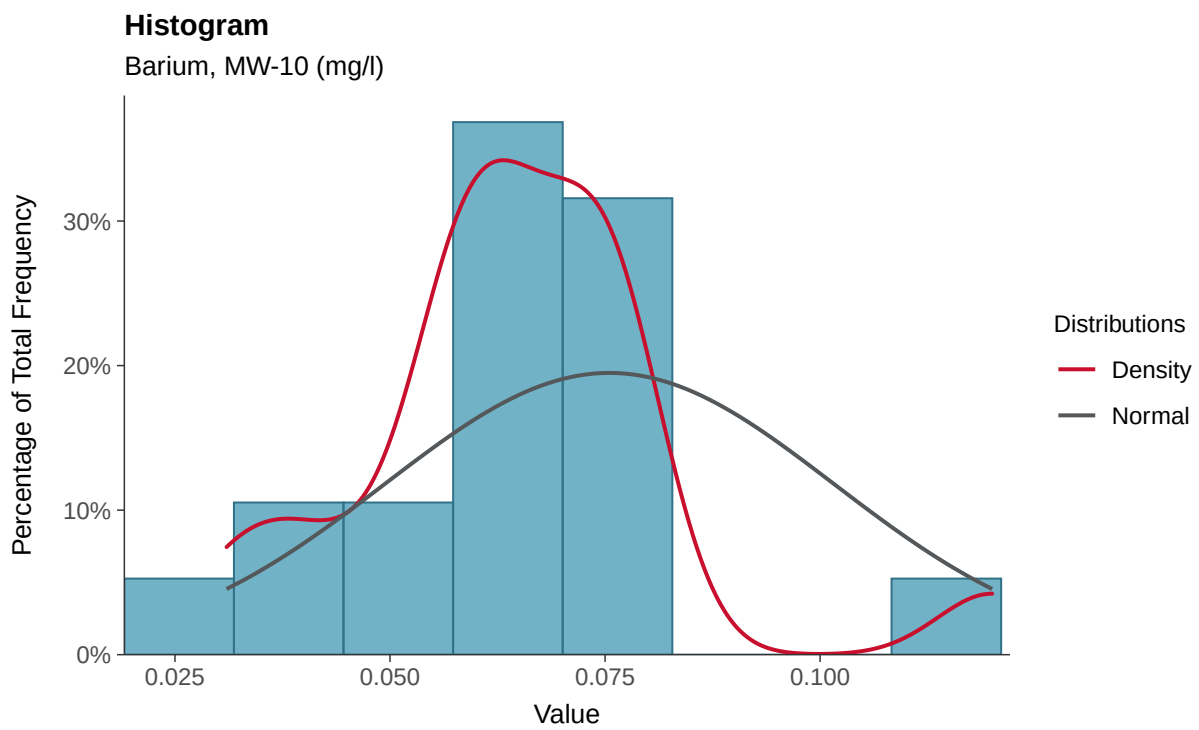
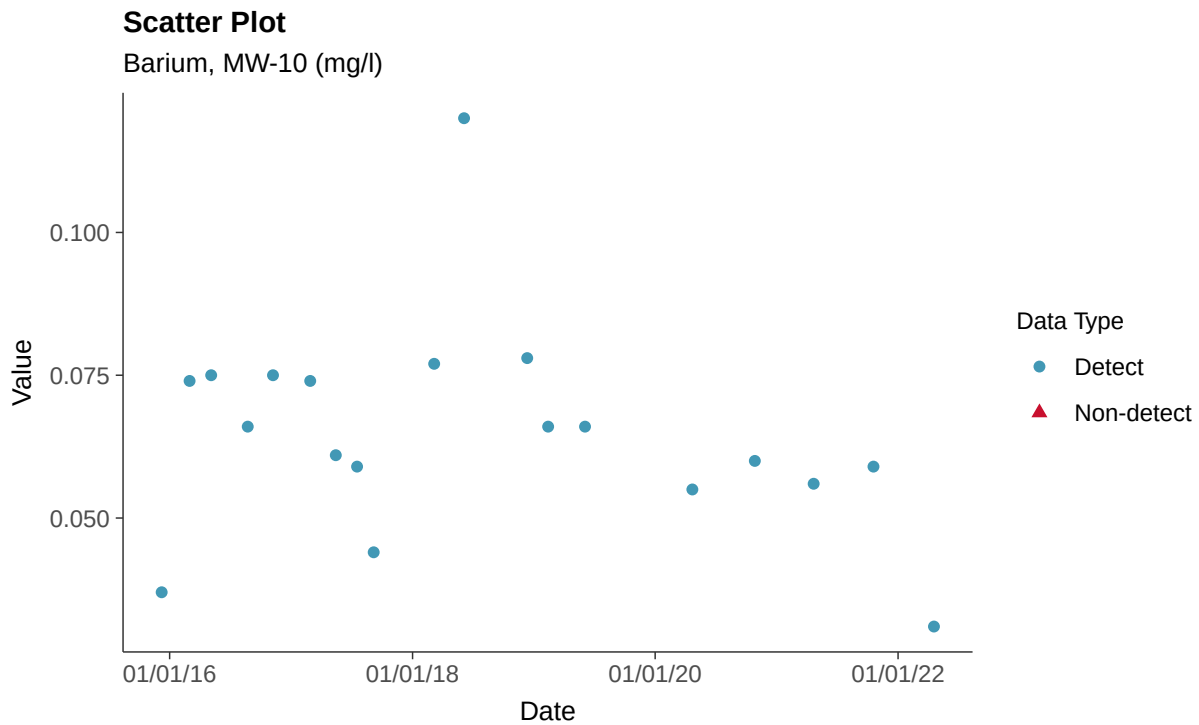






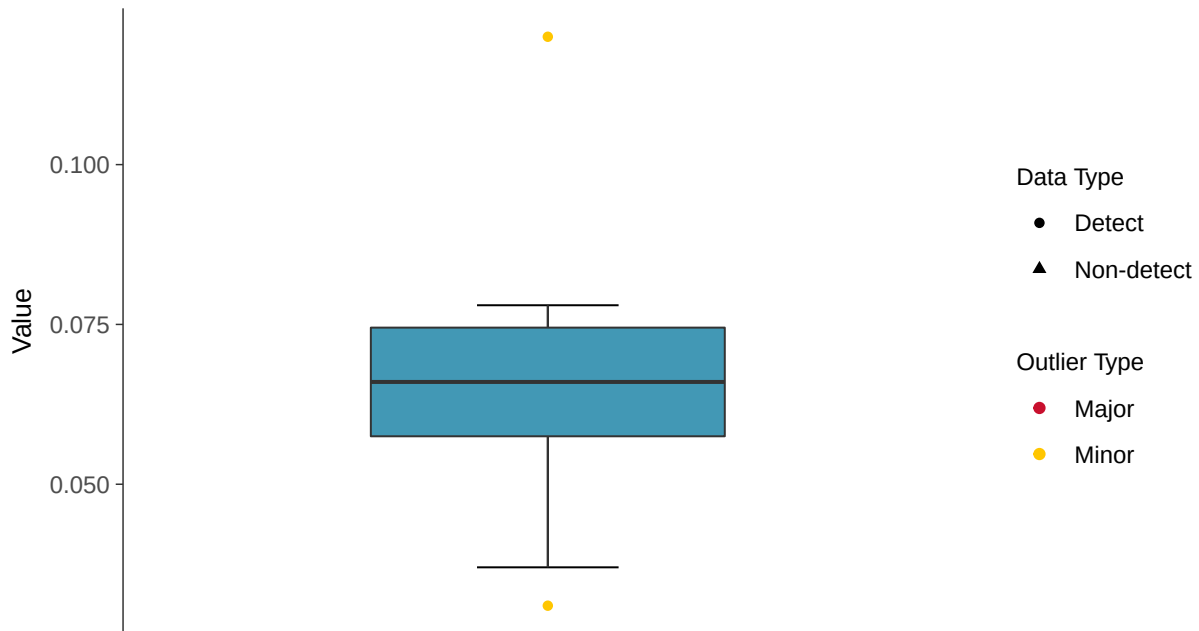
Appendix IV: Barium, MW-10

ID: 1_2_106



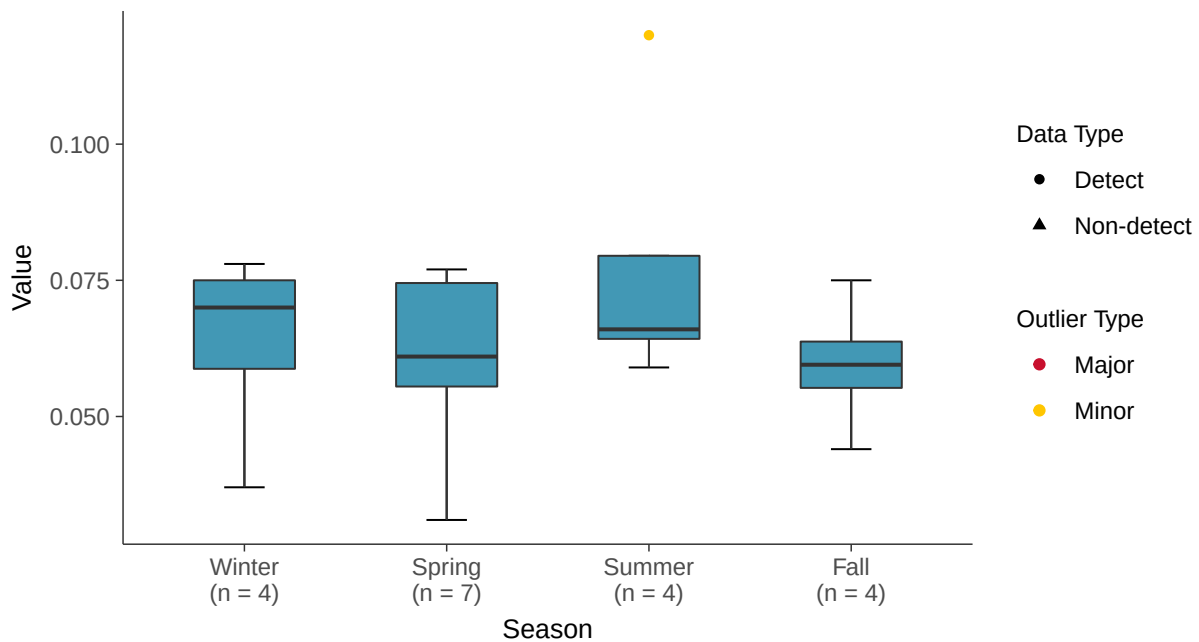
Boxplot

Barium, MW-10 (mg/l)



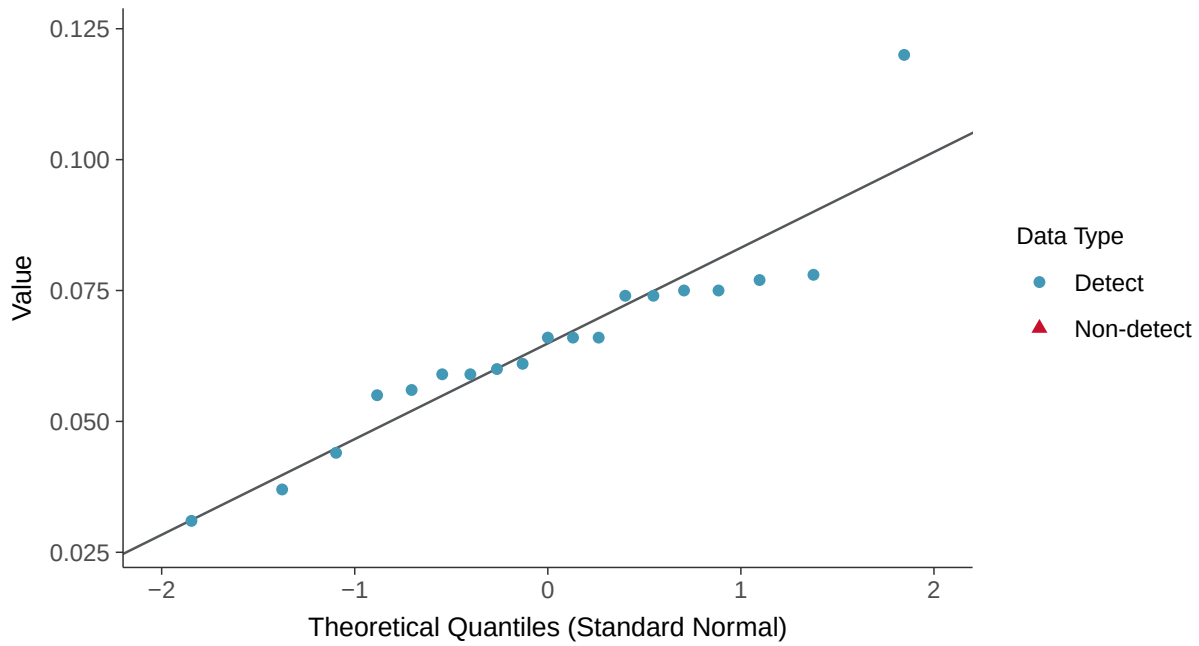
Boxplot by Season

Barium, MW-10 (mg/l)



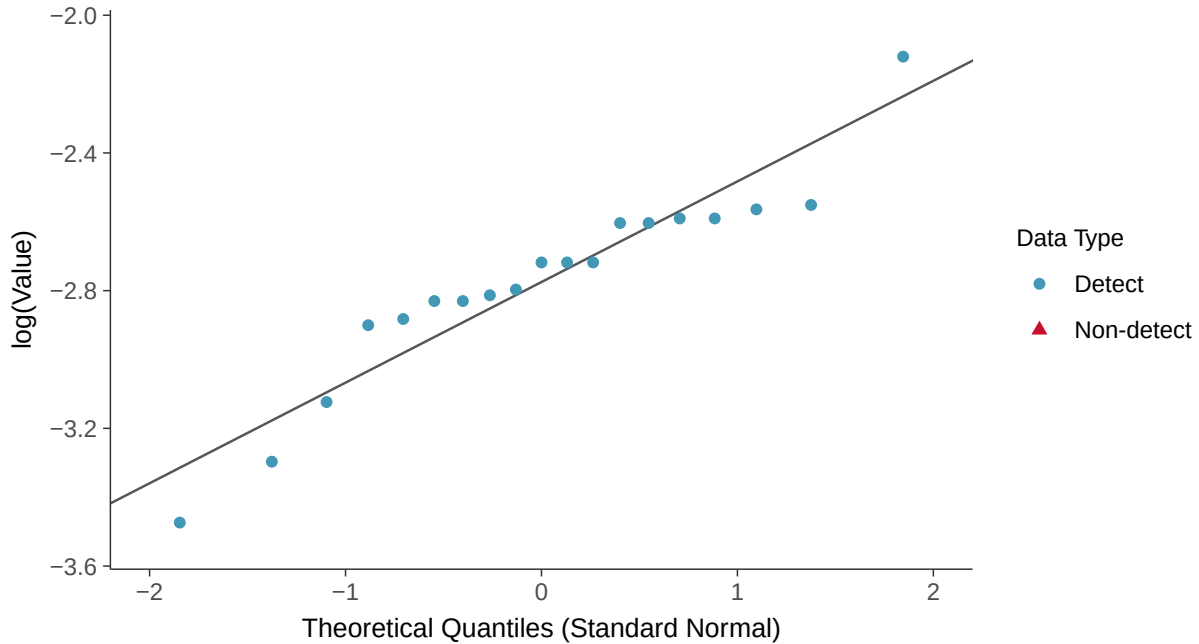
Normal Q-Q plot

Barium, MW-10 (mg/l)



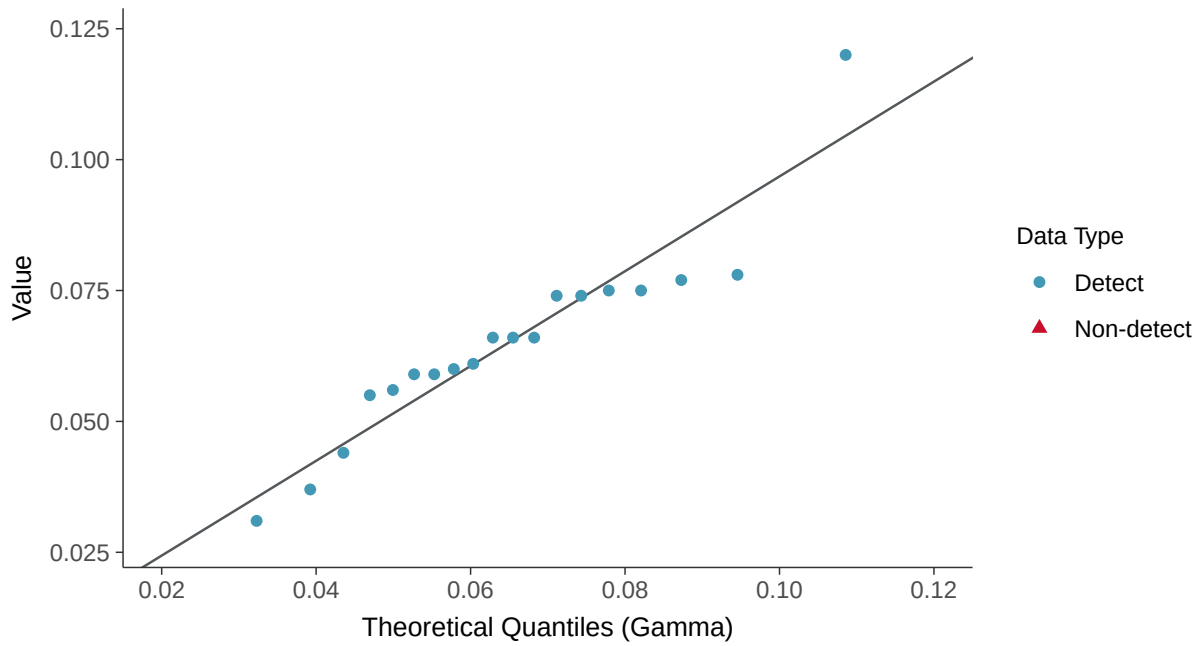
Lognormal Q-Q plot

Barium, MW-10 (mg/l)



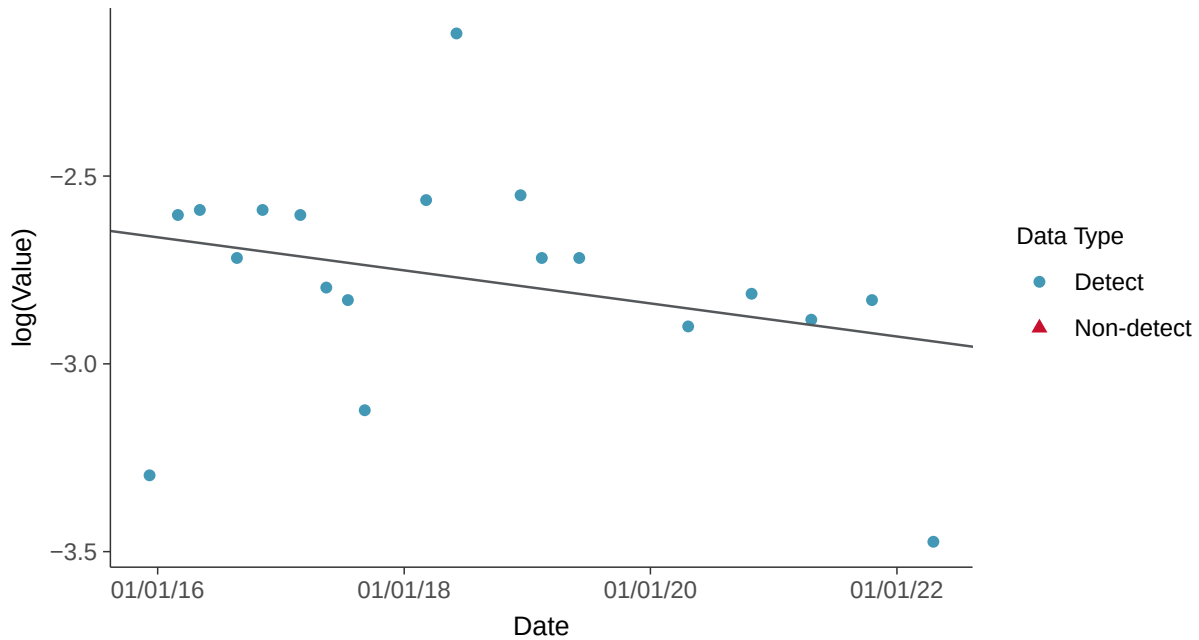
Gamma Q-Q plot

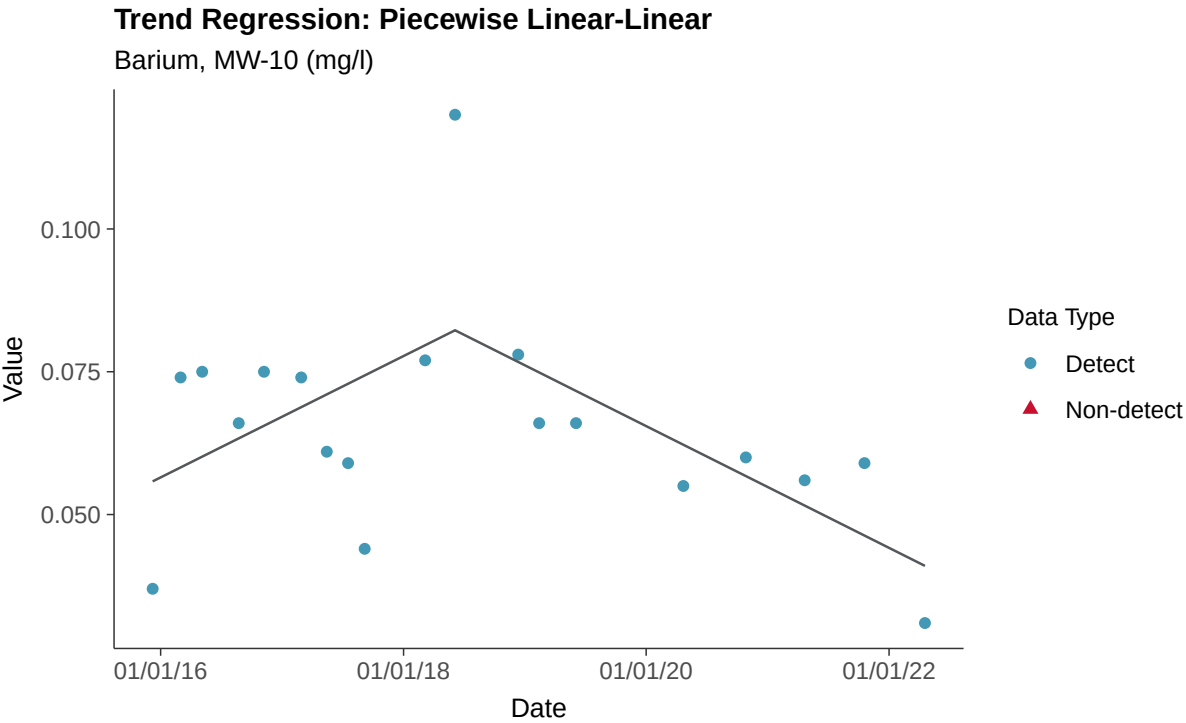
Barium, MW-10 (mg/l)



Trend Regression: Lognormal MLE

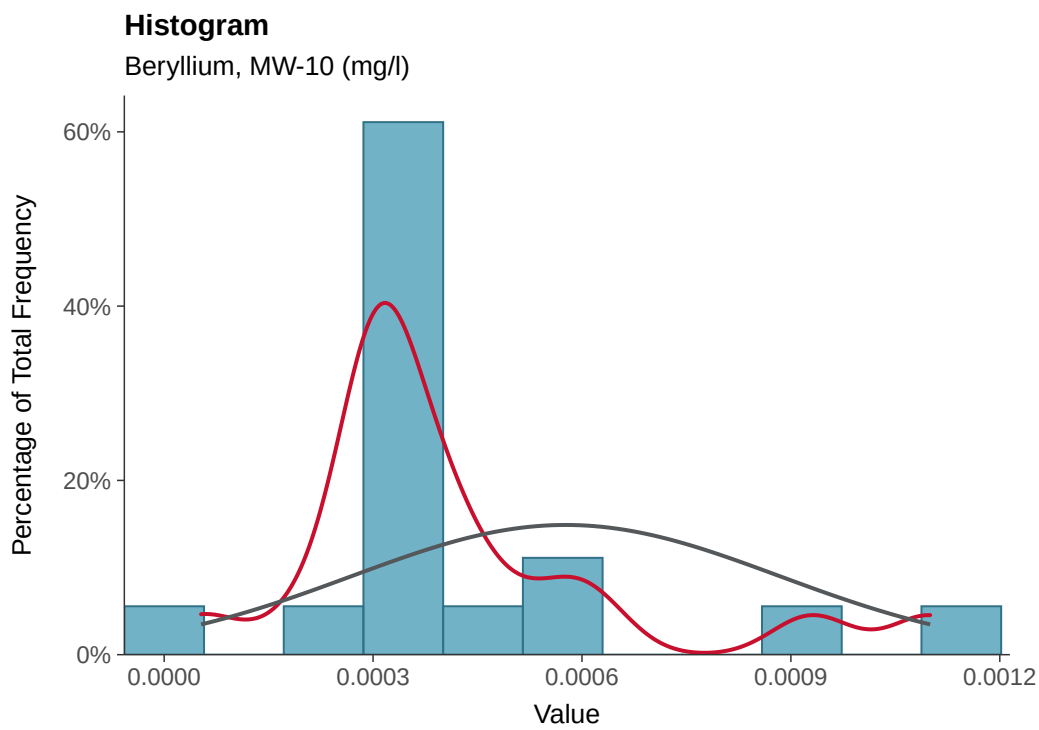
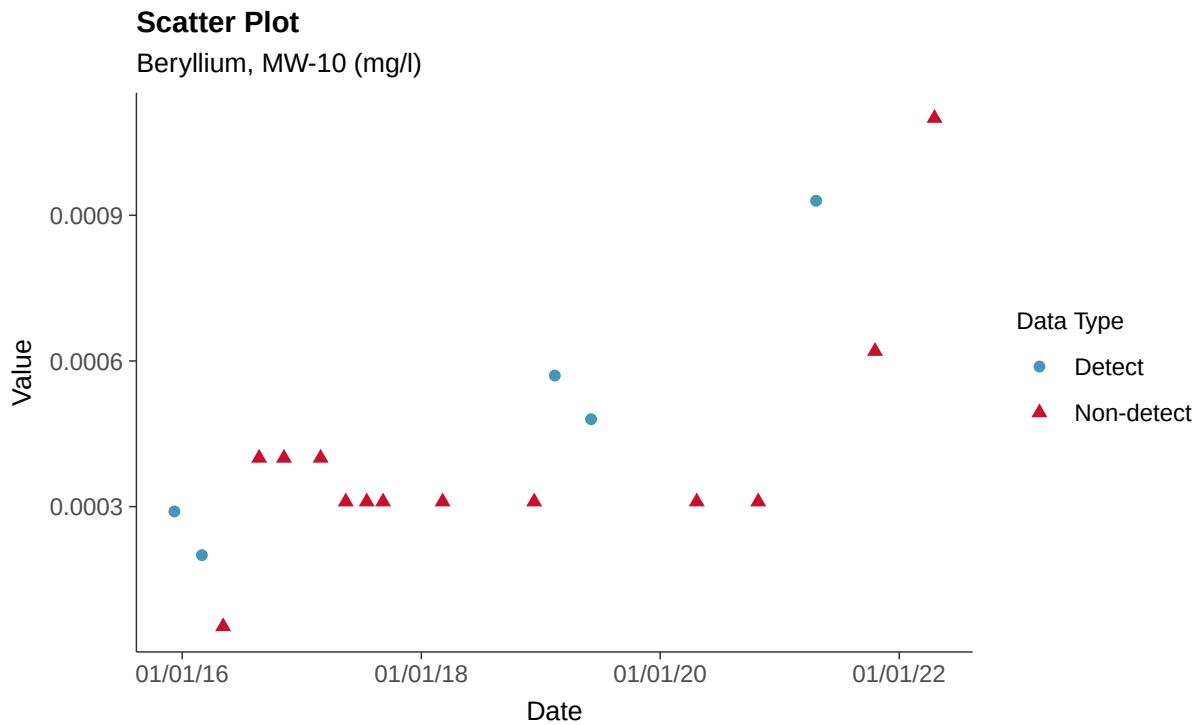
Barium, MW-10 (mg/l)





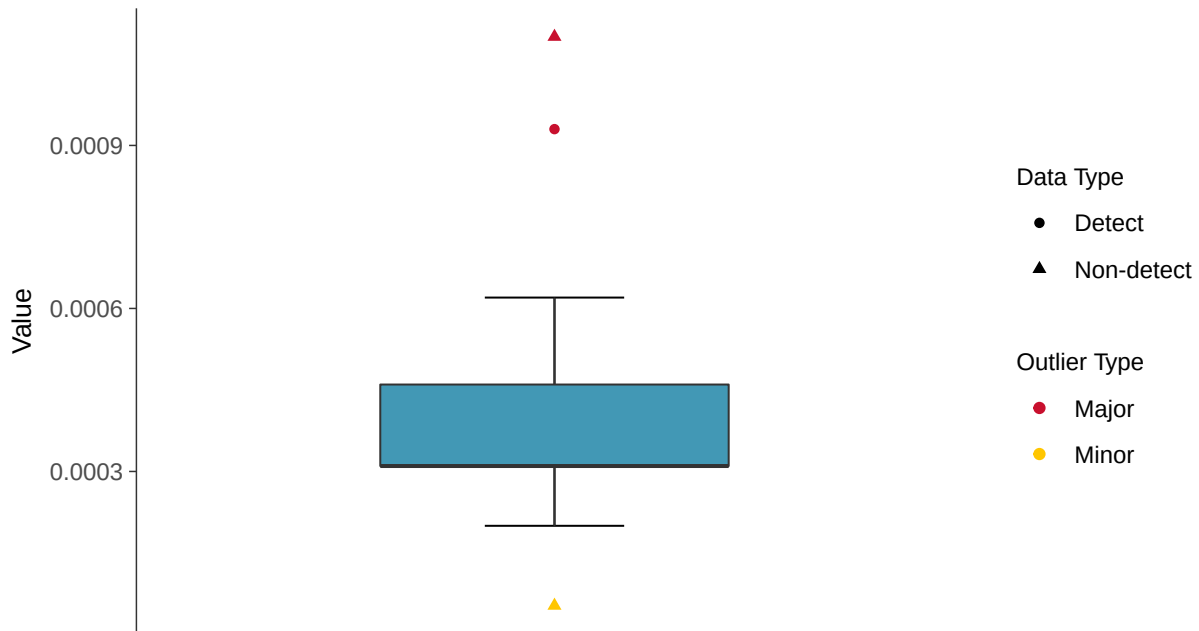
Appendix IV: Beryllium, MW-10

ID: 1_2_107



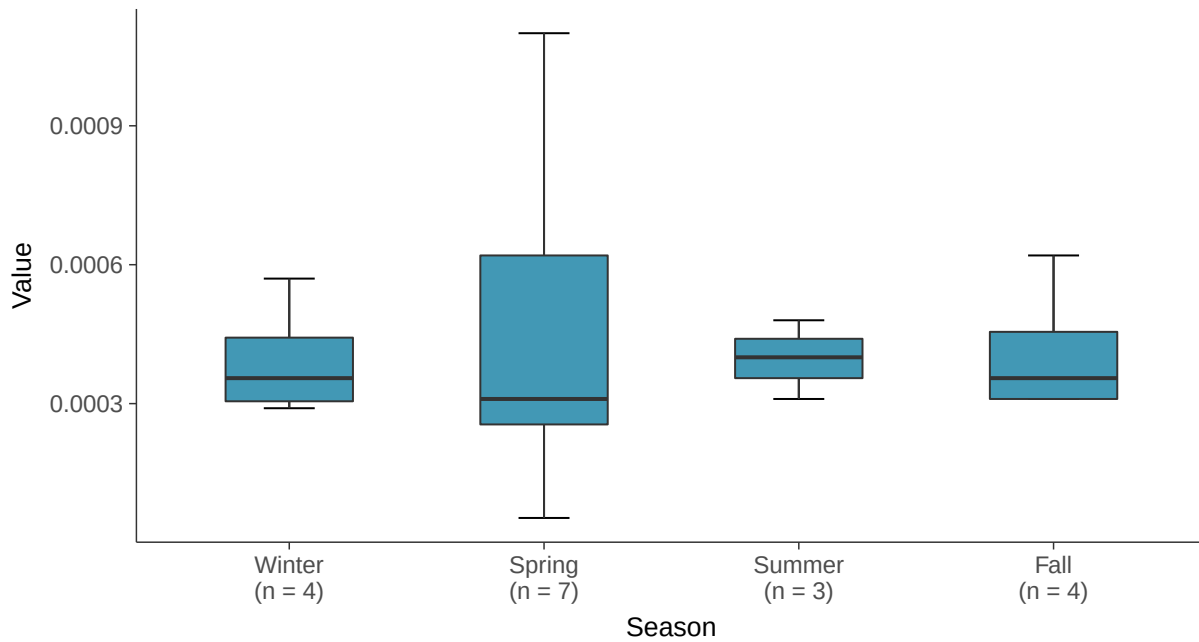
Boxplot

Beryllium, MW-10 (mg/l)



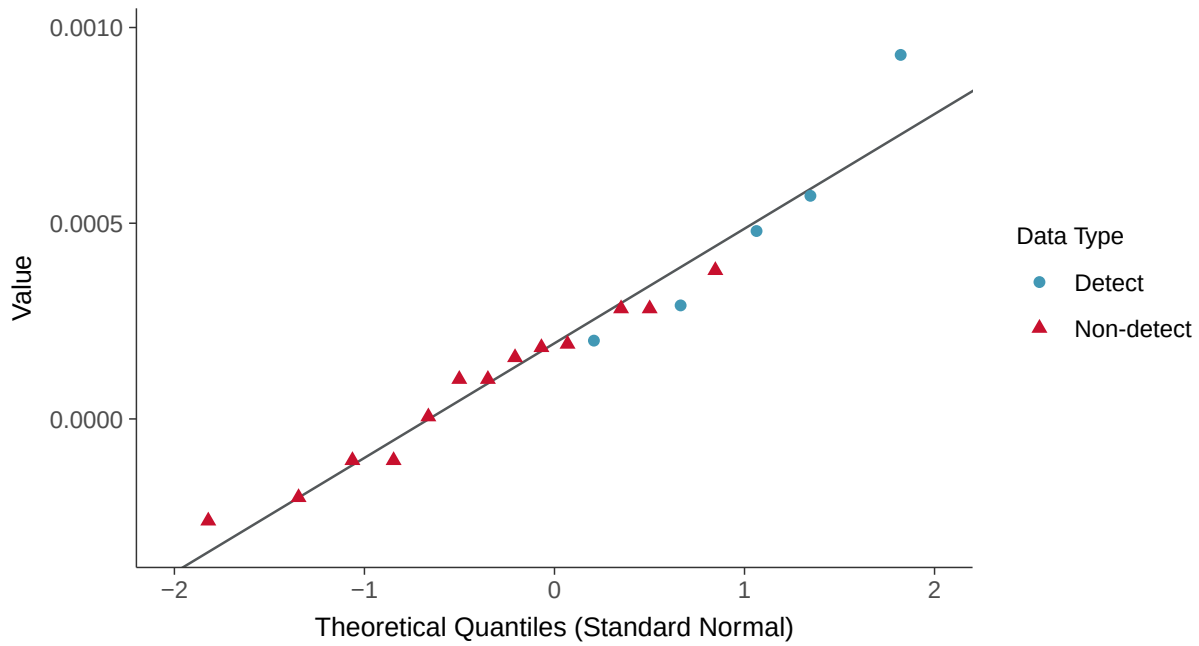
Boxplot by Season

Beryllium, MW-10 (mg/l)



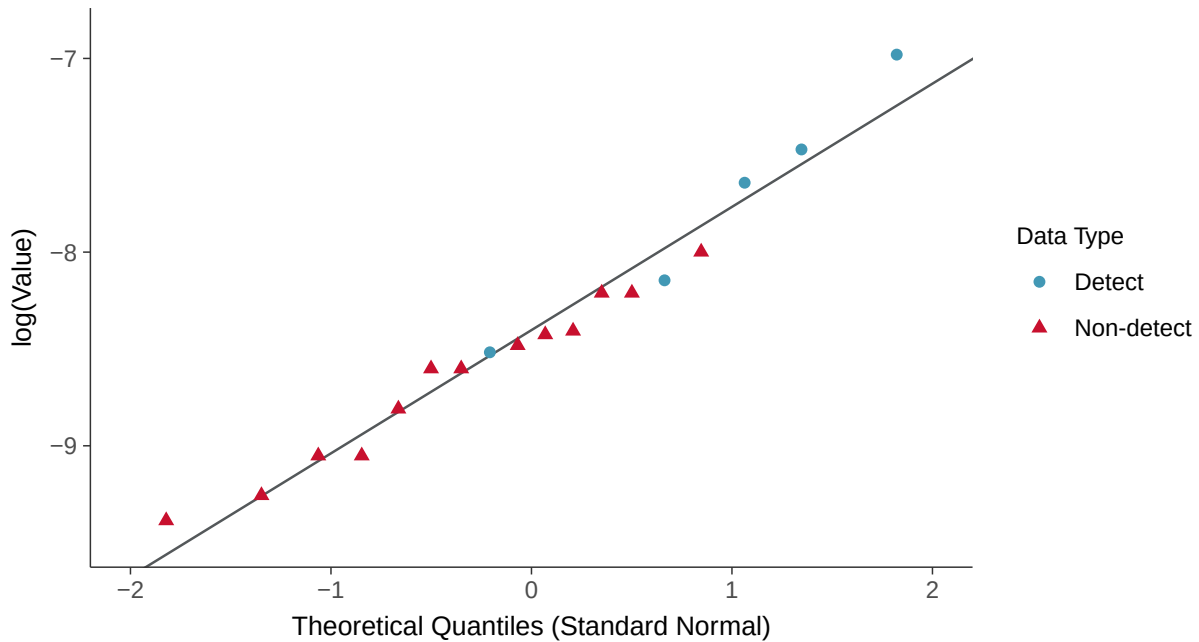
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-10 (mg/l)



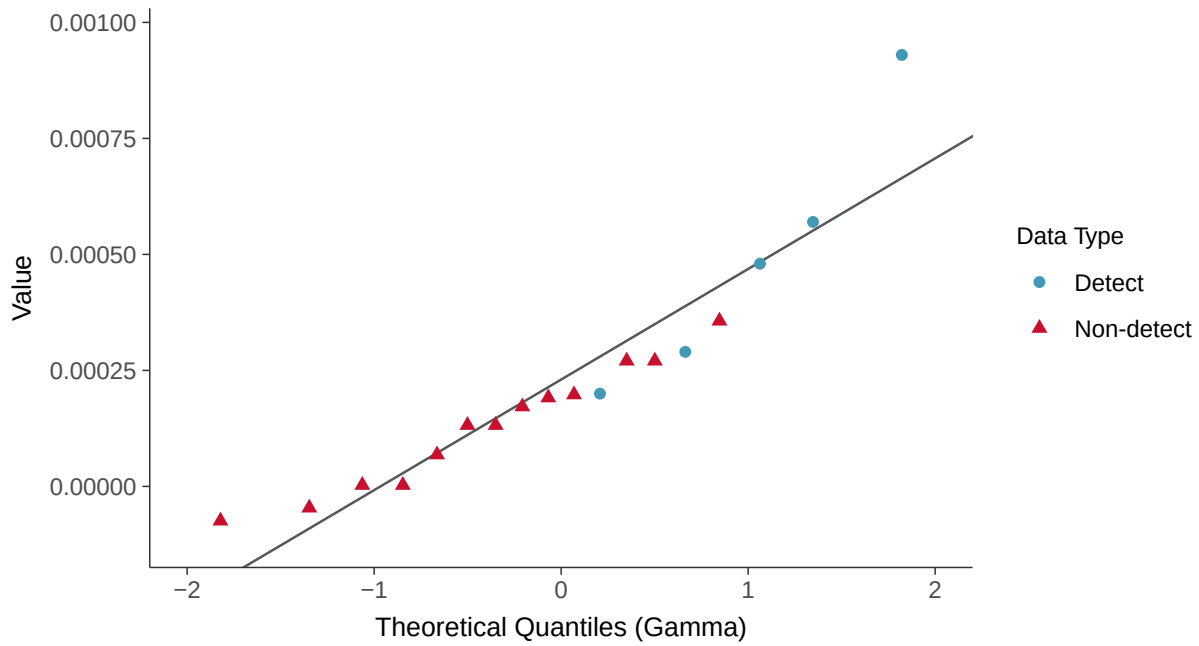
Lognormal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-10 (mg/l)



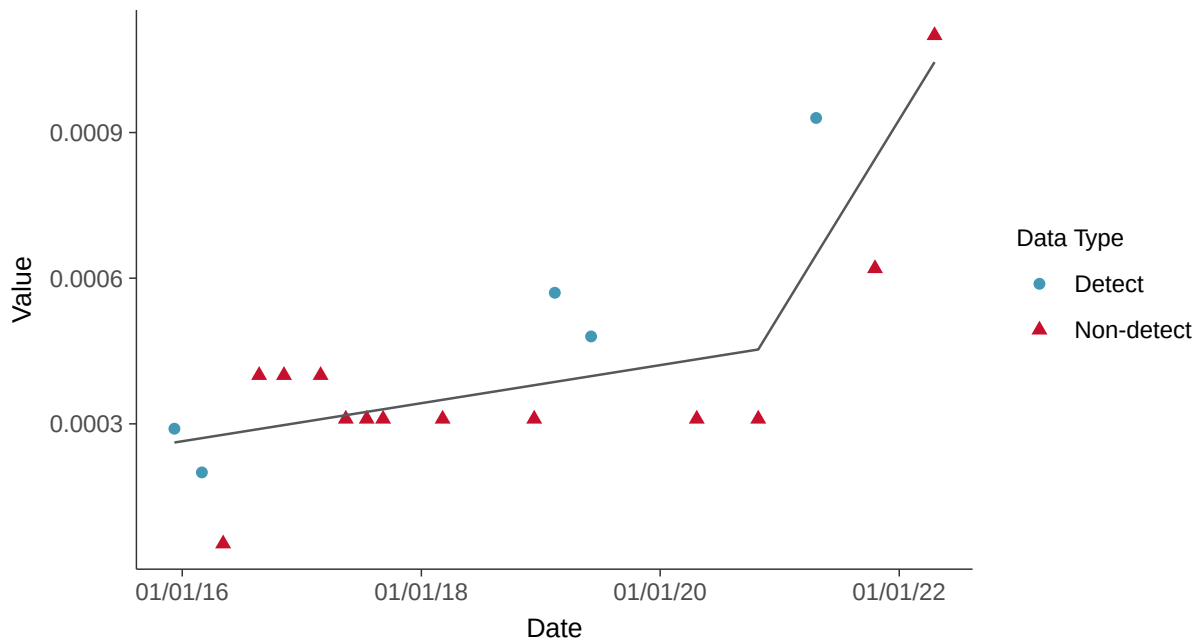
Gamma Q-Q plot using ROS Imputed Estimates

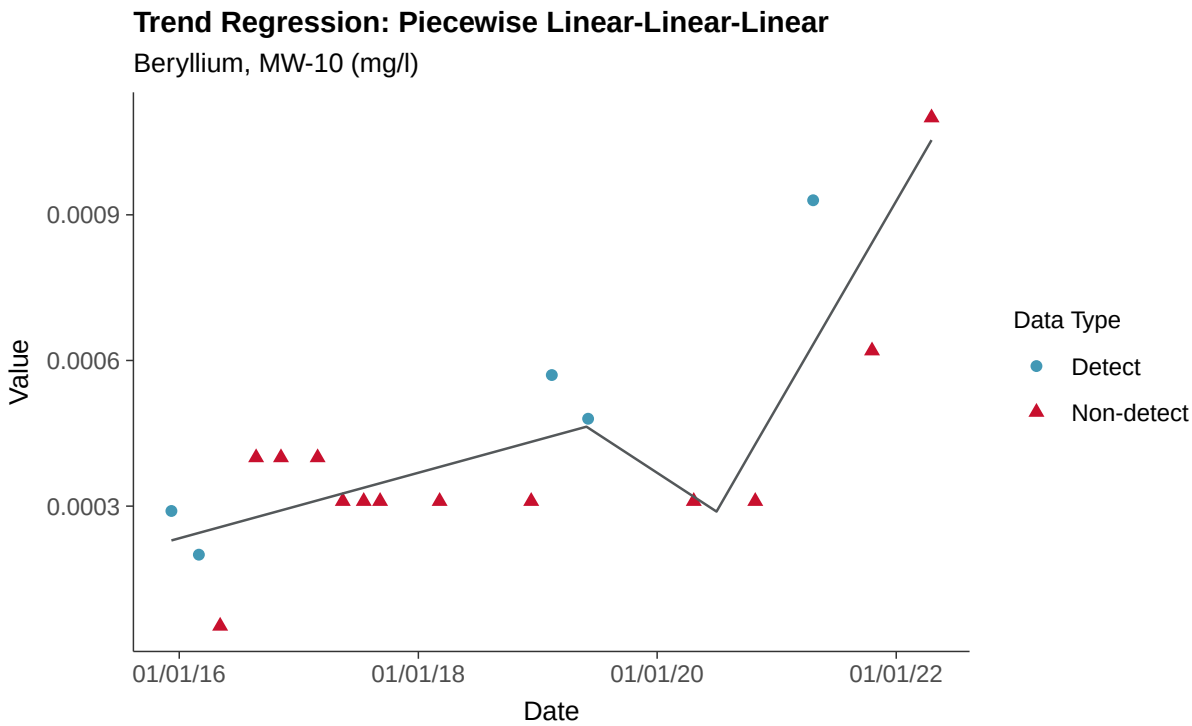
Beryllium, MW-10 (mg/l)



Trend Regression: Piecewise Linear-Linear

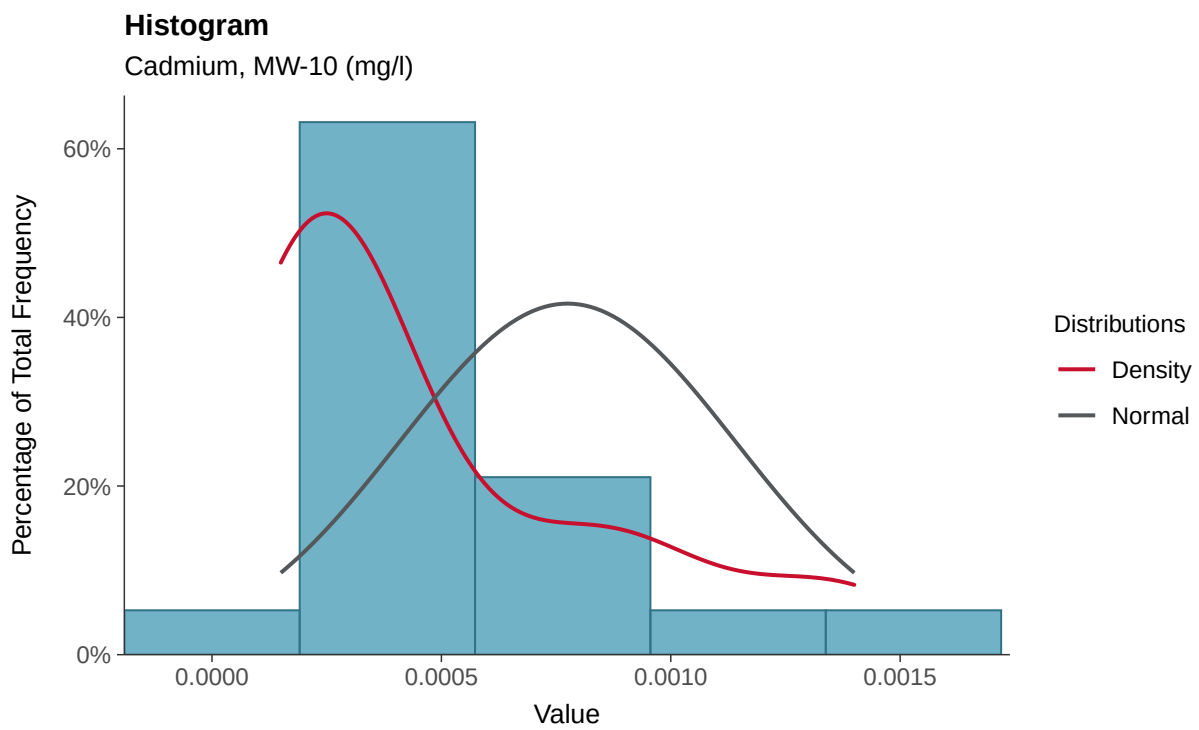
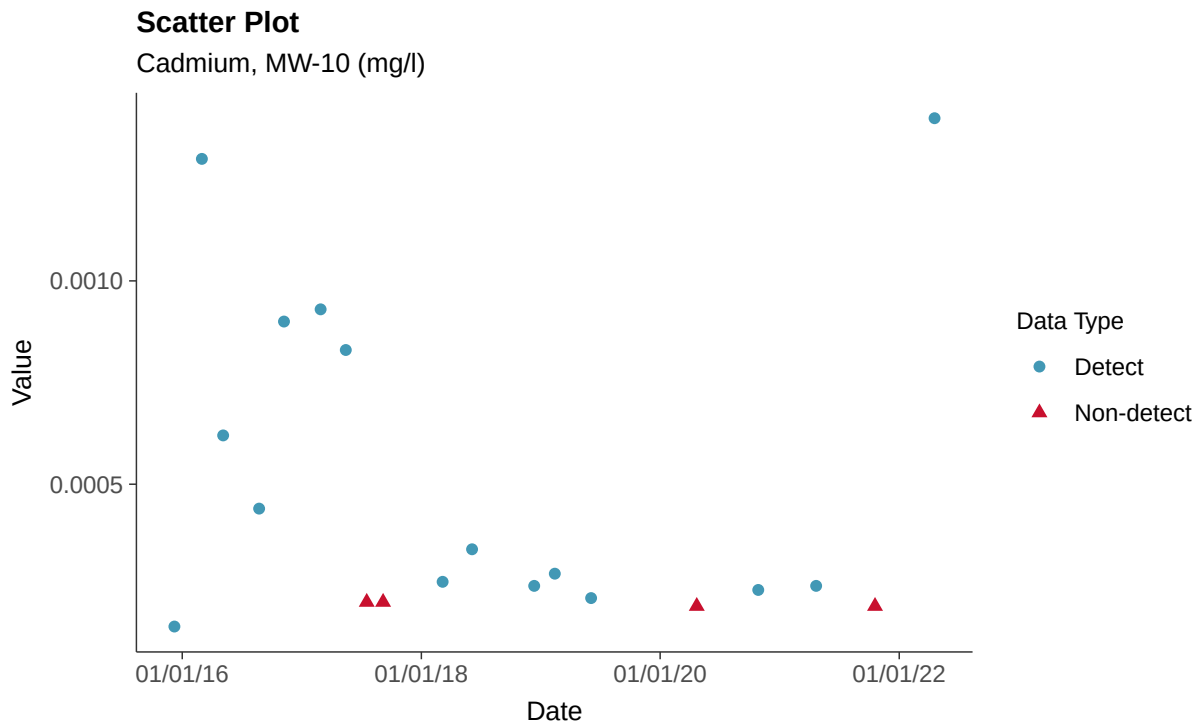
Beryllium, MW-10 (mg/l)

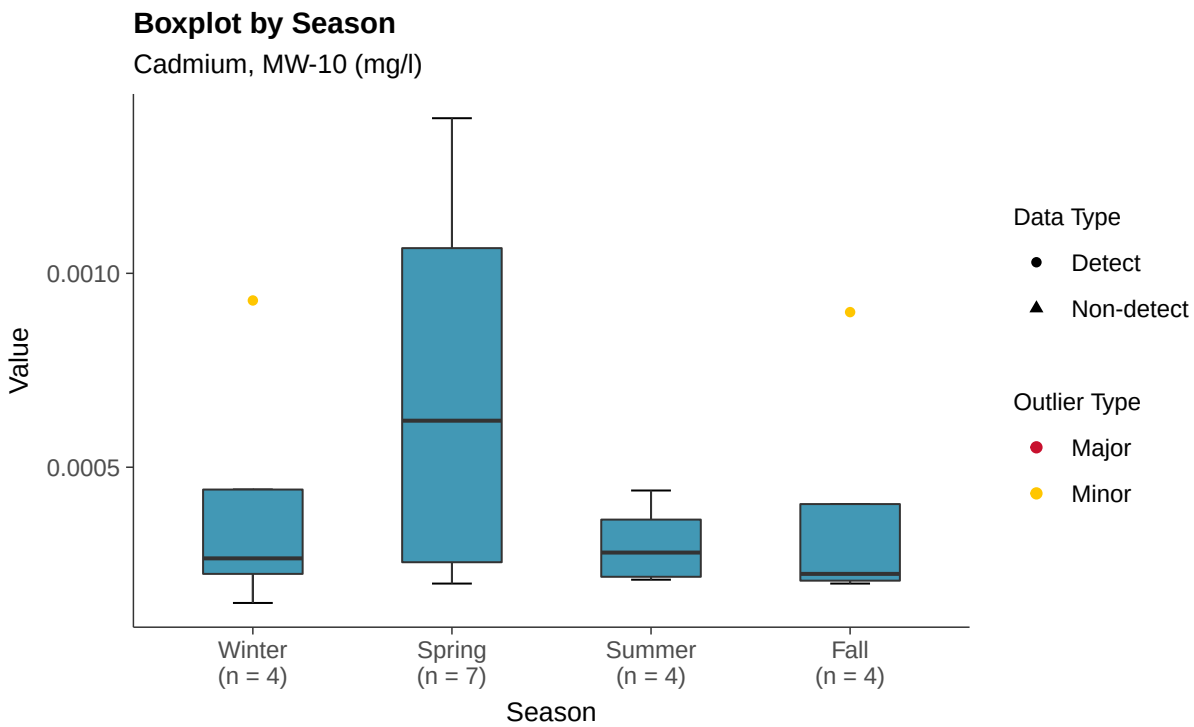
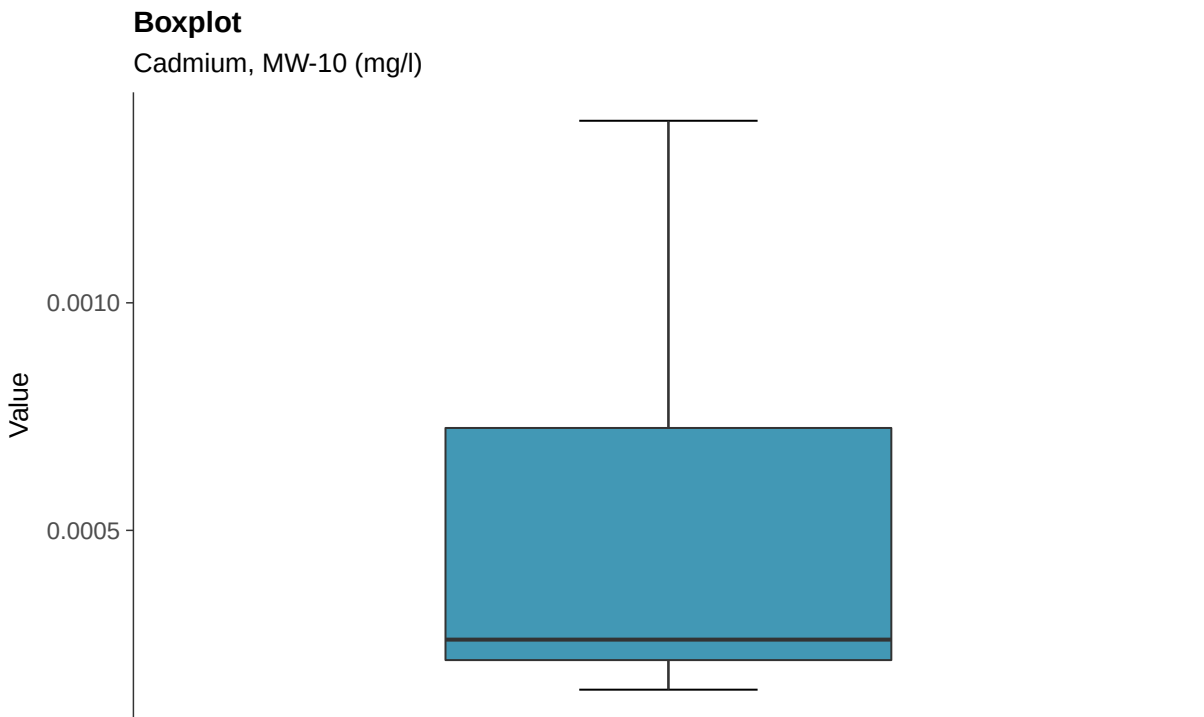




Appendix IV: Cadmium, MW-10

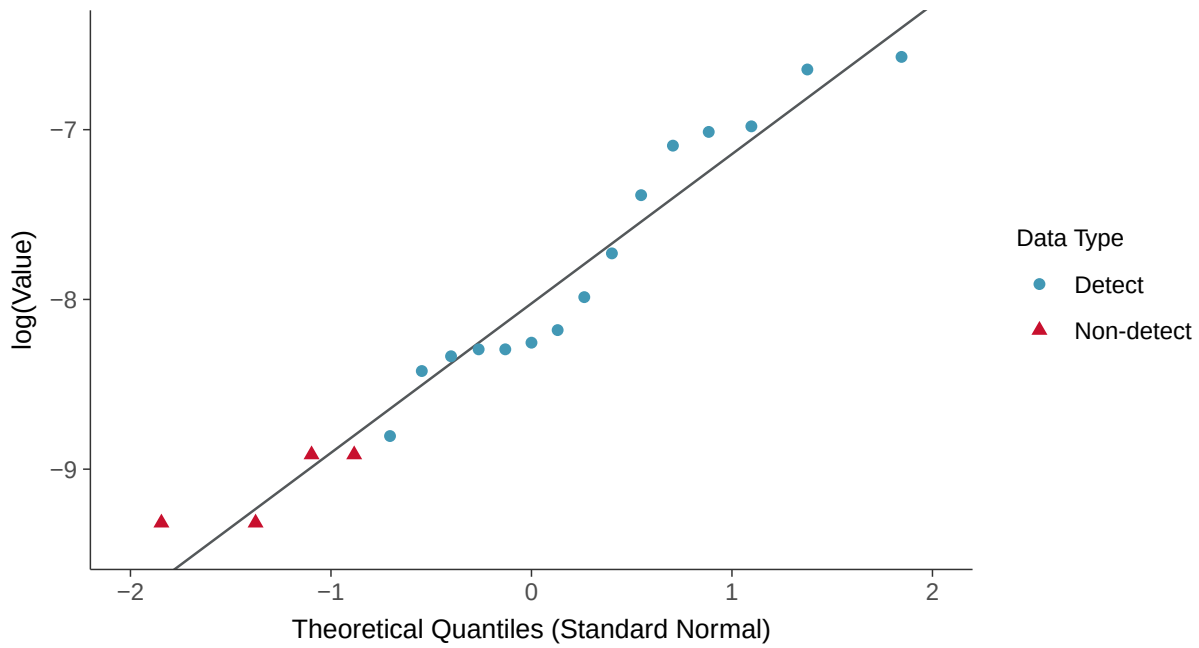
ID: 1_2_109





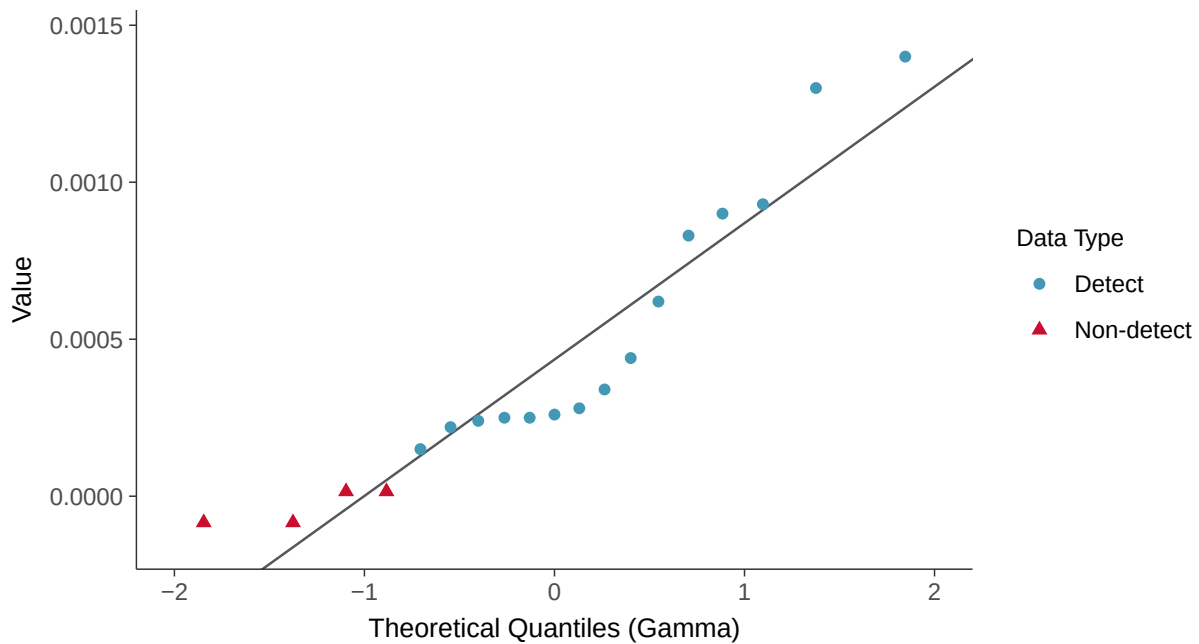
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-10 (mg/l)



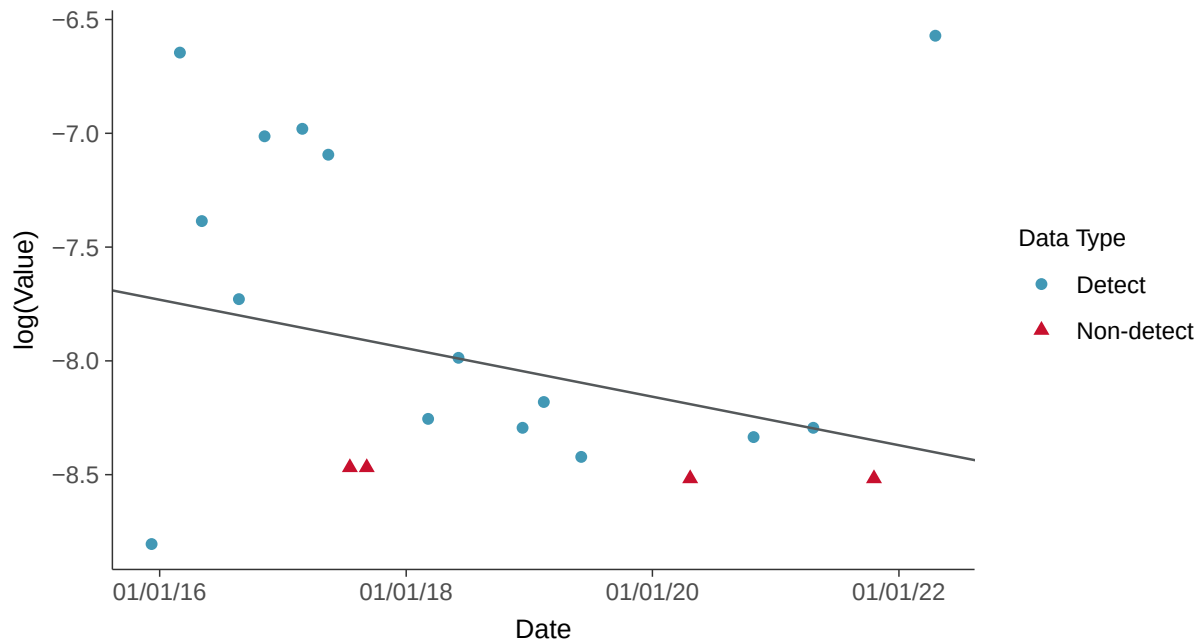
Gamma Q-Q plot using ROS Imputed Estimates

Cadmium, MW-10 (mg/l)



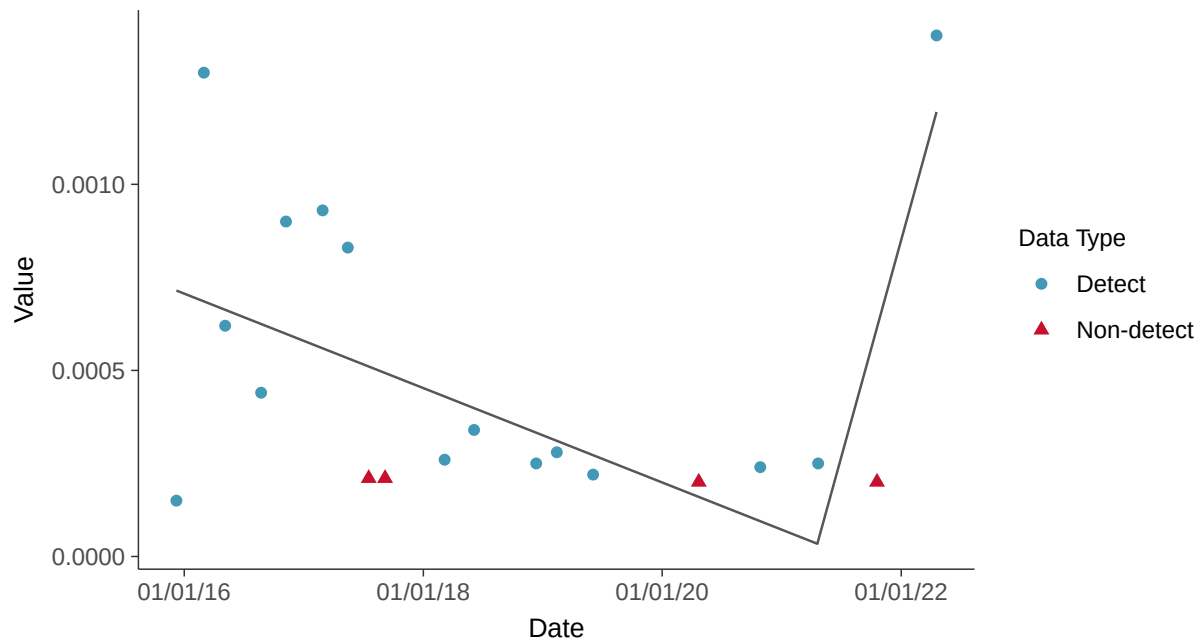
Trend Regression: Lognormal MLE

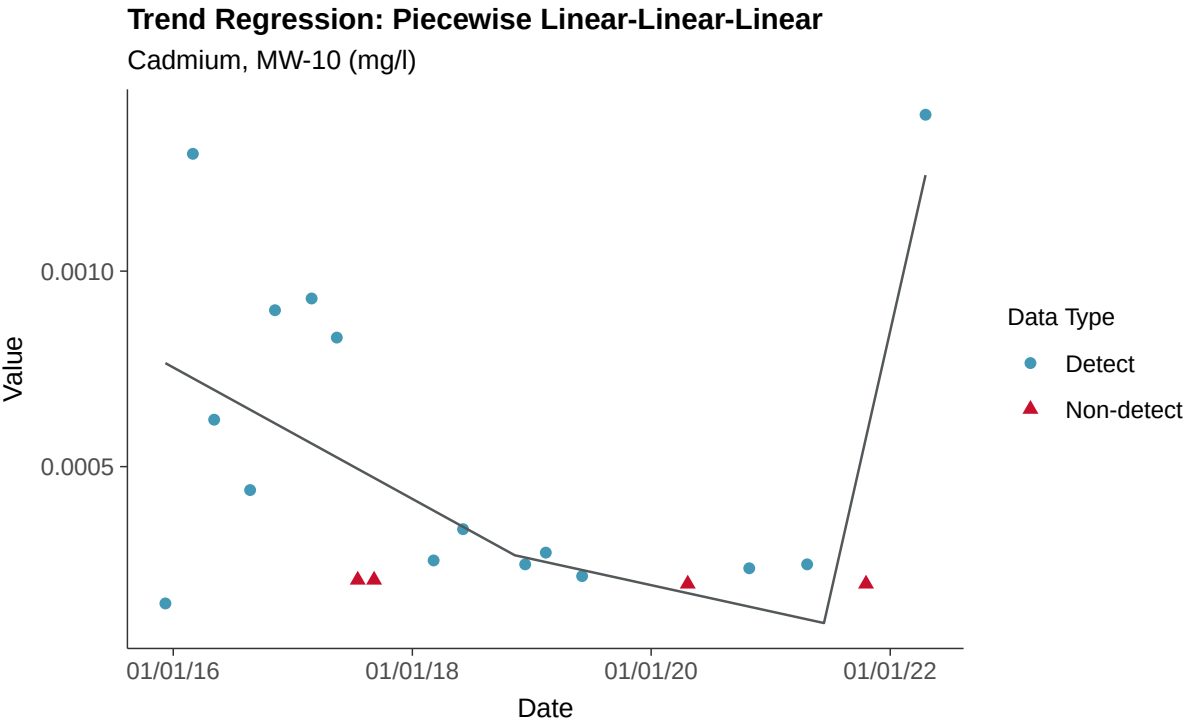
Cadmium, MW-10 (mg/l)



Trend Regression: Piecewise Linear-Linear

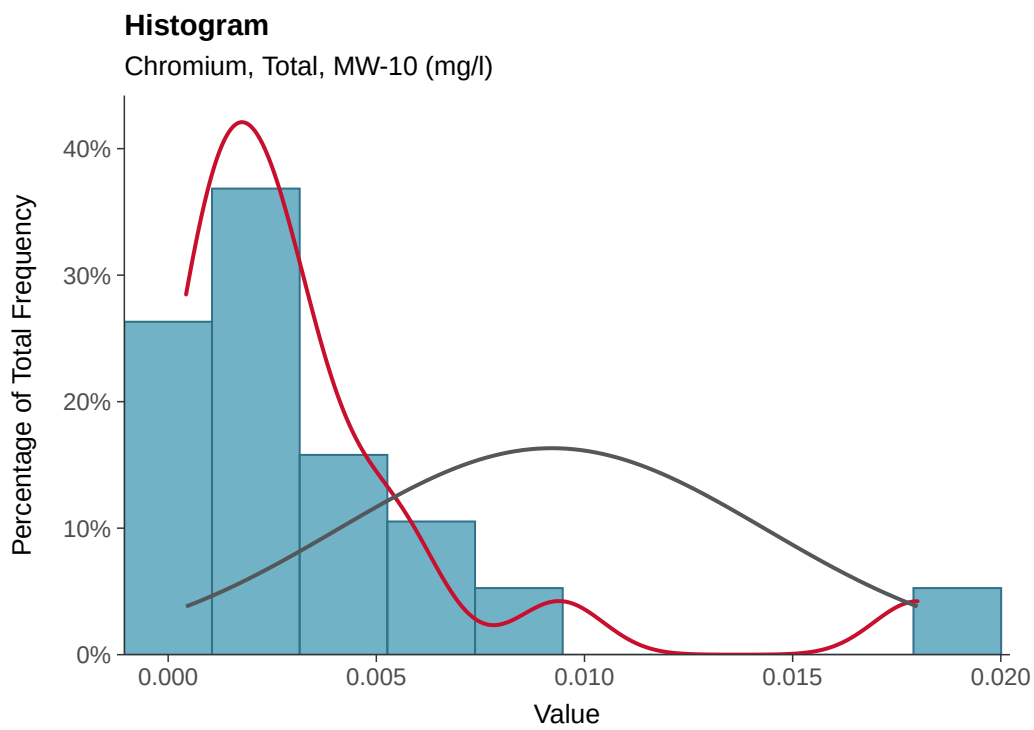
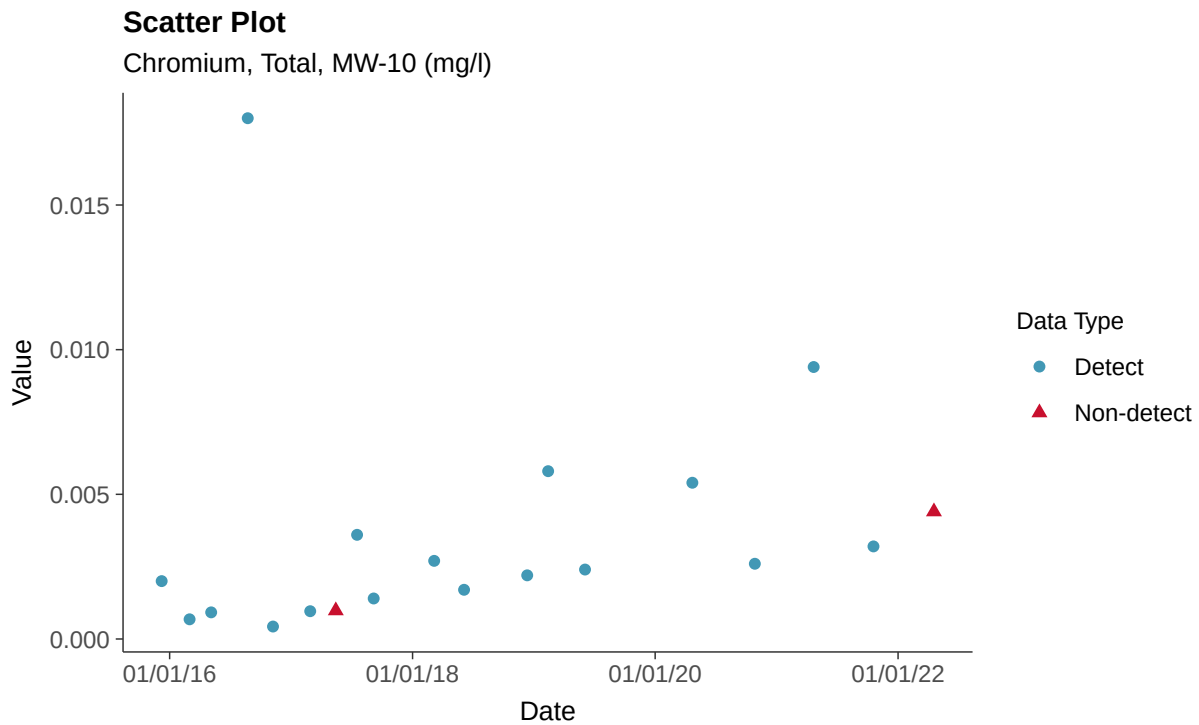
Cadmium, MW-10 (mg/l)





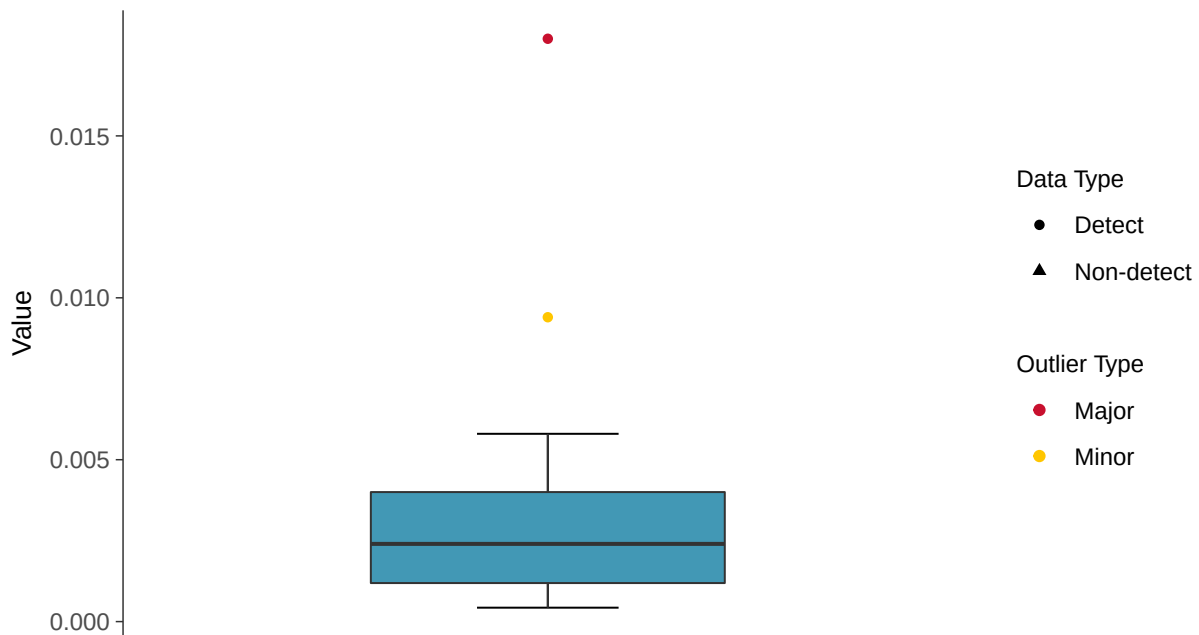
Appendix IV: Chromium, Total, MW-10

ID: 1_2_112



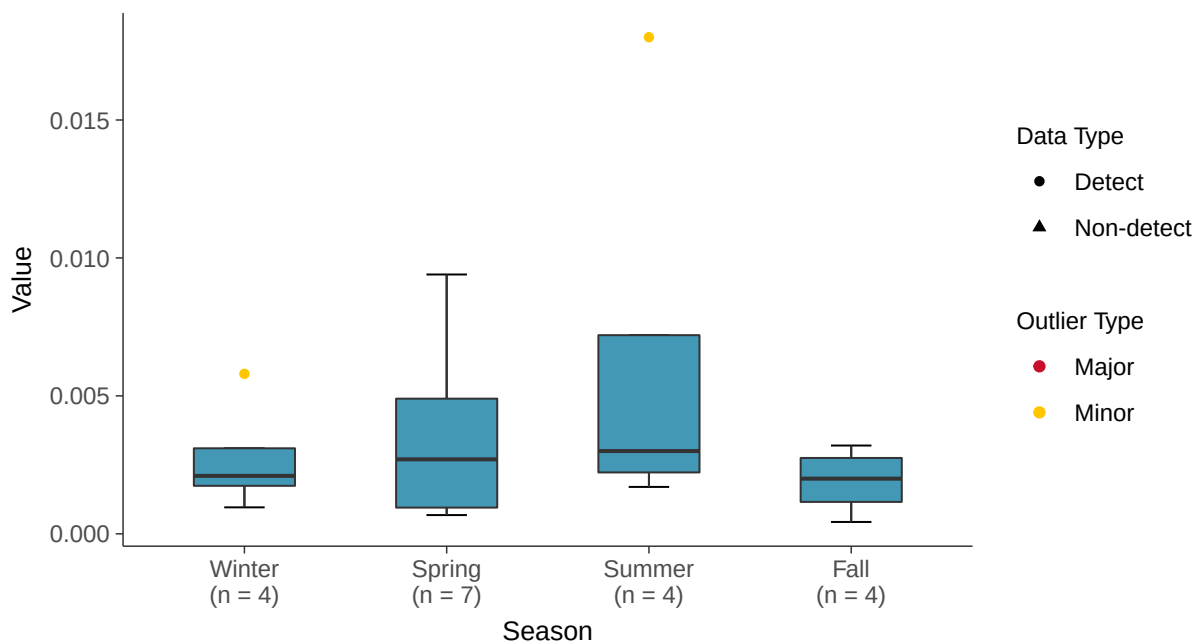
Boxplot

Chromium, Total, MW-10 (mg/l)



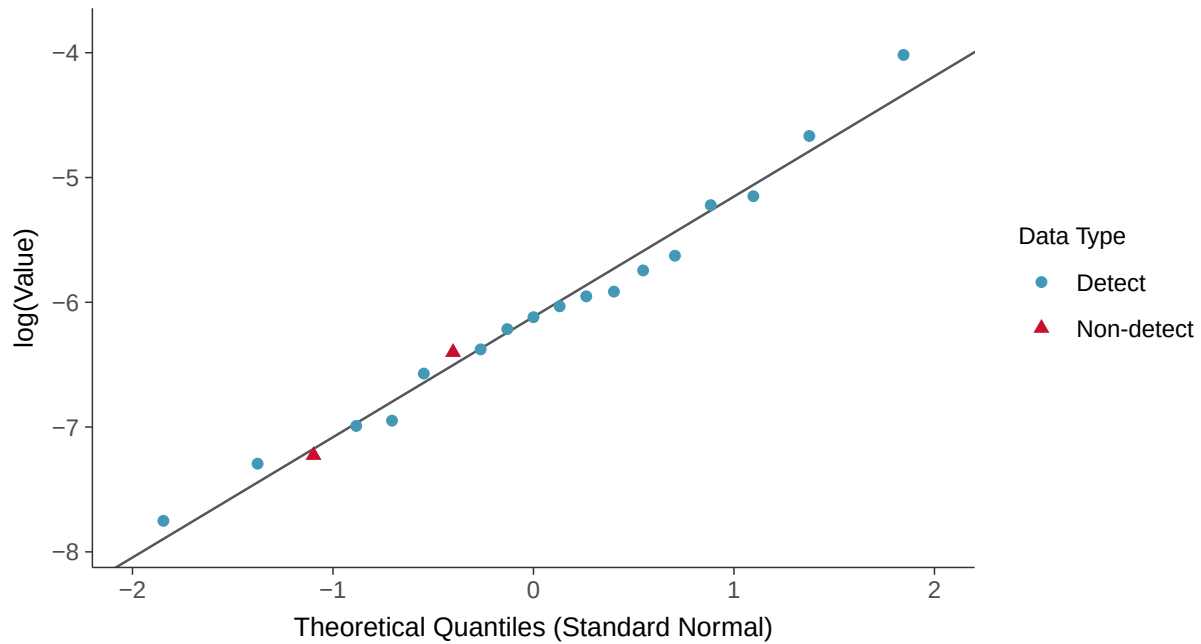
Boxplot by Season

Chromium, Total, MW-10 (mg/l)



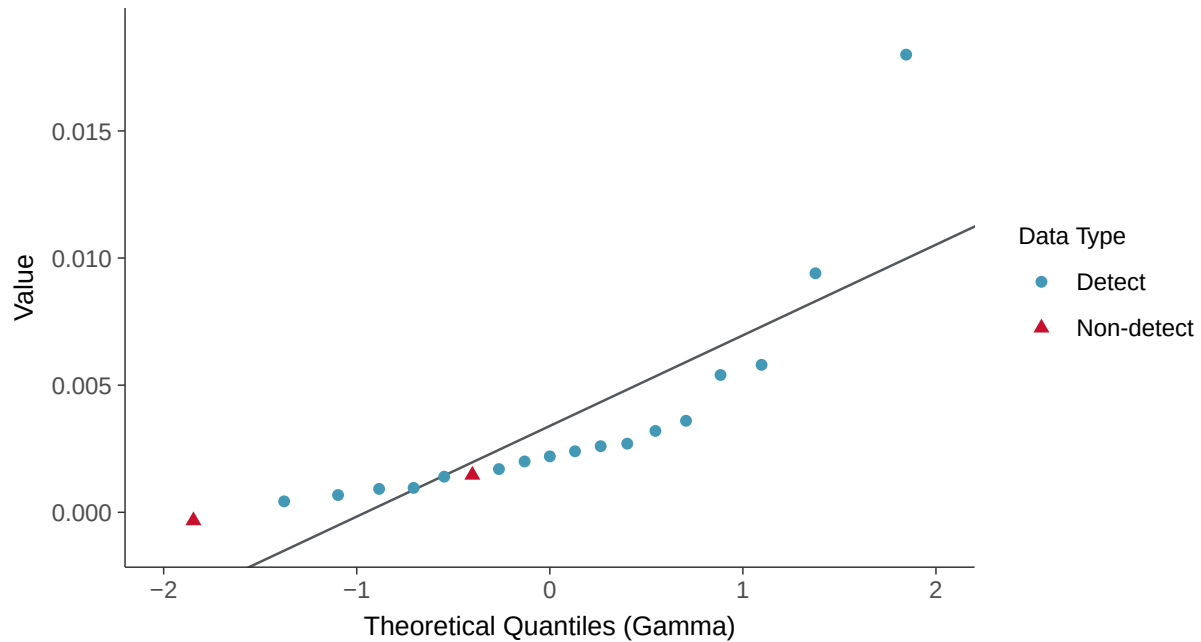
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-10 (mg/l)



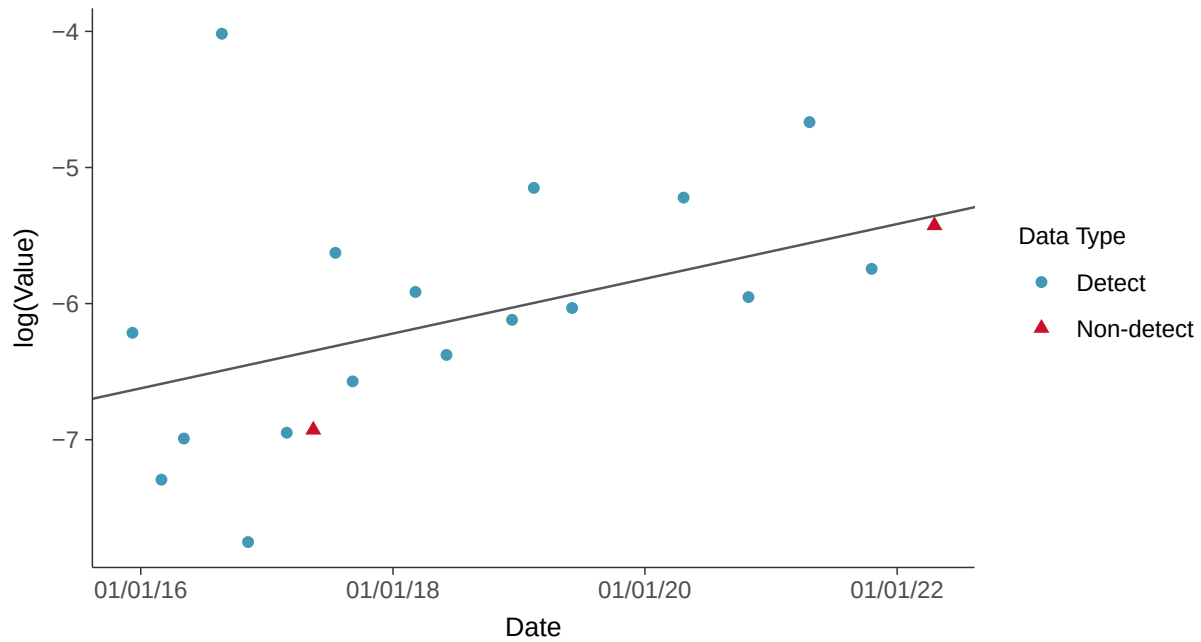
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-10 (mg/l)



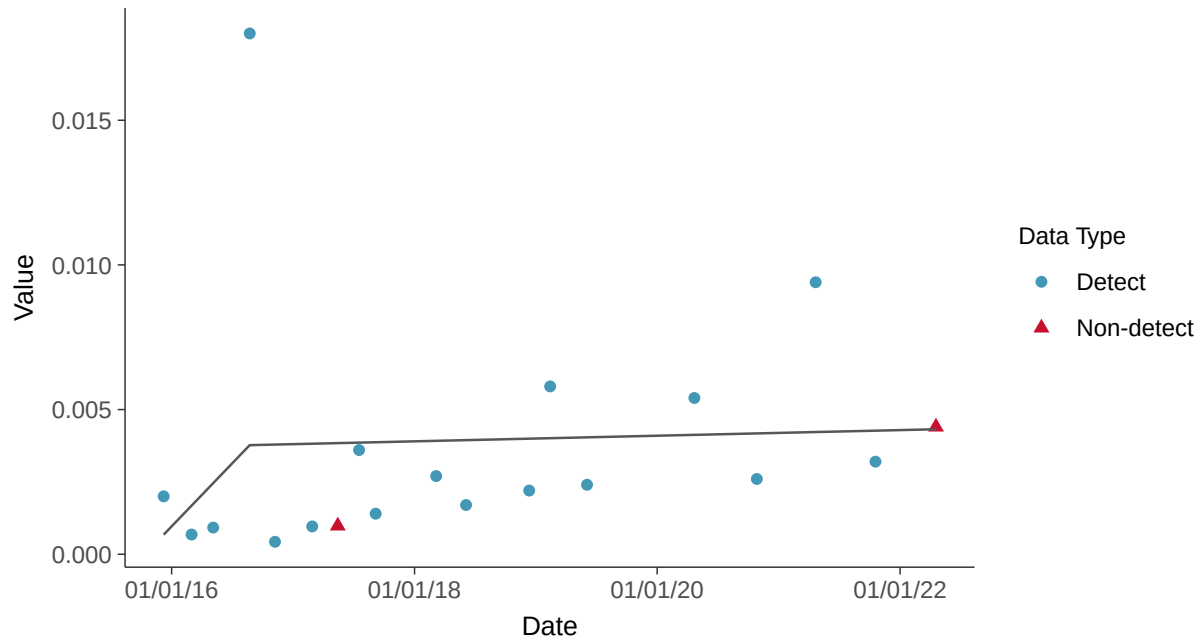
Trend Regression: Lognormal MLE

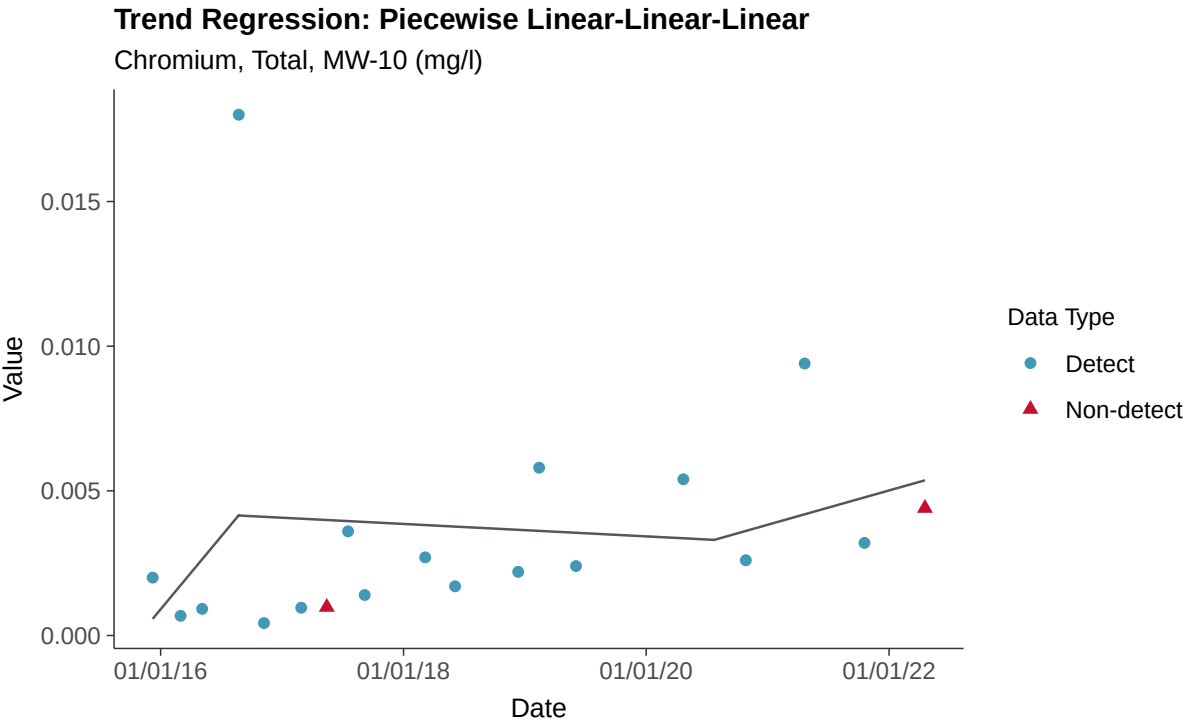
Chromium, Total, MW-10 (mg/l)



Trend Regression: Piecewise Linear-Linear

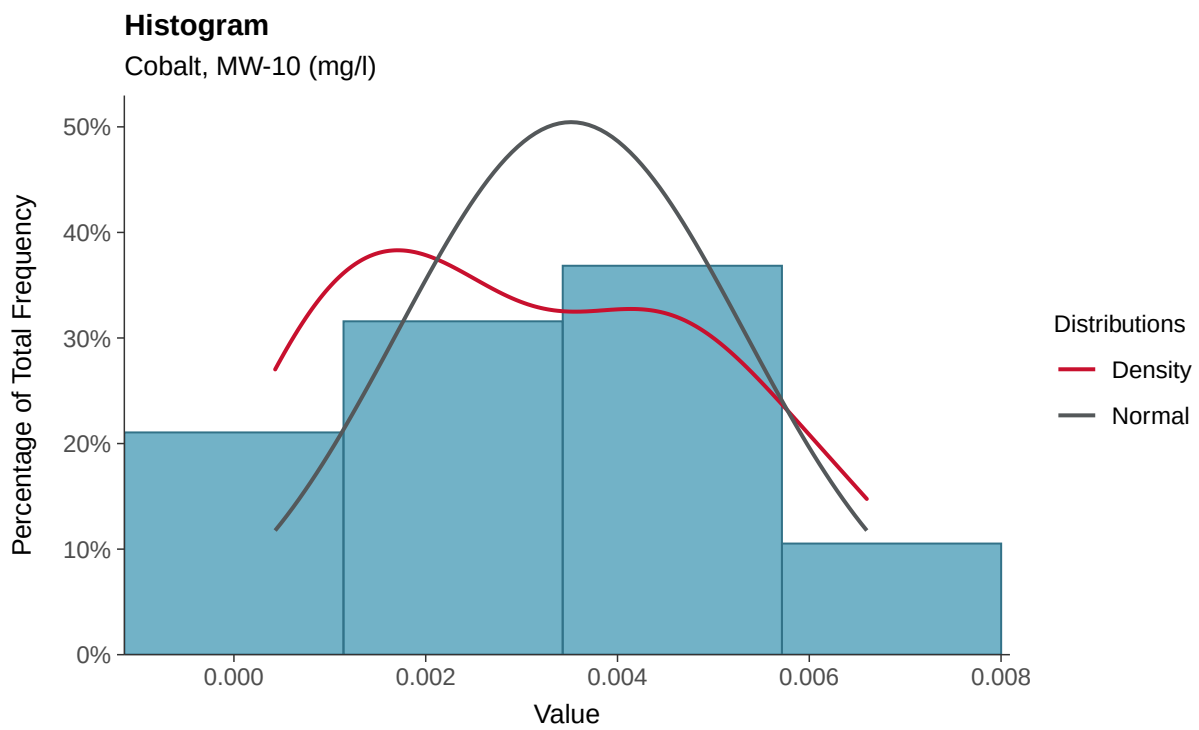
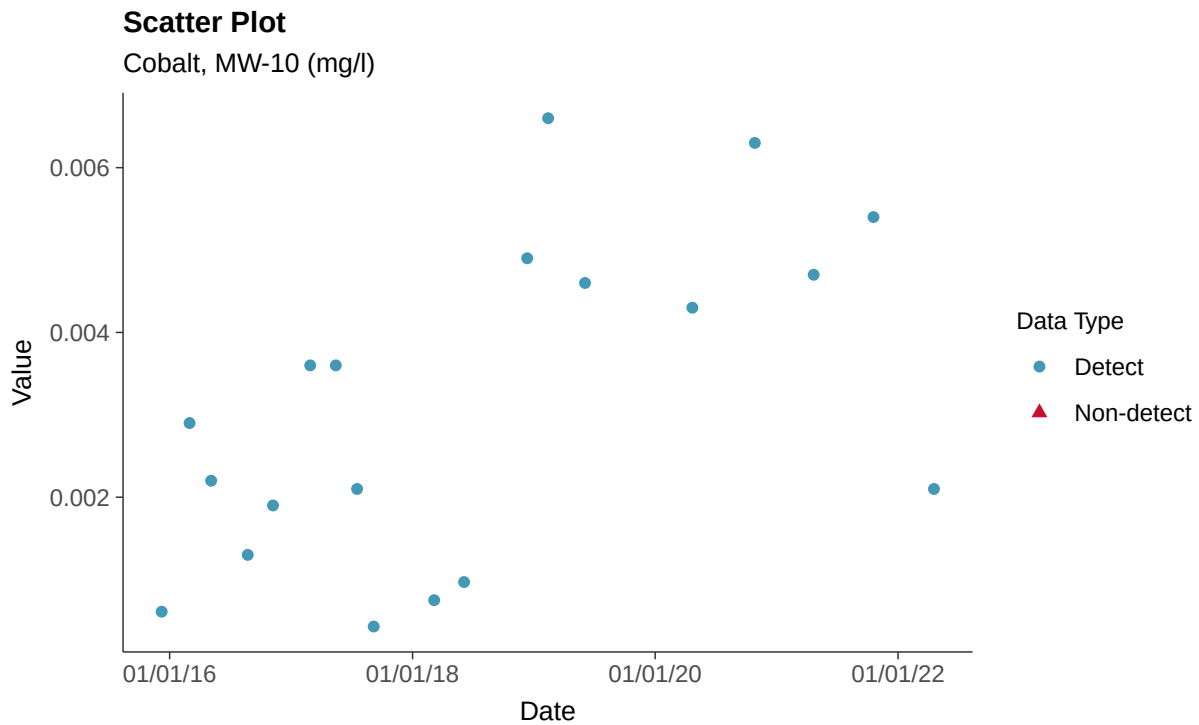
Chromium, Total, MW-10 (mg/l)





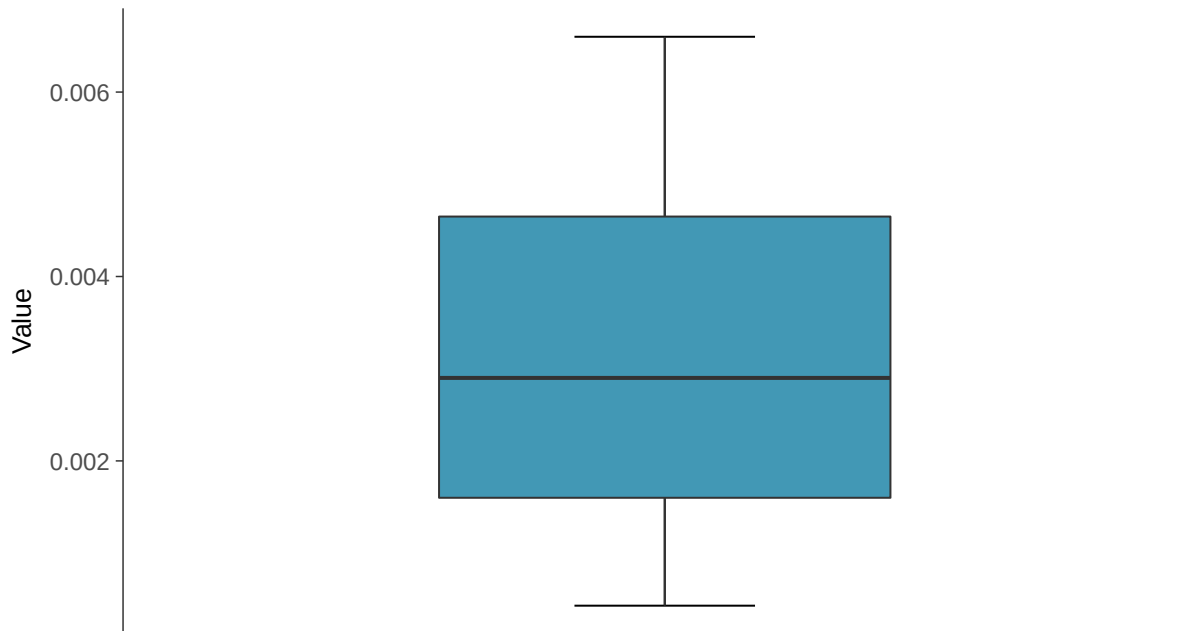
Appendix IV: Cobalt, MW-10

ID: 1_2_113



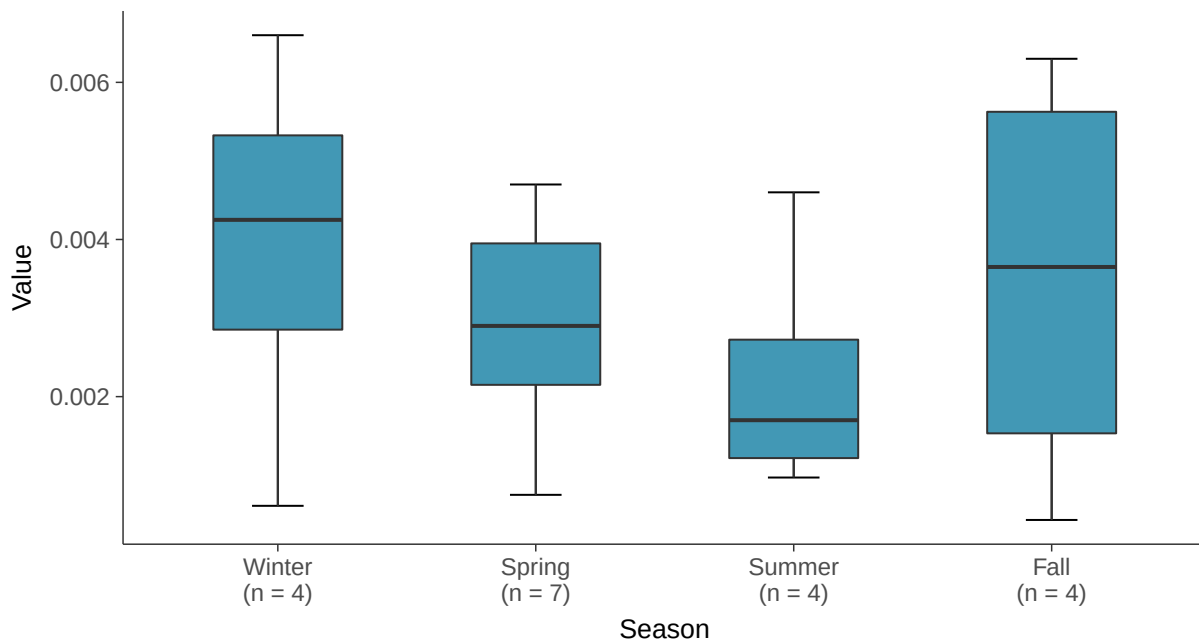
Boxplot

Cobalt, MW-10 (mg/l)



Boxplot by Season

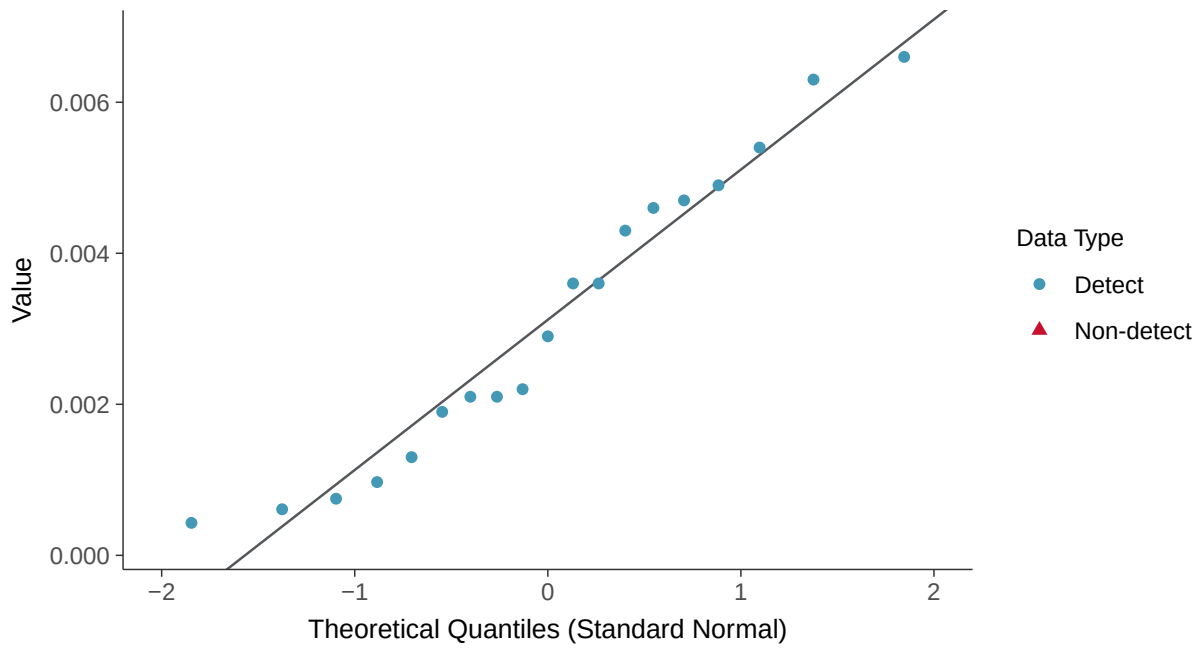
Cobalt, MW-10 (mg/l)





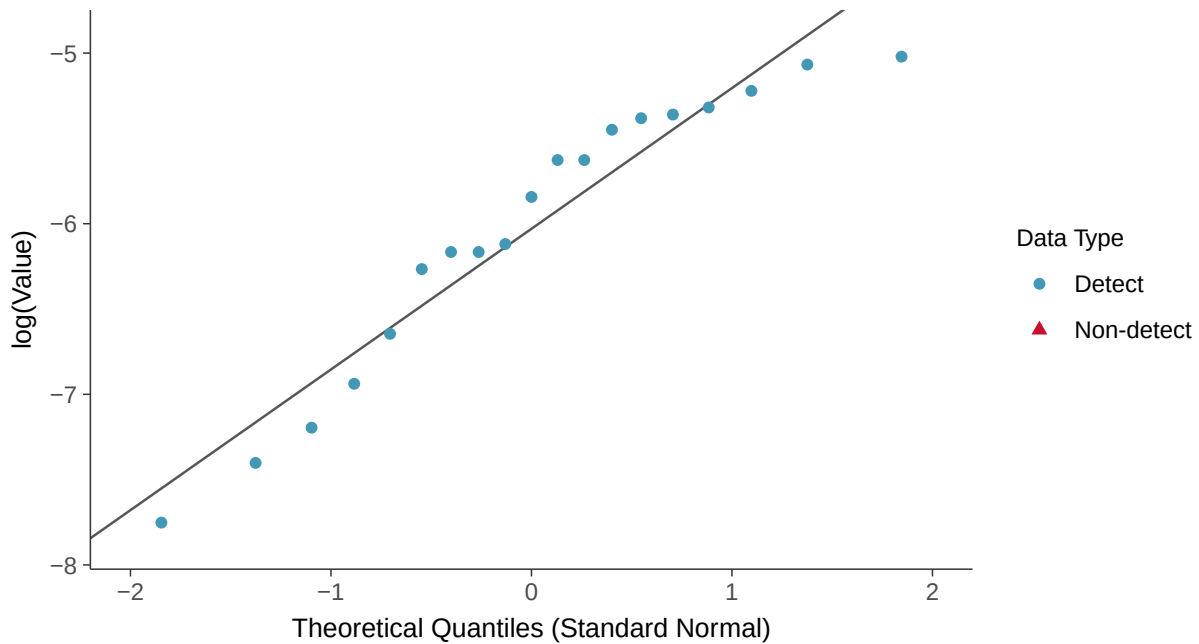
Normal Q-Q plot

Cobalt, MW-10 (mg/l)

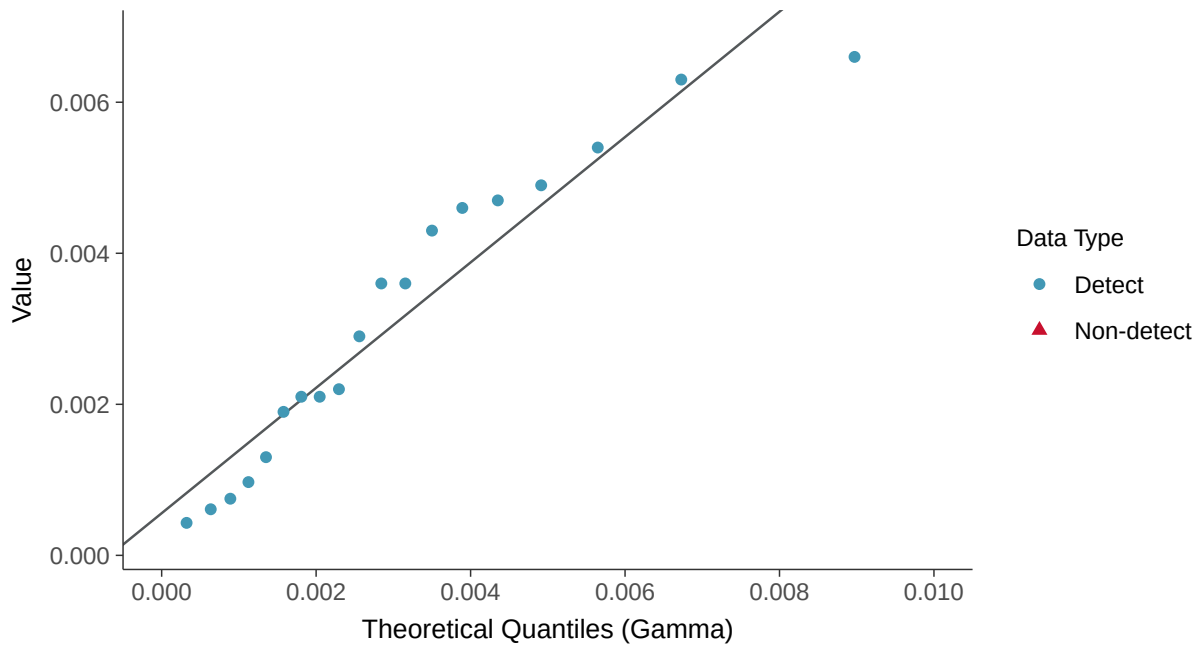


Lognormal Q-Q plot

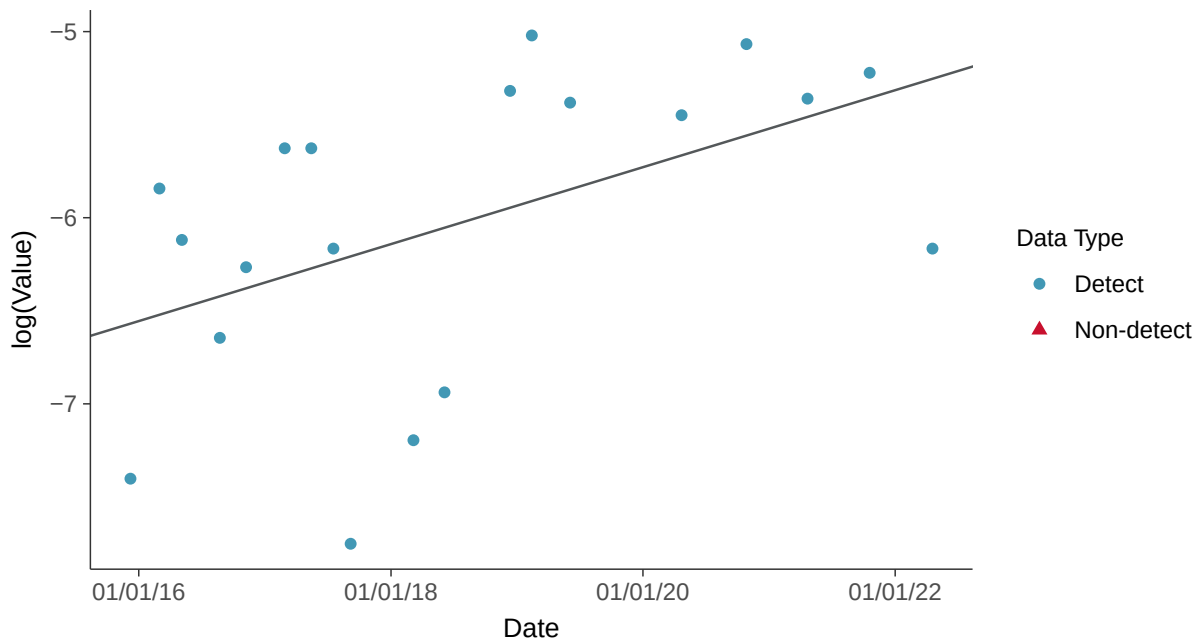
Cobalt, MW-10 (mg/l)



Gamma Q-Q plot
Cobalt, MW-10 (mg/l)

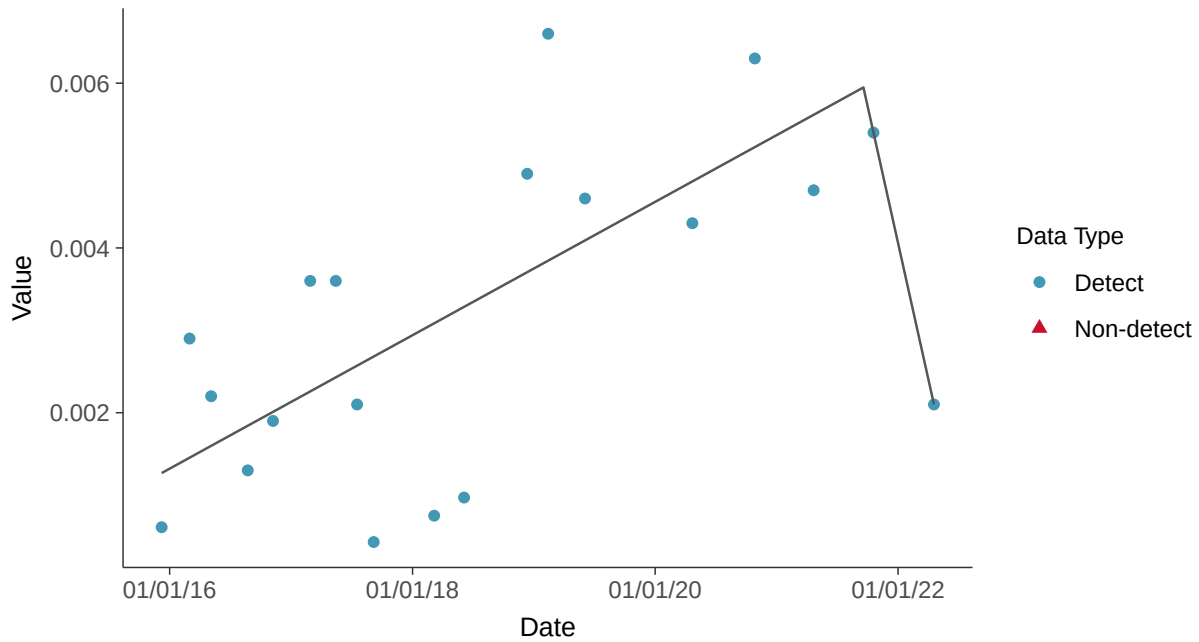


Trend Regression: Lognormal MLE
Cobalt, MW-10 (mg/l)



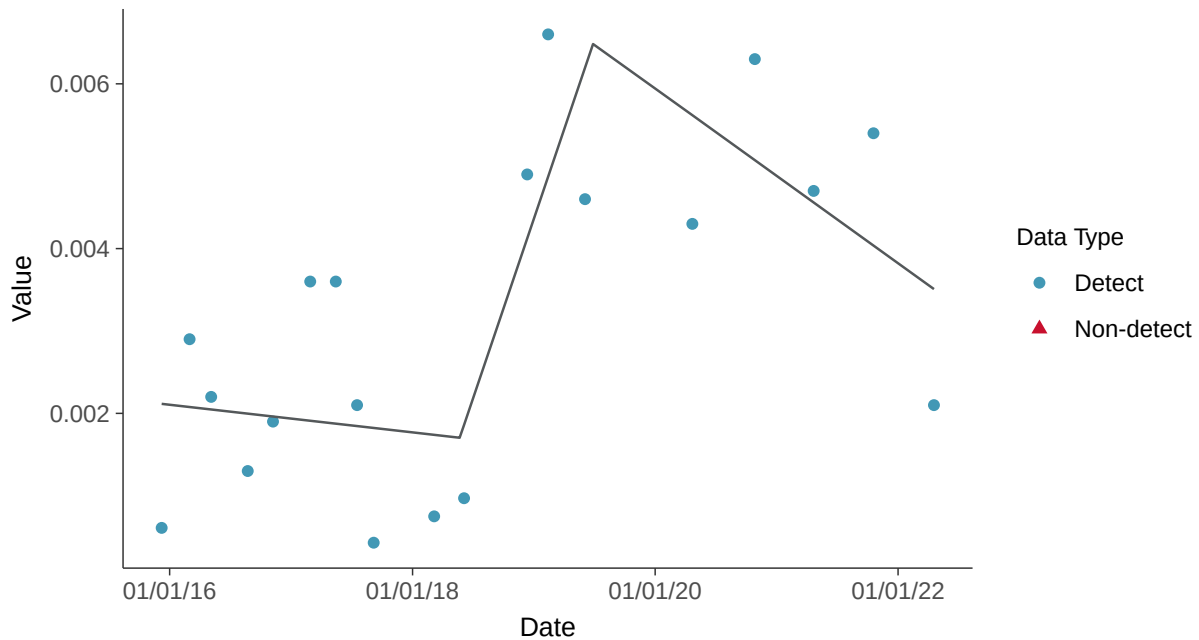
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-10 (mg/l)



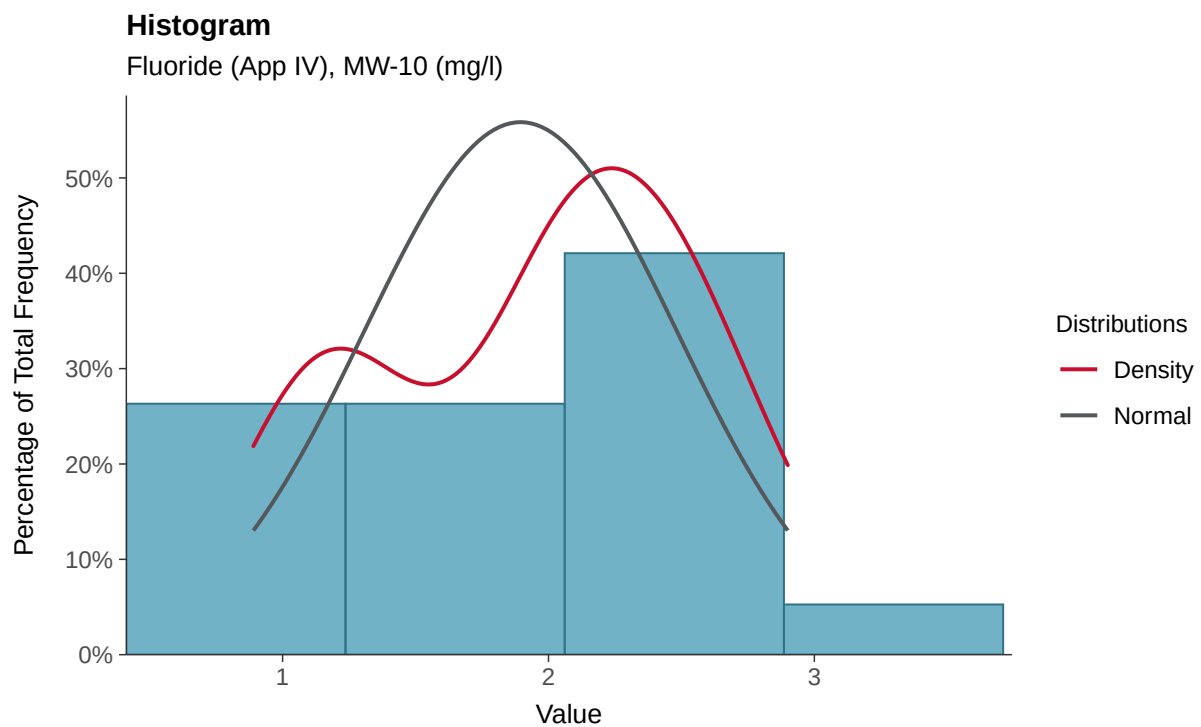
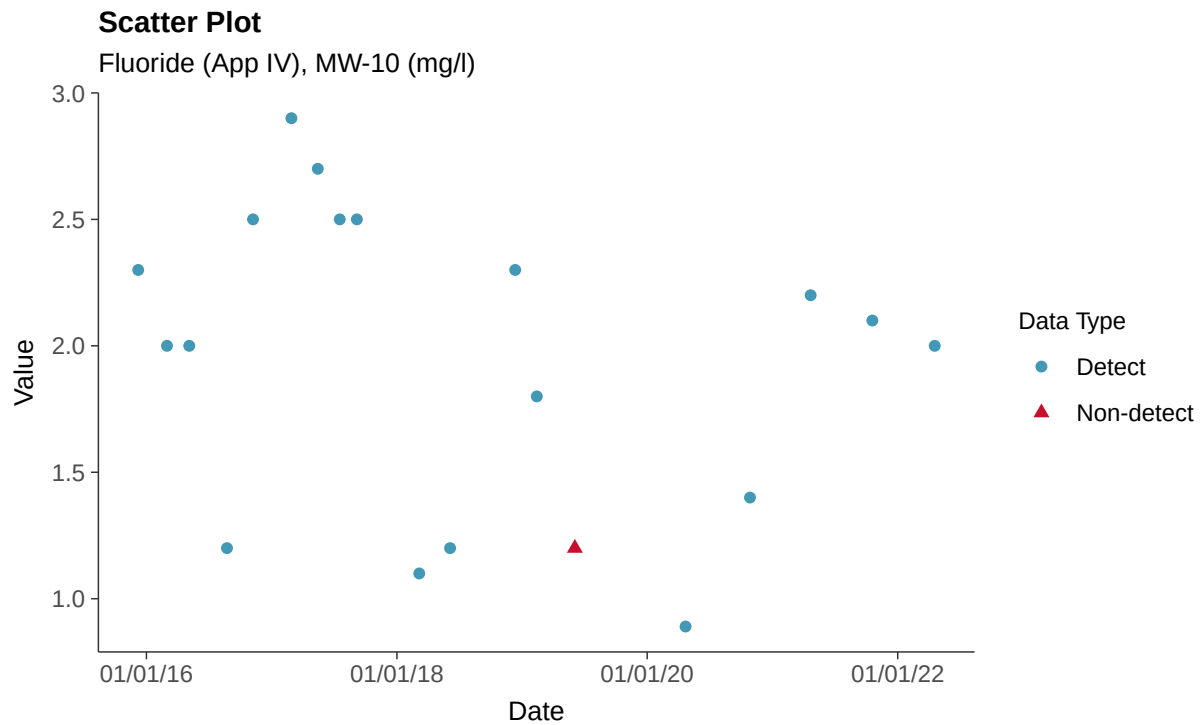
Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-10 (mg/l)



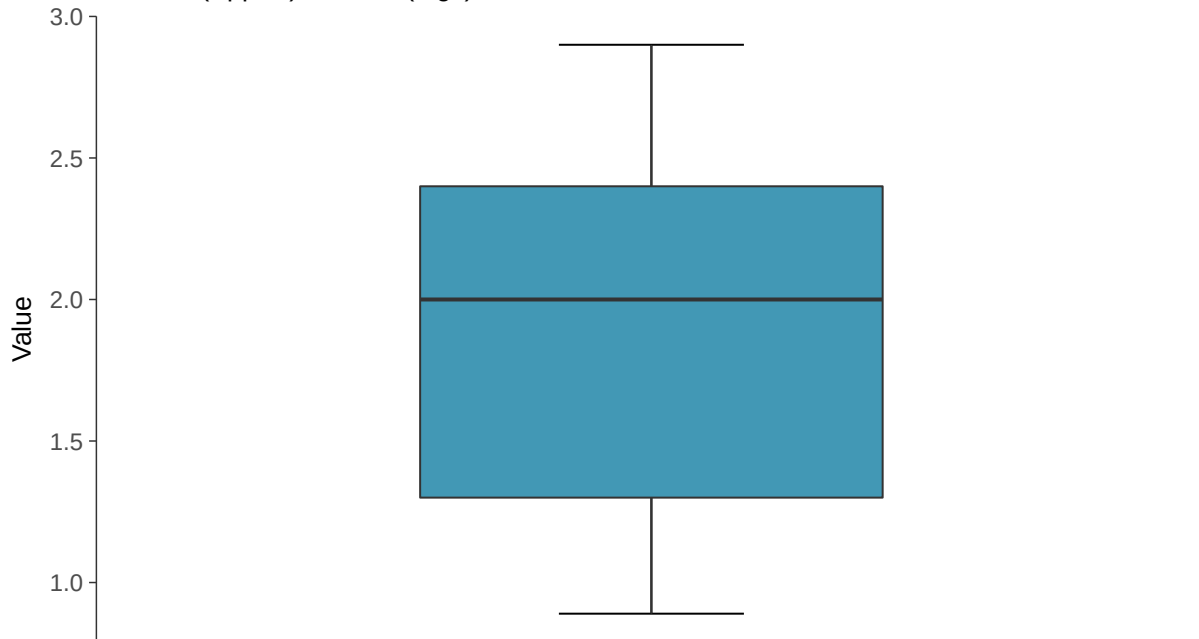
Appendix IV: Fluoride (App IV), MW-10

ID: 1_2_116



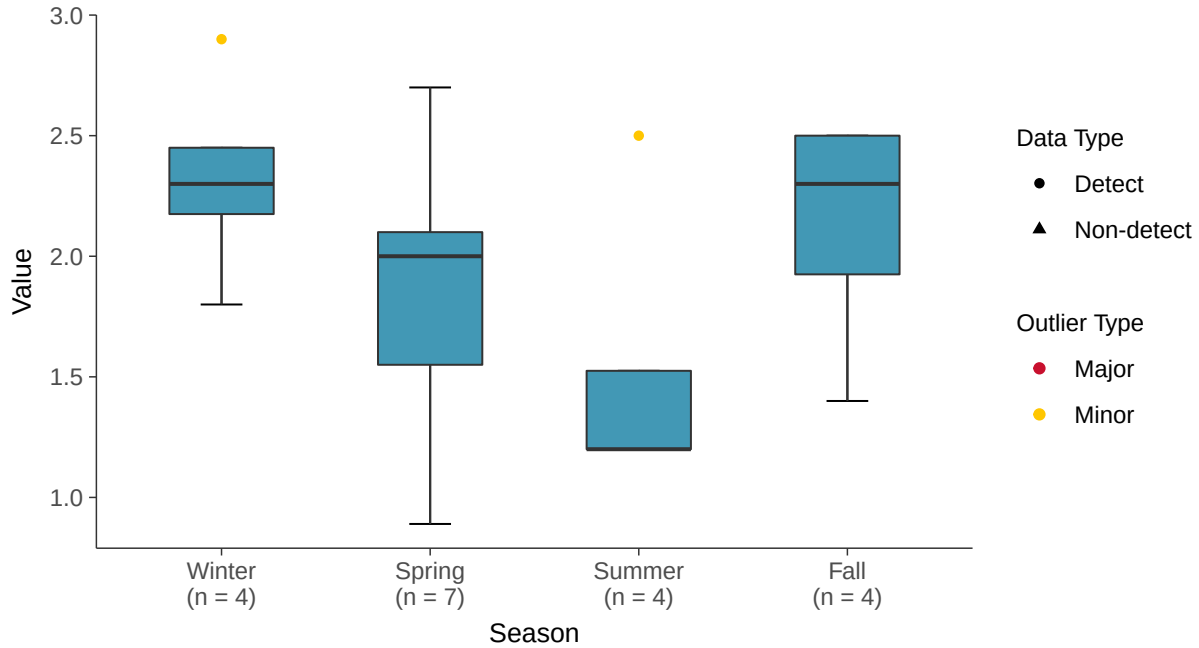
Boxplot

Fluoride (App IV), MW-10 (mg/l)



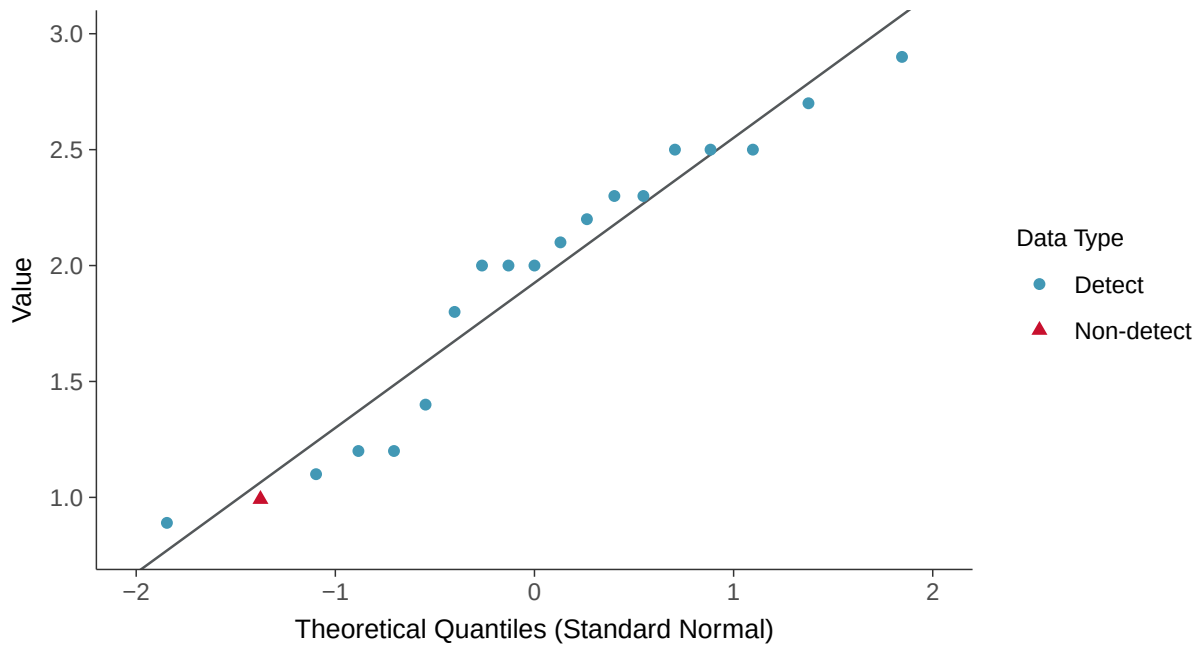
Boxplot by Season

Fluoride (App IV), MW-10 (mg/l)



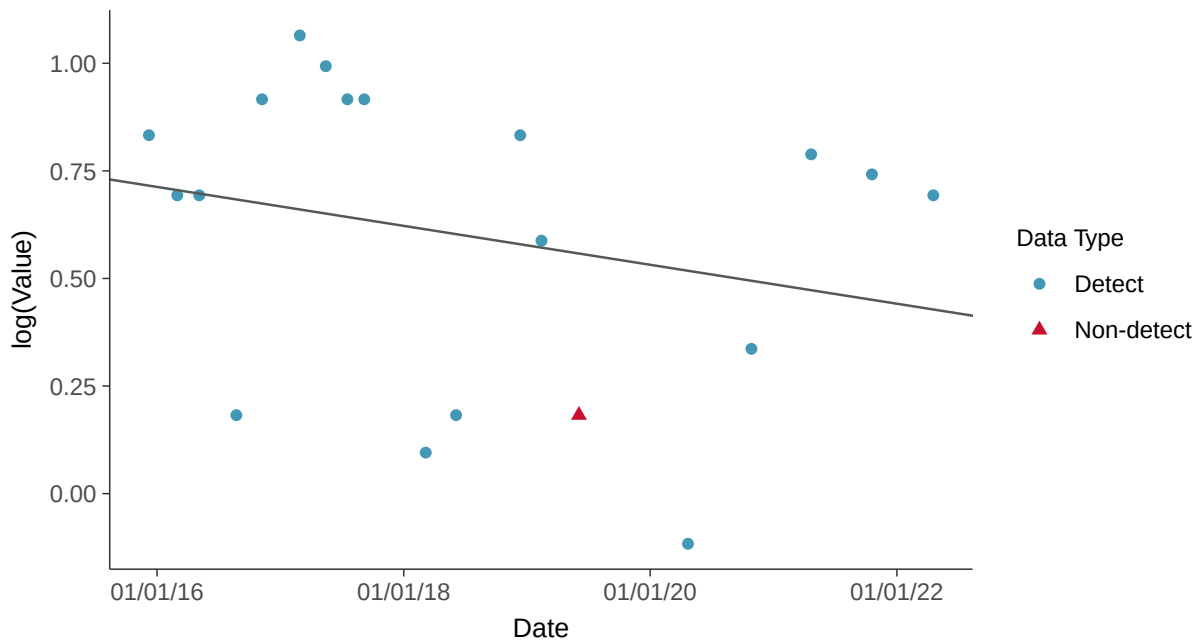
Normal Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-10 (mg/l)



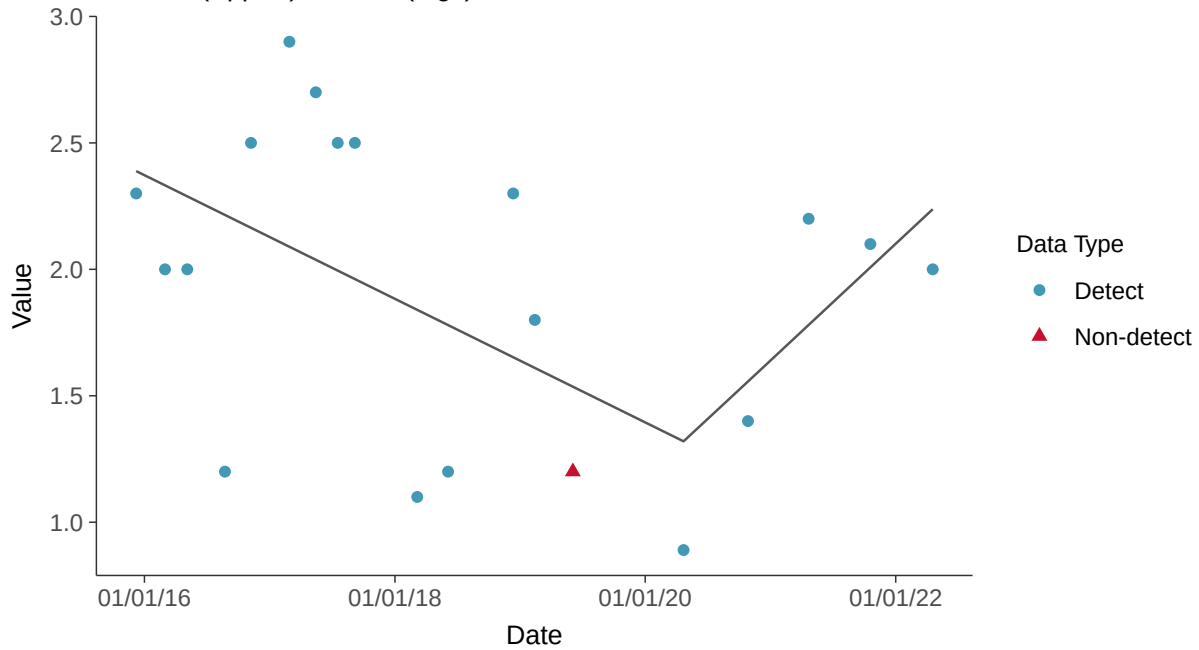
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-10 (mg/l)



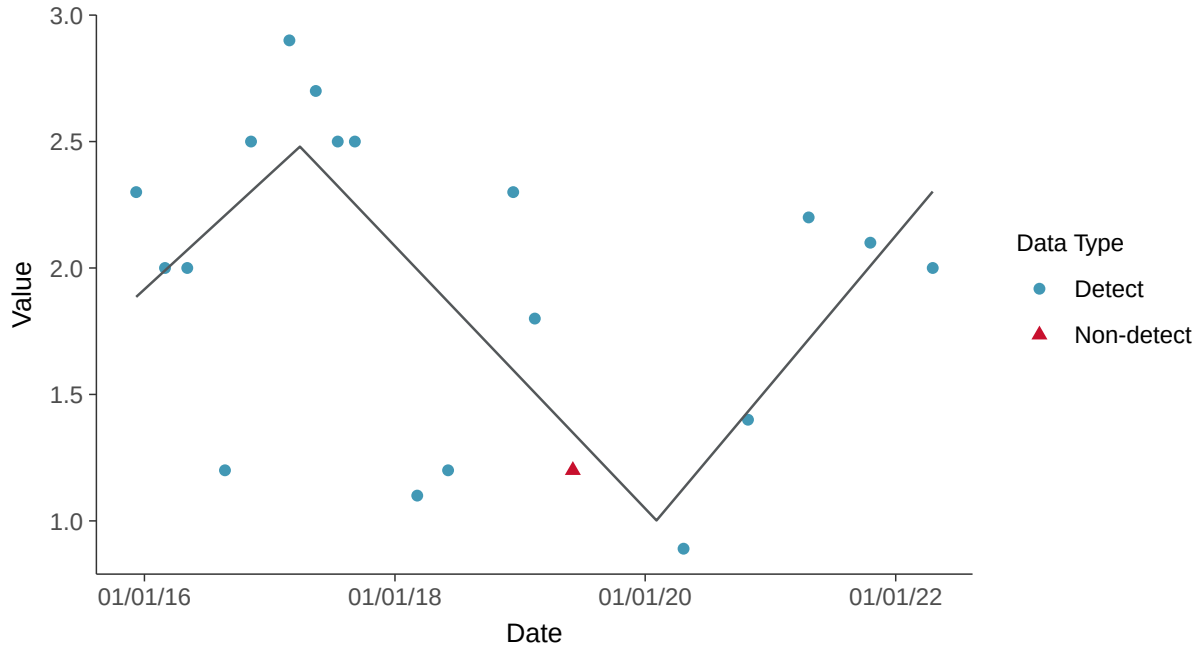
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-10 (mg/l)



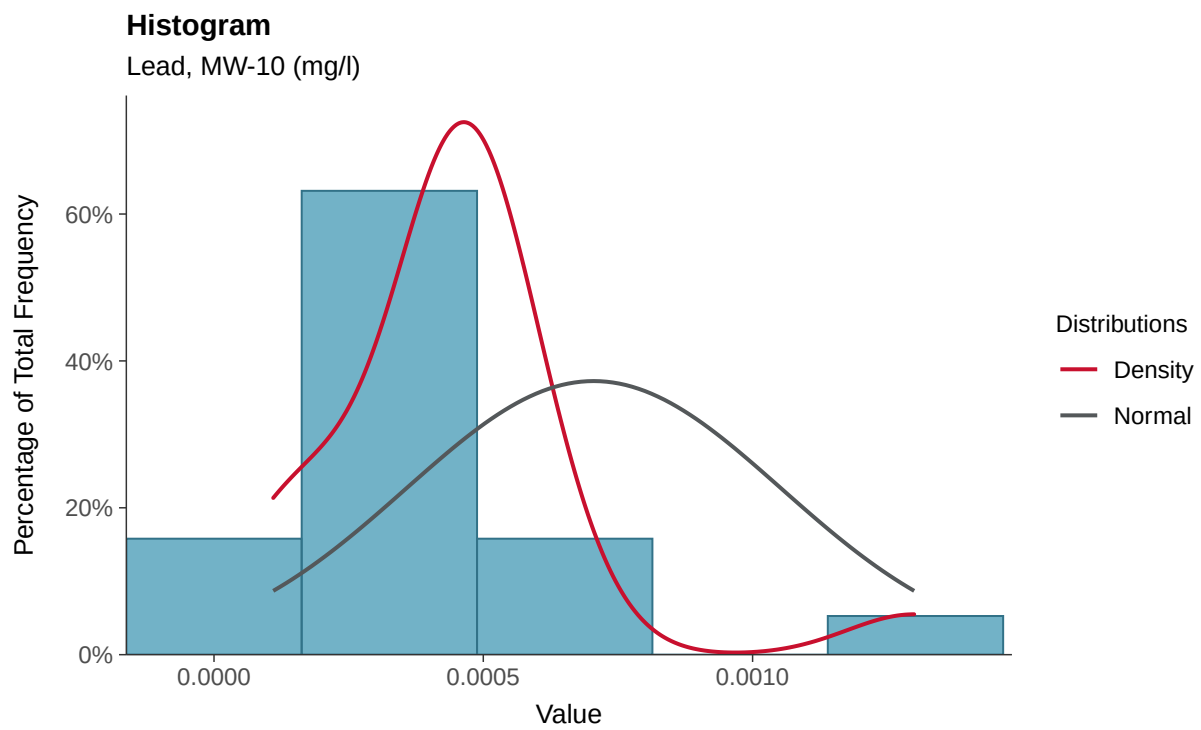
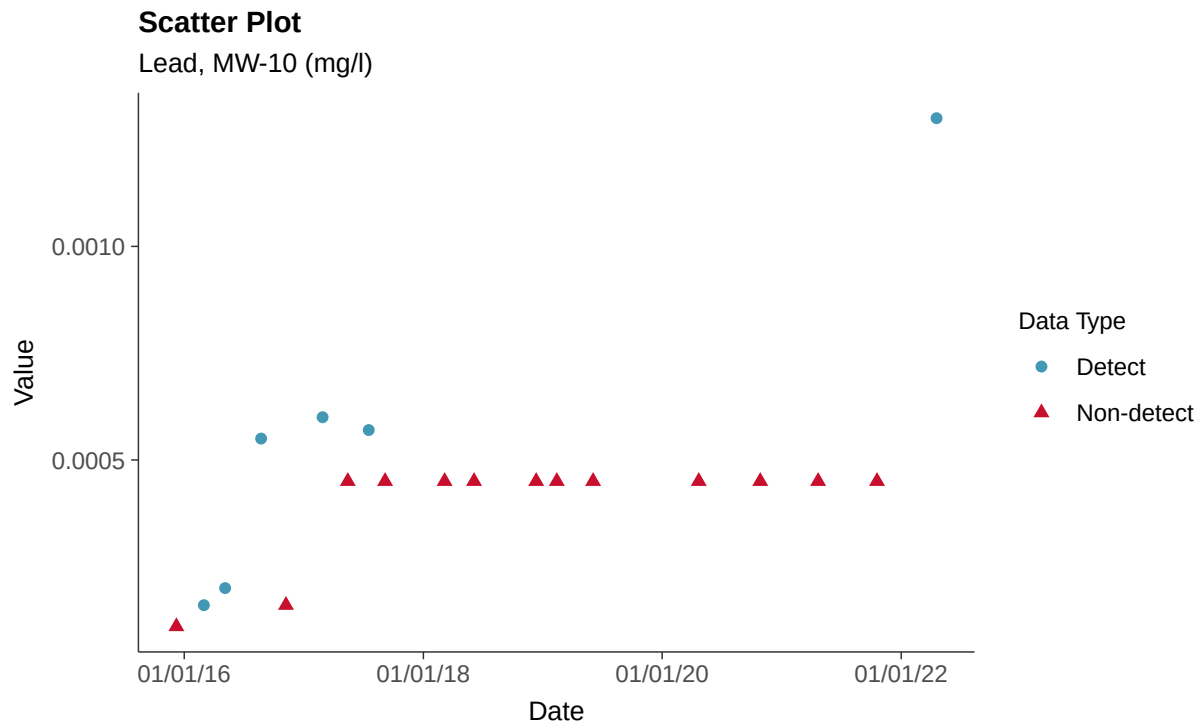
Trend Regression: Piecewise Linear-Linear-Linear

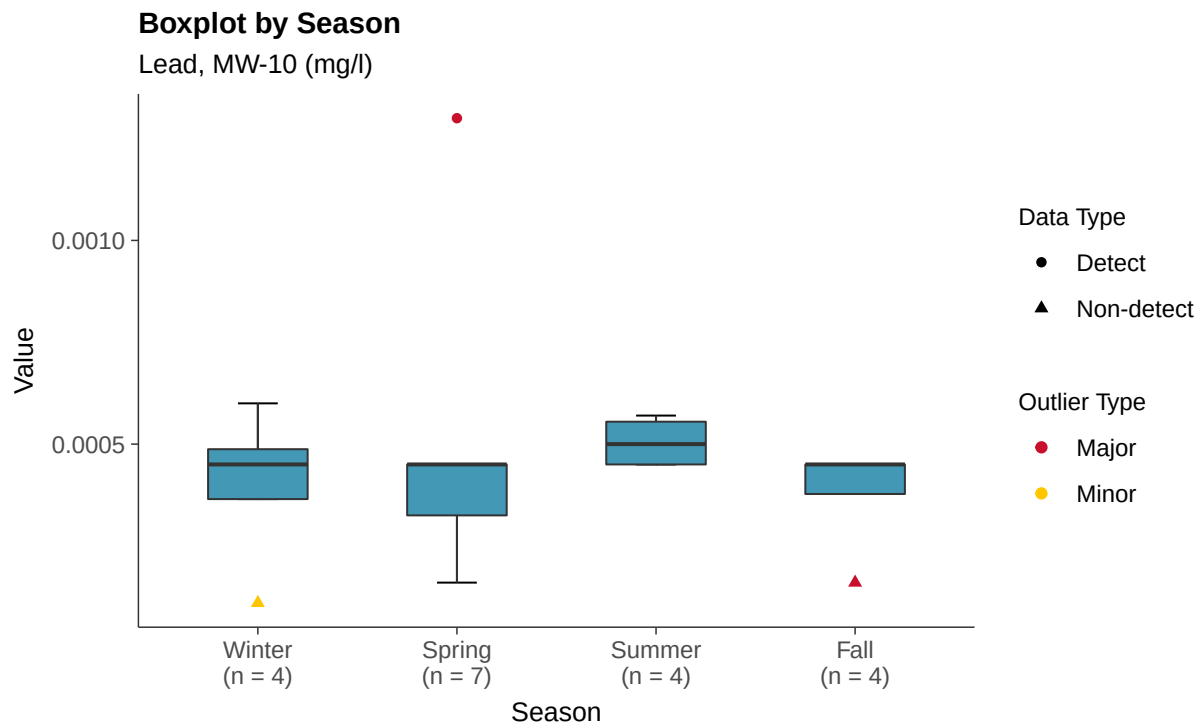
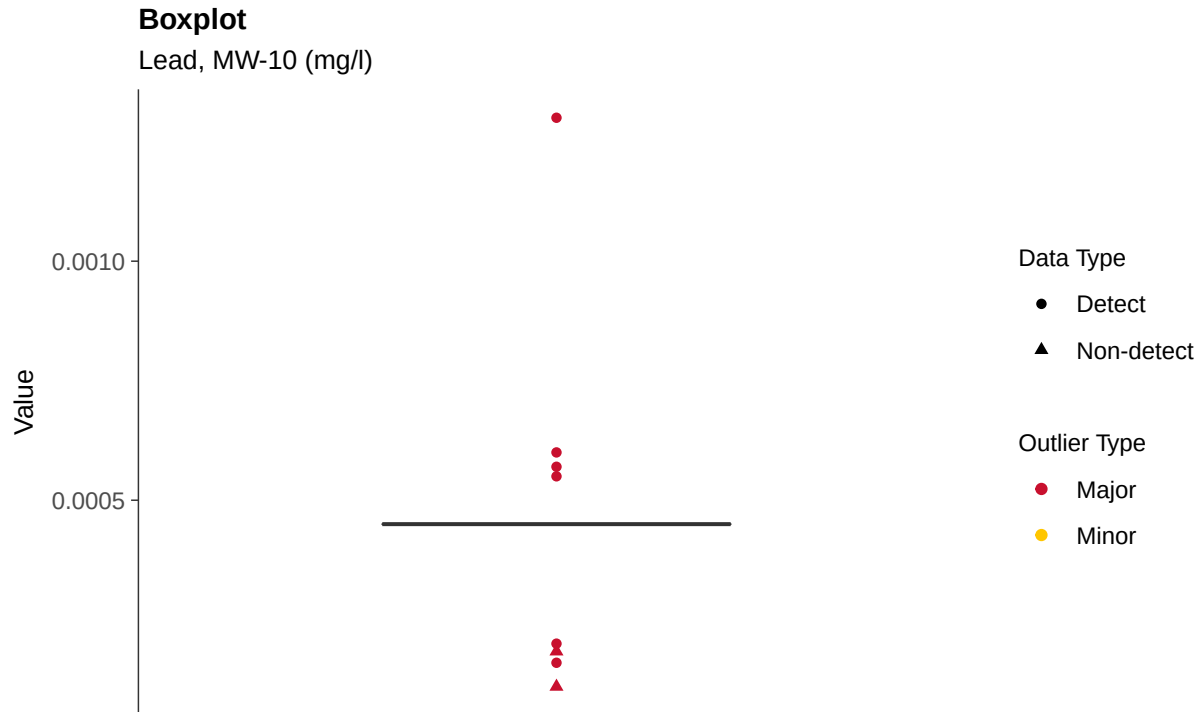
Fluoride (App IV), MW-10 (mg/l)



Appendix IV: Lead, MW-10

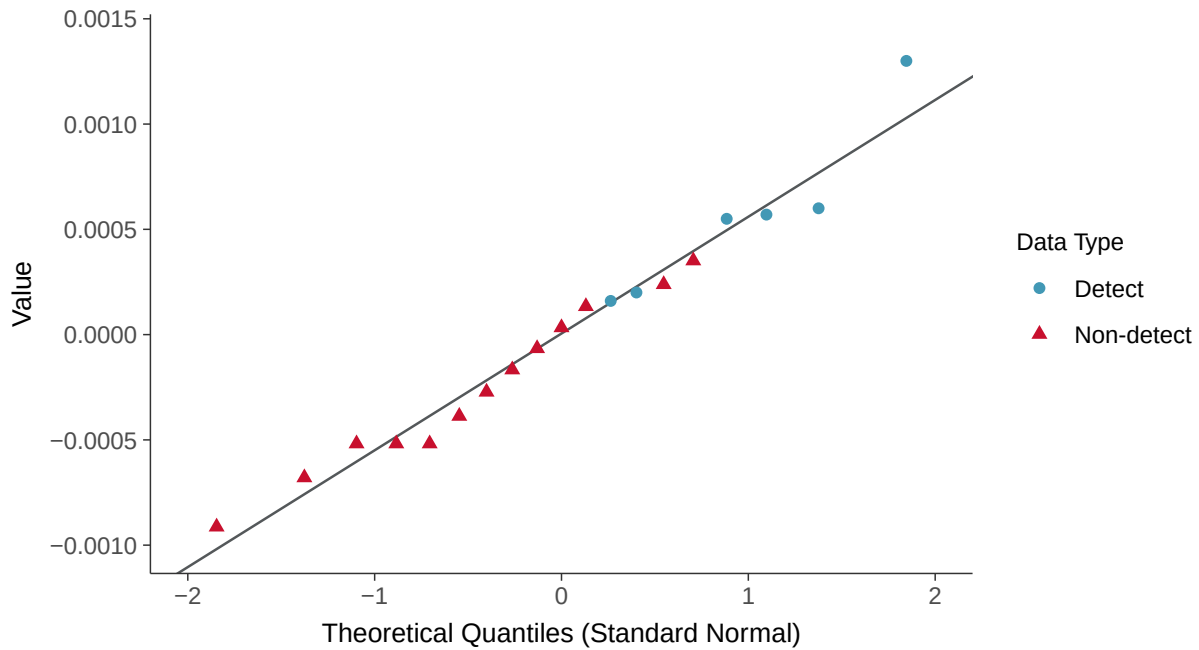
ID: 1_2_117





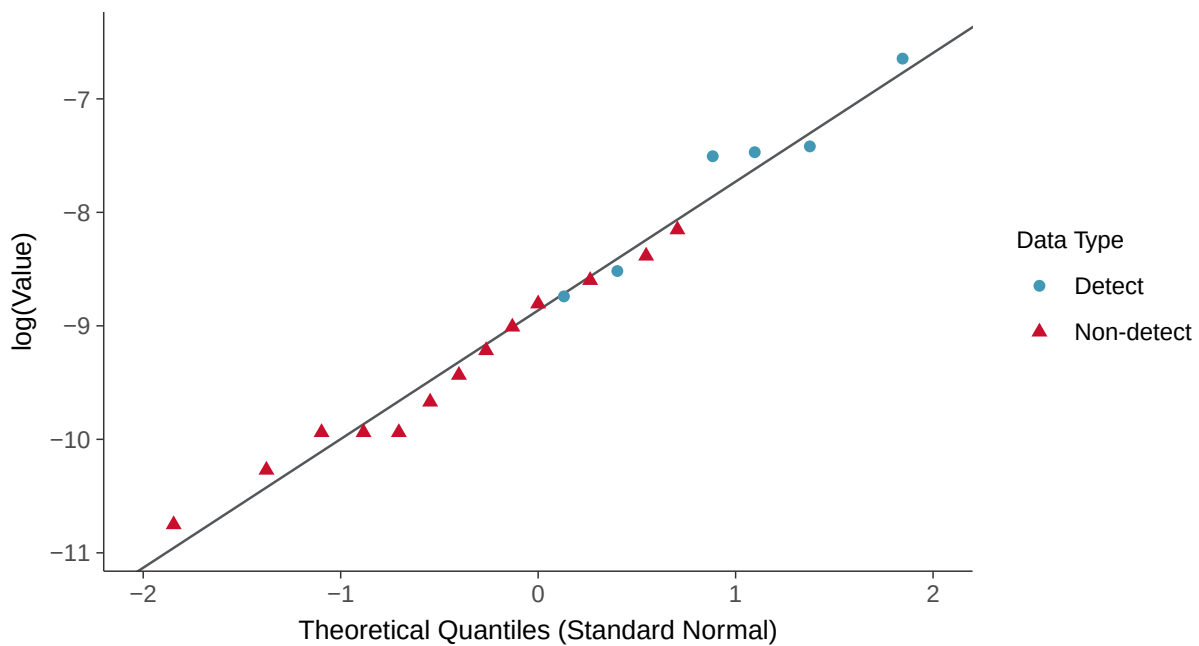
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-10 (mg/l)



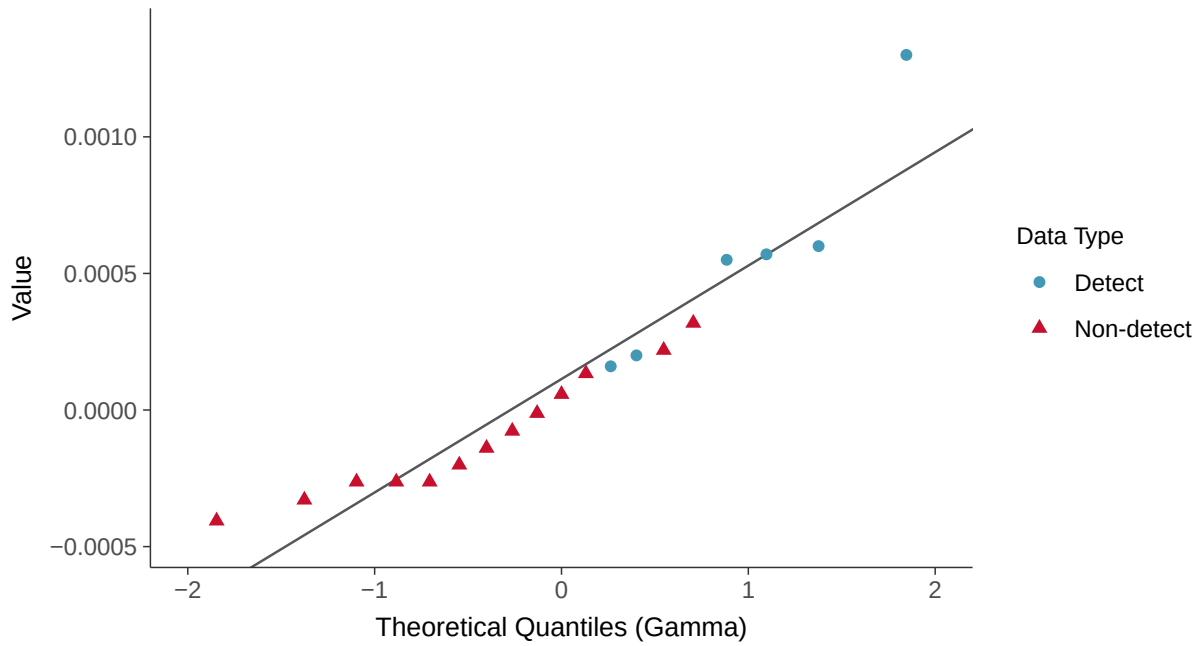
Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-10 (mg/l)



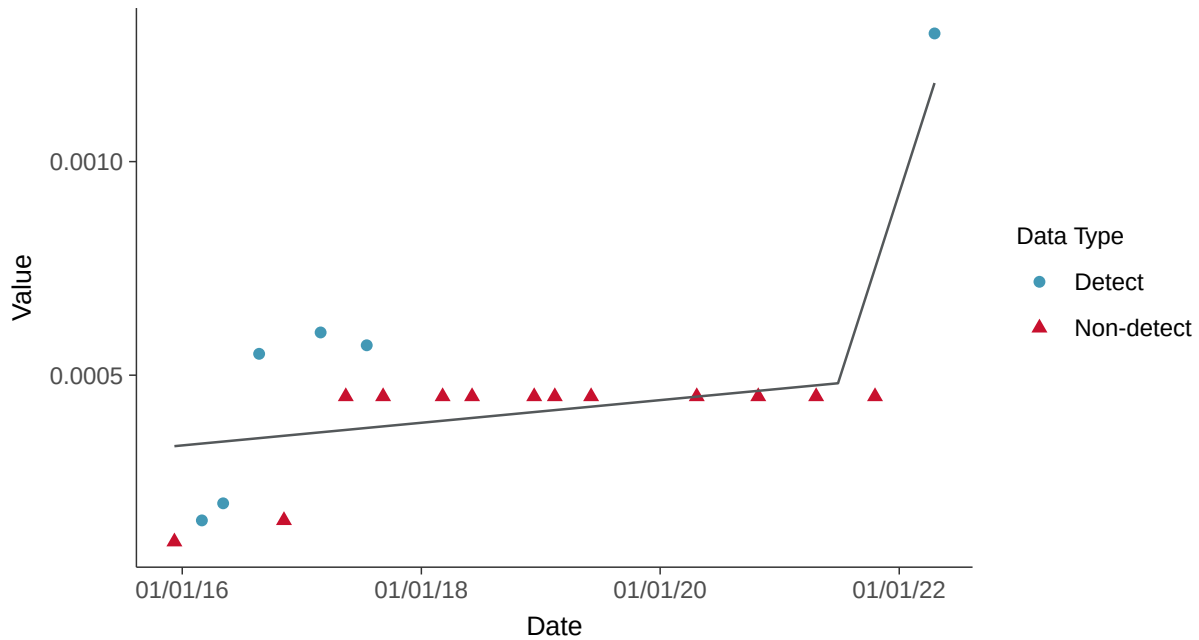
Gamma Q-Q plot using ROS Imputed Estimates

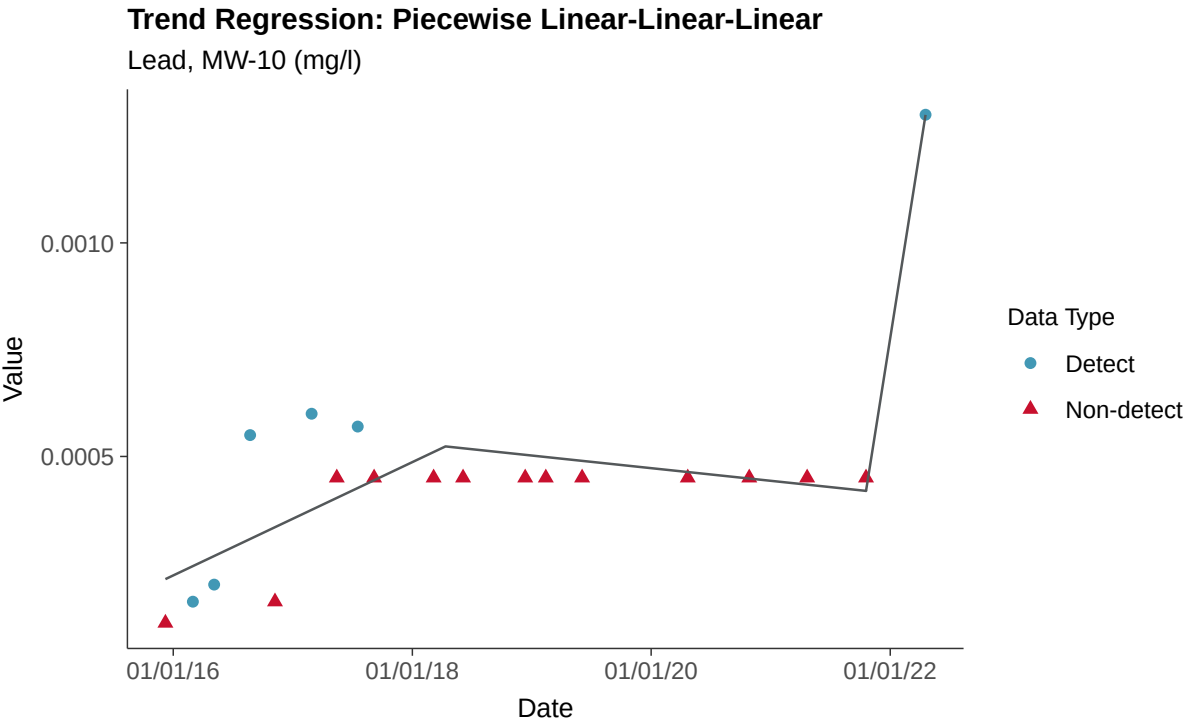
Lead, MW-10 (mg/l)



Trend Regression: Piecewise Linear-Linear

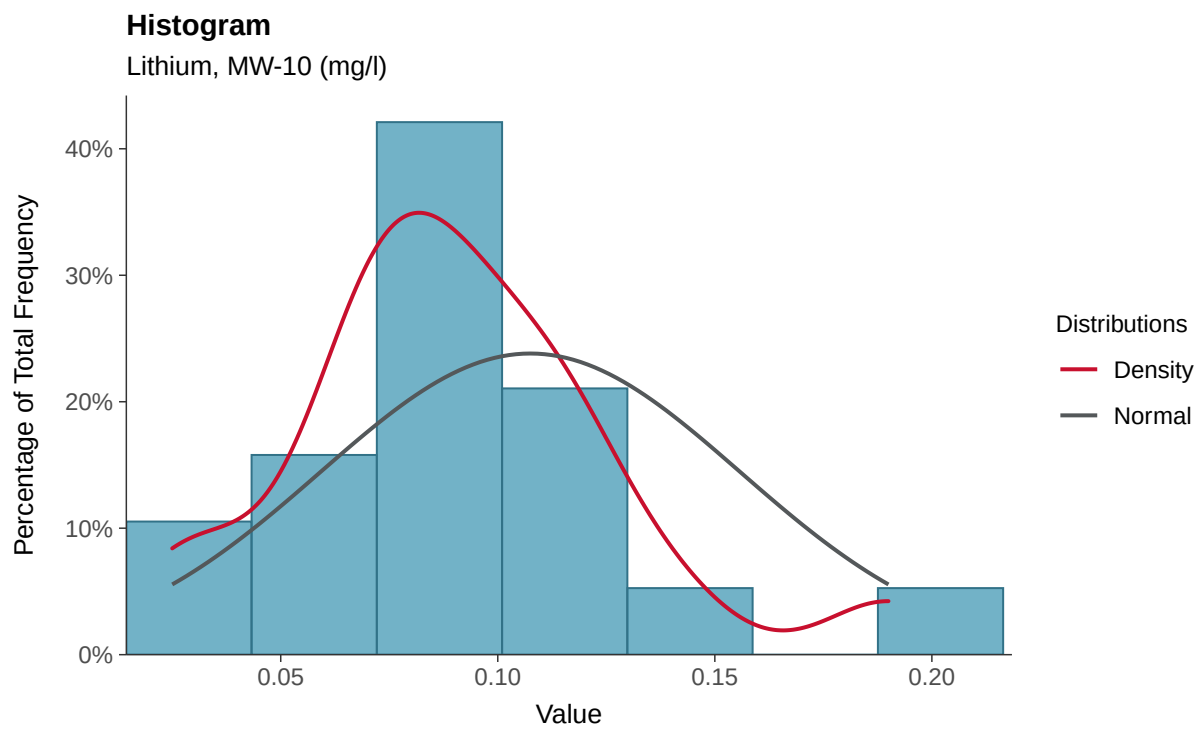
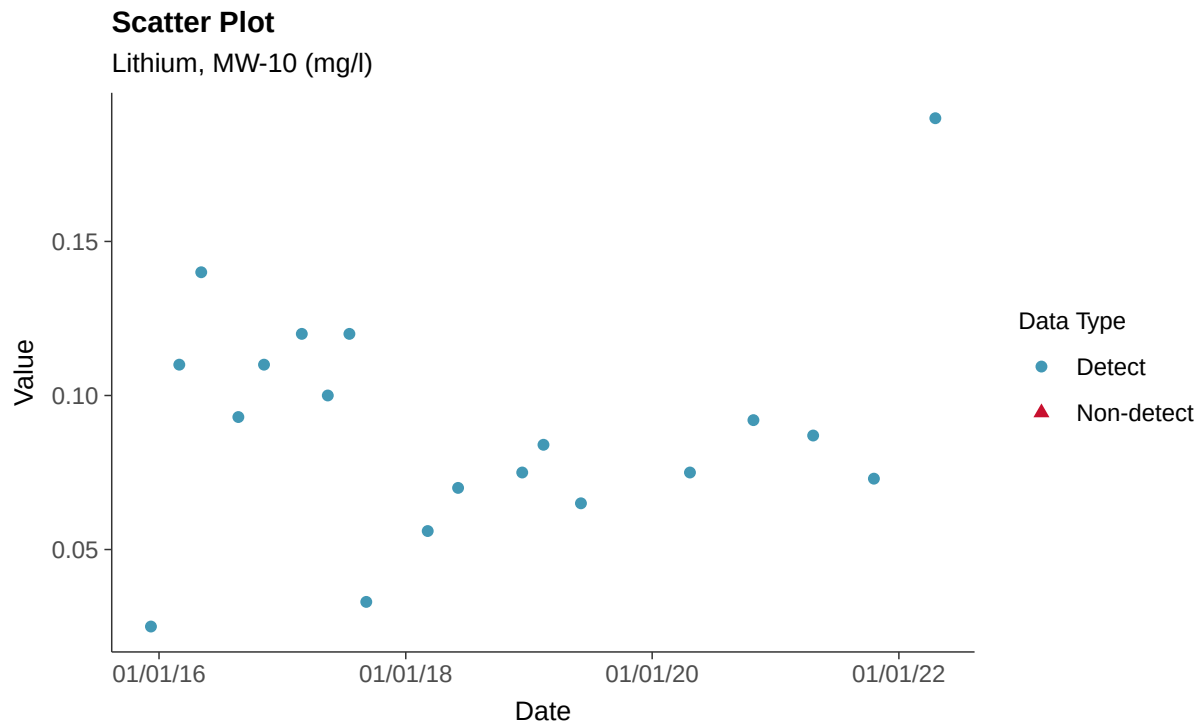
Lead, MW-10 (mg/l)





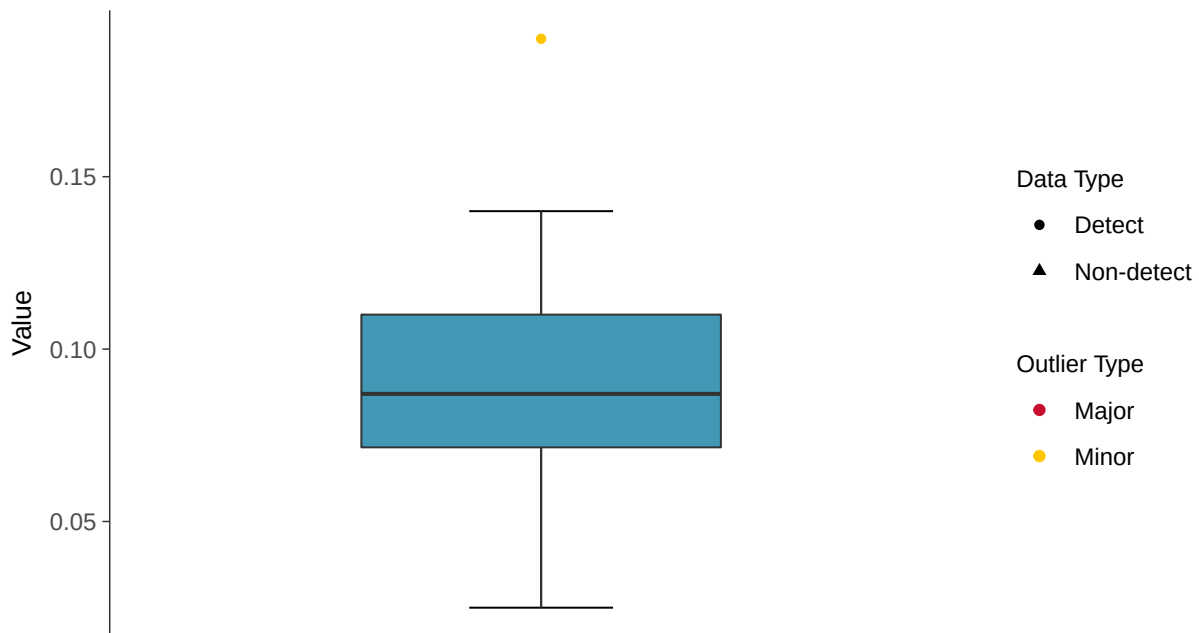
Appendix IV: Lithium, MW-10

ID: 1_2_118



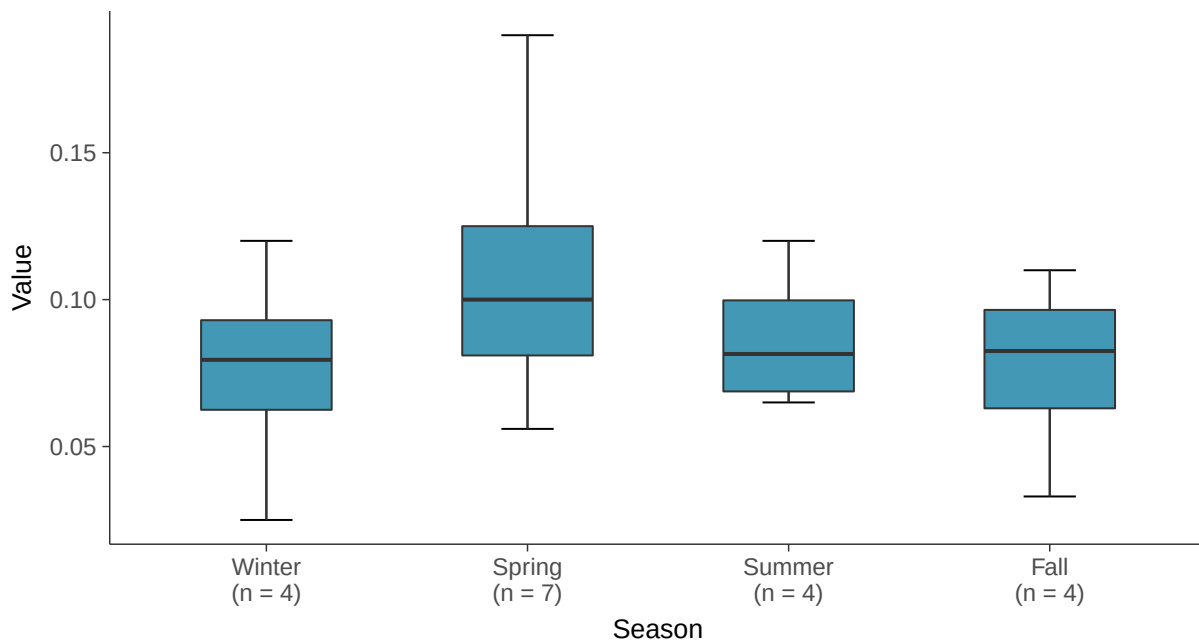
Boxplot

Lithium, MW-10 (mg/l)



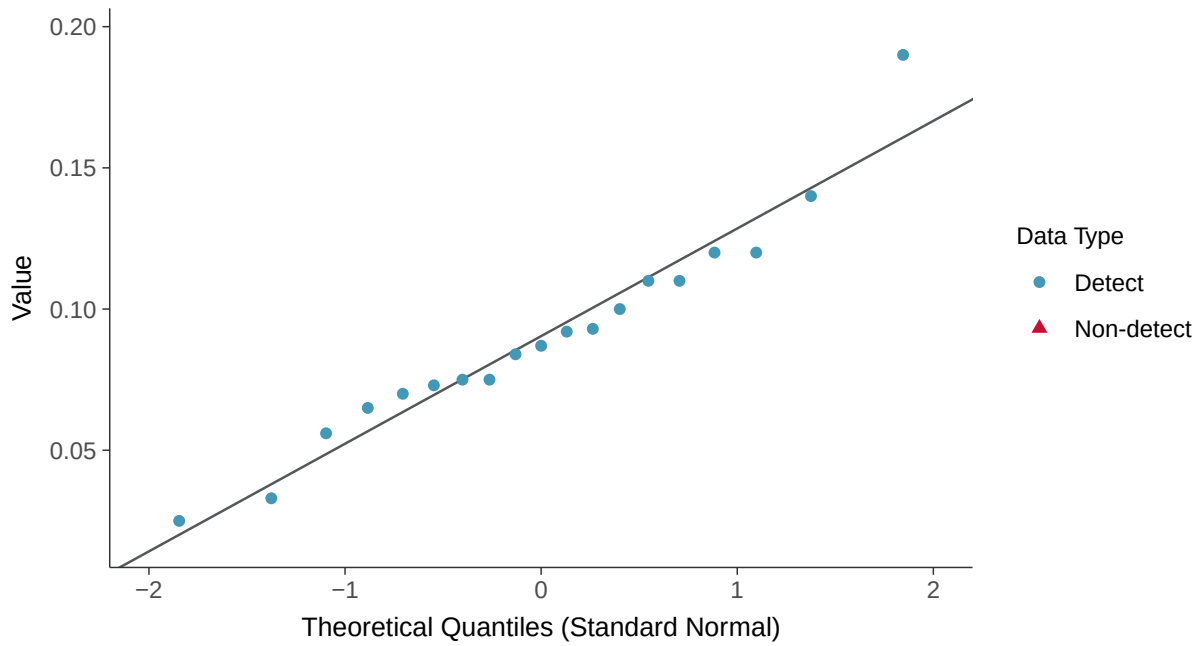
Boxplot by Season

Lithium, MW-10 (mg/l)



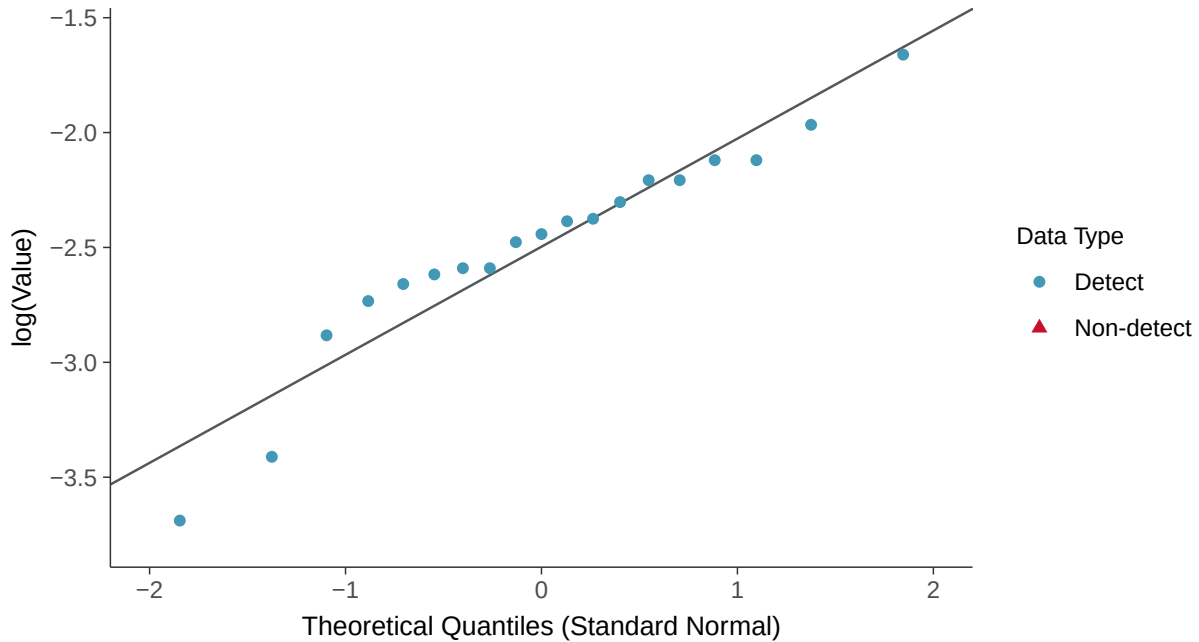
Normal Q-Q plot

Lithium, MW-10 (mg/l)



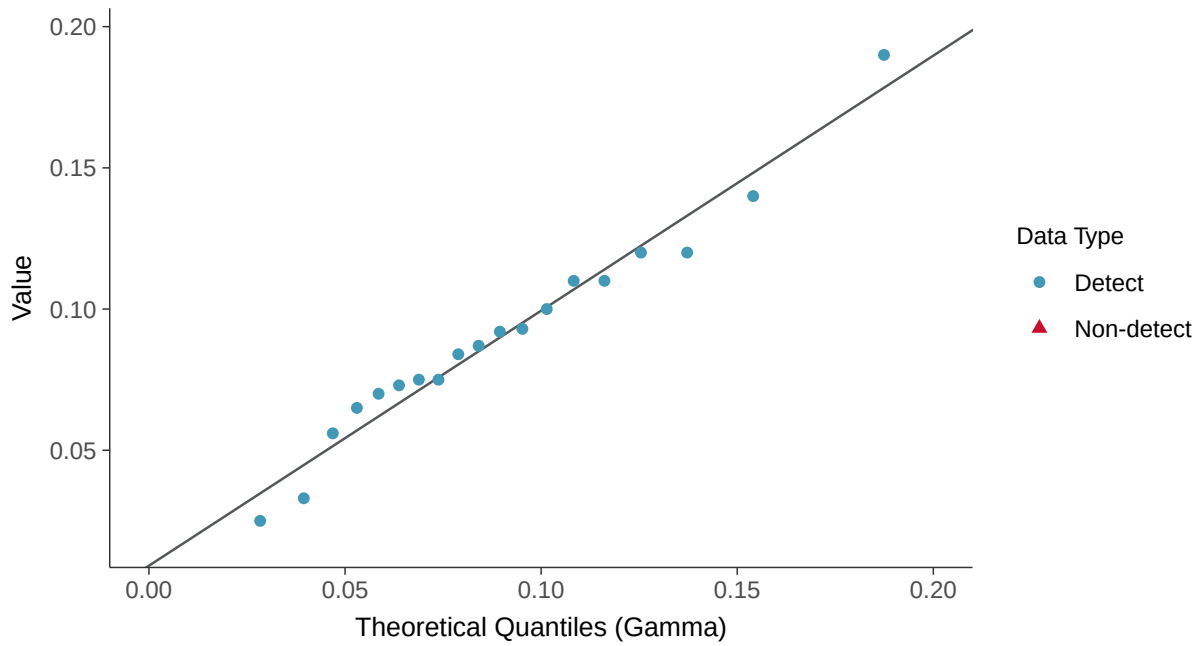
Lognormal Q-Q plot

Lithium, MW-10 (mg/l)



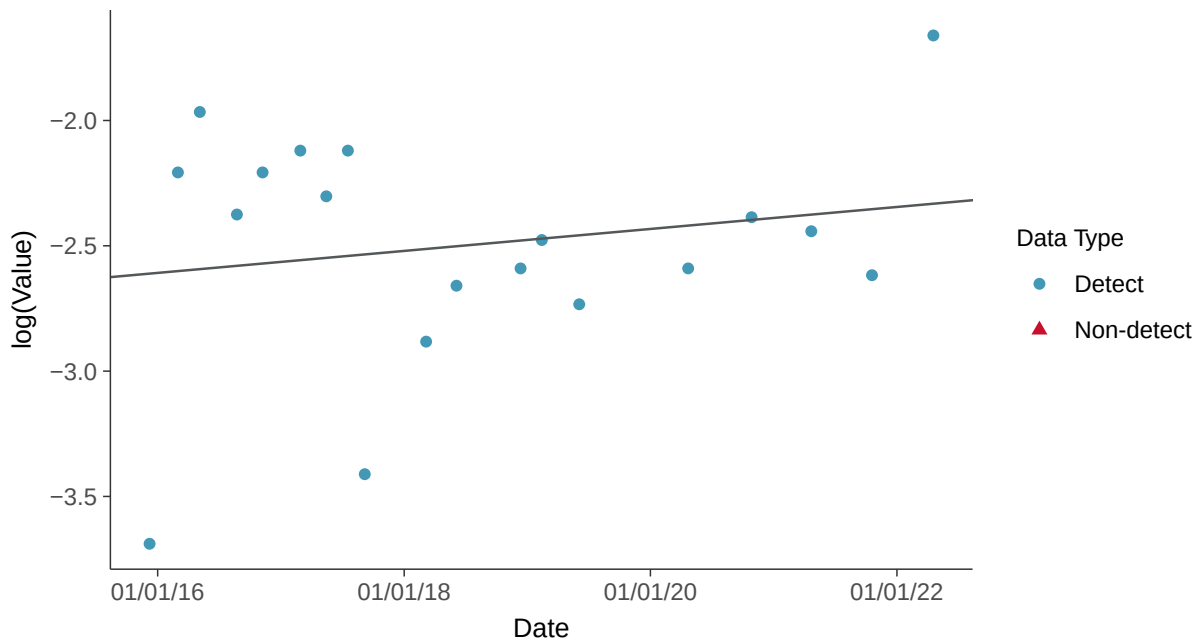
Gamma Q-Q plot

Lithium, MW-10 (mg/l)



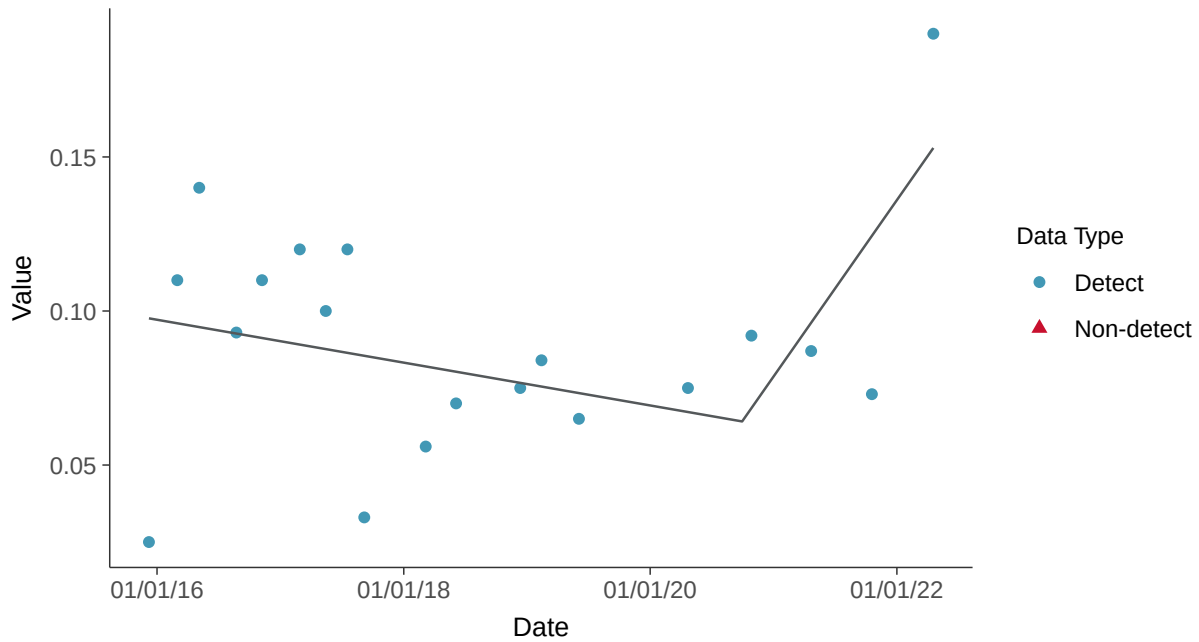
Trend Regression: Lognormal MLE

Lithium, MW-10 (mg/l)



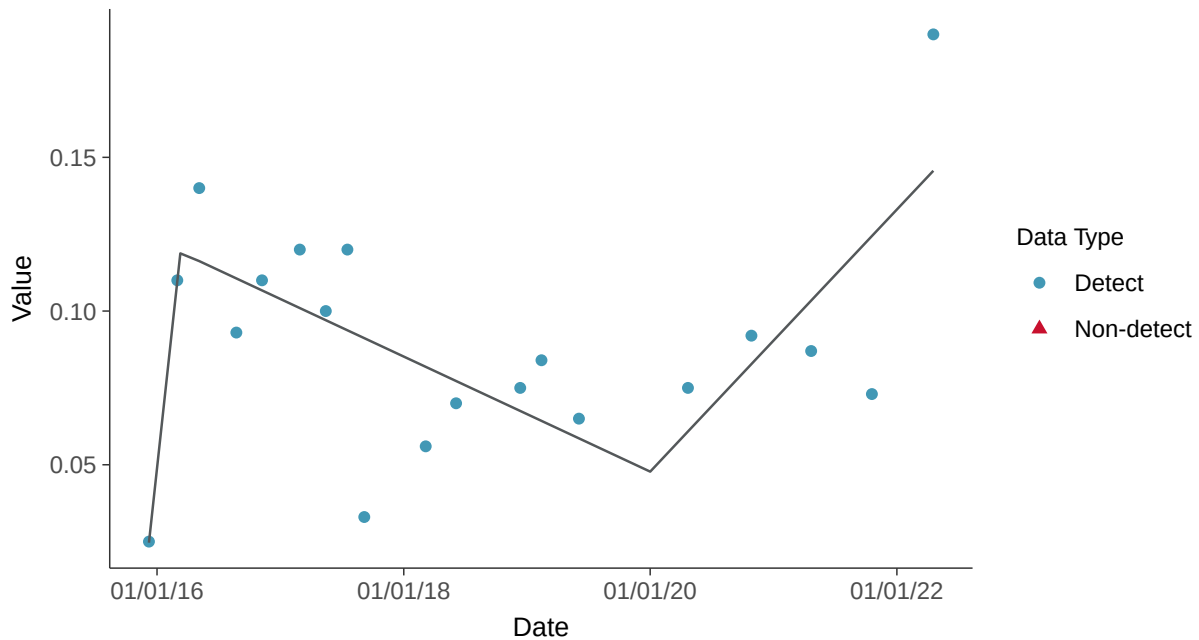
Trend Regression: Piecewise Linear-Linear

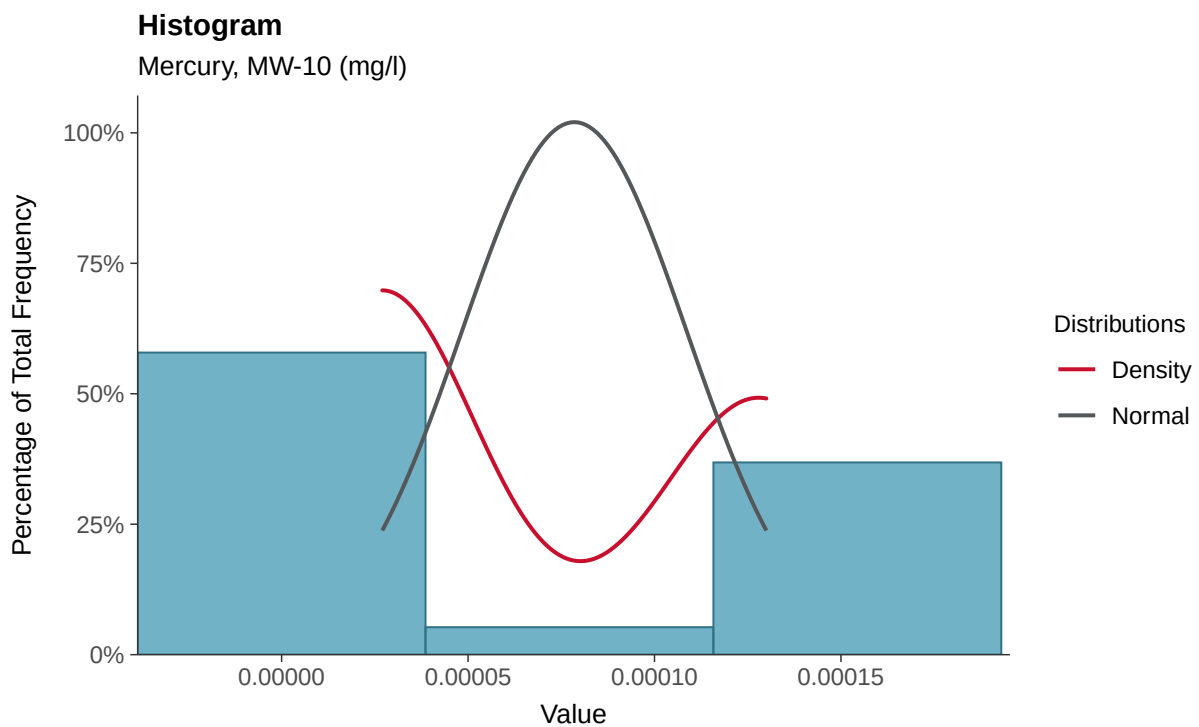
Lithium, MW-10 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

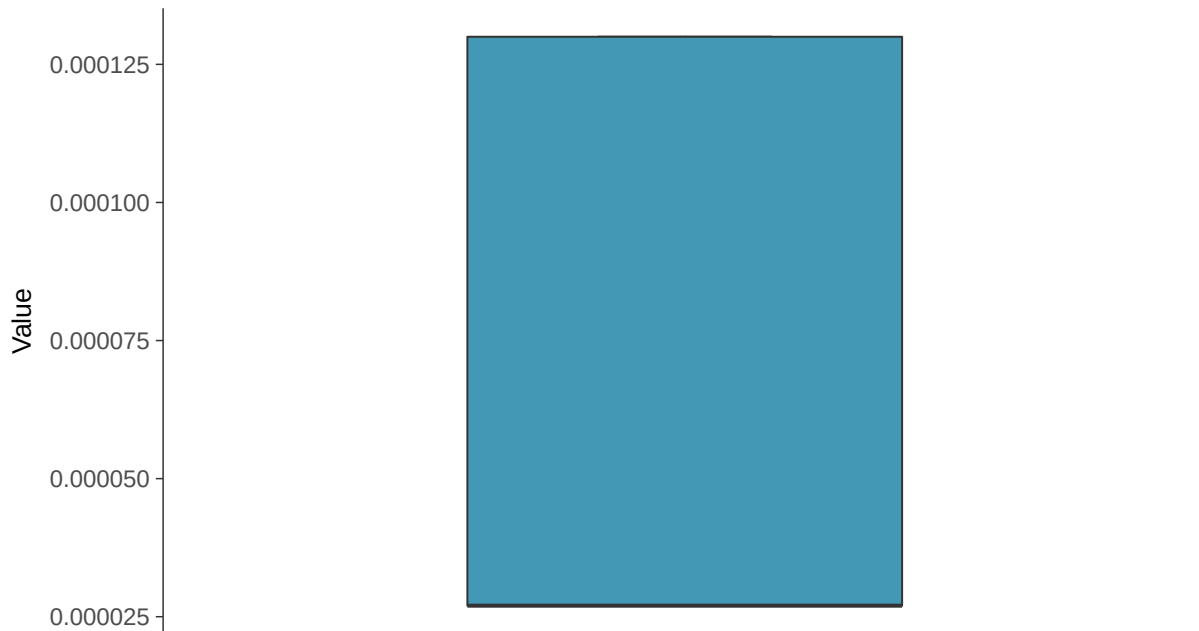
Lithium, MW-10 (mg/l)





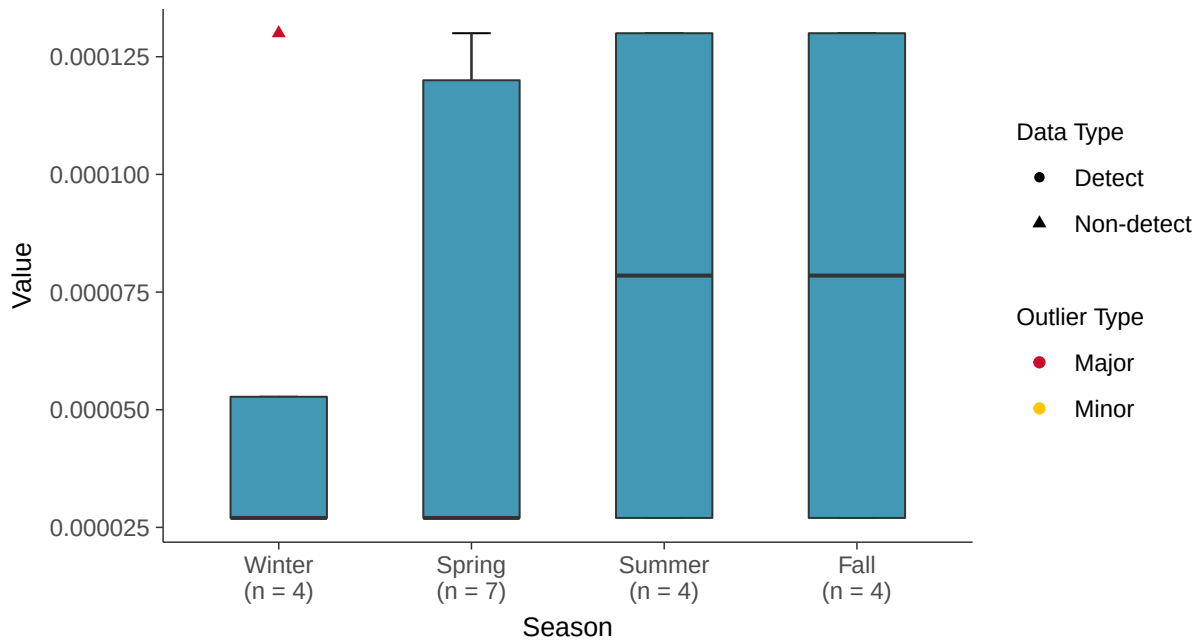
Boxplot

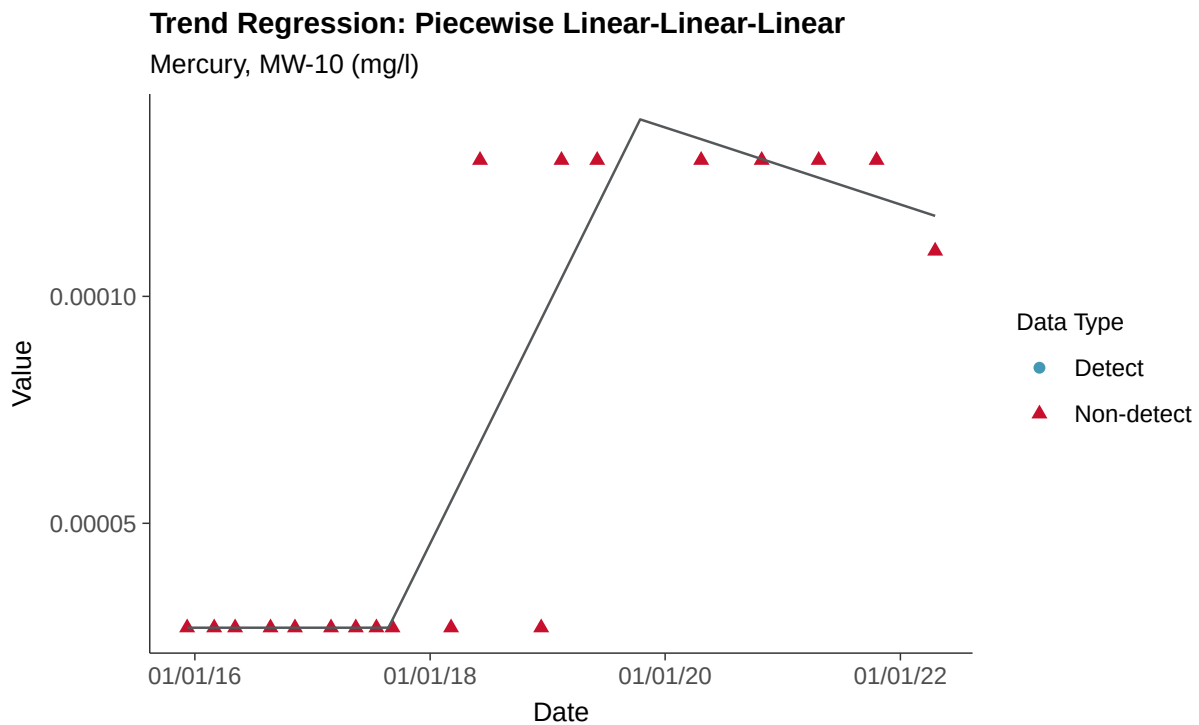
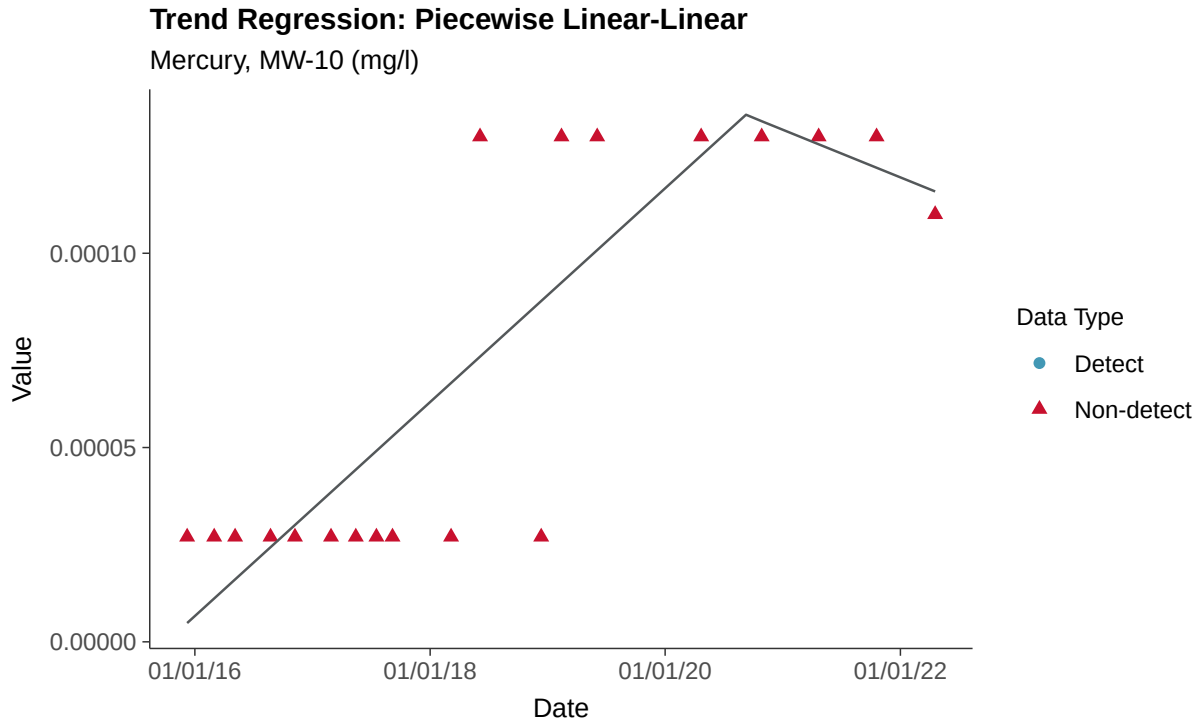
Mercury, MW-10 (mg/l)



Boxplot by Season

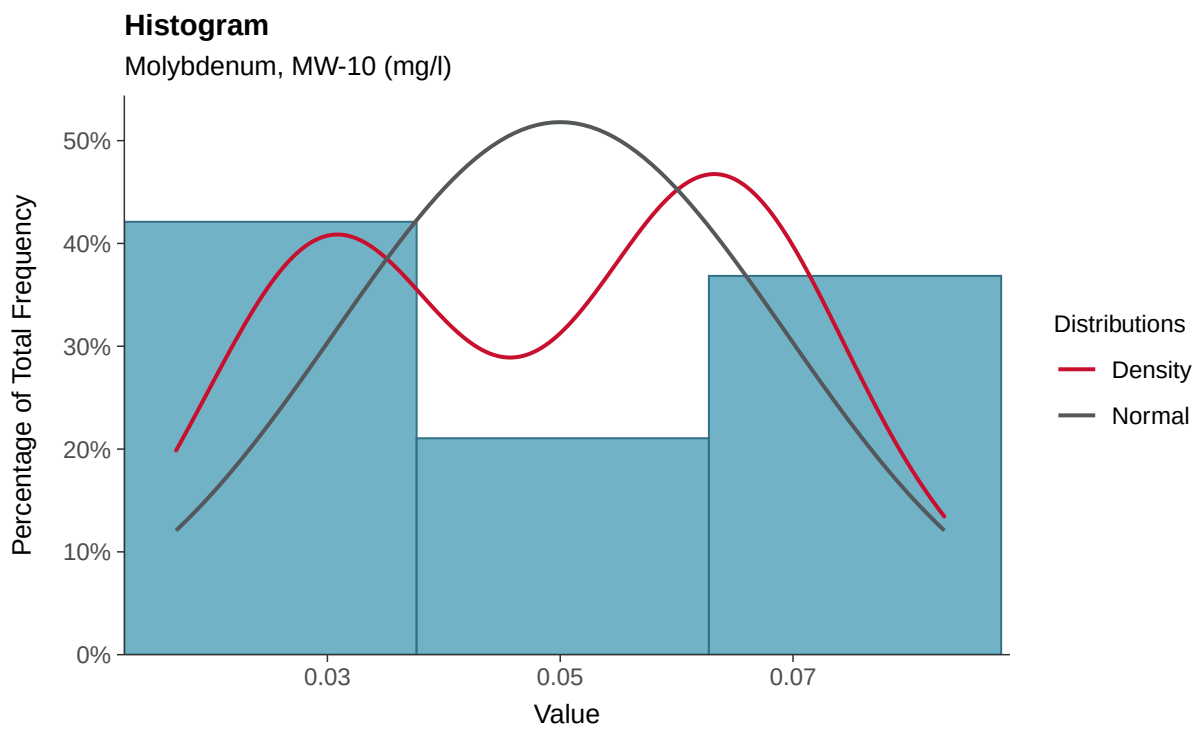
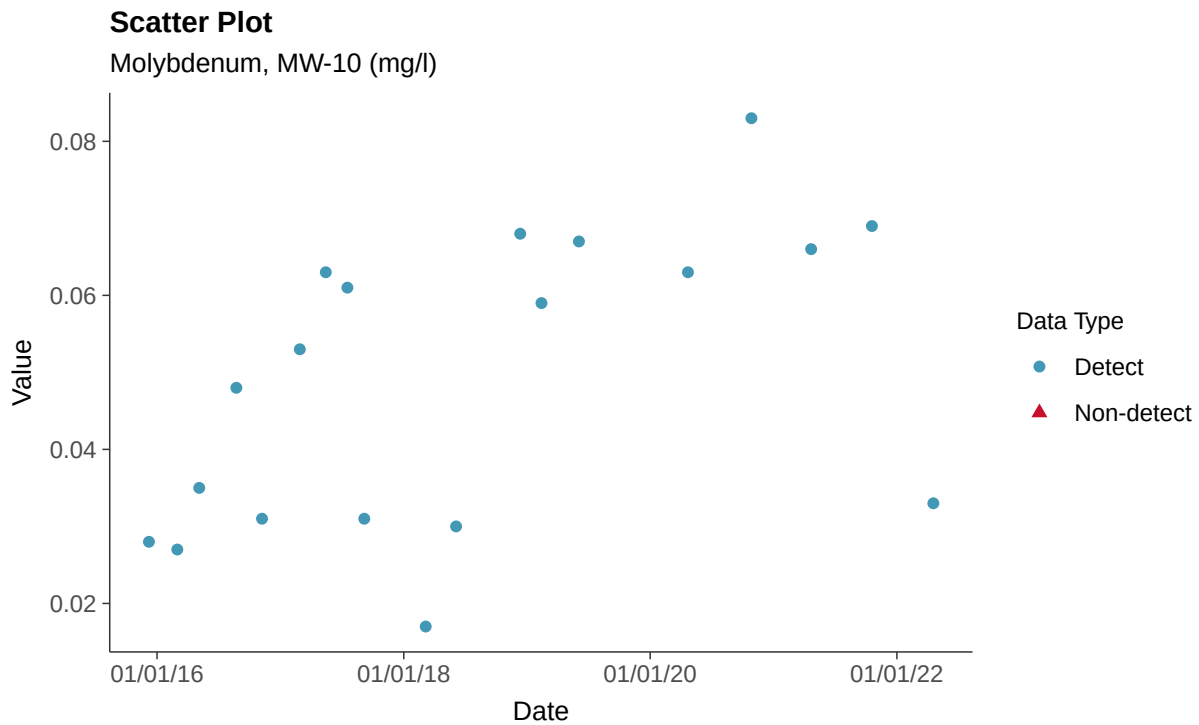
Mercury, MW-10 (mg/l)





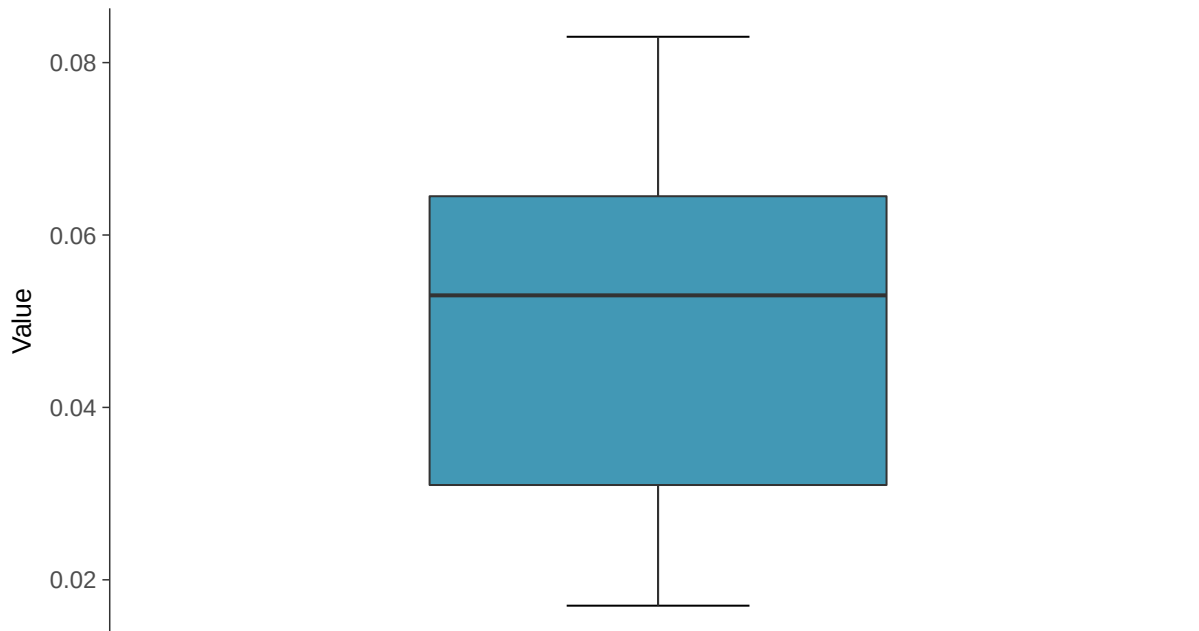
Appendix IV: Molybdenum, MW-10

ID: 1_2_121



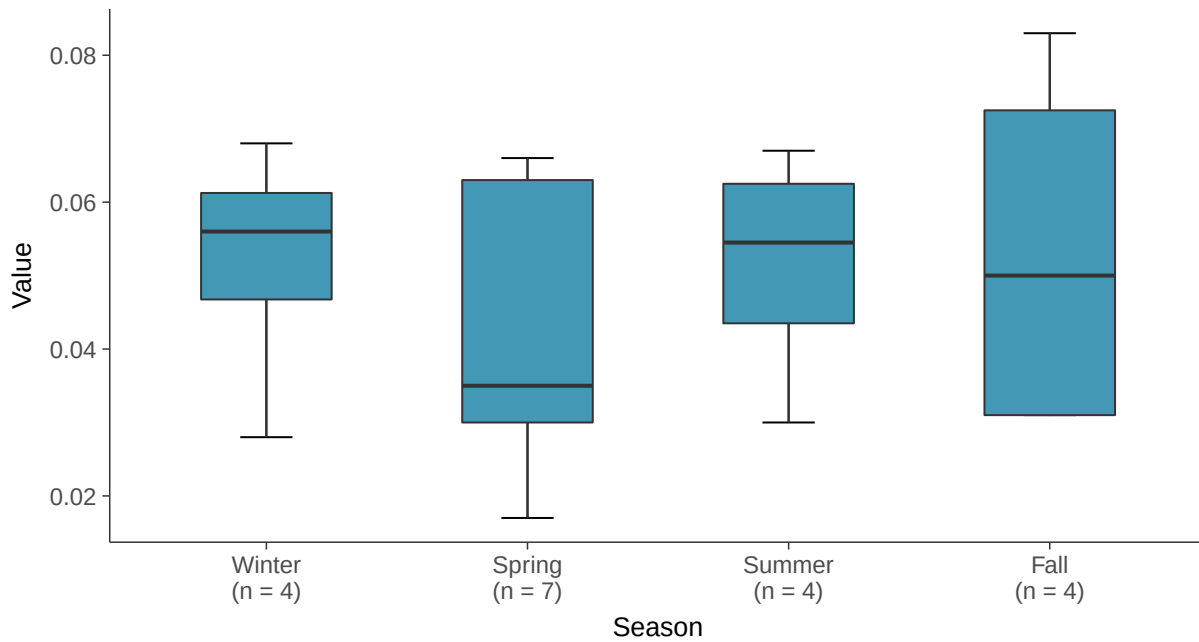
Boxplot

Molybdenum, MW-10 (mg/l)



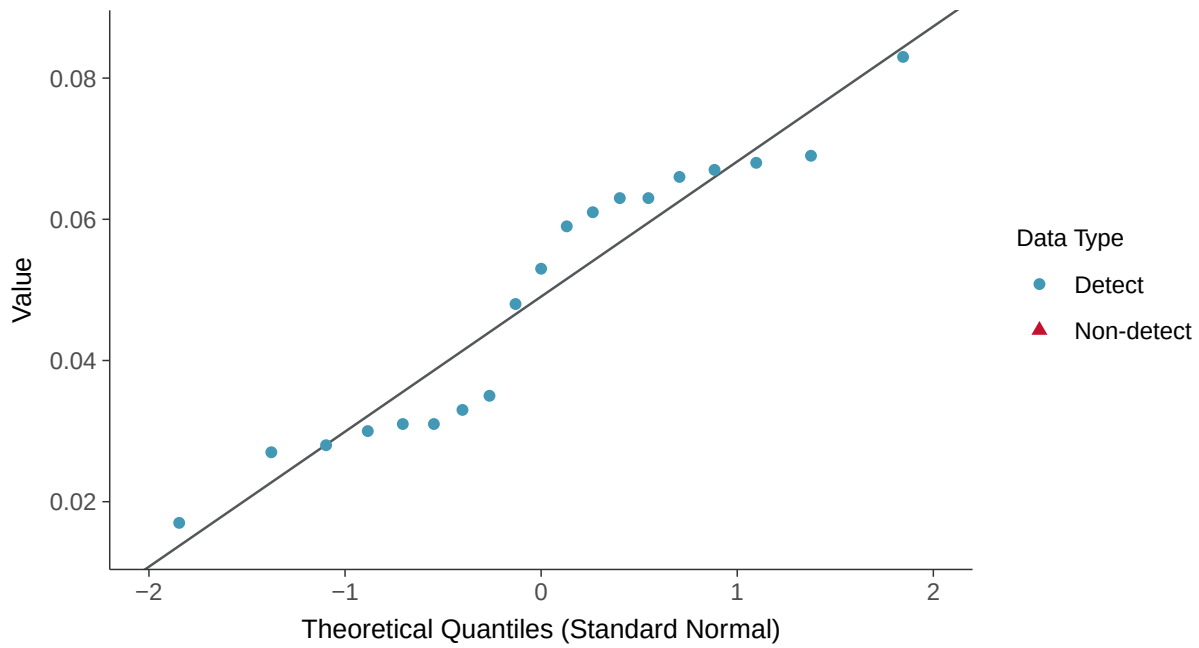
Boxplot by Season

Molybdenum, MW-10 (mg/l)



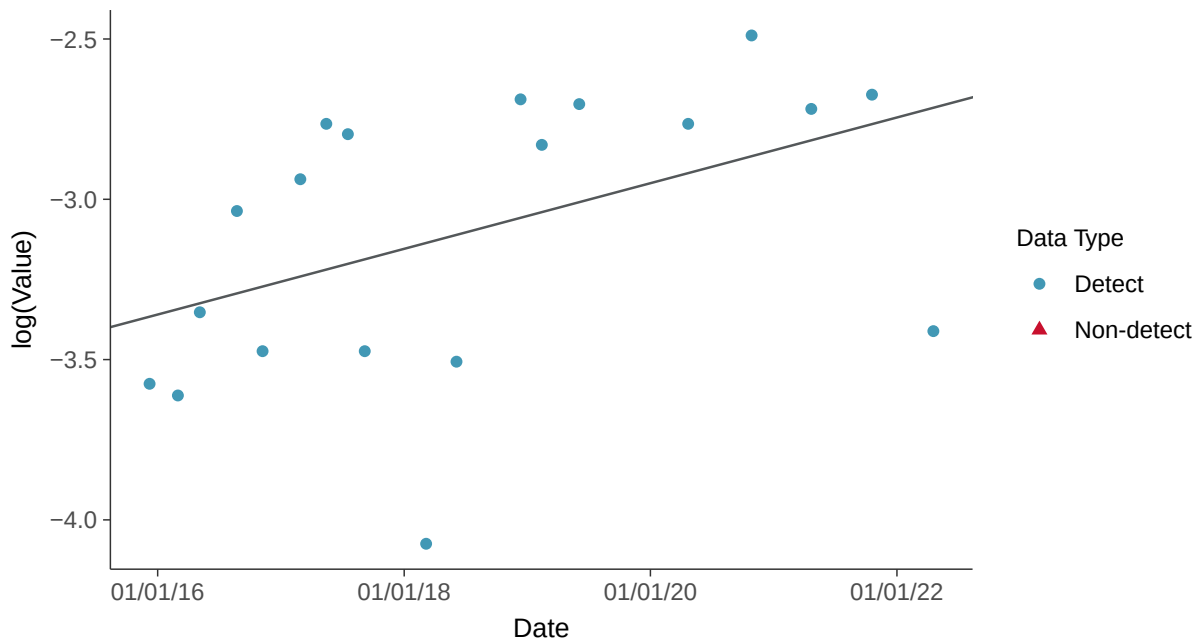
Normal Q-Q plot

Molybdenum, MW-10 (mg/l)



Trend Regression: Lognormal MLE

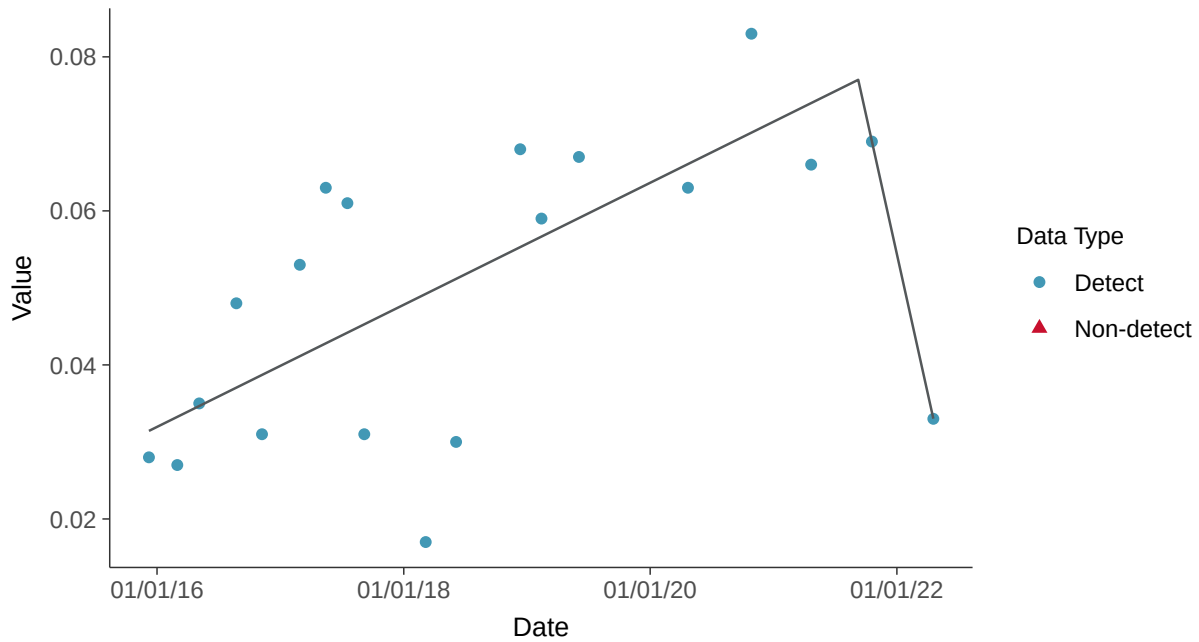
Molybdenum, MW-10 (mg/l)





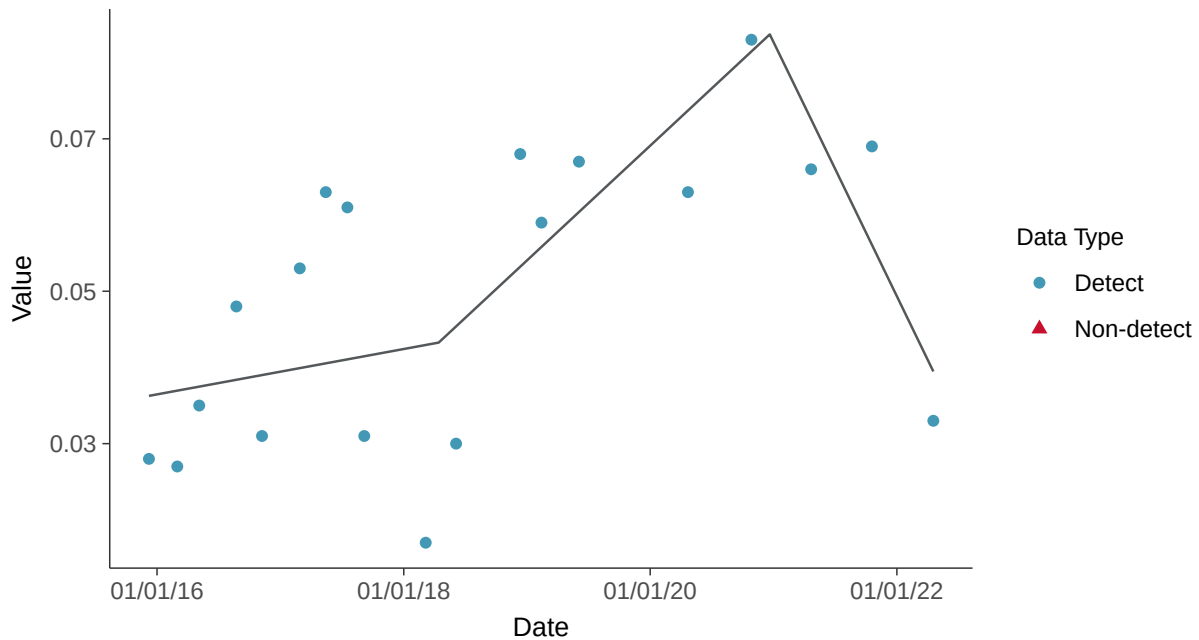
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-10 (mg/l)



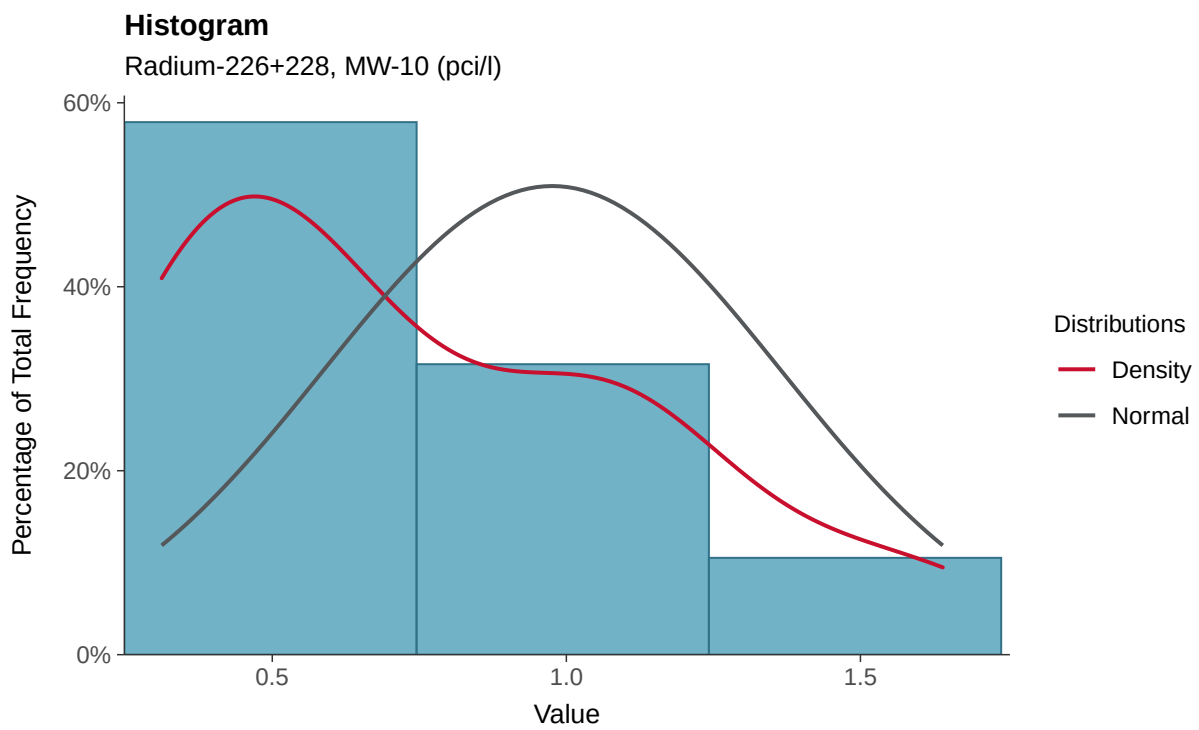
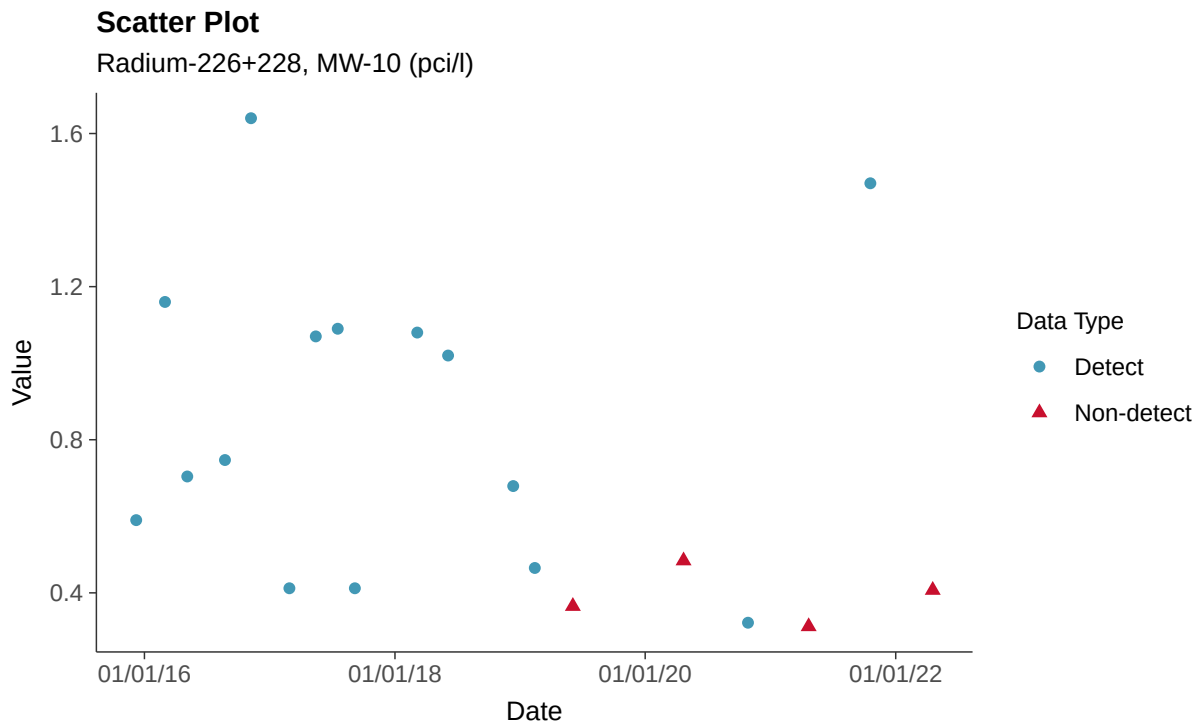
Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-10 (mg/l)



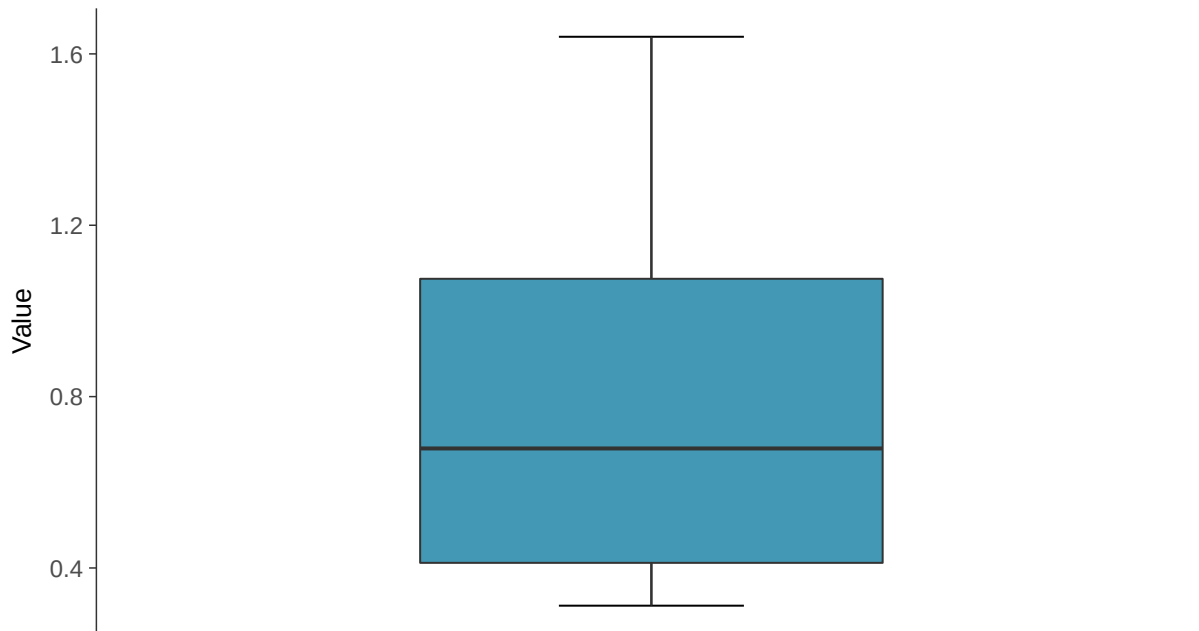
Appendix IV: Radium-226+228, MW-10

ID: 1_2_127



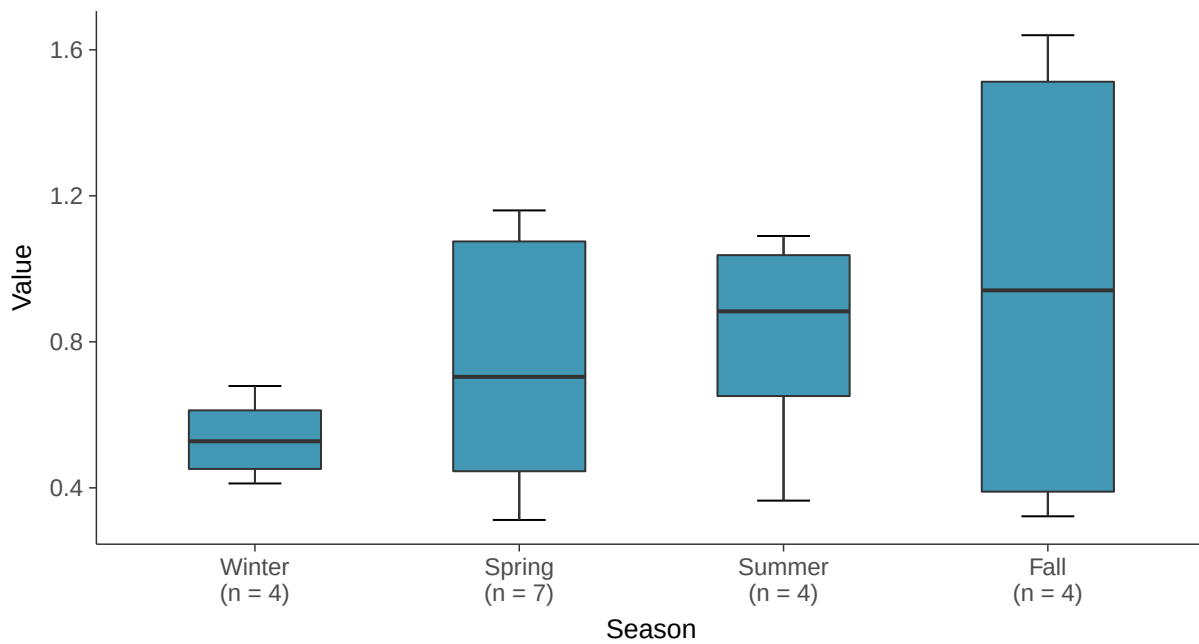
Boxplot

Radium-226+228, MW-10 (pci/l)



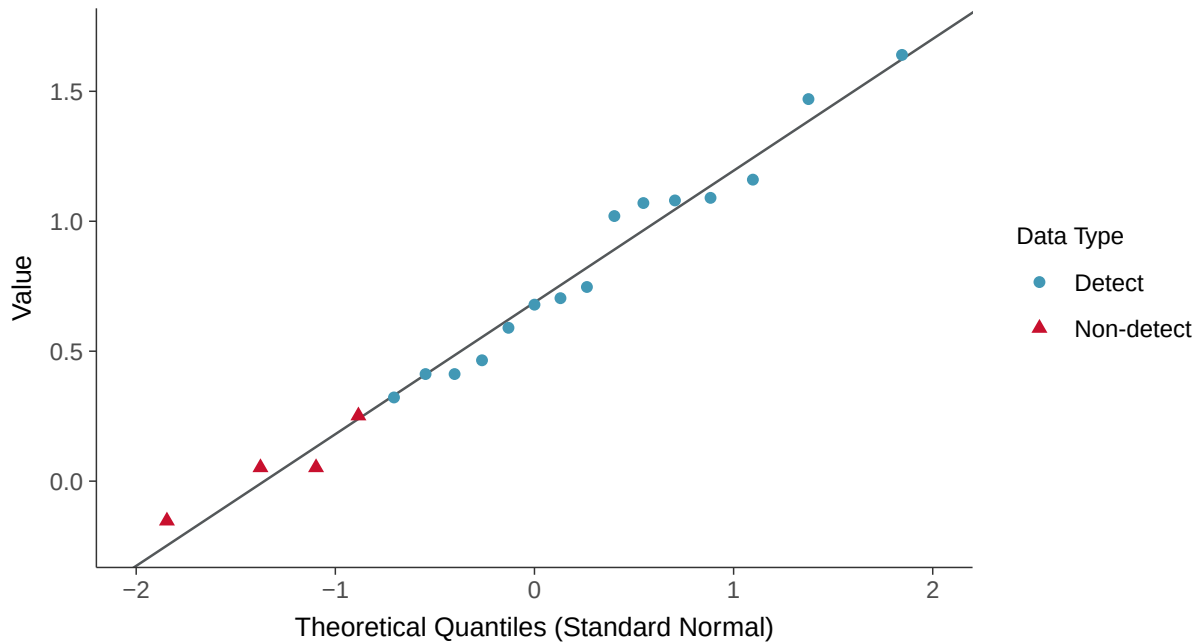
Boxplot by Season

Radium-226+228, MW-10 (pci/l)



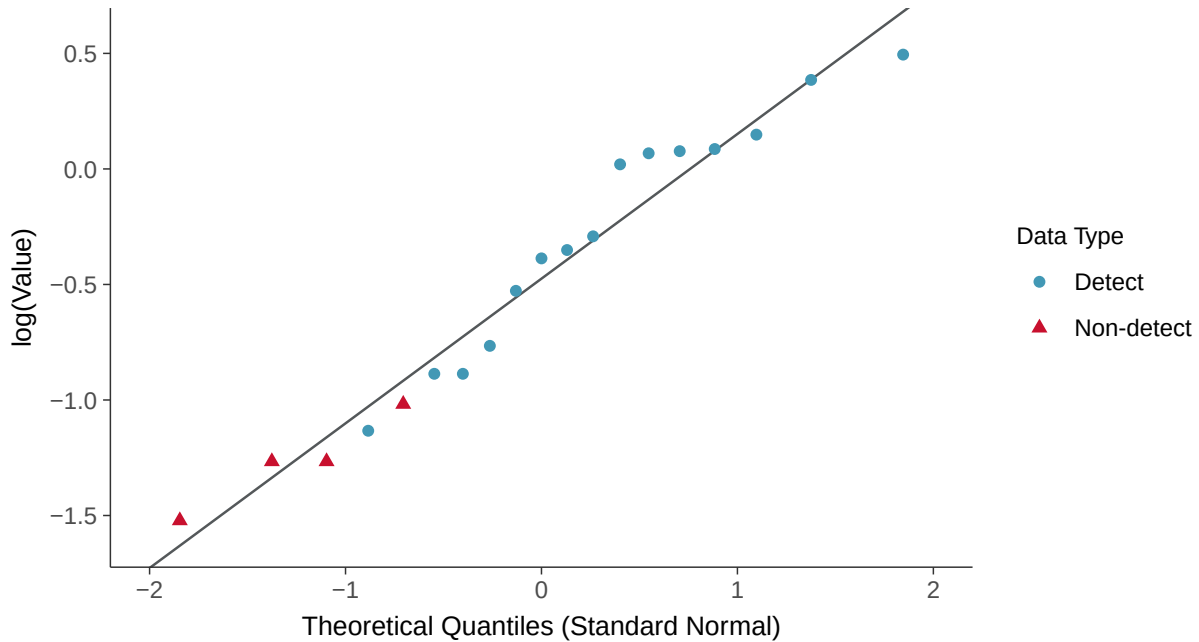
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-10 (pci/l)



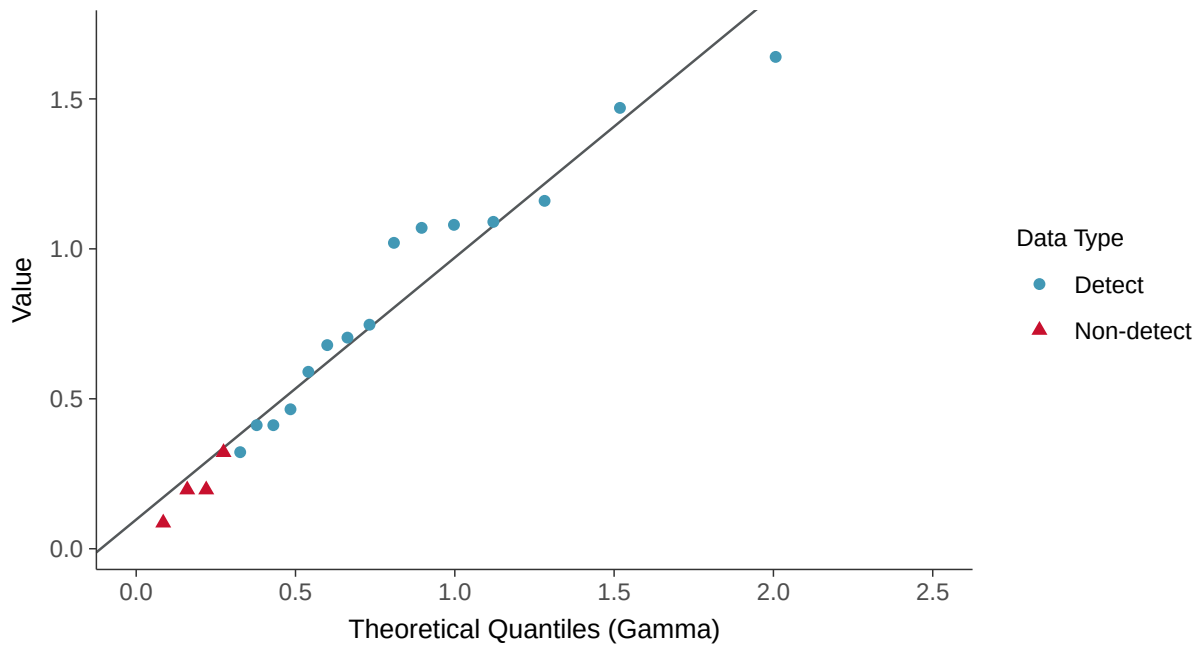
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-10 (pci/l)



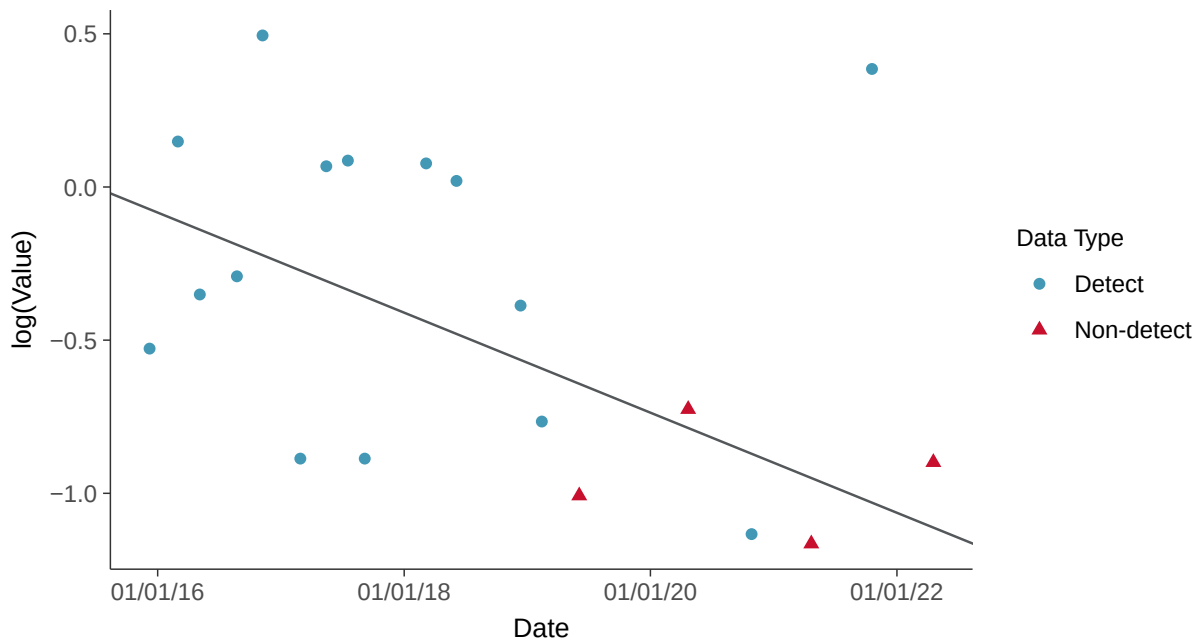
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-10 (pci/l)



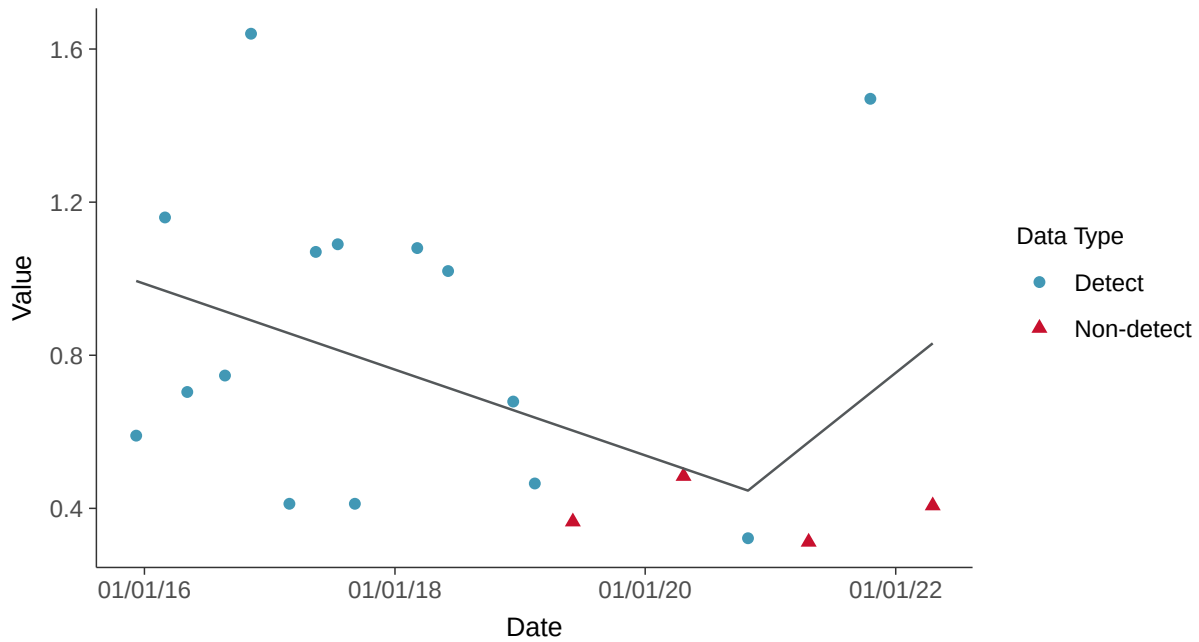
Trend Regression: Lognormal MLE

Radium-226+228, MW-10 (pci/l)



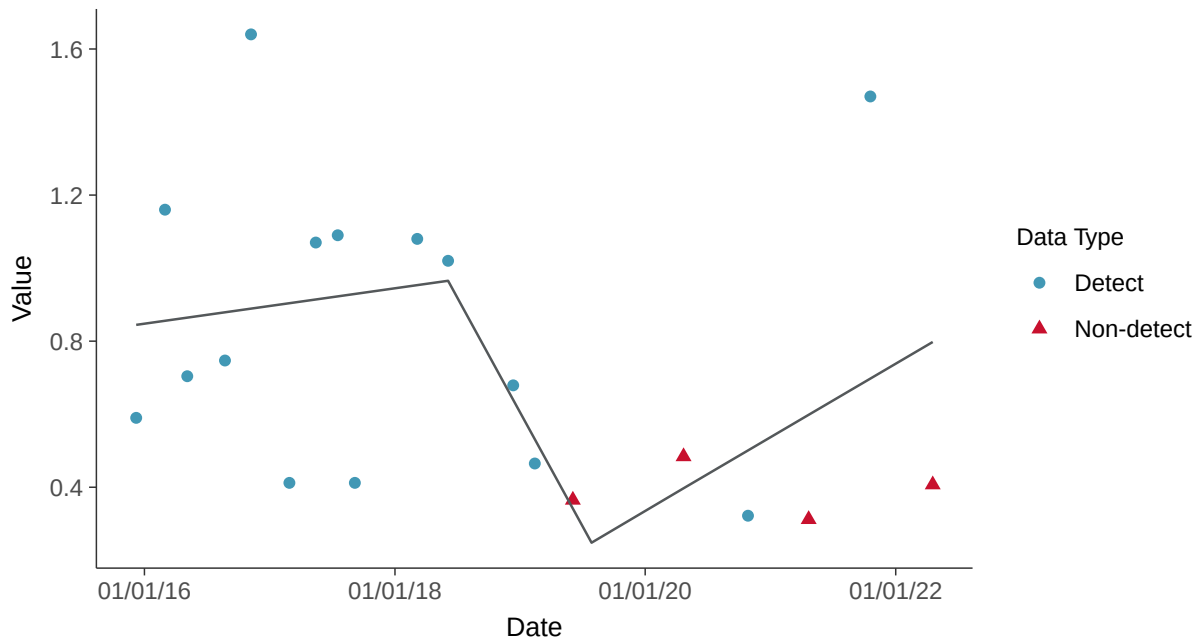
Trend Regression: Piecewise Linear-Linear

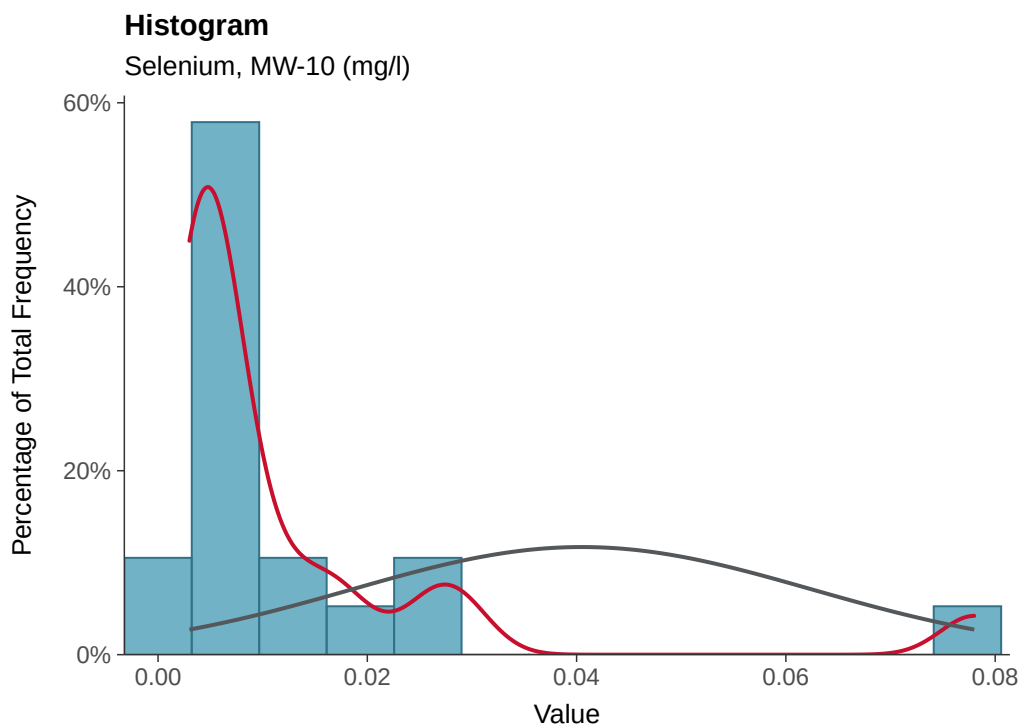
Radium-226+228, MW-10 (pci/l)



Trend Regression: Piecewise Linear-Linear-Linear

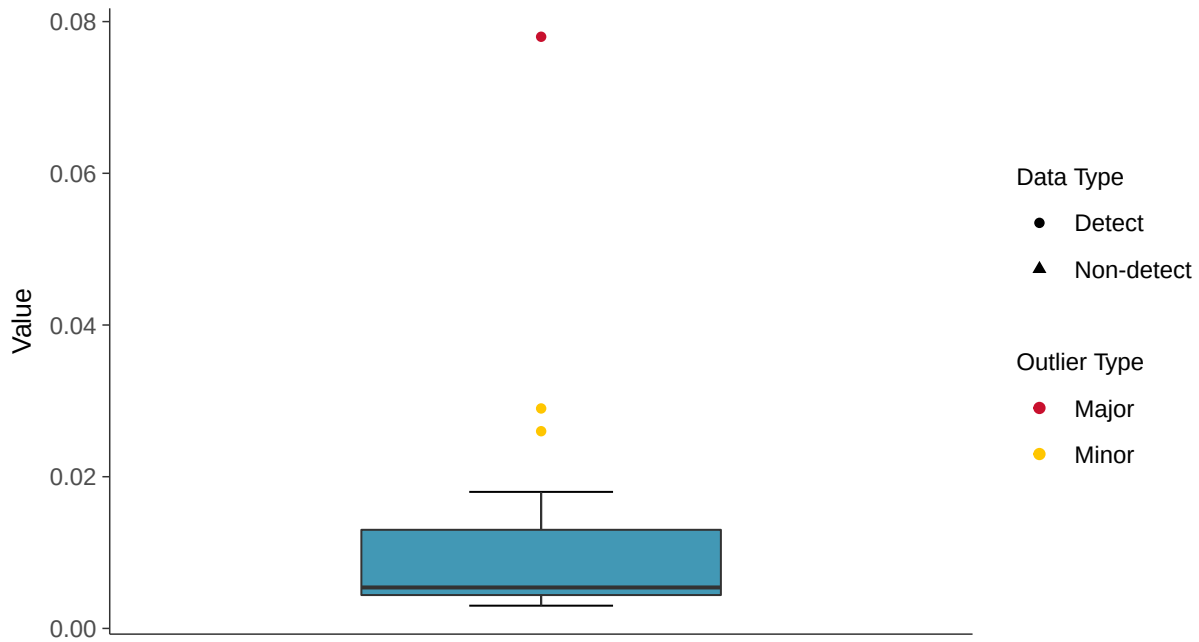
Radium-226+228, MW-10 (pci/l)





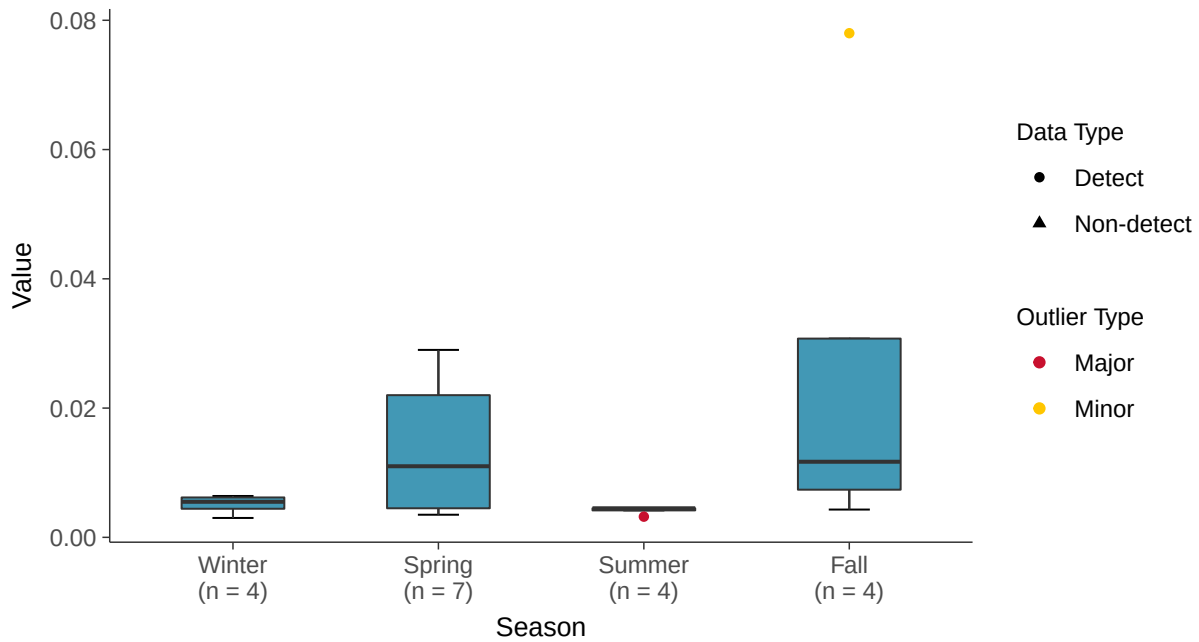
Boxplot

Selenium, MW-10 (mg/l)



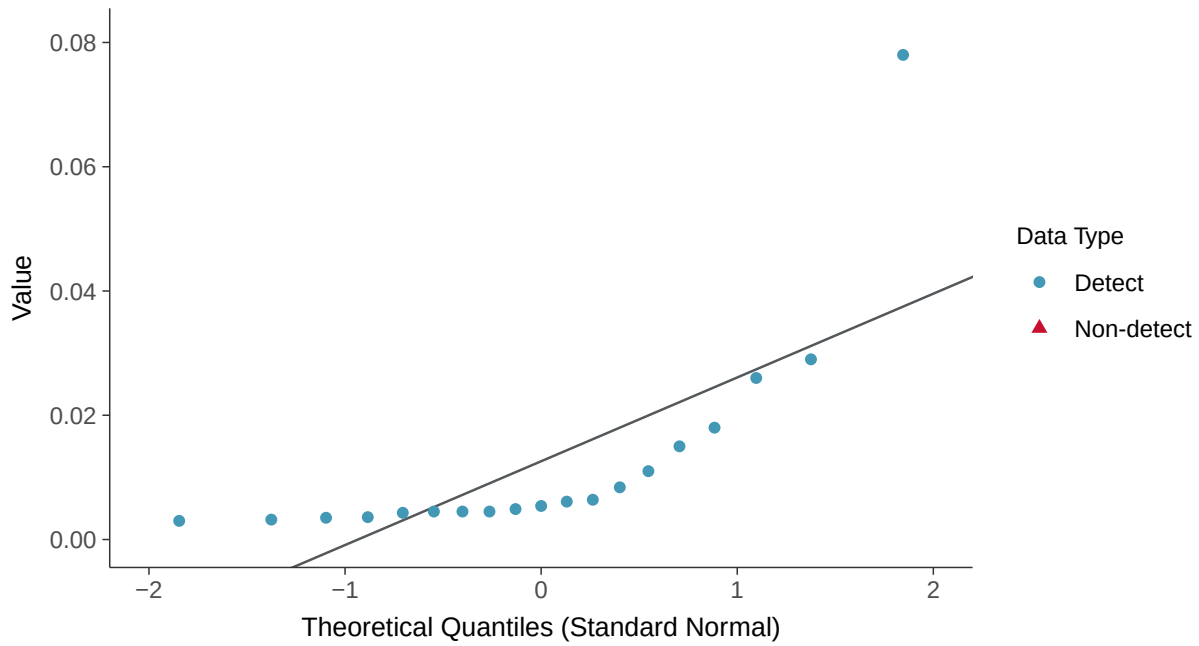
Boxplot by Season

Selenium, MW-10 (mg/l)



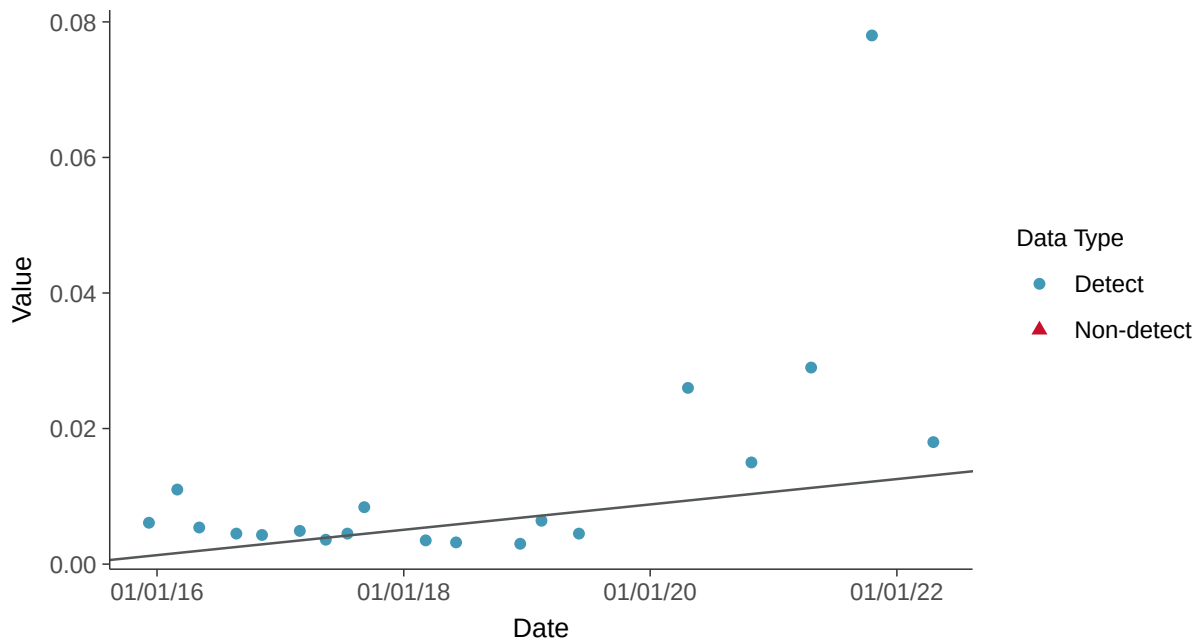
Normal Q-Q plot

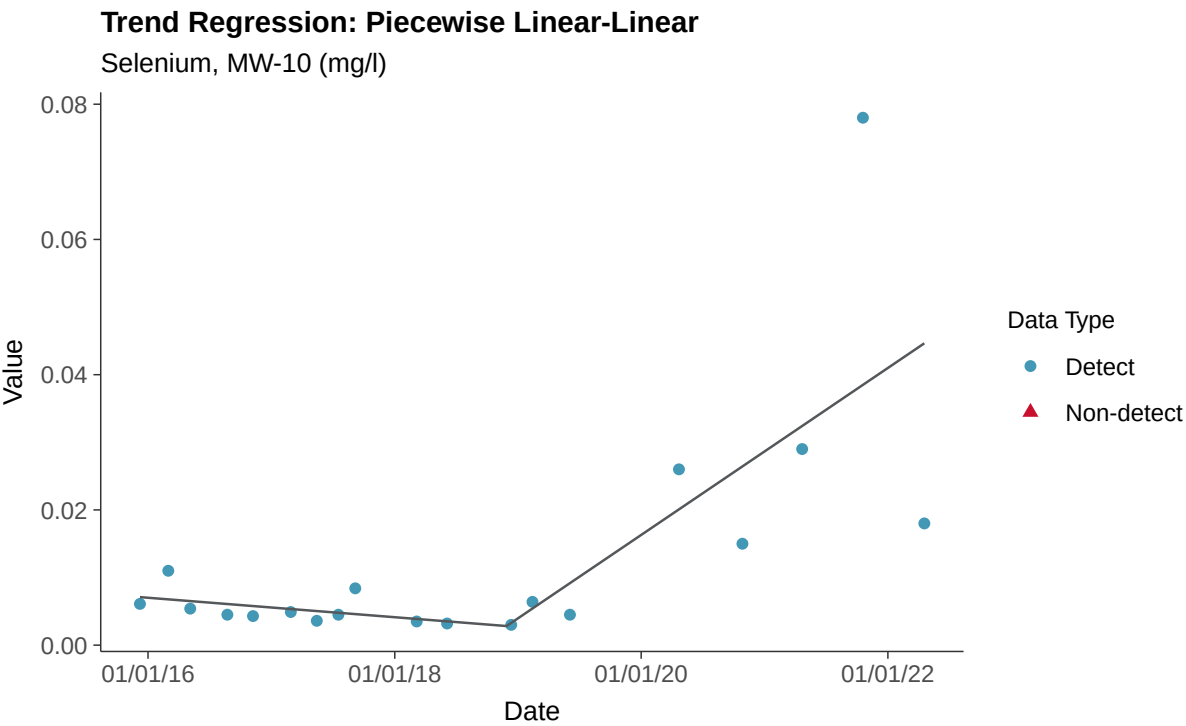
Selenium, MW-10 (mg/l)

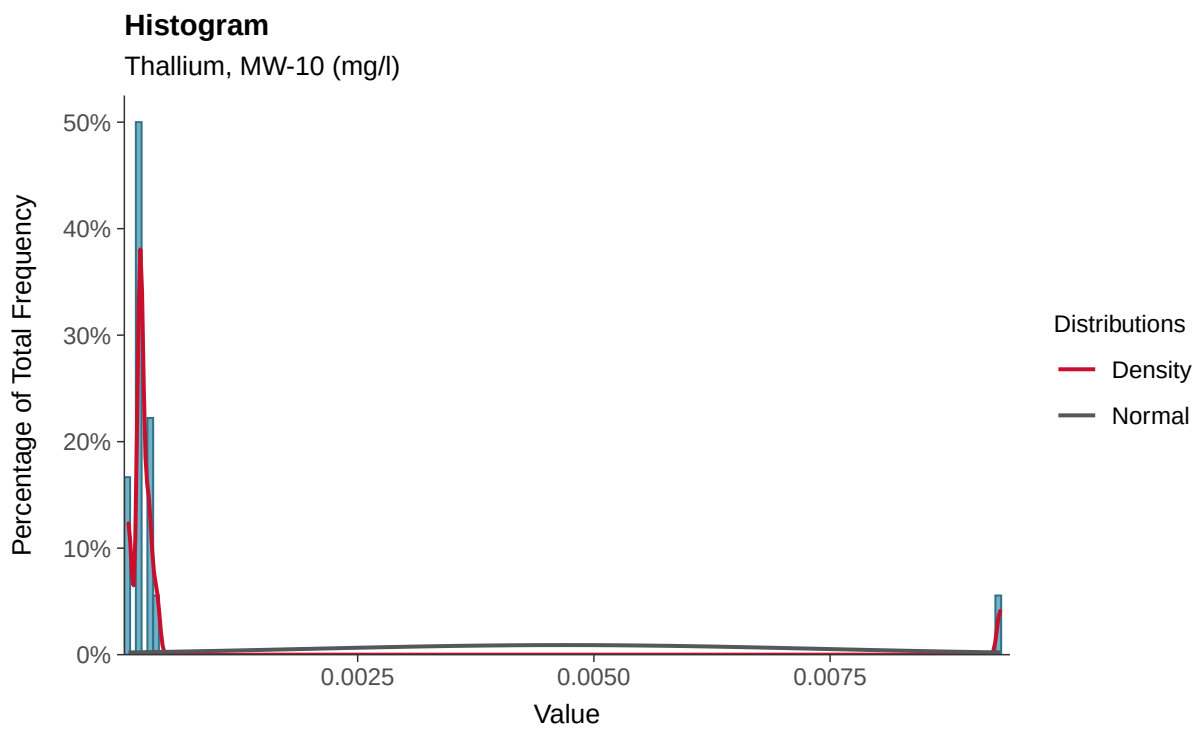


Trend Regression: Mann-Kendall/Theil-Sen Estimate

Selenium, MW-10 (mg/l)

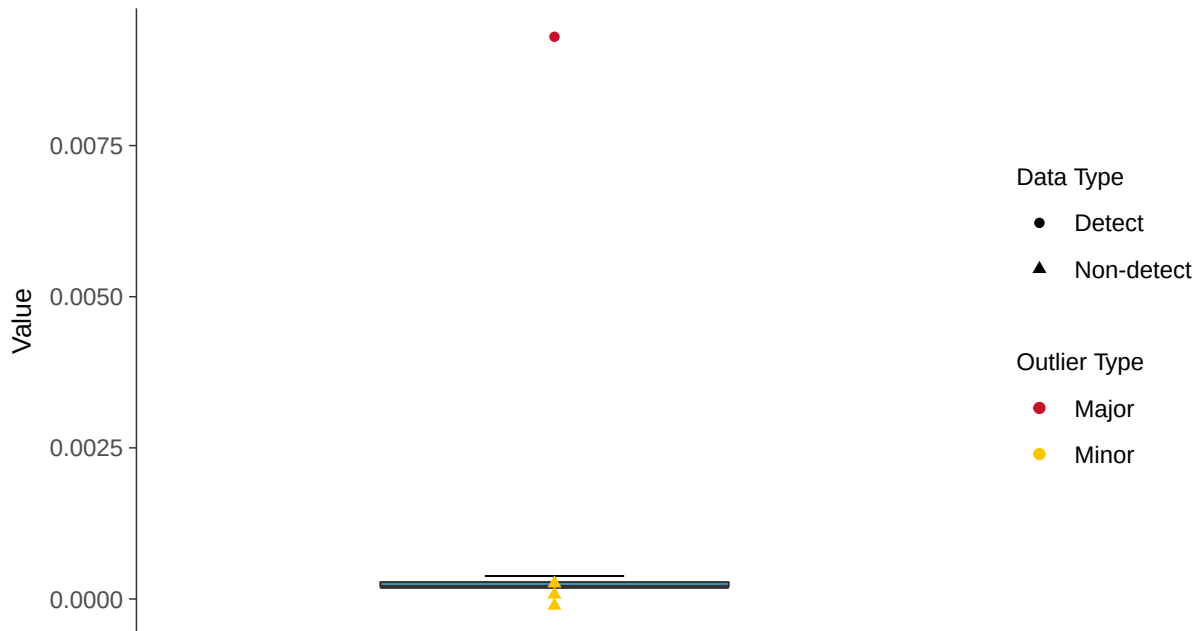






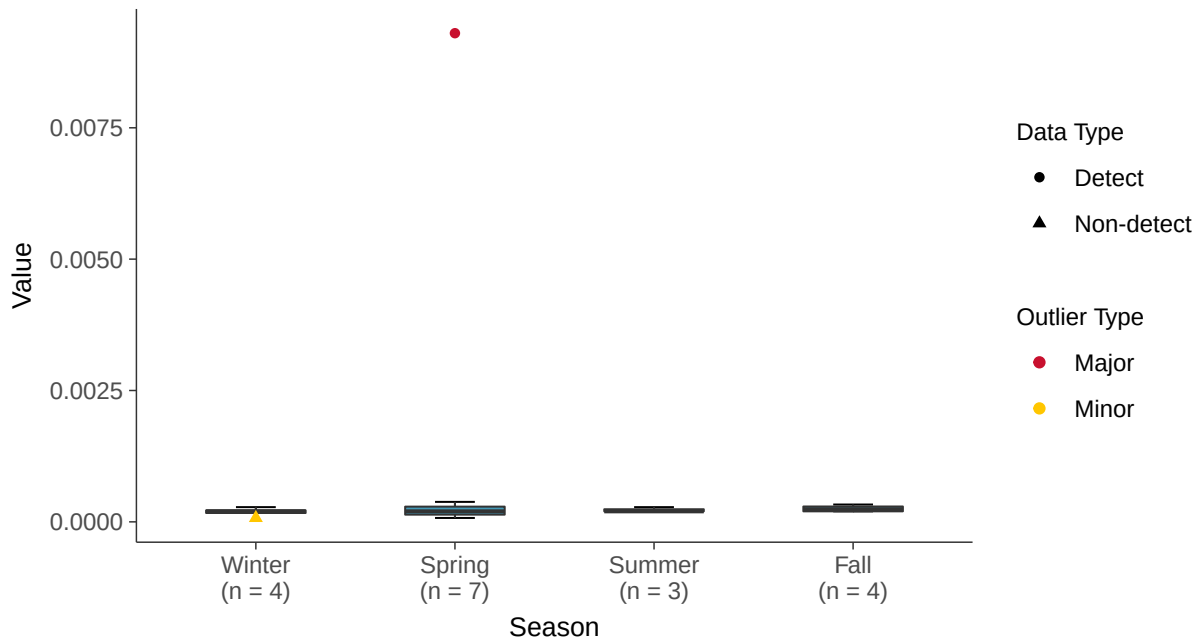
Boxplot

Thallium, MW-10 (mg/l)



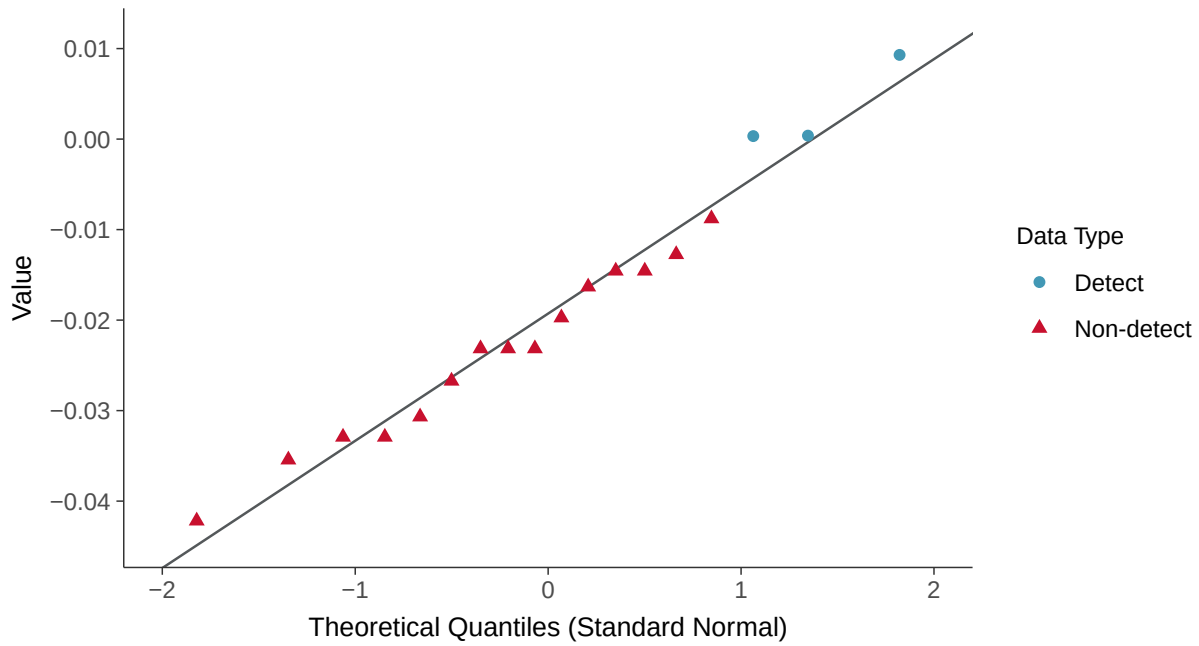
Boxplot by Season

Thallium, MW-10 (mg/l)



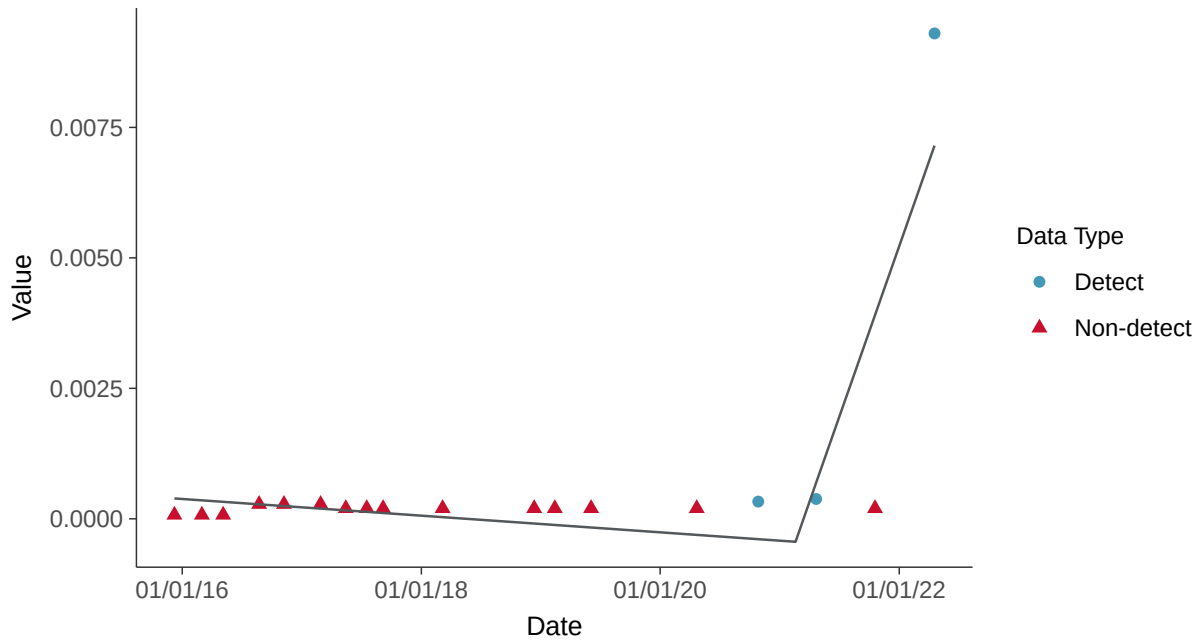
Normal Q-Q plot using ROS Imputed Estimates

Thallium, MW-10 (mg/l)



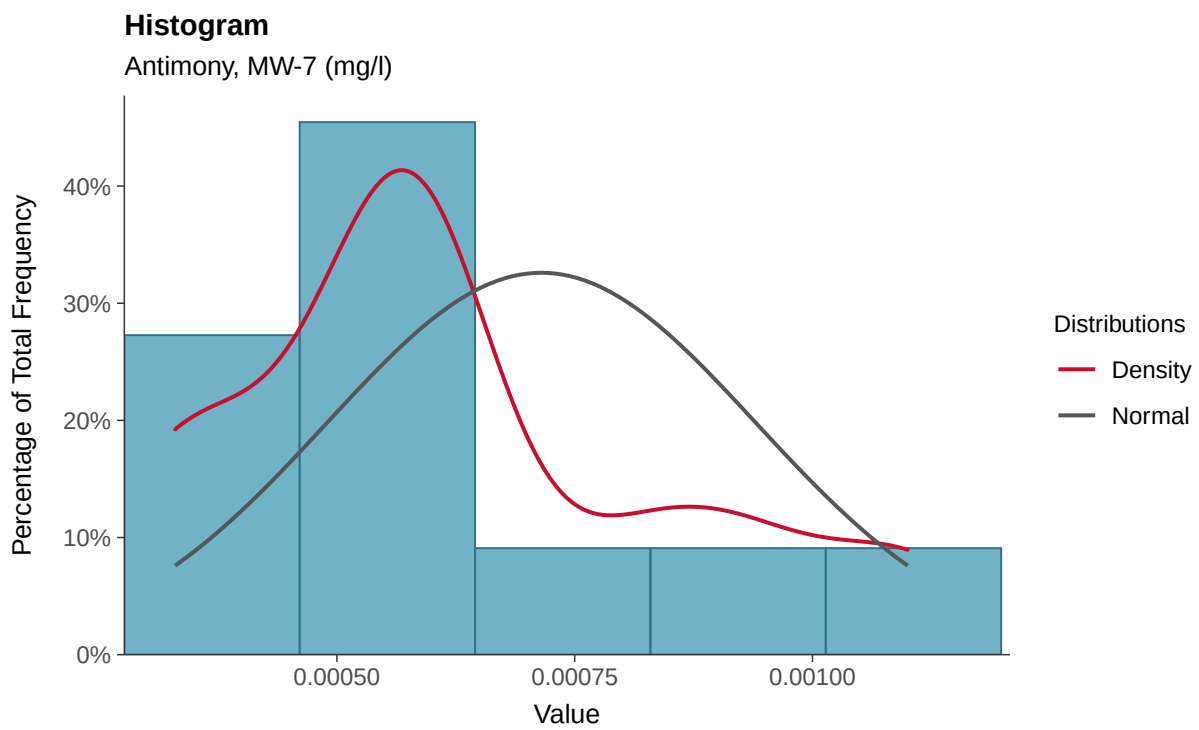
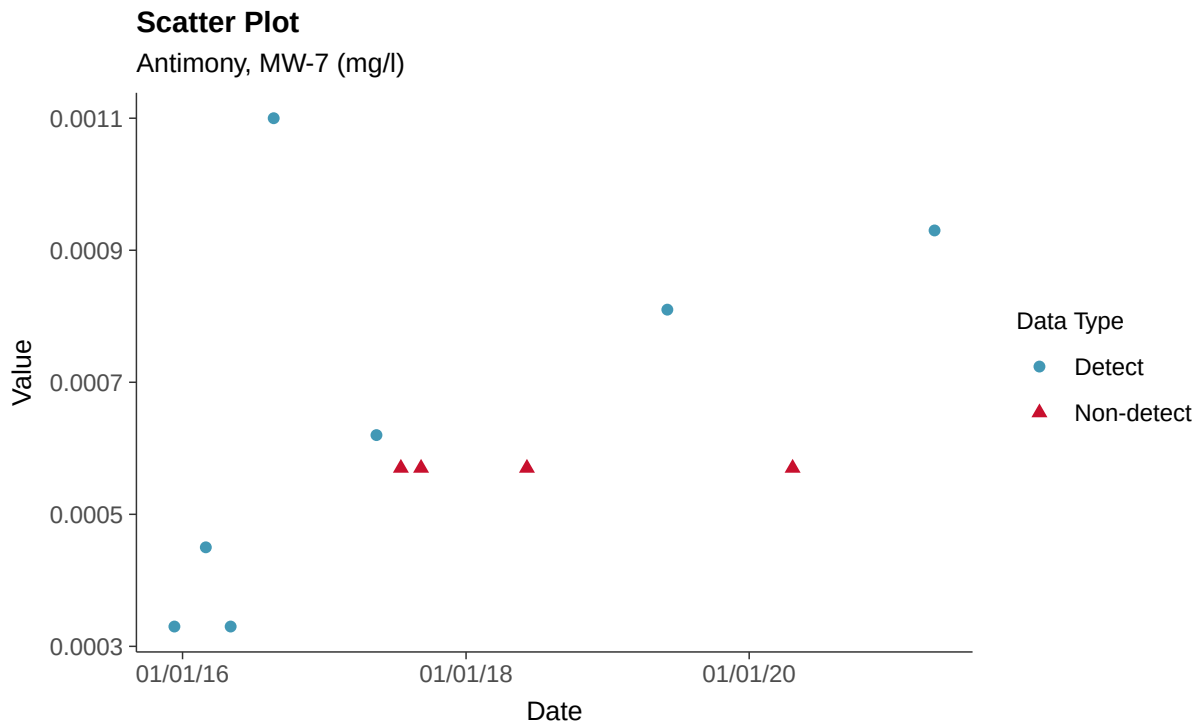
Trend Regression: Piecewise Linear-Linear

Thallium, MW-10 (mg/l)



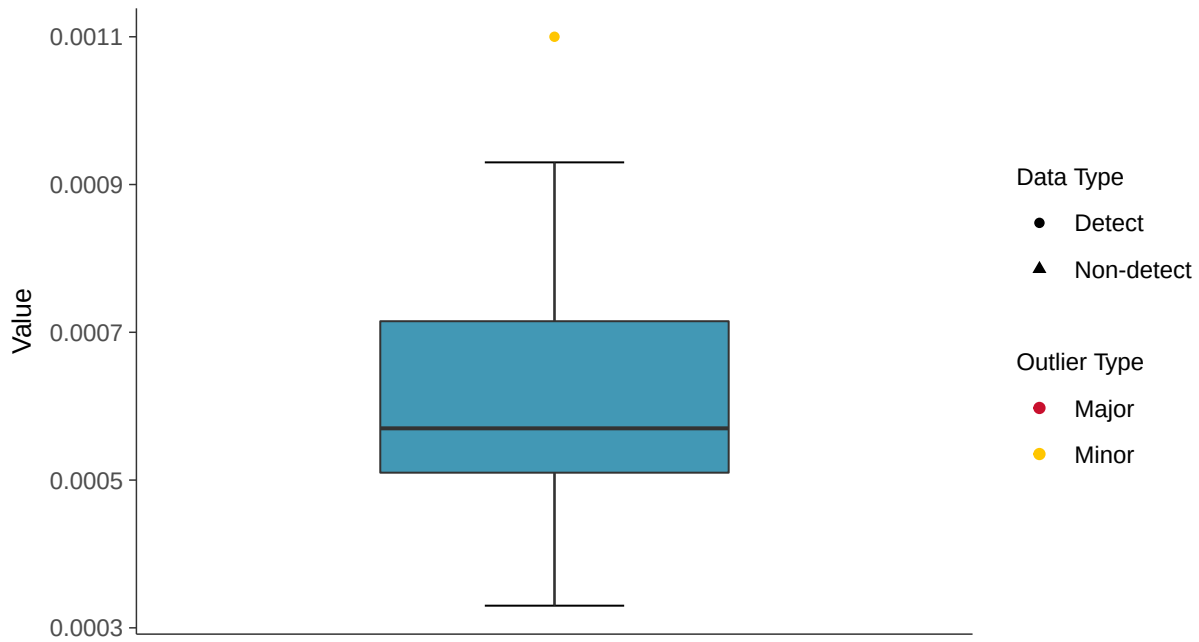
Appendix IV: Antimony, MW-7

ID: 2_2_104



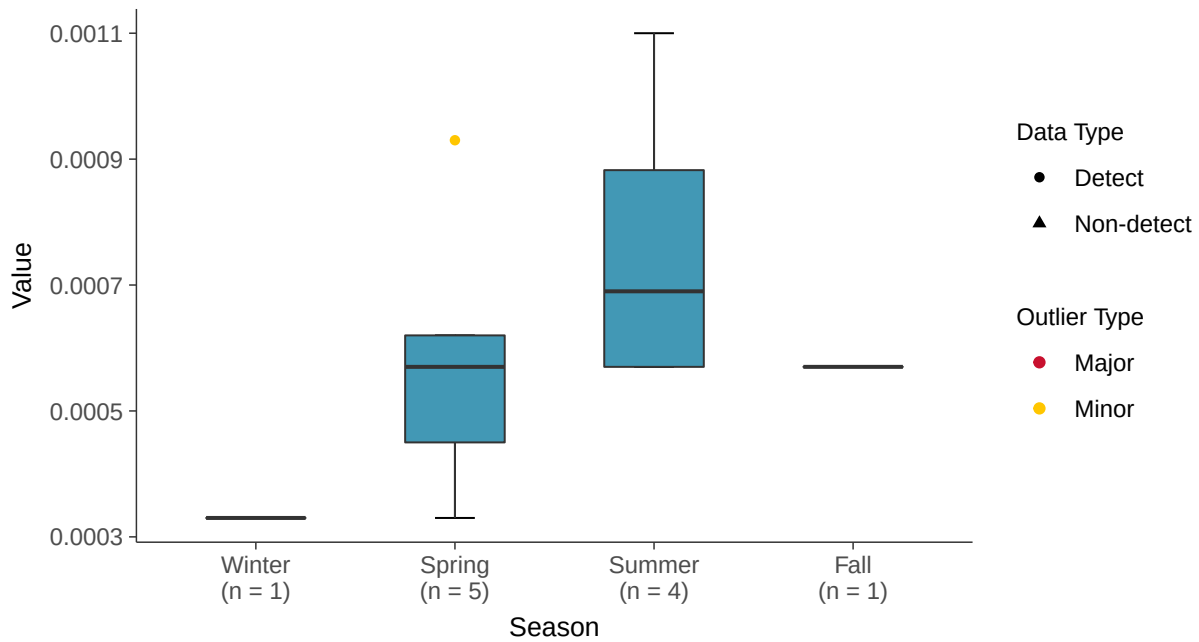
Boxplot

Antimony, MW-7 (mg/l)



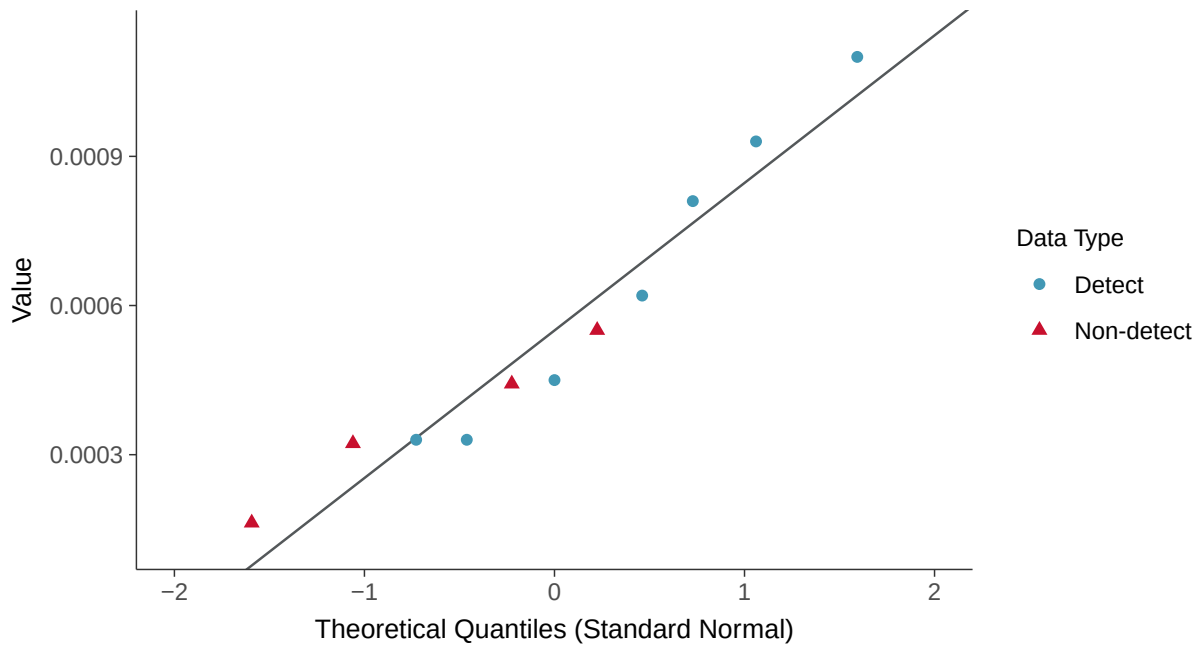
Boxplot by Season

Antimony, MW-7 (mg/l)



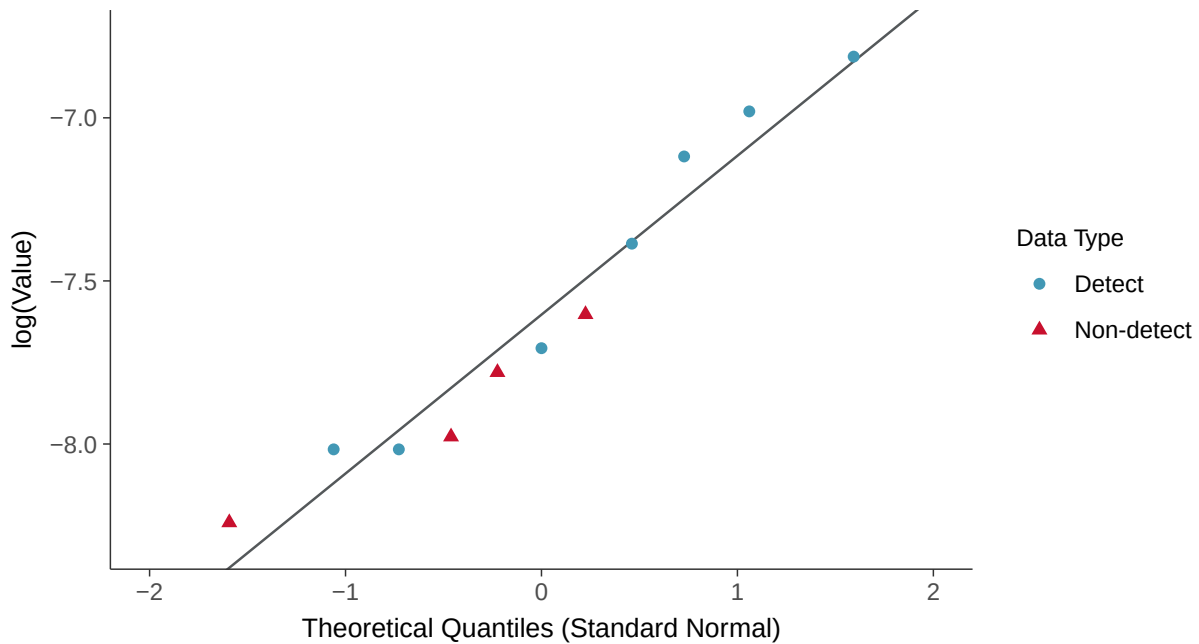
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-7 (mg/l)



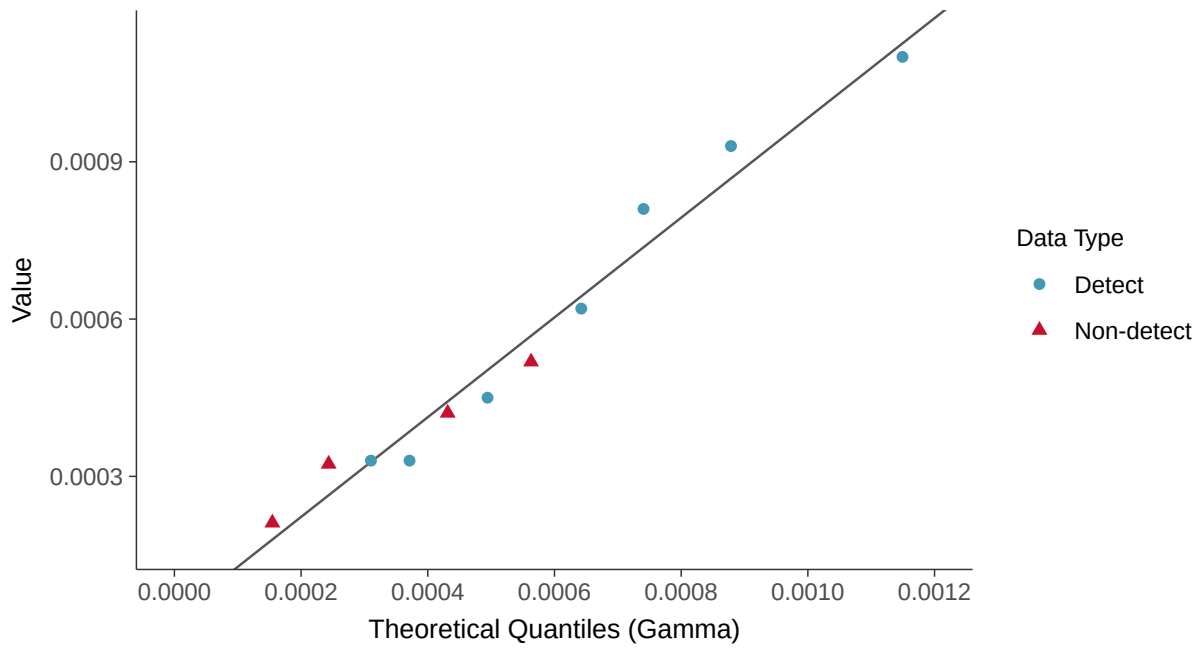
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-7 (mg/l)



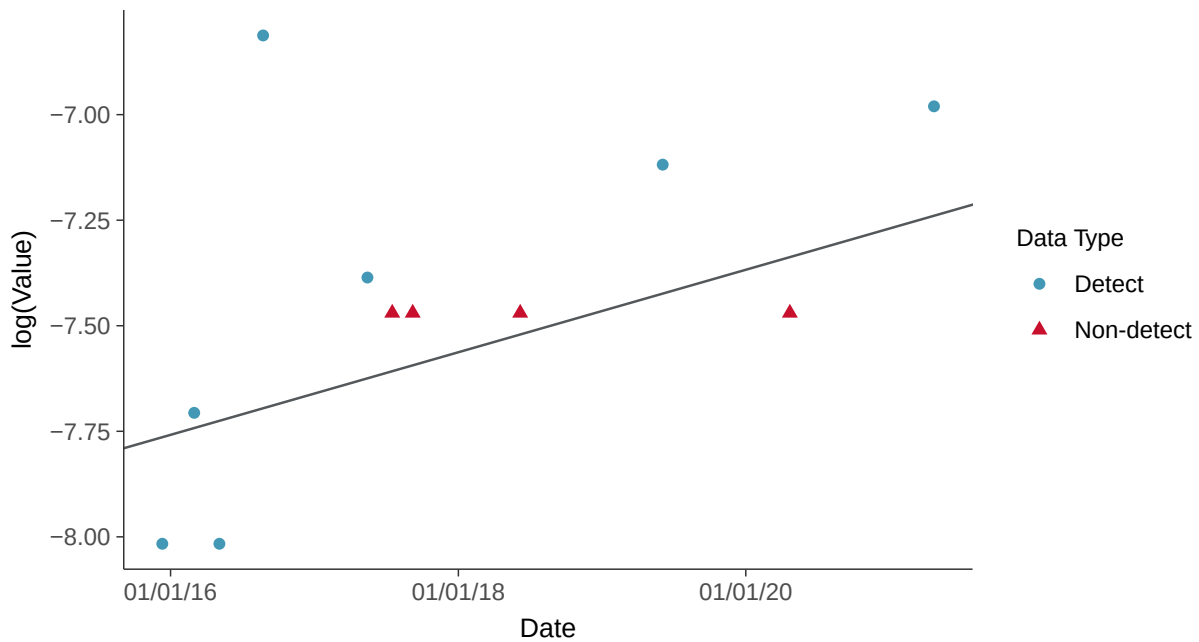
Gamma Q-Q plot using ROS Imputed Estimates

Antimony, MW-7 (mg/l)



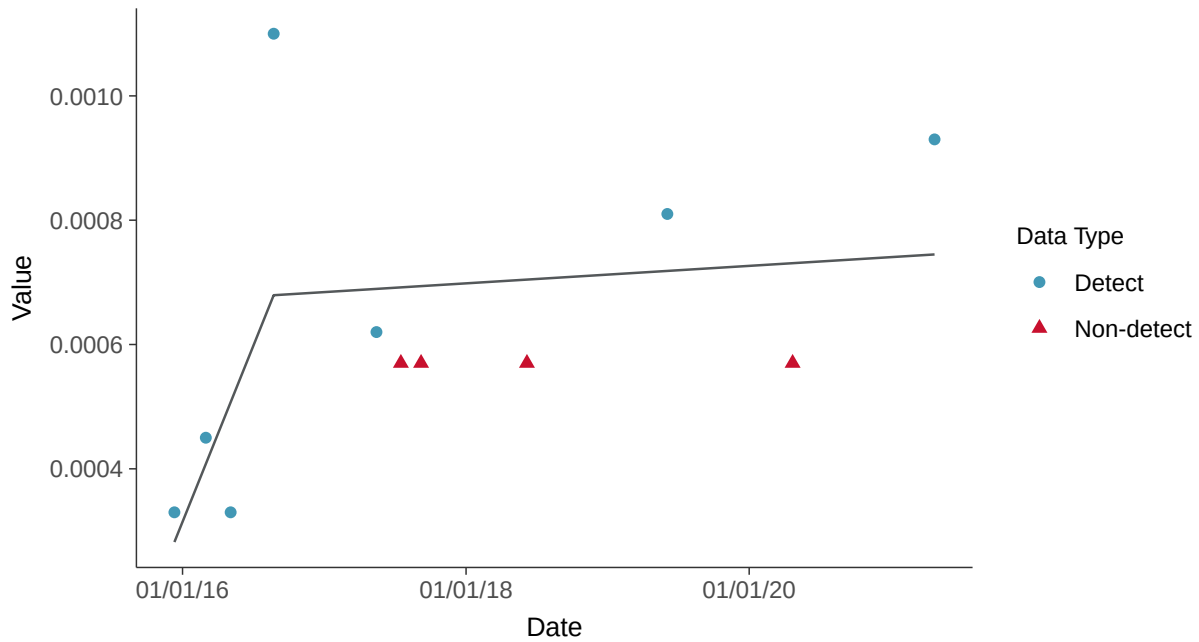
Trend Regression: Lognormal MLE

Antimony, MW-7 (mg/l)



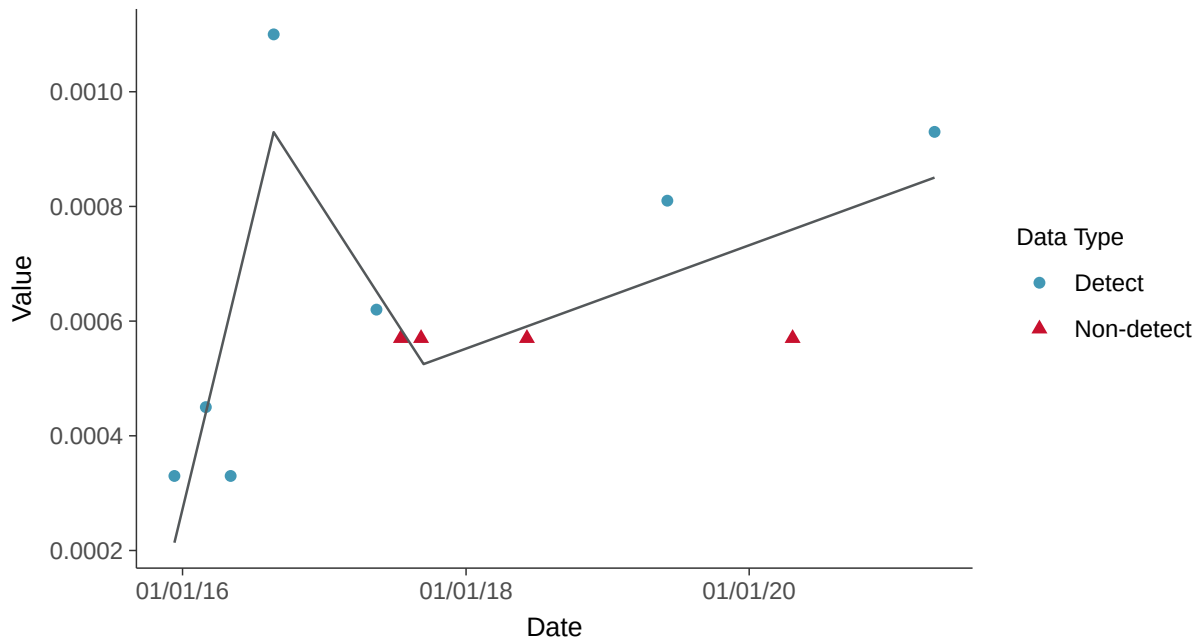
Trend Regression: Piecewise Linear-Linear

Antimony, MW-7 (mg/l)



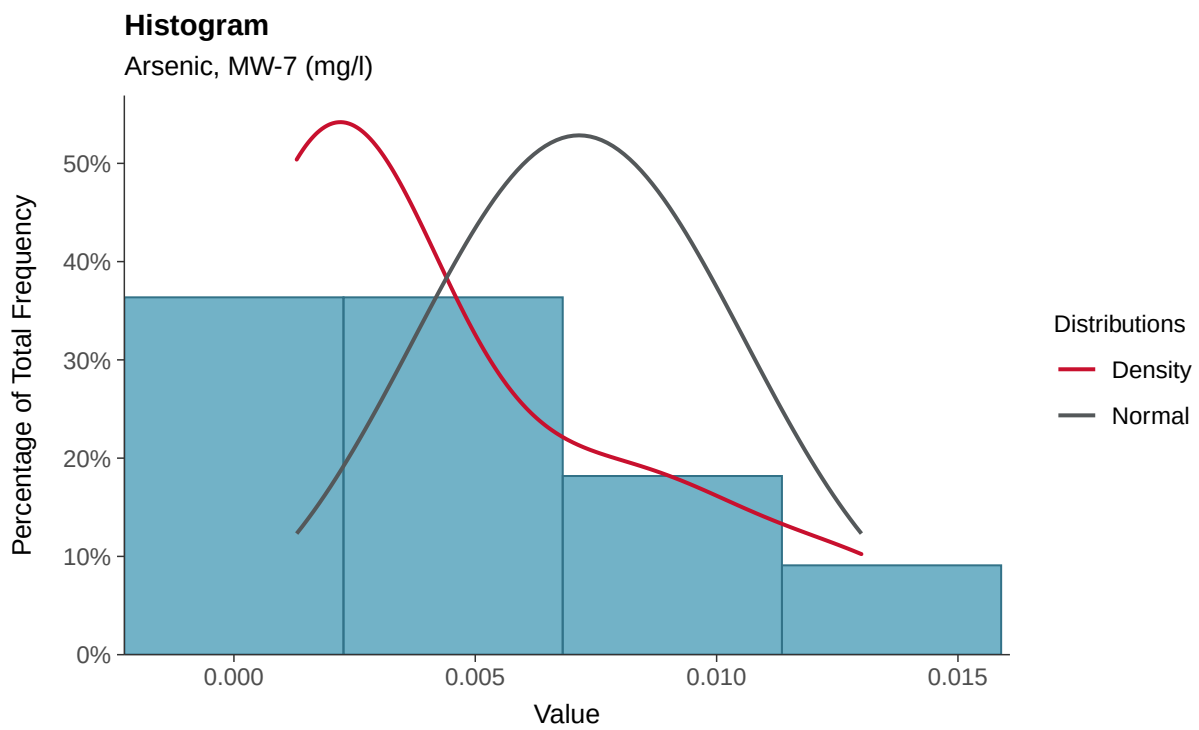
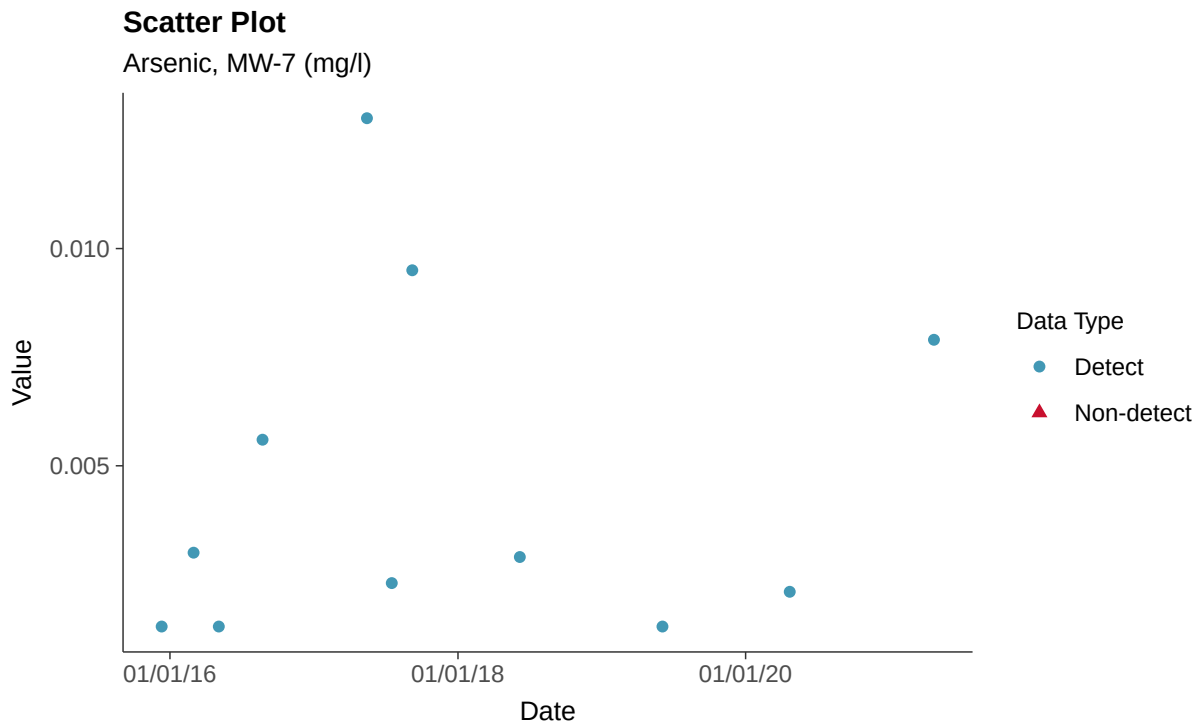
Trend Regression: Piecewise Linear-Linear-Linear

Antimony, MW-7 (mg/l)



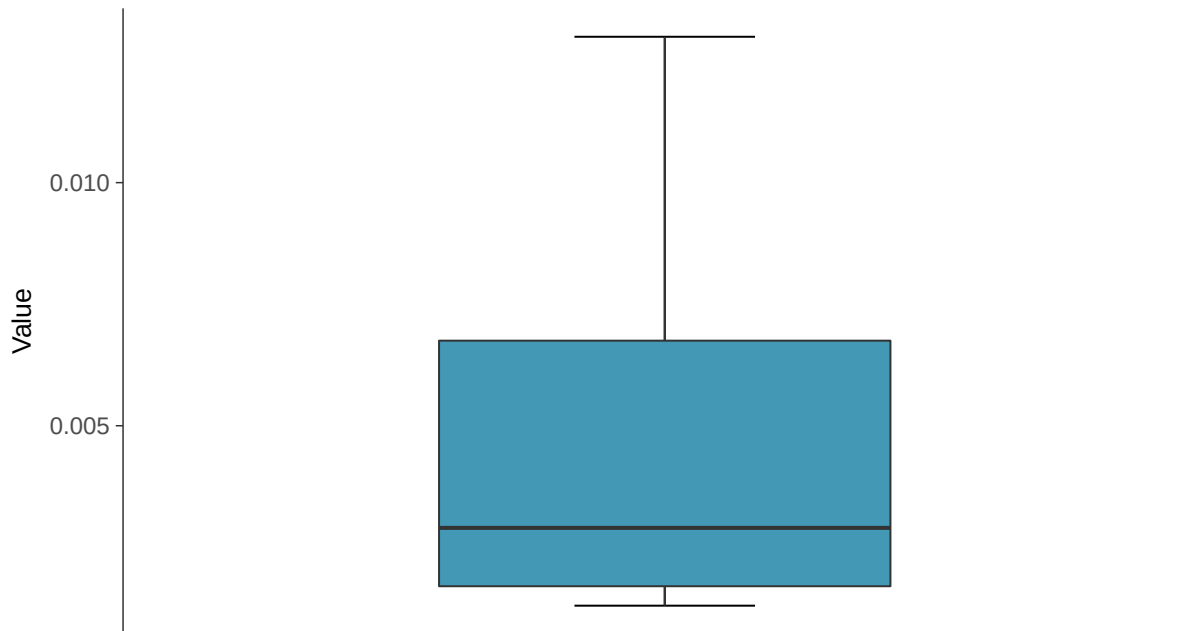
Appendix IV: Arsenic, MW-7

ID: 2_2_105



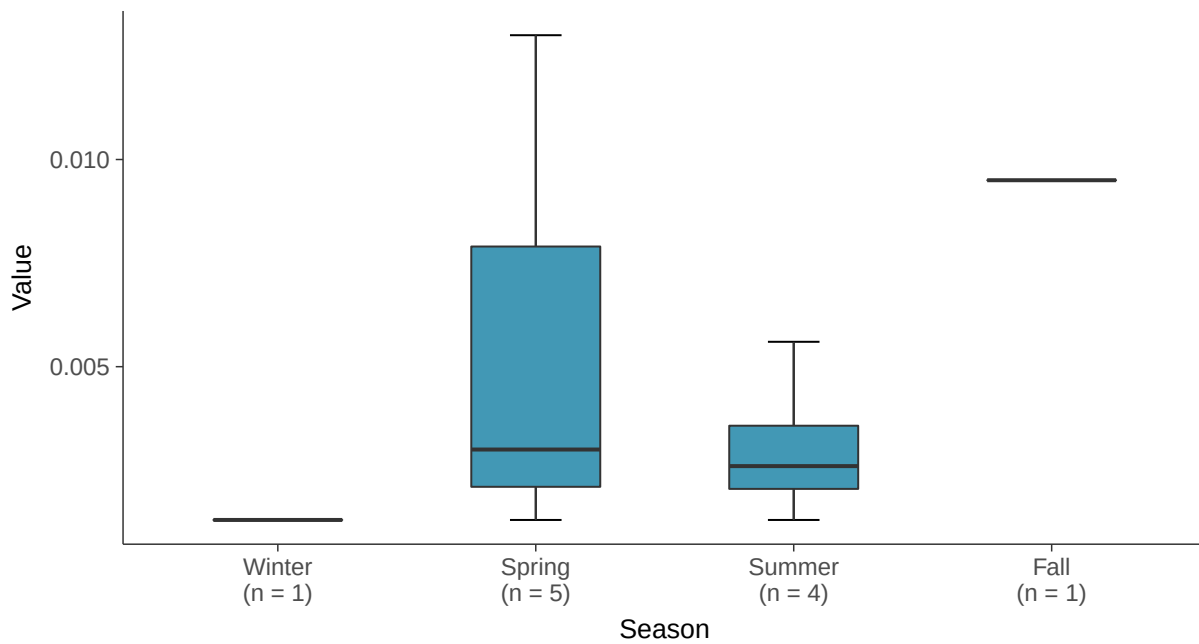
Boxplot

Arsenic, MW-7 (mg/l)



Boxplot by Season

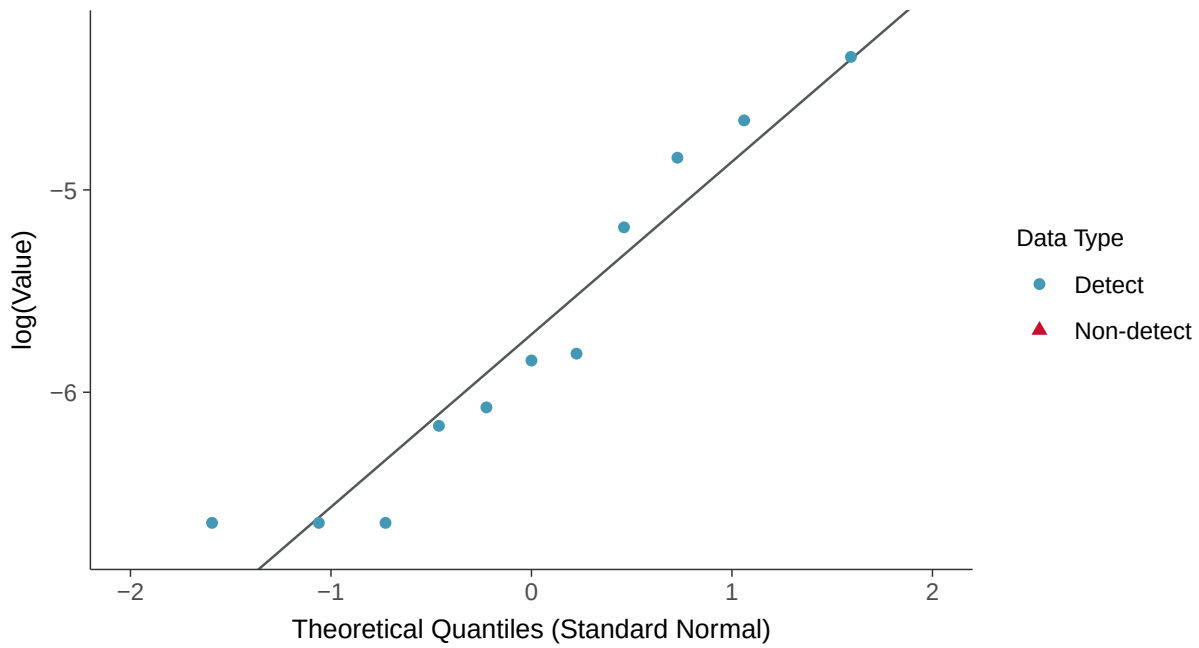
Arsenic, MW-7 (mg/l)





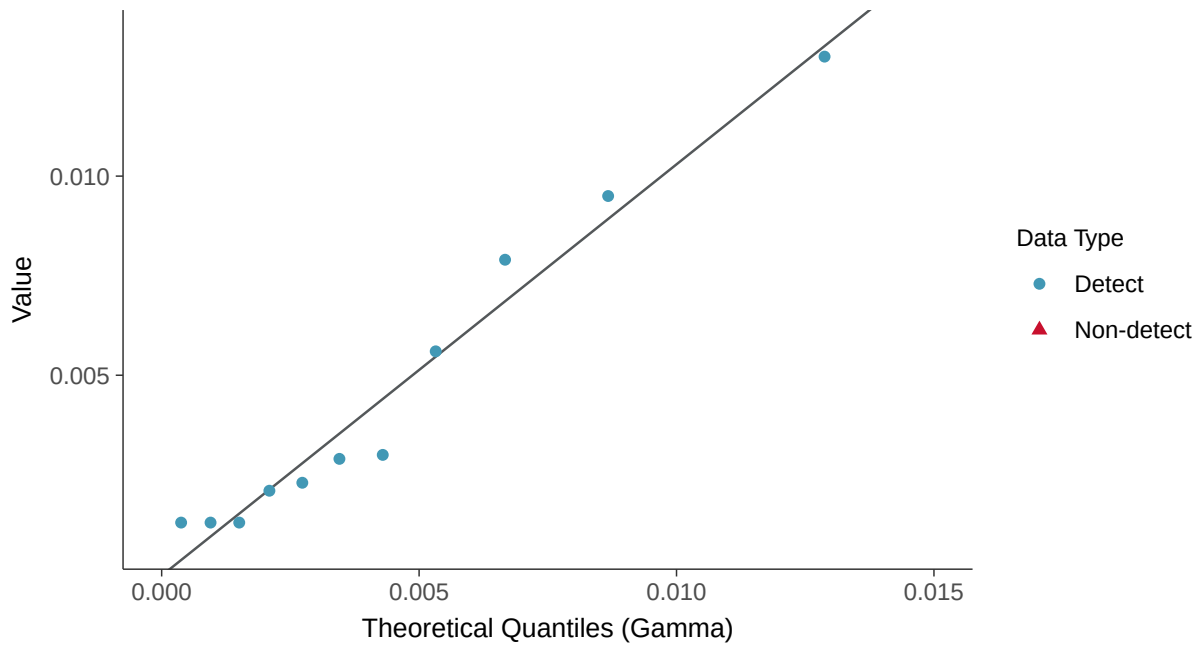
Lognormal Q-Q plot

Arsenic, MW-7 (mg/l)



Gamma Q-Q plot

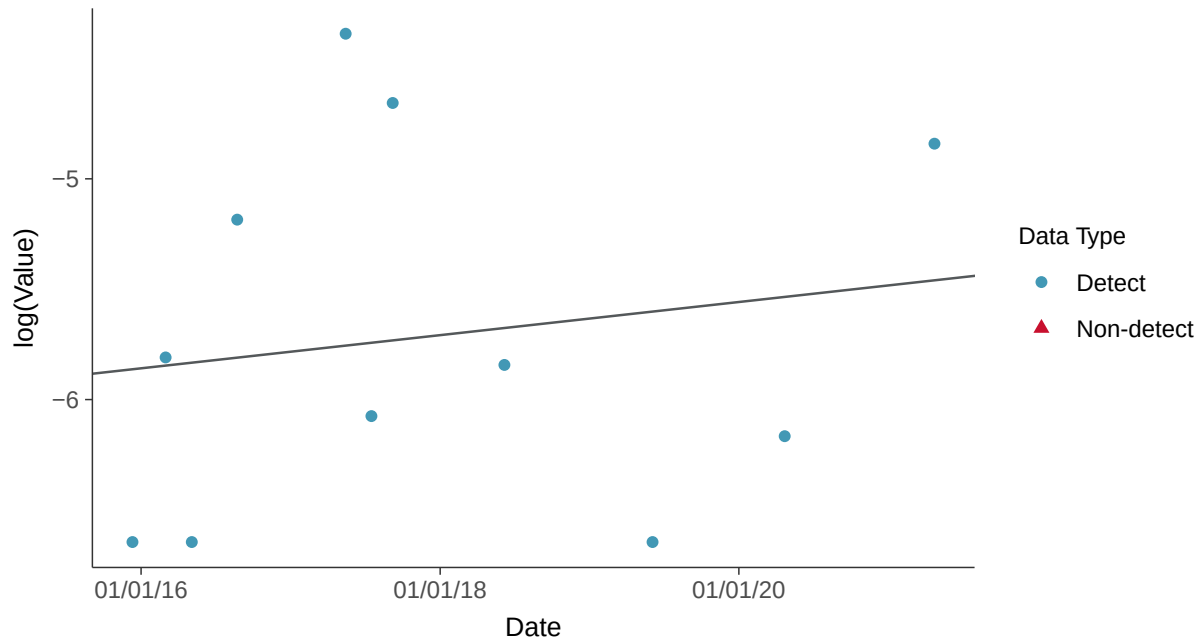
Arsenic, MW-7 (mg/l)





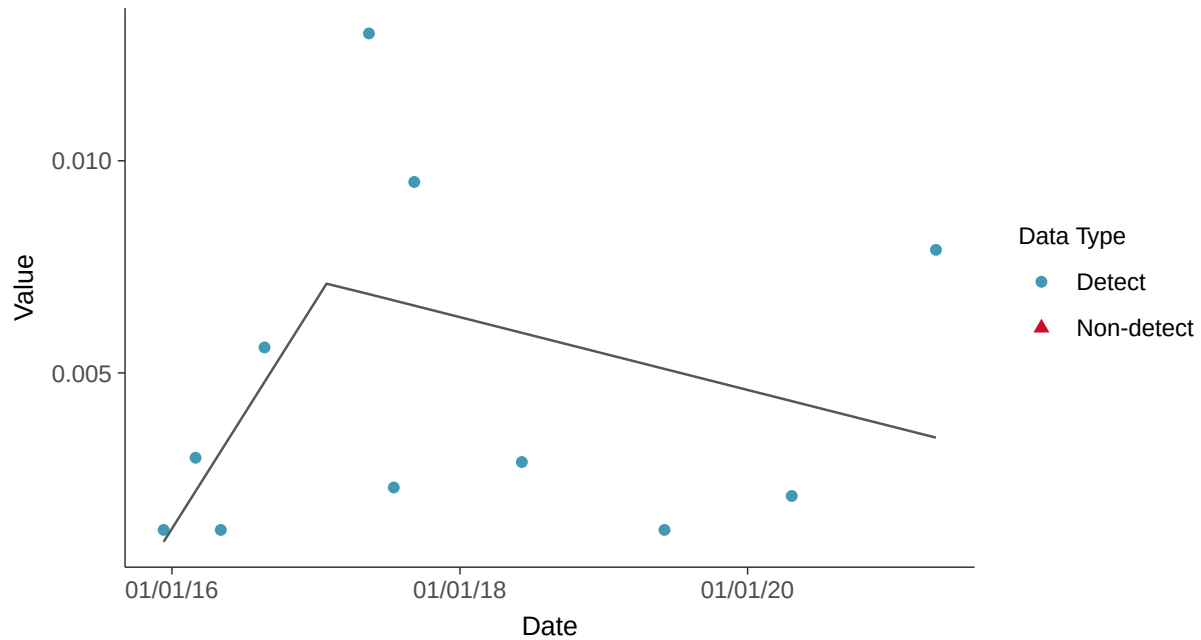
Trend Regression: Lognormal MLE

Arsenic, MW-7 (mg/l)



Trend Regression: Piecewise Linear-Linear

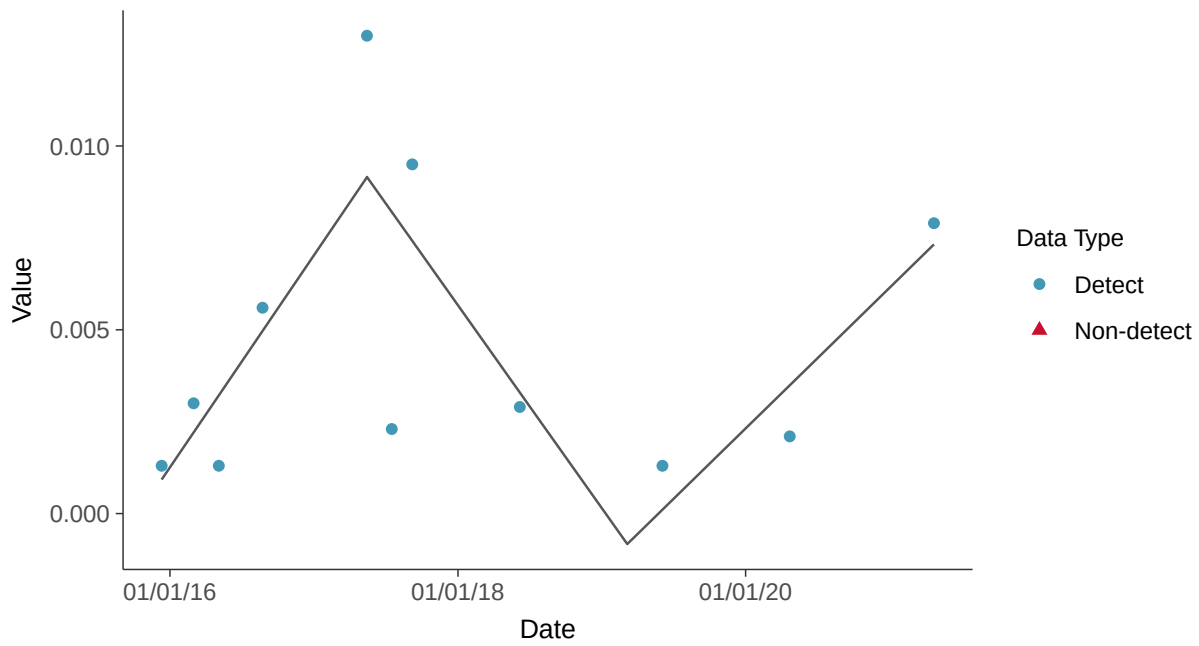
Arsenic, MW-7 (mg/l)





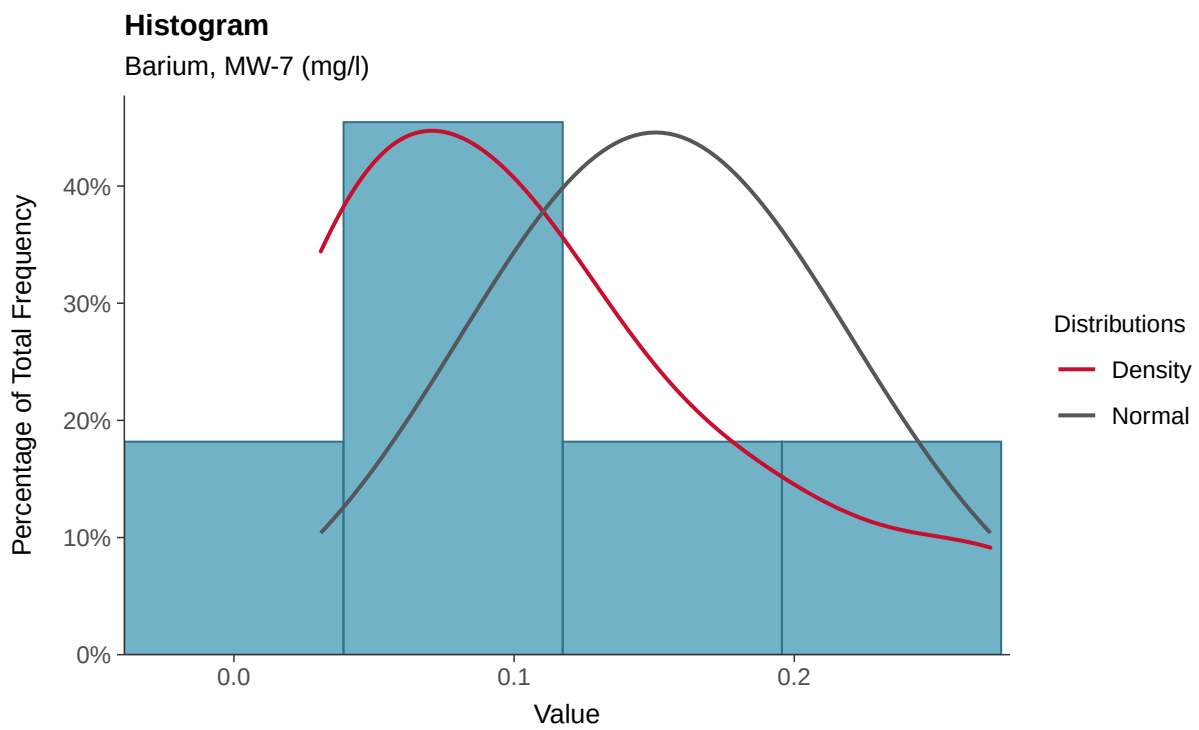
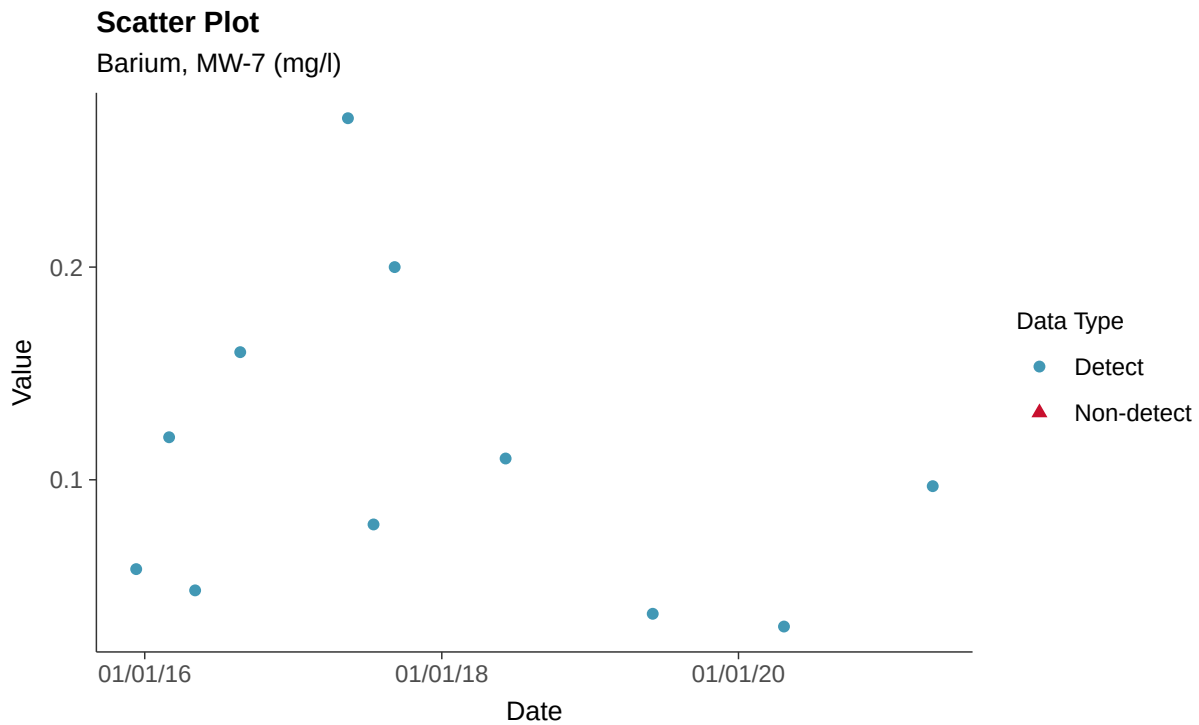
Trend Regression: Piecewise Linear-Linear-Linear

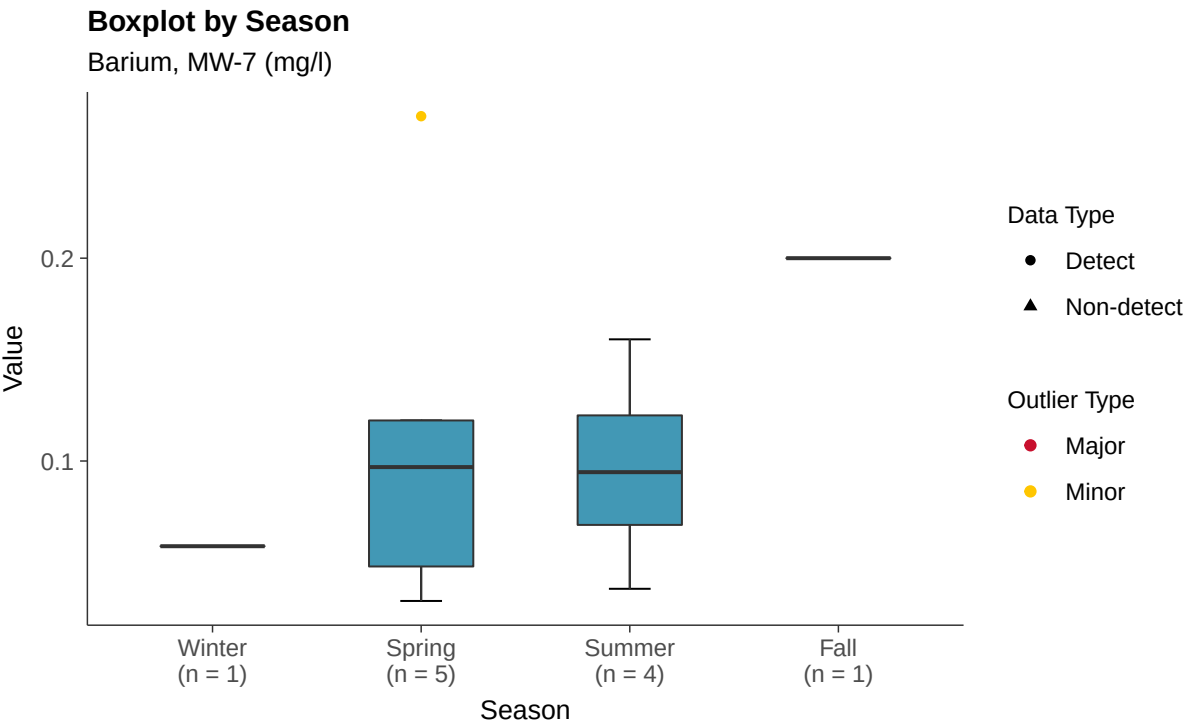
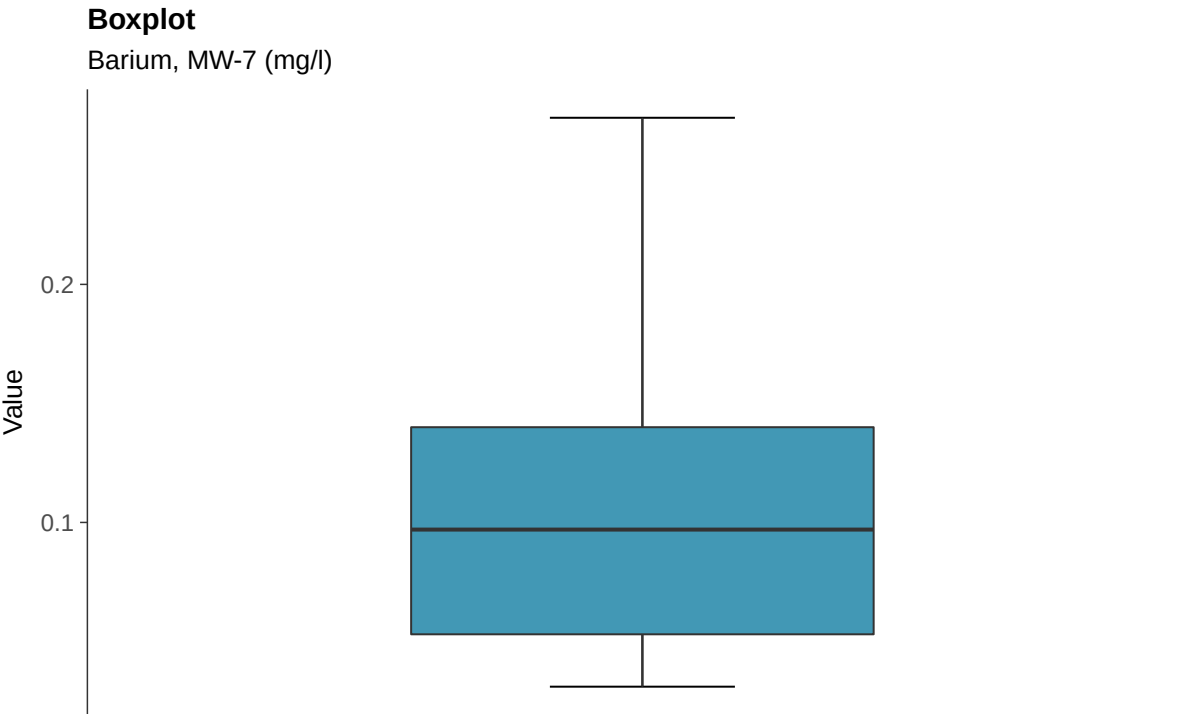
Arsenic, MW-7 (mg/l)



Appendix IV: Barium, MW-7

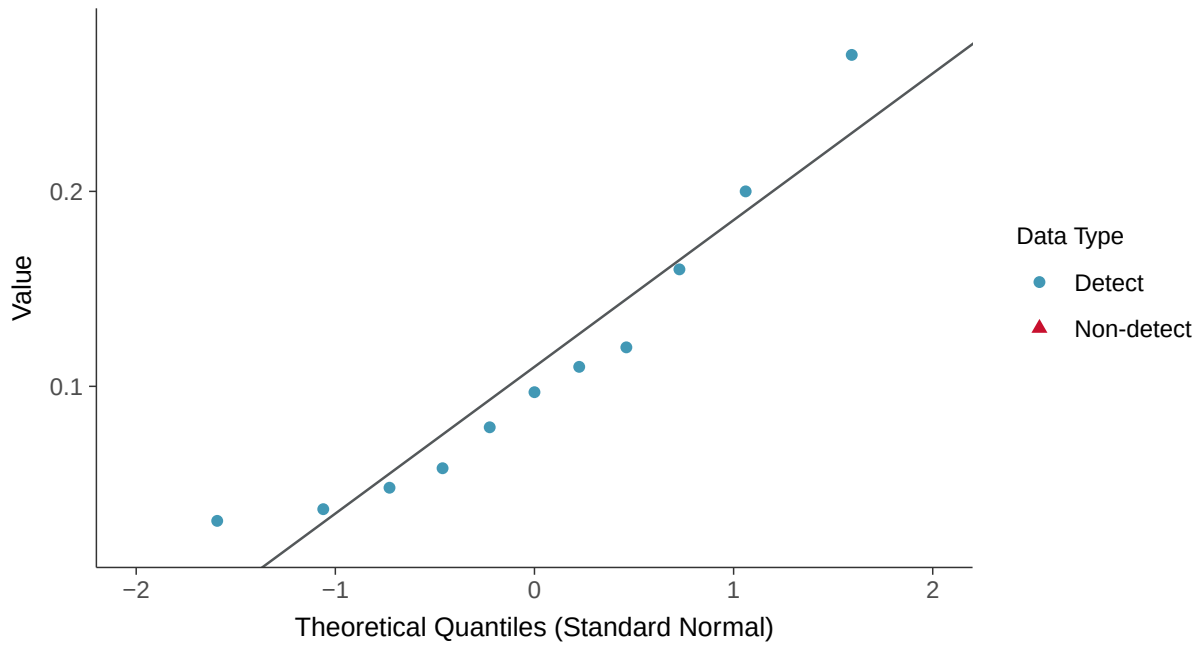
ID: 2_2_106



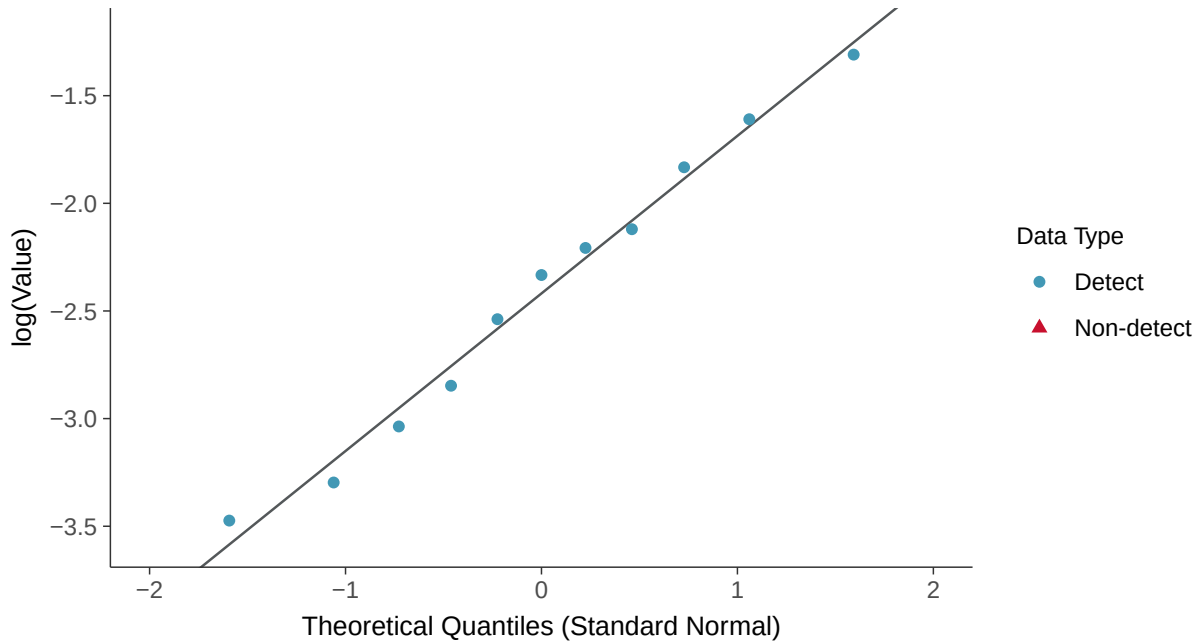




Normal Q-Q plot
Barium, MW-7 (mg/l)

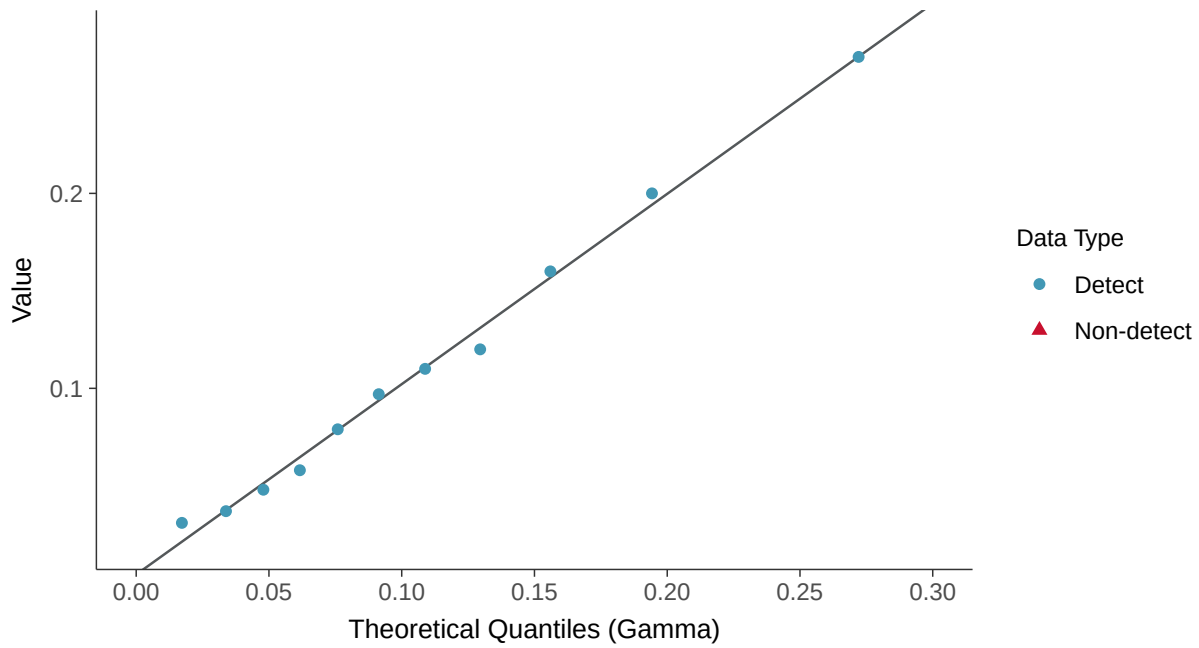


Lognormal Q-Q plot
Barium, MW-7 (mg/l)



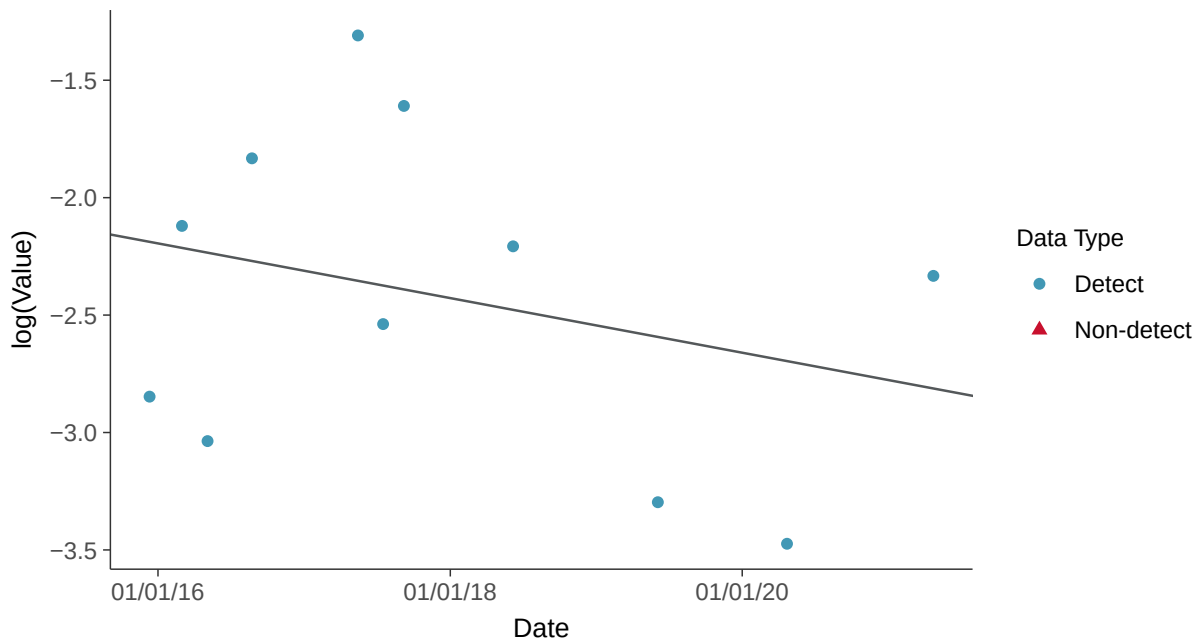
Gamma Q-Q plot

Barium, MW-7 (mg/l)



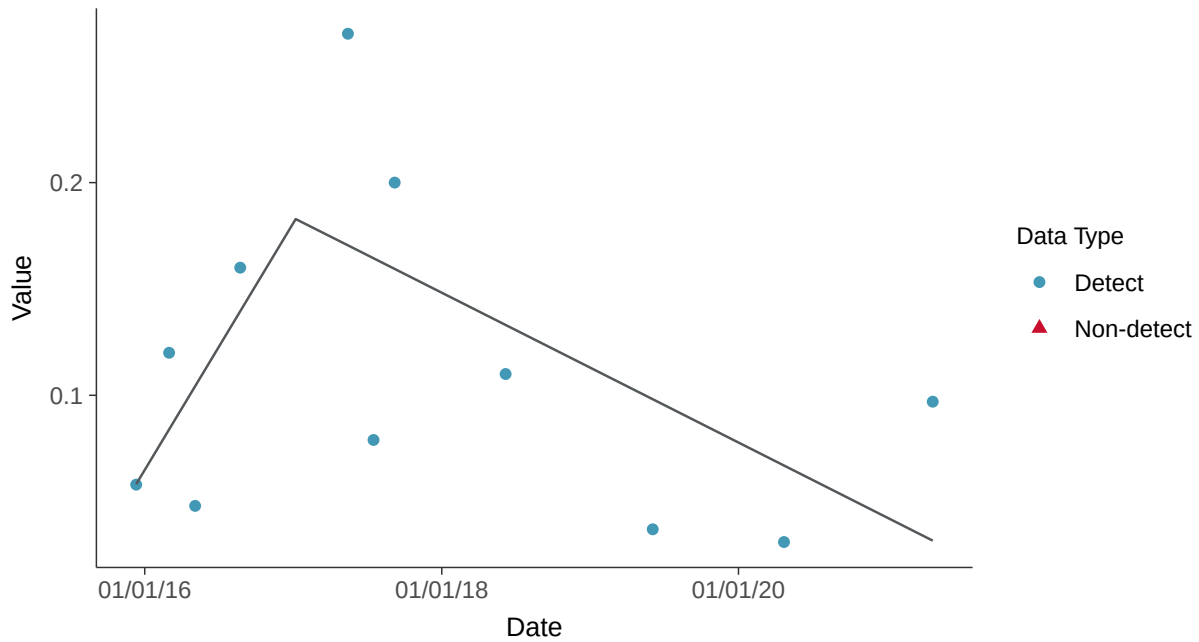
Trend Regression: Lognormal MLE

Barium, MW-7 (mg/l)

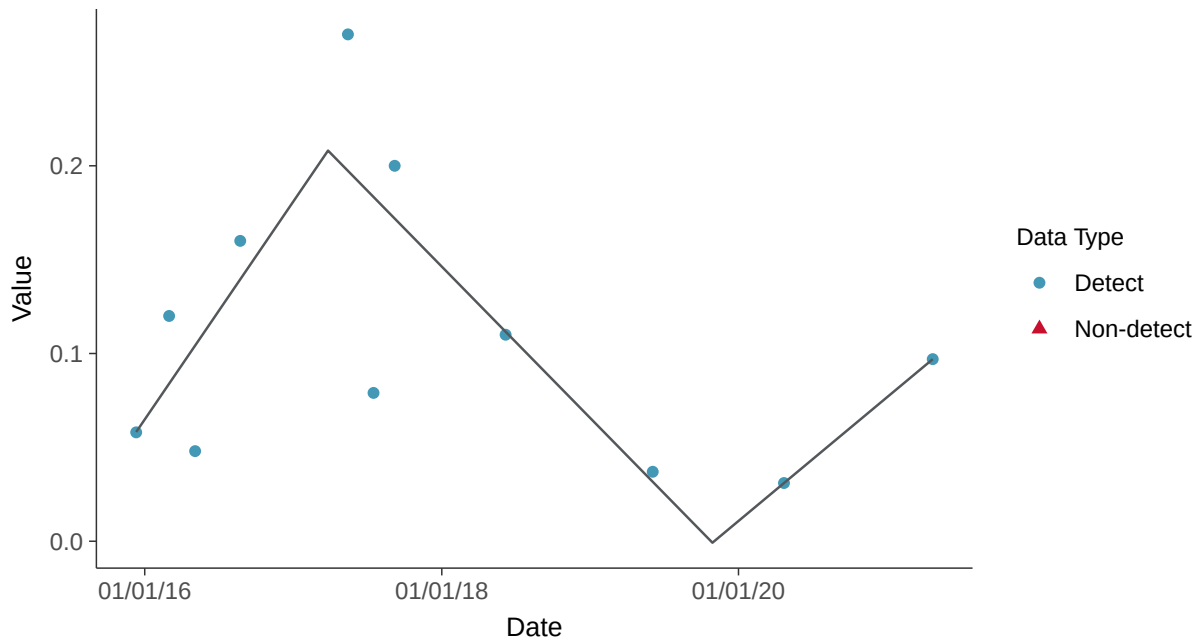




Trend Regression: Piecewise Linear-Linear
Barium, MW-7 (mg/l)

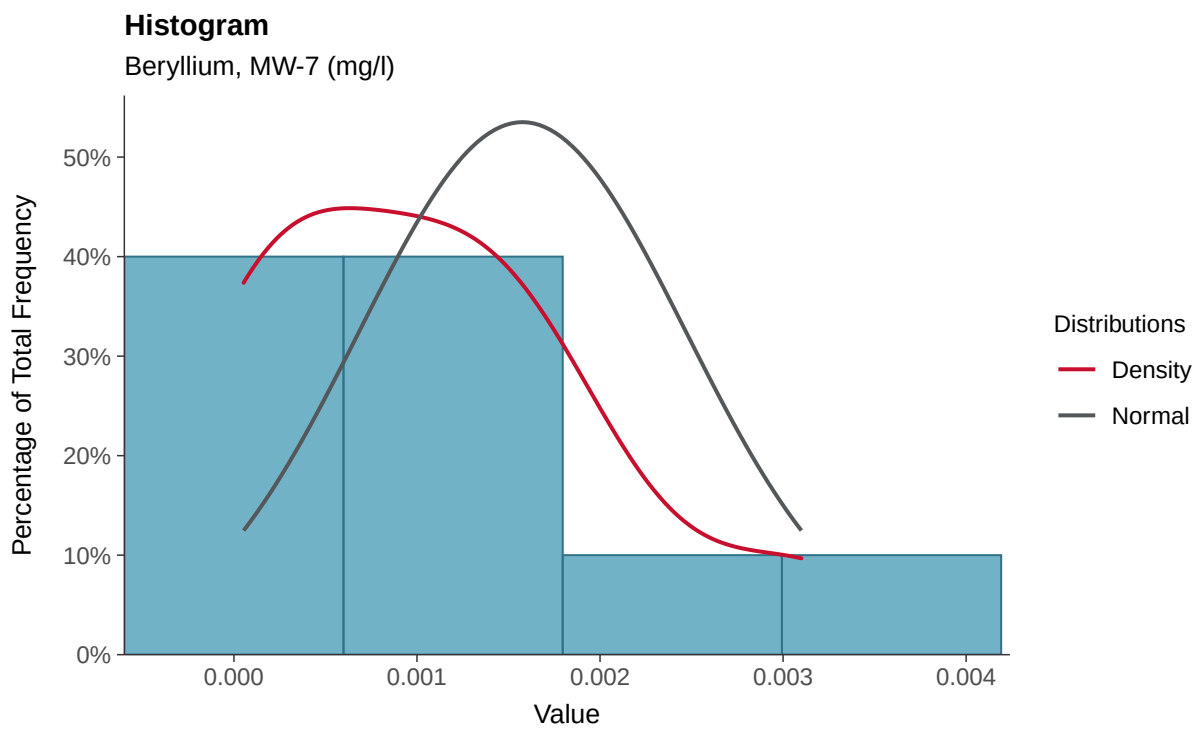
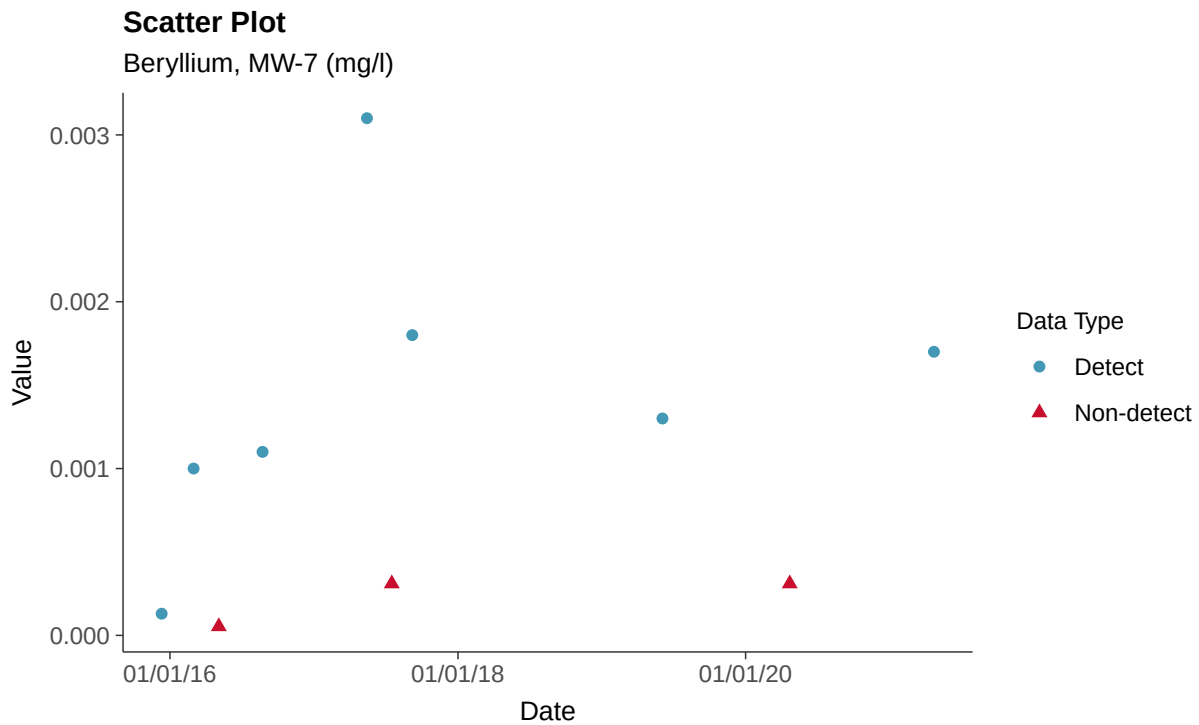


Trend Regression: Piecewise Linear-Linear-Linear
Barium, MW-7 (mg/l)



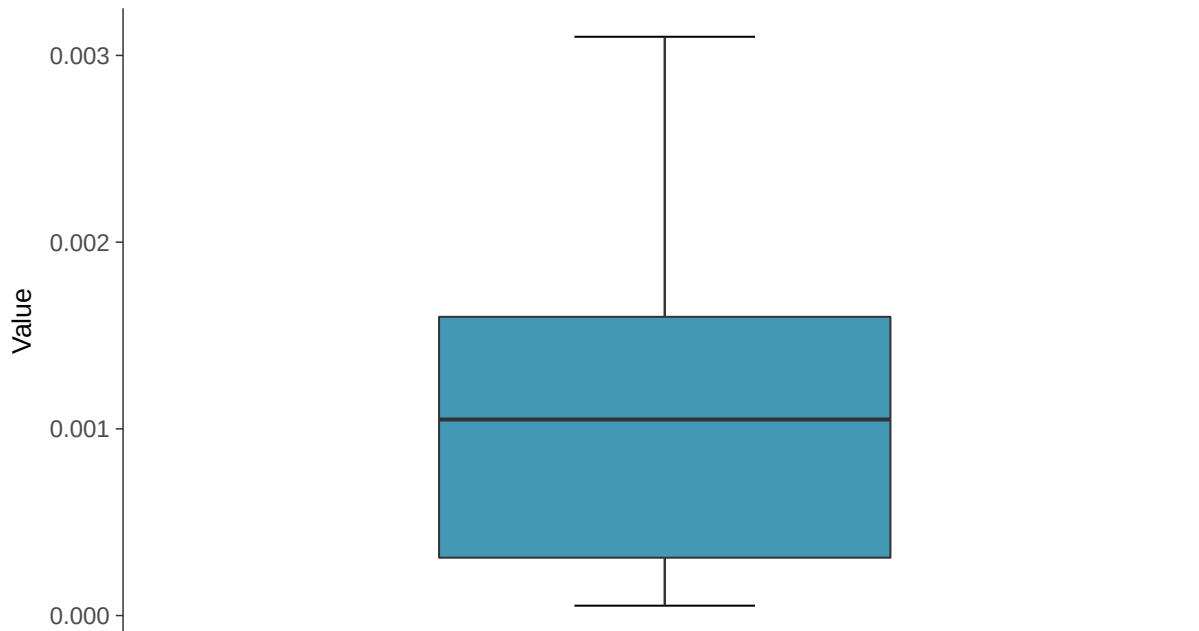
Appendix IV: Beryllium, MW-7

ID: 2_2_107



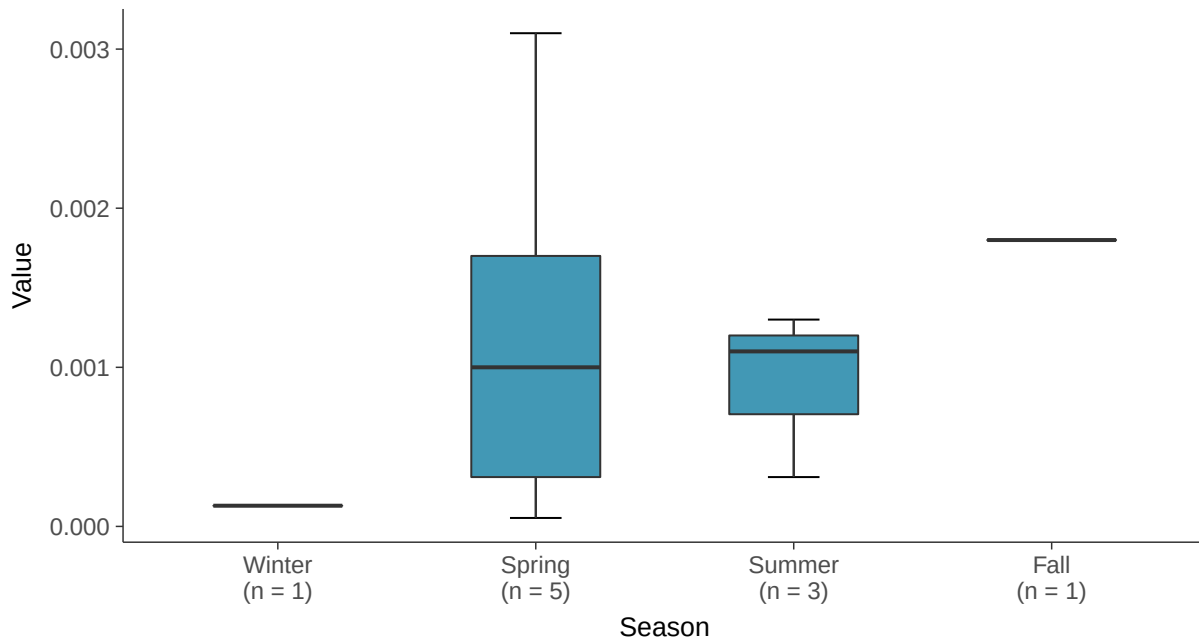
Boxplot

Beryllium, MW-7 (mg/l)



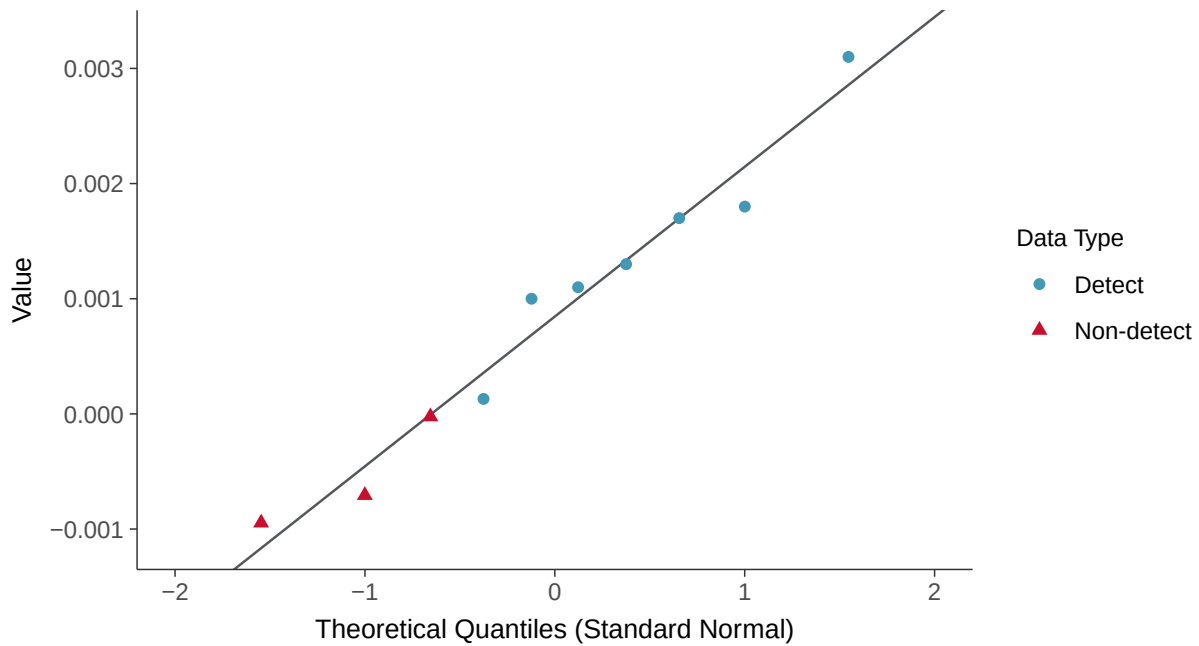
Boxplot by Season

Beryllium, MW-7 (mg/l)



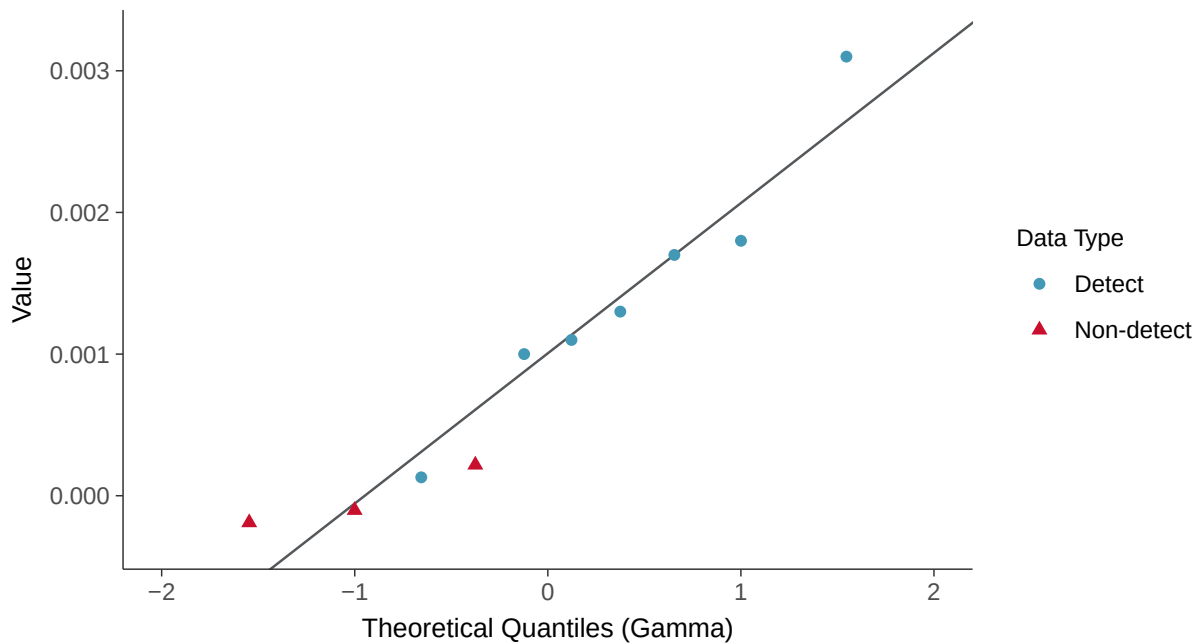
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-7 (mg/l)



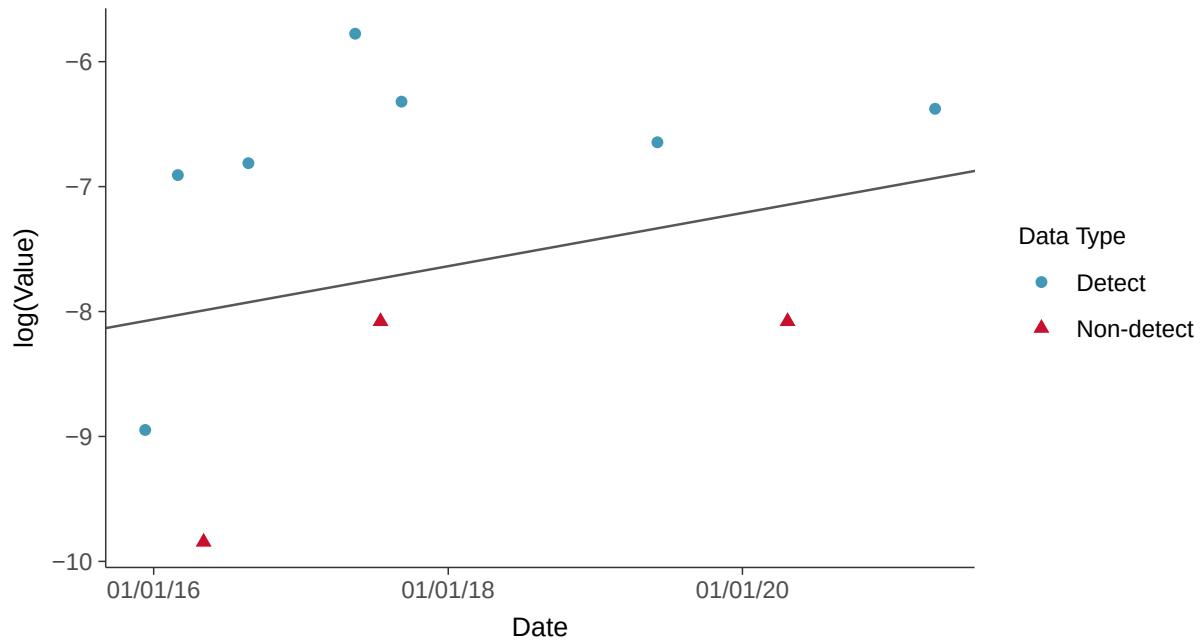
Gamma Q-Q plot using ROS Imputed Estimates

Beryllium, MW-7 (mg/l)



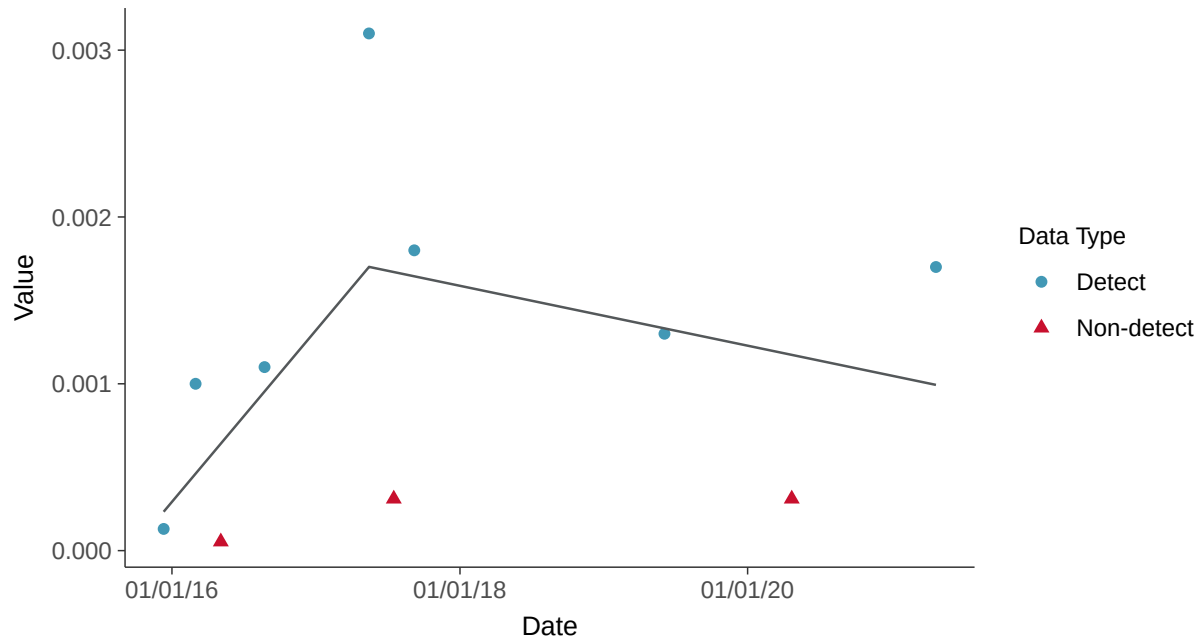
Trend Regression: Lognormal MLE

Beryllium, MW-7 (mg/l)



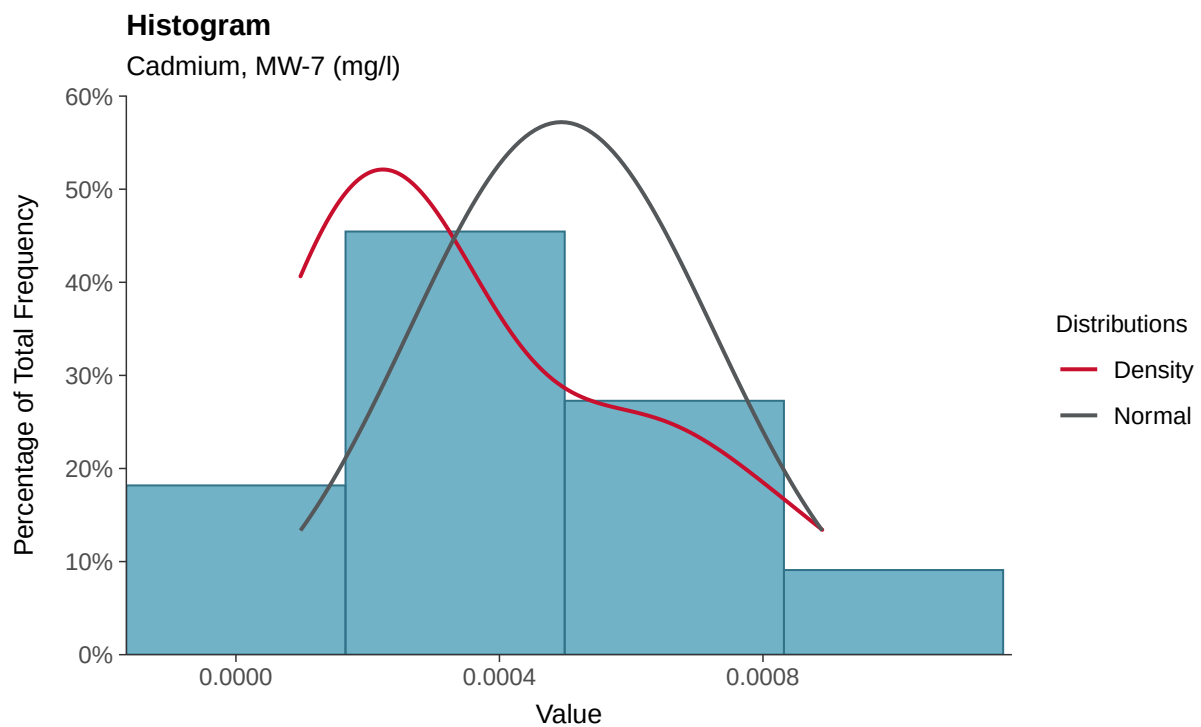
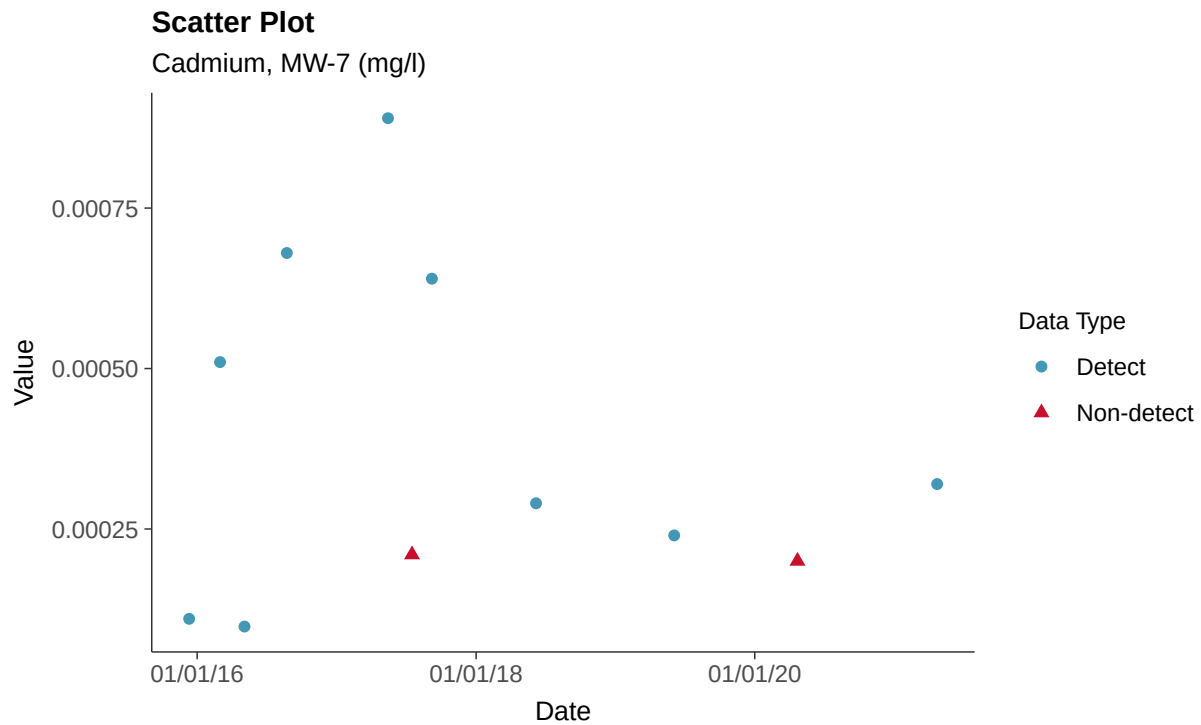
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-7 (mg/l)



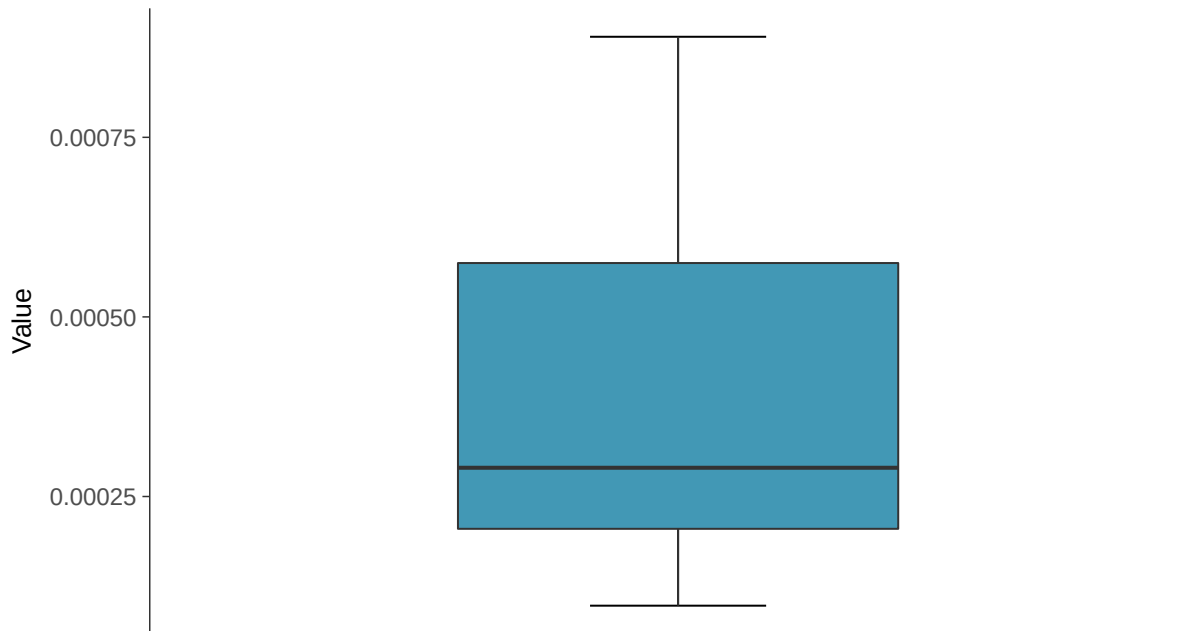
Appendix IV: Cadmium, MW-7

ID: 2_2_109



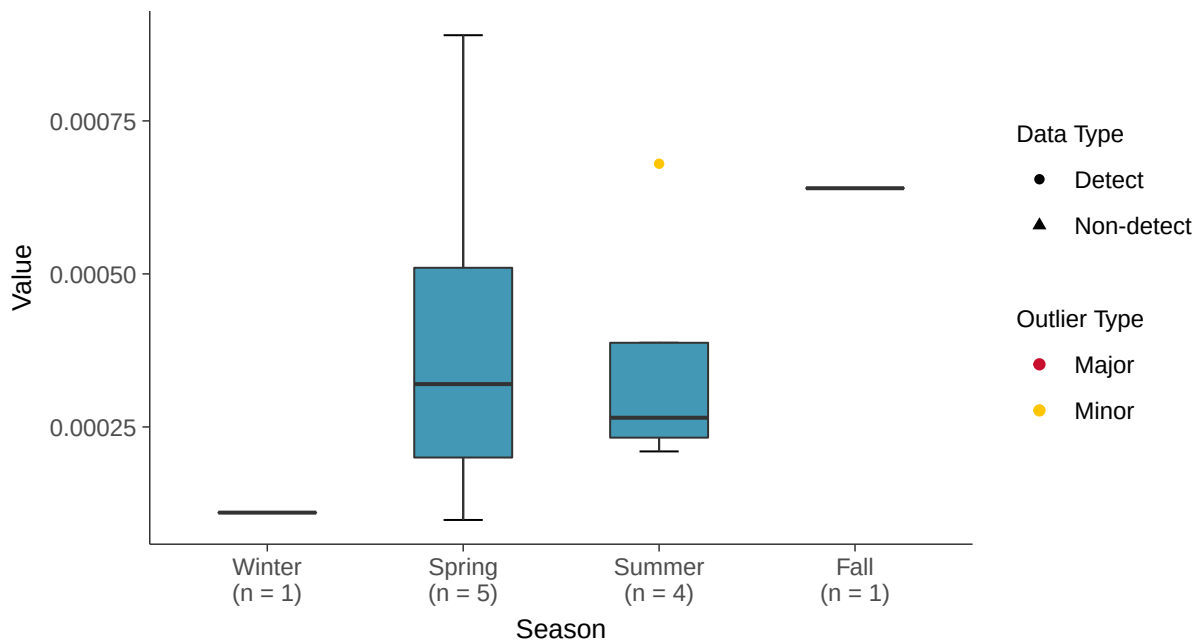
Boxplot

Cadmium, MW-7 (mg/l)



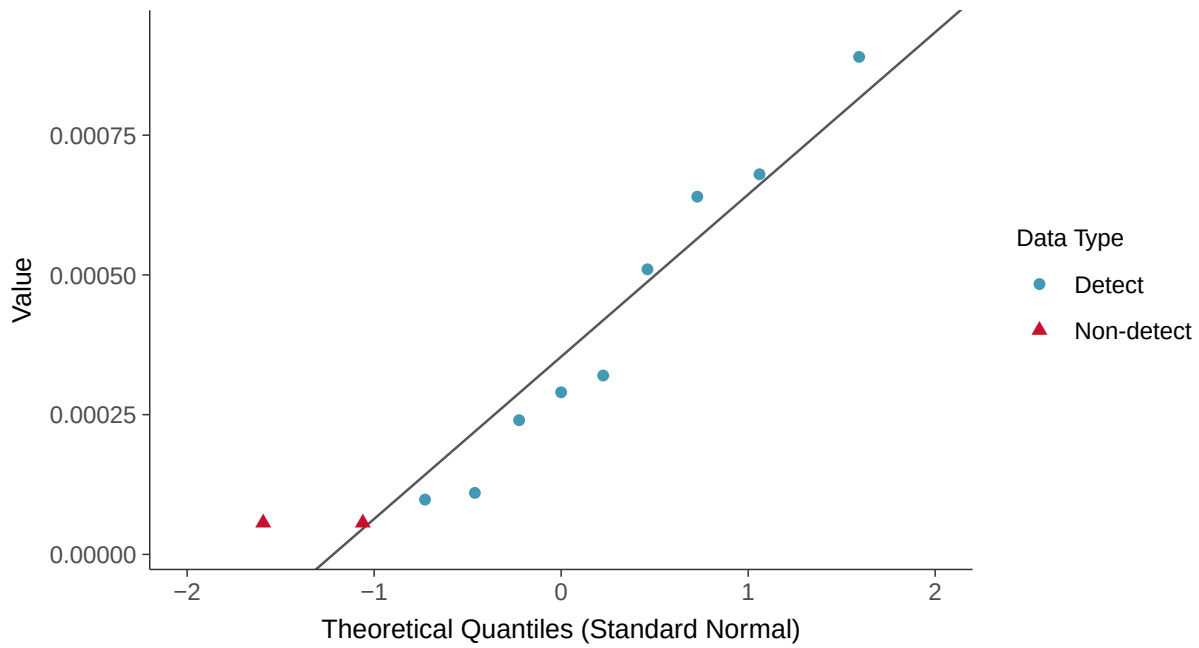
Boxplot by Season

Cadmium, MW-7 (mg/l)



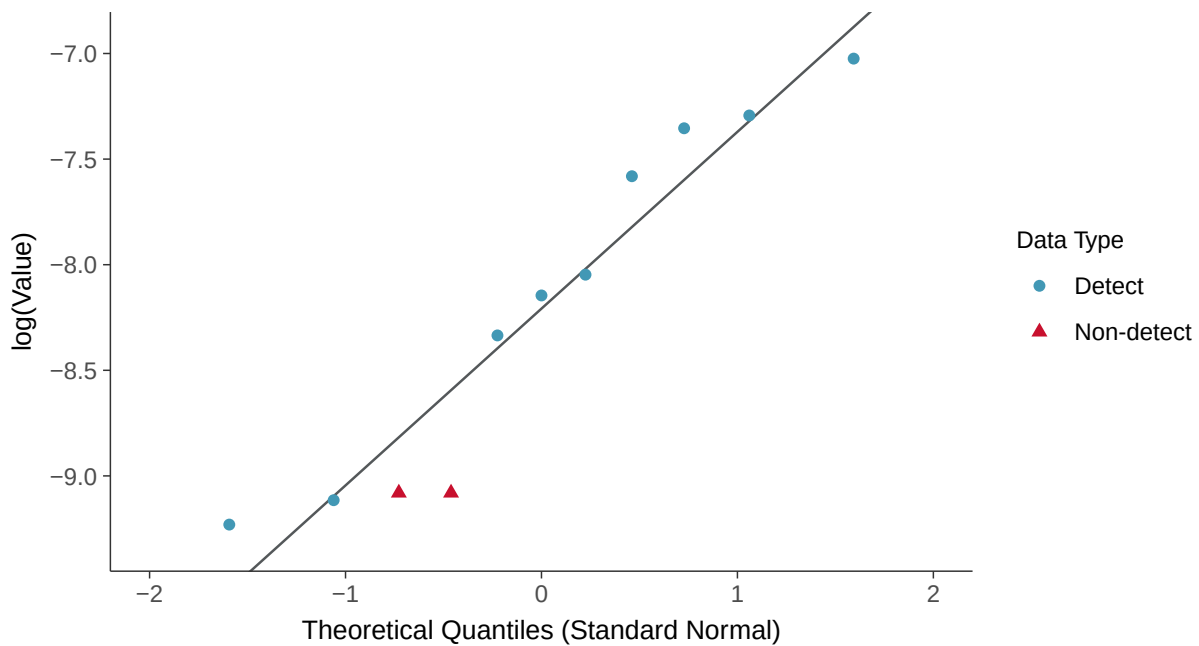
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-7 (mg/l)



Lognormal Q-Q plot using ROS Imputed Estimates

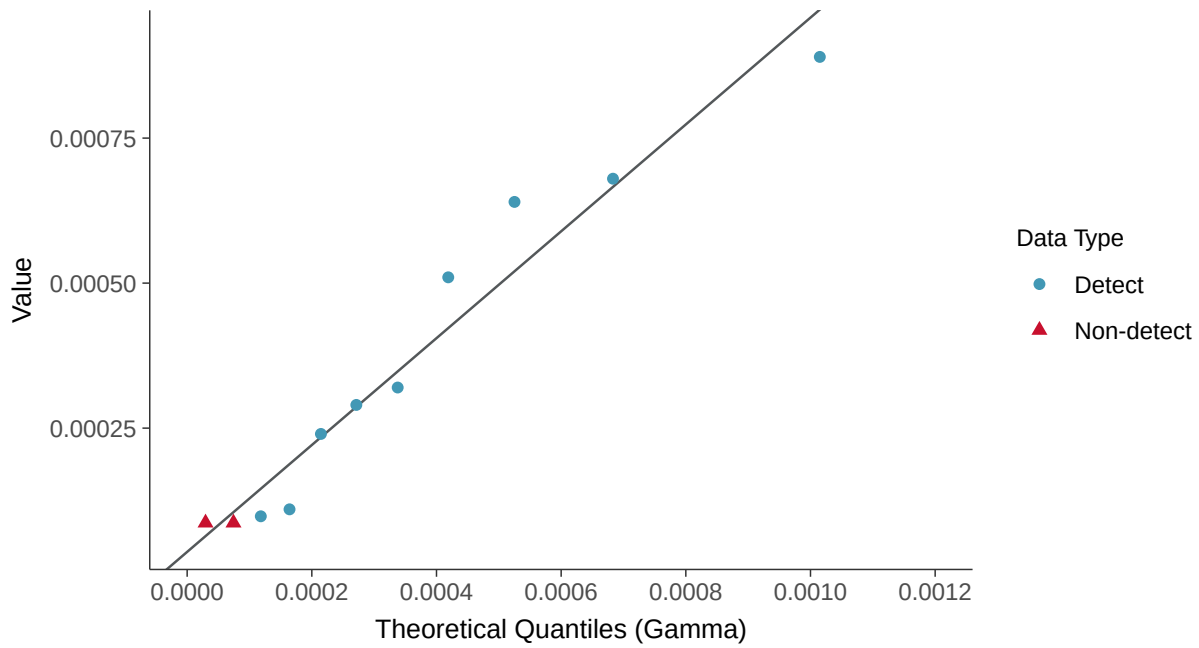
Cadmium, MW-7 (mg/l)





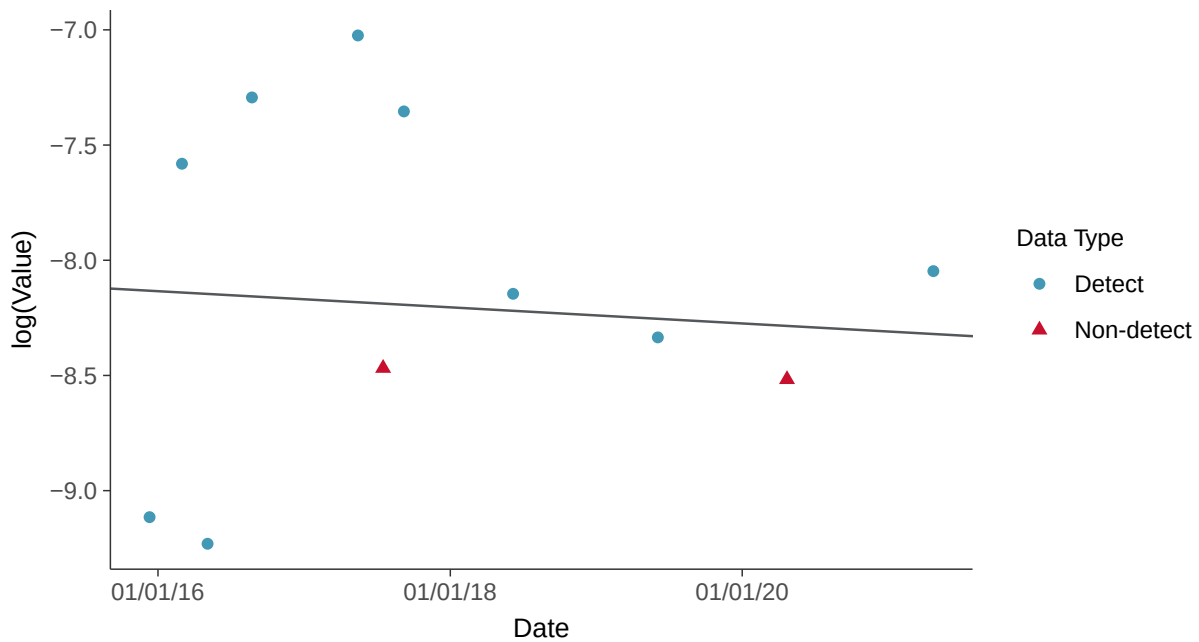
Gamma Q-Q plot using ROS Imputed Estimates

Cadmium, MW-7 (mg/l)



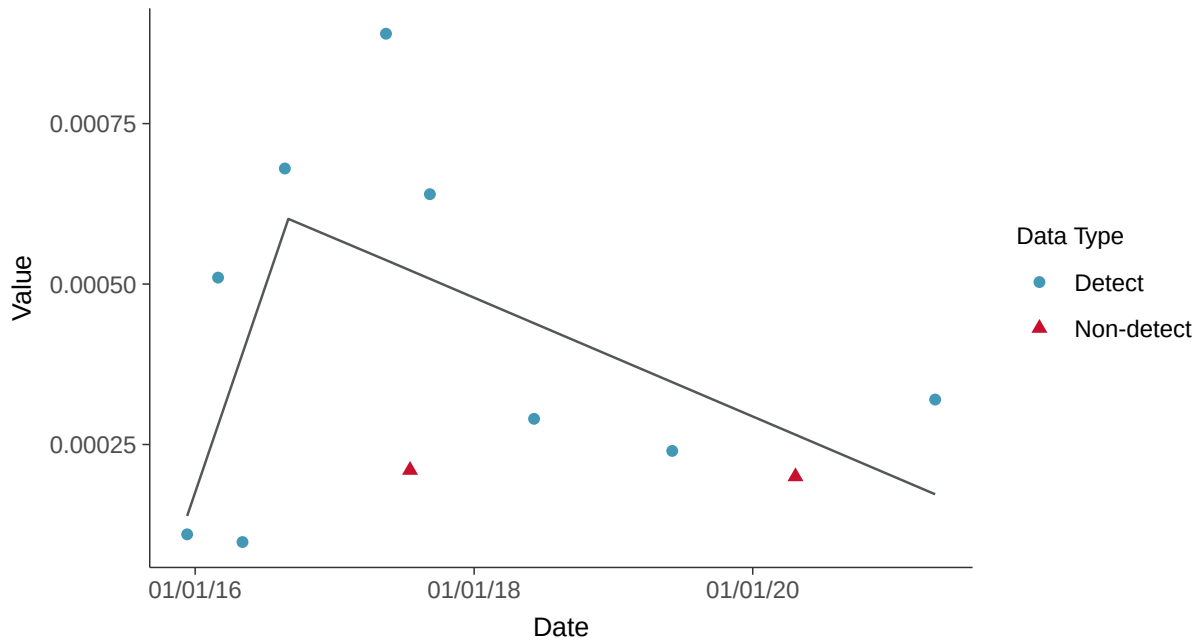
Trend Regression: Lognormal MLE

Cadmium, MW-7 (mg/l)



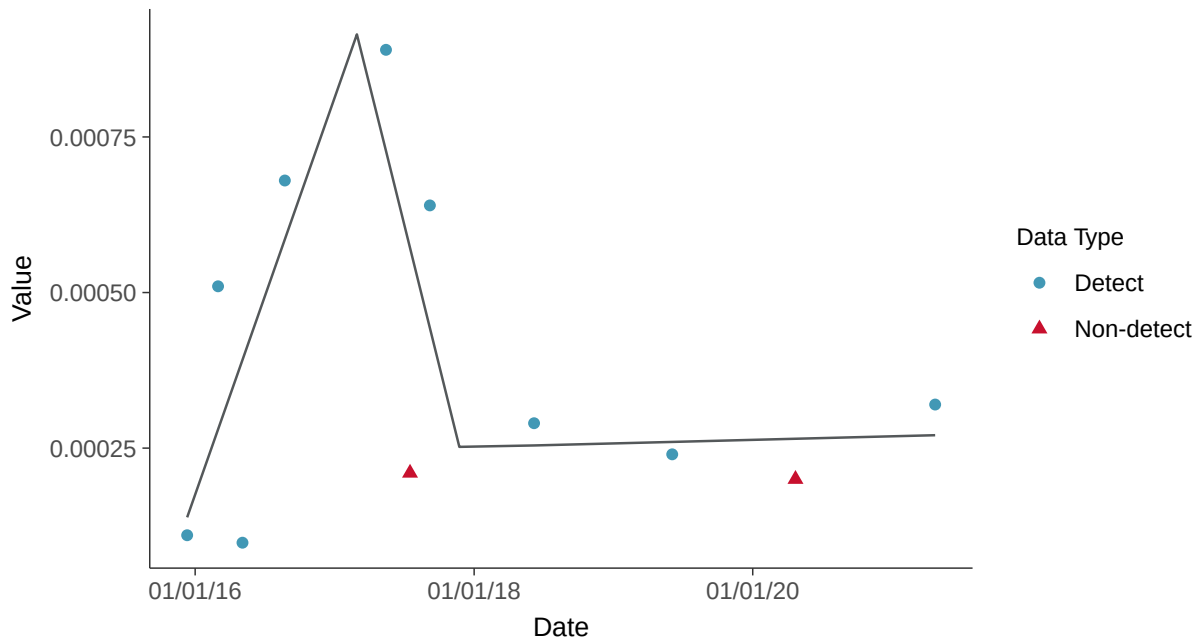
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-7 (mg/l)



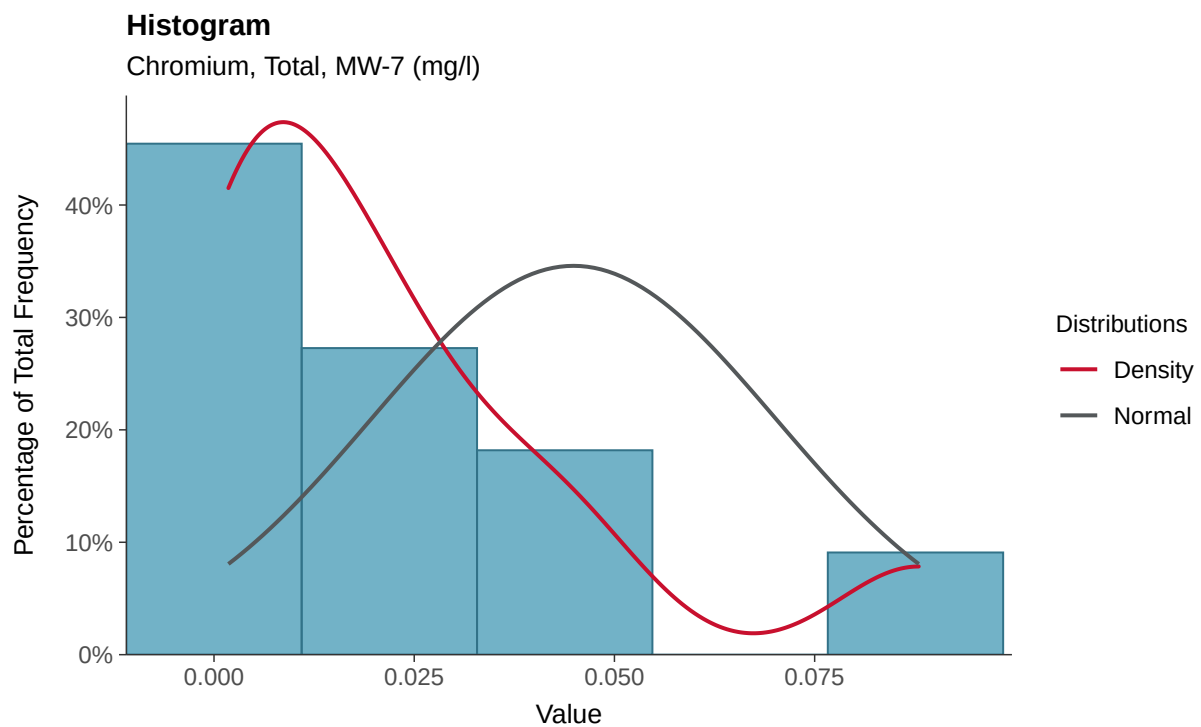
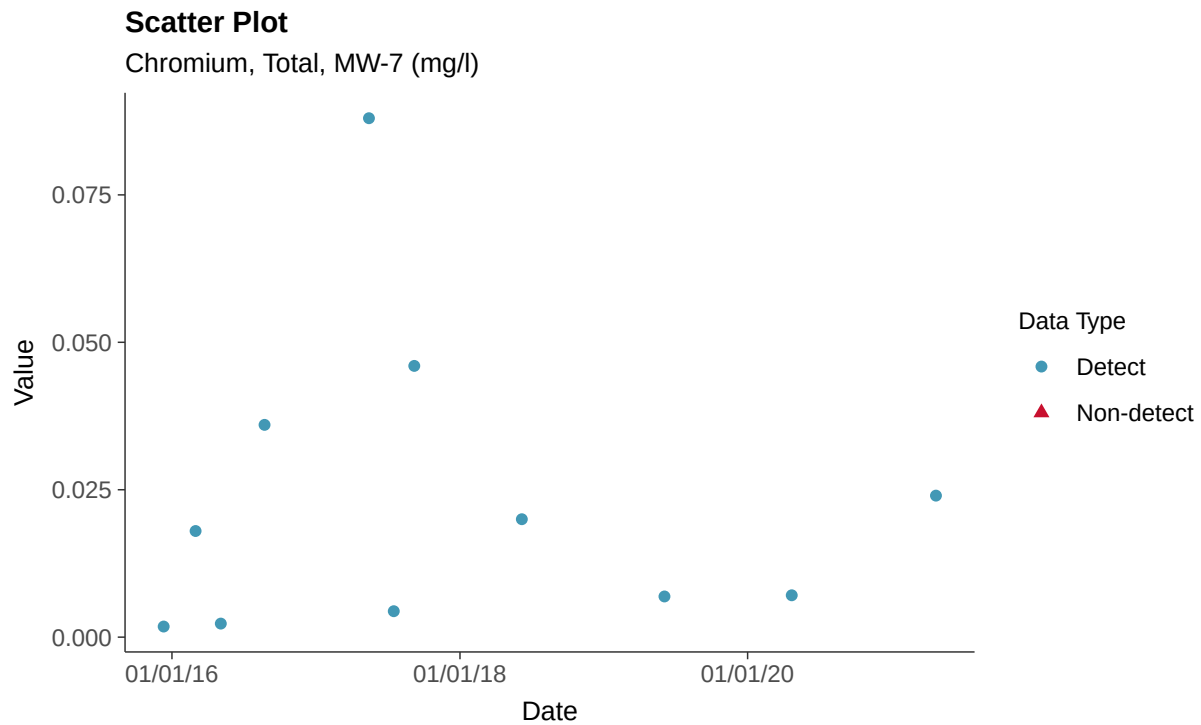
Trend Regression: Piecewise Linear-Linear-Linear

Cadmium, MW-7 (mg/l)



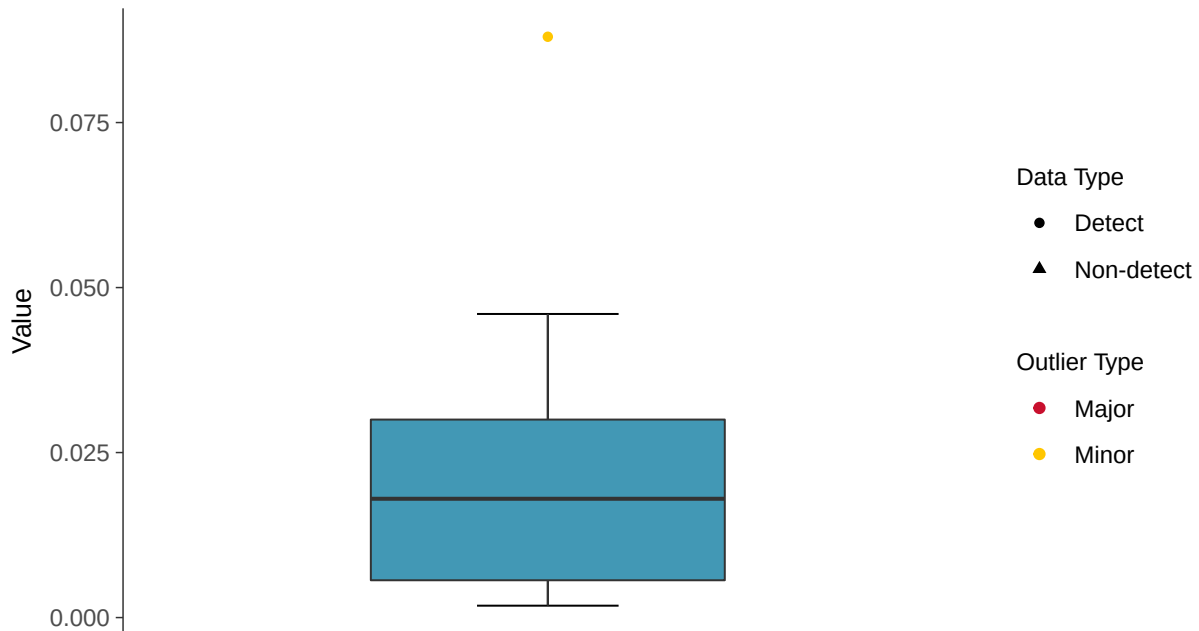
Appendix IV: Chromium, Total, MW-7

ID: 2_2_112



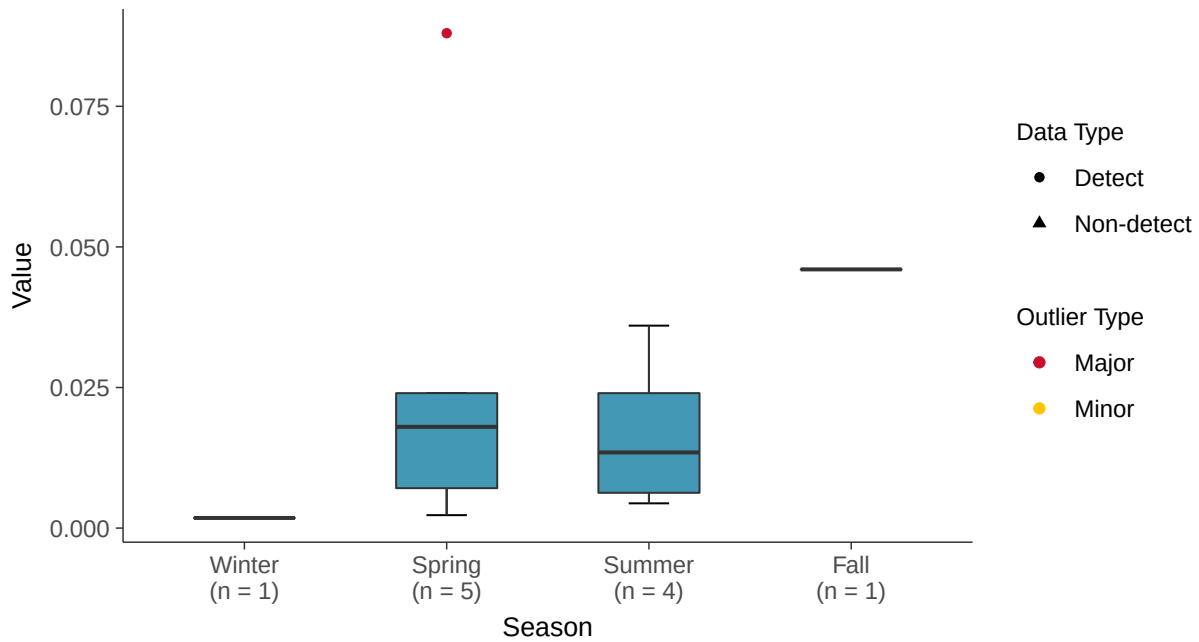
Boxplot

Chromium, Total, MW-7 (mg/l)



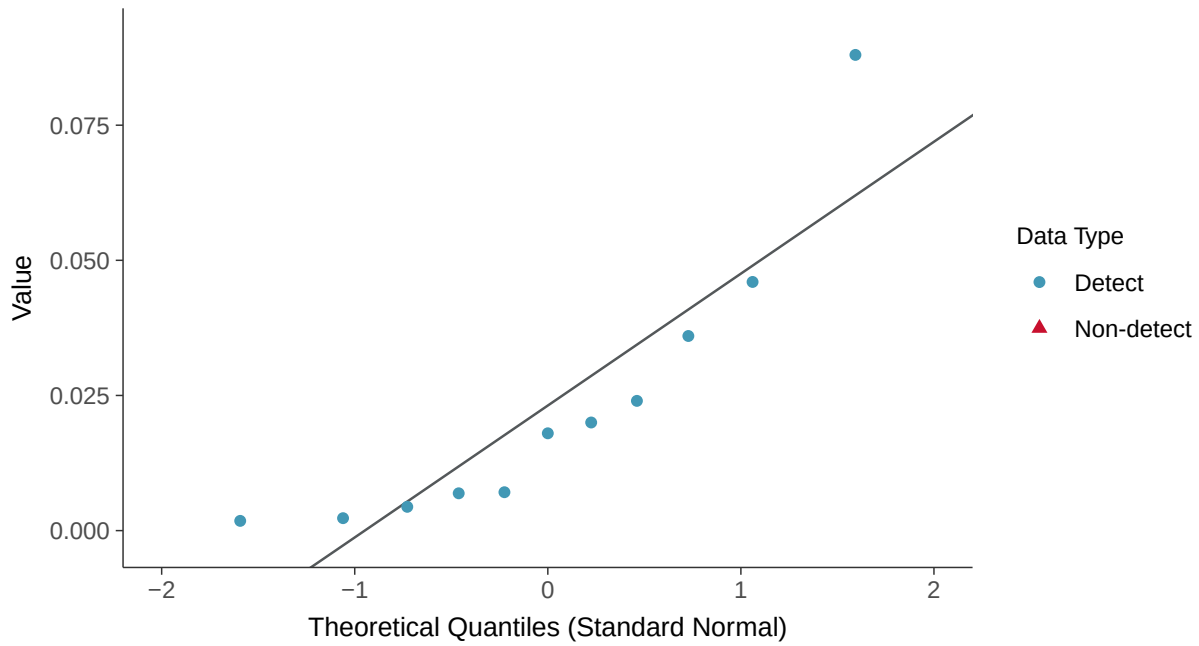
Boxplot by Season

Chromium, Total, MW-7 (mg/l)



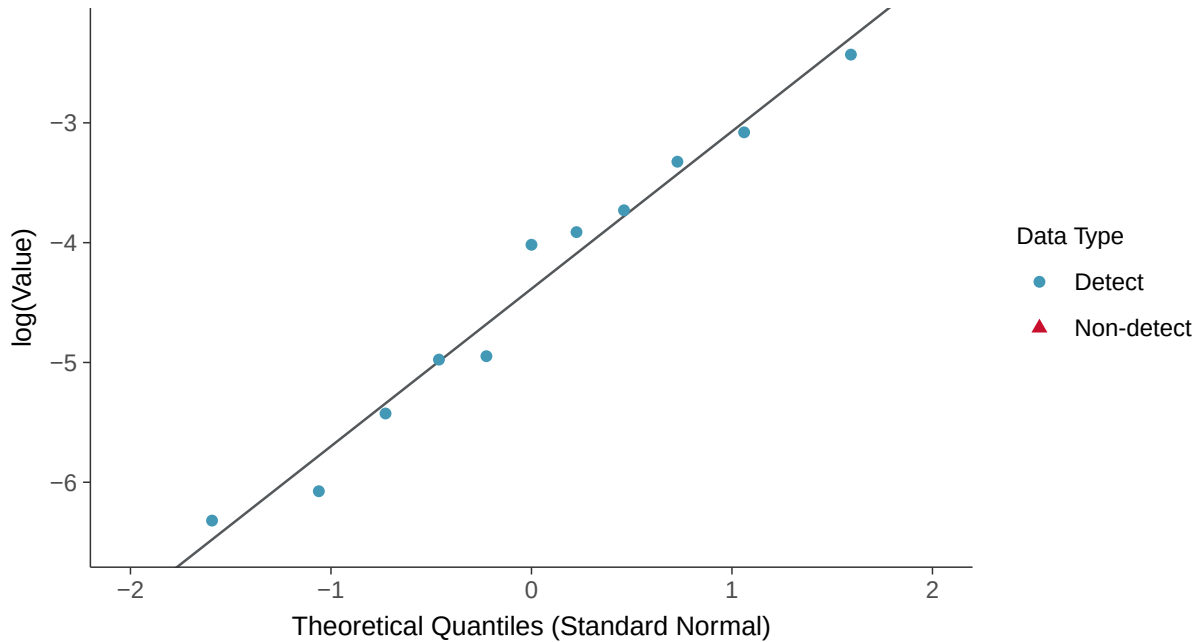
Normal Q-Q plot

Chromium, Total, MW-7 (mg/l)



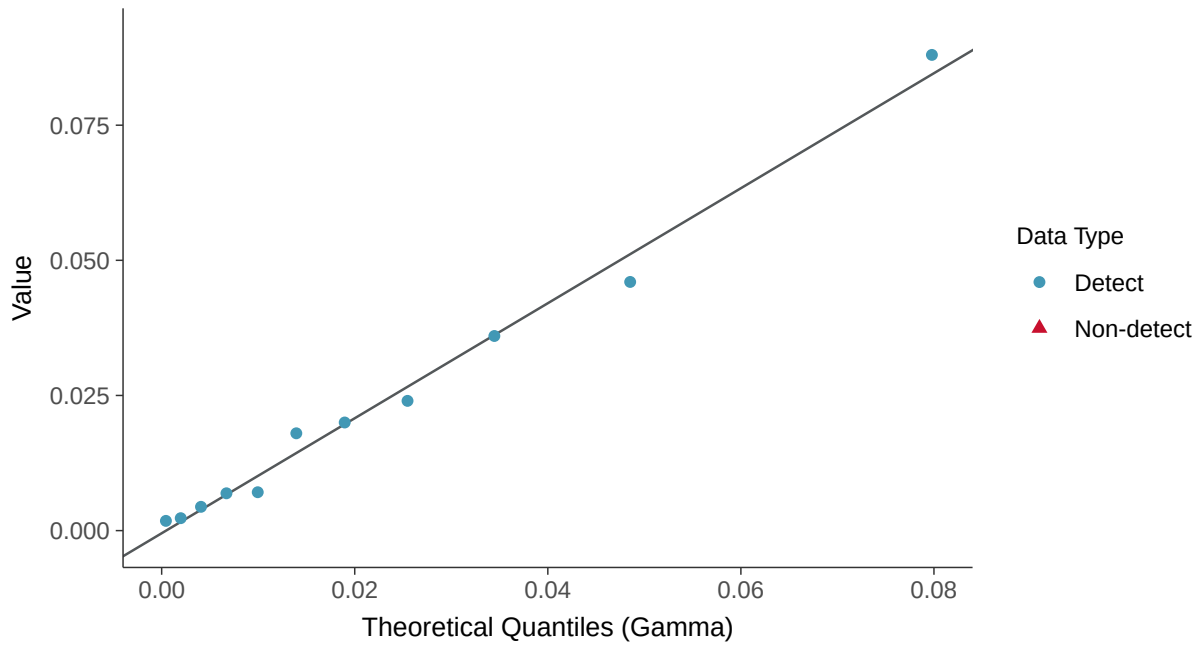
Lognormal Q-Q plot

Chromium, Total, MW-7 (mg/l)



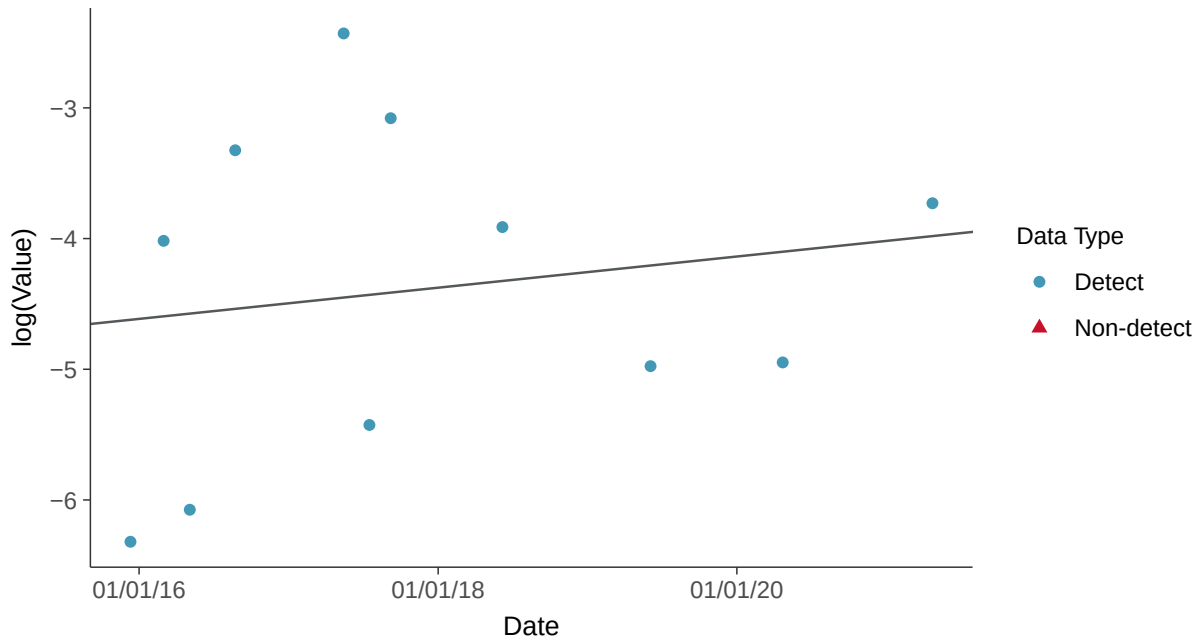
Gamma Q-Q plot

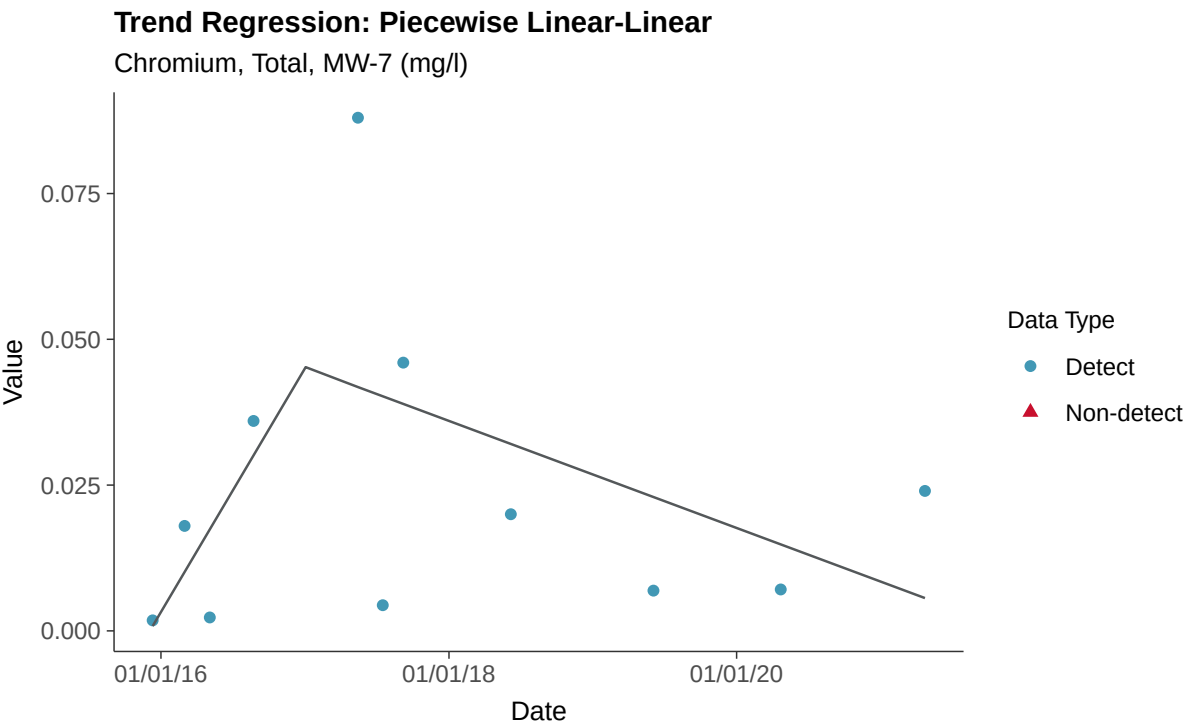
Chromium, Total, MW-7 (mg/l)



Trend Regression: Lognormal MLE

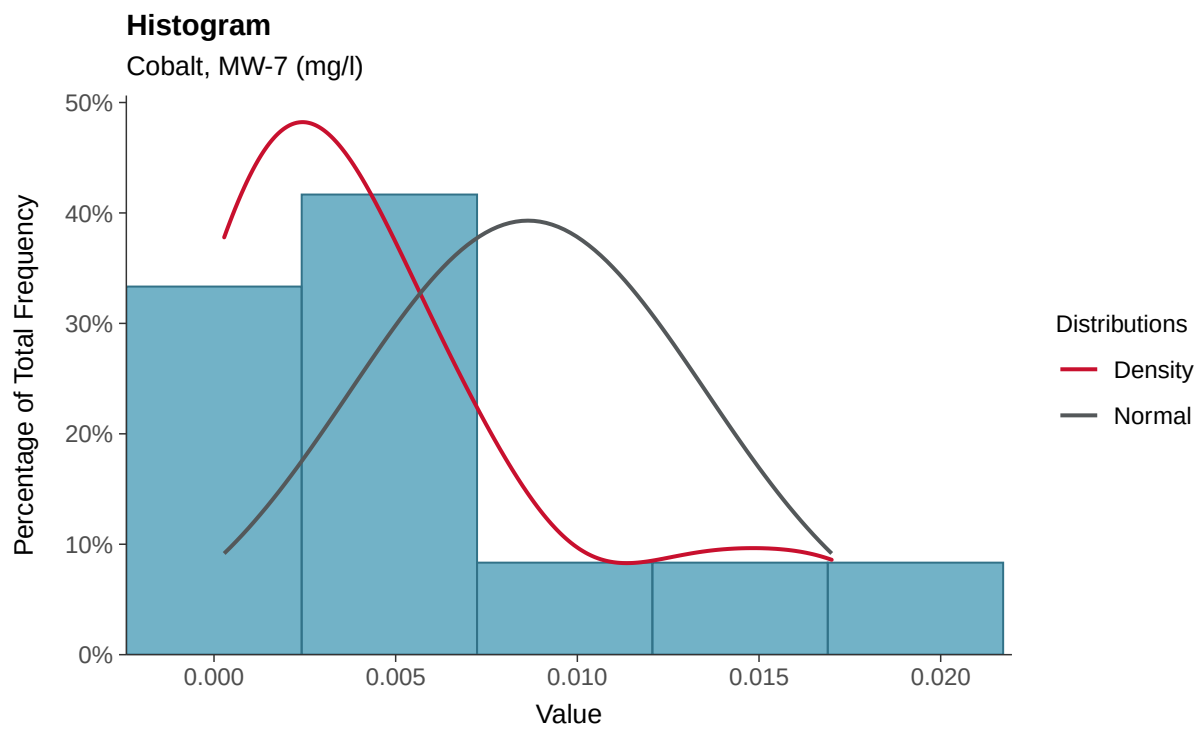
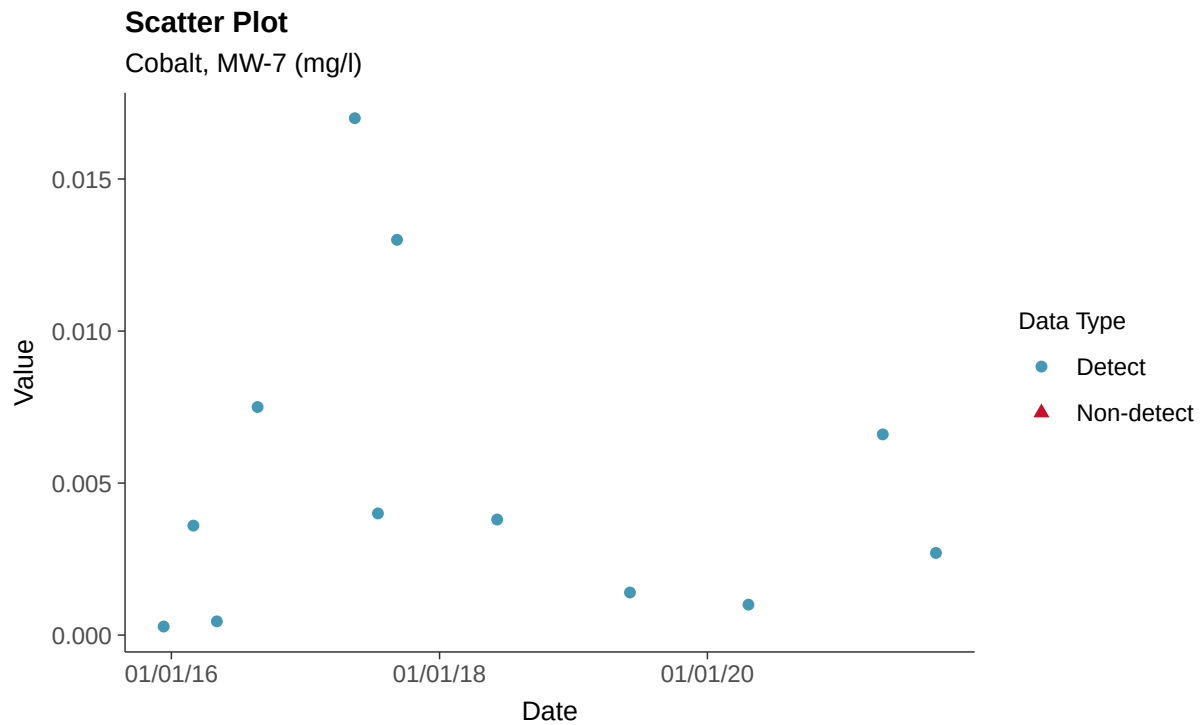
Chromium, Total, MW-7 (mg/l)

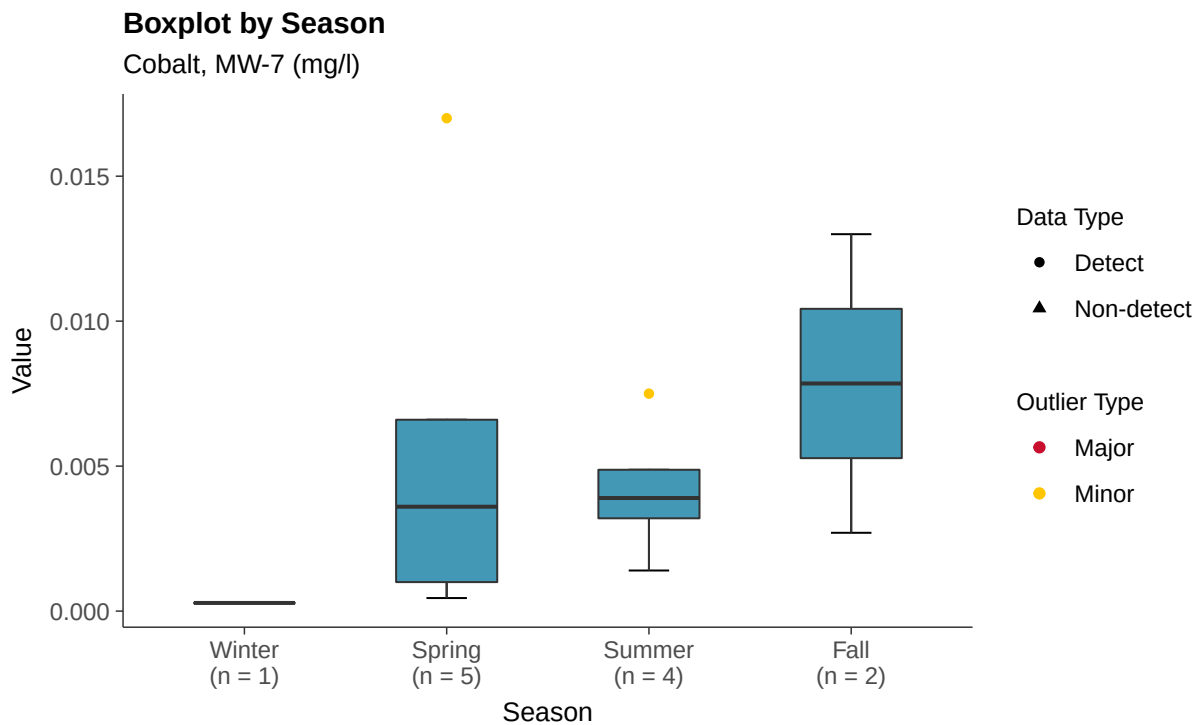
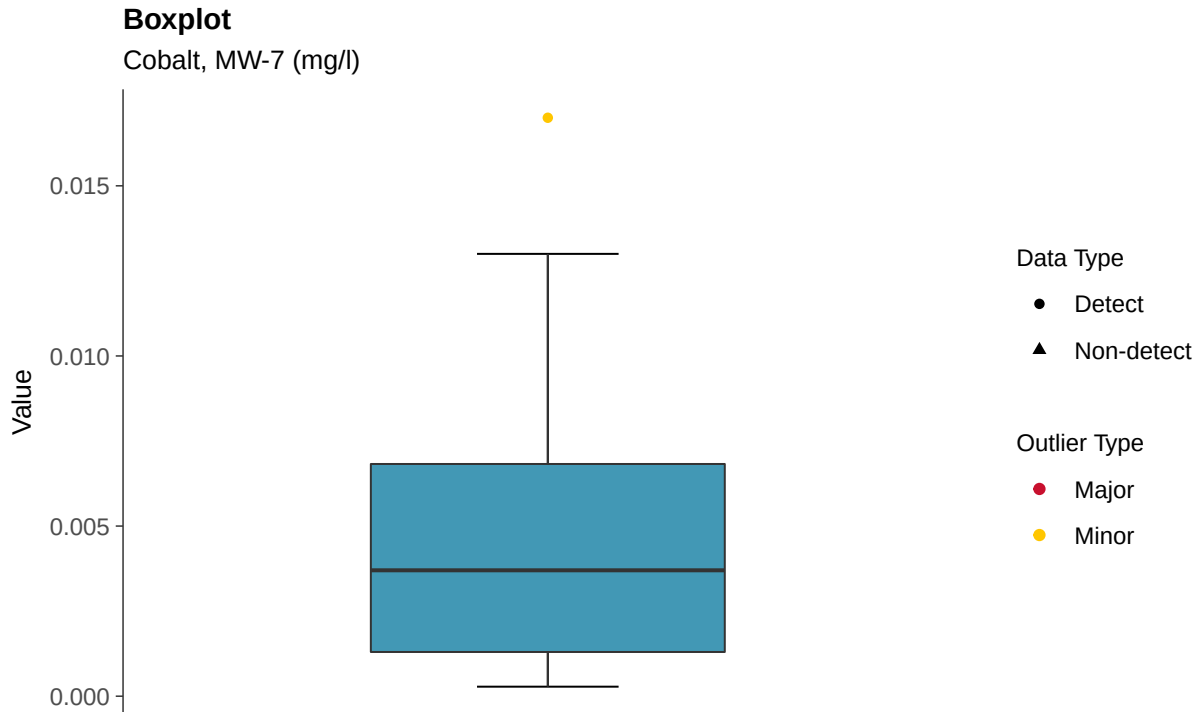




Appendix IV: Cobalt, MW-7

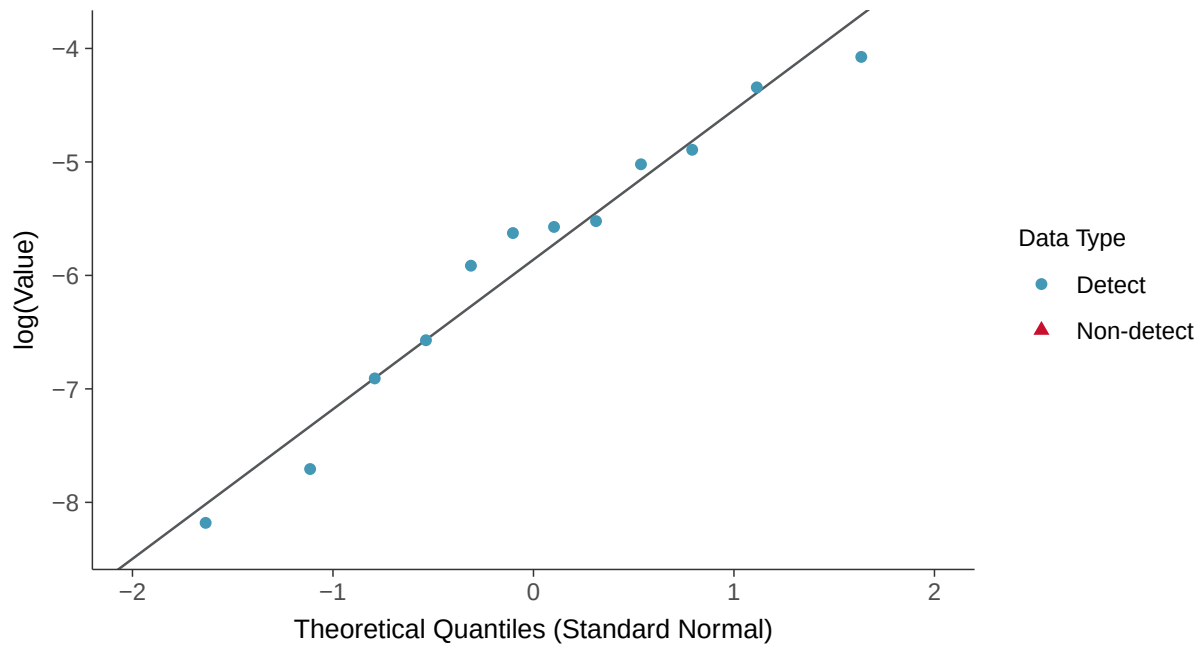
ID: 2_2_113





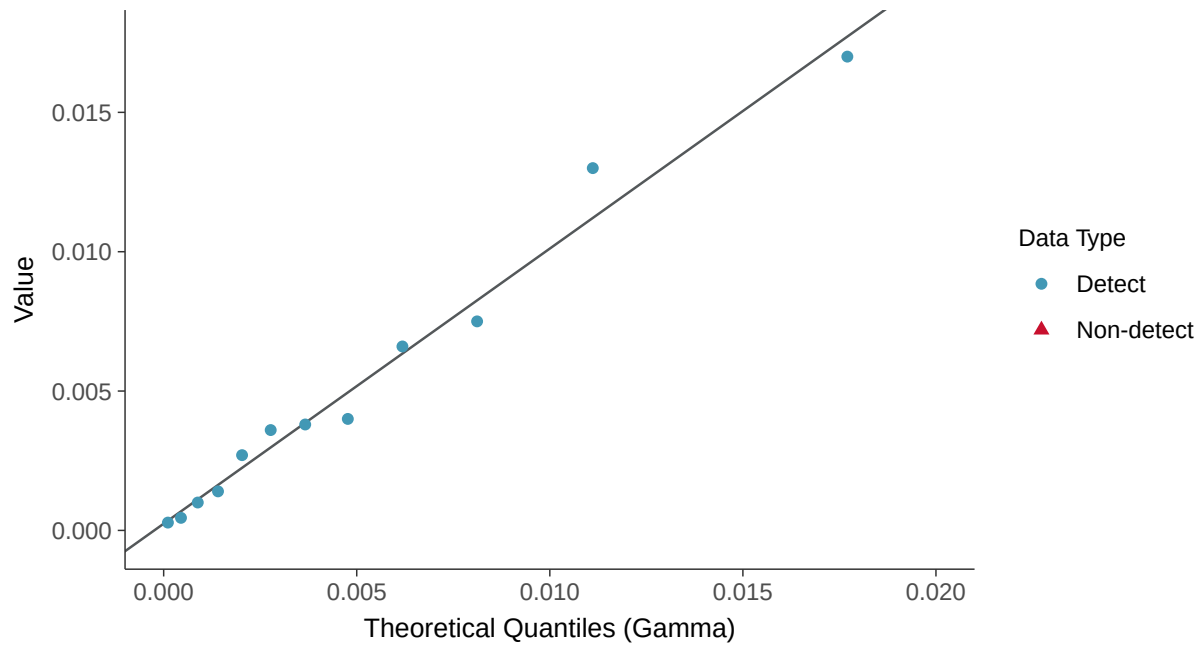
Lognormal Q-Q plot

Cobalt, MW-7 (mg/l)



Gamma Q-Q plot

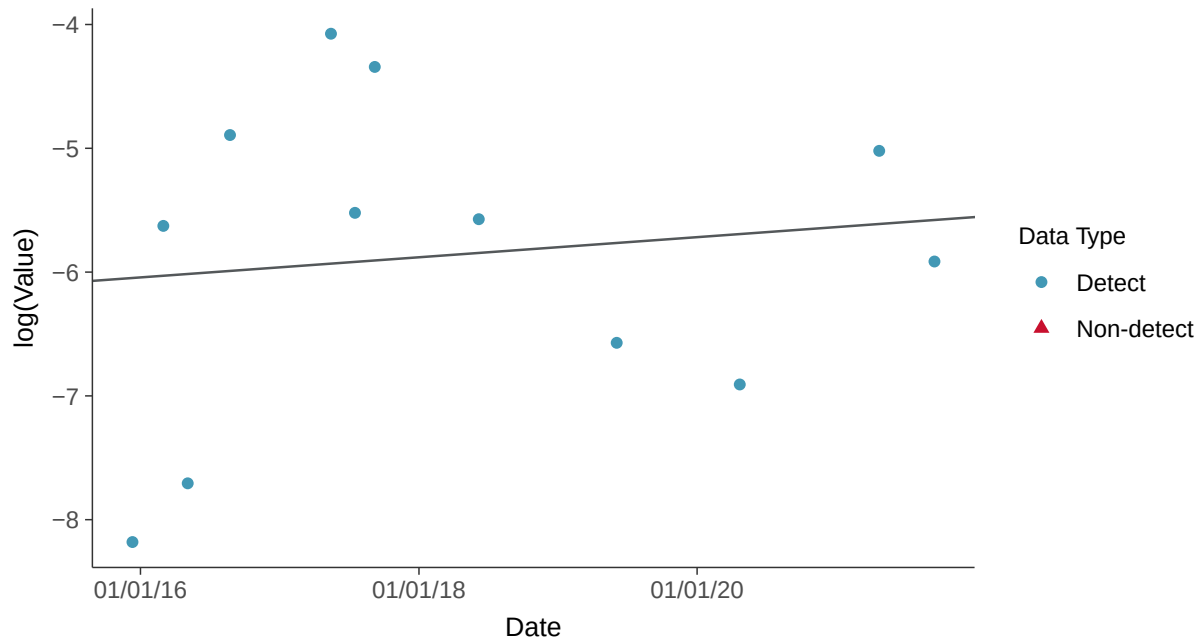
Cobalt, MW-7 (mg/l)





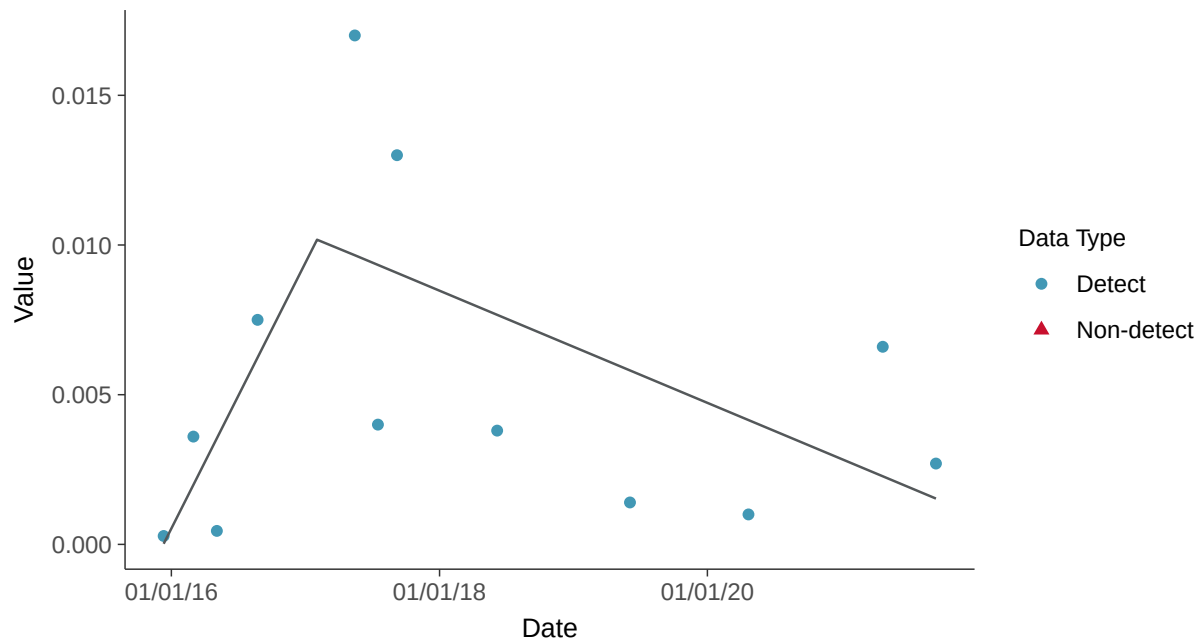
Trend Regression: Lognormal MLE

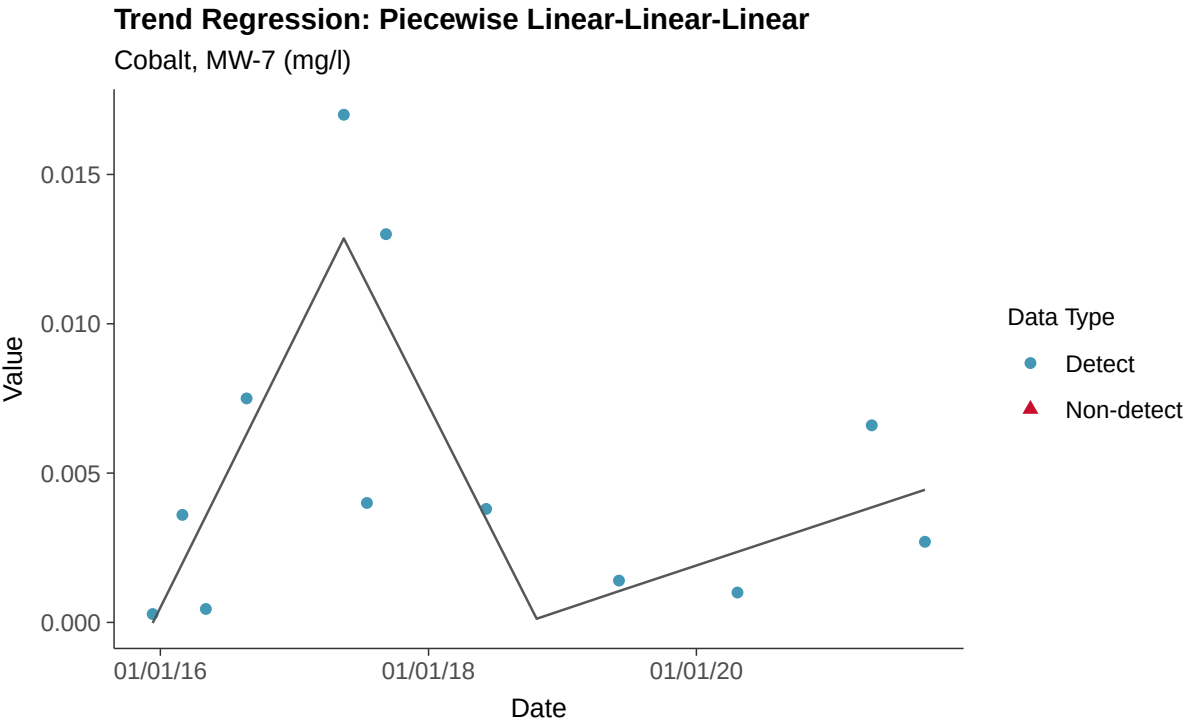
Cobalt, MW-7 (mg/l)



Trend Regression: Piecewise Linear-Linear

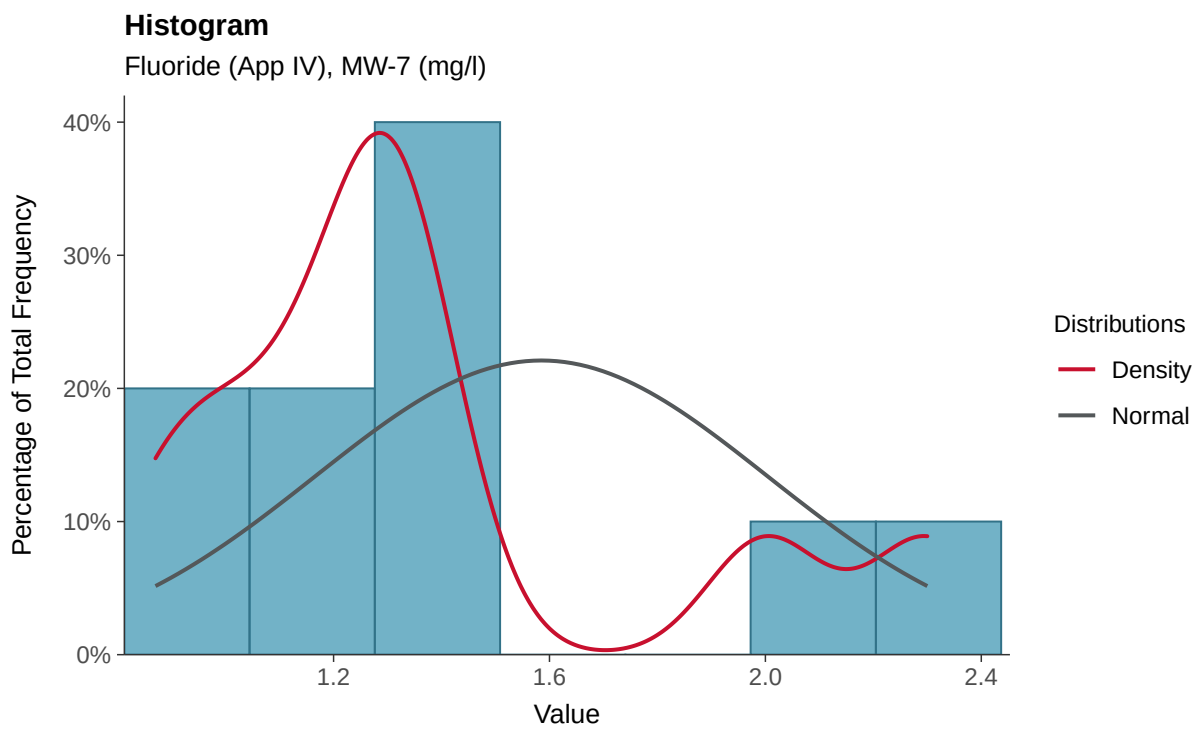
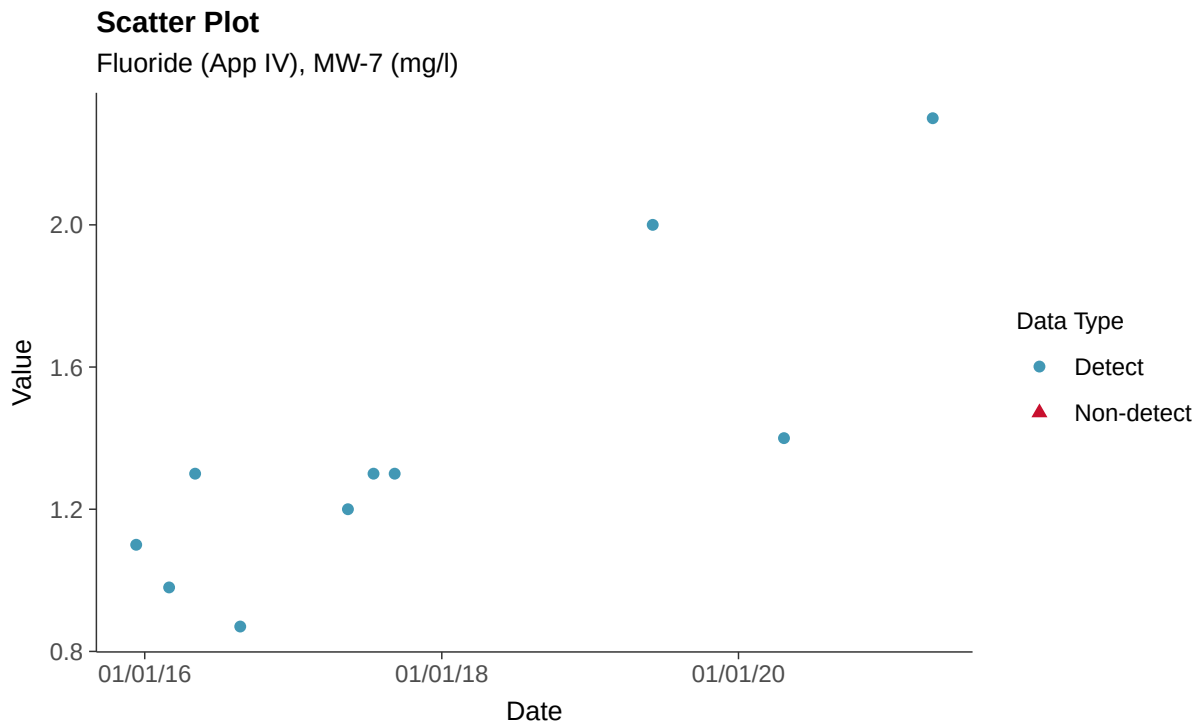
Cobalt, MW-7 (mg/l)





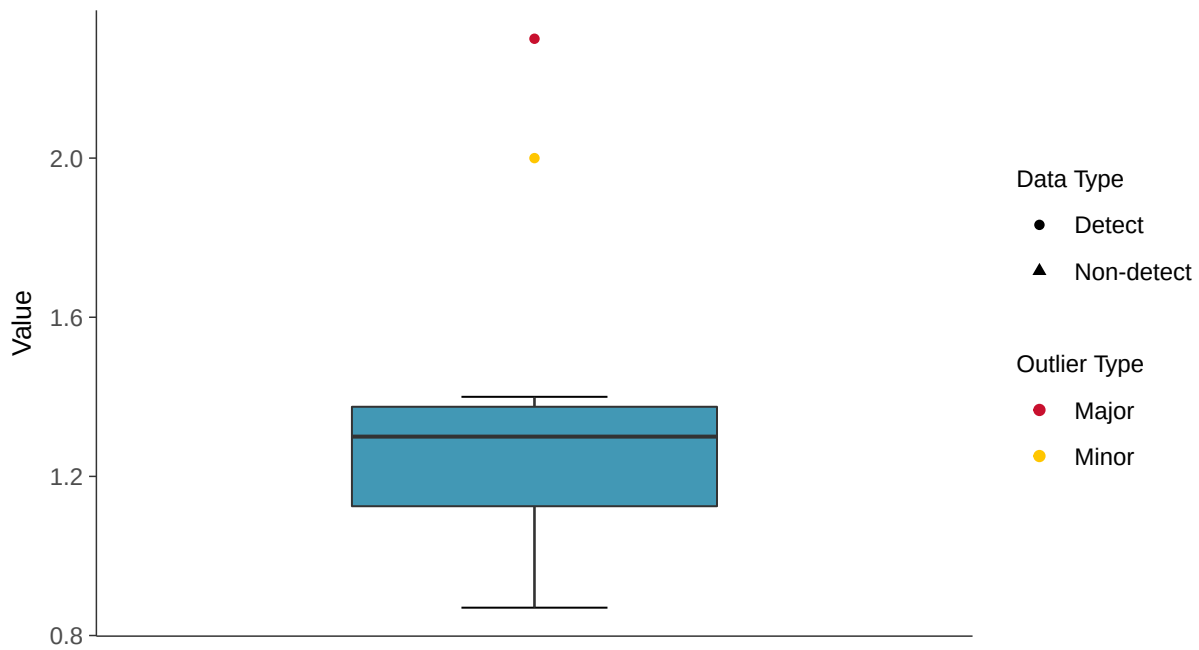
Appendix IV: Fluoride (App IV), MW-7

ID: 2_2_116



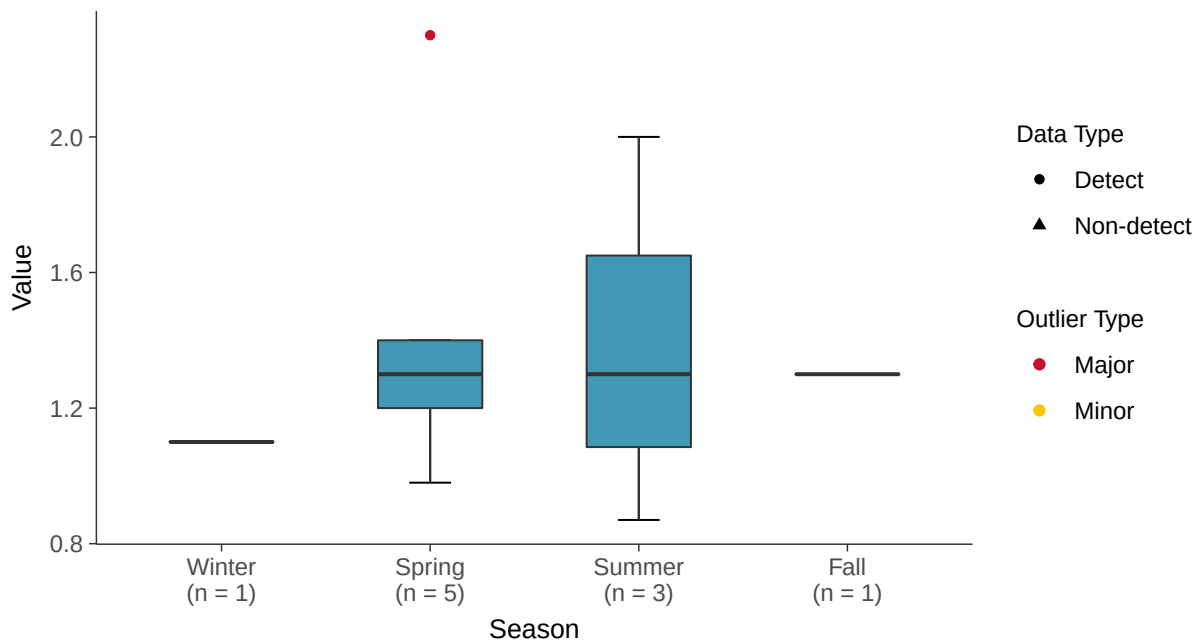
Boxplot

Fluoride (App IV), MW-7 (mg/l)



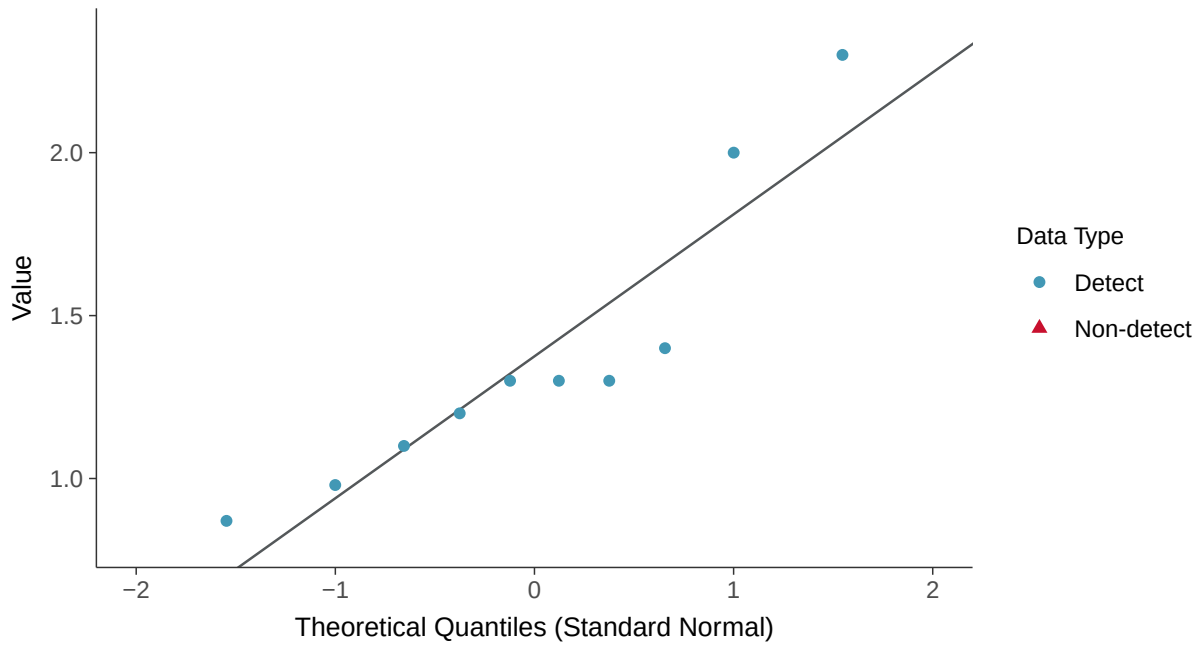
Boxplot by Season

Fluoride (App IV), MW-7 (mg/l)



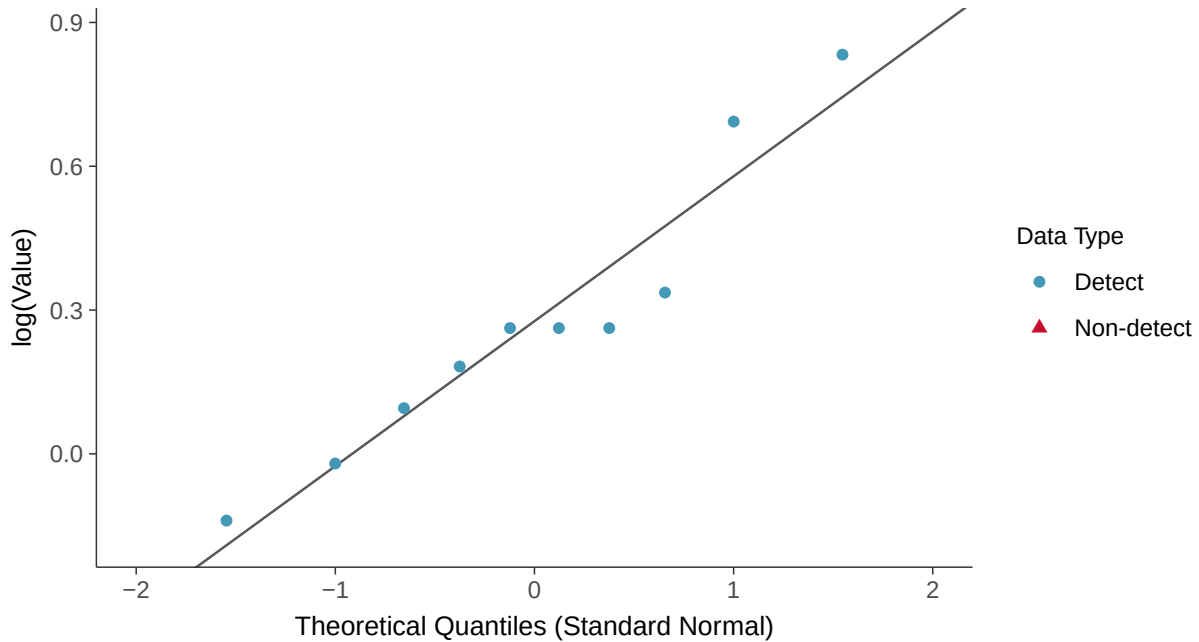
Normal Q-Q plot

Fluoride (App IV), MW-7 (mg/l)



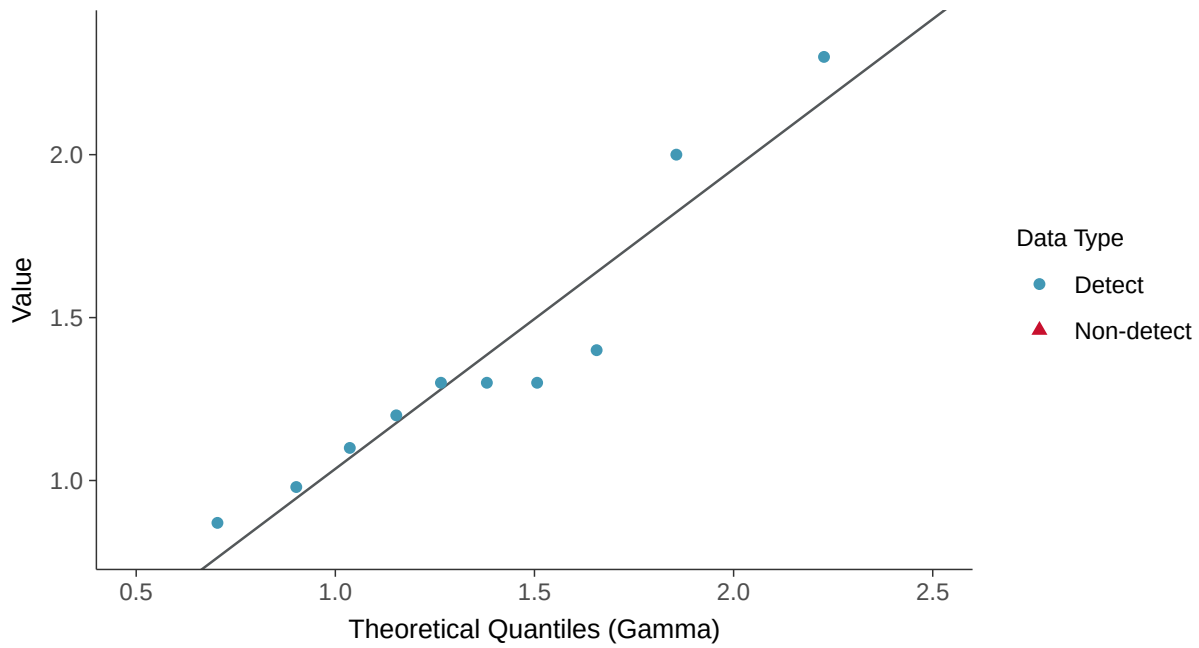
Lognormal Q-Q plot

Fluoride (App IV), MW-7 (mg/l)



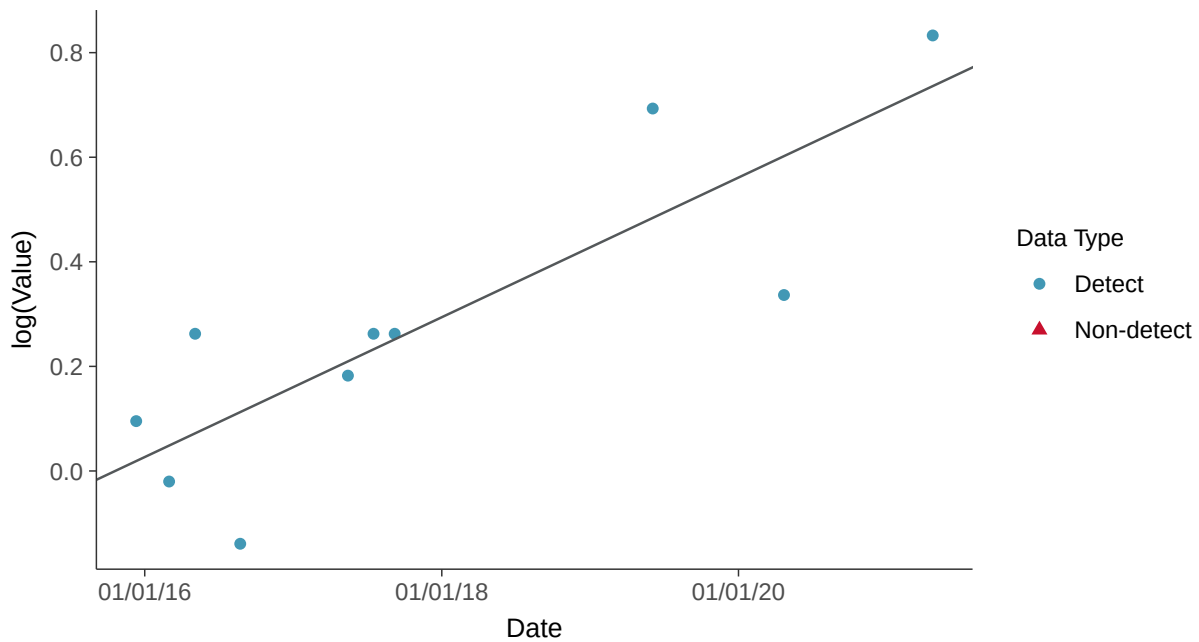
Gamma Q-Q plot

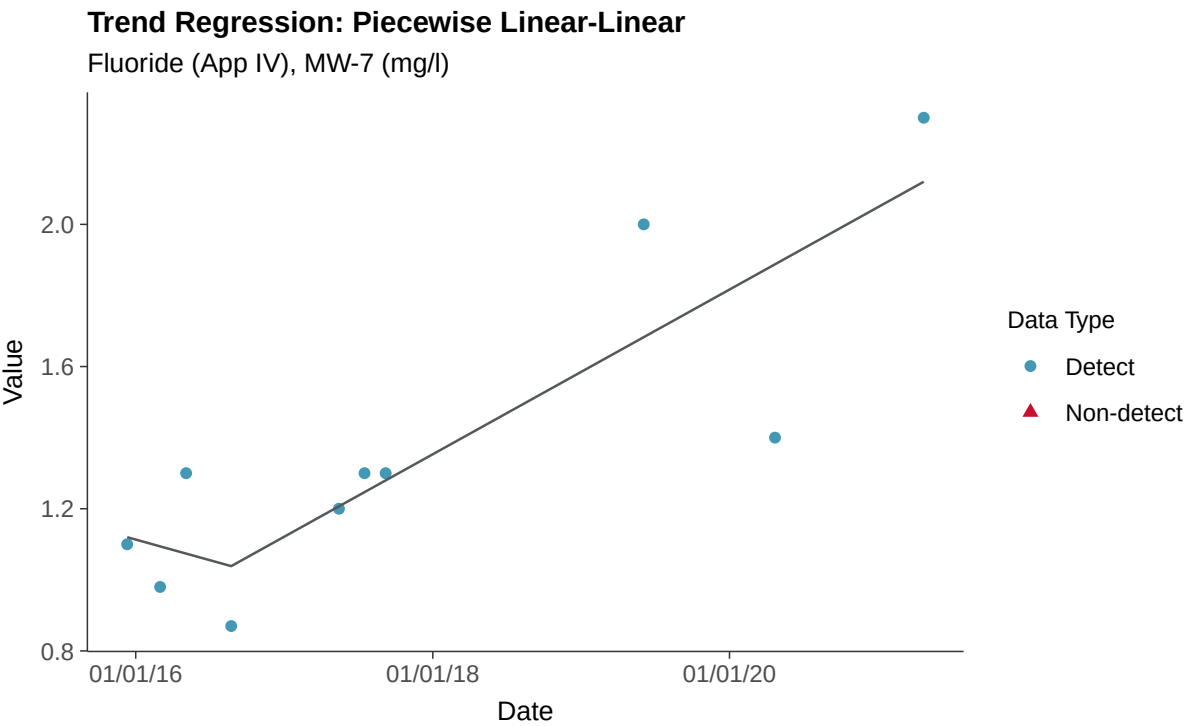
Fluoride (App IV), MW-7 (mg/l)



Trend Regression: Lognormal MLE

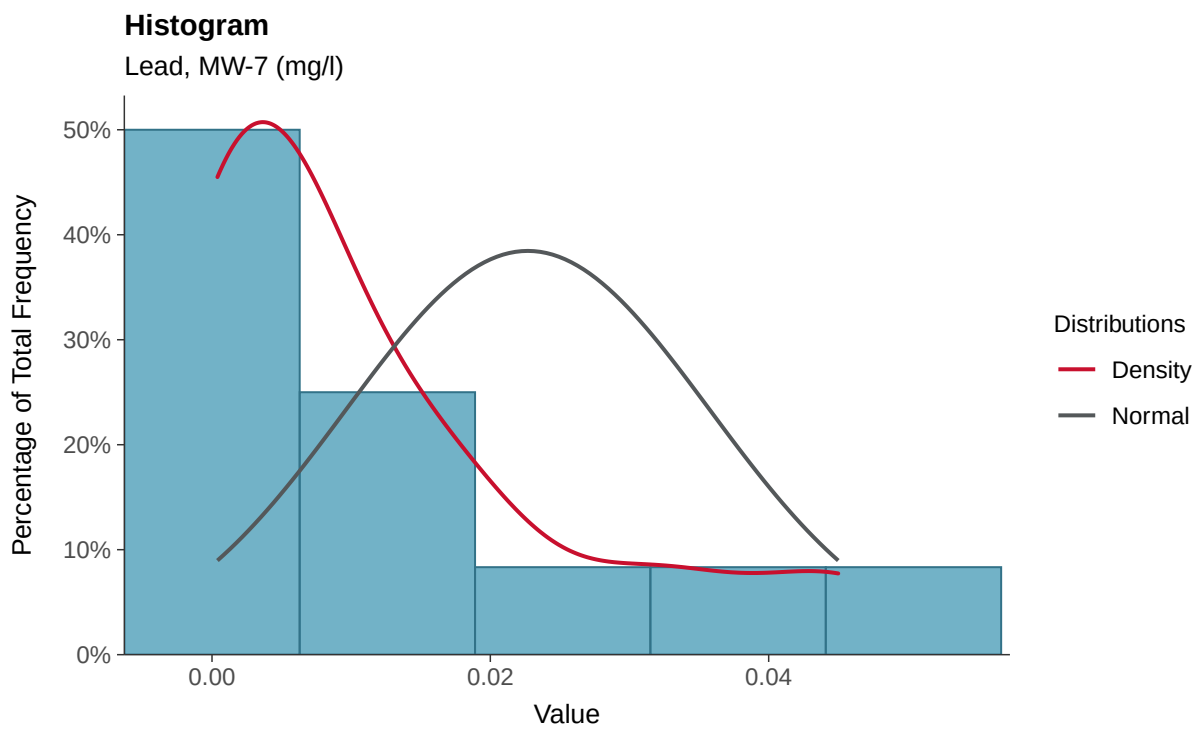
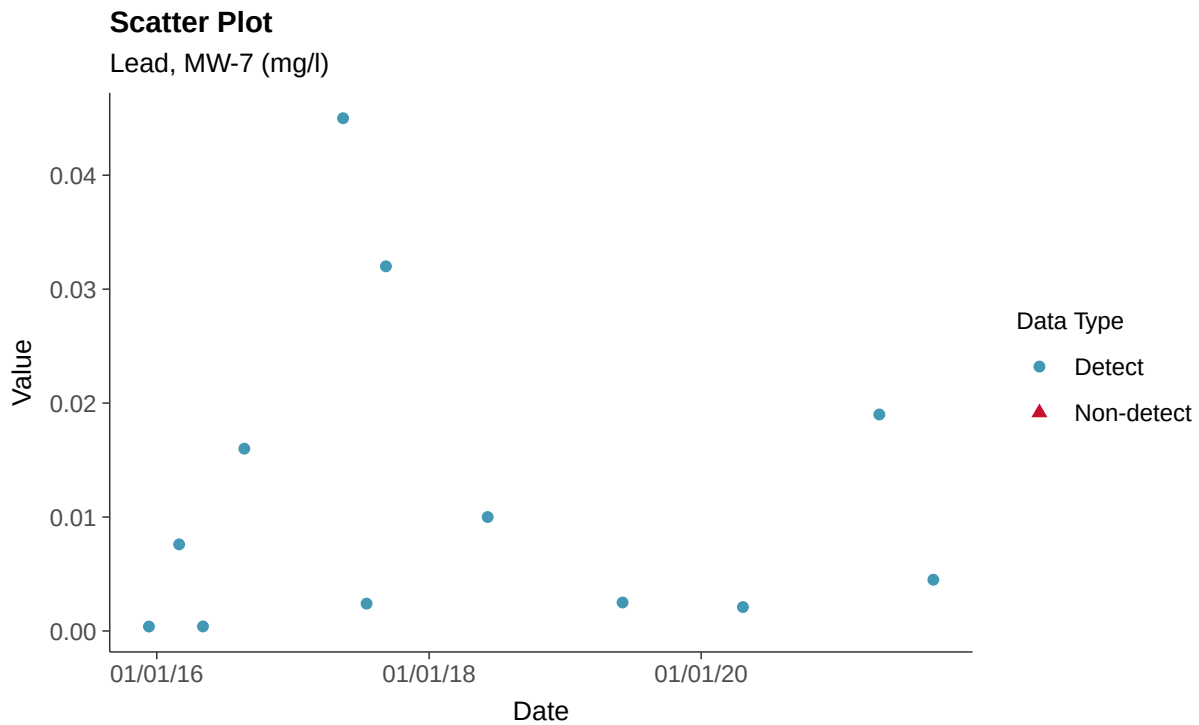
Fluoride (App IV), MW-7 (mg/l)

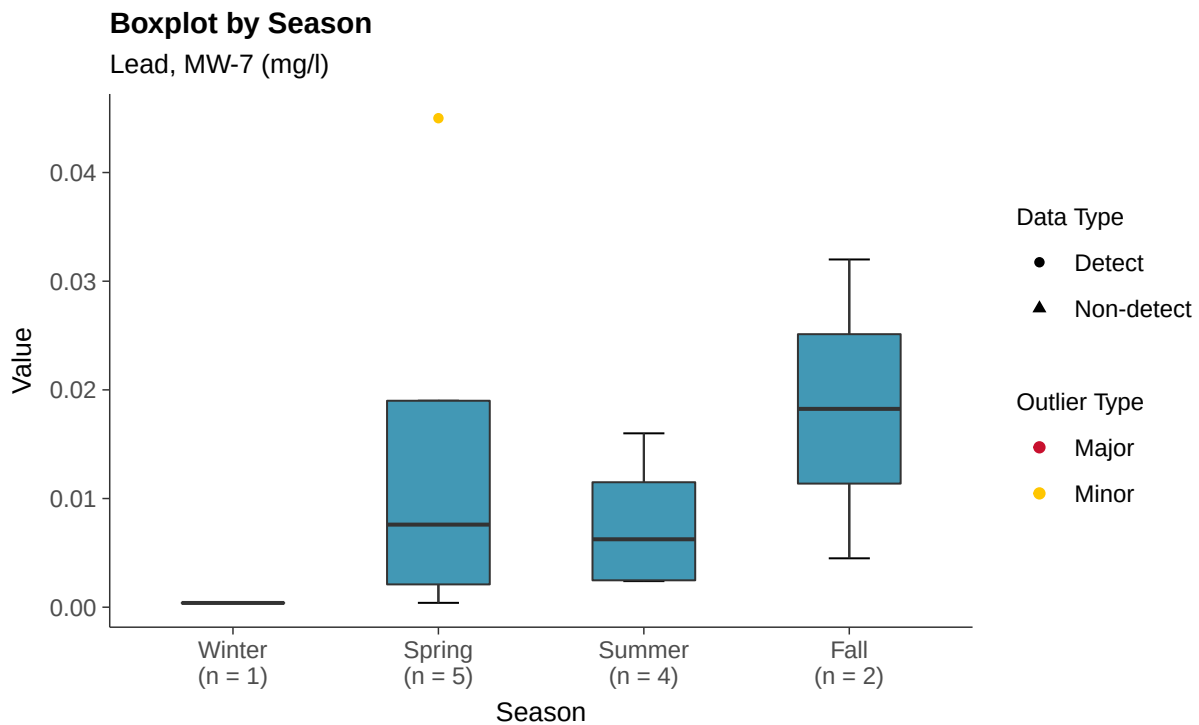
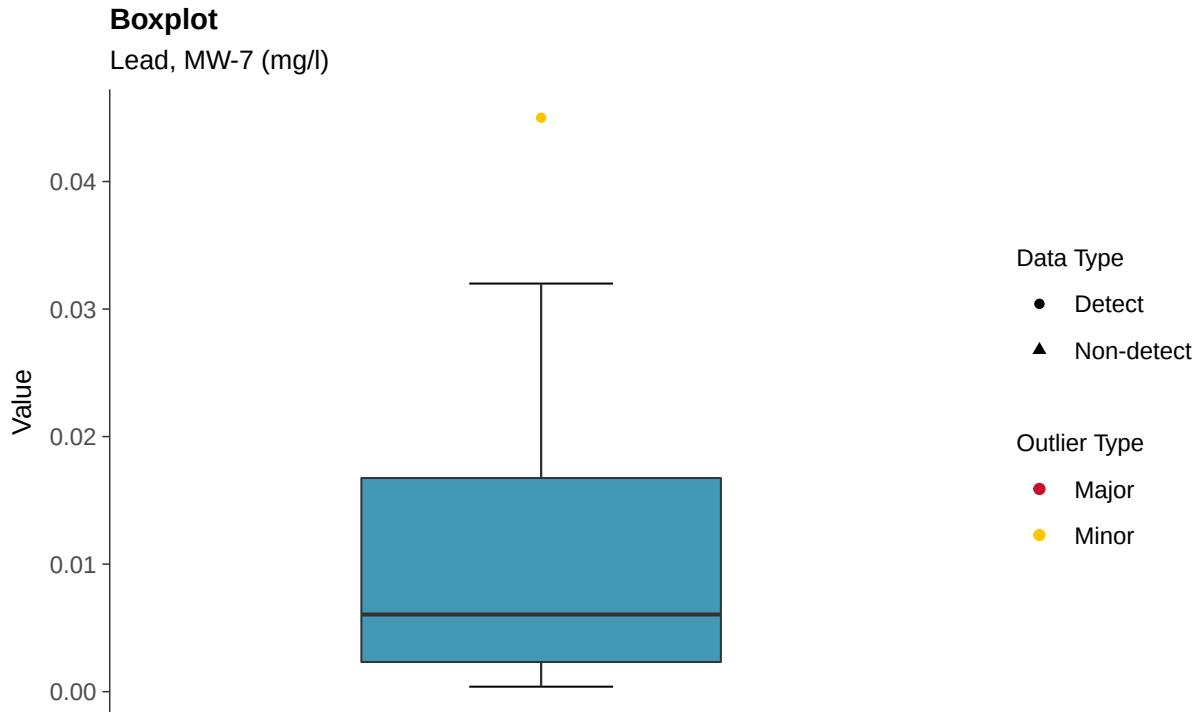




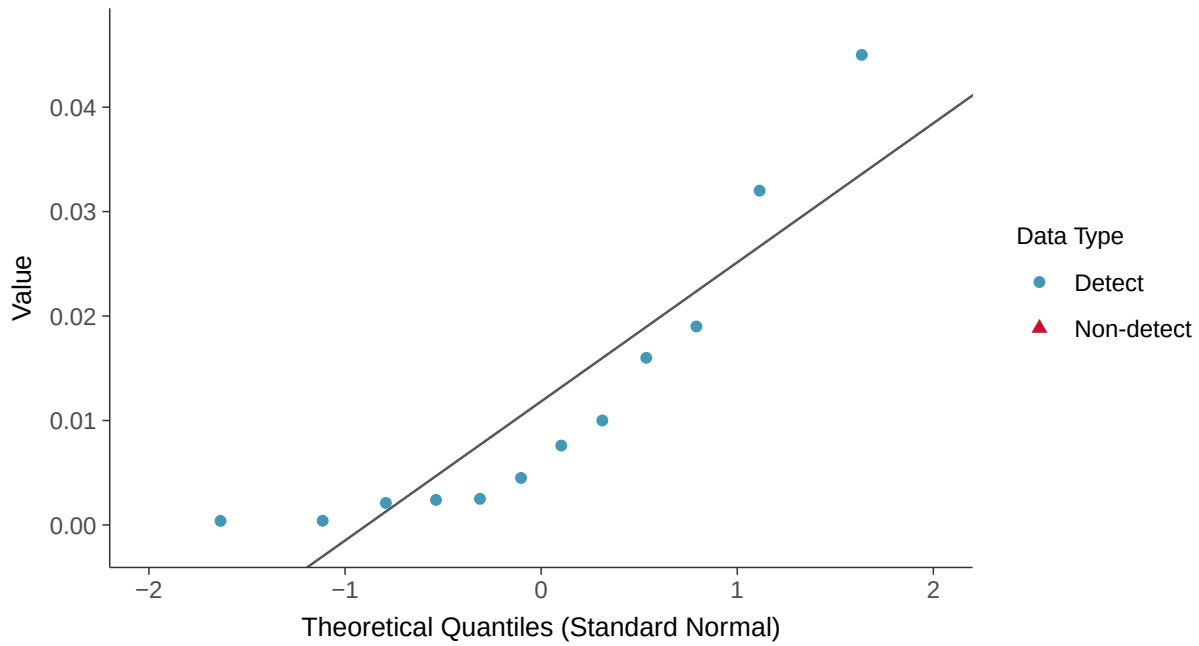
Appendix IV: Lead, MW-7

ID: 2_2_117

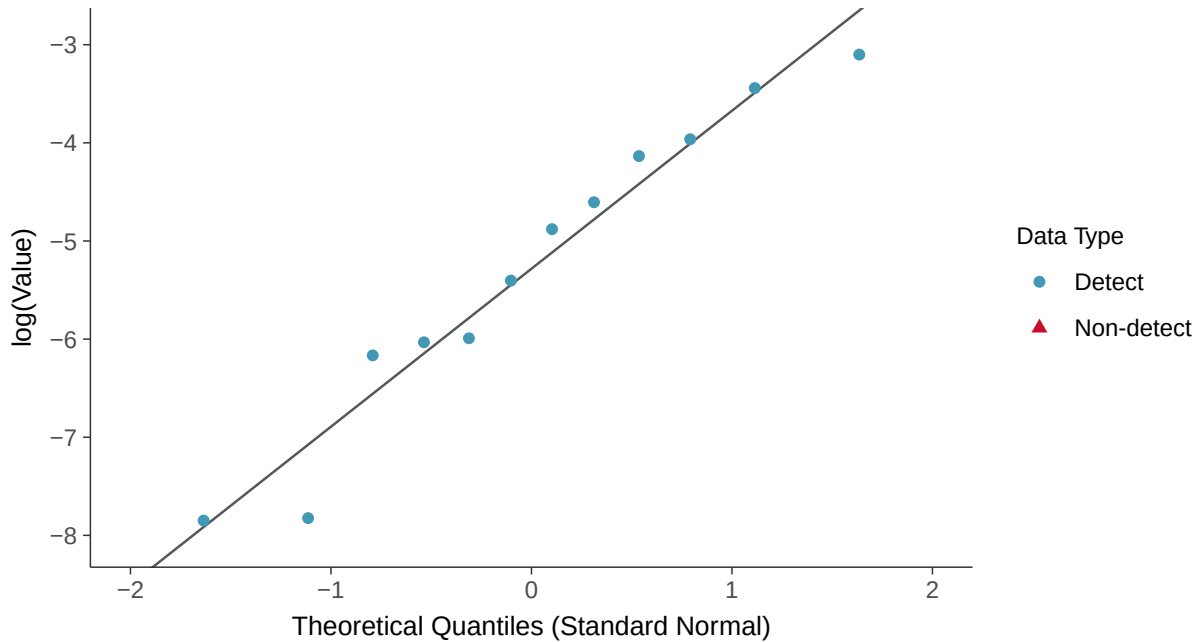




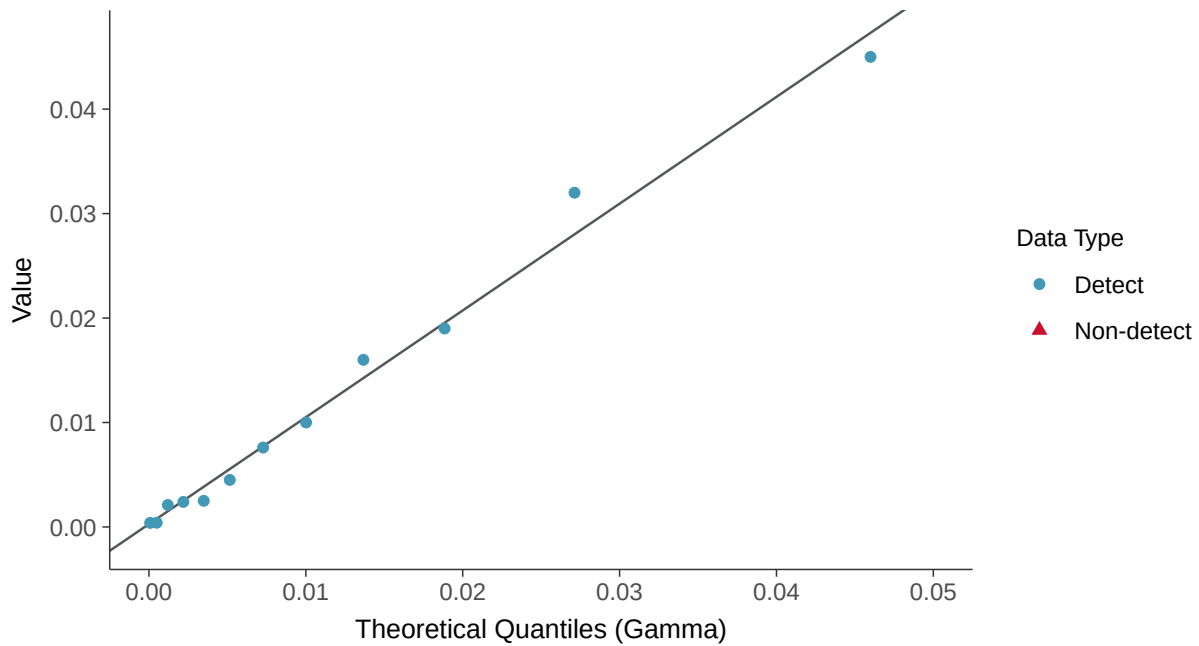
Normal Q-Q plot
Lead, MW-7 (mg/l)



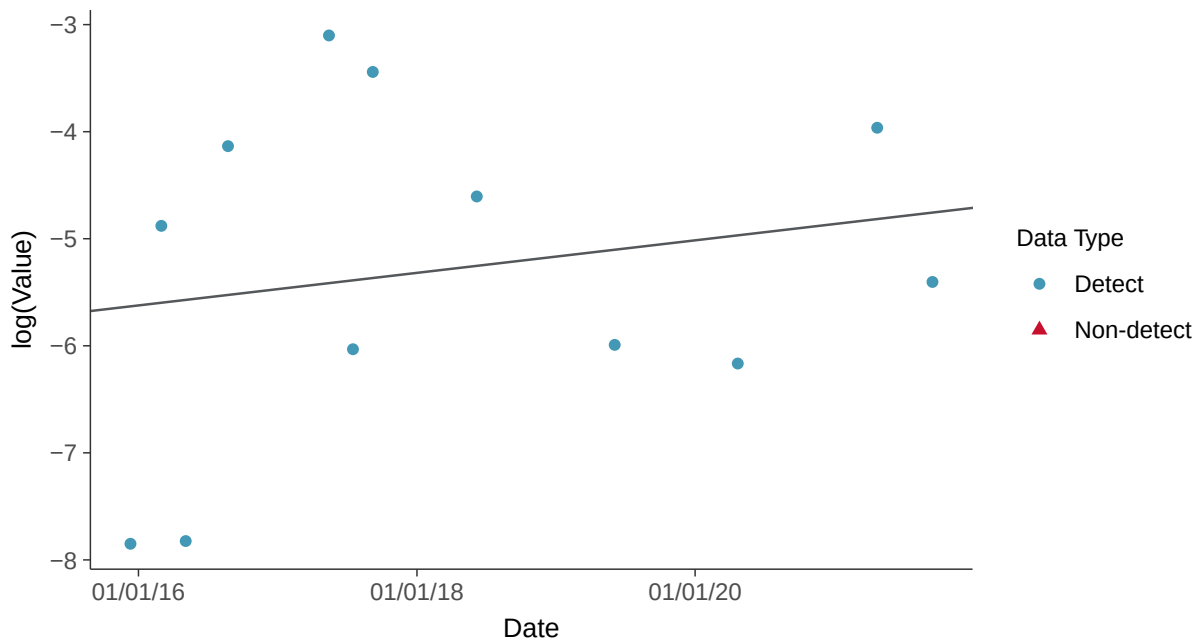
Lognormal Q-Q plot
Lead, MW-7 (mg/l)



Gamma Q-Q plot
Lead, MW-7 (mg/l)



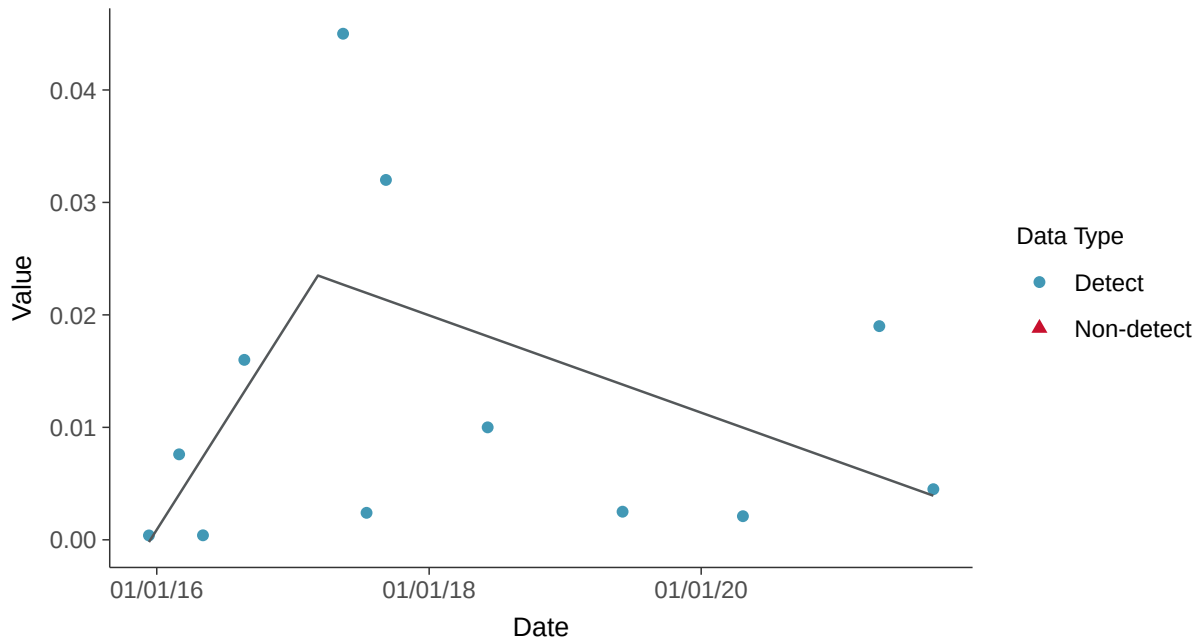
Trend Regression: Lognormal MLE
Lead, MW-7 (mg/l)





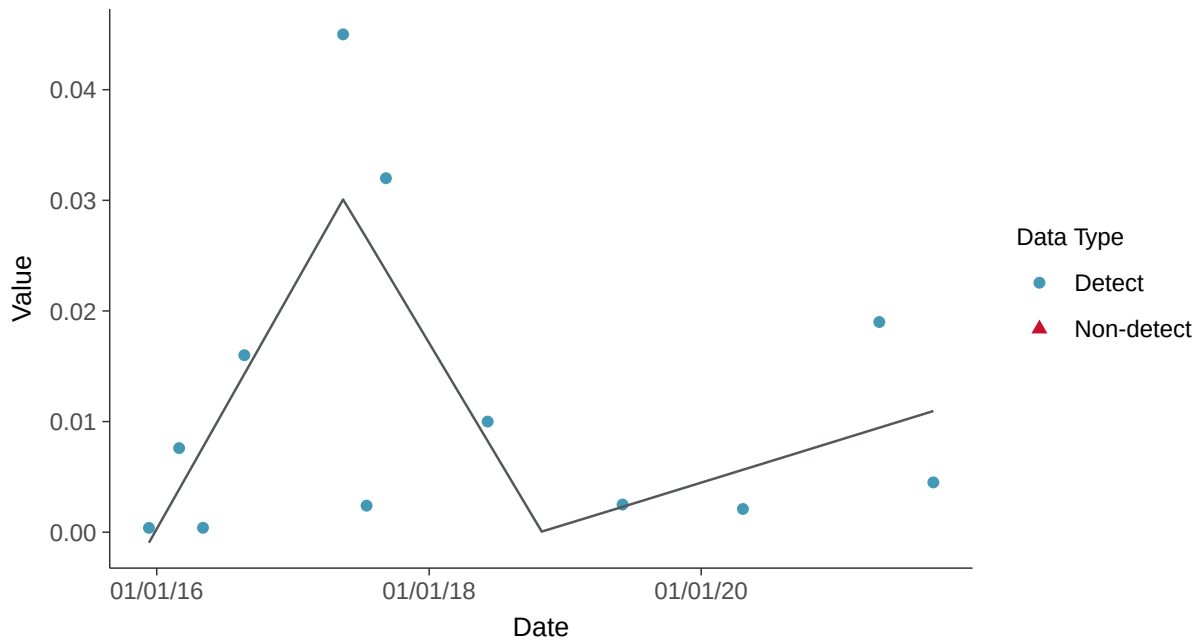
Trend Regression: Piecewise Linear-Linear

Lead, MW-7 (mg/l)



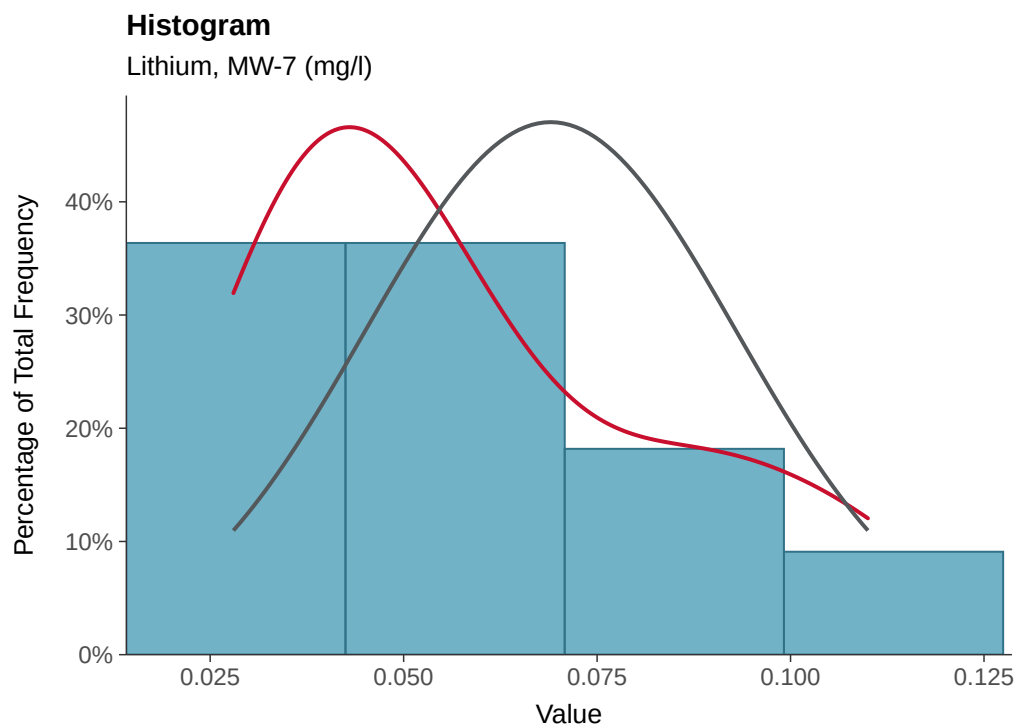
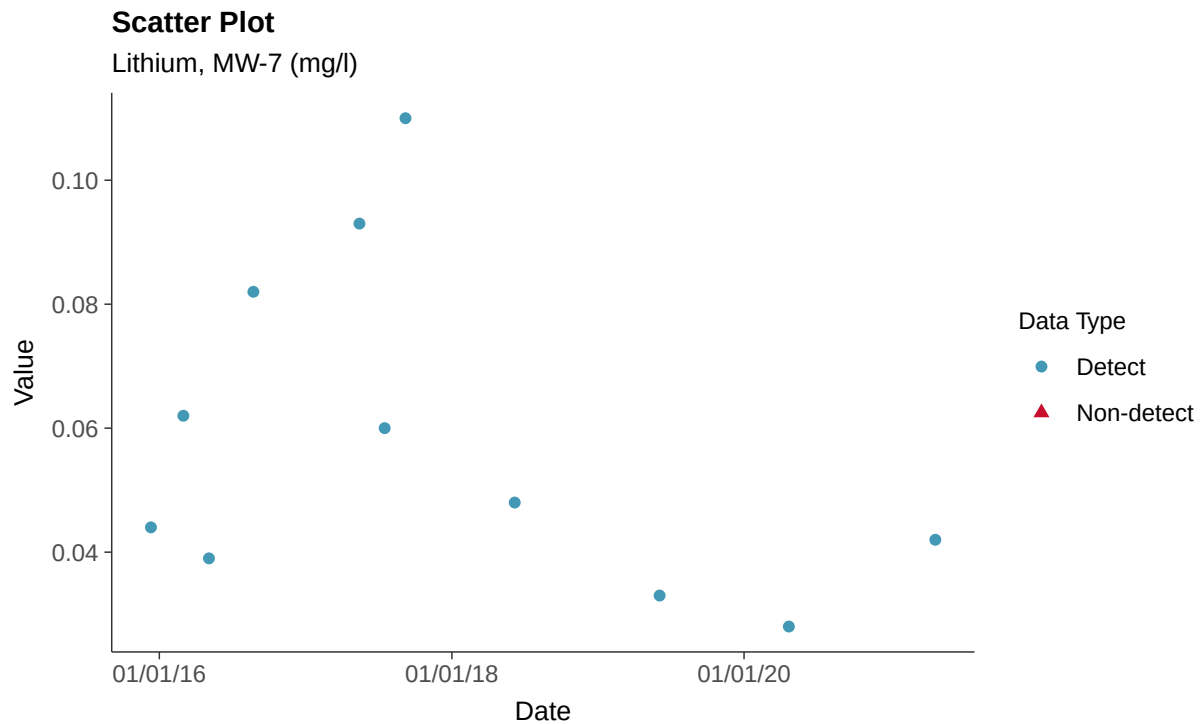
Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-7 (mg/l)



Appendix IV: Lithium, MW-7

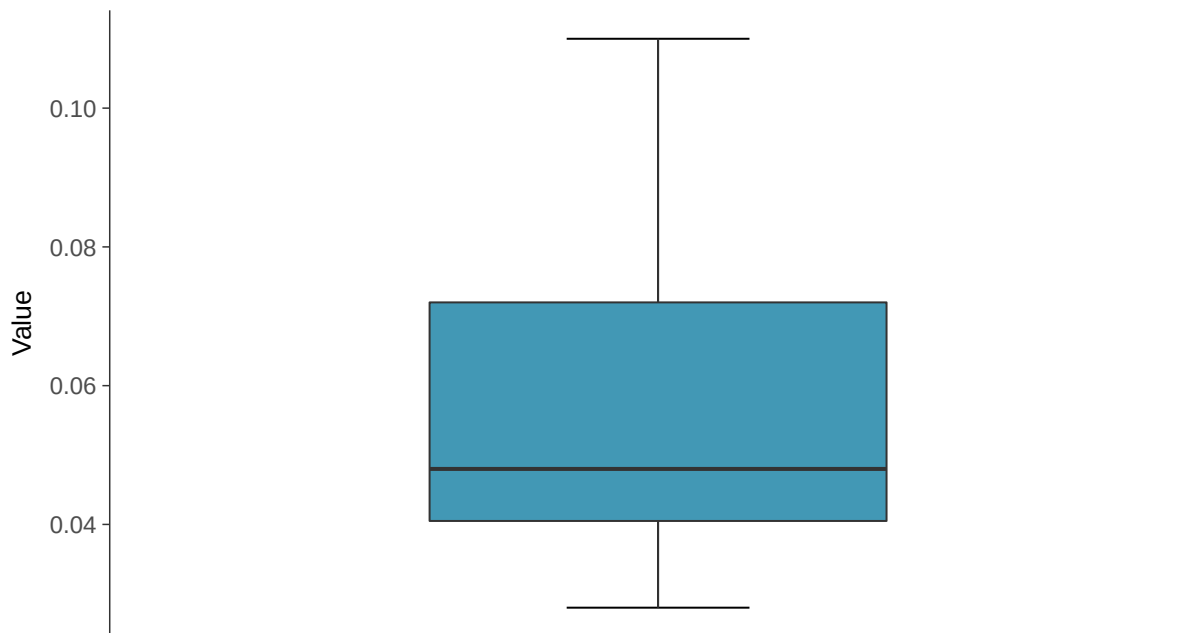
ID: 2_2_118





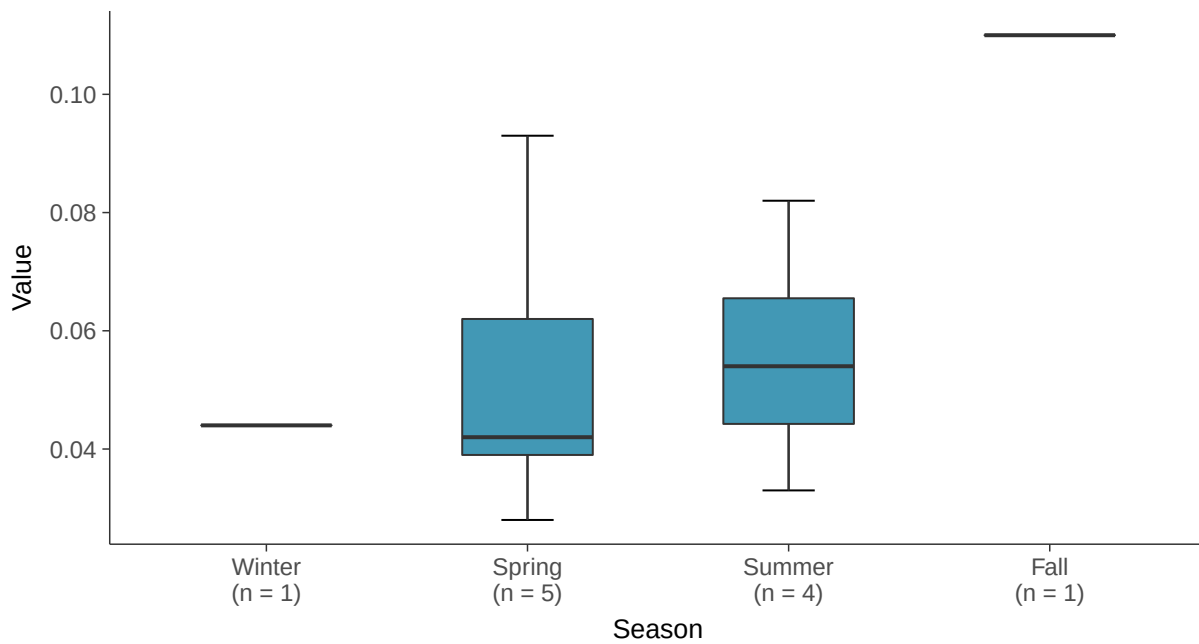
Boxplot

Lithium, MW-7 (mg/l)



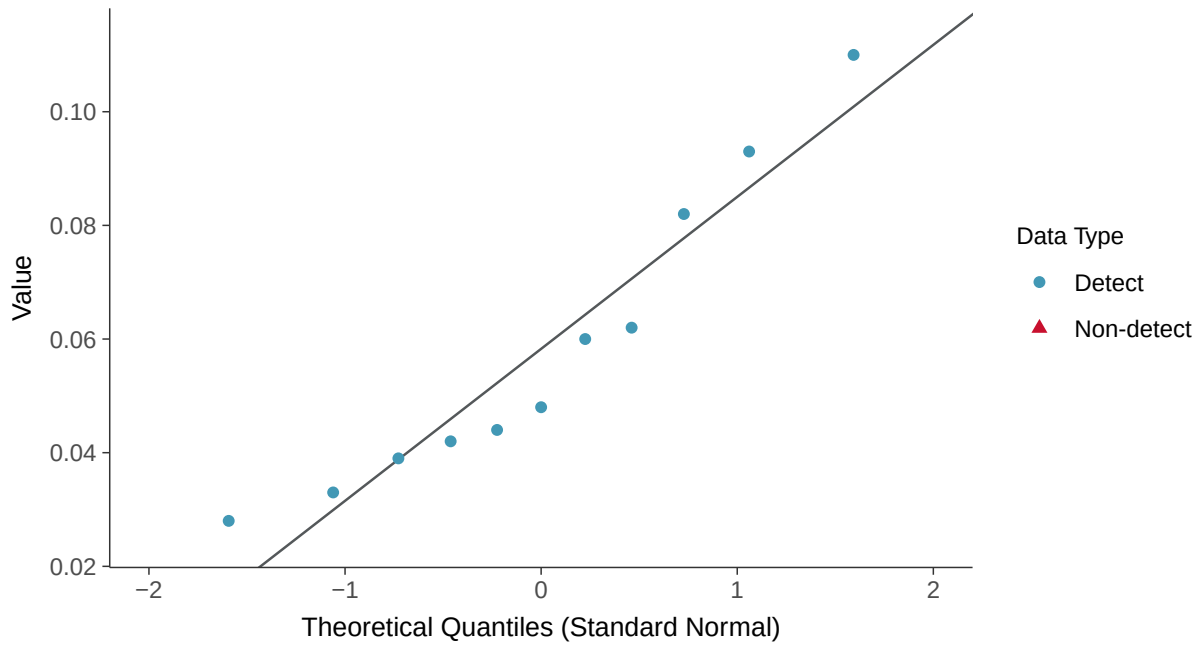
Boxplot by Season

Lithium, MW-7 (mg/l)

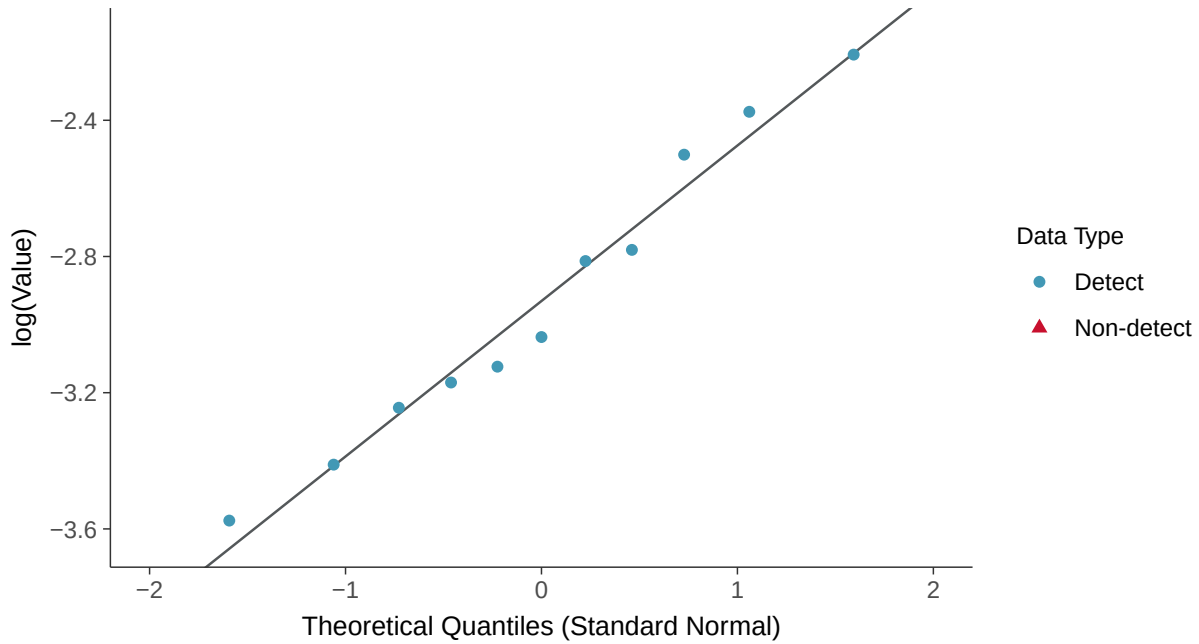




Normal Q-Q plot
Lithium, MW-7 (mg/l)

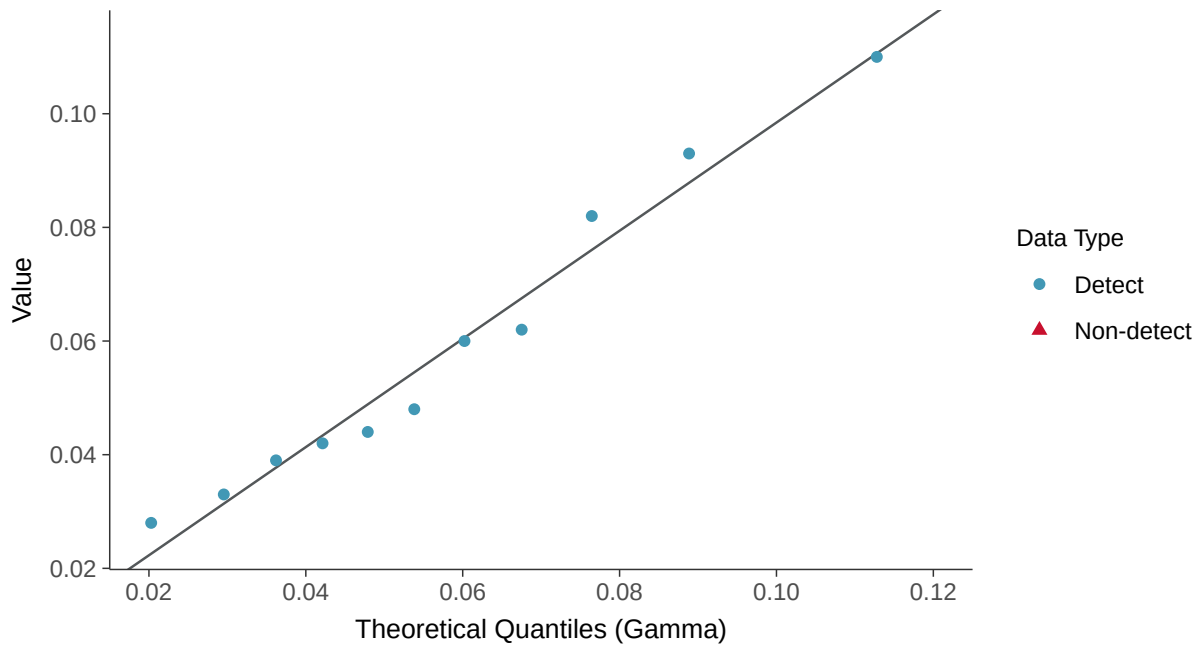


Lognormal Q-Q plot
Lithium, MW-7 (mg/l)

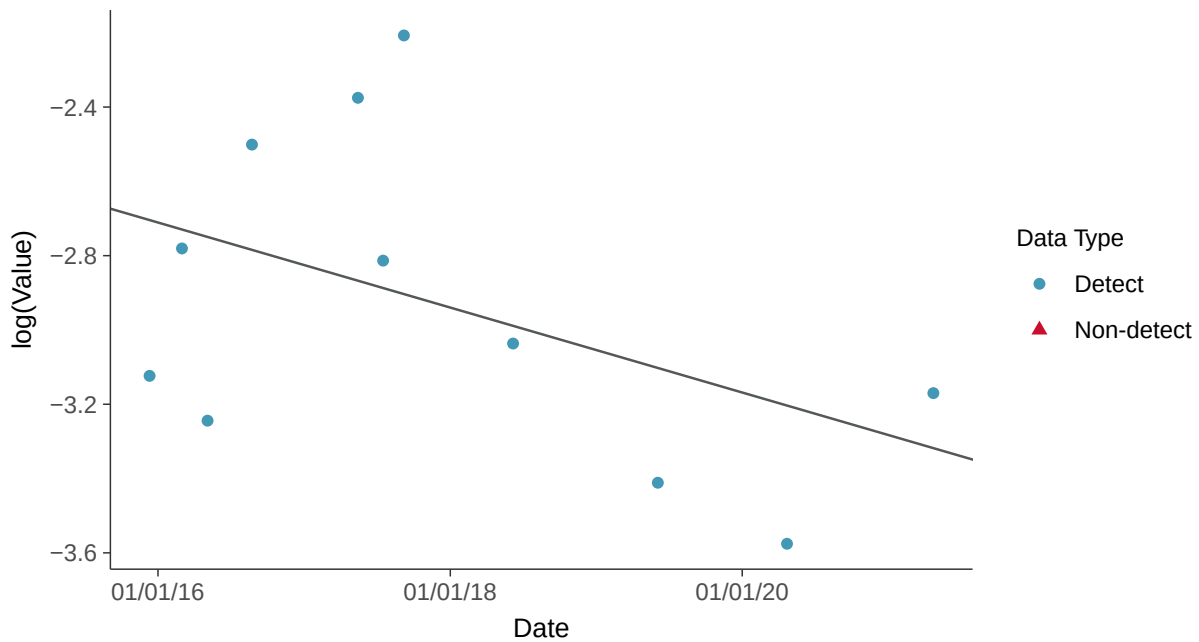




Gamma Q-Q plot
Lithium, MW-7 (mg/l)



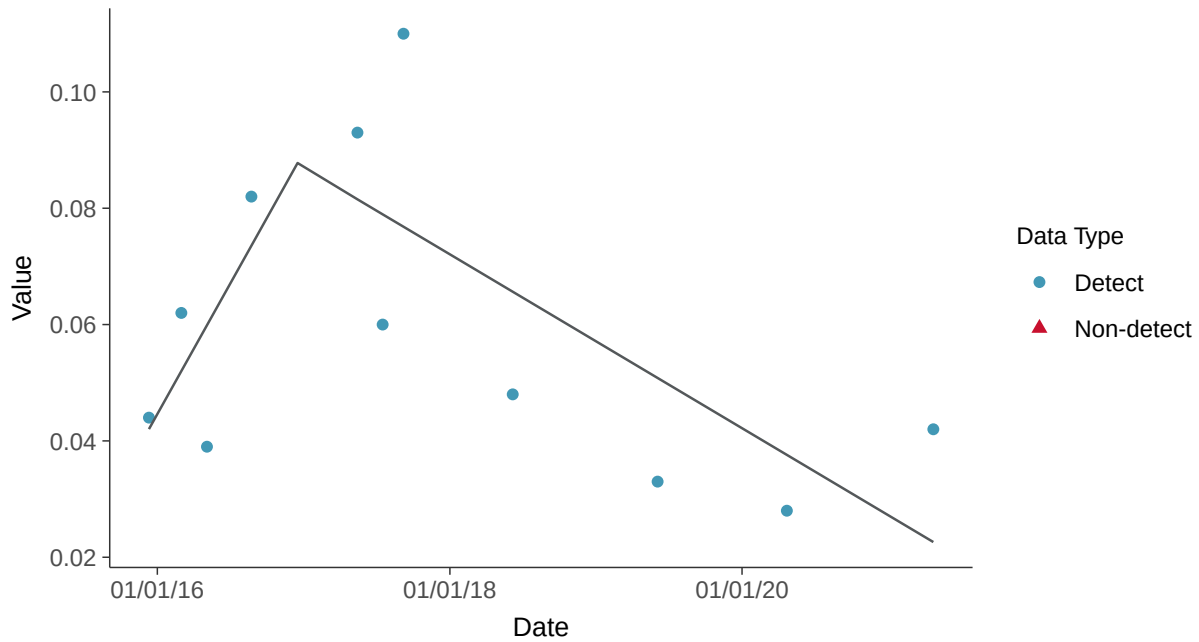
Trend Regression: Lognormal MLE
Lithium, MW-7 (mg/l)





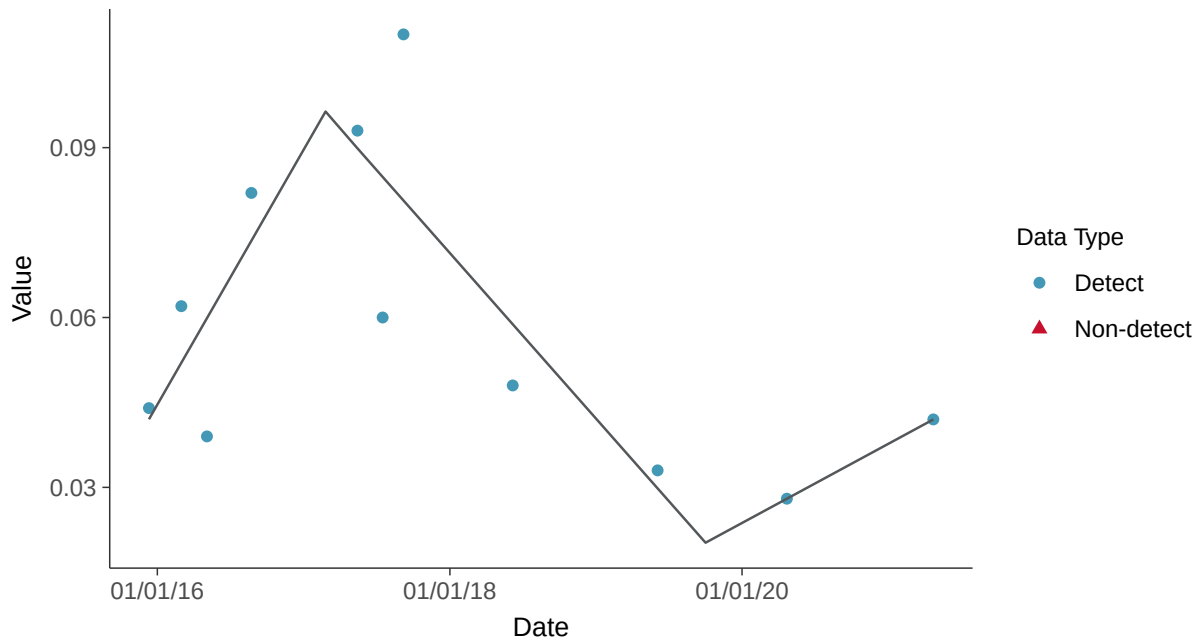
Trend Regression: Piecewise Linear-Linear

Lithium, MW-7 (mg/l)



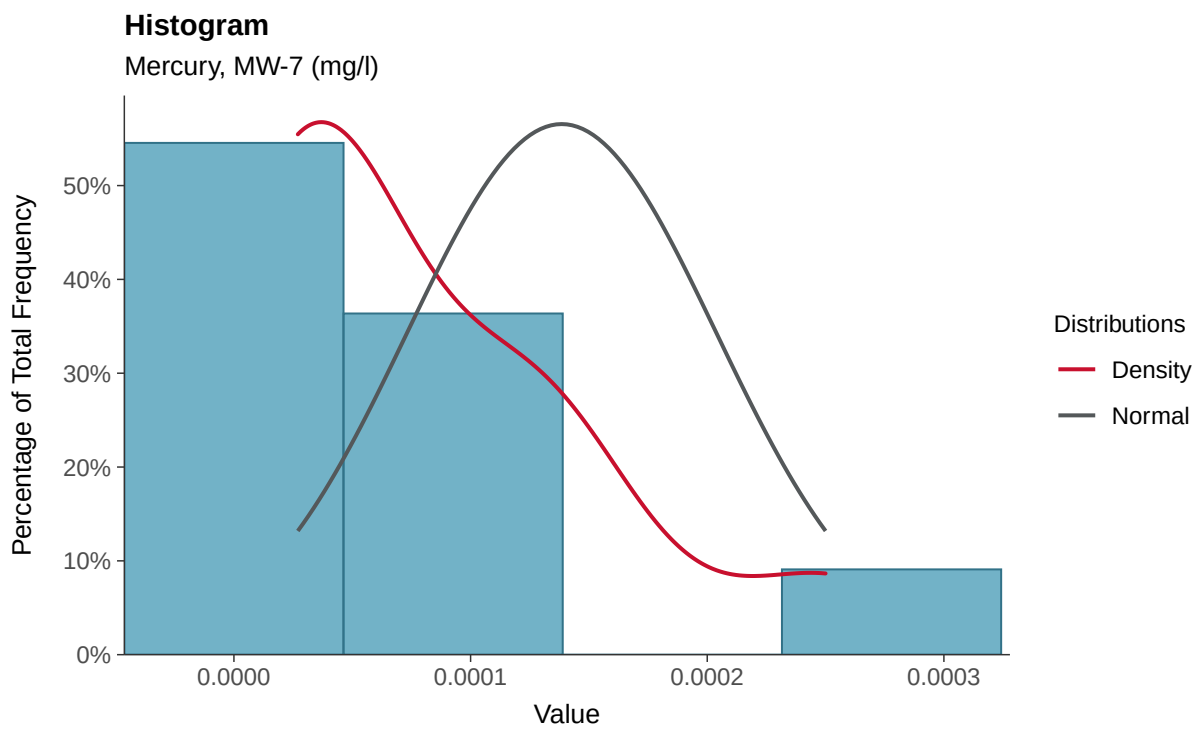
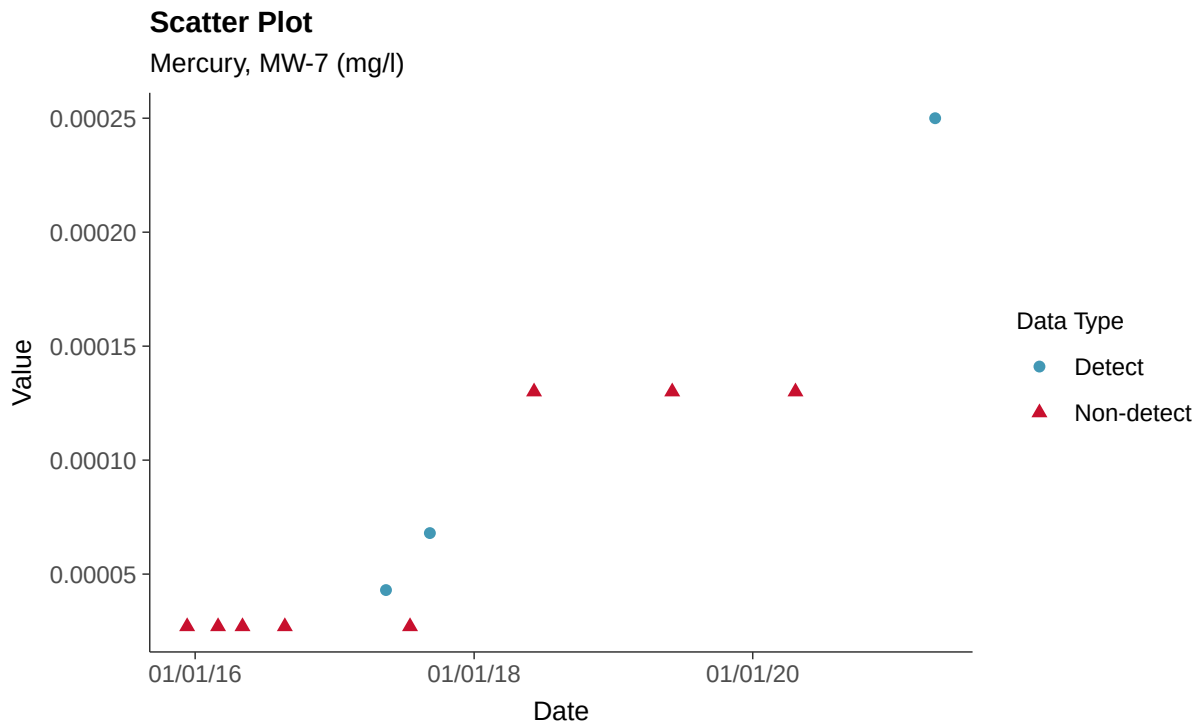
Trend Regression: Piecewise Linear-Linear-Linear

Lithium, MW-7 (mg/l)



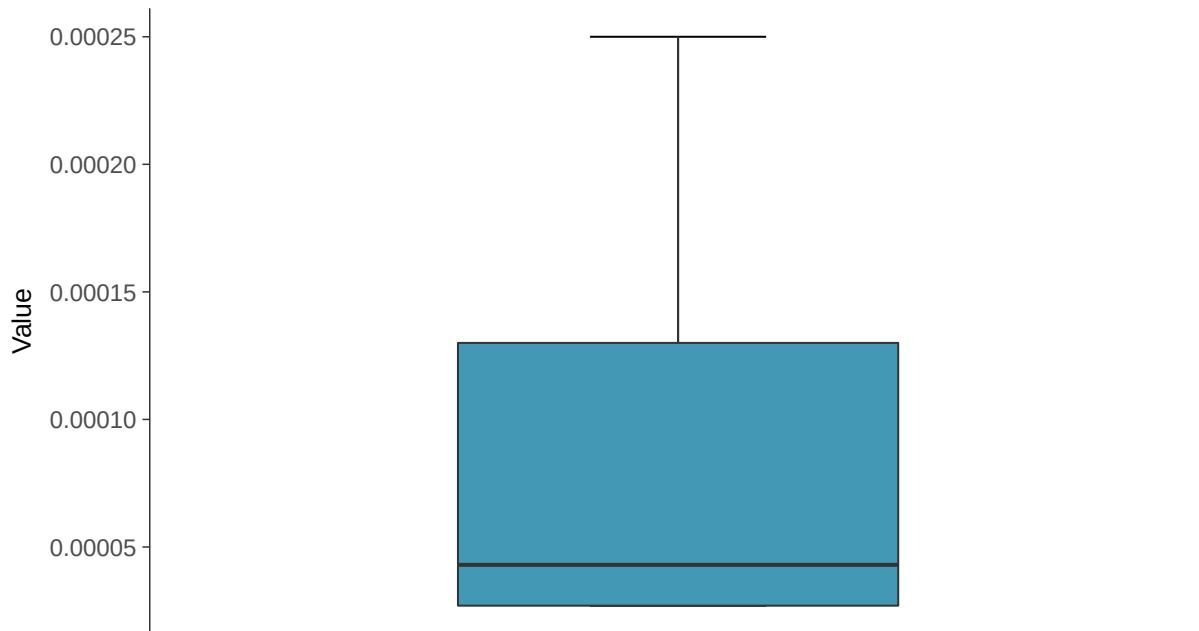
Appendix IV: Mercury, MW-7

ID: 2_2_120



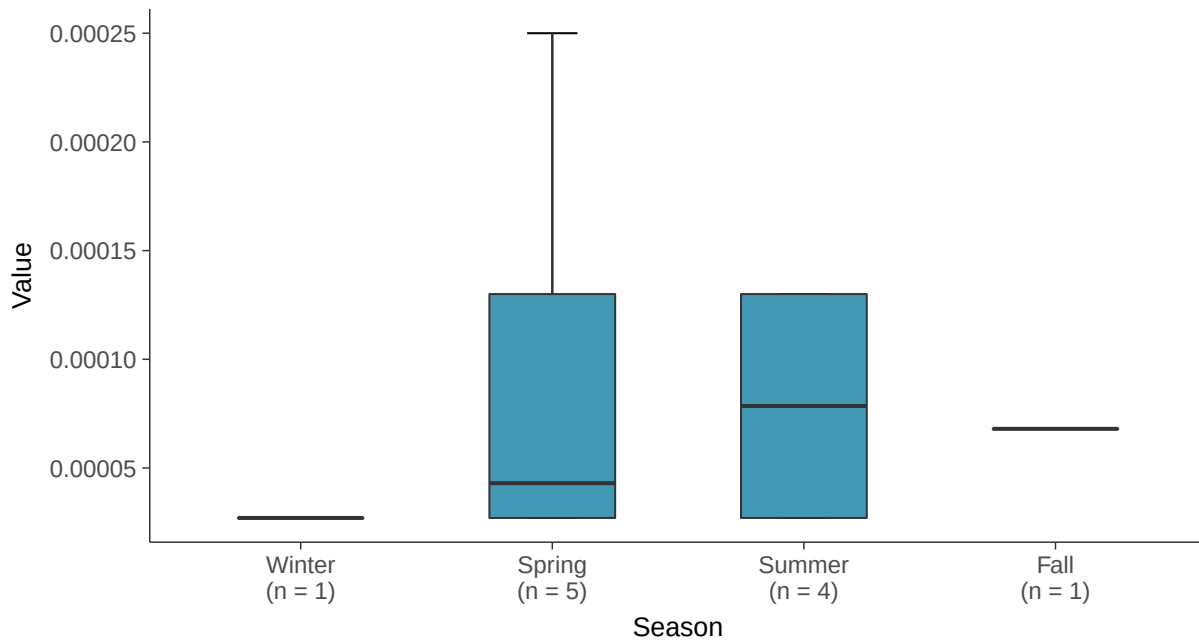
Boxplot

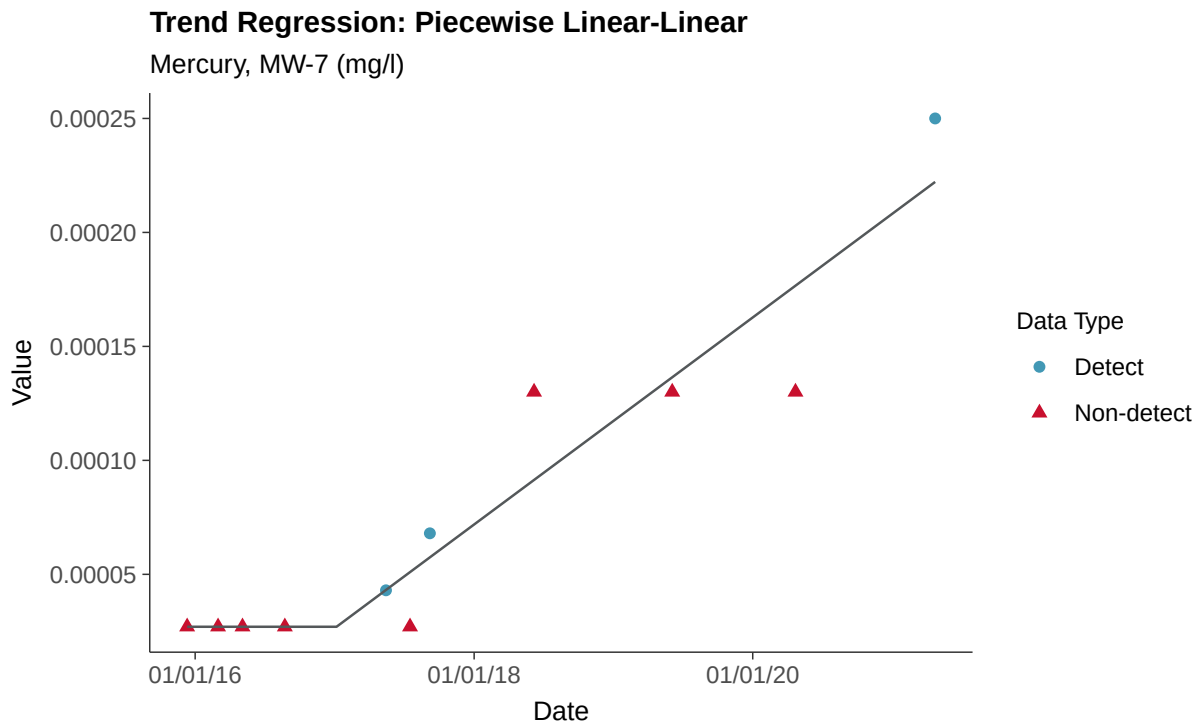
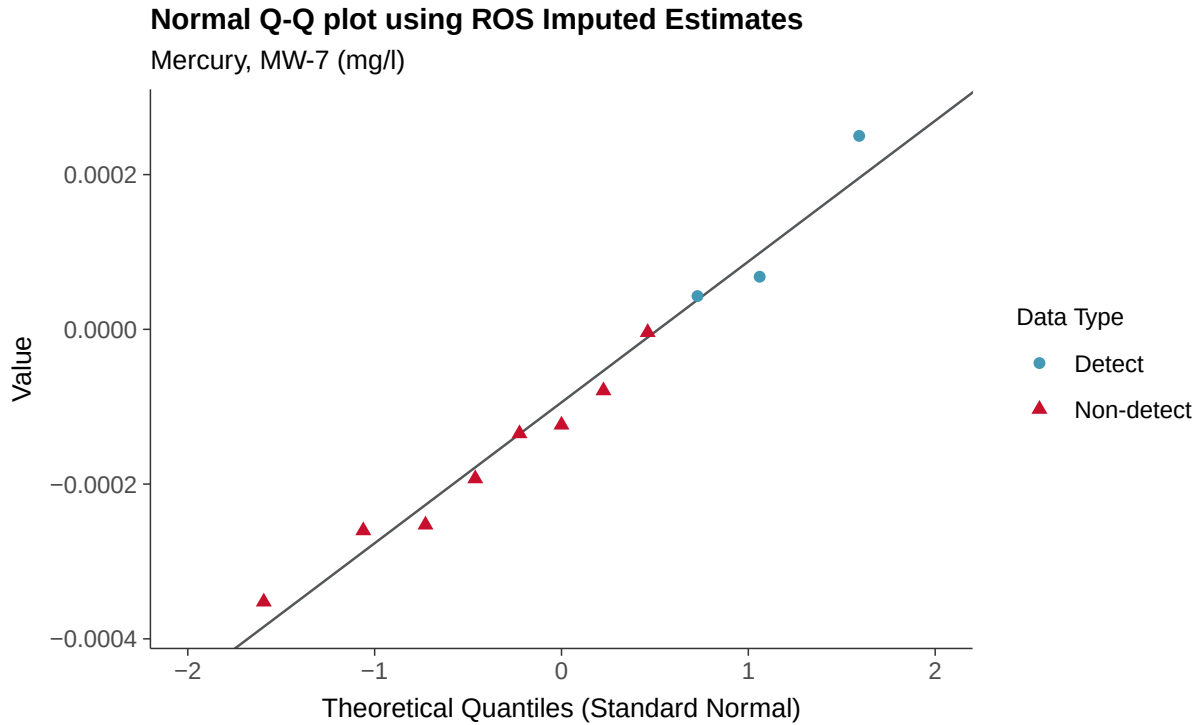
Mercury, MW-7 (mg/l)



Boxplot by Season

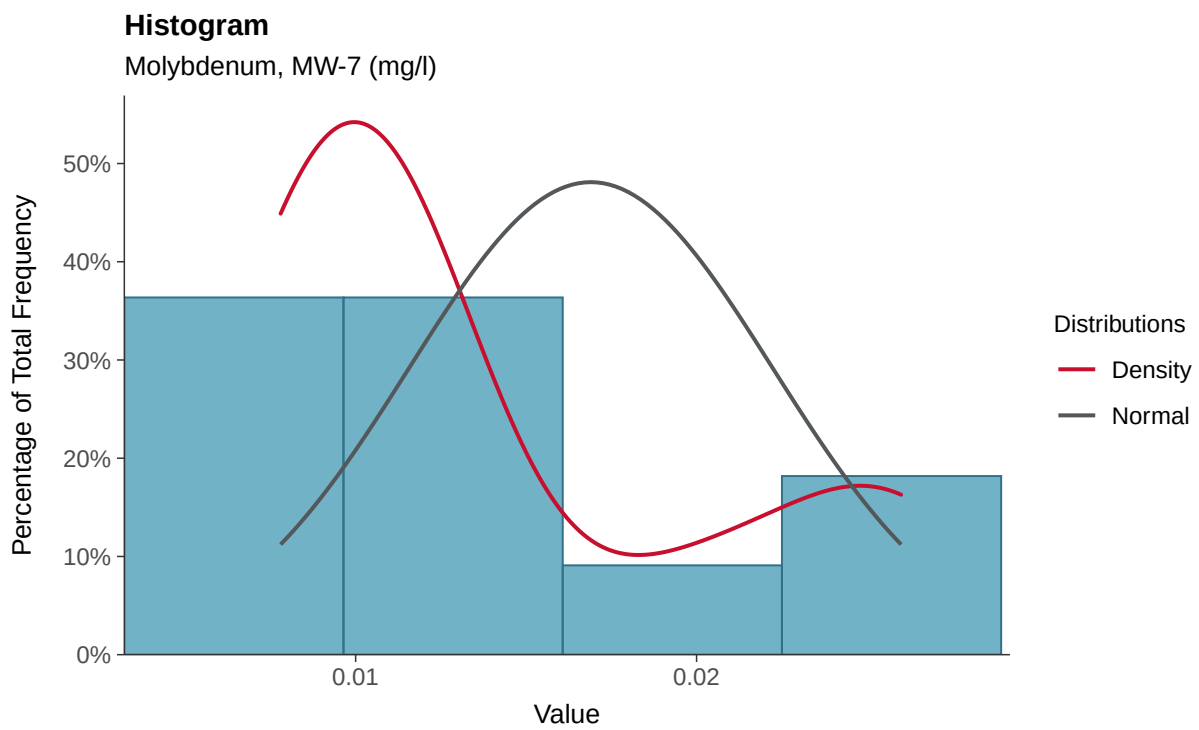
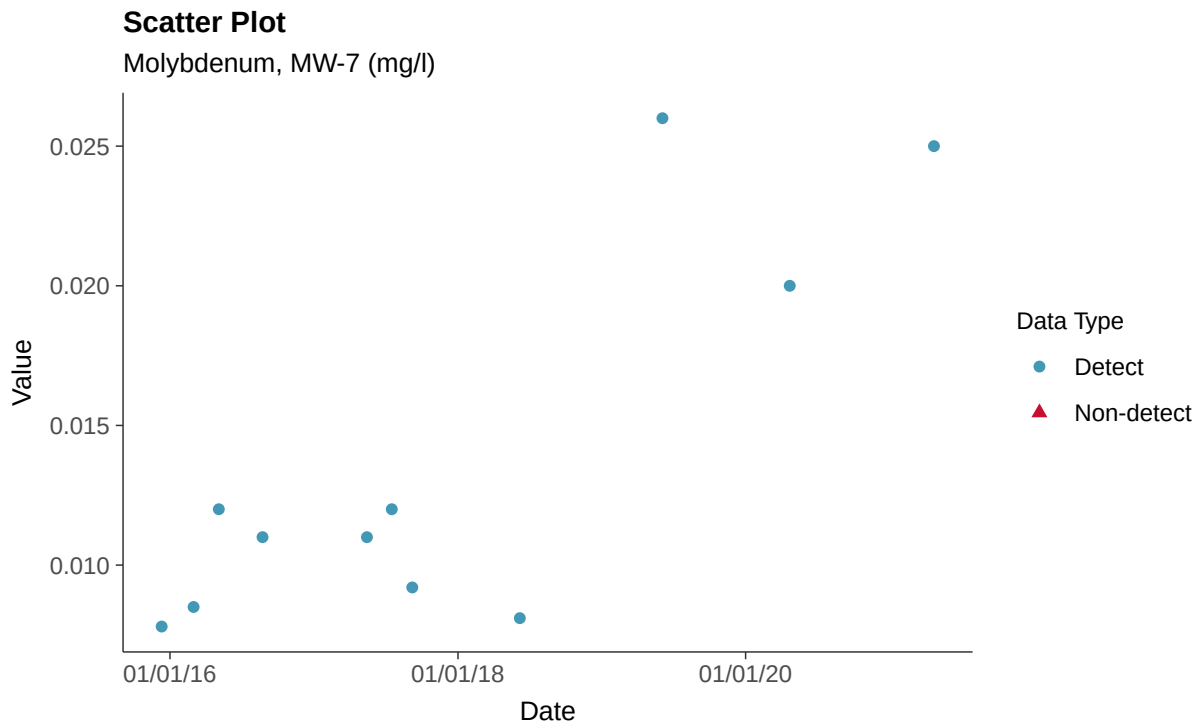
Mercury, MW-7 (mg/l)





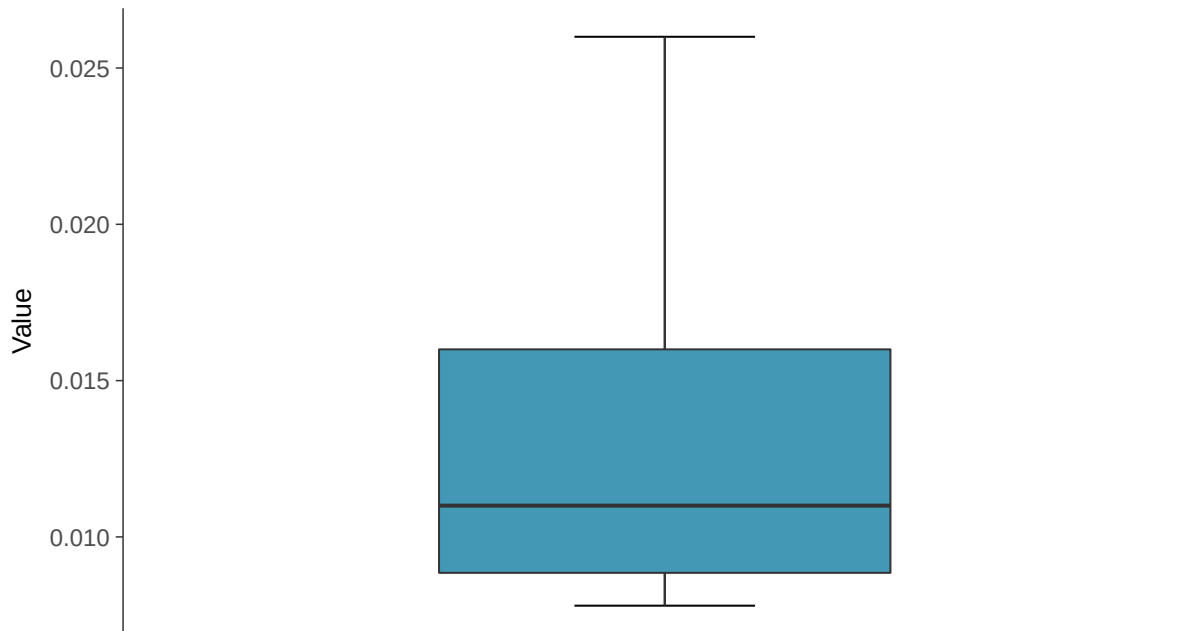
Appendix IV: Molybdenum, MW-7

ID: 2_2_121



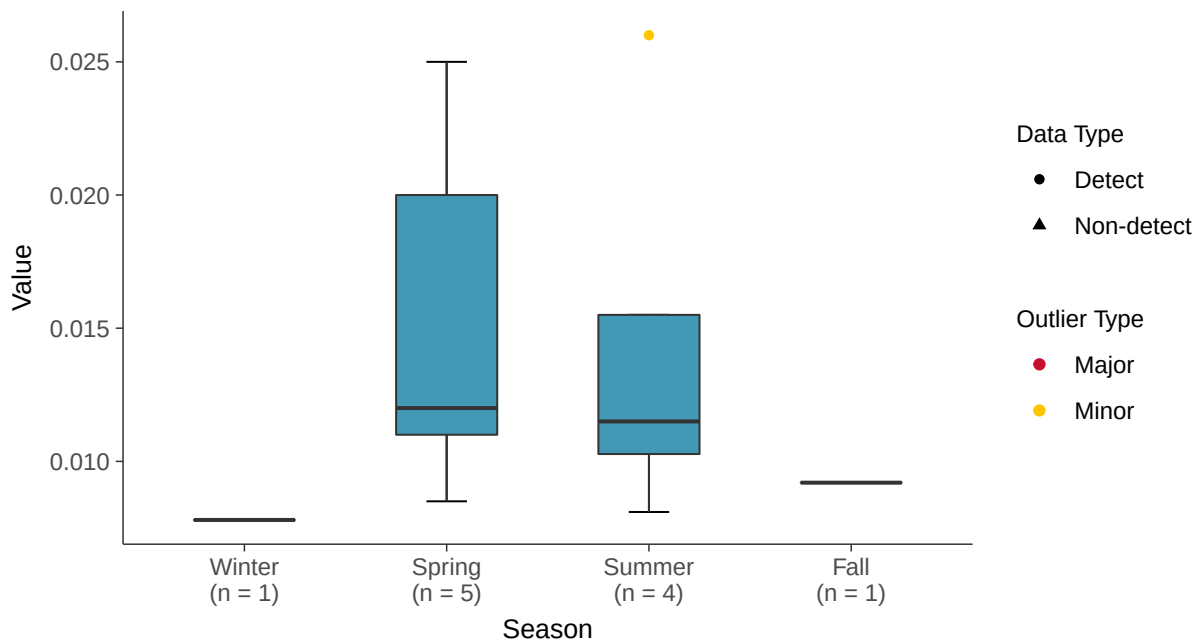
Boxplot

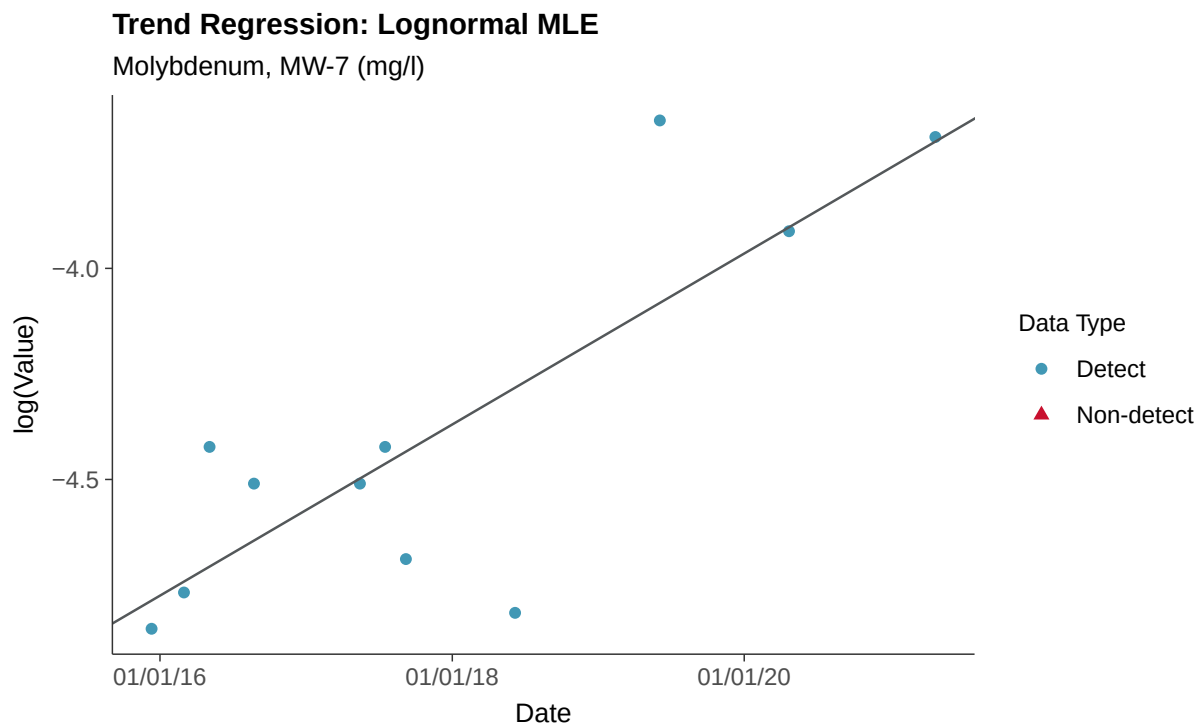
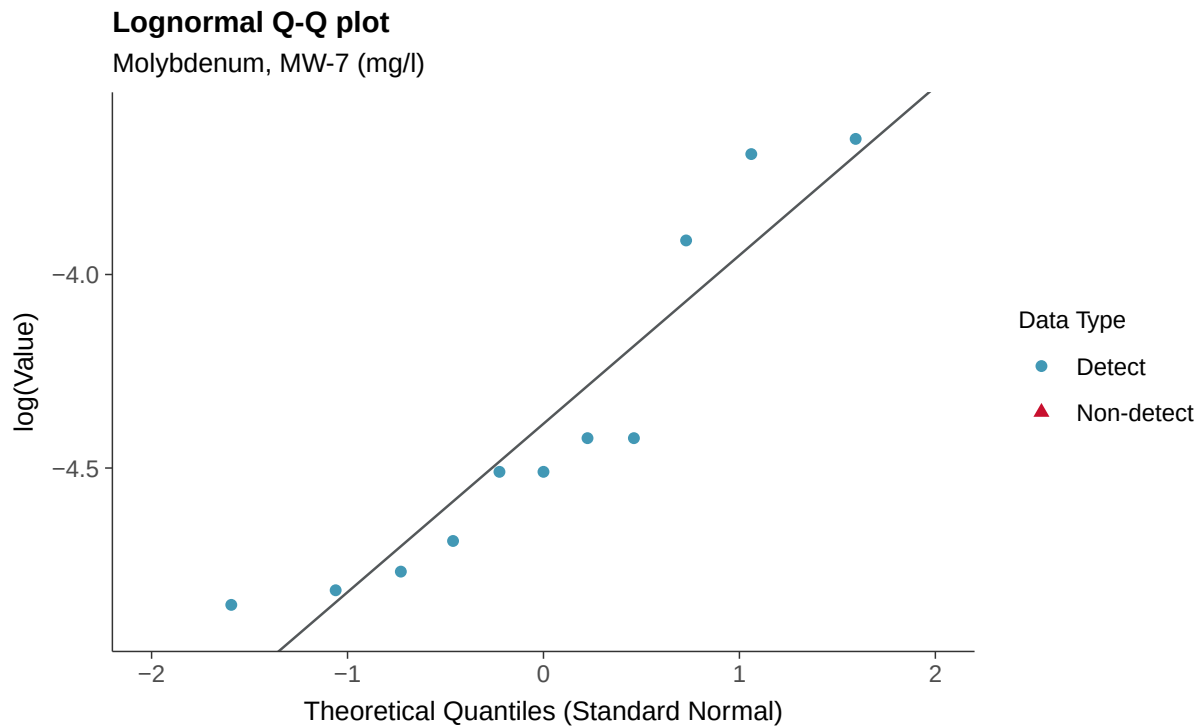
Molybdenum, MW-7 (mg/l)



Boxplot by Season

Molybdenum, MW-7 (mg/l)

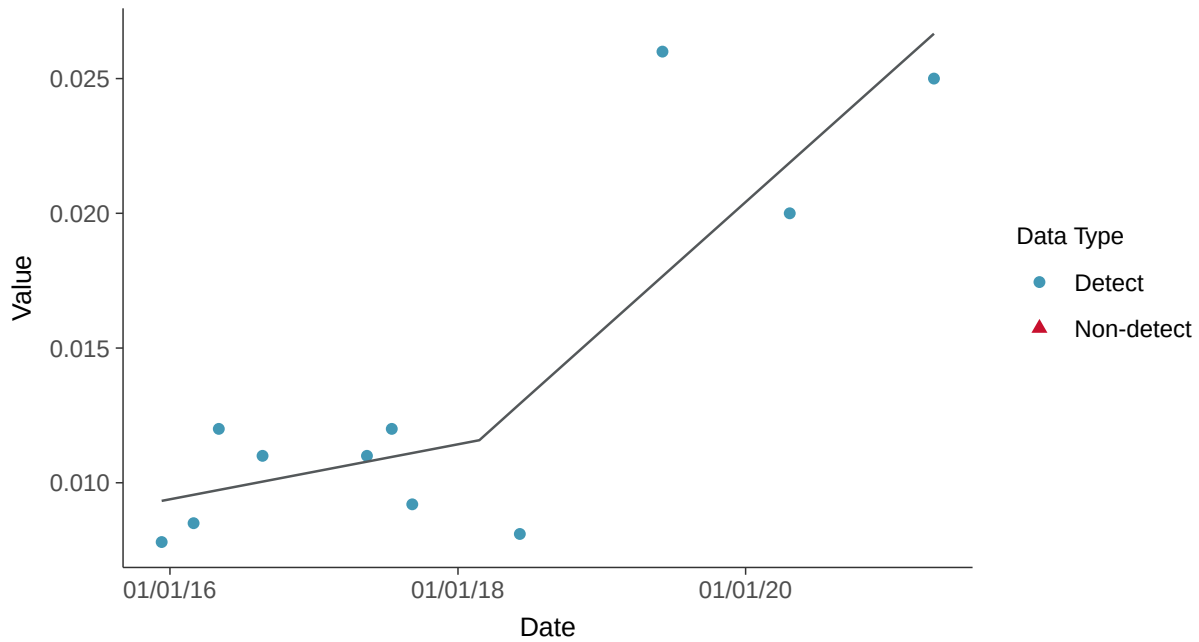






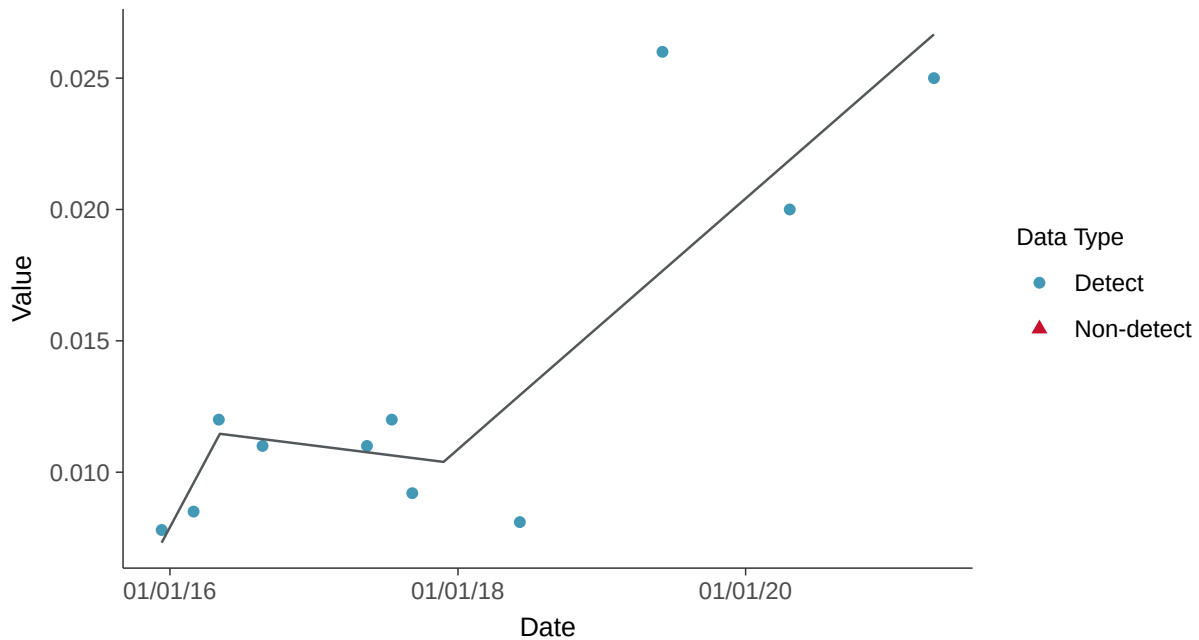
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-7 (mg/l)



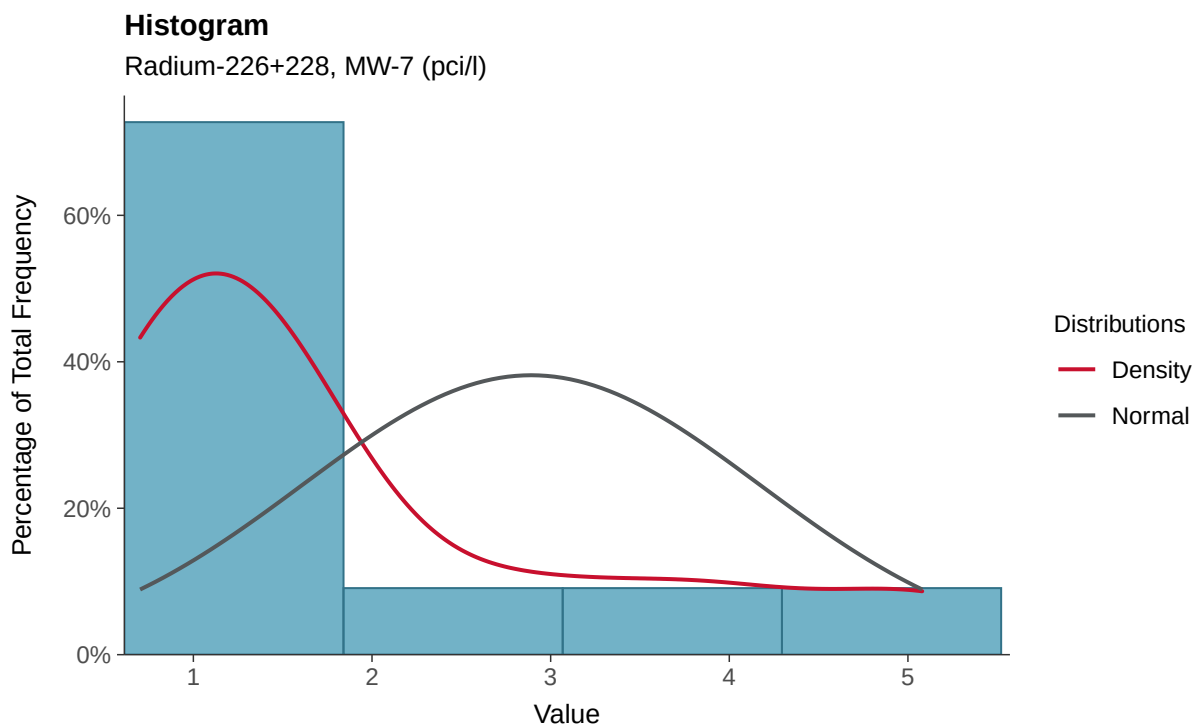
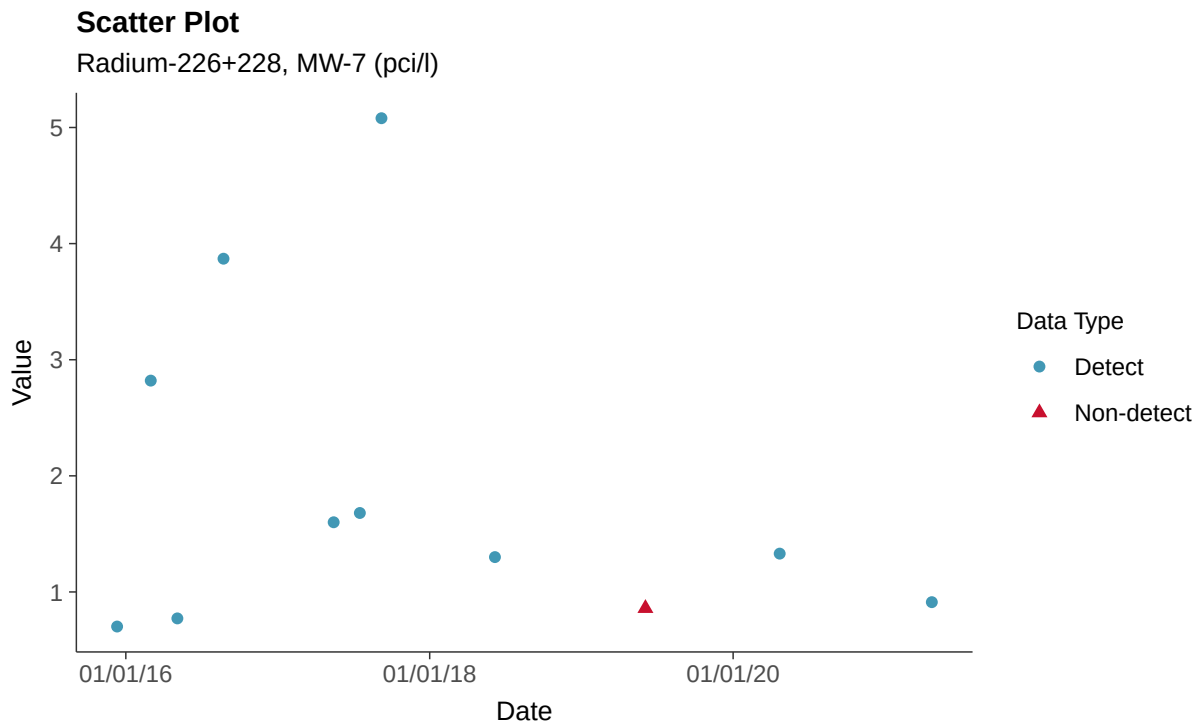
Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-7 (mg/l)



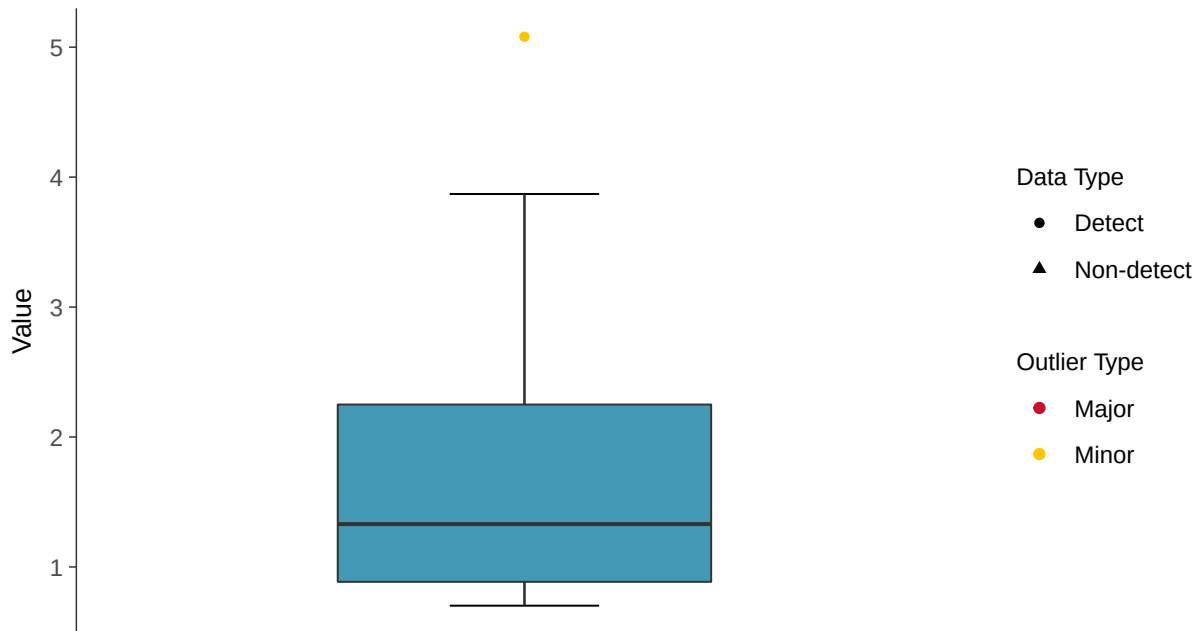
Appendix IV: Radium-226+228, MW-7

ID: 2_2_127



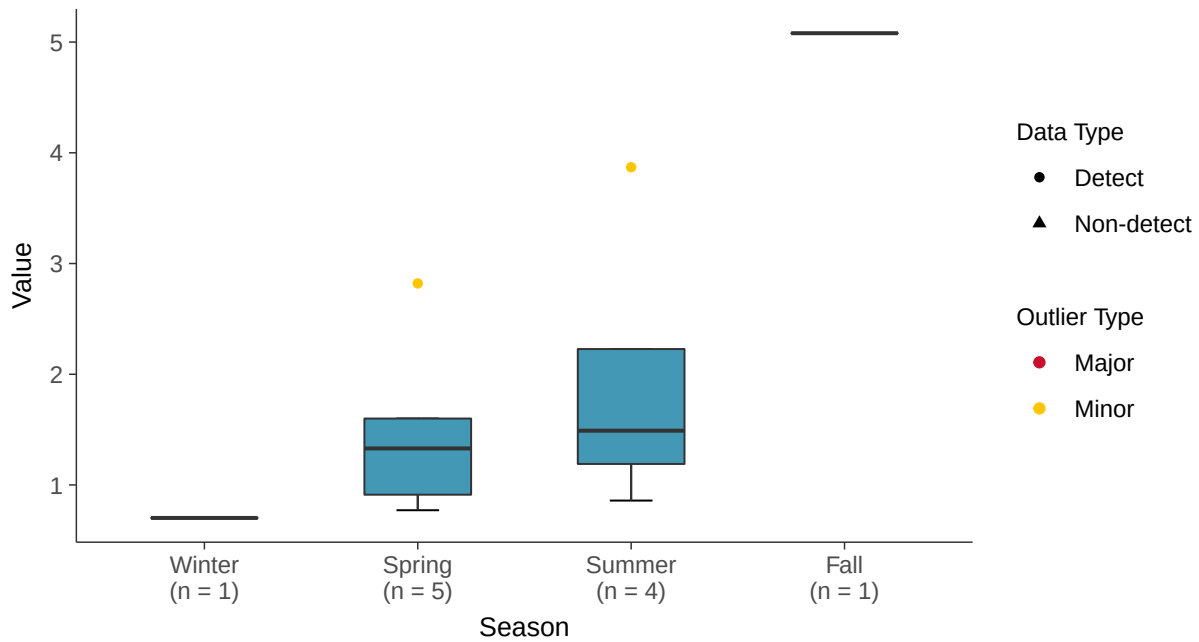
Boxplot

Radium-226+228, MW-7 (pci/l)



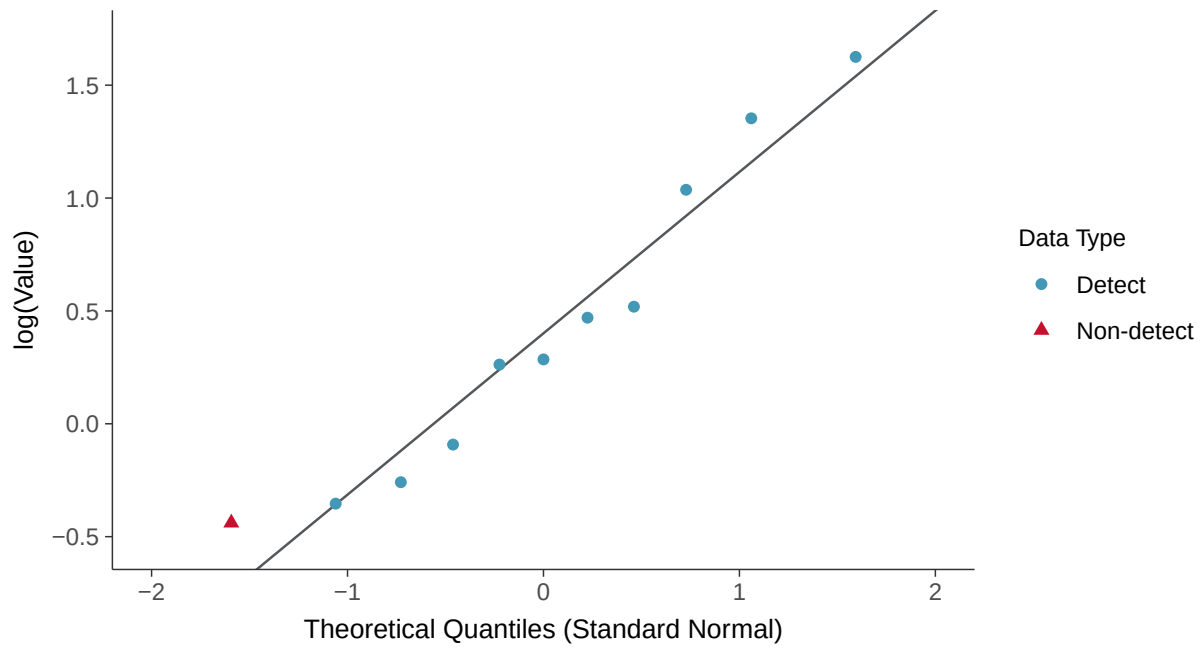
Boxplot by Season

Radium-226+228, MW-7 (pci/l)



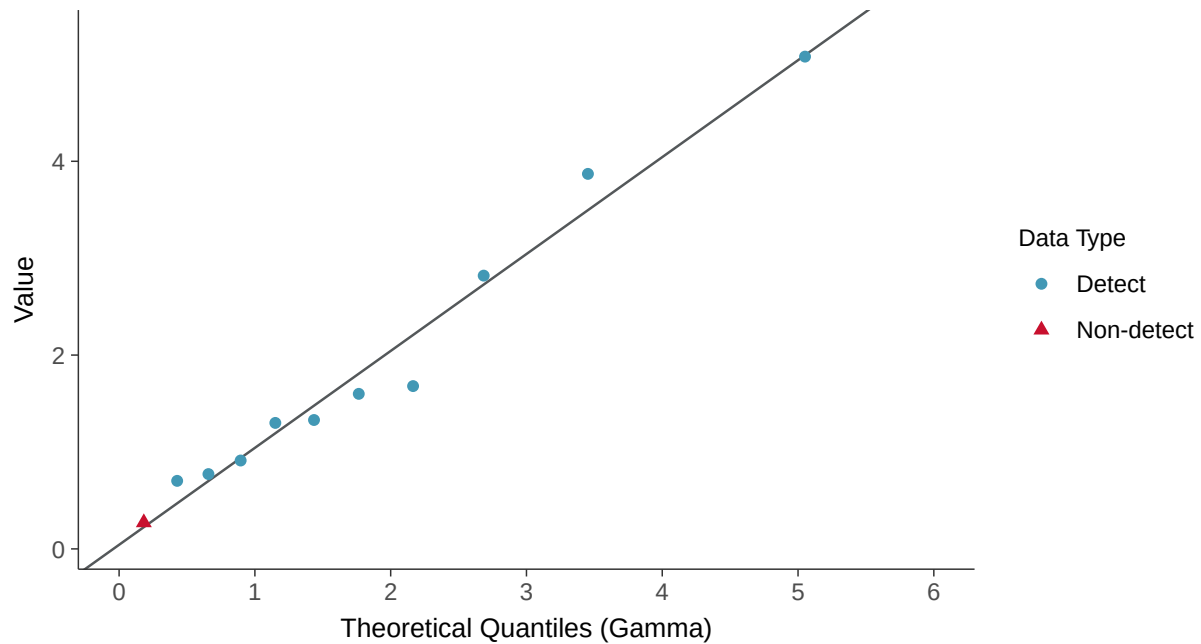
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-7 (pci/l)



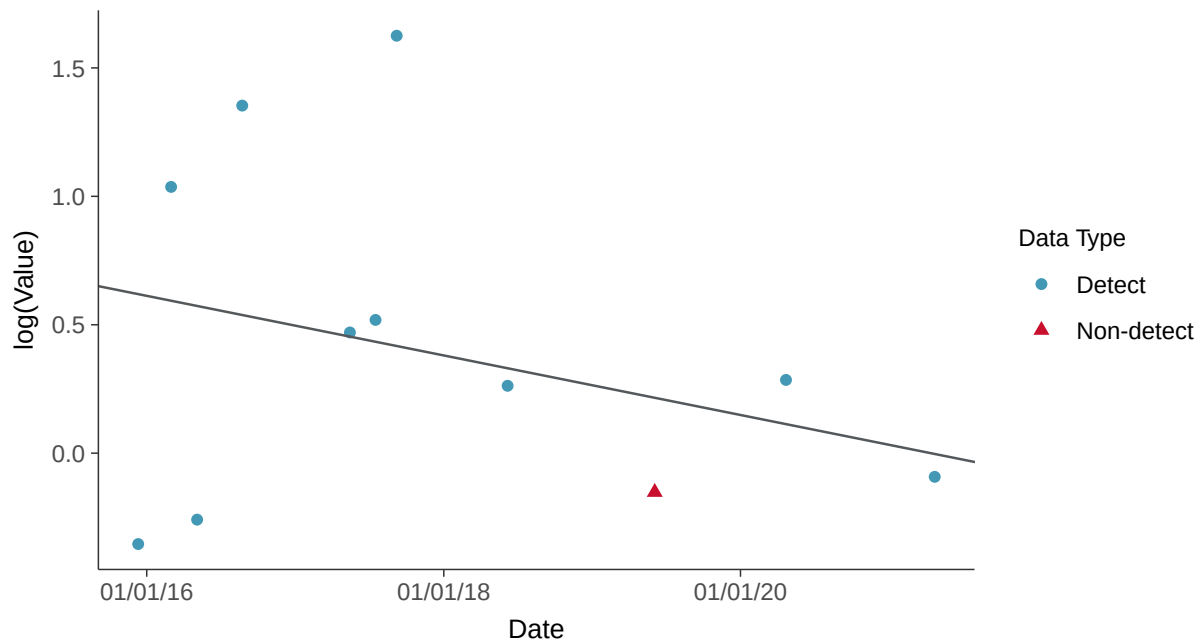
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-7 (pci/l)



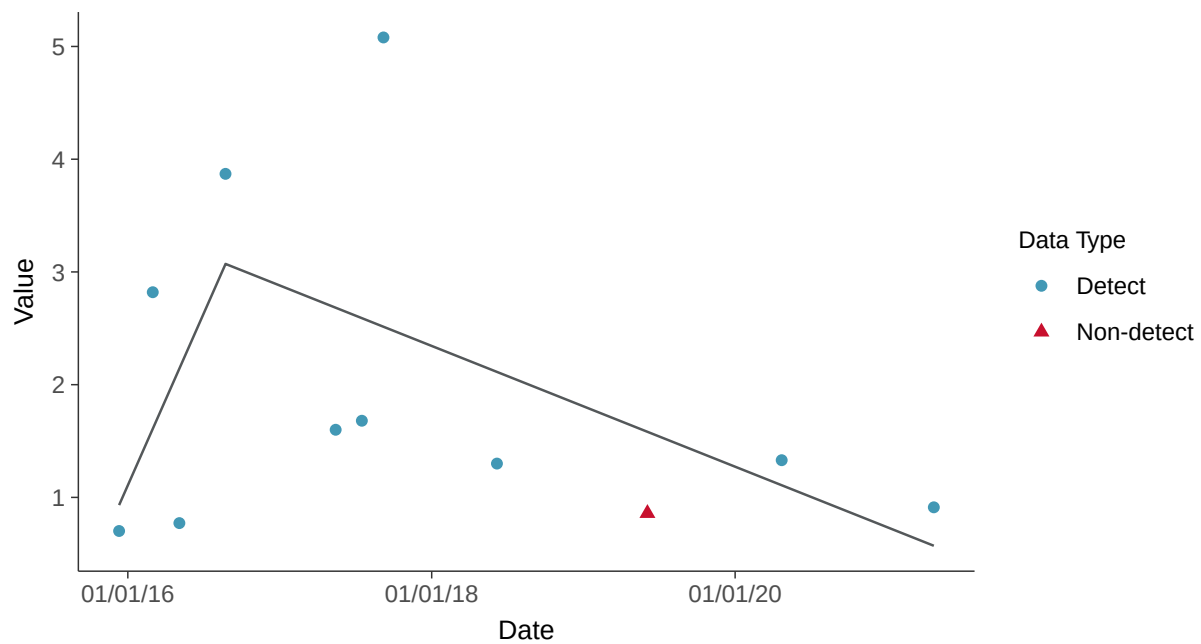
Trend Regression: Lognormal MLE

Radium-226+228, MW-7 (pci/l)



Trend Regression: Piecewise Linear-Linear

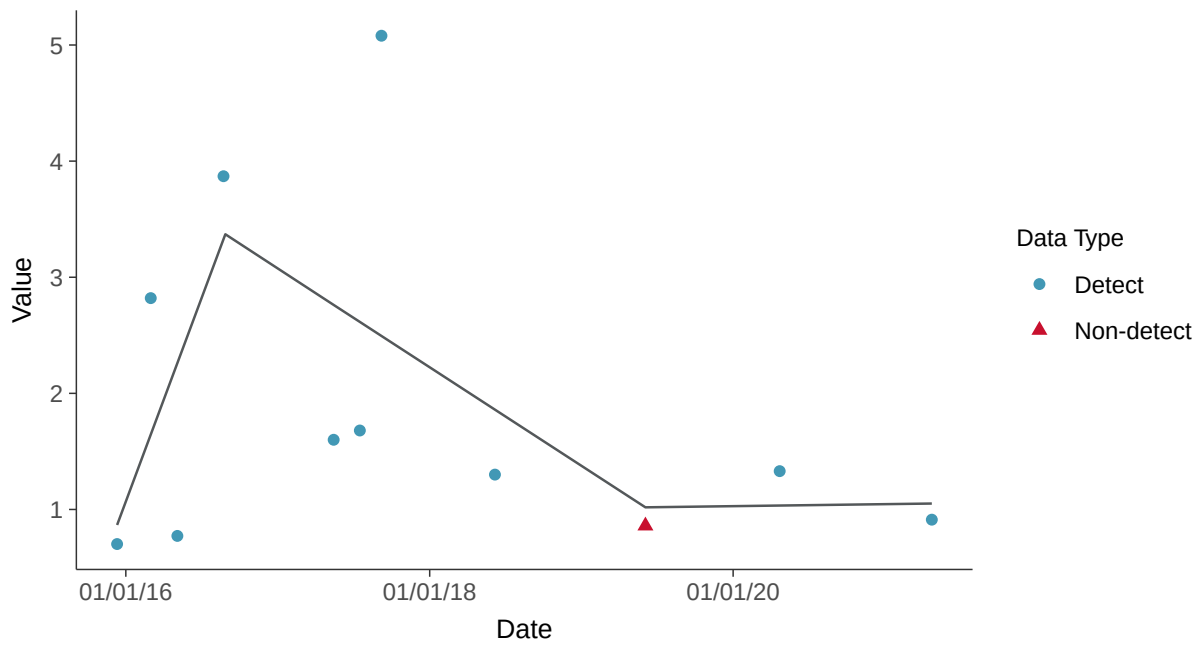
Radium-226+228, MW-7 (pci/l)





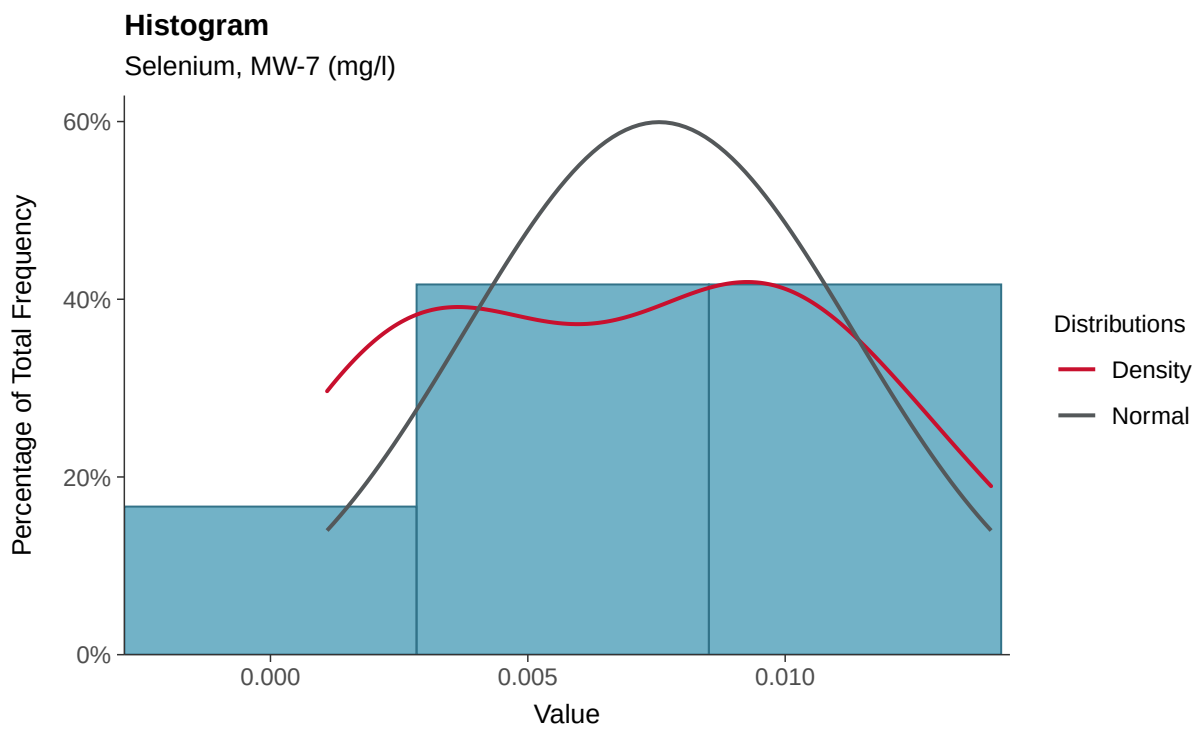
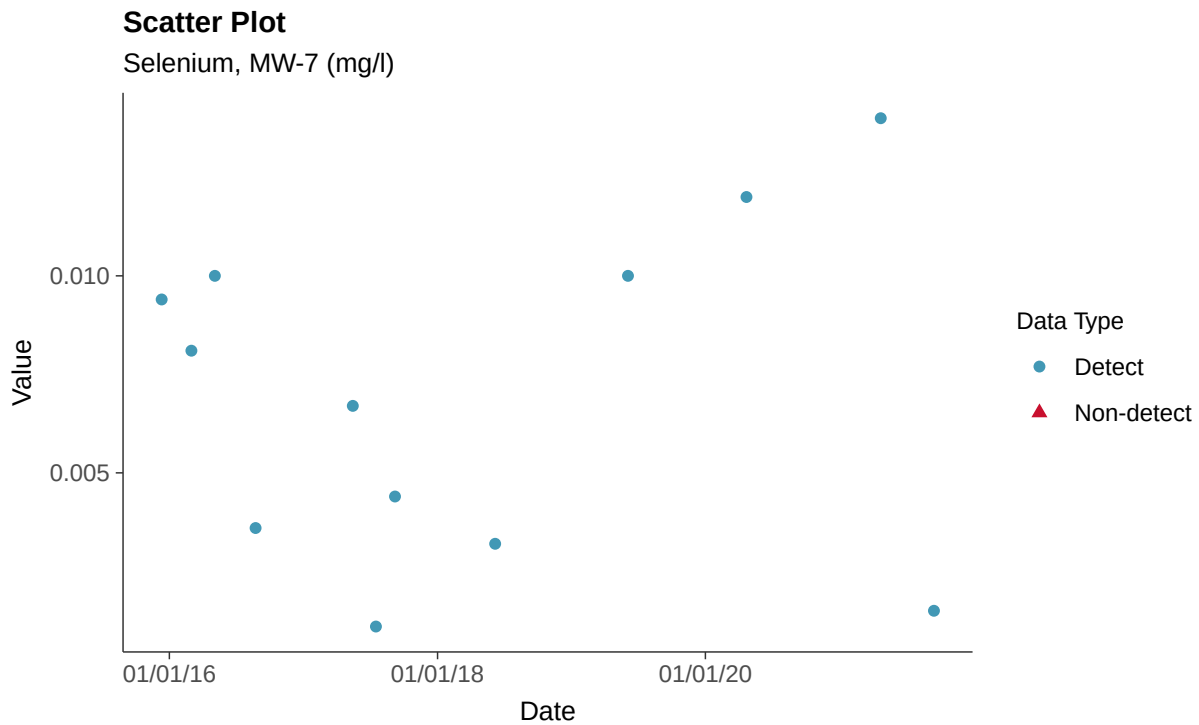
Trend Regression: Piecewise Linear-Linear-Linear

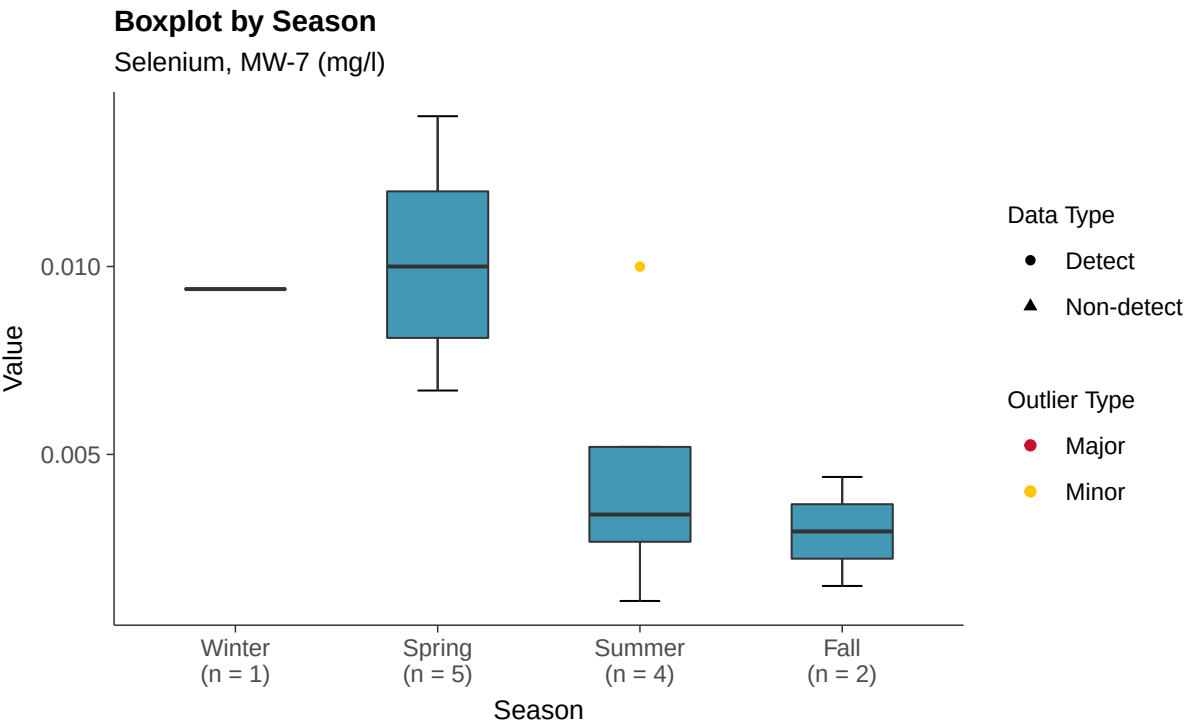
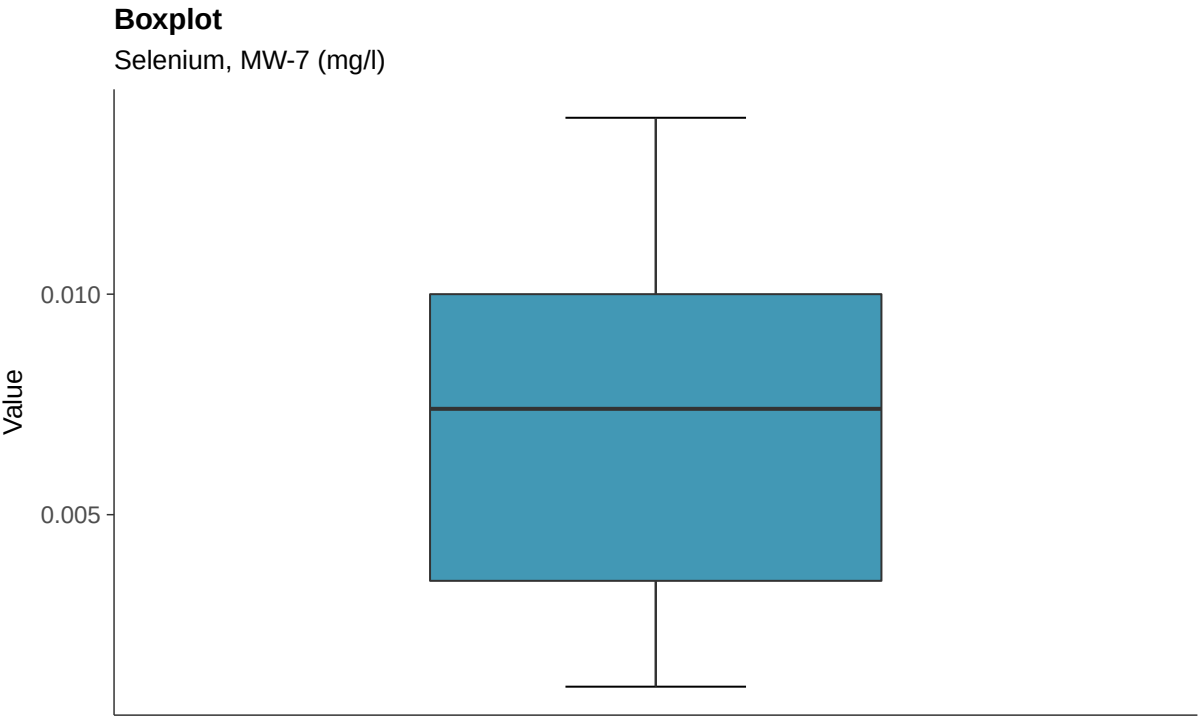
Radium-226+228, MW-7 (pci/l)



Appendix IV: Selenium, MW-7

ID: 2_2_129

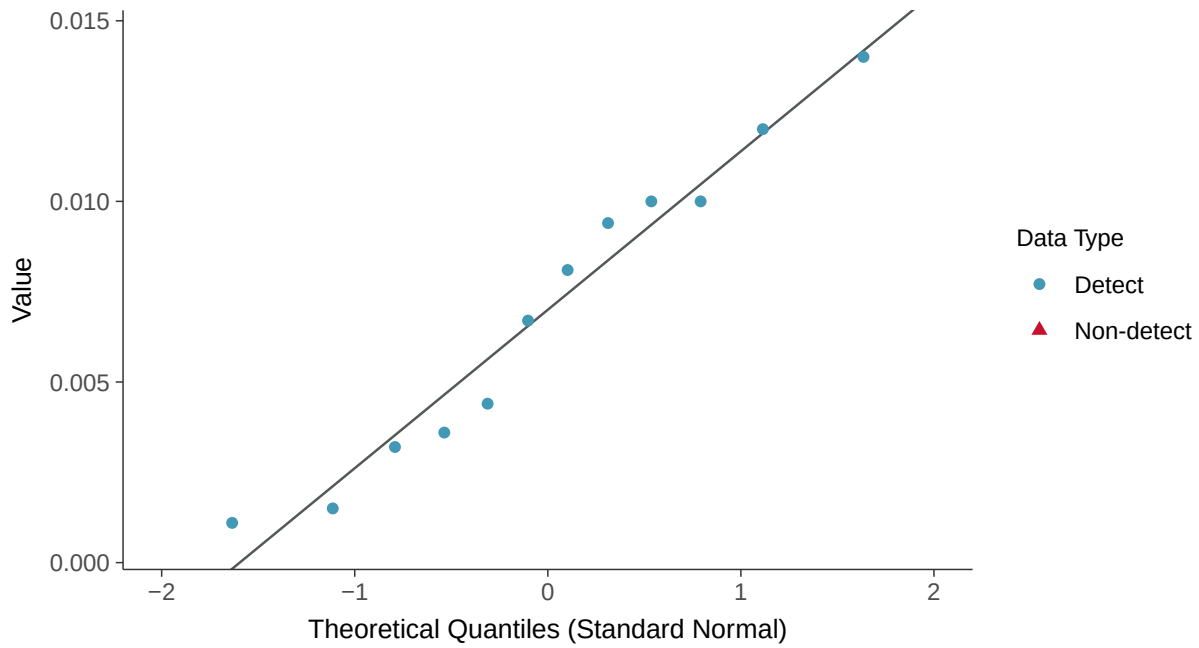






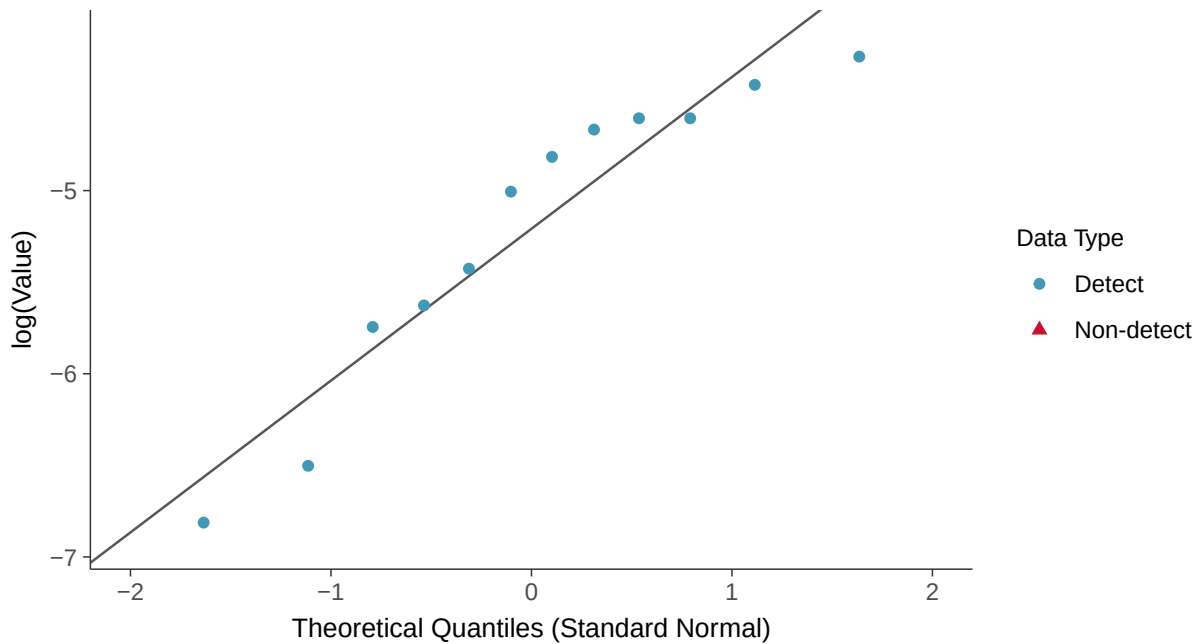
Normal Q-Q plot

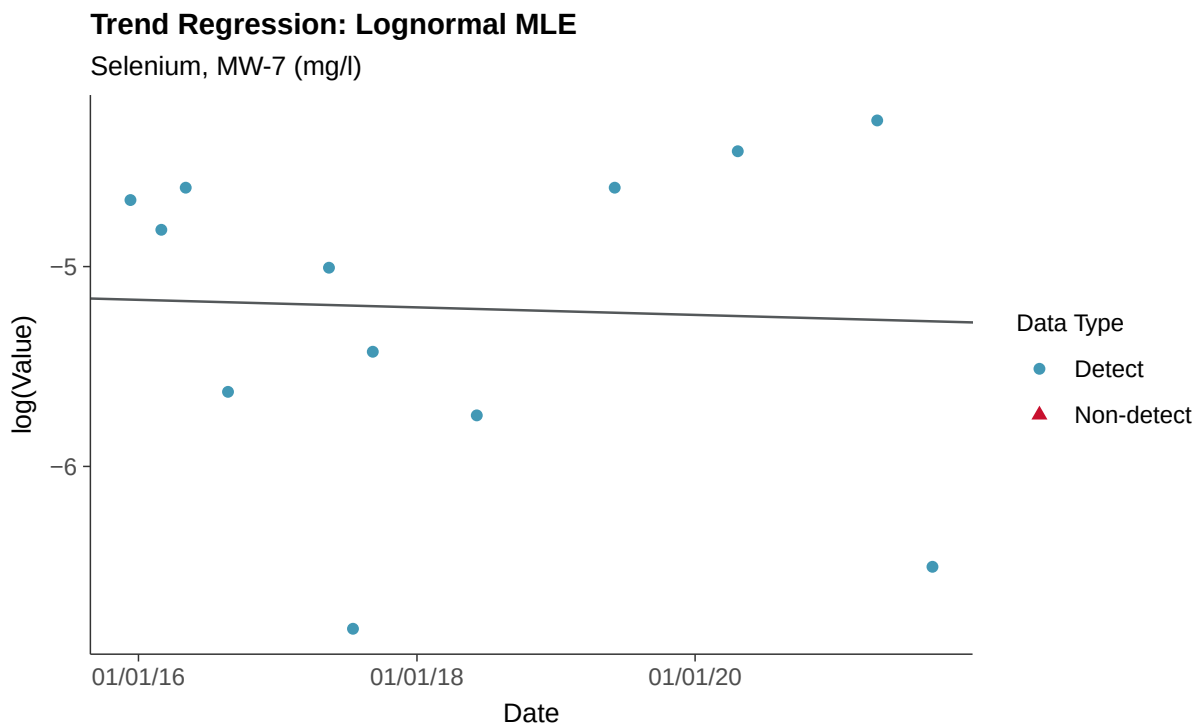
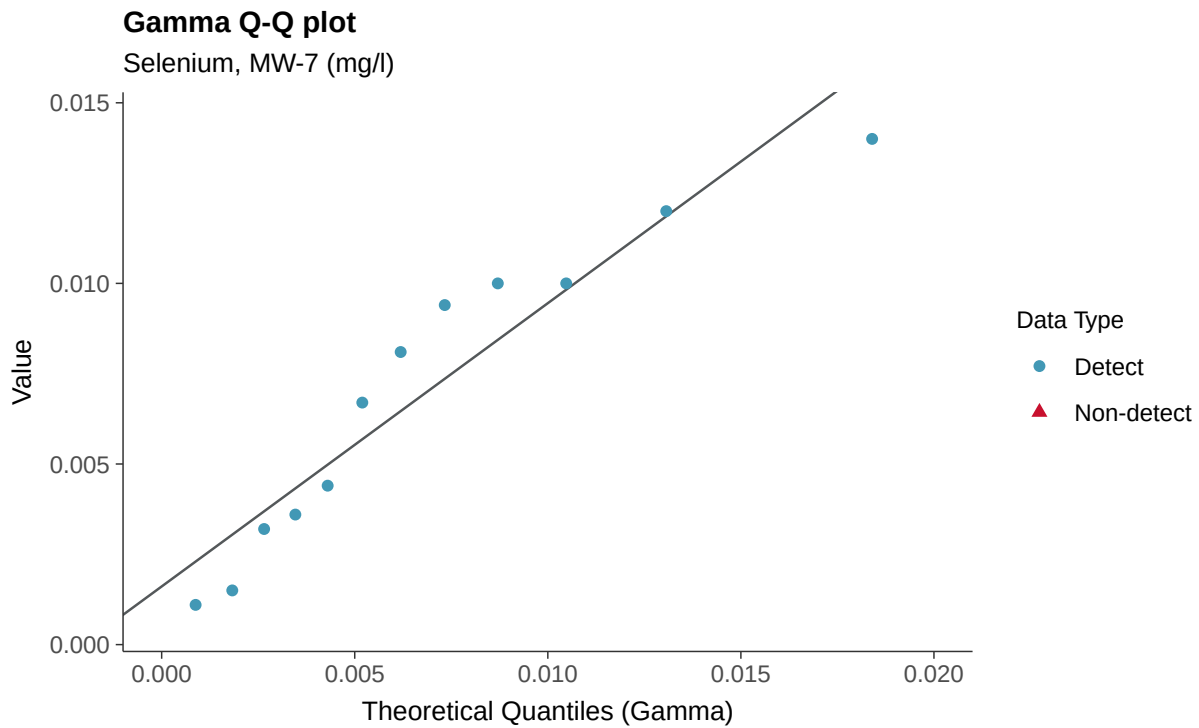
Selenium, MW-7 (mg/l)

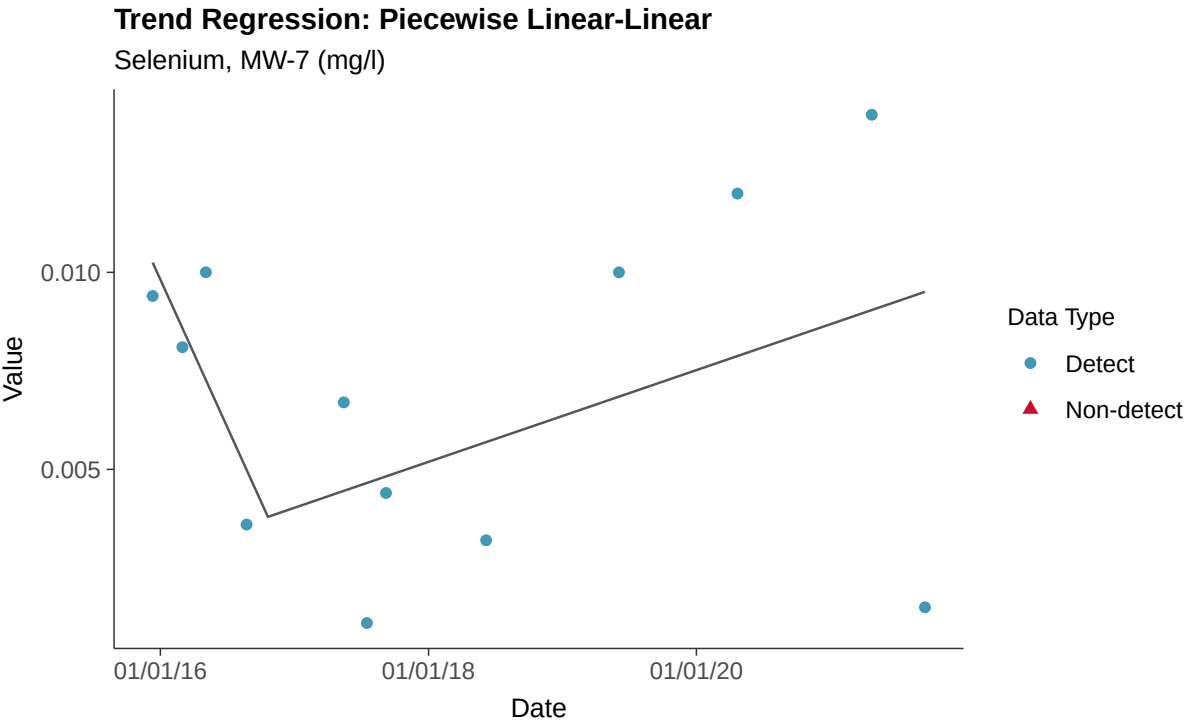


Lognormal Q-Q plot

Selenium, MW-7 (mg/l)

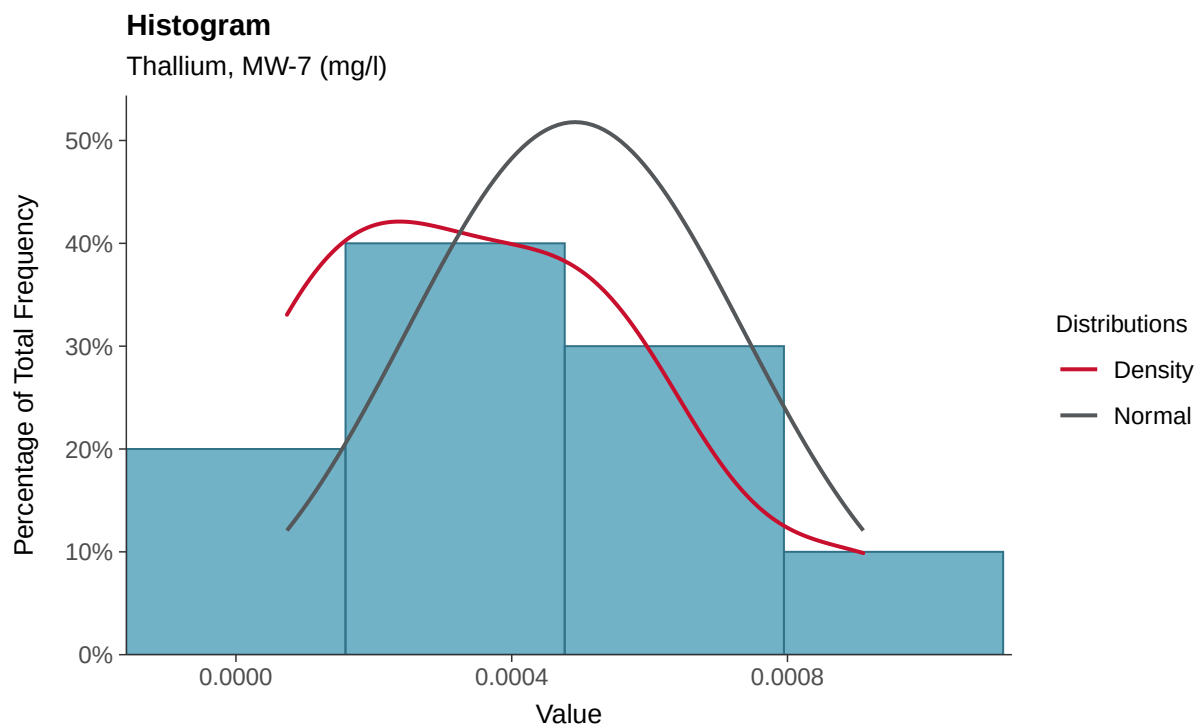
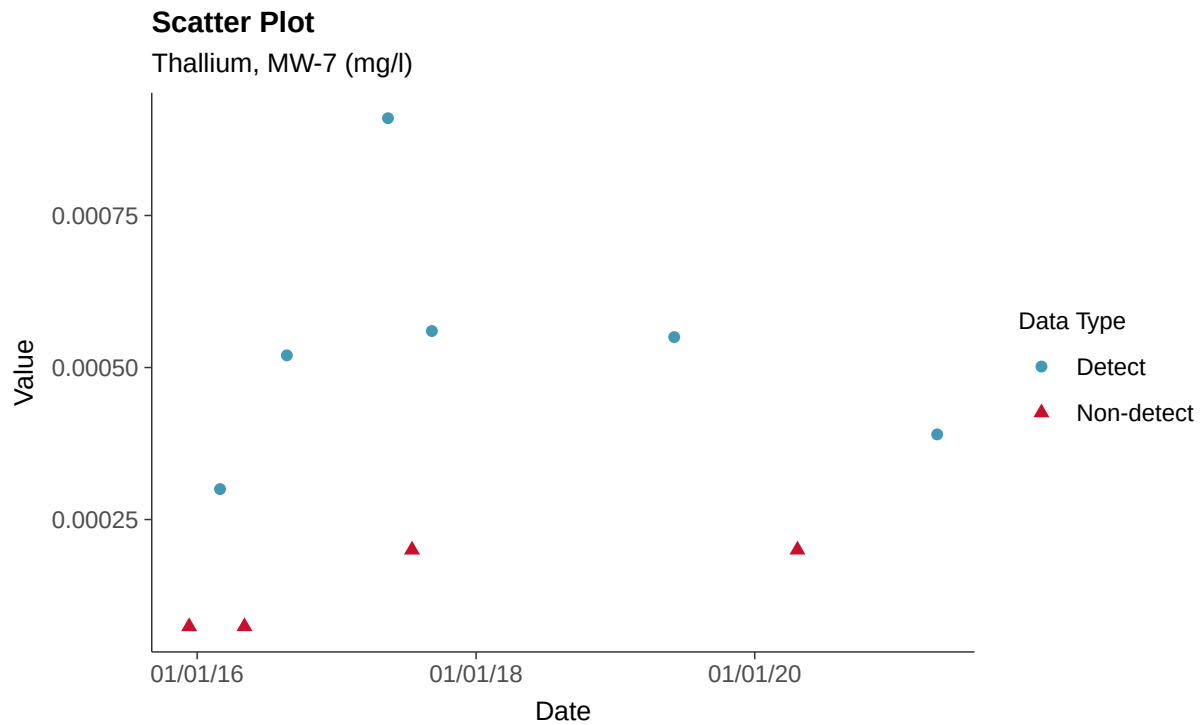






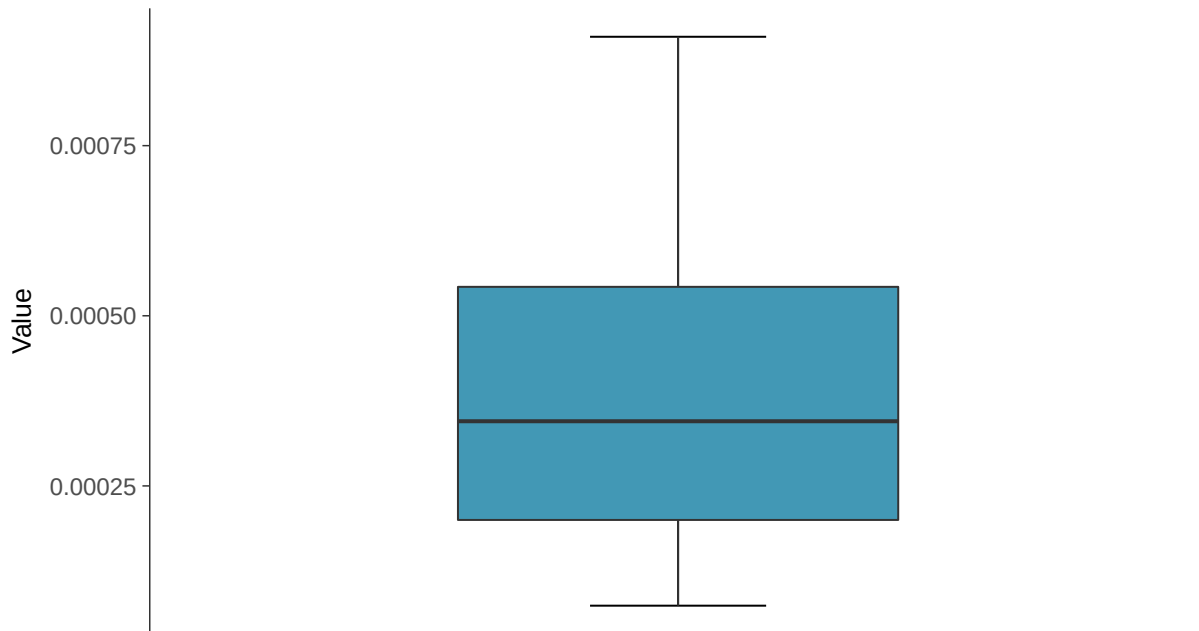
Appendix IV: Thallium, MW-7

ID: 2_2_134



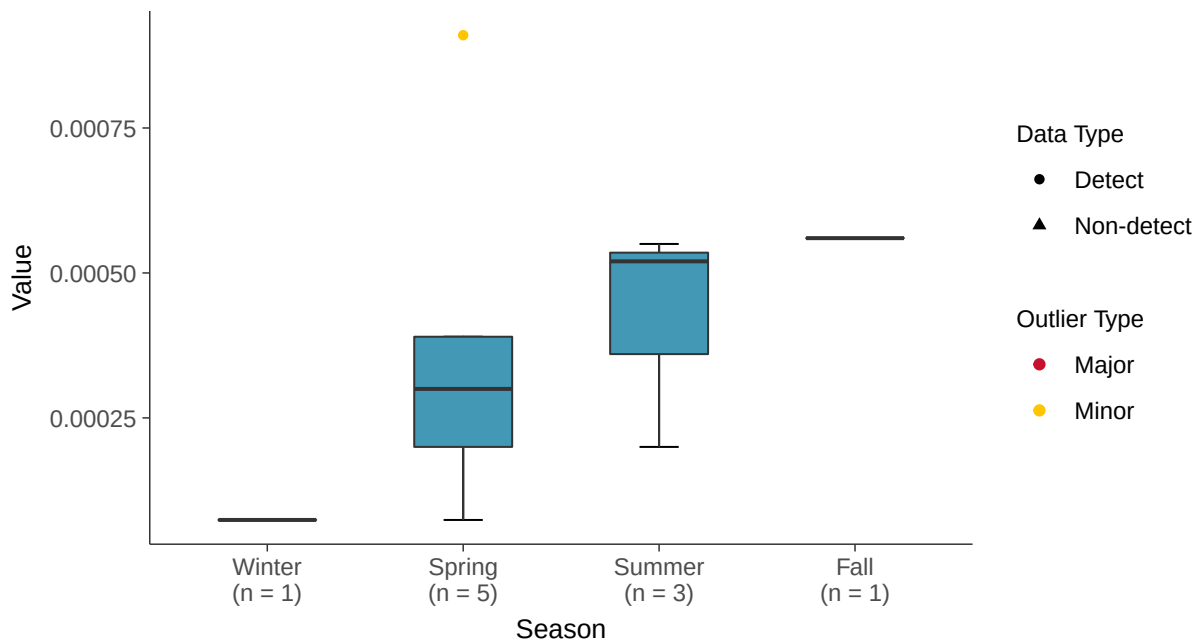
Boxplot

Thallium, MW-7 (mg/l)



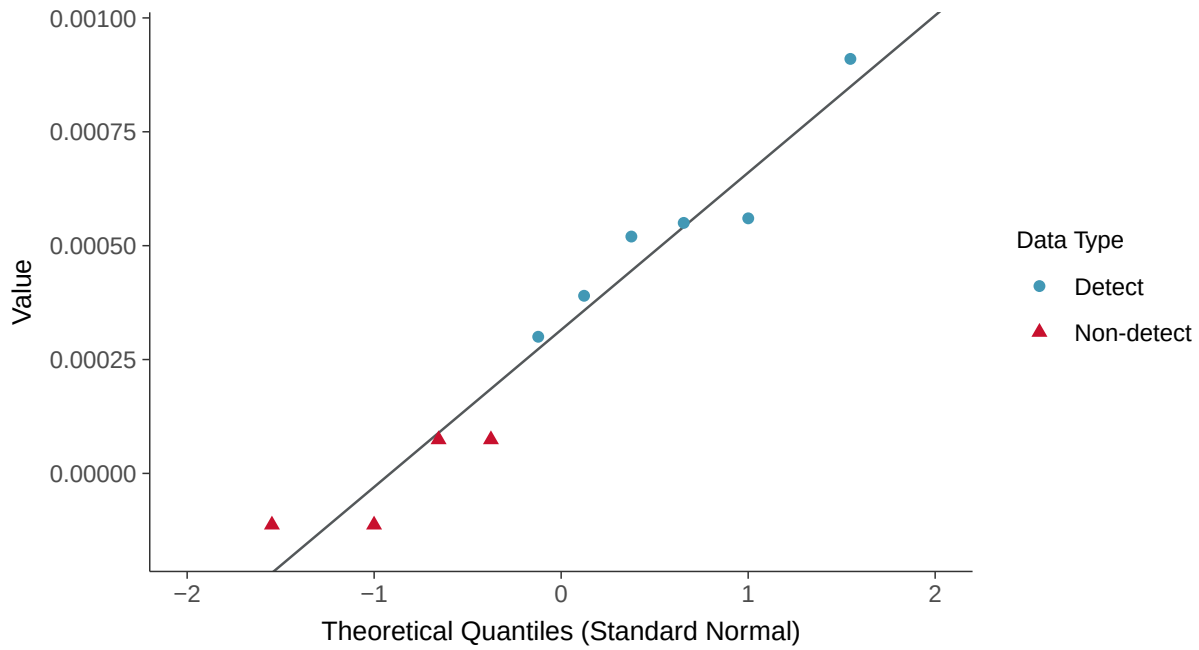
Boxplot by Season

Thallium, MW-7 (mg/l)



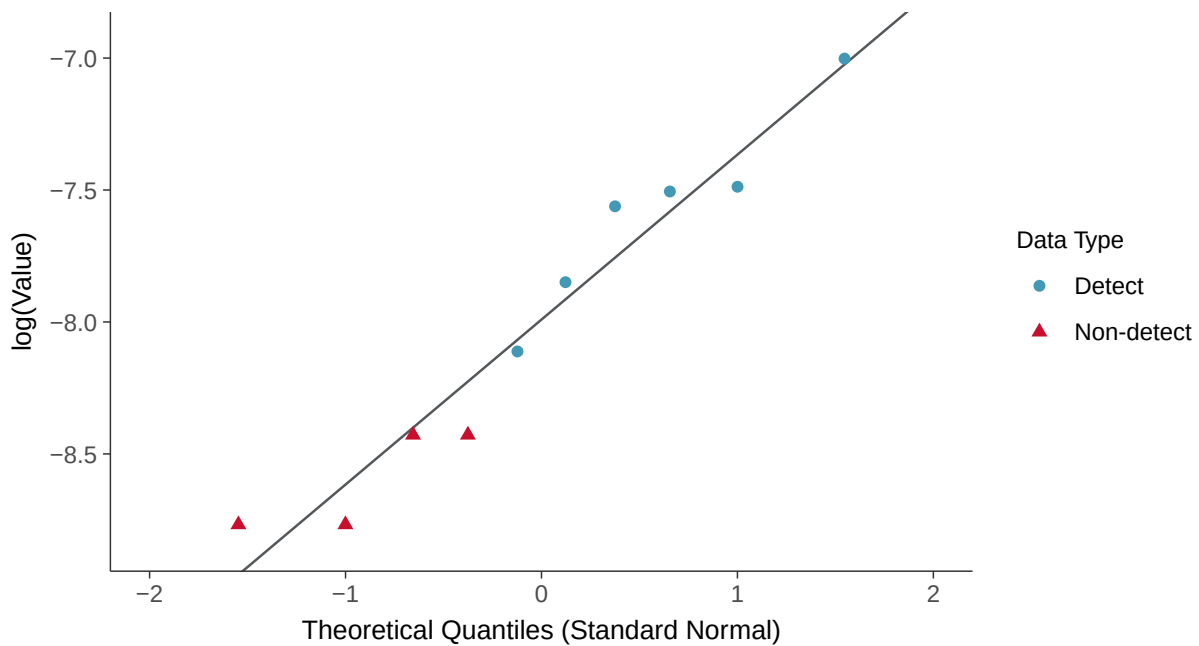
Normal Q-Q plot using ROS Imputed Estimates

Thallium, MW-7 (mg/l)



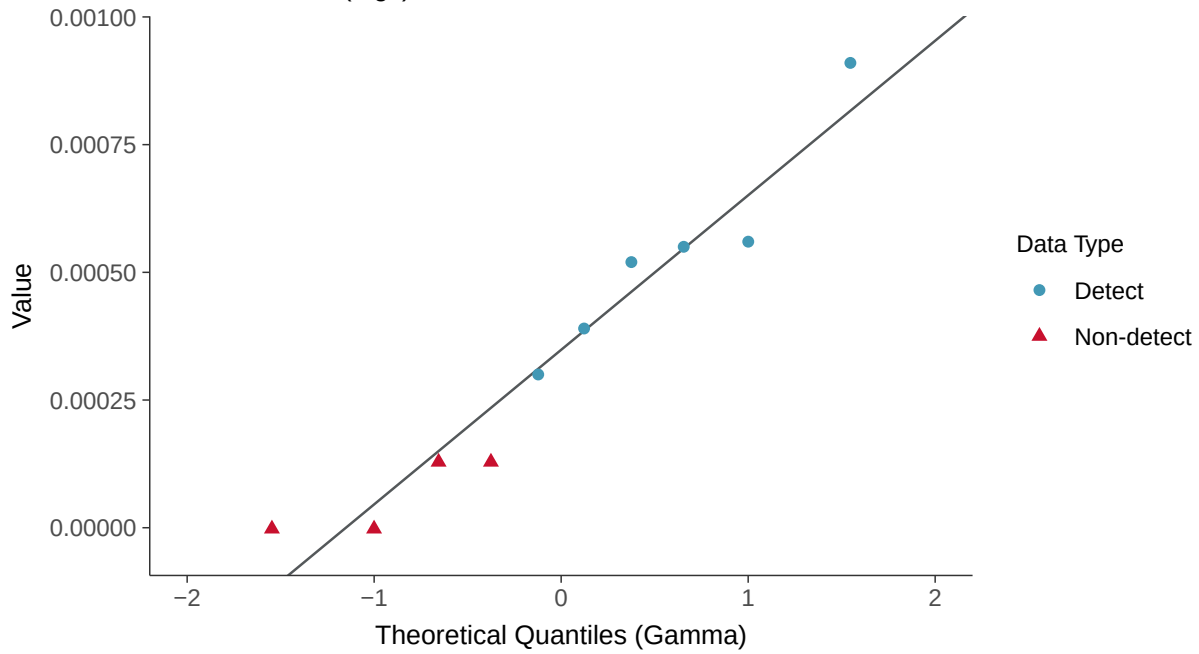
Lognormal Q-Q plot using ROS Imputed Estimates

Thallium, MW-7 (mg/l)



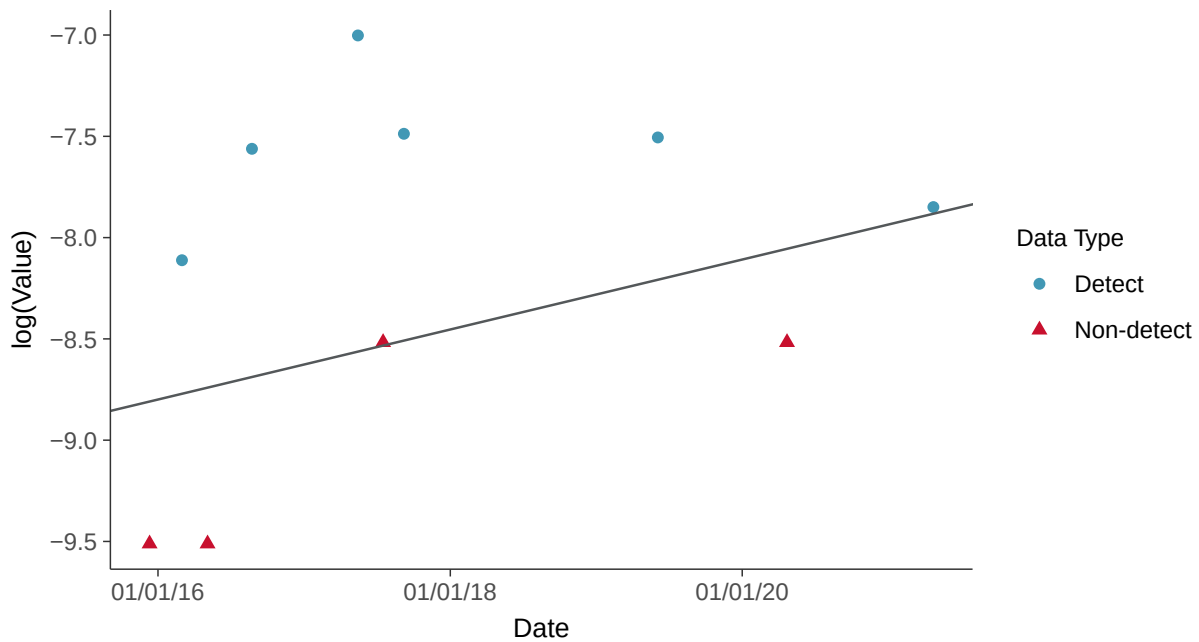
Gamma Q-Q plot using ROS Imputed Estimates

Thallium, MW-7 (mg/l)



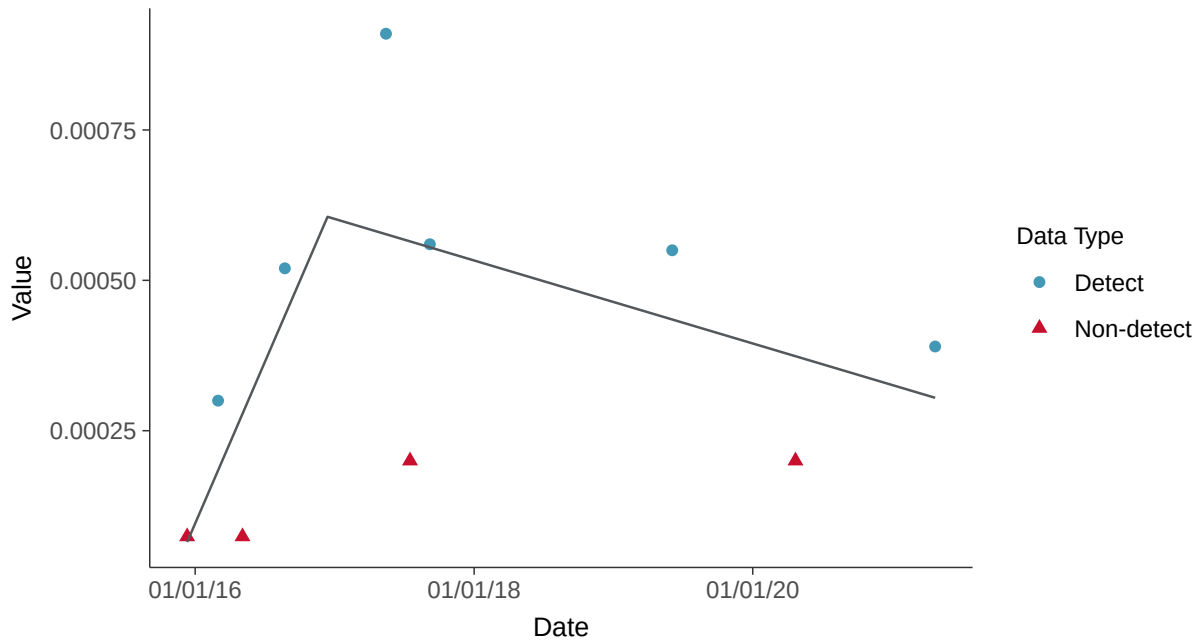
Trend Regression: Lognormal MLE

Thallium, MW-7 (mg/l)



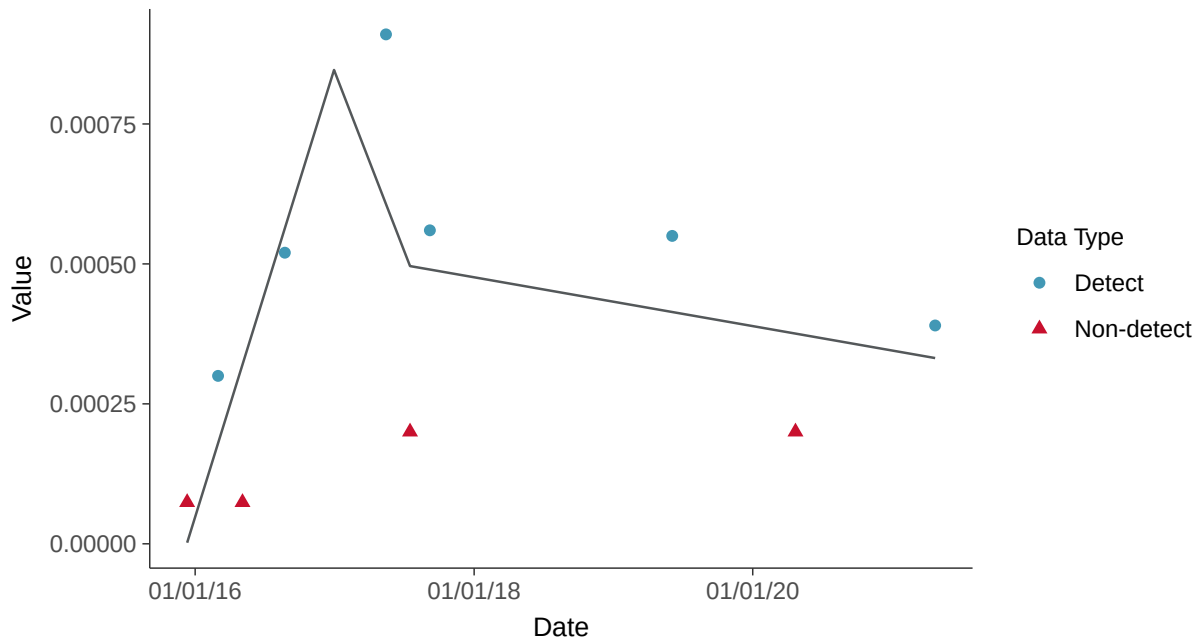
Trend Regression: Piecewise Linear-Linear

Thallium, MW-7 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

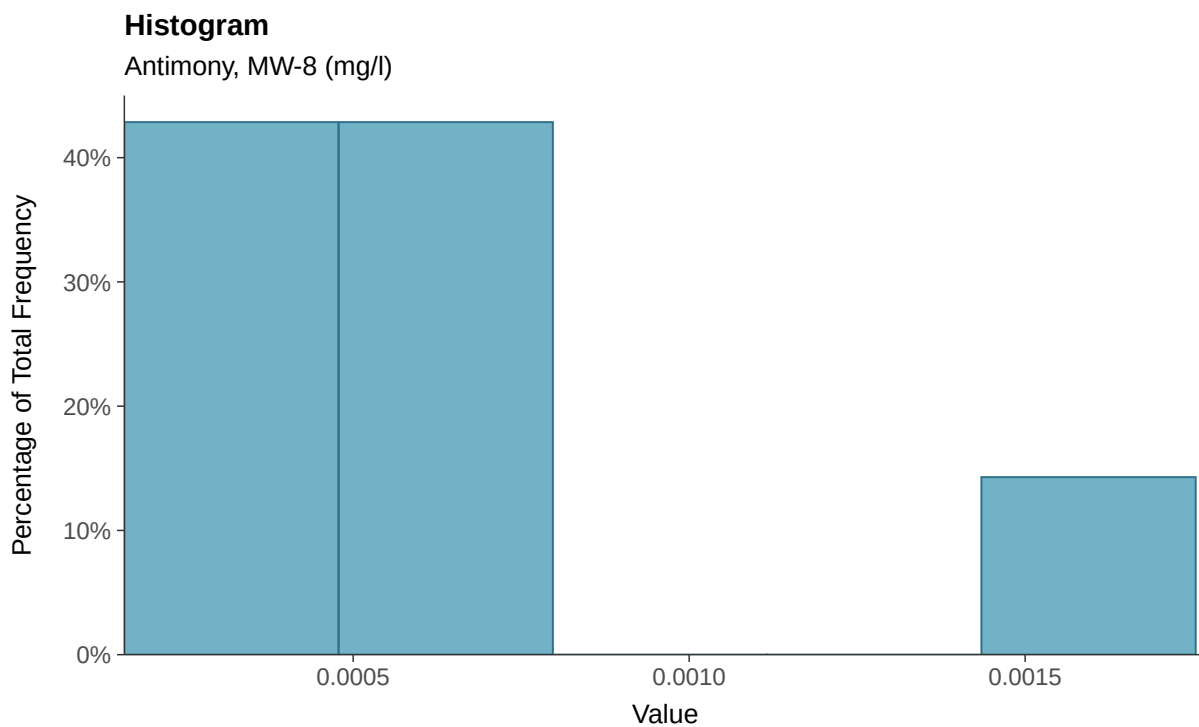
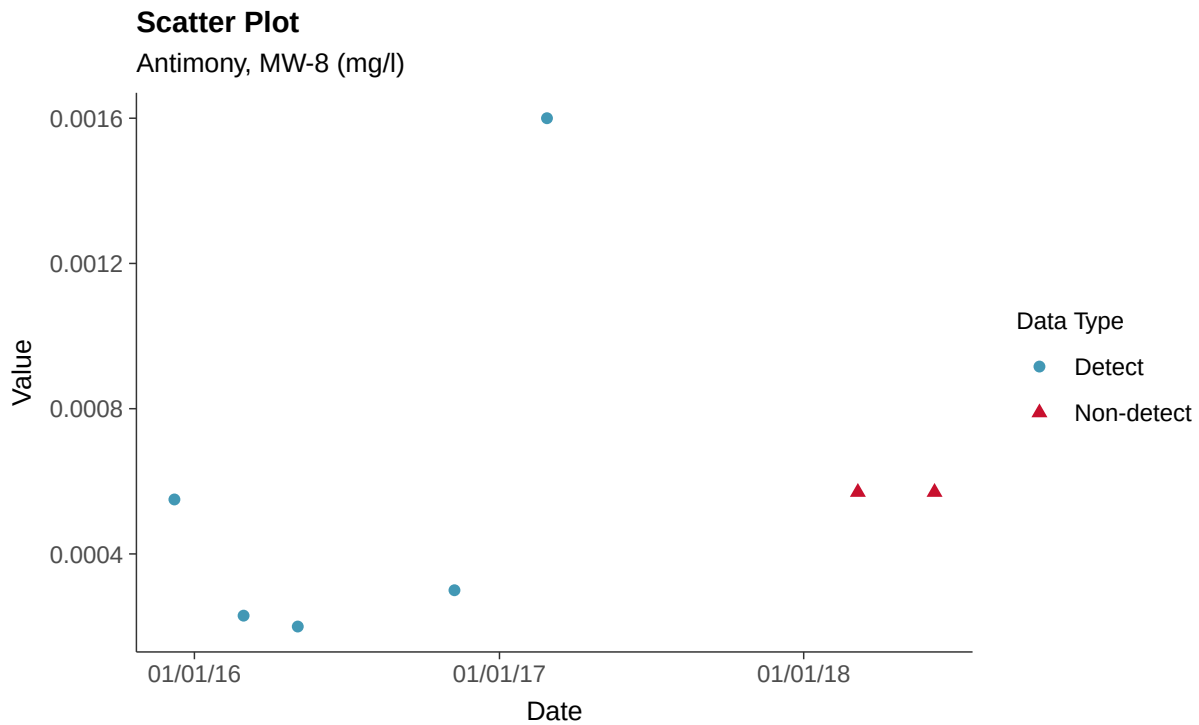
Thallium, MW-7 (mg/l)

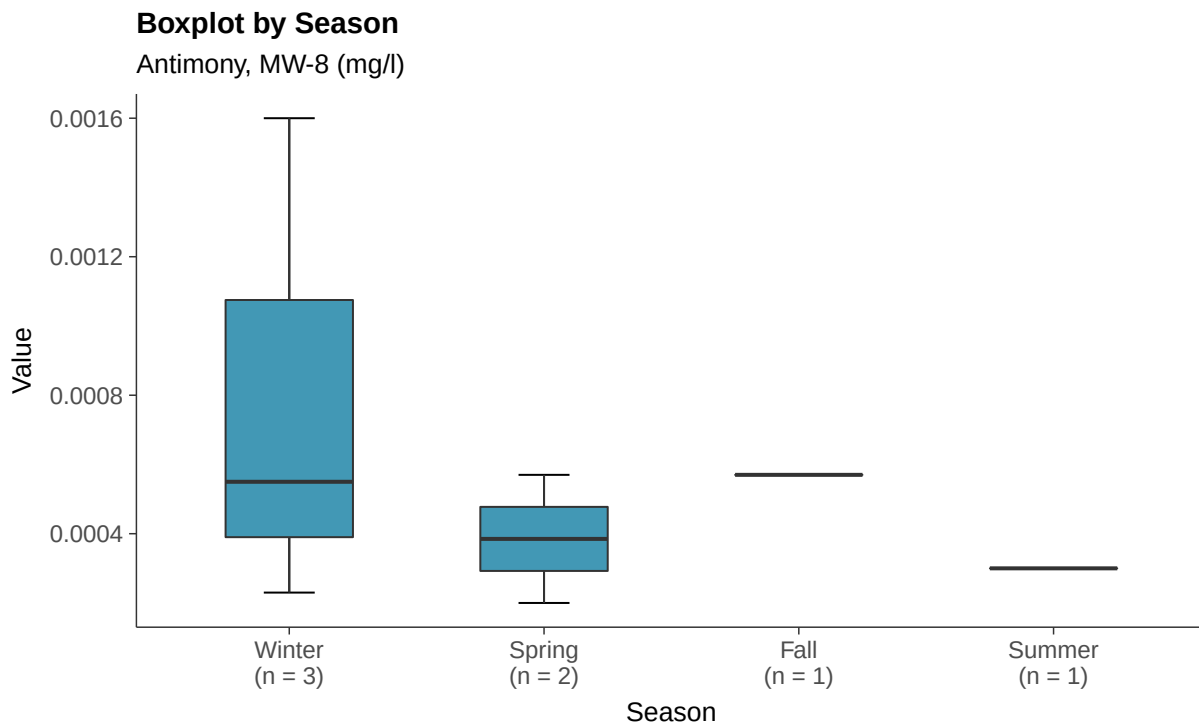
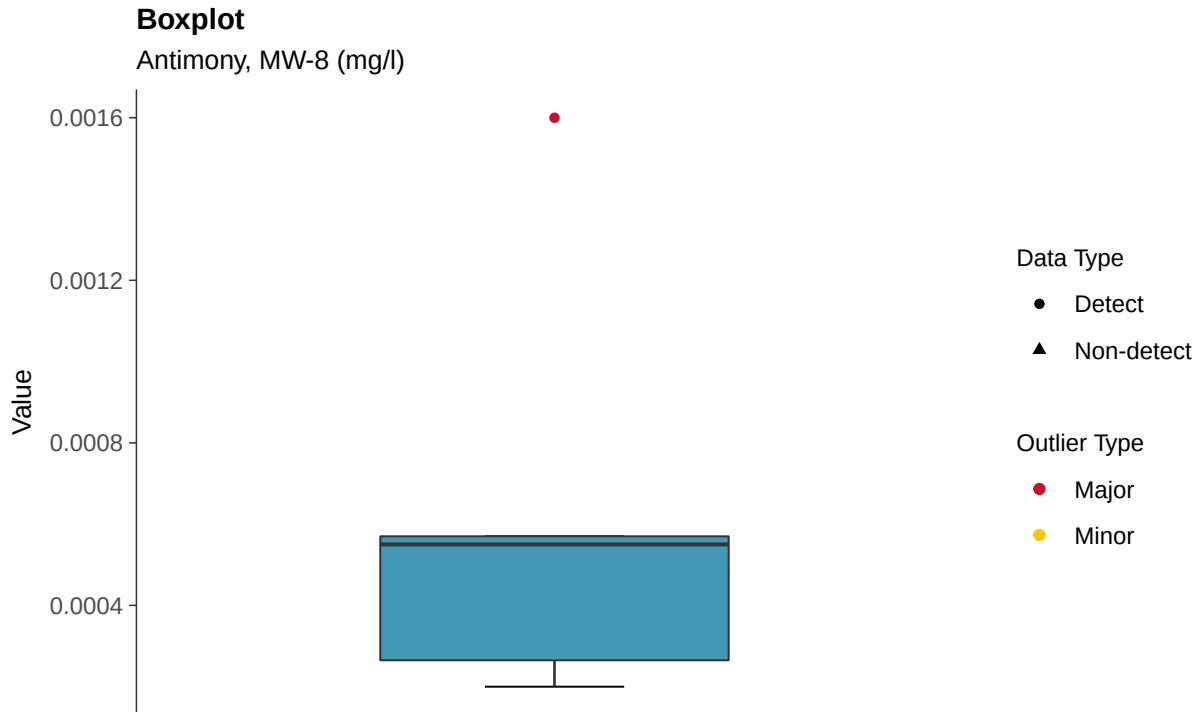




Appendix IV: Antimony, MW-8

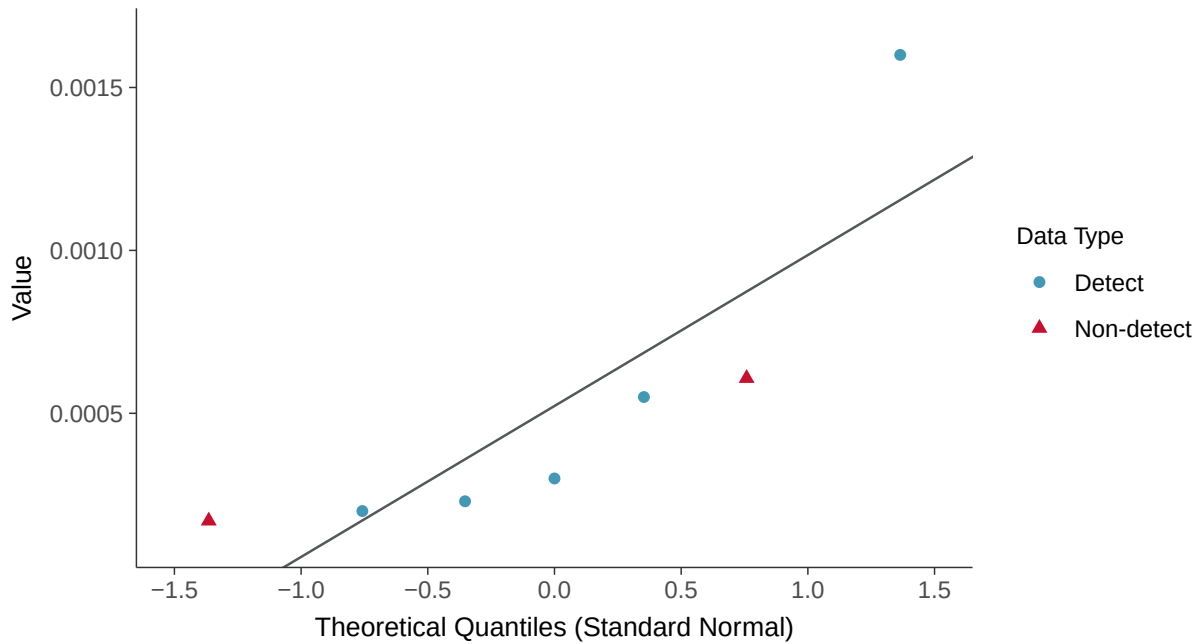
ID: 3_2_104





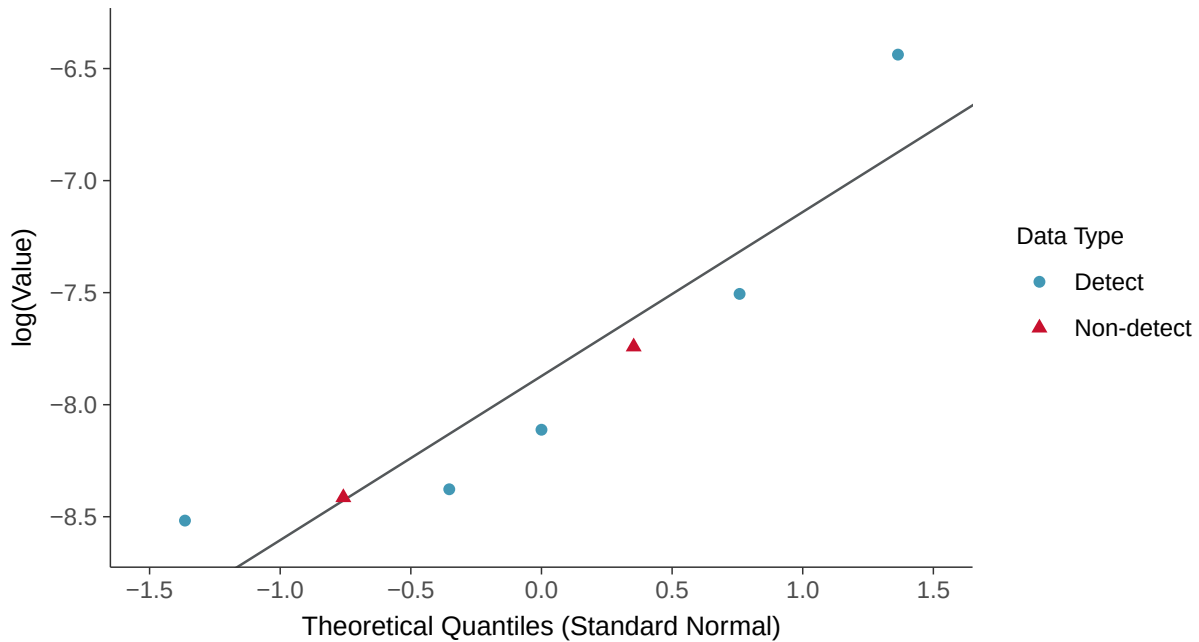
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-8 (mg/l)



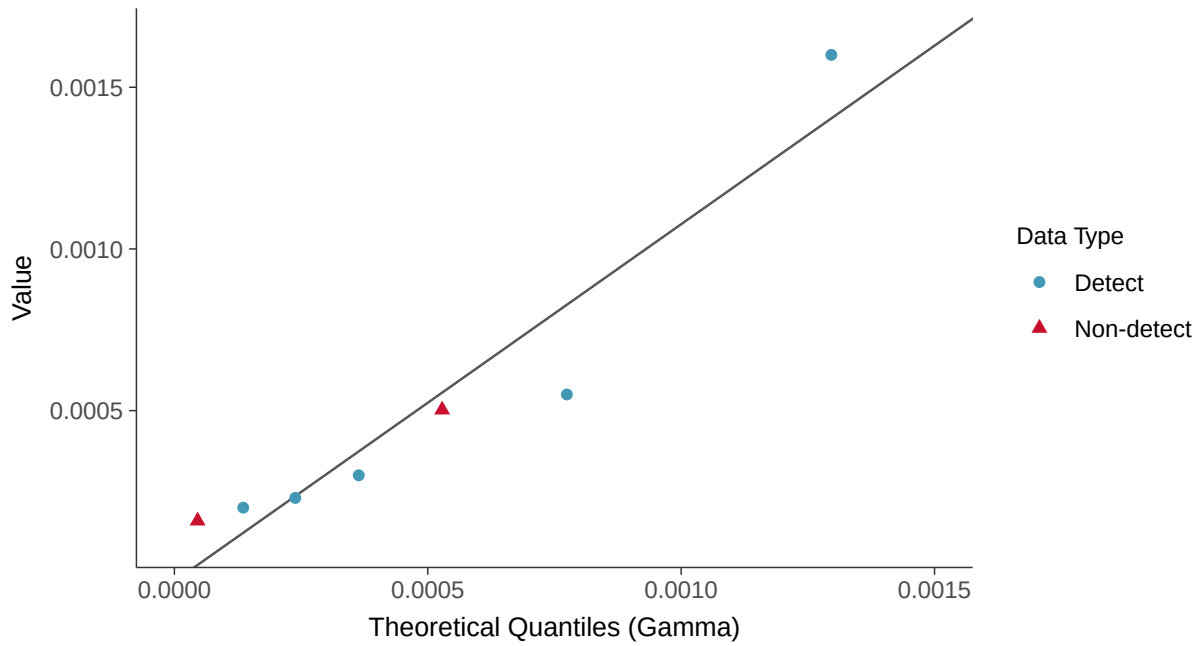
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-8 (mg/l)



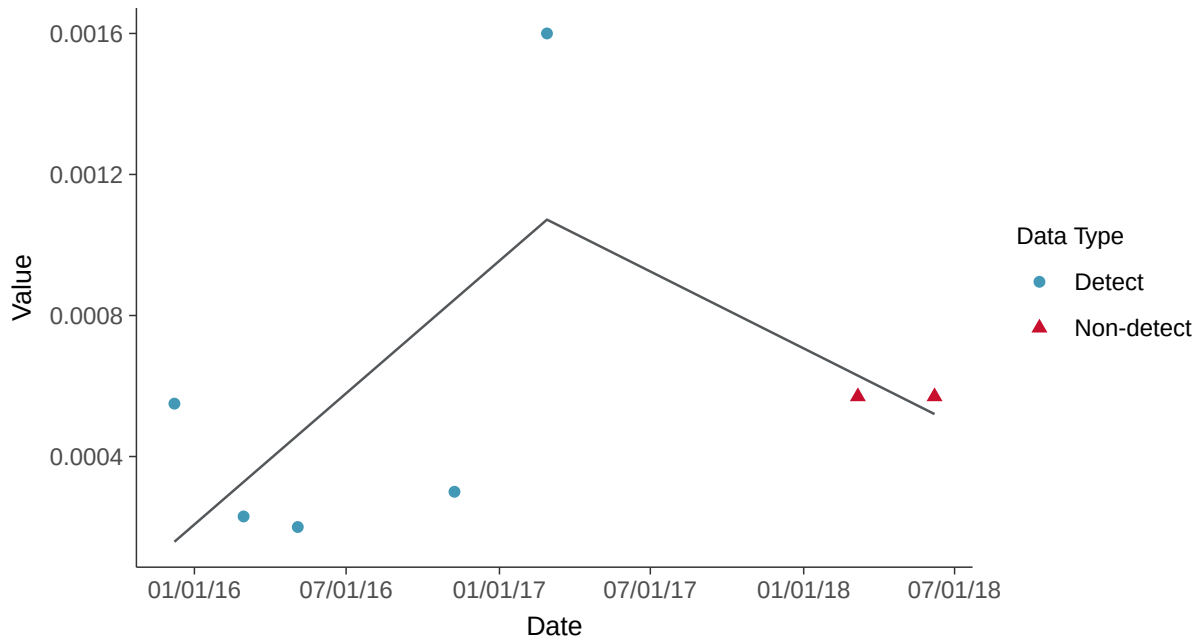
Gamma Q-Q plot using ROS Imputed Estimates

Antimony, MW-8 (mg/l)



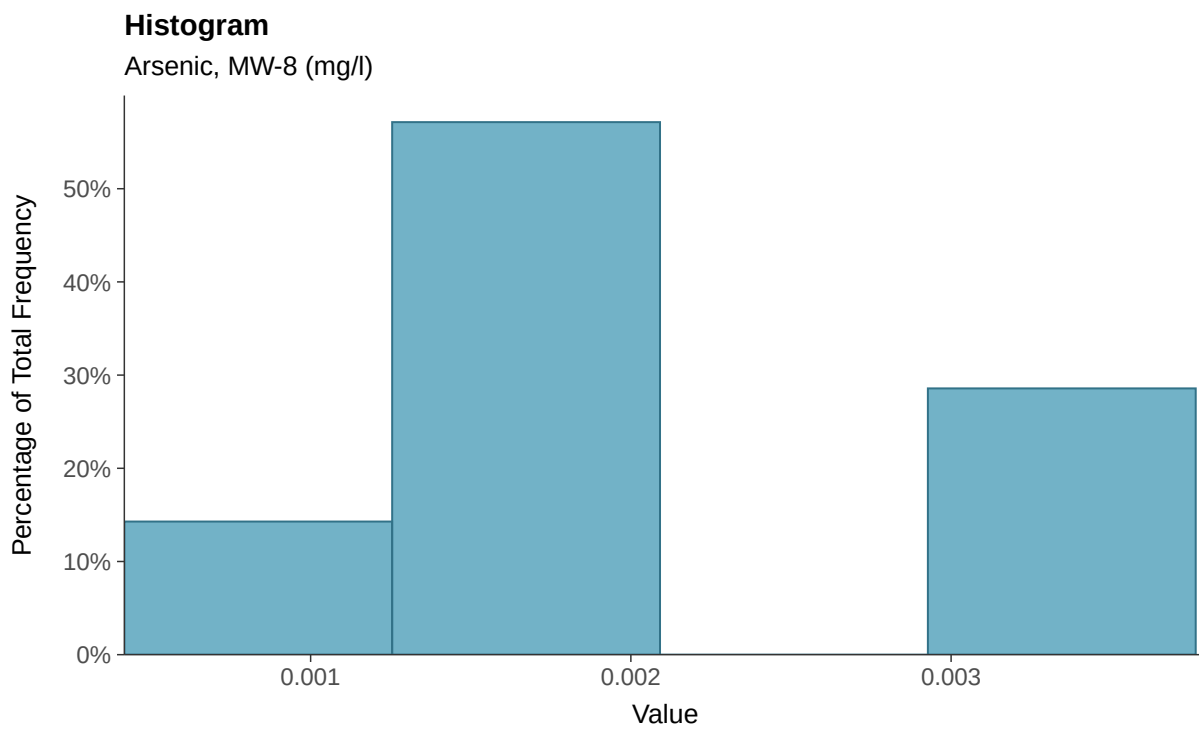
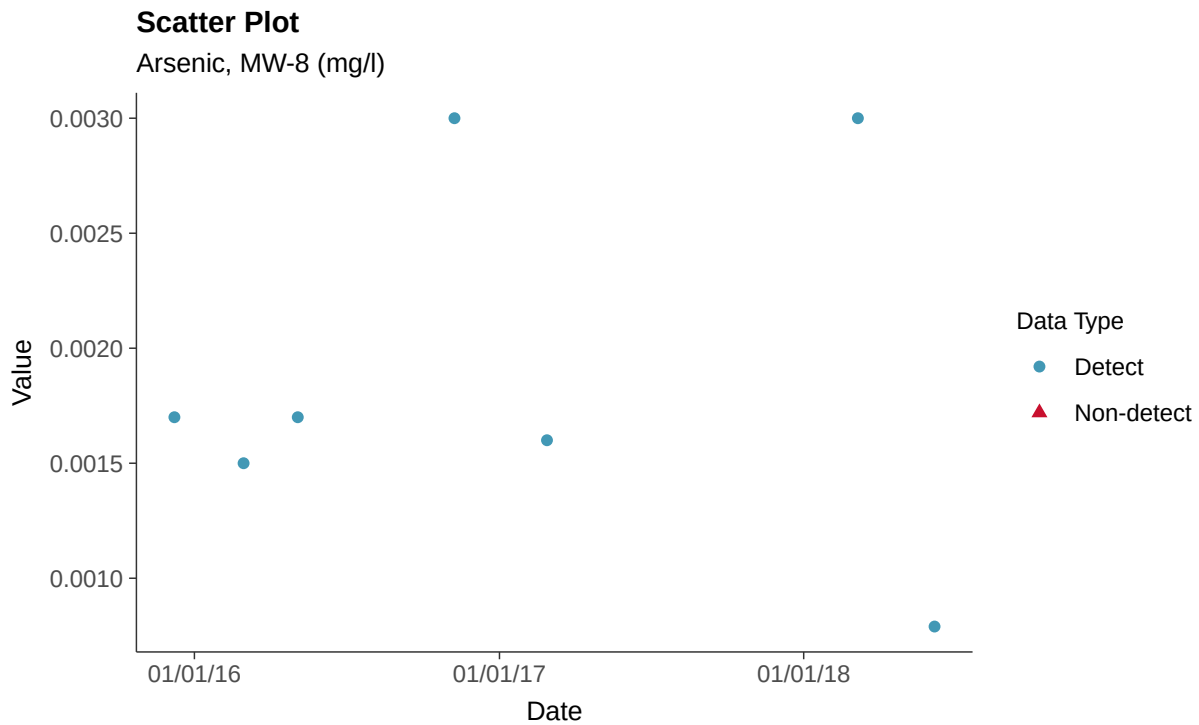
Trend Regression: Piecewise Linear-Linear

Antimony, MW-8 (mg/l)



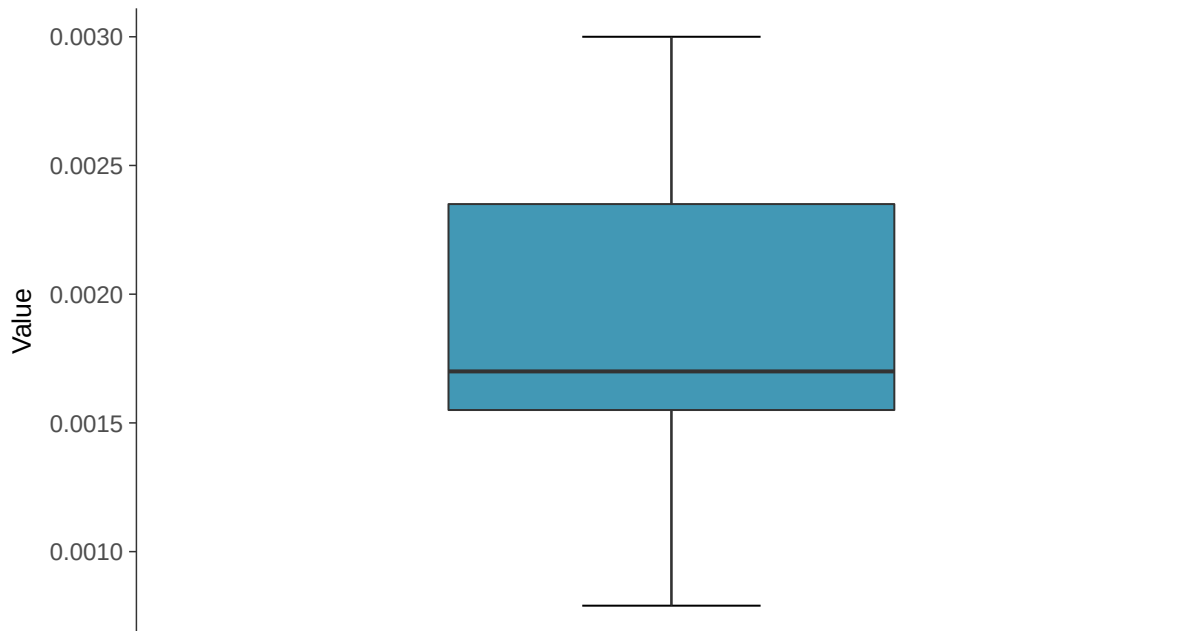
Appendix IV: Arsenic, MW-8

ID: 3_2_105



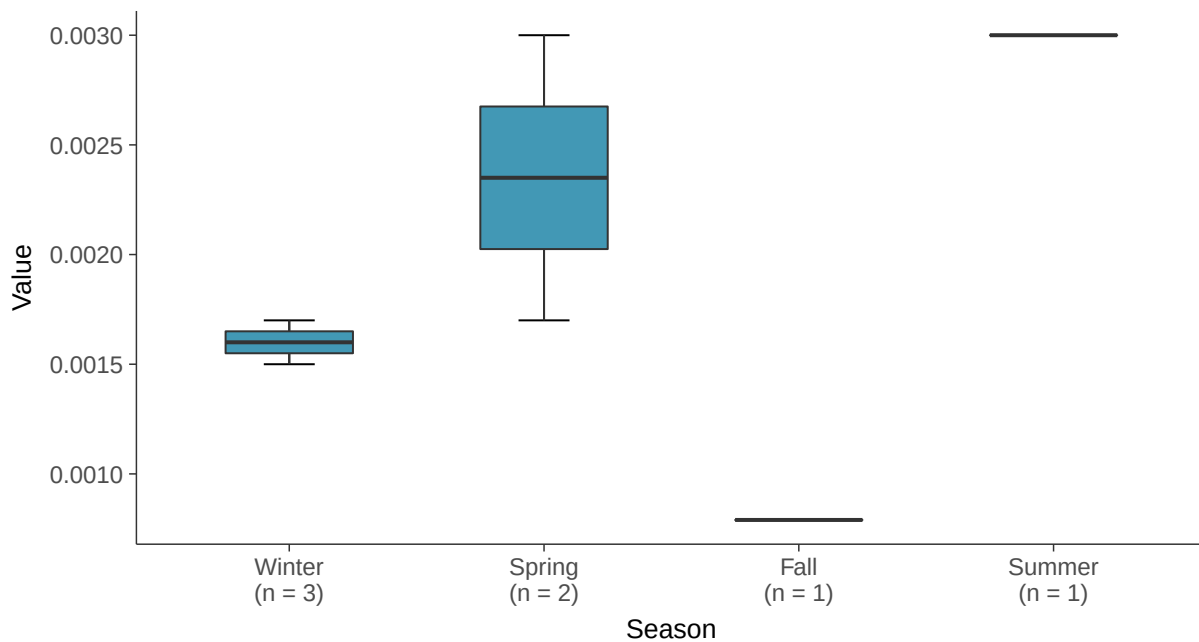
Boxplot

Arsenic, MW-8 (mg/l)



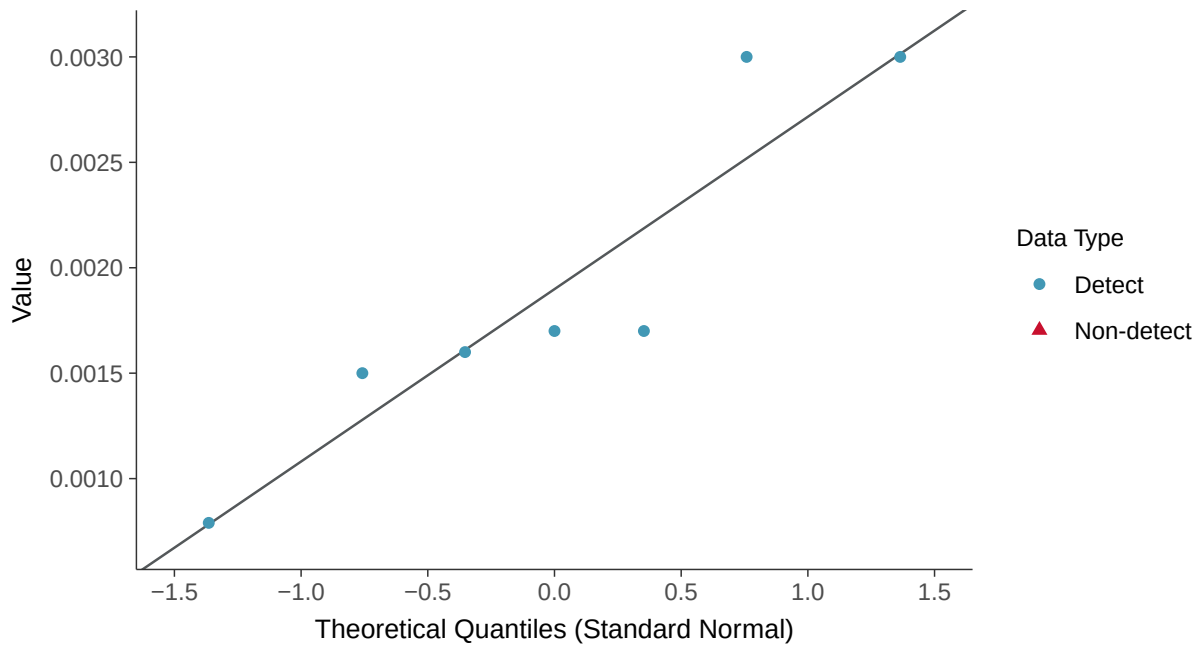
Boxplot by Season

Arsenic, MW-8 (mg/l)



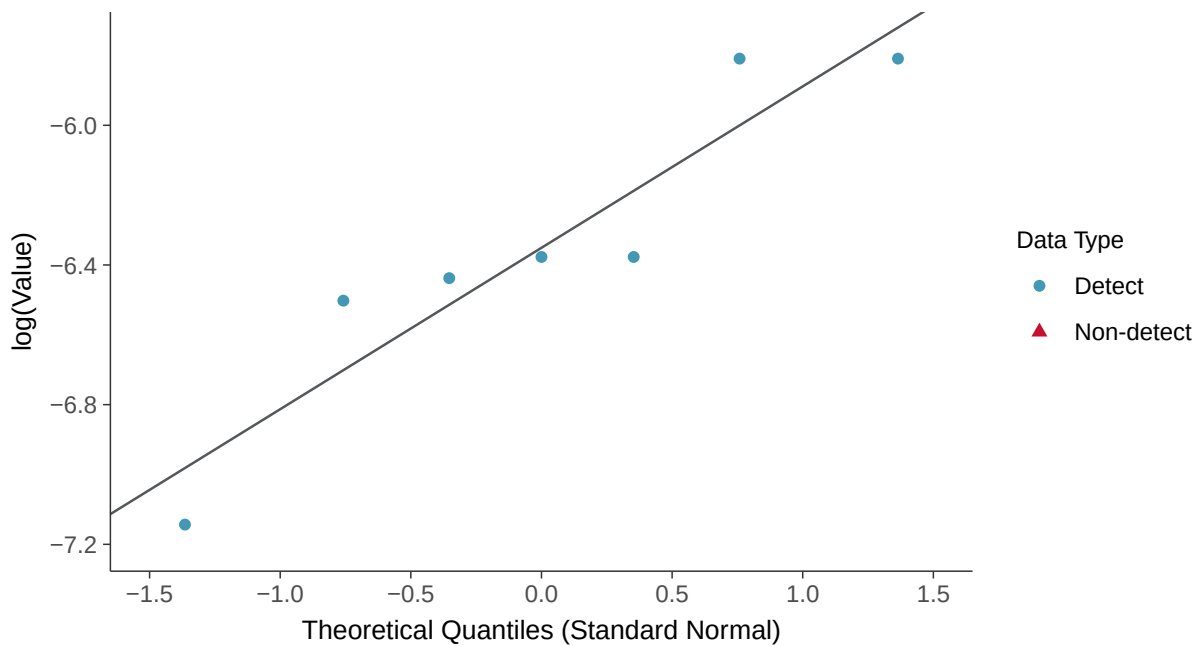
Normal Q-Q plot

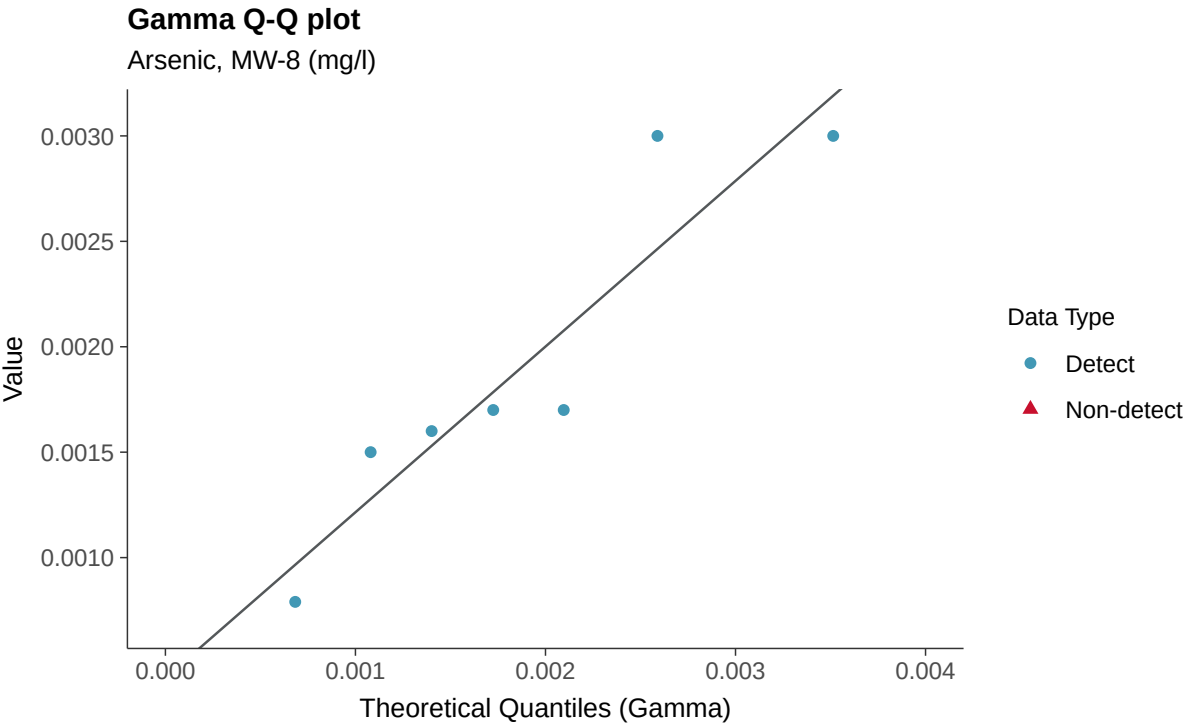
Arsenic, MW-8 (mg/l)



Lognormal Q-Q plot

Arsenic, MW-8 (mg/l)

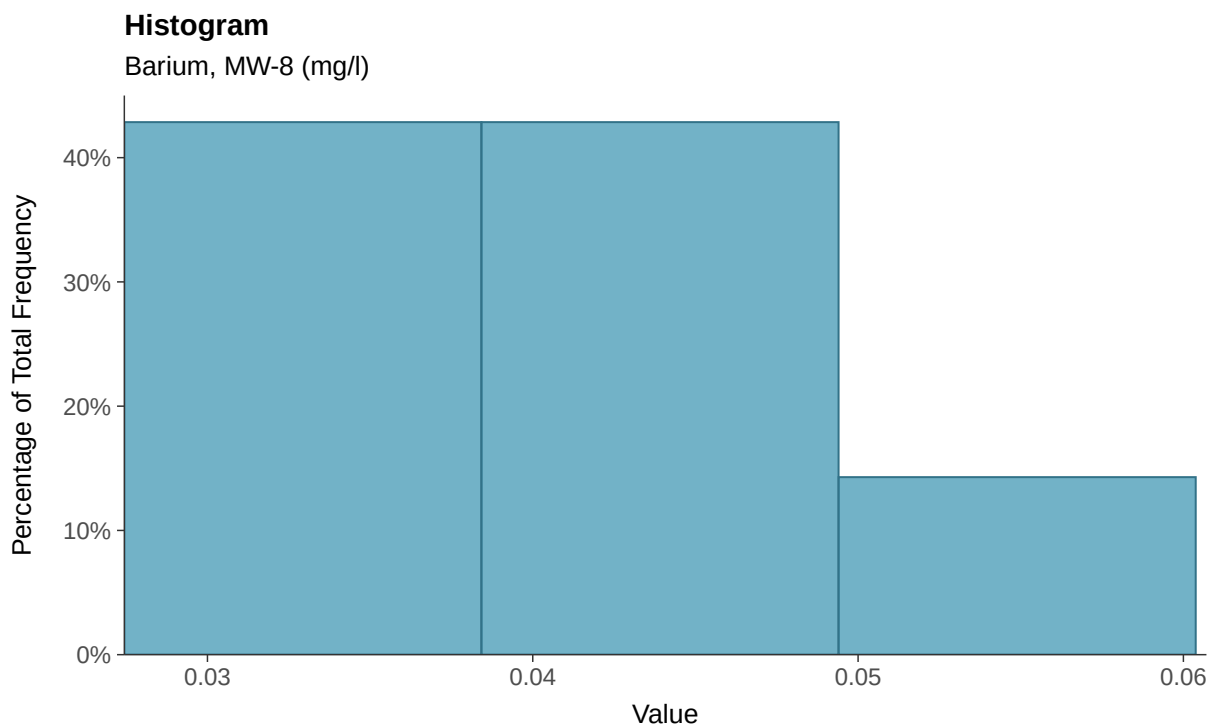
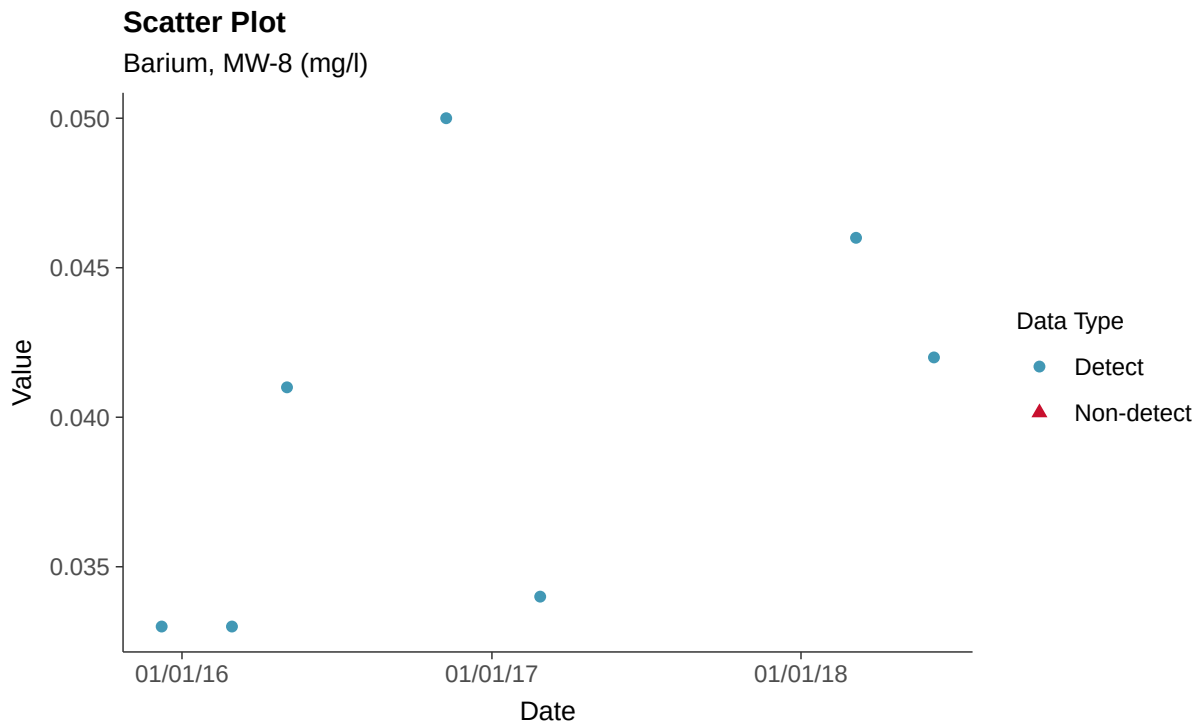






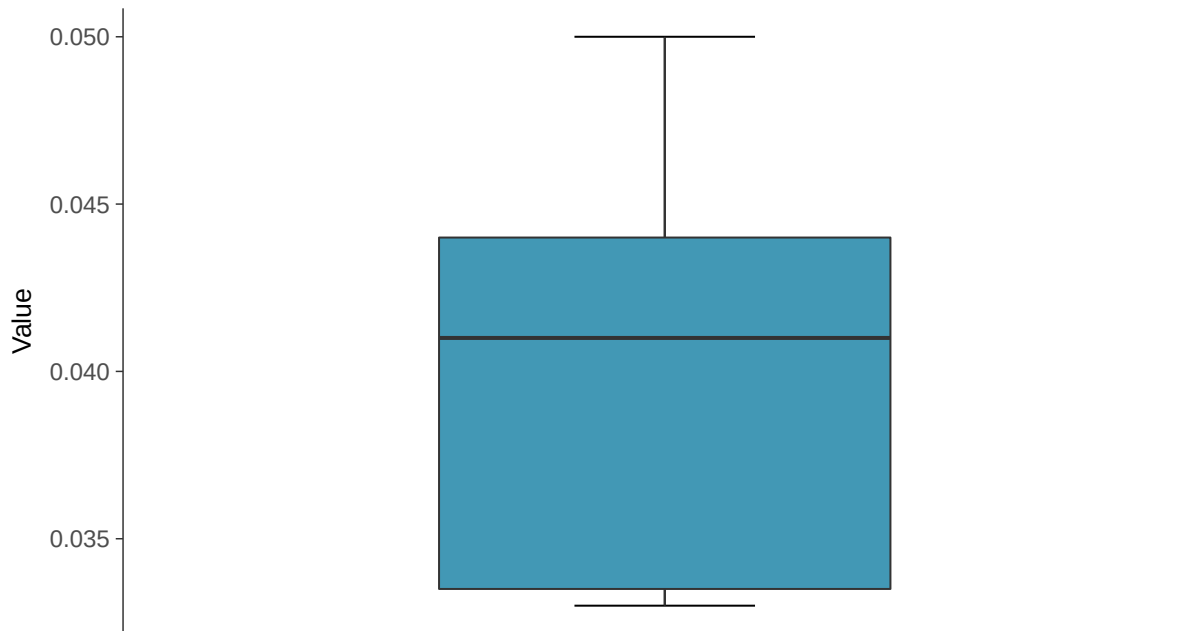
Appendix IV: Barium, MW-8

ID: 3_2_106



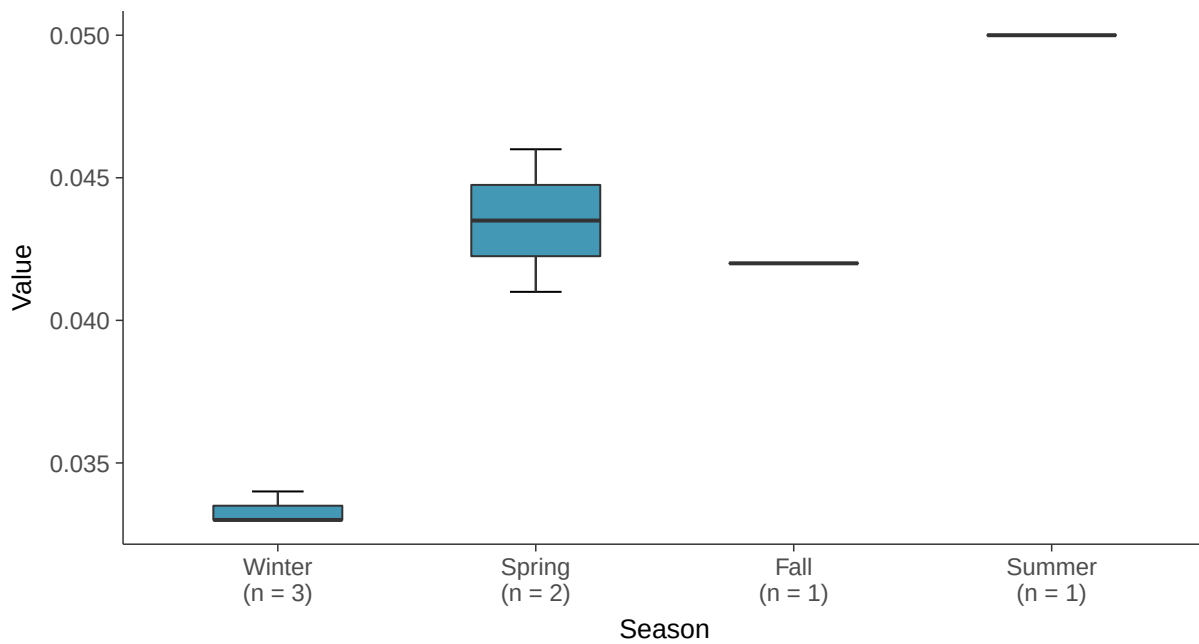
Boxplot

Barium, MW-8 (mg/l)



Boxplot by Season

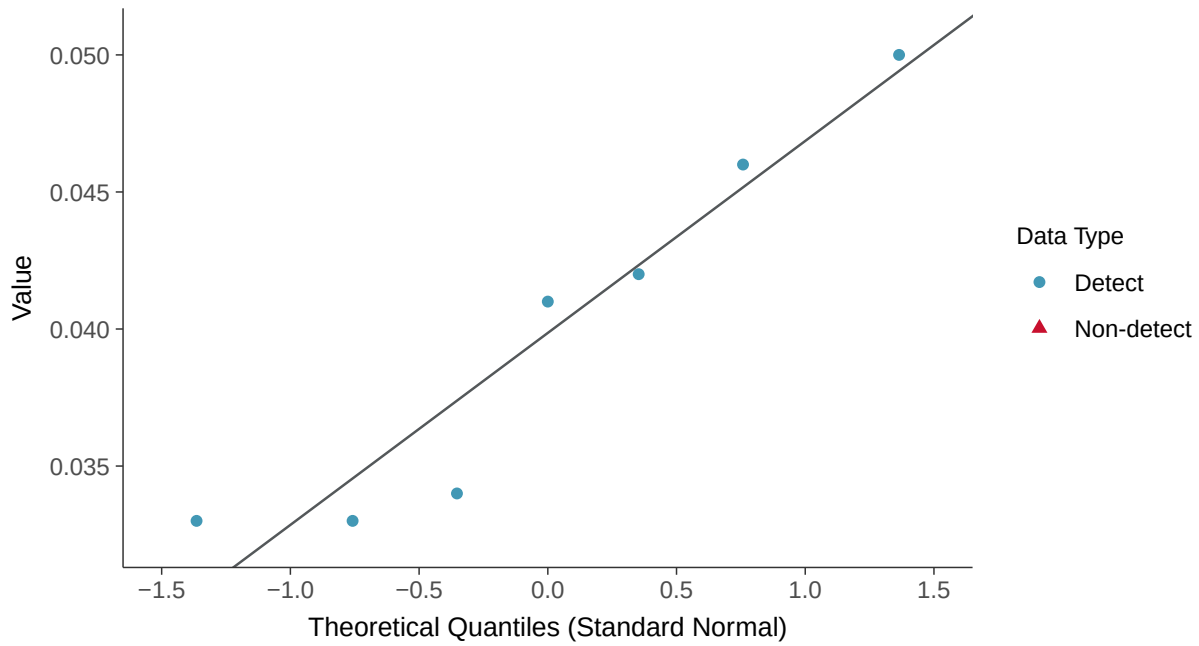
Barium, MW-8 (mg/l)





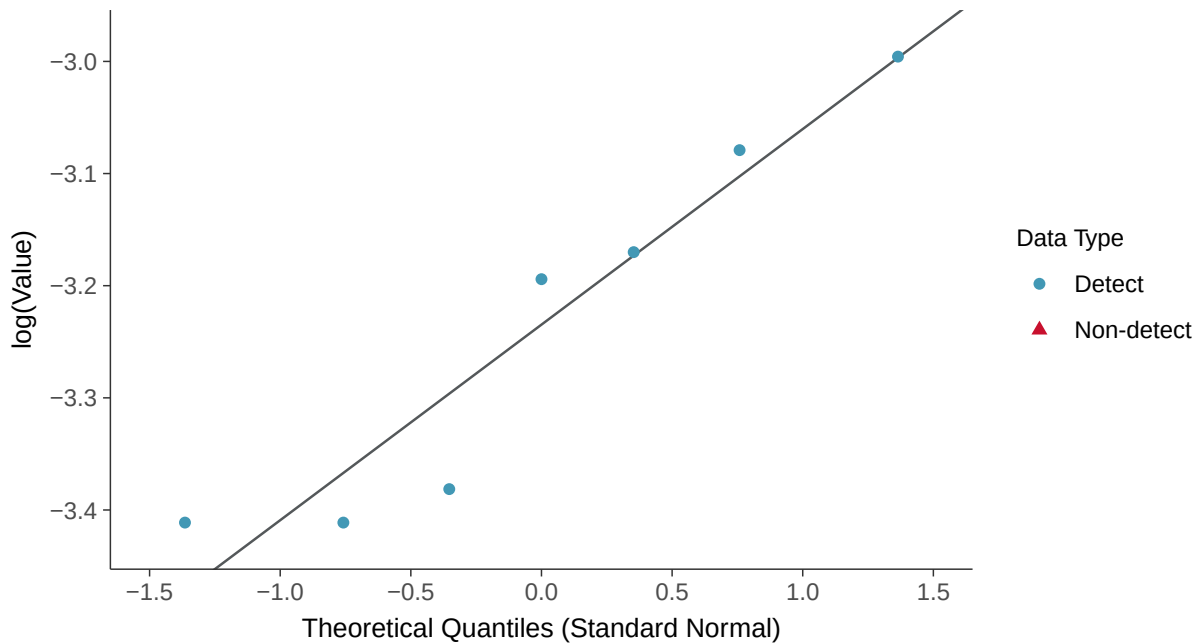
Normal Q-Q plot

Barium, MW-8 (mg/l)

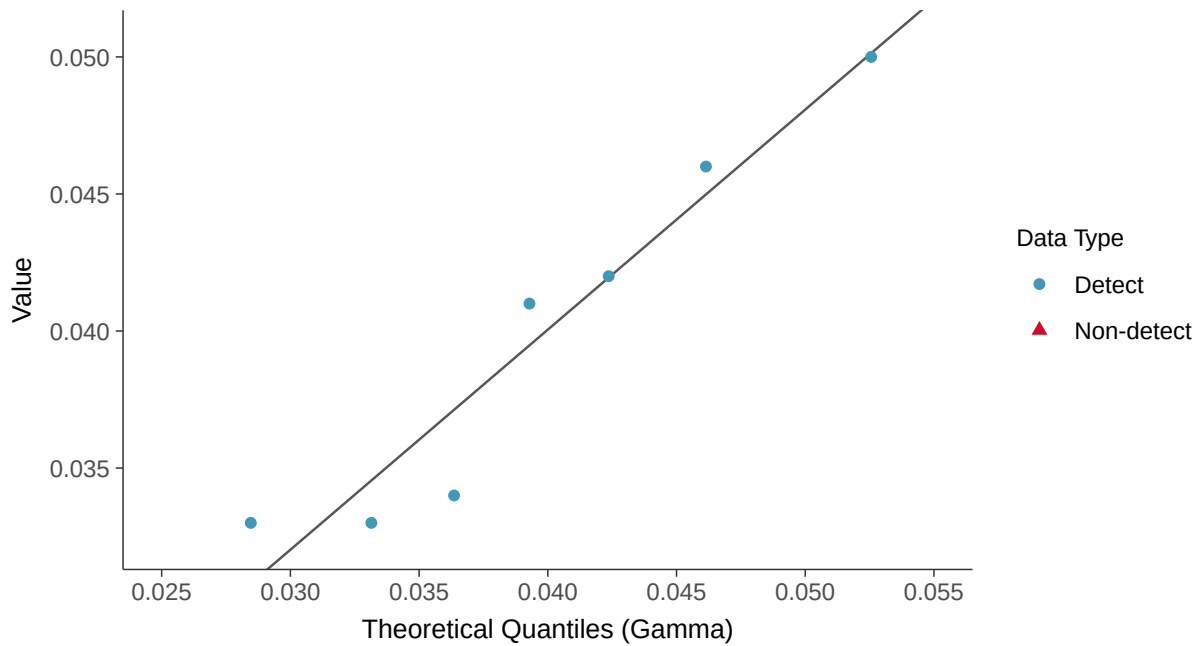


Lognormal Q-Q plot

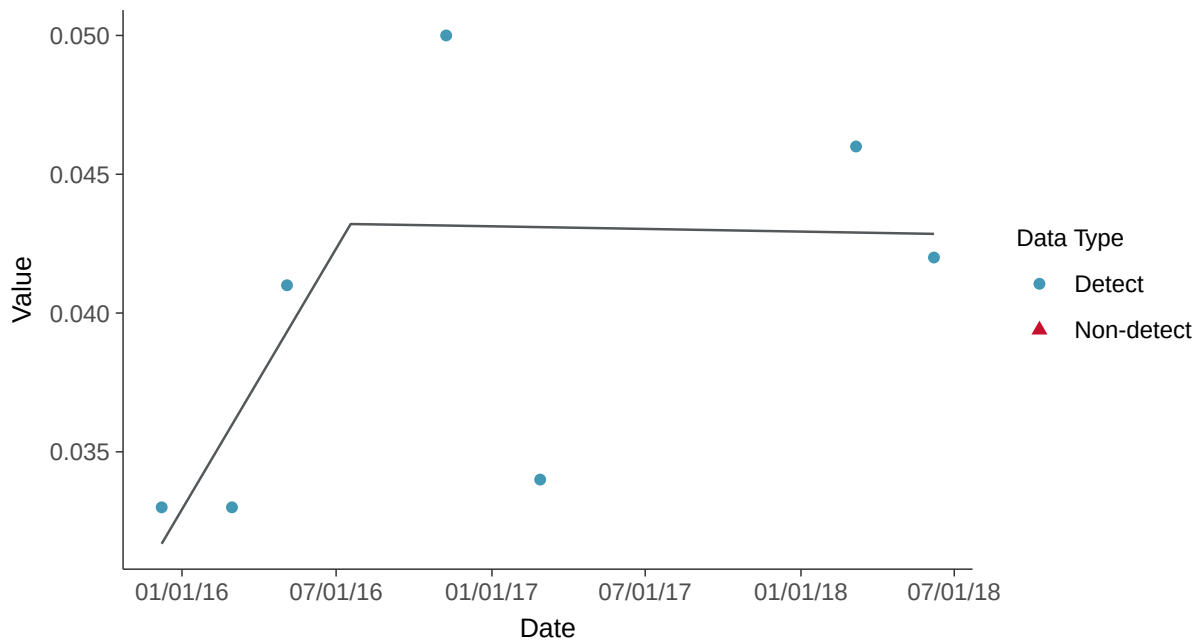
Barium, MW-8 (mg/l)



Gamma Q-Q plot
Barium, MW-8 (mg/l)



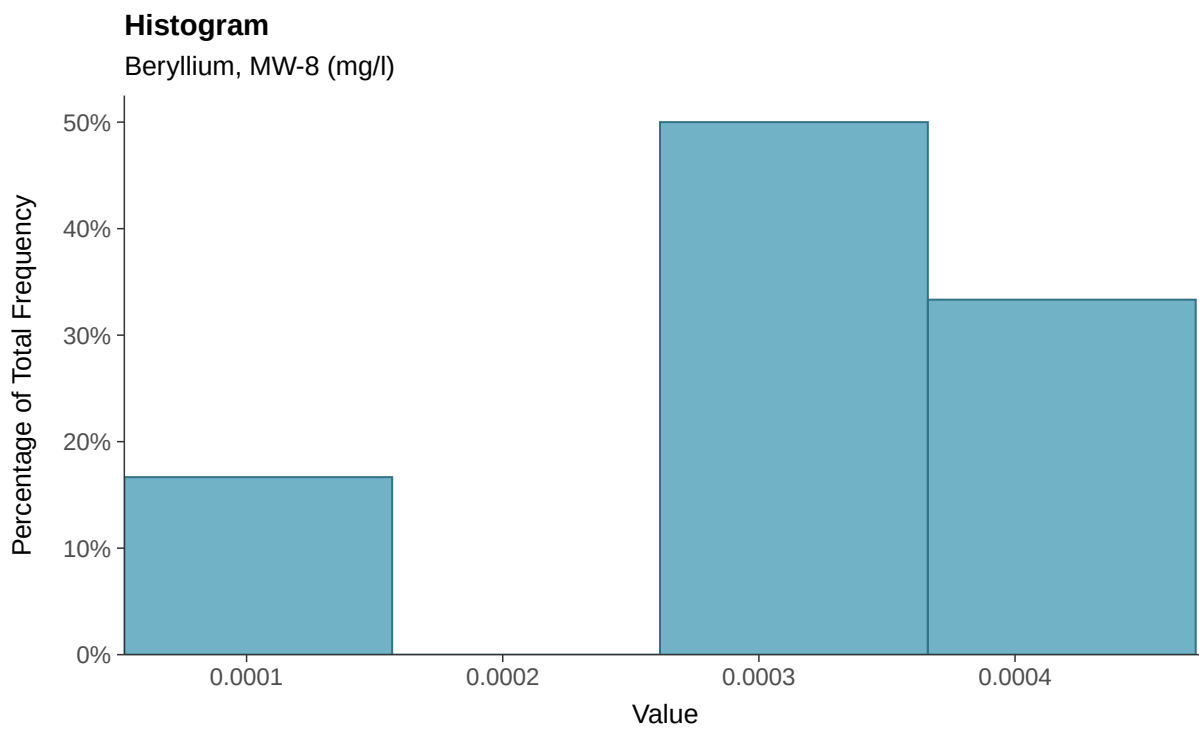
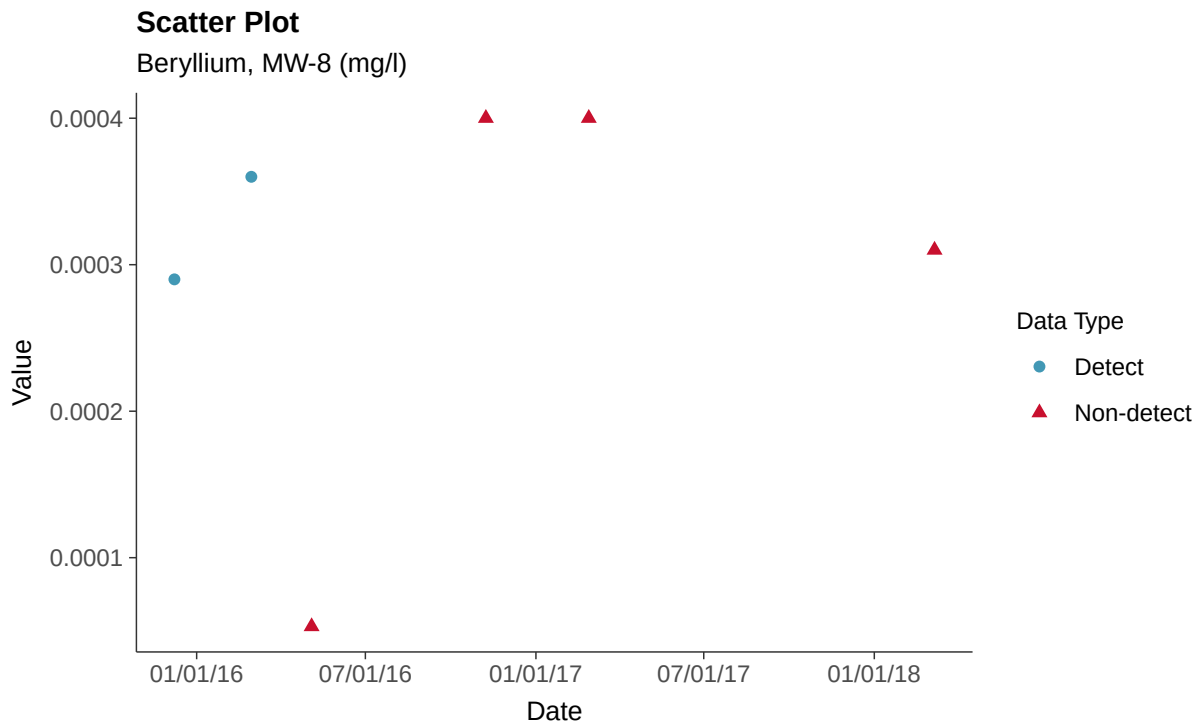
Trend Regression: Piecewise Linear-Linear
Barium, MW-8 (mg/l)





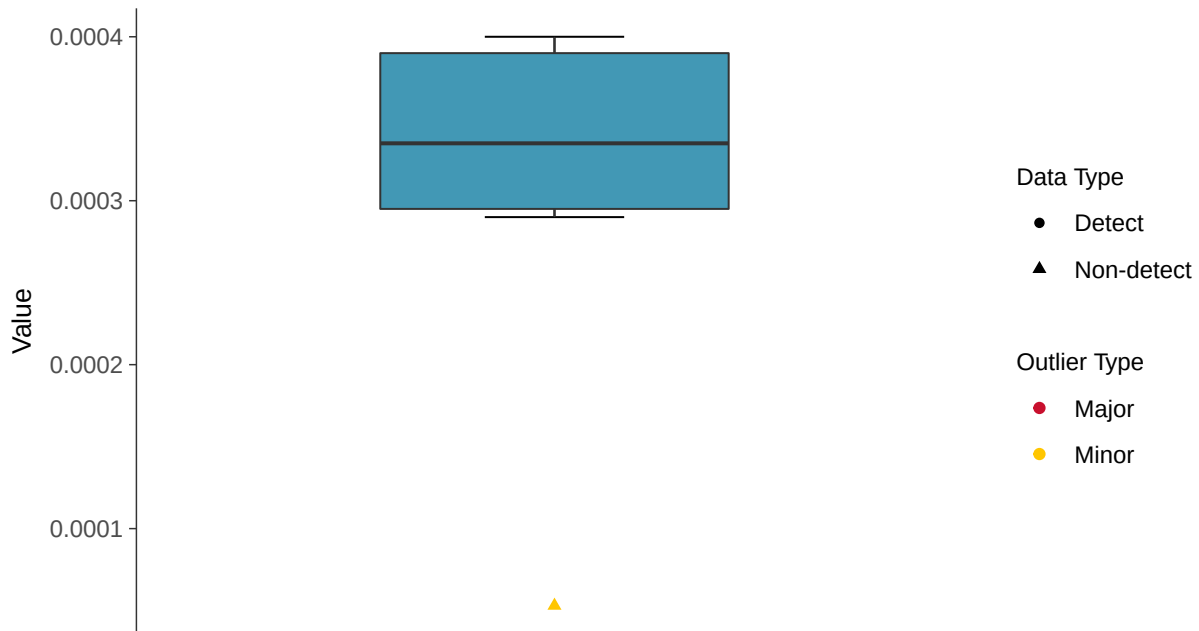
Appendix IV: Beryllium, MW-8

ID: 3_2_107



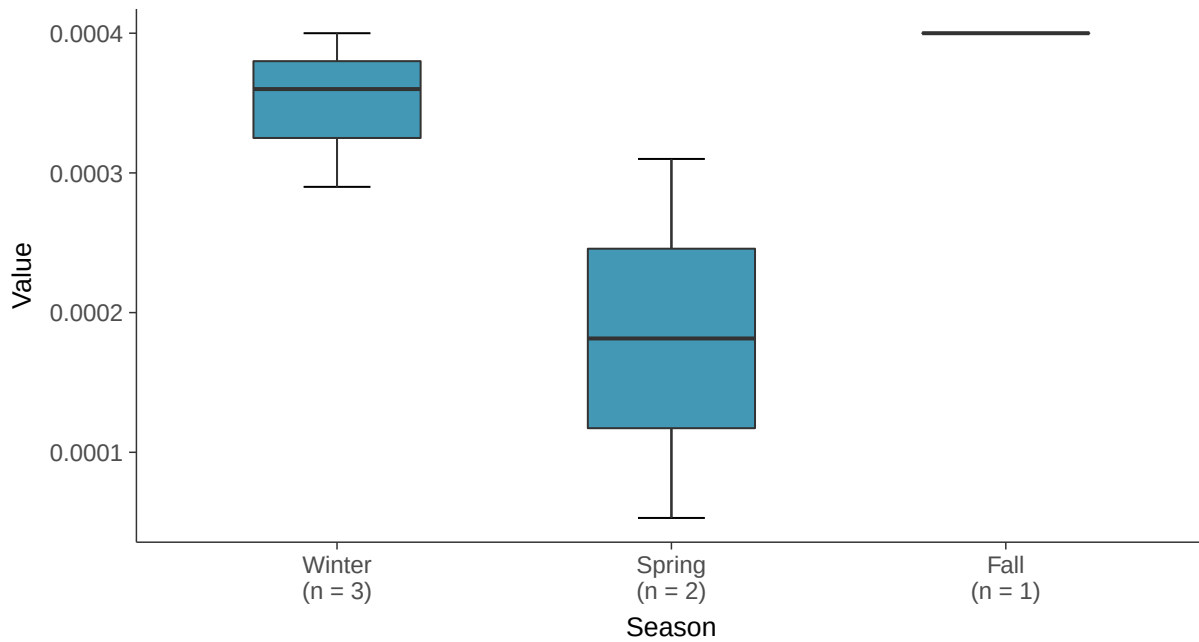
Boxplot

Beryllium, MW-8 (mg/l)



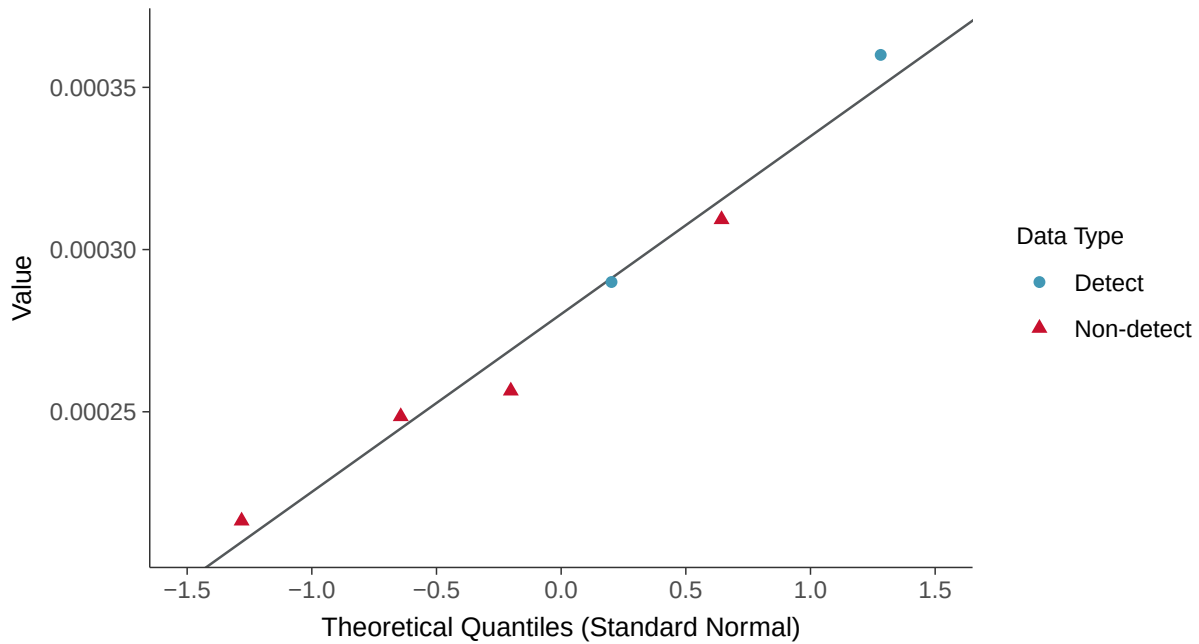
Boxplot by Season

Beryllium, MW-8 (mg/l)



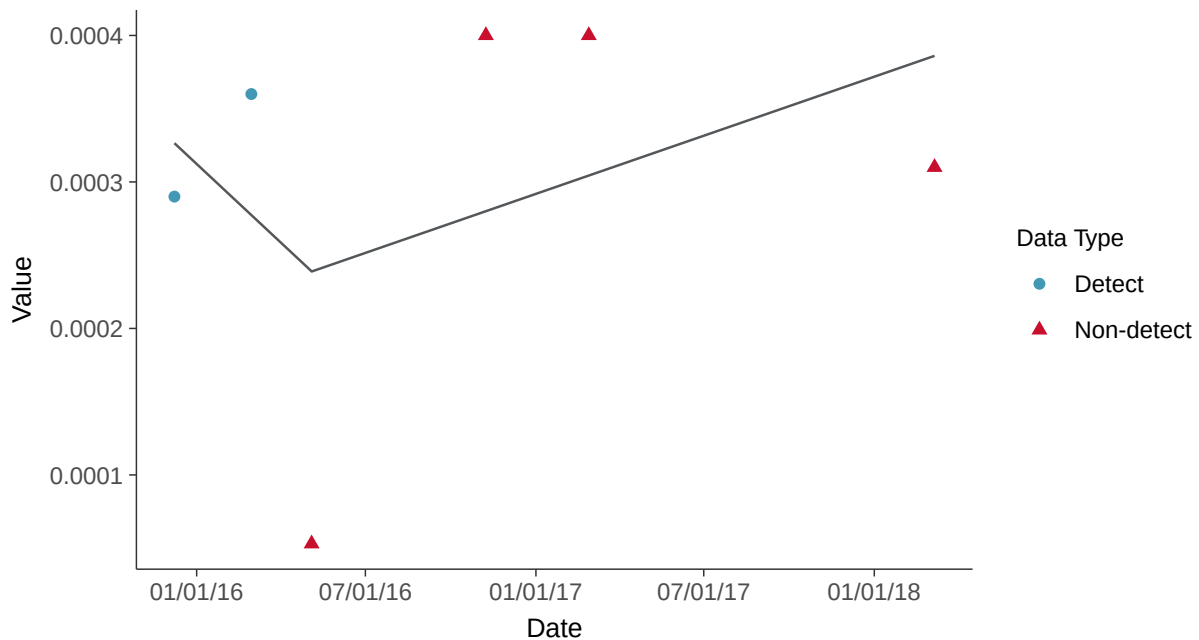
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

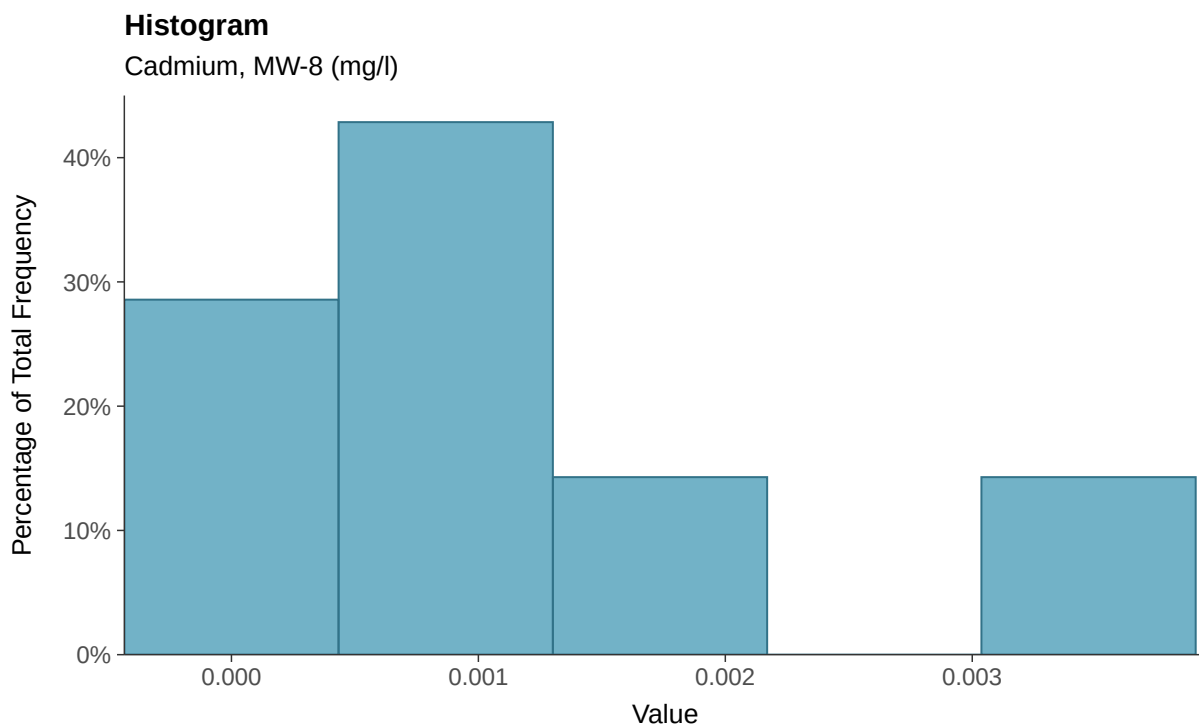
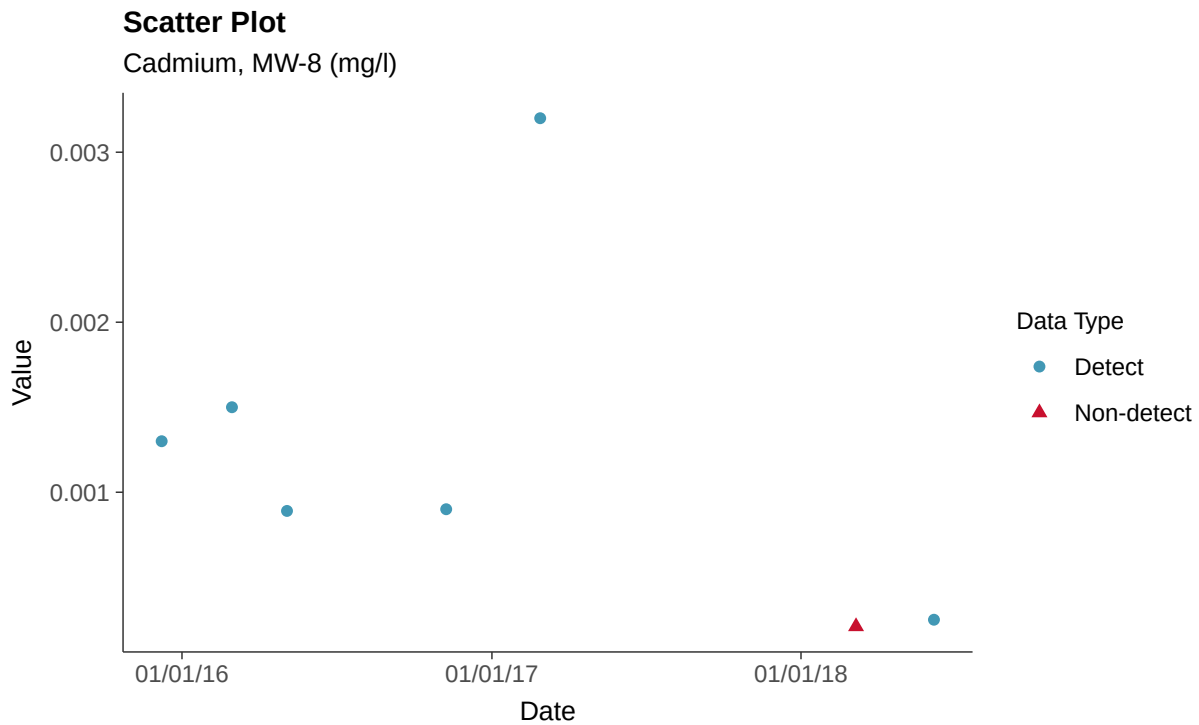
Beryllium, MW-8 (mg/l)





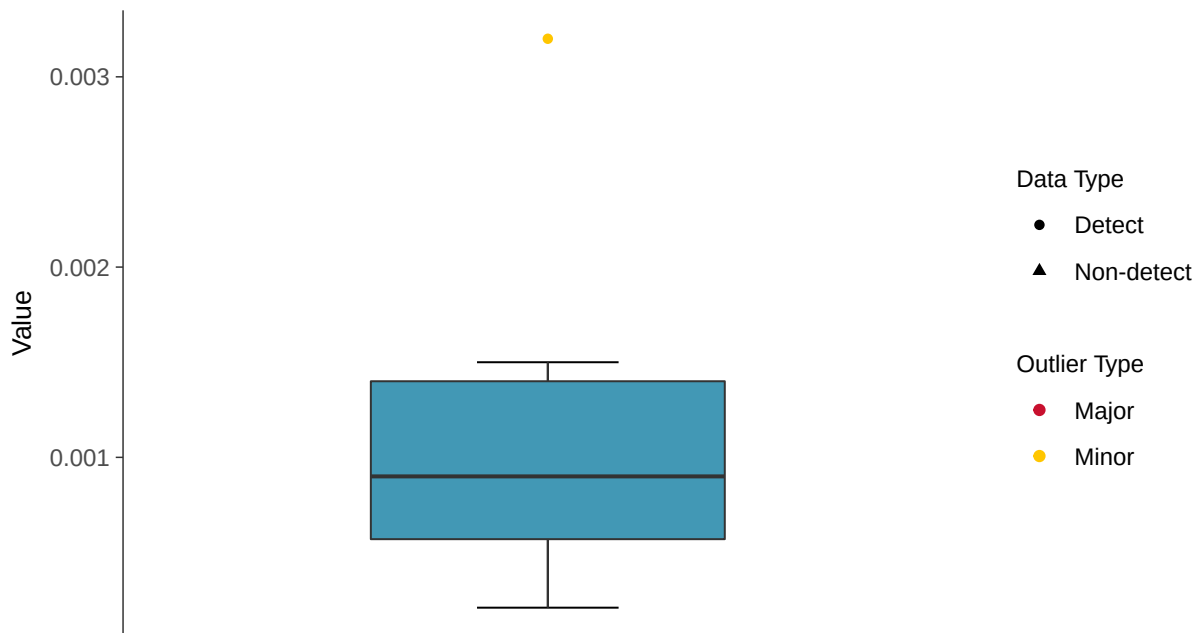
Appendix IV: Cadmium, MW-8

ID: 3_2_109



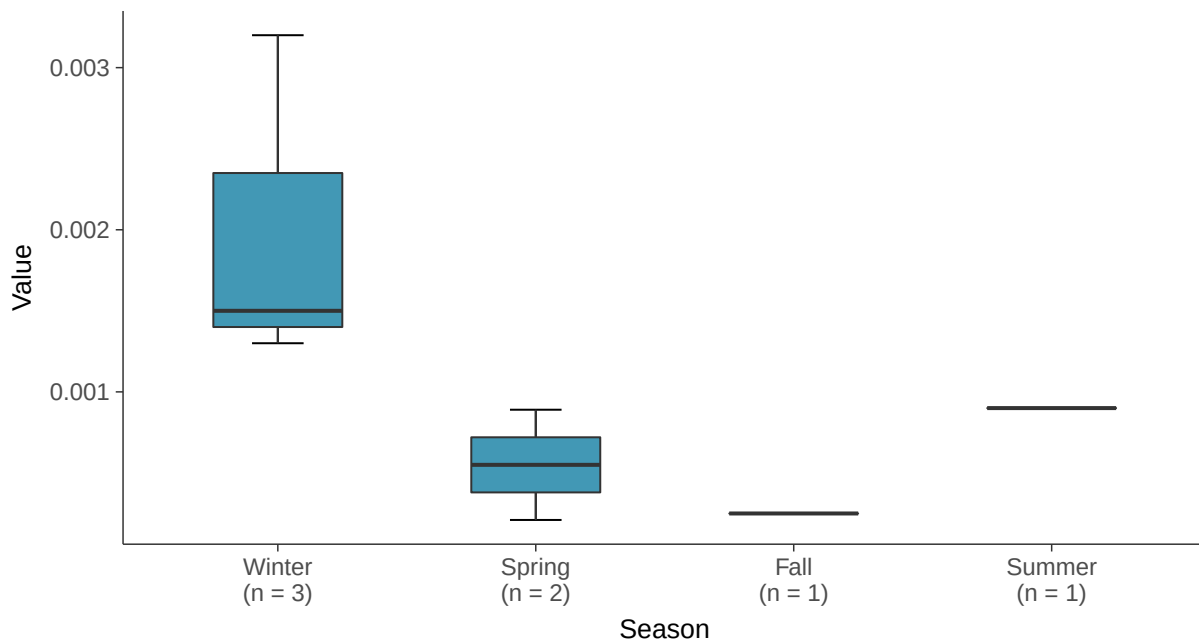
Boxplot

Cadmium, MW-8 (mg/l)



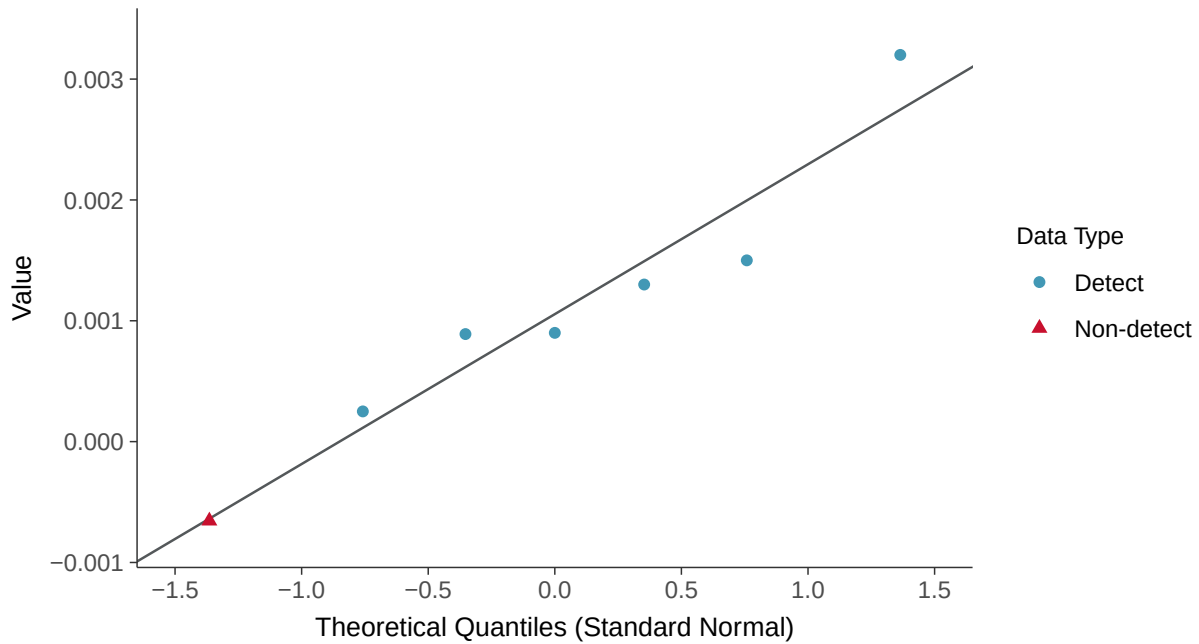
Boxplot by Season

Cadmium, MW-8 (mg/l)



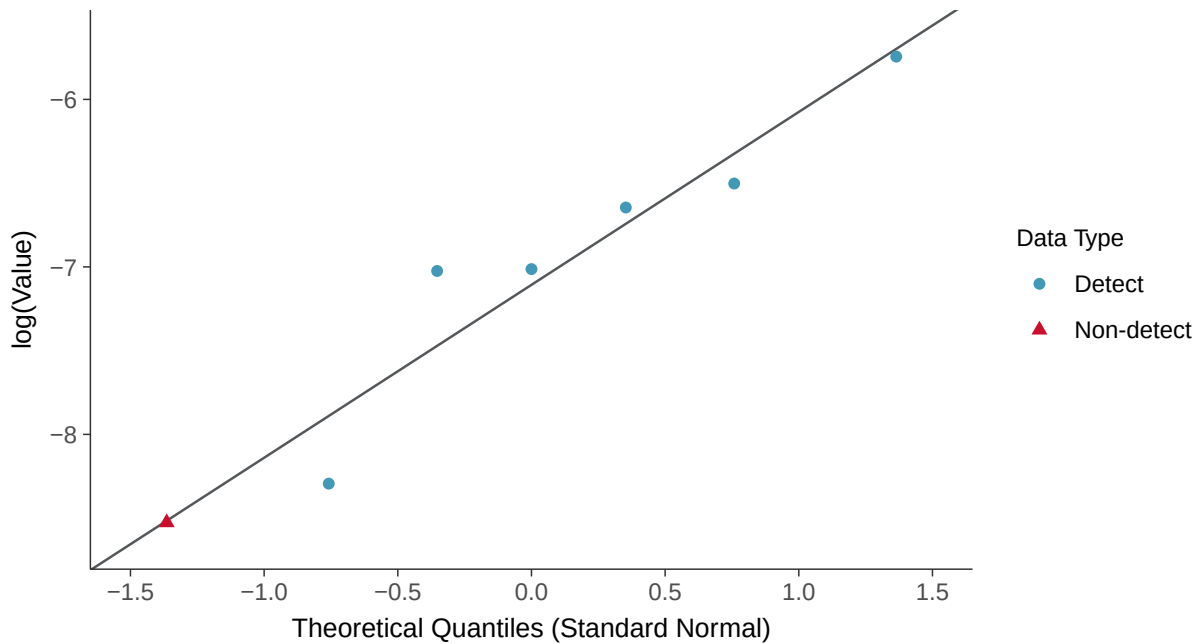
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-8 (mg/l)



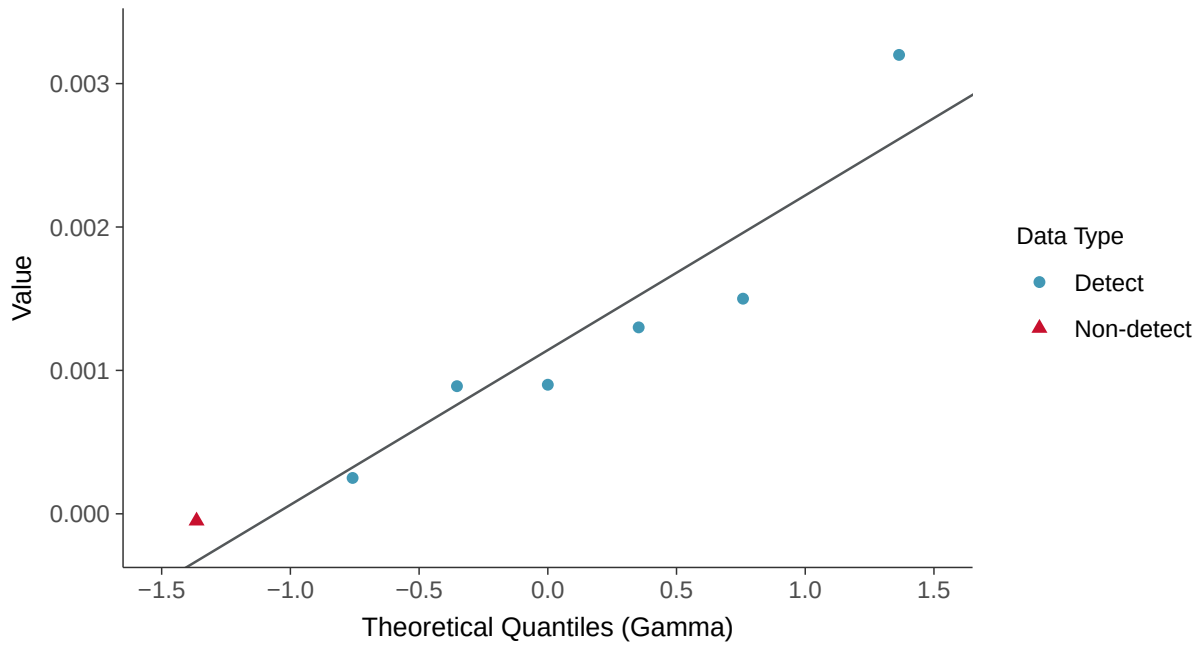
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-8 (mg/l)



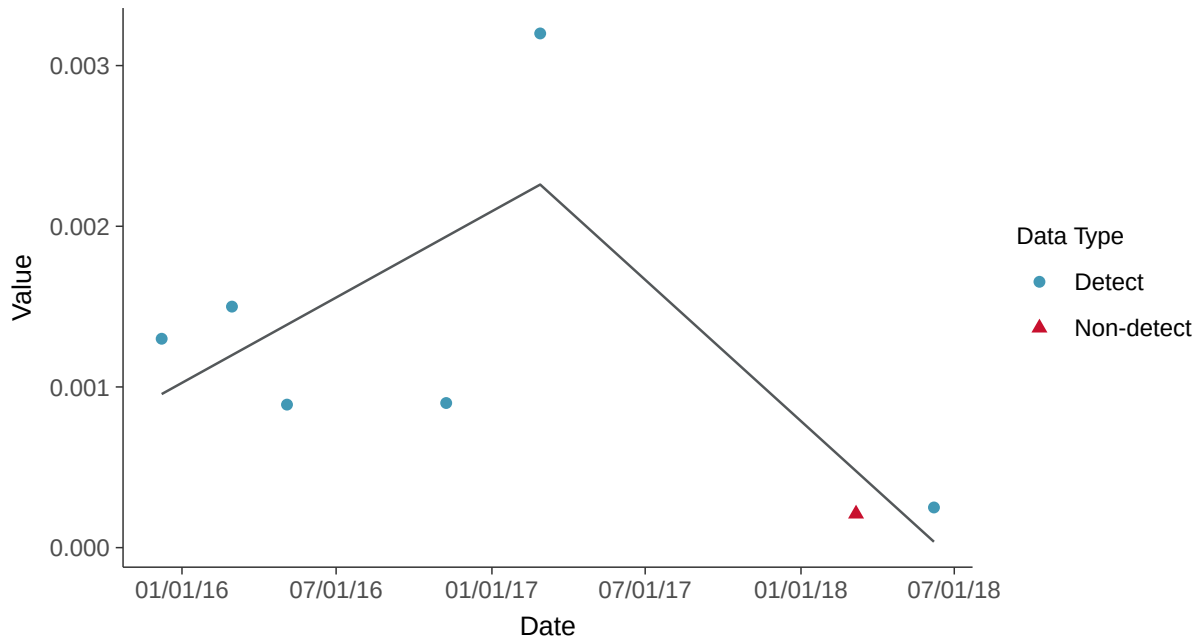
Gamma Q-Q plot using ROS Imputed Estimates

Cadmium, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

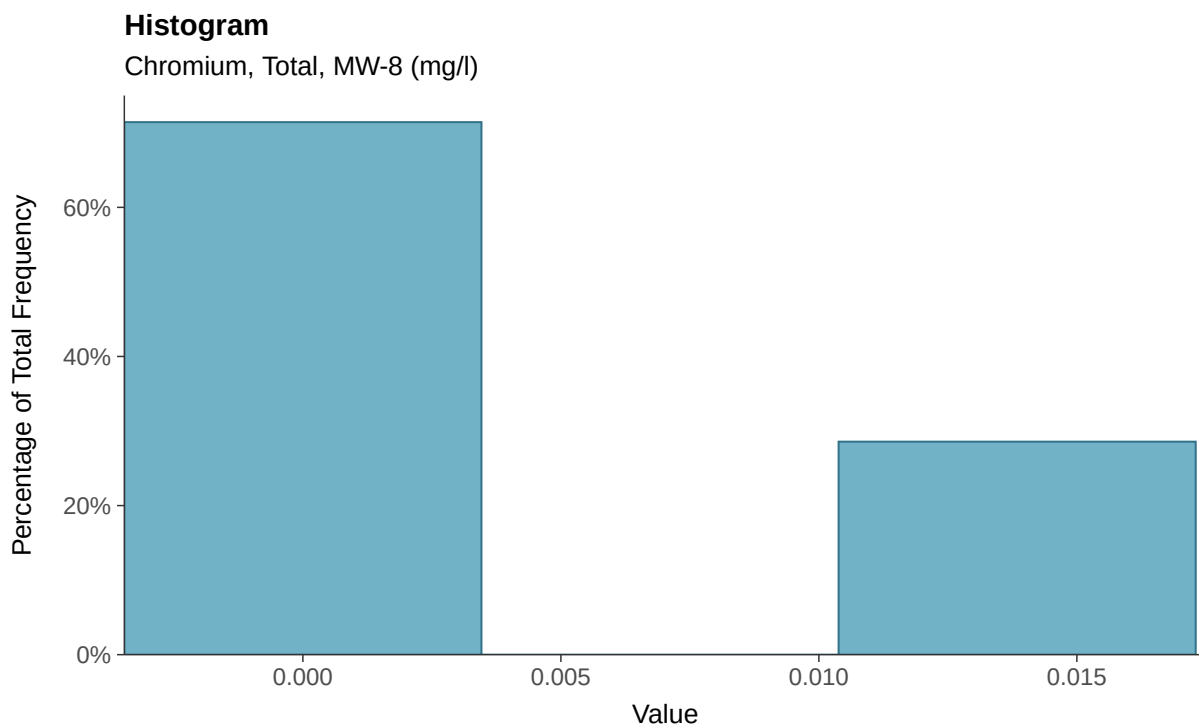
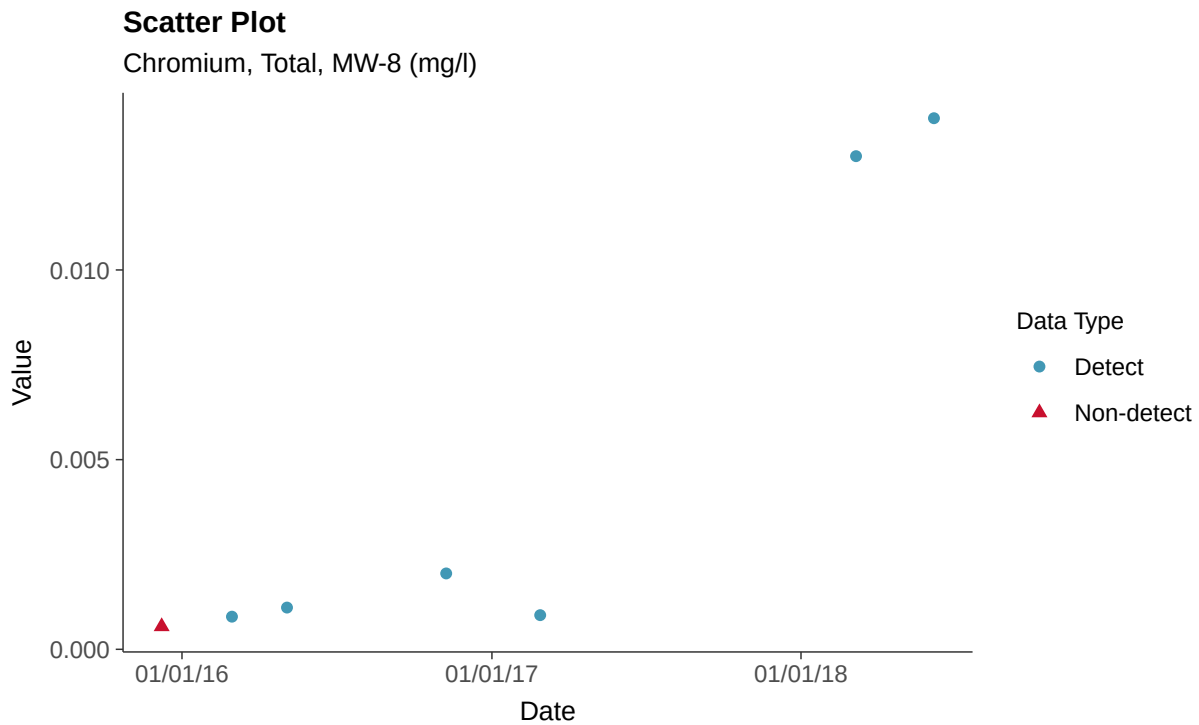
Cadmium, MW-8 (mg/l)

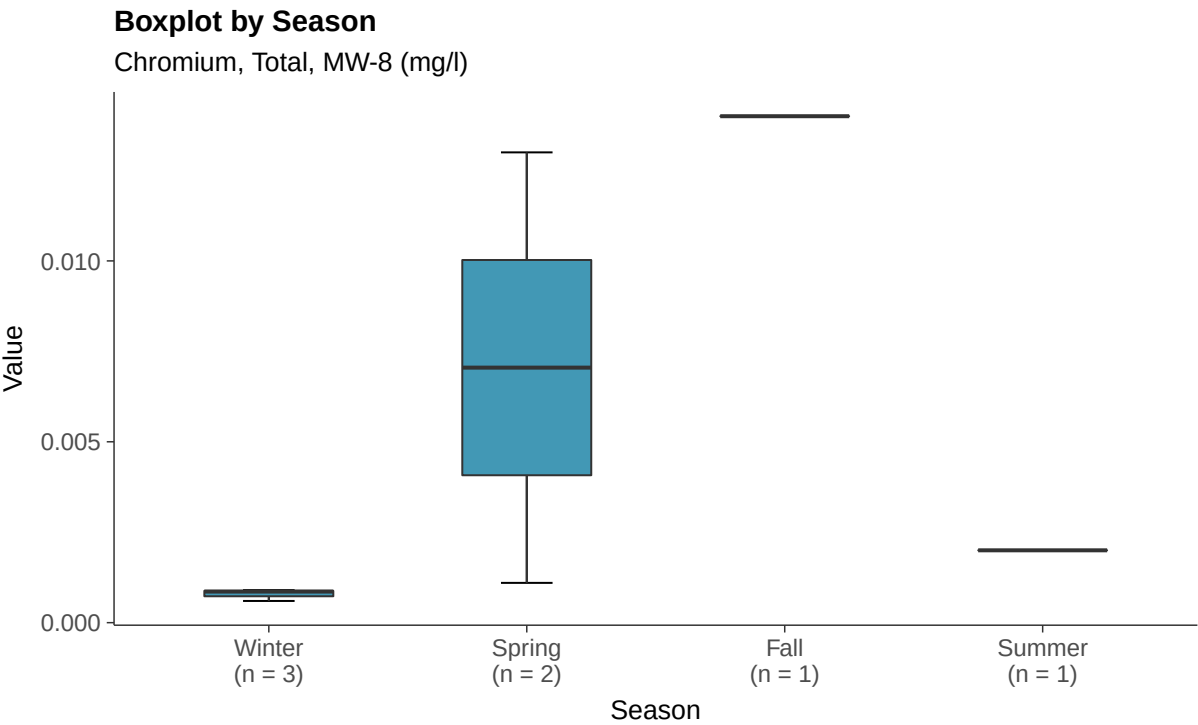
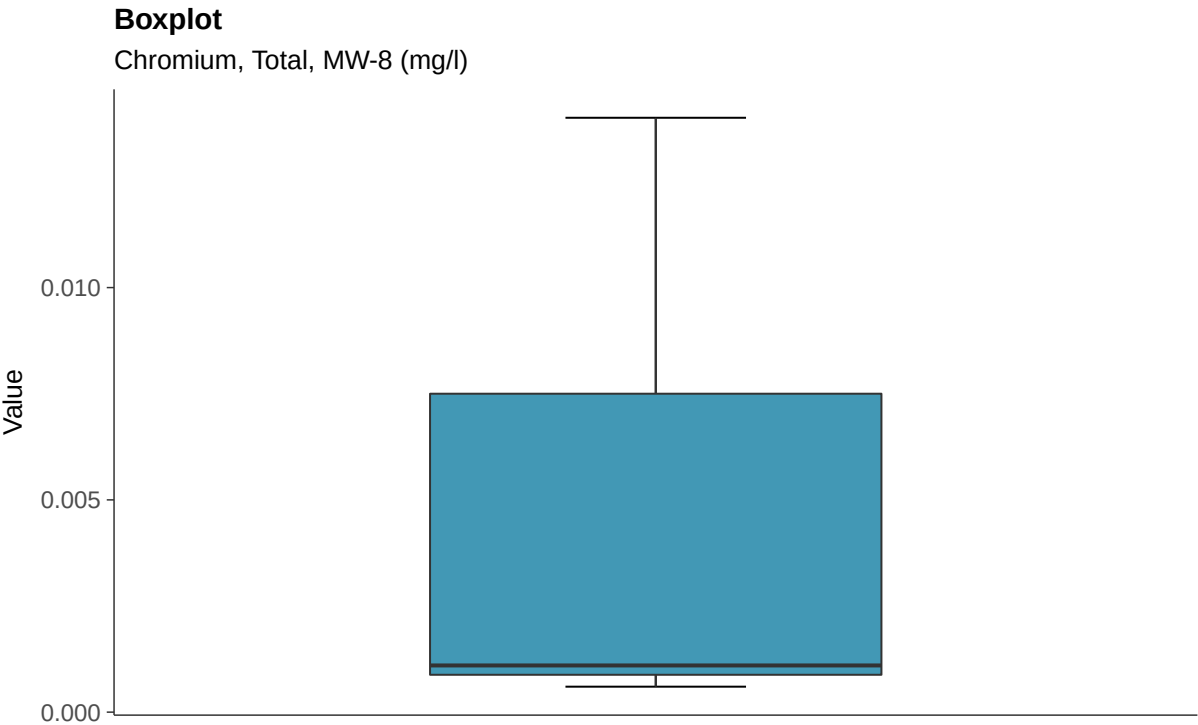




Appendix IV: Chromium, Total, MW-8

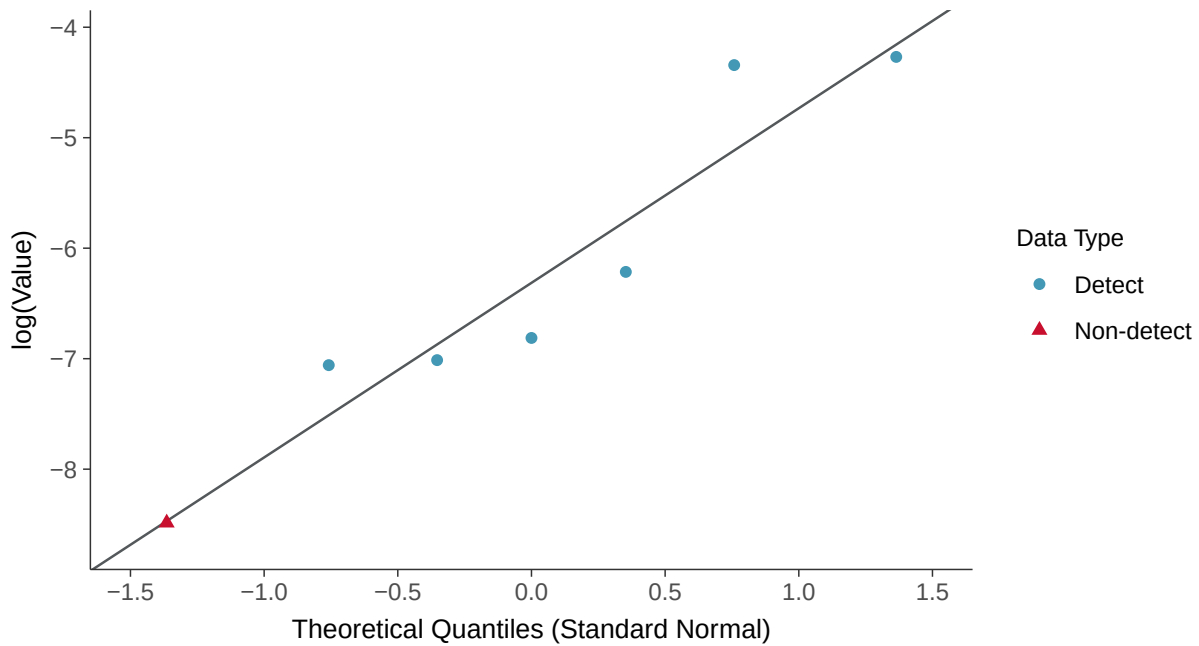
ID: 3_2_112





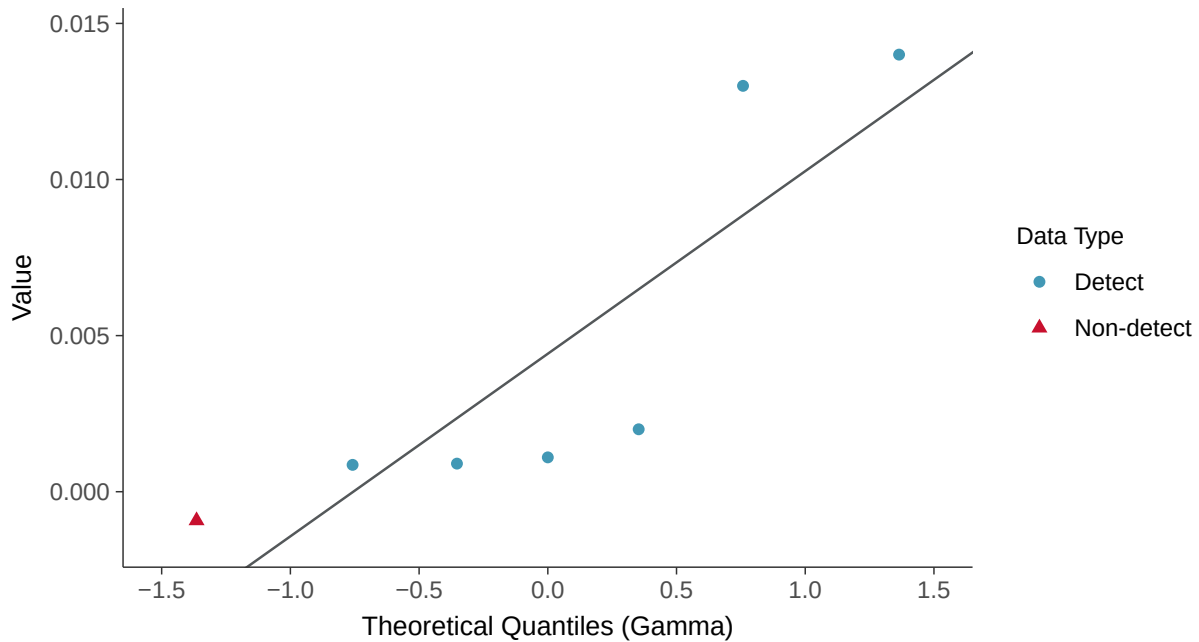
Lognormal Q-Q plot using ROS Imputed Estimates

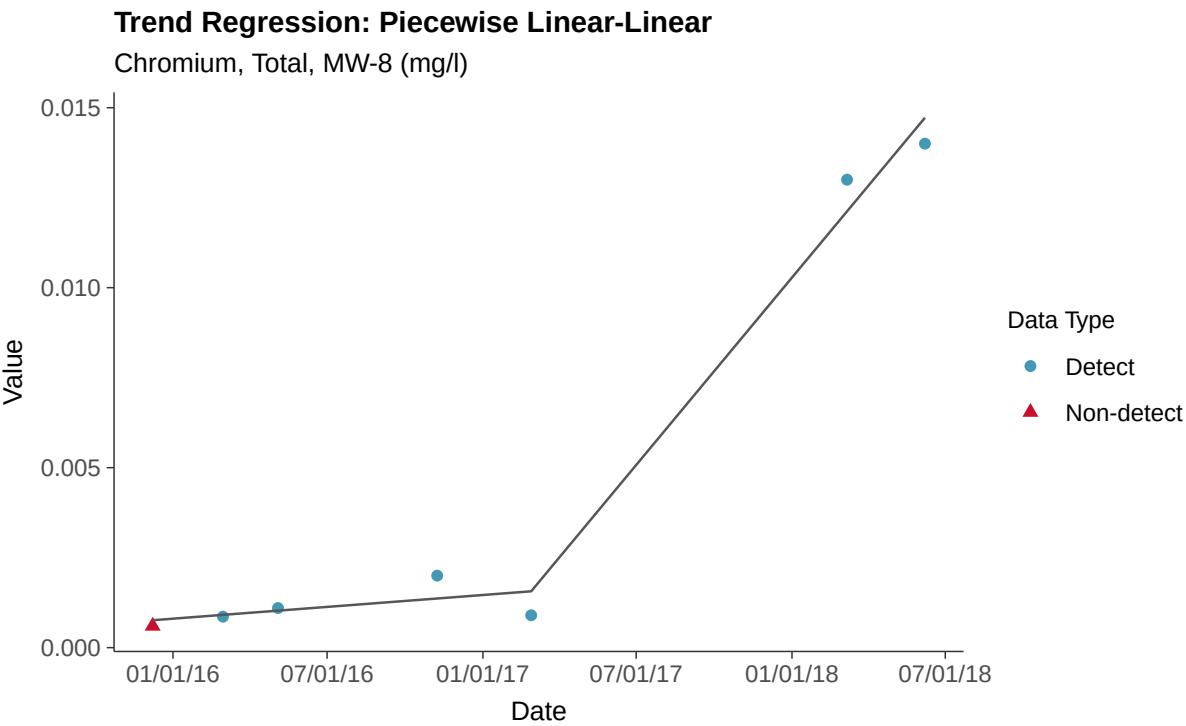
Chromium, Total, MW-8 (mg/l)



Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-8 (mg/l)

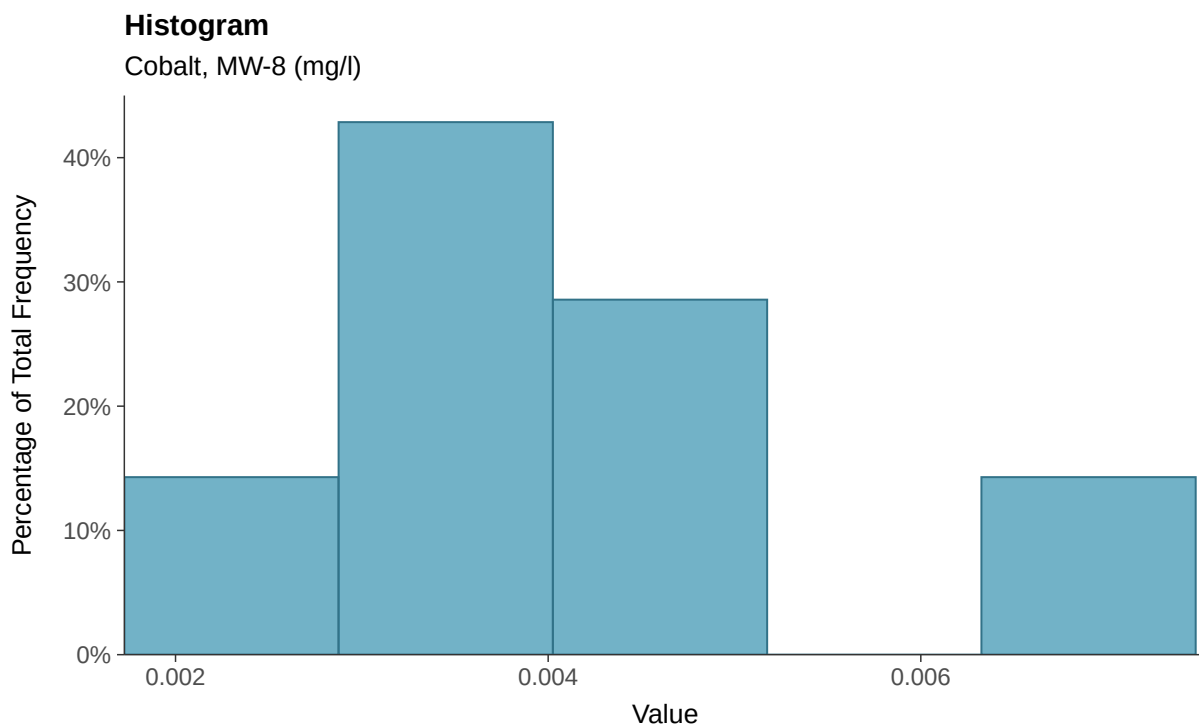
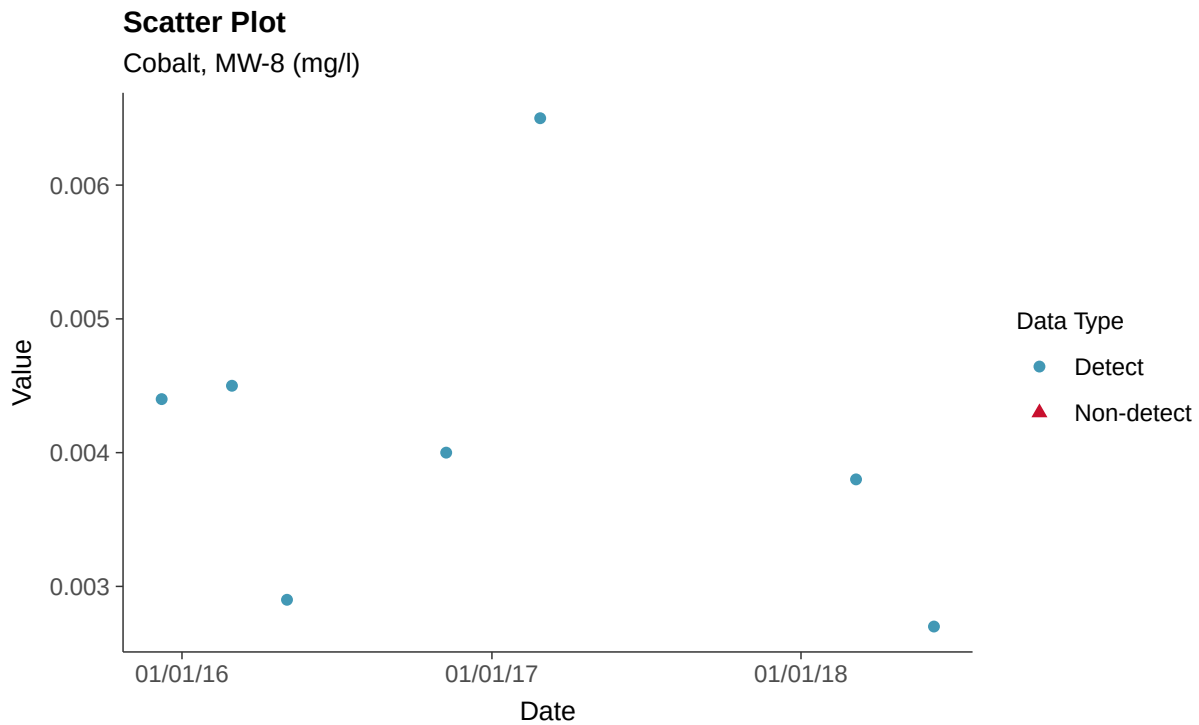


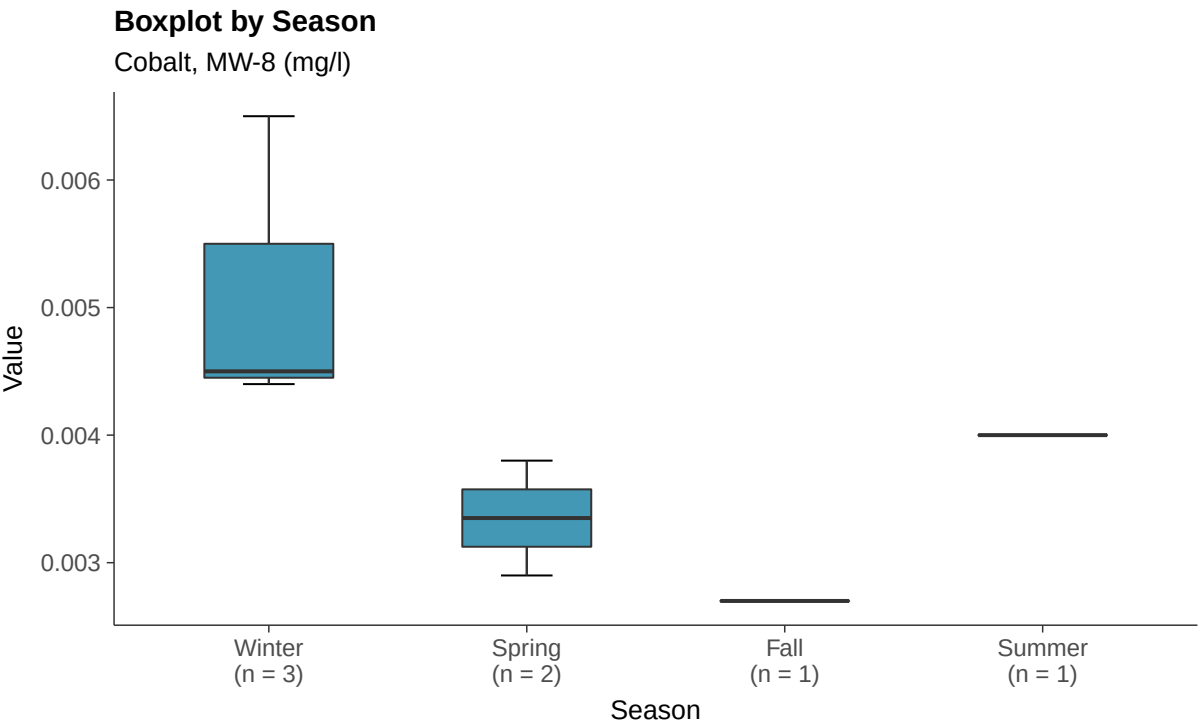
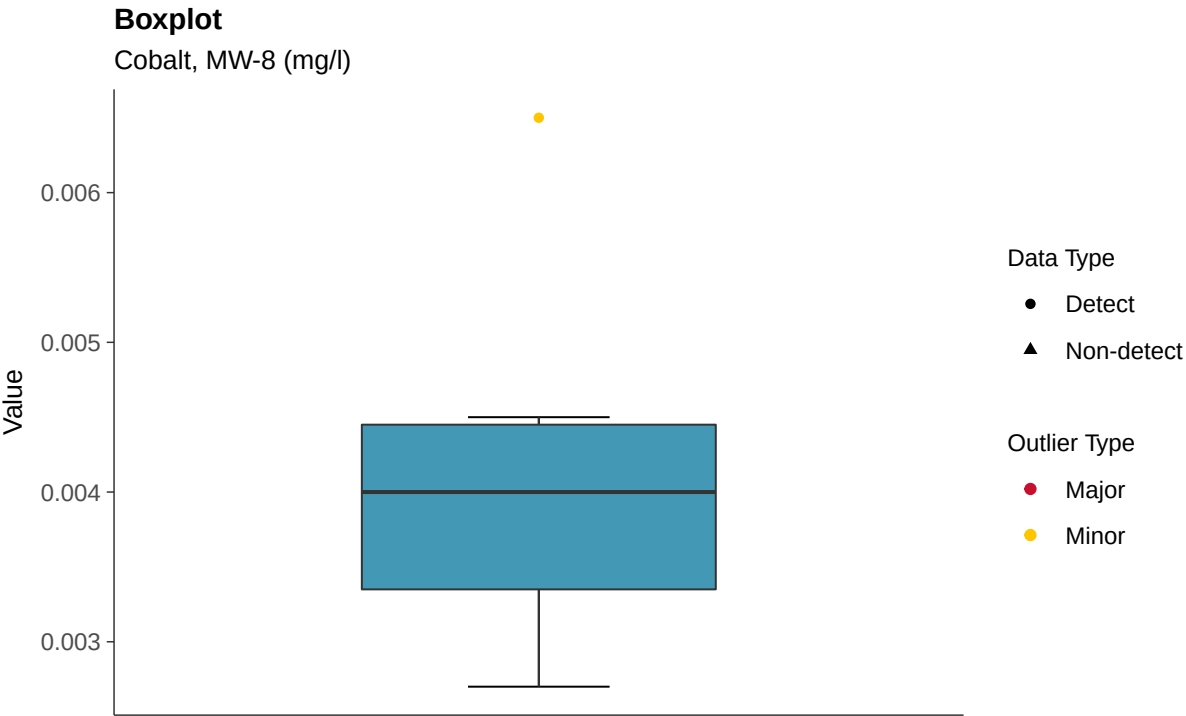




Appendix IV: Cobalt, MW-8

ID: 3_2_113

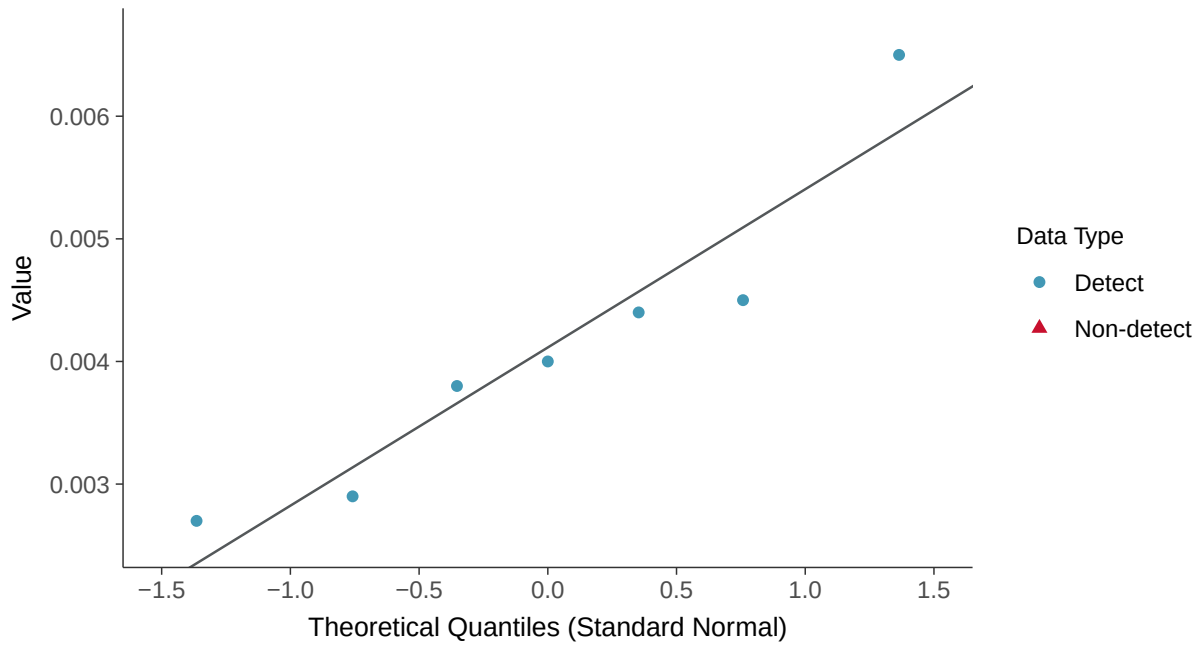






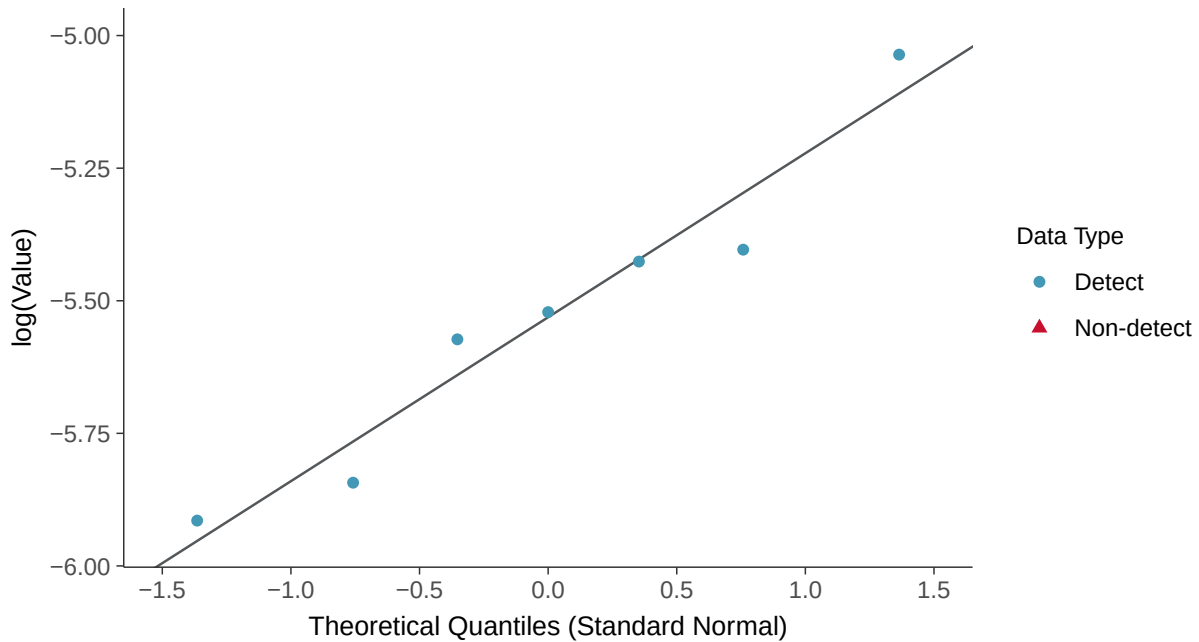
Normal Q-Q plot

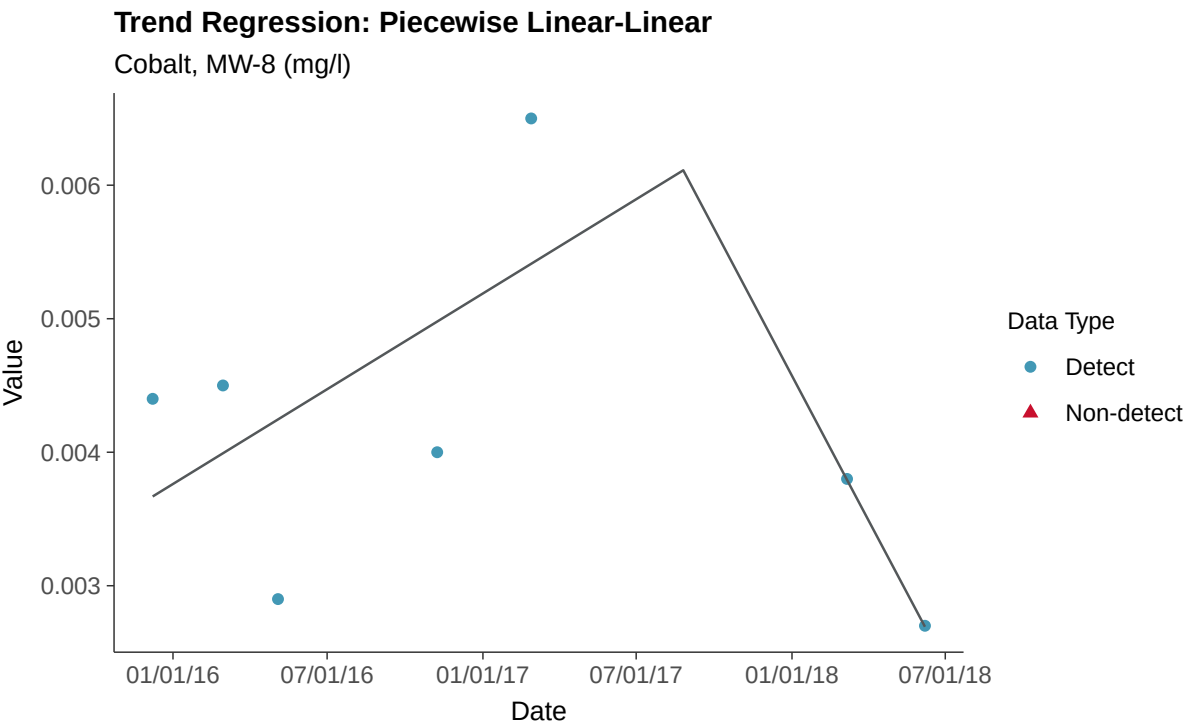
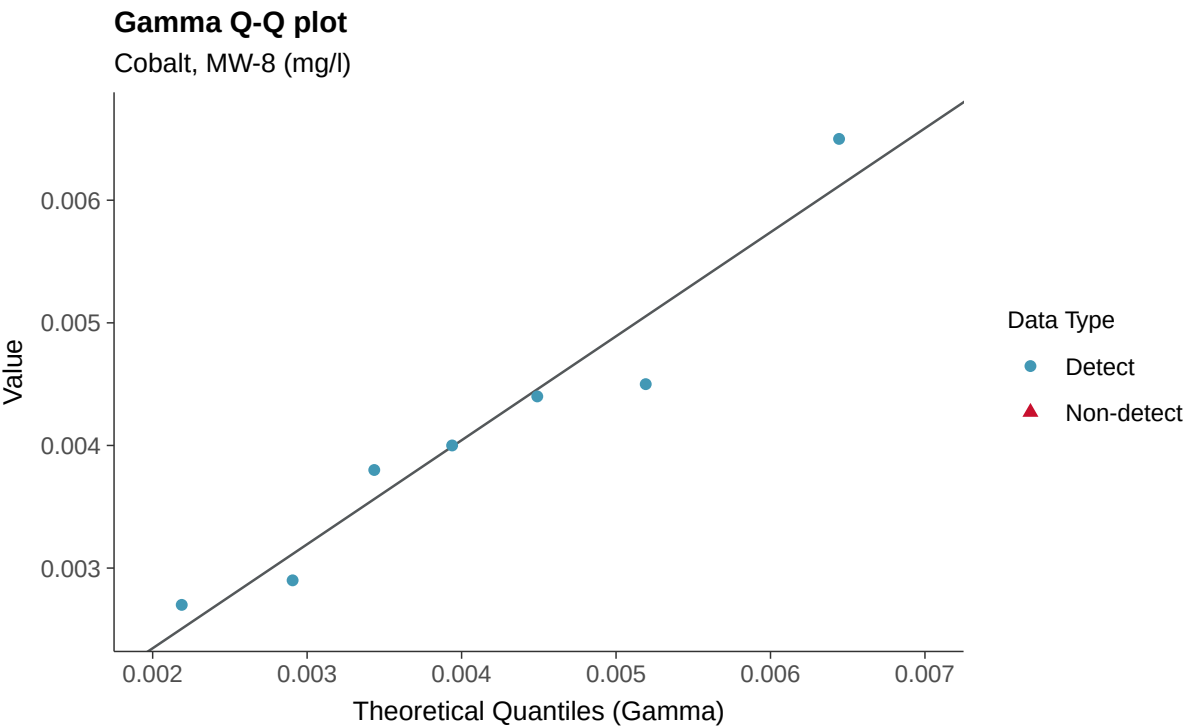
Cobalt, MW-8 (mg/l)

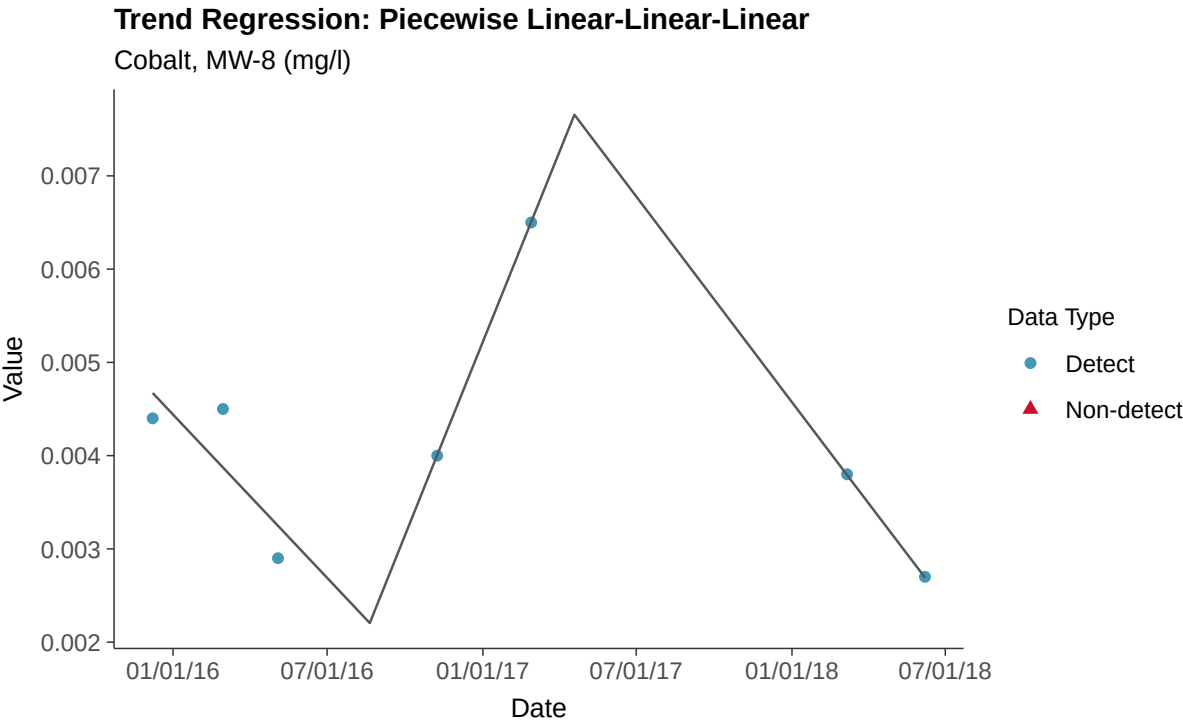


Lognormal Q-Q plot

Cobalt, MW-8 (mg/l)



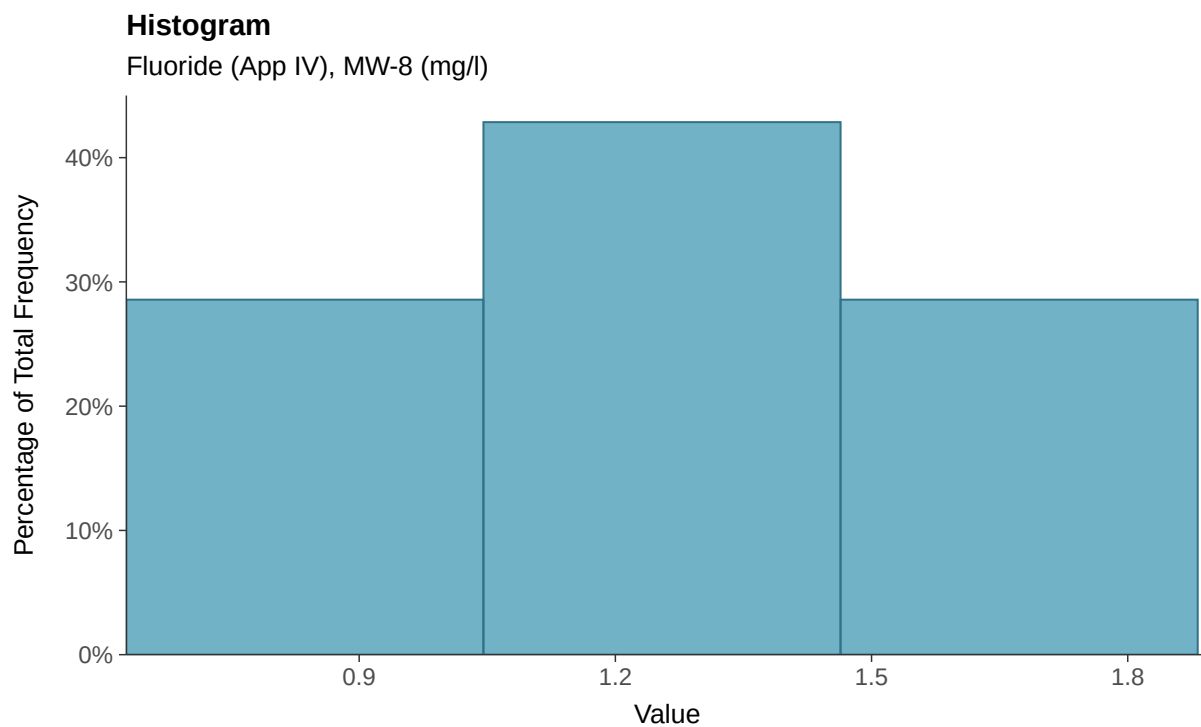
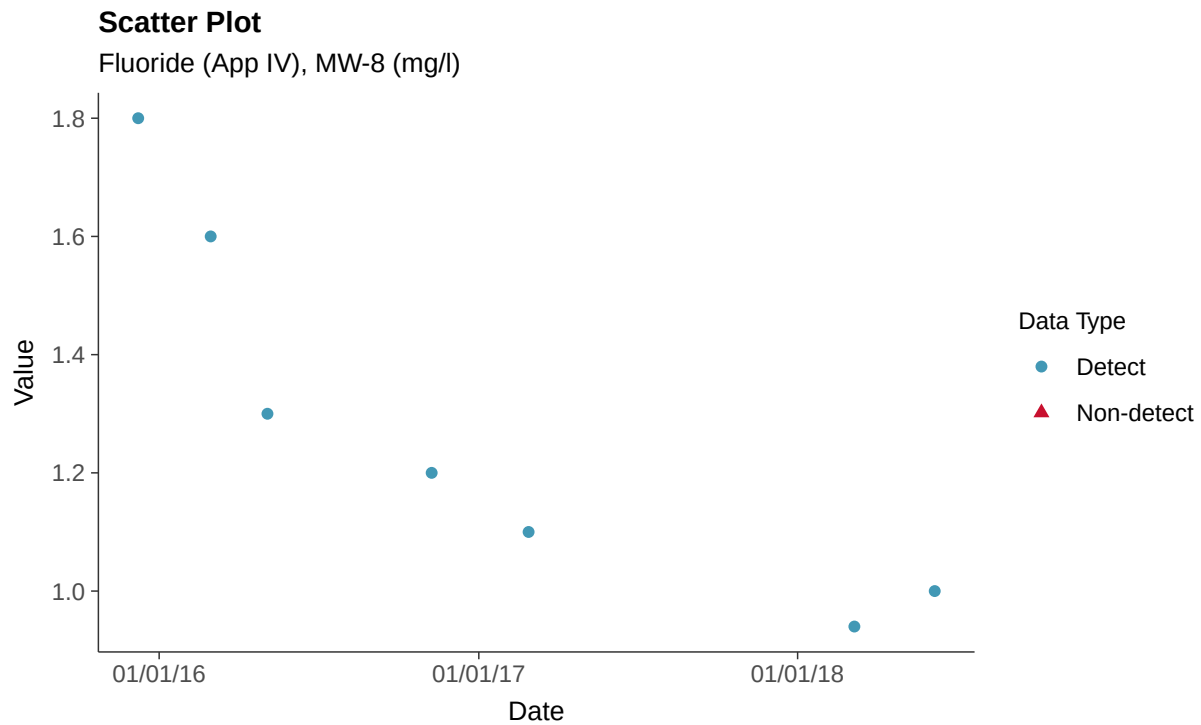






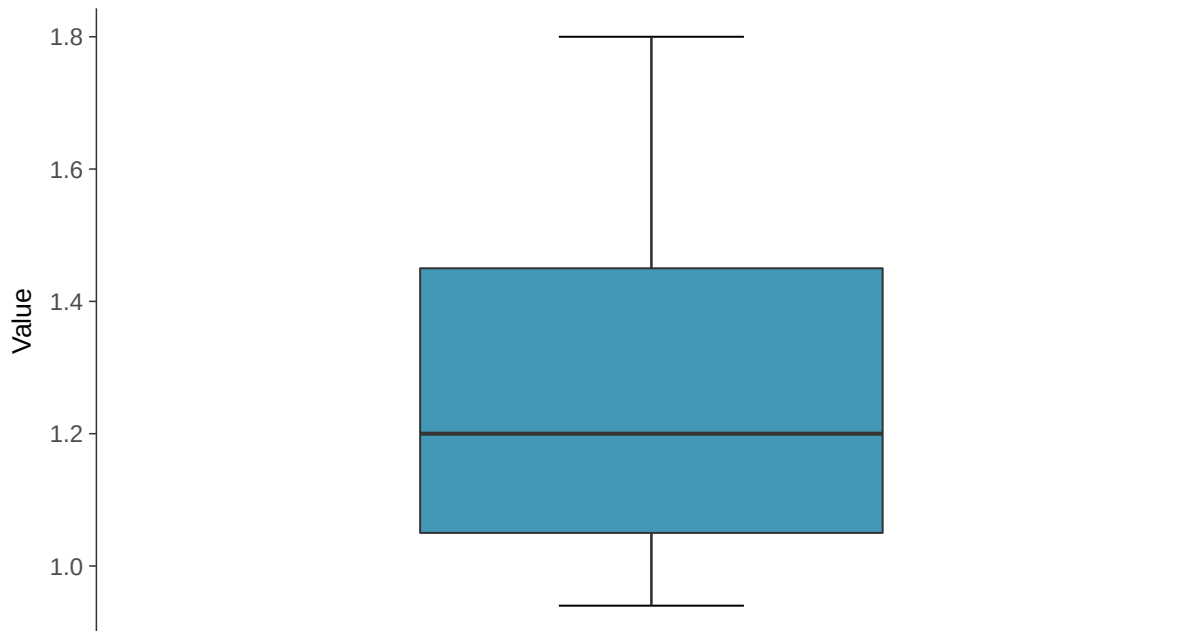
Appendix IV: Fluoride (App IV), MW-8

ID: 3_2_116



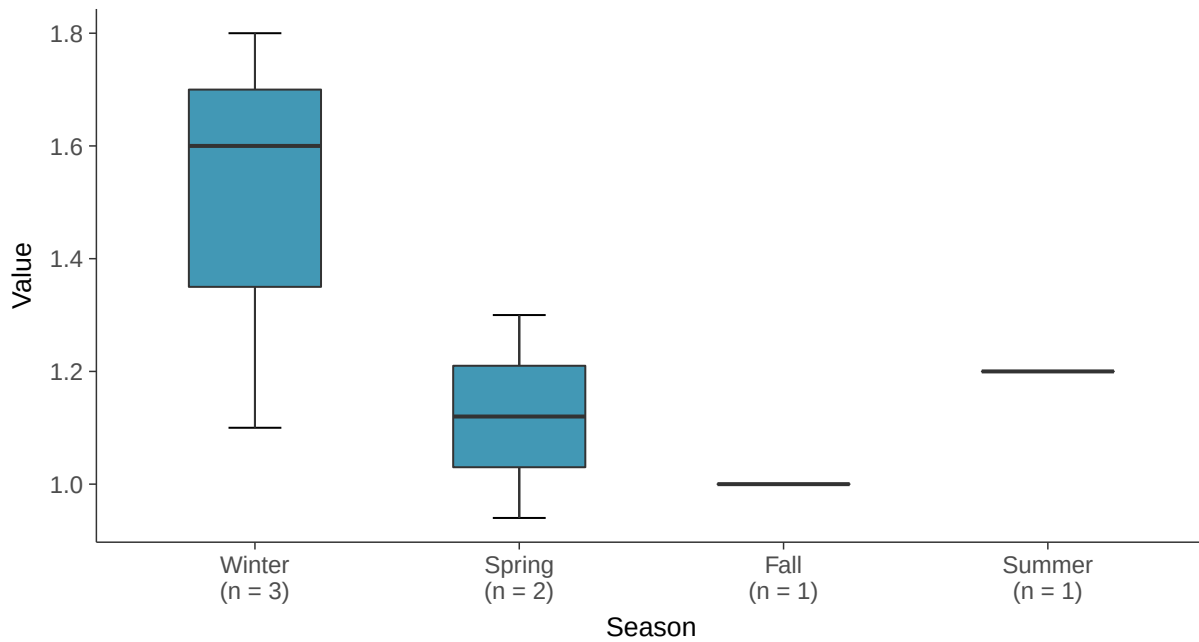
Boxplot

Fluoride (App IV), MW-8 (mg/l)



Boxplot by Season

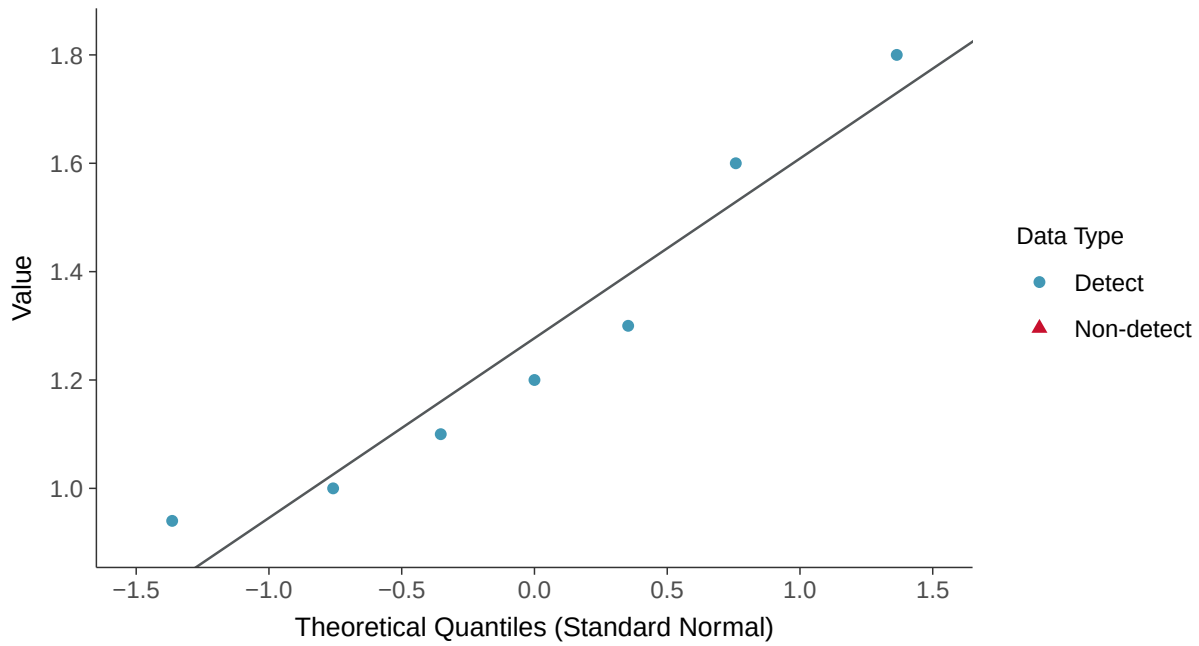
Fluoride (App IV), MW-8 (mg/l)





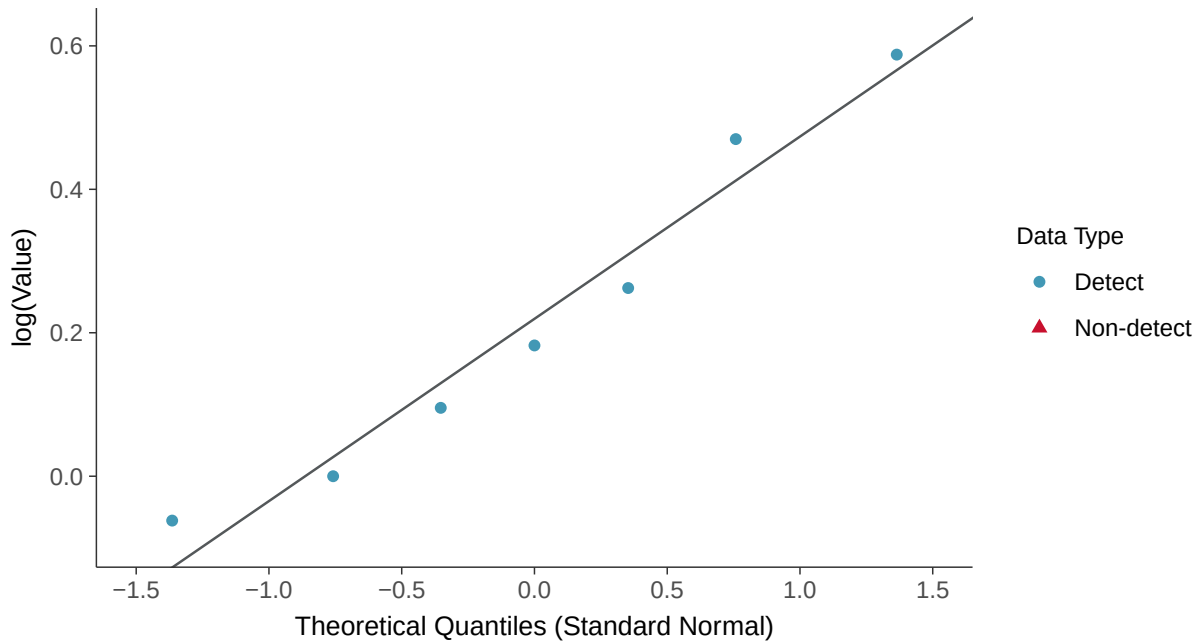
Normal Q-Q plot

Fluoride (App IV), MW-8 (mg/l)



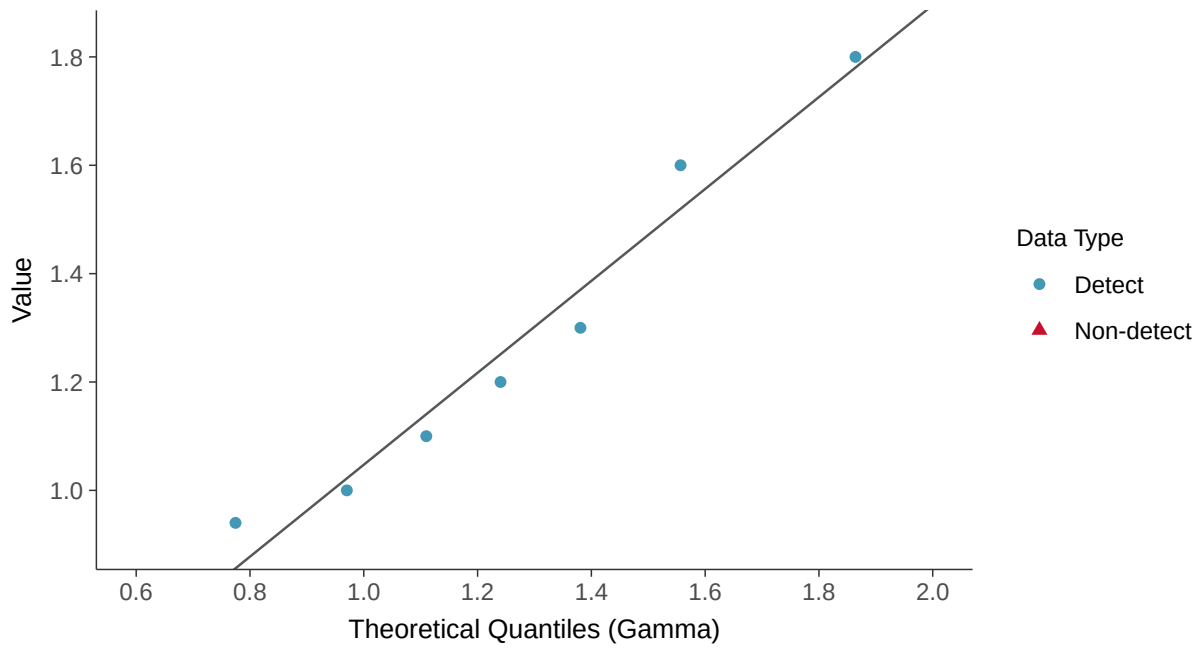
Lognormal Q-Q plot

Fluoride (App IV), MW-8 (mg/l)



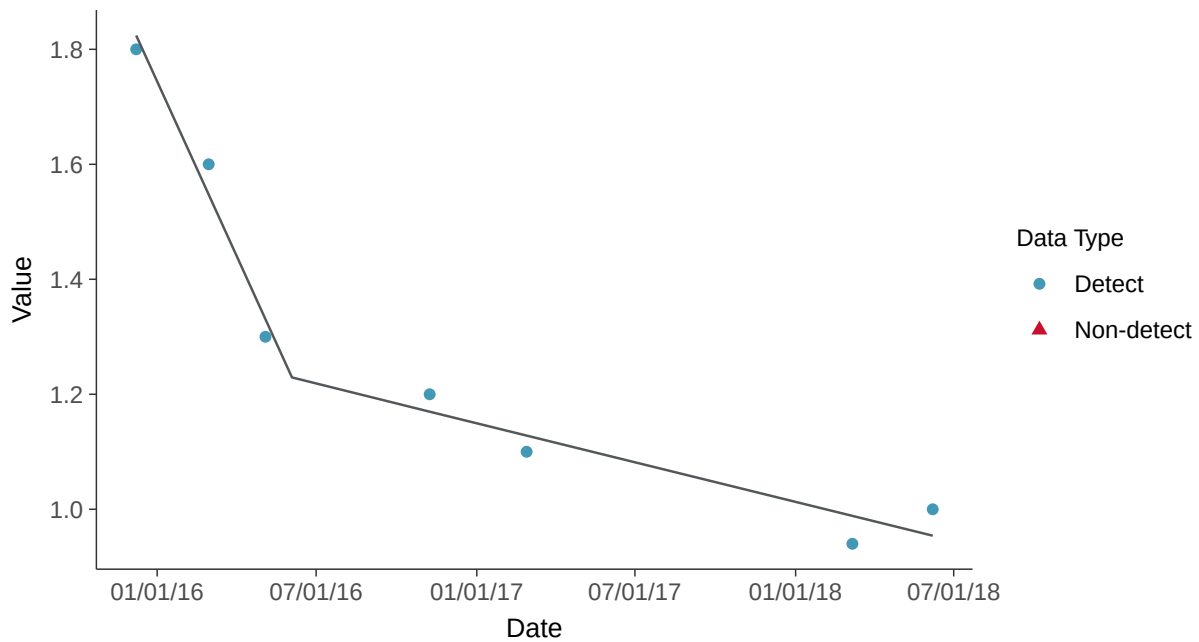
Gamma Q-Q plot

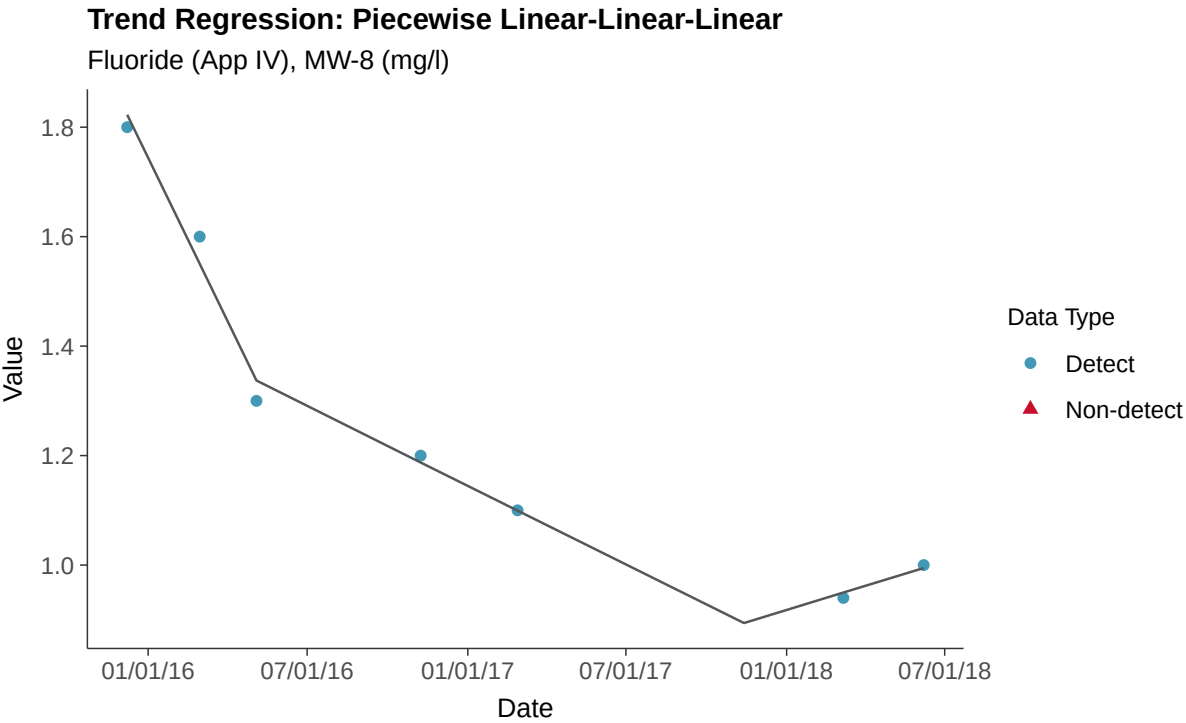
Fluoride (App IV), MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-8 (mg/l)

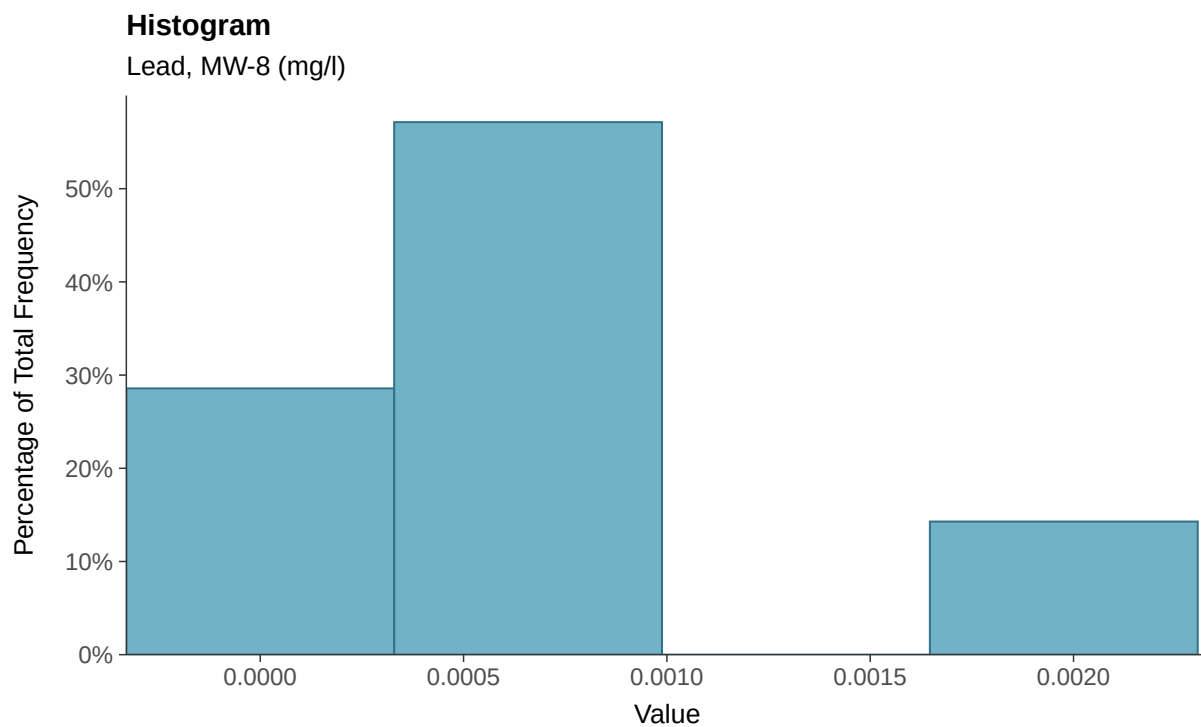
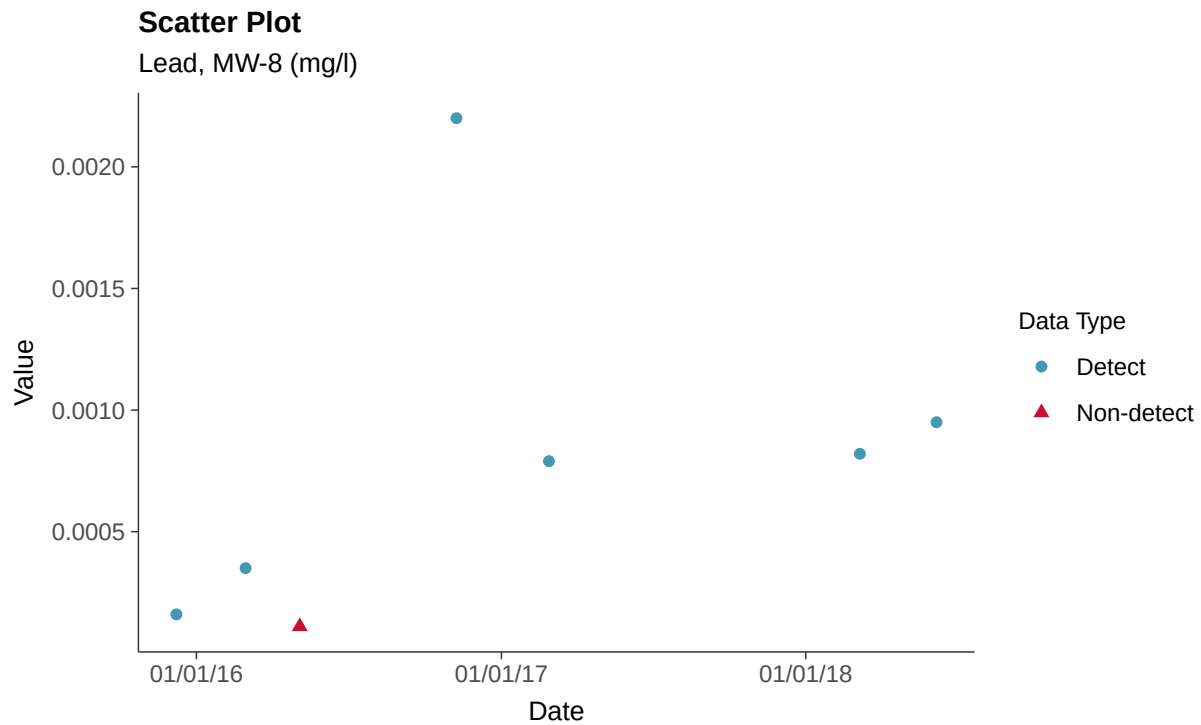


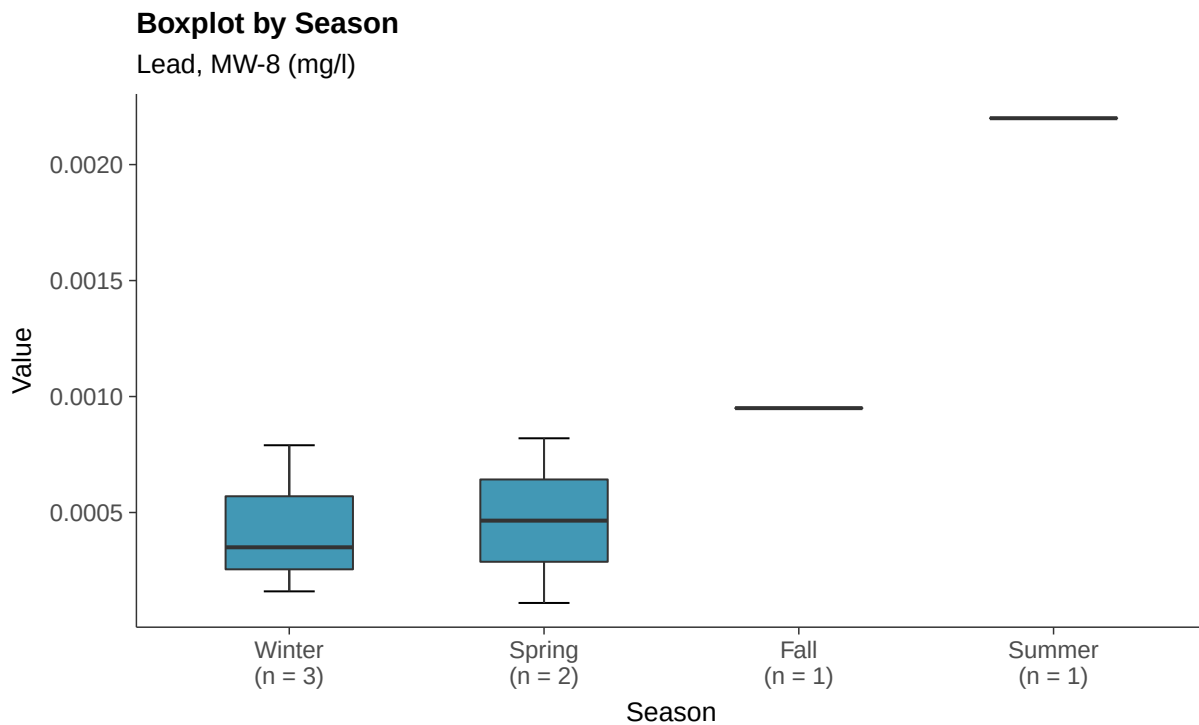
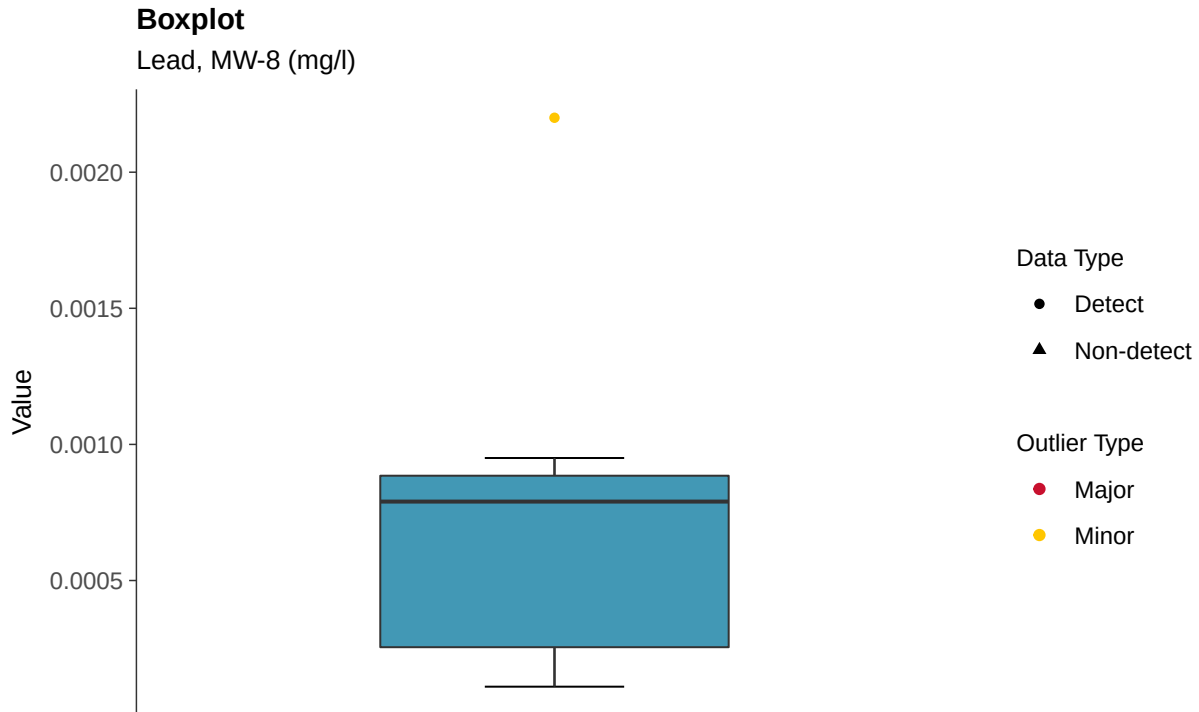




Appendix IV: Lead, MW-8

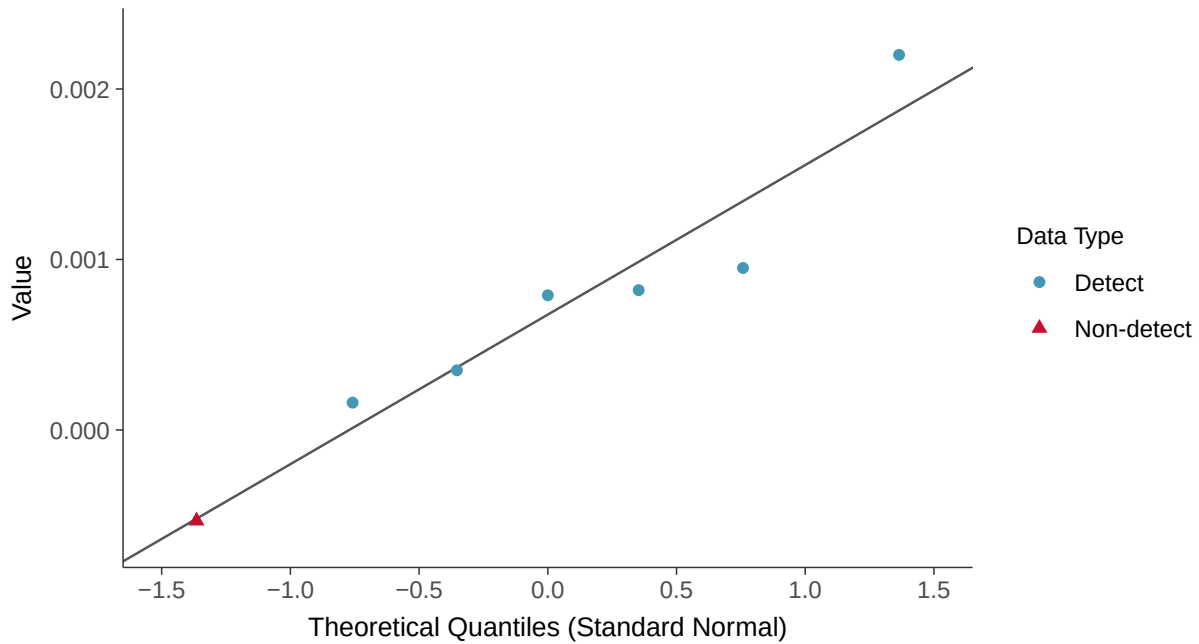
ID: 3_2_117





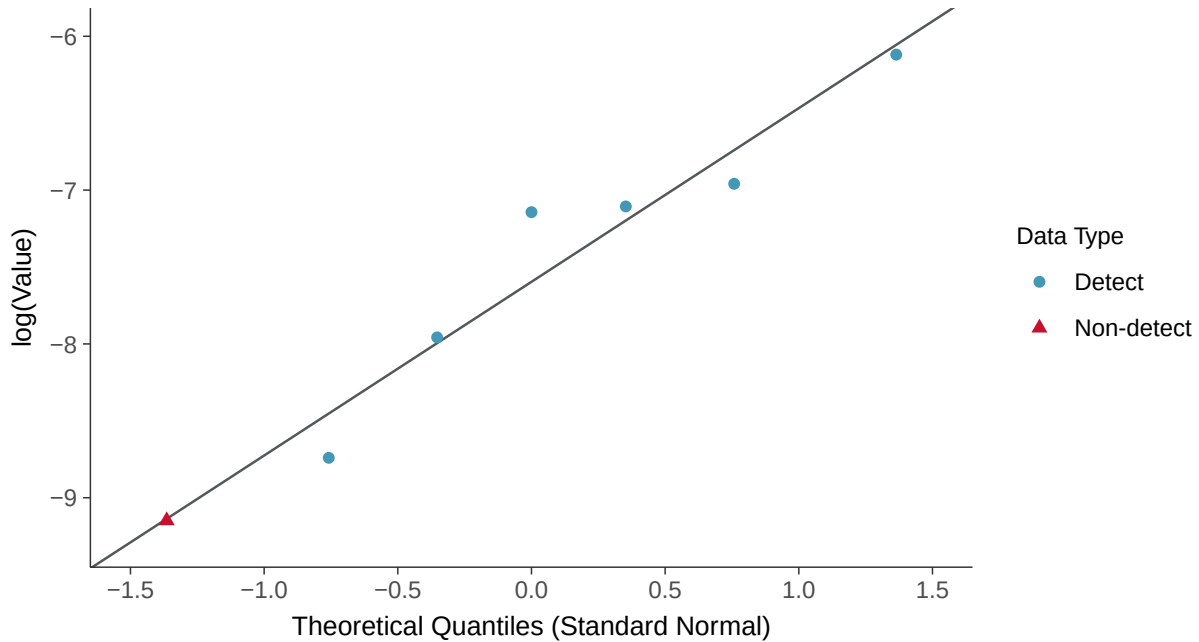
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-8 (mg/l)



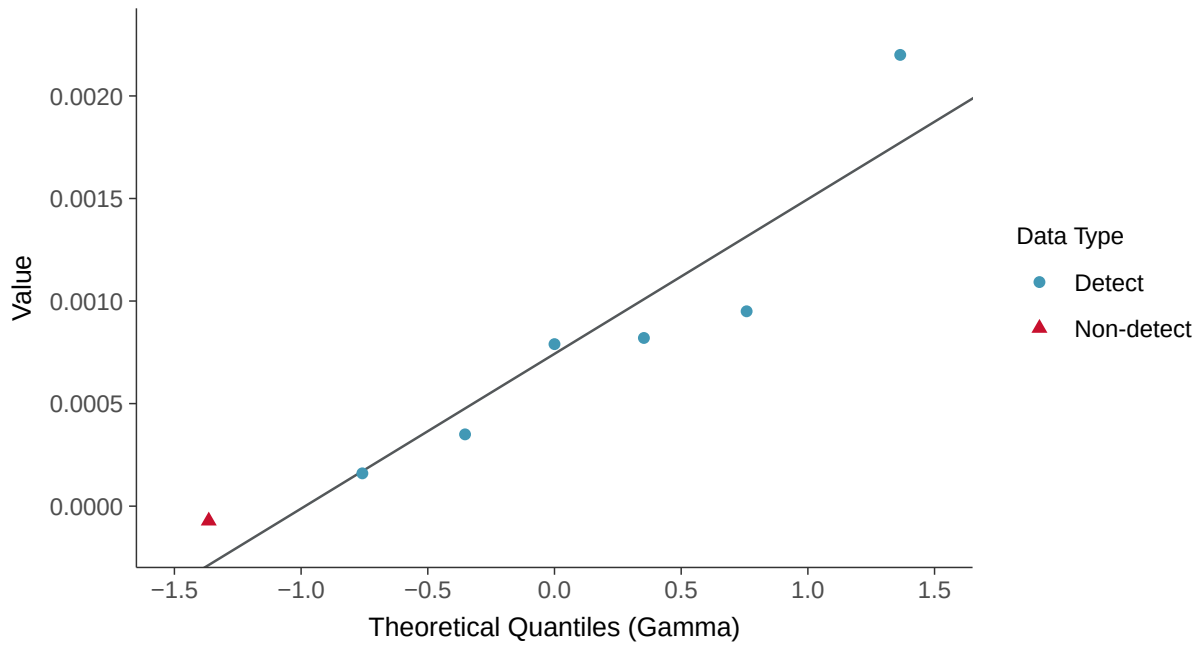
Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-8 (mg/l)



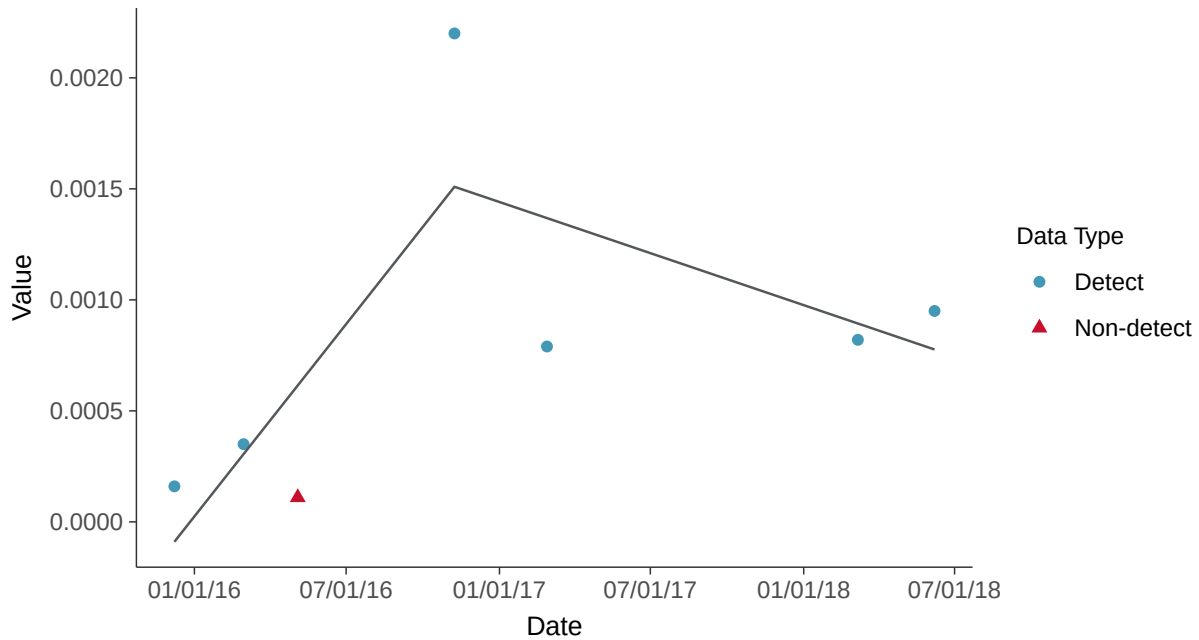
Gamma Q-Q plot using ROS Imputed Estimates

Lead, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

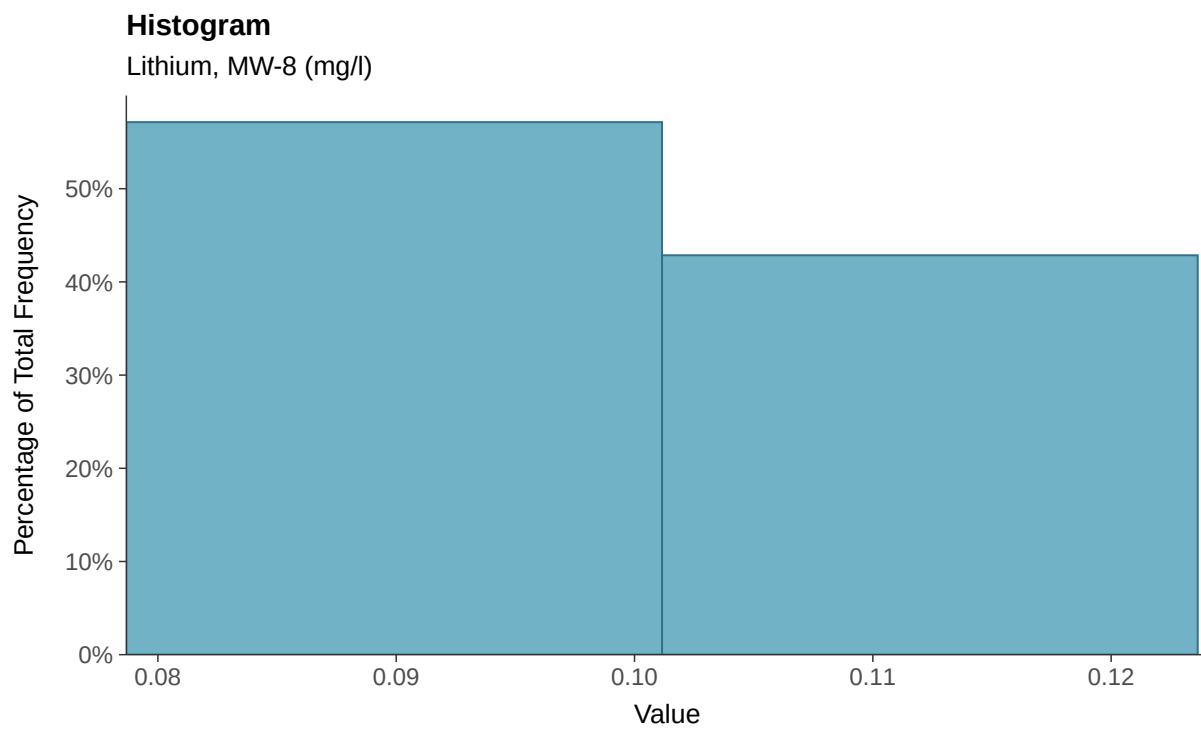
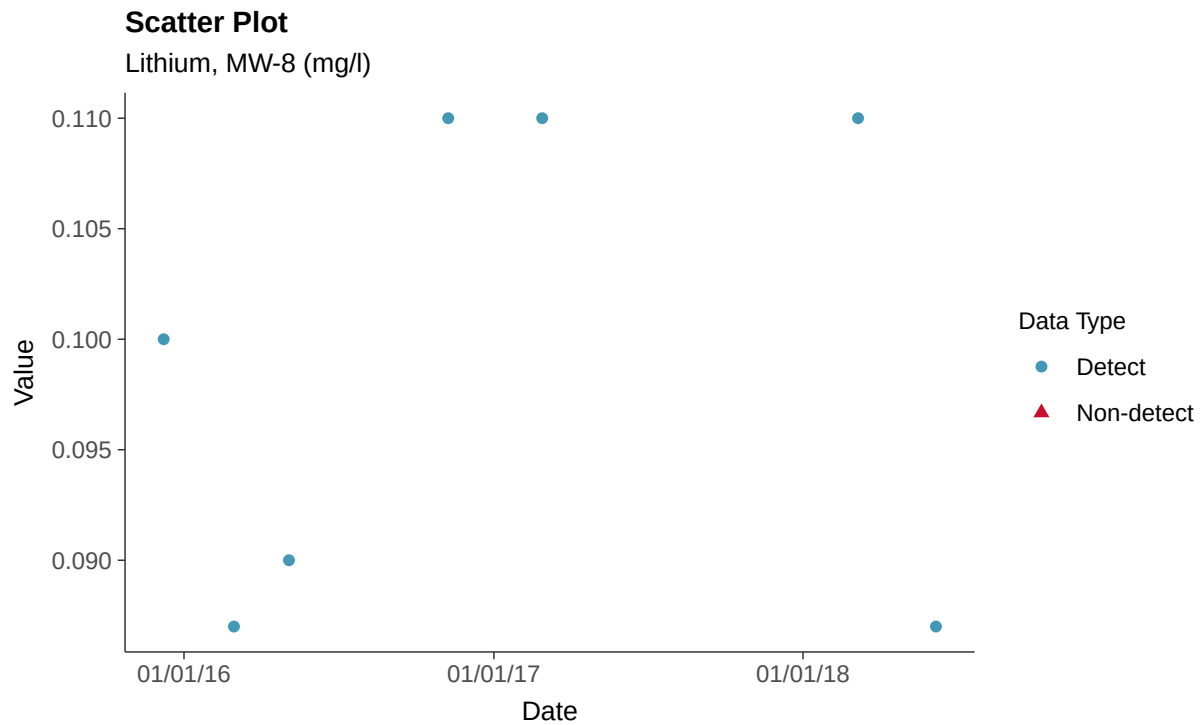
Lead, MW-8 (mg/l)





Appendix IV: Lithium, MW-8

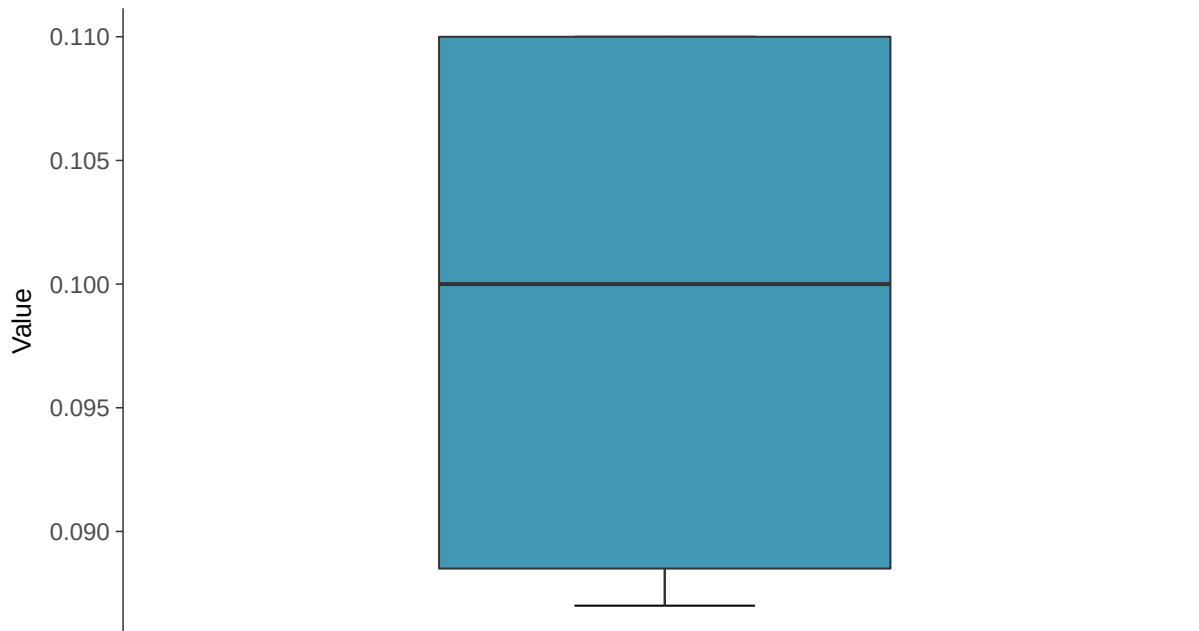
ID: 3_2_118





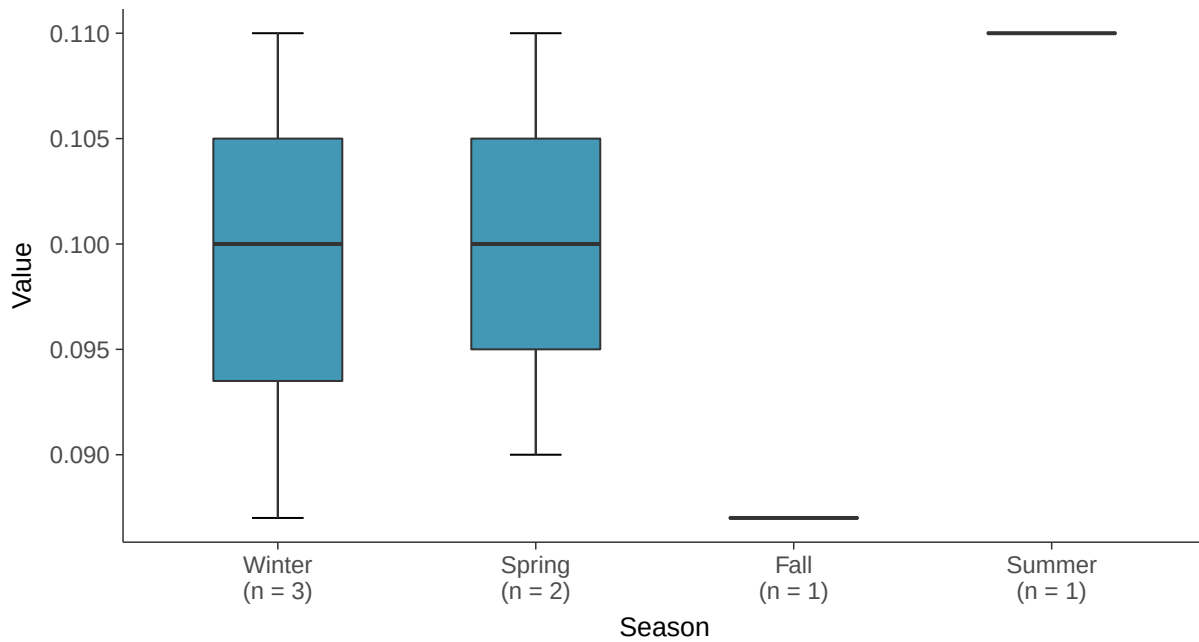
Boxplot

Lithium, MW-8 (mg/l)



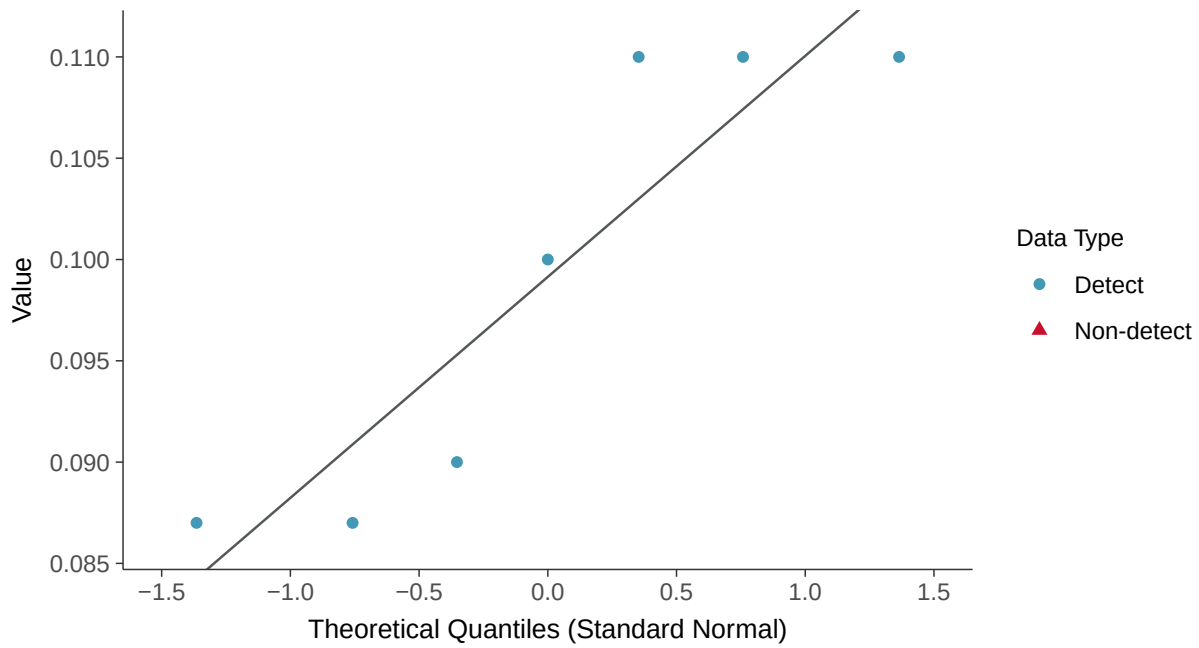
Boxplot by Season

Lithium, MW-8 (mg/l)



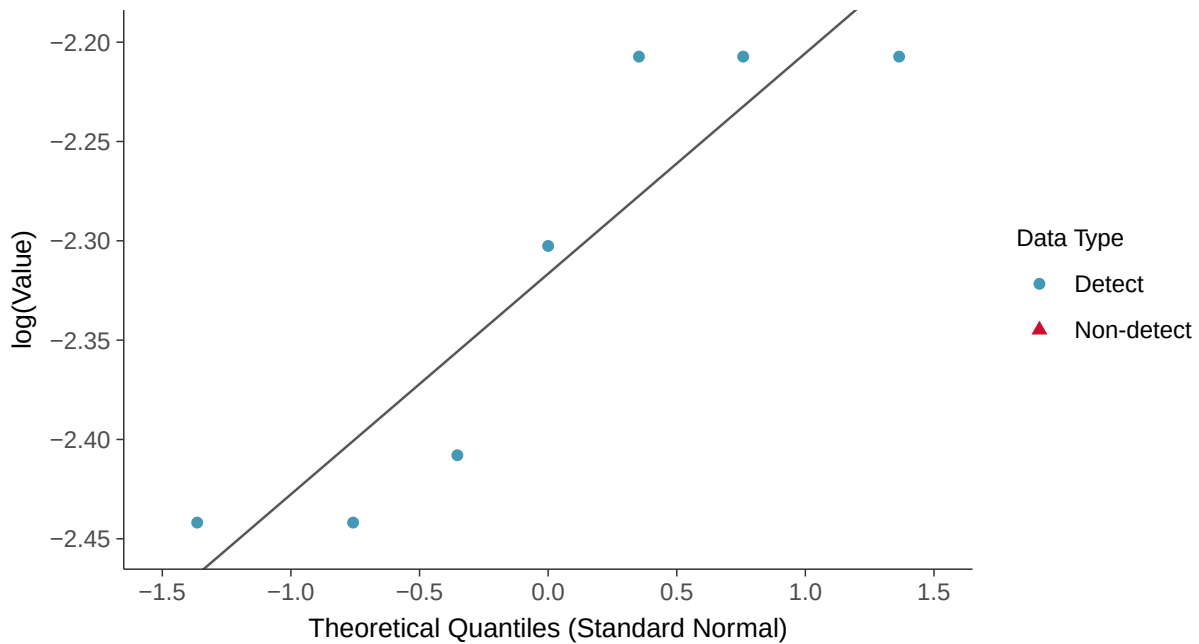
Normal Q-Q plot

Lithium, MW-8 (mg/l)

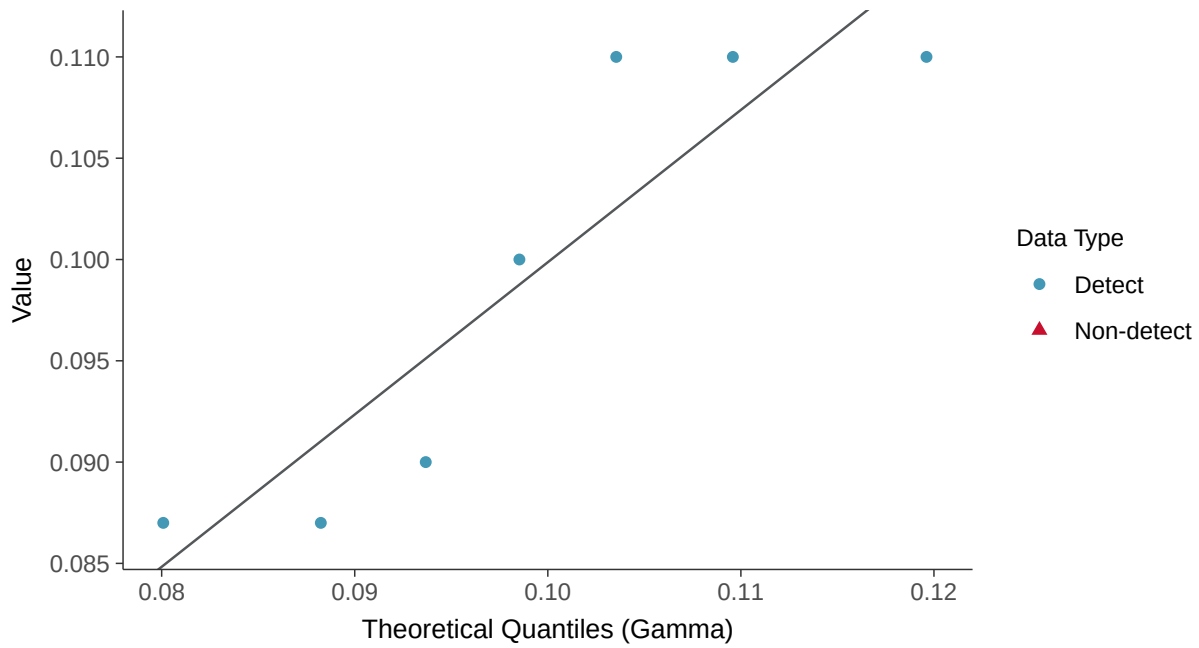


Lognormal Q-Q plot

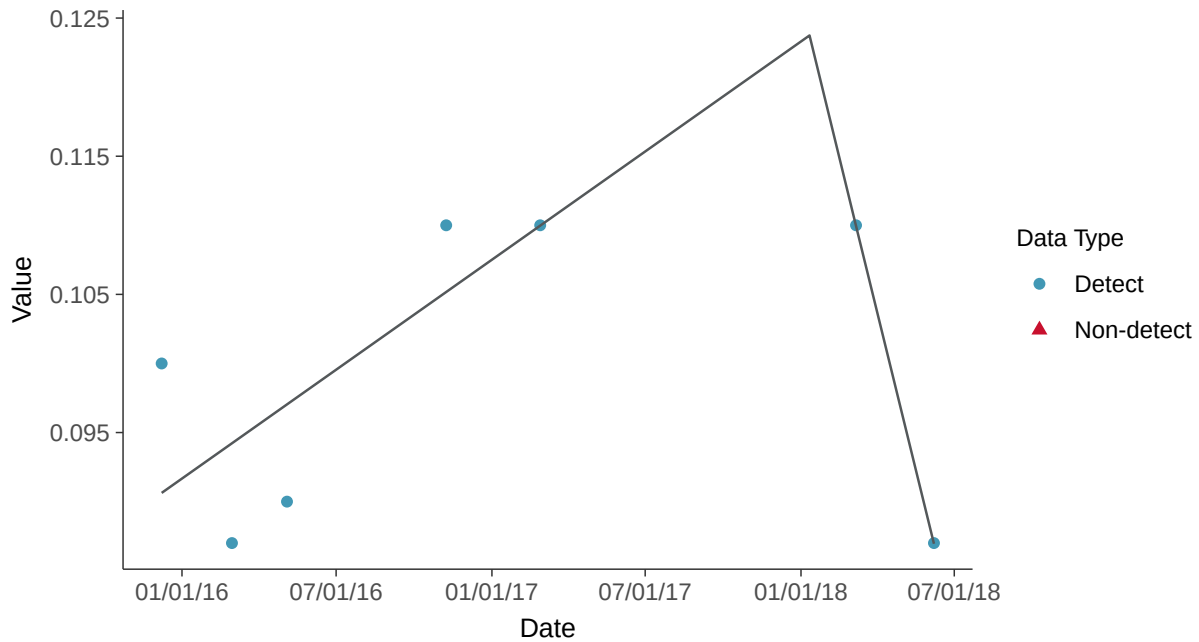
Lithium, MW-8 (mg/l)



Gamma Q-Q plot
Lithium, MW-8 (mg/l)

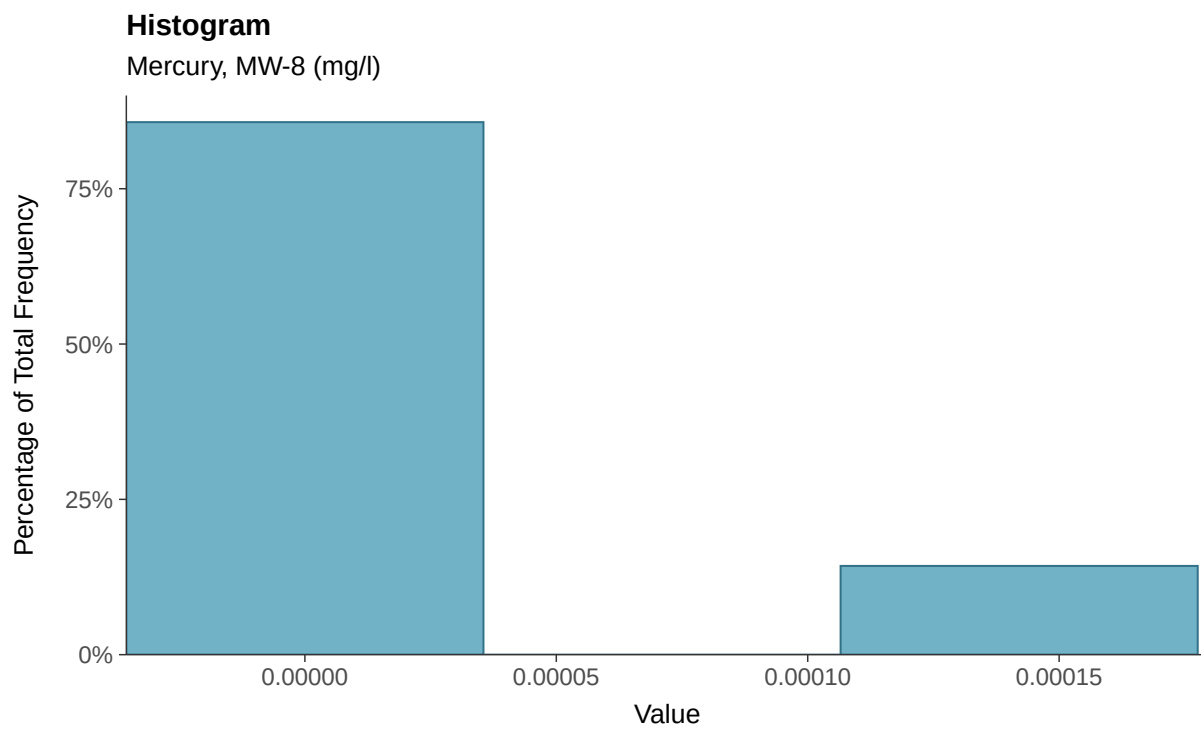
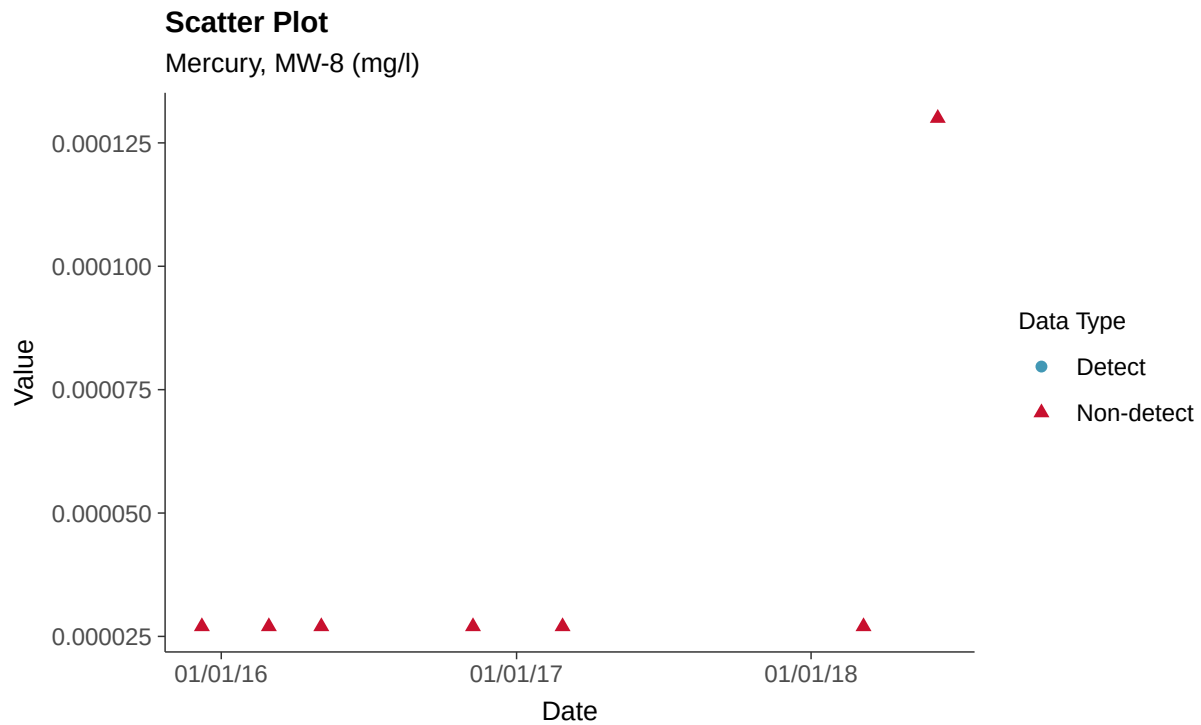


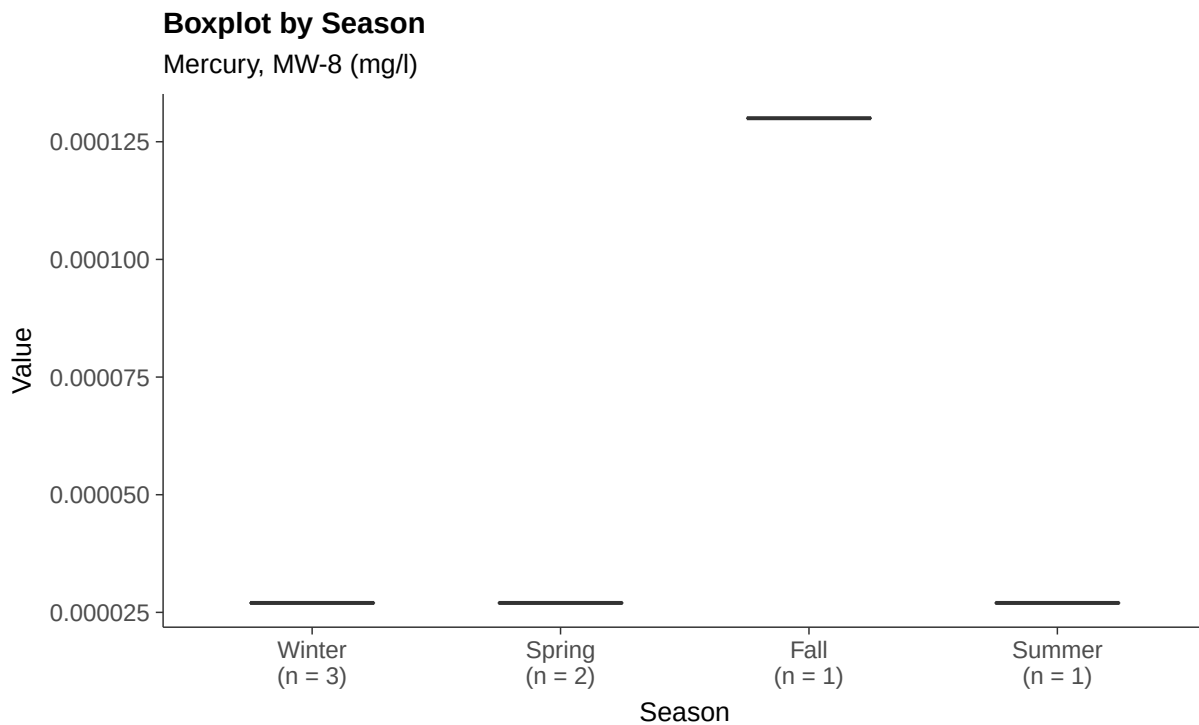
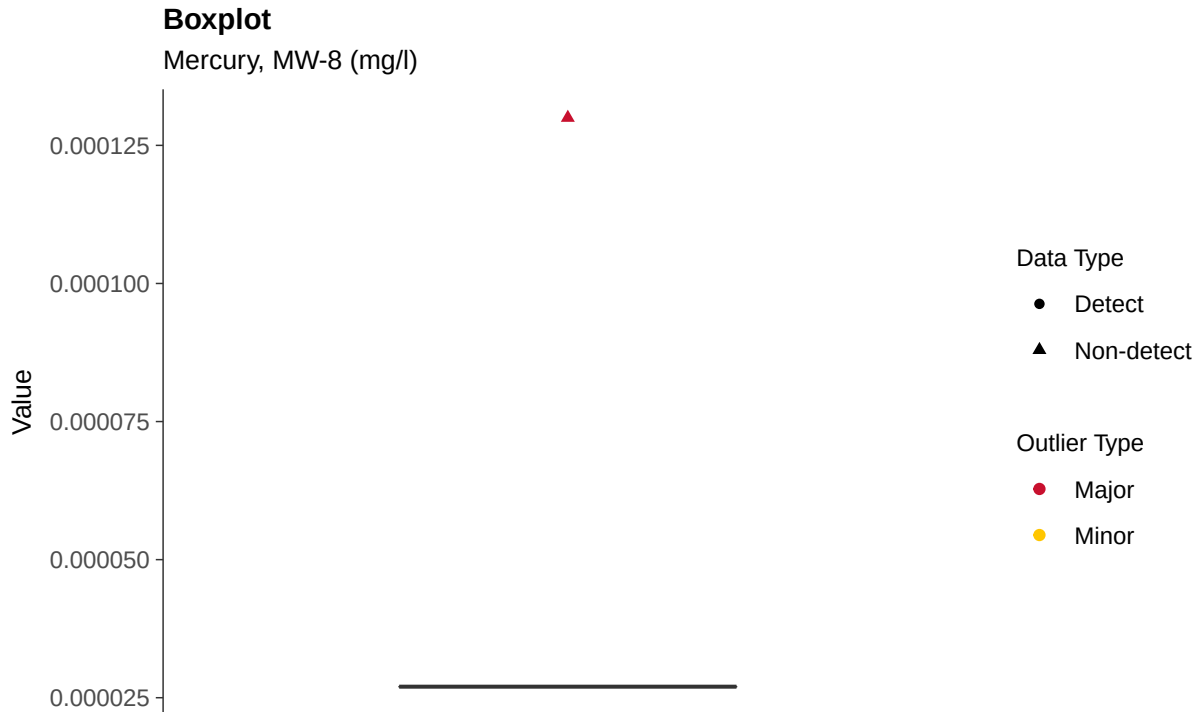
Trend Regression: Piecewise Linear-Linear
Lithium, MW-8 (mg/l)



Appendix IV: Mercury, MW-8

ID: 3_2_120

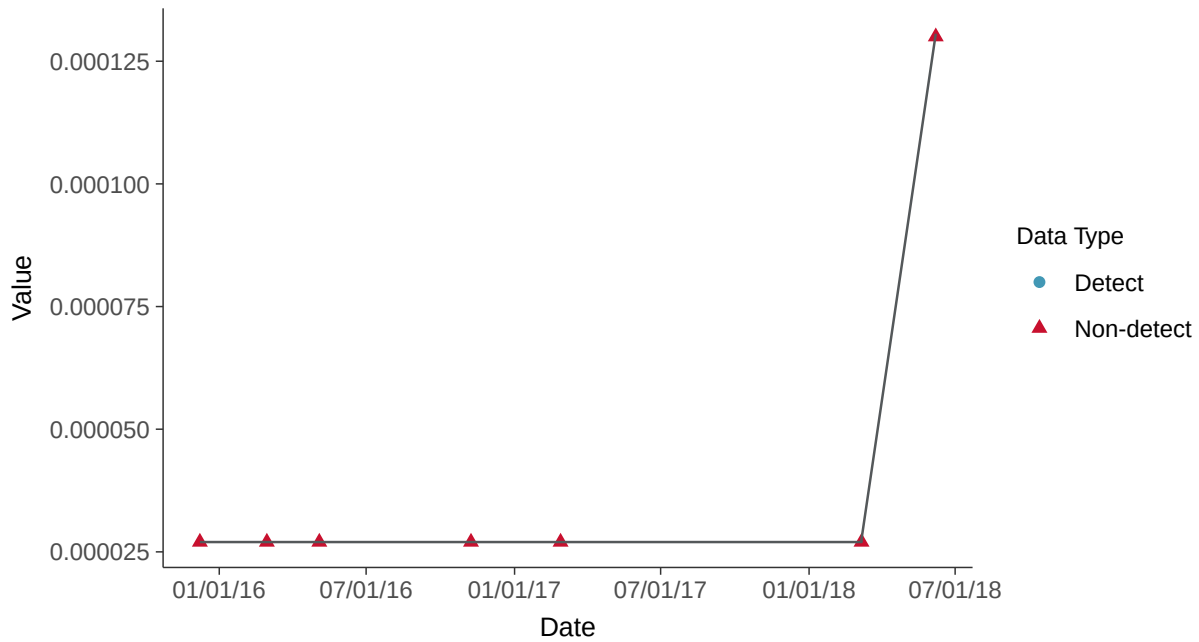






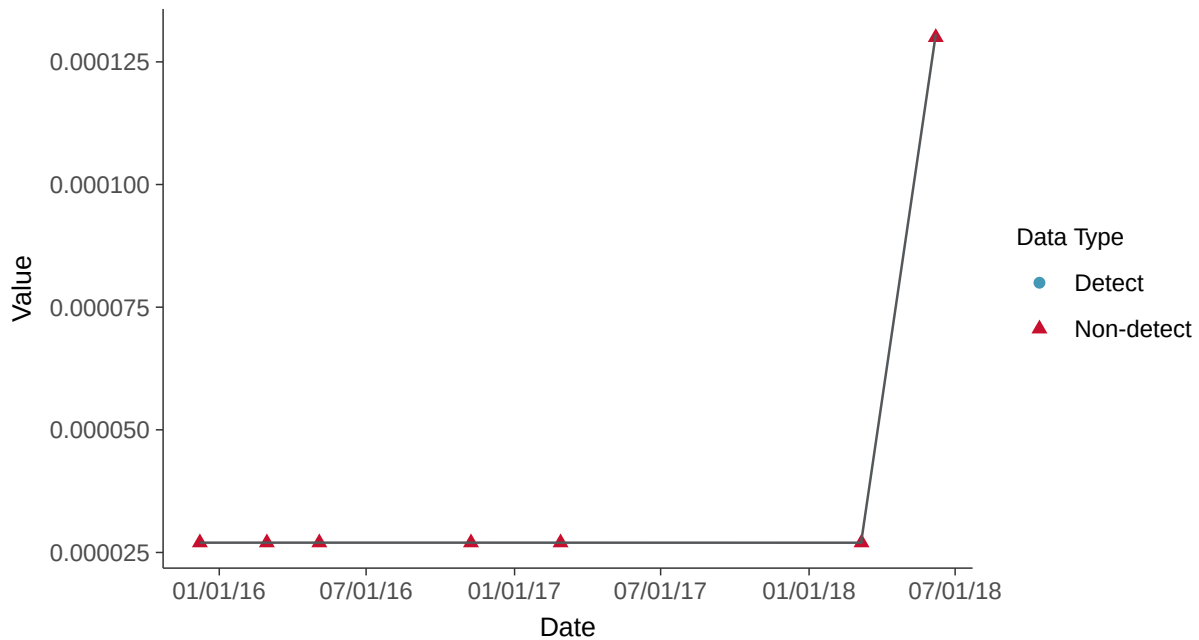
Trend Regression: Piecewise Linear-Linear

Mercury, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

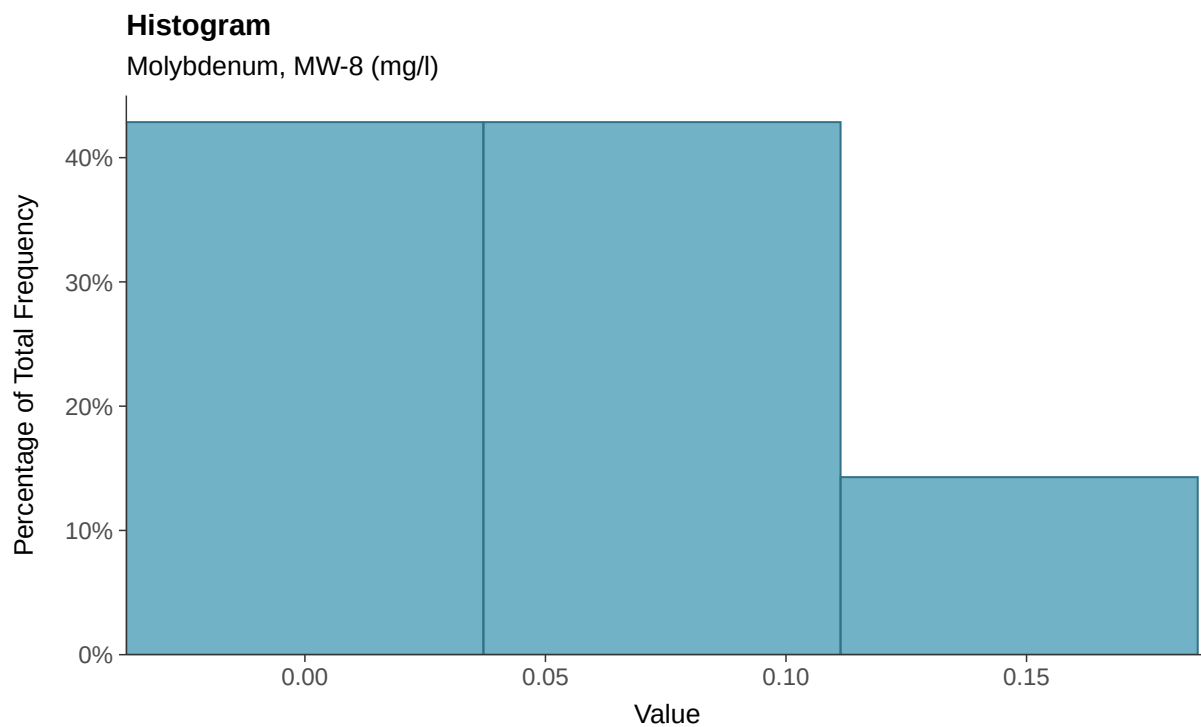
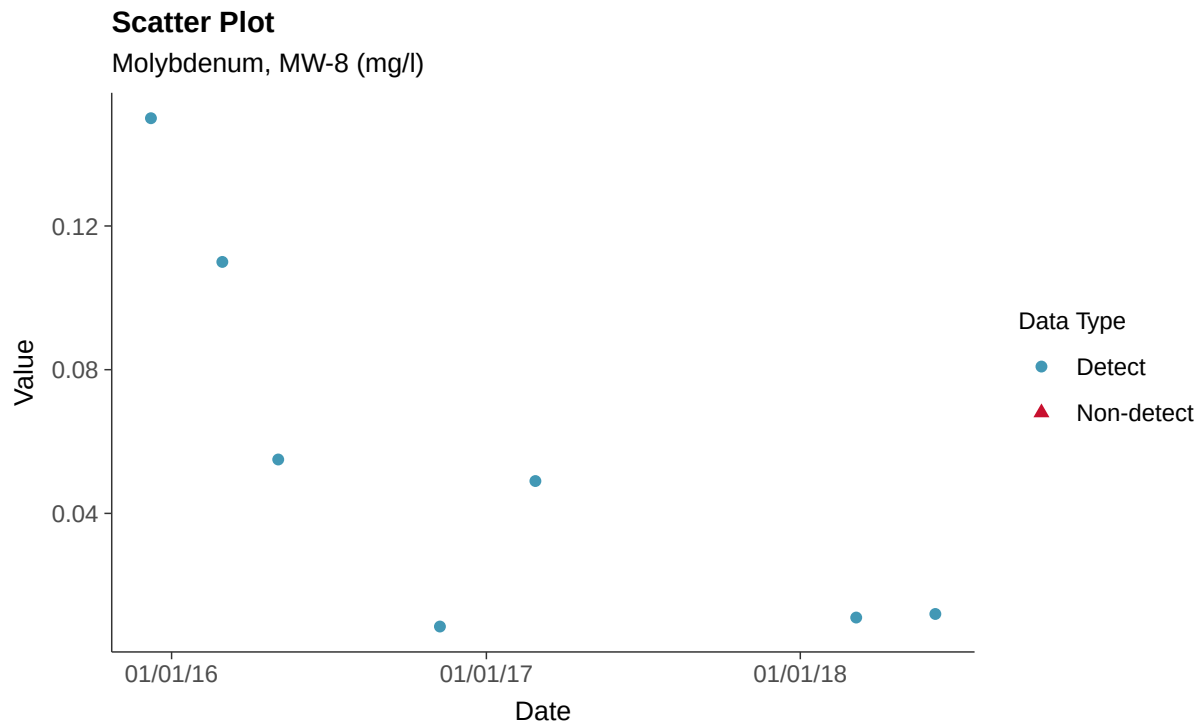
Mercury, MW-8 (mg/l)





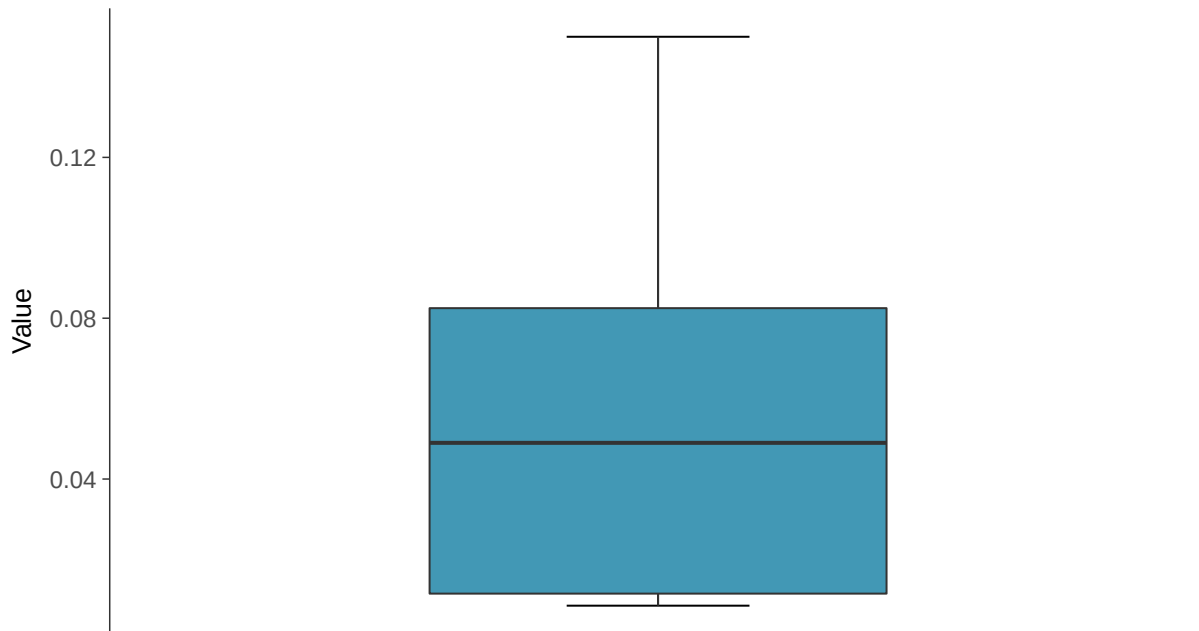
Appendix IV: Molybdenum, MW-8

ID: 3_2_121



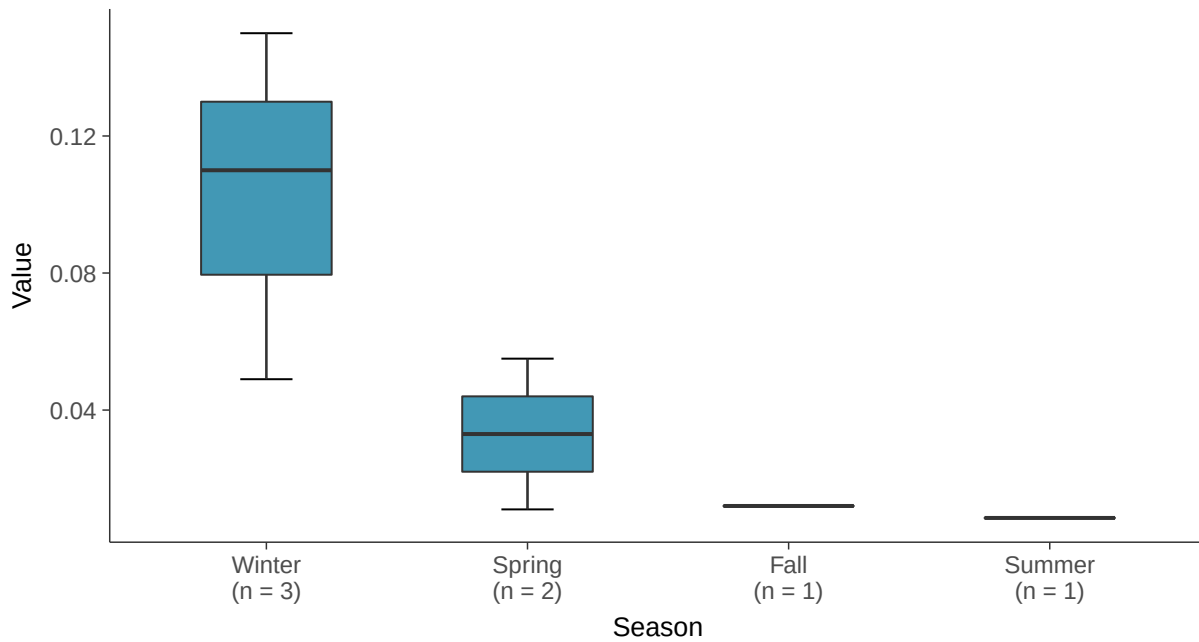
Boxplot

Molybdenum, MW-8 (mg/l)



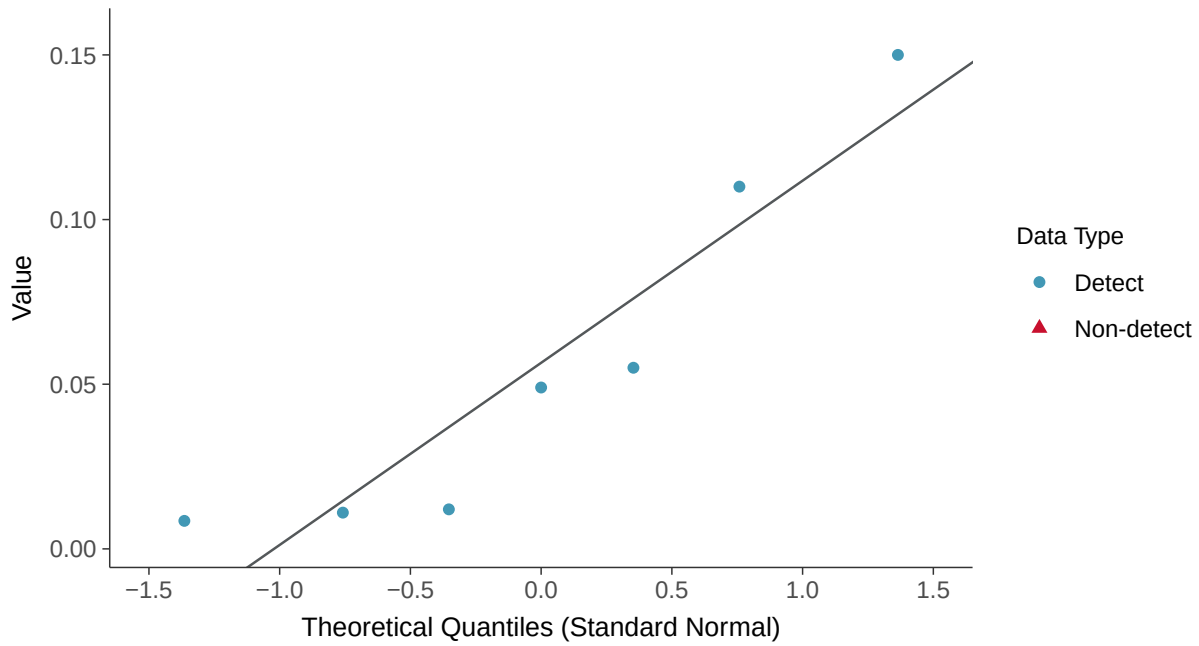
Boxplot by Season

Molybdenum, MW-8 (mg/l)



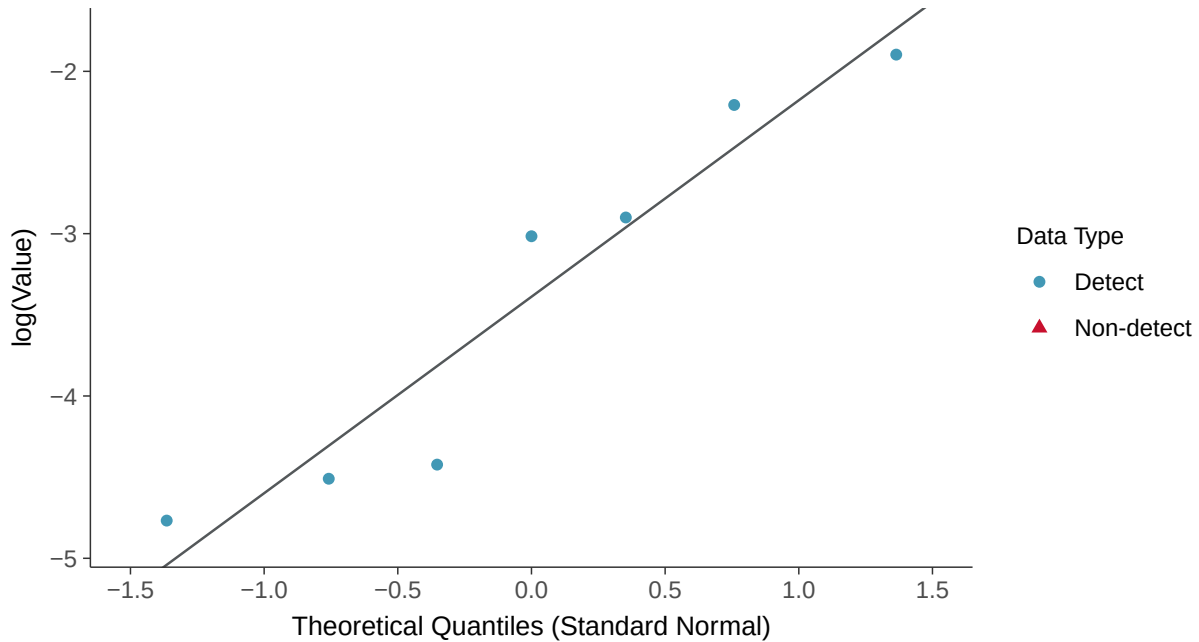
Normal Q-Q plot

Molybdenum, MW-8 (mg/l)



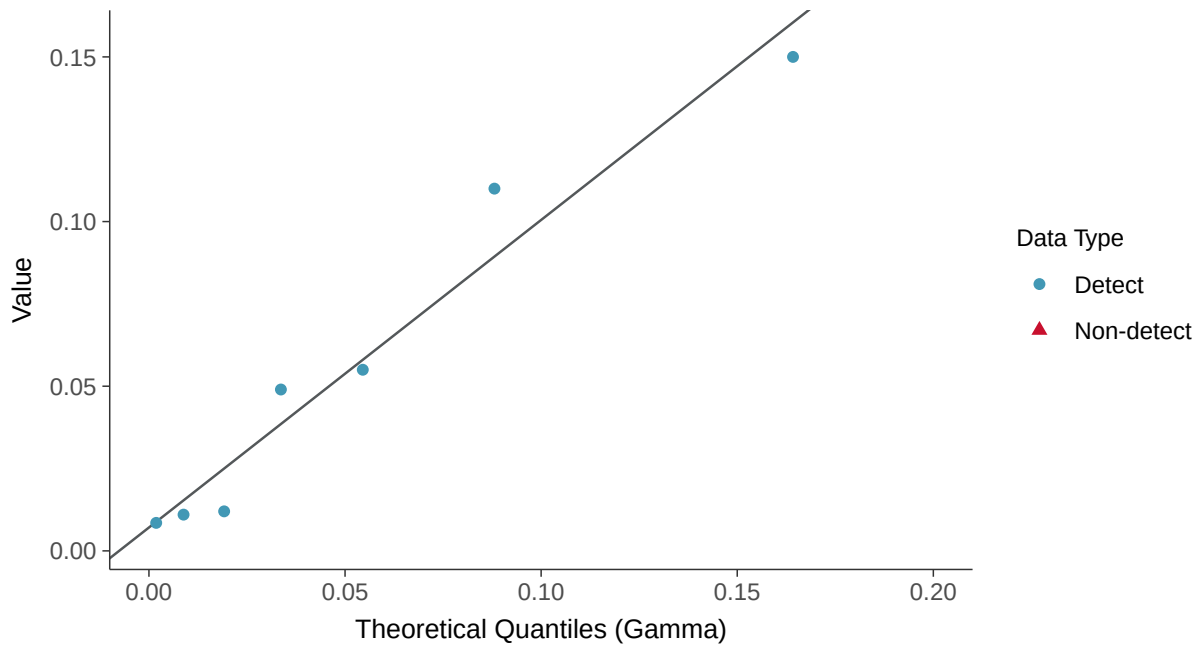
Lognormal Q-Q plot

Molybdenum, MW-8 (mg/l)



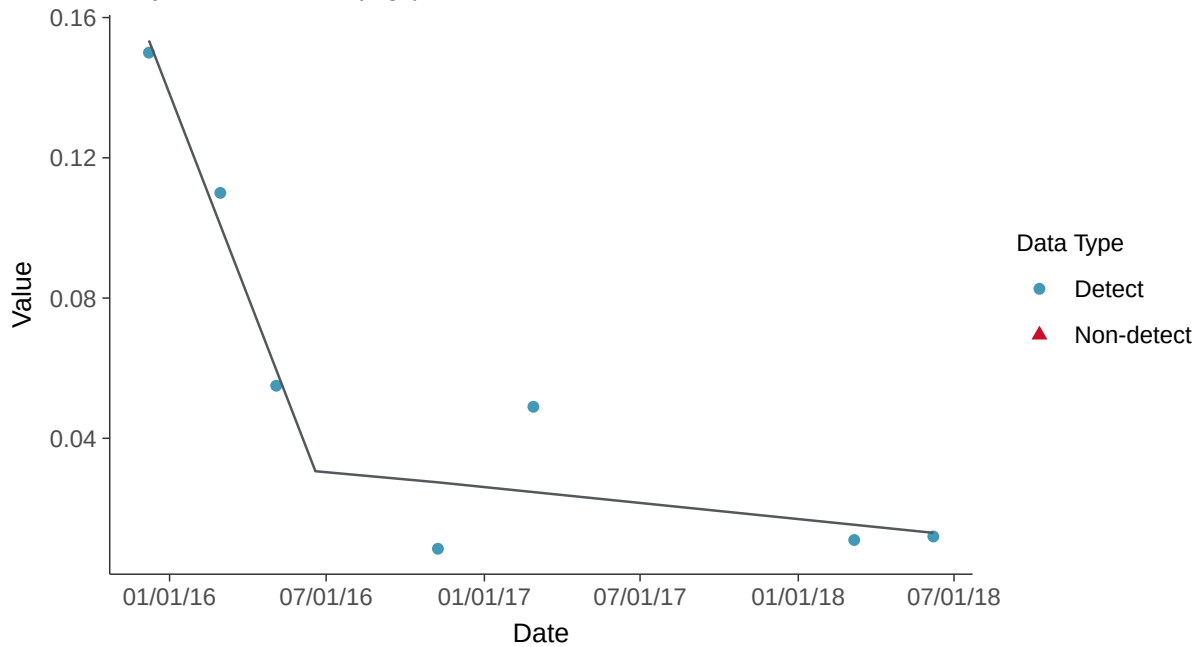
Gamma Q-Q plot

Molybdenum, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

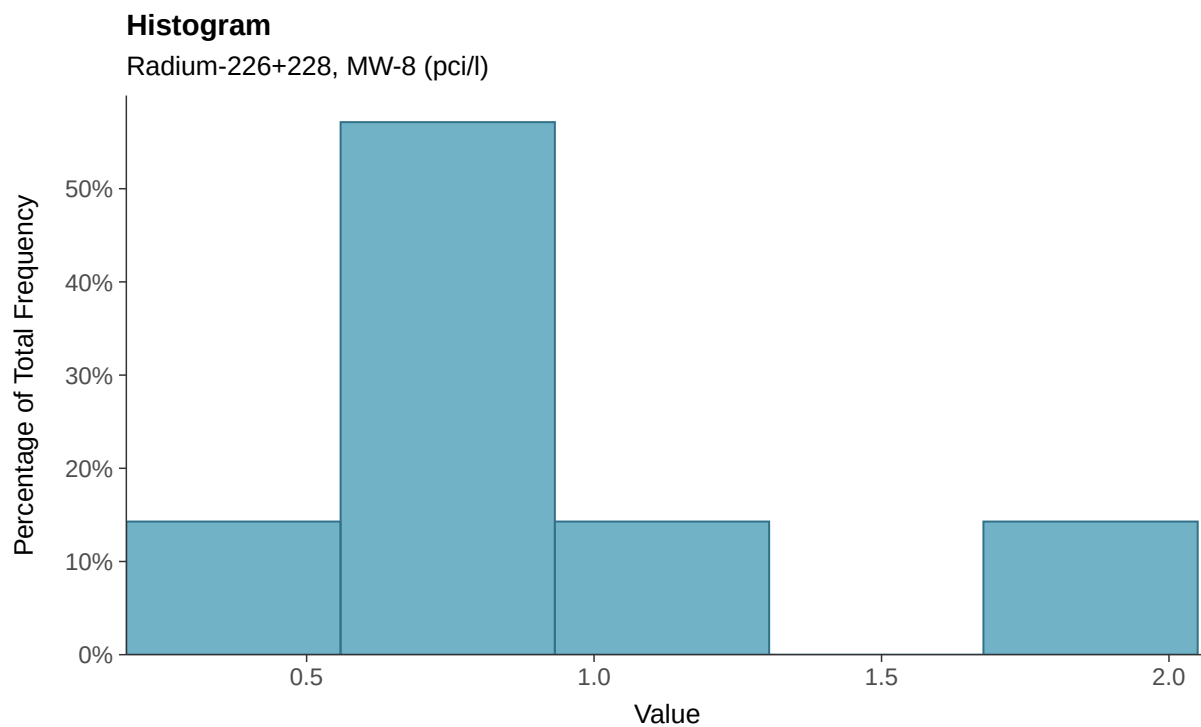
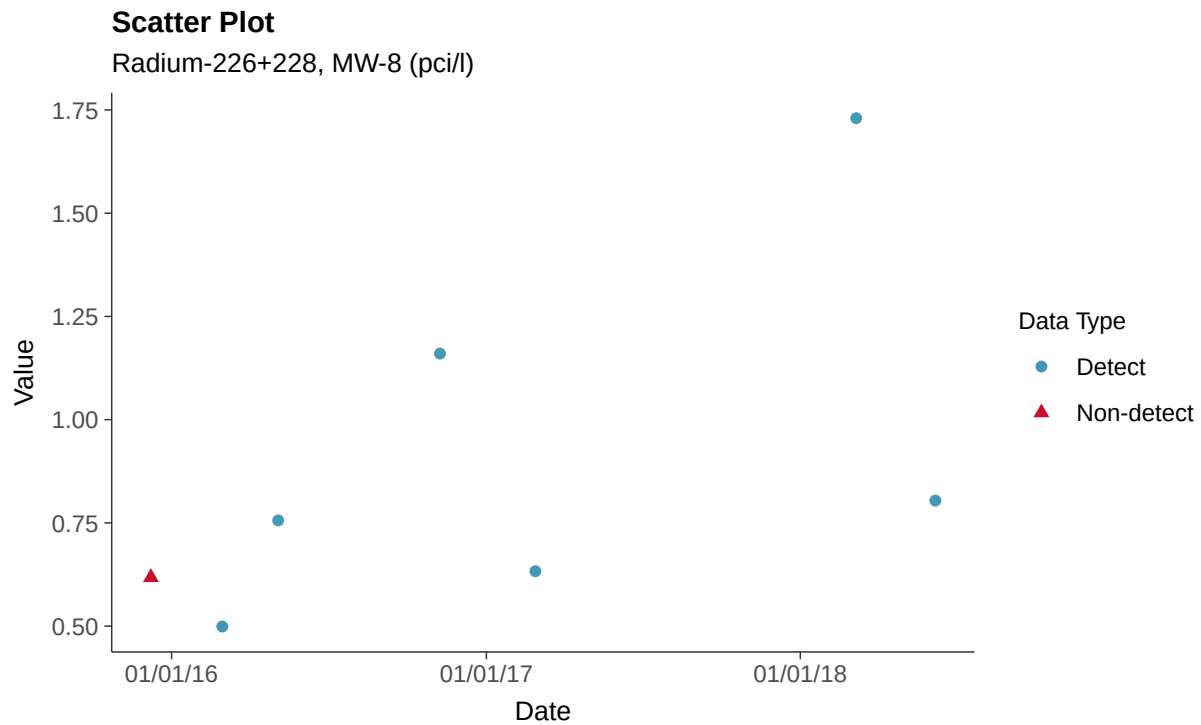
Molybdenum, MW-8 (mg/l)





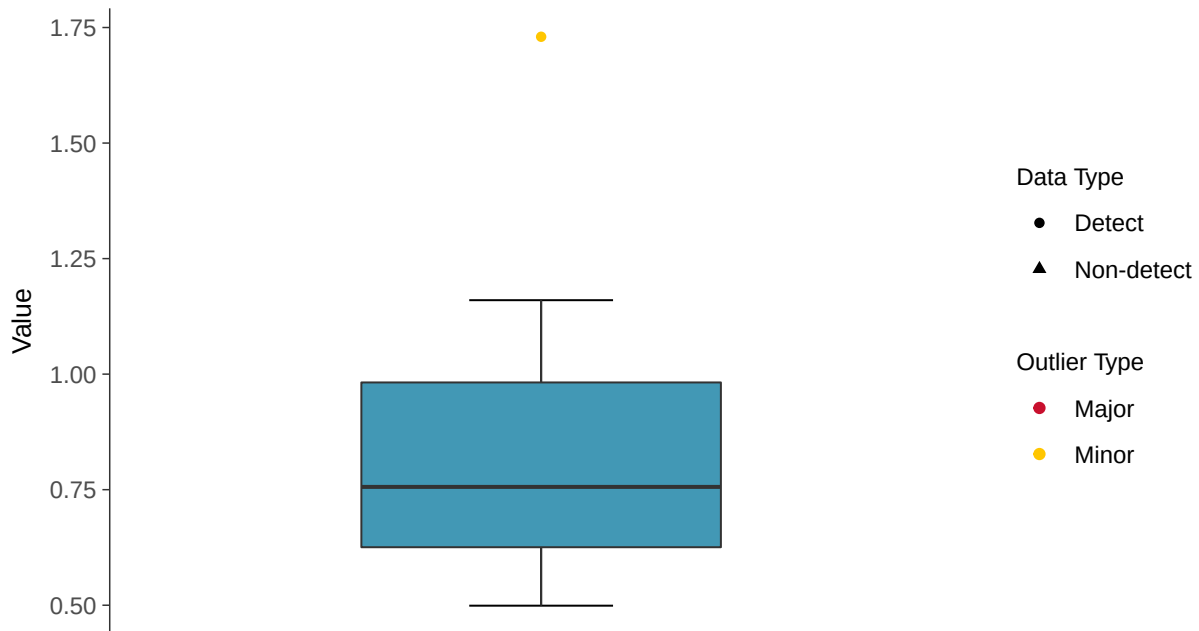
Appendix IV: Radium-226+228, MW-8

ID: 3_2_127



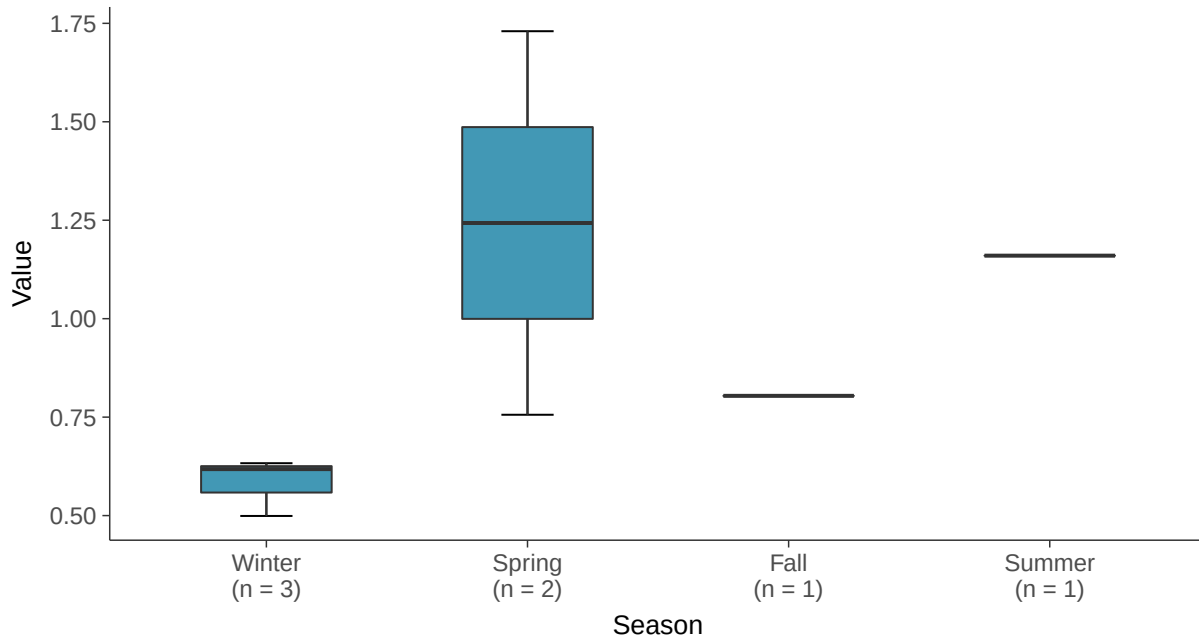
Boxplot

Radium-226+228, MW-8 (pci/l)



Boxplot by Season

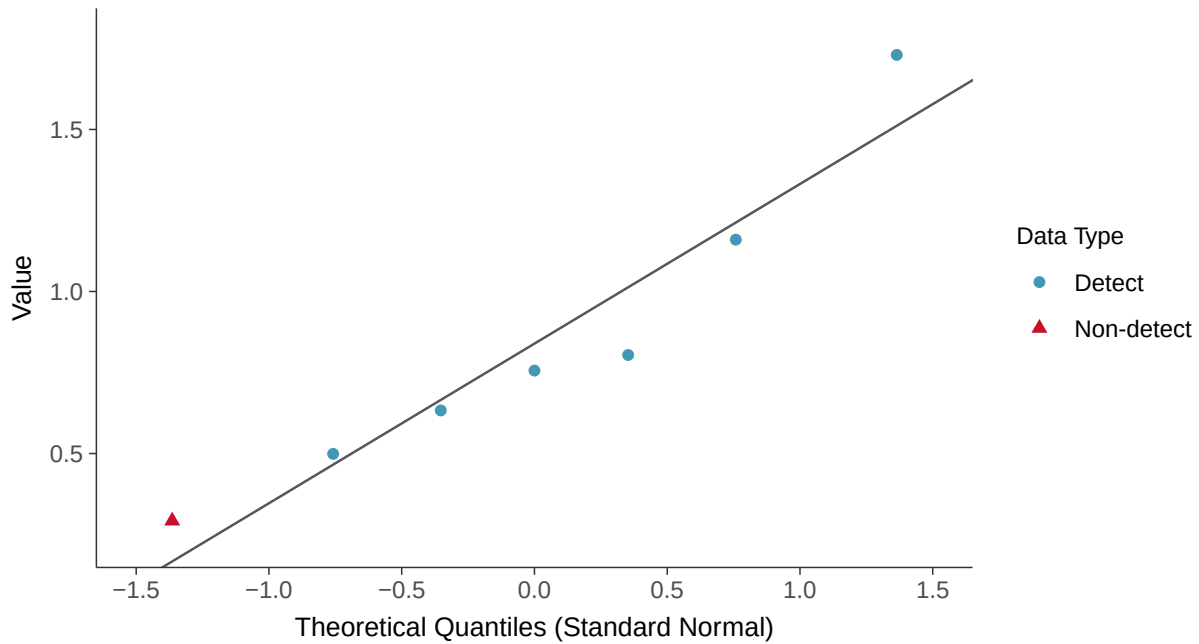
Radium-226+228, MW-8 (pci/l)





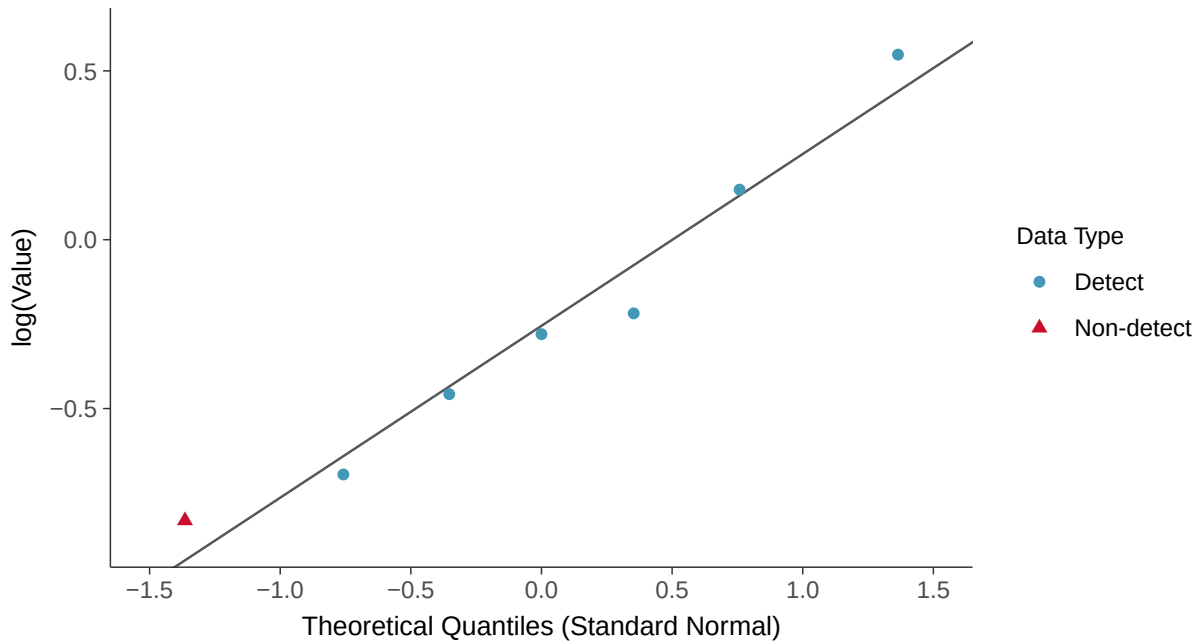
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-8 (pci/l)



Lognormal Q-Q plot using ROS Imputed Estimates

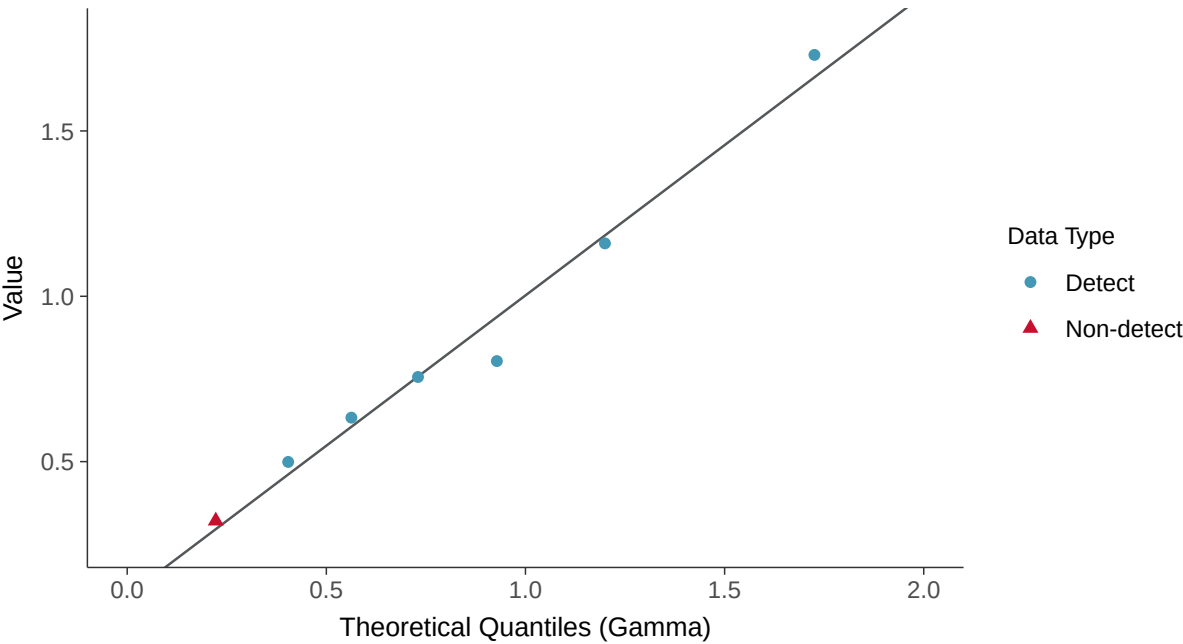
Radium-226+228, MW-8 (pci/l)





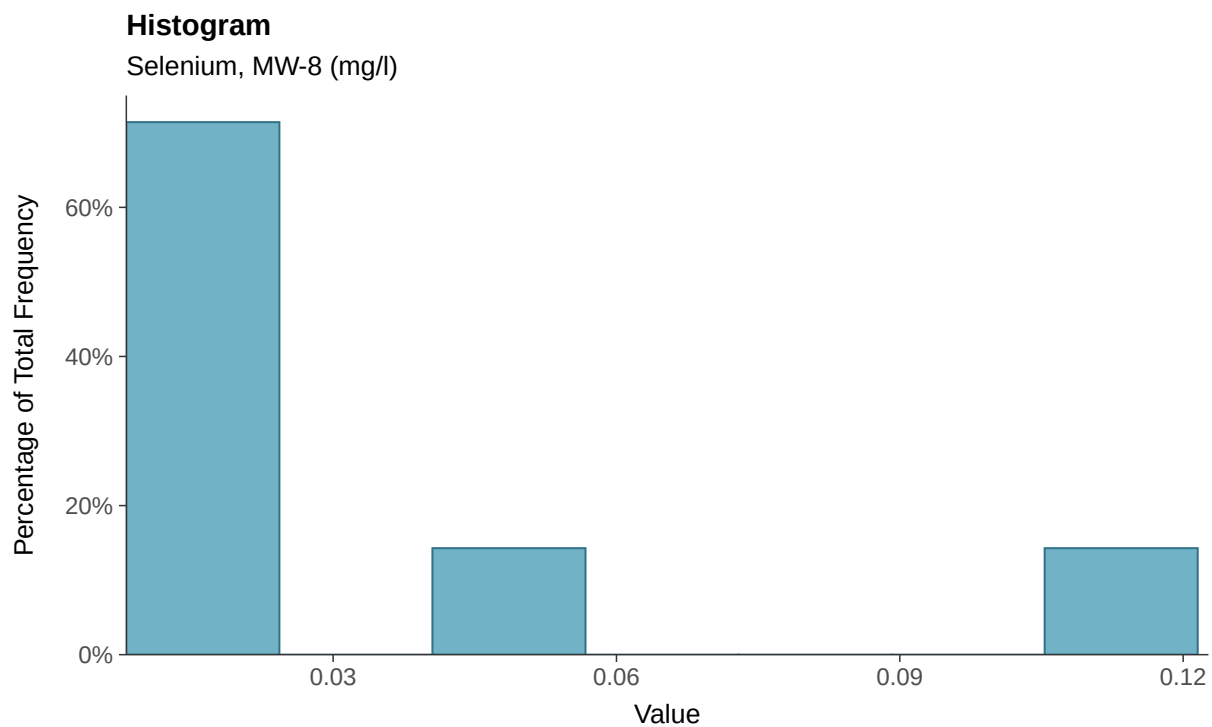
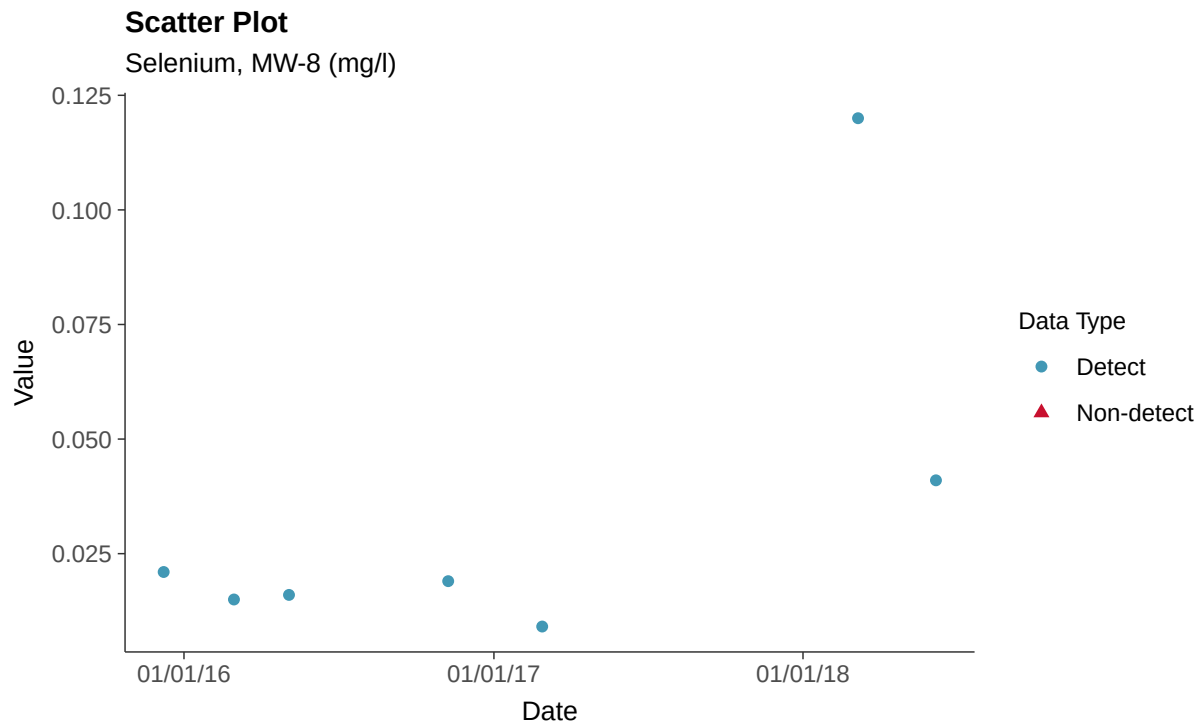
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-8 (pci/l)



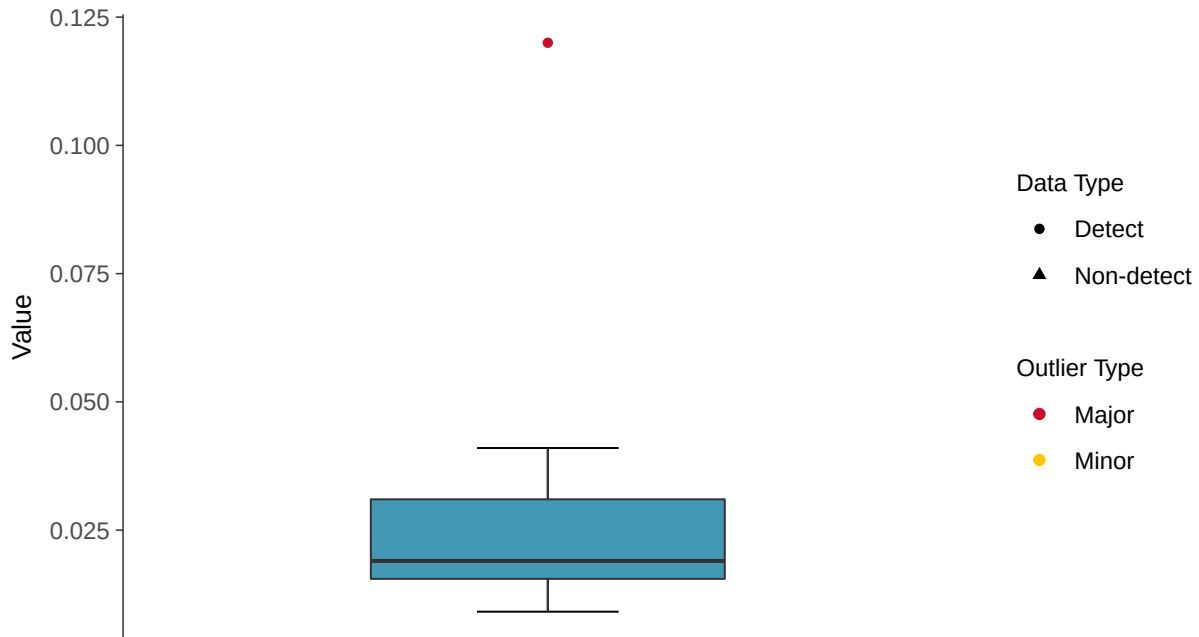
Appendix IV: Selenium, MW-8

ID: 3_2_129



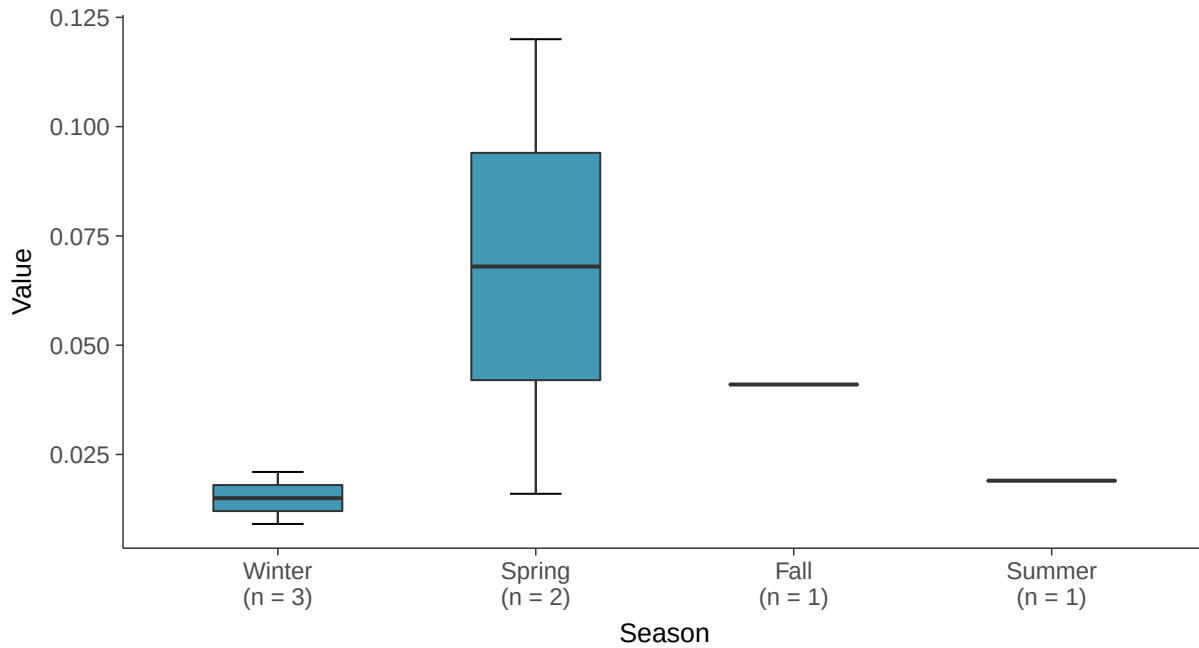
Boxplot

Selenium, MW-8 (mg/l)



Boxplot by Season

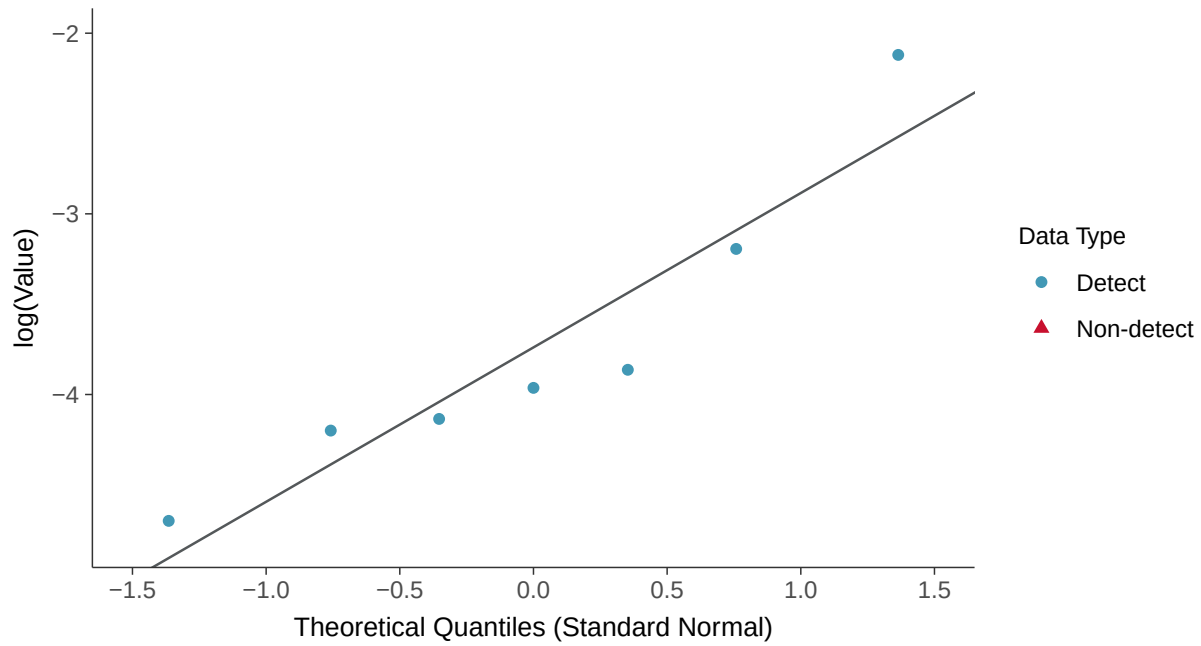
Selenium, MW-8 (mg/l)





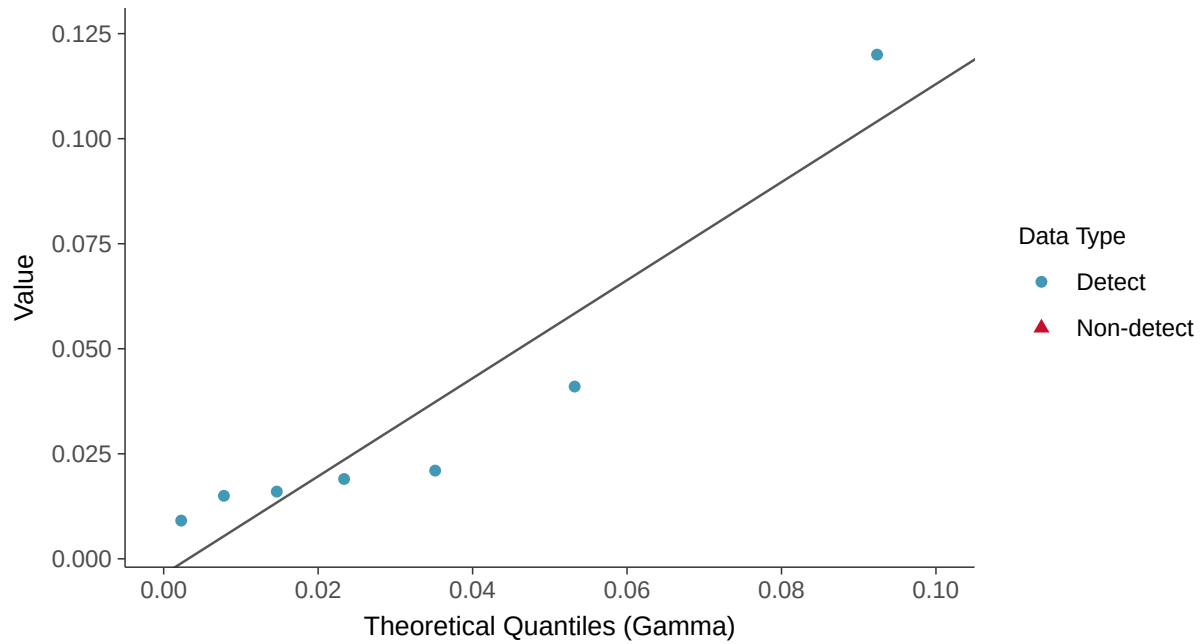
Lognormal Q-Q plot

Selenium, MW-8 (mg/l)



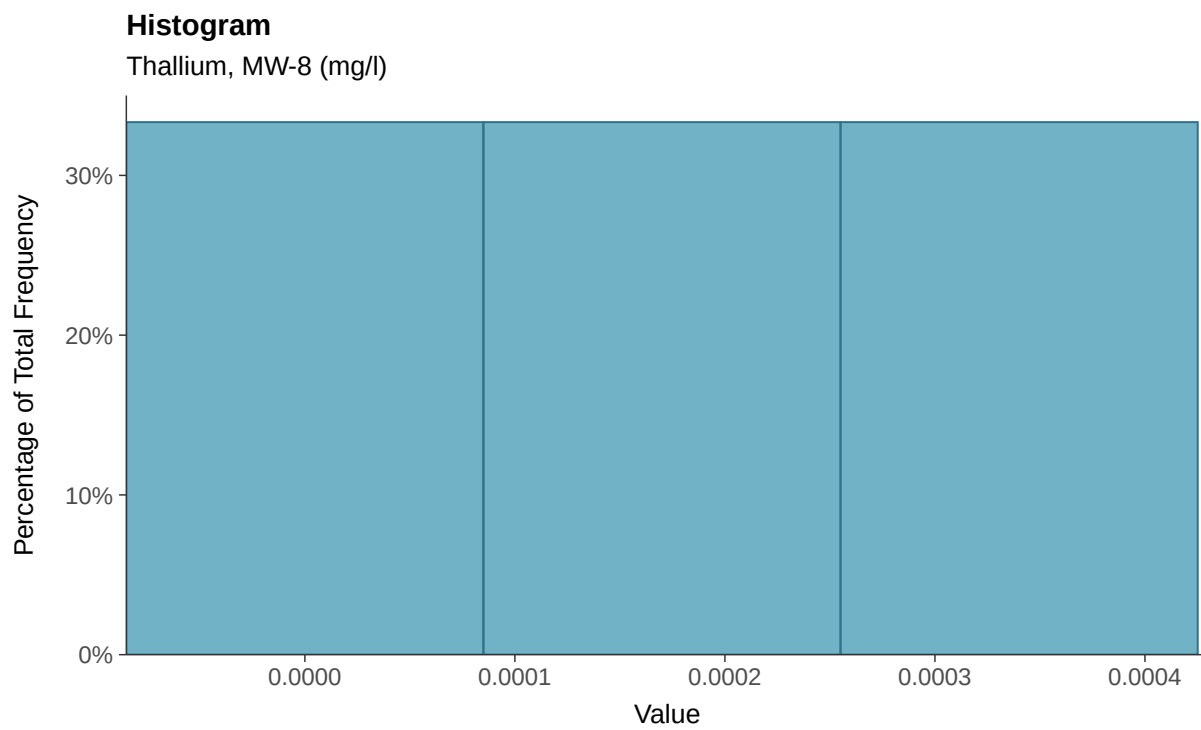
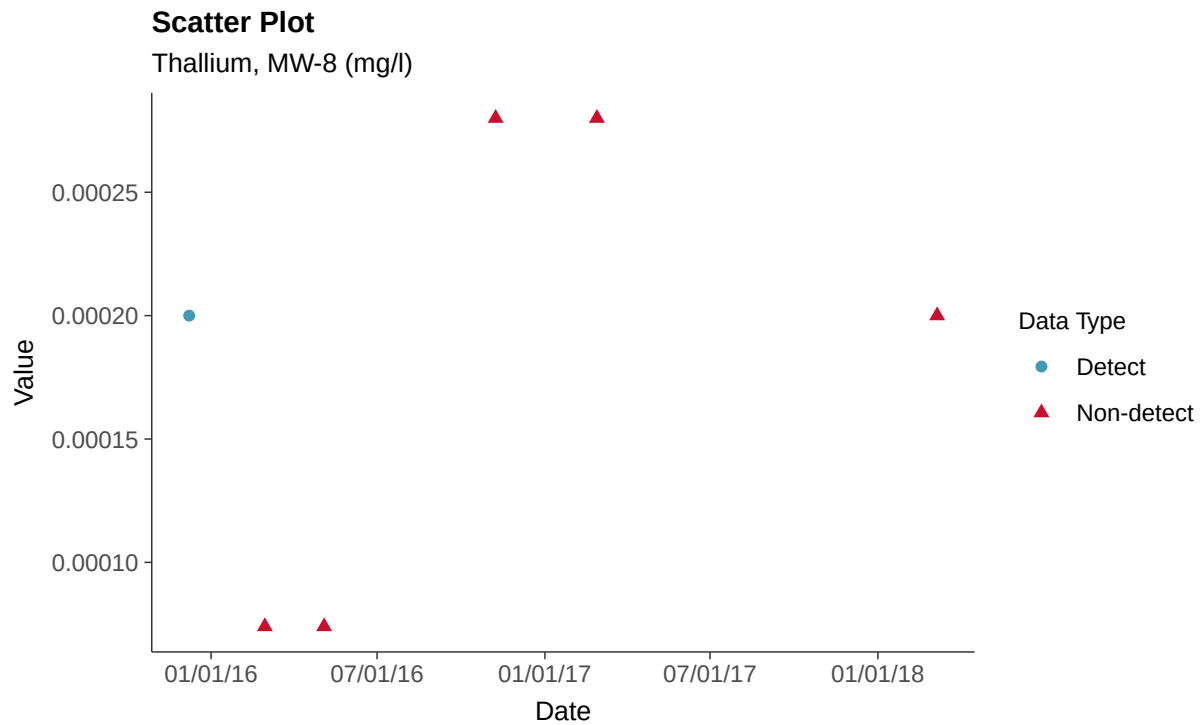
Gamma Q-Q plot

Selenium, MW-8 (mg/l)



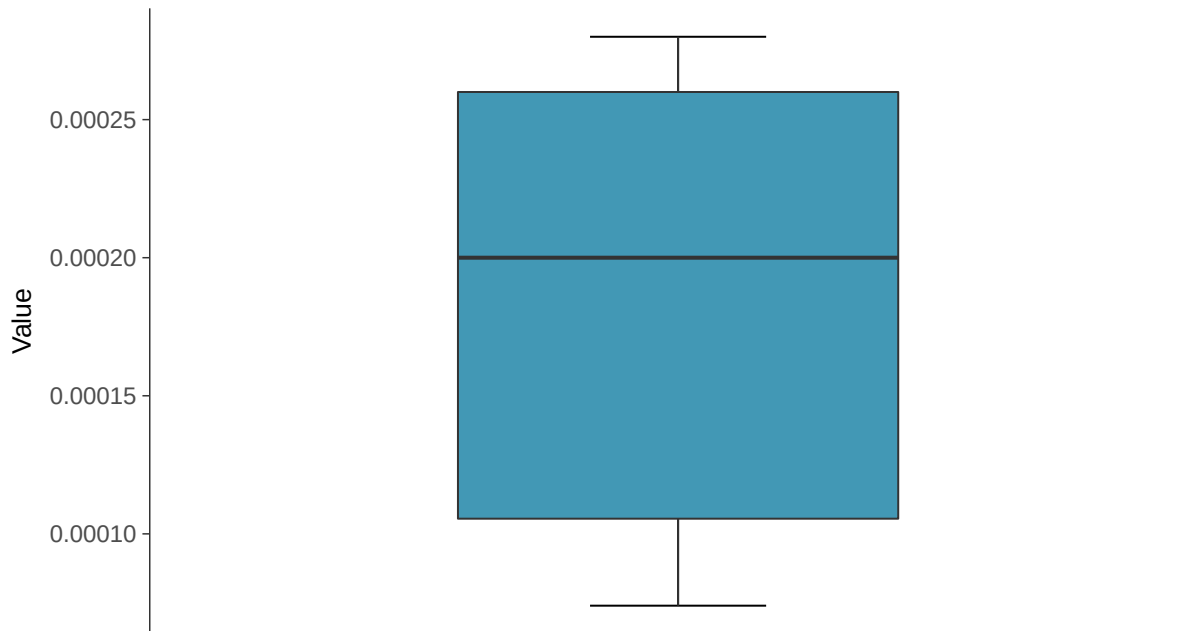
Appendix IV: Thallium, MW-8

ID: 3_2_134



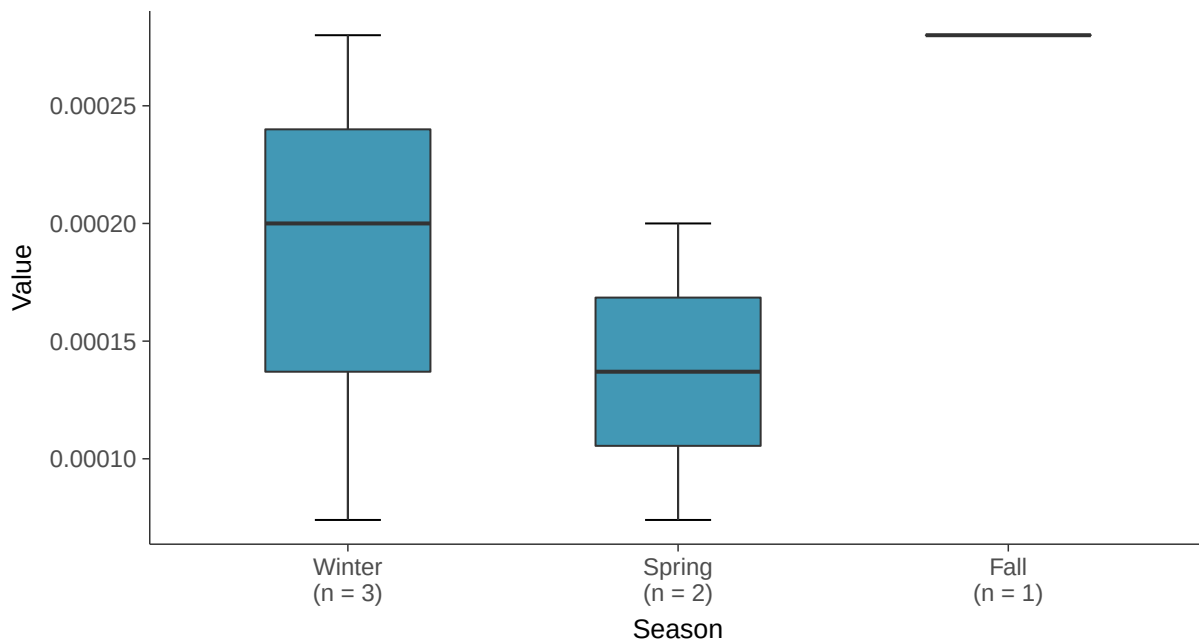
Boxplot

Thallium, MW-8 (mg/l)



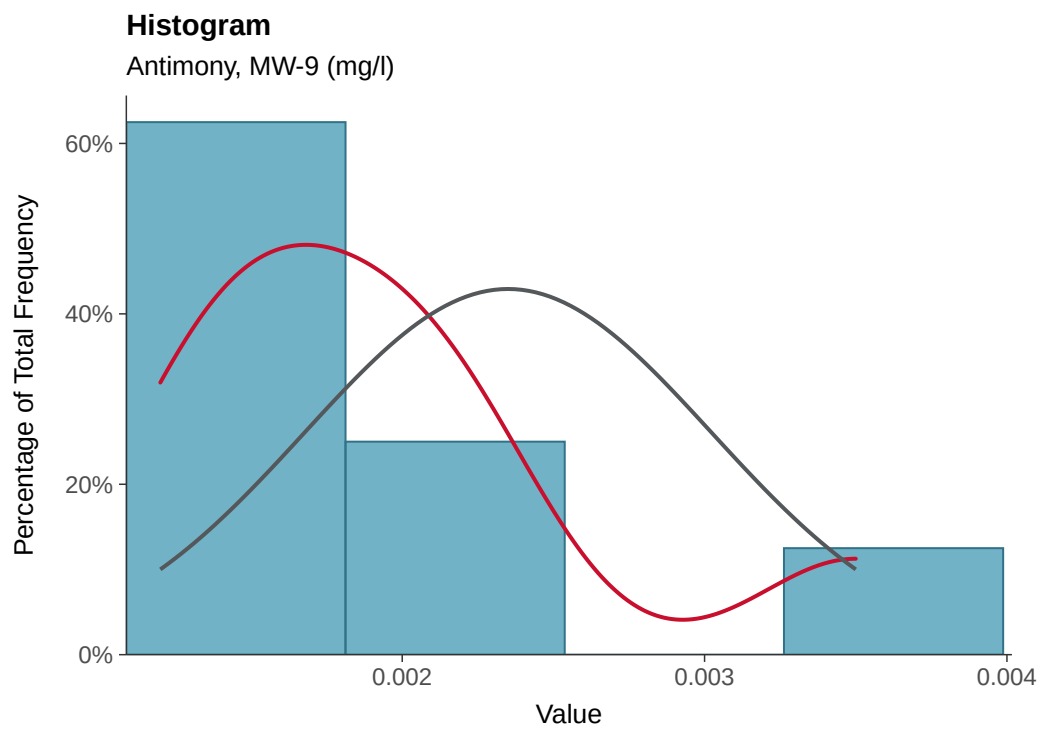
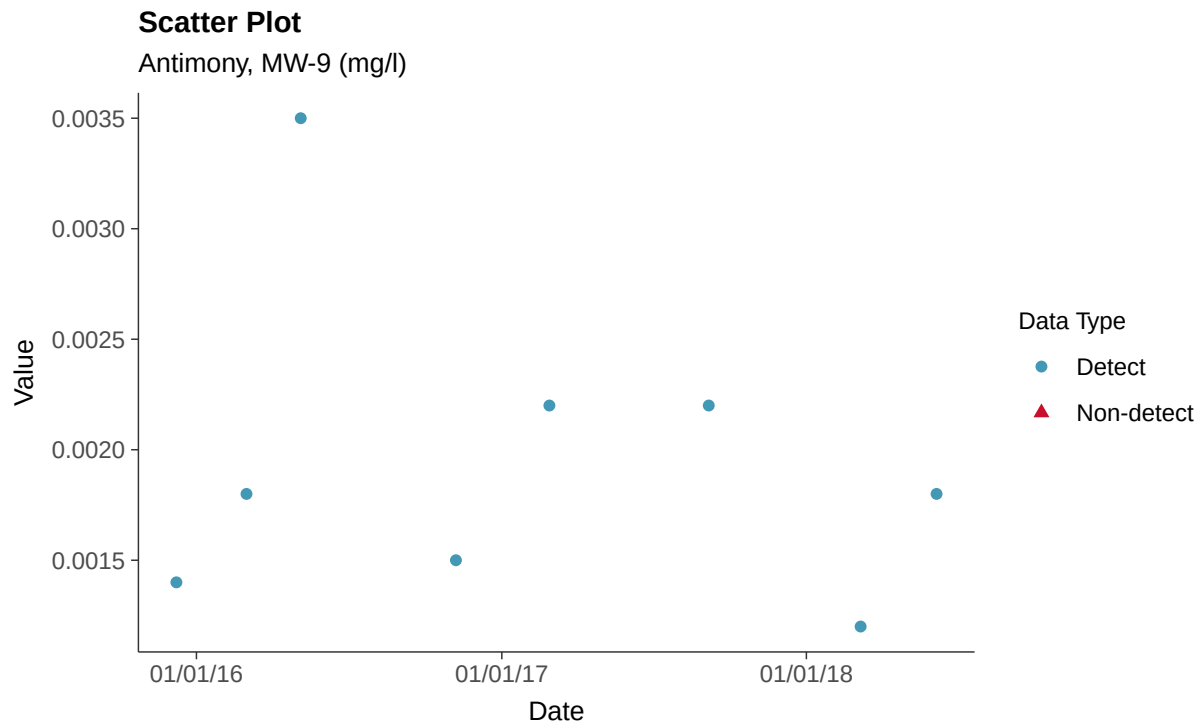
Boxplot by Season

Thallium, MW-8 (mg/l)



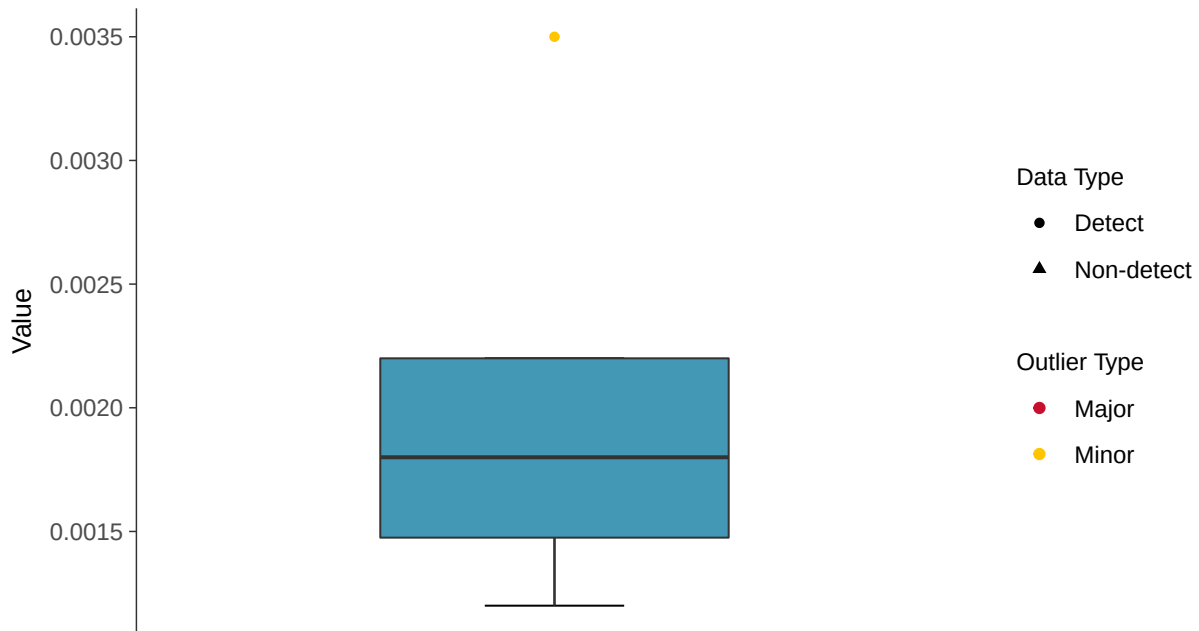
Appendix IV: Antimony, MW-9

ID: 4_2_104



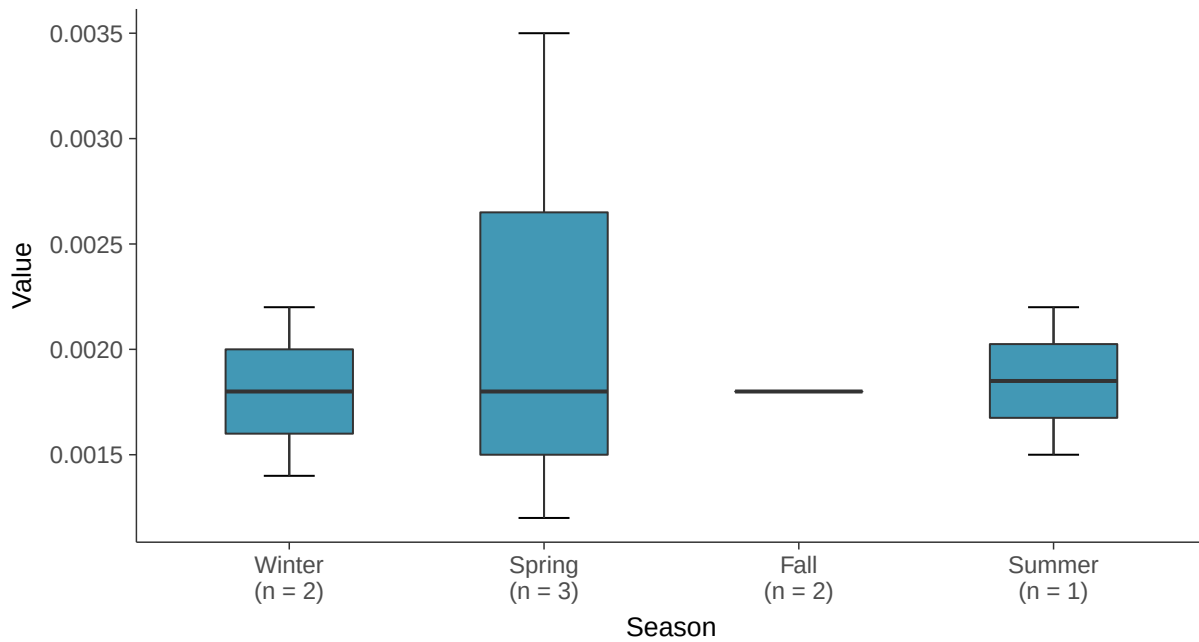
Boxplot

Antimony, MW-9 (mg/l)



Boxplot by Season

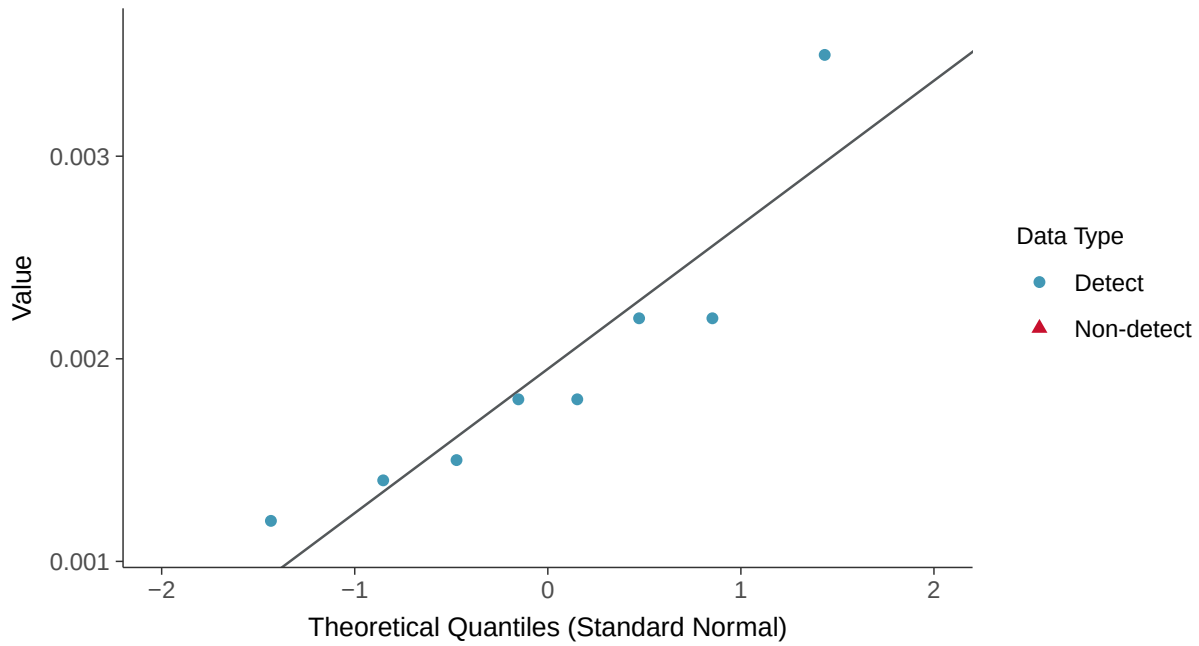
Antimony, MW-9 (mg/l)





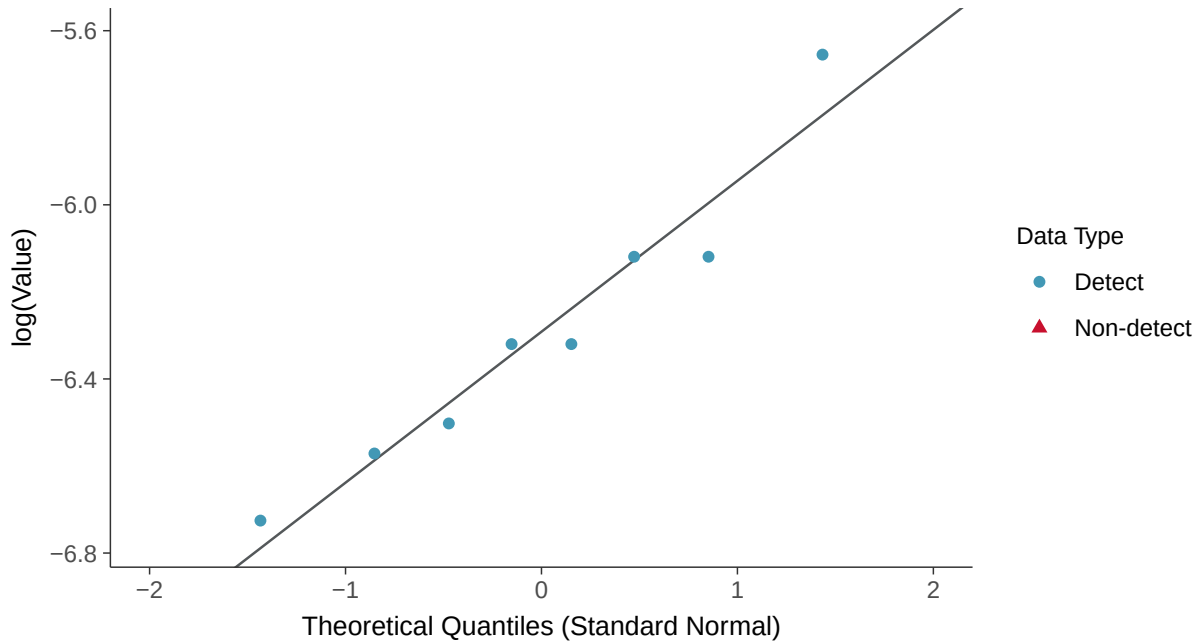
Normal Q-Q plot

Antimony, MW-9 (mg/l)



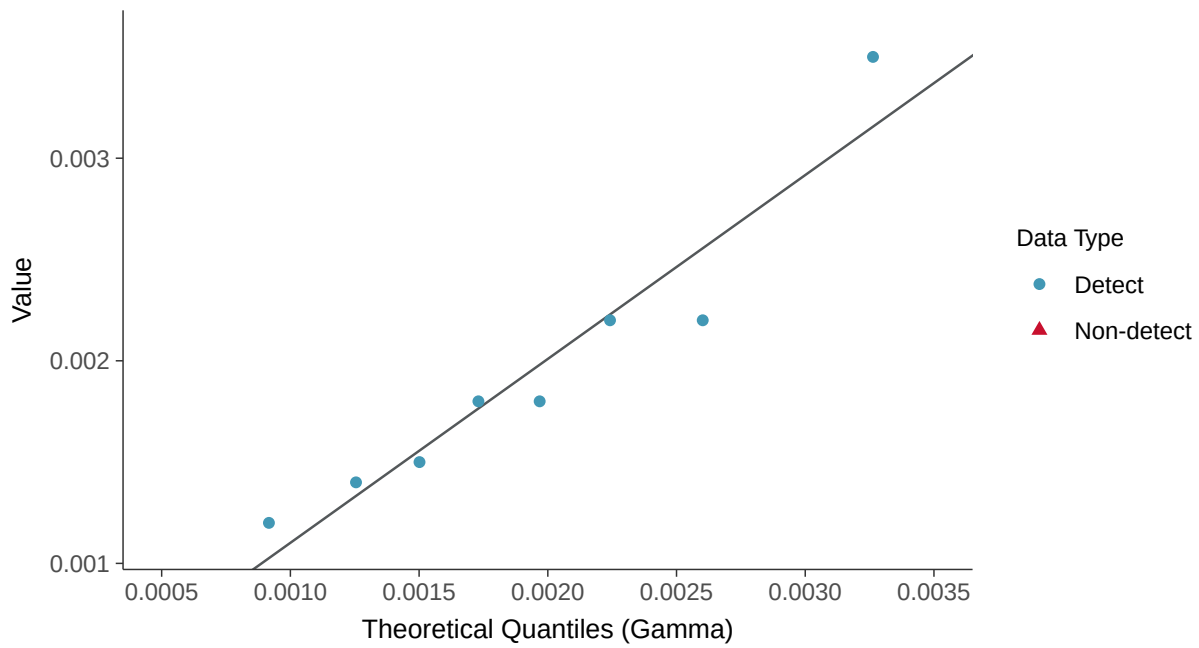
Lognormal Q-Q plot

Antimony, MW-9 (mg/l)



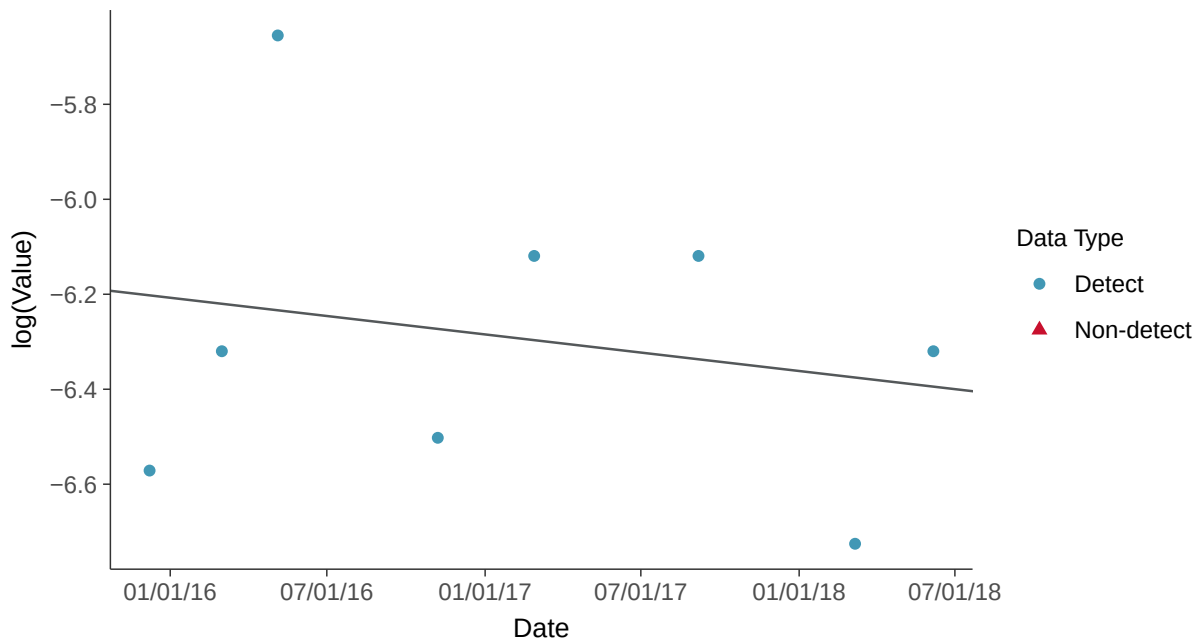
Gamma Q-Q plot

Antimony, MW-9 (mg/l)



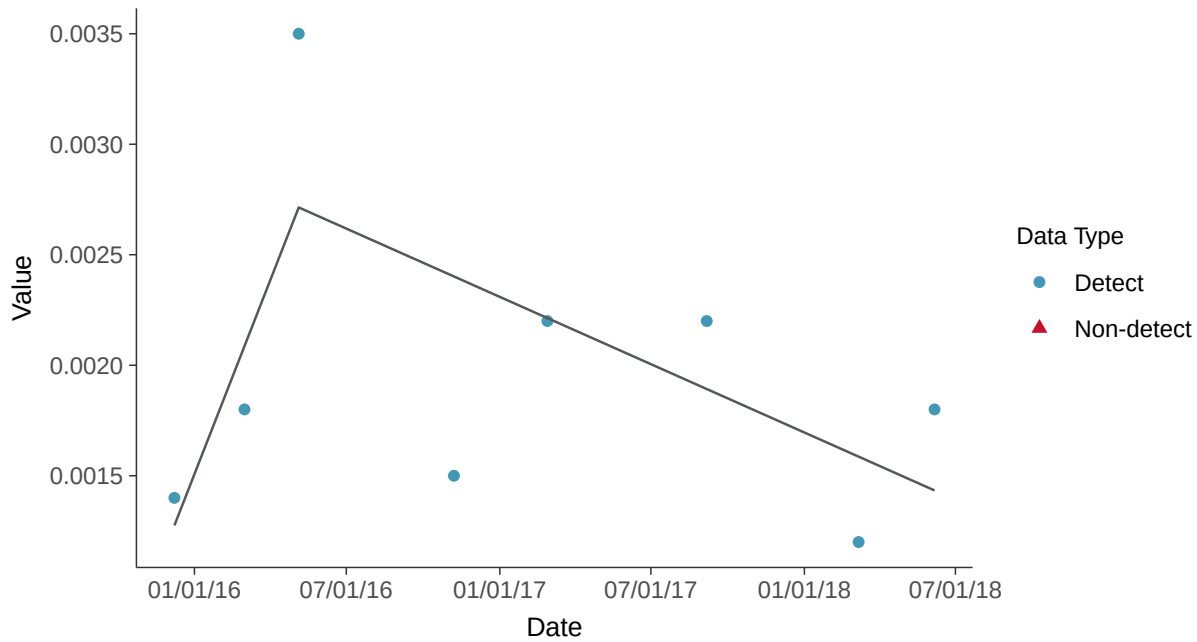
Trend Regression: Lognormal MLE

Antimony, MW-9 (mg/l)



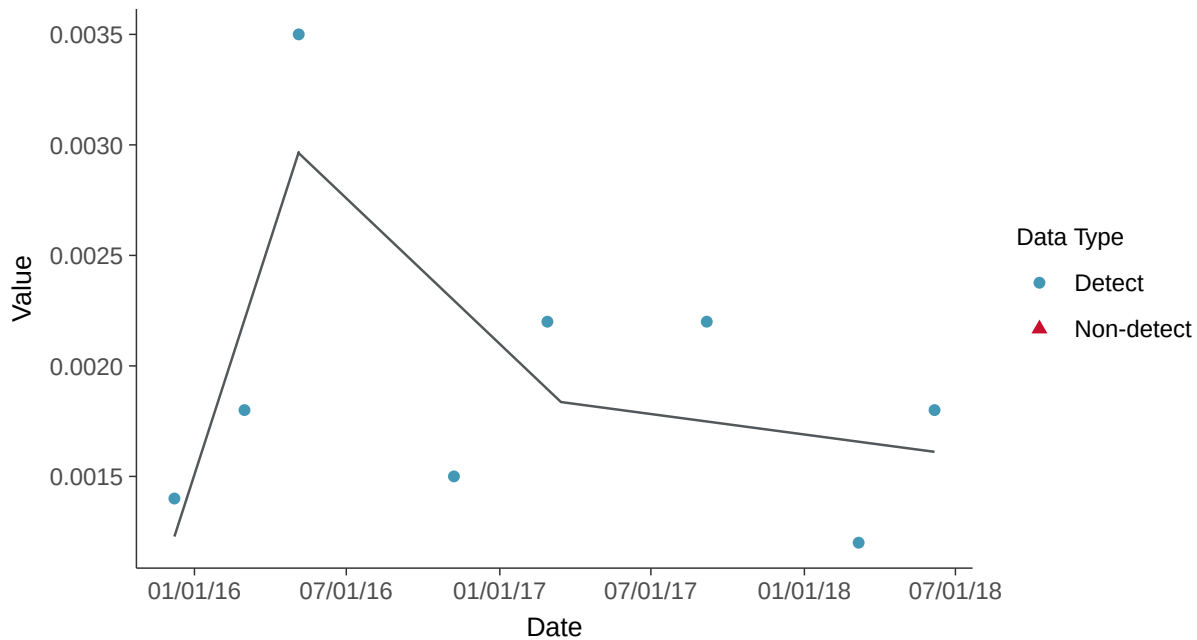
Trend Regression: Piecewise Linear-Linear

Antimony, MW-9 (mg/l)



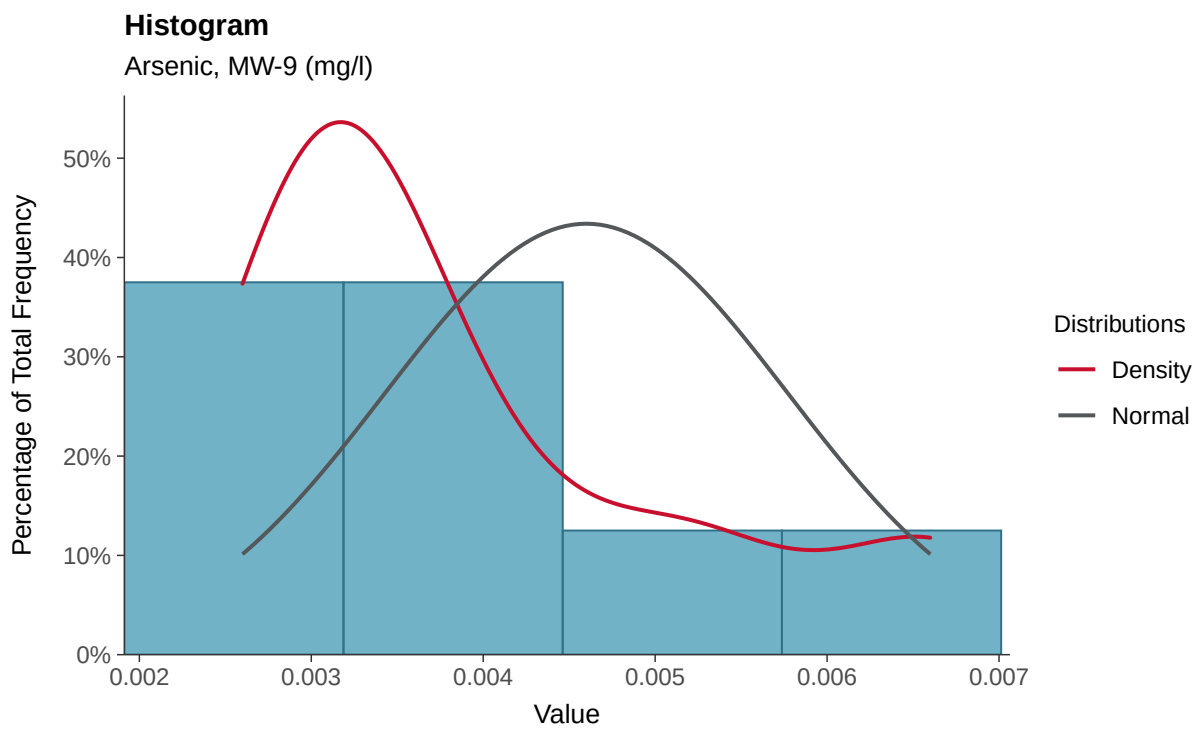
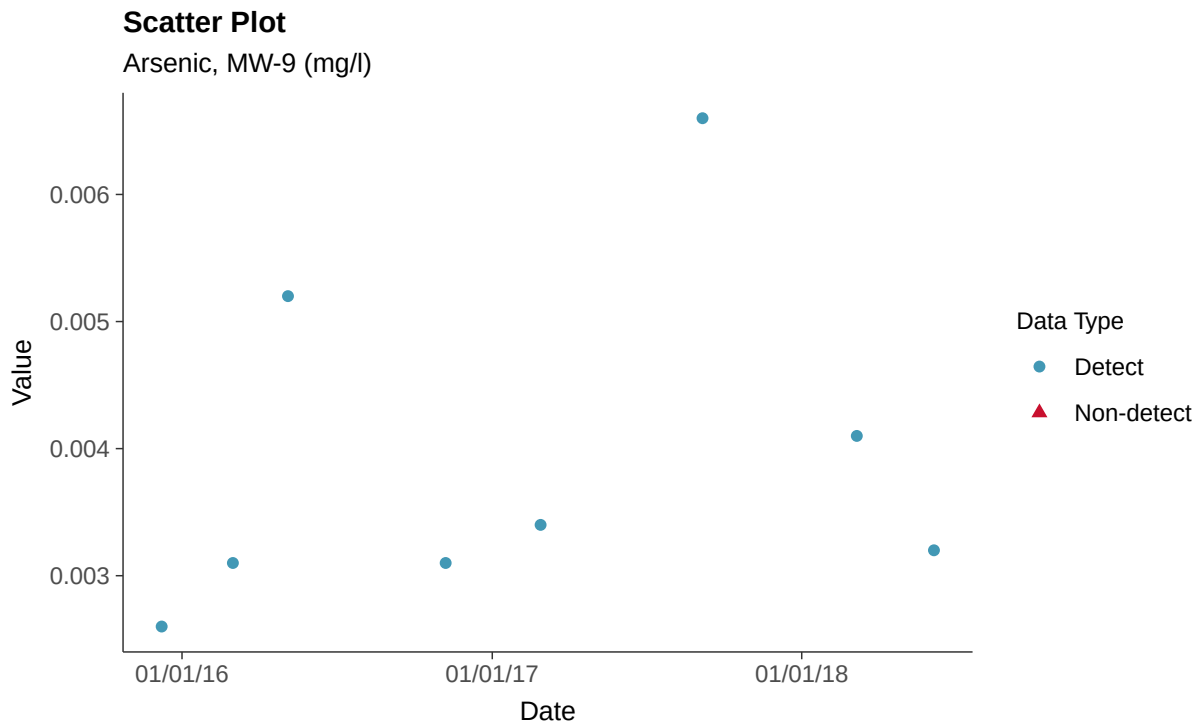
Trend Regression: Piecewise Linear-Linear-Linear

Antimony, MW-9 (mg/l)



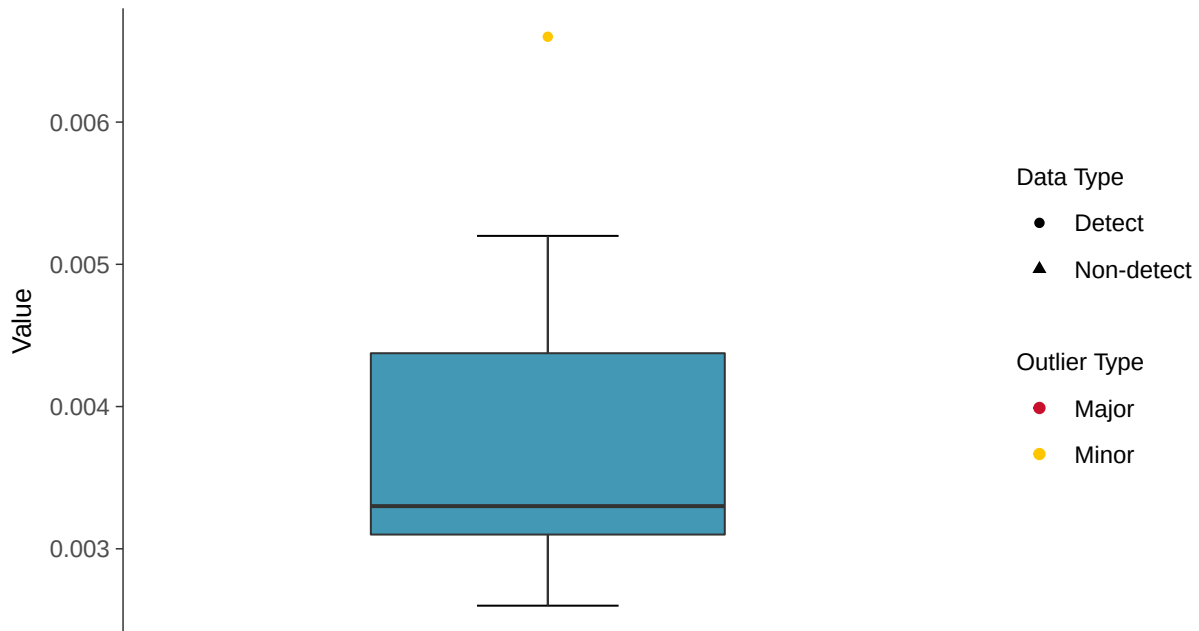
Appendix IV: Arsenic, MW-9

ID: 4_2_105



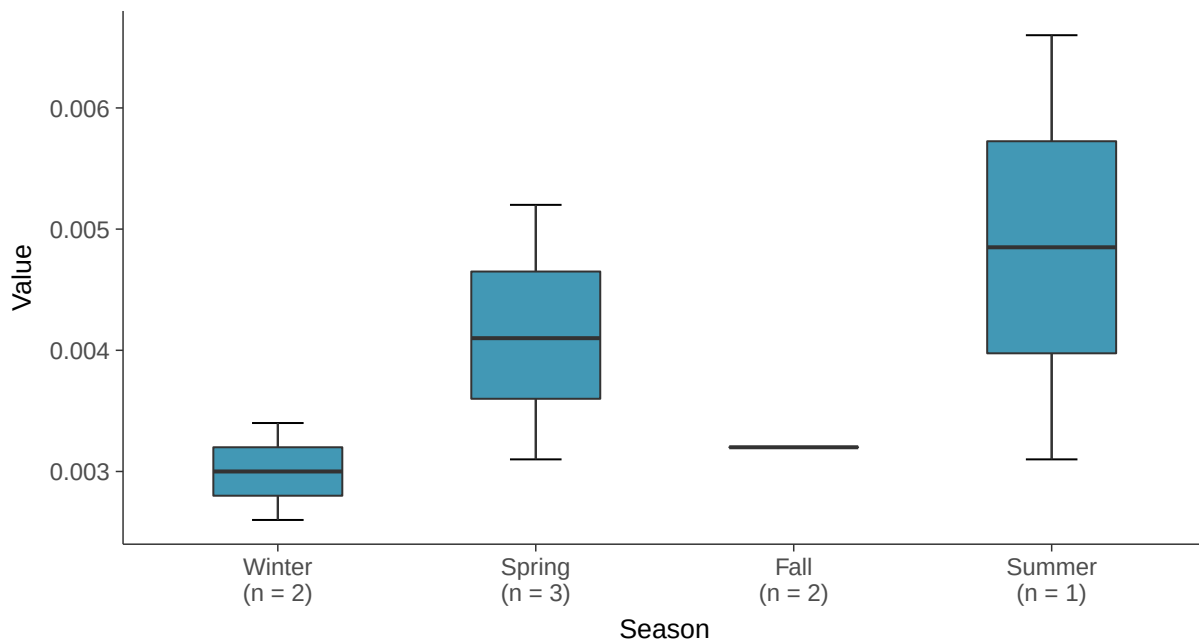
Boxplot

Arsenic, MW-9 (mg/l)



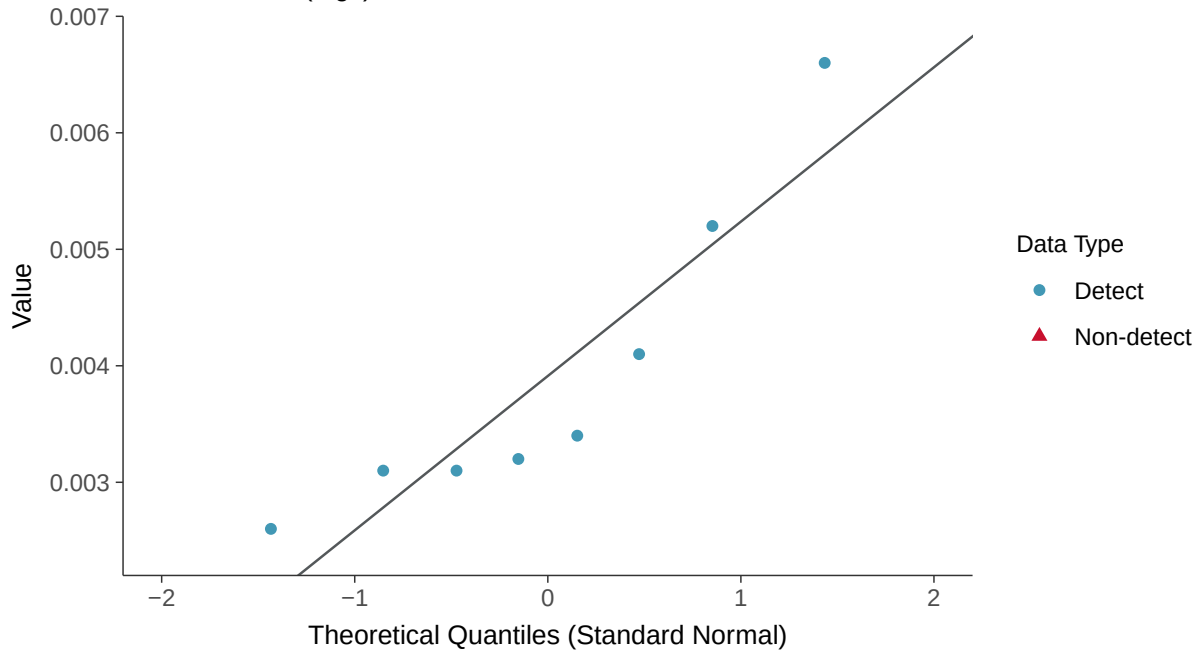
Boxplot by Season

Arsenic, MW-9 (mg/l)



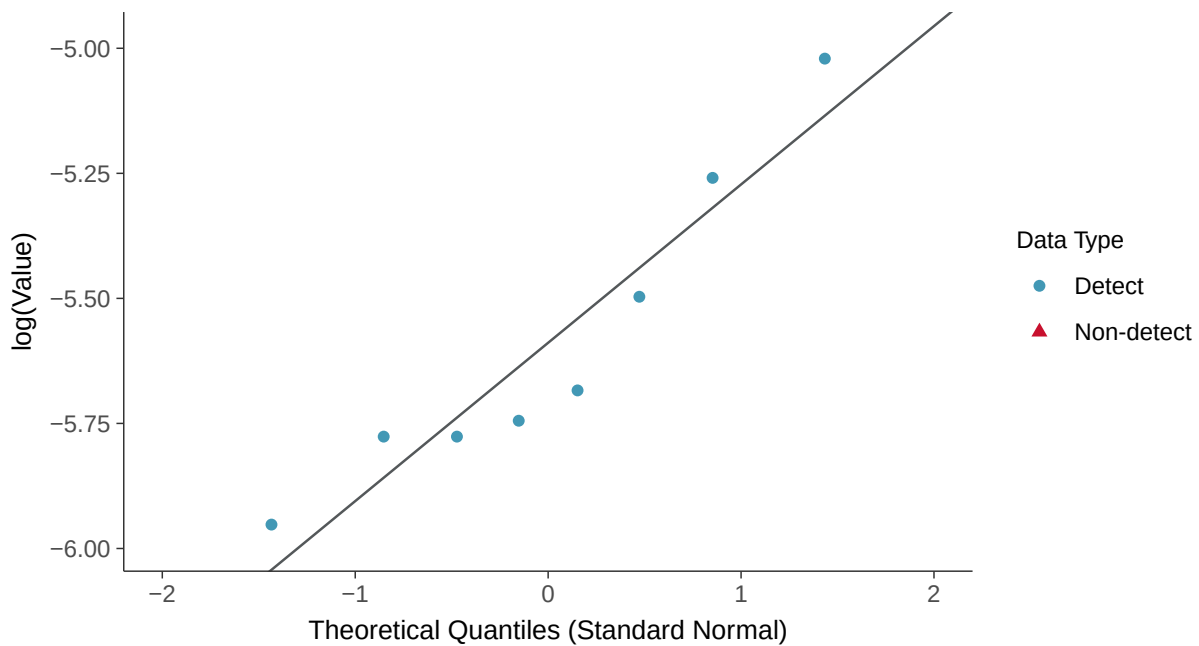
Normal Q-Q plot

Arsenic, MW-9 (mg/l)



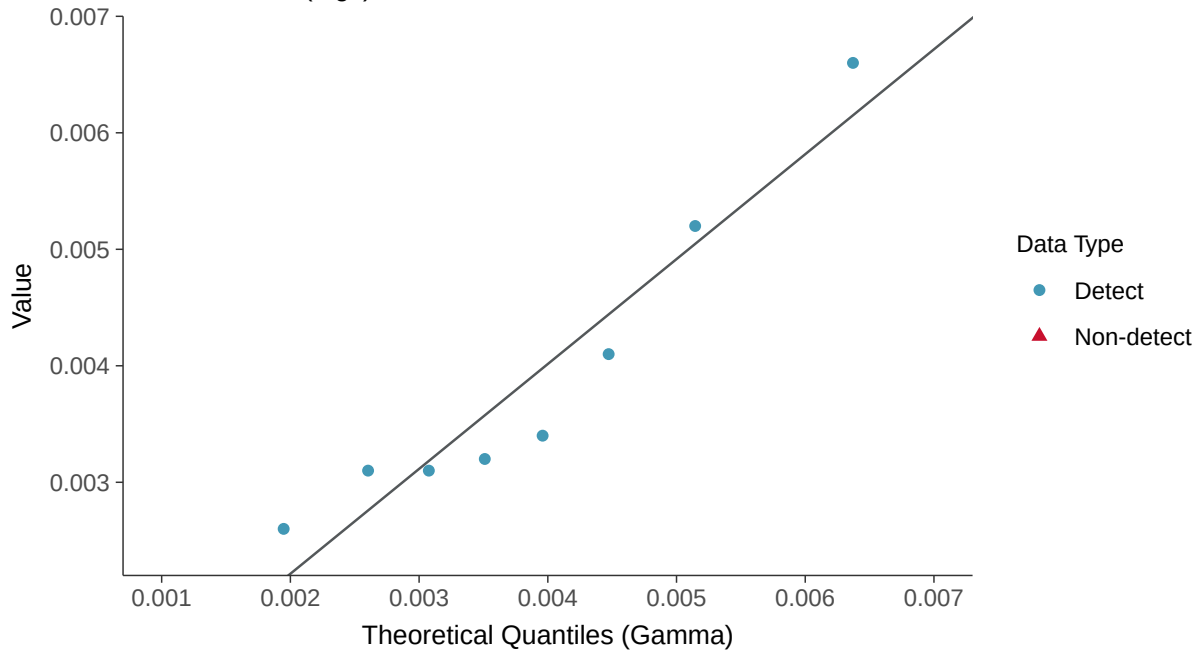
Lognormal Q-Q plot

Arsenic, MW-9 (mg/l)



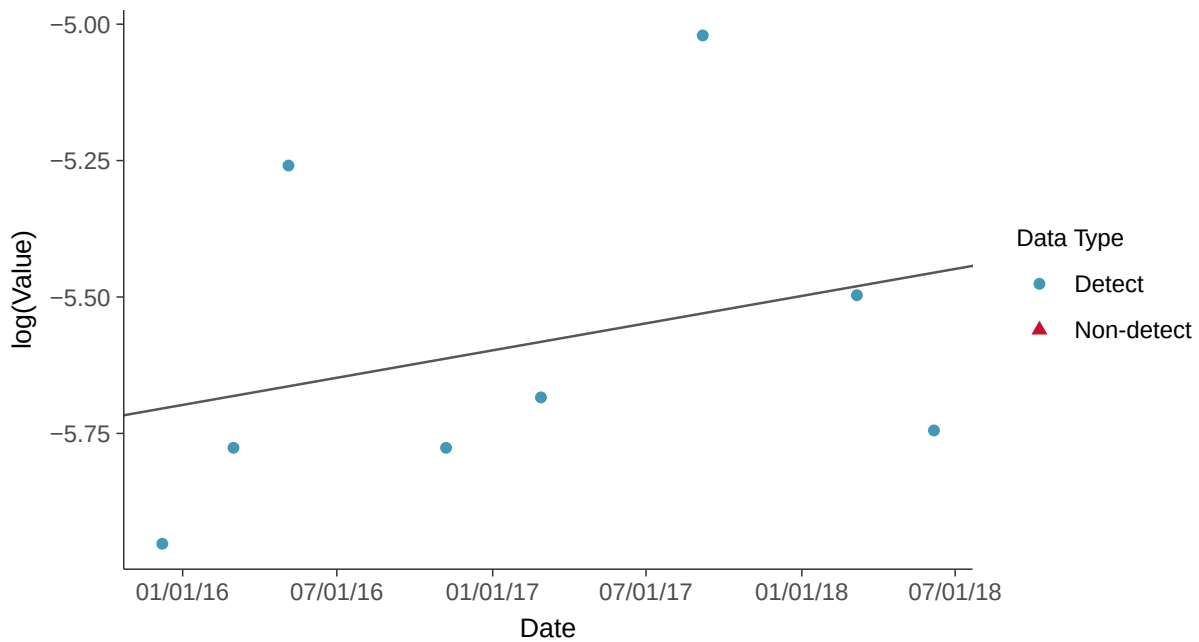
Gamma Q-Q plot

Arsenic, MW-9 (mg/l)



Trend Regression: Lognormal MLE

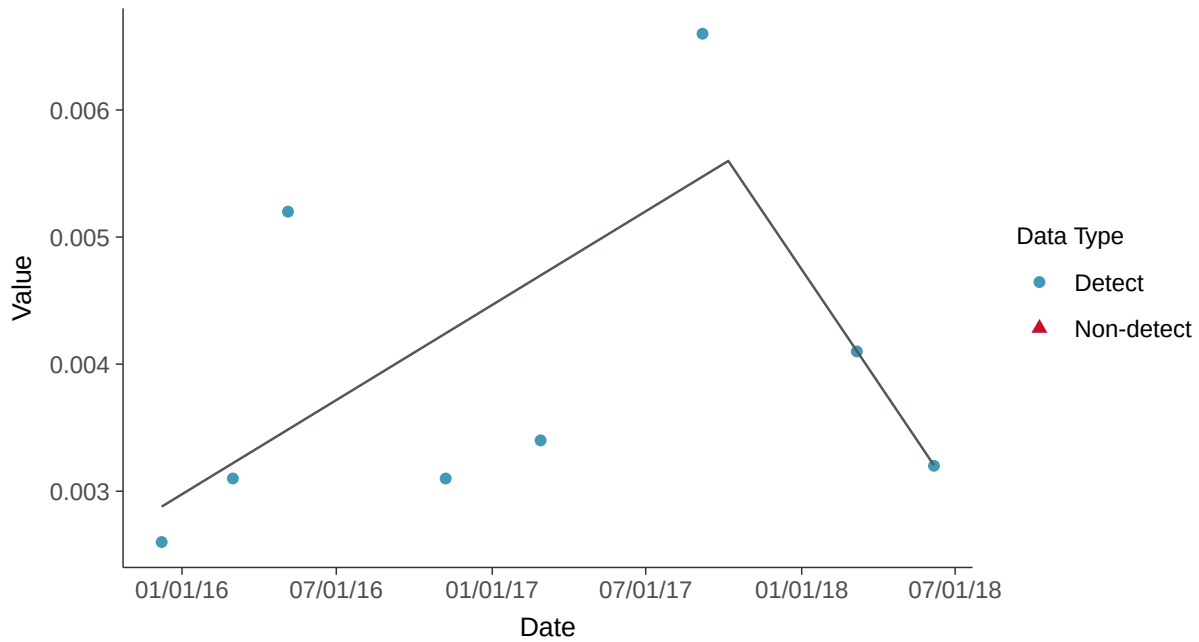
Arsenic, MW-9 (mg/l)





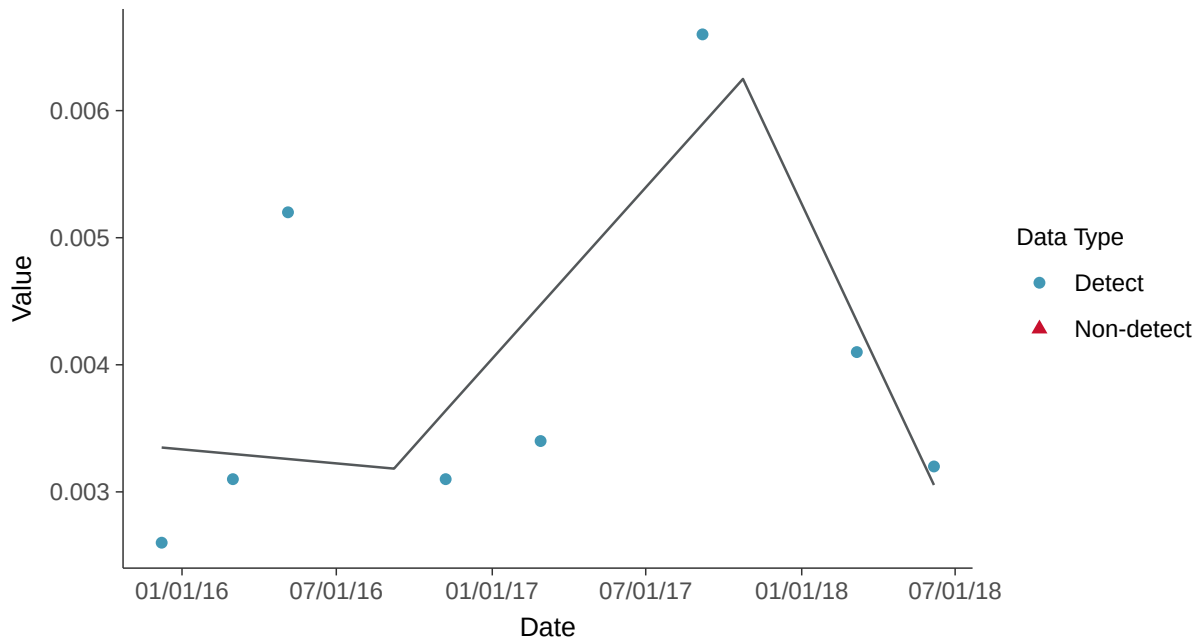
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-9 (mg/l)



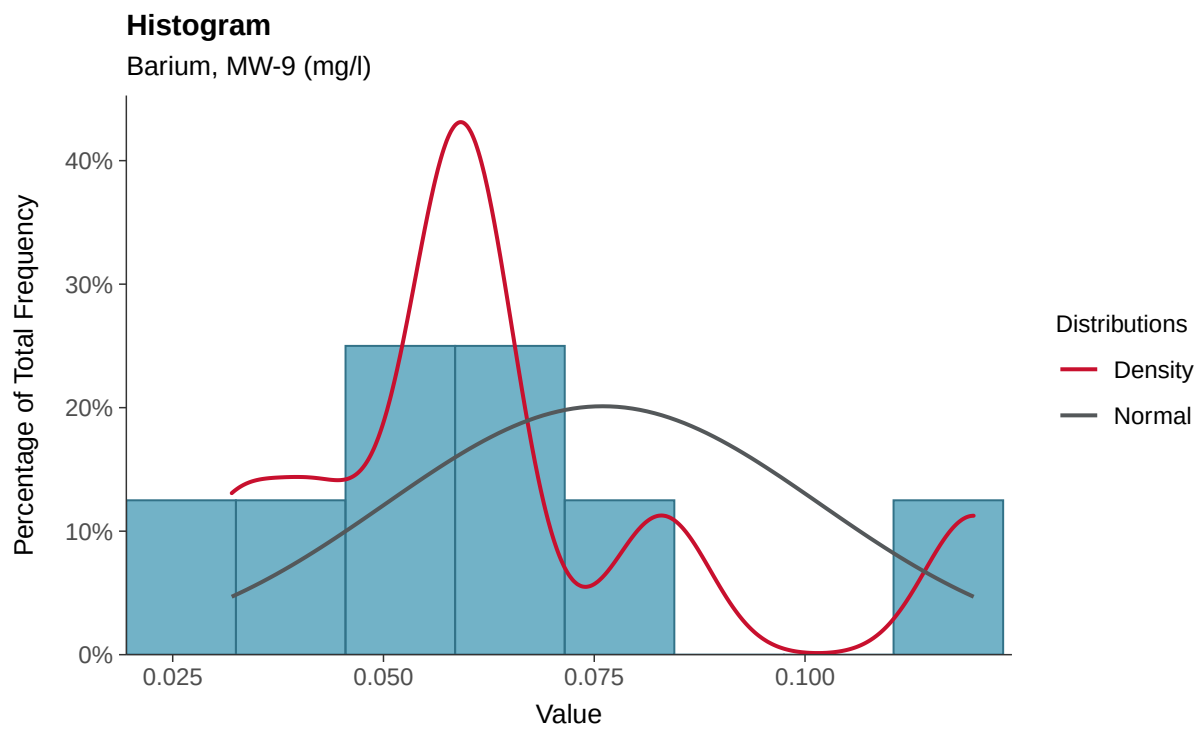
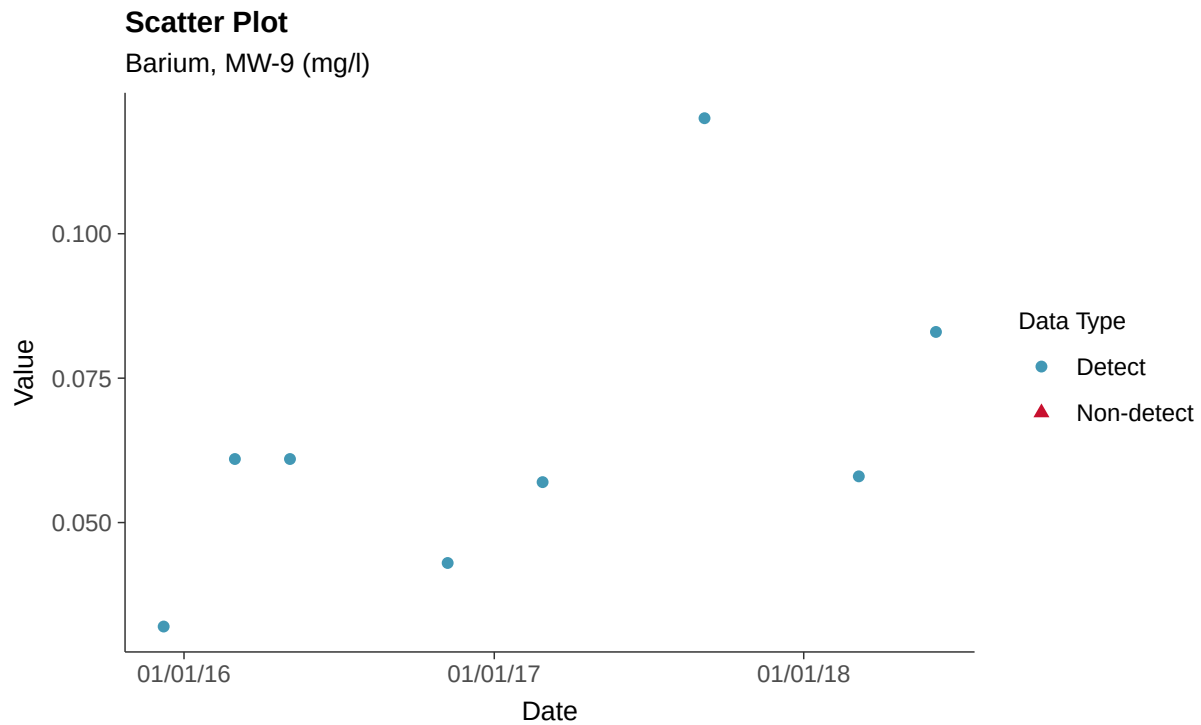
Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-9 (mg/l)



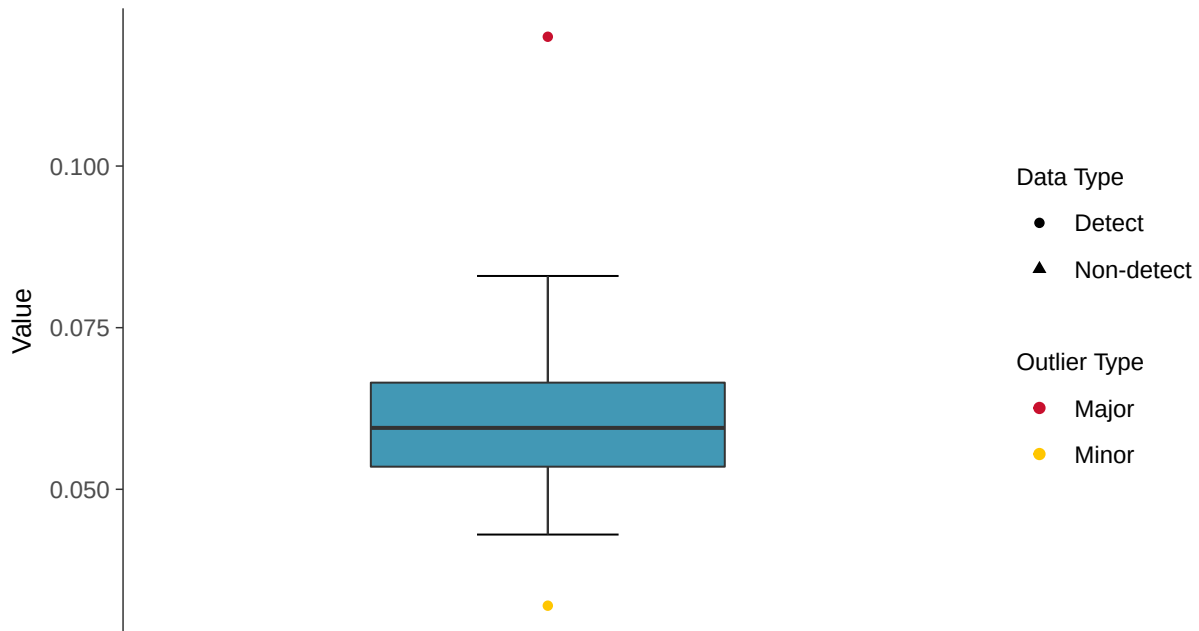
Appendix IV: Barium, MW-9

ID: 4_2_106



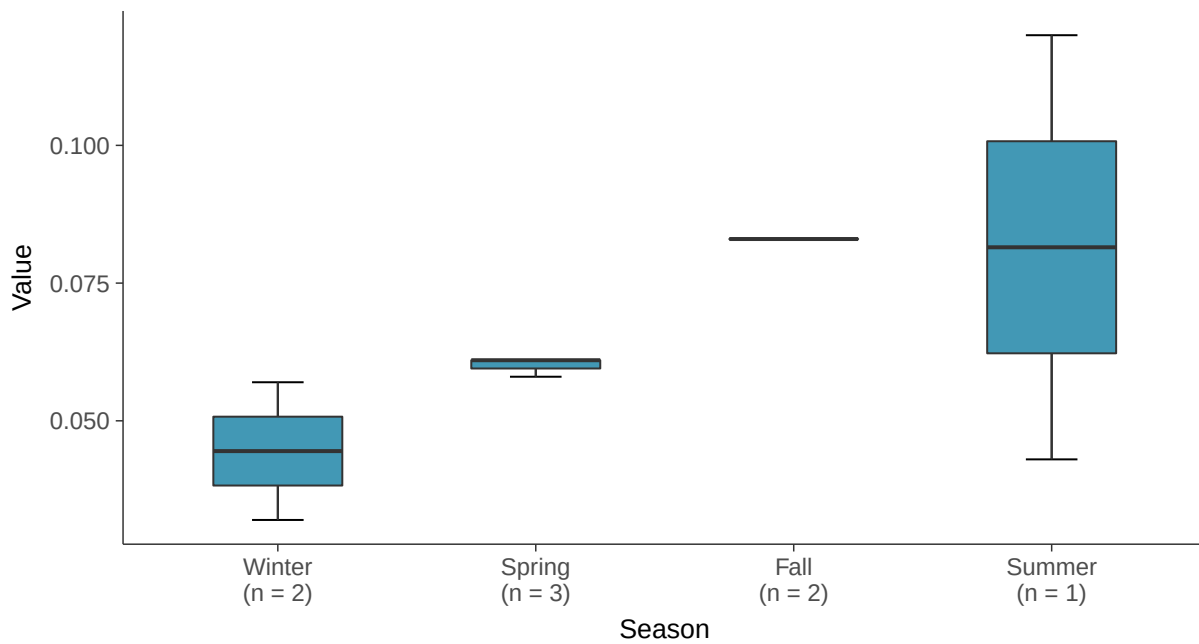
Boxplot

Barium, MW-9 (mg/l)



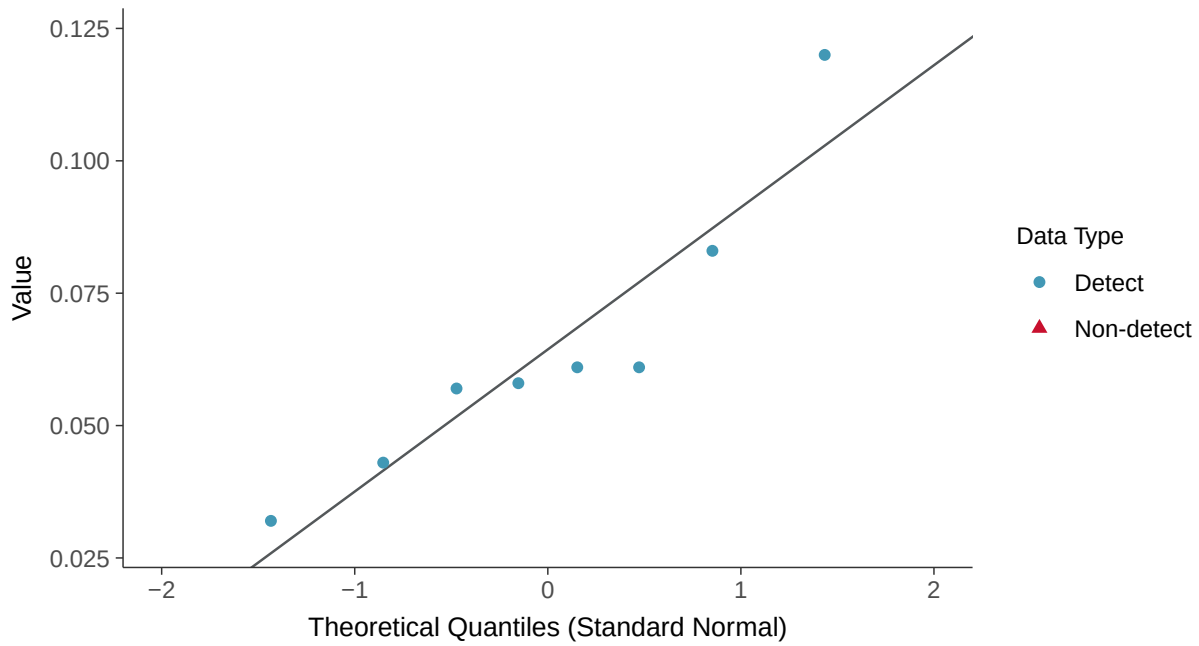
Boxplot by Season

Barium, MW-9 (mg/l)



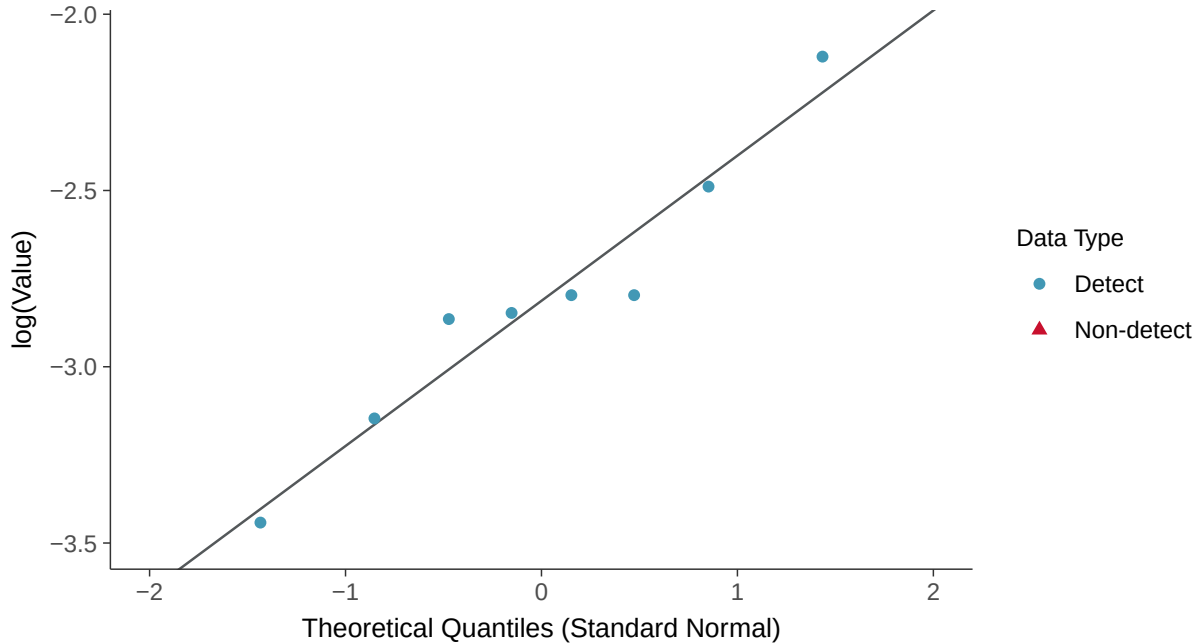
Normal Q-Q plot

Barium, MW-9 (mg/l)



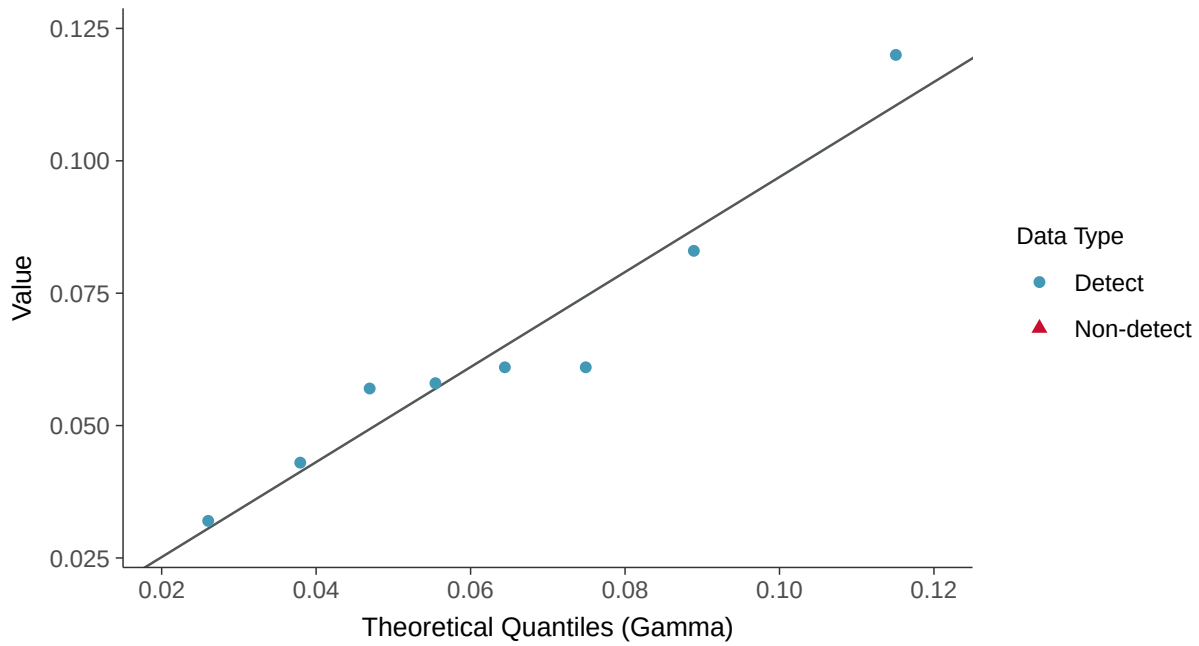
Lognormal Q-Q plot

Barium, MW-9 (mg/l)

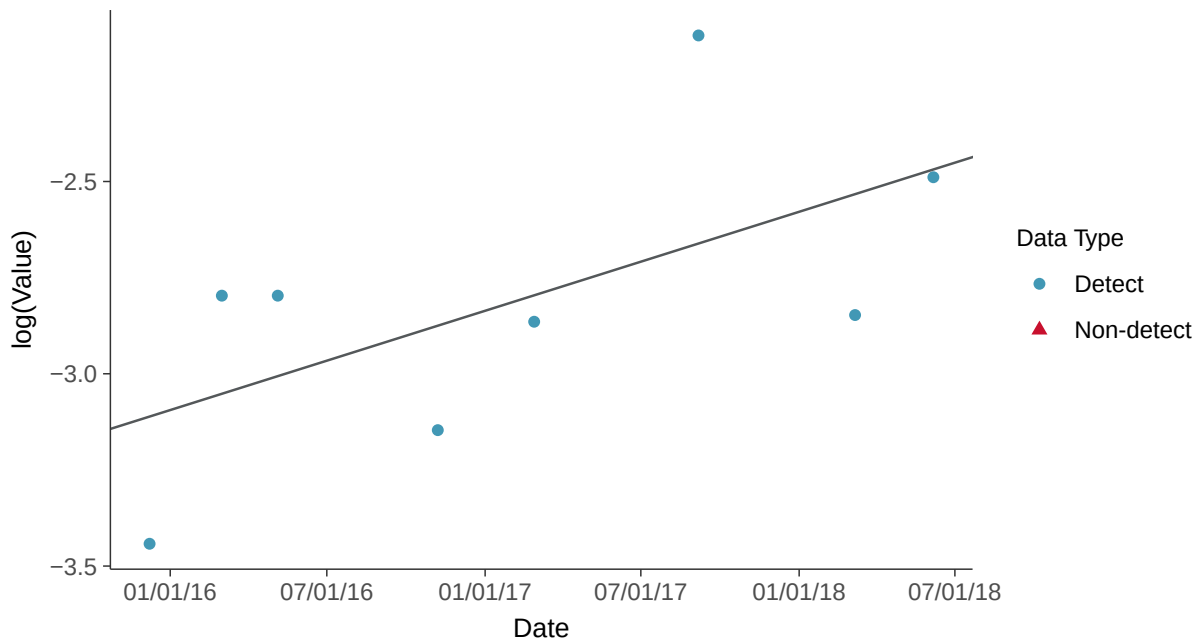




Gamma Q-Q plot
Barium, MW-9 (mg/l)



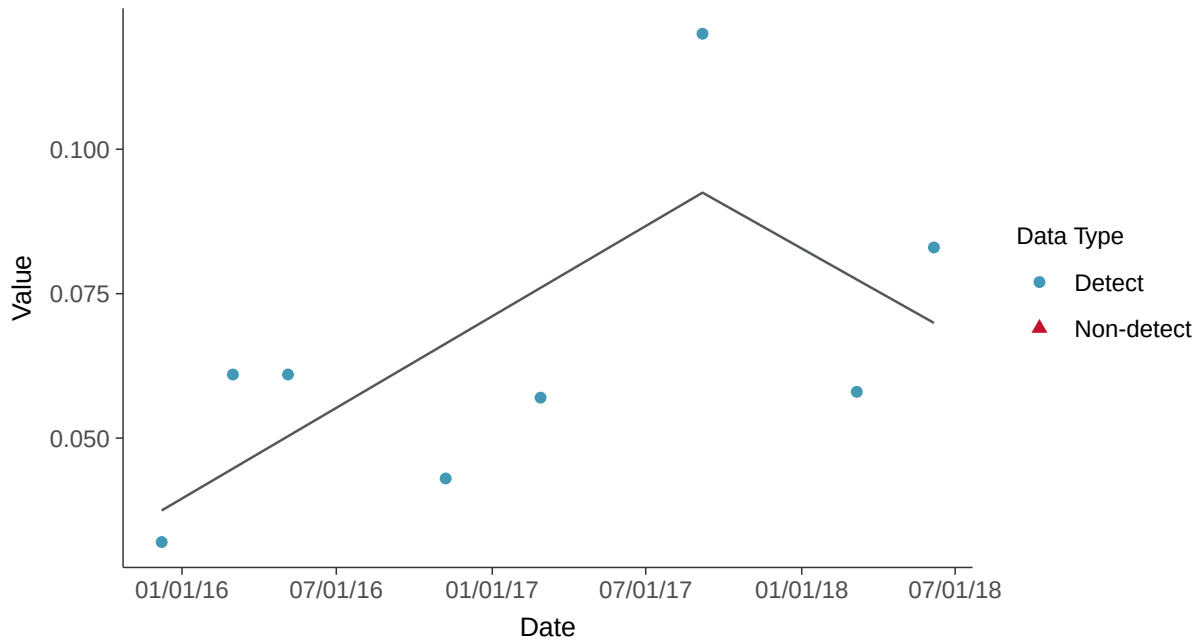
Trend Regression: Lognormal MLE
Barium, MW-9 (mg/l)





Trend Regression: Piecewise Linear-Linear

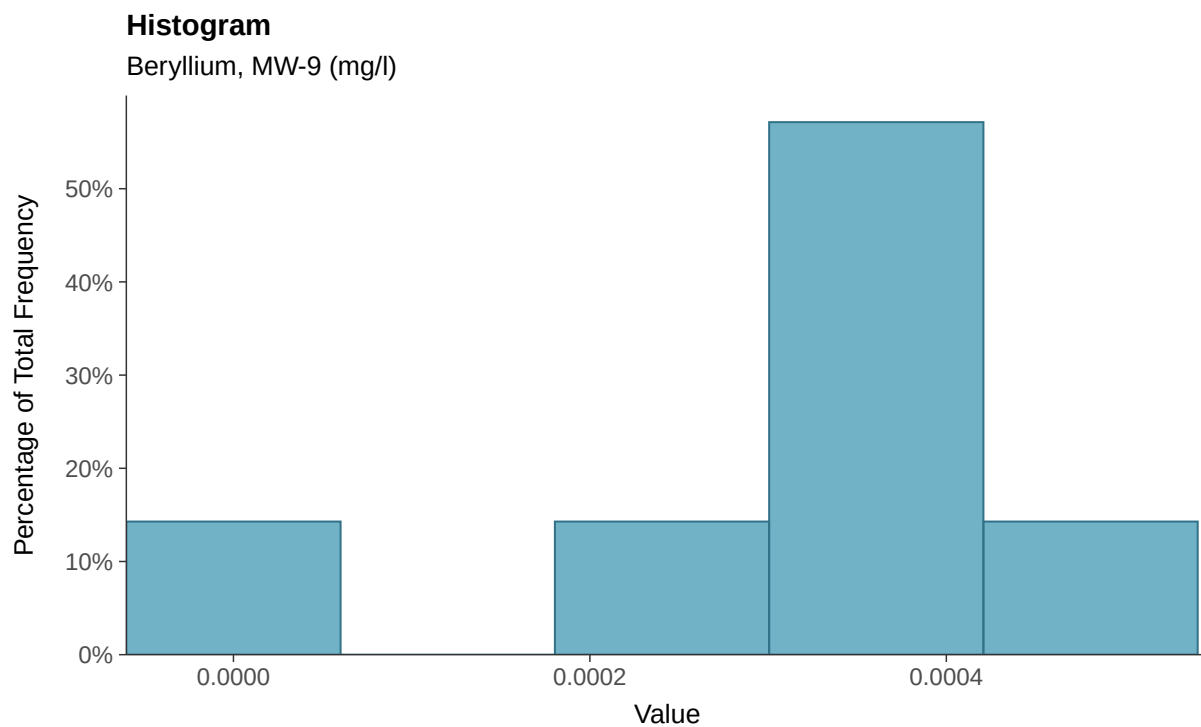
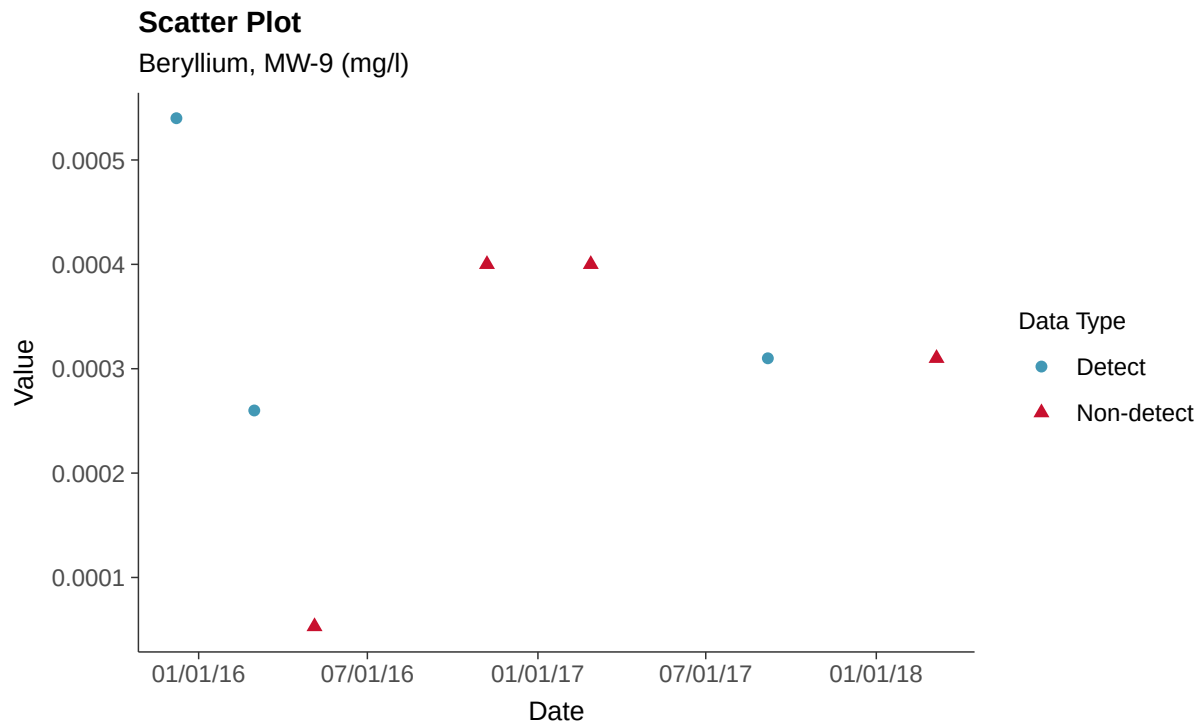
Barium, MW-9 (mg/l)

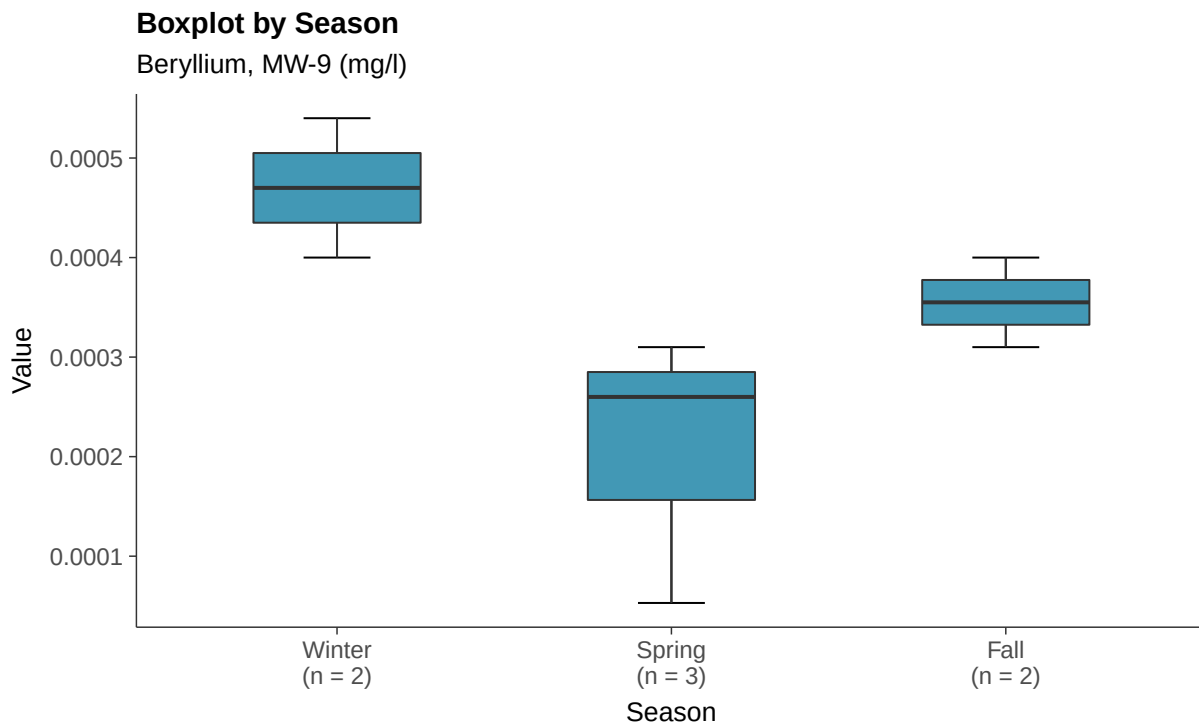
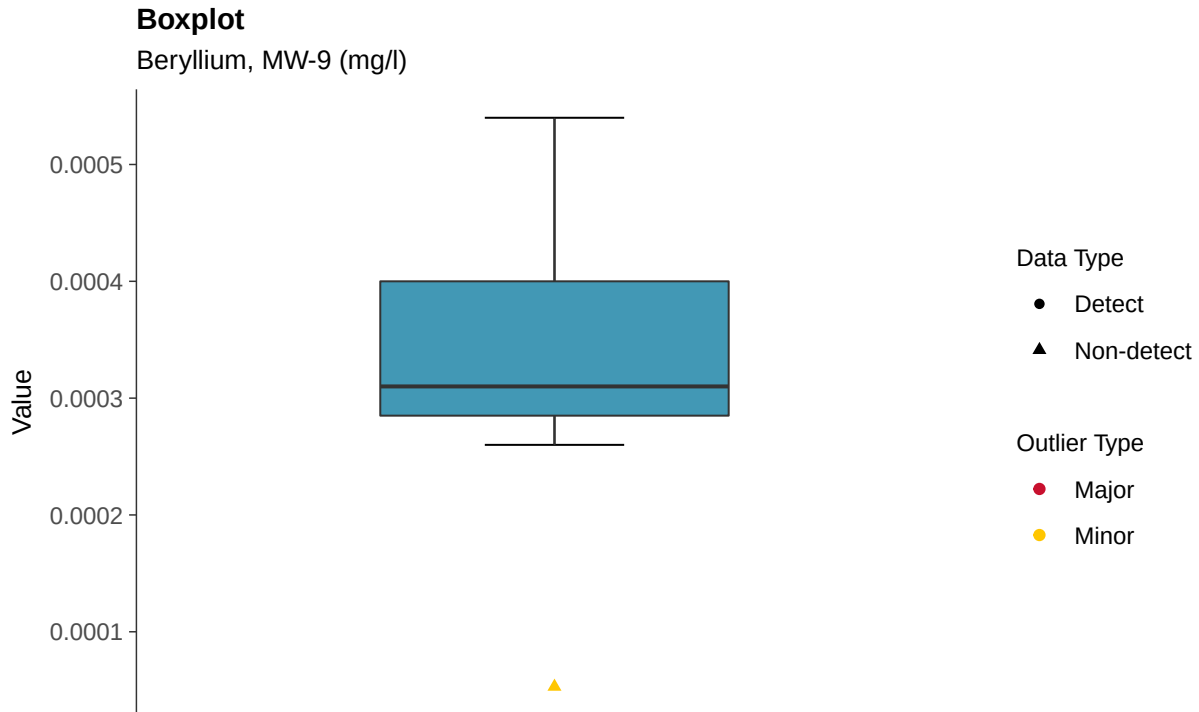




Appendix IV: Beryllium, MW-9

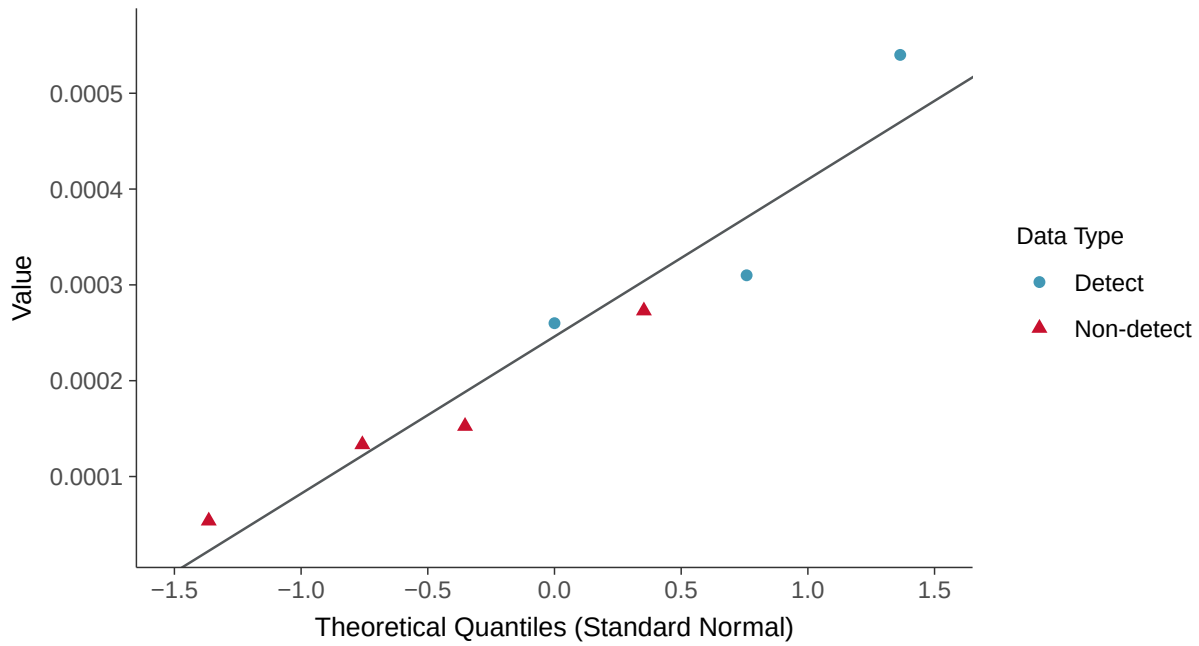
ID: 4_2_107





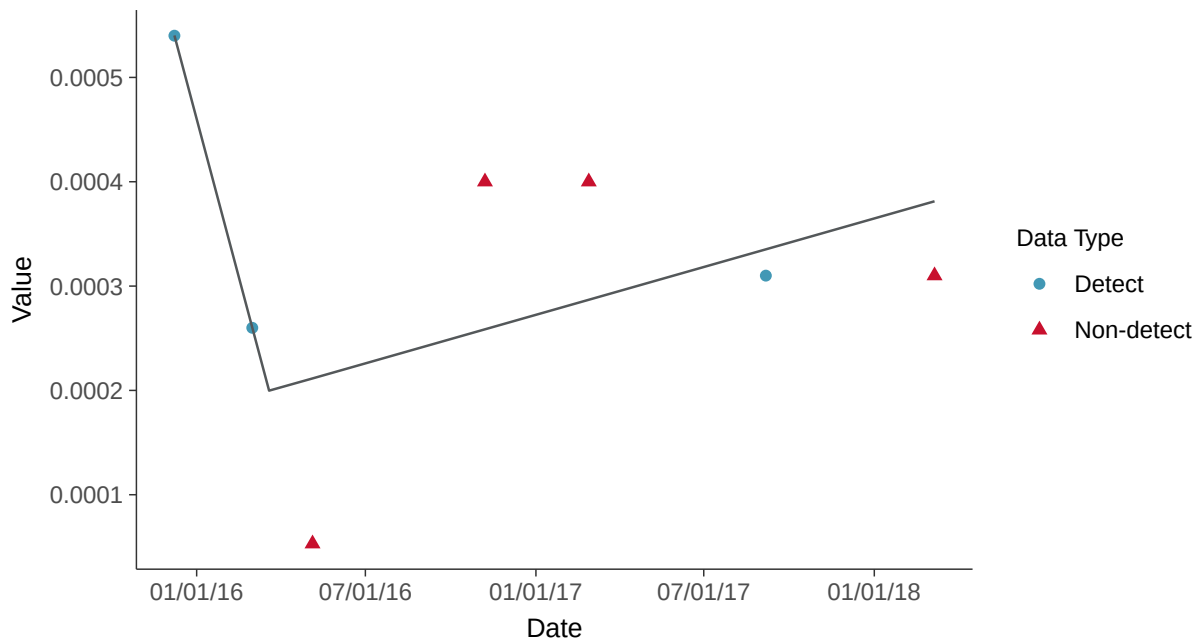
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-9 (mg/l)



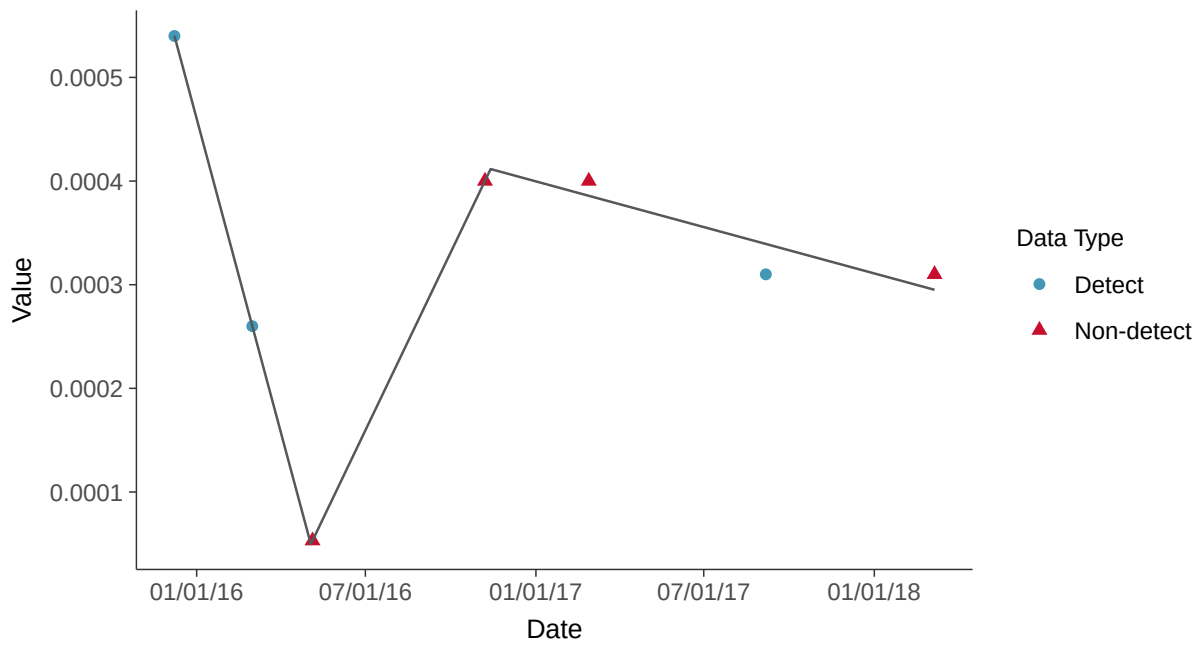
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-9 (mg/l)



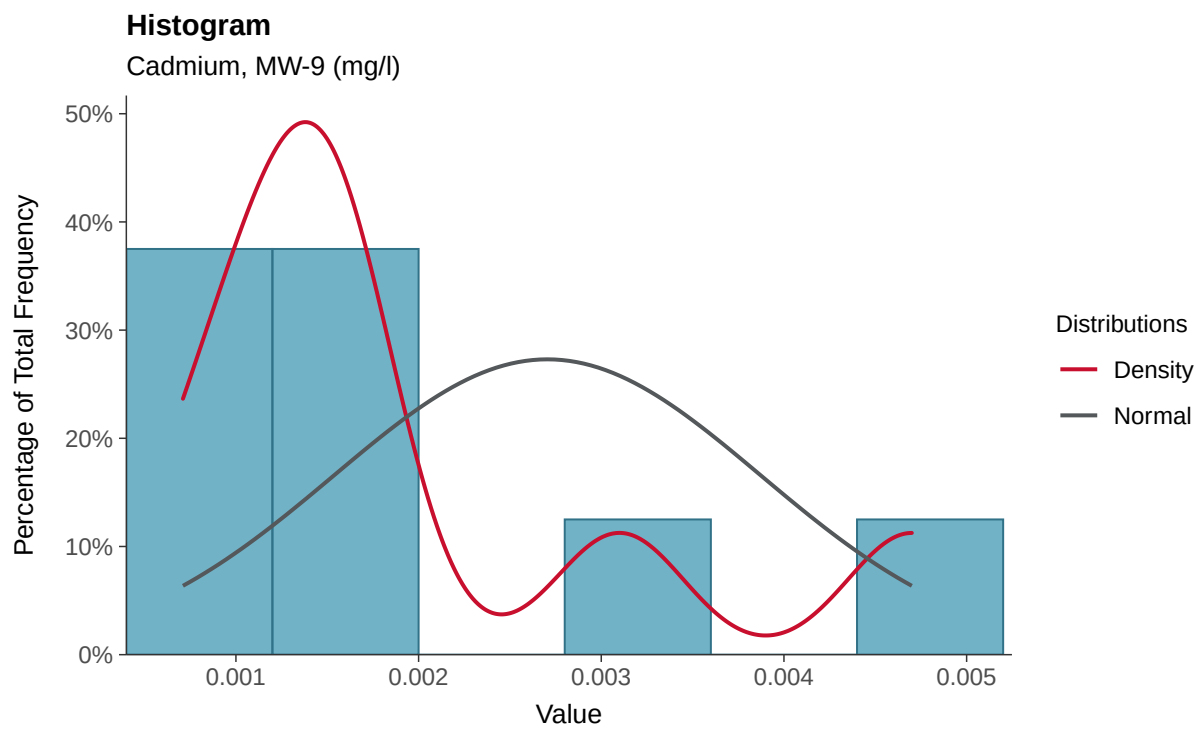
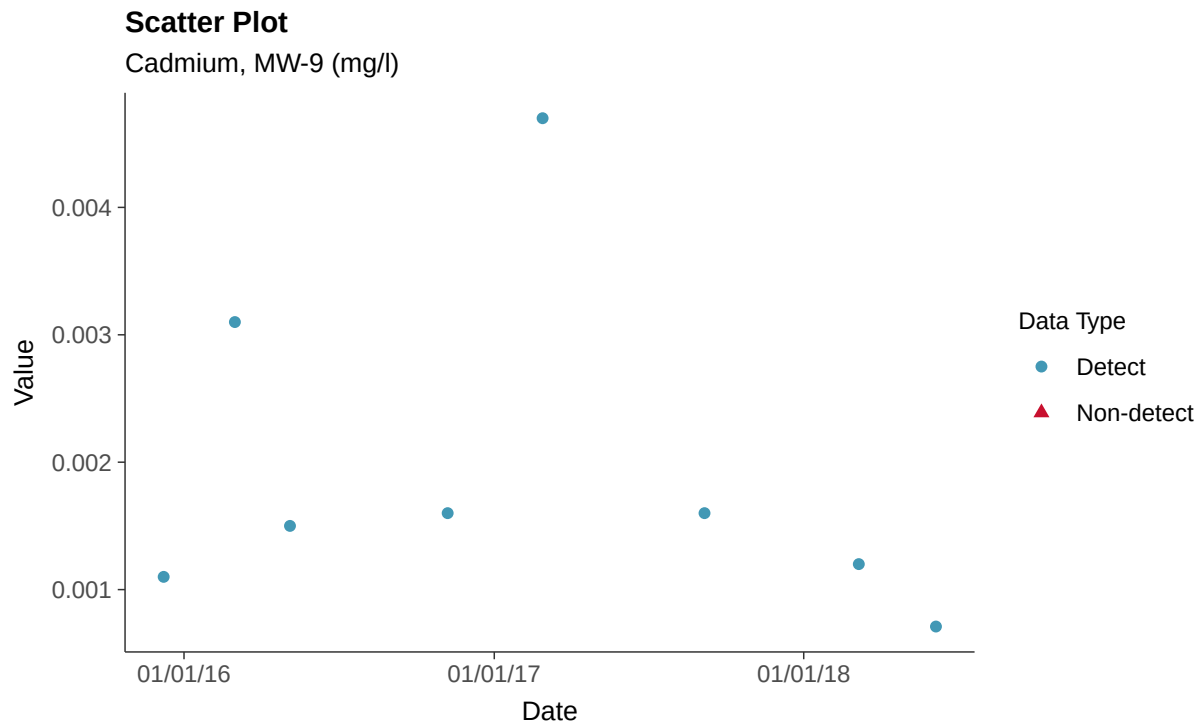


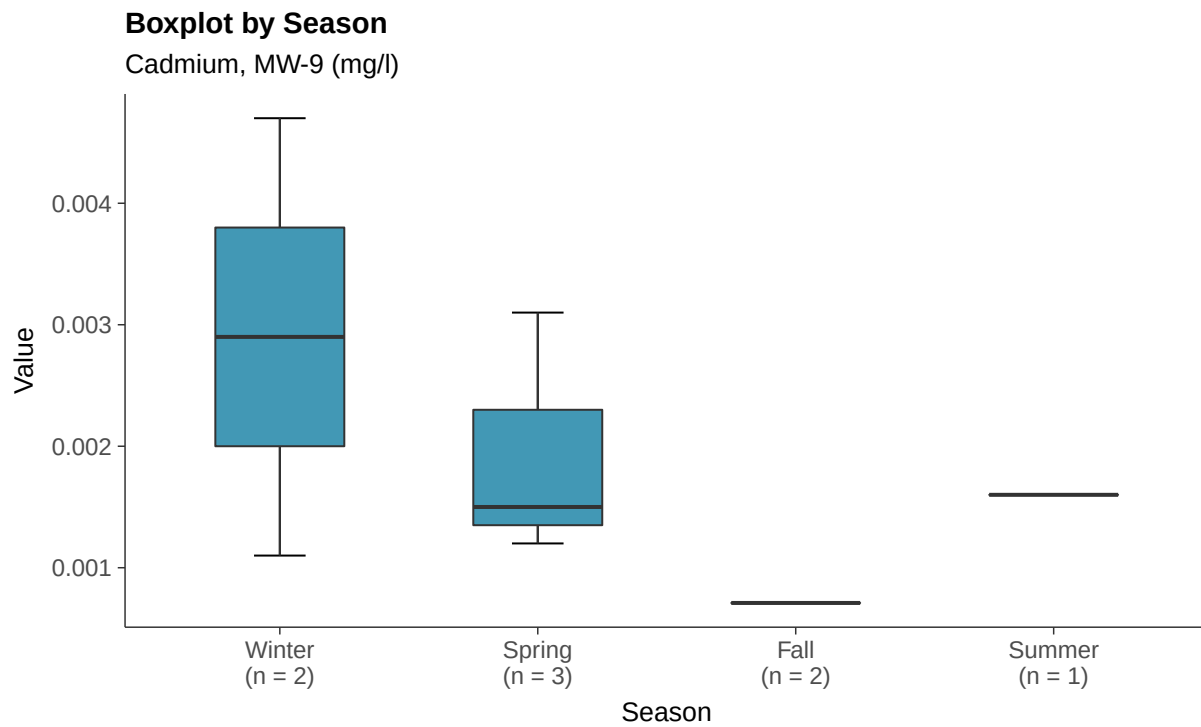
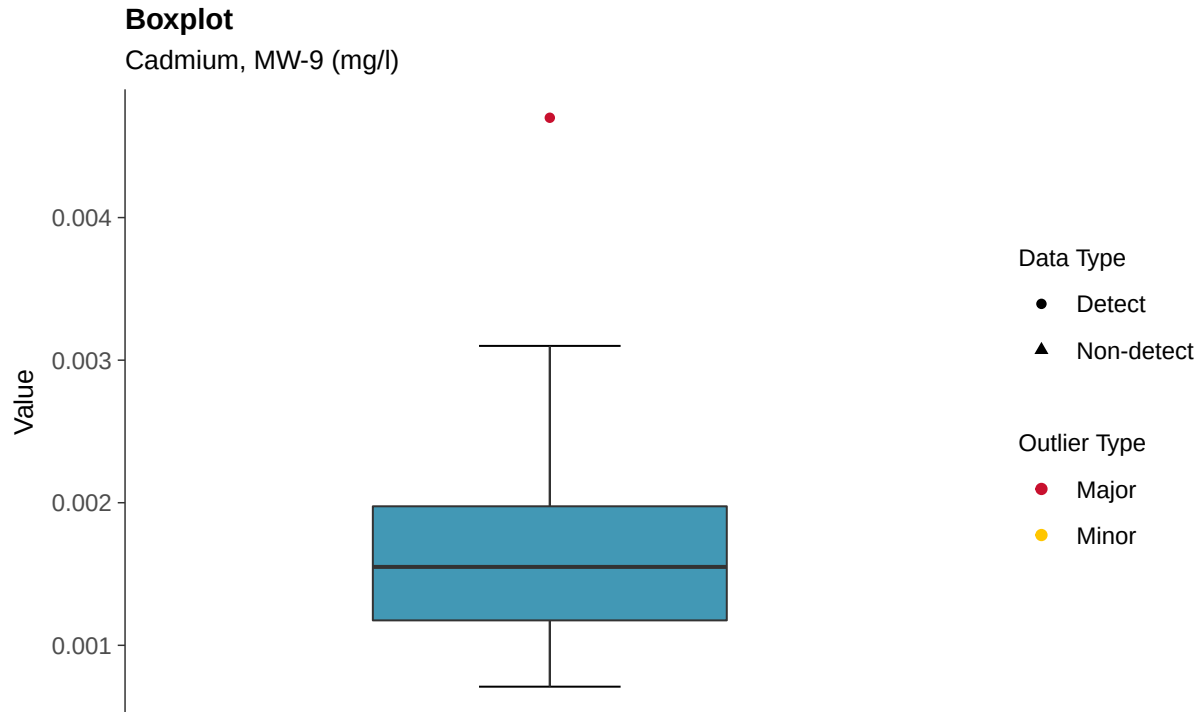
Trend Regression: Piecewise Linear-Linear-Linear
Beryllium, MW-9 (mg/l)



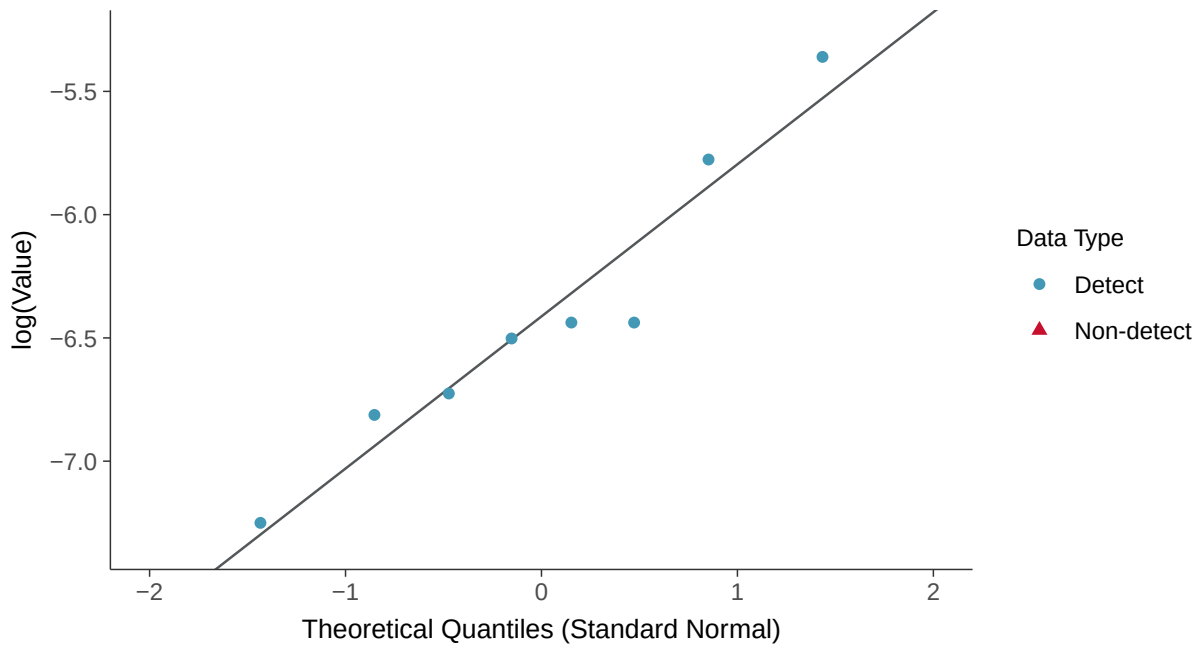
Appendix IV: Cadmium, MW-9

ID: 4_2_109

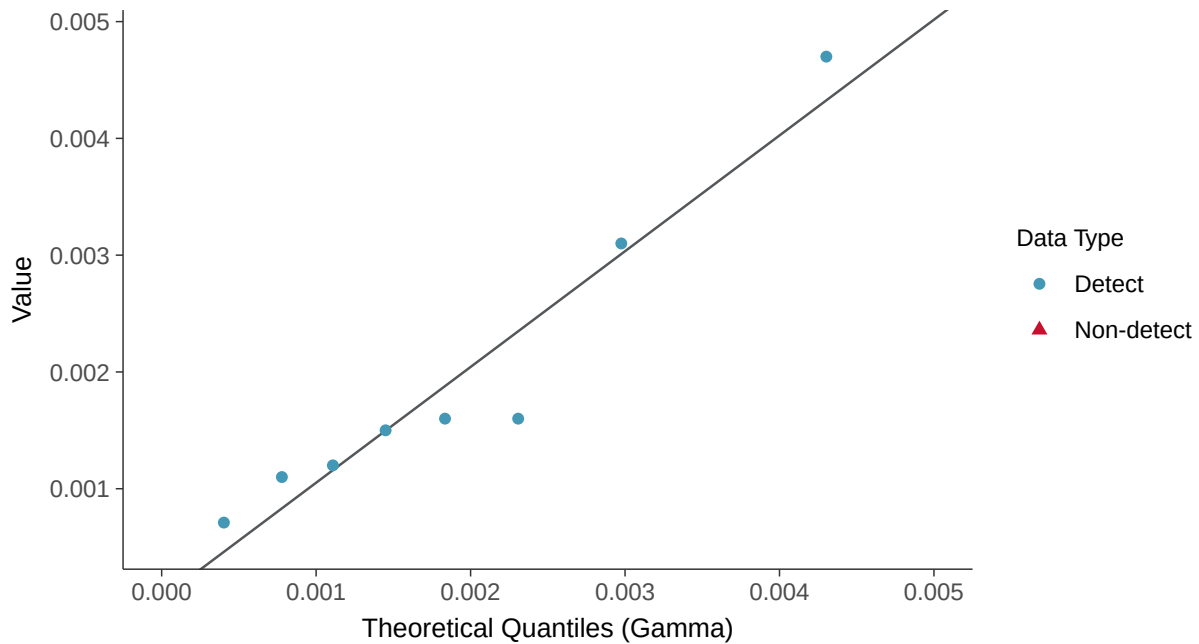




Lognormal Q-Q plot
Cadmium, MW-9 (mg/l)

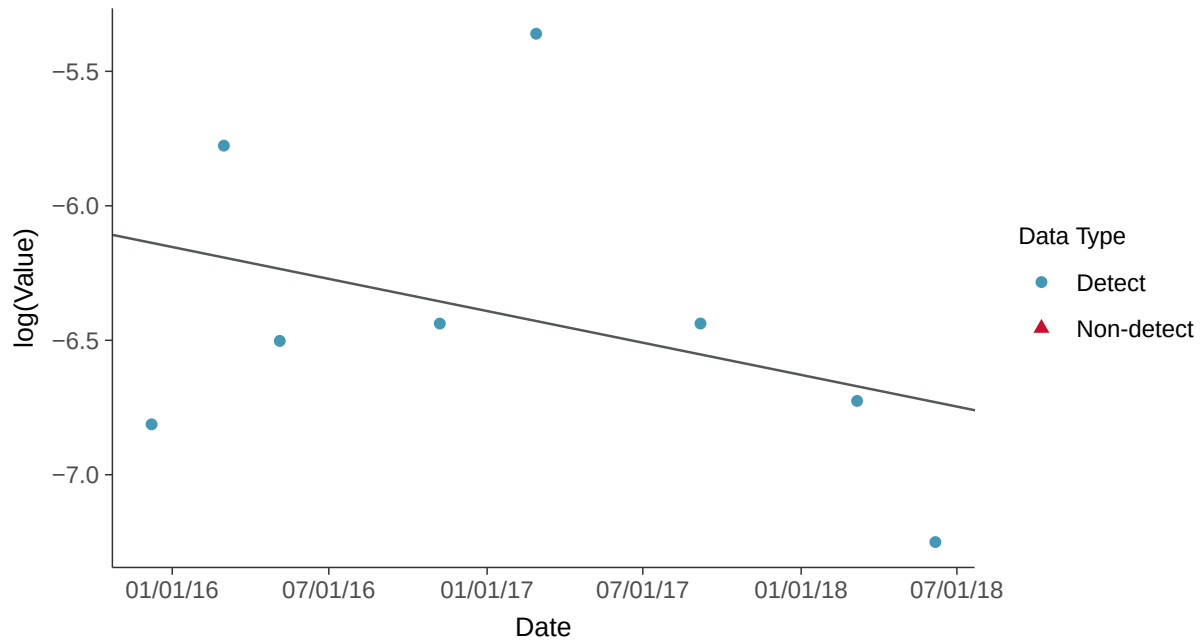


Gamma Q-Q plot
Cadmium, MW-9 (mg/l)



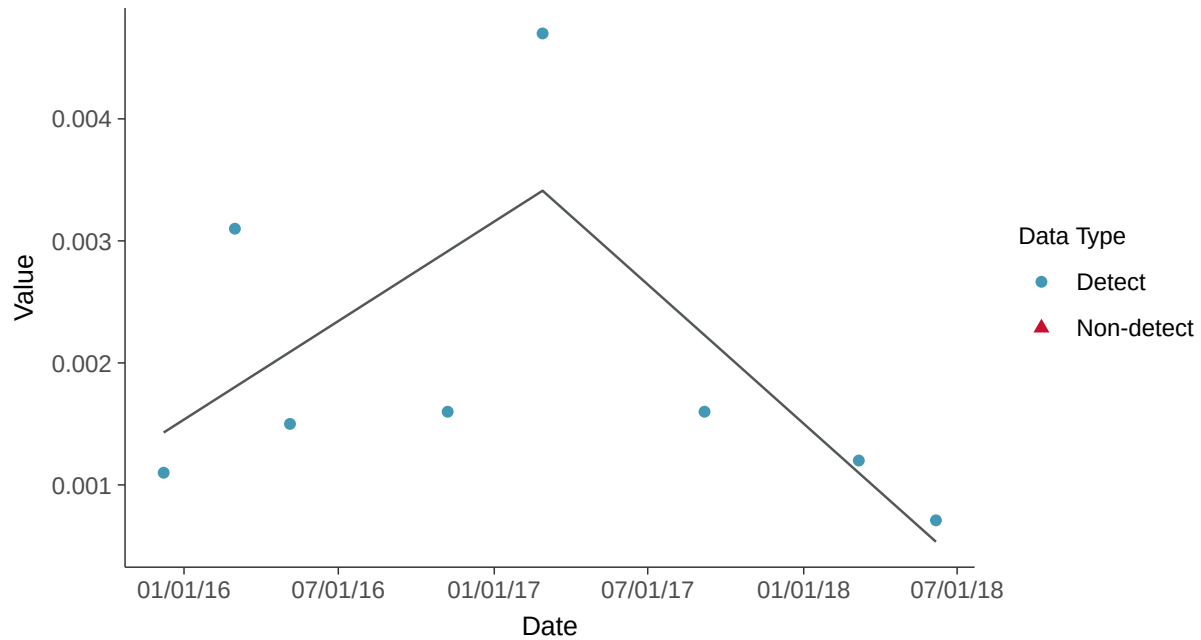
Trend Regression: Lognormal MLE

Cadmium, MW-9 (mg/l)



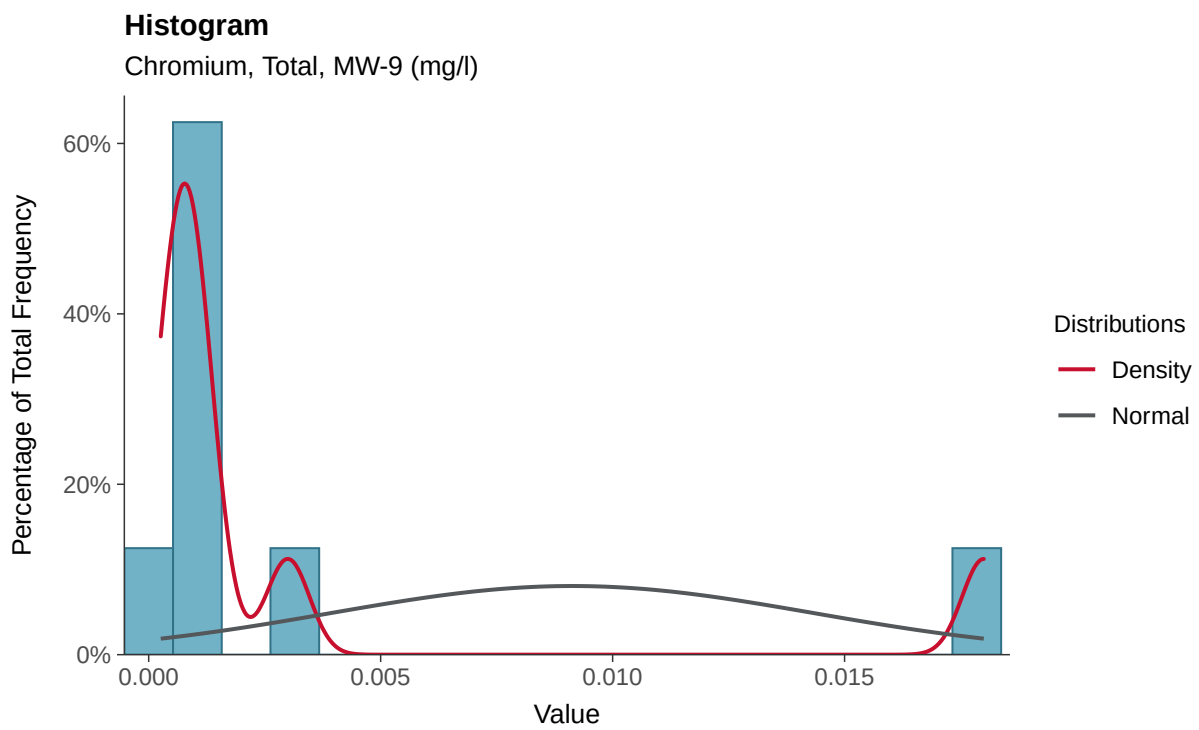
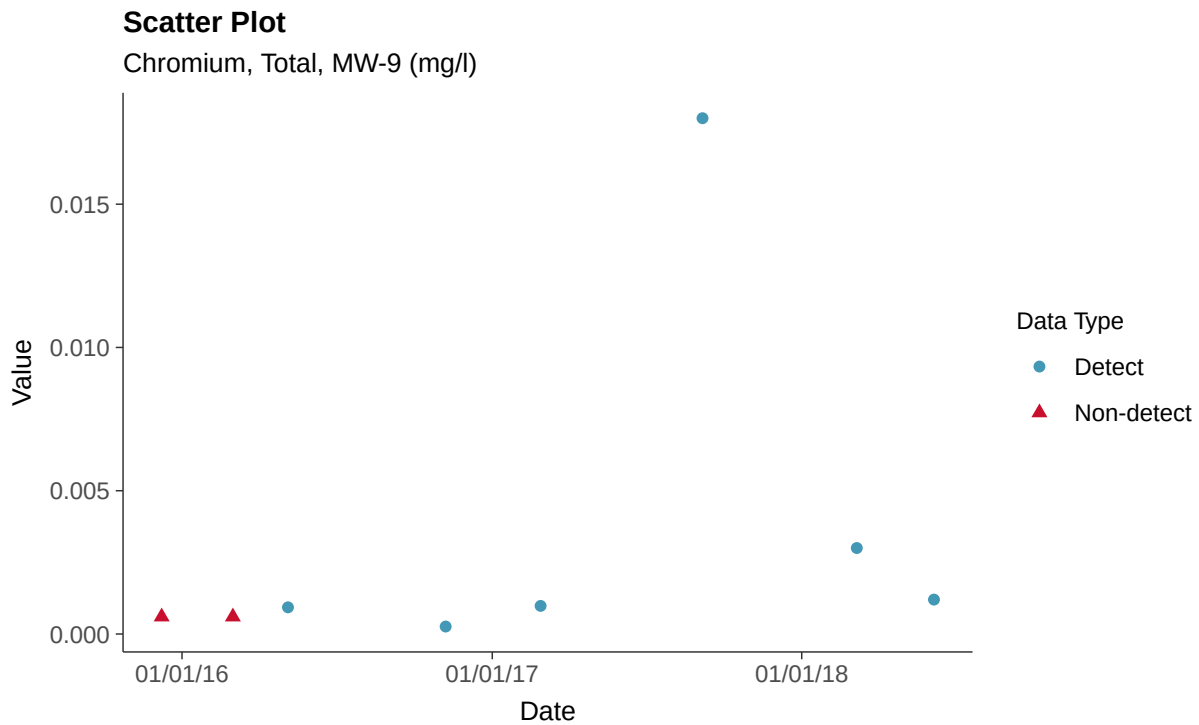
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-9 (mg/l)



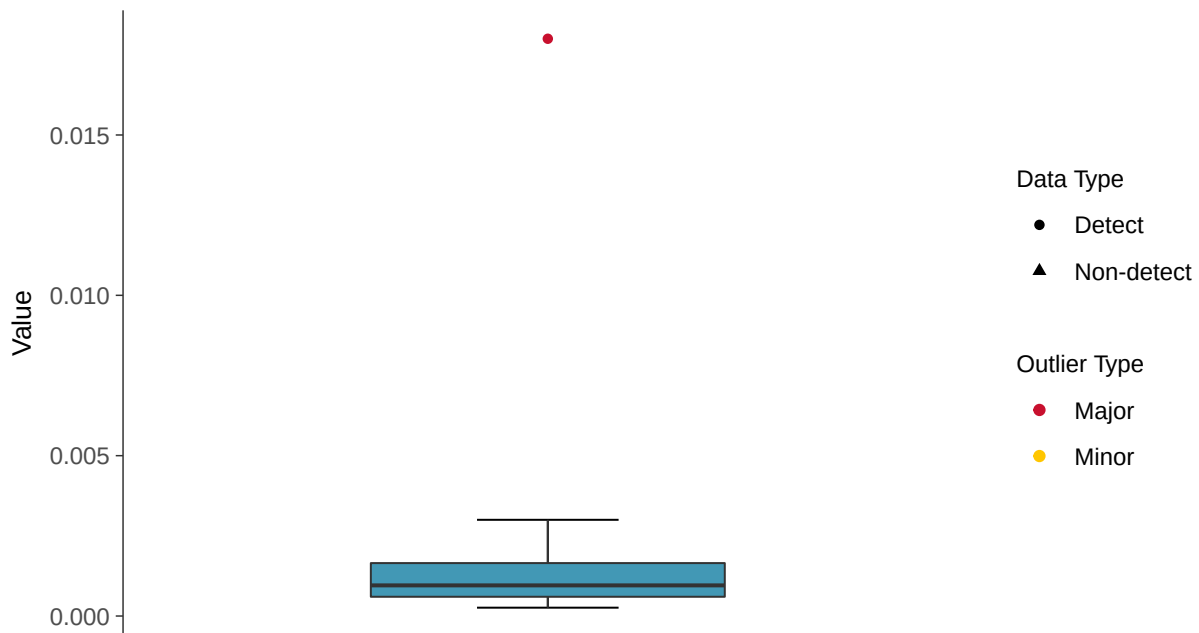
Appendix IV: Chromium, Total, MW-9

ID: 4_2_112



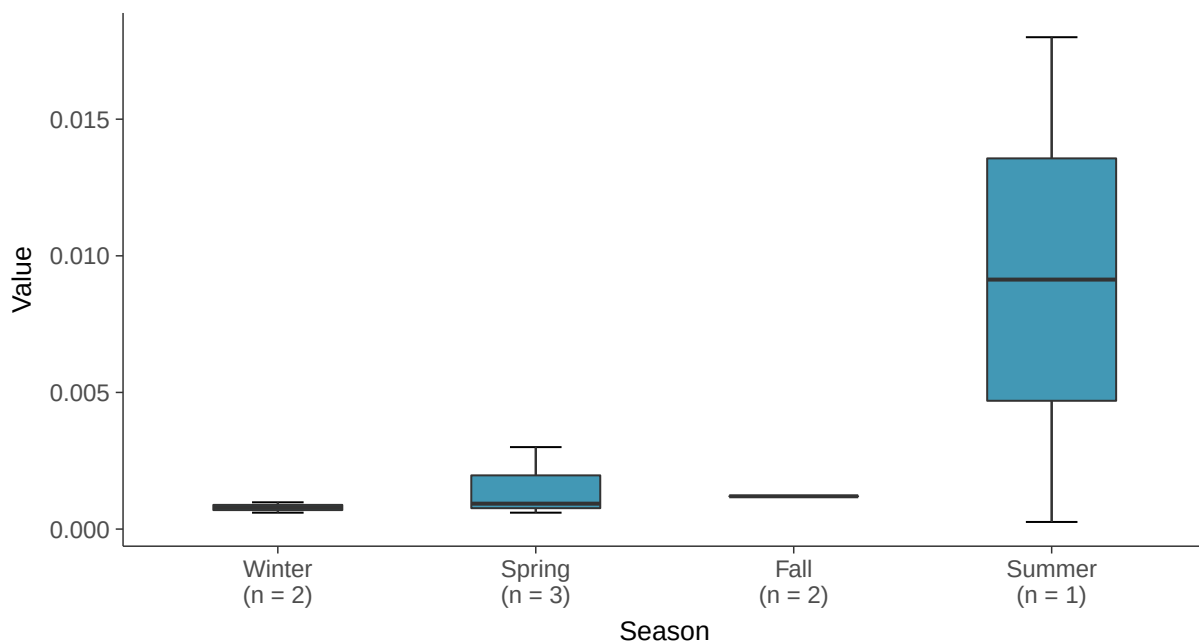
Boxplot

Chromium, Total, MW-9 (mg/l)



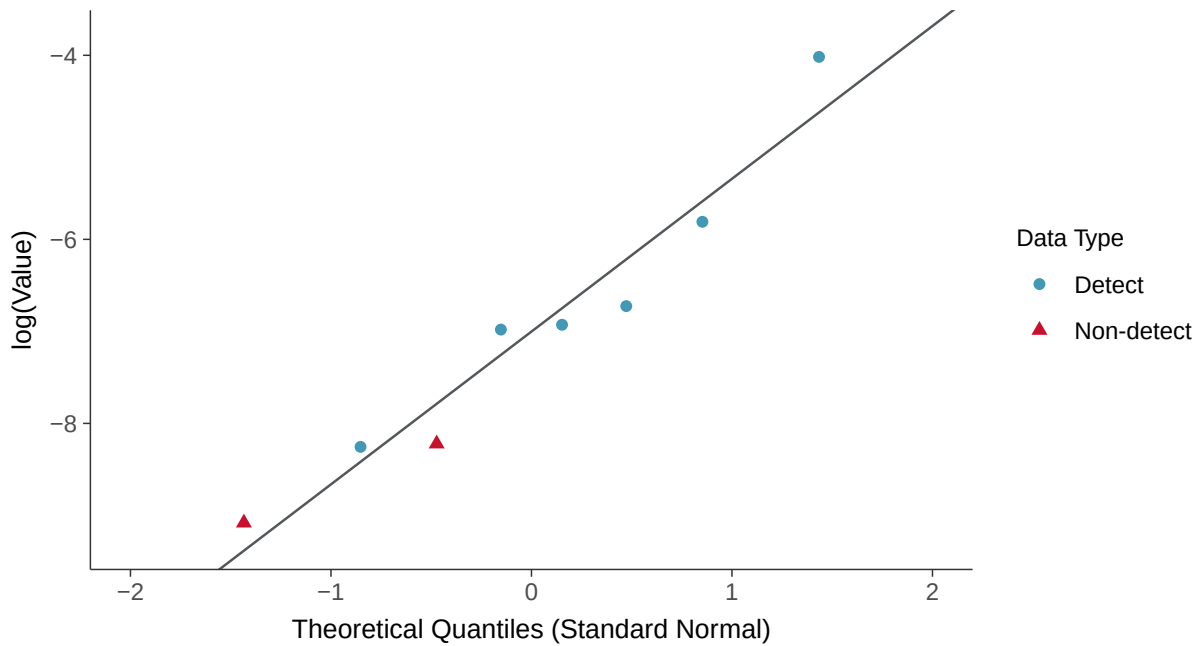
Boxplot by Season

Chromium, Total, MW-9 (mg/l)



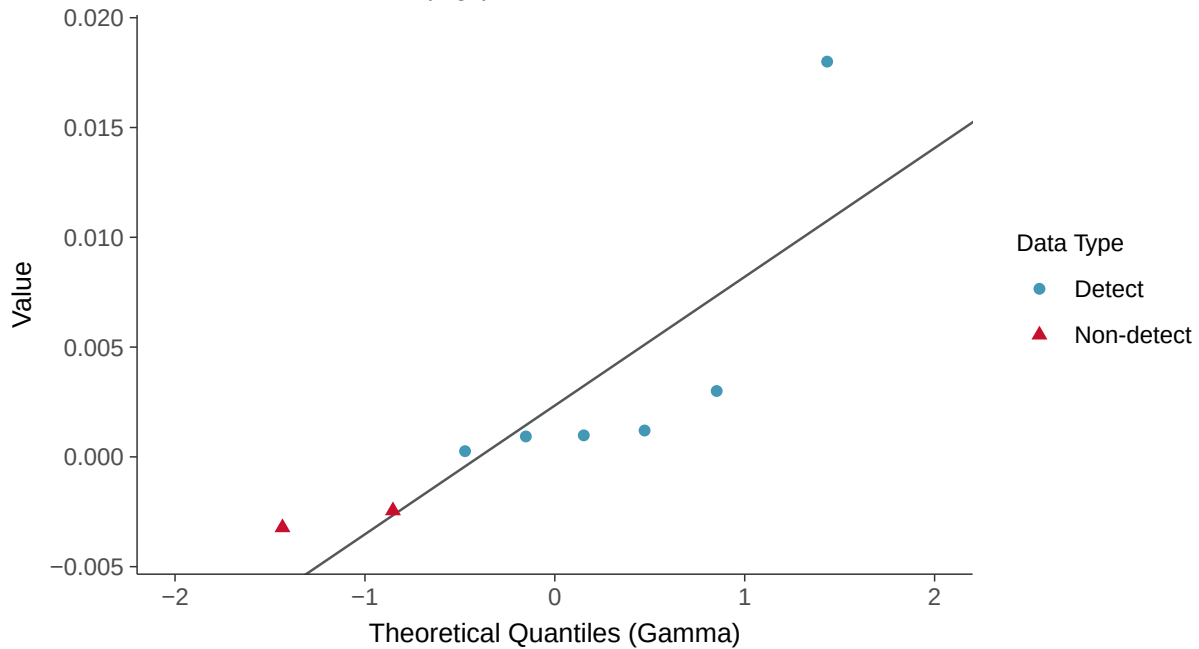
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-9 (mg/l)



Gamma Q-Q plot using ROS Imputed Estimates

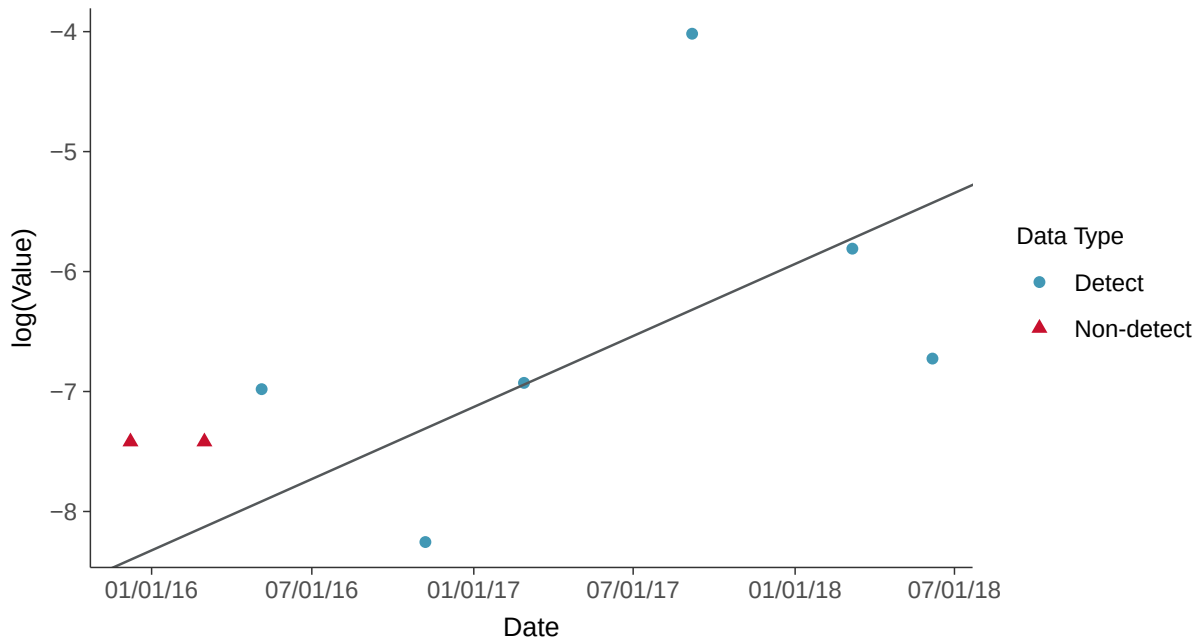
Chromium, Total, MW-9 (mg/l)





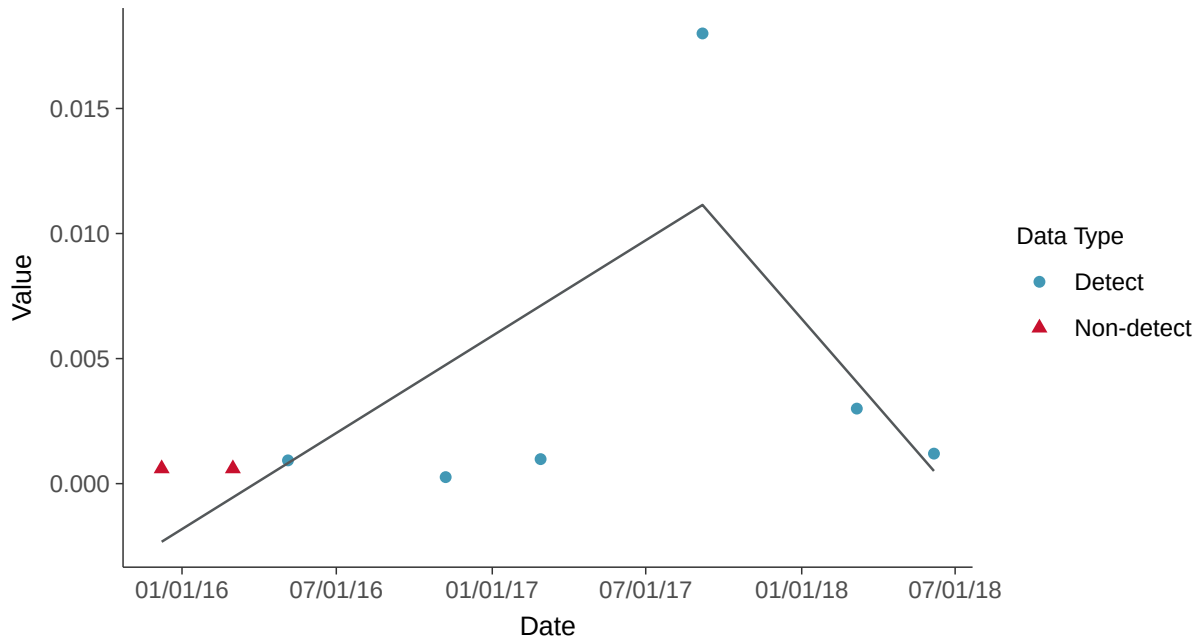
Trend Regression: Lognormal MLE

Chromium, Total, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear

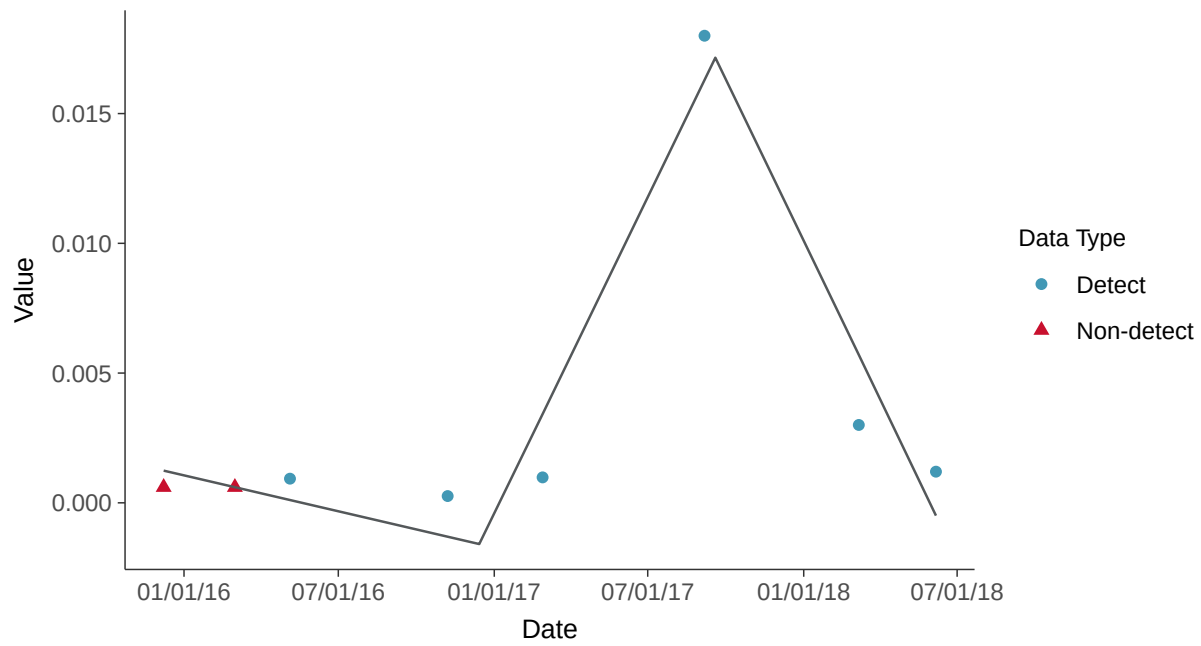
Chromium, Total, MW-9 (mg/l)





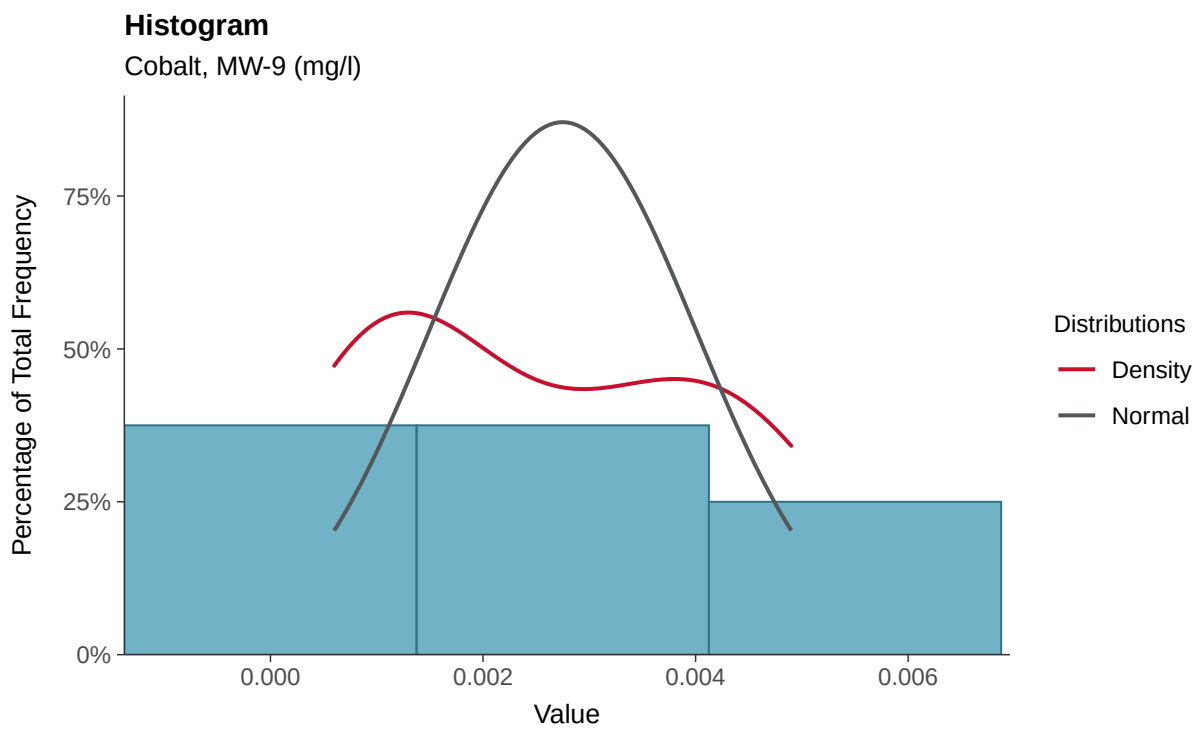
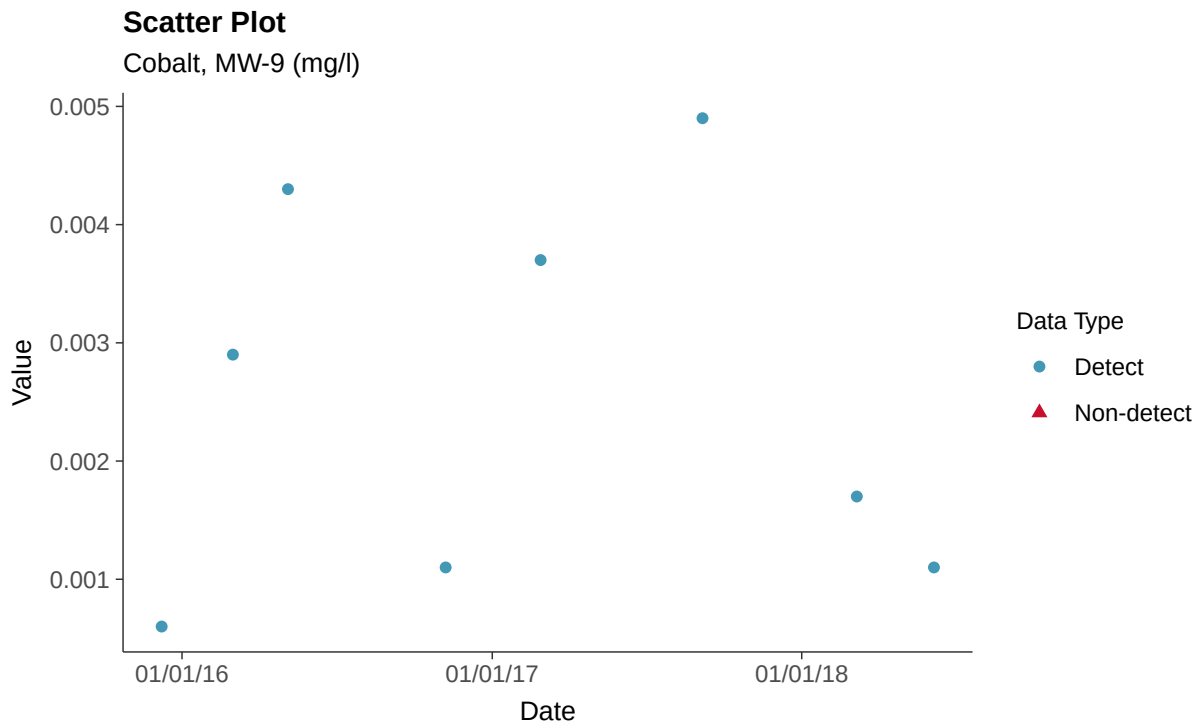
Trend Regression: Piecewise Linear-Linear-Linear

Chromium, Total, MW-9 (mg/l)



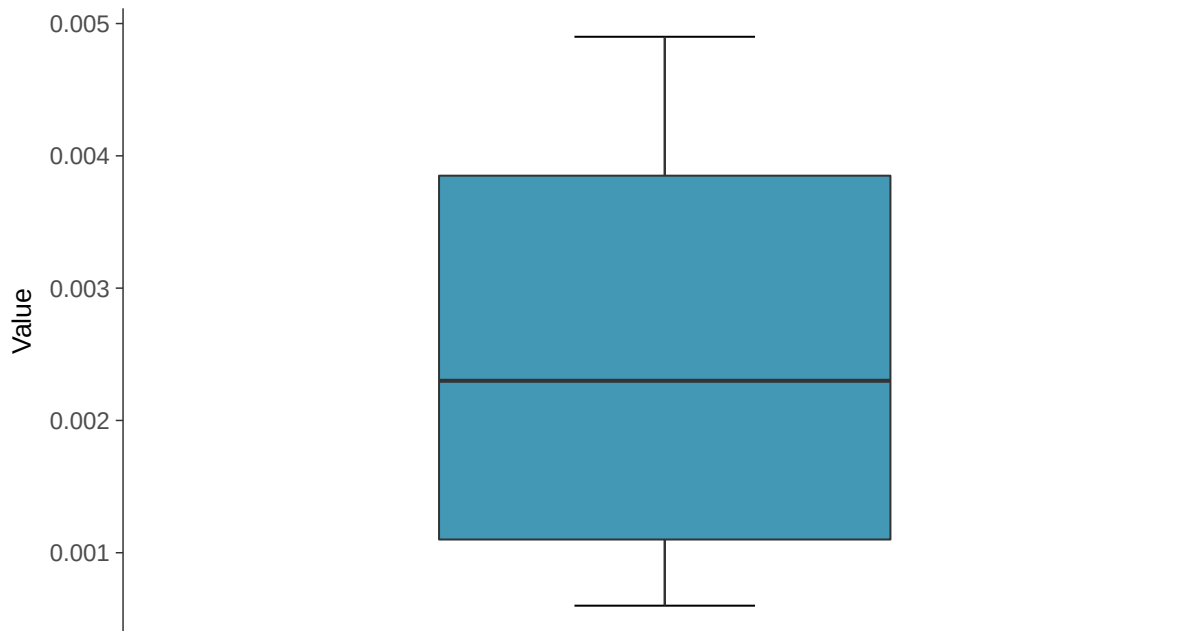
Appendix IV: Cobalt, MW-9

ID: 4_2_113



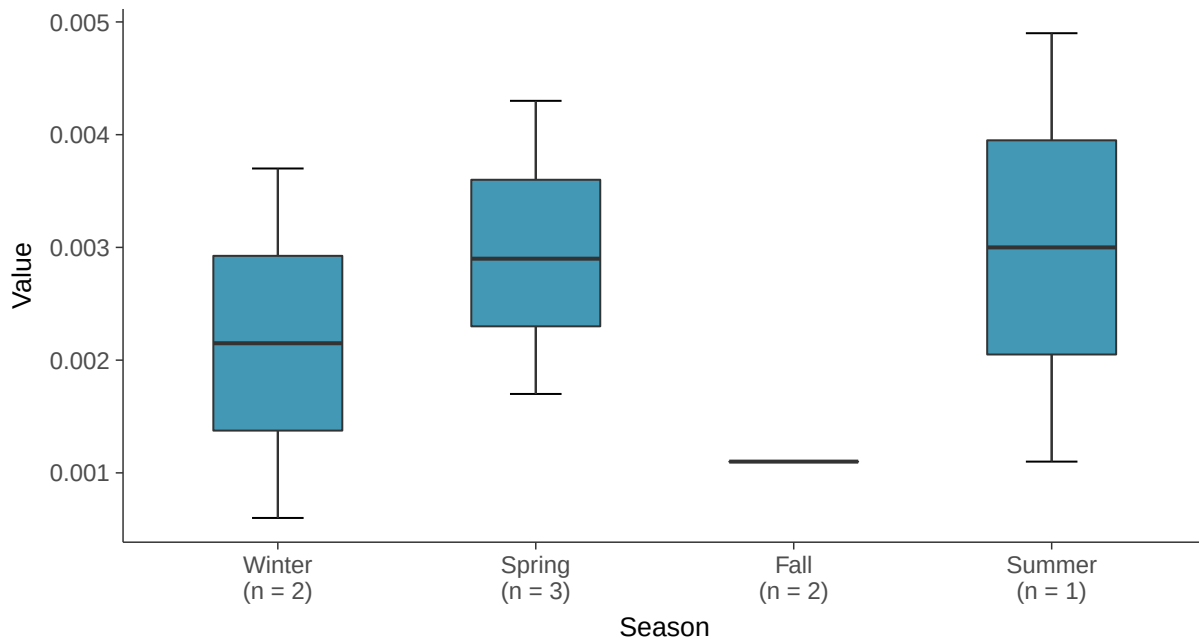
Boxplot

Cobalt, MW-9 (mg/l)



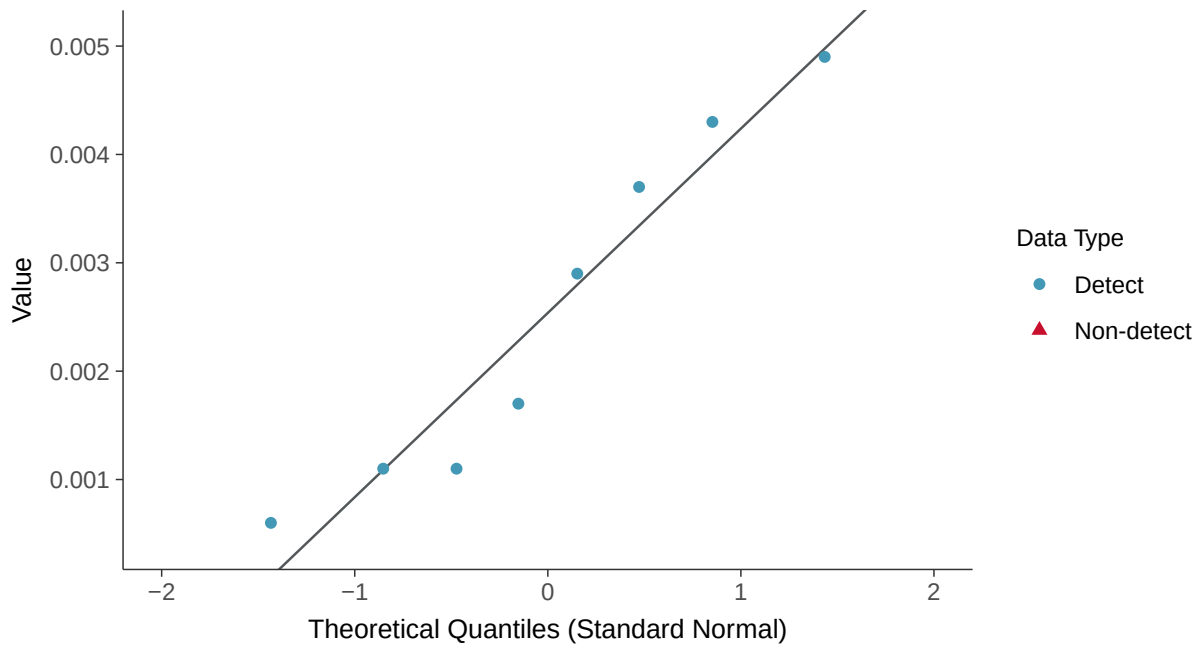
Boxplot by Season

Cobalt, MW-9 (mg/l)



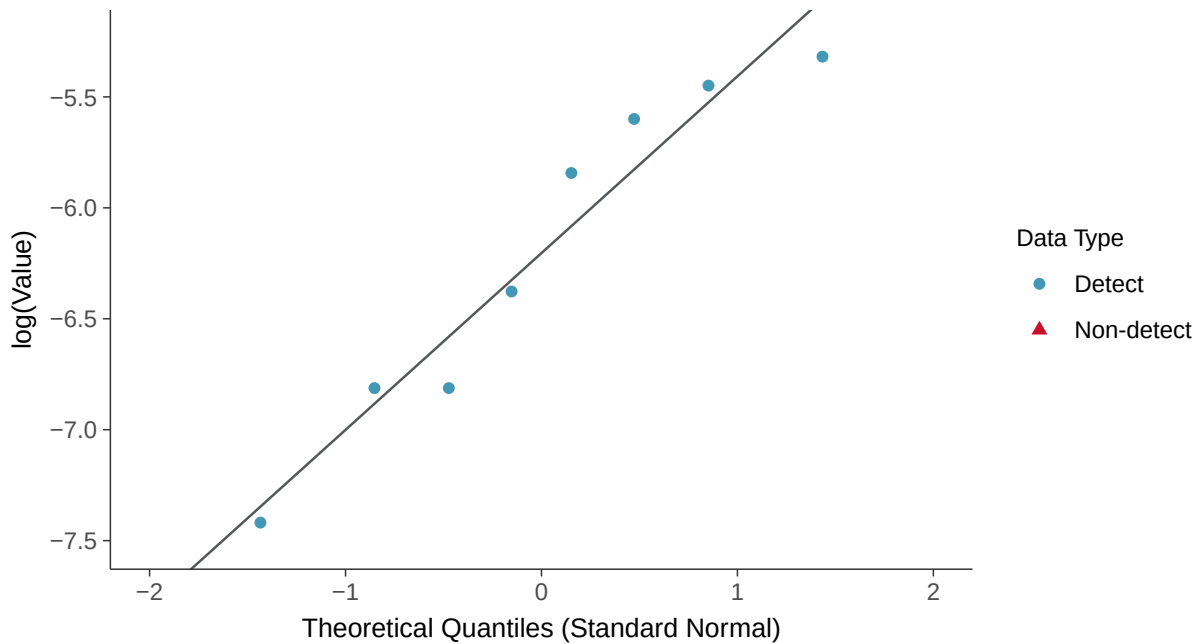
Normal Q-Q plot

Cobalt, MW-9 (mg/l)



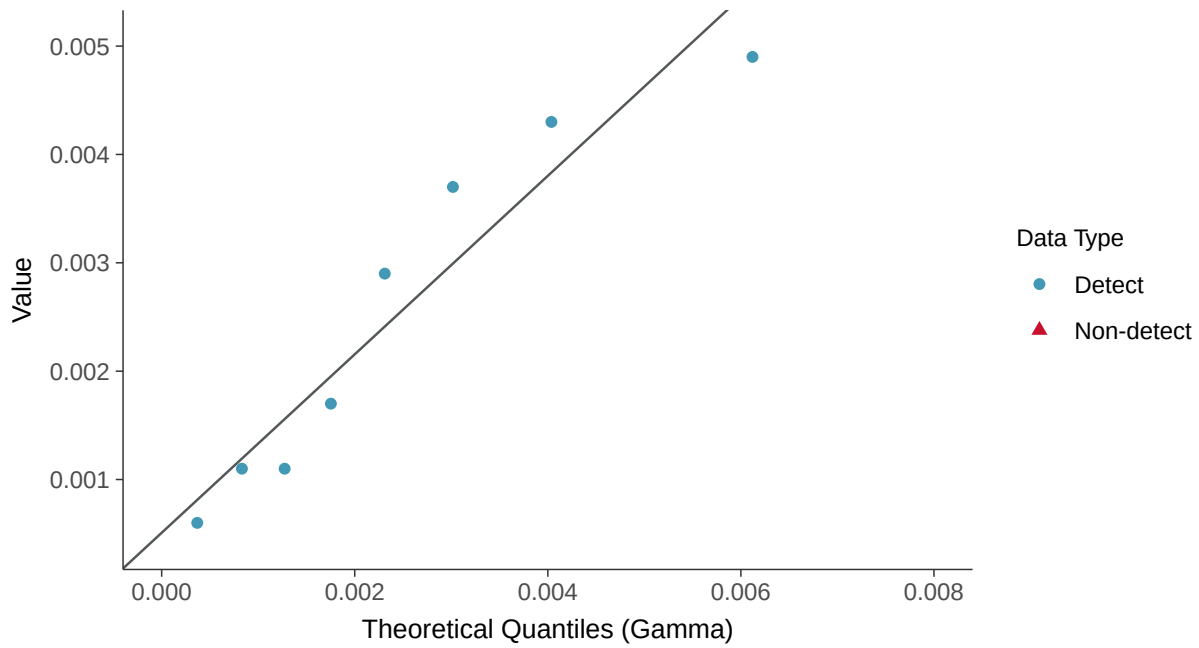
Lognormal Q-Q plot

Cobalt, MW-9 (mg/l)



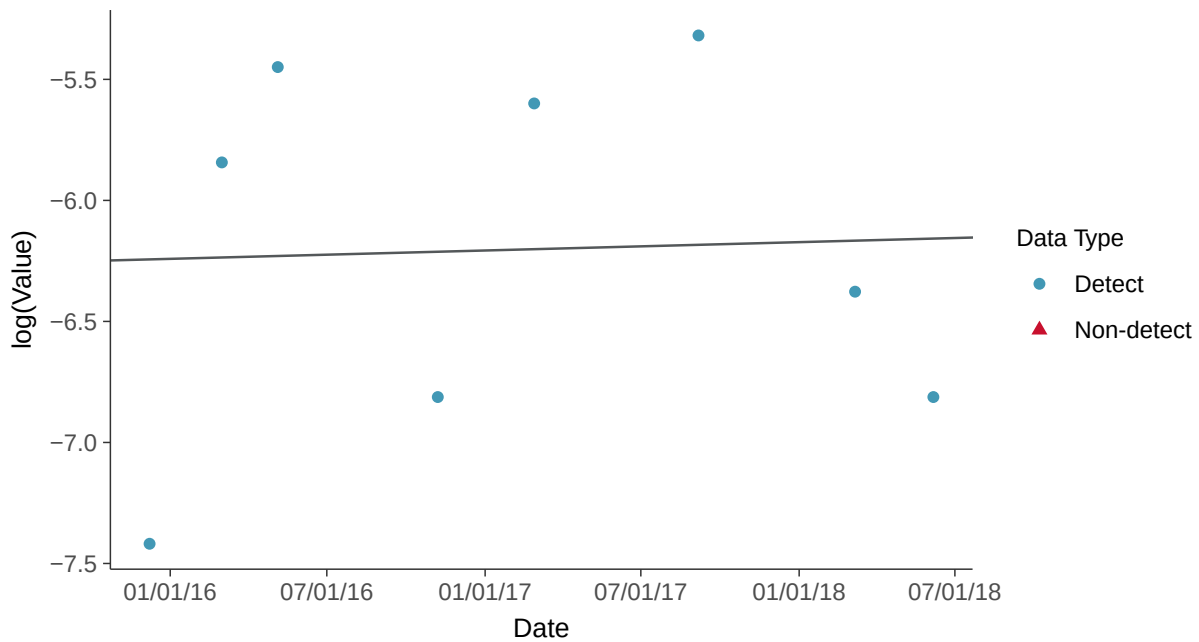
Gamma Q-Q plot

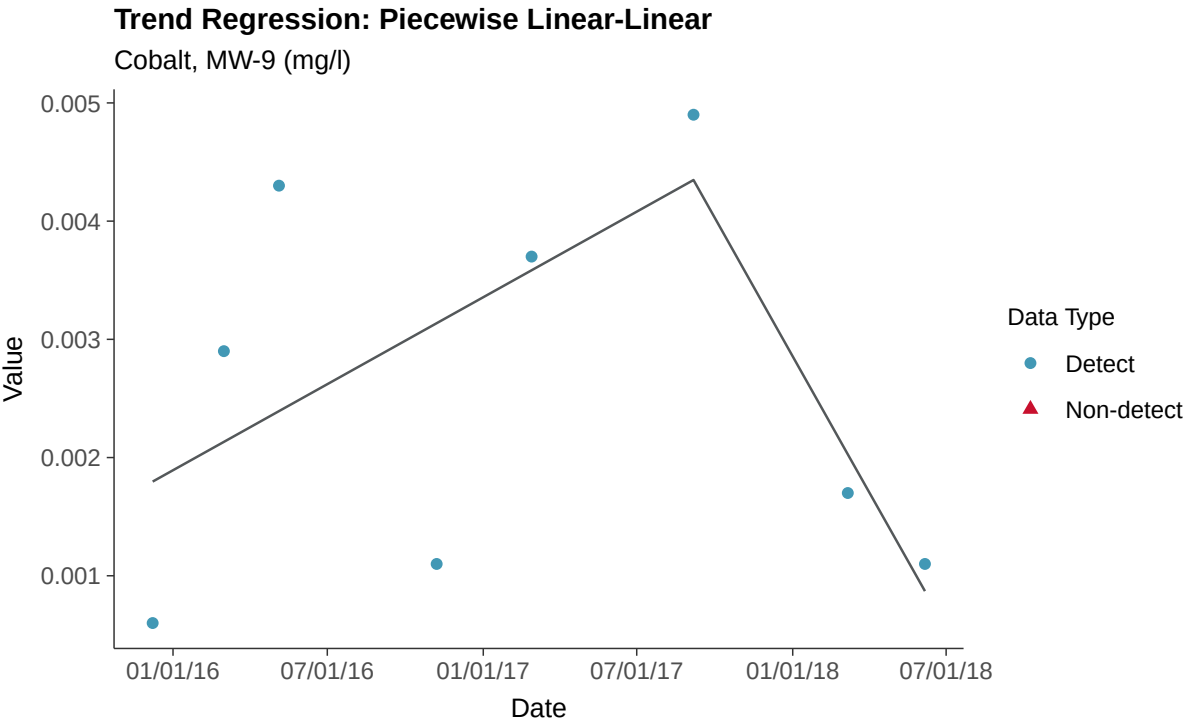
Cobalt, MW-9 (mg/l)



Trend Regression: Lognormal MLE

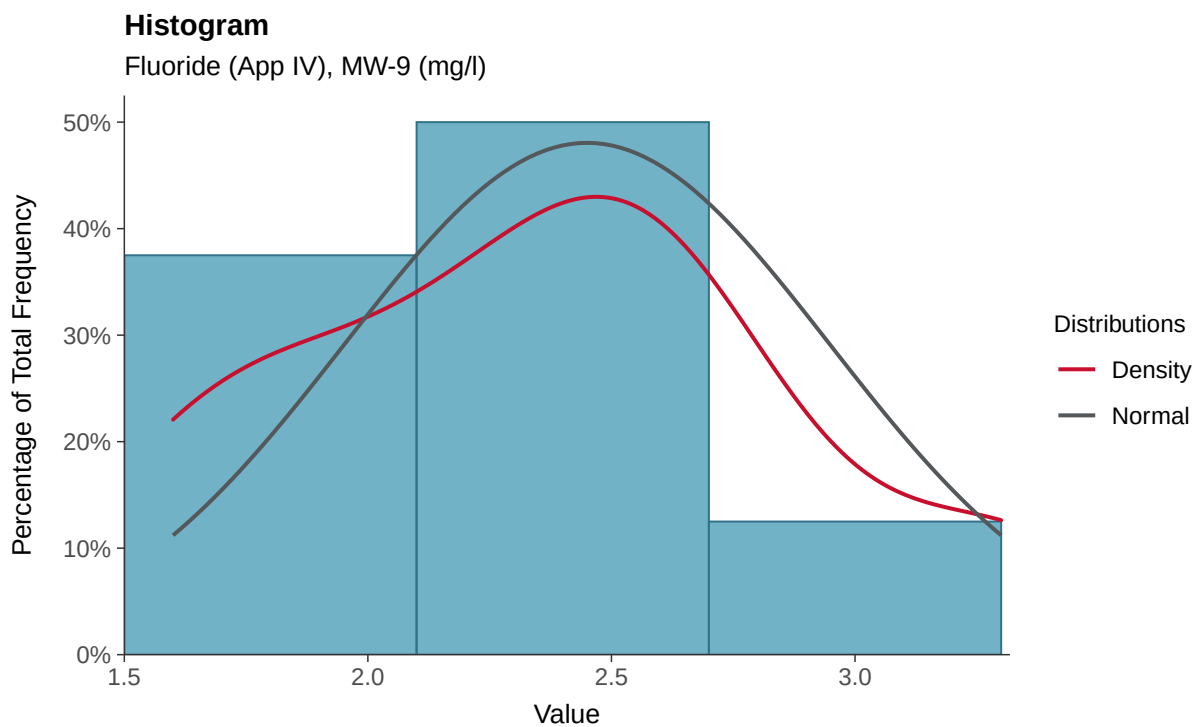
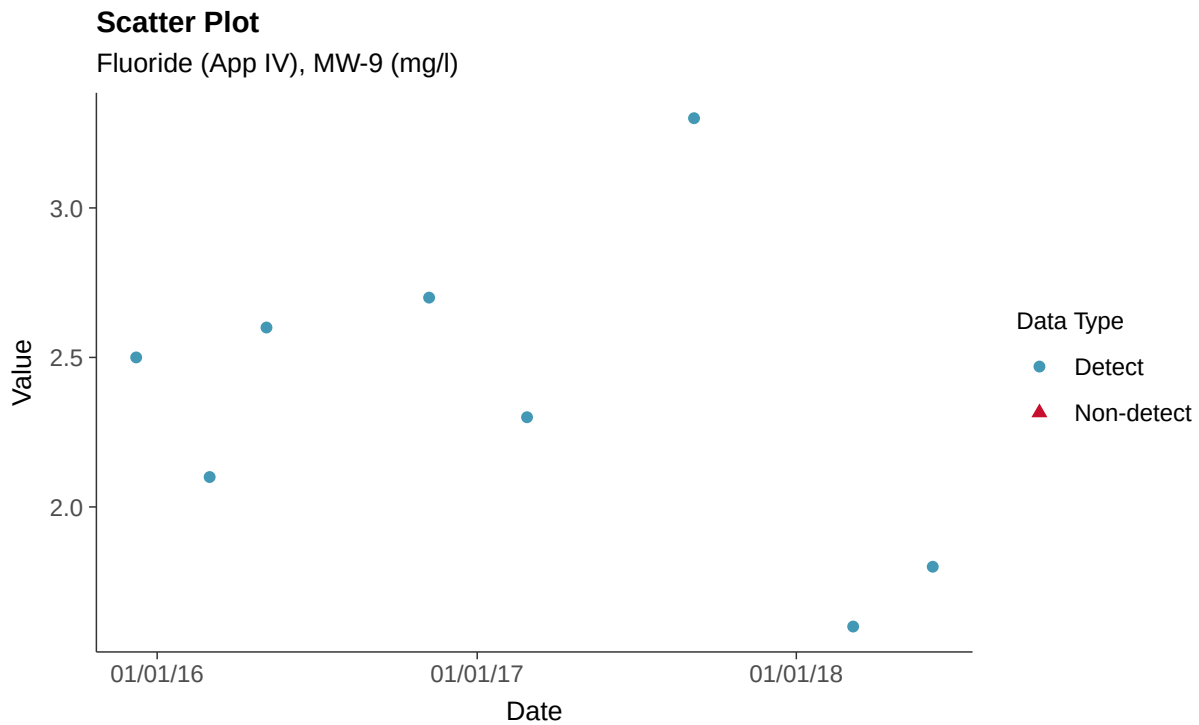
Cobalt, MW-9 (mg/l)





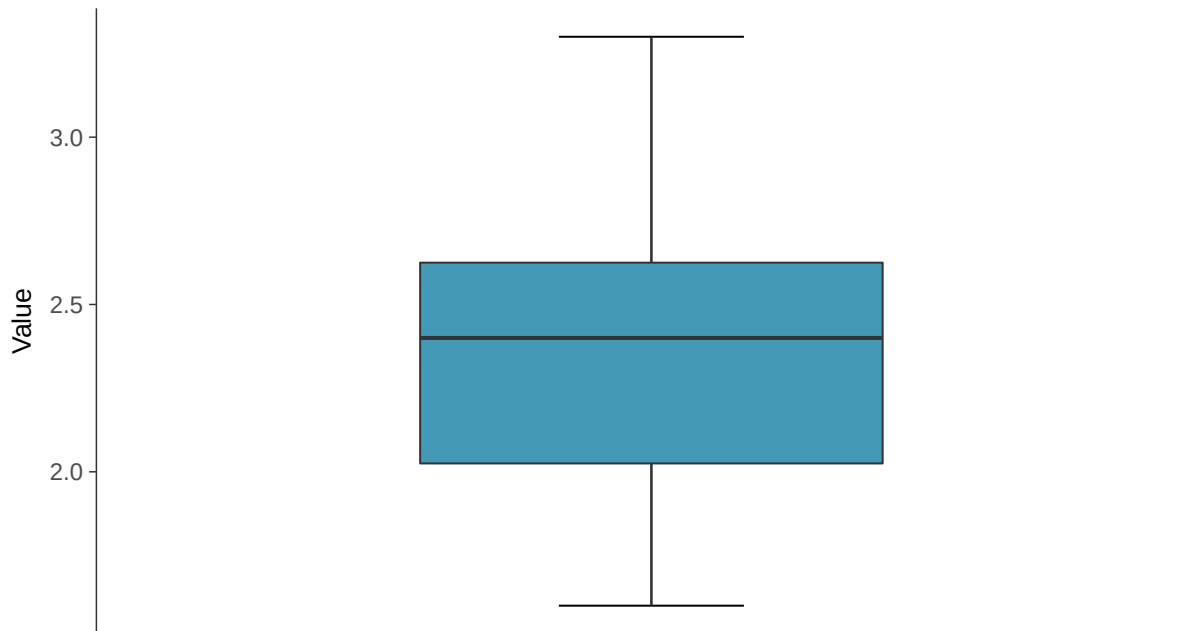
Appendix IV: Fluoride (App IV), MW-9

ID: 4_2_116



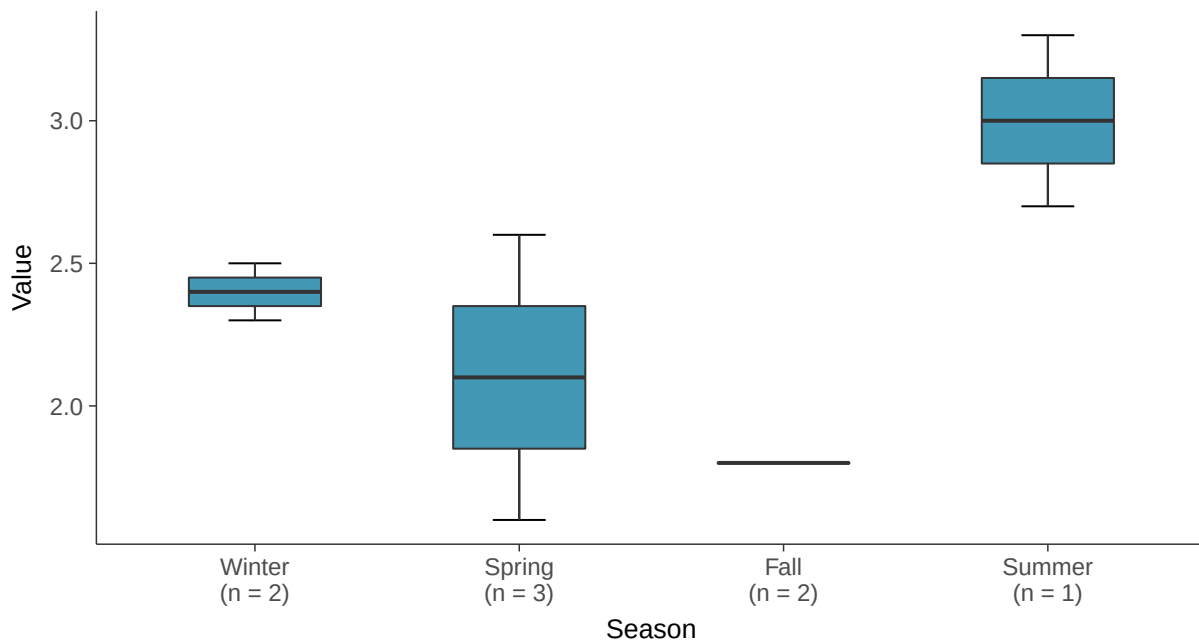
Boxplot

Fluoride (App IV), MW-9 (mg/l)



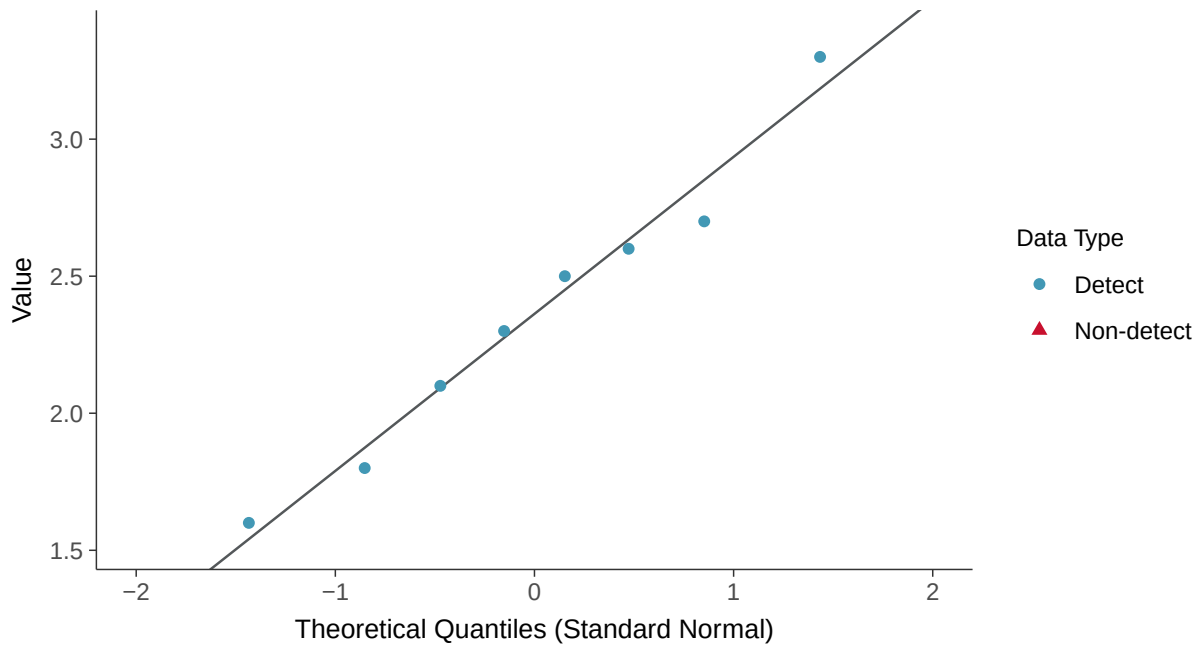
Boxplot by Season

Fluoride (App IV), MW-9 (mg/l)



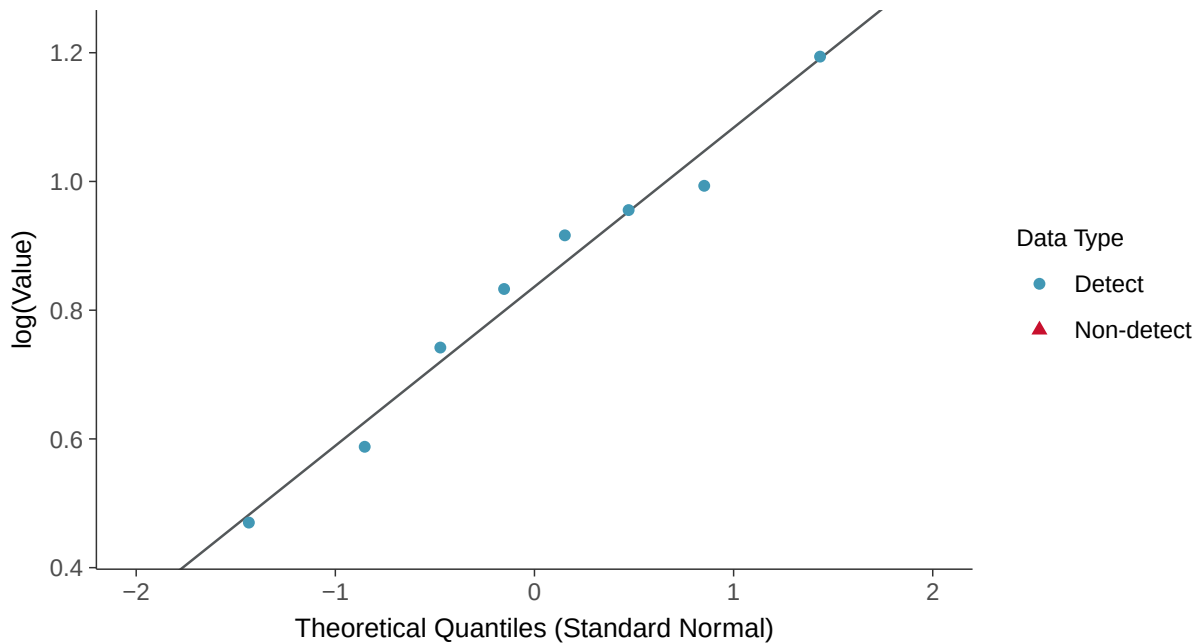
Normal Q-Q plot

Fluoride (App IV), MW-9 (mg/l)



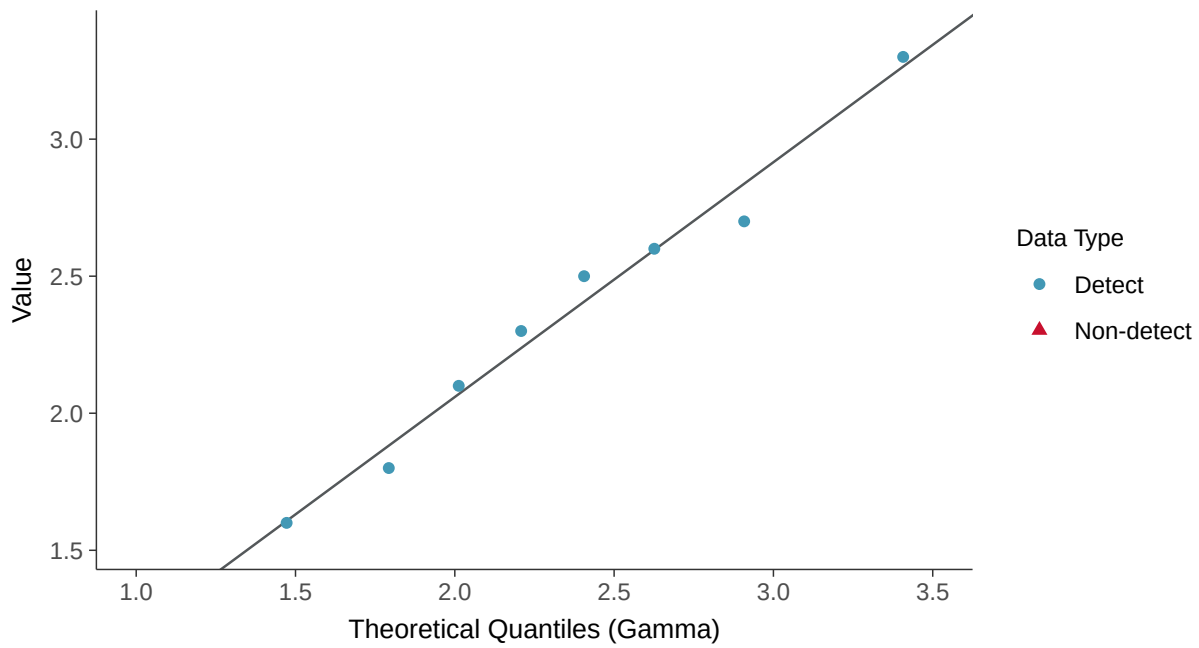
Lognormal Q-Q plot

Fluoride (App IV), MW-9 (mg/l)



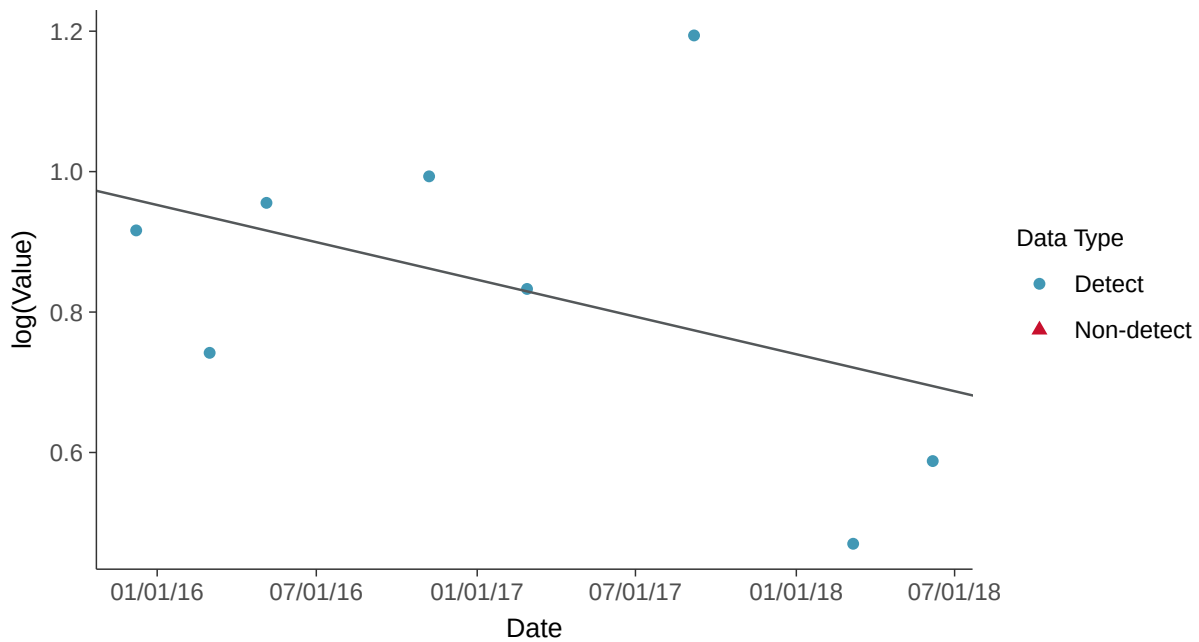
Gamma Q-Q plot

Fluoride (App IV), MW-9 (mg/l)



Trend Regression: Lognormal MLE

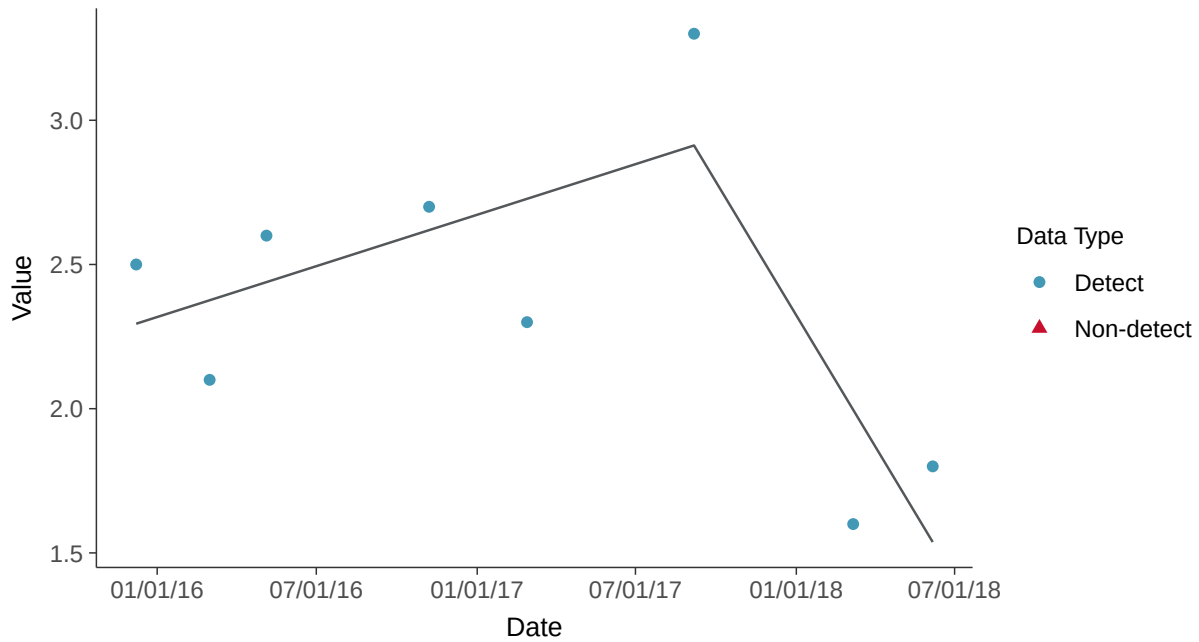
Fluoride (App IV), MW-9 (mg/l)





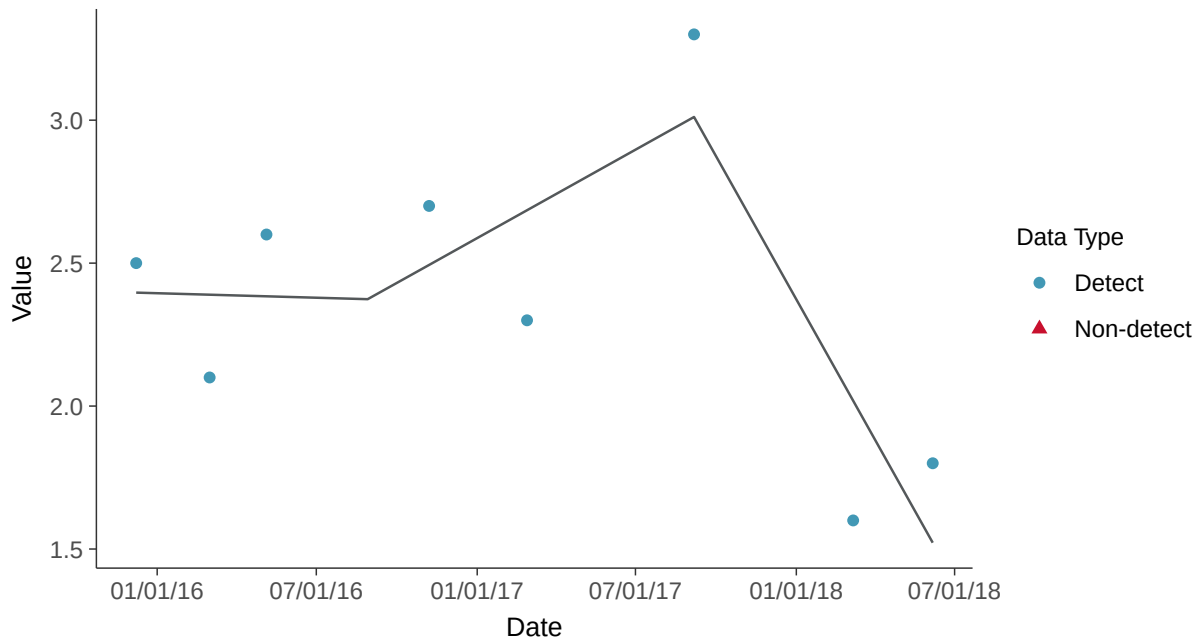
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-9 (mg/l)



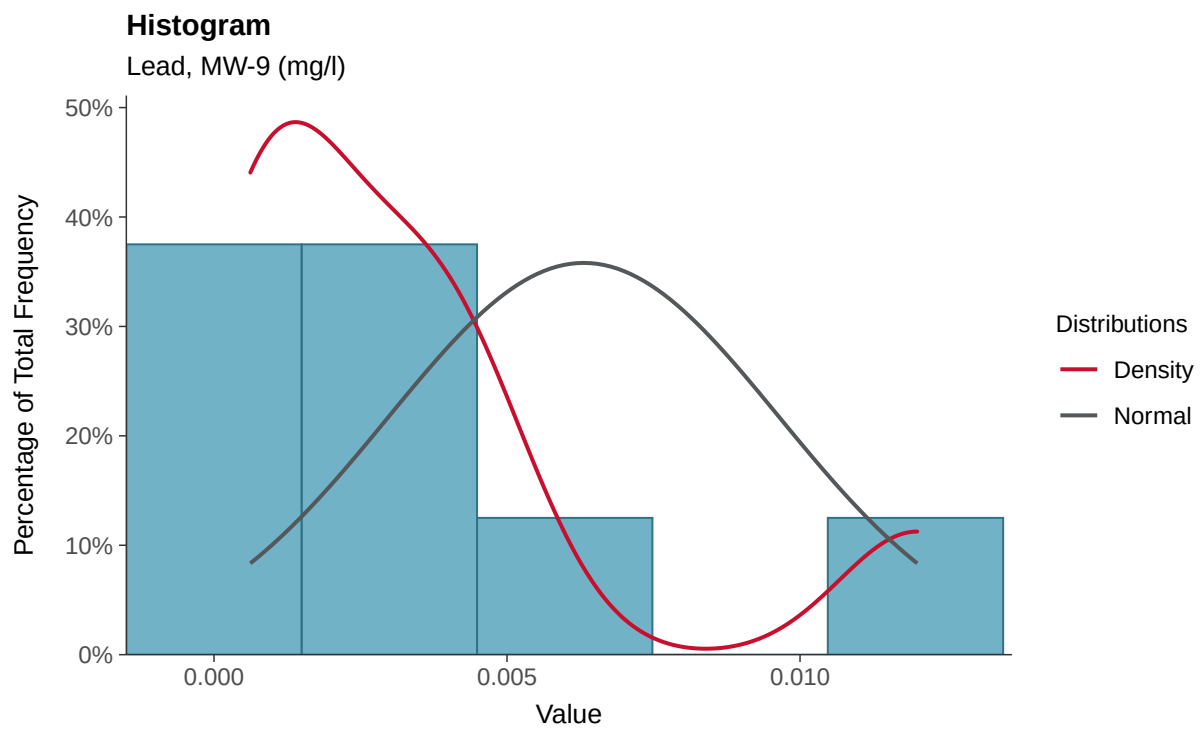
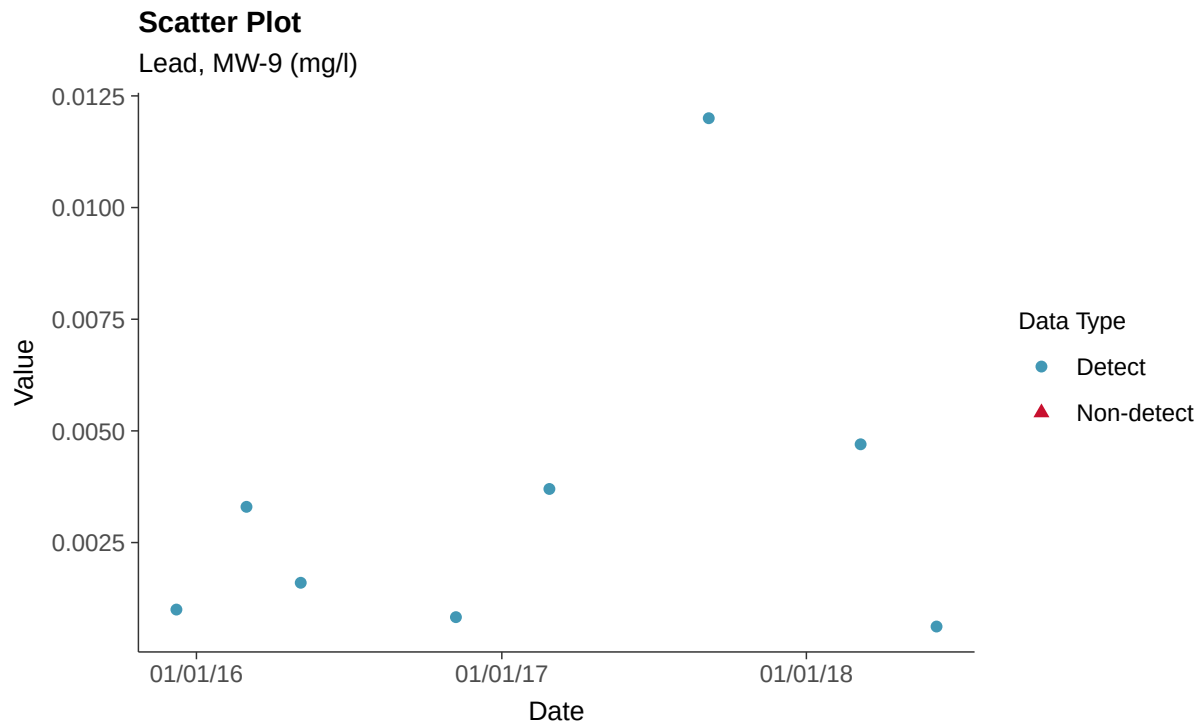
Trend Regression: Piecewise Linear-Linear-Linear

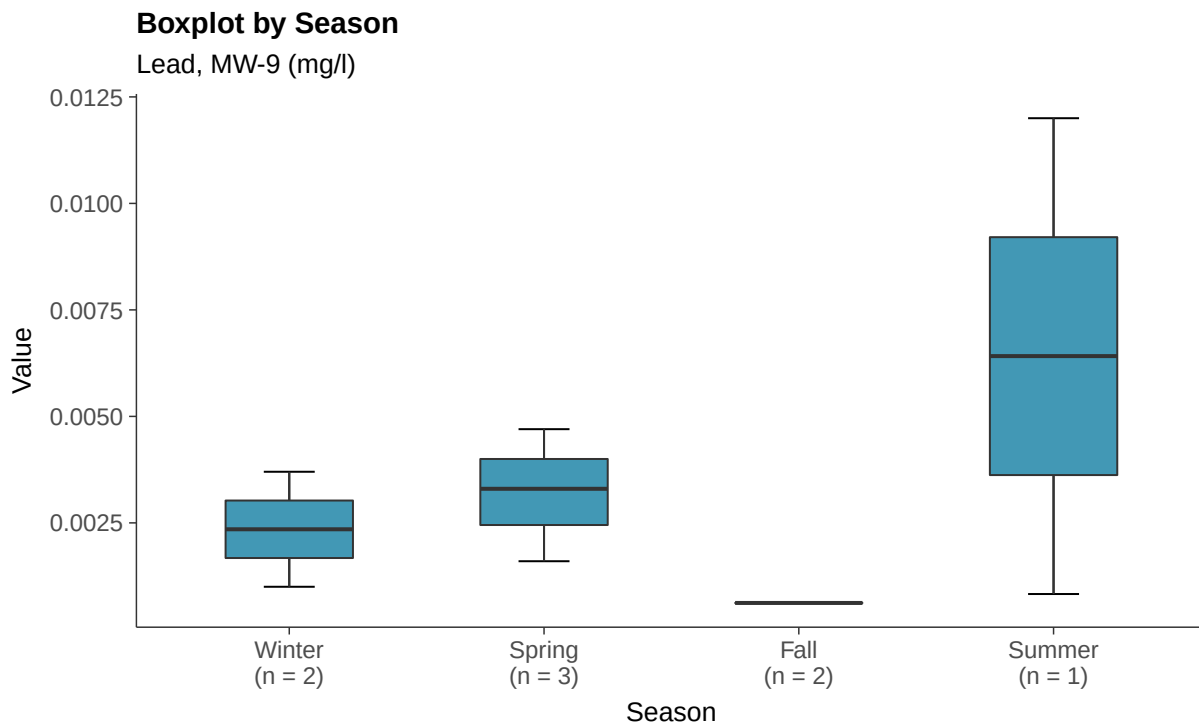
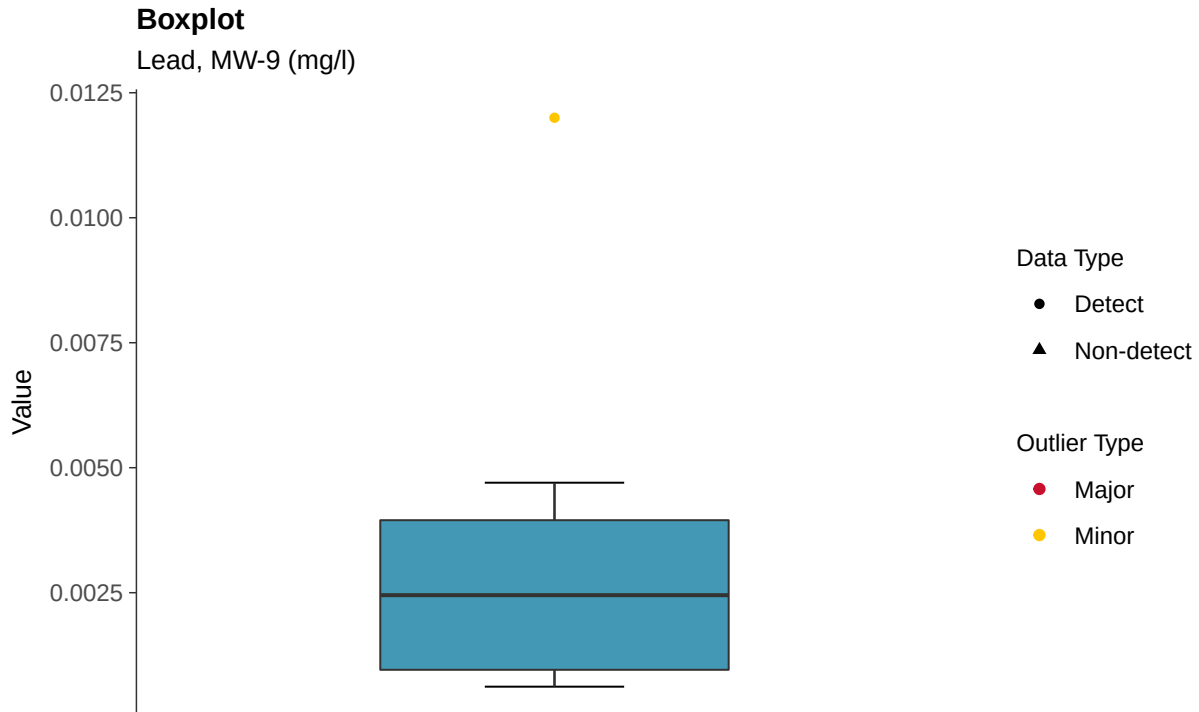
Fluoride (App IV), MW-9 (mg/l)



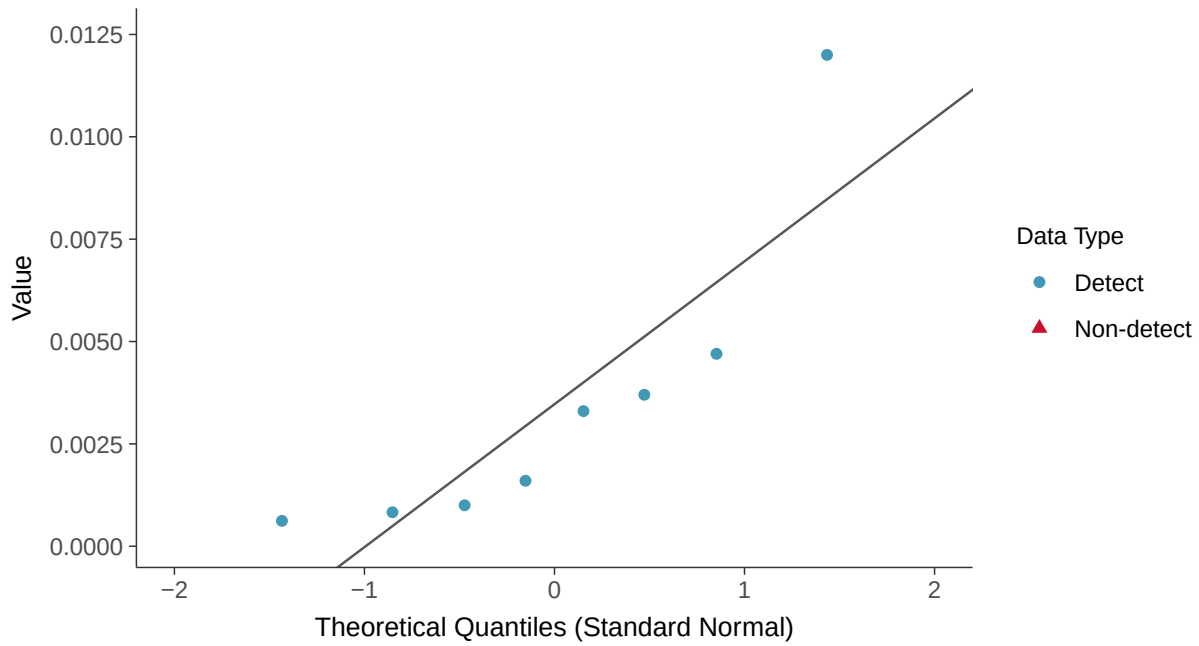
Appendix IV: Lead, MW-9

ID: 4_2_117

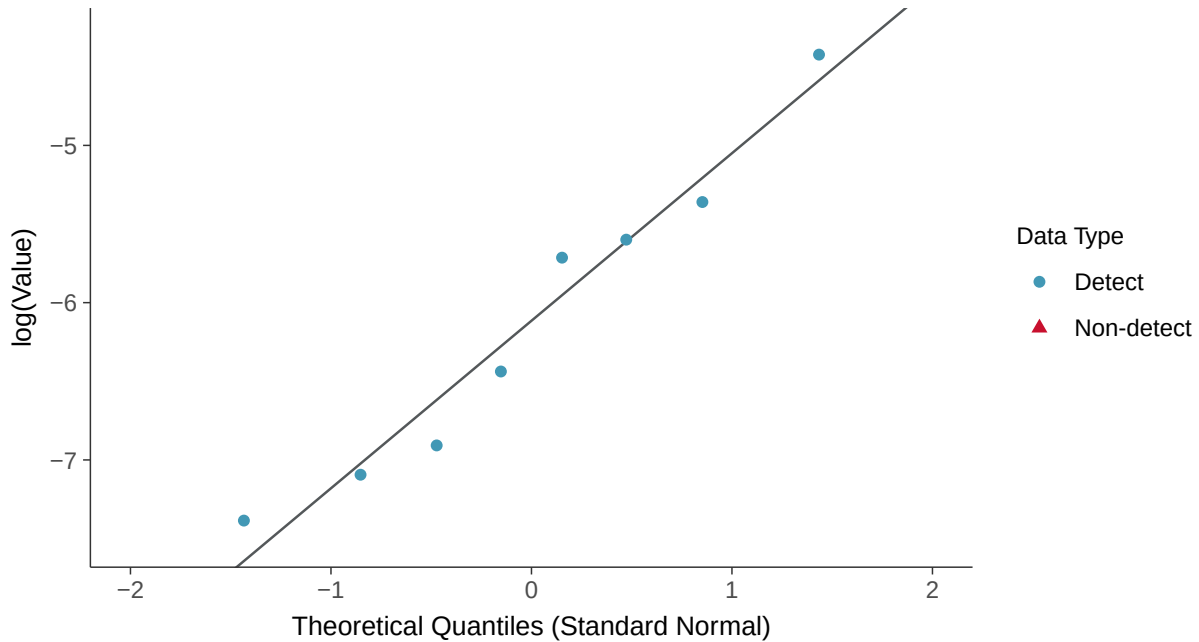




Normal Q-Q plot
Lead, MW-9 (mg/l)

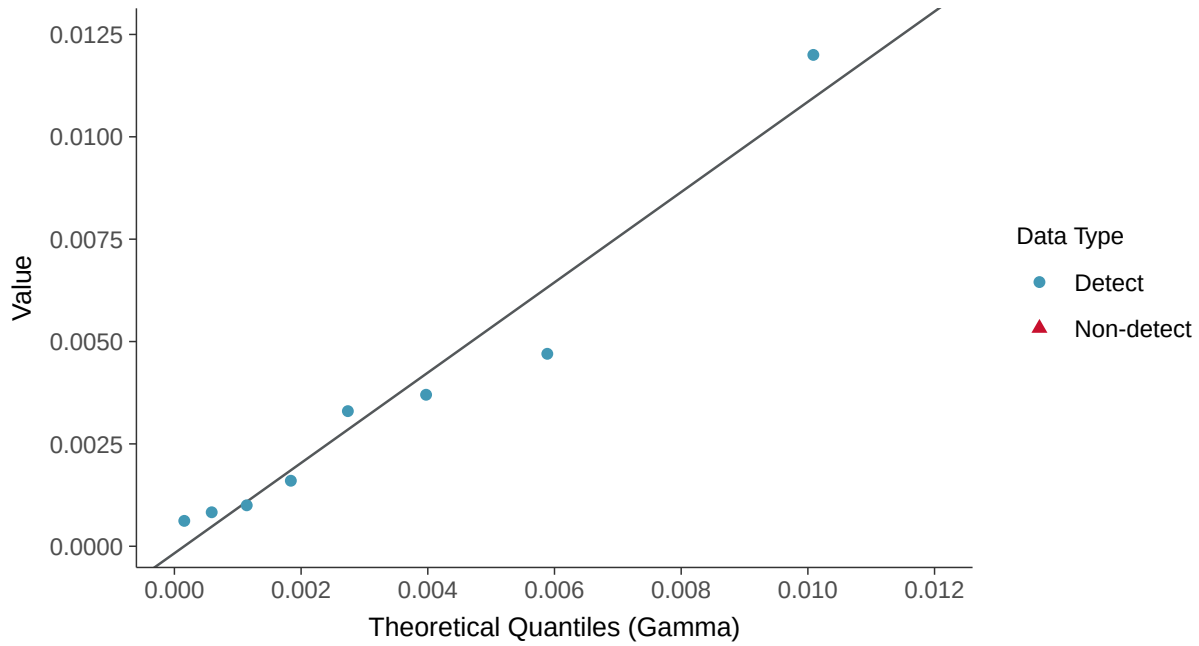


Lognormal Q-Q plot
Lead, MW-9 (mg/l)



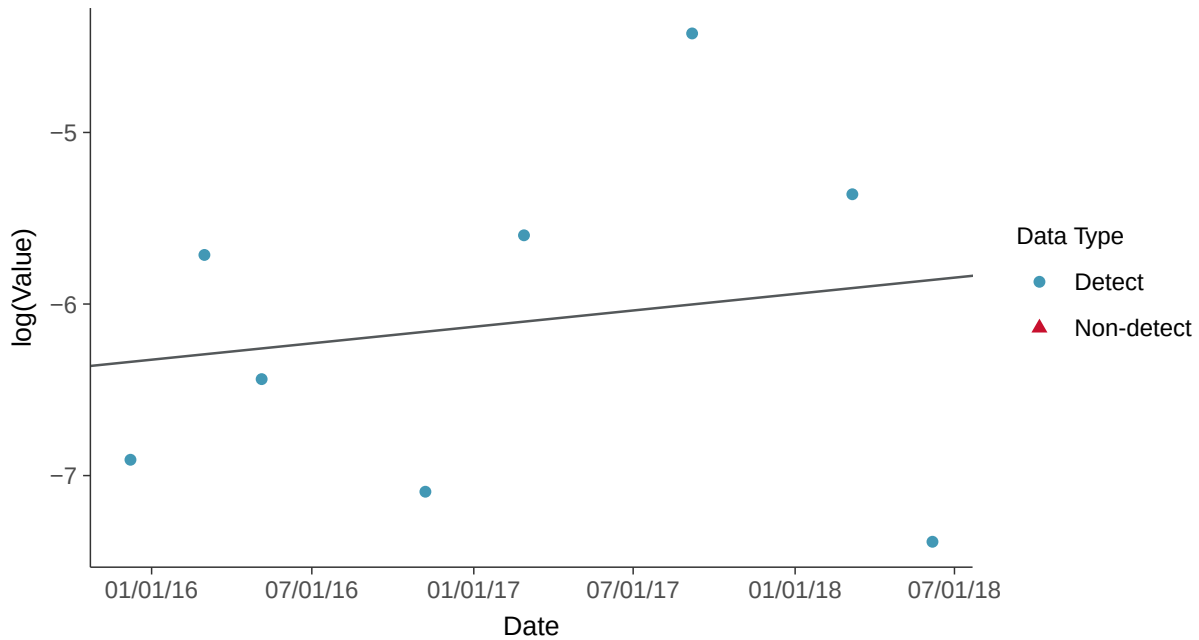
Gamma Q-Q plot

Lead, MW-9 (mg/l)



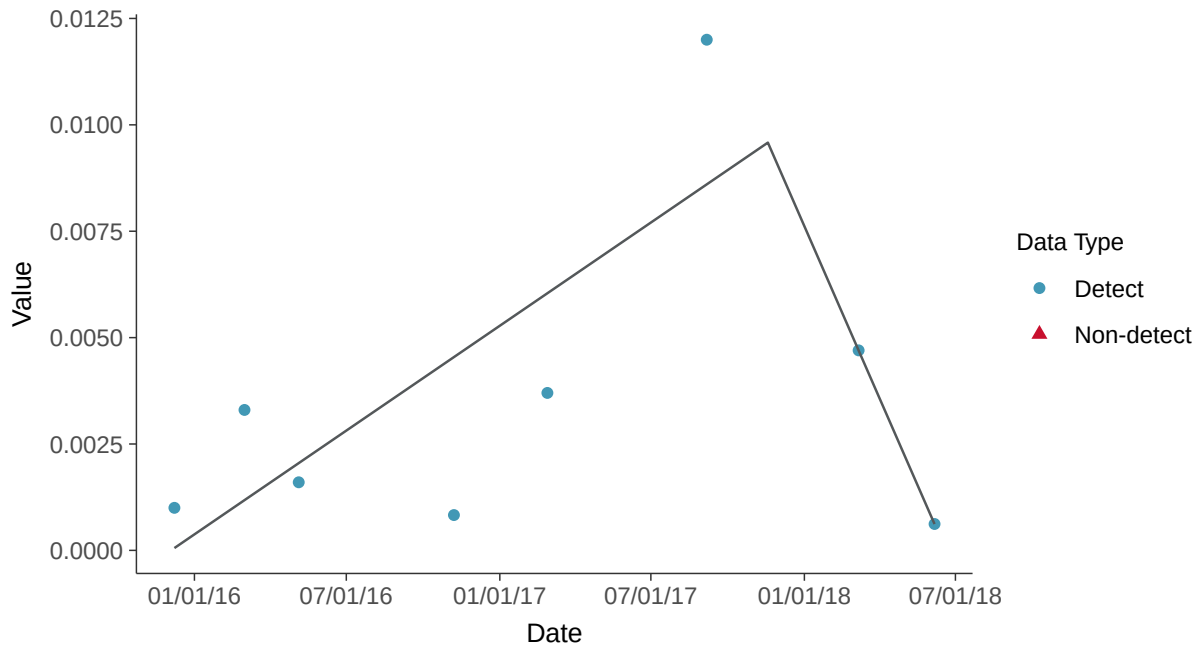
Trend Regression: Lognormal MLE

Lead, MW-9 (mg/l)



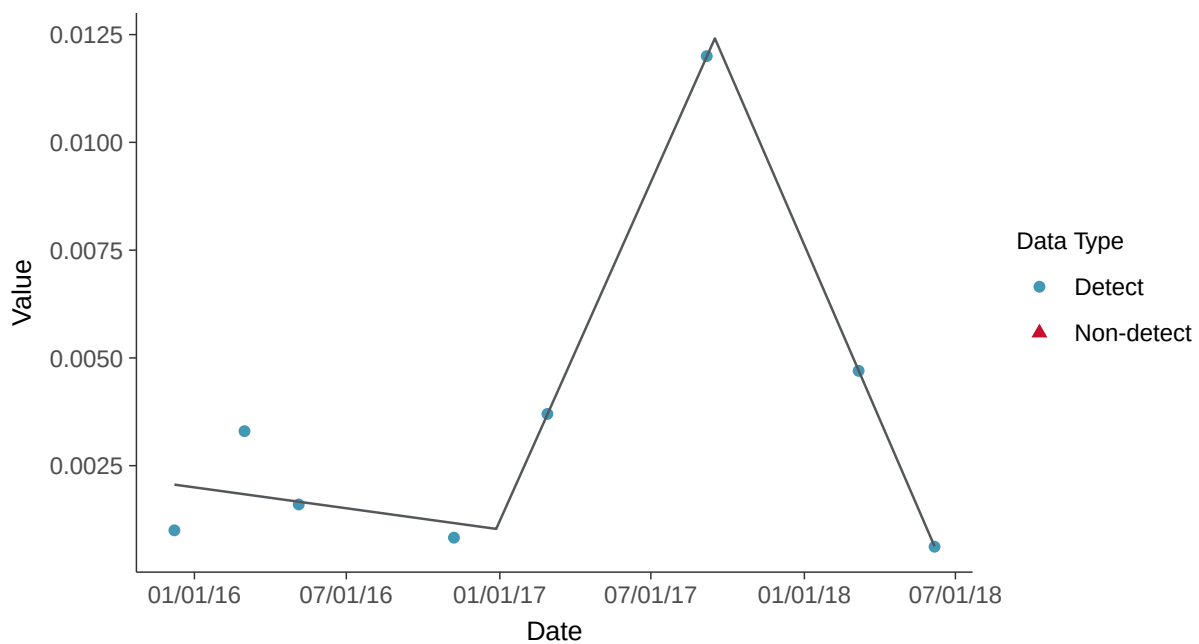
Trend Regression: Piecewise Linear-Linear

Lead, MW-9 (mg/l)



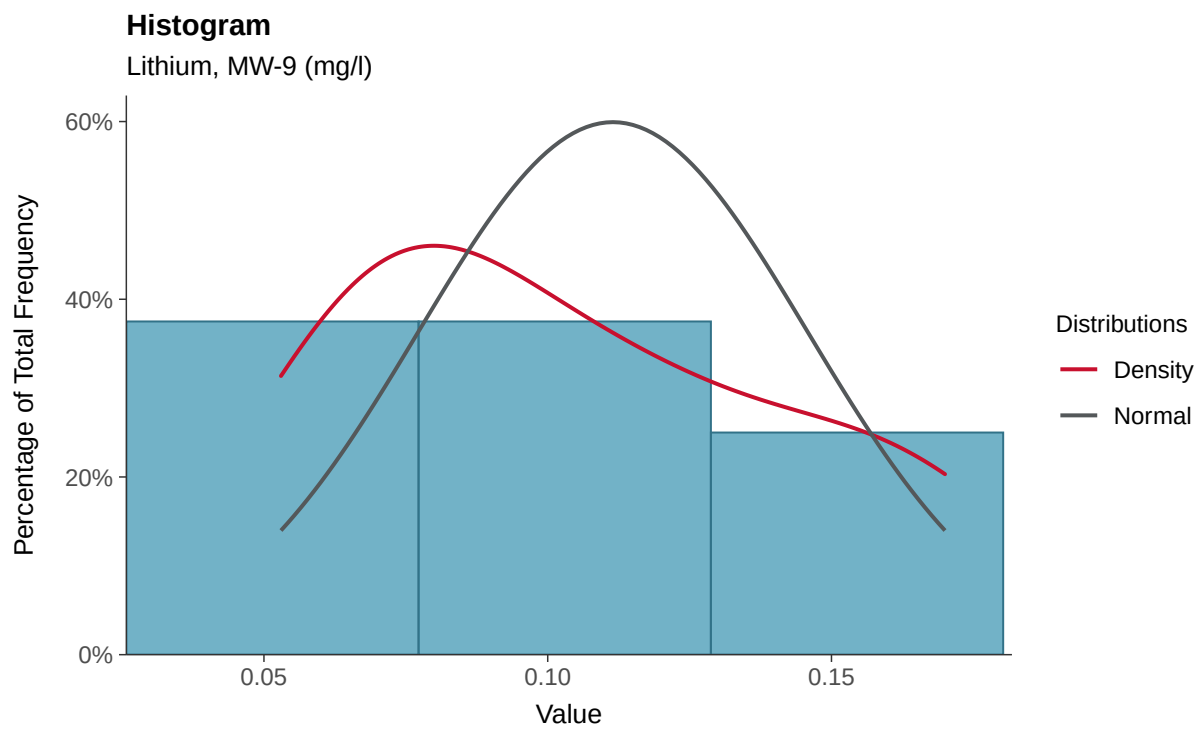
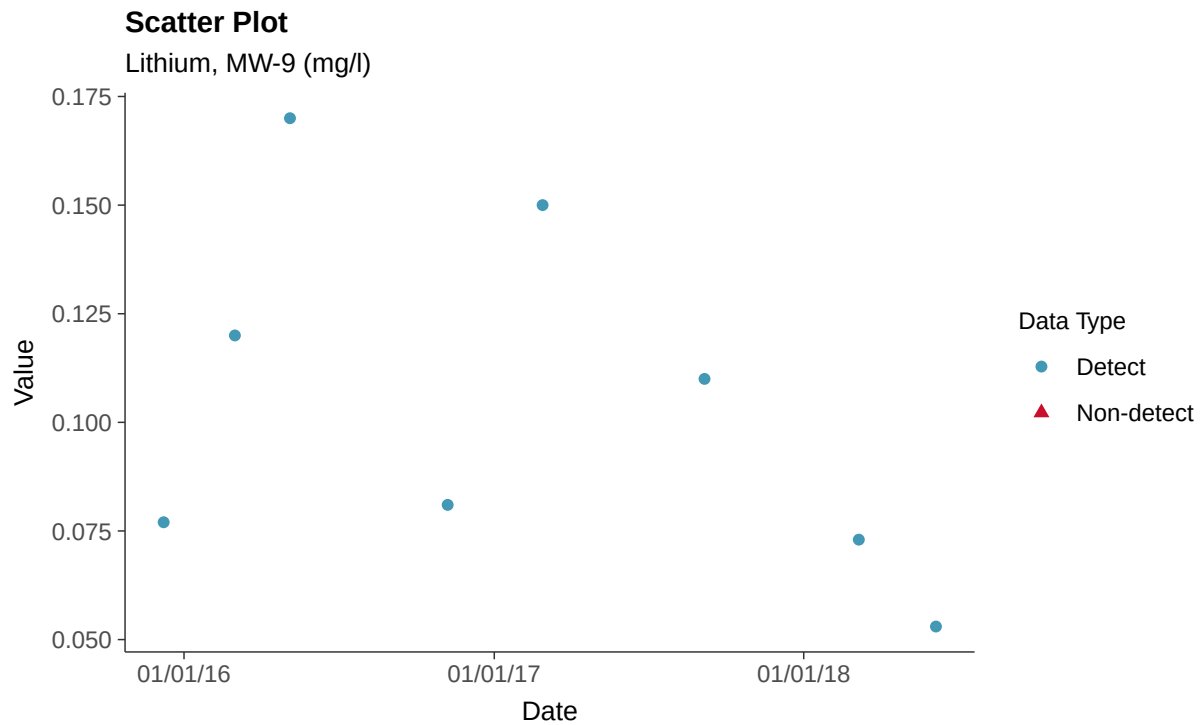
Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-9 (mg/l)



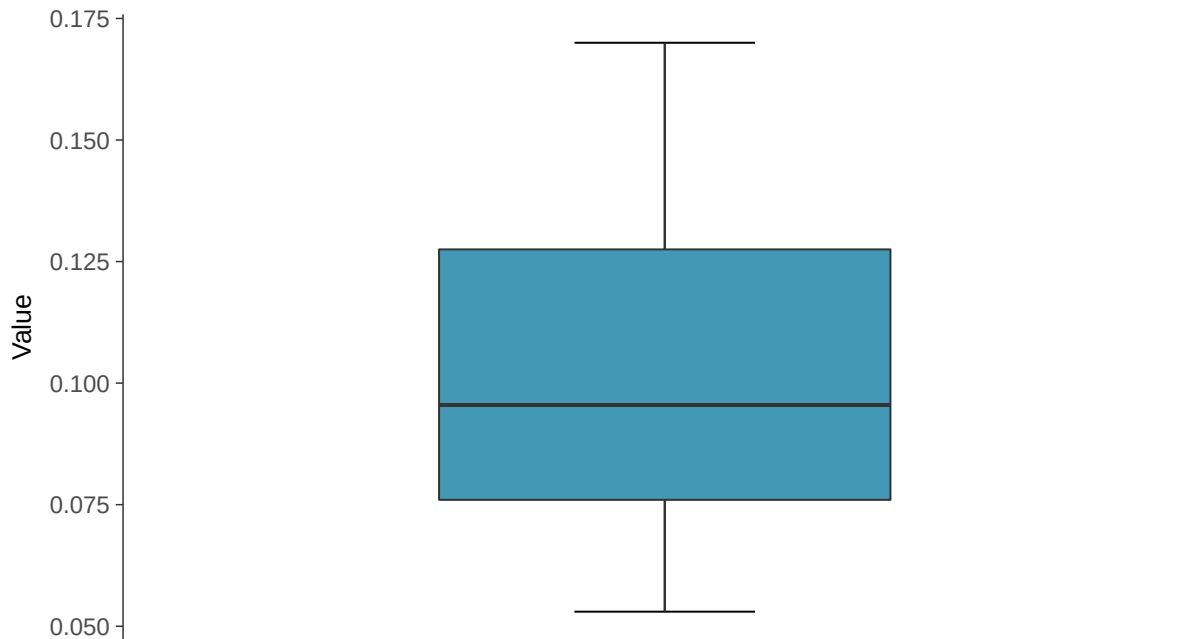
Appendix IV: Lithium, MW-9

ID: 4_2_118



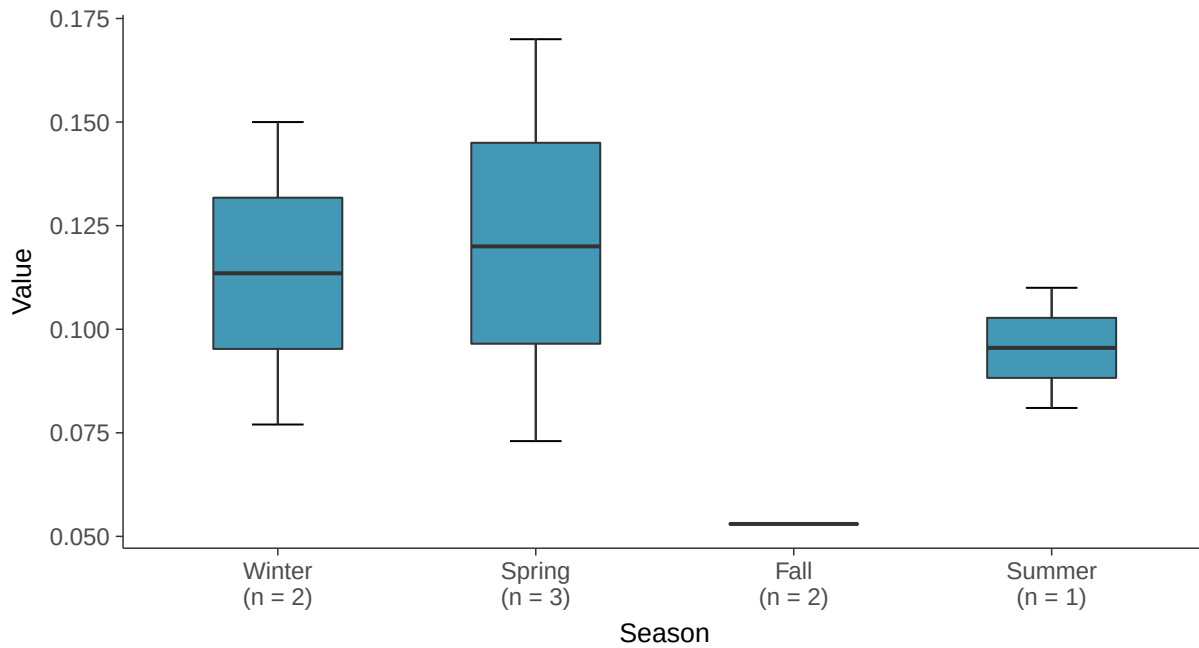
Boxplot

Lithium, MW-9 (mg/l)



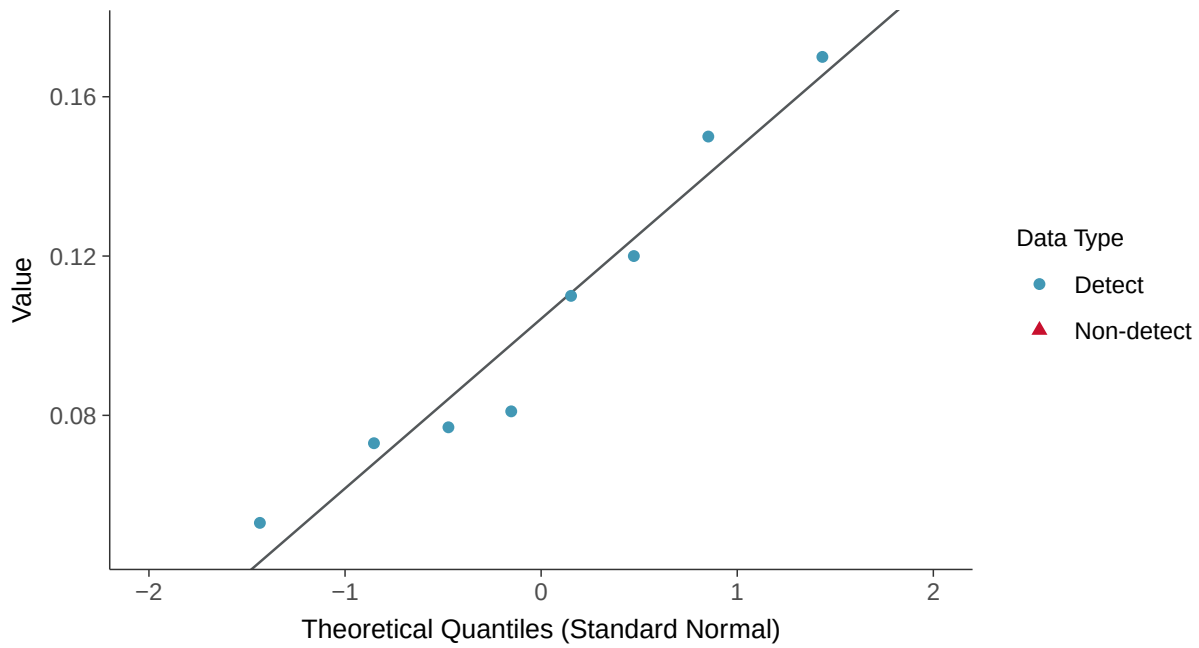
Boxplot by Season

Lithium, MW-9 (mg/l)



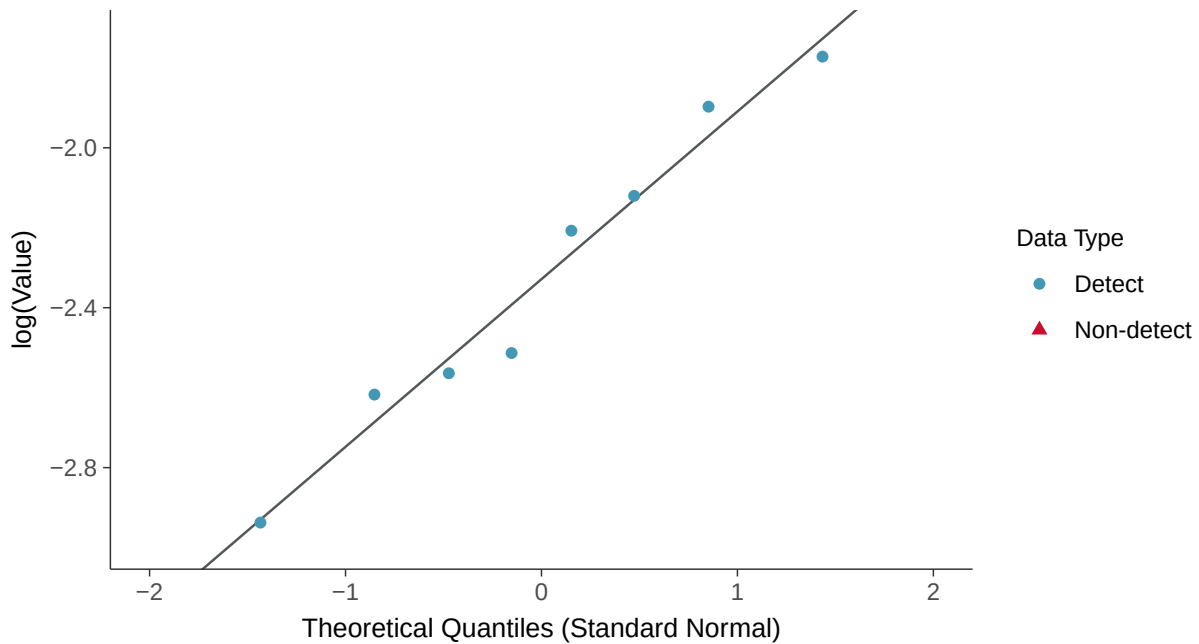
Normal Q-Q plot

Lithium, MW-9 (mg/l)



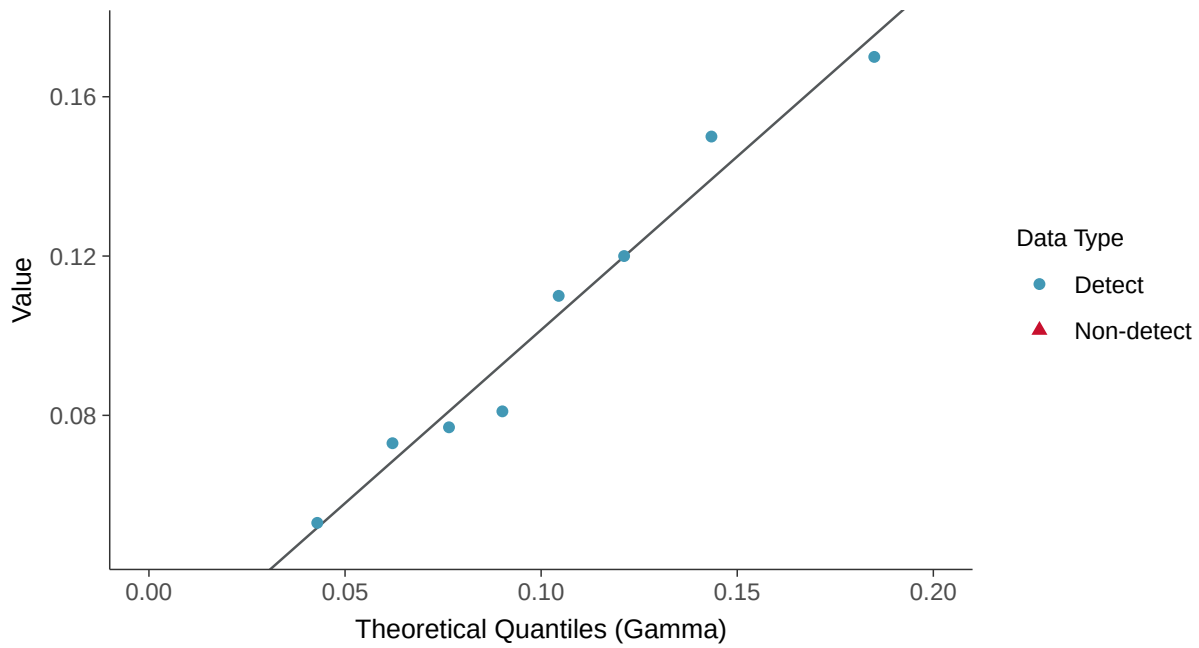
Lognormal Q-Q plot

Lithium, MW-9 (mg/l)



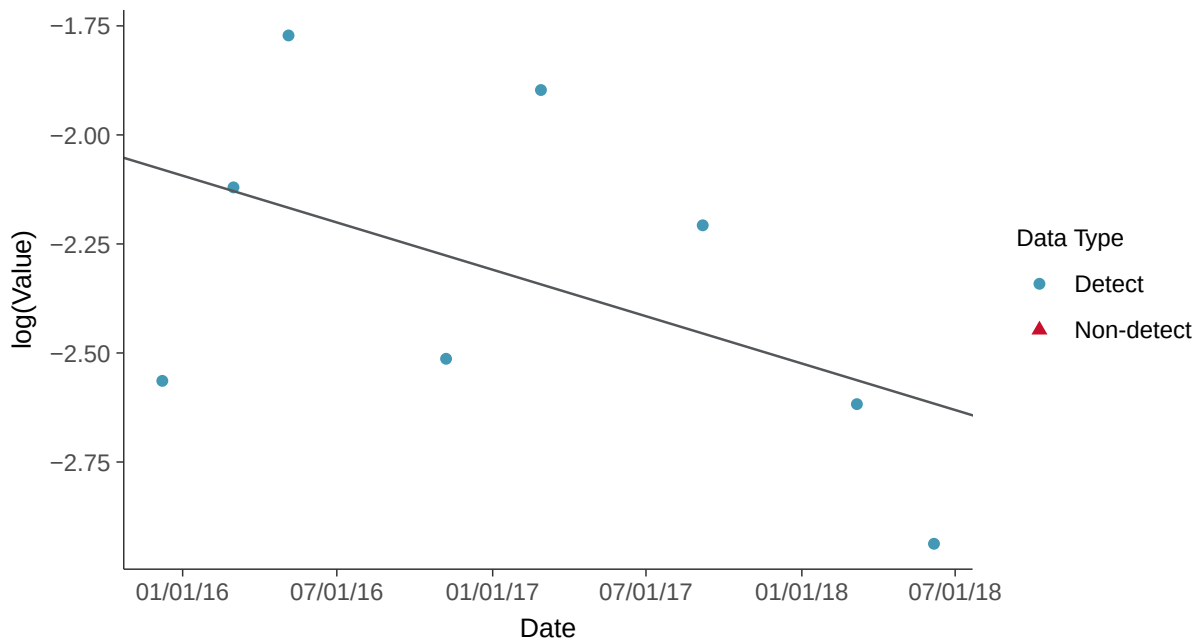
Gamma Q-Q plot

Lithium, MW-9 (mg/l)



Trend Regression: Lognormal MLE

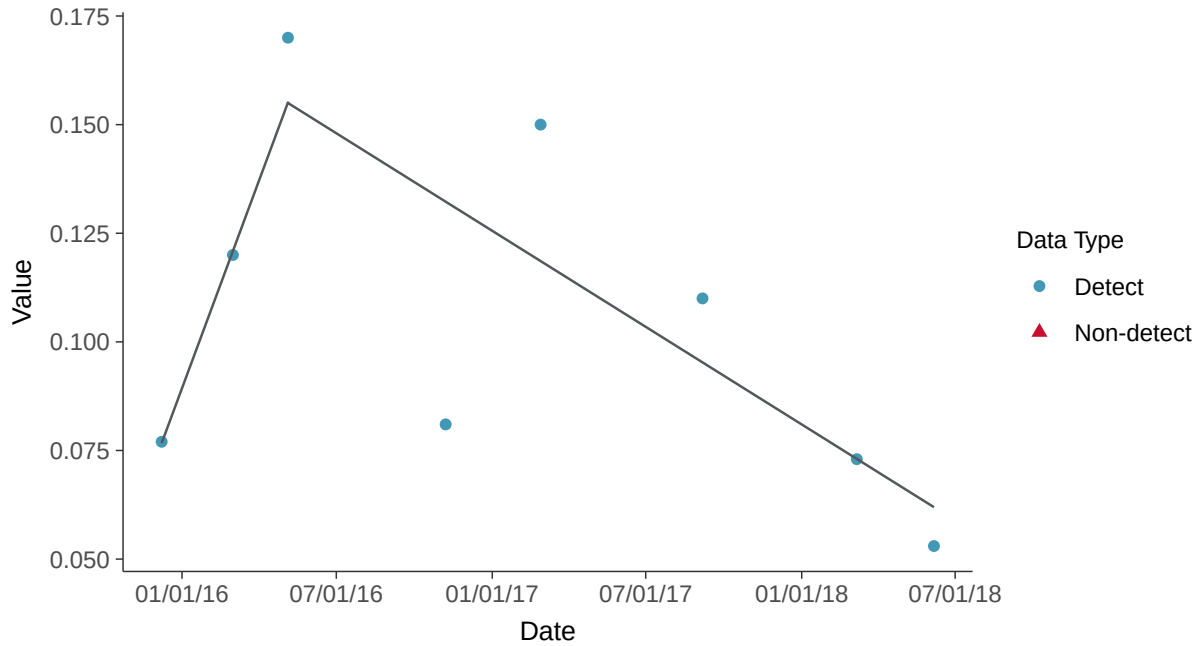
Lithium, MW-9 (mg/l)





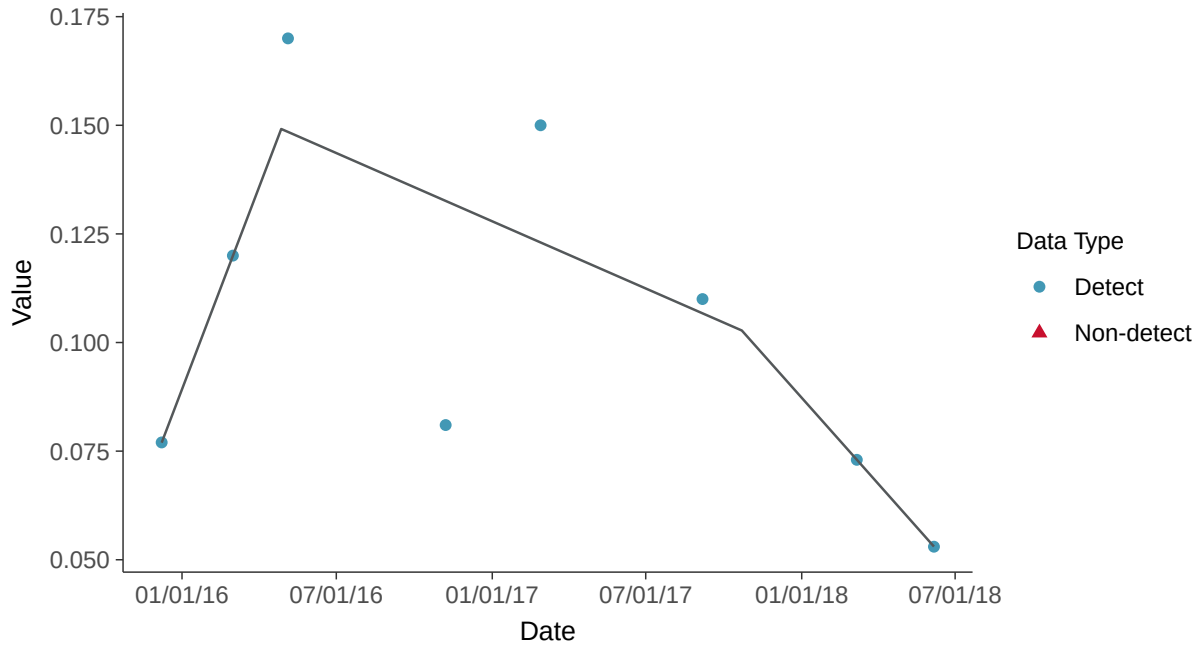
Trend Regression: Piecewise Linear-Linear

Lithium, MW-9 (mg/l)



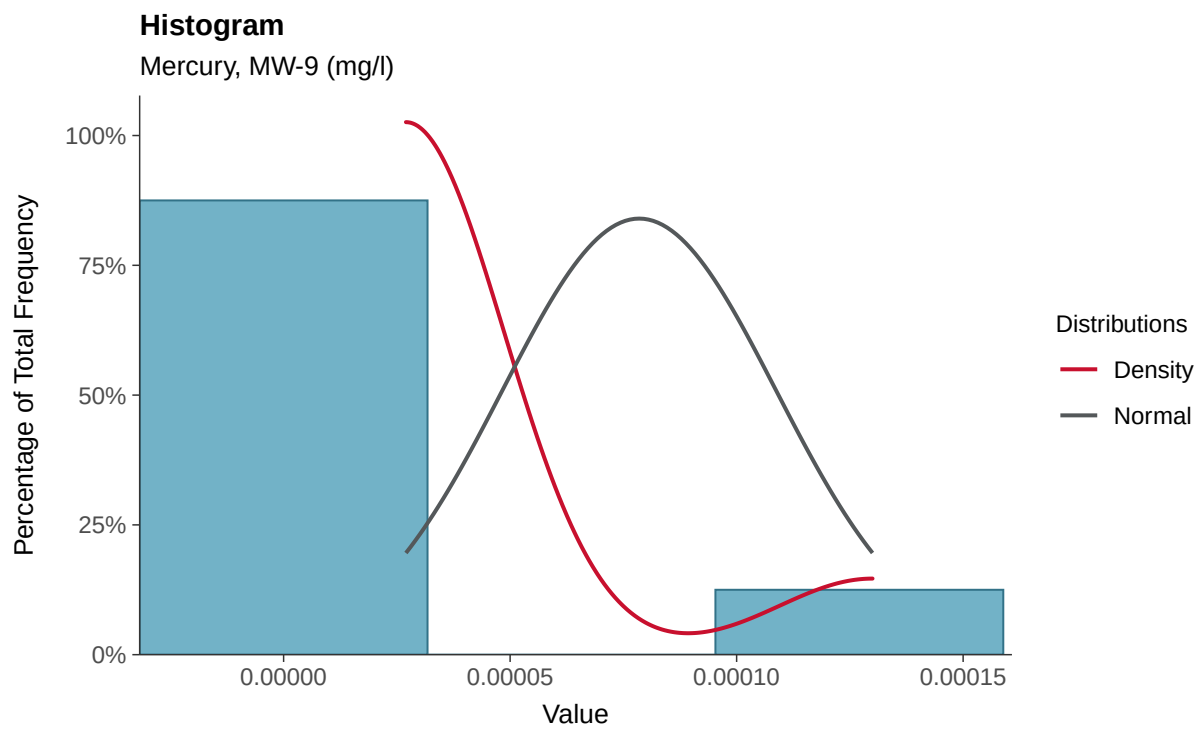
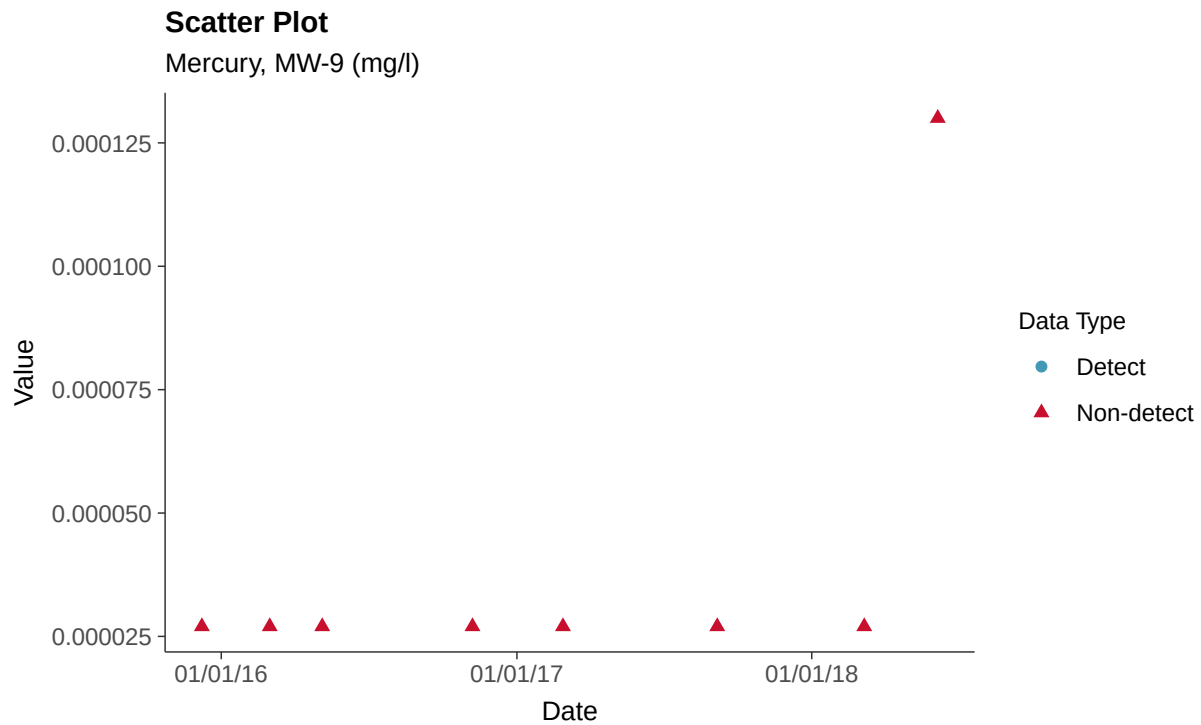
Trend Regression: Piecewise Linear-Linear-Linear

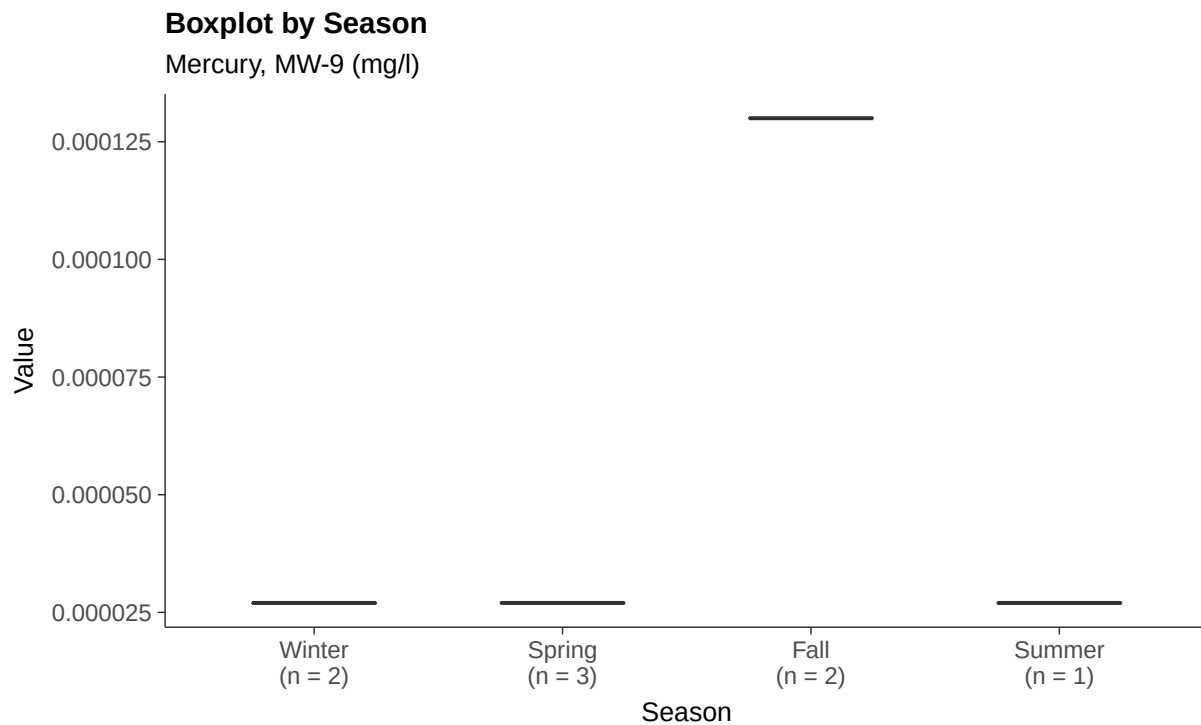
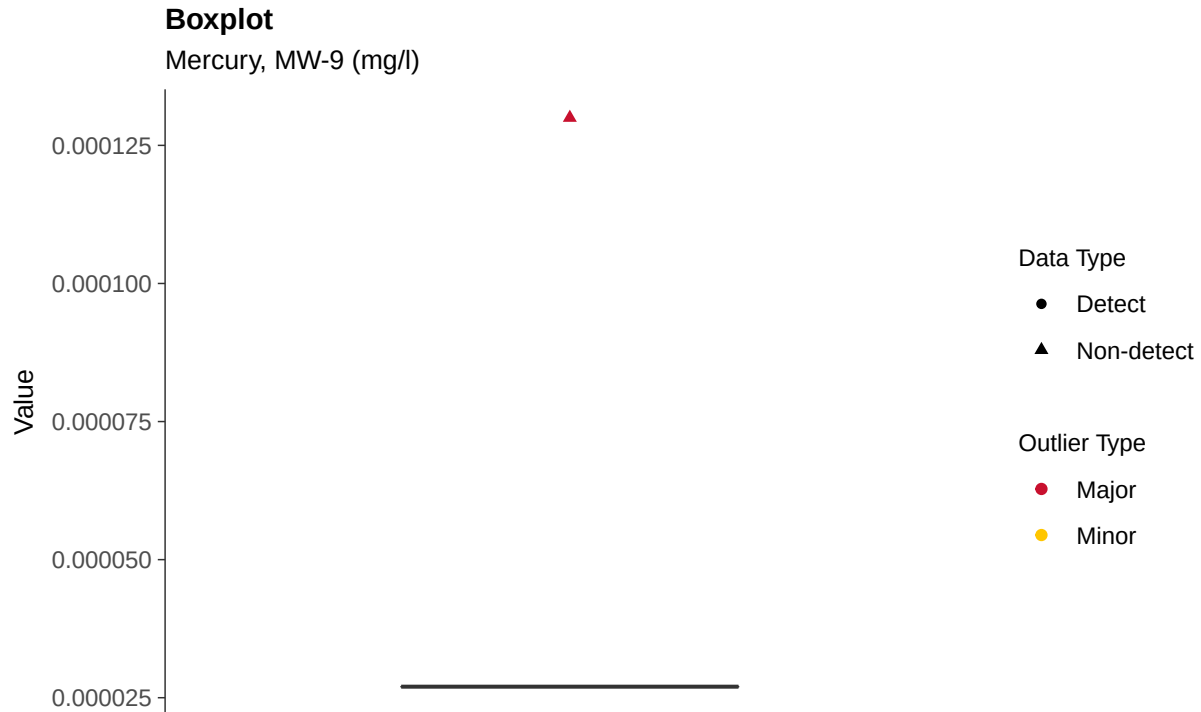
Lithium, MW-9 (mg/l)



Appendix IV: Mercury, MW-9

ID: 4_2_120

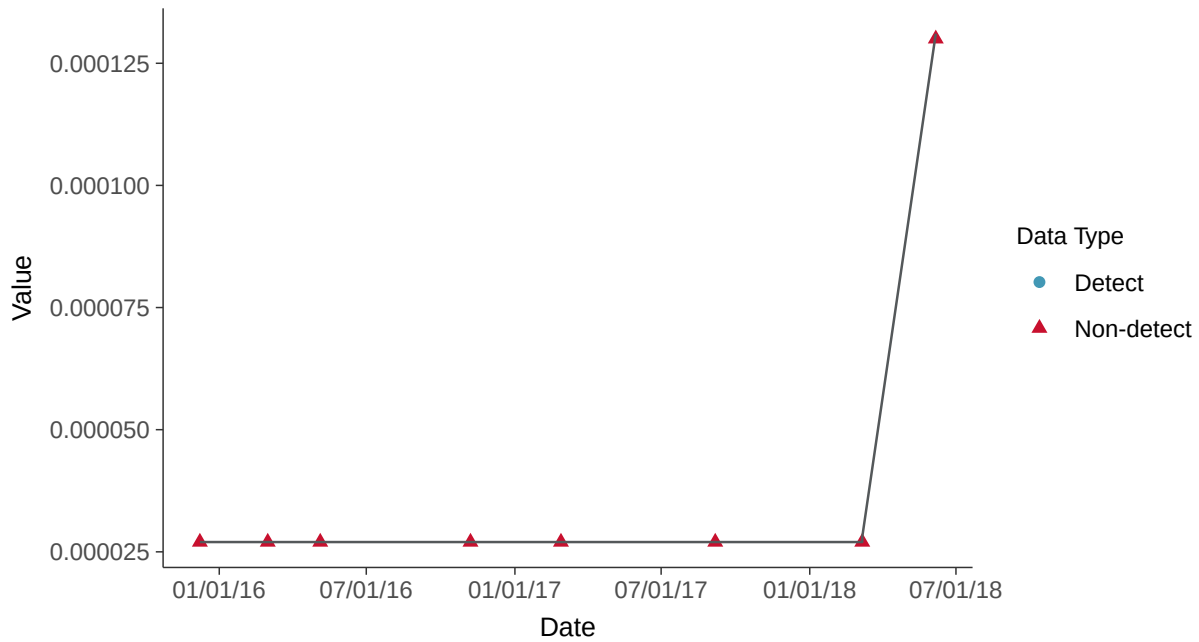






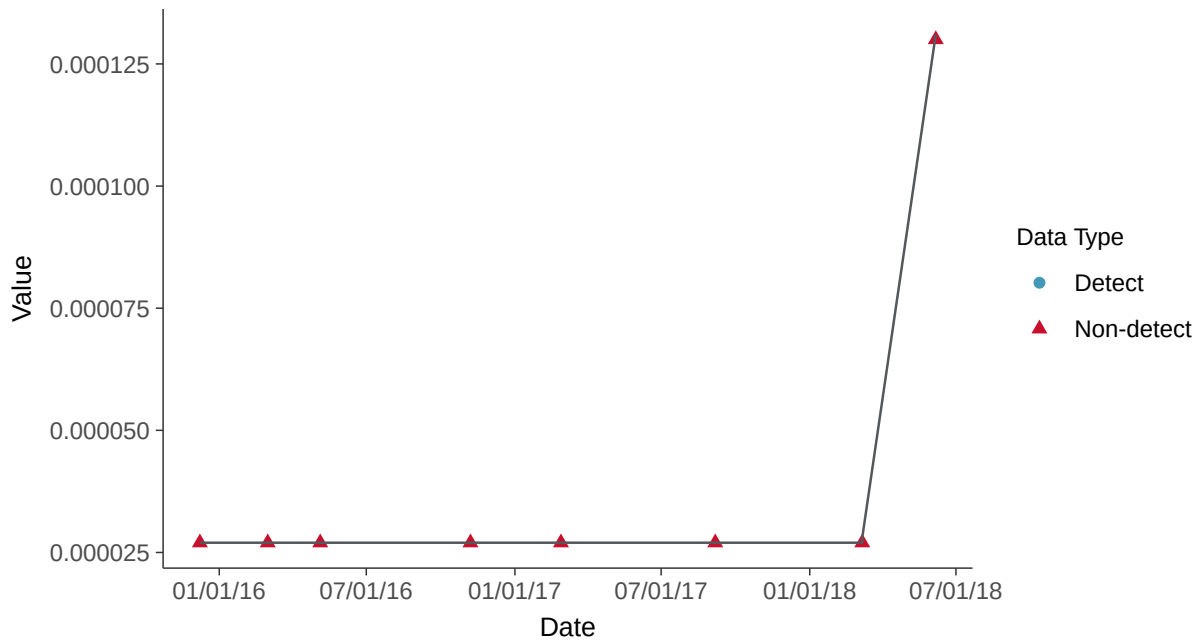
Trend Regression: Piecewise Linear-Linear

Mercury, MW-9 (mg/l)



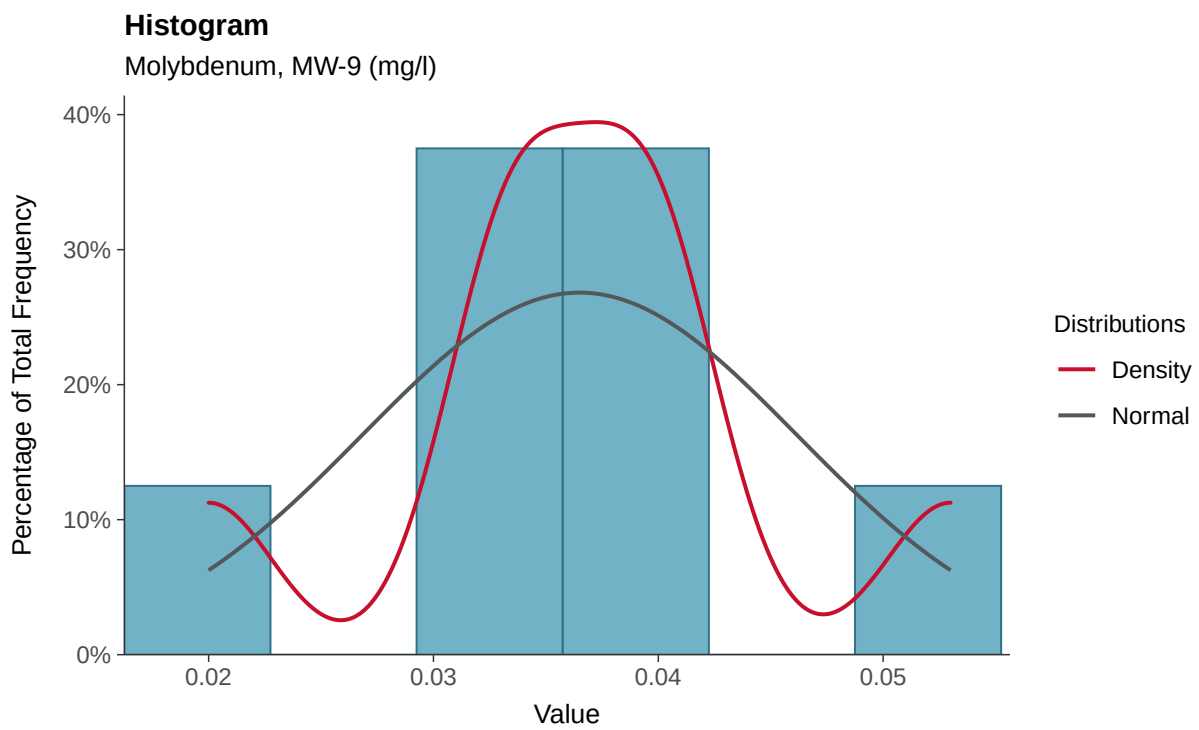
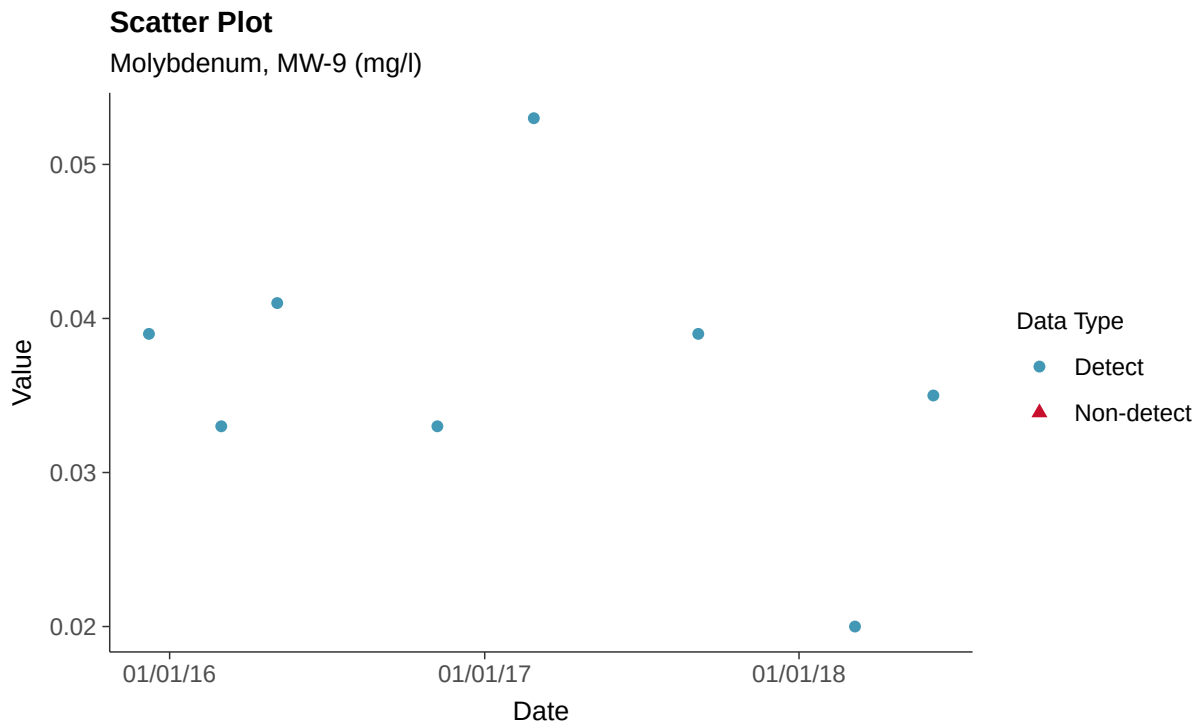
Trend Regression: Piecewise Linear-Linear-Linear

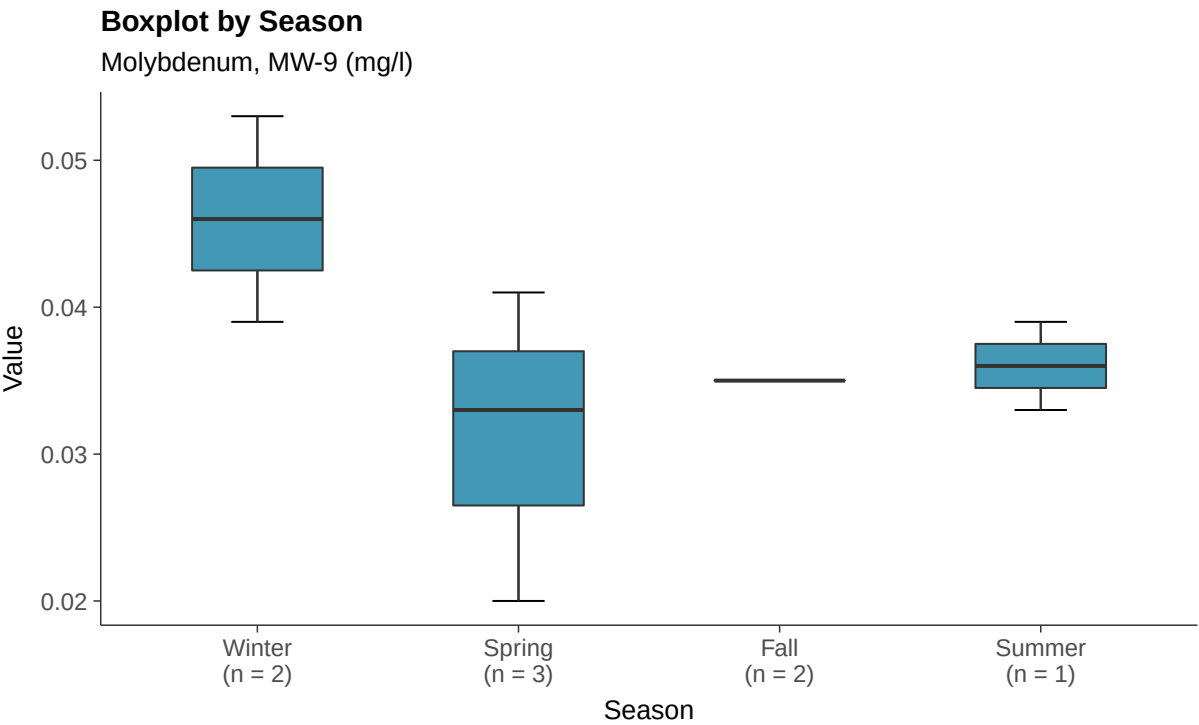
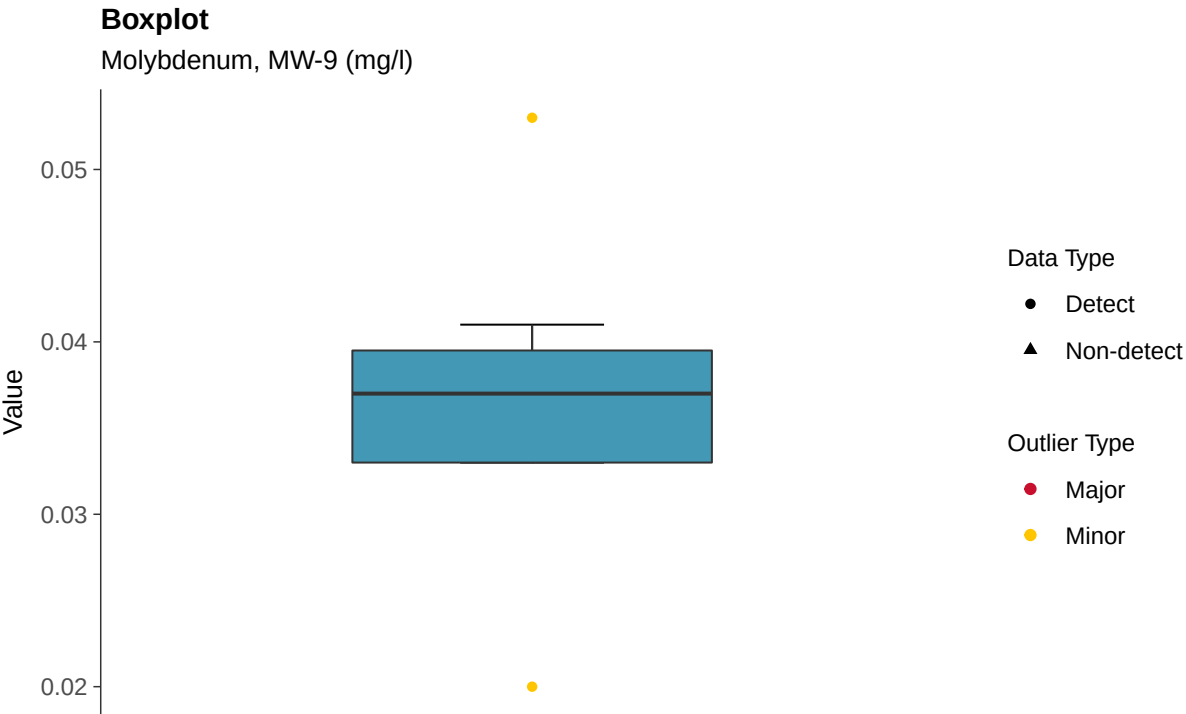
Mercury, MW-9 (mg/l)



Appendix IV: Molybdenum, MW-9

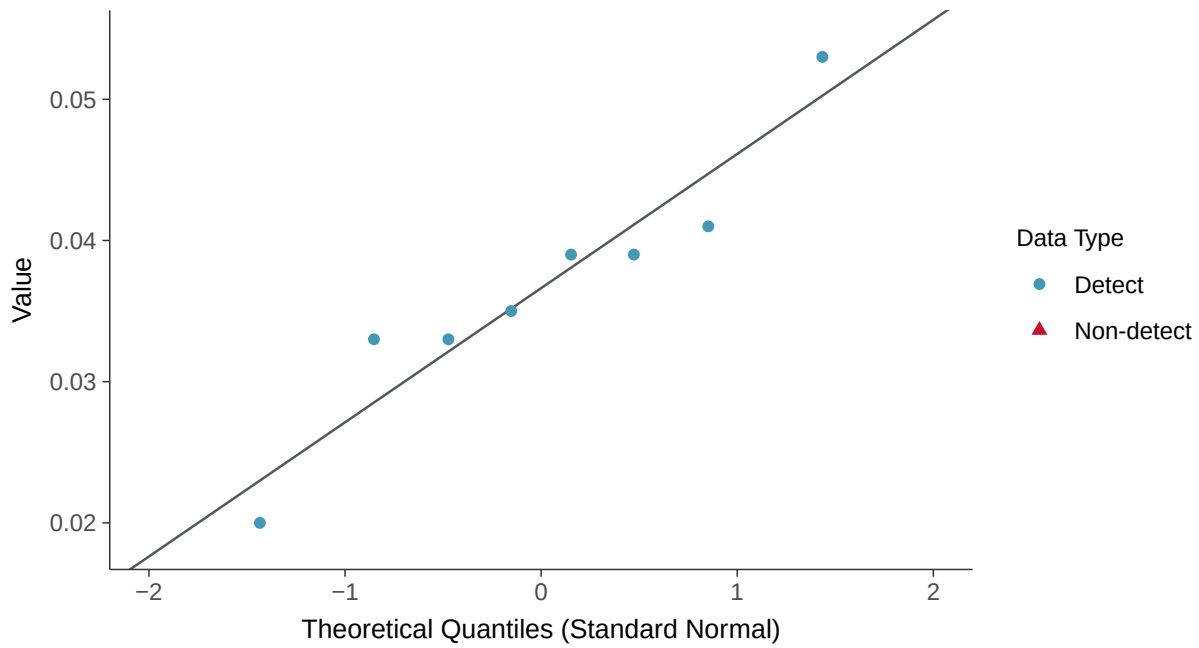
ID: 4_2_121





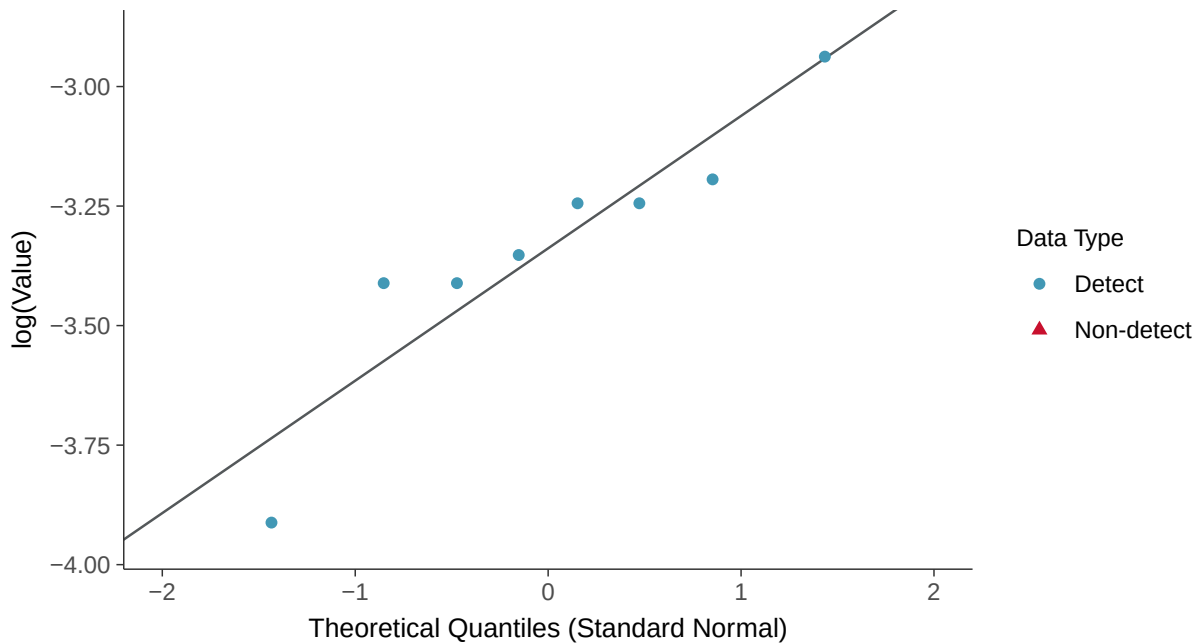
Normal Q-Q plot

Molybdenum, MW-9 (mg/l)



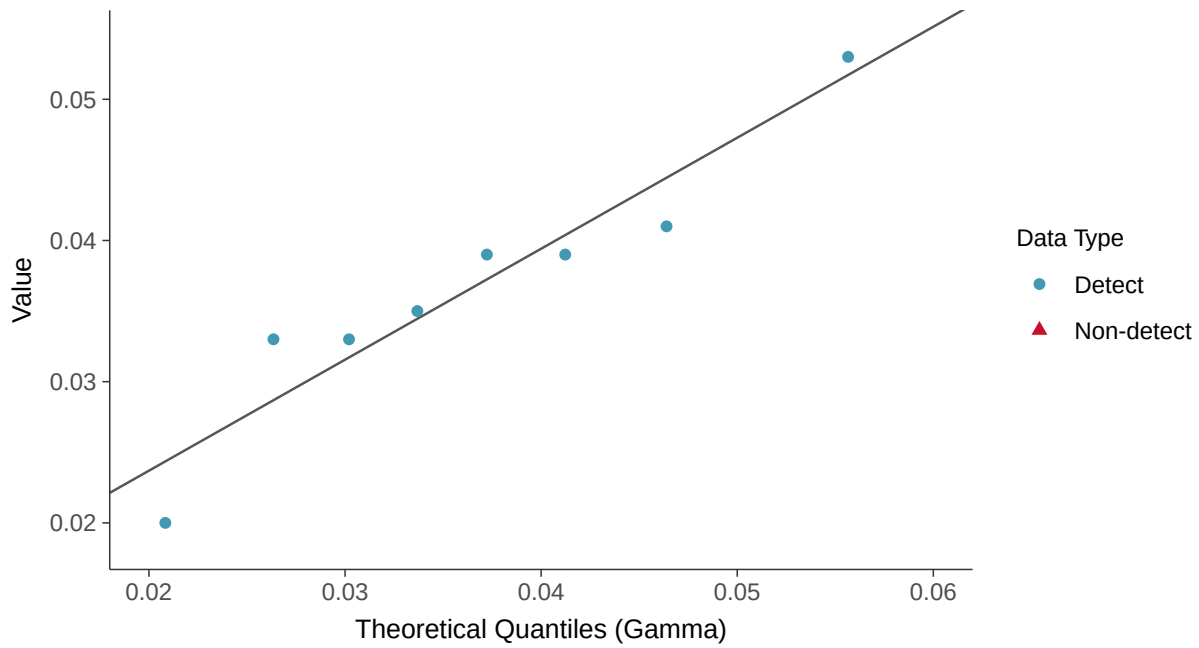
Lognormal Q-Q plot

Molybdenum, MW-9 (mg/l)



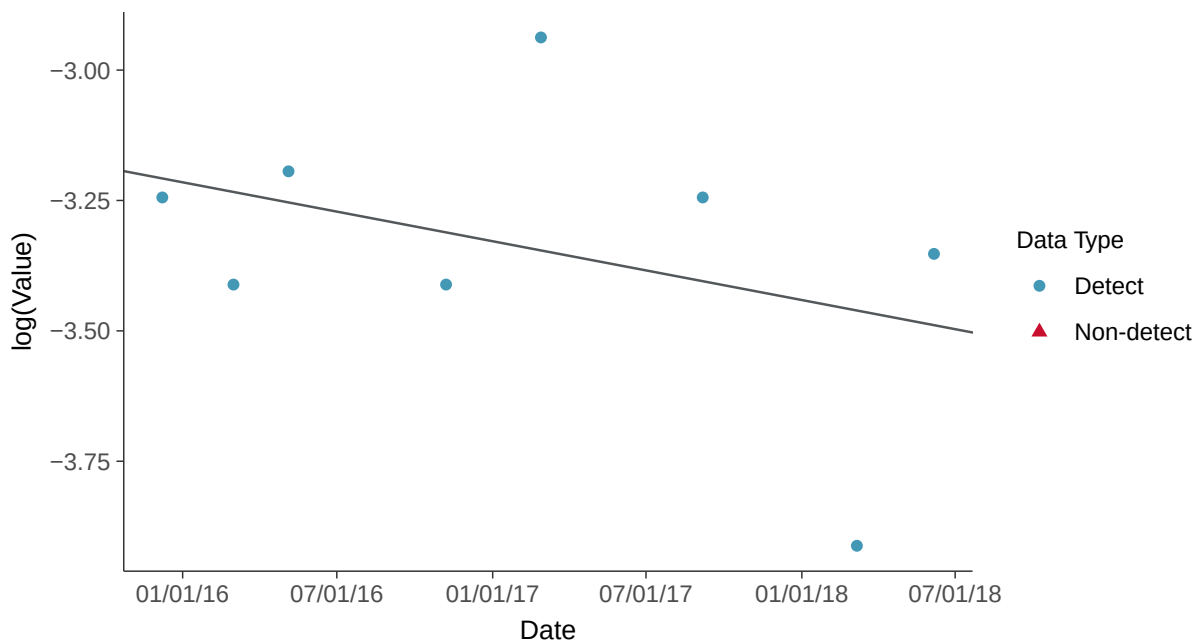
Gamma Q-Q plot

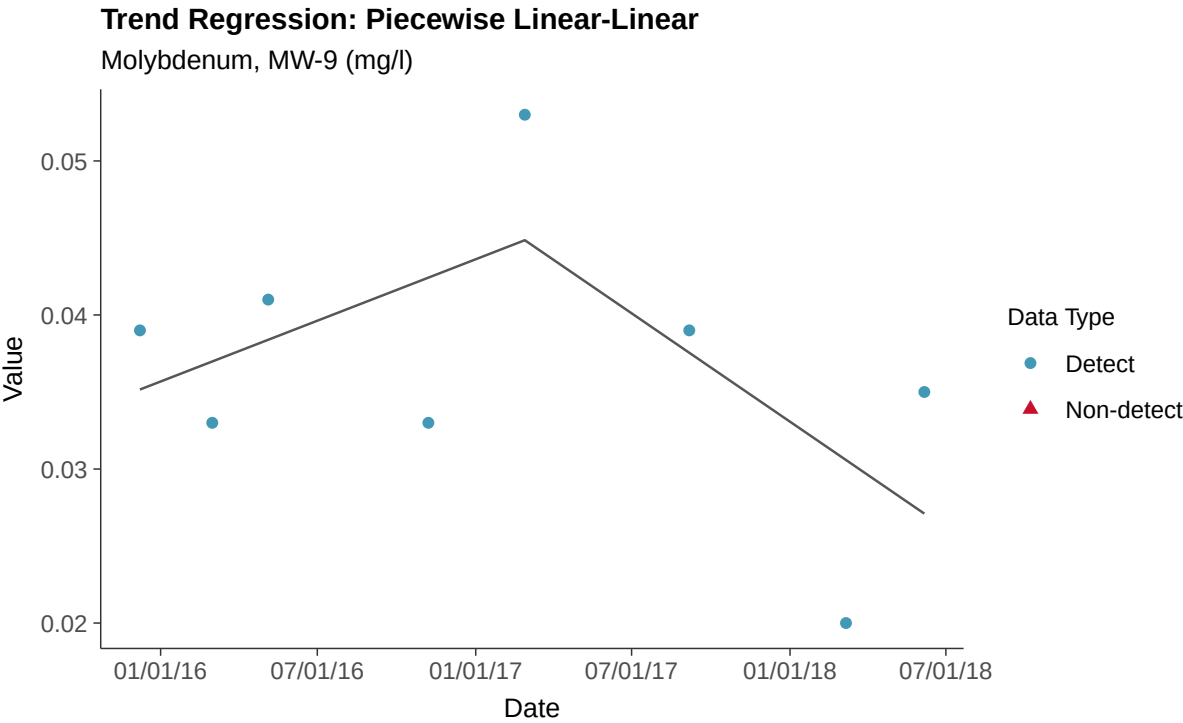
Molybdenum, MW-9 (mg/l)



Trend Regression: Lognormal MLE

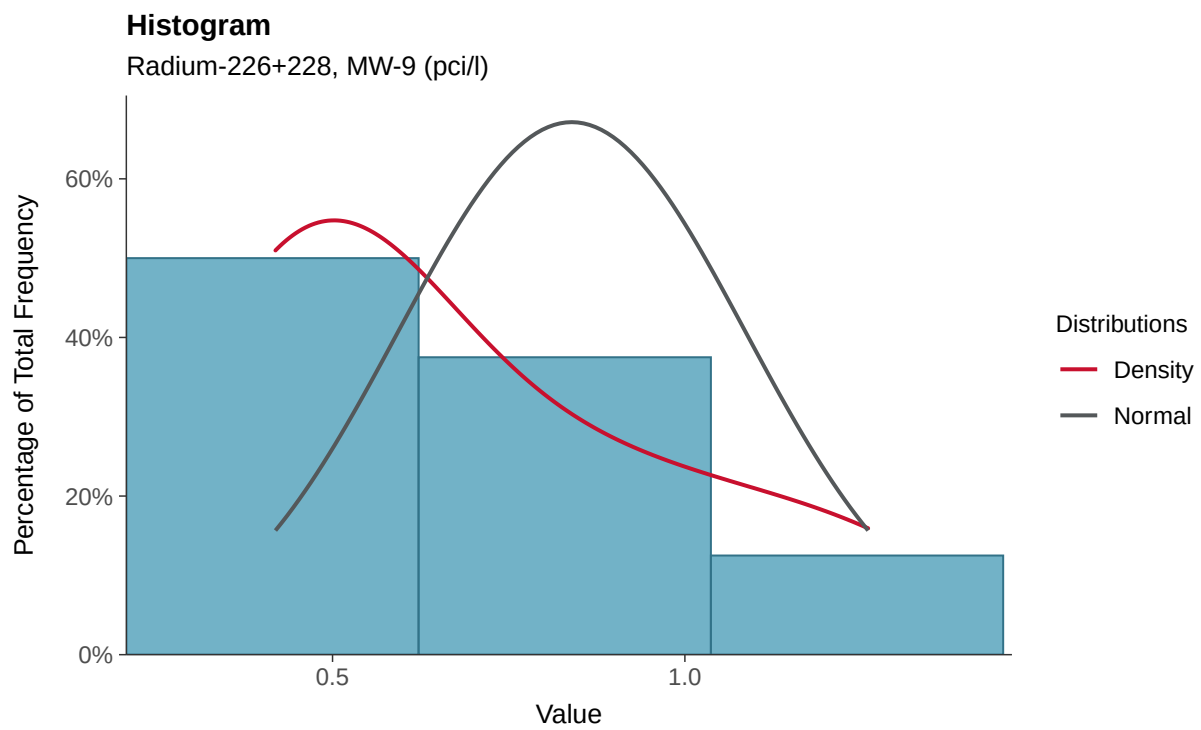
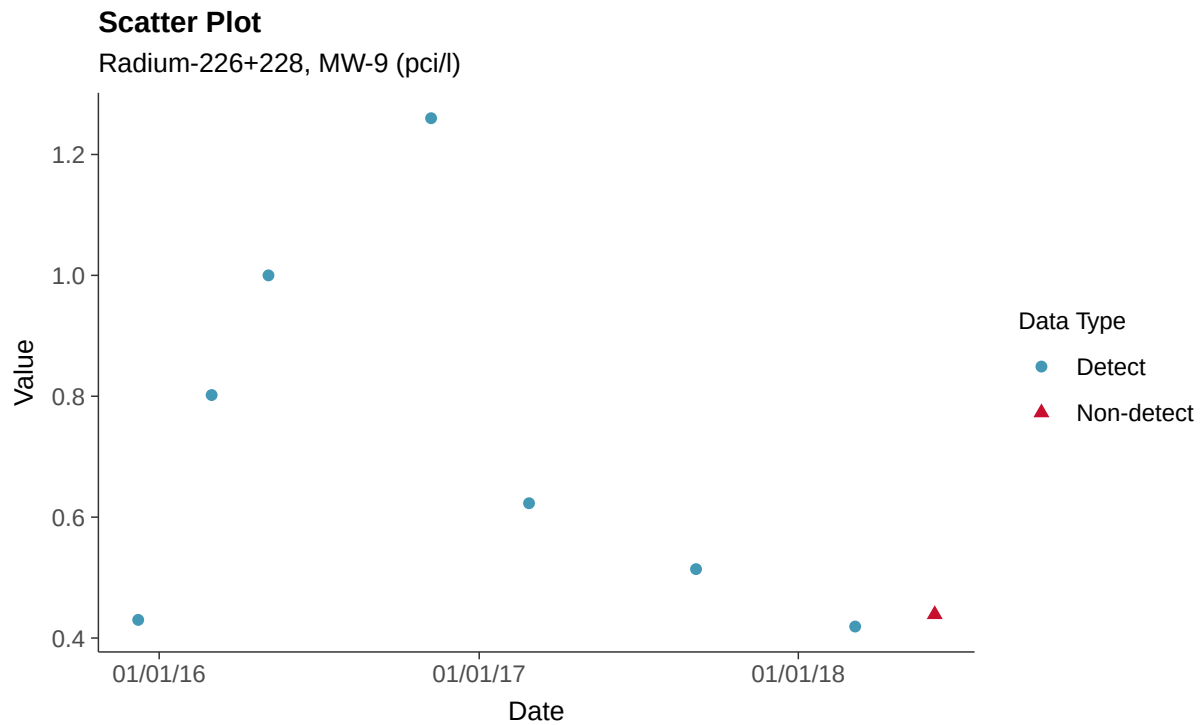
Molybdenum, MW-9 (mg/l)





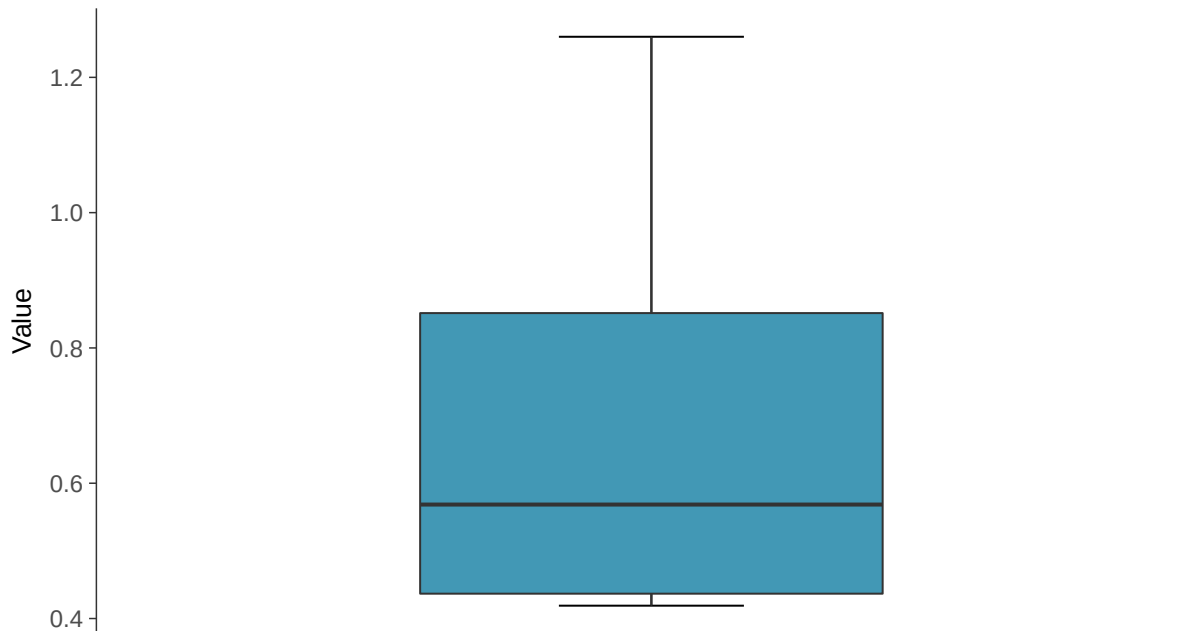
Appendix IV: Radium-226+228, MW-9

ID: 4_2_127



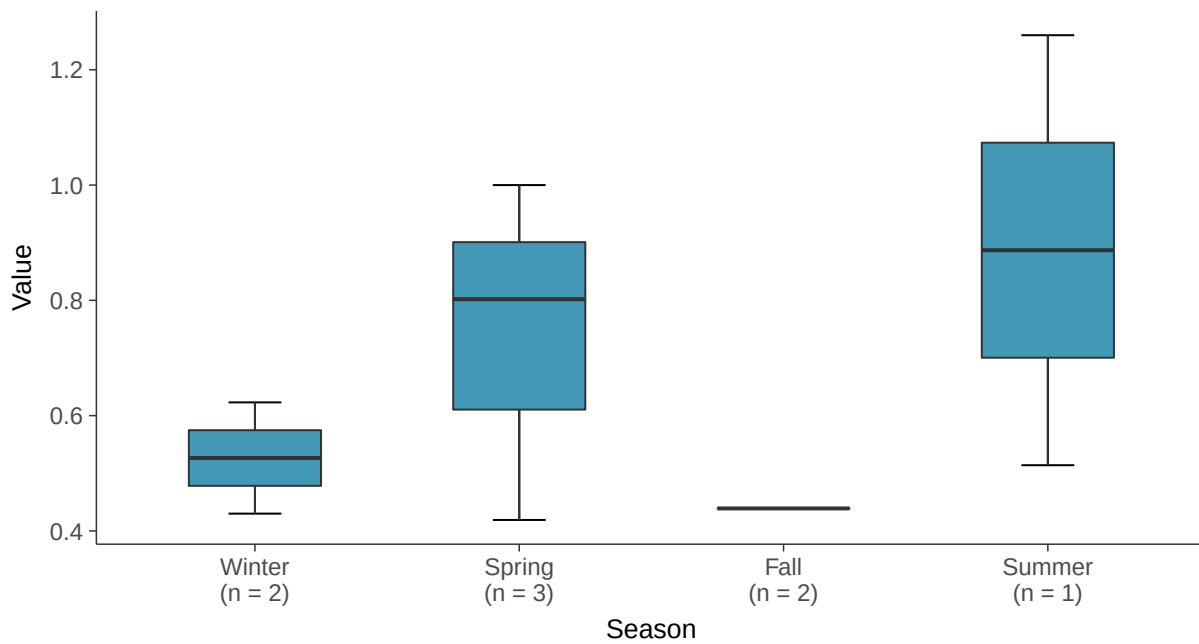
Boxplot

Radium-226+228, MW-9 (pci/l)



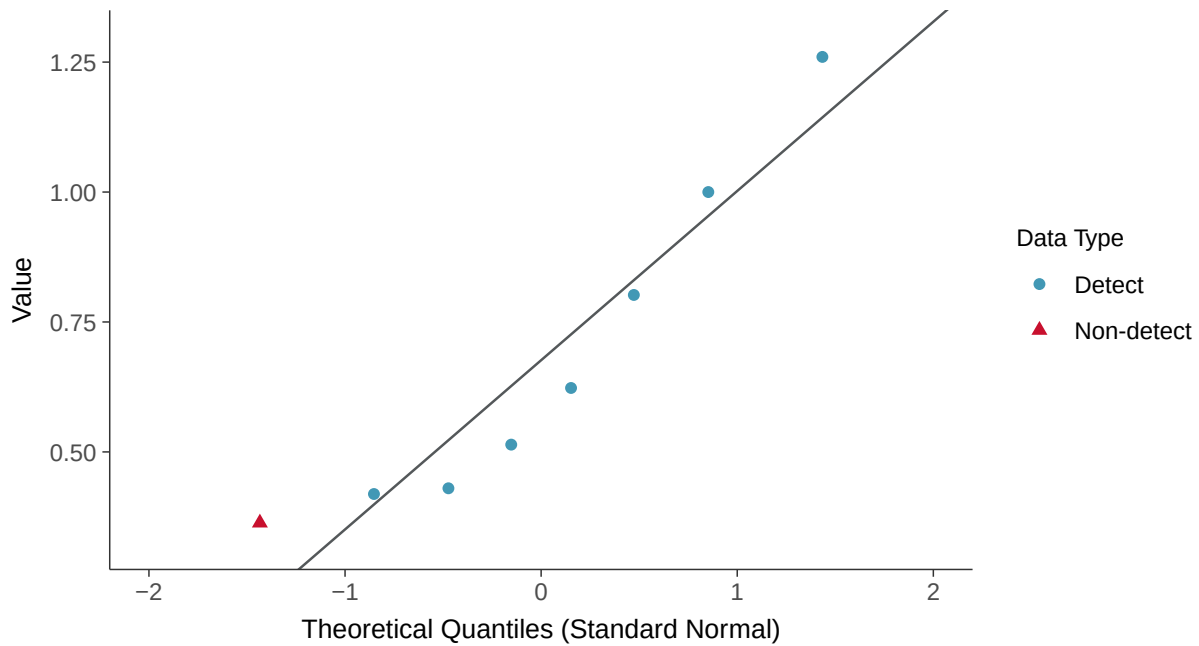
Boxplot by Season

Radium-226+228, MW-9 (pci/l)



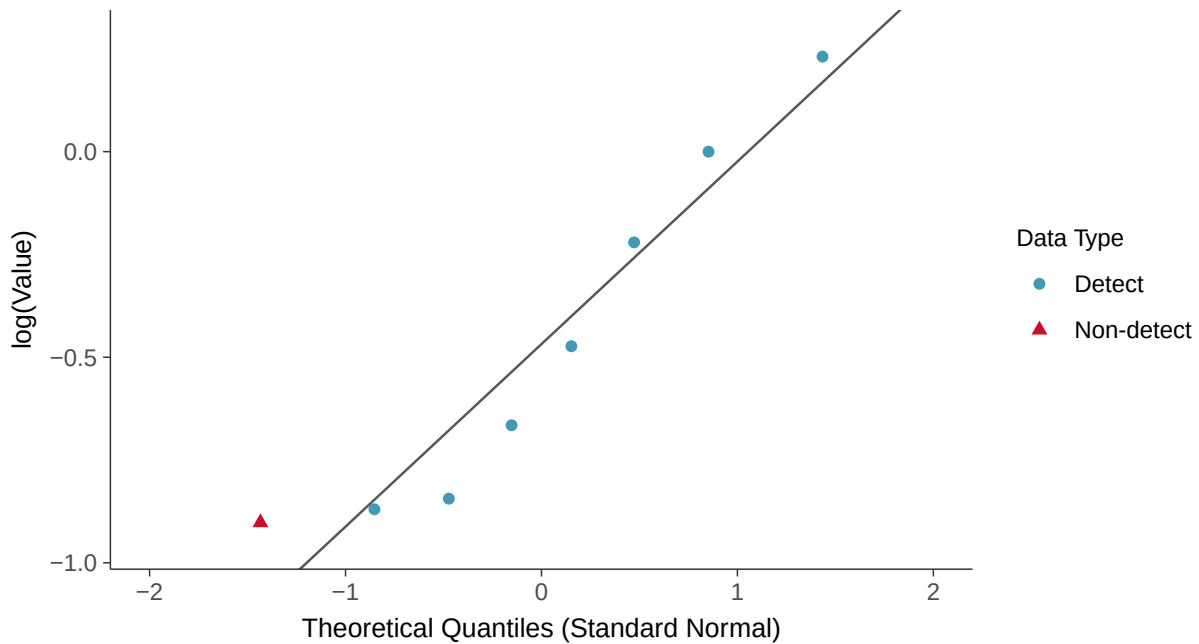
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-9 (pci/l)



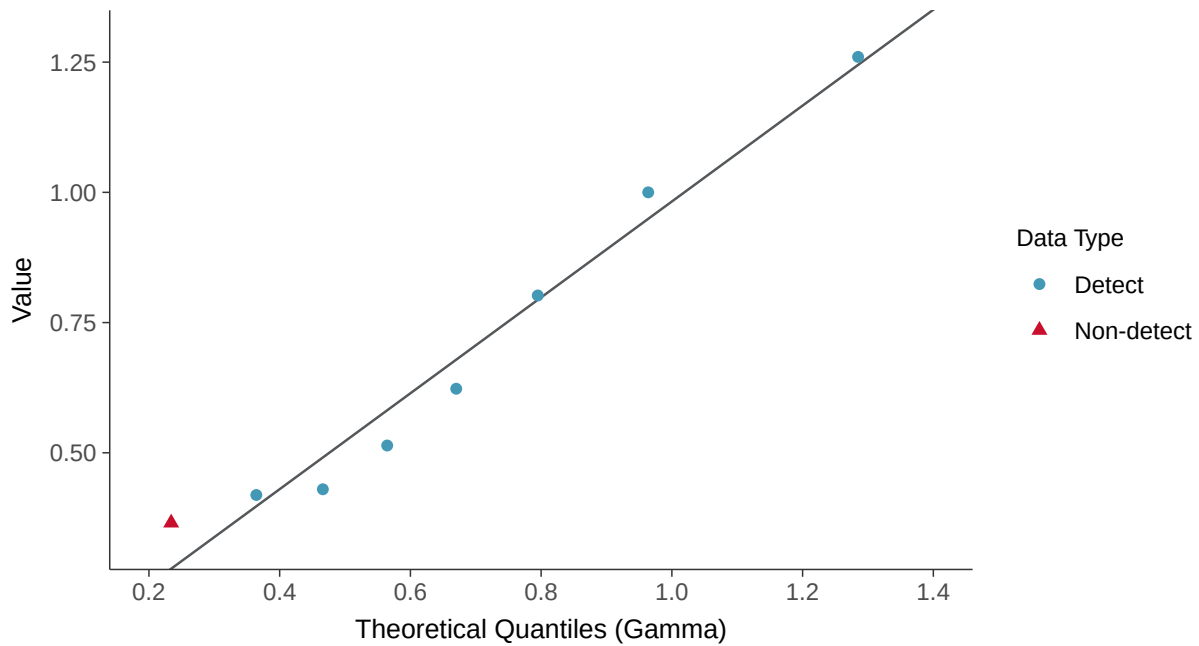
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-9 (pci/l)



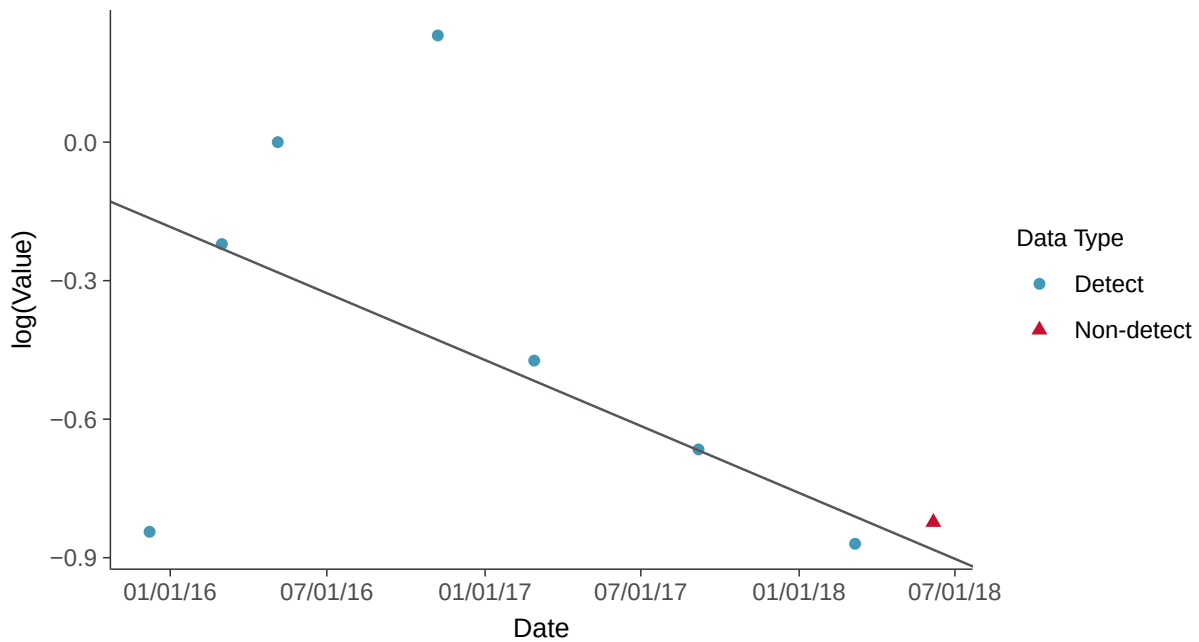
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-9 (pci/l)



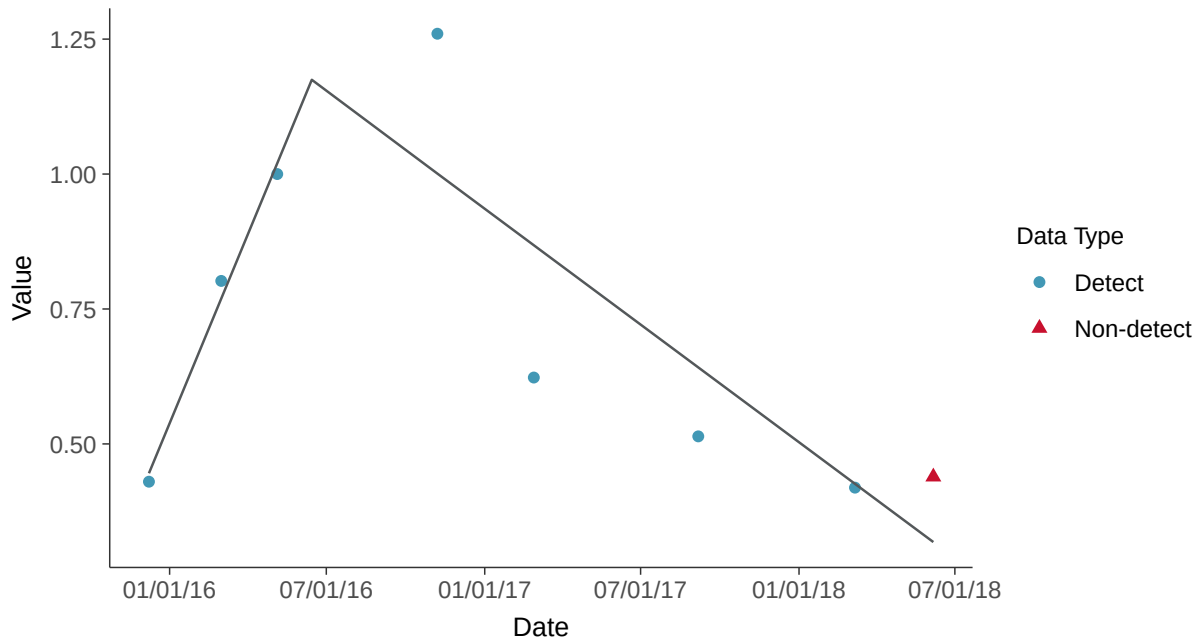
Trend Regression: Lognormal MLE

Radium-226+228, MW-9 (pci/l)



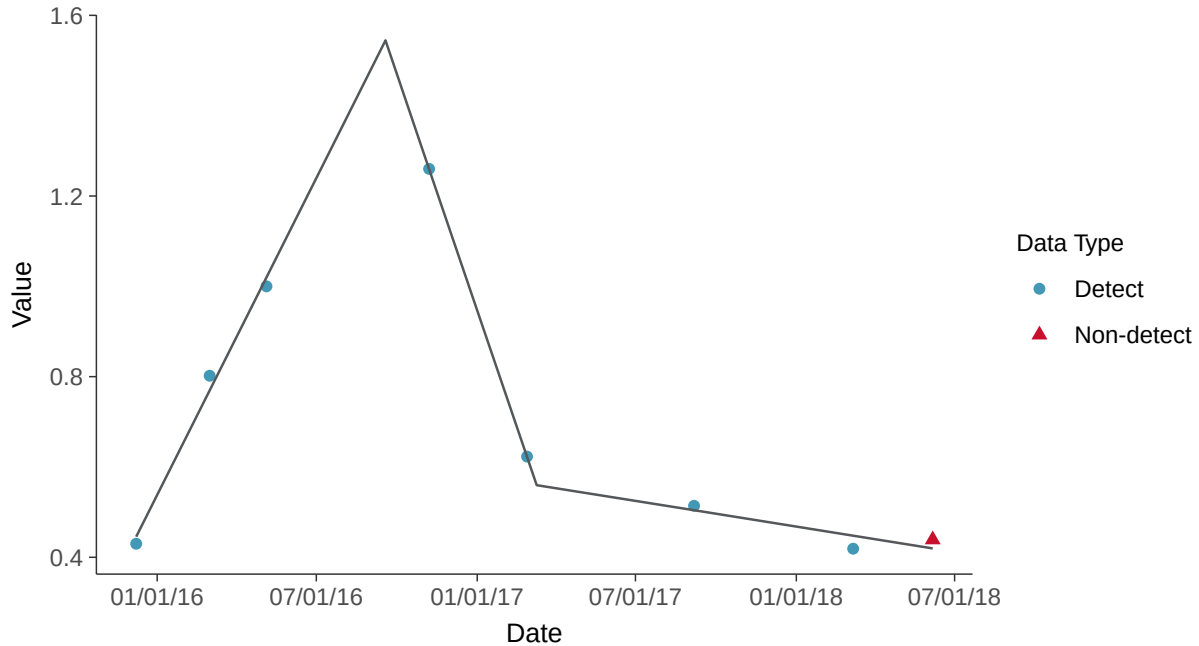
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-9 (pci/l)



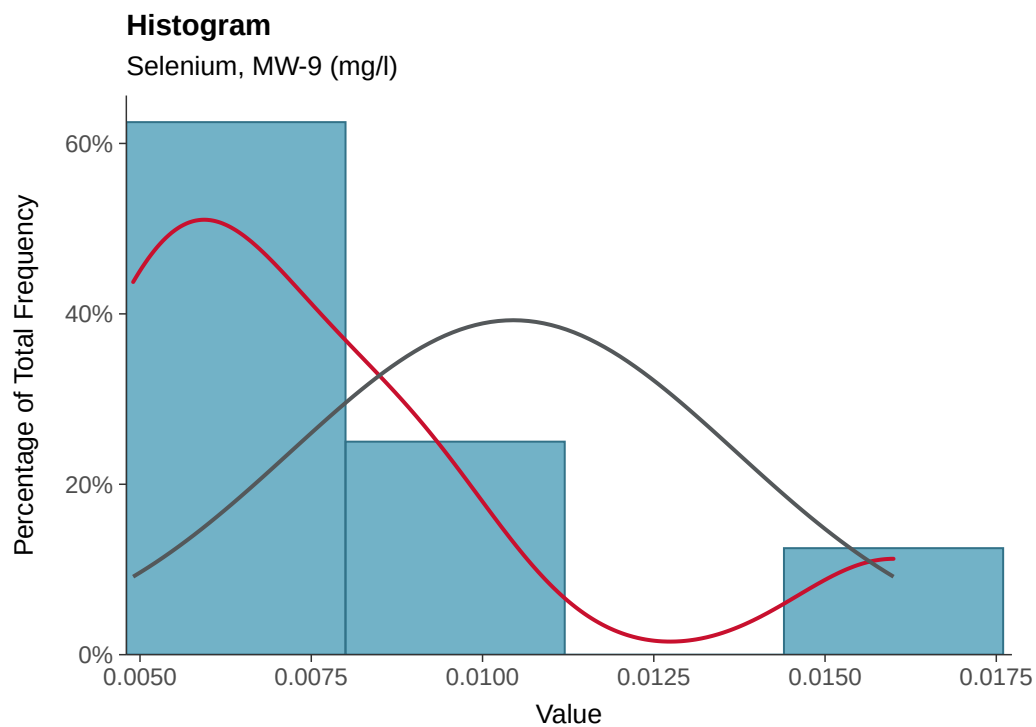
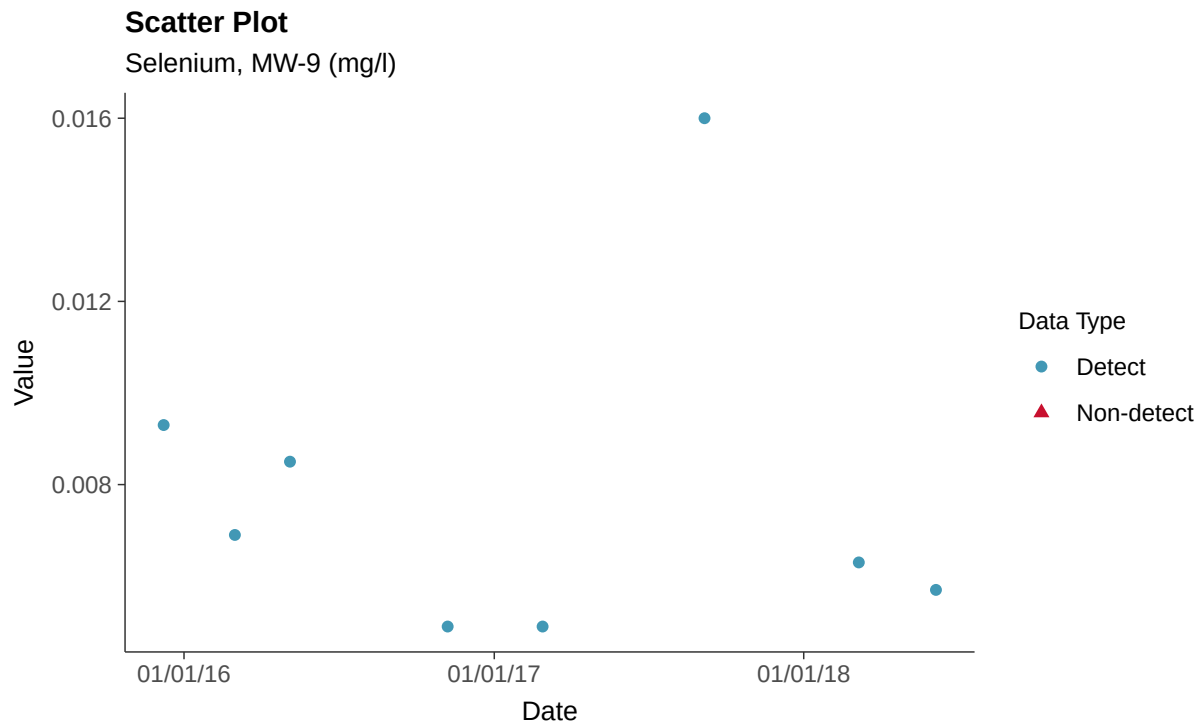
Trend Regression: Piecewise Linear-Linear-Linear

Radium-226+228, MW-9 (pci/l)



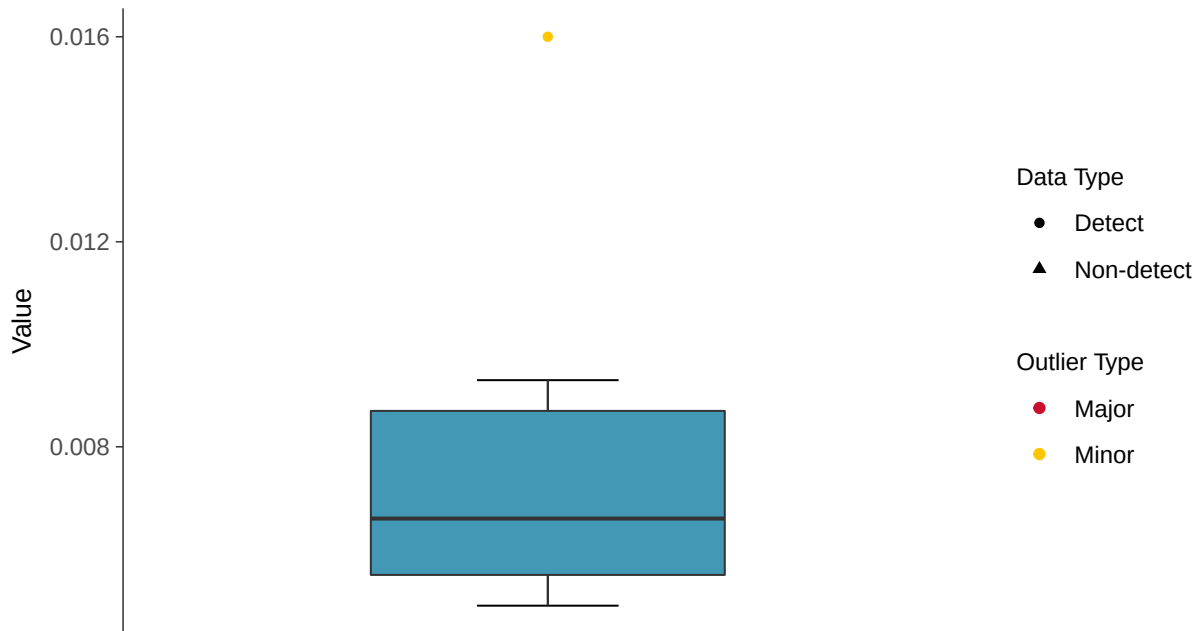
Appendix IV: Selenium, MW-9

ID: 4_2_129



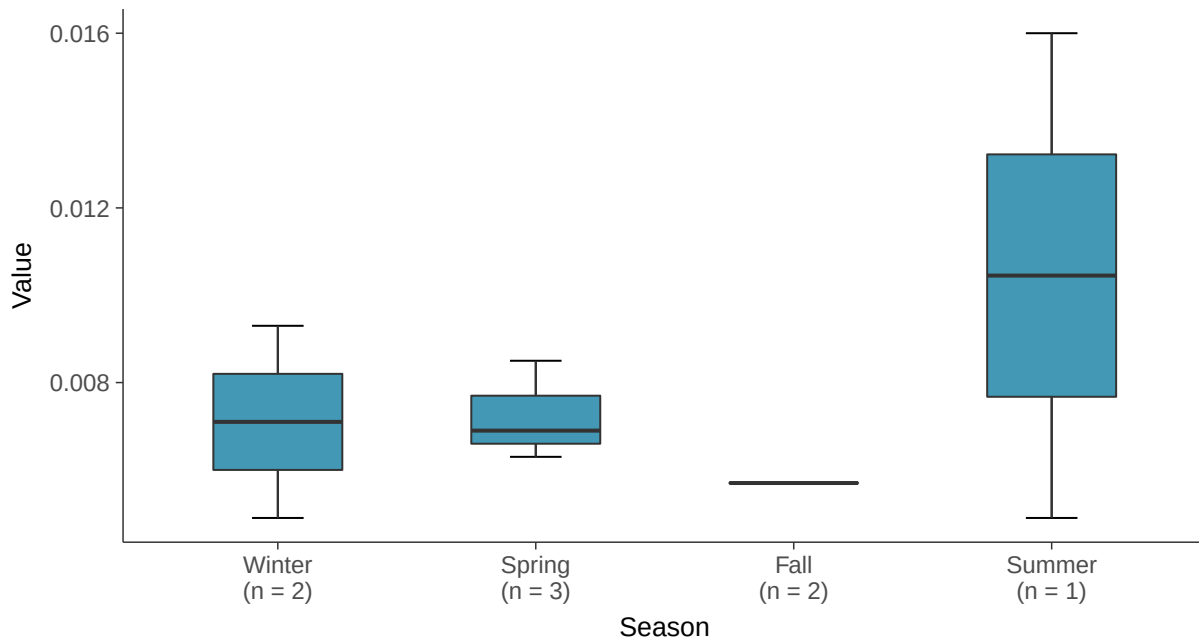
Boxplot

Selenium, MW-9 (mg/l)



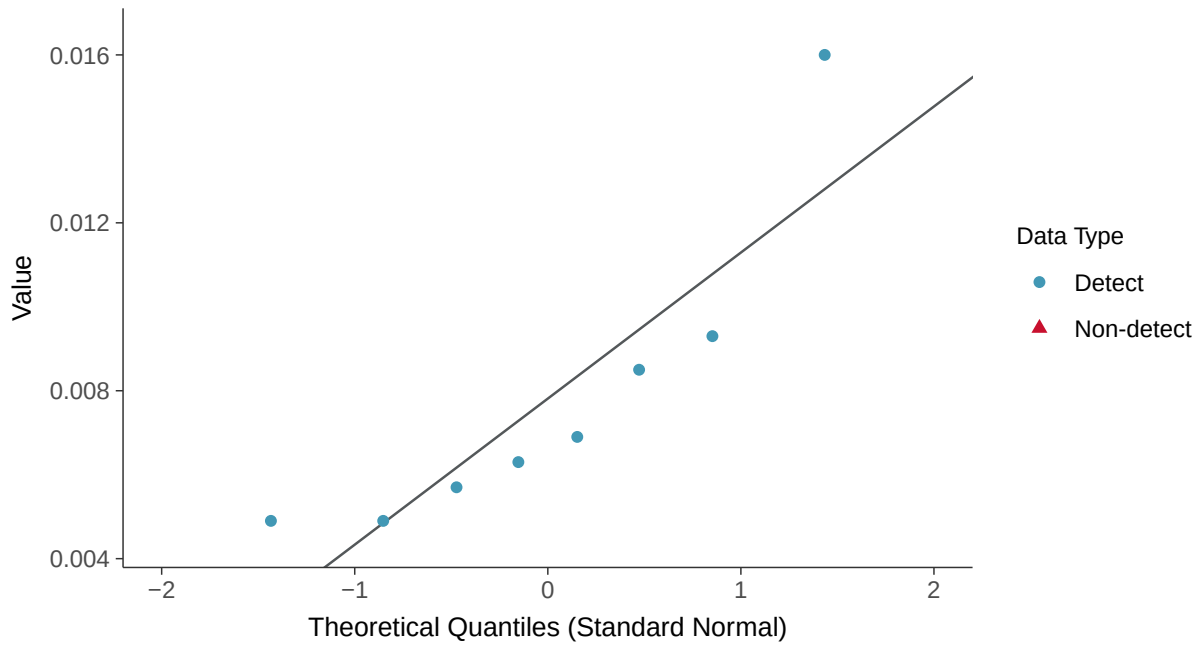
Boxplot by Season

Selenium, MW-9 (mg/l)



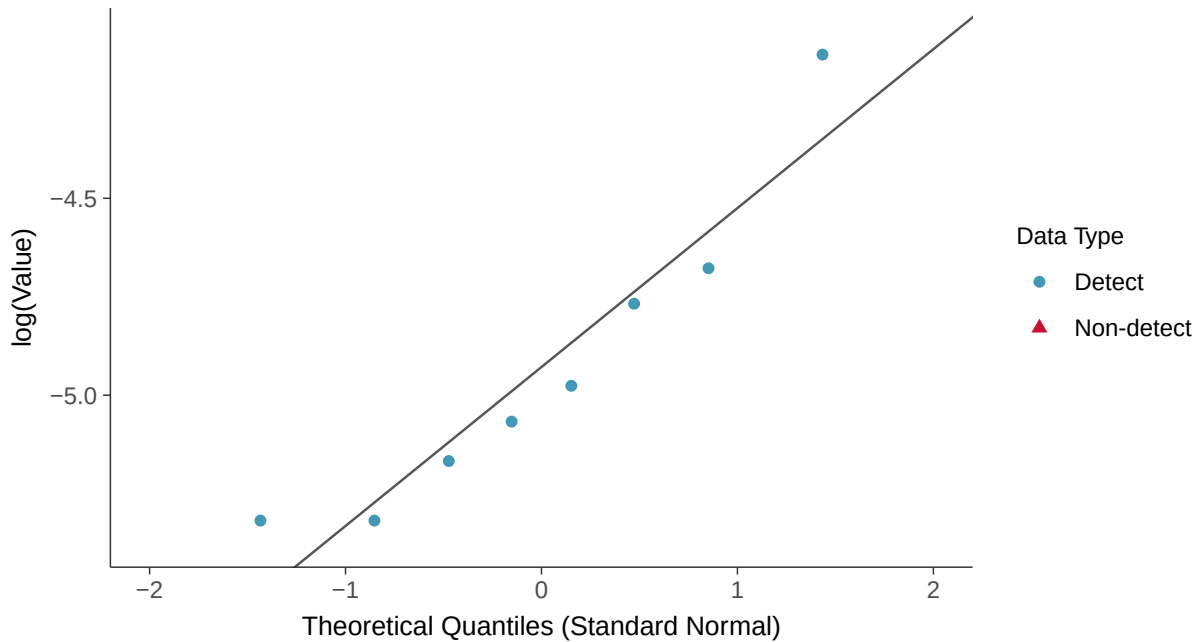
Normal Q-Q plot

Selenium, MW-9 (mg/l)



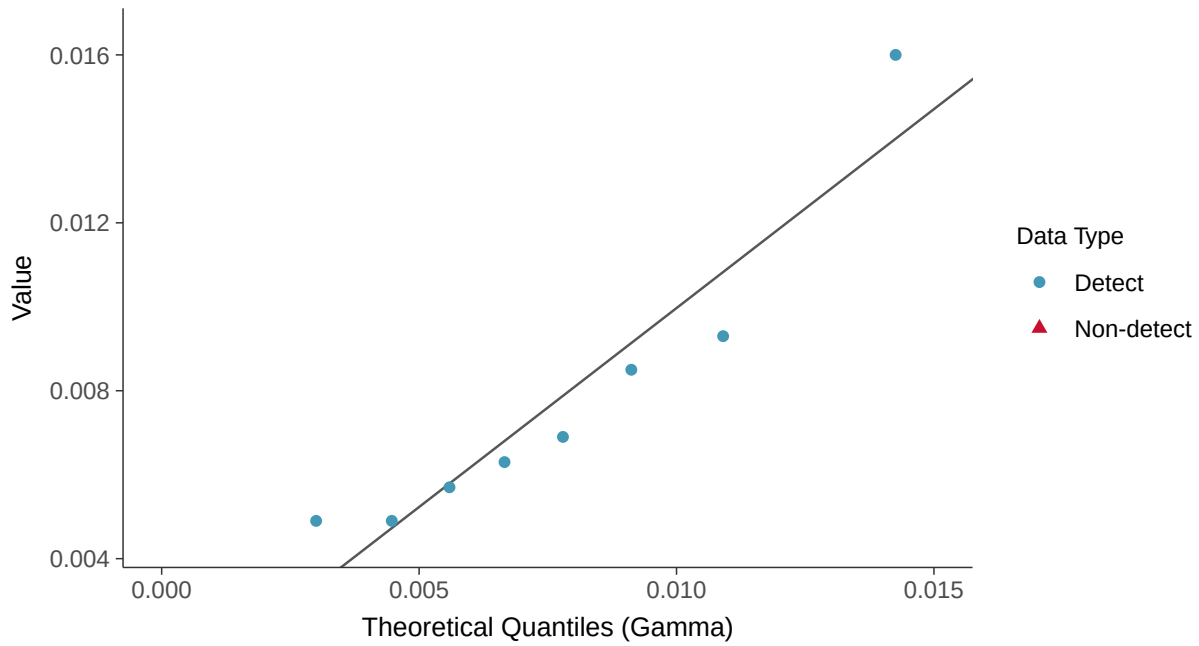
Lognormal Q-Q plot

Selenium, MW-9 (mg/l)



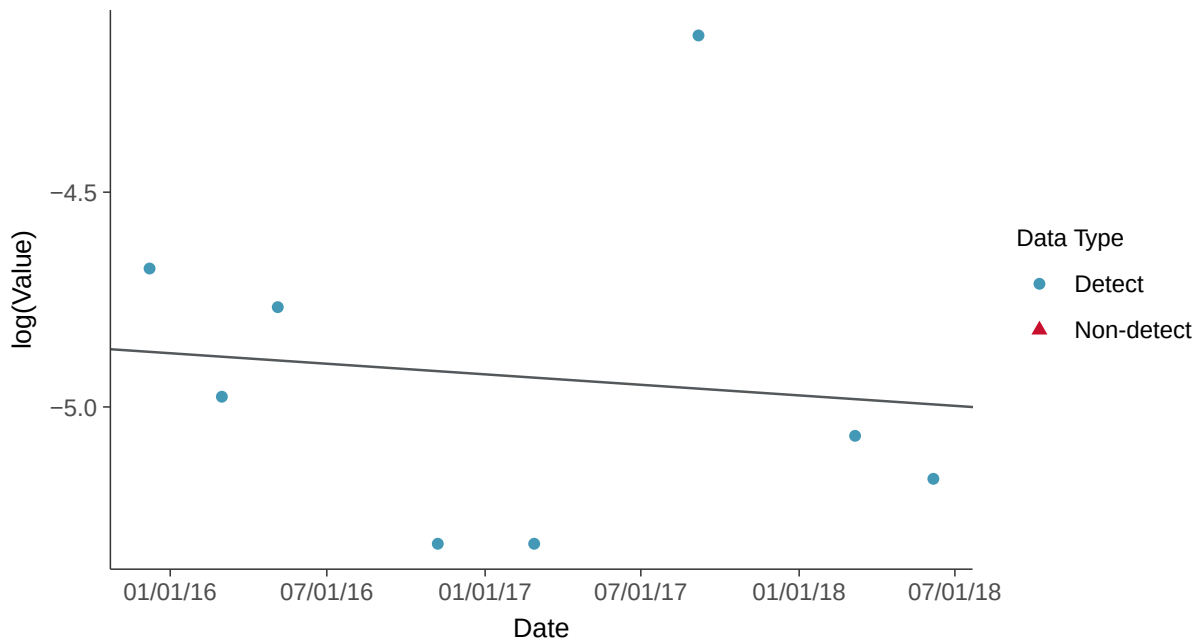
Gamma Q-Q plot

Selenium, MW-9 (mg/l)



Trend Regression: Lognormal MLE

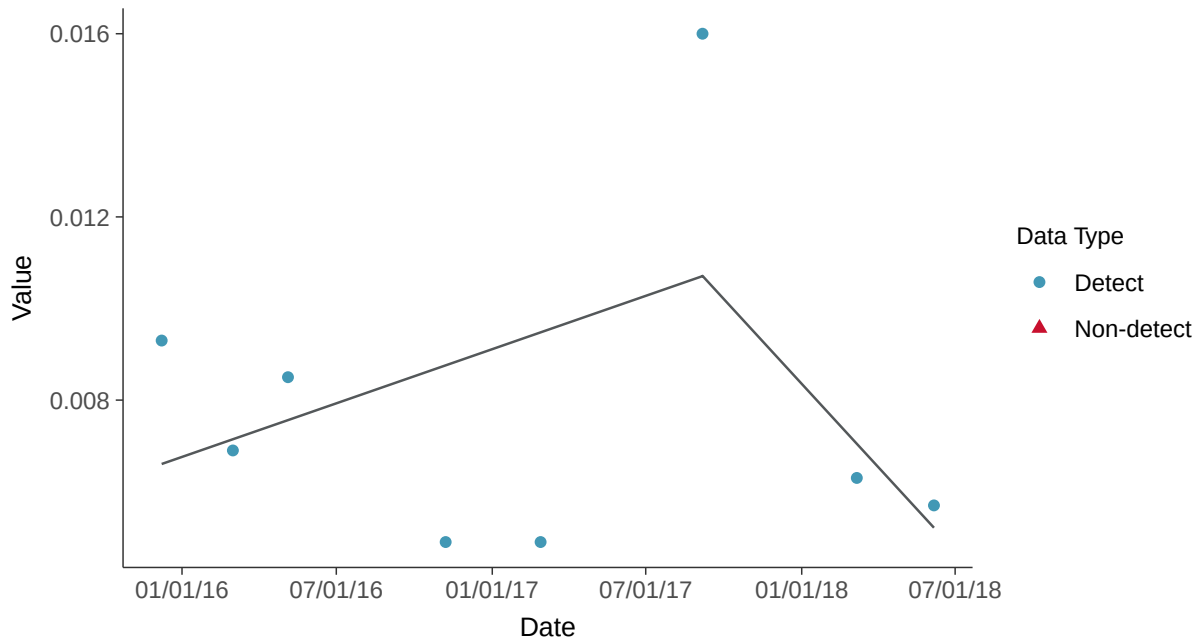
Selenium, MW-9 (mg/l)





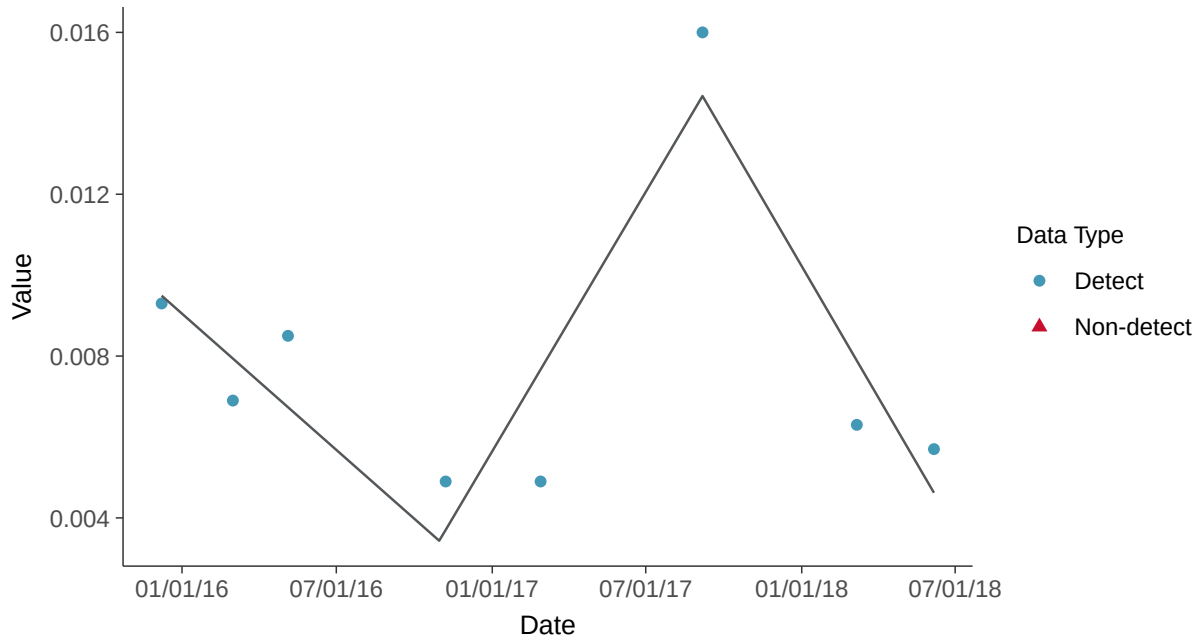
Trend Regression: Piecewise Linear-Linear

Selenium, MW-9 (mg/l)



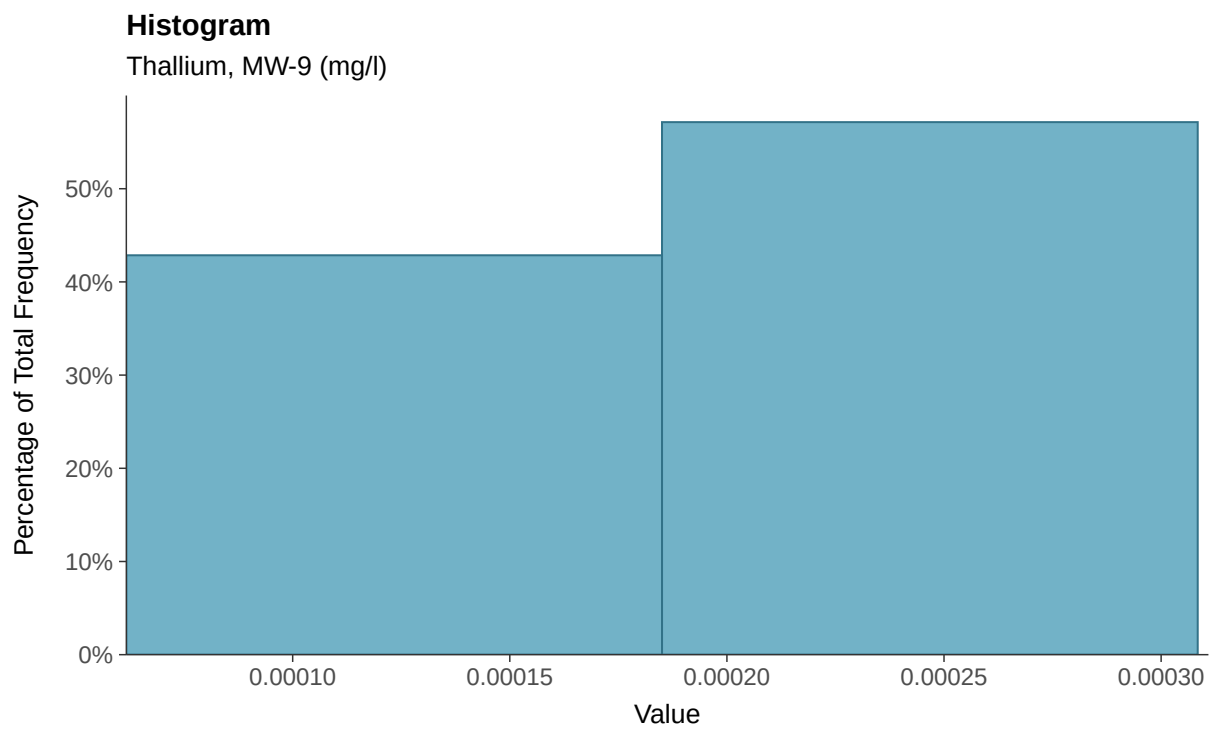
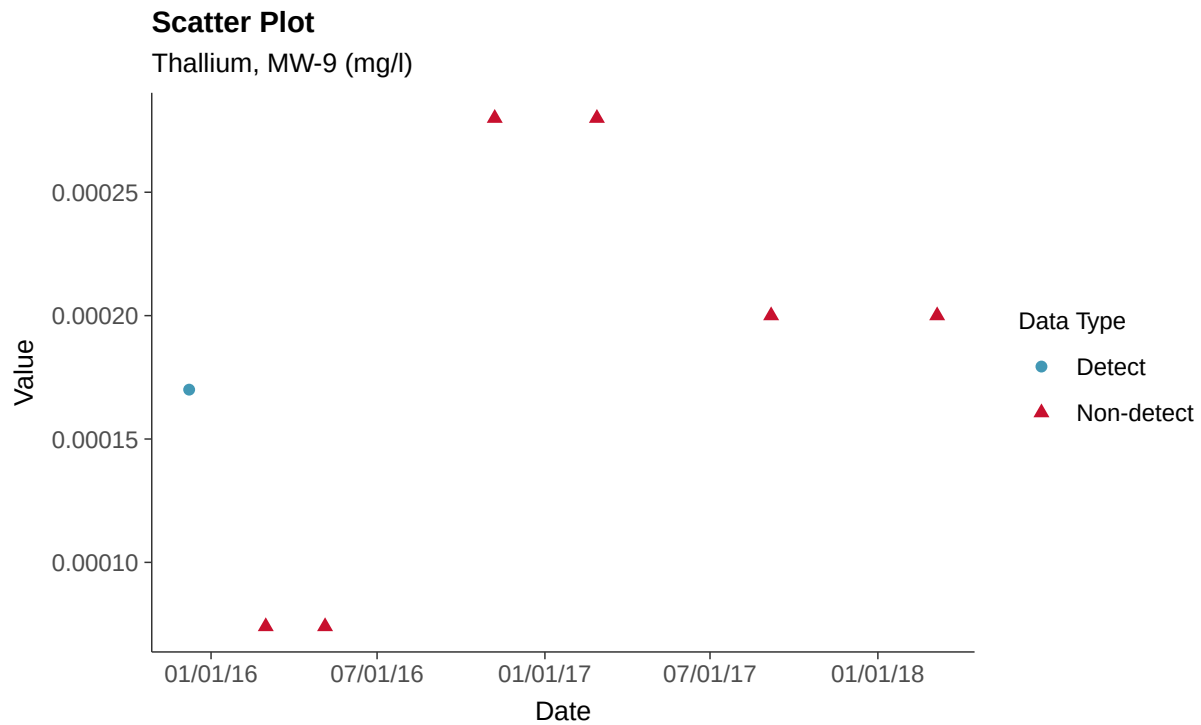
Trend Regression: Piecewise Linear-Linear-Linear

Selenium, MW-9 (mg/l)



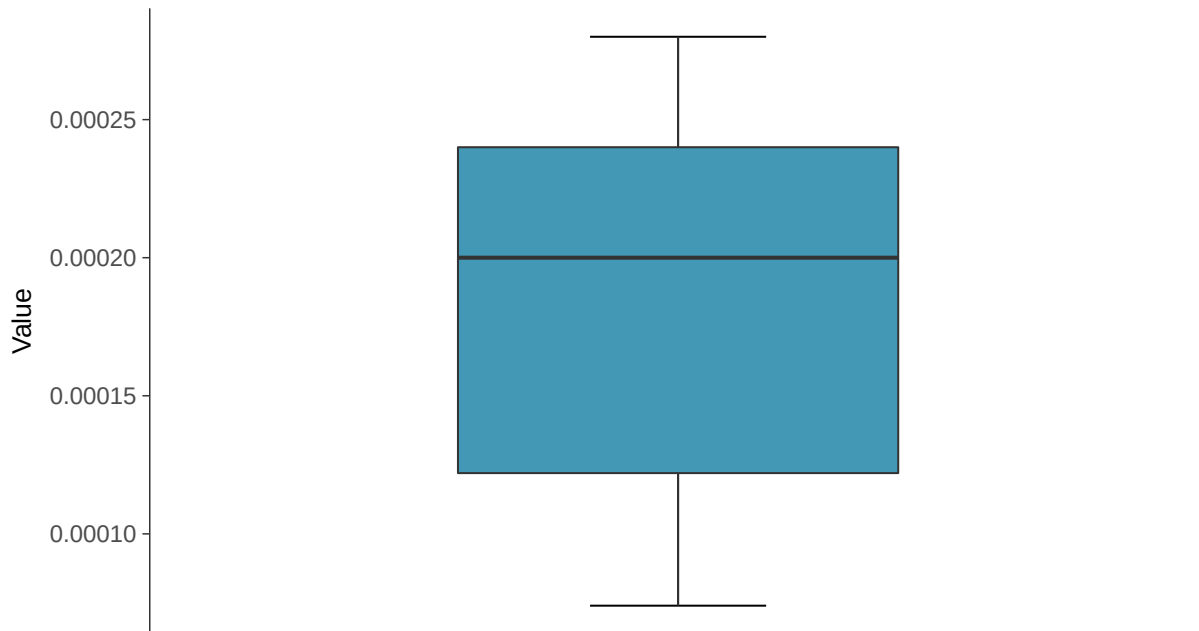
Appendix IV: Thallium, MW-9

ID: 4_2_134



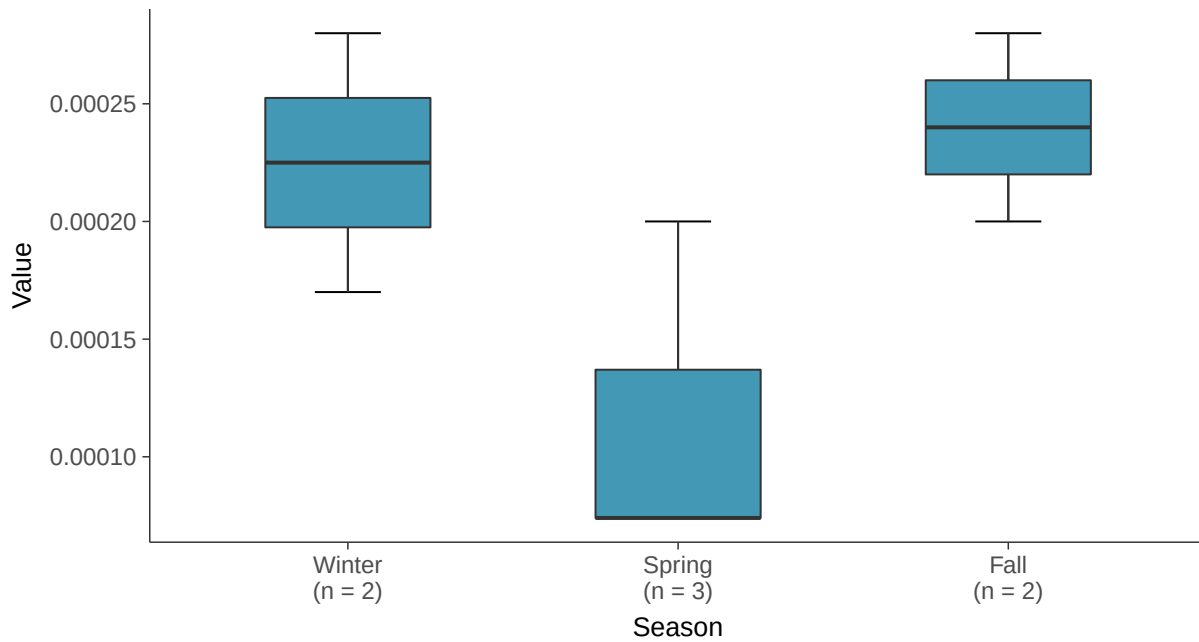
Boxplot

Thallium, MW-9 (mg/l)



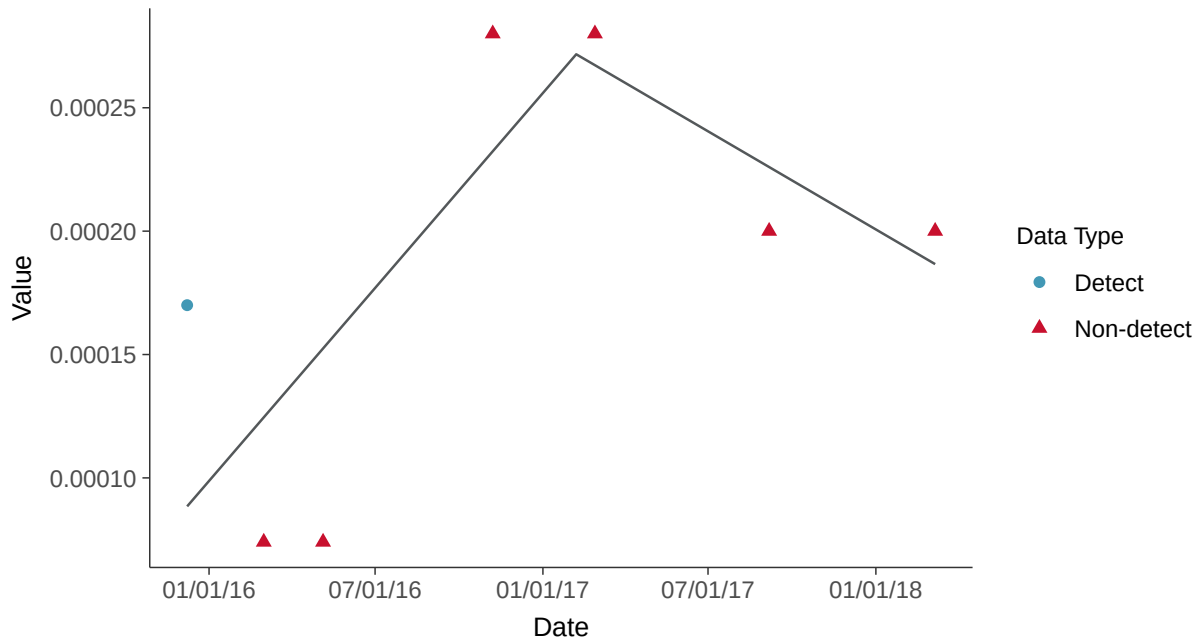
Boxplot by Season

Thallium, MW-9 (mg/l)



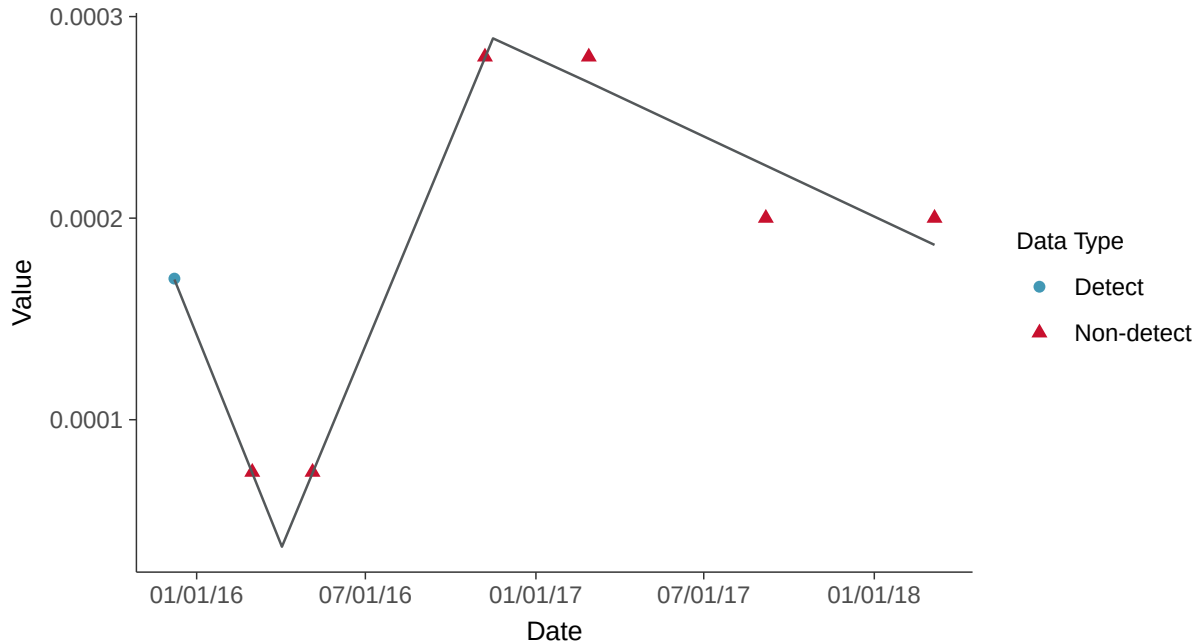
Trend Regression: Piecewise Linear-Linear

Thallium, MW-9 (mg/l)



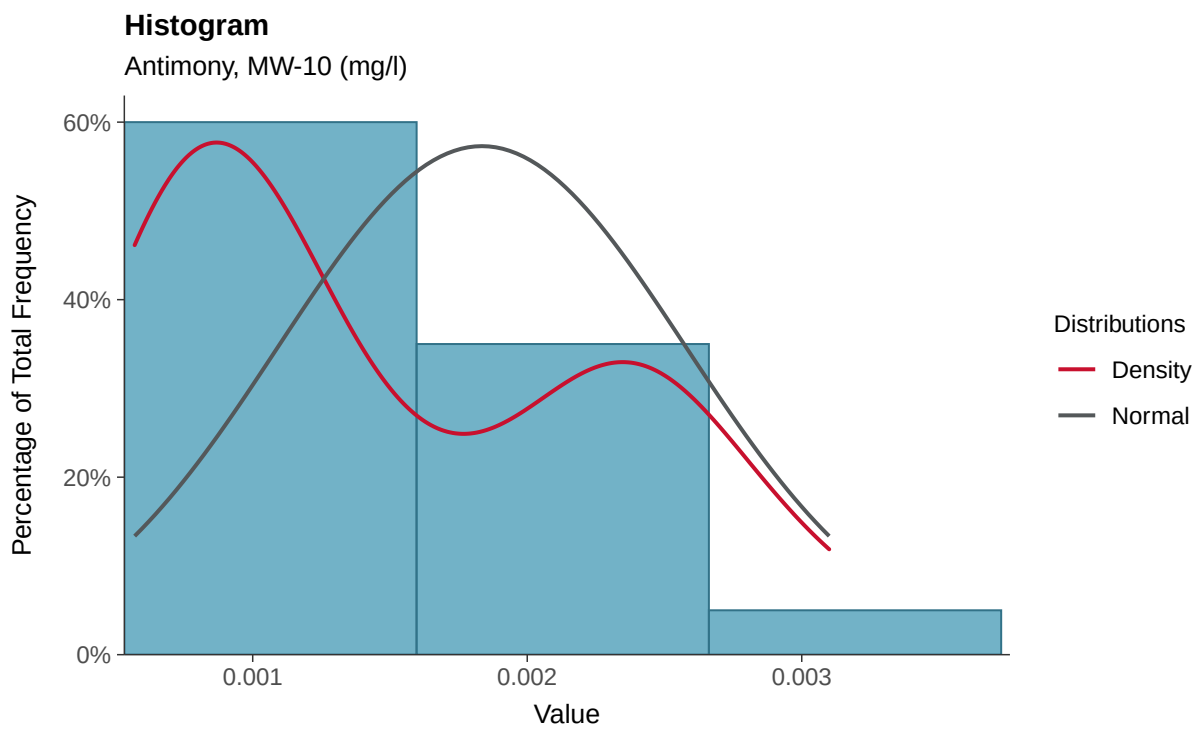
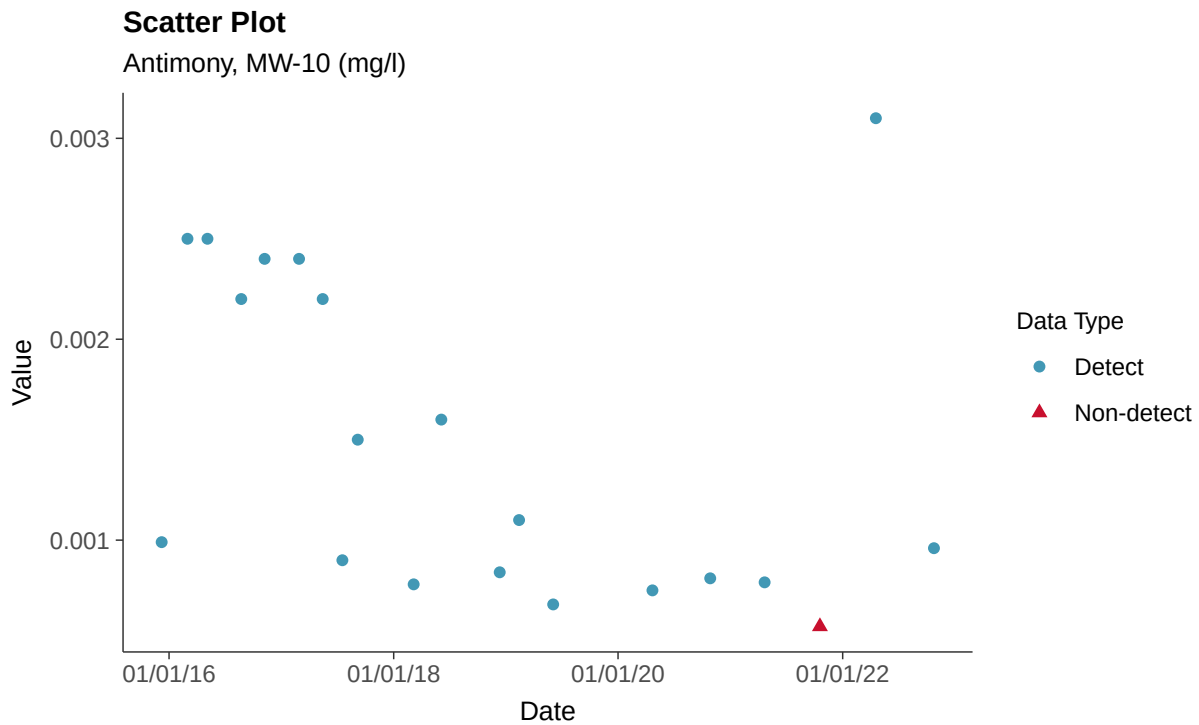
Trend Regression: Piecewise Linear-Linear-Linear

Thallium, MW-9 (mg/l)



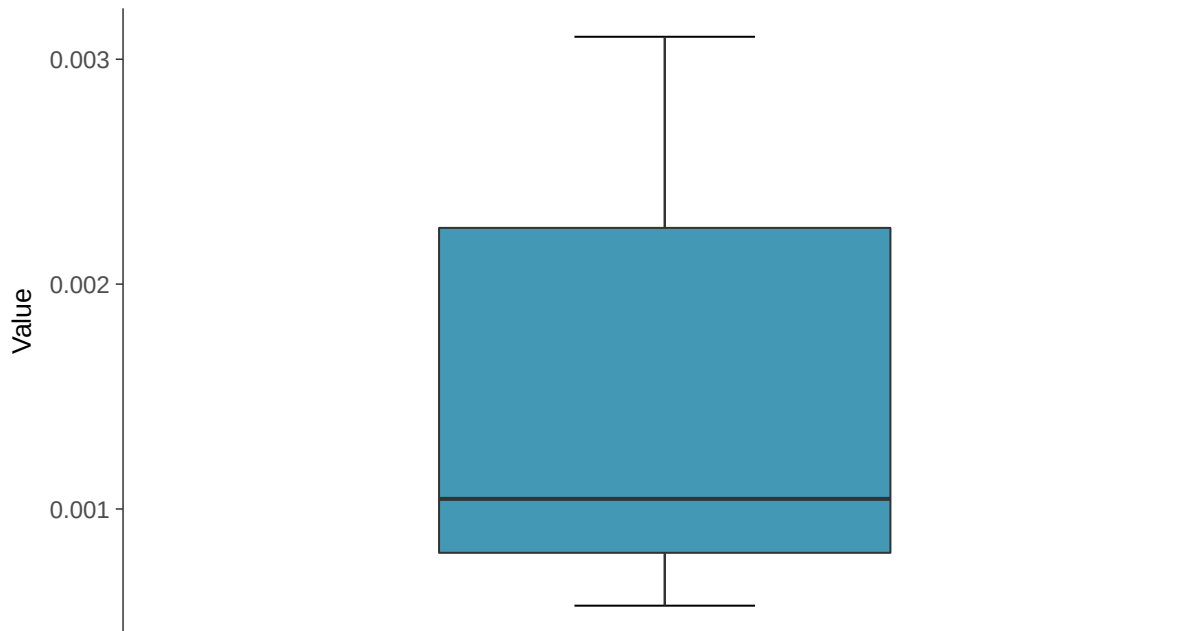
Appendix IV: Antimony, MW-10

ID: 1_2_104



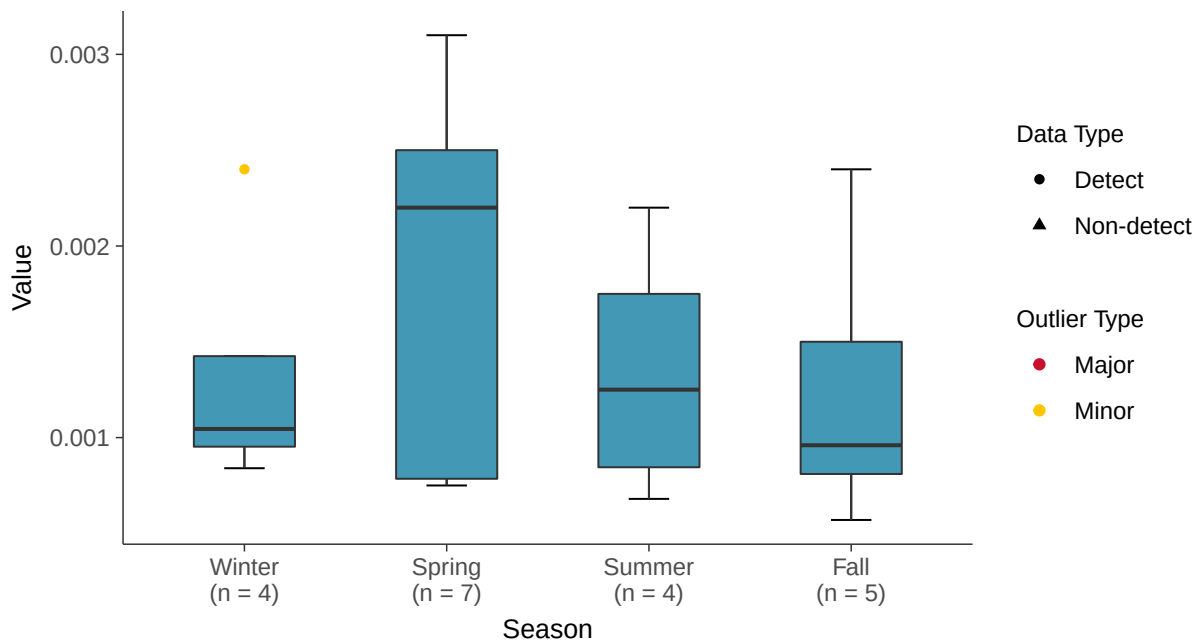
Boxplot

Antimony, MW-10 (mg/l)



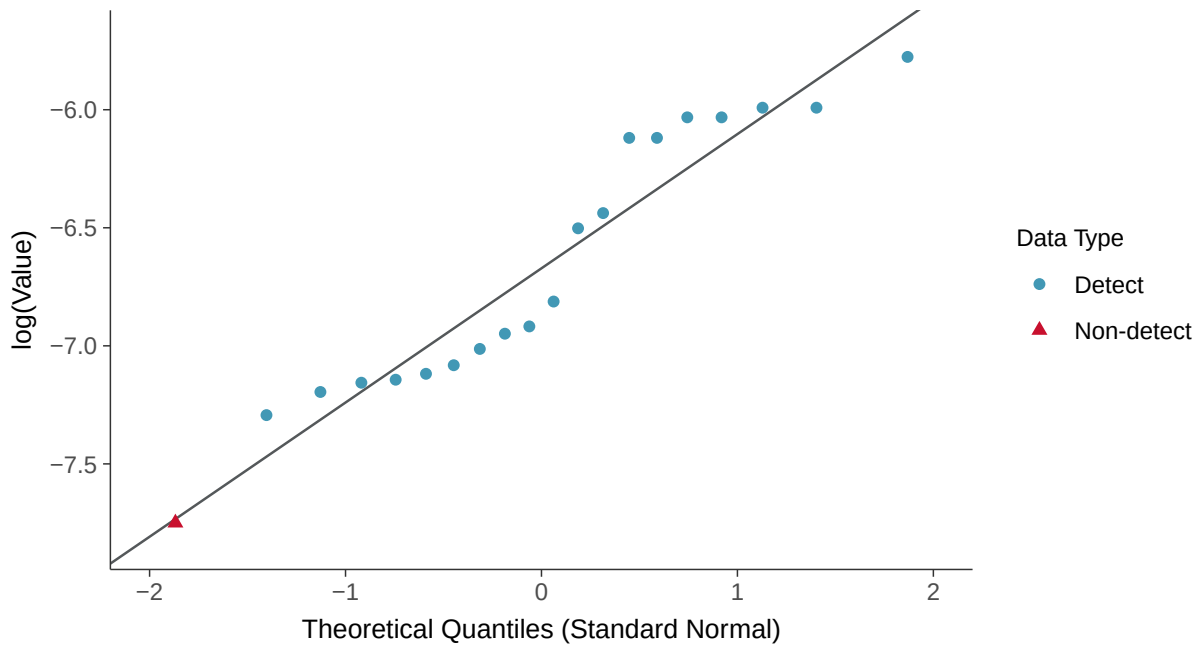
Boxplot by Season

Antimony, MW-10 (mg/l)



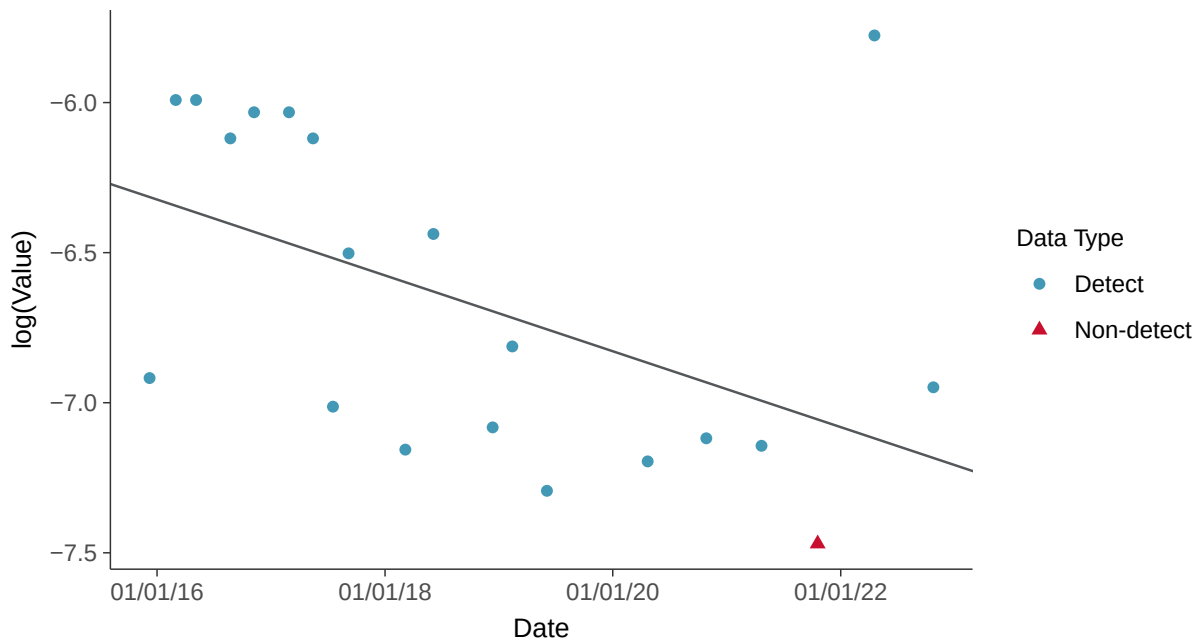
Lognormal Q-Q plot using ROS Imputed Estimates

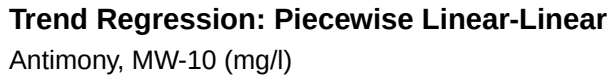
Antimony, MW-10 (mg/l)



Trend Regression: Lognormal MLE

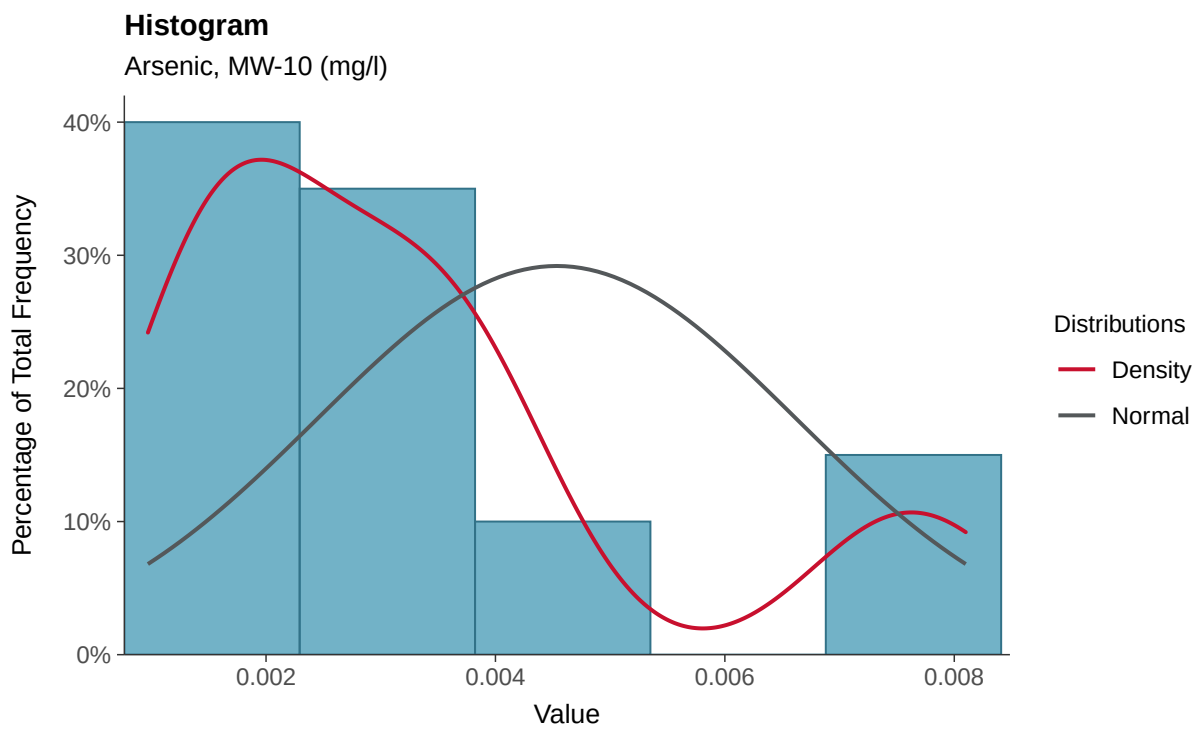
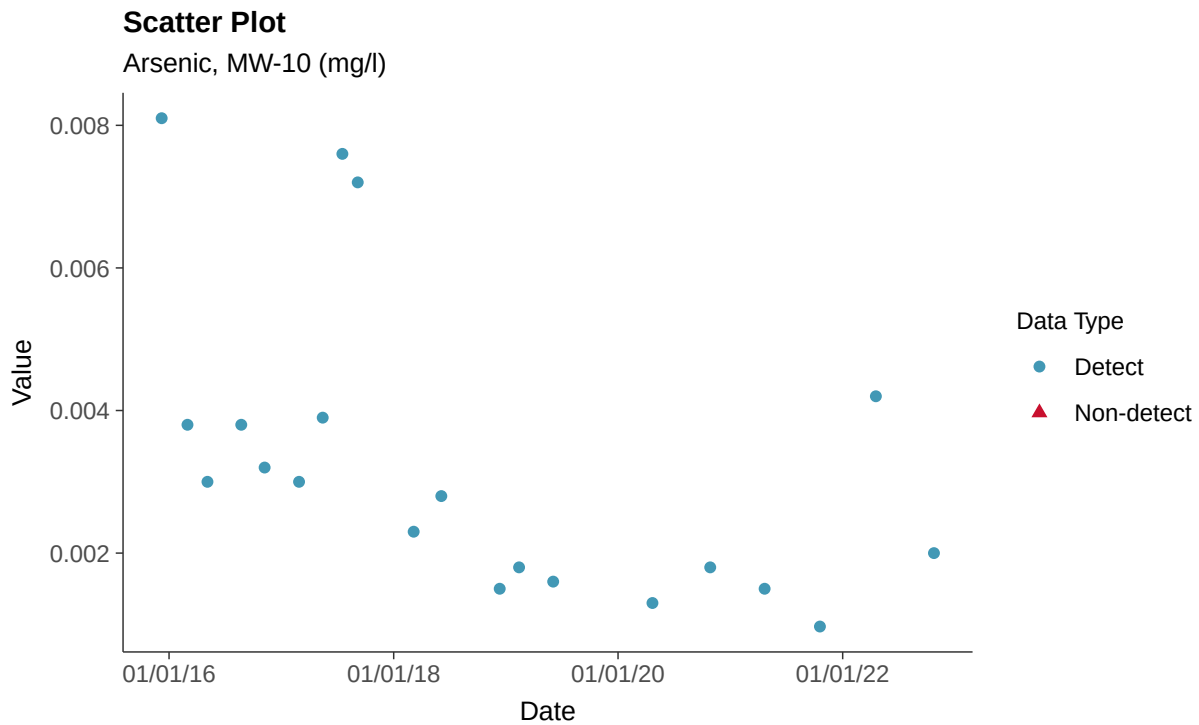
Antimony, MW-10 (mg/l)





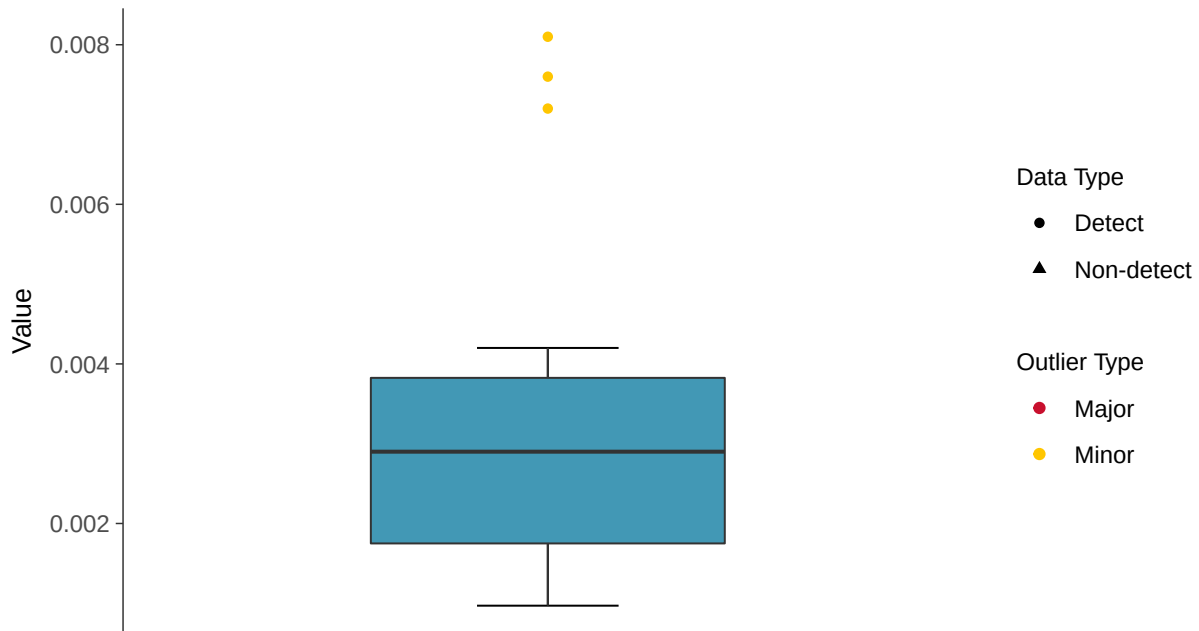
Appendix IV: Arsenic, MW-10

ID: 1_2_105



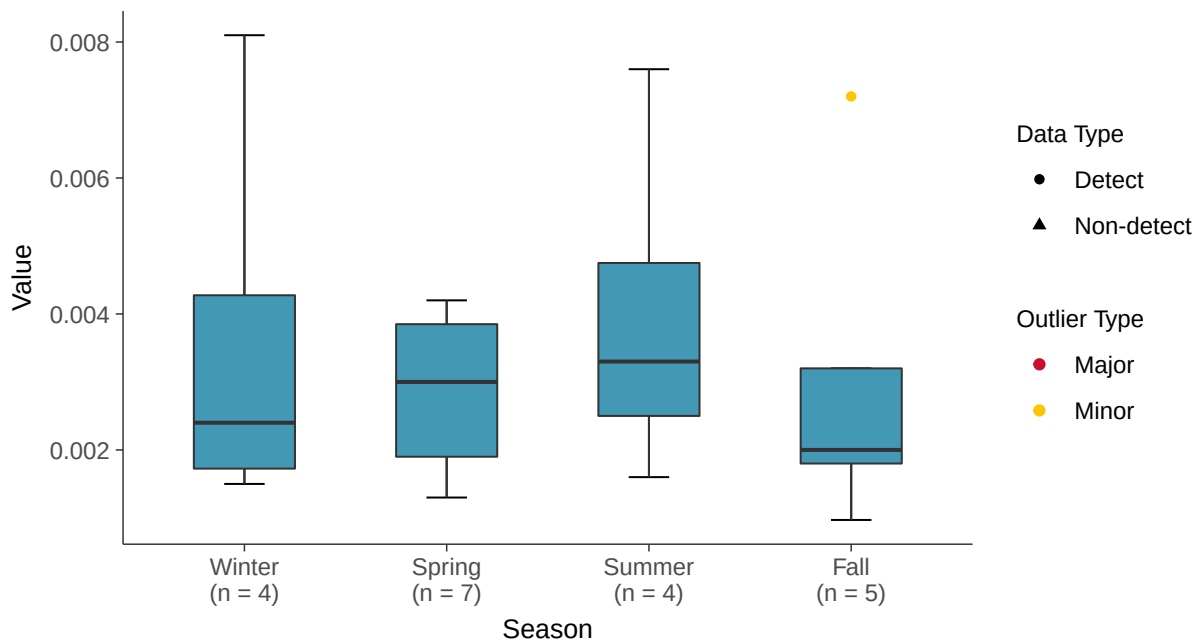
Boxplot

Arsenic, MW-10 (mg/l)



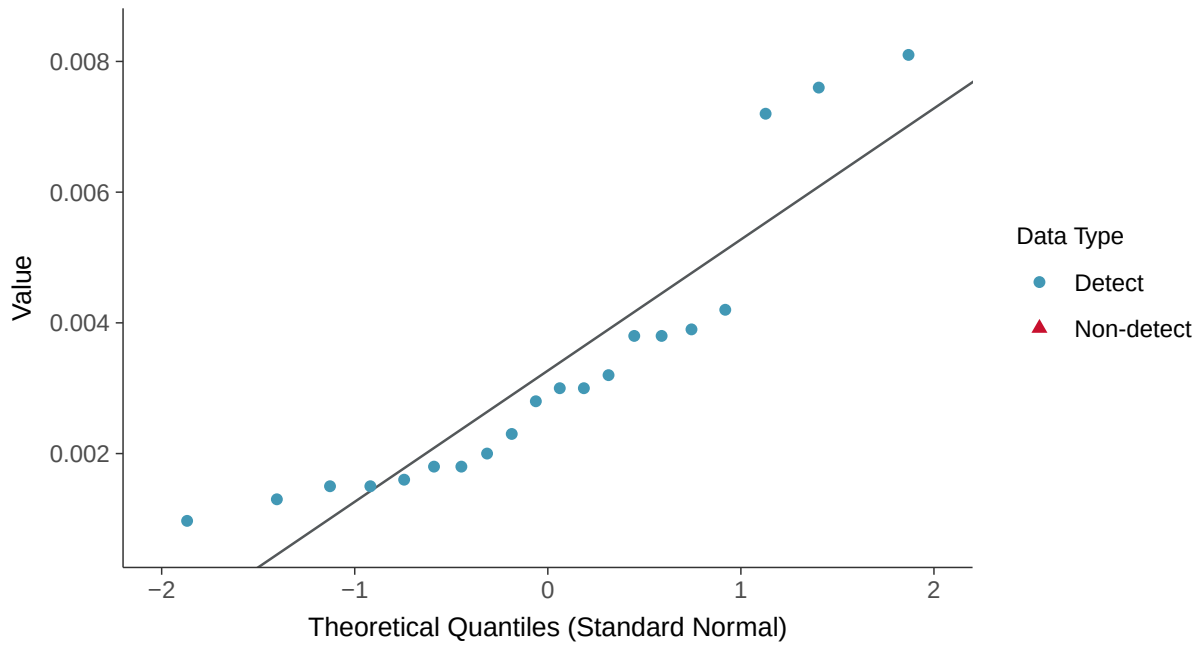
Boxplot by Season

Arsenic, MW-10 (mg/l)



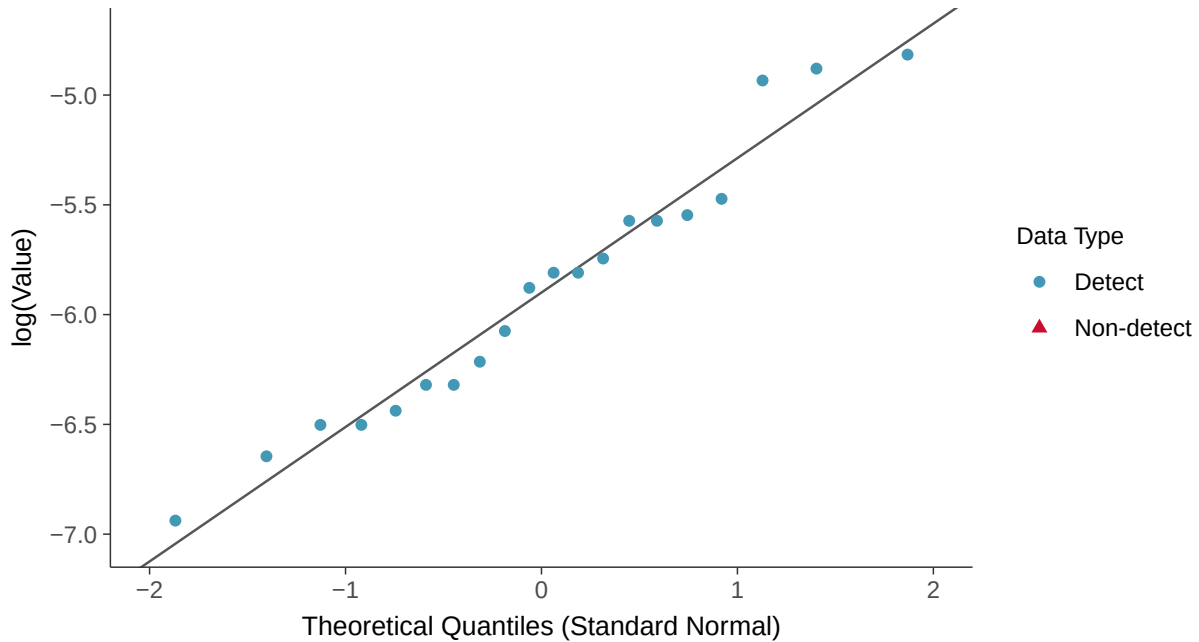
Normal Q-Q plot

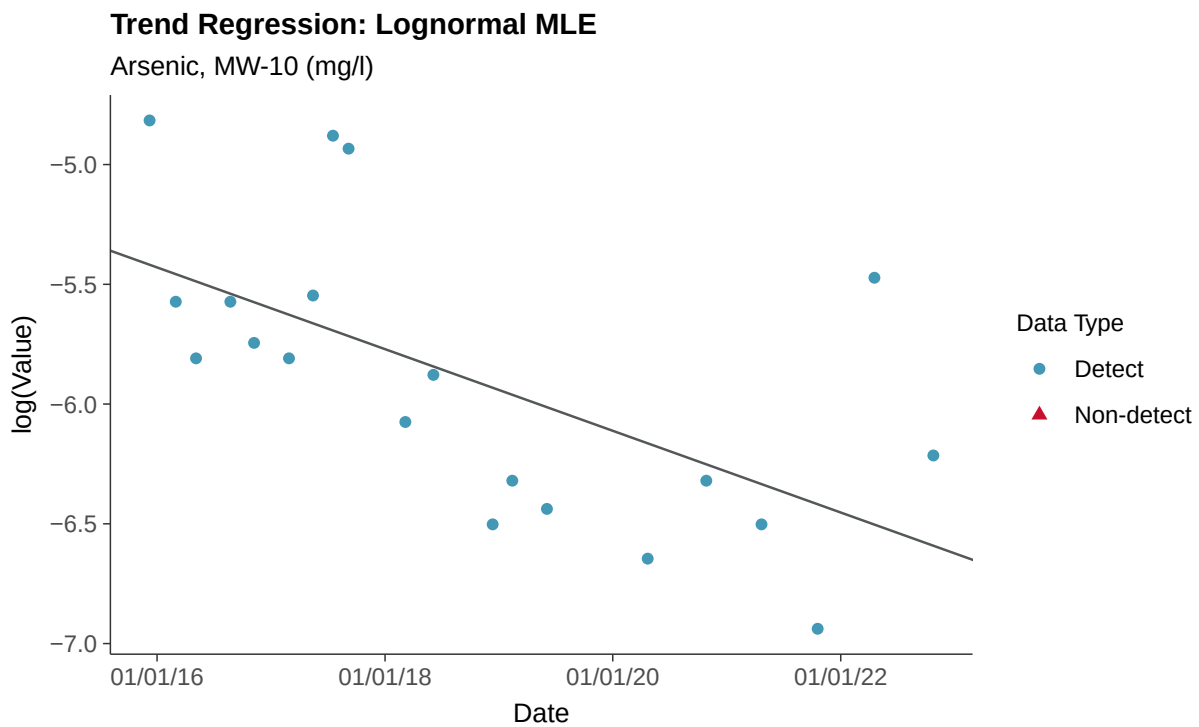
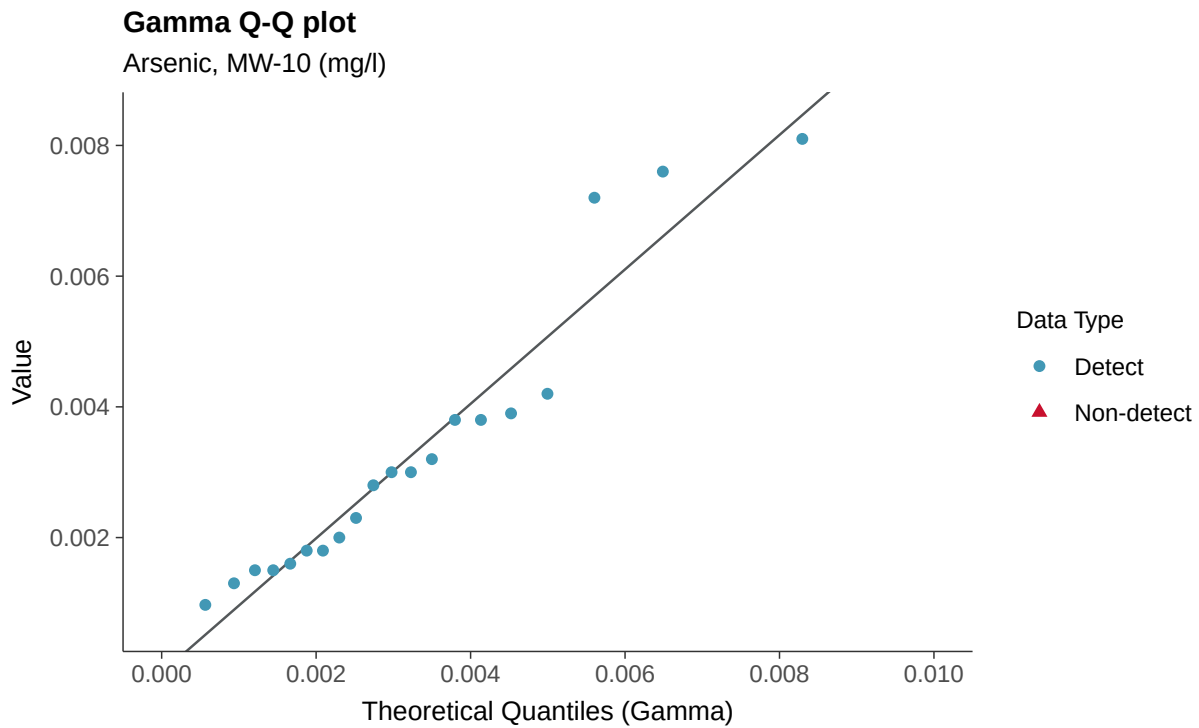
Arsenic, MW-10 (mg/l)



Lognormal Q-Q plot

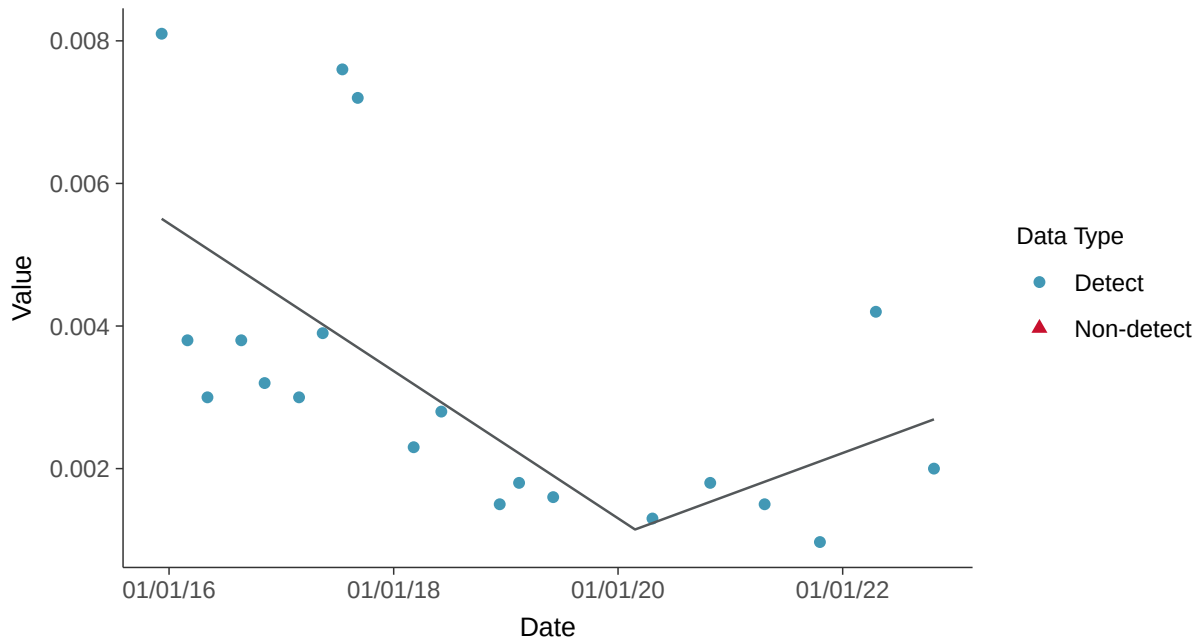
Arsenic, MW-10 (mg/l)





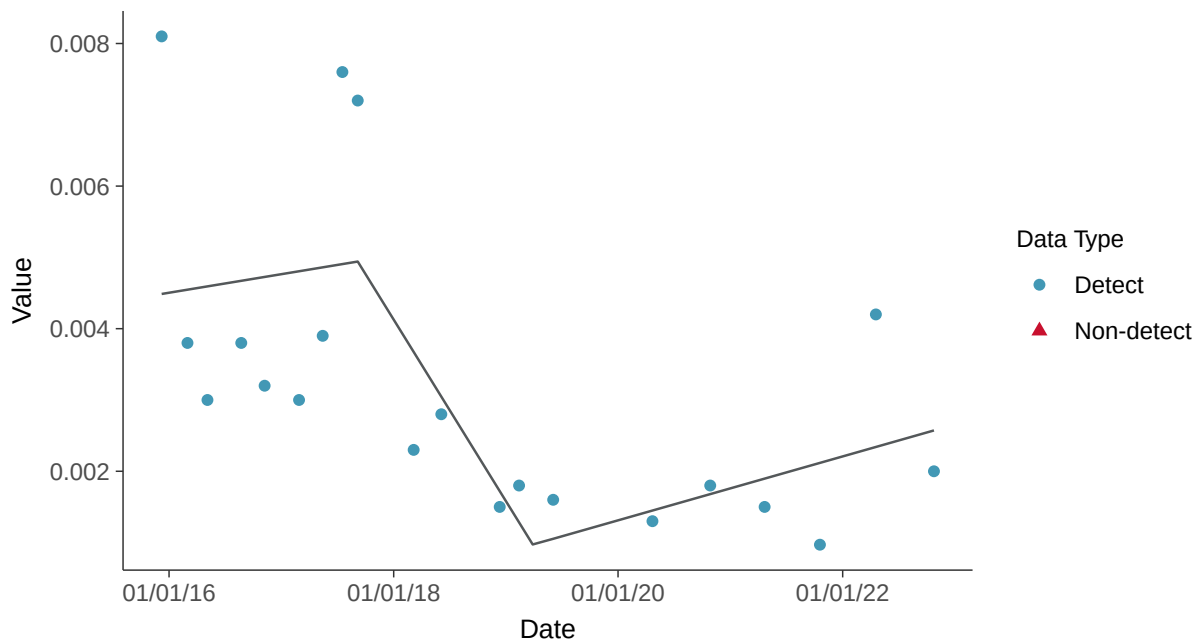
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-10 (mg/l)



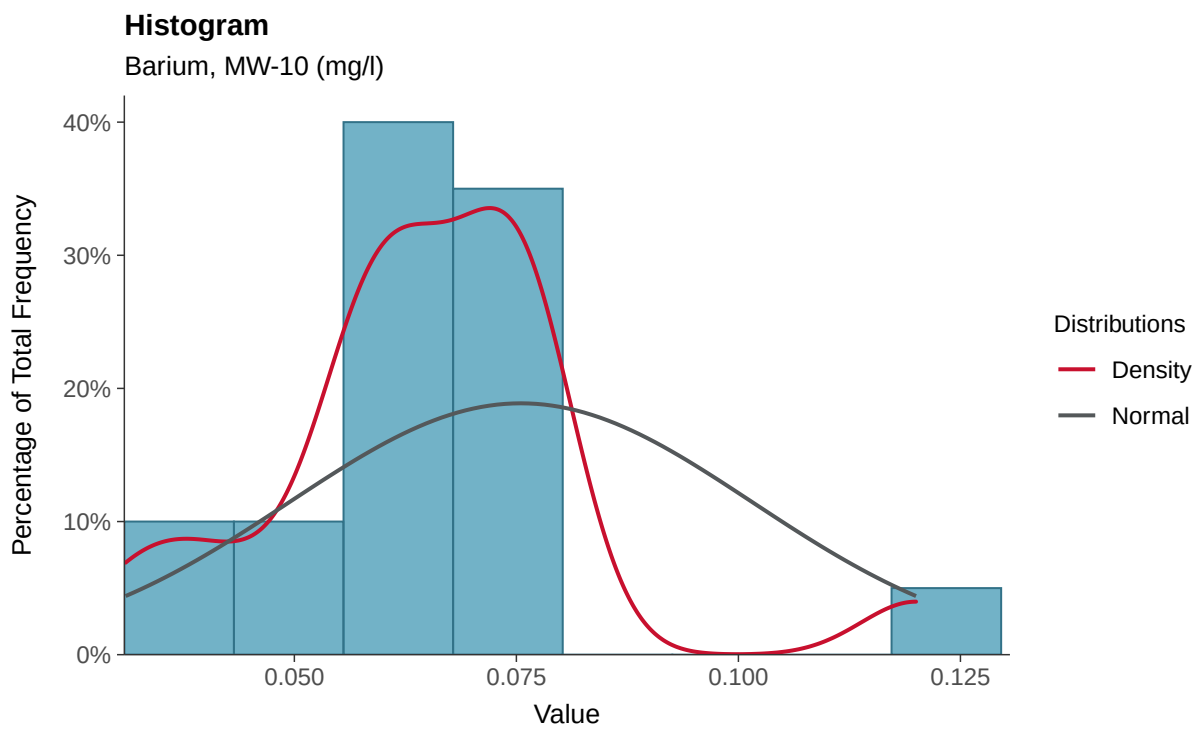
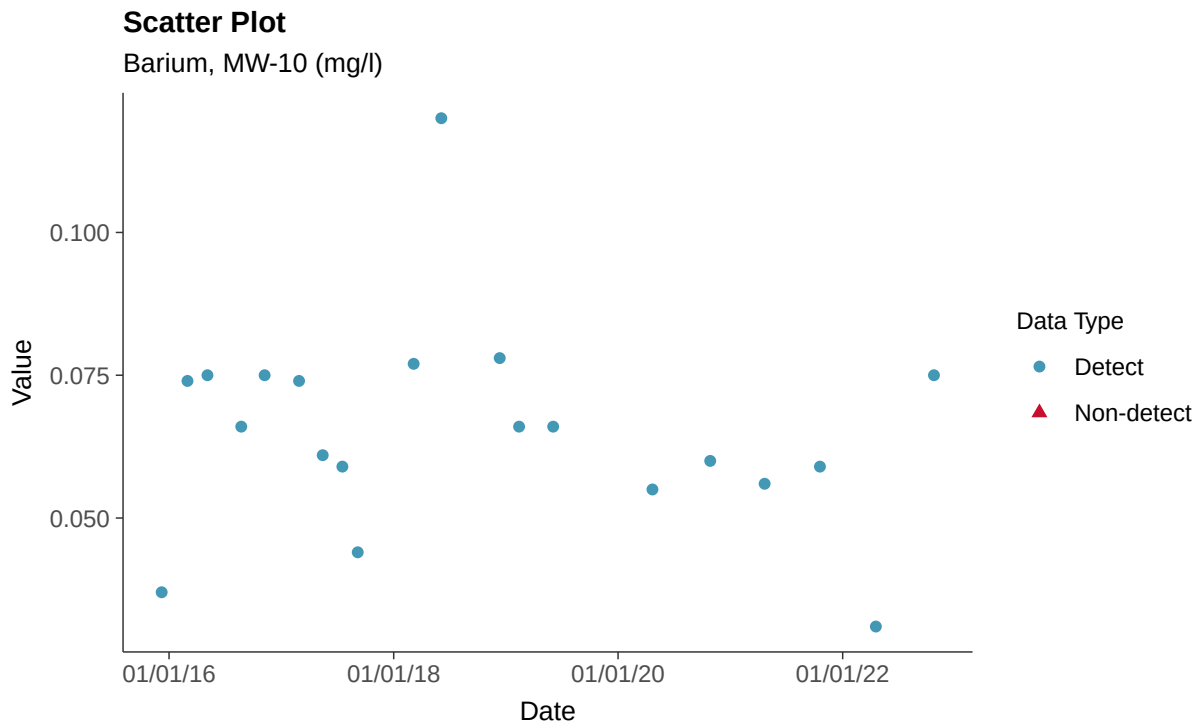
Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-10 (mg/l)



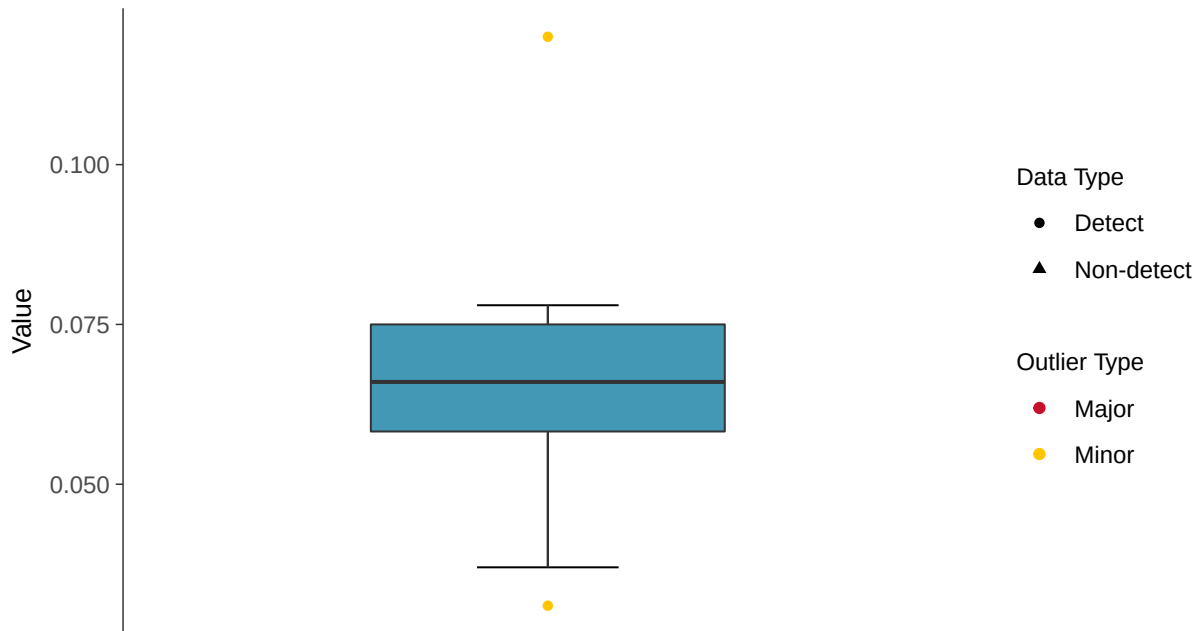
Appendix IV: Barium, MW-10

ID: 1_2_106



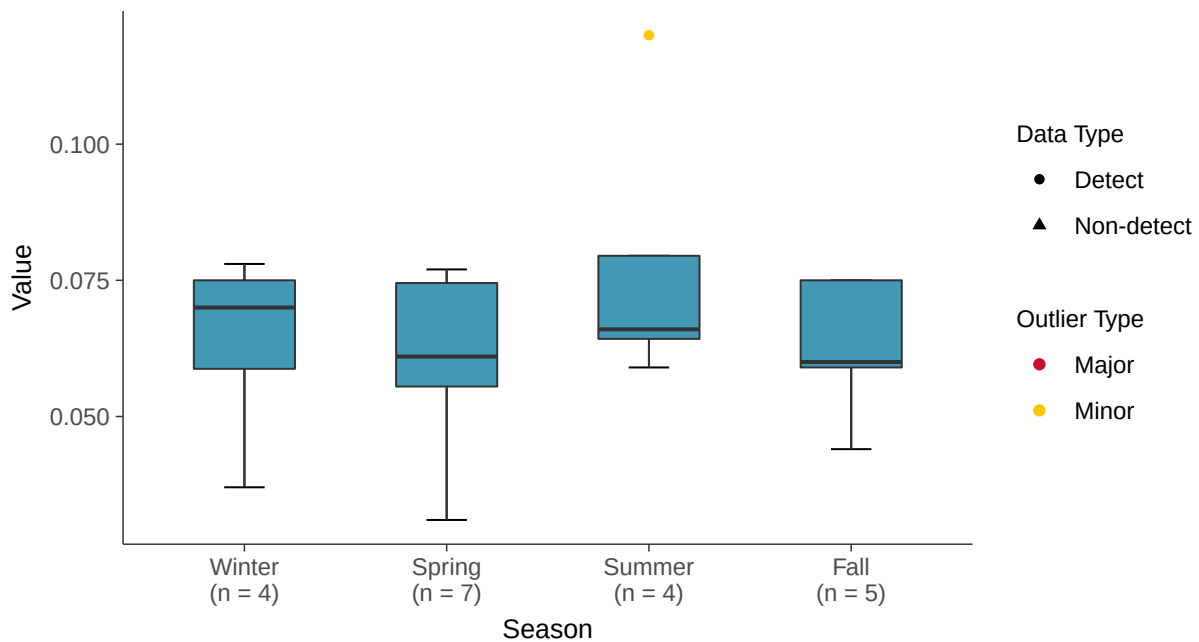
Boxplot

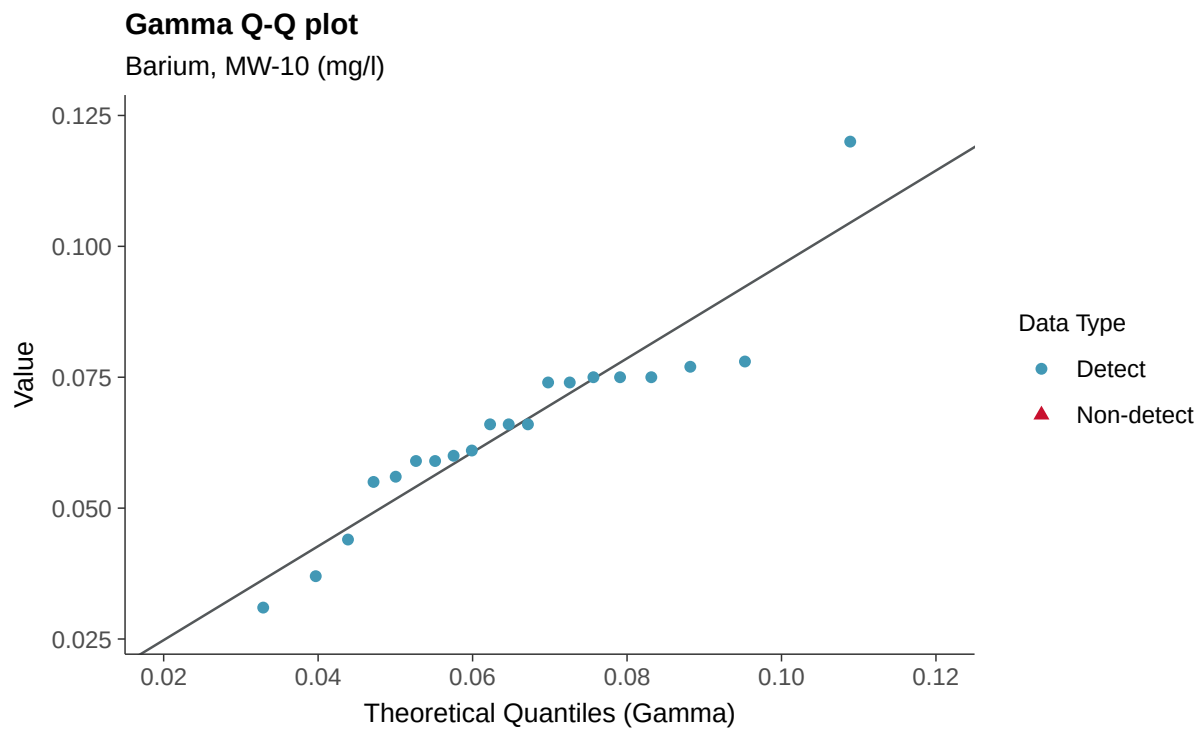
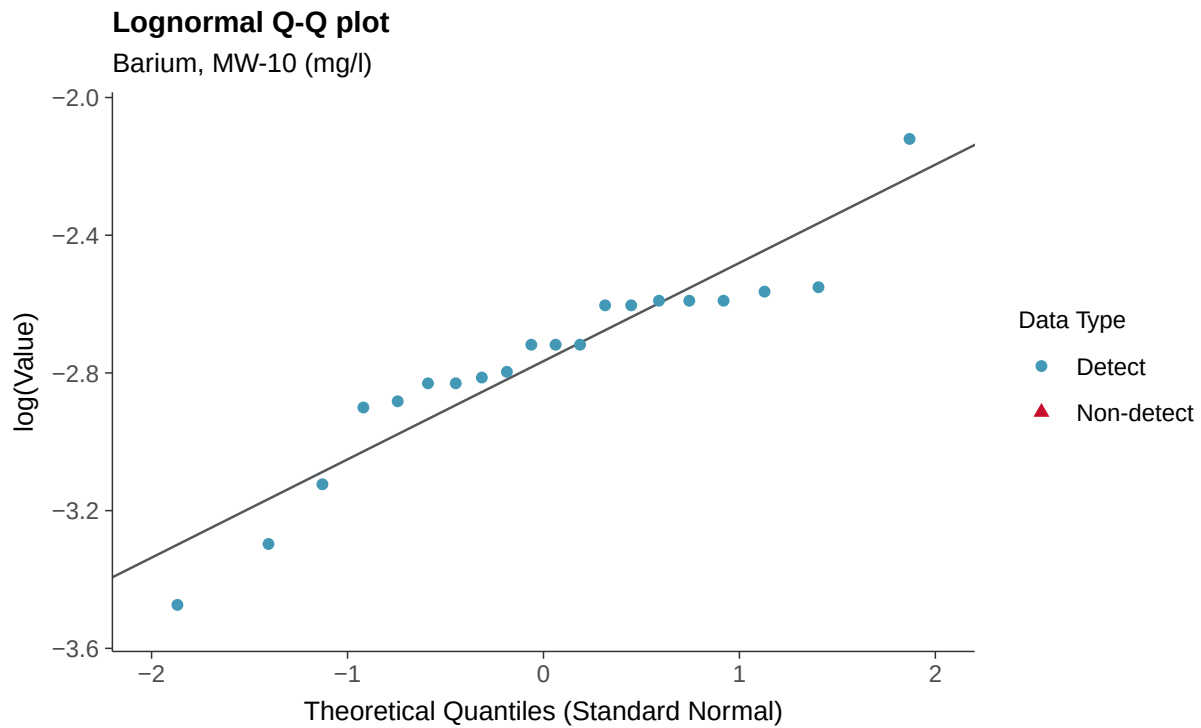
Barium, MW-10 (mg/l)



Boxplot by Season

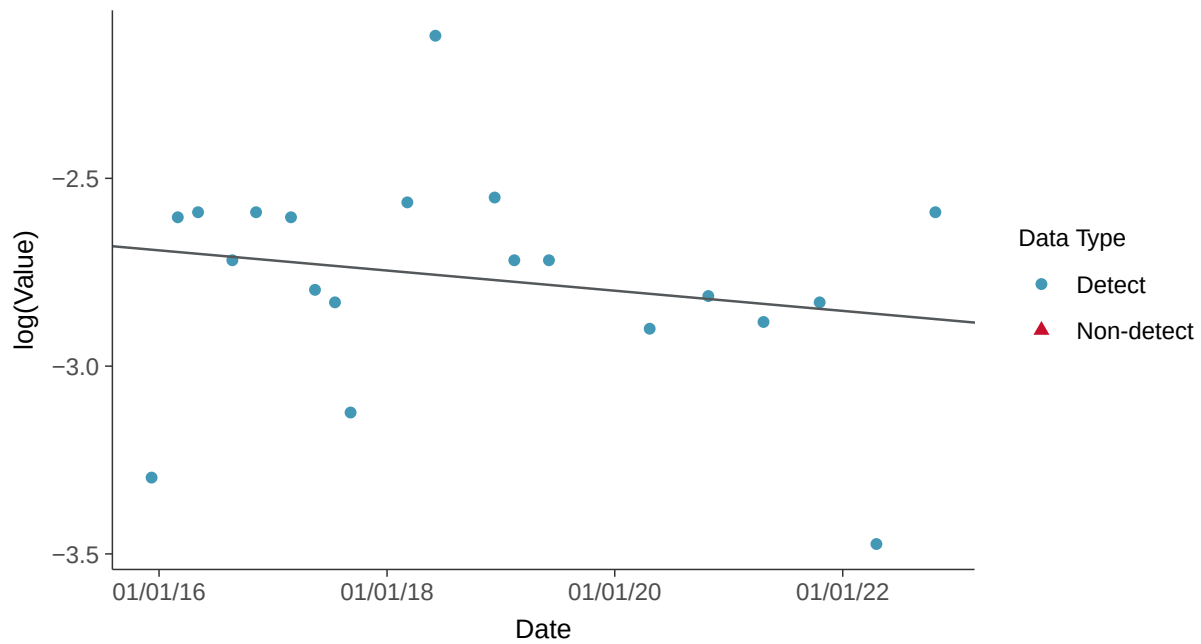
Barium, MW-10 (mg/l)





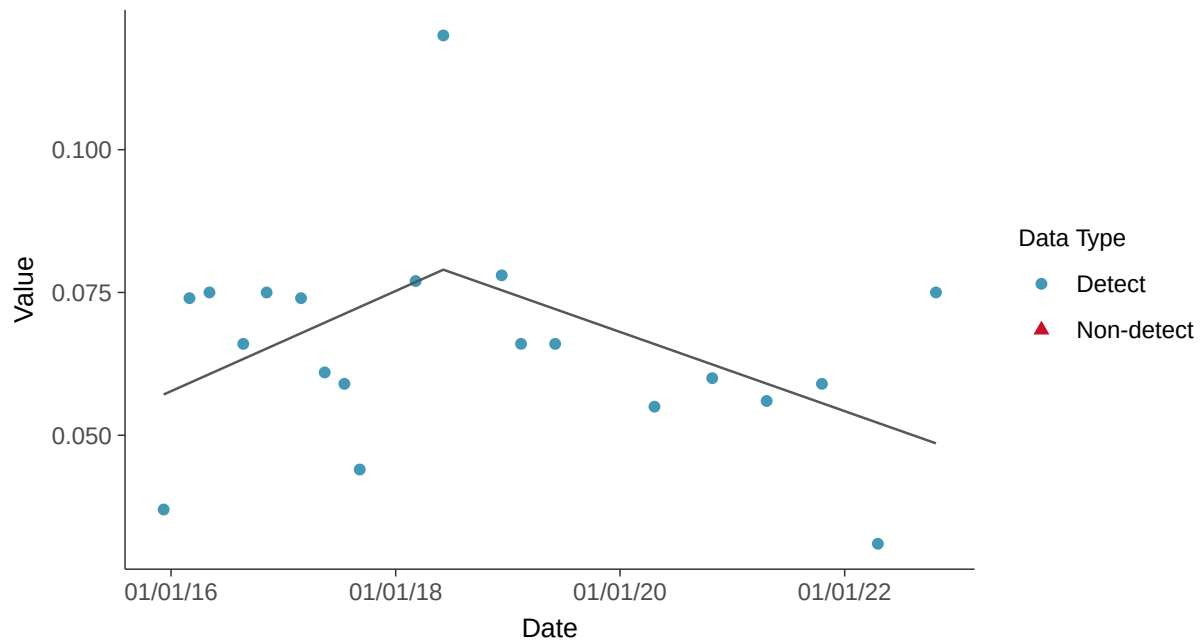
Trend Regression: Lognormal MLE

Barium, MW-10 (mg/l)



Trend Regression: Piecewise Linear-Linear

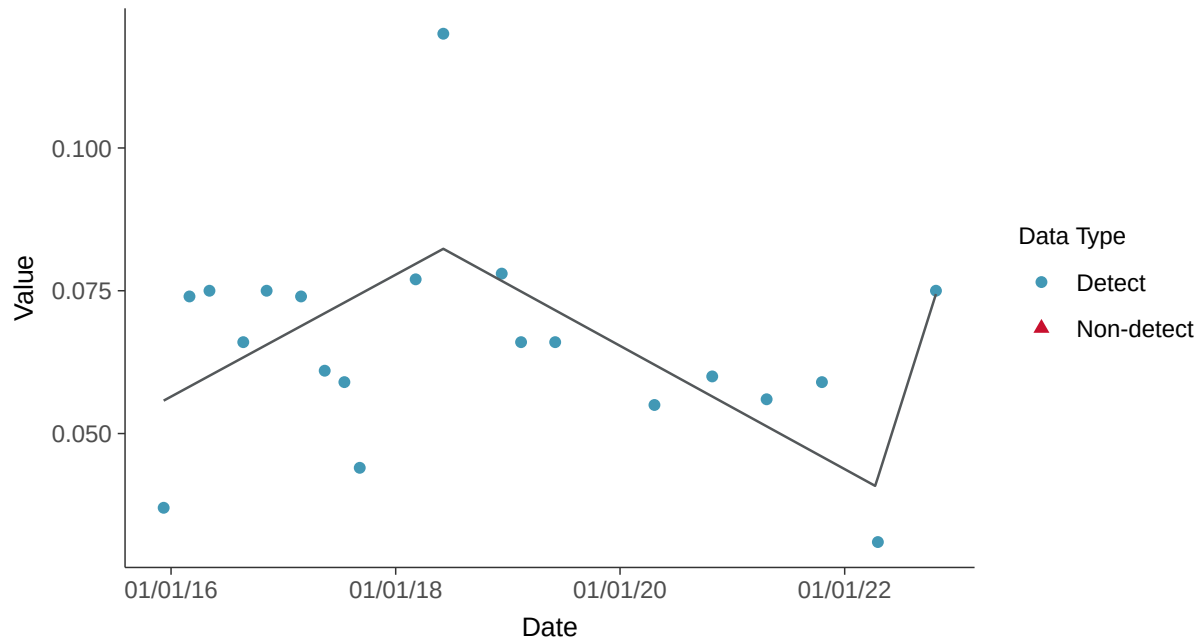
Barium, MW-10 (mg/l)





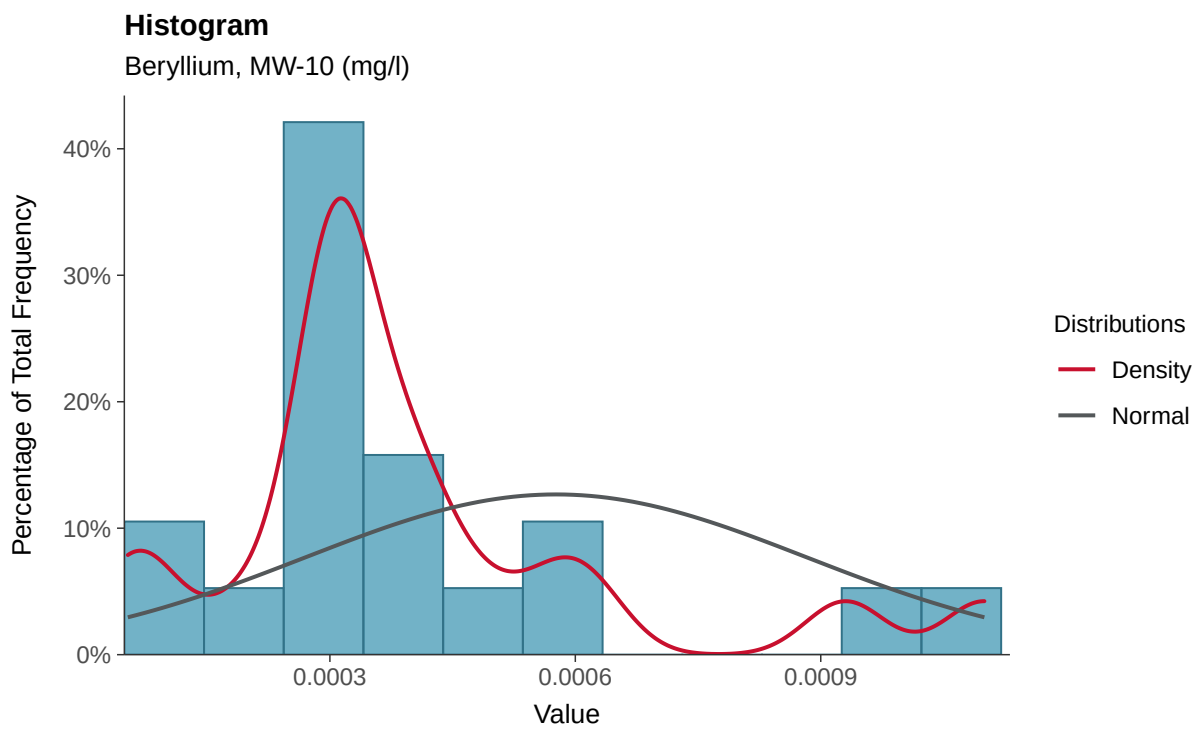
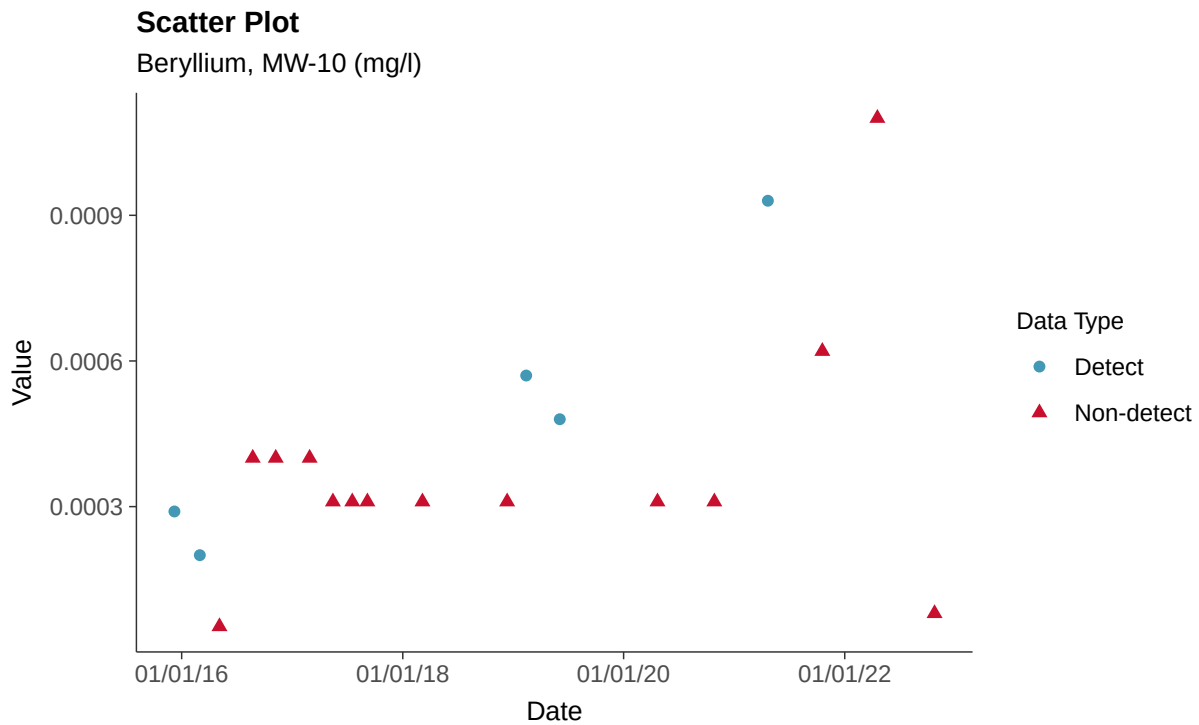
Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-10 (mg/l)

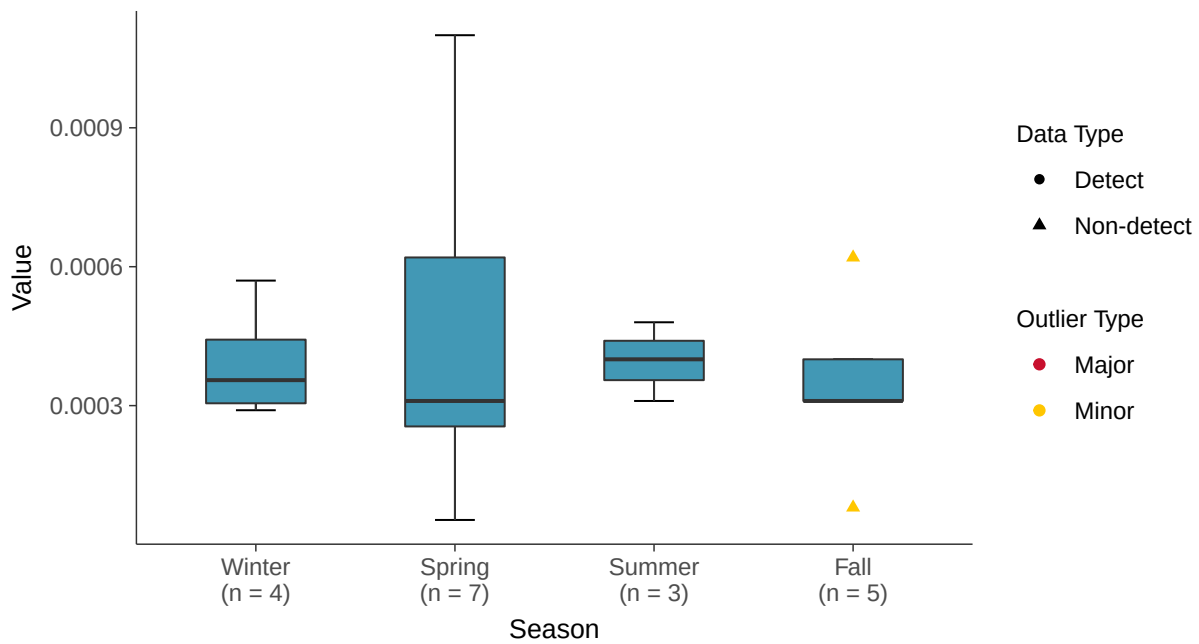


Appendix IV: Beryllium, MW-10

ID: 1_2_107

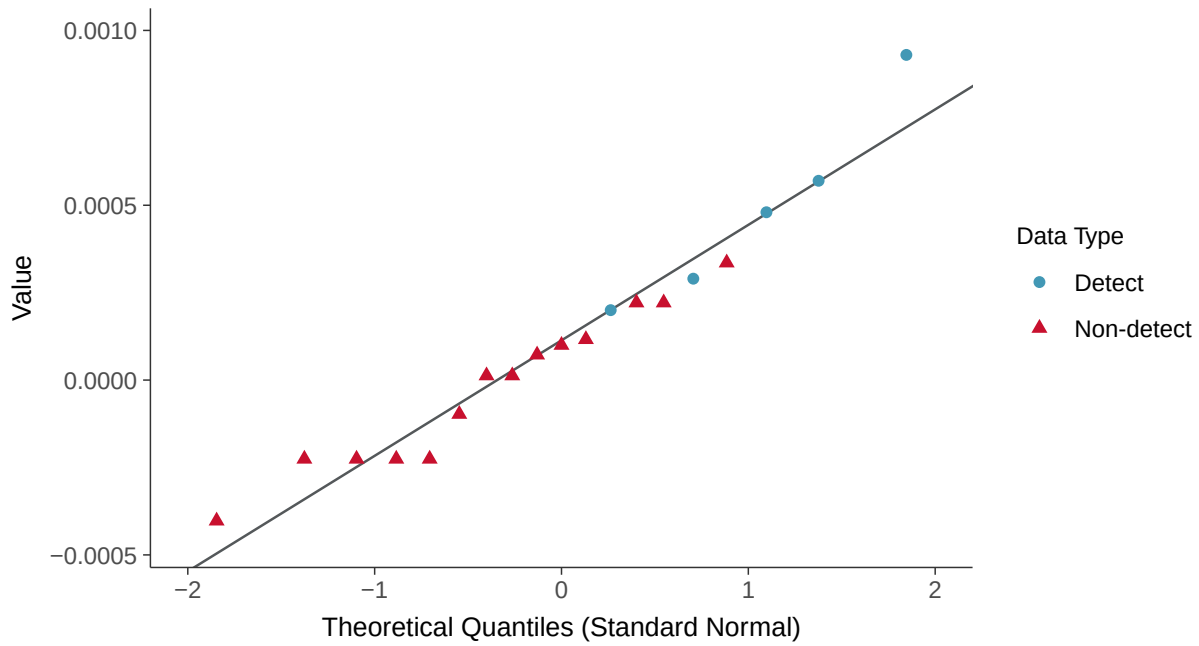


Beryllium, MW-10 (mg/l)



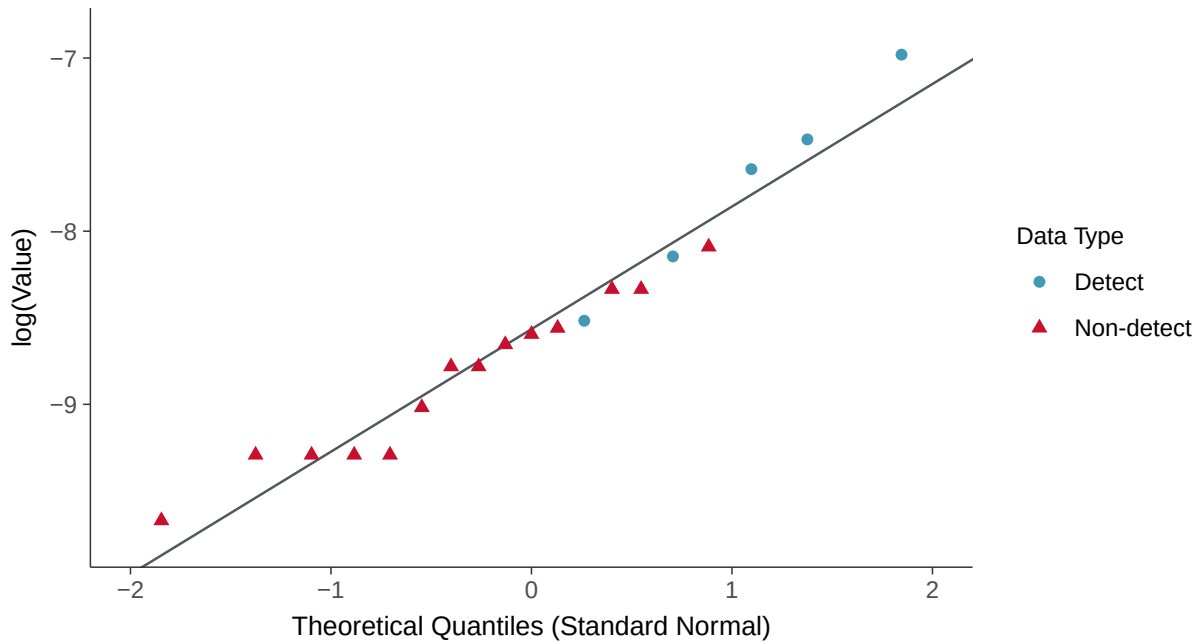
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-10 (mg/l)



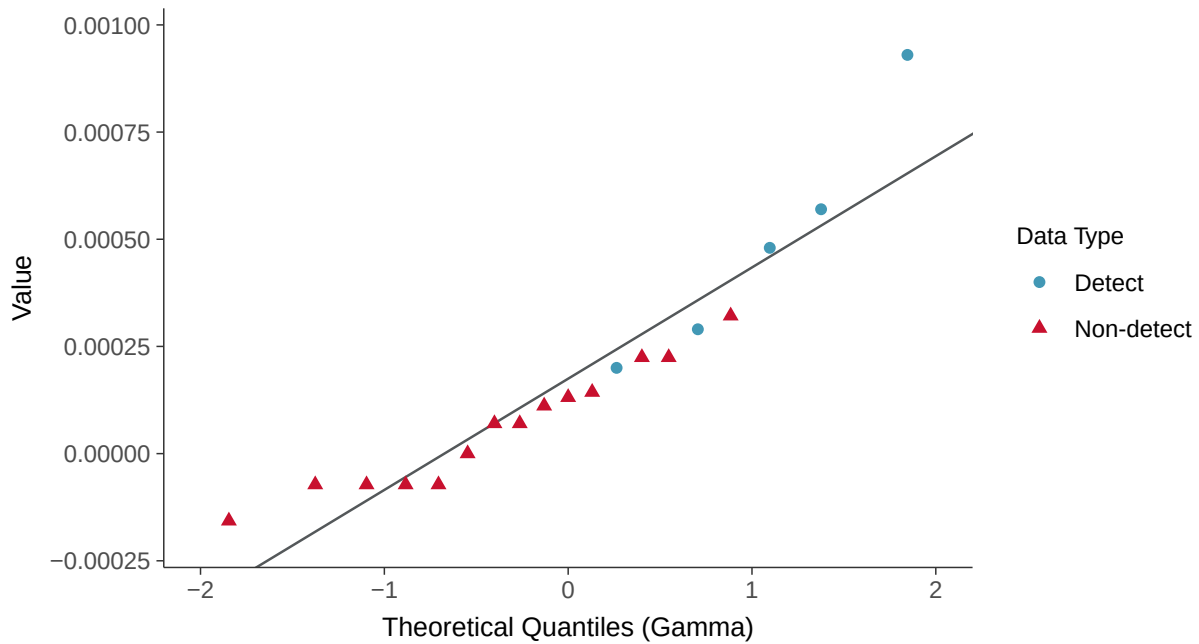
Lognormal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-10 (mg/l)



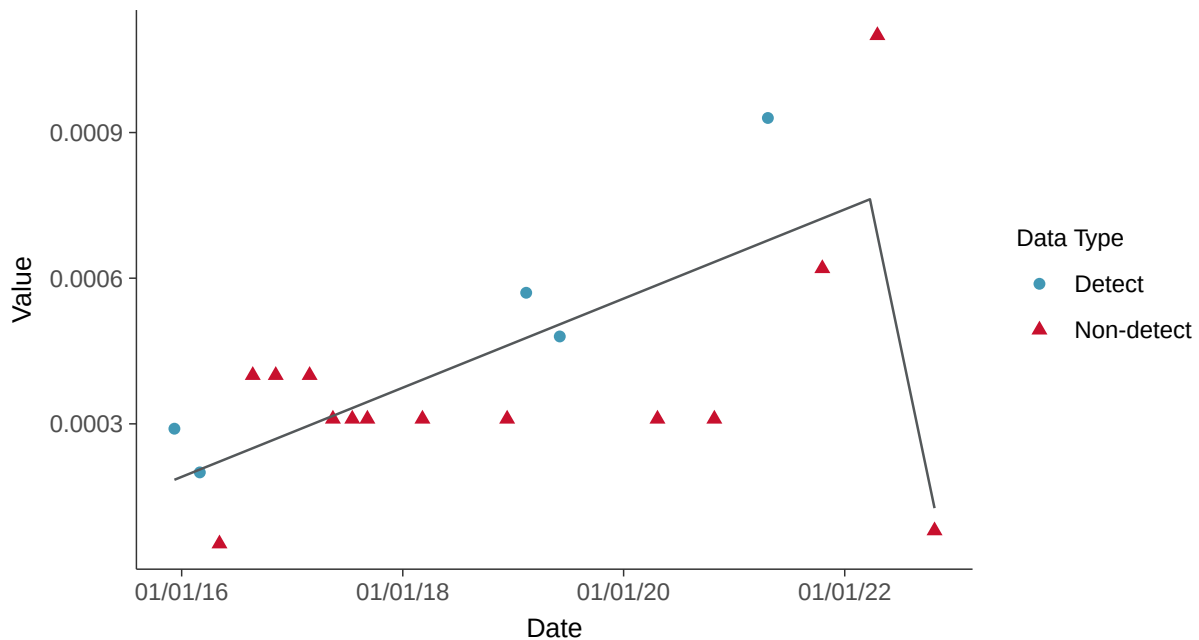
Gamma Q-Q plot using ROS Imputed Estimates

Beryllium, MW-10 (mg/l)



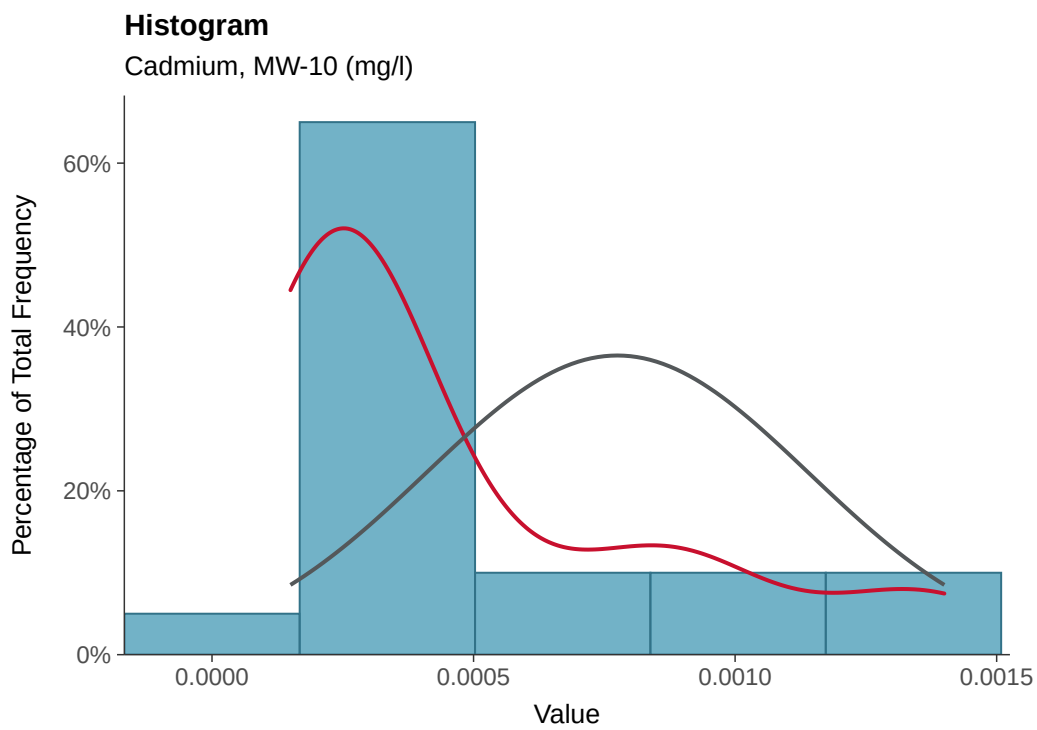
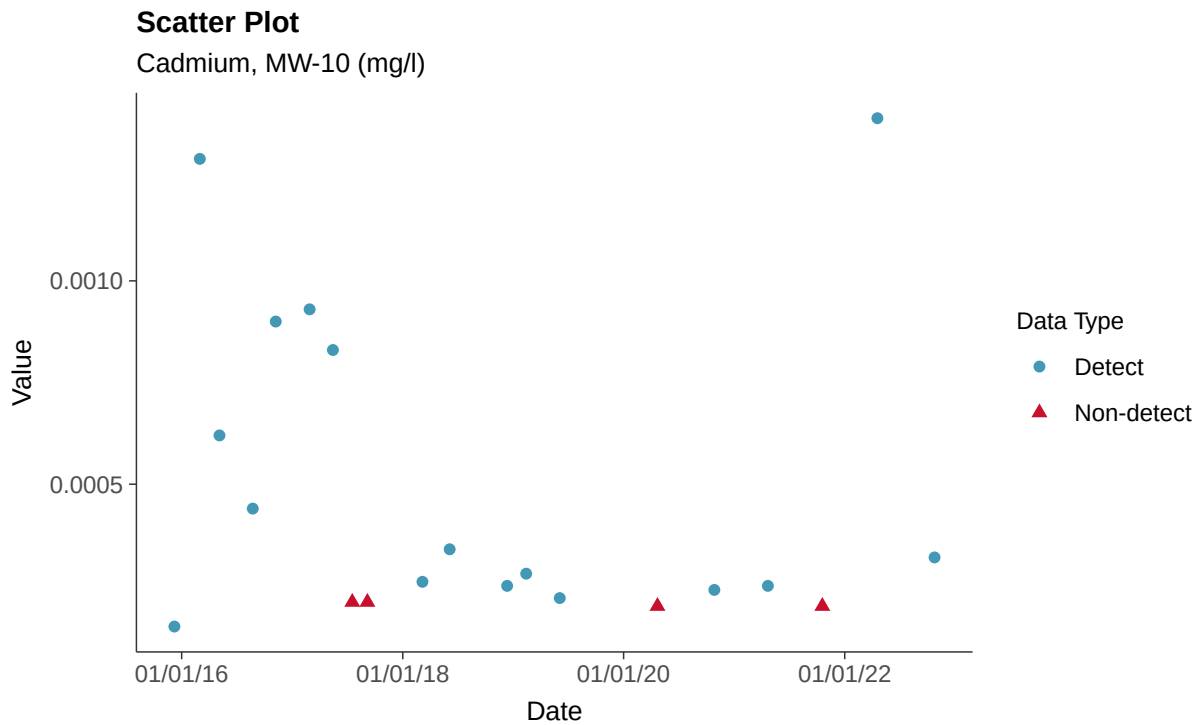
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-10 (mg/l)



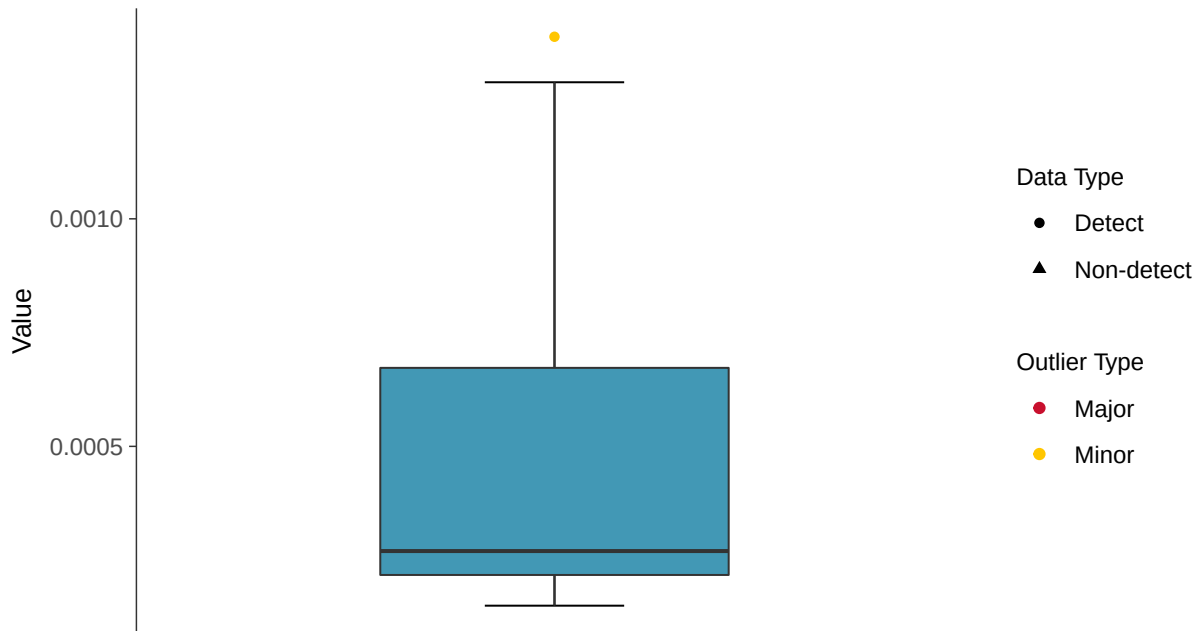
Appendix IV: Cadmium, MW-10

ID: 1_2_109



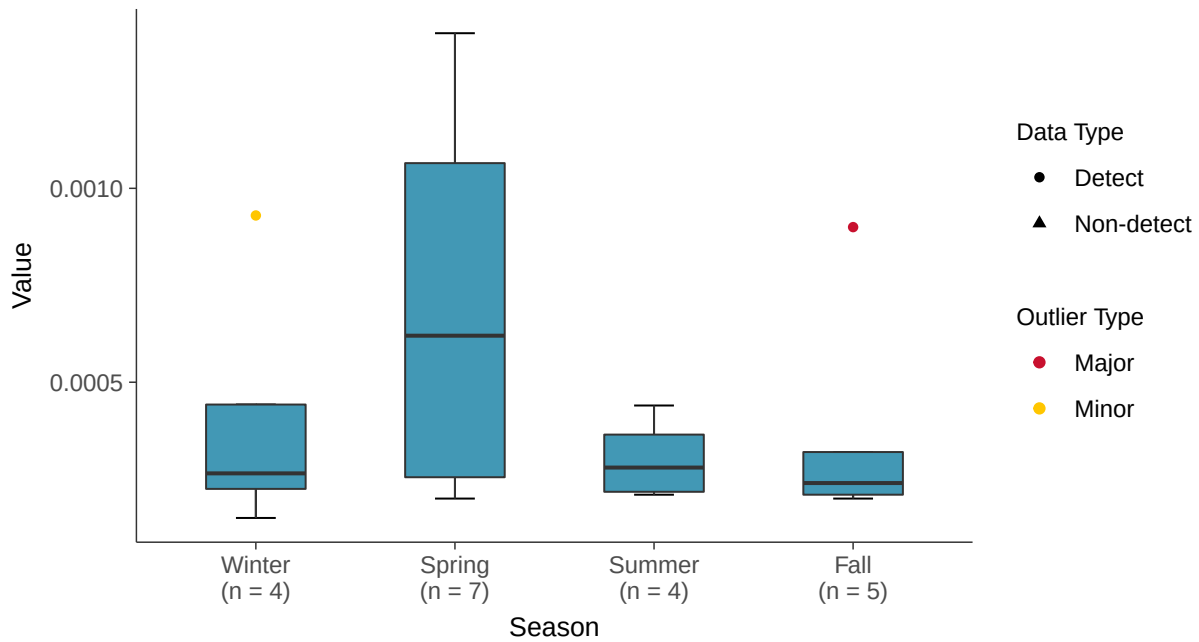
Boxplot

Cadmium, MW-10 (mg/l)



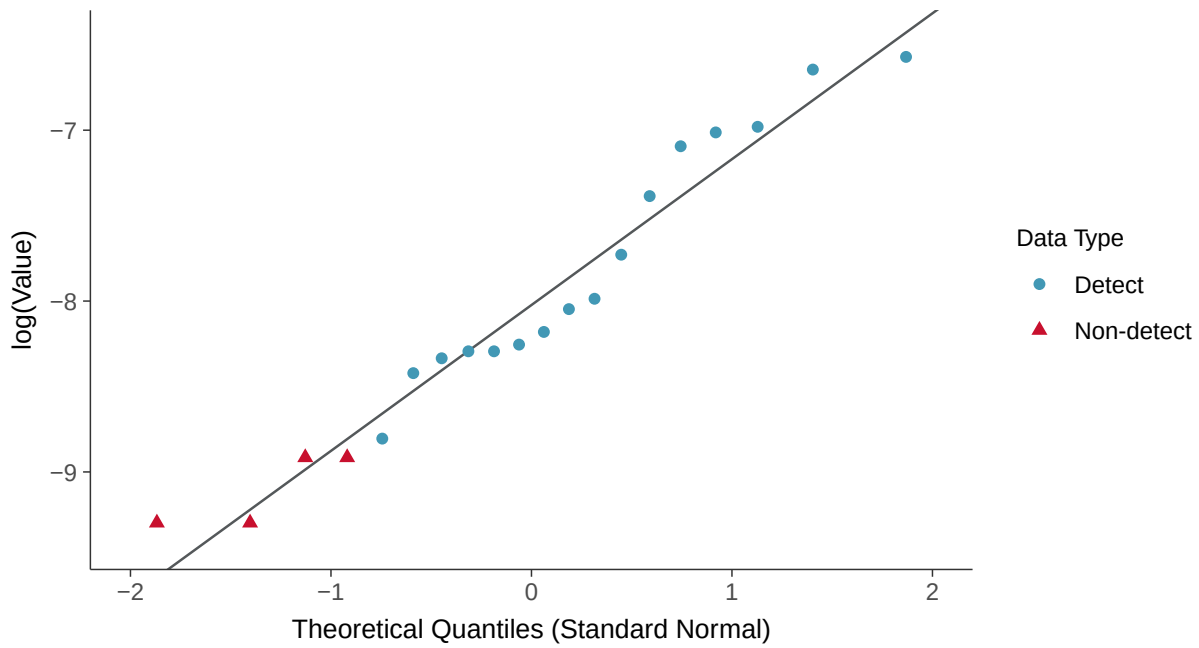
Boxplot by Season

Cadmium, MW-10 (mg/l)



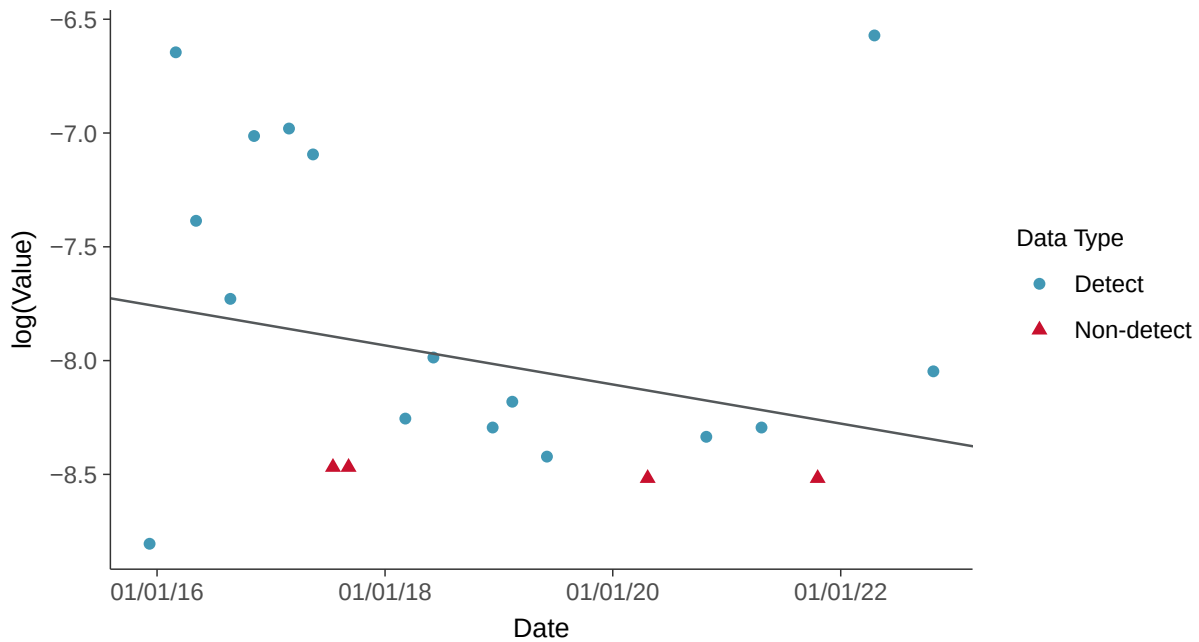
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-10 (mg/l)



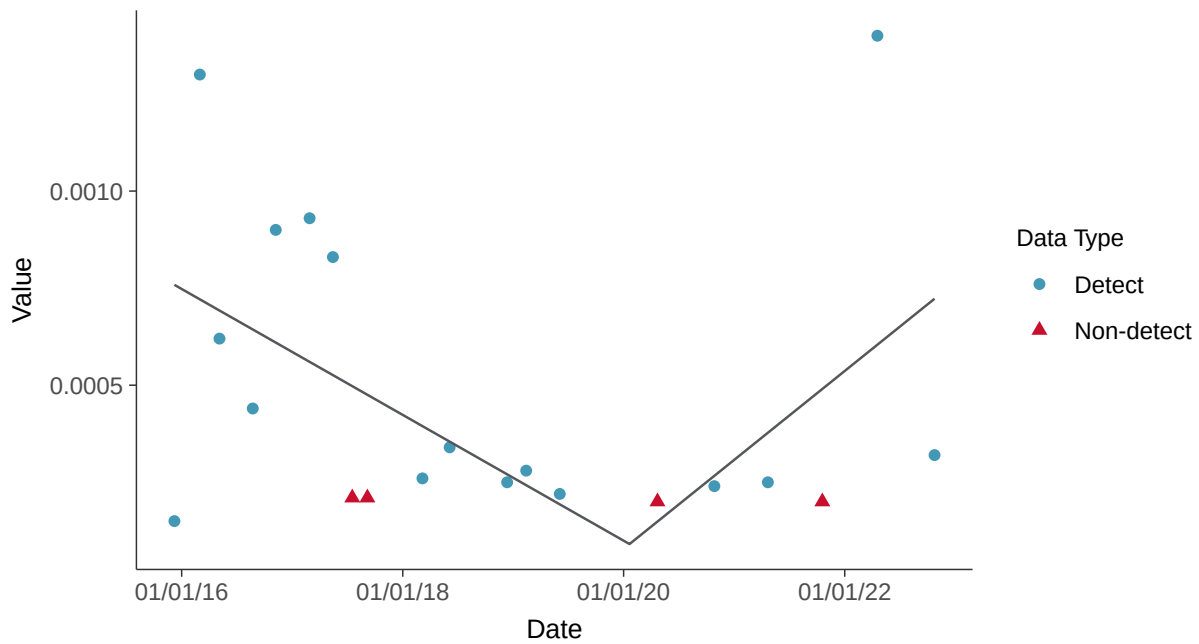
Trend Regression: Lognormal MLE

Cadmium, MW-10 (mg/l)



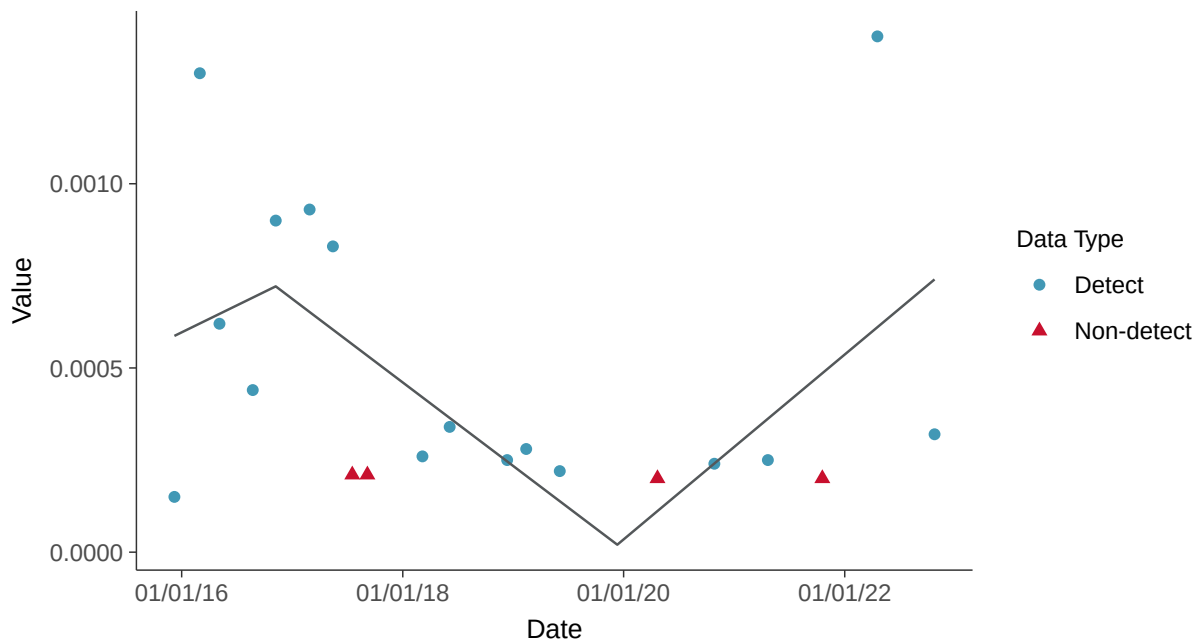
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-10 (mg/l)



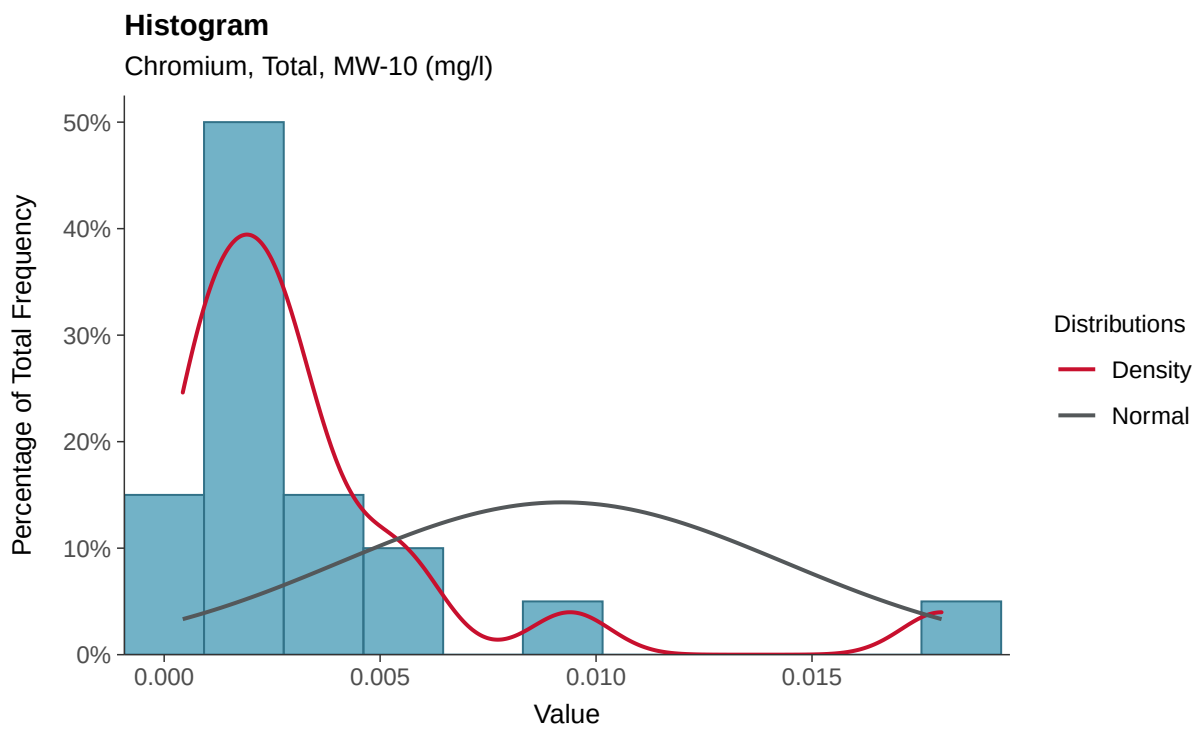
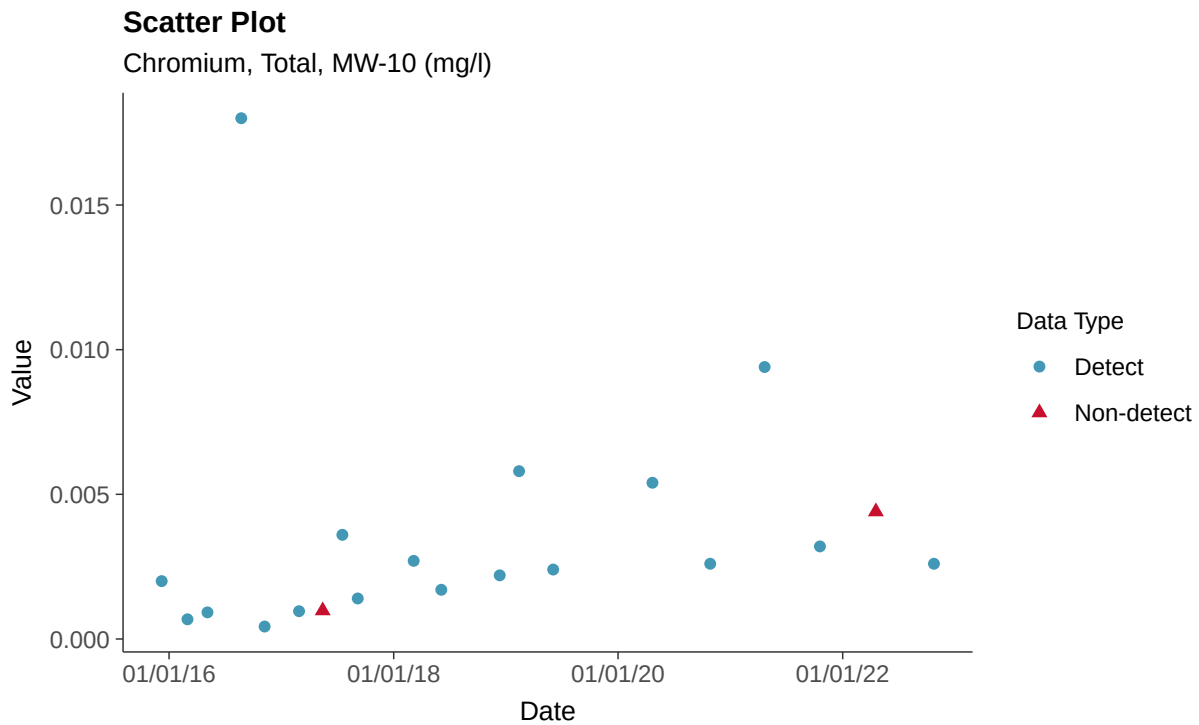
Trend Regression: Piecewise Linear-Linear-Linear

Cadmium, MW-10 (mg/l)



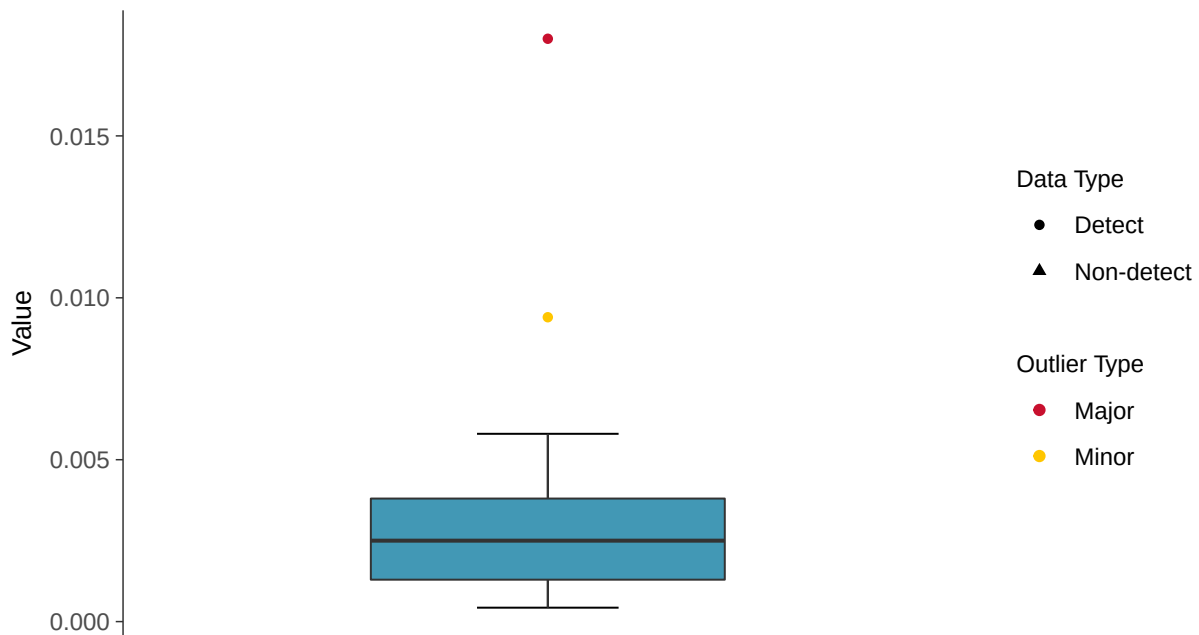
Appendix IV: Chromium, Total, MW-10

ID: 1_2_112



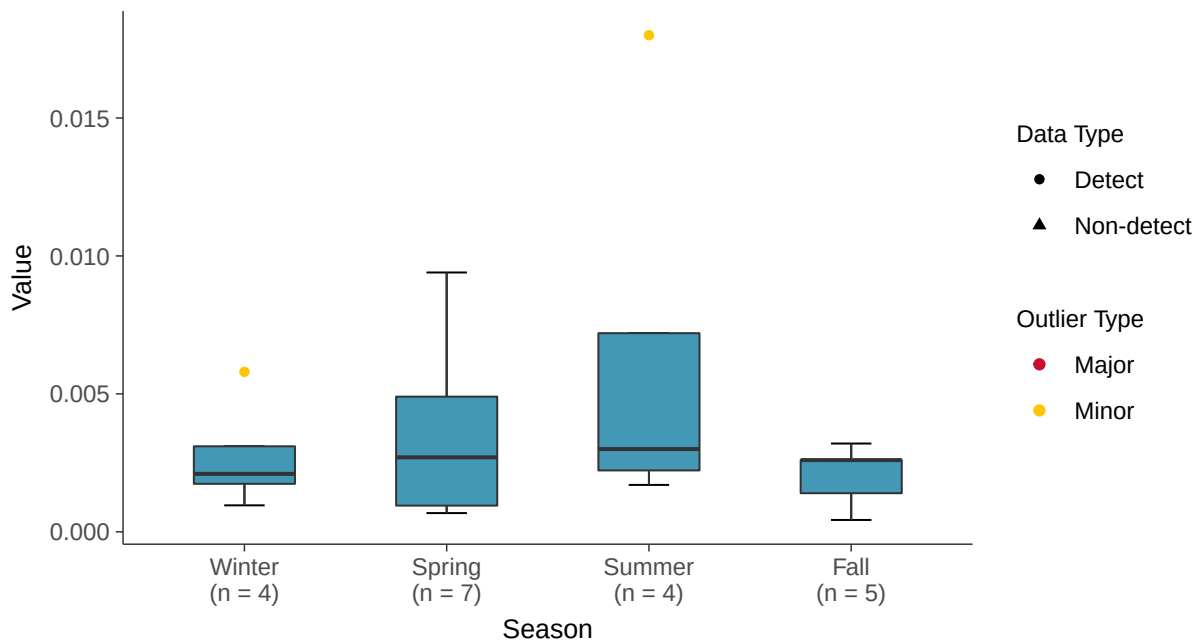
Boxplot

Chromium, Total, MW-10 (mg/l)



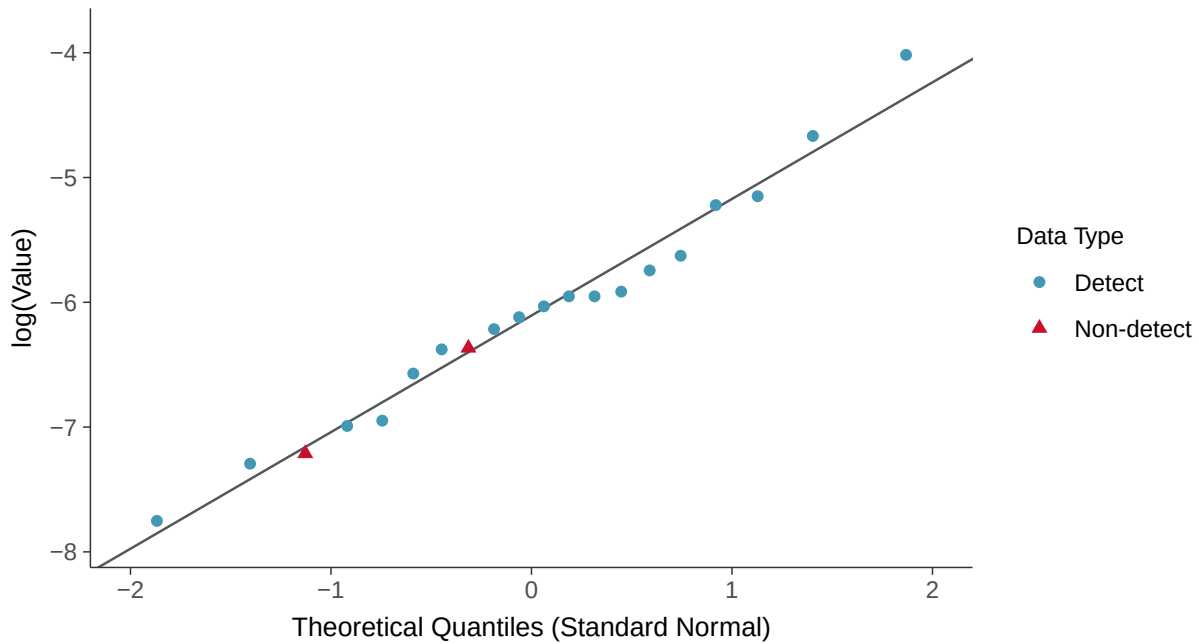
Boxplot by Season

Chromium, Total, MW-10 (mg/l)



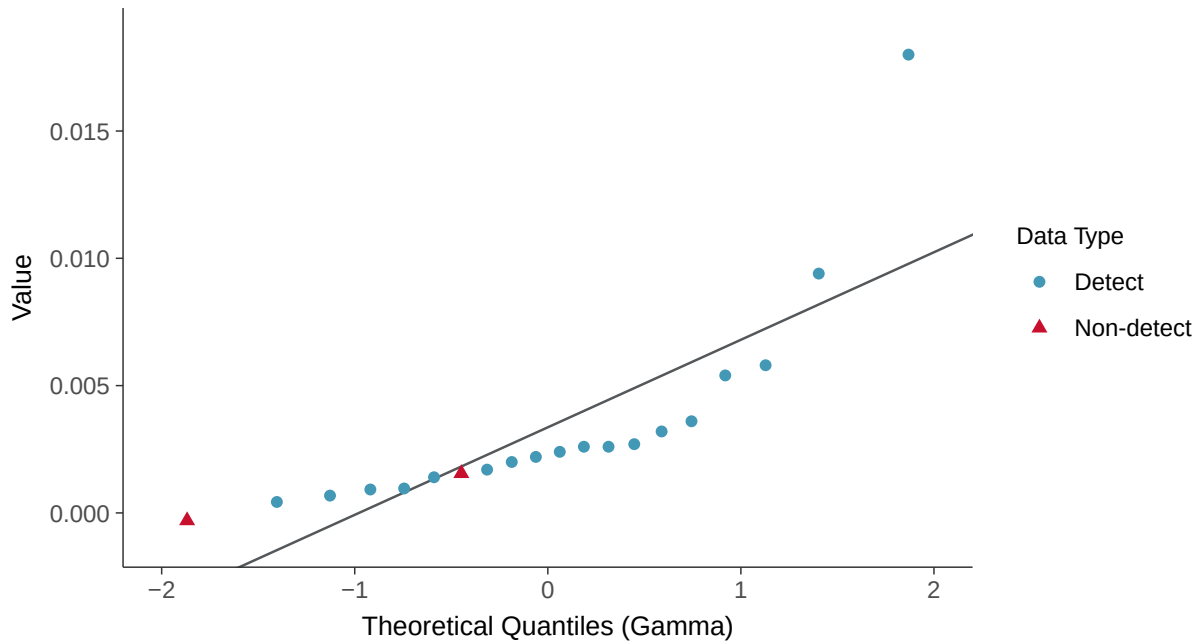
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-10 (mg/l)



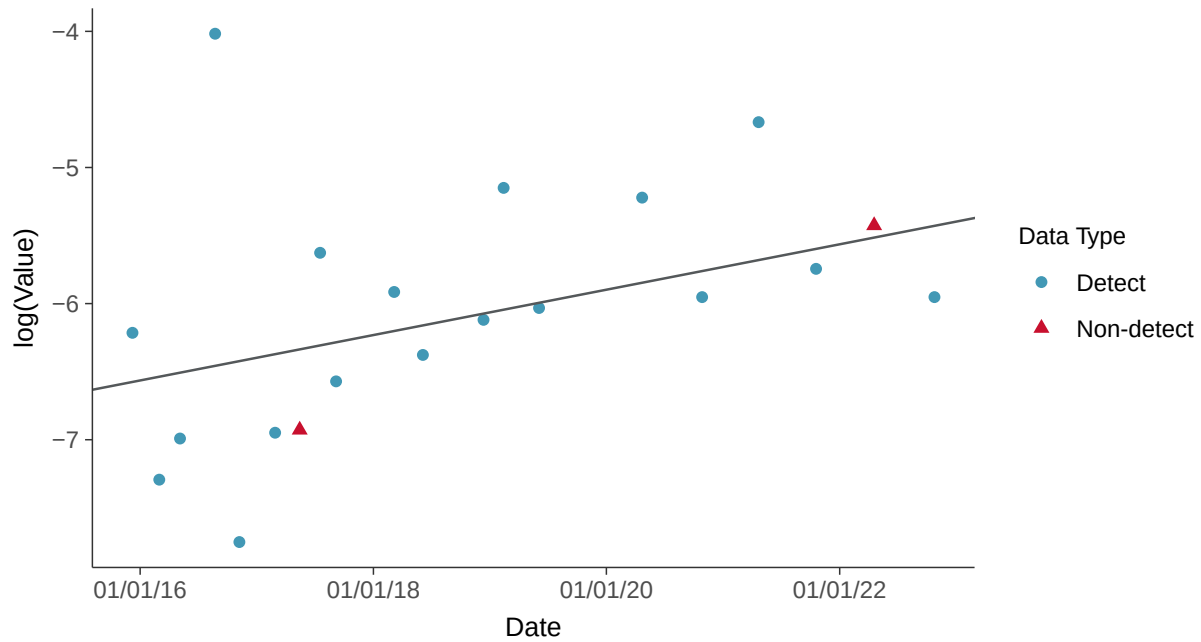
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-10 (mg/l)



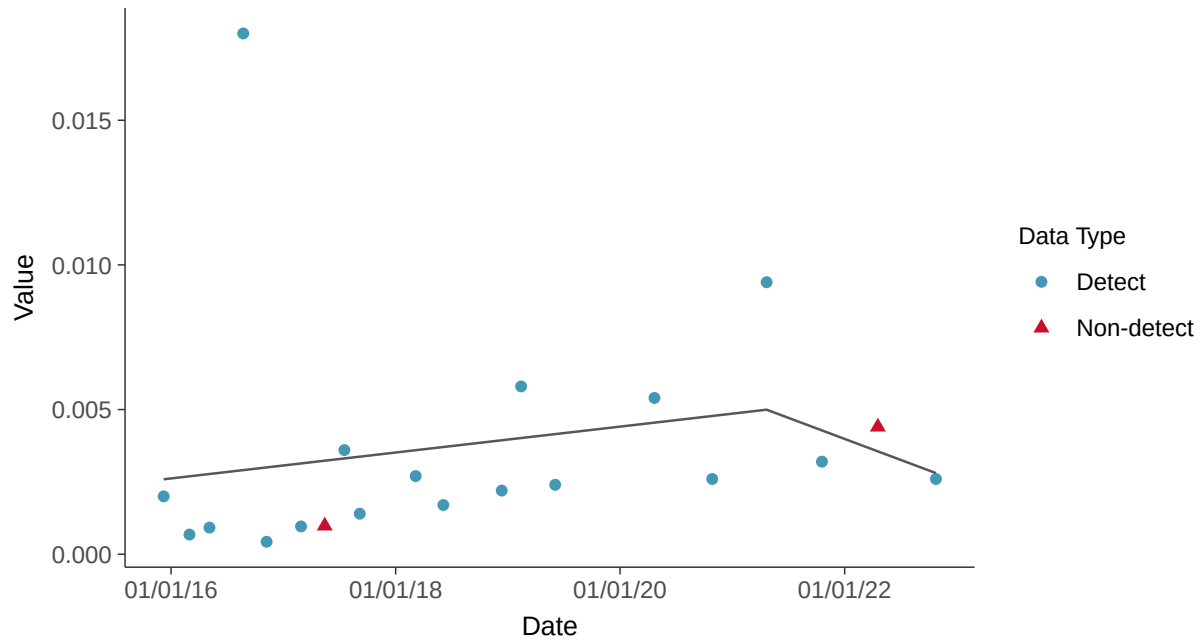
Trend Regression: Lognormal MLE

Chromium, Total, MW-10 (mg/l)



Trend Regression: Piecewise Linear-Linear

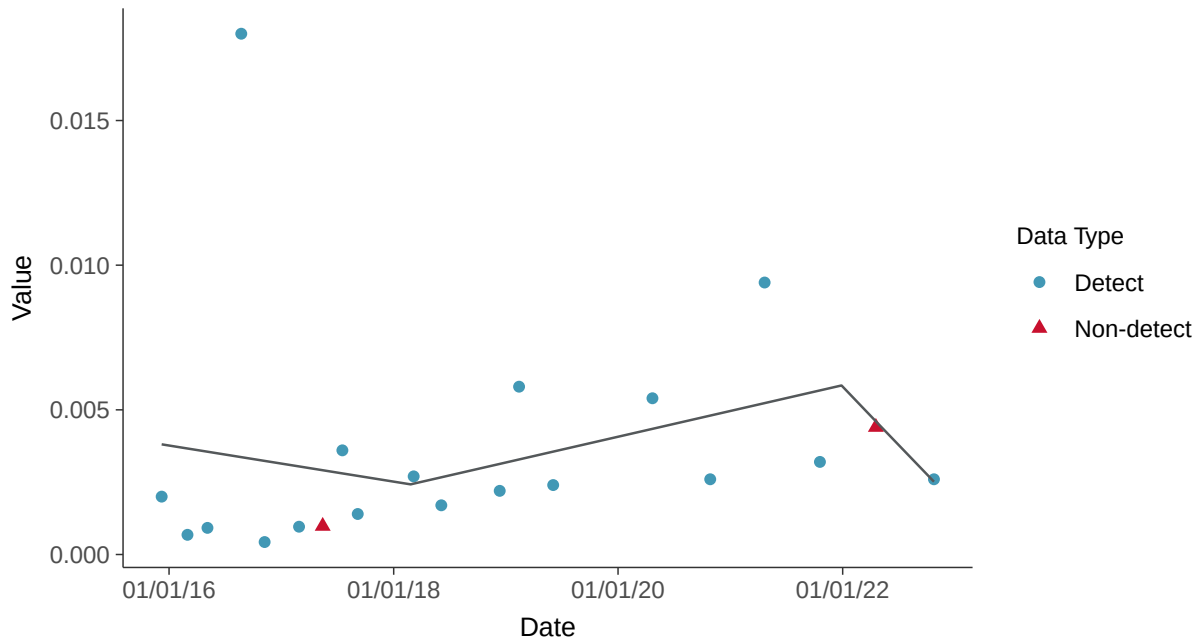
Chromium, Total, MW-10 (mg/l)





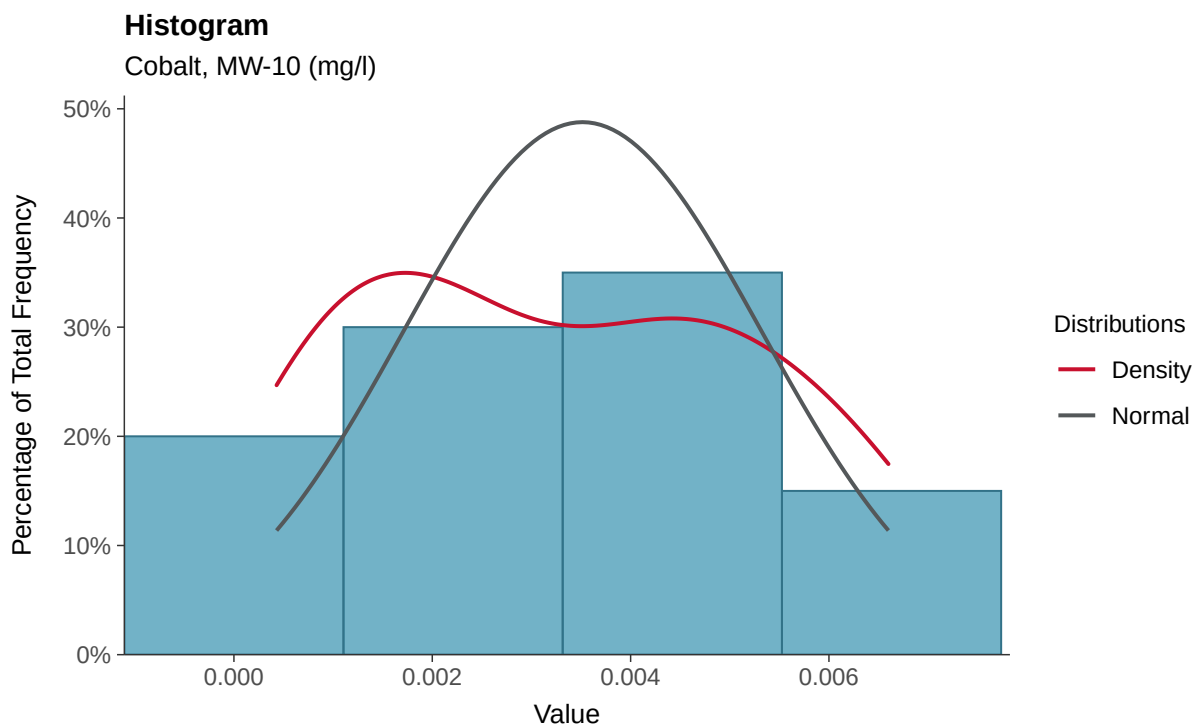
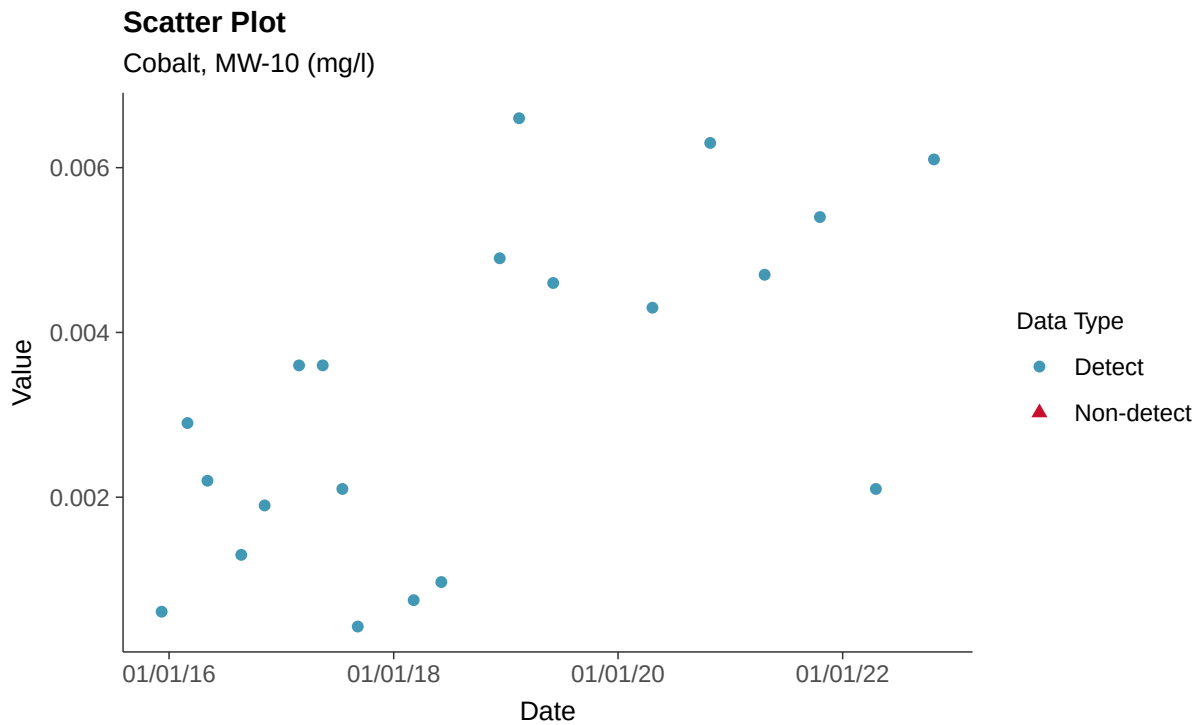
Trend Regression: Piecewise Linear-Linear-Linear

Chromium, Total, MW-10 (mg/l)



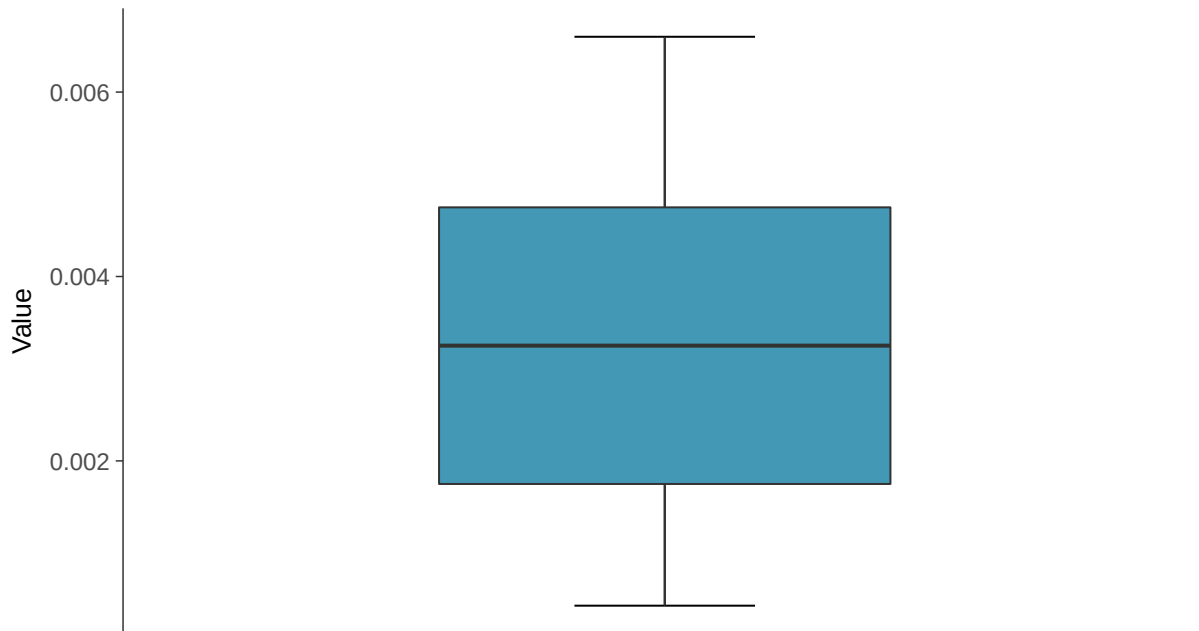
Appendix IV: Cobalt, MW-10

ID: 1_2_113



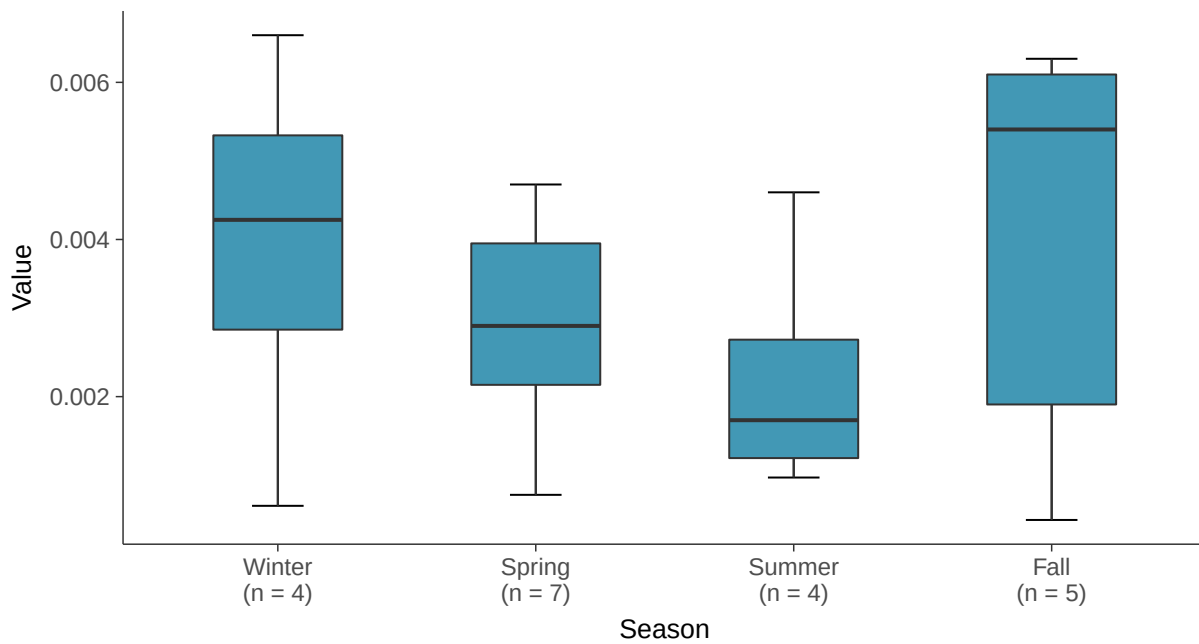
Boxplot

Cobalt, MW-10 (mg/l)



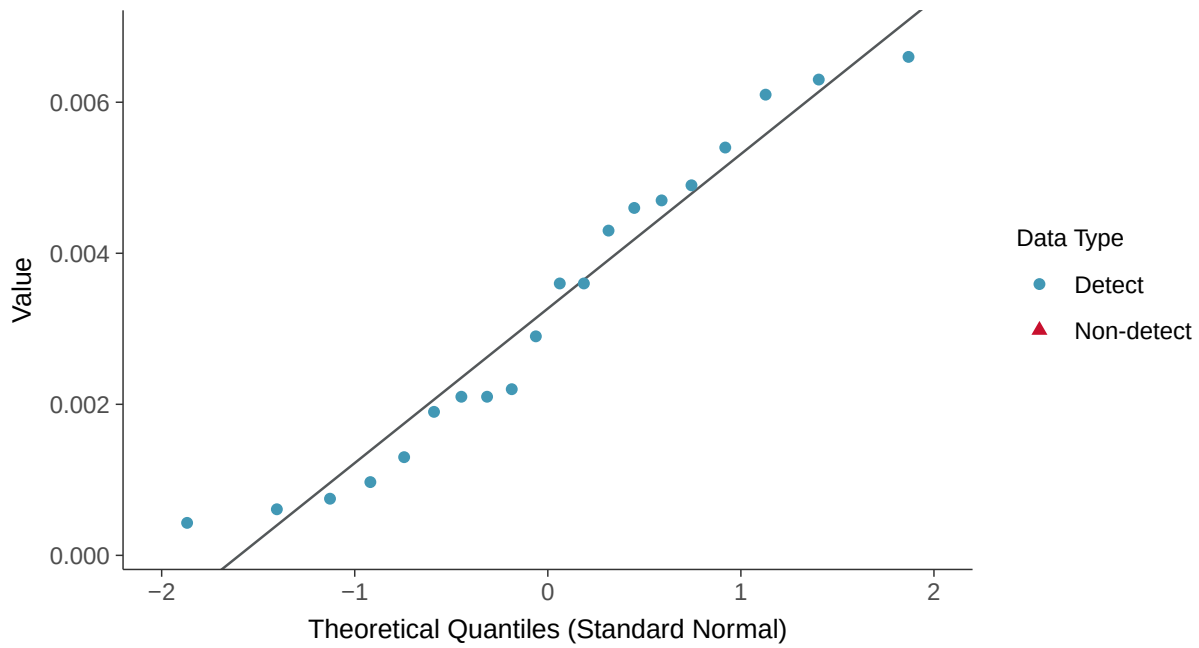
Boxplot by Season

Cobalt, MW-10 (mg/l)



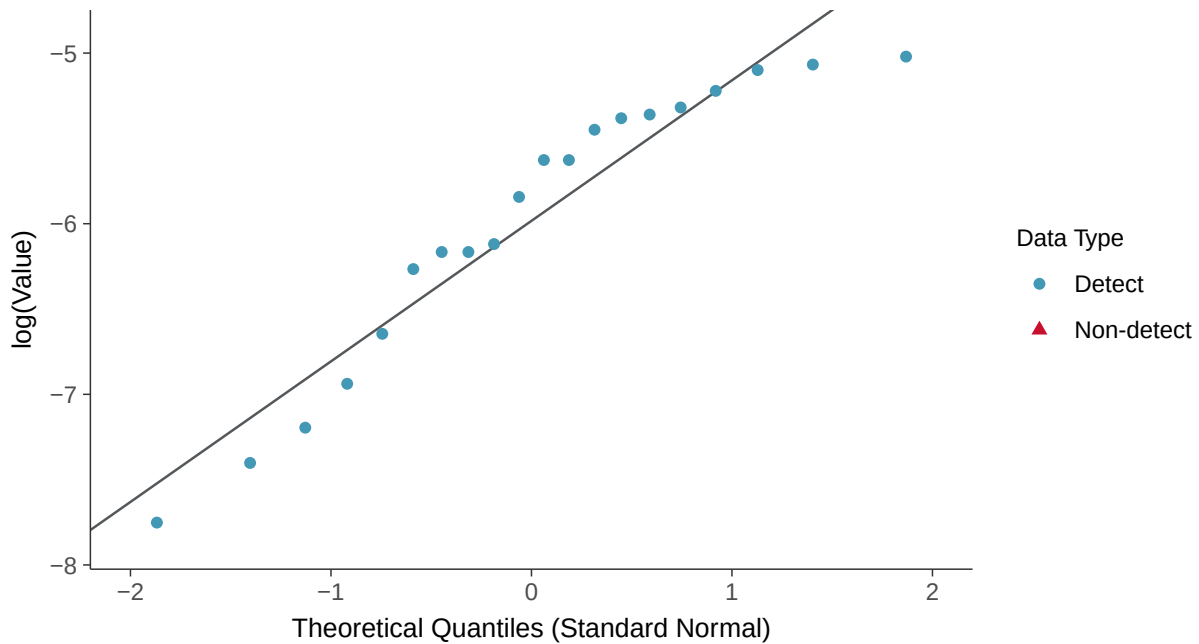
Normal Q-Q plot

Cobalt, MW-10 (mg/l)

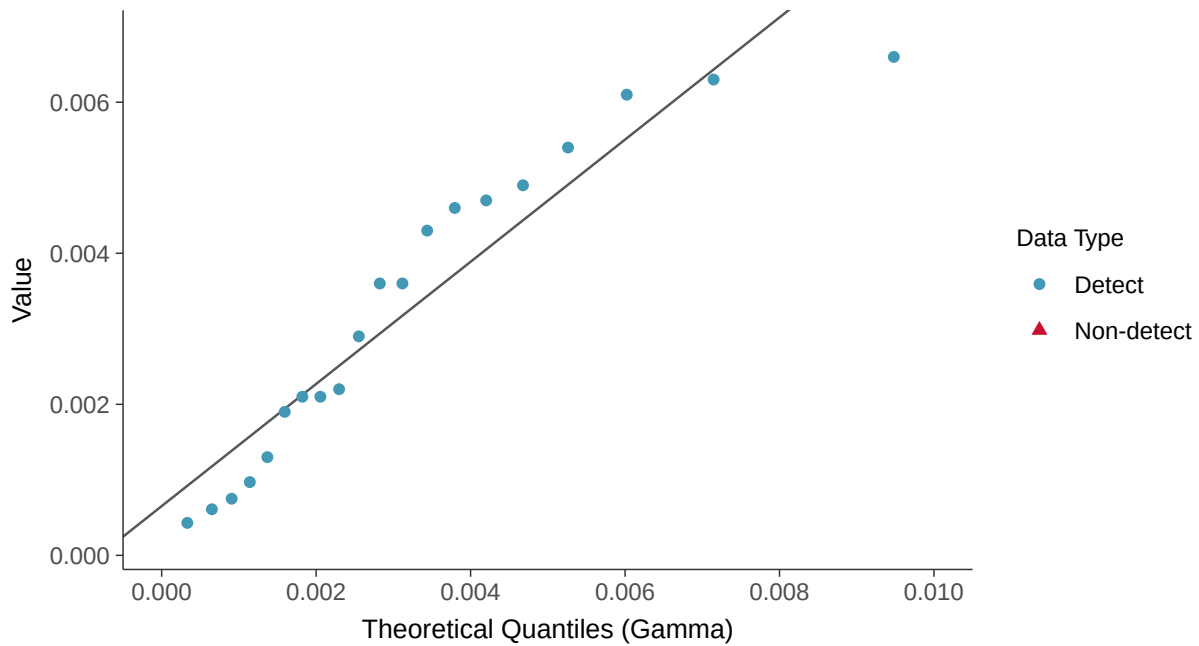


Lognormal Q-Q plot

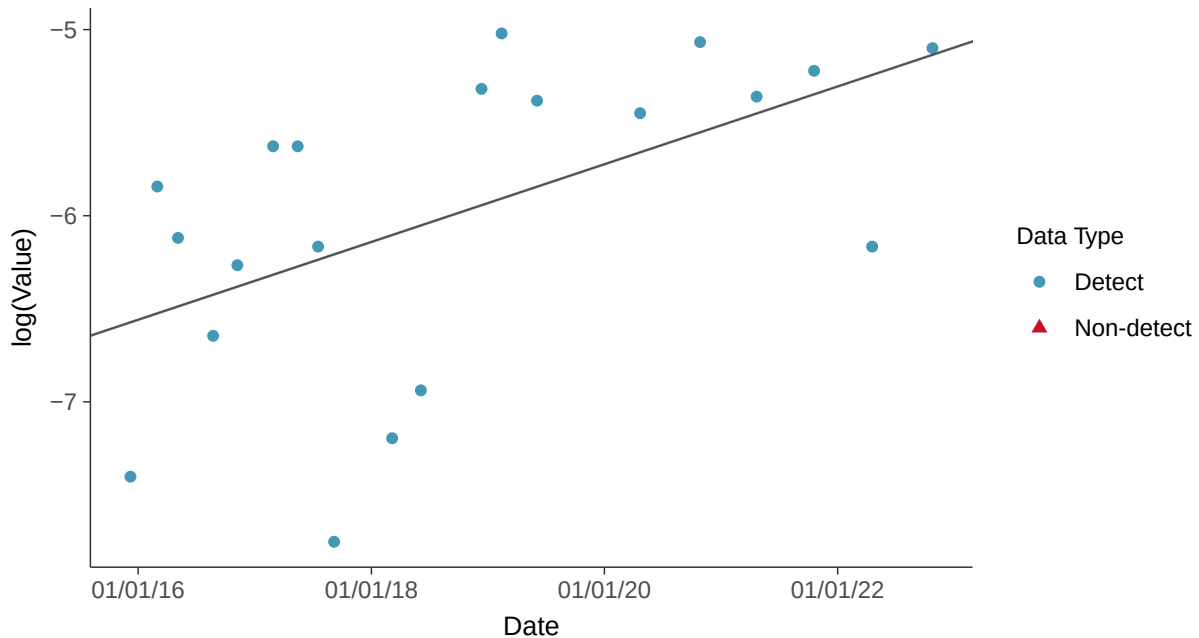
Cobalt, MW-10 (mg/l)



Gamma Q-Q plot
Cobalt, MW-10 (mg/l)

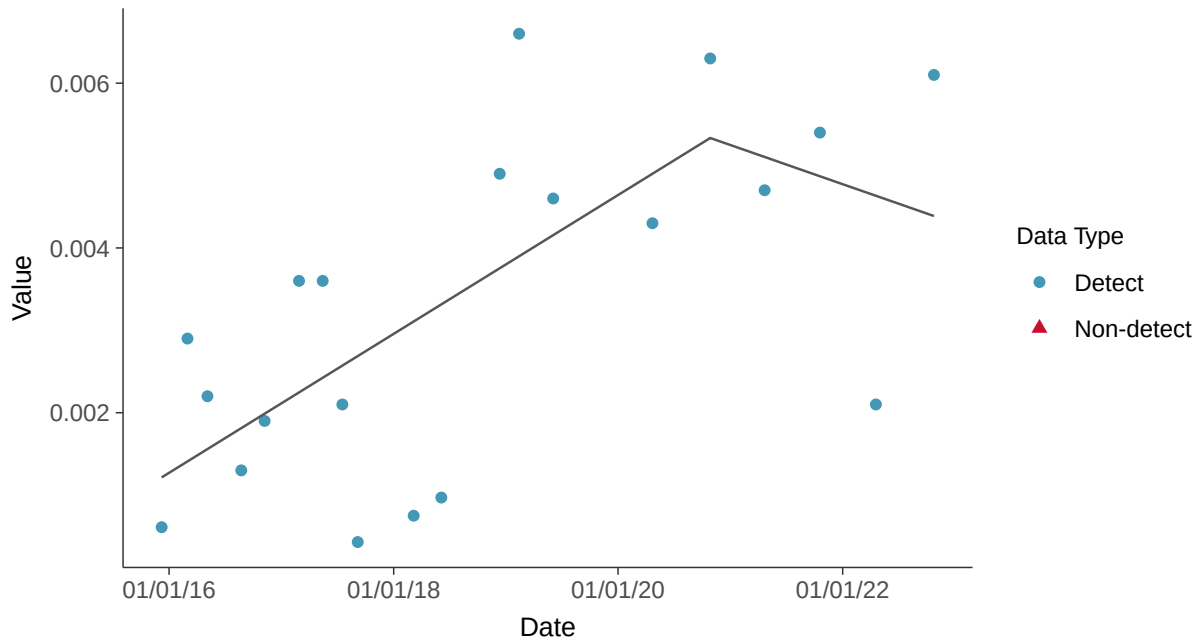


Trend Regression: Lognormal MLE
Cobalt, MW-10 (mg/l)



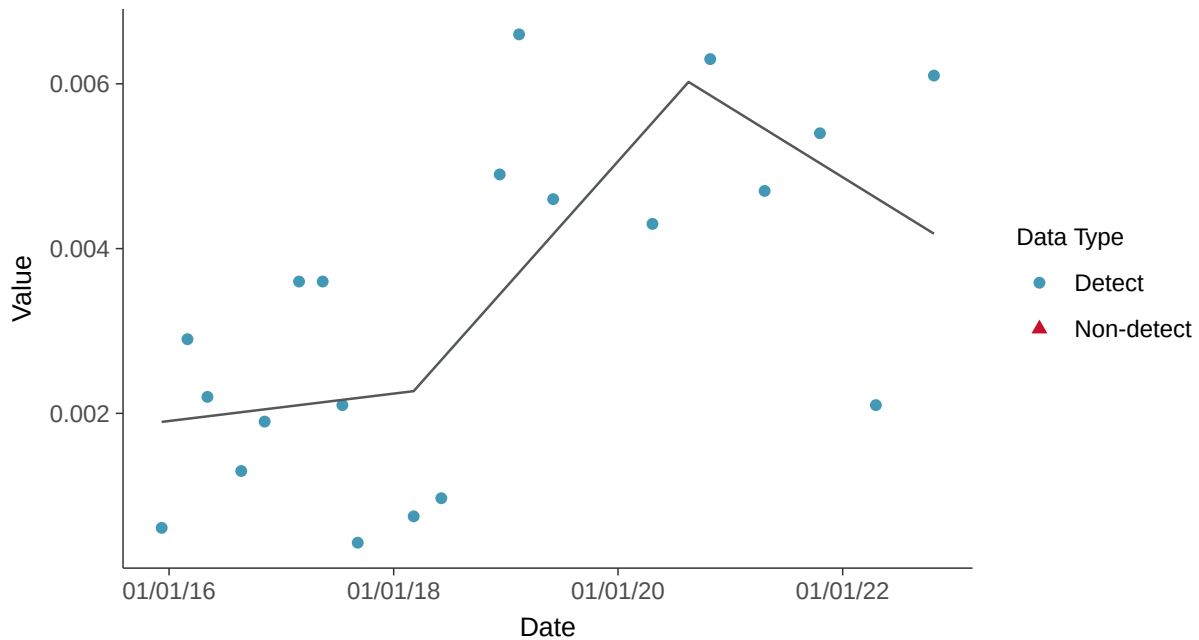
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-10 (mg/l)



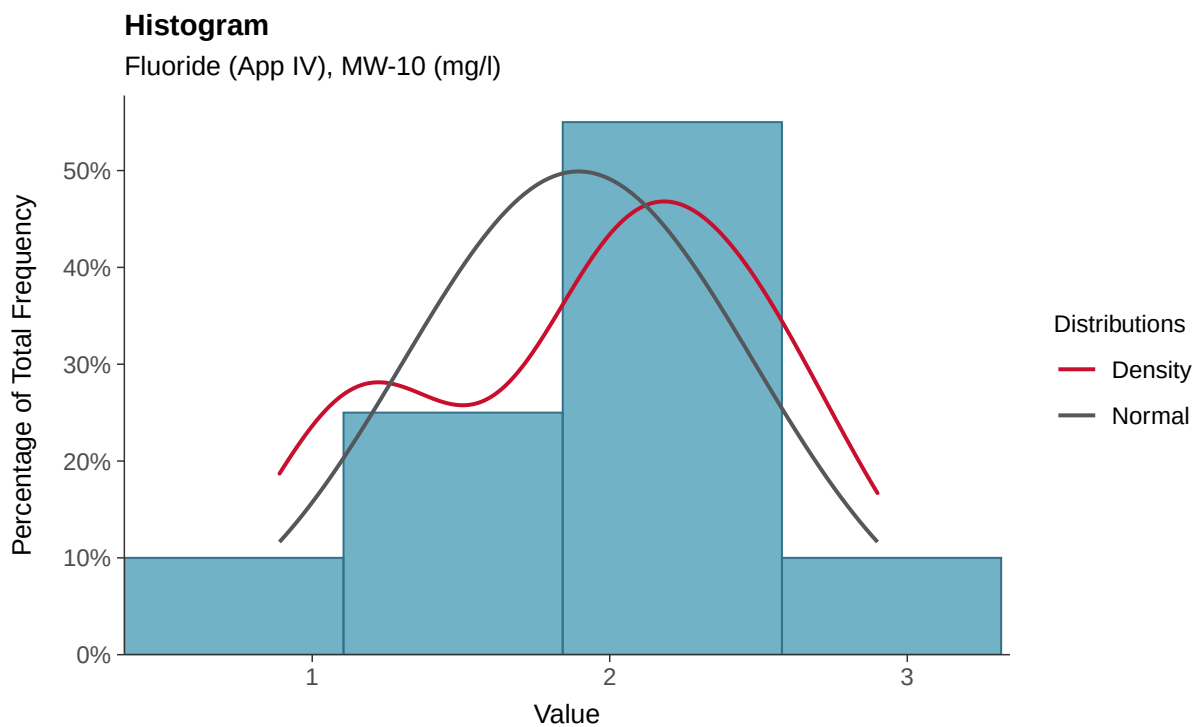
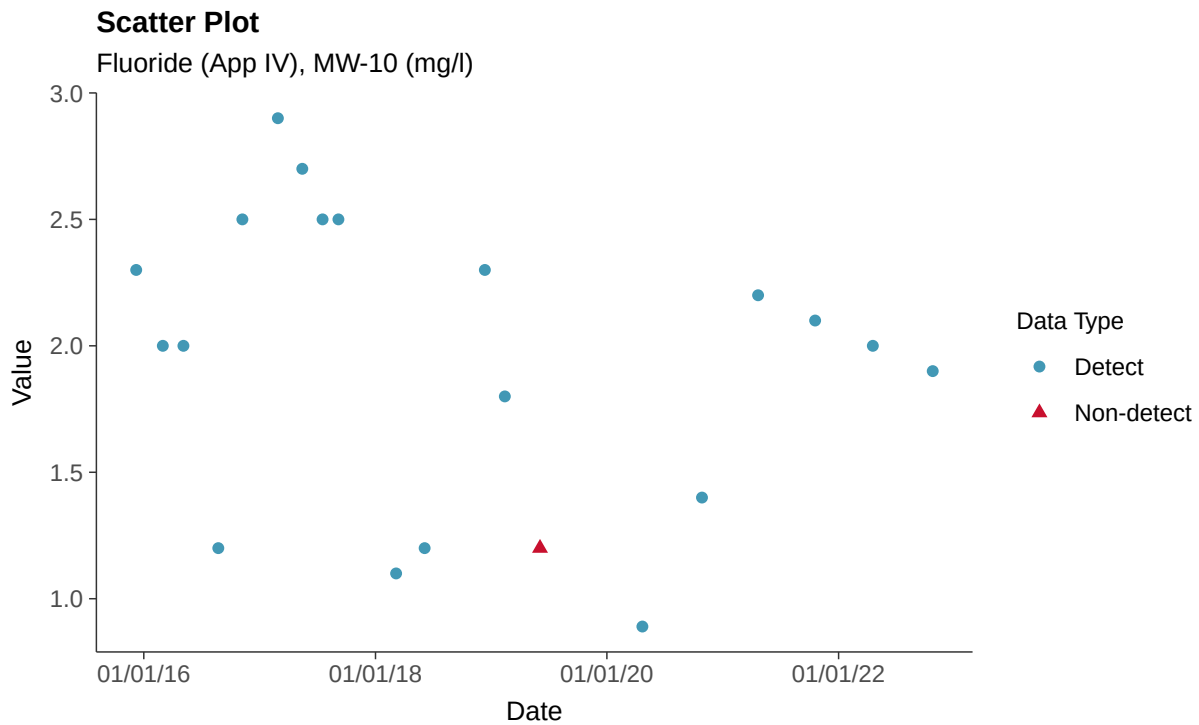
Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-10 (mg/l)



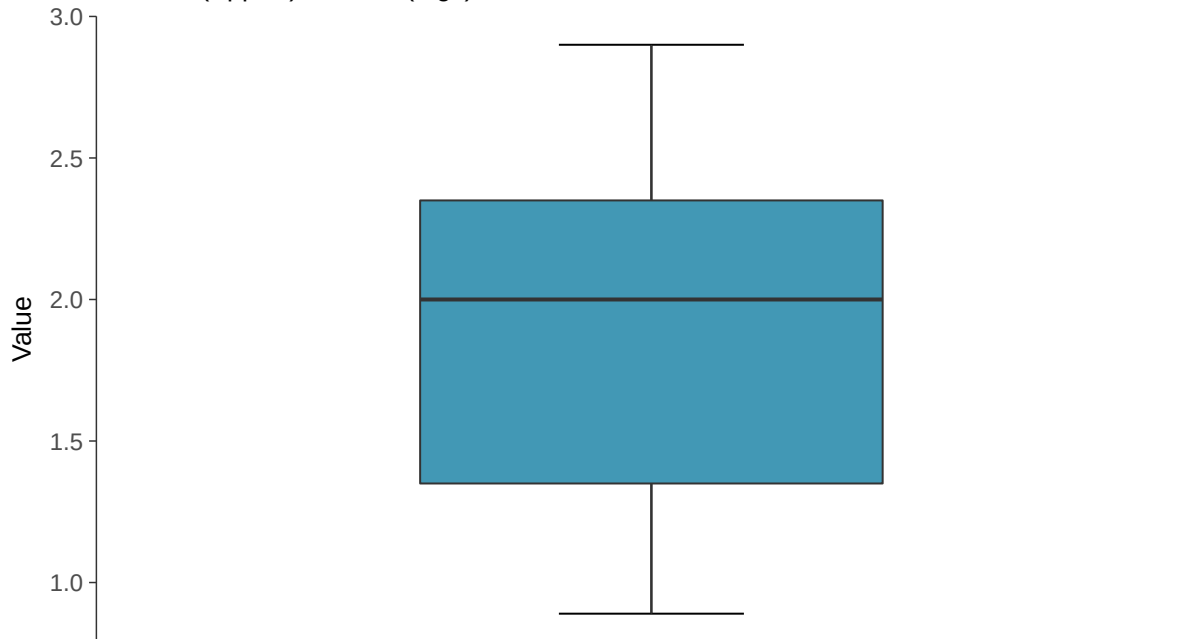
Appendix IV: Fluoride (App IV), MW-10

ID: 1_2_116



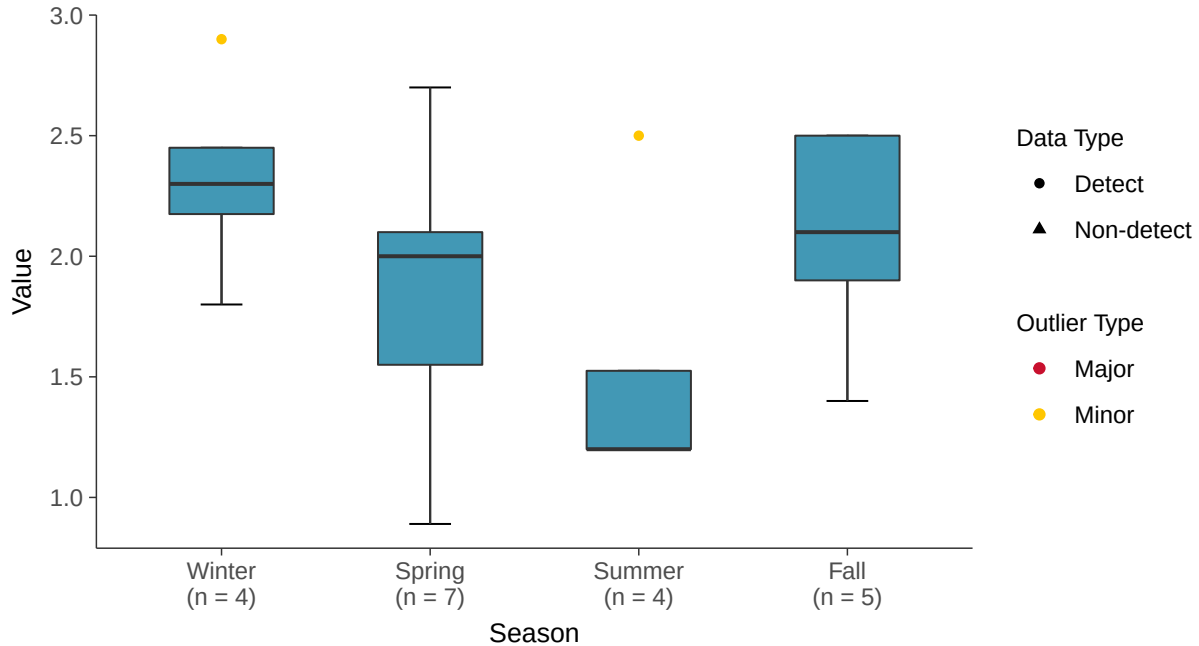
Boxplot

Fluoride (App IV), MW-10 (mg/l)



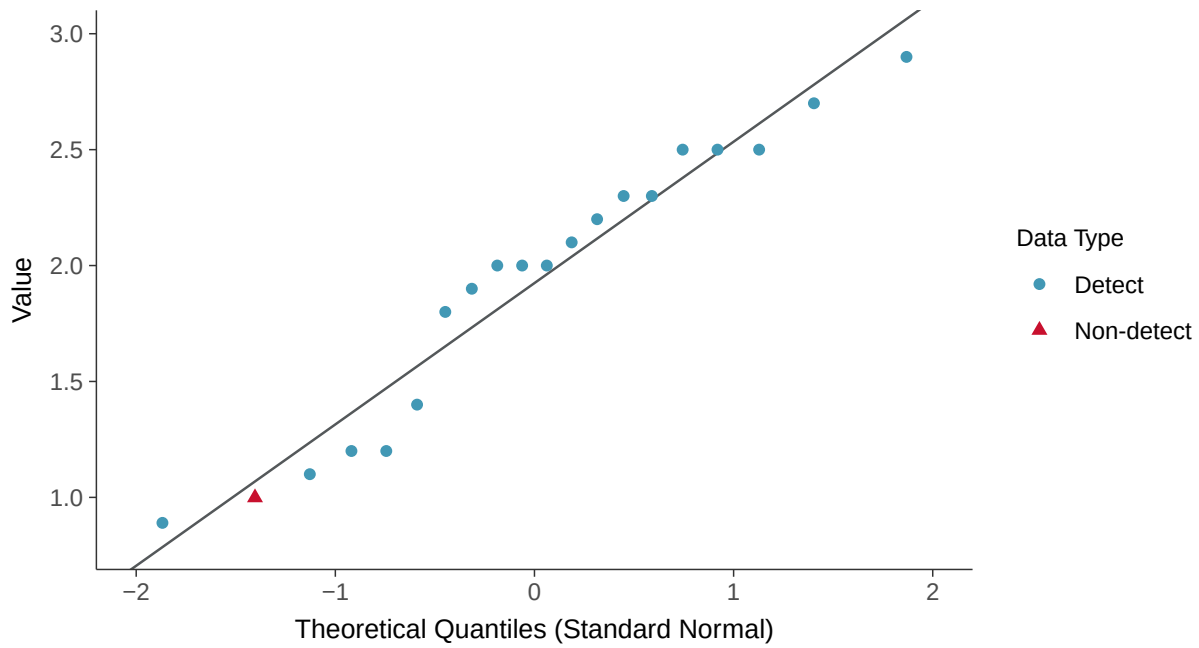
Boxplot by Season

Fluoride (App IV), MW-10 (mg/l)



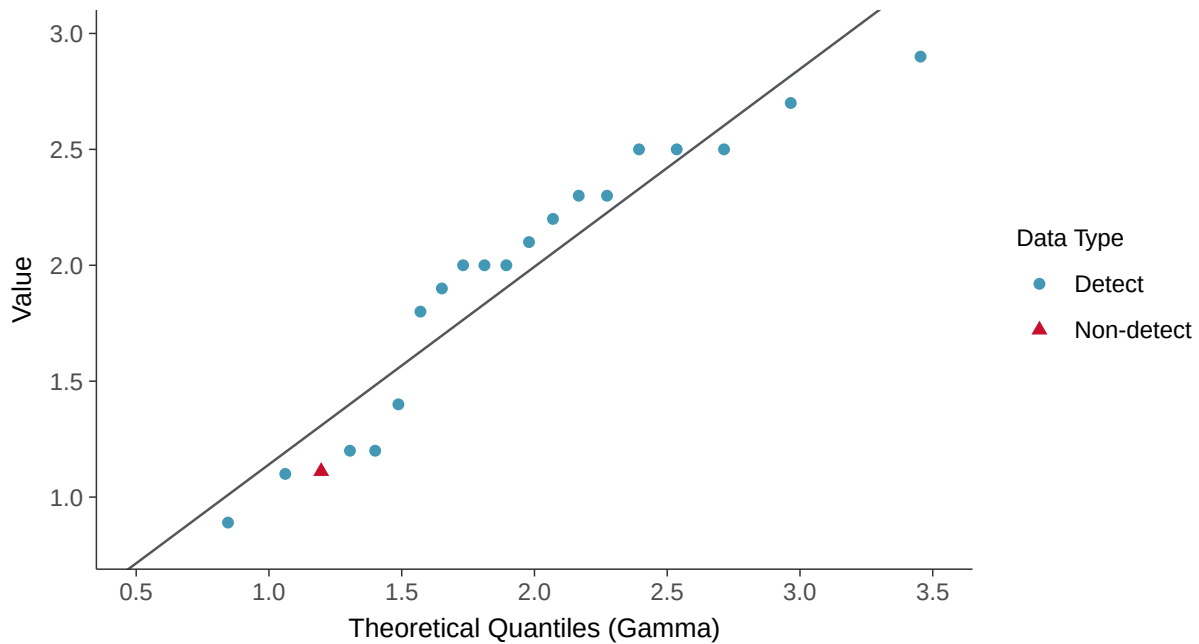
Normal Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-10 (mg/l)



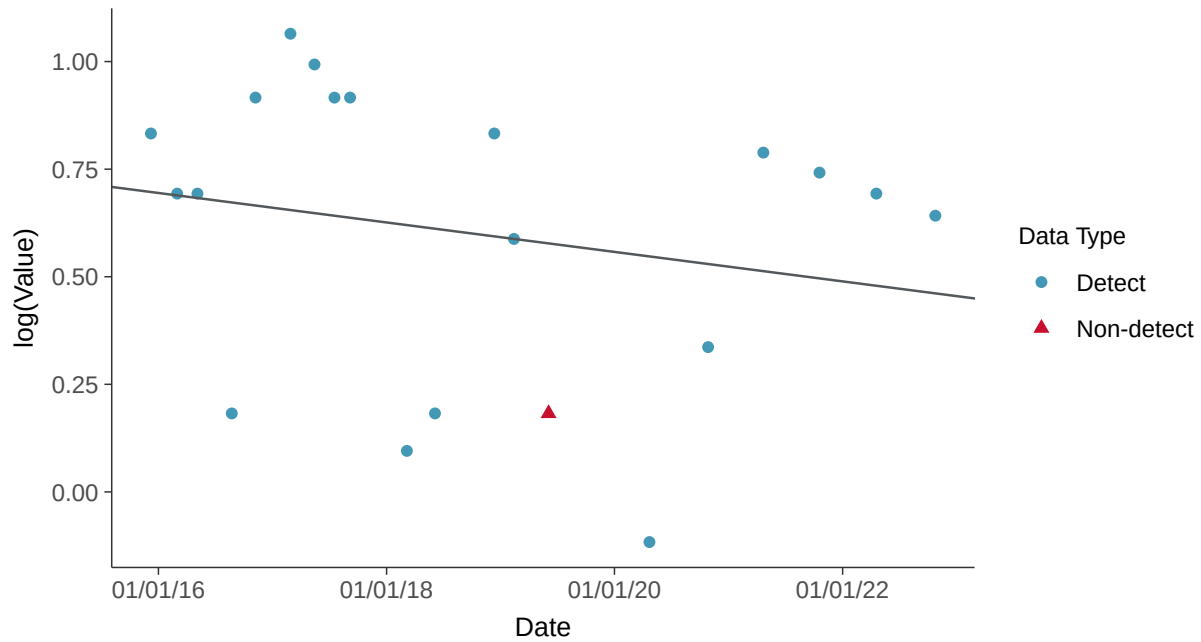
Gamma Q-Q plot using ROS Imputed Estimates

Fluoride (App IV), MW-10 (mg/l)



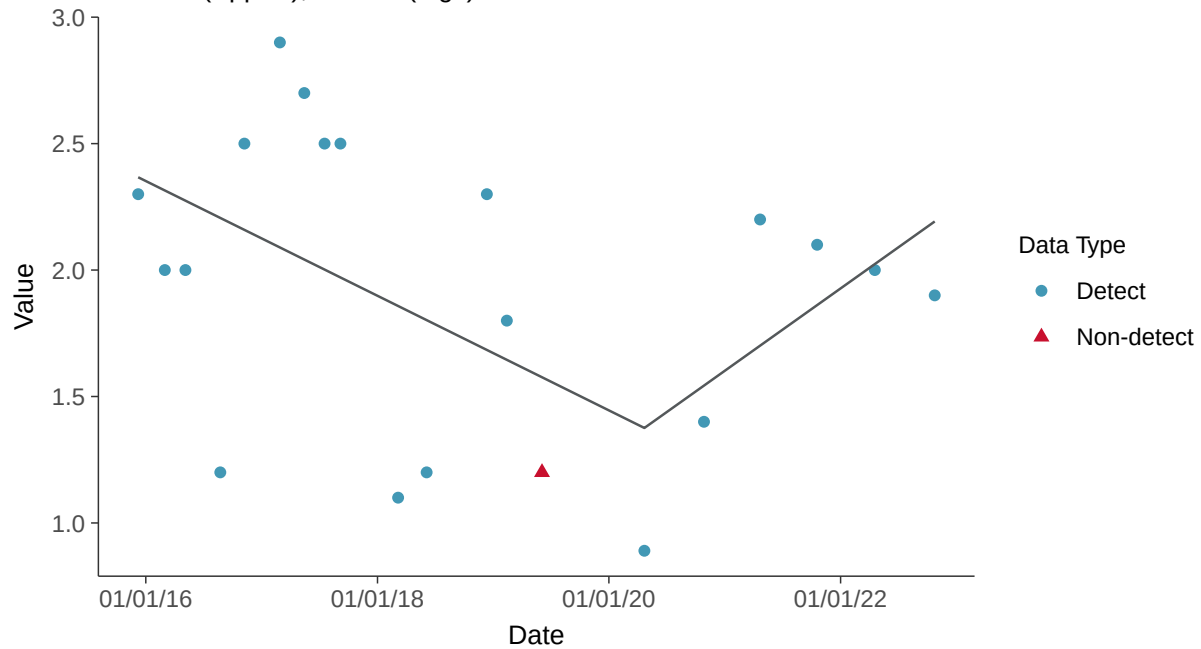
Trend Regression: Lognormal MLE

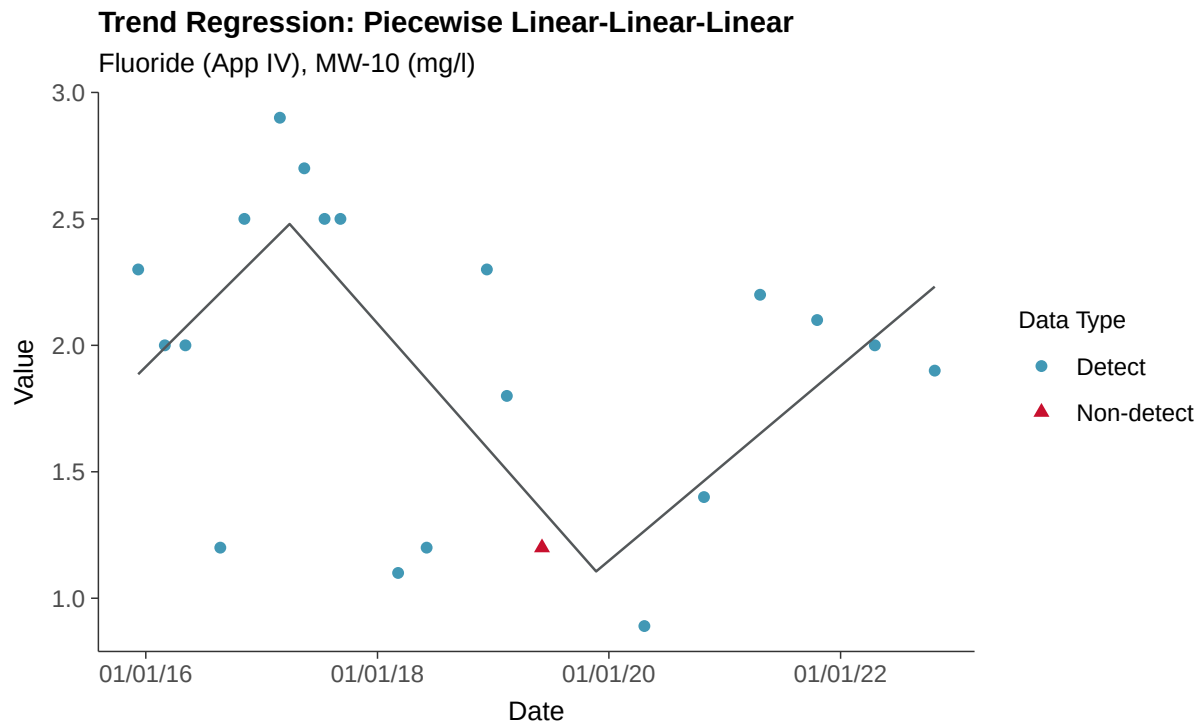
Fluoride (App IV), MW-10 (mg/l)



Trend Regression: Piecewise Linear-Linear

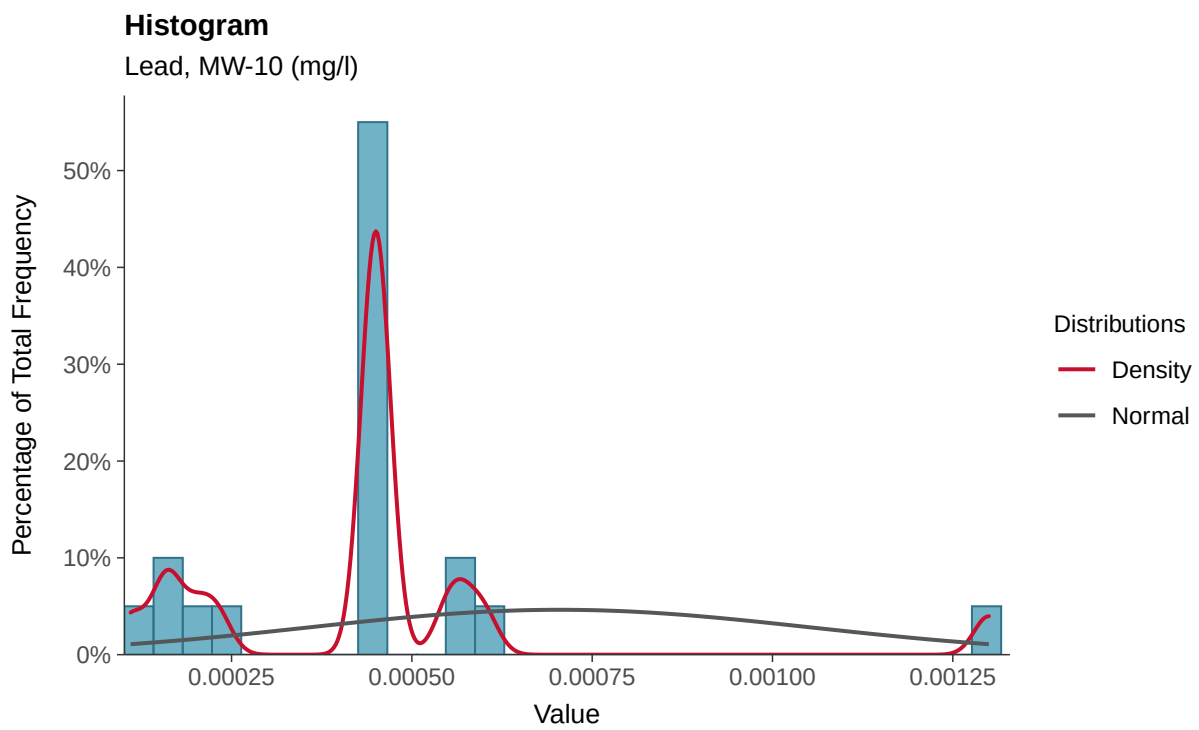
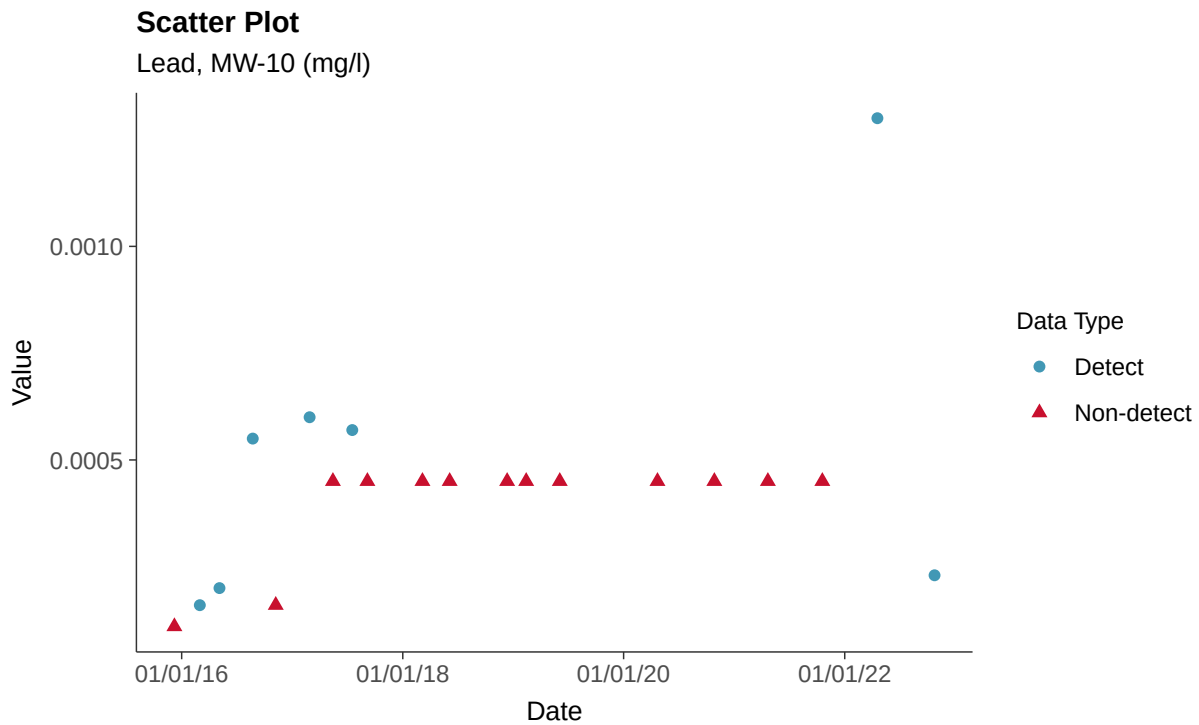
Fluoride (App IV), MW-10 (mg/l)

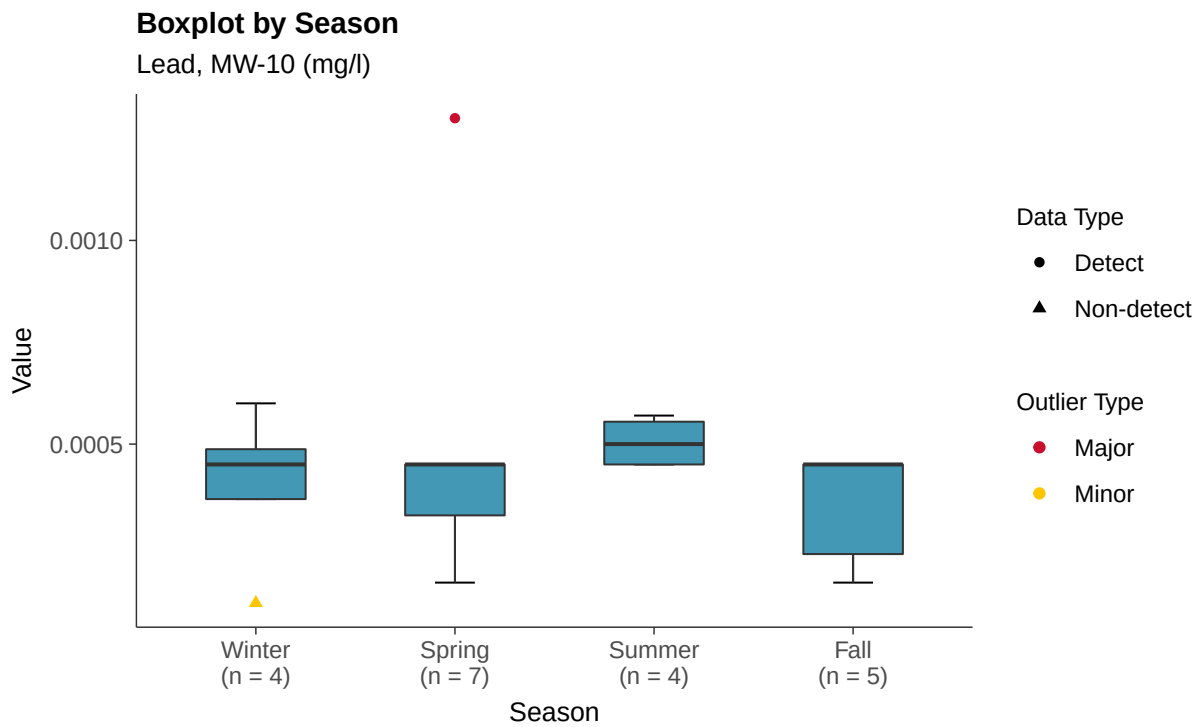
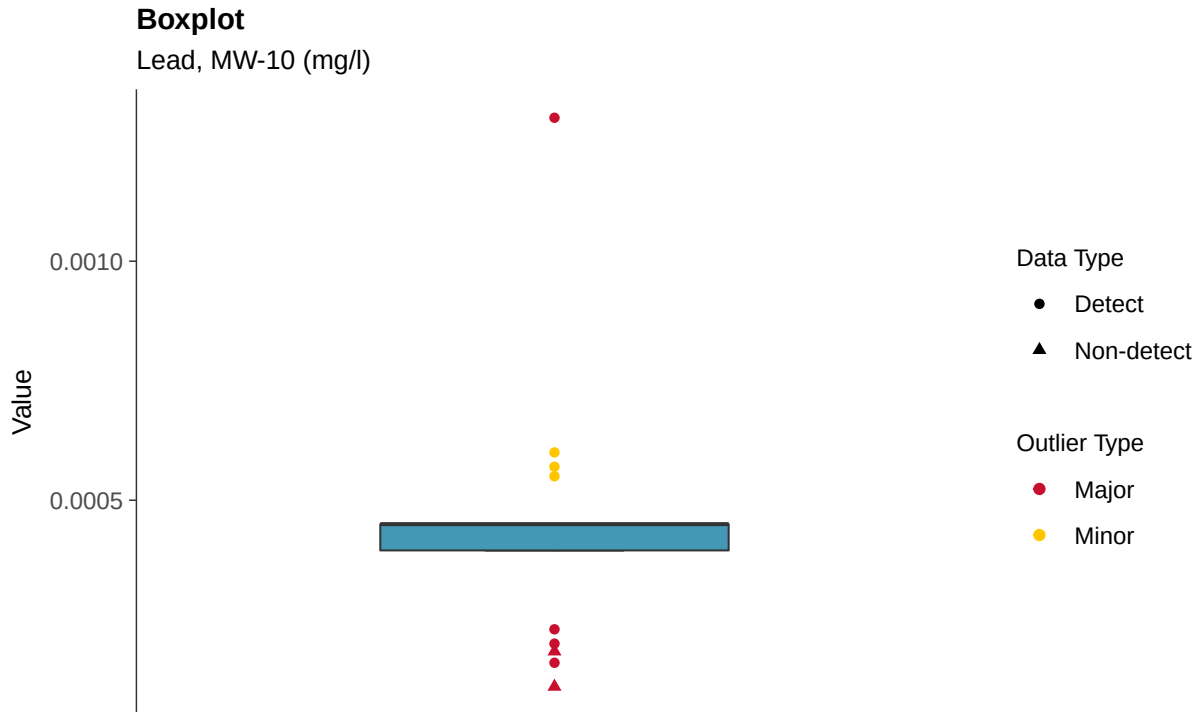




Appendix IV: Lead, MW-10

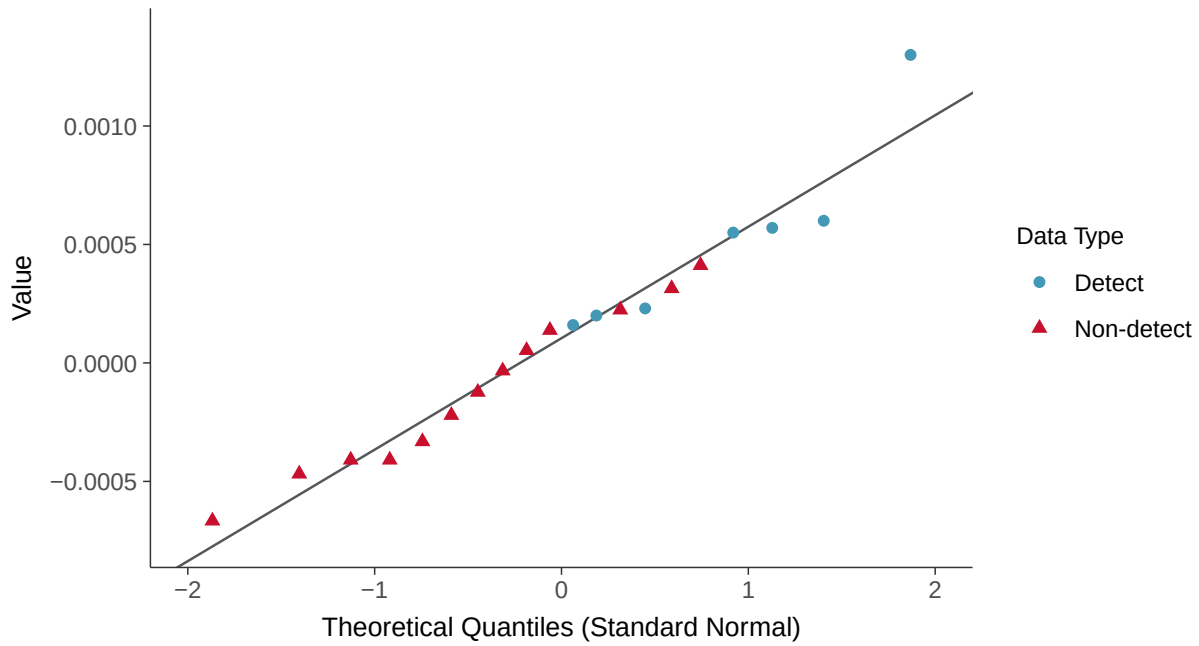
ID: 1_2_117





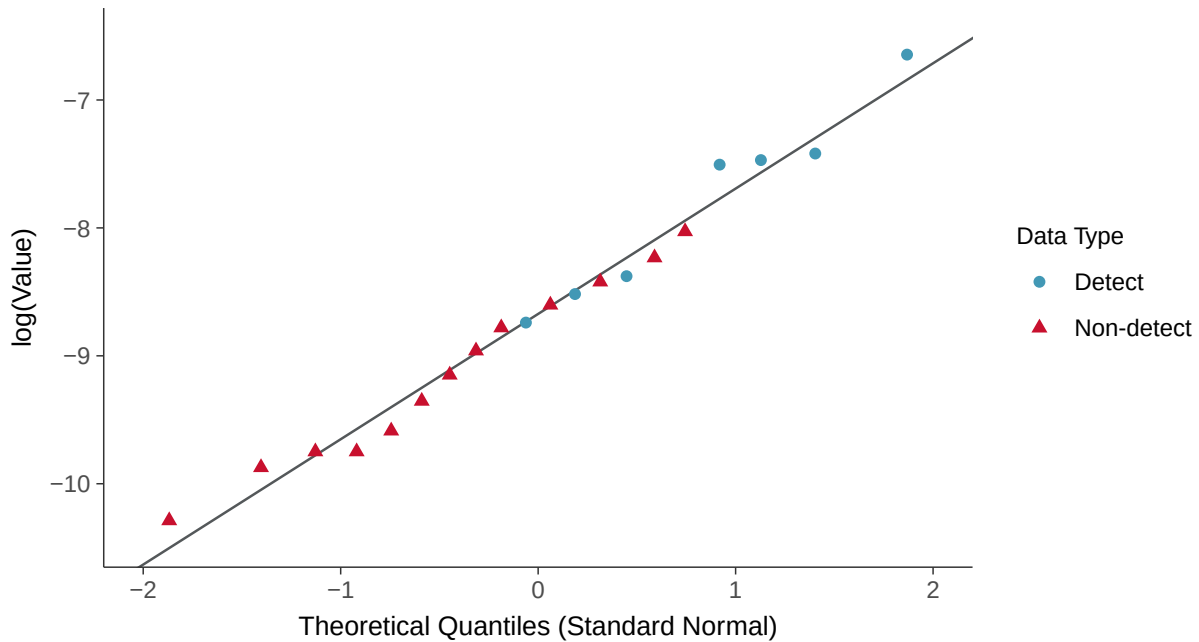
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-10 (mg/l)



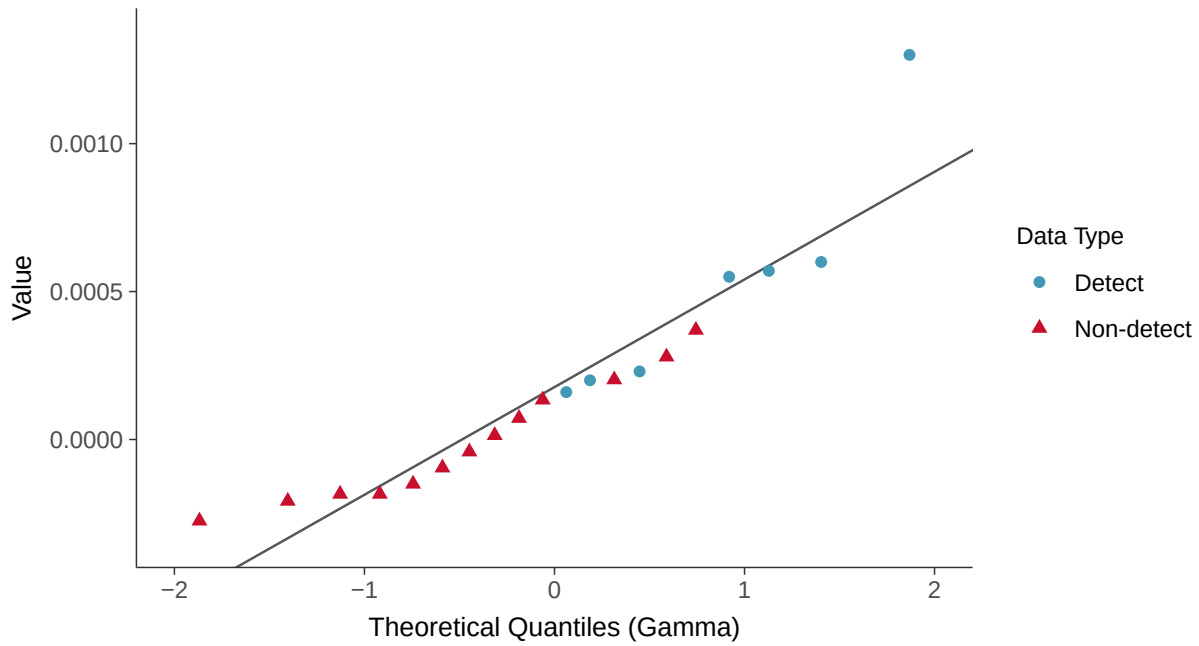
Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-10 (mg/l)



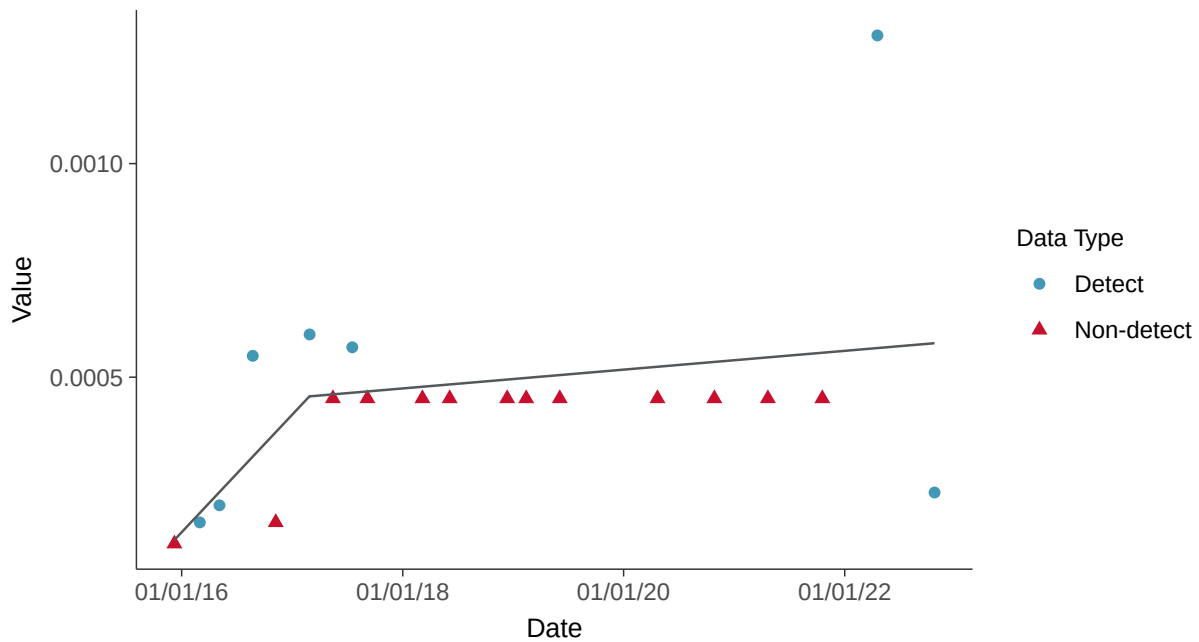
Gamma Q-Q plot using ROS Imputed Estimates

Lead, MW-10 (mg/l)



Trend Regression: Piecewise Linear-Linear

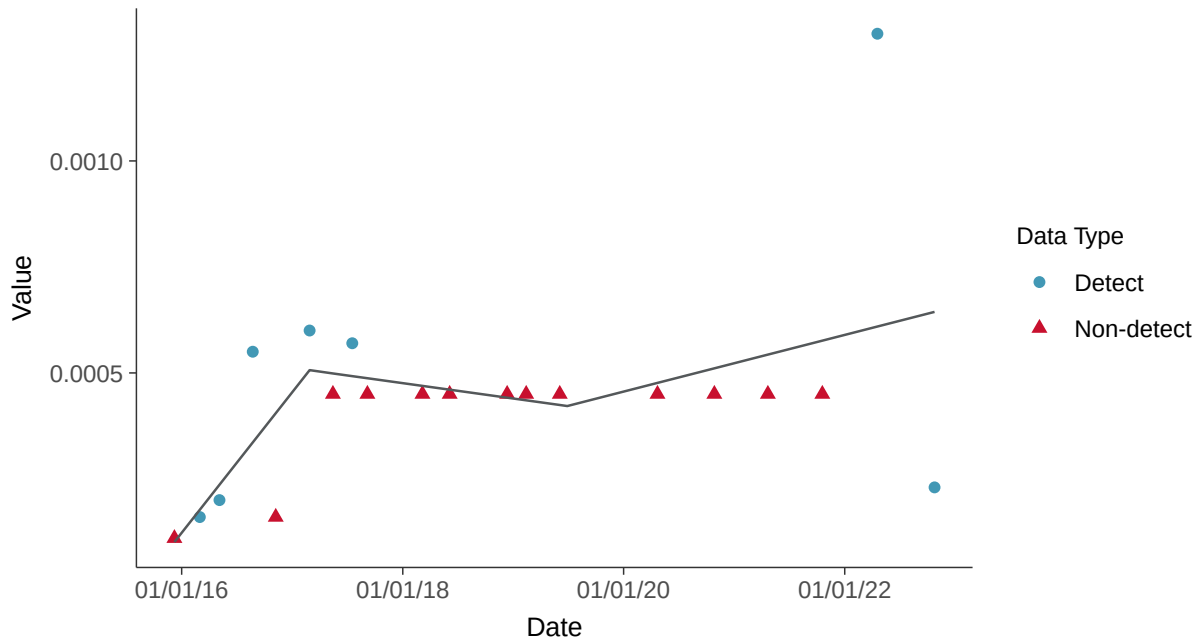
Lead, MW-10 (mg/l)





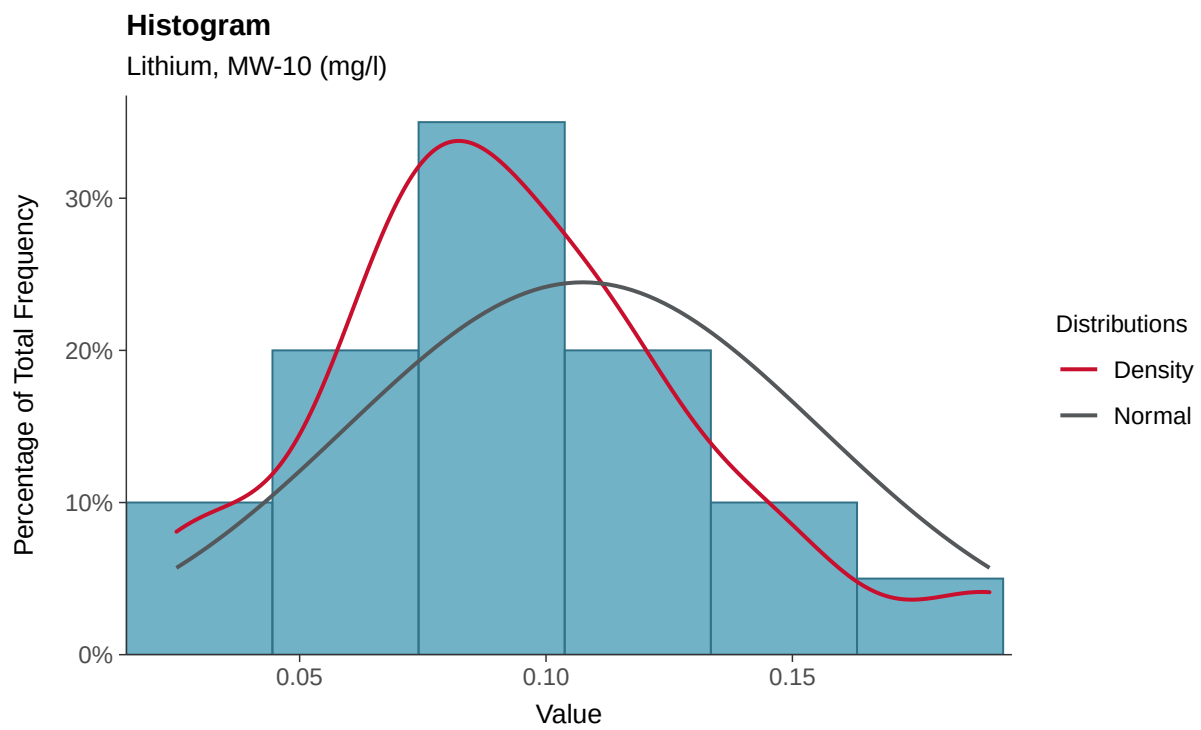
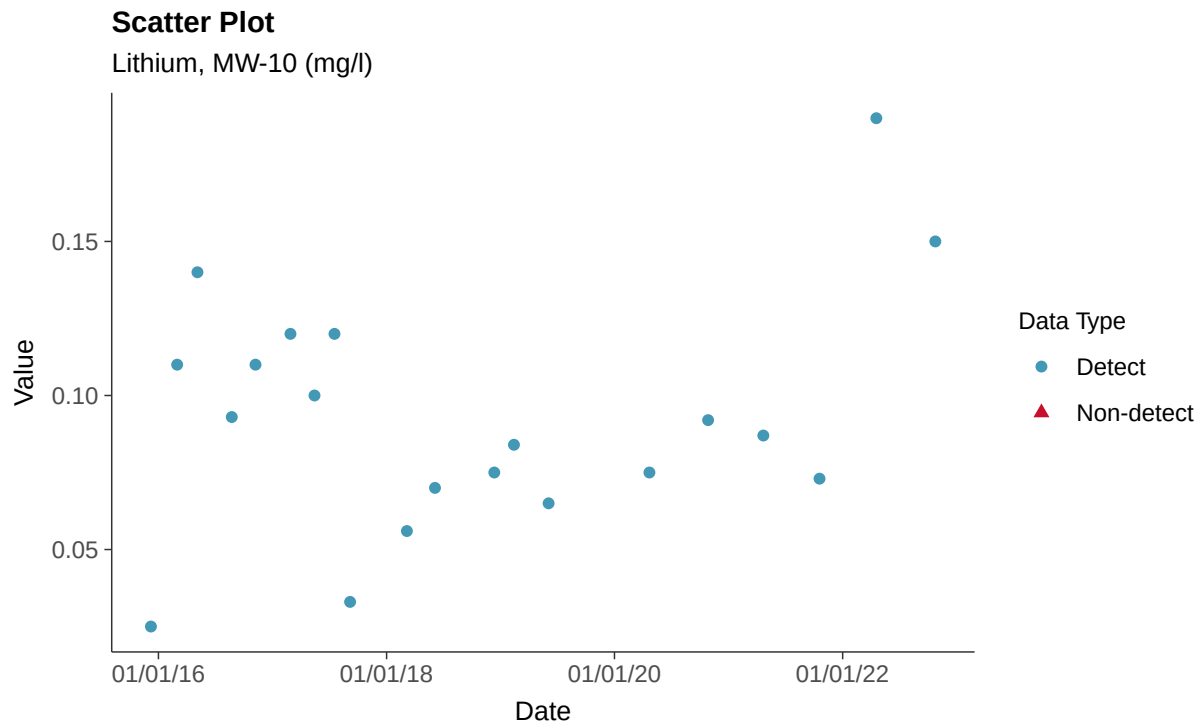
Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-10 (mg/l)



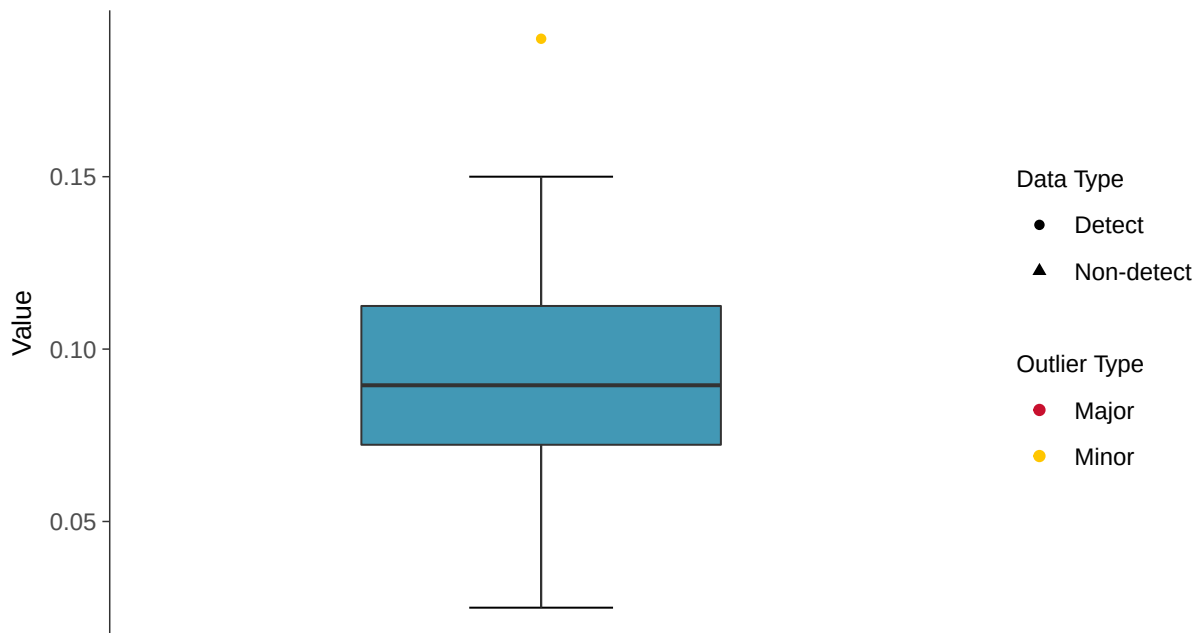
Appendix IV: Lithium, MW-10

ID: 1_2_118



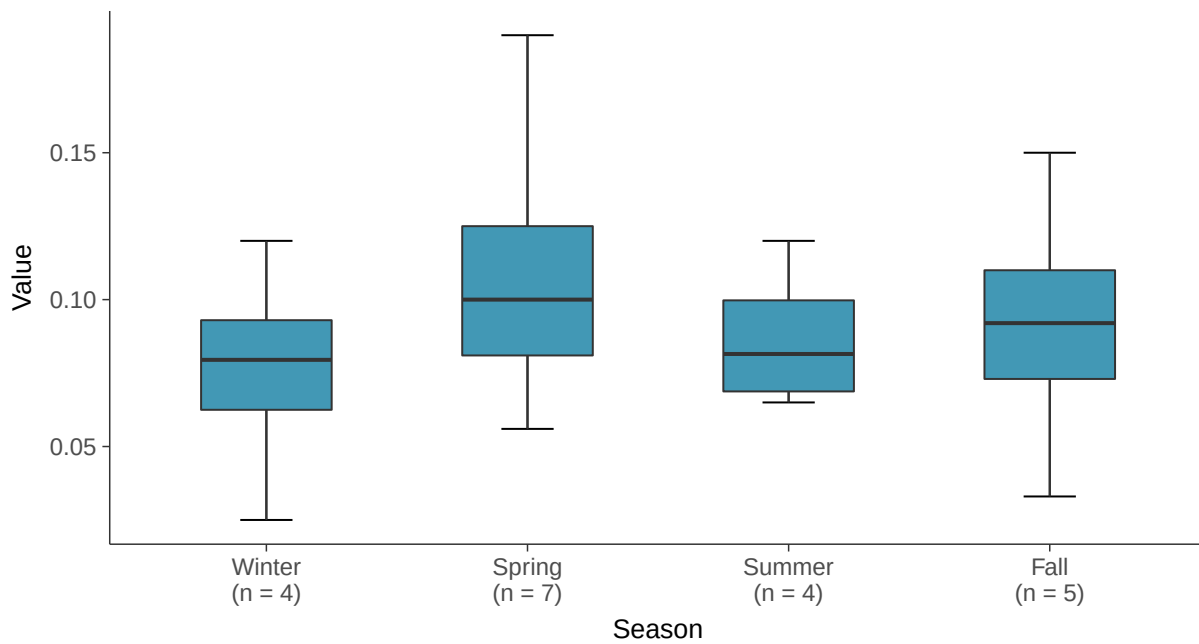
Boxplot

Lithium, MW-10 (mg/l)



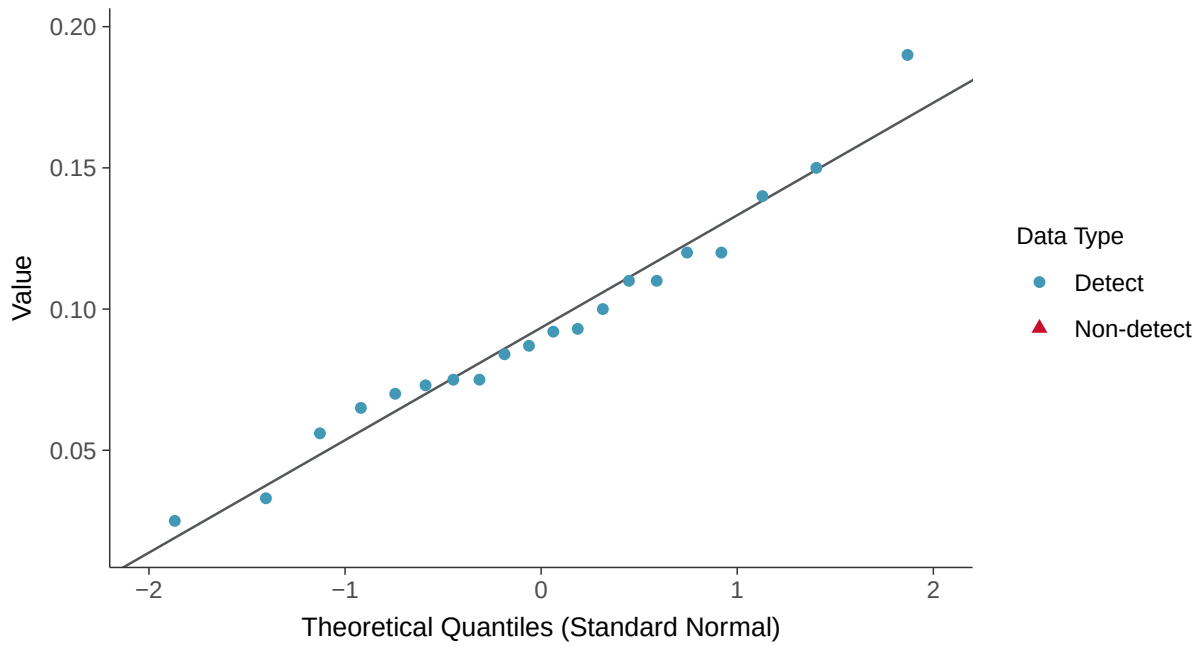
Boxplot by Season

Lithium, MW-10 (mg/l)



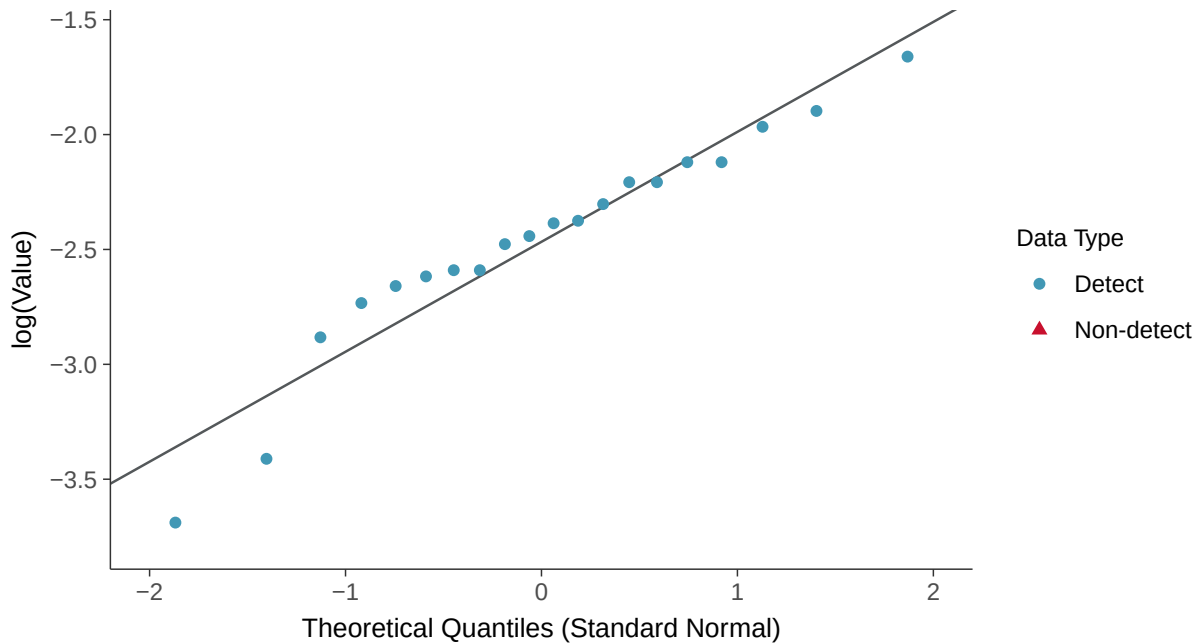
Normal Q-Q plot

Lithium, MW-10 (mg/l)

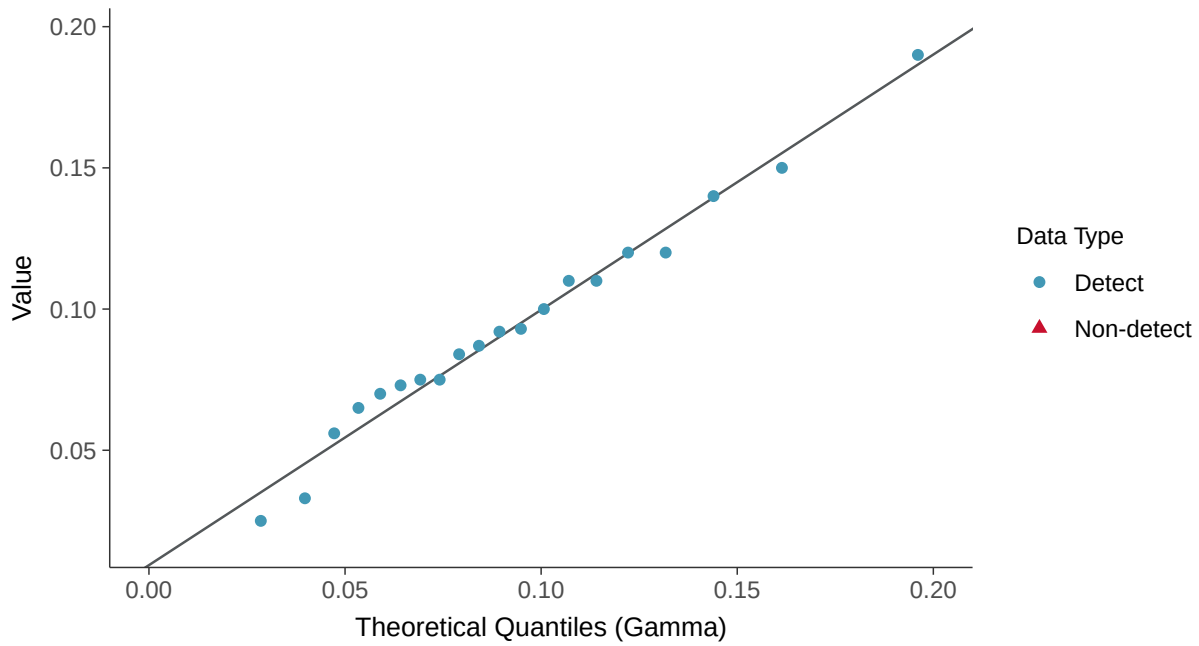


Lognormal Q-Q plot

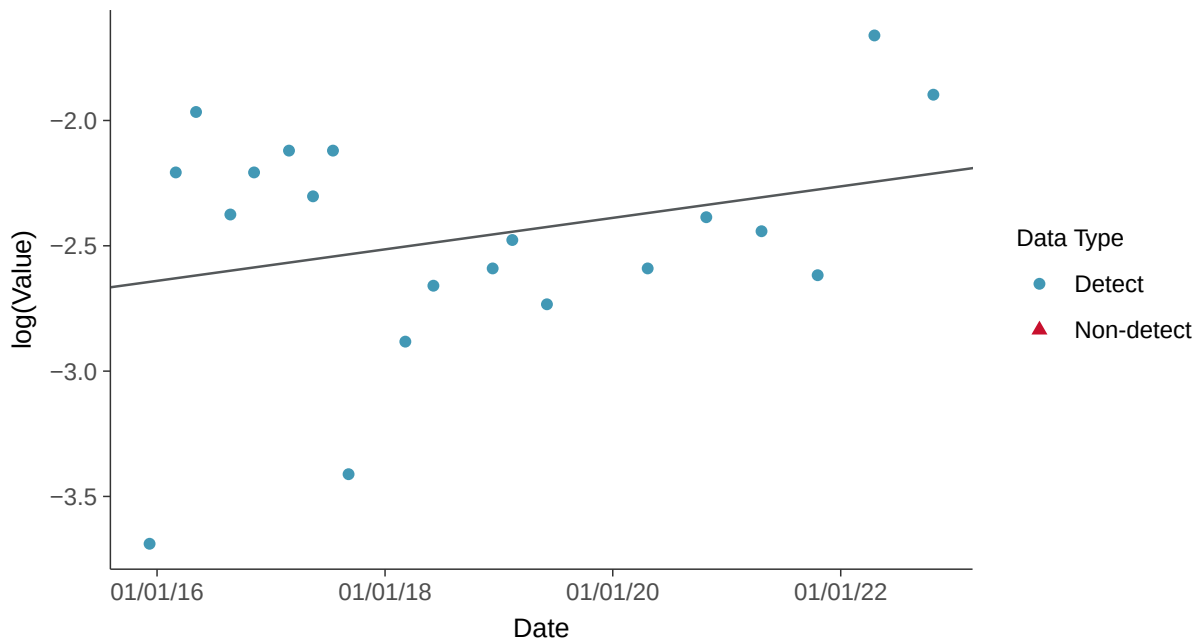
Lithium, MW-10 (mg/l)



Lithium, MW-10 (mg/l)

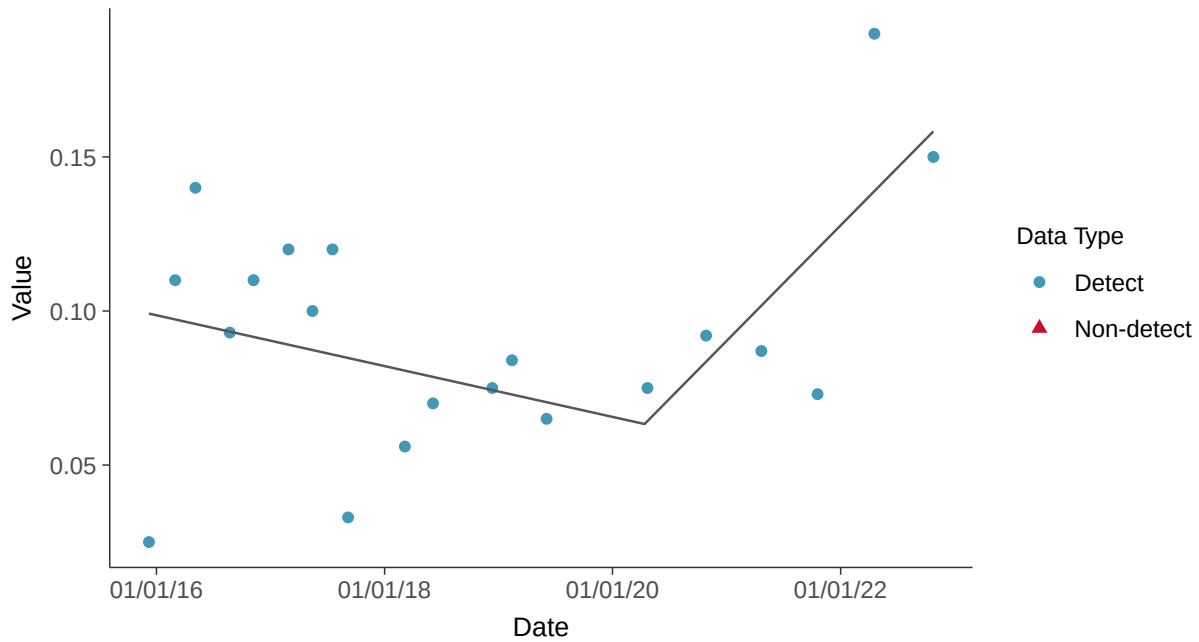


Lithium, MW-10 (mg/l)



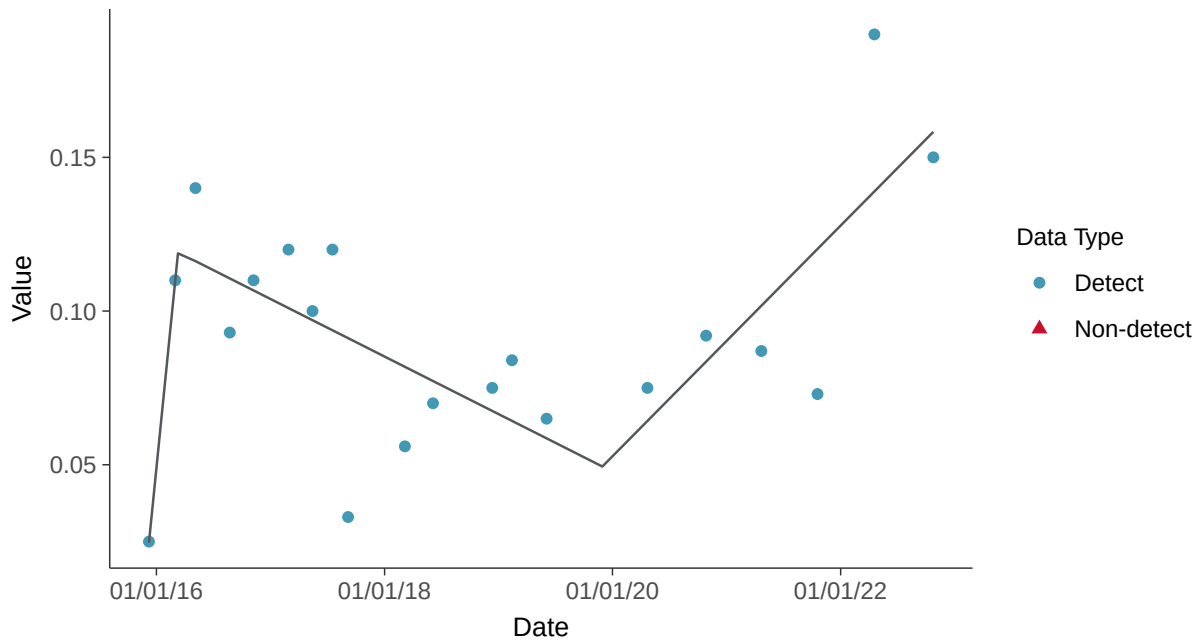
Trend Regression: Piecewise Linear-Linear

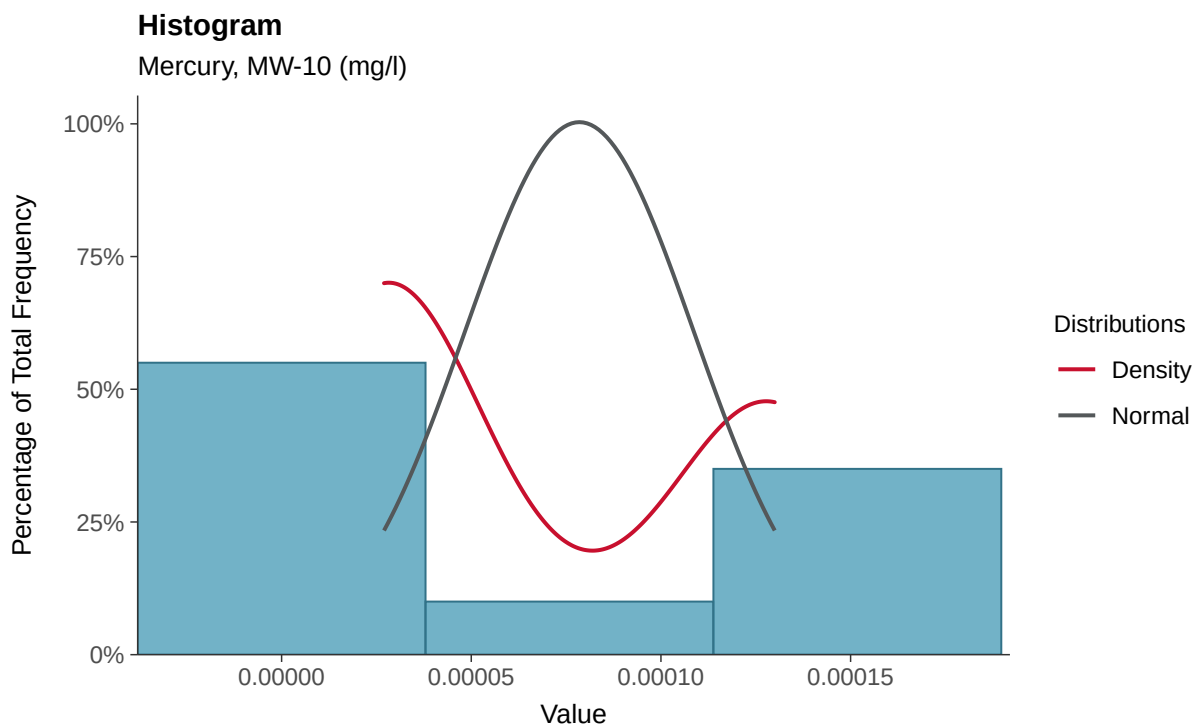
Lithium, MW-10 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

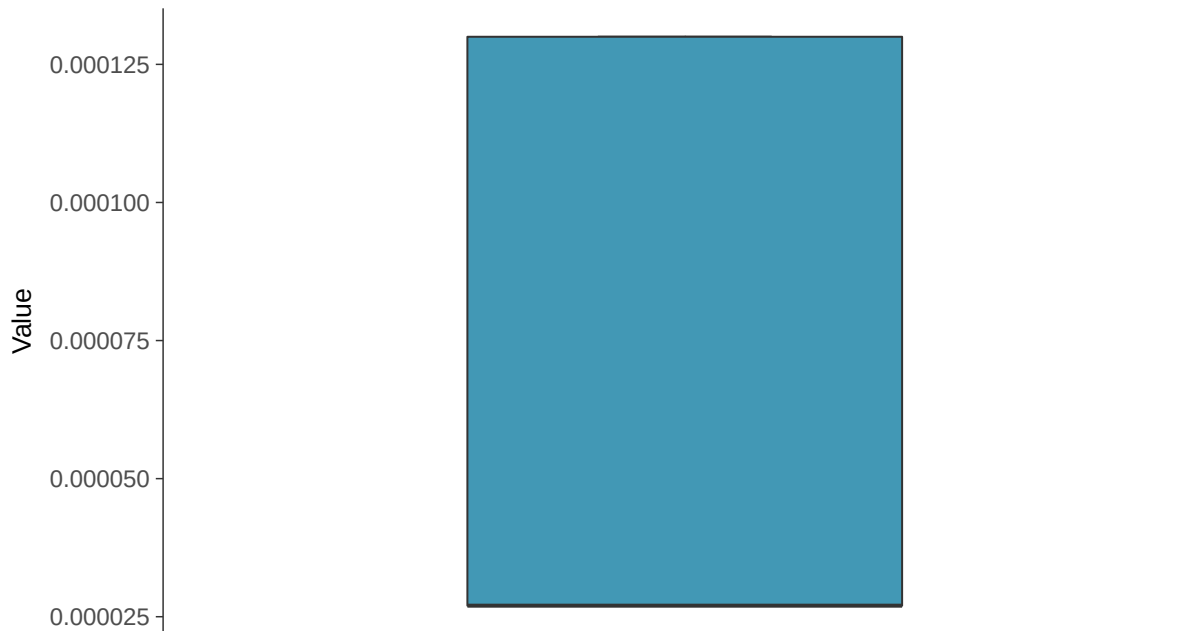
Lithium, MW-10 (mg/l)





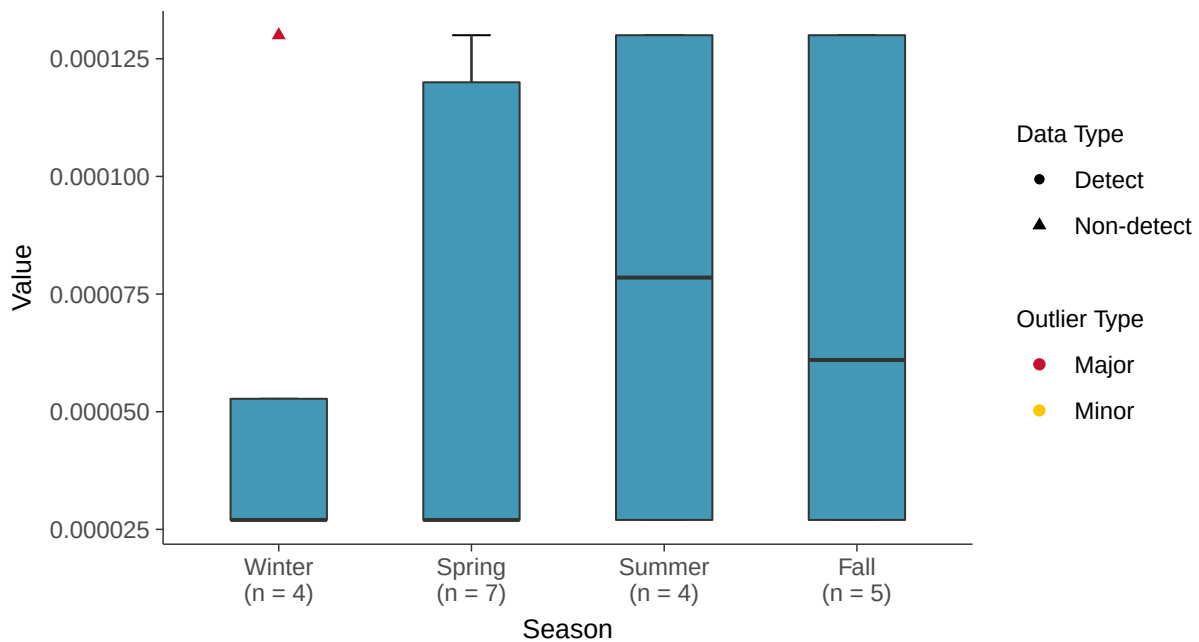
Boxplot

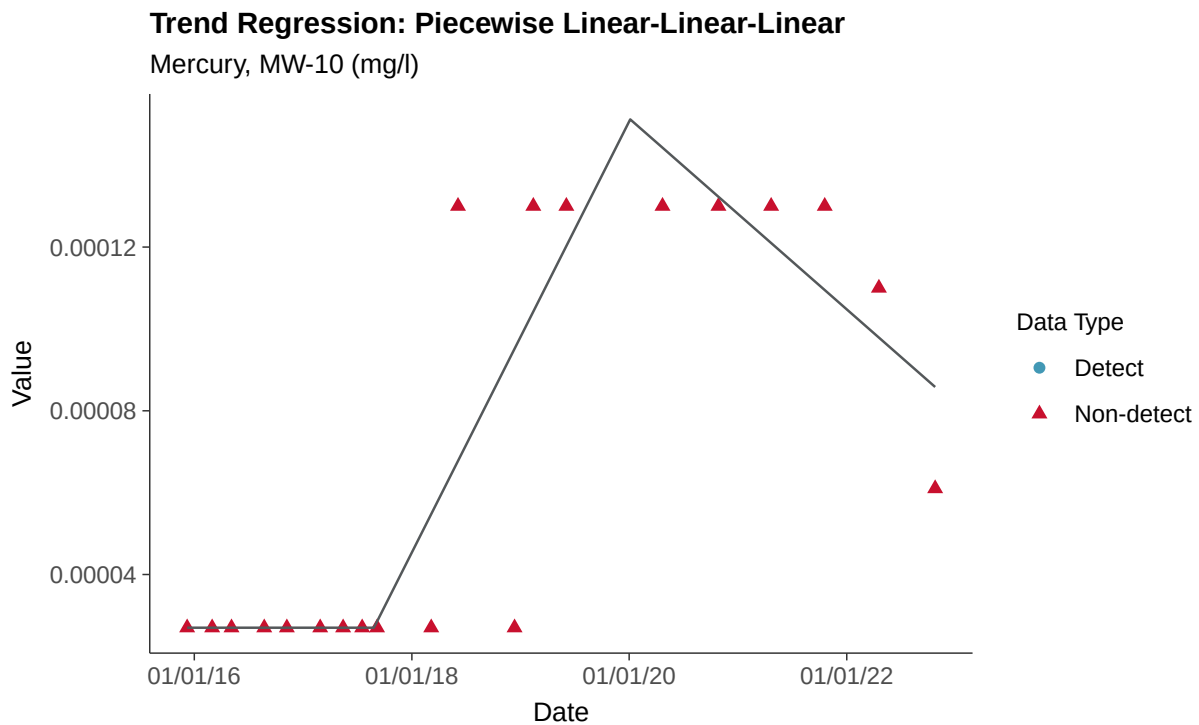
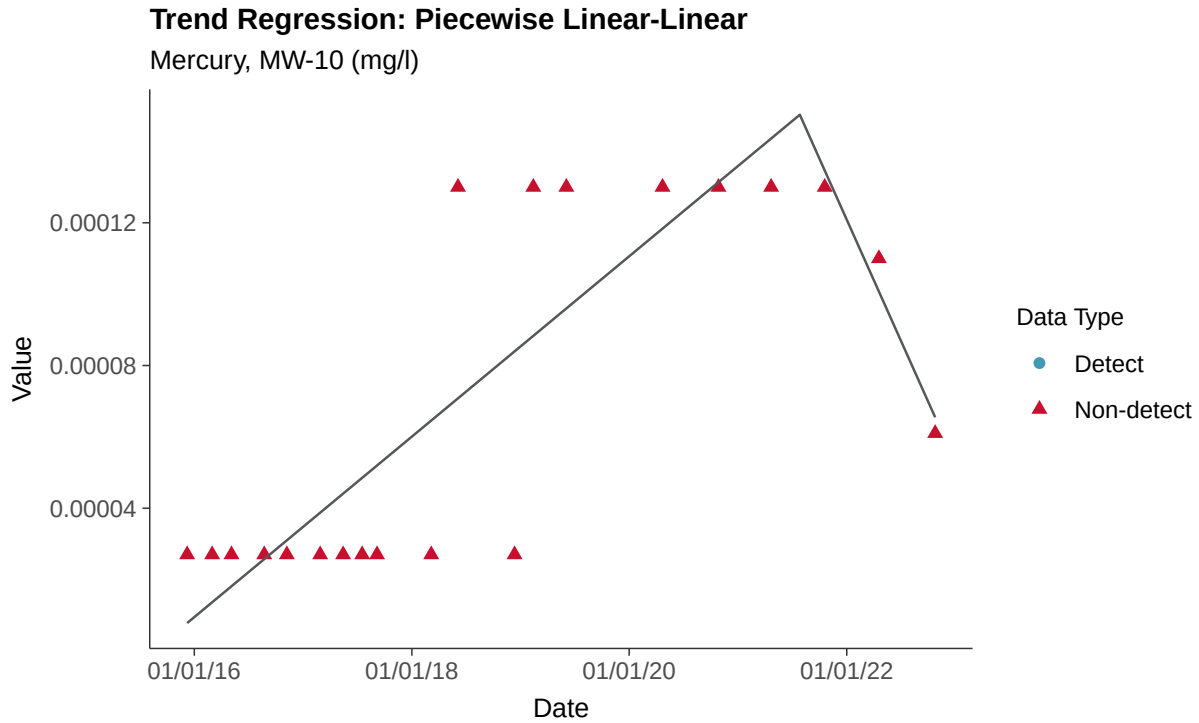
Mercury, MW-10 (mg/l)



Boxplot by Season

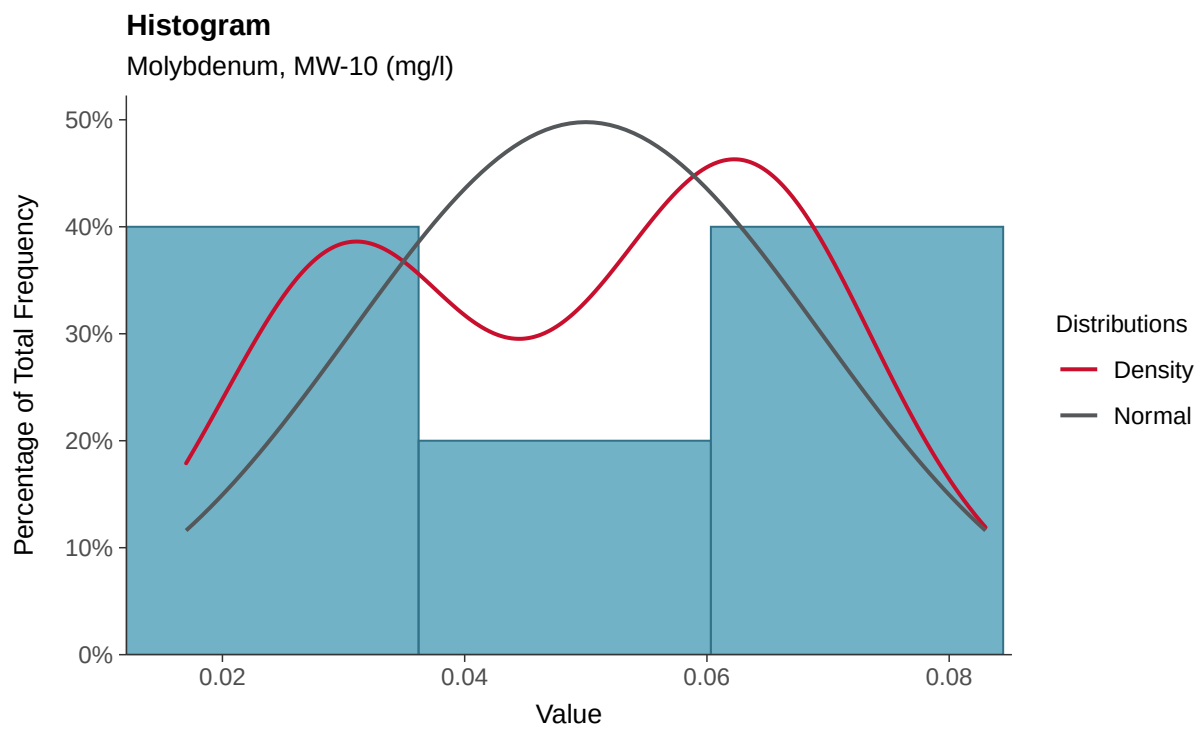
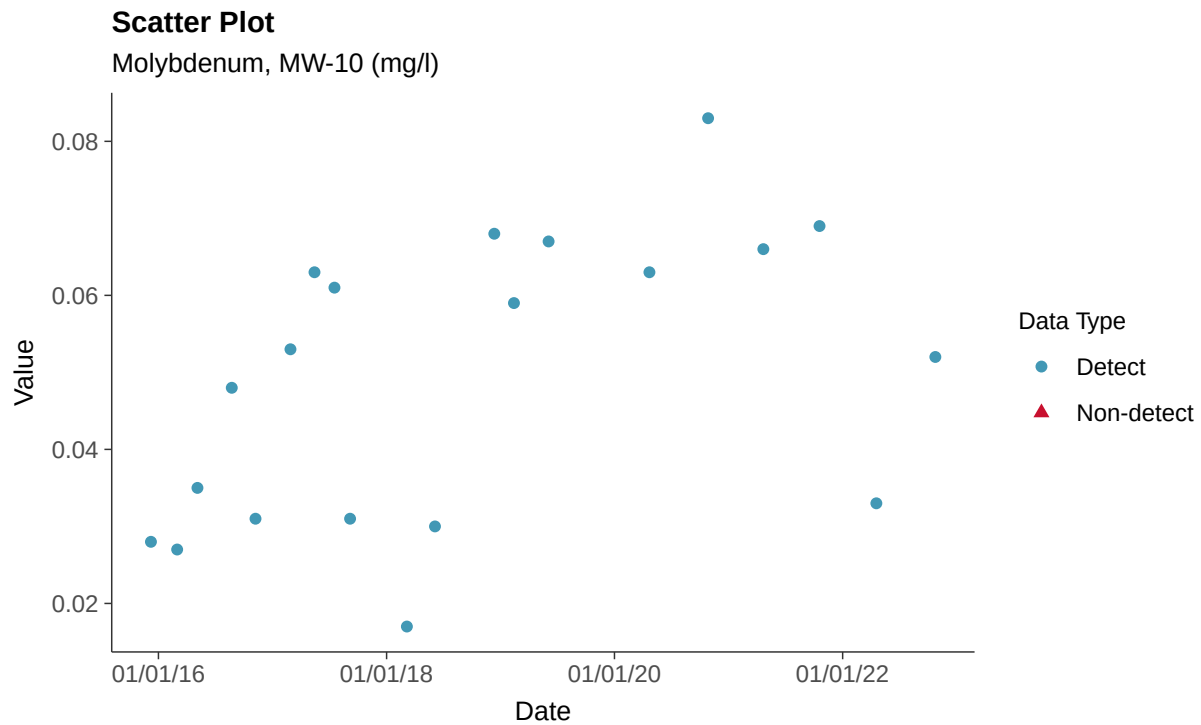
Mercury, MW-10 (mg/l)





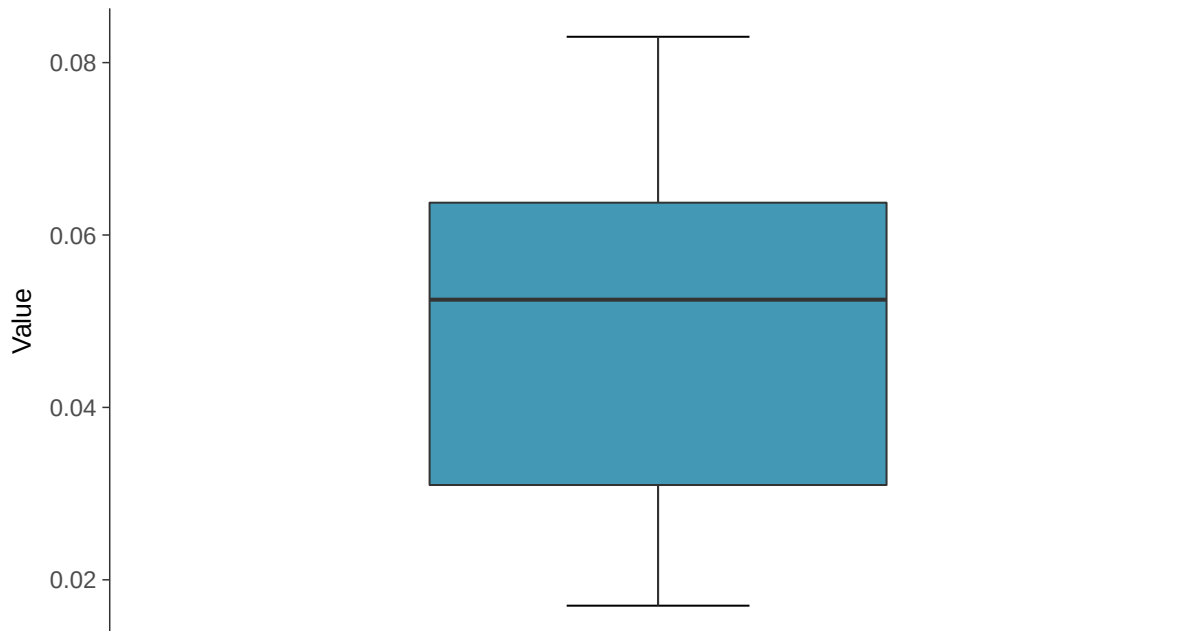
Appendix IV: Molybdenum, MW-10

ID: 1_2_121



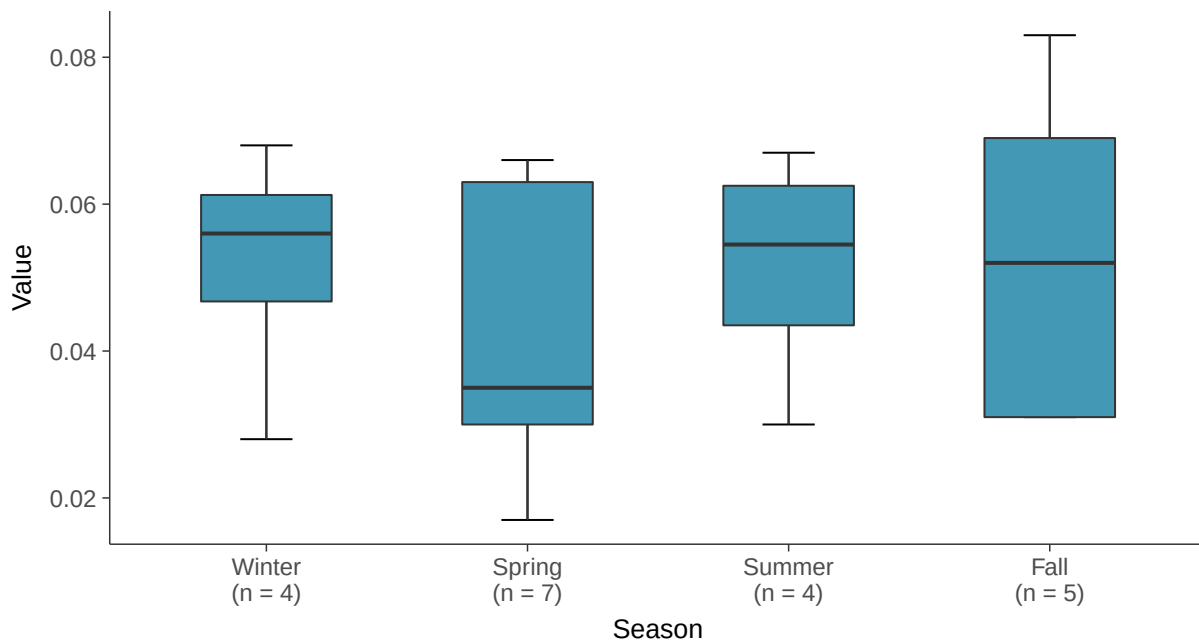
Boxplot

Molybdenum, MW-10 (mg/l)



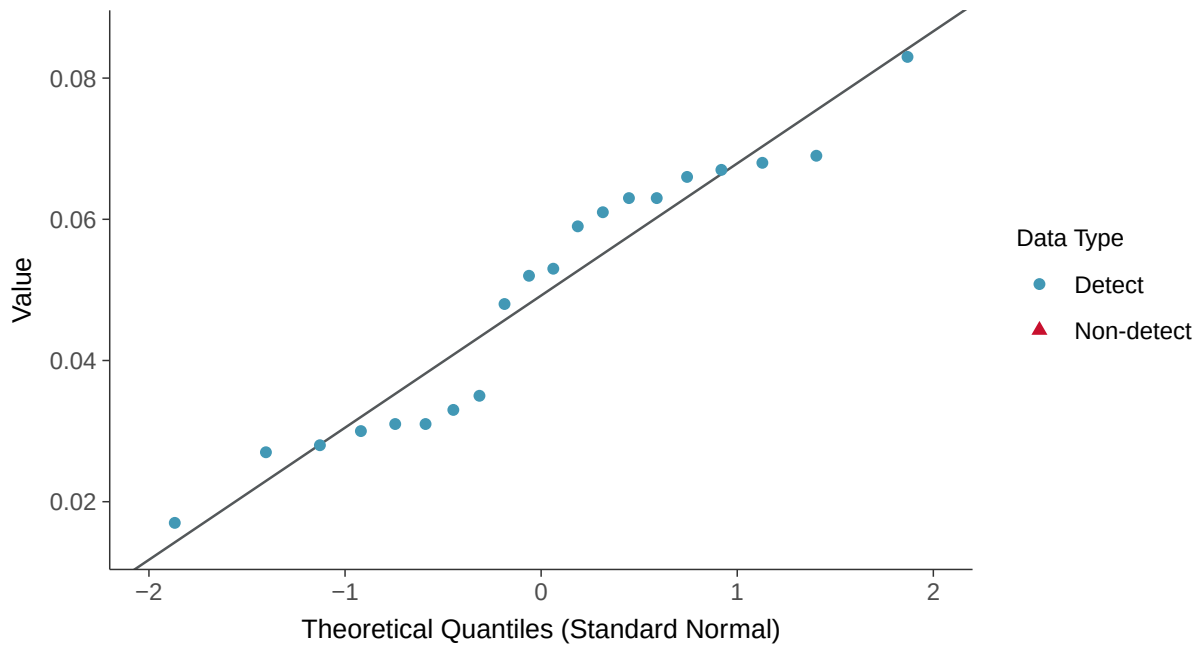
Boxplot by Season

Molybdenum, MW-10 (mg/l)



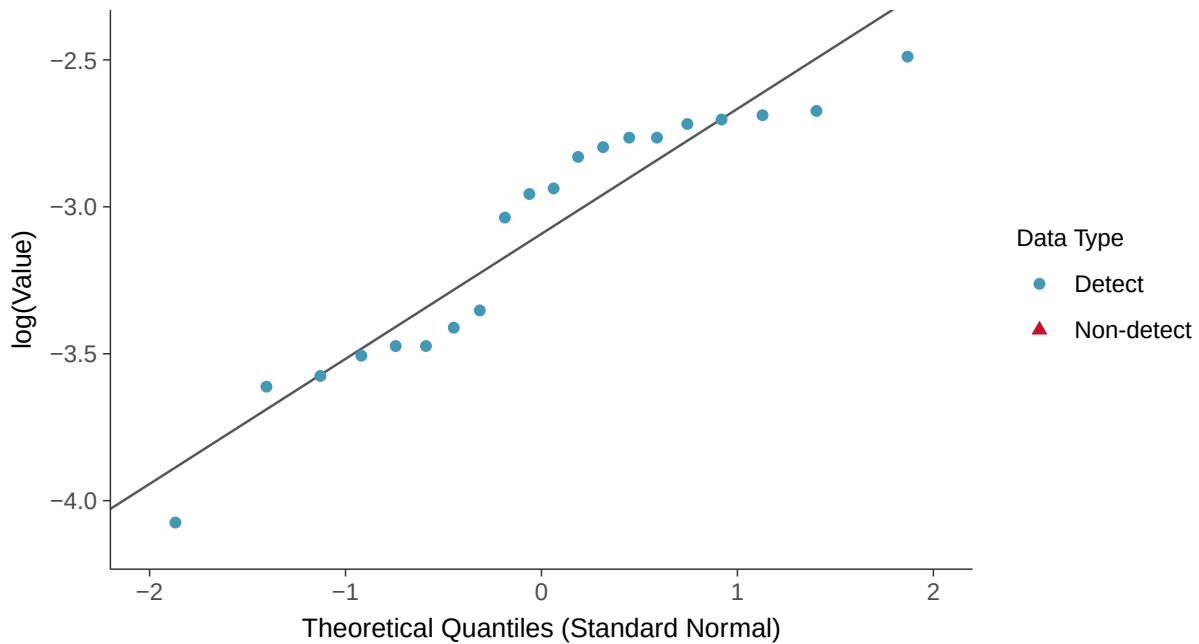
Normal Q-Q plot

Molybdenum, MW-10 (mg/l)



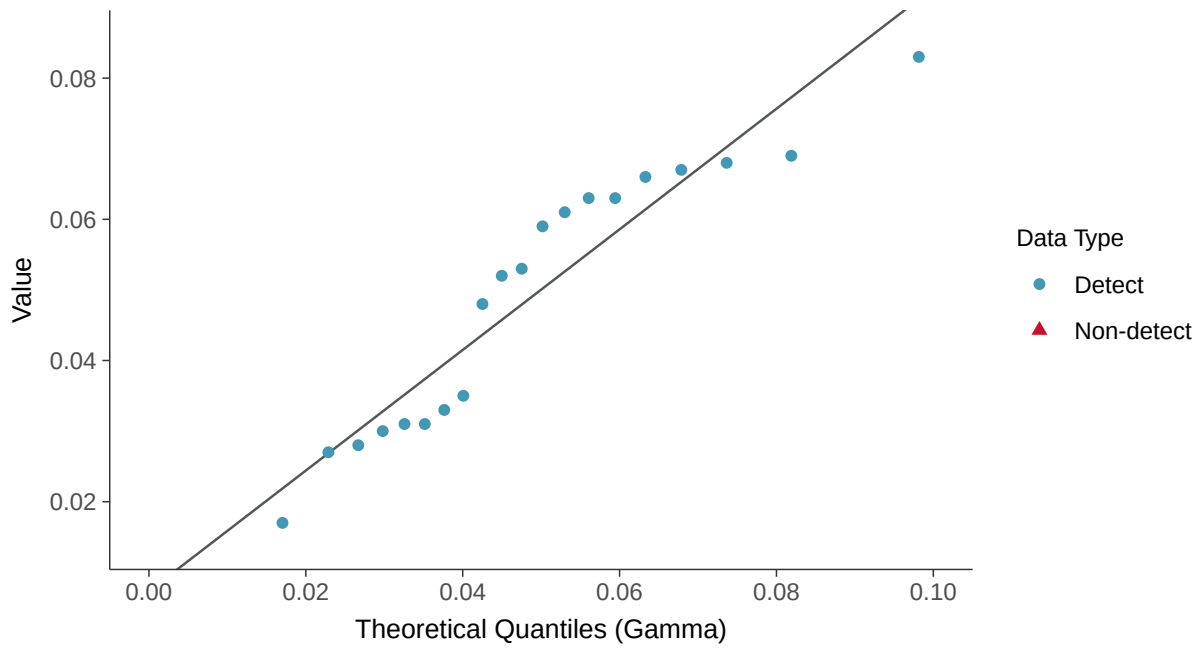
Lognormal Q-Q plot

Molybdenum, MW-10 (mg/l)



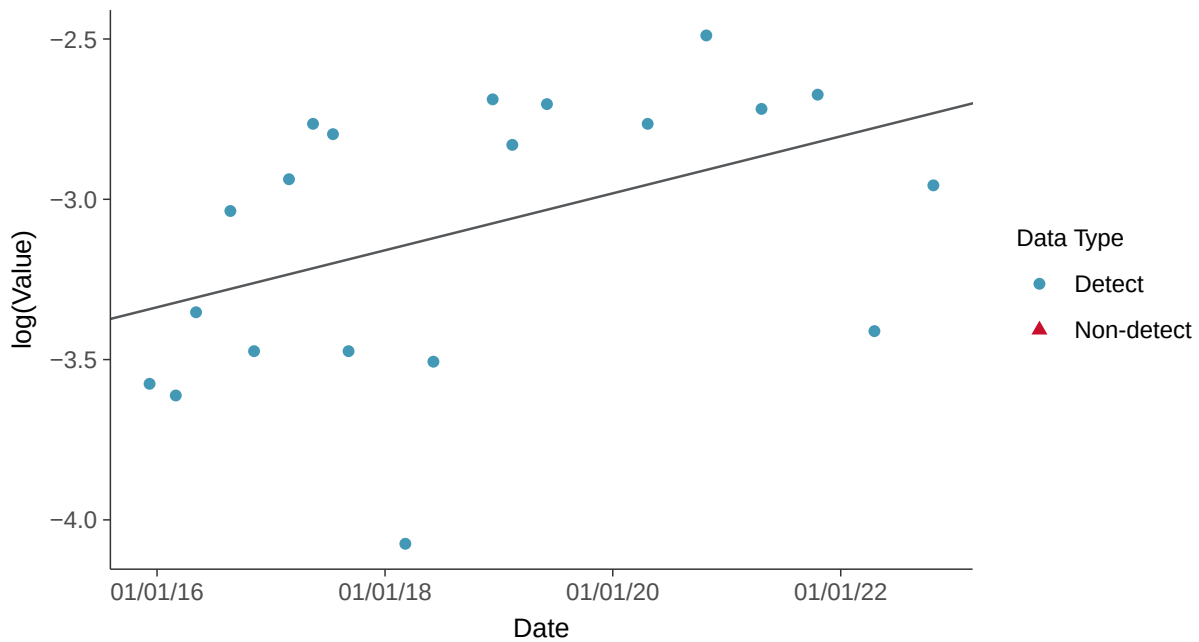
Gamma Q-Q plot

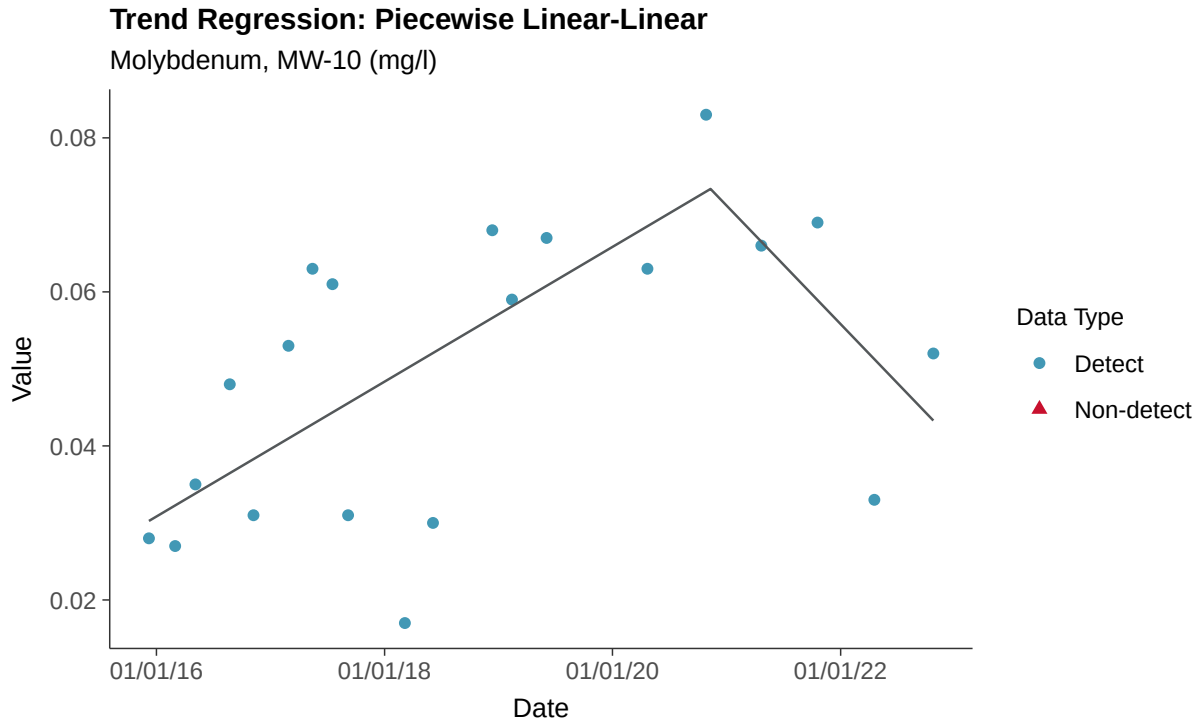
Molybdenum, MW-10 (mg/l)



Trend Regression: Lognormal MLE

Molybdenum, MW-10 (mg/l)



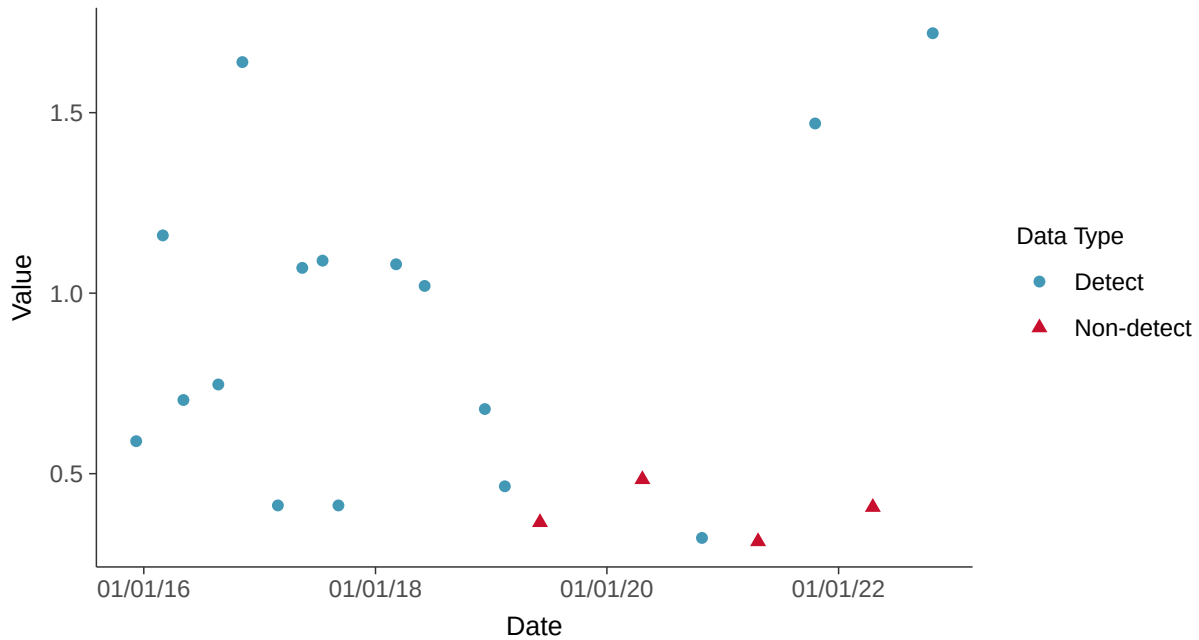


Appendix IV: Radium-226+228, MW-10

ID: 1_2_127

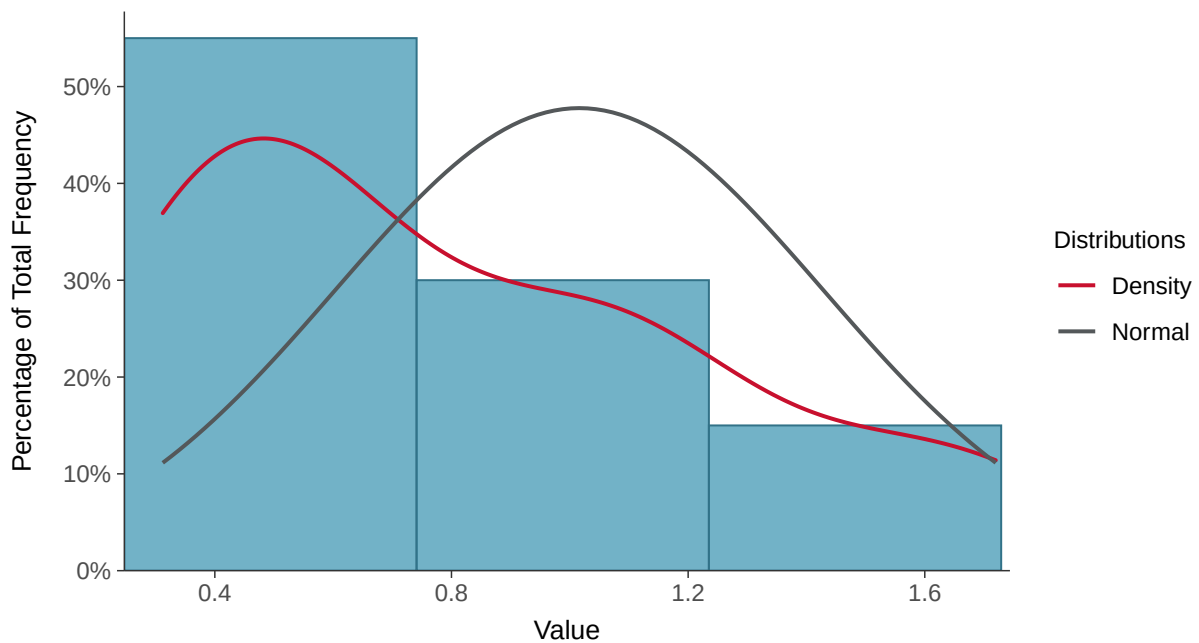
Scatter Plot

Radium-226+228, MW-10 (pci/l)



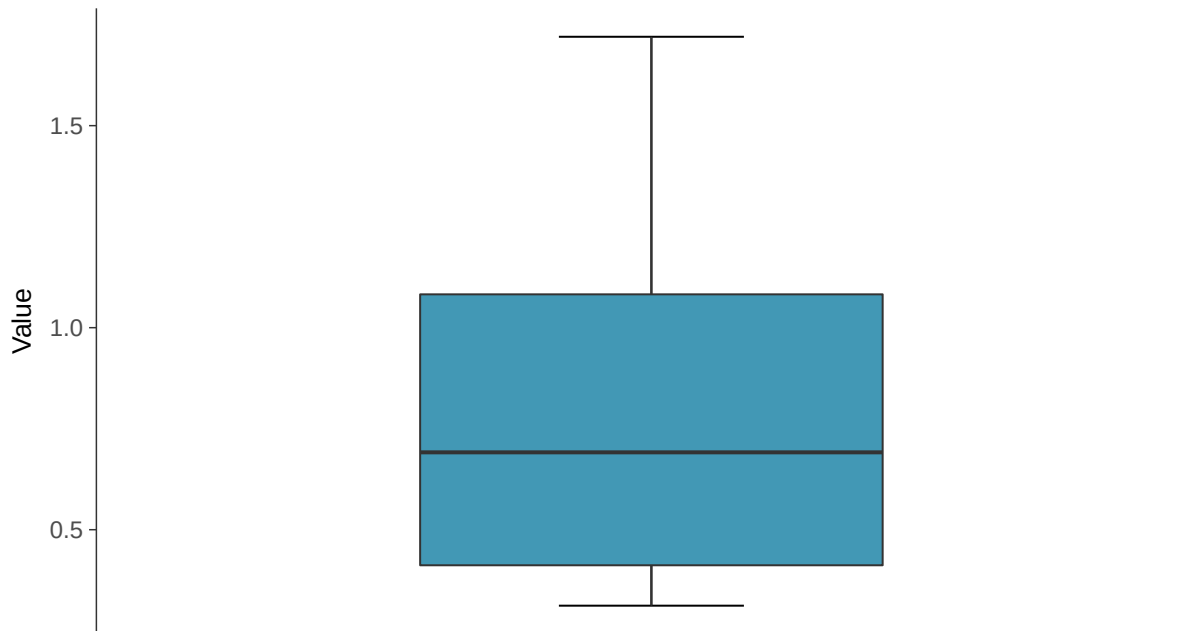
Histogram

Radium-226+228, MW-10 (pci/l)



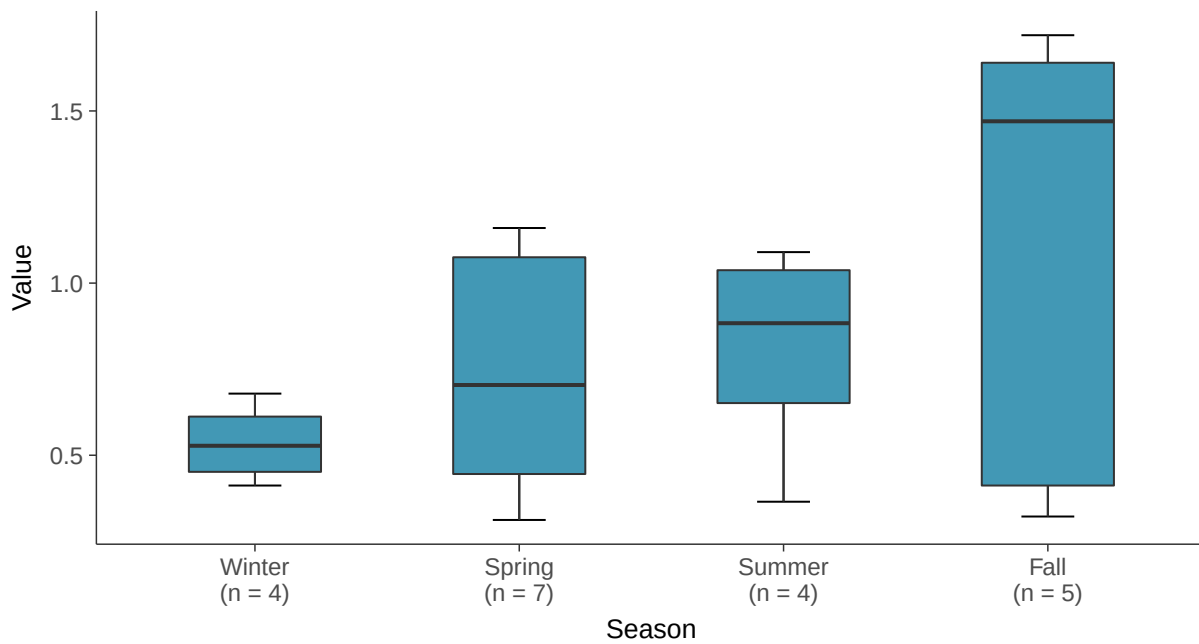
Boxplot

Radium-226+228, MW-10 (pci/l)



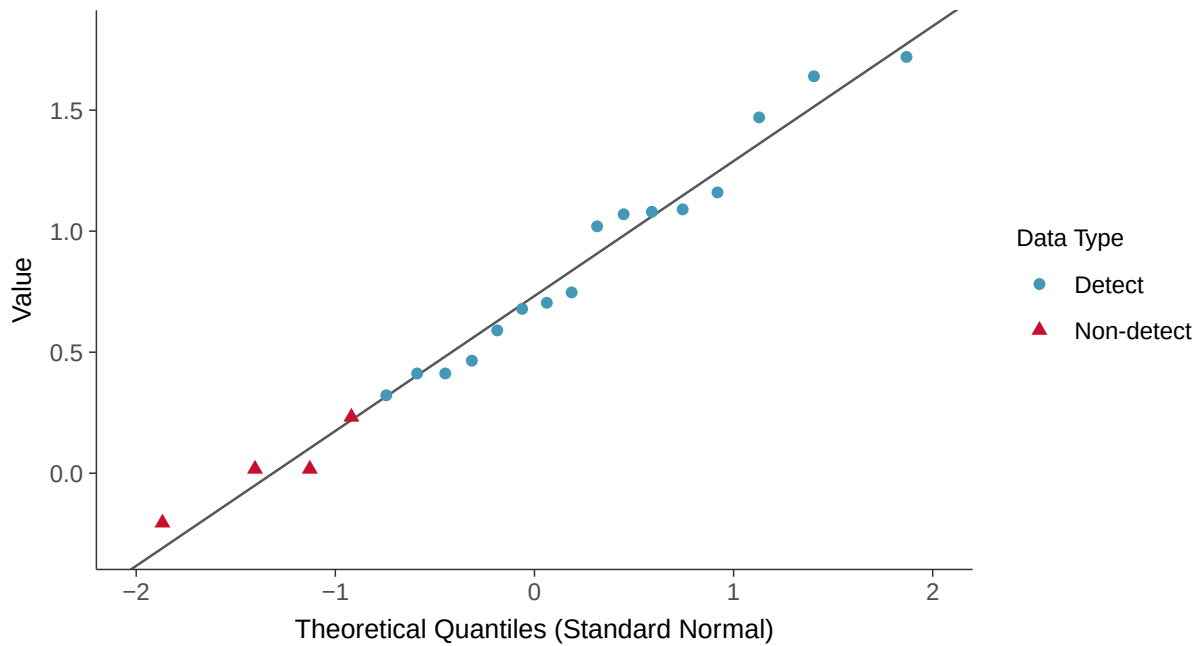
Boxplot by Season

Radium-226+228, MW-10 (pci/l)



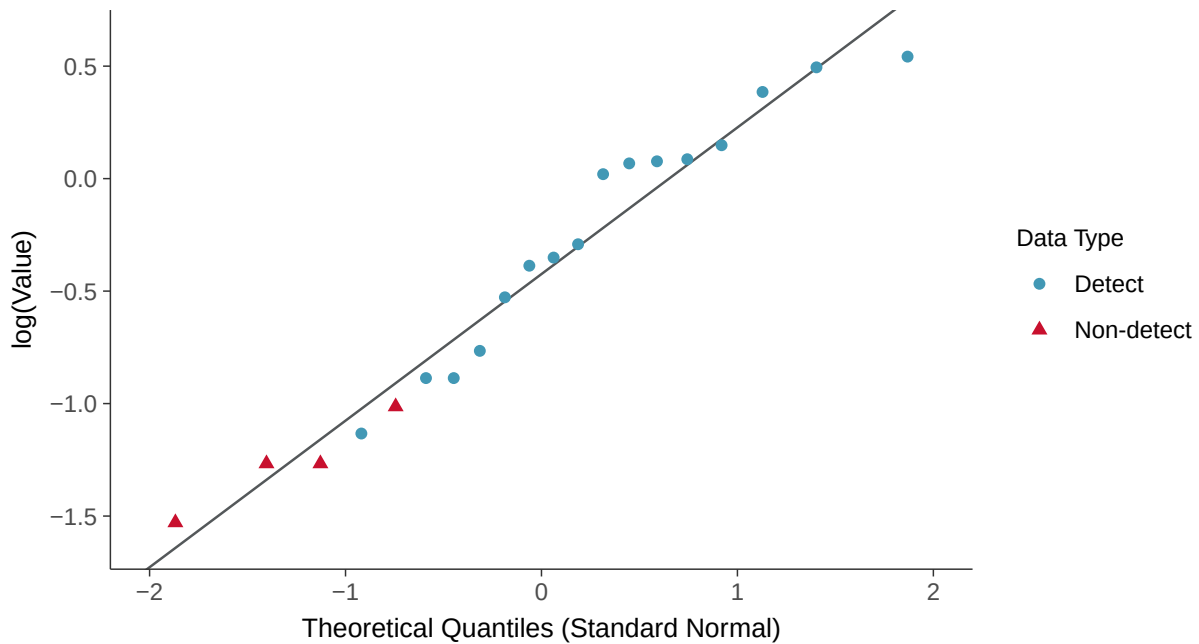
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-10 (pci/l)



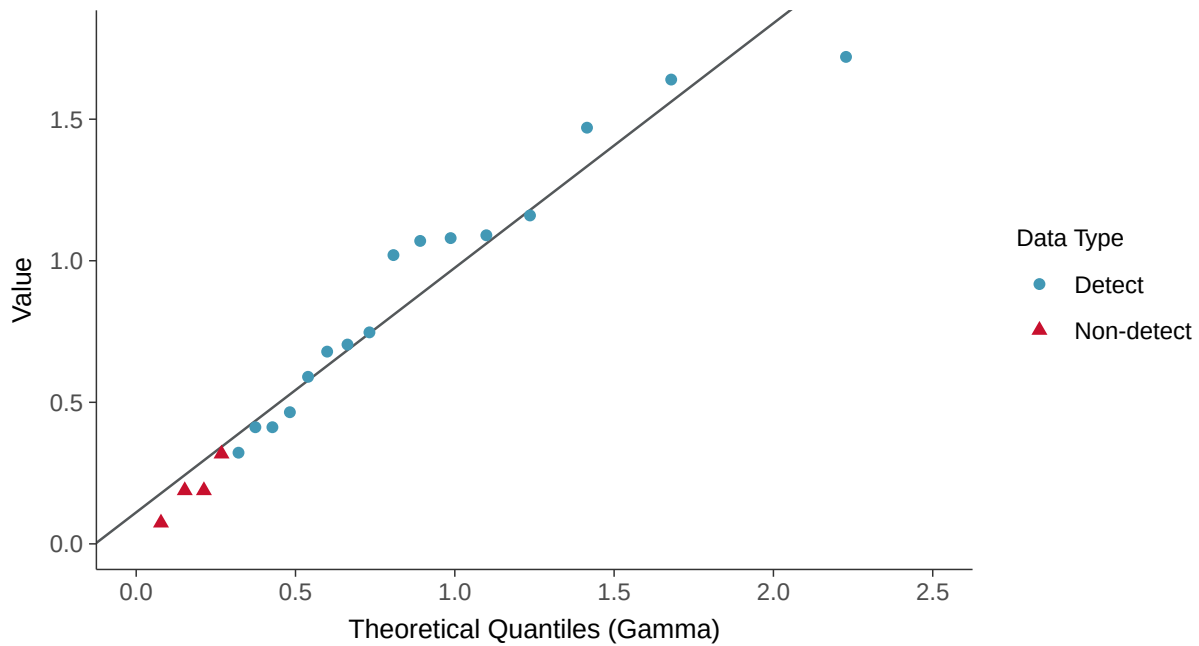
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-10 (pci/l)



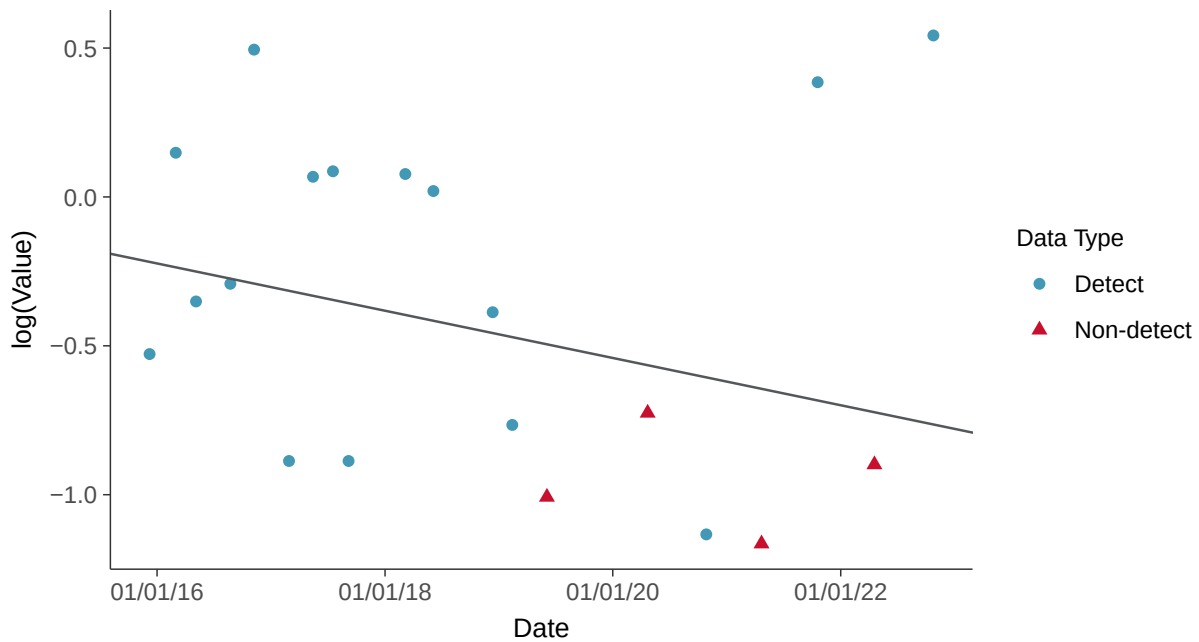
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-10 (pci/l)



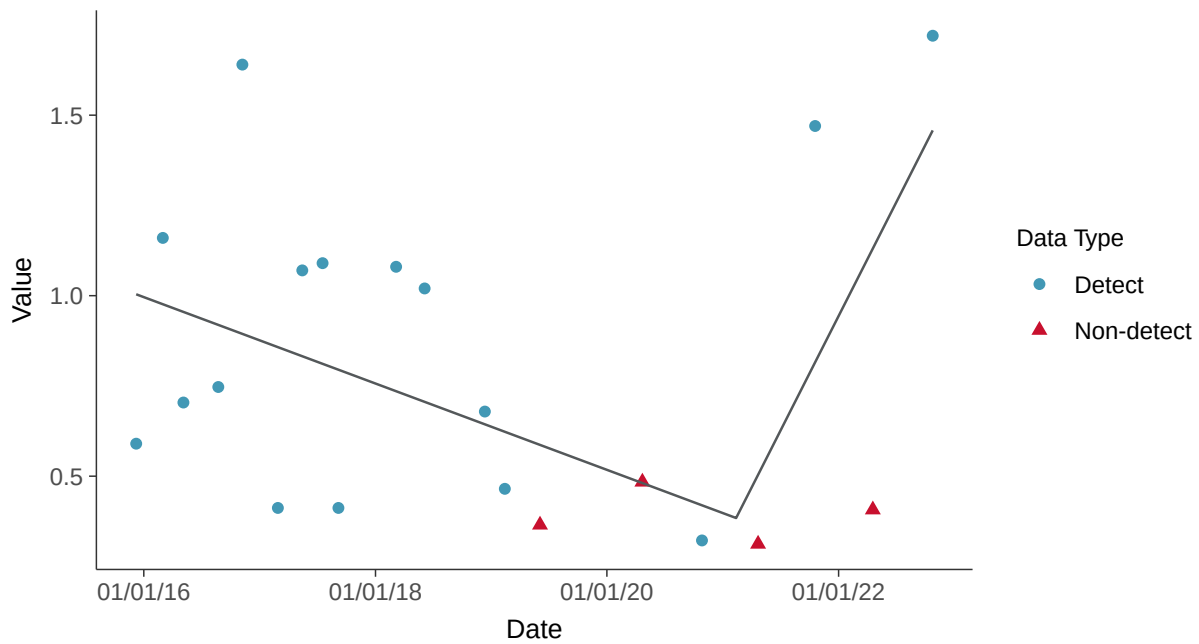
Trend Regression: Lognormal MLE

Radium-226+228, MW-10 (pci/l)



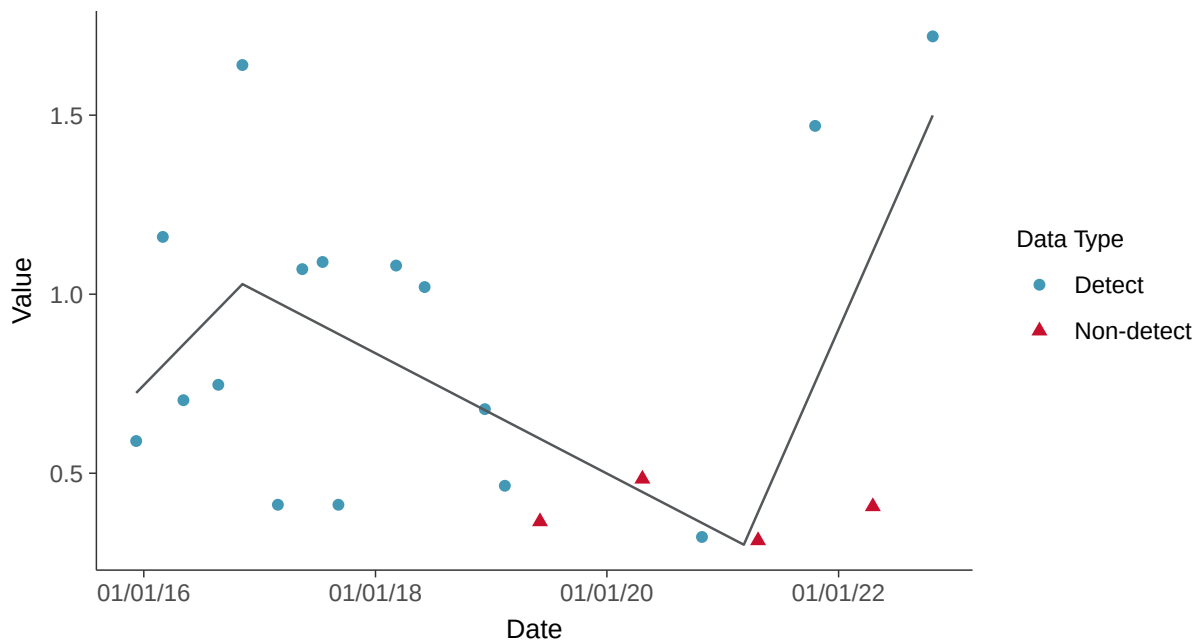
Trend Regression: Piecewise Linear-Linear

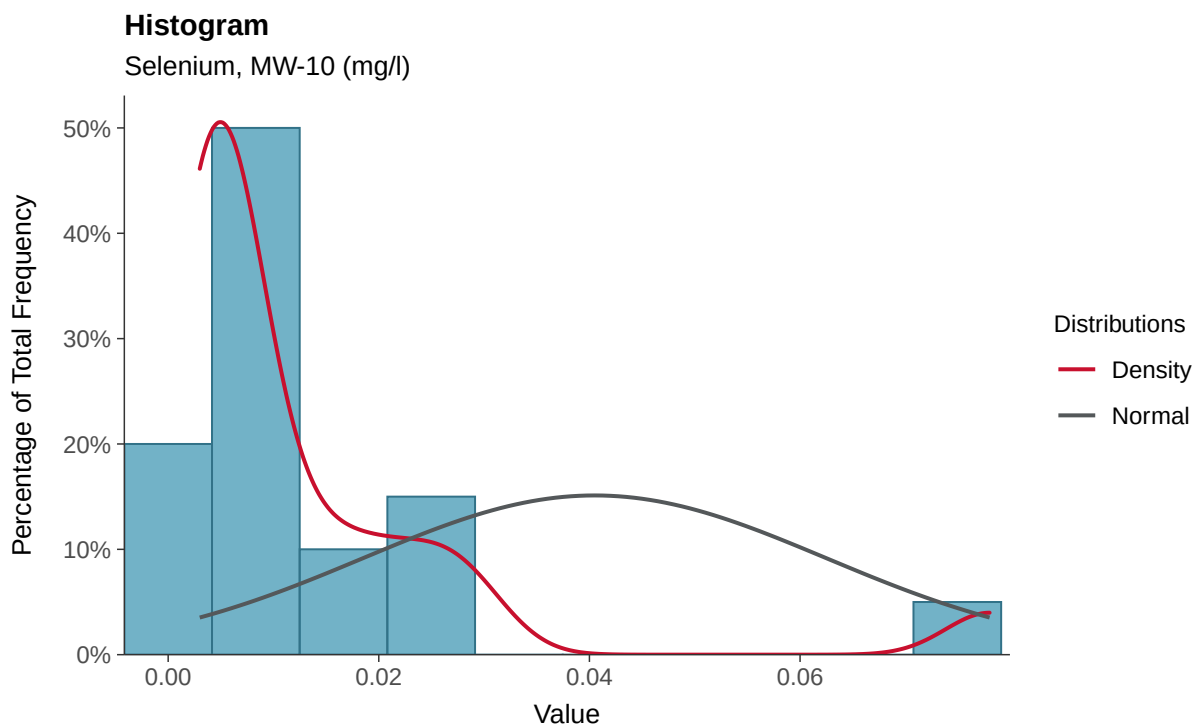
Radium-226+228, MW-10 (pci/l)

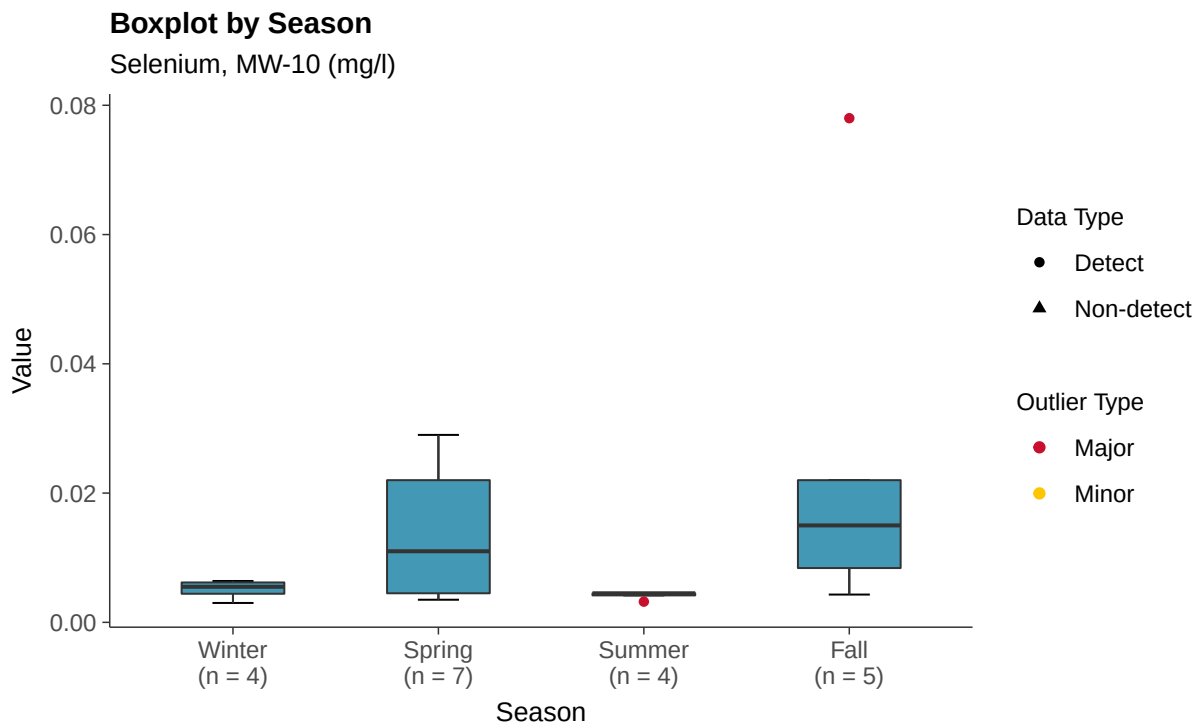
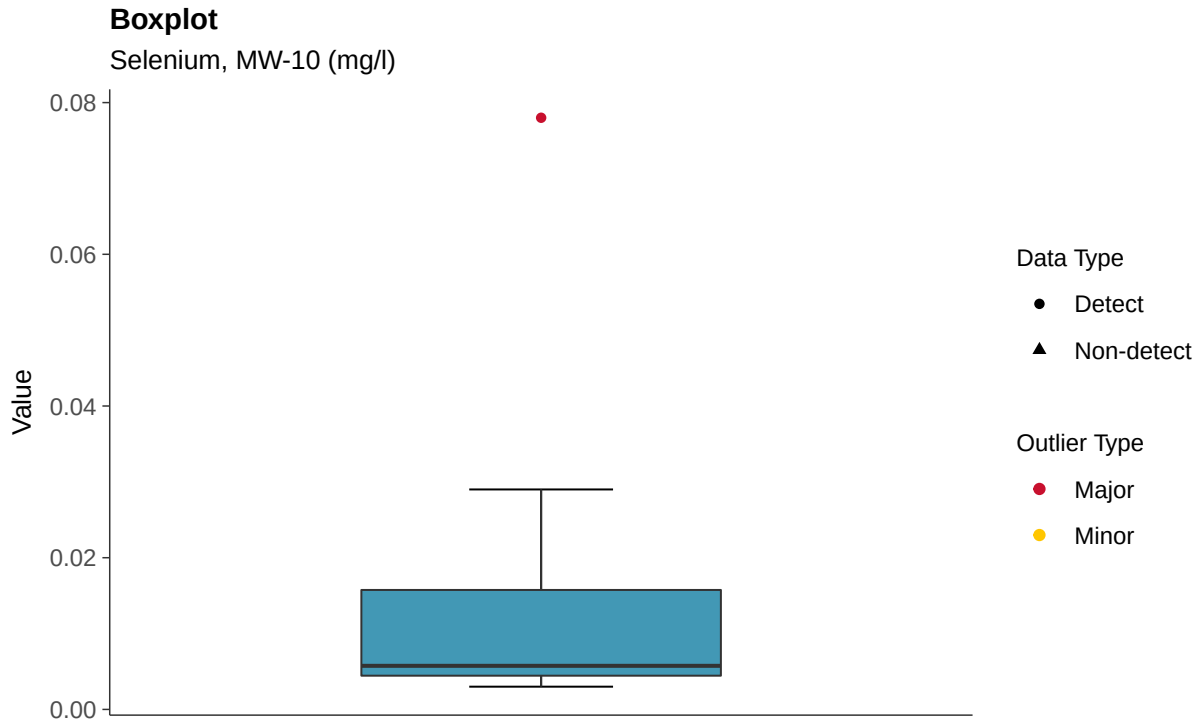


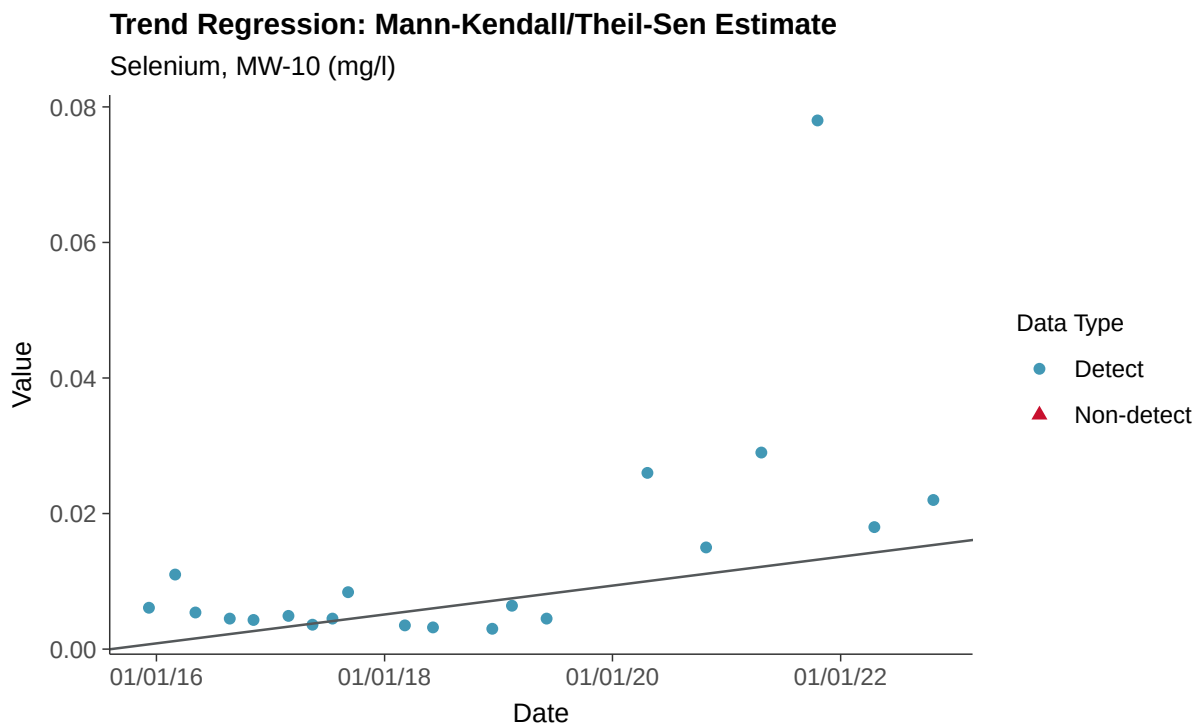
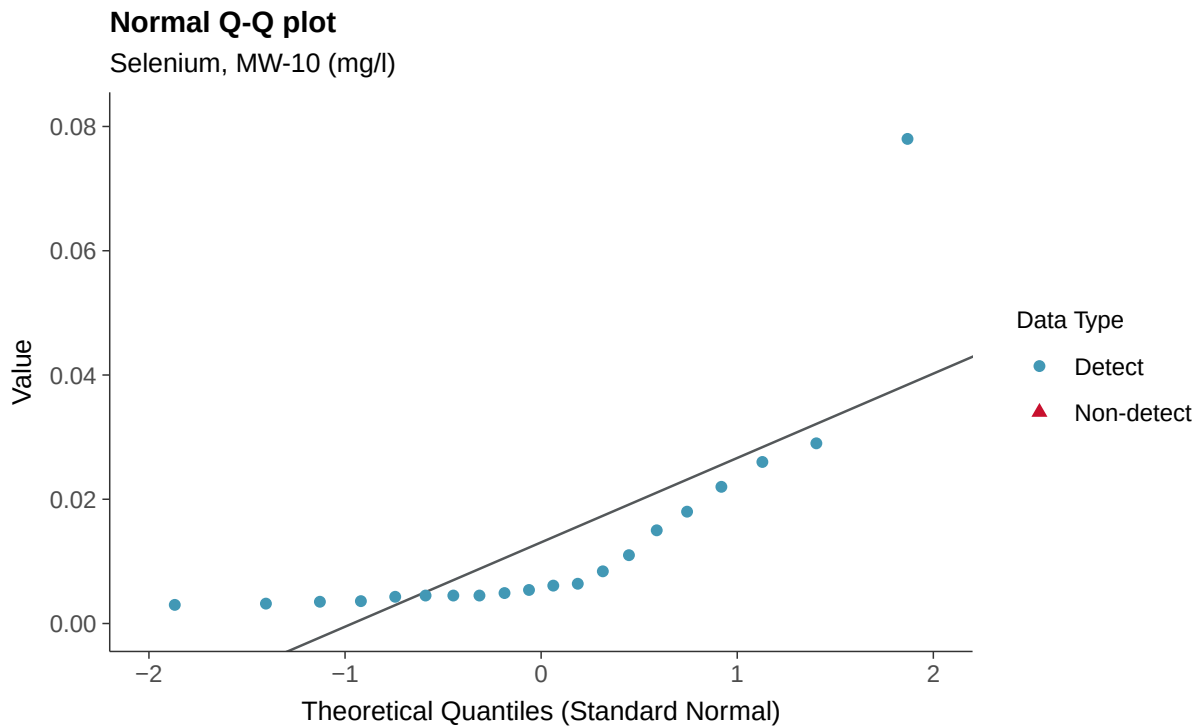
Trend Regression: Piecewise Linear-Linear-Linear

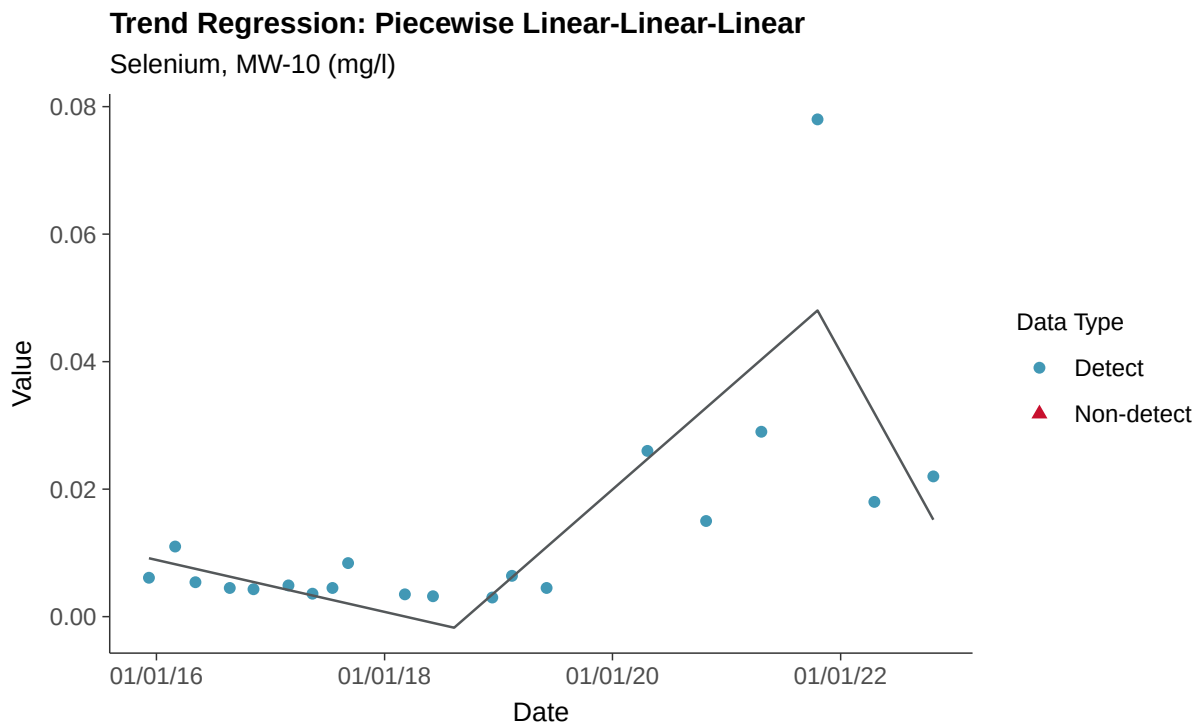
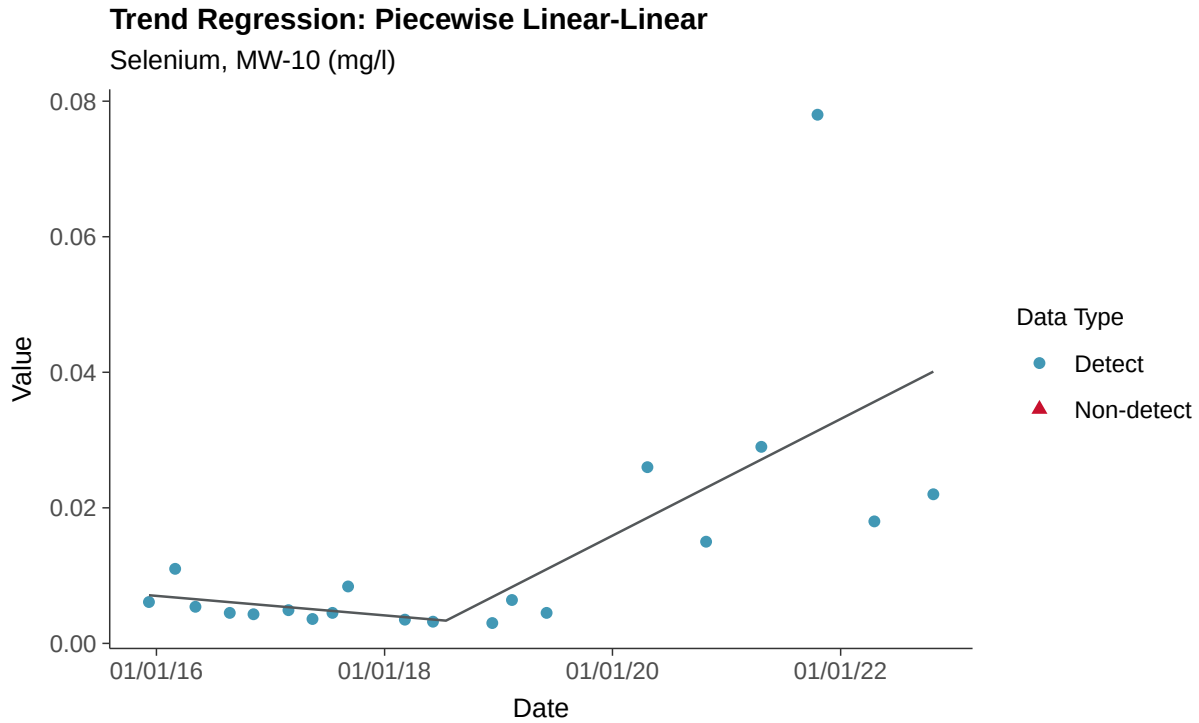
Radium-226+228, MW-10 (pci/l)





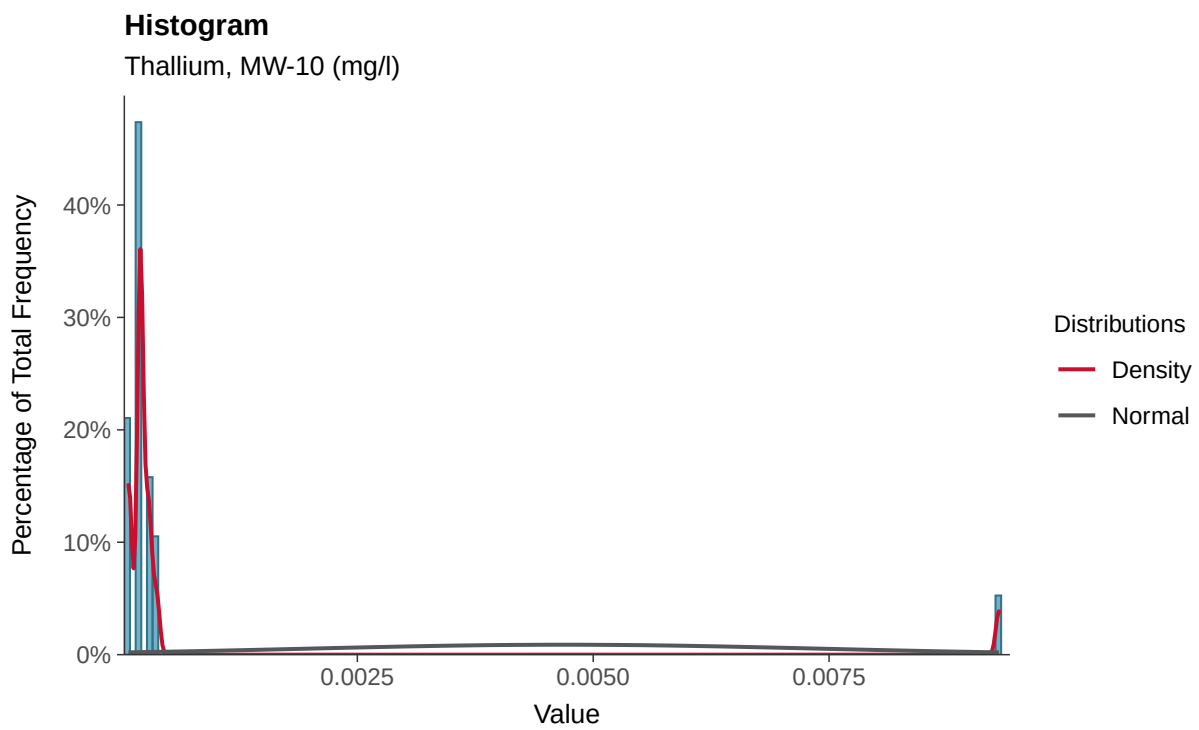
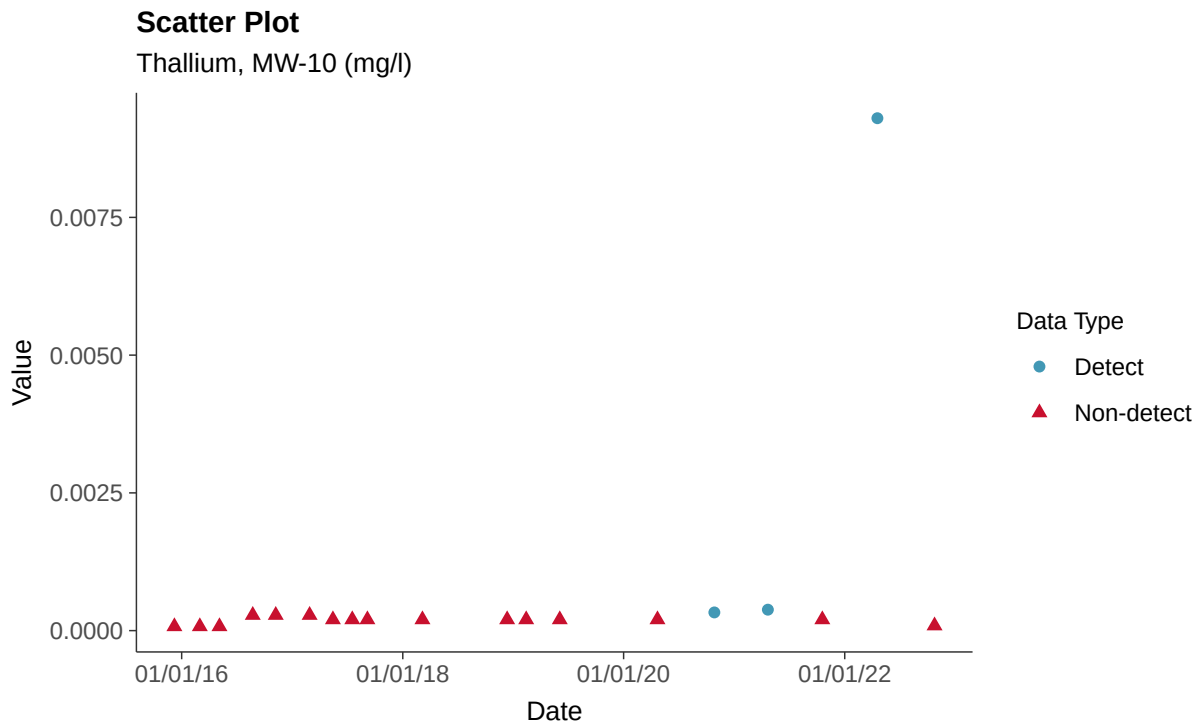






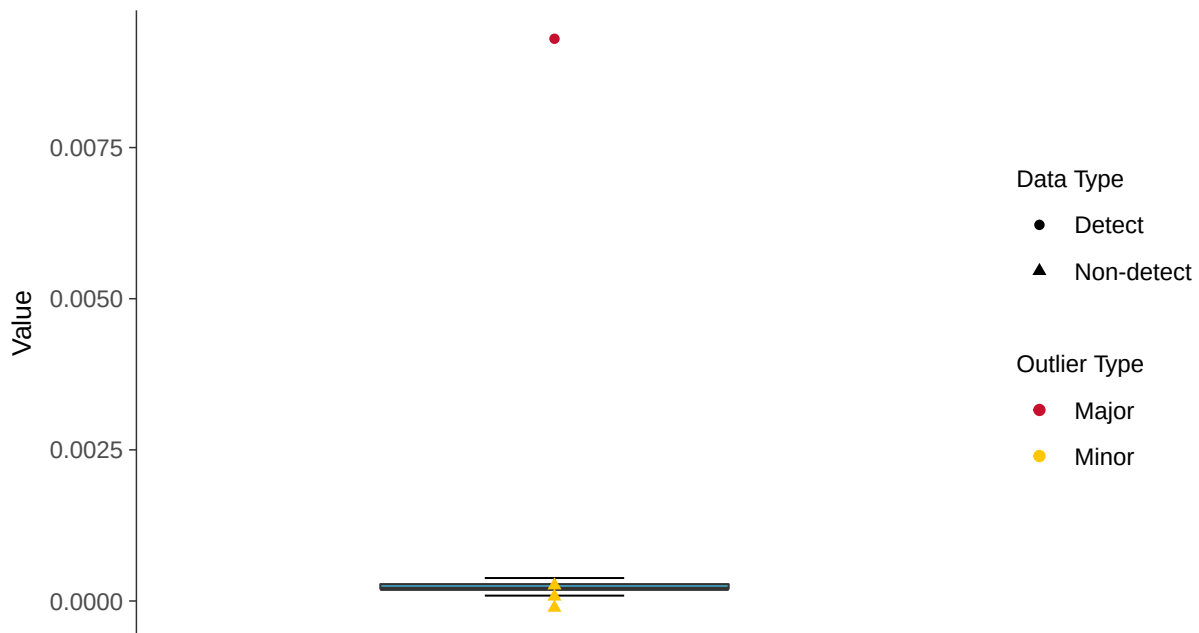
Appendix IV: Thallium, MW-10

ID: 1_2_134



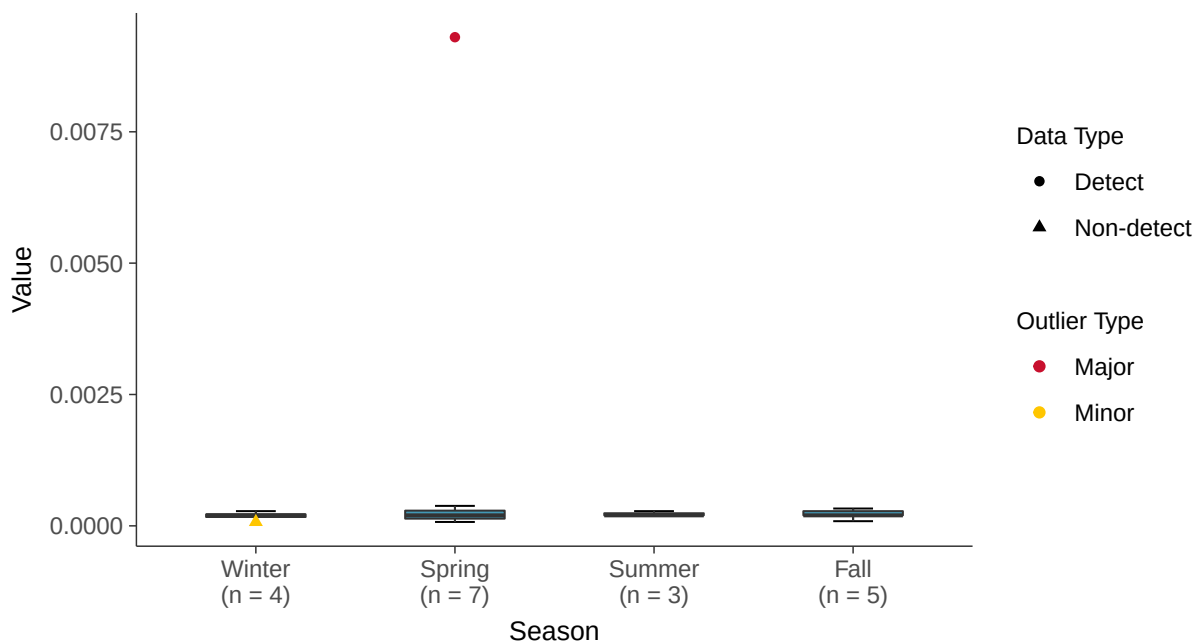
Boxplot

Thallium, MW-10 (mg/l)



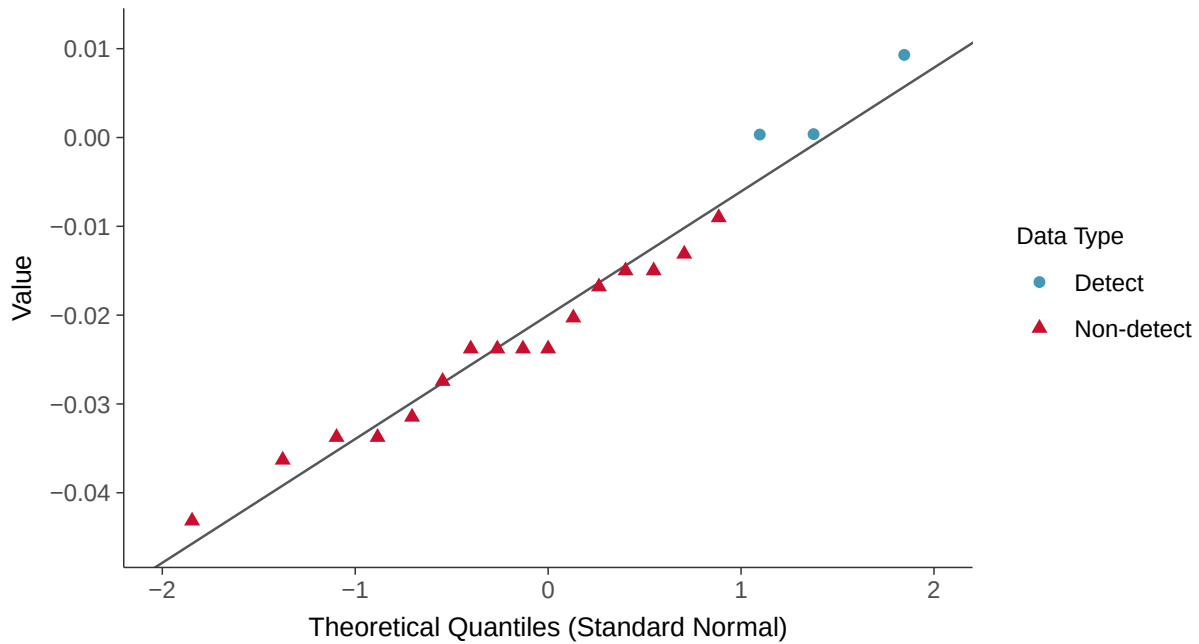
Boxplot by Season

Thallium, MW-10 (mg/l)



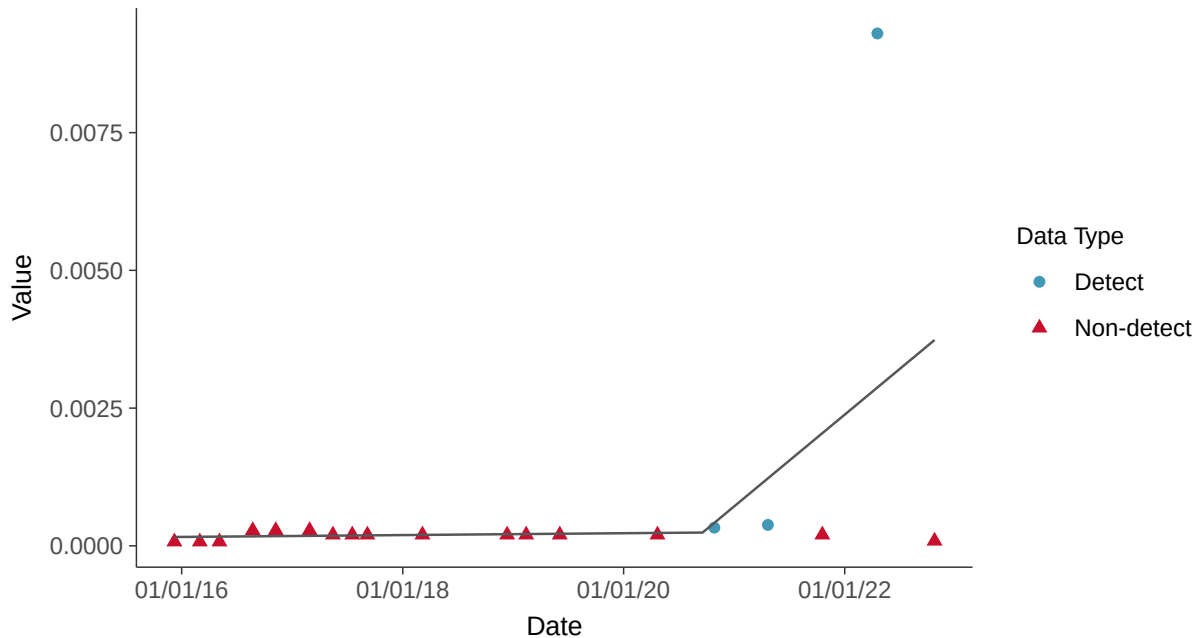
Normal Q-Q plot using ROS Imputed Estimates

Thallium, MW-10 (mg/l)

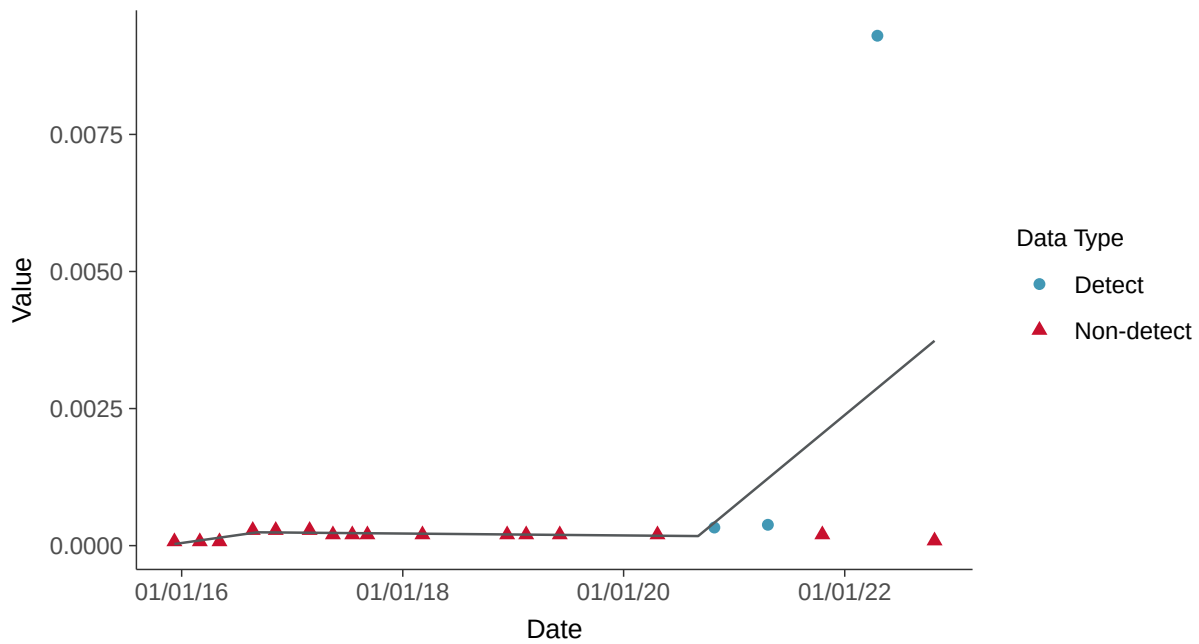


Trend Regression: Piecewise Linear-Linear

Thallium, MW-10 (mg/l)

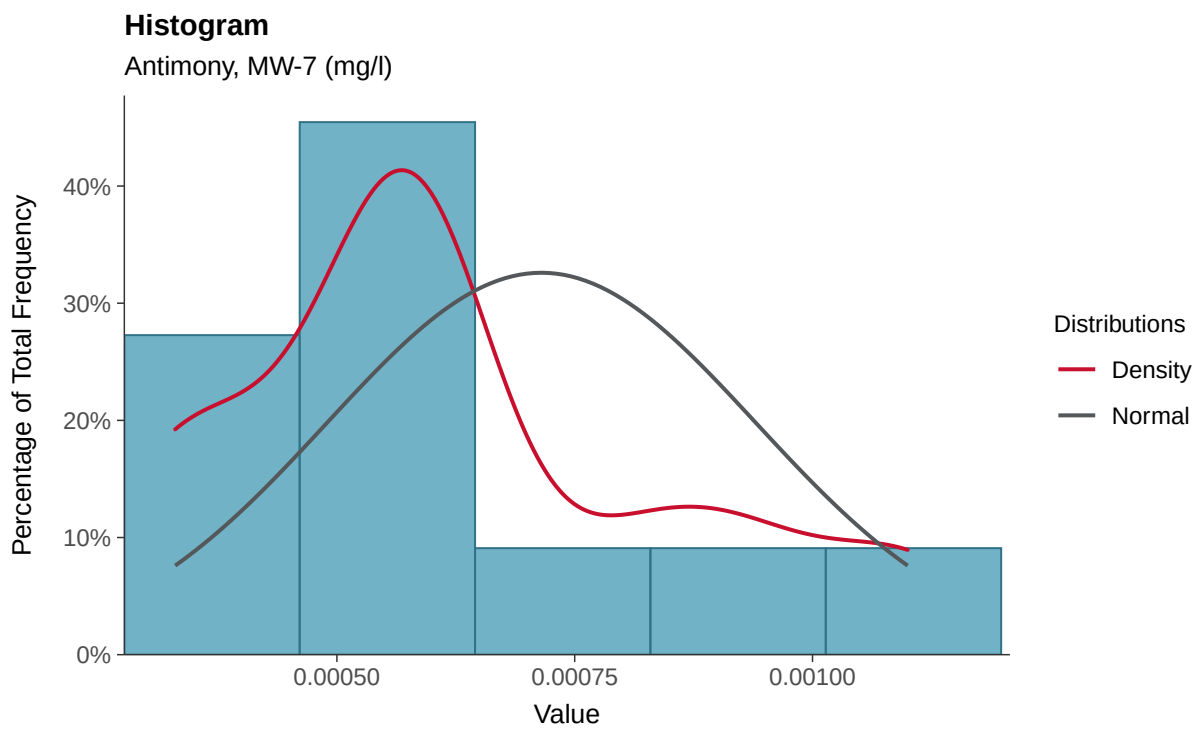
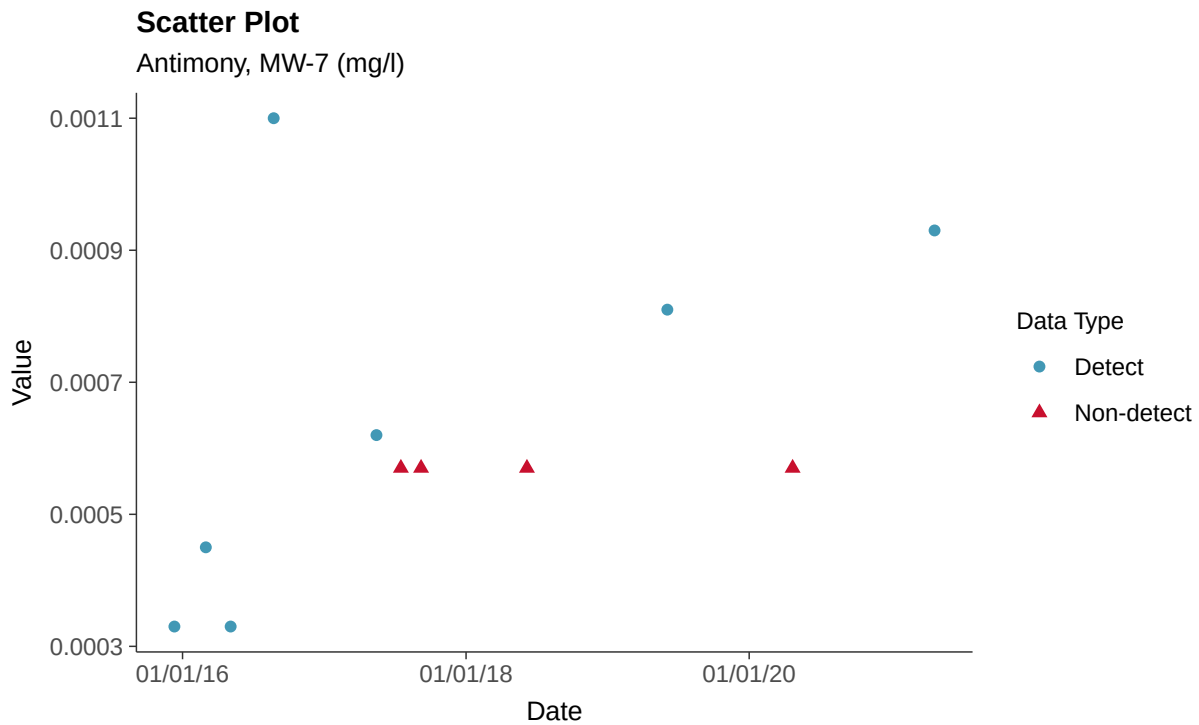


Thallium, MW-10 (mg/l)



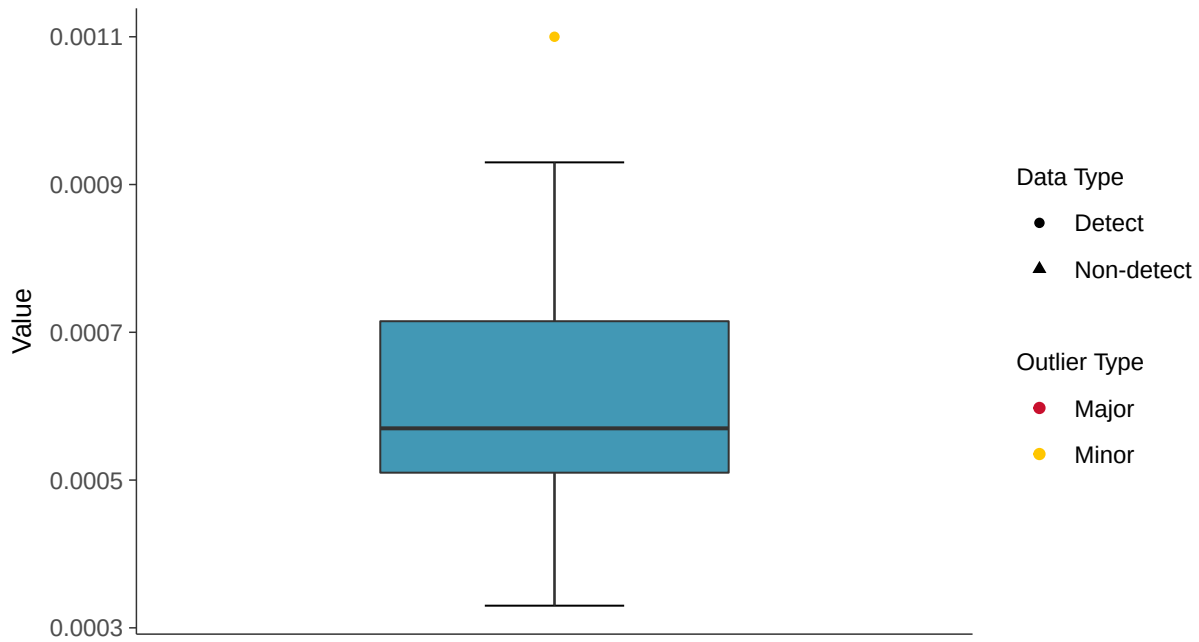
Appendix IV: Antimony, MW-7

ID: 2_2_104



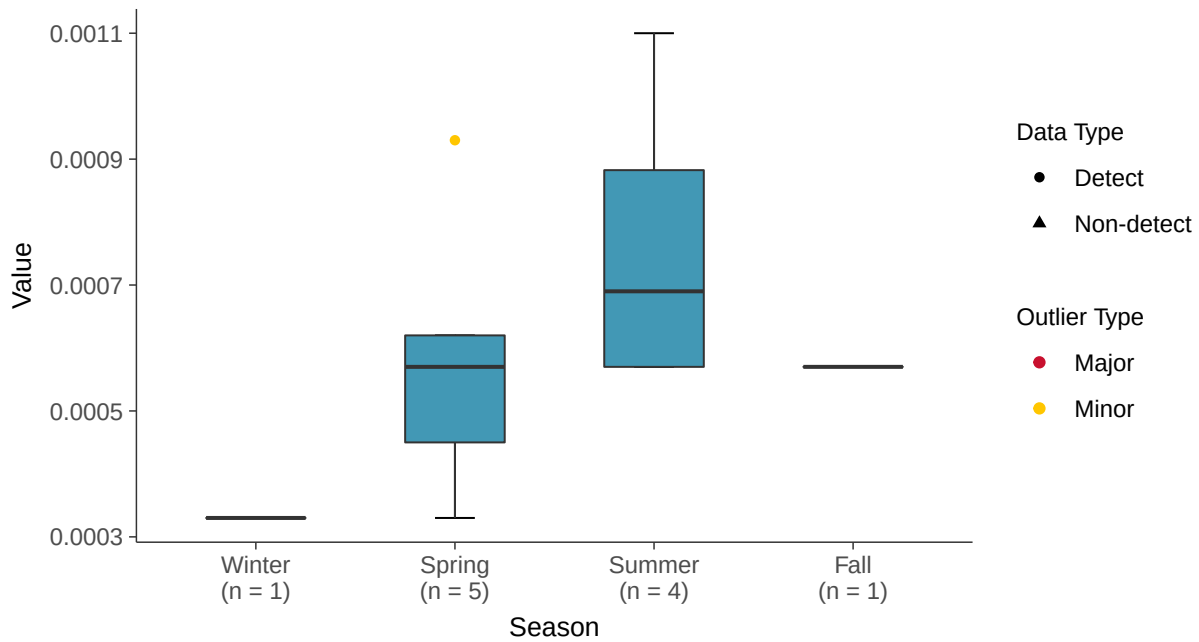
Boxplot

Antimony, MW-7 (mg/l)



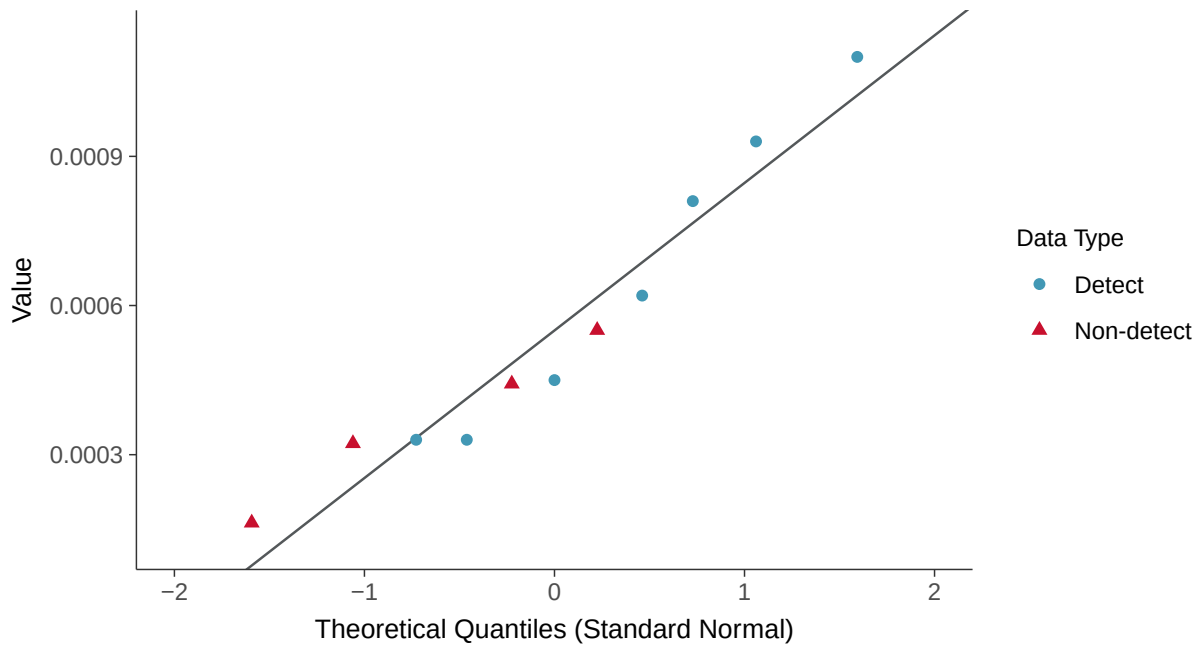
Boxplot by Season

Antimony, MW-7 (mg/l)



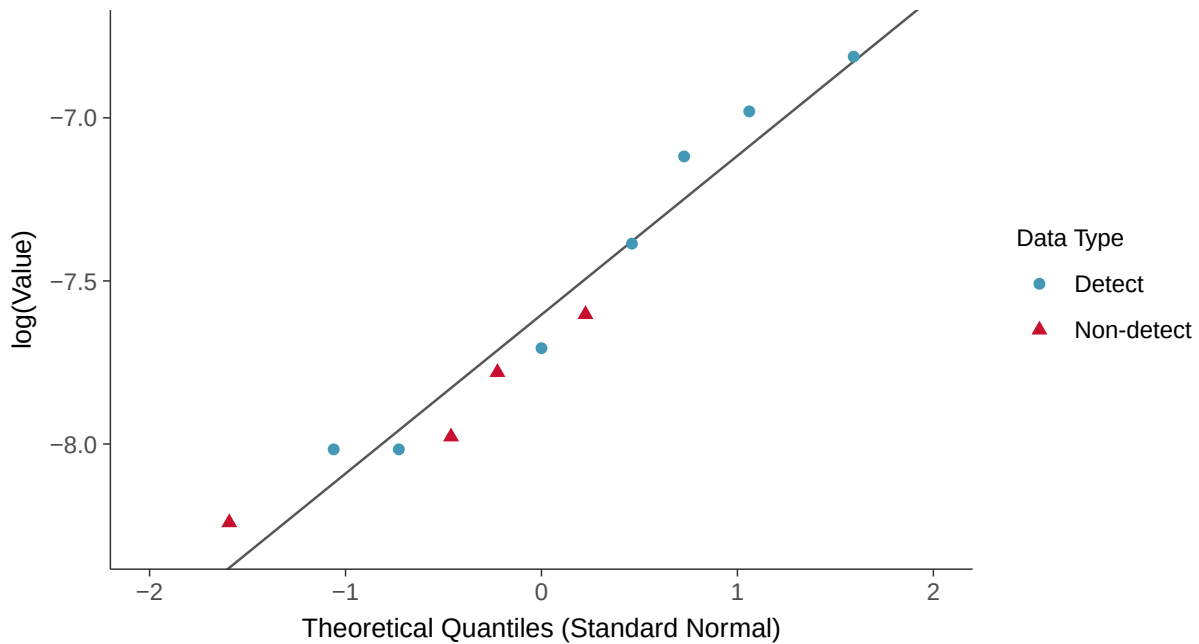
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-7 (mg/l)



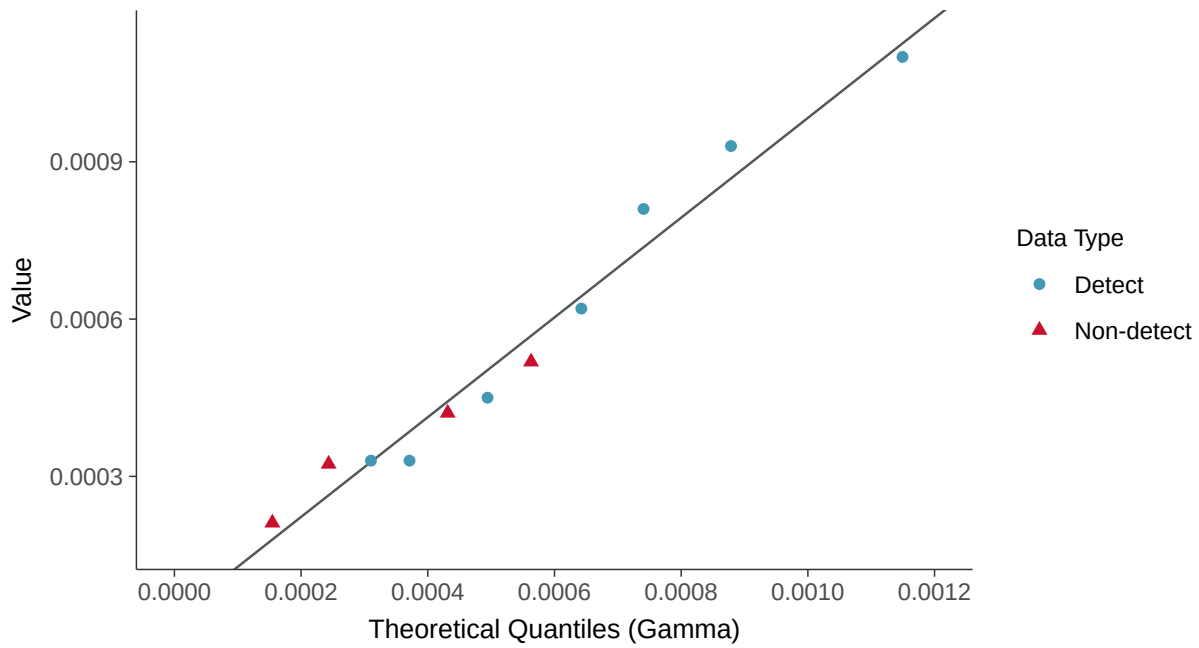
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-7 (mg/l)



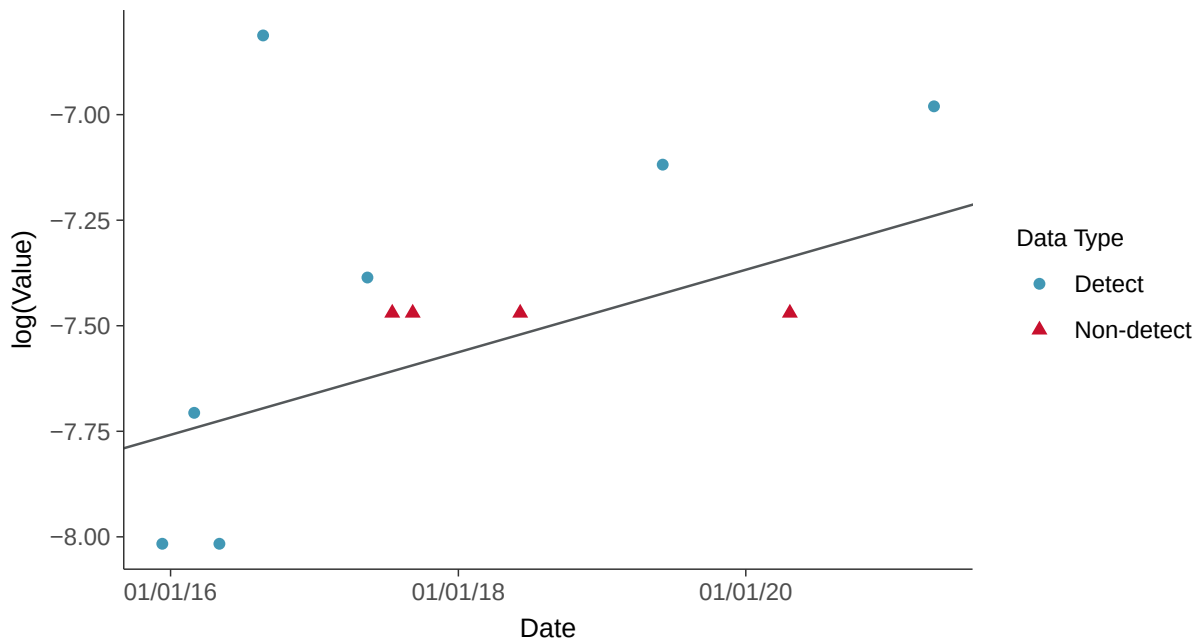
Gamma Q-Q plot using ROS Imputed Estimates

Antimony, MW-7 (mg/l)



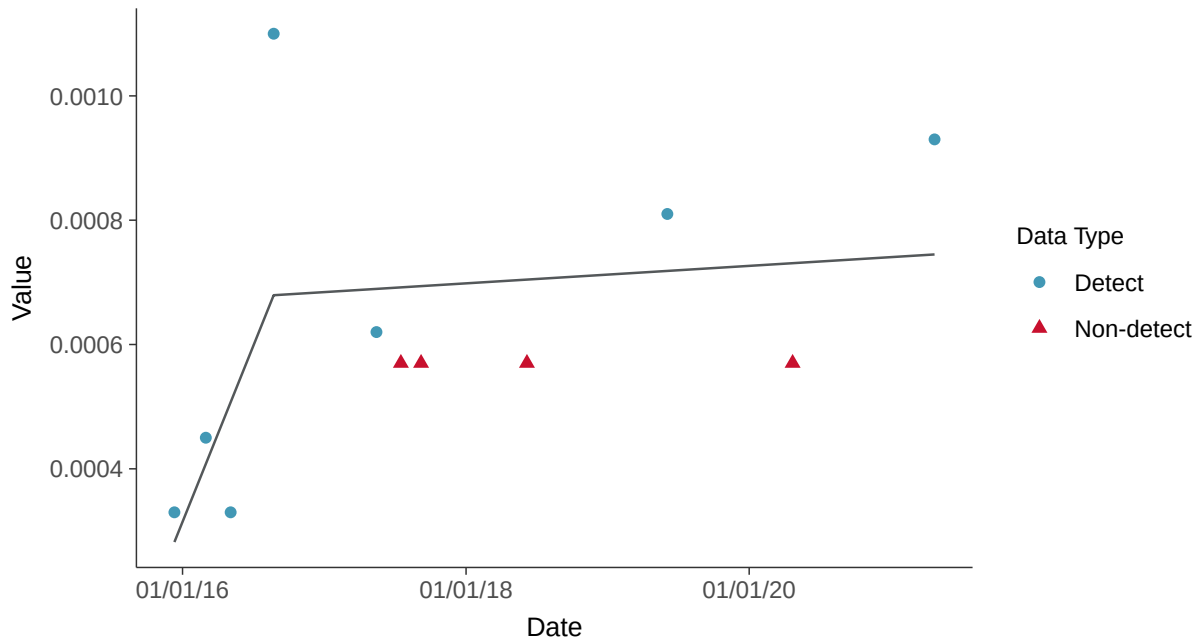
Trend Regression: Lognormal MLE

Antimony, MW-7 (mg/l)



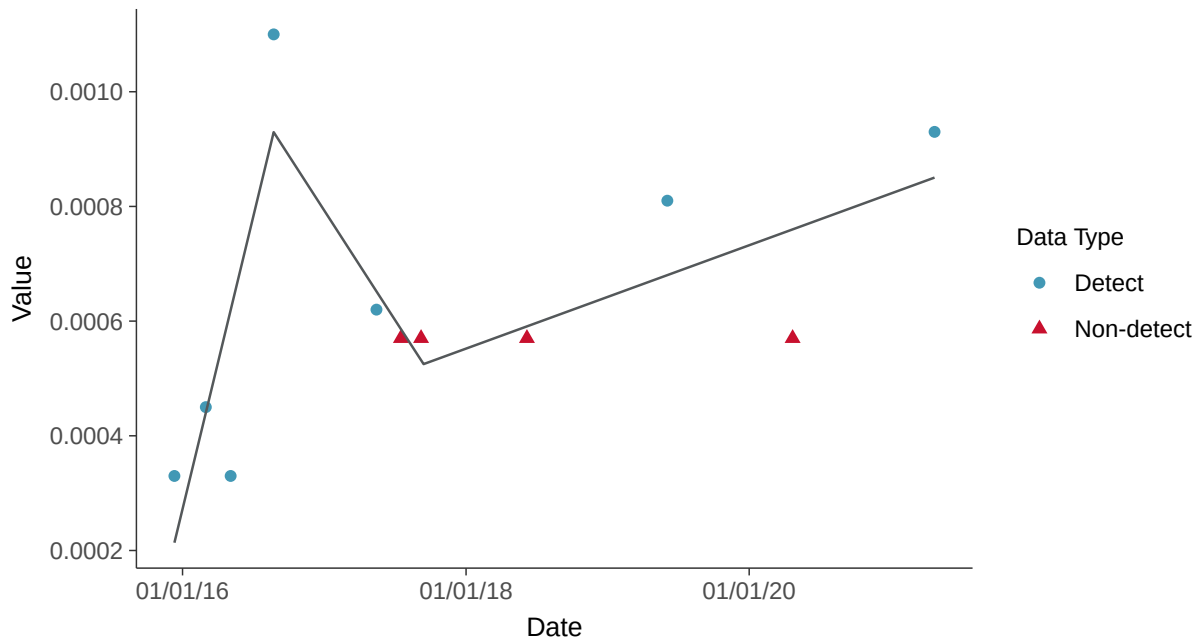
Trend Regression: Piecewise Linear-Linear

Antimony, MW-7 (mg/l)



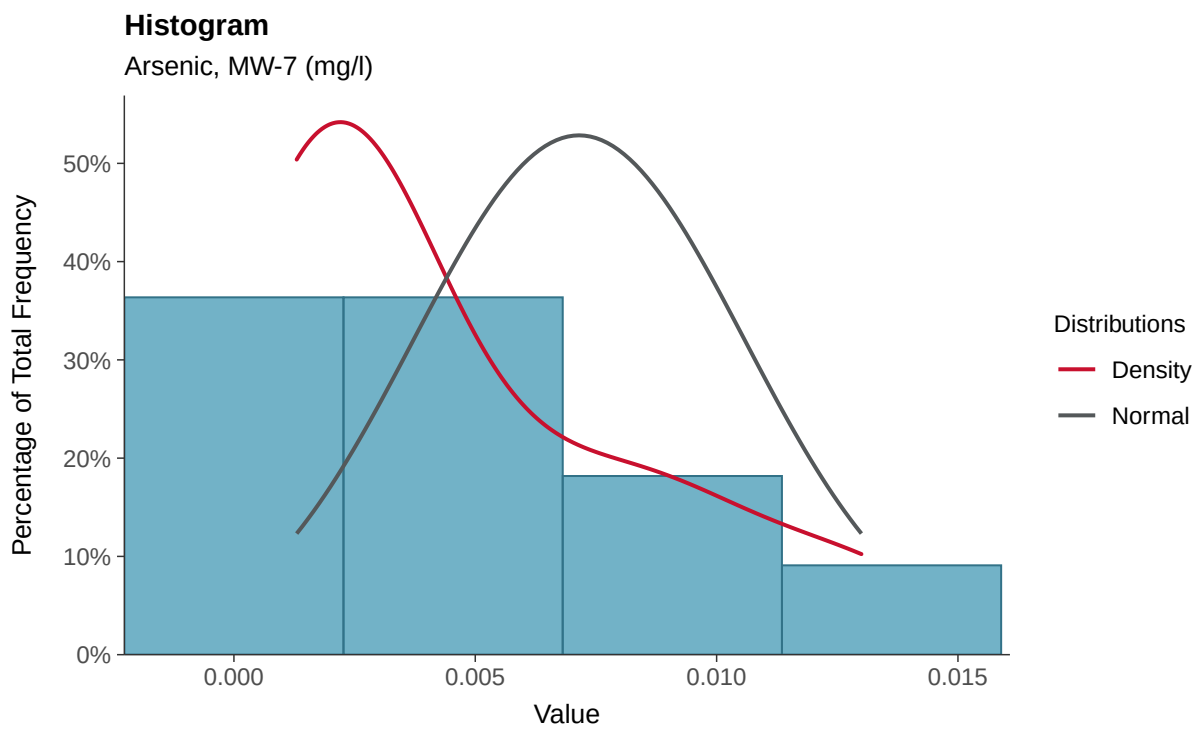
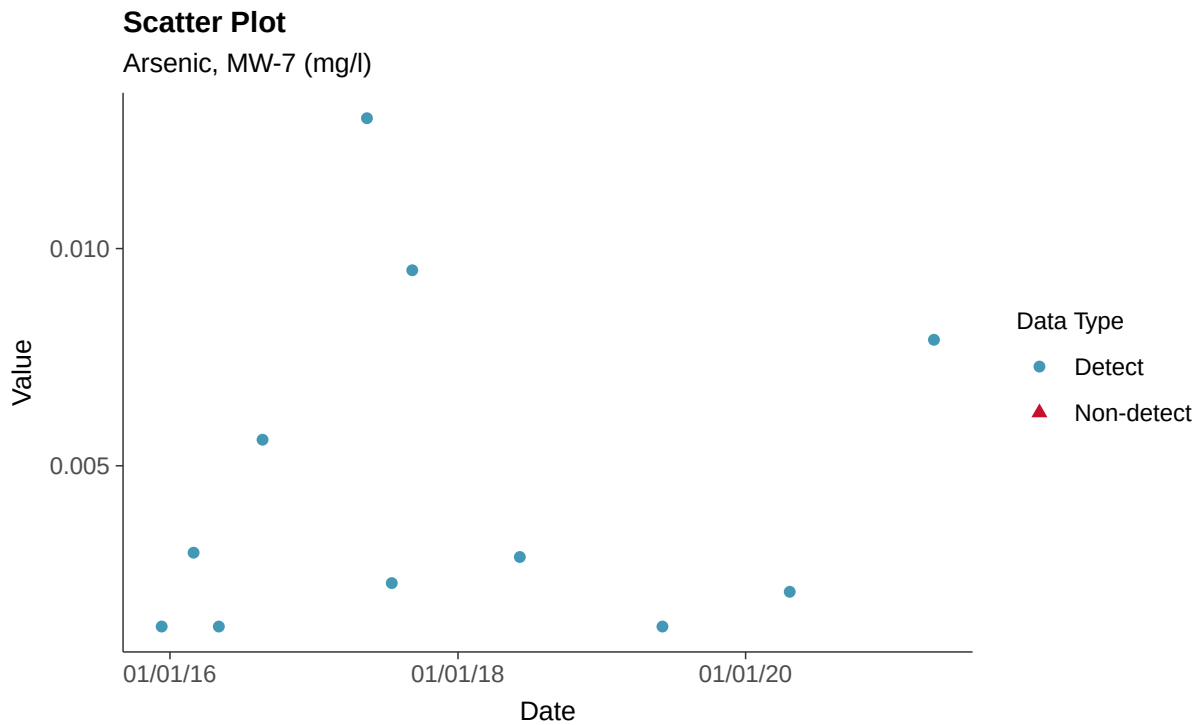
Trend Regression: Piecewise Linear-Linear-Linear

Antimony, MW-7 (mg/l)



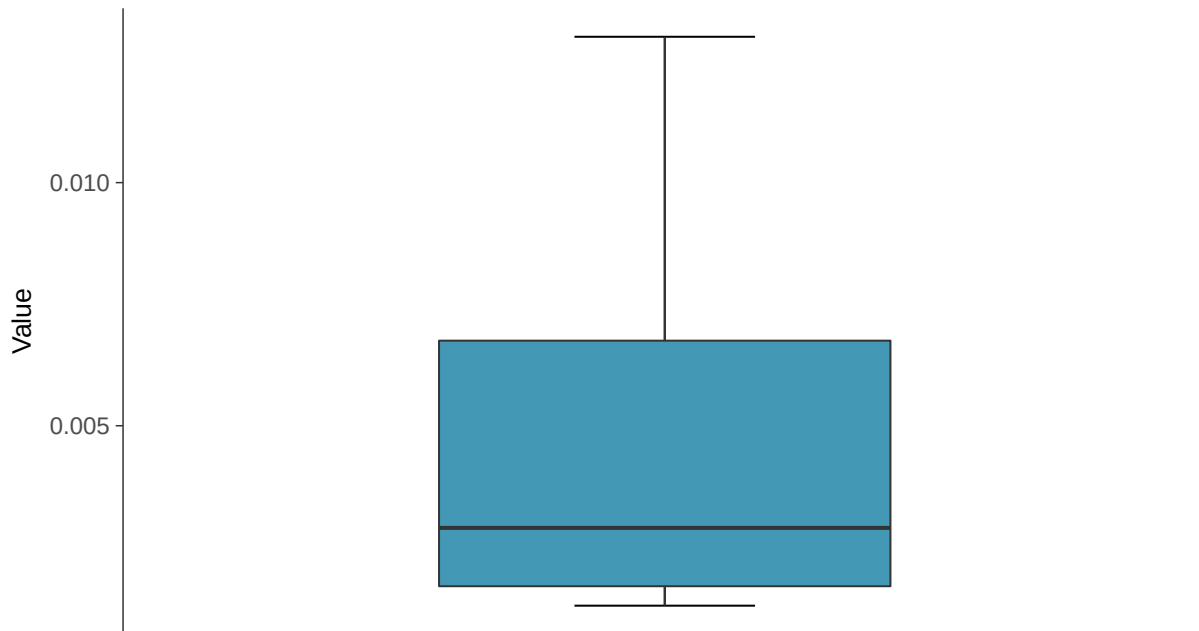
Appendix IV: Arsenic, MW-7

ID: 2_2_105



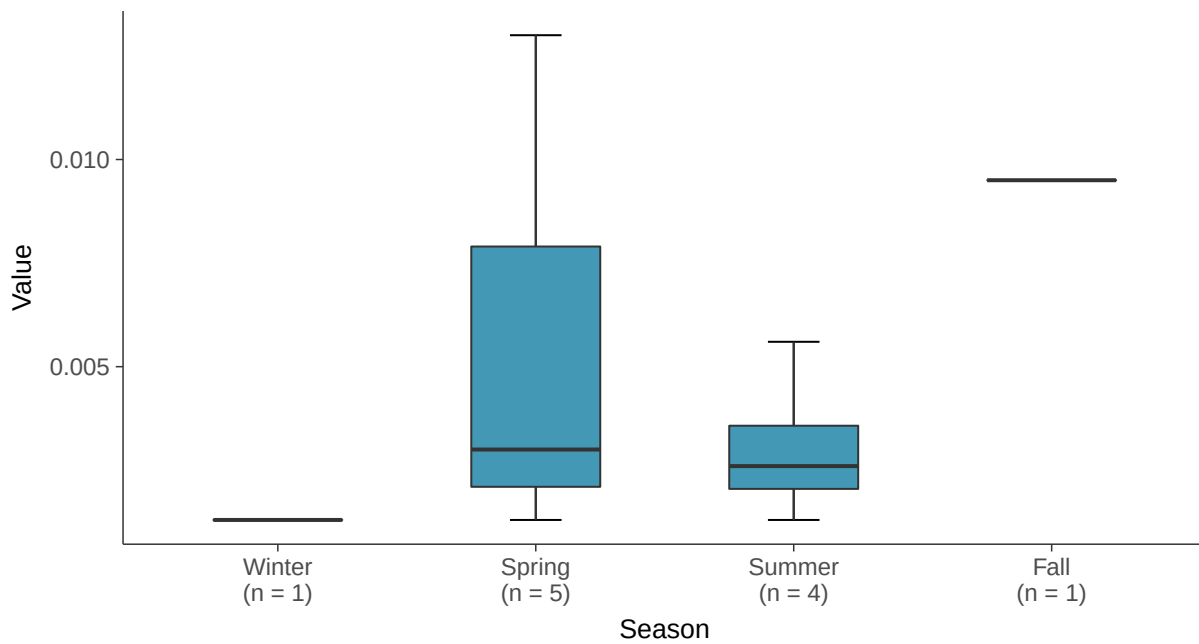
Boxplot

Arsenic, MW-7 (mg/l)



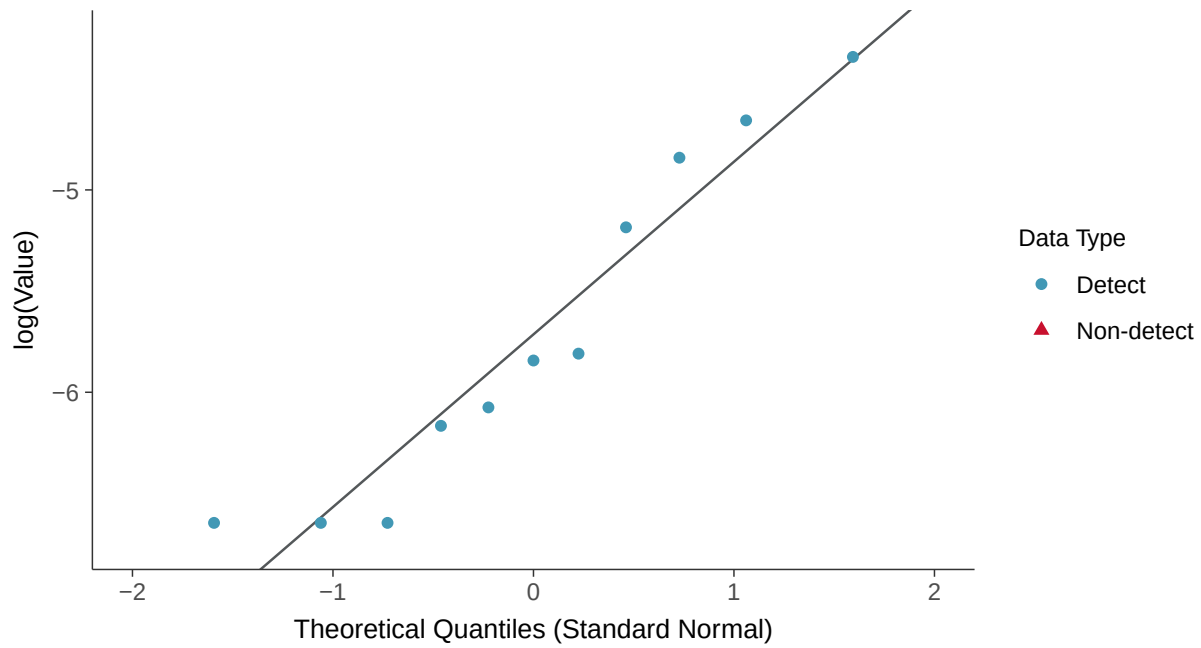
Boxplot by Season

Arsenic, MW-7 (mg/l)



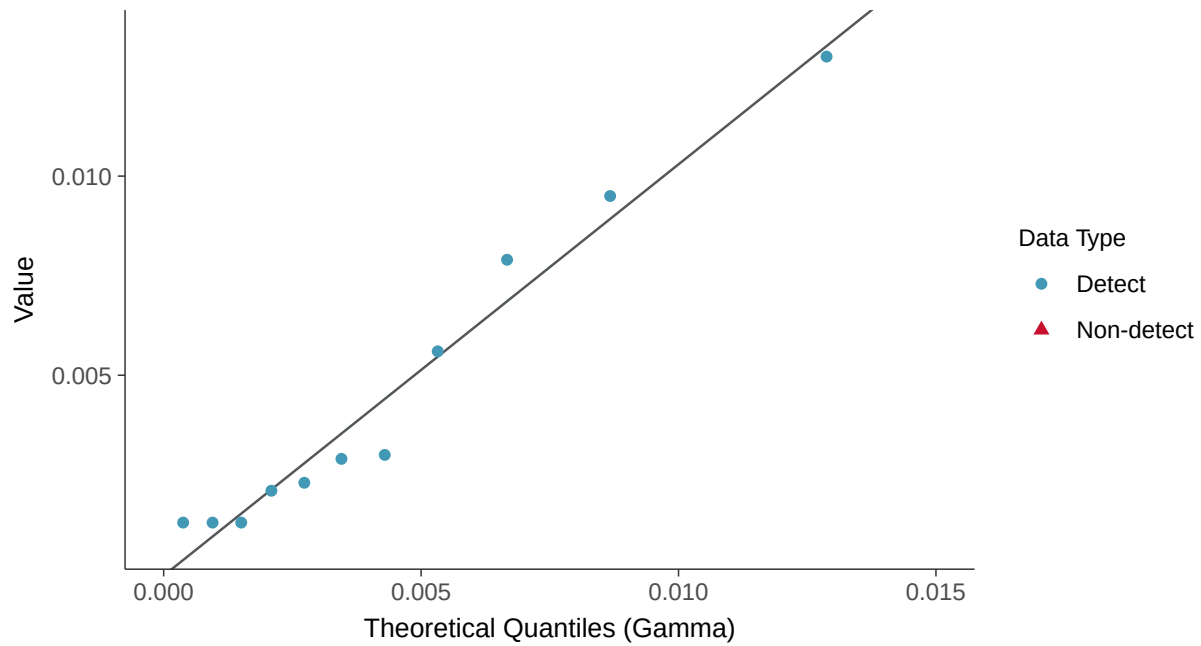
Lognormal Q-Q plot

Arsenic, MW-7 (mg/l)



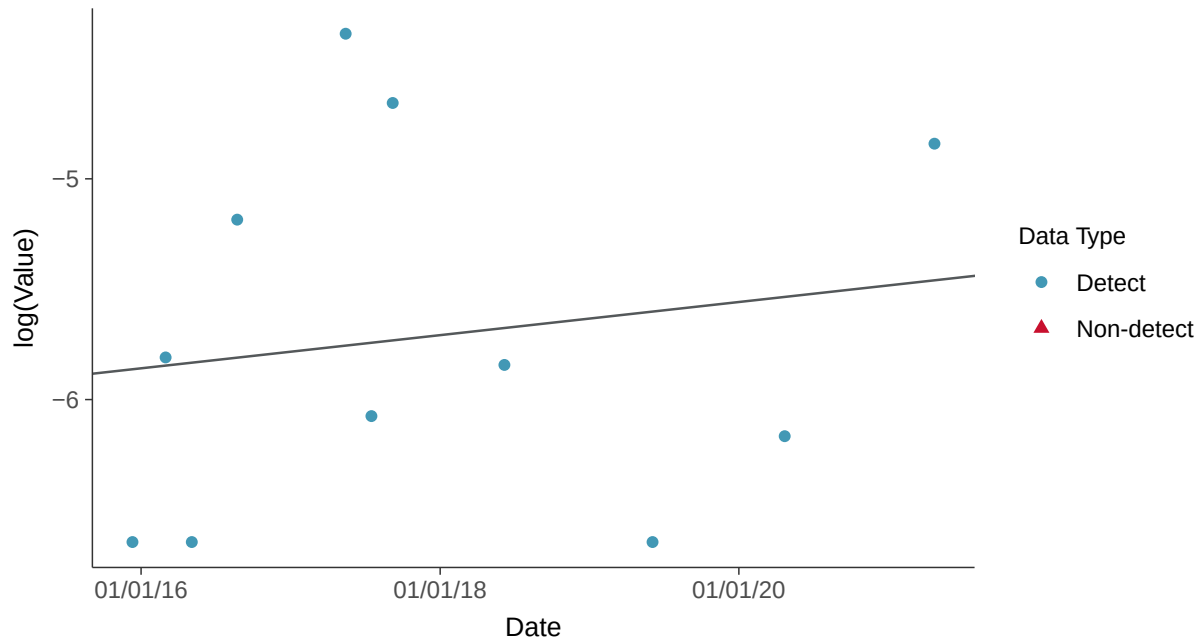
Gamma Q-Q plot

Arsenic, MW-7 (mg/l)



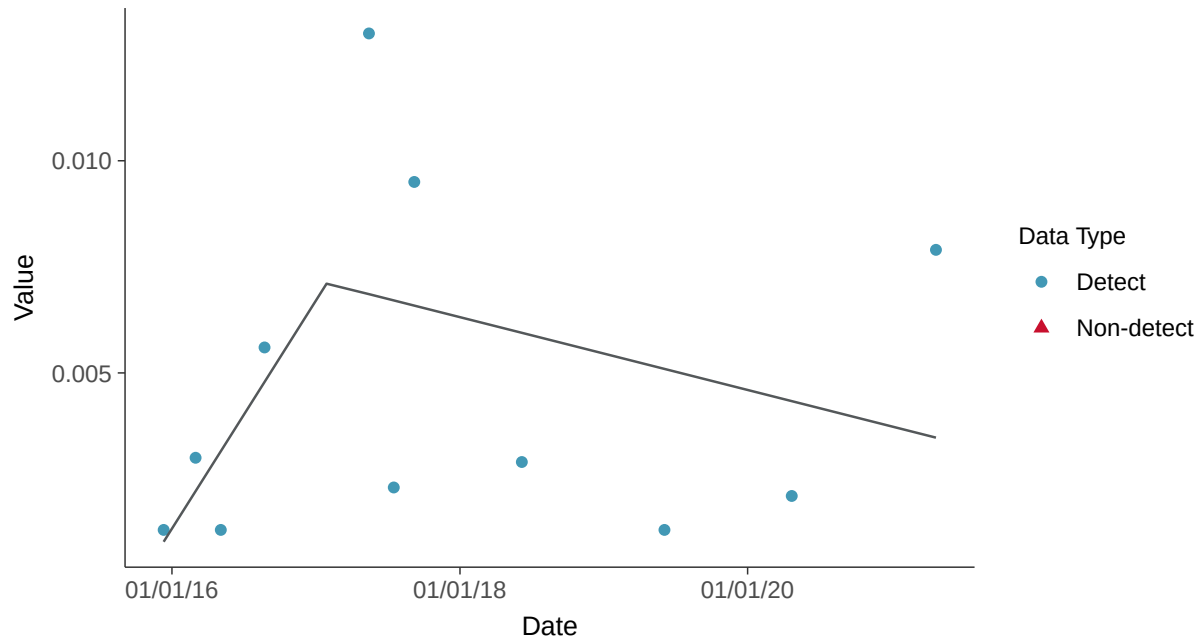
Trend Regression: Lognormal MLE

Arsenic, MW-7 (mg/l)



Trend Regression: Piecewise Linear-Linear

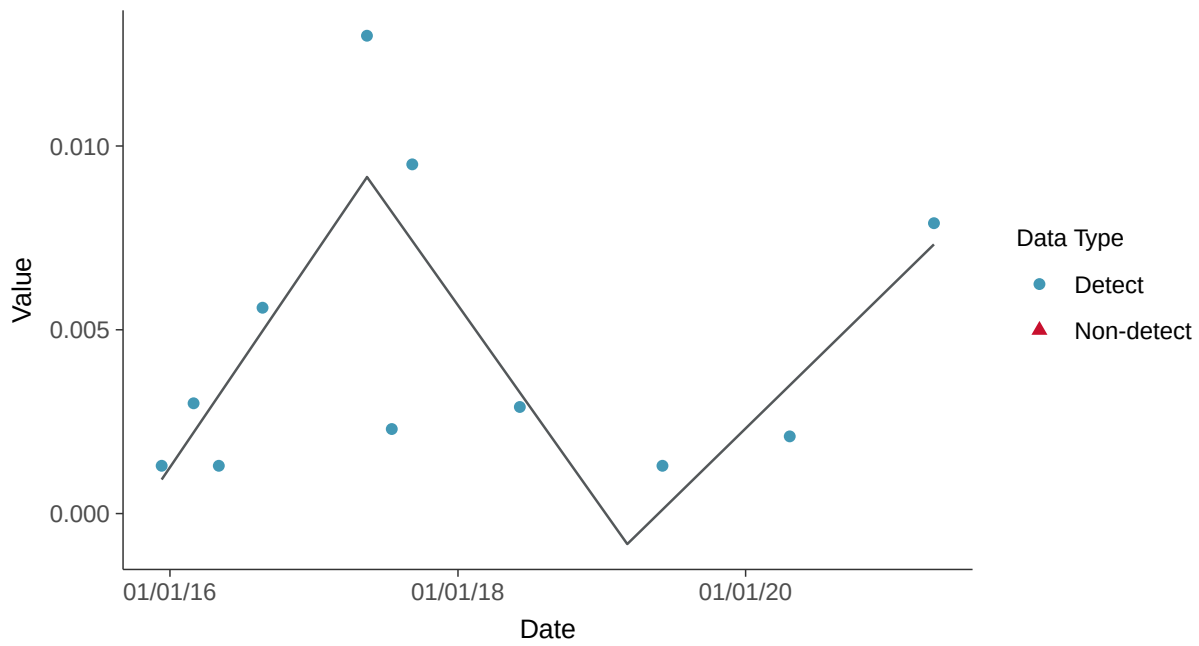
Arsenic, MW-7 (mg/l)





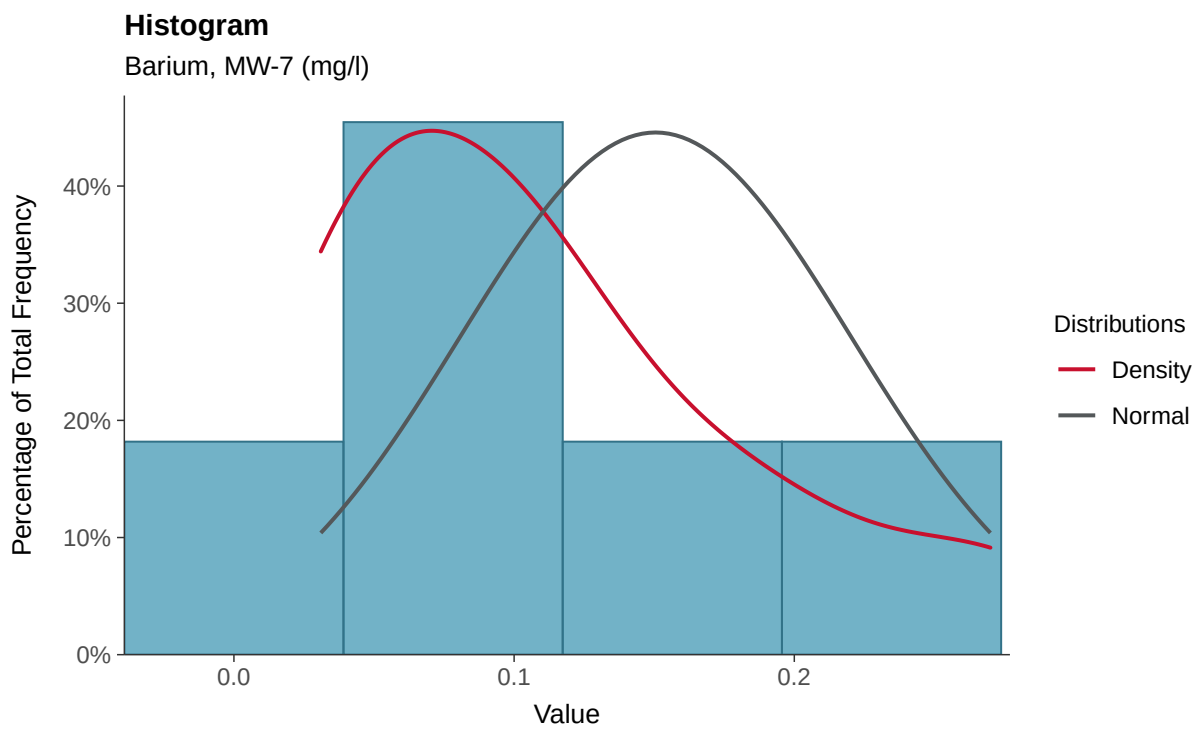
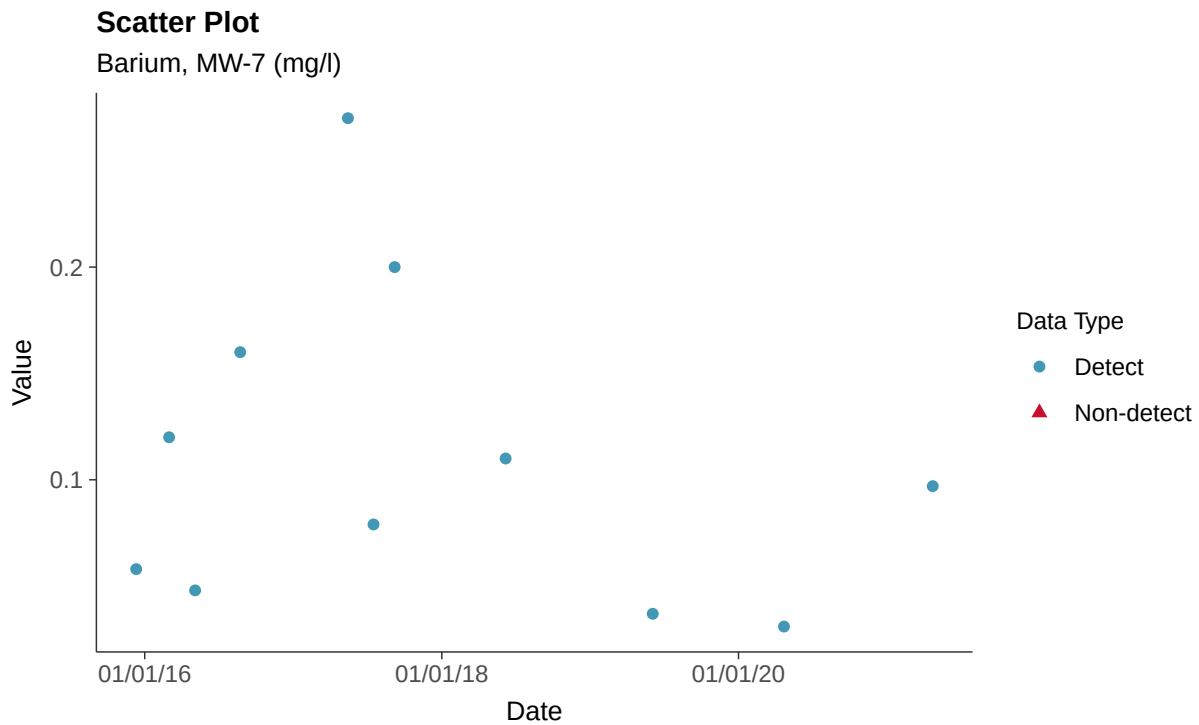
Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-7 (mg/l)



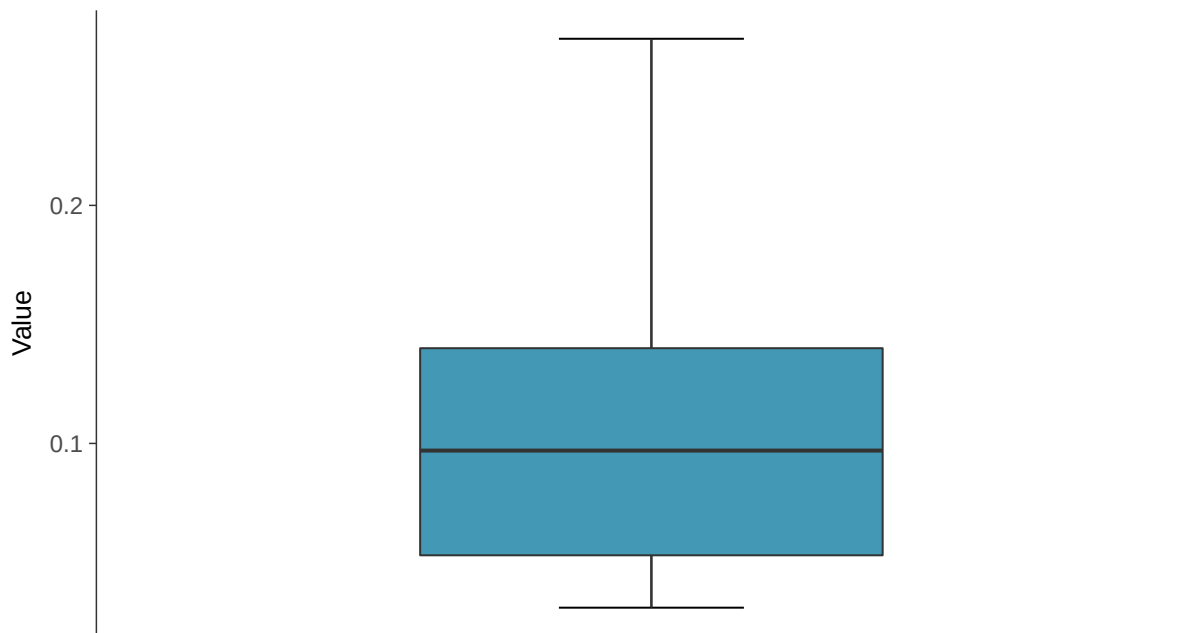
Appendix IV: Barium, MW-7

ID: 2_2_106



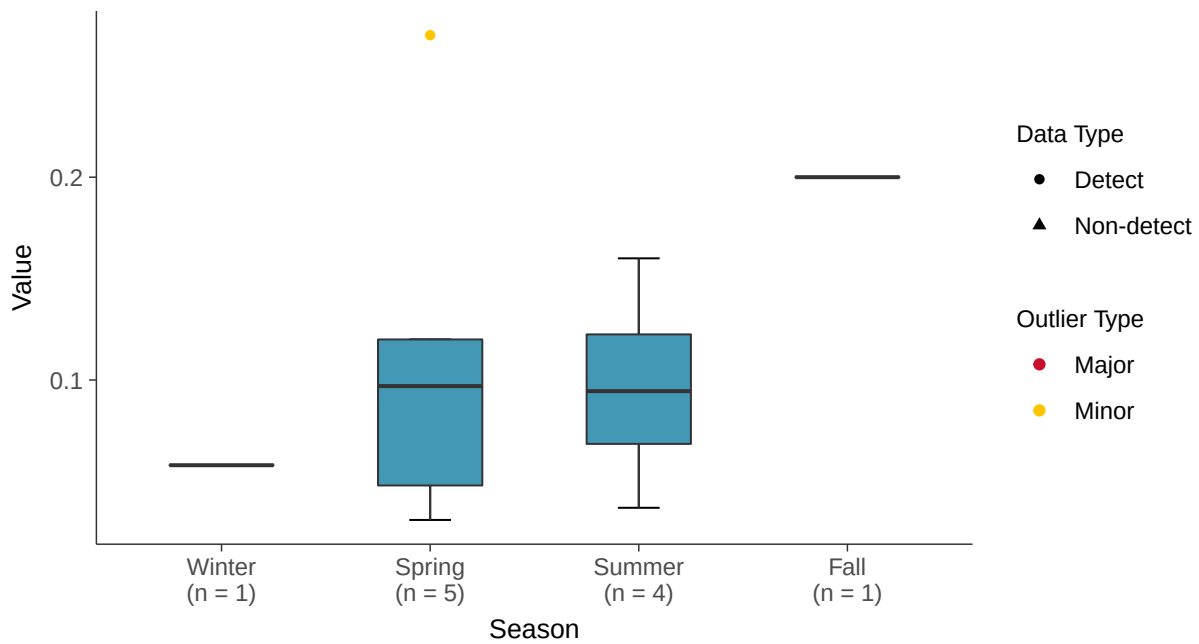
Boxplot

Barium, MW-7 (mg/l)



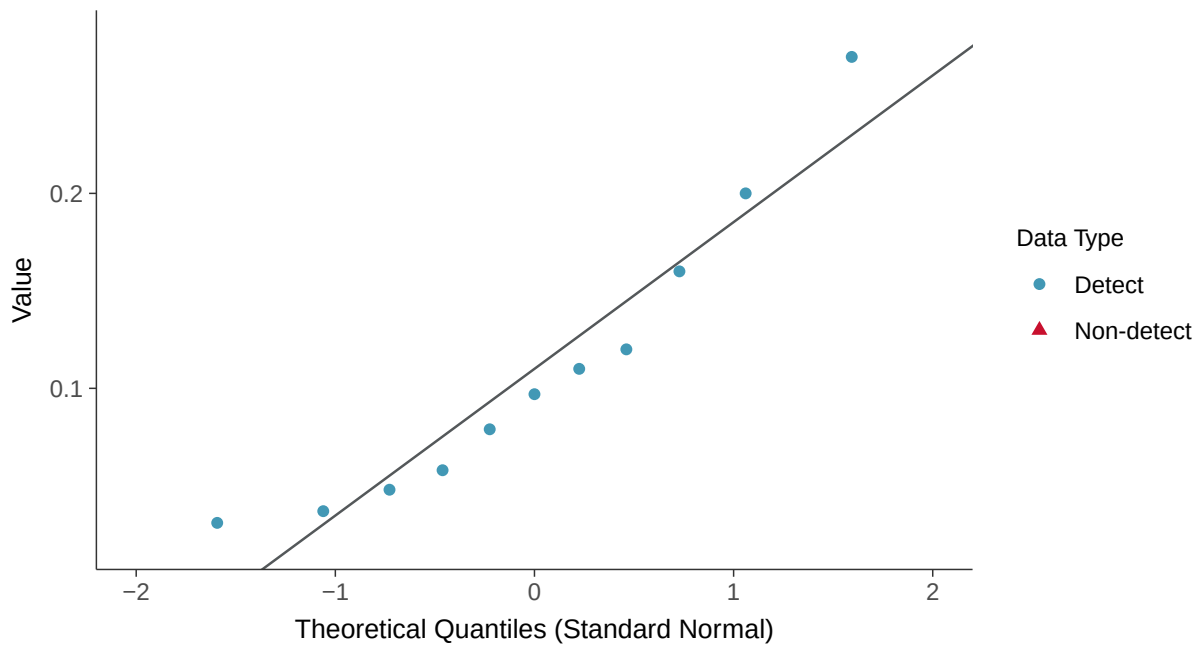
Boxplot by Season

Barium, MW-7 (mg/l)



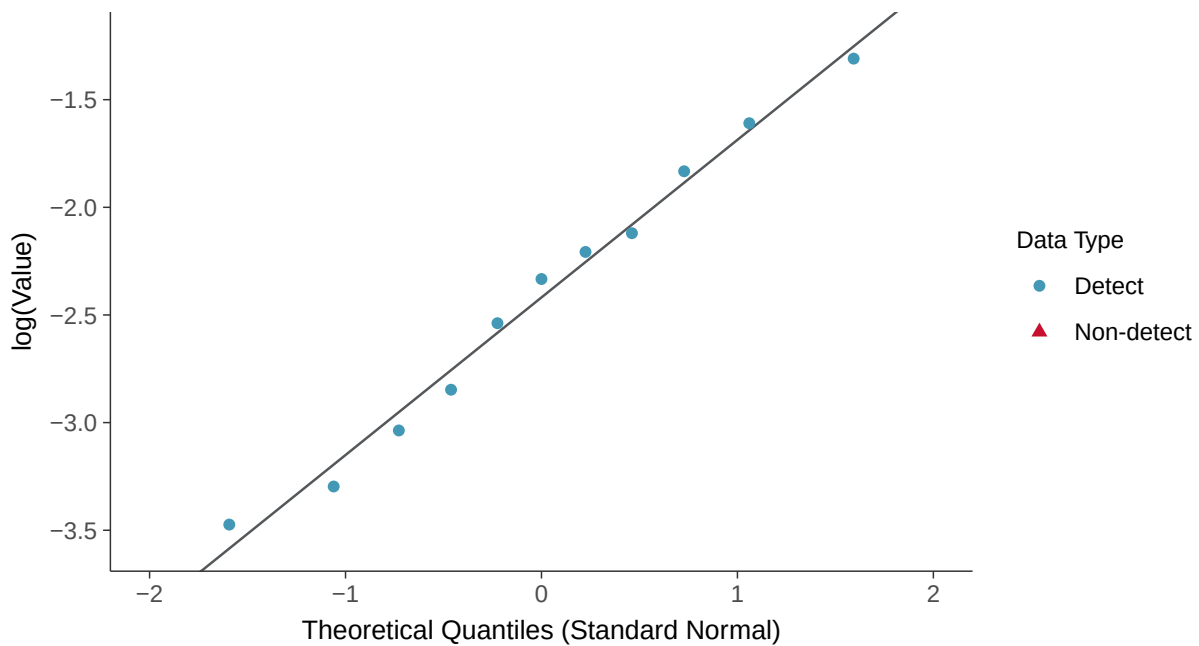
Normal Q-Q plot

Barium, MW-7 (mg/l)



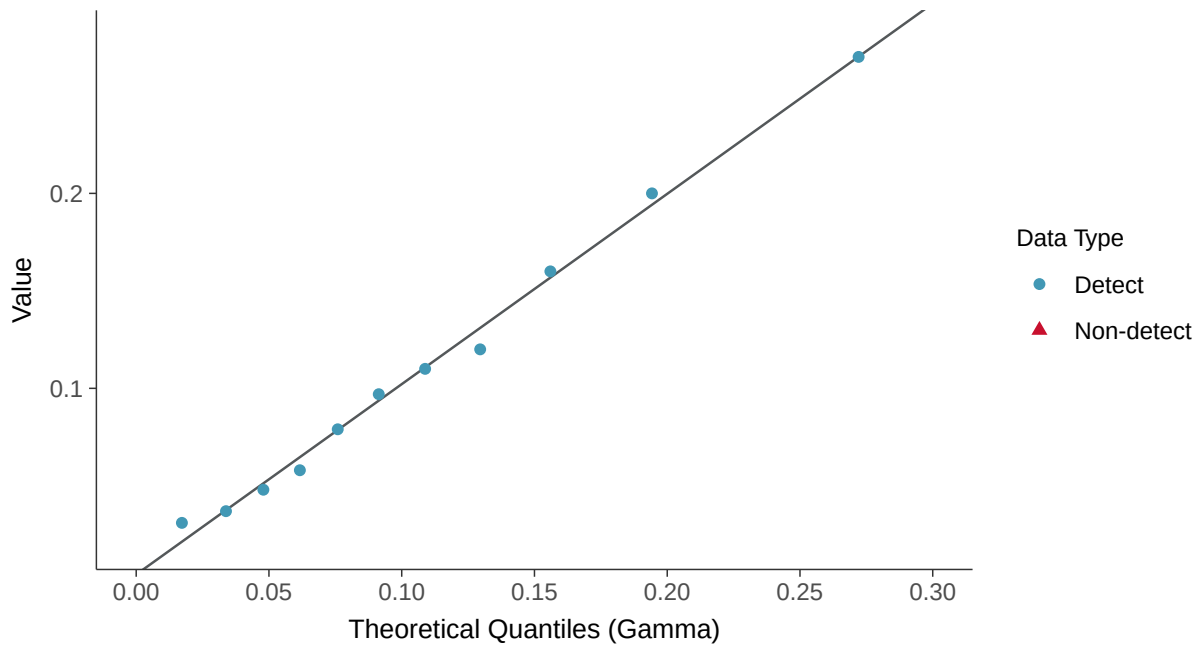
Lognormal Q-Q plot

Barium, MW-7 (mg/l)



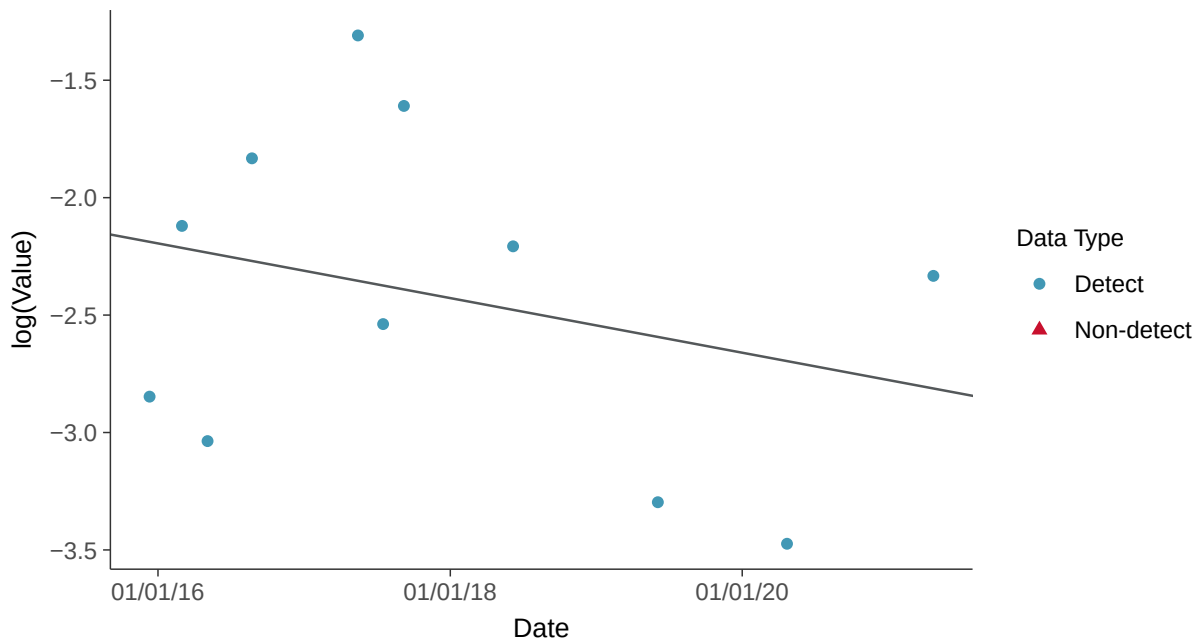
Gamma Q-Q plot

Barium, MW-7 (mg/l)



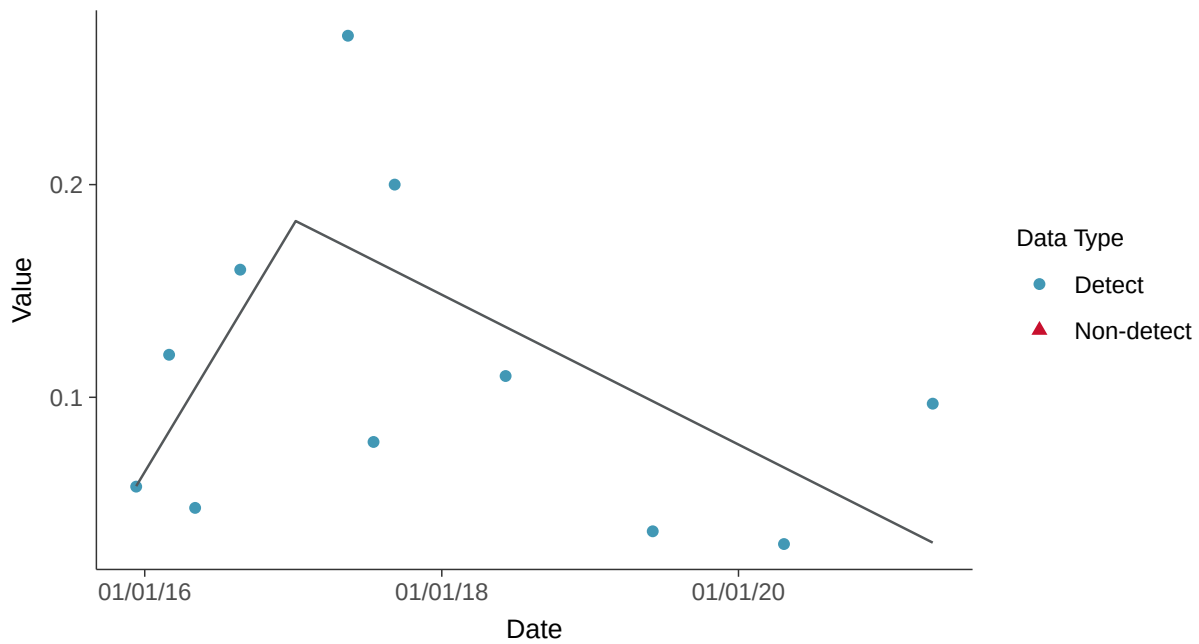
Trend Regression: Lognormal MLE

Barium, MW-7 (mg/l)



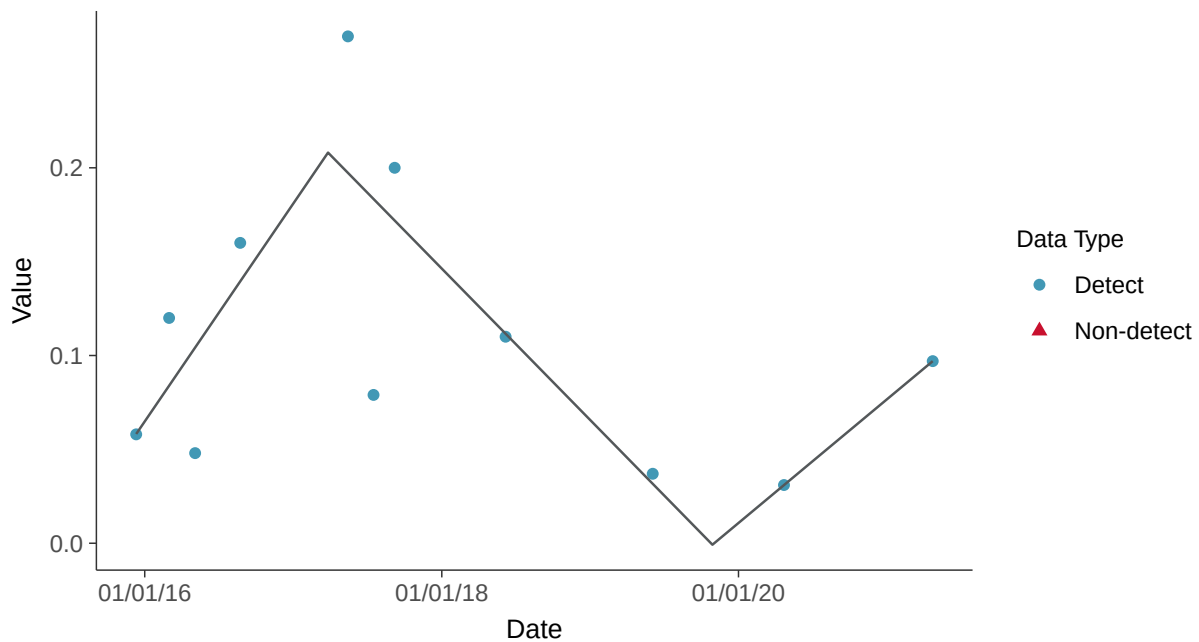
Trend Regression: Piecewise Linear-Linear

Barium, MW-7 (mg/l)



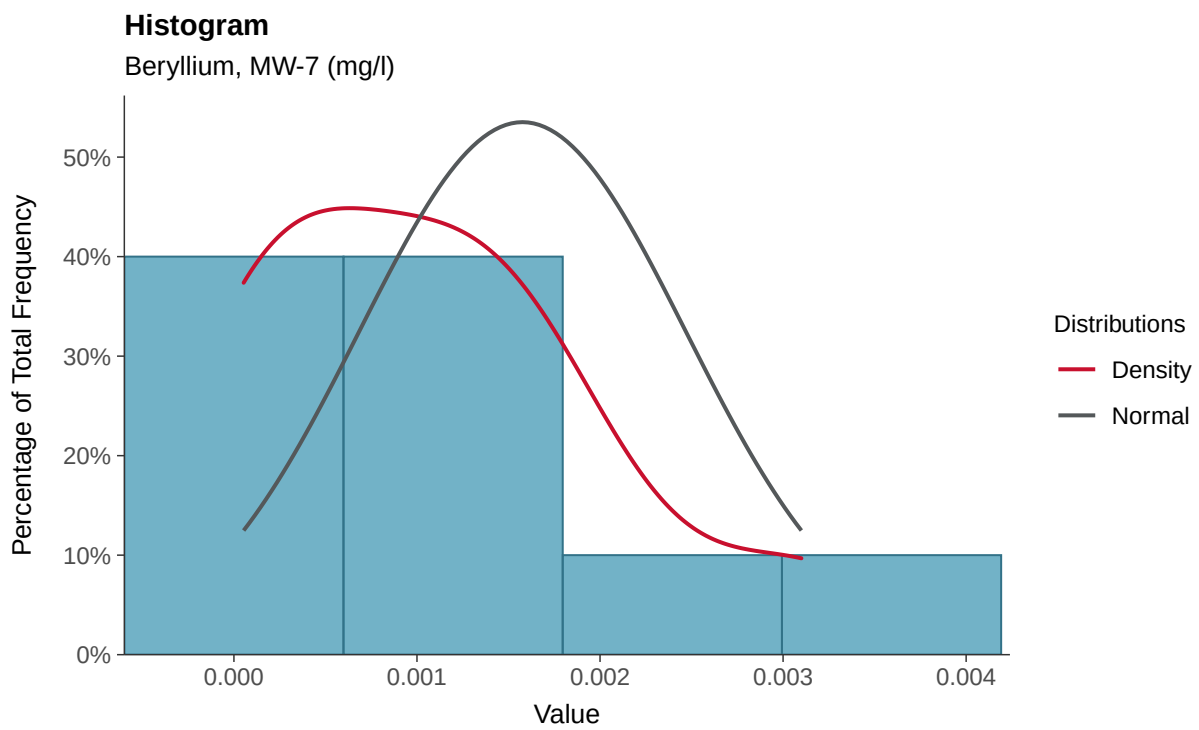
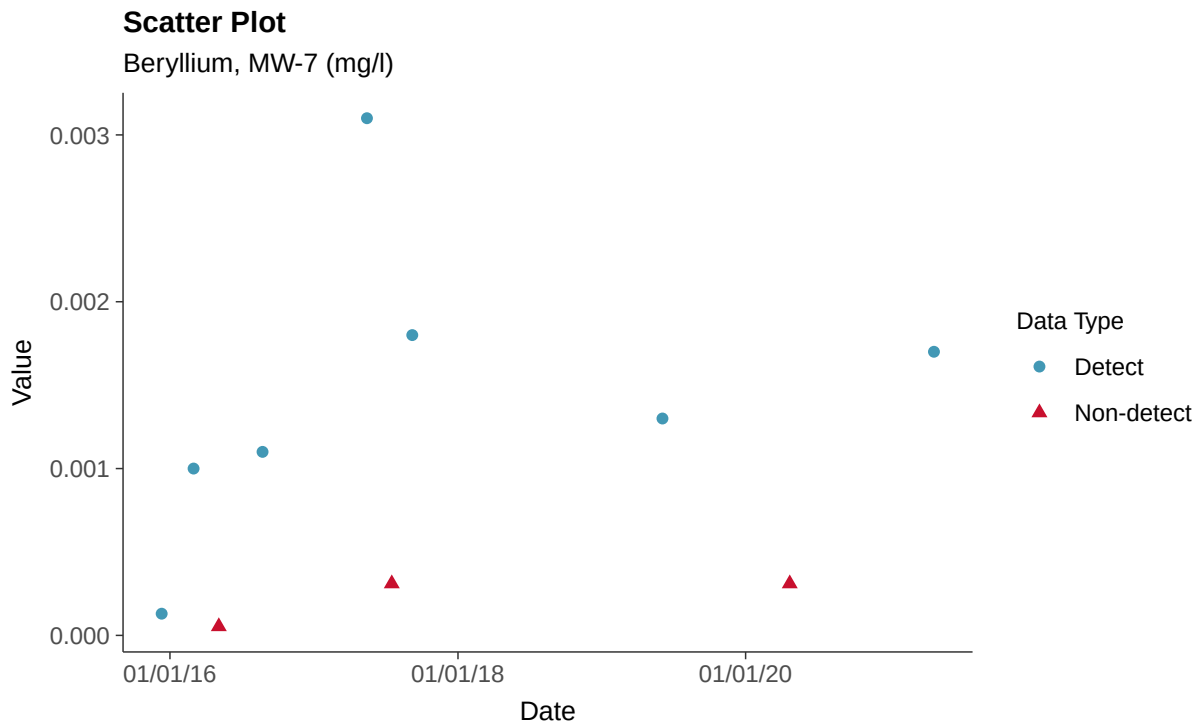
Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-7 (mg/l)



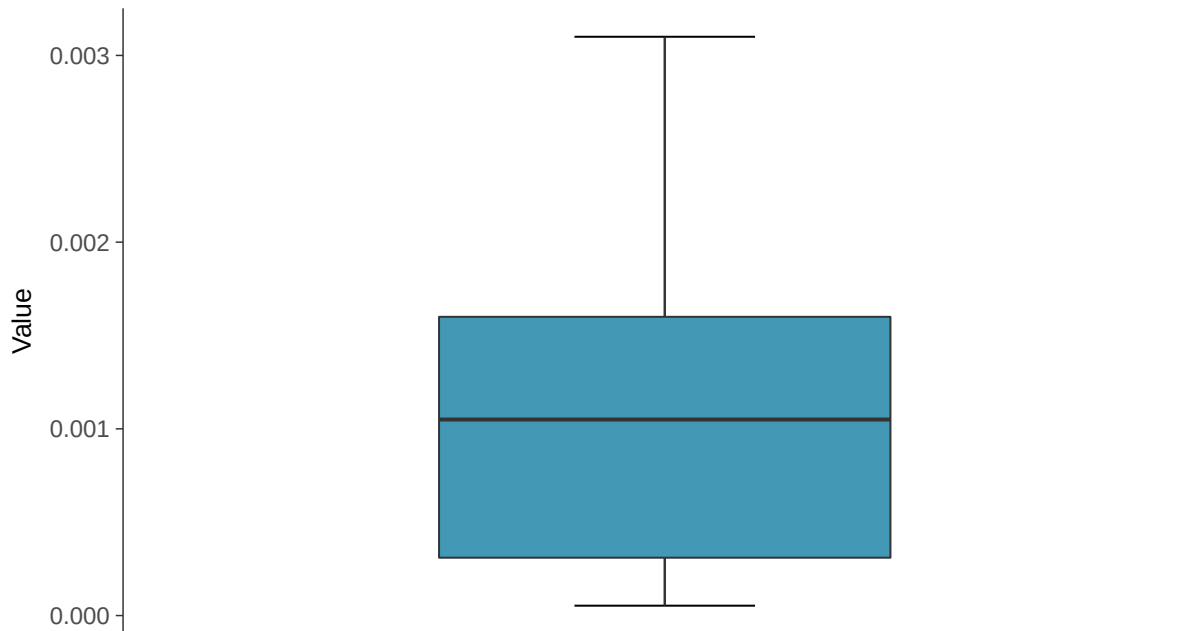
Appendix IV: Beryllium, MW-7

ID: 2_2_107



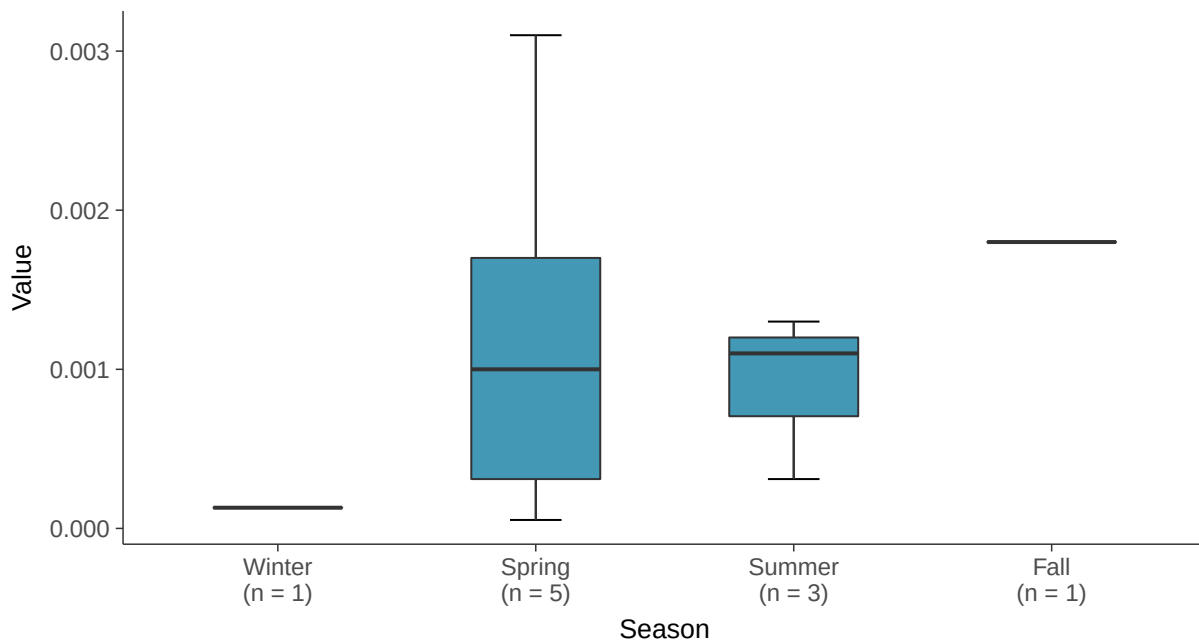
Boxplot

Beryllium, MW-7 (mg/l)



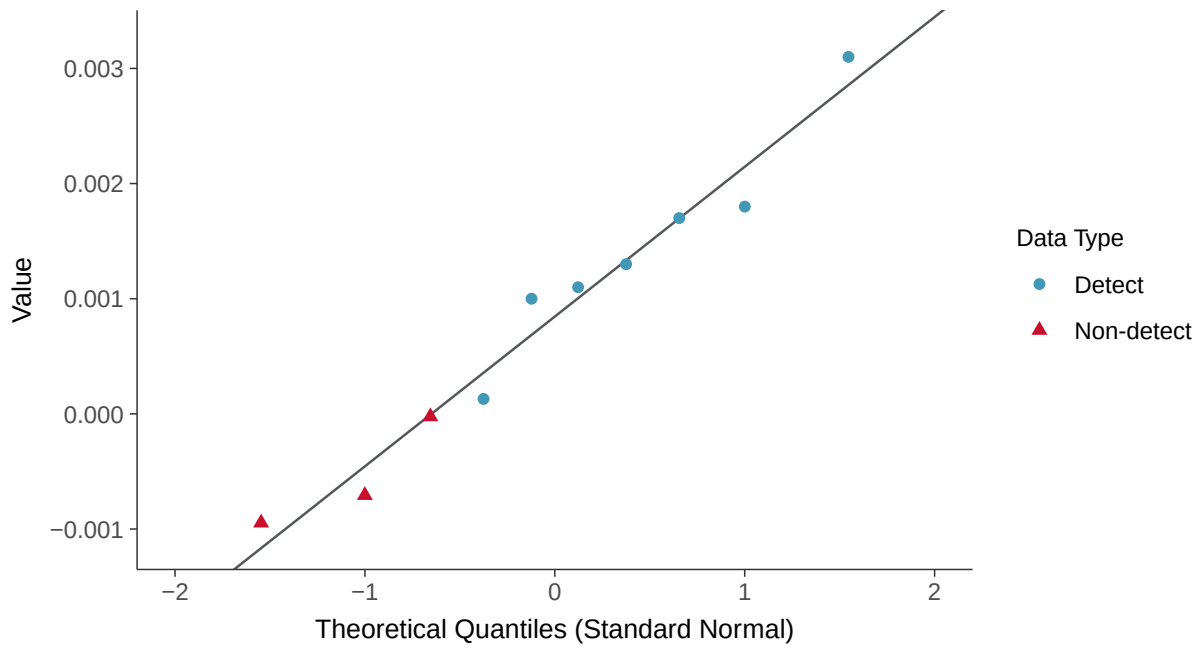
Boxplot by Season

Beryllium, MW-7 (mg/l)



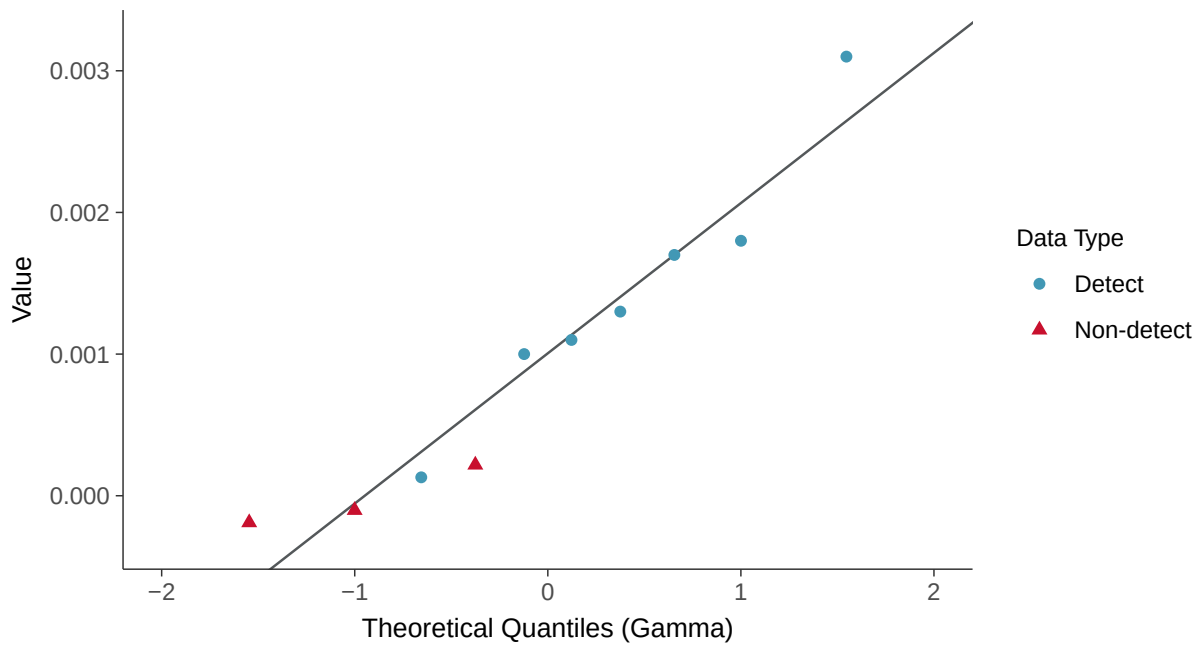
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-7 (mg/l)



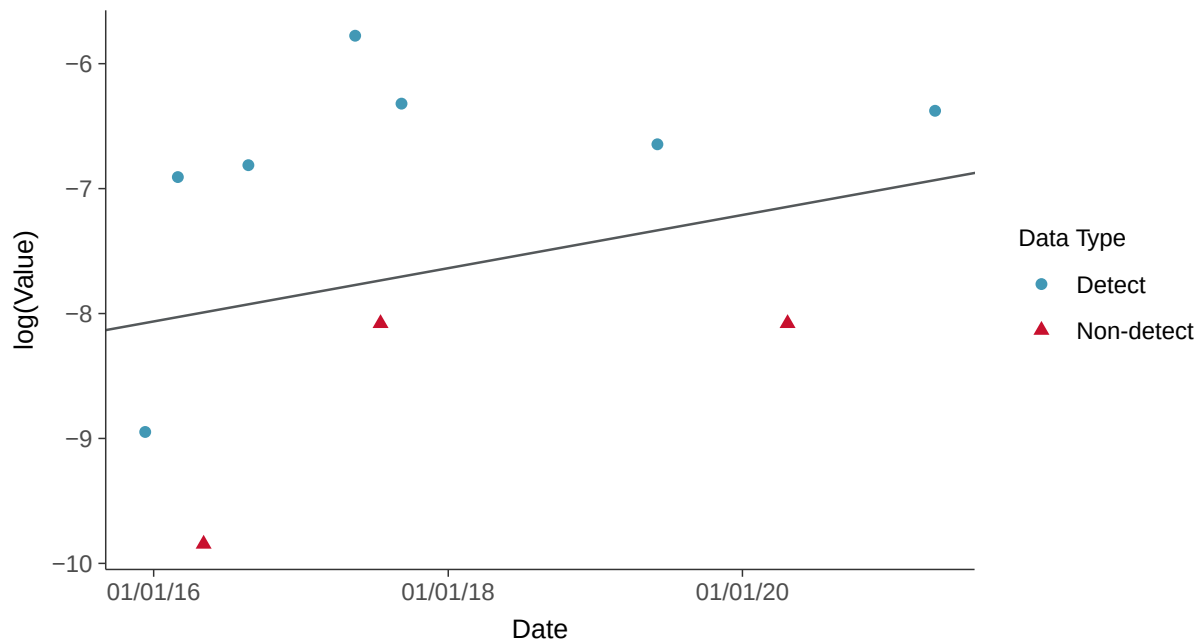
Gamma Q-Q plot using ROS Imputed Estimates

Beryllium, MW-7 (mg/l)



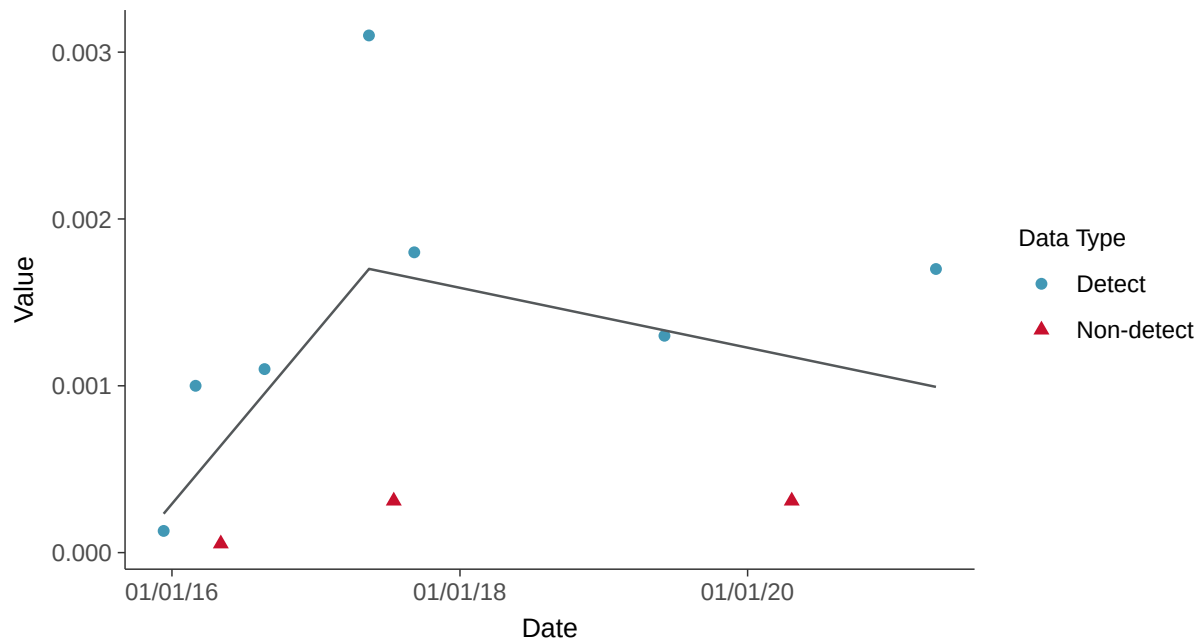
Trend Regression: Lognormal MLE

Beryllium, MW-7 (mg/l)



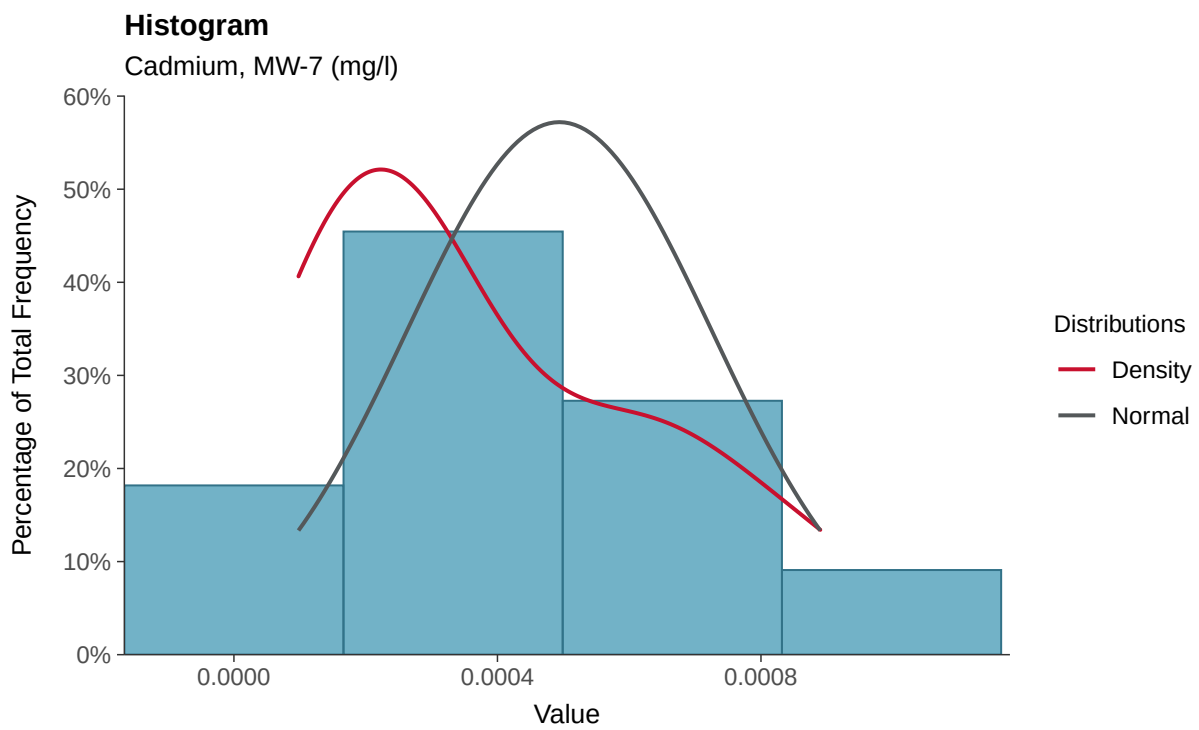
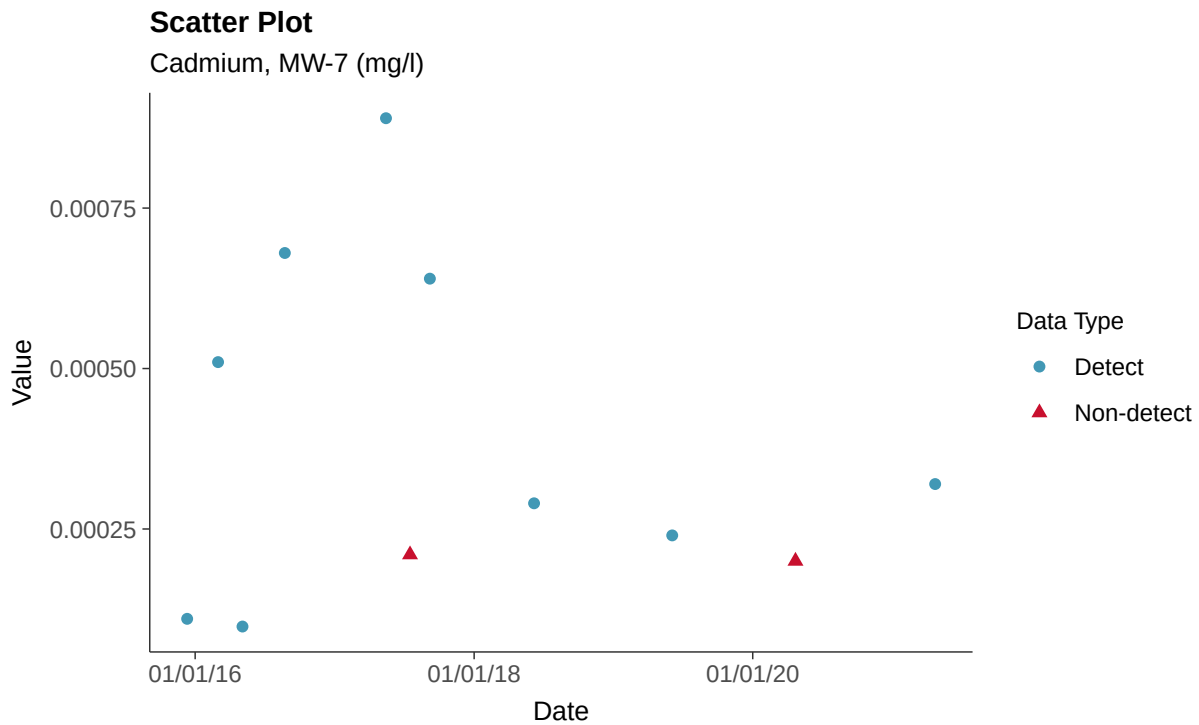
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-7 (mg/l)



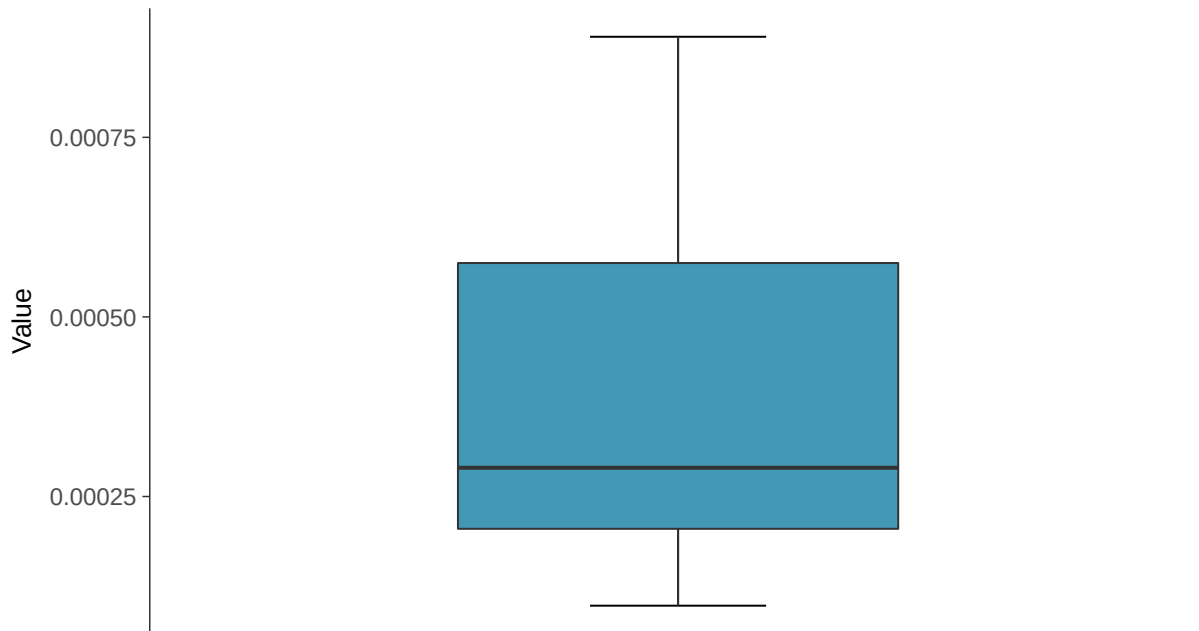
Appendix IV: Cadmium, MW-7

ID: 2_2_109



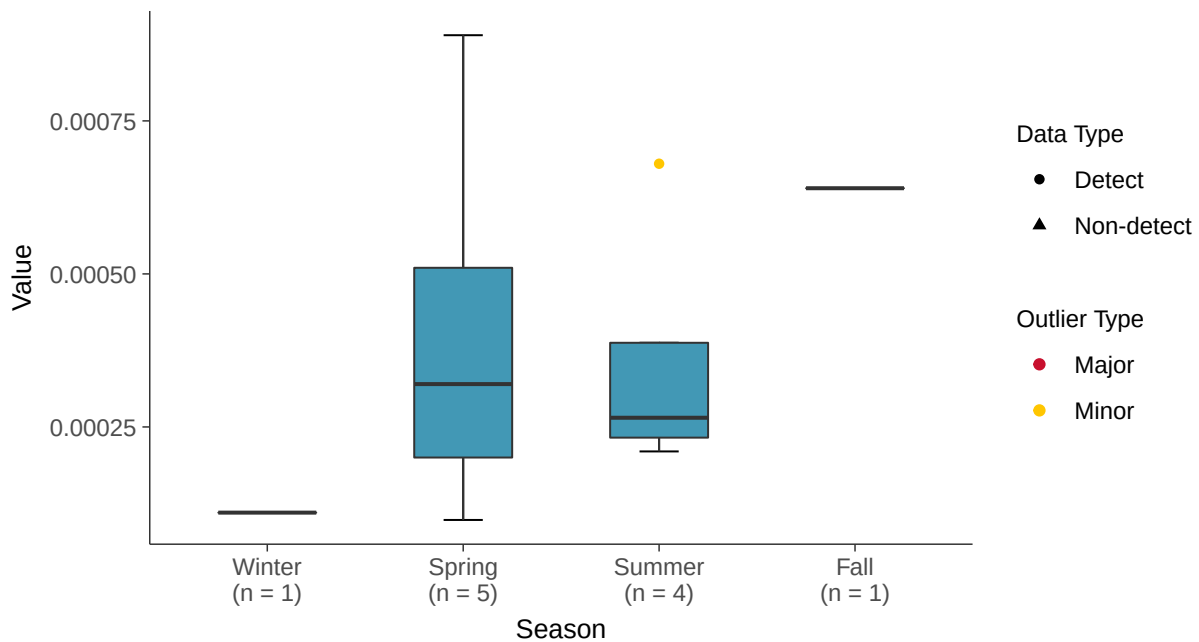
Boxplot

Cadmium, MW-7 (mg/l)



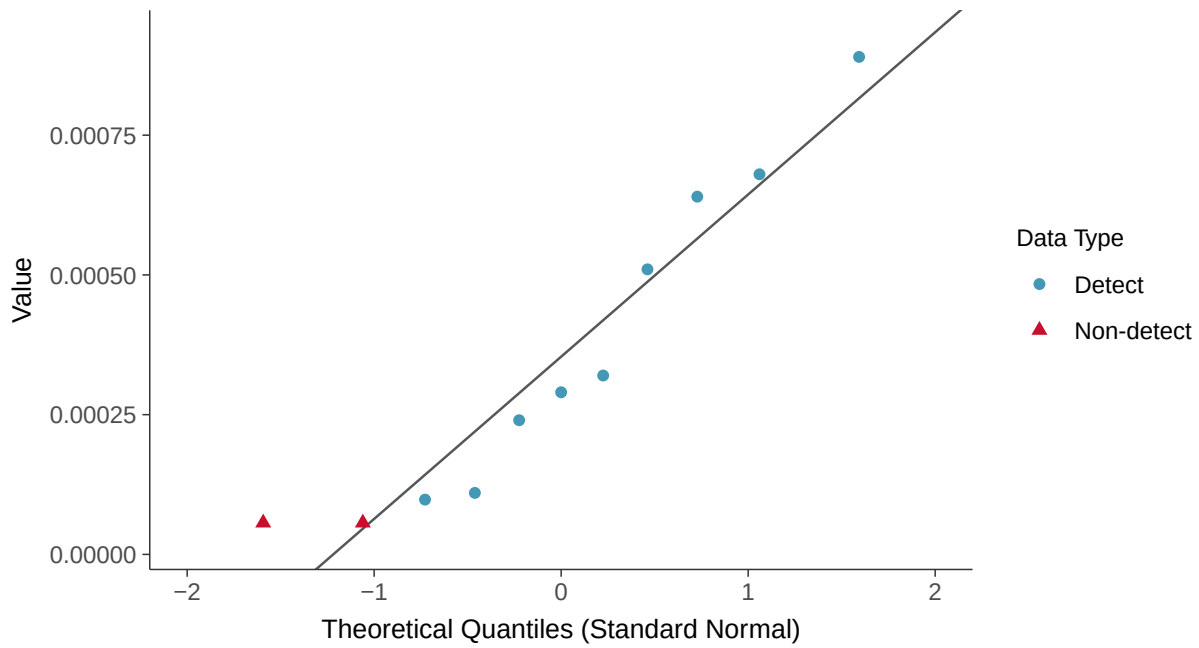
Boxplot by Season

Cadmium, MW-7 (mg/l)



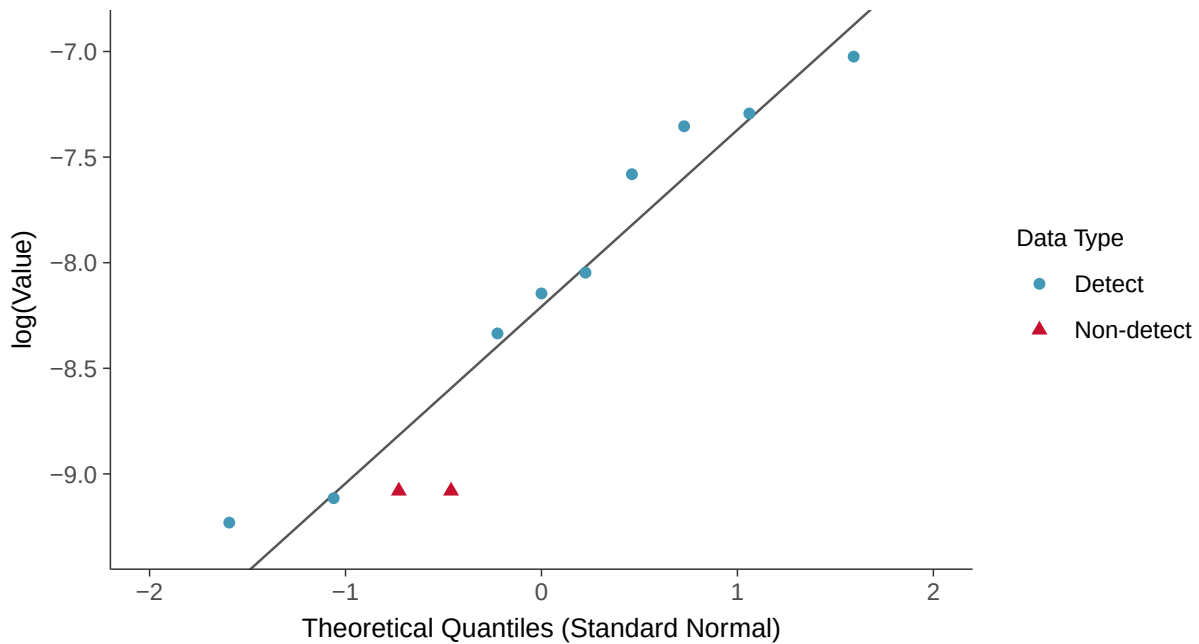
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-7 (mg/l)



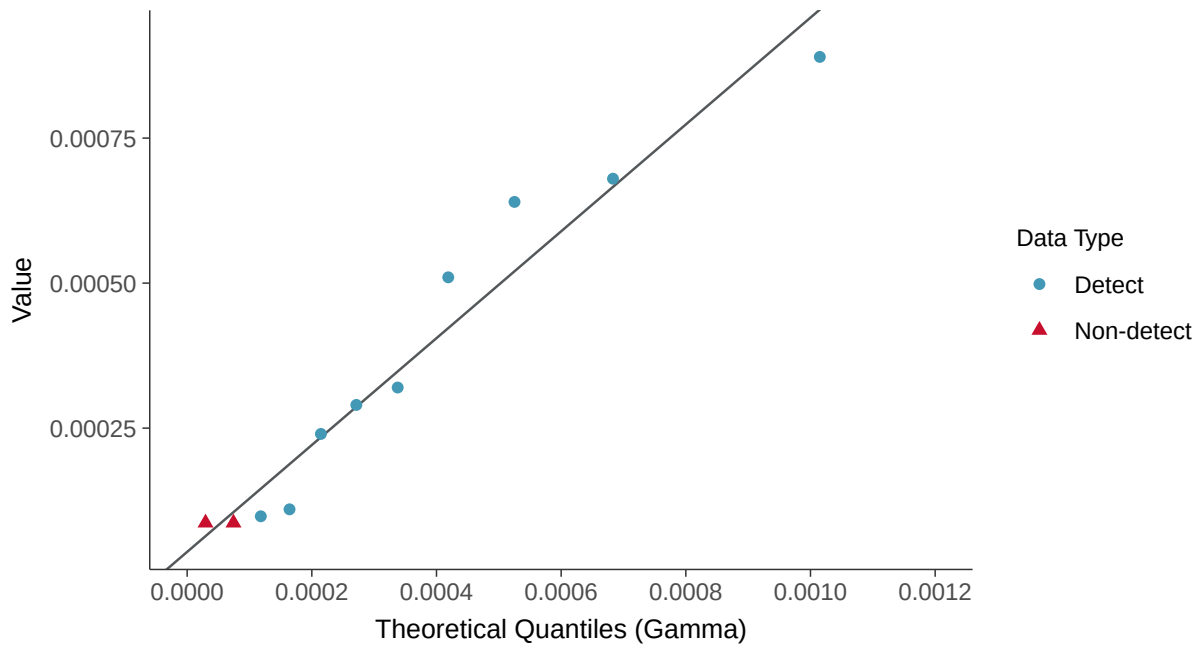
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-7 (mg/l)



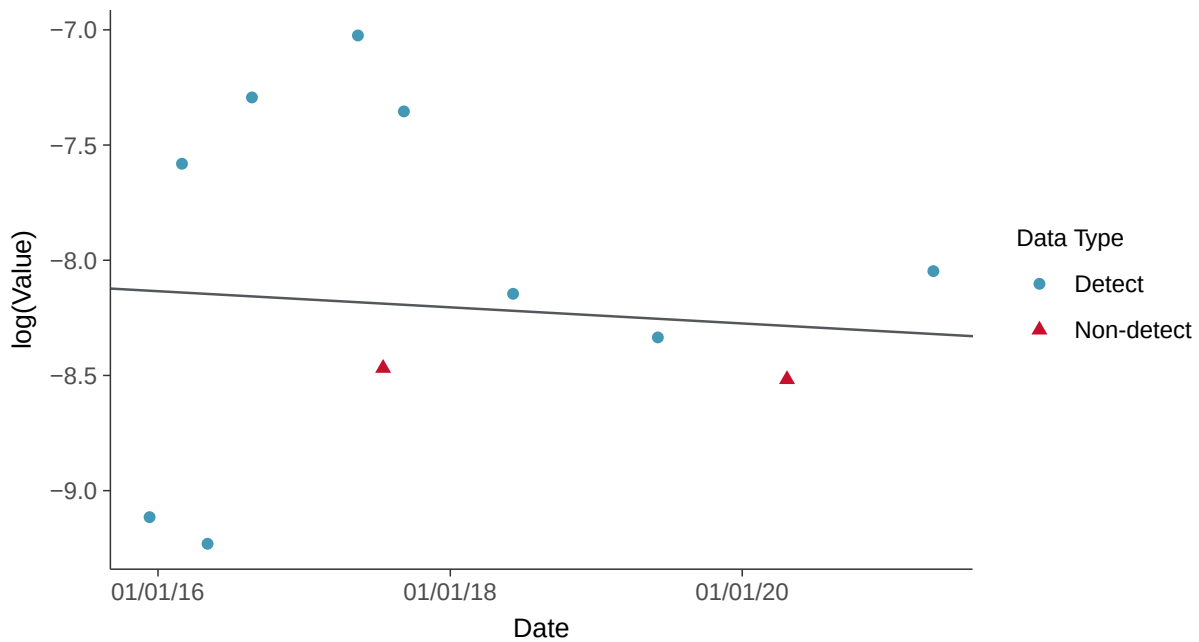
Gamma Q-Q plot using ROS Imputed Estimates

Cadmium, MW-7 (mg/l)



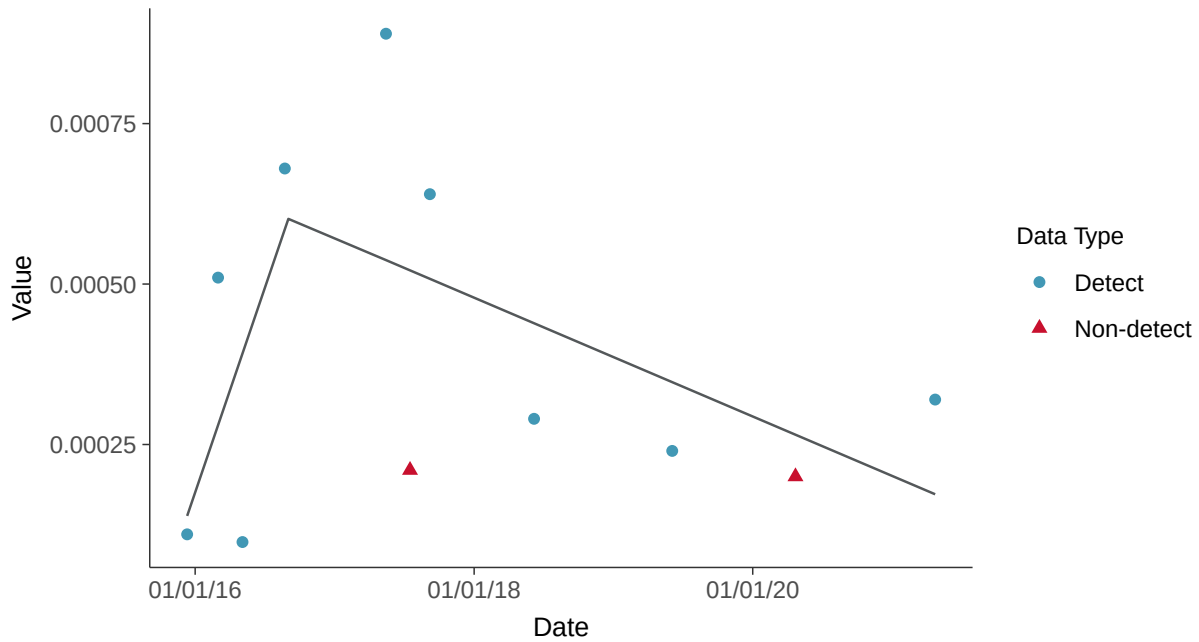
Trend Regression: Lognormal MLE

Cadmium, MW-7 (mg/l)



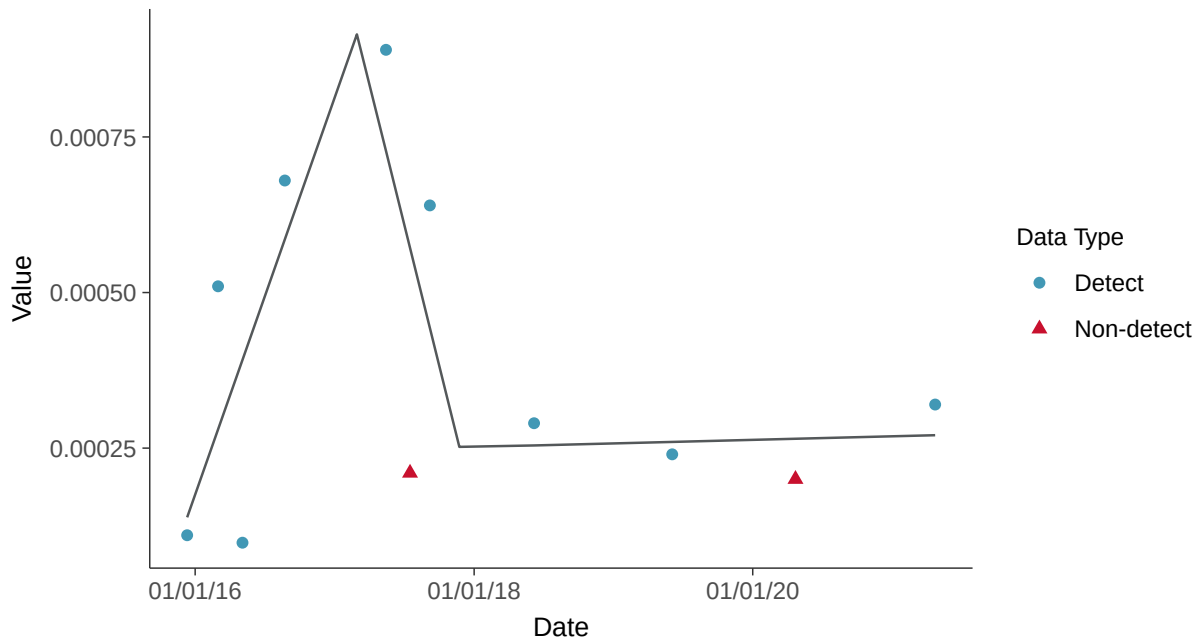
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-7 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cadmium, MW-7 (mg/l)

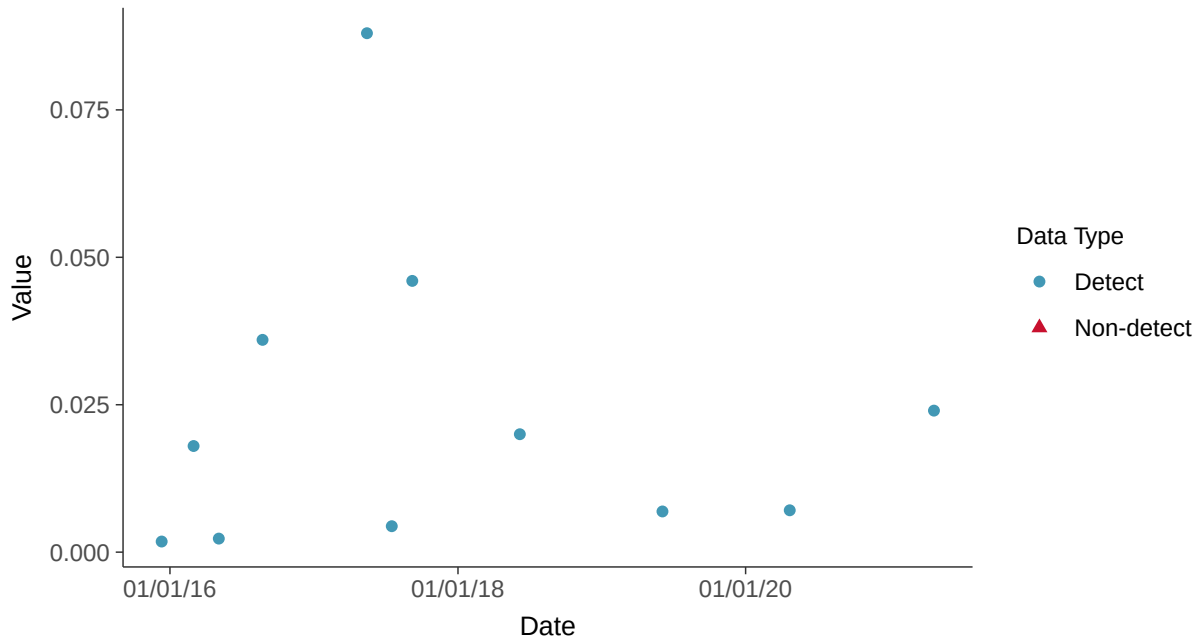


Appendix IV: Chromium, Total, MW-7

ID: 2_2_112

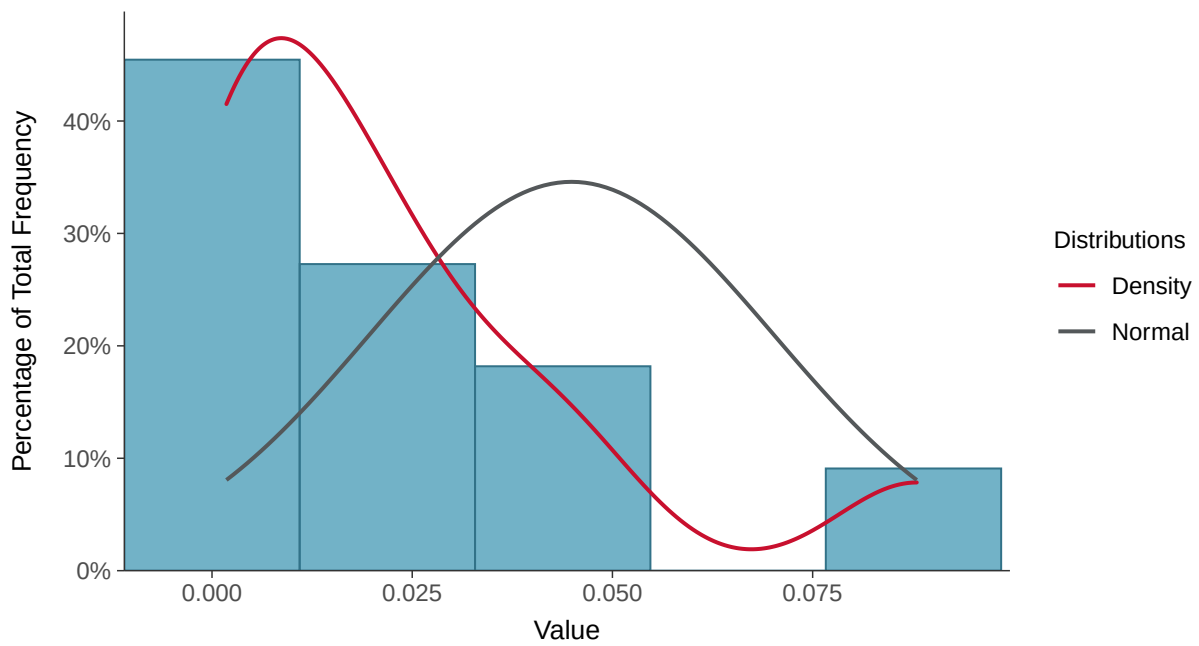
Scatter Plot

Chromium, Total, MW-7 (mg/l)



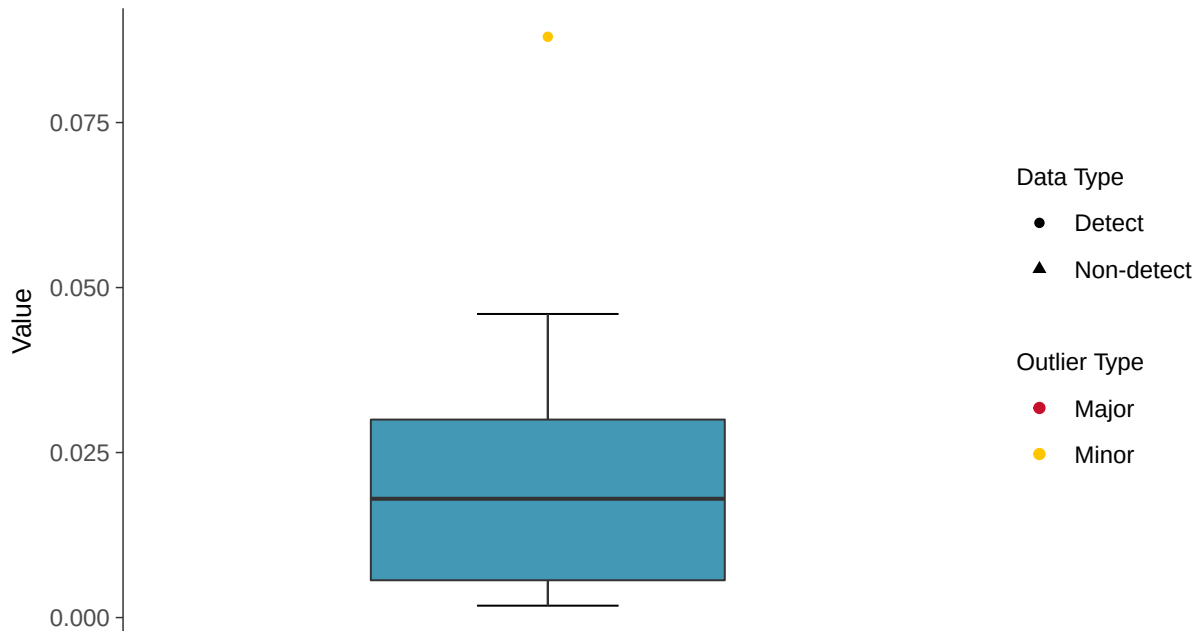
Histogram

Chromium, Total, MW-7 (mg/l)



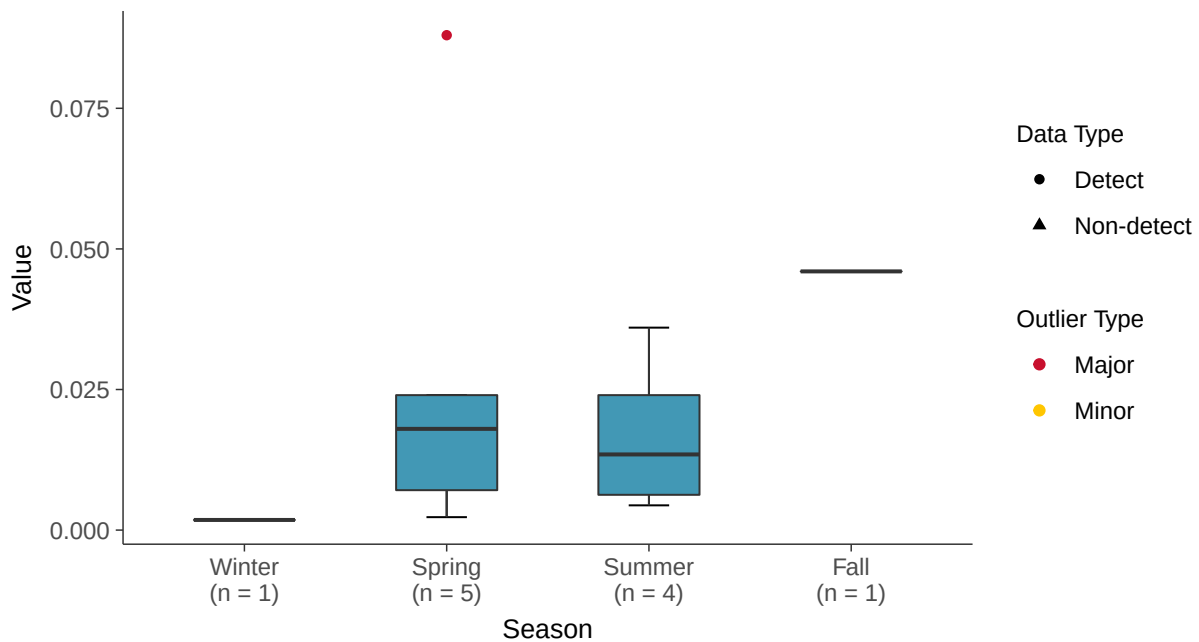
Boxplot

Chromium, Total, MW-7 (mg/l)



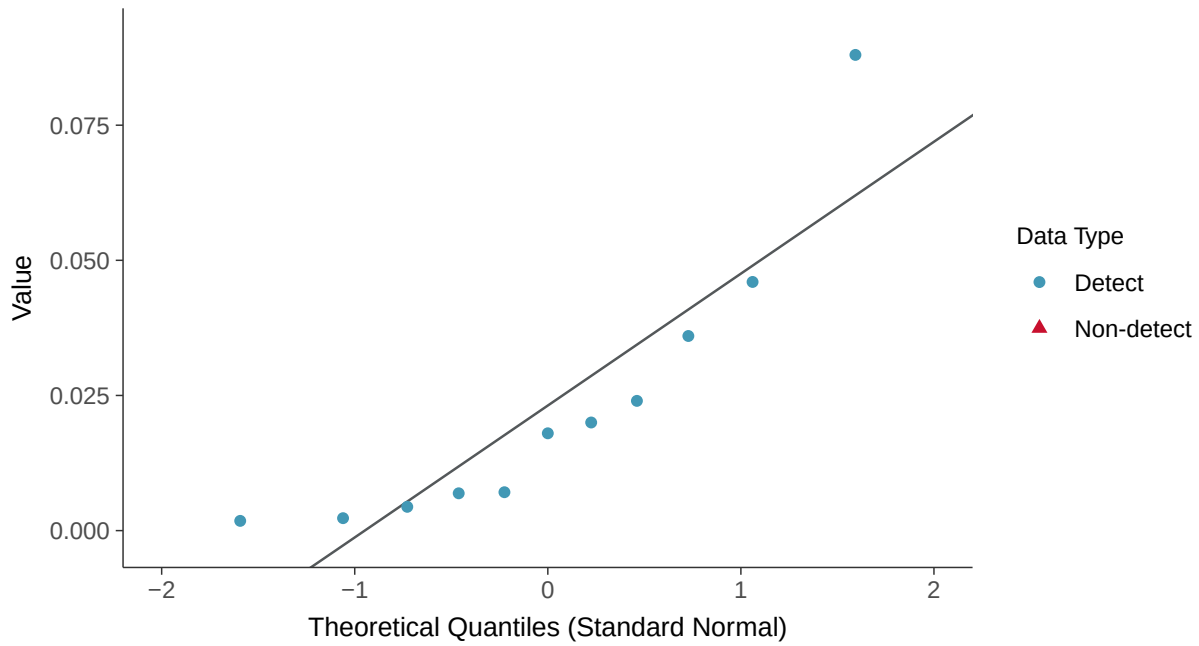
Boxplot by Season

Chromium, Total, MW-7 (mg/l)



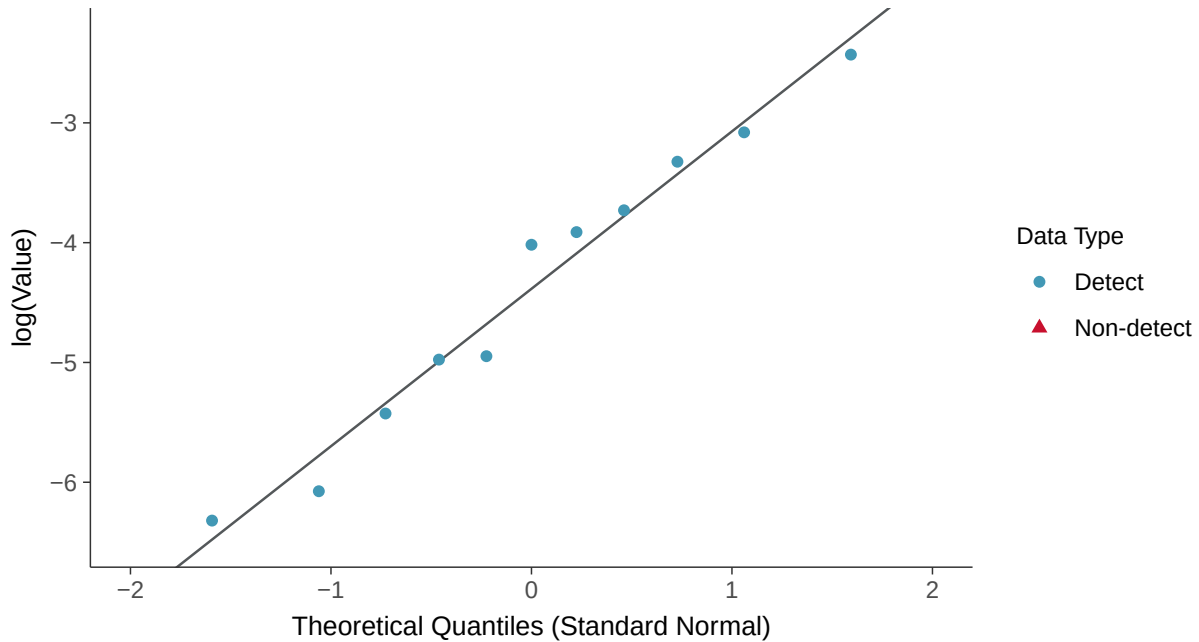
Normal Q-Q plot

Chromium, Total, MW-7 (mg/l)



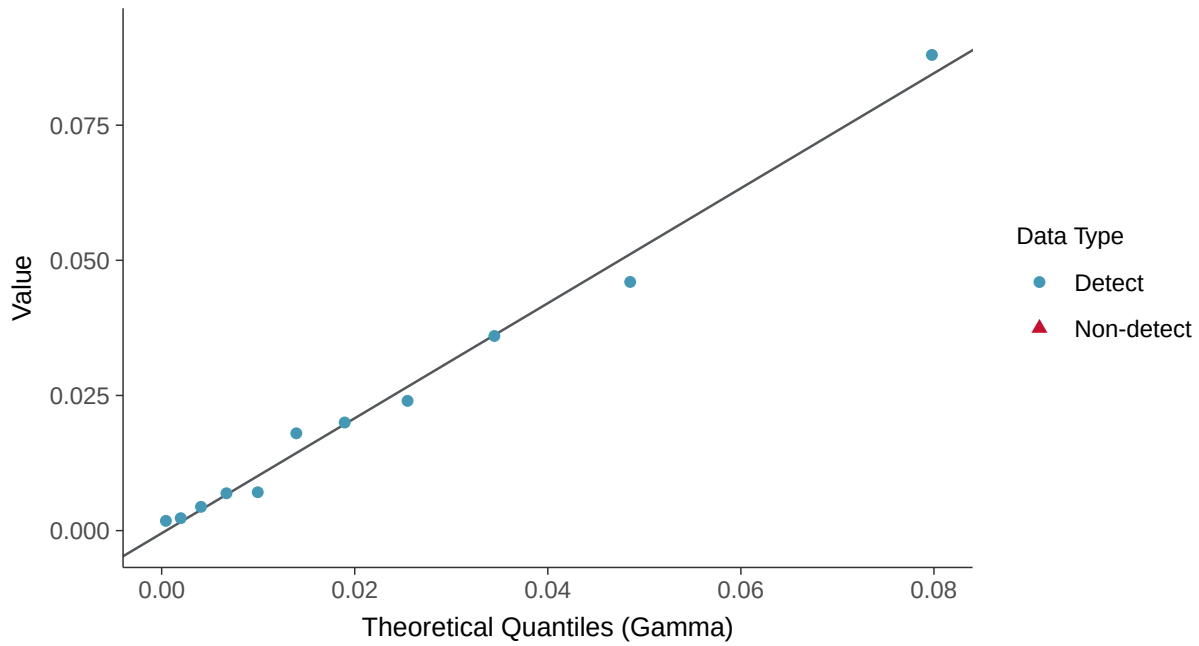
Lognormal Q-Q plot

Chromium, Total, MW-7 (mg/l)



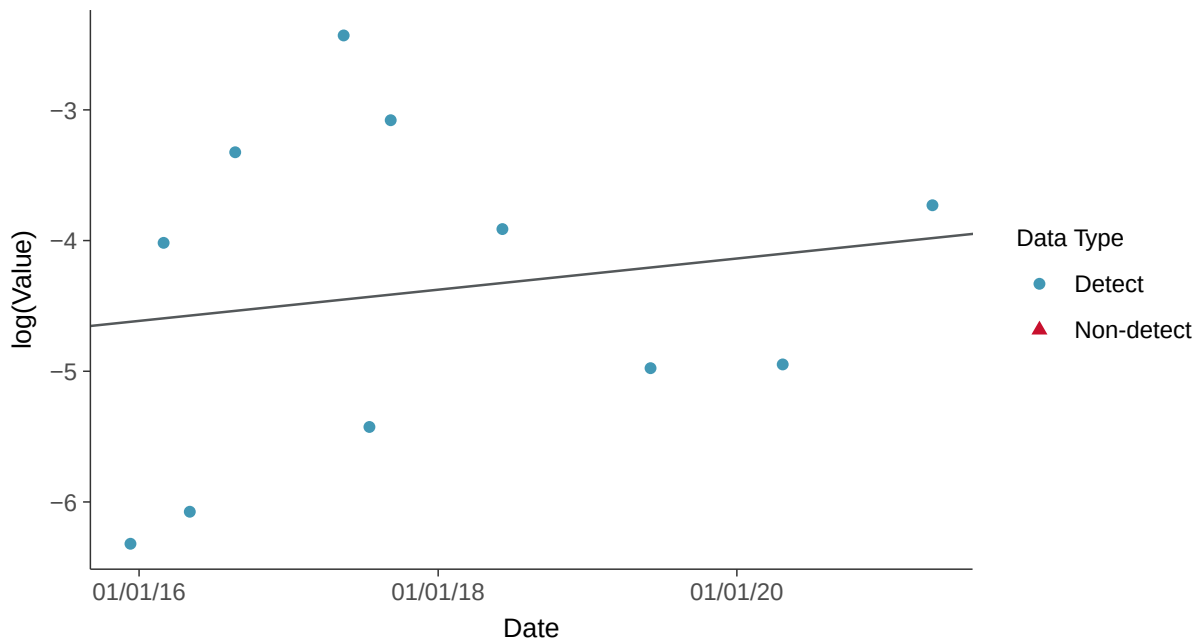
Gamma Q-Q plot

Chromium, Total, MW-7 (mg/l)



Trend Regression: Lognormal MLE

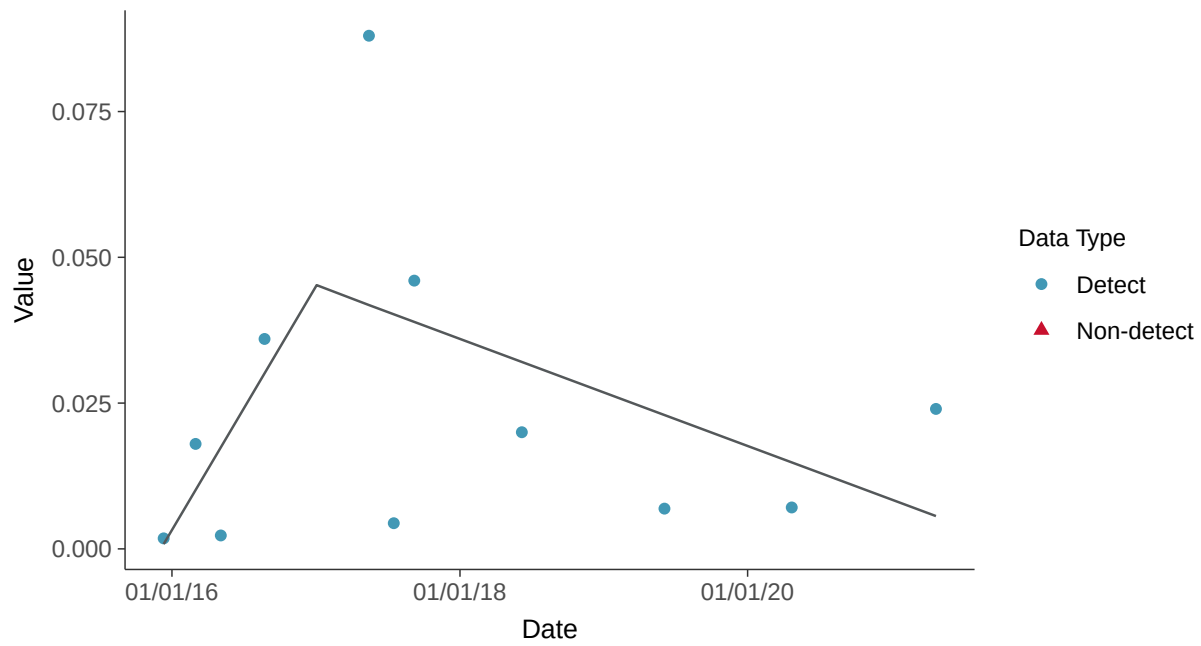
Chromium, Total, MW-7 (mg/l)





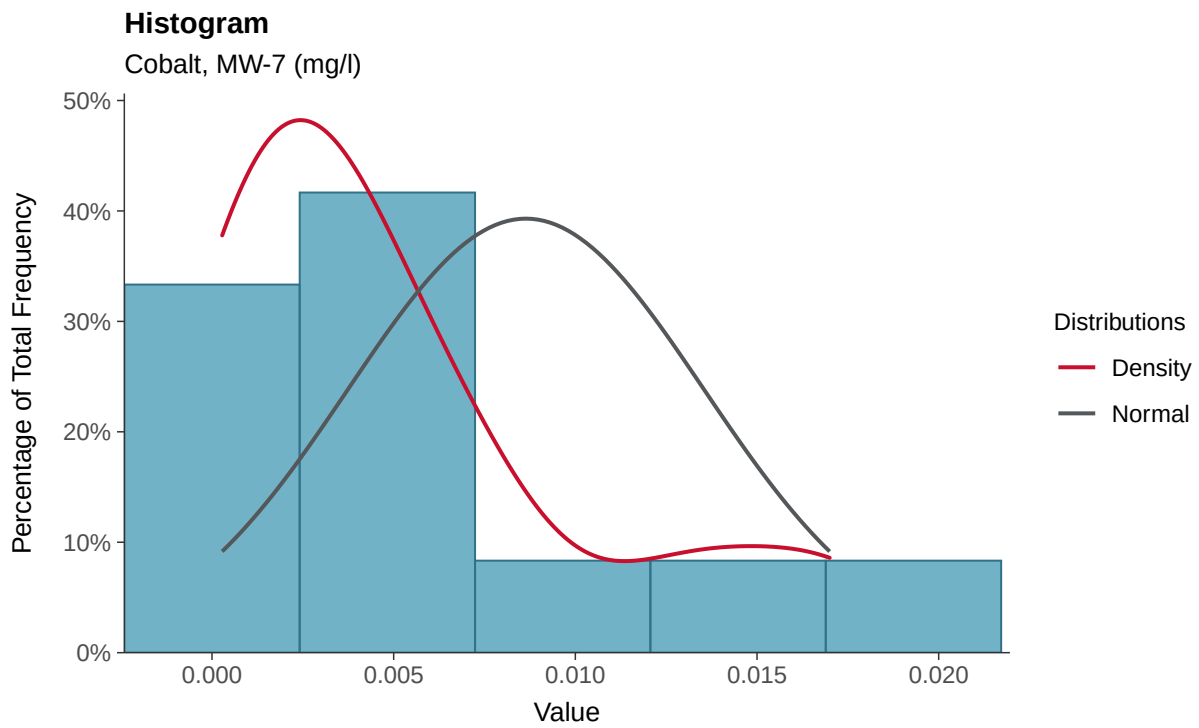
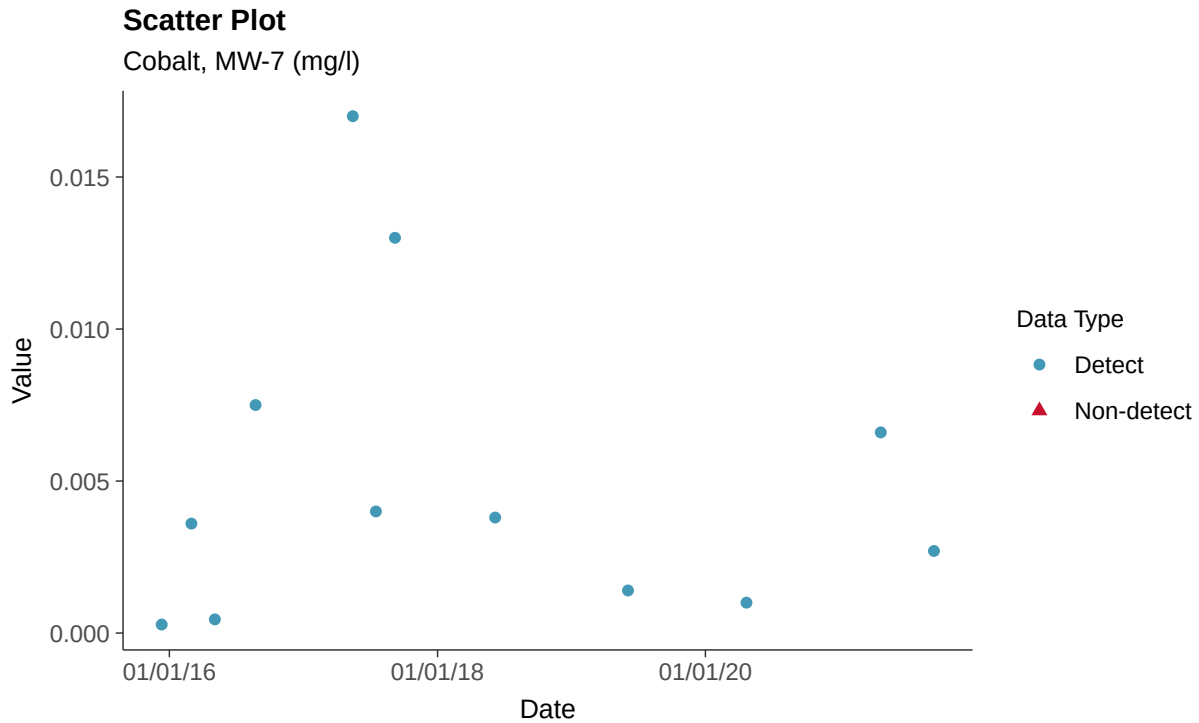
Trend Regression: Piecewise Linear-Linear

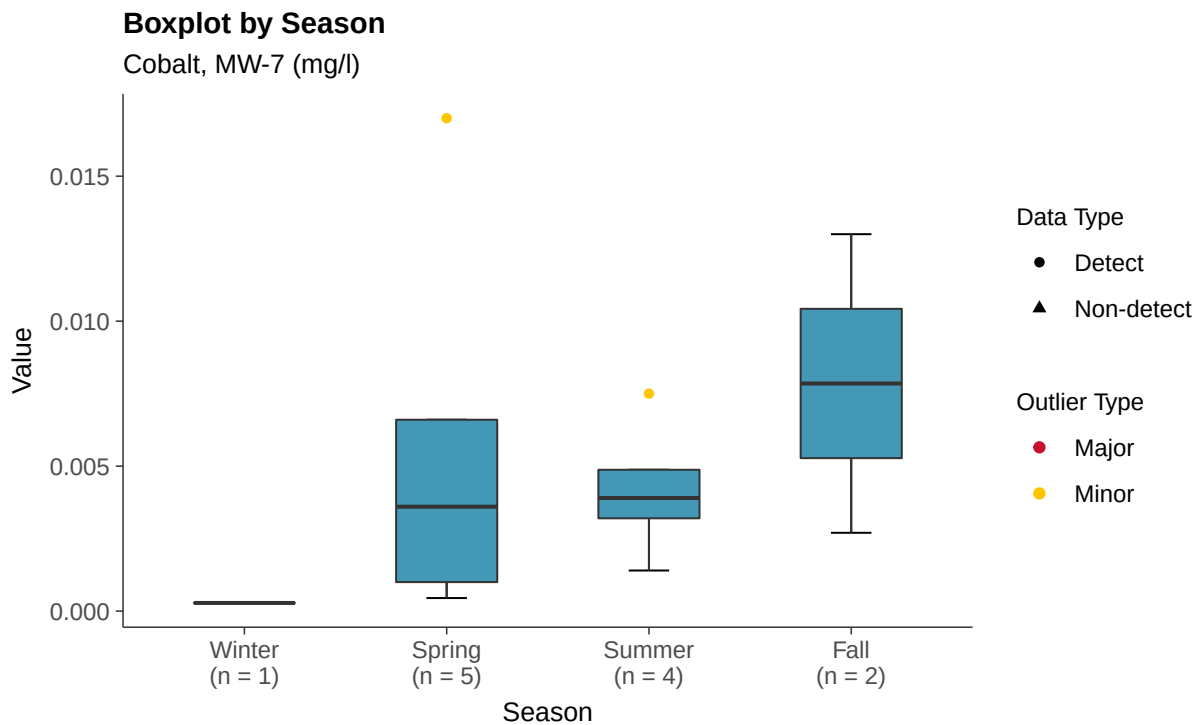
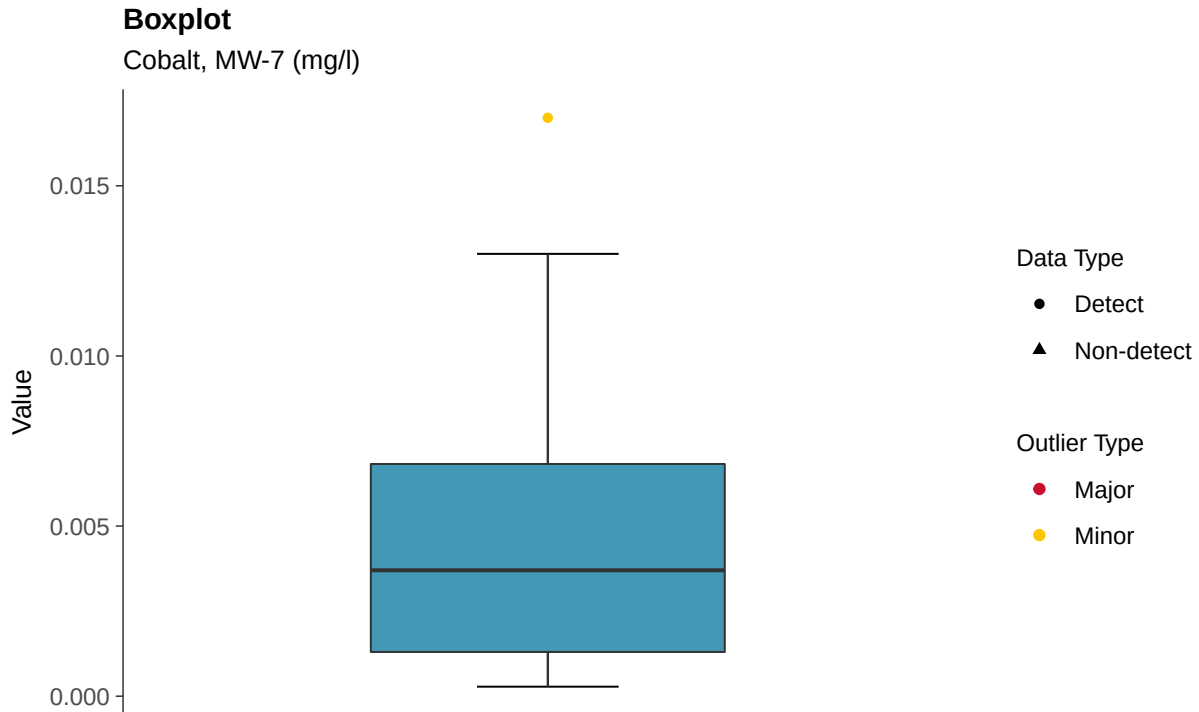
Chromium, Total, MW-7 (mg/l)



Appendix IV: Cobalt, MW-7

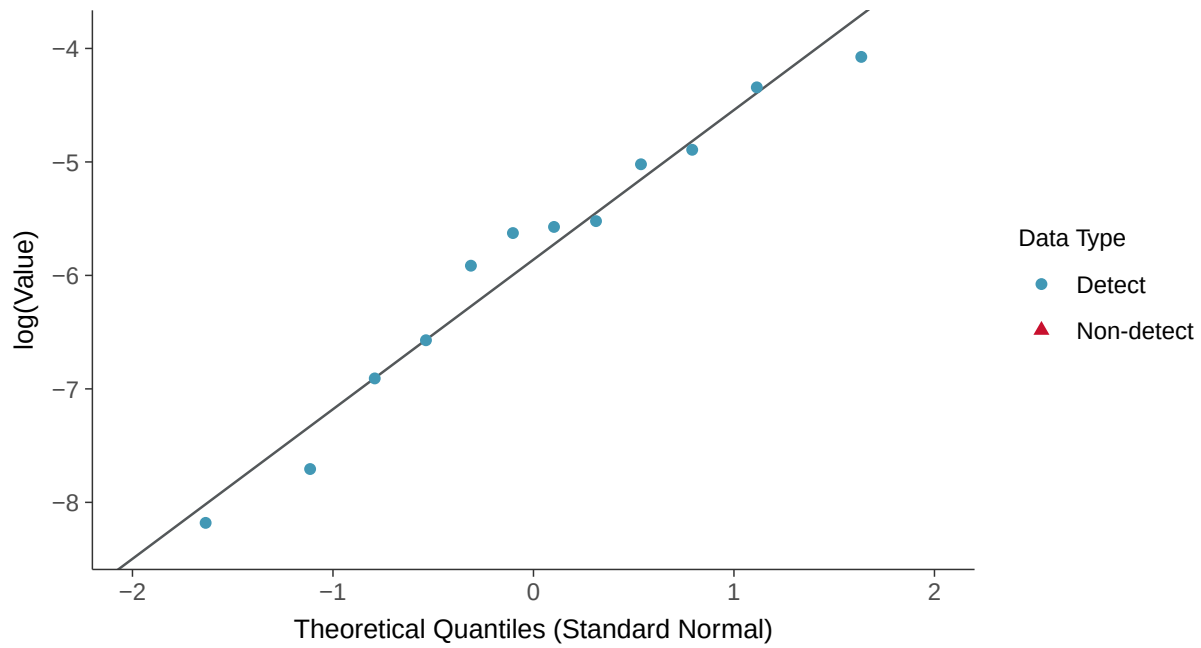
ID: 2_2_113





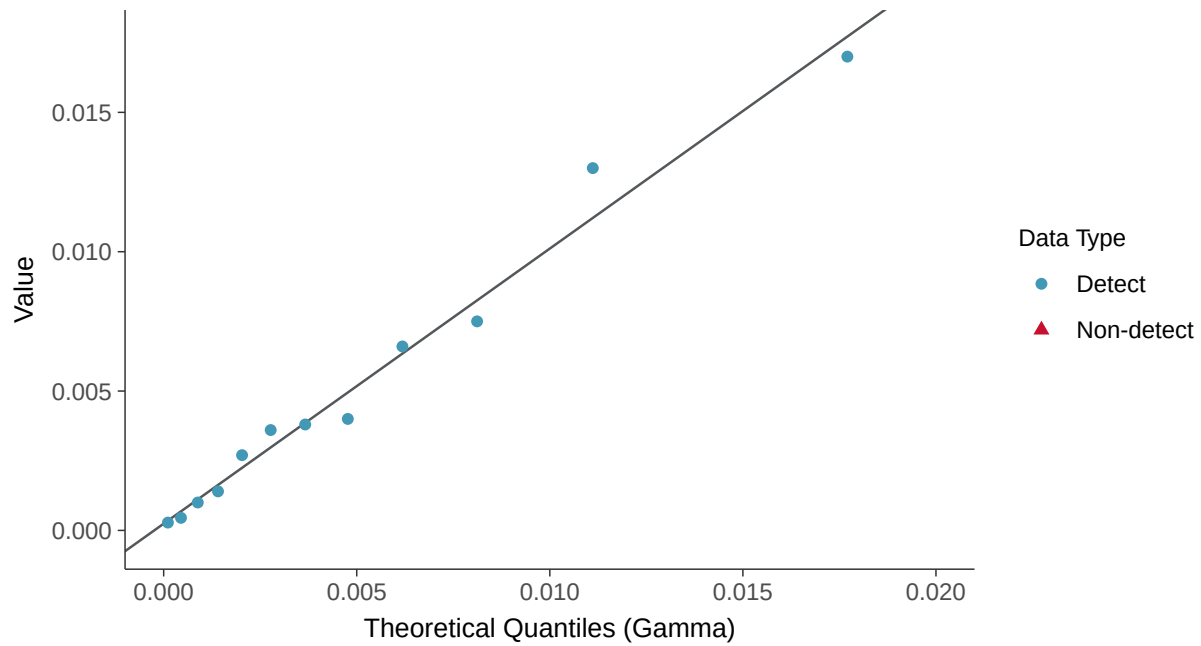
Lognormal Q-Q plot

Cobalt, MW-7 (mg/l)



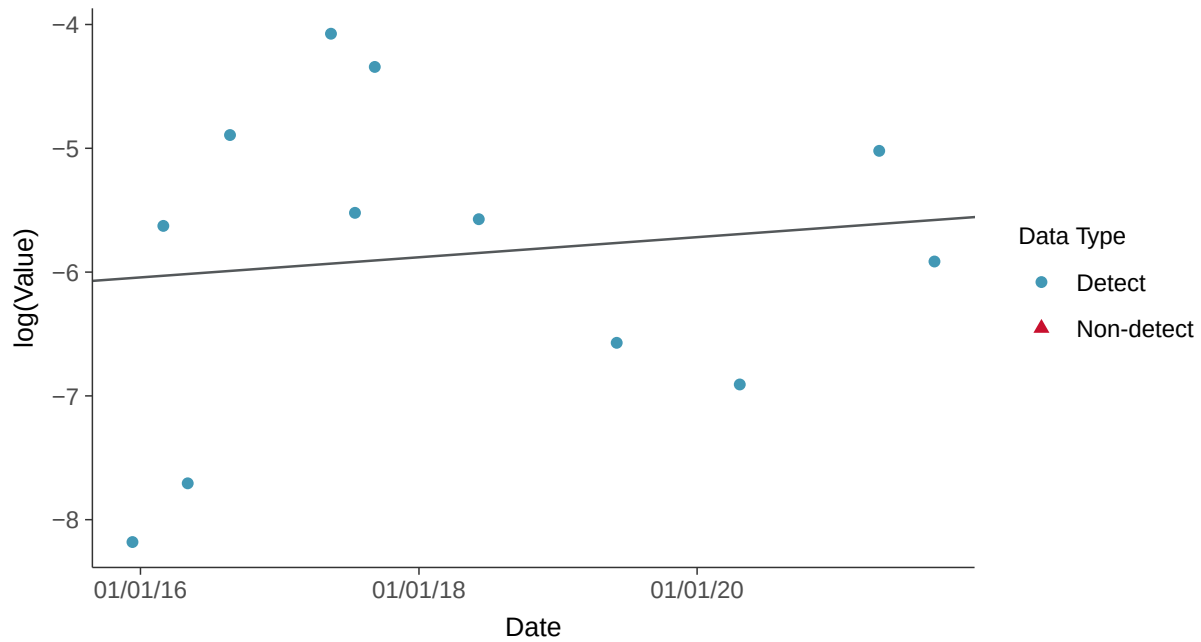
Gamma Q-Q plot

Cobalt, MW-7 (mg/l)



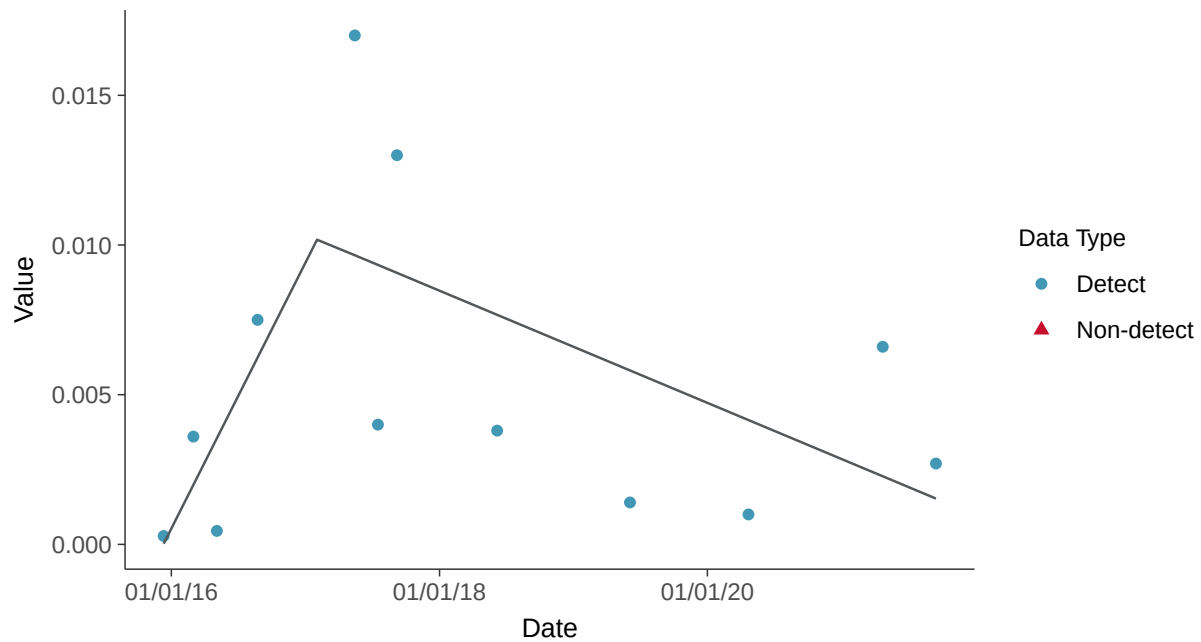
Trend Regression: Lognormal MLE

Cobalt, MW-7 (mg/l)



Trend Regression: Piecewise Linear-Linear

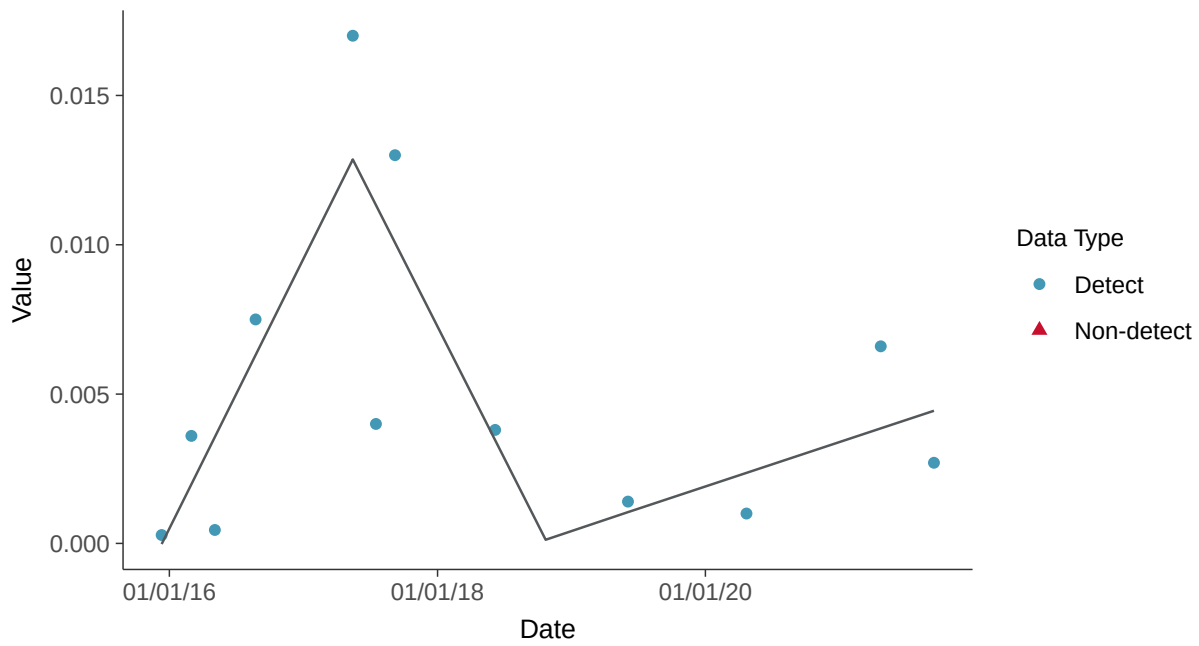
Cobalt, MW-7 (mg/l)





Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-7 (mg/l)

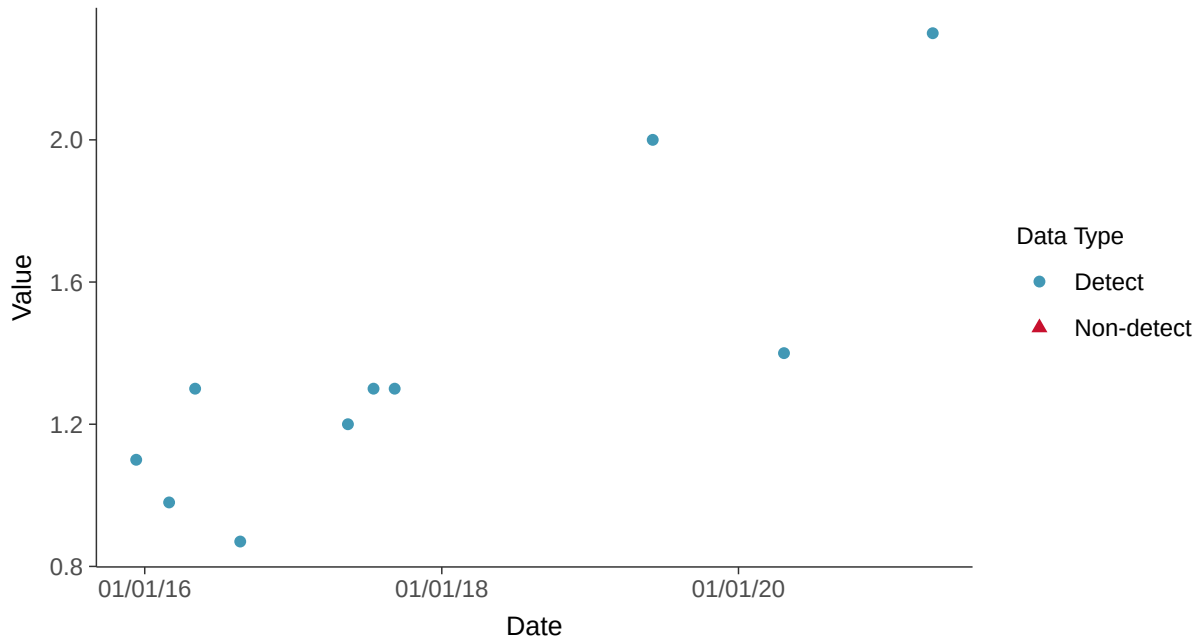


Appendix IV: Fluoride (App IV), MW-7

ID: 2_2_116

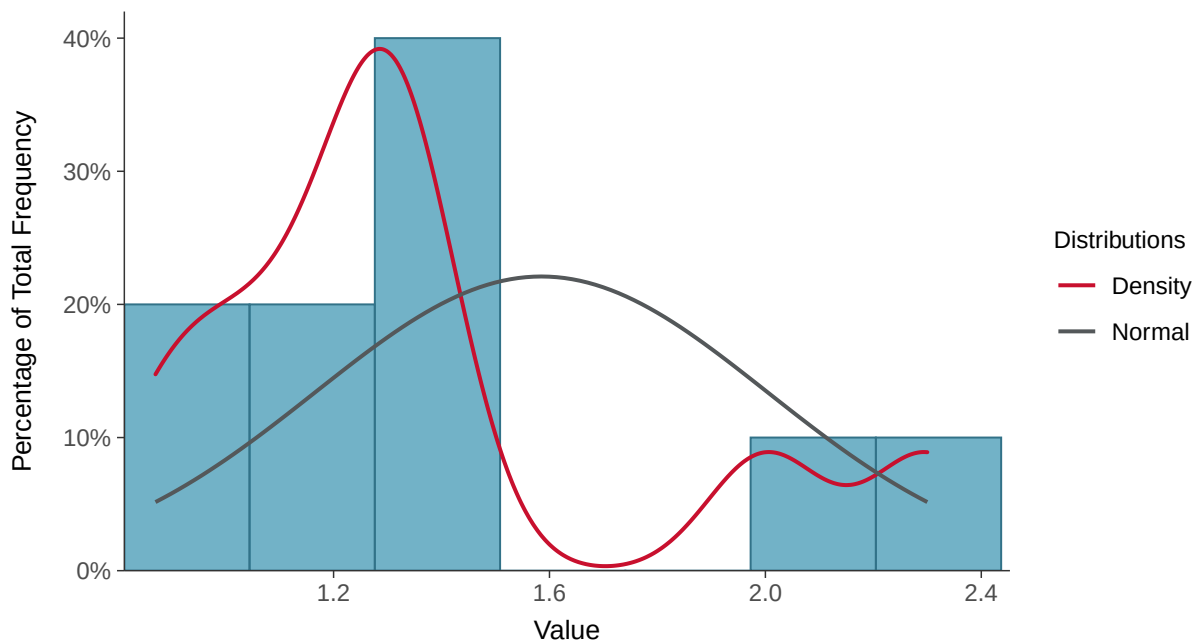
Scatter Plot

Fluoride (App IV), MW-7 (mg/l)



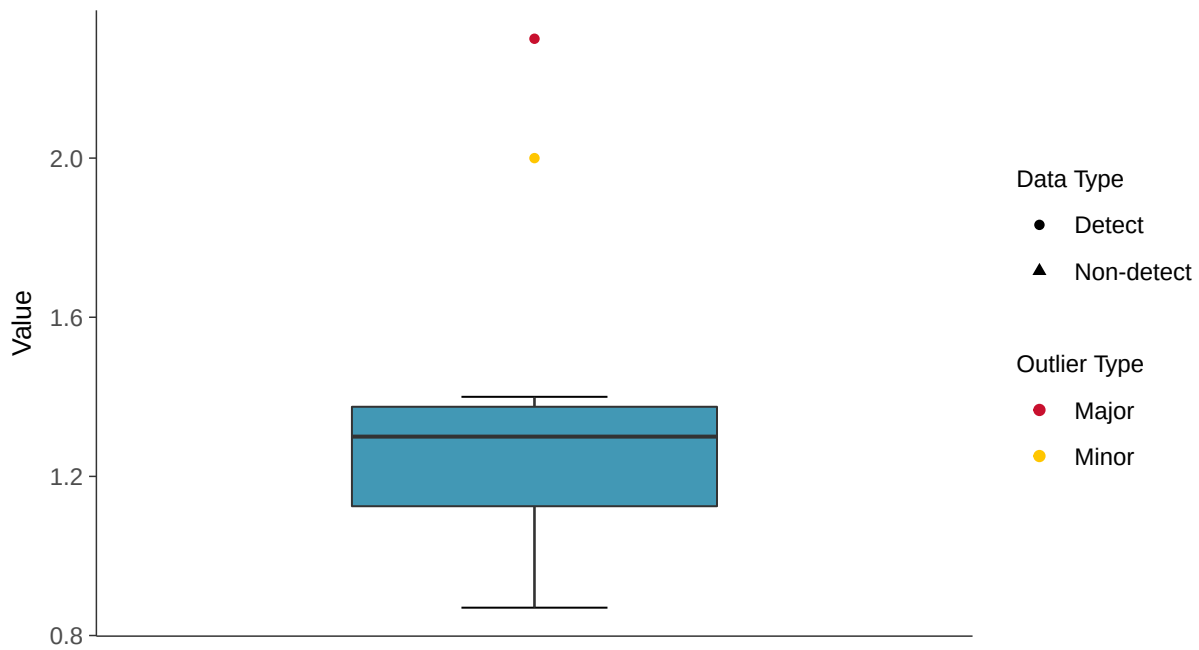
Histogram

Fluoride (App IV), MW-7 (mg/l)



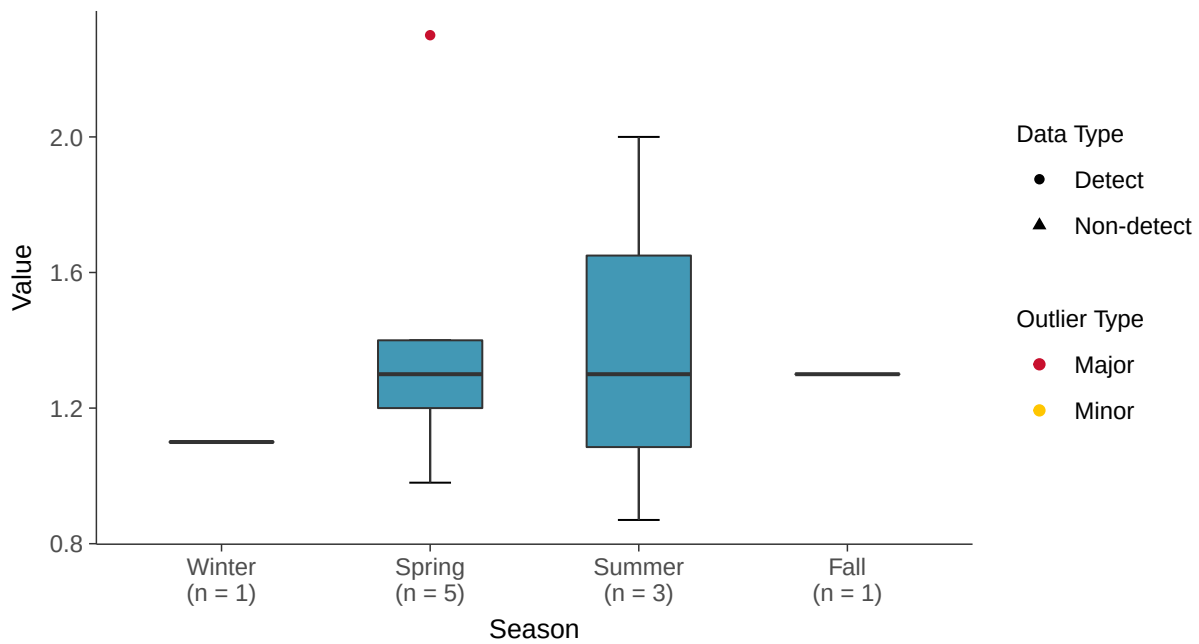
Boxplot

Fluoride (App IV), MW-7 (mg/l)



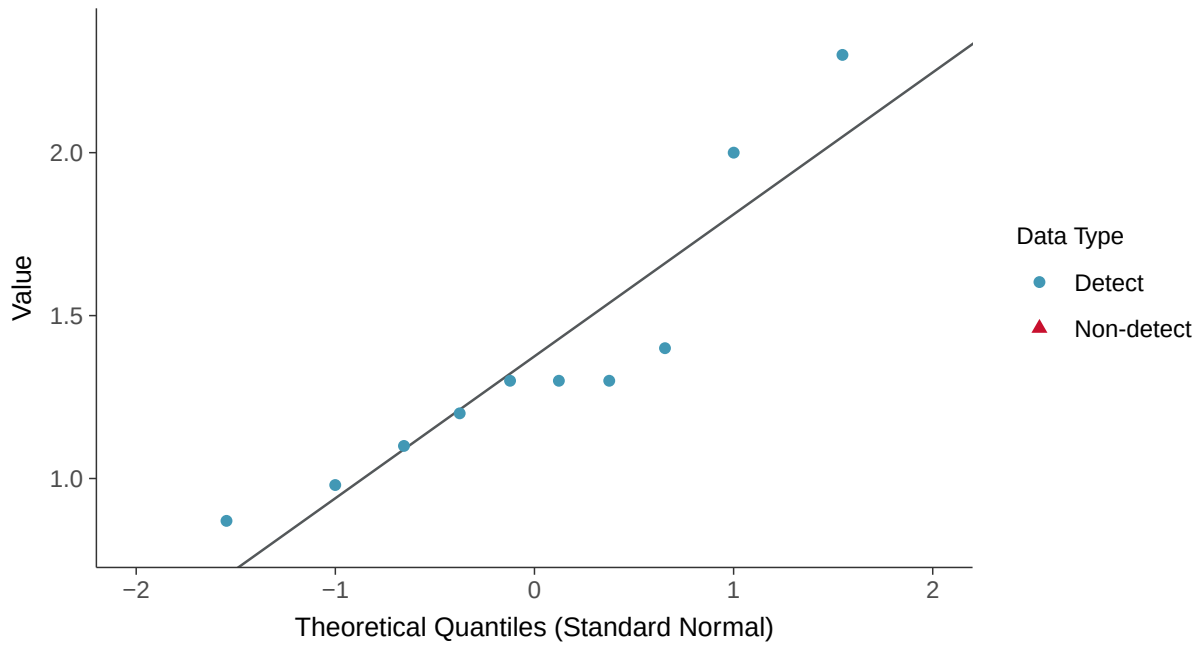
Boxplot by Season

Fluoride (App IV), MW-7 (mg/l)



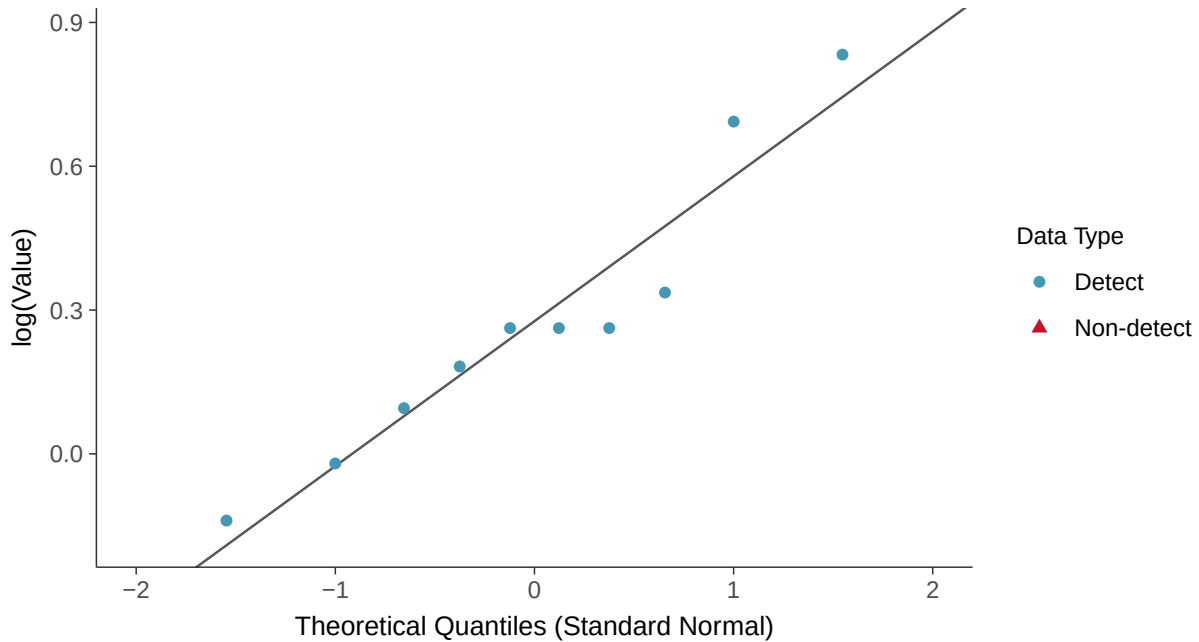
Normal Q-Q plot

Fluoride (App IV), MW-7 (mg/l)



Lognormal Q-Q plot

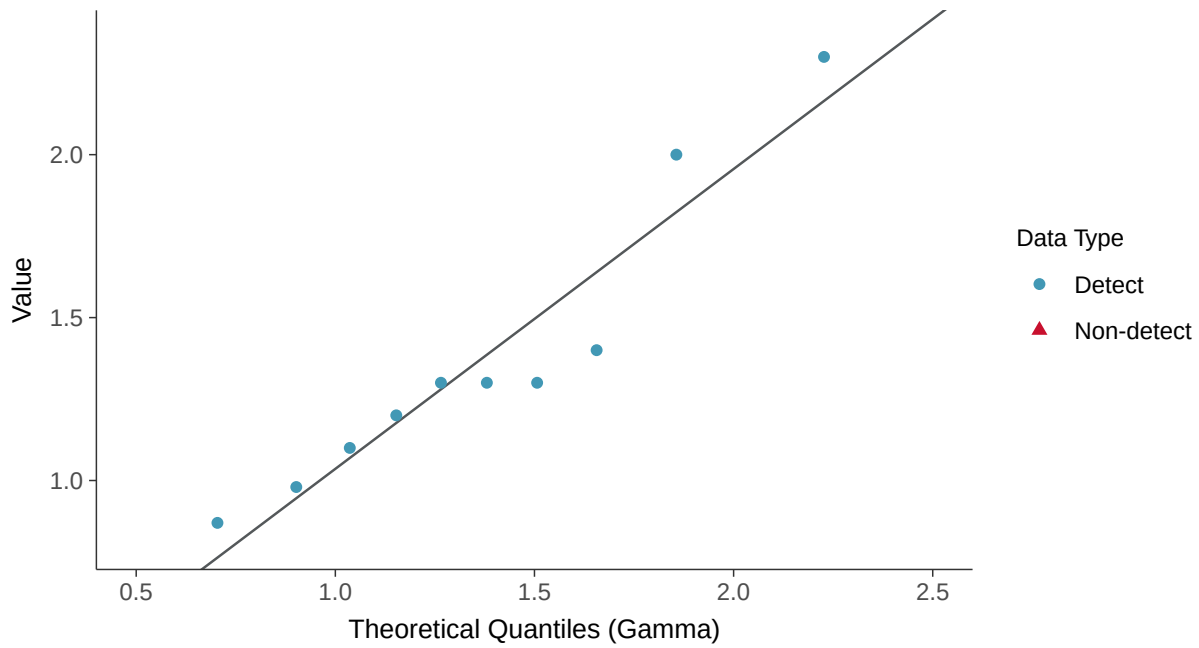
Fluoride (App IV), MW-7 (mg/l)





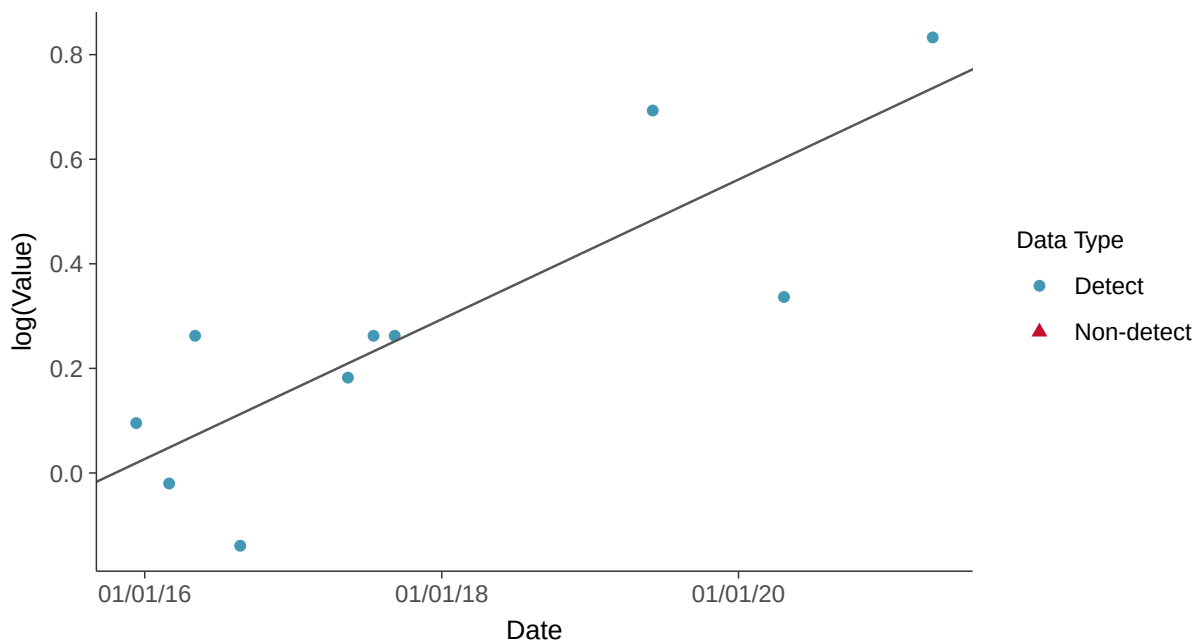
Gamma Q-Q plot

Fluoride (App IV), MW-7 (mg/l)



Trend Regression: Lognormal MLE

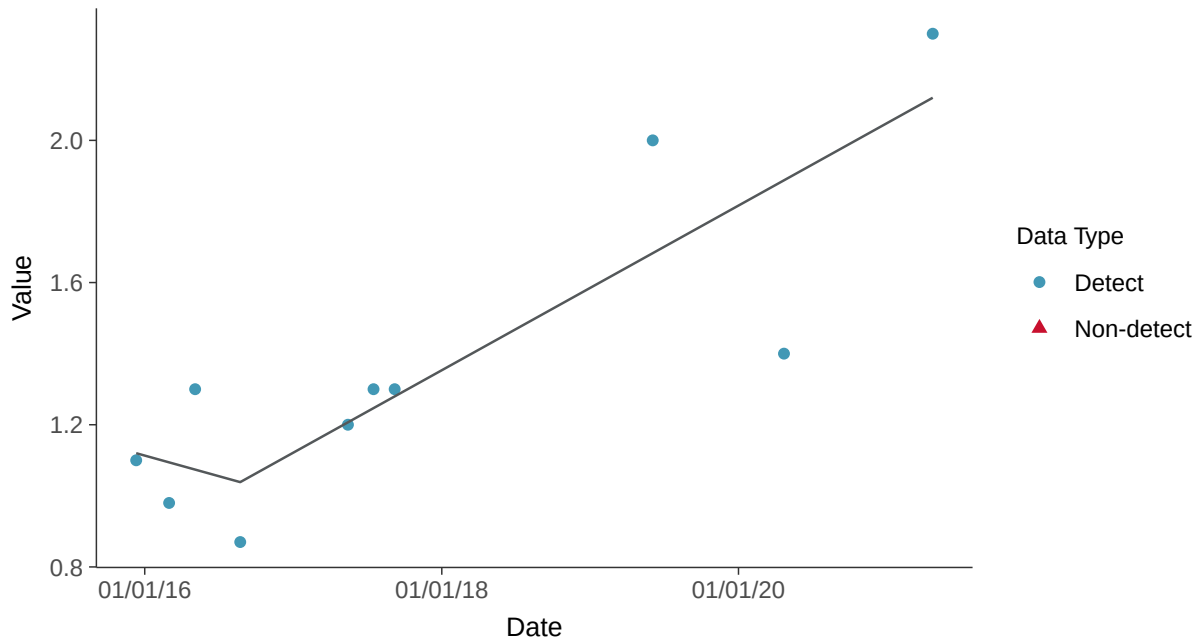
Fluoride (App IV), MW-7 (mg/l)





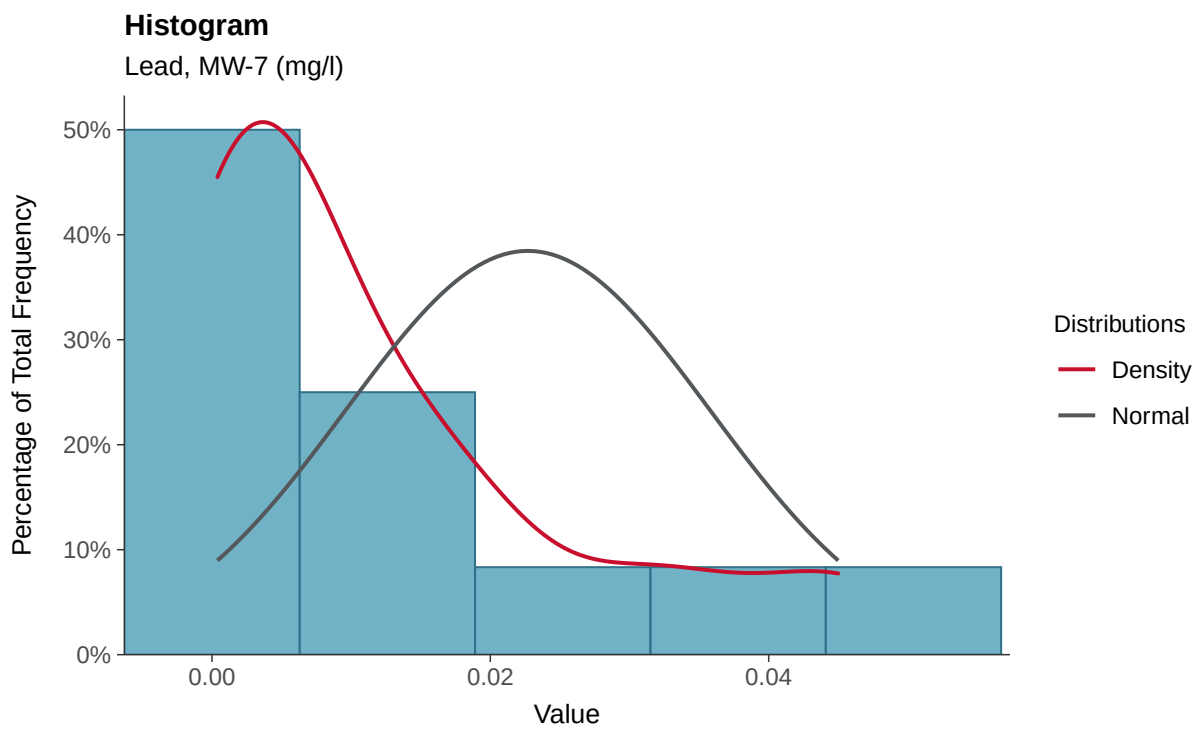
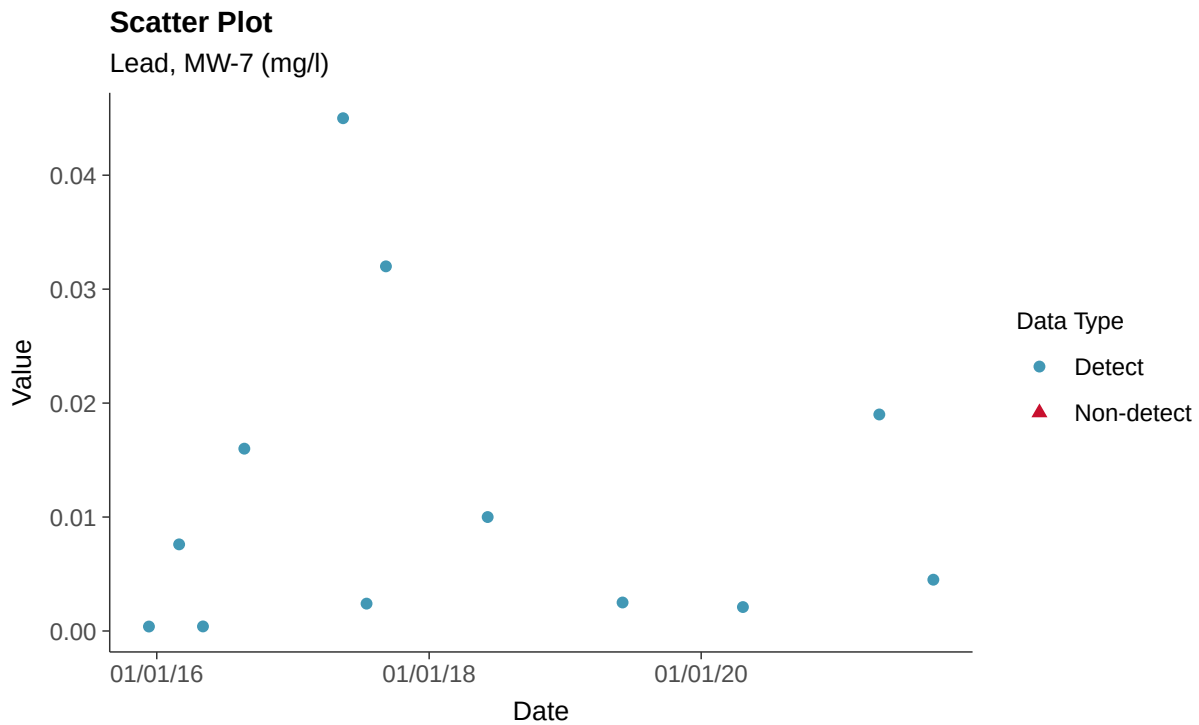
Trend Regression: Piecewise Linear-Linear

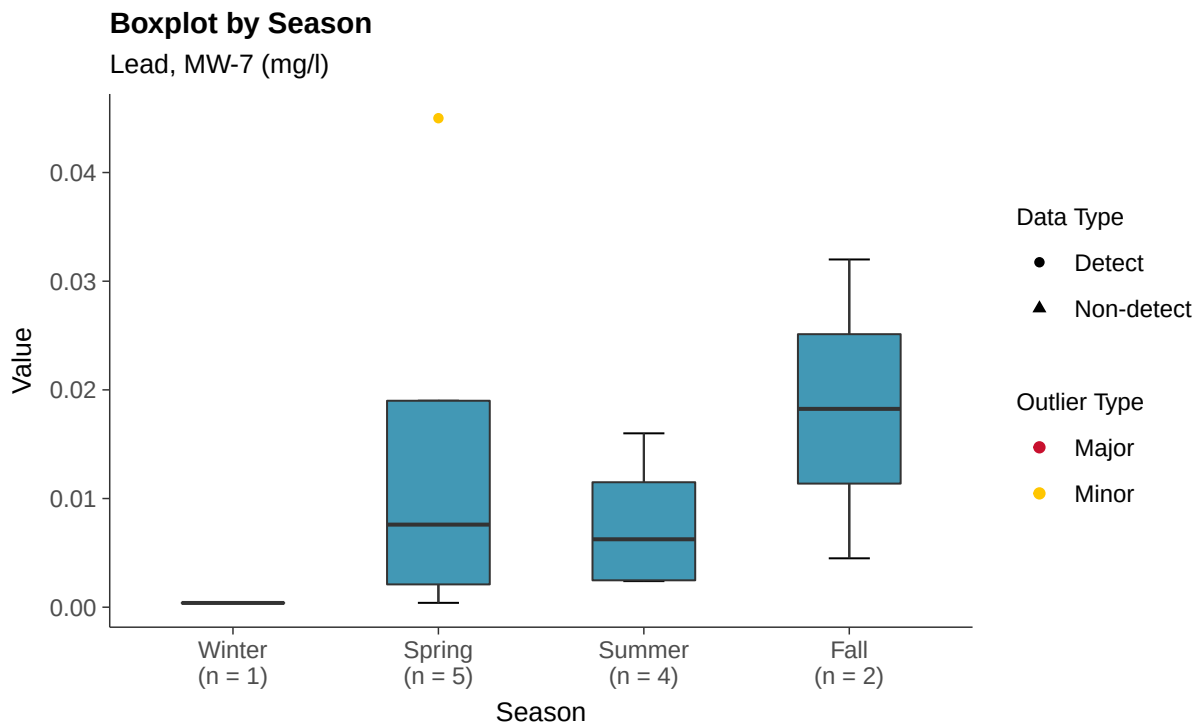
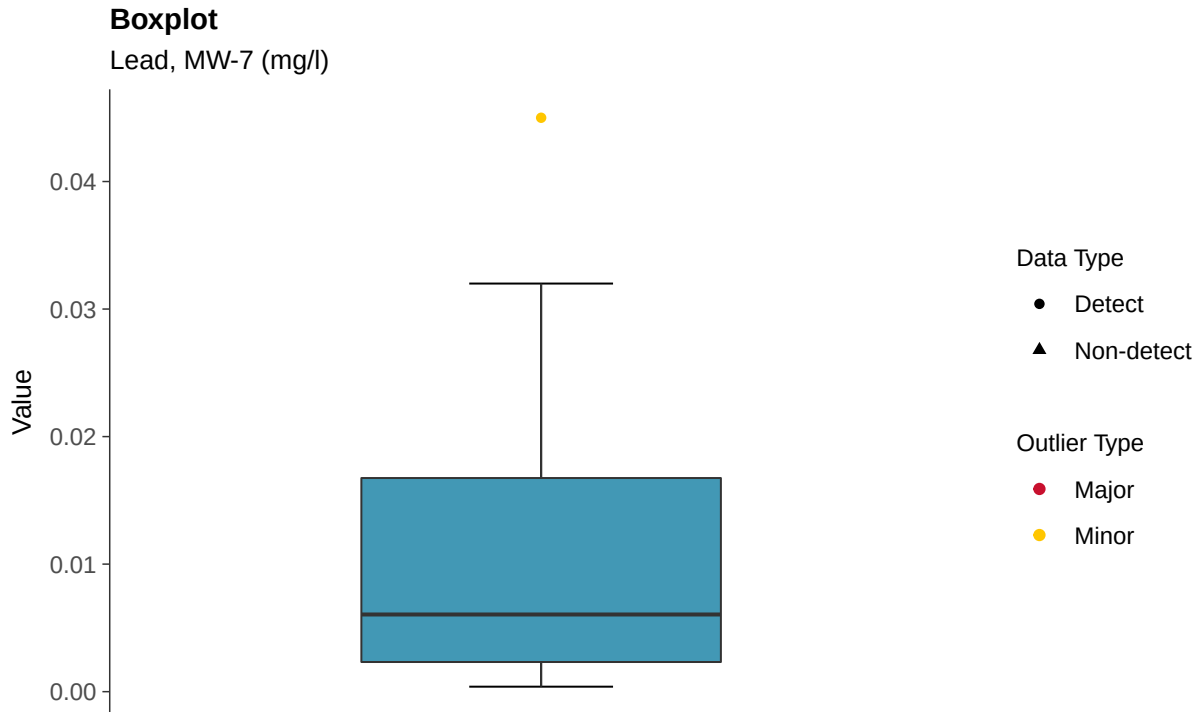
Fluoride (App IV), MW-7 (mg/l)



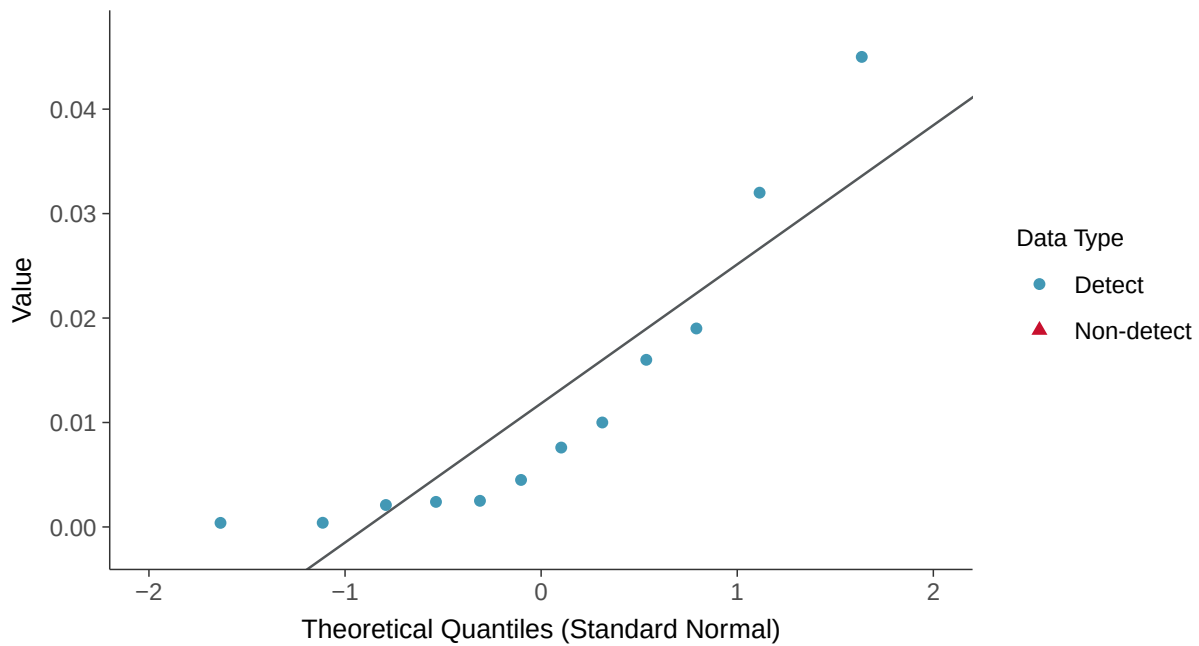
Appendix IV: Lead, MW-7

ID: 2_2_117

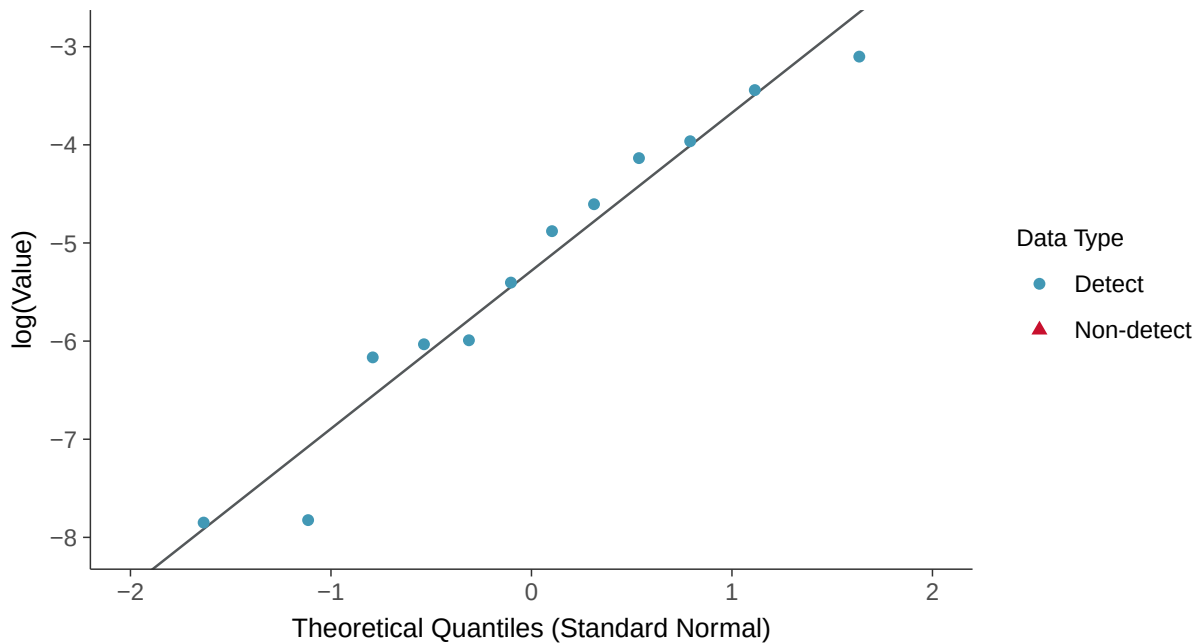


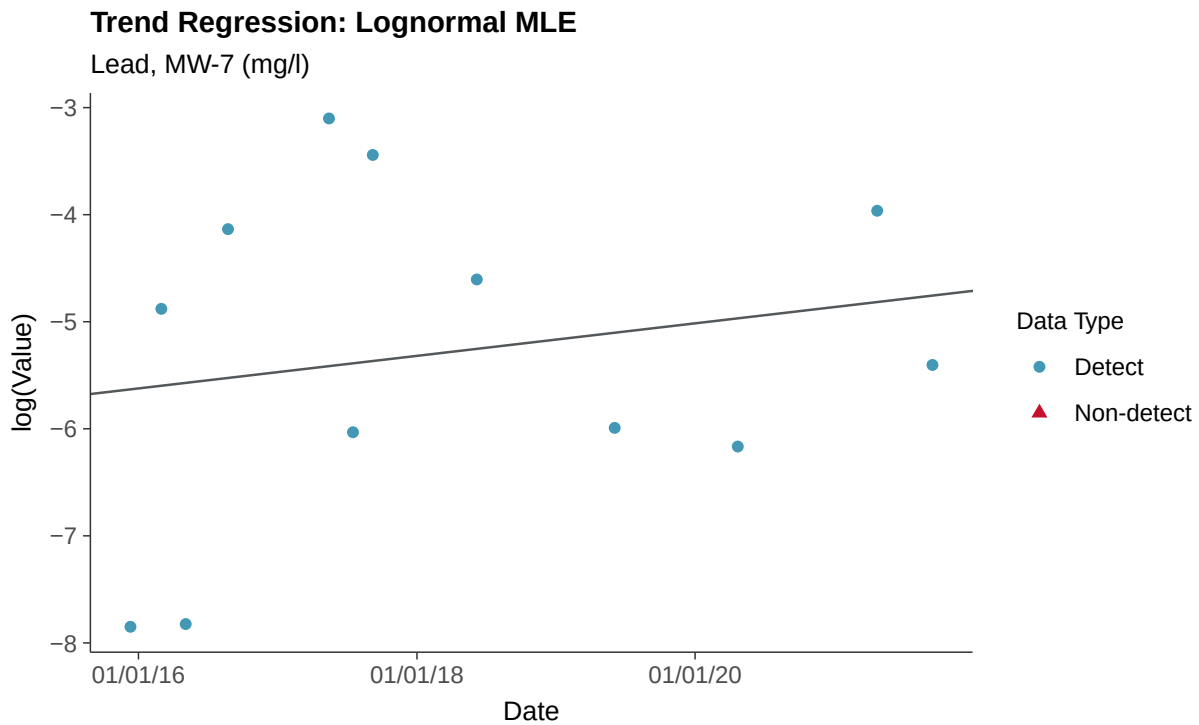
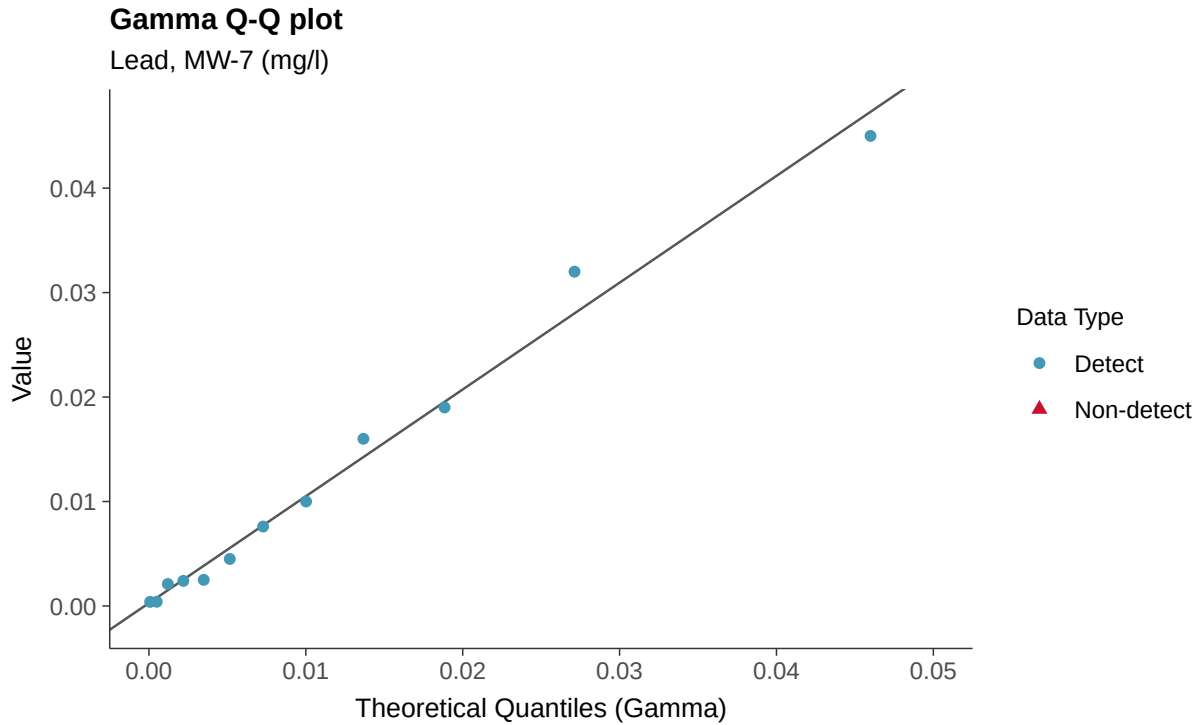


Normal Q-Q plot
Lead, MW-7 (mg/l)



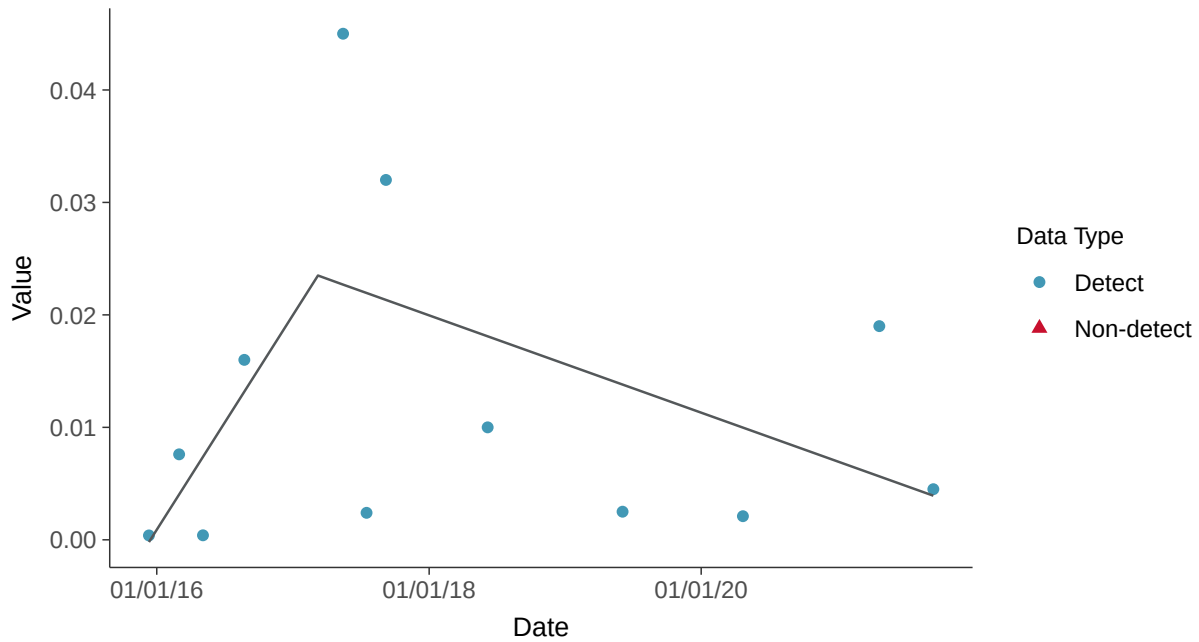
Lognormal Q-Q plot
Lead, MW-7 (mg/l)





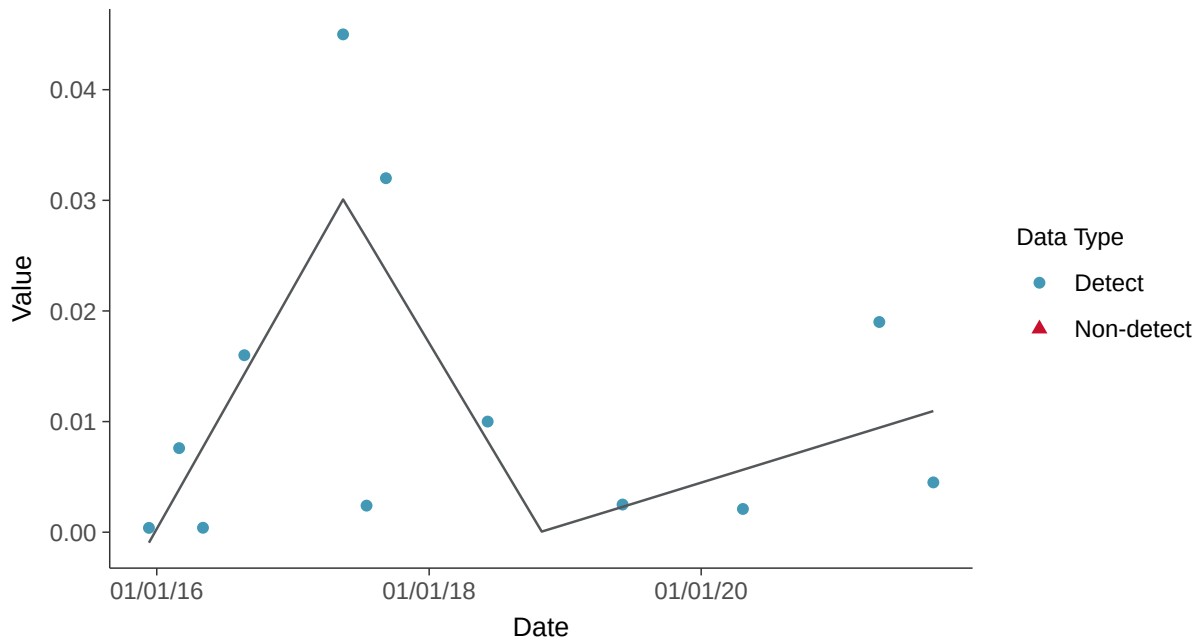
Trend Regression: Piecewise Linear-Linear

Lead, MW-7 (mg/l)



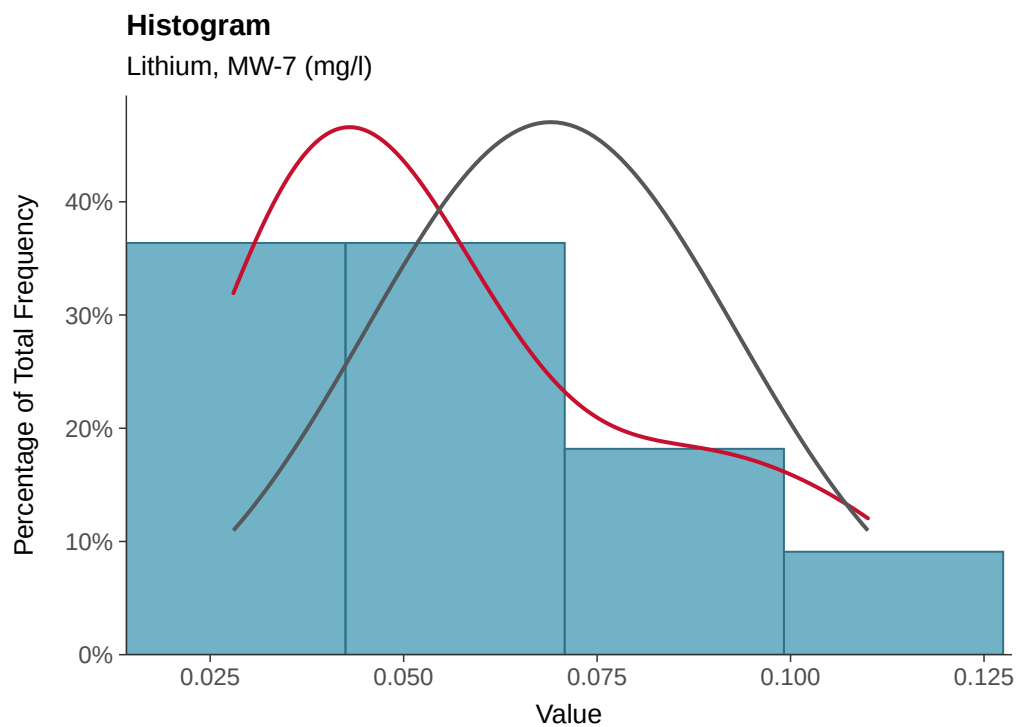
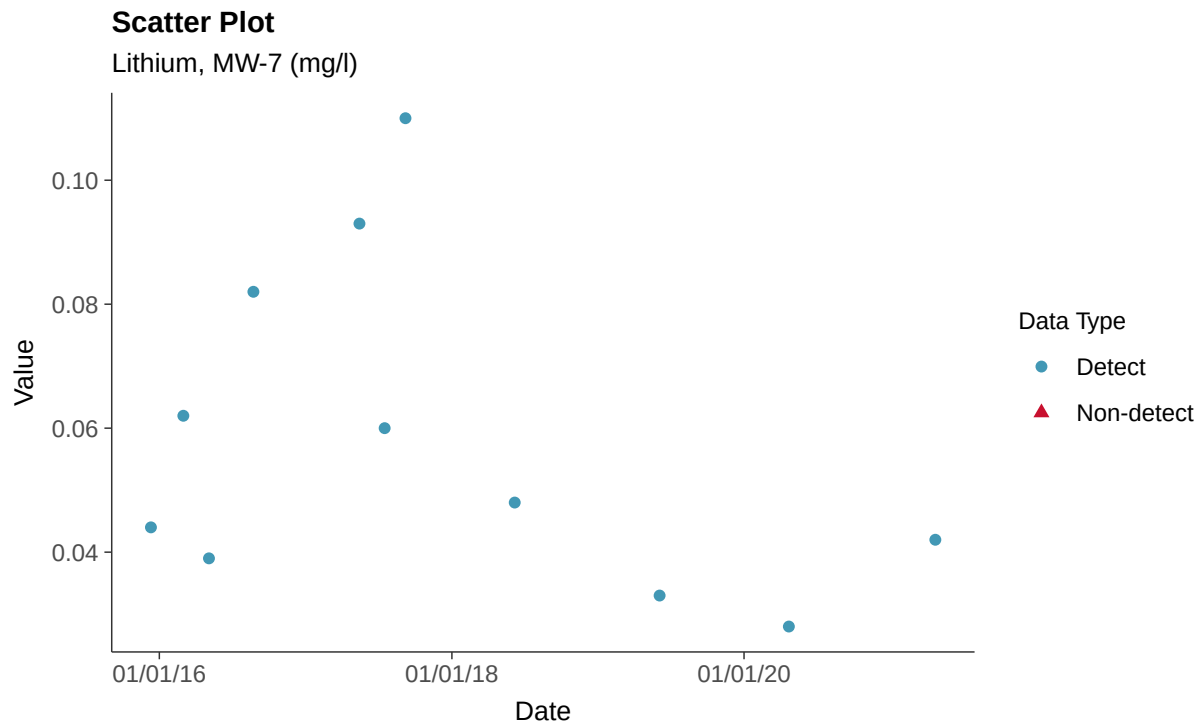
Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-7 (mg/l)



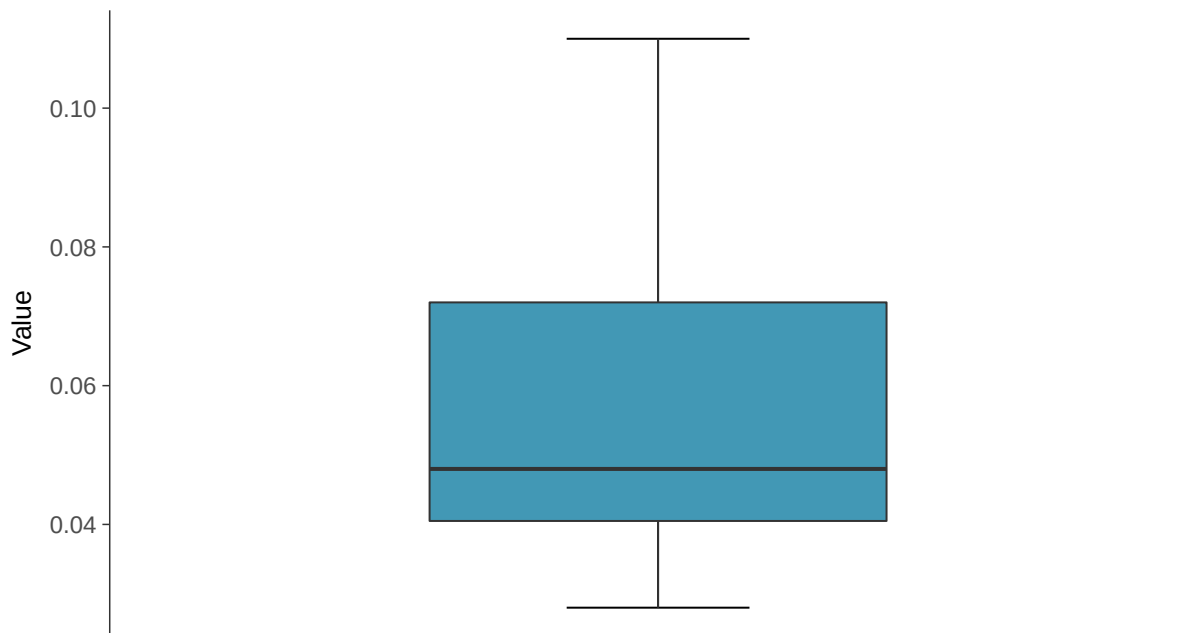
Appendix IV: Lithium, MW-7

ID: 2_2_118



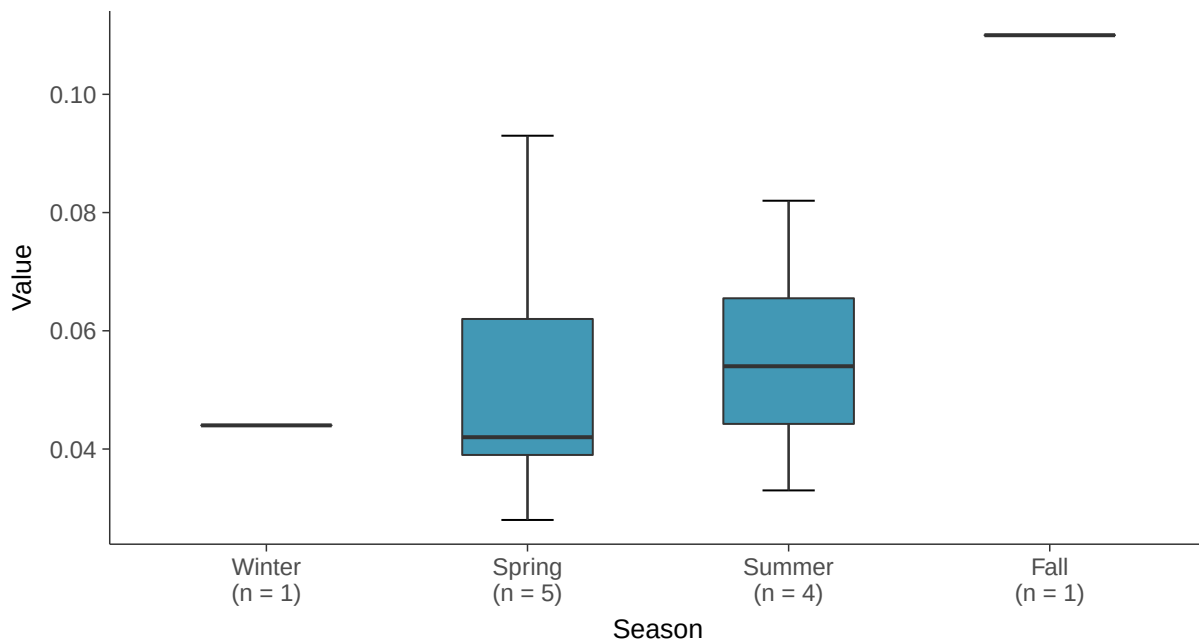
Boxplot

Lithium, MW-7 (mg/l)

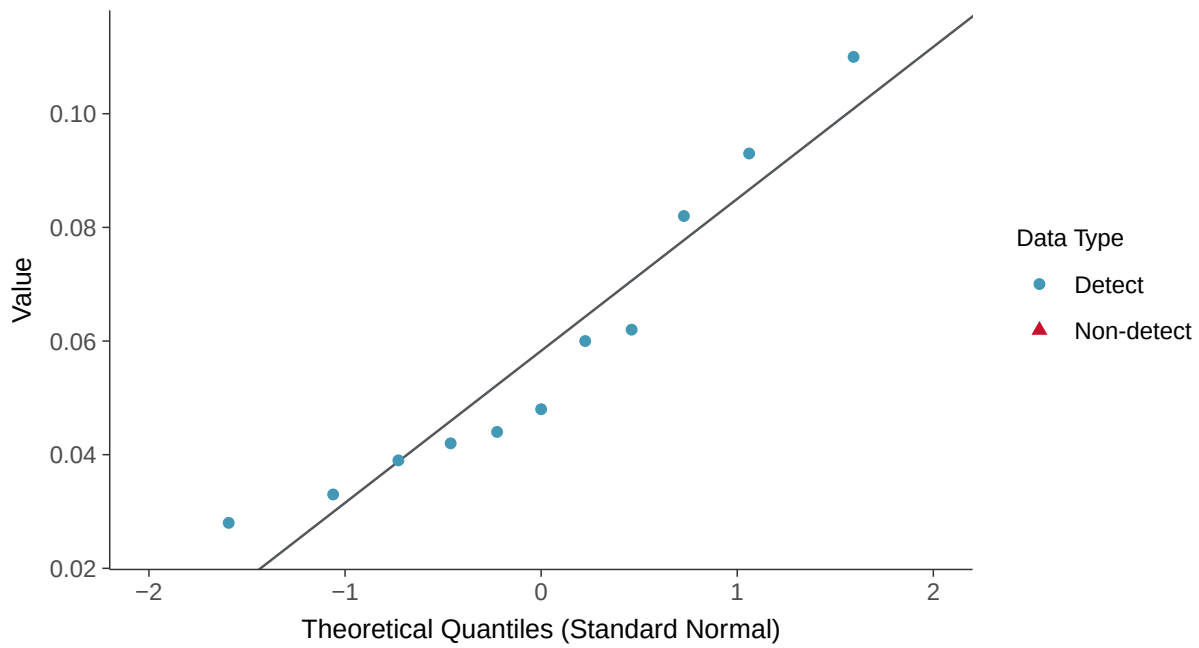


Boxplot by Season

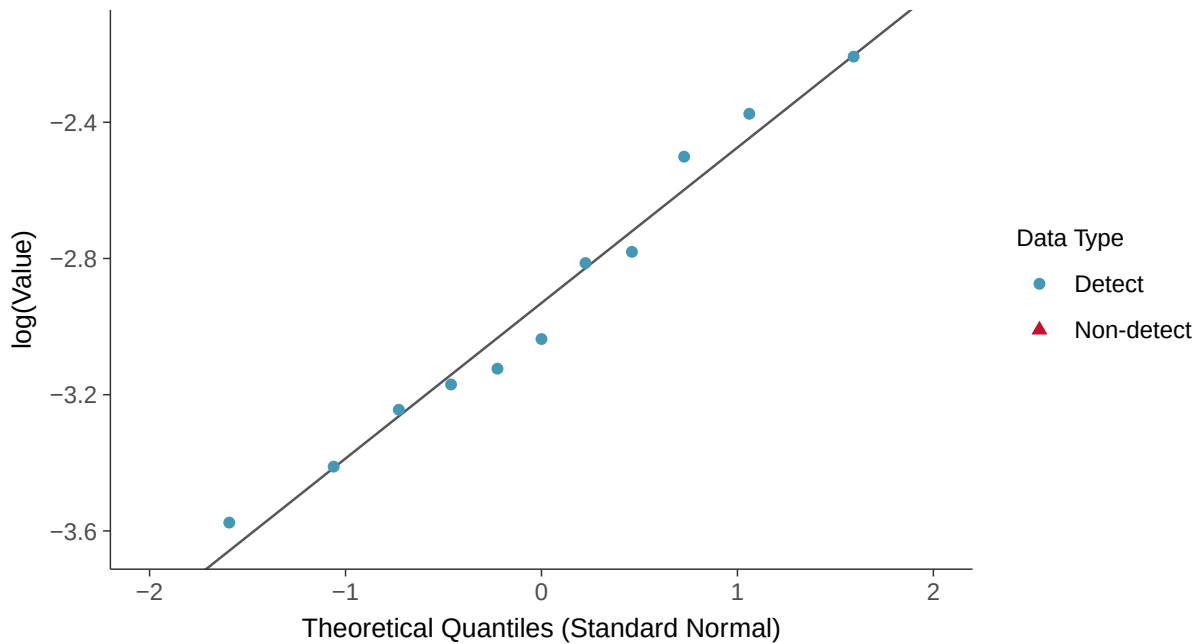
Lithium, MW-7 (mg/l)



Normal Q-Q plot
Lithium, MW-7 (mg/l)

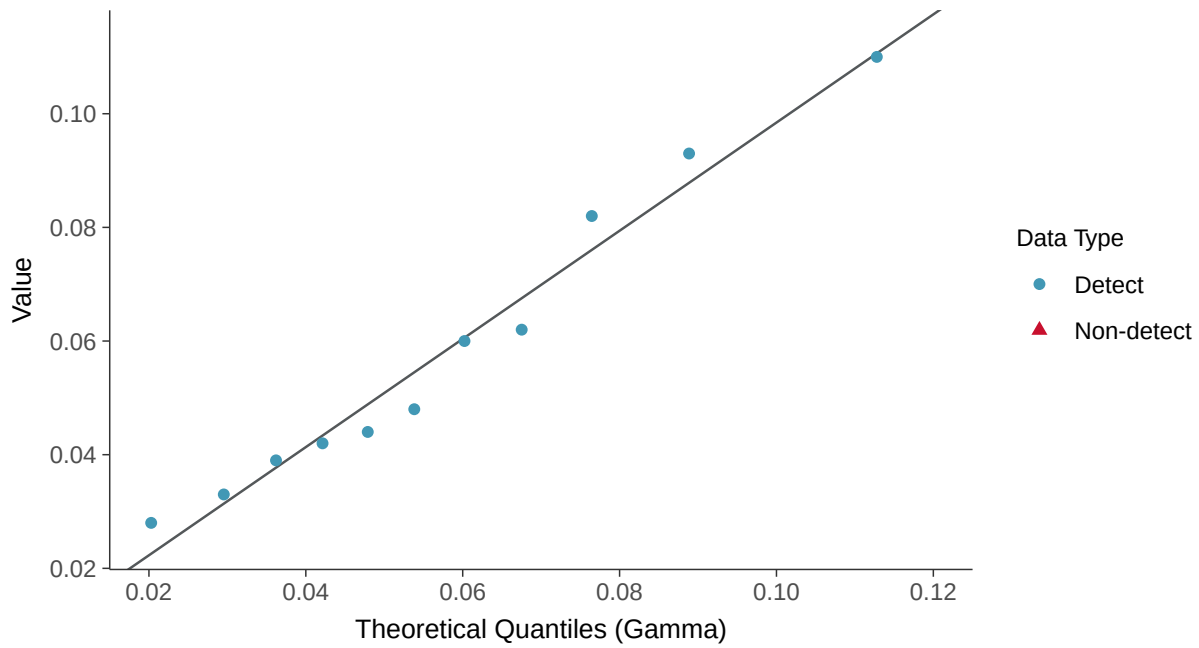


Lognormal Q-Q plot
Lithium, MW-7 (mg/l)



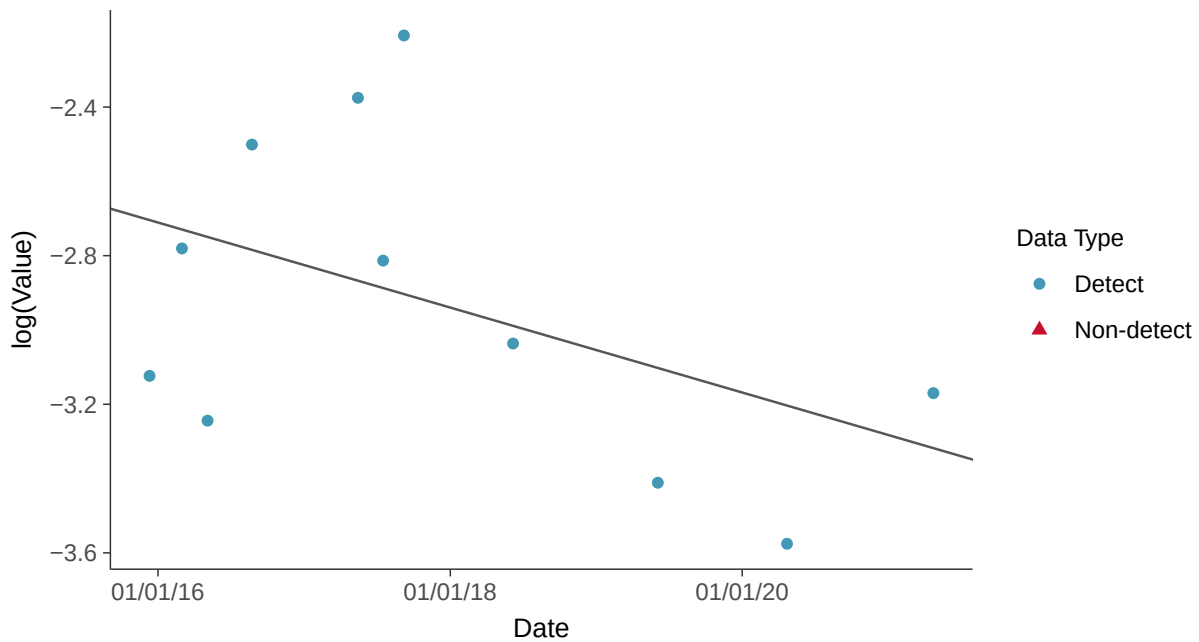
Gamma Q-Q plot

Lithium, MW-7 (mg/l)



Trend Regression: Lognormal MLE

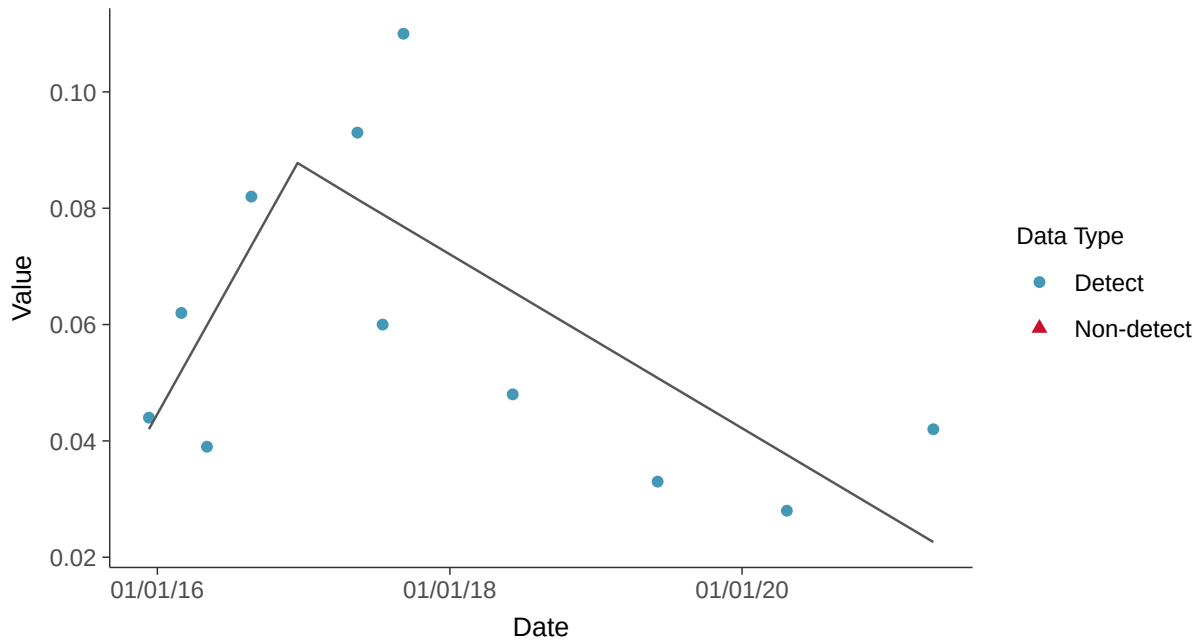
Lithium, MW-7 (mg/l)





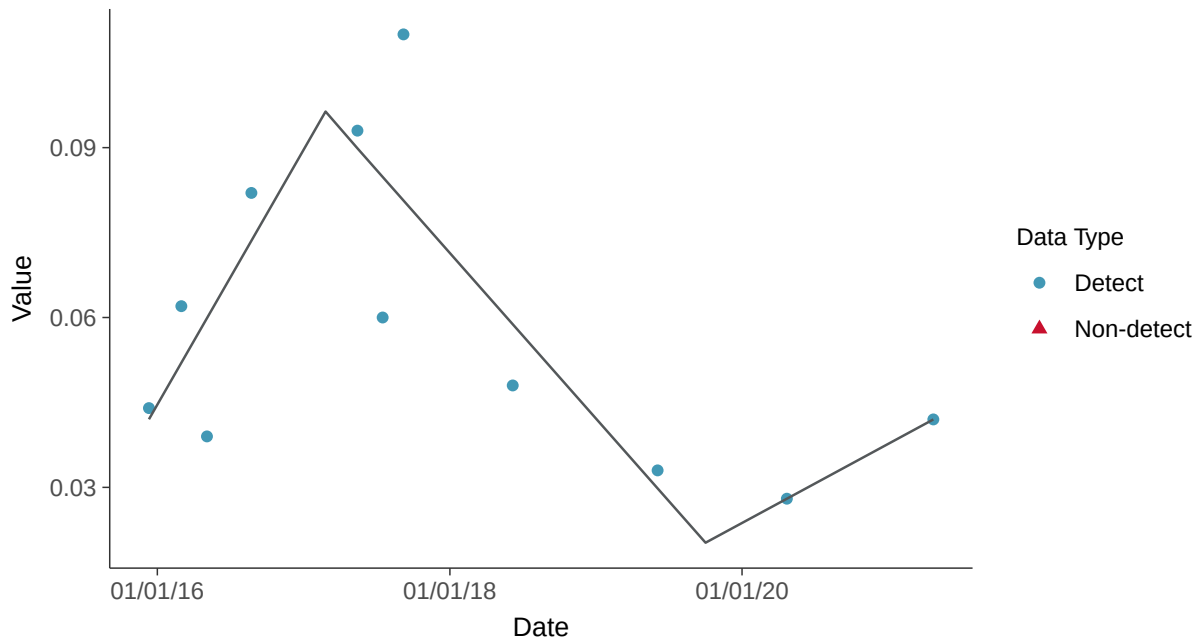
Trend Regression: Piecewise Linear-Linear

Lithium, MW-7 (mg/l)



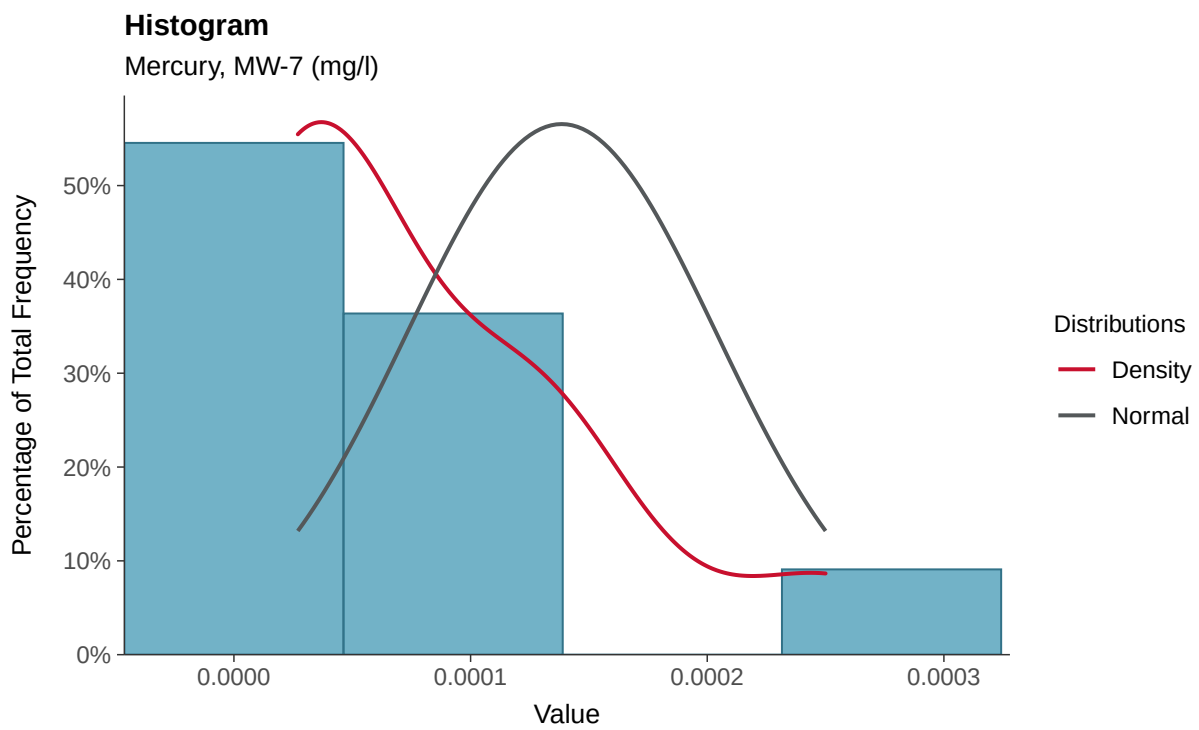
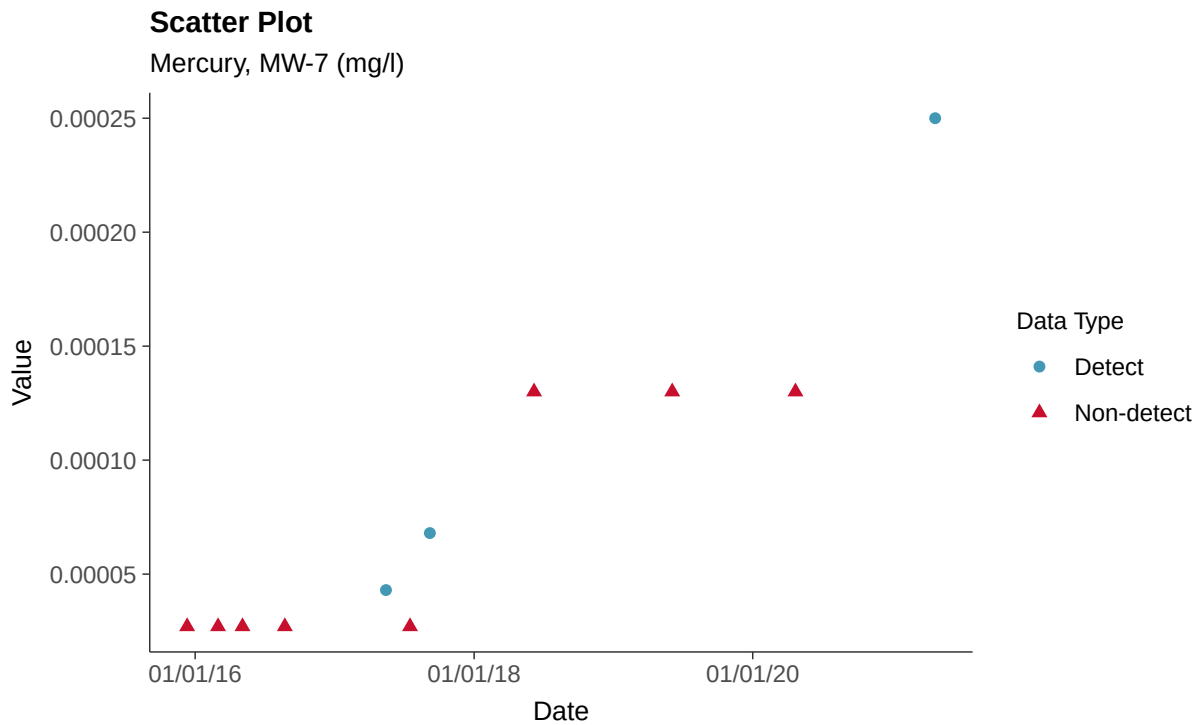
Trend Regression: Piecewise Linear-Linear-Linear

Lithium, MW-7 (mg/l)



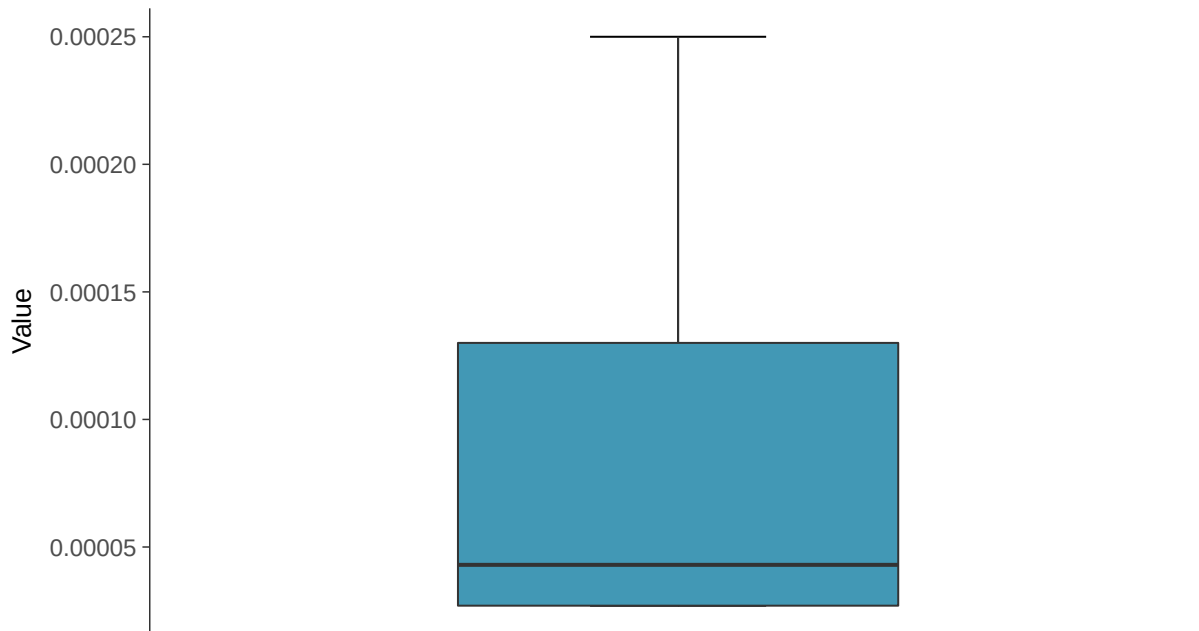
Appendix IV: Mercury, MW-7

ID: 2_2_120



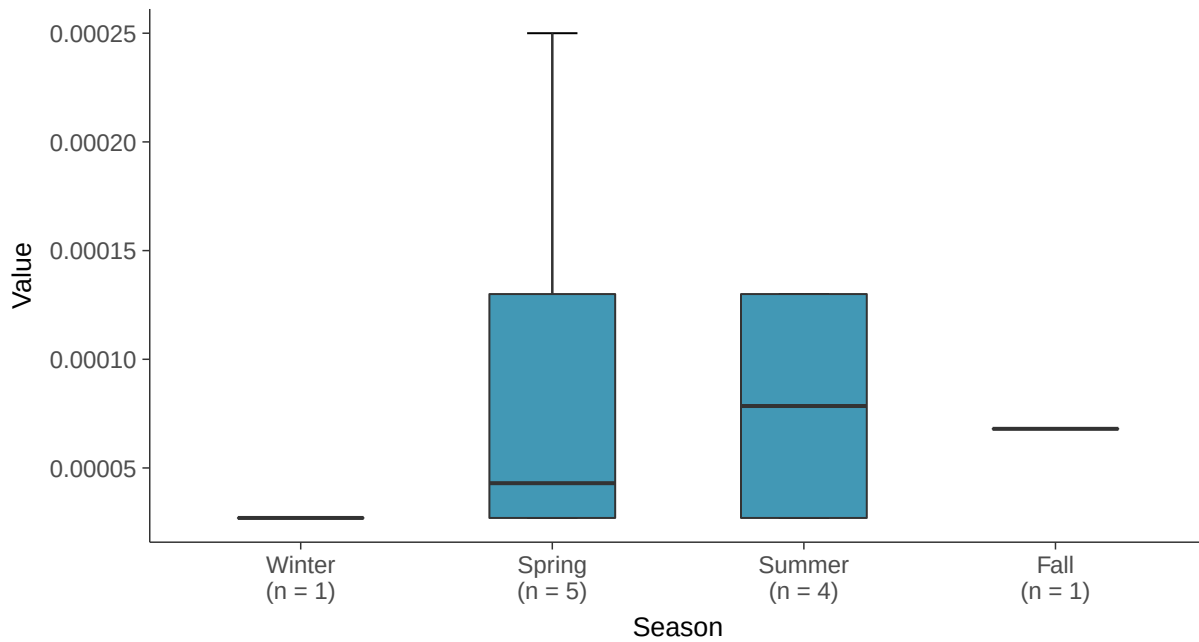
Boxplot

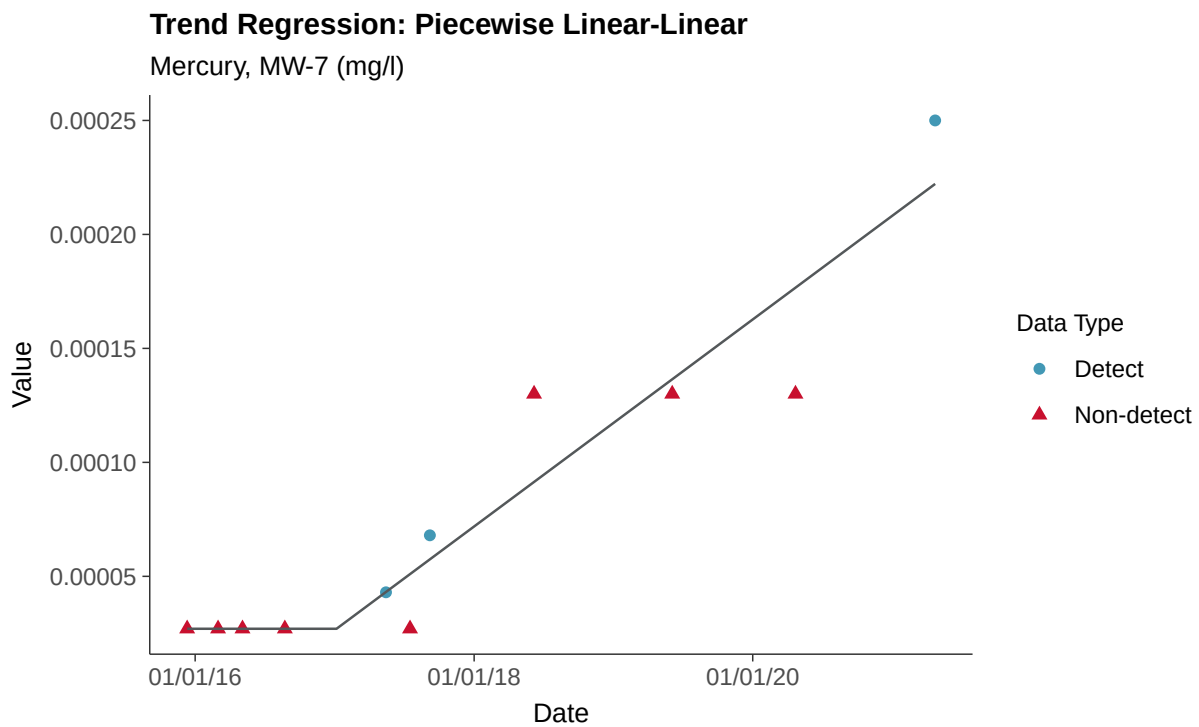
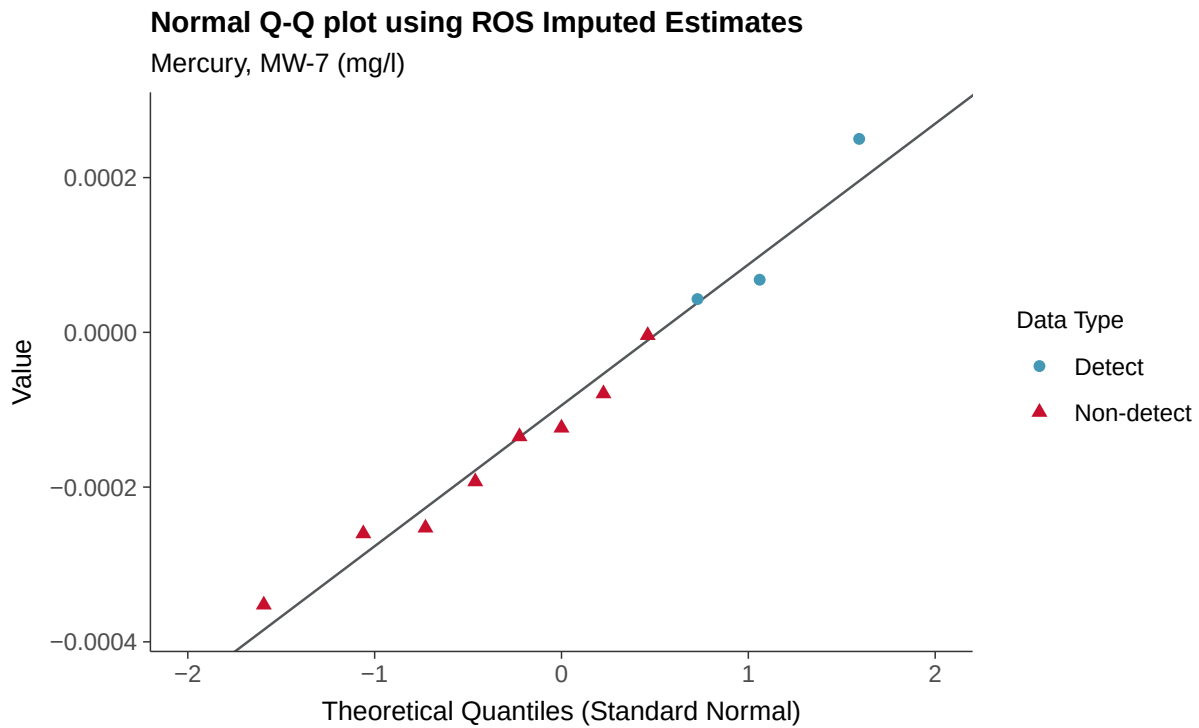
Mercury, MW-7 (mg/l)



Boxplot by Season

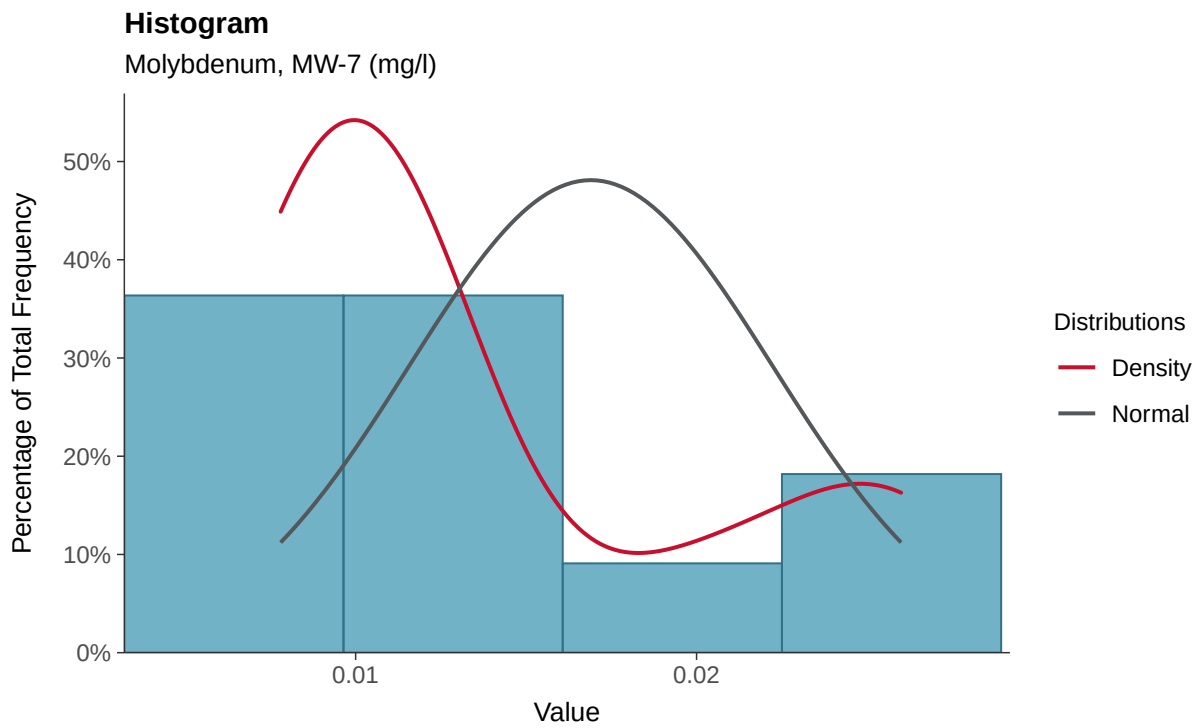
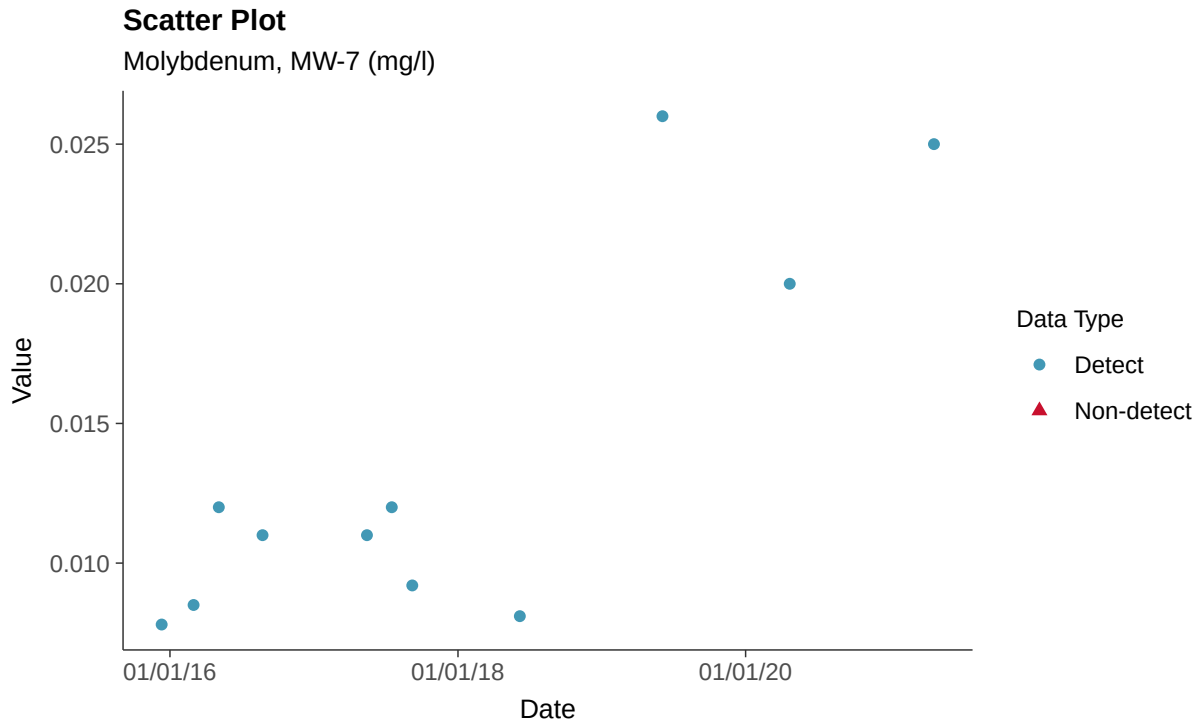
Mercury, MW-7 (mg/l)





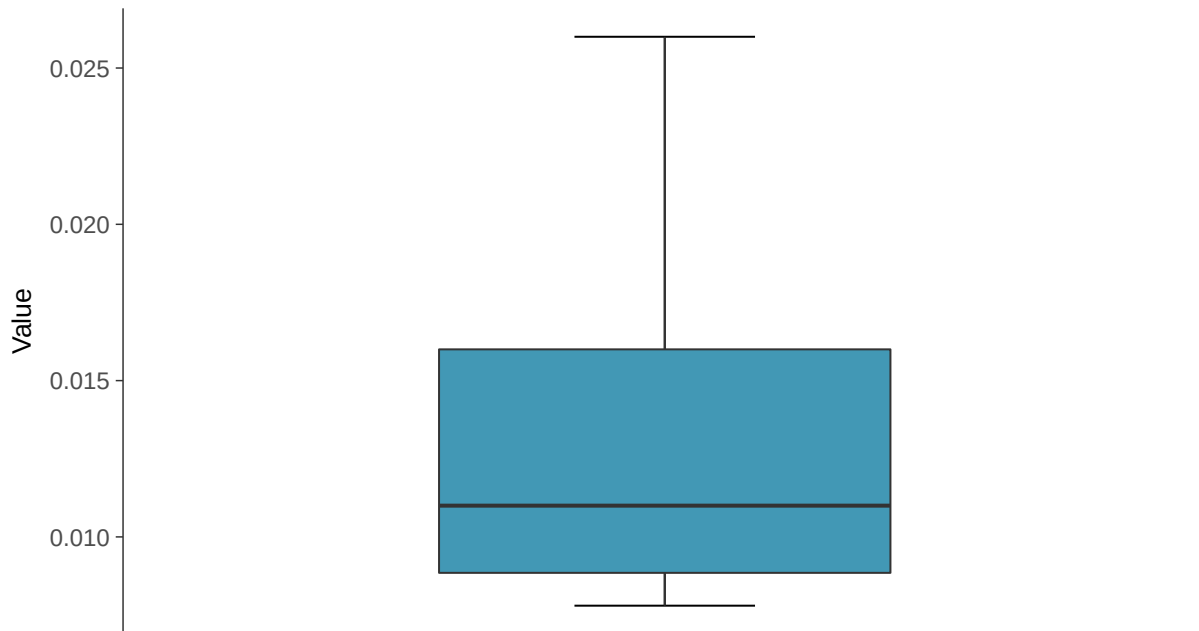
Appendix IV: Molybdenum, MW-7

ID: 2_2_121



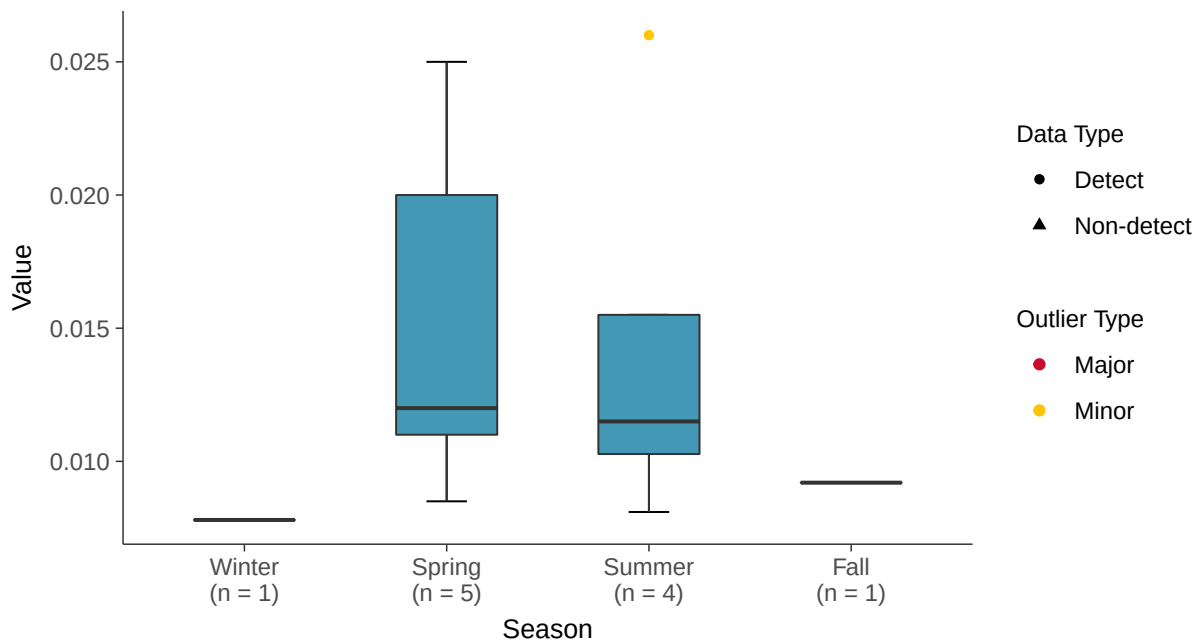
Boxplot

Molybdenum, MW-7 (mg/l)



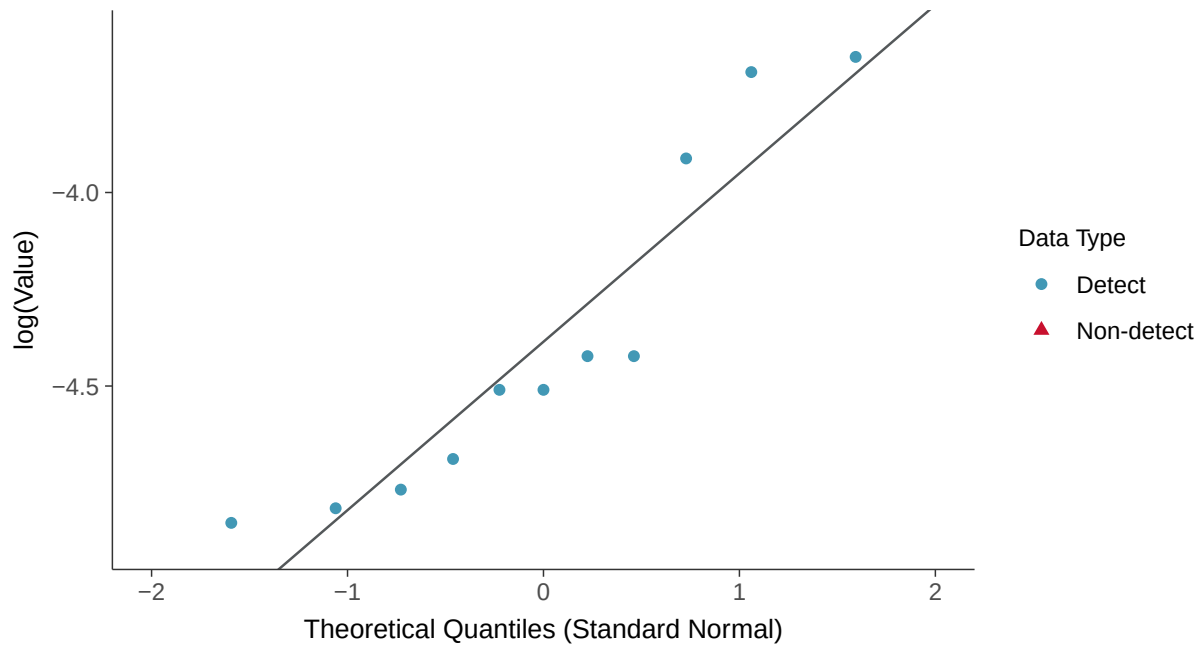
Boxplot by Season

Molybdenum, MW-7 (mg/l)



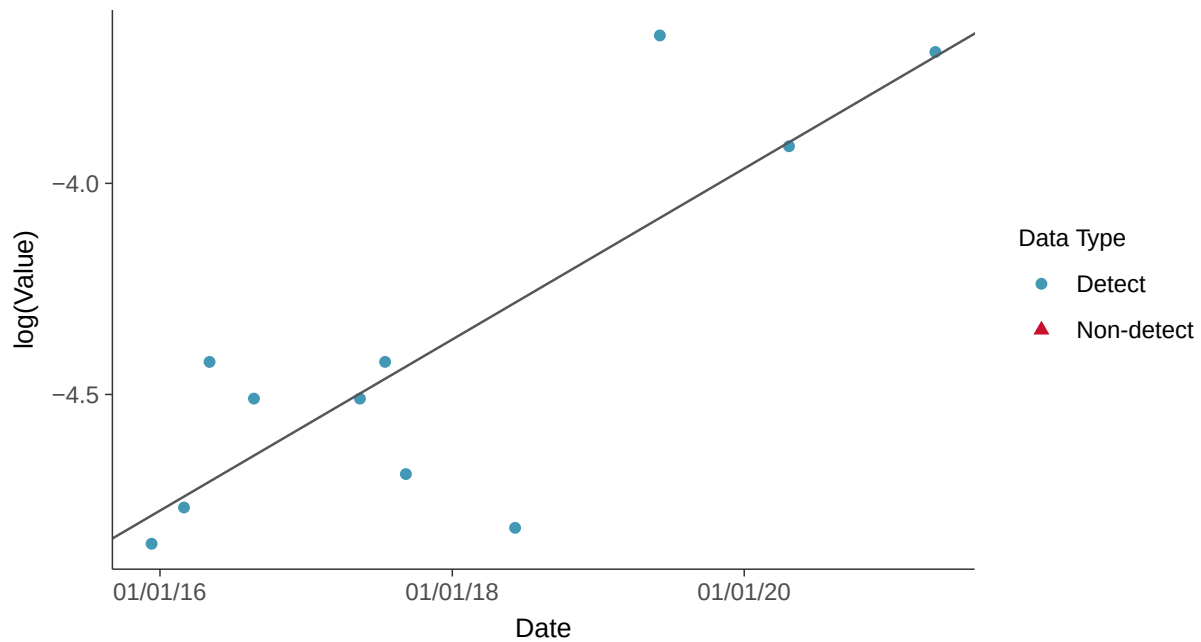
Lognormal Q-Q plot

Molybdenum, MW-7 (mg/l)



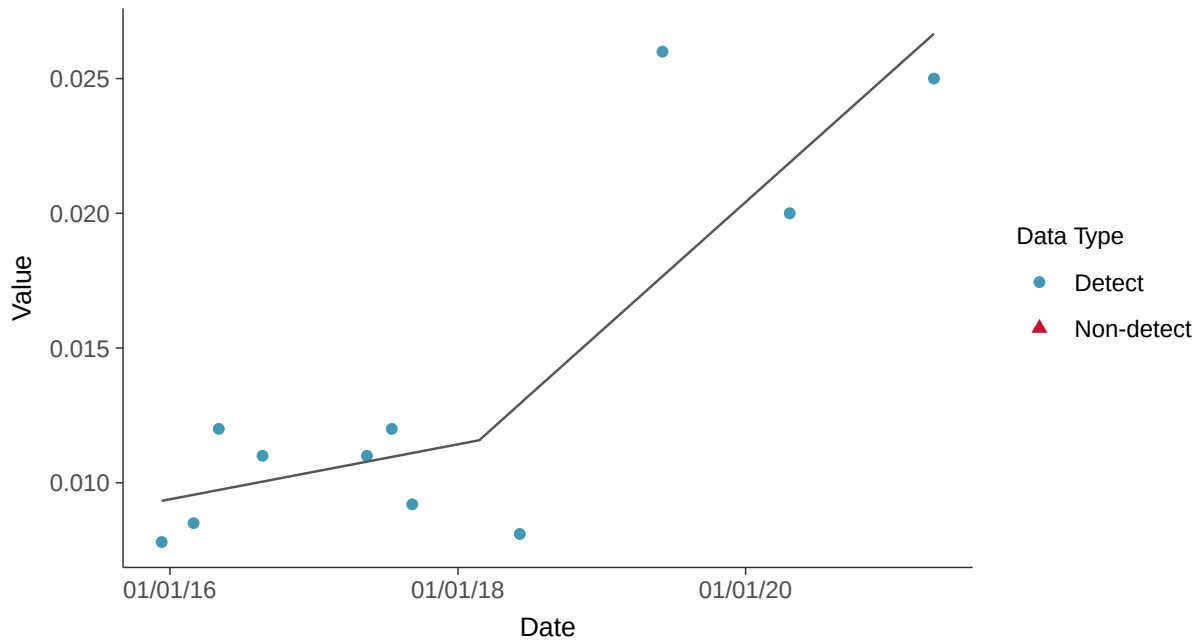
Trend Regression: Lognormal MLE

Molybdenum, MW-7 (mg/l)



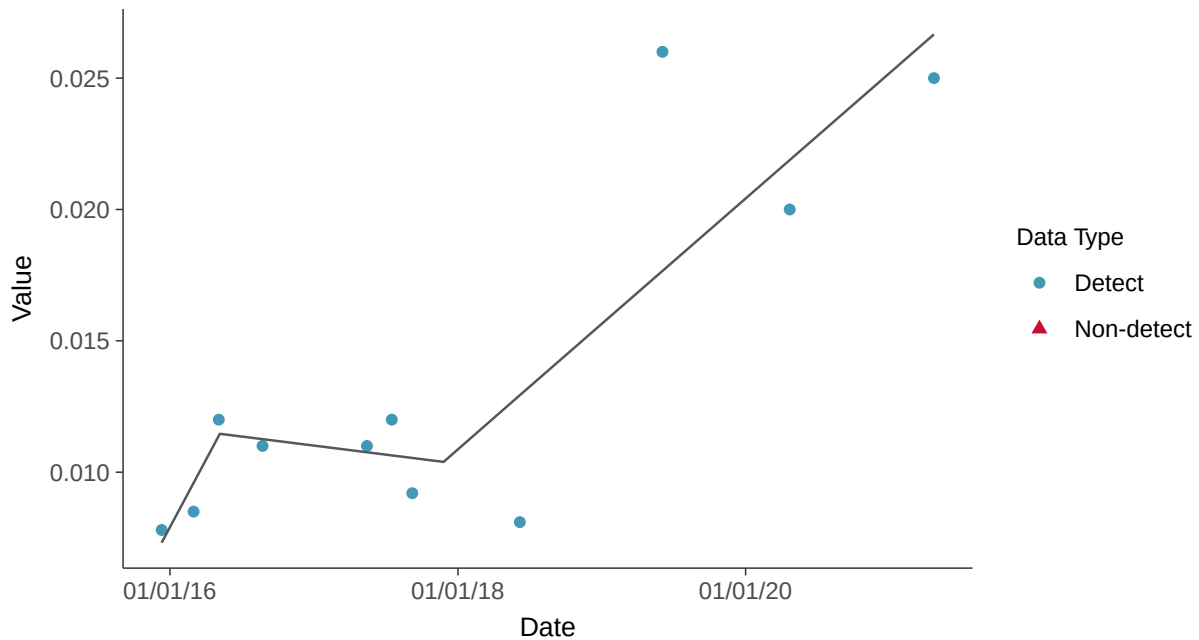
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-7 (mg/l)



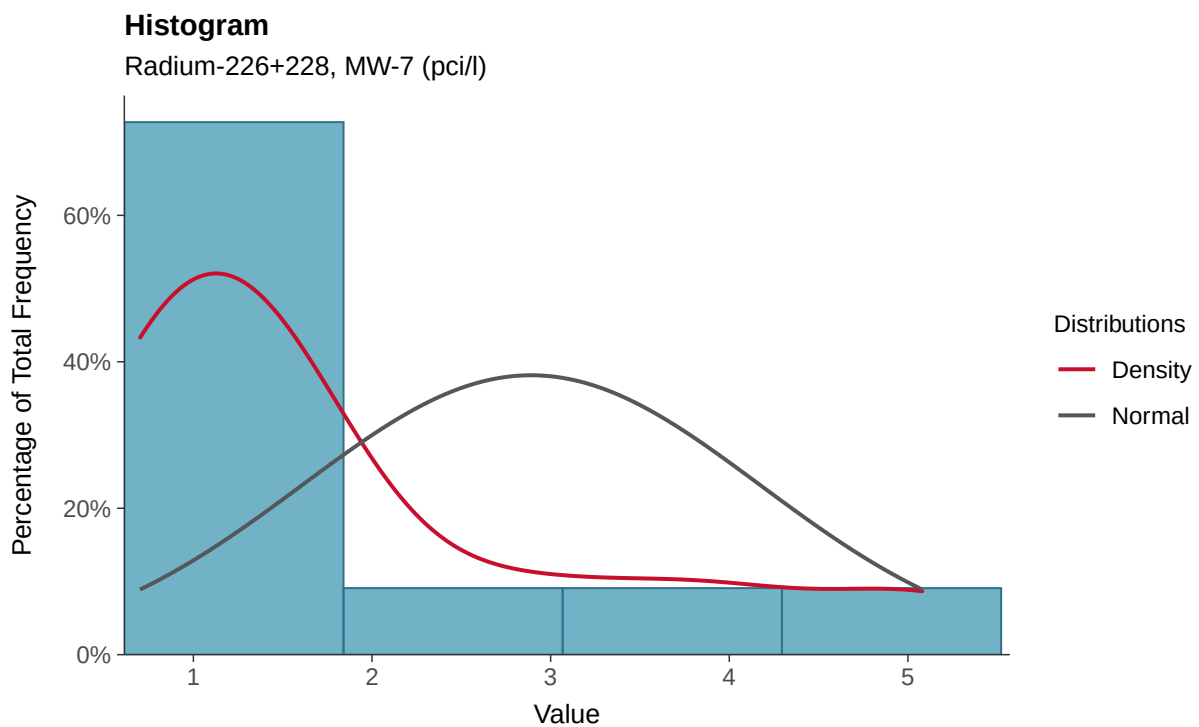
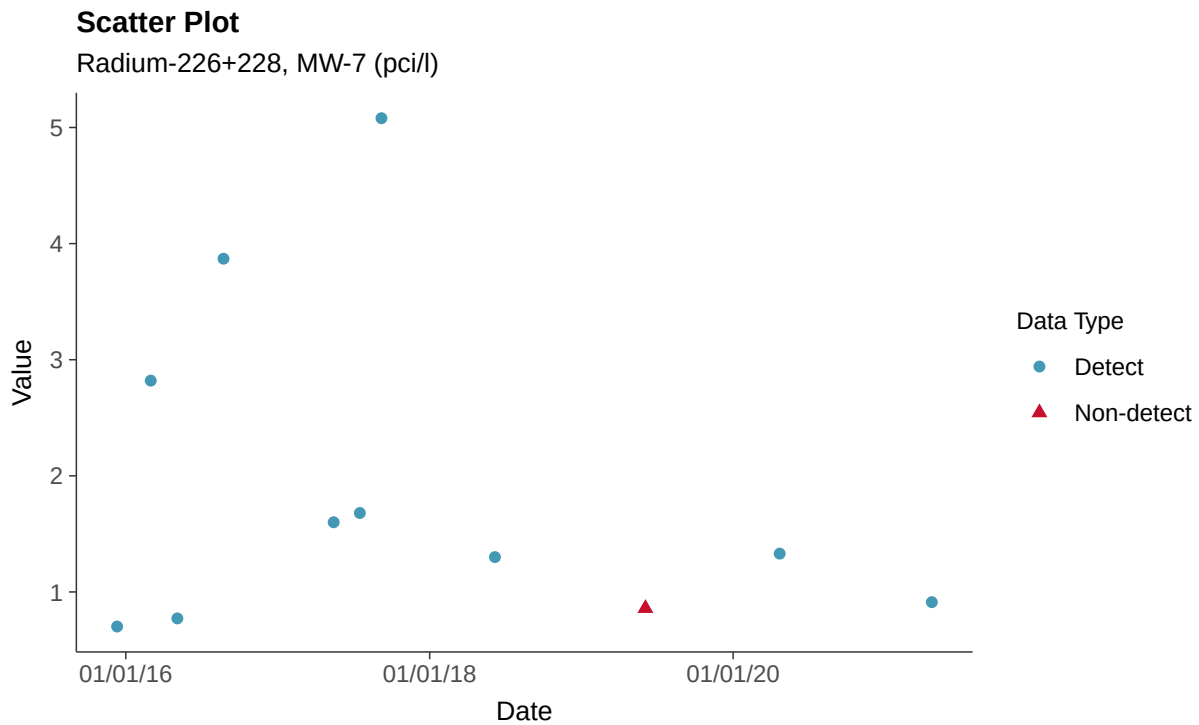
Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-7 (mg/l)



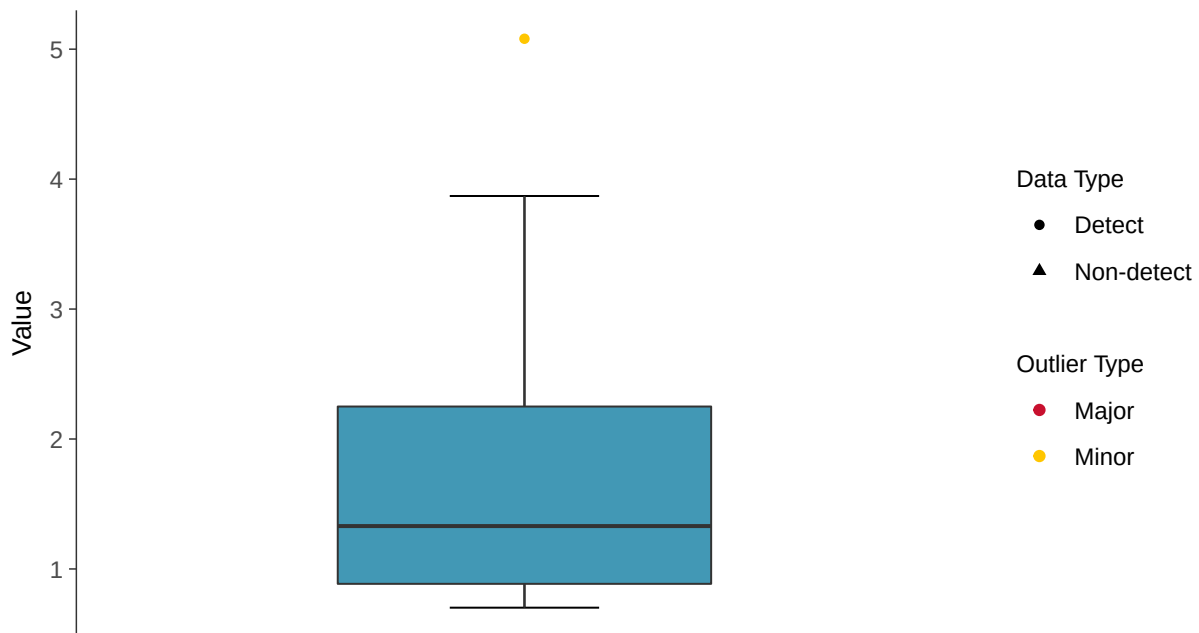
Appendix IV: Radium-226+228, MW-7

ID: 2_2_127



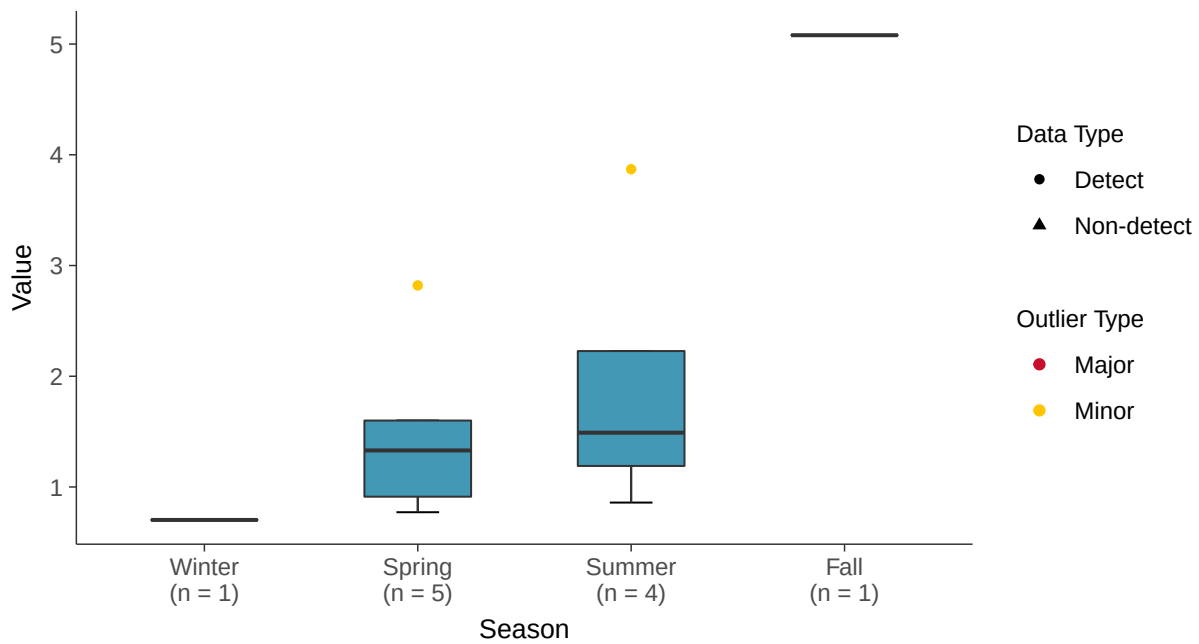
Boxplot

Radium-226+228, MW-7 (pci/l)



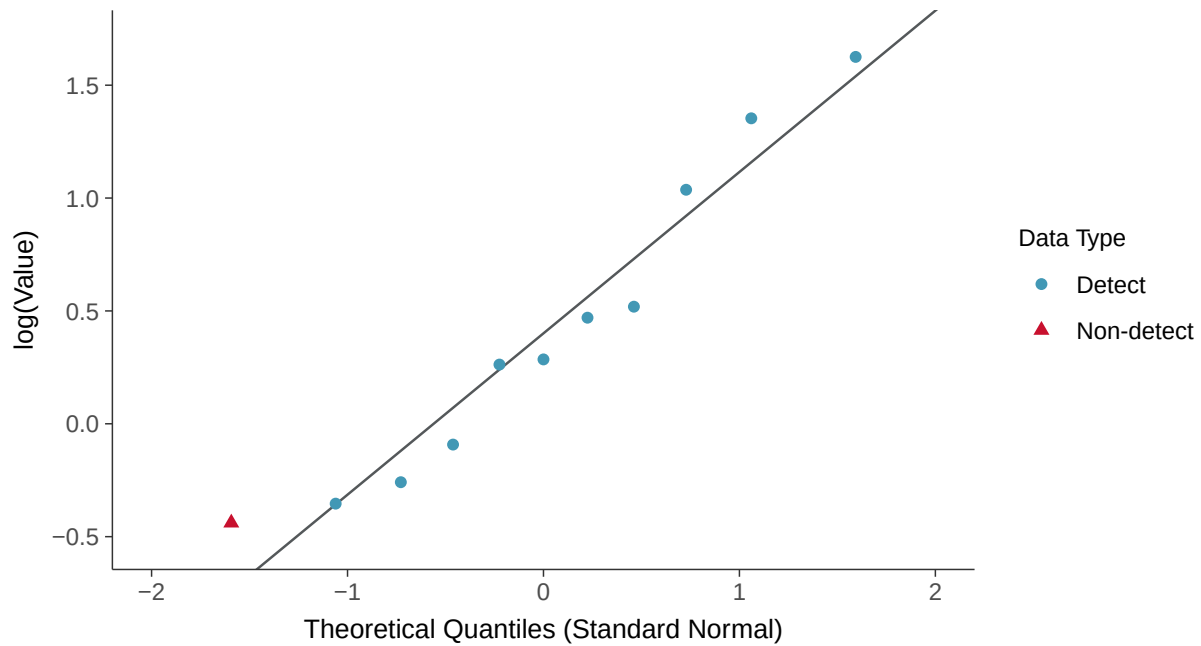
Boxplot by Season

Radium-226+228, MW-7 (pci/l)



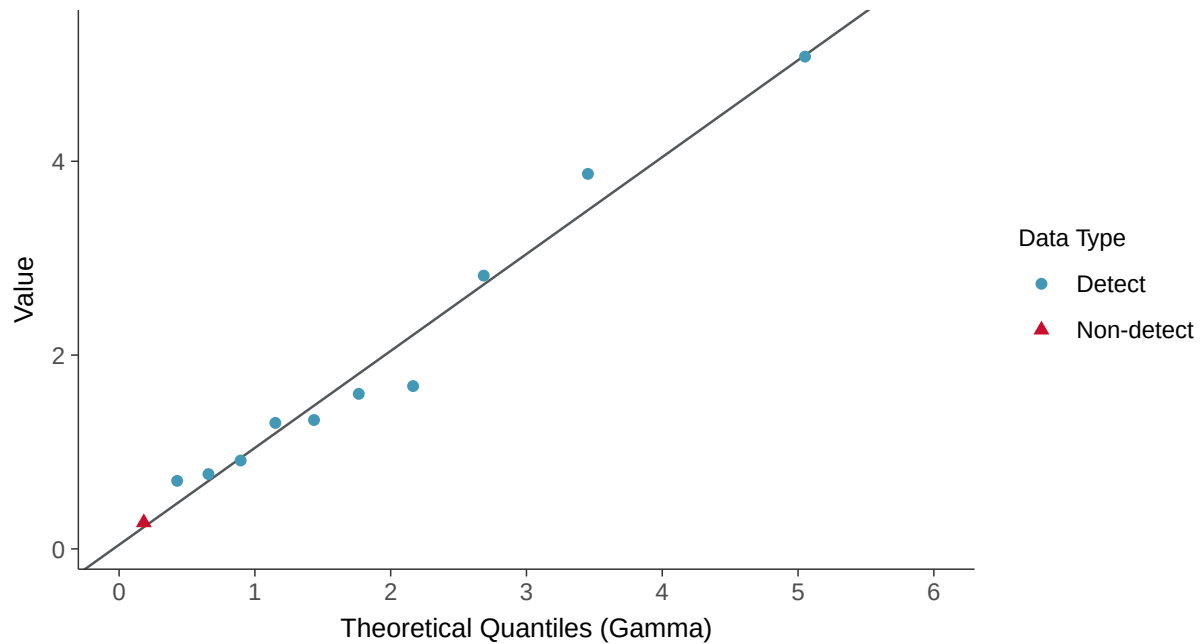
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-7 (pci/l)



Gamma Q-Q plot using ROS Imputed Estimates

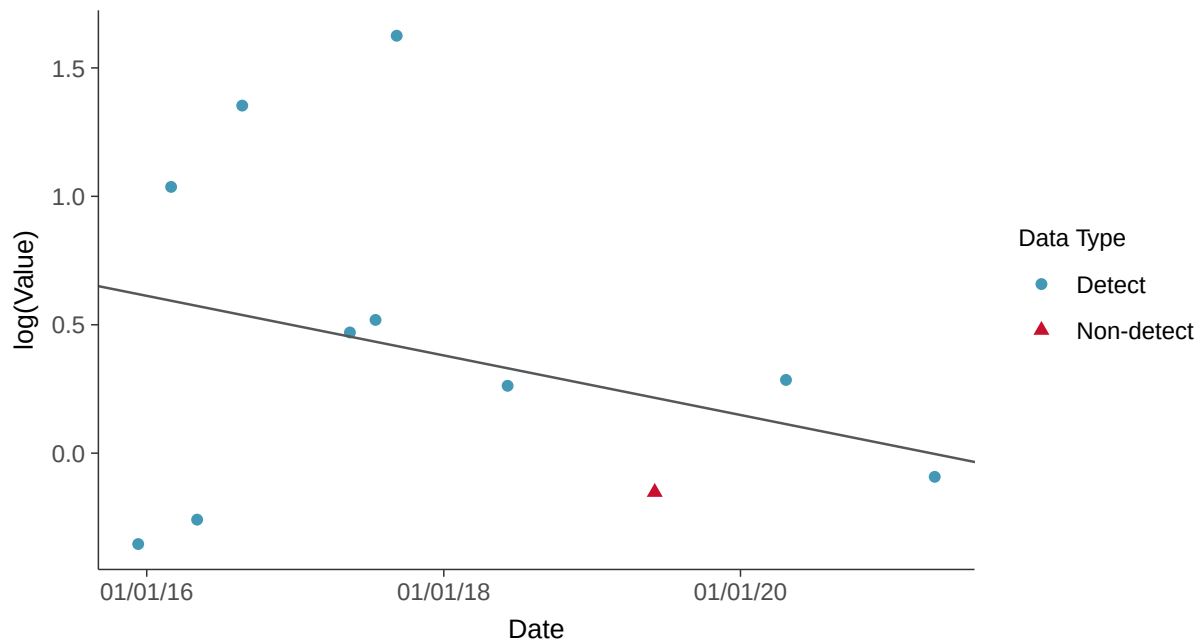
Radium-226+228, MW-7 (pci/l)





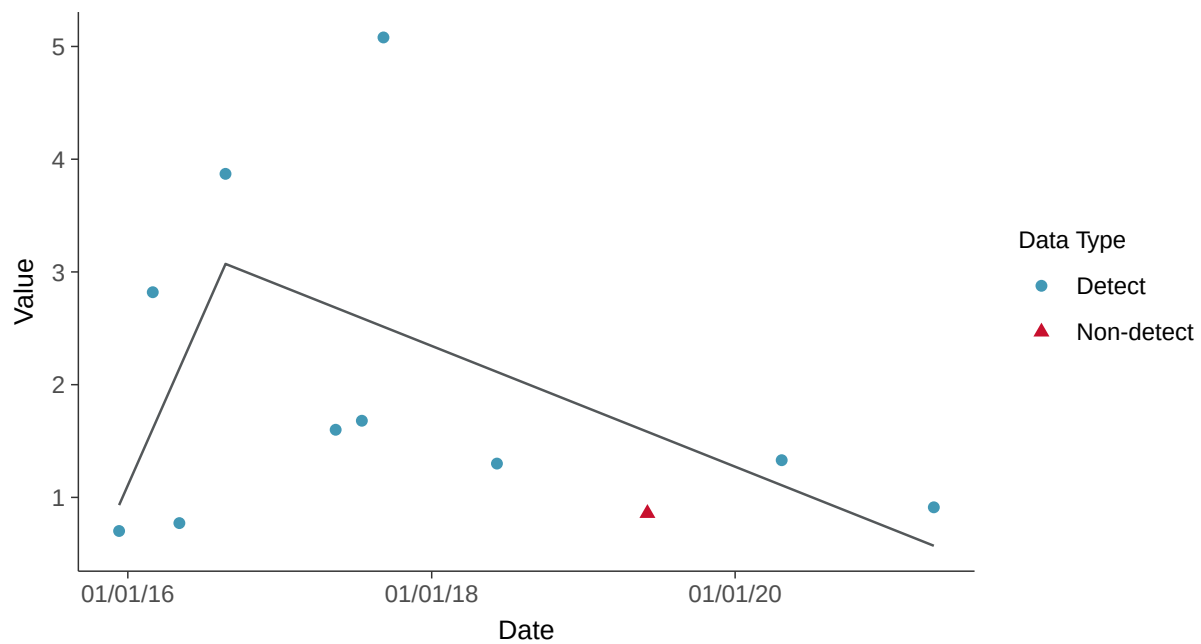
Trend Regression: Lognormal MLE

Radium-226+228, MW-7 (pci/l)



Trend Regression: Piecewise Linear-Linear

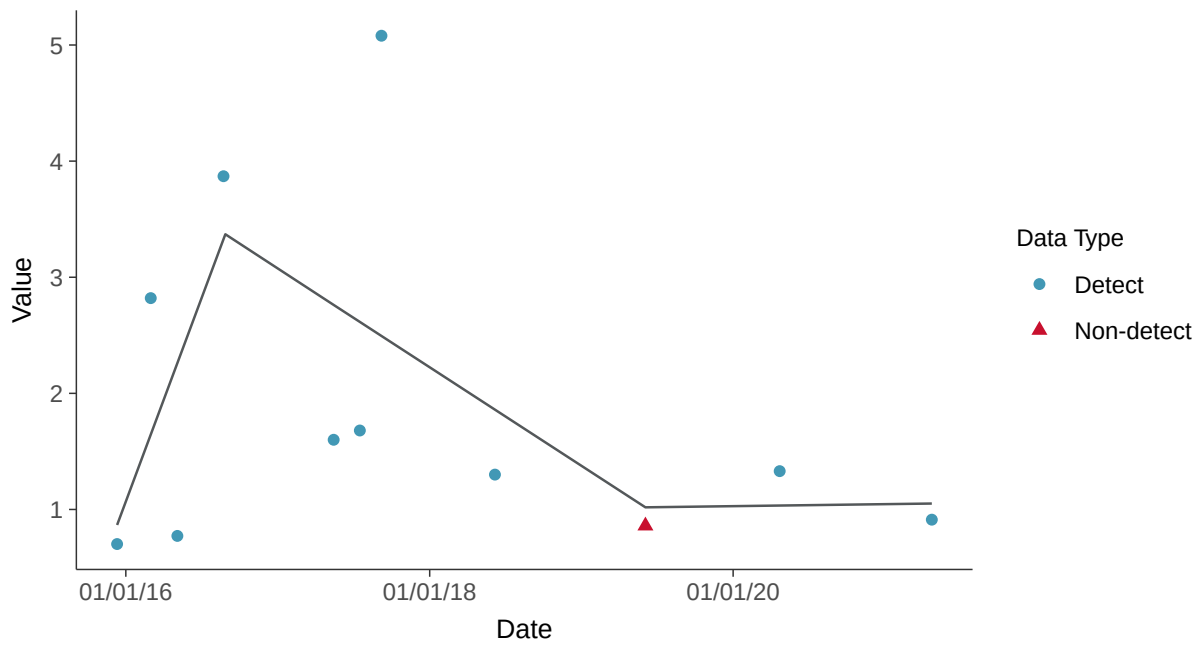
Radium-226+228, MW-7 (pci/l)





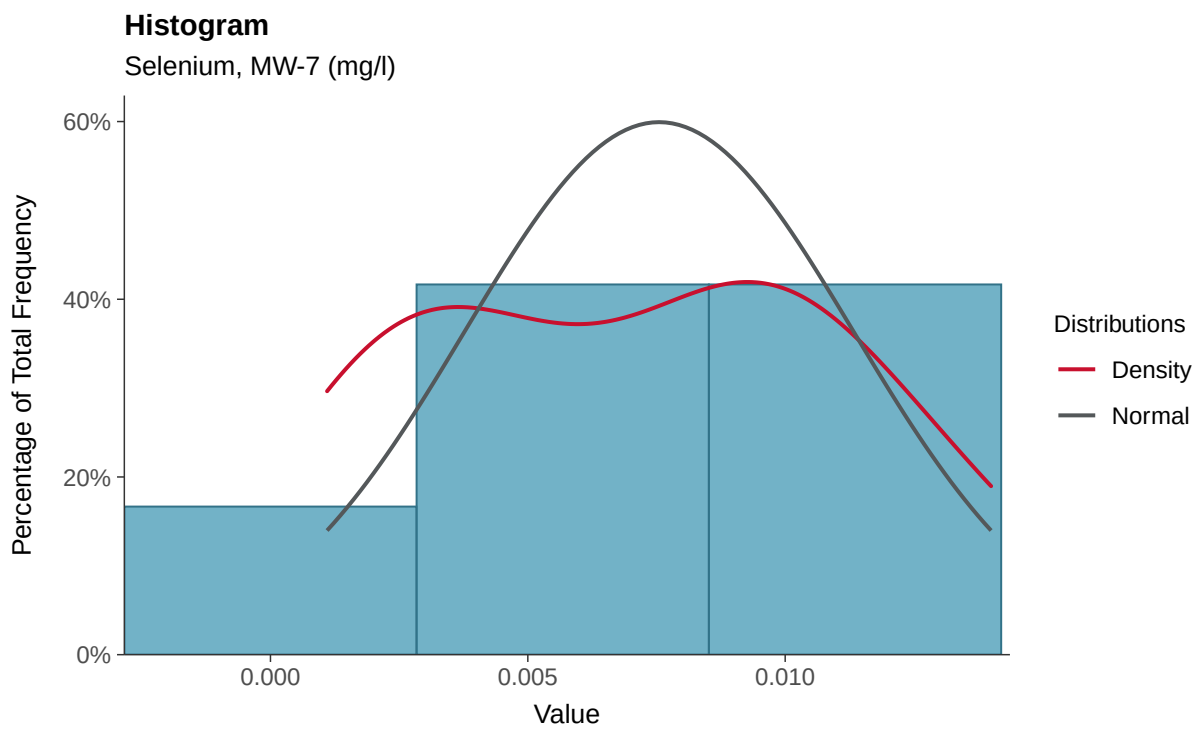
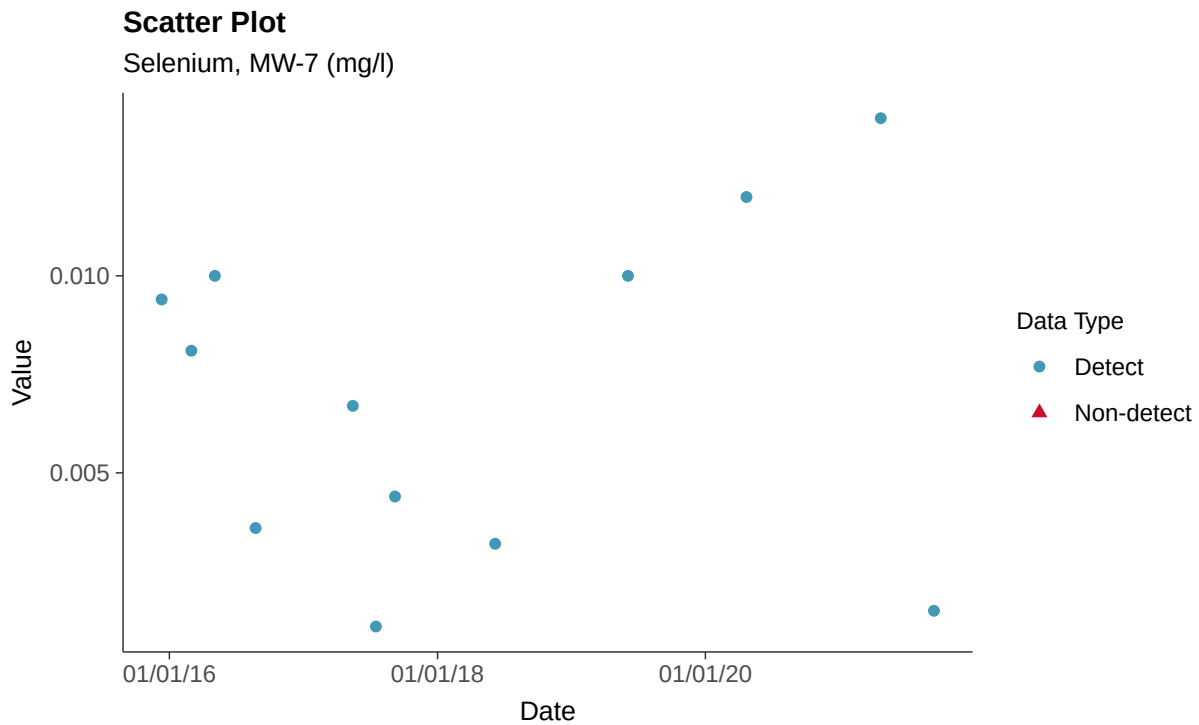
Trend Regression: Piecewise Linear-Linear-Linear

Radium-226+228, MW-7 (pci/l)



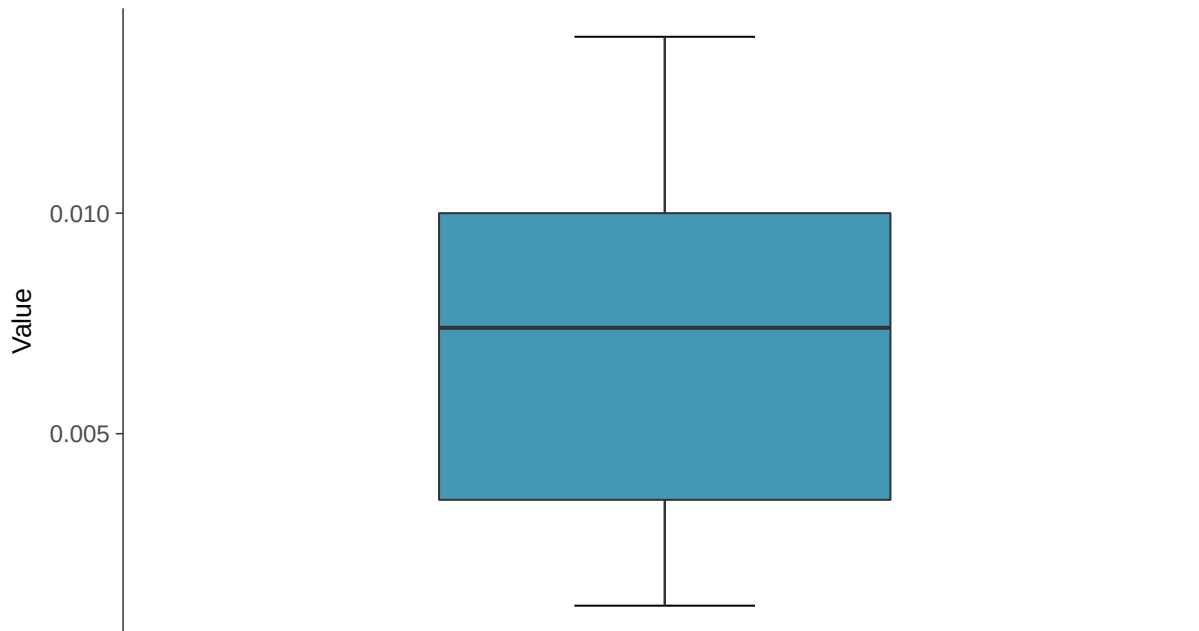
Appendix IV: Selenium, MW-7

ID: 2_2_129



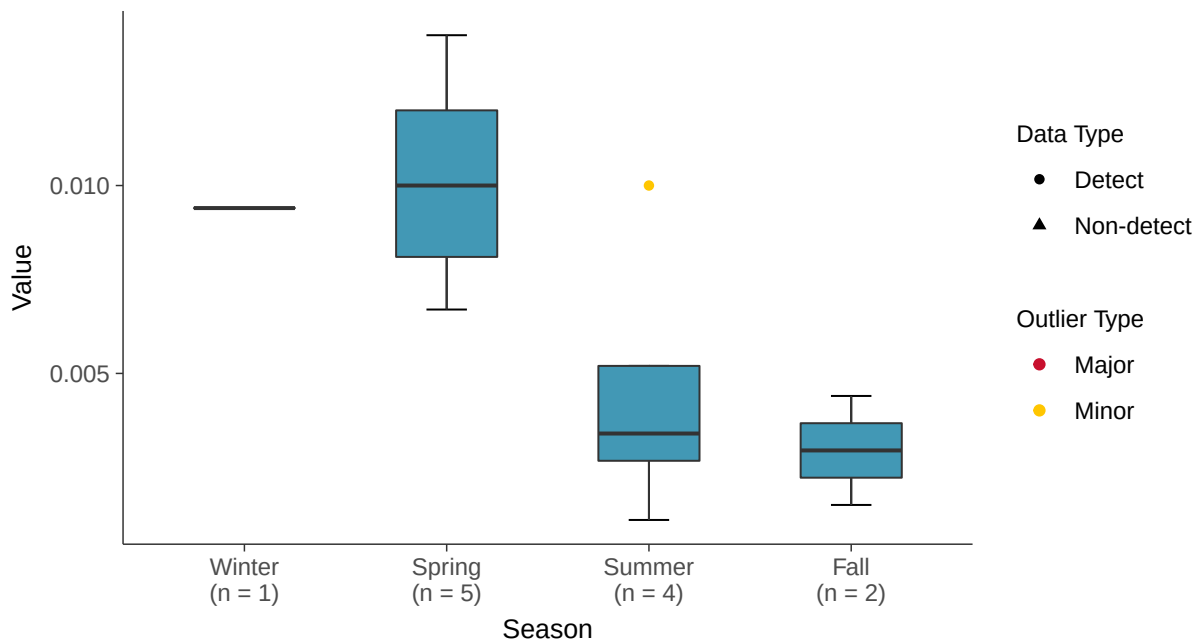
Boxplot

Selenium, MW-7 (mg/l)



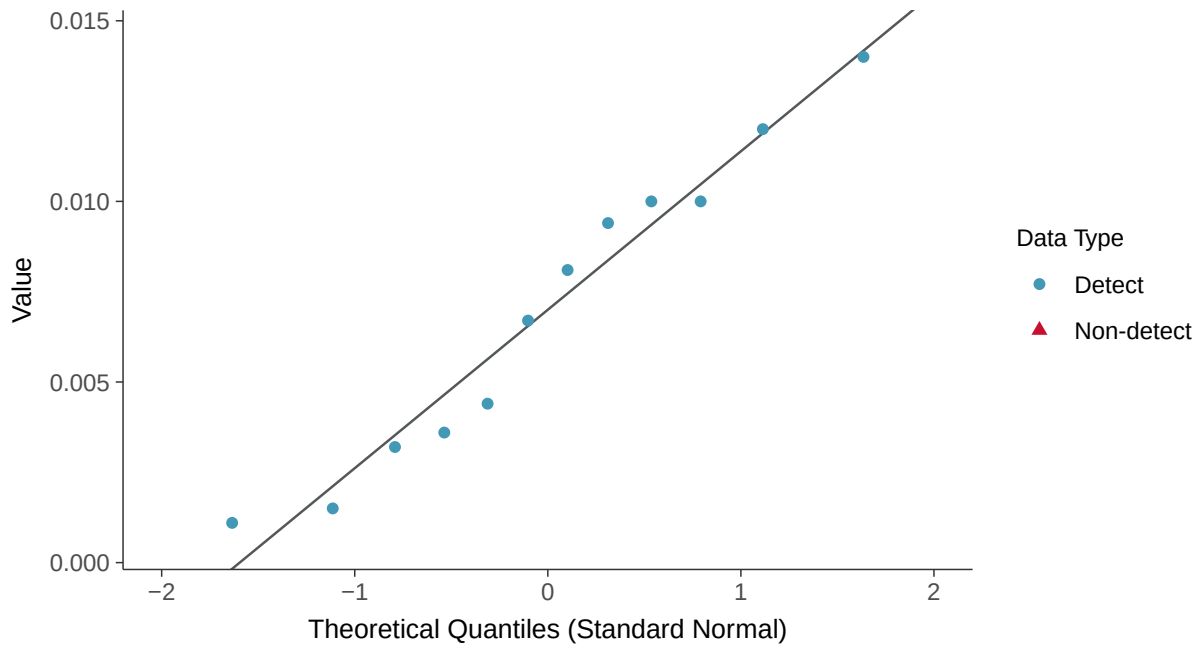
Boxplot by Season

Selenium, MW-7 (mg/l)



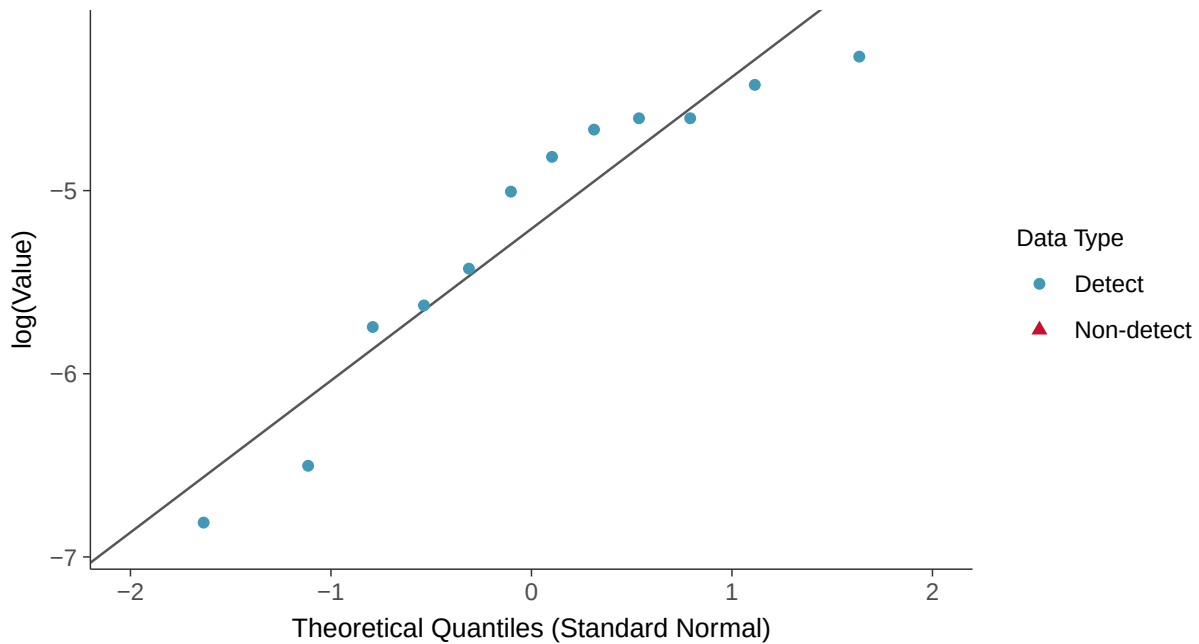
Normal Q-Q plot

Selenium, MW-7 (mg/l)



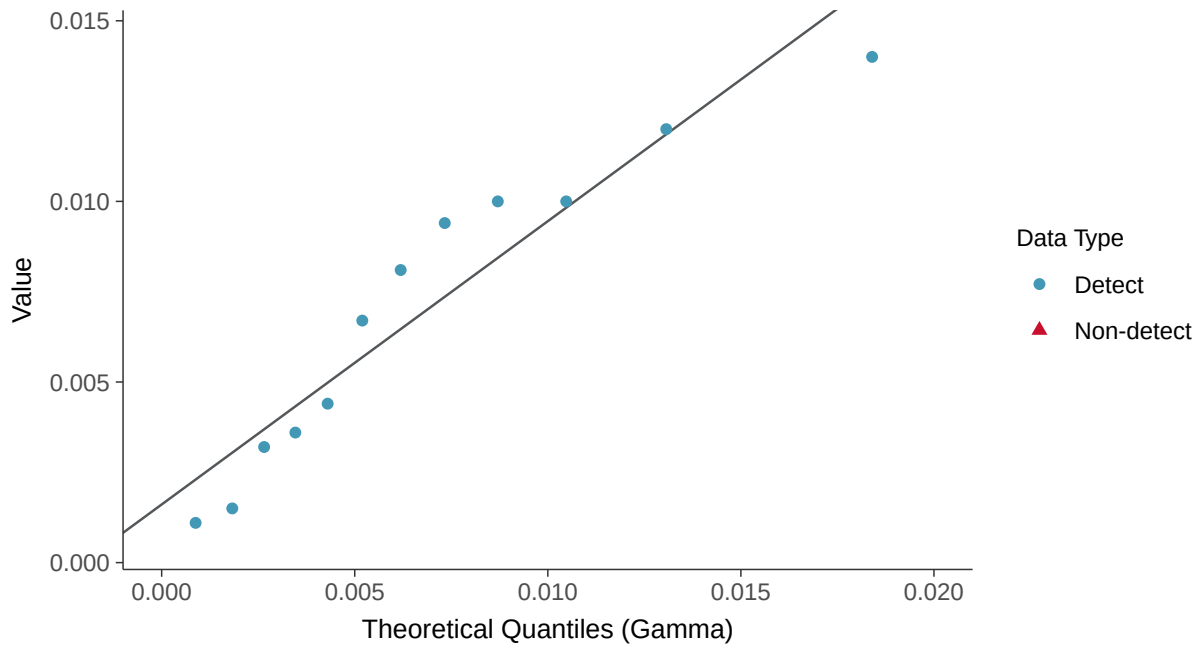
Lognormal Q-Q plot

Selenium, MW-7 (mg/l)



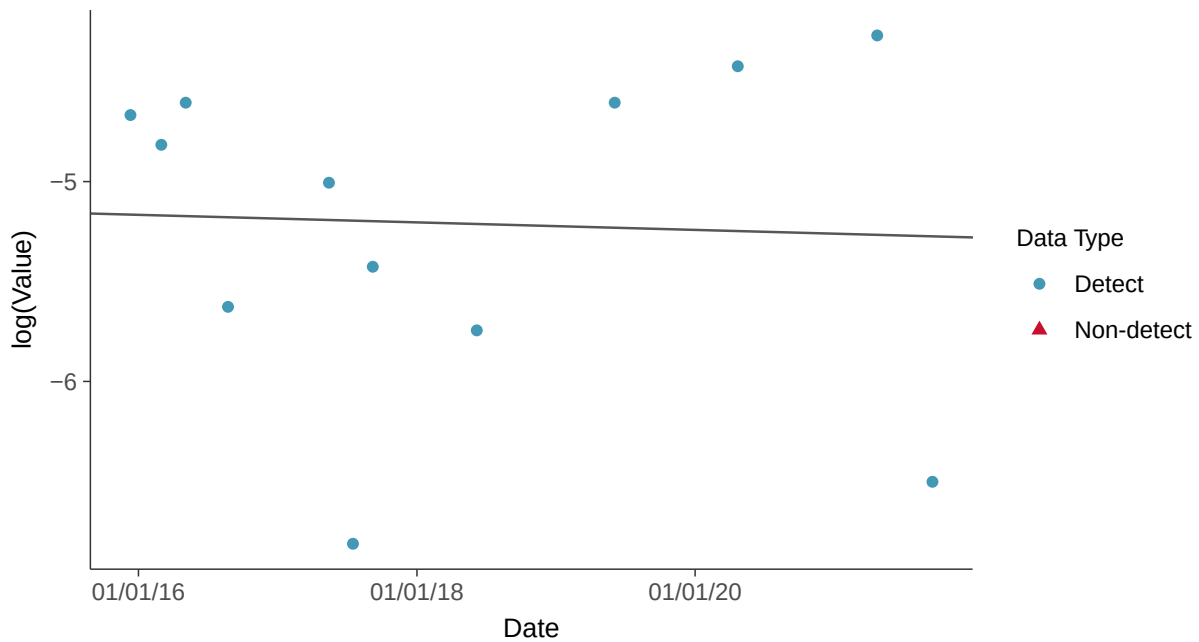
Gamma Q-Q plot

Selenium, MW-7 (mg/l)



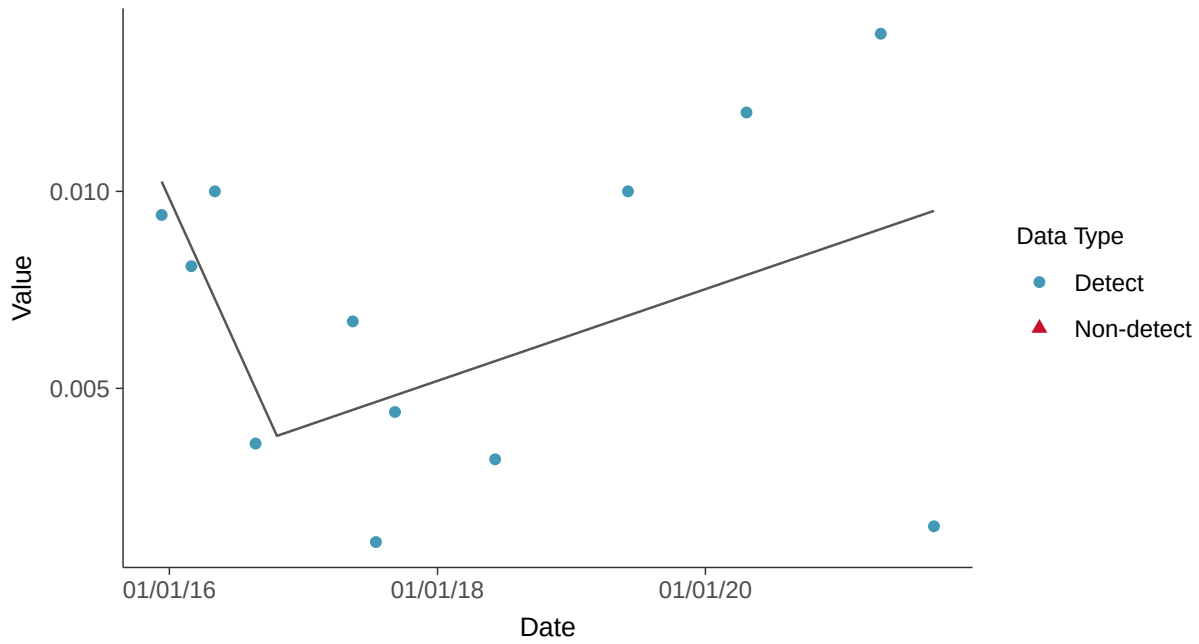
Trend Regression: Lognormal MLE

Selenium, MW-7 (mg/l)



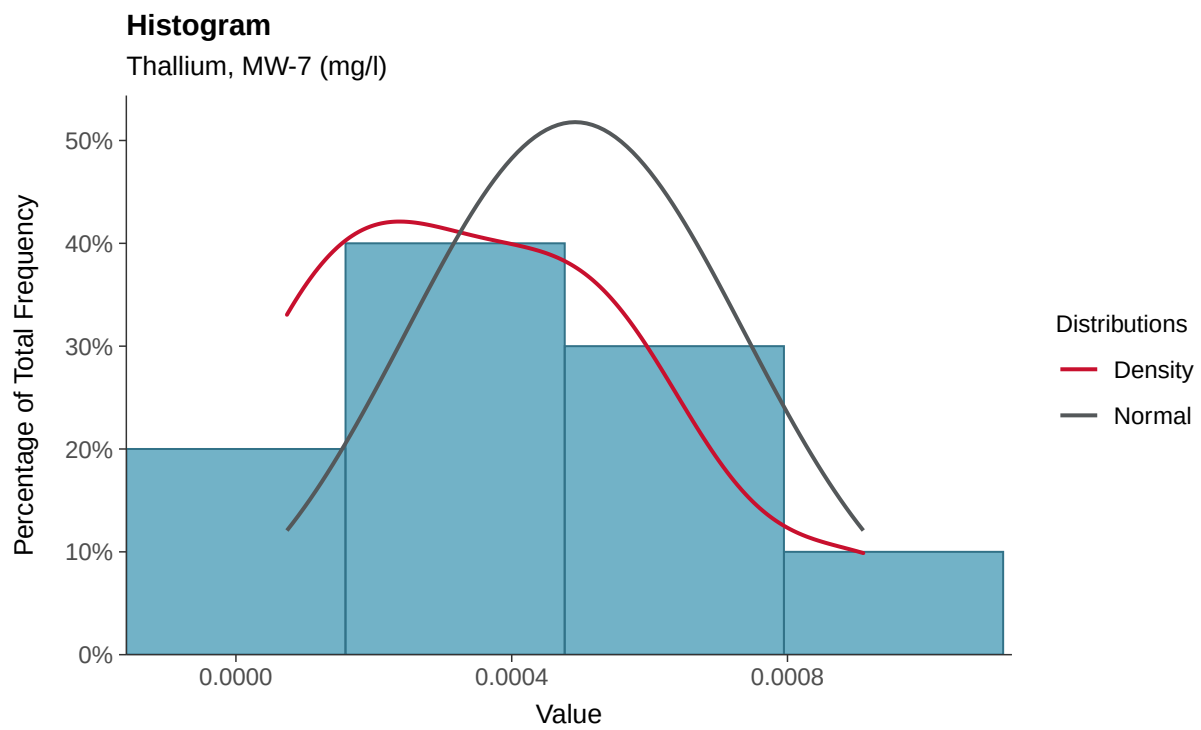
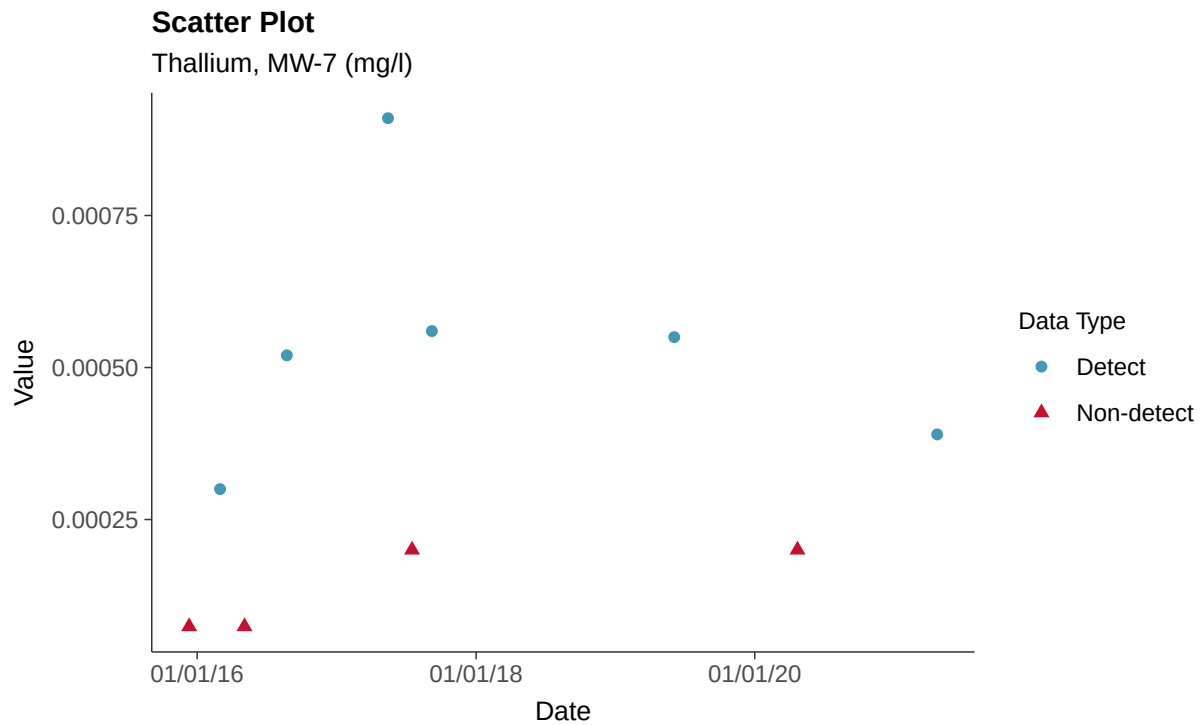


Trend Regression: Piecewise Linear-Linear
Selenium, MW-7 (mg/l)



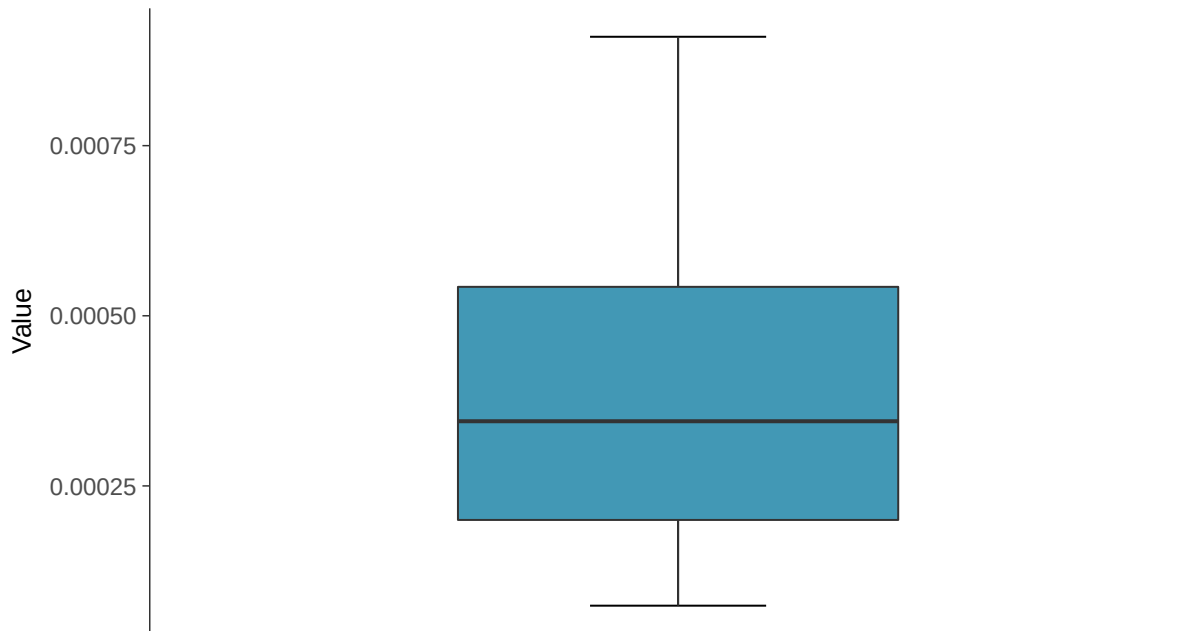
Appendix IV: Thallium, MW-7

ID: 2_2_134



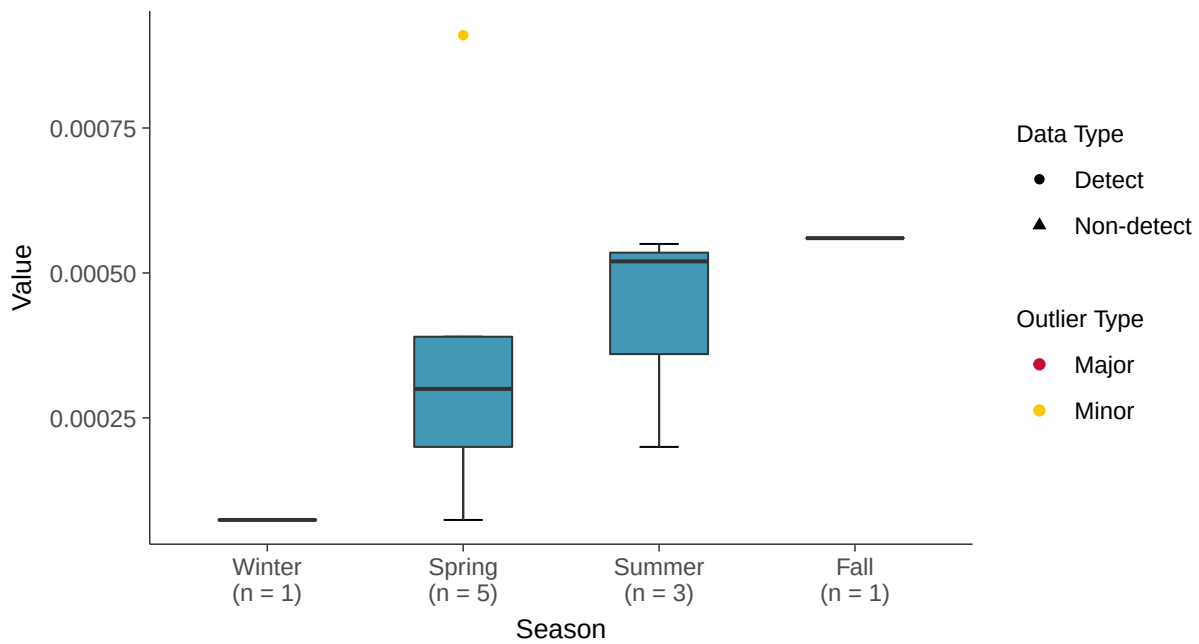
Boxplot

Thallium, MW-7 (mg/l)



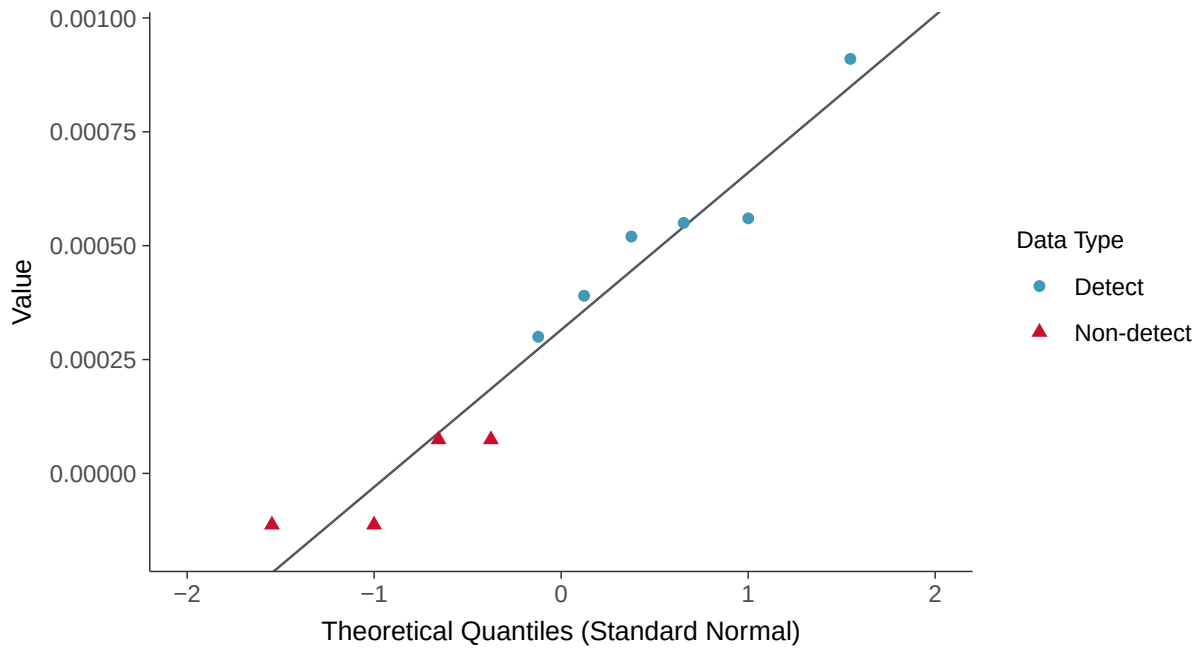
Boxplot by Season

Thallium, MW-7 (mg/l)



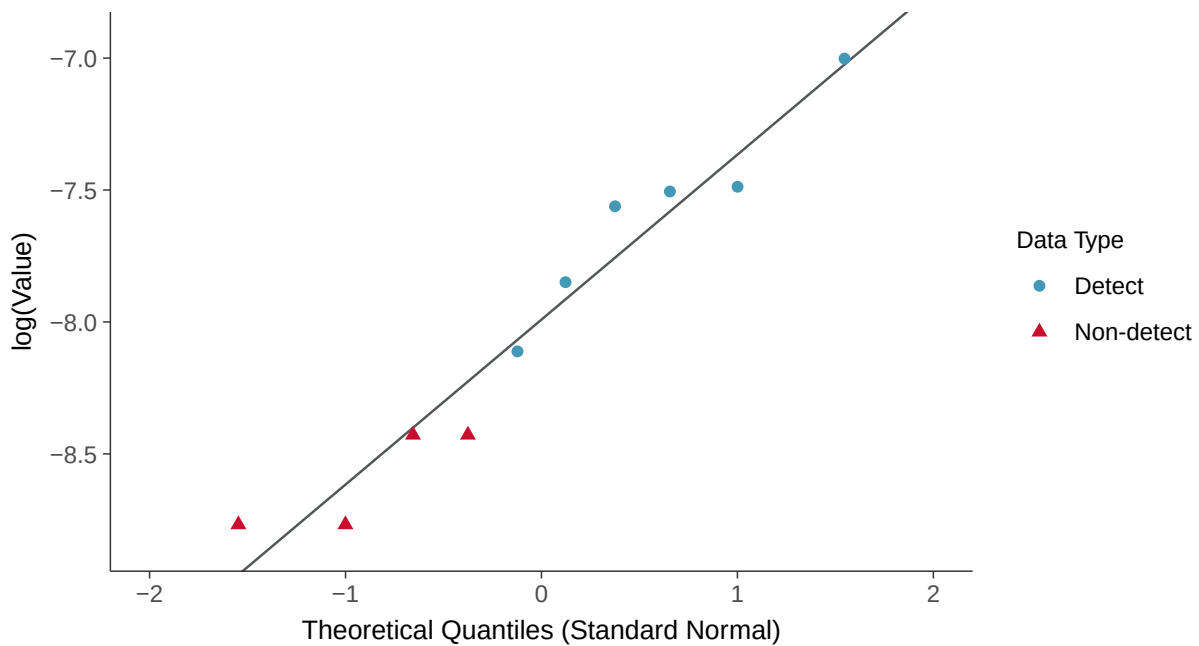
Normal Q-Q plot using ROS Imputed Estimates

Thallium, MW-7 (mg/l)



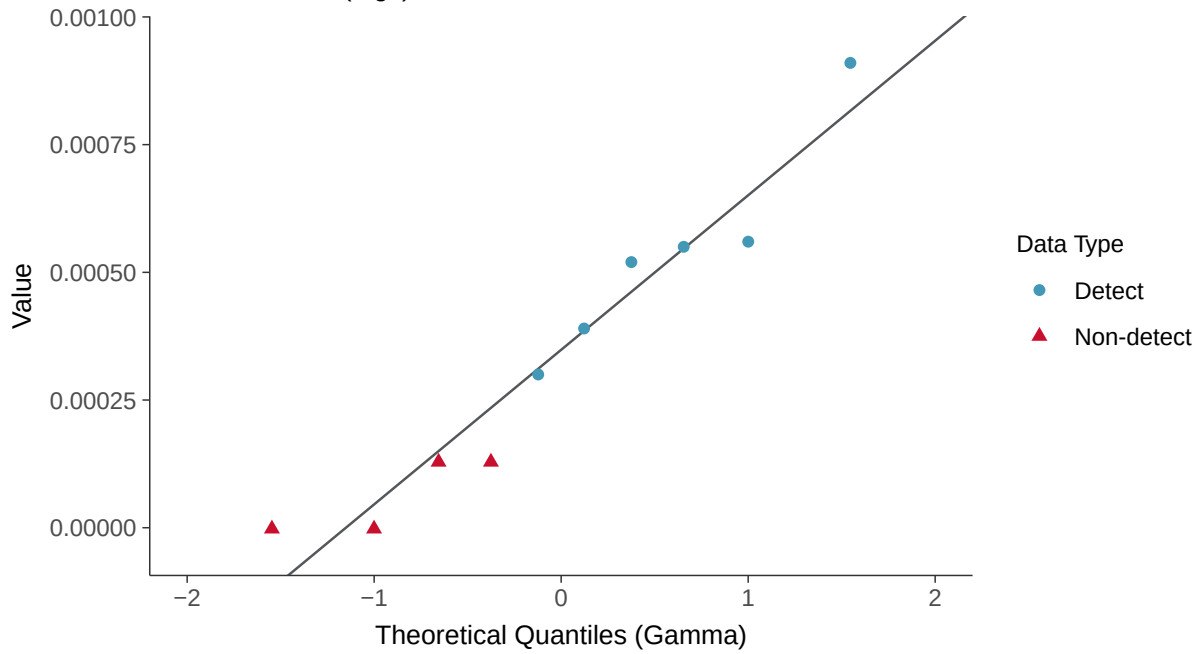
Lognormal Q-Q plot using ROS Imputed Estimates

Thallium, MW-7 (mg/l)



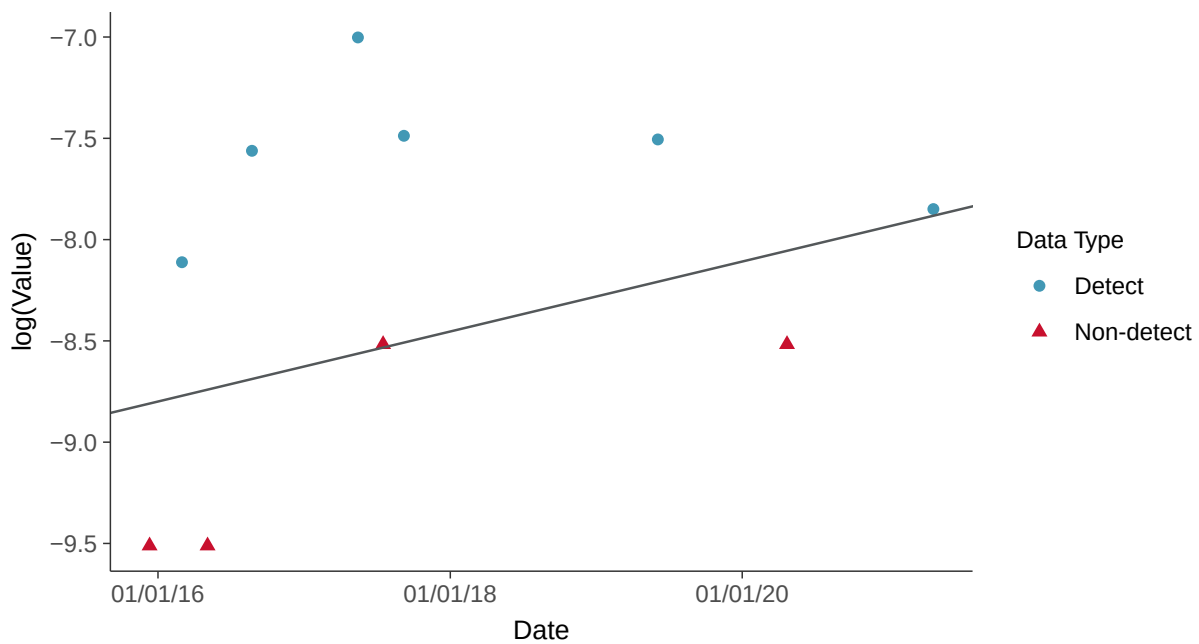
Gamma Q-Q plot using ROS Imputed Estimates

Thallium, MW-7 (mg/l)



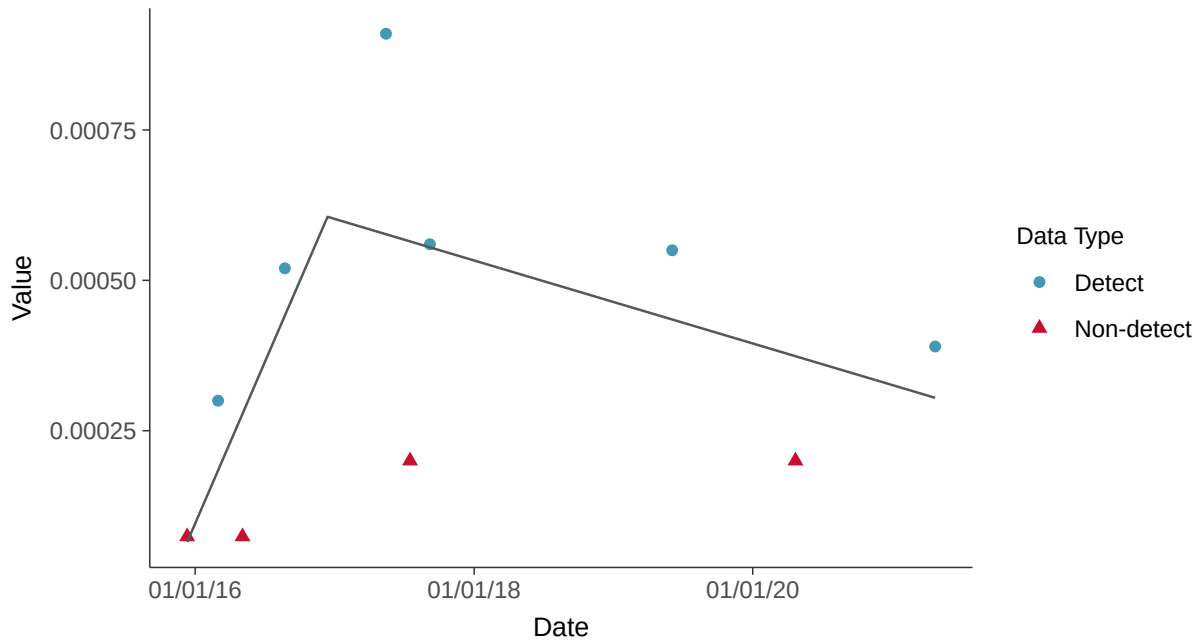
Trend Regression: Lognormal MLE

Thallium, MW-7 (mg/l)



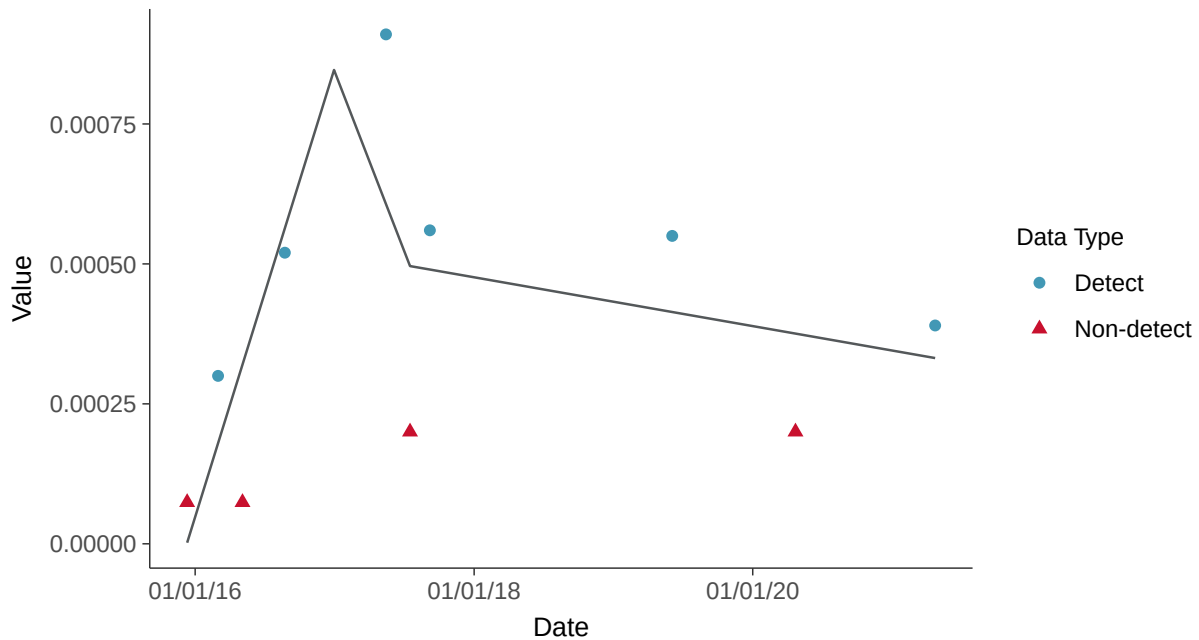
Trend Regression: Piecewise Linear-Linear

Thallium, MW-7 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

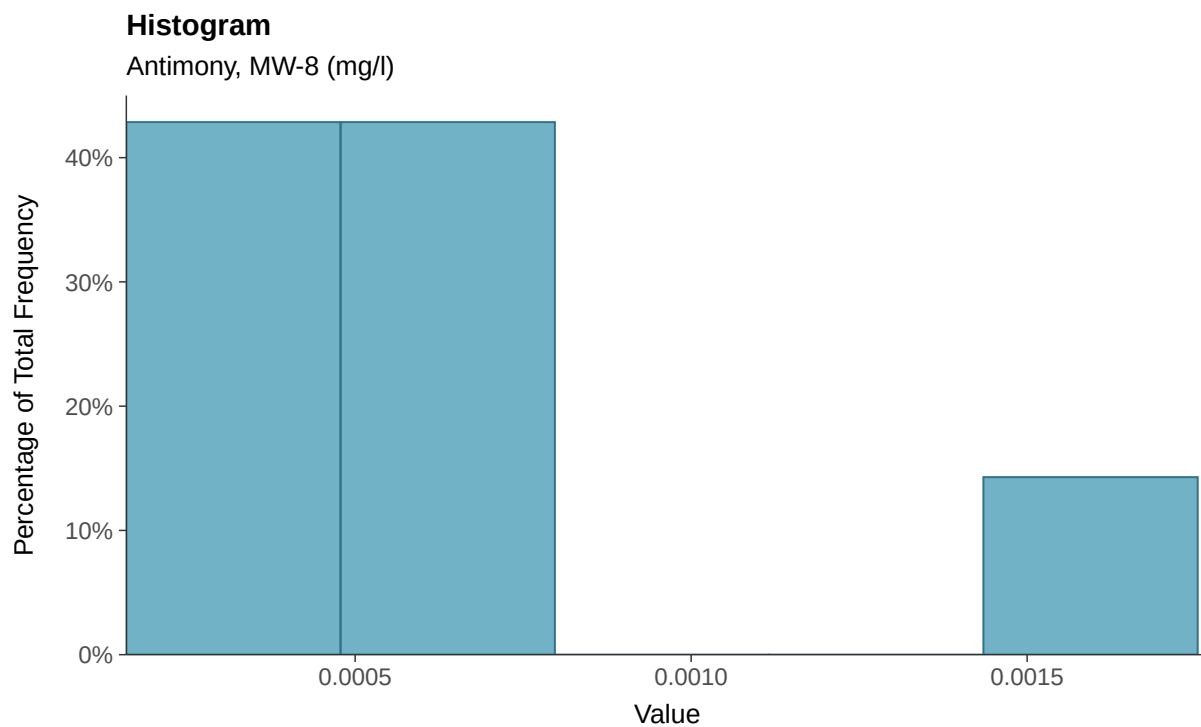
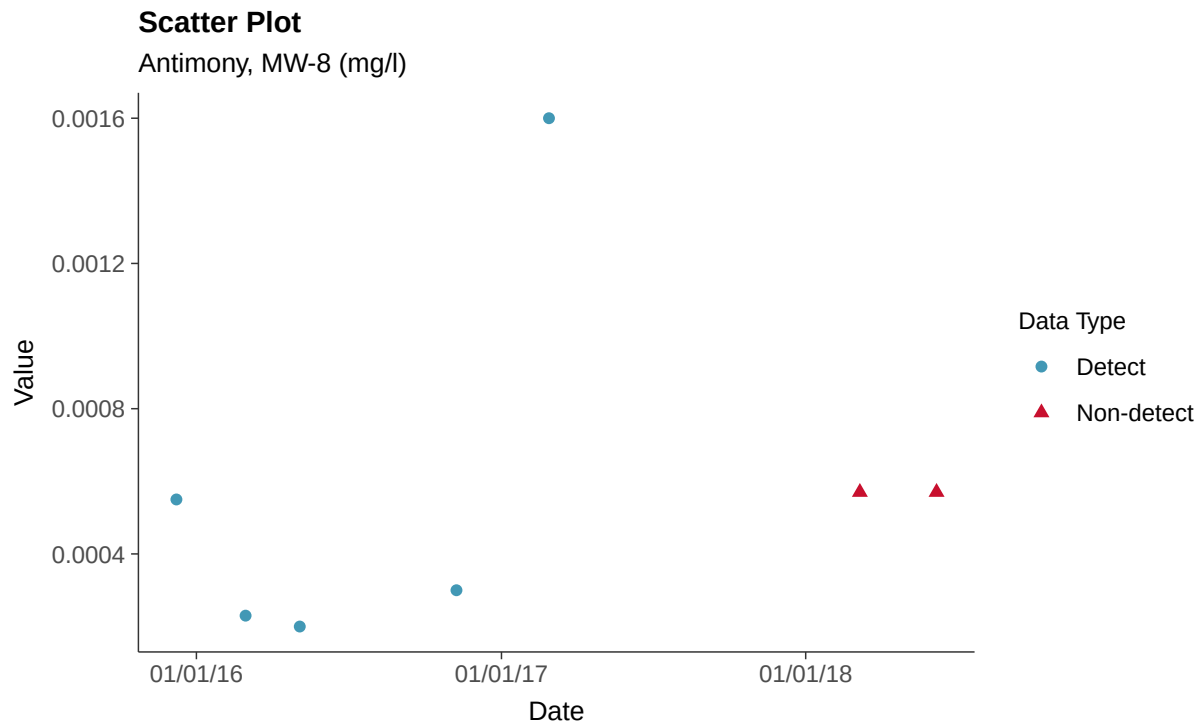
Thallium, MW-7 (mg/l)





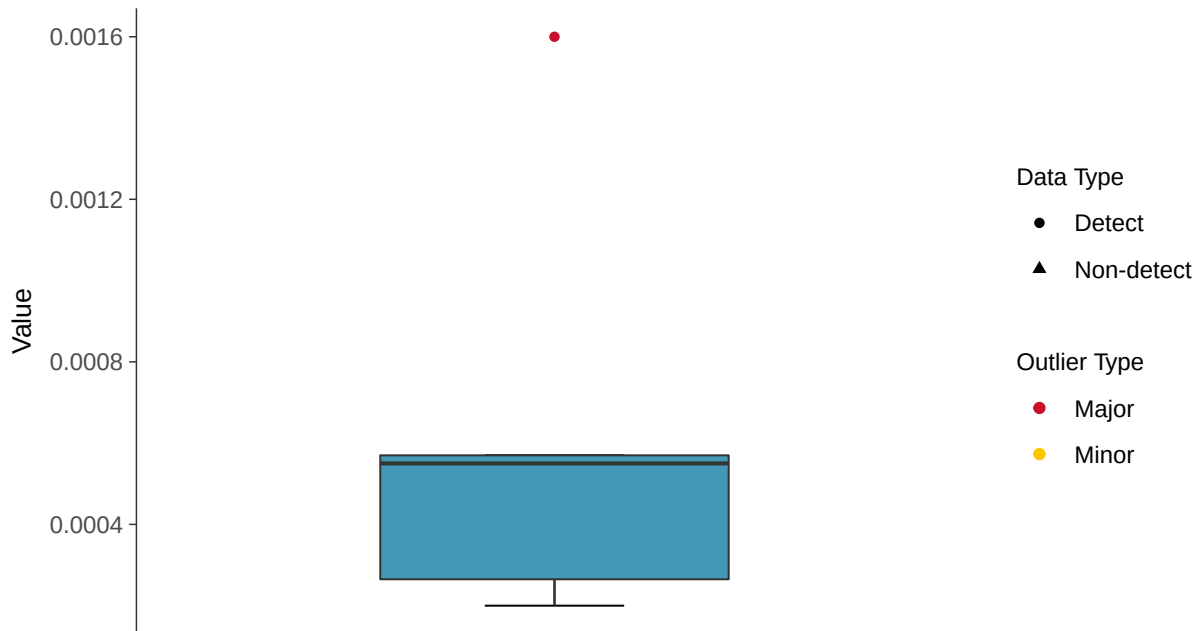
Appendix IV: Antimony, MW-8

ID: 3_2_104



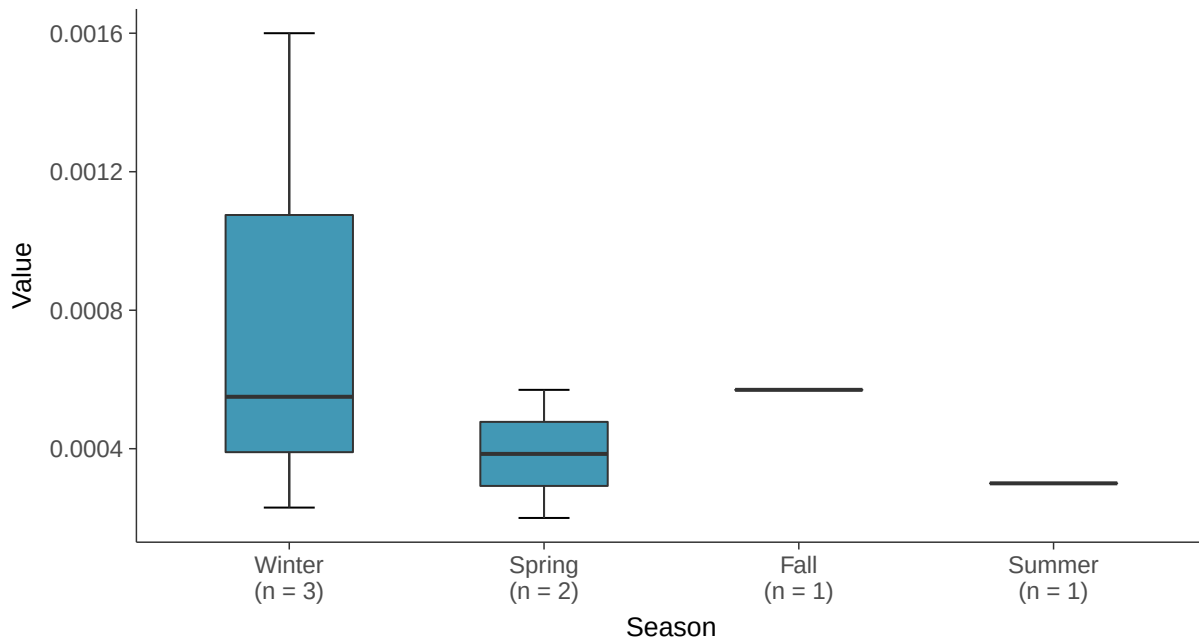
Boxplot

Antimony, MW-8 (mg/l)



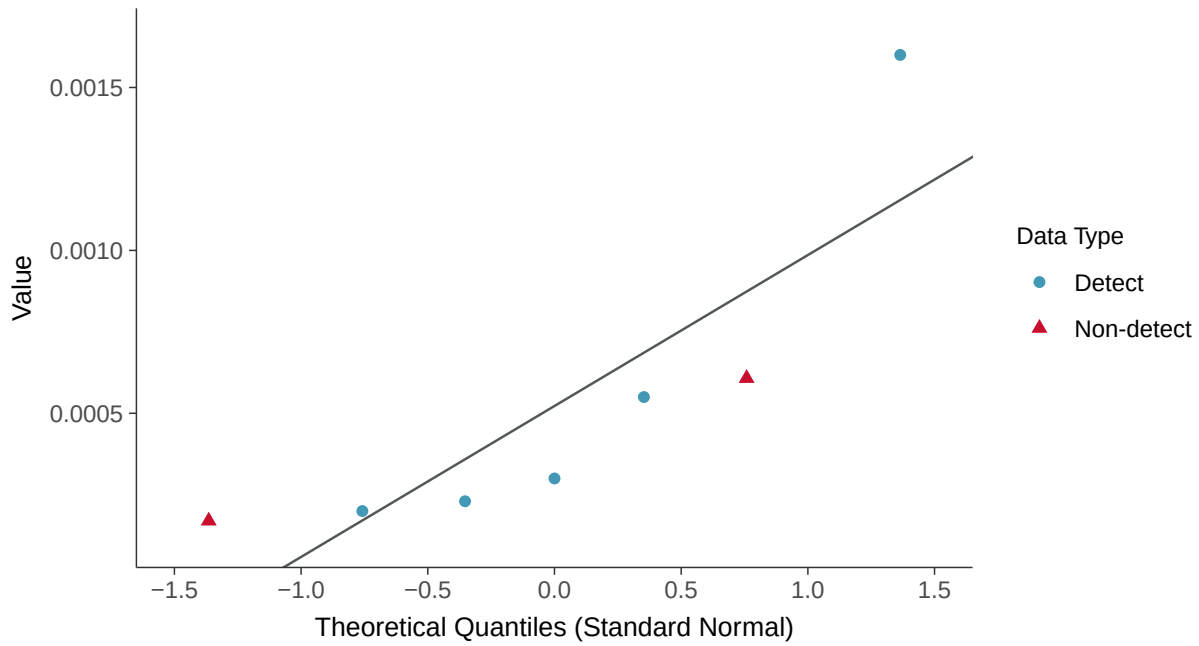
Boxplot by Season

Antimony, MW-8 (mg/l)



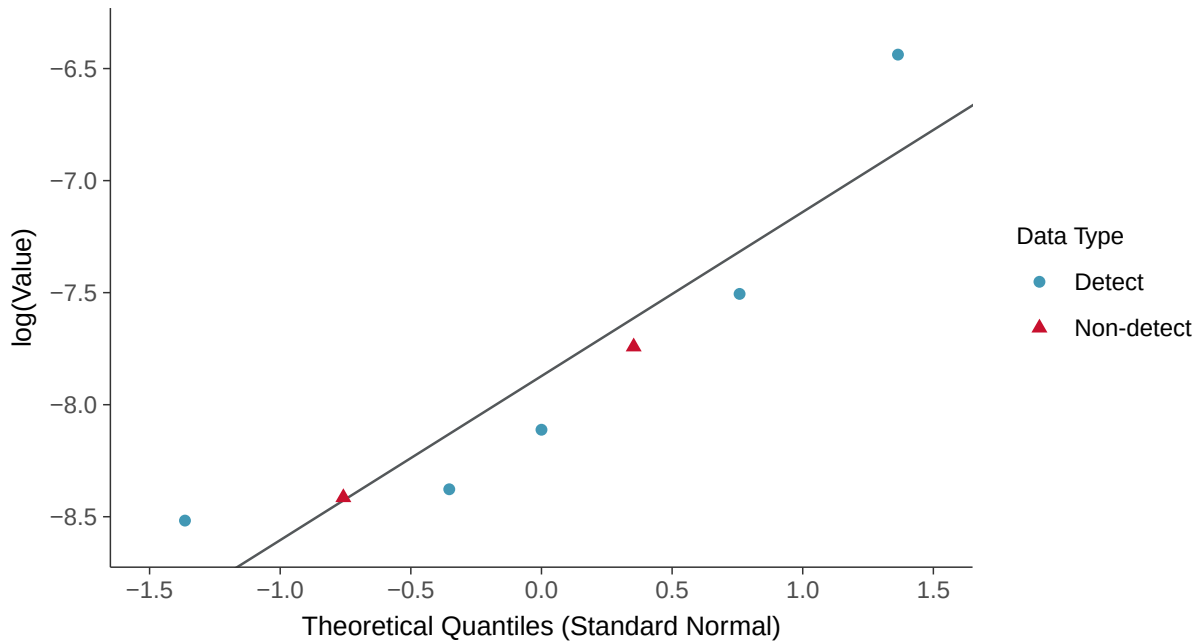
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-8 (mg/l)



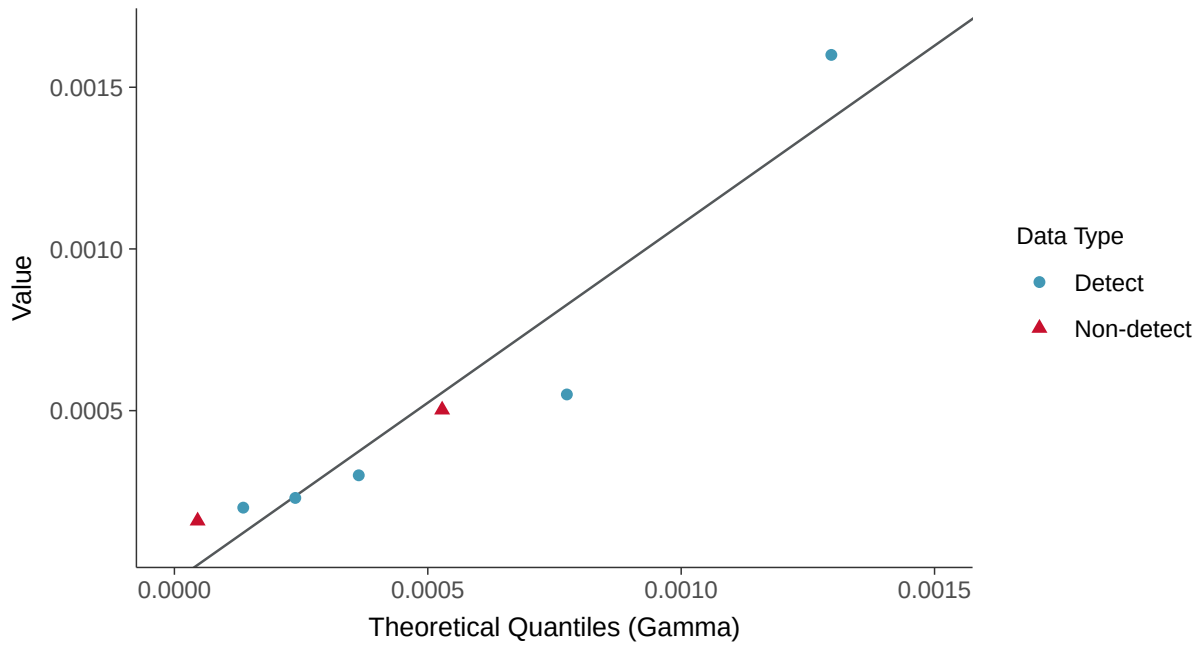
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-8 (mg/l)



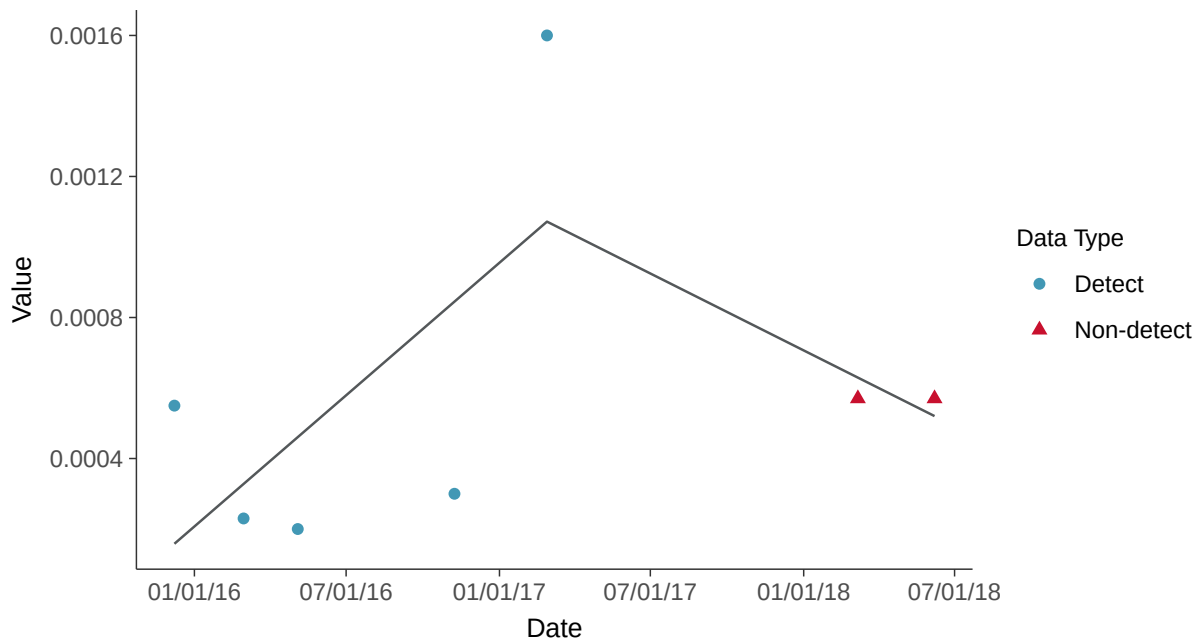
Gamma Q-Q plot using ROS Imputed Estimates

Antimony, MW-8 (mg/l)



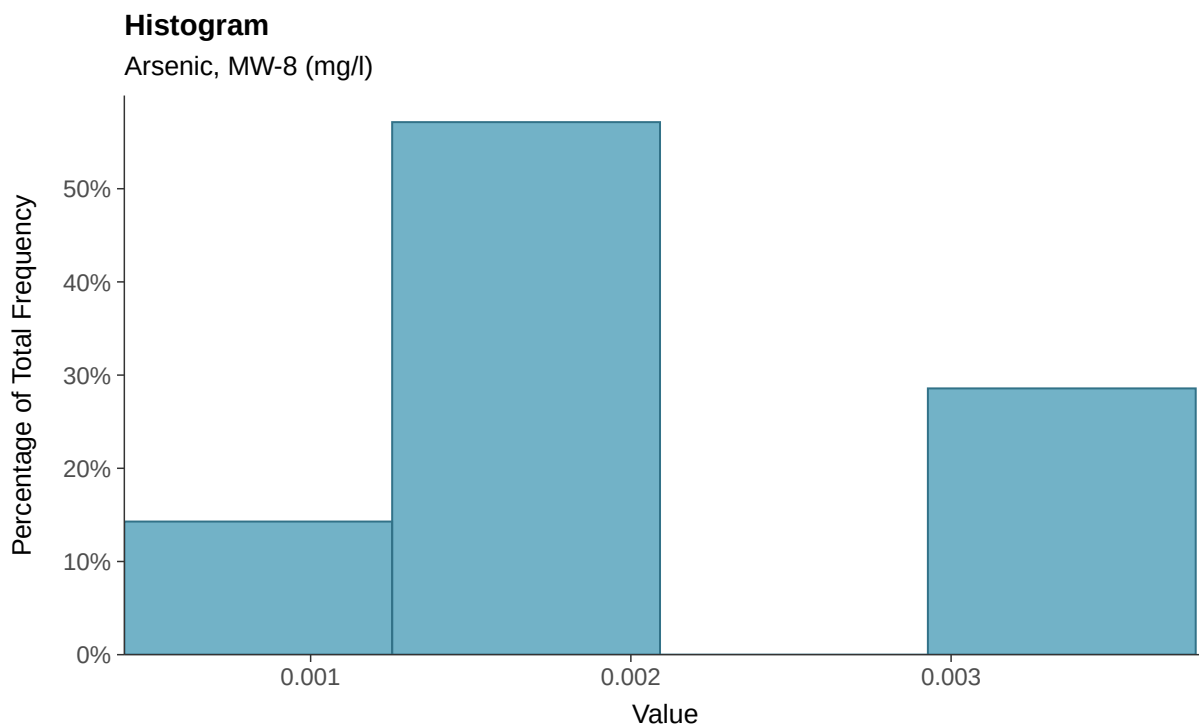
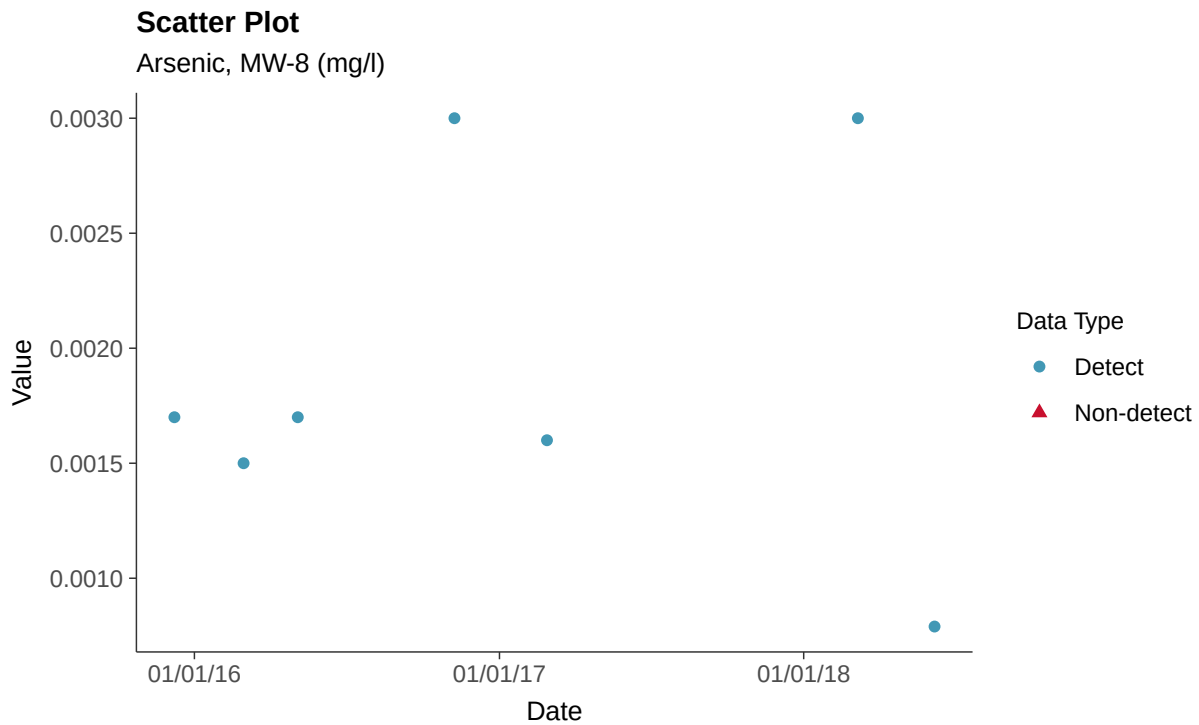
Trend Regression: Piecewise Linear-Linear

Antimony, MW-8 (mg/l)



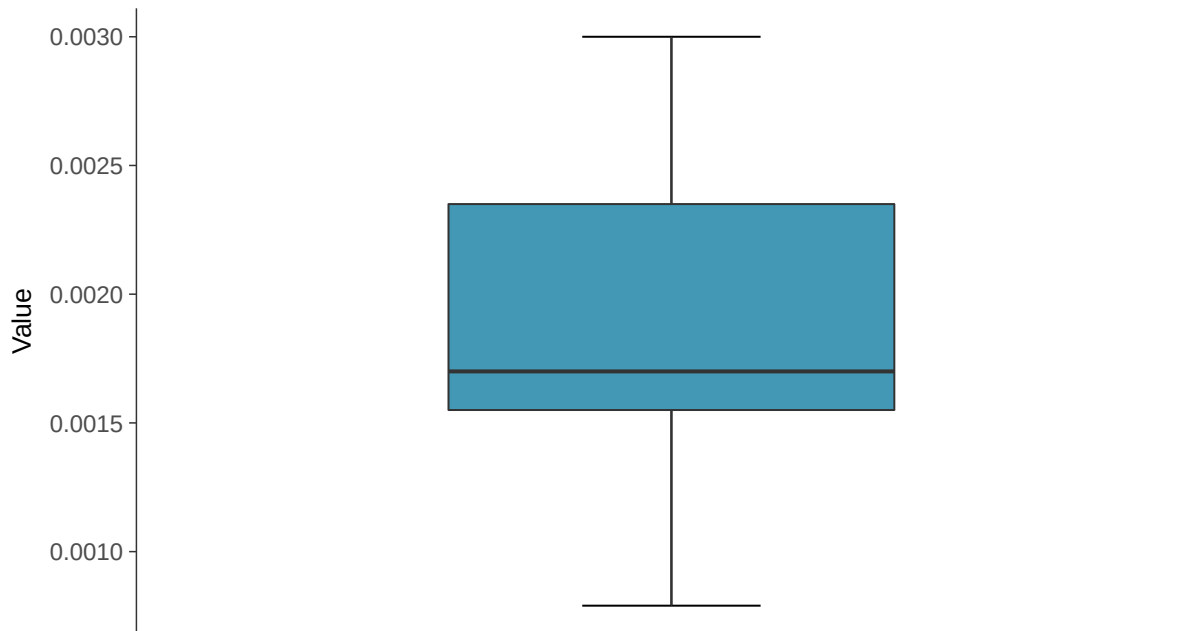
Appendix IV: Arsenic, MW-8

ID: 3_2_105



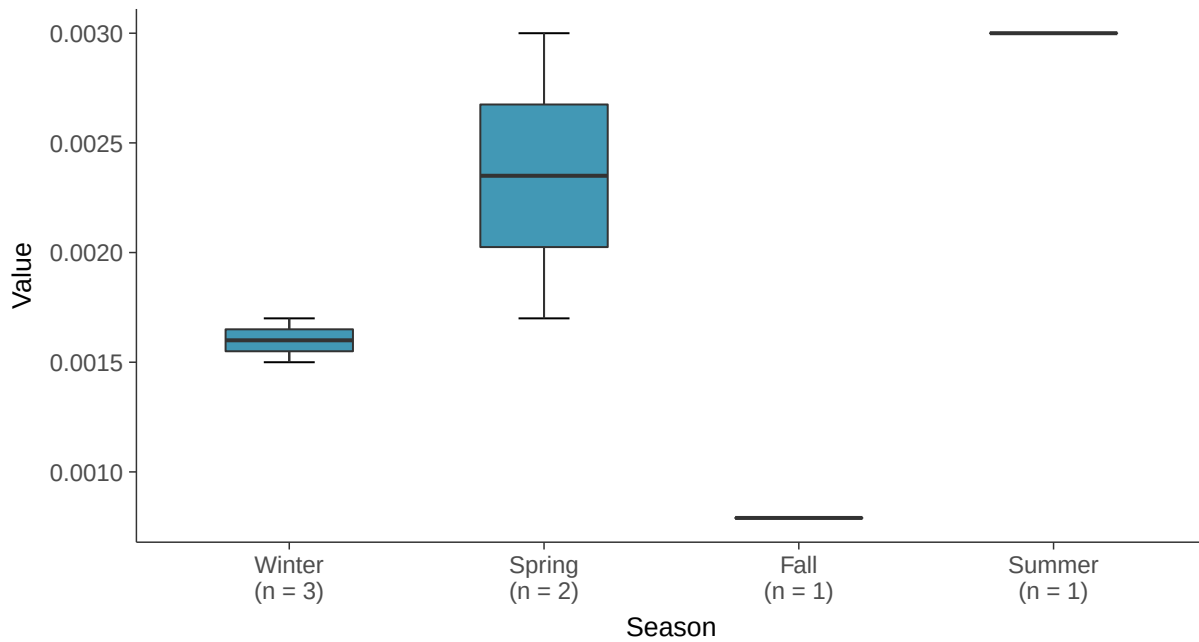
Boxplot

Arsenic, MW-8 (mg/l)



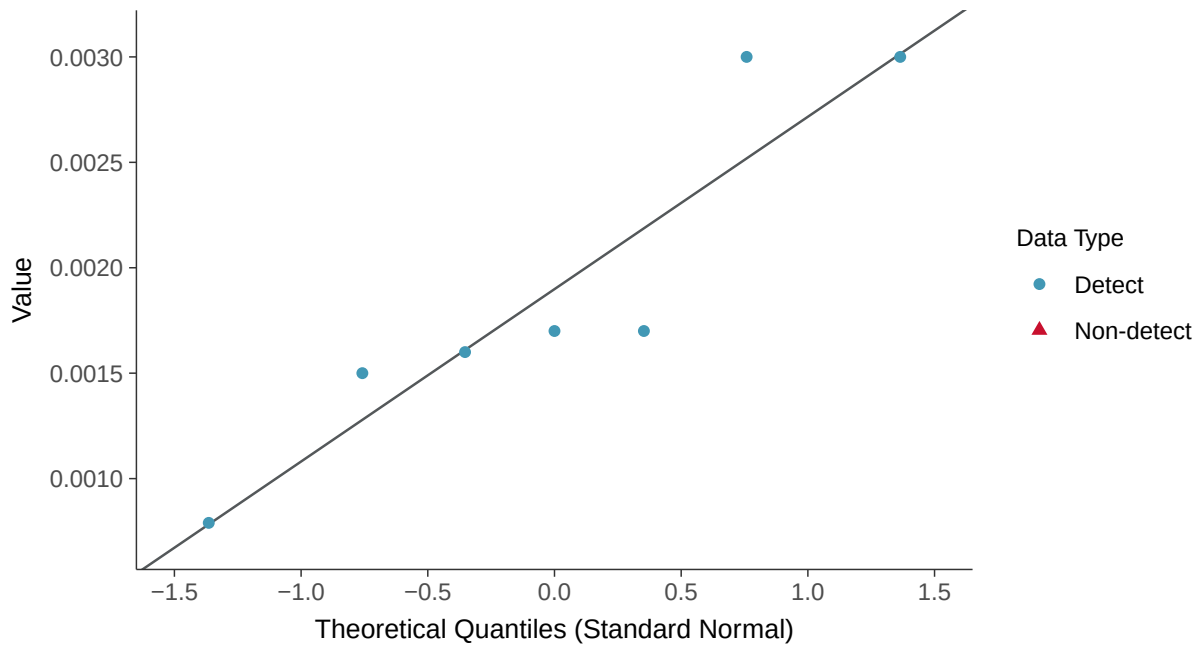
Boxplot by Season

Arsenic, MW-8 (mg/l)



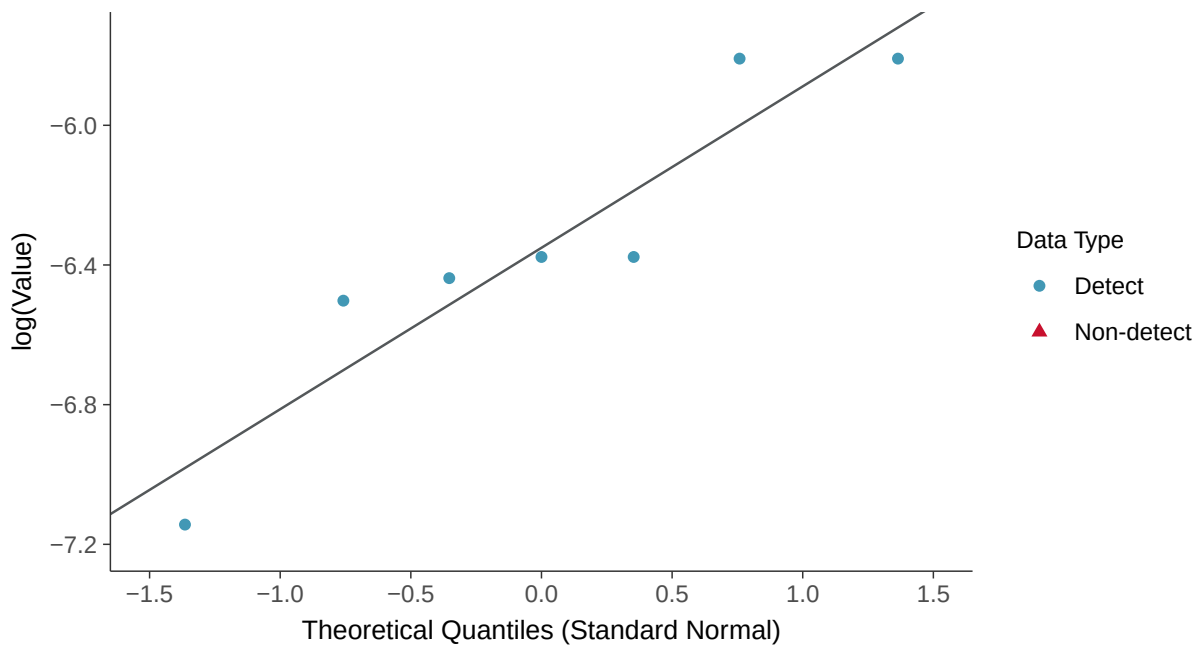
Normal Q-Q plot

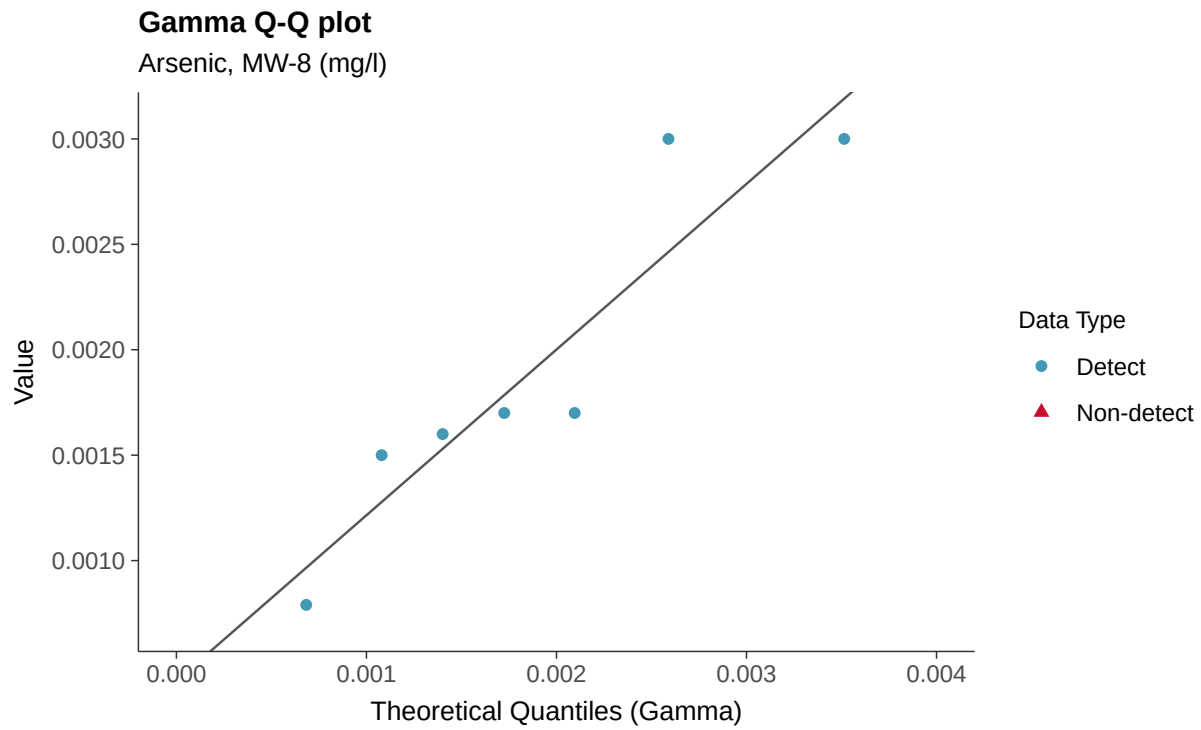
Arsenic, MW-8 (mg/l)



Lognormal Q-Q plot

Arsenic, MW-8 (mg/l)

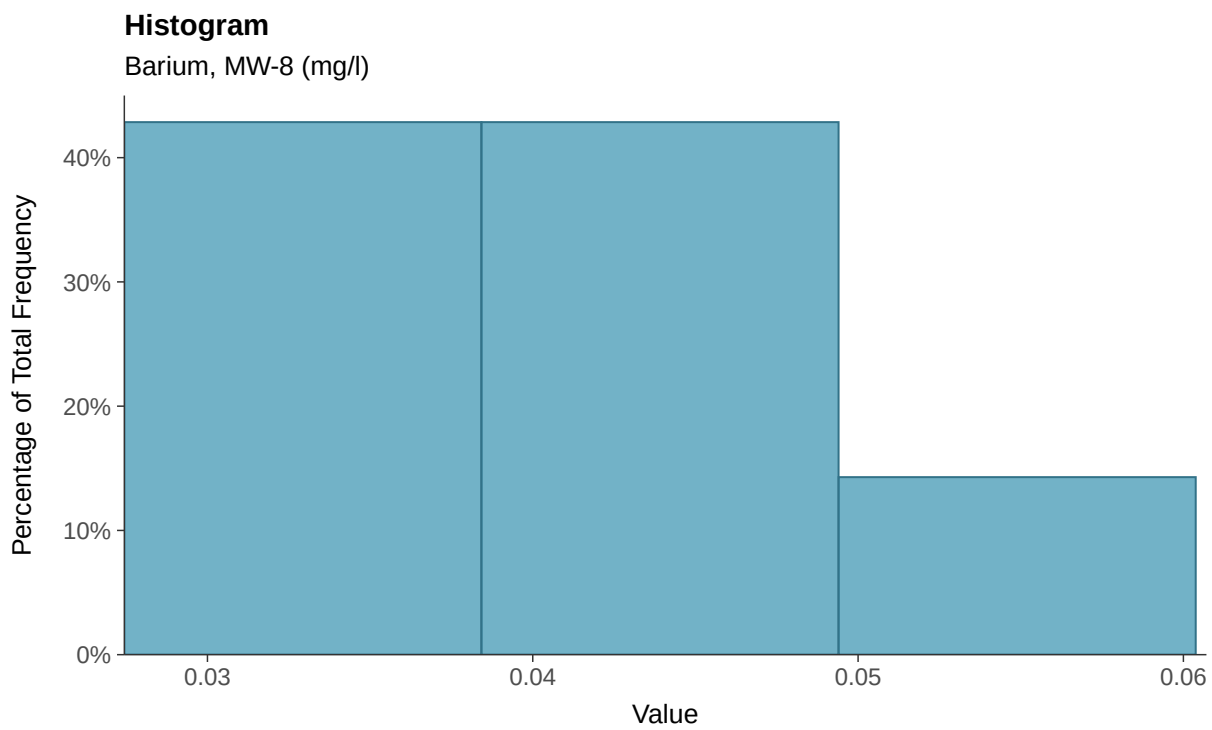
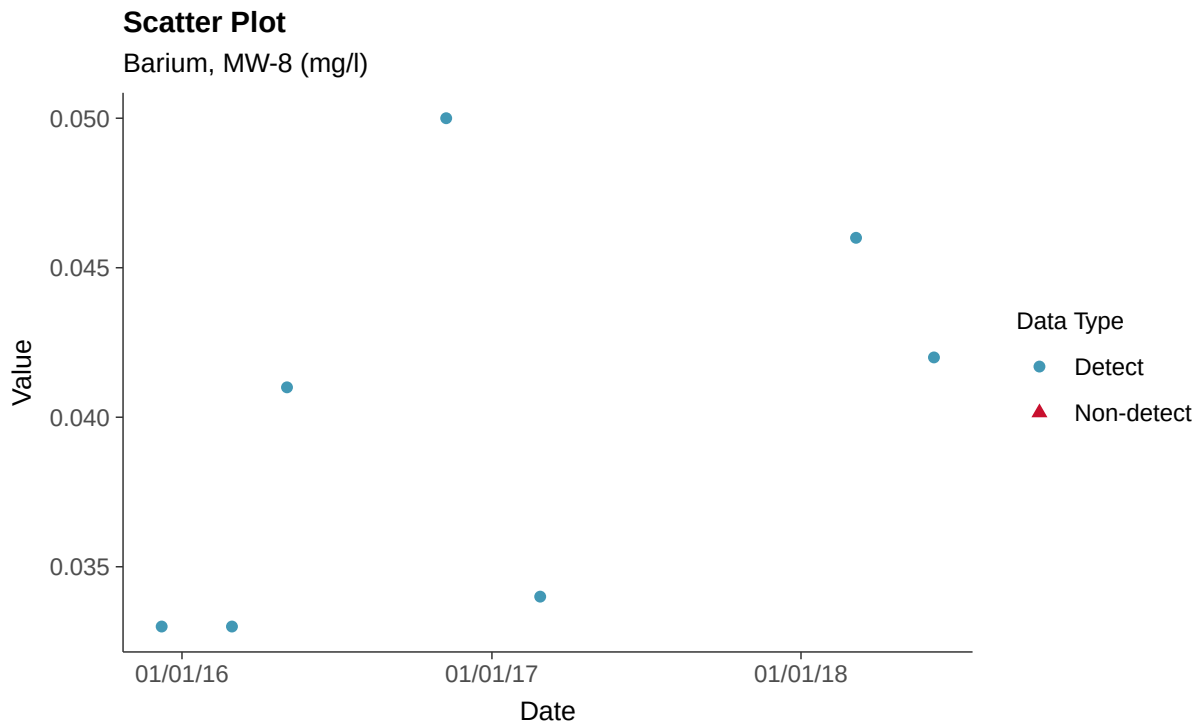






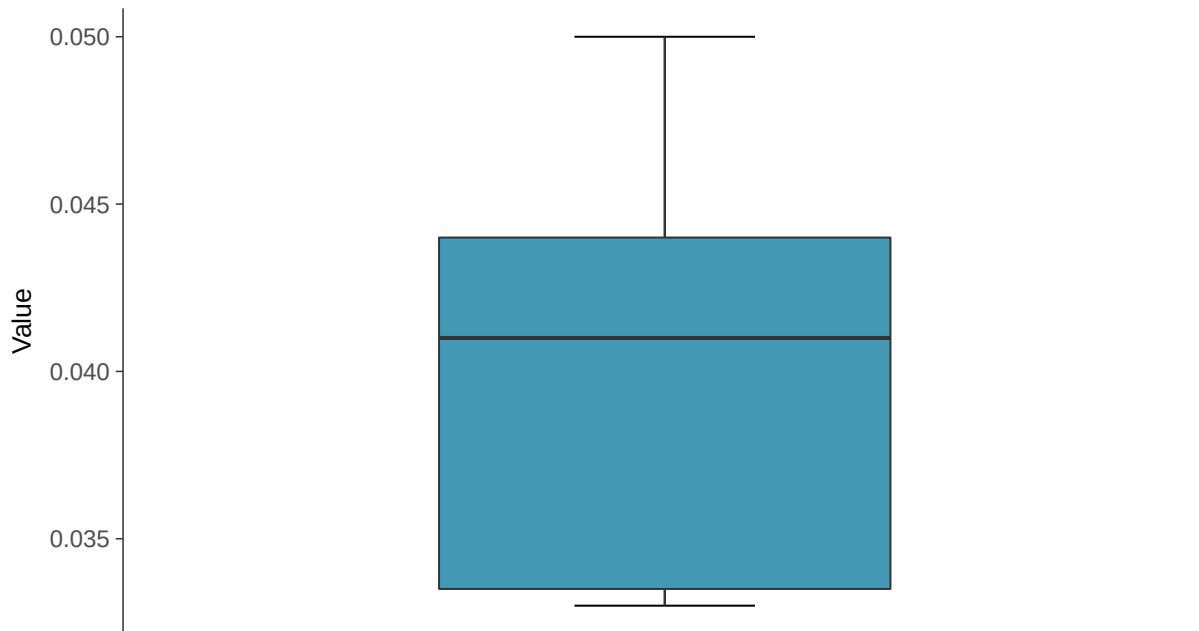
Appendix IV: Barium, MW-8

ID: 3_2_106



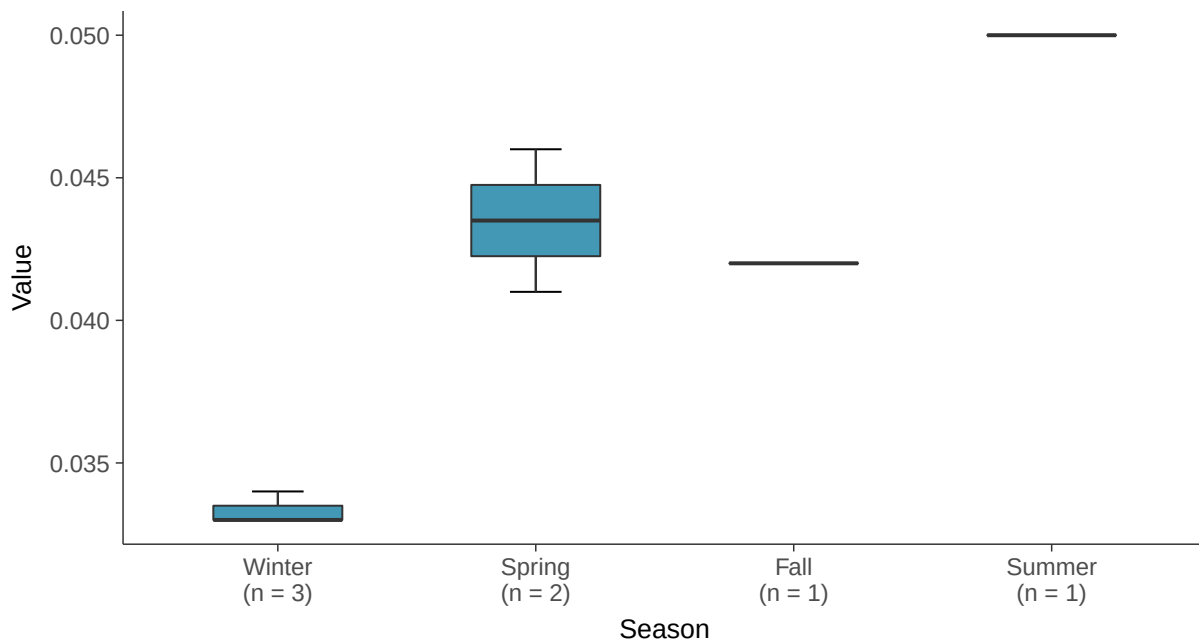
Boxplot

Barium, MW-8 (mg/l)



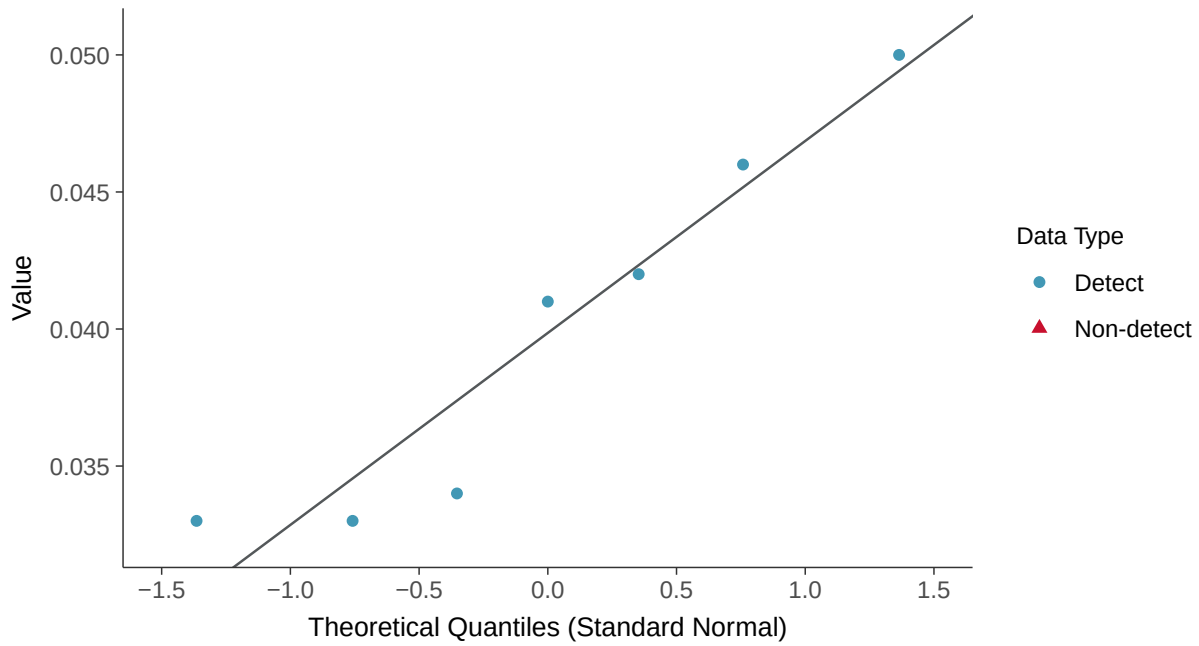
Boxplot by Season

Barium, MW-8 (mg/l)



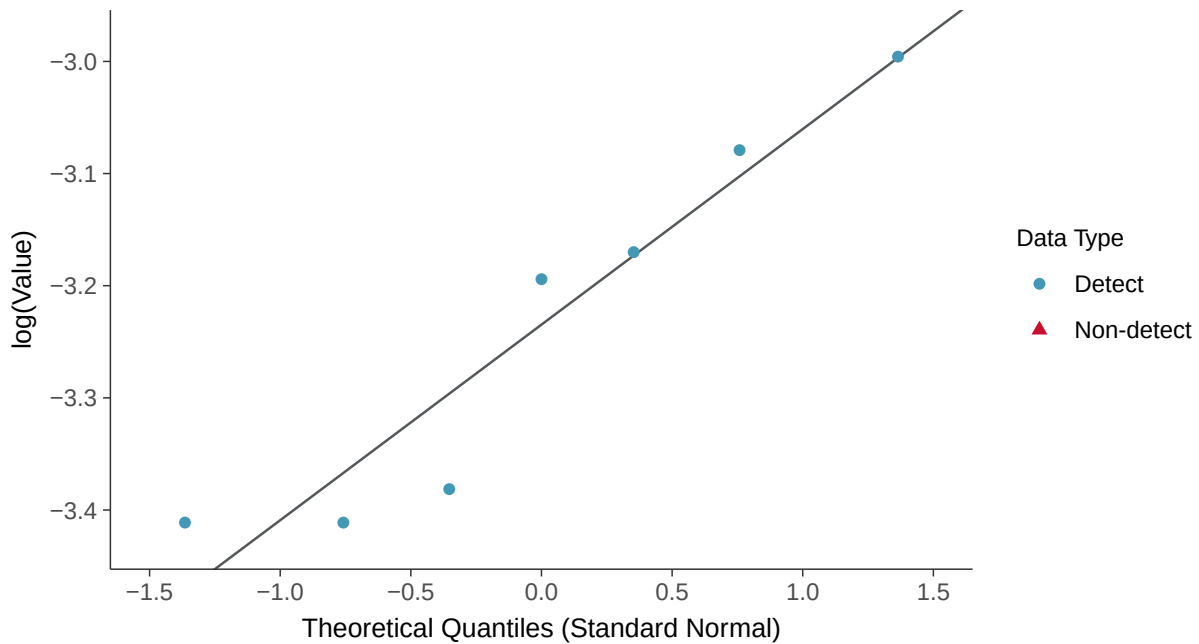
Normal Q-Q plot

Barium, MW-8 (mg/l)

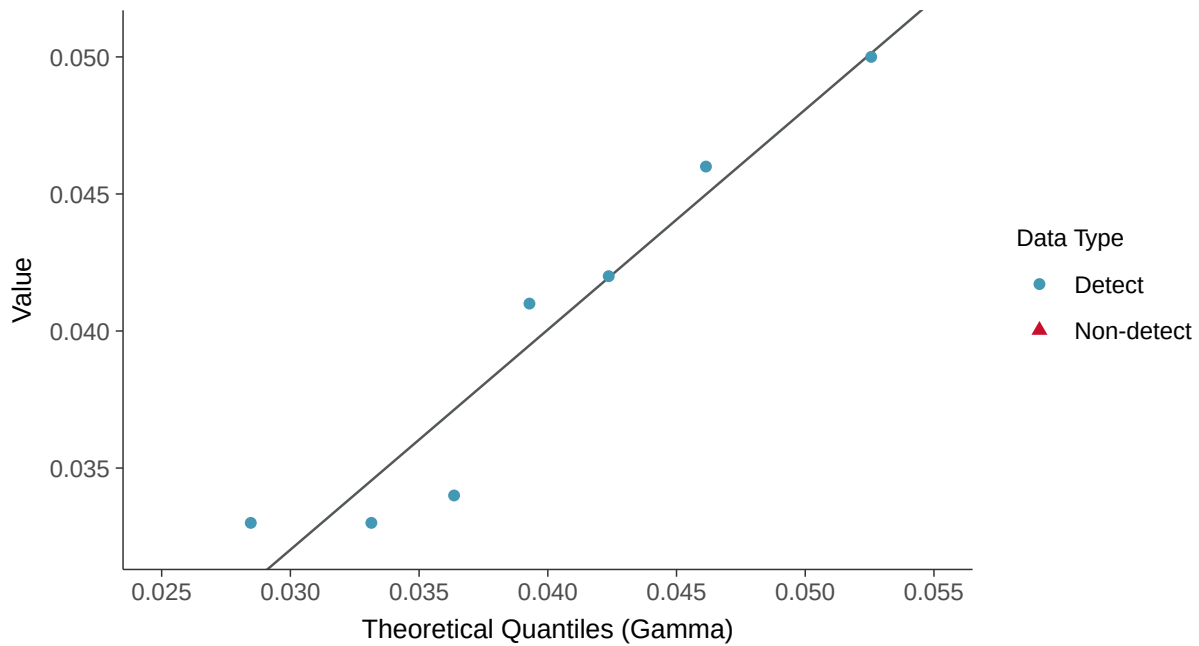


Lognormal Q-Q plot

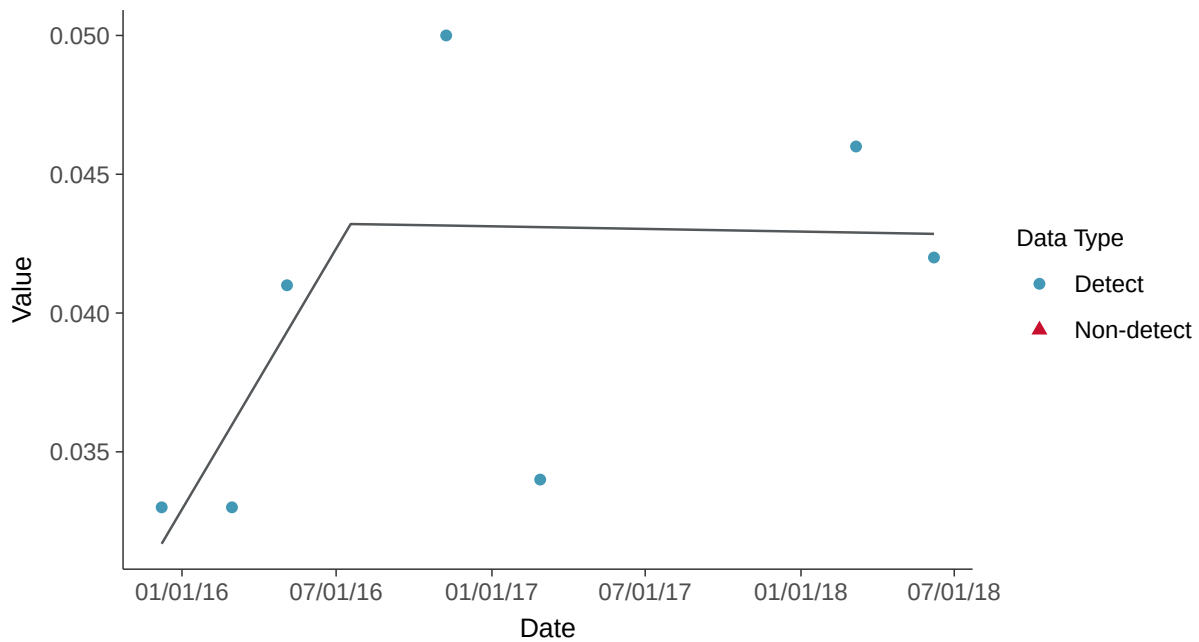
Barium, MW-8 (mg/l)



Gamma Q-Q plot
Barium, MW-8 (mg/l)

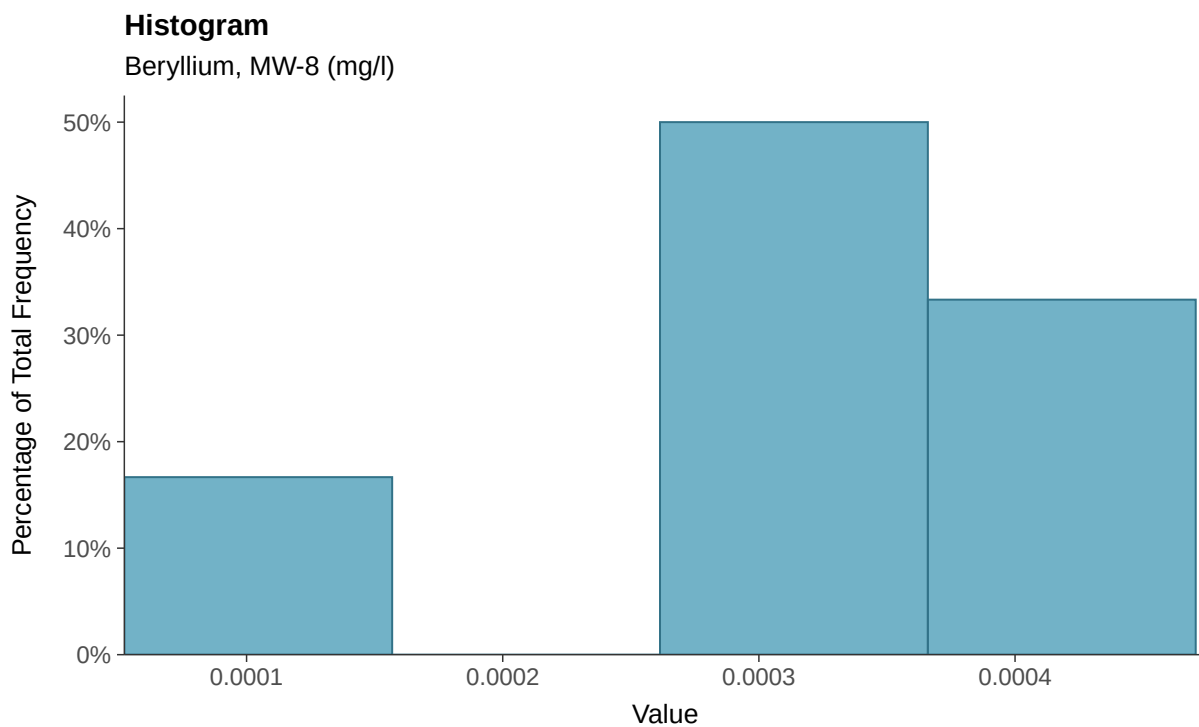
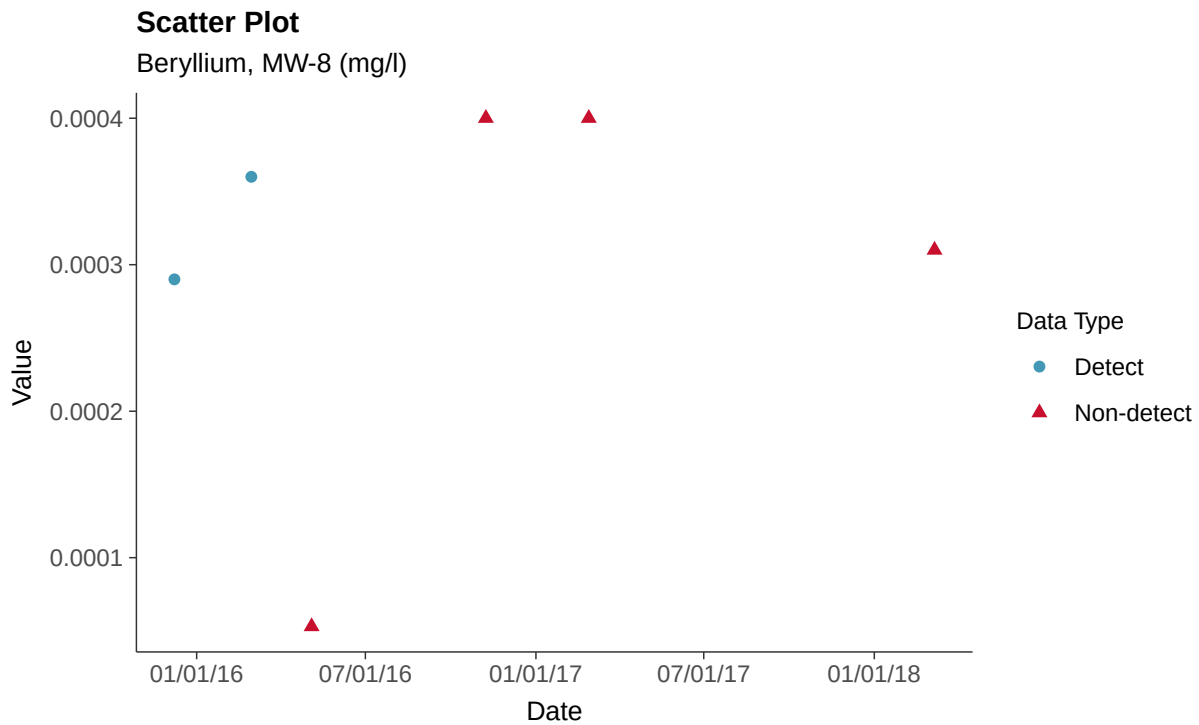


Trend Regression: Piecewise Linear-Linear
Barium, MW-8 (mg/l)



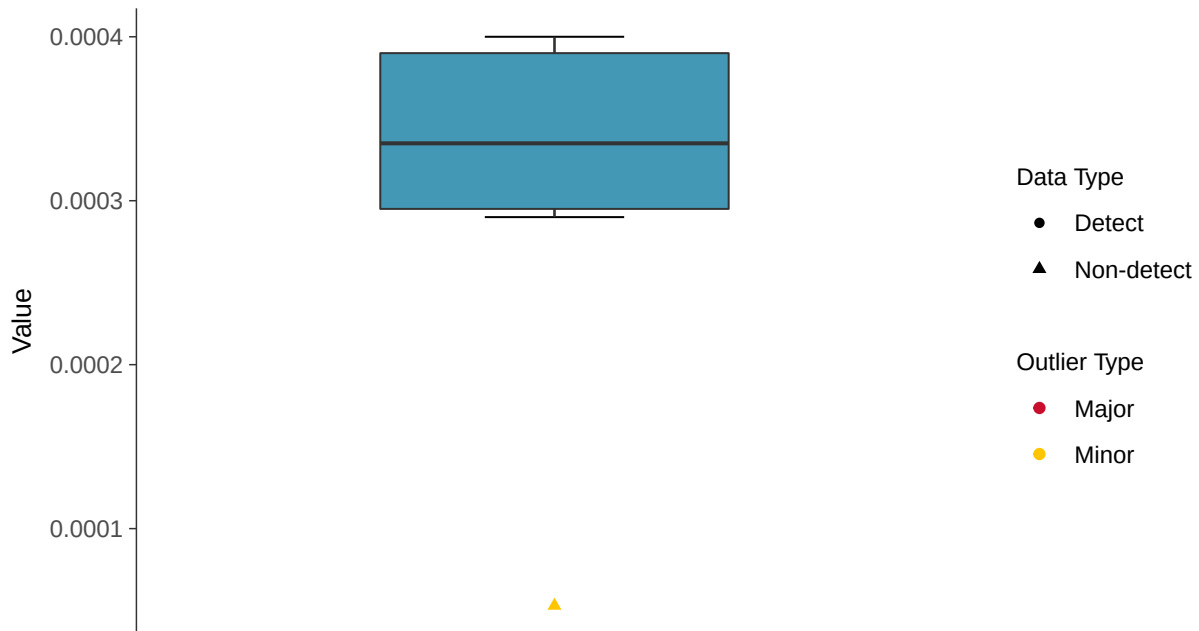
Appendix IV: Beryllium, MW-8

ID: 3_2_107



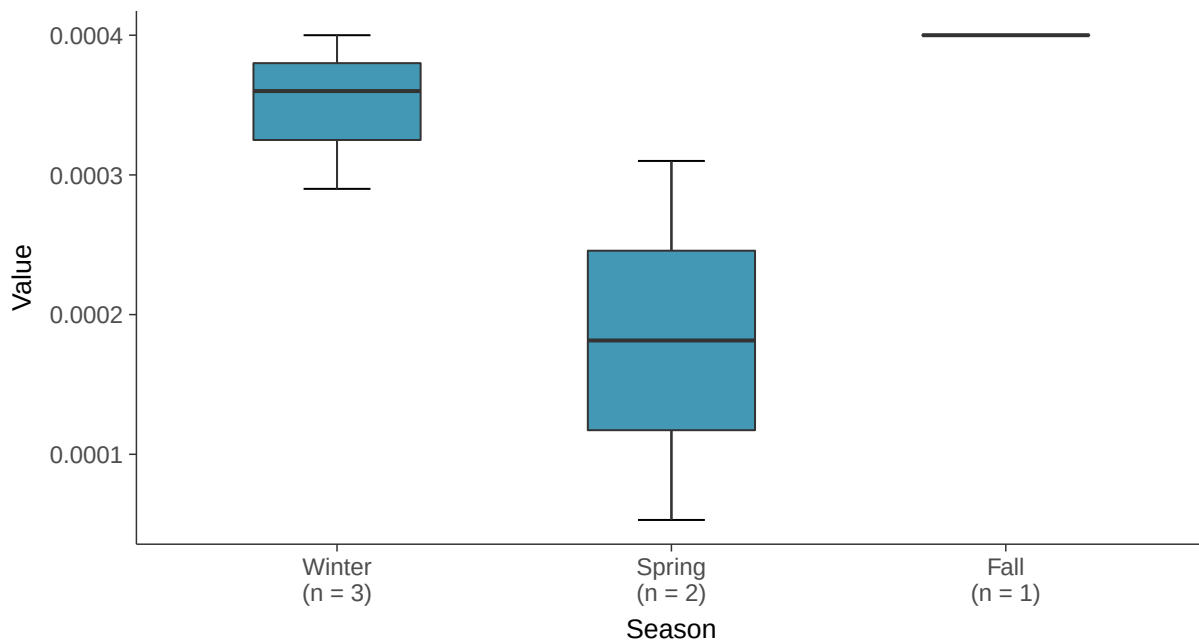
Boxplot

Beryllium, MW-8 (mg/l)



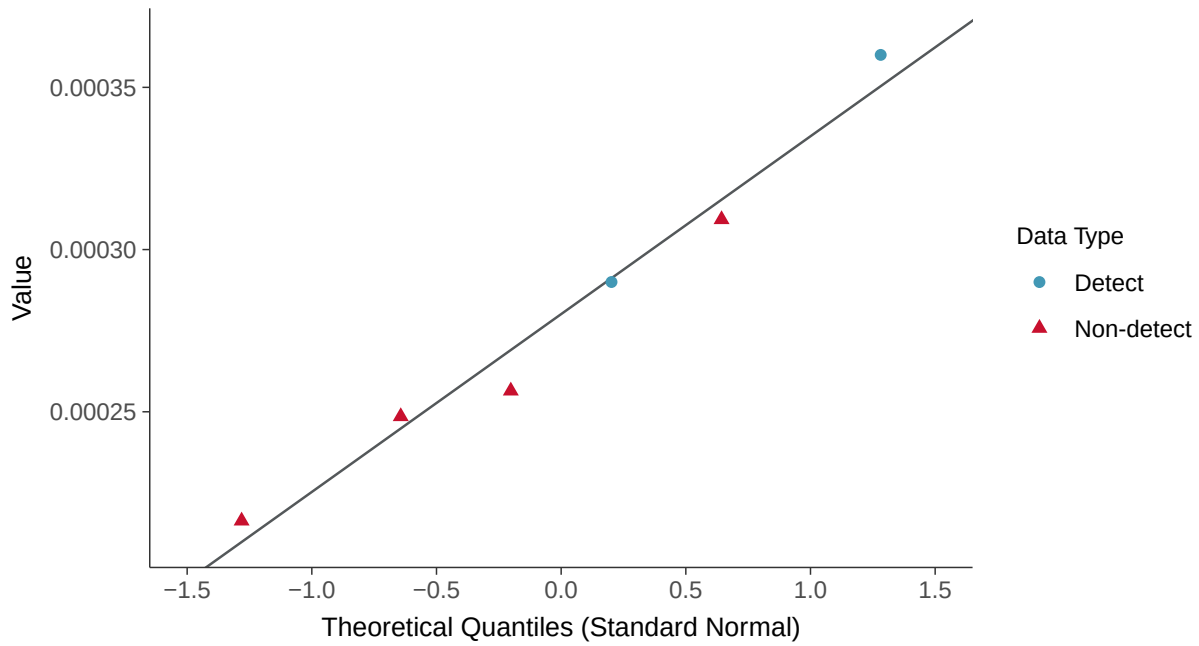
Boxplot by Season

Beryllium, MW-8 (mg/l)



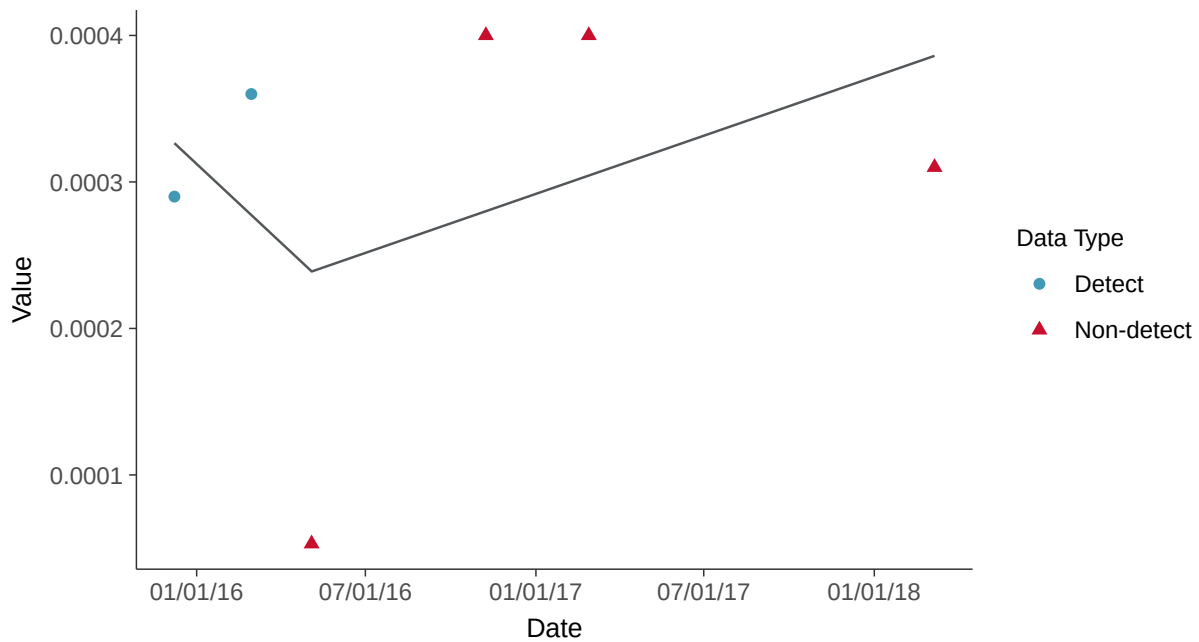
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

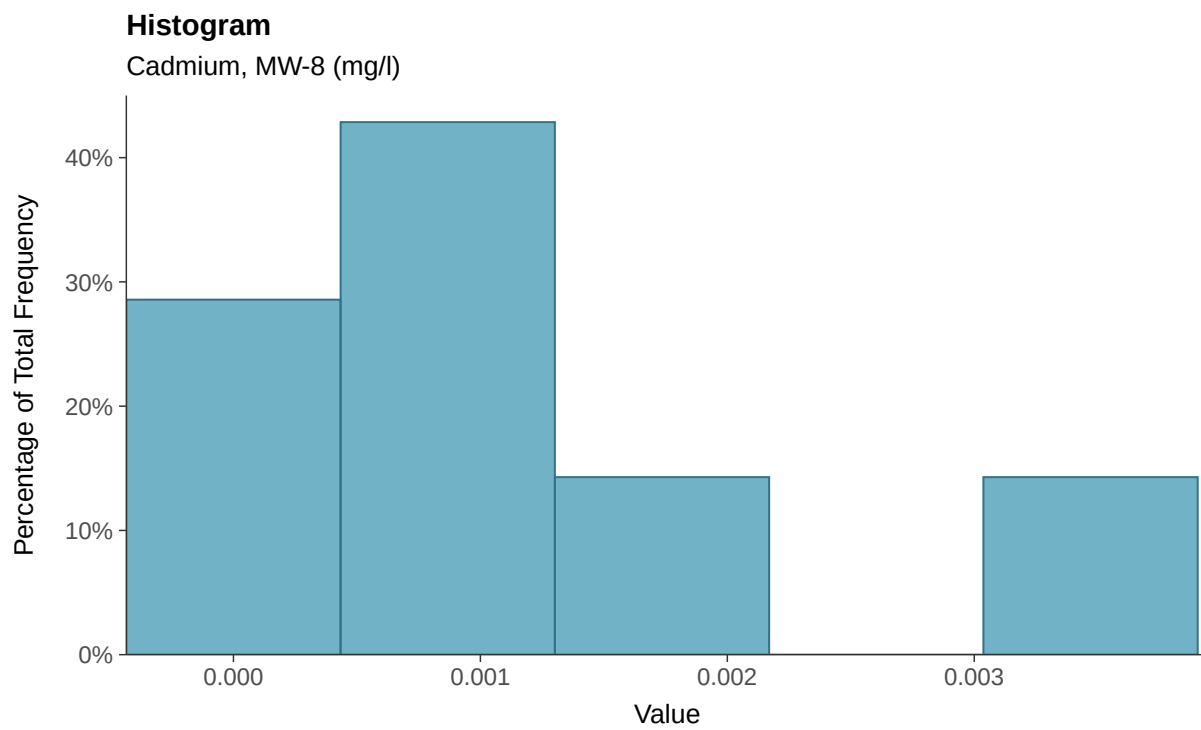
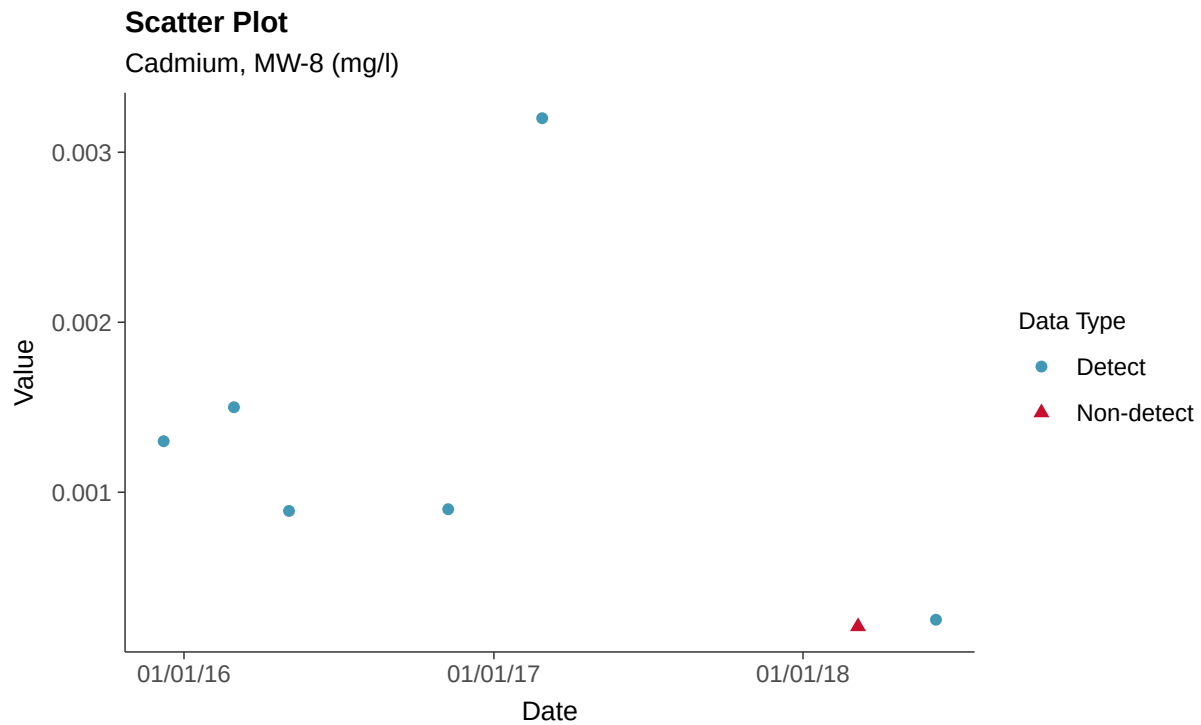
Beryllium, MW-8 (mg/l)





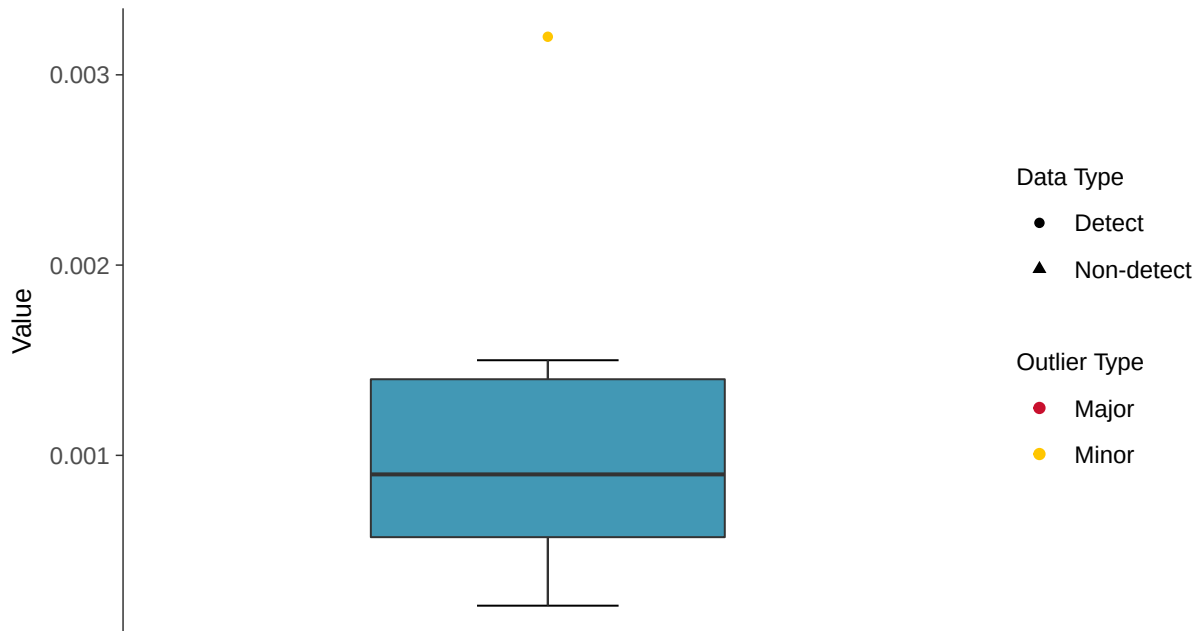
Appendix IV: Cadmium, MW-8

ID: 3_2_109



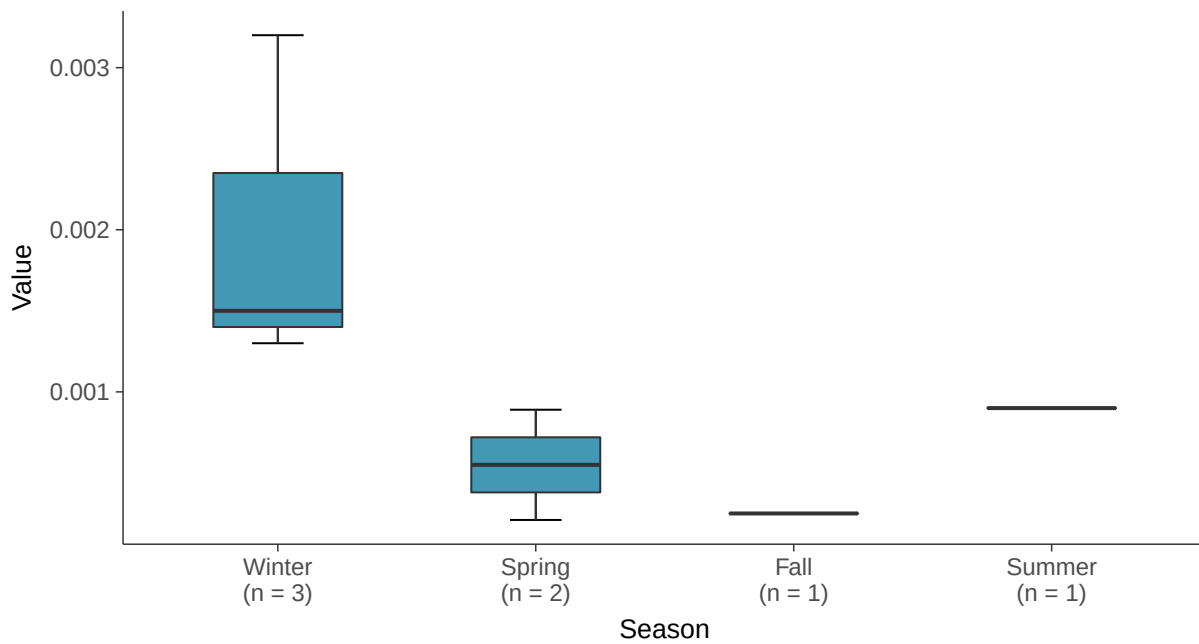
Boxplot

Cadmium, MW-8 (mg/l)



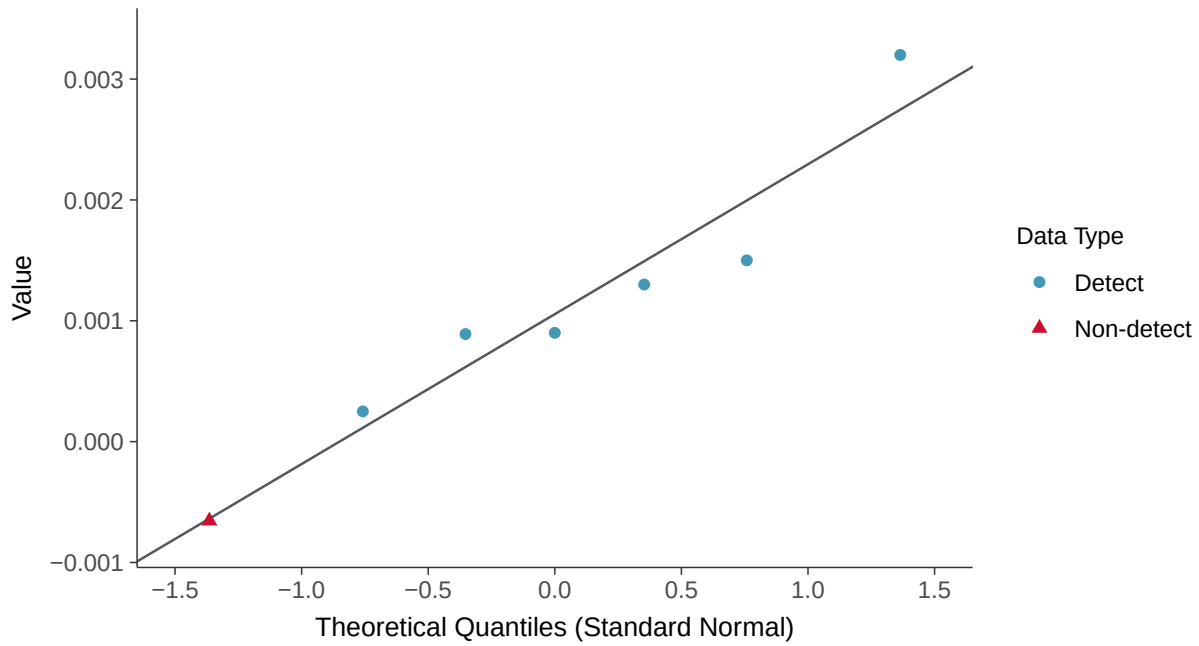
Boxplot by Season

Cadmium, MW-8 (mg/l)



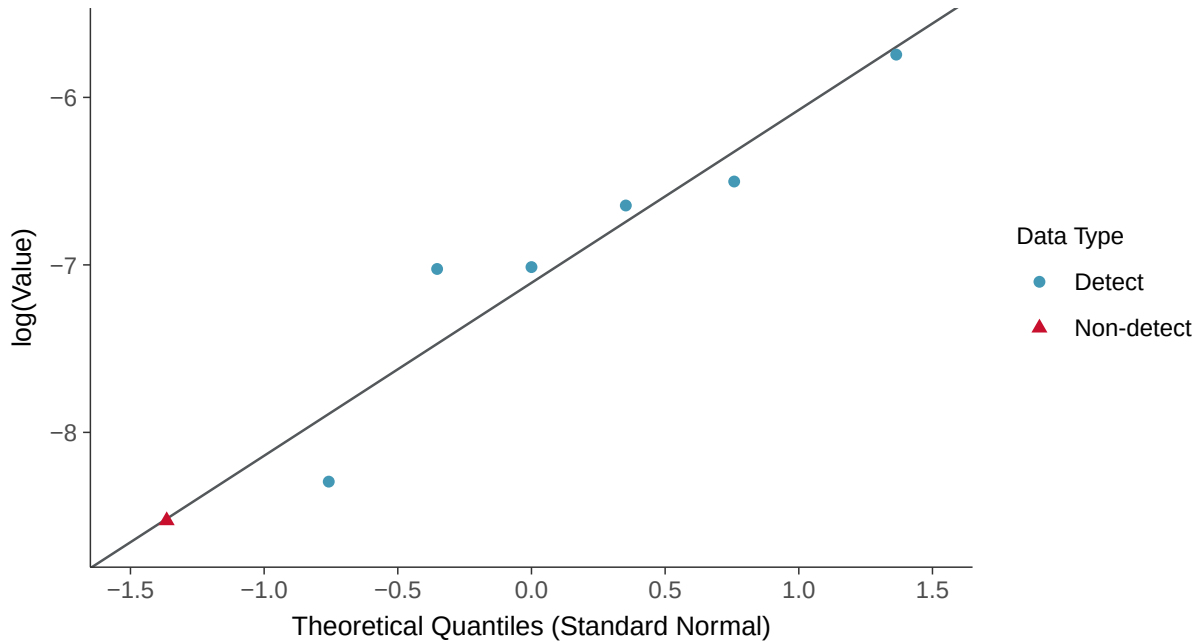
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-8 (mg/l)



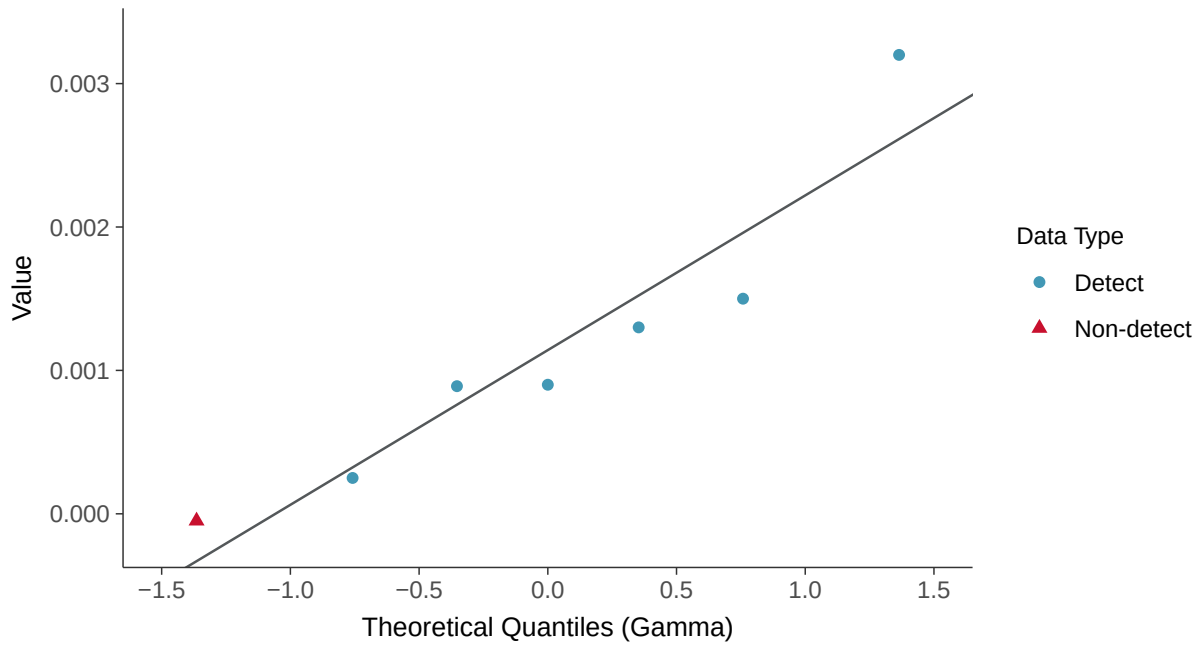
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-8 (mg/l)



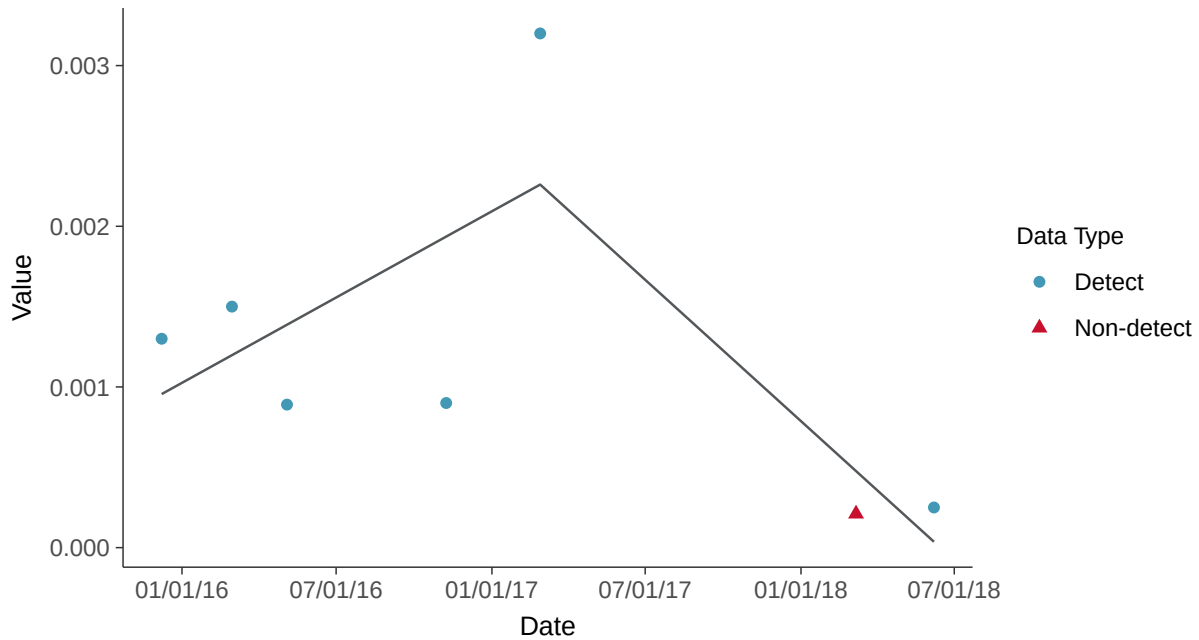
Gamma Q-Q plot using ROS Imputed Estimates

Cadmium, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

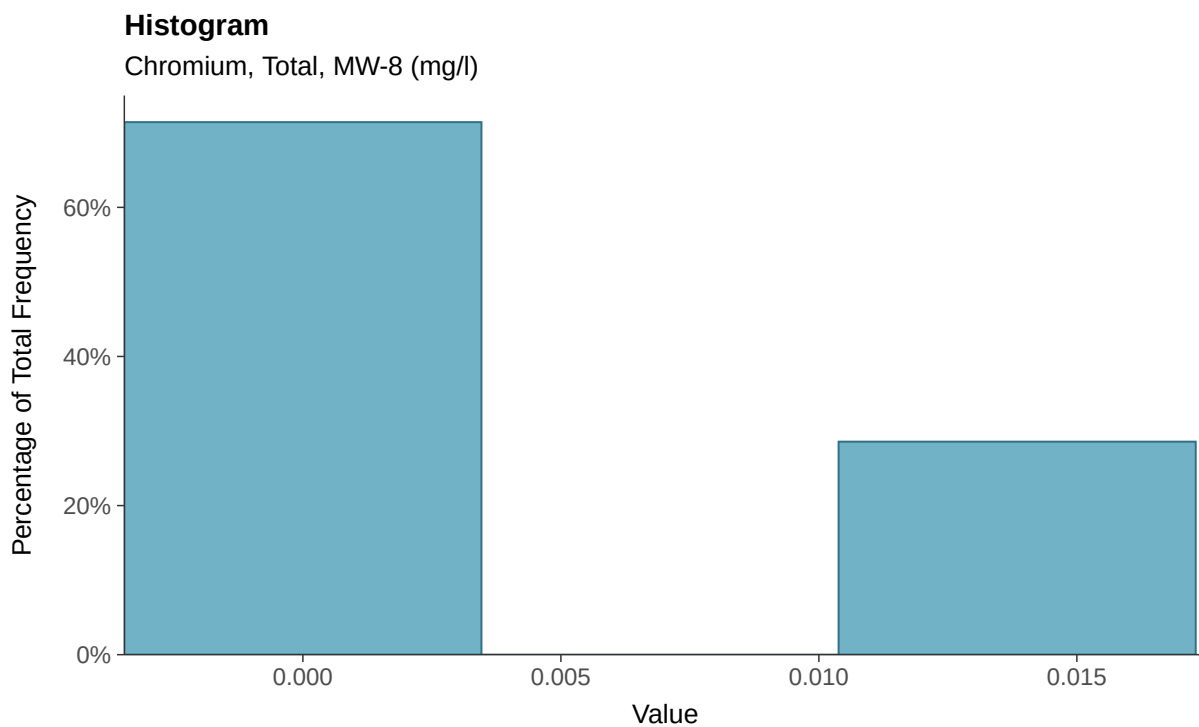
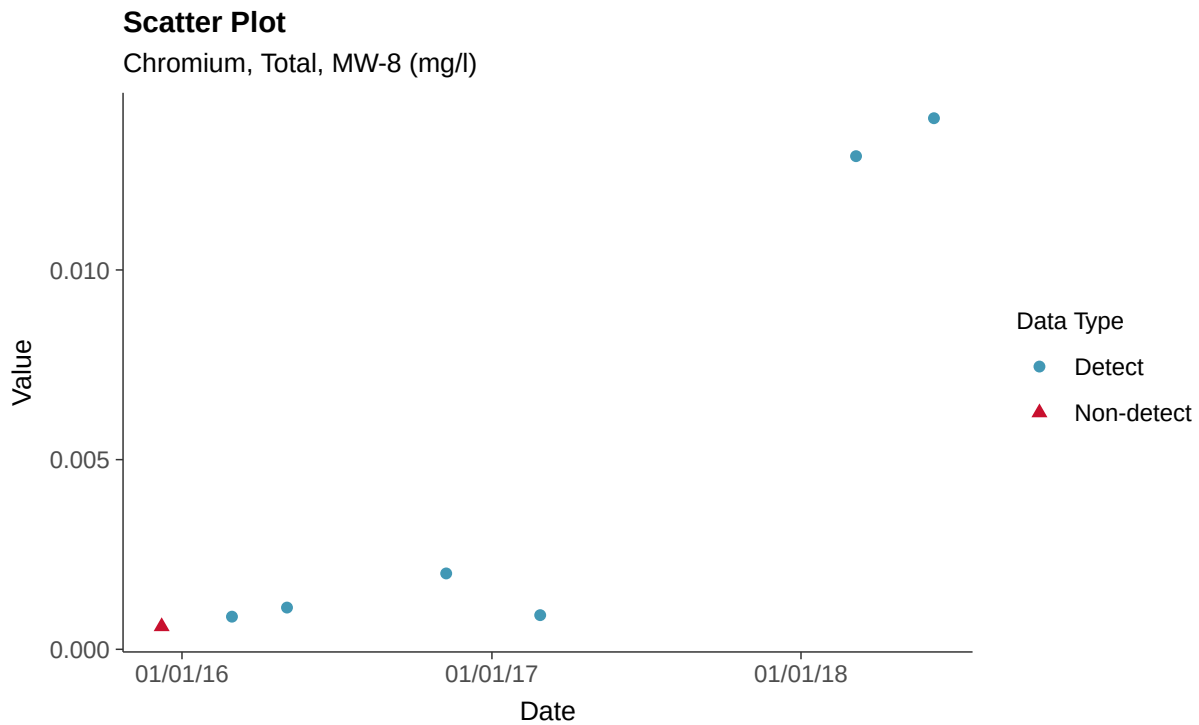
Cadmium, MW-8 (mg/l)





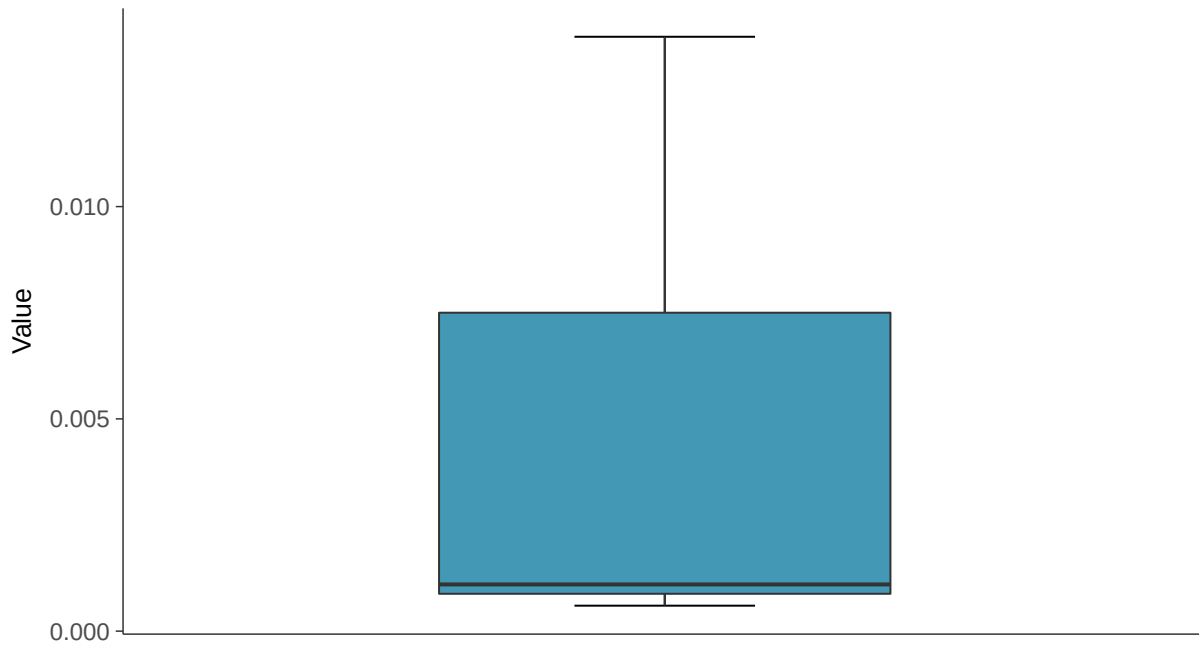
Appendix IV: Chromium, Total, MW-8

ID: 3_2_112



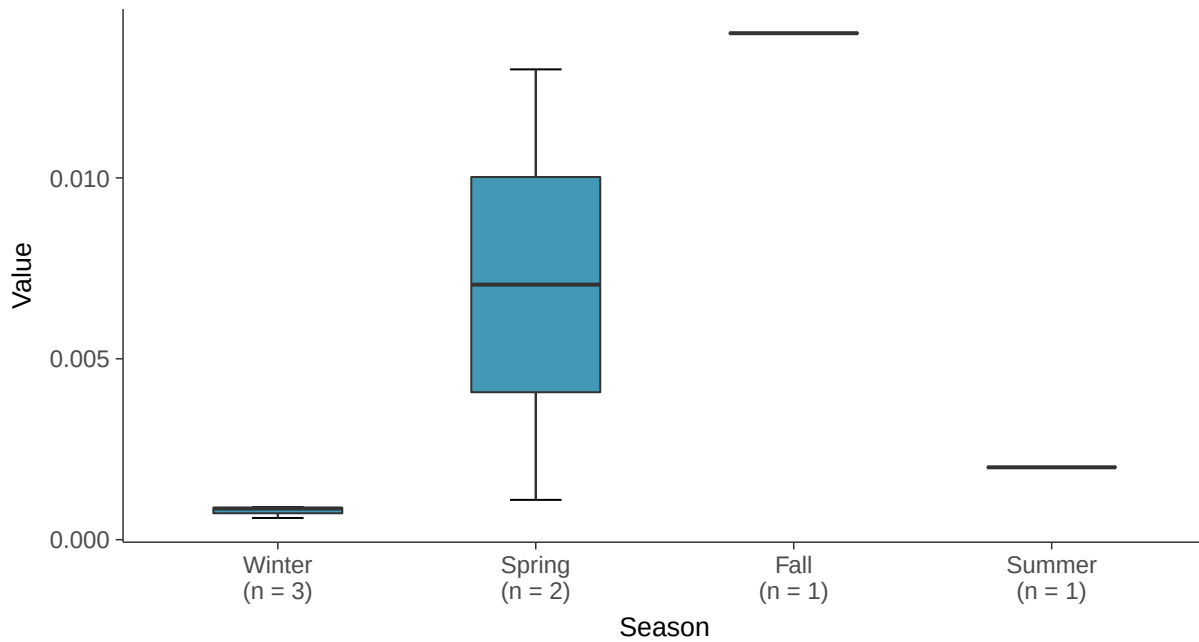
Boxplot

Chromium, Total, MW-8 (mg/l)



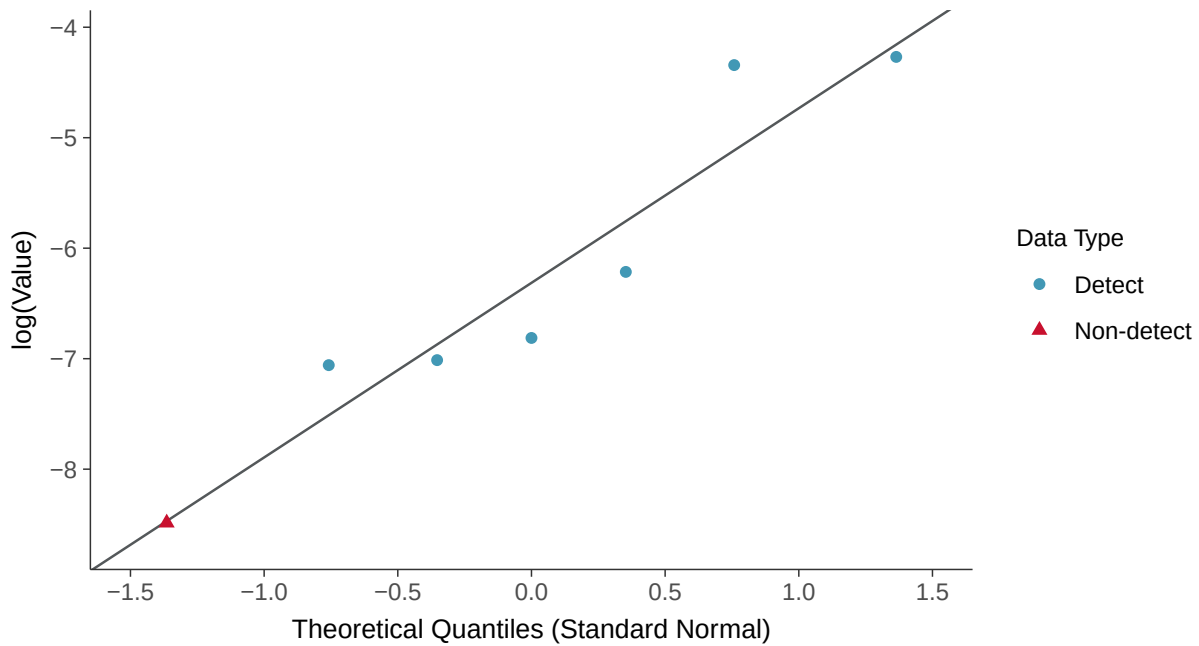
Boxplot by Season

Chromium, Total, MW-8 (mg/l)



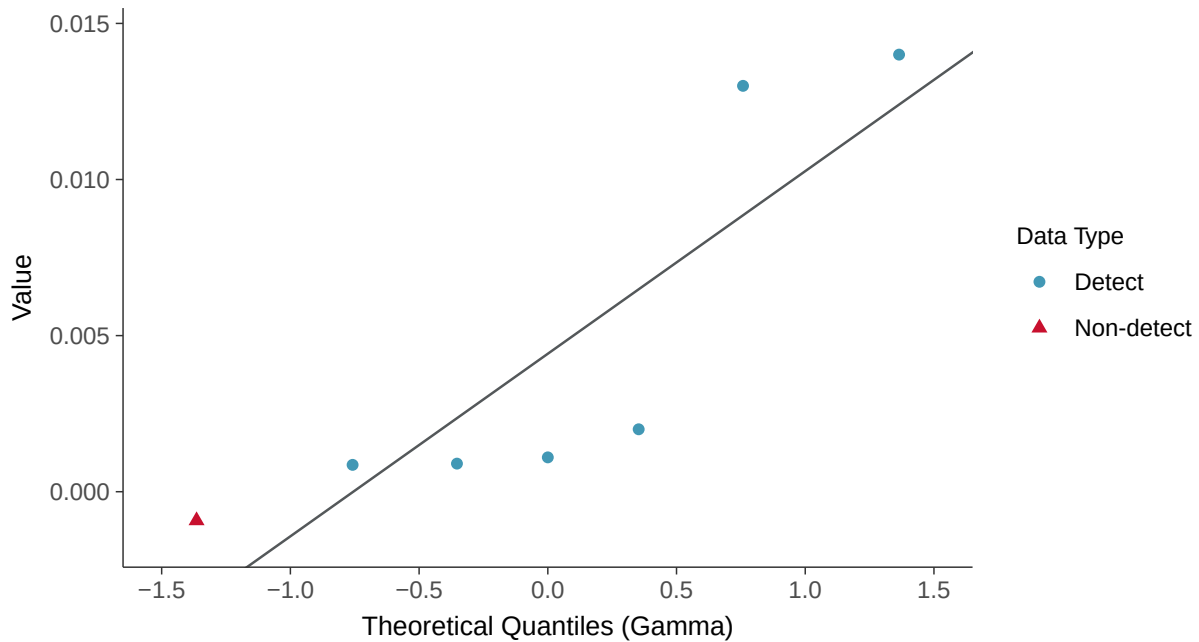
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-8 (mg/l)



Gamma Q-Q plot using ROS Imputed Estimates

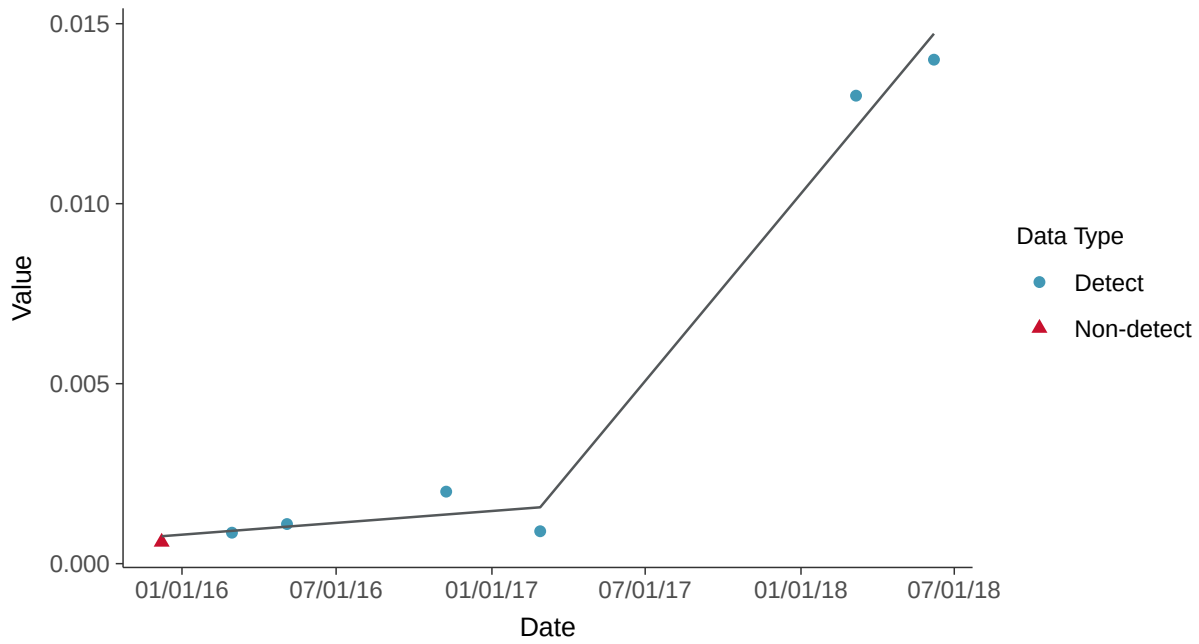
Chromium, Total, MW-8 (mg/l)





Trend Regression: Piecewise Linear-Linear

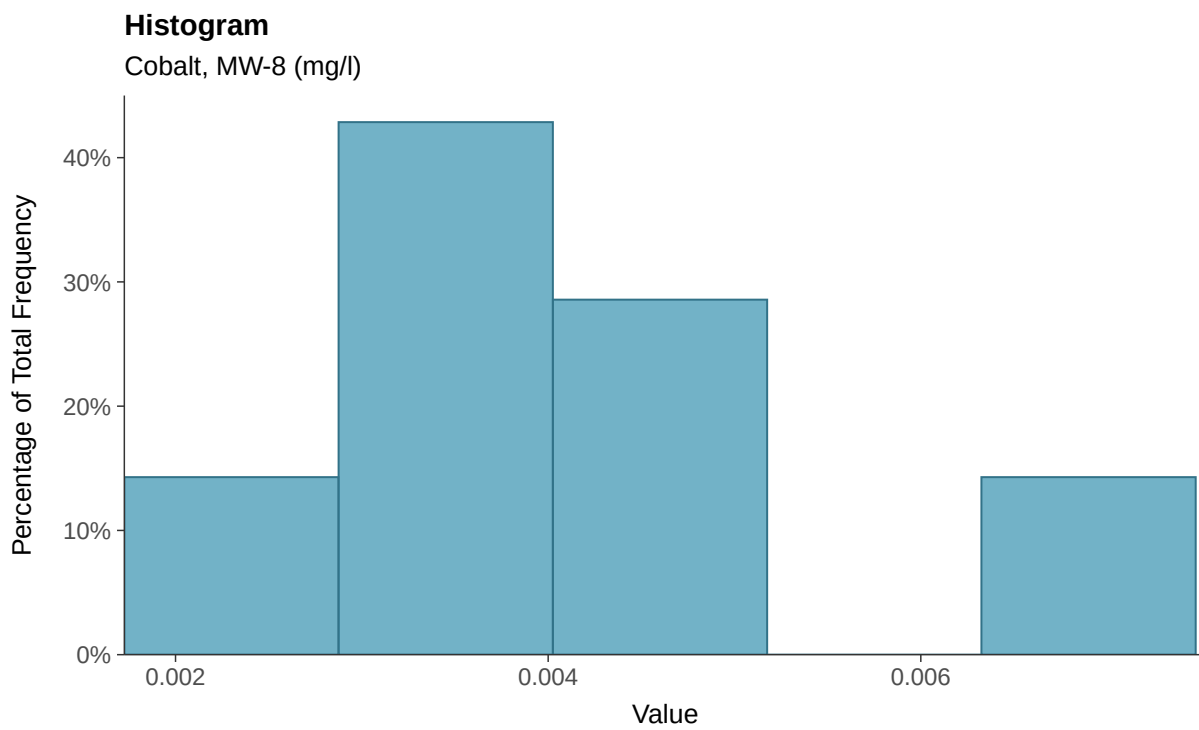
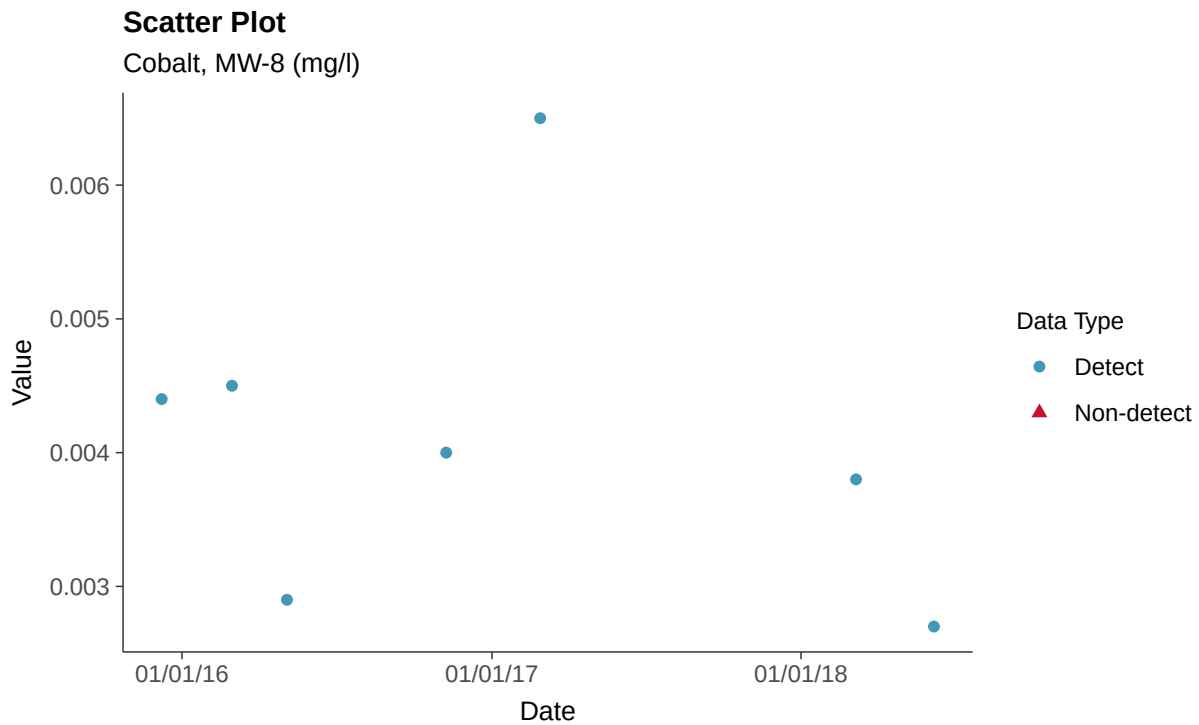
Chromium, Total, MW-8 (mg/l)





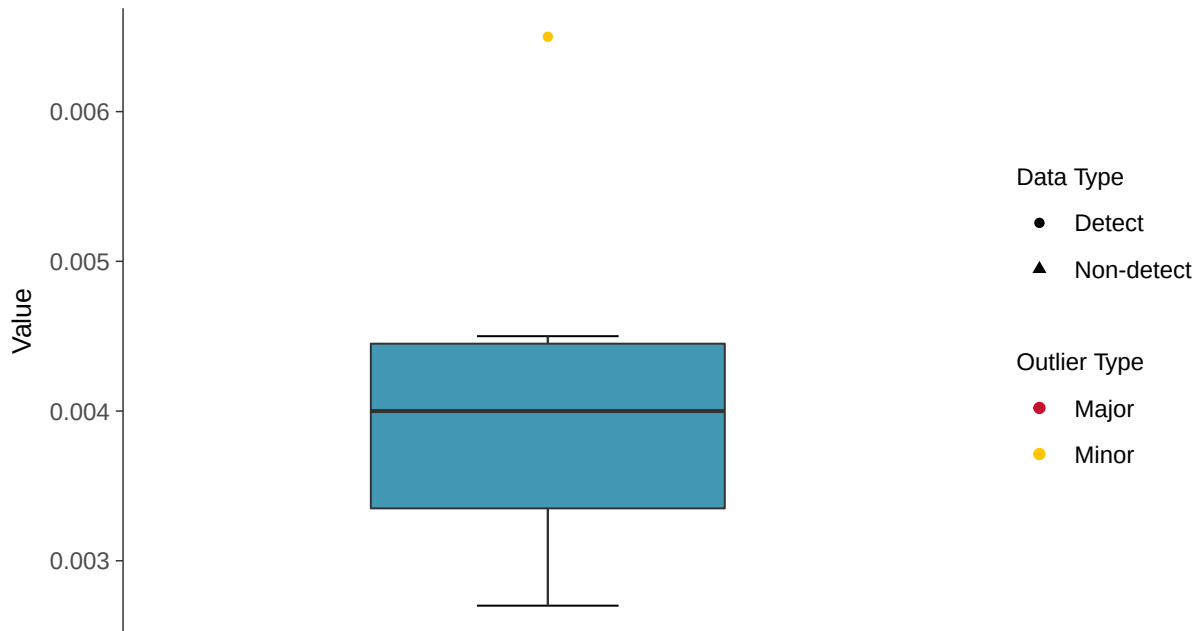
Appendix IV: Cobalt, MW-8

ID: 3_2_113



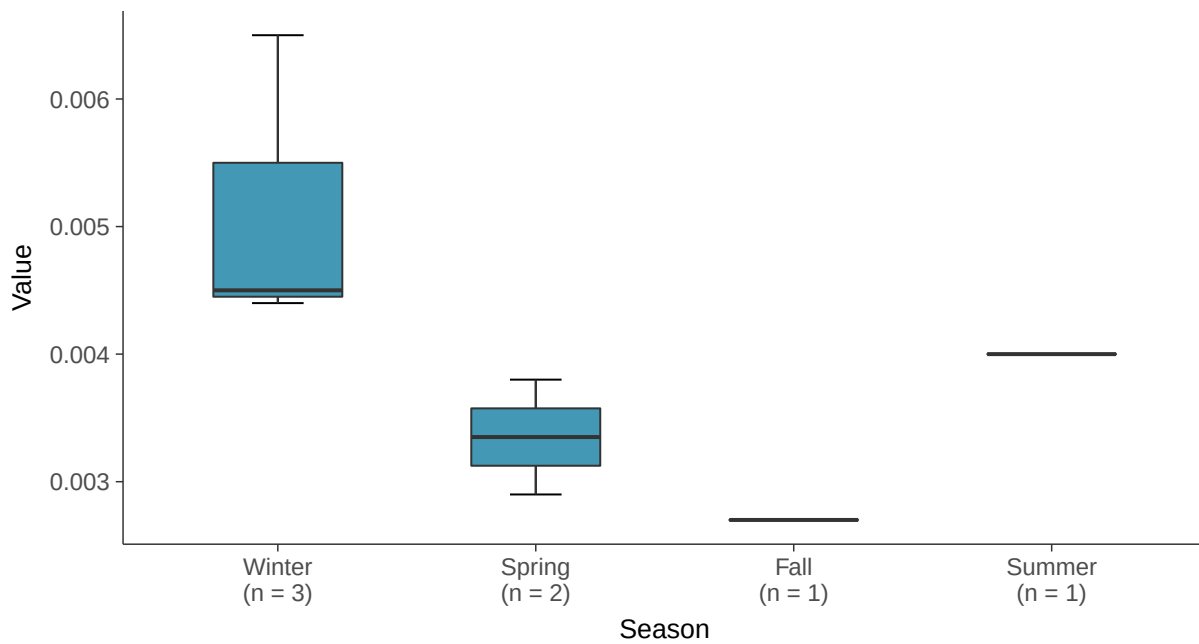
Boxplot

Cobalt, MW-8 (mg/l)



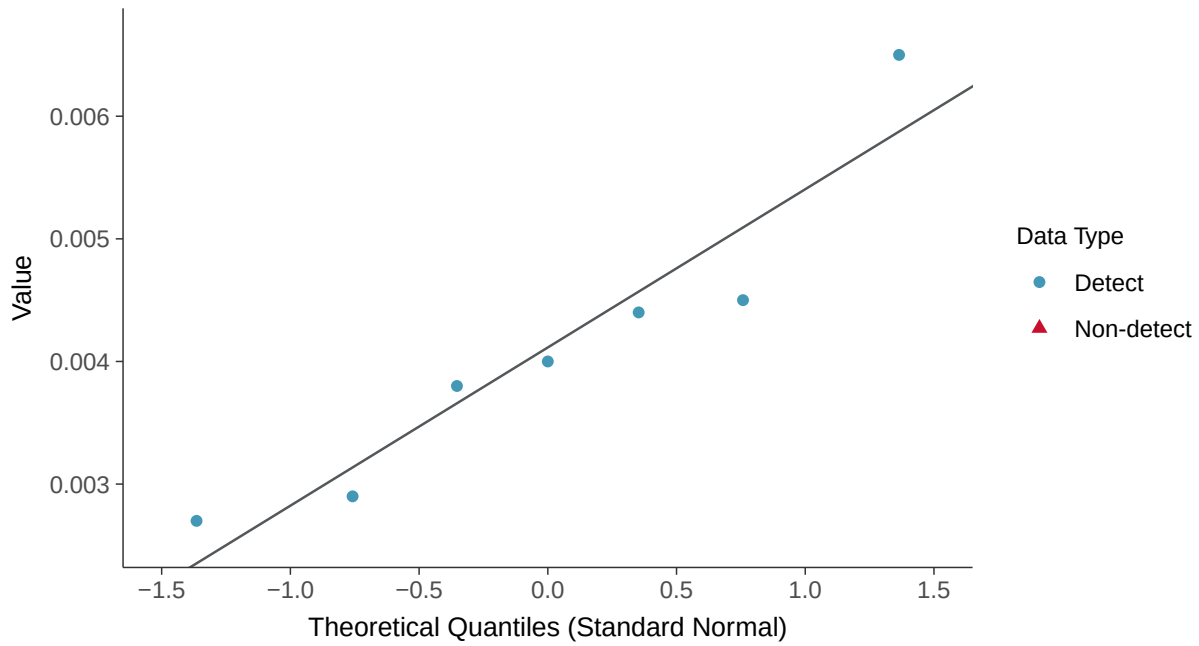
Boxplot by Season

Cobalt, MW-8 (mg/l)



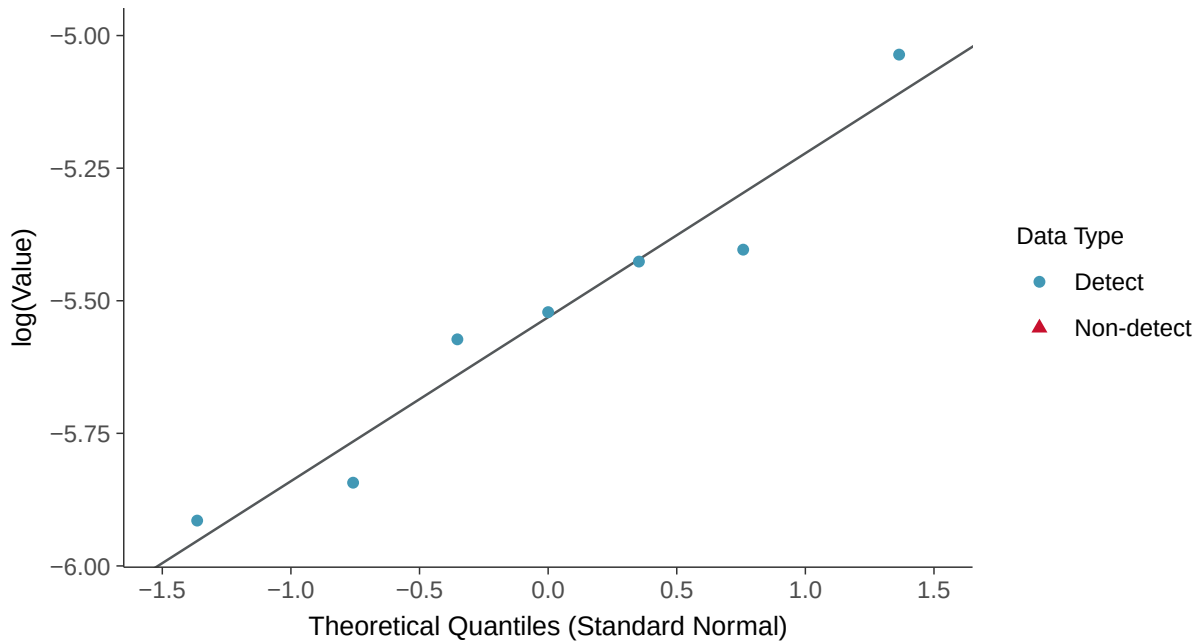
Normal Q-Q plot

Cobalt, MW-8 (mg/l)

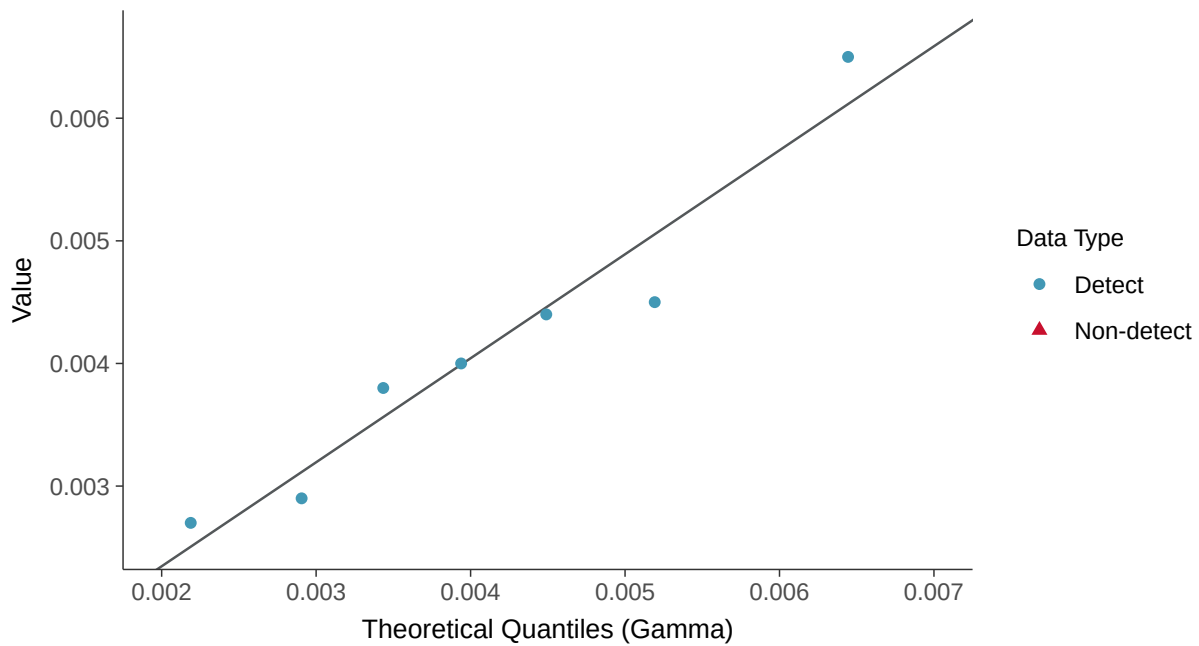


Lognormal Q-Q plot

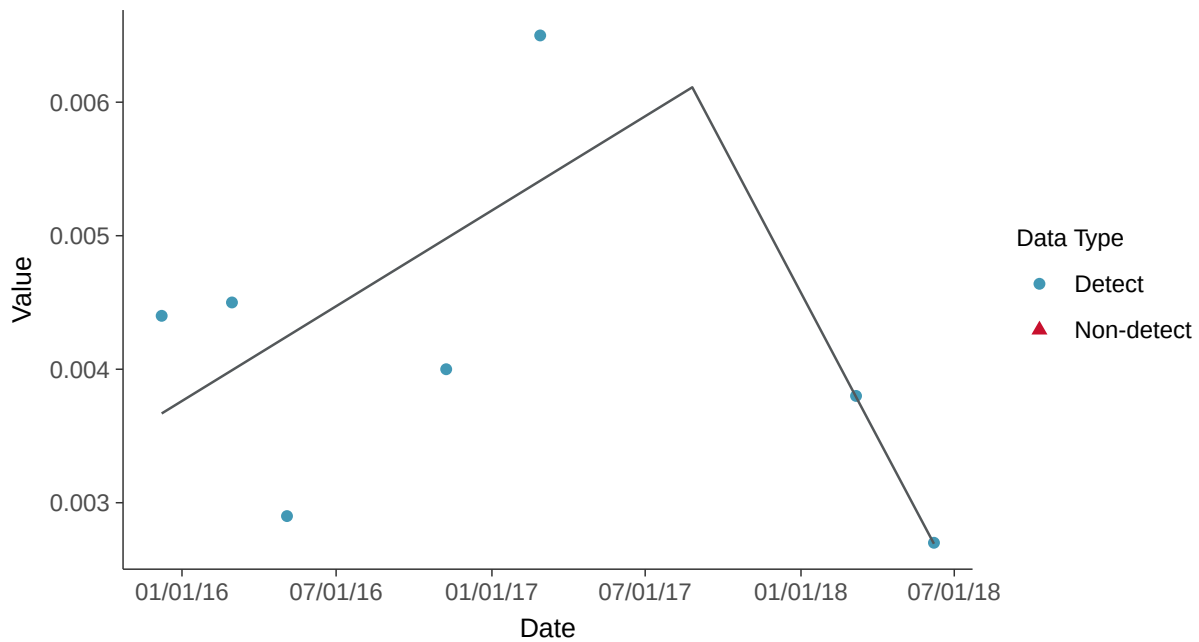
Cobalt, MW-8 (mg/l)



Gamma Q-Q plot
Cobalt, MW-8 (mg/l)



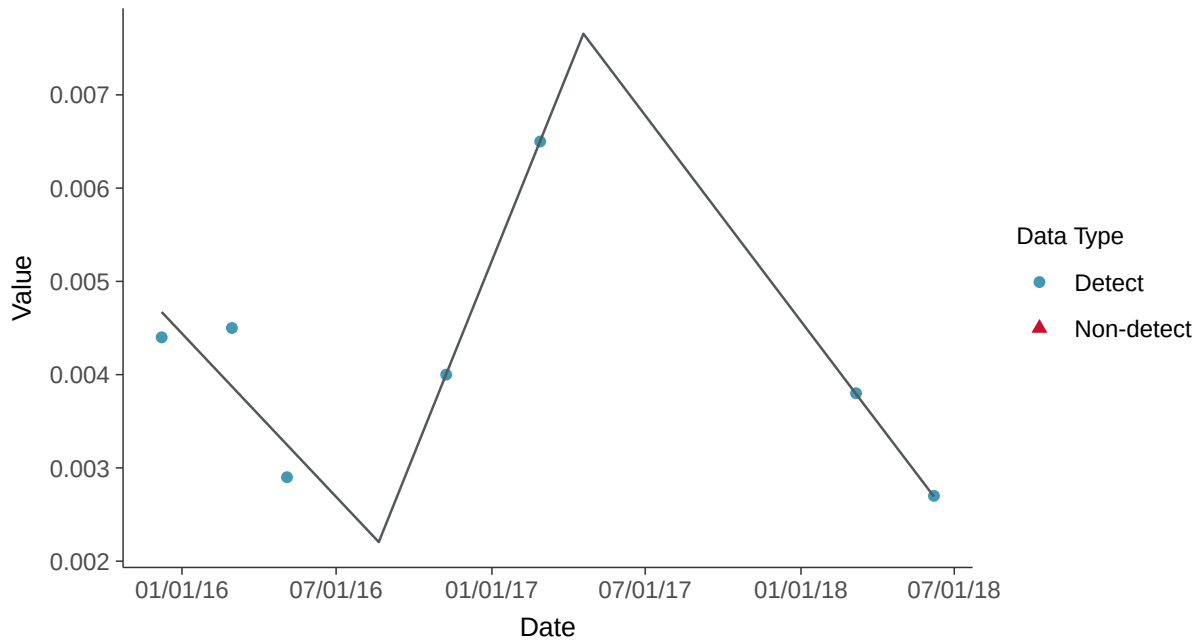
Trend Regression: Piecewise Linear-Linear
Cobalt, MW-8 (mg/l)





Trend Regression: Piecewise Linear-Linear-Linear

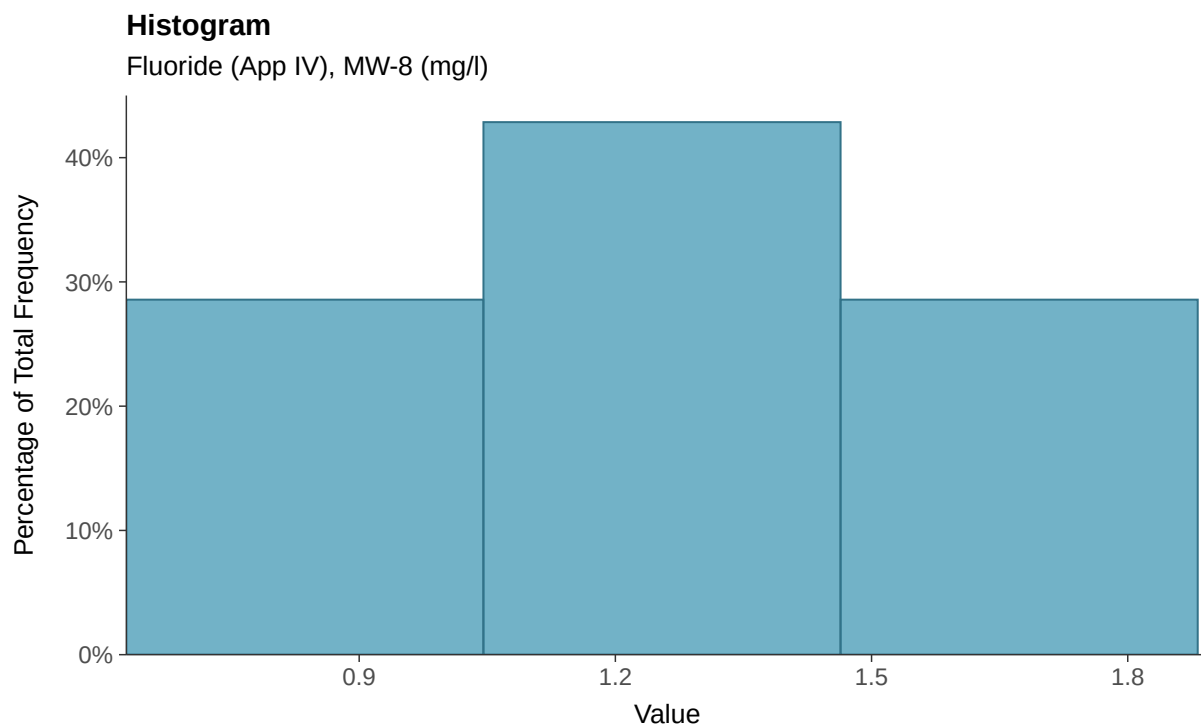
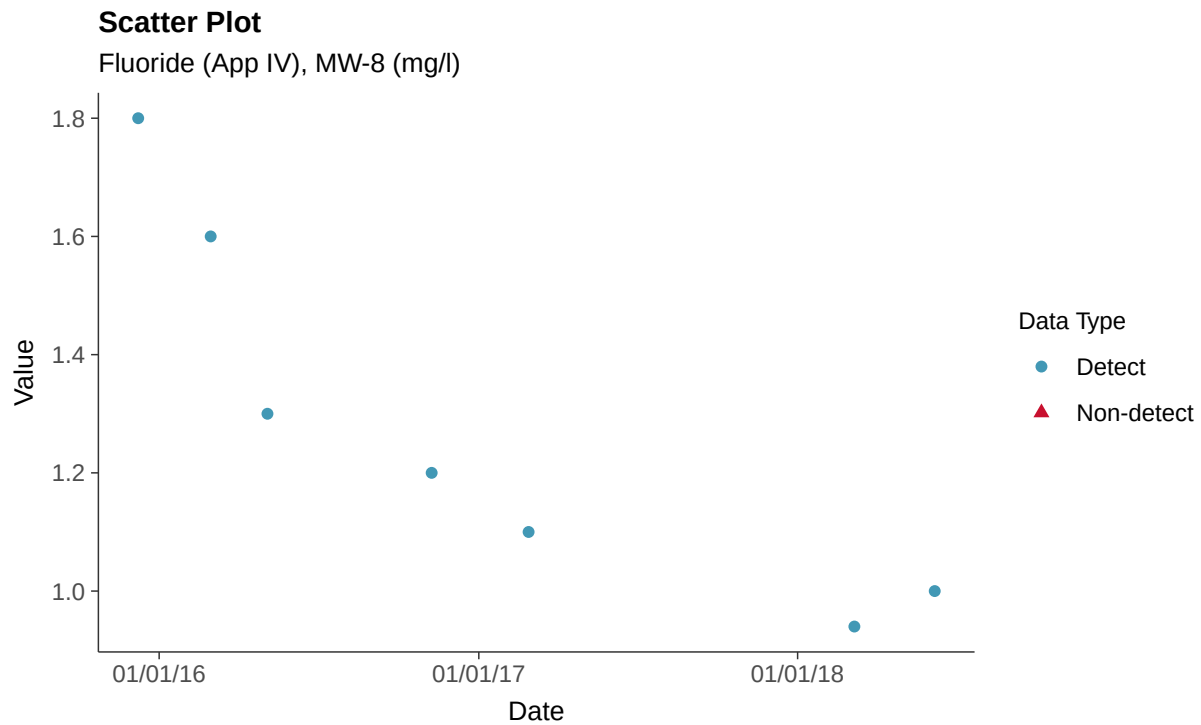
Cobalt, MW-8 (mg/l)





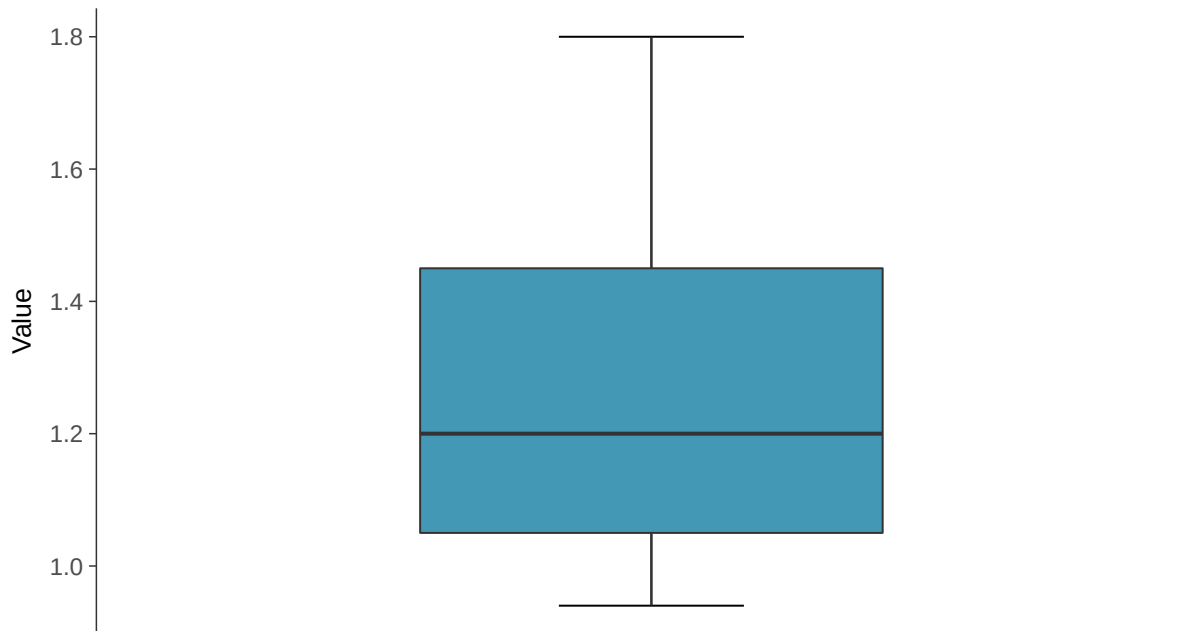
Appendix IV: Fluoride (App IV), MW-8

ID: 3_2_116



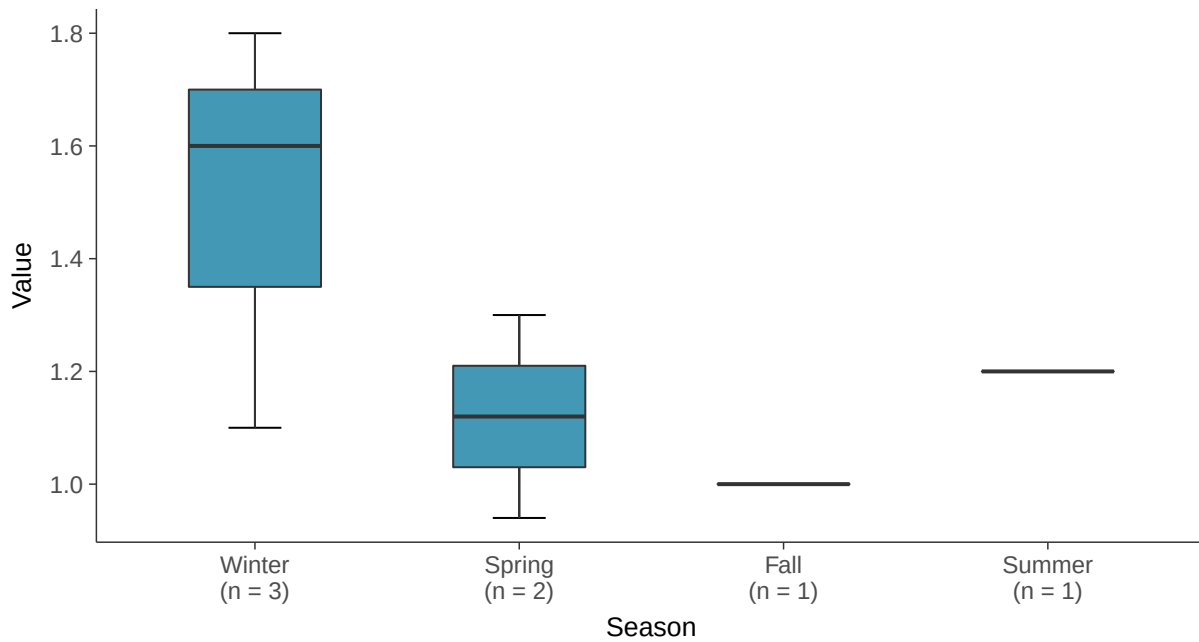
Boxplot

Fluoride (App IV), MW-8 (mg/l)



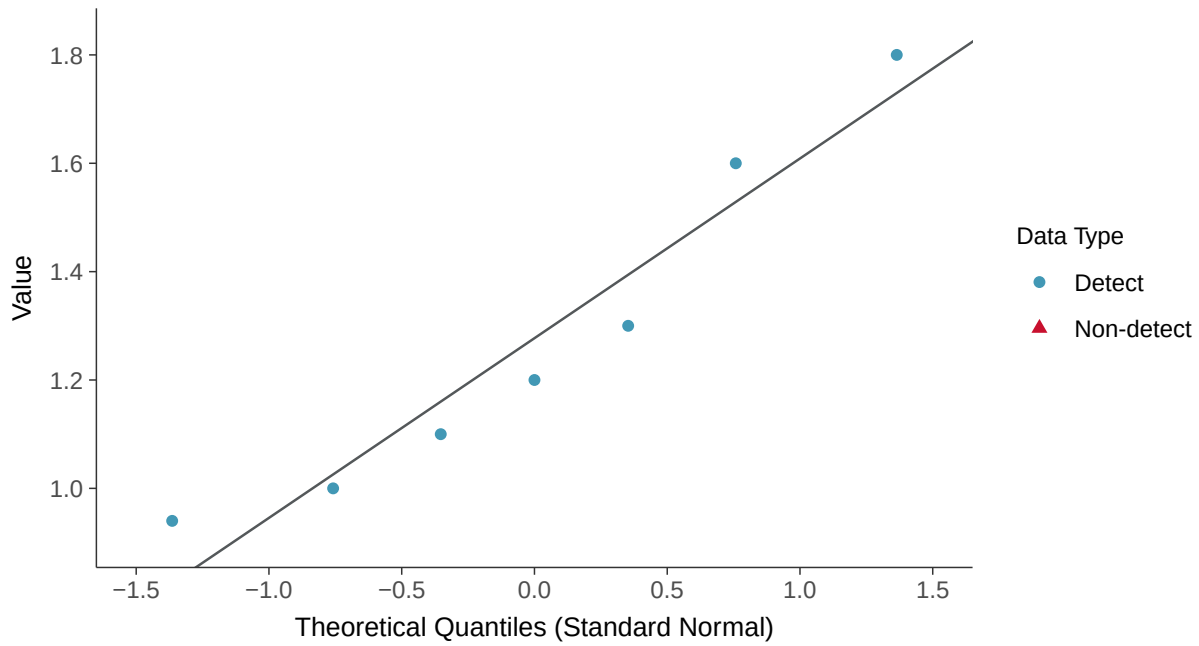
Boxplot by Season

Fluoride (App IV), MW-8 (mg/l)



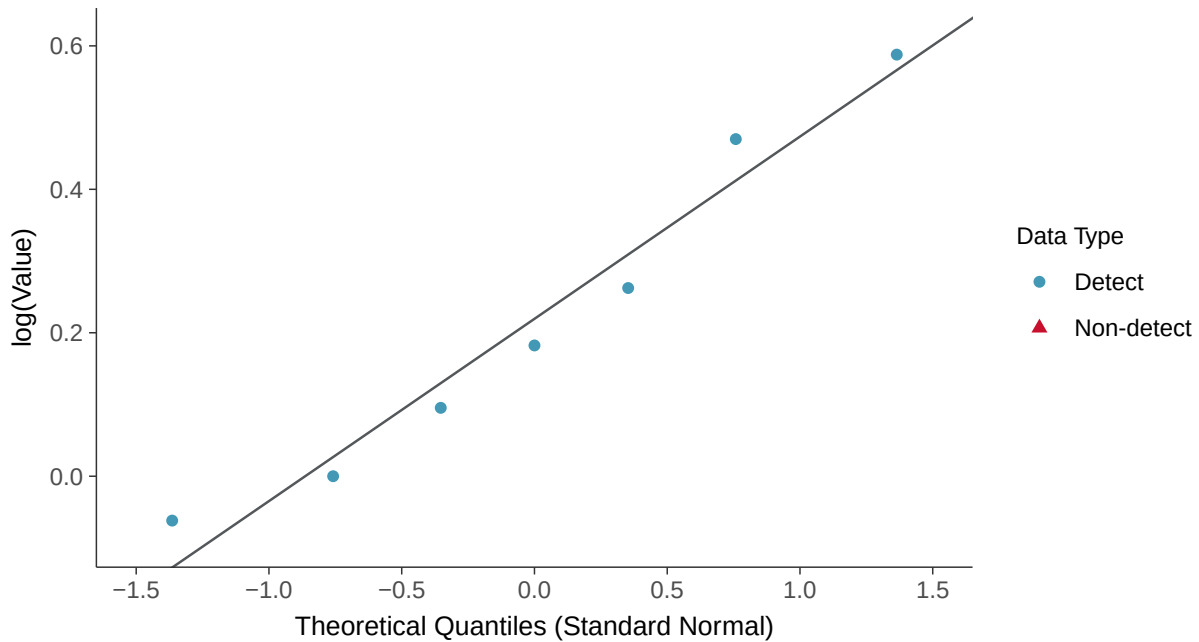
Normal Q-Q plot

Fluoride (App IV), MW-8 (mg/l)



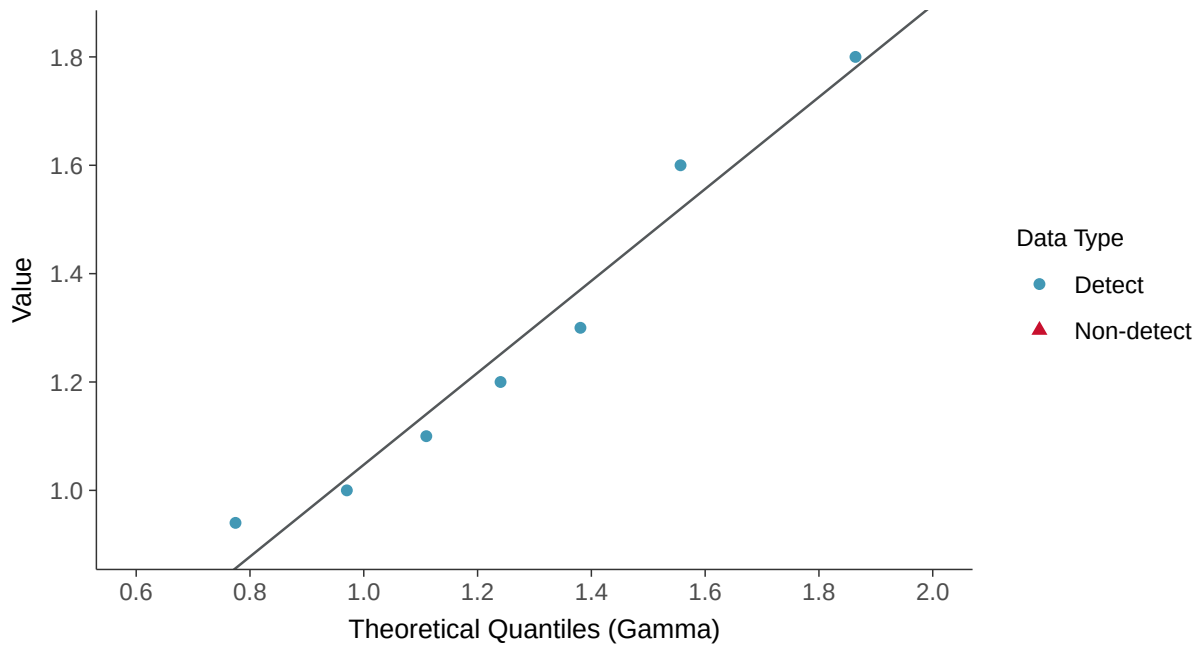
Lognormal Q-Q plot

Fluoride (App IV), MW-8 (mg/l)



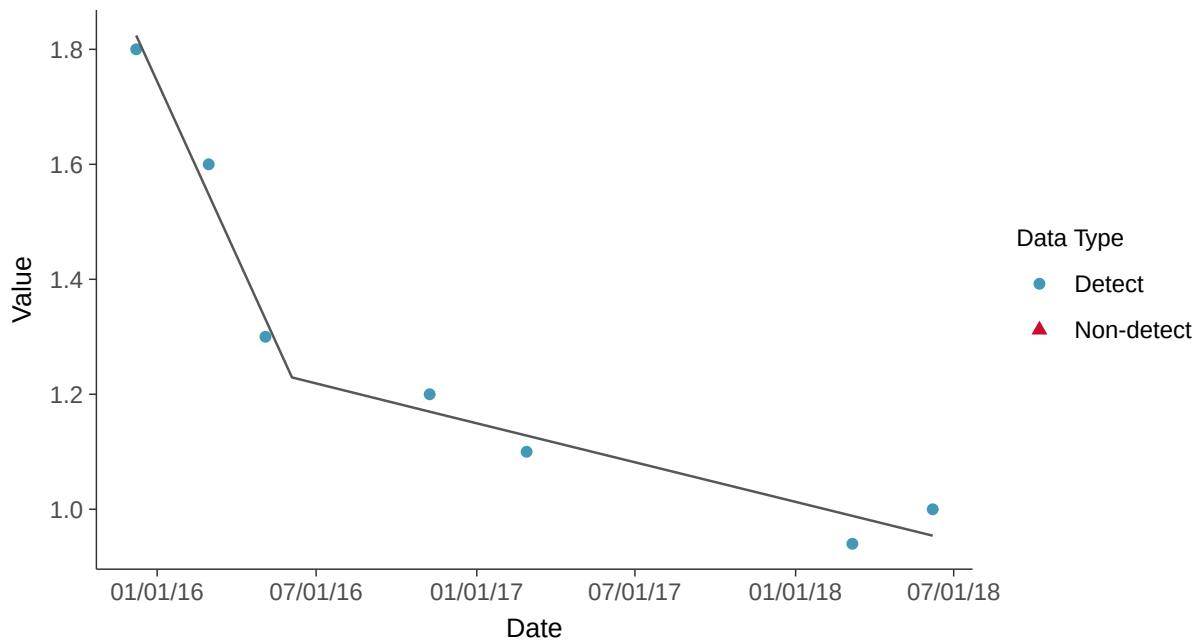
Gamma Q-Q plot

Fluoride (App IV), MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

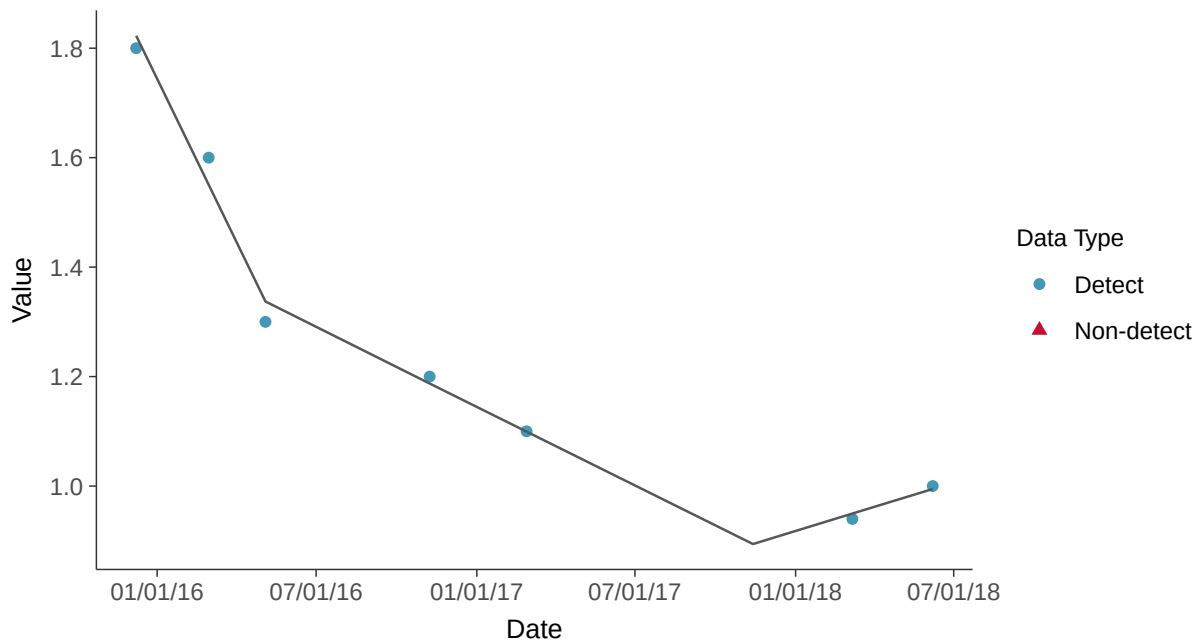
Fluoride (App IV), MW-8 (mg/l)





Trend Regression: Piecewise Linear-Linear-Linear

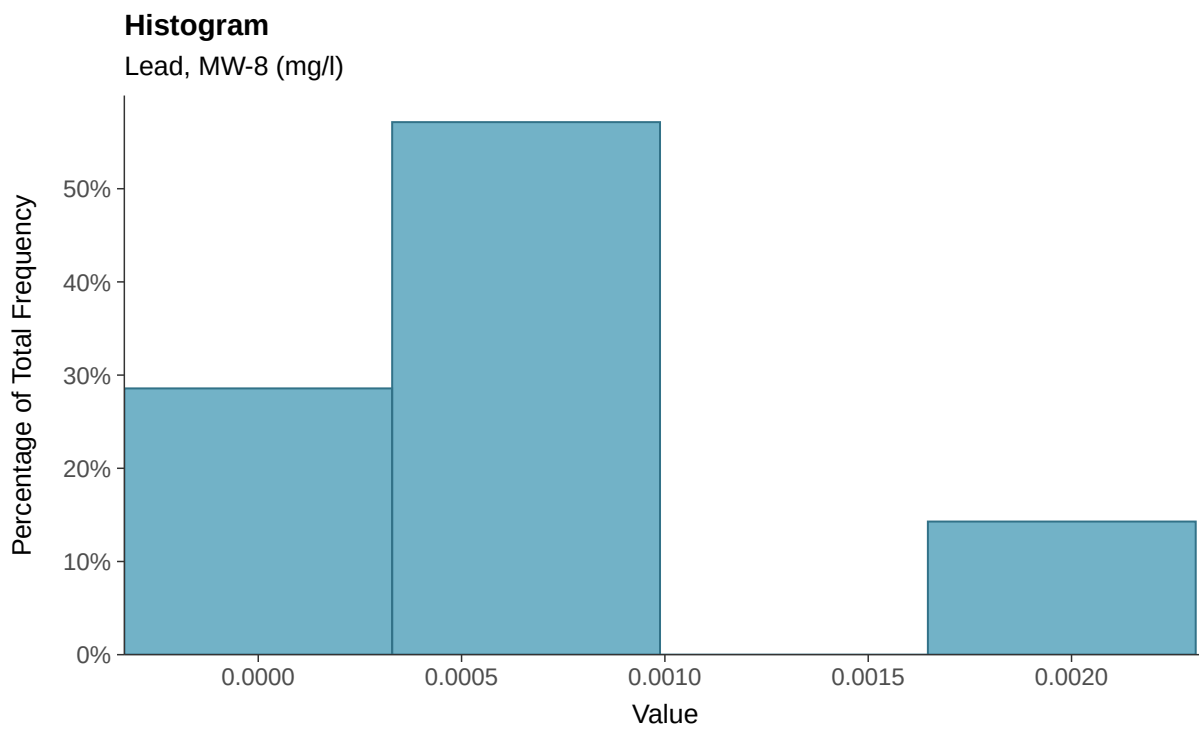
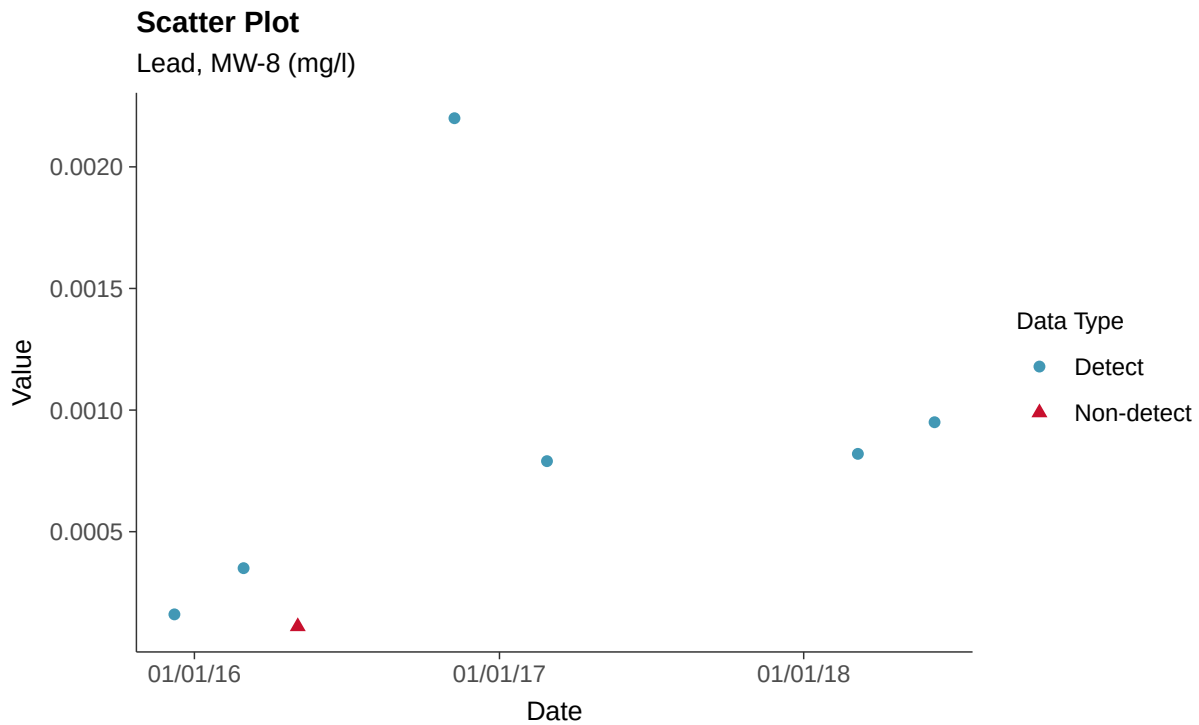
Fluoride (App IV), MW-8 (mg/l)

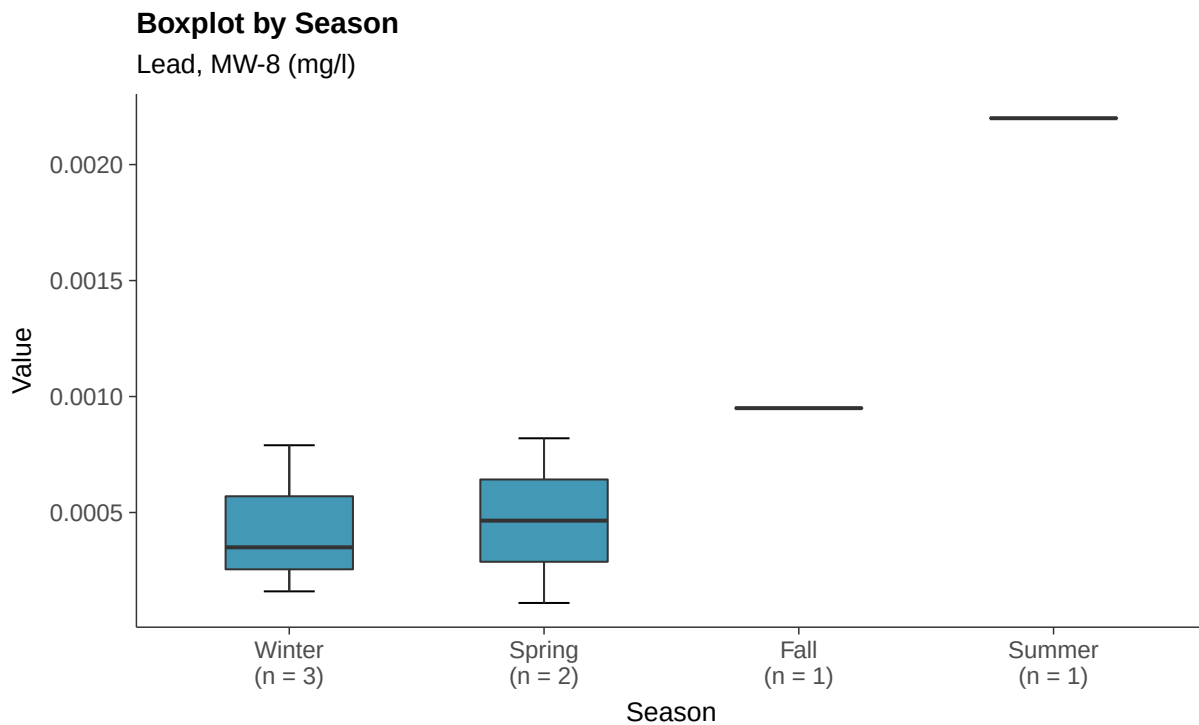
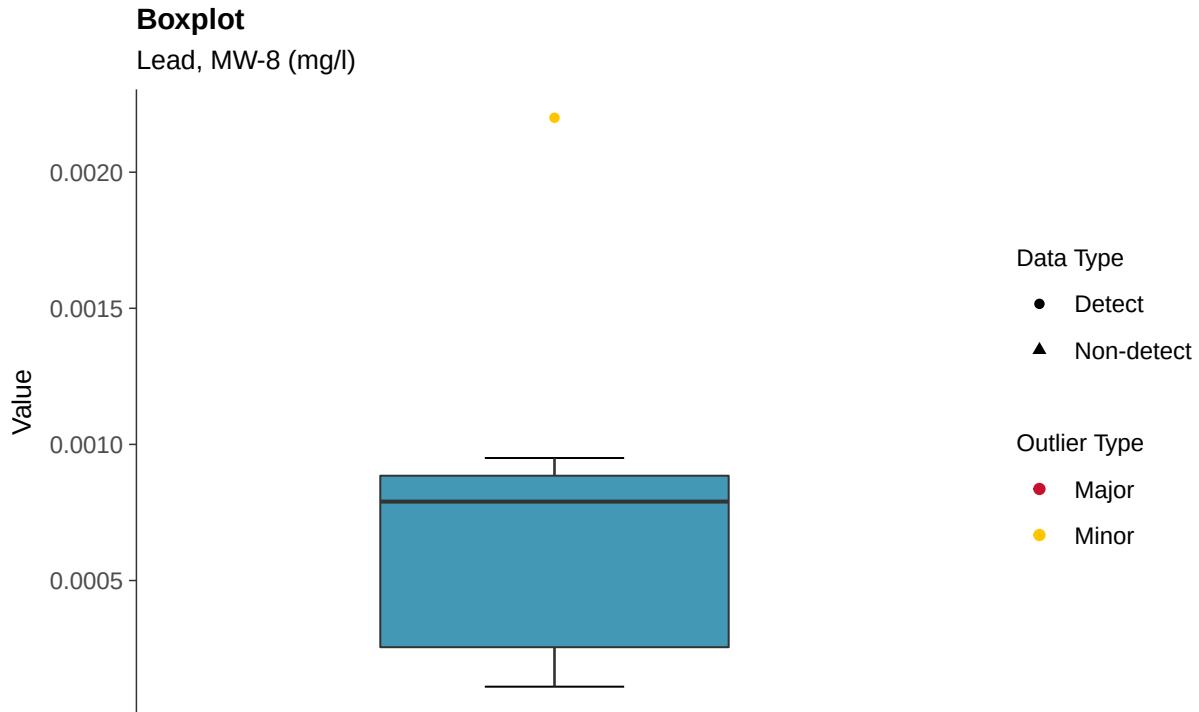




Appendix IV: Lead, MW-8

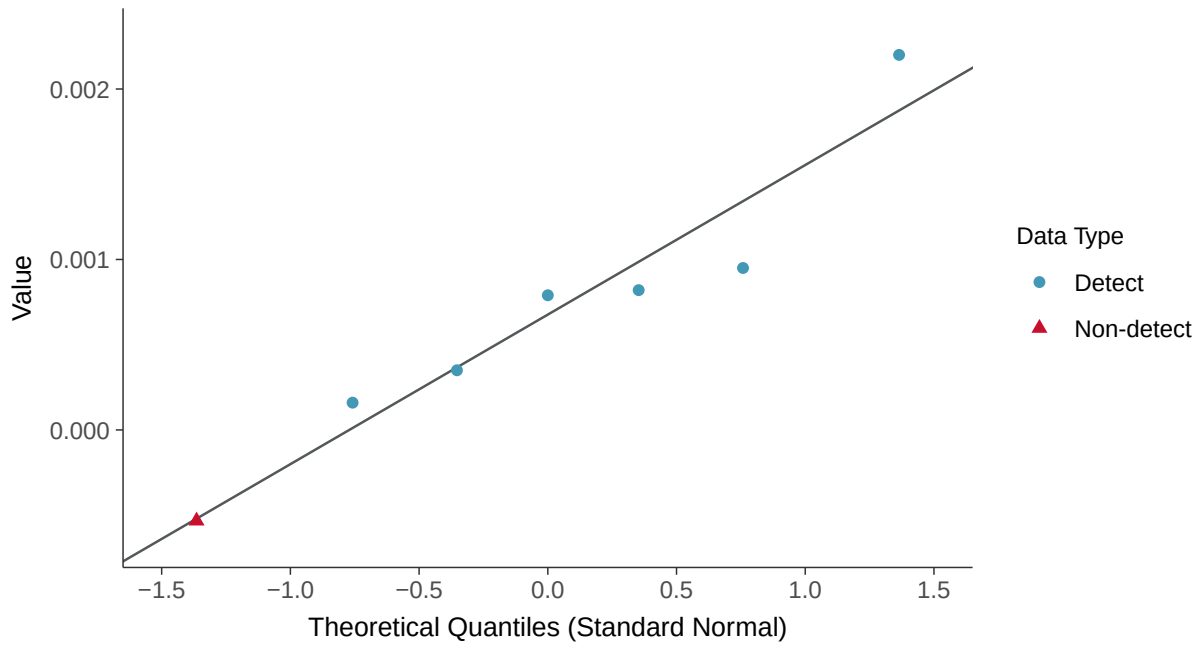
ID: 3_2_117





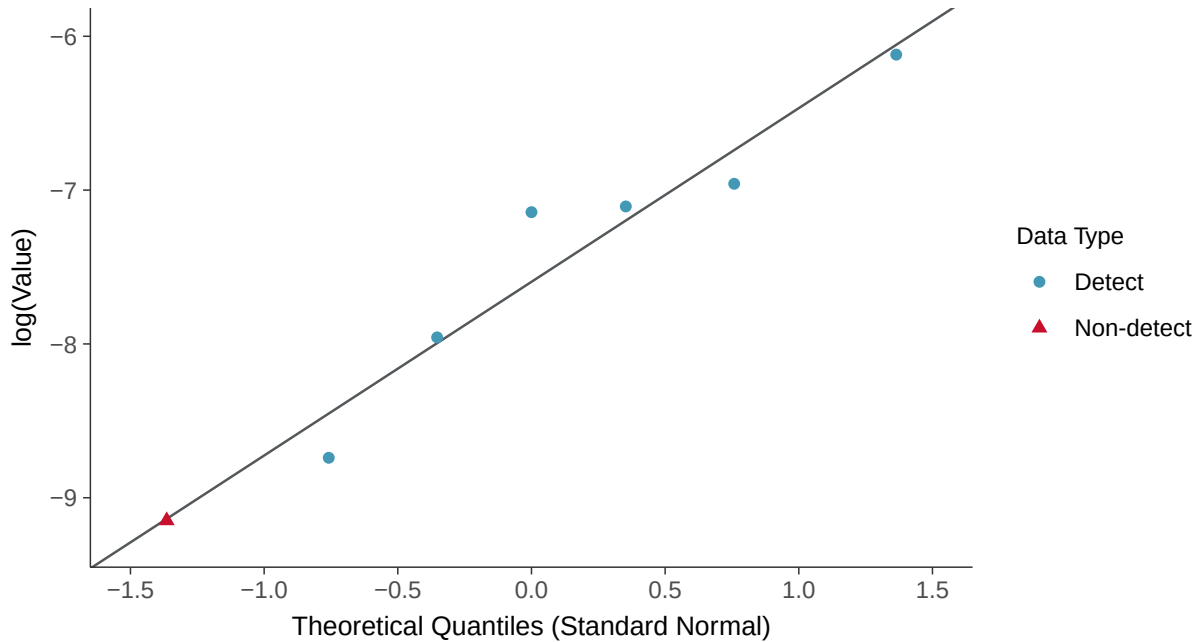
Normal Q-Q plot using ROS Imputed Estimates

Lead, MW-8 (mg/l)



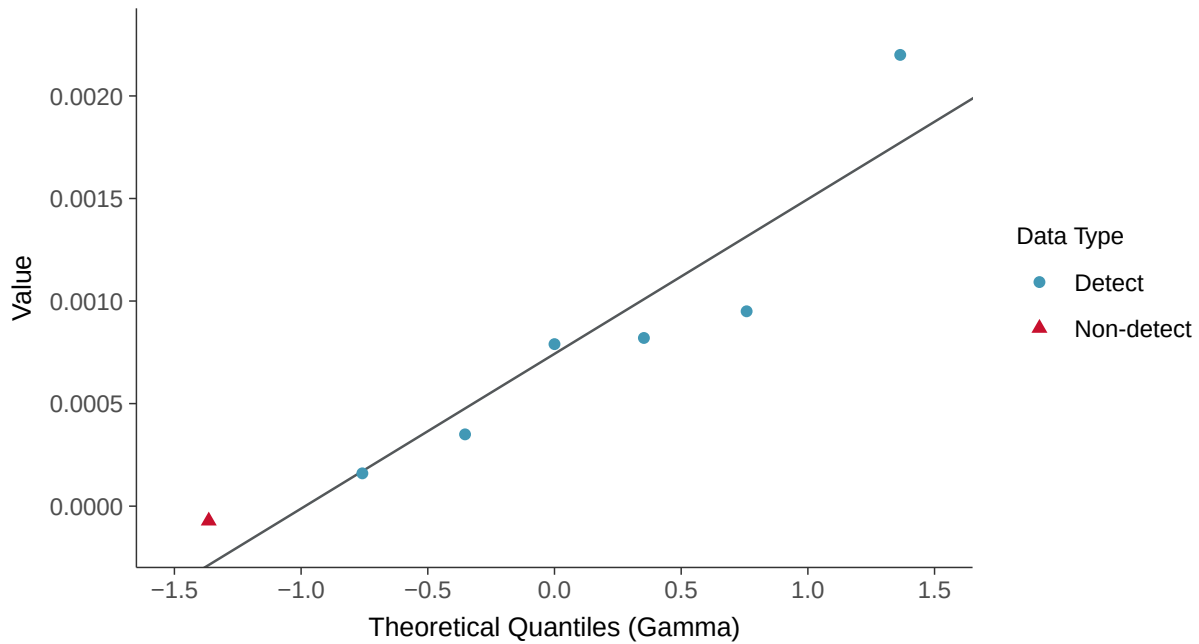
Lognormal Q-Q plot using ROS Imputed Estimates

Lead, MW-8 (mg/l)



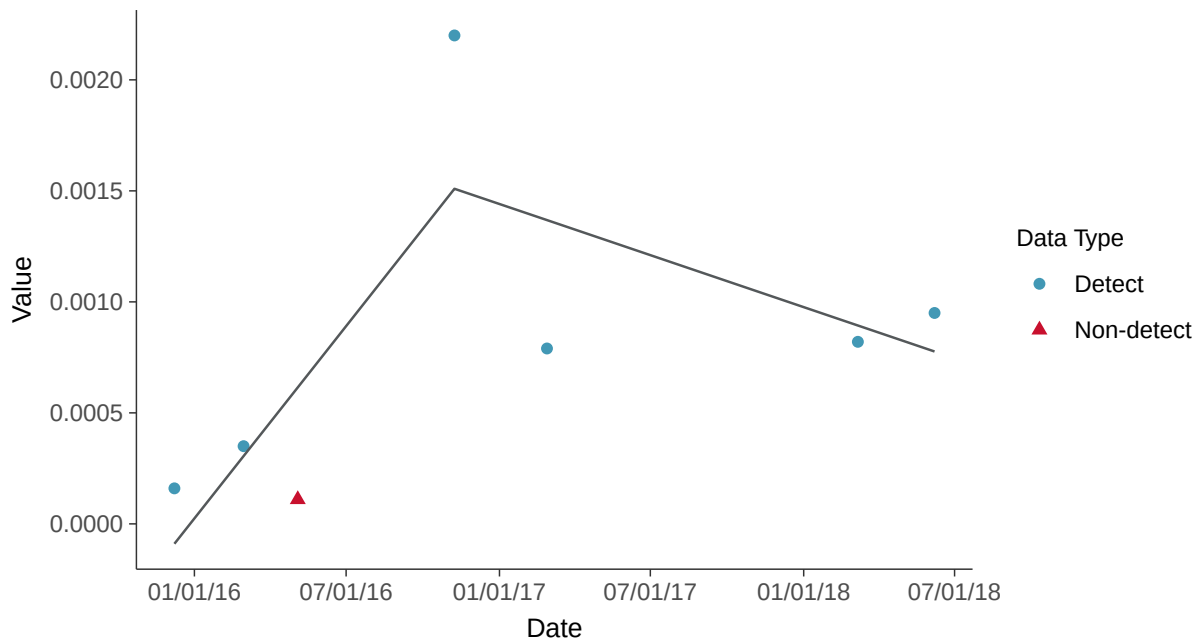
Gamma Q-Q plot using ROS Imputed Estimates

Lead, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

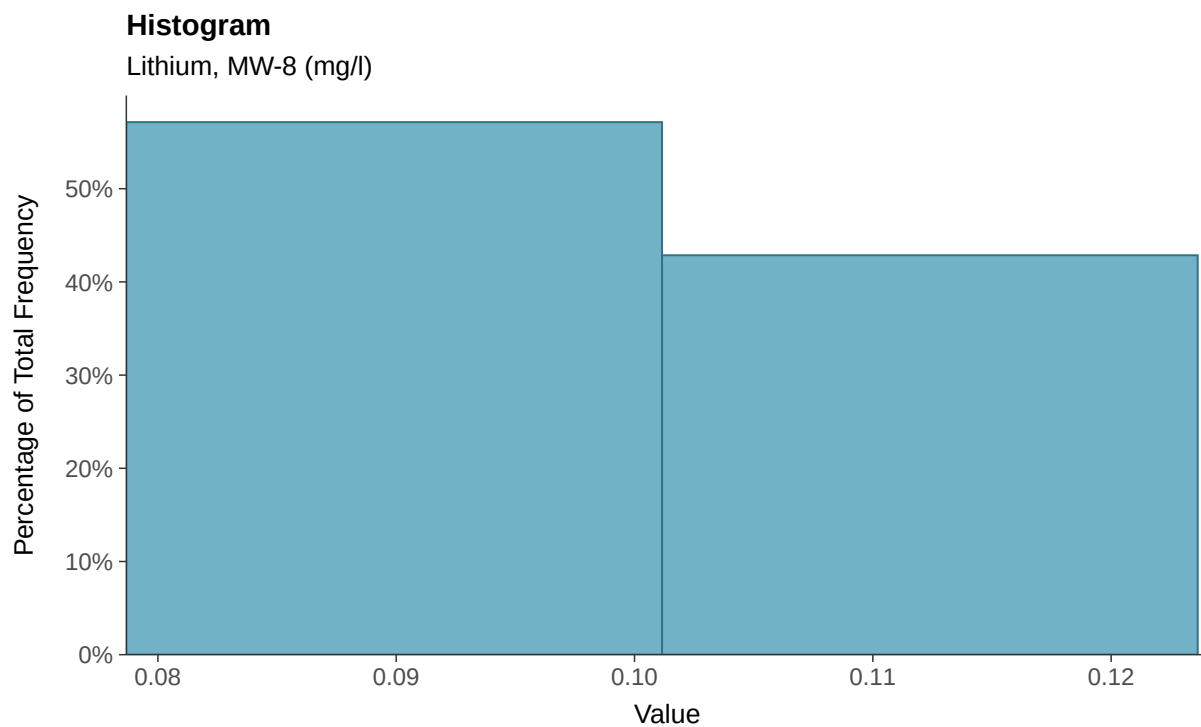
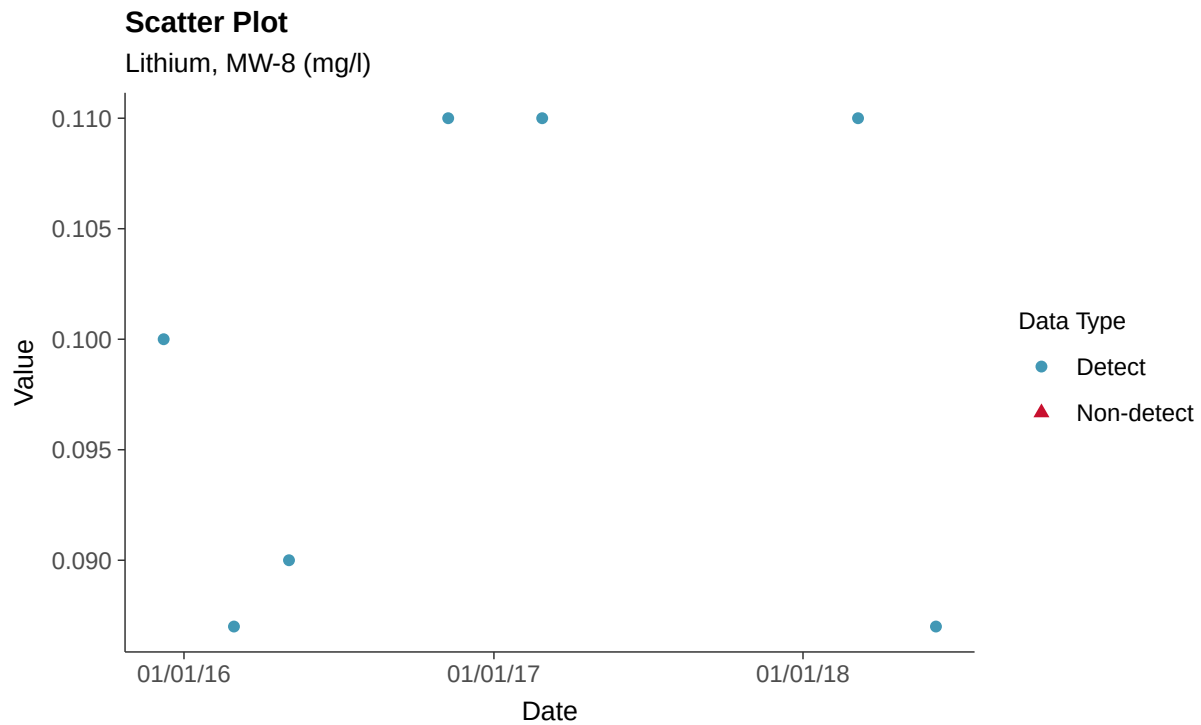
Lead, MW-8 (mg/l)





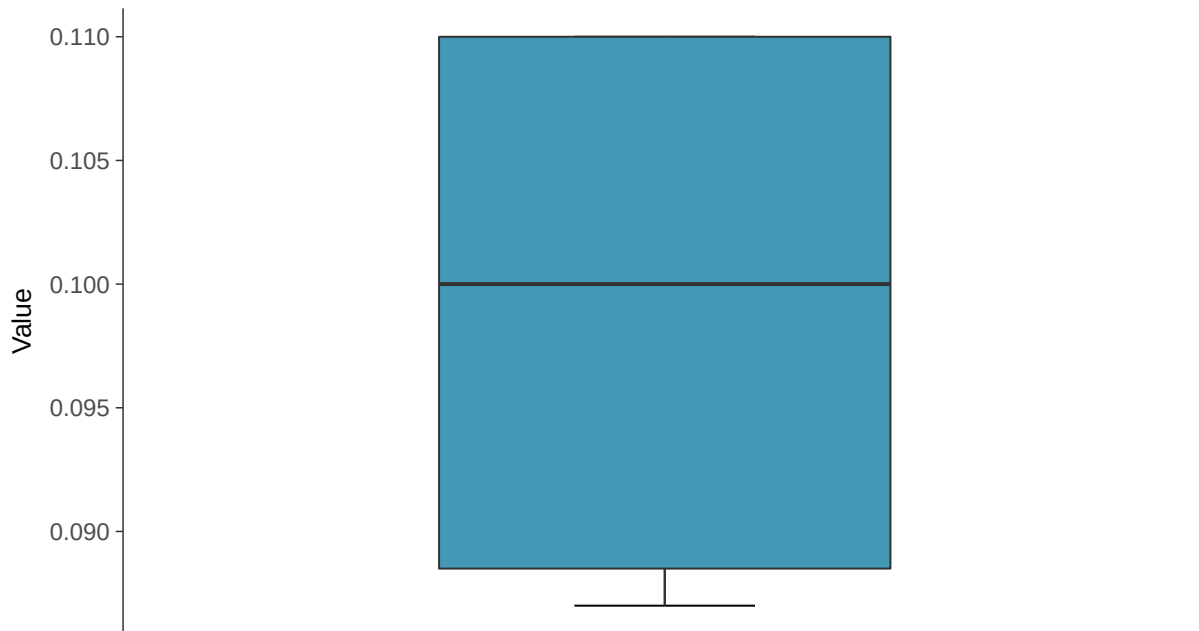
Appendix IV: Lithium, MW-8

ID: 3_2_118



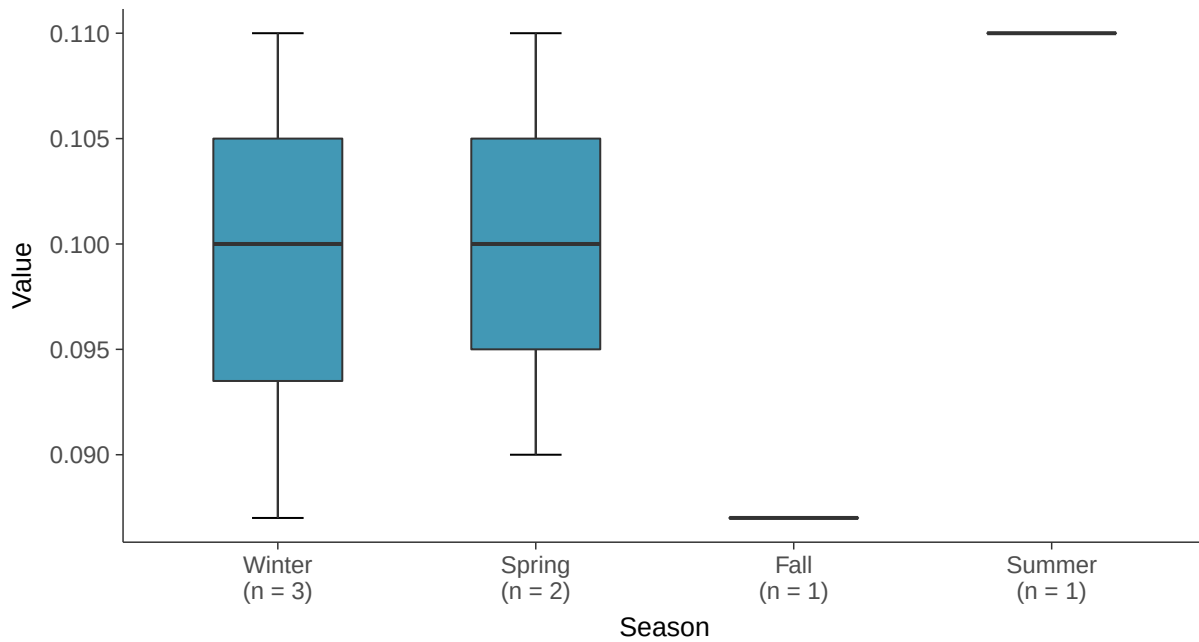
Boxplot

Lithium, MW-8 (mg/l)



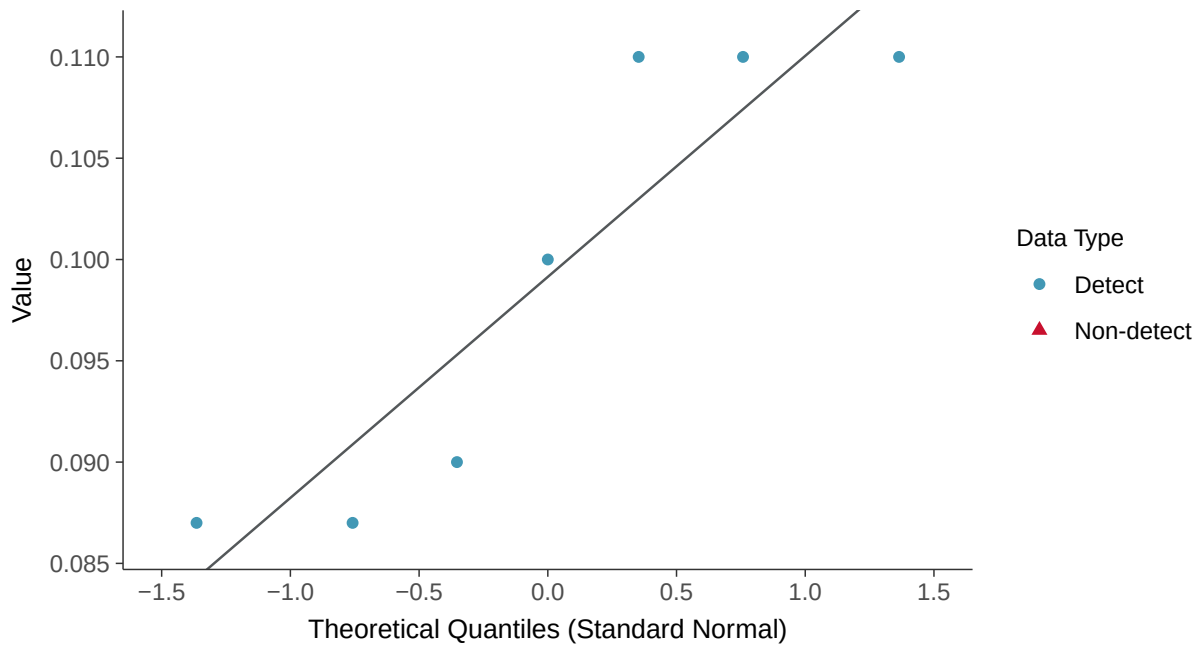
Boxplot by Season

Lithium, MW-8 (mg/l)



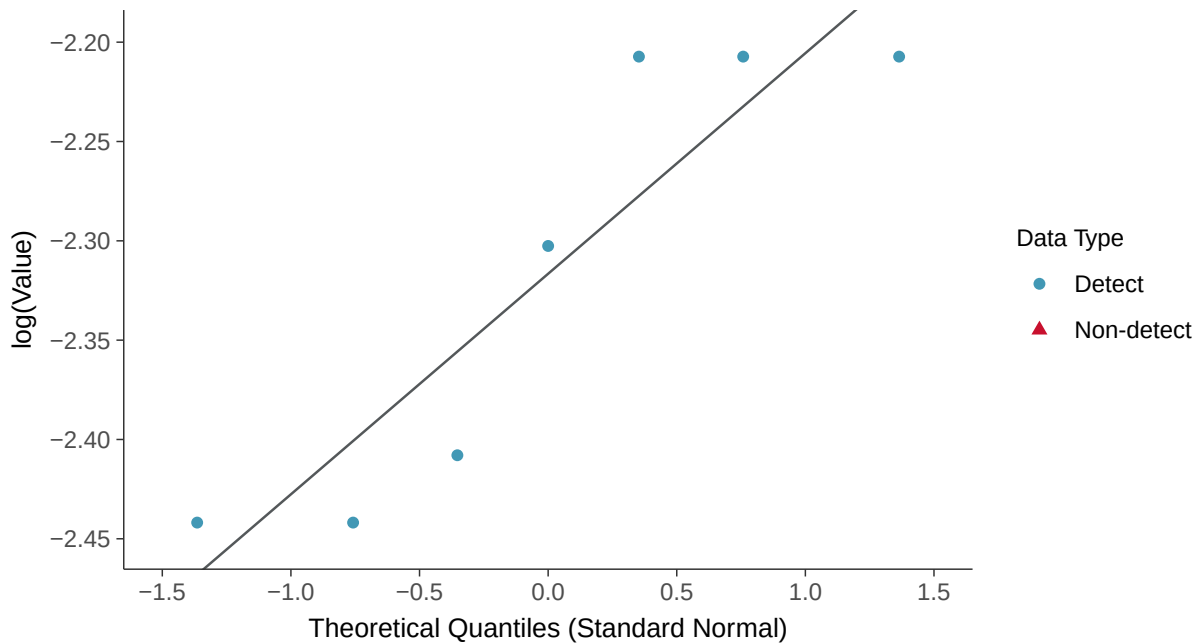
Normal Q-Q plot

Lithium, MW-8 (mg/l)

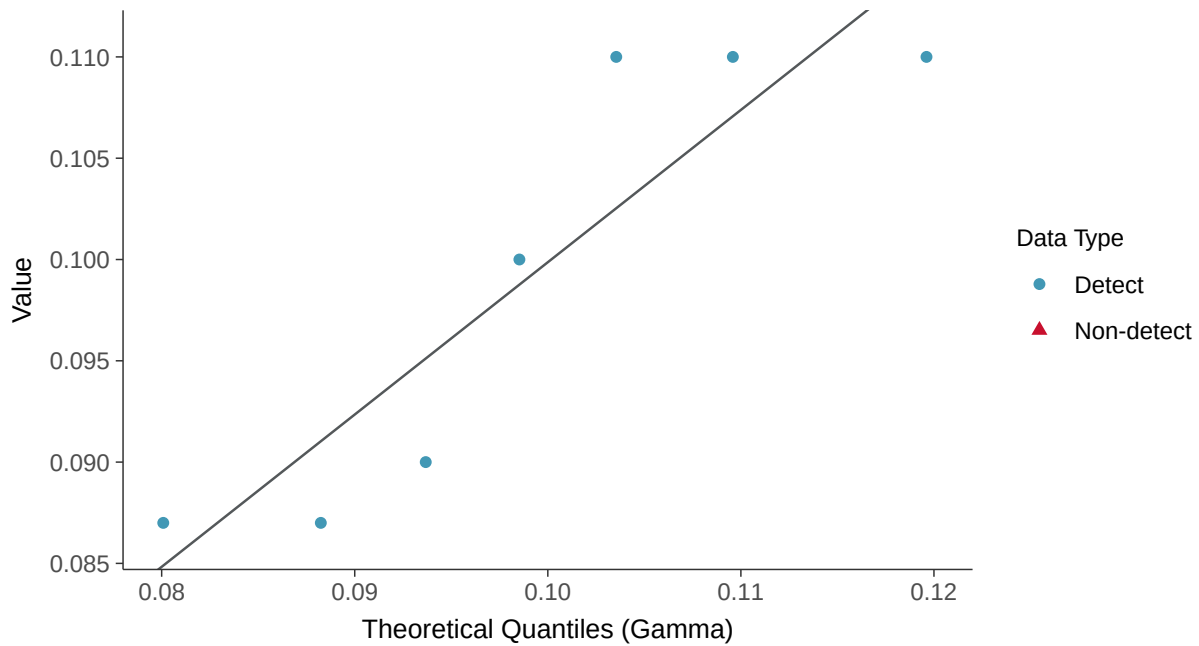


Lognormal Q-Q plot

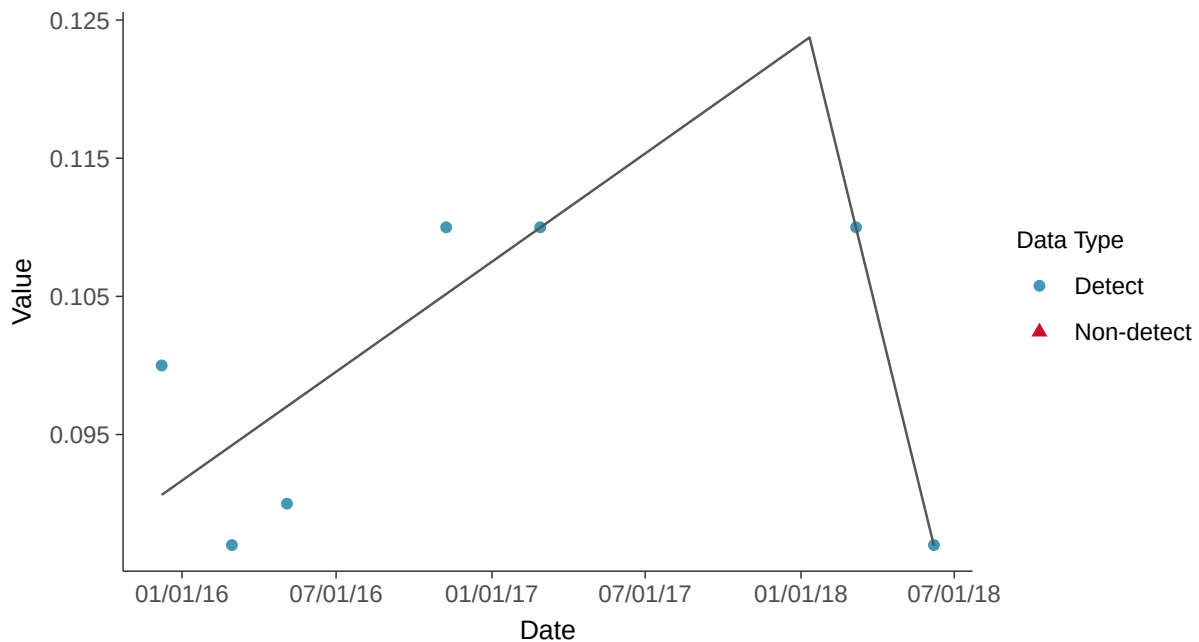
Lithium, MW-8 (mg/l)



Gamma Q-Q plot
Lithium, MW-8 (mg/l)



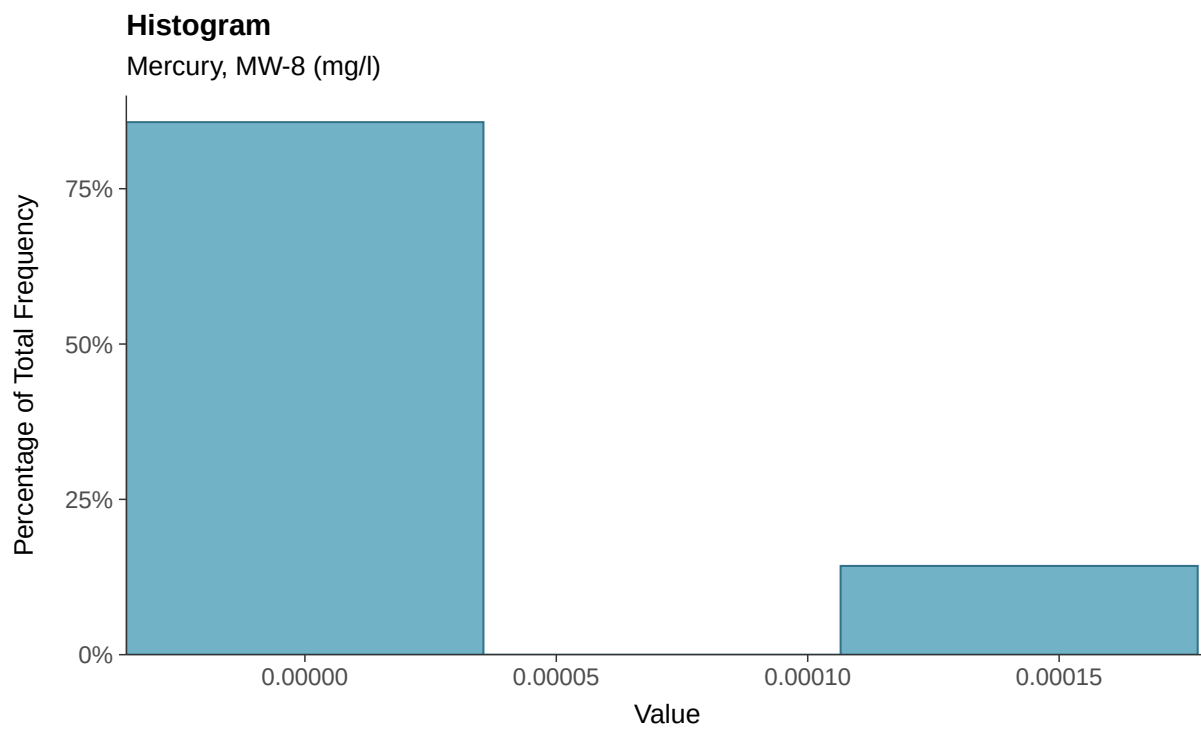
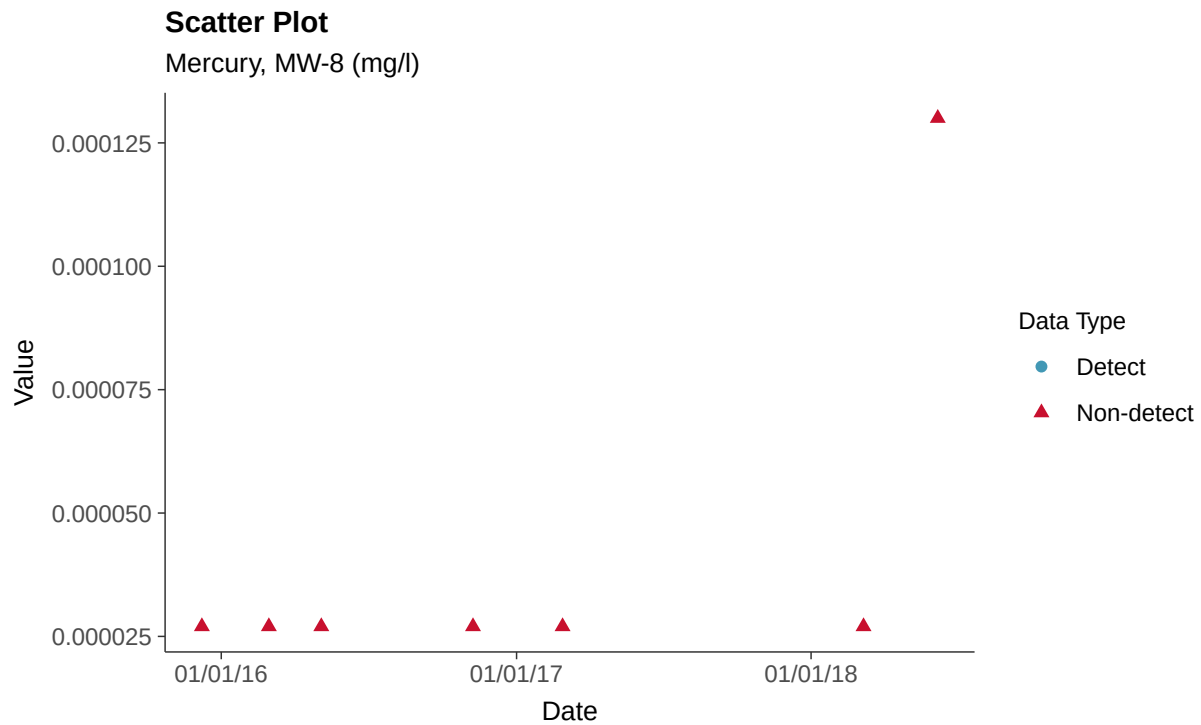
Trend Regression: Piecewise Linear-Linear
Lithium, MW-8 (mg/l)

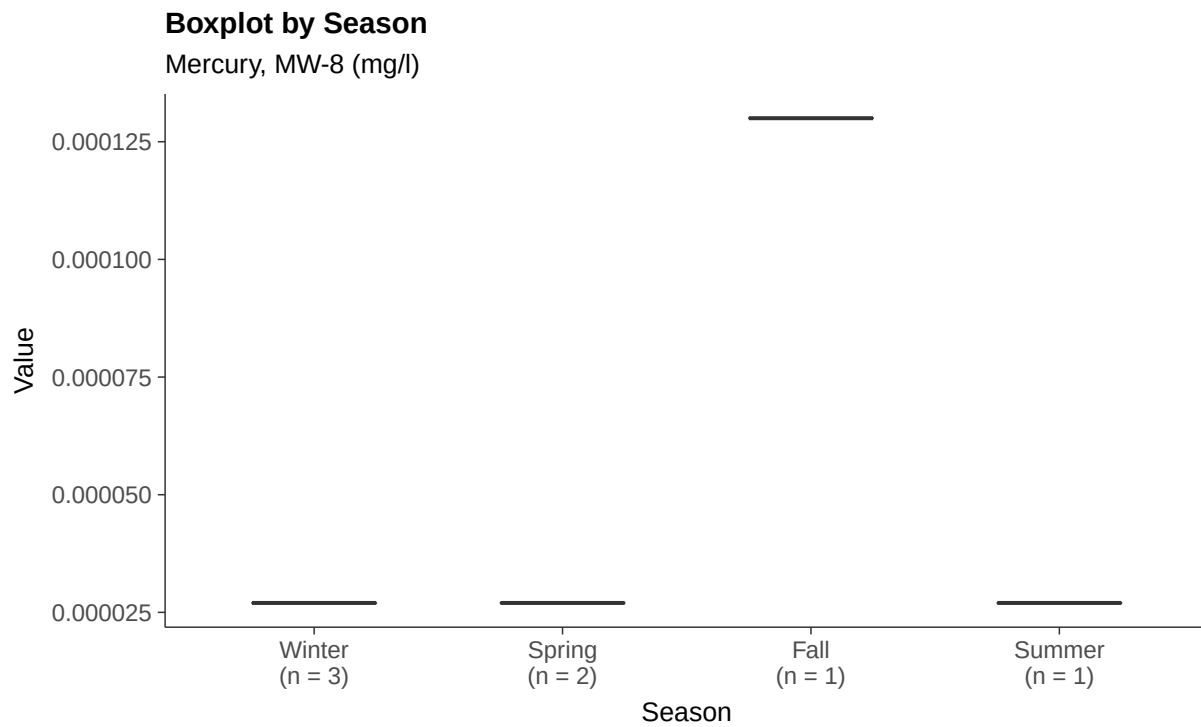
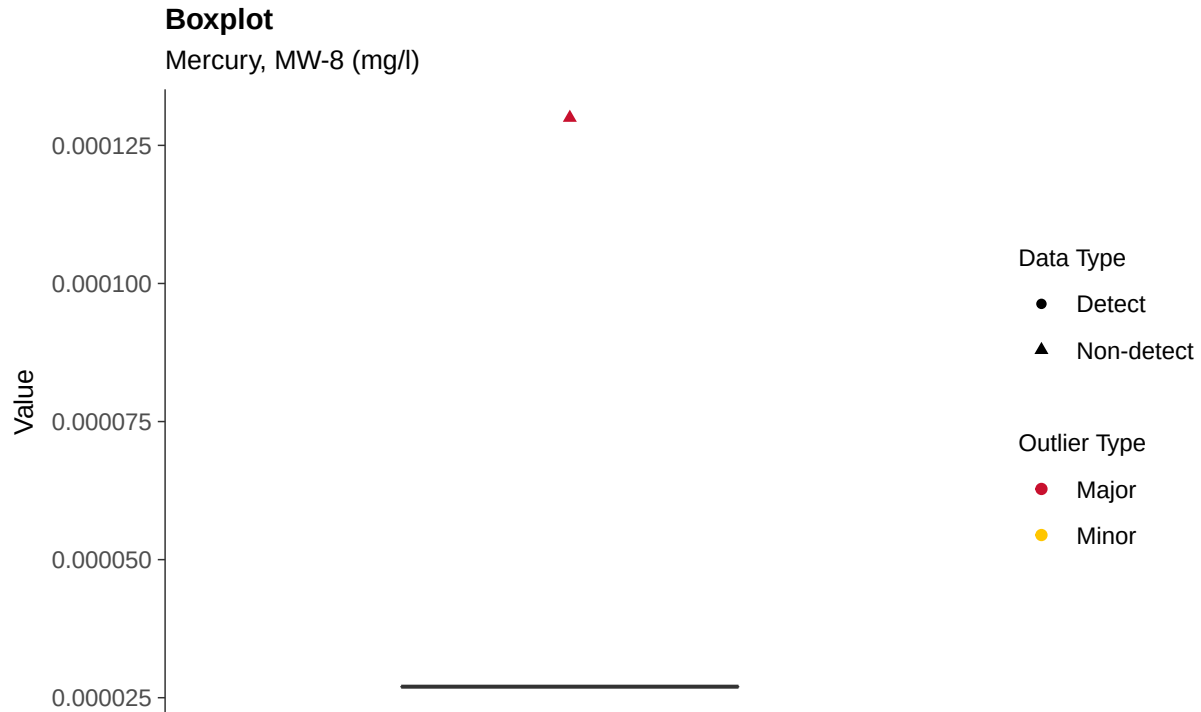




Appendix IV: Mercury, MW-8

ID: 3_2_120

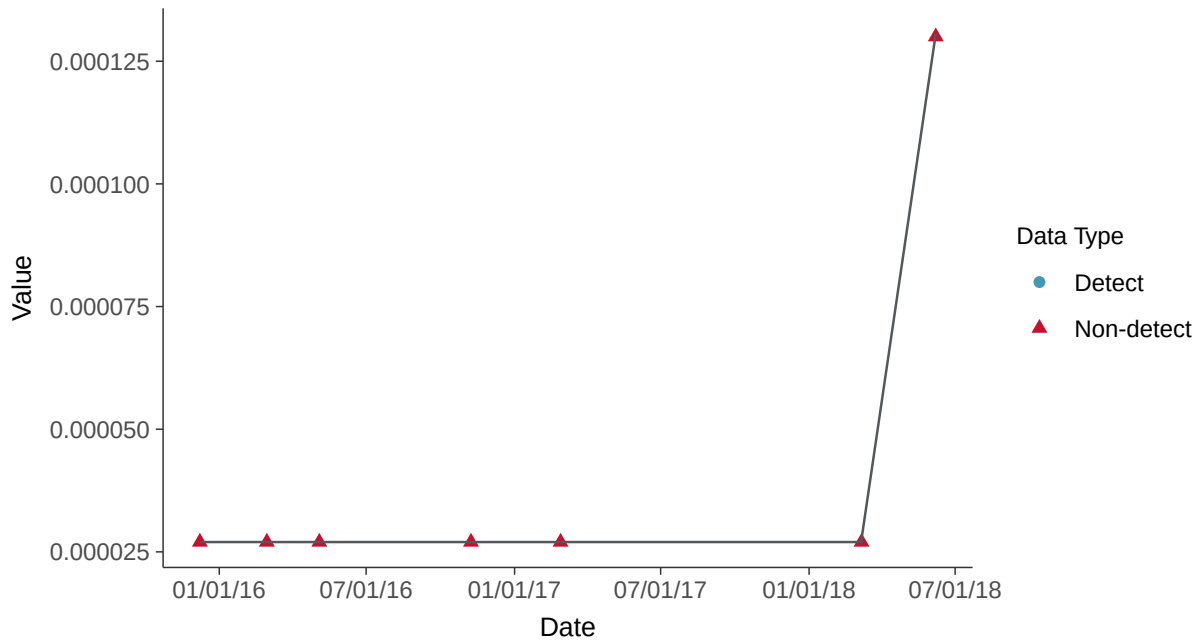






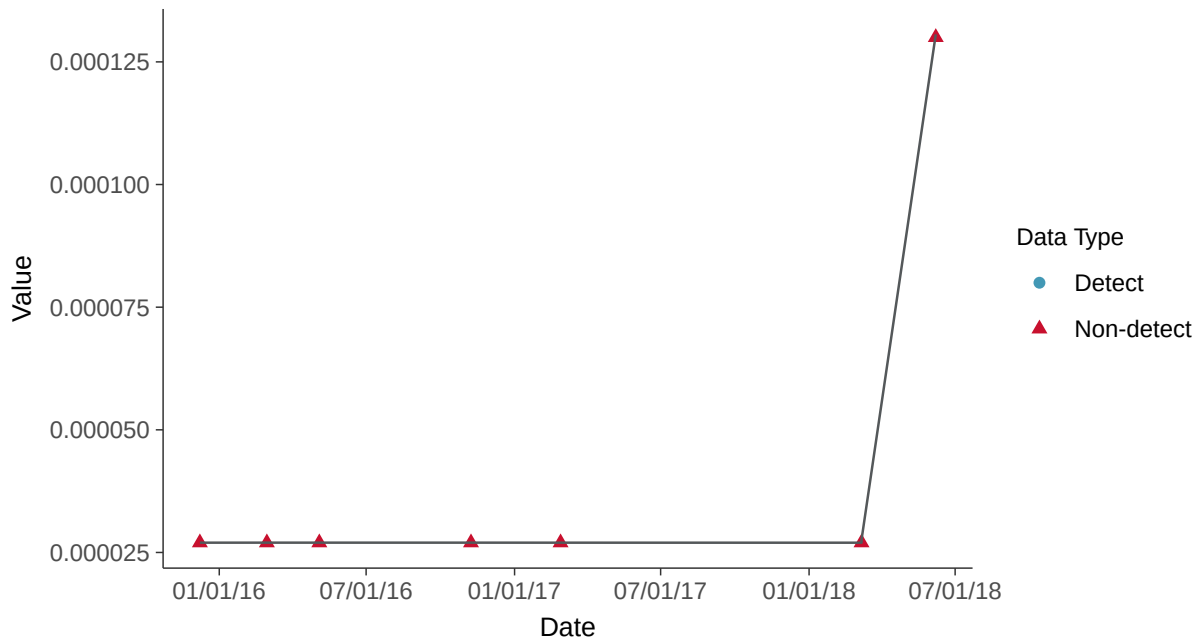
Trend Regression: Piecewise Linear-Linear

Mercury, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

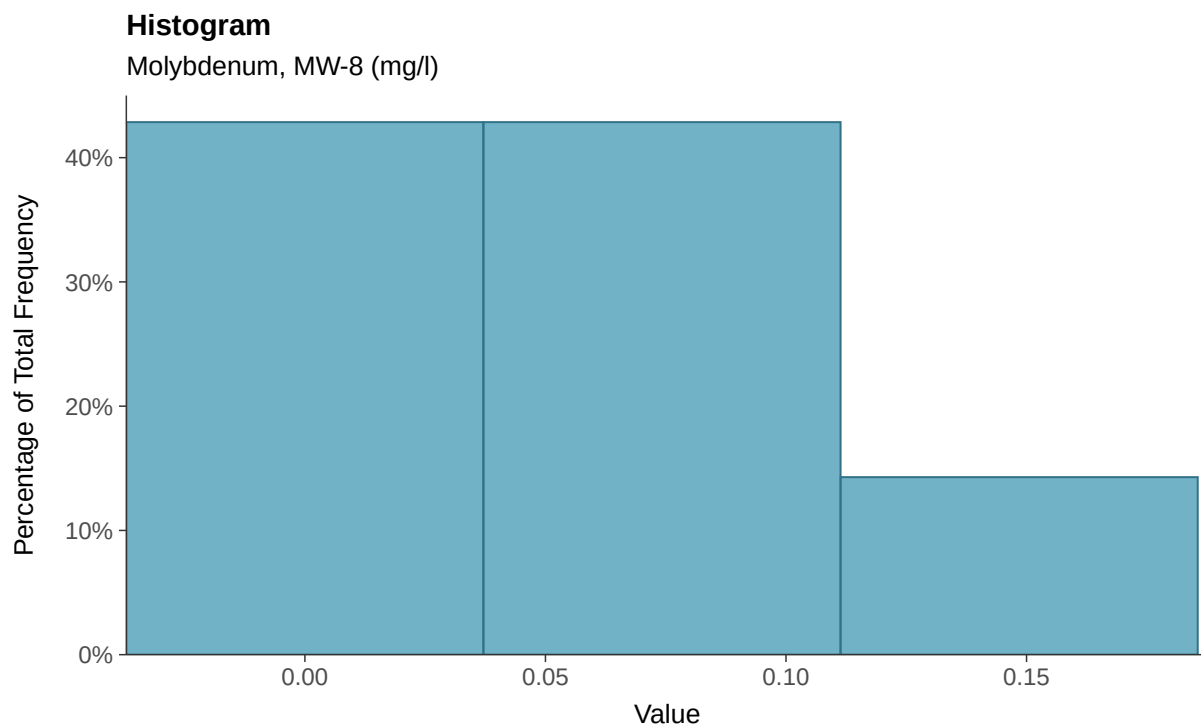
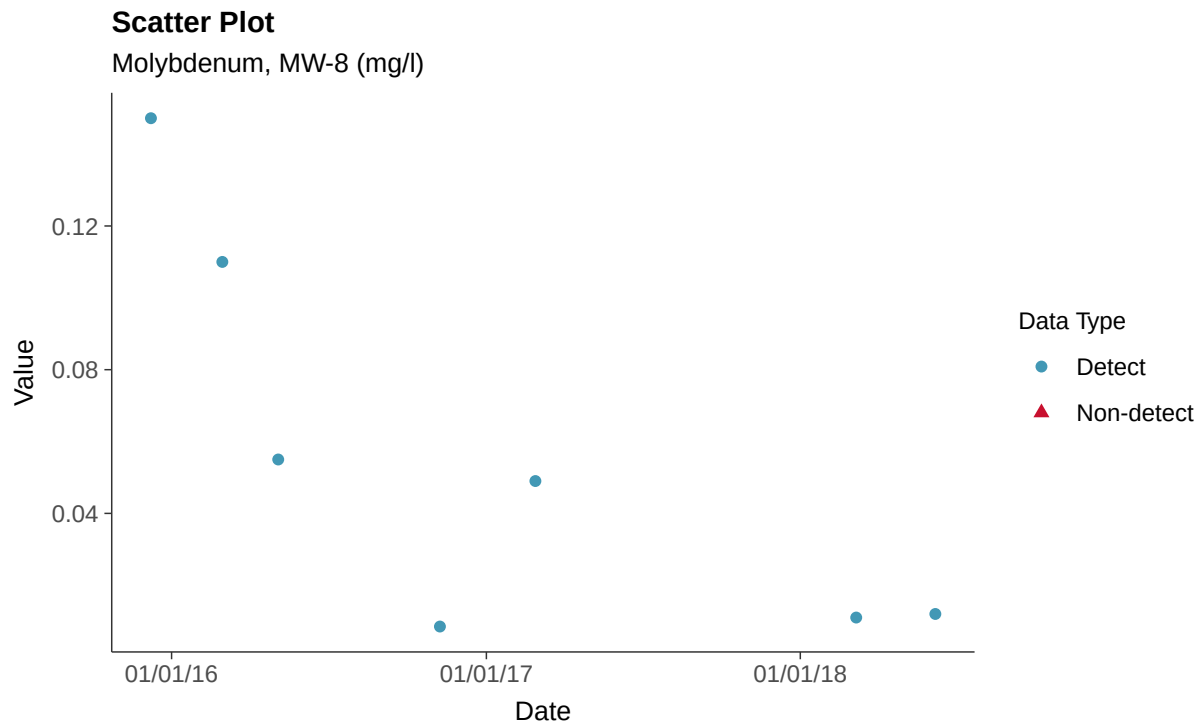
Mercury, MW-8 (mg/l)





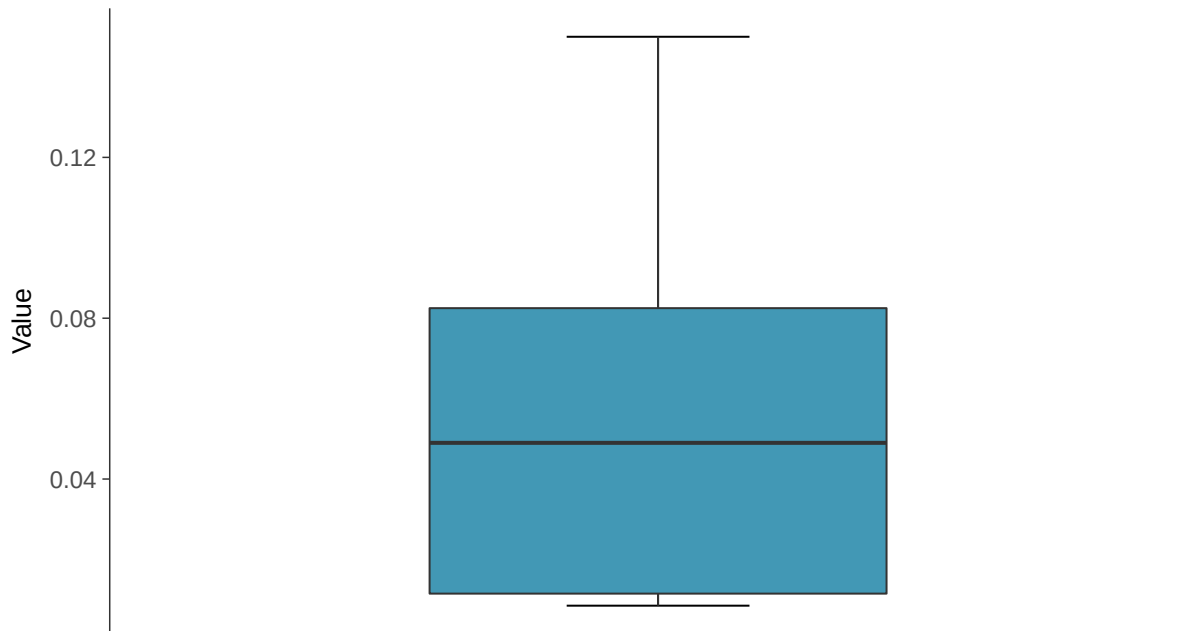
Appendix IV: Molybdenum, MW-8

ID: 3_2_121



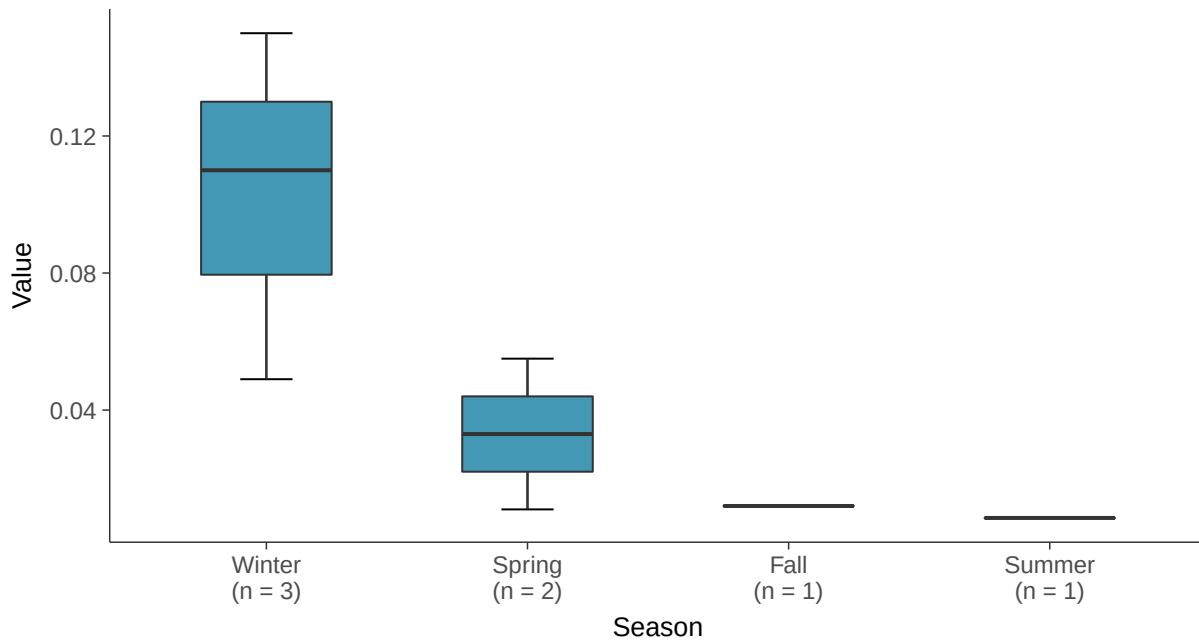
Boxplot

Molybdenum, MW-8 (mg/l)



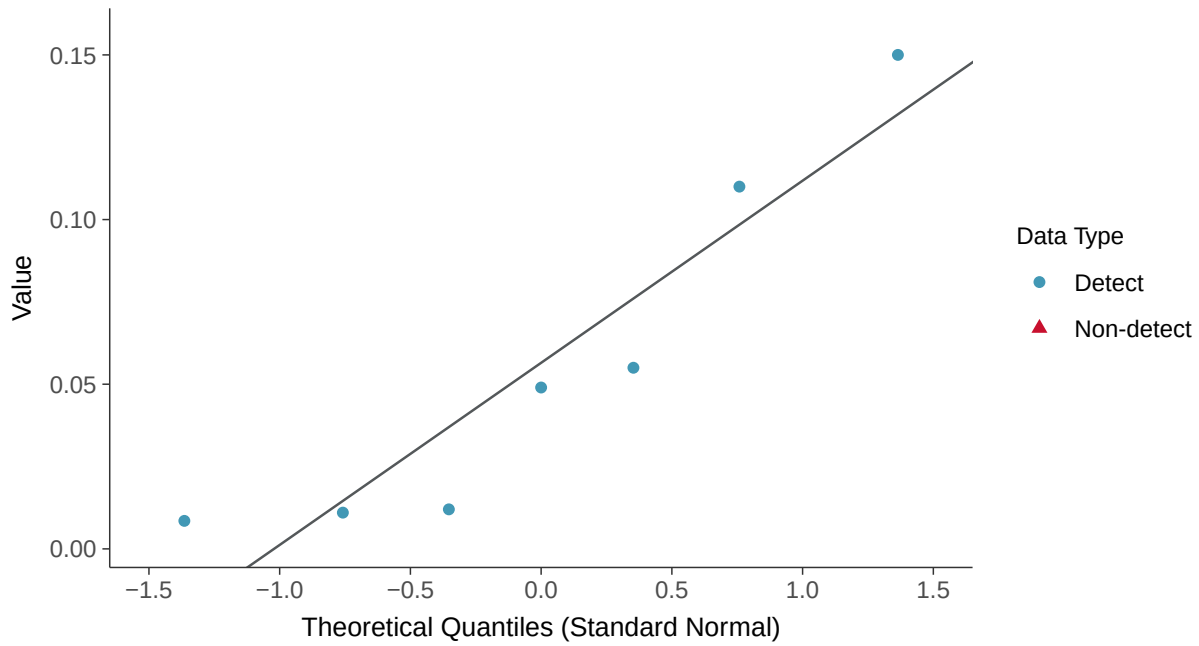
Boxplot by Season

Molybdenum, MW-8 (mg/l)



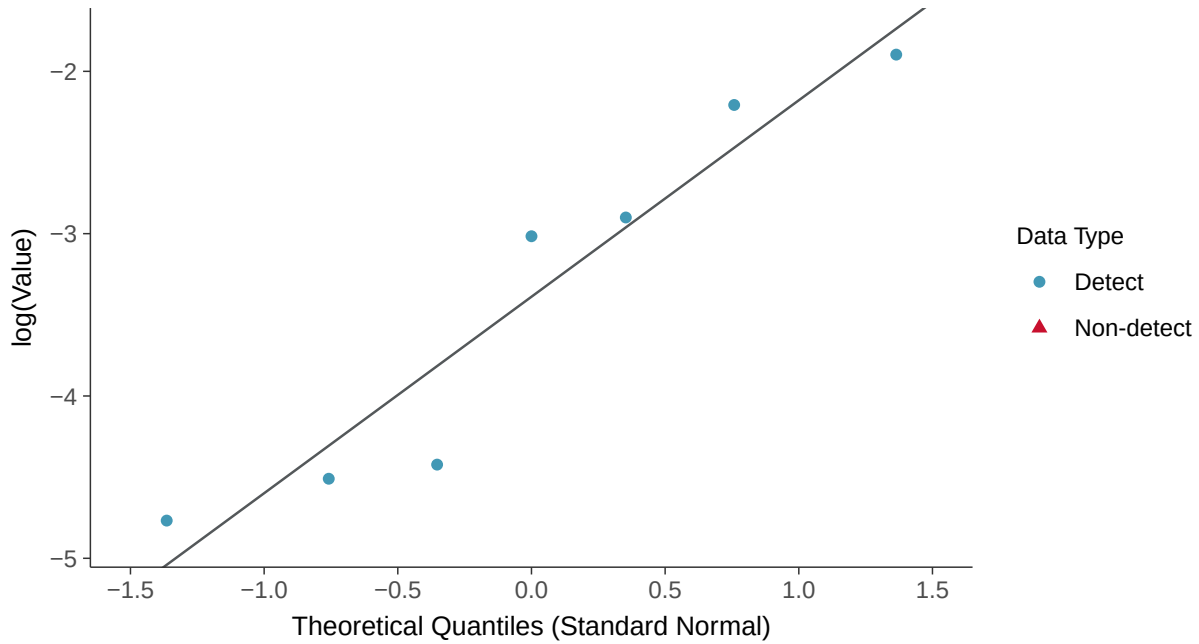
Normal Q-Q plot

Molybdenum, MW-8 (mg/l)



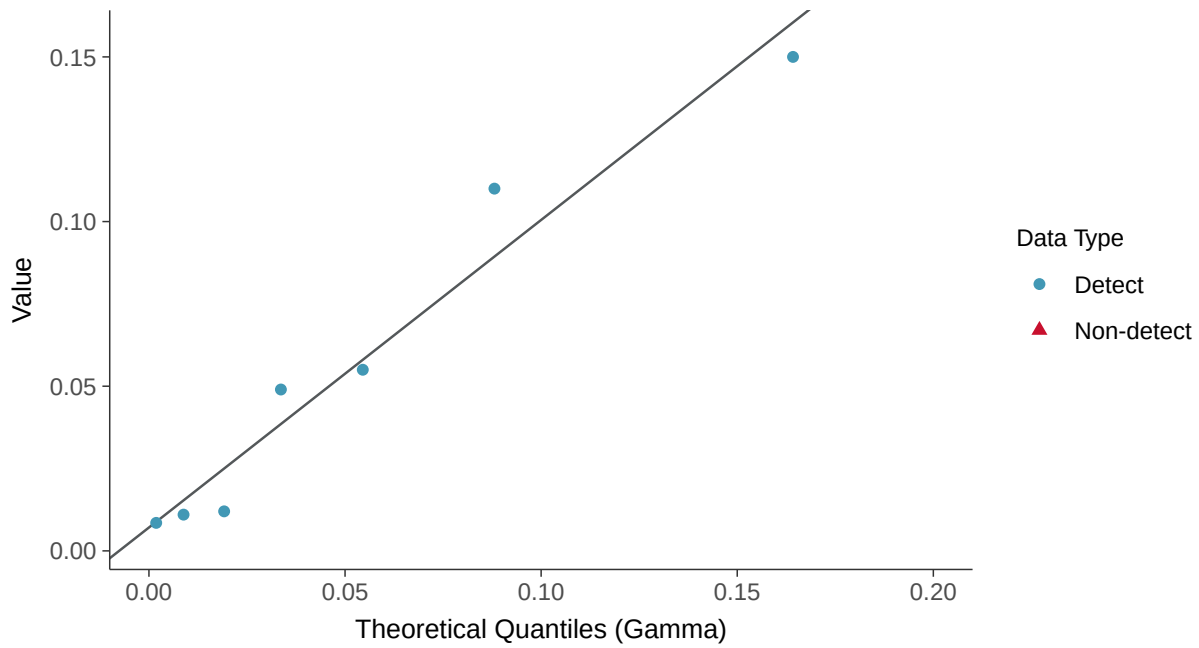
Lognormal Q-Q plot

Molybdenum, MW-8 (mg/l)



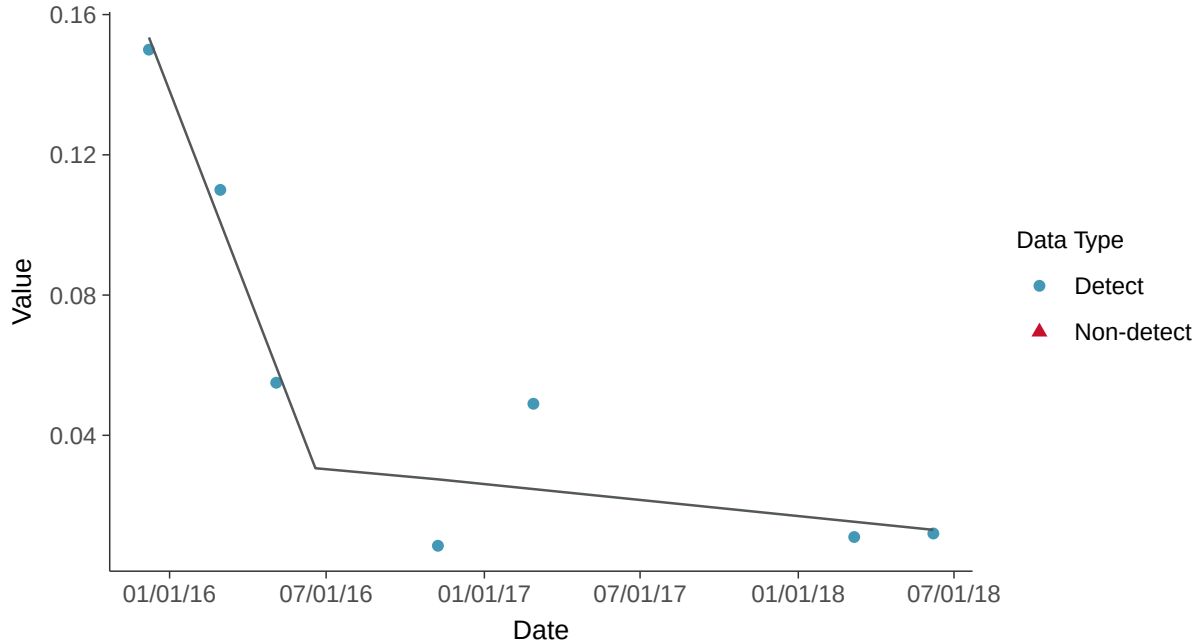
Gamma Q-Q plot

Molybdenum, MW-8 (mg/l)



Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-8 (mg/l)

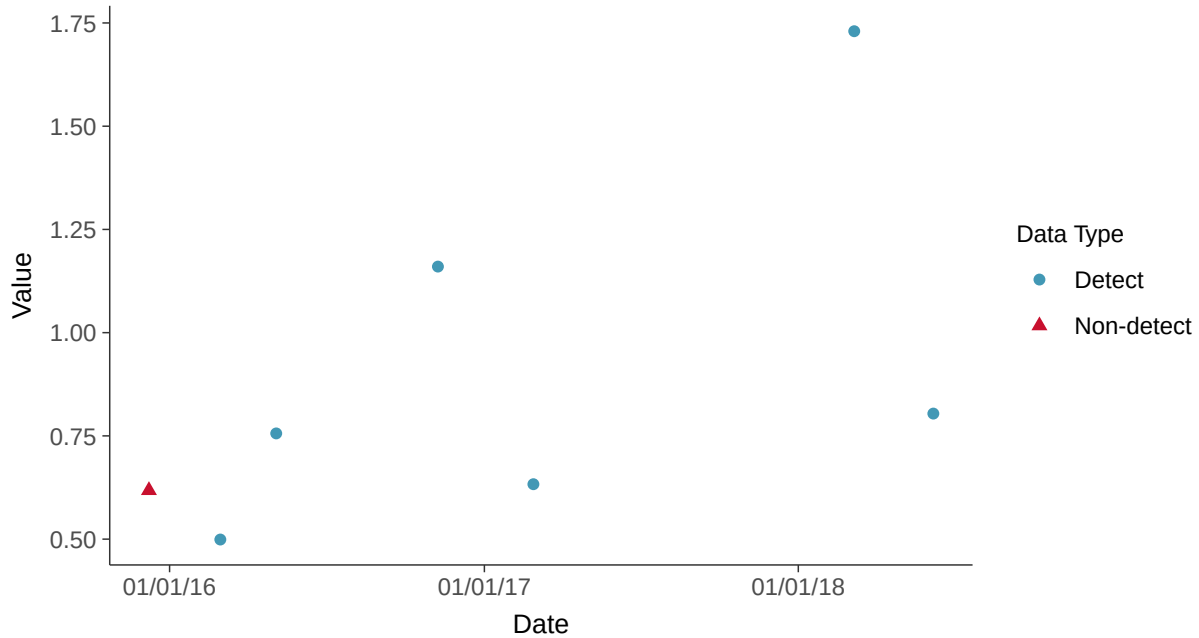


Appendix IV: Radium-226+228, MW-8

ID: 3_2_127

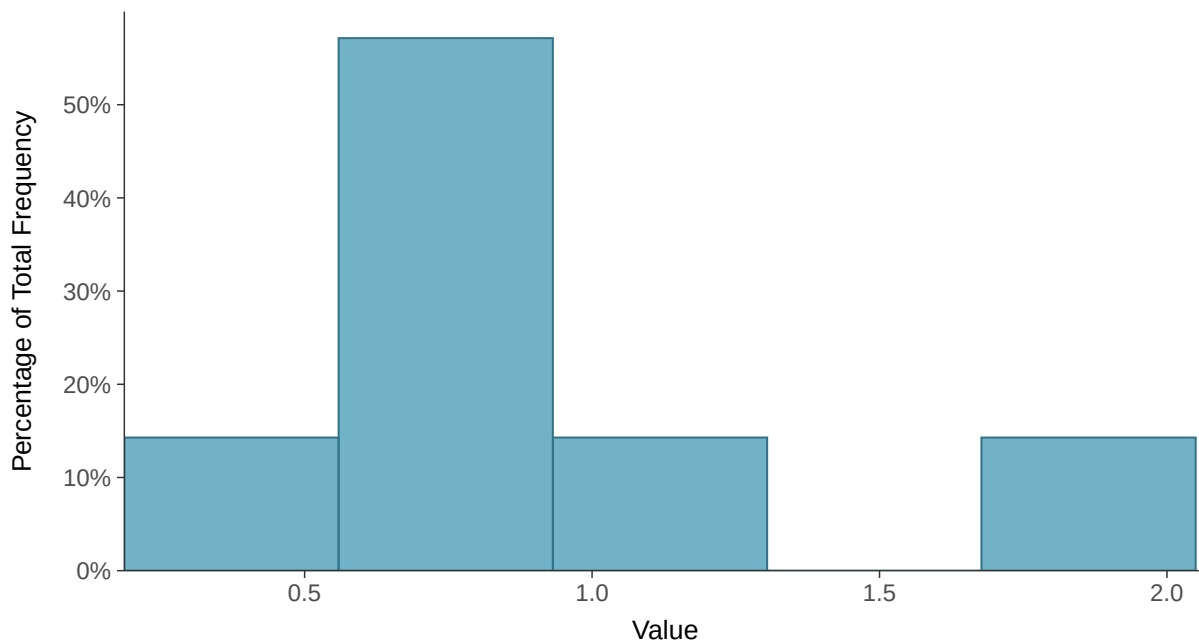
Scatter Plot

Radium-226+228, MW-8 (pci/l)



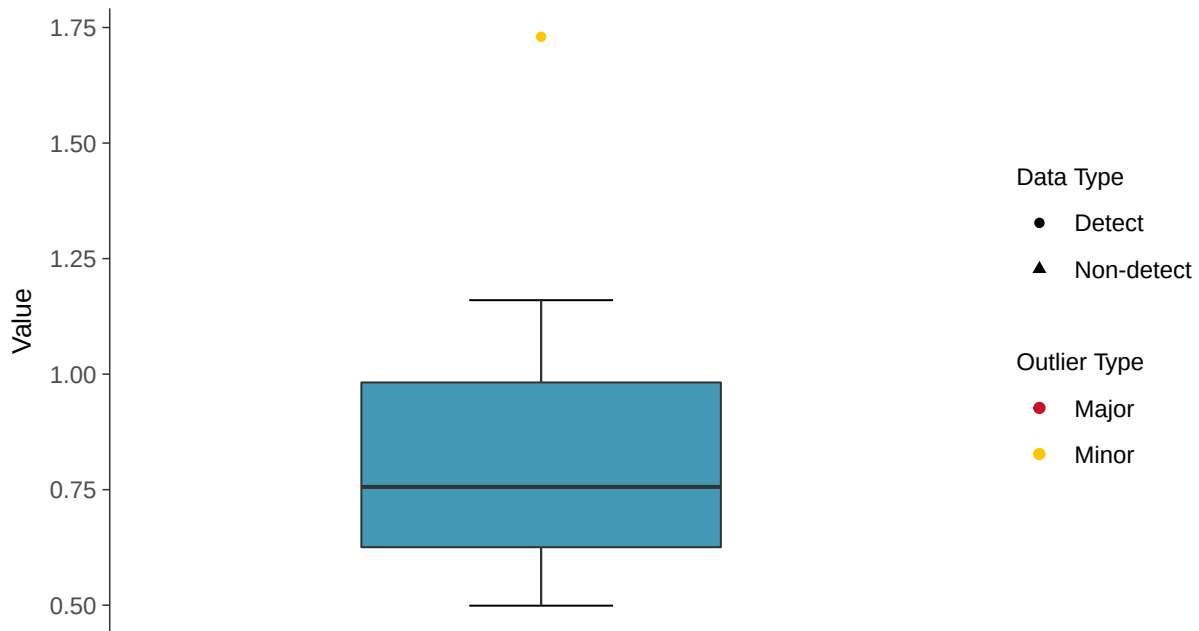
Histogram

Radium-226+228, MW-8 (pci/l)



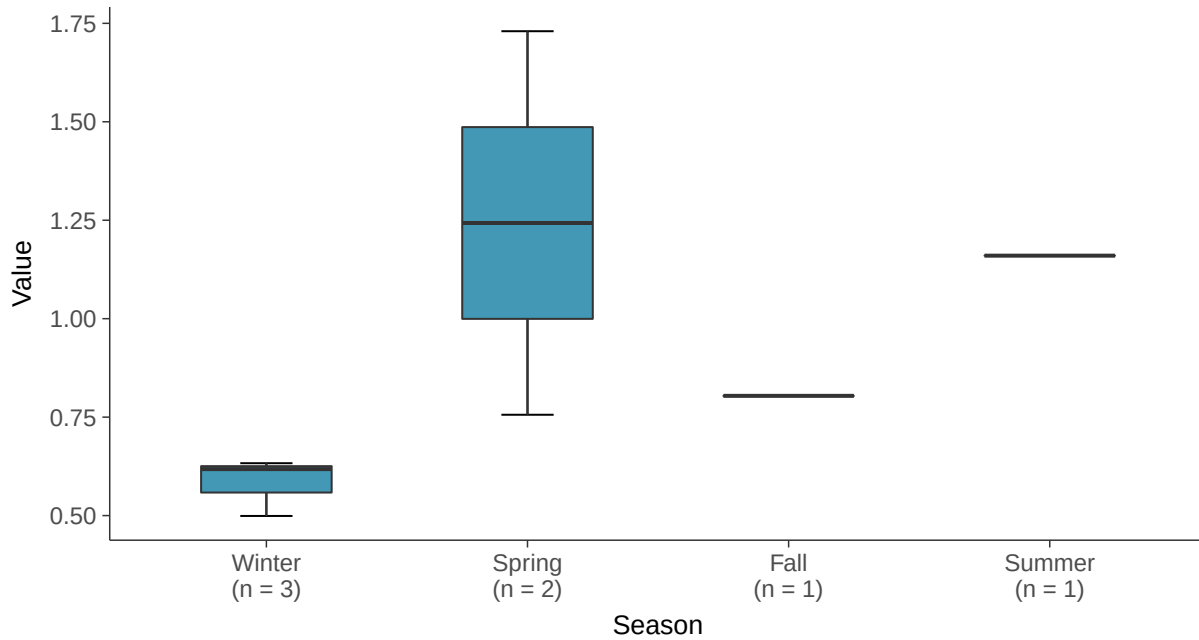
Boxplot

Radium-226+228, MW-8 (pci/l)



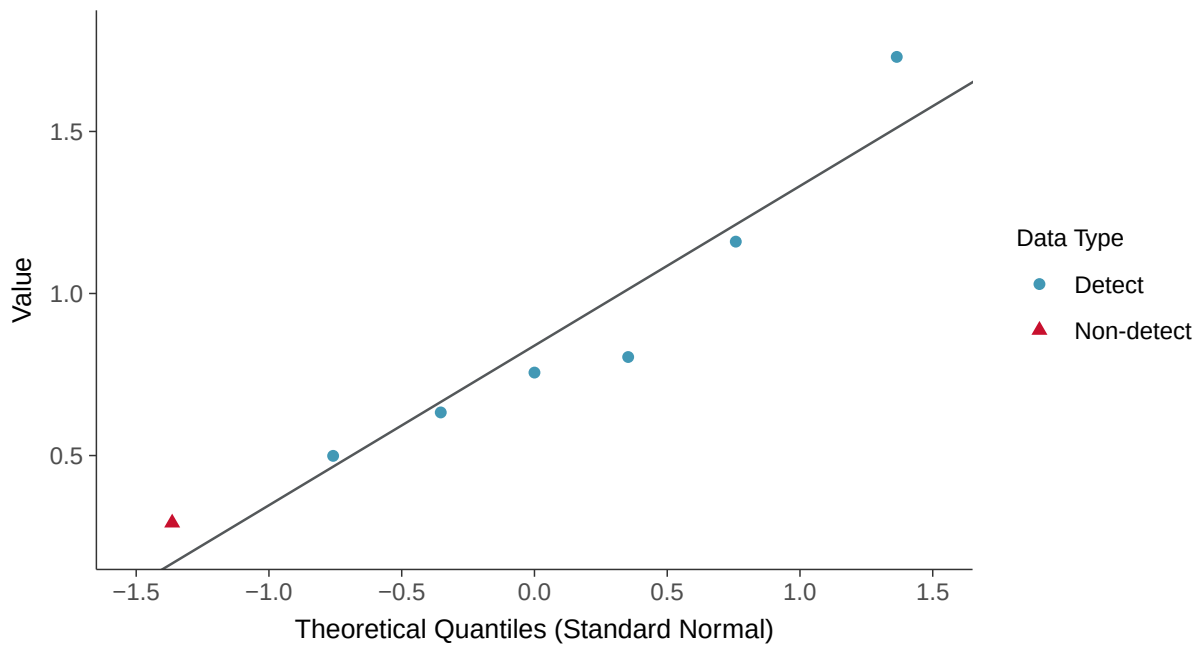
Boxplot by Season

Radium-226+228, MW-8 (pci/l)



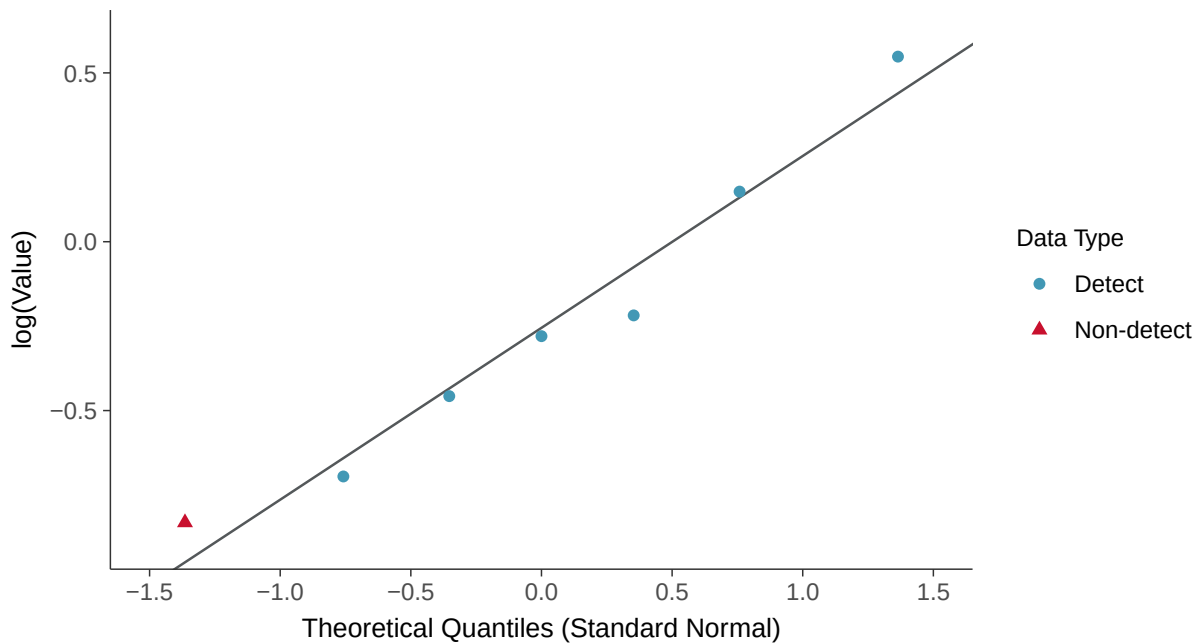
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-8 (pci/l)



Lognormal Q-Q plot using ROS Imputed Estimates

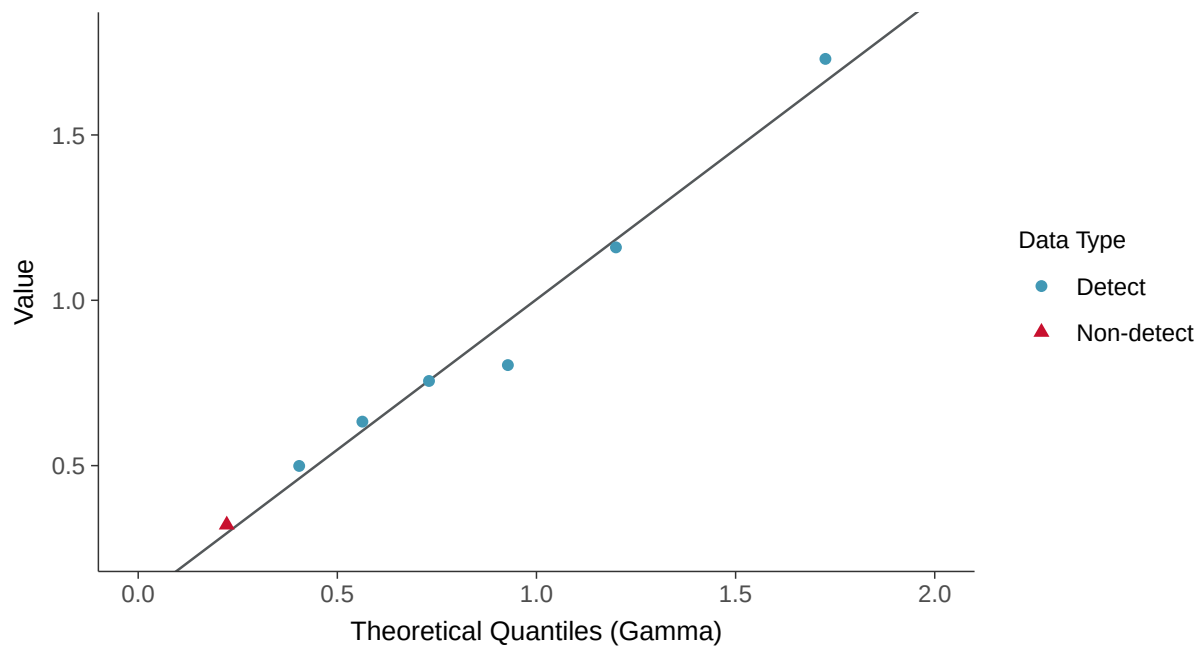
Radium-226+228, MW-8 (pci/l)





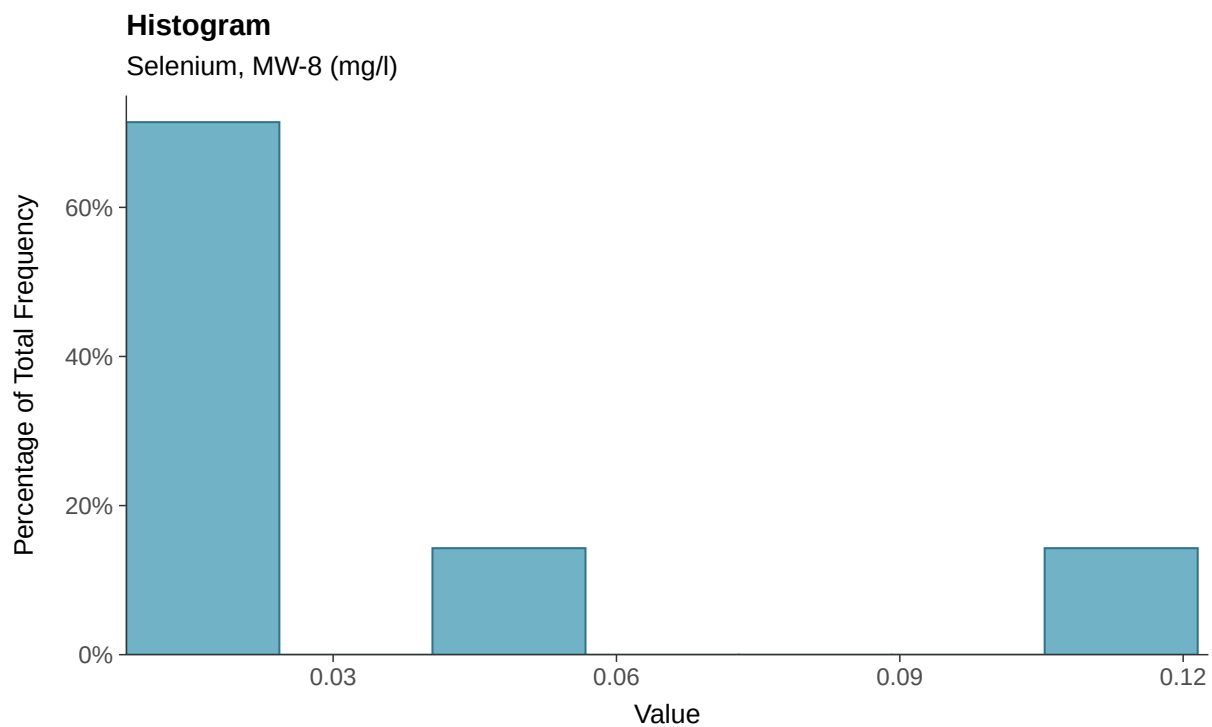
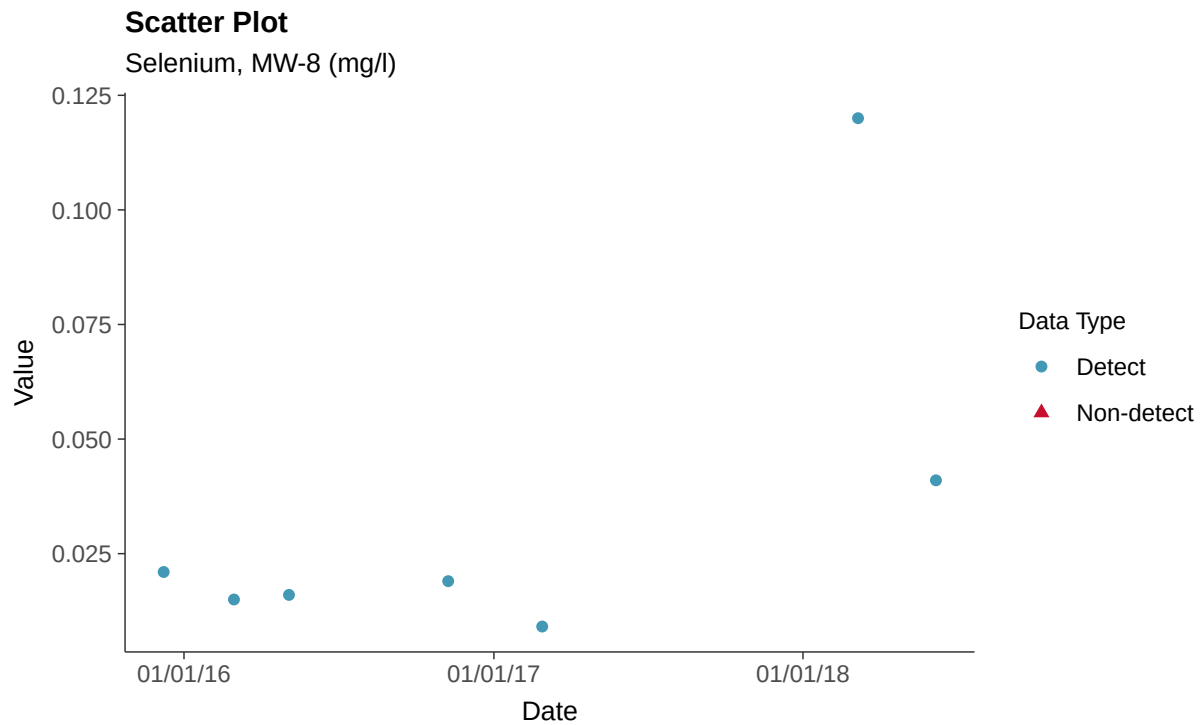
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-8 (pci/l)



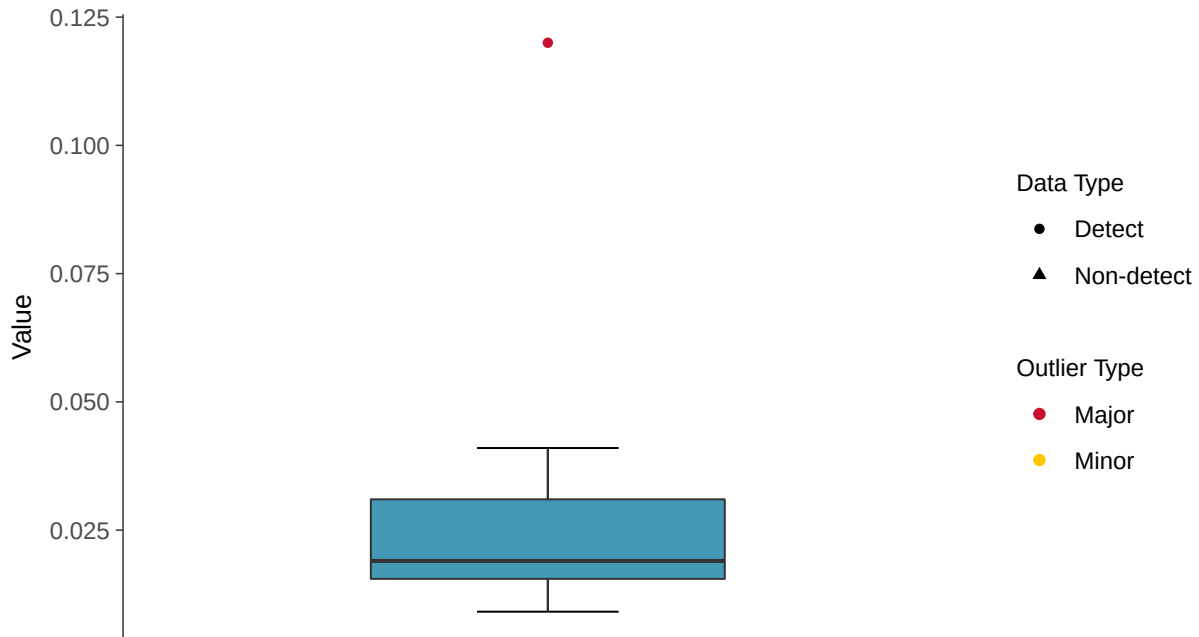
Appendix IV: Selenium, MW-8

ID: 3_2_129



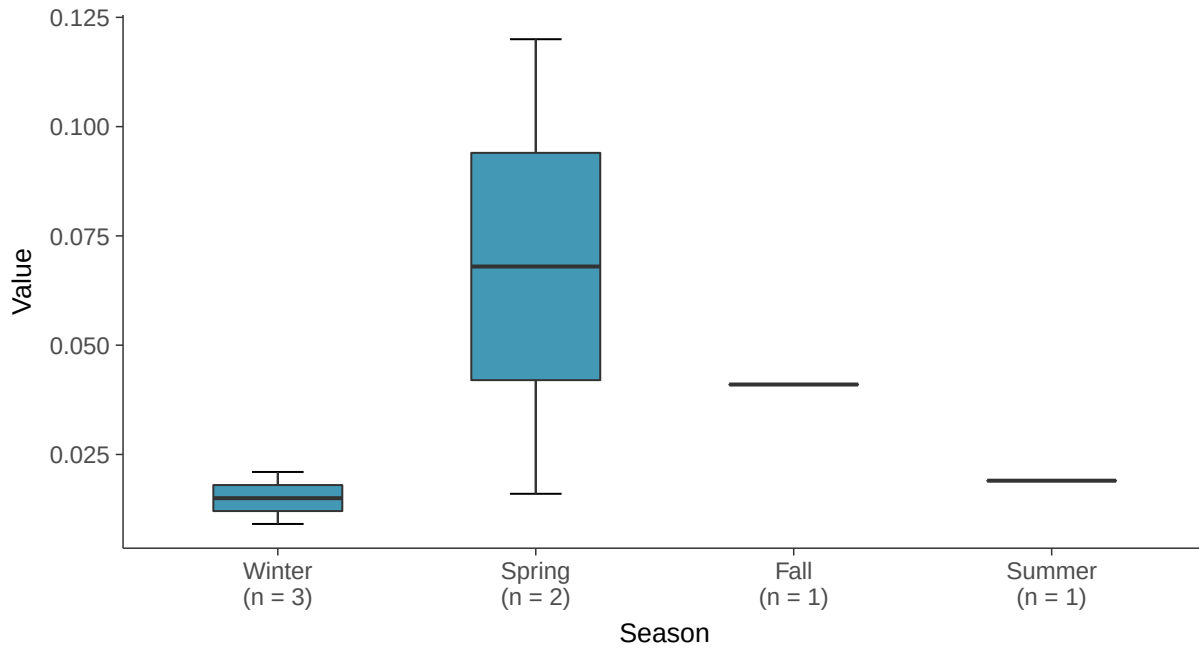
Boxplot

Selenium, MW-8 (mg/l)



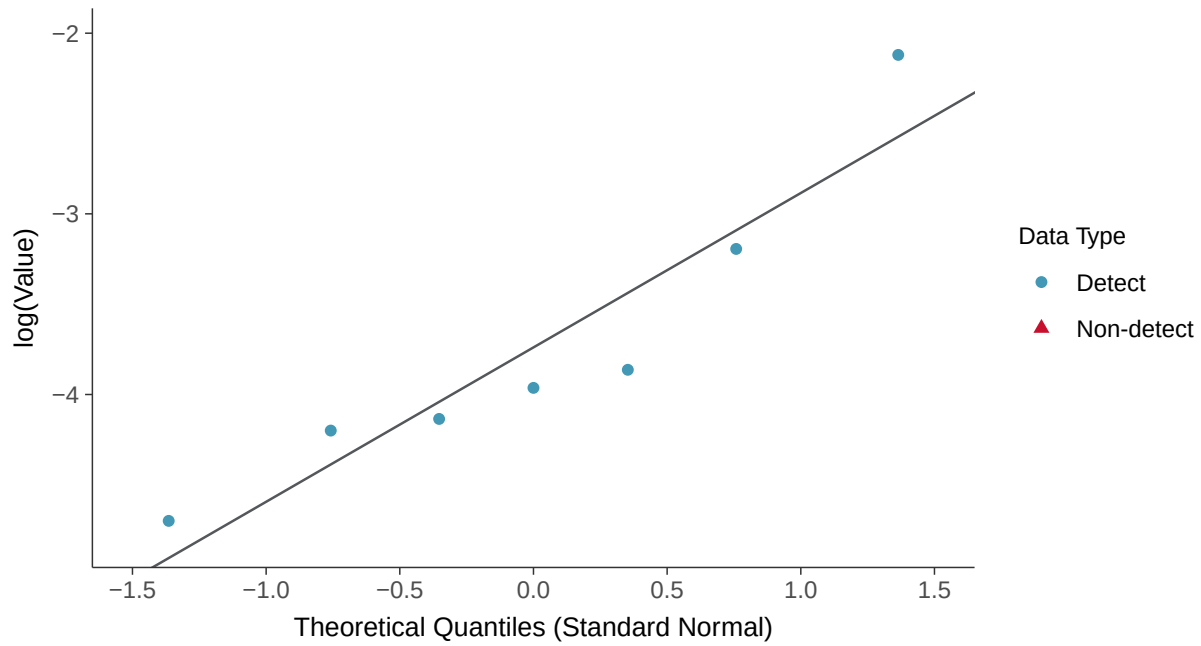
Boxplot by Season

Selenium, MW-8 (mg/l)



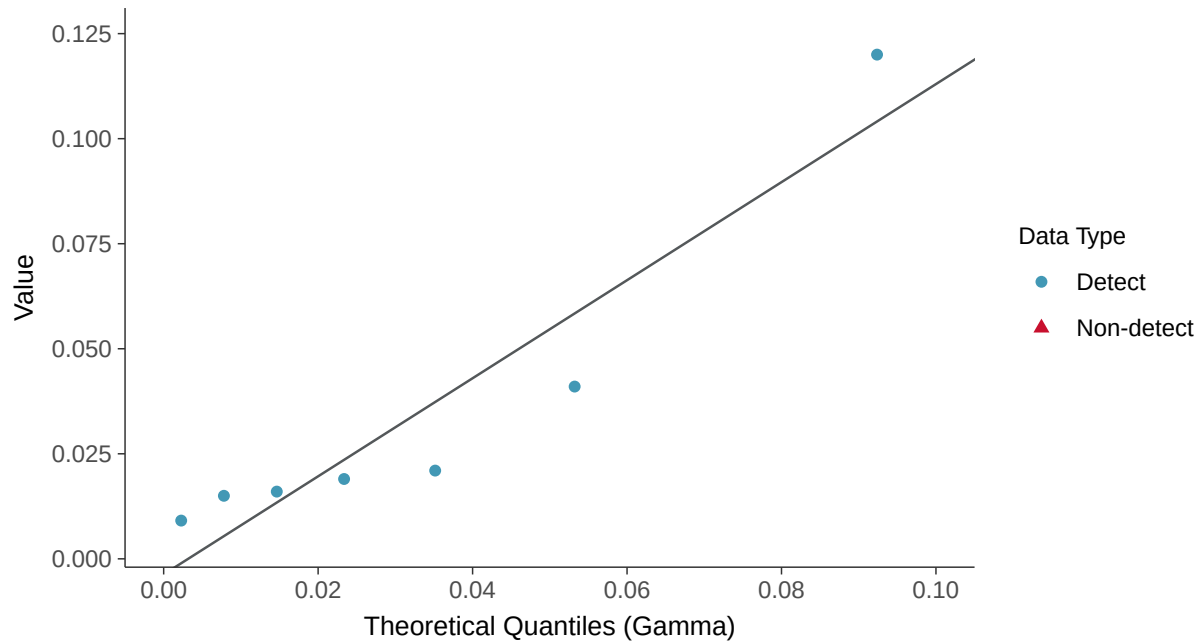
Lognormal Q-Q plot

Selenium, MW-8 (mg/l)



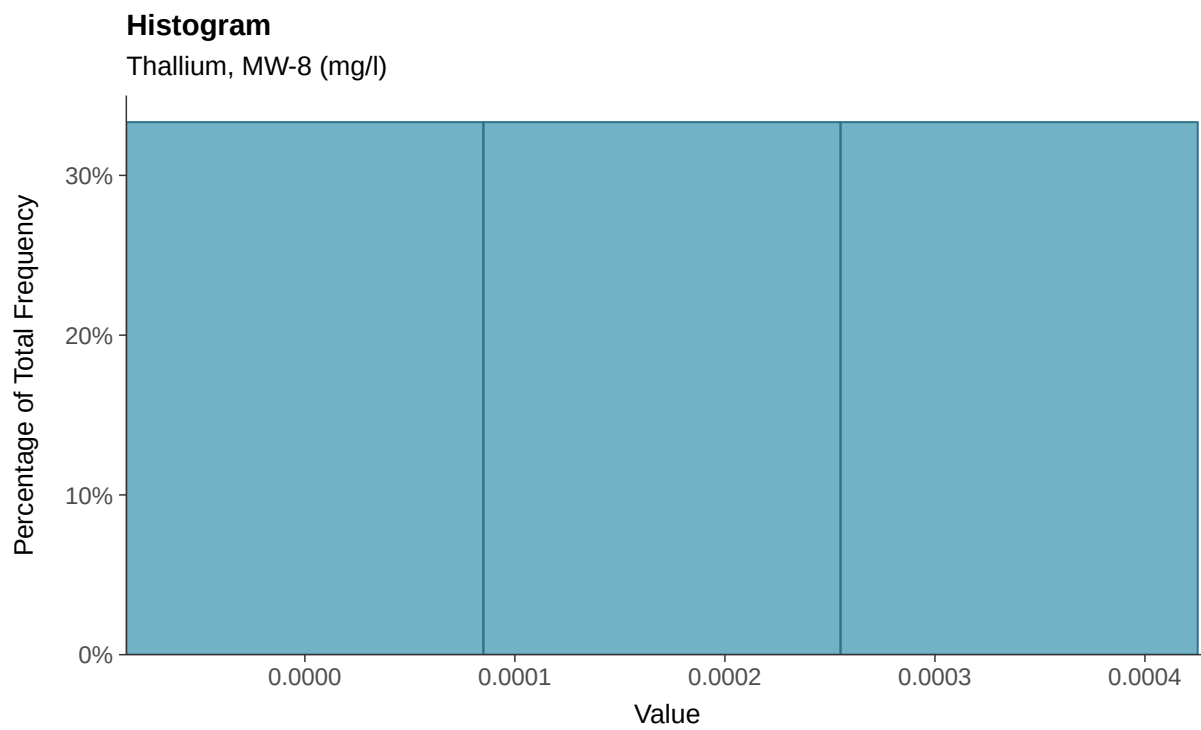
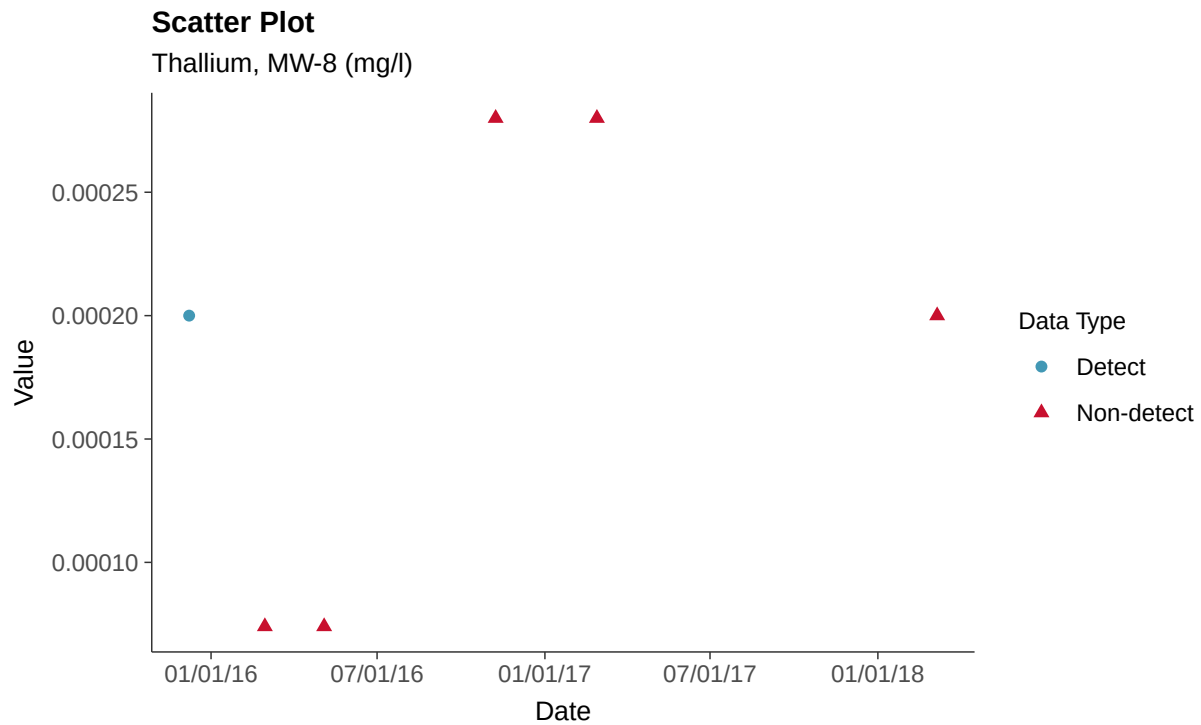
Gamma Q-Q plot

Selenium, MW-8 (mg/l)



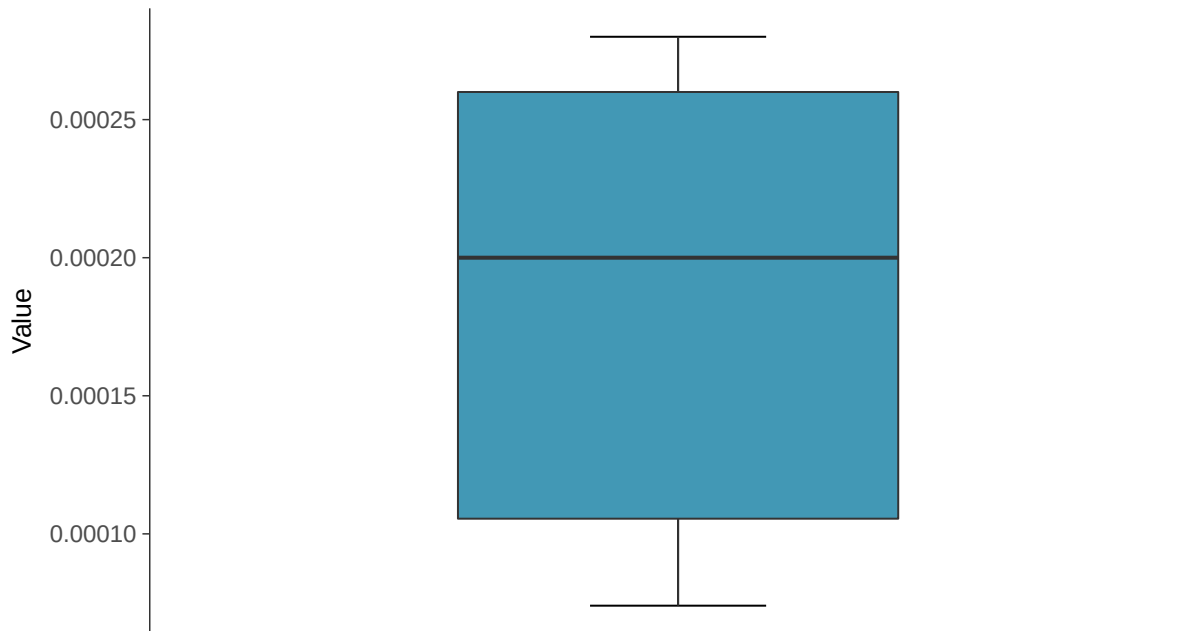
Appendix IV: Thallium, MW-8

ID: 3_2_134



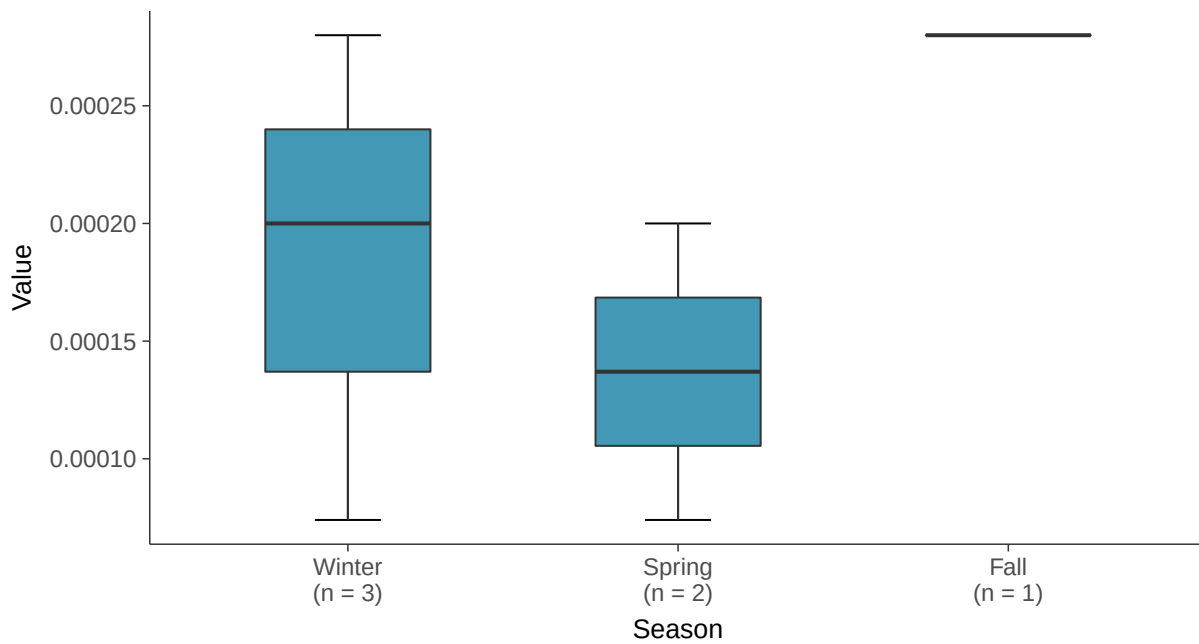
Boxplot

Thallium, MW-8 (mg/l)



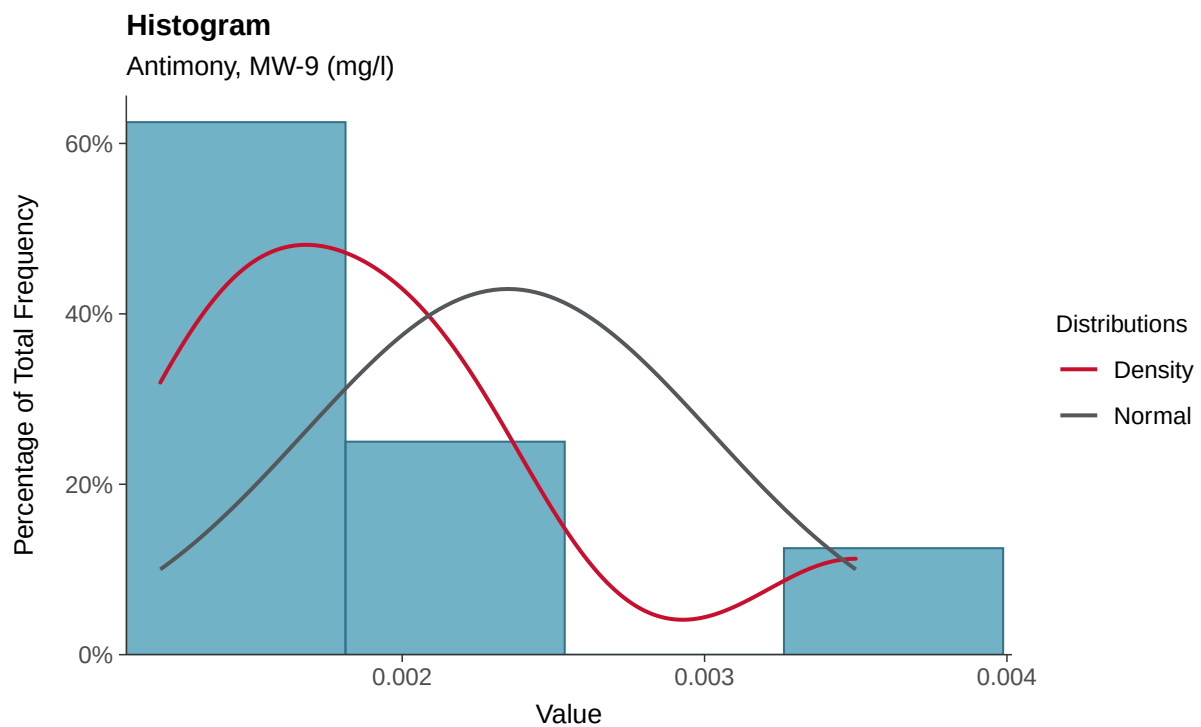
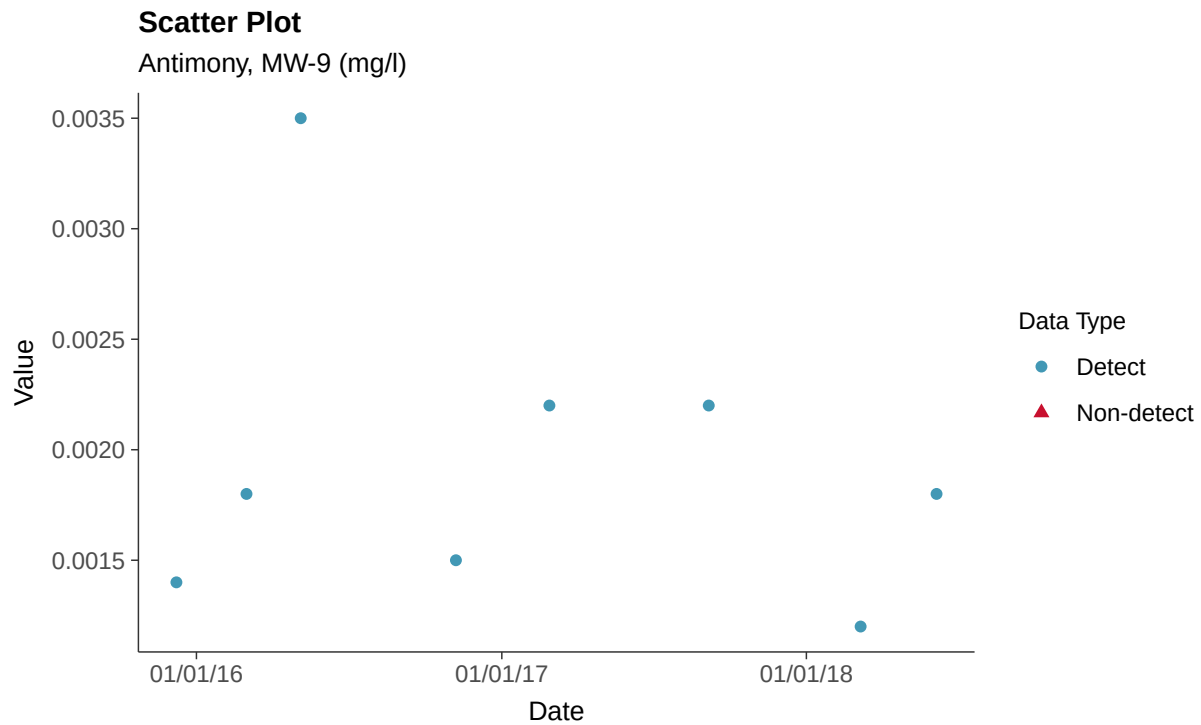
Boxplot by Season

Thallium, MW-8 (mg/l)



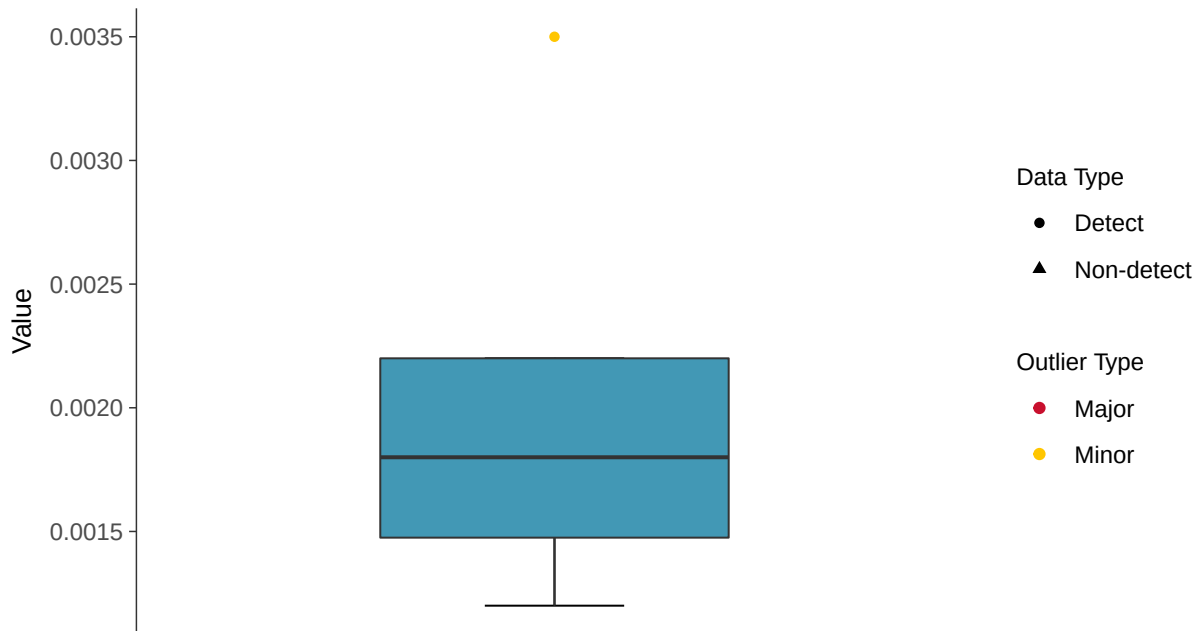
Appendix IV: Antimony, MW-9

ID: 4_2_104



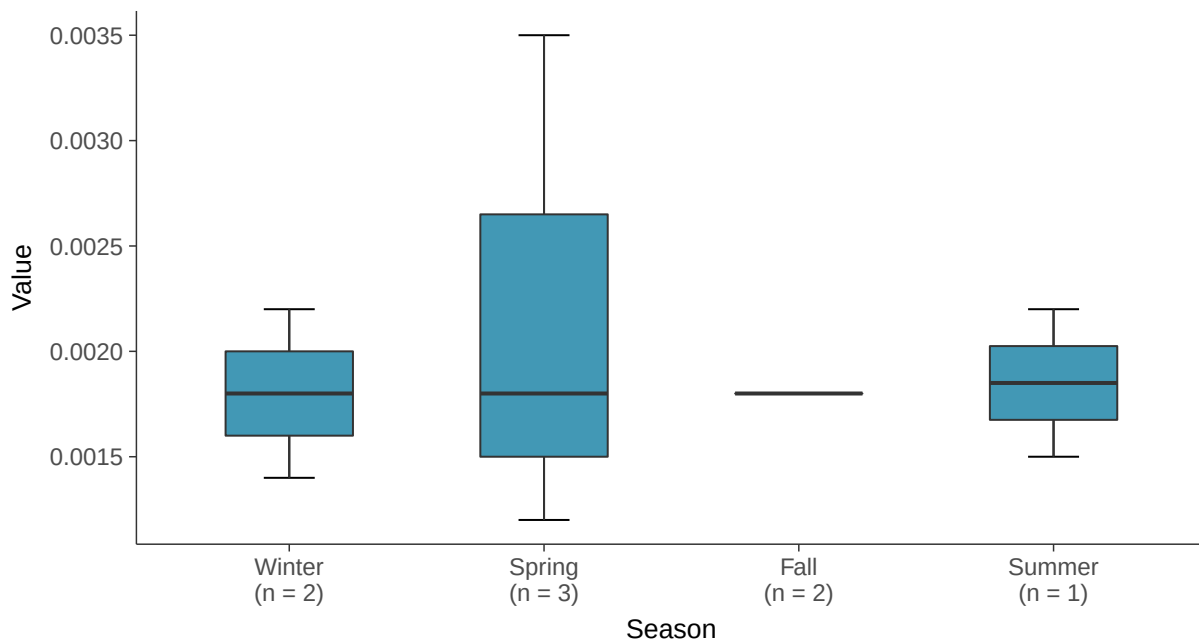
Boxplot

Antimony, MW-9 (mg/l)



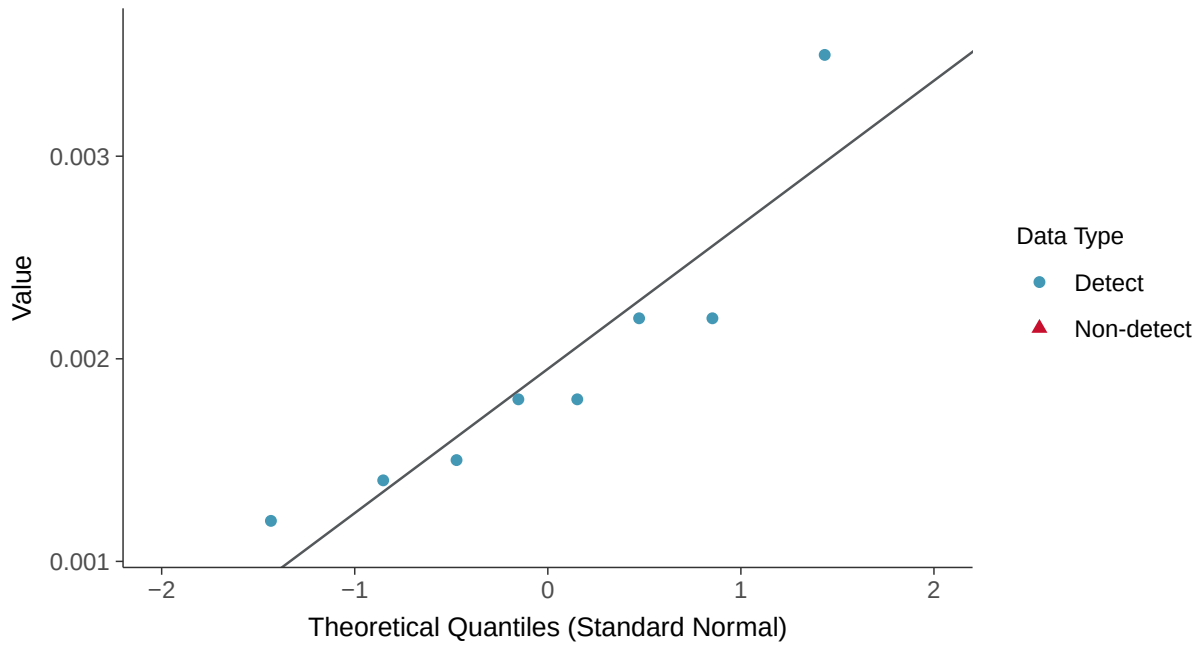
Boxplot by Season

Antimony, MW-9 (mg/l)



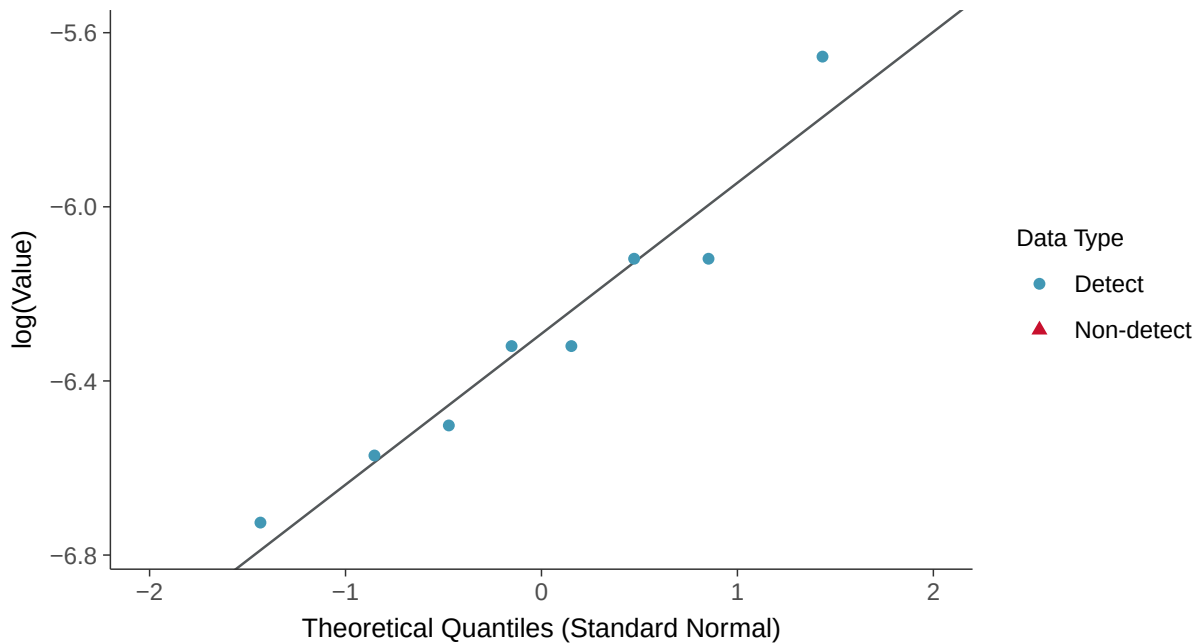
Normal Q-Q plot

Antimony, MW-9 (mg/l)



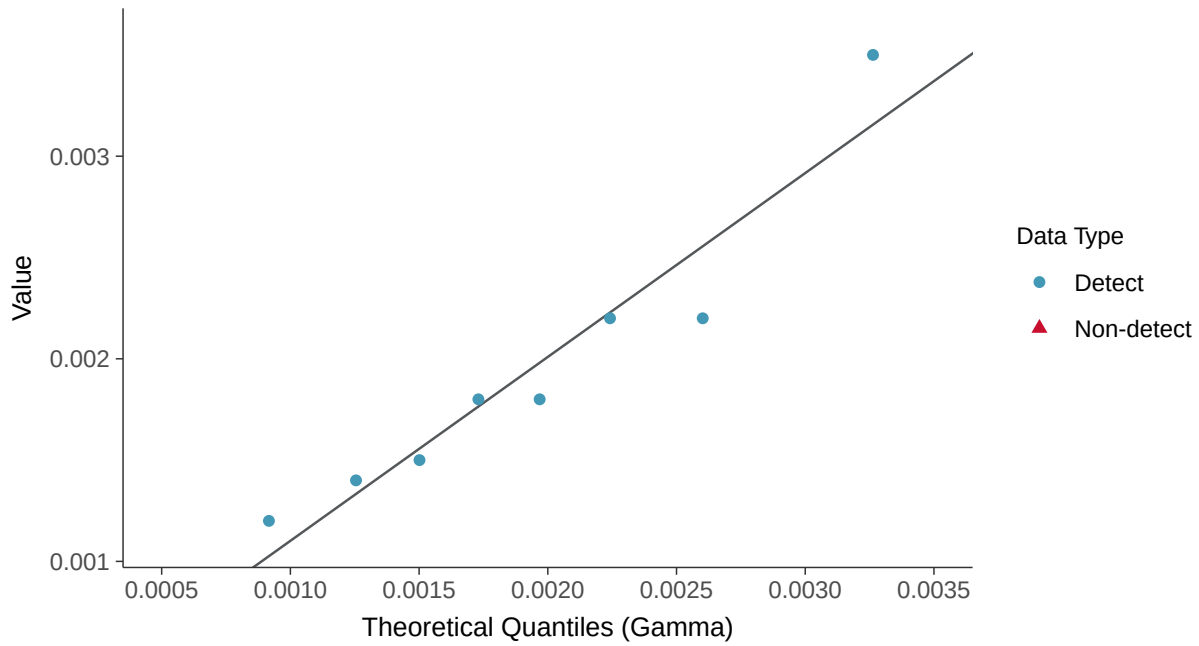
Lognormal Q-Q plot

Antimony, MW-9 (mg/l)



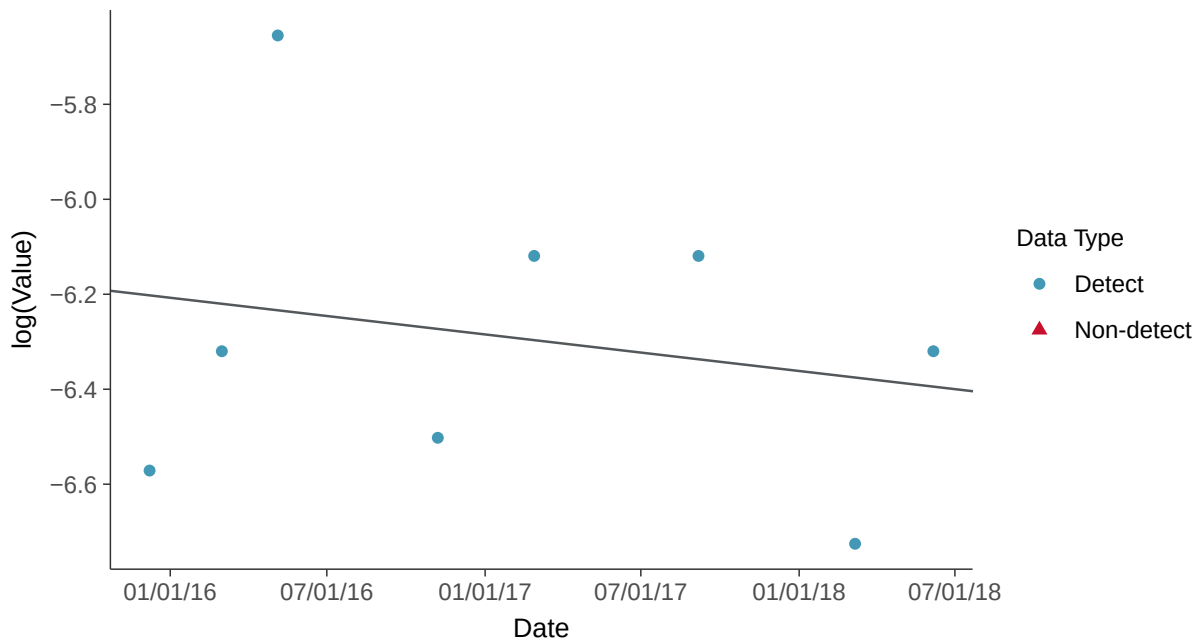
Gamma Q-Q plot

Antimony, MW-9 (mg/l)



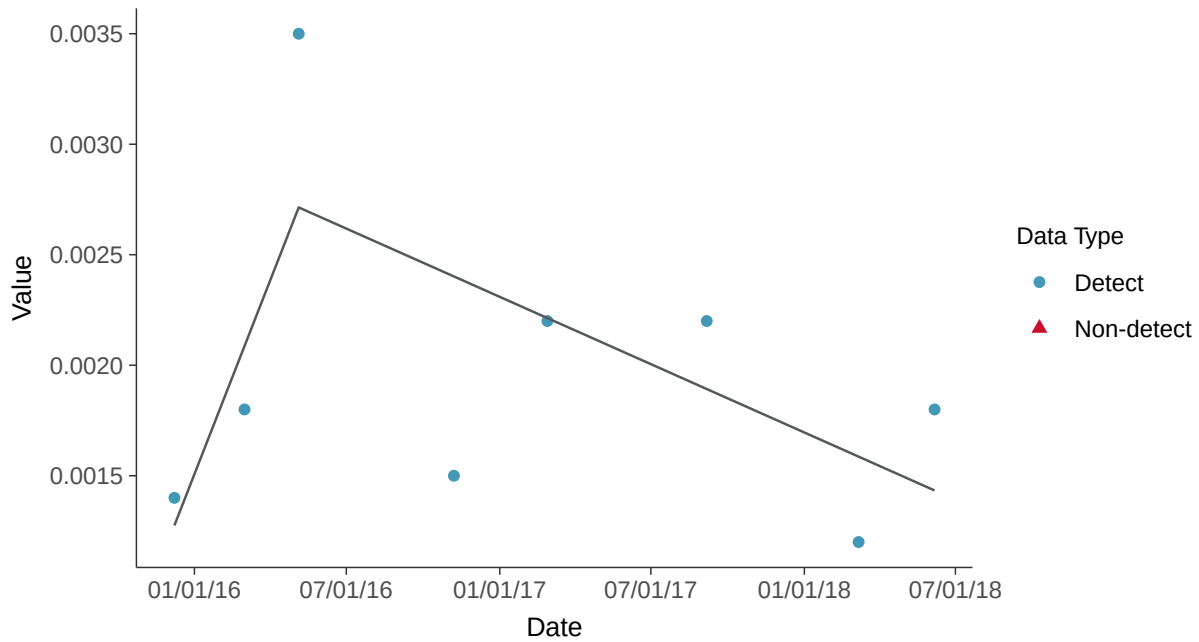
Trend Regression: Lognormal MLE

Antimony, MW-9 (mg/l)



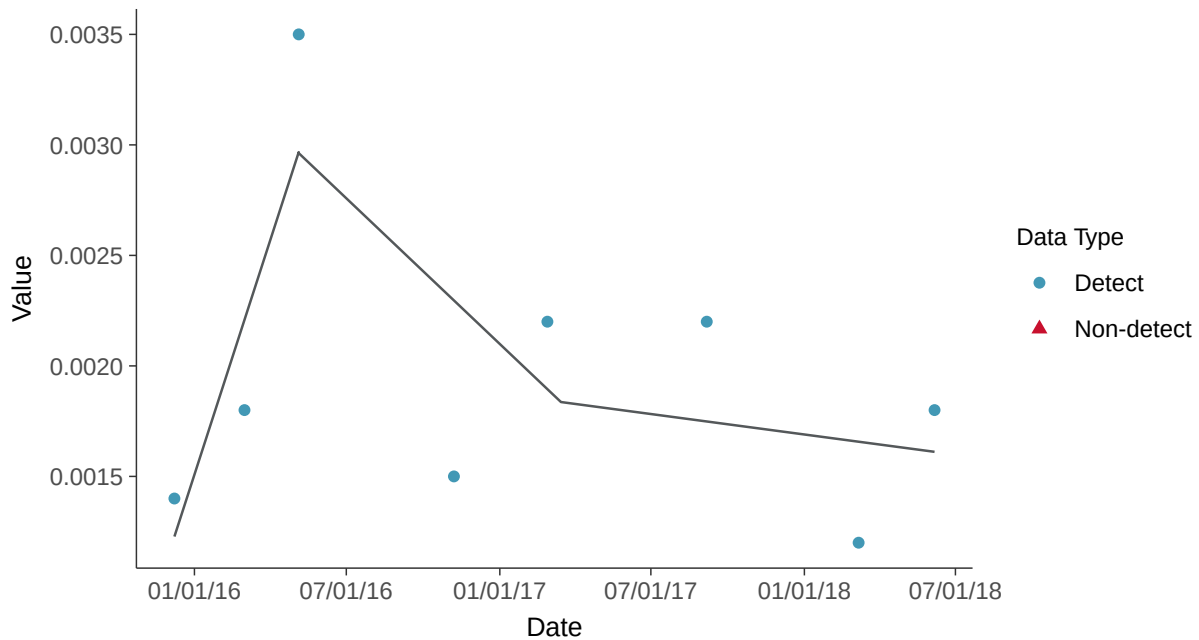
Trend Regression: Piecewise Linear-Linear

Antimony, MW-9 (mg/l)



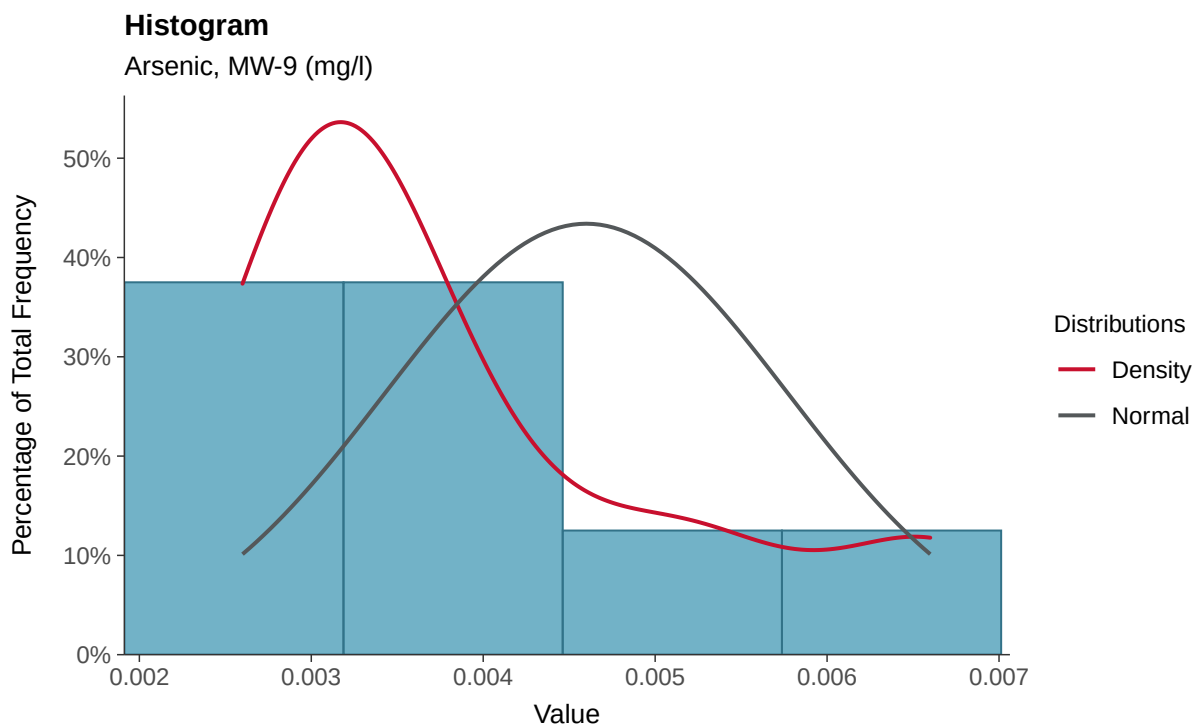
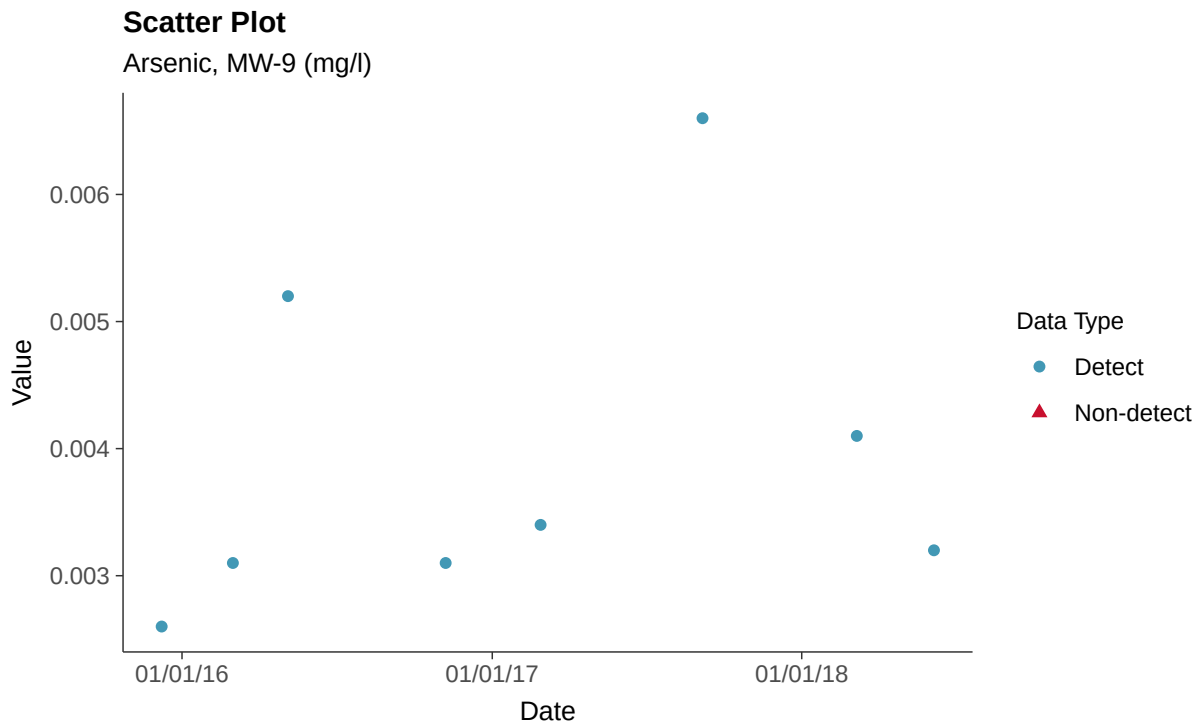
Trend Regression: Piecewise Linear-Linear-Linear

Antimony, MW-9 (mg/l)



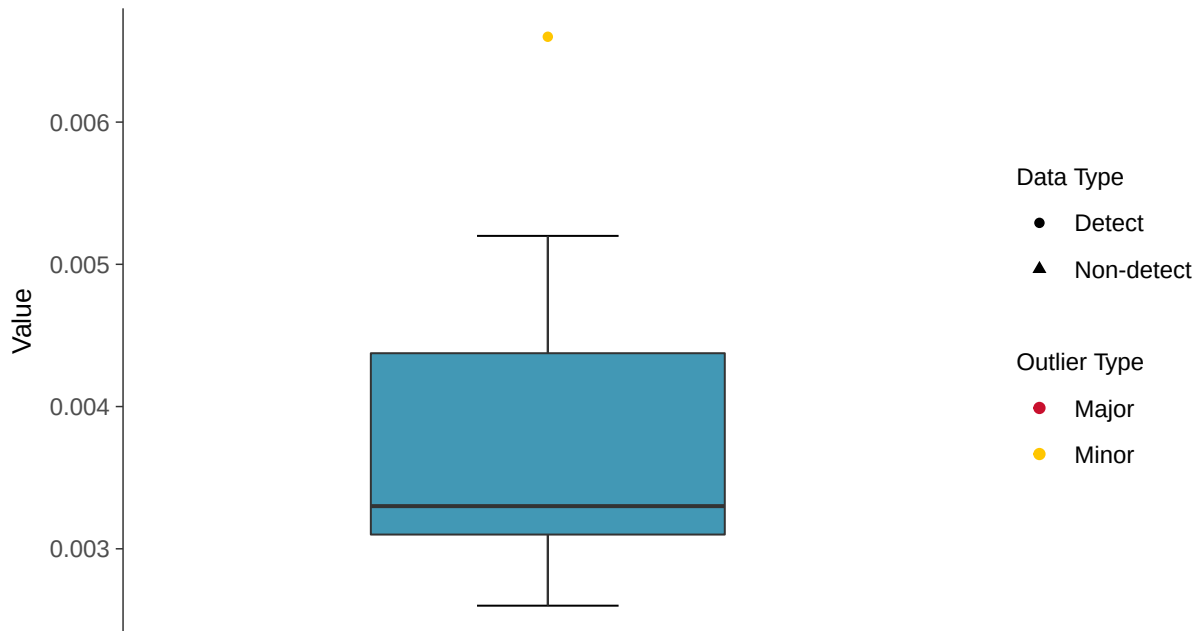
Appendix IV: Arsenic, MW-9

ID: 4_2_105



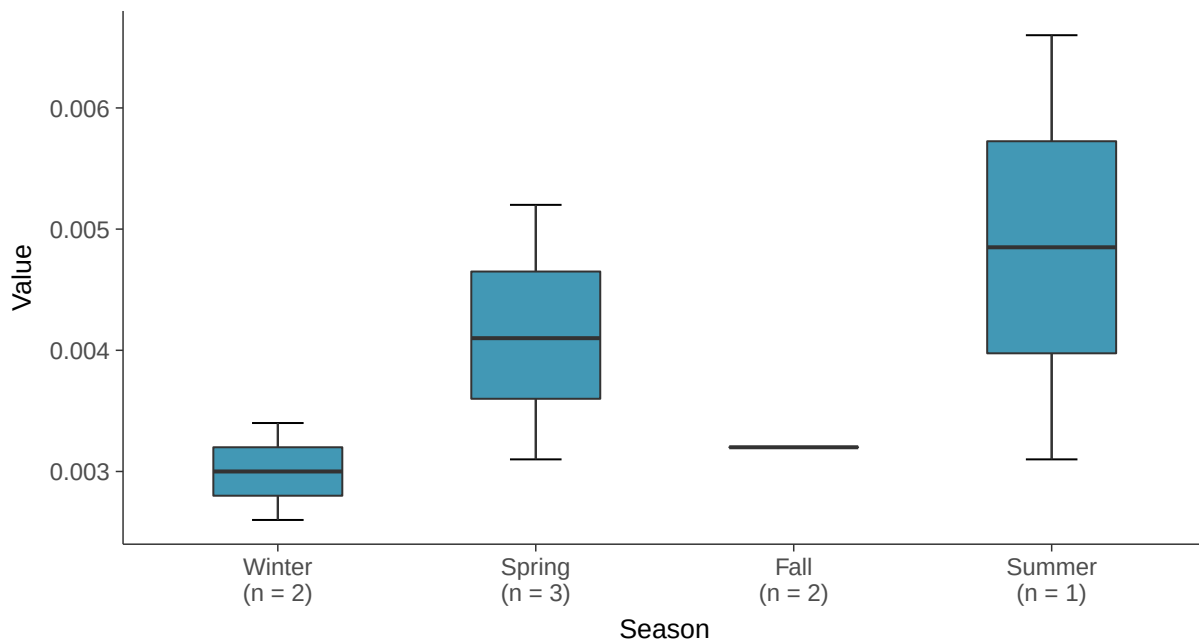
Boxplot

Arsenic, MW-9 (mg/l)



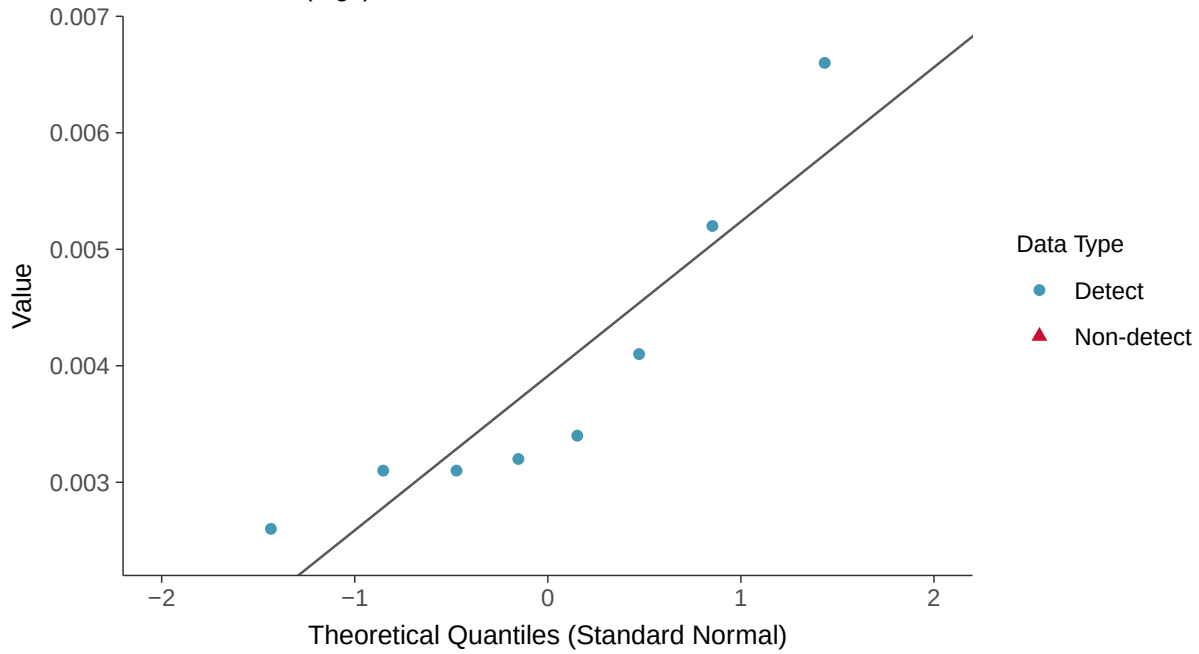
Boxplot by Season

Arsenic, MW-9 (mg/l)



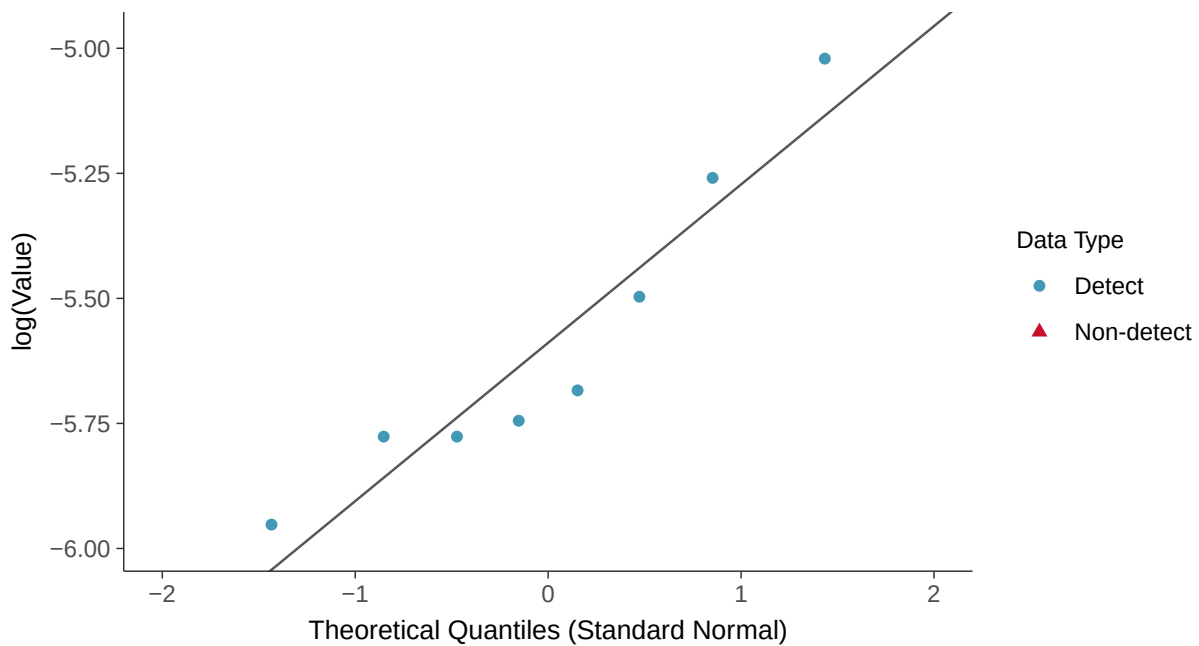
Normal Q-Q plot

Arsenic, MW-9 (mg/l)

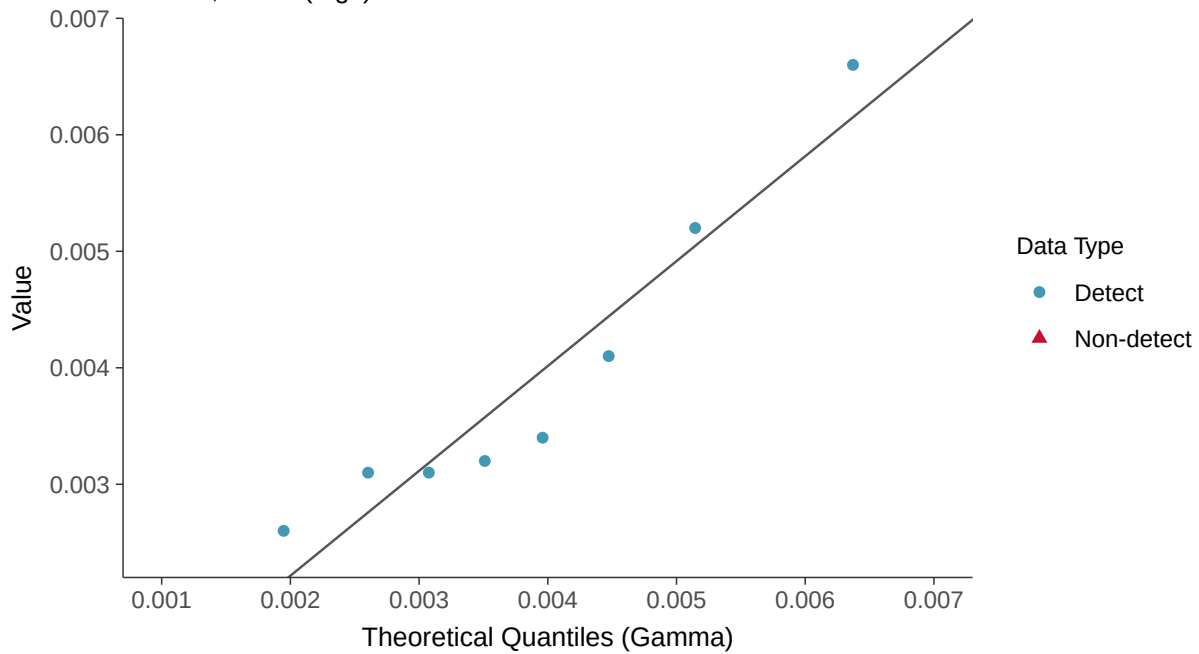


Lognormal Q-Q plot

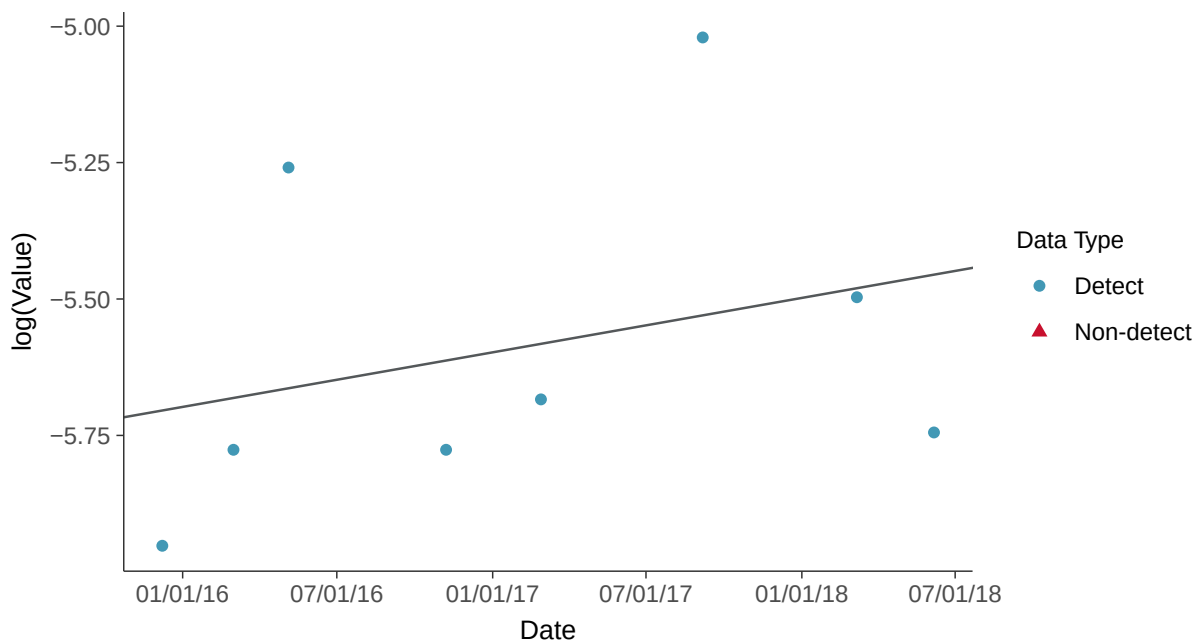
Arsenic, MW-9 (mg/l)



Gamma Q-Q plot
Arsenic, MW-9 (mg/l)



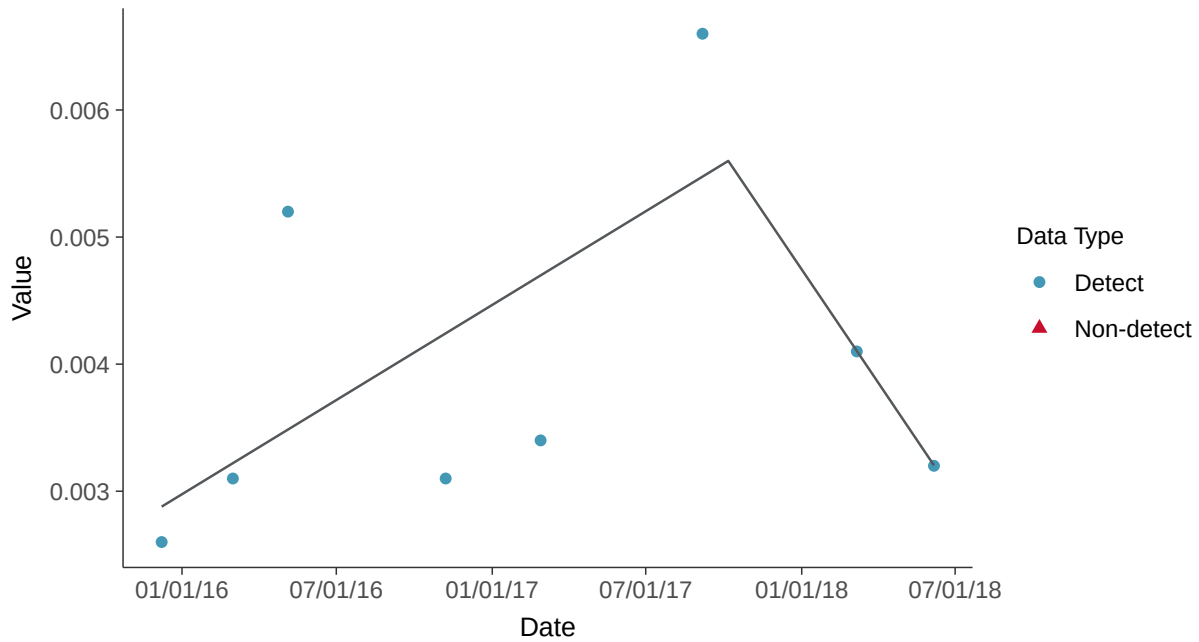
Trend Regression: Lognormal MLE
Arsenic, MW-9 (mg/l)





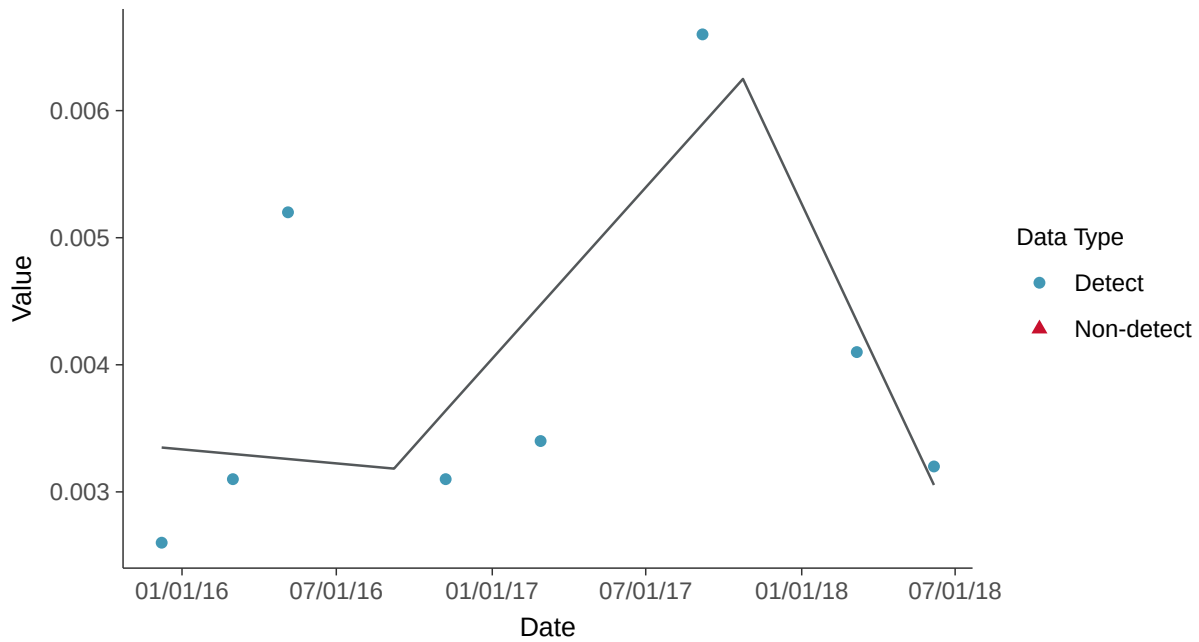
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-9 (mg/l)



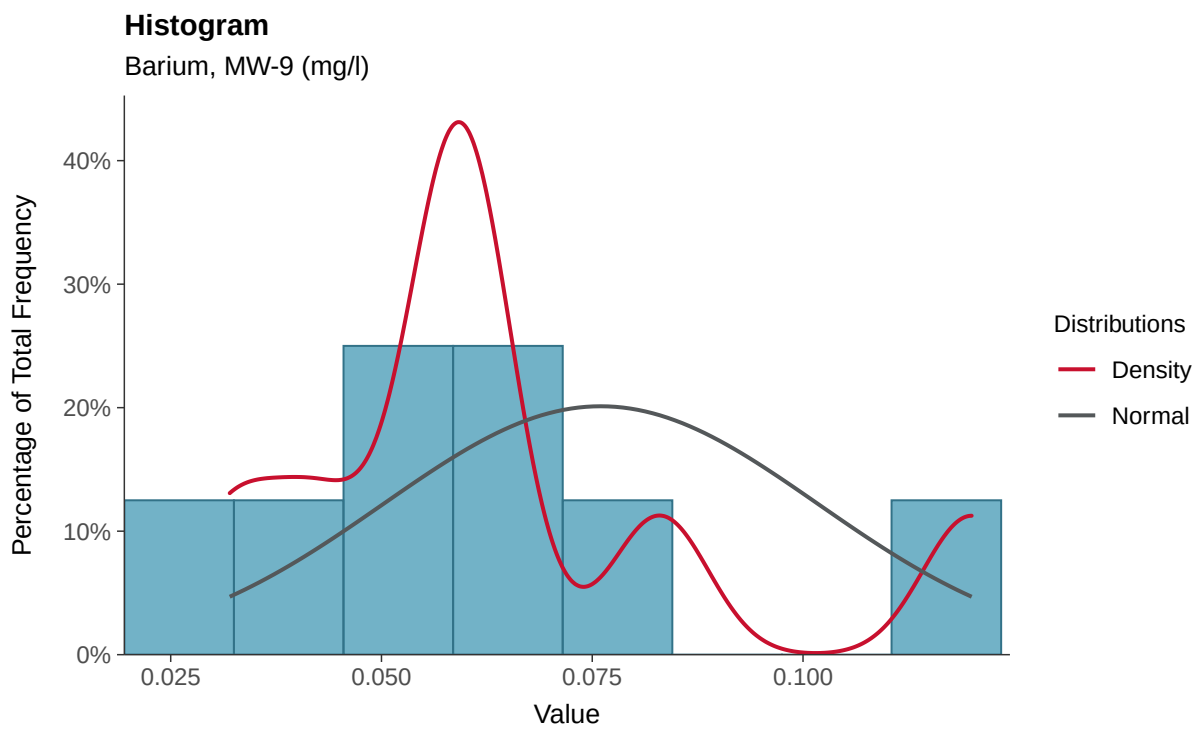
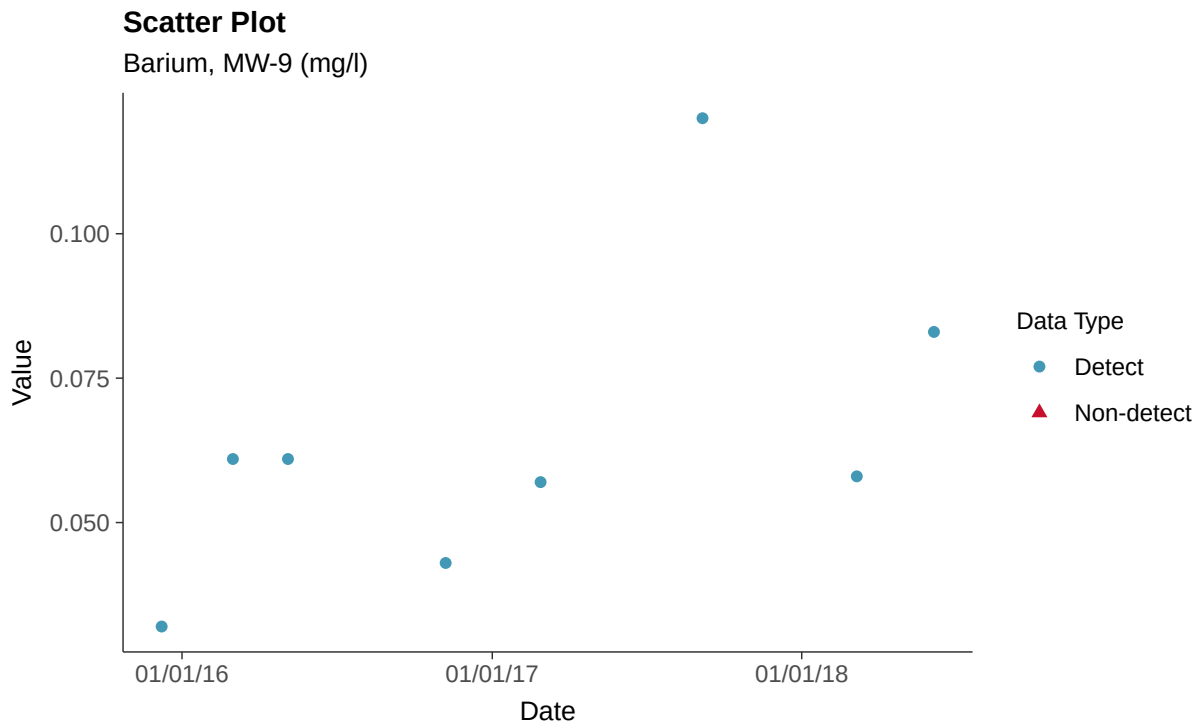
Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-9 (mg/l)



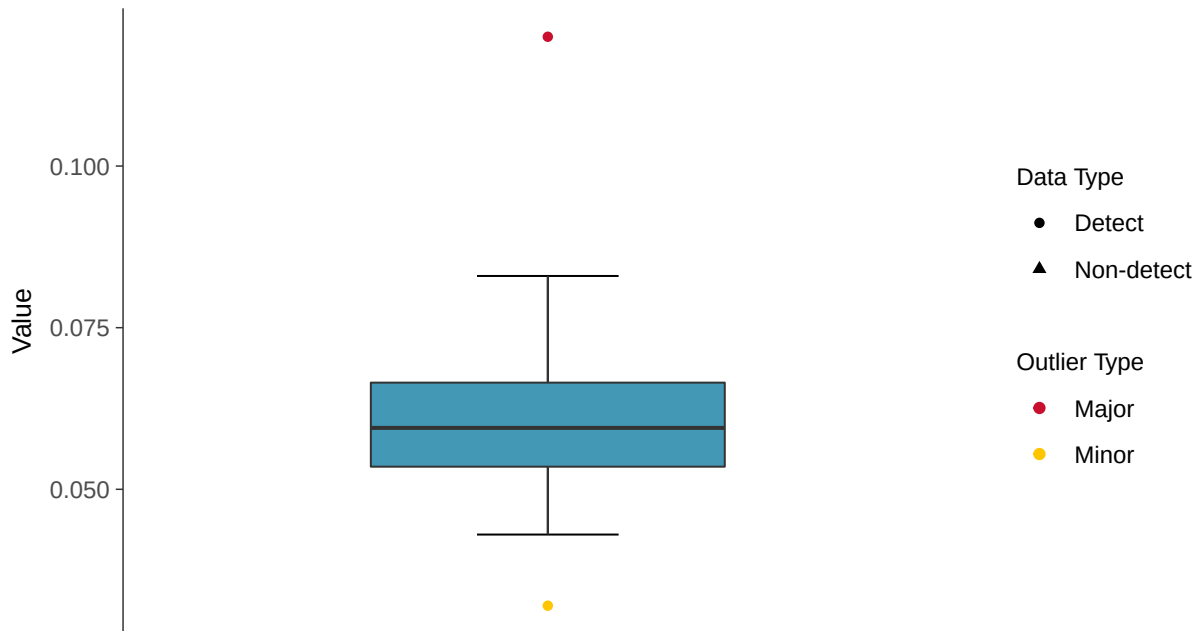
Appendix IV: Barium, MW-9

ID: 4_2_106



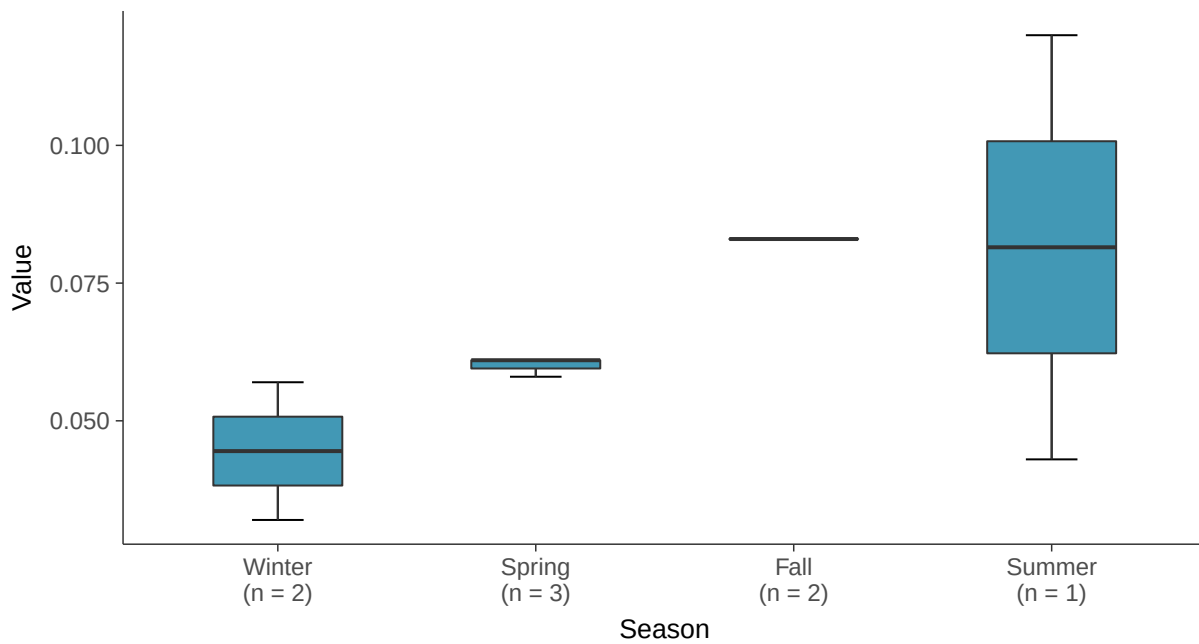
Boxplot

Barium, MW-9 (mg/l)



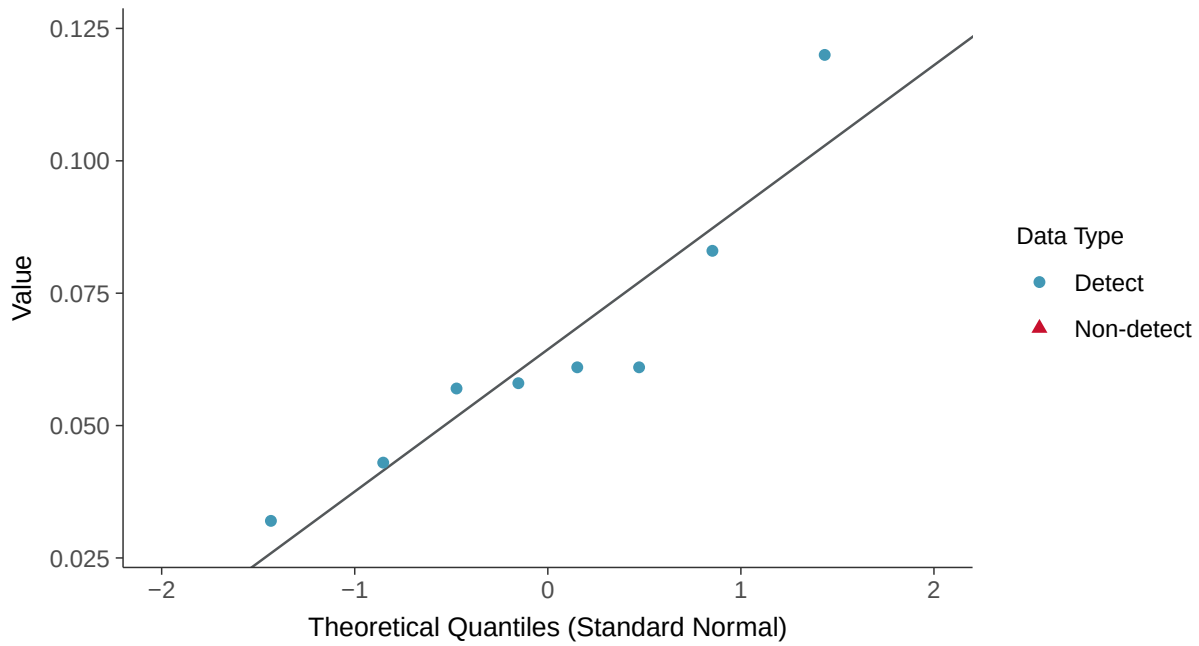
Boxplot by Season

Barium, MW-9 (mg/l)



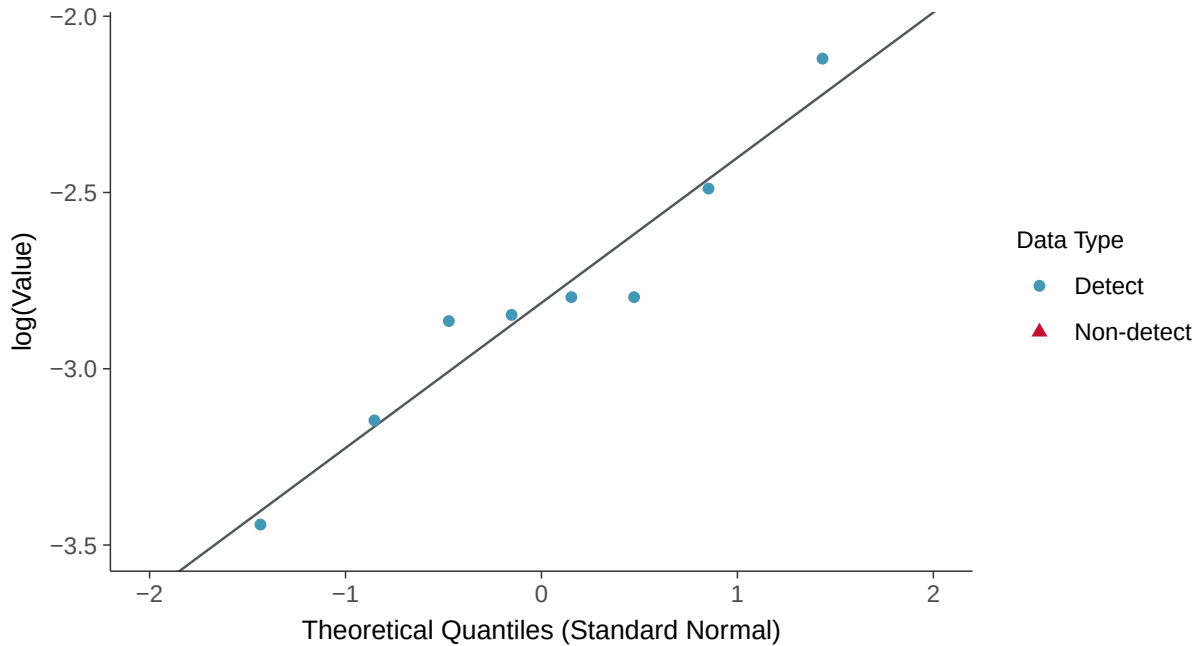
Normal Q-Q plot

Barium, MW-9 (mg/l)

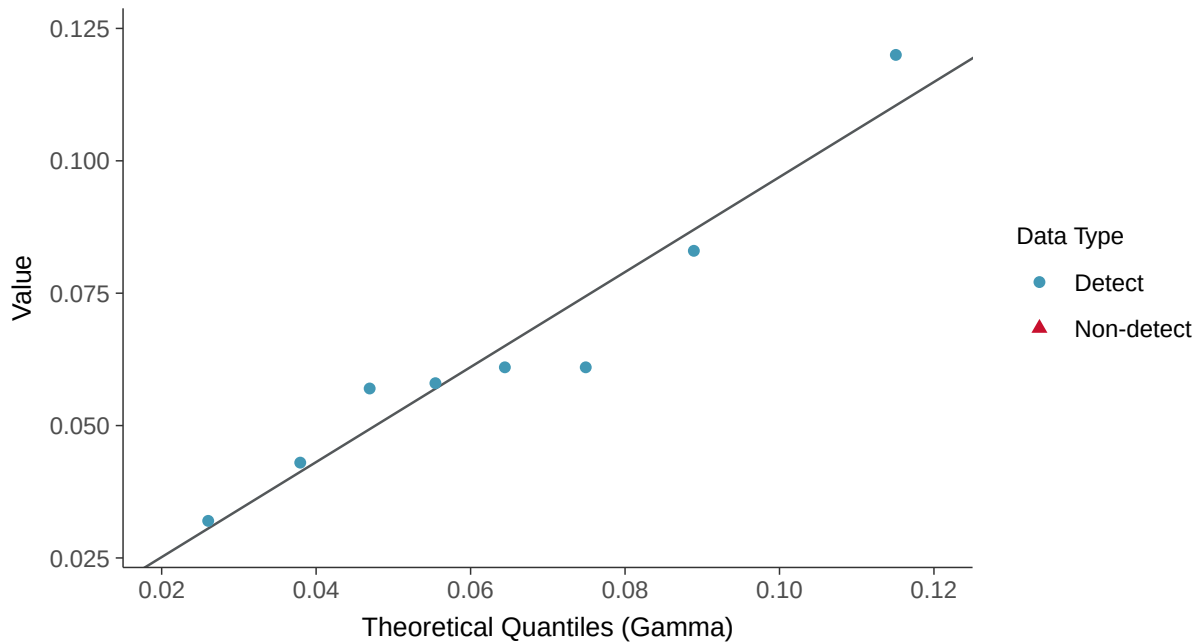


Lognormal Q-Q plot

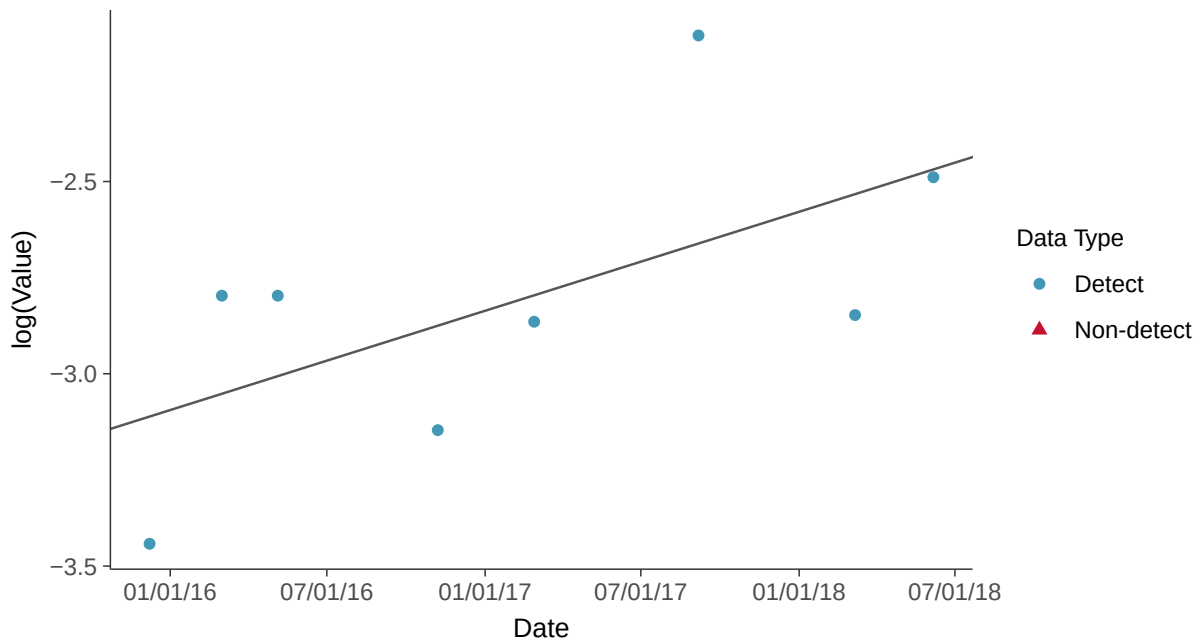
Barium, MW-9 (mg/l)



Gamma Q-Q plot
Barium, MW-9 (mg/l)



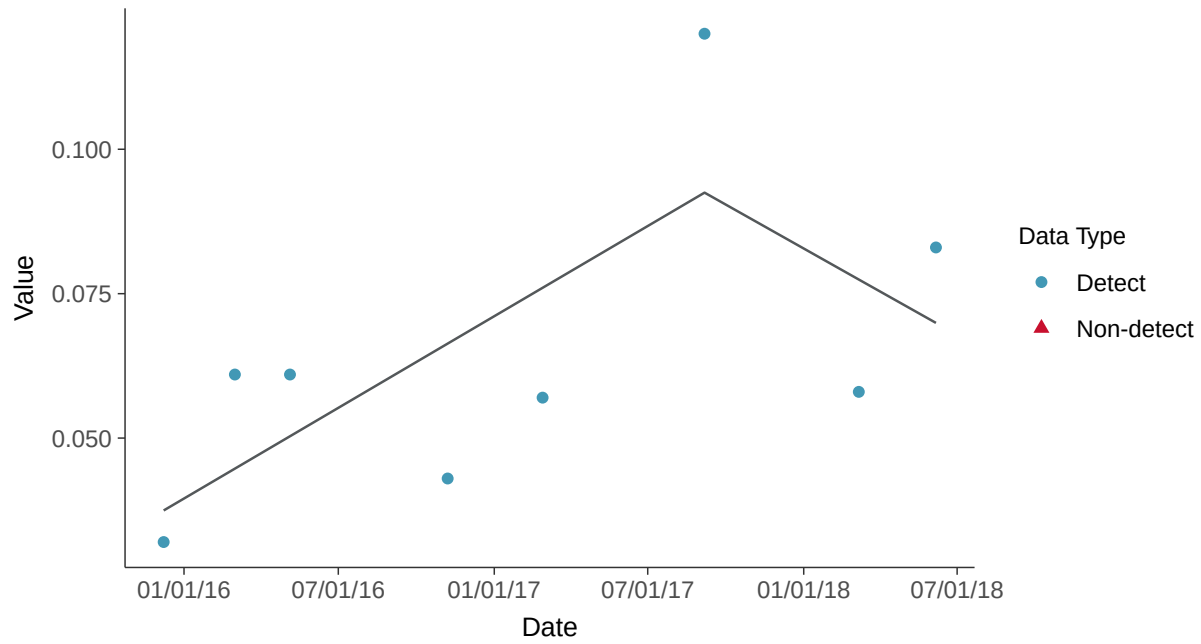
Trend Regression: Lognormal MLE
Barium, MW-9 (mg/l)





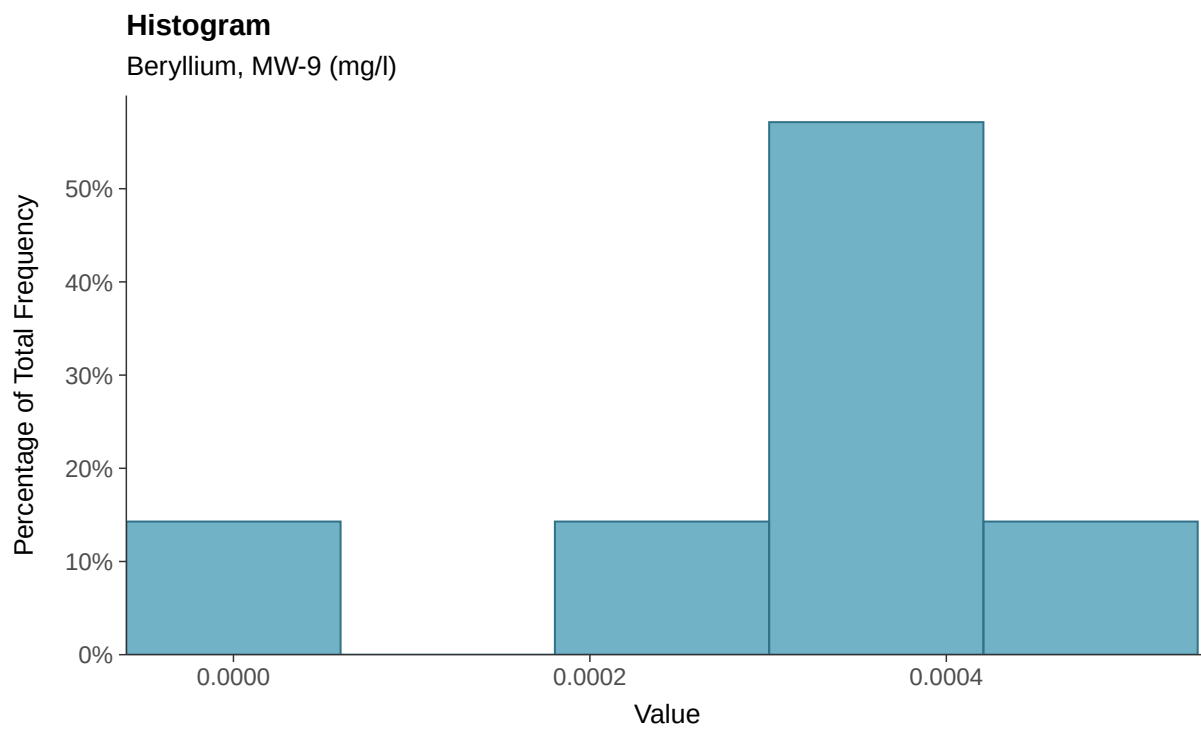
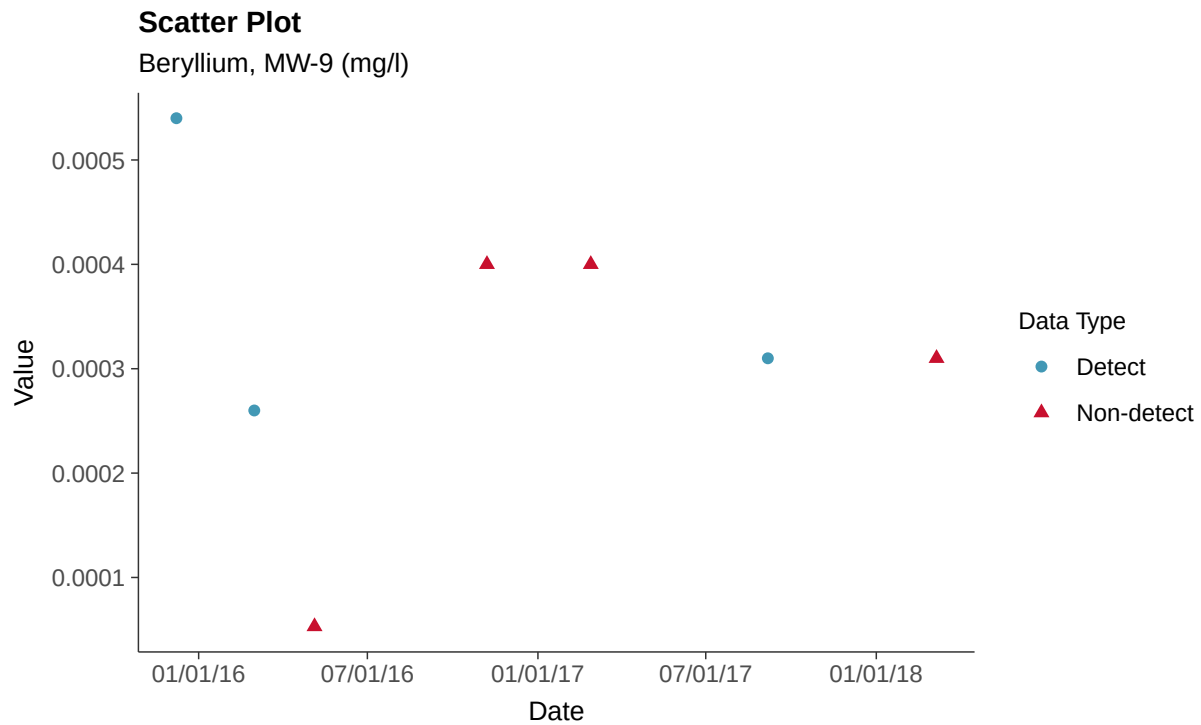
Trend Regression: Piecewise Linear-Linear

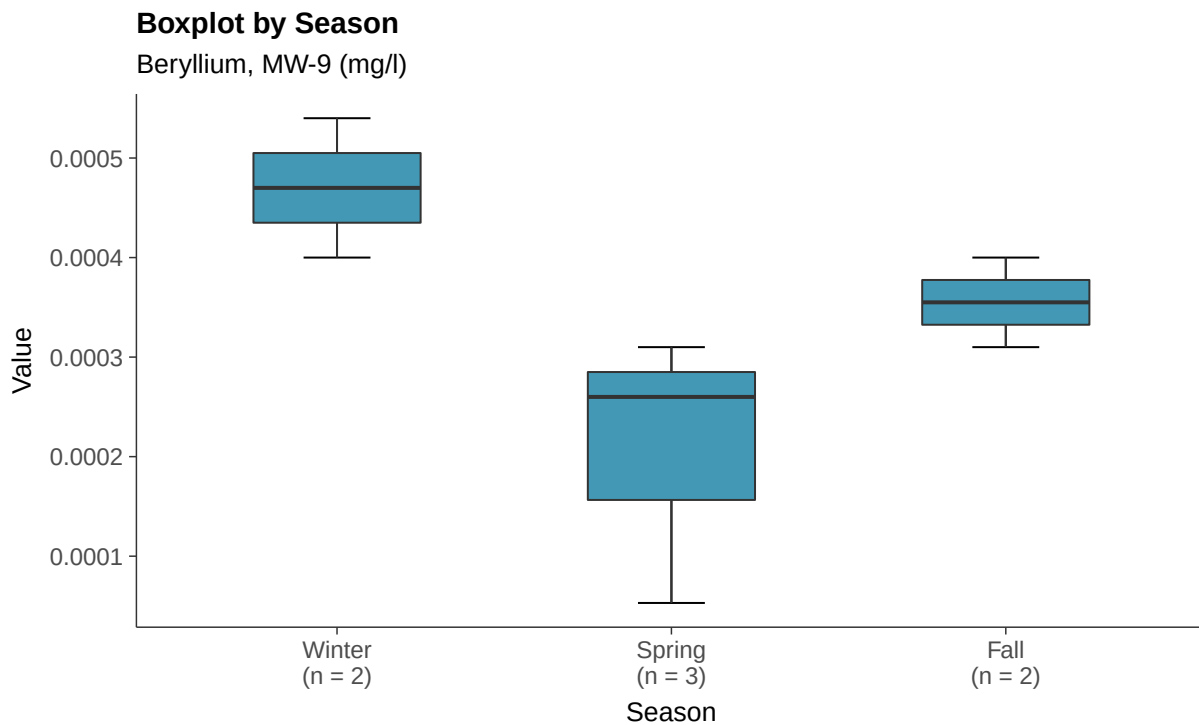
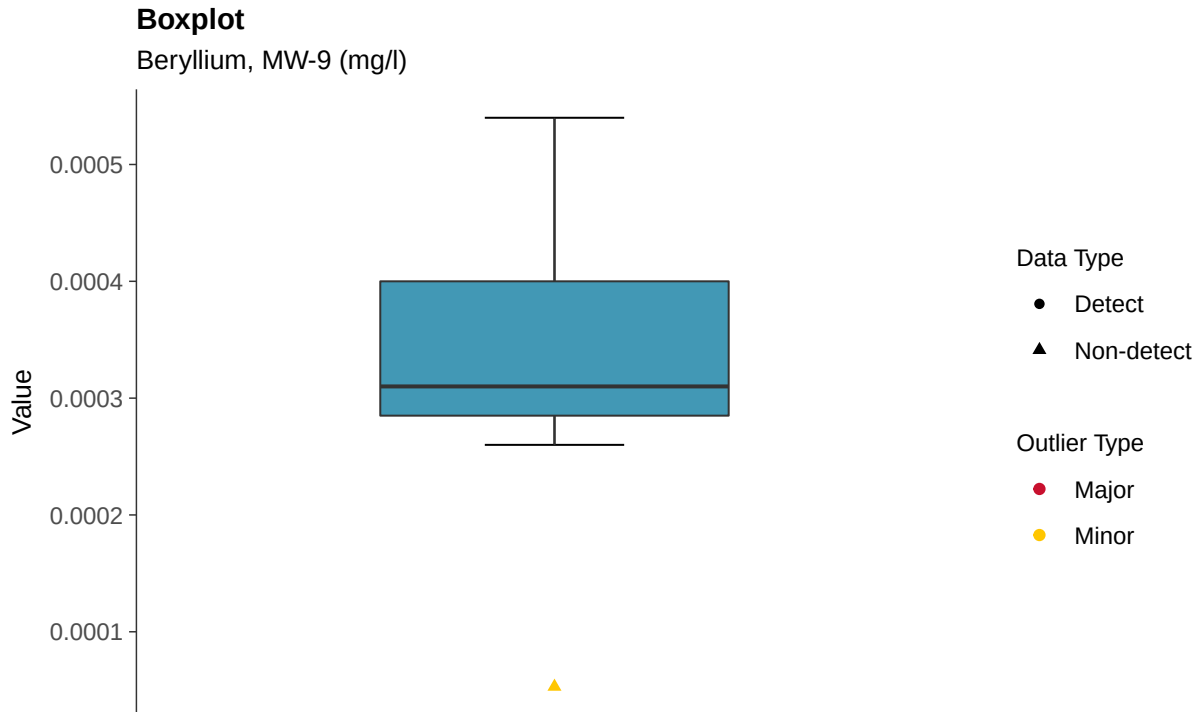
Barium, MW-9 (mg/l)



Appendix IV: Beryllium, MW-9

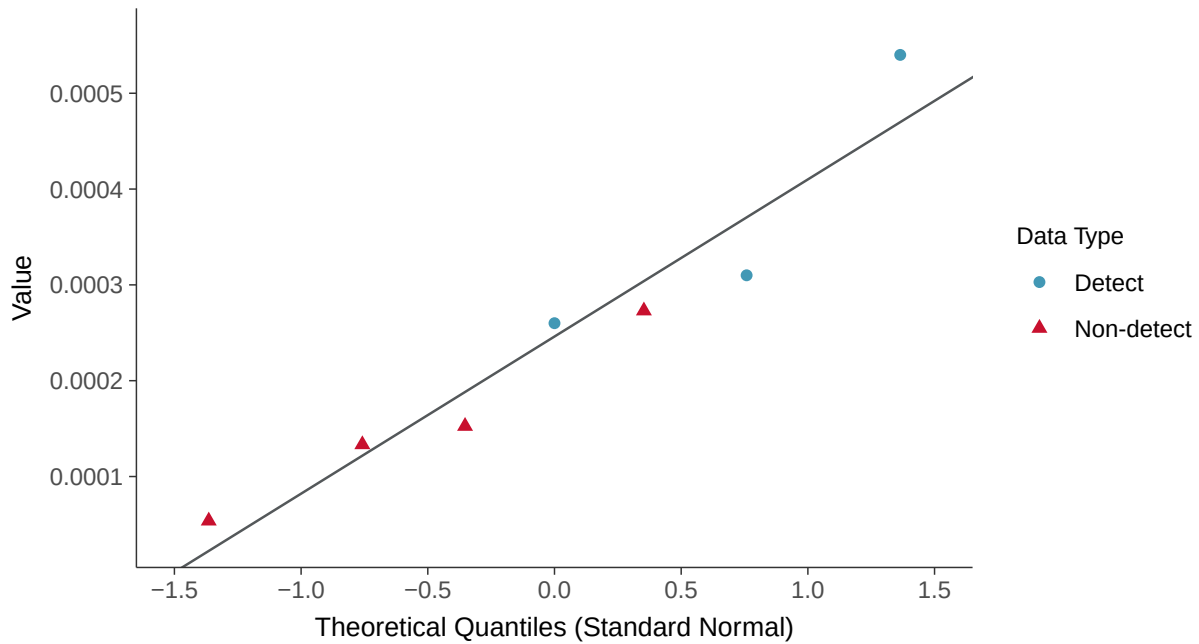
ID: 4_2_107





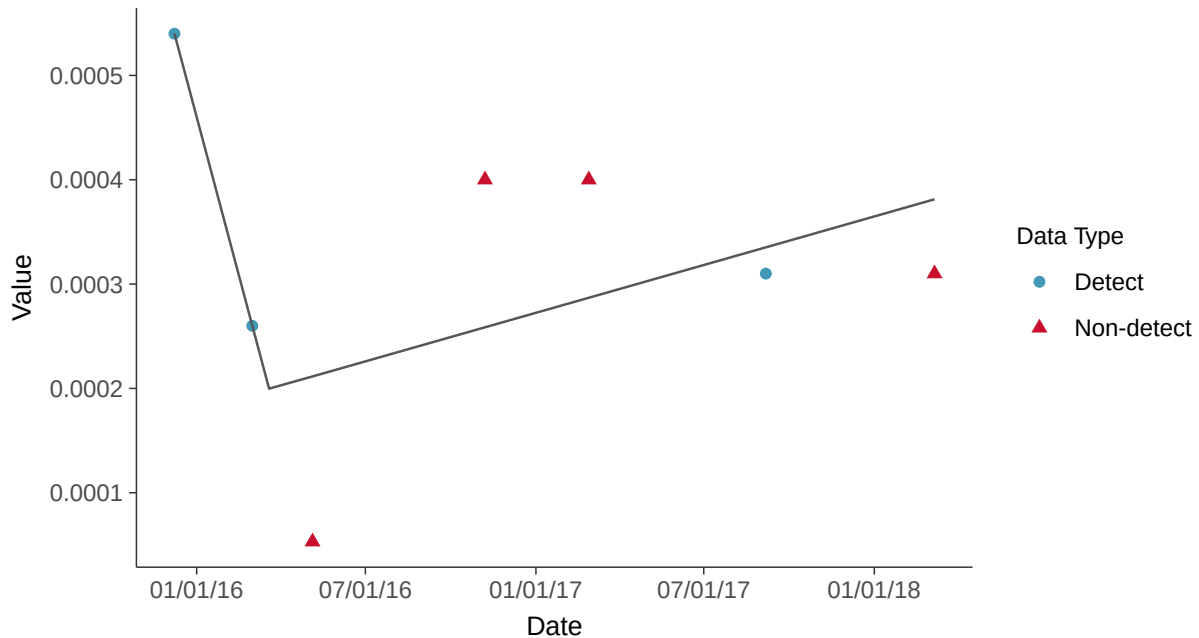
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear

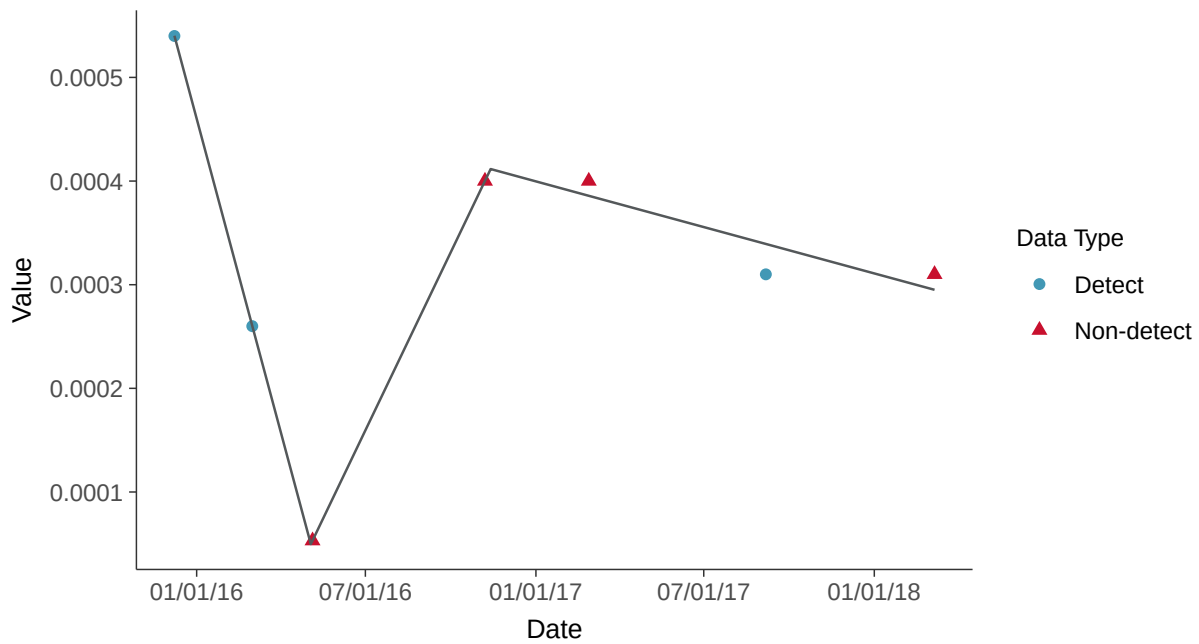
Beryllium, MW-9 (mg/l)





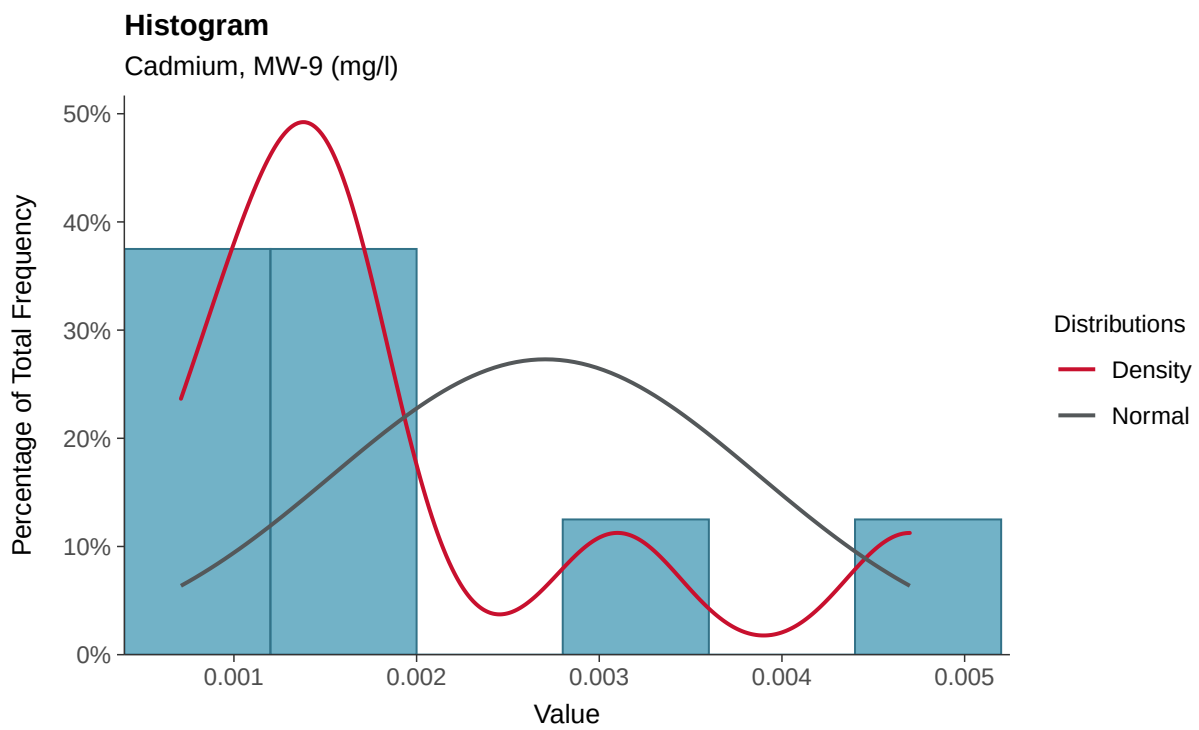
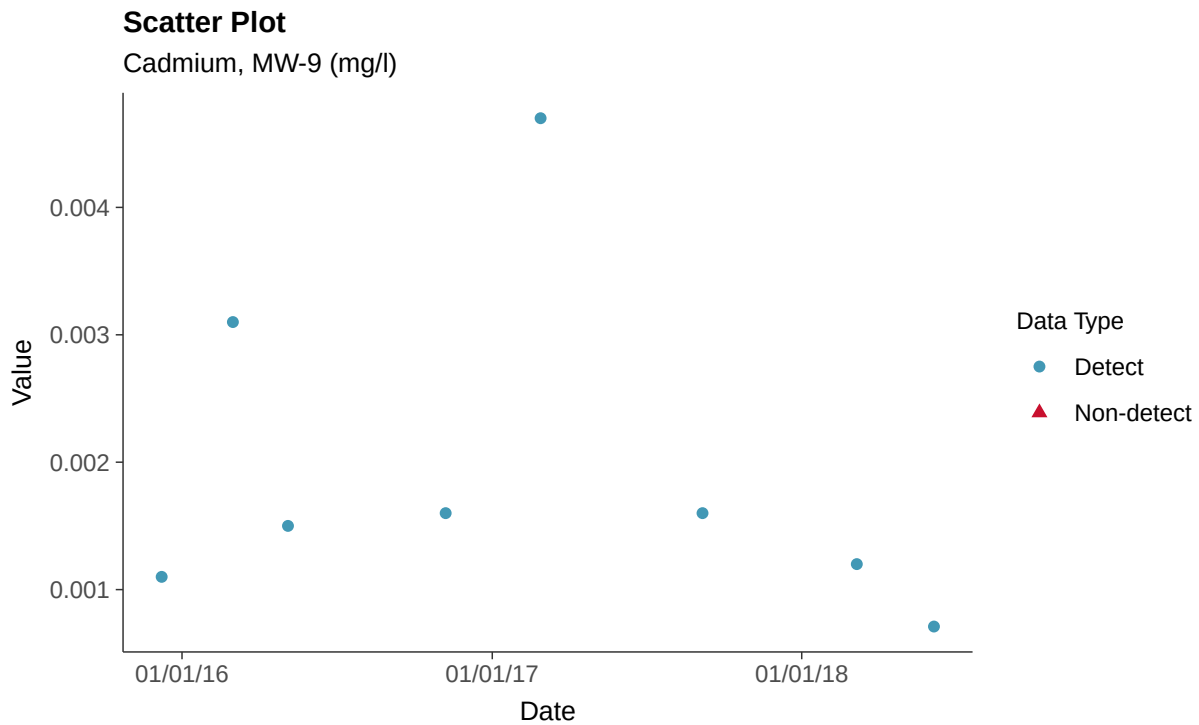
Trend Regression: Piecewise Linear-Linear-Linear

Beryllium, MW-9 (mg/l)



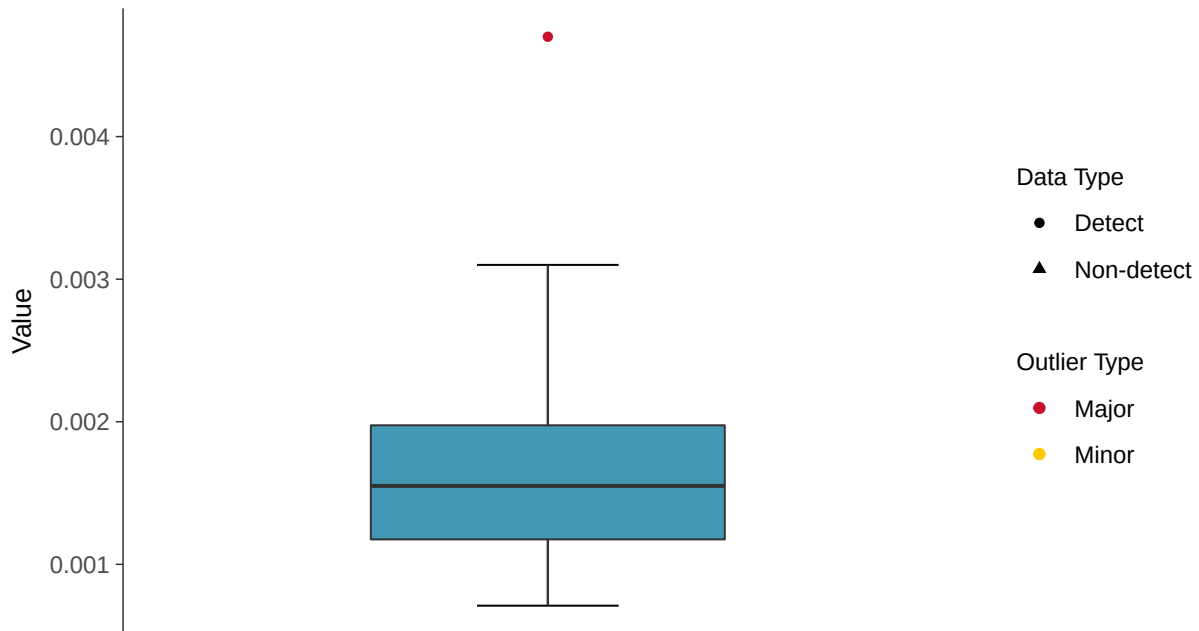
Appendix IV: Cadmium, MW-9

ID: 4_2_109



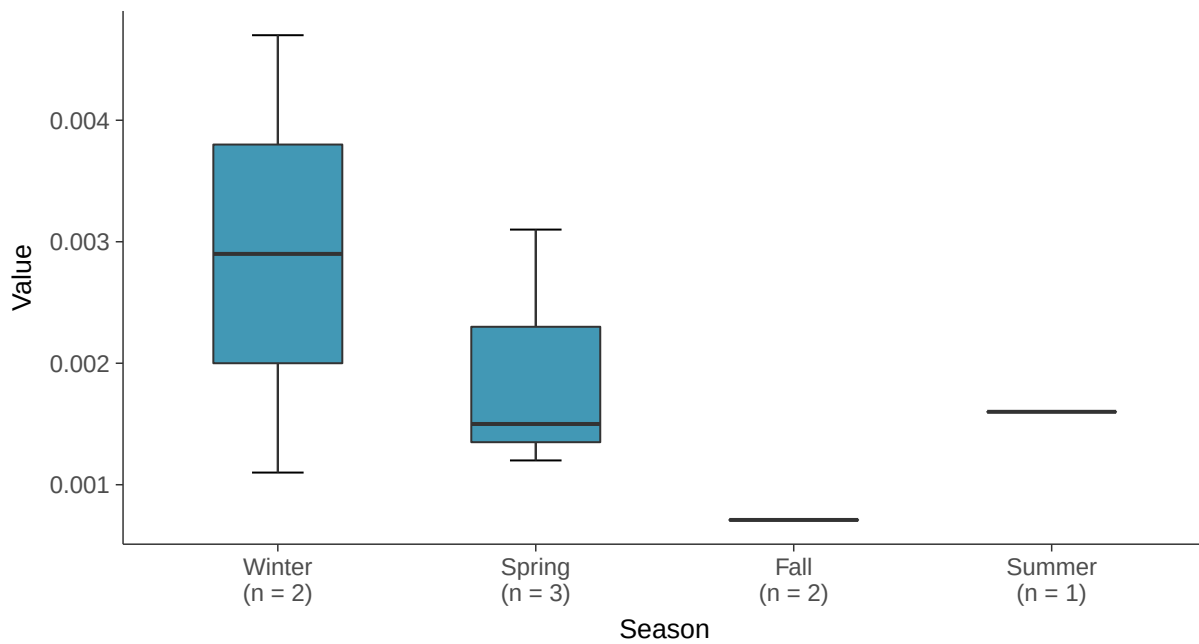
Boxplot

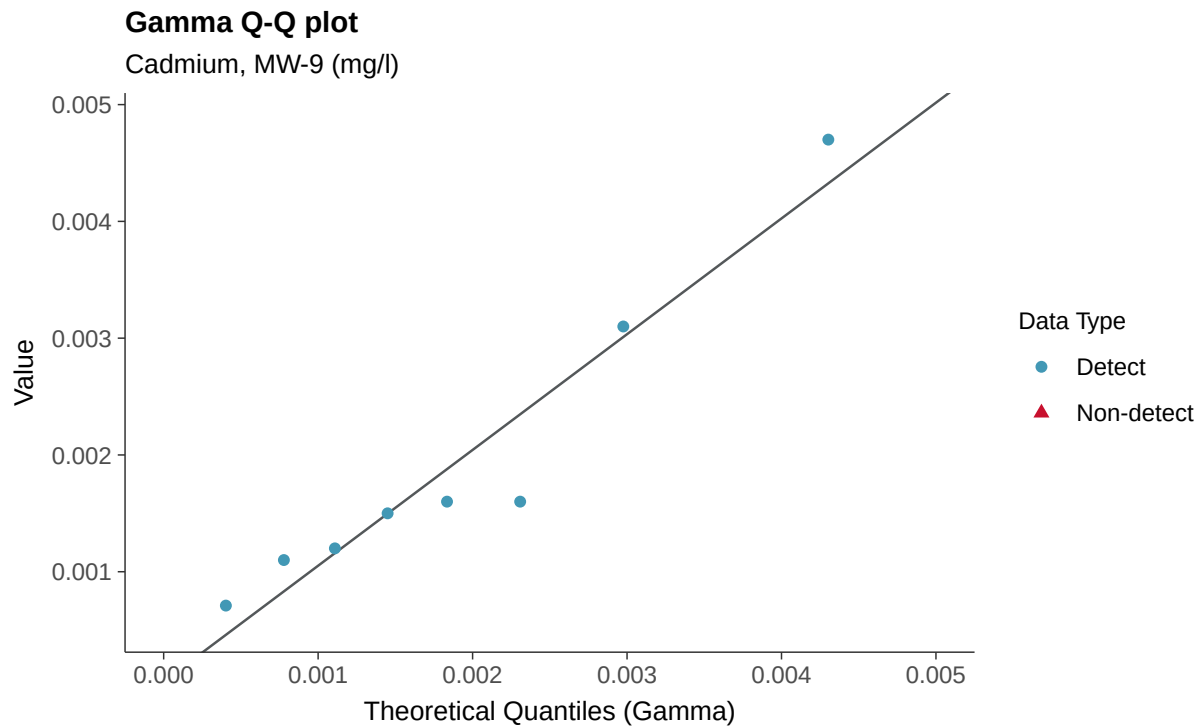
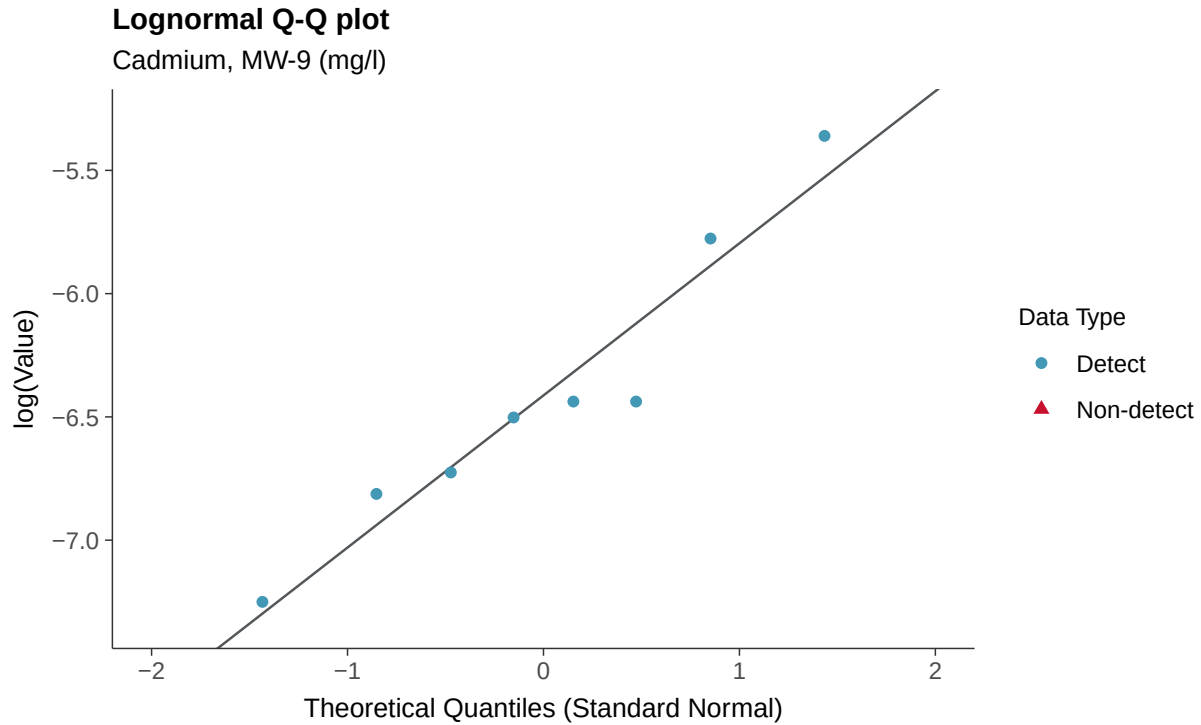
Cadmium, MW-9 (mg/l)



Boxplot by Season

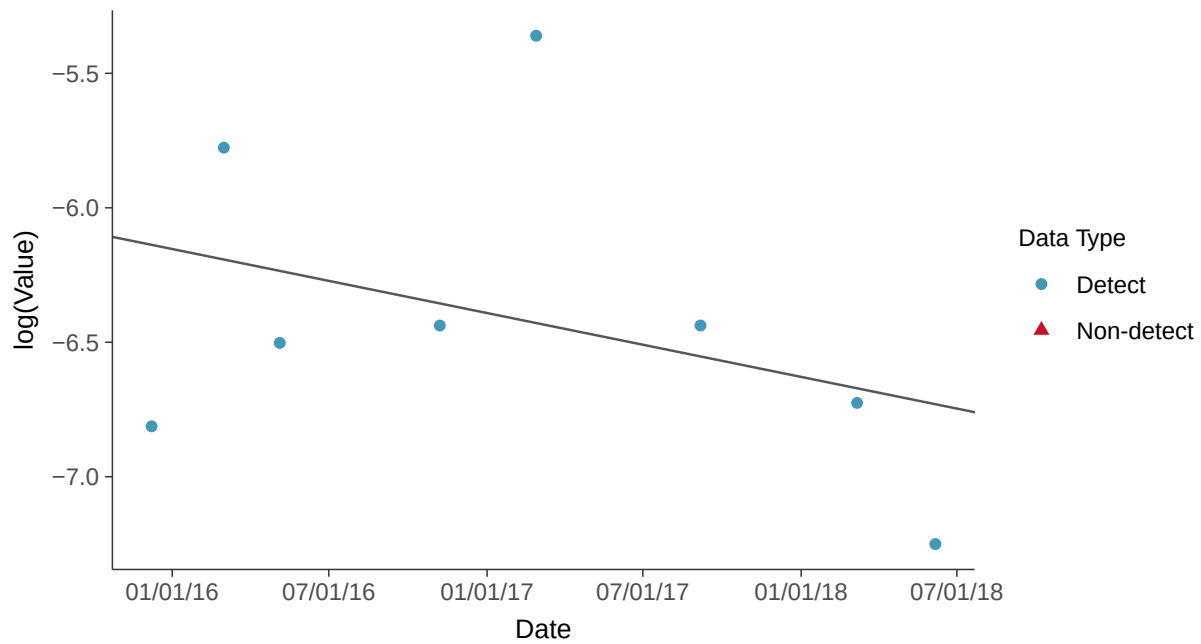
Cadmium, MW-9 (mg/l)





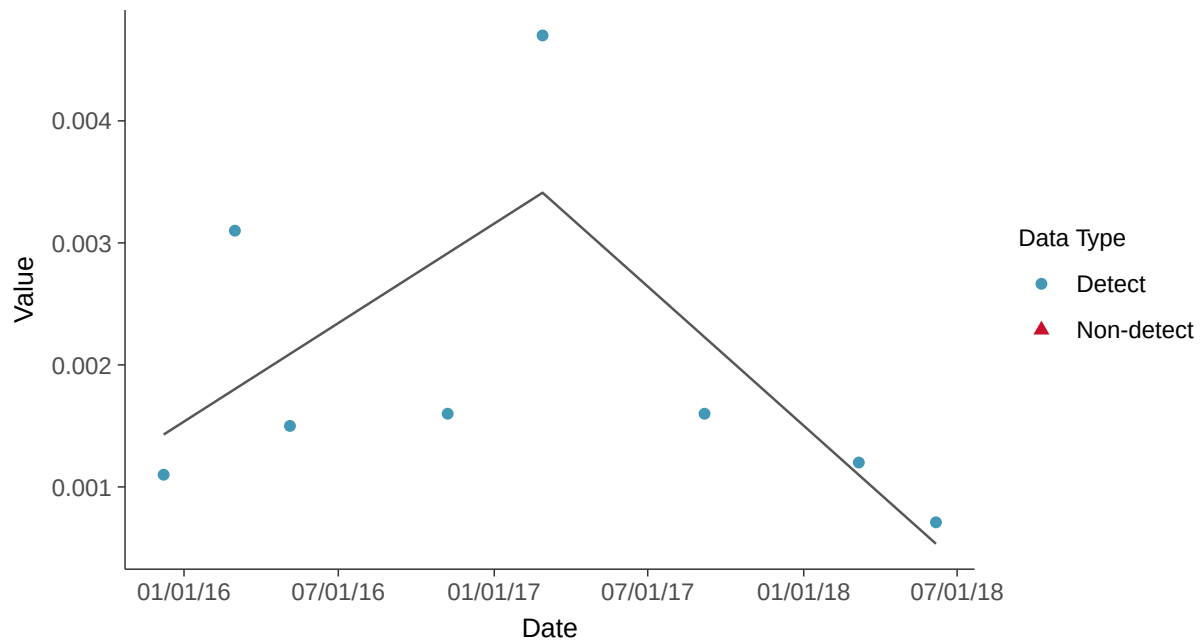
Trend Regression: Lognormal MLE

Cadmium, MW-9 (mg/l)



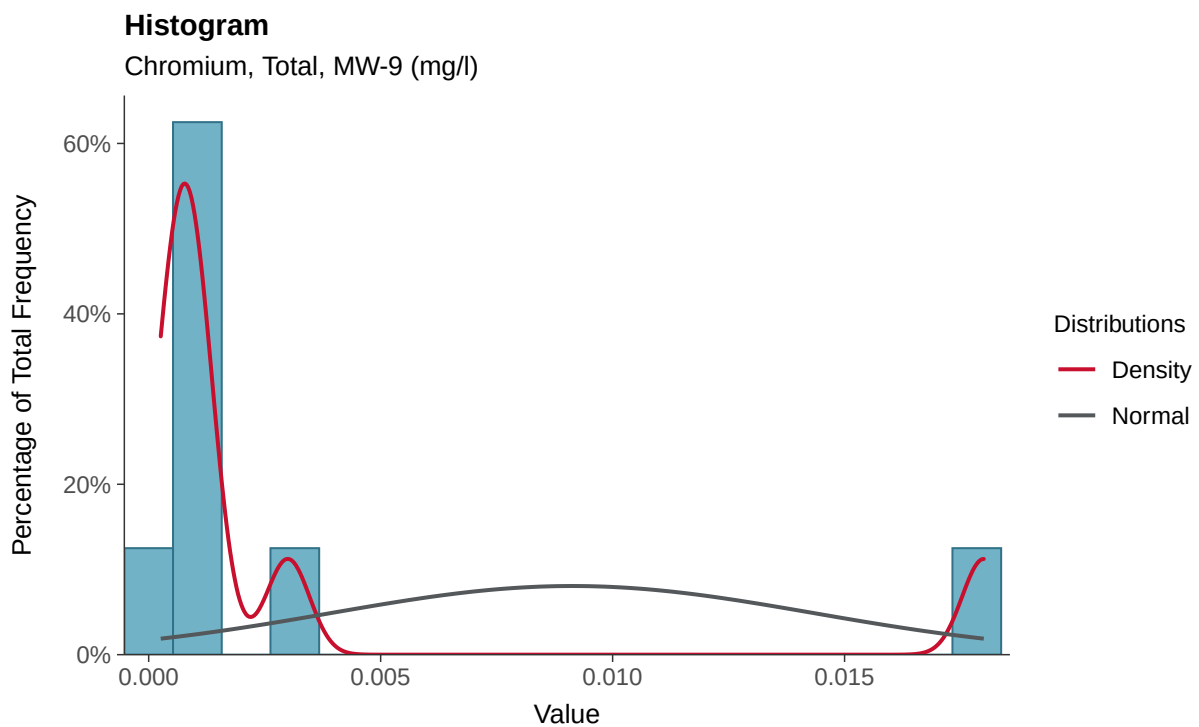
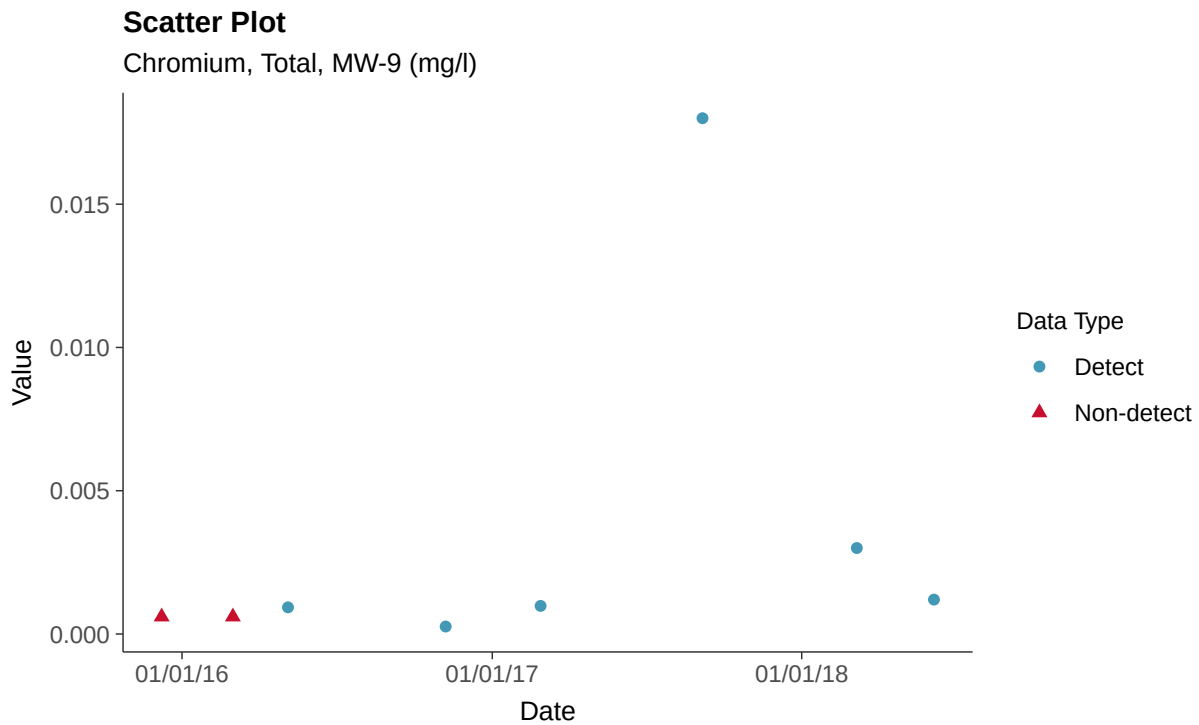
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-9 (mg/l)



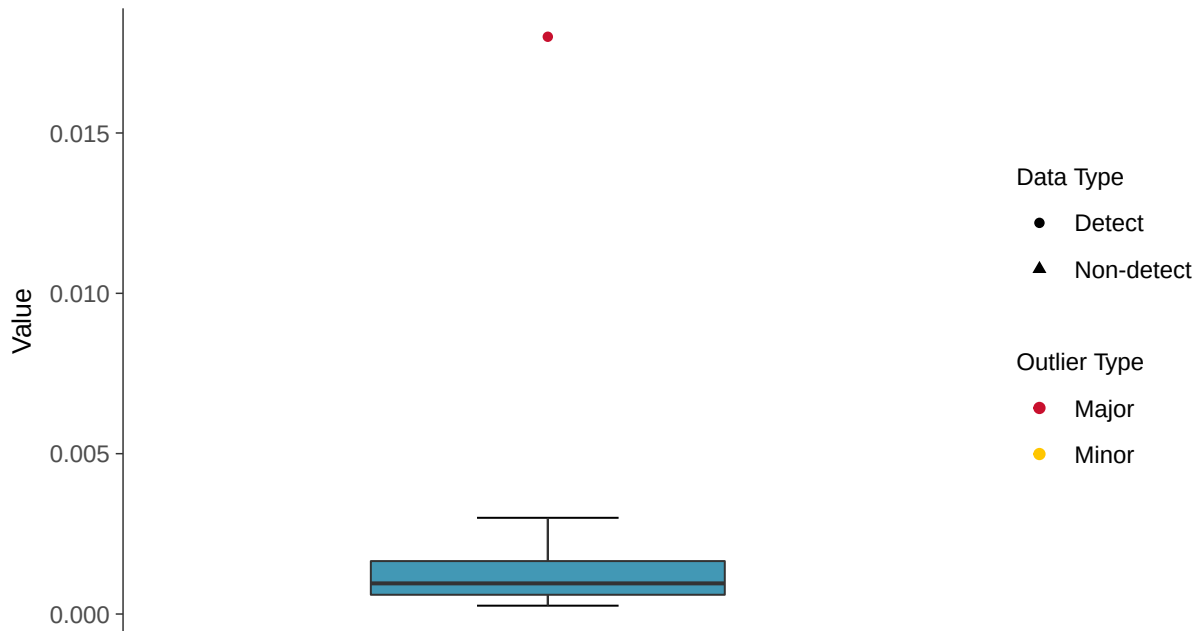
Appendix IV: Chromium, Total, MW-9

ID: 4_2_112



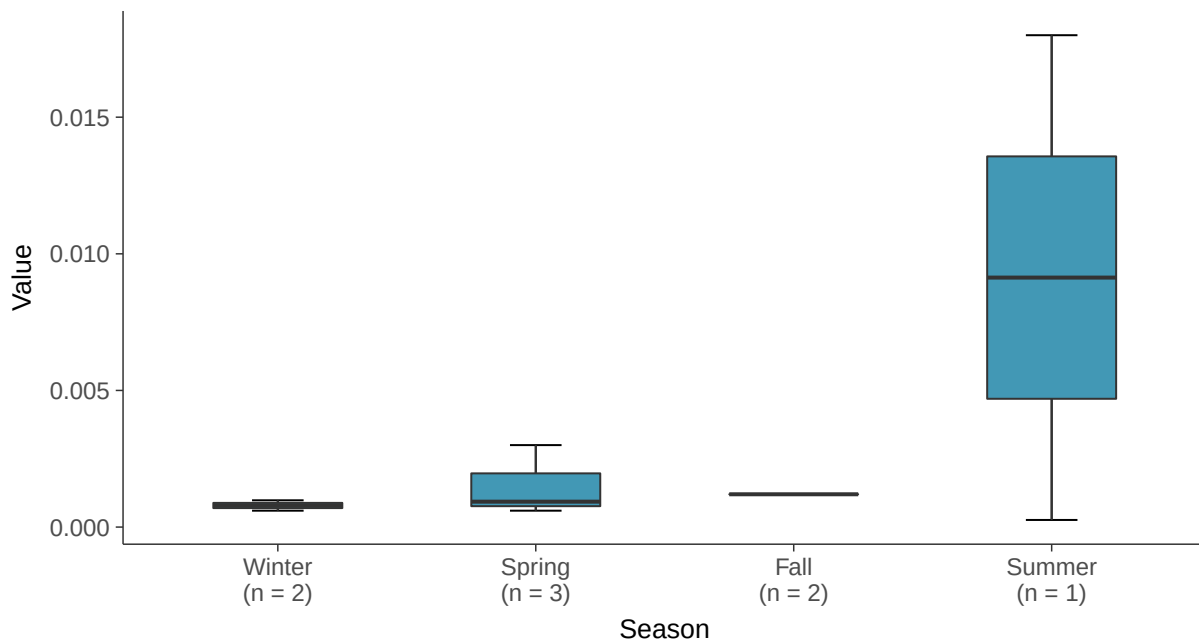
Boxplot

Chromium, Total, MW-9 (mg/l)



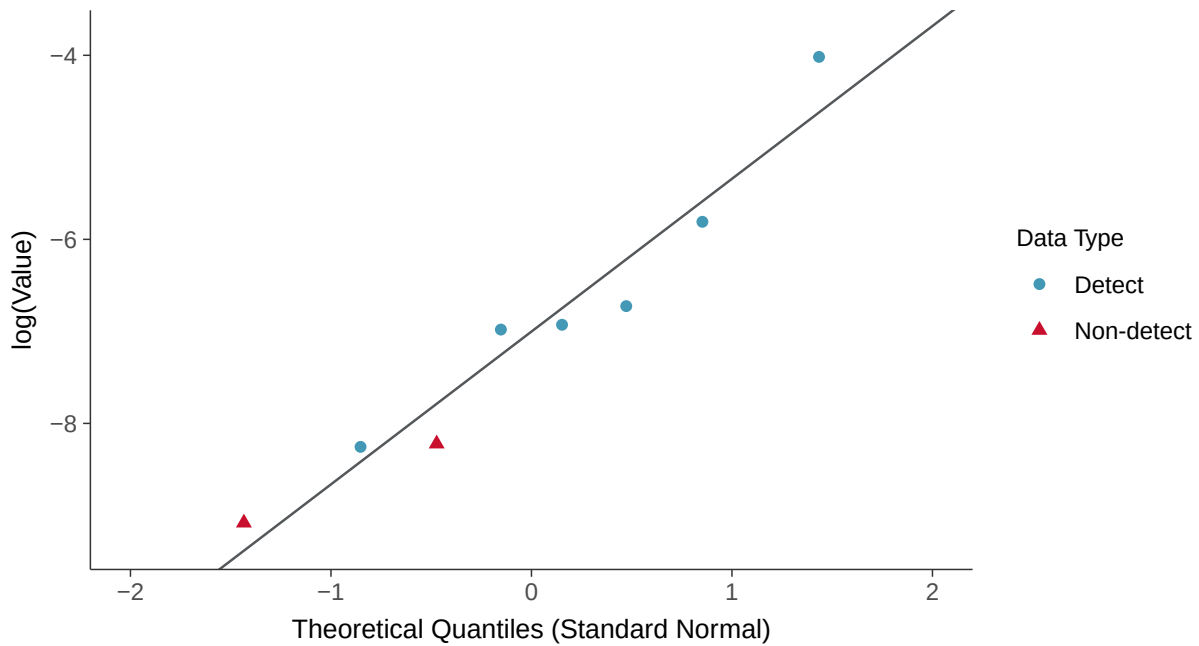
Boxplot by Season

Chromium, Total, MW-9 (mg/l)



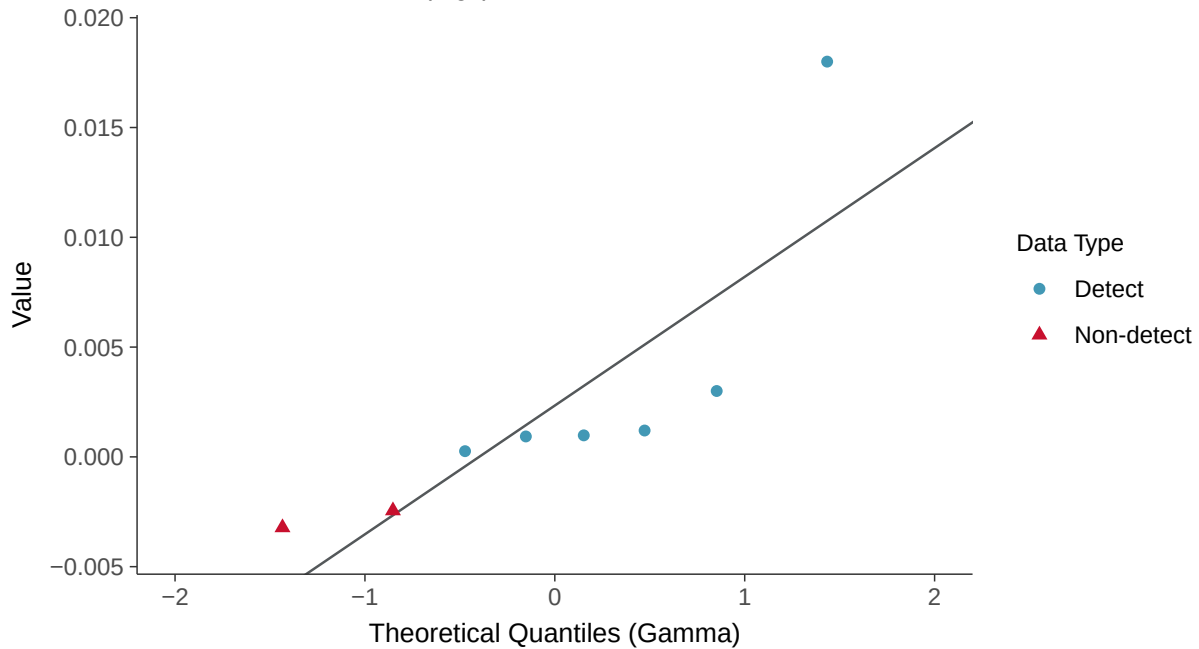
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-9 (mg/l)



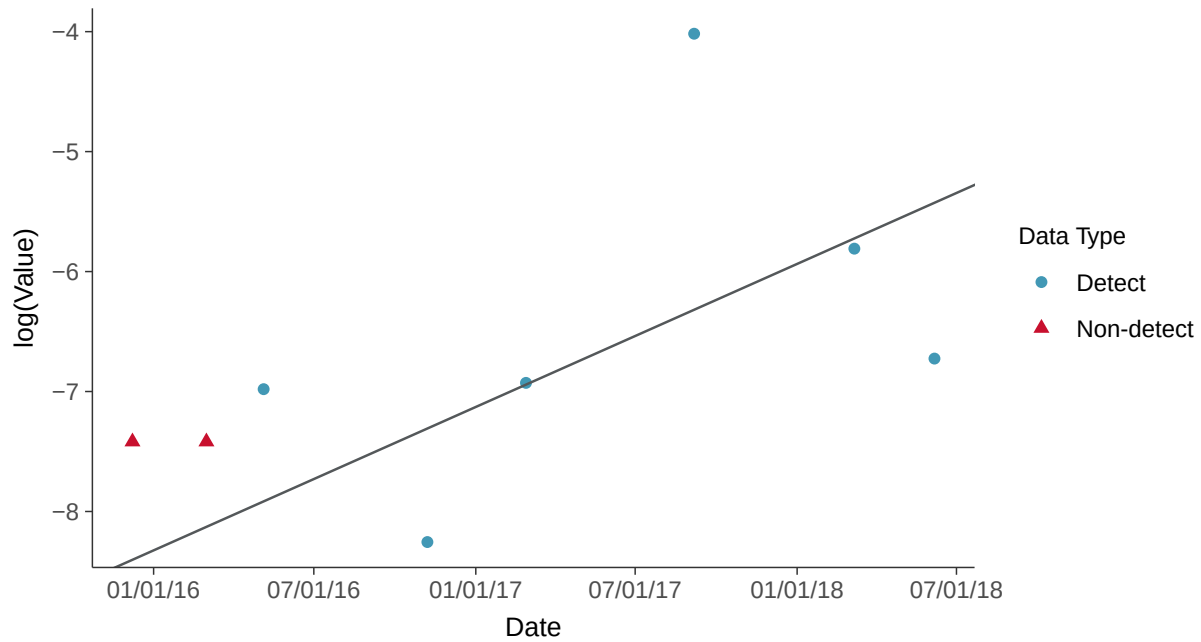
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-9 (mg/l)



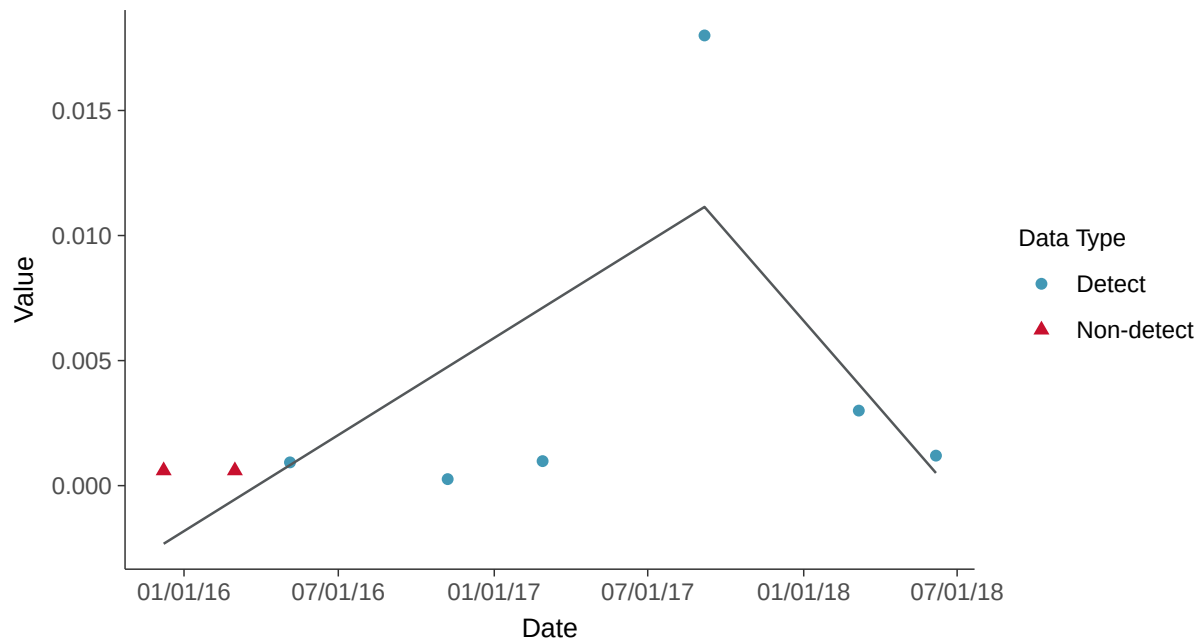
Trend Regression: Lognormal MLE

Chromium, Total, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear

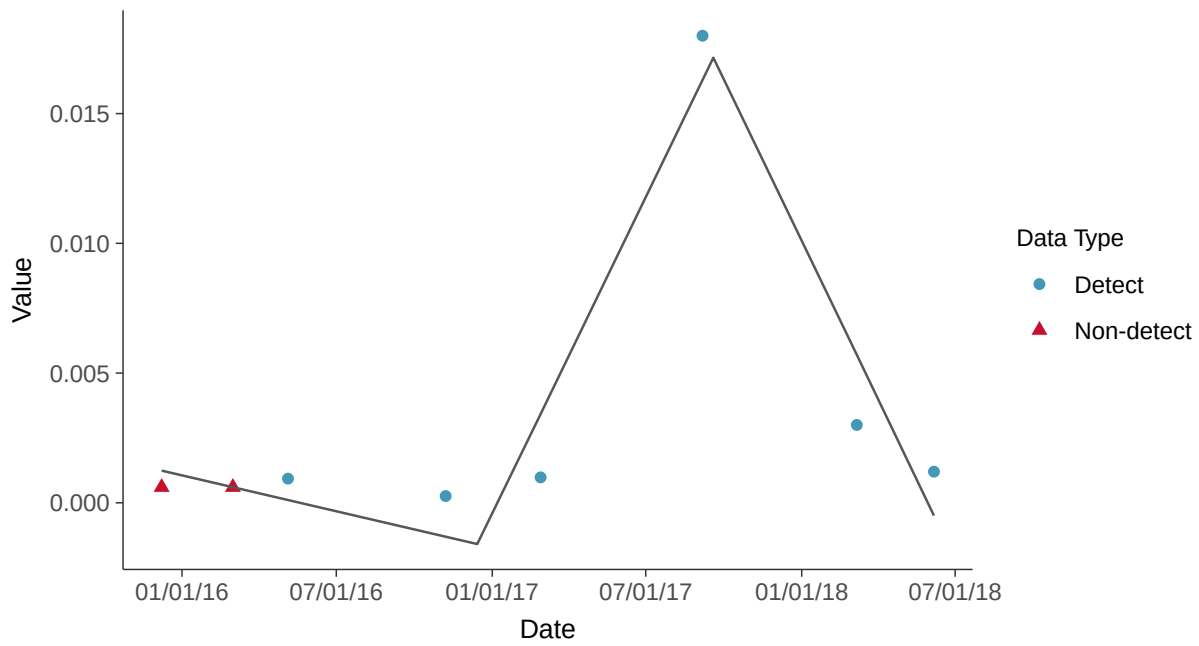
Chromium, Total, MW-9 (mg/l)





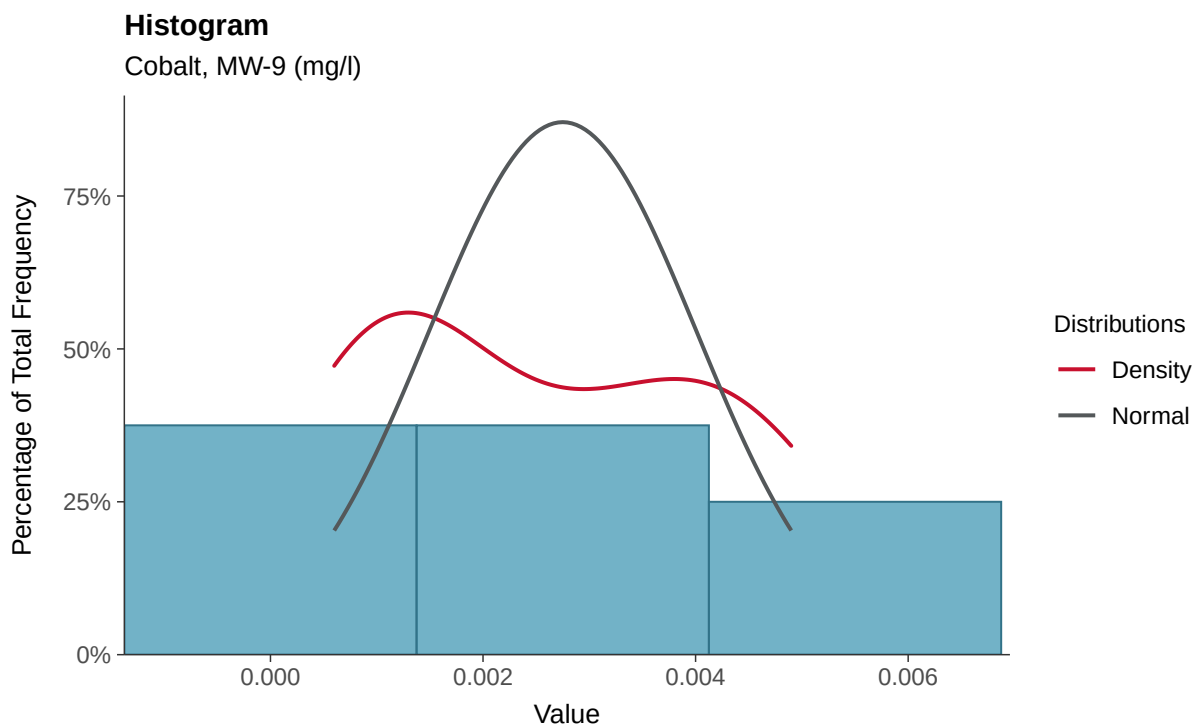
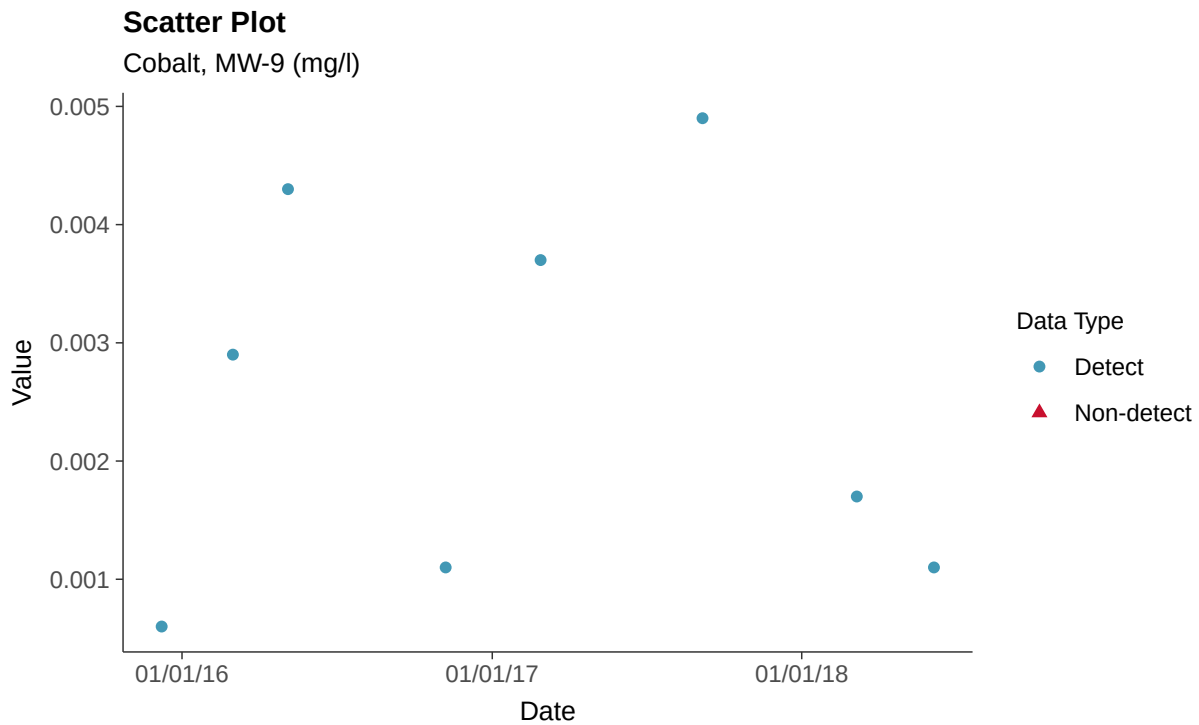
Trend Regression: Piecewise Linear-Linear-Linear

Chromium, Total, MW-9 (mg/l)



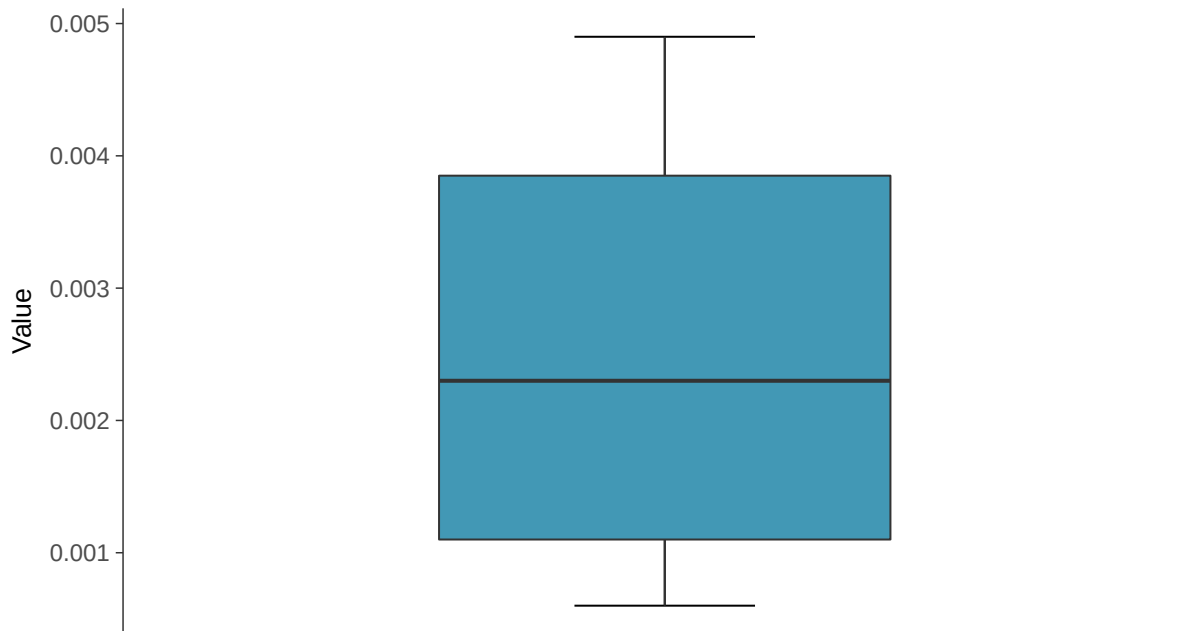
Appendix IV: Cobalt, MW-9

ID: 4_2_113



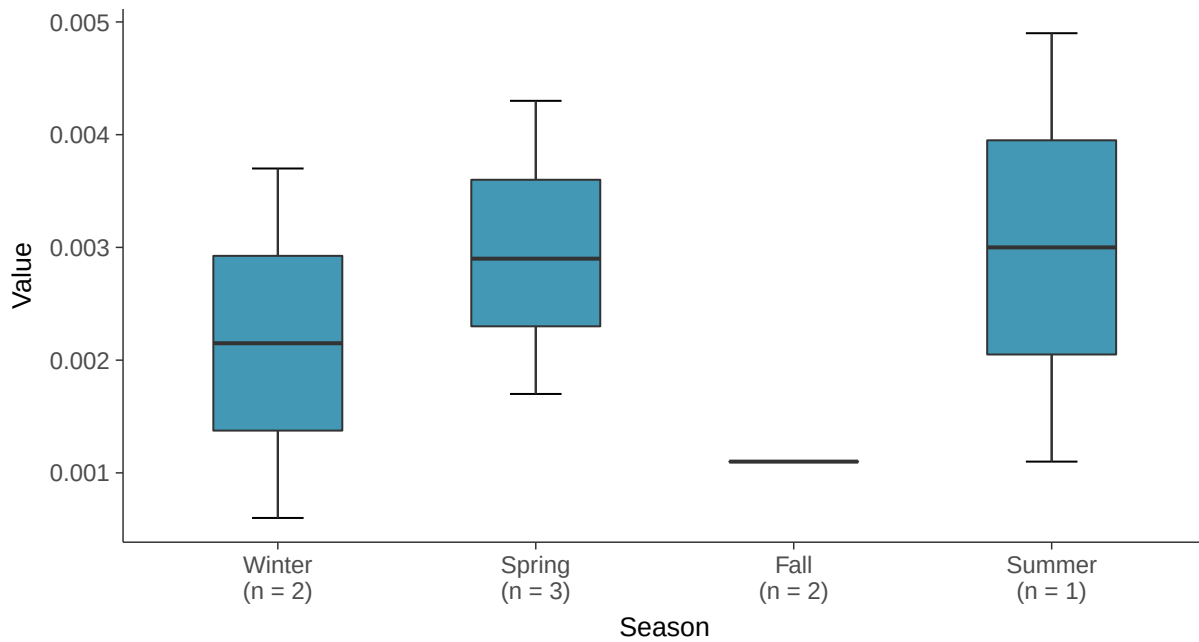
Boxplot

Cobalt, MW-9 (mg/l)



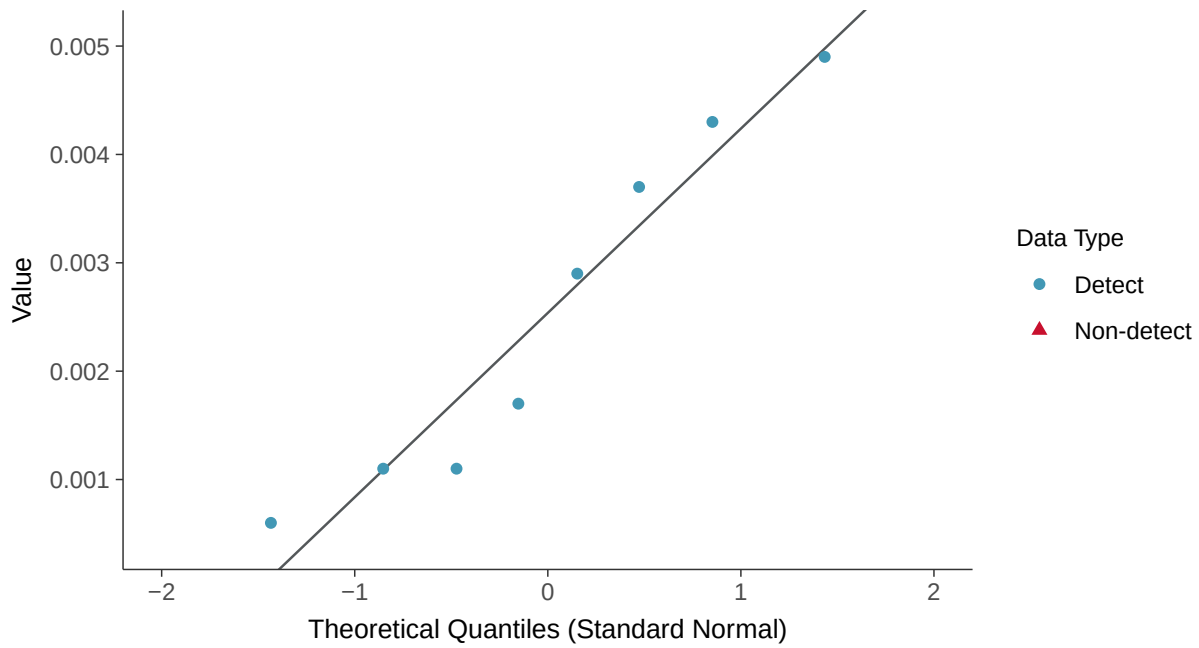
Boxplot by Season

Cobalt, MW-9 (mg/l)



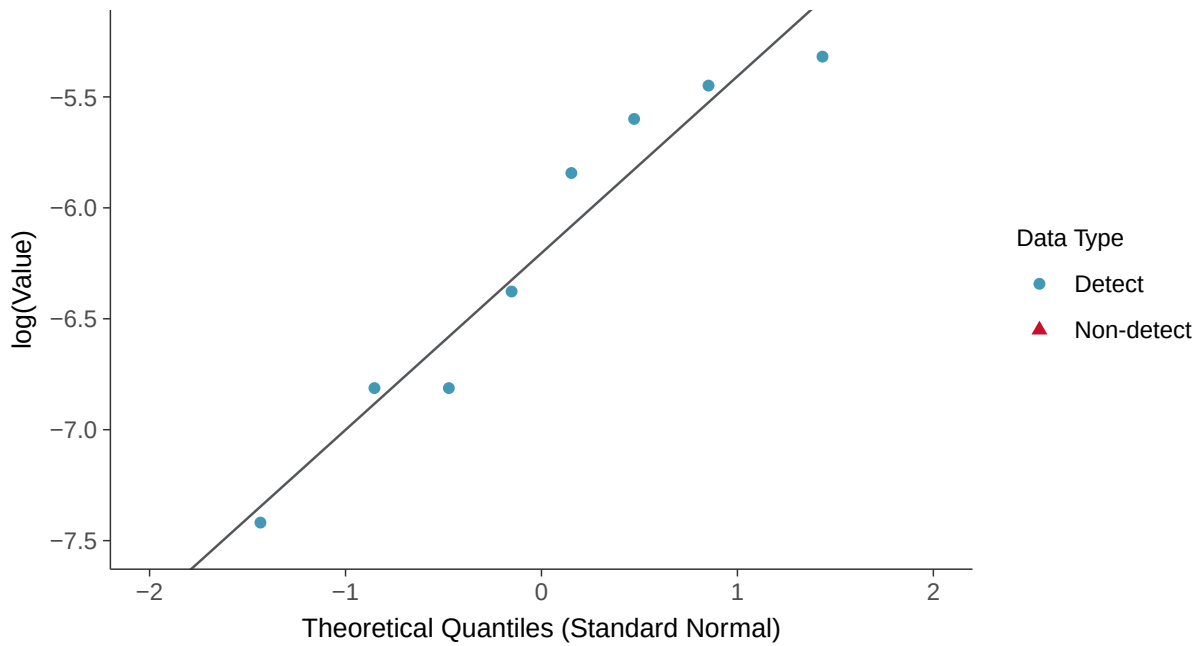
Normal Q-Q plot

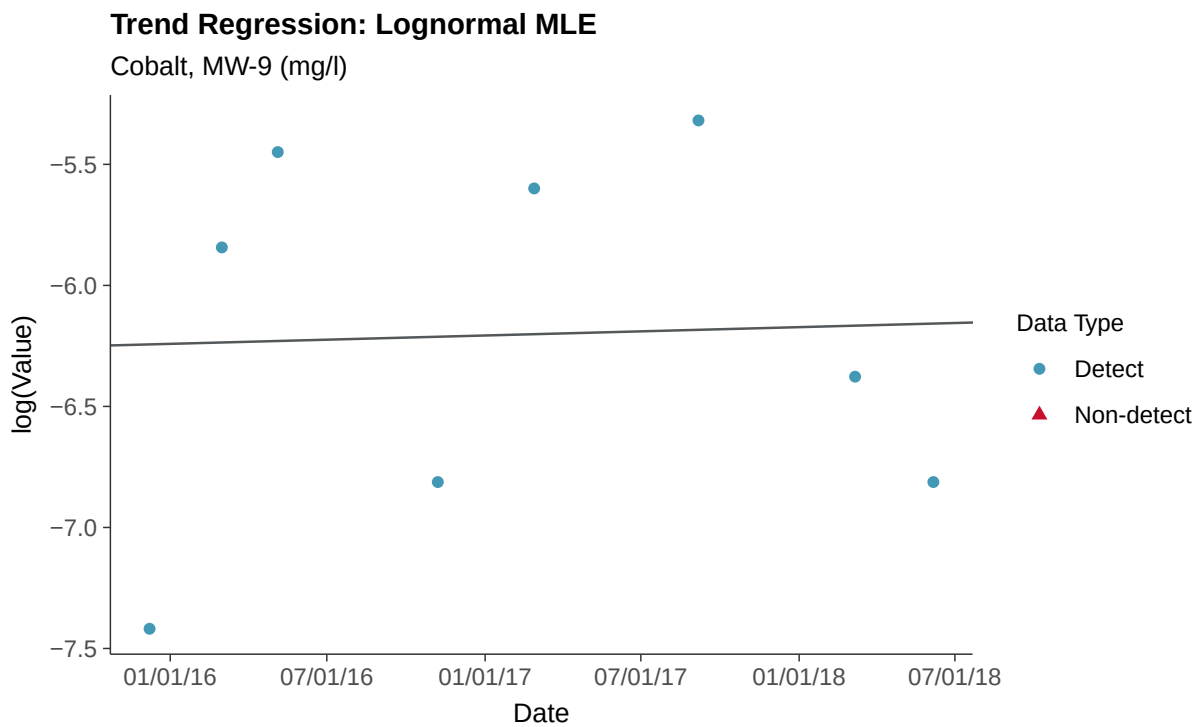
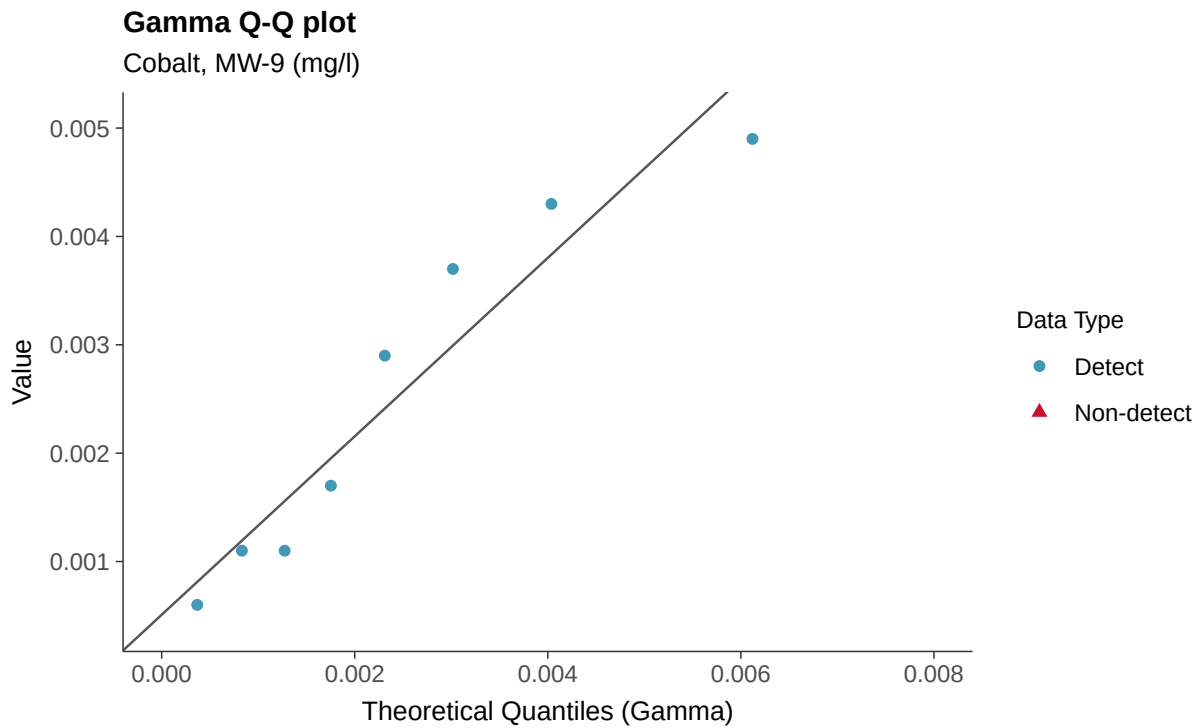
Cobalt, MW-9 (mg/l)



Lognormal Q-Q plot

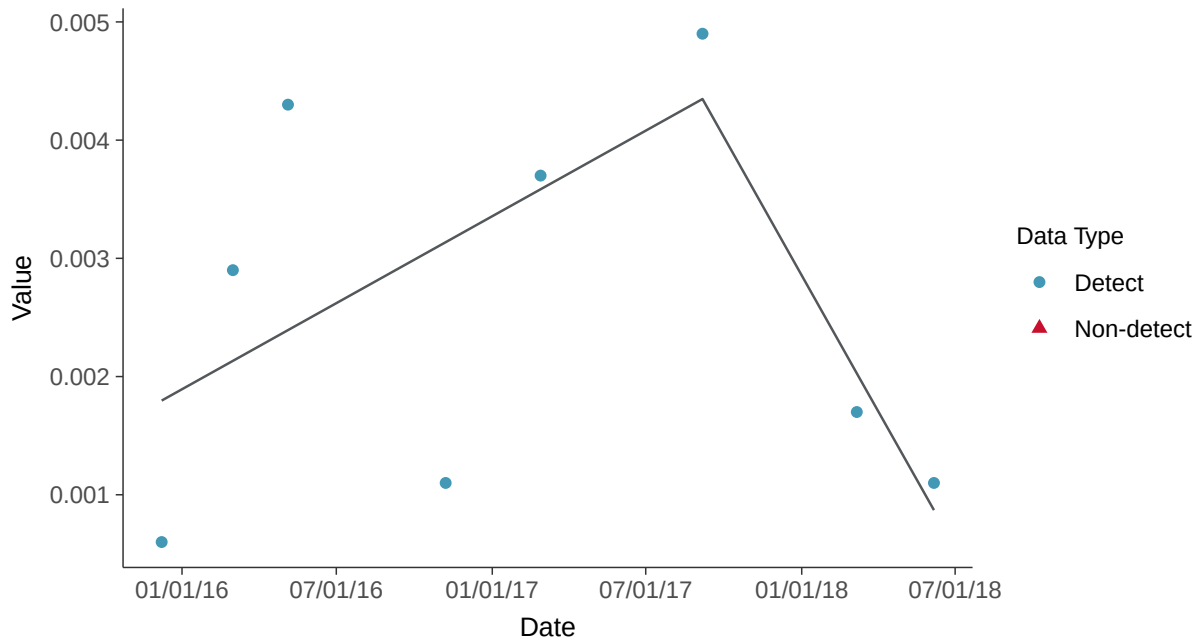
Cobalt, MW-9 (mg/l)







Trend Regression: Piecewise Linear-Linear
Cobalt, MW-9 (mg/l)

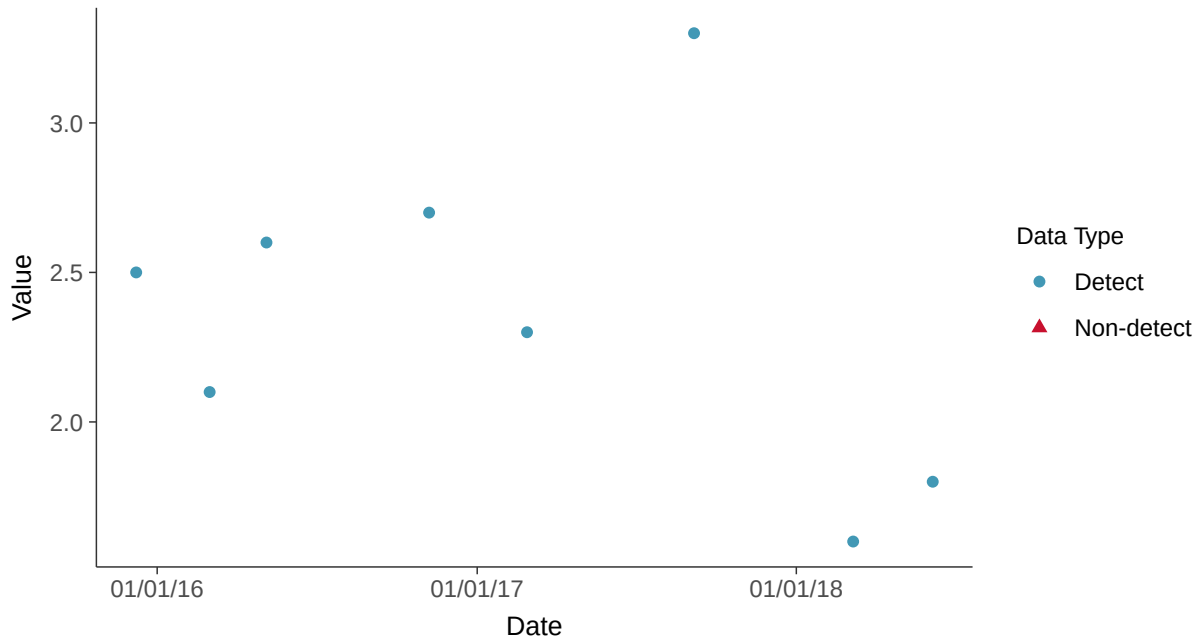


Appendix IV: Fluoride (App IV), MW-9

ID: 4_2_116

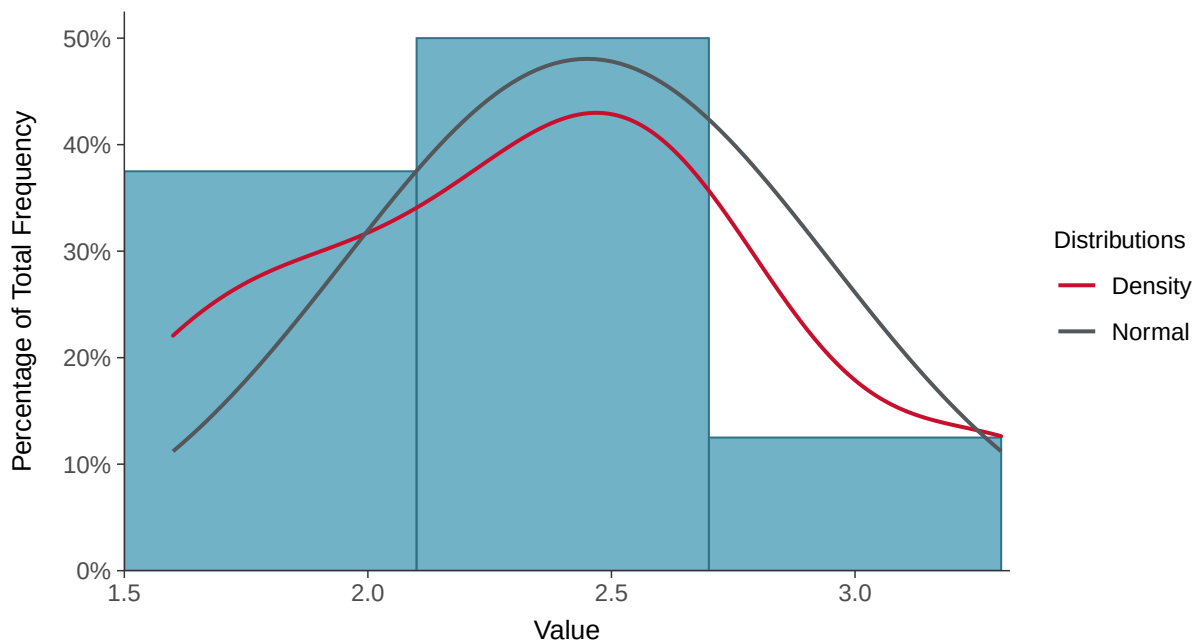
Scatter Plot

Fluoride (App IV), MW-9 (mg/l)



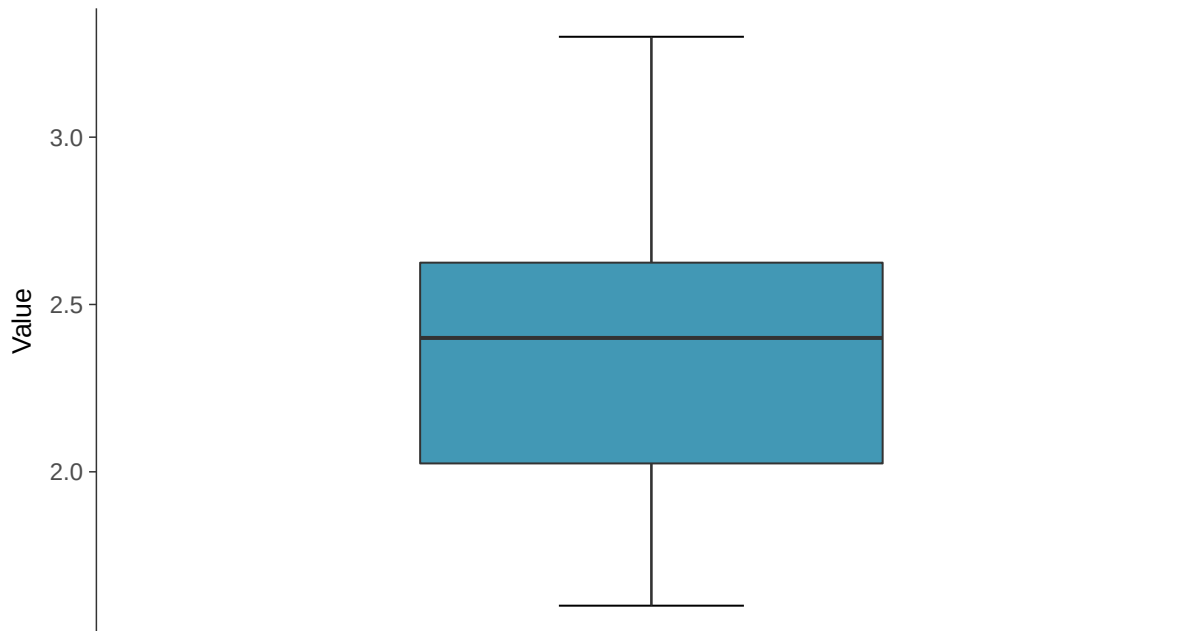
Histogram

Fluoride (App IV), MW-9 (mg/l)



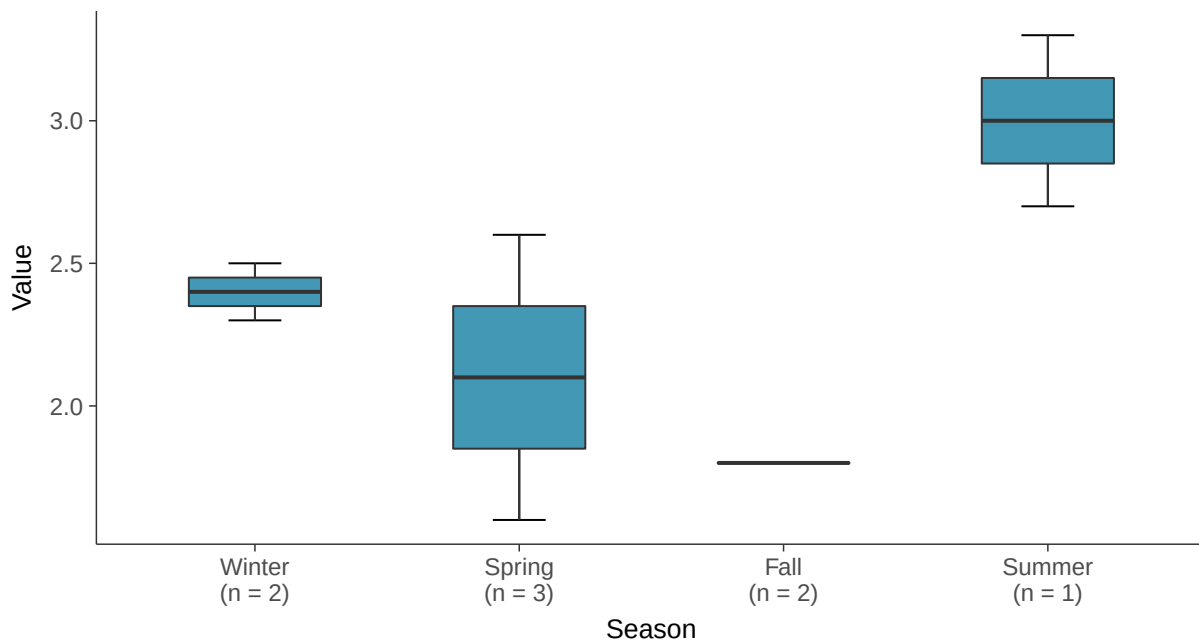
Boxplot

Fluoride (App IV), MW-9 (mg/l)



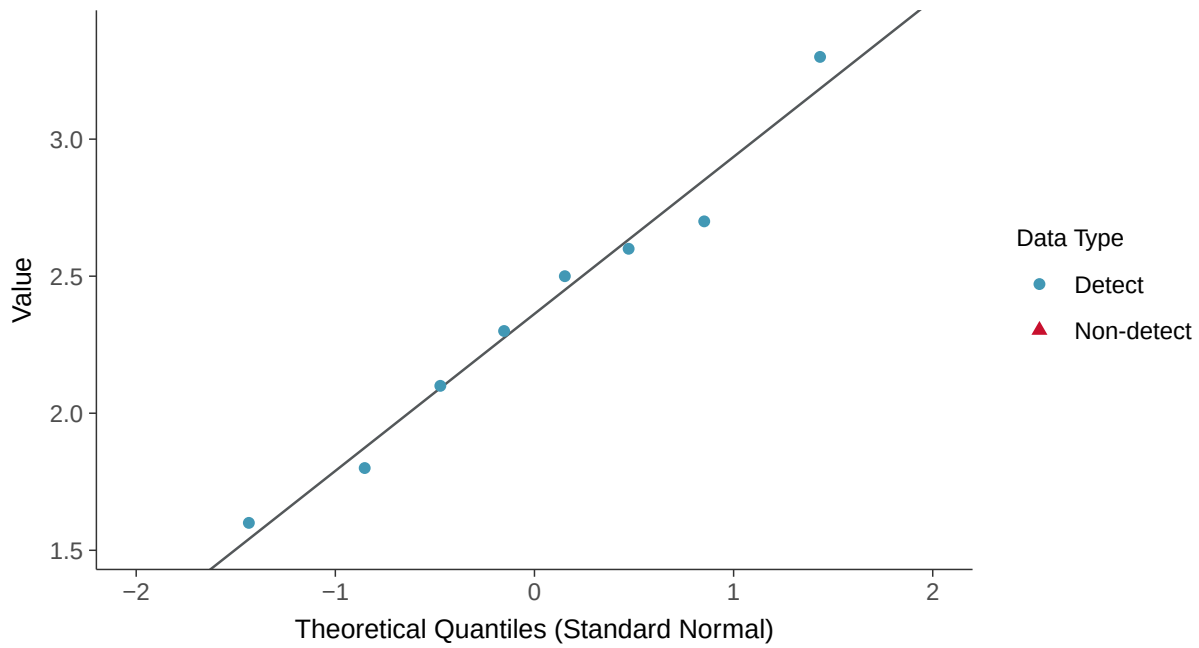
Boxplot by Season

Fluoride (App IV), MW-9 (mg/l)



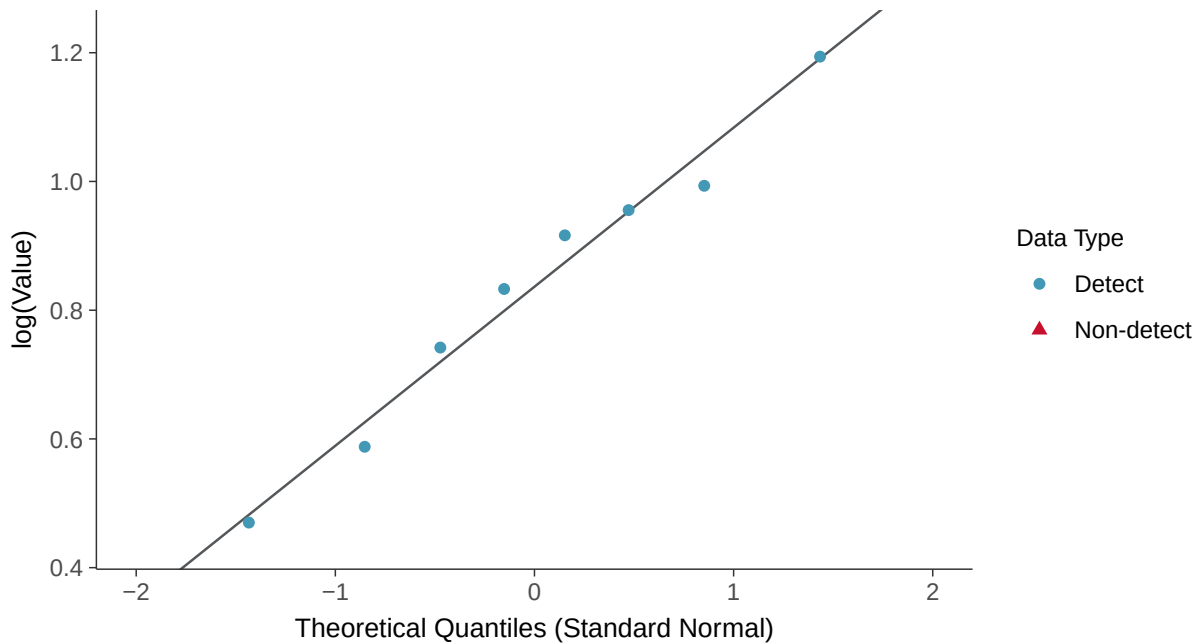
Normal Q-Q plot

Fluoride (App IV), MW-9 (mg/l)



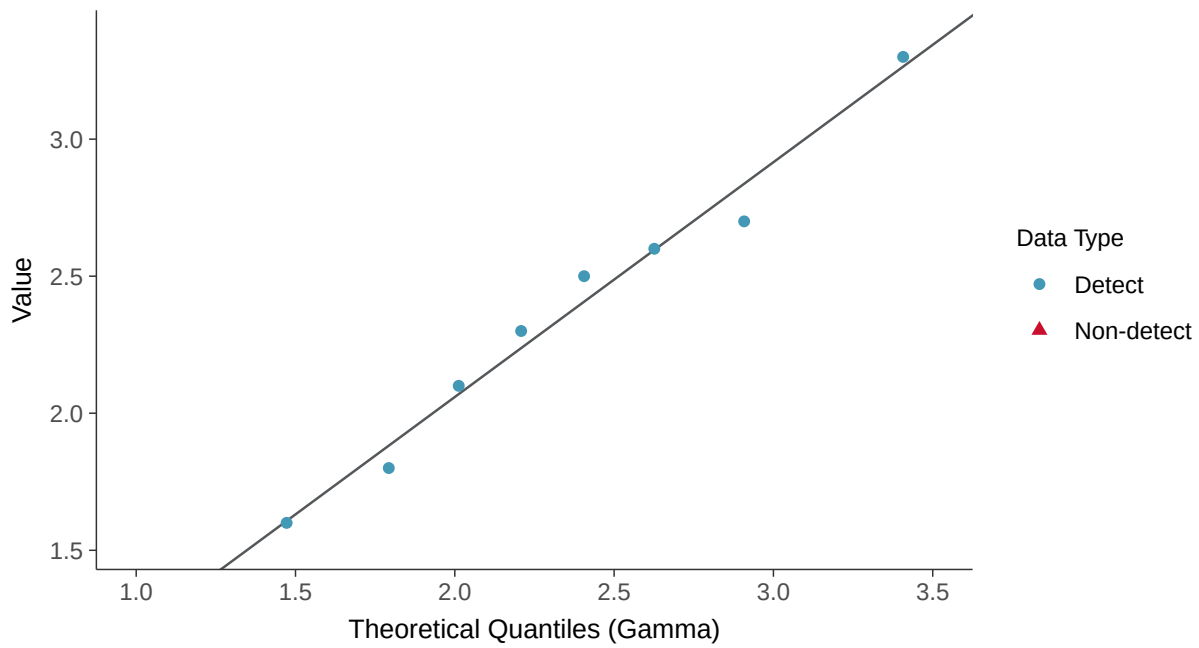
Lognormal Q-Q plot

Fluoride (App IV), MW-9 (mg/l)



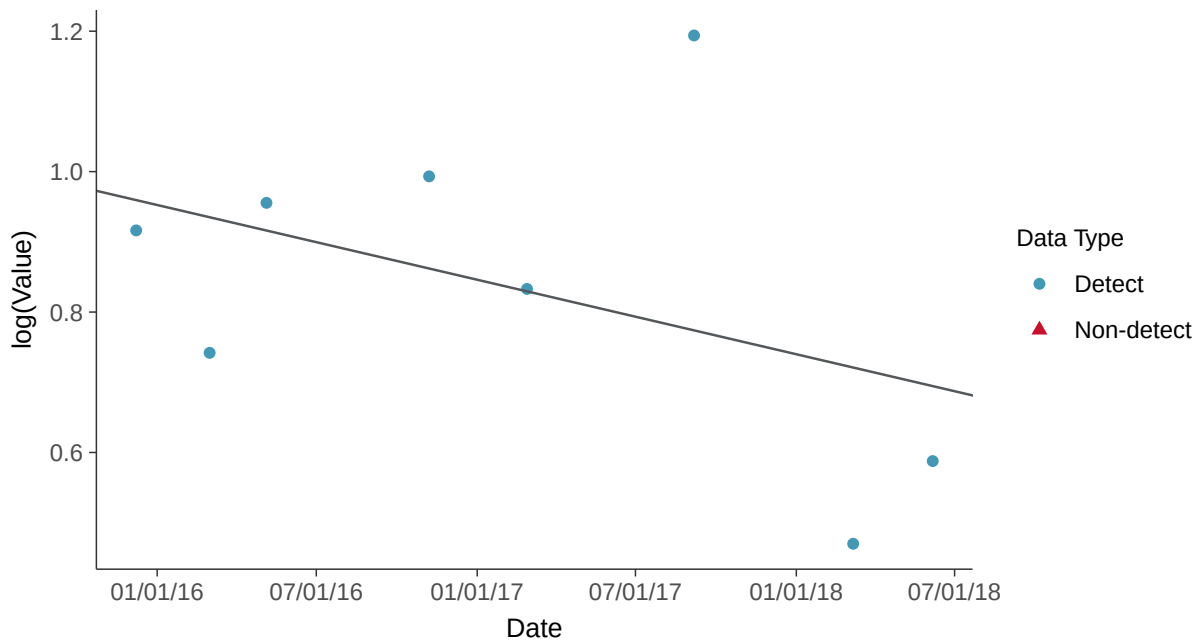
Gamma Q-Q plot

Fluoride (App IV), MW-9 (mg/l)



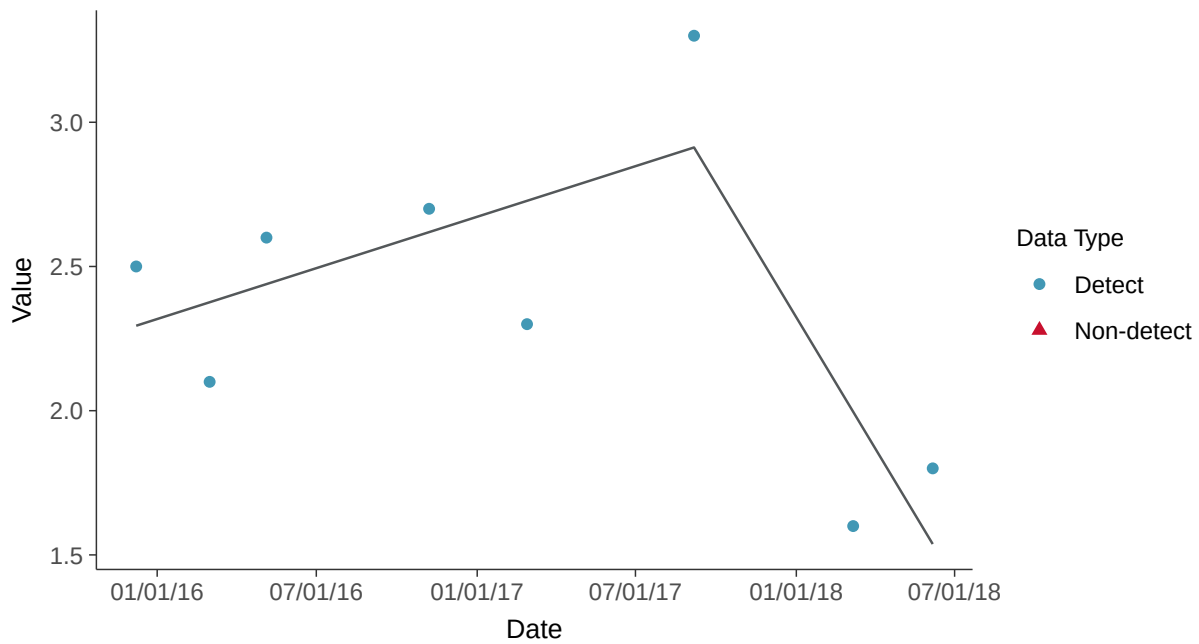
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-9 (mg/l)



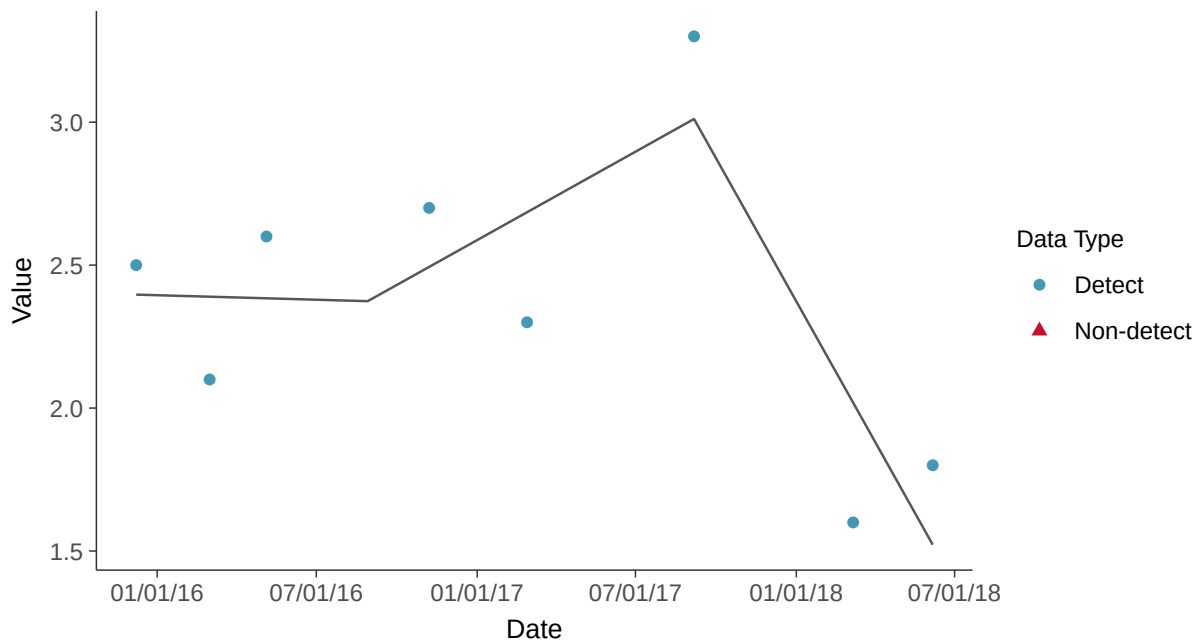
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-9 (mg/l)



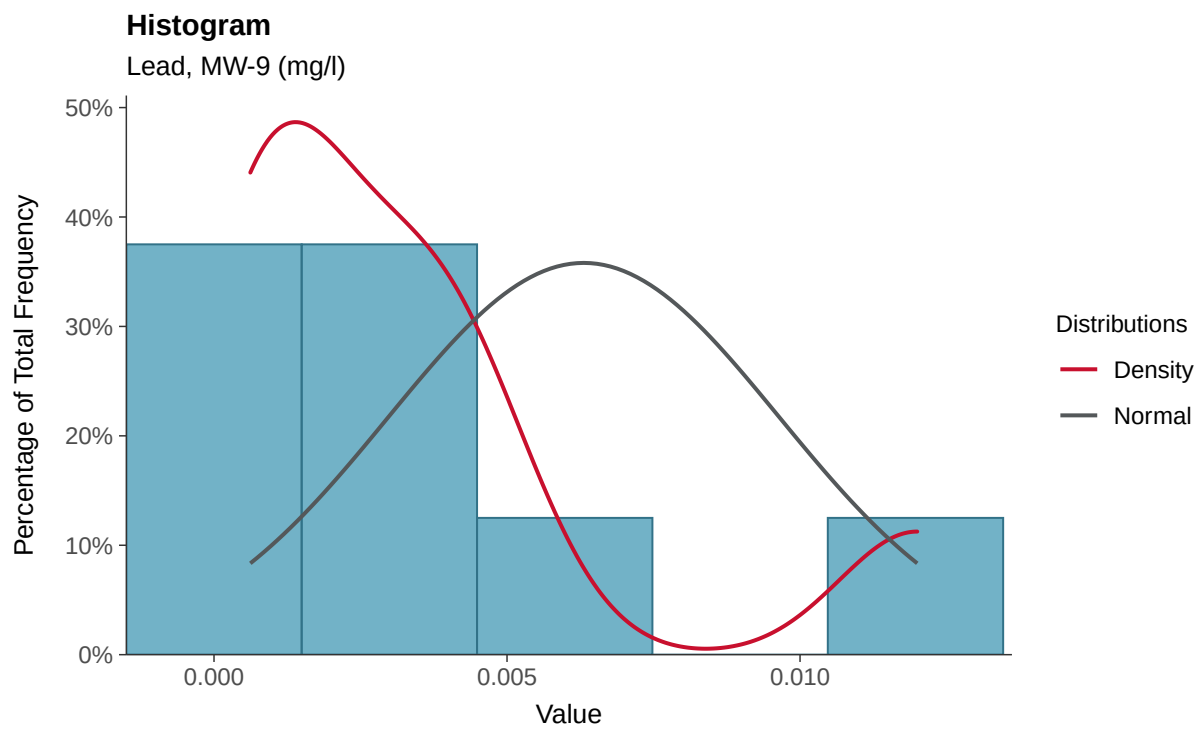
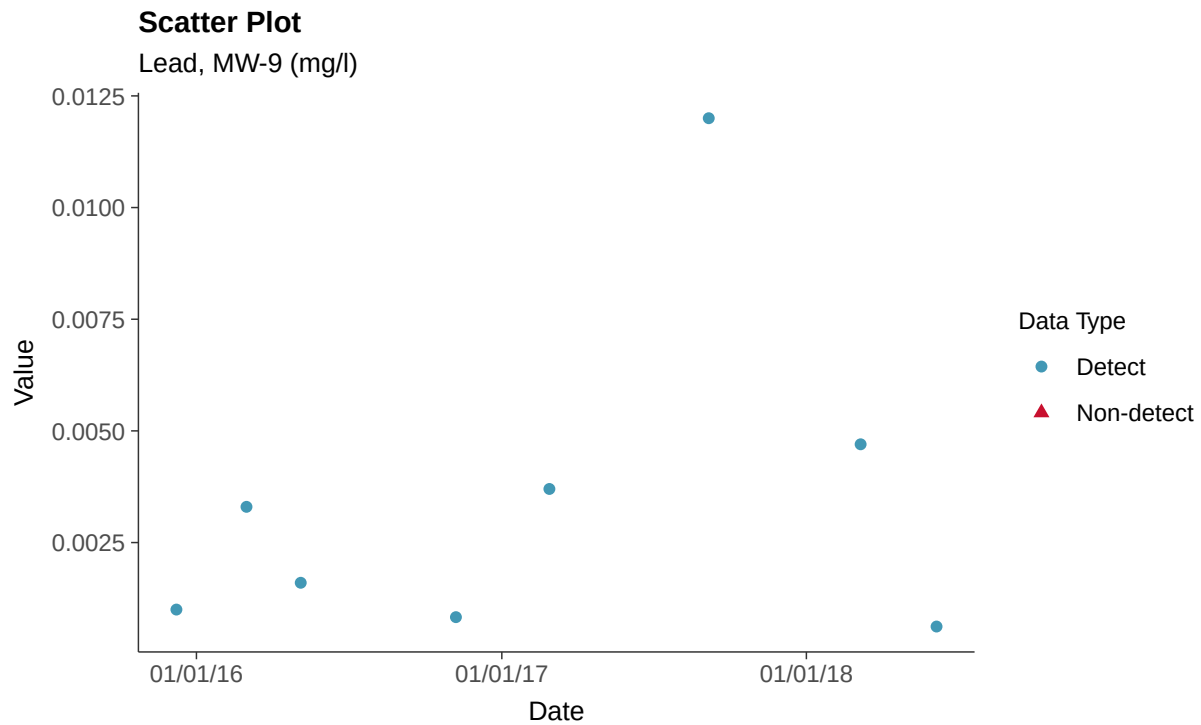
Trend Regression: Piecewise Linear-Linear-Linear

Fluoride (App IV), MW-9 (mg/l)



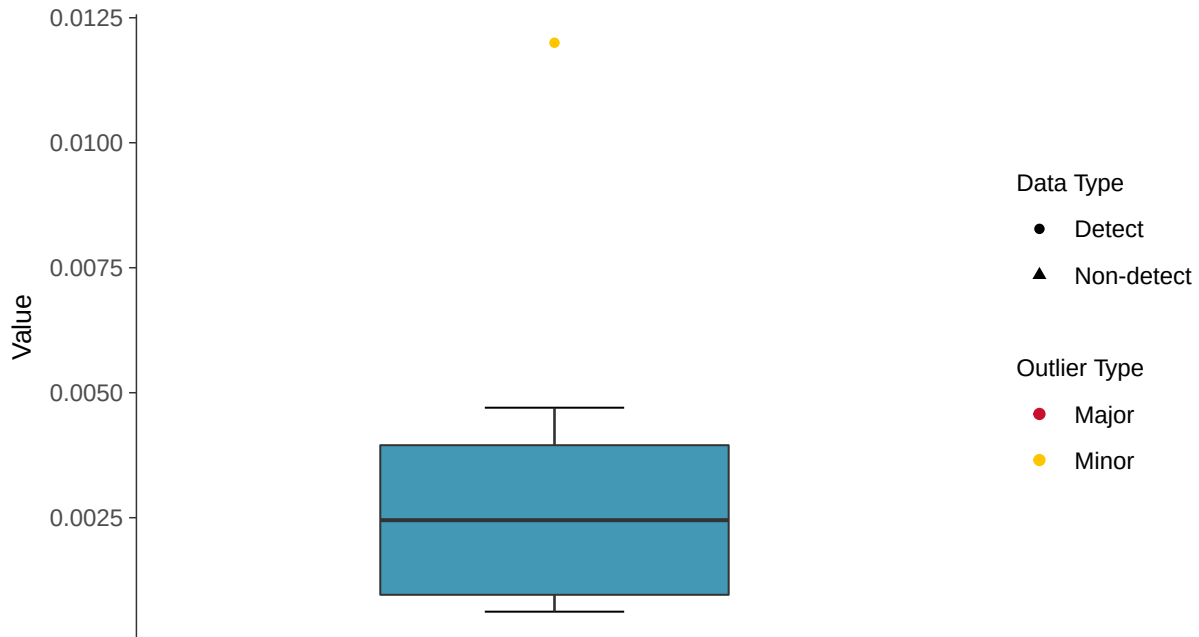
Appendix IV: Lead, MW-9

ID: 4_2_117



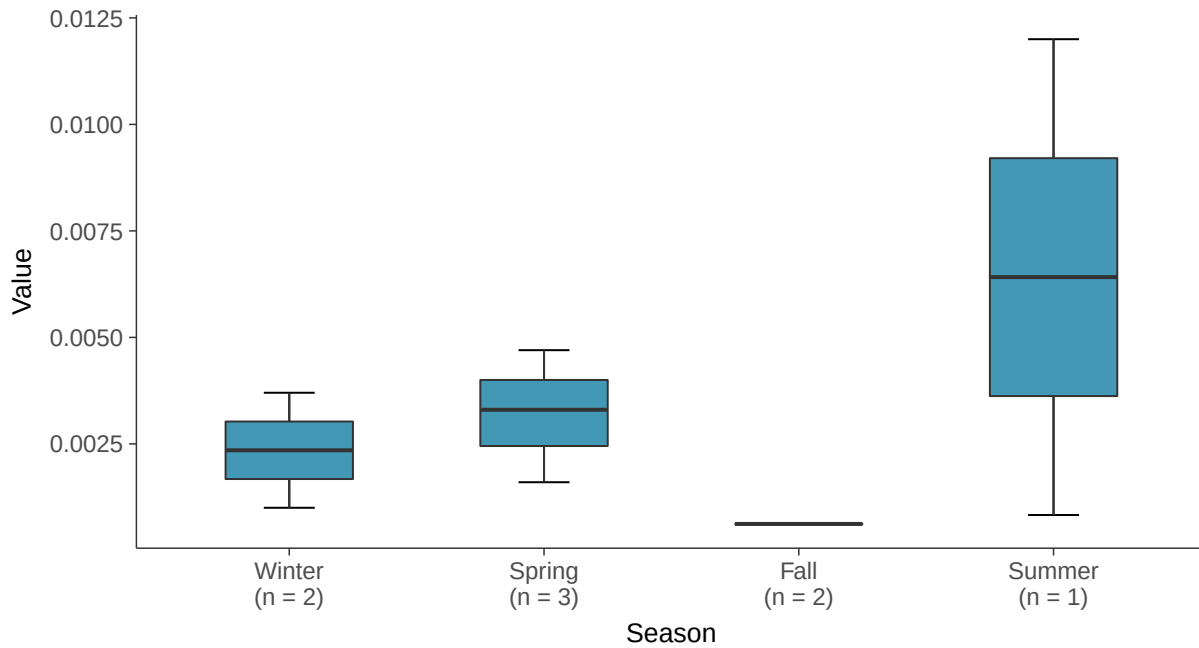
Boxplot

Lead, MW-9 (mg/l)



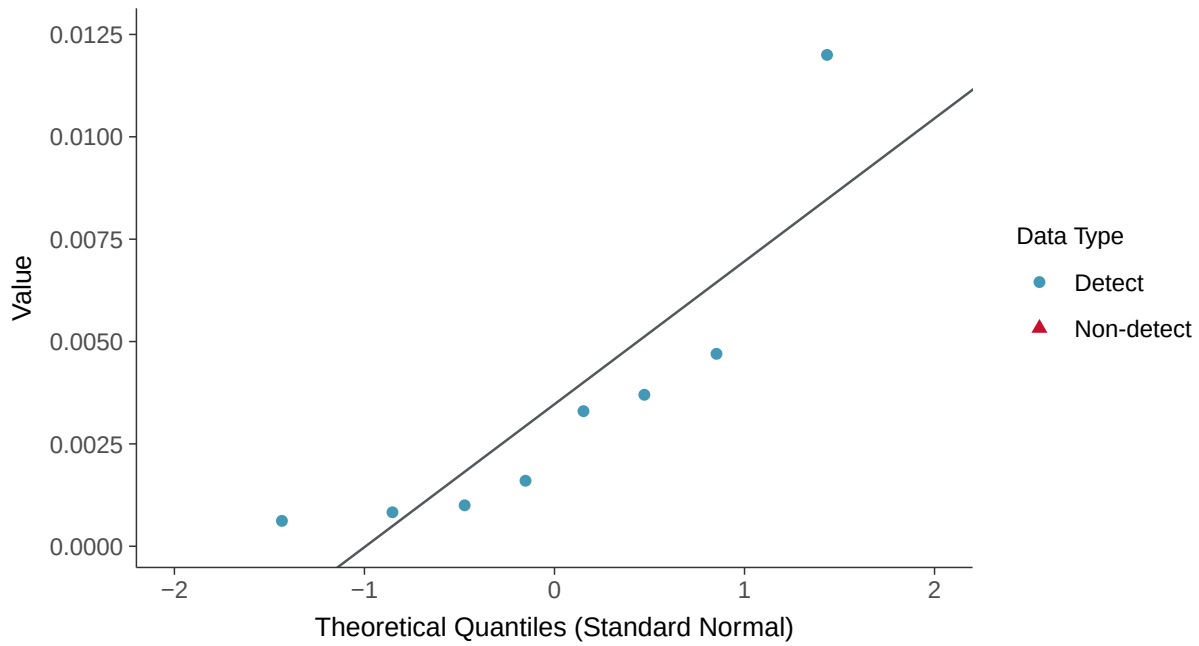
Boxplot by Season

Lead, MW-9 (mg/l)



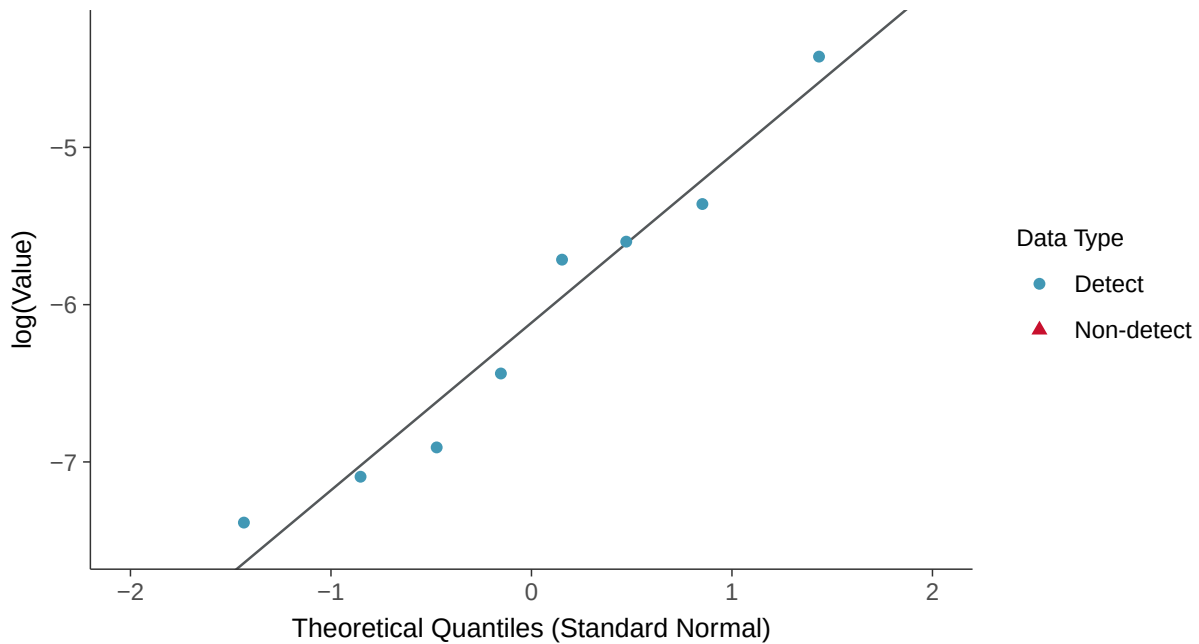
Normal Q-Q plot

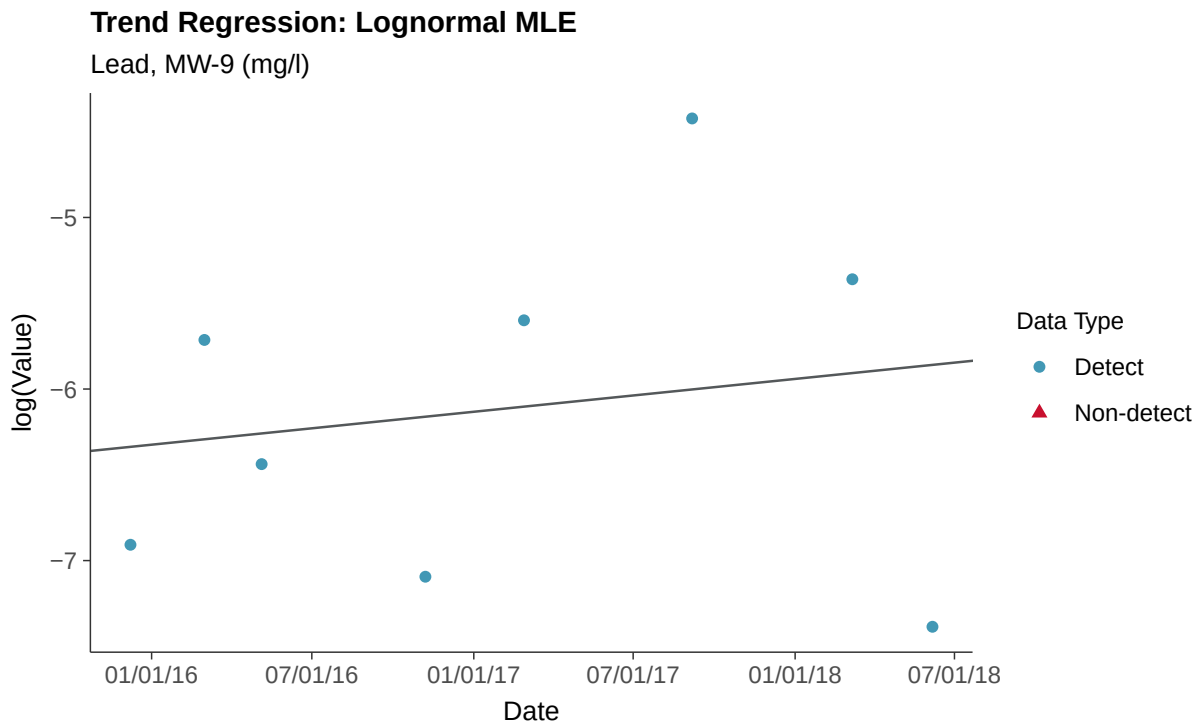
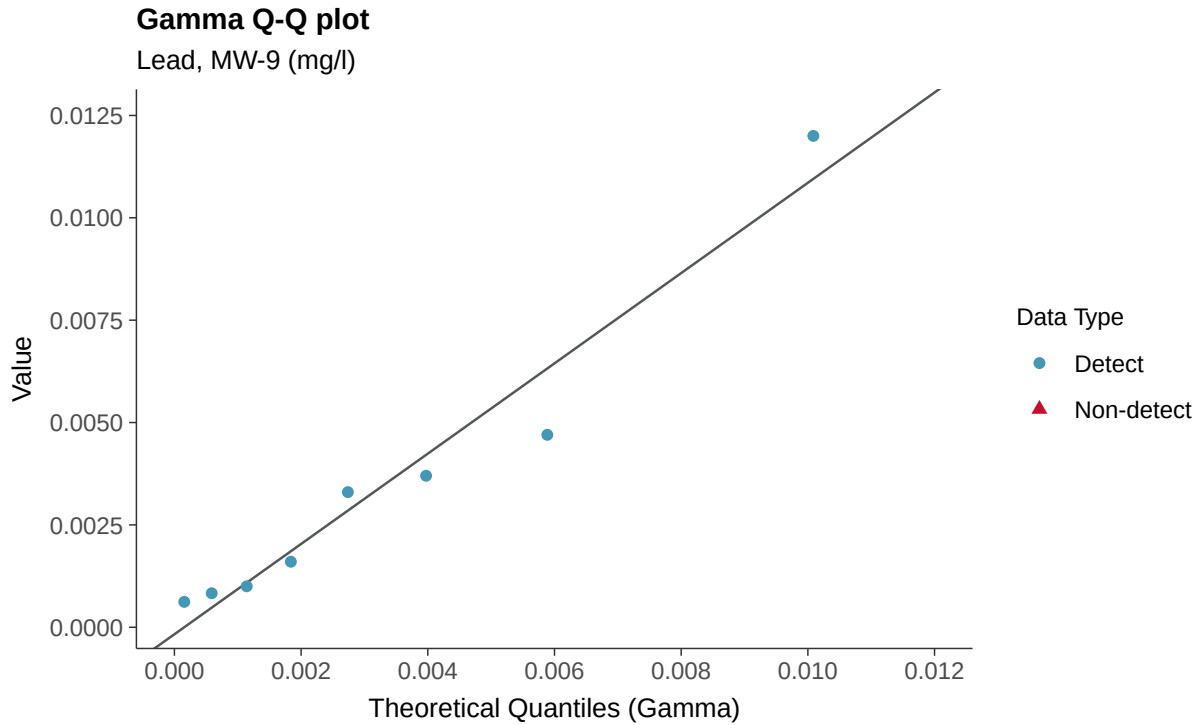
Lead, MW-9 (mg/l)



Lognormal Q-Q plot

Lead, MW-9 (mg/l)

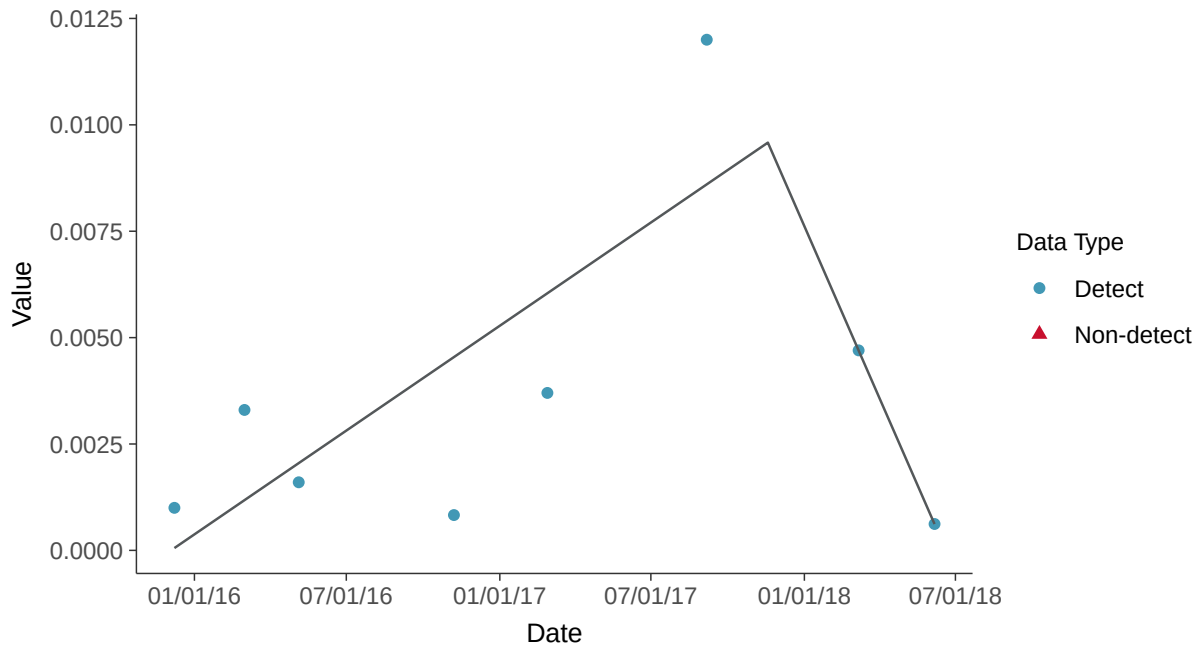






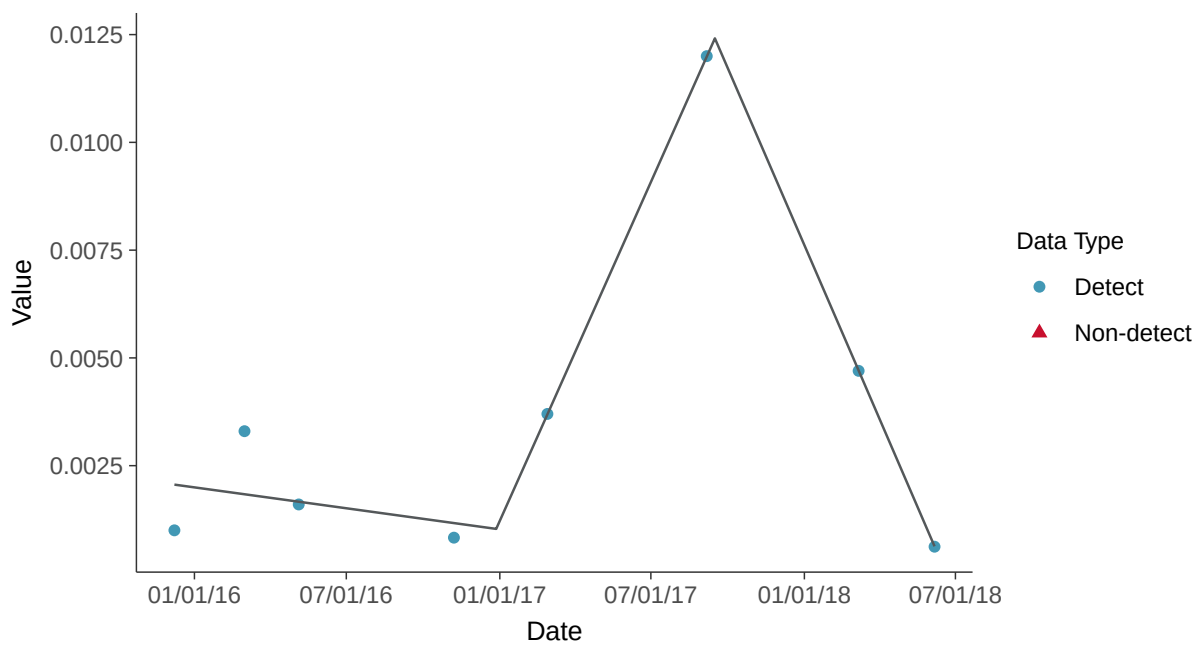
Trend Regression: Piecewise Linear-Linear

Lead, MW-9 (mg/l)



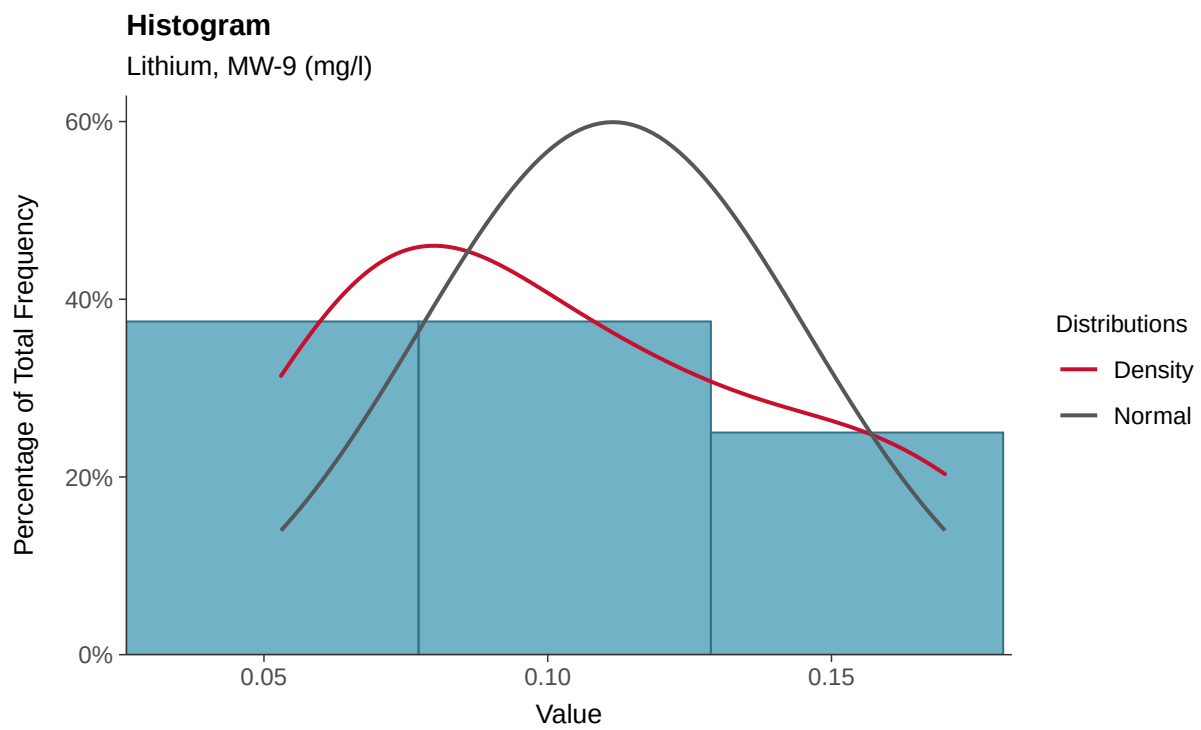
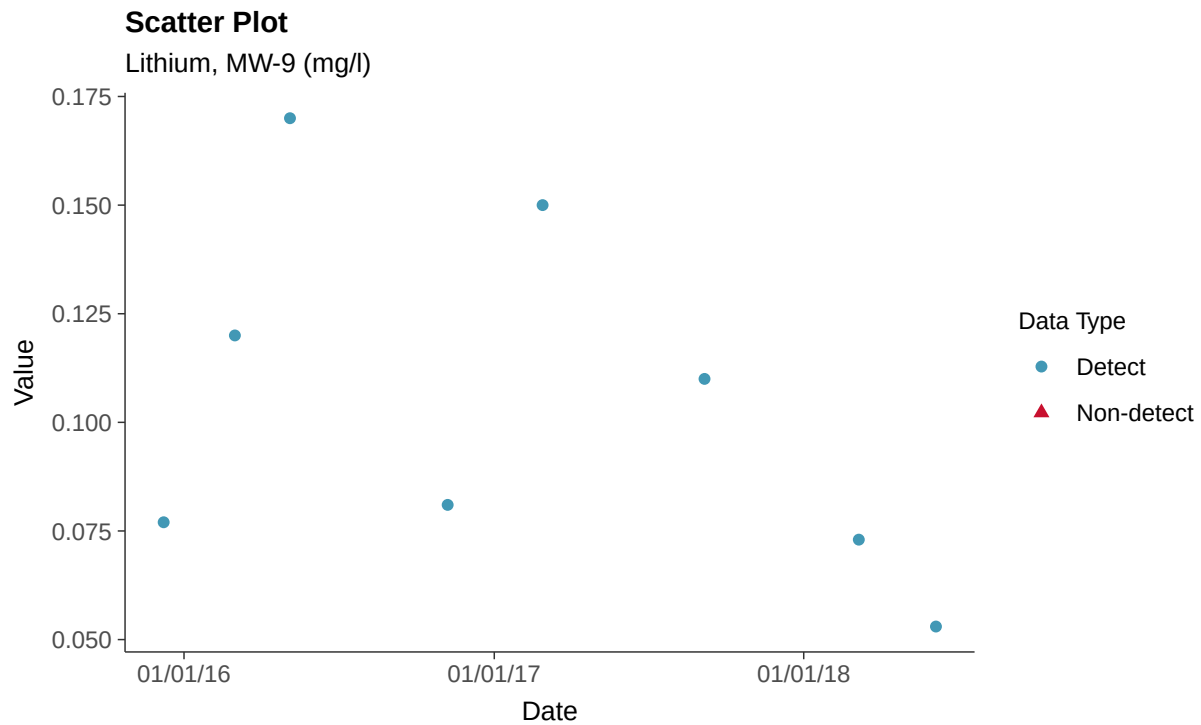
Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-9 (mg/l)



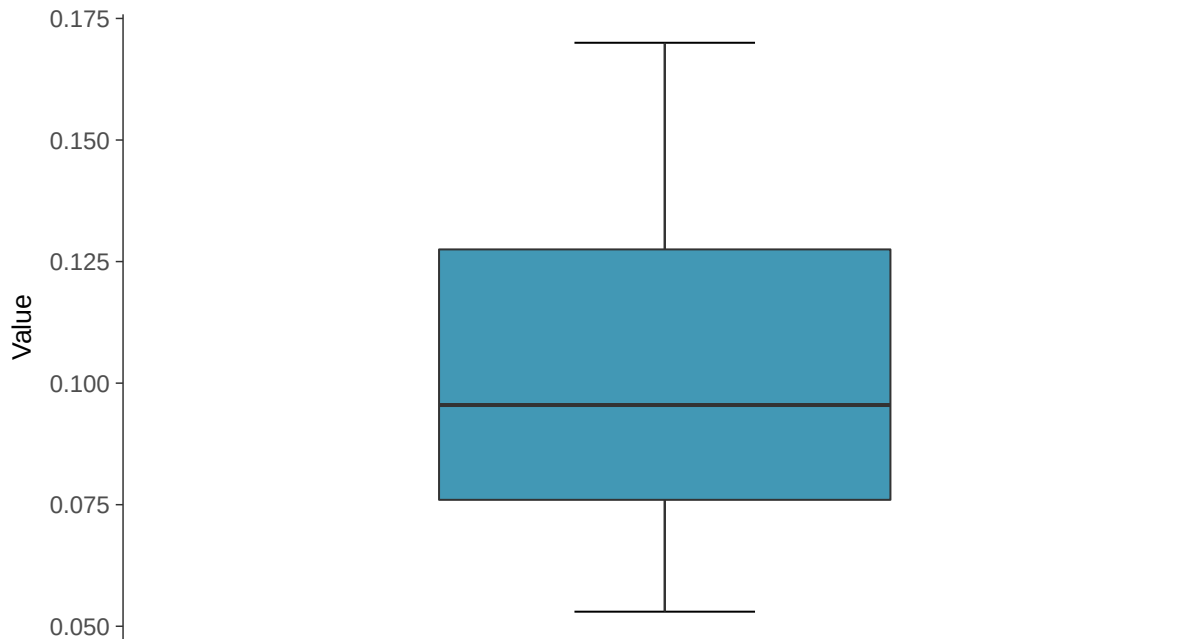
Appendix IV: Lithium, MW-9

ID: 4_2_118



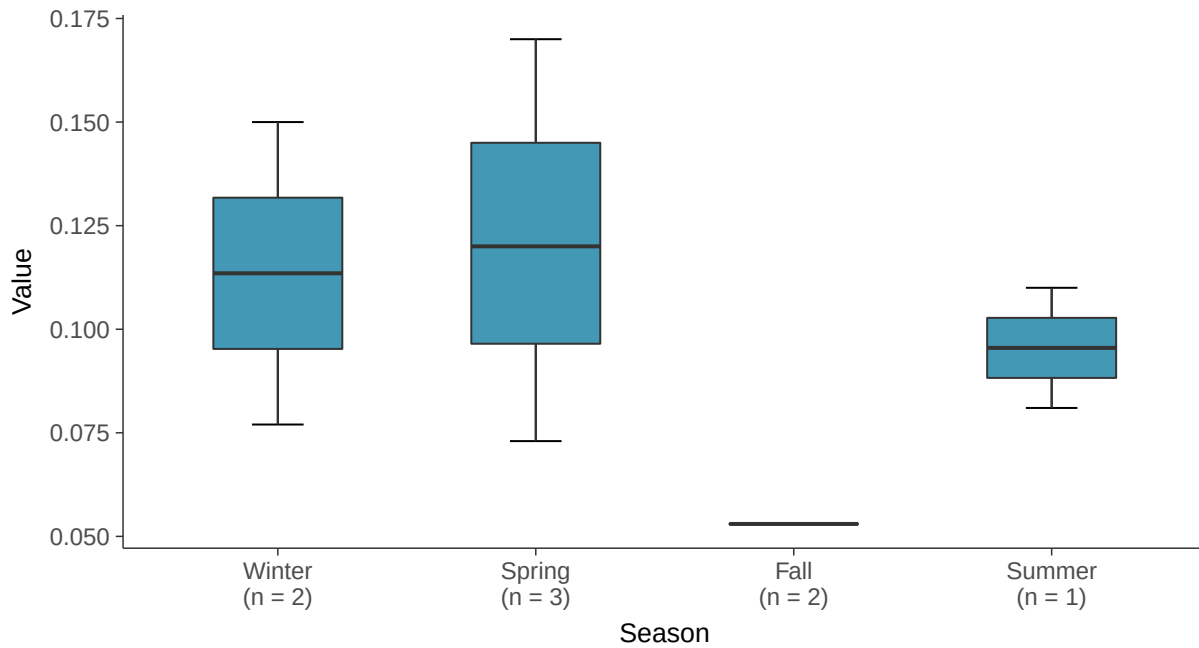
Boxplot

Lithium, MW-9 (mg/l)



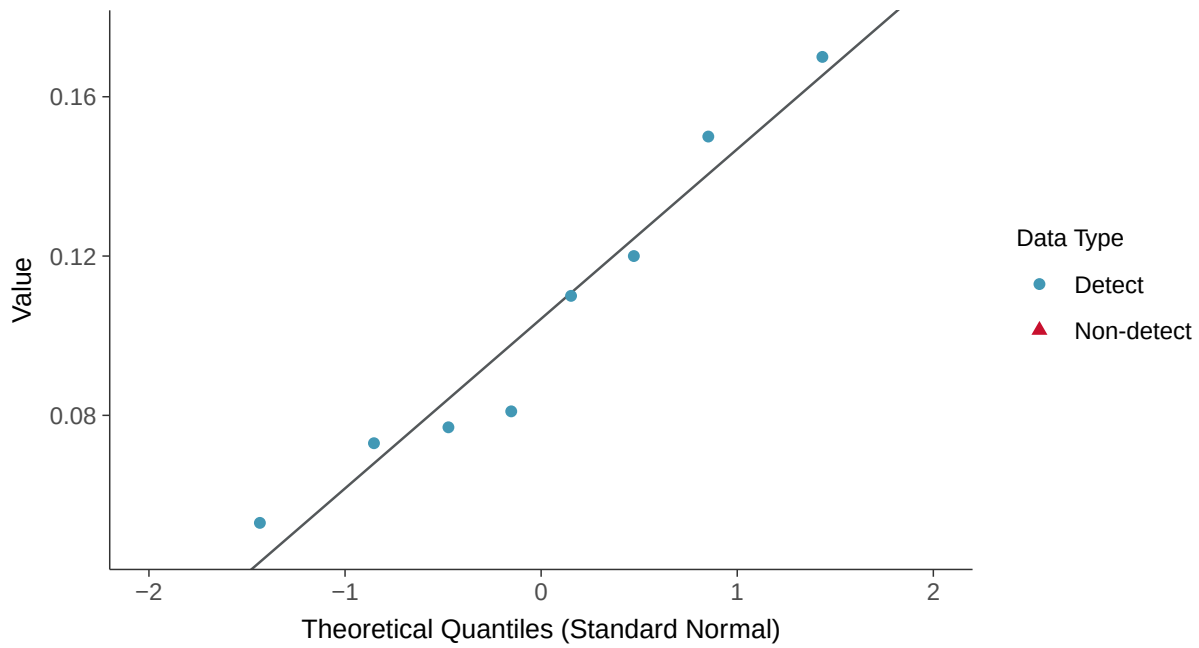
Boxplot by Season

Lithium, MW-9 (mg/l)



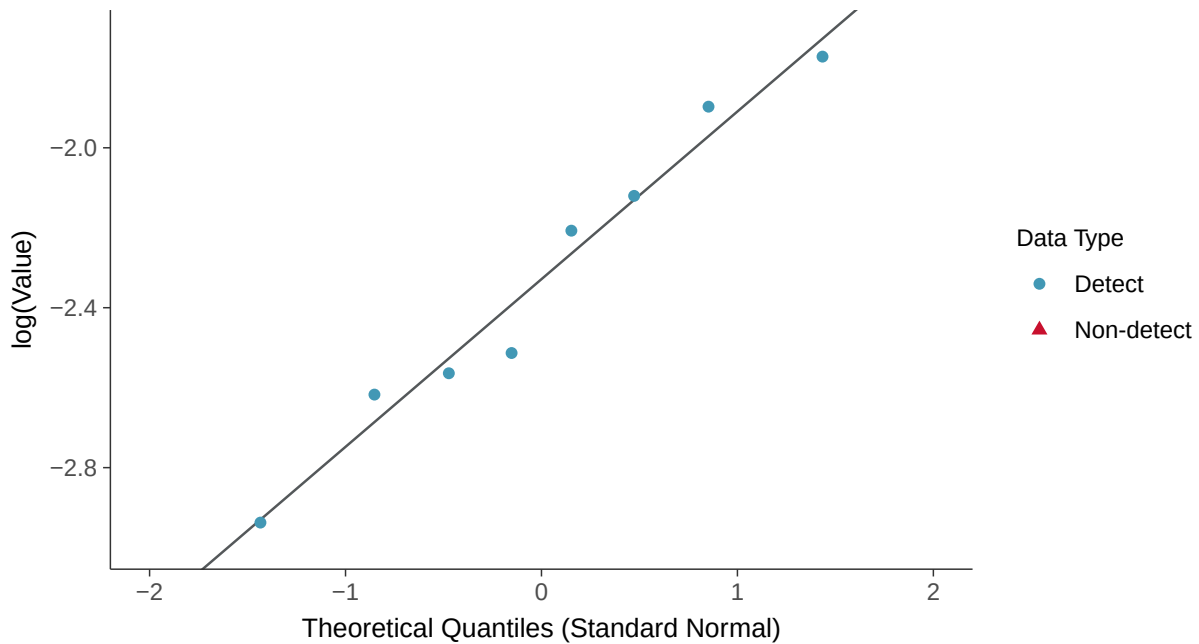
Normal Q-Q plot

Lithium, MW-9 (mg/l)



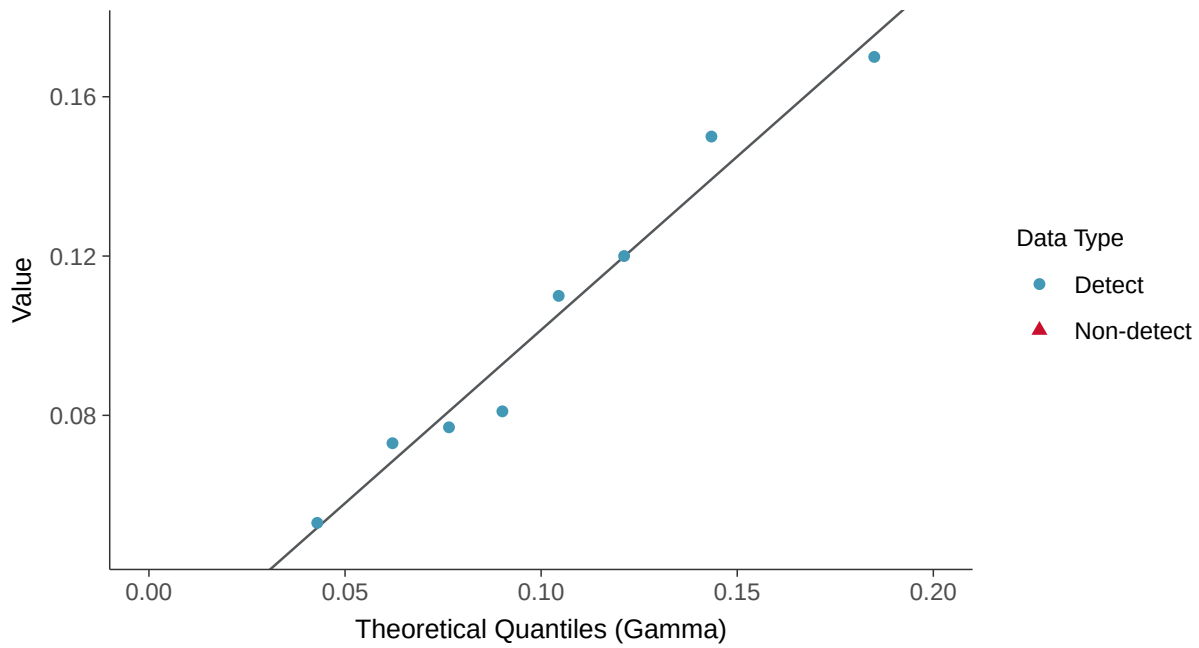
Lognormal Q-Q plot

Lithium, MW-9 (mg/l)



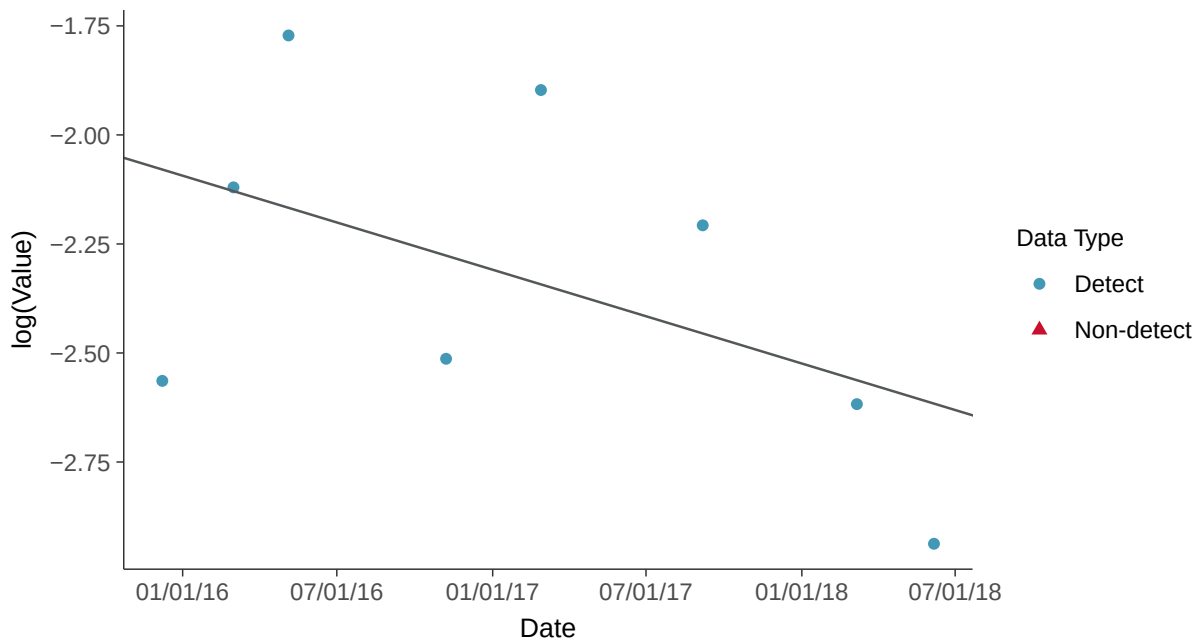
Gamma Q-Q plot

Lithium, MW-9 (mg/l)



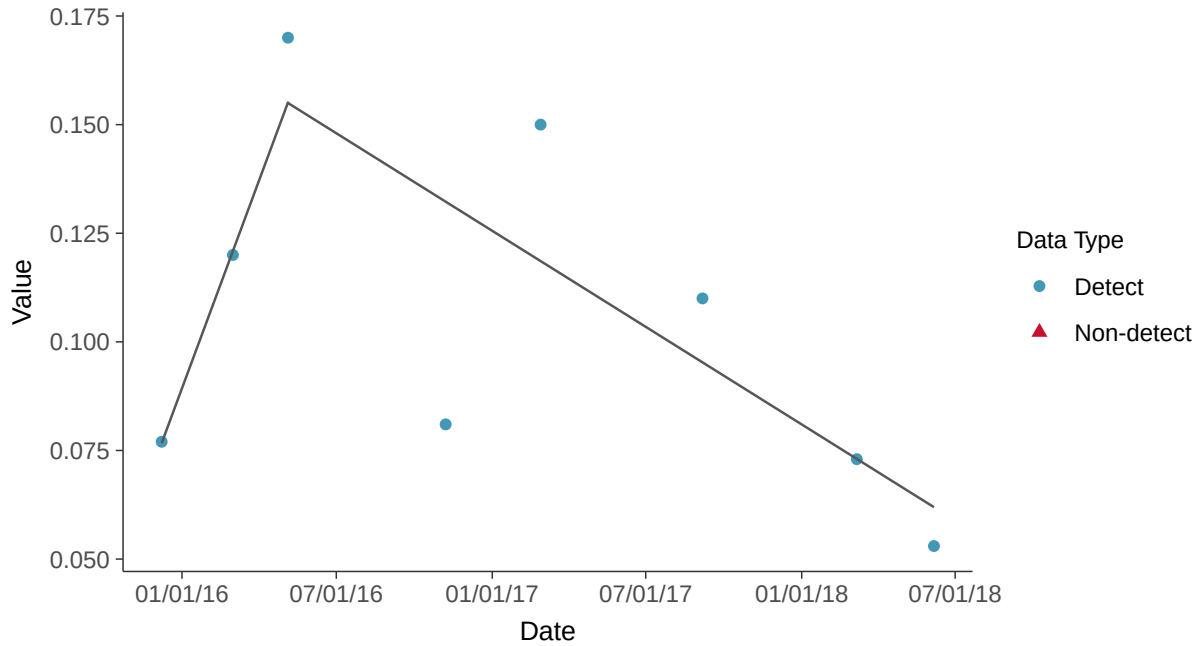
Trend Regression: Lognormal MLE

Lithium, MW-9 (mg/l)



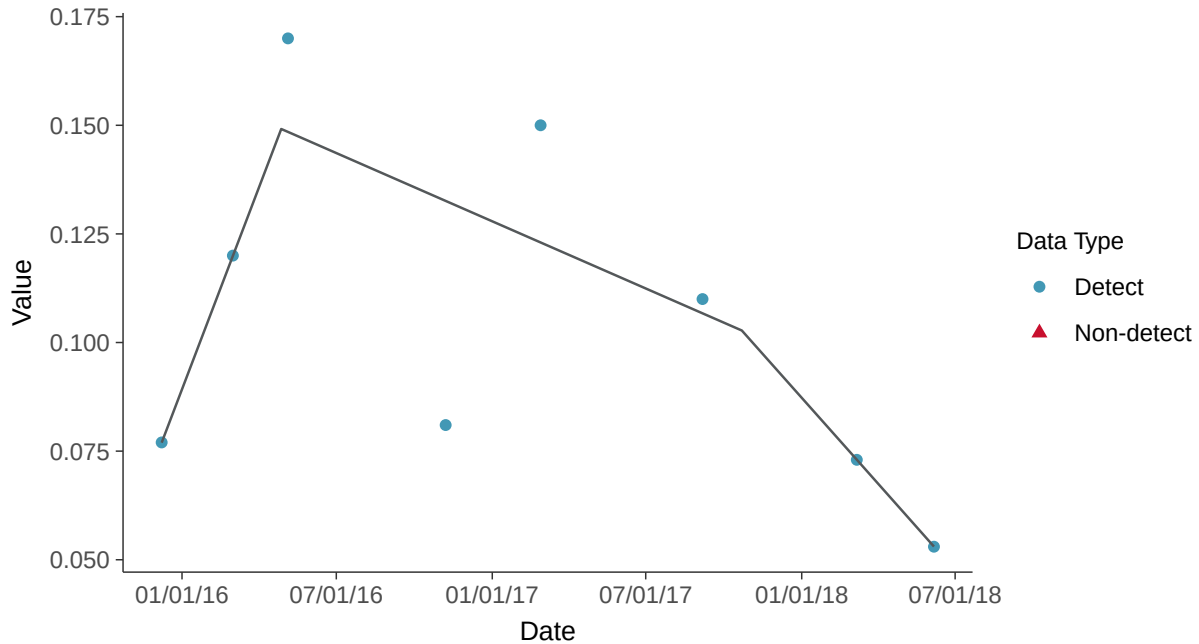
Trend Regression: Piecewise Linear-Linear

Lithium, MW-9 (mg/l)



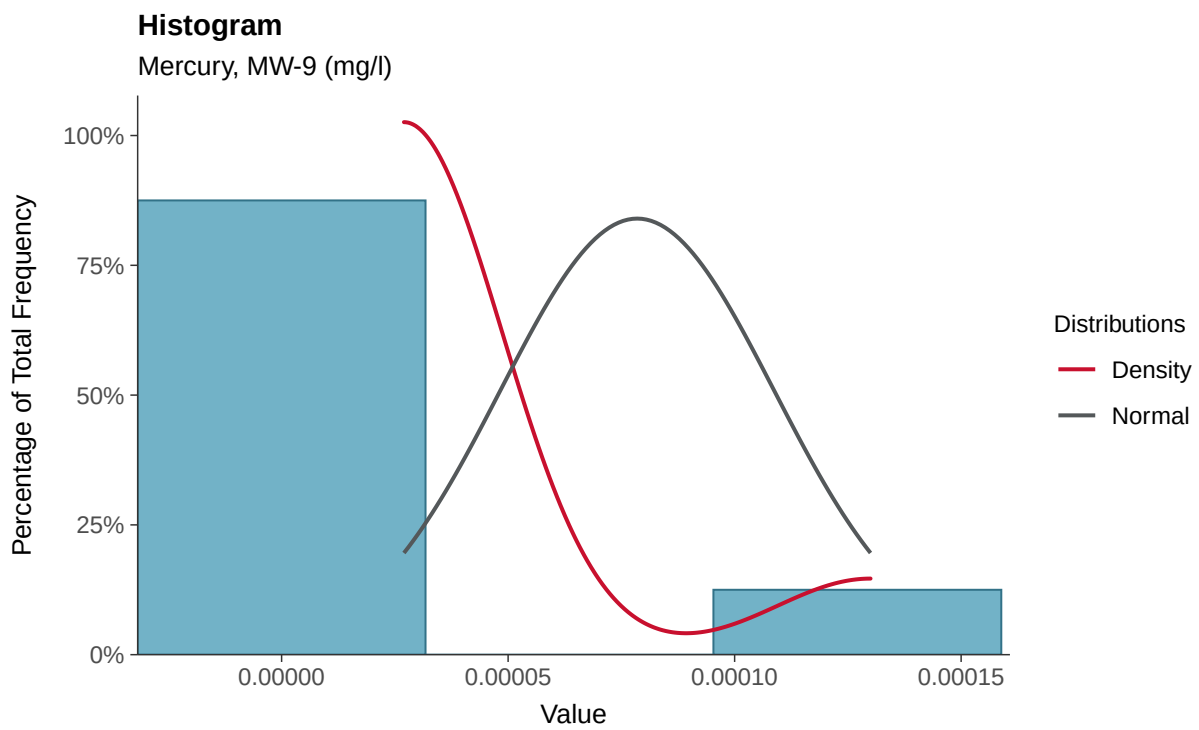
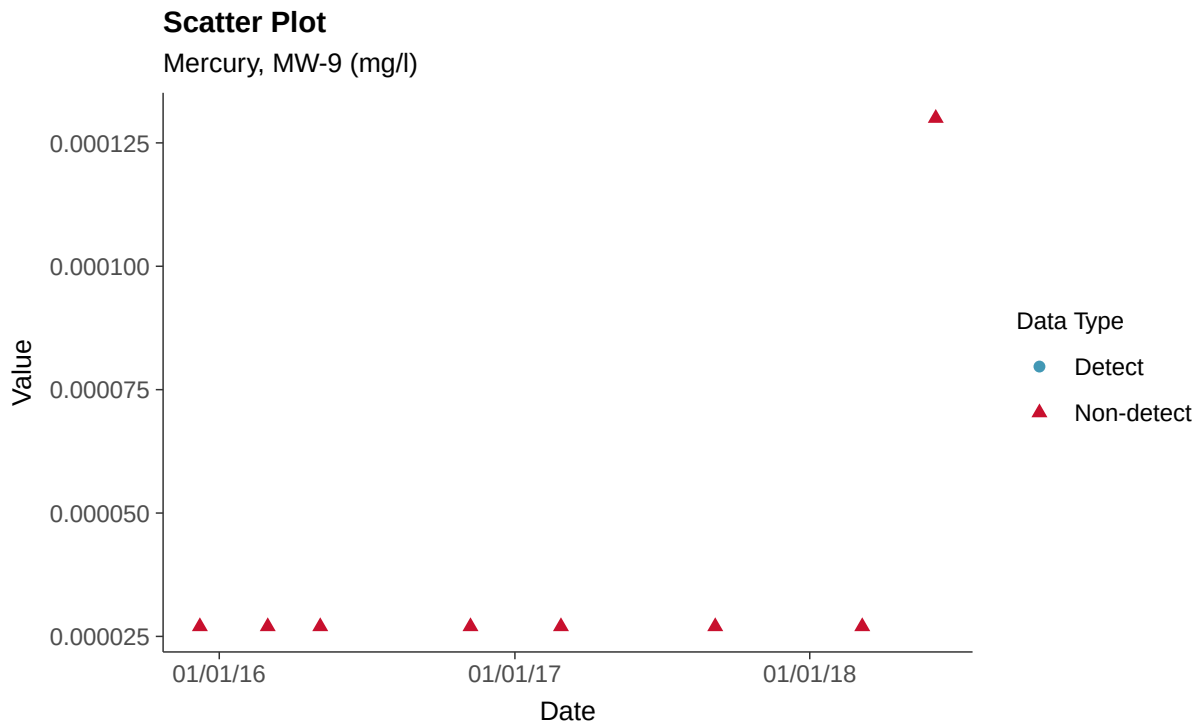
Trend Regression: Piecewise Linear-Linear-Linear

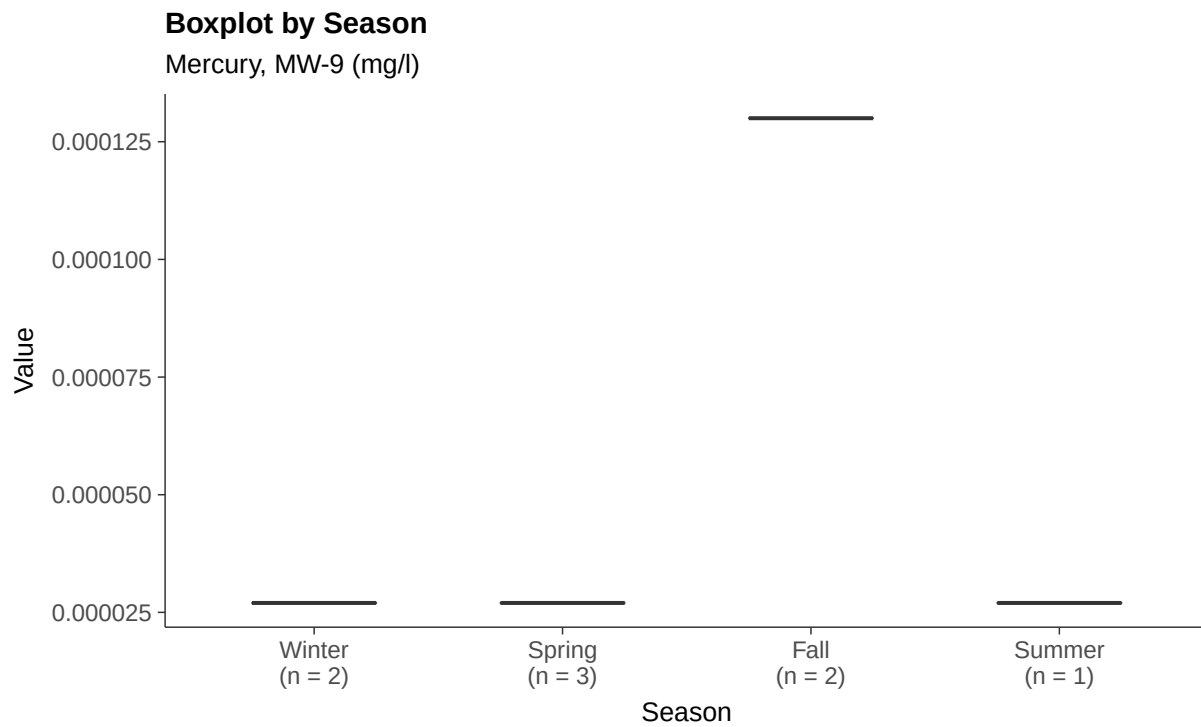
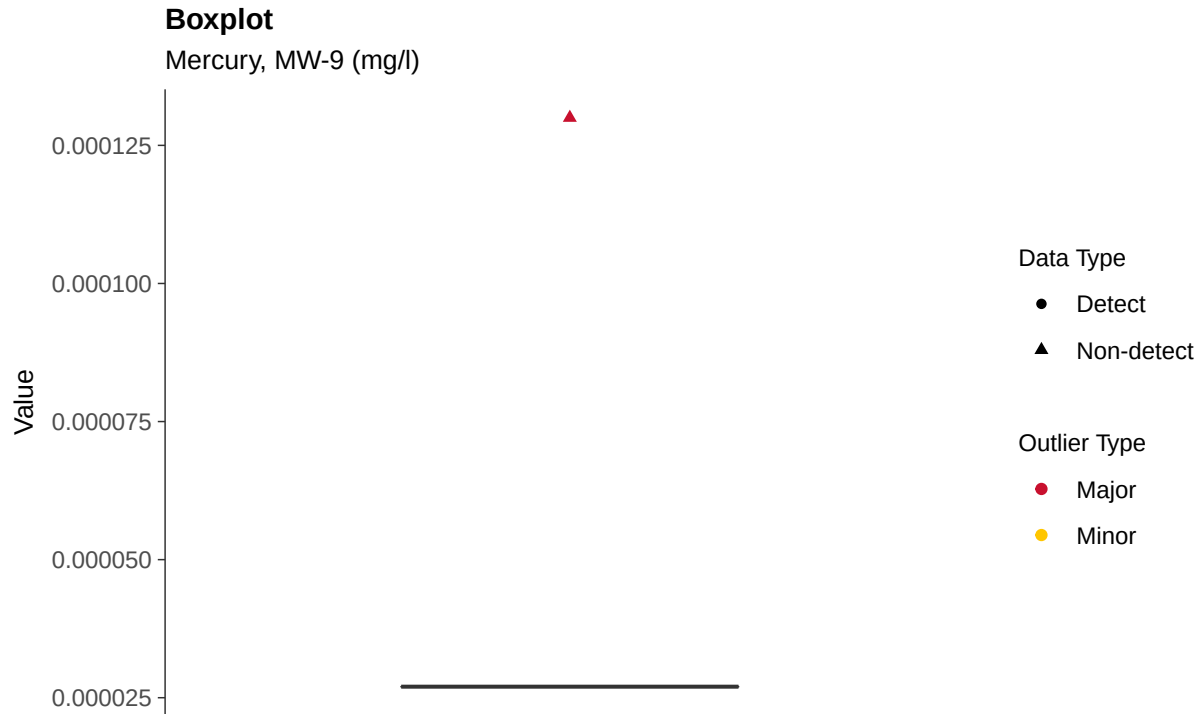
Lithium, MW-9 (mg/l)



Appendix IV: Mercury, MW-9

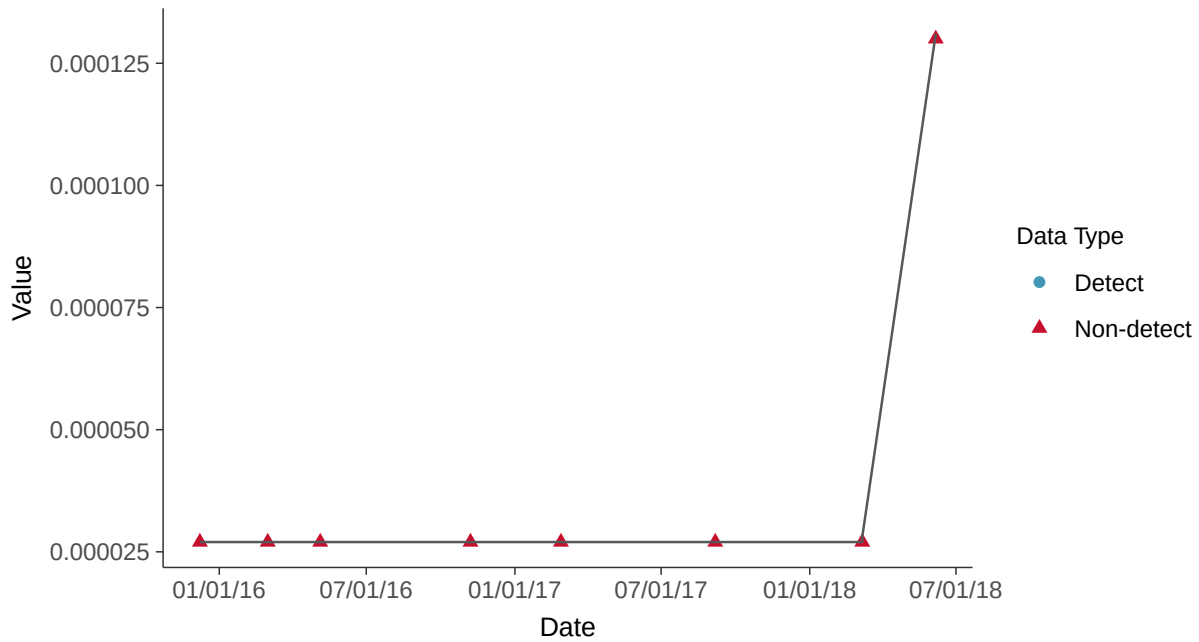
ID: 4_2_120





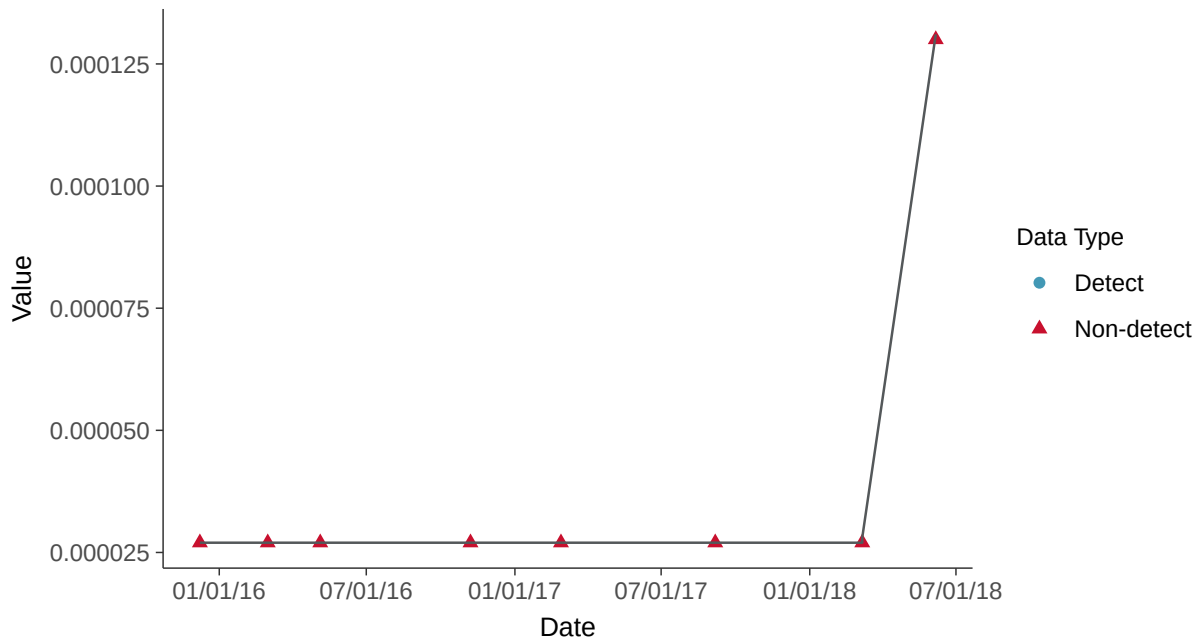
Trend Regression: Piecewise Linear-Linear

Mercury, MW-9 (mg/l)



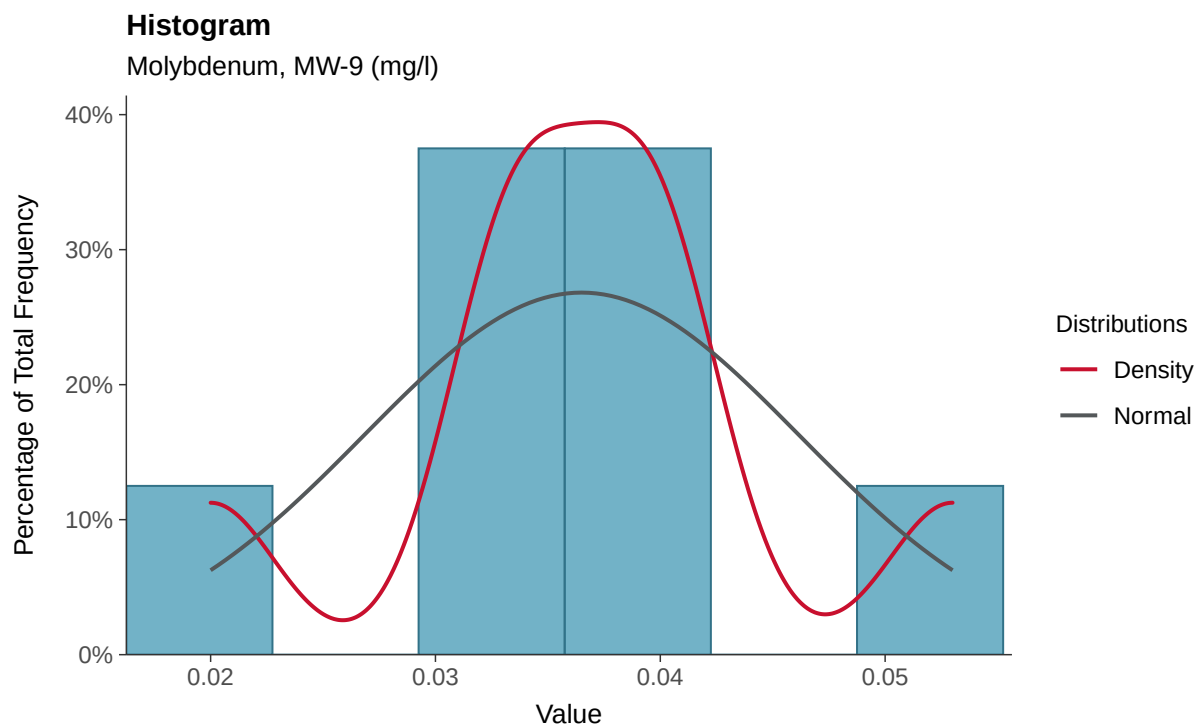
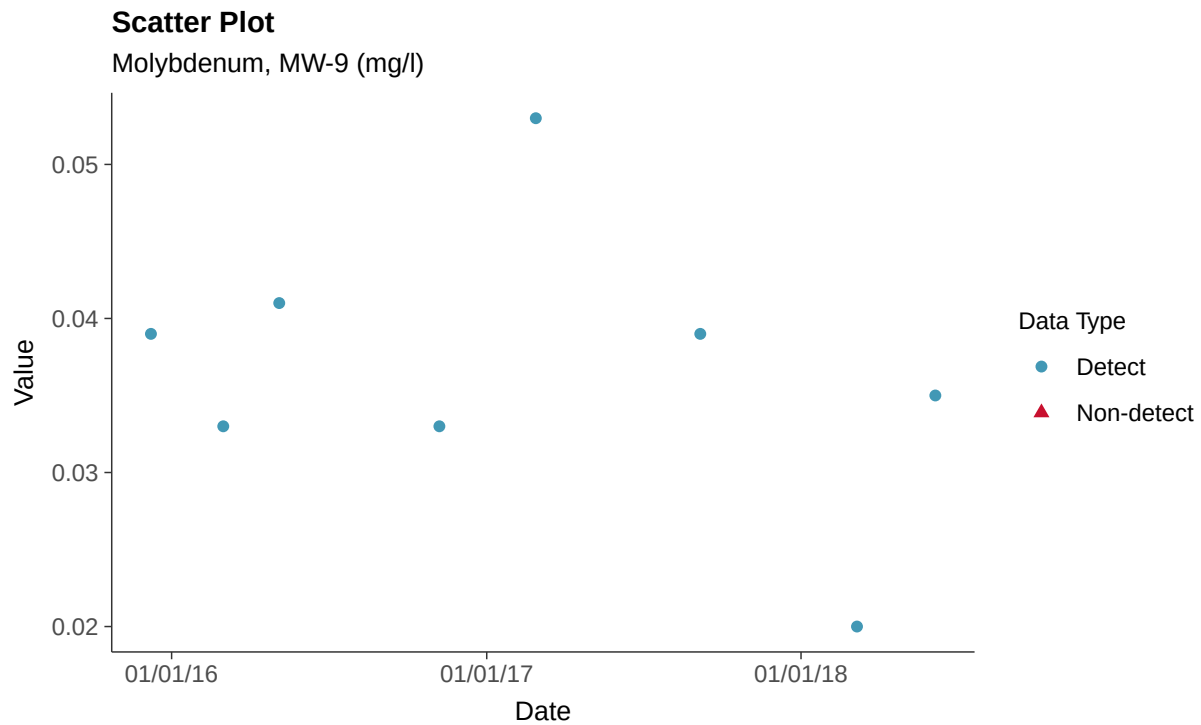
Trend Regression: Piecewise Linear-Linear-Linear

Mercury, MW-9 (mg/l)



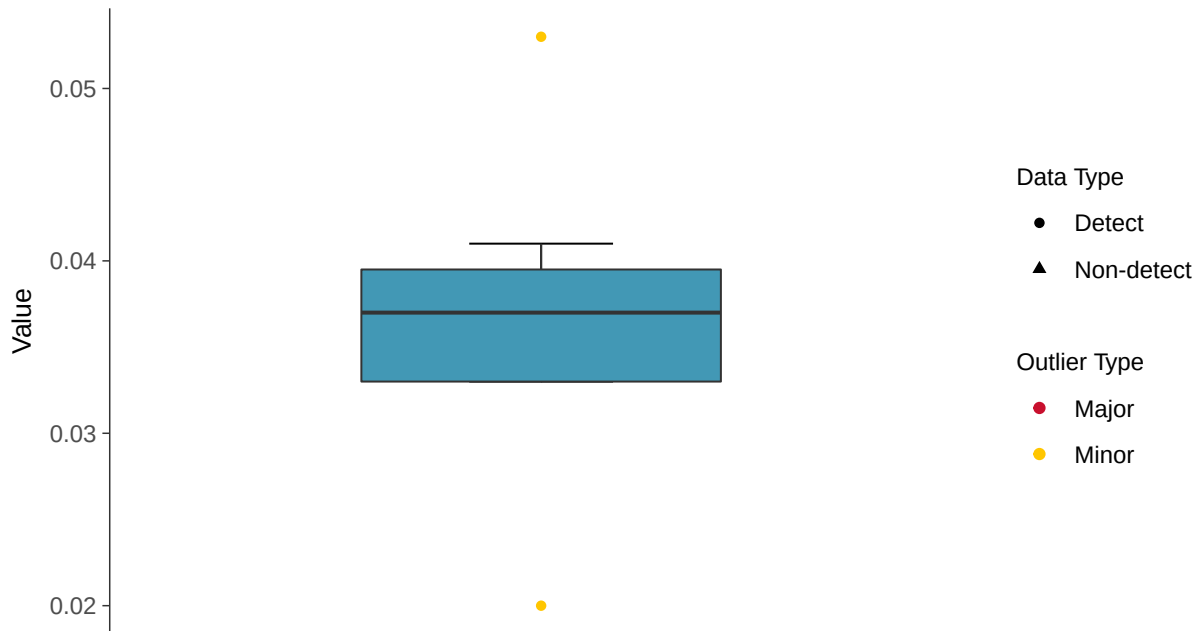
Appendix IV: Molybdenum, MW-9

ID: 4_2_121



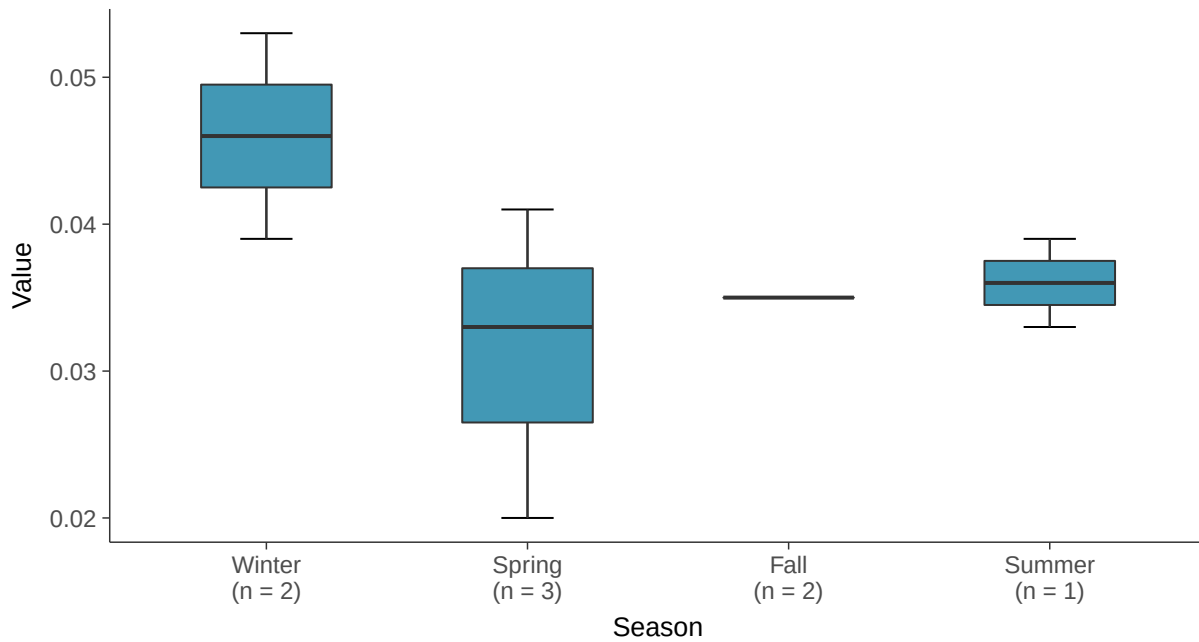
Boxplot

Molybdenum, MW-9 (mg/l)



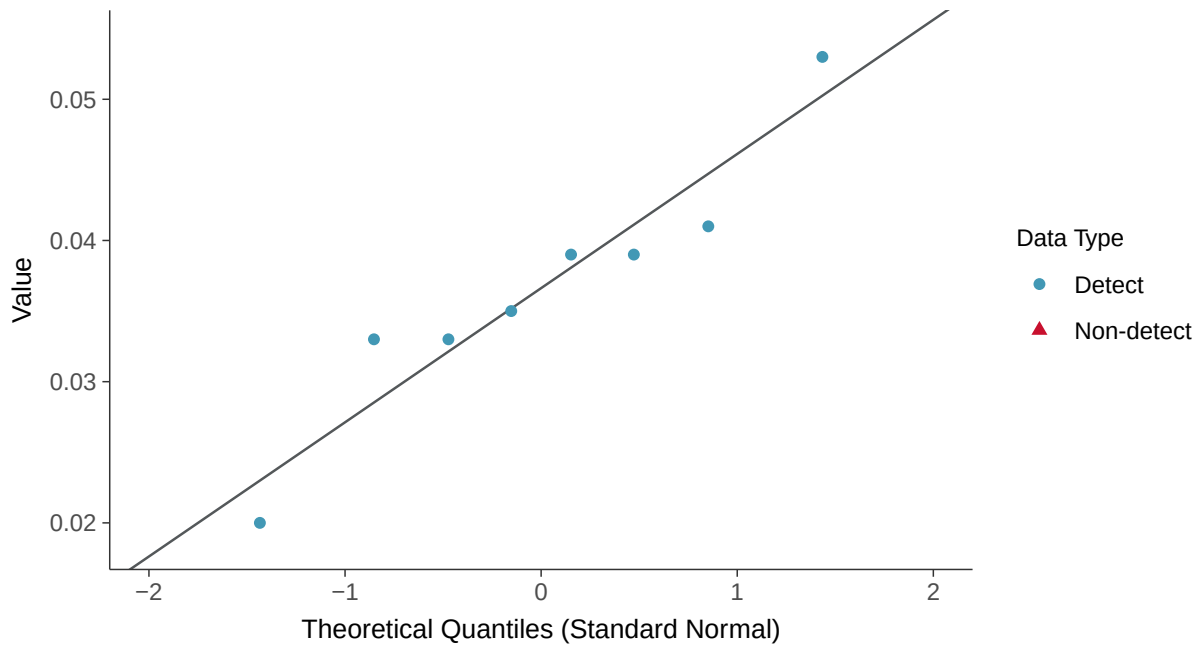
Boxplot by Season

Molybdenum, MW-9 (mg/l)



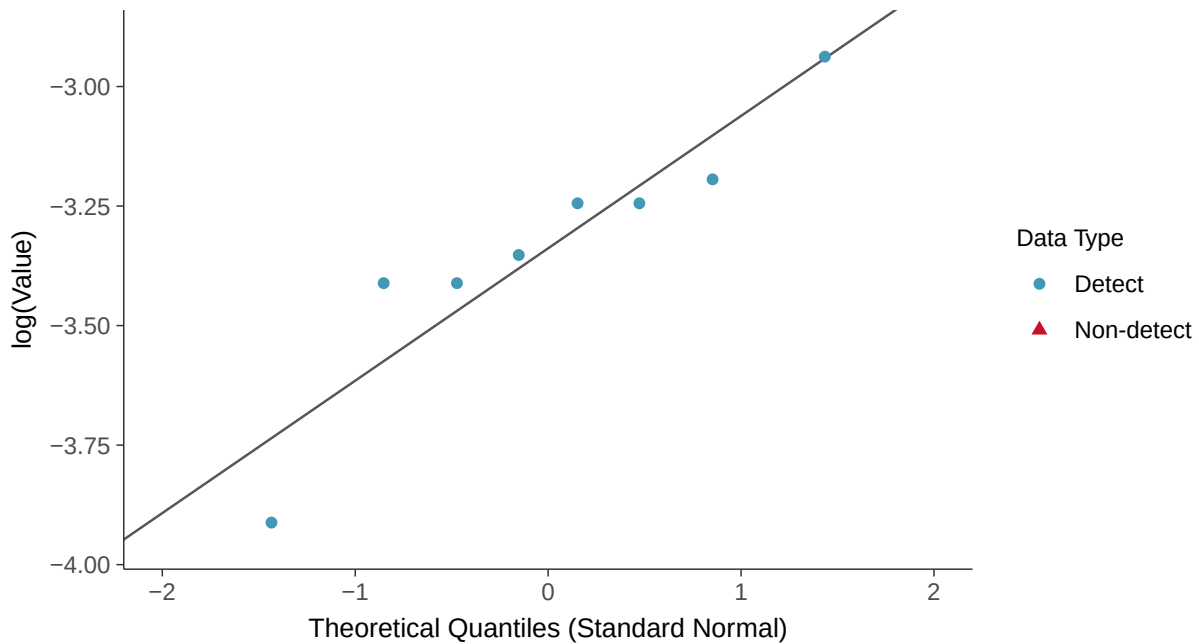
Normal Q-Q plot

Molybdenum, MW-9 (mg/l)



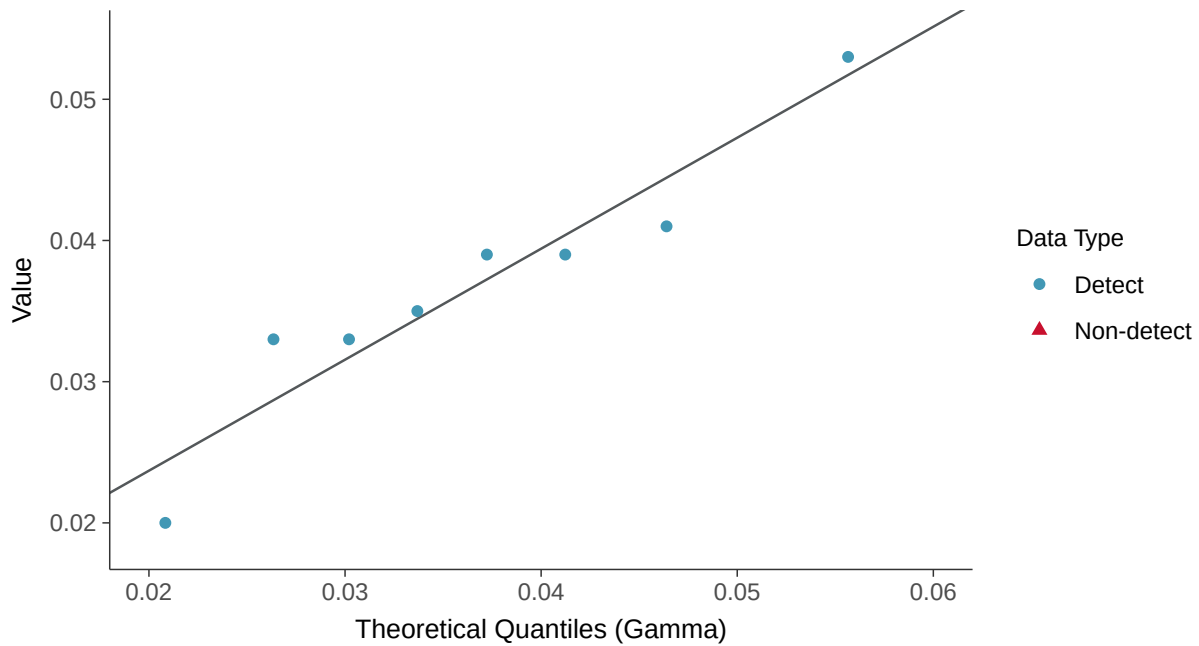
Lognormal Q-Q plot

Molybdenum, MW-9 (mg/l)



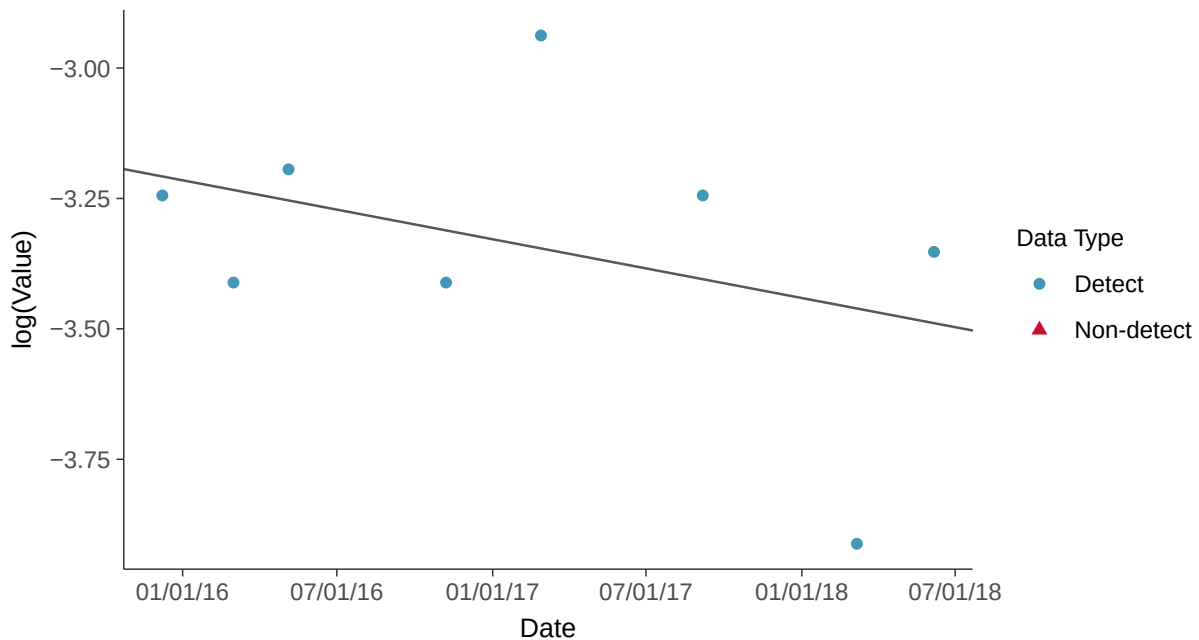
Gamma Q-Q plot

Molybdenum, MW-9 (mg/l)



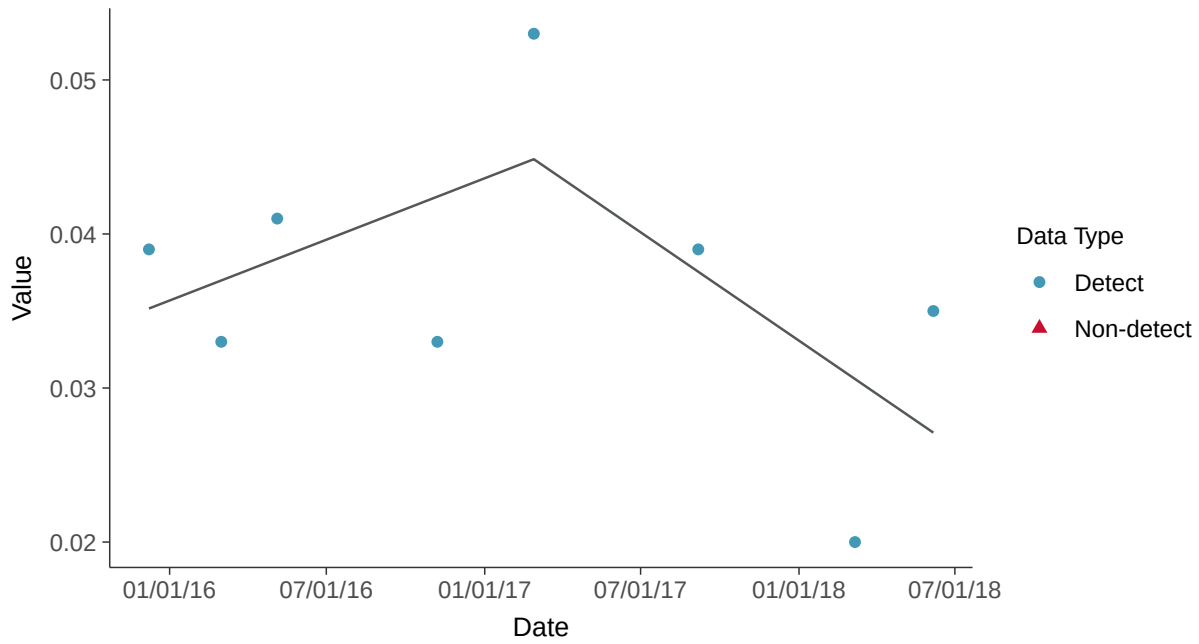
Trend Regression: Lognormal MLE

Molybdenum, MW-9 (mg/l)



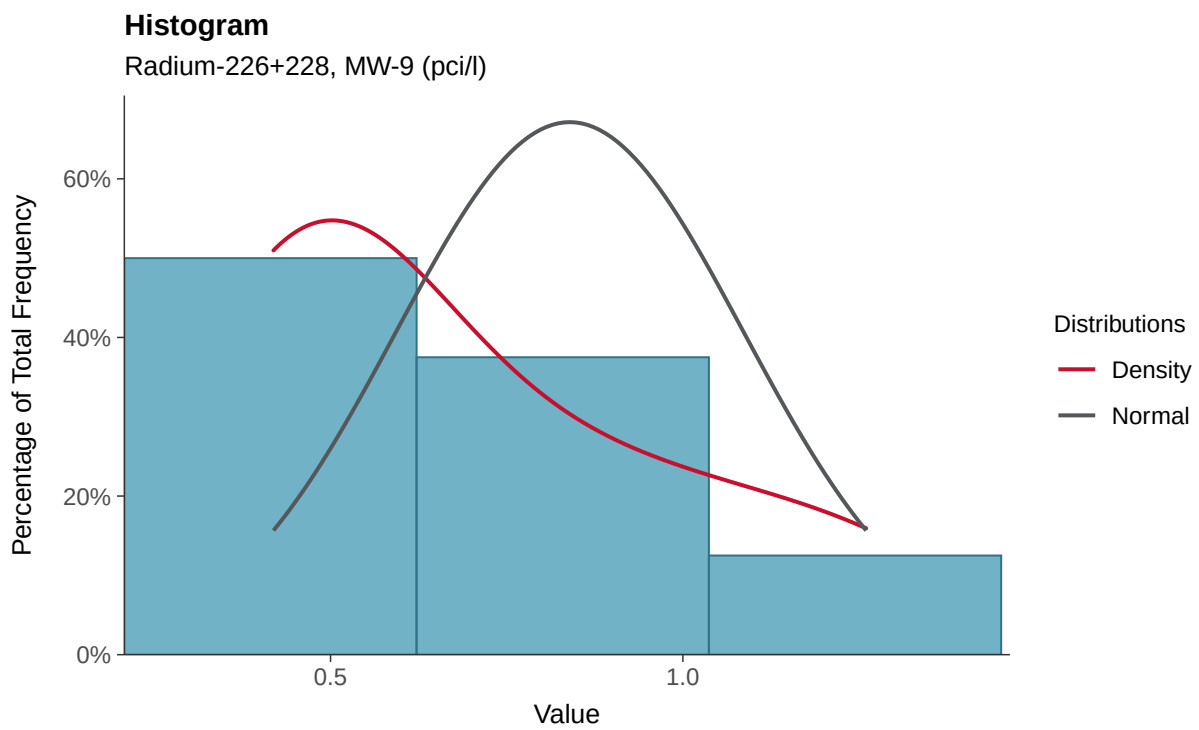
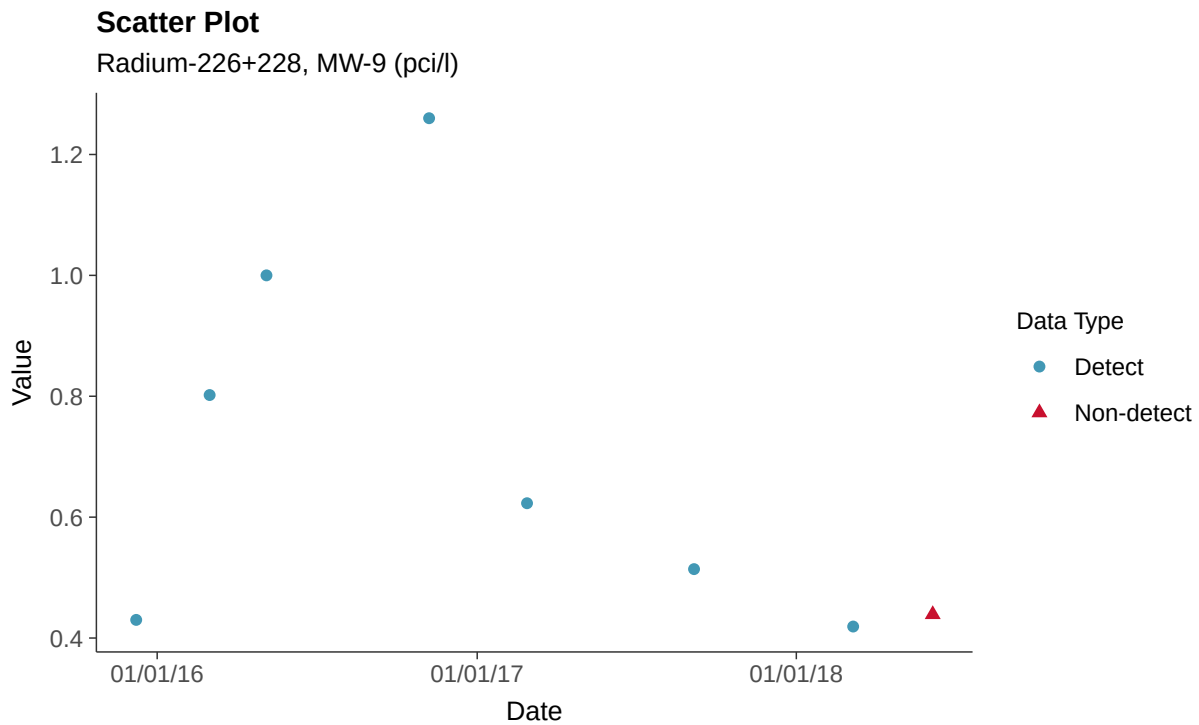


Trend Regression: Piecewise Linear-Linear
Molybdenum, MW-9 (mg/l)



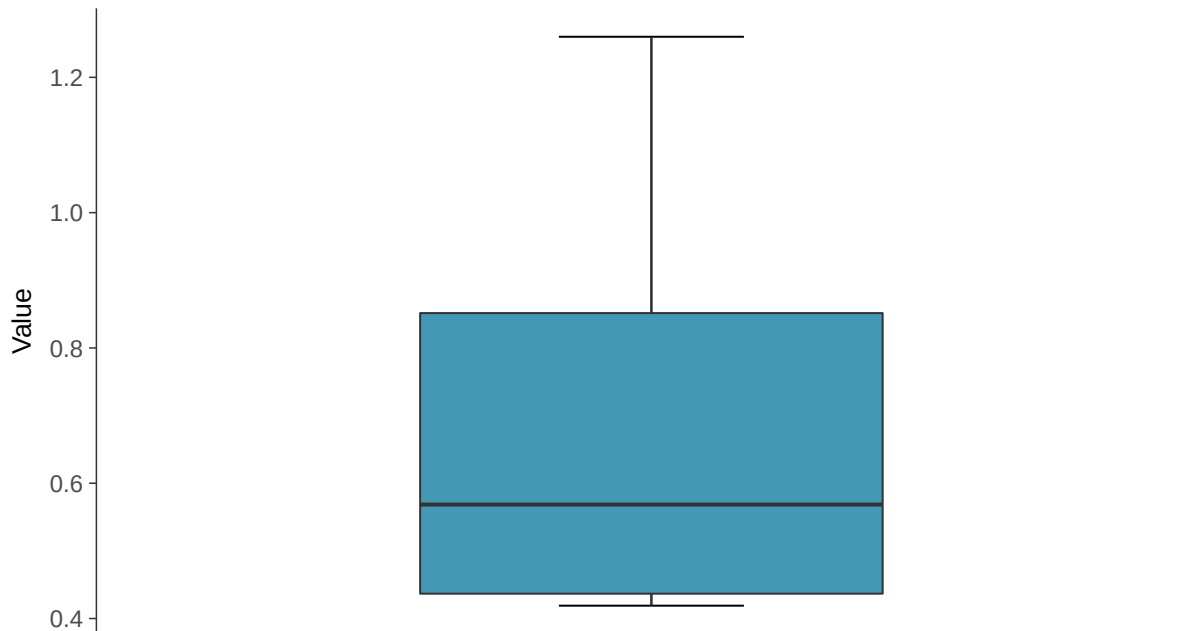
Appendix IV: Radium-226+228, MW-9

ID: 4_2_127



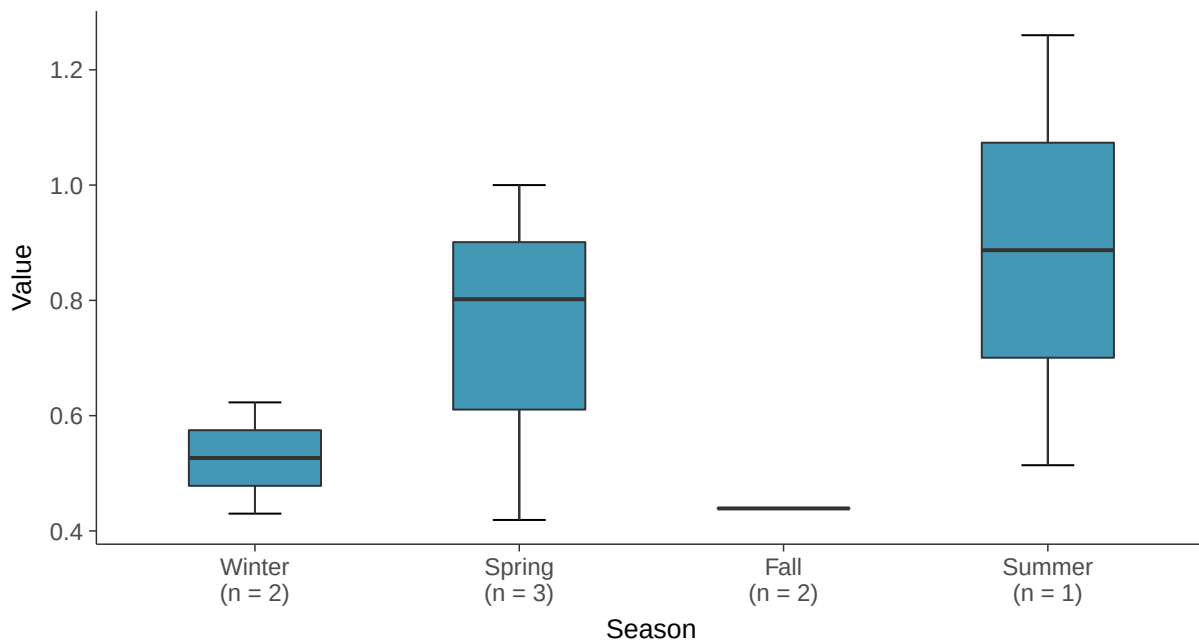
Boxplot

Radium-226+228, MW-9 (pci/l)



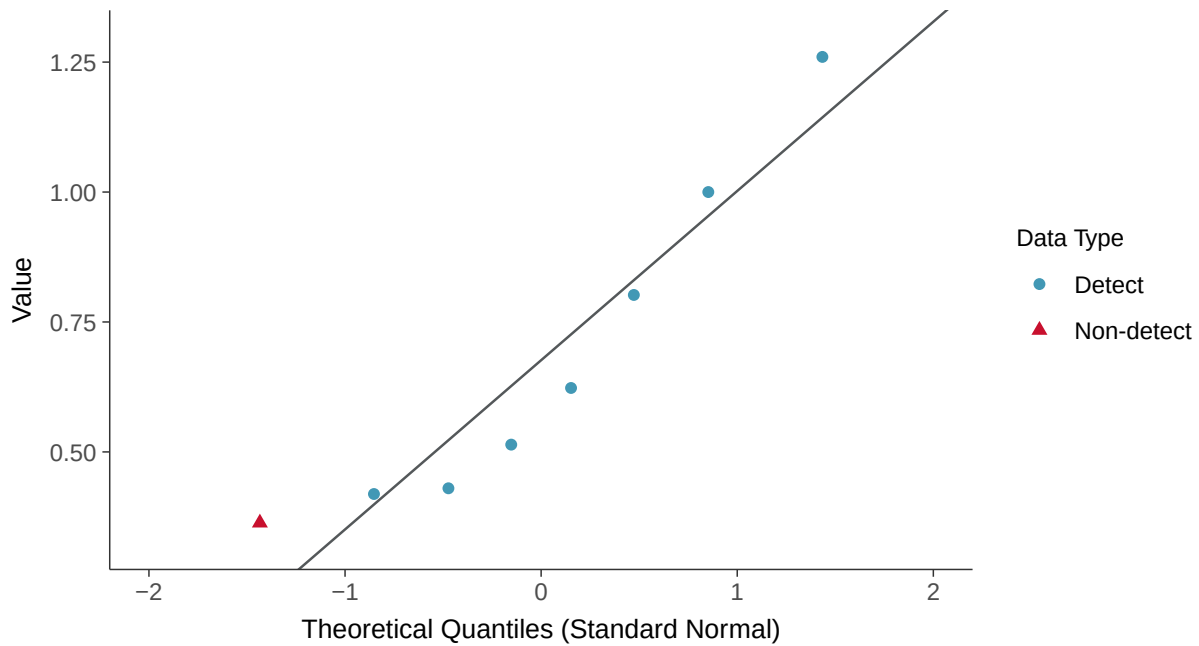
Boxplot by Season

Radium-226+228, MW-9 (pci/l)



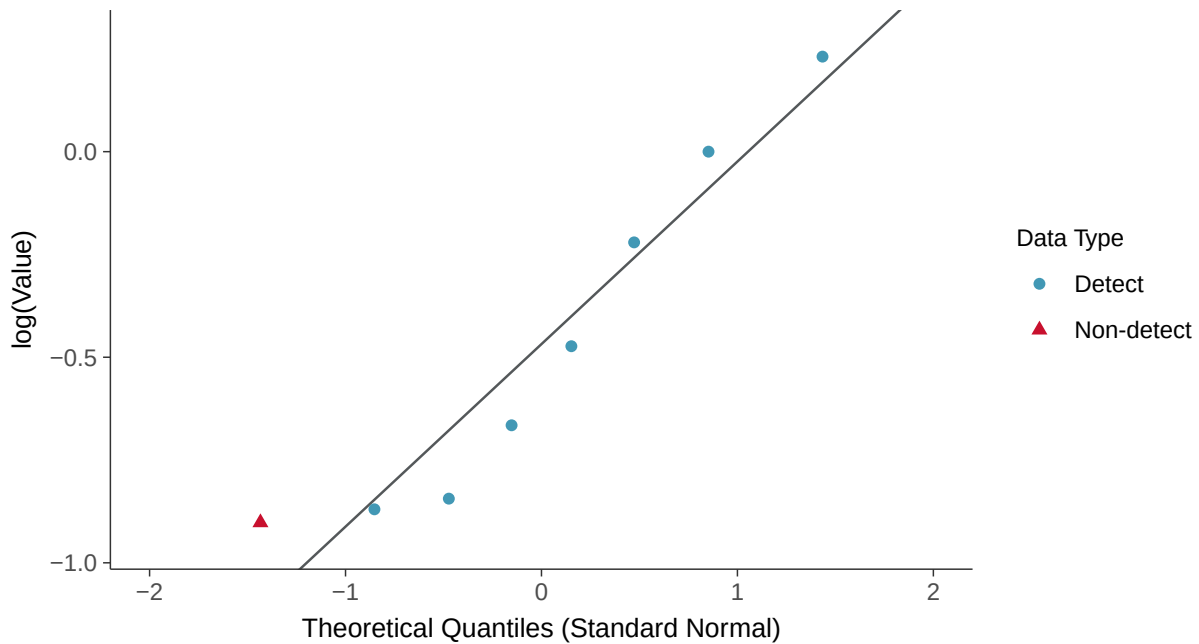
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-9 (pci/l)



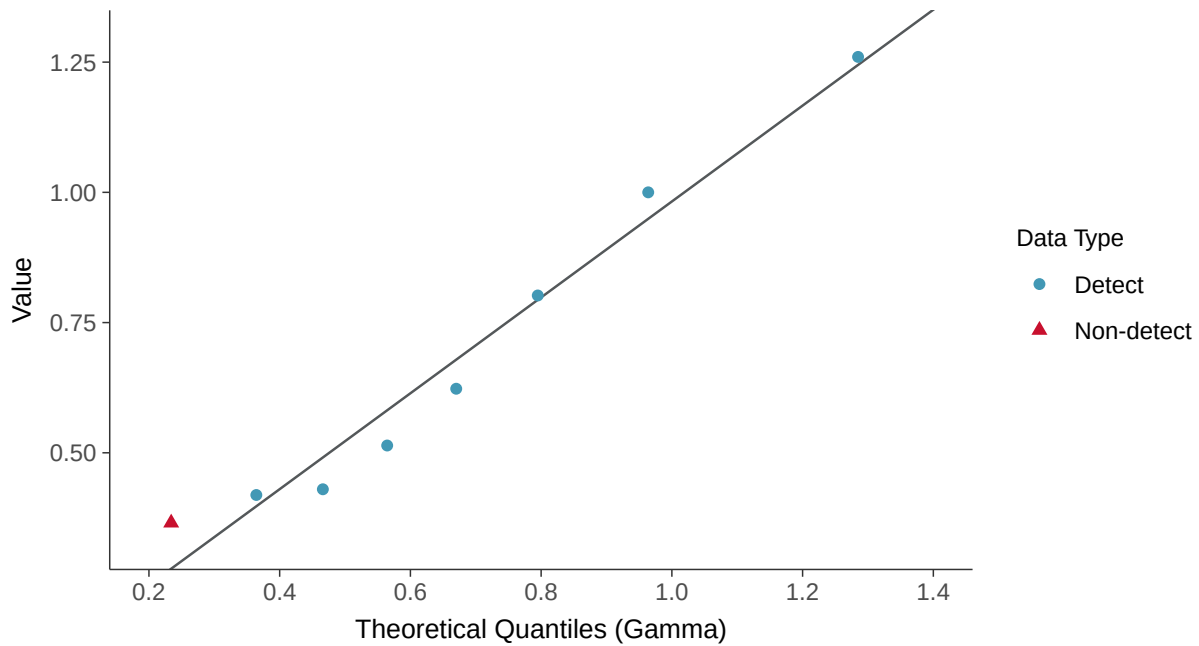
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-9 (pci/l)



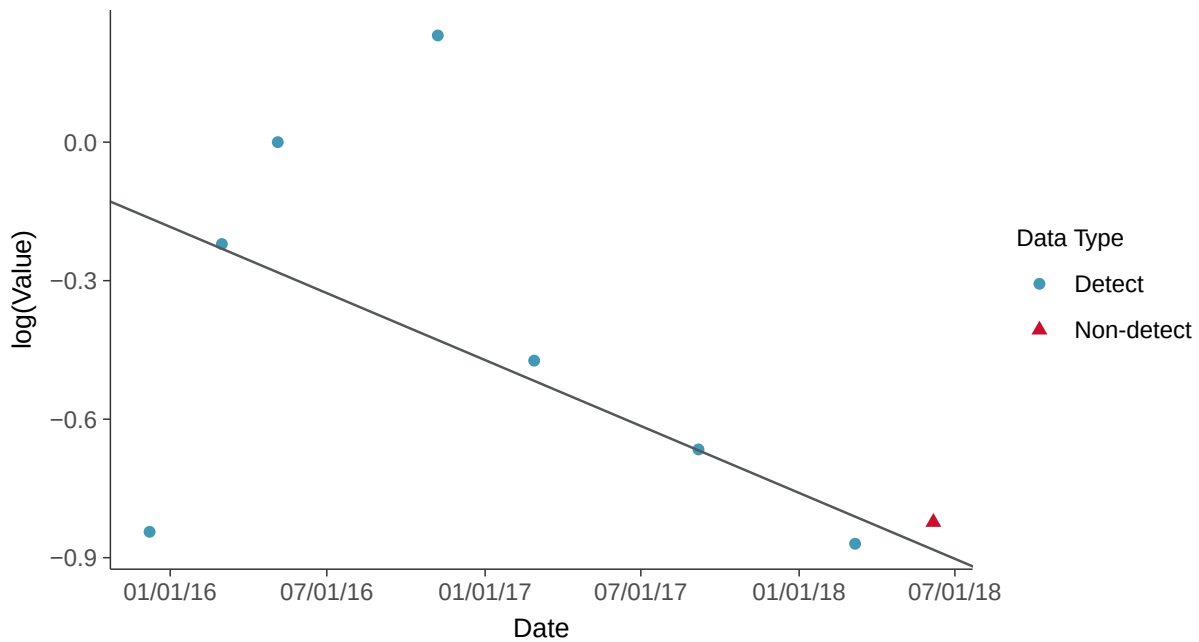
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-9 (pci/l)



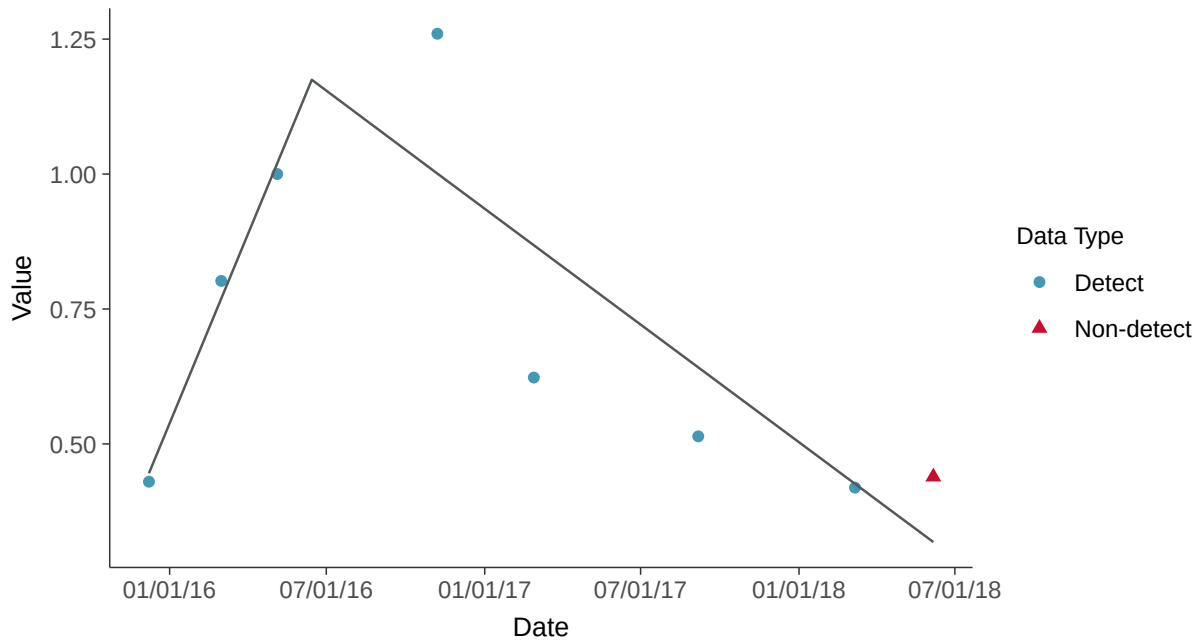
Trend Regression: Lognormal MLE

Radium-226+228, MW-9 (pci/l)



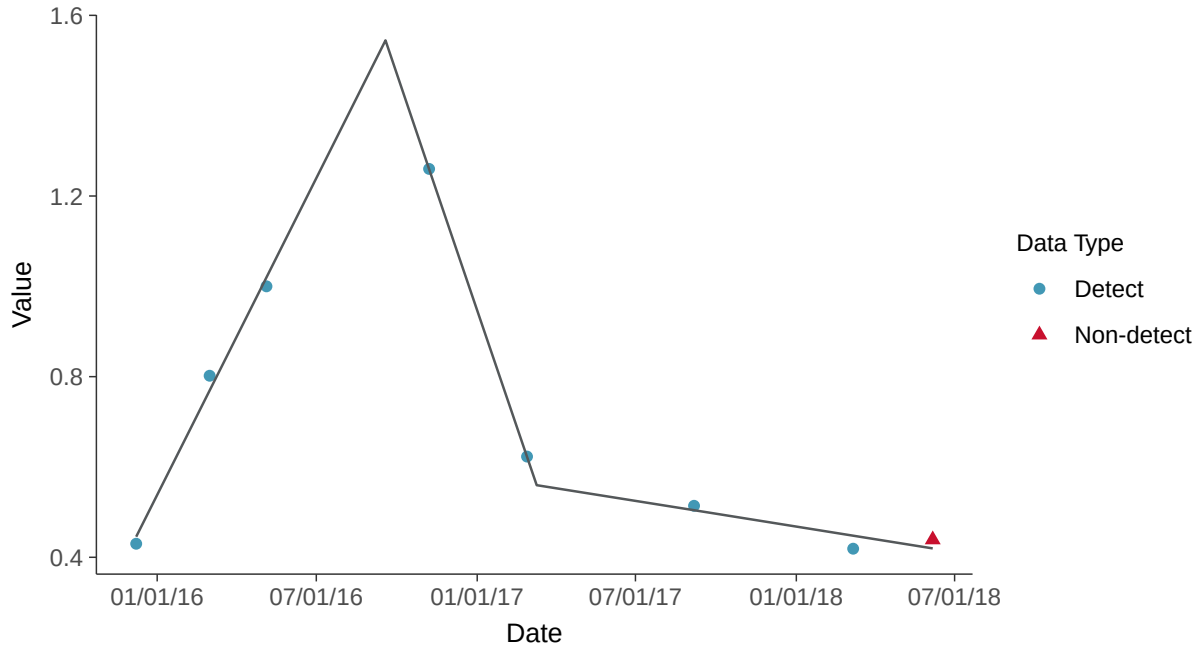
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-9 (pci/l)



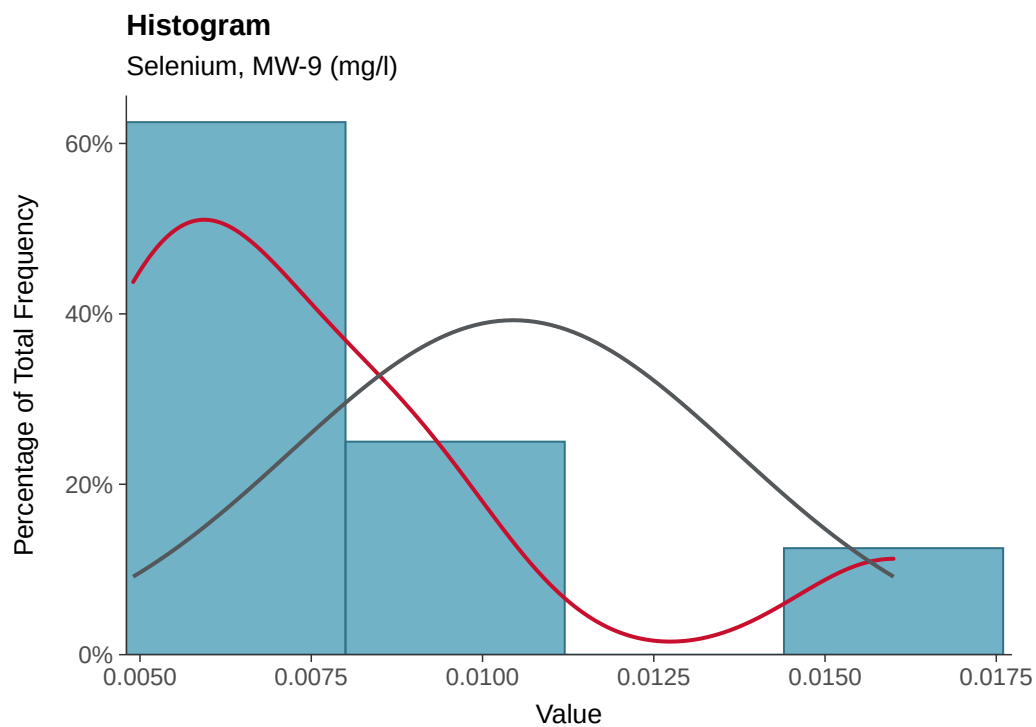
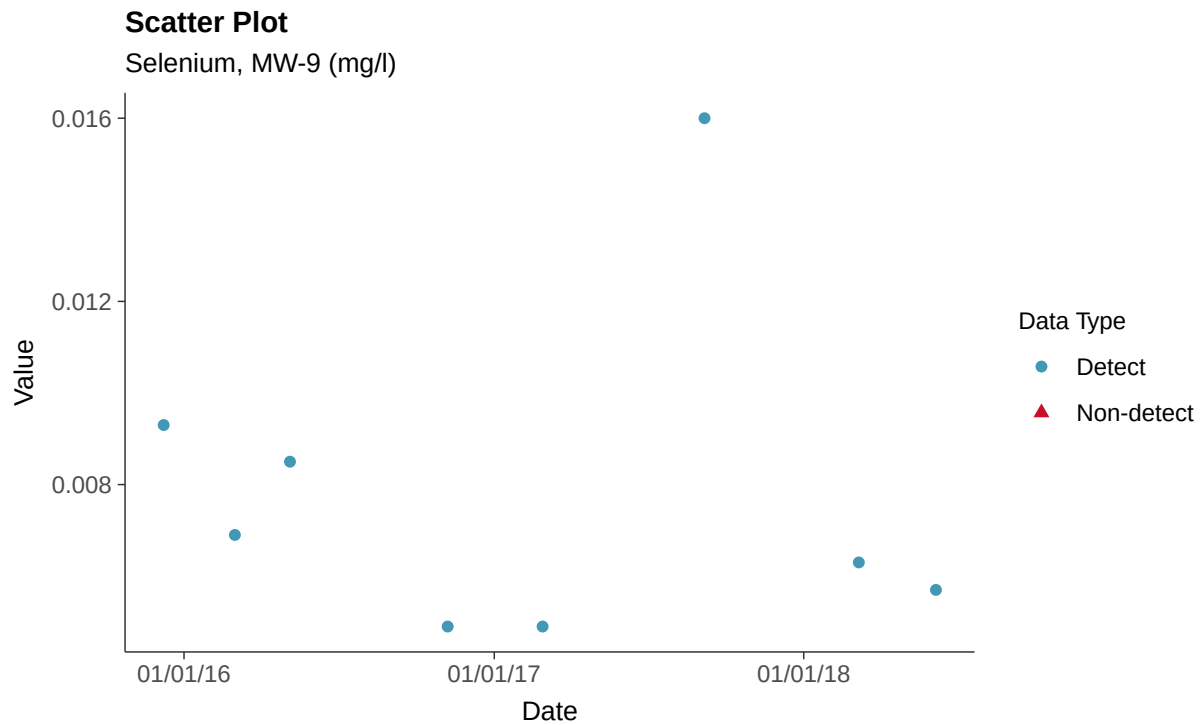
Trend Regression: Piecewise Linear-Linear-Linear

Radium-226+228, MW-9 (pci/l)



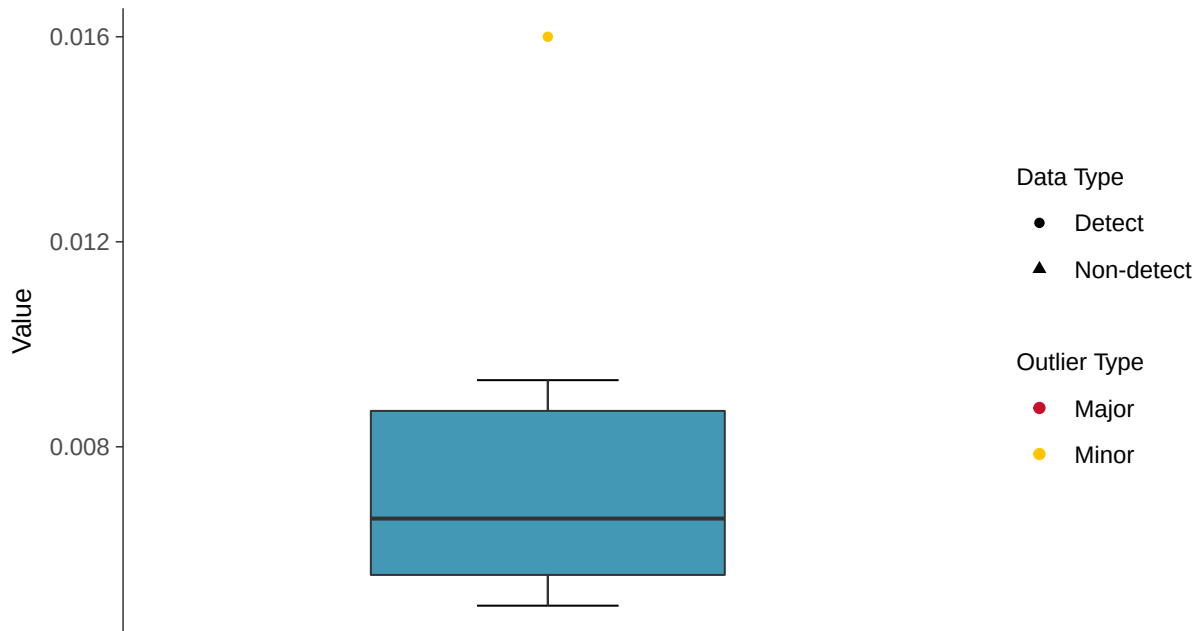
Appendix IV: Selenium, MW-9

ID: 4_2_129



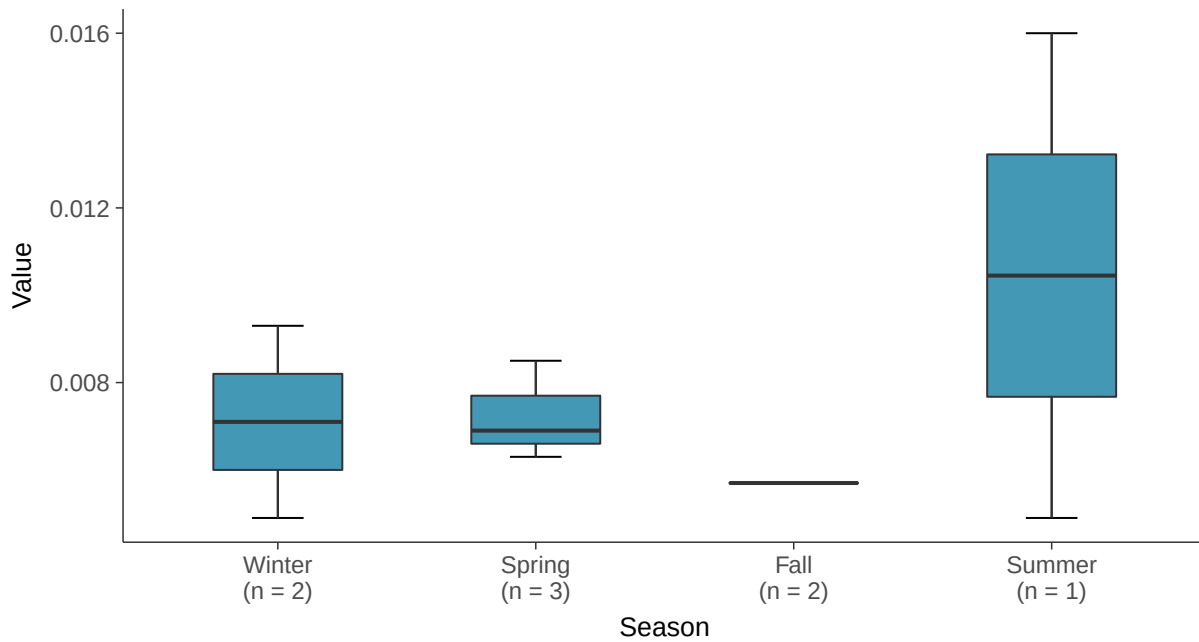
Boxplot

Selenium, MW-9 (mg/l)



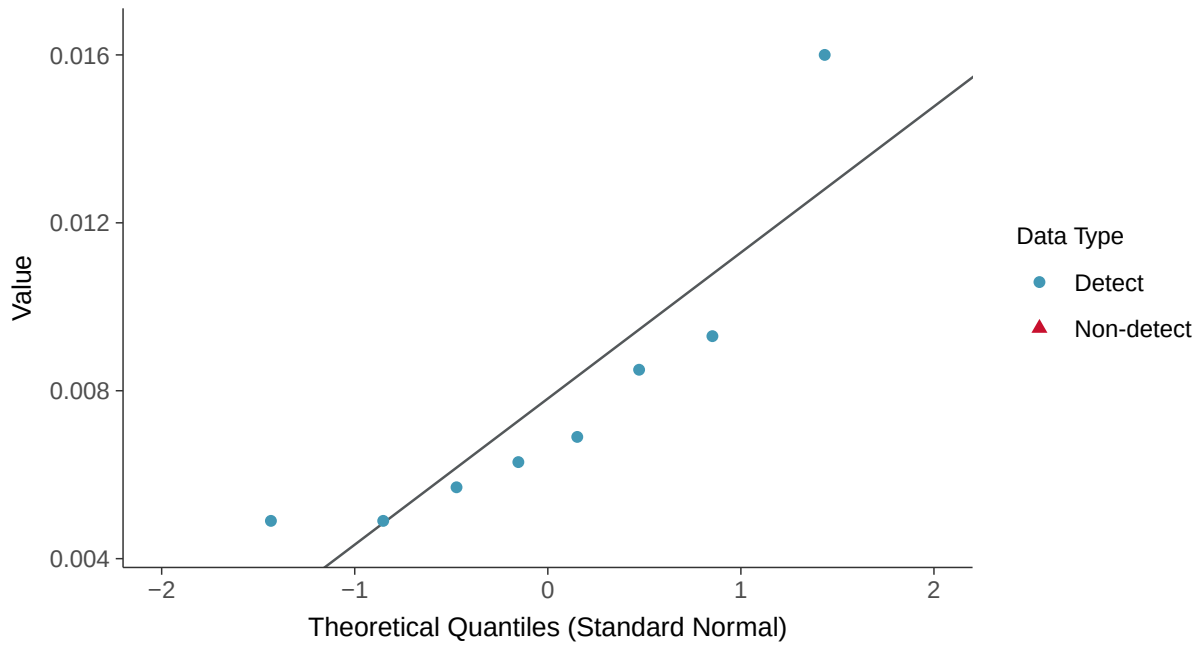
Boxplot by Season

Selenium, MW-9 (mg/l)



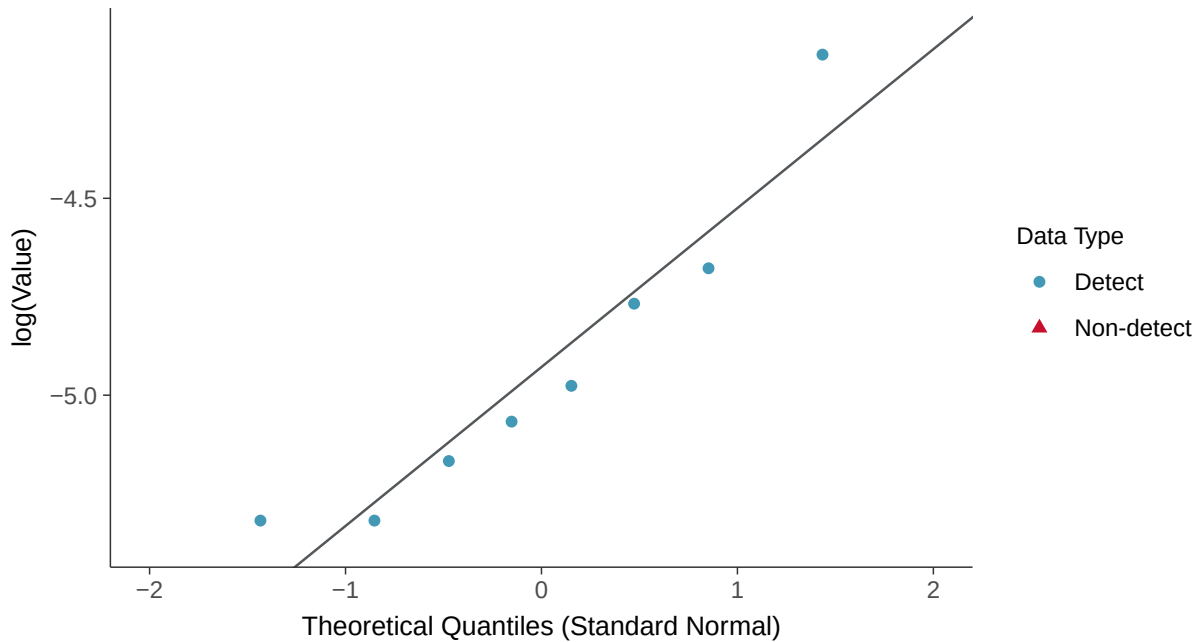
Normal Q-Q plot

Selenium, MW-9 (mg/l)

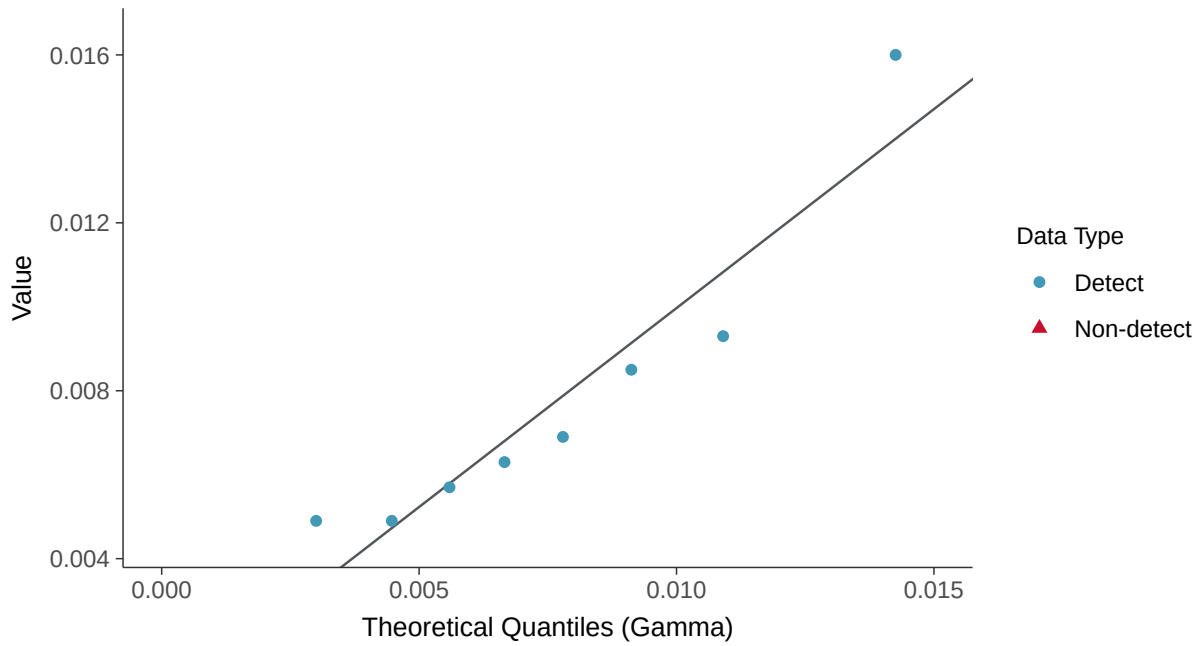


Lognormal Q-Q plot

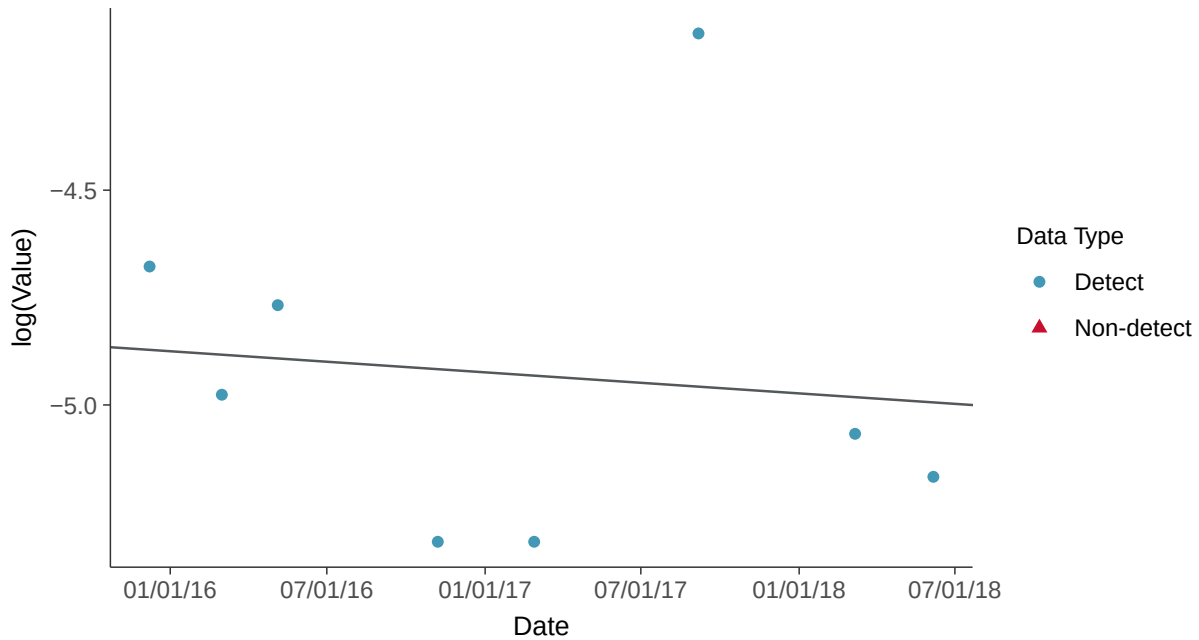
Selenium, MW-9 (mg/l)



Gamma Q-Q plot
Selenium, MW-9 (mg/l)

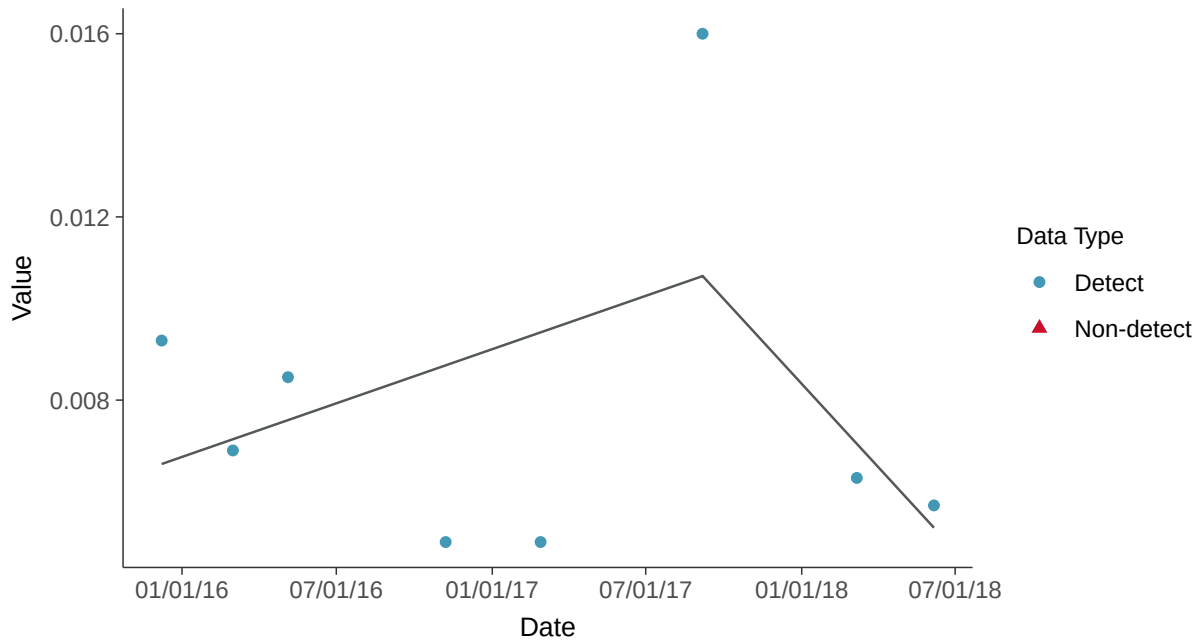


Trend Regression: Lognormal MLE
Selenium, MW-9 (mg/l)



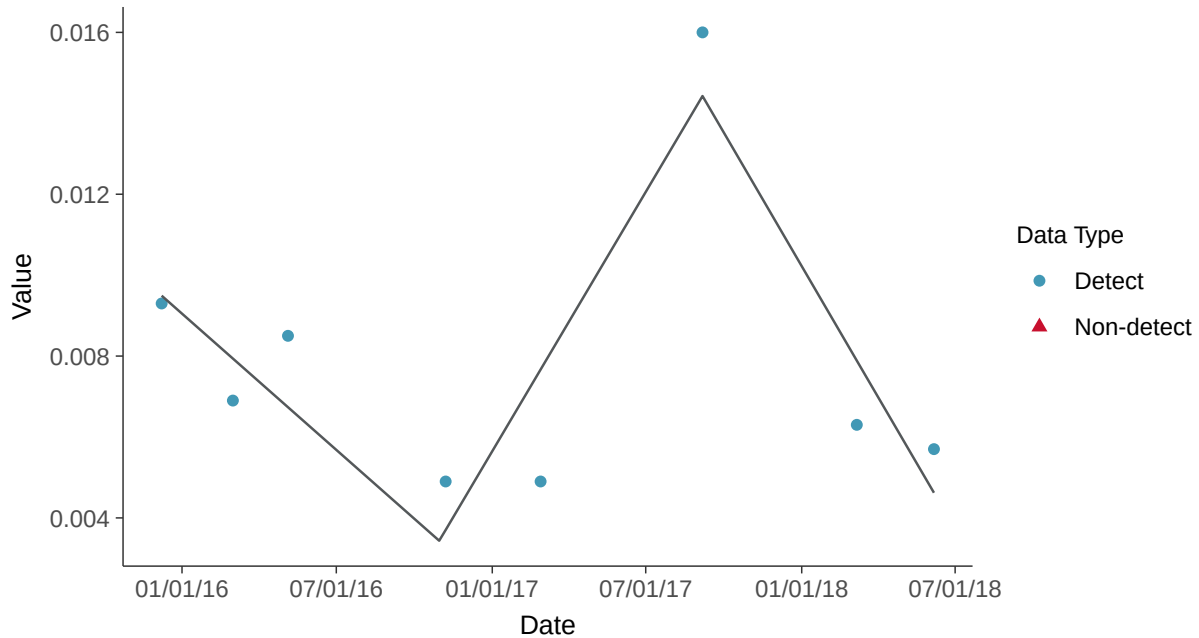
Trend Regression: Piecewise Linear-Linear

Selenium, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

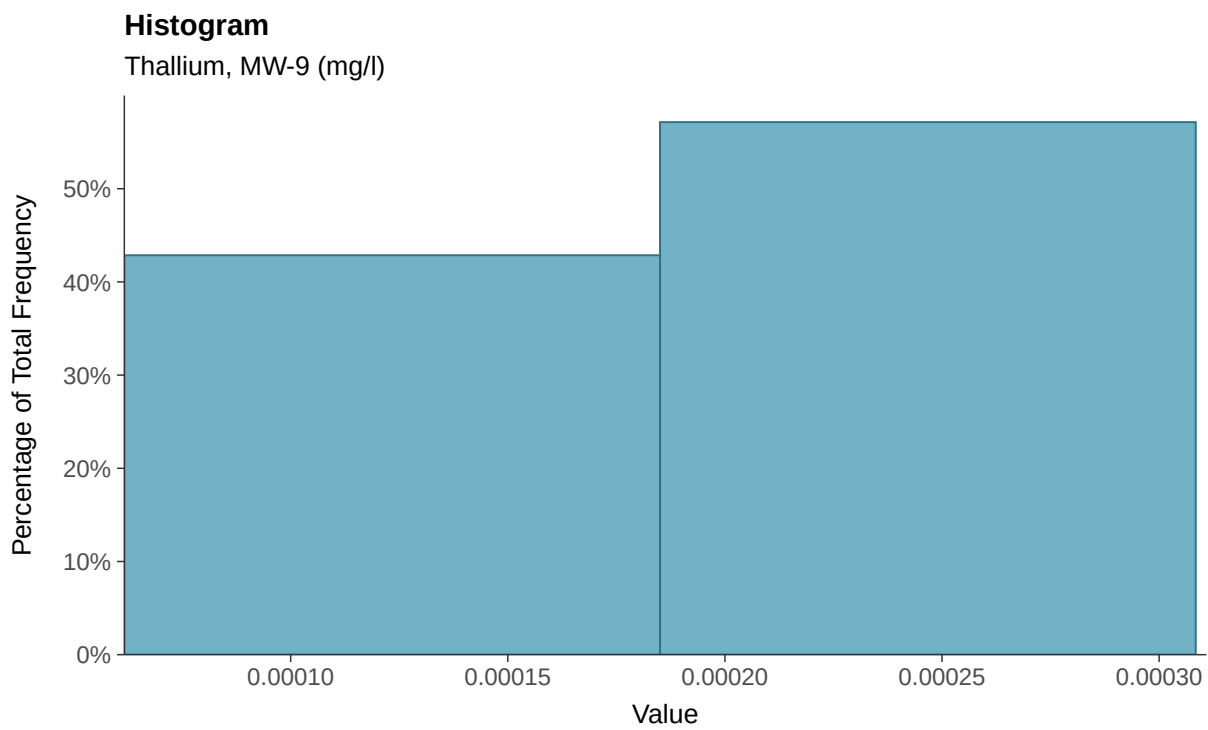
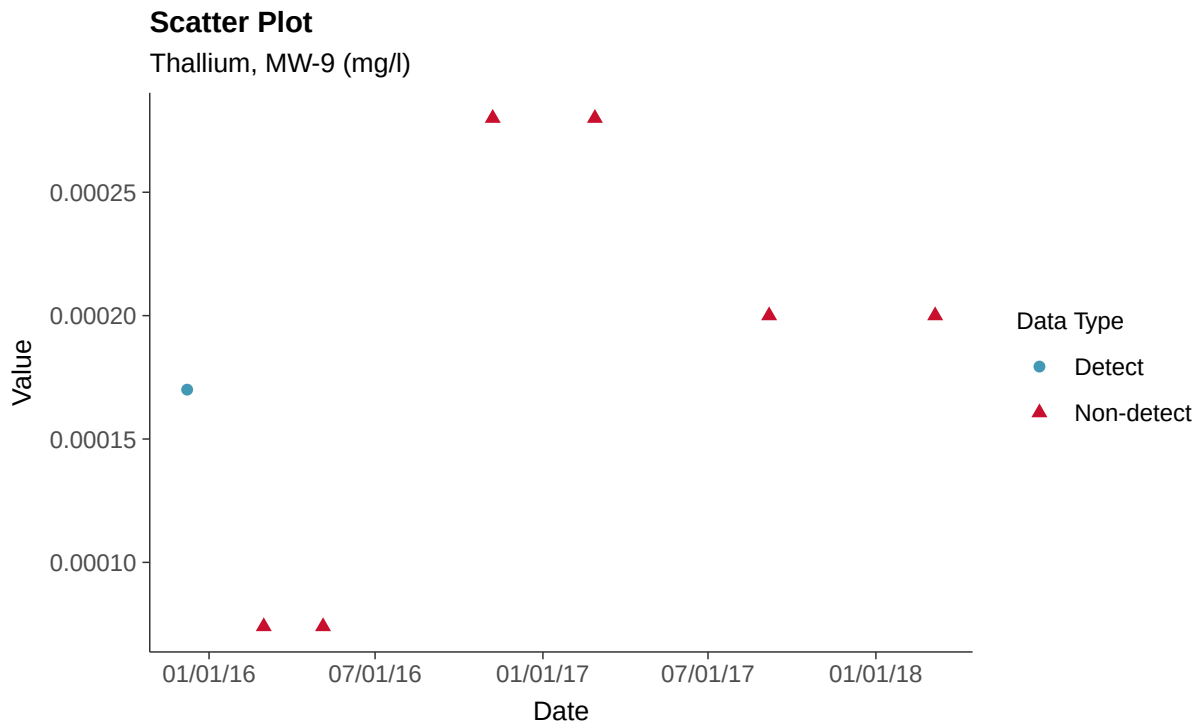
Selenium, MW-9 (mg/l)





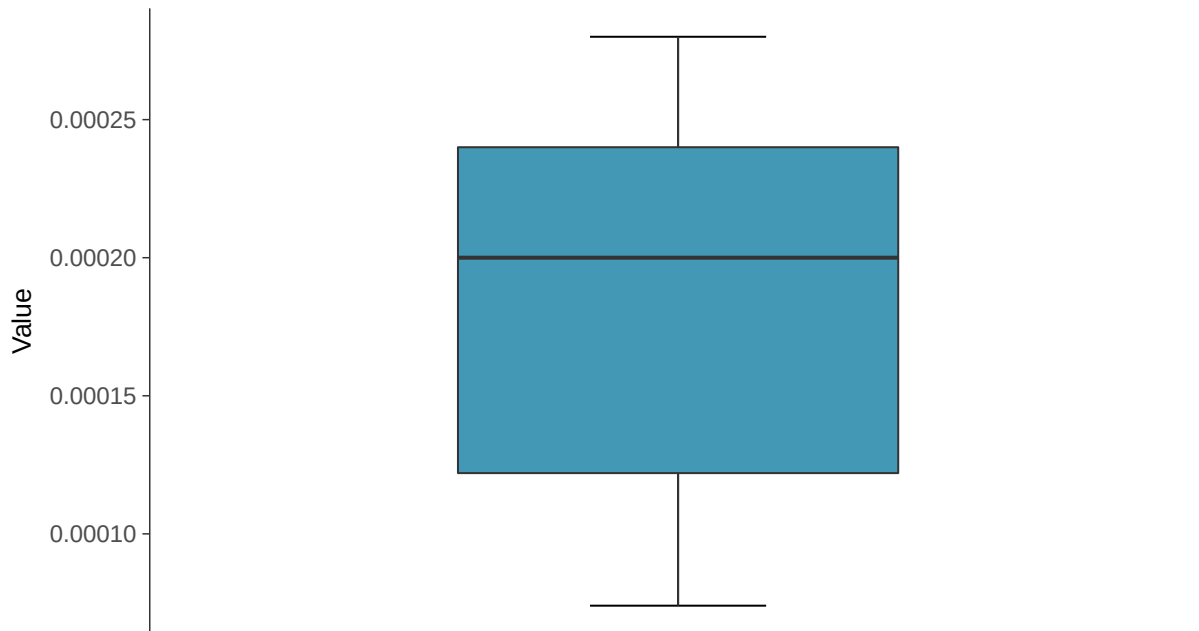
Appendix IV: Thallium, MW-9

ID: 4_2_134



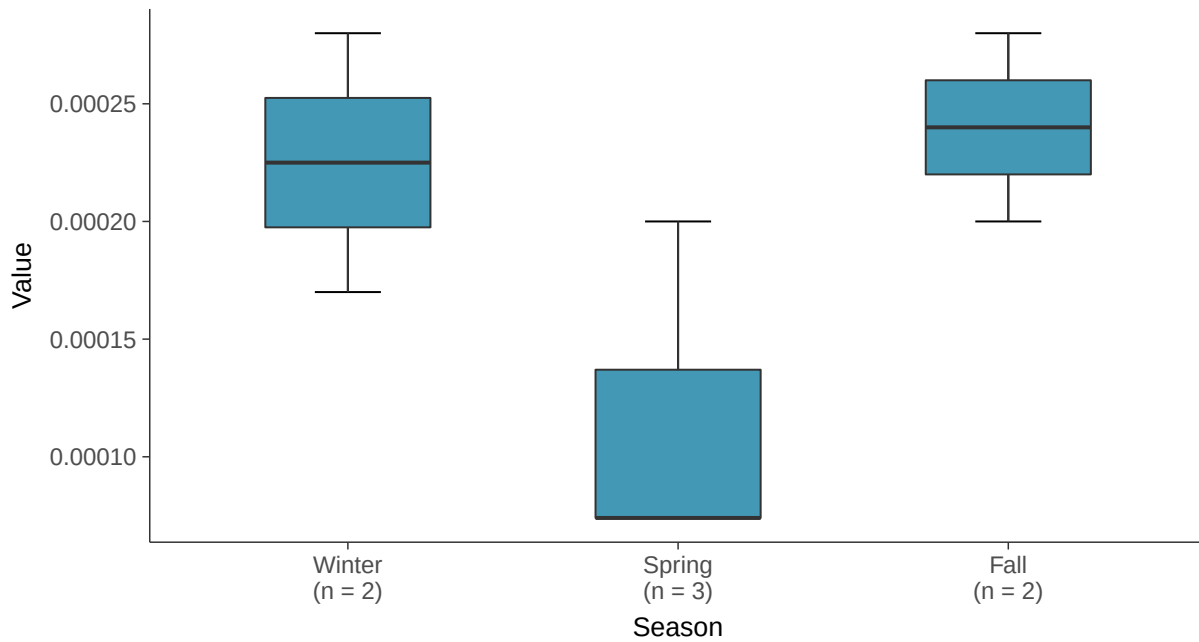
Boxplot

Thallium, MW-9 (mg/l)



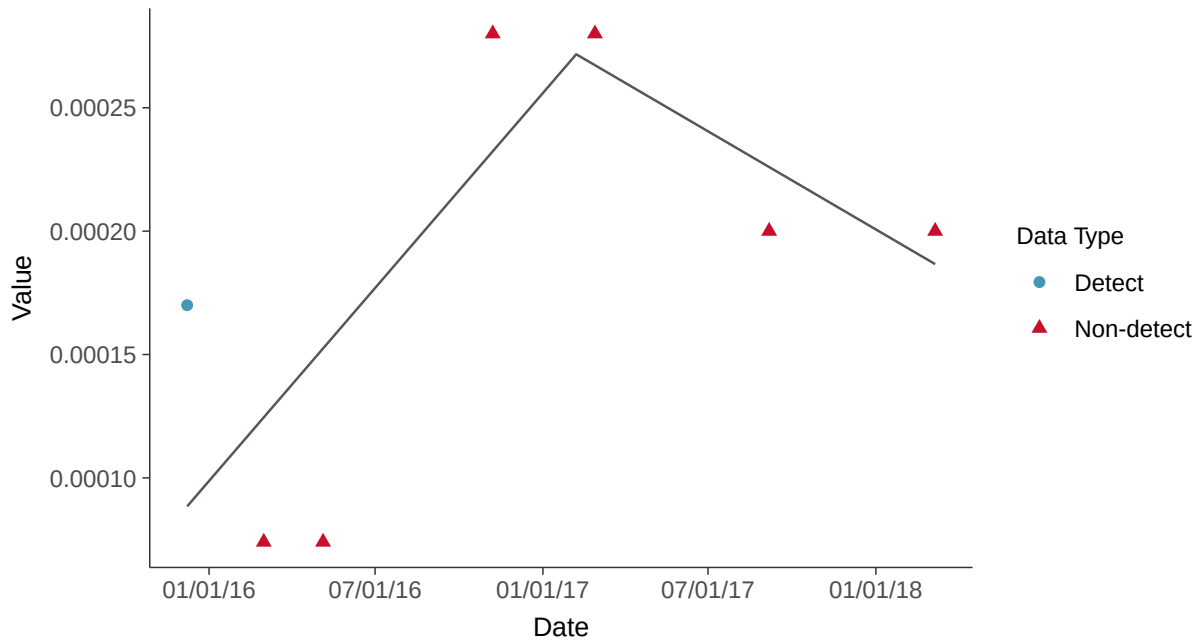
Boxplot by Season

Thallium, MW-9 (mg/l)



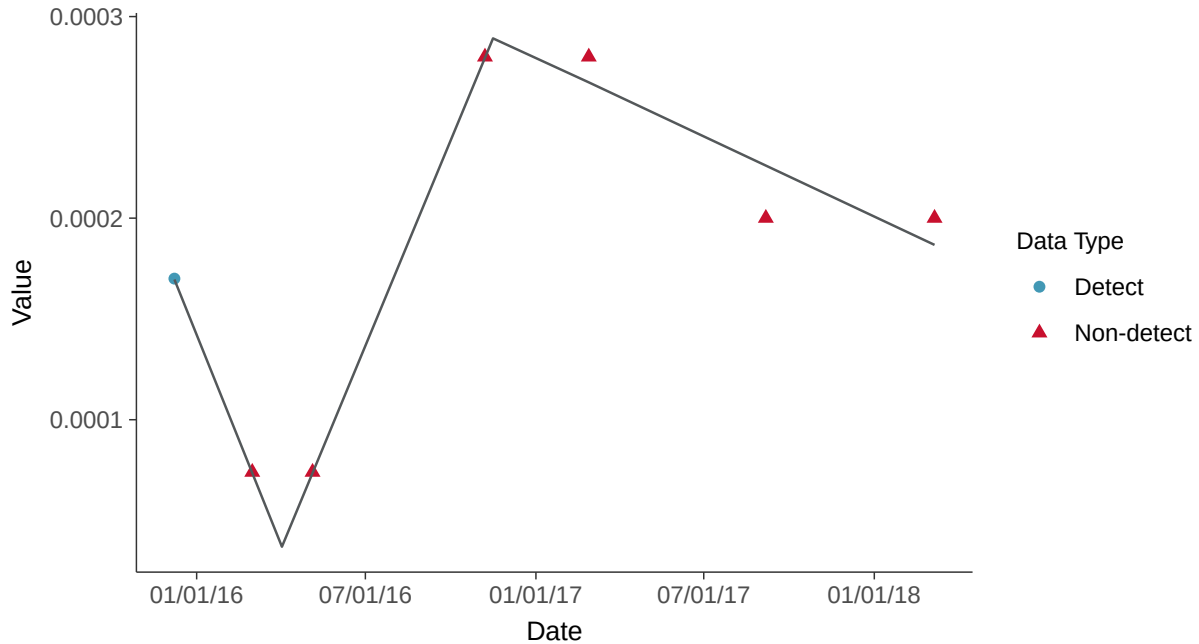
Trend Regression: Piecewise Linear-Linear

Thallium, MW-9 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Thallium, MW-9 (mg/l)



Cooling Tower Retention Pond

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
1_1_108	MW-15	Appendix III	Boron	mg/l	15	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	2.71	2.70	1.40	3.70	0.728	0.269	0.889	-0.394	-0.788
1_1_110	MW-15	Appendix III	Calcium	mg/l	15	0	0%	2018-08-29 to 2021-10-19	Lognormal	Lognormal	285	240	170	650	134	0.469	74.1	1.80	3.06
1_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	15	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal	Gamma	459	360	260	1000	234	0.511	88.9	1.70	1.91
1_1_115	MW-15	Appendix III	Fluoride	mg/l	16	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	1.48	1.40	0.840	2.60	0.431	0.291	0.370	0.983	1.94
1_1_123	MW-15	Appendix III	pH (field)	su	14	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	7.85	7.84	7.23	8.33	0.343	0.0437	0.407	-0.284	-0.943
1_1_124	MW-15	Appendix III	pH (lab)	su	15	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	7.92	7.90	7.70	8.25	0.167	0.0210	0.148	0.506	-0.0607
1_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	15	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal	Gamma	961	910	380	2000	469	0.488	252	1.12	0.744
1_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	15	0	0%	2018-08-29 to 2021-10-19	Lognormal	Lognormal	2313	2000	1500	5000	949	0.410	593	1.98	4.02
1_2_104	MW-15	Appendix IV	Antimony	mg/l	12	0	0%	2018-08-29 to 2021-10-19	Nonparametric	Nonparametric	0.00153	0.00150	0.00130	0.00190	0.000189	0.123	0.000148	1.35	1.11
1_2_105	MW-15	Appendix IV	Arsenic	mg/l	12	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	0.00239	0.00230	0.00170	0.00305	0.000369	0.155	0.000222	0.219	0.252
1_2_106	MW-15	Appendix IV	Barium	mg/l	12	0	0%	2018-08-29 to 2021-10-19	Normal	Normal	0.0686	0.0820	0.0310	0.100	0.0294	0.428	0.0267	-0.270	-2.08
1_2_107	MW-15	Appendix IV	Beryllium	mg/l	11	11	92%	2018-08-29 to 2021-10-19		Nonparametric	0.000391	0.000310	0.000310	0.000890	0.000190	0.486	0	2.35	5.03
1_2_109	MW-15	Appendix IV	Cadmium	mg/l	12	7	54%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Nonparametric	0.000347	0.000210	0.000200	0.000960	0.000253	0.729	0.0000148	1.77	2.18
1_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	12	2	15%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	0.00375	0.00385	0.000980	0.00660	0.00184	0.490	0.00215	-0.113	-1.34
1_2_113	MW-15	Appendix IV	Cobalt	mg/l	13	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal	Gamma	0.00451	0.00400	0.00210	0.00970	0.00255	0.566	0.00178	1.30	0.571
1_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	16	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	1.48	1.40	0.840	2.60	0.431	0.291	0.370	0.983	1.94
1_2_117	MW-15	Appendix IV	Lead	mg/l	12	13	100%	2018-08-29 to 2021-10-19		Nonparametric	0.000450	0.000450	0.000450	0.000450	0	0	0	NA	NA
1_2_118	MW-15	Appendix IV	Lithium	mg/l	12	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal	Gamma	0.0997	0.0925	0.0795	0.150	0.0226	0.226	0.0126	1.61	1.70
1_2_120	MW-15	Appendix IV	Mercury	mg/l	11	12	100%	2018-08-29 to 2021-10-19		Nonparametric	0.000121	0.000130	0.0000270	0.000130	0.0000311	0.257	0	-3.32	11.0
1_2_121	MW-15	Appendix IV	Molybdenum	mg/l	12	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	0.0450	0.0435	0.0200	0.0840	0.0188	0.418	0.0156	0.734	0.464
1_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	12	3	23%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	0.977	1.00	0.325	1.76	0.458	0.469	0.540	0.313	-0.837
1_2_129	MW-15	Appendix IV	Selenium	mg/l	13	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	0.0294	0.0290	0.00320	0.0660	0.0216	0.734	0.0287	0.385	-1.12
1_2_134	MW-15	Appendix IV	Thallium	mg/l	12	12	92%	2018-08-29 to 2021-10-19		Nonparametric	0.000220	0.000200	0.000200	0.000440	0.0000693	0.315	0	3.46	12.0
1_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	14	0	0%	2018-08-29 to 2021-10-19	Lognormal	Lognormal	3098	2784	2311	5984	984	0.318	439	2.31	5.68
1_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	14	0	0%	2018-08-29 to 2021-10-19	Normal	Normal	47	43.5	-194	212	94.4	2.01	51	-0.853	2.97
1_3_126	MW-15	Supplemental	Radium-226	pci/l	12	4	31%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	0.277	0.215	0.0786	0.587	0.154	0.555	0.155	0.761	-0.273
1_3_128	MW-15	Supplemental	Radium-228	pci/l	12	4	31%	2018-08-29 to 2021-10-19	Nonparametric	Nonparametric	0.748	0.667	0.325	1.55	0.348	0.465	0.187	1.30	1.36
1_3_132	MW-15	Supplemental	Temperature (field)	deg c	14	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	18.5	17.9	15.5	22.9	2.21	0.120	2.00	0.793	-0.179
1_3_133	MW-15	Supplemental	Temperature (lab)	deg c	14	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	21.4	21.4	19.3	23.1	1.24	0.0580	1.63	-0.177	-1.08
1_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	11	2	17%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	7.48	4.40	1.10	27.0	7.75	1.04	4.89	1.81	3.54
1_3_137	MW-15	Supplemental	Turbidity (field)	ntu	14	0	0%	2018-08-29 to 2021-10-19	Nonparametric	Nonparametric	0.761	0.425	0.0200	2.13	0.841	1.10	0.600	0.520	-1.39
2_1_108	MW-16	Appendix III	Boron	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.711	0.720	0.330	1.20	0.203	0.285	0.152	0.569	1.44
2_1_110	MW-16	Appendix III	Calcium	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	209	205	77.0	300	64.5	0.308	81.5	-0.336	-0.634
2_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	346	340	150	540	99.7	0.288	96.3	0.173	0.0565
2_1_115	MW-16	Appendix III	Fluoride	mg/l	17	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	2.13	2.10	1.20	2.70	0.452	0.212	0.444	-0.703	-0.189
2_1_123	MW-16	Appendix III	pH (field)	su	15	0	0%	2018-08-29 to 2022-04-19	Nonparametric	Nonparametric	6.82	6.79	6.62	7.35	0.176	0.0258	0.0519	2.12	6.07
2_1_124	MW-16	Appendix III	pH (lab)	su	16	0	0%	2018-08-29 to 2022-04-19	Lognormal; Normal	Lognormal	7.42	7.40	7.00	7.90	0.218	0.0293	0.148	0.566	1.12
2_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	655	680	160	1100	241	0.369	259	-0.0613	0.0960
2_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	1788	1750	700	2600	532	0.298	481	-0.0640	-0.206
2_2_104	MW-16	Appendix IV	Antimony	mg/l	13	3	21%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.000767	0.000810	0.000570	0.00110	0.000161	0.211	0.000148	0.391	-0.254
2_2_105	MW-16	Appendix IV	Arsenic	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00322	0.00320	0.00230	0.00420	0.000582	0.181	0.000741	-0.0192	-0.836
2_2_106	MW-16	Appendix IV	Barium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0528	0.0520	0.0360	0.100	0.0167	0.316	0.0119	2.02	5.27

(Table continues on next page)

^a Non-detects are excluded from goodness-of-fit tests.

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
2_2_107	MW-16	Appendix IV	Beryllium	mg/l	12	12	92%	2018-08-29 to 2022-04-19		Nonparametric	0.000349	0.000310	0.000270	0.000620	0.000104	0.298	0	2.22	4.15
2_2_109	MW-16	Appendix IV	Cadmium	mg/l	13	3	21%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.000328	0.000280	0.000200	0.000790	0.000172	0.526	0.000119	1.86	3.65
2_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	13	8	57%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Nonparametric	0.00262	0.00150	0.000980	0.0130	0.00331	1.26	0.000770	2.98	9.51
2_2_113	MW-16	Appendix IV	Cobalt	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Lognormal	Lognormal	0.000681	0.000460	0.000280	0.00190	0.000493	0.724	0.000193	1.78	2.44
2_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	2.13	2.10	1.20	2.70	0.452	0.212	0.444	-0.703	-0.189
2_2_117	MW-16	Appendix IV	Lead	mg/l	13	13	93%	2018-08-29 to 2022-04-19		Nonparametric	0.000438	0.000450	0.000240	0.000500	0.0000610	0.139	0	-3.24	11.5
2_2_118	MW-16	Appendix IV	Lithium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0746	0.0740	0.0380	0.110	0.0204	0.274	0.0222	0.0793	-0.482
2_2_120	MW-16	Appendix IV	Mercury	mg/l	12	13	100%	2018-08-29 to 2022-04-19		Nonparametric	0.000120	0.000130	0.0000270	0.000130	0.0000298	0.249	0	-3.26	10.8
2_2_121	MW-16	Appendix IV	Molybdenum	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0195	0.0180	0.00980	0.0370	0.00824	0.422	0.0104	0.709	-0.101
2_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	1.05	1.03	0.517	1.72	0.363	0.344	0.281	0.428	-0.468
2_2_129	MW-16	Appendix IV	Selenium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Normal	Gamma	0.00753	0.00720	0.00290	0.0110	0.00191	0.254	0.00126	-0.663	2.61
2_2_134	MW-16	Appendix IV	Thallium	mg/l	13	14	100%	2018-08-29 to 2022-04-19		Nonparametric	0.000205	0.000200	0.000200	0.000260	0.0000166	0.0813	0	3.61	13.0
2_3_101	MW-16	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	190	190	190	190	NA	NA	0	NA	NA
2_3_102	MW-16	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	2	100%	2022-04-19 to 2022-04-19		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
2_3_103	MW-16	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	190	190	190	190	NA	NA	0	NA	NA
2_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	2549	2592	1164	3669	612	0.240	584	-0.365	0.870
2_3_119	MW-16	Supplemental	Magnesium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	46.0	46.0	46.0	46.0	NA	NA	0	NA	NA
2_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	2018-08-29 to 2022-04-19	Nonparametric	Nonparametric	67.0	89.9	-273	213	107	1.60	20.0	-2.40	7.92
2_3_125	MW-16	Supplemental	Potassium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	30.0	30.0	30.0	30.0	NA	NA	0	NA	NA
2_3_126	MW-16	Supplemental	Radium-226	pci/l	13	3	21%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.306	0.276	0.110	0.604	0.168	0.550	0.203	0.499	-1.13
2_3_128	MW-16	Supplemental	Radium-228	pci/l	13	1	7%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.807	0.758	0.472	1.37	0.252	0.312	0.218	0.755	0.637
2_3_130	MW-16	Supplemental	Sodium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	270	270	270	270	NA	NA	0	NA	NA
2_3_132	MW-16	Supplemental	Temperature (field)	deg c	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	18.1	18.2	15.8	20.7	1.13	0.0625	0.889	0.256	1.50
2_3_133	MW-16	Supplemental	Temperature (lab)	deg c	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	21.4	21.5	19.7	23.3	1.18	0.0549	1.48	0.256	-1.20
2_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	11	2	17%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	5.10	3.20	1.10	14.0	4.55	0.893	2.96	1.08	-0.127
2_3_137	MW-16	Supplemental	Turbidity (field)	ntu	15	0	0%	2018-08-29 to 2022-04-19	Gamma	Gamma	2.29	1.41	0.0200	7.62	2.54	1.11	2.06	0.983	-0.266
3_1_108	MW-17	Appendix III	Boron	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.755	0.690	0.410	1.15	0.231	0.307	0.237	0.405	-1.07
3_1_110	MW-17	Appendix III	Calcium	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	143	115	74.0	370	73.9	0.518	37.0	2.14	5.53
3_1_111	MW-17	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	196	165	88.0	540	110	0.562	66.7	2.18	6.14
3_1_115	MW-17	Appendix III	Fluoride	mg/l	17	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	1.68	1.70	1.10	2.30	0.372	0.222	0.444	0.195	-1.14
3_1_123	MW-17	Appendix III	pH (field)	su	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	6.63	6.62	6.25	6.92	0.184	0.0277	0.178	-0.495	-0.0361
3_1_124	MW-17	Appendix III	pH (lab)	su	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	7.29	7.30	6.70	7.90	0.356	0.0488	0.407	0.130	-0.641
3_1_131	MW-17	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	422	360	180	1200	251	0.595	193	2.11	5.77
3_1_135	MW-17	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Normal	Normal	1077	925	8.00	2800	612	0.568	333	1.32	3.67
3_2_104	MW-17	Appendix IV	Antimony	mg/l	13	13	93%	2018-08-29 to 2022-04-19		Nonparametric	0.000588	0.000570	0.000570	0.000690	0.0000432	0.0736	0	2.19	3.30
3_2_105	MW-17	Appendix IV	Arsenic	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00399	0.00410	0.00300	0.00465	0.000540	0.135	0.000444	-0.659	-0.602
3_2_106	MW-17	Appendix IV	Barium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0468	0.0450	0.0290	0.0790	0.0142	0.303	0.00889	0.977	1.23
3_2_107	MW-17	Appendix IV	Beryllium	mg/l	12	11	85%	2018-08-29 to 2022-04-19		Nonparametric	0.000339	0.000310	0.000270	0.000620	0.0000909	0.268	0	3.14	10.4
3_2_109	MW-17	Appendix IV	Cadmium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00108	0.000910	0.000670	0.00240	0.000462	0.428	0.000281	2.14	5.48
3_2_112	MW-17	Appendix IV	Chromium, Total	mg/l	13	6	43%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00157	0.00110	0.000980	0.00470	0.00106	0.679	0.000178	2.54	6.77
3_2_113	MW-17	Appendix IV	Cobalt	mg/l	13	1	7%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.000502	0.000400	0.000190	0.00140	0.000326	0.648	0.000237	1.87	4.37
3_2_116	MW-17	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	1.68	1.70	1.10	2.30	0.372	0.222	0.444	0.195	-1.14

(Table continues on next page)

^a Non-detects are excluded from goodness-of-fit tests.

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
3_2_117	MW-17	Appendix IV	Lead	mg/l	13	14	100%	2018-08-29 to 2022-04-19		Nonparametric	0.000434	0.000450	0.000240	0.000450	0.0000582	0.134	0	-3.61	13.0
3_2_118	MW-17	Appendix IV	Lithium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Nonparametric	Nonparametric	0.0423	0.0335	0.0300	0.110	0.0221	0.522	0.00519	2.79	8.45
3_2_120	MW-17	Appendix IV	Mercury	mg/l	12	13	100%	2018-08-29 to 2022-04-19		Nonparametric	0.000120	0.000130	0.0000270	0.000130	0.0000298	0.249	0	-3.26	10.8
3_2_121	MW-17	Appendix IV	Molybdenum	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0116	0.0104	0.00570	0.0240	0.00583	0.501	0.00637	0.803	-0.187
3_2_127	MW-17	Appendix IV	Radium-226+228	pci/l	13	1	7%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.954	0.915	0.463	1.88	0.403	0.423	0.416	1.11	1.01
3_2_129	MW-17	Appendix IV	Selenium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00549	0.00570	0.00310	0.00760	0.00130	0.237	0.000889	-0.552	-0.253
3_2_134	MW-17	Appendix IV	Thallium	mg/l	13	12	86%	2018-08-29 to 2022-04-19		Nonparametric	0.000235	0.000200	0.000200	0.000510	0.0000869	0.370	0	3.09	10.1
3_3_101	MW-17	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	140	140	140	140	NA	NA	0	NA	NA
3_3_102	MW-17	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	2	100%	2022-04-19 to 2022-04-19		Nonparametric	3.10	3.10	3.10	3.10	NA	NA	0	NA	NA
3_3_103	MW-17	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	140	140	140	140	NA	NA	0	NA	NA
3_3_114	MW-17	Supplemental	Conductivity (field)	us/cm	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal	Gamma	1713	1519	1022	4230	796	0.465	615	2.47	7.44
3_3_119	MW-17	Supplemental	Magnesium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	13.0	13.0	13.0	13.0	NA	NA	0	NA	NA
3_3_122	MW-17	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	2018-08-29 to 2022-04-19	Nonparametric	Nonparametric	78.9	119	-352	194	129	1.63	34.8	-2.97	10.0
3_3_125	MW-17	Supplemental	Potassium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	5.90	5.90	5.90	5.90	NA	NA	0	NA	NA
3_3_126	MW-17	Supplemental	Radium-226	pci/l	13	3	21%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.239	0.183	0.114	0.517	0.118	0.497	0.0859	1.22	1.04
3_3_128	MW-17	Supplemental	Radium-228	pci/l	13	1	7%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.743	0.595	0.416	1.36	0.327	0.440	0.249	0.836	-0.623
3_3_130	MW-17	Supplemental	Sodium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	120	120	120	120	NA	NA	0	NA	NA
3_3_132	MW-17	Supplemental	Temperature (field)	deg c	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	18.7	18.4	16.0	20.9	1.44	0.0770	1.78	0.0565	-0.534
3_3_133	MW-17	Supplemental	Temperature (lab)	deg c	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	21.5	21.5	19.4	23.6	1.31	0.0609	1.63	0.0156	-0.899
3_3_136	MW-17	Supplemental	Total Suspended Solids	mg/l	11	6	50%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Nonparametric	6.85	2.00	1.10	46.0	13.3	1.94	1.33	3.06	9.61
3_3_137	MW-17	Supplemental	Turbidity (field)	ntu	15	0	0%	2018-08-29 to 2022-04-19	Normal	Normal	1.23	1.24	0.0200	4.12	1.21	0.980	1.47	0.831	0.622

^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
1_1_108	MW-15	Appendix III	Boron	mg/l	15	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	2.71	2.70	1.40	3.70	0.728	0.269	0.889	-0.394	-0.788
1_1_110	MW-15	Appendix III	Calcium	mg/l	15	0	0%	2018-08-29 to 2021-10-19	Lognormal	Lognormal	285	240	170	650	134	0.469	74.1	1.80	3.06
1_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	15	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal	Gamma	459	360	260	1000	234	0.511	88.9	1.70	1.91
1_1_115	MW-15	Appendix III	Fluoride	mg/l	16	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	1.48	1.40	0.840	2.60	0.431	0.291	0.370	0.983	1.94
1_1_123	MW-15	Appendix III	pH (field)	su	14	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	7.85	7.84	7.23	8.33	0.343	0.0437	0.407	-0.284	-0.943
1_1_124	MW-15	Appendix III	pH (lab)	su	15	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	7.92	7.90	7.70	8.25	0.167	0.0210	0.148	0.506	-0.0607
1_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	15	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal	Gamma	961	910	380	2000	469	0.488	252	1.12	0.744
1_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	15	0	0%	2018-08-29 to 2021-10-19	Lognormal	Lognormal	2313	2000	1500	5000	949	0.410	593	1.98	4.02
1_2_104	MW-15	Appendix IV	Antimony	mg/l	12	0	0%	2018-08-29 to 2021-10-19	Nonparametric	Nonparametric	0.00153	0.00150	0.00130	0.00190	0.000189	0.123	0.000148	1.35	1.11
1_2_105	MW-15	Appendix IV	Arsenic	mg/l	12	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	0.00239	0.00230	0.00170	0.00305	0.000369	0.155	0.000222	0.219	0.252
1_2_106	MW-15	Appendix IV	Barium	mg/l	12	0	0%	2018-08-29 to 2021-10-19	Normal	Normal	0.0686	0.0820	0.0310	0.100	0.0294	0.428	0.0267	-0.270	-2.08
1_2_107	MW-15	Appendix IV	Beryllium	mg/l	11	11	92%	2018-08-29 to 2021-10-19		Nonparametric	0.000890	0.000890	0.000890	0.000890	NA	NA	0	NA	NA
1_2_109	MW-15	Appendix IV	Cadmium	mg/l	12	7	54%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Nonparametric	0.000548	0.000550	0.000260	0.000960	0.000301	0.549	0.000430	0.404	-1.39
1_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	12	2	15%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	0.00415	0.00470	0.00155	0.00660	0.00171	0.412	0.00156	-0.434	-0.936
1_2_113	MW-15	Appendix IV	Cobalt	mg/l	13	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal	Gamma	0.00451	0.00400	0.00210	0.00970	0.00255	0.566	0.00178	1.30	0.571
1_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	16	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	1.48	1.40	0.840	2.60	0.431	0.291	0.370	0.983	1.94
1_2_118	MW-15	Appendix IV	Lithium	mg/l	12	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal	Gamma	0.0997	0.0925	0.0795	0.150	0.0226	0.226	0.0126	1.61	1.70
1_2_121	MW-15	Appendix IV	Molybdenum	mg/l	12	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	0.0450	0.0435	0.0200	0.0840	0.0188	0.418	0.0156	0.734	0.464
1_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	12	3	23%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	1.15	1.05	0.580	1.76	0.384	0.334	0.389	0.264	-0.574
1_2_129	MW-15	Appendix IV	Selenium	mg/l	13	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	0.0294	0.0290	0.00320	0.0660	0.0216	0.734	0.0287	0.385	-1.12
1_2_134	MW-15	Appendix IV	Thallium	mg/l	12	12	92%	2018-08-29 to 2021-10-19		Nonparametric	0.000440	0.000440	0.000440	0.000440	NA	NA	0	NA	NA
1_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	14	0	0%	2018-08-29 to 2021-10-19	Lognormal	Lognormal	3098	2784	2311	5984	984	0.318	439	2.31	5.68
1_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	14	0	0%	2018-08-29 to 2021-10-19	Normal	Normal	47	43.5	-194	212	94.4	2.01	51	-0.853	2.97
1_3_126	MW-15	Supplemental	Radium-226	pci/l	12	4	31%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	0.346	0.361	0.177	0.587	0.141	0.407	0.190	0.458	-0.502
1_3_128	MW-15	Supplemental	Radium-228	pci/l	12	4	31%	2018-08-29 to 2021-10-19	Nonparametric	Nonparametric	0.890	0.679	0.615	1.55	0.341	0.384	0.0604	1.22	0.449
1_3_132	MW-15	Supplemental	Temperature (field)	deg c	14	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	18.5	17.9	15.5	22.9	2.21	0.120	2.00	0.793	-0.179
1_3_133	MW-15	Supplemental	Temperature (lab)	deg c	14	0	0%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	21.4	21.4	19.3	23.1	1.24	0.0580	1.63	-0.177	-1.08
1_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	11	2	17%	2018-08-29 to 2021-10-19	Gamma; Lognormal; Normal	Gamma	8.90	4.80	2.00	27.0	7.92	0.889	4.15	1.71	3.10
1_3_137	MW-15	Supplemental	Turbidity (field)	ntu	14	0	0%	2018-08-29 to 2021-10-19	Nonparametric	Nonparametric	0.761	0.425	0.0200	2.13	0.841	1.10	0.600	0.520	-1.39
2_1_108	MW-16	Appendix III	Boron	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.711	0.720	0.330	1.20	0.203	0.285	0.152	0.569	1.44
2_1_110	MW-16	Appendix III	Calcium	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	209	205	77.0	300	64.5	0.308	81.5	-0.336	-0.634
2_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	346	340	150	540	99.7	0.288	96.3	0.173	0.0565
2_1_115	MW-16	Appendix III	Fluoride	mg/l	17	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	2.13	2.10	1.20	2.70	0.452	0.212	0.444	-0.703	-0.189
2_1_123	MW-16	Appendix III	pH (field)	su	15	0	0%	2018-08-29 to 2022-04-19	Nonparametric	Nonparametric	6.82	6.79	6.62	7.35	0.176	0.0258	0.0519	2.12	6.07
2_1_124	MW-16	Appendix III	pH (lab)	su	16	0	0%	2018-08-29 to 2022-04-19	Lognormal; Normal	Lognormal	7.42	7.40	7.00	7.90	0.218	0.0293	0.148	0.566	1.12
2_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	655	680	160	1100	241	0.369	259	-0.0613	0.0960
2_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	1788	1750	700	2600	532	0.298	481	-0.0640	-0.206
2_2_104	MW-16	Appendix IV	Antimony	mg/l	13	3	21%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.000813	0.000830	0.000570	0.00110	0.000152	0.187	0.0000963	0.0822	0.541
2_2_105	MW-16	Appendix IV	Arsenic	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00322	0.00320	0.00230	0.00420	0.000582	0.181	0.000741	-0.0192	-0.836
2_2_106	MW-16	Appendix IV	Barium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0528	0.0520	0.0360	0.100	0.0167	0.316	0.0119	2.02	5.27
2_2_107	MW-16	Appendix IV	Beryllium	mg/l	12	12	92%	2018-08-29 to 2022-04-19		Nonparametric	0.000510	0.000510	0.000510	0.000510	NA	NA	0	NA	NA
2_2_109	MW-16	Appendix IV	Cadmium	mg/l	13	3	21%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.000366	0.000293	0.000200	0.000790	0.000180	0.493	0.000122	1.63	2.78
2_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	13	8	57%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Nonparametric	0.00440	0.00160	0.00150	0.0130	0.00497	1.13	0.000148	1.92	3.67

(Table continues on next page)

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
2_2_113	MW-16	Appendix IV	Cobalt	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Lognormal	Lognormal	0.000681	0.000460	0.000280	0.00190	0.000493	0.724	0.000193	1.78	2.44
2_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	2.13	2.10	1.20	2.70	0.452	0.212	0.444	-0.703	-0.189
2_2_117	MW-16	Appendix IV	Lead	mg/l	13	13	93%	2018-08-29 to 2022-04-19		Nonparametric	0.000500	0.000500	0.000500	0.000500	NA	NA	0	NA	NA
2_2_118	MW-16	Appendix IV	Lithium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0746	0.0740	0.0380	0.110	0.0204	0.274	0.0222	0.0793	-0.482
2_2_121	MW-16	Appendix IV	Molybdenum	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0195	0.0180	0.00980	0.0370	0.00824	0.422	0.0104	0.709	-0.101
2_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	1.05	1.03	0.517	1.72	0.363	0.344	0.281	0.428	-0.468
2_2_129	MW-16	Appendix IV	Selenium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Normal	Gamma	0.00753	0.00720	0.00290	0.0110	0.00191	0.254	0.00126	-0.663	2.61
2_3_101	MW-16	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	190	190	190	190	NA	NA	0	NA	NA
2_3_103	MW-16	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	190	190	190	190	NA	NA	0	NA	NA
2_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	2549	2592	1164	3669	612	0.240	584	-0.365	0.870
2_3_119	MW-16	Supplemental	Magnesium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	46.0	46.0	46.0	46.0	NA	NA	0	NA	NA
2_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	2018-08-29 to 2022-04-19	Nonparametric	Nonparametric	67.0	89.9	-273	213	107	1.60	20.0	-2.40	7.92
2_3_125	MW-16	Supplemental	Potassium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	30.0	30.0	30.0	30.0	NA	NA	0	NA	NA
2_3_126	MW-16	Supplemental	Radium-226	pci/l	13	3	21%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.328	0.314	0.110	0.604	0.170	0.518	0.207	0.429	-1.16
2_3_128	MW-16	Supplemental	Radium-228	pci/l	13	1	7%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.830	0.794	0.472	1.37	0.248	0.299	0.216	0.681	0.774
2_3_130	MW-16	Supplemental	Sodium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	270	270	270	270	NA	NA	0	NA	NA
2_3_132	MW-16	Supplemental	Temperature (field)	deg c	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	18.1	18.2	15.8	20.7	1.13	0.0625	0.889	0.256	1.50
2_3_133	MW-16	Supplemental	Temperature (lab)	deg c	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	21.4	21.5	19.7	23.3	1.18	0.0549	1.48	0.256	-1.20
2_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	11	2	17%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	5.50	3.40	1.20	14.0	4.59	0.835	3.11	0.960	-0.429
2_3_137	MW-16	Supplemental	Turbidity (field)	ntu	15	0	0%	2018-08-29 to 2022-04-19	Gamma	Gamma	2.29	1.41	0.0200	7.62	2.54	1.11	2.06	0.983	-0.266
3_1_108	MW-17	Appendix III	Boron	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.755	0.690	0.410	1.15	0.231	0.307	0.237	0.405	-1.07
3_1_110	MW-17	Appendix III	Calcium	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	143	115	74.0	370	73.9	0.518	37.0	2.14	5.53
3_1_111	MW-17	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	196	165	88.0	540	110	0.562	66.7	2.18	6.14
3_1_115	MW-17	Appendix III	Fluoride	mg/l	17	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	1.68	1.70	1.10	2.30	0.372	0.222	0.444	0.195	-1.14
3_1_123	MW-17	Appendix III	pH (field)	su	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	6.63	6.62	6.25	6.92	0.184	0.0277	0.178	-0.495	-0.0361
3_1_124	MW-17	Appendix III	pH (lab)	su	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	7.29	7.30	6.70	7.90	0.356	0.0488	0.407	0.130	-0.641
3_1_131	MW-17	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	422	360	180	1200	251	0.595	193	2.11	5.77
3_1_135	MW-17	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	2018-08-29 to 2022-04-19	Normal	Normal	1077	925	8.00	2800	612	0.568	333	1.32	3.67
3_2_104	MW-17	Appendix IV	Antimony	mg/l	13	13	93%	2018-08-29 to 2022-04-19		Nonparametric	0.000680	0.000680	0.000680	0.000680	NA	NA	0	NA	NA
3_2_105	MW-17	Appendix IV	Arsenic	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00399	0.00410	0.00300	0.00465	0.000540	0.135	0.000444	-0.659	-0.602
3_2_106	MW-17	Appendix IV	Barium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0468	0.0450	0.0290	0.0790	0.0142	0.303	0.00889	0.977	1.23
3_2_107	MW-17	Appendix IV	Beryllium	mg/l	12	11	85%	2018-08-29 to 2022-04-19		Nonparametric	0.000350	0.000350	0.000340	0.000360	0.0000141	0.0404	0.0000148	NA	NA
3_2_109	MW-17	Appendix IV	Cadmium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00108	0.000910	0.000670	0.00240	0.000462	0.428	0.000281	2.14	5.48
3_2_112	MW-17	Appendix IV	Chromium, Total	mg/l	13	6	43%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00205	0.00150	0.00110	0.00470	0.00129	0.629	0.000593	1.83	3.27
3_2_113	MW-17	Appendix IV	Cobalt	mg/l	13	1	7%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.000528	0.000450	0.000240	0.00140	0.000326	0.617	0.000248	1.88	4.38
3_2_116	MW-17	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	1.68	1.70	1.10	2.30	0.372	0.222	0.444	0.195	-1.14
3_2_118	MW-17	Appendix IV	Lithium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Nonparametric	Nonparametric	0.0423	0.0335	0.0300	0.110	0.0221	0.522	0.00519	2.79	8.45
3_2_121	MW-17	Appendix IV	Molybdenum	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.0116	0.0104	0.00570	0.0240	0.00583	0.501	0.00637	0.803	-0.187
3_2_127	MW-17	Appendix IV	Radium-226+228	pci/l	13	1	7%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.995	0.920	0.591	1.88	0.392	0.394	0.368	1.18	1.07
3_2_129	MW-17	Appendix IV	Selenium	mg/l	13	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.00549	0.00570	0.00310	0.00760	0.00130	0.237	0.000889	-0.552	-0.253
3_2_134	MW-17	Appendix IV	Thallium	mg/l	13	12	86%	2018-08-29 to 2022-04-19		Nonparametric	0.000395	0.000395	0.000280	0.000510	0.000163	0.412	0.000170	NA	NA
3_3_101	MW-17	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	140	140	140	140	NA	NA	0	NA	NA
3_3_103	MW-17	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	140	140	140	140	NA	NA	0	NA	NA

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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
3_3_114	MW-17	Supplemental	Conductivity (field)	us/cm	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal	Gamma	1713	1519	1022	4230	796	0.465	615	2.47	7.44
3_3_119	MW-17	Supplemental	Magnesium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	13.0	13.0	13.0	13.0	NA	NA	0	NA	NA
3_3_122	MW-17	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	2018-08-29 to 2022-04-19	Nonparametric	Nonparametric	78.9	119	-352	194	129	1.63	34.8	-2.97	10.0
3_3_125	MW-17	Supplemental	Potassium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	5.90	5.90	5.90	5.90	NA	NA	0	NA	NA
3_3_126	MW-17	Supplemental	Radium-226	pci/l	13	3	21%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.249	0.201	0.114	0.517	0.125	0.504	0.0711	1.24	0.984
3_3_128	MW-17	Supplemental	Radium-228	pci/l	13	1	7%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	0.766	0.671	0.416	1.36	0.330	0.431	0.350	0.712	-0.819
3_3_130	MW-17	Supplemental	Sodium	mg/l	1	0	0%	2022-04-19 to 2022-04-19		Nonparametric	120	120	120	120	NA	NA	0	NA	NA
3_3_132	MW-17	Supplemental	Temperature (field)	deg c	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	18.7	18.4	16.0	20.9	1.44	0.0770	1.78	0.0565	-0.534
3_3_133	MW-17	Supplemental	Temperature (lab)	deg c	15	0	0%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Gamma	21.5	21.5	19.4	23.6	1.31	0.0609	1.63	0.0156	-0.899
3_3_136	MW-17	Supplemental	Total Suspended Solids	mg/l	11	6	50%	2018-08-29 to 2022-04-19	Gamma; Lognormal; Normal	Nonparametric	2.80	2.80	1.60	4.80	1.23	0.440	1.19	1.28	2.00
3_3_137	MW-17	Supplemental	Turbidity (field)	ntu	15	0	0%	2018-08-29 to 2022-04-19	Normal	Normal	1.23	1.24	0.0200	4.12	1.21	0.980	1.47	0.831	0.622

Table 3: Goodness-of-Fit Tests, Non-Detects Excluded

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Normal		Lognormal		Gamma				Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution				
								S-W		Lilliefors		S-W		Lilliefors					K-S		A-D	
								Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value				Stat.	p-Value	Stat.	p-Value
1_1_108	MW-15	Appendix III	Boron	mg/l	15	0	0%	0.944	0.440	0.124	0.769	0.905	0.115	0.147	0.521	0.132	>= 0.10	0.424	>= 0.10	0.301	Gamma; Lognormal; Normal	Gamma
1_1_110	MW-15	Appendix III	Calcium	mg/l	15	0	0%	0.772	0.002	0.278	0.003	0.878	0.045	0.207	0.082	0.235	0.01 <= p < 0.05	0.950	0.01 <= p < 0.05	0.389	Lognormal	Lognormal
1_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	15	0	0%	0.745	0.001	0.264	0.006	0.860	0.024	0.172	0.273	0.201	>= 0.10	1.089	< 0.01	0.420	Gamma; Lognormal	Gamma
1_1_115	MW-15	Appendix III	Fluoride	mg/l	16	0	0%	0.933	0.272	0.170	0.252	0.973	0.886	0.123	0.748	0.132	>= 0.10	0.255	>= 0.10	0.284	Gamma; Lognormal; Normal	Gamma
1_1_123	MW-15	Appendix III	pH (field)	su	14	0	0%	0.961	0.742	0.112	0.902	0.959	0.707	0.116	0.880	0.122	>= 0.10	0.238	>= 0.10	0.044	Gamma; Lognormal; Normal	Gamma
1_1_124	MW-15	Appendix III	pH (lab)	su	15	0	0%	0.917	0.176	0.175	0.248	0.919	0.189	0.172	0.273	0.167	>= 0.10	0.491	>= 0.10	0.021	Gamma; Lognormal; Normal	Gamma
1_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	15	0	0%	0.881	0.049	0.267	0.005	0.960	0.697	0.180	0.213	0.205	0.05 <= p < 0.10	0.392	>= 0.10	0.471	Gamma; Lognormal	Gamma
1_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	15	0	0%	0.770	0.002	0.256	0.009	0.880	0.047	0.210	0.075	0.231	0.01 <= p < 0.05	0.887	0.01 <= p < 0.05	0.338	Lognormal	Lognormal
1_2_104	MW-15	Appendix IV	Antimony	mg/l	12	0	0%	0.806	0.011	0.311	0.002	0.840	0.027	0.294	0.005	0.302	< 0.01	0.972	0.01 <= p < 0.05	0.117	Nonparametric	Nonparametric
1_2_105	MW-15	Appendix IV	Arsenic	mg/l	12	0	0%	0.937	0.463	0.260	0.024	0.935	0.434	0.233	0.070	0.246	0.05 <= p < 0.10	0.473	>= 0.10	0.157	Gamma; Lognormal; Normal	Gamma
1_2_106	MW-15	Appendix IV	Barium	mg/l	12	0	0%	0.806	0.011	0.235	0.067	0.795	0.008	0.256	0.029	0.259	0.01 <= p < 0.05	1.154	< 0.01	0.490	Normal	Normal
1_2_107	MW-15	Appendix IV	Beryllium	mg/l	11	11	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
1_2_109	MW-15	Appendix IV	Cadmium	mg/l	12	7	54%	0.910	0.468	0.231	0.513	0.879	0.303	0.249	0.389	0.271	>= 0.10	0.380	>= 0.10	0.592	Gamma; Lognormal; Normal	Nonparametric
1_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	12	2	15%	0.924	0.392	0.210	0.244	0.850	0.058	0.225	0.162	0.234	>= 0.10	0.589	>= 0.10	0.513	Gamma; Lognormal; Normal	Gamma
1_2_113	MW-15	Appendix IV	Cobalt	mg/l	13	0	0%	0.811	0.009	0.286	0.005	0.915	0.216	0.189	0.230	0.223	0.05 <= p < 0.10	0.621	>= 0.10	0.505	Gamma; Lognormal	Gamma
1_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	16	0	0%	0.933	0.272	0.170	0.252	0.973	0.886	0.123	0.748	0.132	>= 0.10	0.255	>= 0.10	0.284	Gamma; Lognormal; Normal	Gamma
1_2_117	MW-15	Appendix IV	Lead	mg/l	12	13	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
1_2_118	MW-15	Appendix IV	Lithium	mg/l	12	0	0%	0.781	0.006	0.245	0.045	0.837	0.025	0.204	0.179	0.218	>= 0.10	0.928	0.01 <= p < 0.05	0.203	Gamma; Lognormal	Gamma
1_2_120	MW-15	Appendix IV	Mercury	mg/l	11	12	100%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
1_2_121	MW-15	Appendix IV	Molybdenum	mg/l	12	0	0%	0.945	0.567	0.149	0.657	0.963	0.826	0.111	0.950	0.106	>= 0.10	0.200	>= 0.10	0.431	Gamma; Lognormal; Normal	Gamma
1_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	12	3	23%	0.966	0.854	0.160	0.729	0.965	0.854	0.154	0.782	0.127	>= 0.10	0.192	>= 0.10	0.353	Gamma; Lognormal; Normal	Gamma
1_2_129	MW-15	Appendix IV	Selenium	mg/l	13	0	0%	0.922	0.270	0.132	0.774	0.910	0.185	0.177	0.325	0.163	>= 0.10	0.361	>= 0.10	1.014	Gamma; Lognormal; Normal	Gamma
1_2_134	MW-15	Appendix IV	Thallium	mg/l	12	12	92%	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA		NA		Nonparametric
1_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	14	0	0%	0.719	0.001	0.266	0.008	0.819	0.009	0.222	0.060	0.240	0.01 <= p < 0.05	1.120	< 0.01	0.259	Lognormal	Lognormal
1_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	14	0	0%	0.908	0.148	0.202	0.128	NA	NA	NA	NA	NA		NA		NA		Normal
1_3_126	MW-15	Supplemental	Radium-226	pci/l	12	4	31%	0.928	0.495	0.196	0.484	0.928	0.494	0.235	0.216	0.219	>= 0.10	0.369	>= 0.10	0.422	Gamma; Lognormal; Normal	Gamma
1_3_128	MW-15	Supplemental	Radium-228	pci/l	12	4	31%	0.782	0.018	0.351	0.004	0.803	0.030	0.347	0.005	0.363	< 0.01	0.898	0.01 <= p < 0.05	0.347	Nonparametric	Nonparametric
1_3_132	MW-15	Supplemental	Temperature (field)	deg c	14	0	0%	0.929	0.299	0.167	0.359	0.948	0.526	0.156	0.467	0.166	>= 0.10	0.364	>= 0.10	0.116	Gamma; Lognormal; Normal	Gamma
1_3_133	MW-15	Supplemental	Temperature (lab)	deg c	14	0	0%	0.958	0.693	0.102	0.958	0.956	0.661	0.110	0.916	0.112	>= 0.10	0.243	>= 0.10	0.058	Gamma; Lognormal; Normal	Gamma
1_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	11	2	17%	0.800	0.020	0.253	0.100	0.952	0.710	0.202	0.360	0.240	>= 0.10	0.413	>= 0.10	0.822	Gamma; Lognormal; Normal	Gamma
1_3_137	MW-15	Supplemental	Turbidity (field)	ntu	14	0	0%	0.800	0.005	0.311	0.001	0.706	0.000	0.331	0.000	0.337	< 0.01	1.732	< 0.01	2.228	Nonparametric	Nonparametric
2_1_108	MW-16	Appendix III	Boron	mg/l	16	0	0%	0.964	0.731	0.135	0.609	0.961	0.676	0.145	0.497	0.124	>= 0.10	0.260	>= 0.10	0.298	Gamma; Lognormal; Normal	Gamma
2_1_110	MW-16	Appendix III	Calcium	mg/l	16	0	0%	0.946	0.422	0.140	0.552	0.894	0.065	0.148	0.455	0.135	>= 0.10	0.444	>= 0.10	0.361	Gamma; Lognormal; Normal	Gamma
2_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	0.984	0.986	0.130	0.664	0.953	0.544	0.126	0.712	0.103	>= 0.10	0.192	>= 0.10	0.313	Gamma; Lognormal; Normal	Gamma
2_1_115	MW-16	Appendix III	Fluoride	mg/l	17	0	0%	0.927	0.190	0.194	0.089	0.880	0.032	0.196	0.080	0.203	0.05 <= p < 0.10	0.613	>= 0.10	0.238	Gamma; Lognormal; Normal	Gamma
2_1_123	MW-16	Appendix III	pH (field)	su	15	0	0%	0.784	0.002	0.280	0.002	0.797	0.003	0.275	0.003	0.276	< 0.01	1.085	< 0.01	0.025	Nonparametric	Nonparametric
2_1_124	MW-16	Appendix III	pH (lab)	su	16	0	0%	0.903	0.090	0.296	0.001	0.907	0.105	0.291	0.001	0.294	< 0.01	0.878	0.01 <= p < 0.05	0.029	Lognormal; Normal	Lognormal
2_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	0.984	0.989	0.128	0.689	0.881	0.040	0.171	0.241	0.138	>= 0.10	0.359	>= 0.10	0.464	Gamma; Lognormal; Normal	Gamma
2_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	0.963	0.710	0.116	0.821	0.919	0.161	0.122	0.752	0.102	>= 0.10	0.275	>= 0.10	0.337	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.

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Normal				Lognormal				Gamma				Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
								Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value			
2_2_104	MW-16	Appendix IV	Antimony	mg/l	13	3	21%	0.949	0.651	0.191	0.381	0.940	0.555	0.225	0.162	0.214	>= 0.10	0.381	>= 0.10	0.192	Gamma; Lognormal; Normal	Gamma
2_2_105	MW-16	Appendix IV	Arsenic	mg/l	13	0	0%	0.968	0.867	0.124	0.847	0.958	0.727	0.133	0.761	0.142	>= 0.10	0.255	>= 0.10	0.185	Gamma; Lognormal; Normal	Gamma
2_2_106	MW-16	Appendix IV	Barium	mg/l	13	0	0%	0.804	0.008	0.218	0.092	0.913	0.200	0.161	0.469	0.180	>= 0.10	0.522	>= 0.10	0.272	Gamma; Lognormal; Normal	Gamma
2_2_107	MW-16	Appendix IV	Beryllium	mg/l	12	12	92%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
2_2_109	MW-16	Appendix IV	Cadmium	mg/l	13	3	21%	0.832	0.035	0.243	0.097	0.933	0.476	0.200	0.309	0.225	>= 0.10	0.428	>= 0.10	0.430	Gamma; Lognormal; Normal	Gamma
2_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	13	8	57%	0.706	0.011	0.314	0.109	0.788	0.064	0.334	0.072	0.357	0.05 <= p < 0.10	0.685	0.05 <= p < 0.10	0.955	Gamma; Lognormal; Normal	Nonparametric
2_2_113	MW-16	Appendix IV	Cobalt	mg/l	13	0	0%	0.743	0.002	0.305	0.002	0.888	0.091	0.228	0.064	0.265	0.01 <= p < 0.05	0.927	0.01 <= p < 0.05	0.583	Lognormal	Lognormal
2_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	0.927	0.190	0.194	0.089	0.880	0.032	0.196	0.080	0.203	0.05 <= p < 0.10	0.613	>= 0.10	0.238	Gamma; Lognormal; Normal	Gamma
2_2_117	MW-16	Appendix IV	Lead	mg/l	13	13	93%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
2_2_118	MW-16	Appendix IV	Lithium	mg/l	13	0	0%	0.984	0.994	0.107	0.953	0.968	0.863	0.089	0.996	0.086	>= 0.10	0.155	>= 0.10	0.292	Gamma; Lognormal; Normal	Gamma
2_2_120	MW-16	Appendix IV	Mercury	mg/l	12	13	100%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
2_2_121	MW-16	Appendix IV	Molybdenum	mg/l	13	0	0%	0.927	0.316	0.170	0.381	0.949	0.586	0.164	0.440	0.178	>= 0.10	0.317	>= 0.10	0.422	Gamma; Lognormal; Normal	Gamma
2_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	13	0	0%	0.955	0.675	0.164	0.447	0.966	0.841	0.110	0.937	0.126	>= 0.10	0.213	>= 0.10	0.357	Gamma; Lognormal; Normal	Gamma
2_2_129	MW-16	Appendix IV	Selenium	mg/l	13	0	0%	0.918	0.232	0.197	0.183	0.787	0.005	0.267	0.012	0.240	0.05 <= p < 0.10	0.796	0.01 <= p < 0.05	0.316	Gamma; Normal	Gamma
2_2_134	MW-16	Appendix IV	Thallium	mg/l	13	14	100%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
2_3_101	MW-16	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
2_3_102	MW-16	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	2	100%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
2_3_103	MW-16	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
2_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	15	0	0%	0.978	0.952	0.119	0.819	0.903	0.104	0.163	0.355	0.152	>= 0.10	0.341	>= 0.10	0.274	Gamma; Lognormal; Normal	Gamma
2_3_119	MW-16	Supplemental	Magnesium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
2_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	0.718	0.000	0.326	0.000	NA	NA	NA	NA			NA		NA	Nonparametric	Nonparametric
2_3_125	MW-16	Supplemental	Potassium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
2_3_126	MW-16	Supplemental	Radium-226	pci/l	13	3	21%	0.936	0.506	0.157	0.692	0.958	0.763	0.142	0.824	0.141	>= 0.10	0.235	>= 0.10	0.563	Gamma; Lognormal; Normal	Gamma
2_3_128	MW-16	Supplemental	Radium-228	pci/l	13	1	7%	0.957	0.739	0.131	0.821	0.979	0.978	0.158	0.563	0.137	>= 0.10	0.189	>= 0.10	0.300	Gamma; Lognormal; Normal	Gamma
2_3_130	MW-16	Supplemental	Sodium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
2_3_132	MW-16	Supplemental	Temperature (field)	deg c	15	0	0%	0.965	0.772	0.142	0.568	0.967	0.807	0.133	0.671	0.131	>= 0.10	0.295	>= 0.10	0.062	Gamma; Lognormal; Normal	Gamma
2_3_133	MW-16	Supplemental	Temperature (lab)	deg c	15	0	0%	0.935	0.325	0.177	0.232	0.938	0.353	0.175	0.245	0.183	>= 0.10	0.412	>= 0.10	0.055	Gamma; Lognormal; Normal	Gamma
2_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	11	2	17%	0.853	0.063	0.261	0.053	0.937	0.523	0.154	0.722	0.194	>= 0.10	0.381	>= 0.10	0.879	Gamma; Lognormal; Normal	Gamma
2_3_137	MW-16	Supplemental	Turbidity (field)	ntu	15	0	0%	0.842	0.014	0.223	0.042	0.779	0.002	0.272	0.004	0.236	0.05 <= p < 0.10	0.925	0.01 <= p < 0.05	2.466	Gamma	Gamma
3_1_108	MW-17	Appendix III	Boron	mg/l	16	0	0%	0.940	0.344	0.143	0.517	0.962	0.702	0.104	0.916	0.116	>= 0.10	0.295	>= 0.10	0.309	Gamma; Lognormal; Normal	Gamma
3_1_110	MW-17	Appendix III	Calcium	mg/l	16	0	0%	0.775	0.001	0.202	0.080	0.926	0.212	0.153	0.401	0.169	>= 0.10	0.627	0.05 <= p < 0.10	0.422	Gamma; Lognormal; Normal	Gamma
3_1_111	MW-17	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	0.779	0.001	0.187	0.139	0.948	0.462	0.122	0.756	0.137	>= 0.10	0.466	>= 0.10	0.465	Gamma; Lognormal; Normal	Gamma
3_1_115	MW-17	Appendix III	Fluoride	mg/l	17	0	0%	0.952	0.482	0.156	0.334	0.958	0.601	0.125	0.680	0.142	>= 0.10	0.304	>= 0.10	0.225	Gamma; Lognormal; Normal	Gamma
3_1_123	MW-17	Appendix III	pH (field)	su	15	0	0%	0.961	0.714	0.169	0.294	0.957	0.648	0.174	0.252	0.168	>= 0.10	0.313	>= 0.10	0.028	Gamma; Lognormal; Normal	Gamma
3_1_124	MW-17	Appendix III	pH (lab)	su	16	0	0%	0.955	0.566	0.136	0.602	0.956	0.597	0.145	0.496	0.142	>= 0.10	0.332	>= 0.10	0.049	Gamma; Lognormal; Normal	Gamma
3_1_131	MW-17	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	0.795	0.002	0.176	0.208	0.959	0.642	0.121	0.769	0.121	>= 0.10	0.372	>= 0.10	0.502	Gamma; Lognormal; Normal	Gamma
3_1_135	MW-17	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	0.880	0.038	0.175	0.211	0.568	0.000	0.373	0.000	0.294	< 0.01	1.419	< 0.01	1.282	Normal	Normal
3_2_104	MW-17	Appendix IV	Antimony	mg/l	13	13	93%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
3_2_105	MW-17	Appendix IV	Arsenic	mg/l	13	0	0%	0.913	0.203	0.194	0.196	0.893	0.106	0.214	0.105	0.212	>= 0.10	0.564	>= 0.10	0.142	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.

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Normal				Lognormal				Gamma				Log-SD (NDs excl.)	ProUCL Distributions Fit	Recommended Distribution
								S-W		Lilliefors		S-W		Lilliefors		K-S		A-D				
								Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value	Stat.	p-Value			
3_2_106	MW-17	Appendix IV	Barium	mg/l	13	0	0%	0.898	0.126	0.231	0.056	0.935	0.394	0.181	0.291	0.191	>= 0.10	0.443	>= 0.10	0.293	Gamma; Lognormal; Normal	Gamma
3_2_107	MW-17	Appendix IV	Beryllium	mg/l	12	11	85%	NA	NA	NA	NA	NA	NA	NA	NA			NA		0.040		Nonparametric
3_2_109	MW-17	Appendix IV	Cadmium	mg/l	13	0	0%	0.766	0.003	0.187	0.244	0.895	0.115	0.166	0.427	0.176	>= 0.10	0.659	0.05 <= p < 0.10	0.351	Gamma; Lognormal; Normal	Gamma
3_2_112	MW-17	Appendix IV	Chromium, Total	mg/l	13	6	43%	0.773	0.022	0.291	0.074	0.883	0.242	0.212	0.443	0.247	>= 0.10	0.528	>= 0.10	0.524	Gamma; Lognormal; Normal	Gamma
3_2_113	MW-17	Appendix IV	Cobalt	mg/l	13	1	7%	0.801	0.010	0.199	0.209	0.934	0.424	0.150	0.641	0.164	>= 0.10	0.431	>= 0.10	0.531	Gamma; Lognormal; Normal	Gamma
3_2_116	MW-17	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	0.952	0.482	0.156	0.334	0.958	0.601	0.125	0.680	0.142	>= 0.10	0.304	>= 0.10	0.225	Gamma; Lognormal; Normal	Gamma
3_2_117	MW-17	Appendix IV	Lead	mg/l	13	14	100%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
3_2_118	MW-17	Appendix IV	Lithium	mg/l	13	0	0%	0.609	0.000	0.289	0.004	0.740	0.001	0.241	0.037	0.247	0.01 <= p < 0.05	1.473	< 0.01	0.374	Nonparametric	Nonparametric
3_2_120	MW-17	Appendix IV	Mercury	mg/l	12	13	100%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
3_2_121	MW-17	Appendix IV	Molybdenum	mg/l	13	0	0%	0.898	0.125	0.160	0.478	0.923	0.275	0.144	0.652	0.154	>= 0.10	0.417	>= 0.10	0.495	Gamma; Lognormal; Normal	Gamma
3_2_127	MW-17	Appendix IV	Radium-226+228	pci/l	13	1	7%	0.880	0.087	0.228	0.086	0.936	0.444	0.165	0.488	0.189	>= 0.10	0.403	>= 0.10	0.366	Gamma; Lognormal; Normal	Gamma
3_2_129	MW-17	Appendix IV	Selenium	mg/l	13	0	0%	0.938	0.426	0.181	0.286	0.891	0.102	0.233	0.052	0.214	>= 0.10	0.613	>= 0.10	0.264	Gamma; Lognormal; Normal	Gamma
3_2_134	MW-17	Appendix IV	Thallium	mg/l	13	12	86%	NA	NA	NA	NA	NA	NA	NA	NA			NA		0.424		Nonparametric
3_3_101	MW-17	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
3_3_102	MW-17	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	1	2	100%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
3_3_103	MW-17	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
3_3_114	MW-17	Supplemental	Conductivity (field)	us/cm	15	0	0%	0.730	0.001	0.238	0.022	0.895	0.080	0.184	0.189	0.208	0.05 <= p < 0.10	0.692	0.05 <= p < 0.10	0.366	Gamma; Lognormal	Gamma
3_3_119	MW-17	Supplemental	Magnesium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
3_3_122	MW-17	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	0.641	0.000	0.305	0.001	NA	NA	NA	NA			NA		NA	Nonparametric	Nonparametric
3_3_125	MW-17	Supplemental	Potassium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
3_3_126	MW-17	Supplemental	Radium-226	pci/l	13	3	21%	0.876	0.117	0.225	0.161	0.959	0.778	0.170	0.564	0.193	>= 0.10	0.367	>= 0.10	0.466	Gamma; Lognormal; Normal	Gamma
3_3_128	MW-17	Supplemental	Radium-228	pci/l	13	1	7%	0.893	0.129	0.198	0.215	0.927	0.346	0.158	0.565	0.181	>= 0.10	0.399	>= 0.10	0.421	Gamma; Lognormal; Normal	Gamma
3_3_130	MW-17	Supplemental	Sodium	mg/l	1	0	0%	NA	NA	NA	NA	NA	NA	NA	NA			NA		NA		Nonparametric
3_3_132	MW-17	Supplemental	Temperature (field)	deg c	15	0	0%	0.943	0.424	0.172	0.270	0.946	0.463	0.158	0.401	0.163	>= 0.10	0.388	>= 0.10	0.077	Gamma; Lognormal; Normal	Gamma
3_3_133	MW-17	Supplemental	Temperature (lab)	deg c	15	0	0%	0.951	0.534	0.138	0.616	0.950	0.530	0.150	0.489	0.145	>= 0.10	0.321	>= 0.10	0.061	Gamma; Lognormal; Normal	Gamma
3_3_136	MW-17	Supplemental	Total Suspended Solids	mg/l	11	6	50%	0.885	0.334	0.300	0.146	0.952	0.753	0.232	0.506	0.250	>= 0.10	0.313	>= 0.10	0.416	Gamma; Lognormal; Normal	Nonparametric
3_3_137	MW-17	Supplemental	Turbidity (field)	ntu	15	0	0%	0.873	0.038	0.192	0.143	0.760	0.001	0.290	0.001	0.246	0.01 <= p < 0.05	1.273	< 0.01	2.197	Normal	Normal

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.
1_1_108	MW-15	Appendix III	Boron	mg/l	15	0	0%	0.304	0.194	
1_1_110	MW-15	Appendix III	Calcium	mg/l	15	0	0%	-0.038	0.870	
1_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	15	0	0%	0.017	0.942	
1_1_115	MW-15	Appendix III	Fluoride	mg/l	16	0	0%	0.048	0.833	
1_1_123	MW-15	Appendix III	pH (field)	su	14	0	0%	0.517	0.032	*
1_1_124	MW-15	Appendix III	pH (lab)	su	15	0	0%	0.680	0.004	**
1_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	15	0	0%	0.064	0.784	
1_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	15	0	0%	-0.112	0.633	
1_2_104	MW-15	Appendix IV	Antimony	mg/l	12	0	0%	-0.265	0.300	
1_2_105	MW-15	Appendix IV	Arsenic	mg/l	12	0	0%	0.346	0.176	
1_2_106	MW-15	Appendix IV	Barium	mg/l	12	0	0%	0.228	0.372	
1_2_107	MW-15	Appendix IV	Beryllium	mg/l	11	11	92%	NA	NA	
1_2_109	MW-15	Appendix IV	Cadmium	mg/l	12	7	54%	-0.656	0.052	
1_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	12	2	15%	0.712	0.009	**
1_2_113	MW-15	Appendix IV	Cobalt	mg/l	13	0	0%	-0.147	0.552	
1_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	16	0	0%	0.048	0.833	
1_2_118	MW-15	Appendix IV	Lithium	mg/l	12	0	0%	-0.236	0.357	
1_2_121	MW-15	Appendix IV	Molybdenum	mg/l	12	0	0%	0.072	0.779	
1_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	12	3	23%	-0.215	0.450	
1_2_129	MW-15	Appendix IV	Selenium	mg/l	13	0	0%	0.613	0.013	*
1_2_134	MW-15	Appendix IV	Thallium	mg/l	12	12	92%	NA	NA	
1_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	14	0	0%	-0.164	0.495	
1_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	14	0	0%	-0.030	0.901	
1_3_126	MW-15	Supplemental	Radium-226	pci/l	12	4	31%	0.094	0.750	
1_3_128	MW-15	Supplemental	Radium-228	pci/l	12	4	31%	0.061	0.837	
1_3_132	MW-15	Supplemental	Temperature (field)	deg c	14	0	0%	0.691	0.004	**
1_3_133	MW-15	Supplemental	Temperature (lab)	deg c	14	0	0%	0.061	0.800	
1_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	11	2	17%	-0.105	0.711	
1_3_137	MW-15	Supplemental	Turbidity (field)	ntu	14	0	0%	-0.309	0.199	
2_1_108	MW-16	Appendix III	Boron	mg/l	16	0	0%	0.294	0.197	
2_1_110	MW-16	Appendix III	Calcium	mg/l	16	0	0%	0.294	0.197	
2_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	0.198	0.385	
2_1_115	MW-16	Appendix III	Fluoride	mg/l	17	0	0%	0.660	0.003	**
2_1_123	MW-16	Appendix III	pH (field)	su	15	0	0%	-0.109	0.642	
2_1_124	MW-16	Appendix III	pH (lab)	su	16	0	0%	0.577	0.012	*
2_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	0.146	0.521	
2_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	0.133	0.559	
2_2_104	MW-16	Appendix IV	Antimony	mg/l	13	3	21%	0.380	0.165	
2_2_105	MW-16	Appendix IV	Arsenic	mg/l	13	0	0%	0.696	0.005	**
2_2_106	MW-16	Appendix IV	Barium	mg/l	13	0	0%	0.086	0.730	
2_2_107	MW-16	Appendix IV	Beryllium	mg/l	12	12	92%	NA	NA	
2_2_109	MW-16	Appendix IV	Cadmium	mg/l	13	3	21%	0.176	0.520	

(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.
2_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	13	8	57%	-0.077	0.821	
2_2_113	MW-16	Appendix IV	Cobalt	mg/l	13	0	0%	0.444	0.074	
2_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	0.660	0.003	**
2_2_117	MW-16	Appendix IV	Lead	mg/l	13	13	93%	NA	NA	
2_2_118	MW-16	Appendix IV	Lithium	mg/l	13	0	0%	0.234	0.346	
2_2_121	MW-16	Appendix IV	Molybdenum	mg/l	13	0	0%	0.628	0.011	*
2_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	13	0	0%	0.113	0.649	
2_2_129	MW-16	Appendix IV	Selenium	mg/l	13	0	0%	0.211	0.394	
2_3_101	MW-16	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	
2_3_103	MW-16	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	
2_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	15	0	0%	0.100	0.669	
2_3_119	MW-16	Supplemental	Magnesium	mg/l	1	0	0%	NA	NA	
2_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	-0.026	0.913	
2_3_125	MW-16	Supplemental	Potassium	mg/l	1	0	0%	NA	NA	
2_3_126	MW-16	Supplemental	Radium-226	pci/l	13	3	21%	0.440	0.108	
2_3_128	MW-16	Supplemental	Radium-228	pci/l	13	1	7%	-0.027	0.915	
2_3_130	MW-16	Supplemental	Sodium	mg/l	1	0	0%	NA	NA	
2_3_132	MW-16	Supplemental	Temperature (field)	deg c	15	0	0%	-0.142	0.543	
2_3_133	MW-16	Supplemental	Temperature (lab)	deg c	15	0	0%	0.387	0.099	
2_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	11	2	17%	-0.073	0.791	
2_3_137	MW-16	Supplemental	Turbidity (field)	ntu	15	0	0%	0.248	0.290	
3_1_108	MW-17	Appendix III	Boron	mg/l	16	0	0%	0.743	0.001	**
3_1_110	MW-17	Appendix III	Calcium	mg/l	16	0	0%	0.341	0.135	
3_1_111	MW-17	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	0.267	0.243	
3_1_115	MW-17	Appendix III	Fluoride	mg/l	17	0	0%	0.571	0.010	*
3_1_123	MW-17	Appendix III	pH (field)	su	15	0	0%	-0.237	0.311	
3_1_124	MW-17	Appendix III	pH (lab)	su	16	0	0%	0.497	0.029	*
3_1_131	MW-17	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	0.330	0.148	
3_1_135	MW-17	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	0.381	0.095	
3_2_104	MW-17	Appendix IV	Antimony	mg/l	13	13	93%	NA	NA	
3_2_105	MW-17	Appendix IV	Arsenic	mg/l	13	0	0%	0.697	0.005	**
3_2_106	MW-17	Appendix IV	Barium	mg/l	13	0	0%	0.146	0.555	
3_2_107	MW-17	Appendix IV	Beryllium	mg/l	12	11	85%	-0.500	0.157	
3_2_109	MW-17	Appendix IV	Cadmium	mg/l	13	0	0%	-0.001	0.997	
3_2_112	MW-17	Appendix IV	Chromium, Total	mg/l	13	6	43%	-0.140	0.650	
3_2_113	MW-17	Appendix IV	Cobalt	mg/l	13	1	7%	0.394	0.123	
3_2_116	MW-17	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	0.571	0.010	*
3_2_118	MW-17	Appendix IV	Lithium	mg/l	13	0	0%	0.333	0.179	
3_2_121	MW-17	Appendix IV	Molybdenum	mg/l	13	0	0%	0.033	0.893	
3_2_127	MW-17	Appendix IV	Radium-226+228	pci/l	13	1	7%	-0.187	0.465	
3_2_129	MW-17	Appendix IV	Selenium	mg/l	13	0	0%	0.398	0.108	
3_2_134	MW-17	Appendix IV	Thallium	mg/l	13	12	86%	-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.
3_3_101	MW-17	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	1	0	0%	NA	NA	
3_3_103	MW-17	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	1	0	0%	NA	NA	
3_3_114	MW-17	Supplemental	Conductivity (field)	us/cm	15	0	0%	0.210	0.370	
3_3_119	MW-17	Supplemental	Magnesium	mg/l	1	0	0%	NA	NA	
3_3_122	MW-17	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	-0.072	0.757	
3_3_125	MW-17	Supplemental	Potassium	mg/l	1	0	0%	NA	NA	
3_3_126	MW-17	Supplemental	Radium-226	pci/l	13	3	21%	0.560	0.041	*
3_3_128	MW-17	Supplemental	Radium-228	pci/l	13	1	7%	-0.421	0.100	
3_3_130	MW-17	Supplemental	Sodium	mg/l	1	0	0%	NA	NA	
3_3_132	MW-17	Supplemental	Temperature (field)	deg c	15	0	0%	0.504	0.031	*
3_3_133	MW-17	Supplemental	Temperature (lab)	deg c	15	0	0%	0.229	0.328	
3_3_136	MW-17	Supplemental	Total Suspended Solids	mg/l	11	6	50%	0.000	1.000	
3_3_137	MW-17	Supplemental	Turbidity (field)	ntu	15	0	0%	-0.170	0.469	

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 5: Outlier Counts by Date

Date	Count
2018-08-29	8
2019-06-03	2
2019-10-22	1
2020-10-27	2
2022-04-19	1

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
1_2_118	MW-15	Appendix IV	Lithium	mg/l	12	0	0%	12	2020-10-27	0.150
1_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	14	0	0%	14	2020-10-27	5984
2_1_123	MW-16	Appendix III	pH (field)	su	15	0	0%	15	2019-10-22	7.35
2_2_106	MW-16	Appendix IV	Barium	mg/l	13	0	0%	13	2022-04-19	0.100
2_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	15	2019-06-03	-273
3_1_110	MW-17	Appendix III	Calcium	mg/l	16	0	0%	16	2018-08-29	370
3_1_111	MW-17	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	16	2018-08-29	540
3_1_131	MW-17	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	16	2018-08-29	1200
3_1_135	MW-17	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	16	2018-08-29	2800
3_2_109	MW-17	Appendix IV	Cadmium	mg/l	13	0	0%	13	2018-08-29	0.00240
3_2_113	MW-17	Appendix IV	Cobalt	mg/l	13	1	7%	12	2018-08-29	0.00140
3_2_118	MW-17	Appendix IV	Lithium	mg/l	13	0	0%	13	2018-08-29	0.110
3_3_114	MW-17	Supplemental	Conductivity (field)	us/cm	15	0	0%	15	2018-08-29	4230
3_3_122	MW-17	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	15	2019-06-03	-352

Table 7: Seasonality Tests

ID	Well	Constituent Type	Constituent	Unit	% NDs	Full					Without Non-Detects															
						Sample Size					p-Value			Sample Size					p-Value							
						Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA					
1_1_108	MW-15	Appendix III	Boron	mg/l	0%	3	4	2	6	15	0.127	0.090	0.070	3	4	2	6	15	0.127	0.090	0.070					
1_1_110	MW-15	Appendix III	Calcium	mg/l	0%	3	4	2	6	15	0.132	0.248	0.126	3	4	2	6	15	0.132	0.248	0.126					
1_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	0%	3	4	2	6	15	0.242	0.264	0.189	3	4	2	6	15	0.242	0.264	0.189					
1_1_115	MW-15	Appendix III	Fluoride	mg/l	0%	3	4	3	6	16	0.386	0.449	0.409	3	4	3	6	16	0.386	0.449	0.409					
1_1_123	MW-15	Appendix III	pH (field)	su	0%	2	4	2	6	14	0.650	0.745	0.760	2	4	2	6	14	0.650	0.745	0.760					
1_1_124	MW-15	Appendix III	pH (lab)	su	0%	3	4	2	6	15	0.849	0.823	0.828	3	4	2	6	15	0.849	0.823	0.828					
1_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	0%	3	4	2	6	15	0.139	0.094	0.085	3	4	2	6	15	0.139	0.094	0.085					
1_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	0%	3	4	2	6	15	0.185	0.410	0.259	3	4	2	6	15	0.185	0.410	0.259					
1_2_104	MW-15	Appendix IV	Antimony	mg/l	0%	2	2	2	6	12	0.943	0.836	0.867	2	2	2	6	12	0.943	0.836	0.867					
1_2_105	MW-15	Appendix IV	Arsenic	mg/l	0%	2	2	2	6	12	0.835	0.947	0.949	2	2	2	6	12	0.835	0.947	0.949					
1_2_106	MW-15	Appendix IV	Barium	mg/l	0%	2	2	2	6	12	0.126	0.196	0.154	2	2	2	6	12	0.126	0.196	0.154					
1_2_107	MW-15	Appendix IV	Beryllium	mg/l	92%	2	2	2	5	11	0.451	0.563	0.536	0	0	0	1	1	NA	NA	NA					
1_2_109	MW-15	Appendix IV	Cadmium	mg/l	54%	2	2	2	6	12	0.127	0.317	0.341	2	0	1	2	5	0.623	0.793	0.808					
1_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	15%	2	2	2	6	12	0.318	0.493	0.406	2	2	2	4	10	0.448	0.739	0.683					
1_2_113	MW-15	Appendix IV	Cobalt	mg/l	0%	2	2	2	7	13	0.115	0.335	0.190	2	2	2	7	13	0.115	0.335	0.190					
1_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	0%	3	4	3	6	16	0.386	0.449	0.409	3	4	3	6	16	0.386	0.449	0.409					
1_2_117	MW-15	Appendix IV	Lead	mg/l	100%	2	2	2	6	12	NA	0.163	0.163	NA	NA	NA	NA	NA	NA	NA	NA					
1_2_118	MW-15	Appendix IV	Lithium	mg/l	0%	2	2	2	6	12	0.168	0.379	0.308	2	2	2	6	12	0.168	0.379	0.308					
1_2_120	MW-15	Appendix IV	Mercury	mg/l	100%	2	2	2	5	11	0.753	0.812	0.812	NA	NA	NA	NA	NA	NA	NA	NA					
1_2_121	MW-15	Appendix IV	Molybdenum	mg/l	0%	2	2	2	6	12	0.146	0.195	0.129	2	2	2	6	12	0.146	0.195	0.129					
1_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	23%	2	2	2	6	12	0.061	0.041	*	0.019	*	2	0	2	5	9	0.186	0.236	0.313			
1_2_129	MW-15	Appendix IV	Selenium	mg/l	0%	2	2	2	7	13	0.207	0.249	0.347	2	2	2	7	13	0.207	0.249	0.347					
1_2_134	MW-15	Appendix IV	Thallium	mg/l	92%	2	2	2	6	12	0.801	0.848	0.848	0	0	0	1	1	NA	NA	NA					
1_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	0%	2	4	2	6	14	0.427	0.743	0.662	2	4	2	6	14	0.427	0.743	0.662					
1_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	4	2	6	14	0.500	0.698	NA	2	4	2	6	14	0.500	0.698	NA					
1_3_126	MW-15	Supplemental	Radium-226	pci/l	31%	2	2	2	6	12	0.185	0.311	0.138	2	0	1	5	8	0.294	0.289	0.271					
1_3_128	MW-15	Supplemental	Radium-228	pci/l	31%	2	2	2	6	12	0.025	*	0.003	**	0.001	**	2	0	2	4	8	0.064	0.036	*	0.028	*
1_3_132	MW-15	Supplemental	Temperature (field)	deg c	0%	2	4	2	6	14	0.301	0.360	0.355	2	4	2	6	14	0.301	0.360	0.355					
1_3_133	MW-15	Supplemental	Temperature (lab)	deg c	0%	3	4	1	6	14	0.513	0.592	0.599	3	4	1	6	14	0.513	0.592	0.599					
1_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	17%	2	2	1	6	11	0.049	*	0.259	0.032	*	1	1	1	6	9	0.130	0.570	0.210			
1_3_137	MW-15	Supplemental	Turbidity (field)	ntu	0%	2	4	2	6	14	0.508	0.548	0.681	2	4	2	6	14	0.508	0.548	0.681					
2_1_108	MW-16	Appendix III	Boron	mg/l	0%	3	5	2	6	16	0.403	0.231	0.251	3	5	2	6	16	0.403	0.231	0.251					
2_1_110	MW-16	Appendix III	Calcium	mg/l	0%	3	5	2	6	16	0.898	0.797	0.749	3	5	2	6	16	0.898	0.797	0.749					
2_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	0%	3	5	2	6	16	0.760	0.844	0.749	3	5	2	6	16	0.760	0.844	0.749					
2_1_115	MW-16	Appendix III	Fluoride	mg/l	0%	3	5	3	6	17	0.527	0.559	0.572	3	5	3	6	17	0.527	0.559	0.572					
2_1_123	MW-16	Appendix III	pH (field)	su	0%	2	5	2	6	15	0.862	0.976	0.978	2	5	2	6	15	0.862	0.976	0.978					
2_1_124	MW-16	Appendix III	pH (lab)	su	0%	3	5	2	6	16	0.316	0.168	0.164	3	5	2	6	16	0.316	0.168	0.164					
2_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	0%	3	5	2	6	16	0.872	0.854	0.706	3	5	2	6	16	0.872	0.854	0.706					
2_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	0%	3	5	2	6	16	0.936	0.924	0.840	3	5	2	6	16	0.936	0.924	0.840					

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

Table 7: Seasonality Tests *(continued)*

ID	Well	Constituent Type	Constituent	Unit	% NDs	Full					Without Non-Detects														
						Sample Size					p-Value			Sample Size					p-Value						
						Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA				
2_2_104	MW-16	Appendix IV	Antimony	mg/l	21%	2	3	2	6	13	0.308	0.407	0.375	2	1	2	5	10	0.656	0.669	0.633				
2_2_105	MW-16	Appendix IV	Arsenic	mg/l	0%	2	3	2	6	13	0.086	0.072	0.058	2	3	2	6	13	0.086	0.072	0.058				
2_2_106	MW-16	Appendix IV	Barium	mg/l	0%	2	3	2	6	13	0.494	0.447	0.456	2	3	2	6	13	0.494	0.447	0.456				
2_2_107	MW-16	Appendix IV	Beryllium	mg/l	92%	2	3	2	5	12	0.271	0.415	0.386	0	0	0	1	1	NA	NA	NA				
2_2_109	MW-16	Appendix IV	Cadmium	mg/l	21%	2	3	2	6	13	0.374	0.305	0.410	2	2	2	4	10	0.557	0.519	0.631				
2_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	57%	2	3	2	6	13	0.739	0.554	0.727	1	1	1	2	5	0.317	0.009	**	0.030	*		
2_2_113	MW-16	Appendix IV	Cobalt	mg/l	0%	2	3	2	6	13	0.253	0.284	0.291	2	3	2	6	13	0.253	0.284		0.291			
2_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	0%	3	5	3	6	17	0.527	0.559	0.572	3	5	3	6	17	0.527	0.559		0.572			
2_2_117	MW-16	Appendix IV	Lead	mg/l	93%	2	3	2	6	13	0.392	0.347	0.352	0	0	0	1	1	NA	NA		NA			
2_2_118	MW-16	Appendix IV	Lithium	mg/l	0%	2	3	2	6	13	0.352	0.351	0.296	2	3	2	6	13	0.352	0.351		0.296			
2_2_120	MW-16	Appendix IV	Mercury	mg/l	100%	2	3	2	5	12	0.756	0.823	0.800	NA	NA	NA	NA	NA	NA	NA		NA			
2_2_121	MW-16	Appendix IV	Molybdenum	mg/l	0%	2	3	2	6	13	0.293	0.197	0.218	2	3	2	6	13	0.293	0.197		0.218			
2_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	0%	2	3	2	6	13	0.785	0.974	0.938	2	3	2	6	13	0.785	0.974		0.938			
2_2_129	MW-16	Appendix IV	Selenium	mg/l	0%	2	3	2	6	13	0.154	0.076	0.200	2	3	2	6	13	0.154	0.076		0.200			
2_2_134	MW-16	Appendix IV	Thallium	mg/l	100%	2	3	2	6	13	0.343	0.379	0.379	NA	NA	NA	NA	NA	NA	NA		NA			
2_3_101	MW-16	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA		NA			
2_3_102	MW-16	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	1	0	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA			
2_3_103	MW-16	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA		NA			
2_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	0%	2	5	2	6	15	0.674	0.798	0.796	2	5	2	6	15	0.674	0.798		0.796			
2_3_119	MW-16	Supplemental	Magnesium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA		NA			
2_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	0%	2	5	2	6	15	0.644	0.327	NA	2	5	2	6	15	0.644	0.327		NA			
2_3_125	MW-16	Supplemental	Potassium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA		NA			
2_3_126	MW-16	Supplemental	Radium-226	pci/l	21%	2	3	2	6	13	0.347	0.363	0.348	2	2	2	4	10	0.440	0.403		0.380			
2_3_128	MW-16	Supplemental	Radium-228	pci/l	7%	2	3	2	6	13	0.996	0.984	0.998	2	3	2	5	12	0.988	0.990		0.989			
2_3_130	MW-16	Supplemental	Sodium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA		NA			
2_3_132	MW-16	Supplemental	Temperature (field)	deg c	0%	2	5	2	6	15	0.358	0.637	0.608	2	5	2	6	15	0.358	0.637		0.608			
2_3_133	MW-16	Supplemental	Temperature (lab)	deg c	0%	3	5	1	6	15	0.156	0.128	0.128	3	5	1	6	15	0.156	0.128		0.128			
2_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	17%	2	3	1	5	11	0.579	0.536	0.616	1	3	1	5	10	0.566	0.543		0.511			
2_3_137	MW-16	Supplemental	Turbidity (field)	ntu	0%	2	5	2	6	15	0.380	0.606	0.363	2	5	2	6	15	0.380	0.606		0.363			
3_1_108	MW-17	Appendix III	Boron	mg/l	0%	4	5	2	5	16	0.137	0.101	0.093	4	5	2	5	16	0.137	0.101		0.093			
3_1_110	MW-17	Appendix III	Calcium	mg/l	0%	4	5	2	5	16	0.315	0.120	0.197	4	5	2	5	16	0.315	0.120		0.197			
3_1_111	MW-17	Appendix III	Chloride (as Cl)	mg/l	0%	4	5	2	5	16	0.393	0.173	0.342	4	5	2	5	16	0.393	0.173		0.342			
3_1_115	MW-17	Appendix III	Fluoride	mg/l	0%	4	5	3	5	17	0.323	0.248	0.318	4	5	3	5	17	0.323	0.248		0.318			
3_1_123	MW-17	Appendix III	pH (field)	su	0%	3	5	2	5	15	0.045	*	0.015	*	3	5	2	5	15	0.045	*	0.015	*	0.015	*
3_1_124	MW-17	Appendix III	pH (lab)	su	0%	4	5	2	5	16	0.236	0.120	0.124	4	5	2	5	16	0.236	0.120		0.124			
3_1_131	MW-17	Appendix III	Sulfate (as SO4)	mg/l	0%	4	5	2	5	16	0.246	0.108	0.178	4	5	2	5	16	0.246	0.108		0.178			
3_1_135	MW-17	Appendix III	Total Dissolved Solids	mg/l	0%	4	5	2	5	16	0.559	0.285	0.686	4	5	2	5	16	0.559	0.285		0.686			
3_2_104	MW-17	Appendix IV	Antimony	mg/l	93%	3	3	2	5	13	0.625	0.698	0.699	0	0	0	1	1	NA	NA		NA			
3_2_105	MW-17	Appendix IV	Arsenic	mg/l	0%	3	3	2	5	13	0.242	0.230	0.233	3	3	2	5	13	0.242	0.230		0.233			

(Table continues on next page)

*** p < 0.001, ** p < 0.01, * p < 0.05

ID	Well	Constituent Type	Constituent	Unit	% NDs	Full					Without Non-Detects												
						Sample Size					p-Value			Sample Size					p-Value				
						Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA	Winter	Spring	Summer	Fall	Total	Kruskal-Wallis	ANOVA	Log ANOVA		
3_2_106	MW-17	Appendix IV	Barium	mg/l	0%	3	3	2	5	13	0.603	0.385	0.395	3	3	2	5	13	0.603	0.385	0.395		
3_2_107	MW-17	Appendix IV	Beryllium	mg/l	85%	3	3	2	4	12	0.846	0.502	0.531	0	1	0	1	2	0.317	NA	NA		
3_2_109	MW-17	Appendix IV	Cadmium	mg/l	0%	3	3	2	5	13	0.158	0.136	0.141	3	3	2	5	13	0.158	0.136	0.141		
3_2_112	MW-17	Appendix IV	Chromium, Total	mg/l	43%	3	3	2	5	13	0.745	0.238	0.332	2	1	1	3	7	0.158	0.019	*	0.041	*
3_2_113	MW-17	Appendix IV	Cobalt	mg/l	7%	3	3	2	5	13	0.107	0.195	0.133	3	2	2	5	12	0.228	0.320		0.320	
3_2_116	MW-17	Appendix IV	Fluoride (App IV)	mg/l	0%	4	5	3	5	17	0.323	0.248	0.318	4	5	3	5	17	0.323	0.248		0.318	
3_2_117	MW-17	Appendix IV	Lead	mg/l	100%	3	3	2	5	13	0.343	0.379	0.379	NA	NA	NA	NA	NA	NA	NA		NA	
3_2_118	MW-17	Appendix IV	Lithium	mg/l	0%	3	3	2	5	13	0.085	0.090	0.066	3	3	2	5	13	0.085	0.090		0.066	
3_2_120	MW-17	Appendix IV	Mercury	mg/l	100%	3	3	2	4	12	0.666	0.696	0.672	NA	NA	NA	NA	NA	NA	NA		NA	
3_2_121	MW-17	Appendix IV	Molybdenum	mg/l	0%	3	3	2	5	13	0.281	0.380	0.325	3	3	2	5	13	0.281	0.380		0.325	
3_2_127	MW-17	Appendix IV	Radium-226+228	pci/l	7%	3	3	2	5	13	0.084	0.225	0.106	3	2	2	5	12	0.181	0.430		0.314	
3_2_129	MW-17	Appendix IV	Selenium	mg/l	0%	3	3	2	5	13	0.745	0.652	0.618	3	3	2	5	13	0.745	0.652		0.618	
3_2_134	MW-17	Appendix IV	Thallium	mg/l	86%	3	3	2	5	13	0.476	0.479	0.509	1	0	1	0	2	0.317	NA		NA	
3_3_101	MW-17	Supplemental	Alkalinity, Bicarbonate (as CaCO3)	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA		NA	
3_3_102	MW-17	Supplemental	Alkalinity, Carbonate (as CaCO3)	mg/l	100%	0	1	0	0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	
3_3_103	MW-17	Supplemental	Alkalinity, Total (as CaCO3)	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA		NA	
3_3_114	MW-17	Supplemental	Conductivity (field)	us/cm	0%	3	5	2	5	15	0.536	0.170	0.275	3	5	2	5	15	0.536	0.170		0.275	
3_3_119	MW-17	Supplemental	Magnesium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA		NA	
3_3_122	MW-17	Supplemental	Oxidation-reduction Potential (field)	mV	0%	3	5	2	5	15	0.980	0.252	NA	3	5	2	5	15	0.980	0.252		NA	
3_3_125	MW-17	Supplemental	Potassium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA		NA	
3_3_126	MW-17	Supplemental	Radium-226	pci/l	21%	3	3	2	5	13	0.150	0.167	0.140	3	2	2	3	10	0.186	0.284		0.231	
3_3_128	MW-17	Supplemental	Radium-228	pci/l	7%	3	3	2	5	13	0.119	0.312	0.190	3	2	2	5	12	0.181	0.453		0.306	
3_3_130	MW-17	Supplemental	Sodium	mg/l	0%	0	1	0	0	1	NA	NA	NA	0	1	0	0	1	NA	NA		NA	
3_3_132	MW-17	Supplemental	Temperature (field)	deg c	0%	3	5	2	5	15	0.106	0.114	0.109	3	5	2	5	15	0.106	0.114		0.109	
3_3_133	MW-17	Supplemental	Temperature (lab)	deg c	0%	4	5	1	5	15	0.273	0.170	0.175	4	5	1	5	15	0.273	0.170		0.175	
3_3_136	MW-17	Supplemental	Total Suspended Solids	mg/l	50%	3	3	1	4	11	0.712	0.635	0.862	0	2	1	2	5	0.331	0.171		0.308	
3_3_137	MW-17	Supplemental	Turbidity (field)	ntu	0%	3	5	2	5	15	0.618	0.506	0.566	3	5	2	5	15	0.618	0.506		0.566	

*** 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
1_1_108	MW-15	Appendix III	Boron	mg/l	15	0	0%	Parametric	Lognormal MLE	0.000102	0.632	↔
1_1_110	MW-15	Appendix III	Calcium	mg/l	15	0	0%	Parametric	Lognormal MLE	-0.000205	0.452	↔
1_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	15	0	0%	Parametric	Lognormal MLE	-0.000124	0.677	↔
1_1_115	MW-15	Appendix III	Fluoride	mg/l	16	0	0%	Parametric	Lognormal MLE	0.000112	0.579	↔
1_1_123	MW-15	Appendix III	pH (field)	su	14	0	0%	Parametric	Lognormal MLE	-0.0000955	0.000	↓
1_1_124	MW-15	Appendix III	pH (lab)	su	15	0	0%	Parametric	Lognormal MLE	-0.0000466	0.000	↓
1_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	15	0	0%	Parametric	Lognormal MLE	-0.000579	0.055	↔
1_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	15	0	0%	Parametric	Lognormal MLE	-0.000150	0.529	↔
1_2_104	MW-15	Appendix IV	Antimony	mg/l	12	0	0%	Nonparametric	MK	-0.000000135	0.137	↔
1_2_105	MW-15	Appendix IV	Arsenic	mg/l	12	0	0%	Parametric	Lognormal MLE	-0.000113	0.300	↔
1_2_106	MW-15	Appendix IV	Barium	mg/l	12	0	0%	Parametric	Lognormal MLE	-0.000821	0.002	↓
1_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	12	2	15%	Parametric	Lognormal MLE	0.000672	0.155	↔
1_2_113	MW-15	Appendix IV	Cobalt	mg/l	13	0	0%	Parametric	Lognormal MLE	0.000625	0.023	↔
1_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	16	0	0%	Parametric	Lognormal MLE	0.000112	0.579	↔
1_2_118	MW-15	Appendix IV	Lithium	mg/l	12	0	0%	Parametric	Lognormal MLE	-0.0000524	0.720	↔
1_2_121	MW-15	Appendix IV	Molybdenum	mg/l	12	0	0%	Parametric	Lognormal MLE	0.000389	0.183	↔
1_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	12	3	23%	Parametric	Lognormal MLE	-0.000730	0.105	↔
1_2_129	MW-15	Appendix IV	Selenium	mg/l	13	0	0%	Parametric	Lognormal MLE	0.00195	0.000	↑
1_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	14	0	0%	Parametric	Lognormal MLE	0.00000796	0.966	↔
1_3_126	MW-15	Supplemental	Radium-226	pci/l	12	4	31%	Parametric	Lognormal MLE	-0.000384	0.529	↔
1_3_132	MW-15	Supplemental	Temperature (field)	deg c	14	0	0%	Parametric	Lognormal MLE	-0.000242	0.000	↓
1_3_133	MW-15	Supplemental	Temperature (lab)	deg c	14	0	0%	Parametric	Lognormal MLE	-0.0000453	0.256	↔
1_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	11	2	17%	Parametric	Lognormal MLE	0.000231	0.771	↔
1_3_137	MW-15	Supplemental	Turbidity (field)	ntu	14	0	0%	Nonparametric	MK	0	0.518	↔
2_1_108	MW-16	Appendix III	Boron	mg/l	16	0	0%	Parametric	Lognormal MLE	-0.000482	0.000	↓
2_1_110	MW-16	Appendix III	Calcium	mg/l	16	0	0%	Parametric	Lognormal MLE	-0.000410	0.027	↔
2_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	Parametric	Lognormal MLE	-0.000340	0.036	↔
2_1_115	MW-16	Appendix III	Fluoride	mg/l	17	0	0%	Parametric	Lognormal MLE	-0.000365	0.001	↓
2_1_123	MW-16	Appendix III	pH (field)	su	15	0	0%	Nonparametric	MK	-0.00000765	0.882	↔
2_1_124	MW-16	Appendix III	pH (lab)	su	16	0	0%	Parametric	Lognormal MLE	-0.0000290	0.061	↔
2_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	Parametric	Lognormal MLE	-0.000576	0.012	↔
2_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	Parametric	Lognormal MLE	-0.000358	0.042	↔
2_2_104	MW-16	Appendix IV	Antimony	mg/l	13	3	21%	Parametric	Lognormal MLE	-0.000649	0.000	↓
2_2_105	MW-16	Appendix IV	Arsenic	mg/l	13	0	0%	Parametric	Lognormal MLE	-0.000337	0.000	↓
2_2_106	MW-16	Appendix IV	Barium	mg/l	13	0	0%	Parametric	Lognormal MLE	0.000231	0.123	↔
2_2_109	MW-16	Appendix IV	Cadmium	mg/l	13	3	21%	Parametric	Lognormal MLE	-0.000322	0.335	↔
2_2_113	MW-16	Appendix IV	Cobalt	mg/l	13	0	0%	Parametric	Lognormal MLE	-0.000590	0.057	↔
2_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	Parametric	Lognormal MLE	-0.000365	0.001	↓
2_2_118	MW-16	Appendix IV	Lithium	mg/l	13	0	0%	Parametric	Lognormal MLE	-0.000290	0.062	↔
2_2_121	MW-16	Appendix IV	Molybdenum	mg/l	13	0	0%	Parametric	Lognormal MLE	-0.000814	0.000	↓
2_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	13	0	0%	Parametric	Lognormal MLE	0.000168	0.421	↔
2_2_129	MW-16	Appendix IV	Selenium	mg/l	13	0	0%	Parametric	Lognormal MLE	-0.000325	0.052	↔
2_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	15	0	0%	Parametric	Lognormal MLE	-0.000265	0.072	↔

(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
2_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	Nonparametric	MK	0.0204	0.488	↔
2_3_126	MW-16	Supplemental	Radium-226	pci/l	13	3	21%	Parametric	Lognormal MLE	-0.000258	0.533	↔
2_3_128	MW-16	Supplemental	Radium-228	pci/l	13	1	7%	Parametric	Lognormal MLE	0.000326	0.064	↔
2_3_132	MW-16	Supplemental	Temperature (field)	deg c	15	0	0%	Parametric	Lognormal MLE	0.0000363	0.309	↔
2_3_133	MW-16	Supplemental	Temperature (lab)	deg c	15	0	0%	Parametric	Lognormal MLE	-0.0000601	0.033	↔
2_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	11	2	17%	Parametric	Lognormal MLE	-0.000288	0.624	↔
2_3_137	MW-16	Supplemental	Turbidity (field)	ntu	15	0	0%	Parametric	Lognormal MLE	-0.00243	0.065	↔
3_1_108	MW-17	Appendix III	Boron	mg/l	16	0	0%	Parametric	Lognormal MLE	-0.000517	0.000	↓
3_1_110	MW-17	Appendix III	Calcium	mg/l	16	0	0%	Parametric	Lognormal MLE	-0.000524	0.011	↔
3_1_111	MW-17	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	Parametric	Lognormal MLE	-0.000392	0.118	↔
3_1_115	MW-17	Appendix III	Fluoride	mg/l	17	0	0%	Parametric	Lognormal MLE	0.0000571	0.659	↔
3_1_123	MW-17	Appendix III	pH (field)	su	15	0	0%	Parametric	Lognormal MLE	-0.0000318	0.024	↔
3_1_124	MW-17	Appendix III	pH (lab)	su	16	0	0%	Parametric	Lognormal MLE	-0.0000631	0.007	↓
3_1_131	MW-17	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	Parametric	Lognormal MLE	-0.000853	0.000	↓
3_1_135	MW-17	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	Parametric	Lognormal MLE	-0.00117	0.085	↔
3_2_105	MW-17	Appendix IV	Arsenic	mg/l	13	0	0%	Parametric	Lognormal MLE	-0.000283	0.000	↓
3_2_106	MW-17	Appendix IV	Barium	mg/l	13	0	0%	Parametric	Lognormal MLE	0.000125	0.462	↔
3_2_109	MW-17	Appendix IV	Cadmium	mg/l	13	0	0%	Parametric	Lognormal MLE	0.000258	0.185	↔
3_2_112	MW-17	Appendix IV	Chromium, Total	mg/l	13	6	43%	Parametric	Lognormal MLE	-0.000213	0.677	↔
3_2_113	MW-17	Appendix IV	Cobalt	mg/l	13	1	7%	Parametric	Lognormal MLE	-0.000994	0.000	↓
3_2_116	MW-17	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	Parametric	Lognormal MLE	0.0000571	0.659	↔
3_2_118	MW-17	Appendix IV	Lithium	mg/l	13	0	0%	Nonparametric	MK	-0.0000202	0.000	↓
3_2_121	MW-17	Appendix IV	Molybdenum	mg/l	13	0	0%	Parametric	Lognormal MLE	-0.0000763	0.794	↔
3_2_127	MW-17	Appendix IV	Radium-226+228	pci/l	13	1	7%	Parametric	Lognormal MLE	-0.000367	0.137	↔
3_2_129	MW-17	Appendix IV	Selenium	mg/l	13	0	0%	Parametric	Lognormal MLE	0.000154	0.306	↔
3_3_114	MW-17	Supplemental	Conductivity (field)	us/cm	15	0	0%	Parametric	Lognormal MLE	-0.000490	0.005	↓
3_3_122	MW-17	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	Nonparametric	MK	0.0156	0.621	↔
3_3_126	MW-17	Supplemental	Radium-226	pci/l	13	3	21%	Parametric	Lognormal MLE	-0.000528	0.082	↔
3_3_128	MW-17	Supplemental	Radium-228	pci/l	13	1	7%	Parametric	Lognormal MLE	-0.000260	0.338	↔
3_3_132	MW-17	Supplemental	Temperature (field)	deg c	15	0	0%	Parametric	Lognormal MLE	-0.0000641	0.127	↔
3_3_133	MW-17	Supplemental	Temperature (lab)	deg c	15	0	0%	Parametric	Lognormal MLE	-0.0000442	0.186	↔
3_3_136	MW-17	Supplemental	Total Suspended Solids	mg/l	11	6	50%	Nonparametric	MK	-0.00112	0.377	↔
3_3_137	MW-17	Supplemental	Turbidity (field)	ntu	15	0	0%	Parametric	Lognormal MLE	0.000803	0.526	↔

Table 9: Trend Tests: Piecewise Linear-Linear

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Line 1			Line 2			Break 1	R-Squared	Overall Trend
								Slope	p-Value	Trend	Slope	p-Value	Trend			
1_1_108	MW-15	Appendix III	Boron	mg/l	15	0	0%	-0.00435	0.510	↔	0.000642	0.420	↔	2019-02-10	0.110	↔
1_1_110	MW-15	Appendix III	Calcium	mg/l	15	0	0%	0.753	0.635	↔	-0.0741	0.594	↔	2019-01-14	0.063	↔
1_1_111	MW-15	Appendix III	Chloride (as Cl)	mg/l	15	0	0%	2.03	0.332	↔	-0.184	0.459	↔	2019-01-22	0.157	↔

(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			Line 2			Break 1	R-Squared	Overall Trend
								Slope	p-Value	Trend	Slope	p-Value	Trend			
1_1_115	MW-15	Appendix III	Fluoride	mg/l	16	0	0%	-0.00698	0.280	↔	0.000672	0.065	↔	2018-12-23	0.382	↔
1_1_123	MW-15	Appendix III	pH (field)	su	14	0	0%	-0.00281	0.125	↔	-0.000523	0.038	↔	2019-02-03	0.730	↔
1_1_124	MW-15	Appendix III	pH (lab)	su	15	0	0%	-0.000822	0.043	↔	-0.000242	0.206	↔	2019-06-04	0.696	↔
1_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	15	0	0%	2.53	0.542	↔	-0.591	0.245	↔	2019-01-15	0.151	↔
1_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	15	0	0%	1.45	0.242	↔	-5.48	0.479	↔	2020-10-27	0.210	↔
1_2_104	MW-15	Appendix IV	Antimony	mg/l	12	0	0%	-0.00000182	0.603	↔	-0.000000760	0.722	↔	2018-11-16	0.127	↔
1_2_105	MW-15	Appendix IV	Arsenic	mg/l	12	0	0%	-0.00000431	0.132	↔	0.000000451	0.333	↔	2019-03-18	0.484	↔
1_2_106	MW-15	Appendix IV	Barium	mg/l	12	0	0%	-0.000143	0.136	↔	0.000000450	0.991	↔	2019-08-24	0.551	↔
1_2_107	MW-15	Appendix IV	Beryllium	mg/l	11	11	92%	-0.00000188	0.284	↔	0.000000291	0.378	↔	2019-02-24	0.249	↔
1_2_109	MW-15	Appendix IV	Cadmium	mg/l	12	7	54%	-0.00000727	0.648	↔	-0.000000184	0.387	↔	2018-10-15	0.356	↔
1_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	12	2	15%	0.00000648	0.009	↑	-0.0000115	0.030	↔	2020-10-06	0.738	↔
1_2_113	MW-15	Appendix IV	Cobalt	mg/l	13	0	0%	0.00000431	0.095	↔	-0.00000841	0.934	↔	2021-04-22	0.311	↔
1_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	16	0	0%	-0.00698	0.280	↔	0.000672	0.065	↔	2018-12-23	0.382	↔
1_2_118	MW-15	Appendix IV	Lithium	mg/l	12	0	0%	0.000145	0.605	↔	-0.0000169	0.572	↔	2019-01-14	0.081	↔
1_2_120	MW-15	Appendix IV	Mercury	mg/l	11	12	100%	-0.000000407	0.483	↔	0.0000000328	0.366	↔	2018-11-16	0.175	↔
1_2_121	MW-15	Appendix IV	Molybdenum	mg/l	12	0	0%	-0.000169	0.402	↔	0.0000357	0.118	↔	2019-01-14	0.331	↔
1_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	12	3	23%	-0.00155	0.209	↔	0.000371	0.746	↔	2019-12-03	0.302	↔
1_2_129	MW-15	Appendix IV	Selenium	mg/l	13	0	0%	0.0000801	0.311	↔	0.0000334	0.016	↔	2019-07-22	0.868	↔
1_2_134	MW-15	Appendix IV	Thallium	mg/l	12	12	92%	0.000000300	0.101	↔	-0.000000188	0.267	↔	2019-10-21	0.379	↔
1_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	14	0	0%	6.44	0.484	↔	-0.275	0.816	↔	2019-01-15	0.082	↔
1_3_122	MW-15	Supplemental	Oxidation-reduction Potential (field)	mV	14	0	0%	-0.546	0.093	↔	0.226	0.153	↔	2019-06-04	0.387	↔
1_3_126	MW-15	Supplemental	Radium-226	pci/l	12	4	31%	-0.00318	0.214	↔	0.000152	0.322	↔	2018-12-02	0.353	↔
1_3_128	MW-15	Supplemental	Radium-228	pci/l	12	4	31%	-0.000737	0.247	↔	0.0000149	0.992	↔	2020-04-22	0.285	↔
1_3_132	MW-15	Supplemental	Temperature (field)	deg c	14	0	0%	-0.0211	0.000	↓	-0.00101	0.271	↔	2019-04-22	0.915	↔
1_3_133	MW-15	Supplemental	Temperature (lab)	deg c	14	0	0%	0.0251	0.212	↔	-0.00177	0.116	↔	2018-11-16	0.328	↔
1_3_136	MW-15	Supplemental	Total Suspended Solids	mg/l	11	2	17%	-0.0226	0.756	↔	0.0181	0.361	↔	2019-09-15	0.161	↔
1_3_137	MW-15	Supplemental	Turbidity (field)	ntu	14	0	0%	-0.00504	0.180	↔	0.00104	0.381	↔	2019-05-07	0.243	↔
2_1_108	MW-16	Appendix III	Boron	mg/l	16	0	0%	-0.00665	0.051	↔	-0.000200	0.035	↔	2018-10-31	0.699	↔
2_1_110	MW-16	Appendix III	Calcium	mg/l	16	0	0%	-0.116	0.051	↔	0.495	0.292	↔	2021-09-23	0.359	↔
2_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	-1.77	0.453	↔	-0.0722	0.275	↔	2018-11-06	0.302	↔
2_1_115	MW-16	Appendix III	Fluoride	mg/l	17	0	0%	-0.00142	0.019	↔	0.000810	0.320	↔	2020-10-27	0.606	↔
2_1_123	MW-16	Appendix III	pH (field)	su	15	0	0%	0.000657	0.295	↔	-0.000359	0.138	↔	2019-10-21	0.259	↔
2_1_124	MW-16	Appendix III	pH (lab)	su	16	0	0%	-0.00163	0.040	↔	0.0000863	0.648	↔	2019-06-02	0.494	↔
2_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	-0.407	0.077	↔	0.282	0.875	↔	2021-04-23	0.299	↔
2_1_135	MW-16	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	-0.797	0.125	↔	2.20	0.596	↔	2021-08-29	0.236	↔
2_2_104	MW-16	Appendix IV	Antimony	mg/l	13	3	21%	-0.000000513	0.004	↓	0.000000202	0.330	↔	2020-10-12	0.822	↔
2_2_105	MW-16	Appendix IV	Arsenic	mg/l	13	0	0%	0.00000945	0.185	↔	-0.00000132	0.000	↓	2018-11-15	0.842	↔
2_2_106	MW-16	Appendix IV	Barium	mg/l	13	0	0%	-0.00000422	0.667	↔	0.000275	0.007	↑	2021-10-02	0.728	↔
2_2_107	MW-16	Appendix IV	Beryllium	mg/l	12	12	92%	-0.000000646	0.514	↔	0.000000105	0.477	↔	2019-02-09	0.116	↔
2_2_109	MW-16	Appendix IV	Cadmium	mg/l	13	3	21%	-0.00000968	0.210	↔	0.0000000715	0.379	↔	2018-10-19	0.686	↔
2_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	13	8	57%	0.00000787	0.196	↔	-0.00000829	0.340	↔	2020-04-22	0.253	↔
2_2_113	MW-16	Appendix IV	Cobalt	mg/l	13	0	0%	-0.0000209	0.002	↓	-0.00000000463	0.975	↔	2018-11-06	0.885	↔

(Table continues on next page)

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Line 1			Line 2			Break 1	R-Squared	Overall Trend
								Slope	p-Value	Trend	Slope	p-Value	Trend			
2_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	-0.00142	0.019	↔	0.000810	0.320	↔	2020-10-27	0.606	↔
2_2_117	MW-16	Appendix IV	Lead	mg/l	13	13	93%	0.000000211	0.655	↔	-0.000000437	0.015	↔	2021-02-20	0.724	↔
2_2_118	MW-16	Appendix IV	Lithium	mg/l	13	0	0%	-0.000344	0.075	↔	-0.00000124	0.934	↔	2018-12-27	0.534	↔
2_2_120	MW-16	Appendix IV	Mercury	mg/l	12	13	100%	-0.000000359	0.670	↔	0.0000000193	0.457	↔	2018-11-15	0.107	↔
2_2_121	MW-16	Appendix IV	Molybdenum	mg/l	13	0	0%	-0.000105	0.002	↓	-0.00000816	0.030	↔	2019-01-15	0.907	↔
2_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	13	0	0%	-0.000301	0.285	↔	0.00296	0.207	↔	2021-04-23	0.550	↔
2_2_129	MW-16	Appendix IV	Selenium	mg/l	13	0	0%	-0.00000361	0.057	↔	0.00000558	0.692	↔	2021-04-23	0.371	↔
2_2_134	MW-16	Appendix IV	Thallium	mg/l	13	14	100%	-0.0000000000000000743	0.106	↔	0.000000330	0.000	↑	2021-10-18	1.000	↔
2_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	15	0	0%	-1.05	0.085	↔	2.57	0.586	↔	2021-06-26	0.276	↔
2_3_122	MW-16	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	-0.479	0.208	↔	0.188	0.190	↔	2019-06-03	0.283	↔
2_3_126	MW-16	Supplemental	Radium-226	pci/l	13	3	21%	-0.00301	0.009	↓	0.000269	0.054	↔	2019-02-05	0.673	↔
2_3_128	MW-16	Supplemental	Radium-228	pci/l	13	1	7%	-0.0000174	0.925	↔	0.00180	0.254	↔	2021-04-23	0.573	↔
2_3_132	MW-16	Supplemental	Temperature (field)	deg c	15	0	0%	-0.000714	0.449	↔	0.0137	0.095	↔	2021-08-20	0.426	↔
2_3_133	MW-16	Supplemental	Temperature (lab)	deg c	15	0	0%	0.0273	0.244	↔	-0.00199	0.008	↓	2018-11-15	0.537	↔
2_3_136	MW-16	Supplemental	Total Suspended Solids	mg/l	11	2	17%	-0.0305	0.456	↔	0.00597	0.490	↔	2019-06-28	0.256	↔
2_3_137	MW-16	Supplemental	Turbidity (field)	ntu	15	0	0%	-0.00934	0.256	↔	-0.000208	0.945	↔	2019-10-21	0.392	↔
3_1_108	MW-17	Appendix III	Boron	mg/l	16	0	0%	-0.00105	0.010	↔	0.000155	0.519	↔	2020-02-23	0.718	↔
3_1_110	MW-17	Appendix III	Calcium	mg/l	16	0	0%	-1.50	0.003	↓	-0.0124	0.672	↔	2019-01-02	0.780	↔
3_1_111	MW-17	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	-2.93	0.015	↔	0.00716	0.874	↔	2018-12-10	0.736	↔
3_1_115	MW-17	Appendix III	Fluoride	mg/l	17	0	0%	-0.00273	0.003	↓	0.000889	0.019	↔	2019-07-22	0.609	↔
3_1_123	MW-17	Appendix III	pH (field)	su	15	0	0%	-0.000698	0.644	↔	-0.000175	0.267	↔	2019-01-15	0.261	↔
3_1_124	MW-17	Appendix III	pH (lab)	su	16	0	0%	-0.00246	0.015	↔	0.000113	0.730	↔	2019-07-21	0.603	↔
3_1_131	MW-17	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	-5.87	0.023	↔	-0.161	0.121	↔	2018-12-06	0.759	↔
3_1_135	MW-17	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	-10.5	0.020	↔	-0.260	0.354	↔	2019-01-07	0.711	↔
3_2_104	MW-17	Appendix IV	Antimony	mg/l	13	13	93%	-0.0000000559	0.442	↔	0.000000180	0.100	↔	2020-10-25	0.336	↔
3_2_105	MW-17	Appendix IV	Arsenic	mg/l	13	0	0%	0.00000909	0.505	↔	-0.00000116	0.000	↓	2018-10-04	0.893	↔
3_2_106	MW-17	Appendix IV	Barium	mg/l	13	0	0%	-0.000335	0.113	↔	0.0000179	0.086	↔	2018-12-05	0.493	↔
3_2_107	MW-17	Appendix IV	Beryllium	mg/l	12	11	85%	-0.0000000968	0.905	↔	0.000000126	0.301	↔	2019-06-29	0.201	↔
3_2_109	MW-17	Appendix IV	Cadmium	mg/l	13	0	0%	-0.0000280	0.176	↔	0.000000536	0.026	↔	2018-10-15	0.691	↔
3_2_112	MW-17	Appendix IV	Chromium, Total	mg/l	13	6	43%	-0.0000413	0.076	↔	0.000000558	0.385	↔	2018-11-01	0.533	↔
3_2_113	MW-17	Appendix IV	Cobalt	mg/l	13	1	7%	-0.00000518	0.005	↓	-0.0000000488	0.793	↔	2019-01-24	0.799	↔
3_2_116	MW-17	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	-0.00273	0.003	↓	0.000889	0.019	↔	2019-07-22	0.609	↔
3_2_117	MW-17	Appendix IV	Lead	mg/l	13	14	100%	0.0000000000000000513	0.095	↔	-0.00000159	0.000	↓	2021-12-07	1.000	↔
3_2_118	MW-17	Appendix IV	Lithium	mg/l	13	0	0%	-0.00101	0.001	↓	-0.00000602	0.346	↔	2018-10-29	0.894	↔
3_2_120	MW-17	Appendix IV	Mercury	mg/l	12	13	100%	-0.000000359	0.670	↔	0.0000000190	0.456	↔	2018-11-15	0.108	↔
3_2_121	MW-17	Appendix IV	Molybdenum	mg/l	13	0	0%	-0.0000611	0.184	↔	0.00000977	0.110	↔	2019-03-31	0.414	↔
3_2_127	MW-17	Appendix IV	Radium-226+228	pci/l	13	1	7%	-0.0434	0.075	↔	-0.0000484	0.837	↔	2018-09-20	0.479	↔
3_2_129	MW-17	Appendix IV	Selenium	mg/l	13	0	0%	-0.0000358	0.075	↔	0.00000162	0.093	↔	2018-11-16	0.474	↔
3_2_134	MW-17	Appendix IV	Thallium	mg/l	13	12	86%	0.00000000864	0.930	↔	0.000000298	0.346	↔	2020-10-30	0.405	↔
3_3_114	MW-17	Supplemental	Conductivity (field)	us/cm	15	0	0%	-5.39	0.028	↔	0.173	0.828	↔	2019-06-24	0.541	↔
3_3_122	MW-17	Supplemental	Oxidation-reduction Potential (field)	mV	15	0	0%	-0.630	0.243	↔	0.222	0.109	↔	2019-06-02	0.295	↔
3_3_126	MW-17	Supplemental	Radium-226	pci/l	13	3	21%	-0.00335	0.009	↓	0.0000449	0.380	↔	2018-12-07	0.800	↔

(Table continues on next page)

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Line 1			Line 2			Break 1	R-Squared	Overall Trend
								Slope	p-Value	Trend	Slope	p-Value	Trend			
3_3_128	MW-17	Supplemental	Radium-228	pci/l	13	1	7%	-0.00235	0.441	↔	0.000133	0.733	↔	2019-02-09	0.123	↔
3_3_132	MW-17	Supplemental	Temperature (field)	deg c	15	0	0%	-0.0194	0.025	↔	0.000856	0.284	↔	2019-03-07	0.691	↔
3_3_133	MW-17	Supplemental	Temperature (lab)	deg c	15	0	0%	0.0362	0.190	↔	-0.00181	0.027	↔	2018-11-13	0.492	↔
3_3_136	MW-17	Supplemental	Total Suspended Solids	mg/l	11	6	50%	0.142	0.543	↔	-0.0171	0.183	↔	2018-12-26	0.271	↔
3_3_137	MW-17	Supplemental	Turbidity (field)	ntu	15	0	0%	-0.00654	0.289	↔	0.00217	0.054	↔	2019-04-23	0.350	↔

Table 10: Trend Tests: Piecewise Linear-Linear-Linear

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Line 1			Line 2			Line 3			Break 1	Break 2	R-Squared	Overall Trend
								Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend				
1_1_108	MW-15	Appendix III	Boron	mg/l	15	0	0%	-0.00747	0.191	↔	0.00893	0.667	↔	-0.000448	0.753	↔	2019-02-23	2019-07-07	0.234	↔
1_1_110	MW-15	Appendix III	Calcium	mg/l	15	0	0%	-0.272	0.595	↔	0.471	0.678	↔	-0.911	0.141	↔	2019-07-03	2020-10-26	0.267	↔
1_1_124	MW-15	Appendix III	pH (lab)	su	15	0	0%	0.00292	0.636	↔	-0.00137	0.030	↔	-0.000188	0.169	↔	2018-10-25	2019-06-01	0.800	↔
1_1_131	MW-15	Appendix III	Sulfate (as SO4)	mg/l	15	0	0%	5.17	0.123	↔	-7.59	0.527	↔	0.153	0.851	↔	2019-02-11	2019-06-11	0.390	↔
1_1_135	MW-15	Appendix III	Total Dissolved Solids	mg/l	15	0	0%	-1.50	0.542	↔	5.76	0.436	↔	-7.77	0.320	↔	2019-11-03	2020-10-27	0.368	↔
1_2_104	MW-15	Appendix IV	Antimony	mg/l	12	0	0%	-0.00000272	0.640	↔	0.000000382	0.760	↔	-0.000000301	0.477	↔	2018-11-15	2019-10-20	0.199	↔
1_2_105	MW-15	Appendix IV	Arsenic	mg/l	12	0	0%	-0.00000465	0.133	↔	0.00000112	0.267	↔	-0.00000151	0.577	↔	2019-04-11	2021-01-31	0.578	↔
1_2_106	MW-15	Appendix IV	Barium	mg/l	12	0	0%	-0.000184	0.054	↔	0.000108	0.218	↔	-0.000141	0.417	↔	2019-09-09	2020-10-27	0.732	↔
1_2_107	MW-15	Appendix IV	Beryllium	mg/l	11	11	92%	-0.00000273	0.464	↔	-0.0000000000126	1.000	↔	0.00000172	0.348	↔	2018-11-29	2021-04-21	0.378	↔
1_2_109	MW-15	Appendix IV	Cadmium	mg/l	12	7	54%	-0.00000736	0.689	↔	-0.000000398	0.648	↔	-0.0000000217	0.975	↔	2018-10-09	2020-01-03	0.369	↔
1_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	12	2	15%	0.0000176	0.179	↔	0.00000399	0.117	↔	-0.0000169	0.096	↔	2019-01-14	2021-02-04	0.808	↔
1_2_118	MW-15	Appendix IV	Lithium	mg/l	12	0	0%	0.0000943	0.761	↔	0.0000113	0.846	↔	-0.0000893	0.699	↔	2019-01-14	2020-10-27	0.162	↔
1_2_120	MW-15	Appendix IV	Mercury	mg/l	11	12	100%	-0.000000580	0.380	↔	0.000000159	0.515	↔	-0.0000000208	0.828	↔	2018-11-16	2019-09-17	0.292	↔
1_2_129	MW-15	Appendix IV	Selenium	mg/l	13	0	0%	0.0000949	0.029	↔	0.00000671	0.854	↔	0.0000702	0.340	↔	2019-07-23	2020-11-01	0.893	↔
1_2_134	MW-15	Appendix IV	Thallium	mg/l	12	12	92%	0.000000369	0.073	↔	-0.000000394	0.466	↔	0.000000104	0.850	↔	2019-10-21	2020-11-19	0.486	↔
1_3_114	MW-15	Supplemental	Conductivity (field)	us/cm	14	0	0%	0.848	0.926	↔	2.16	0.340	↔	-5.90	0.506	↔	2019-03-22	2020-10-27	0.259	↔
1_3_126	MW-15	Supplemental	Radium-226	pci/l	12	4	31%	-0.00232	0.128	↔	0.000412	0.393	↔	-0.000208	0.873	↔	2019-02-01	2020-10-28	0.414	↔
1_3_128	MW-15	Supplemental	Radium-228	pci/l	12	4	31%	-0.0222	0.323	↔	0.00809	0.303	↔	-0.000709	0.098	↔	2018-10-04	2018-12-29	0.538	↔
1_3_132	MW-15	Supplemental	Temperature (field)	deg c	14	0	0%	-0.0436	0.021	↔	-0.0143	0.044	↔	-0.00124	0.132	↔	2018-11-08	2019-05-06	0.950	↔
2_1_108	MW-16	Appendix III	Boron	mg/l	16	0	0%	-0.00659	0.078	↔	-0.000272	0.902	↔	-0.000195	0.127	↔	2018-10-30	2019-03-28	0.699	↔
2_1_111	MW-16	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	-2.20	0.182	↔	3.16	0.660	↔	-0.124	0.127	↔	2018-12-18	2019-02-02	0.414	↔
2_1_115	MW-16	Appendix III	Fluoride	mg/l	17	0	0%	0.00736	0.286	↔	-0.00216	0.003	↓	0.000886	0.210	↔	2018-11-15	2020-07-28	0.760	↔
2_1_124	MW-16	Appendix III	pH (lab)	su	16	0	0%	0.00977	0.263	↔	-0.00275	0.004	↓	0.000178	0.220	↔	2018-10-12	2019-06-02	0.769	↔
2_1_131	MW-16	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	0.262	0.871	↔	-1.76	0.779	↔	0.00409	0.990	↔	2019-04-08	2019-10-11	0.356	↔
2_2_104	MW-16	Appendix IV	Antimony	mg/l	13	3	21%	-0.00000183	0.403	↔	-0.000000434	0.011	↔	0.000000346	0.326	↔	2018-10-25	2021-02-11	0.844	↔
2_2_105	MW-16	Appendix IV	Arsenic	mg/l	13	0	0%	0.0000104	0.038	↔	-0.00000169	0.001	↓	0.000000483	0.809	↔	2018-11-18	2021-06-05	0.894	↔
2_2_109	MW-16	Appendix IV	Cadmium	mg/l	13	3	21%	-0.0000168	0.063	↔	0.000000904	0.909	↔	0.0000000559	0.577	↔	2018-10-02	2018-11-18	0.725	↔
2_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	13	8	57%	0.0000102	0.284	↔	-0.0000184	0.213	↔	0.00000468	0.867	↔	2020-04-21	2021-05-04	0.353	↔
2_2_113	MW-16	Appendix IV	Cobalt	mg/l	13	0	0%	-0.0000209	0.006	↓	0.000000470	0.927	↔	-0.0000000848	0.730	↔	2018-11-08	2019-06-20	0.889	↔
2_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	0.00736	0.286	↔	-0.00216	0.003	↓	0.000886	0.210	↔	2018-11-15	2020-07-28	0.760	↔

(Table continues on next page)

ID	Well	Constituent Type	Constituent	Unit	n	No. NDs	% NDs	Line 1			Line 2			Line 3			Break 1	Break 2	R-Squared	Overall Trend
								Slope	p-Value	Trend	Slope	p-Value	Trend	Slope	p-Value	Trend				
2_2_117	MW-16	Appendix IV	Lead	mg/l	13	13	93%	-0.000000145	0.299	↔	0.00000000549	0.859	↔	-0.00000115	0.000	↓	2019-01-27	2021-10-16	0.962	↔
2_2_118	MW-16	Appendix IV	Lithium	mg/l	13	0	0%	-0.000286	0.158	↔	-0.0000111	0.668	↔	0.000108	0.441	↔	2019-01-08	2021-09-27	0.593	↔
2_2_120	MW-16	Appendix IV	Mercury	mg/l	12	13	100%	-0.000000585	0.510	↔	0.000000163	0.395	↔	-0.0000000327	0.601	↔	2018-11-15	2019-10-04	0.291	↔
2_2_121	MW-16	Appendix IV	Molybdenum	mg/l	13	0	0%	-0.0000987	0.016	↔	-0.0000138	0.164	↔	-0.000000110	0.989	↔	2019-01-07	2020-10-27	0.925	↔
2_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	13	0	0%	-0.00475	0.526	↔	-0.000109	0.752	↔	0.00278	0.257	↔	2018-11-15	2021-04-23	0.628	↔
2_2_134	MW-16	Appendix IV	Thallium	mg/l	13	14	100%	0.00000000000128	0.784	↔	-0.00000000000177	0.130	↔	0.0000000330	0.000	↑	2019-07-11	2021-10-18	1.000	↔
2_3_114	MW-16	Supplemental	Conductivity (field)	us/cm	15	0	0%	-14.3	0.733	↔	-0.855	0.223	↔	2.57	0.613	↔	2018-10-06	2021-07-20	0.319	↔
2_3_126	MW-16	Supplemental	Radium-226	pci/l	13	3	21%	-0.00401	0.081	↔	-0.000190	0.703	↔	0.000303	0.193	↔	2018-12-06	2019-11-06	0.701	↔
2_3_128	MW-16	Supplemental	Radium-228	pci/l	13	1	7%	0.00109	0.466	↔	-0.000532	0.146	↔	0.00221	0.140	↔	2019-06-27	2021-04-23	0.729	↔
2_3_132	MW-16	Supplemental	Temperature (field)	deg c	15	0	0%	-0.00378	0.509	↔	0.000223	0.891	↔	0.0135	0.124	↔	2019-05-06	2021-09-14	0.474	↔
2_3_133	MW-16	Supplemental	Temperature (lab)	deg c	15	0	0%	0.0375	0.023	↔	-0.0120	0.293	↔	-0.000890	0.336	↔	2018-11-22	2019-05-06	0.675	↔
3_1_110	MW-17	Appendix III	Calcium	mg/l	16	0	0%	-1.94	0.087	↔	-0.983	0.330	↔	-0.0134	0.689	↔	2018-11-03	2019-01-15	0.788	↔
3_1_111	MW-17	Appendix III	Chloride (as Cl)	mg/l	16	0	0%	-3.53	0.058	↔	-1.16	0.629	↔	0.00933	0.854	↔	2018-11-02	2019-01-14	0.751	↔
3_1_115	MW-17	Appendix III	Fluoride	mg/l	17	0	0%	0.0182	0.261	↔	-0.00821	0.011	↔	0.000636	0.007	↑	2018-10-01	2019-02-17	0.717	↔
3_1_131	MW-17	Appendix III	Sulfate (as SO4)	mg/l	16	0	0%	-29.0	0.001	↓	-0.750	0.130	↔	-0.0289	0.820	↔	2018-09-20	2019-10-21	0.901	↔
3_1_135	MW-17	Appendix III	Total Dissolved Solids	mg/l	16	0	0%	-12.0	0.061	↔	-1.09	0.069	↔	1.02	0.465	↔	2018-12-10	2020-10-28	0.785	↔
3_2_104	MW-17	Appendix IV	Antimony	mg/l	13	13	93%	-0.000000308	0.315	↔	0.00000000843	0.901	↔	0.0000000889	0.047	↔	2019-01-29	2021-12-07	0.629	↔
3_2_106	MW-17	Appendix IV	Barium	mg/l	13	0	0%	-0.000256	0.022	↔	0.0000657	0.261	↔	-0.0000300	0.280	↔	2019-02-14	2020-10-27	0.672	↔
3_2_109	MW-17	Appendix IV	Cadmium	mg/l	13	0	0%	-0.0000195	0.075	↔	0.00000145	0.873	↔	0.000000422	0.332	↔	2018-11-03	2019-05-14	0.608	↔
3_2_113	MW-17	Appendix IV	Cobalt	mg/l	13	1	7%	-0.0000140	0.170	↔	-0.00000100	0.663	↔	-0.000000483	0.761	↔	2018-10-17	2019-07-13	0.888	↔
3_2_116	MW-17	Appendix IV	Fluoride (App IV)	mg/l	17	0	0%	0.0182	0.261	↔	-0.00821	0.011	↔	0.000636	0.007	↑	2018-10-01	2019-02-17	0.717	↔
3_2_117	MW-17	Appendix IV	Lead	mg/l	13	14	100%	-0.0000000000286	0.890	↔	0.00000000000542	0.143	↔	-0.00000159	0.000	↓	2018-10-16	2021-12-07	1.000	↔
3_2_118	MW-17	Appendix IV	Lithium	mg/l	13	0	0%	-0.00236	0.000	↓	-0.000273	0.201	↔	-0.00000401	0.137	↔	2018-09-20	2018-12-13	0.989	↔
3_2_120	MW-17	Appendix IV	Mercury	mg/l	12	13	100%	-0.000000577	0.518	↔	0.000000153	0.426	↔	-0.0000000321	0.599	↔	2018-11-15	2019-10-21	0.284	↔
3_2_129	MW-17	Appendix IV	Selenium	mg/l	13	0	0%	-0.0000378	0.060	↔	0.0000184	0.817	↔	0.000000282	0.805	↔	2018-12-12	2019-04-20	0.633	↔
3_2_134	MW-17	Appendix IV	Thallium	mg/l	13	12	86%	0.000000194	0.563	↔	-0.000000257	0.708	↔	0.000000297	0.192	↔	2019-07-22	2020-06-07	0.439	↔
3_3_114	MW-17	Supplemental	Conductivity (field)	us/cm	15	0	0%	-20.4	0.048	↔	-0.425	0.637	↔	-0.0258	0.991	↔	2018-11-28	2020-11-27	0.700	↔
3_3_126	MW-17	Supplemental	Radium-226	pci/l	13	3	21%	-0.00327	0.005	↓	0.000219	0.123	↔	-0.000210	0.128	↔	2018-12-21	2020-10-27	0.895	↔
3_3_128	MW-17	Supplemental	Radium-228	pci/l	13	1	7%	-0.0287	0.247	↔	-0.0000710	0.949	↔	0.0000793	0.899	↔	2018-09-21	2019-10-27	0.317	↔
3_3_132	MW-17	Supplemental	Temperature (field)	deg c	15	0	0%	-0.0194	0.011	↔	-0.00125	0.254	↔	0.0106	0.209	↔	2019-02-09	2021-07-21	0.834	↔
3_3_133	MW-17	Supplemental	Temperature (lab)	deg c	15	0	0%	0.0451	0.026	↔	-0.0112	0.424	↔	-0.000792	0.476	↔	2018-11-19	2019-05-06	0.594	↔
3_3_136	MW-17	Supplemental	Total Suspended Solids	mg/l	11	6	50%	0.176	0.509	↔	-0.0413	0.972	↔	0.000816	0.976	↔	2018-12-26	2020-04-13	0.353	↔
3_3_137	MW-17	Supplemental	Turbidity (field)	ntu	15	0	0%	-0.00555	0.394	↔	0.00101	0.700	↔	0.00564	0.240	↔	2019-04-19	2021-04-22	0.407	↔

Cherokee – Lower Confidence Limits for Assessment Monitoring

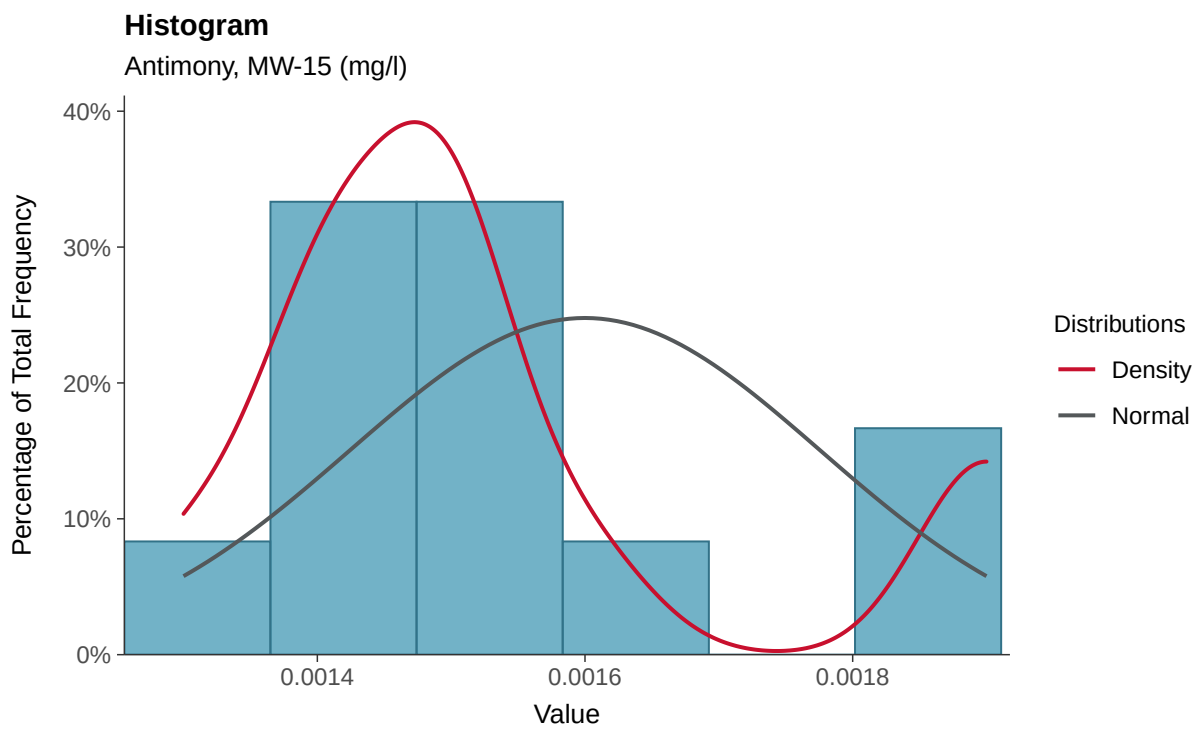
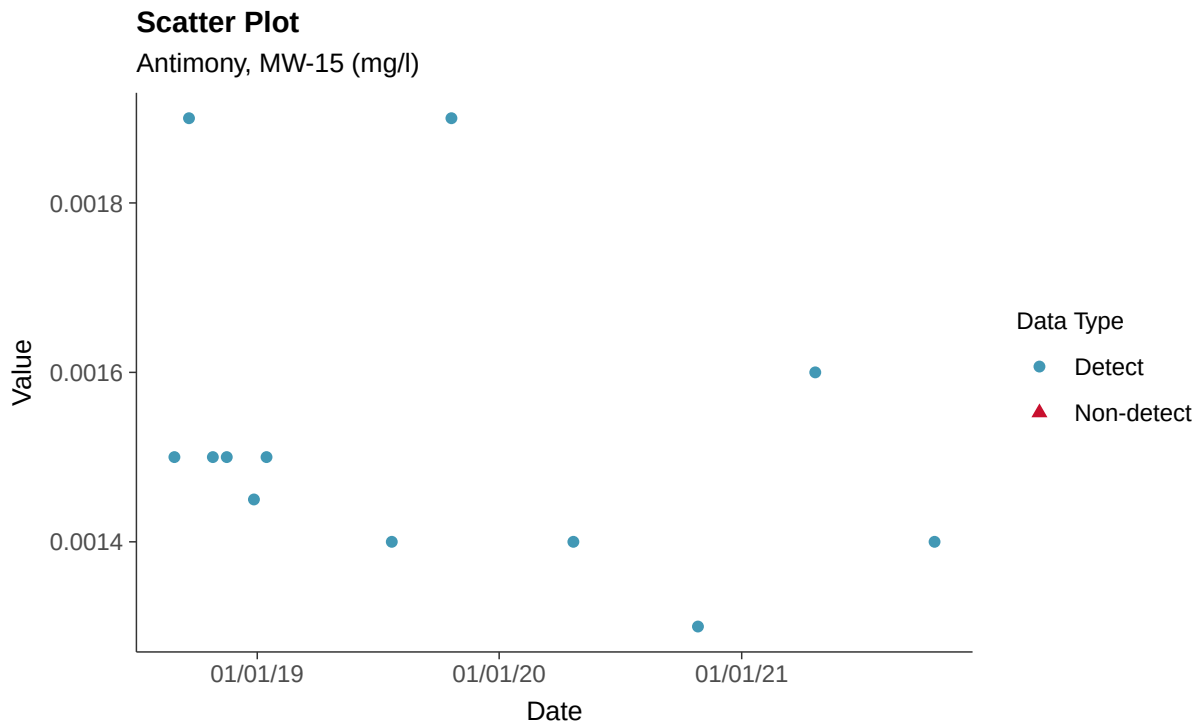
Code	Well	Type	Constituent	Unit	n	% NDs	Range of Sampling Period	Method	LCL
1_2_104	MW-15	Appendix IV	Antimony	mg/l	12	0%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.0014
1_2_105	MW-15	Appendix IV	Arsenic	mg/l	12	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0022
1_2_106	MW-15	Appendix IV	Barium	mg/l	12	0%	08-29-2018 to 04-19-2022	Normal LCL	0.053
1_2_107	MW-15	Appendix IV	Beryllium	mg/l	11	92%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00031
1_2_109	MW-15	Appendix IV	Cadmium	mg/l	12	54%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00020
1_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	12	15%	08-29-2018 to 04-19-2022	Gamma MLE Normal Approx. LCL	0.0027
1_2_113	MW-15	Appendix IV	Cobalt	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0034
1_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	16	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	1.3
1_2_117	MW-15	Appendix IV	Lead	mg/l	12	100%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00045
1_2_118	MW-15	Appendix IV	Lithium	mg/l	12	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.088
1_2_120	MW-15	Appendix IV	Mercury	mg/l	11	100%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00013
1_2_121	MW-15	Appendix IV	Molybdenum	mg/l	12	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.036
1_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	12	23%	08-29-2018 to 04-19-2022	Gamma MLE Normal Approx. LCL	0.69
1_2_129	MW-15	Appendix IV	Selenium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.019
1_2_134	MW-15	Appendix IV	Thallium	mg/l	12	92%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00020
2_2_104	MW-16	Appendix IV	Antimony	mg/l	13	21%	08-29-2018 to 04-19-2022	Gamma MLE Normal Approx. LCL	0.00065
2_2_105	MW-16	Appendix IV	Arsenic	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0029
2_2_106	MW-16	Appendix IV	Barium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.045
2_2_107	MW-16	Appendix IV	Beryllium	mg/l	12	92%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00031
2_2_109	MW-16	Appendix IV	Cadmium	mg/l	13	21%	08-29-2018 to 04-19-2022	Gamma MLE Normal Approx. LCL	0.00024
2_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	13	57%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00098
2_2_113	MW-16	Appendix IV	Cobalt	mg/l	13	0%	08-29-2018 to 04-19-2022	Lognormal H-LCL	0.00051
2_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	17	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	1.9
2_2_117	MW-16	Appendix IV	Lead	mg/l	13	93%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00045
2_2_118	MW-16	Appendix IV	Lithium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.064
2_2_120	MW-16	Appendix IV	Mercury	mg/l	12	100%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00013
2_2_121	MW-16	Appendix IV	Molybdenum	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.016
2_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.87
2_2_129	MW-16	Appendix IV	Selenium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0064
2_2_134	MW-16	Appendix IV	Thallium	mg/l	13	100%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00020
3_2_104	MW-17	Appendix IV	Antimony	mg/l	13	93%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00057
3_2_105	MW-17	Appendix IV	Arsenic	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0037
3_2_106	MW-17	Appendix IV	Barium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.040
3_2_107	MW-17	Appendix IV	Beryllium	mg/l	12	85%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00031
3_2_109	MW-17	Appendix IV	Cadmium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.00089
3_2_112	MW-17	Appendix IV	Chromium, Total	mg/l	13	43%	08-29-2018 to 04-19-2022	Gamma MLE Normal Approx. LCL	0.00088
3_2_113	MW-17	Appendix IV	Cobalt	mg/l	13	7%	08-29-2018 to 04-19-2022	Gamma MLE Normal Approx. LCL	0.00037
3_2_116	MW-17	Appendix IV	Fluoride (App IV)	mg/l	17	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	1.5
3_2_117	MW-17	Appendix IV	Lead	mg/l	13	100%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00045
3_2_118	MW-17	Appendix IV	Lithium	mg/l	13	0%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.031
3_2_120	MW-17	Appendix IV	Mercury	mg/l	12	100%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00013
3_2_121	MW-17	Appendix IV	Molybdenum	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0090
3_2_127	MW-17	Appendix IV	Radium-226+228	pci/l	13	7%	08-29-2018 to 04-19-2022	Gamma MLE Normal Approx. LCL	0.77
3_2_129	MW-17	Appendix IV	Selenium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0048
3_2_134	MW-17	Appendix IV	Thallium	mg/l	13	86%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00020

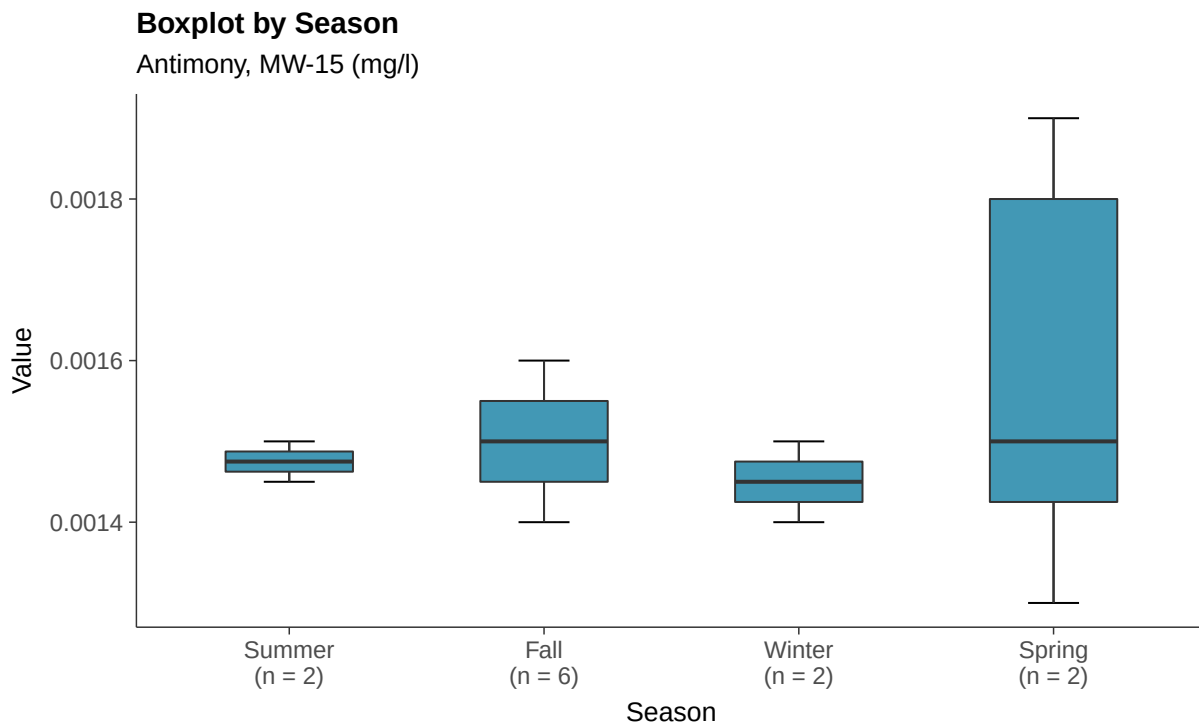
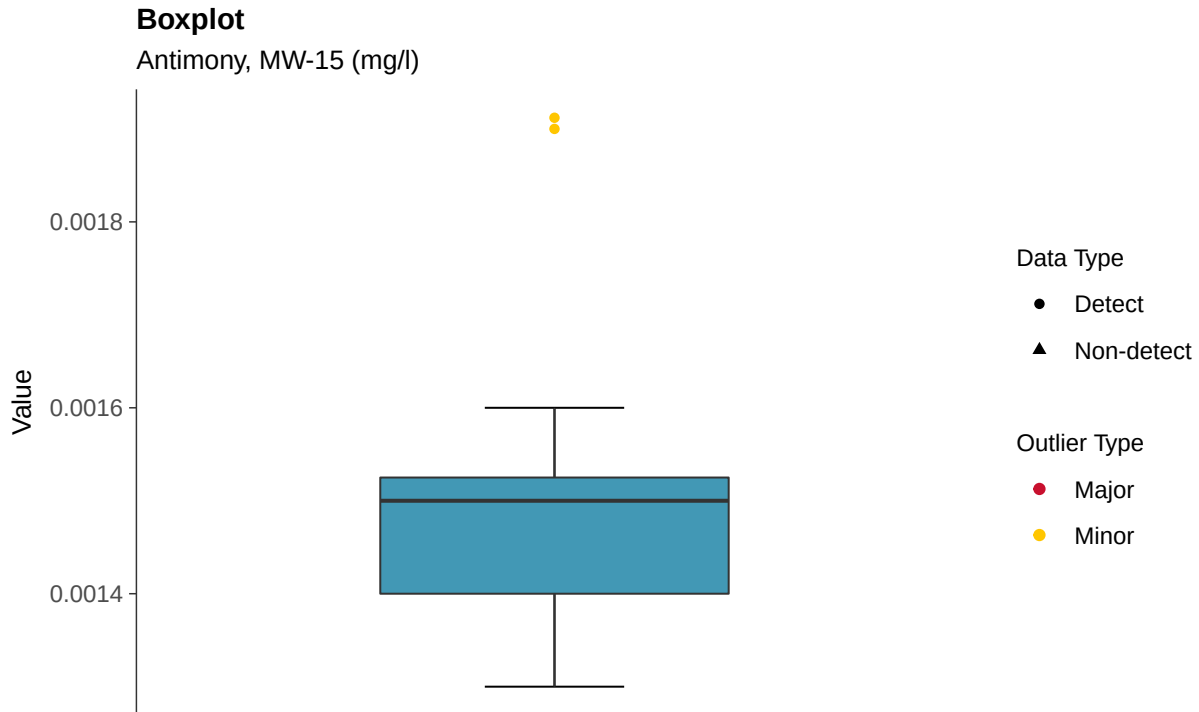
Cherokee – Upper Confidence Limits for Assessment Monitoring

Code	Well	Type	Constituent	Unit	n	% NDs	Range of Sampling Period	Method	UCL
1_2_104	MW-15	Appendix IV	Antimony	mg/l	12	0%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.0016
1_2_105	MW-15	Appendix IV	Arsenic	mg/l	12	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0026
1_2_106	MW-15	Appendix IV	Barium	mg/l	12	0%	08-29-2018 to 04-19-2022	Normal LCL	0.084
1_2_107	MW-15	Appendix IV	Beryllium	mg/l	11	92%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00031
1_2_109	MW-15	Appendix IV	Cadmium	mg/l	12	54%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00055
1_2_112	MW-15	Appendix IV	Chromium, Total	mg/l	12	15%	08-29-2018 to 04-19-2022	Gamma MLE Bootstrap LCL	0.0046
1_2_113	MW-15	Appendix IV	Cobalt	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0062
1_2_116	MW-15	Appendix IV	Fluoride (App IV)	mg/l	16	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	1.7
1_2_117	MW-15	Appendix IV	Lead	mg/l	12	100%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00045
1_2_118	MW-15	Appendix IV	Lithium	mg/l	12	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.11
1_2_120	MW-15	Appendix IV	Mercury	mg/l	11	100%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00013
1_2_121	MW-15	Appendix IV	Molybdenum	mg/l	12	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.059
1_2_127	MW-15	Appendix IV	Radium-226+228	pci/l	12	23%	08-29-2018 to 04-19-2022	Gamma MLE Bootstrap LCL	1.2
1_2_129	MW-15	Appendix IV	Selenium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.051
1_2_134	MW-15	Appendix IV	Thallium	mg/l	12	92%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00020
2_2_104	MW-16	Appendix IV	Antimony	mg/l	13	21%	08-29-2018 to 04-19-2022	Gamma MLE Bootstrap LCL	0.00083
2_2_105	MW-16	Appendix IV	Arsenic	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0036
2_2_106	MW-16	Appendix IV	Barium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.063
2_2_107	MW-16	Appendix IV	Beryllium	mg/l	12	92%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00031
2_2_109	MW-16	Appendix IV	Cadmium	mg/l	13	21%	08-29-2018 to 04-19-2022	Gamma MLE Bootstrap LCL	0.00040
2_2_112	MW-16	Appendix IV	Chromium, Total	mg/l	13	57%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.0025
2_2_113	MW-16	Appendix IV	Cobalt	mg/l	13	0%	08-29-2018 to 04-19-2022	Lognormal H-LCL	0.00098
2_2_116	MW-16	Appendix IV	Fluoride (App IV)	mg/l	17	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	2.4
2_2_117	MW-16	Appendix IV	Lead	mg/l	13	93%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00045
2_2_118	MW-16	Appendix IV	Lithium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.088
2_2_120	MW-16	Appendix IV	Mercury	mg/l	12	100%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00013
2_2_121	MW-16	Appendix IV	Molybdenum	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.025
2_2_127	MW-16	Appendix IV	Radium-226+228	pci/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	1.3
2_2_129	MW-16	Appendix IV	Selenium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0089
2_2_134	MW-16	Appendix IV	Thallium	mg/l	13	100%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00020
3_2_104	MW-17	Appendix IV	Antimony	mg/l	13	93%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00057
3_2_105	MW-17	Appendix IV	Arsenic	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0043
3_2_106	MW-17	Appendix IV	Barium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.056
3_2_107	MW-17	Appendix IV	Beryllium	mg/l	12	85%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00034
3_2_109	MW-17	Appendix IV	Cadmium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0013
3_2_112	MW-17	Appendix IV	Chromium, Total	mg/l	13	43%	08-29-2018 to 04-19-2022	Gamma MLE Bootstrap LCL	0.0019
3_2_113	MW-17	Appendix IV	Cobalt	mg/l	13	7%	08-29-2018 to 04-19-2022	Gamma MLE Bootstrap LCL	0.00066
3_2_116	MW-17	Appendix IV	Fluoride (App IV)	mg/l	17	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	1.9
3_2_117	MW-17	Appendix IV	Lead	mg/l	13	100%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00045
3_2_118	MW-17	Appendix IV	Lithium	mg/l	13	0%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.042
3_2_120	MW-17	Appendix IV	Mercury	mg/l	12	100%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00013
3_2_121	MW-17	Appendix IV	Molybdenum	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.016
3_2_127	MW-17	Appendix IV	Radium-226+228	pci/l	13	7%	08-29-2018 to 04-19-2022	Gamma MLE Bootstrap LCL	1.1
3_2_129	MW-17	Appendix IV	Selenium	mg/l	13	0%	08-29-2018 to 04-19-2022	Adjusted Gamma LCL	0.0064
3_2_134	MW-17	Appendix IV	Thallium	mg/l	13	86%	08-29-2018 to 04-19-2022	Nonparametric LCL around the Median	0.00020

Appendix IV: Antimony, MW-15

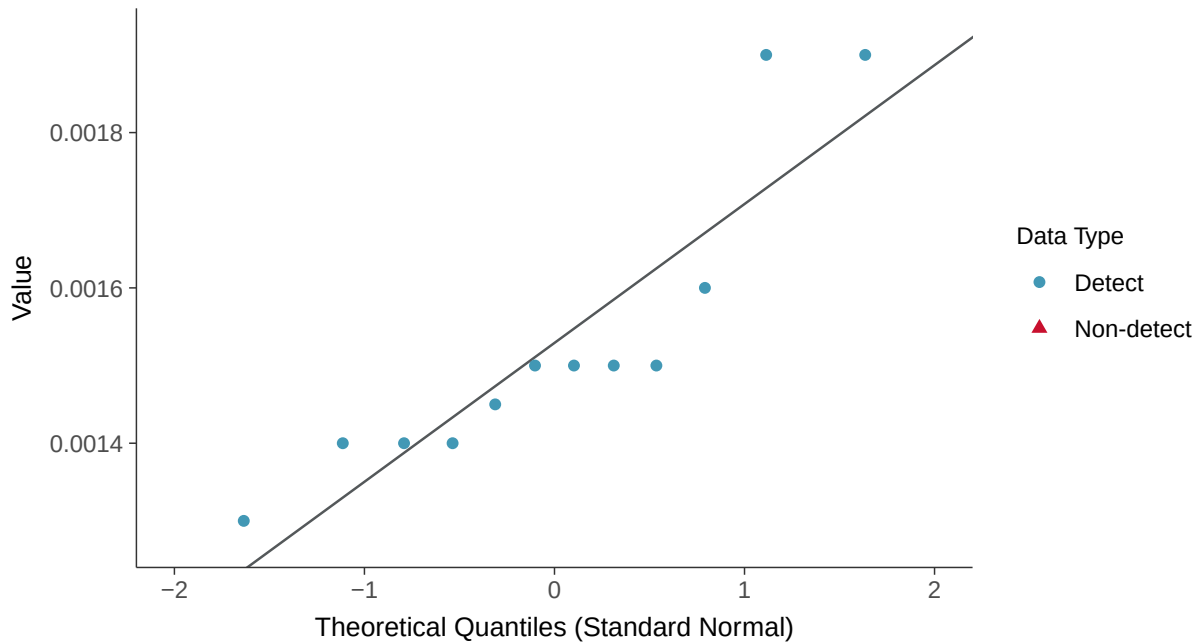
ID: 1_2_104





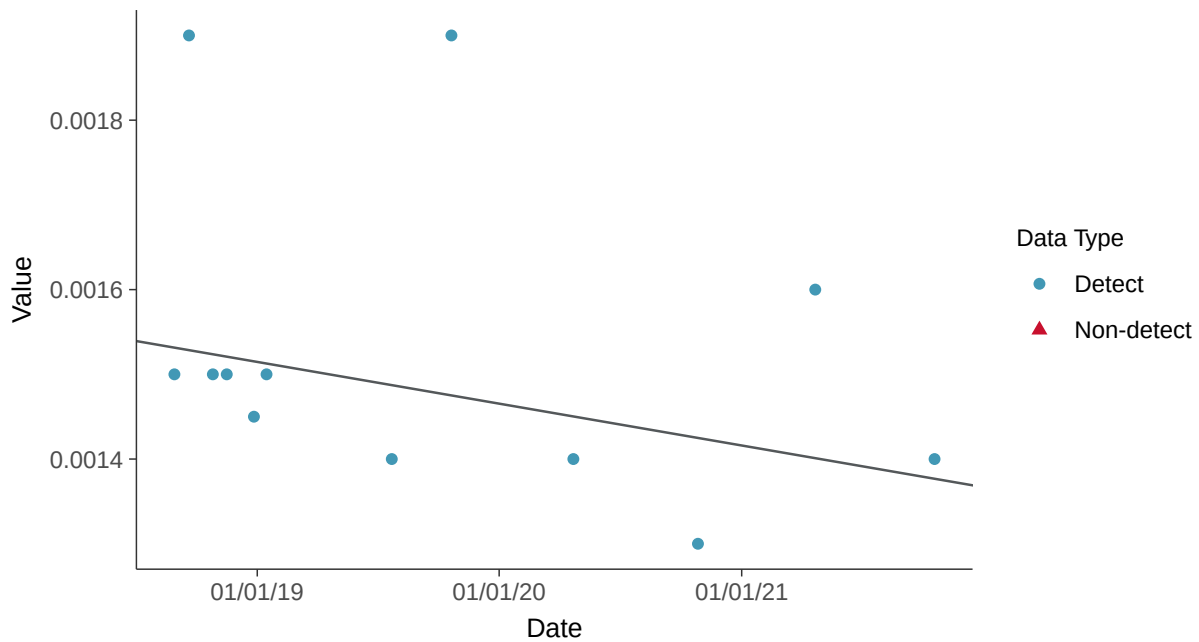
Normal Q-Q plot

Antimony, MW-15 (mg/l)



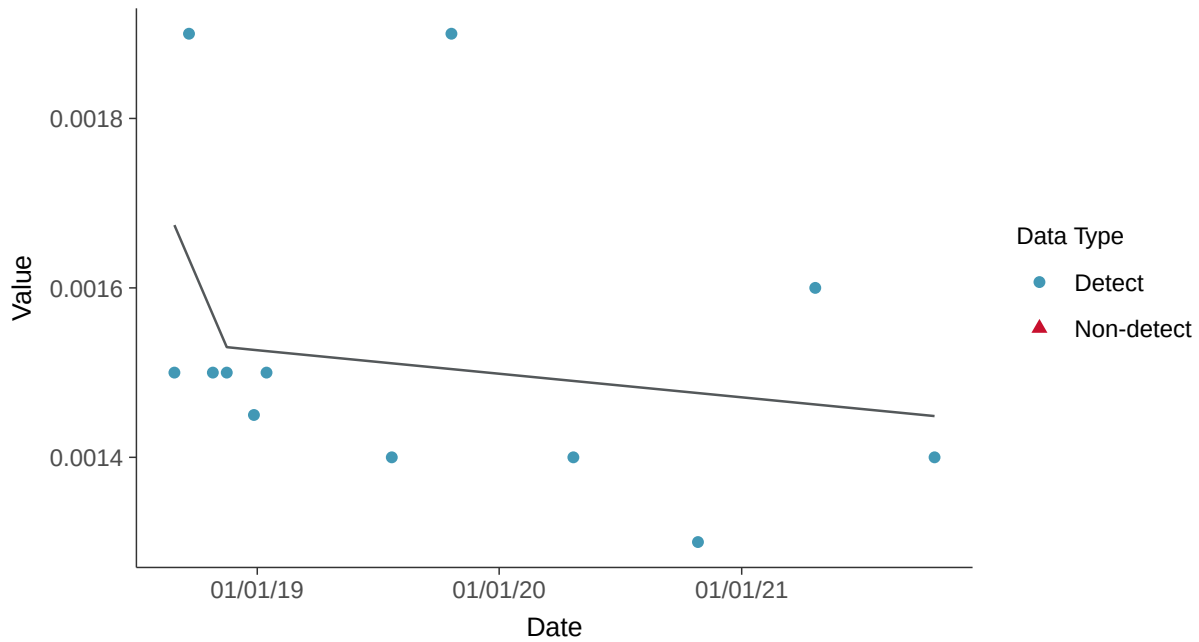
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Antimony, MW-15 (mg/l)



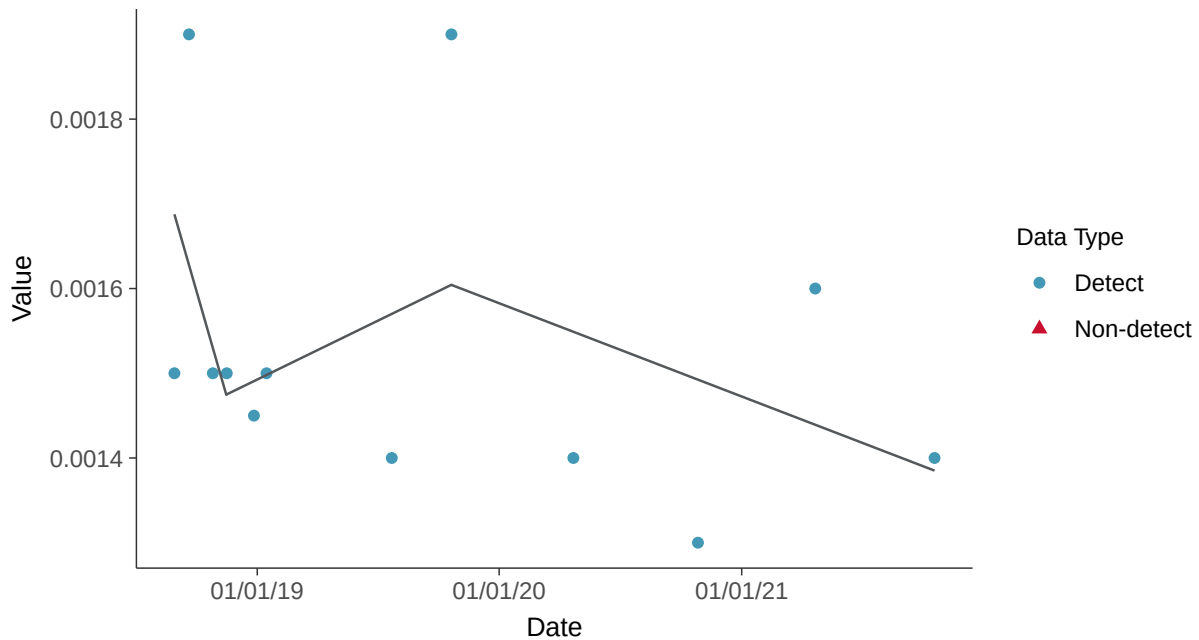
Trend Regression: Piecewise Linear-Linear

Antimony, MW-15 (mg/l)



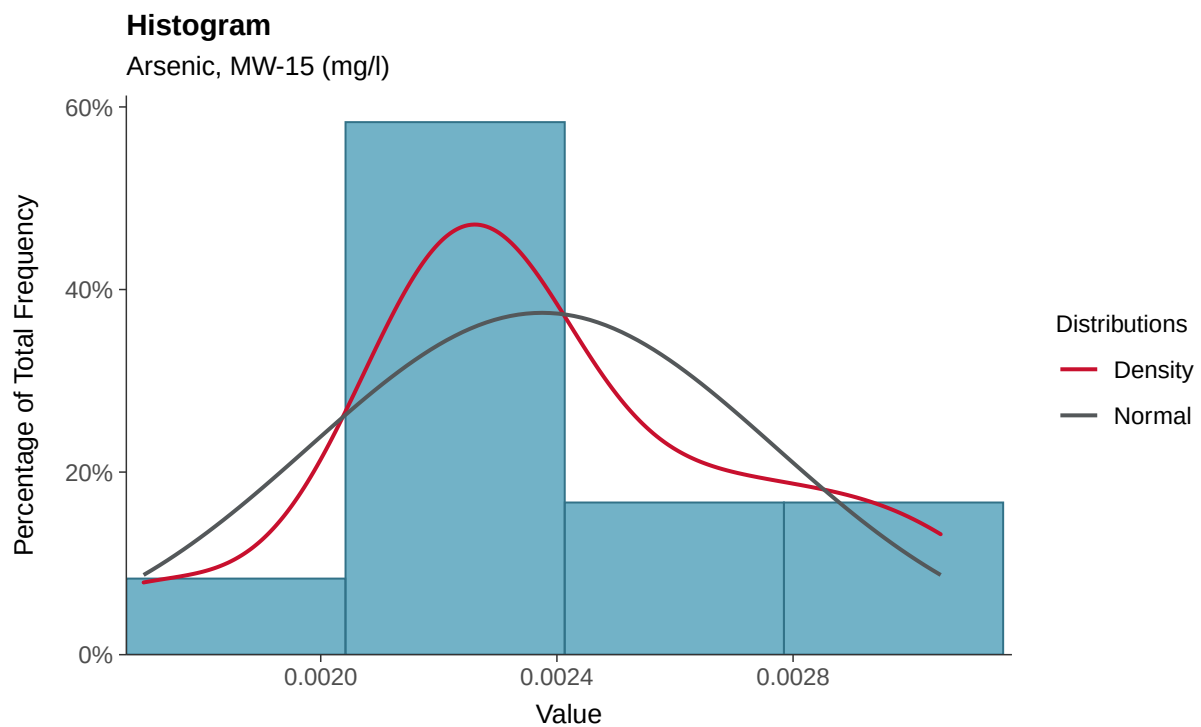
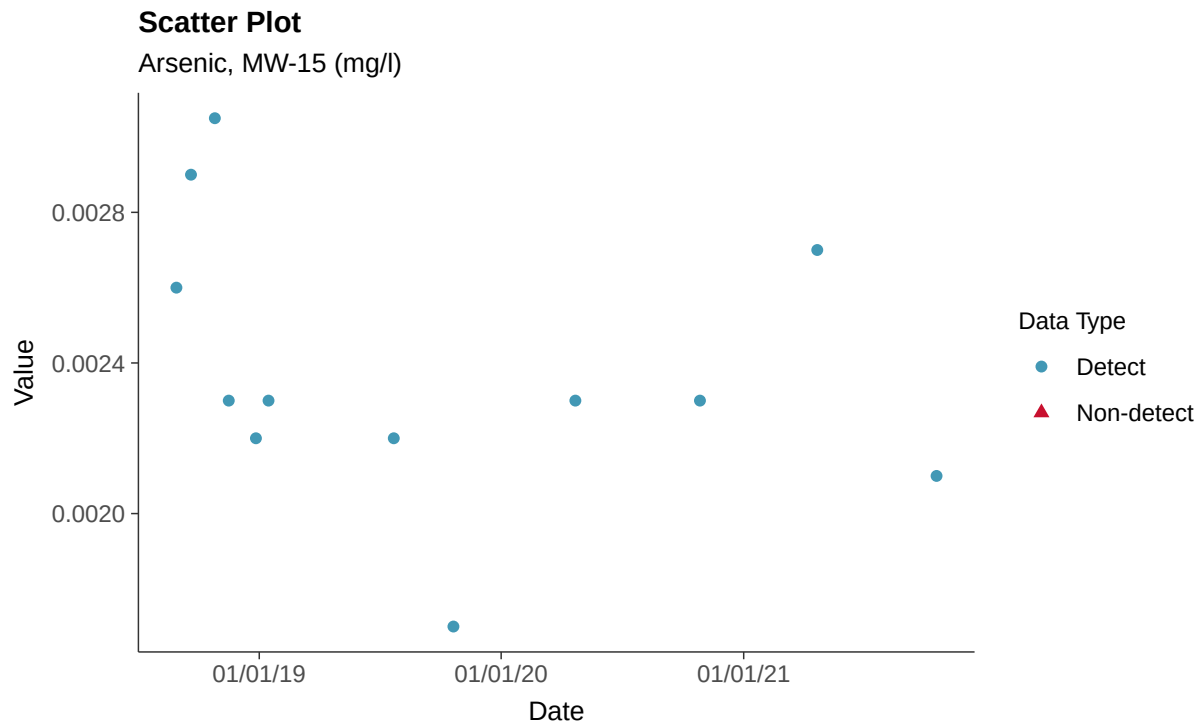
Trend Regression: Piecewise Linear-Linear-Linear

Antimony, MW-15 (mg/l)



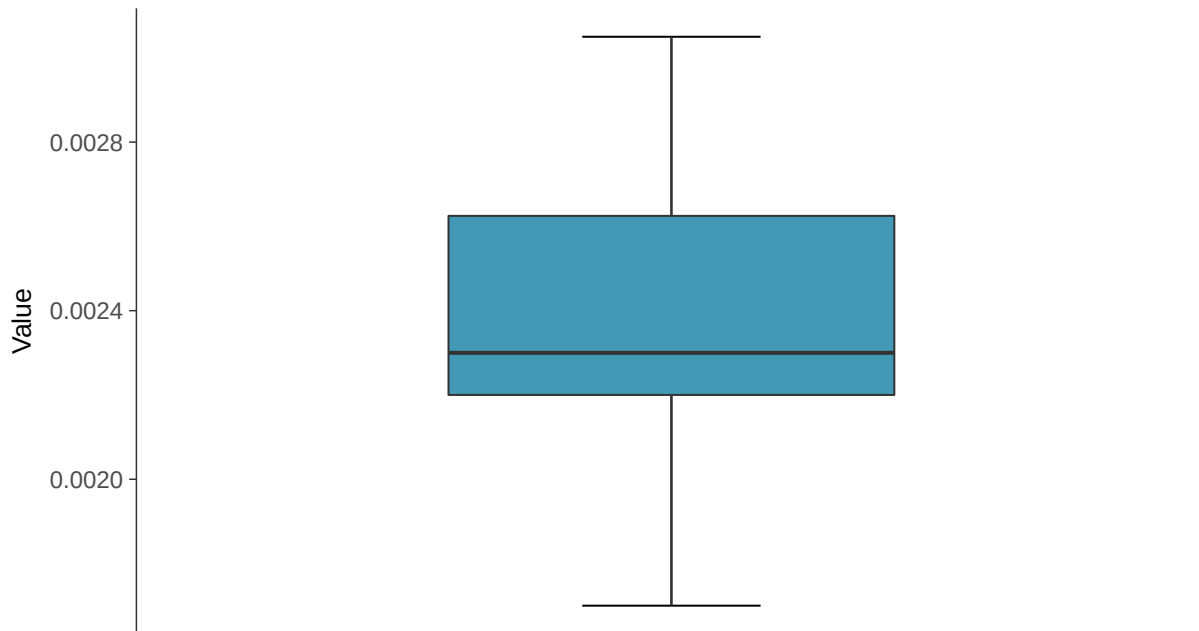
Appendix IV: Arsenic, MW-15

ID: 1_2_105



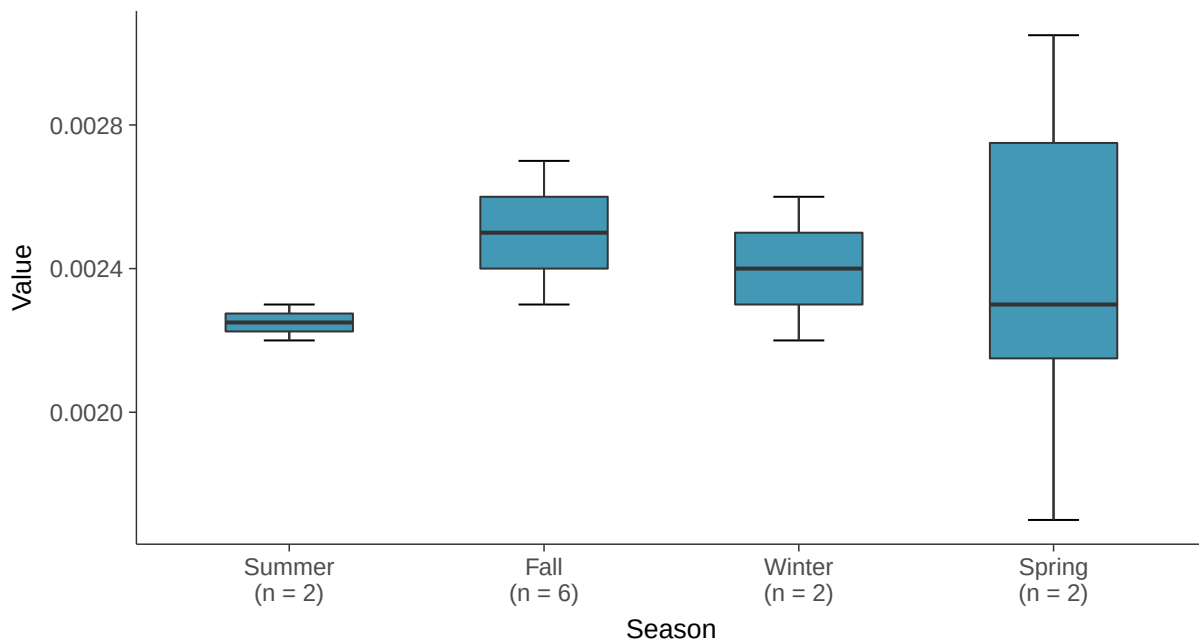
Boxplot

Arsenic, MW-15 (mg/l)



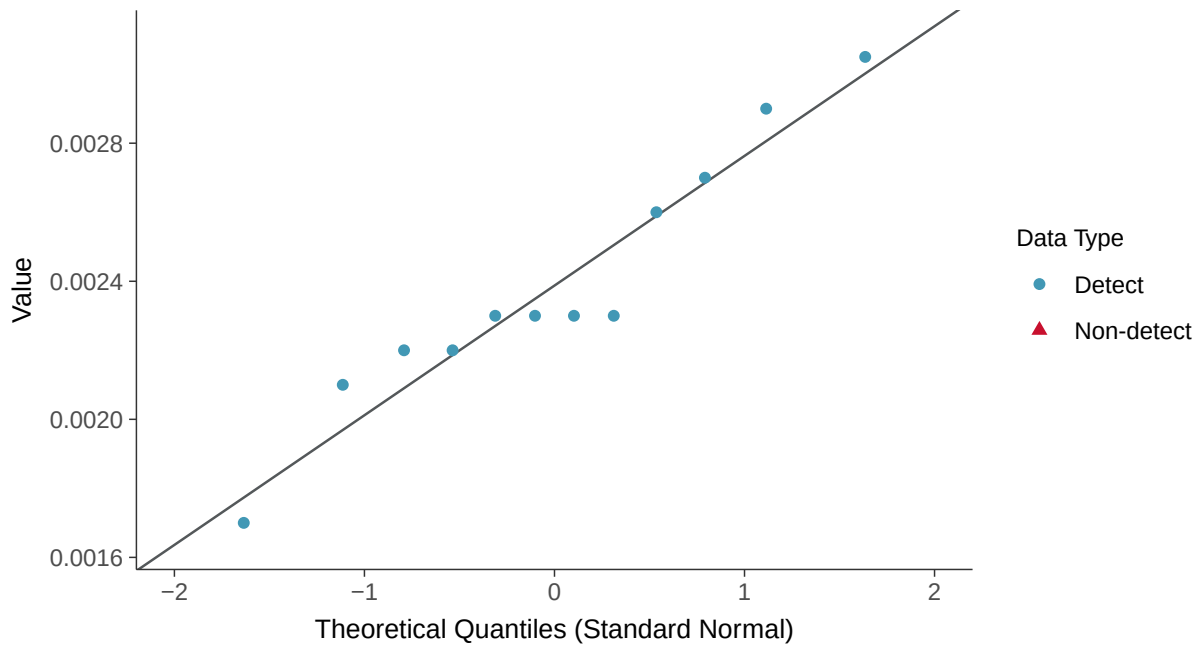
Boxplot by Season

Arsenic, MW-15 (mg/l)



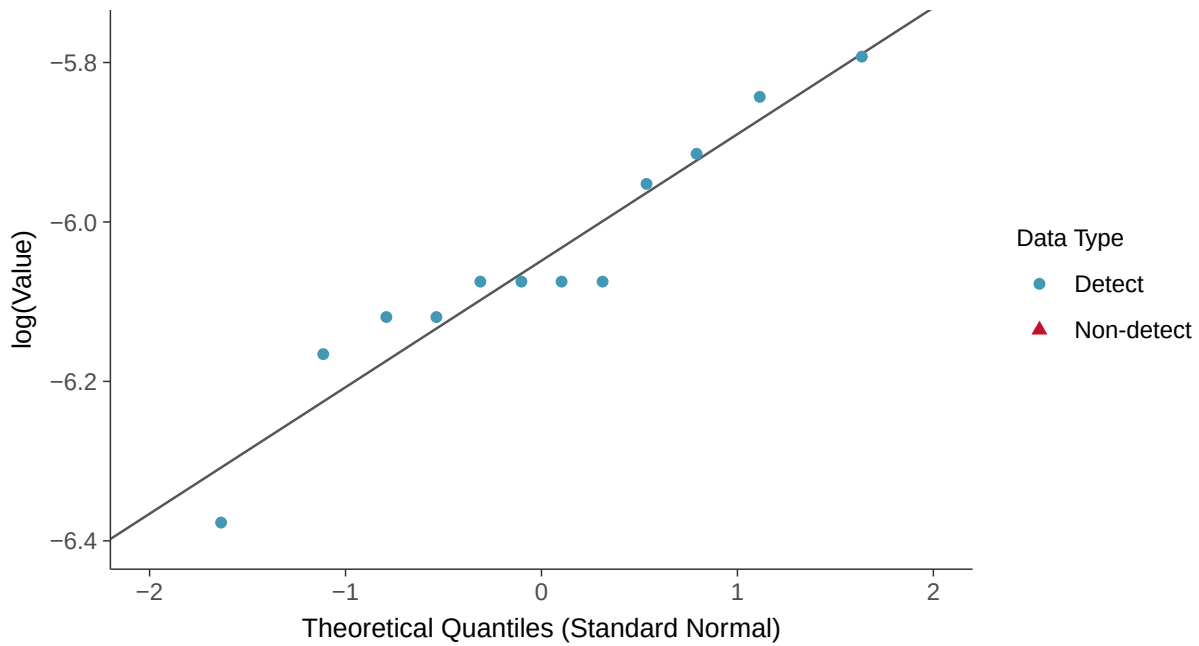
Normal Q-Q plot

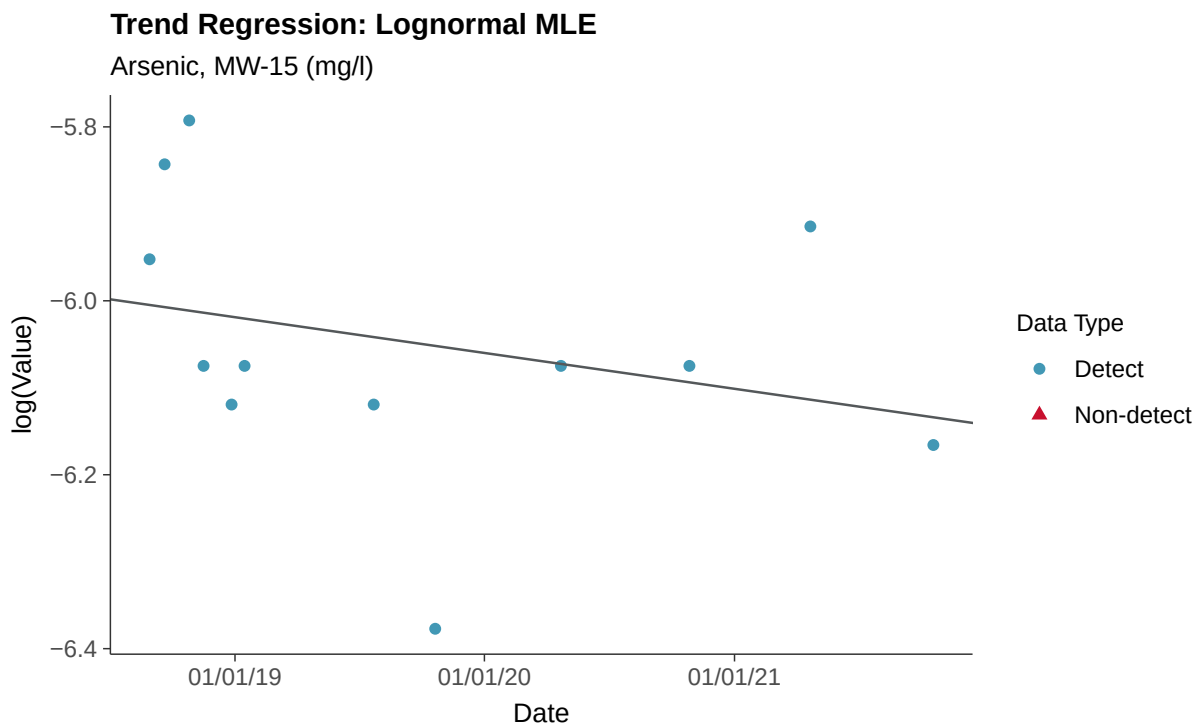
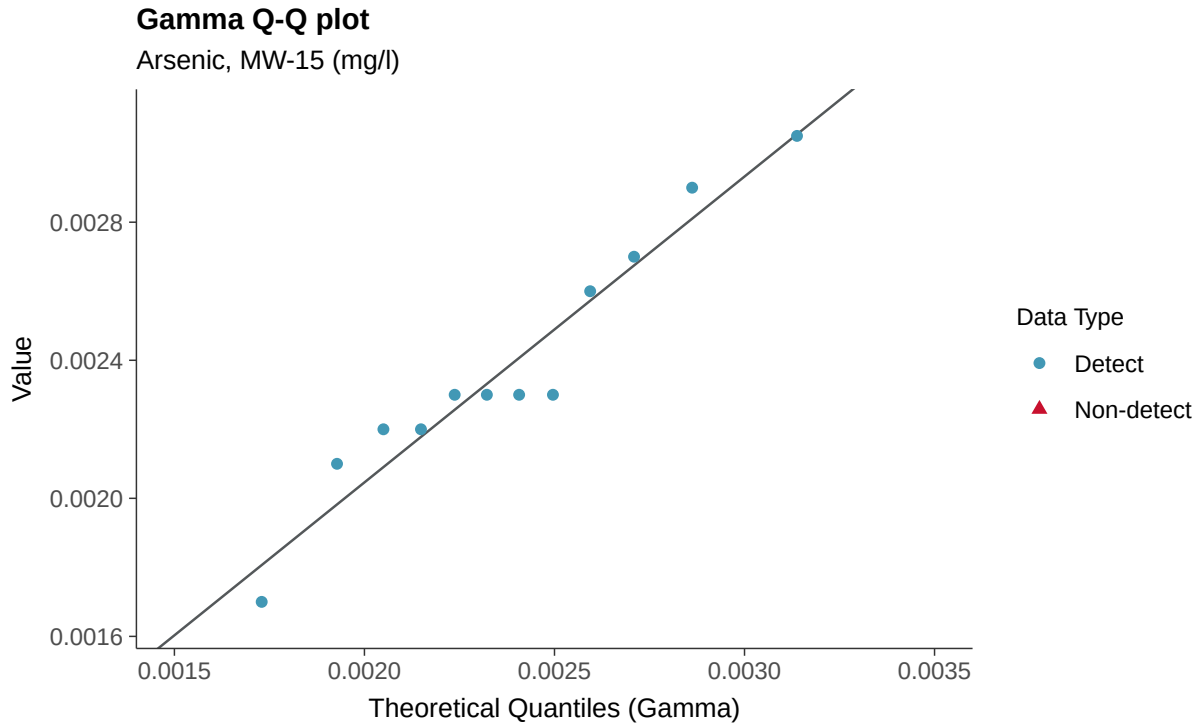
Arsenic, MW-15 (mg/l)



Lognormal Q-Q plot

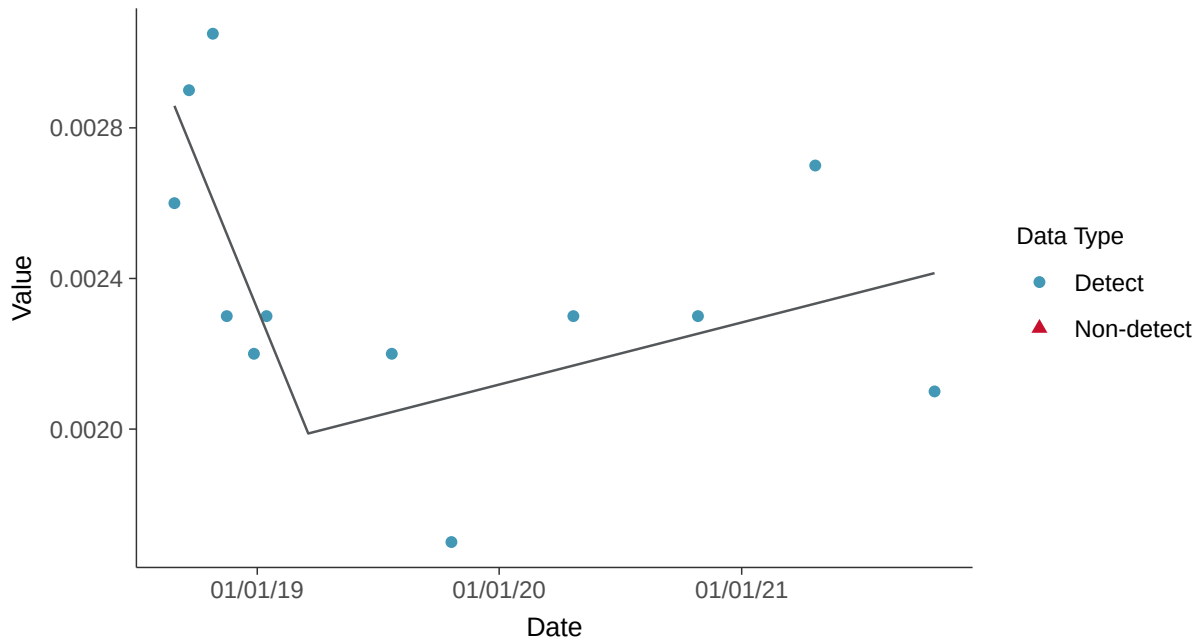
Arsenic, MW-15 (mg/l)





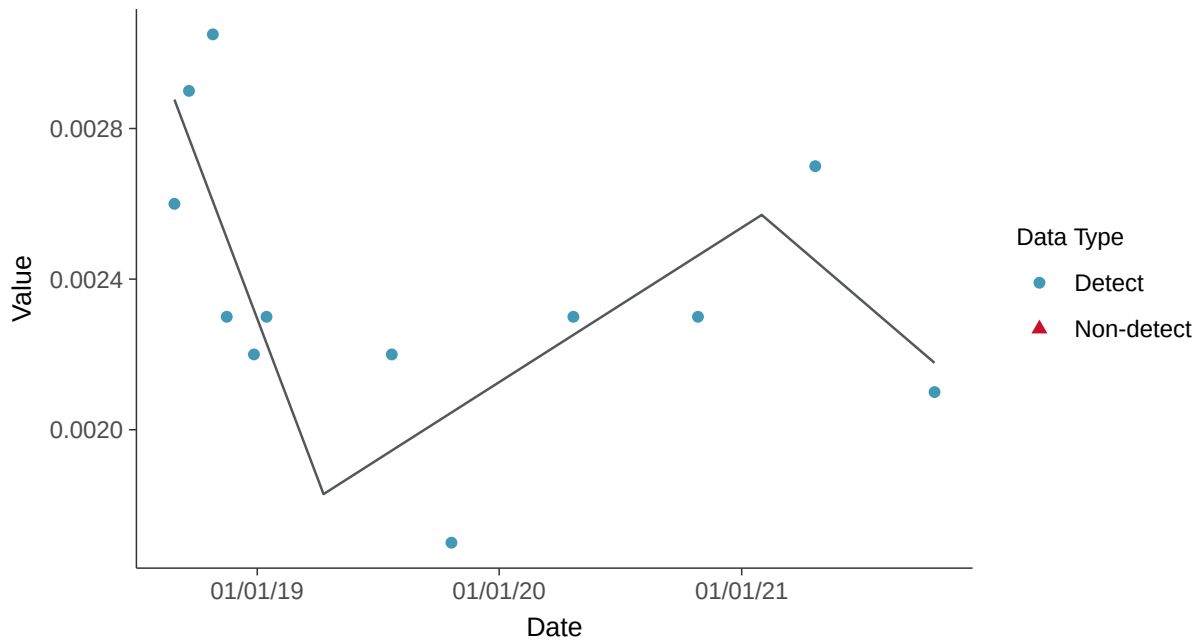
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-15 (mg/l)



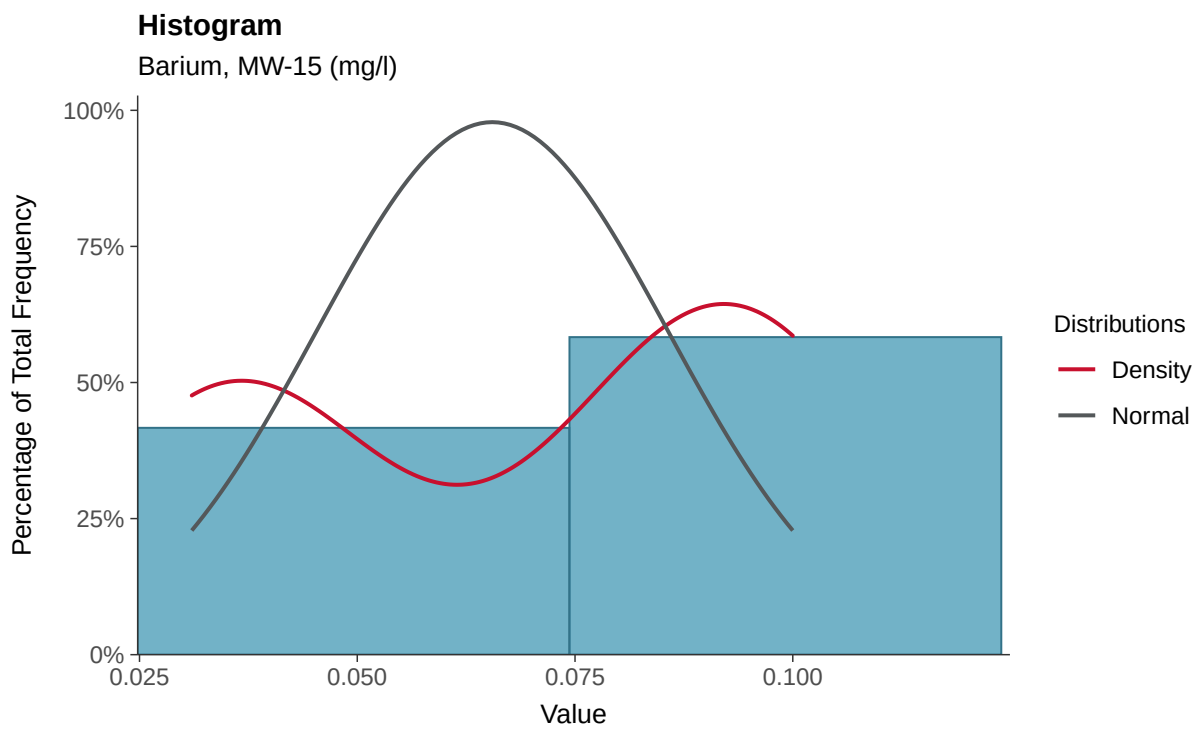
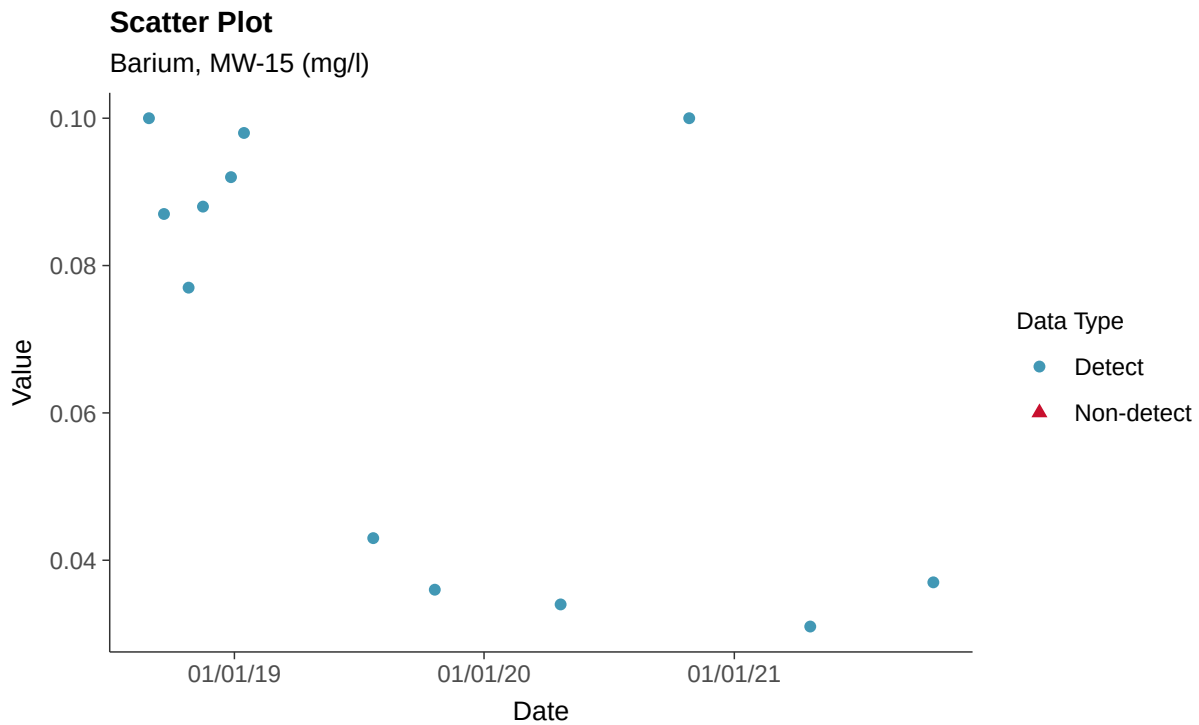
Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-15 (mg/l)



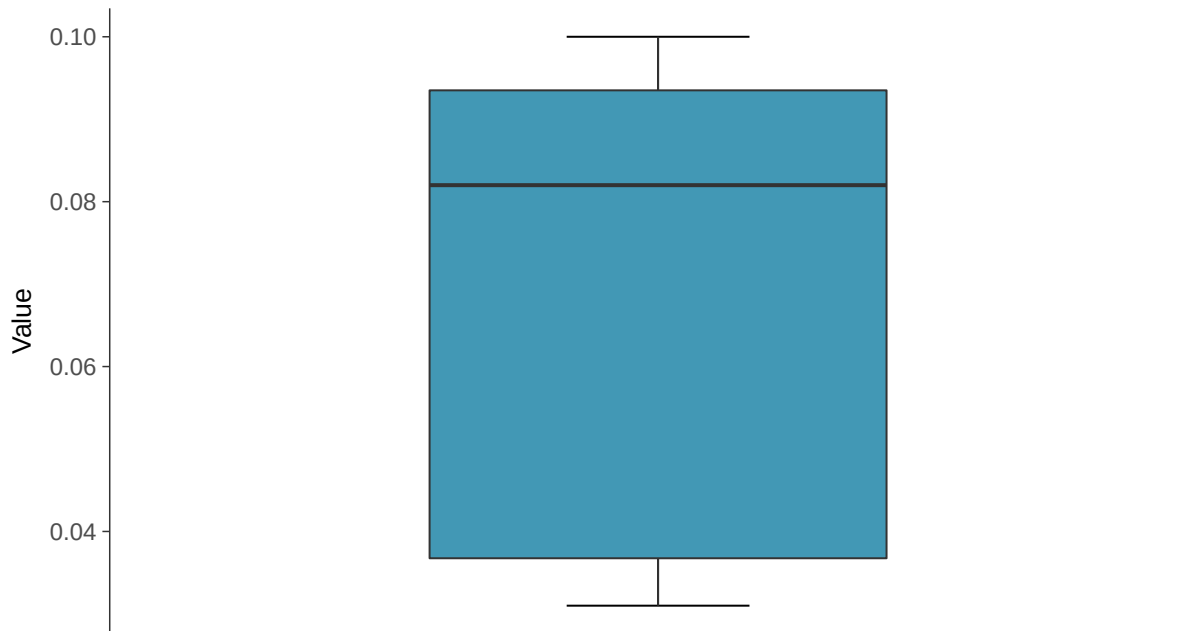
Appendix IV: Barium, MW-15

ID: 1_2_106



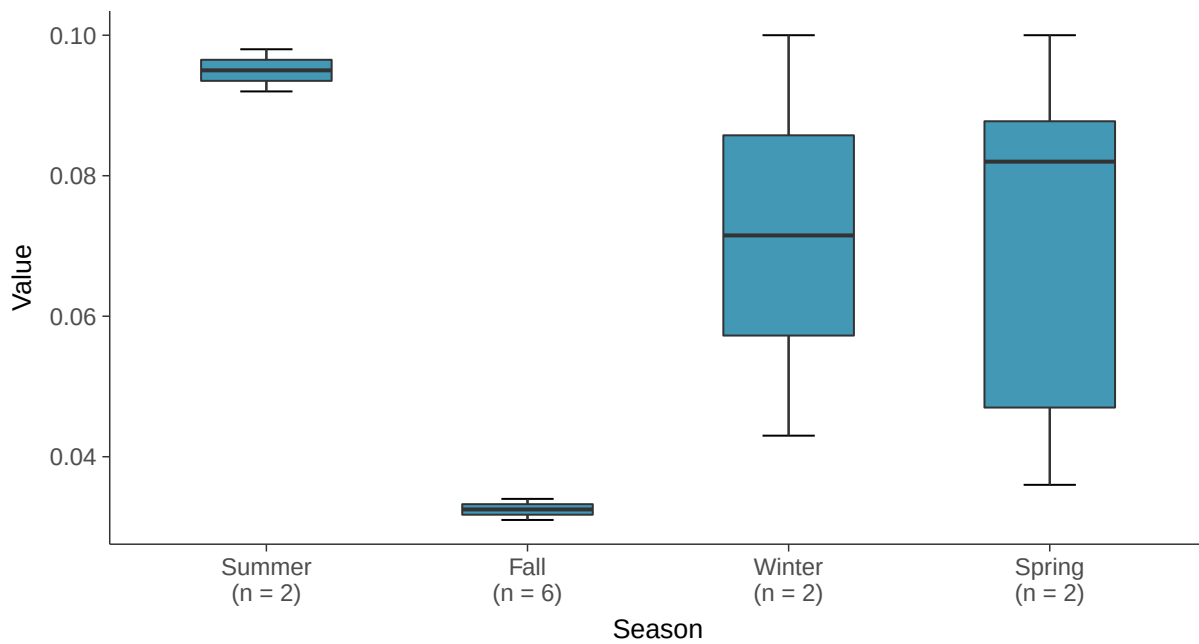
Boxplot

Barium, MW-15 (mg/l)



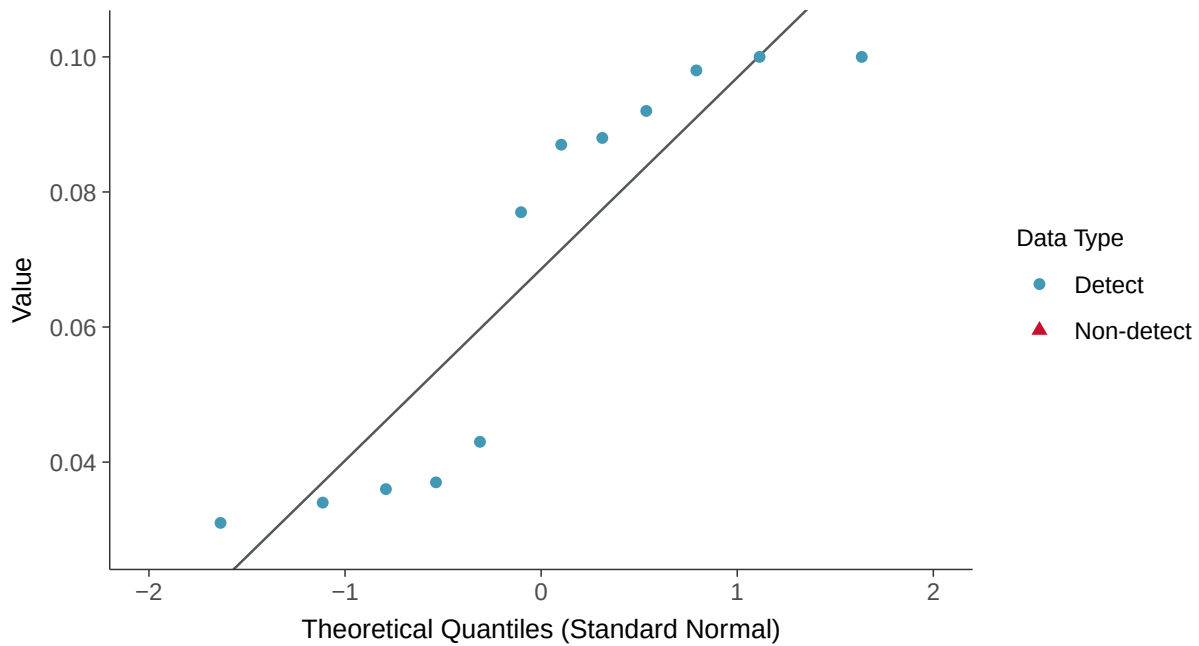
Boxplot by Season

Barium, MW-15 (mg/l)



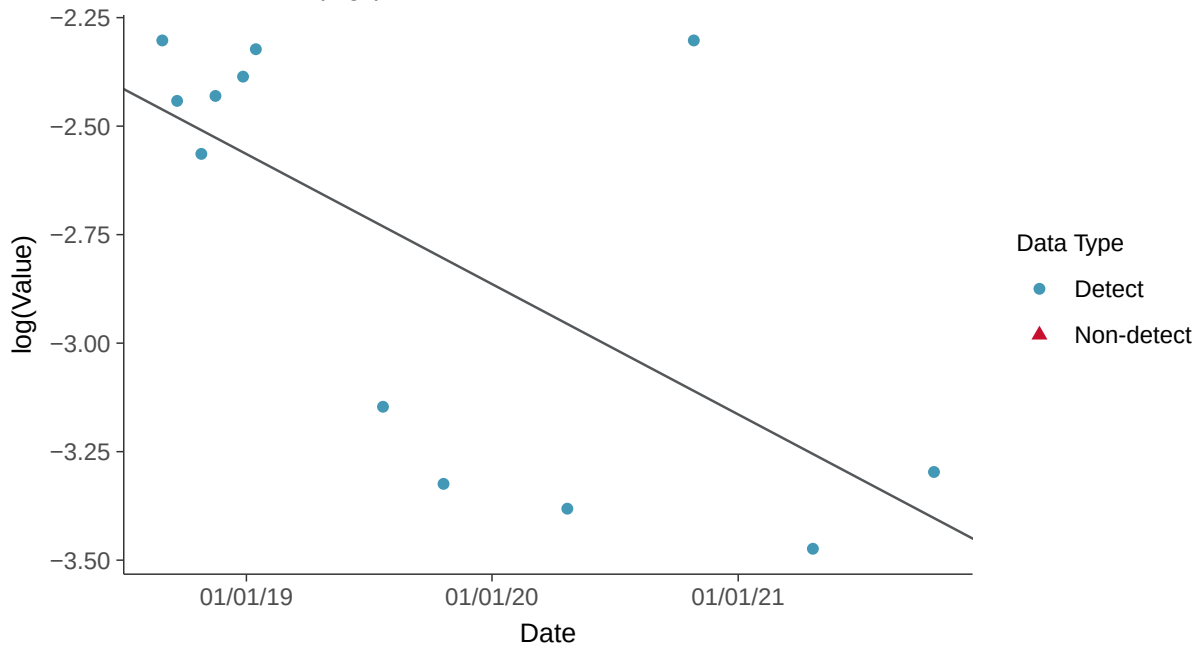
Normal Q-Q plot

Barium, MW-15 (mg/l)



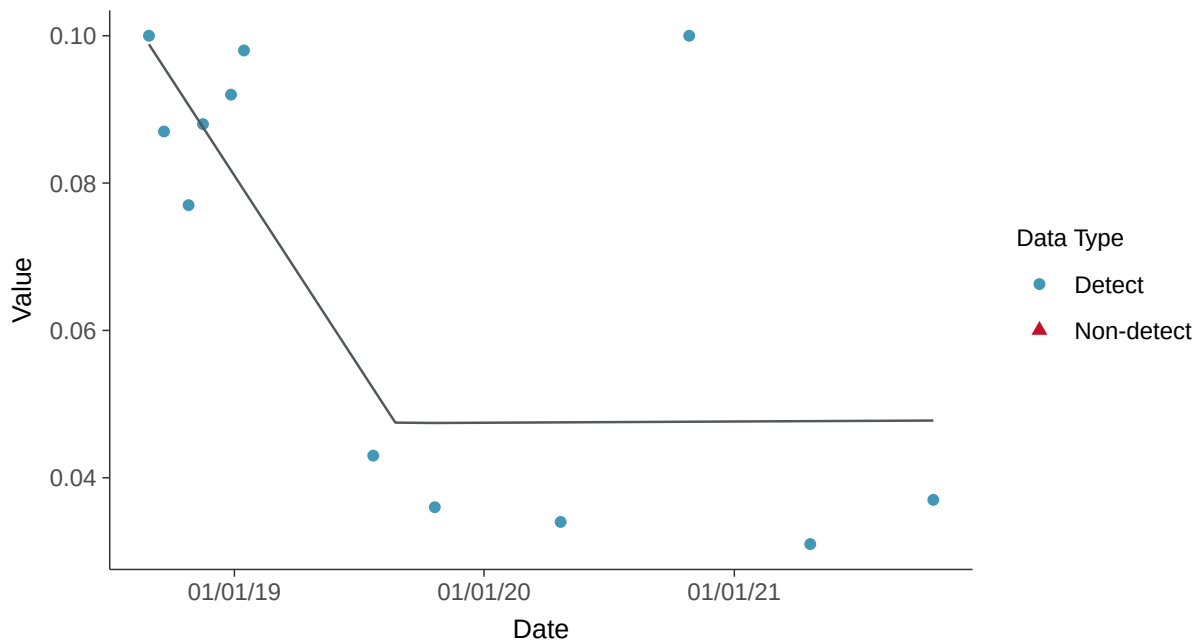
Trend Regression: Lognormal MLE

Barium, MW-15 (mg/l)



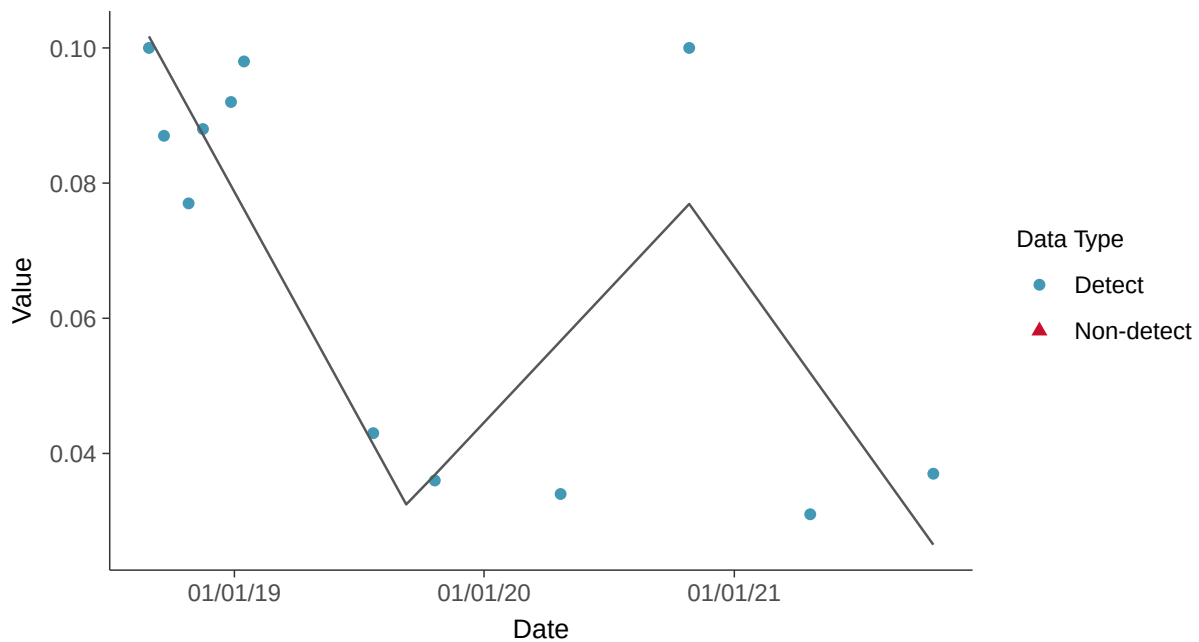
Trend Regression: Piecewise Linear-Linear

Barium, MW-15 (mg/l)



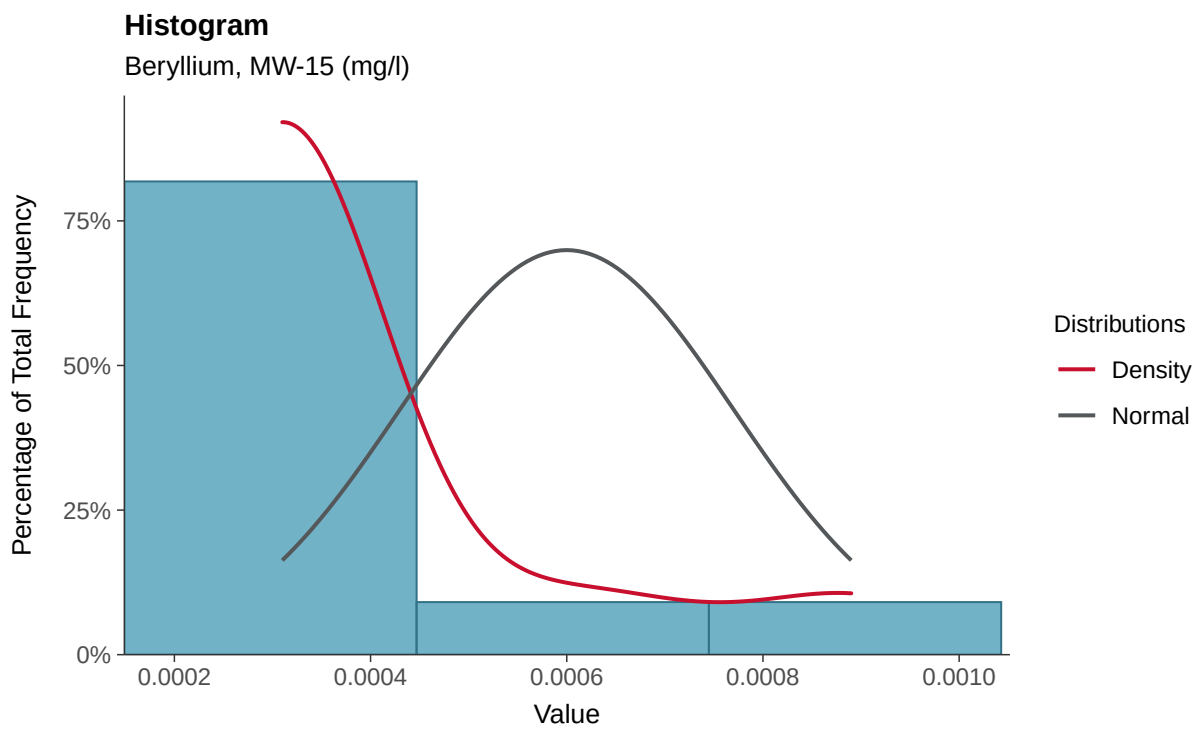
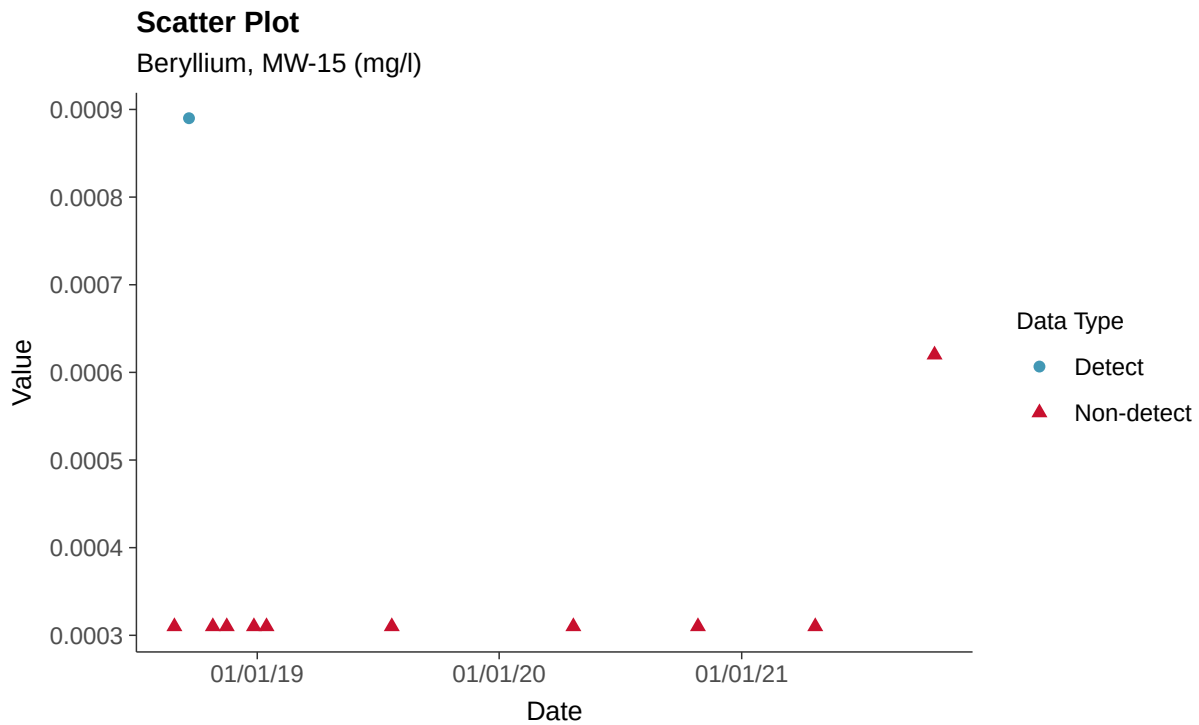
Trend Regression: Piecewise Linear-Linear-Linear

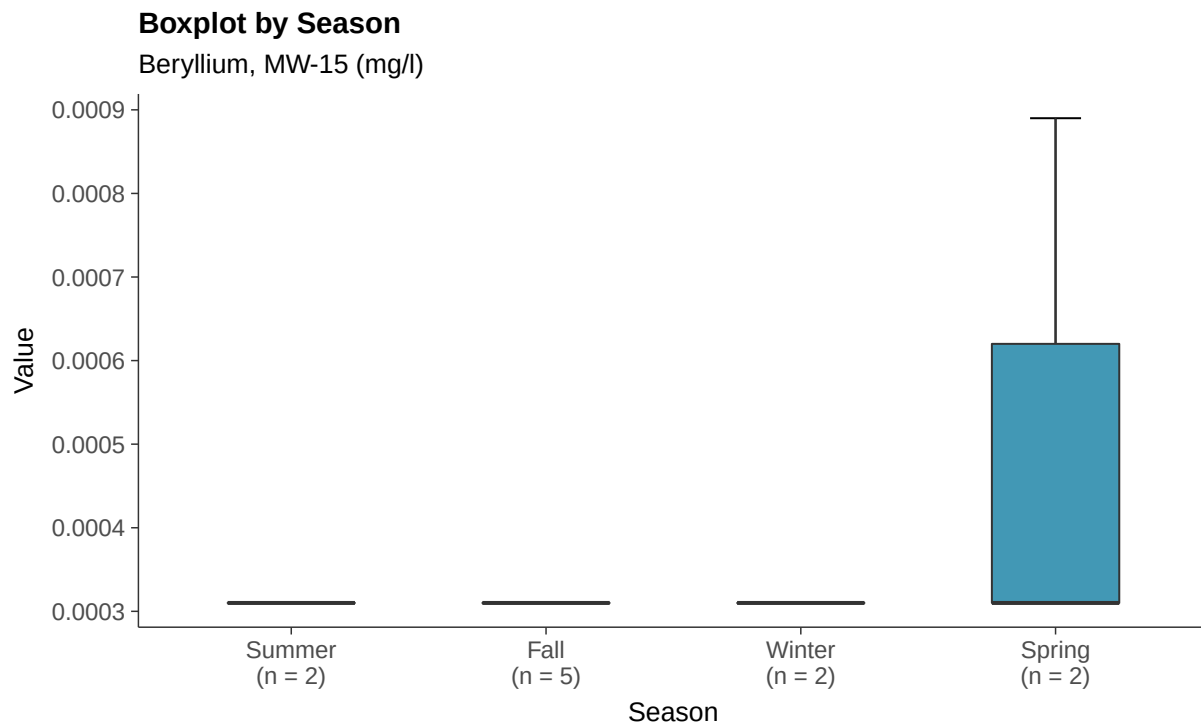
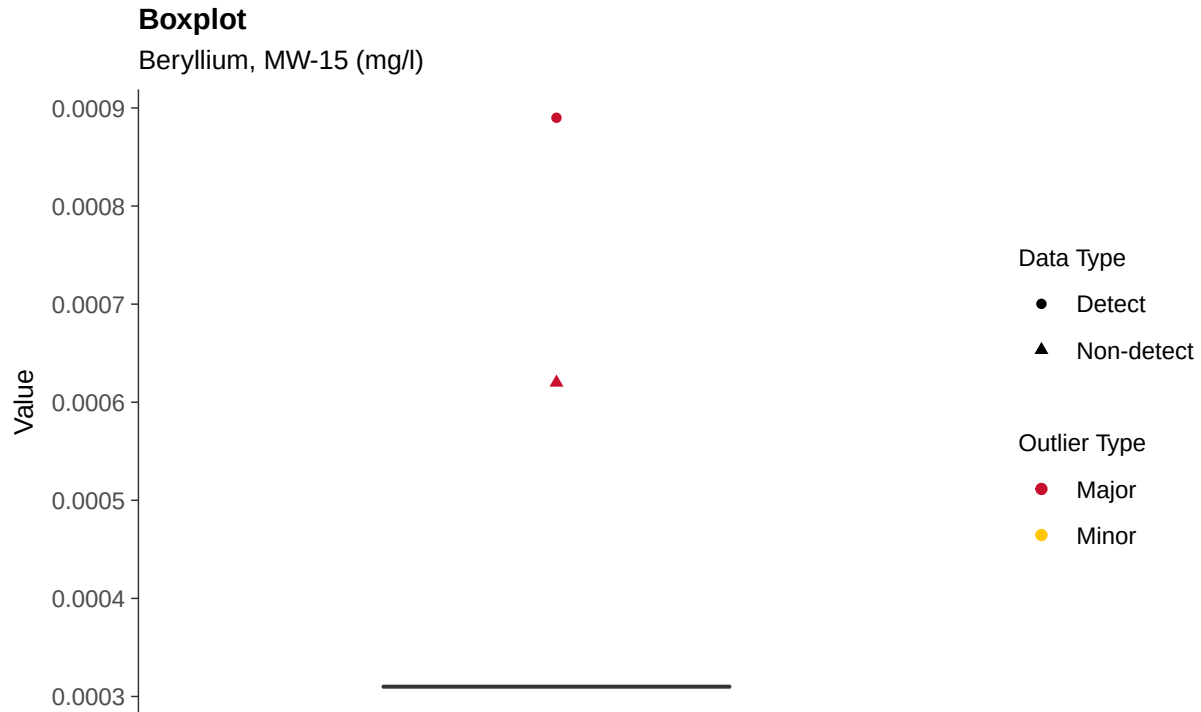
Barium, MW-15 (mg/l)



Appendix IV: Beryllium, MW-15

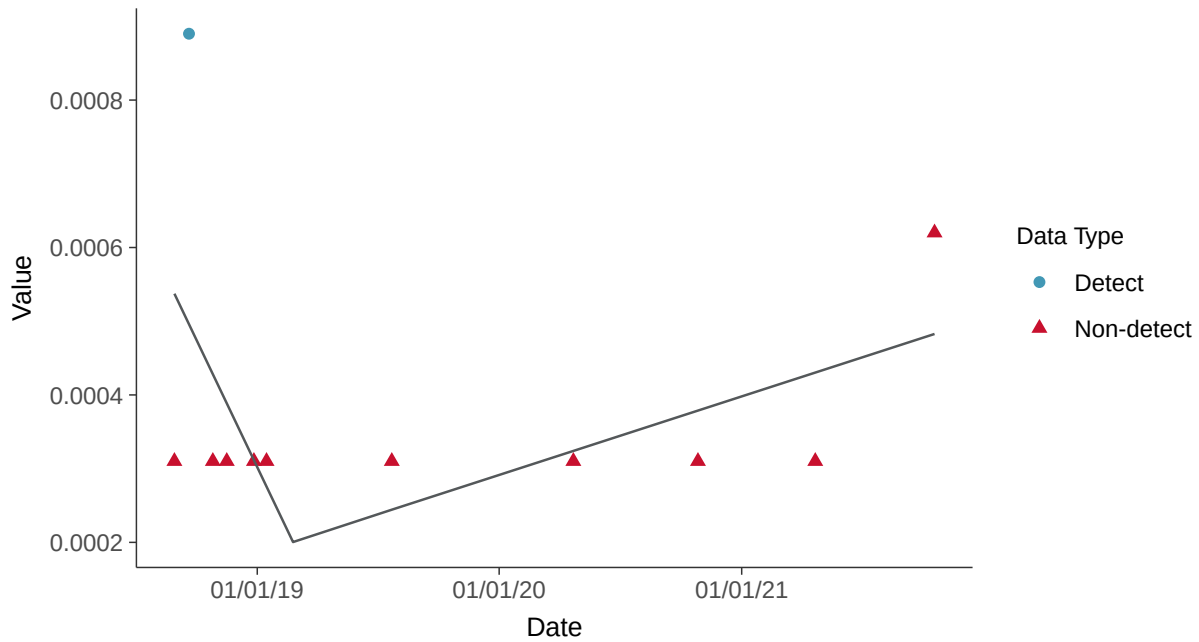
ID: 1_2_107





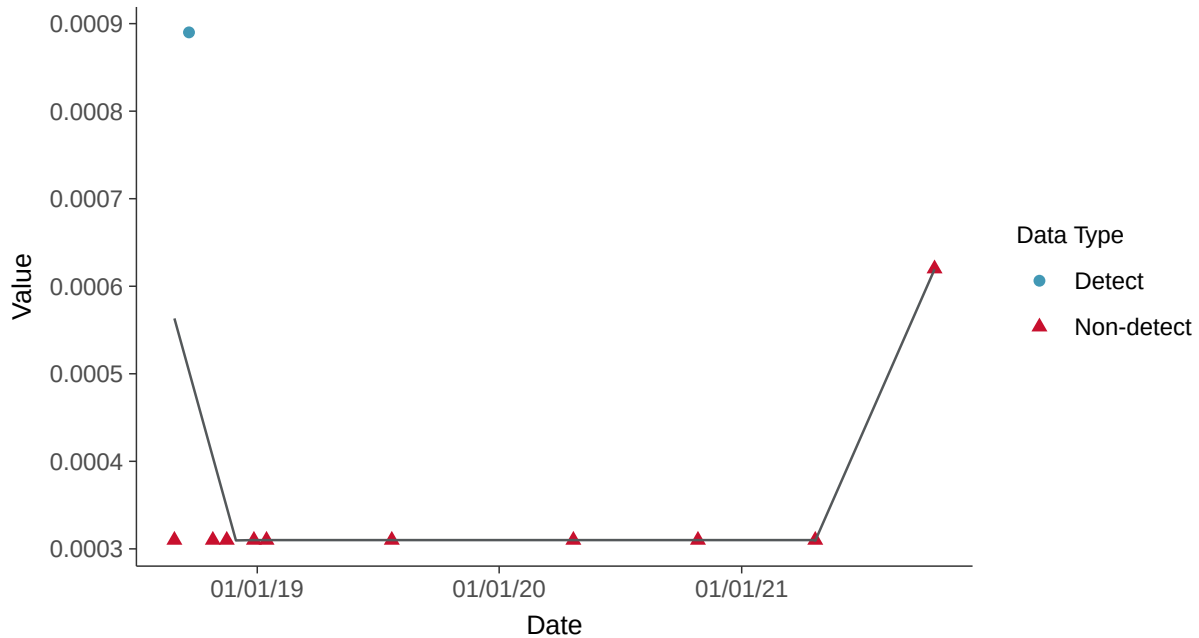
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-15 (mg/l)



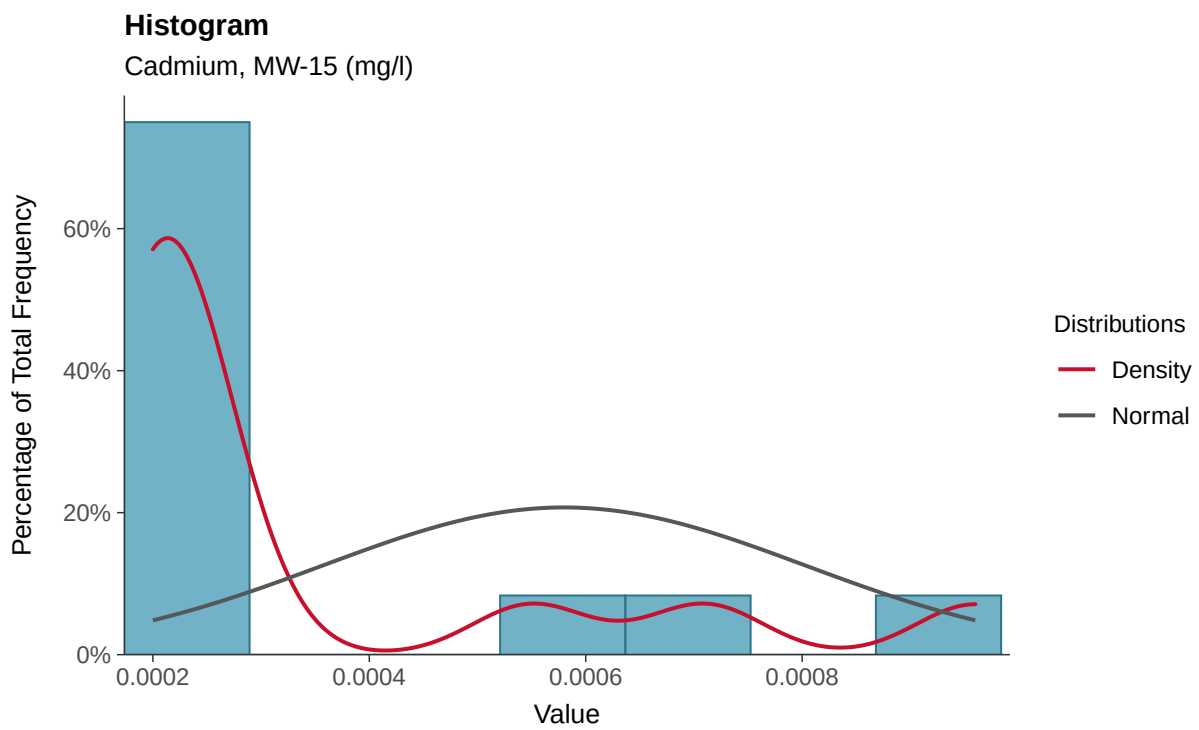
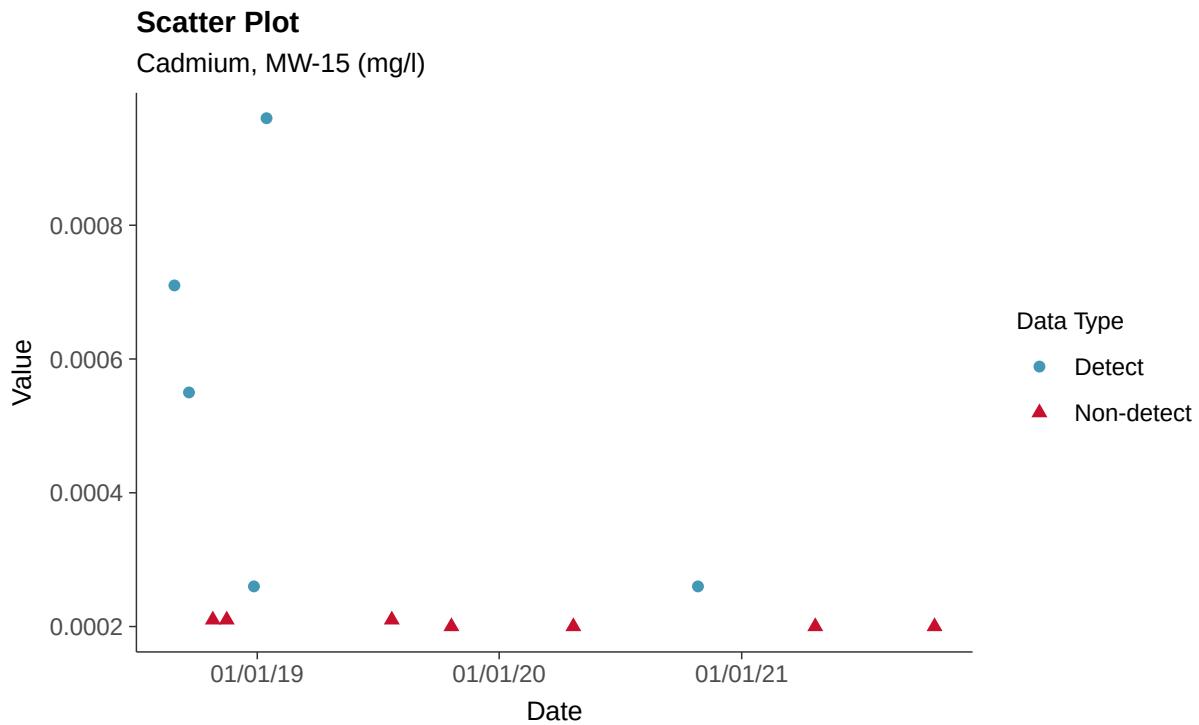
Trend Regression: Piecewise Linear-Linear-Linear

Beryllium, MW-15 (mg/l)



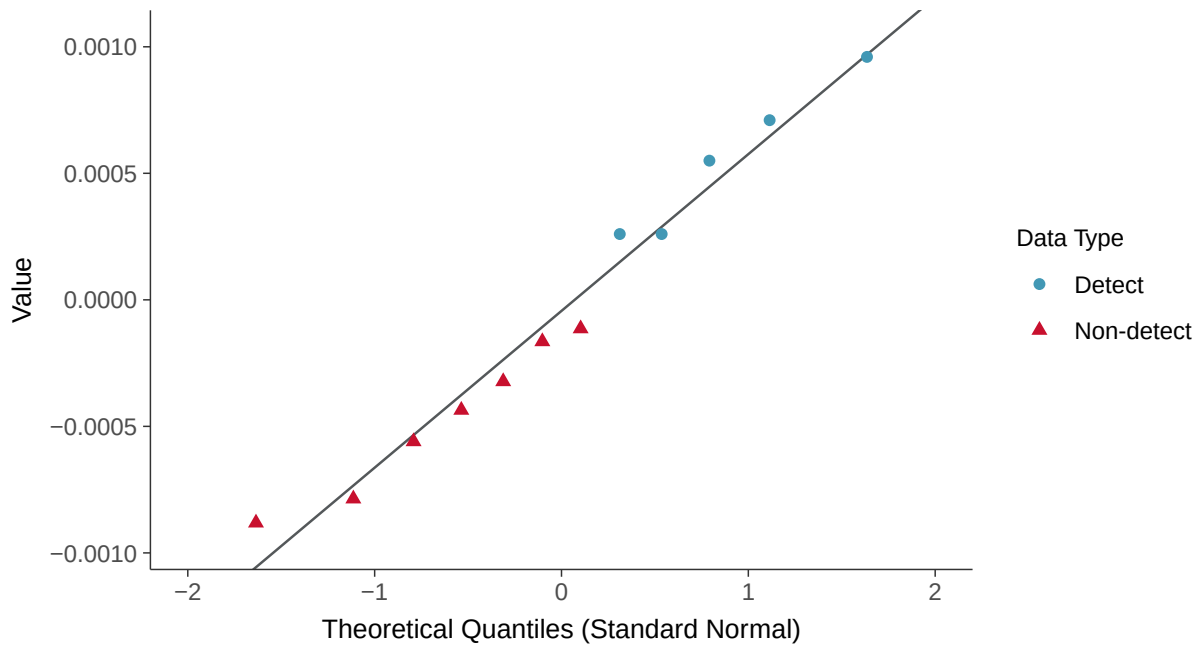
Appendix IV: Cadmium, MW-15

ID: 1_2_109



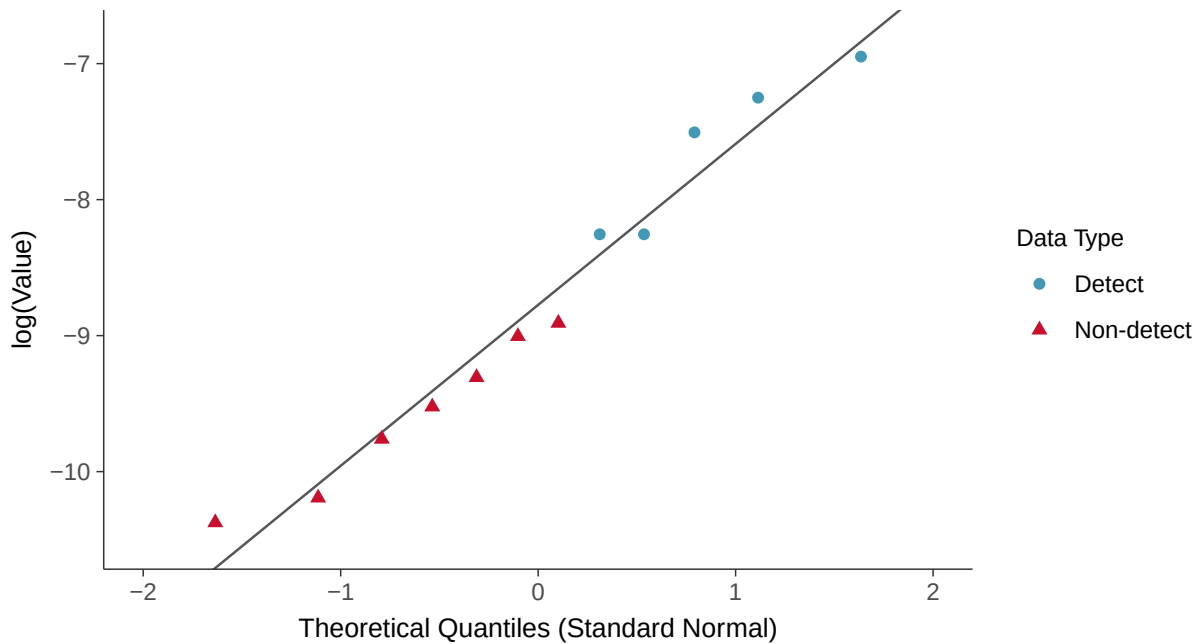
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-15 (mg/l)



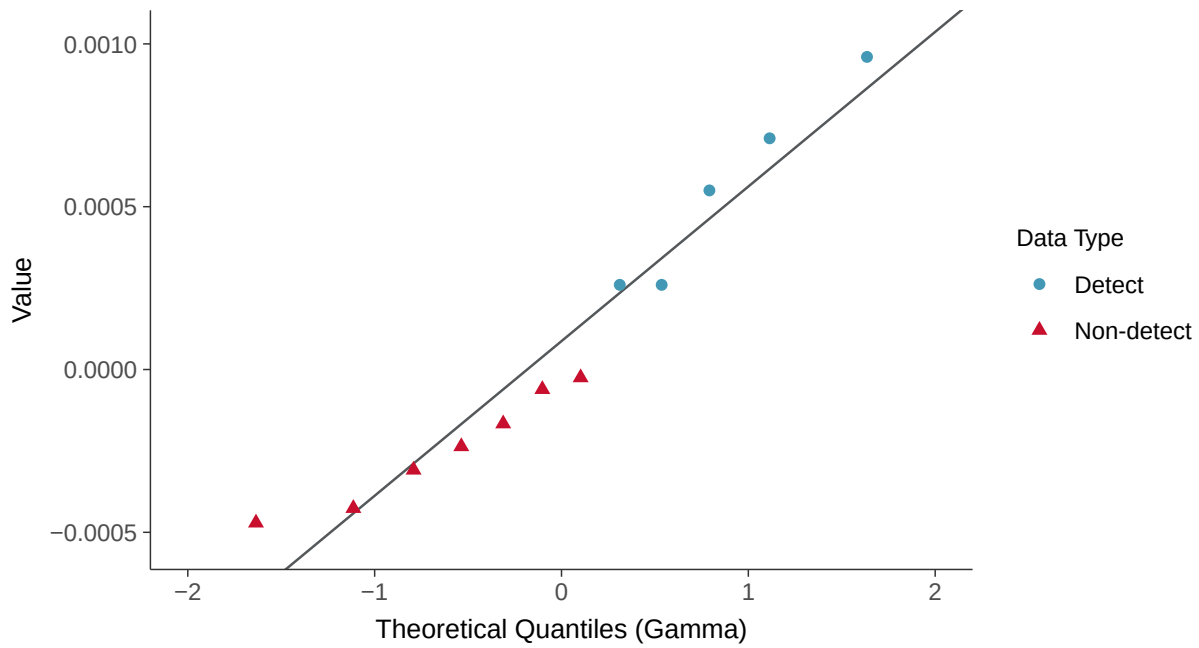
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-15 (mg/l)



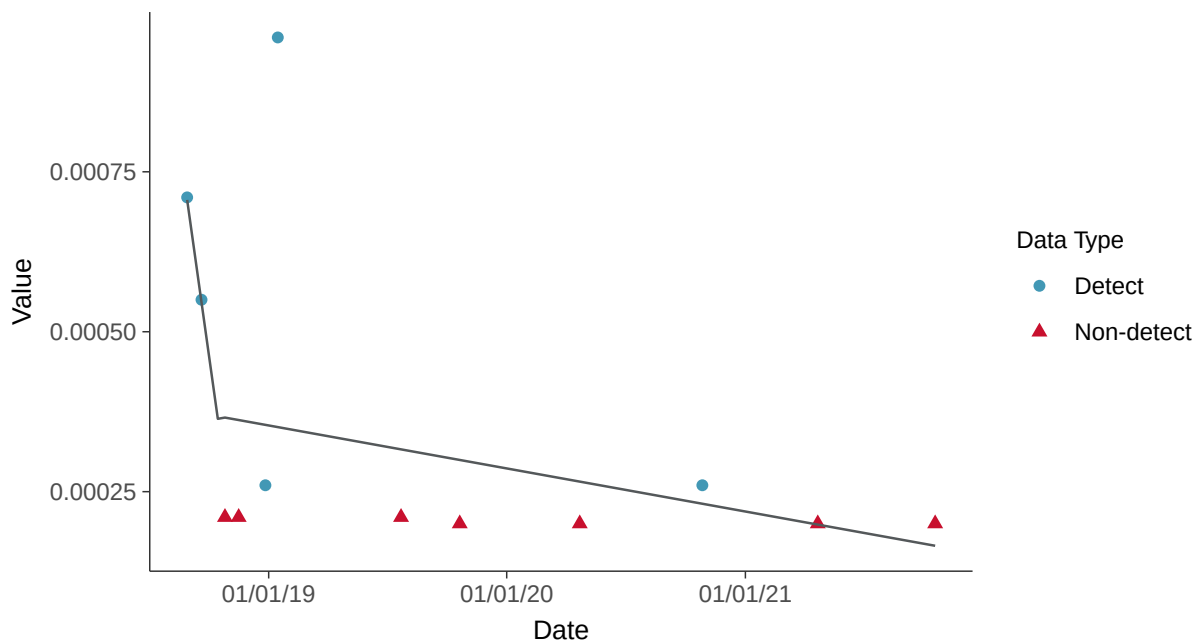
Gamma Q-Q plot using ROS Imputed Estimates

Cadmium, MW-15 (mg/l)

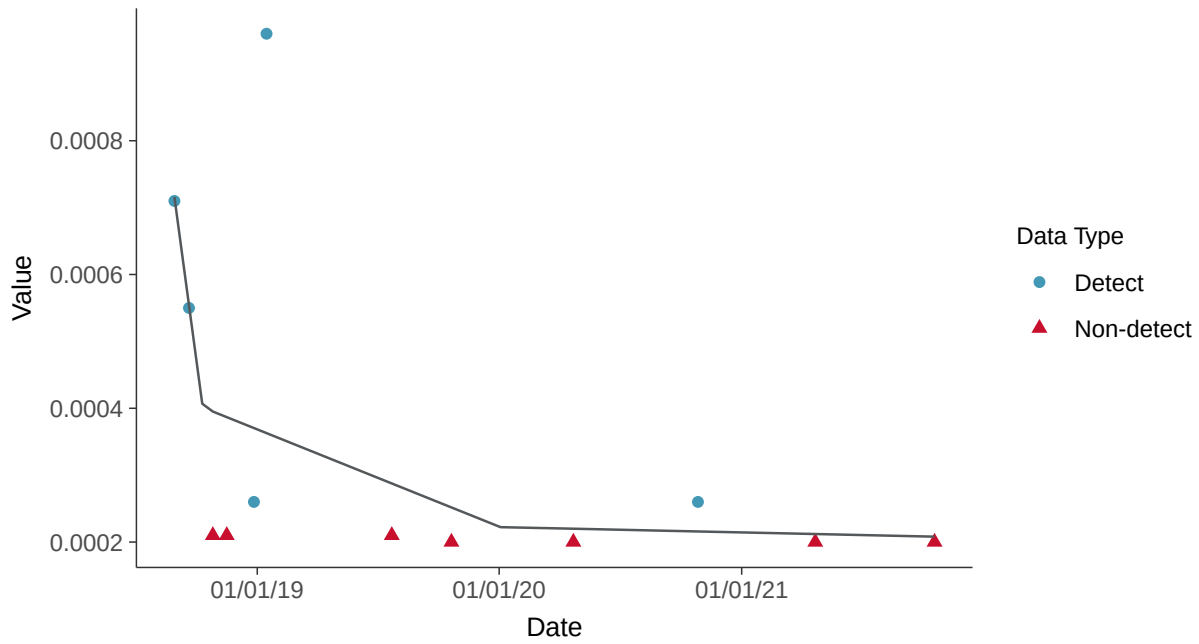


Trend Regression: Piecewise Linear-Linear

Cadmium, MW-15 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-15 (mg/l)

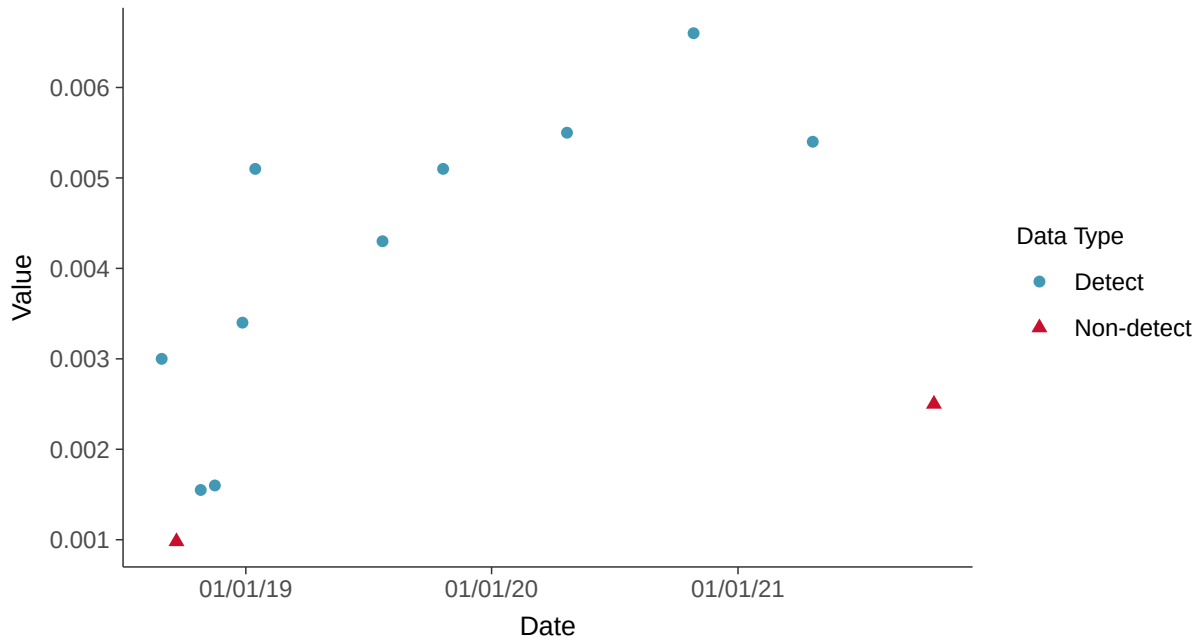


Appendix IV: Chromium, Total, MW-15

ID: 1_2_112

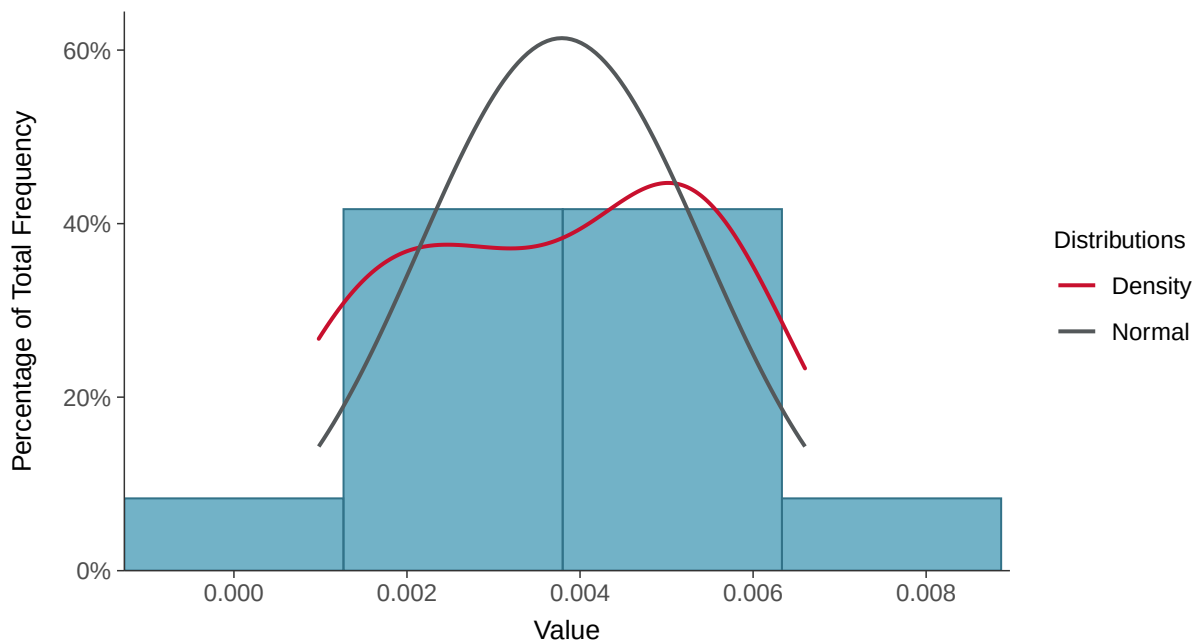
Scatter Plot

Chromium, Total, MW-15 (mg/l)



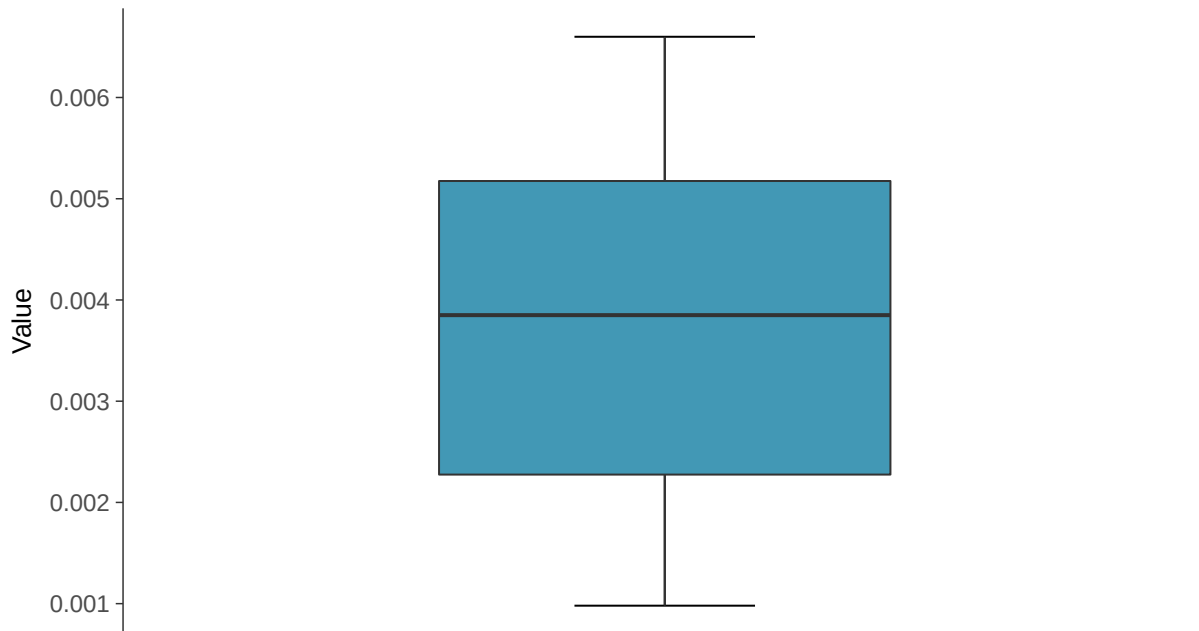
Histogram

Chromium, Total, MW-15 (mg/l)



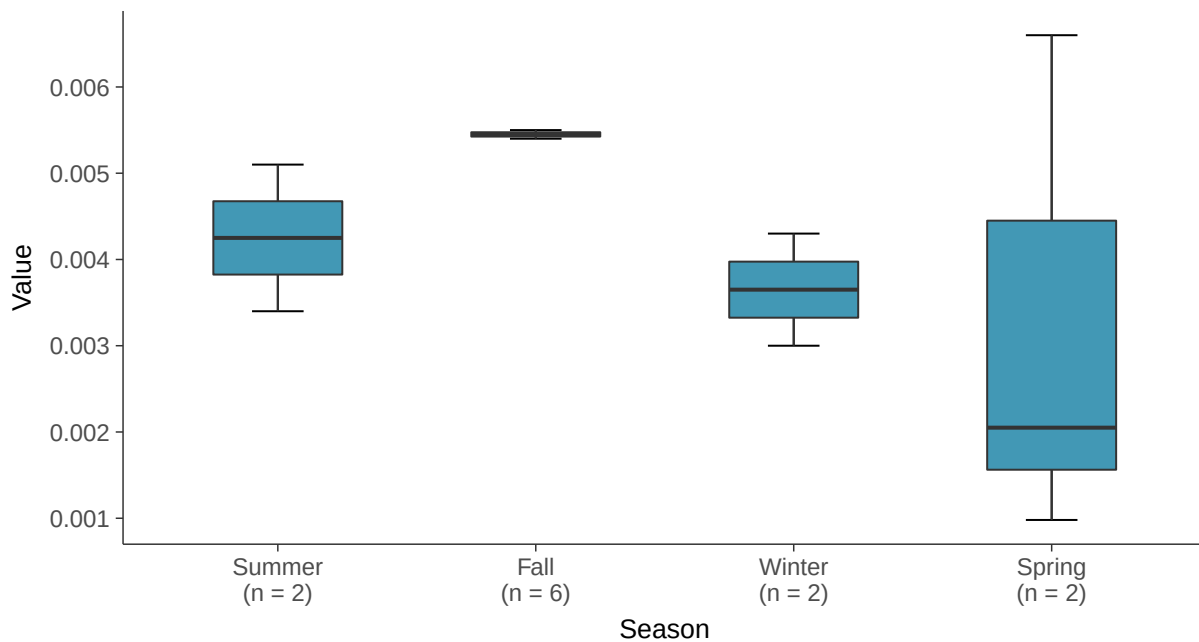
Boxplot

Chromium, Total, MW-15 (mg/l)



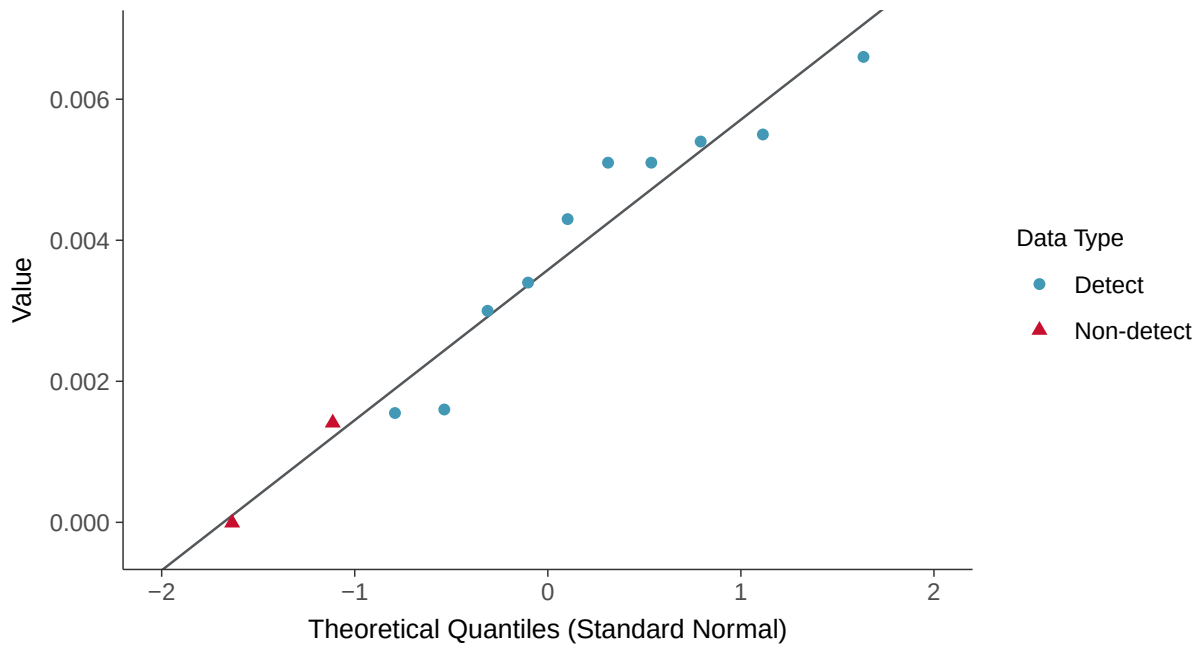
Boxplot by Season

Chromium, Total, MW-15 (mg/l)



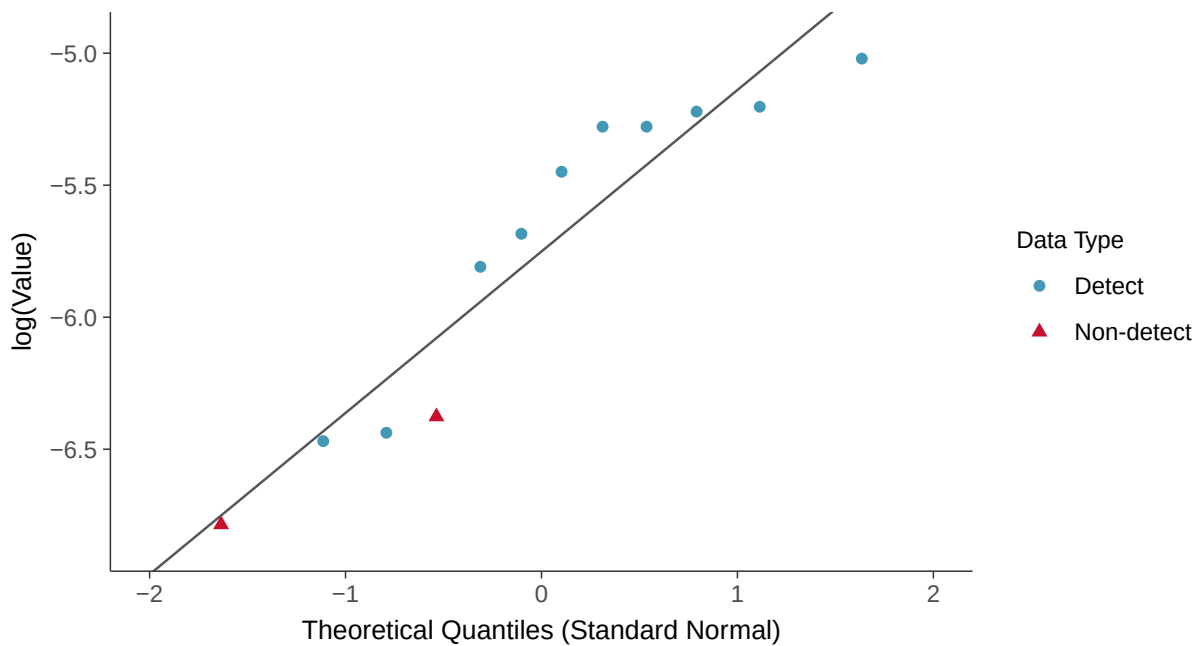
Normal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-15 (mg/l)



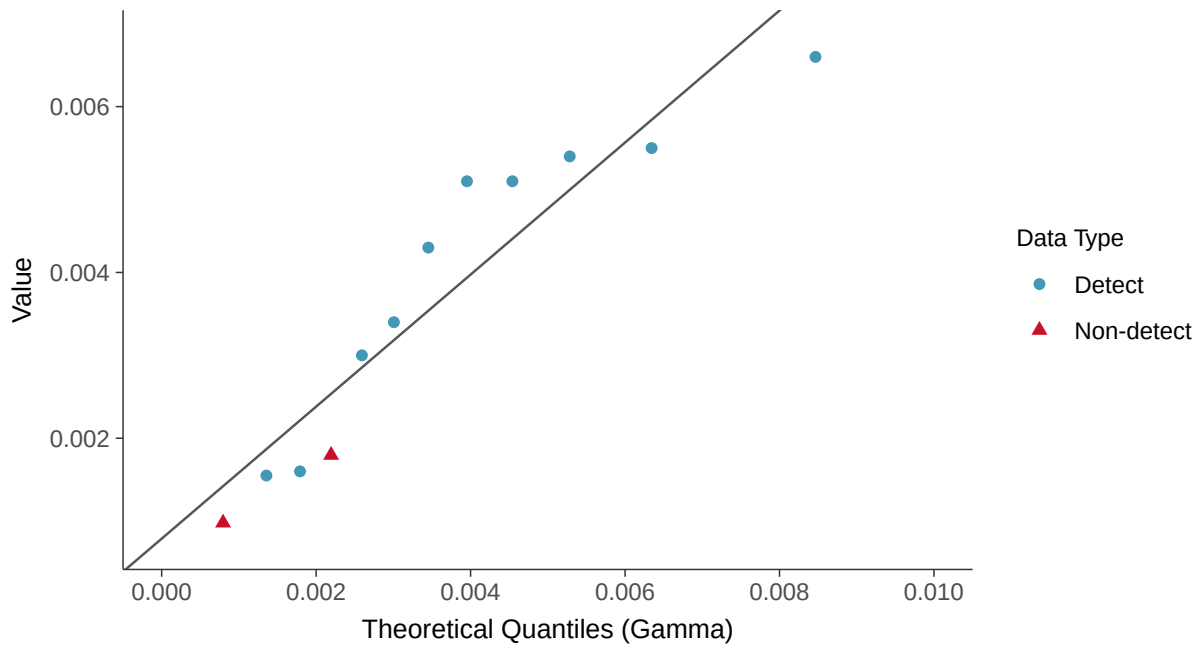
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-15 (mg/l)



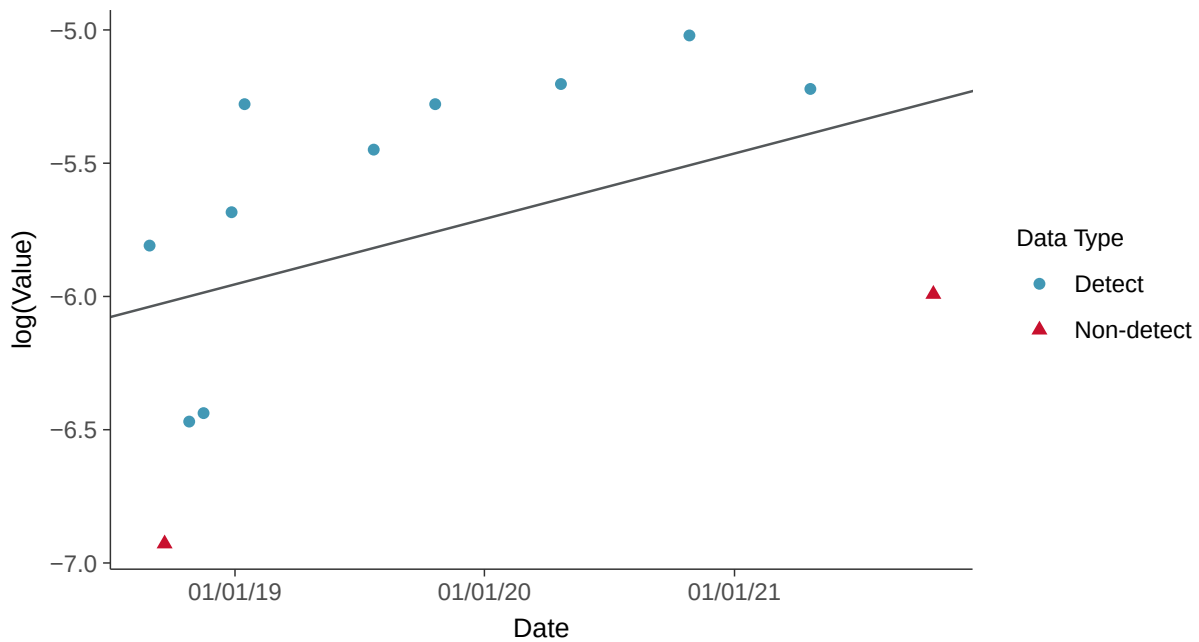
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-15 (mg/l)



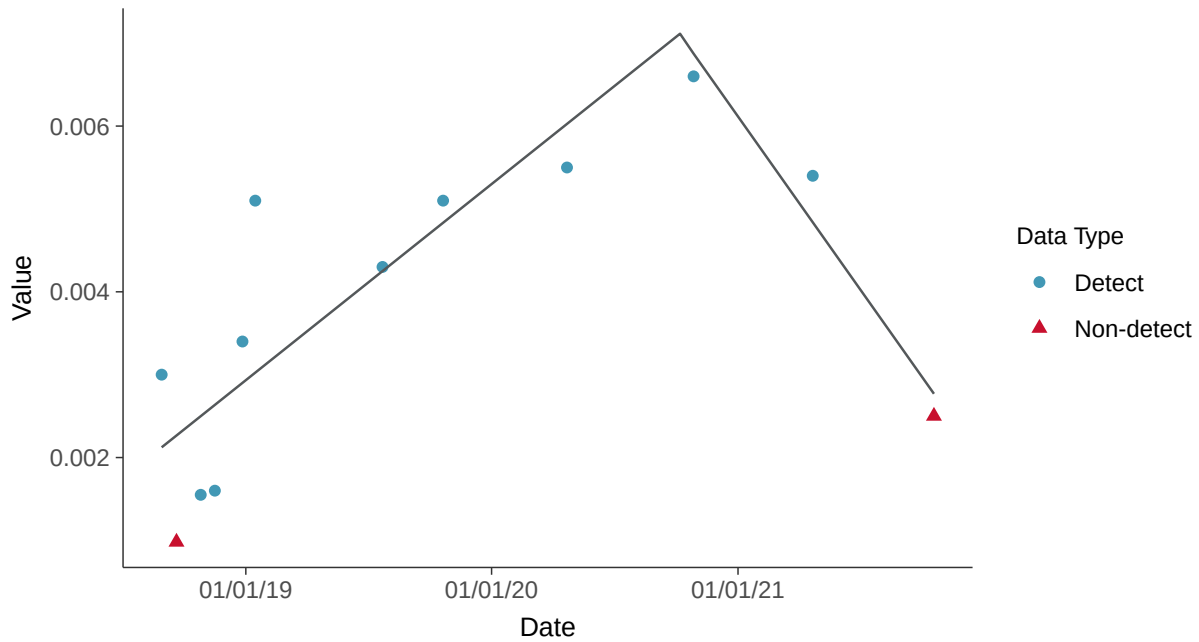
Trend Regression: Lognormal MLE

Chromium, Total, MW-15 (mg/l)



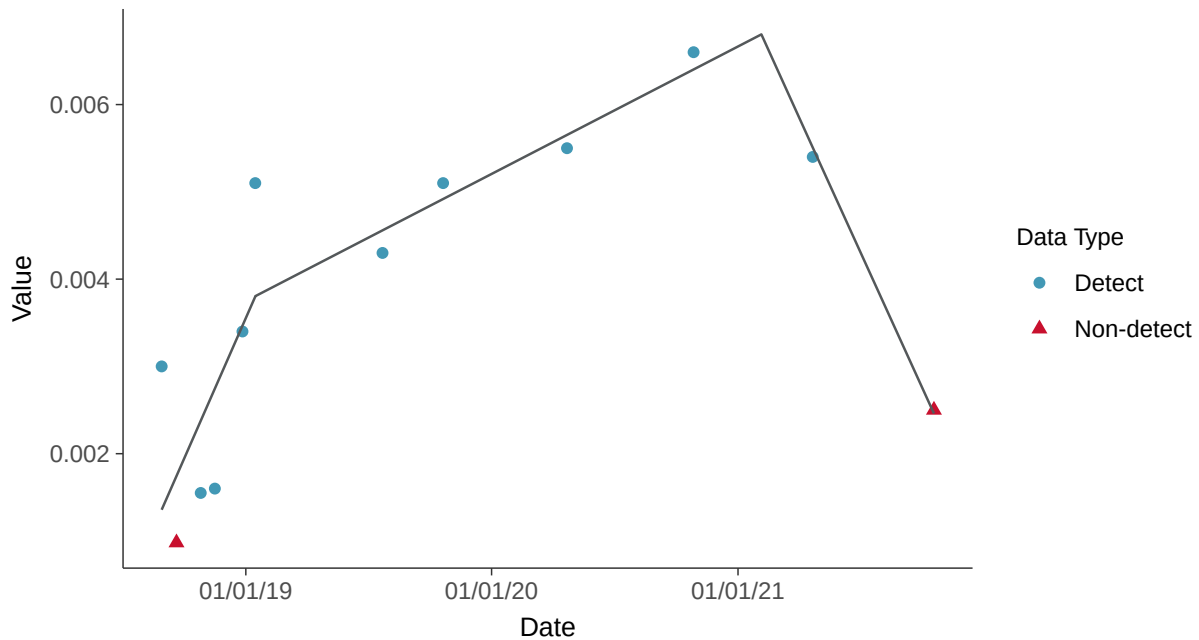
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-15 (mg/l)



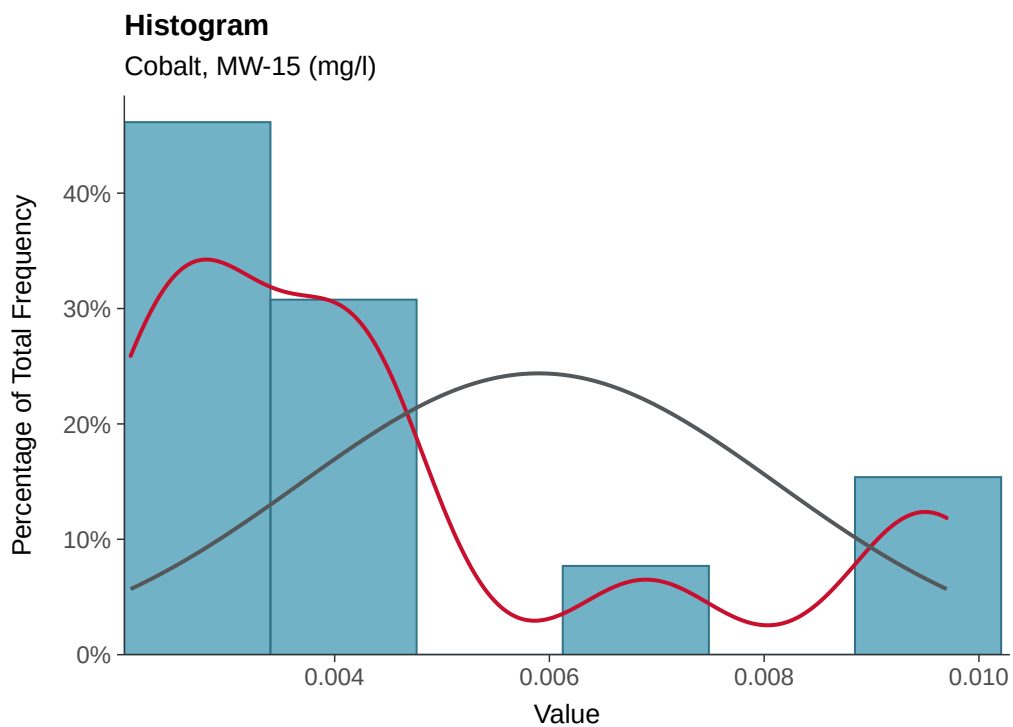
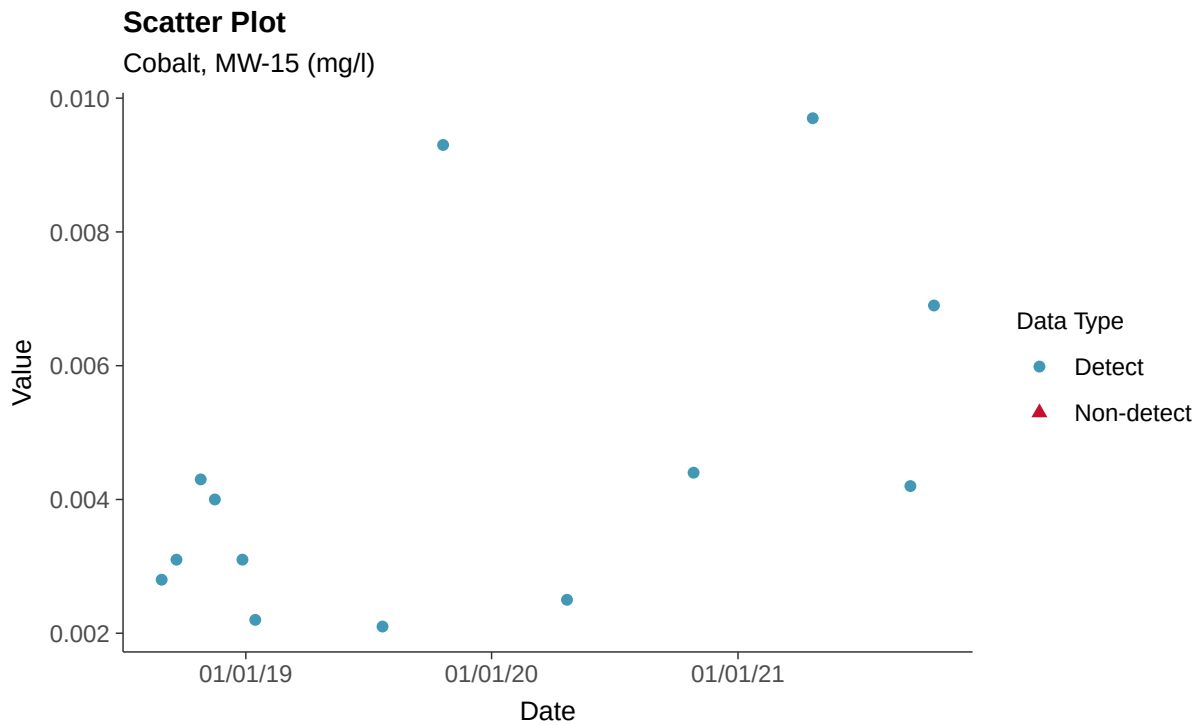
Trend Regression: Piecewise Linear-Linear-Linear

Chromium, Total, MW-15 (mg/l)



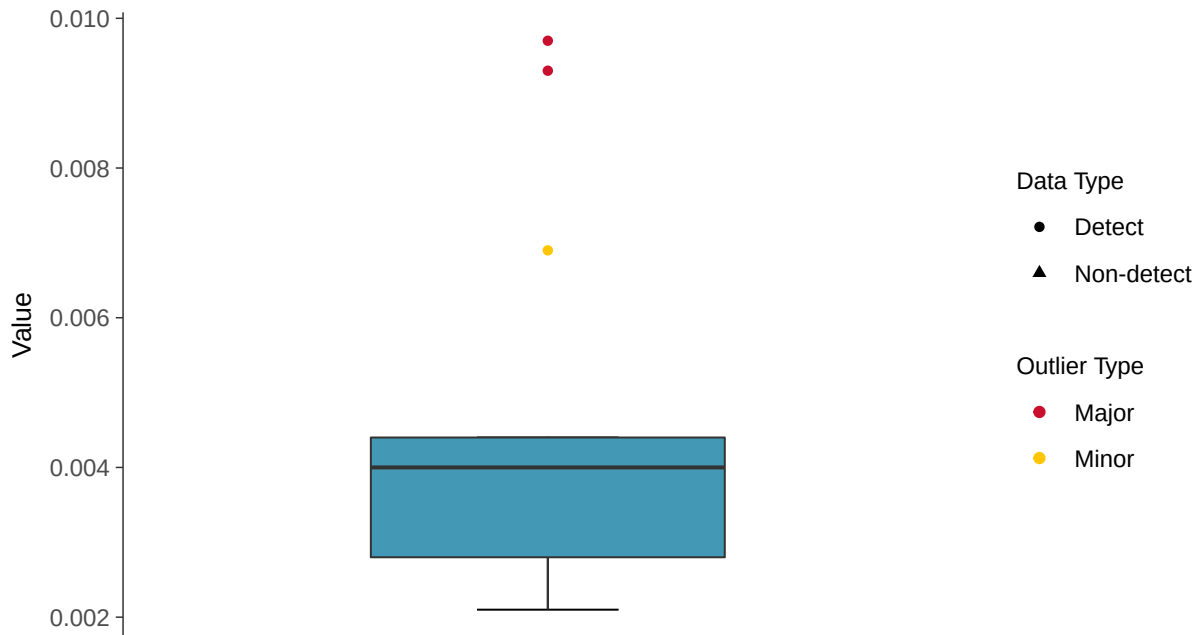
Appendix IV: Cobalt, MW-15

ID: 1_2_113



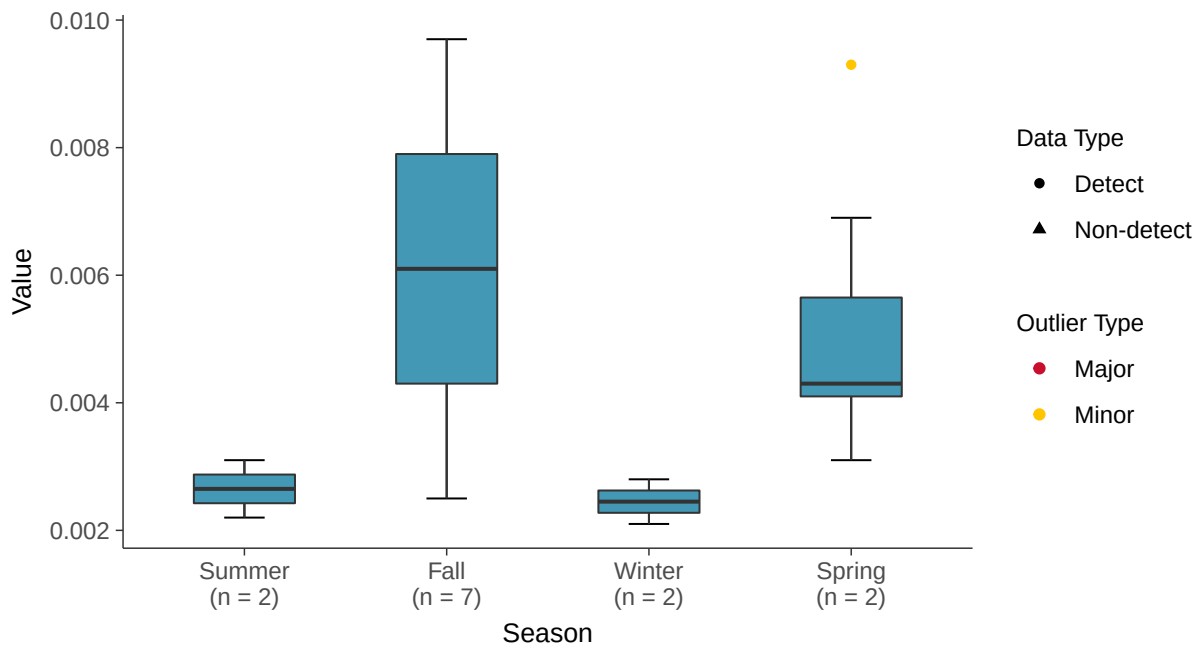
Boxplot

Cobalt, MW-15 (mg/l)



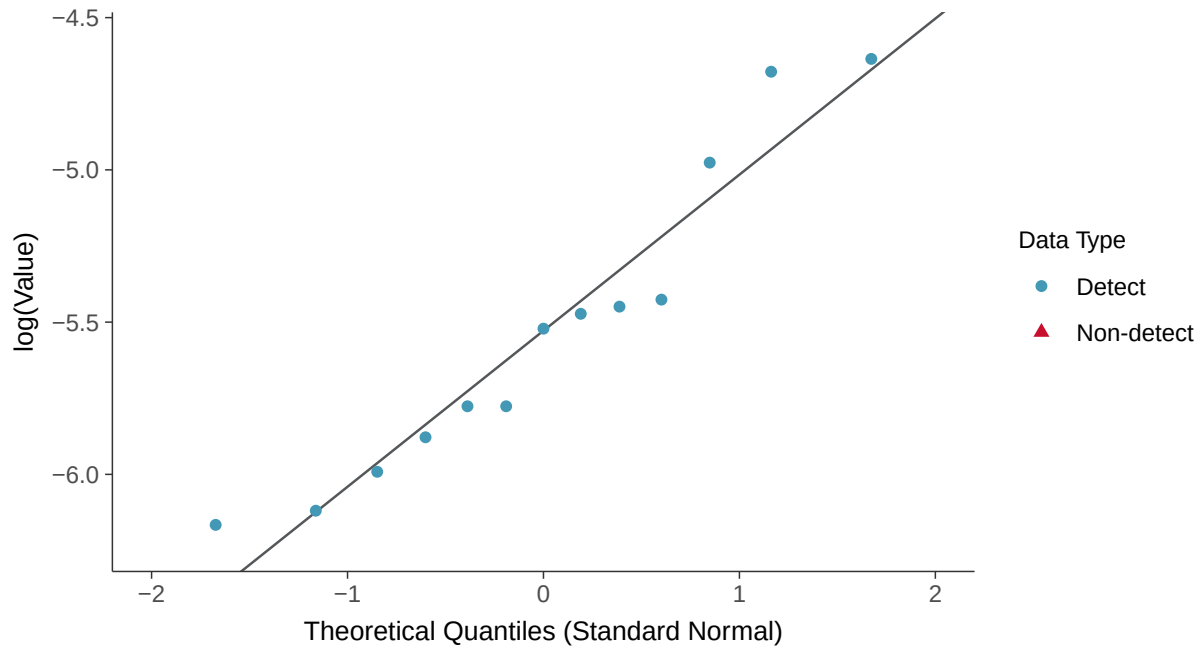
Boxplot by Season

Cobalt, MW-15 (mg/l)



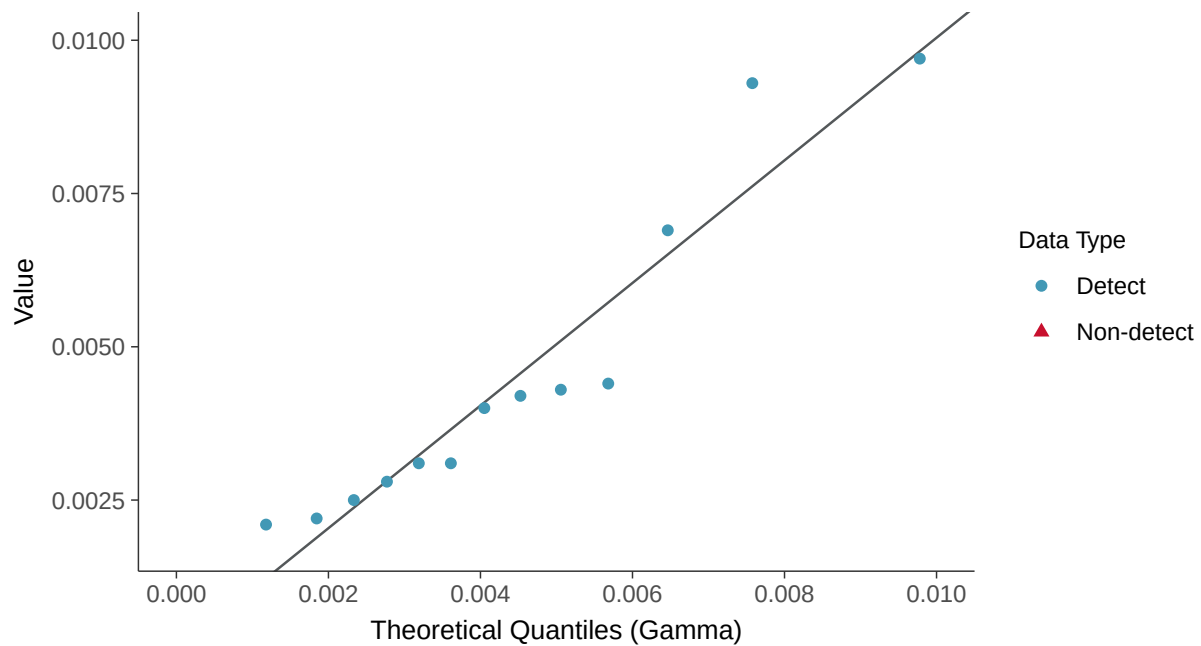
Lognormal Q-Q plot

Cobalt, MW-15 (mg/l)



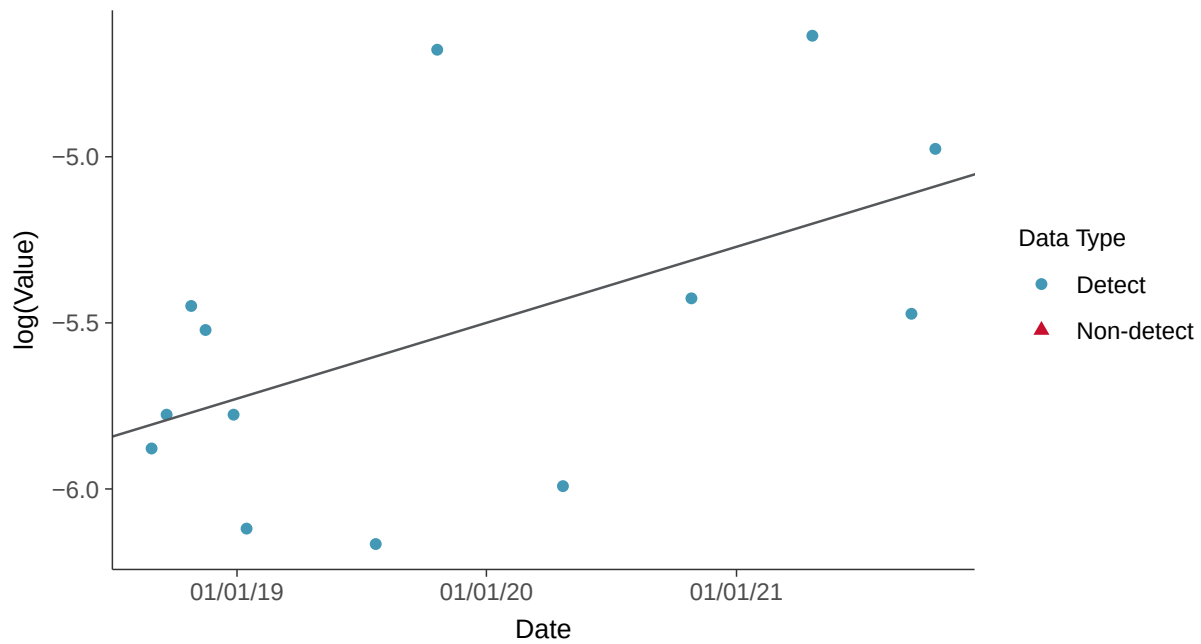
Gamma Q-Q plot

Cobalt, MW-15 (mg/l)



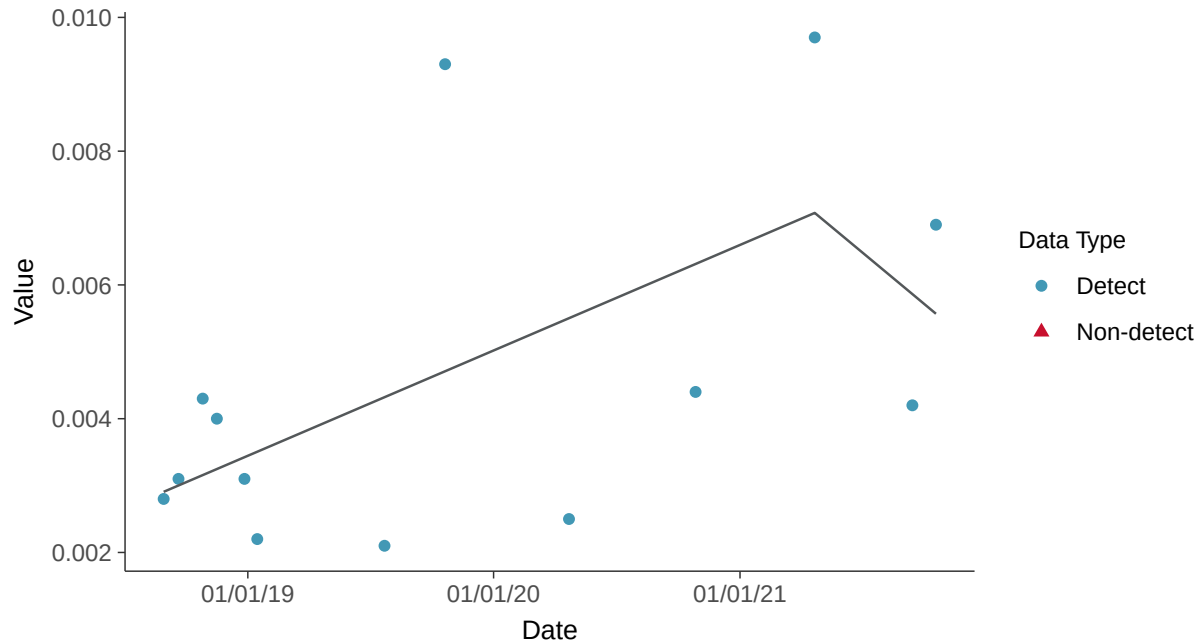
Trend Regression: Lognormal MLE

Cobalt, MW-15 (mg/l)



Trend Regression: Piecewise Linear-Linear

Cobalt, MW-15 (mg/l)

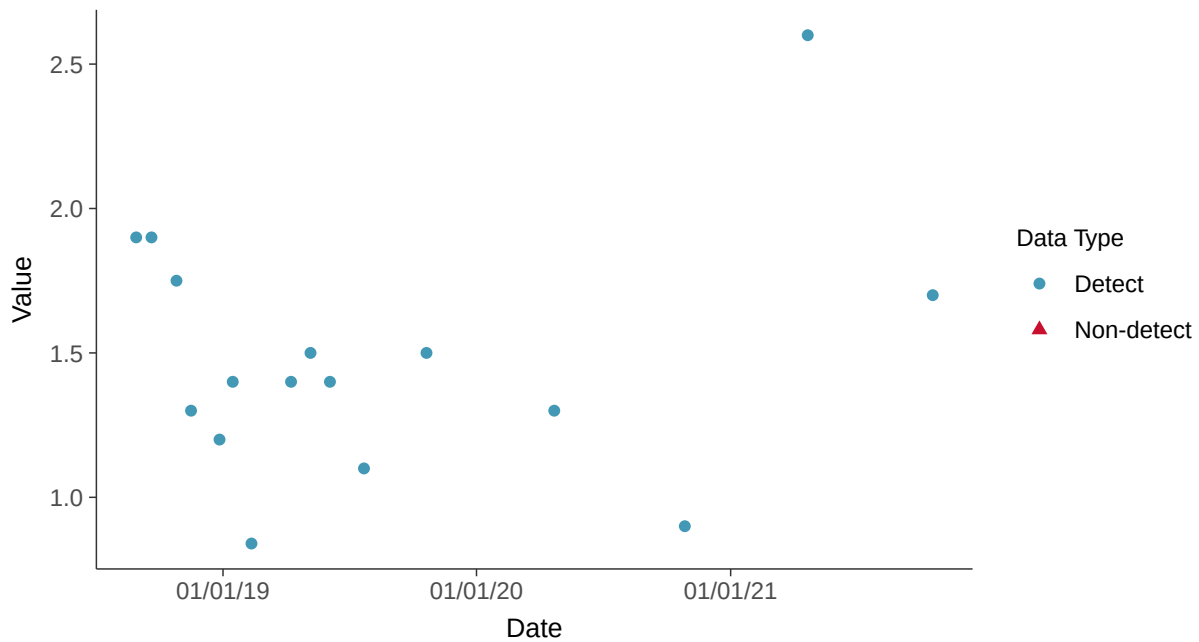


Appendix IV: Fluoride (App IV), MW-15

ID: 1_2_116

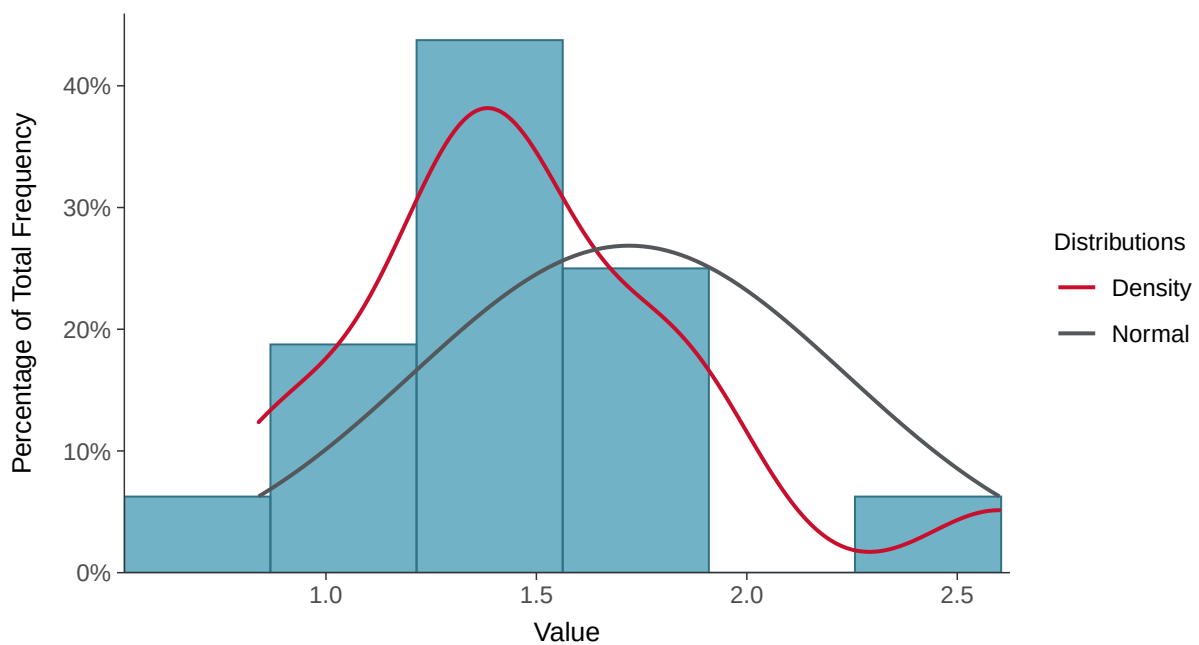
Scatter Plot

Fluoride (App IV), MW-15 (mg/l)



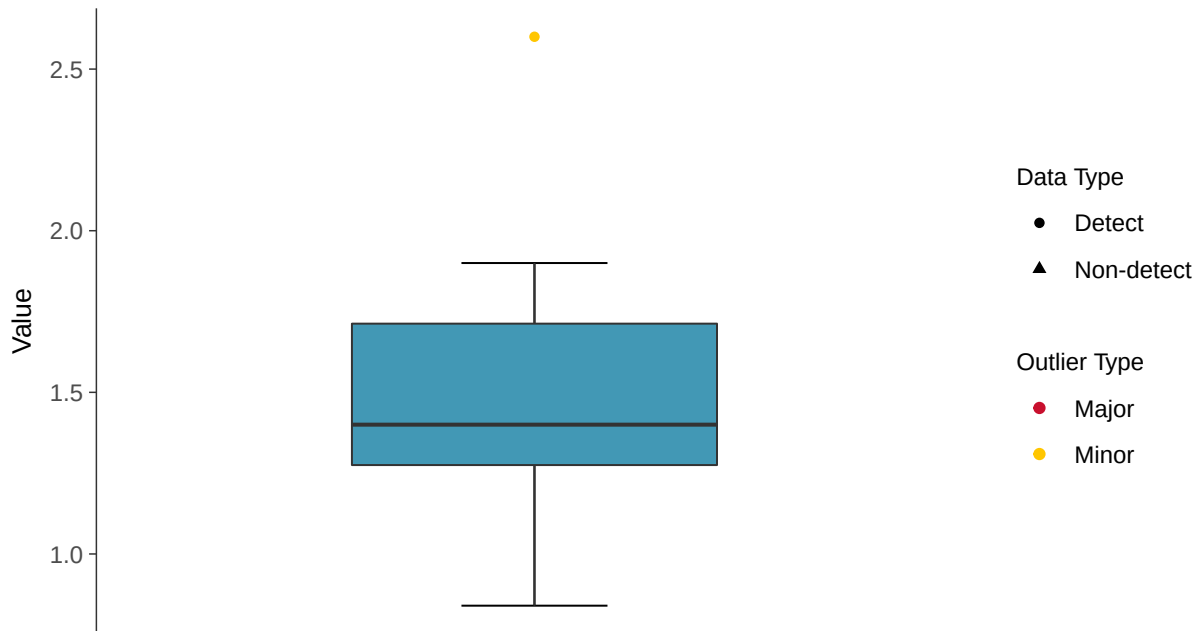
Histogram

Fluoride (App IV), MW-15 (mg/l)



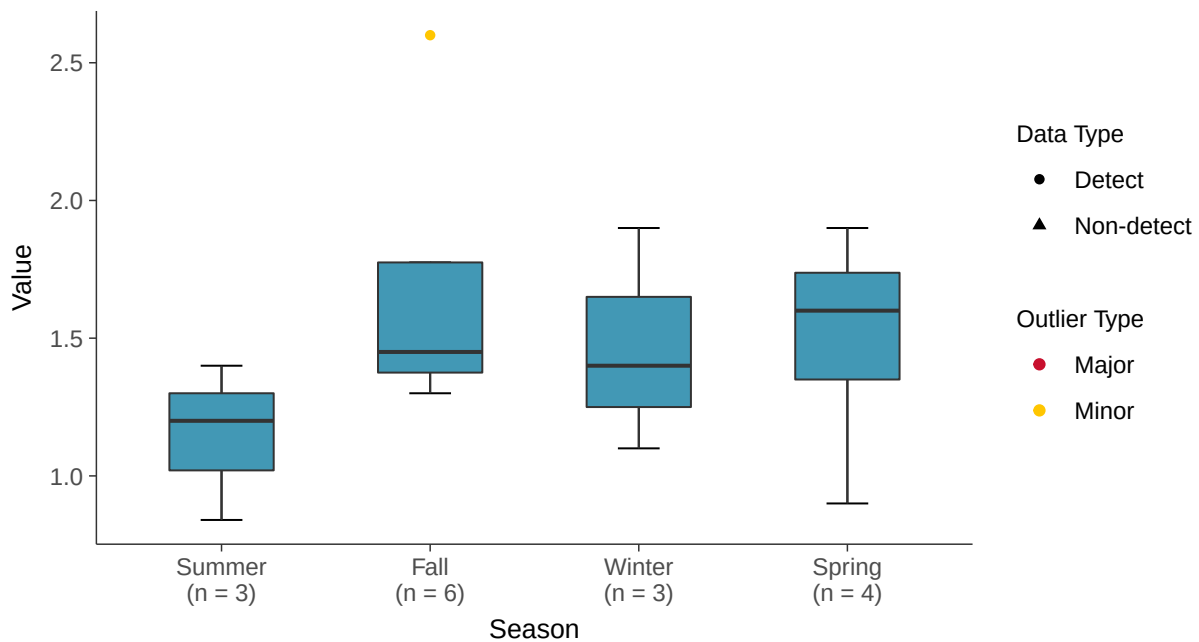
Boxplot

Fluoride (App IV), MW-15 (mg/l)



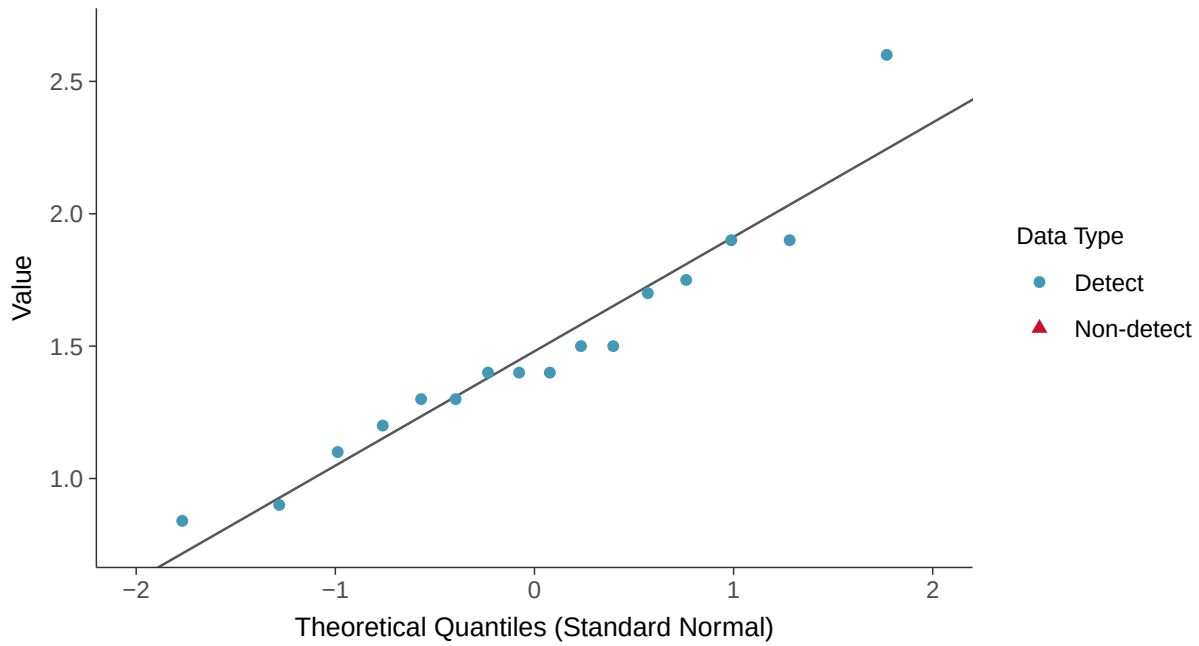
Boxplot by Season

Fluoride (App IV), MW-15 (mg/l)



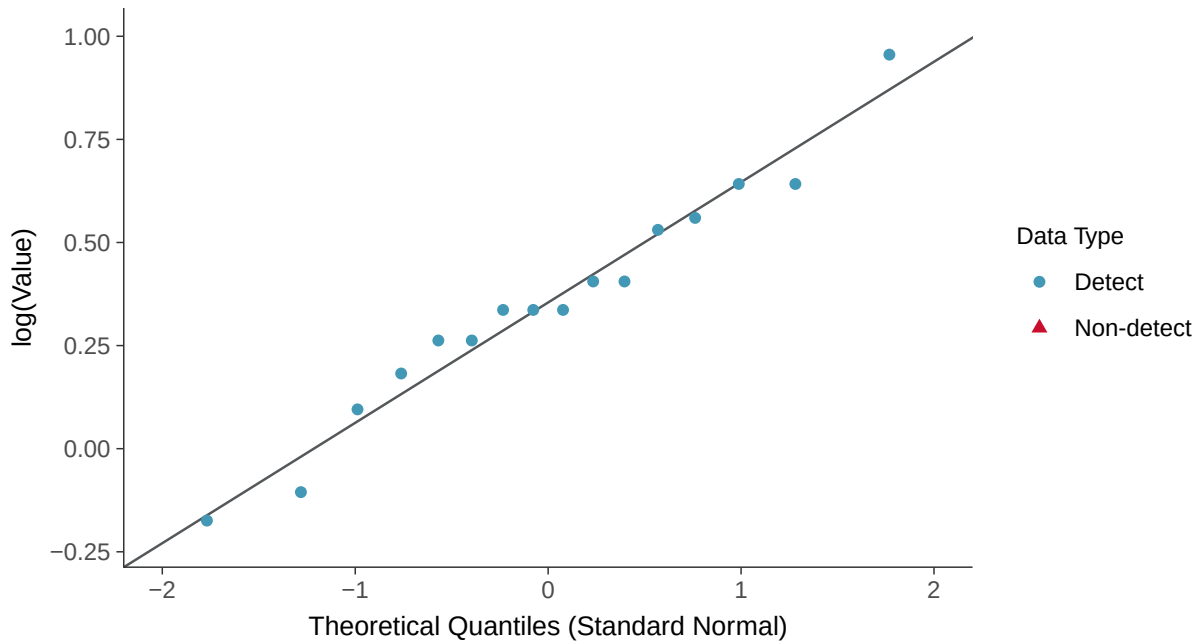
Normal Q-Q plot

Fluoride (App IV), MW-15 (mg/l)



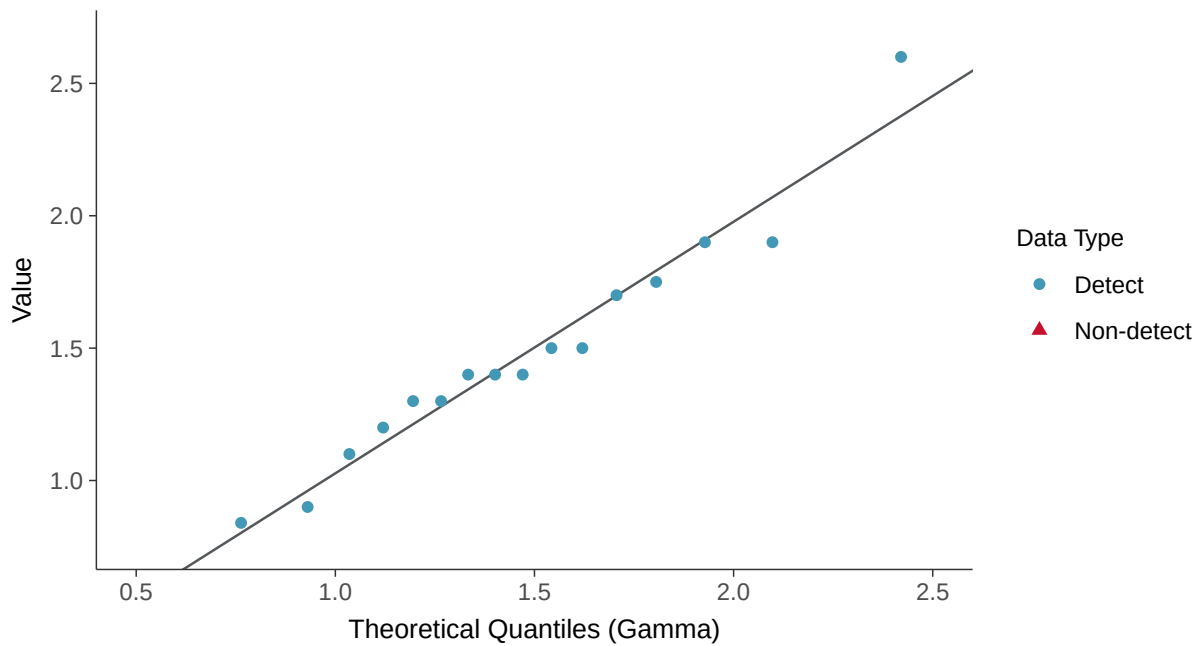
Lognormal Q-Q plot

Fluoride (App IV), MW-15 (mg/l)



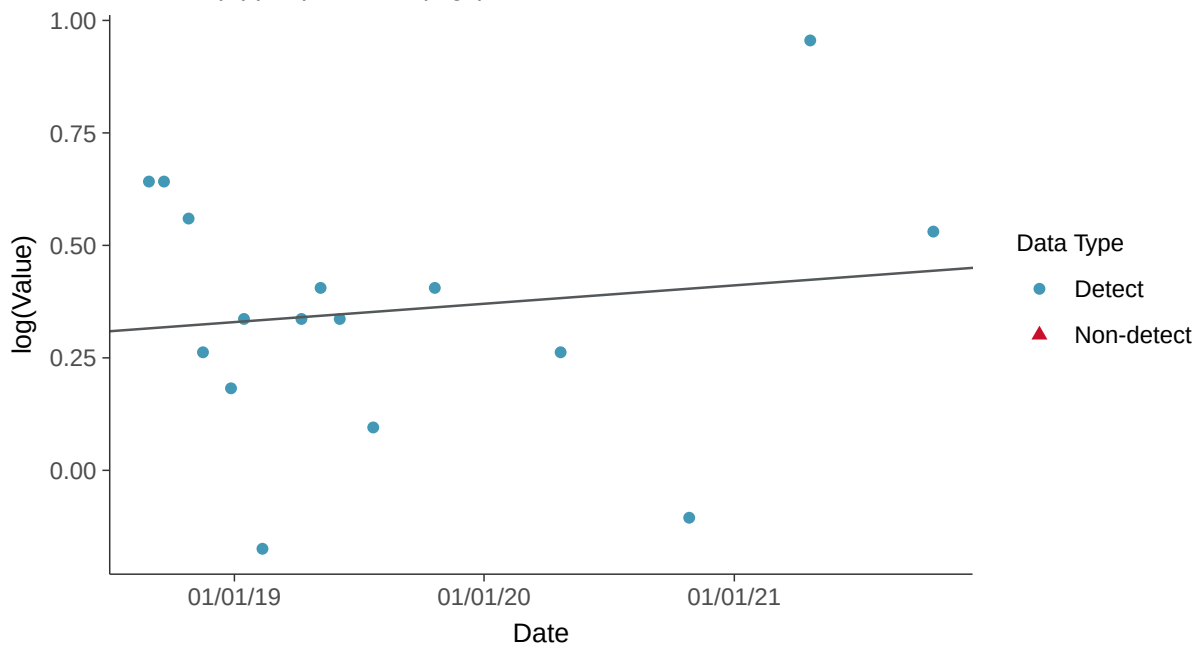
Gamma Q-Q plot

Fluoride (App IV), MW-15 (mg/l)



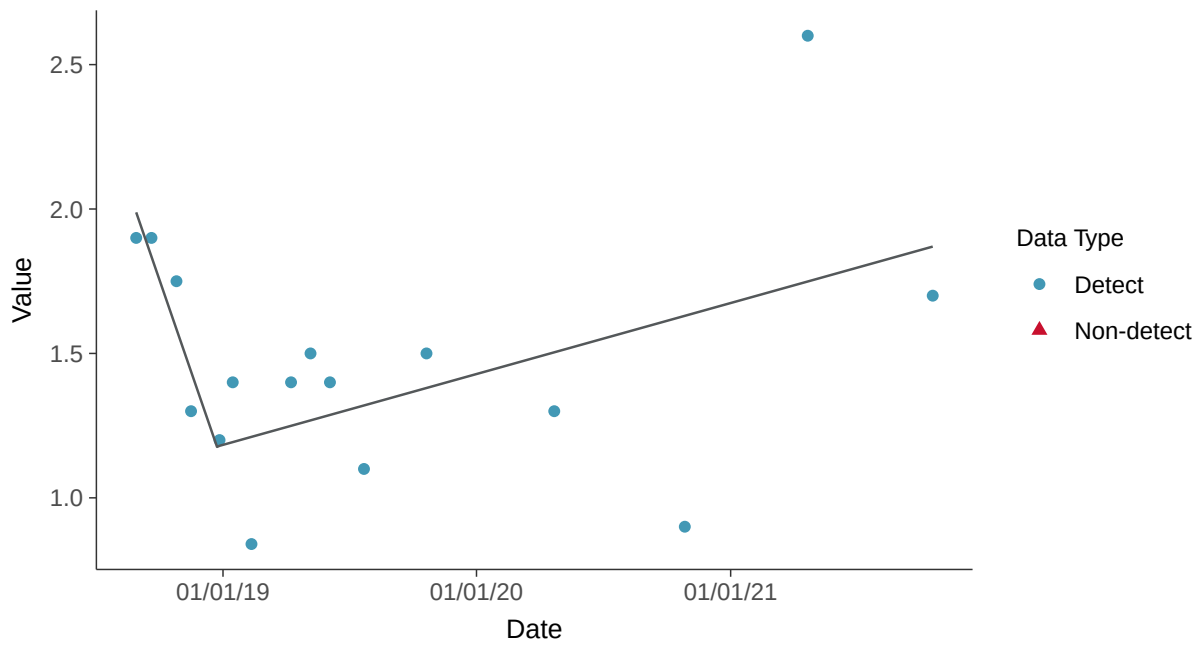
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-15 (mg/l)



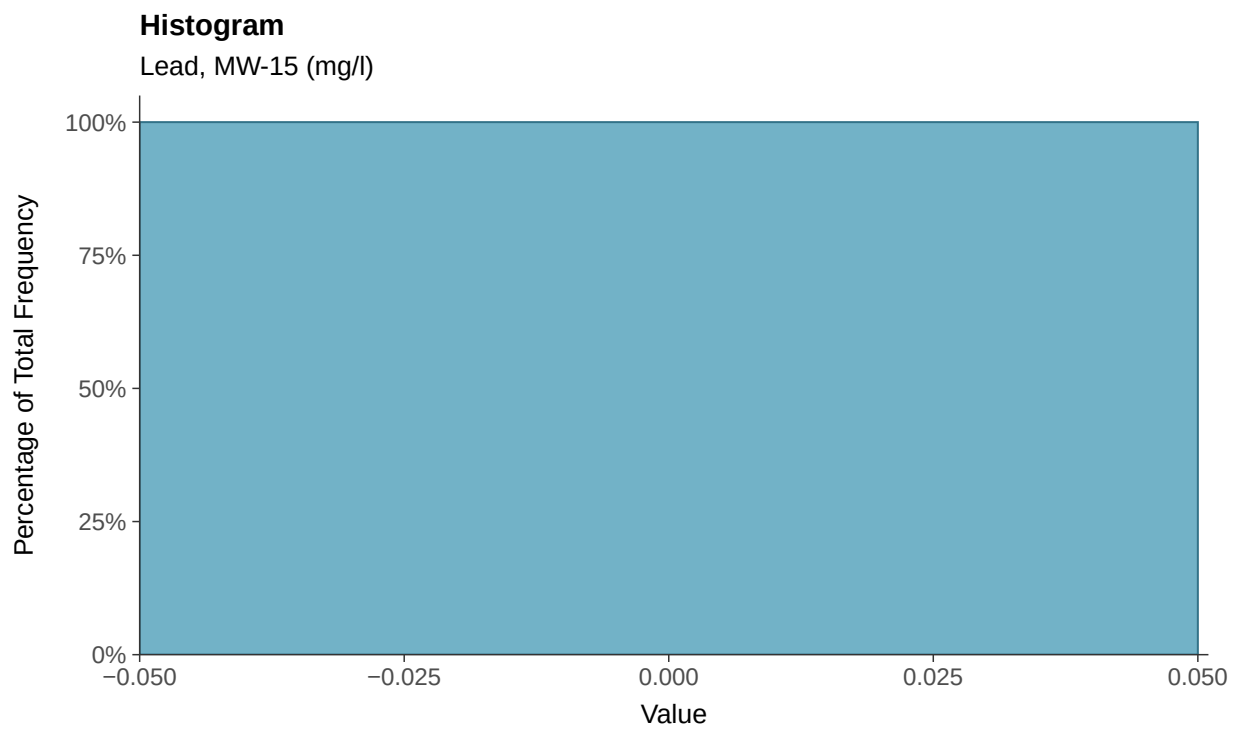
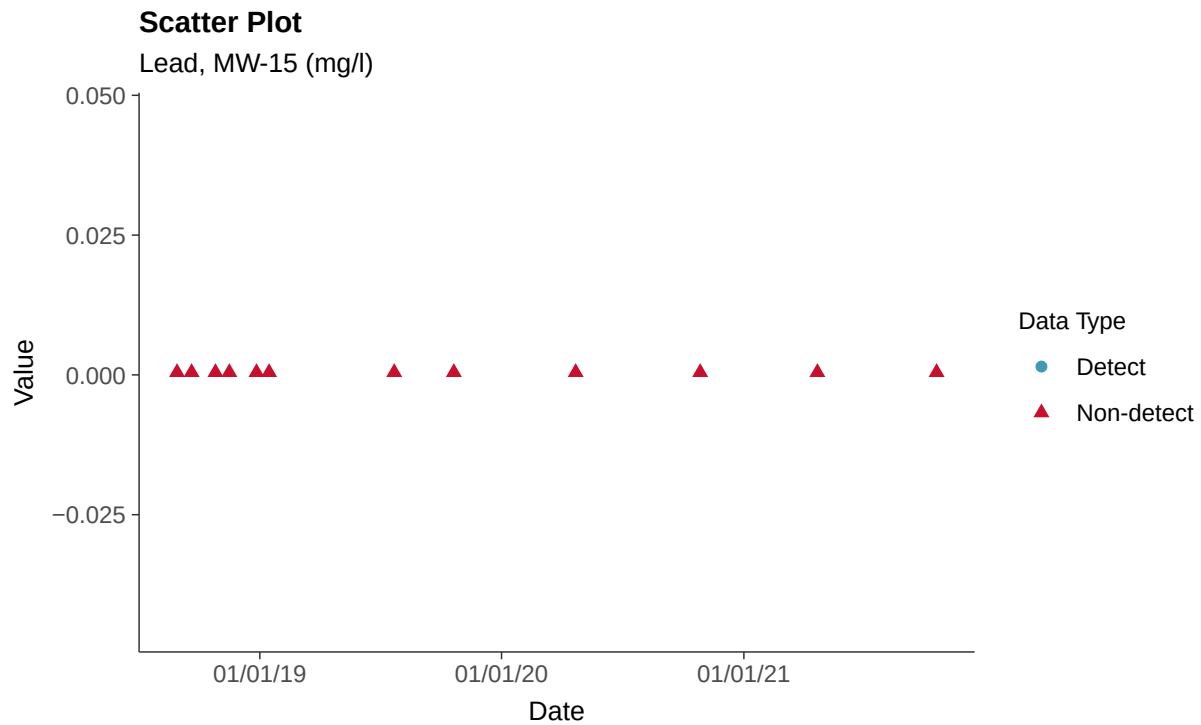
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-15 (mg/l)



Appendix IV: Lead, MW-15

ID: 1_2_117





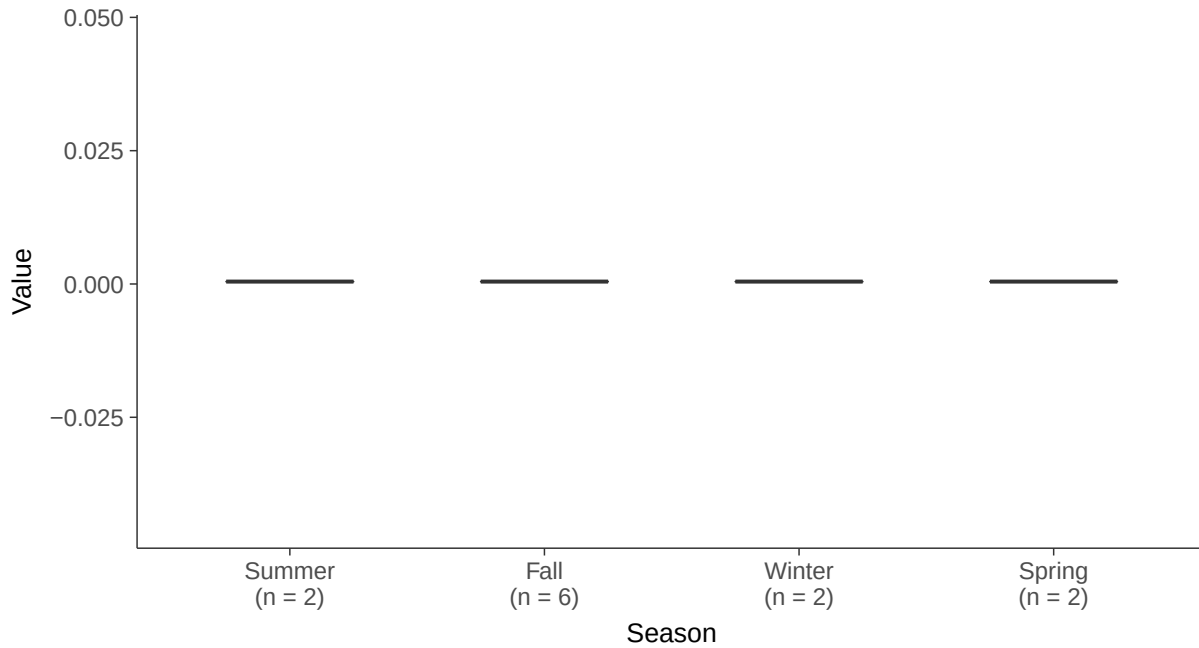
Boxplot

Lead, MW-15 (mg/l)



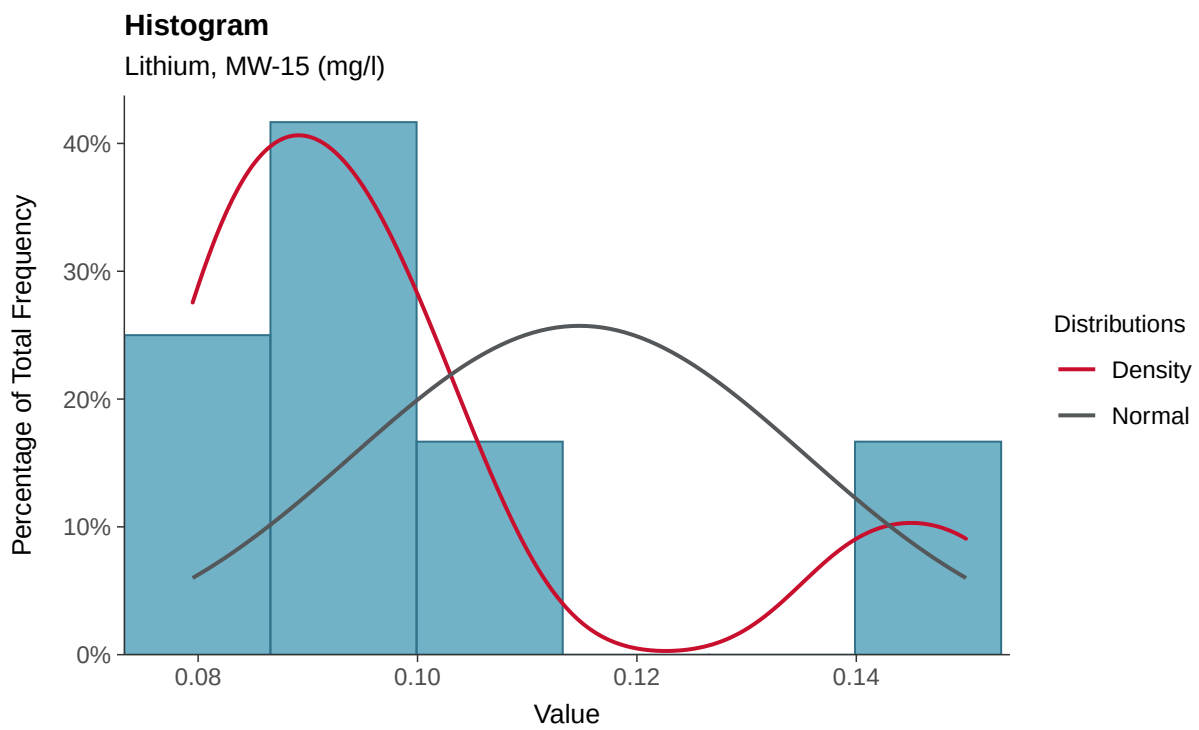
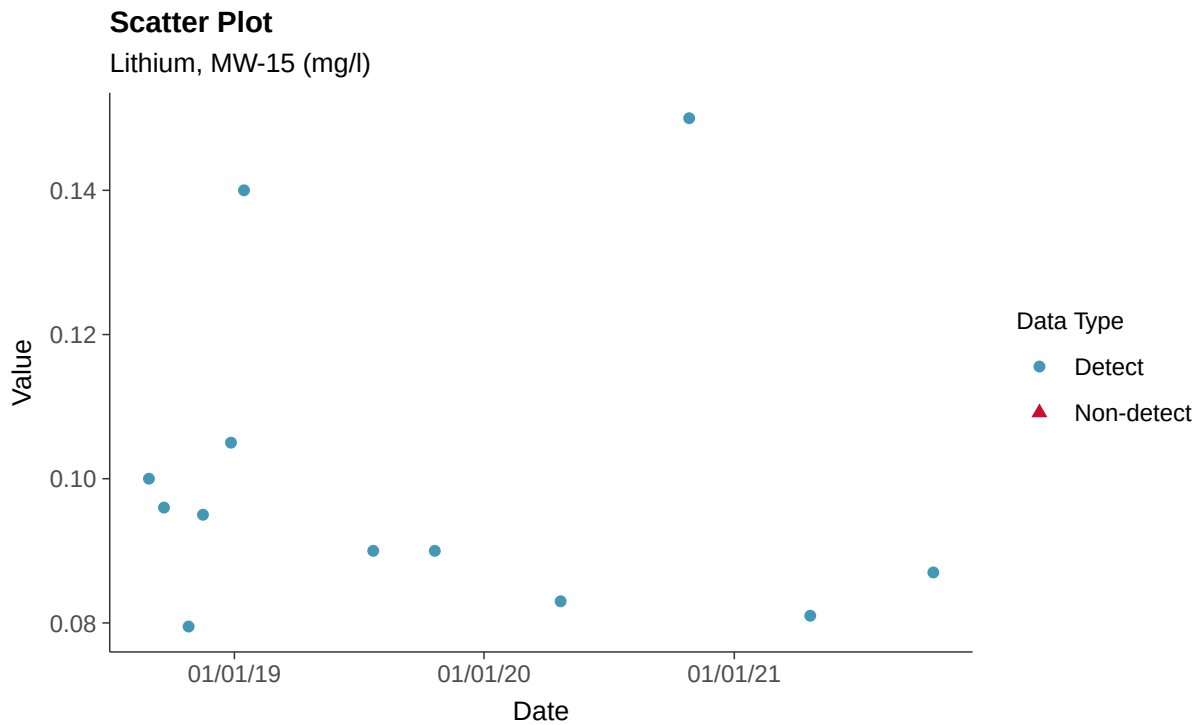
Boxplot by Season

Lead, MW-15 (mg/l)



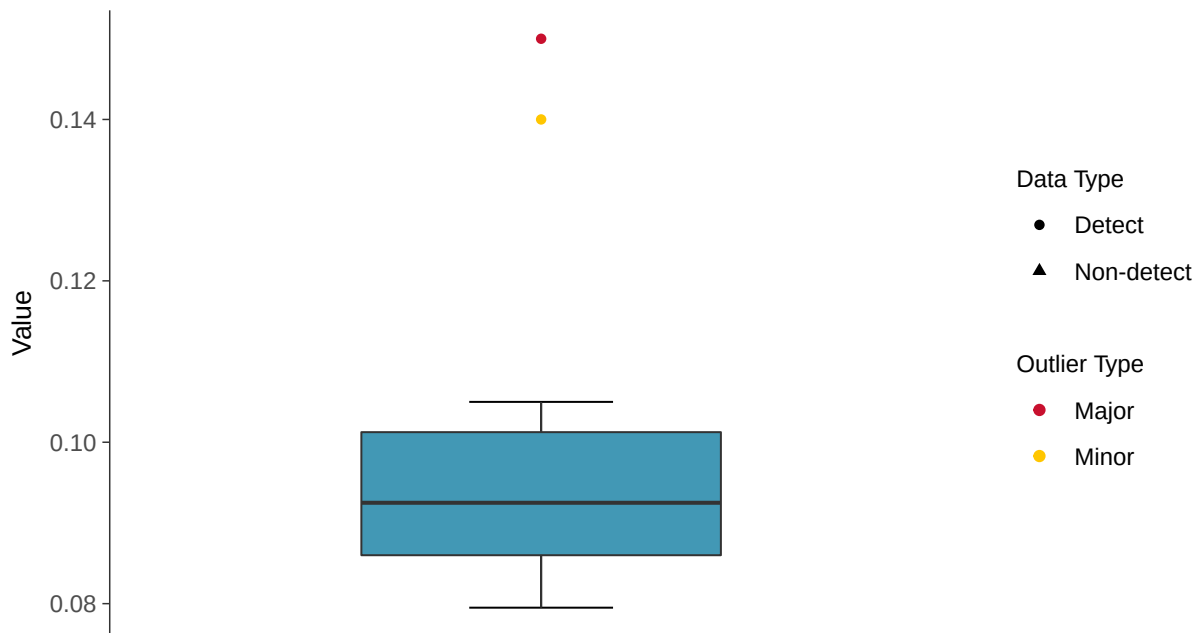
Appendix IV: Lithium, MW-15

ID: 1_2_118



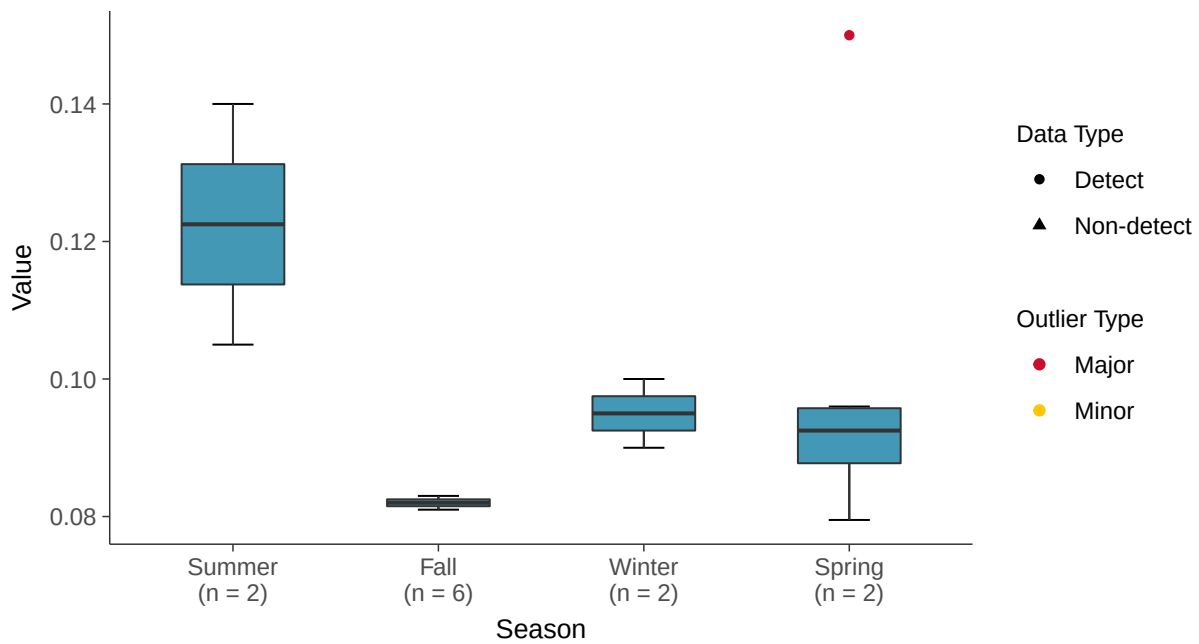
Boxplot

Lithium, MW-15 (mg/l)



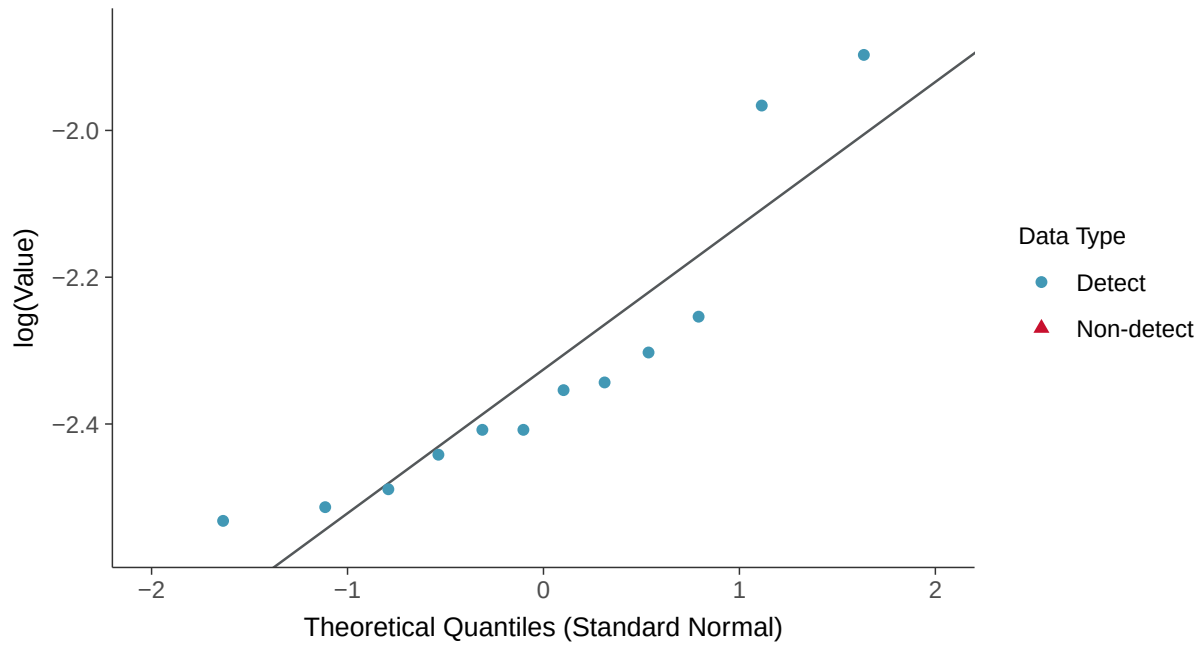
Boxplot by Season

Lithium, MW-15 (mg/l)



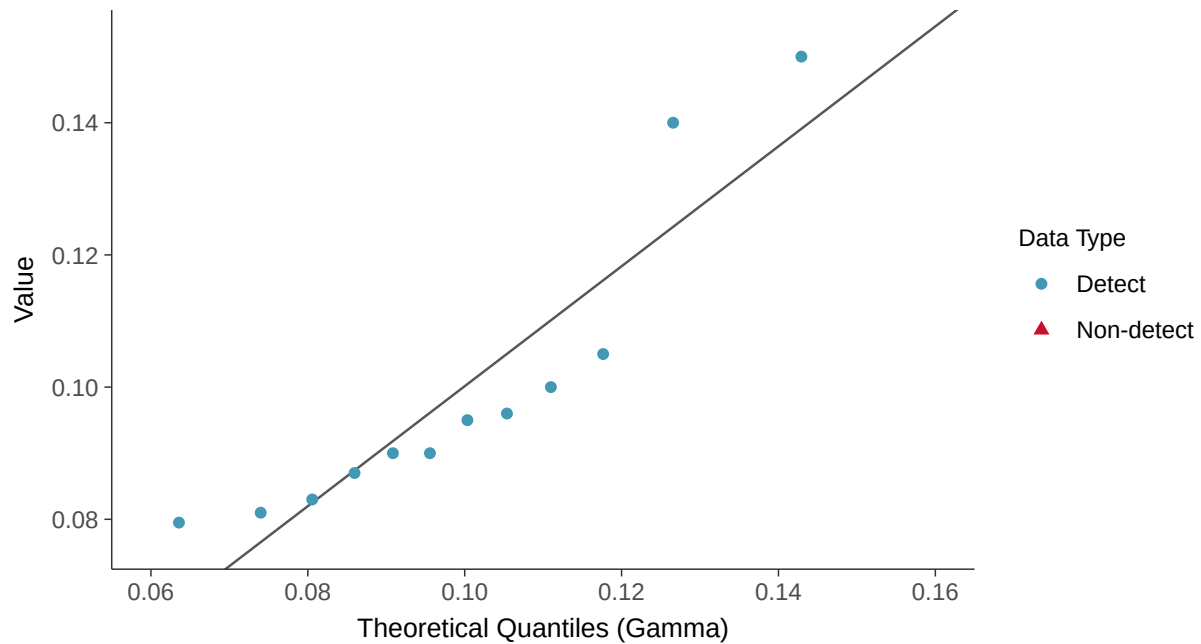
Lognormal Q-Q plot

Lithium, MW-15 (mg/l)



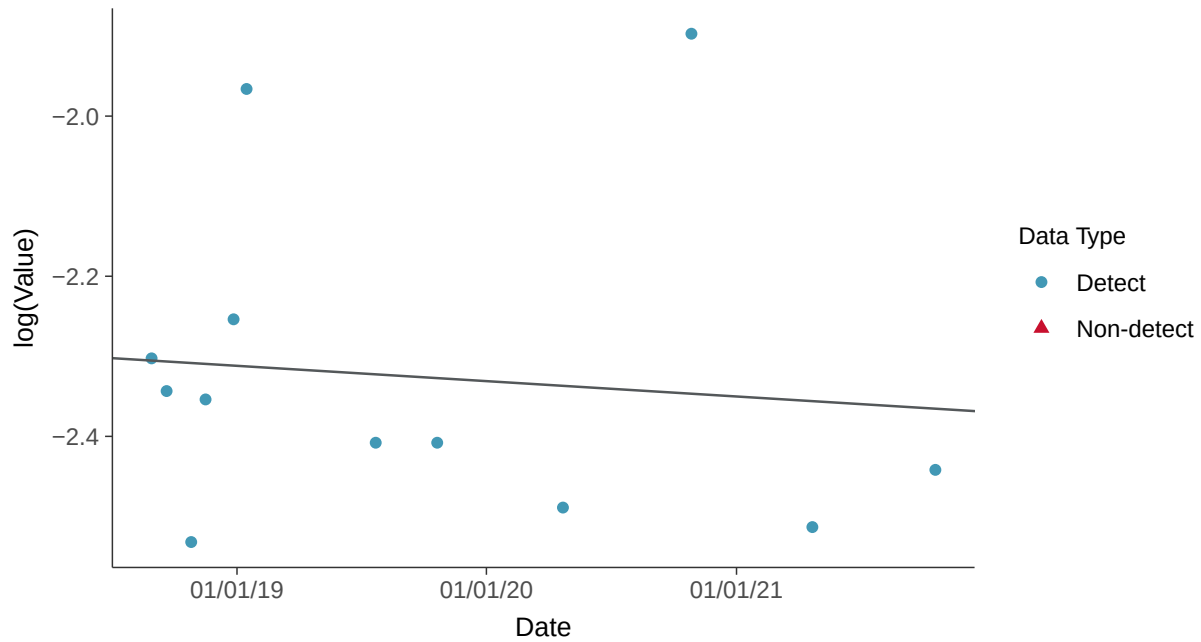
Gamma Q-Q plot

Lithium, MW-15 (mg/l)



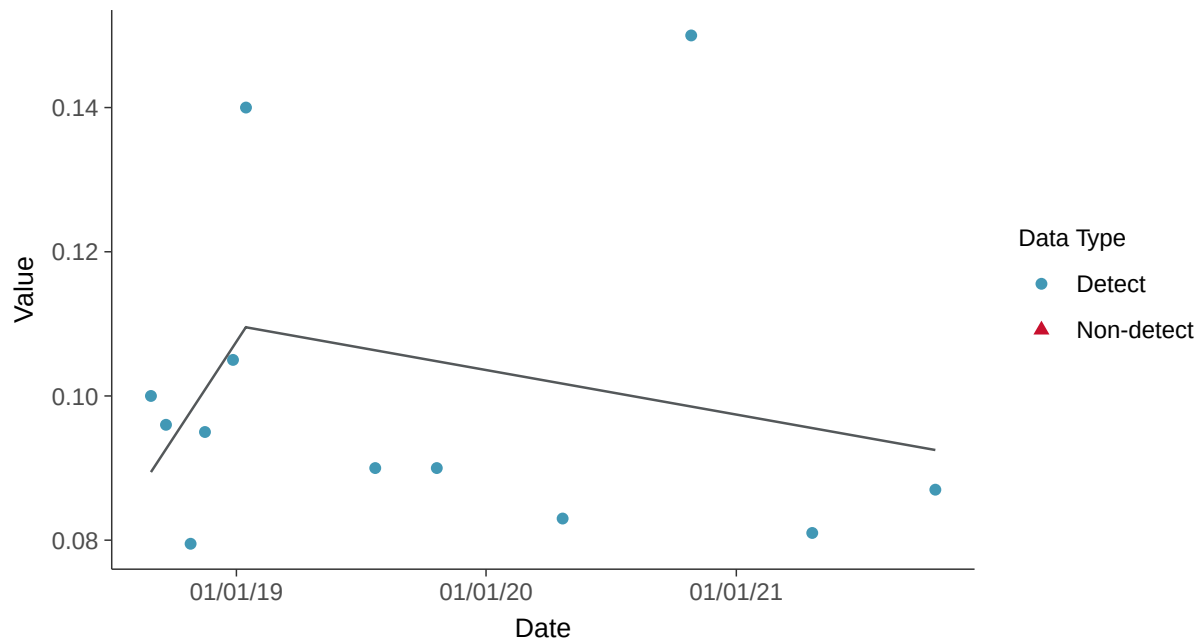
Trend Regression: Lognormal MLE

Lithium, MW-15 (mg/l)



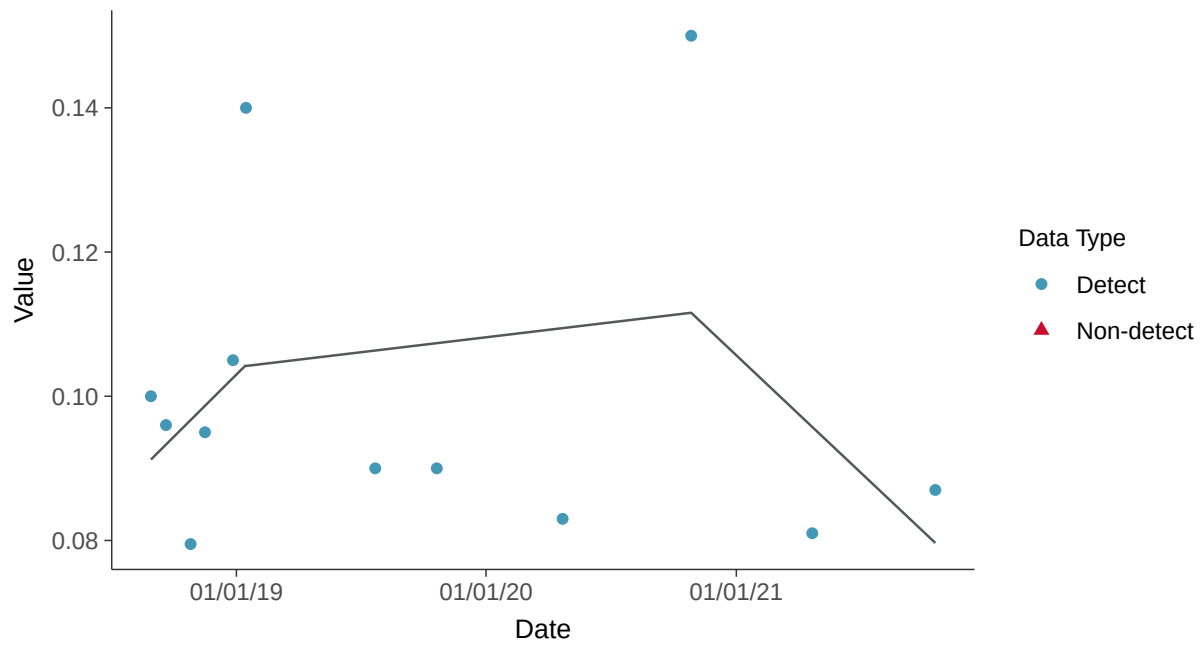
Trend Regression: Piecewise Linear-Linear

Lithium, MW-15 (mg/l)



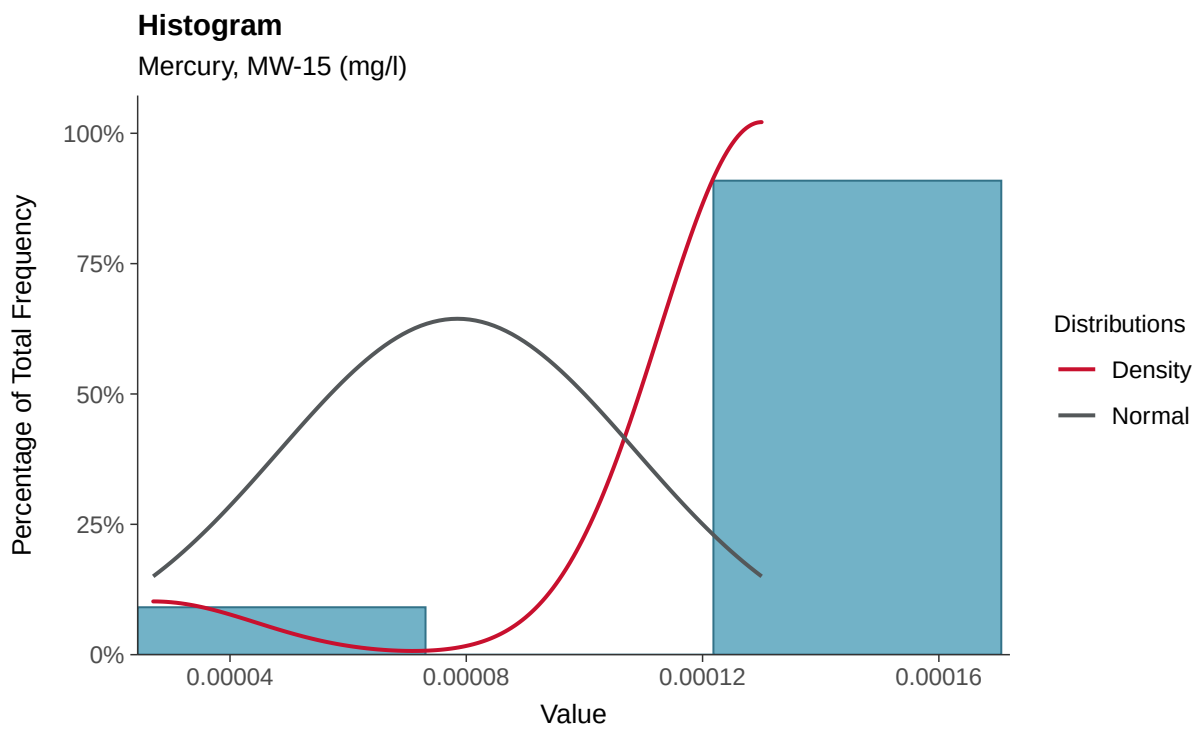
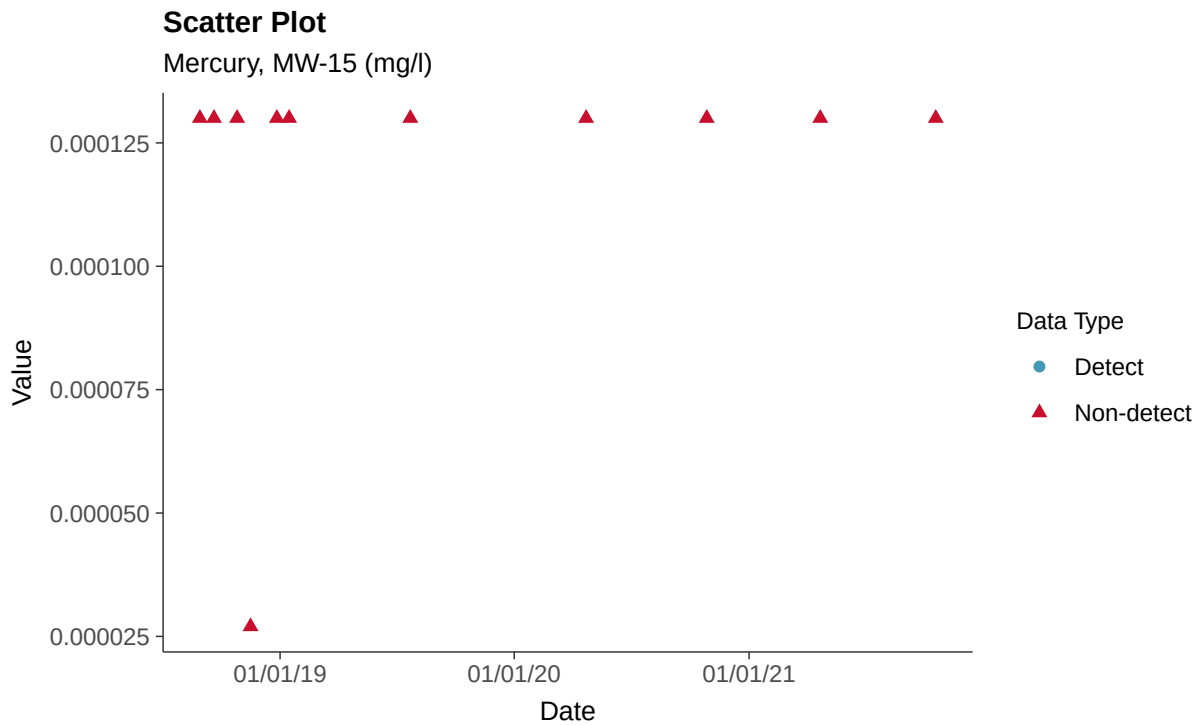
Trend Regression: Piecewise Linear-Linear-Linear

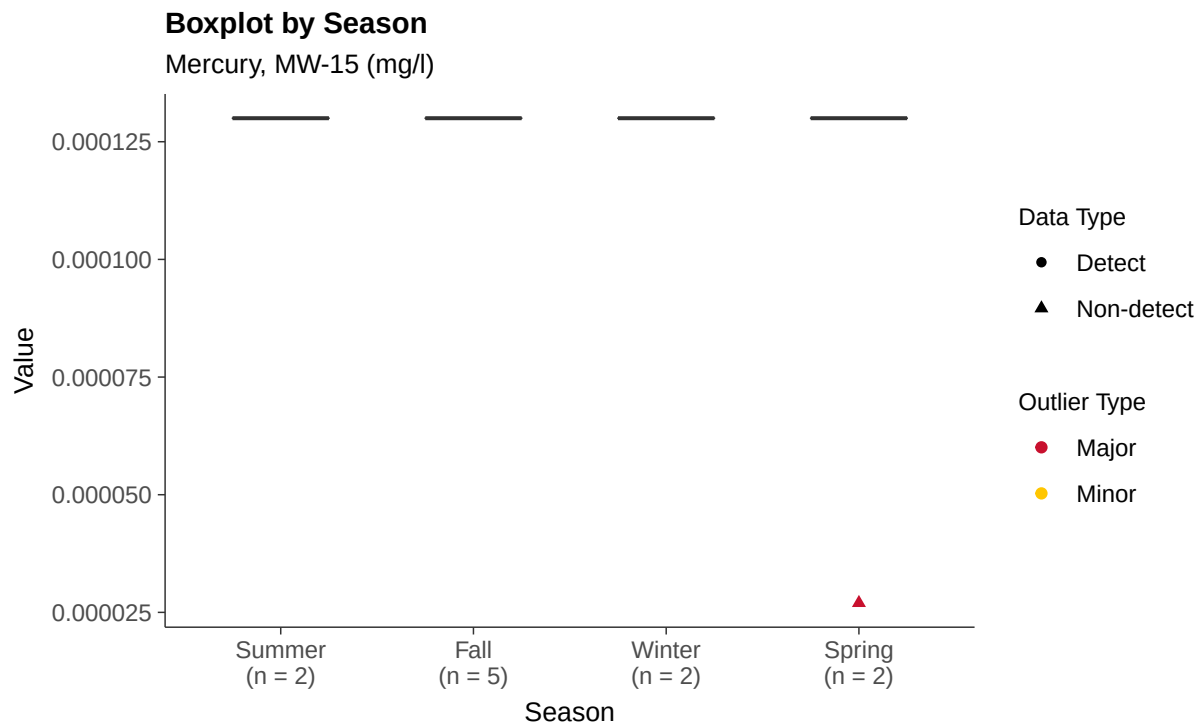
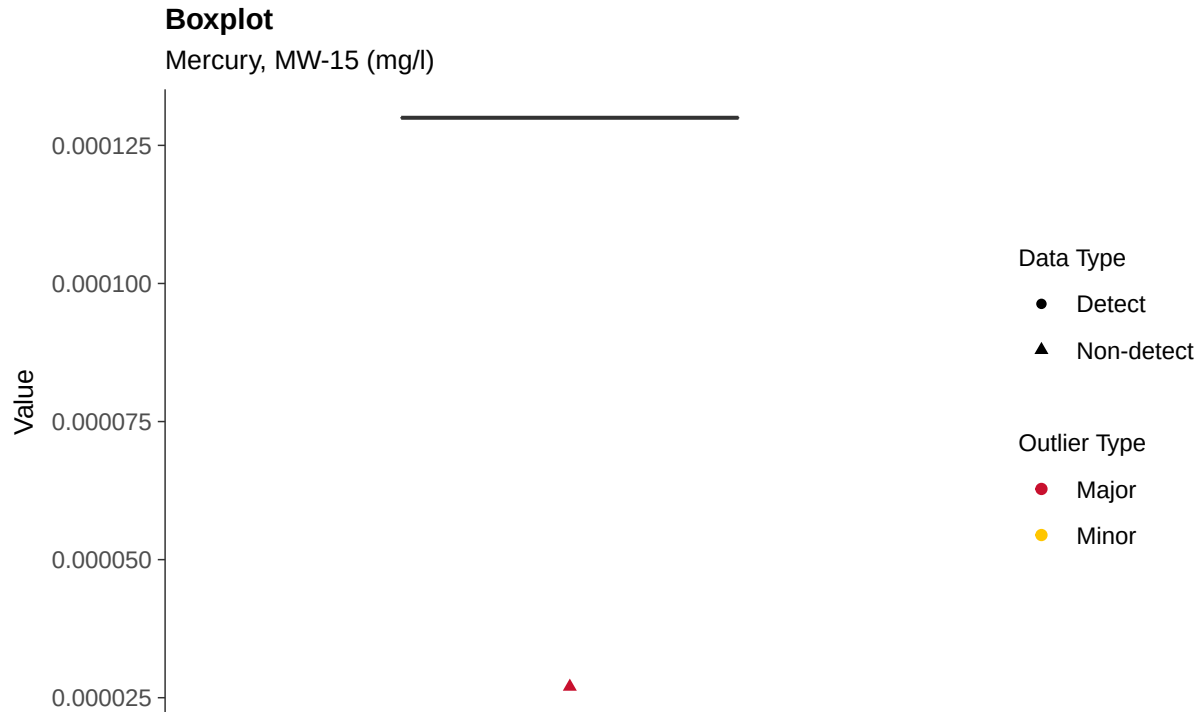
Lithium, MW-15 (mg/l)



Appendix IV: Mercury, MW-15

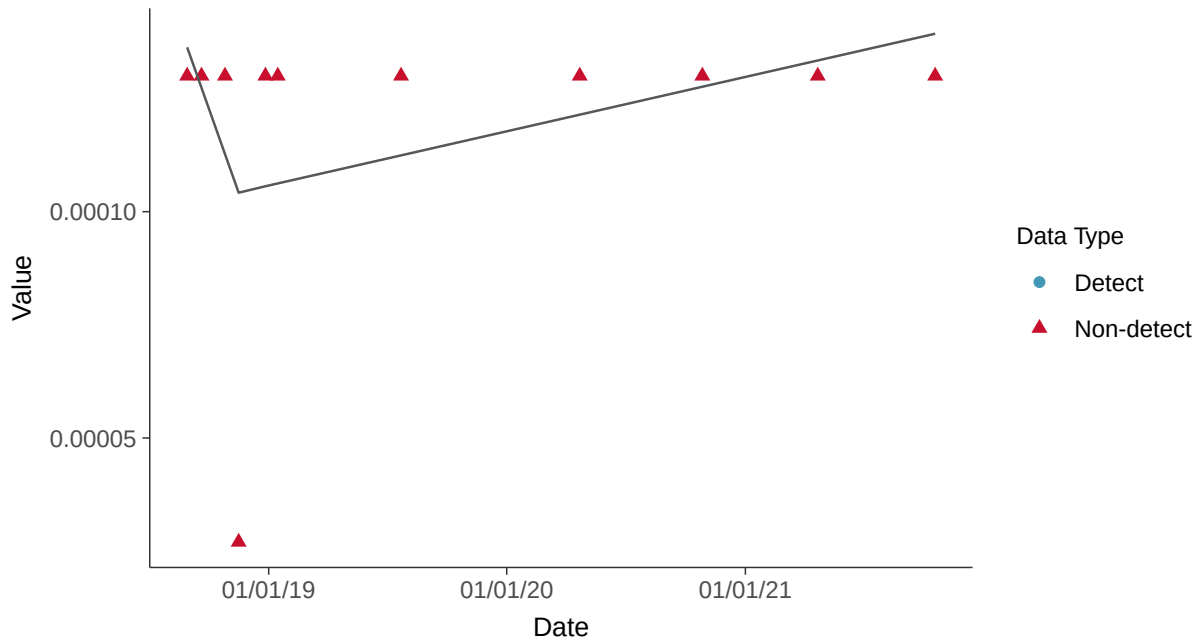
ID: 1_2_120





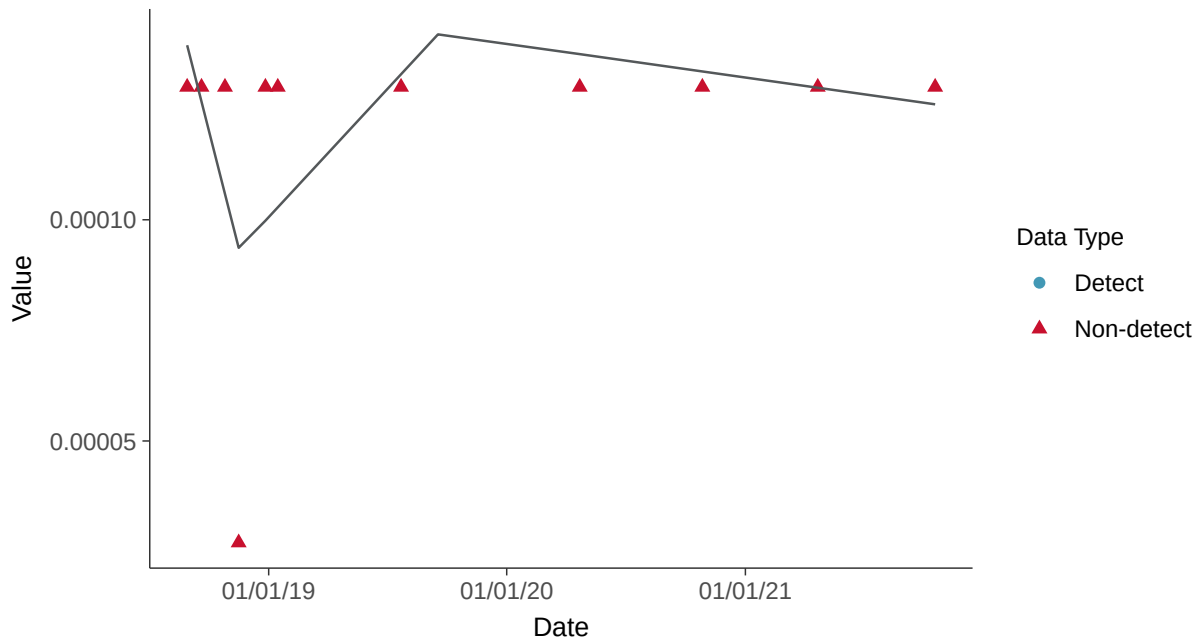
Trend Regression: Piecewise Linear-Linear

Mercury, MW-15 (mg/l)



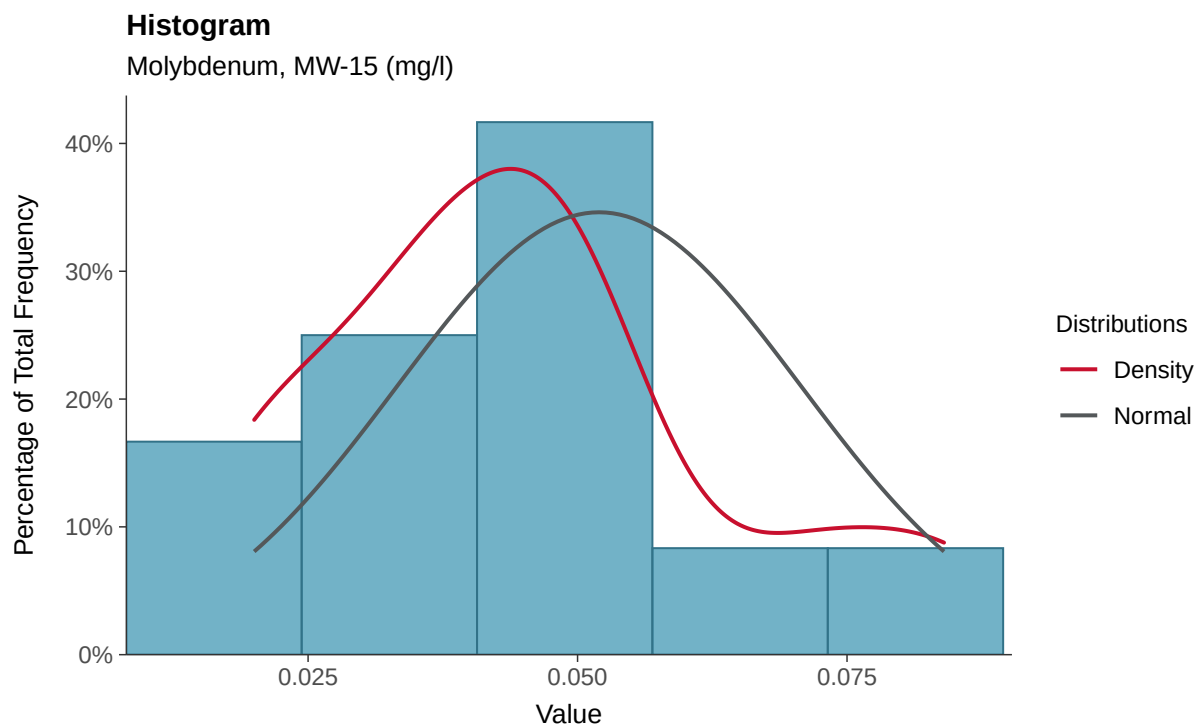
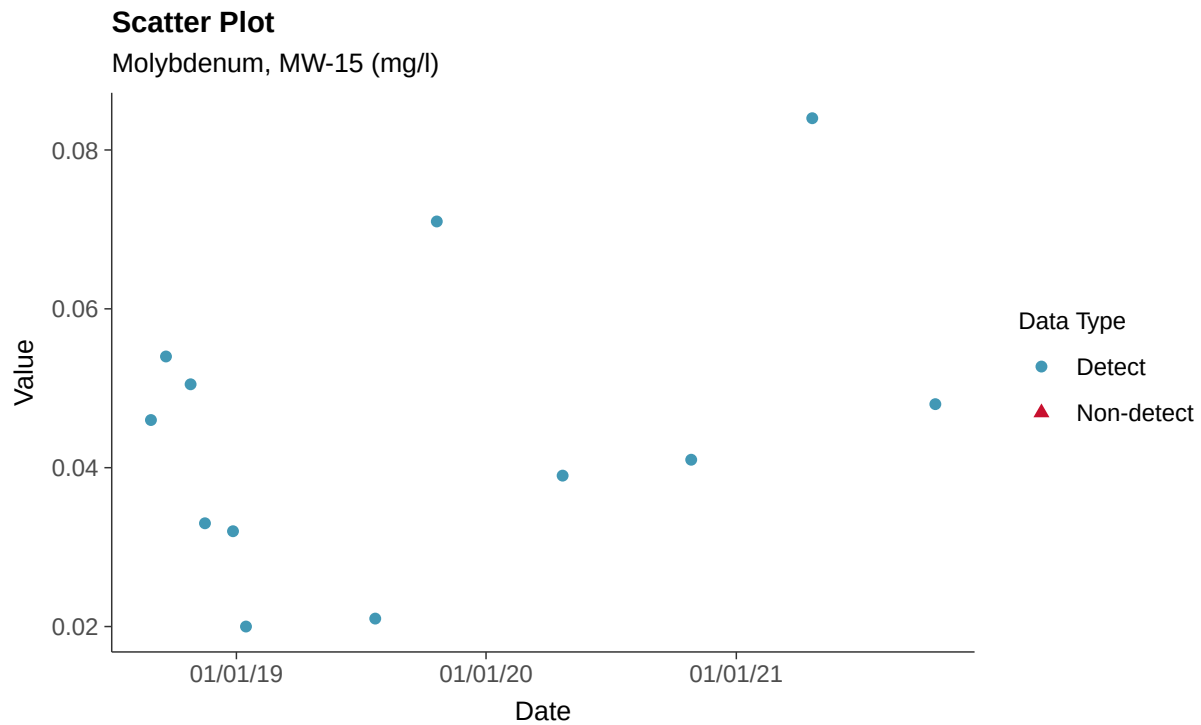
Trend Regression: Piecewise Linear-Linear-Linear

Mercury, MW-15 (mg/l)



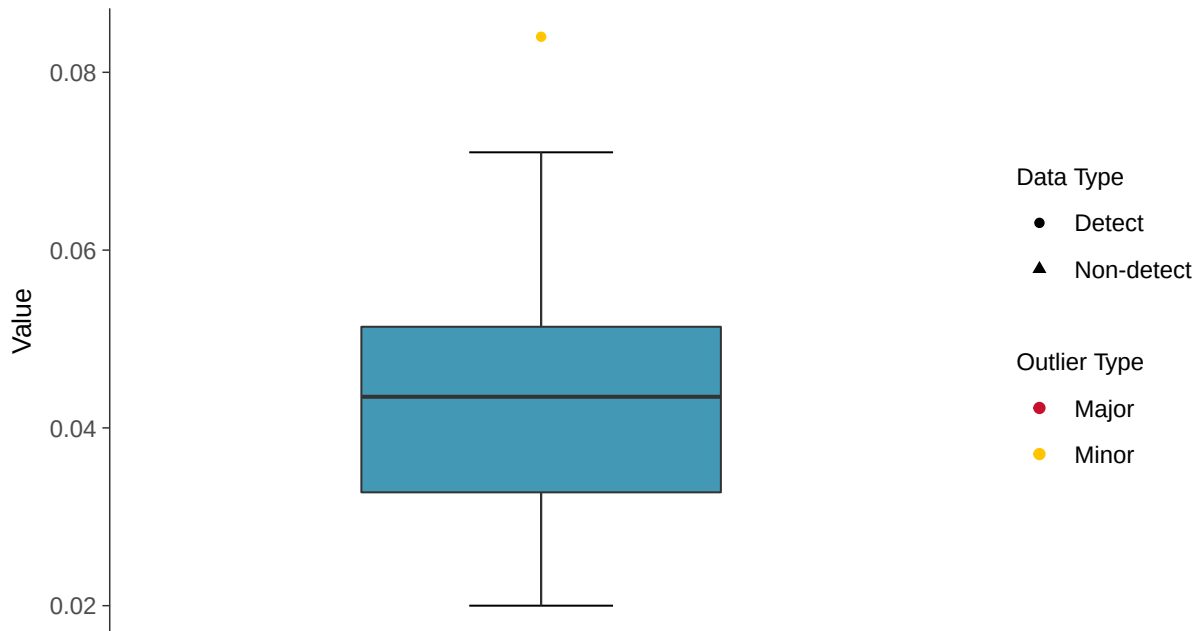
Appendix IV: Molybdenum, MW-15

ID: 1_2_121



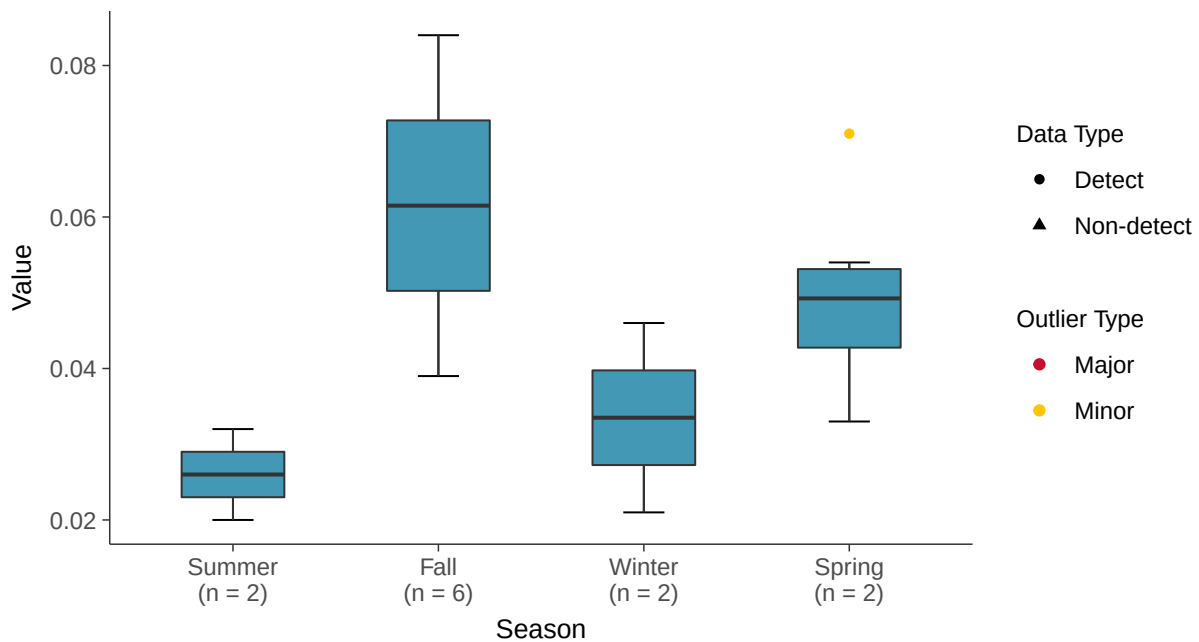
Boxplot

Molybdenum, MW-15 (mg/l)



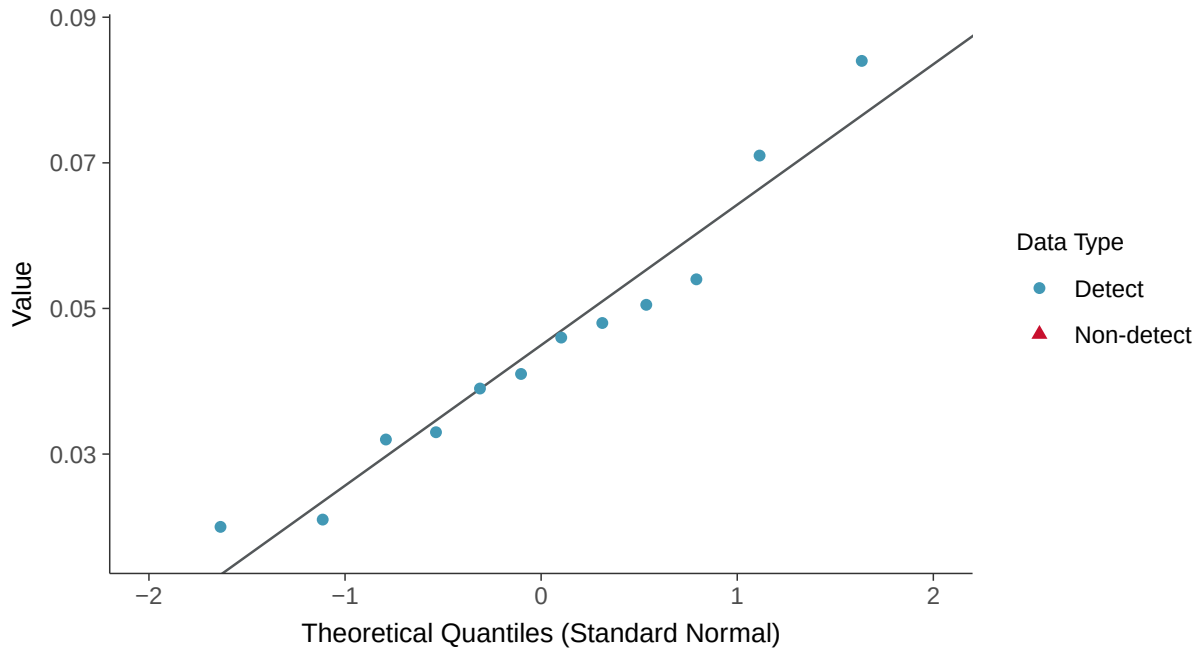
Boxplot by Season

Molybdenum, MW-15 (mg/l)



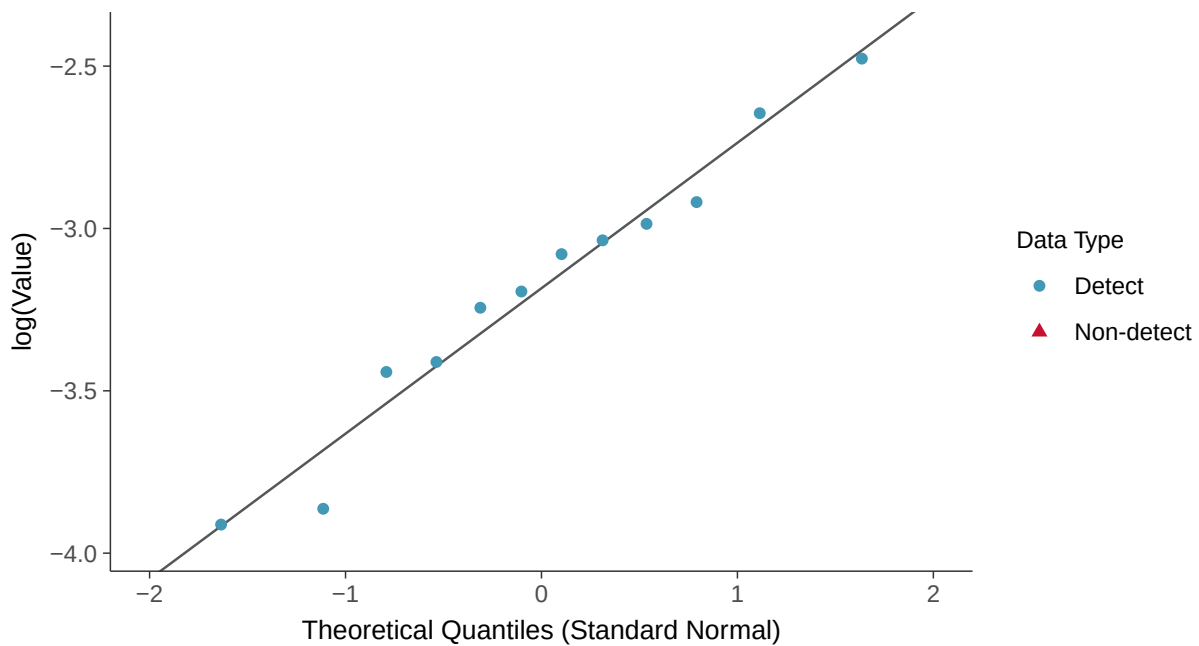
Normal Q-Q plot

Molybdenum, MW-15 (mg/l)



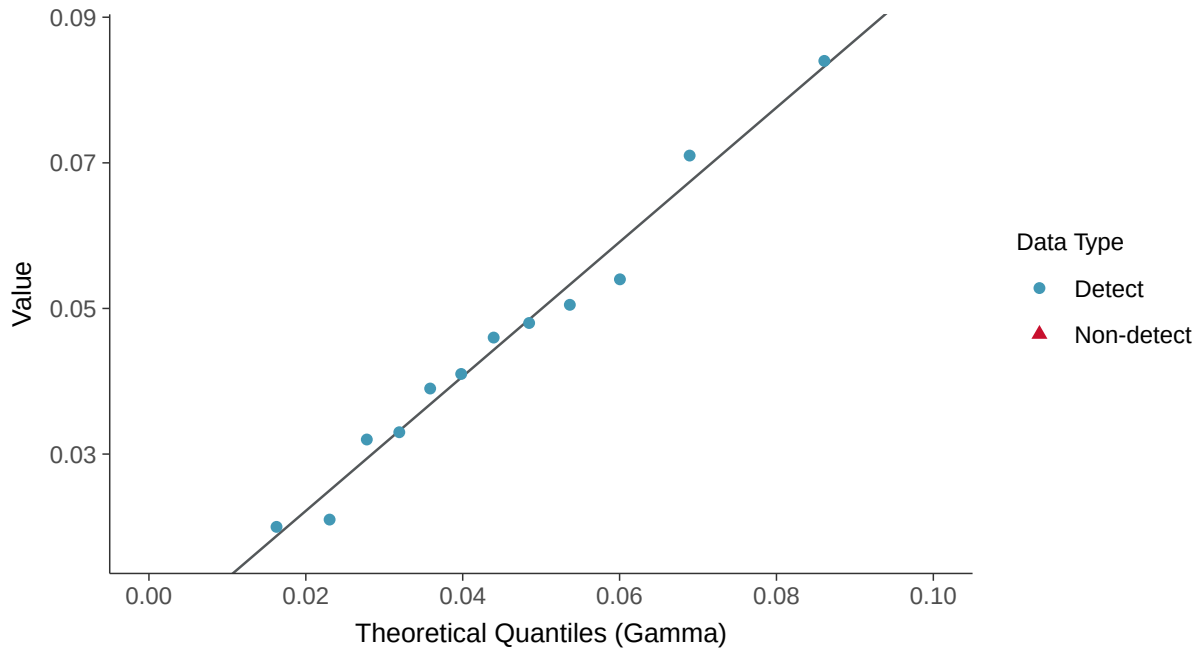
Lognormal Q-Q plot

Molybdenum, MW-15 (mg/l)



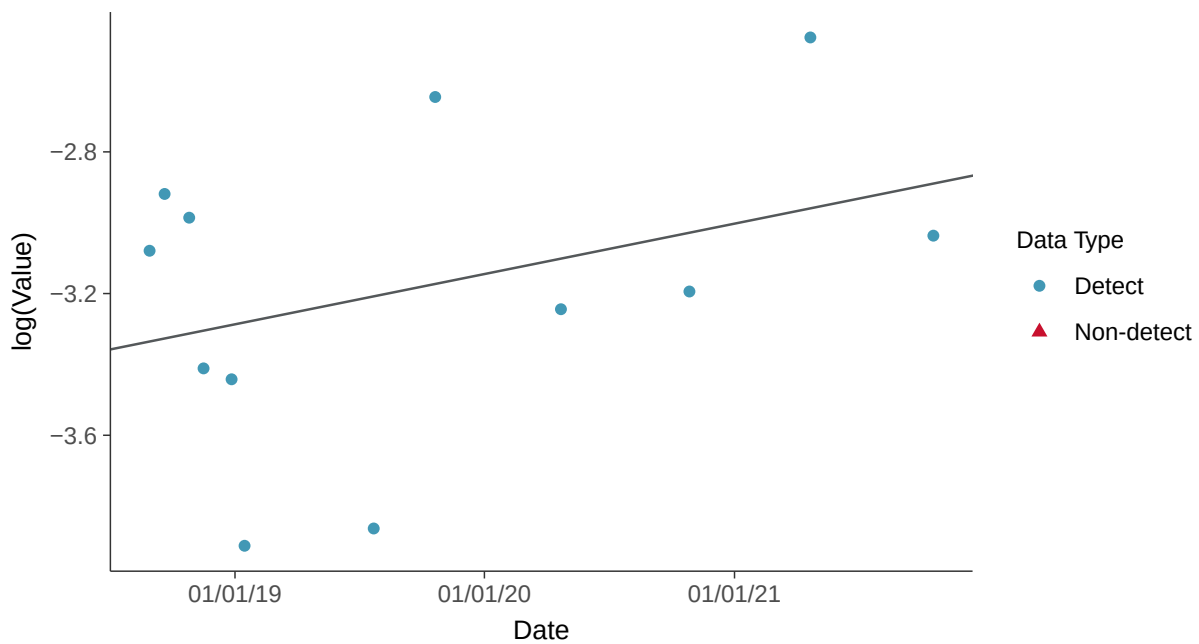
Gamma Q-Q plot

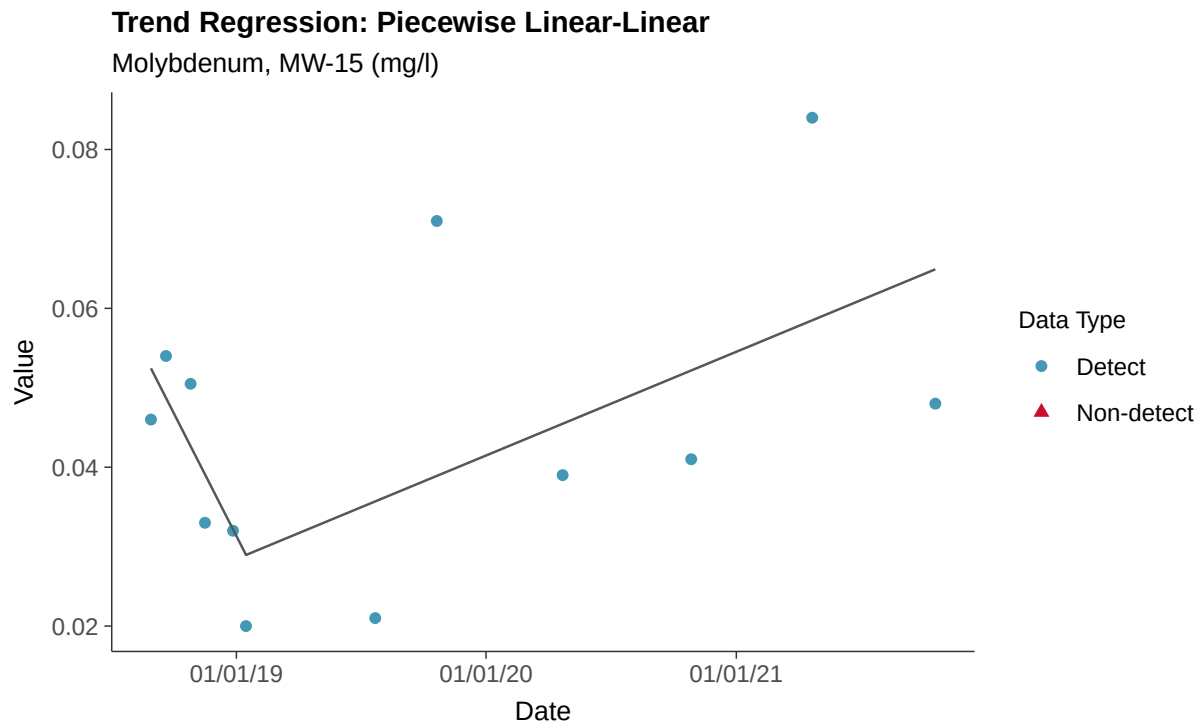
Molybdenum, MW-15 (mg/l)



Trend Regression: Lognormal MLE

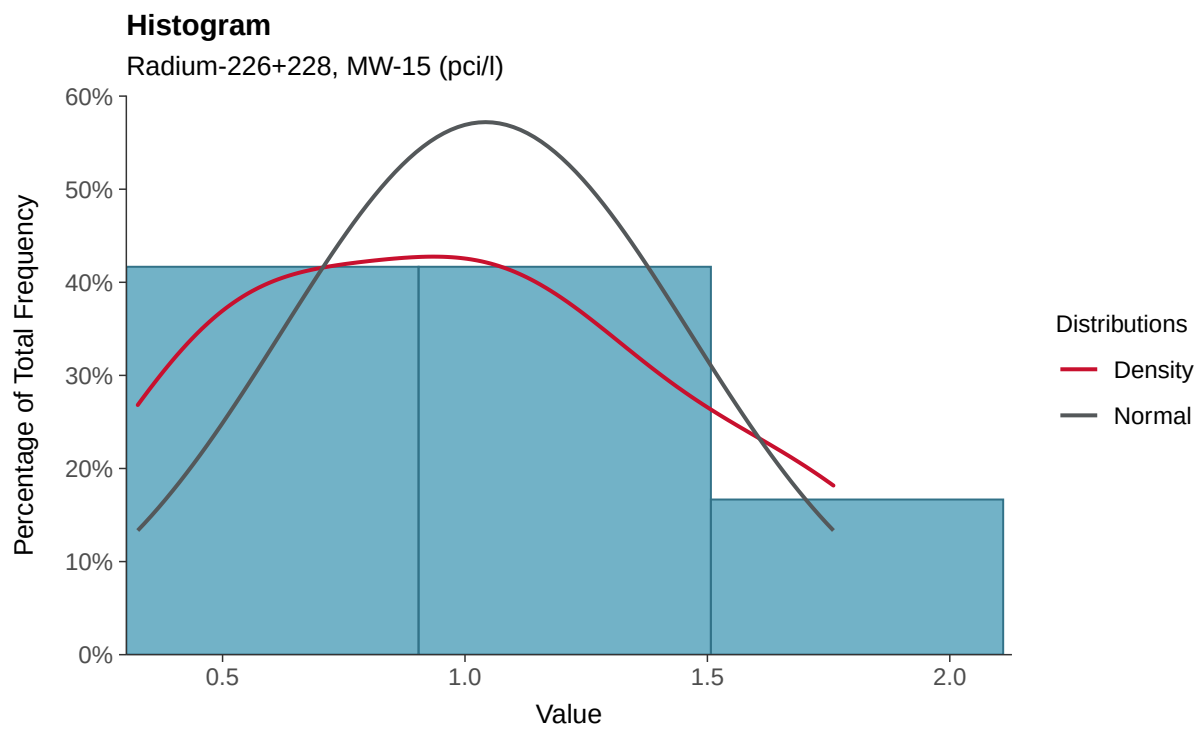
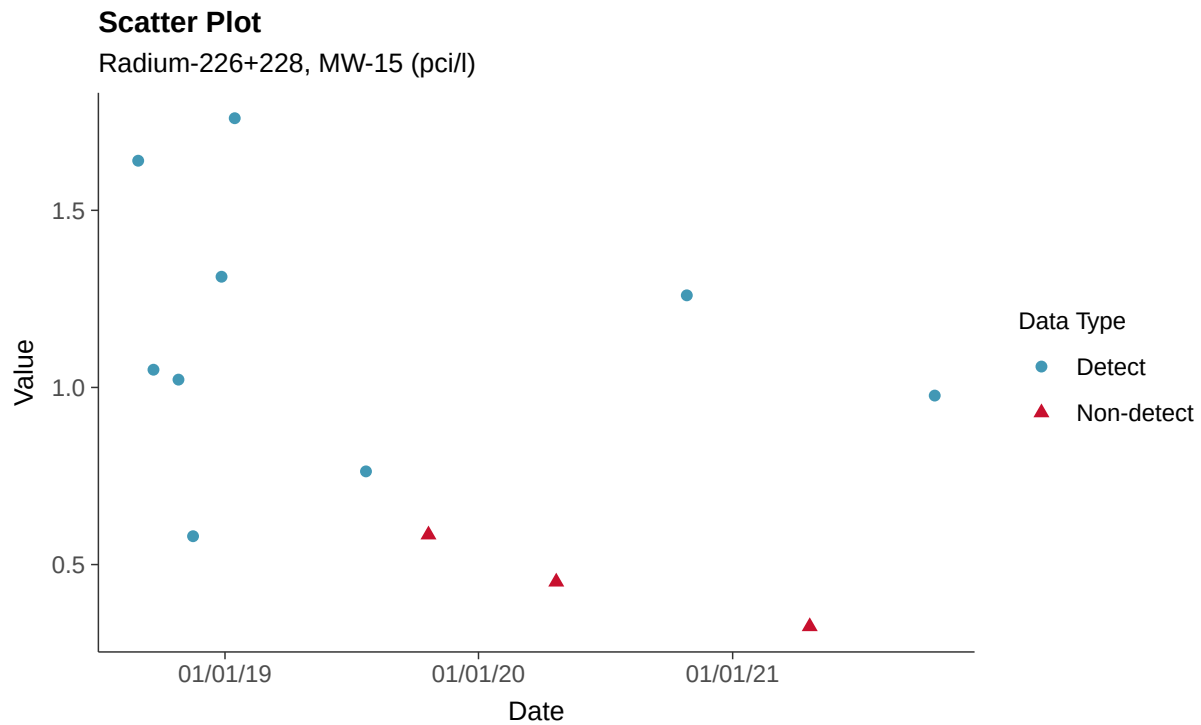
Molybdenum, MW-15 (mg/l)





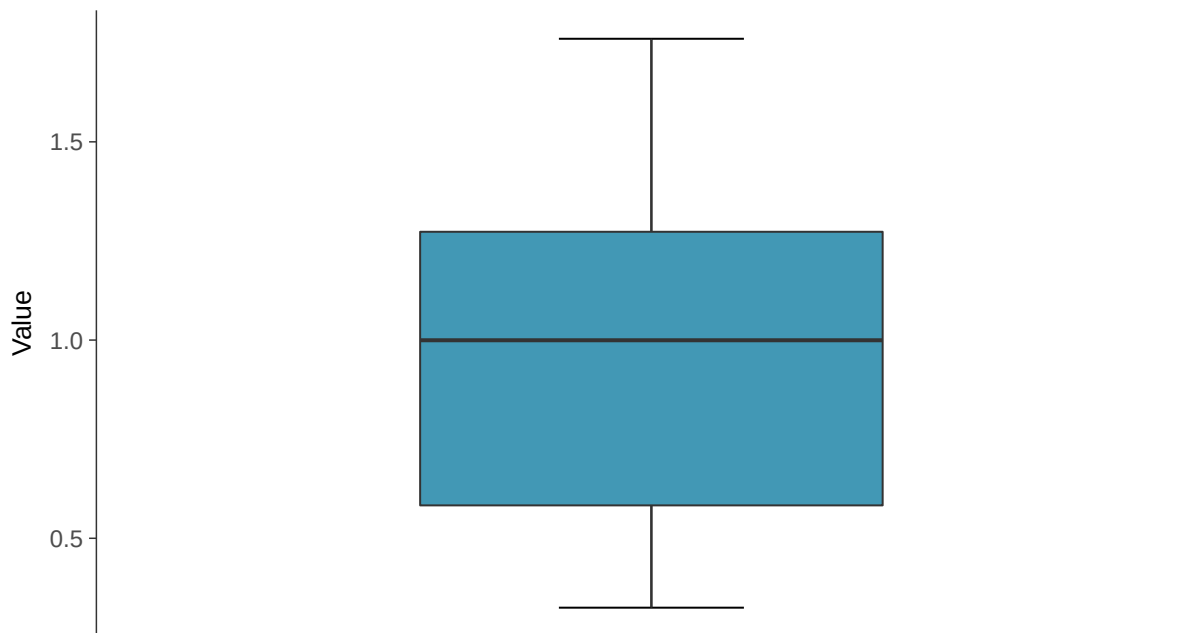
Appendix IV: Radium-226+228, MW-15

ID: 1_2_127



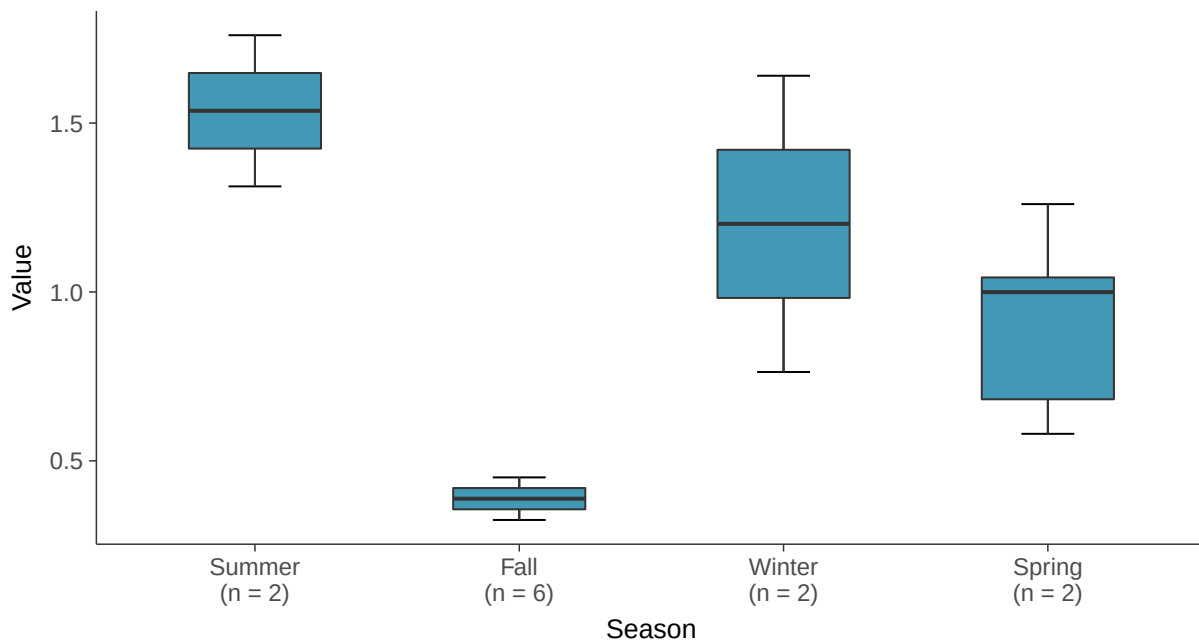
Boxplot

Radium-226+228, MW-15 (pci/l)



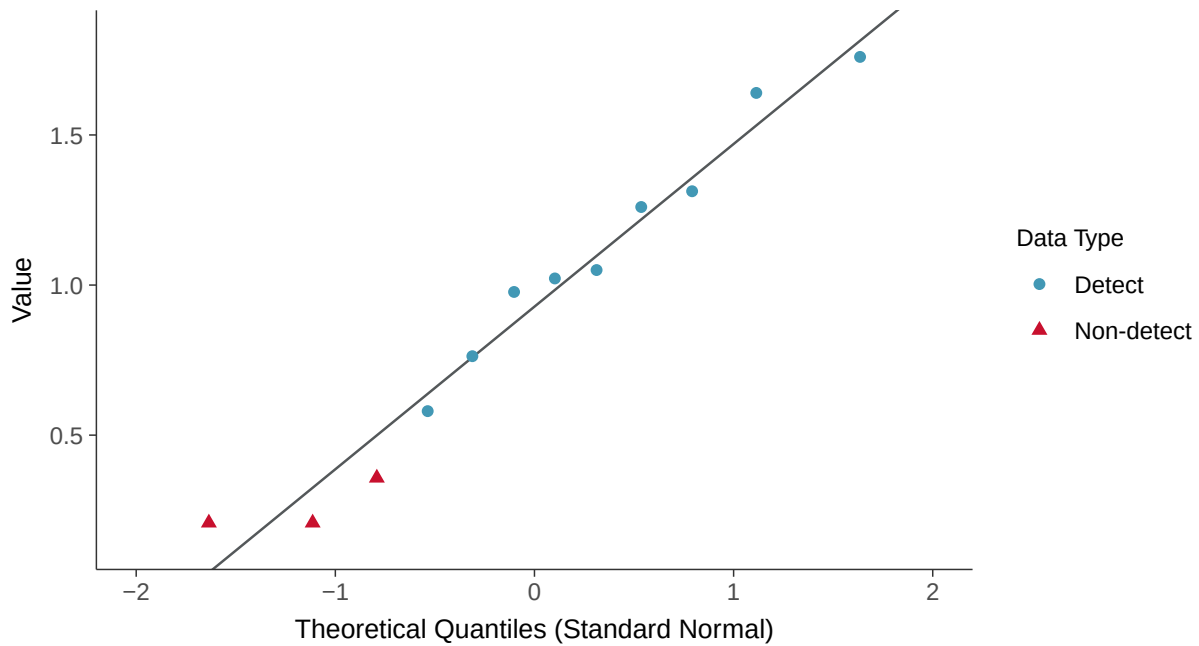
Boxplot by Season

Radium-226+228, MW-15 (pci/l)



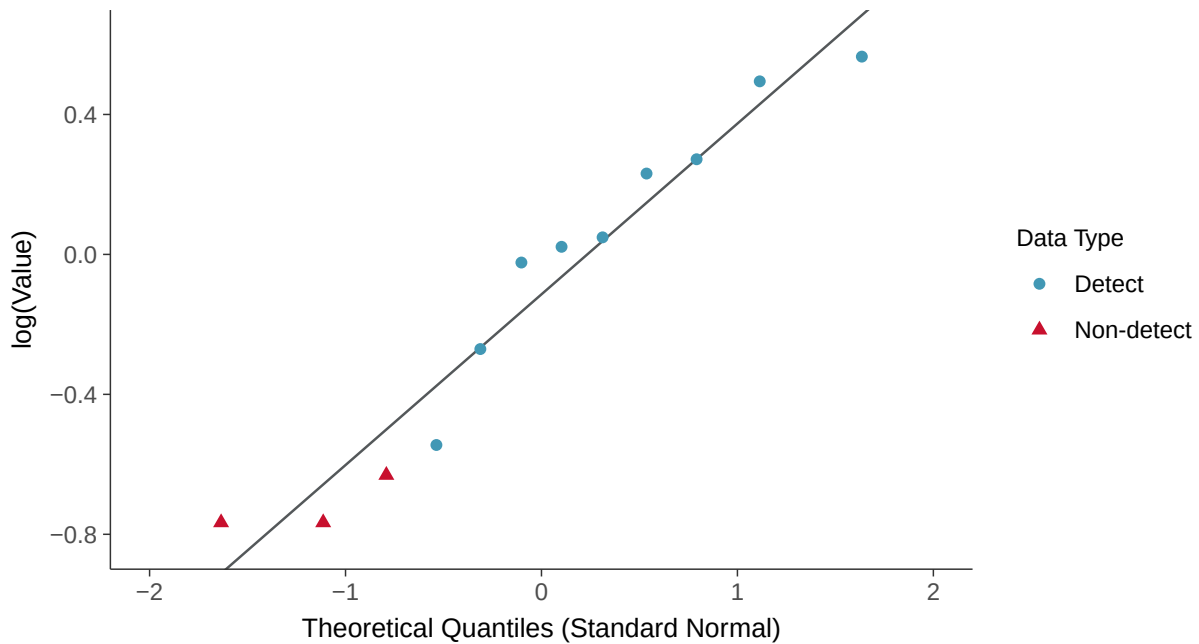
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-15 (pci/l)



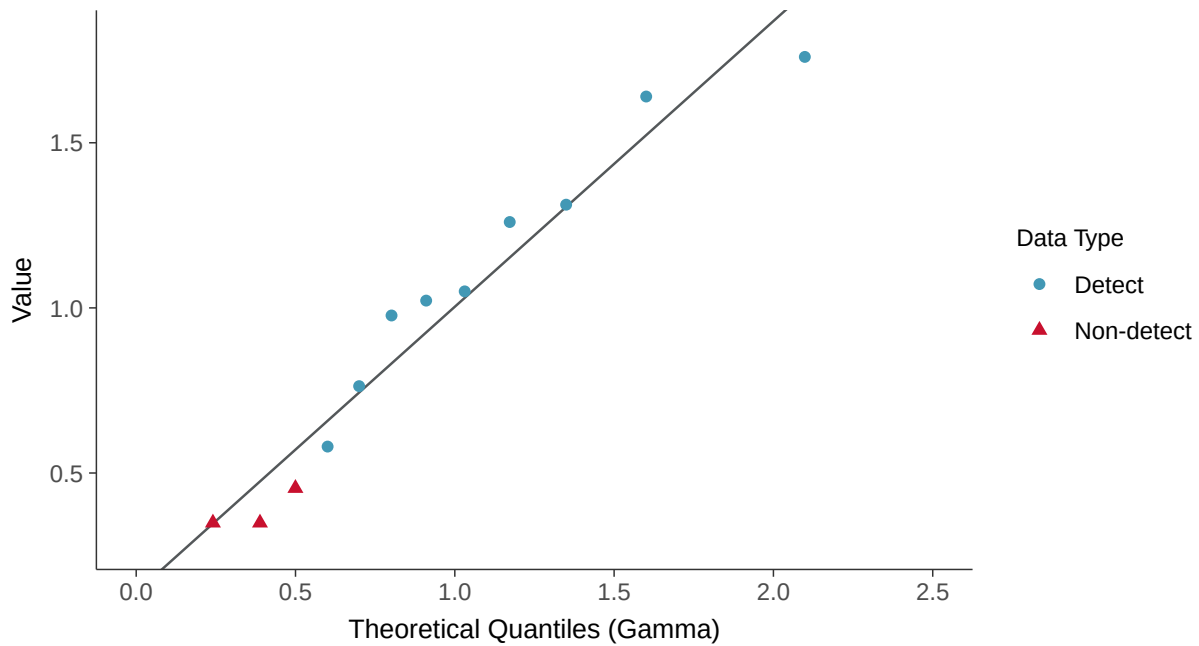
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-15 (pci/l)



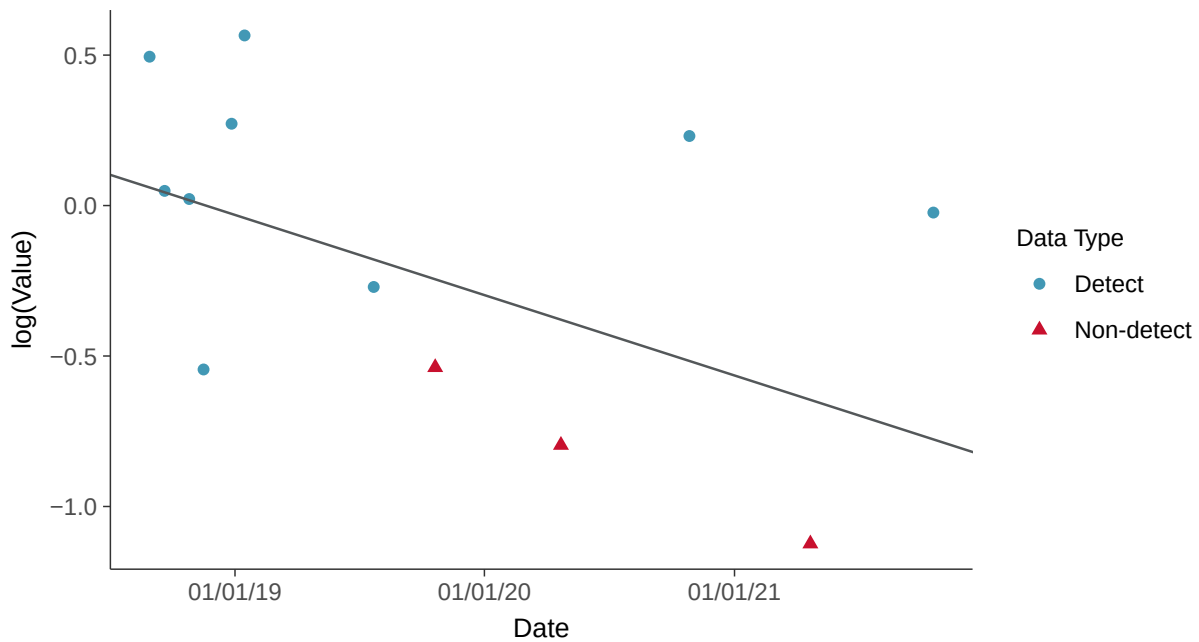
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-15 (pci/l)



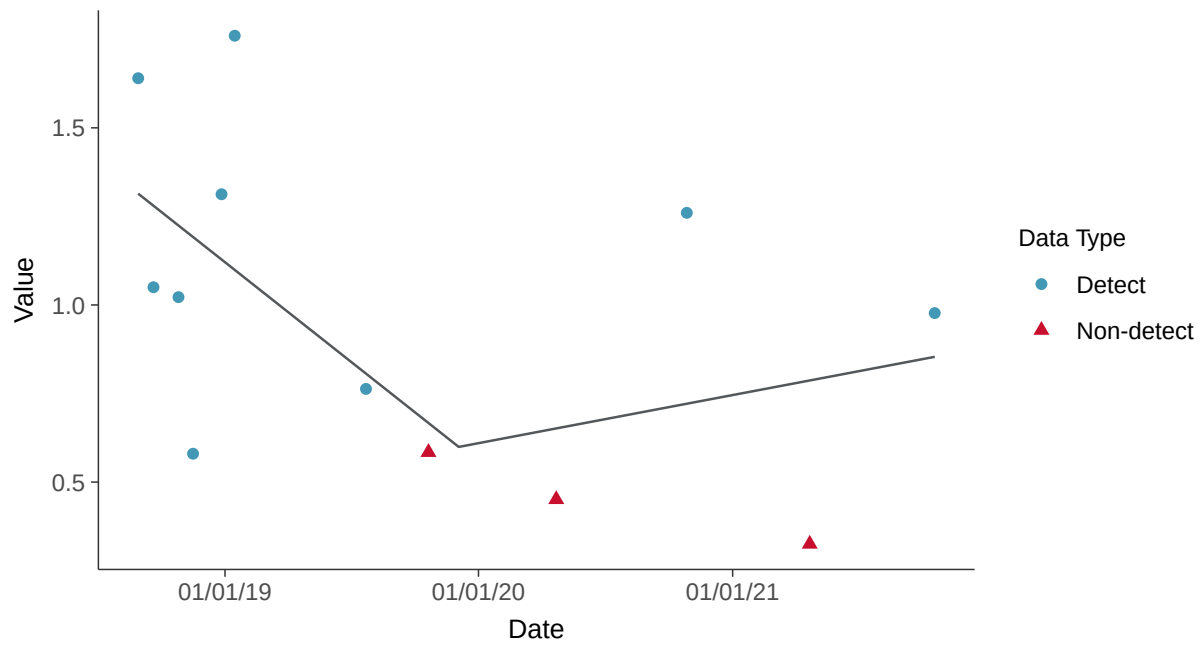
Trend Regression: Lognormal MLE

Radium-226+228, MW-15 (pci/l)



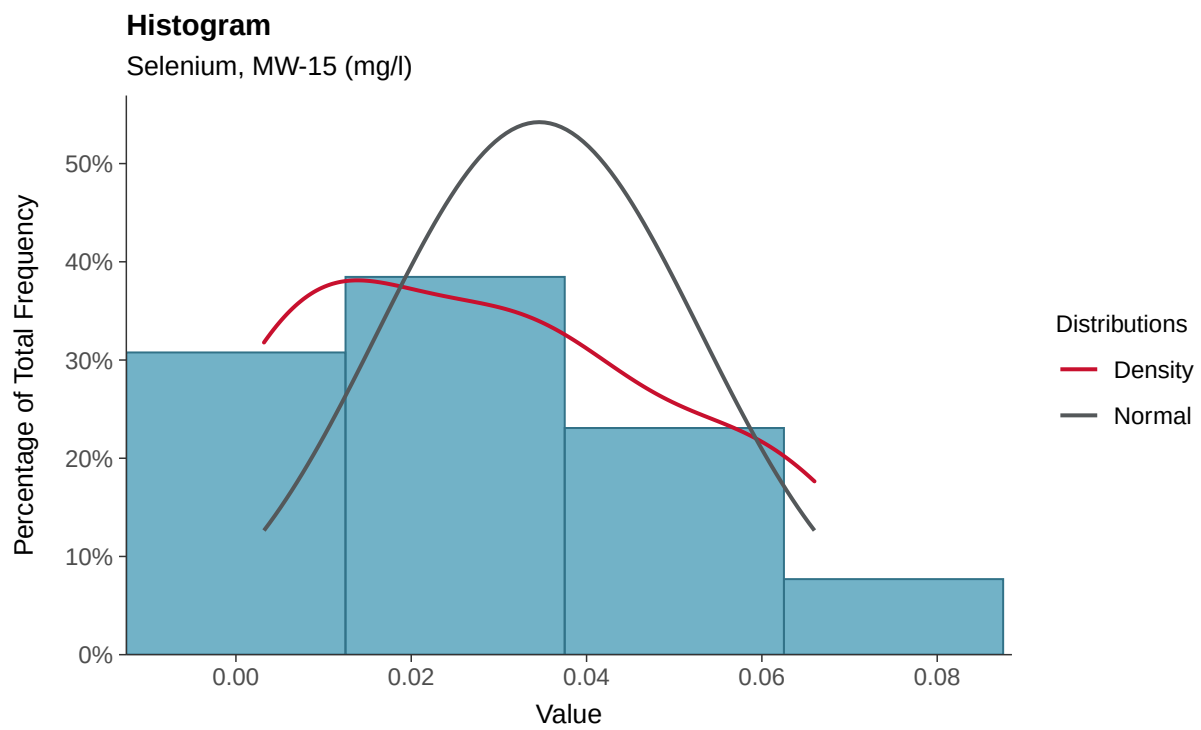
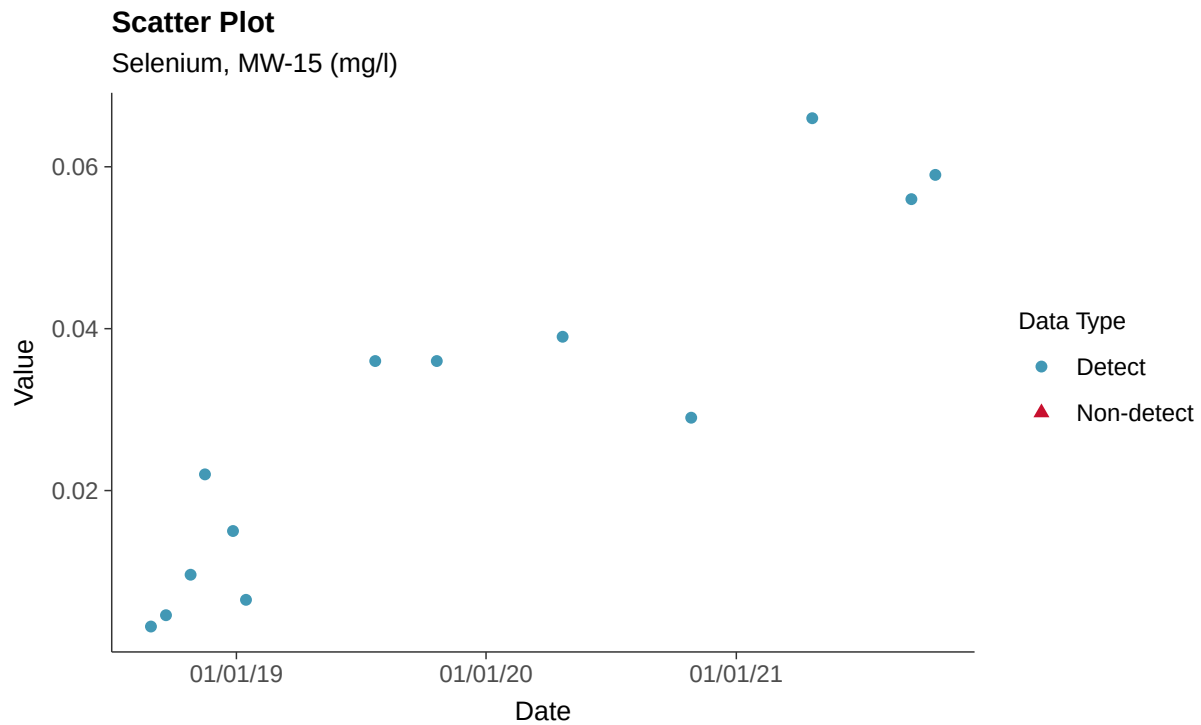
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-15 (pci/l)



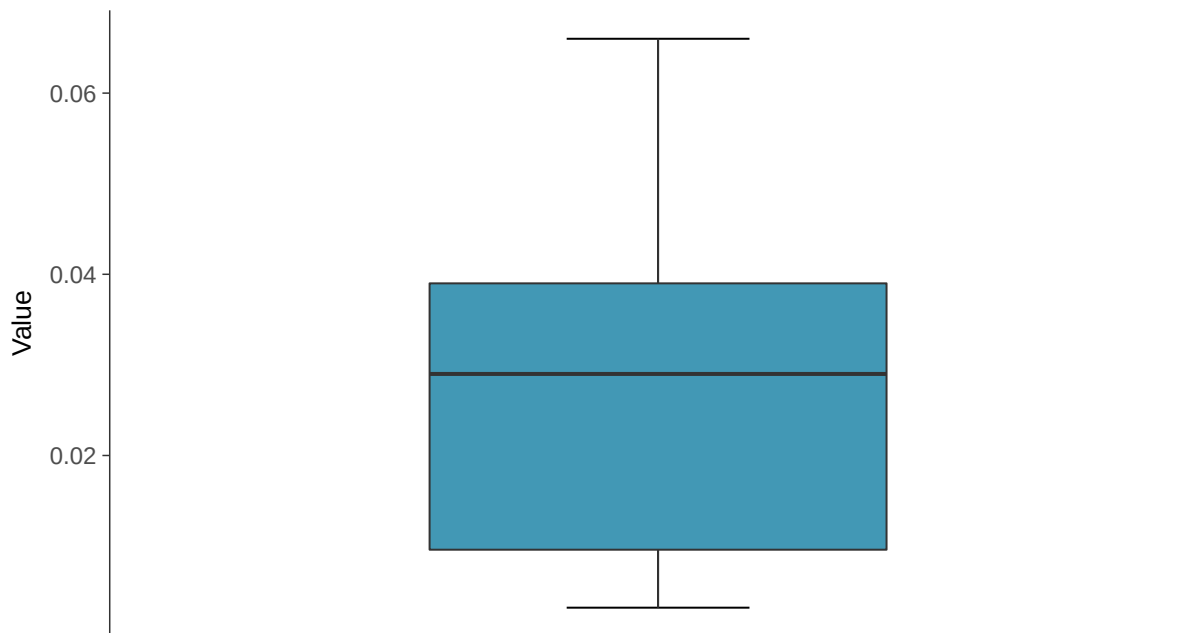
Appendix IV: Selenium, MW-15

ID: 1_2_129



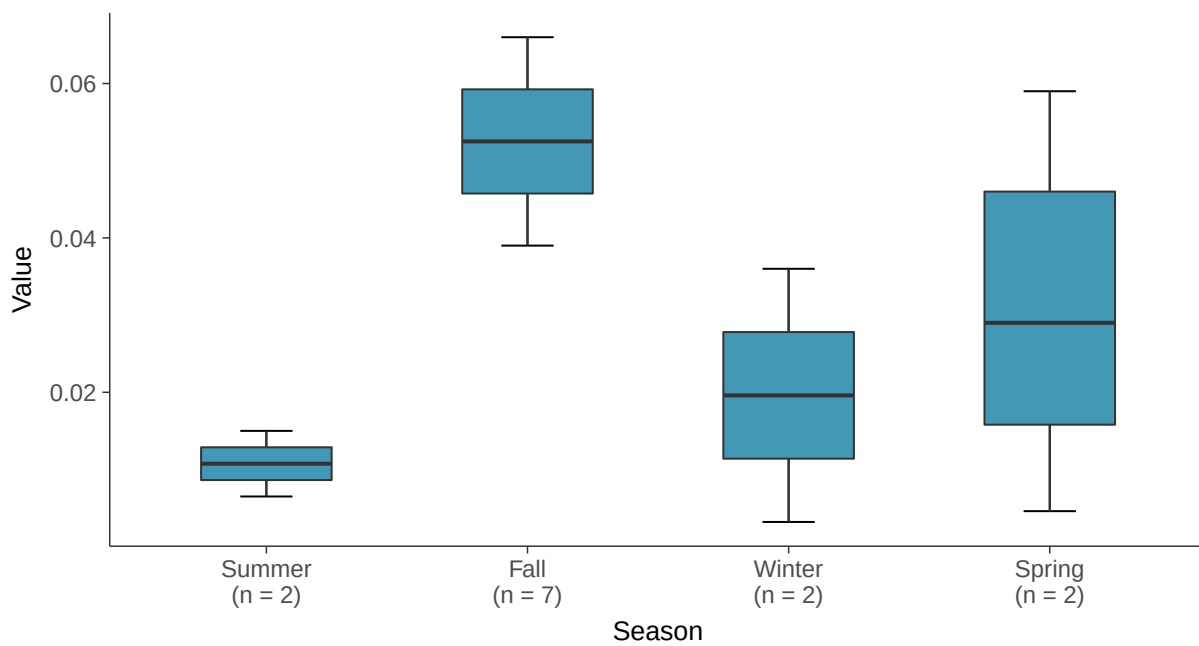
Boxplot

Selenium, MW-15 (mg/l)



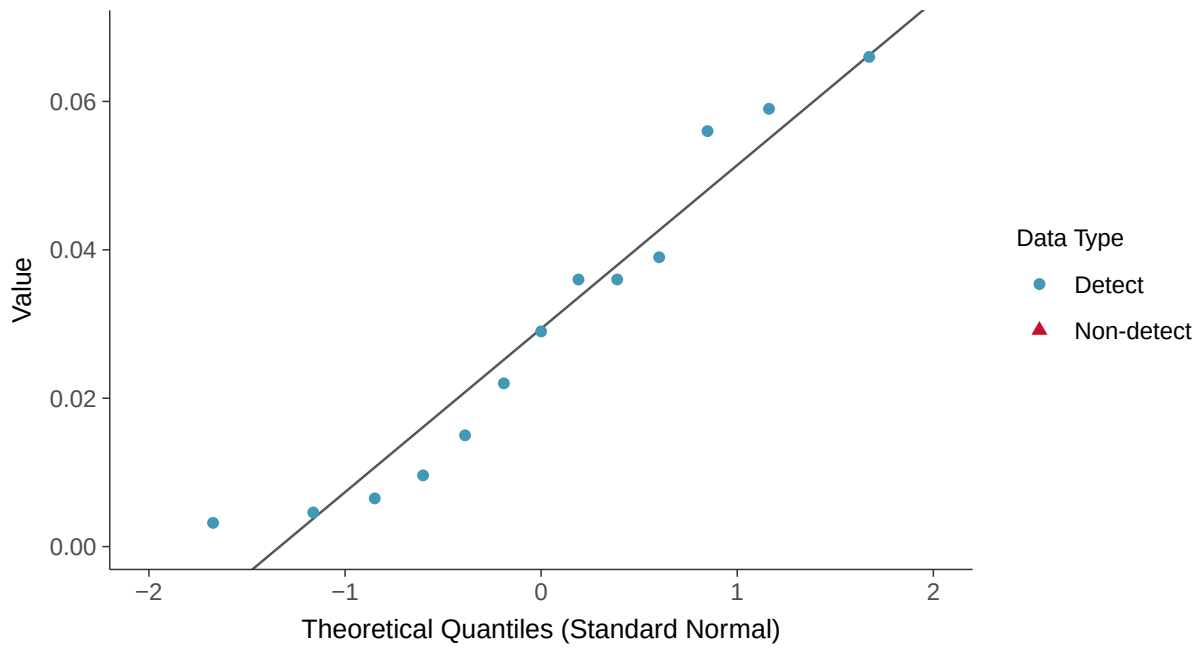
Boxplot by Season

Selenium, MW-15 (mg/l)



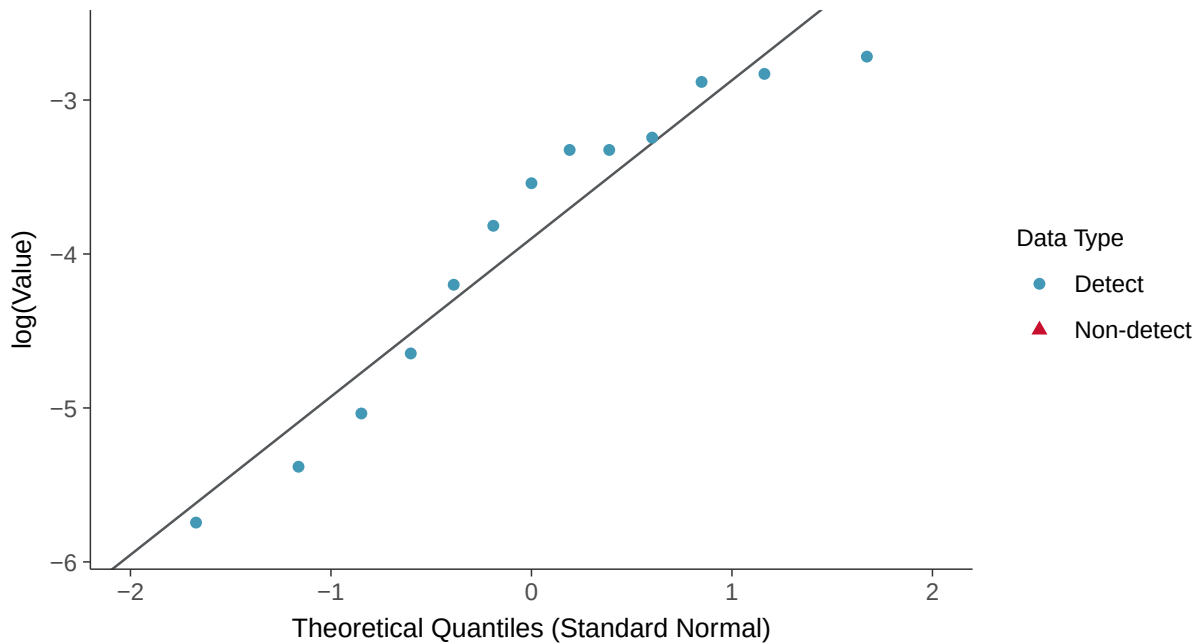
Normal Q-Q plot

Selenium, MW-15 (mg/l)

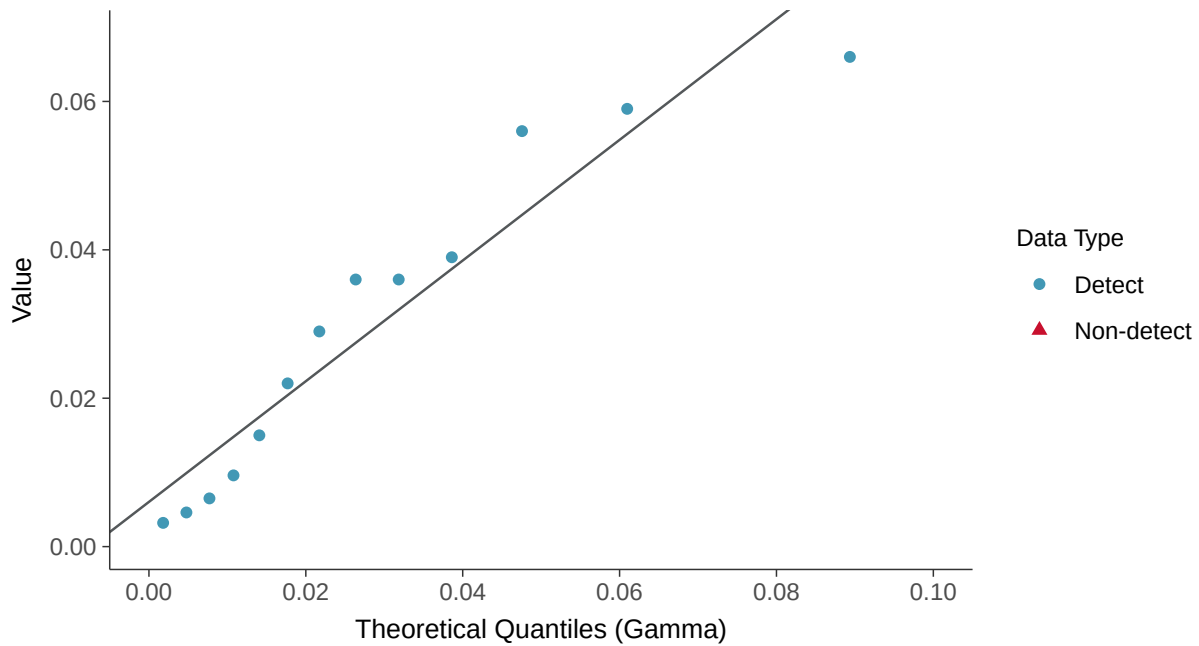


Lognormal Q-Q plot

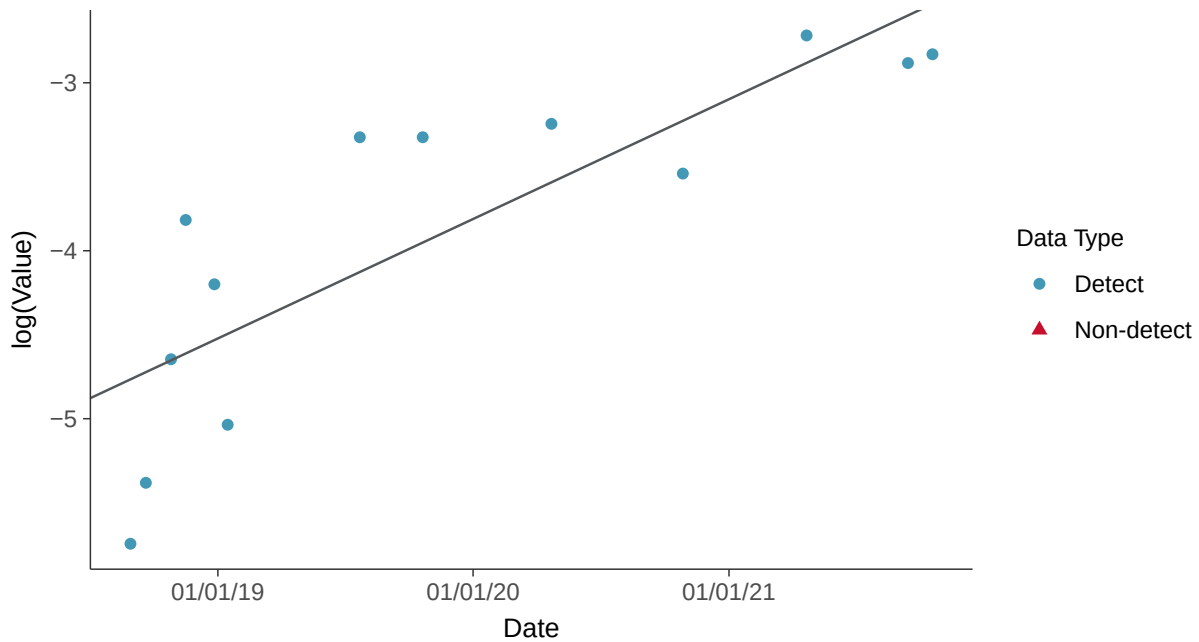
Selenium, MW-15 (mg/l)



Gamma Q-Q plot
Selenium, MW-15 (mg/l)

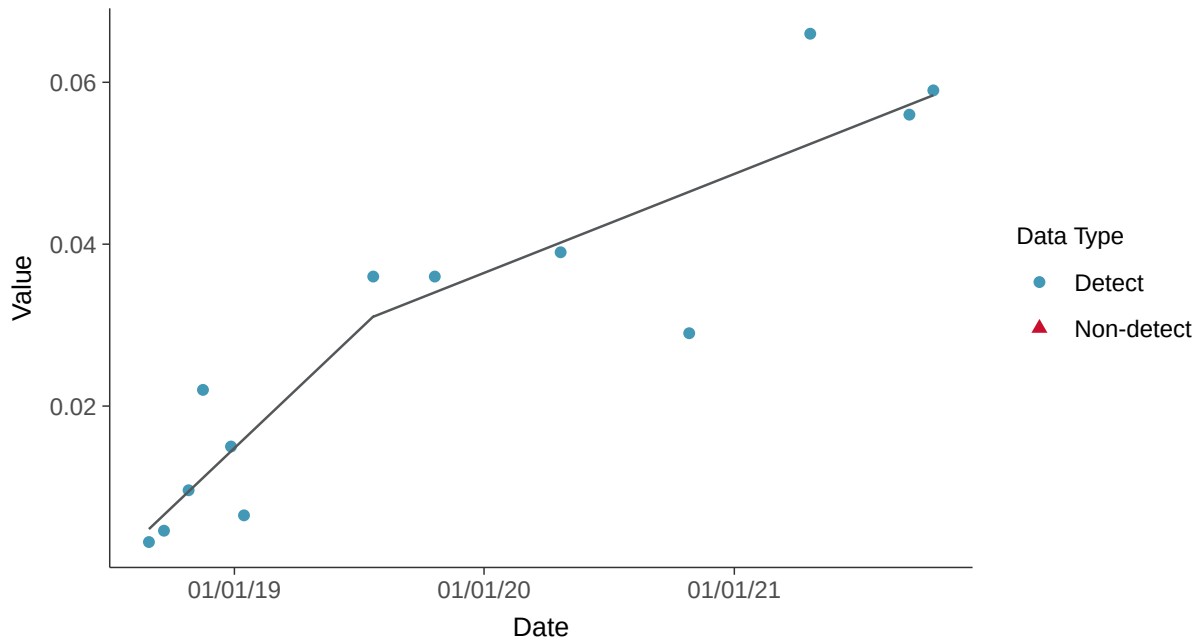


Trend Regression: Lognormal MLE
Selenium, MW-15 (mg/l)



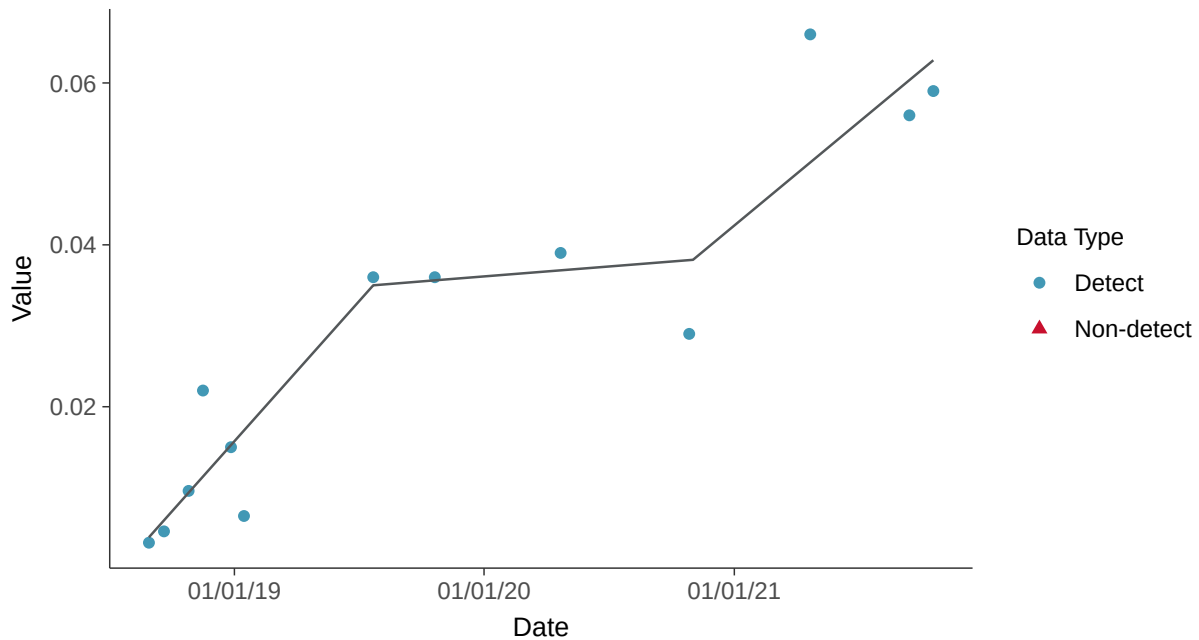
Trend Regression: Piecewise Linear-Linear

Selenium, MW-15 (mg/l)



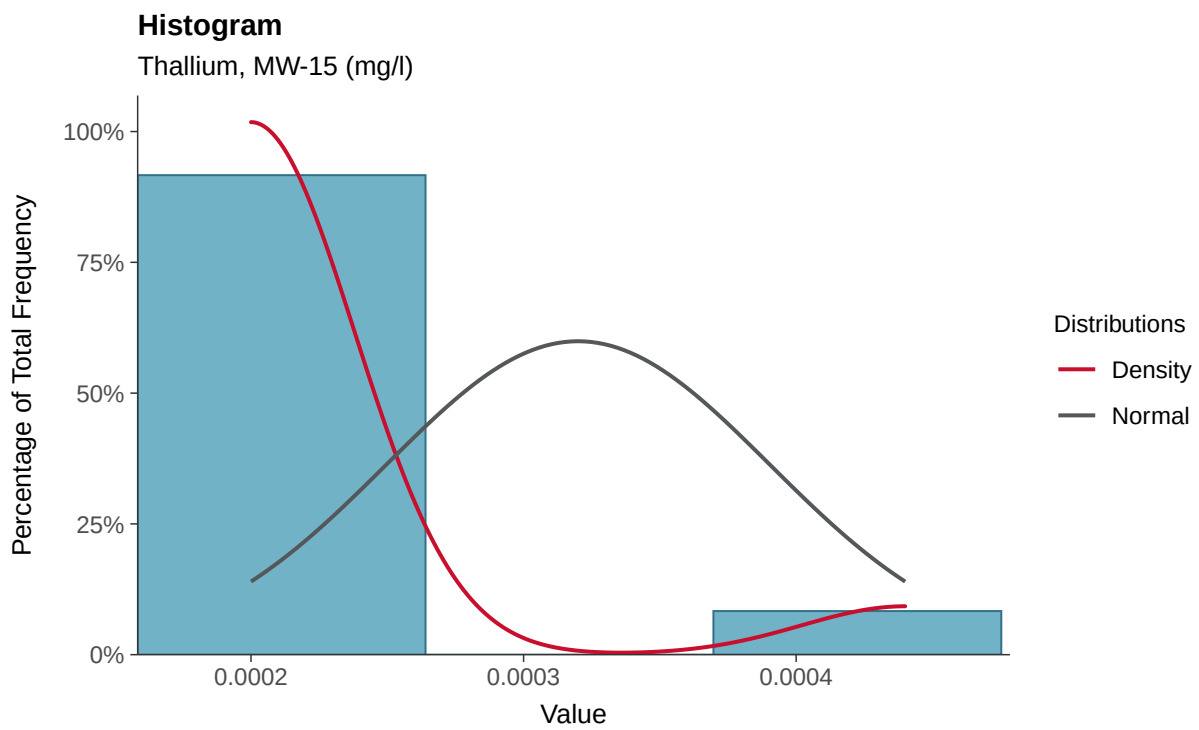
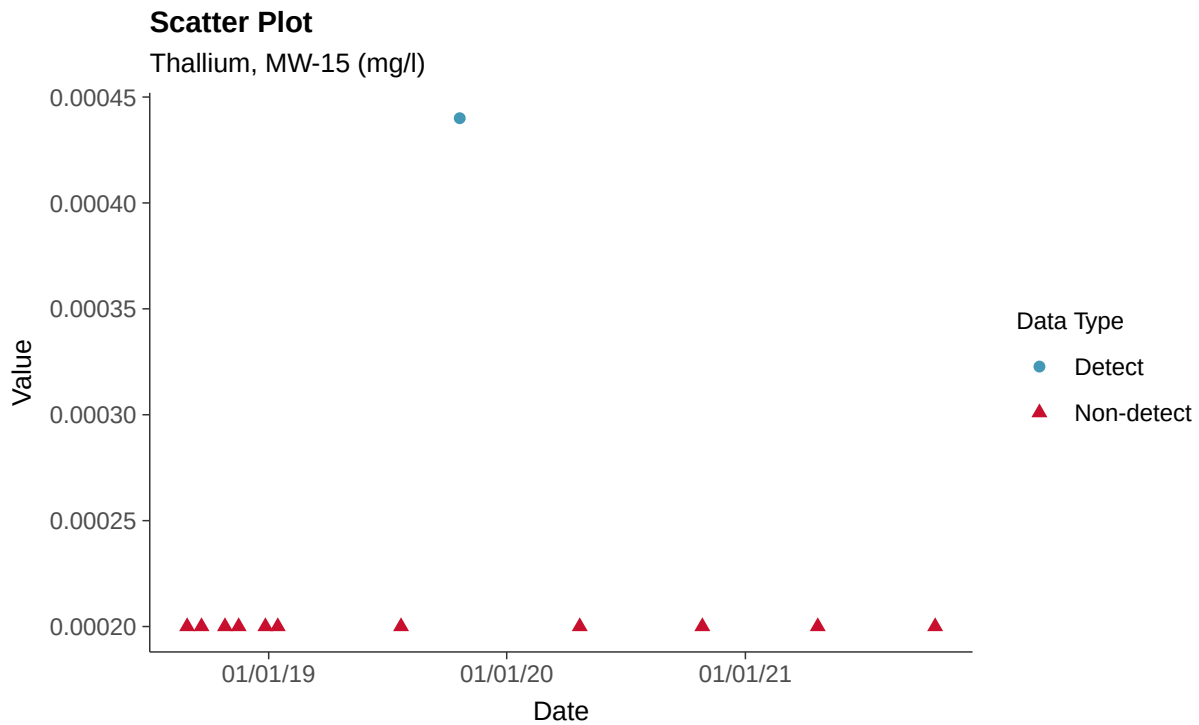
Trend Regression: Piecewise Linear-Linear-Linear

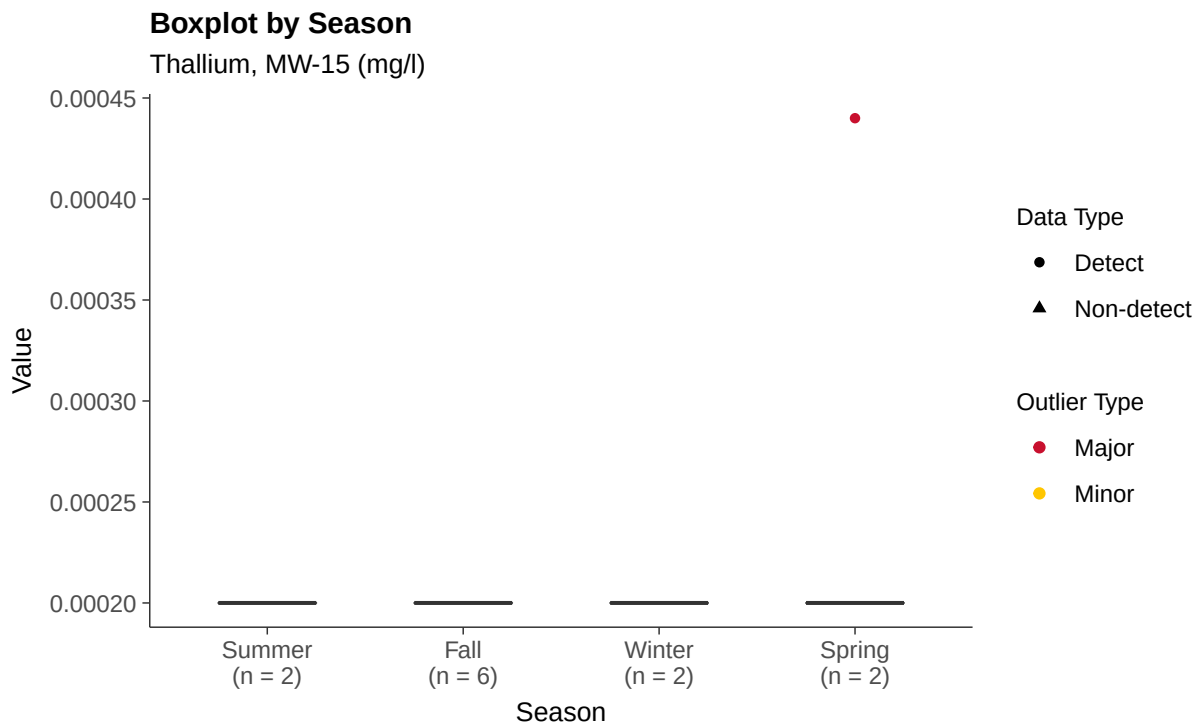
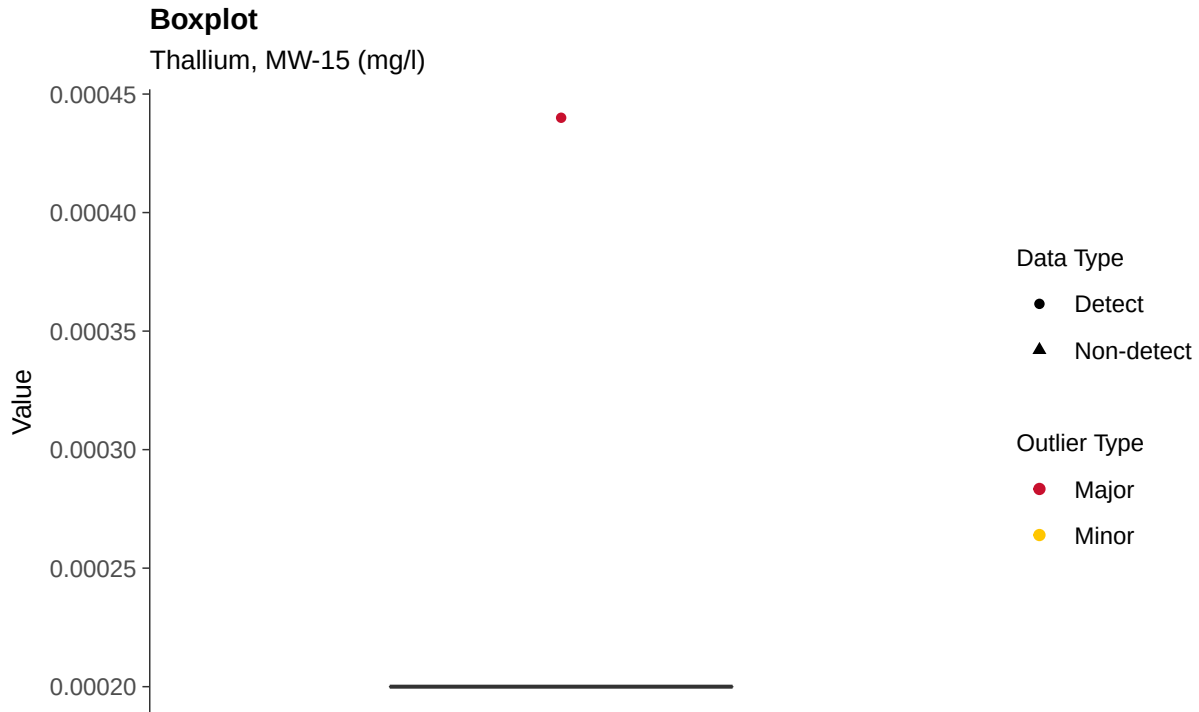
Selenium, MW-15 (mg/l)

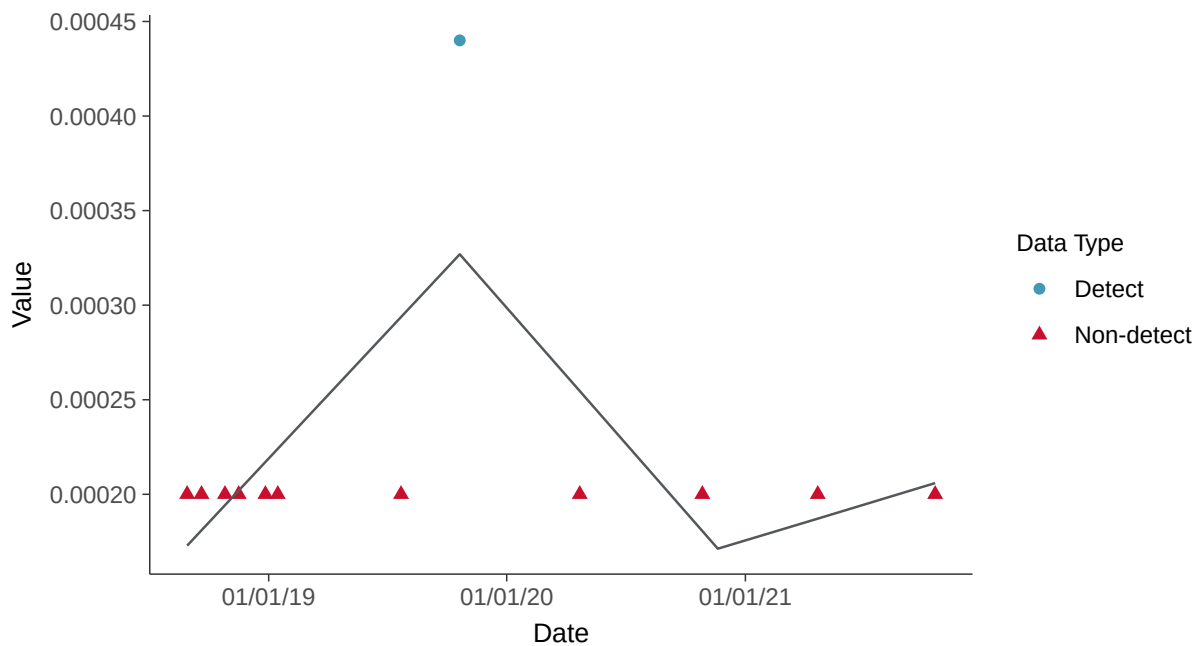


Appendix IV: Thallium, MW-15

ID: 1_2_134

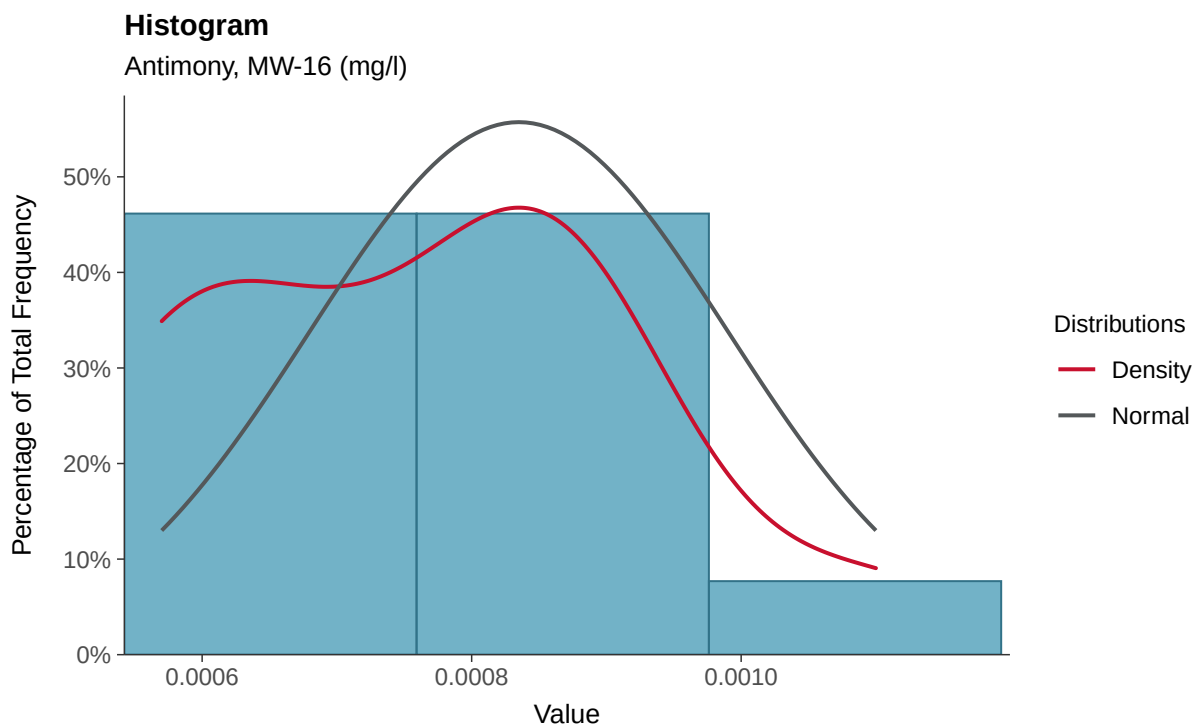
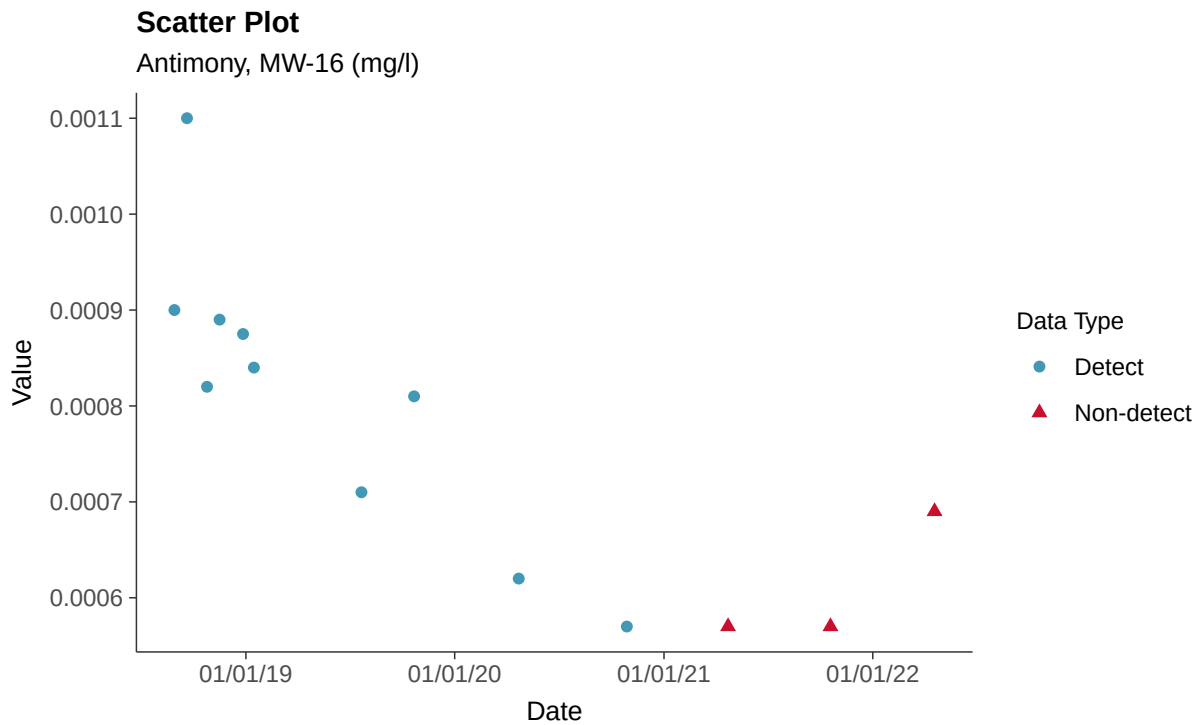






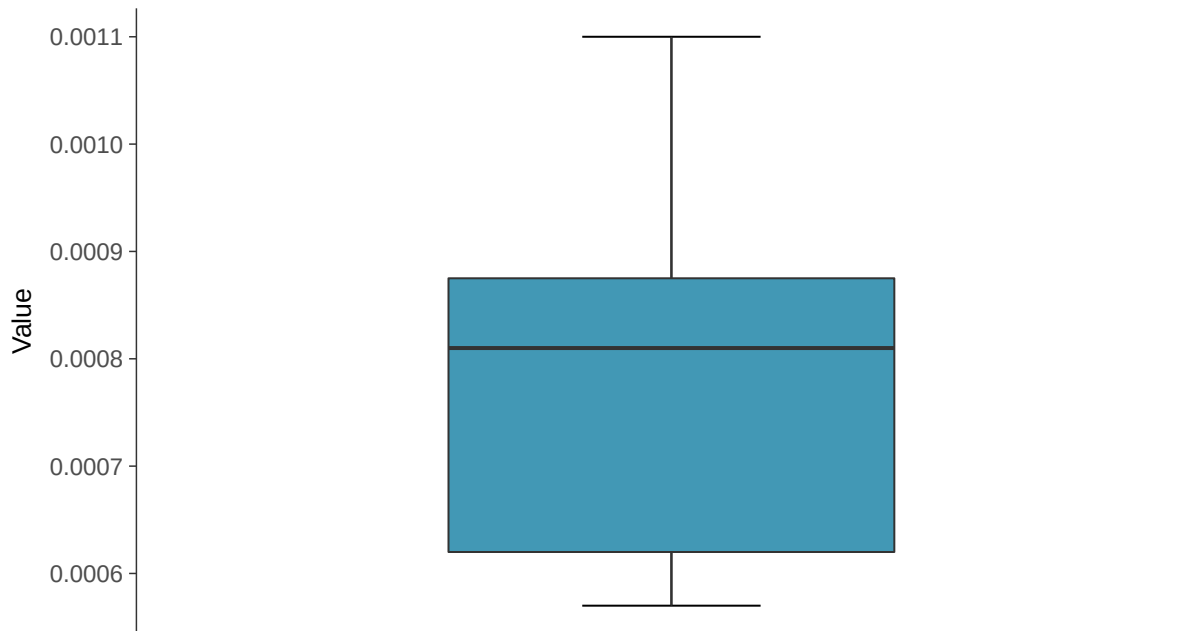
Appendix IV: Antimony, MW-16

ID: 2_2_104



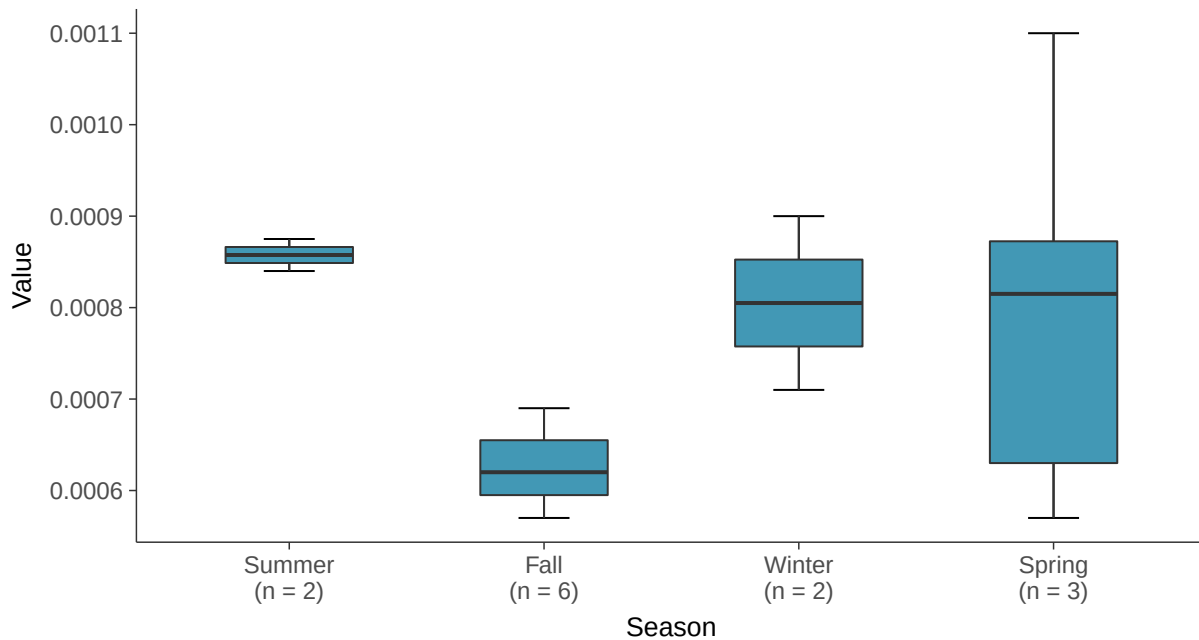
Boxplot

Antimony, MW-16 (mg/l)



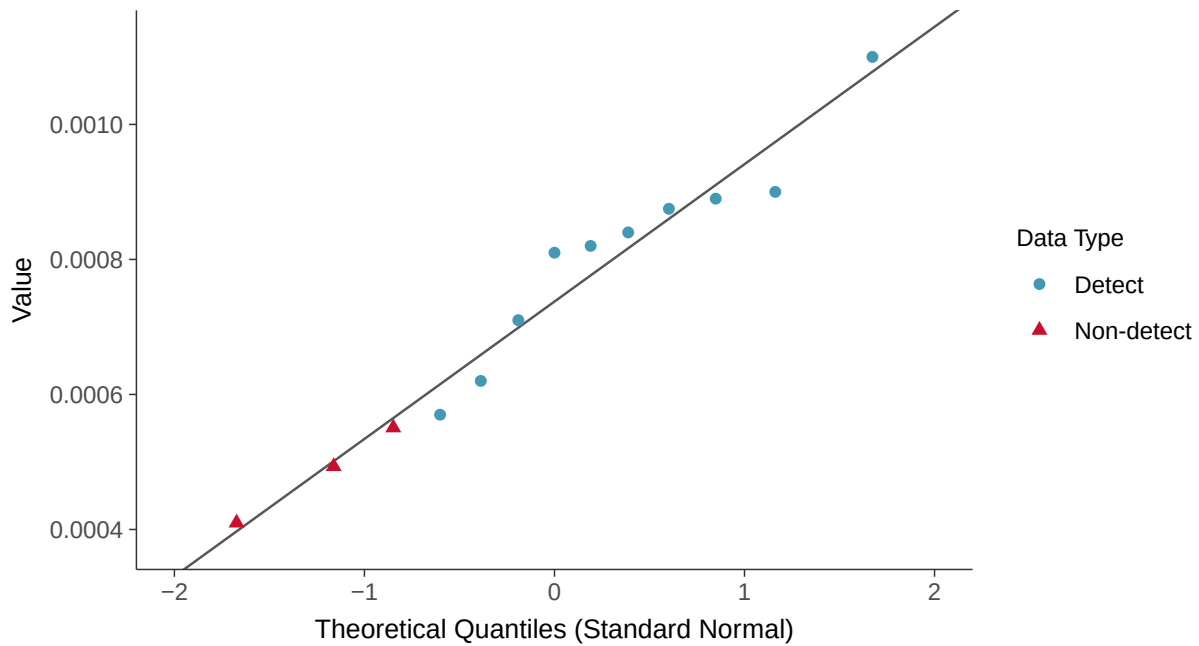
Boxplot by Season

Antimony, MW-16 (mg/l)



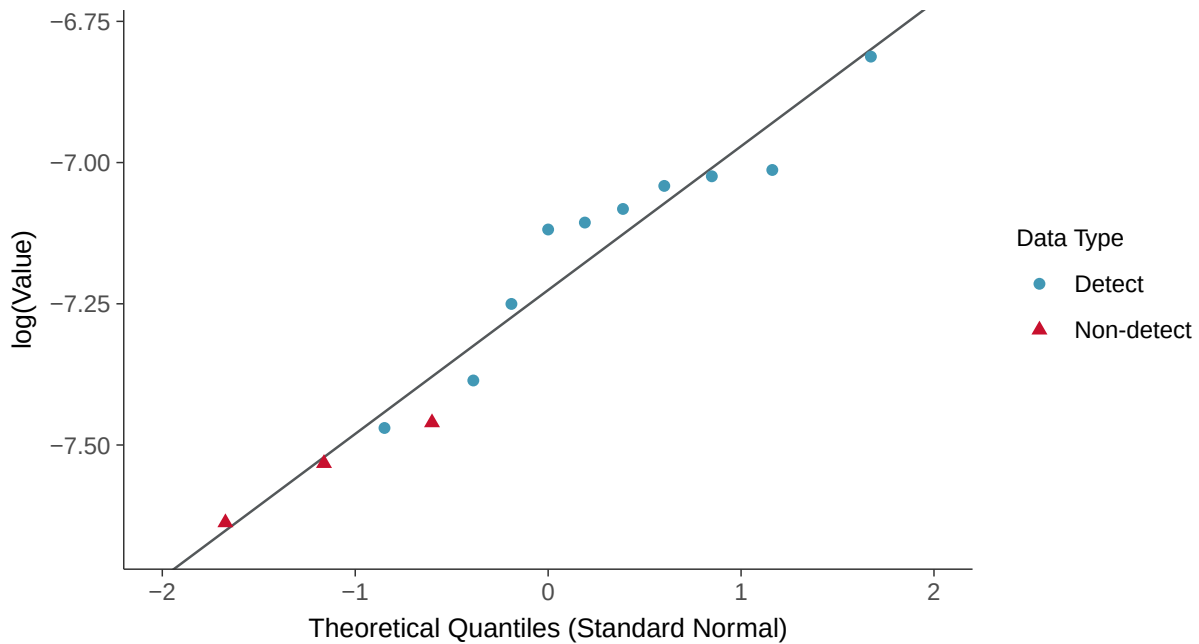
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-16 (mg/l)



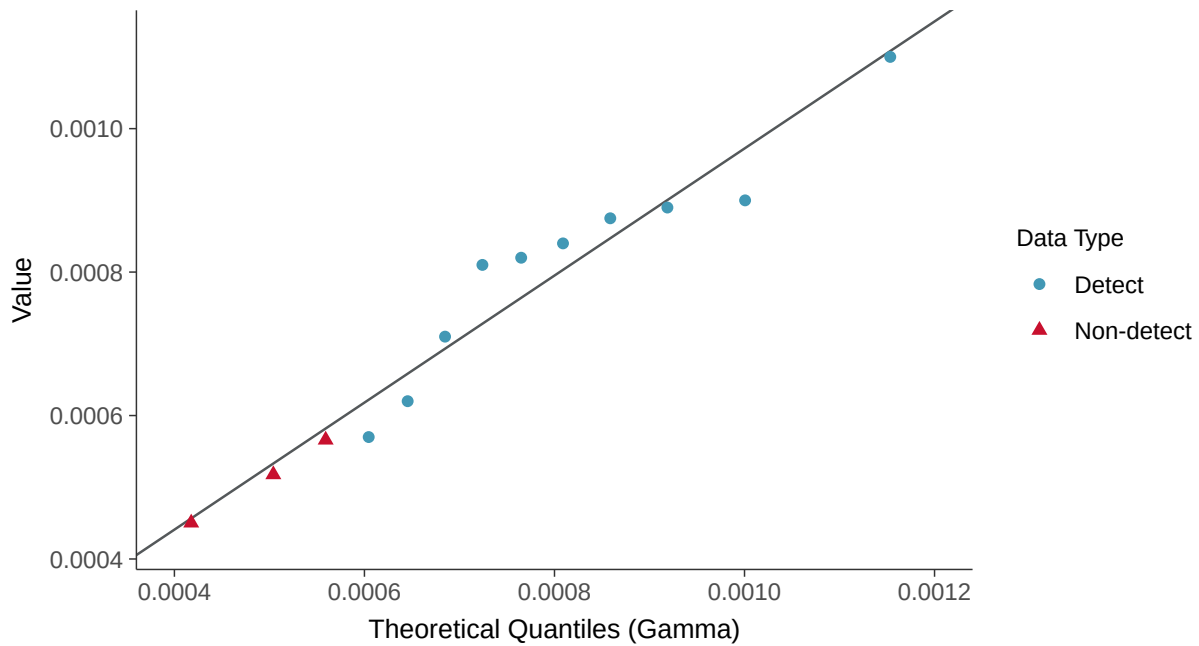
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-16 (mg/l)



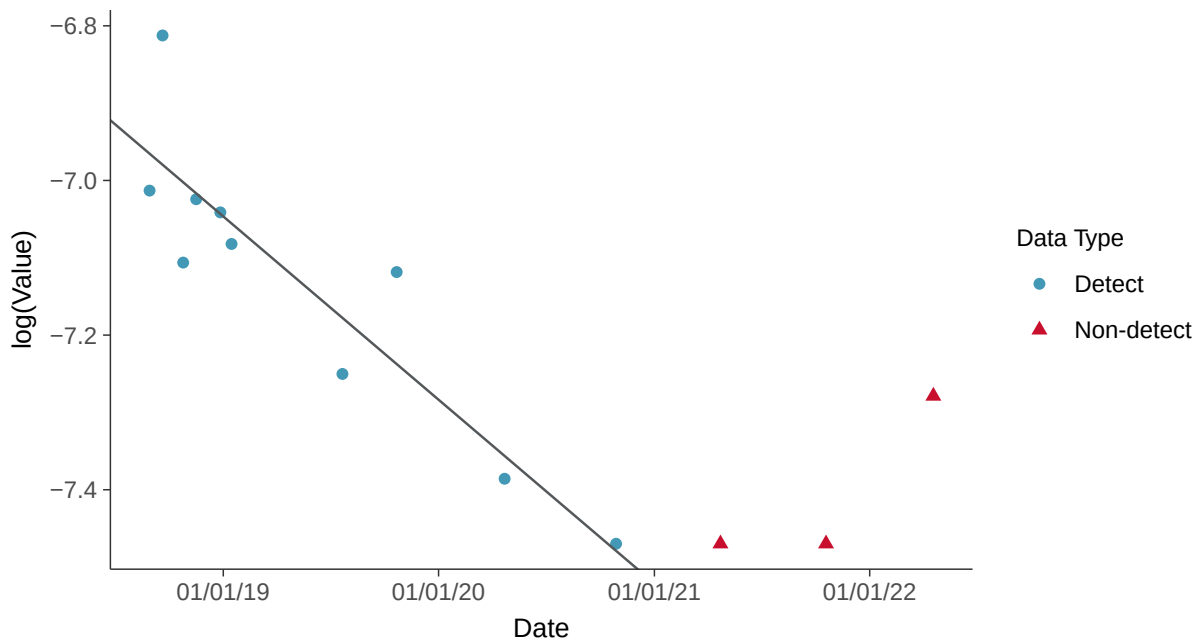
Gamma Q-Q plot using ROS Imputed Estimates

Antimony, MW-16 (mg/l)



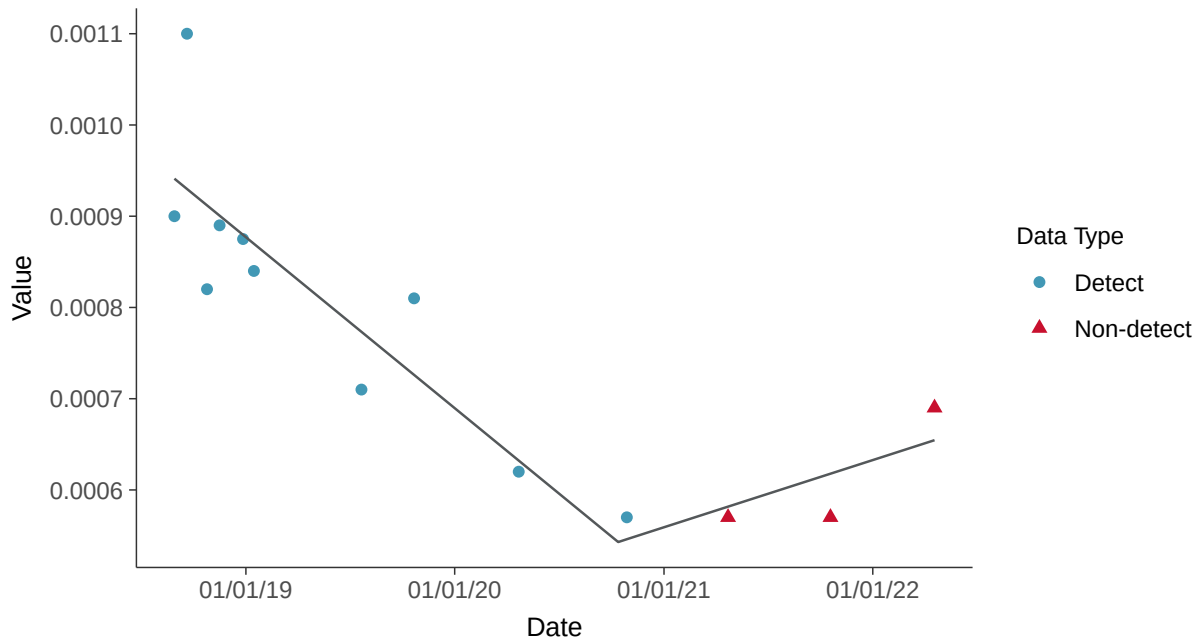
Trend Regression: Lognormal MLE

Antimony, MW-16 (mg/l)



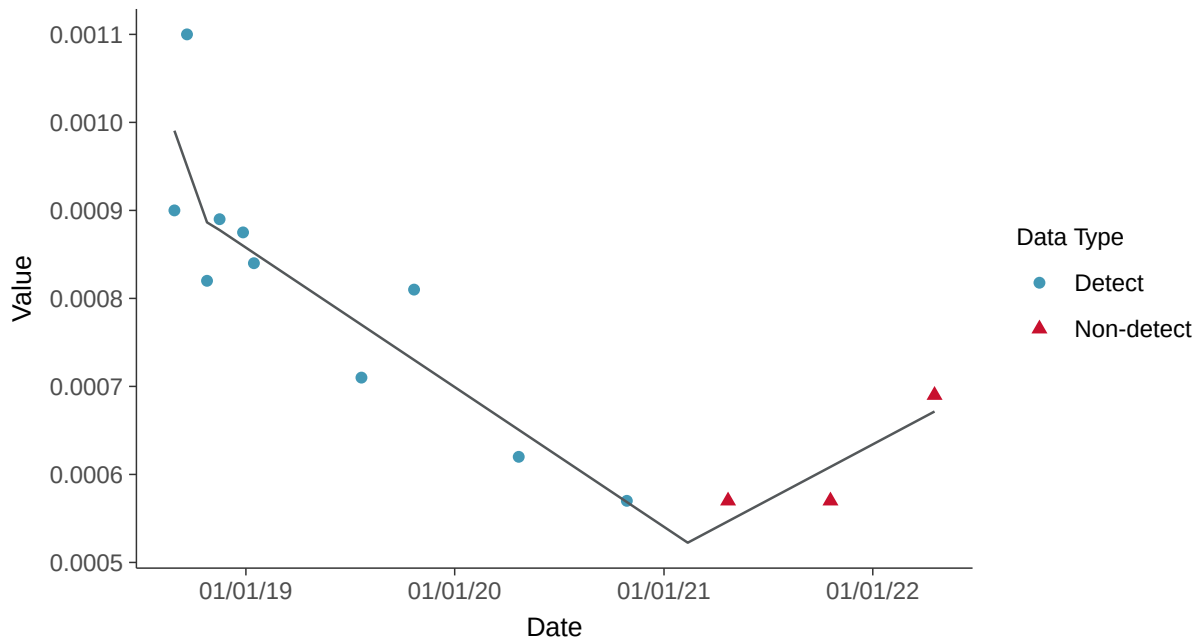
Trend Regression: Piecewise Linear-Linear

Antimony, MW-16 (mg/l)



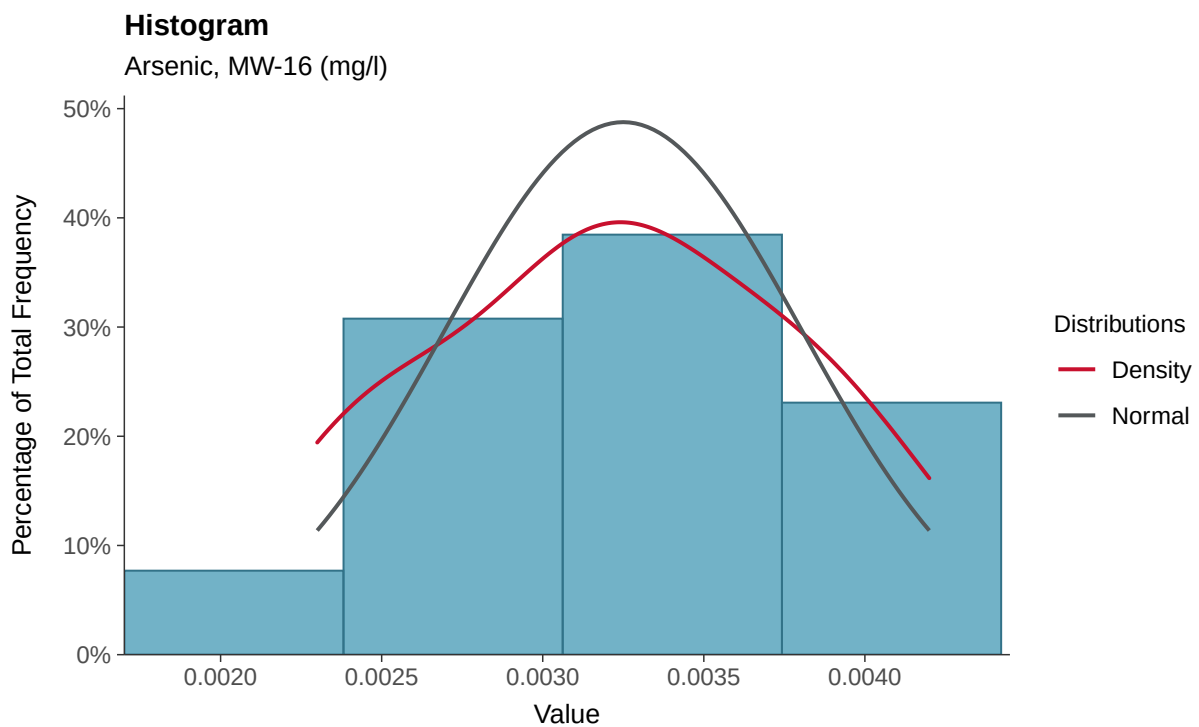
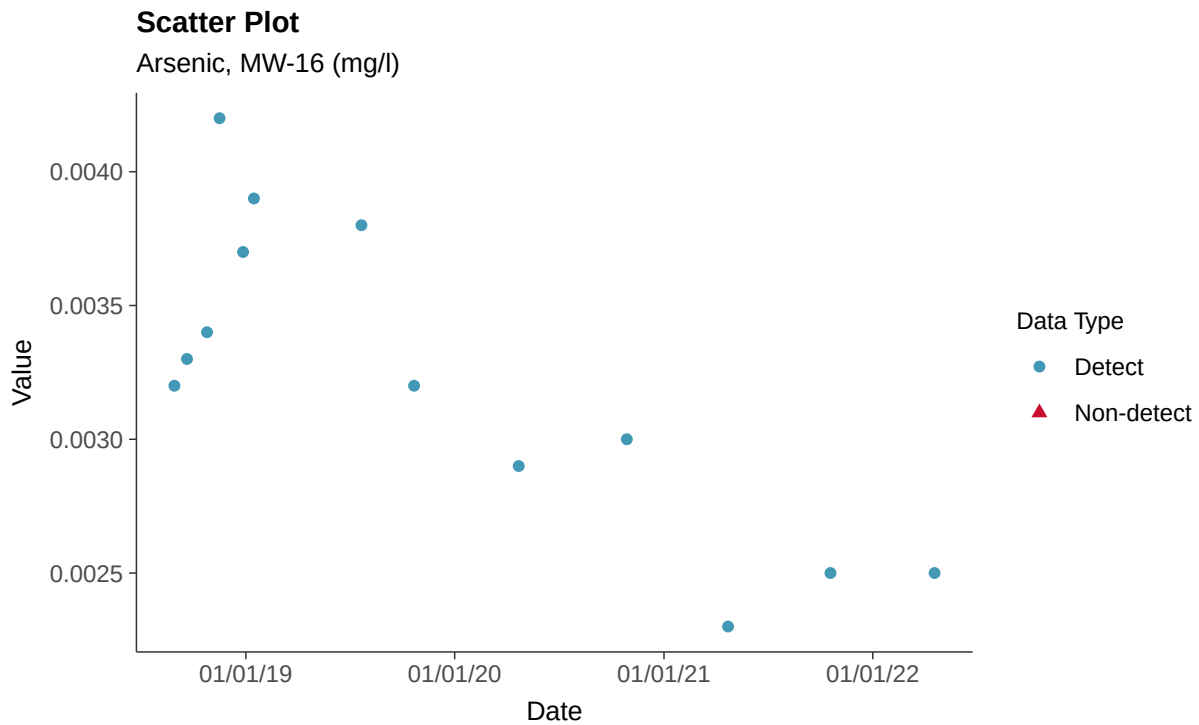
Trend Regression: Piecewise Linear-Linear-Linear

Antimony, MW-16 (mg/l)



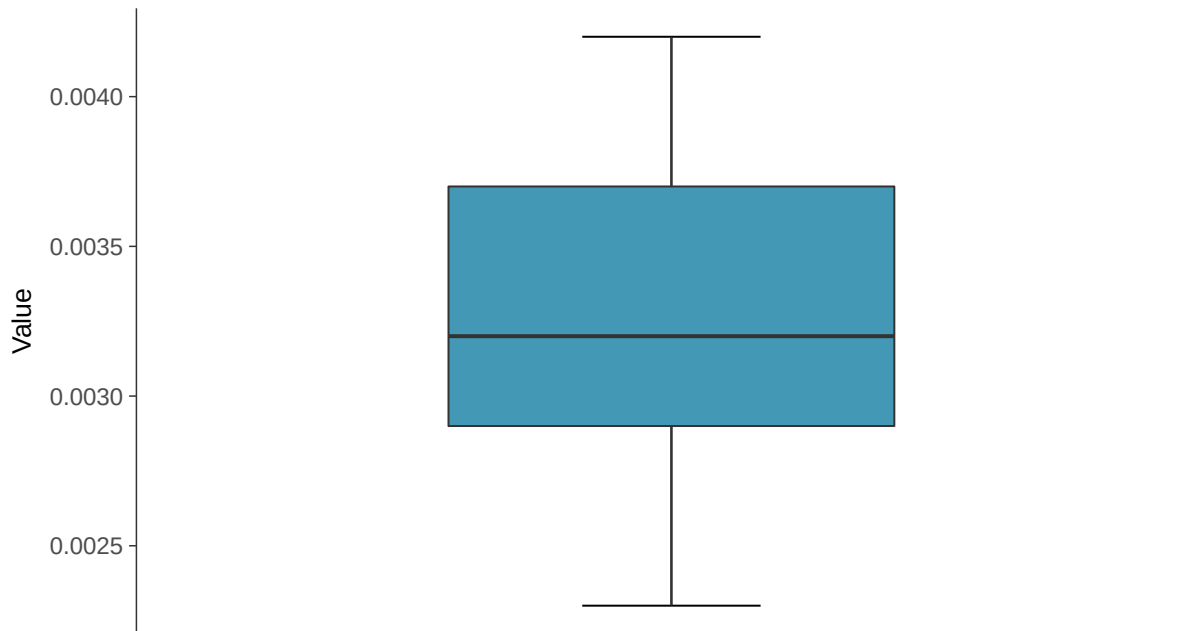
Appendix IV: Arsenic, MW-16

ID: 2_2_105



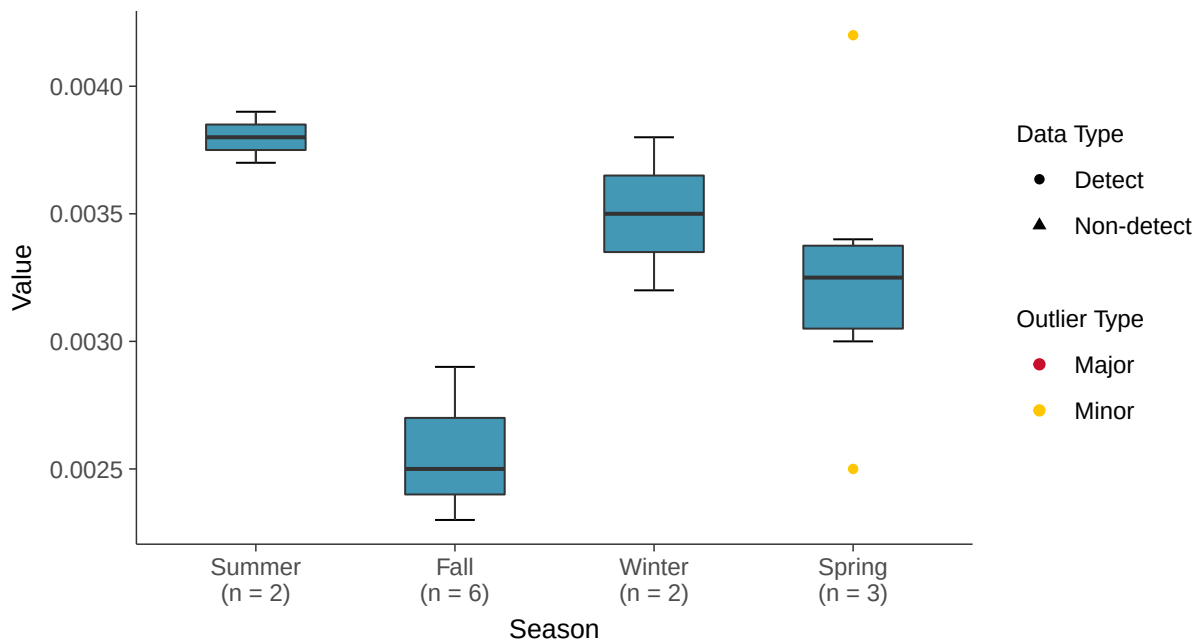
Boxplot

Arsenic, MW-16 (mg/l)



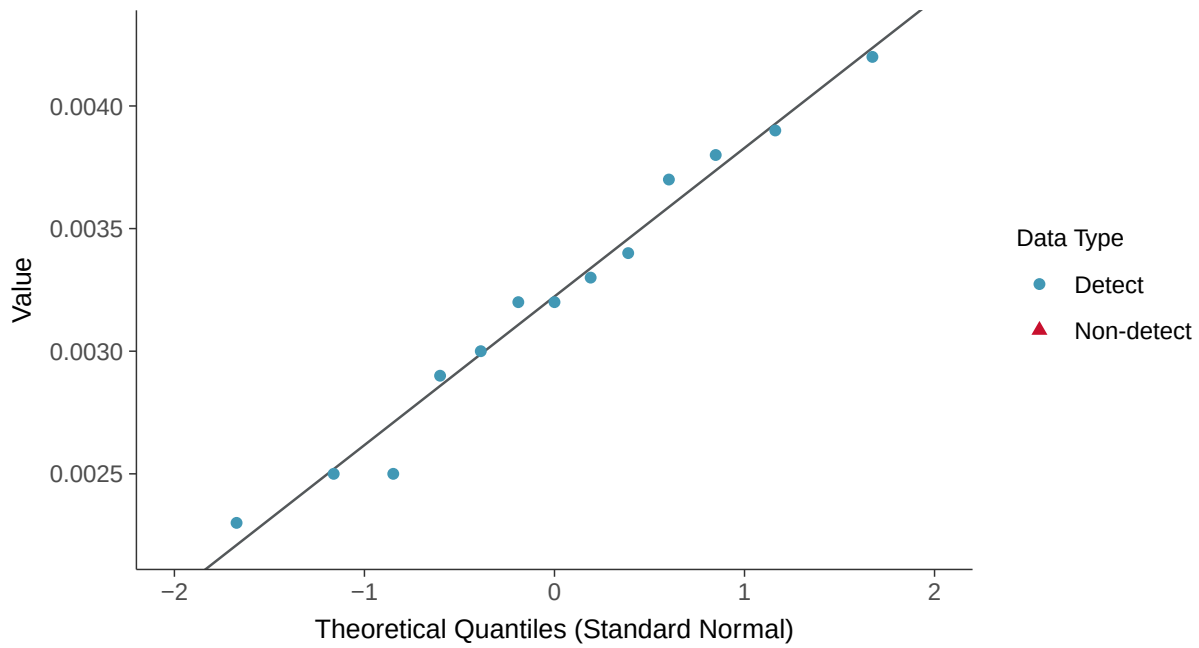
Boxplot by Season

Arsenic, MW-16 (mg/l)



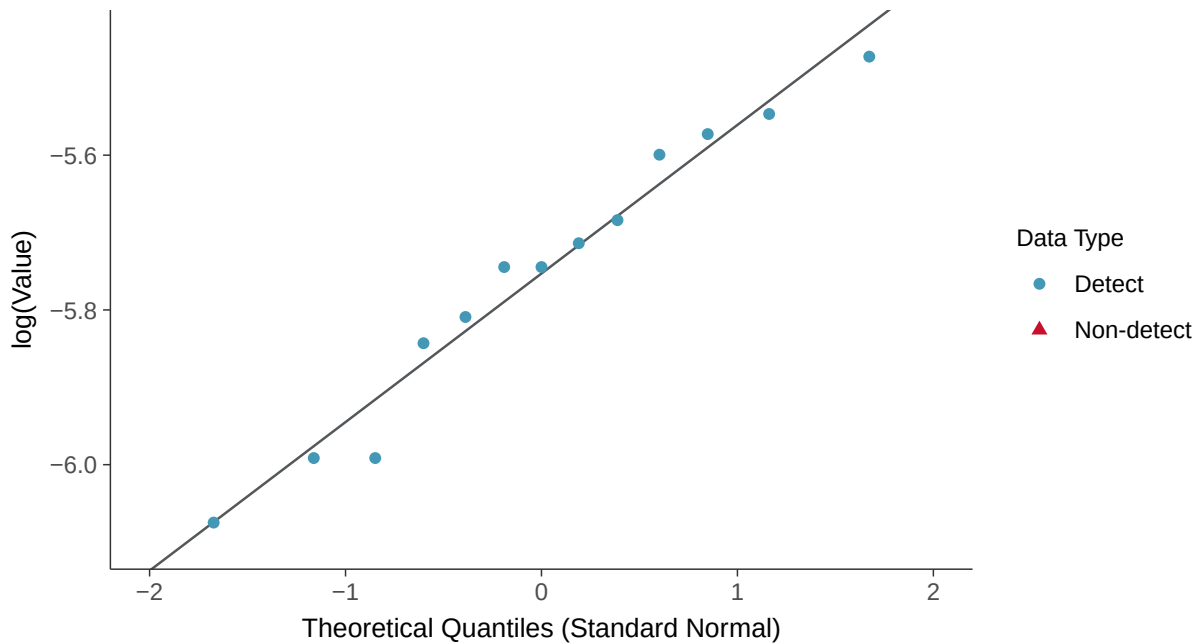
Normal Q-Q plot

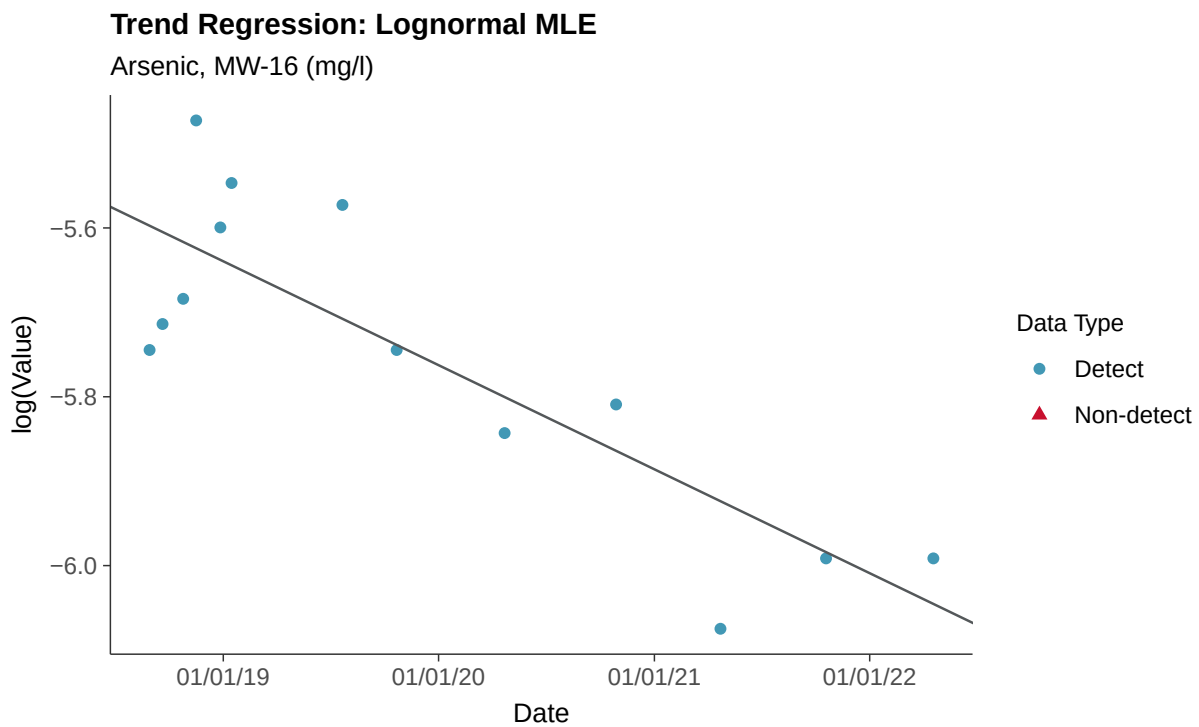
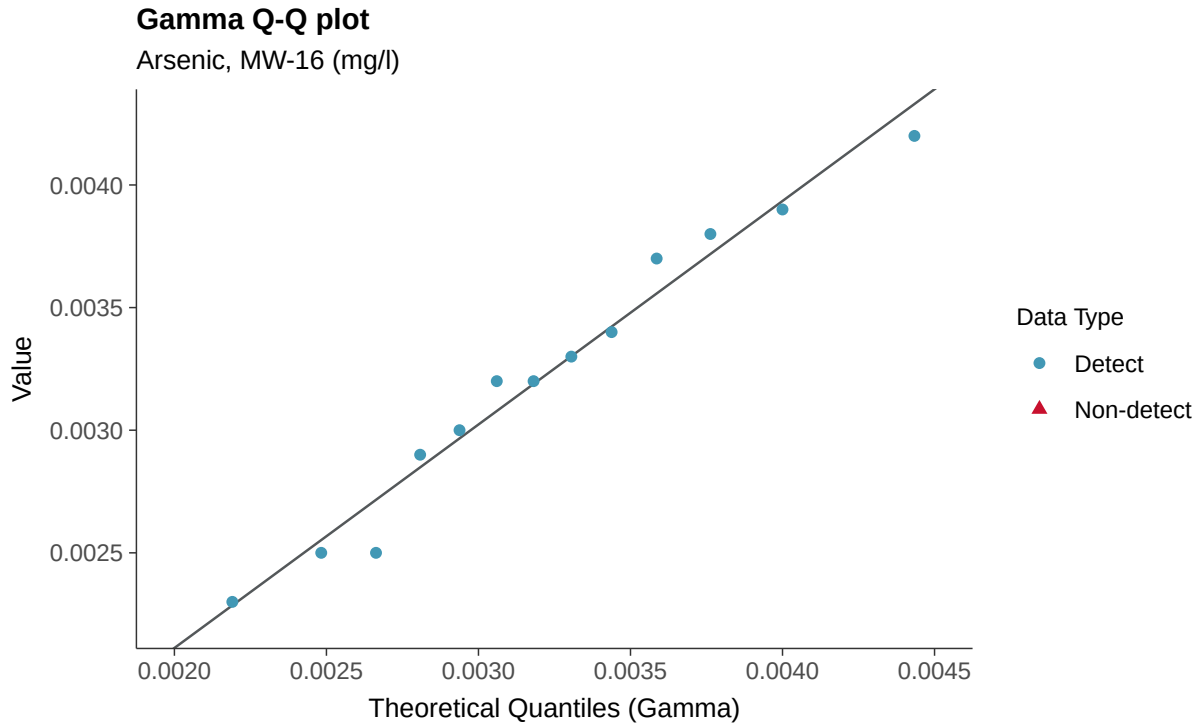
Arsenic, MW-16 (mg/l)



Lognormal Q-Q plot

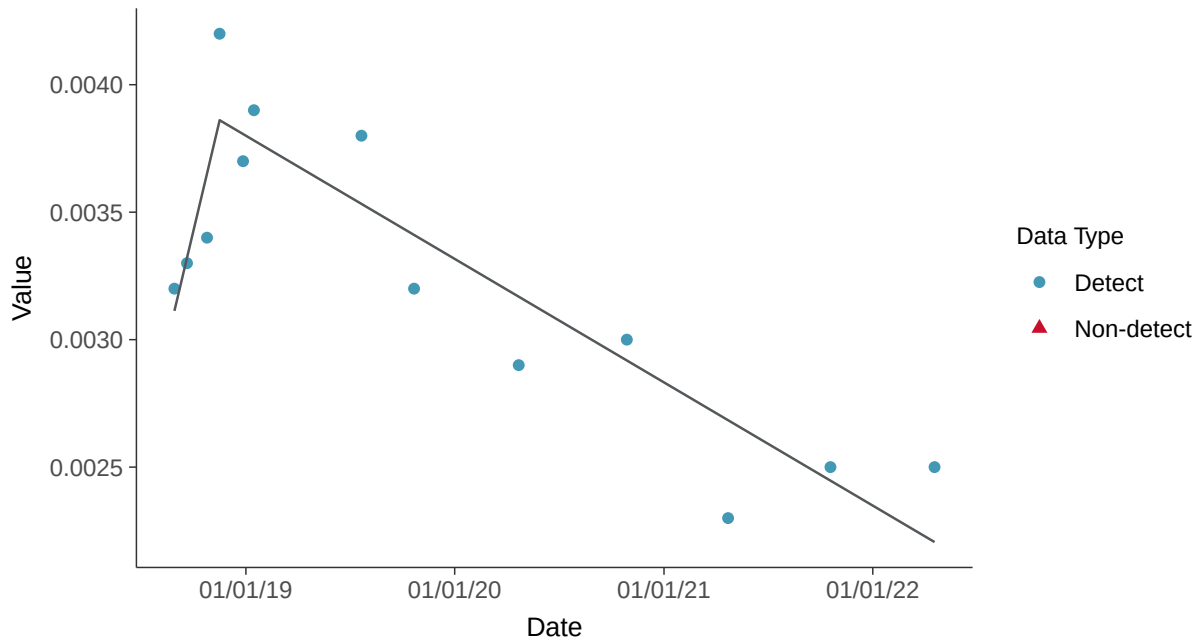
Arsenic, MW-16 (mg/l)





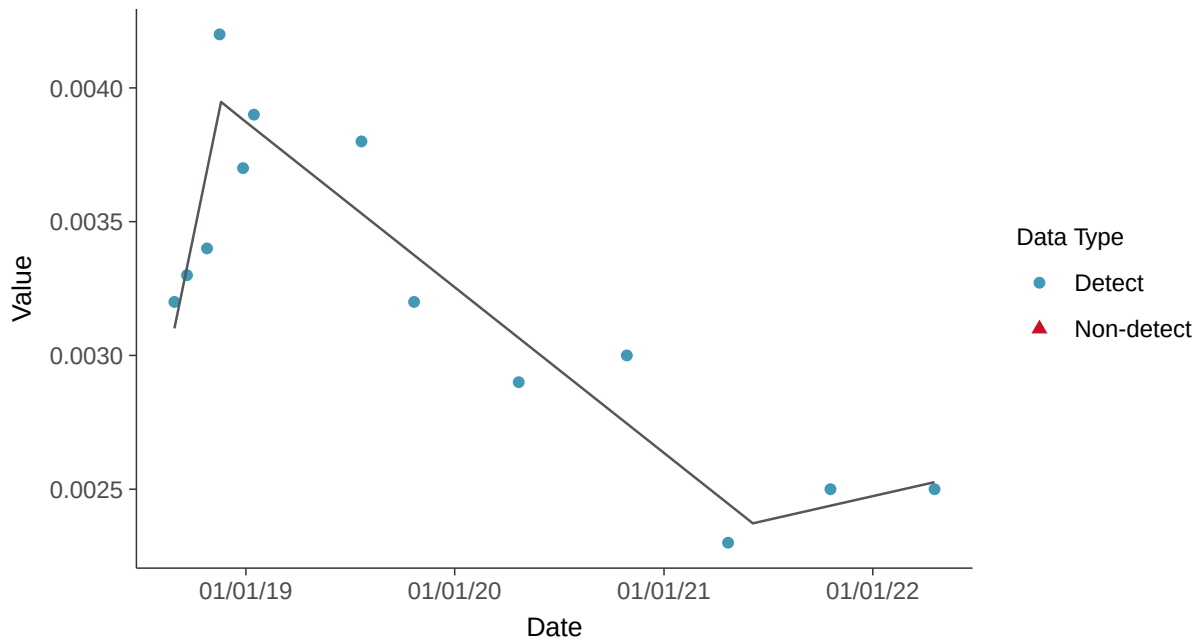
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-16 (mg/l)



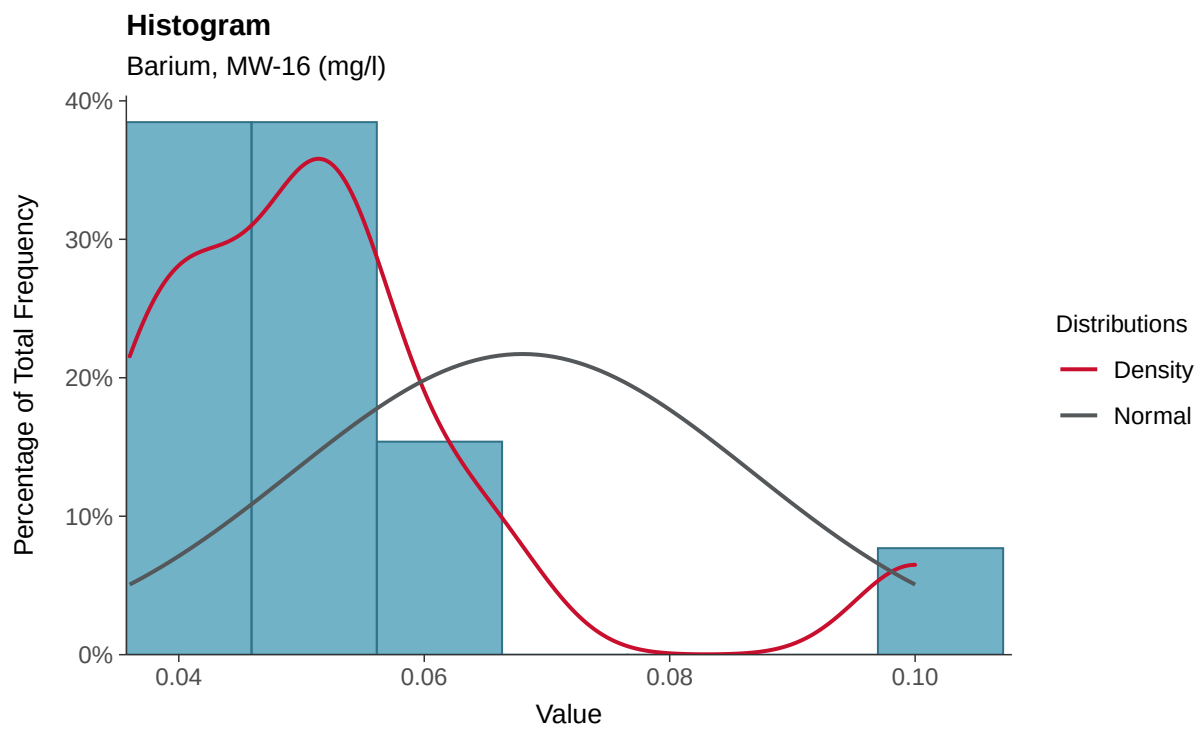
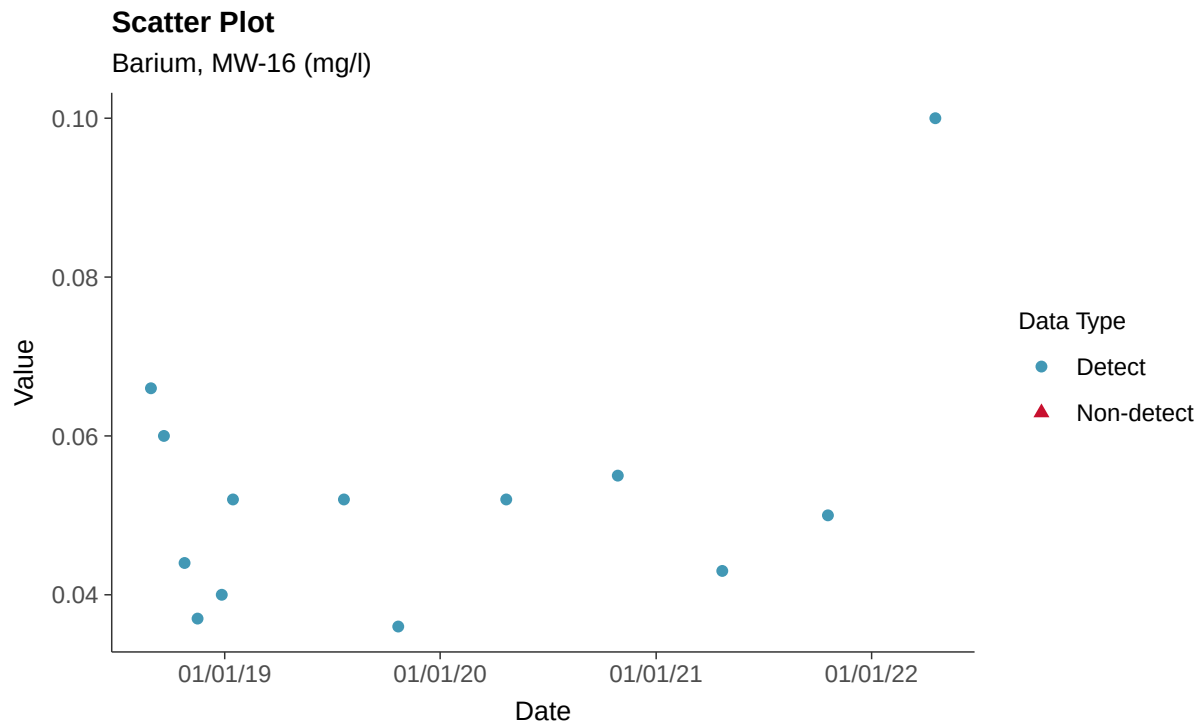
Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-16 (mg/l)



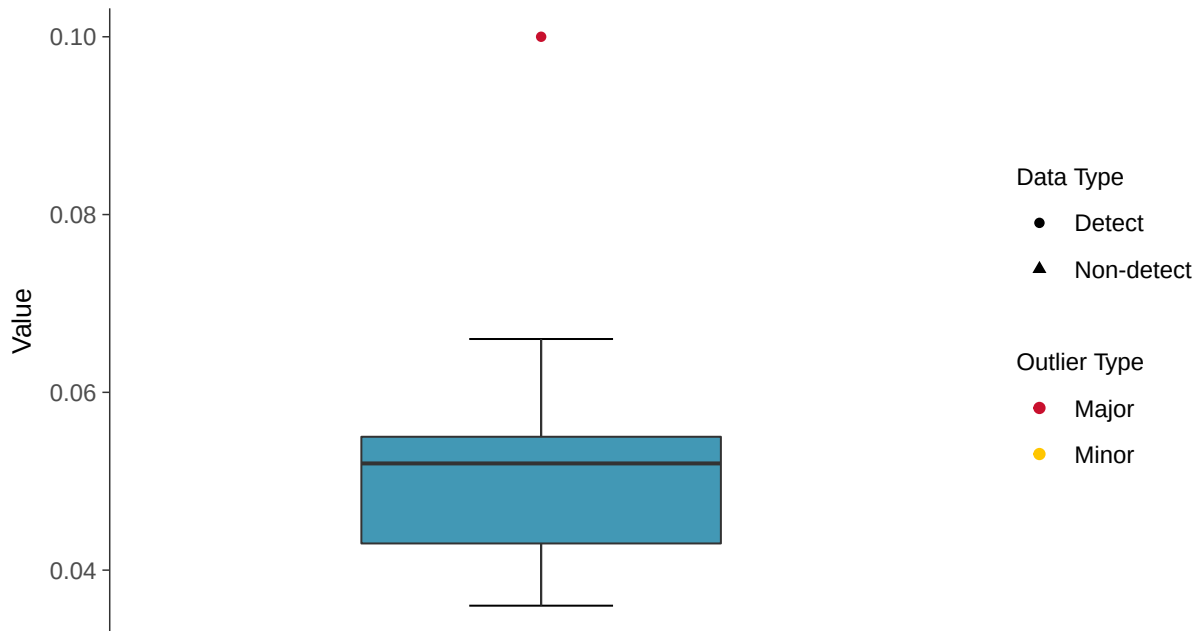
Appendix IV: Barium, MW-16

ID: 2_2_106



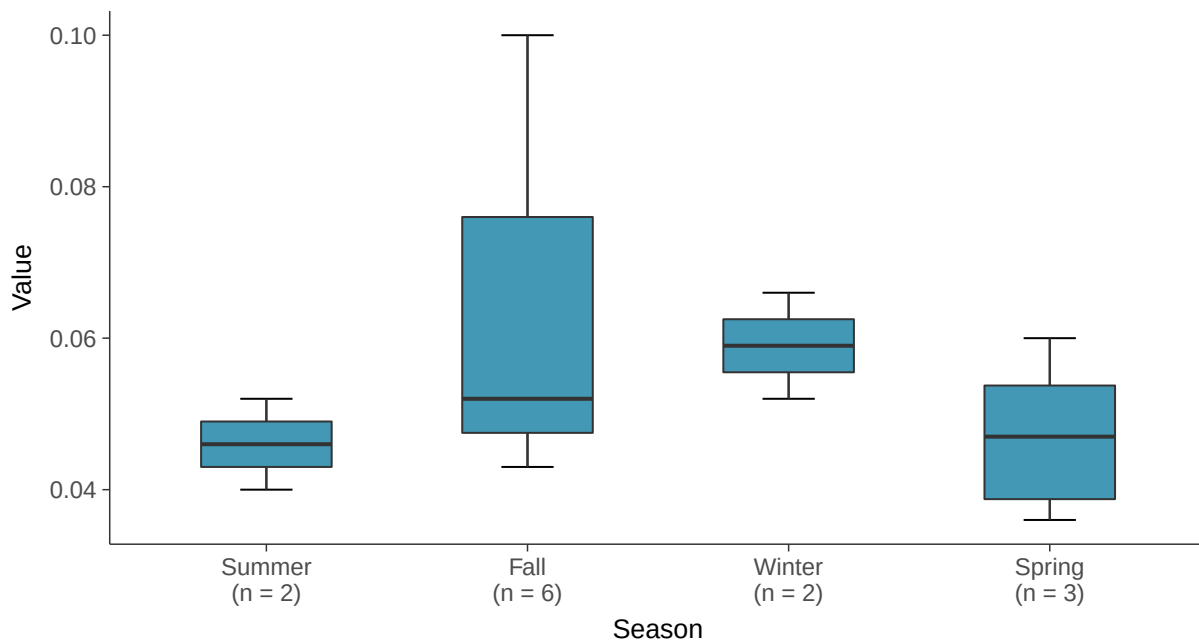
Boxplot

Barium, MW-16 (mg/l)



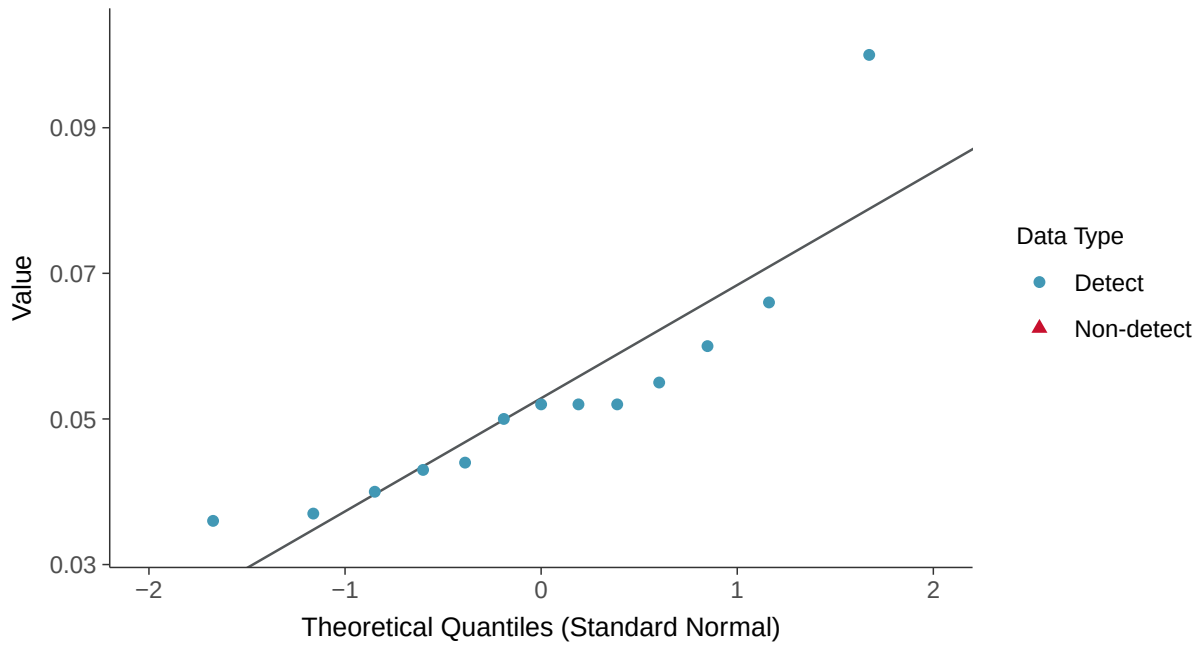
Boxplot by Season

Barium, MW-16 (mg/l)



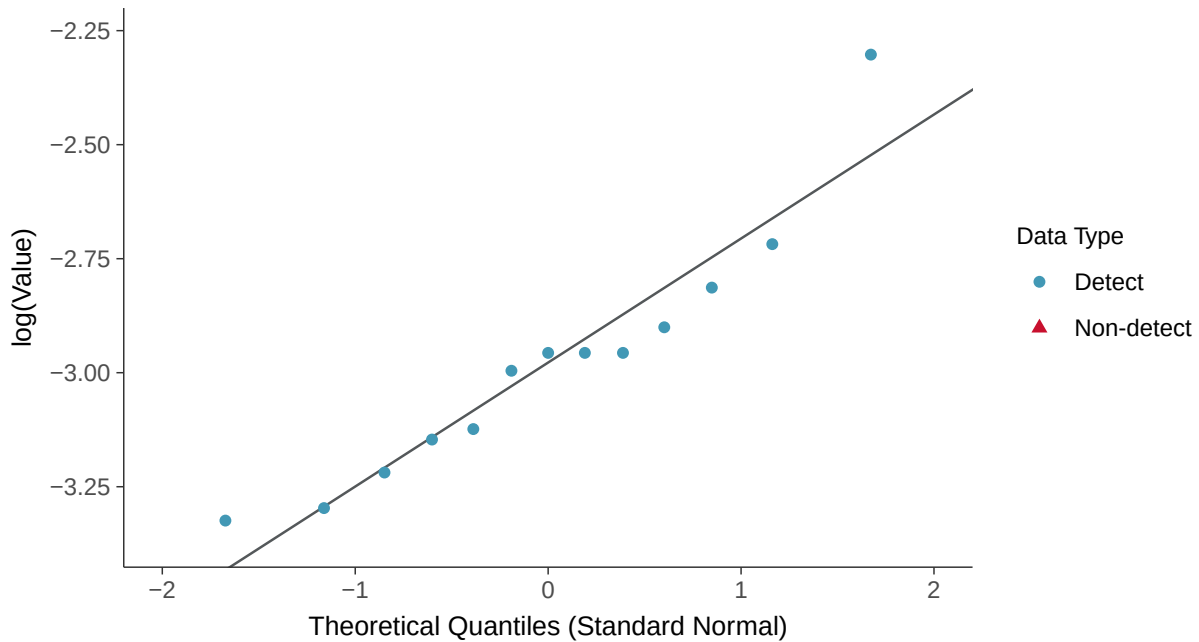
Normal Q-Q plot

Barium, MW-16 (mg/l)

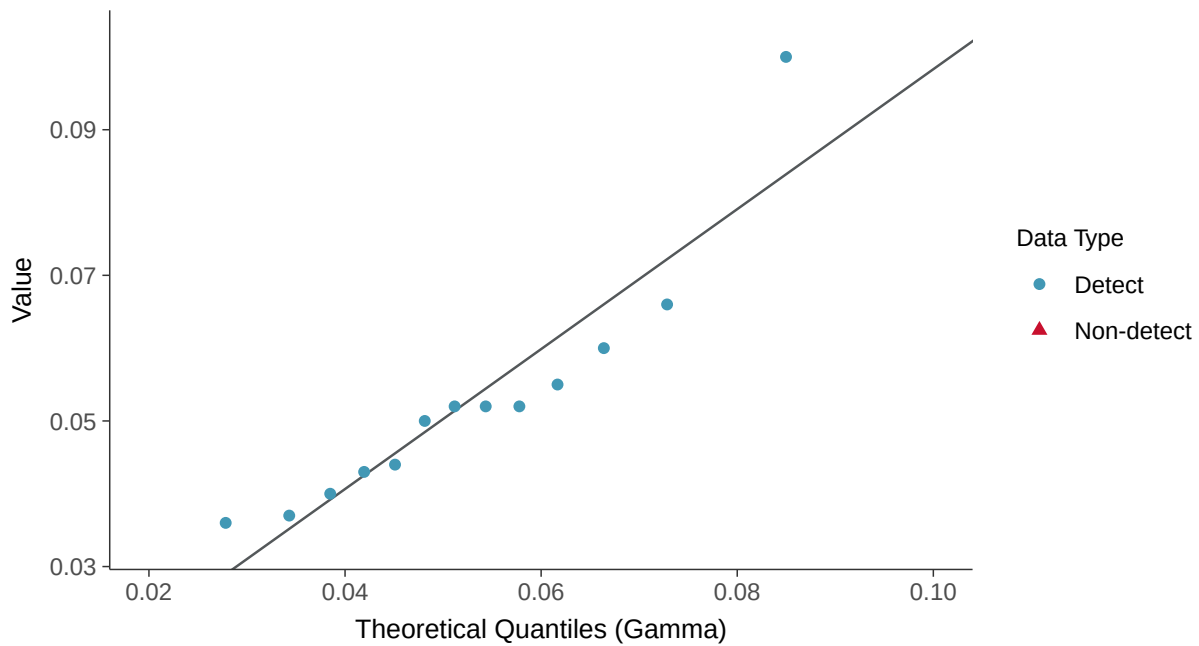


Lognormal Q-Q plot

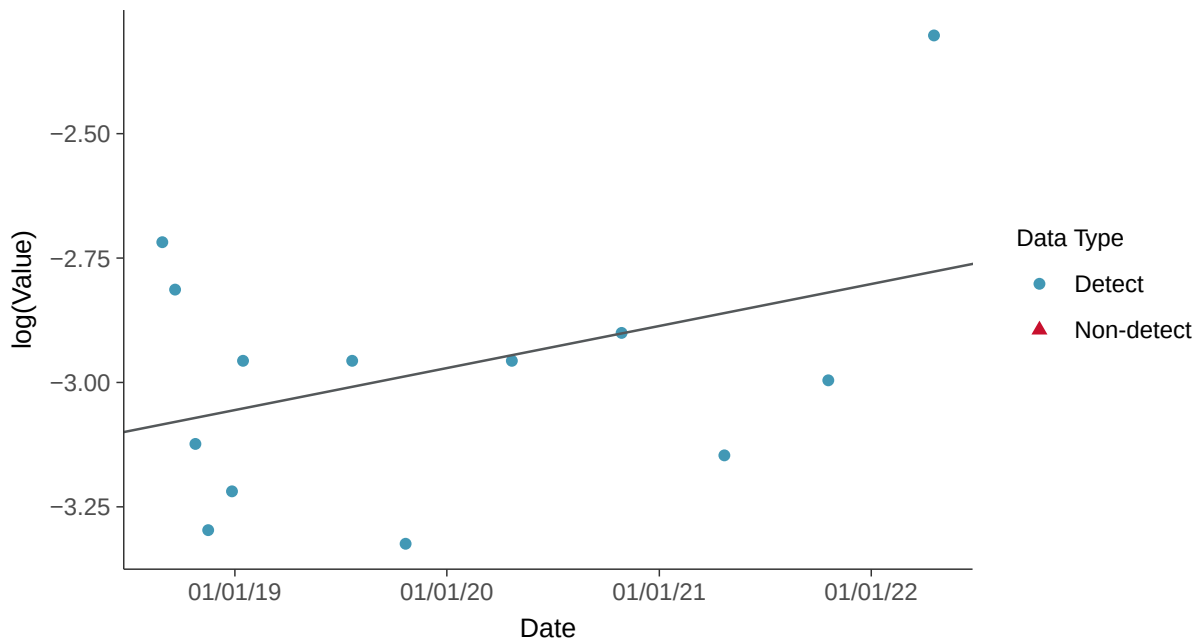
Barium, MW-16 (mg/l)



Gamma Q-Q plot
Barium, MW-16 (mg/l)

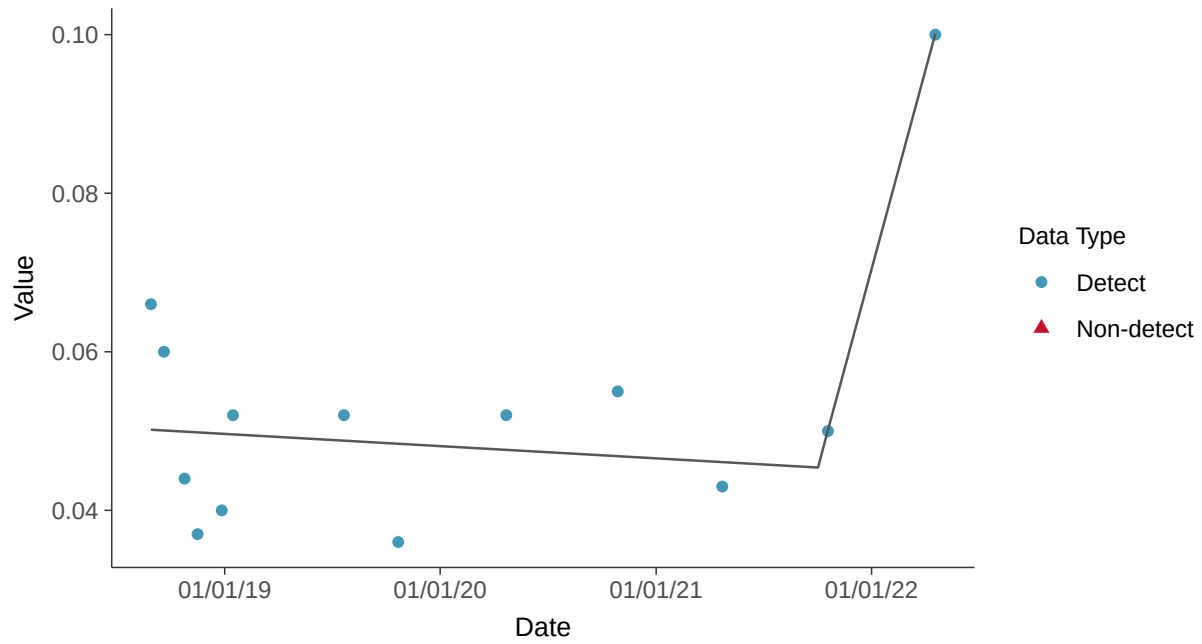


Trend Regression: Lognormal MLE
Barium, MW-16 (mg/l)



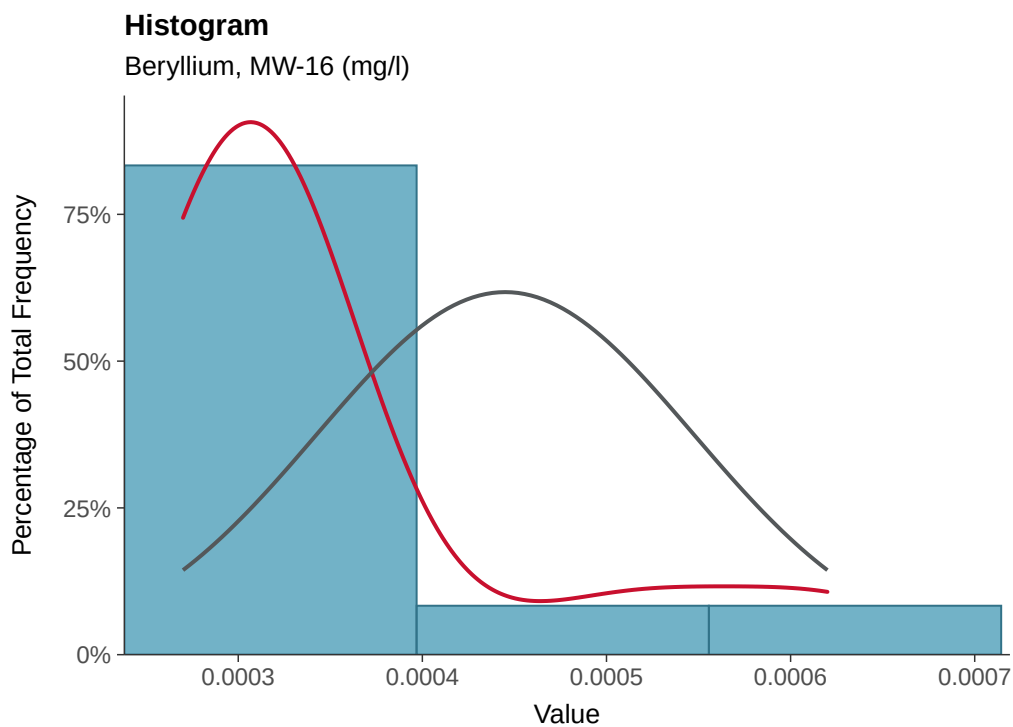
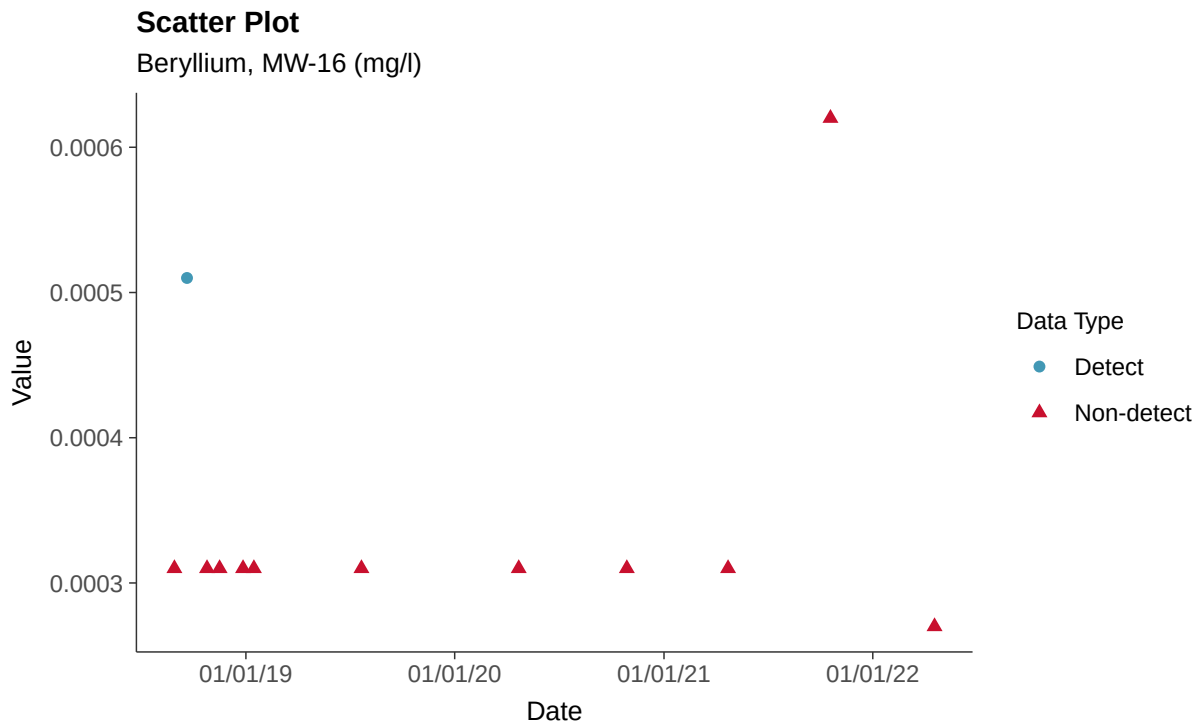
Trend Regression: Piecewise Linear-Linear

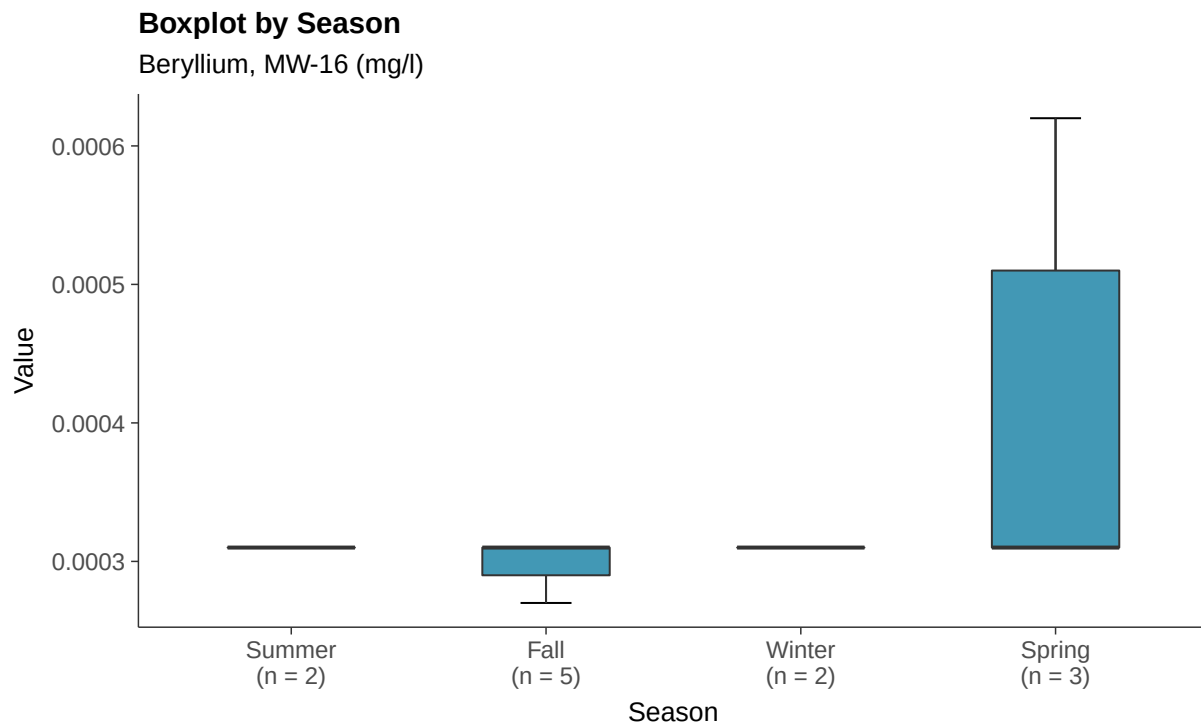
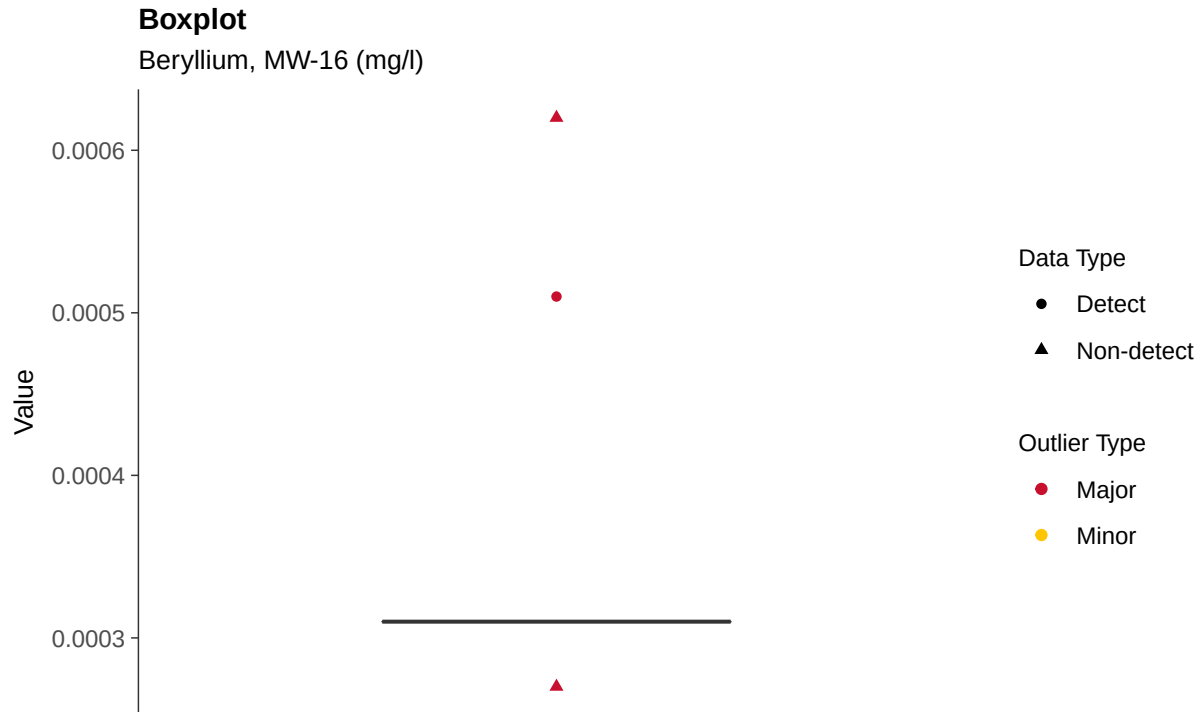
Barium, MW-16 (mg/l)

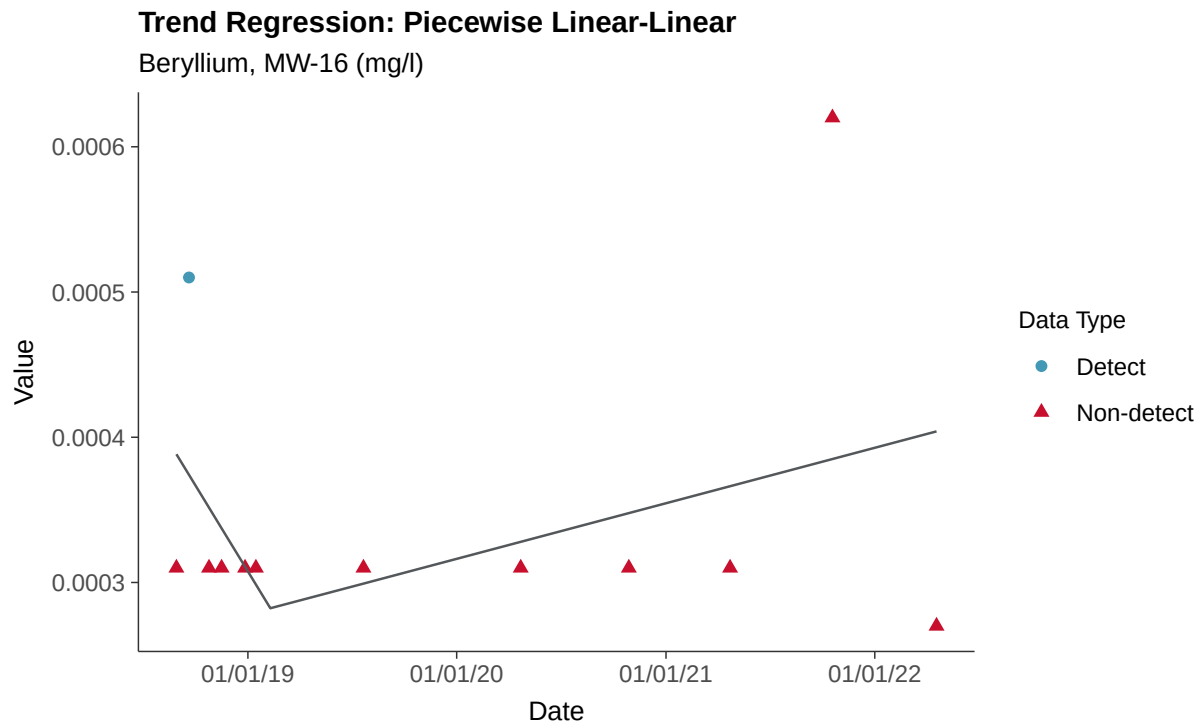


Appendix IV: Beryllium, MW-16

ID: 2_2_107

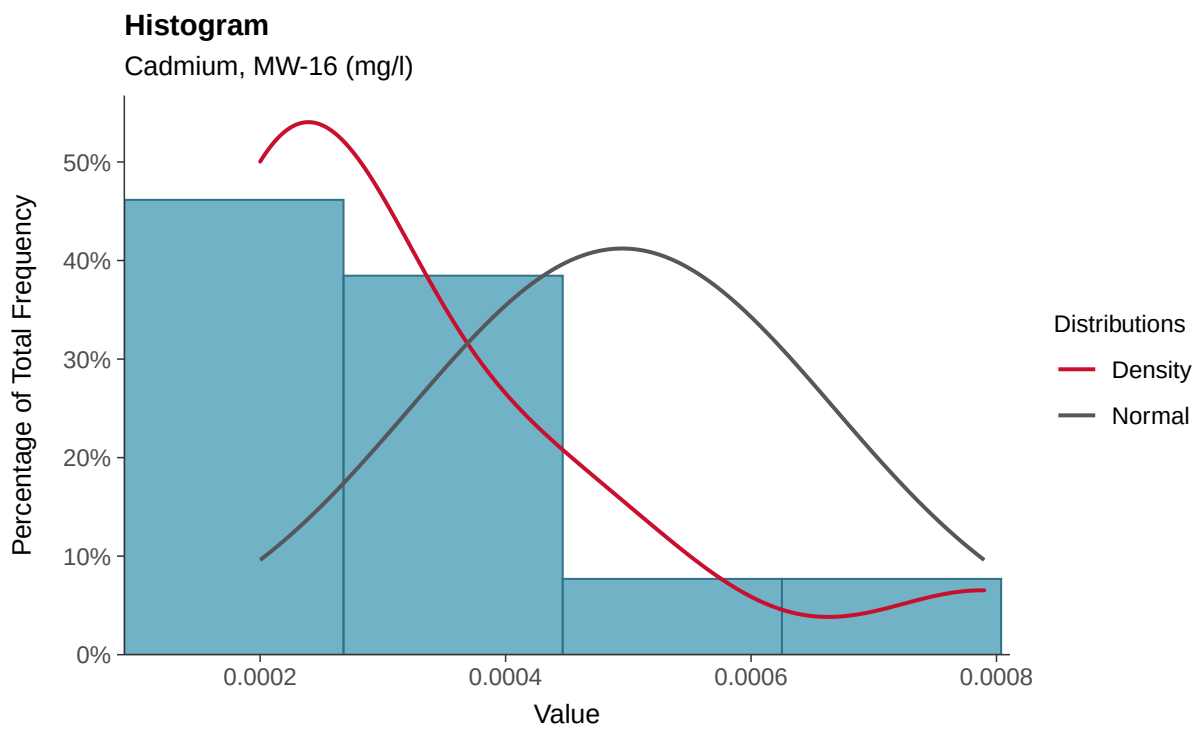
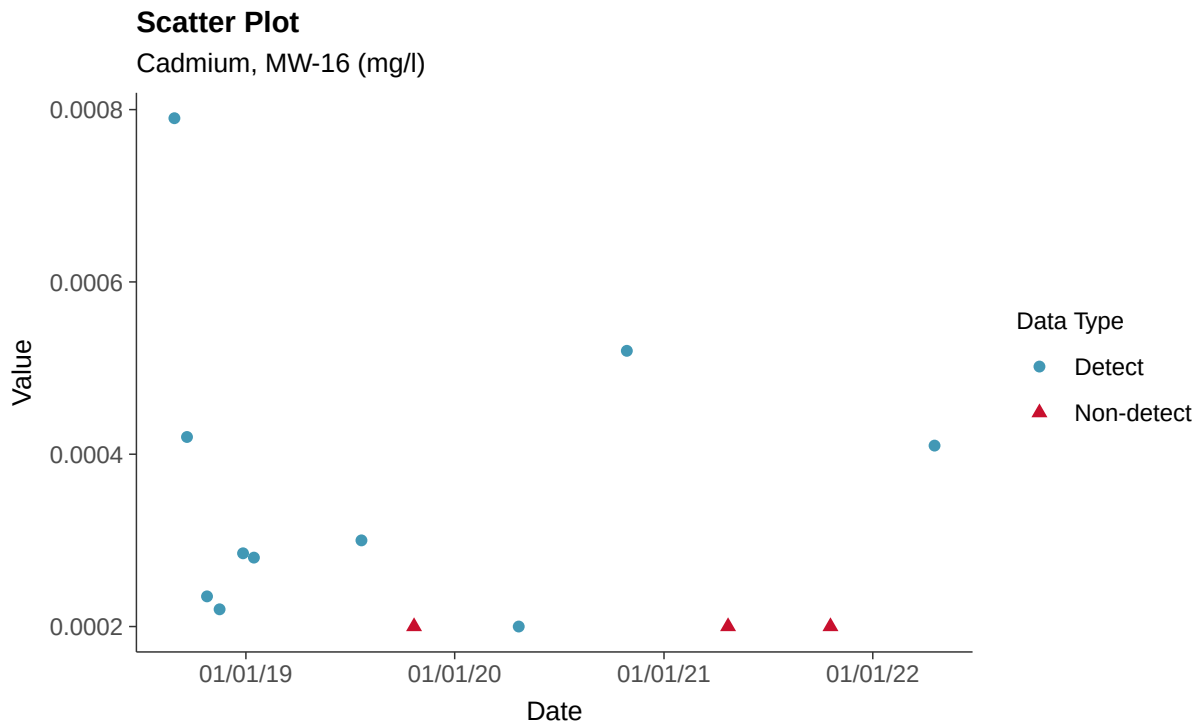






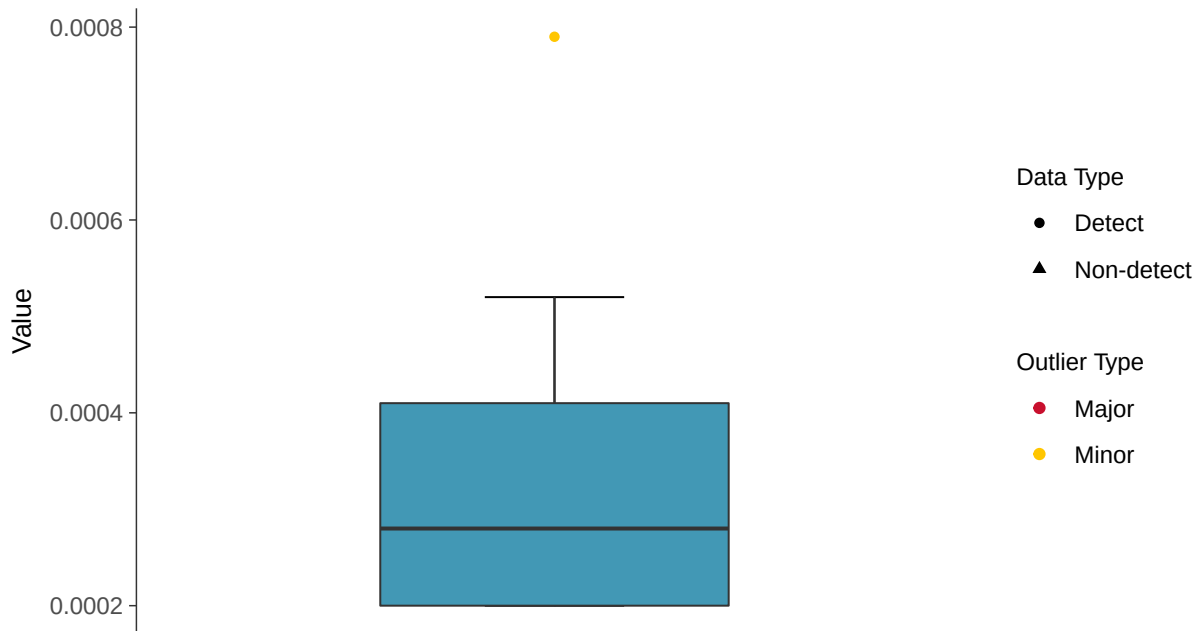
Appendix IV: Cadmium, MW-16

ID: 2_2_109



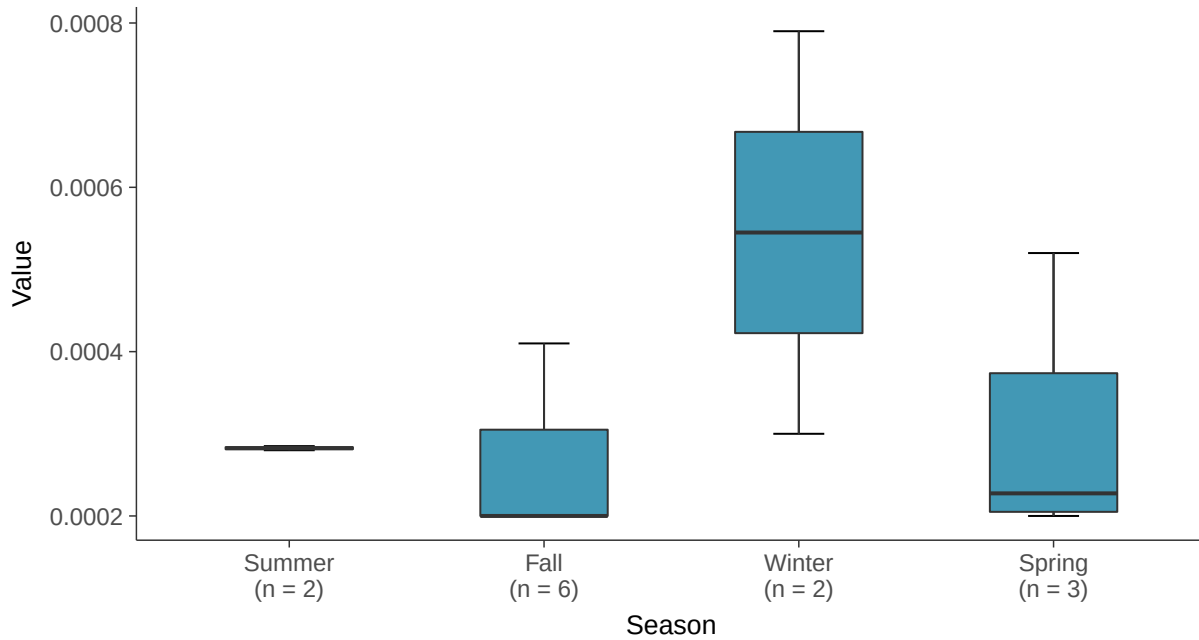
Boxplot

Cadmium, MW-16 (mg/l)



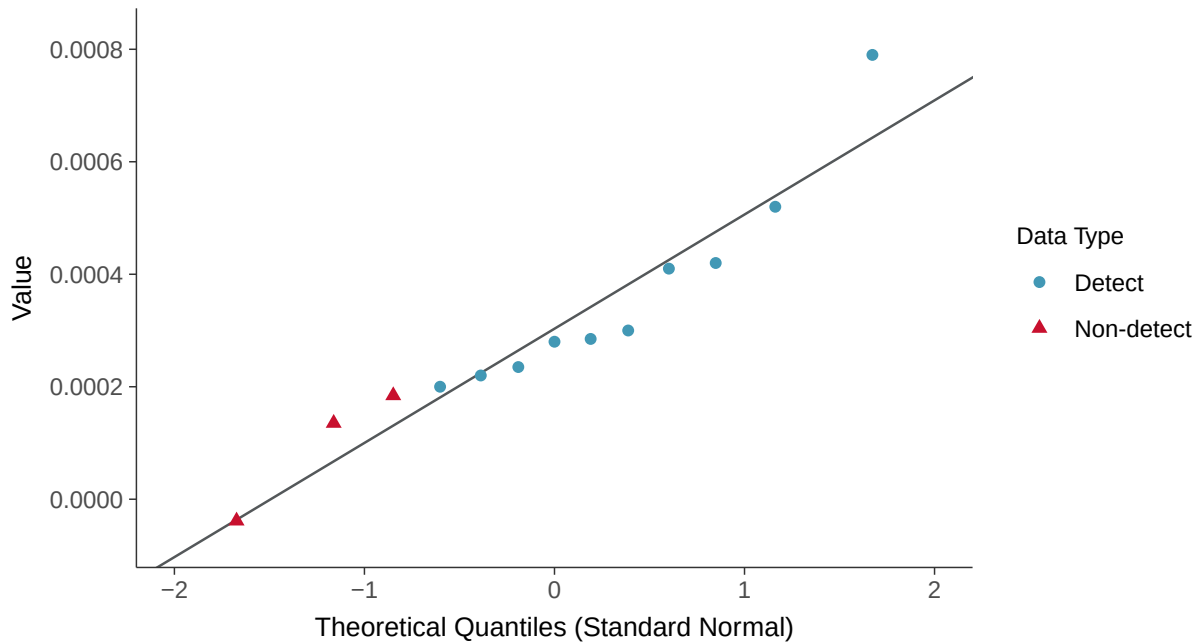
Boxplot by Season

Cadmium, MW-16 (mg/l)



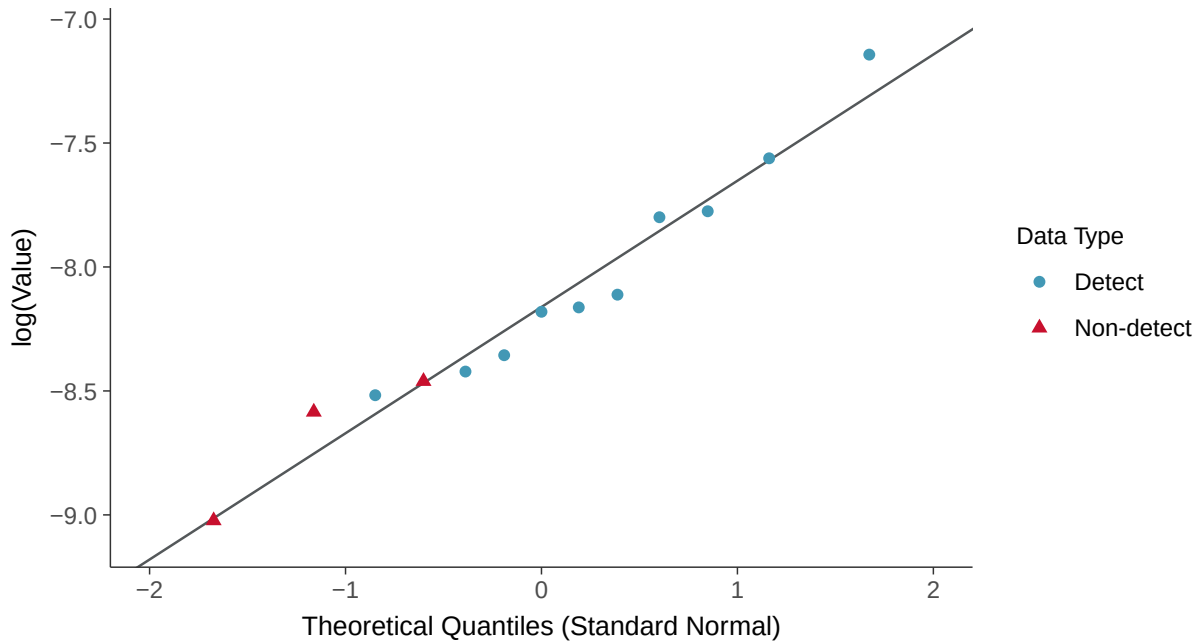
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-16 (mg/l)

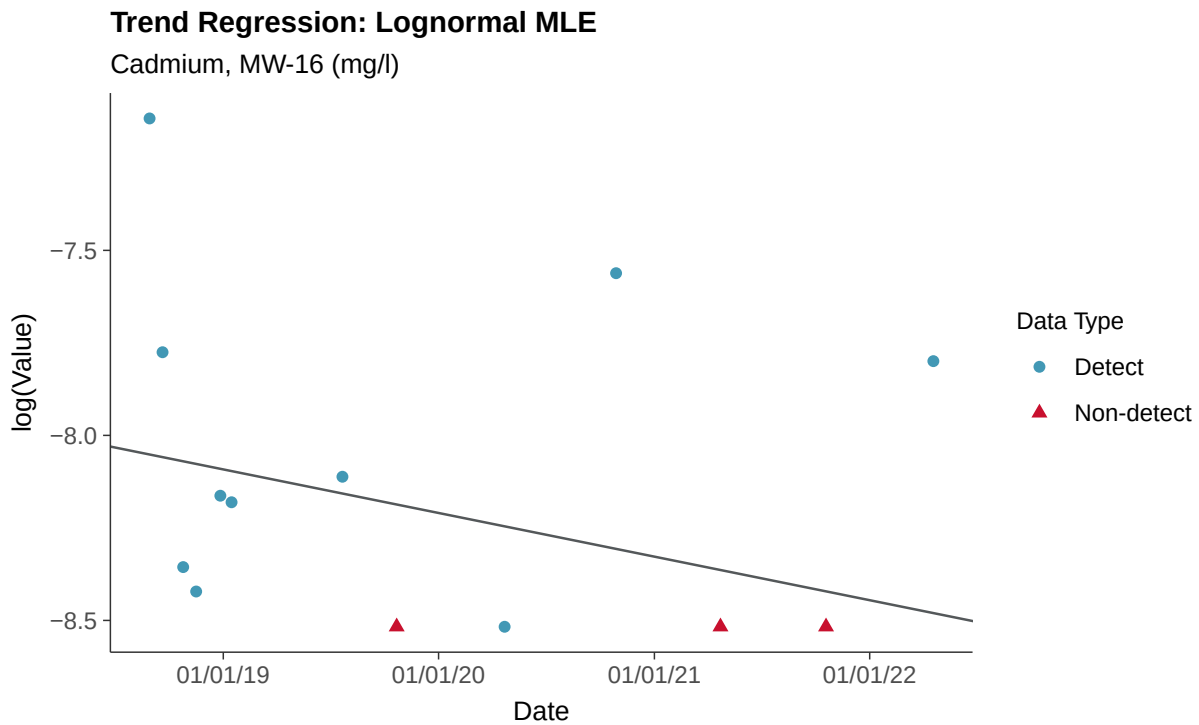


Lognormal Q-Q plot using ROS Imputed Estimates

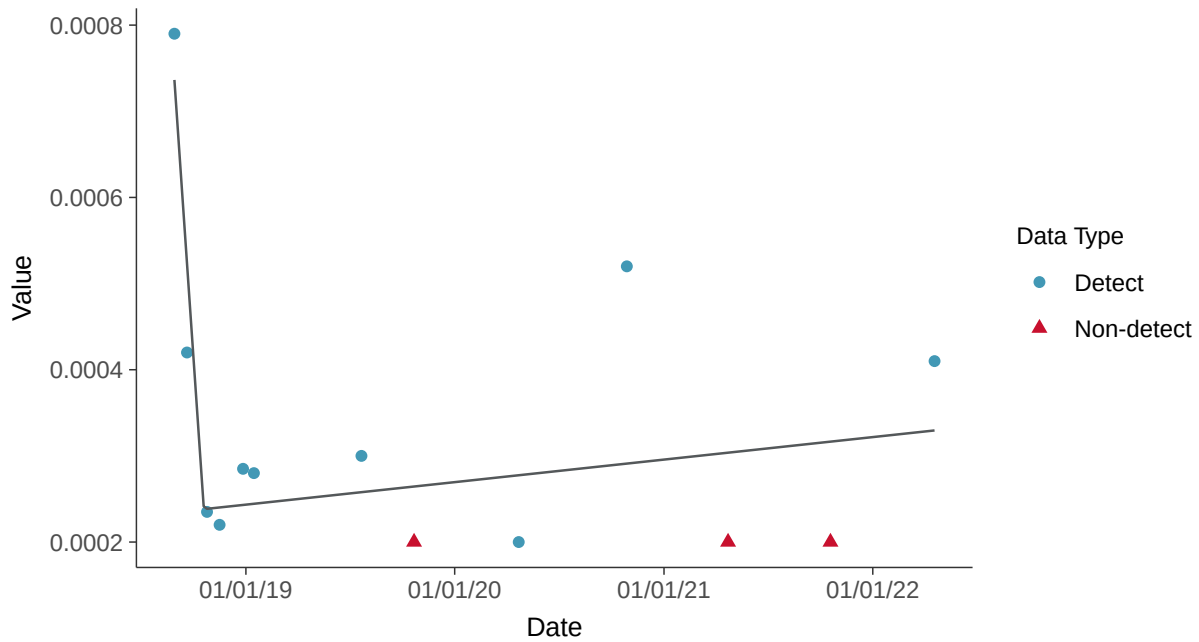
Cadmium, MW-16 (mg/l)



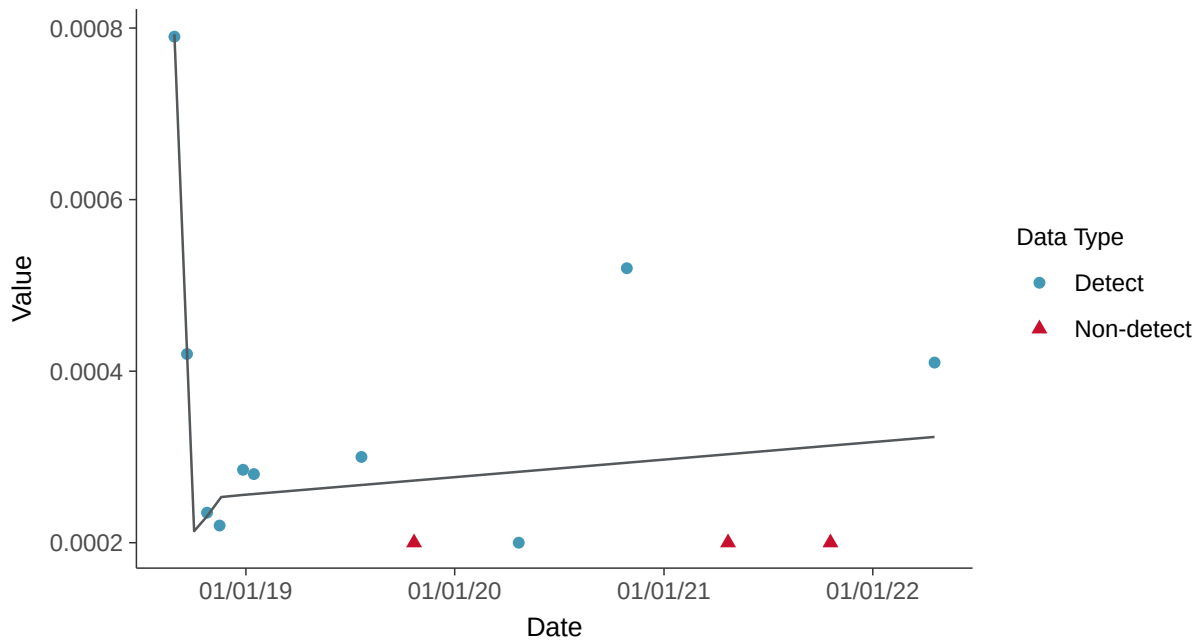
Cadmium, MW-16 (mg/l)



Trend Regression: Piecewise Linear-Linear
Cadmium, MW-16 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear
Cadmium, MW-16 (mg/l)

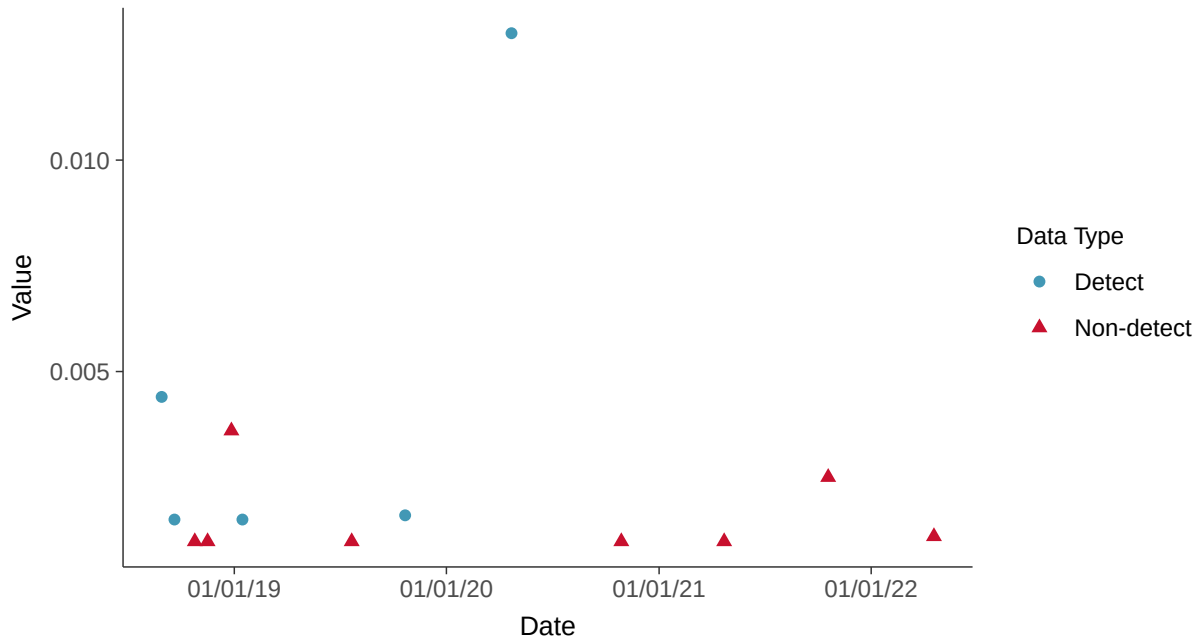


Appendix IV: Chromium, Total, MW-16

ID: 2_2_112

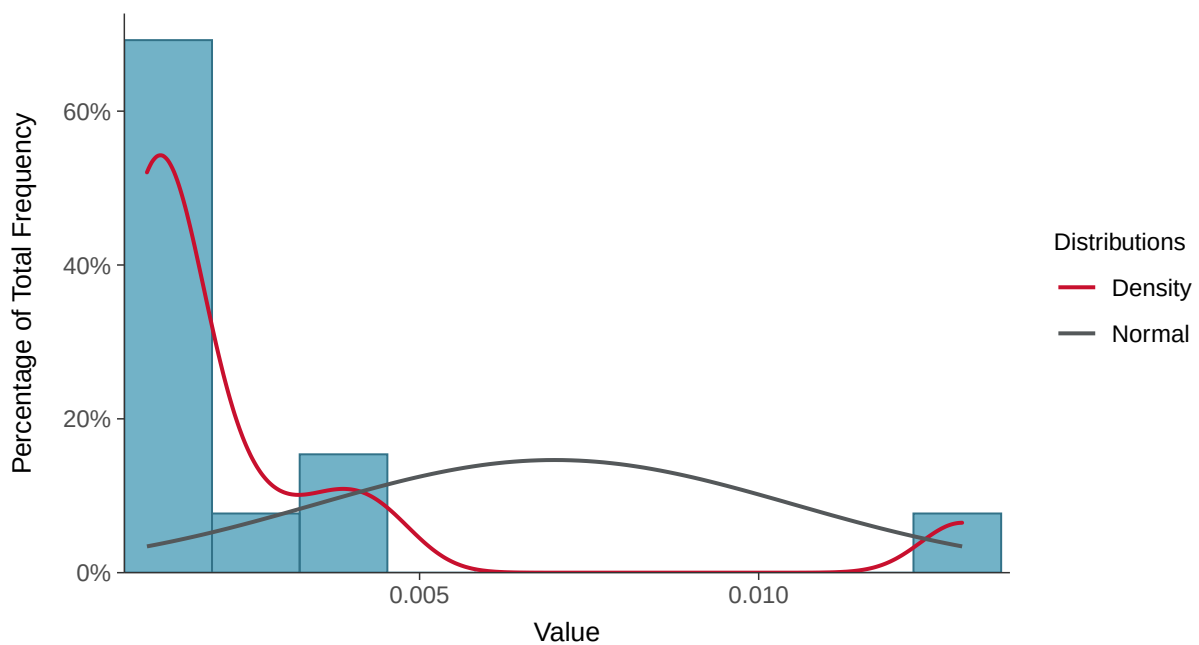
Scatter Plot

Chromium, Total, MW-16 (mg/l)



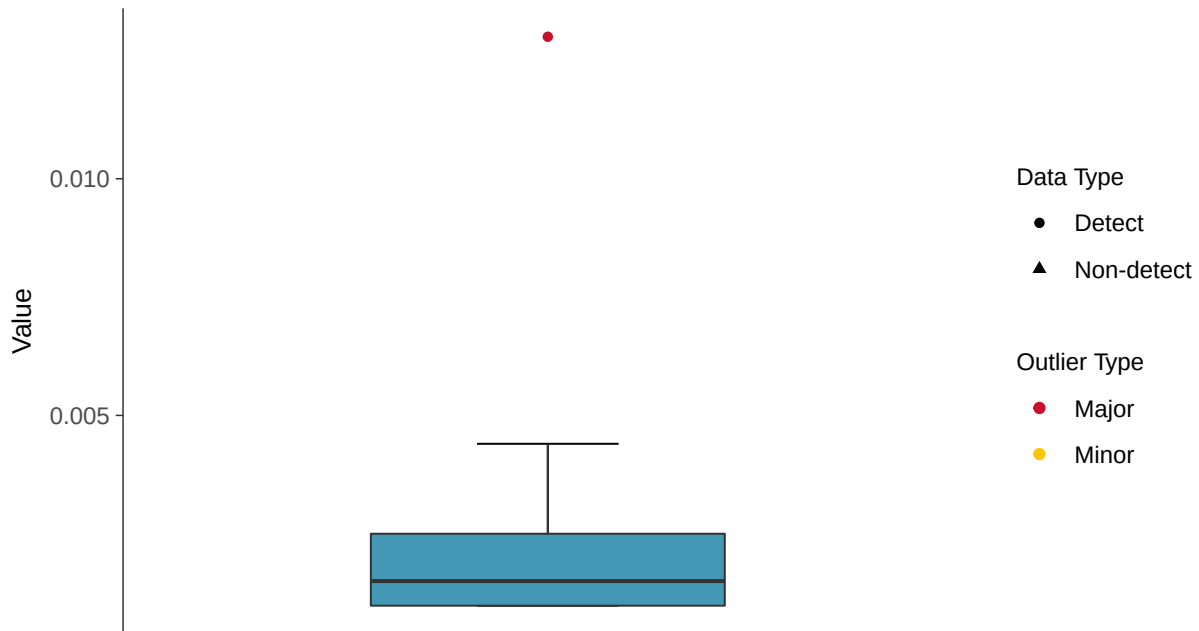
Histogram

Chromium, Total, MW-16 (mg/l)



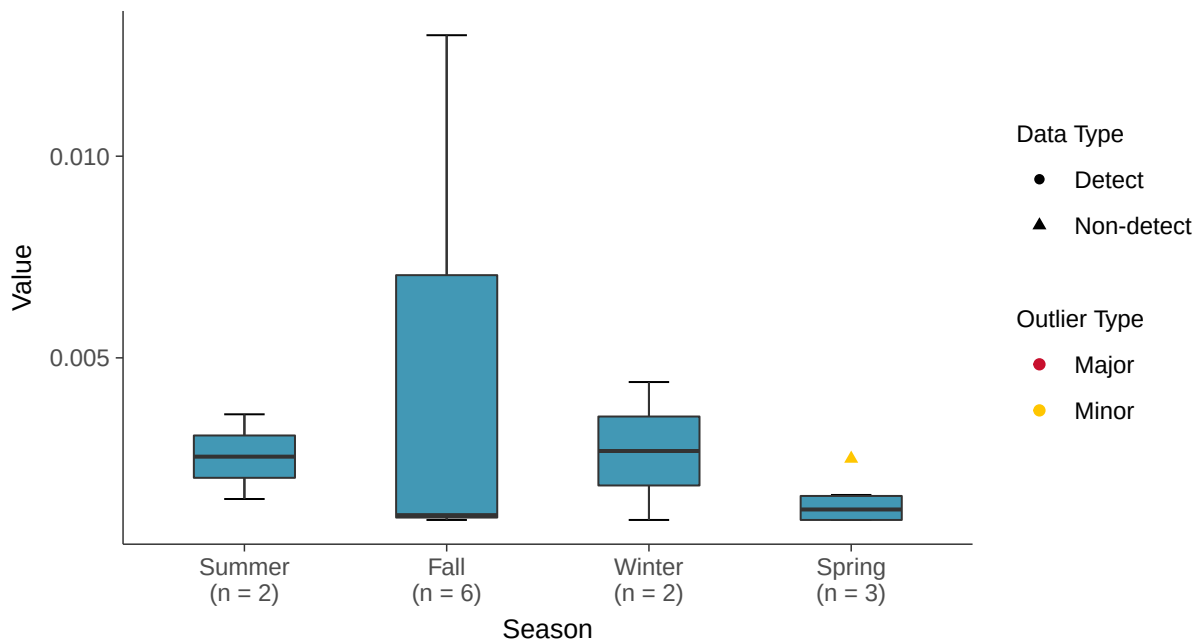
Boxplot

Chromium, Total, MW-16 (mg/l)



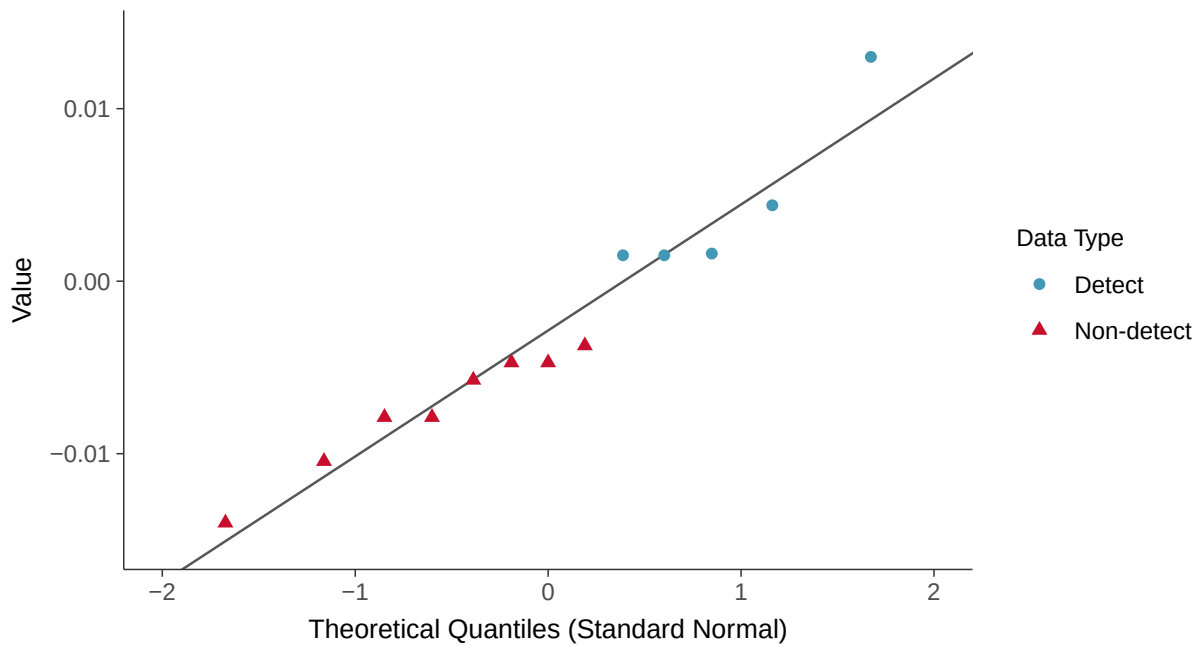
Boxplot by Season

Chromium, Total, MW-16 (mg/l)



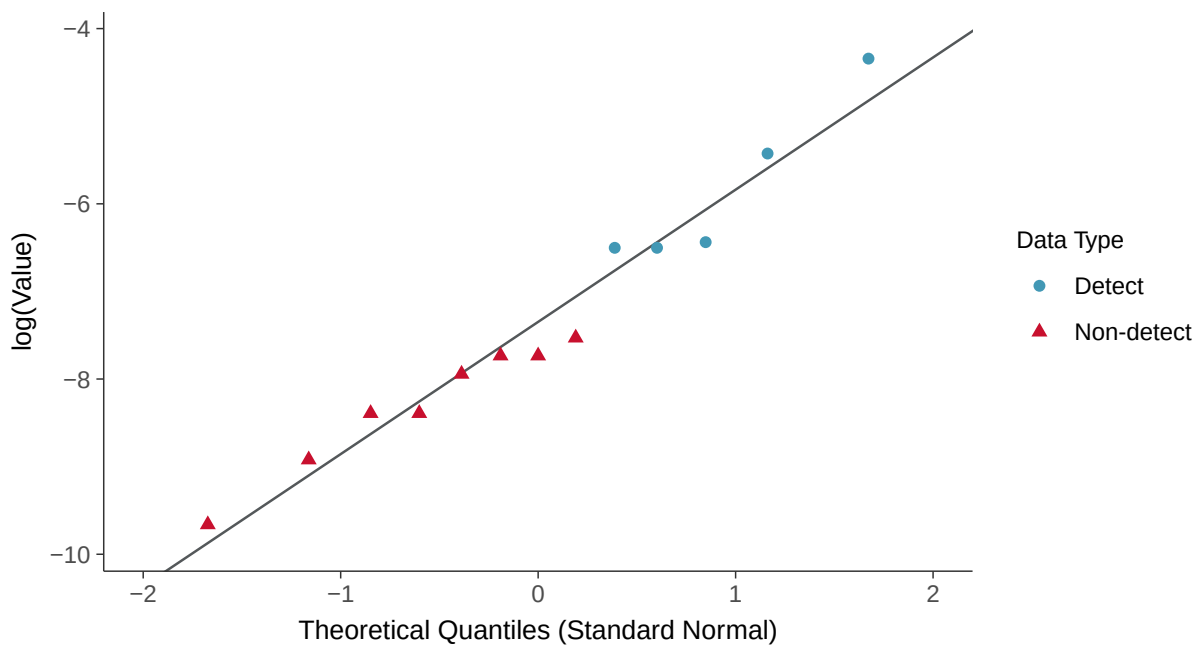
Normal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-16 (mg/l)



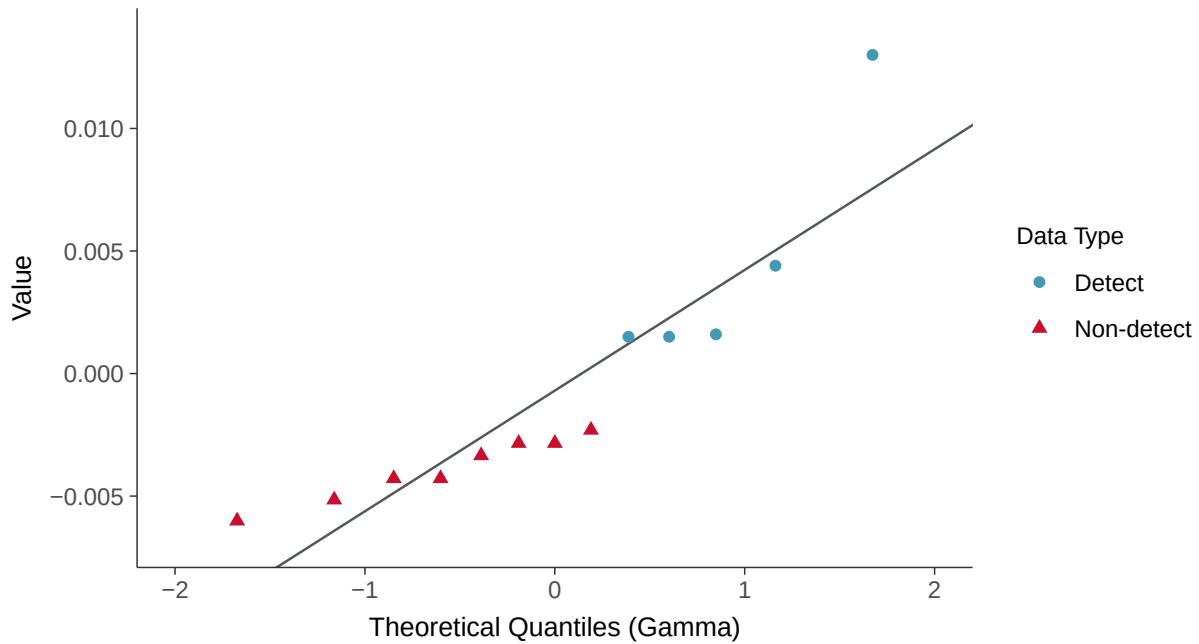
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-16 (mg/l)



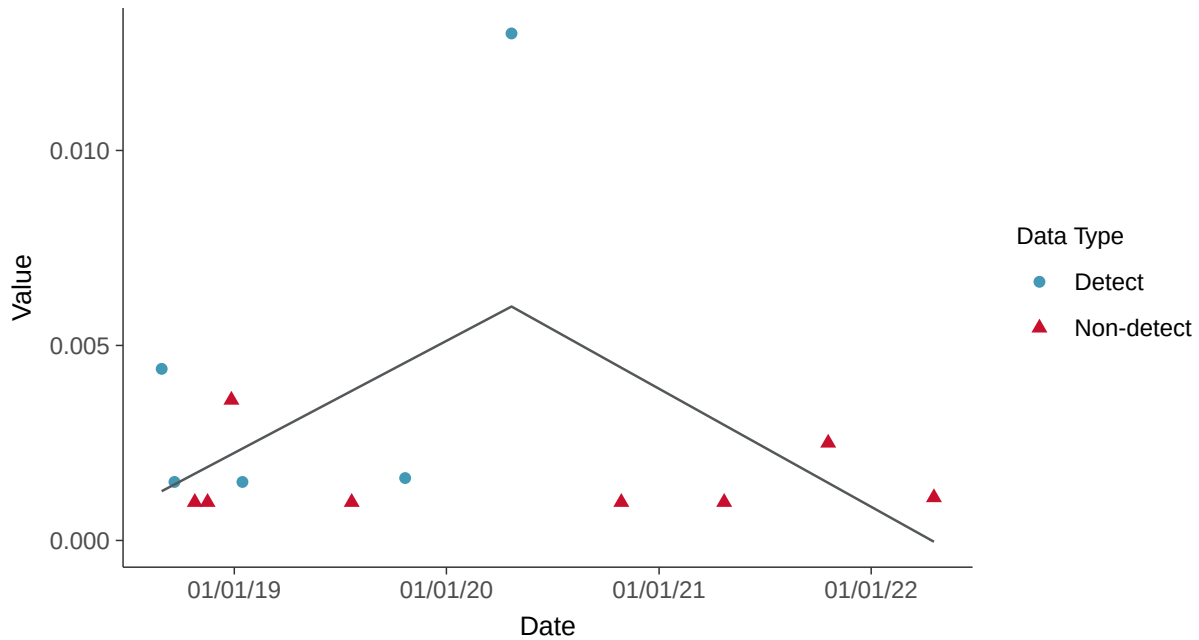
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-16 (mg/l)



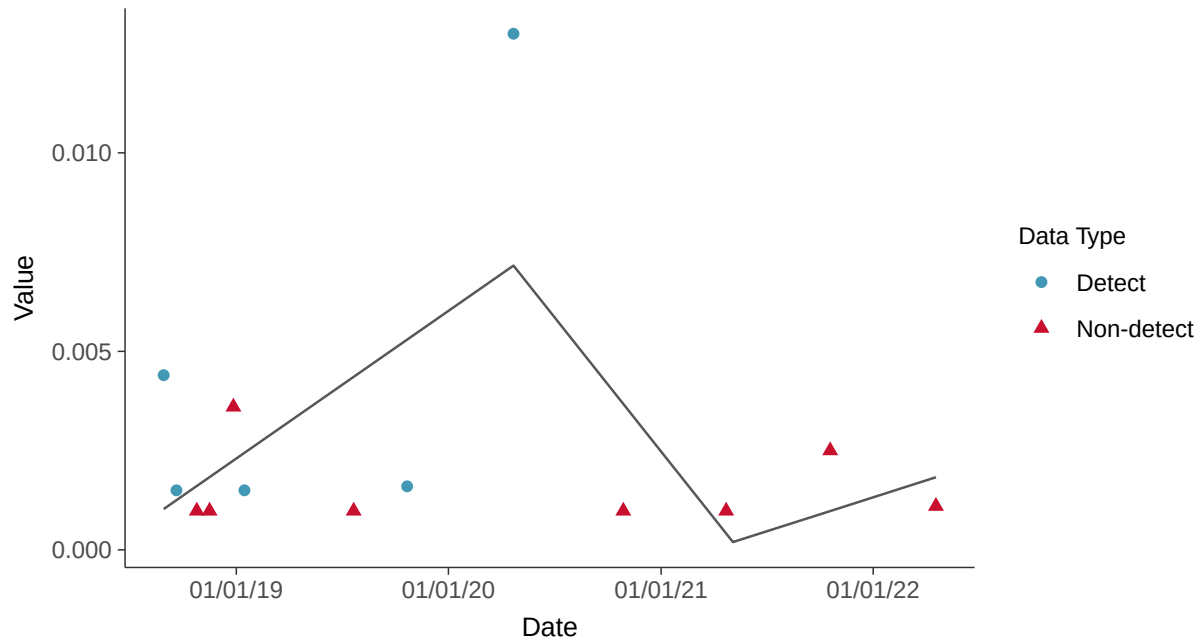
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-16 (mg/l)



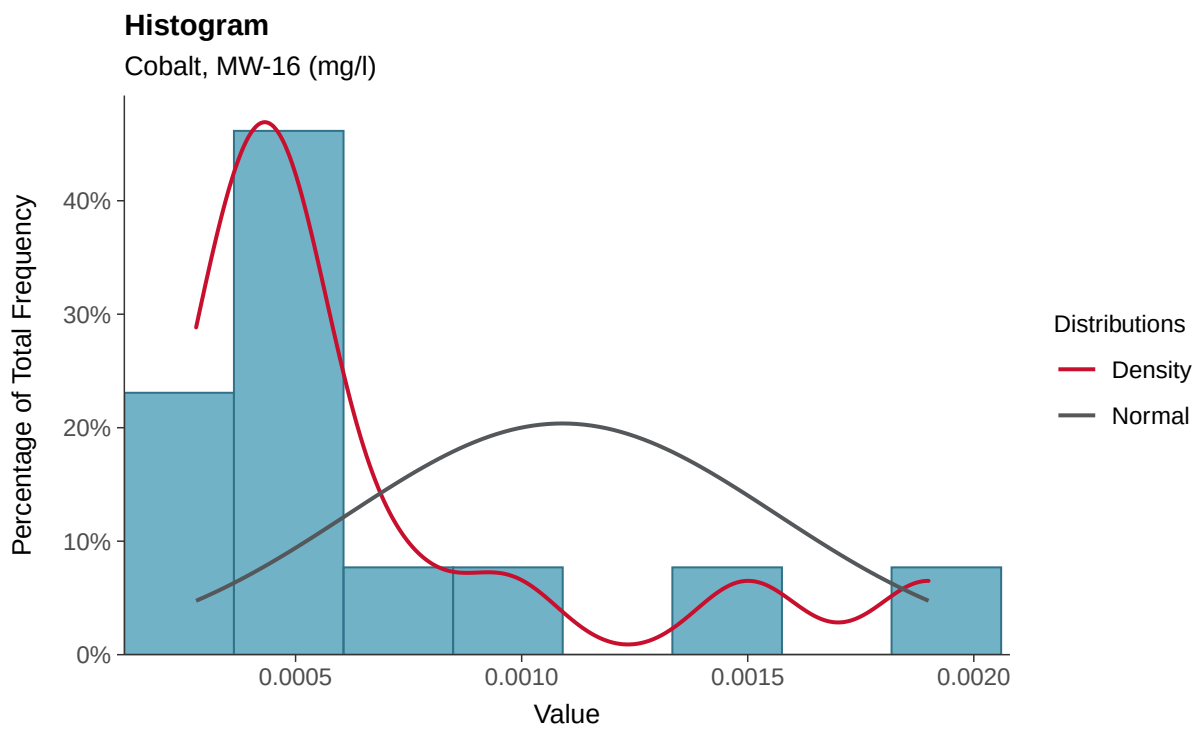
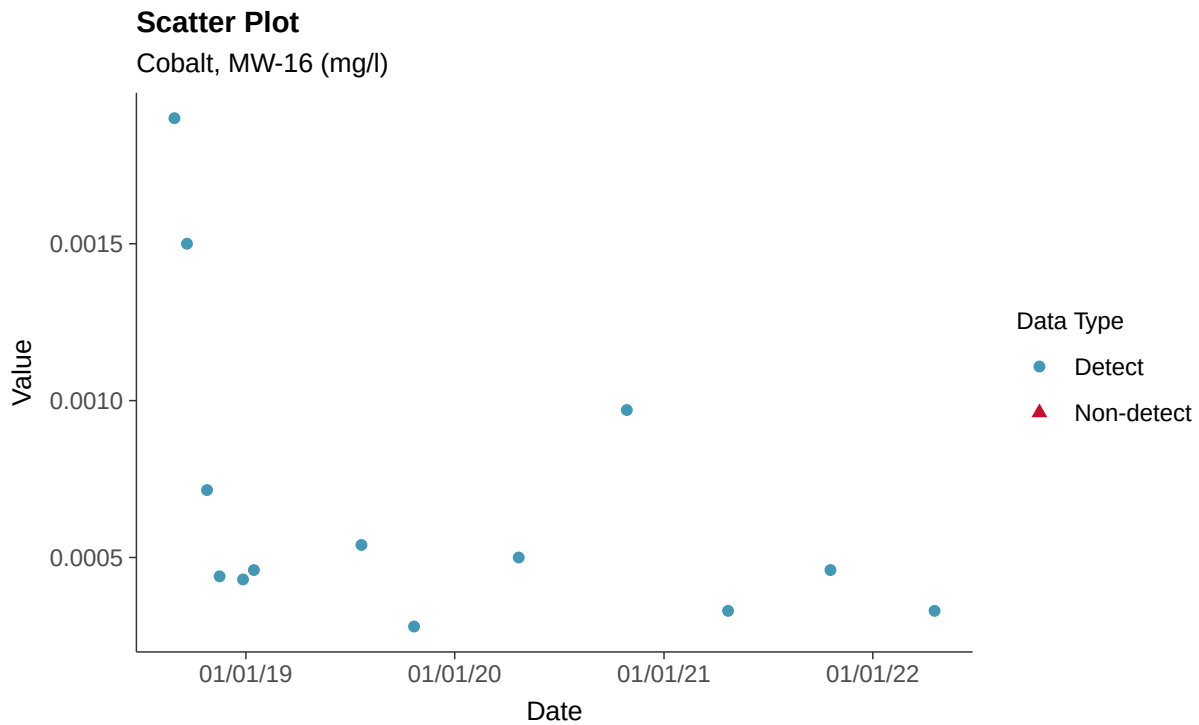
Trend Regression: Piecewise Linear-Linear-Linear

Chromium, Total, MW-16 (mg/l)



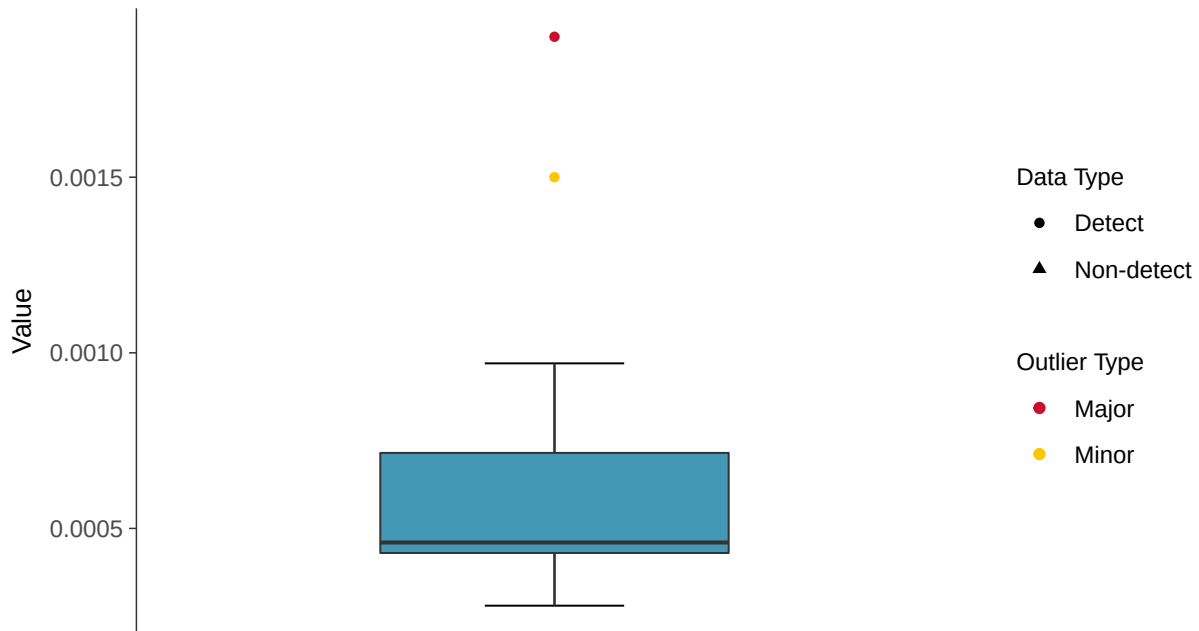
Appendix IV: Cobalt, MW-16

ID: 2_2_113



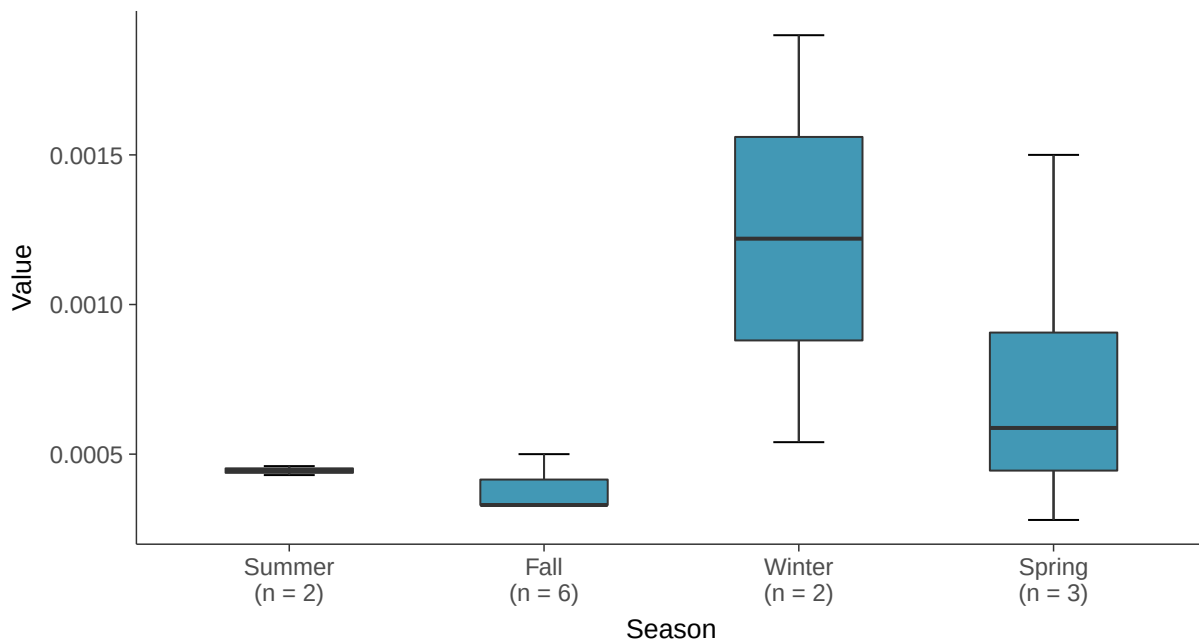
Boxplot

Cobalt, MW-16 (mg/l)



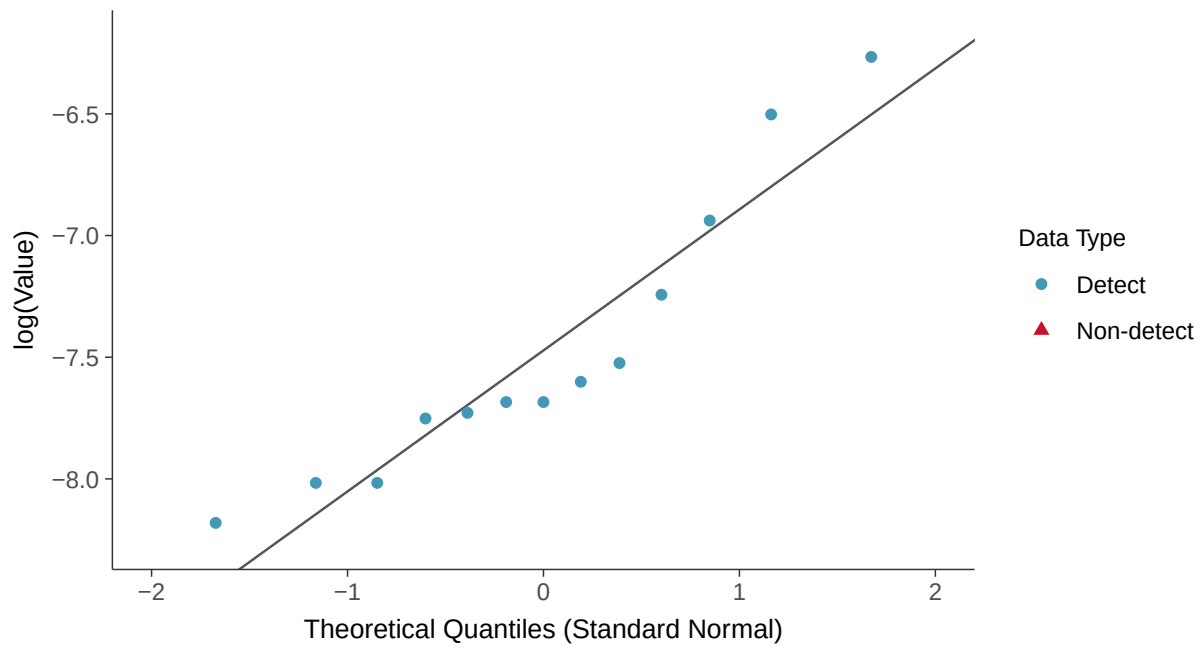
Boxplot by Season

Cobalt, MW-16 (mg/l)



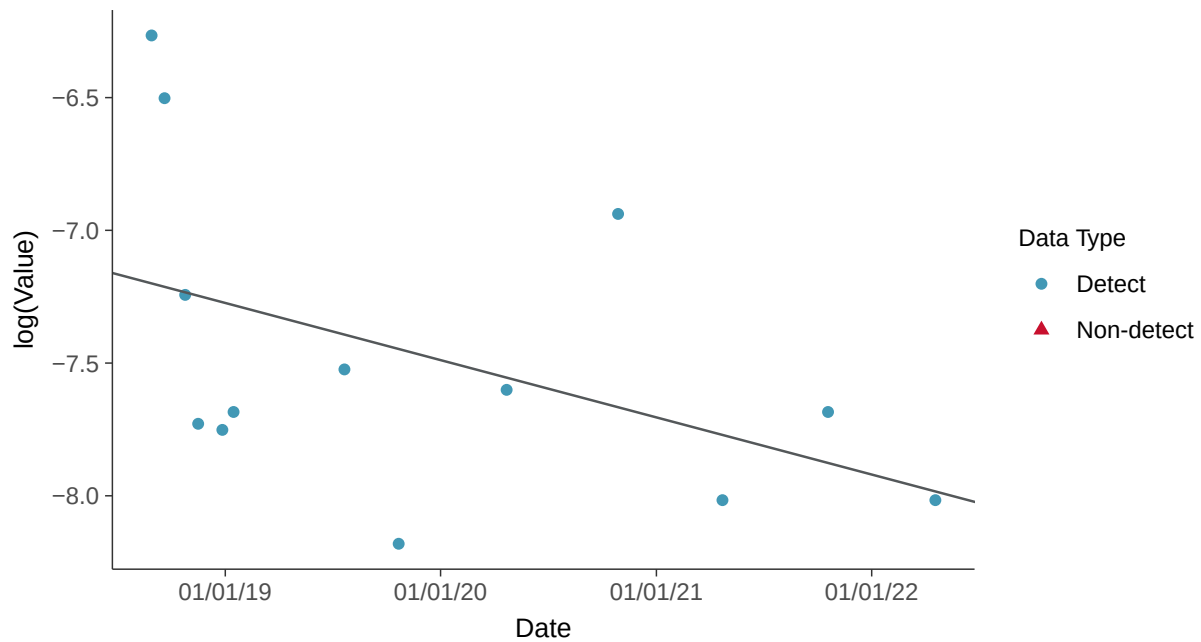
Lognormal Q-Q plot

Cobalt, MW-16 (mg/l)



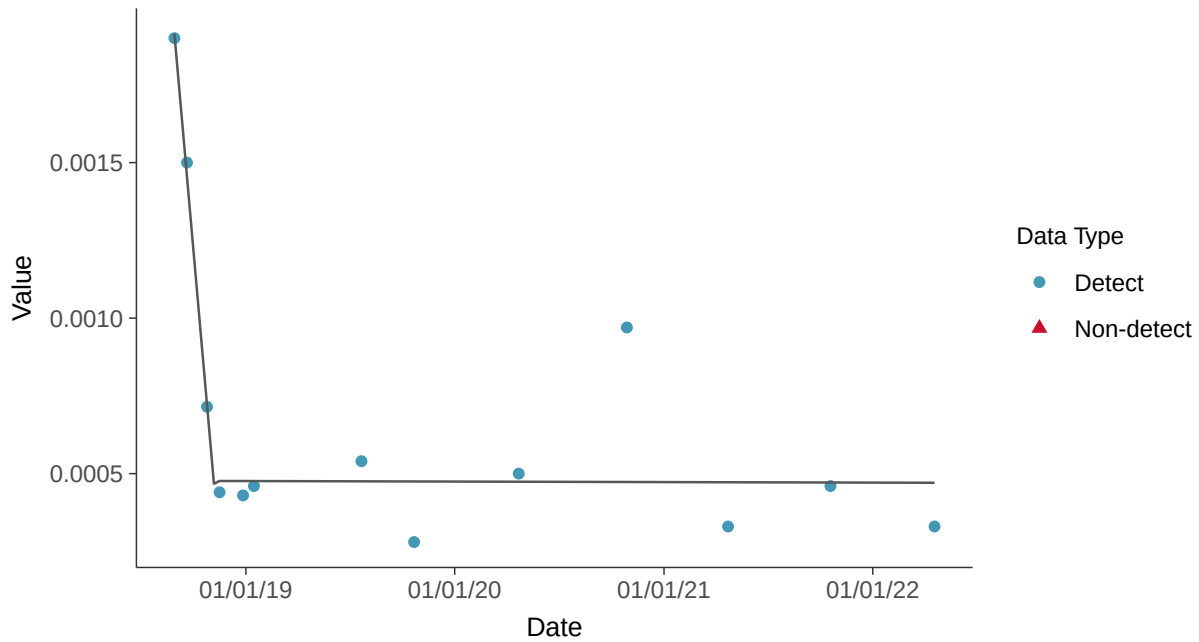
Trend Regression: Lognormal MLE

Cobalt, MW-16 (mg/l)



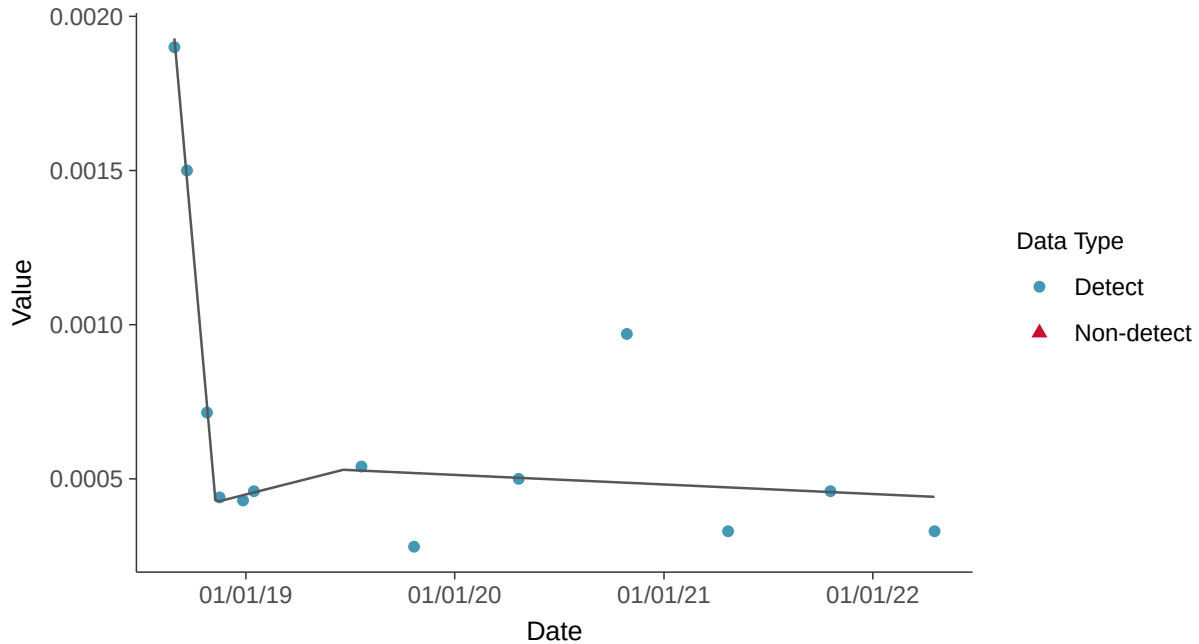
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-16 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-16 (mg/l)

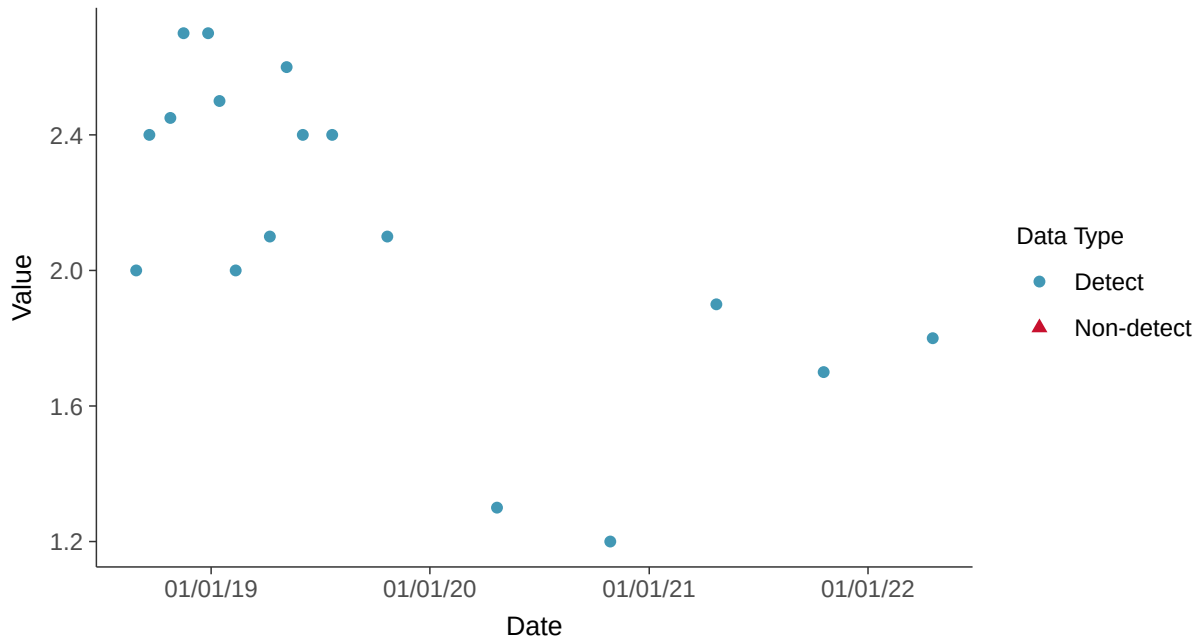


Appendix IV: Fluoride (App IV), MW-16

ID: 2_2_116

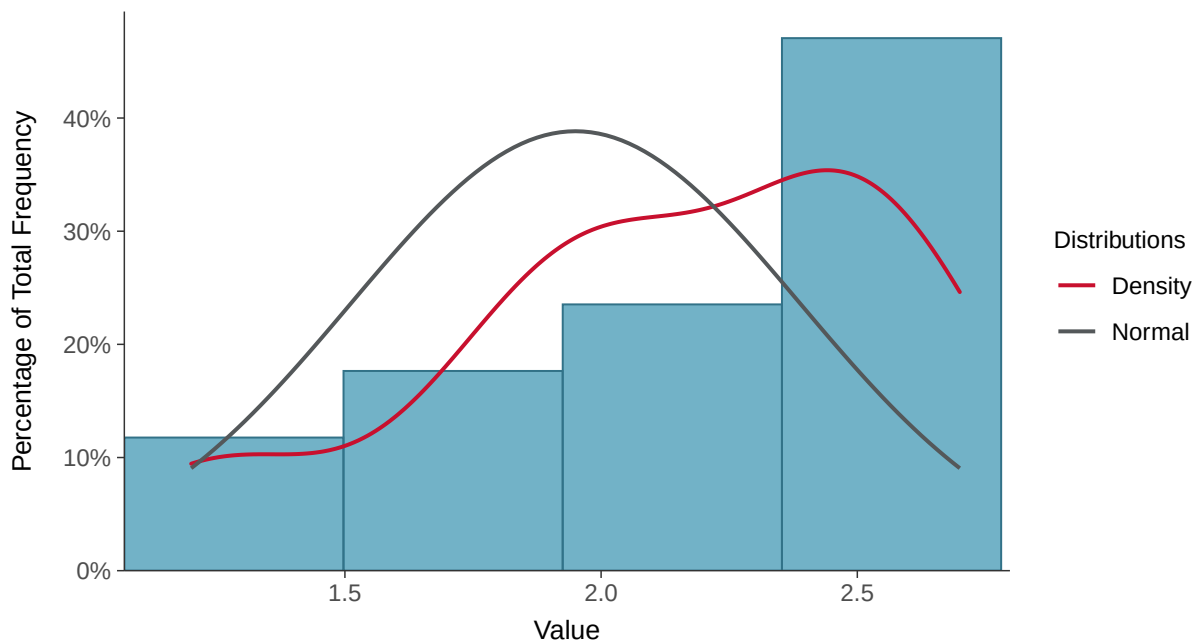
Scatter Plot

Fluoride (App IV), MW-16 (mg/l)



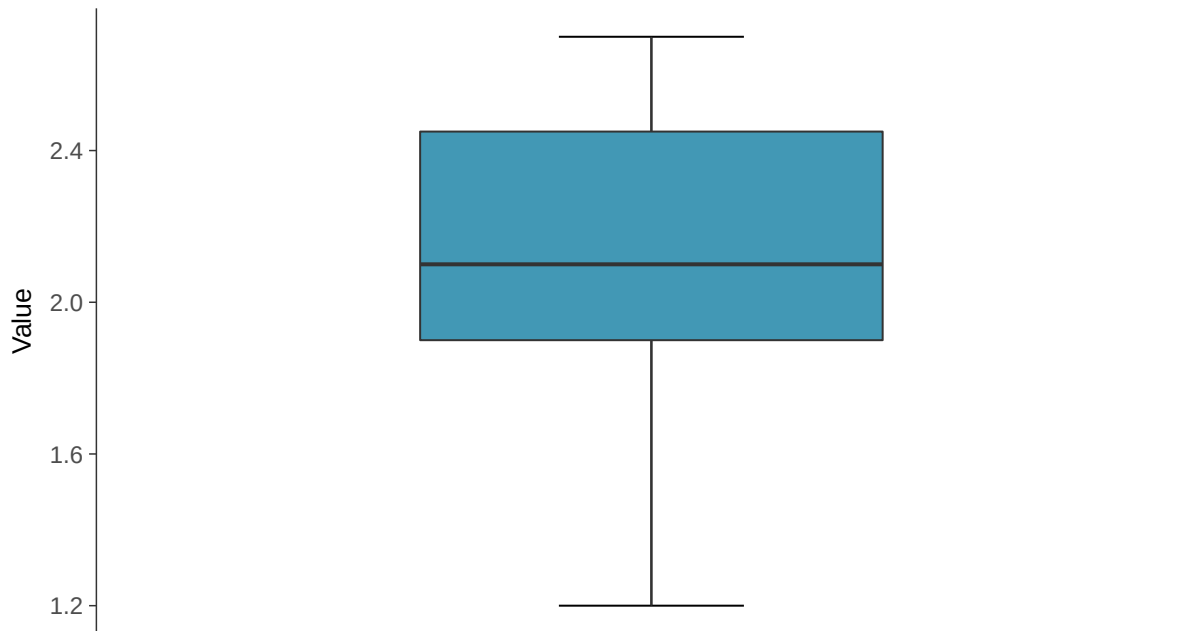
Histogram

Fluoride (App IV), MW-16 (mg/l)



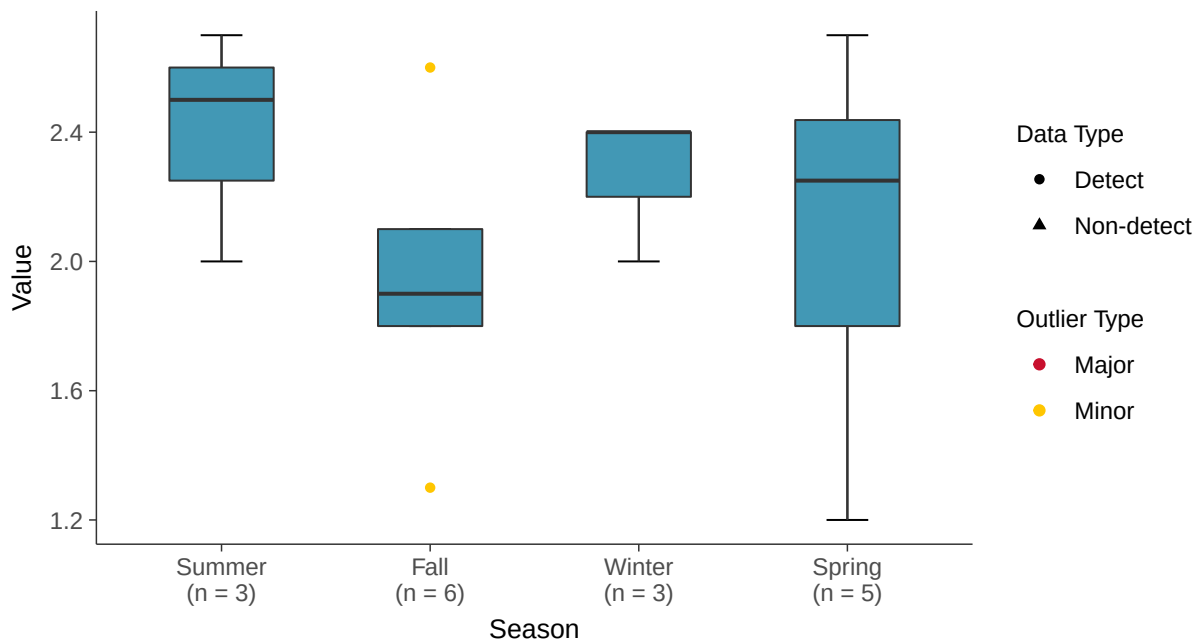
Boxplot

Fluoride (App IV), MW-16 (mg/l)



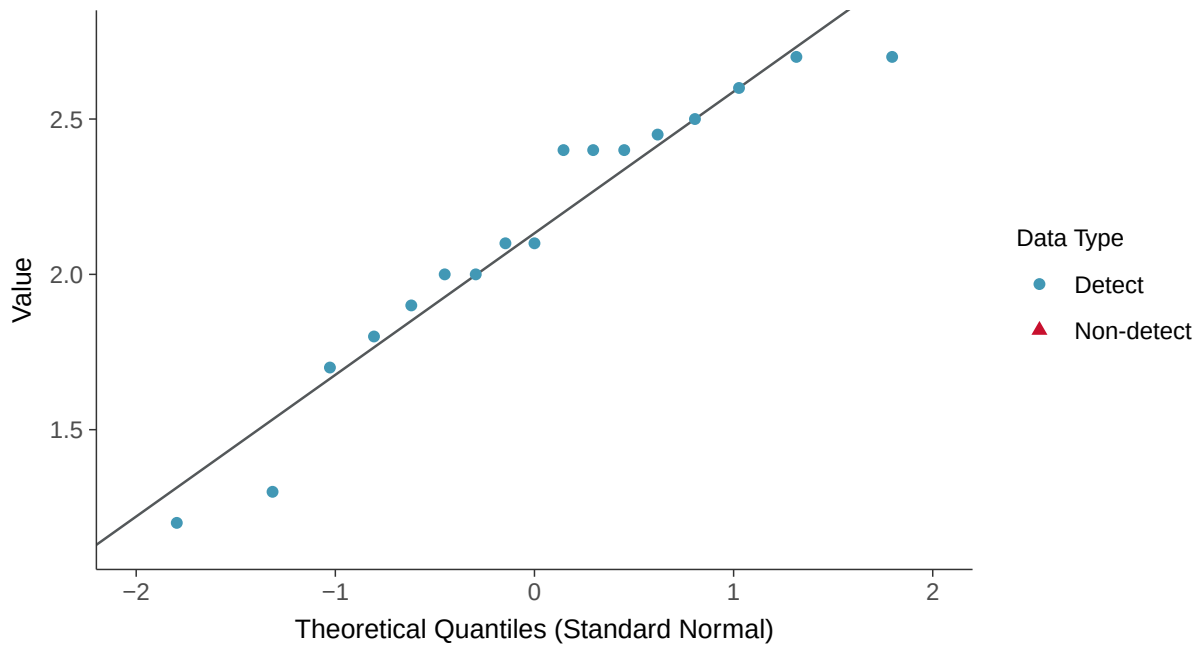
Boxplot by Season

Fluoride (App IV), MW-16 (mg/l)



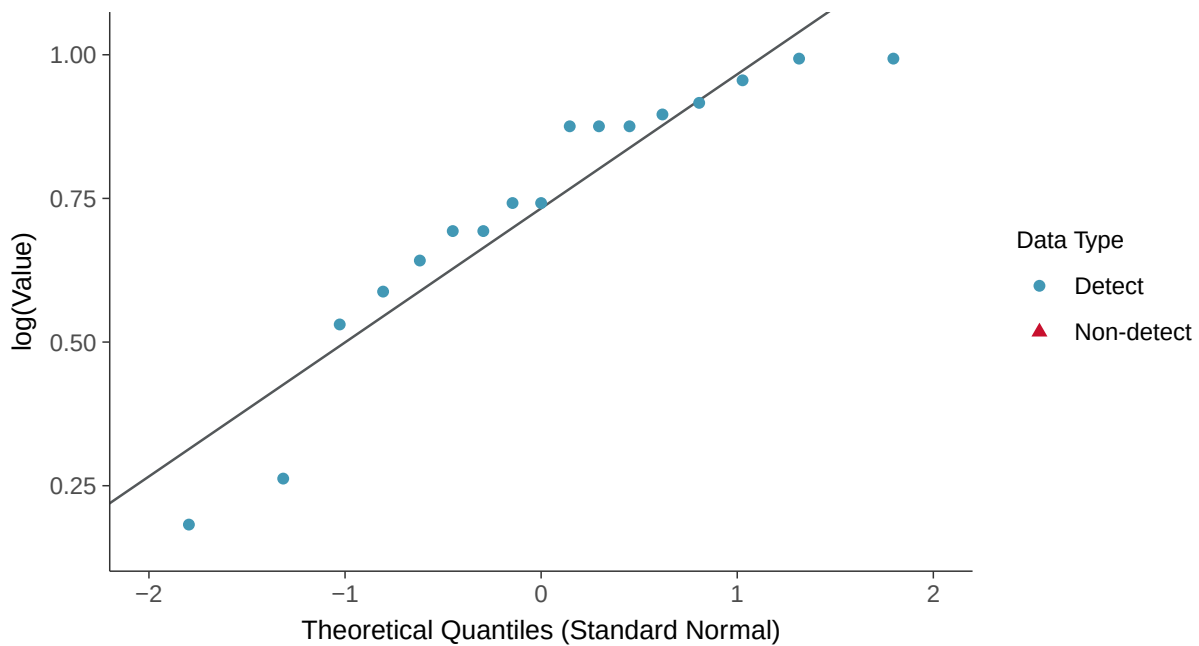
Normal Q-Q plot

Fluoride (App IV), MW-16 (mg/l)



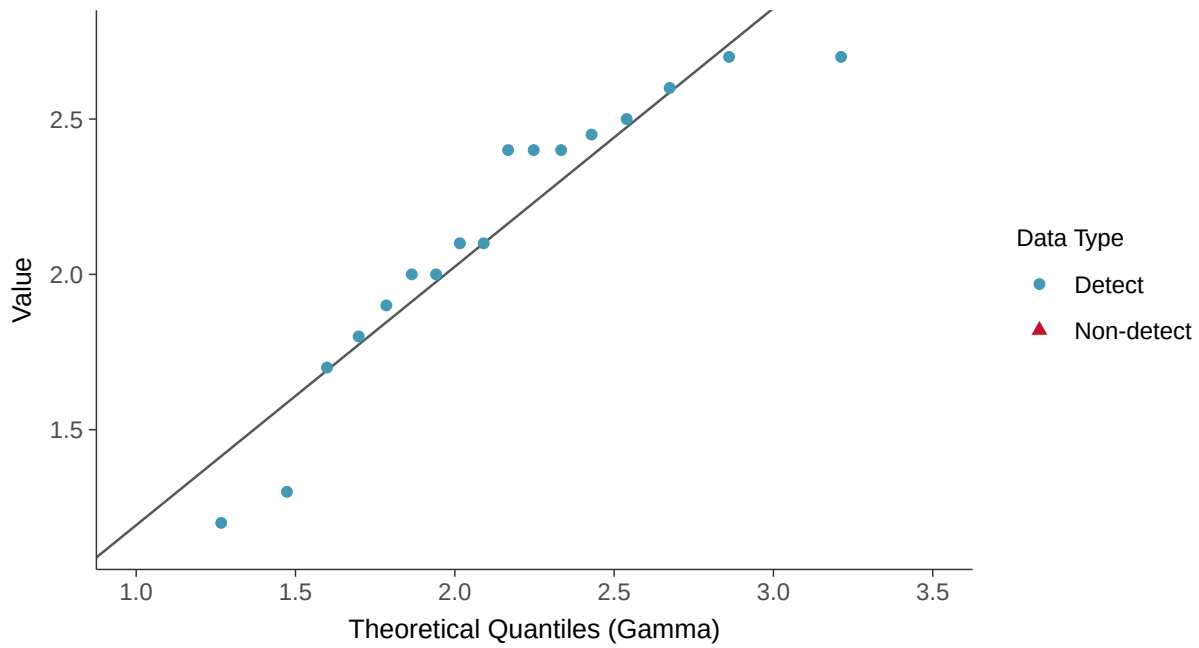
Lognormal Q-Q plot

Fluoride (App IV), MW-16 (mg/l)



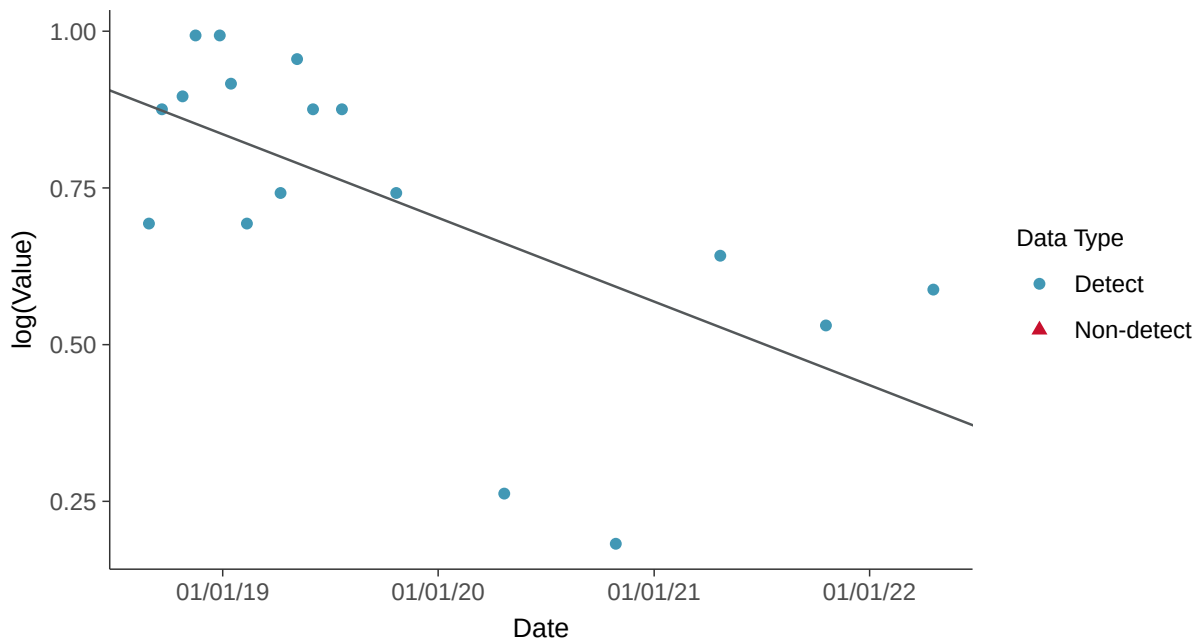
Gamma Q-Q plot

Fluoride (App IV), MW-16 (mg/l)



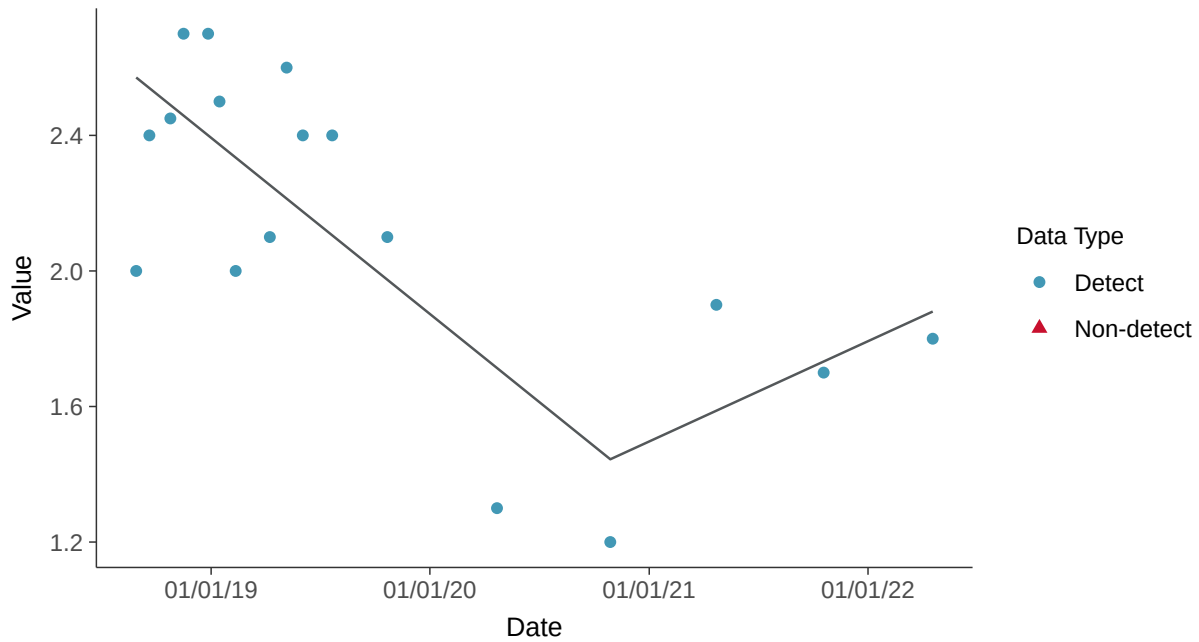
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-16 (mg/l)



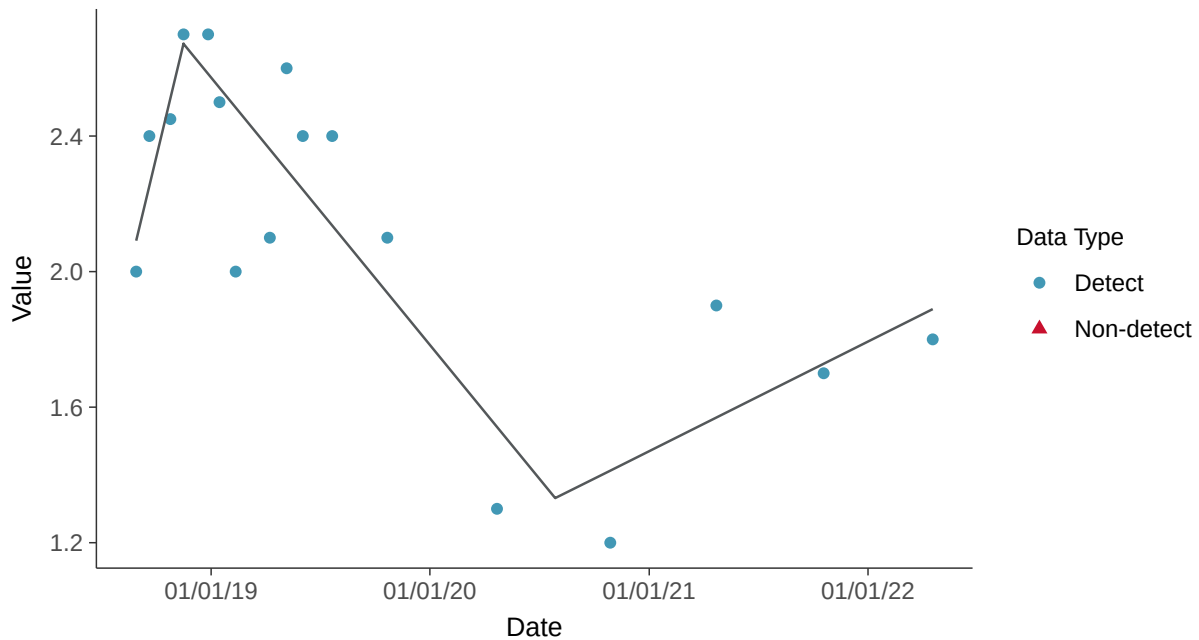
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-16 (mg/l)



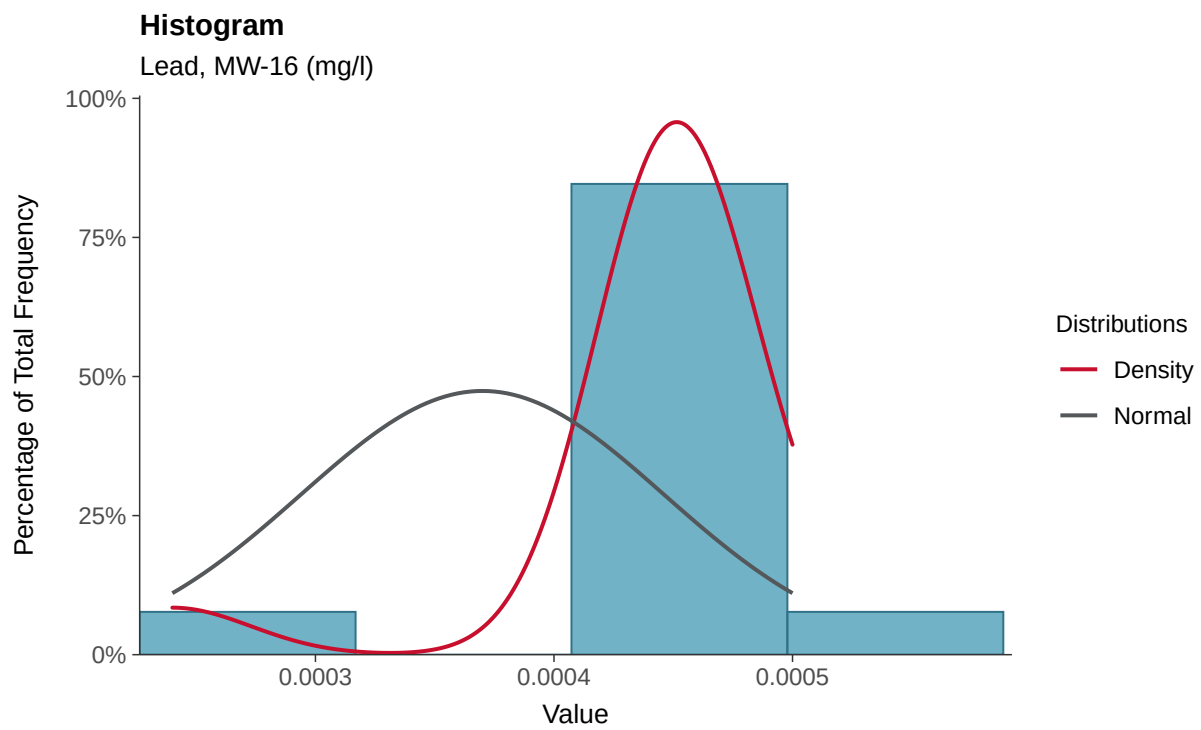
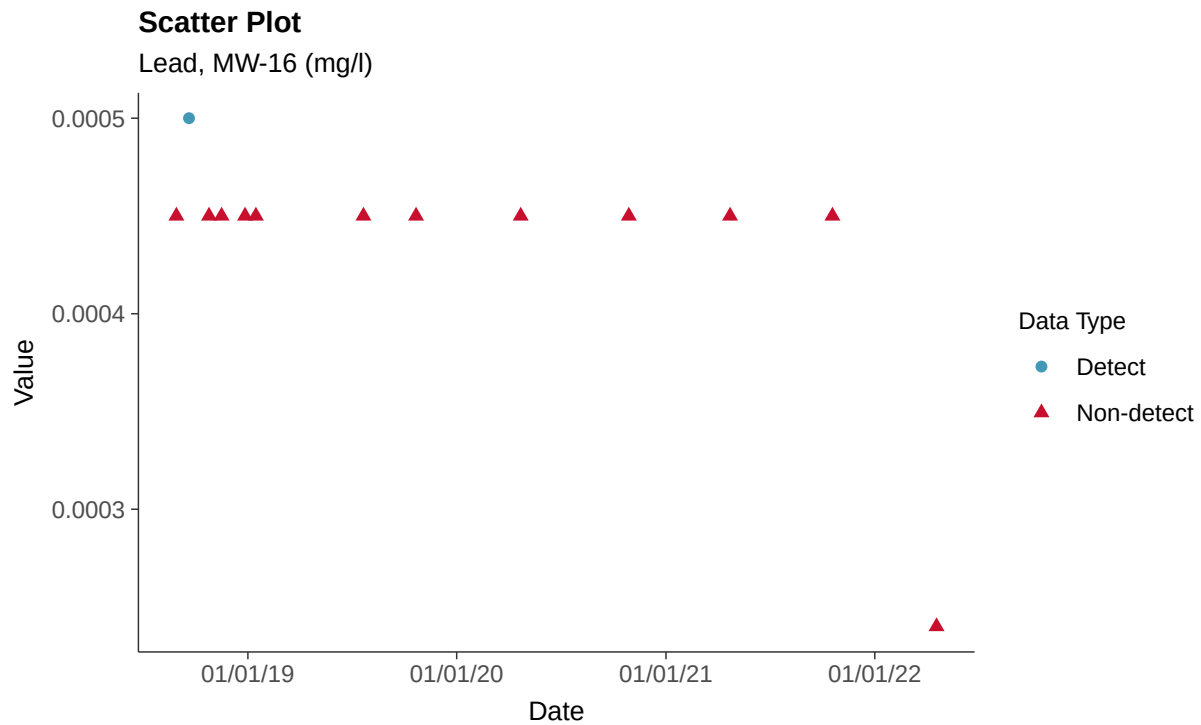
Trend Regression: Piecewise Linear-Linear-Linear

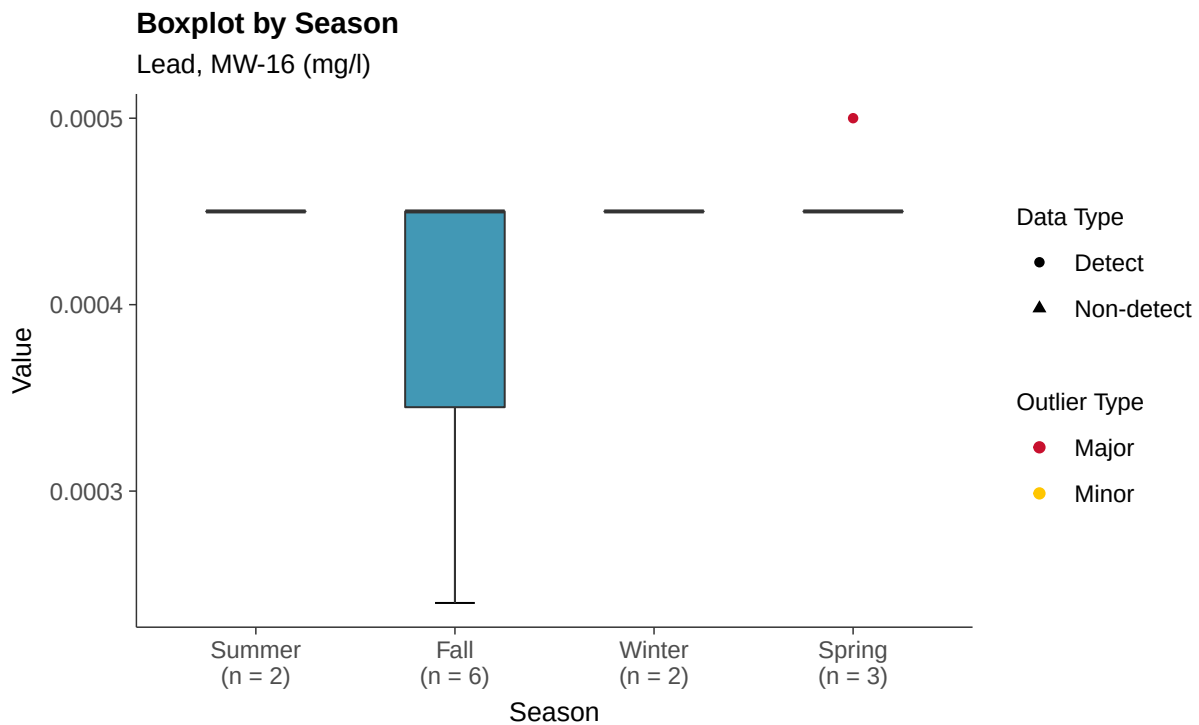
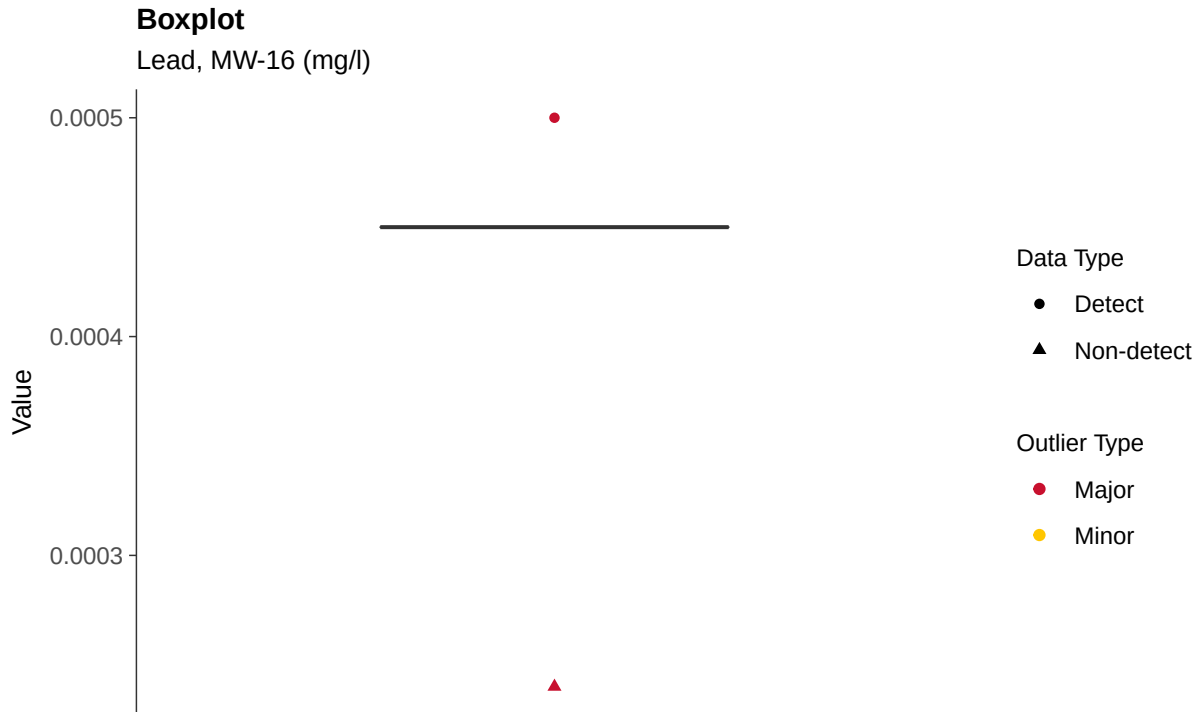
Fluoride (App IV), MW-16 (mg/l)



Appendix IV: Lead, MW-16

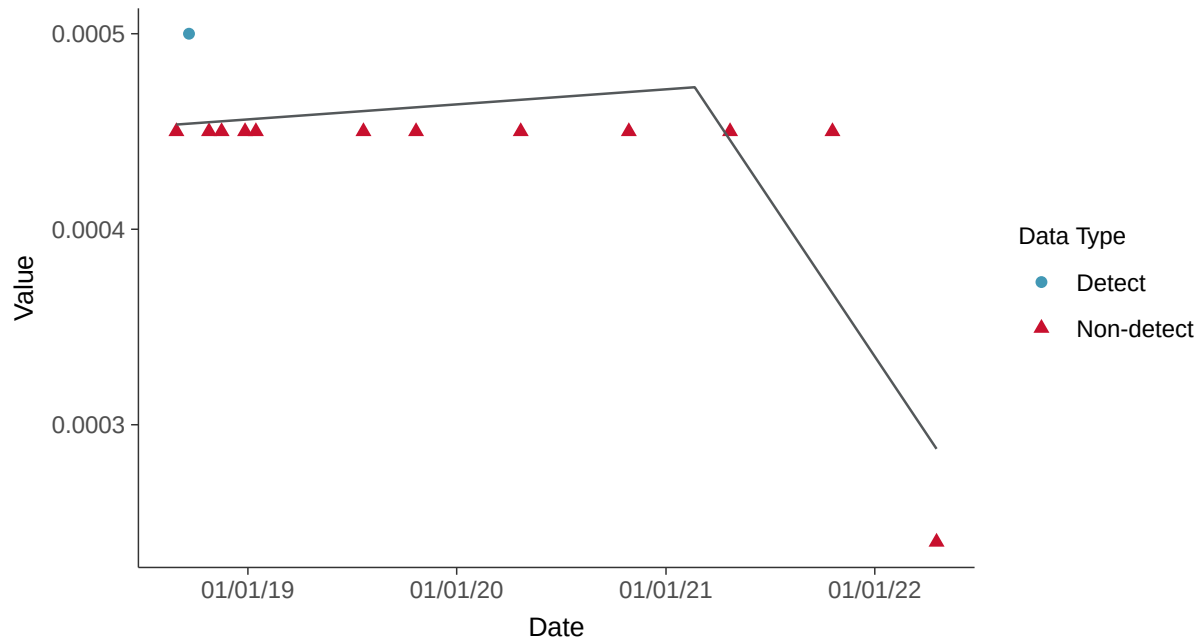
ID: 2_2_117





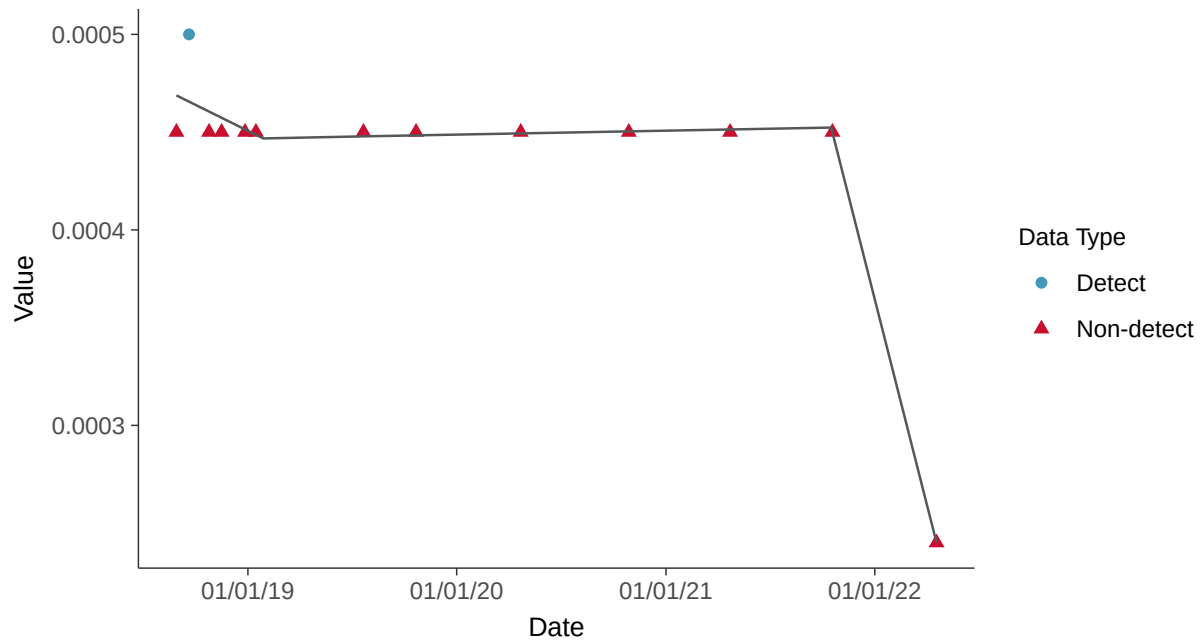
Trend Regression: Piecewise Linear-Linear

Lead, MW-16 (mg/l)



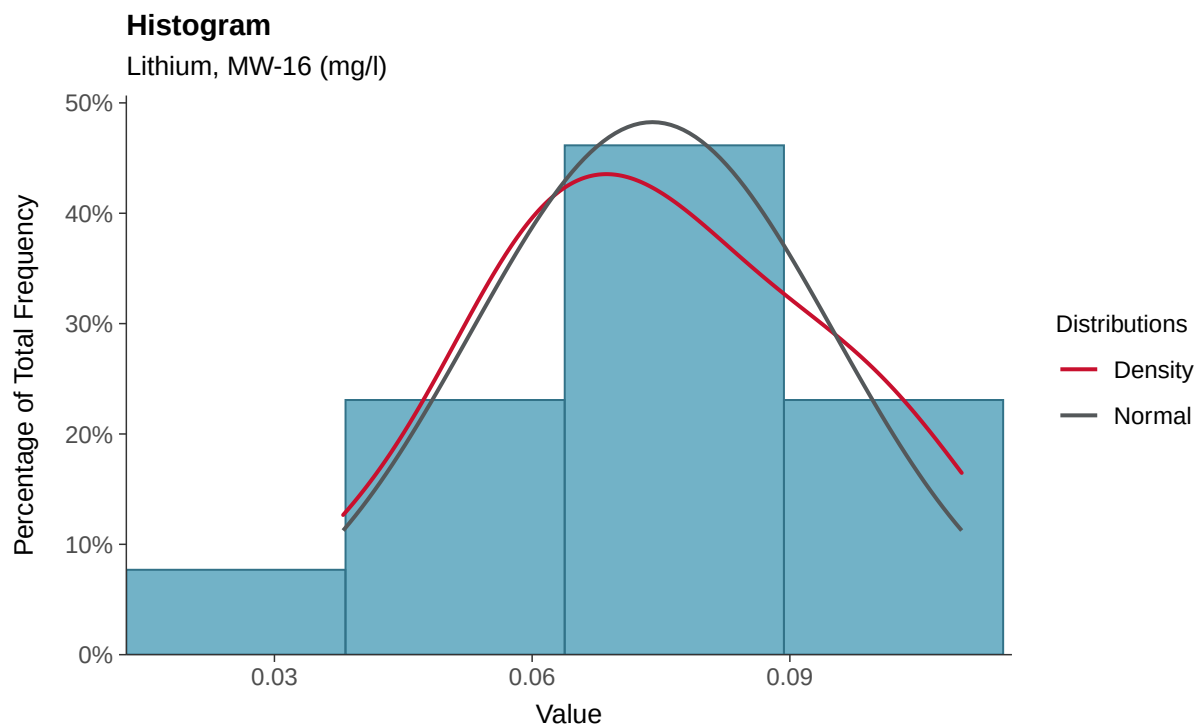
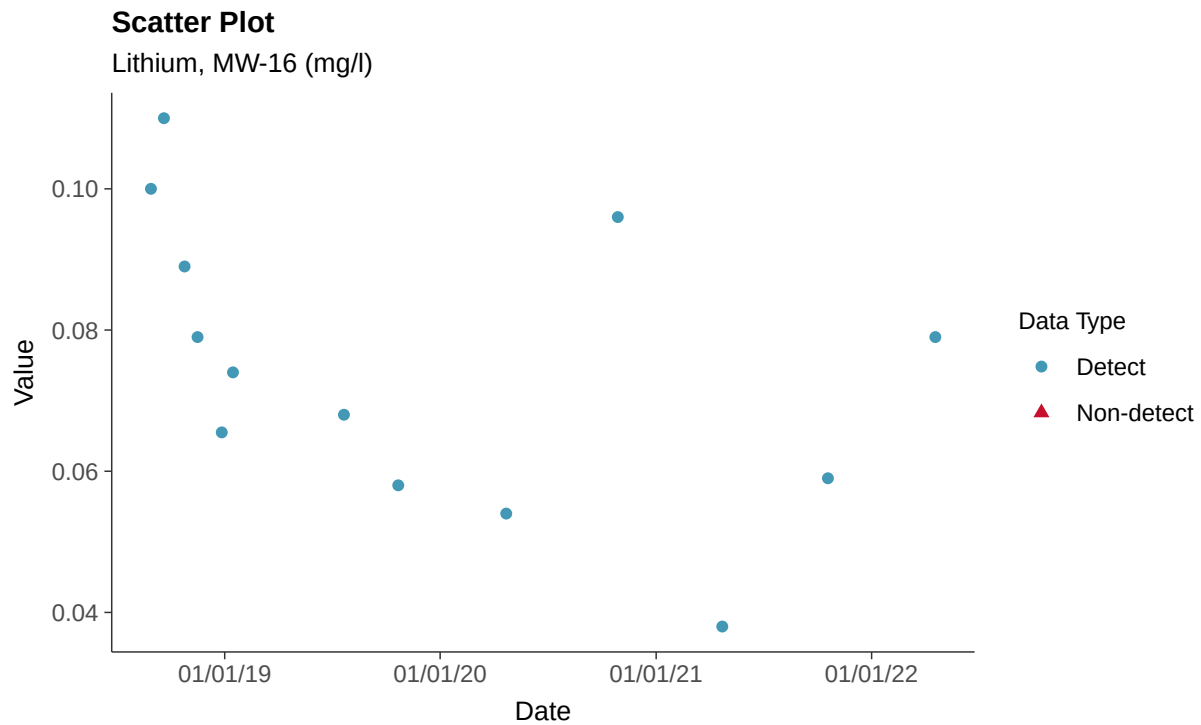
Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-16 (mg/l)



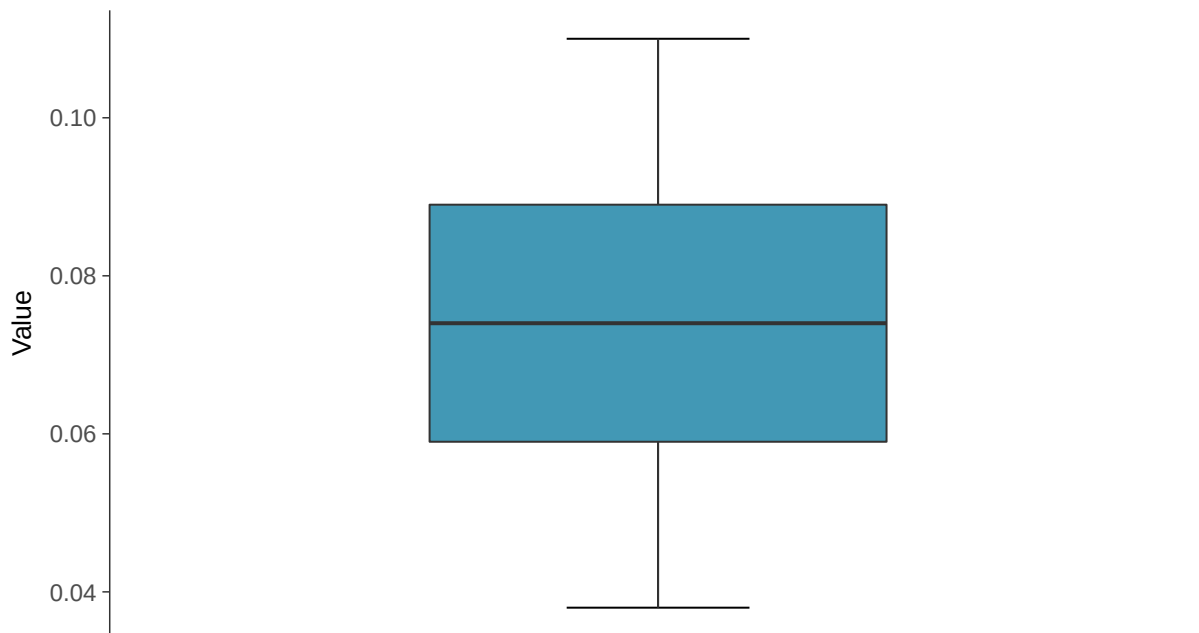
Appendix IV: Lithium, MW-16

ID: 2_2_118



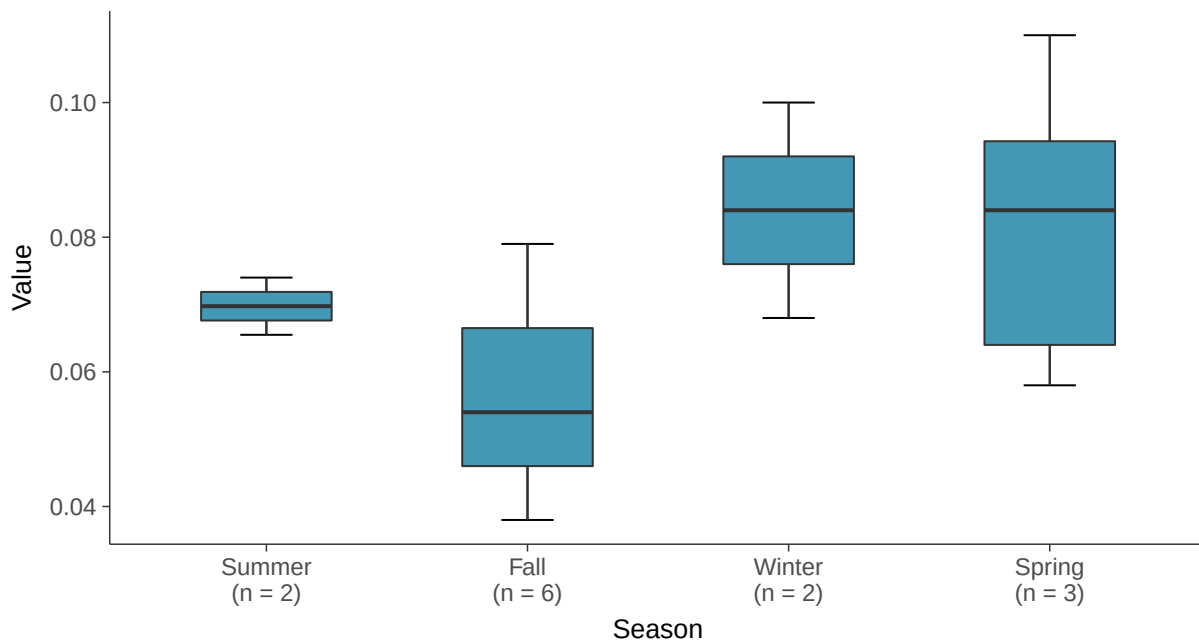
Boxplot

Lithium, MW-16 (mg/l)



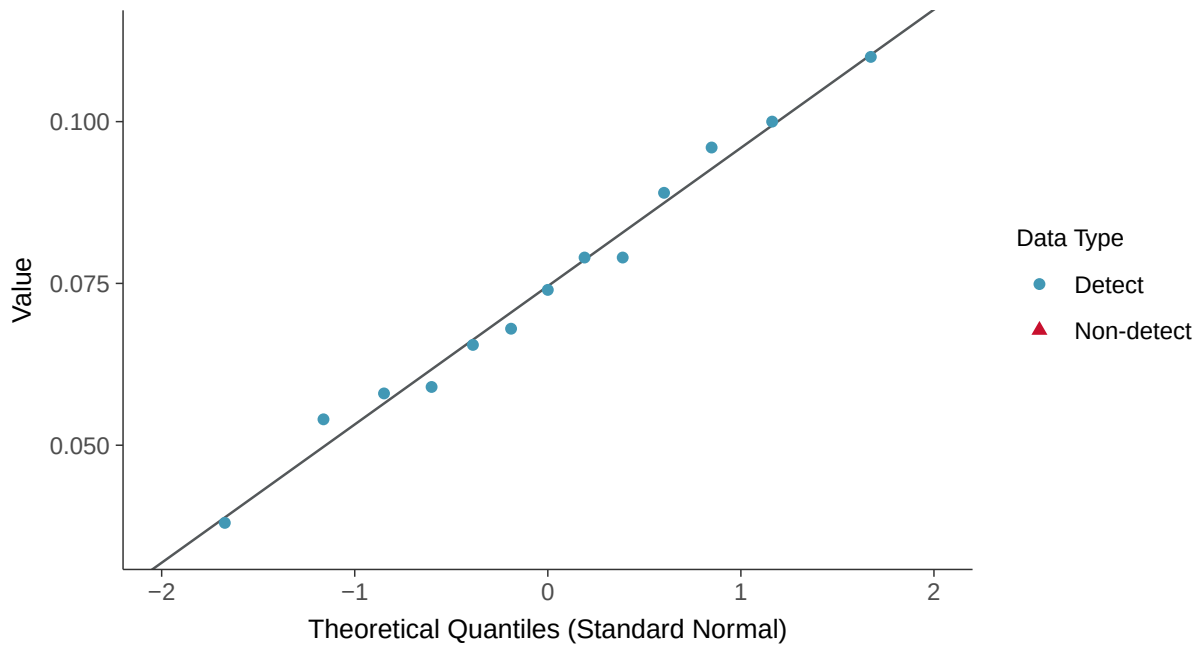
Boxplot by Season

Lithium, MW-16 (mg/l)



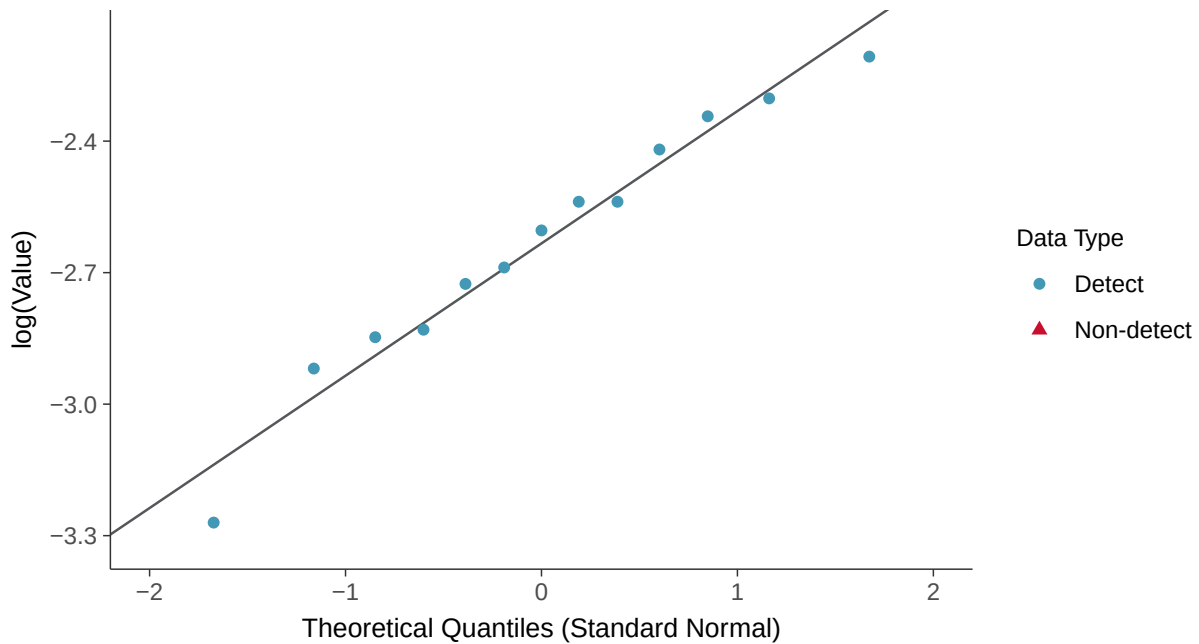
Normal Q-Q plot

Lithium, MW-16 (mg/l)



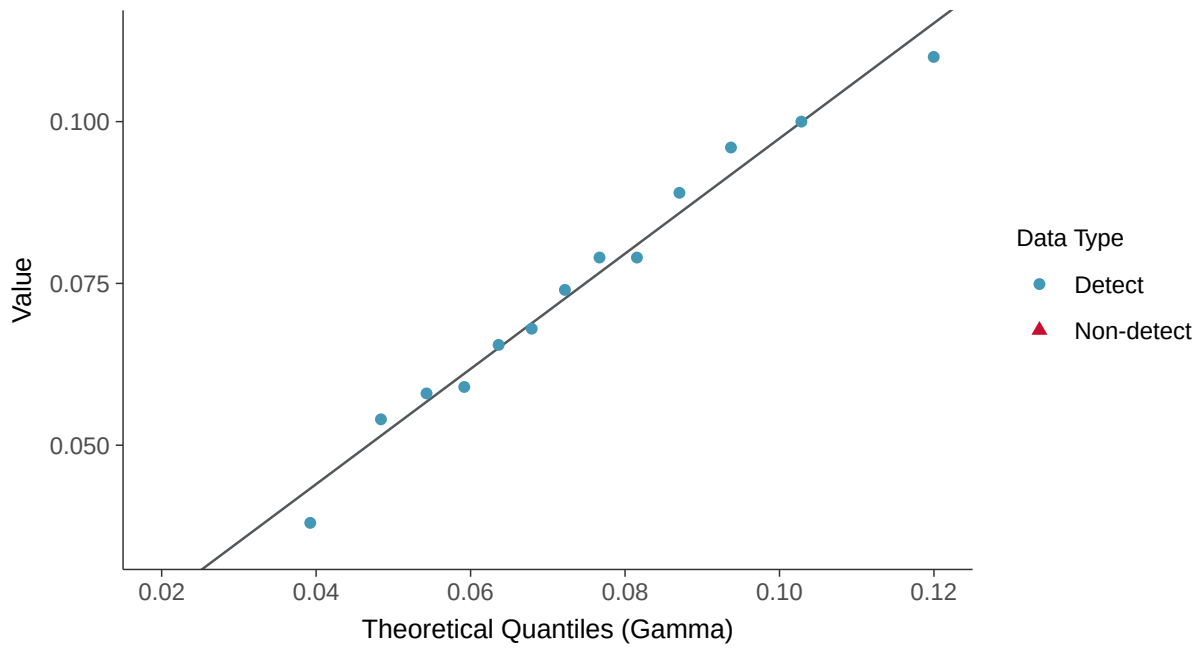
Lognormal Q-Q plot

Lithium, MW-16 (mg/l)



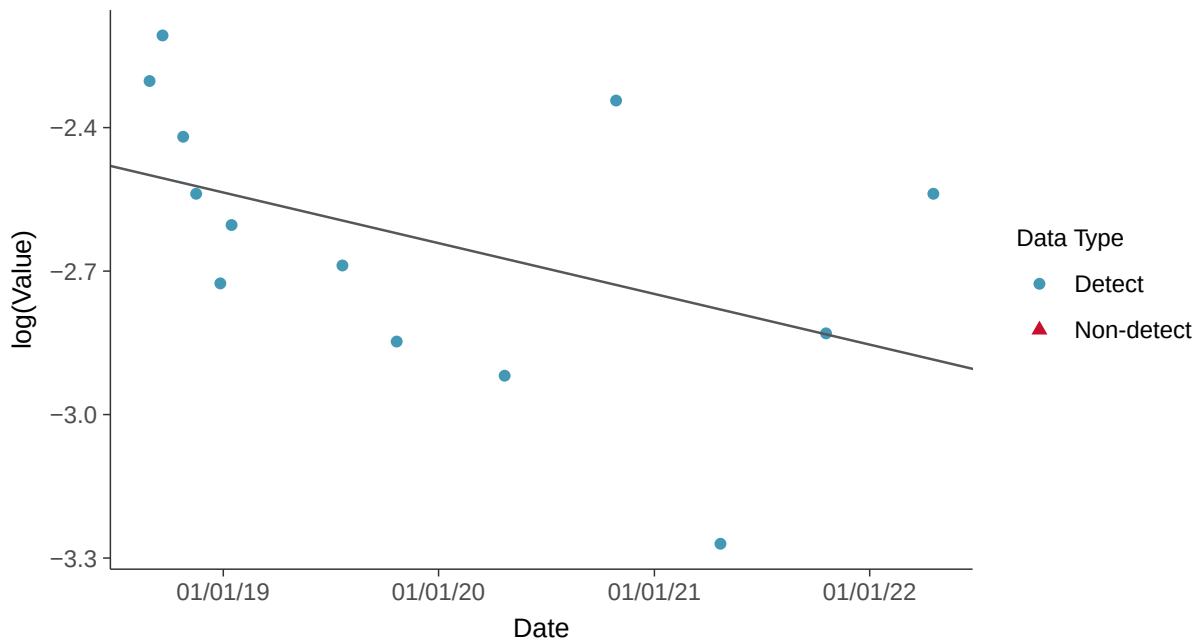
Gamma Q-Q plot

Lithium, MW-16 (mg/l)



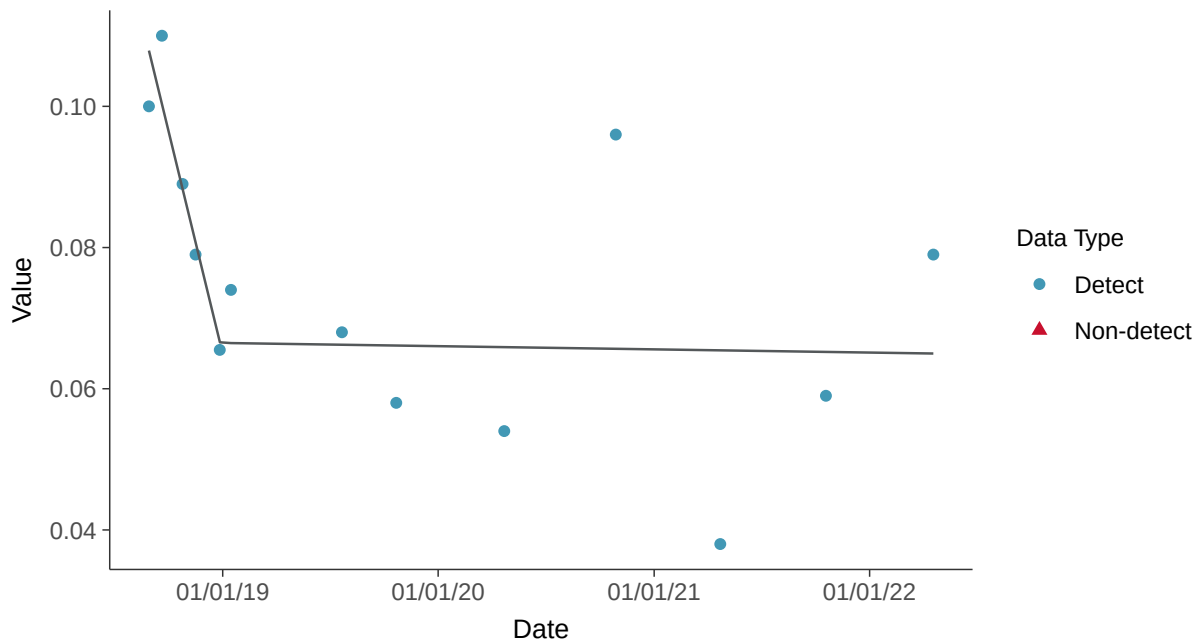
Trend Regression: Lognormal MLE

Lithium, MW-16 (mg/l)



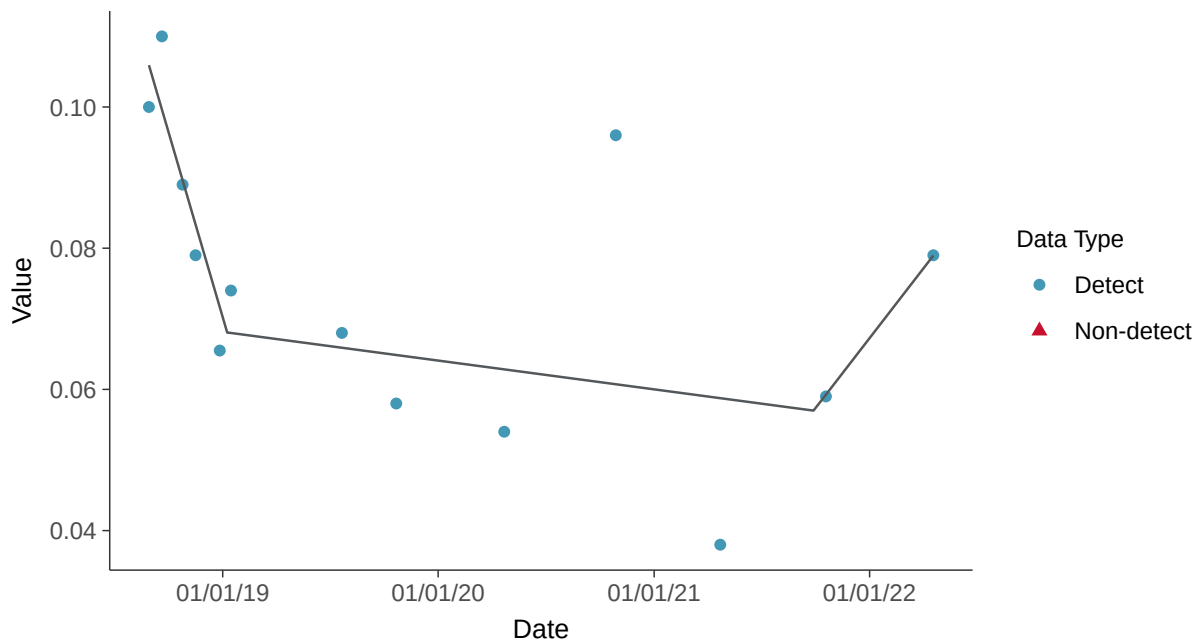
Trend Regression: Piecewise Linear-Linear

Lithium, MW-16 (mg/l)



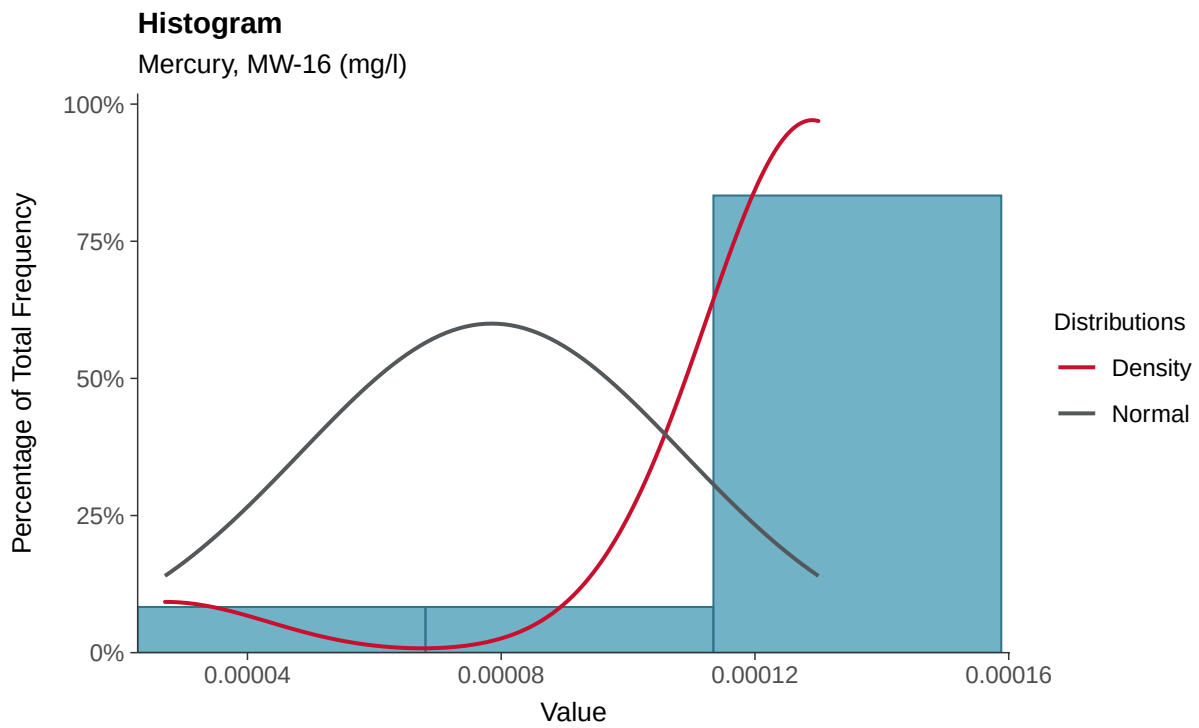
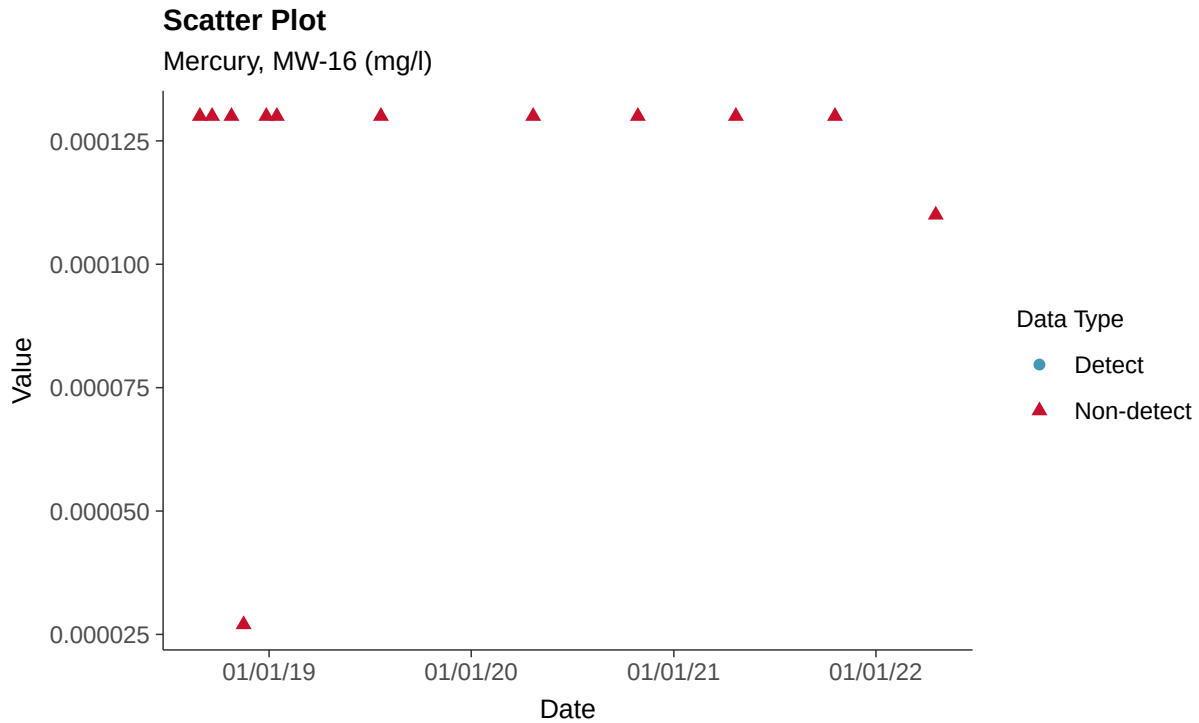
Trend Regression: Piecewise Linear-Linear-Linear

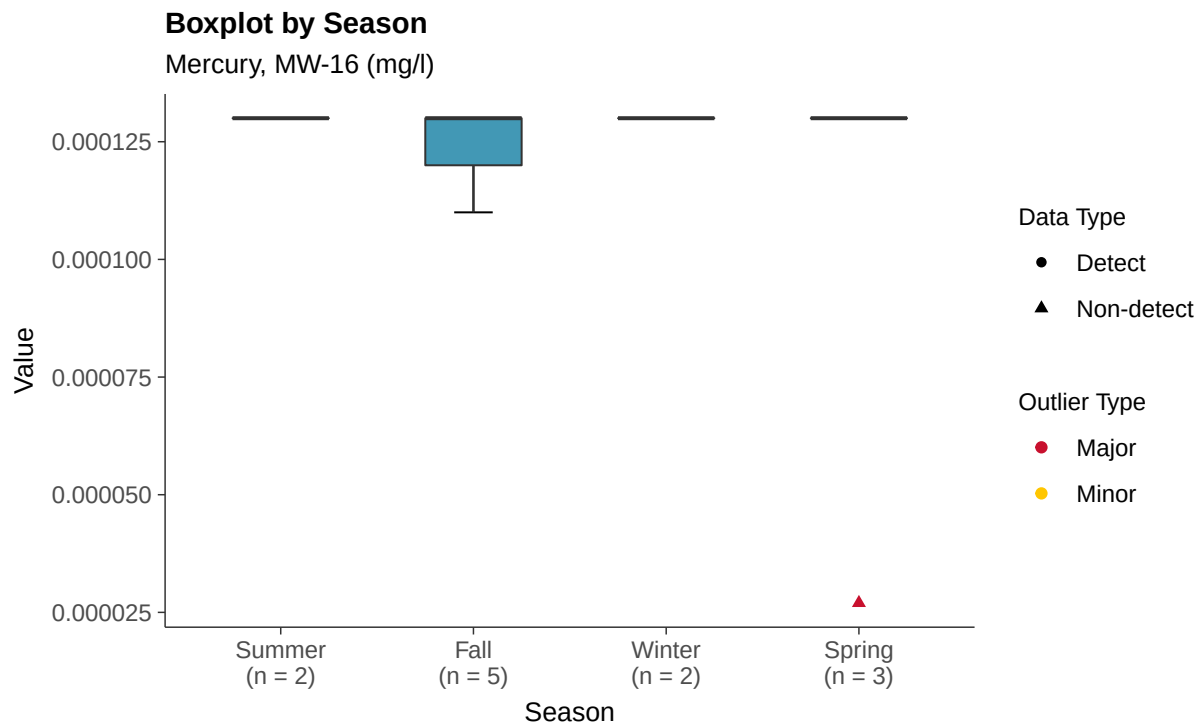
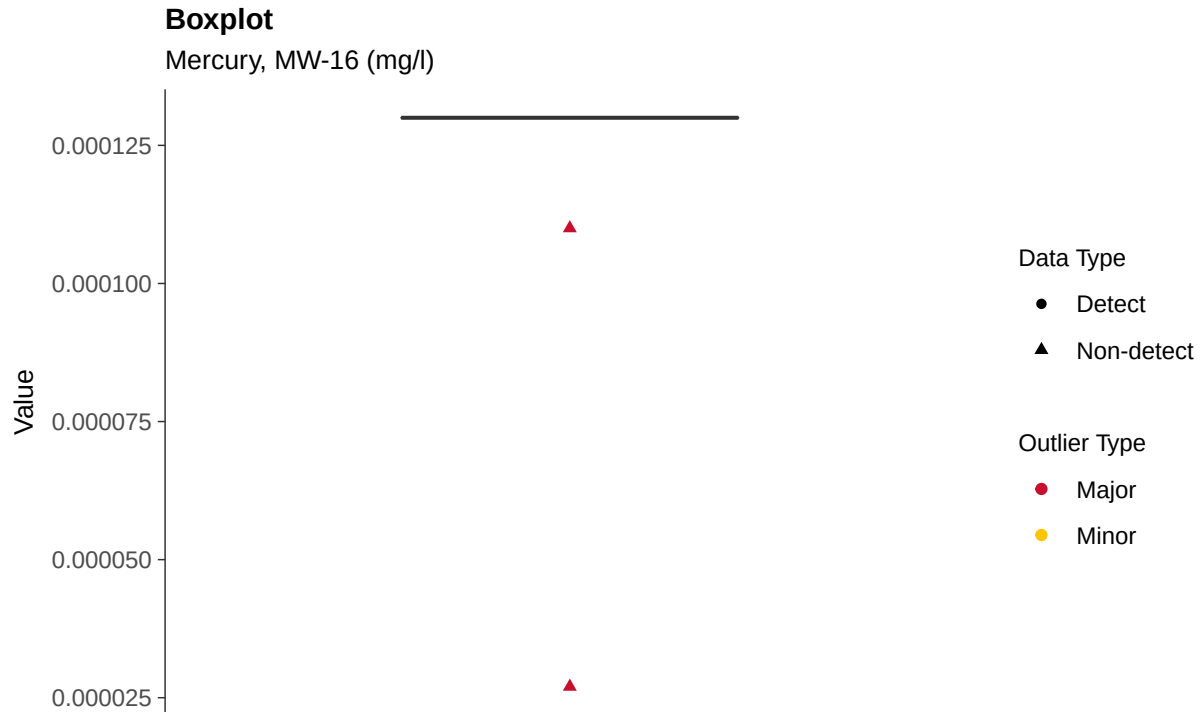
Lithium, MW-16 (mg/l)



Appendix IV: Mercury, MW-16

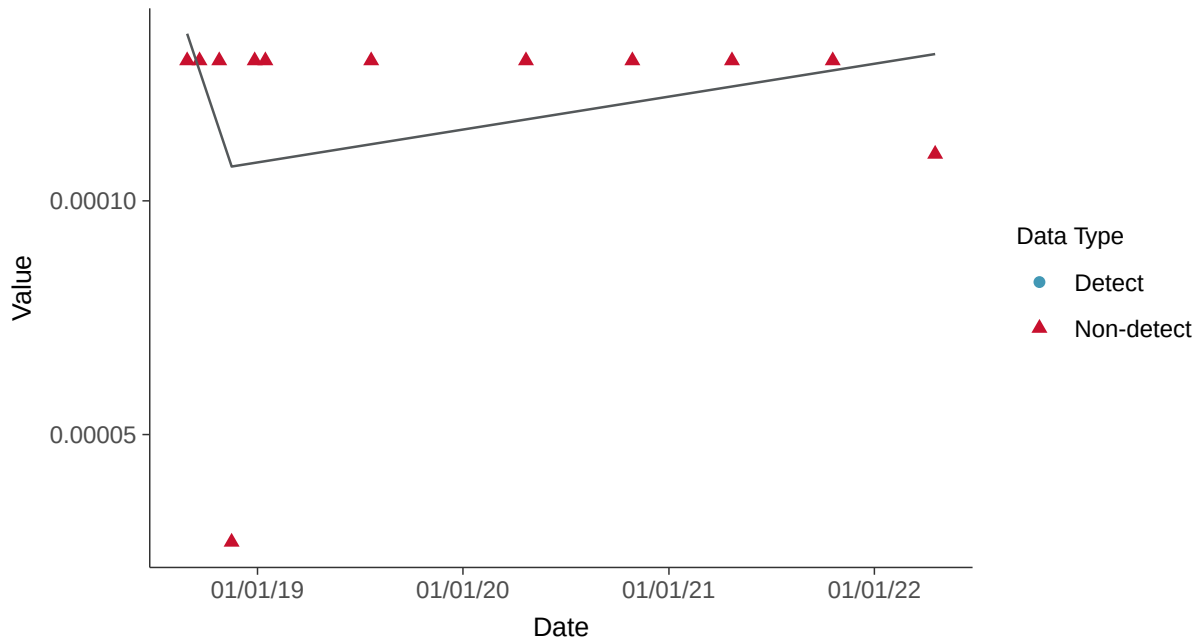
ID: 2_2_120





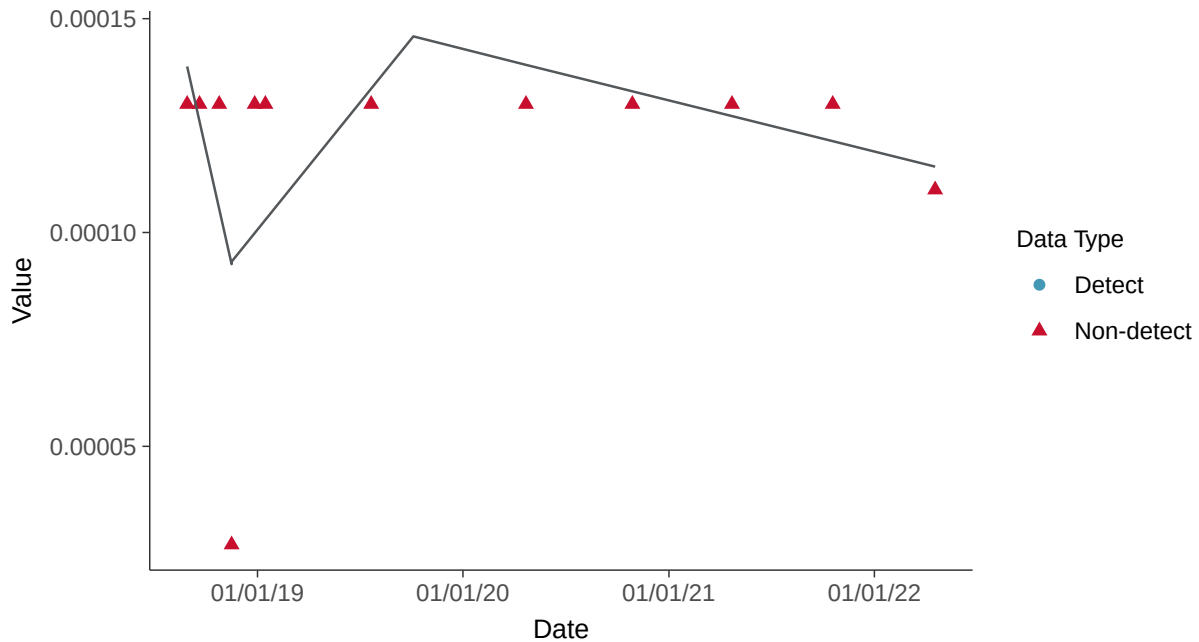
Trend Regression: Piecewise Linear-Linear

Mercury, MW-16 (mg/l)



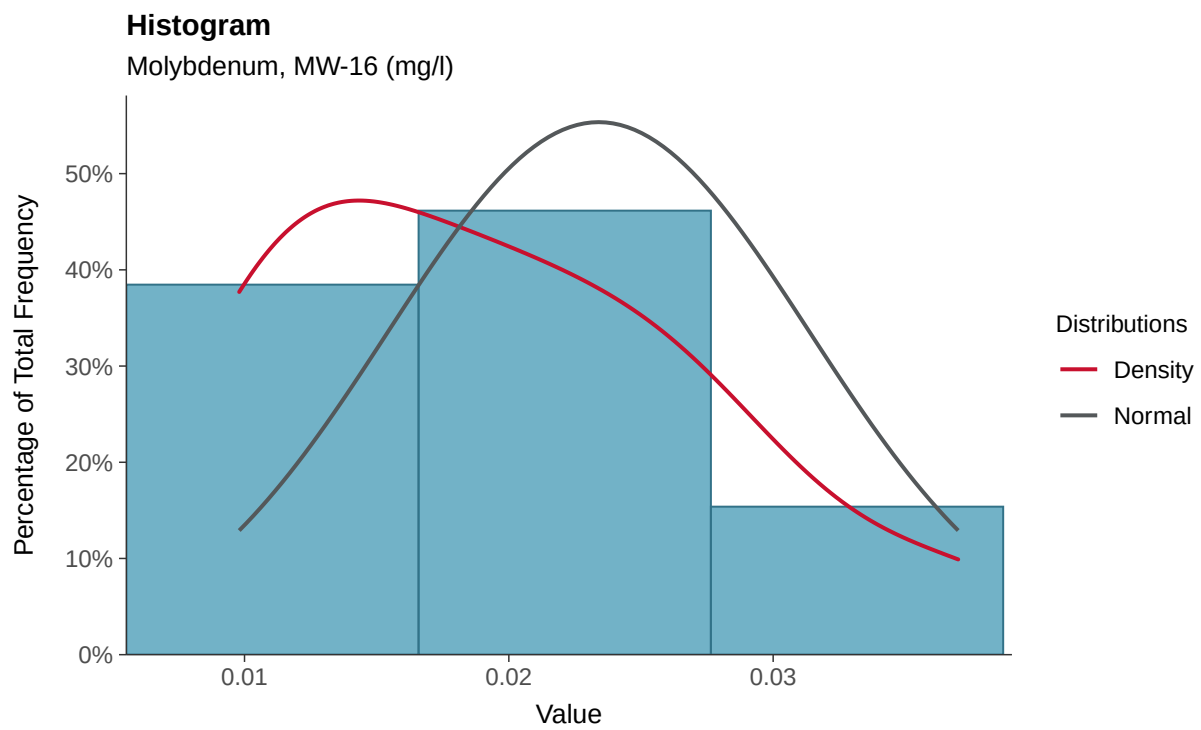
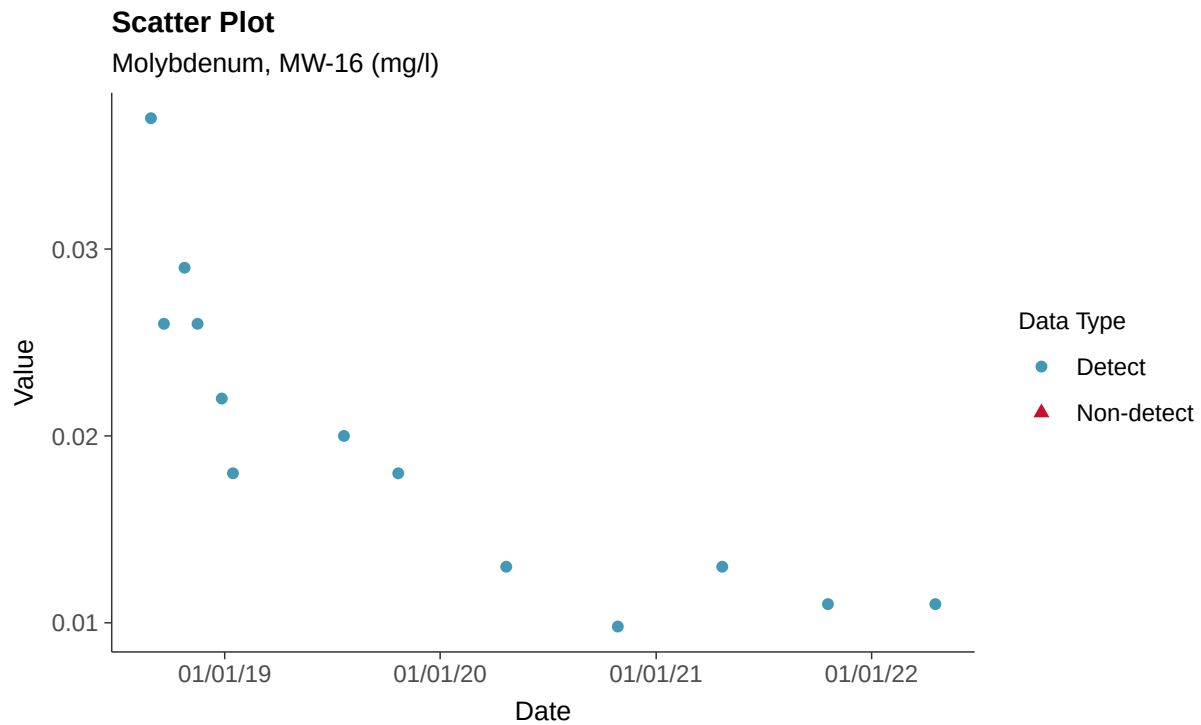
Trend Regression: Piecewise Linear-Linear-Linear

Mercury, MW-16 (mg/l)



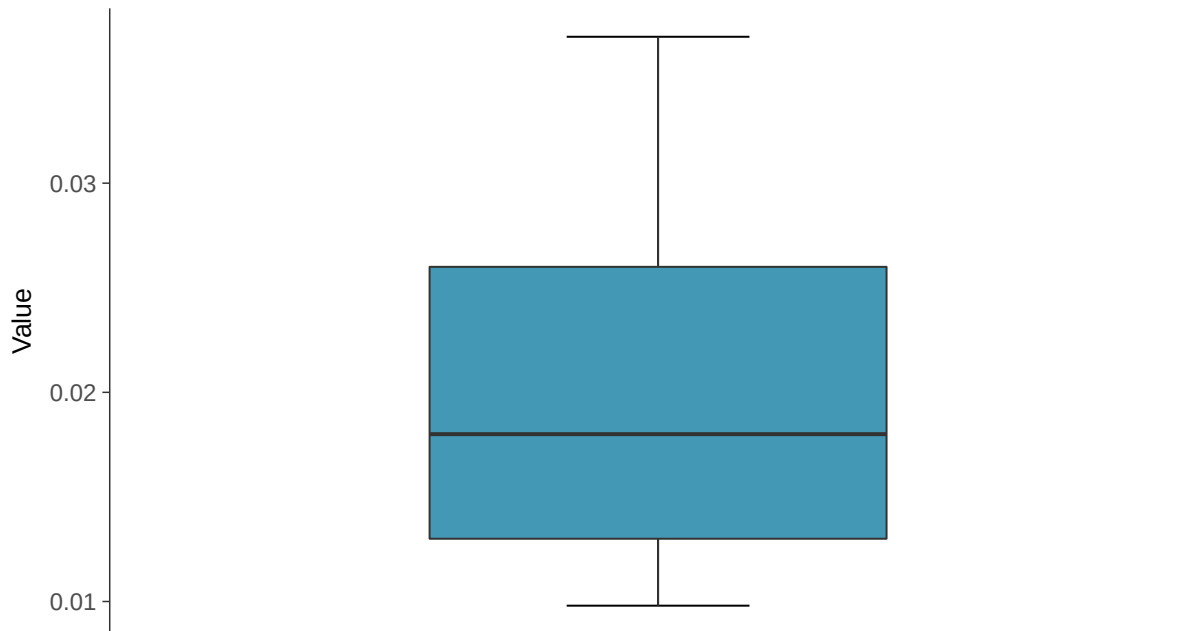
Appendix IV: Molybdenum, MW-16

ID: 2_2_121



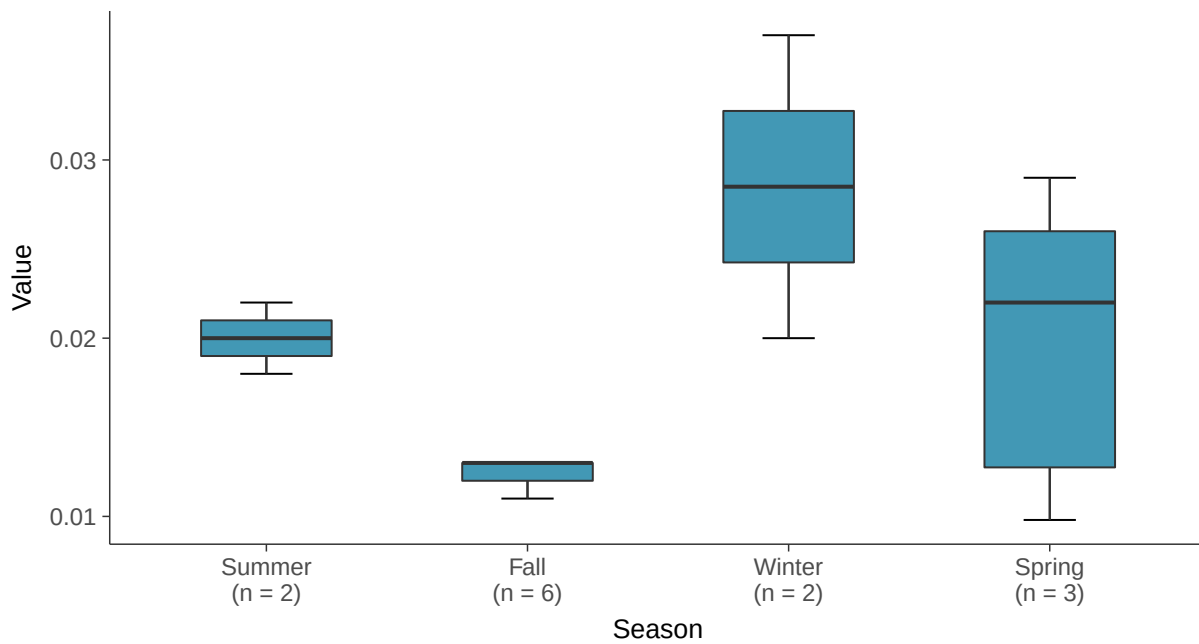
Boxplot

Molybdenum, MW-16 (mg/l)



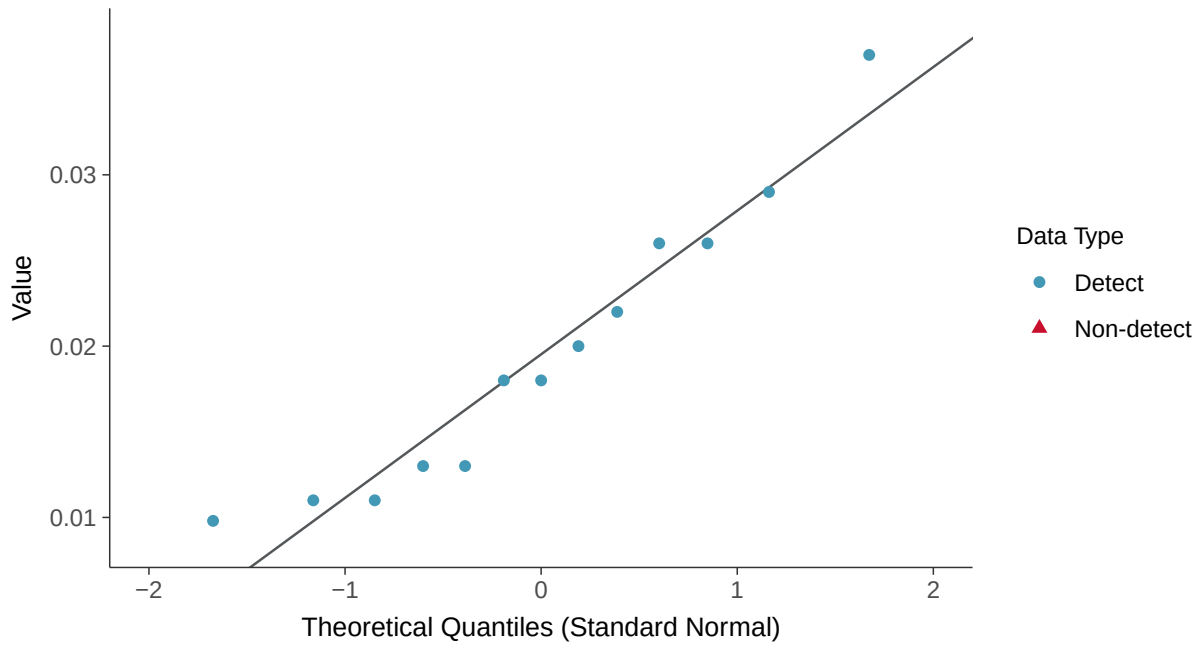
Boxplot by Season

Molybdenum, MW-16 (mg/l)



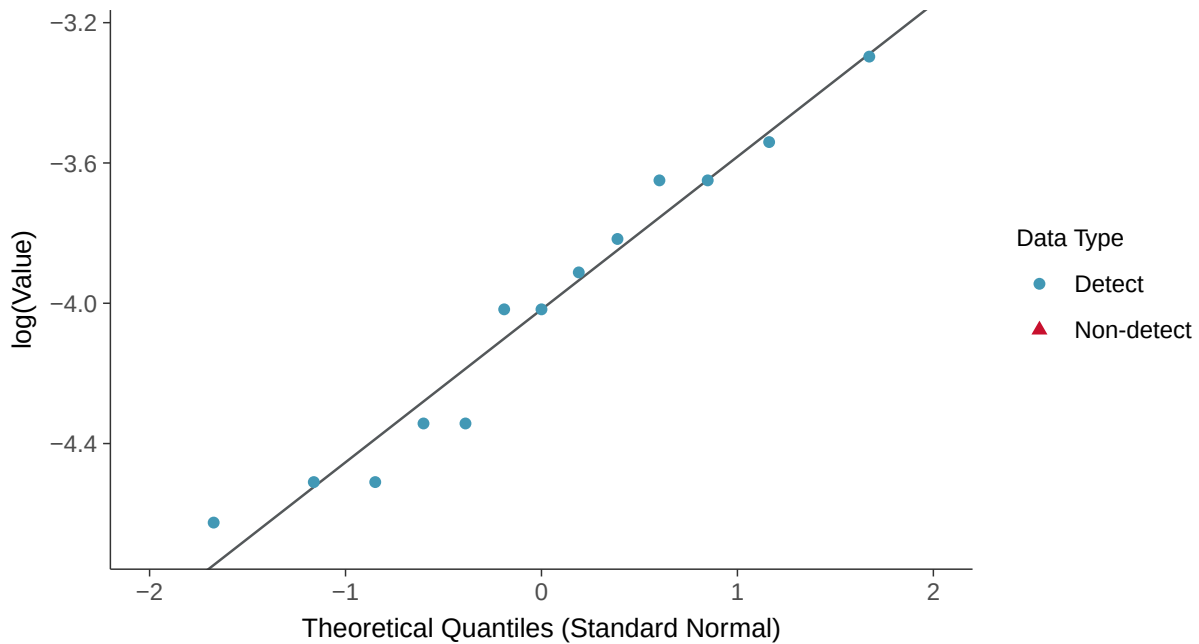
Normal Q-Q plot

Molybdenum, MW-16 (mg/l)



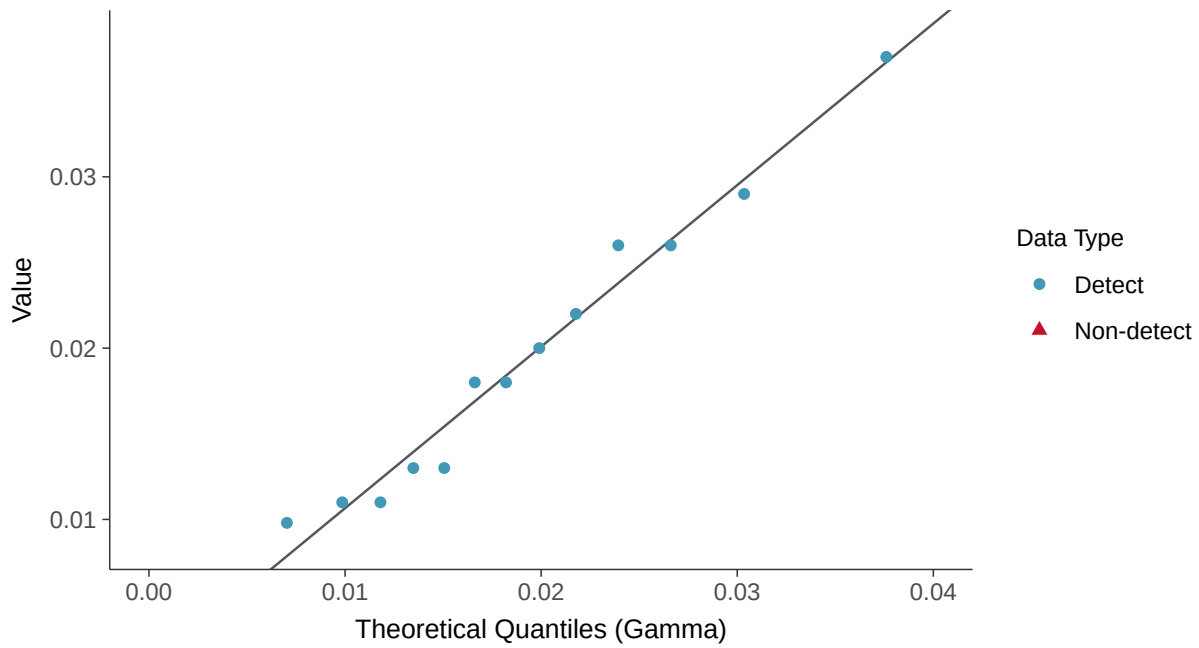
Lognormal Q-Q plot

Molybdenum, MW-16 (mg/l)



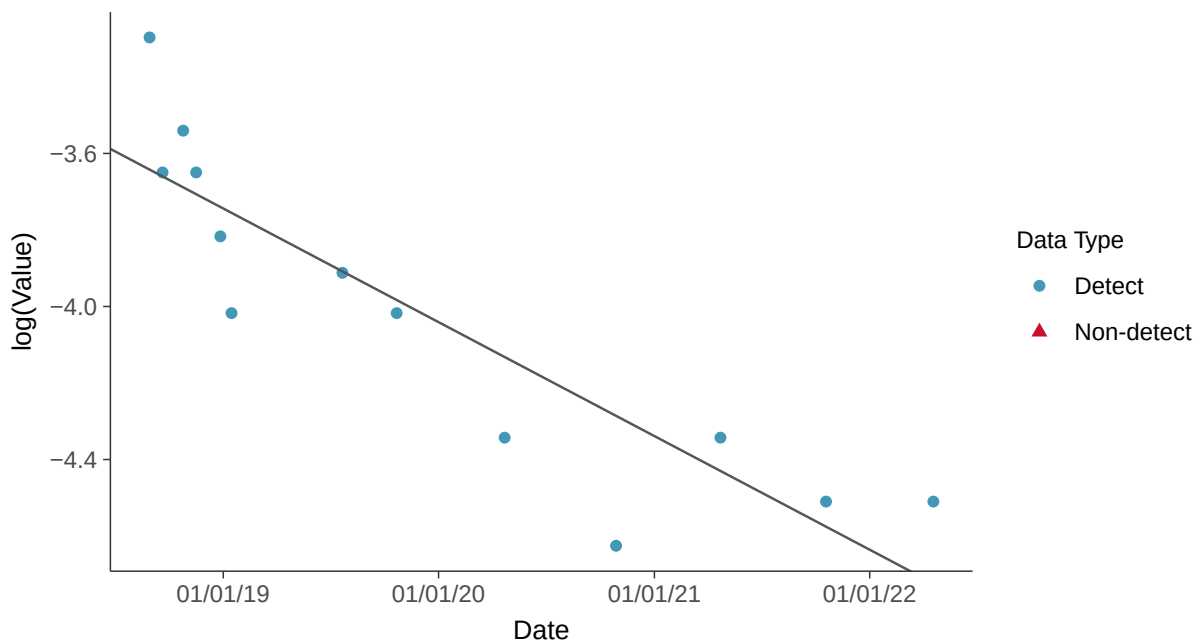
Gamma Q-Q plot

Molybdenum, MW-16 (mg/l)



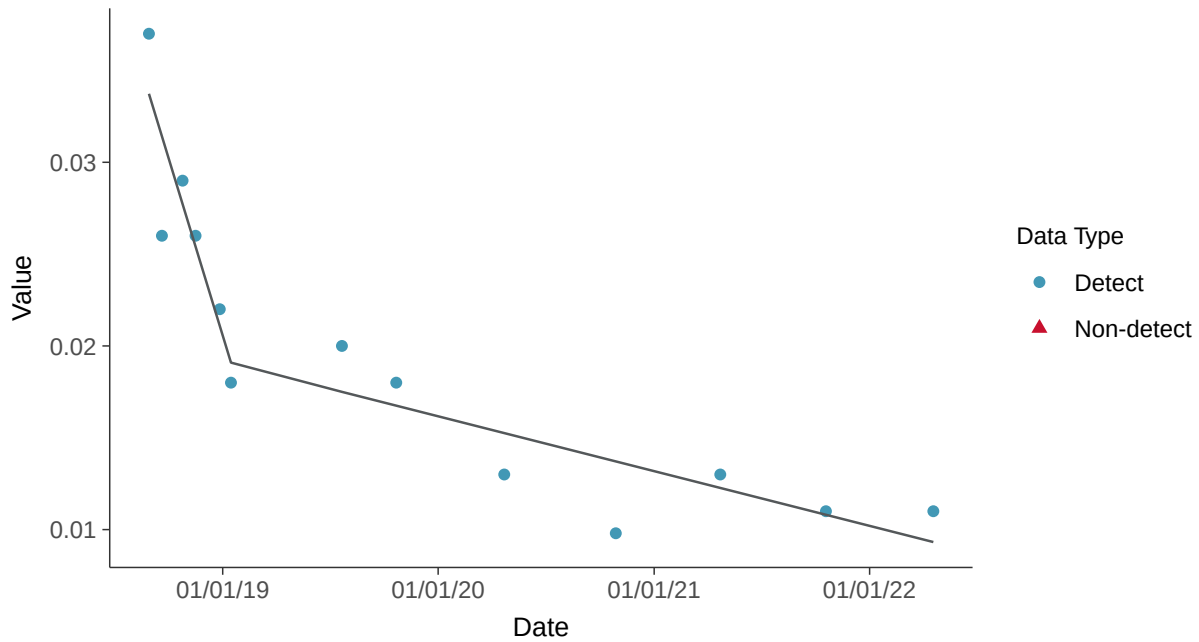
Trend Regression: Lognormal MLE

Molybdenum, MW-16 (mg/l)



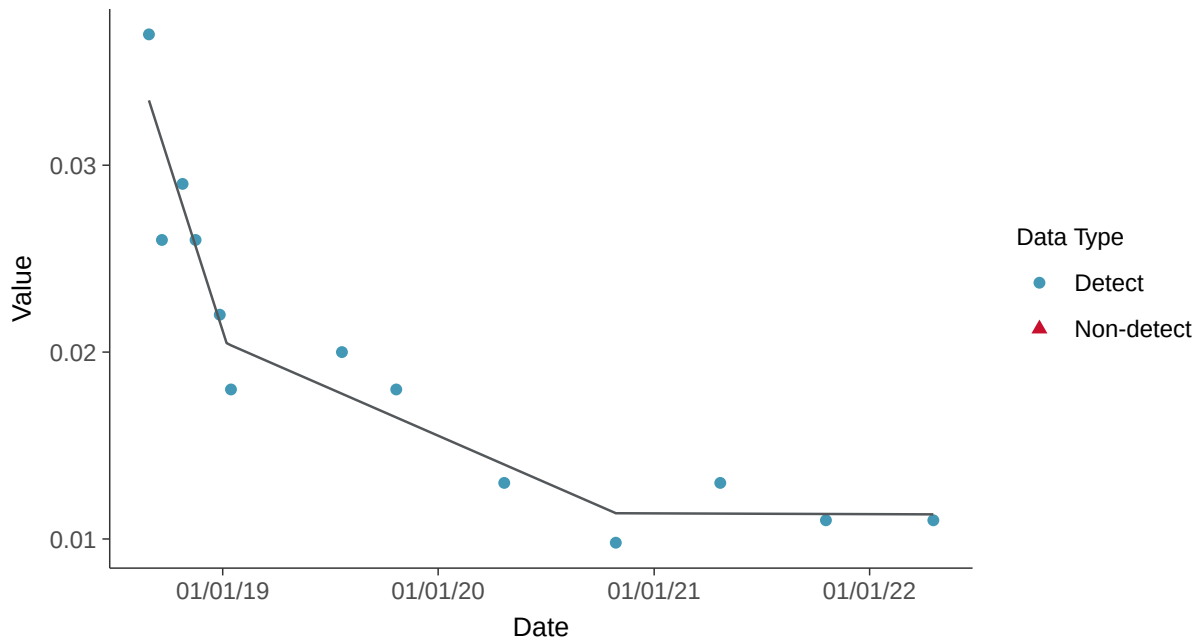
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-16 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-16 (mg/l)

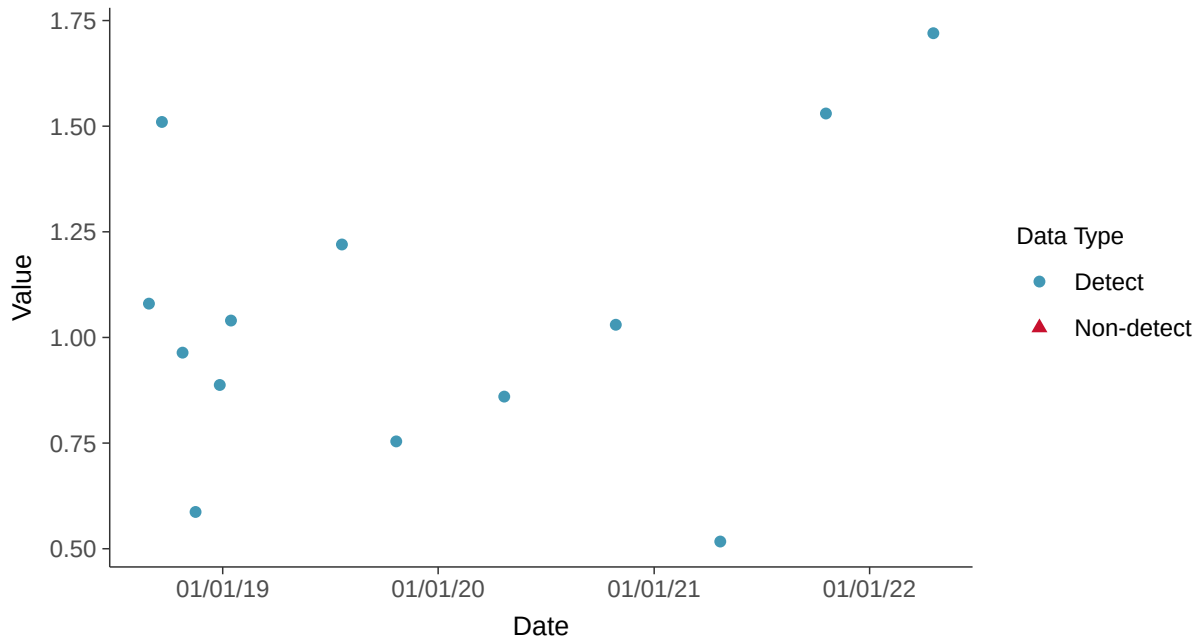


Appendix IV: Radium-226+228, MW-16

ID: 2_2_127

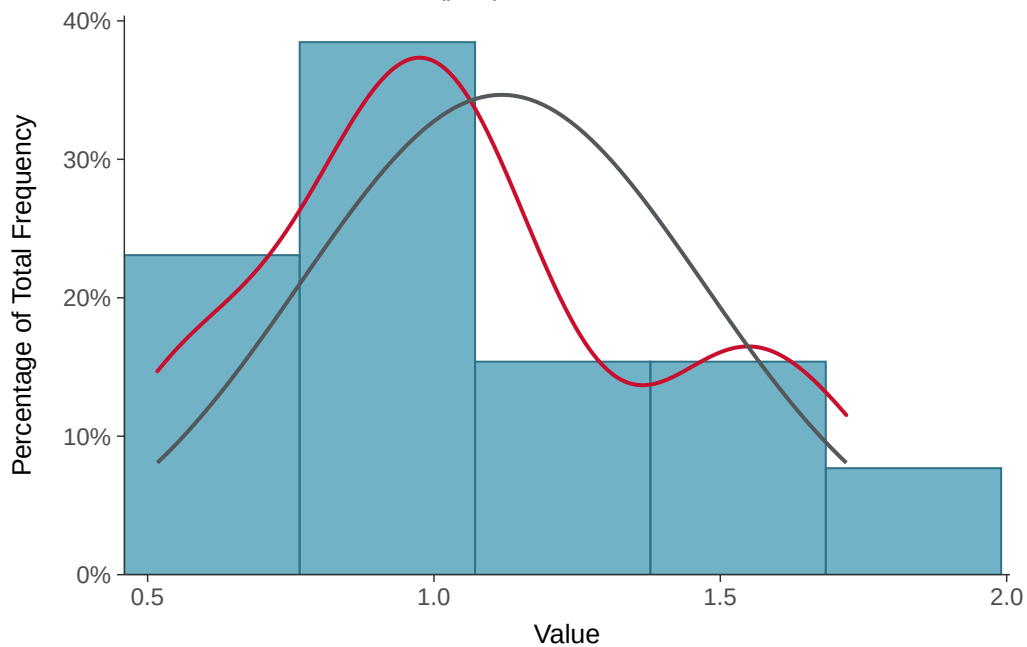
Scatter Plot

Radium-226+228, MW-16 (pci/l)



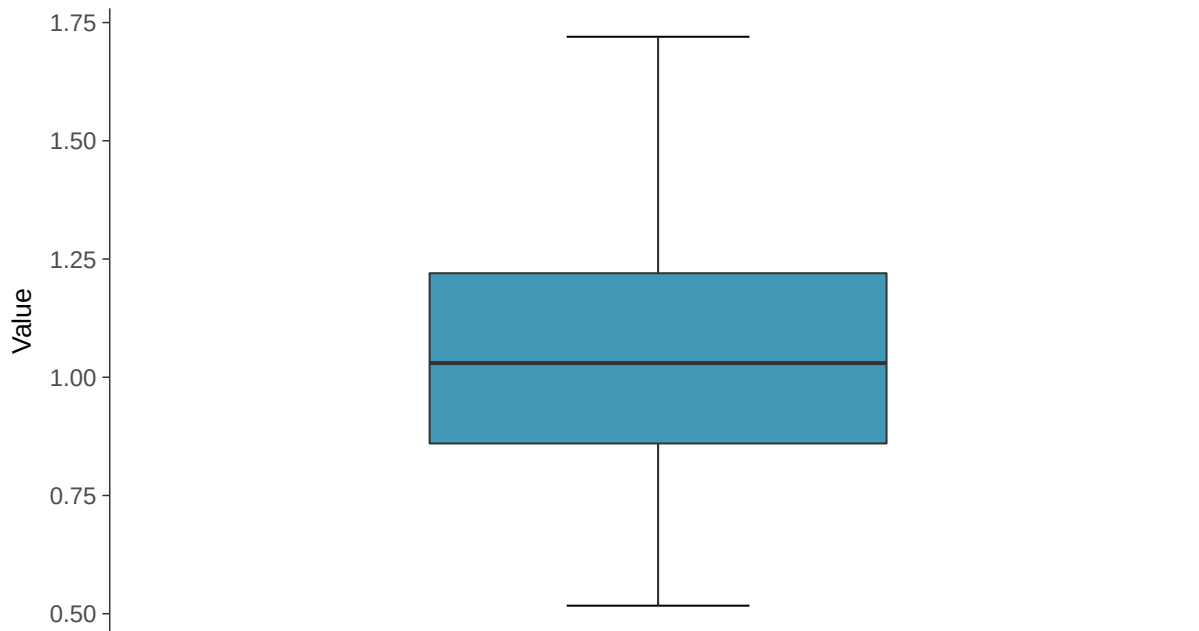
Histogram

Radium-226+228, MW-16 (pci/l)



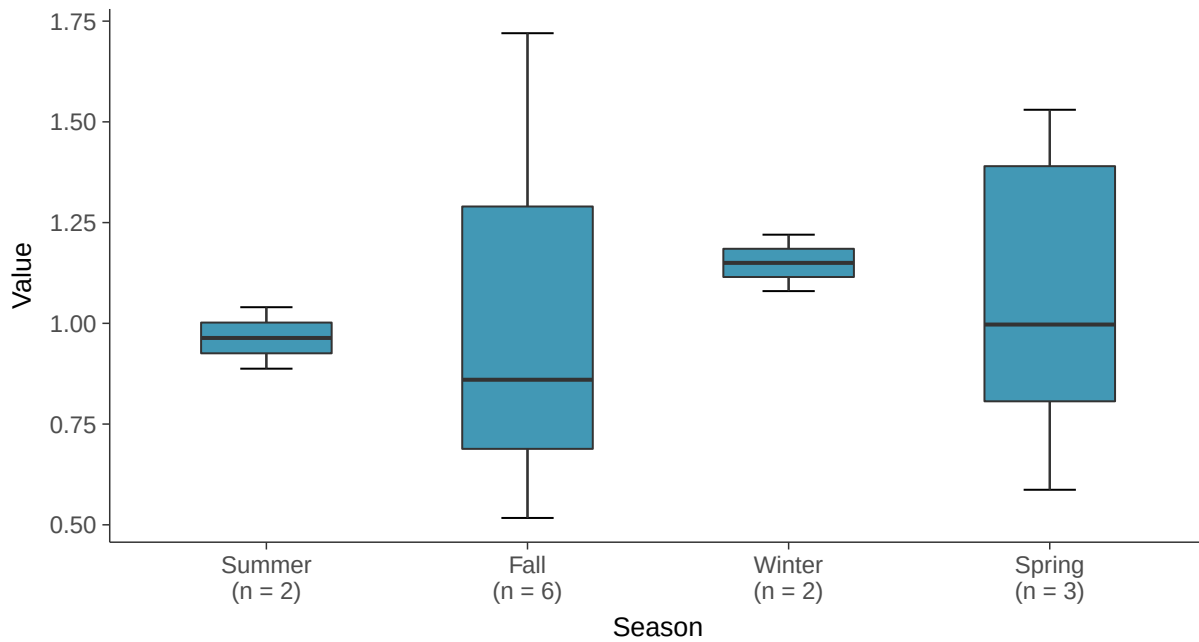
Boxplot

Radium-226+228, MW-16 (pci/l)



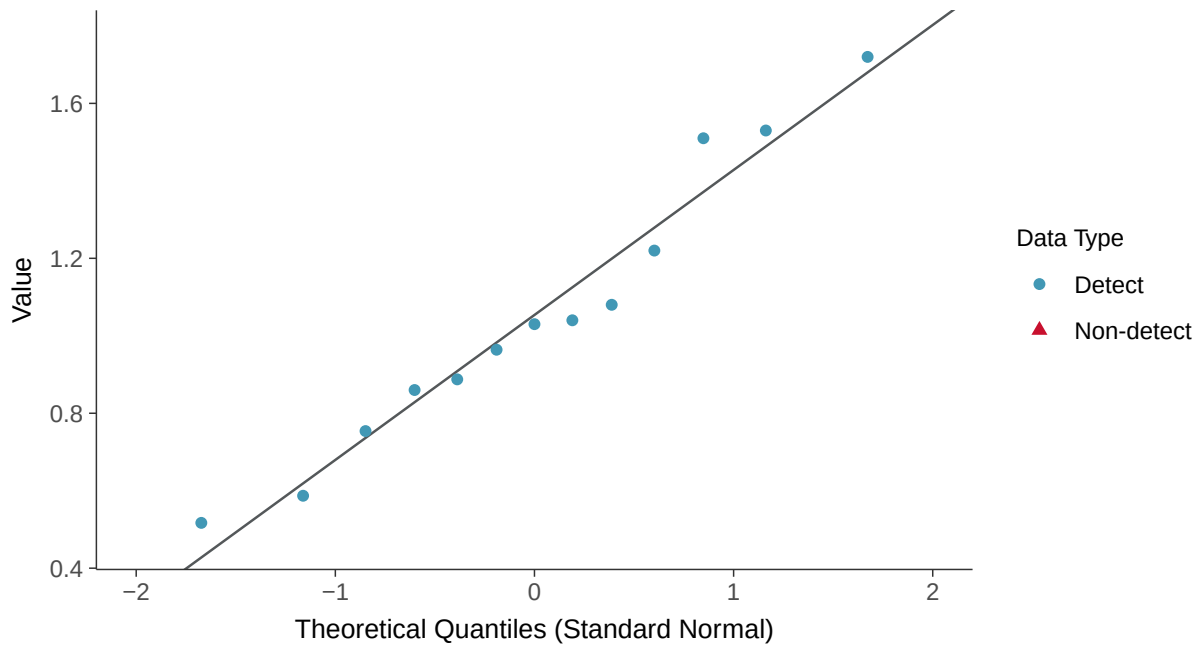
Boxplot by Season

Radium-226+228, MW-16 (pci/l)



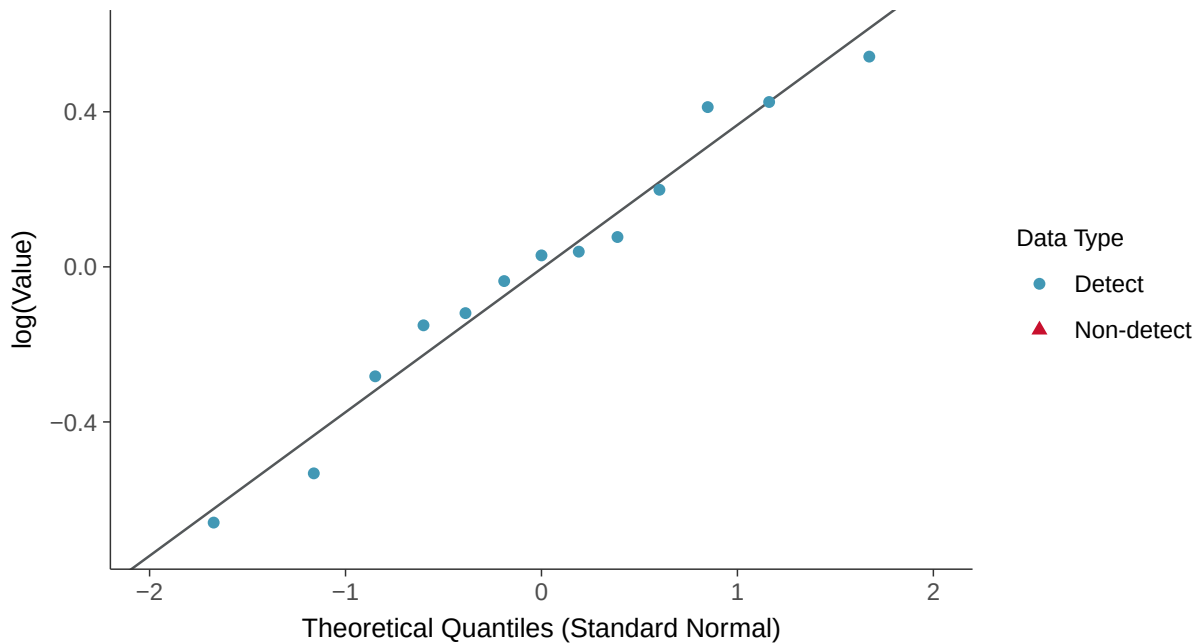
Normal Q-Q plot

Radium-226+228, MW-16 (pci/l)



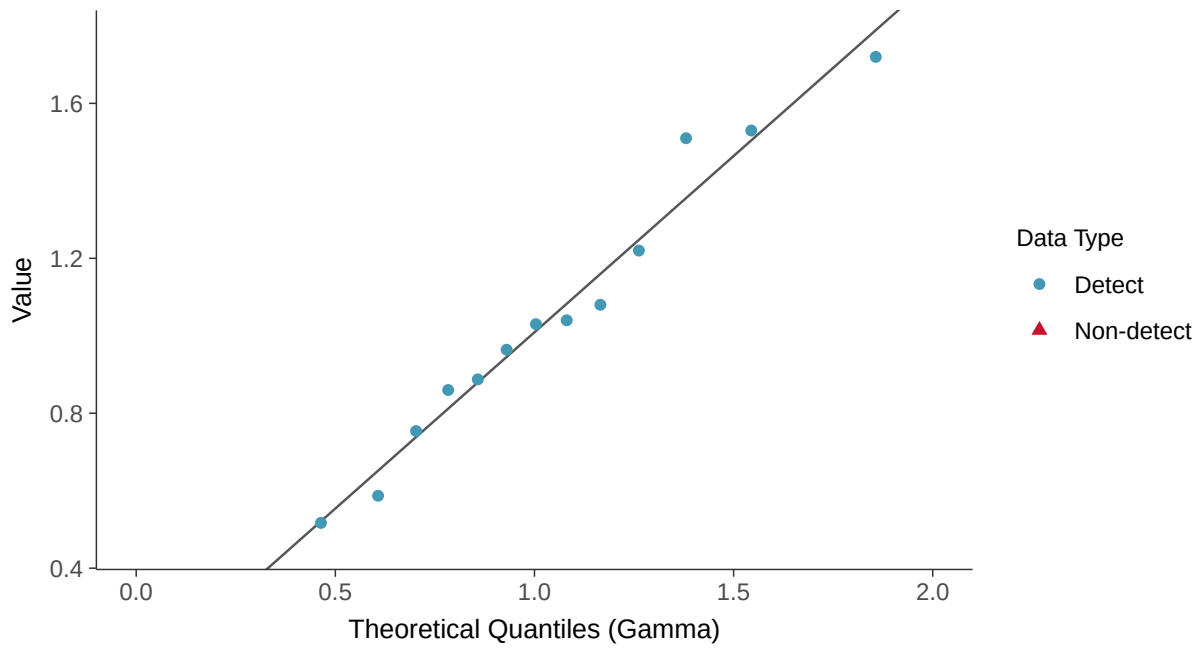
Lognormal Q-Q plot

Radium-226+228, MW-16 (pci/l)



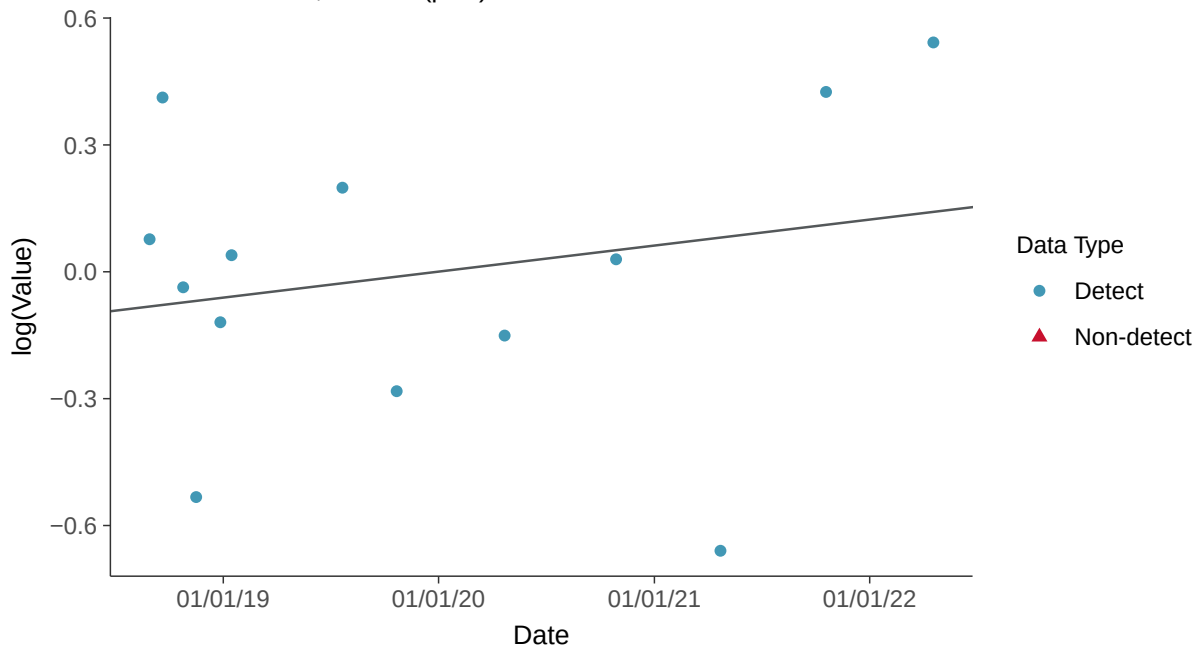
Gamma Q-Q plot

Radium-226+228, MW-16 (pci/l)



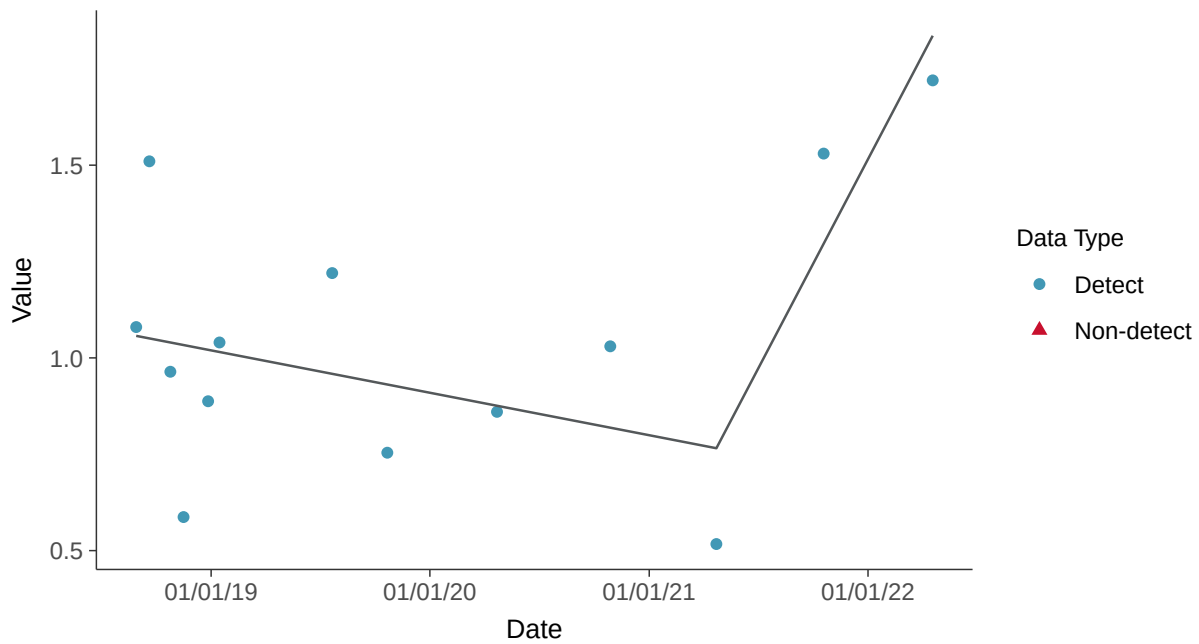
Trend Regression: Lognormal MLE

Radium-226+228, MW-16 (pci/l)



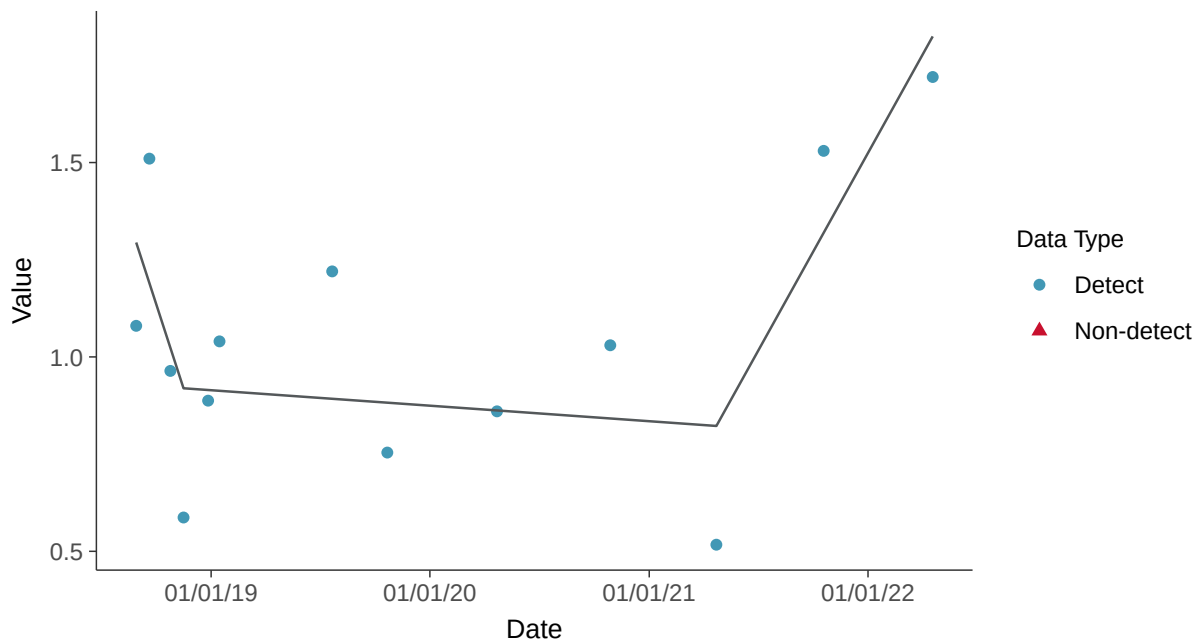
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-16 (pci/l)



Trend Regression: Piecewise Linear-Linear-Linear

Radium-226+228, MW-16 (pci/l)

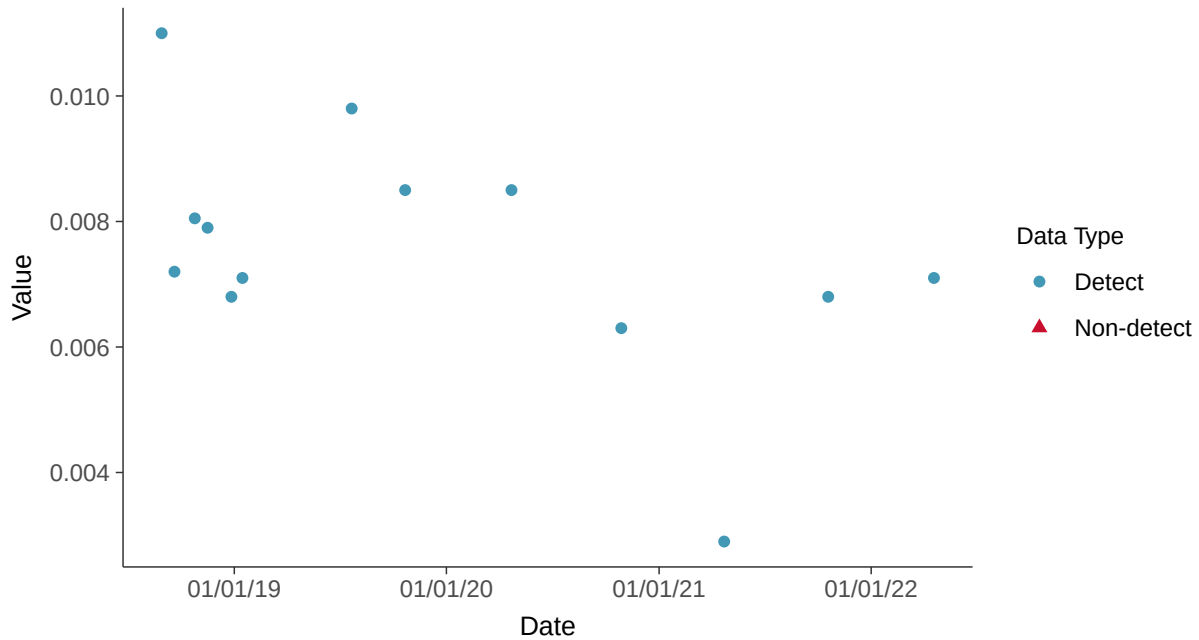


Appendix IV: Selenium, MW-16

ID: 2_2_129

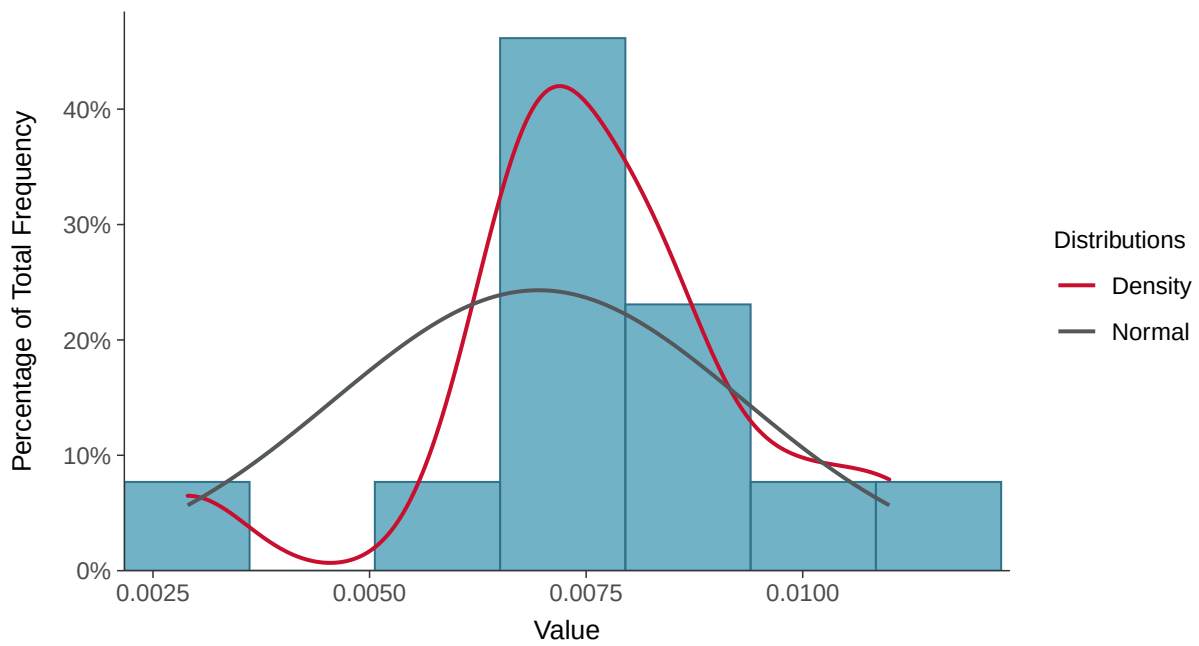
Scatter Plot

Selenium, MW-16 (mg/l)



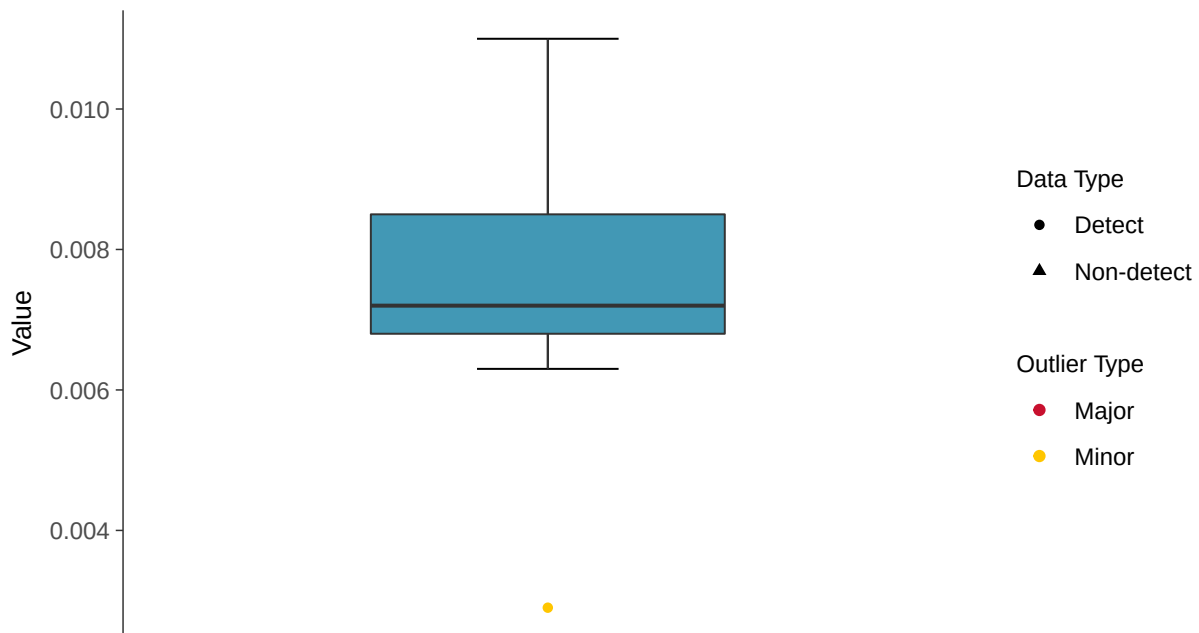
Histogram

Selenium, MW-16 (mg/l)



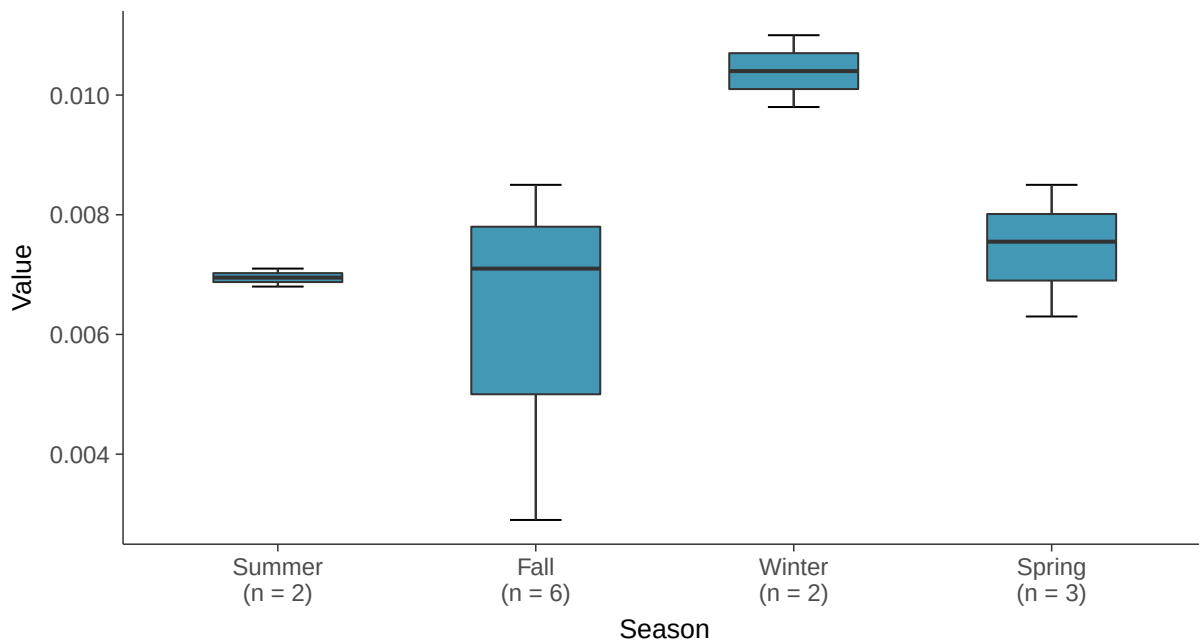
Boxplot

Selenium, MW-16 (mg/l)



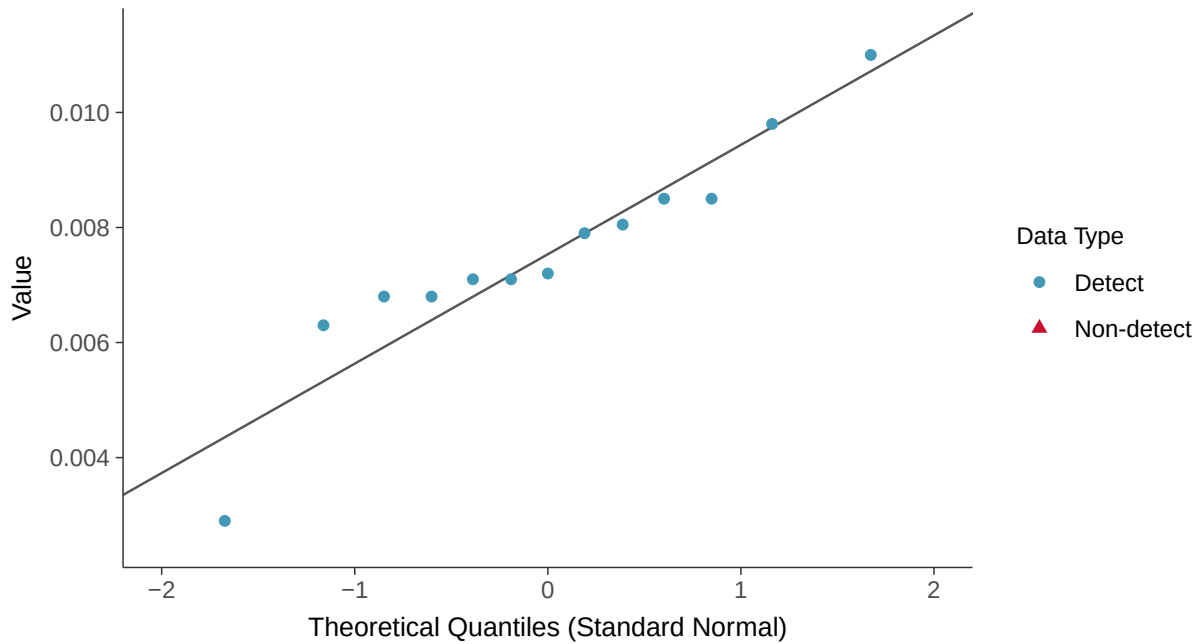
Boxplot by Season

Selenium, MW-16 (mg/l)



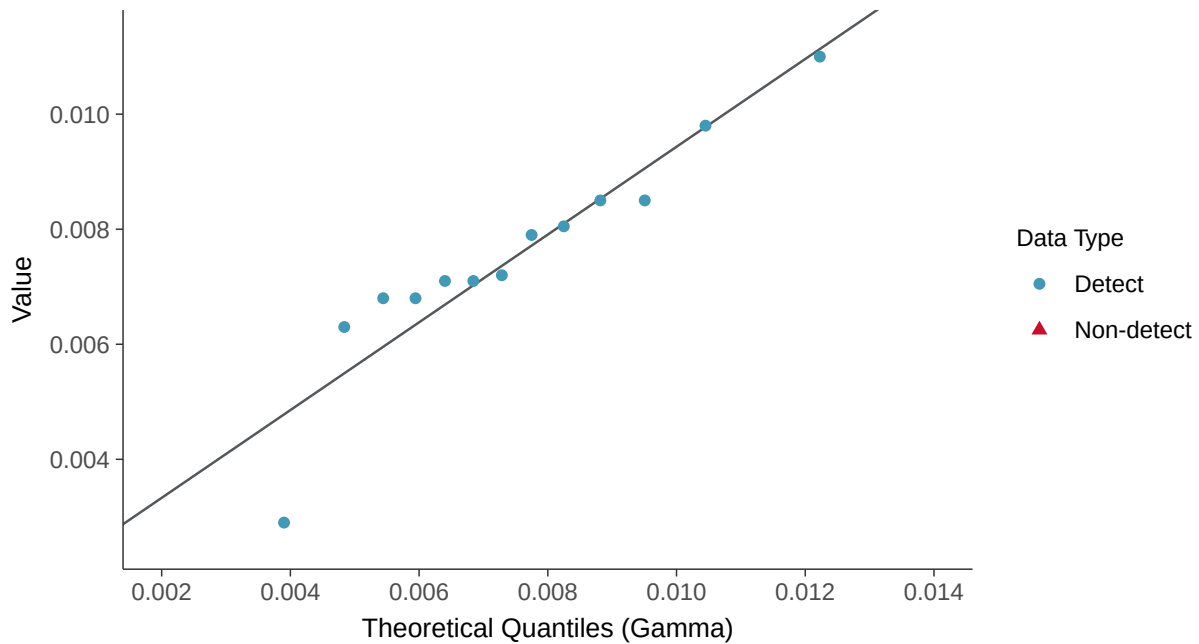
Normal Q-Q plot

Selenium, MW-16 (mg/l)



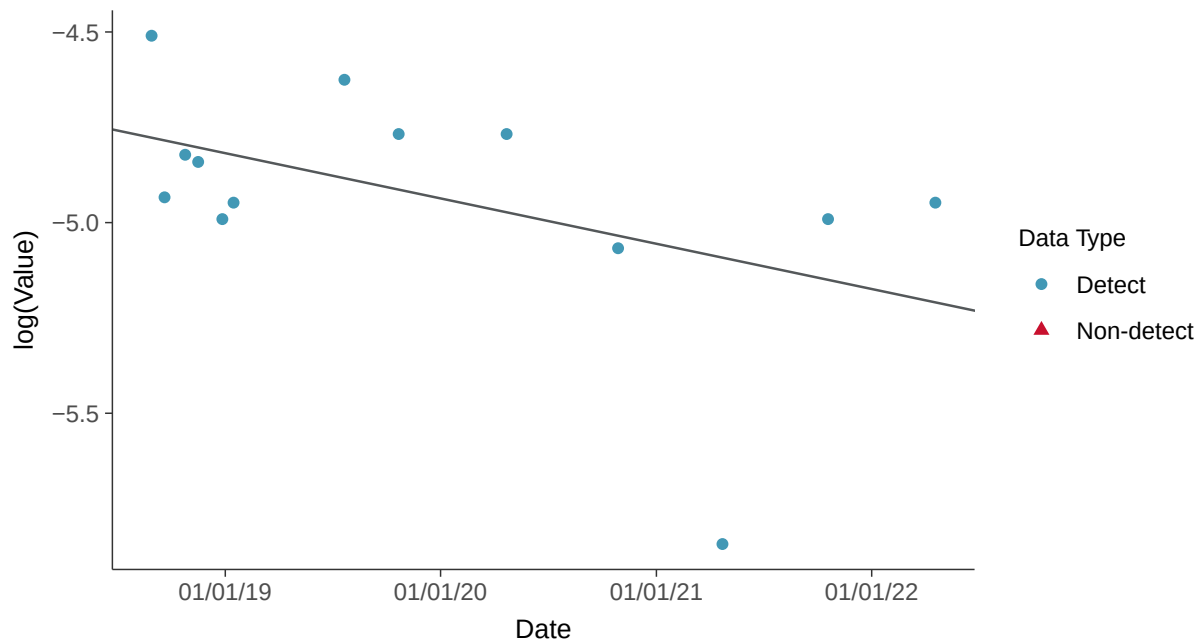
Gamma Q-Q plot

Selenium, MW-16 (mg/l)



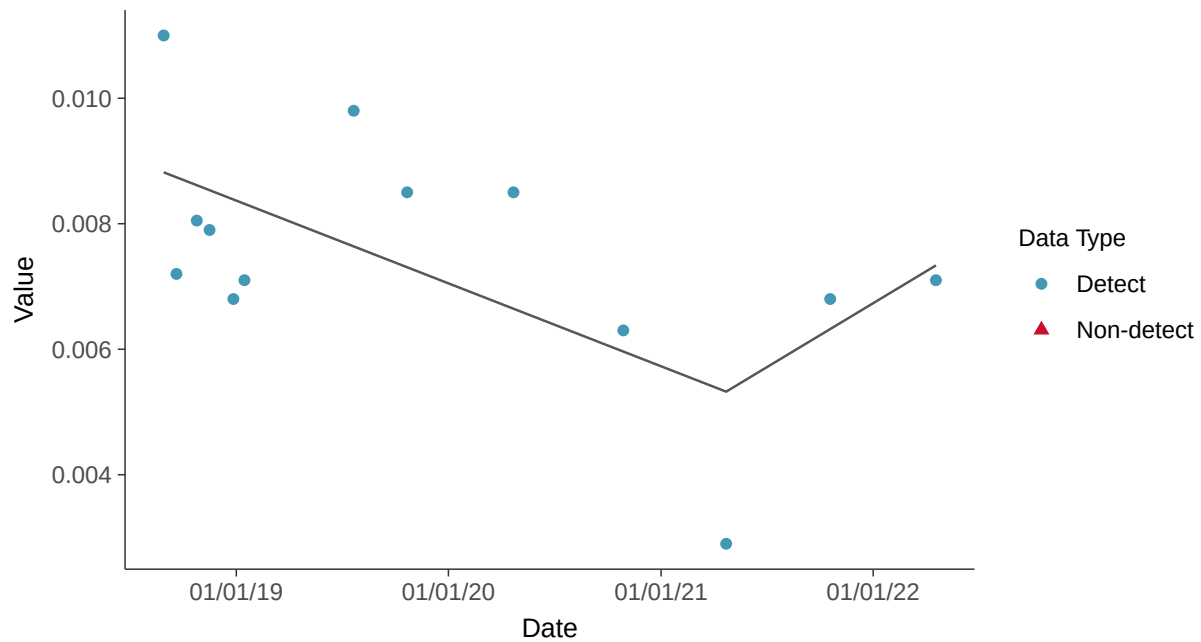
Trend Regression: Lognormal MLE

Selenium, MW-16 (mg/l)



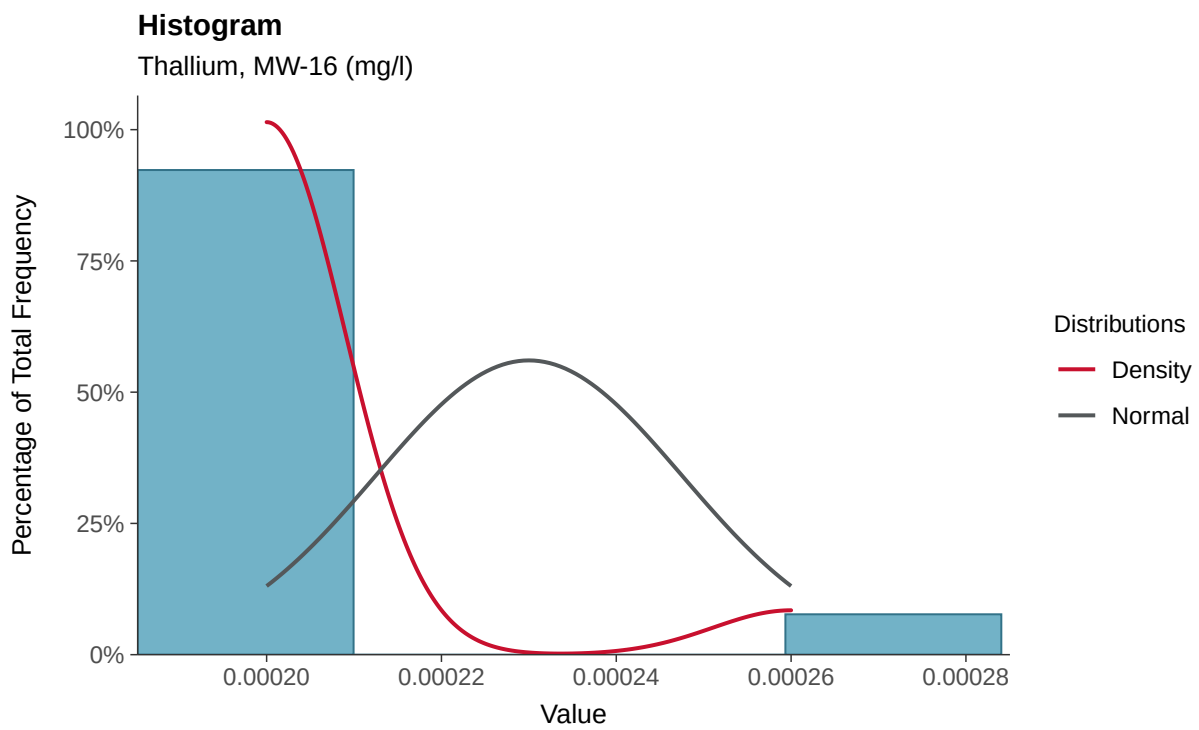
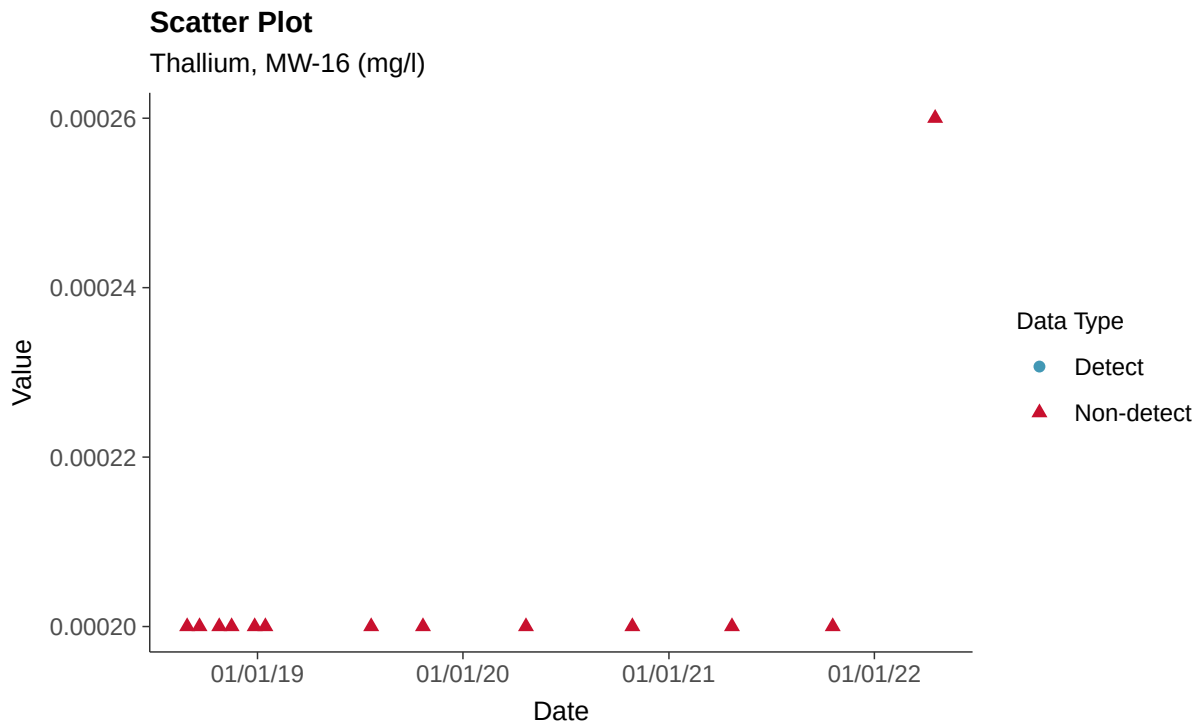
Trend Regression: Piecewise Linear-Linear

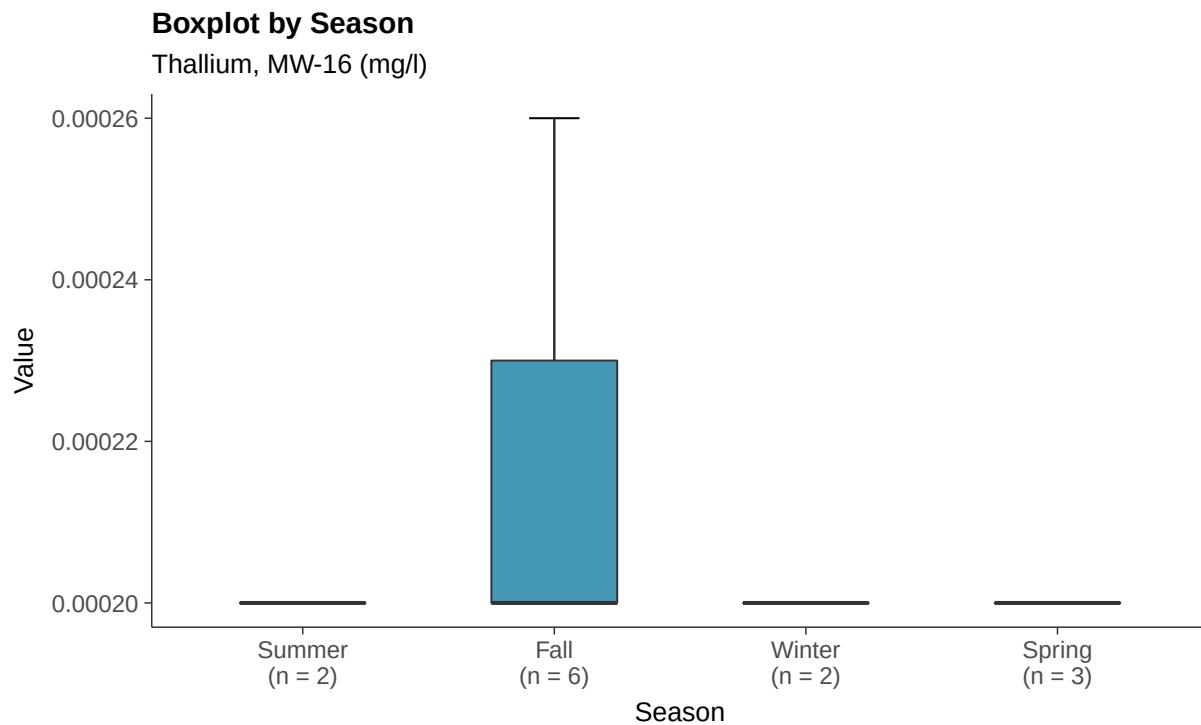
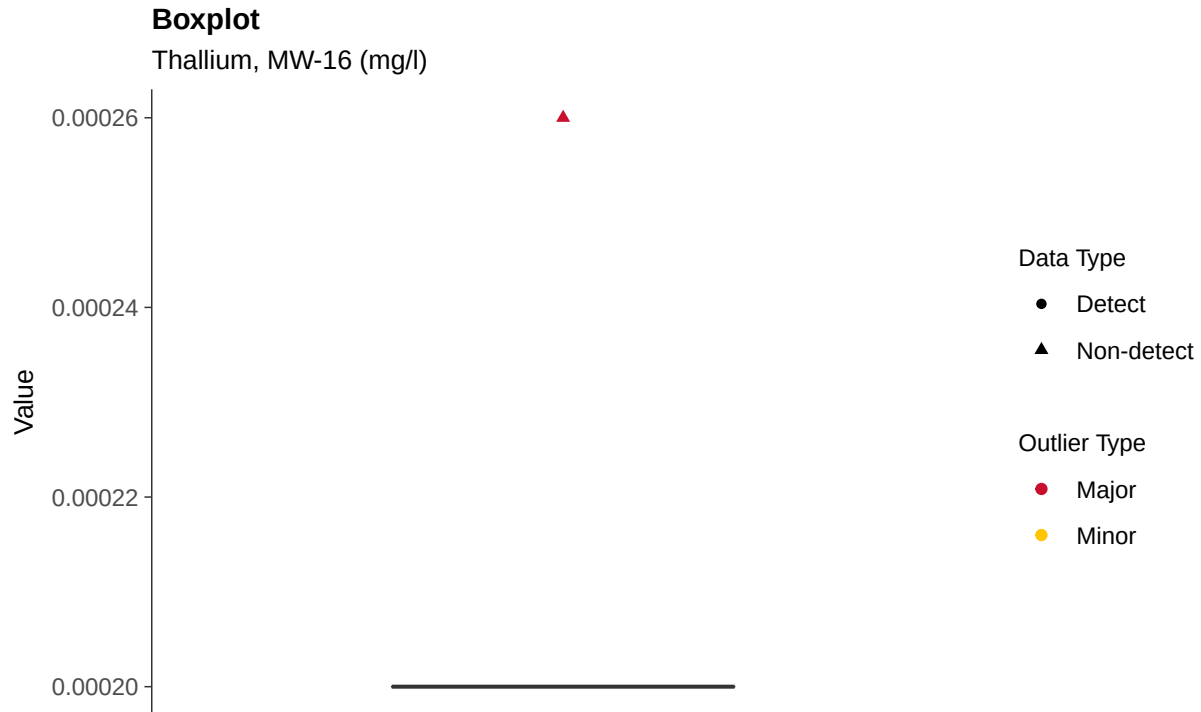
Selenium, MW-16 (mg/l)



Appendix IV: Thallium, MW-16

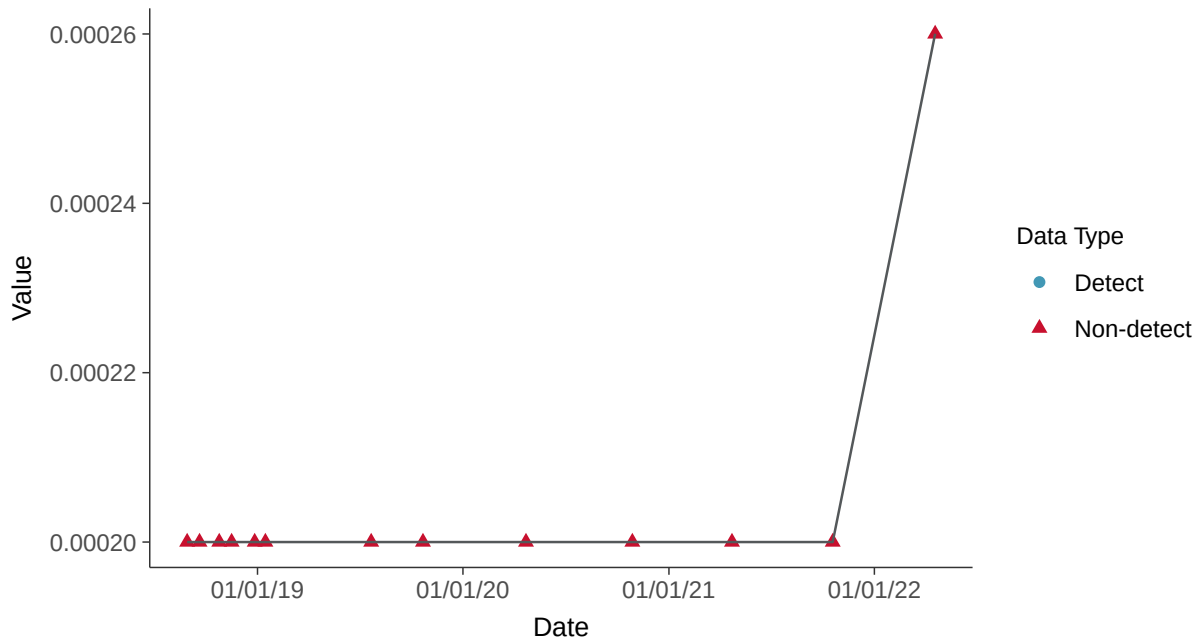
ID: 2_2_134





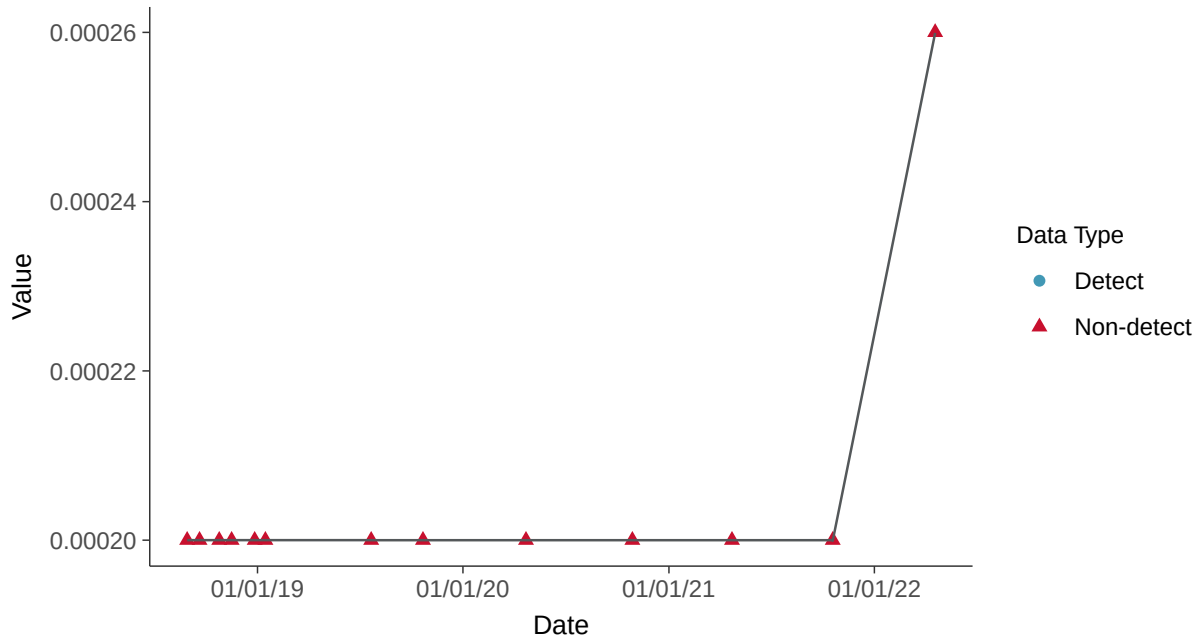
Trend Regression: Piecewise Linear-Linear

Thallium, MW-16 (mg/l)



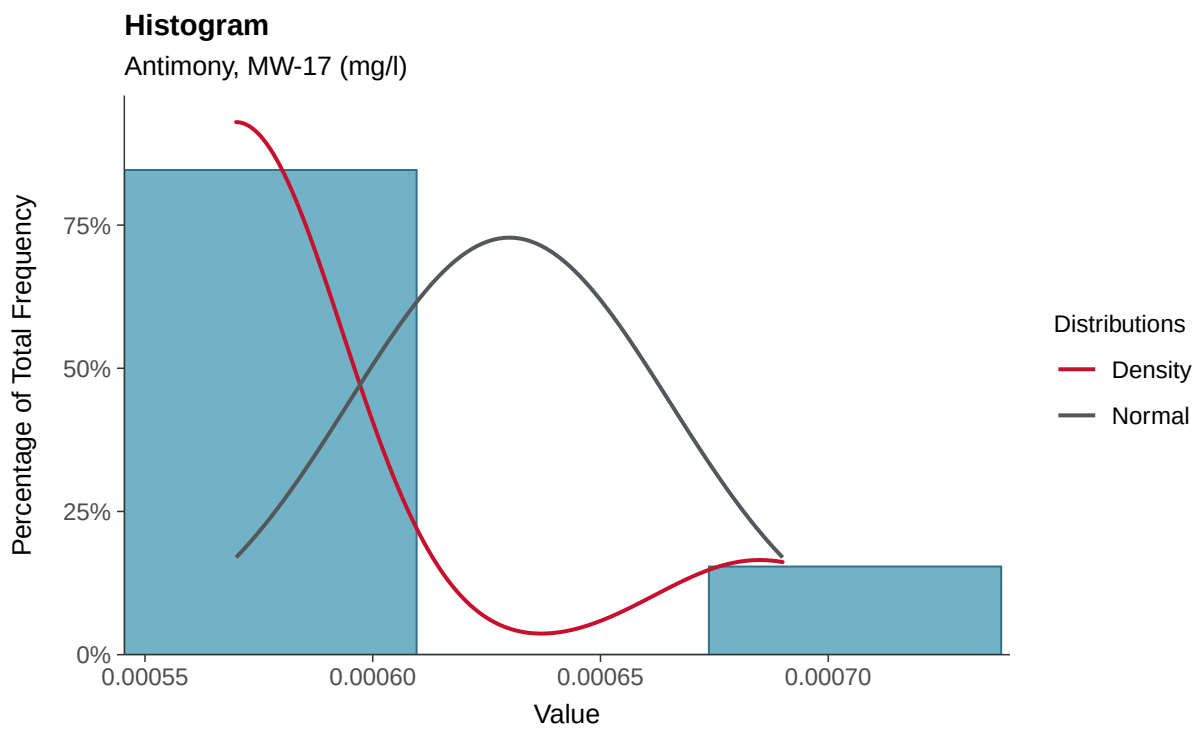
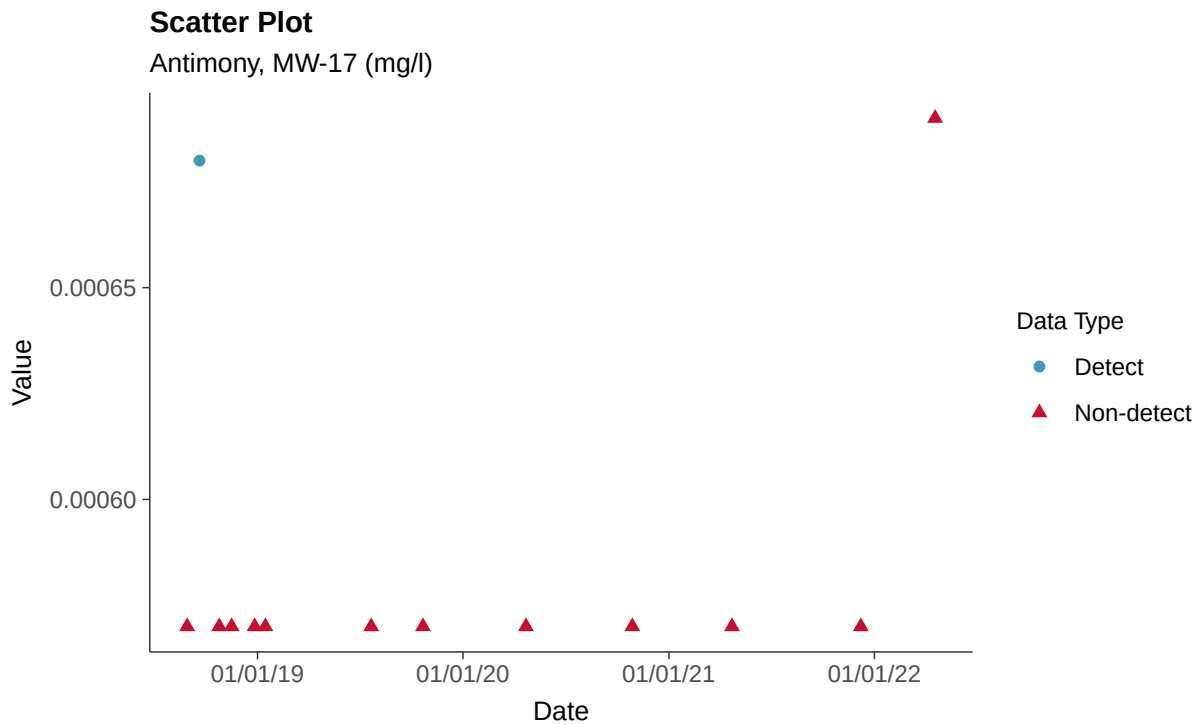
Trend Regression: Piecewise Linear-Linear-Linear

Thallium, MW-16 (mg/l)

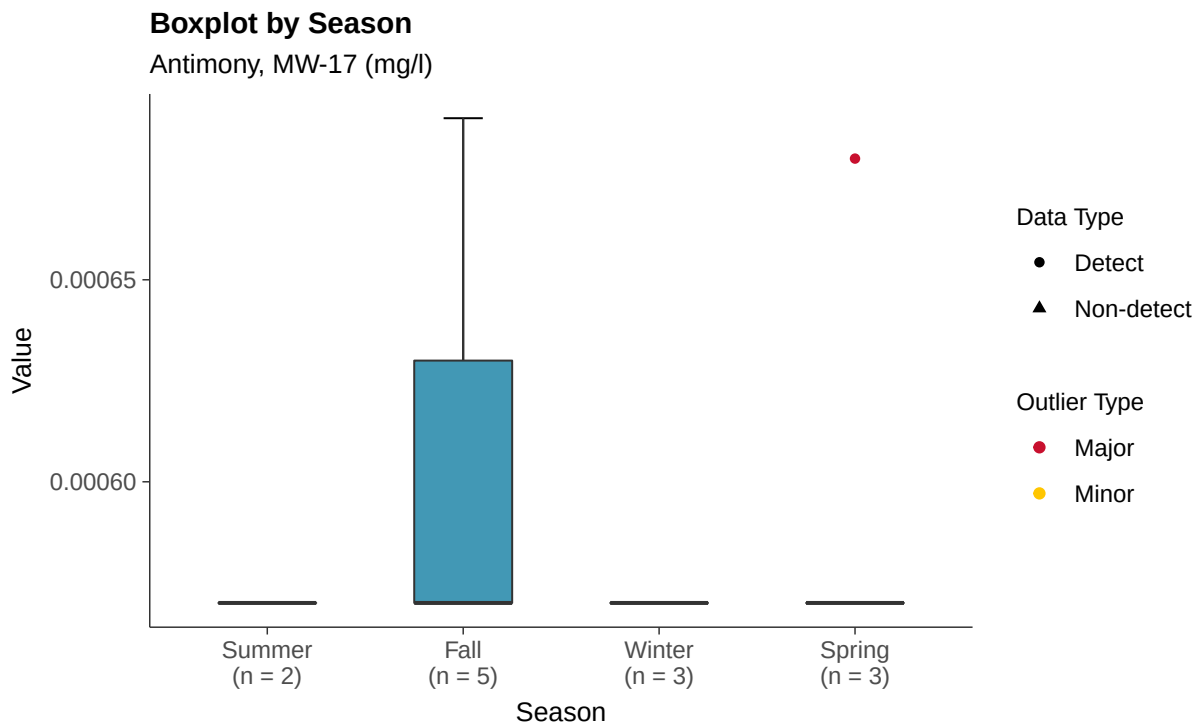


Appendix IV: Antimony, MW-17

ID: 3_2_104

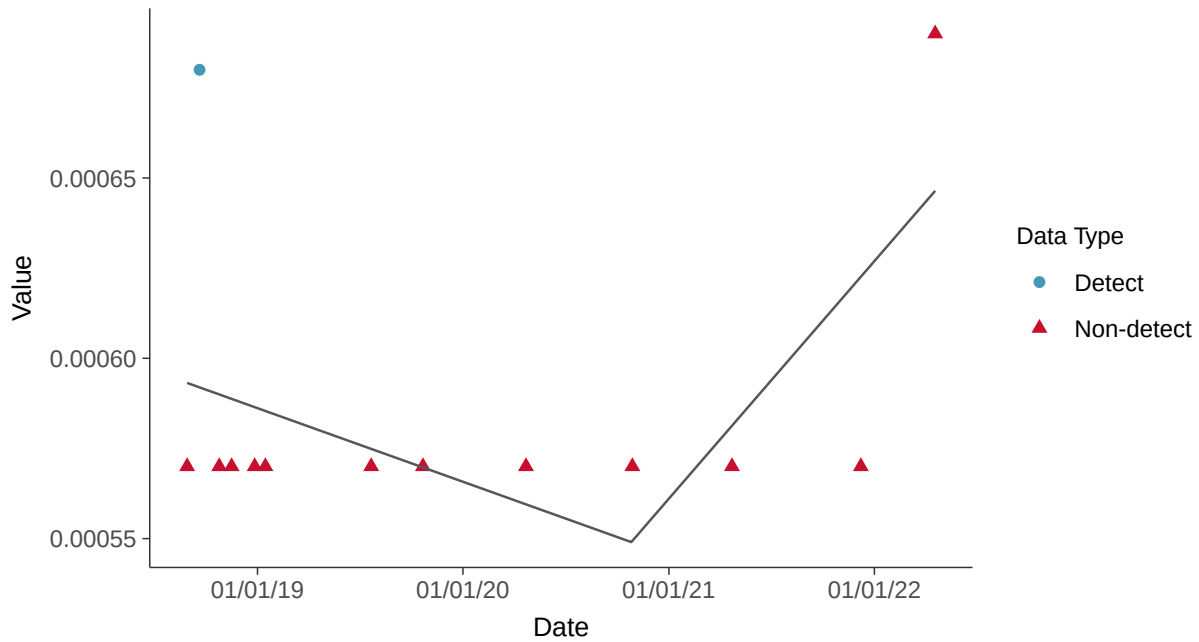


Antimony, MW-17 (mg/l)



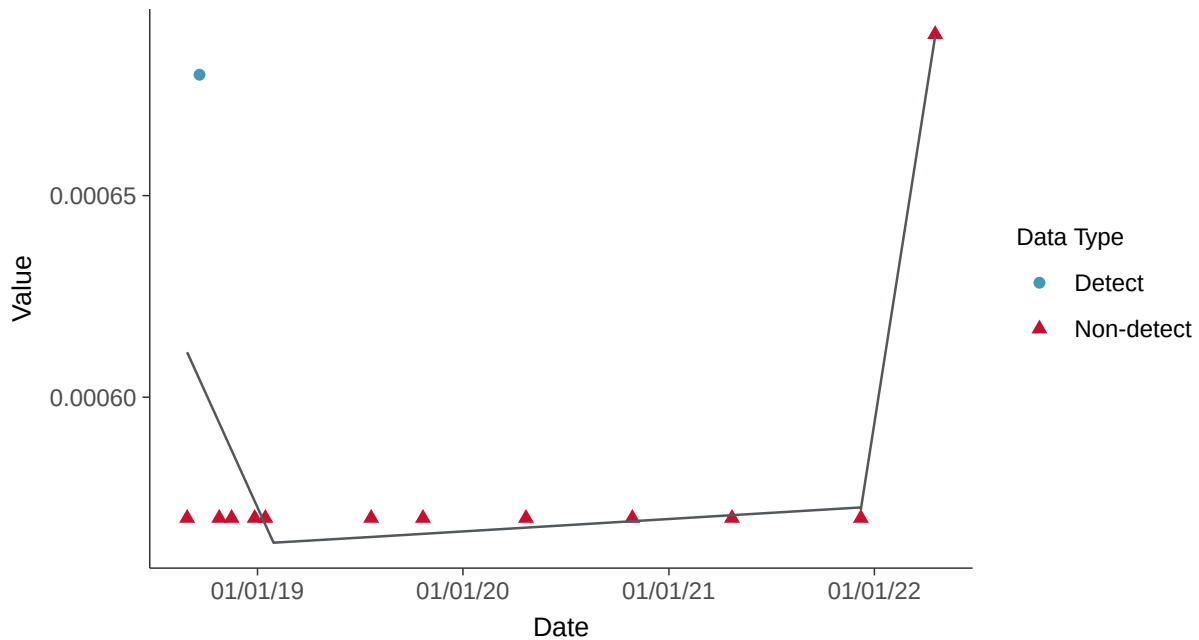
Trend Regression: Piecewise Linear-Linear

Antimony, MW-17 (mg/l)



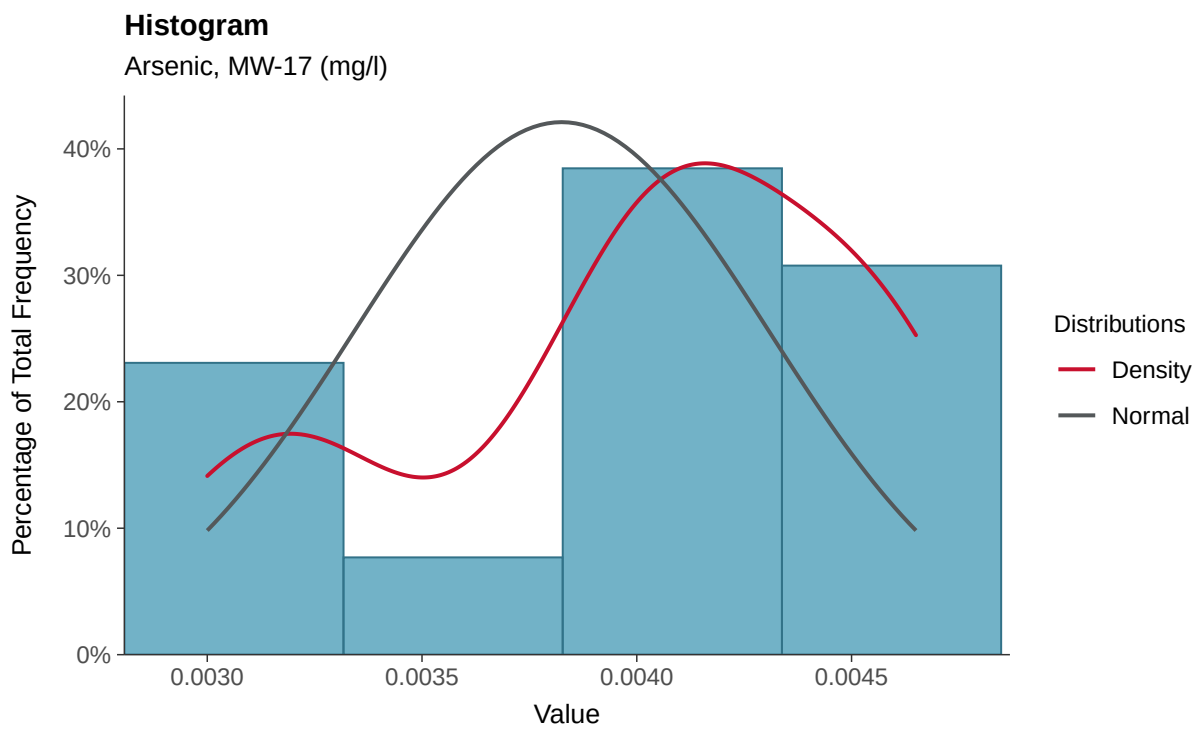
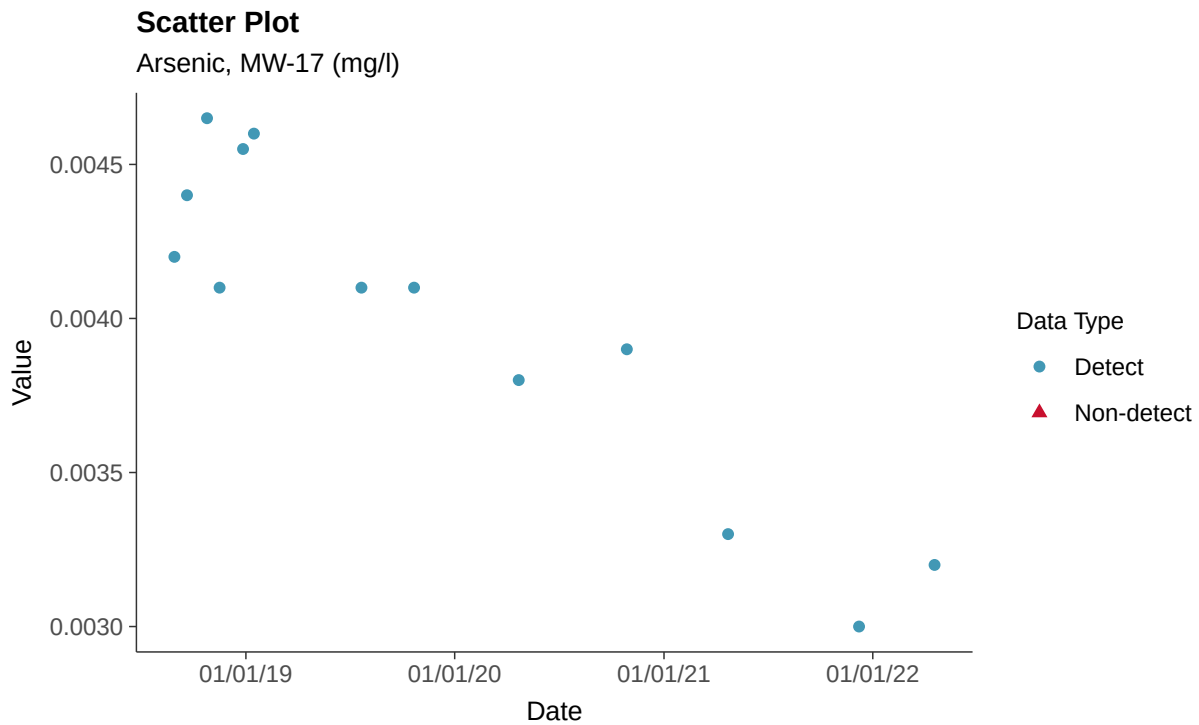
Trend Regression: Piecewise Linear-Linear-Linear

Antimony, MW-17 (mg/l)



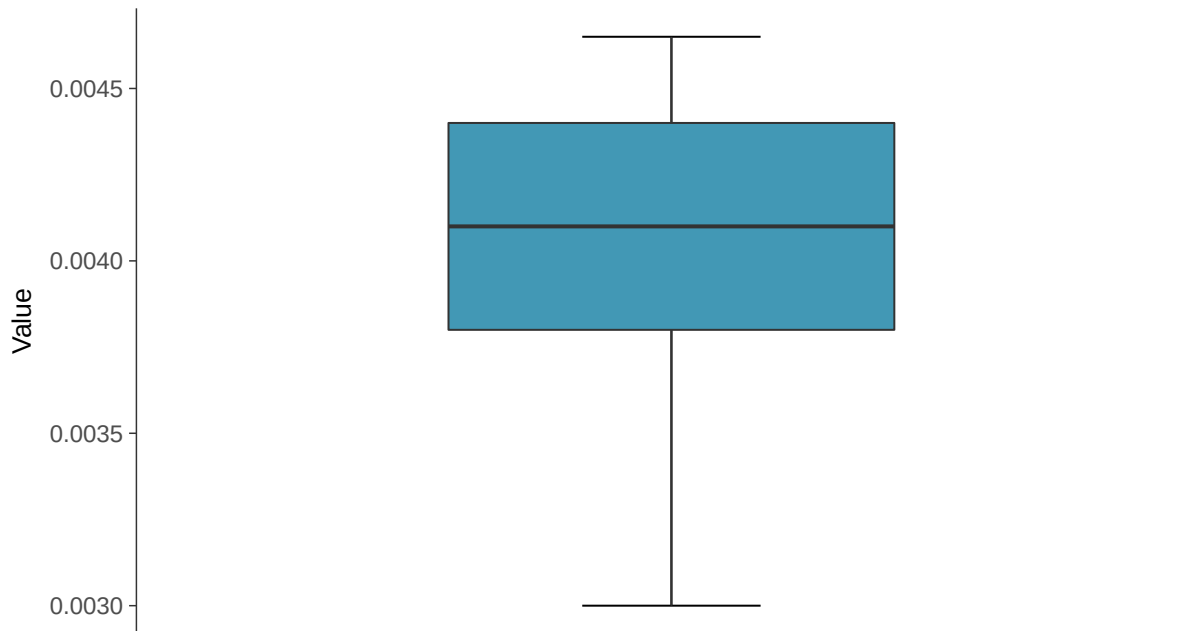
Appendix IV: Arsenic, MW-17

ID: 3_2_105



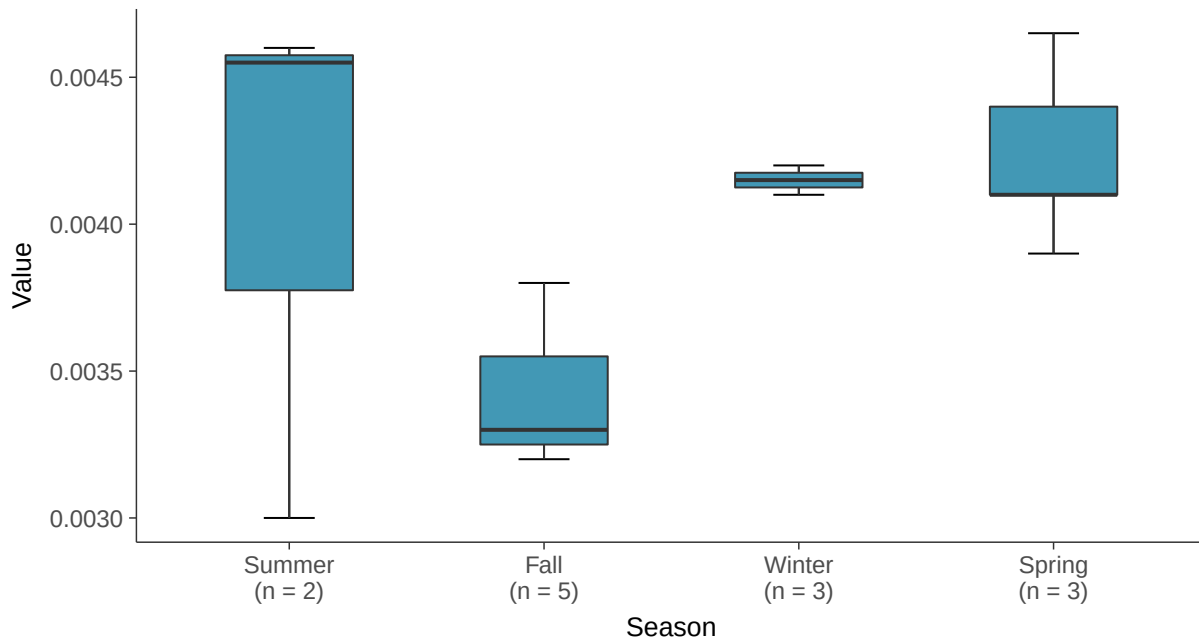
Boxplot

Arsenic, MW-17 (mg/l)



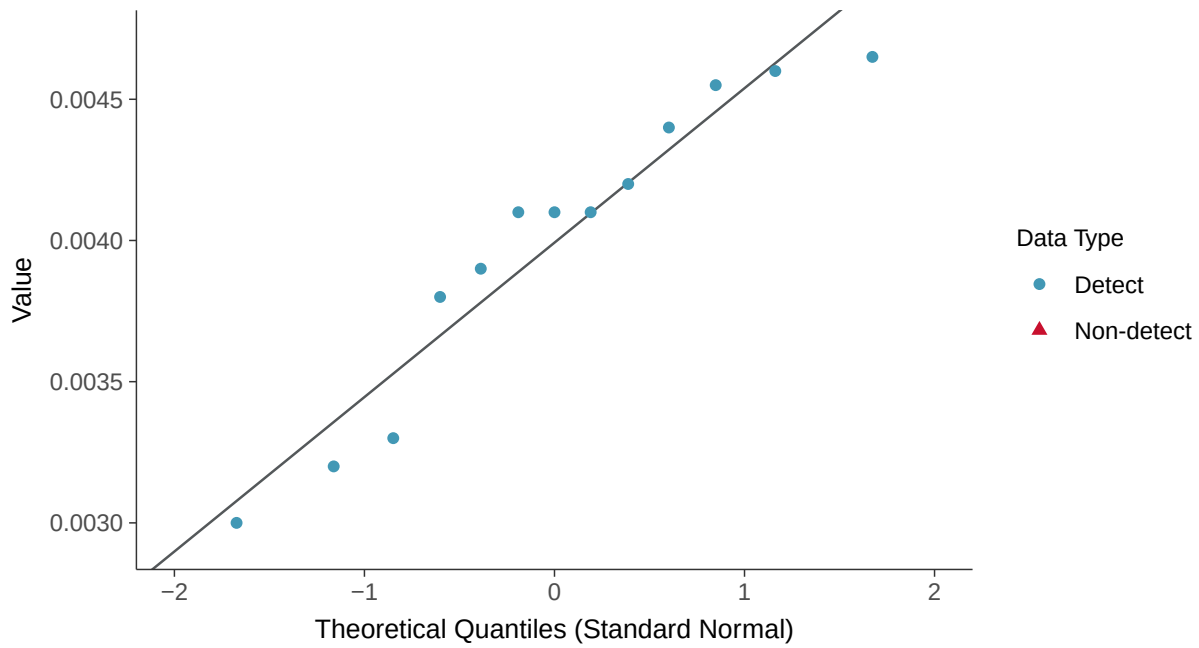
Boxplot by Season

Arsenic, MW-17 (mg/l)



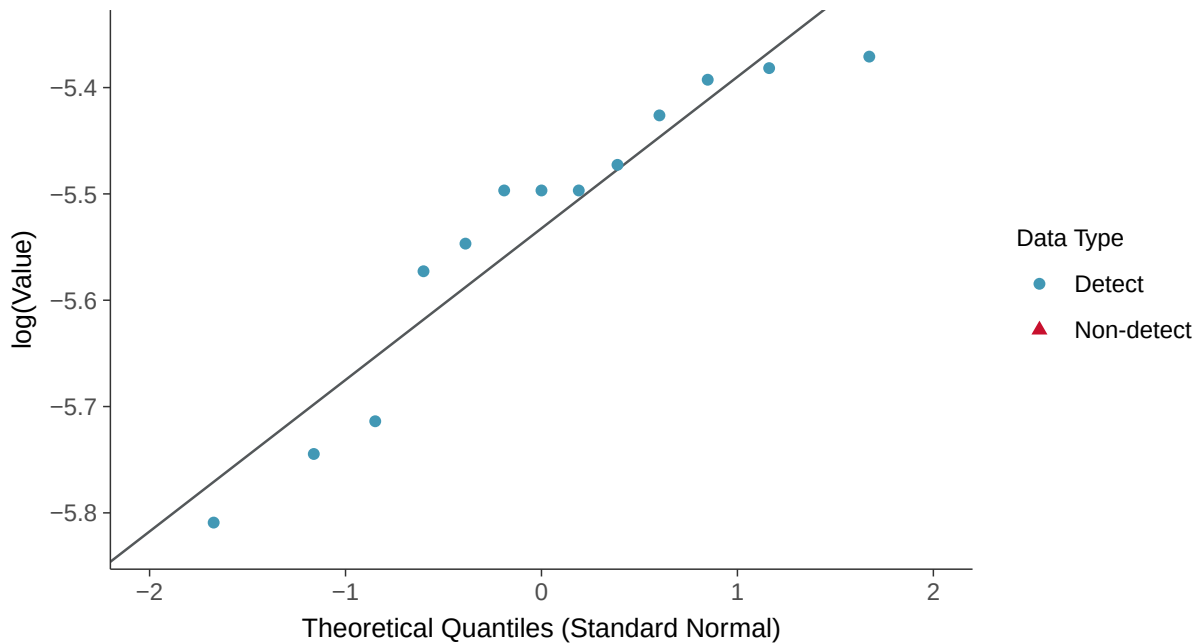
Normal Q-Q plot

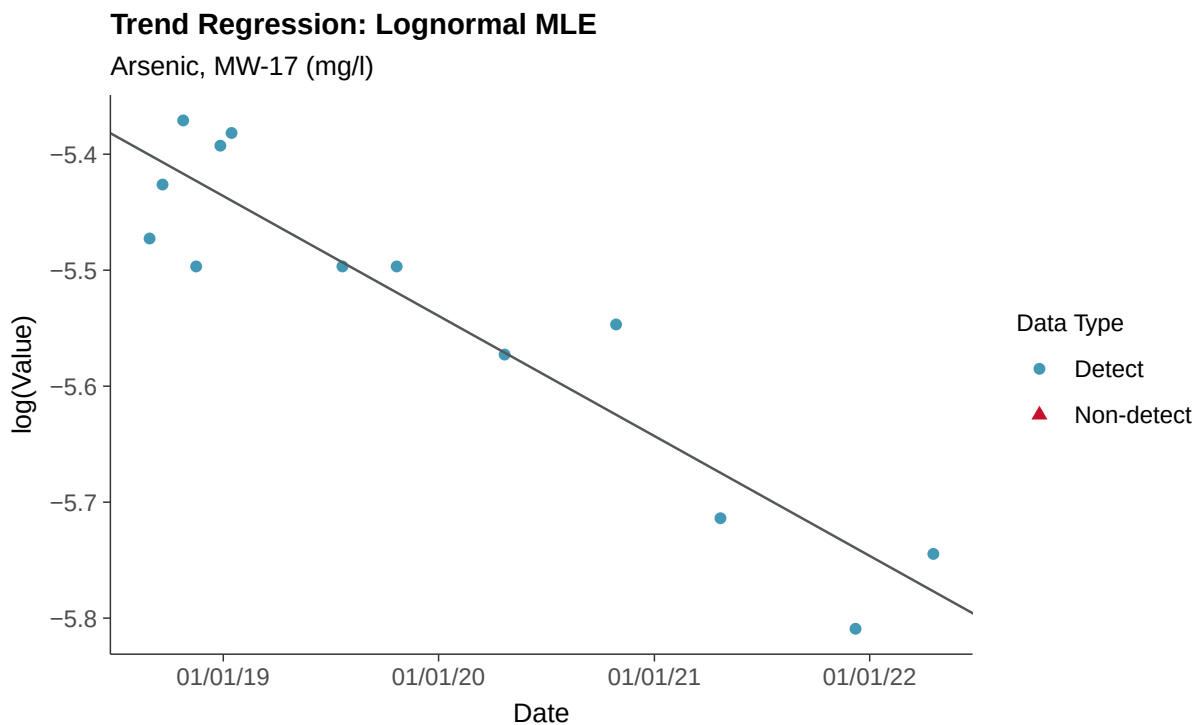
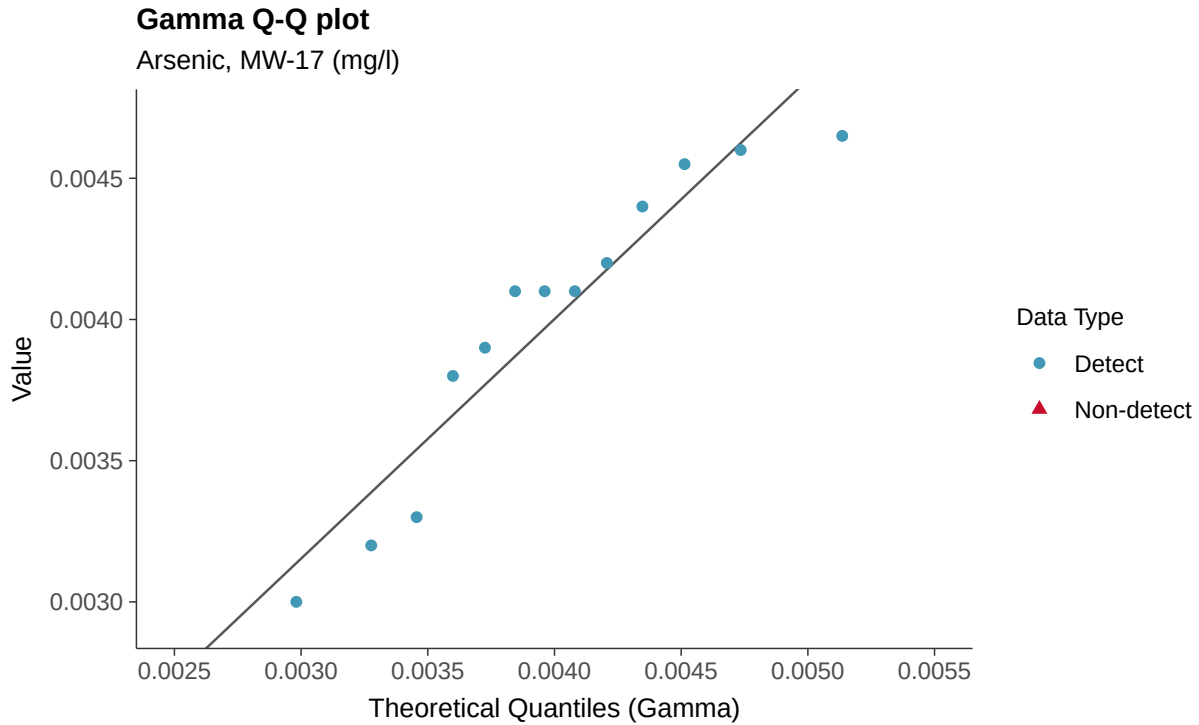
Arsenic, MW-17 (mg/l)



Lognormal Q-Q plot

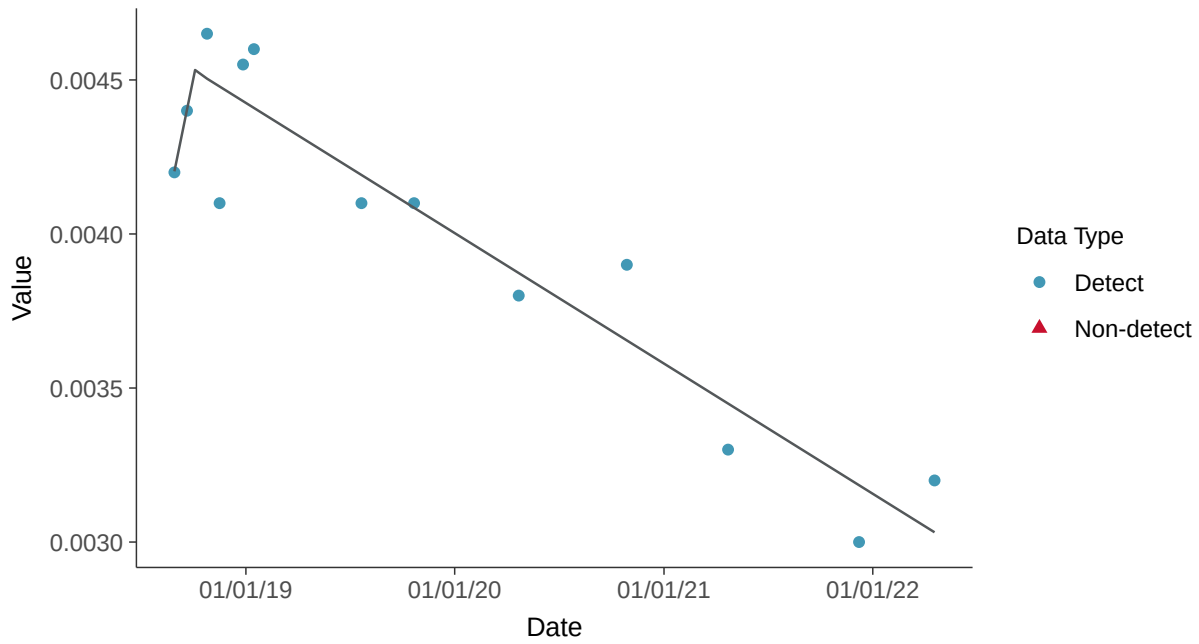
Arsenic, MW-17 (mg/l)





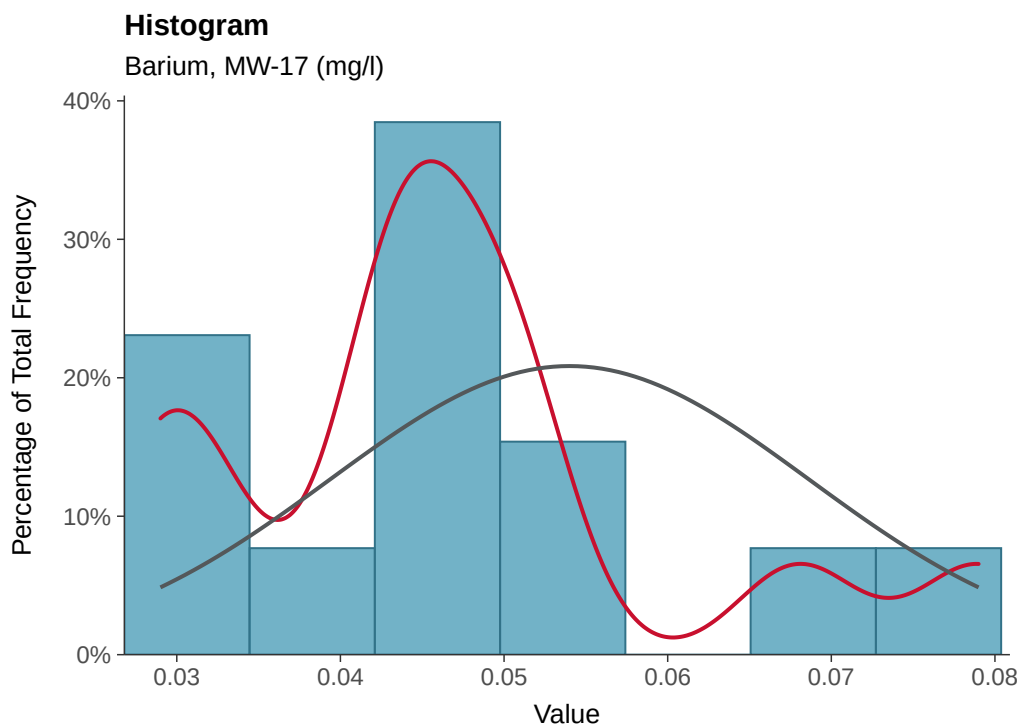
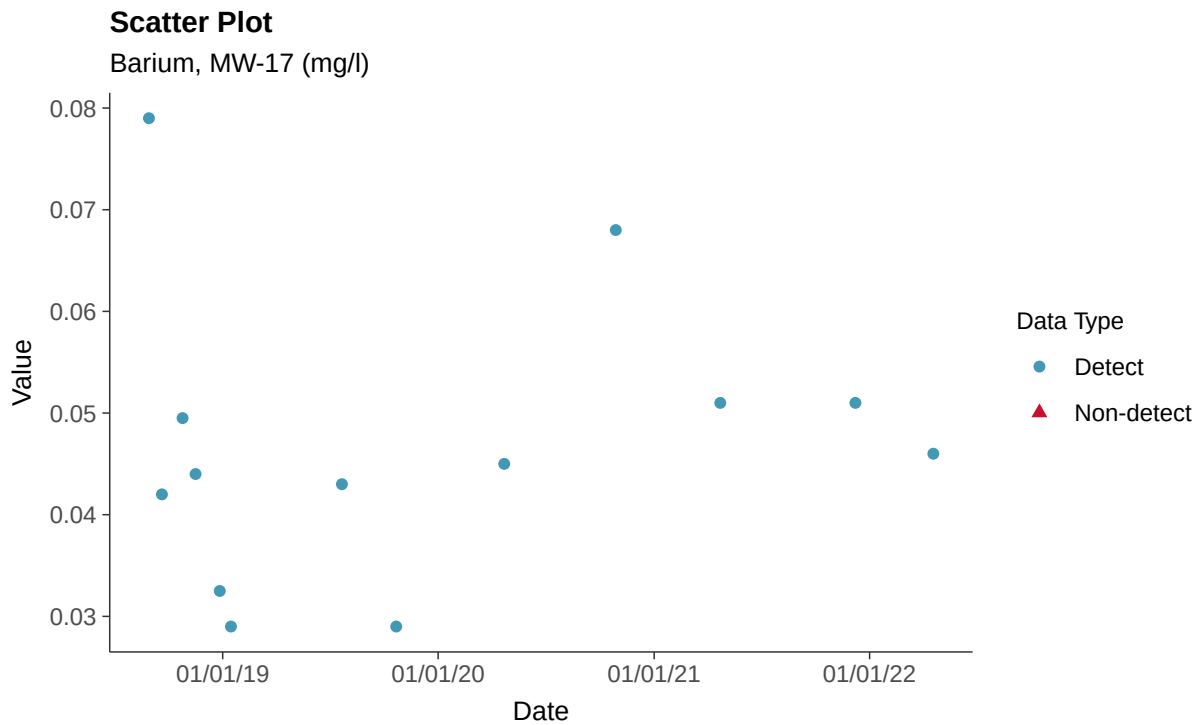
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-17 (mg/l)



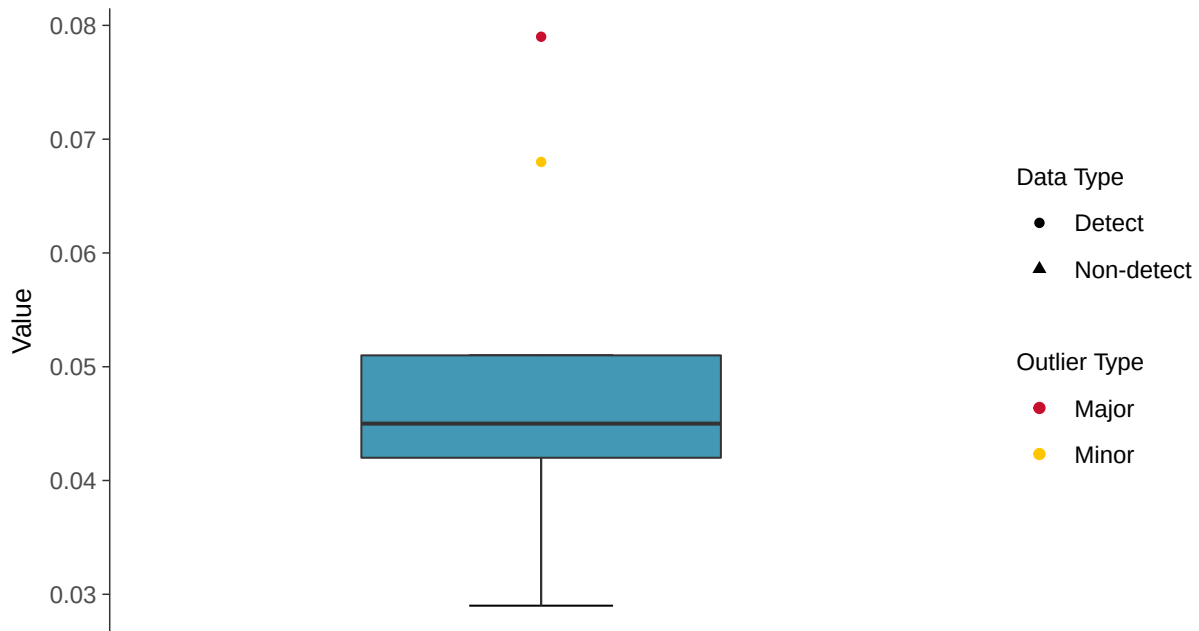
Appendix IV: Barium, MW-17

ID: 3_2_106



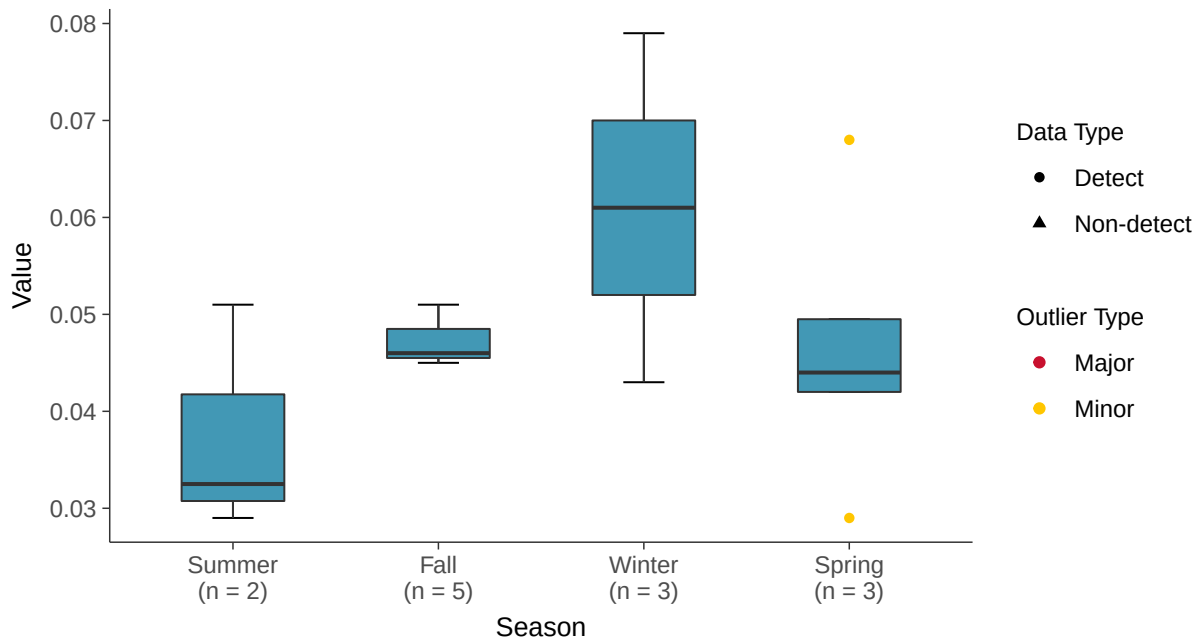
Boxplot

Barium, MW-17 (mg/l)



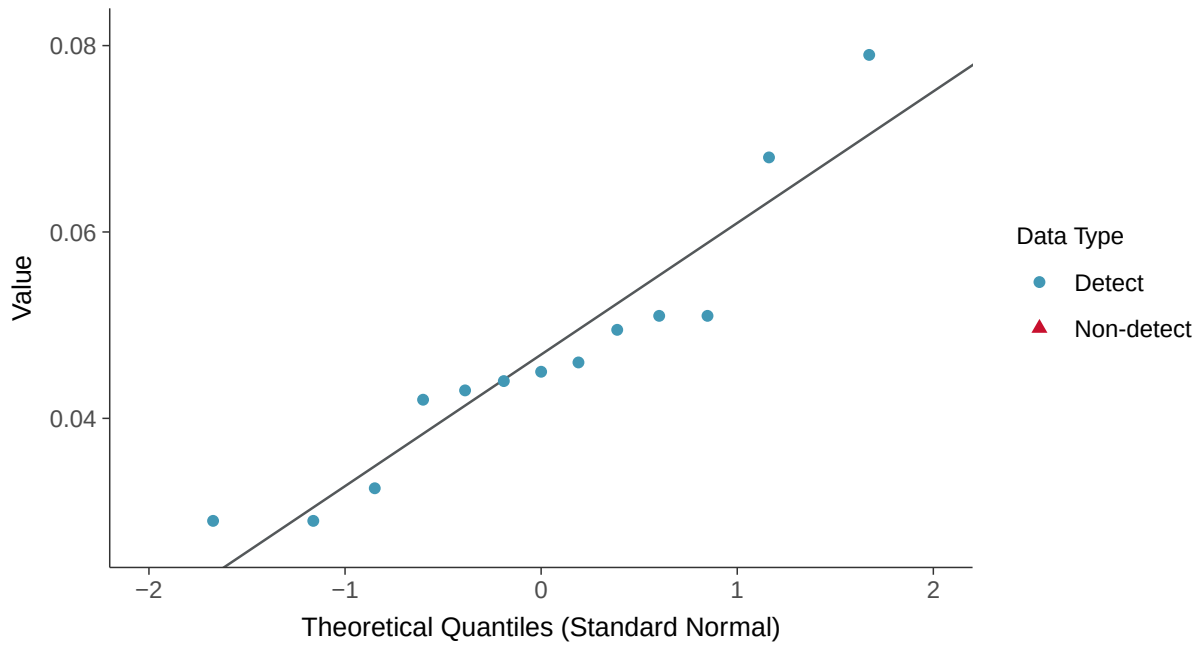
Boxplot by Season

Barium, MW-17 (mg/l)



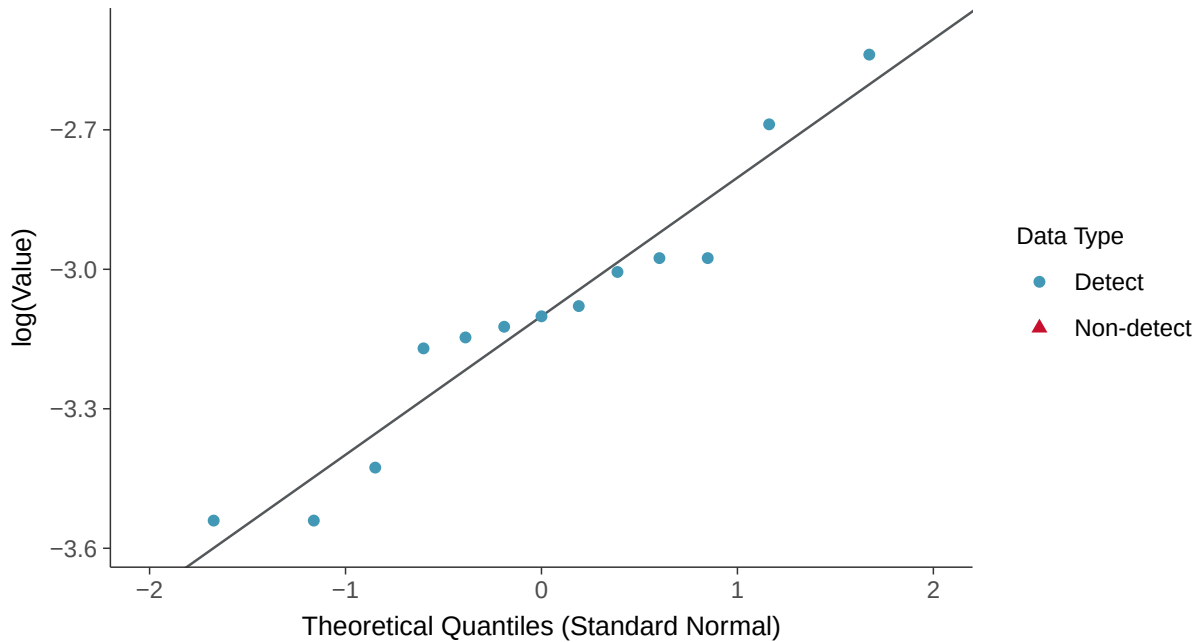
Normal Q-Q plot

Barium, MW-17 (mg/l)



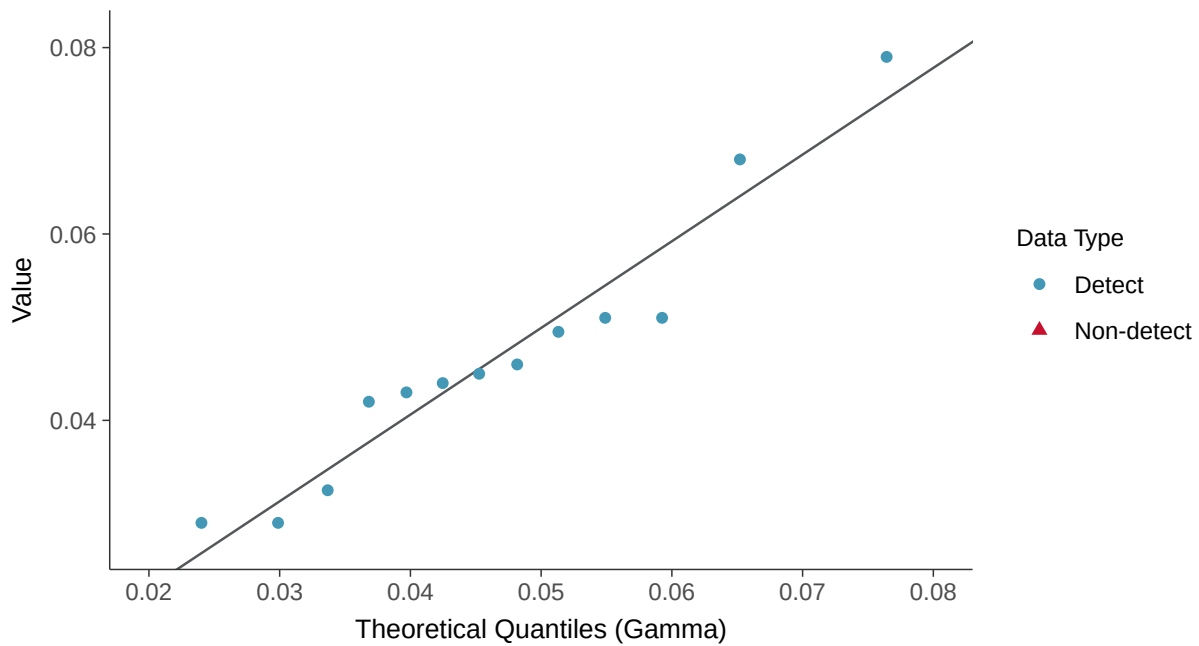
Lognormal Q-Q plot

Barium, MW-17 (mg/l)



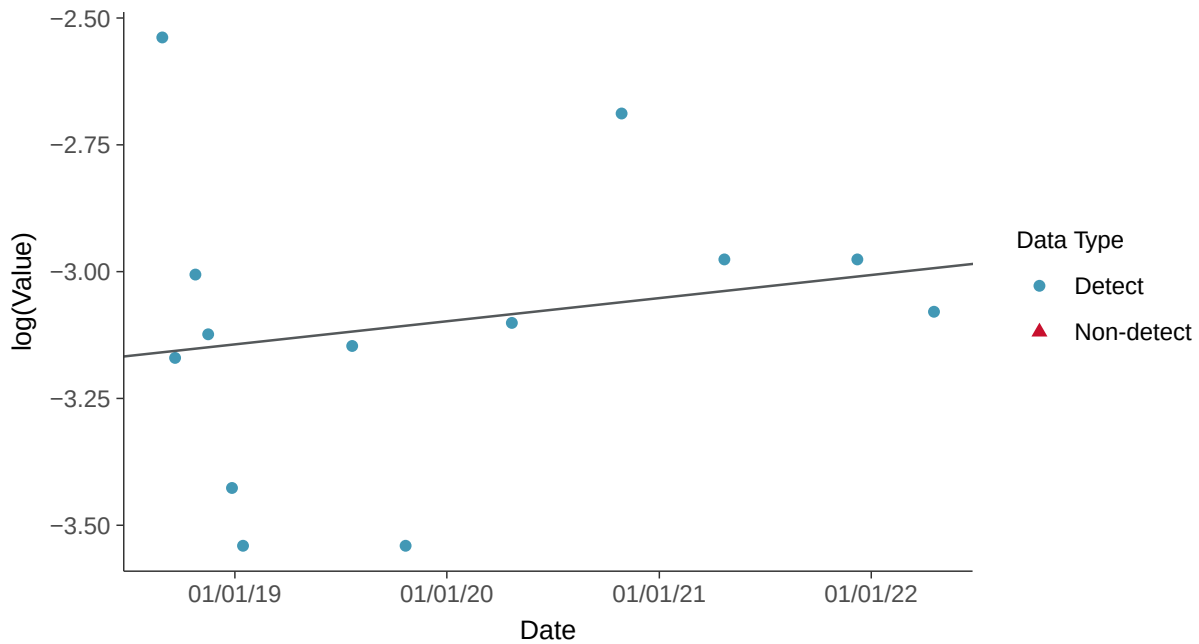
Gamma Q-Q plot

Barium, MW-17 (mg/l)



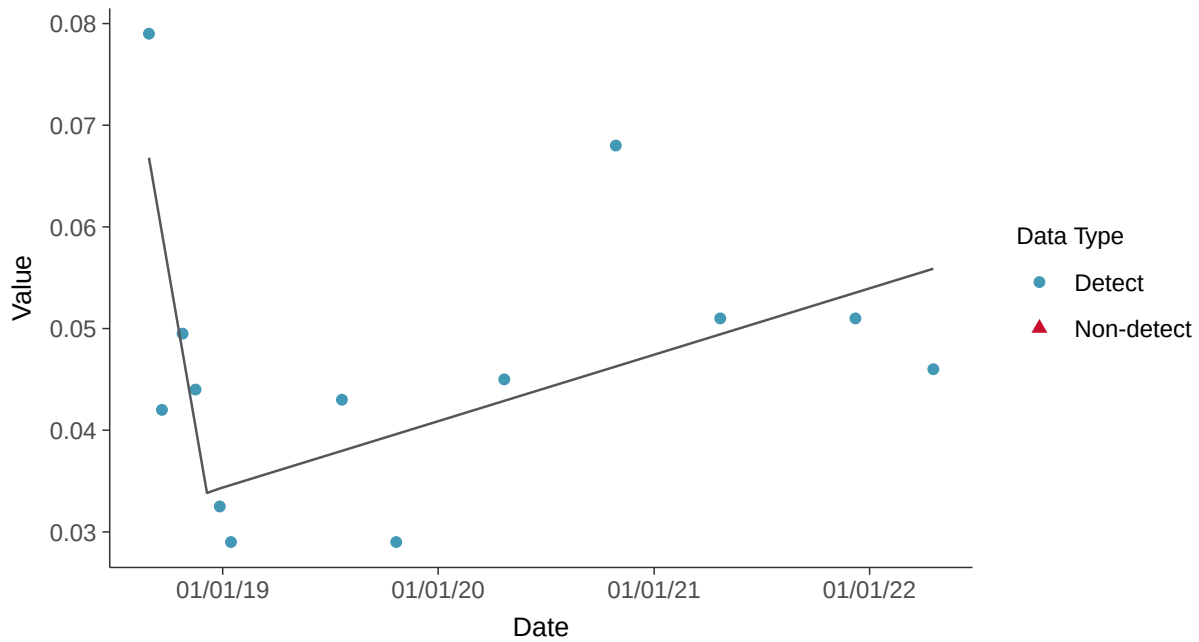
Trend Regression: Lognormal MLE

Barium, MW-17 (mg/l)



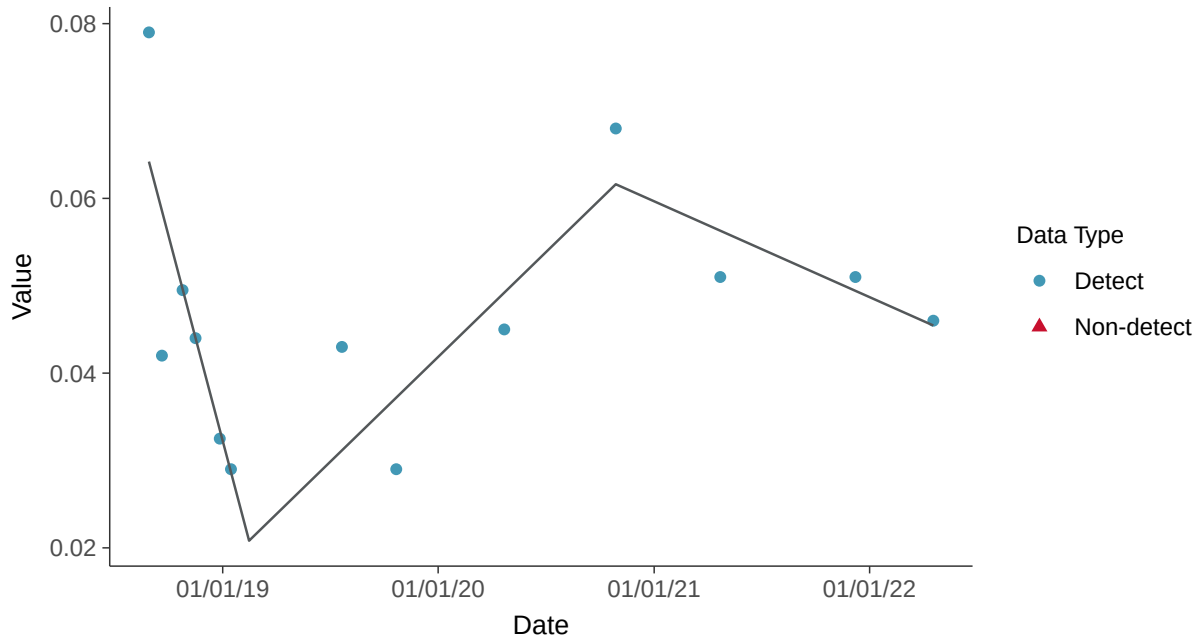
Trend Regression: Piecewise Linear-Linear

Barium, MW-17 (mg/l)



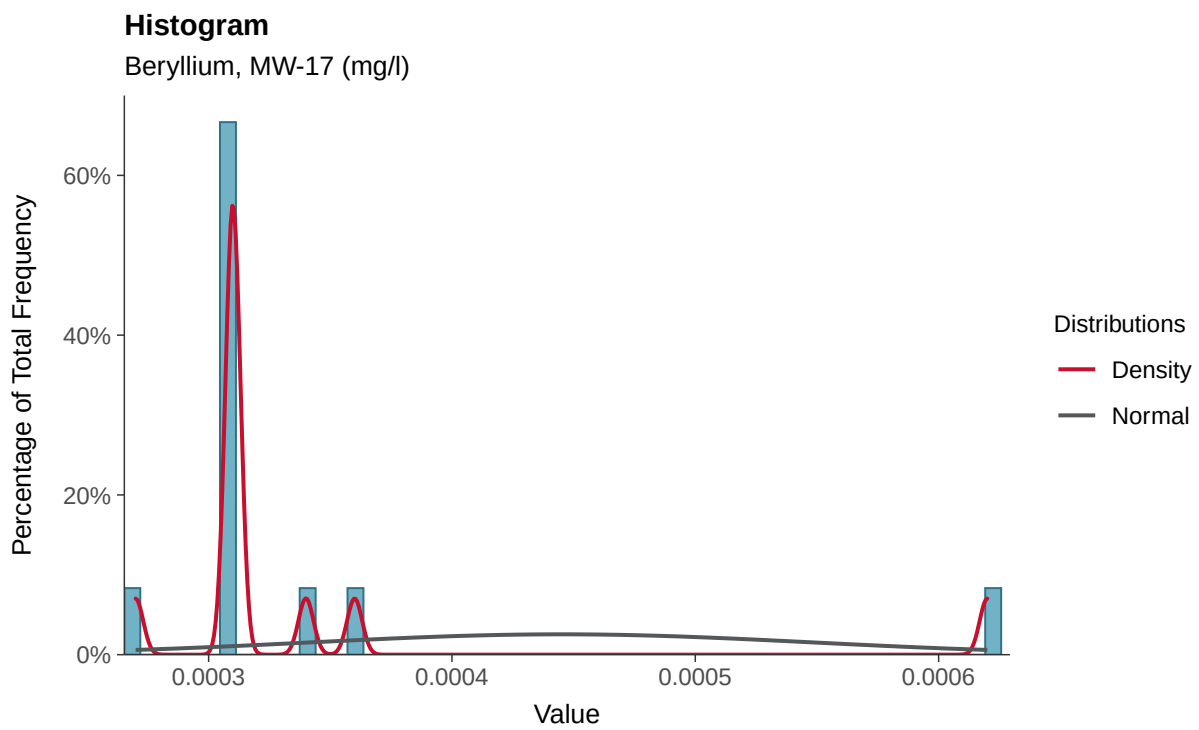
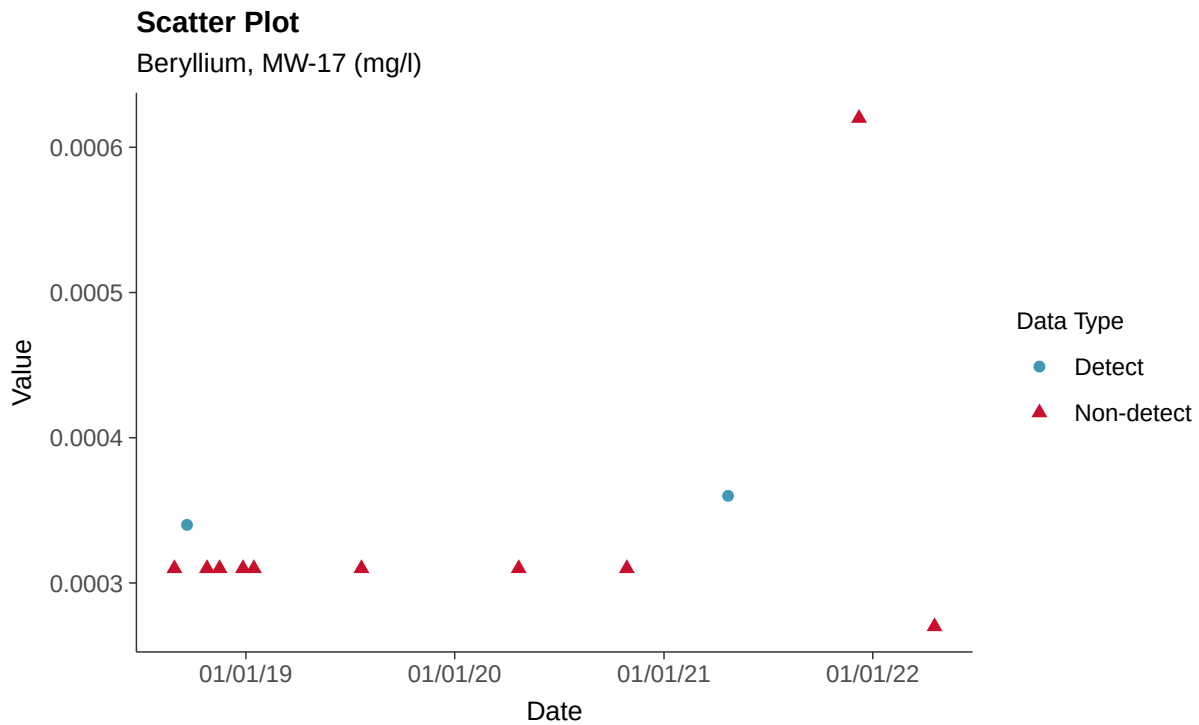
Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-17 (mg/l)



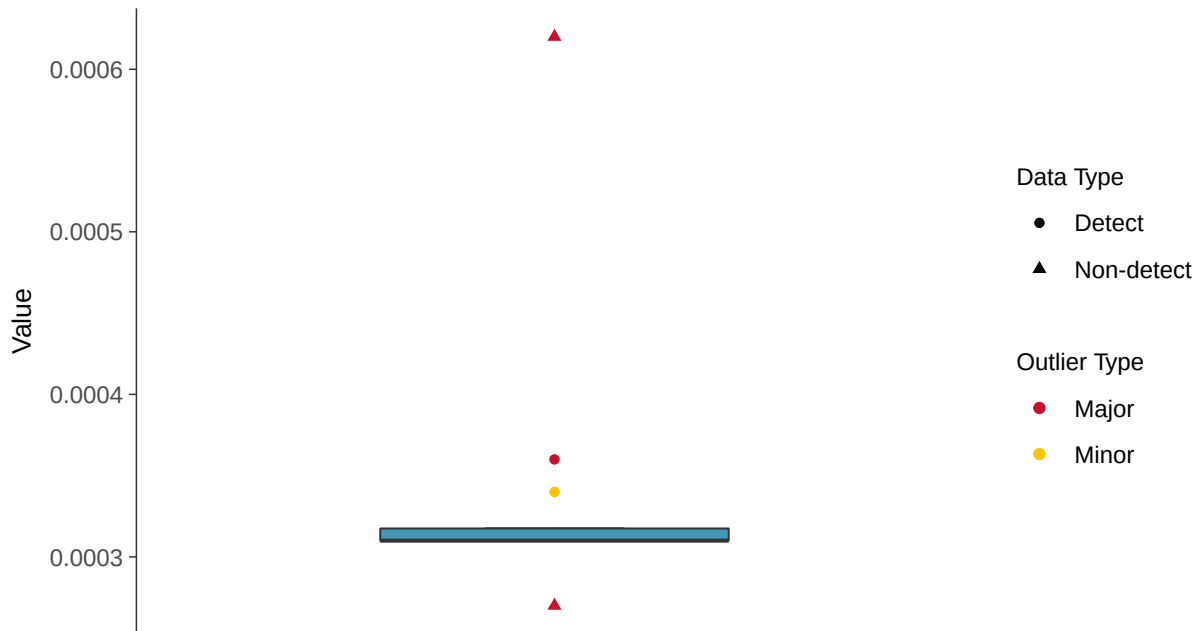
Appendix IV: Beryllium, MW-17

ID: 3_2_107



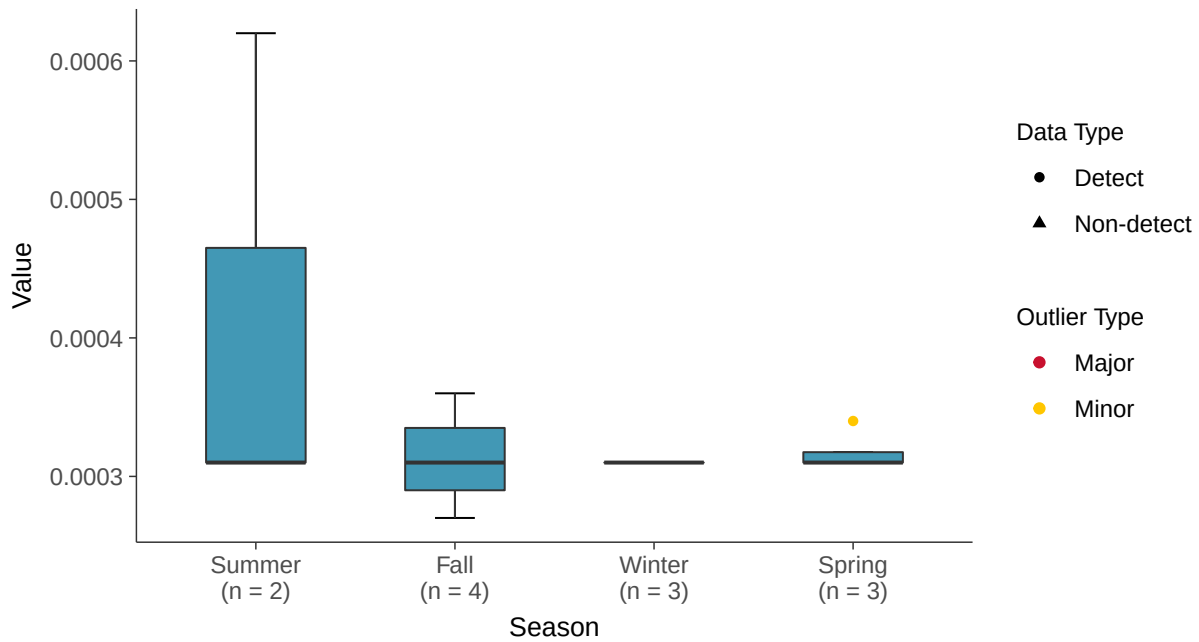
Boxplot

Beryllium, MW-17 (mg/l)



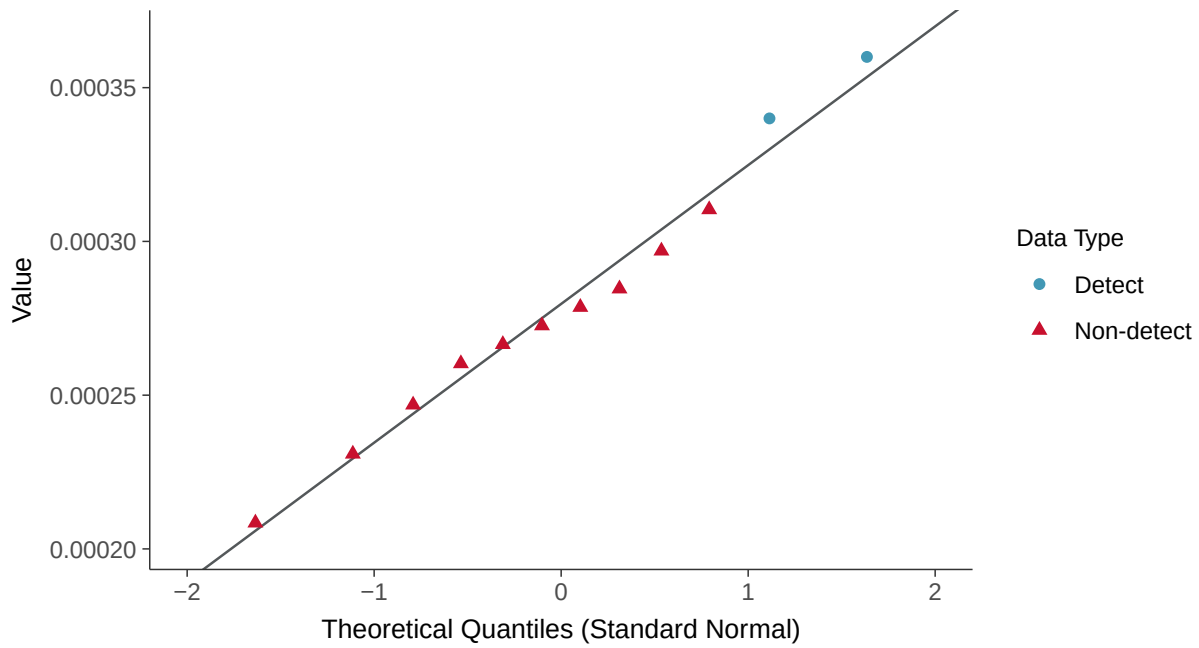
Boxplot by Season

Beryllium, MW-17 (mg/l)



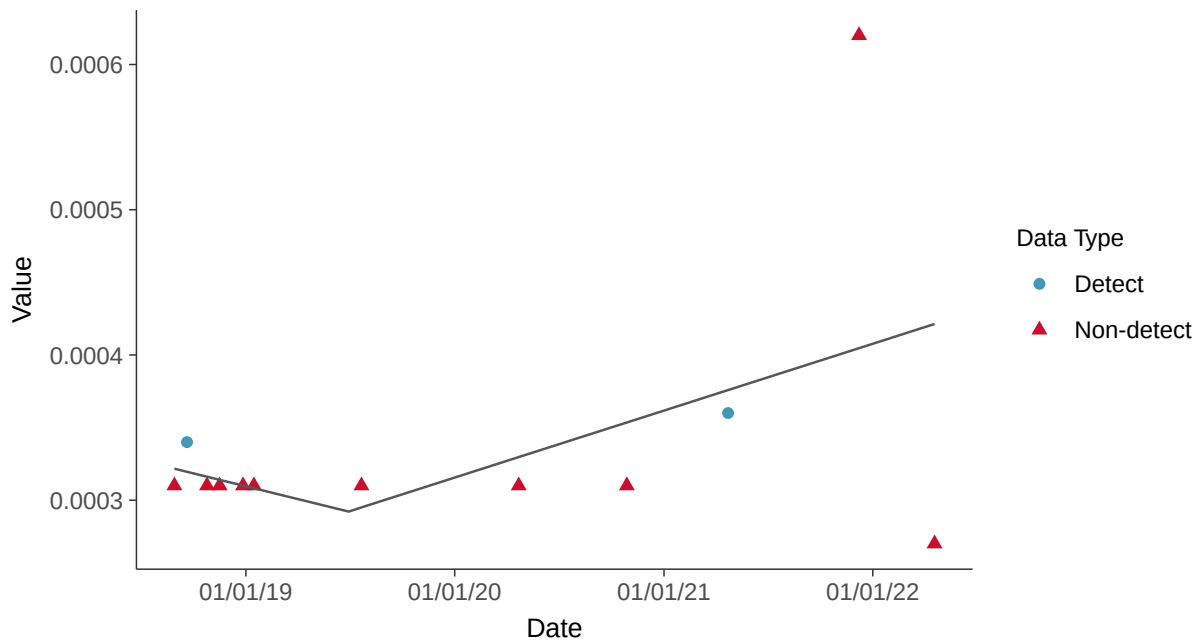
Normal Q-Q plot using ROS Imputed Estimates

Beryllium, MW-17 (mg/l)



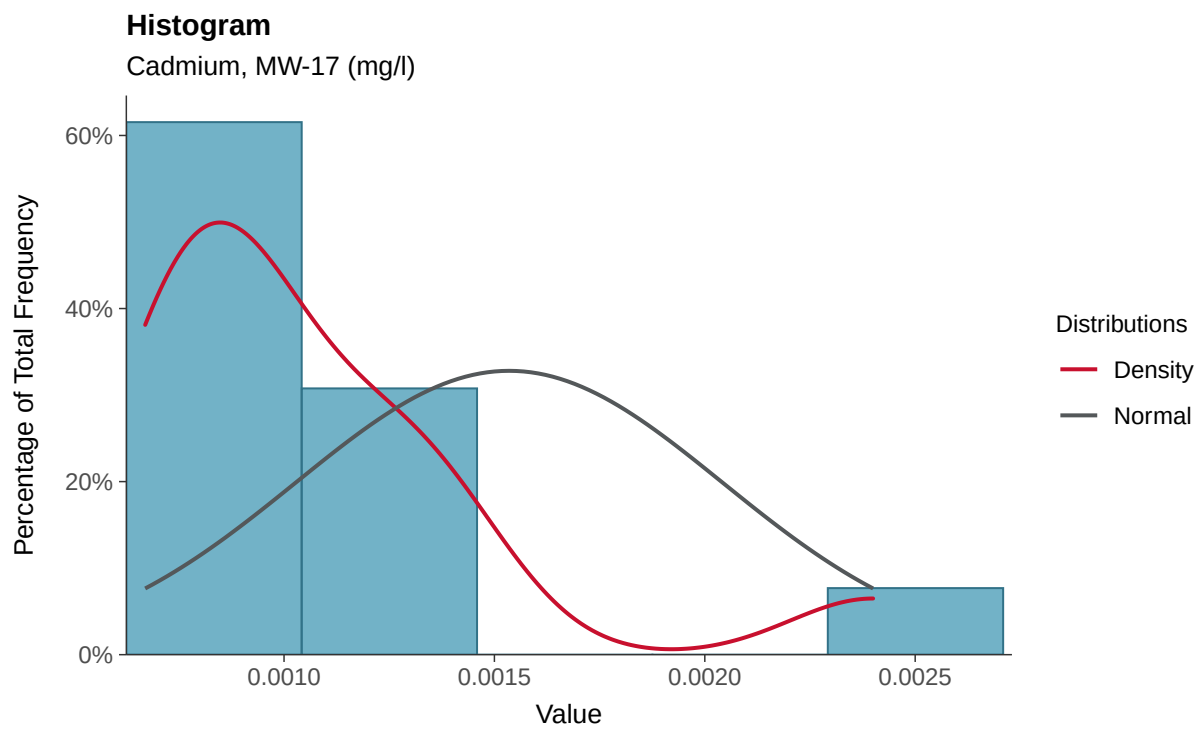
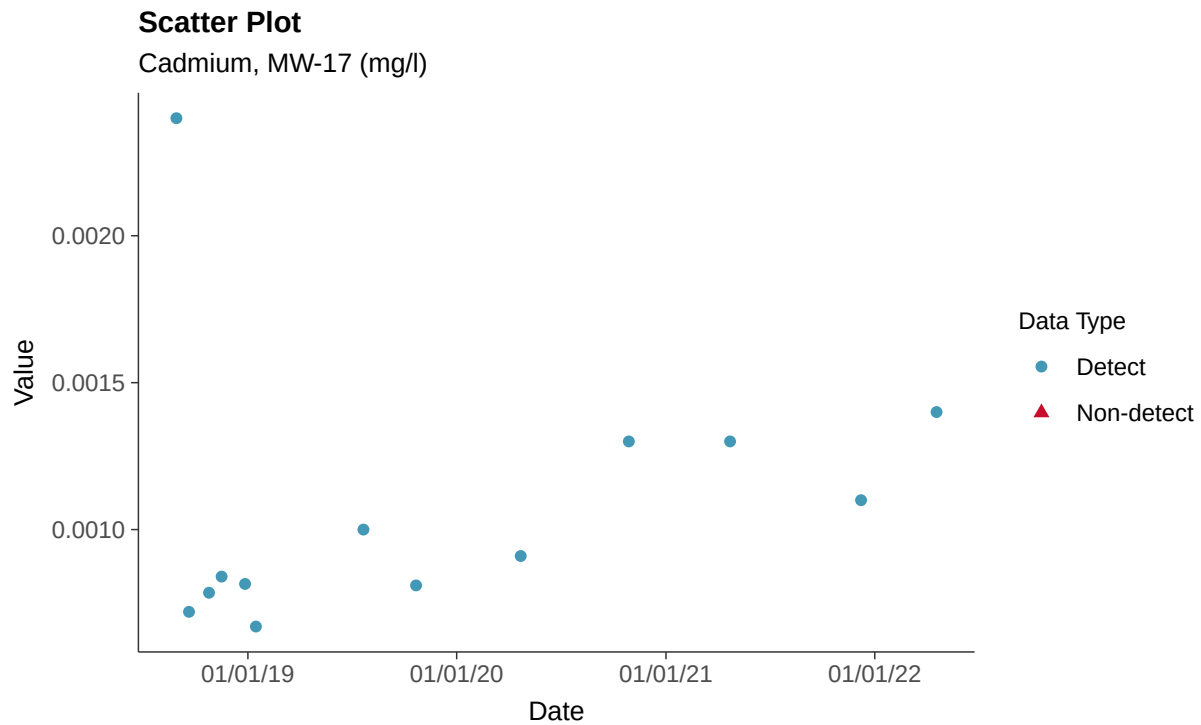
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-17 (mg/l)



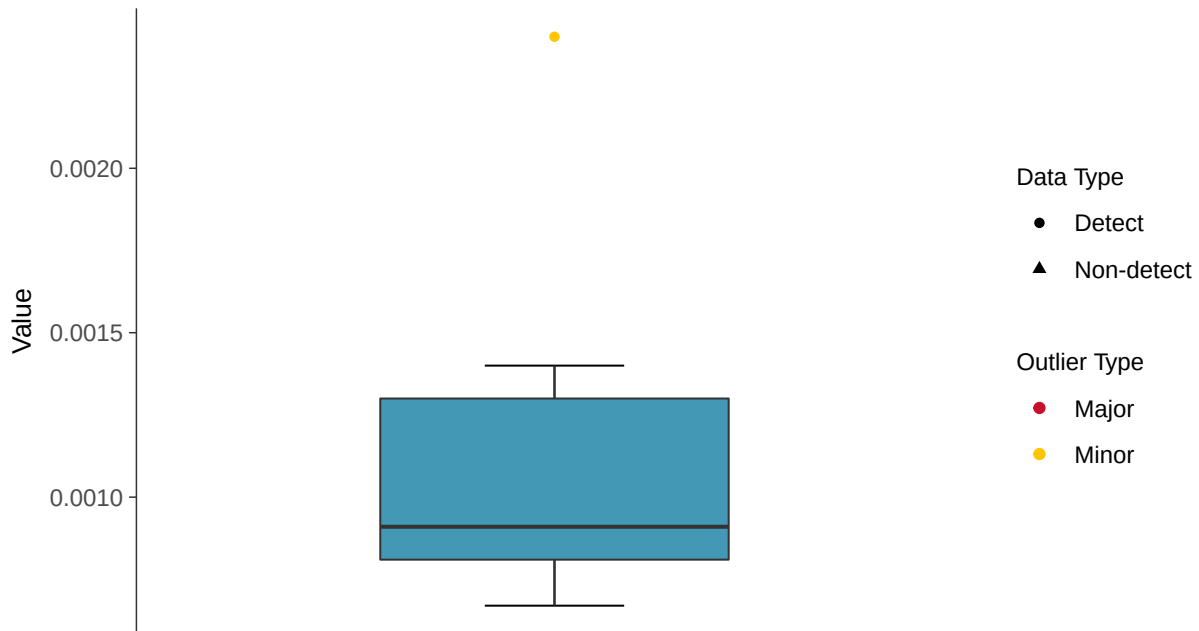
Appendix IV: Cadmium, MW-17

ID: 3_2_109



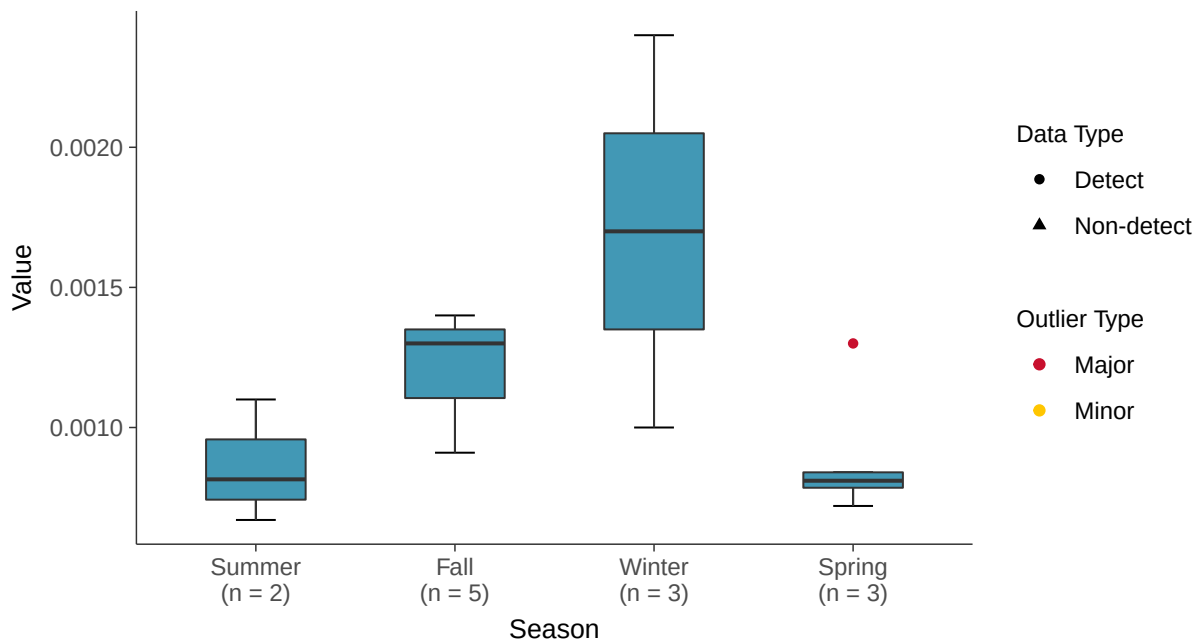
Boxplot

Cadmium, MW-17 (mg/l)



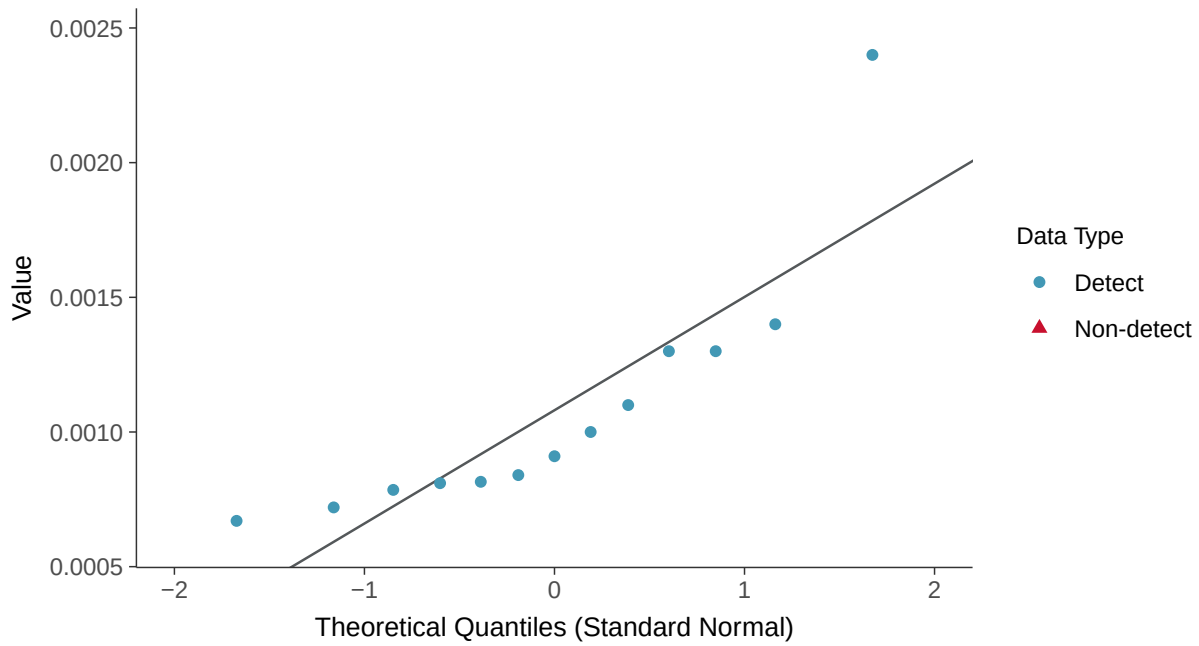
Boxplot by Season

Cadmium, MW-17 (mg/l)



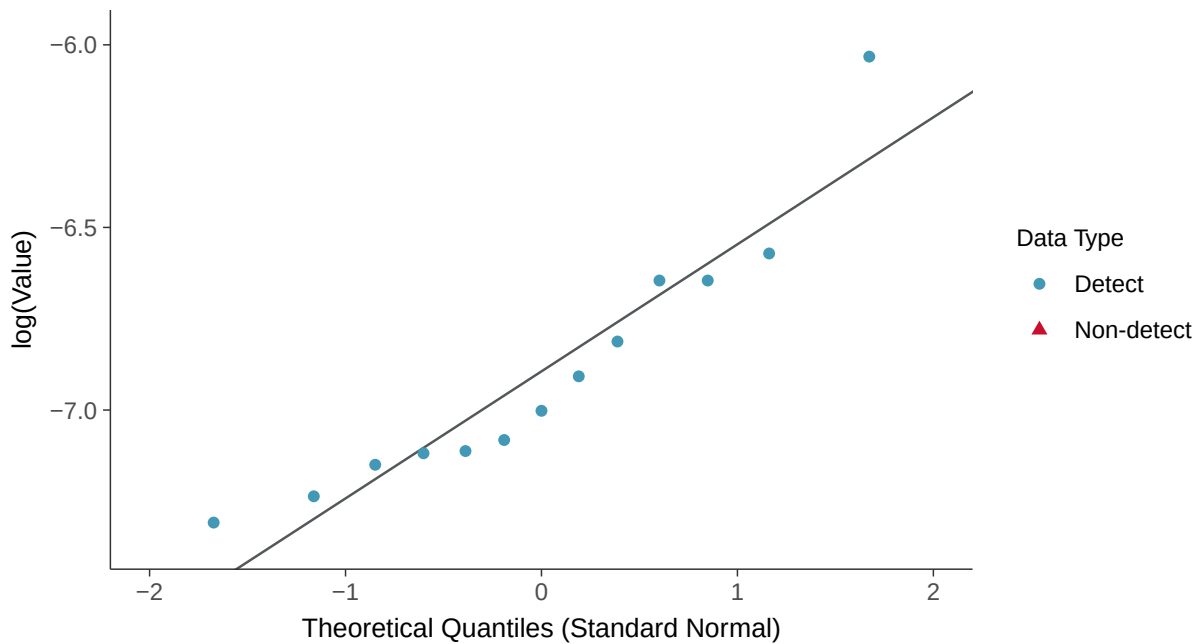
Normal Q-Q plot

Cadmium, MW-17 (mg/l)



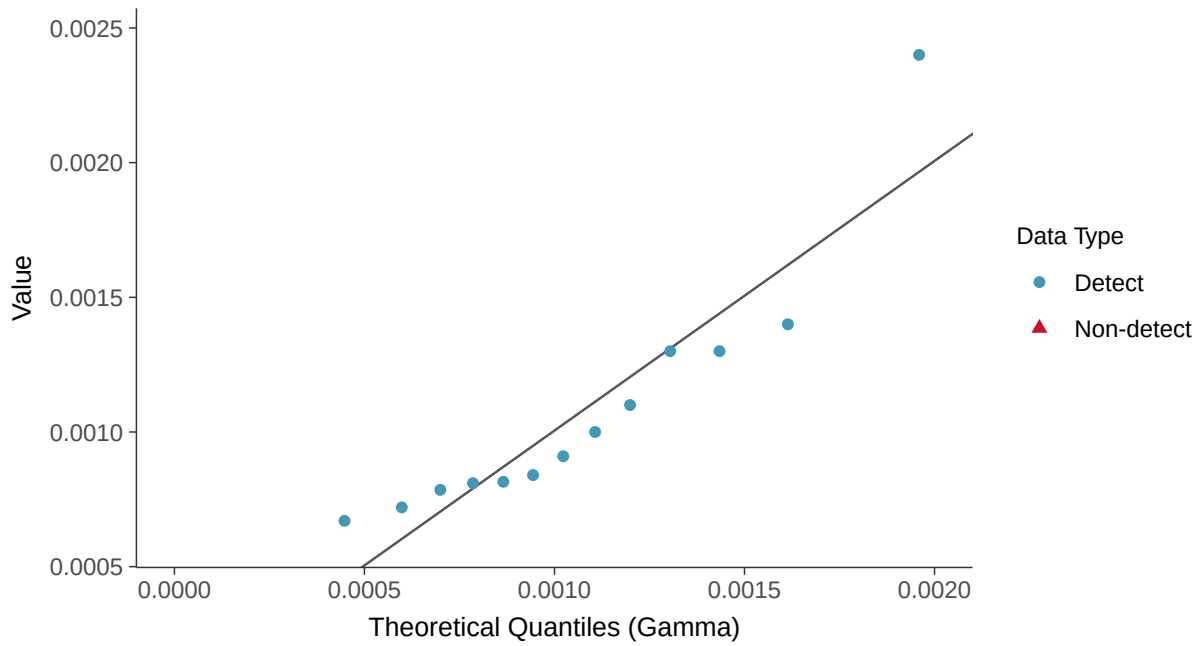
Lognormal Q-Q plot

Cadmium, MW-17 (mg/l)



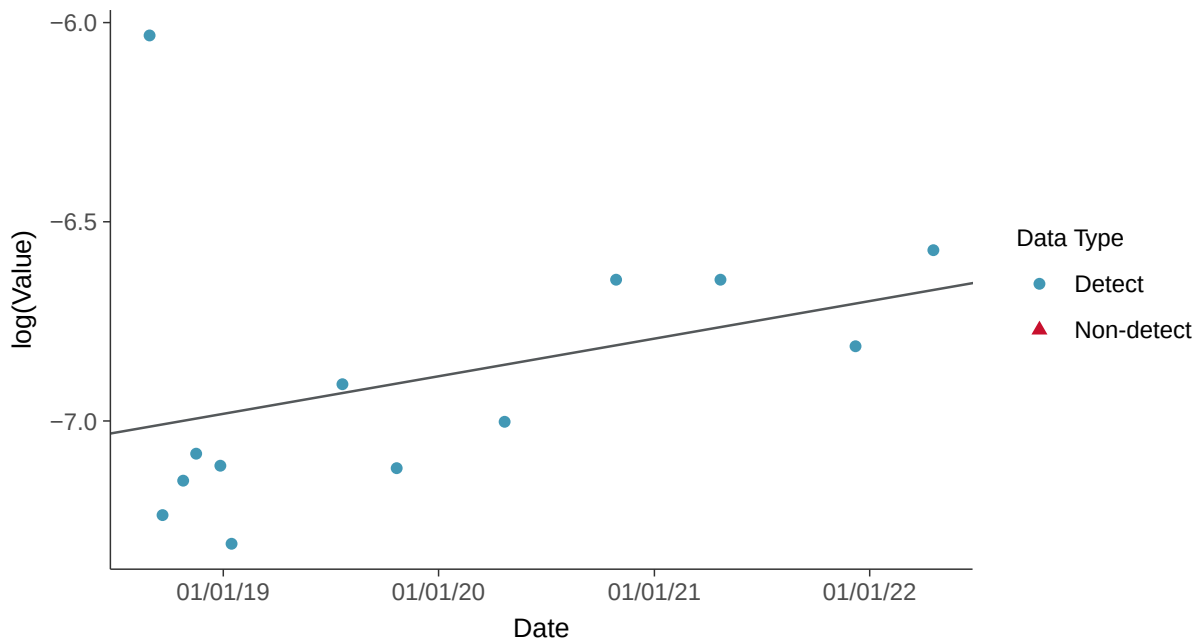
Gamma Q-Q plot

Cadmium, MW-17 (mg/l)



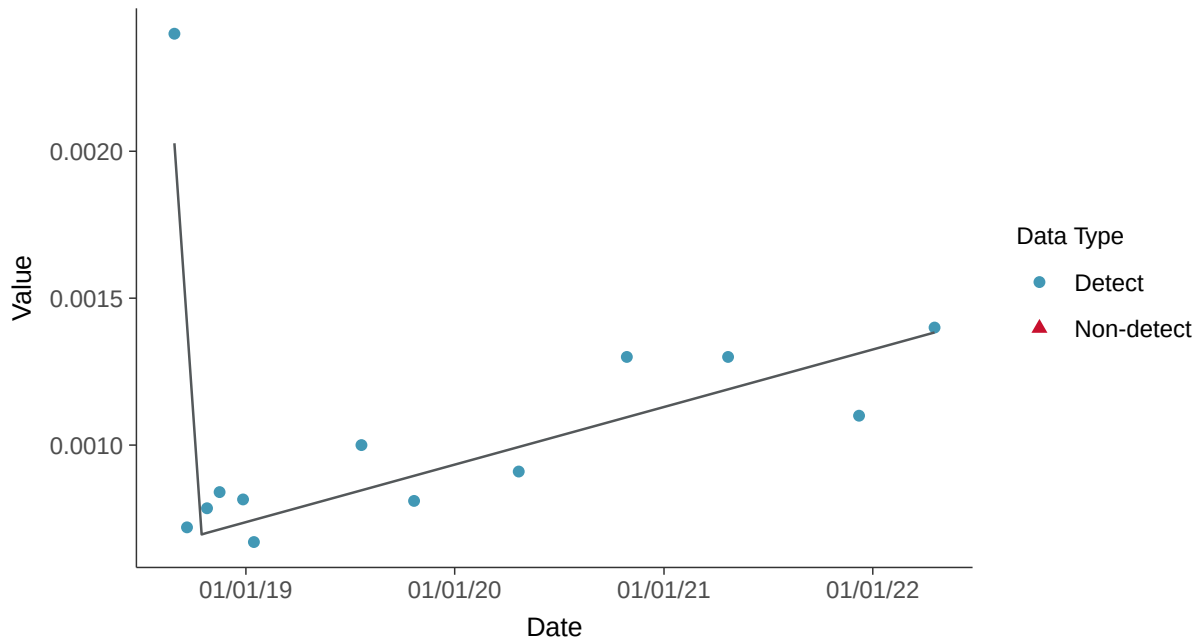
Trend Regression: Lognormal MLE

Cadmium, MW-17 (mg/l)



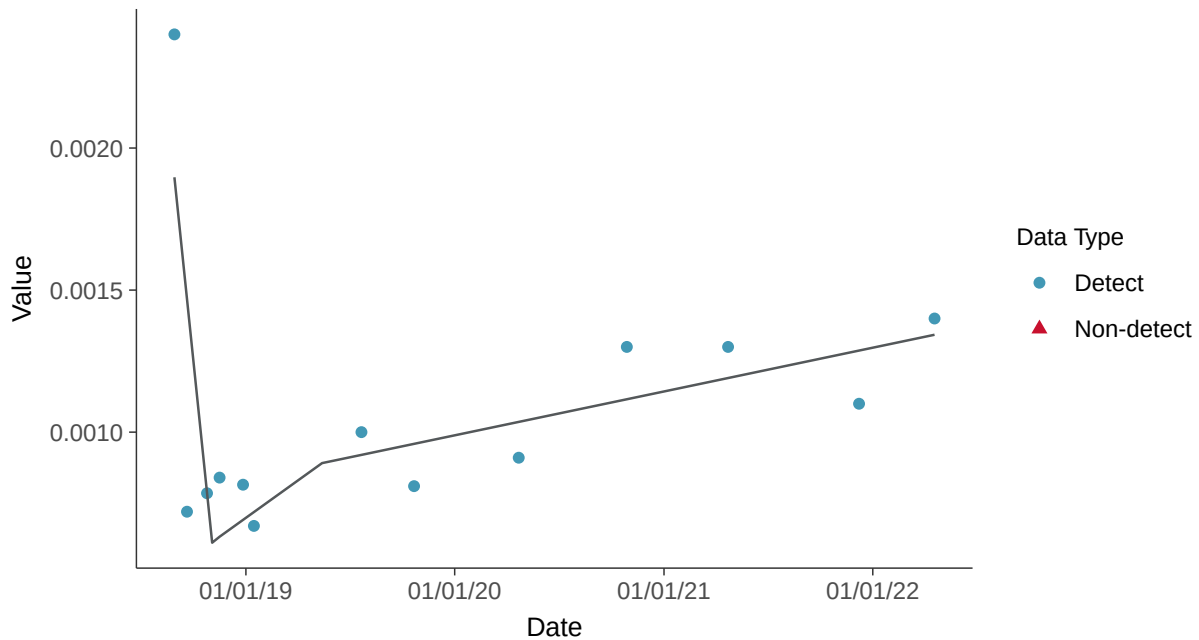
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-17 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cadmium, MW-17 (mg/l)

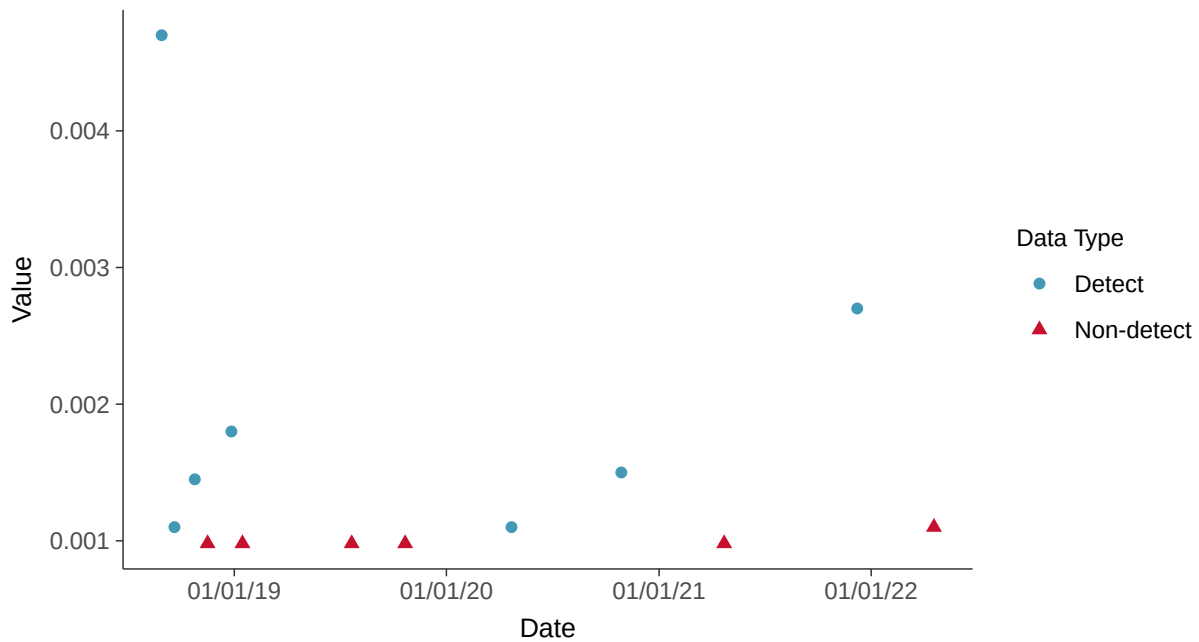


Appendix IV: Chromium, Total, MW-17

ID: 3_2_112

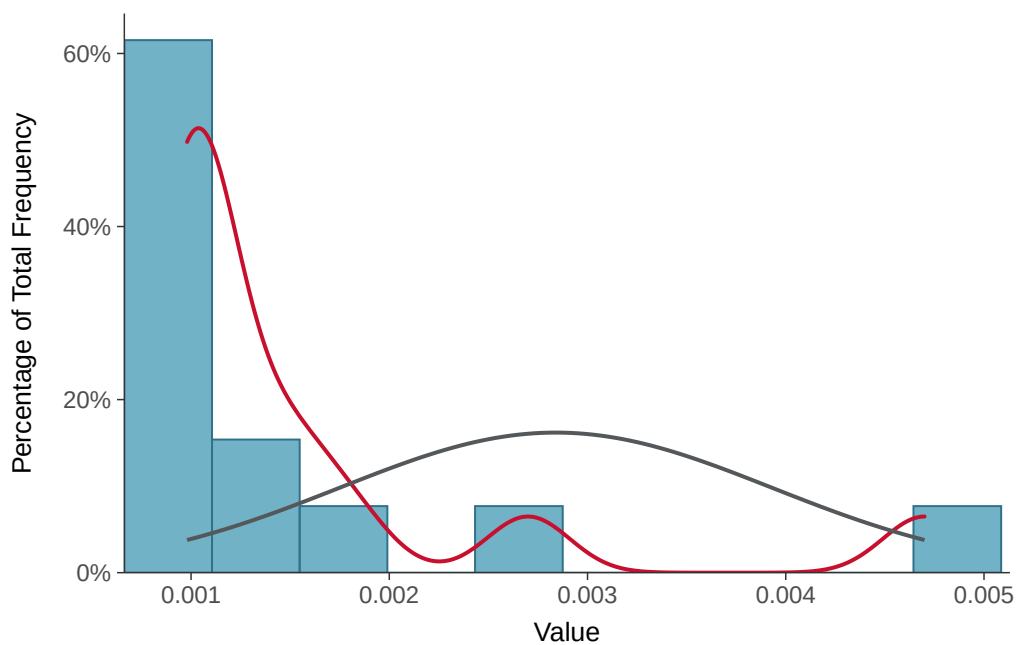
Scatter Plot

Chromium, Total, MW-17 (mg/l)



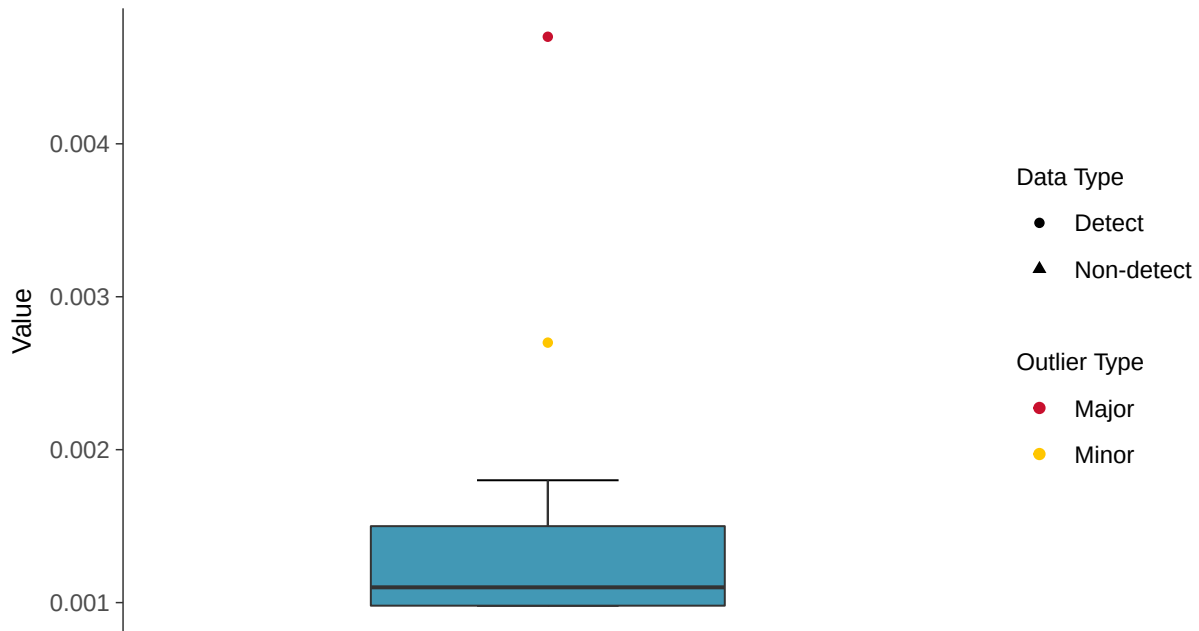
Histogram

Chromium, Total, MW-17 (mg/l)



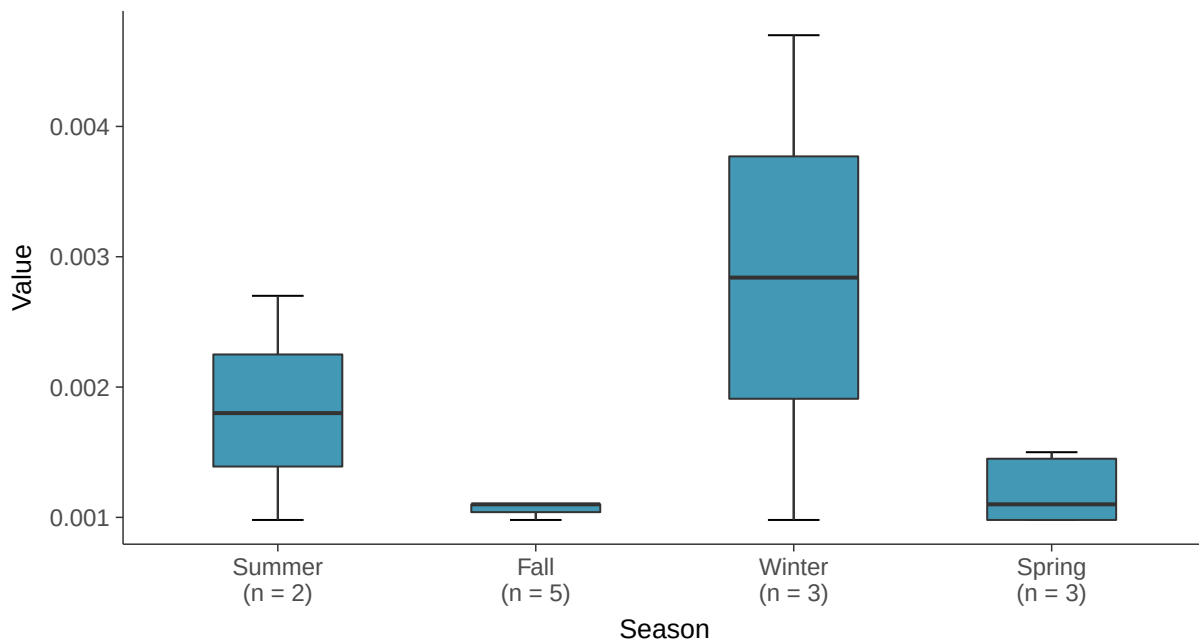
Boxplot

Chromium, Total, MW-17 (mg/l)



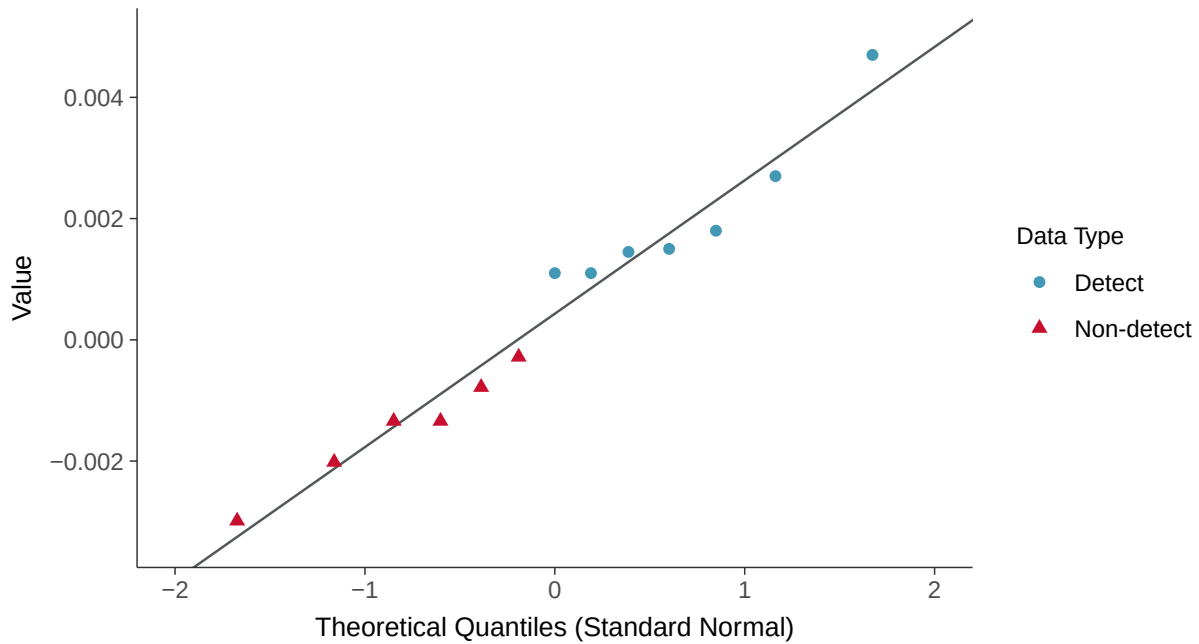
Boxplot by Season

Chromium, Total, MW-17 (mg/l)



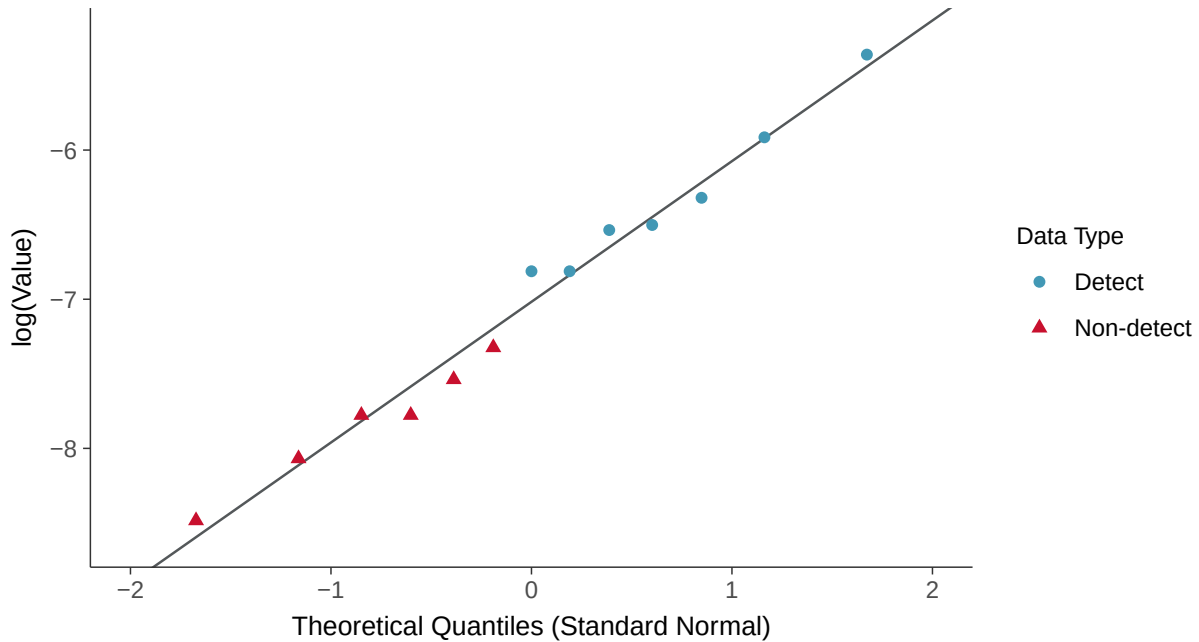
Normal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-17 (mg/l)



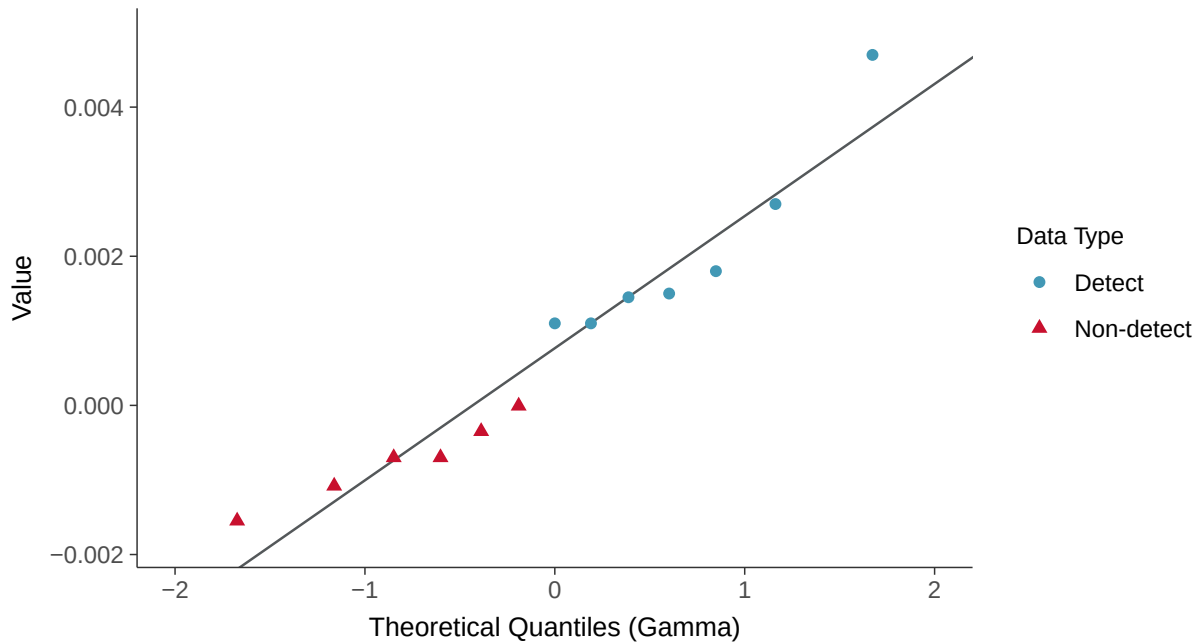
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-17 (mg/l)



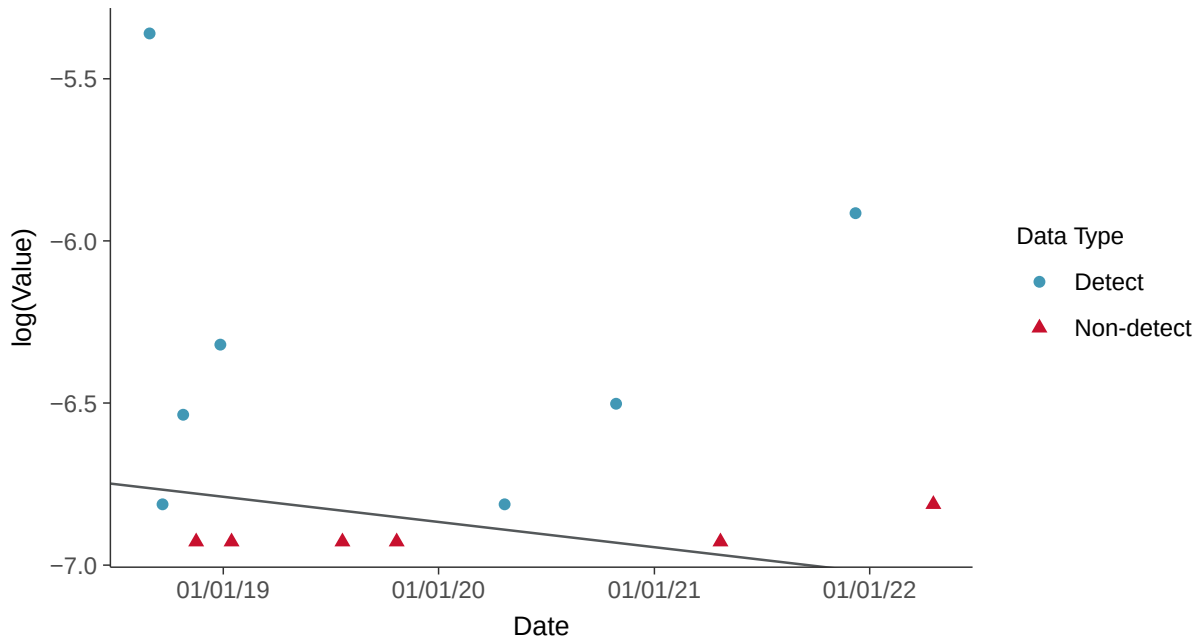
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-17 (mg/l)



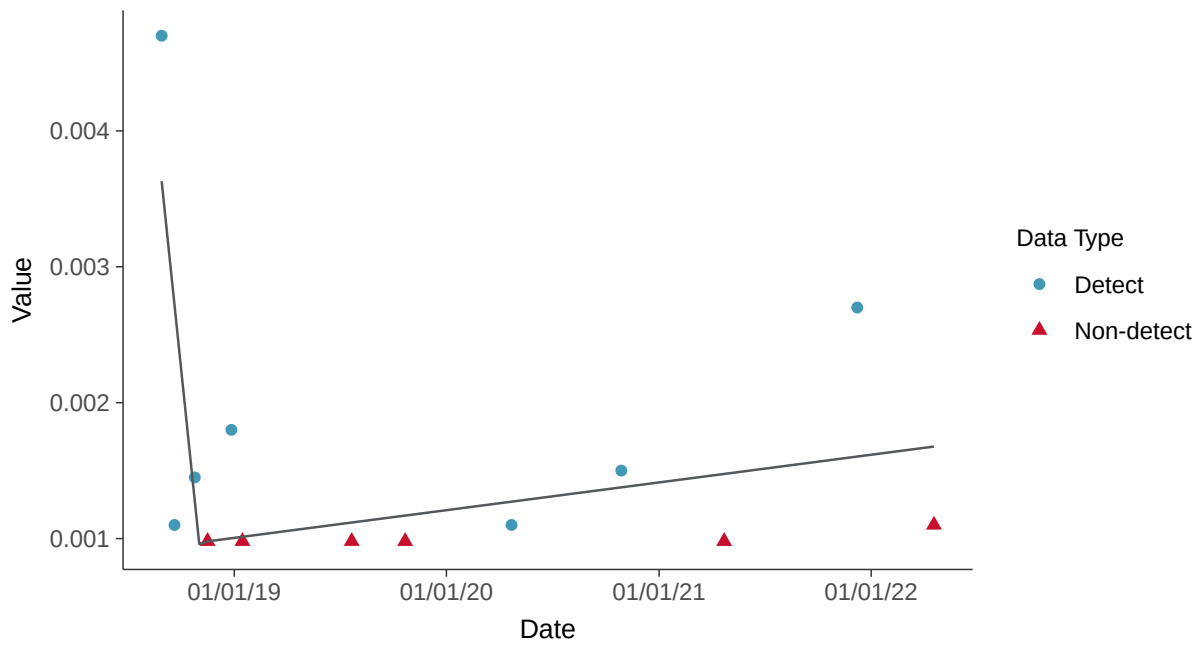
Trend Regression: Lognormal MLE

Chromium, Total, MW-17 (mg/l)



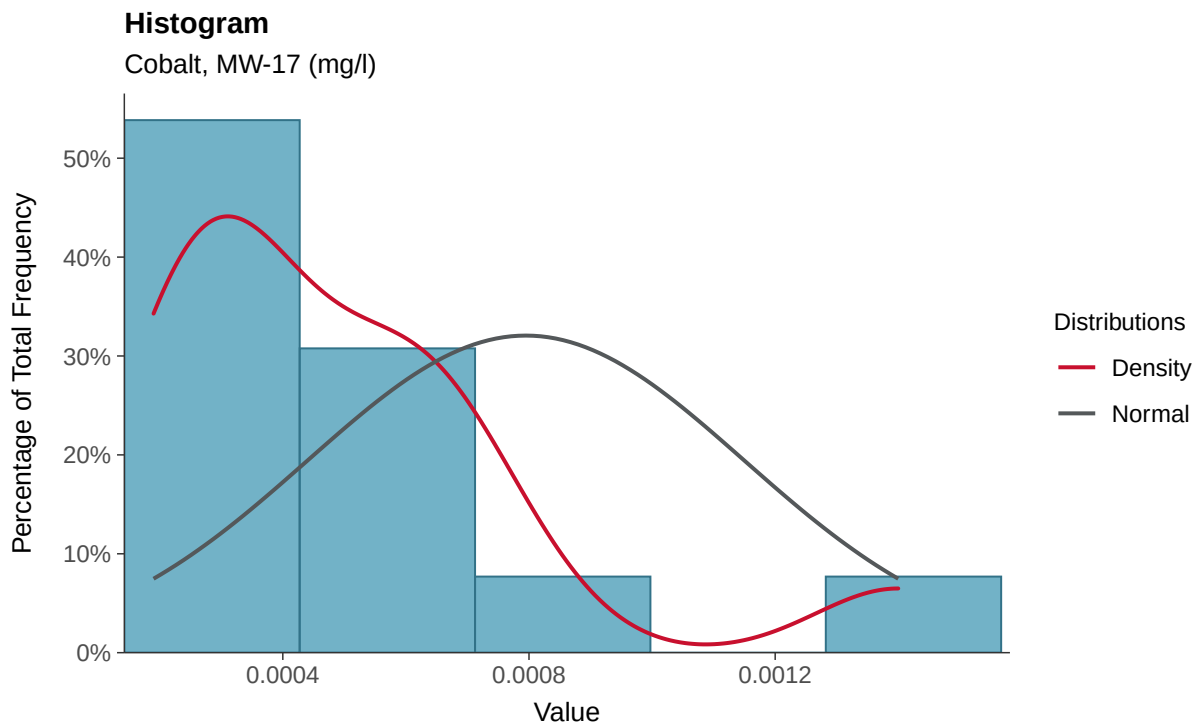
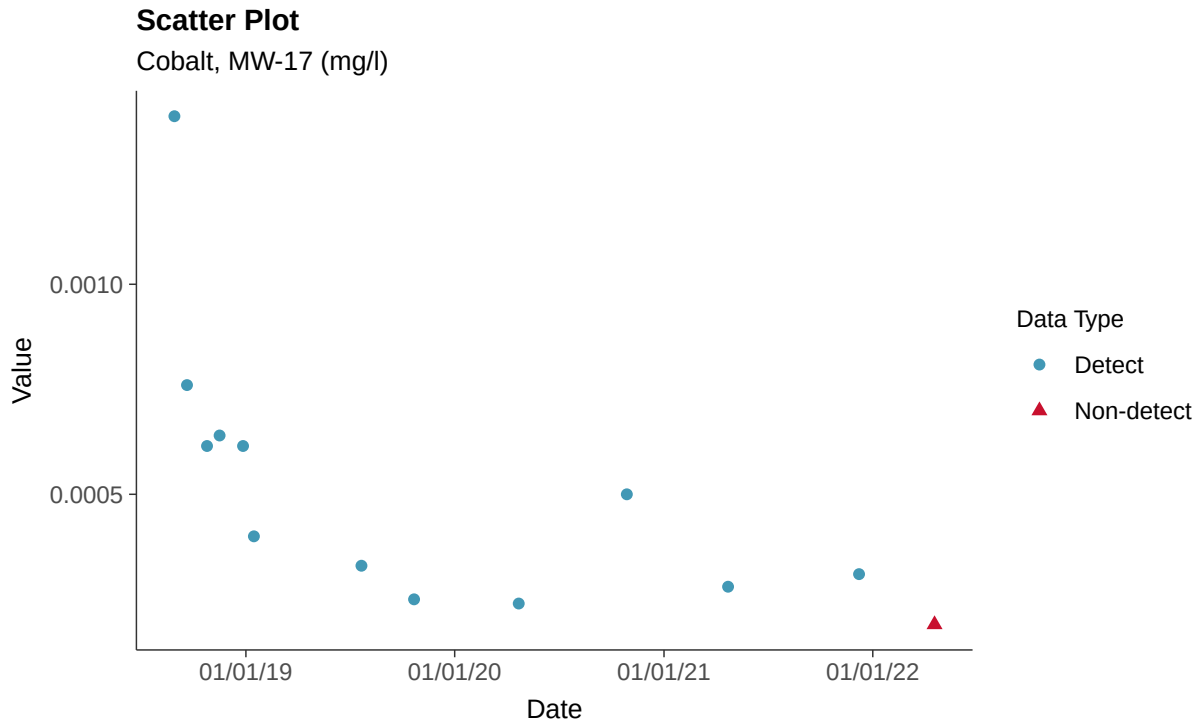
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-17 (mg/l)



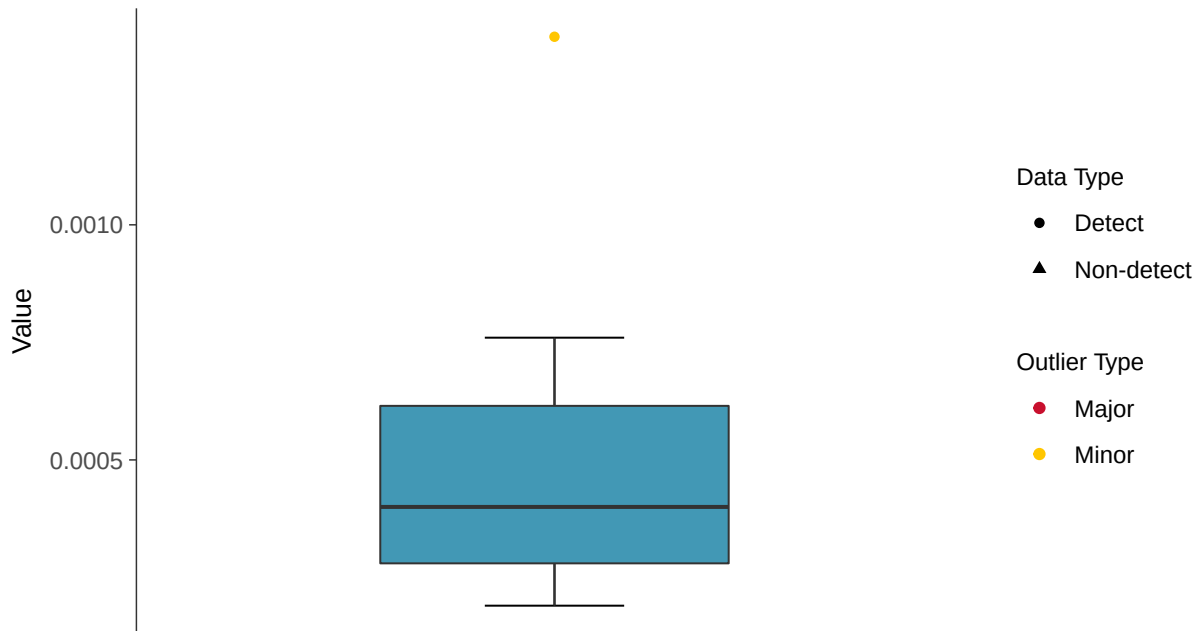
Appendix IV: Cobalt, MW-17

ID: 3_2_113



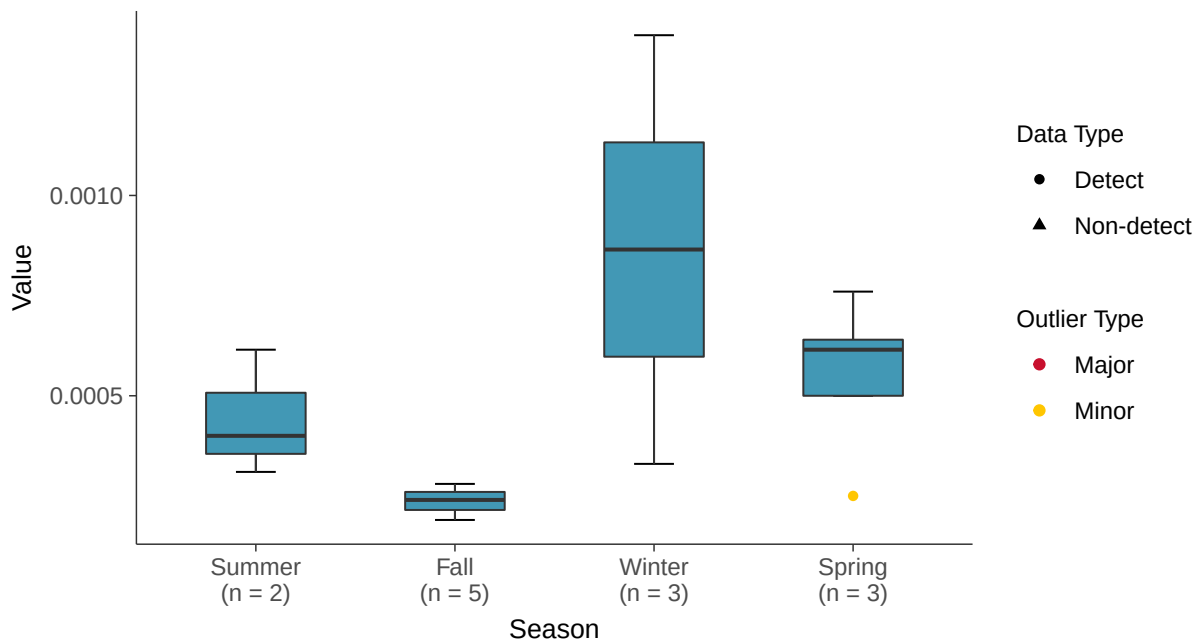
Boxplot

Cobalt, MW-17 (mg/l)



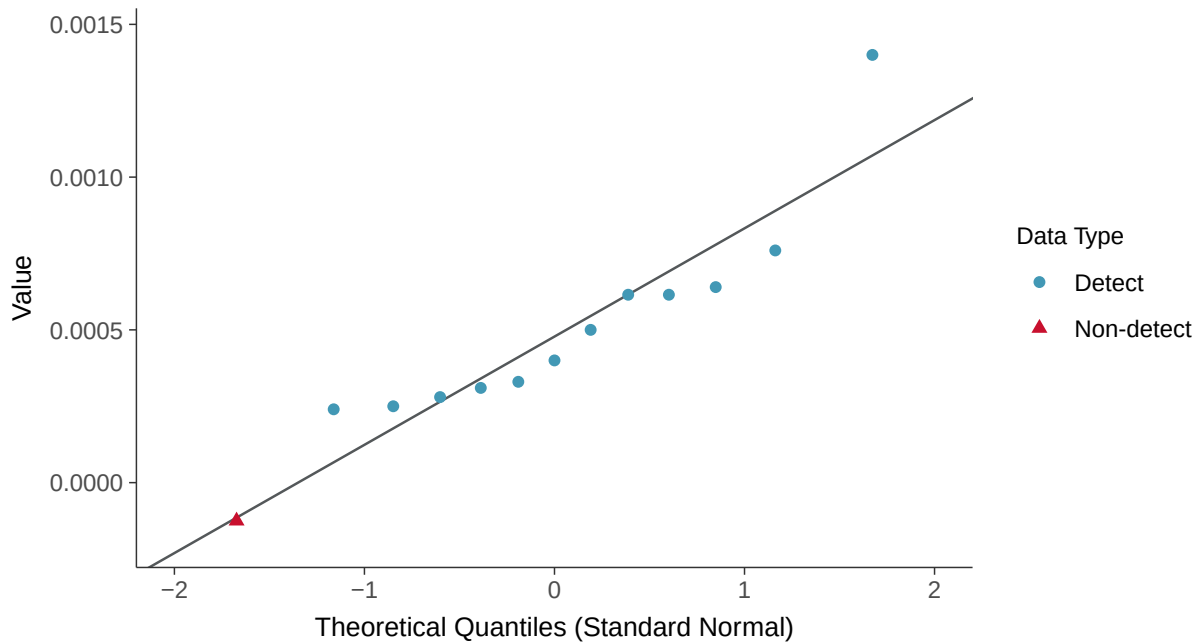
Boxplot by Season

Cobalt, MW-17 (mg/l)



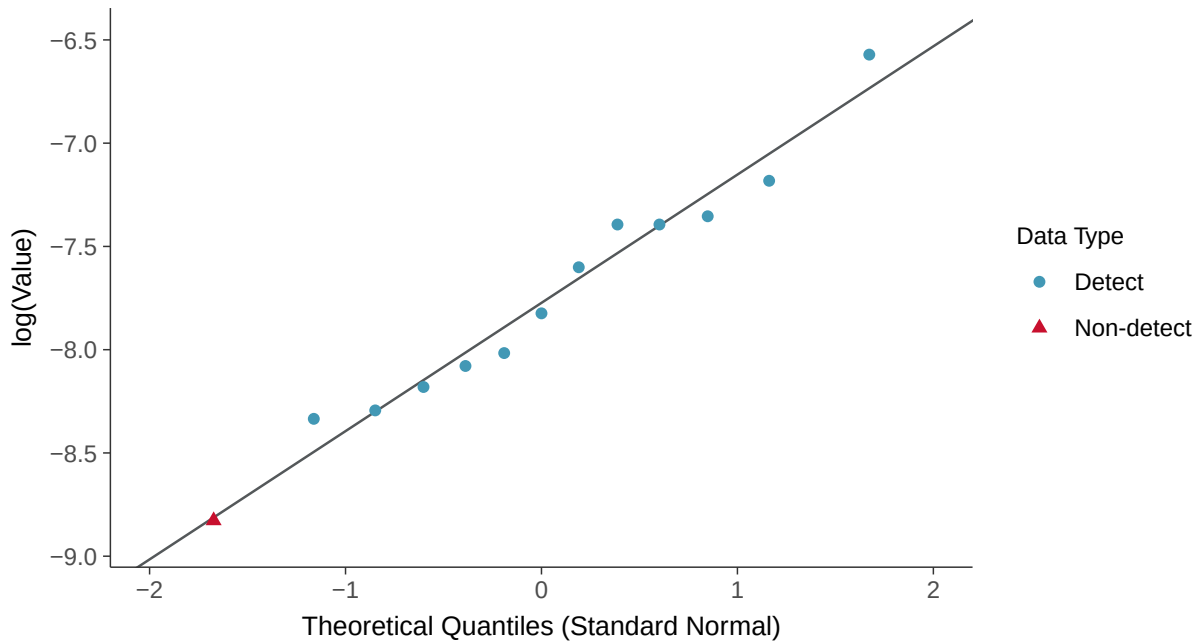
Normal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-17 (mg/l)



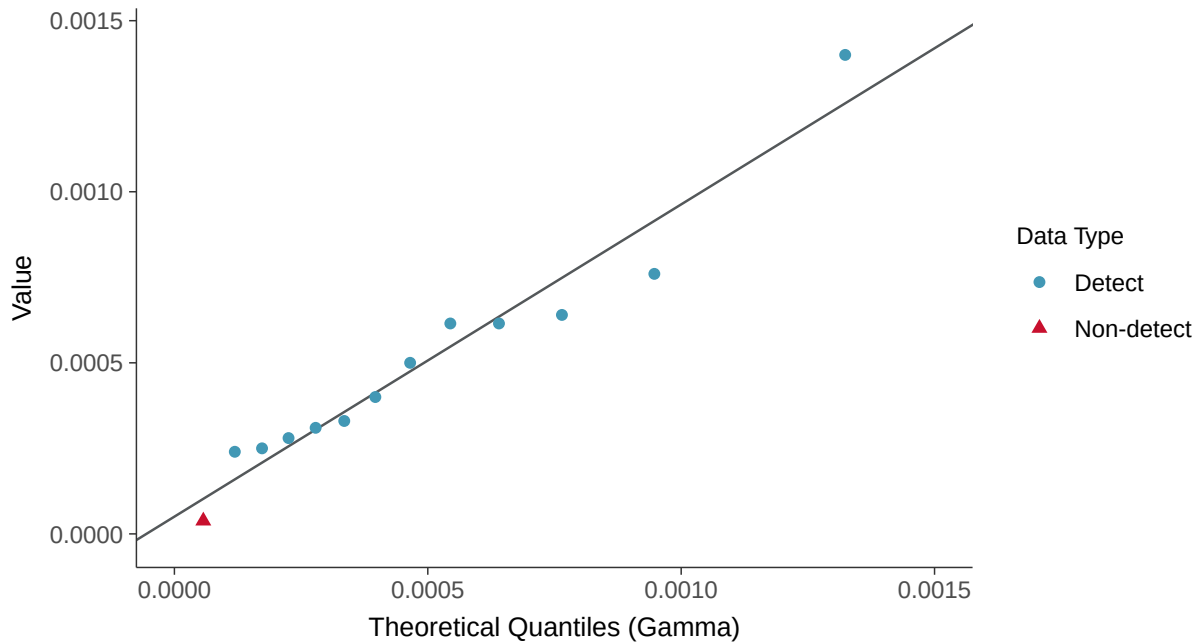
Lognormal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-17 (mg/l)



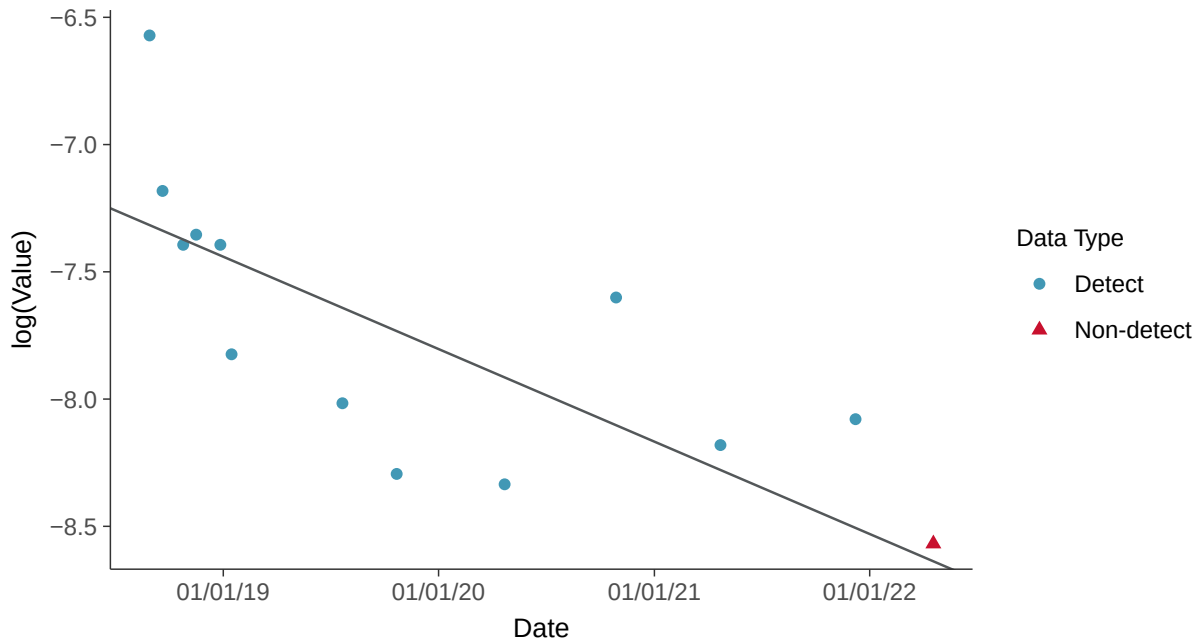
Gamma Q-Q plot using ROS Imputed Estimates

Cobalt, MW-17 (mg/l)



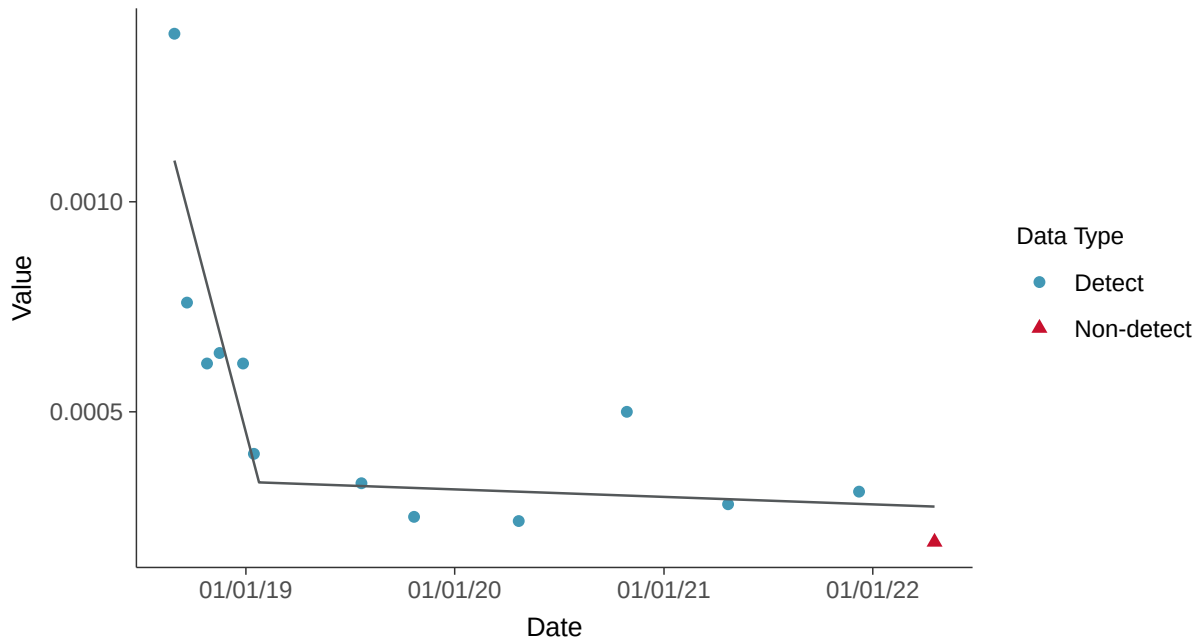
Trend Regression: Lognormal MLE

Cobalt, MW-17 (mg/l)



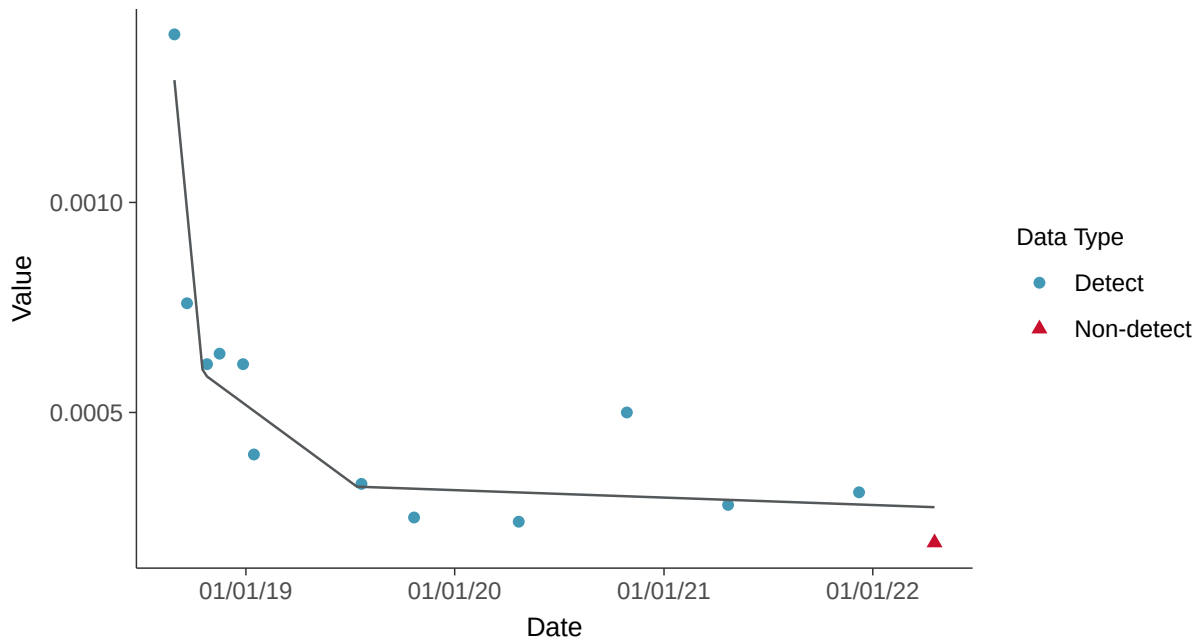
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-17 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-17 (mg/l)

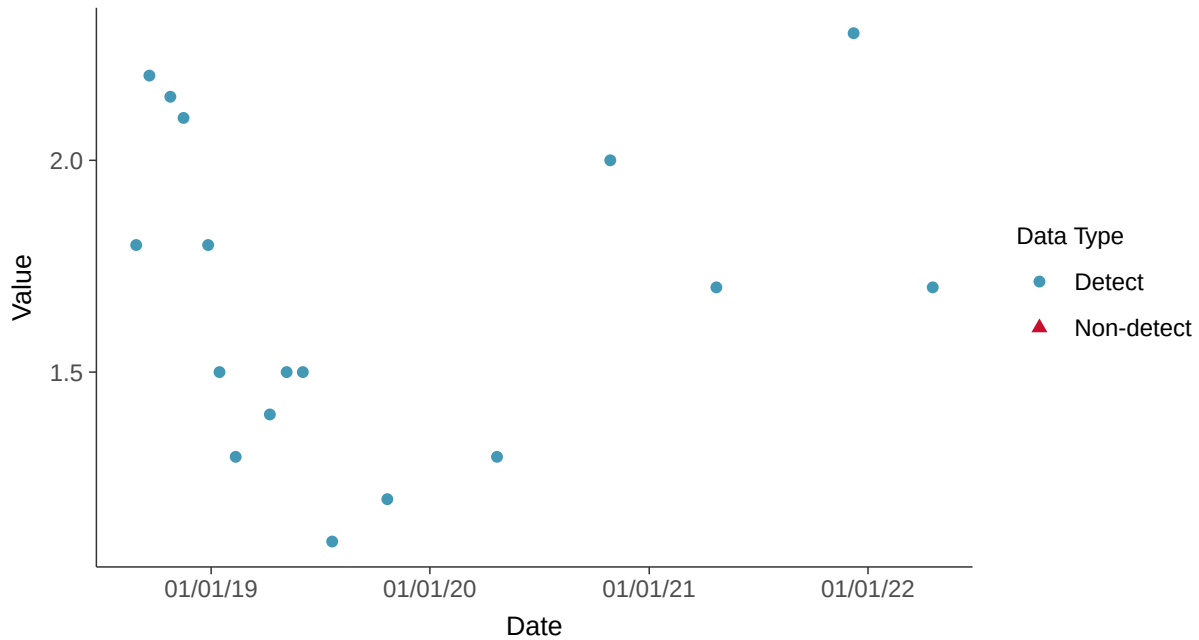


Appendix IV: Fluoride (App IV), MW-17

ID: 3_2_116

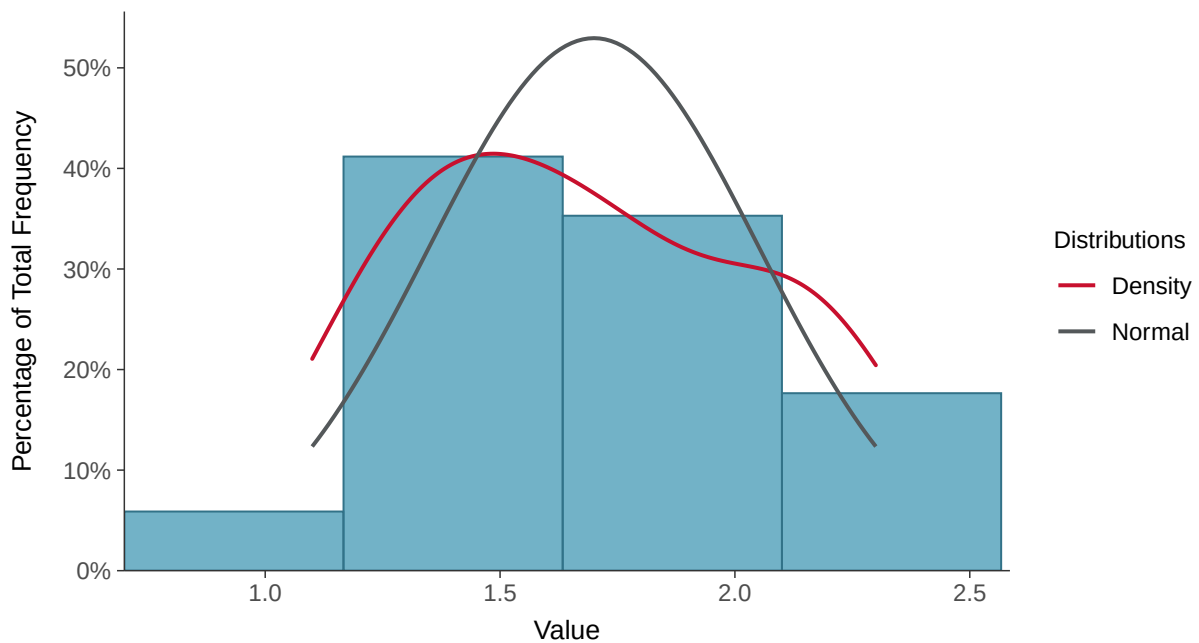
Scatter Plot

Fluoride (App IV), MW-17 (mg/l)



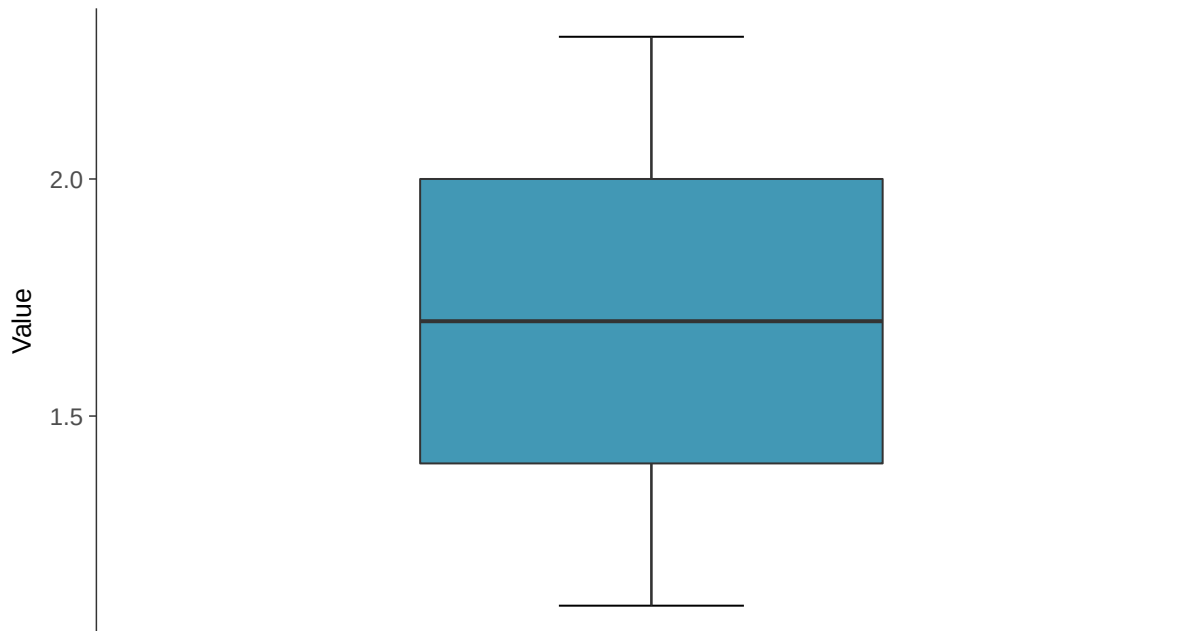
Histogram

Fluoride (App IV), MW-17 (mg/l)



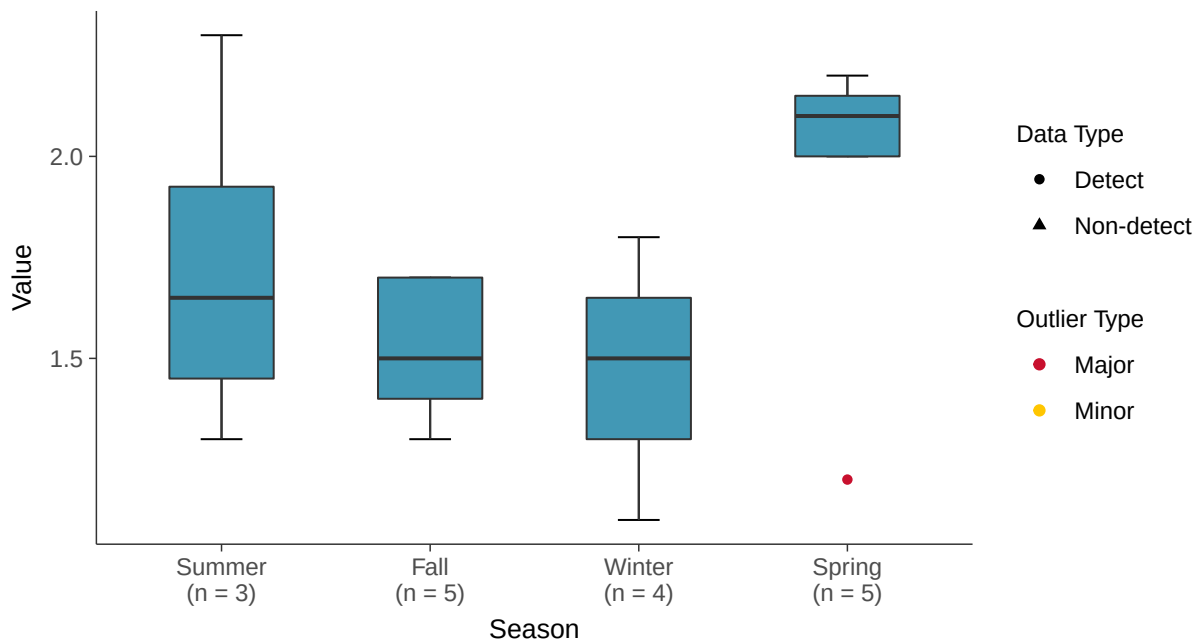
Boxplot

Fluoride (App IV), MW-17 (mg/l)



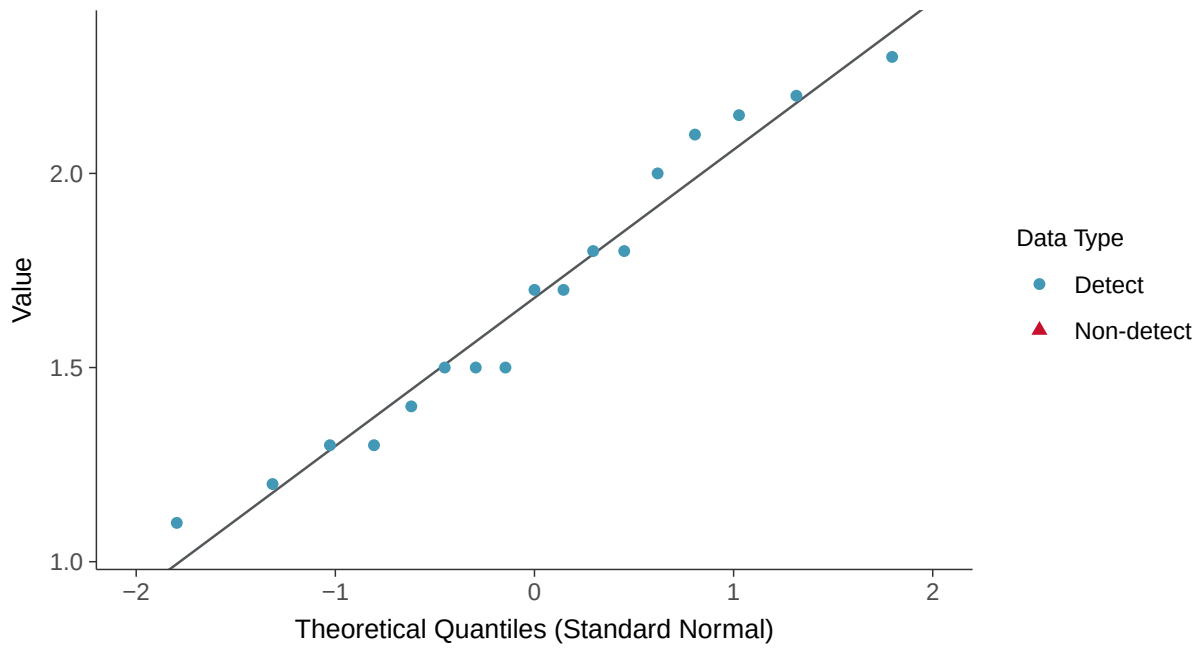
Boxplot by Season

Fluoride (App IV), MW-17 (mg/l)



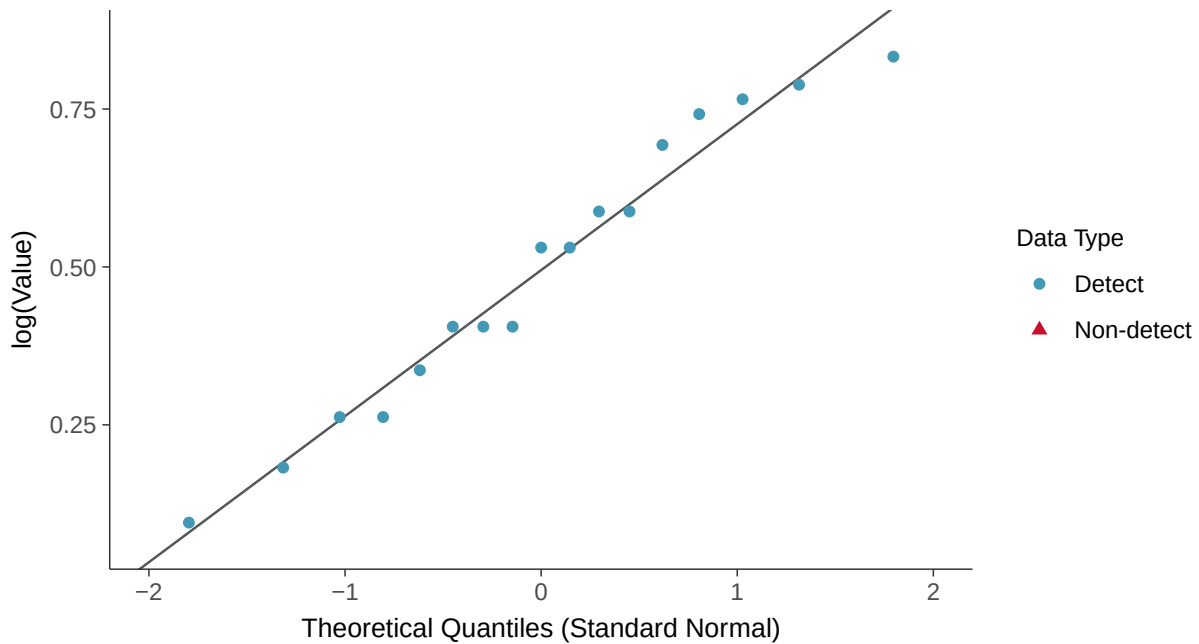
Normal Q-Q plot

Fluoride (App IV), MW-17 (mg/l)



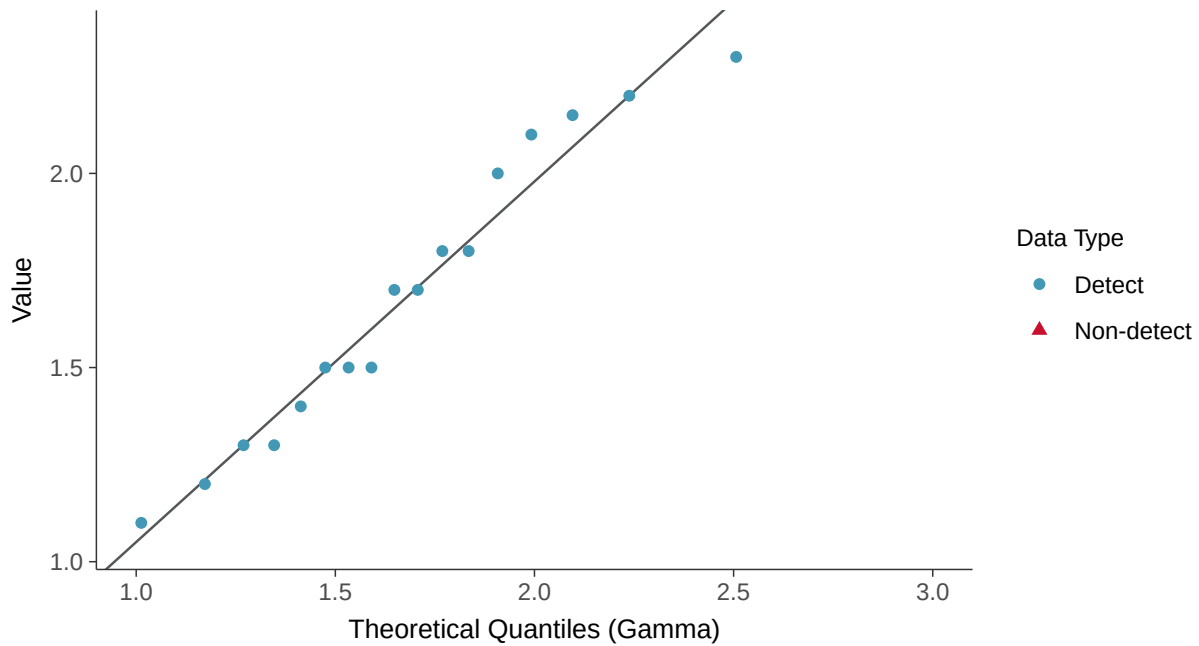
Lognormal Q-Q plot

Fluoride (App IV), MW-17 (mg/l)



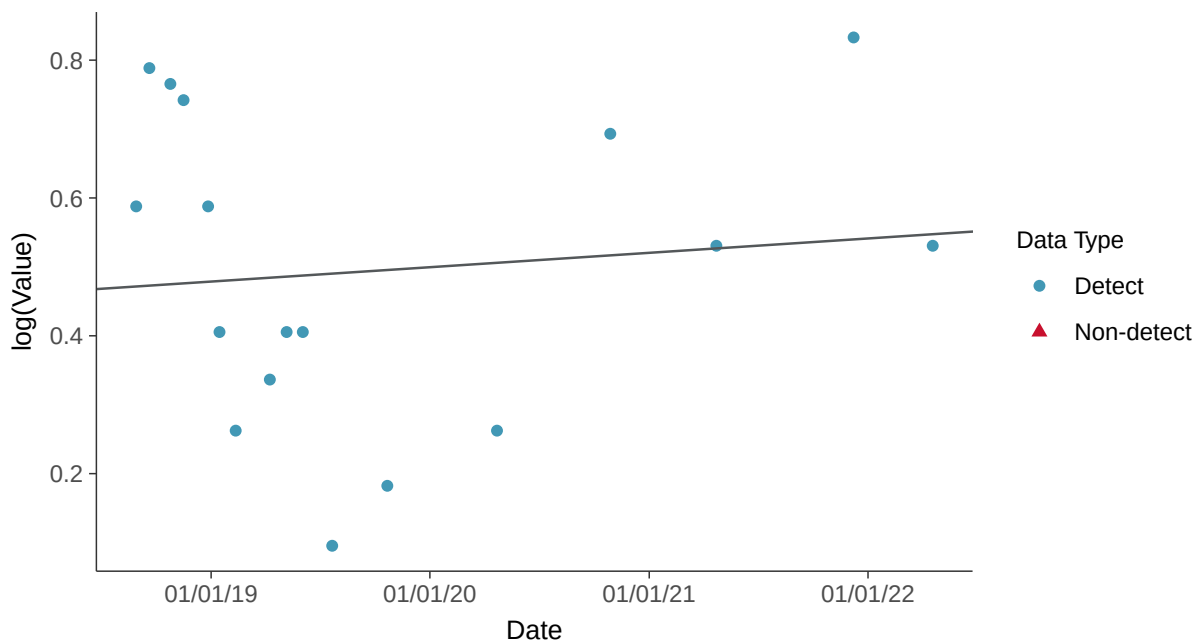
Gamma Q-Q plot

Fluoride (App IV), MW-17 (mg/l)



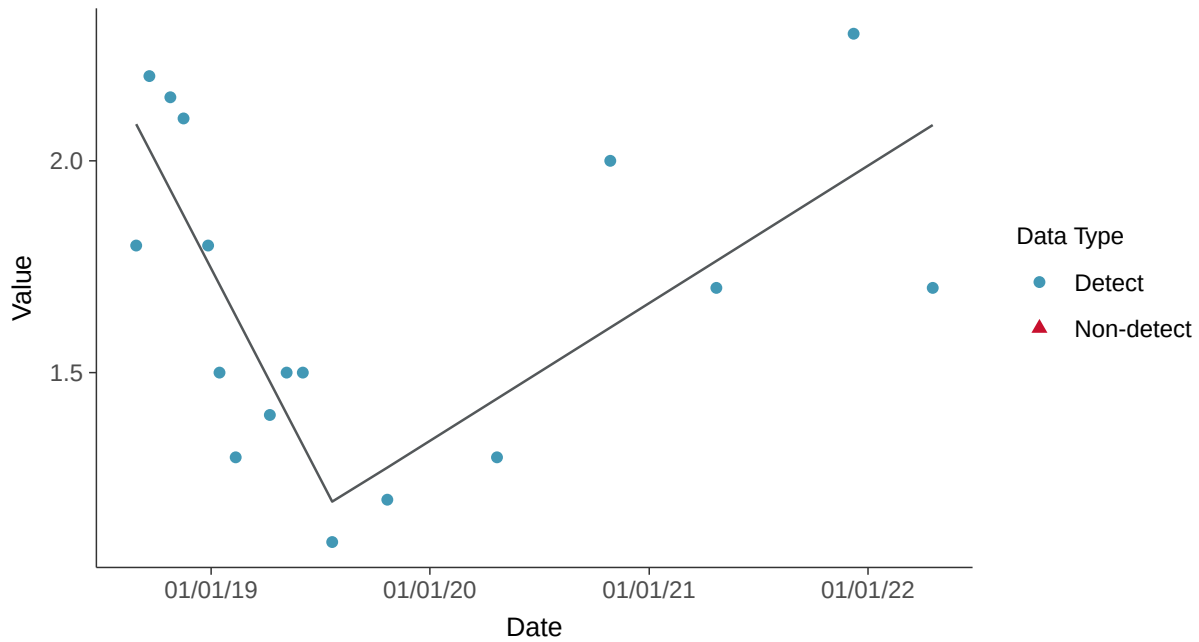
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-17 (mg/l)



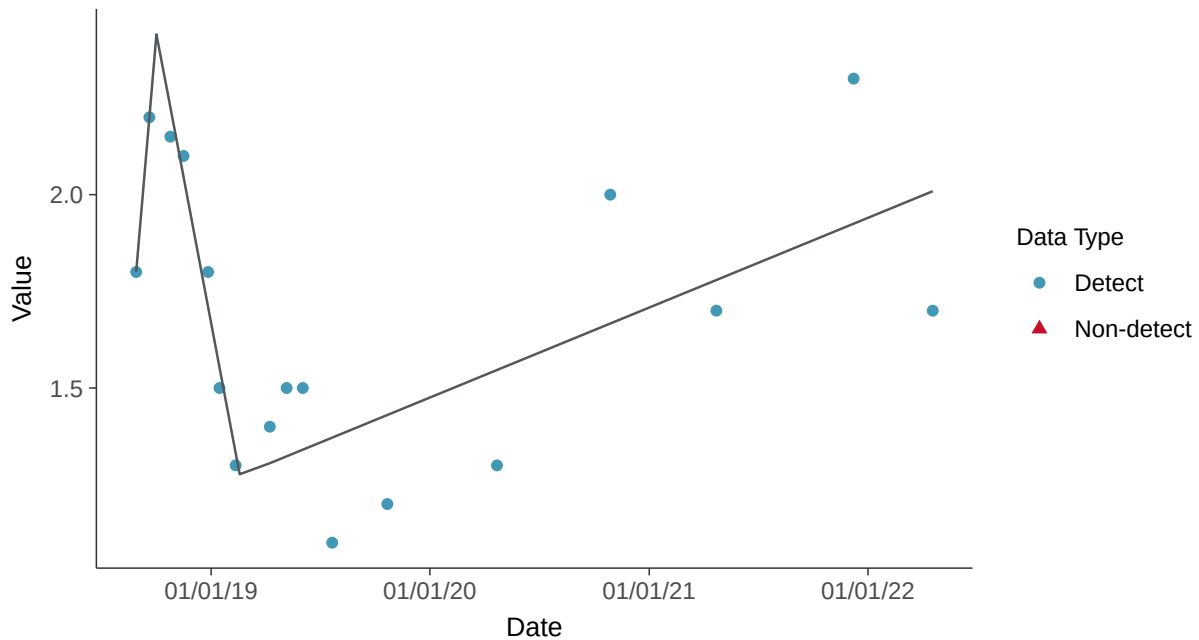
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-17 (mg/l)



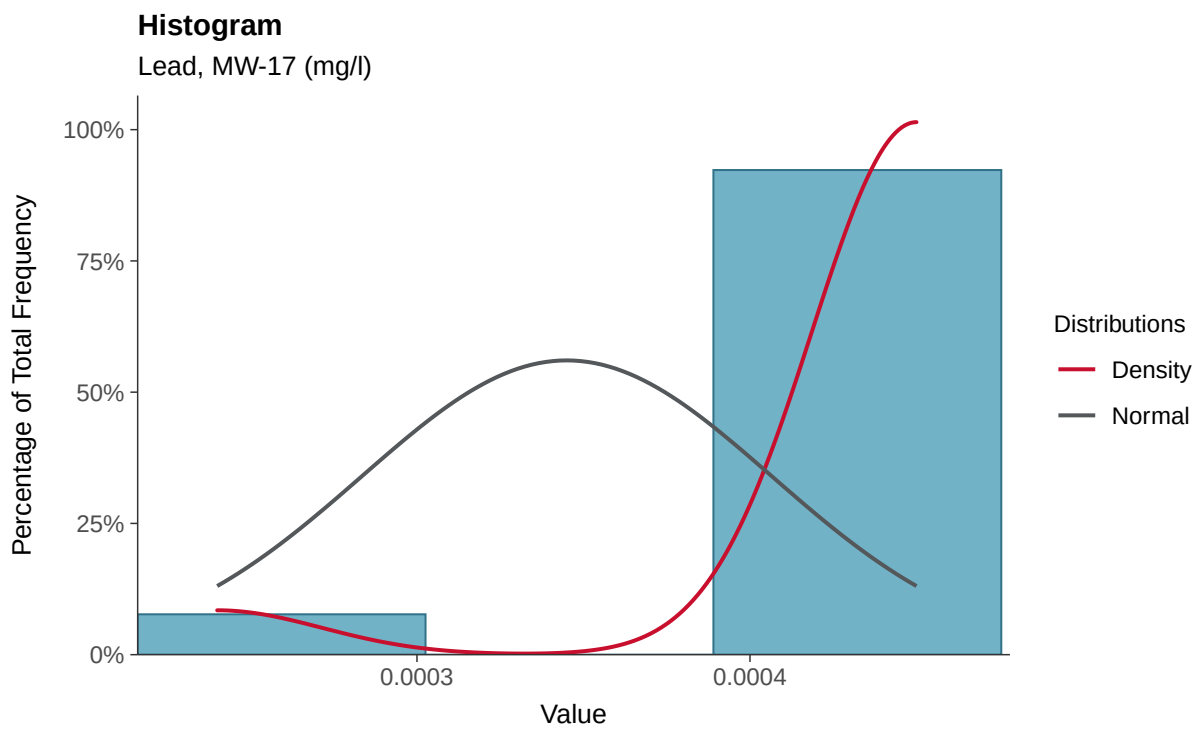
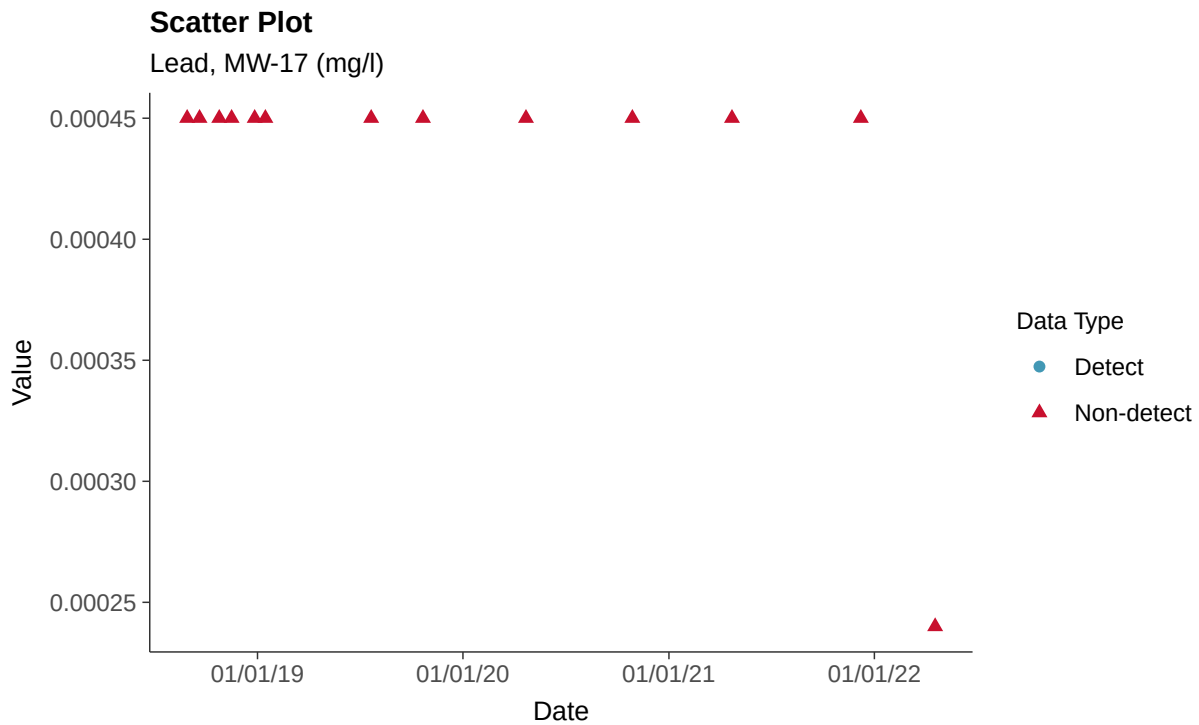
Trend Regression: Piecewise Linear-Linear-Linear

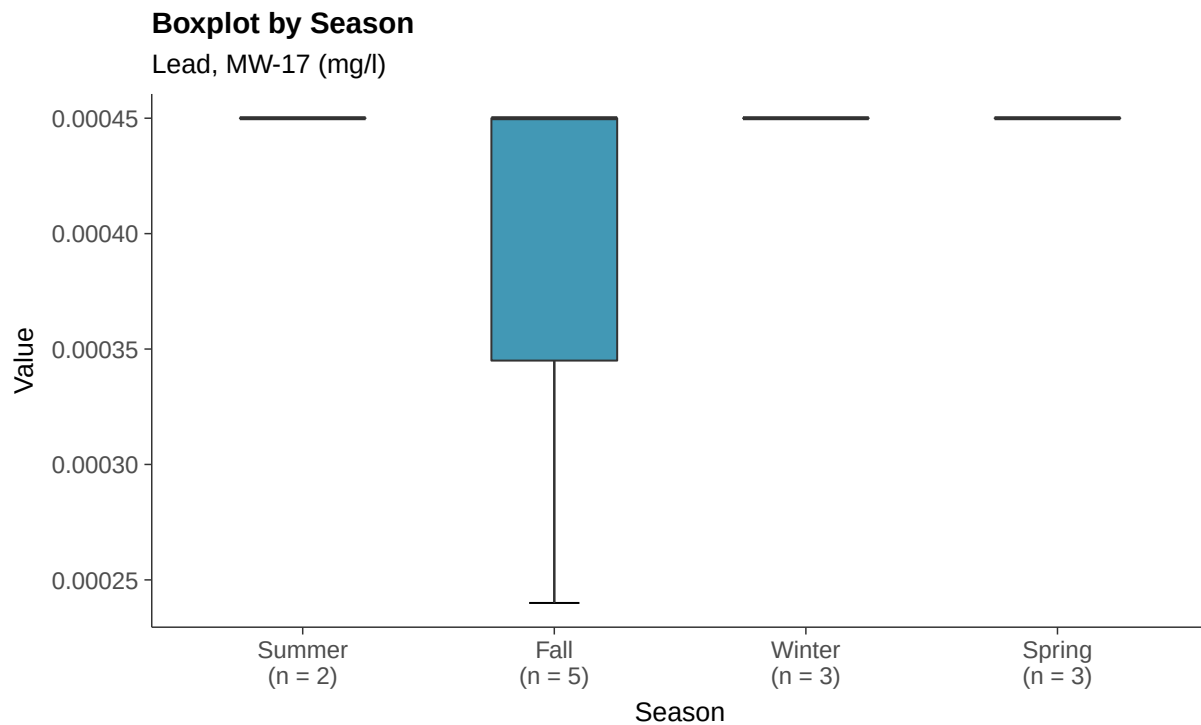
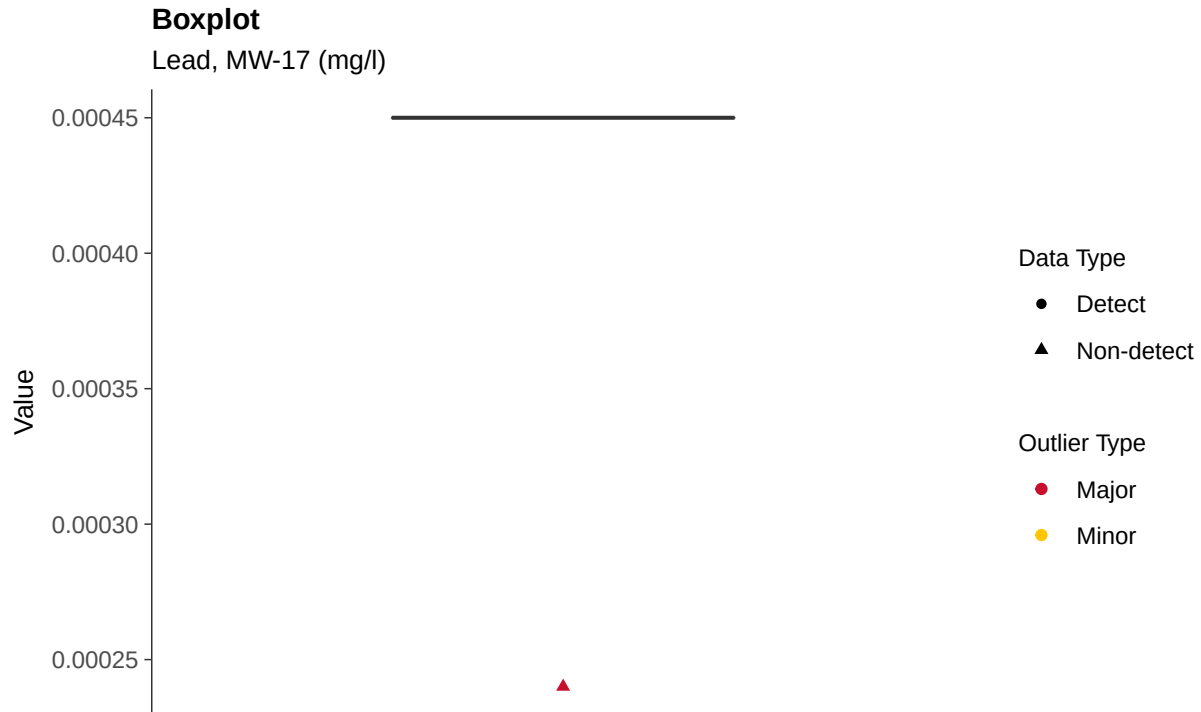
Fluoride (App IV), MW-17 (mg/l)



Appendix IV: Lead, MW-17

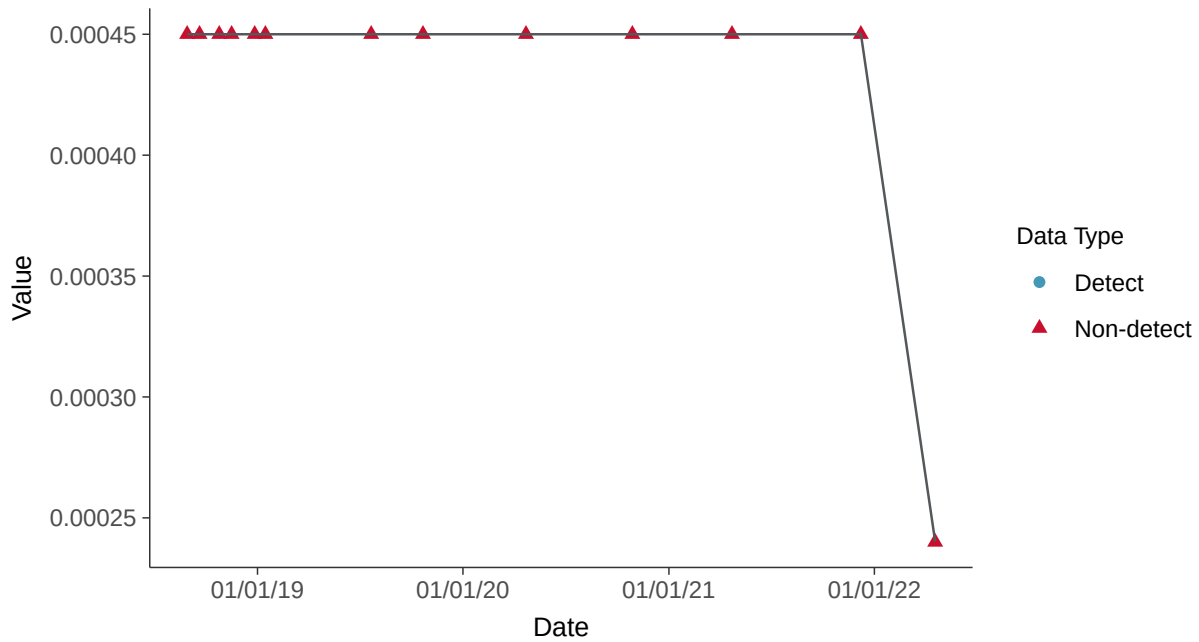
ID: 3_2_117





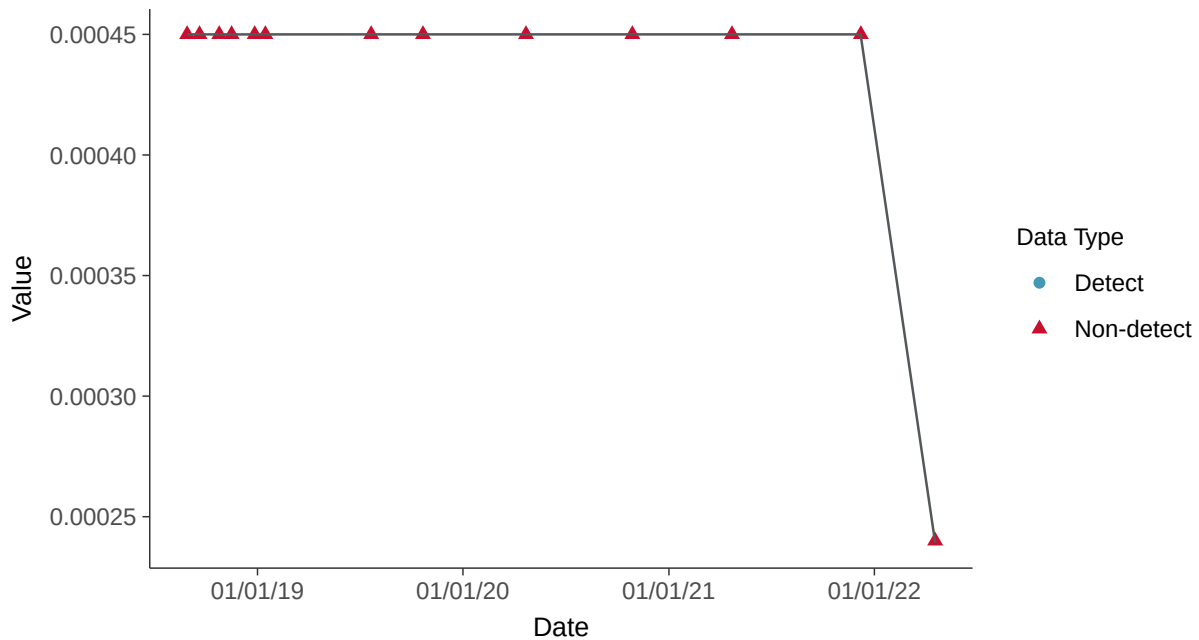
Trend Regression: Piecewise Linear-Linear

Lead, MW-17 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-17 (mg/l)

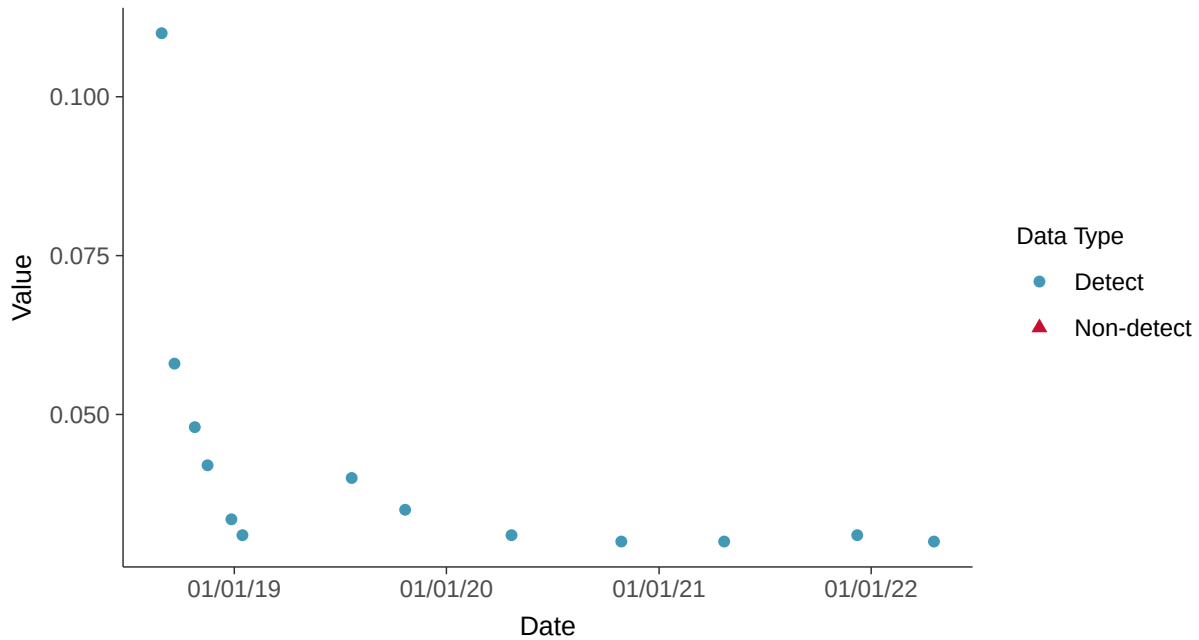


Appendix IV: Lithium, MW-17

ID: 3_2_118

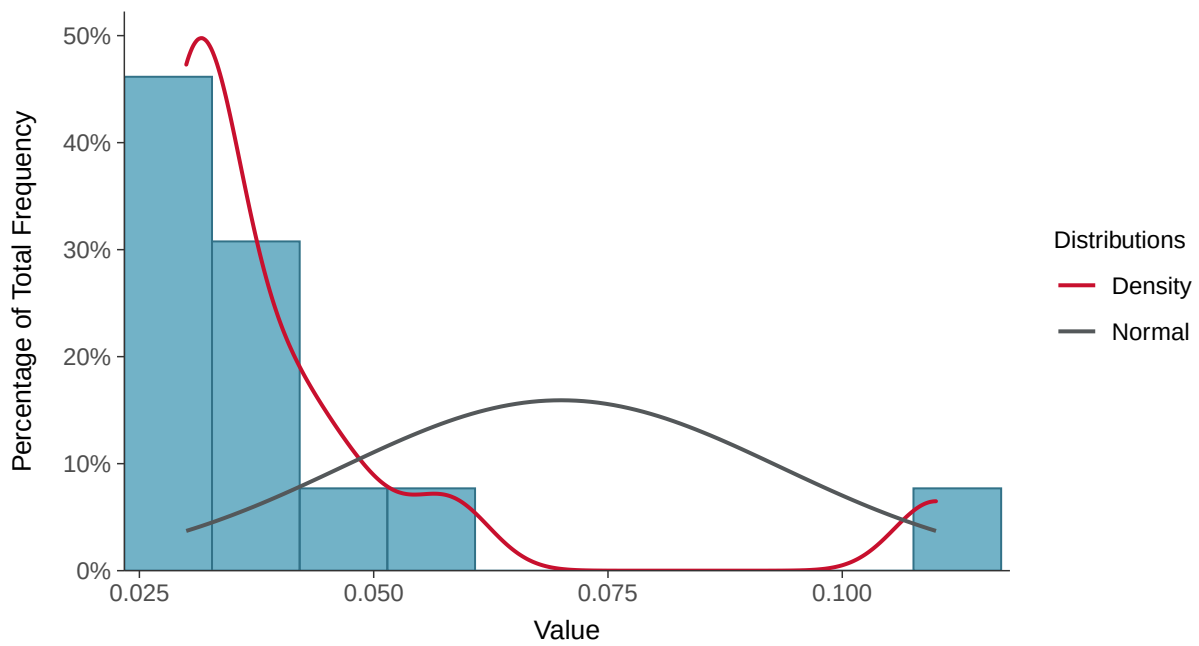
Scatter Plot

Lithium, MW-17 (mg/l)



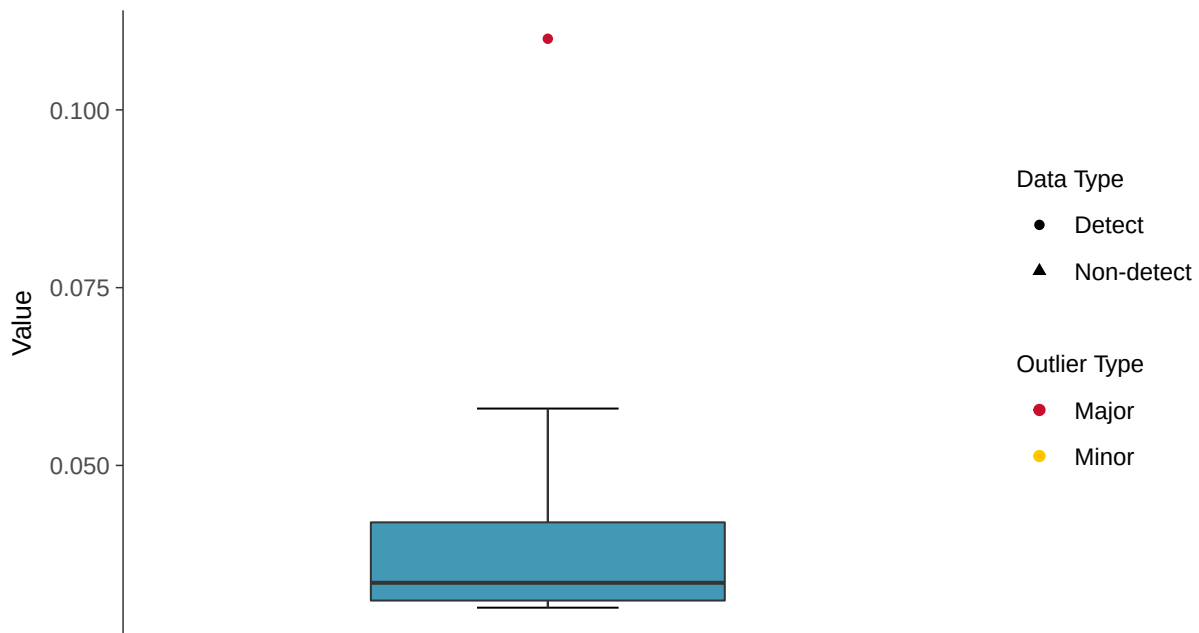
Histogram

Lithium, MW-17 (mg/l)



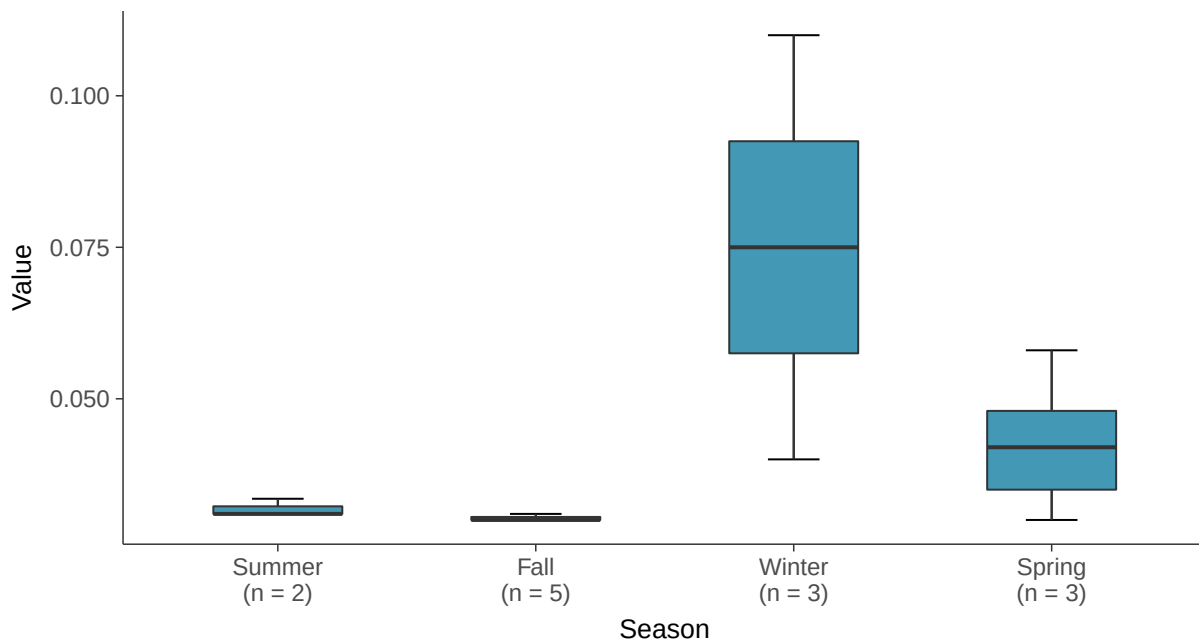
Boxplot

Lithium, MW-17 (mg/l)



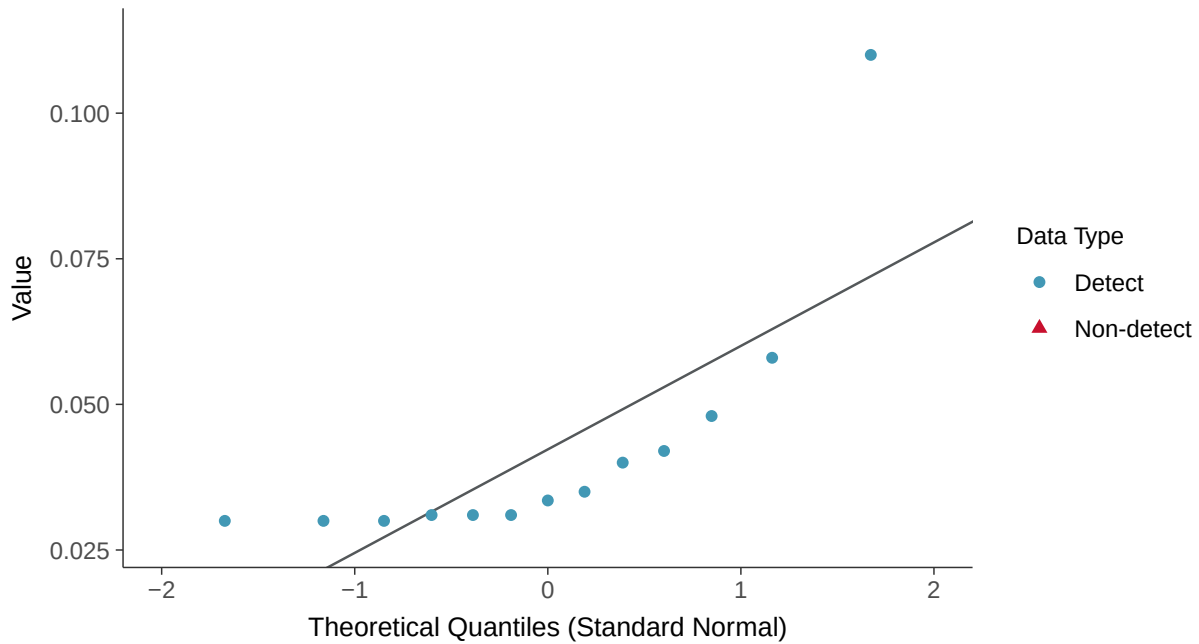
Boxplot by Season

Lithium, MW-17 (mg/l)



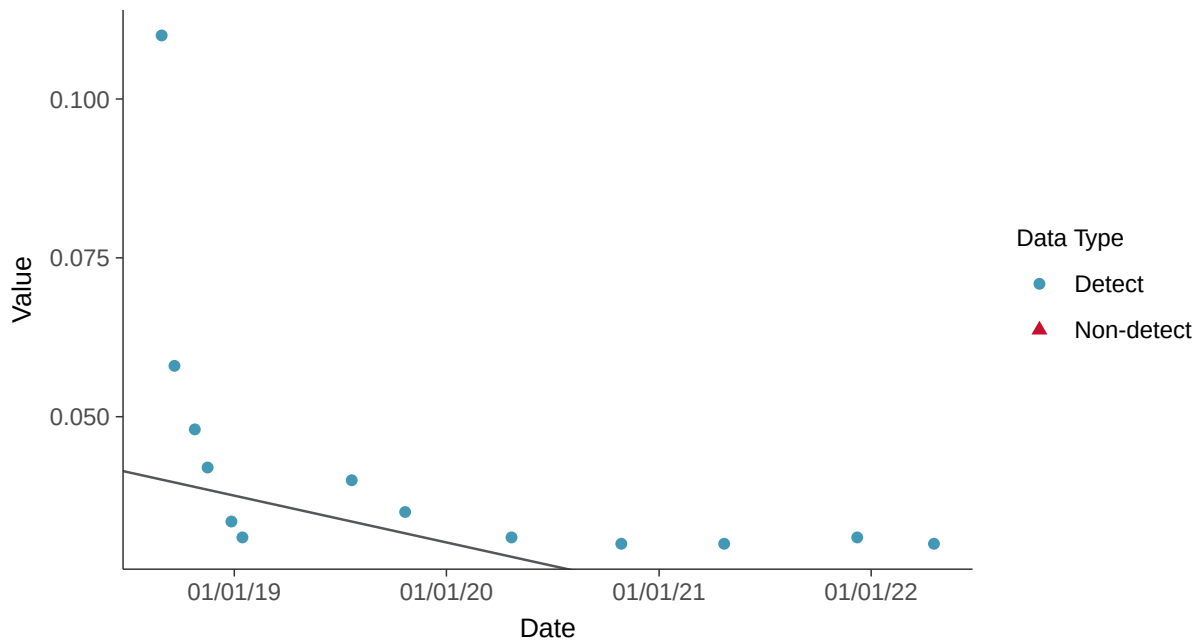
Normal Q-Q plot

Lithium, MW-17 (mg/l)



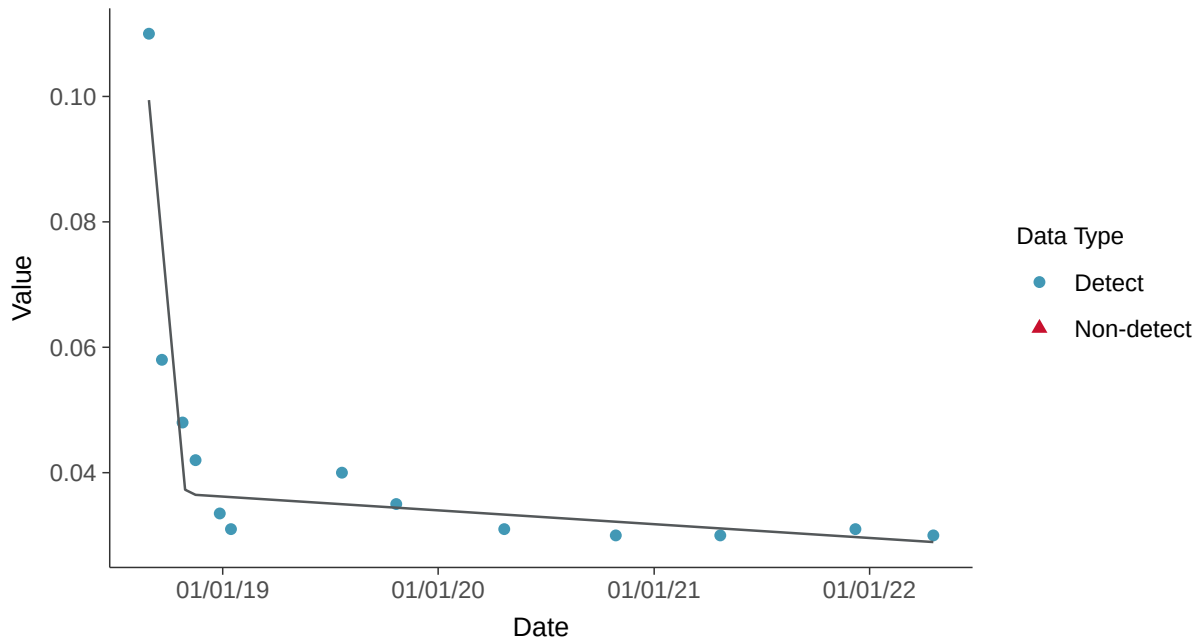
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Lithium, MW-17 (mg/l)



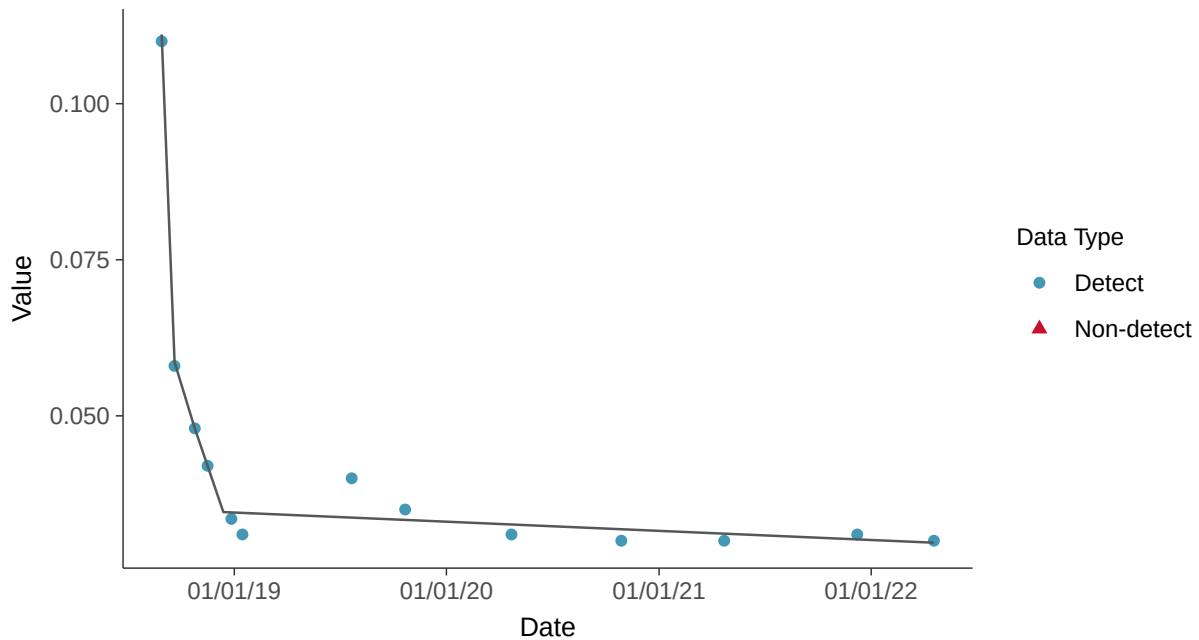
Trend Regression: Piecewise Linear-Linear

Lithium, MW-17 (mg/l)



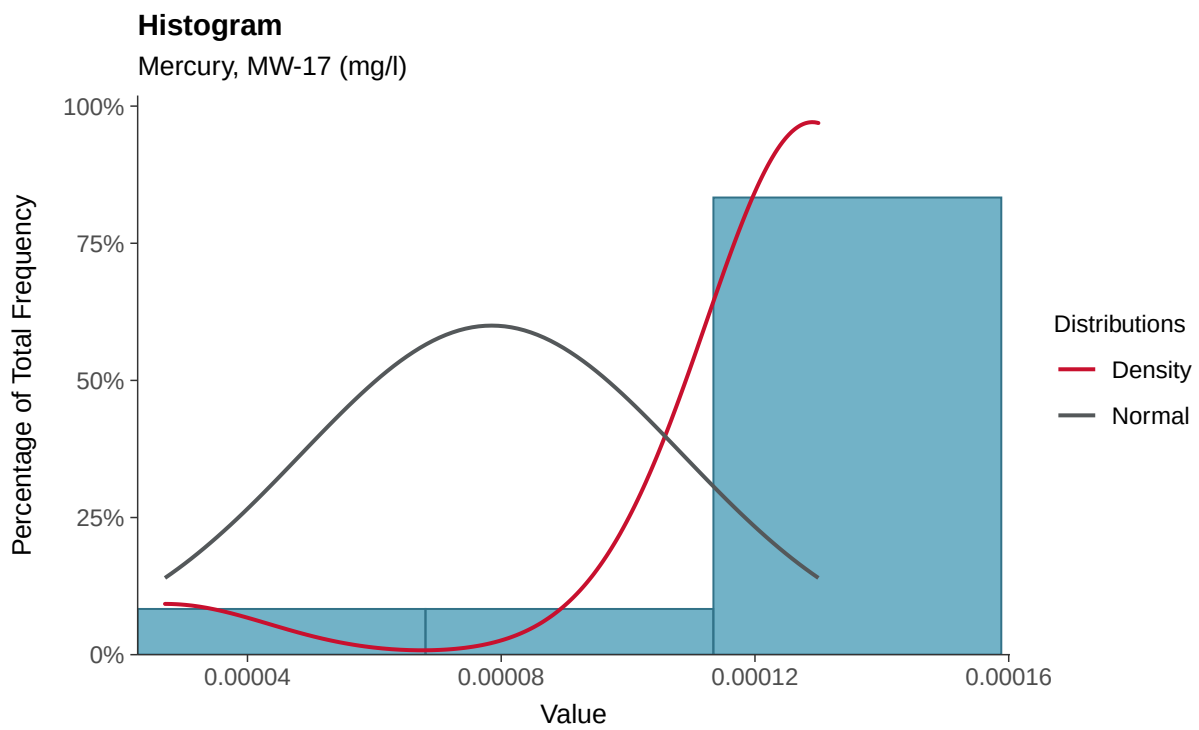
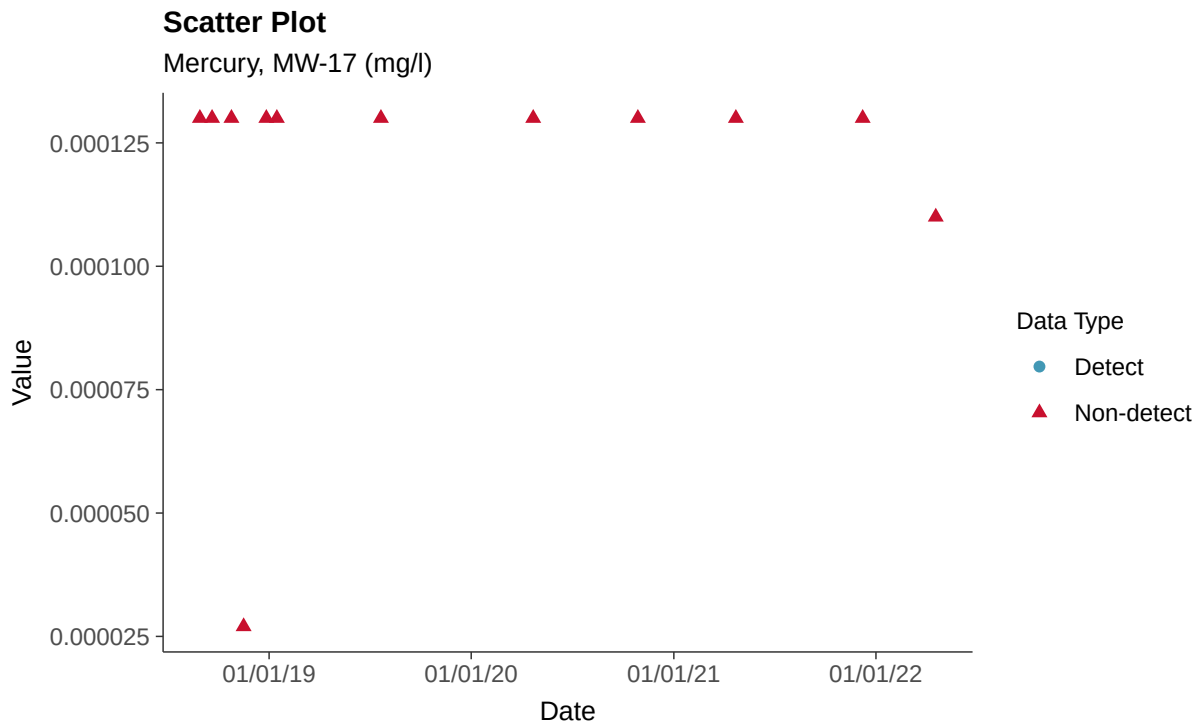
Trend Regression: Piecewise Linear-Linear-Linear

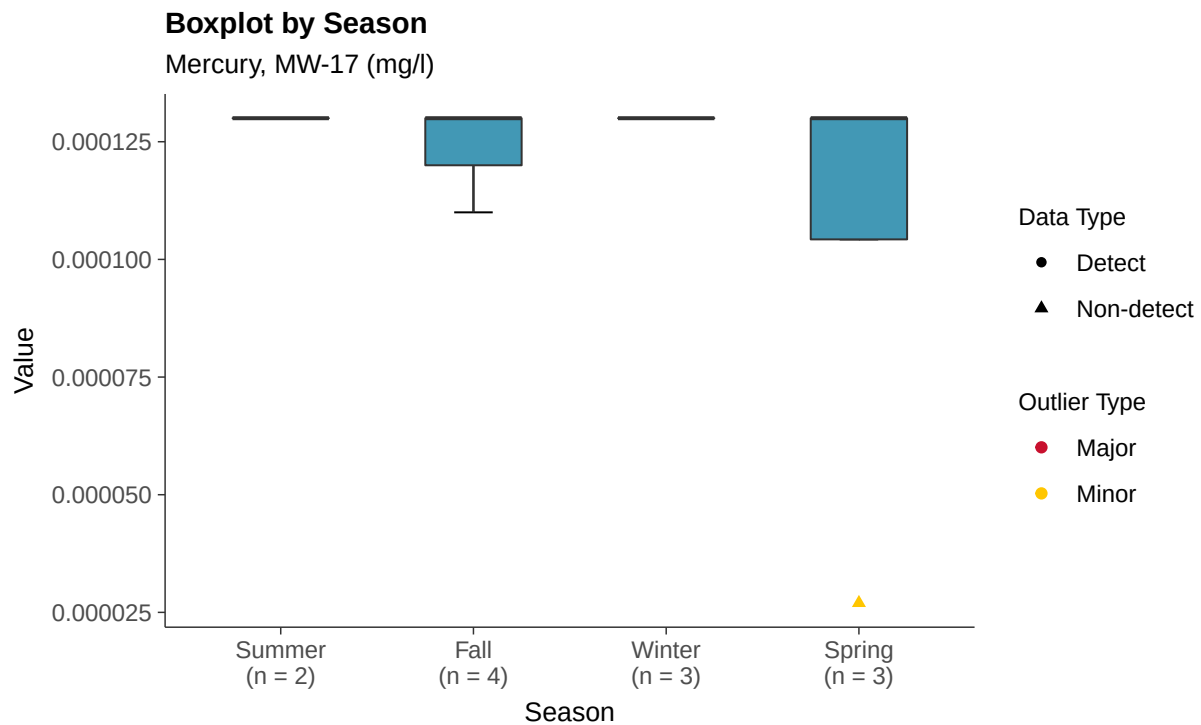
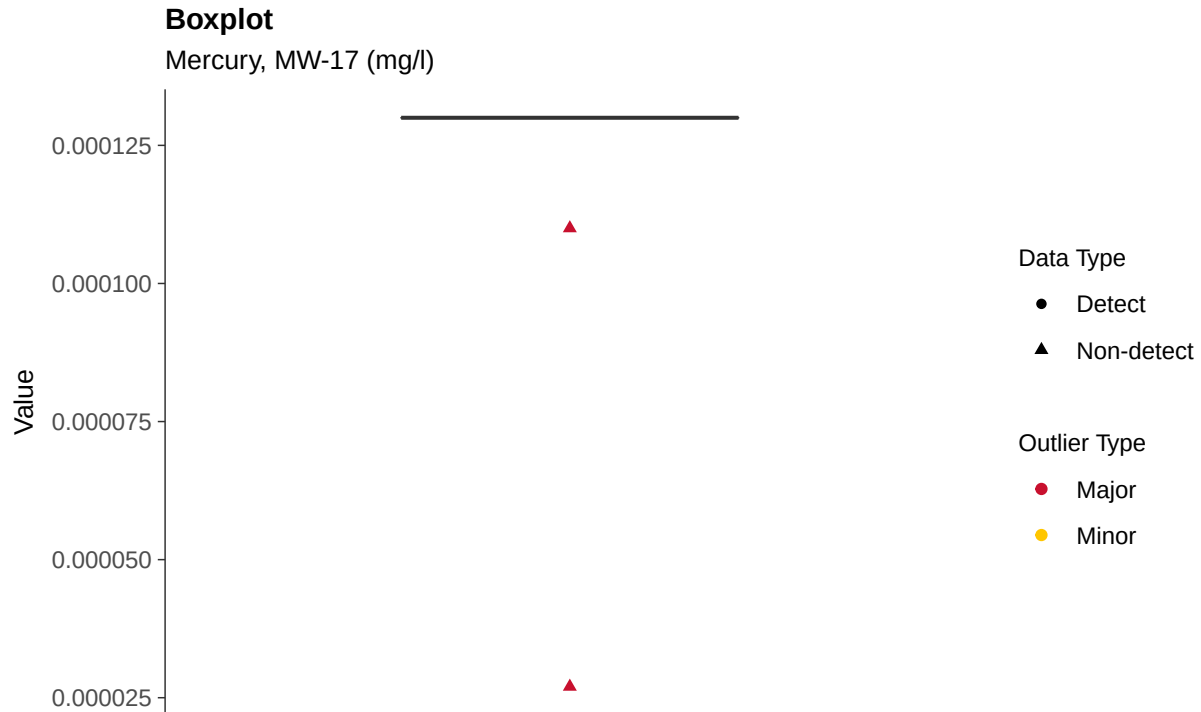
Lithium, MW-17 (mg/l)



Appendix IV: Mercury, MW-17

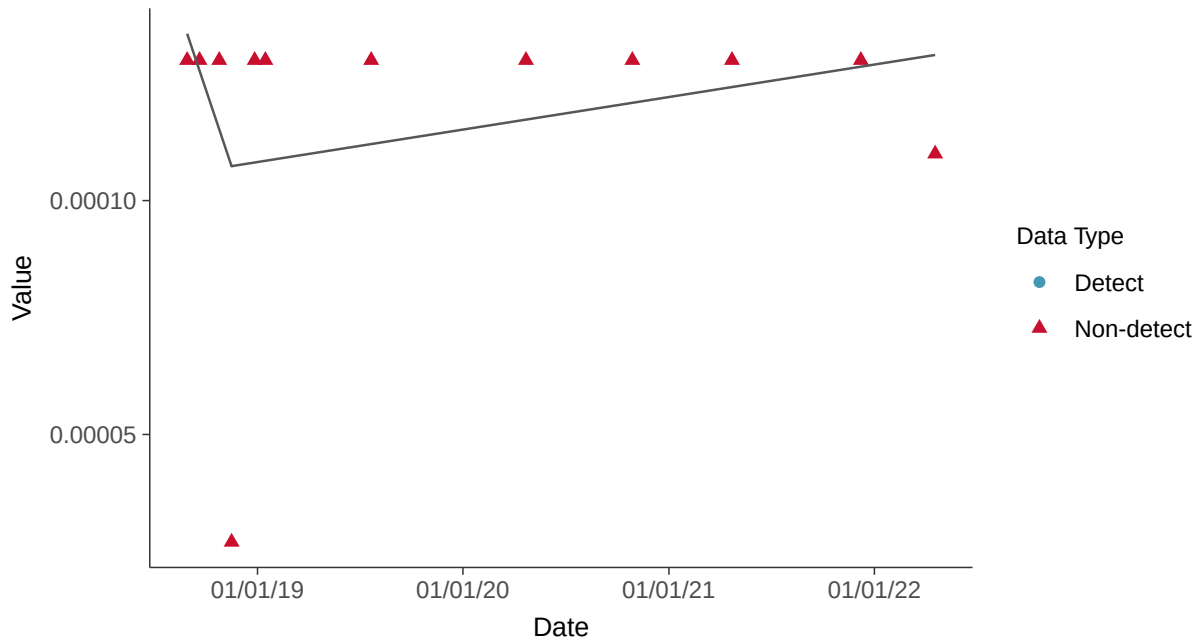
ID: 3_2_120





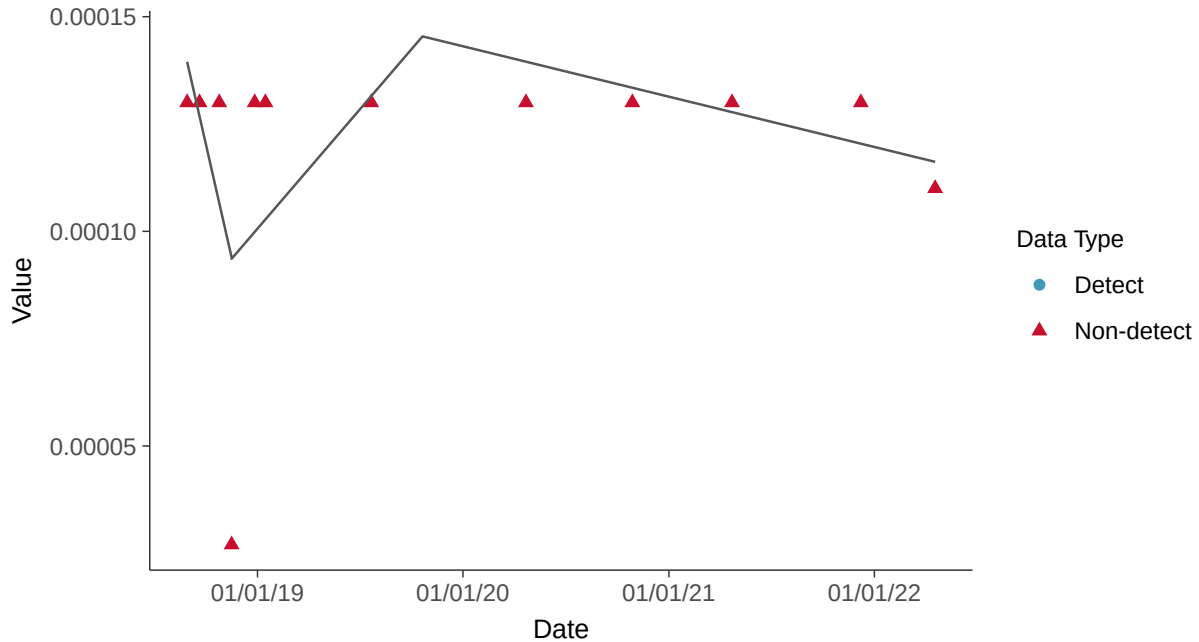
Trend Regression: Piecewise Linear-Linear

Mercury, MW-17 (mg/l)



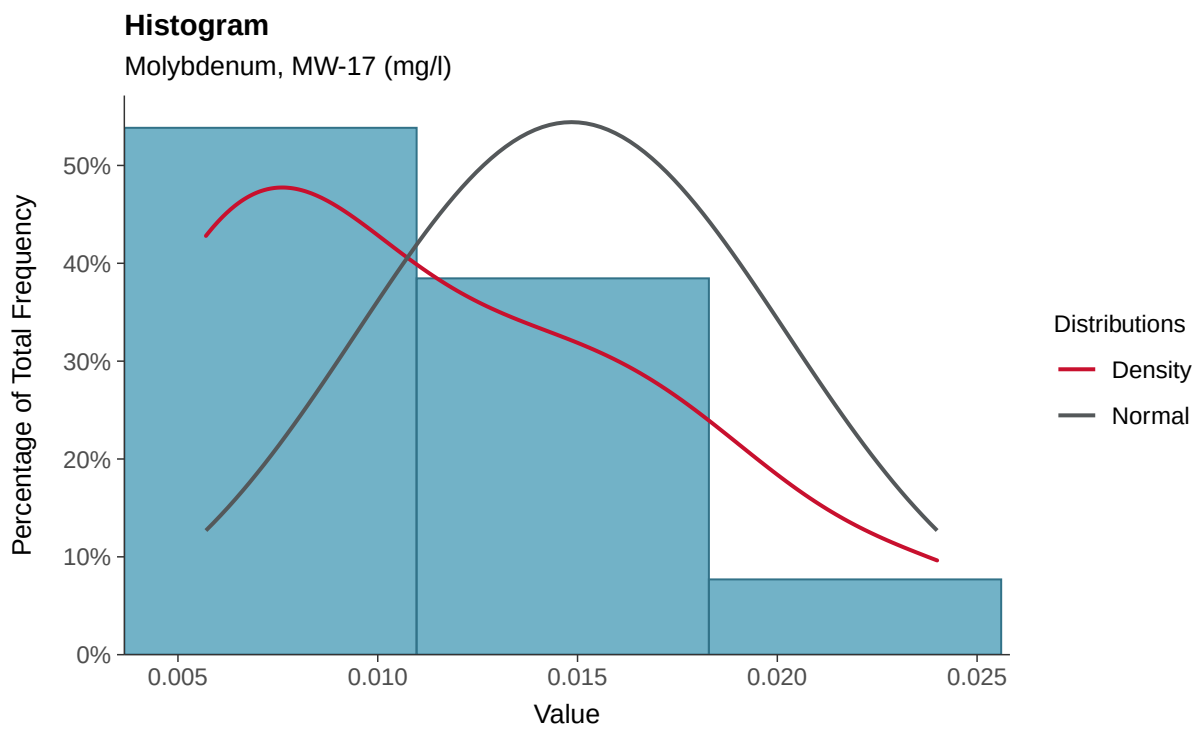
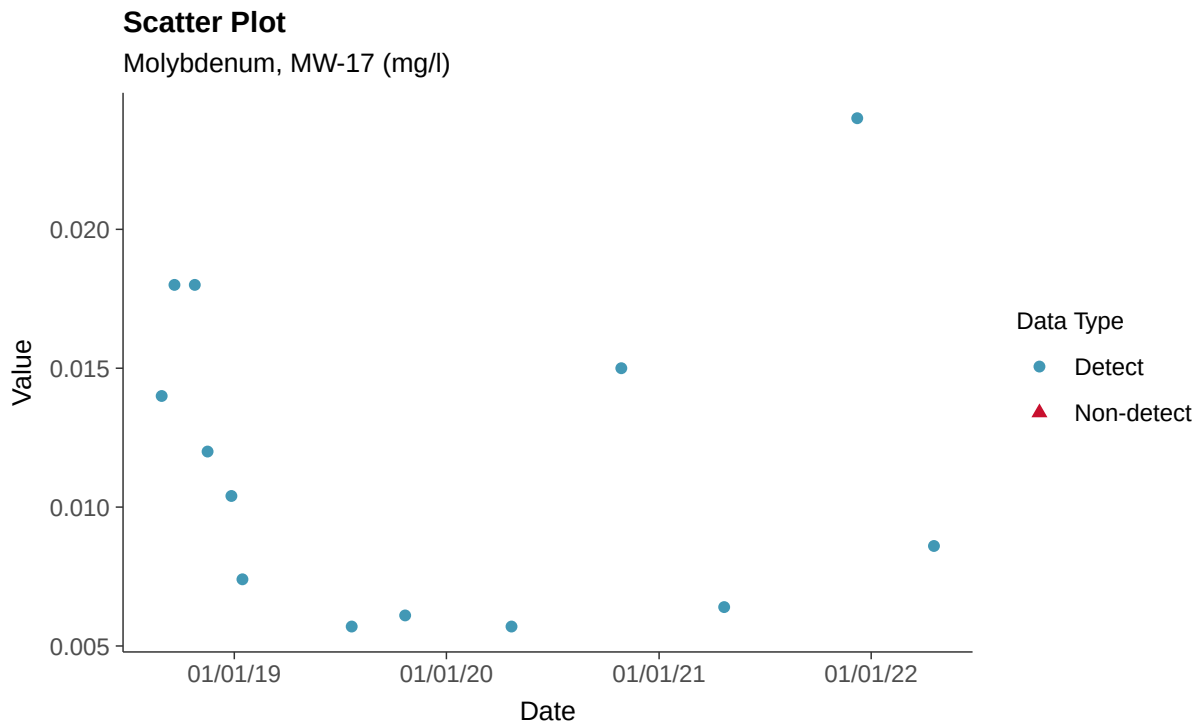
Trend Regression: Piecewise Linear-Linear-Linear

Mercury, MW-17 (mg/l)



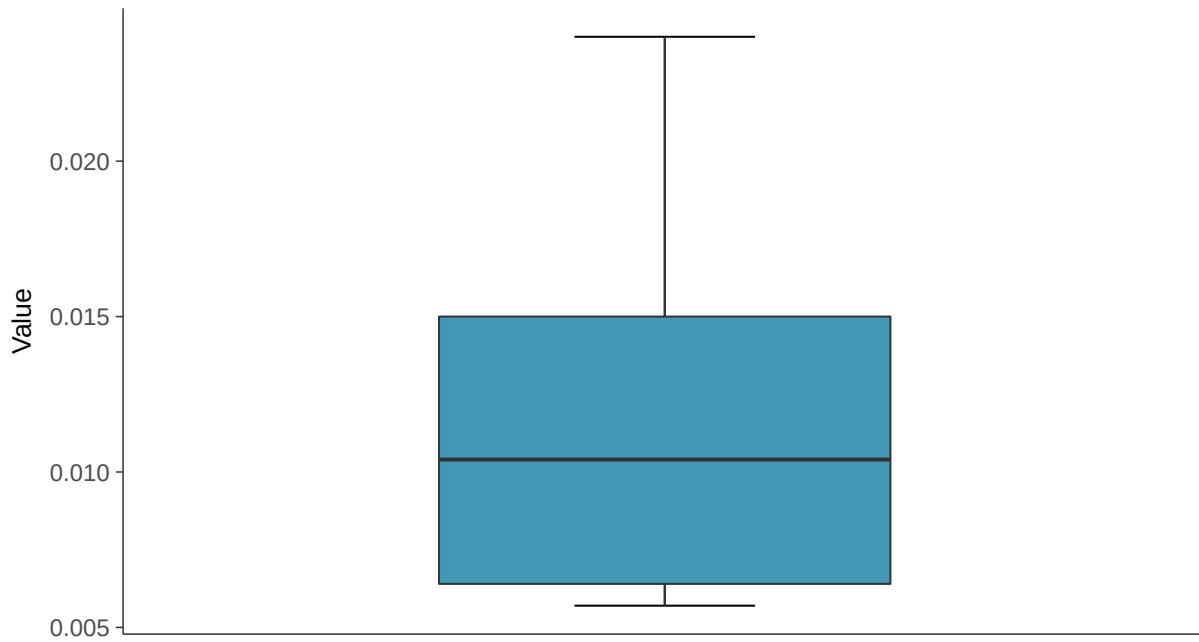
Appendix IV: Molybdenum, MW-17

ID: 3_2_121



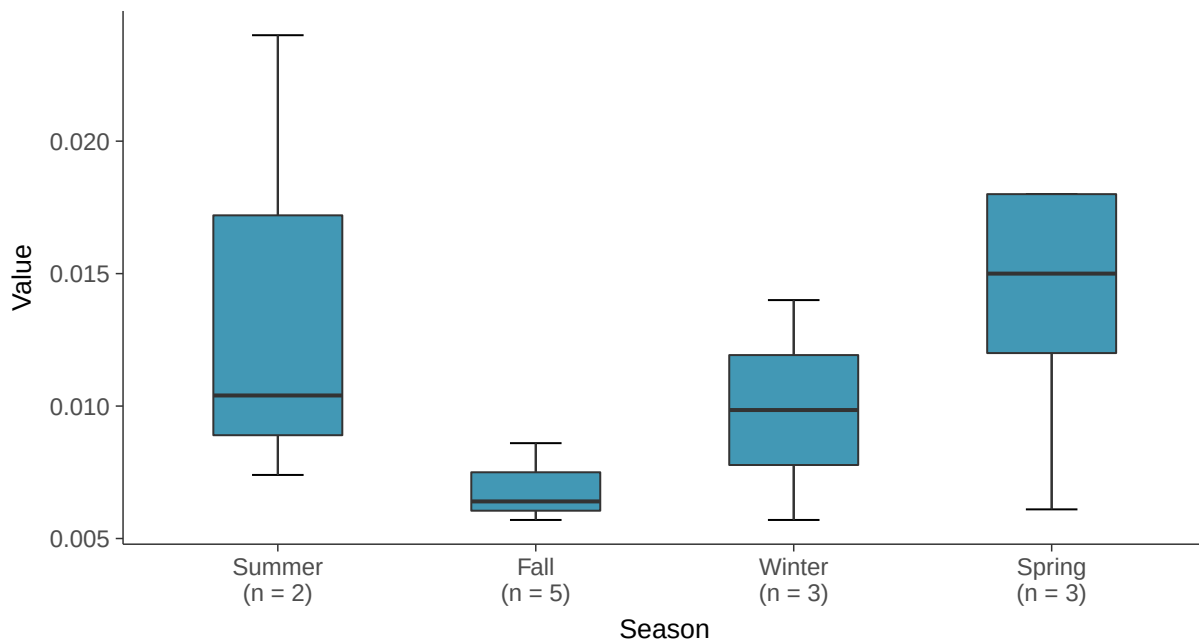
Boxplot

Molybdenum, MW-17 (mg/l)



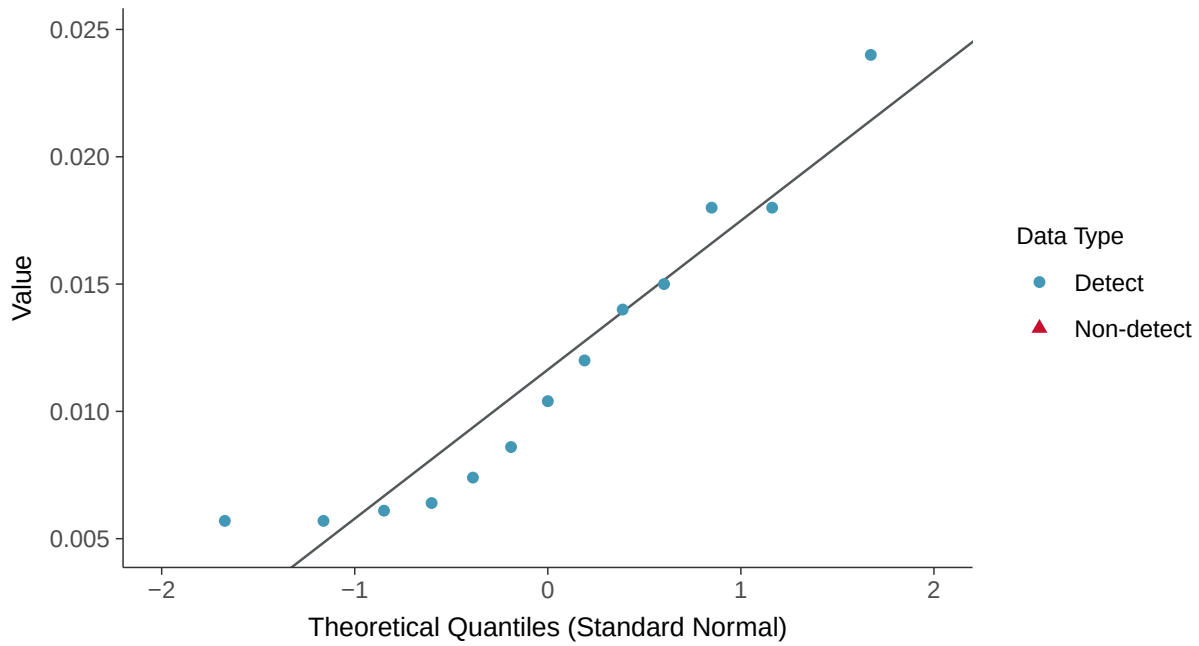
Boxplot by Season

Molybdenum, MW-17 (mg/l)



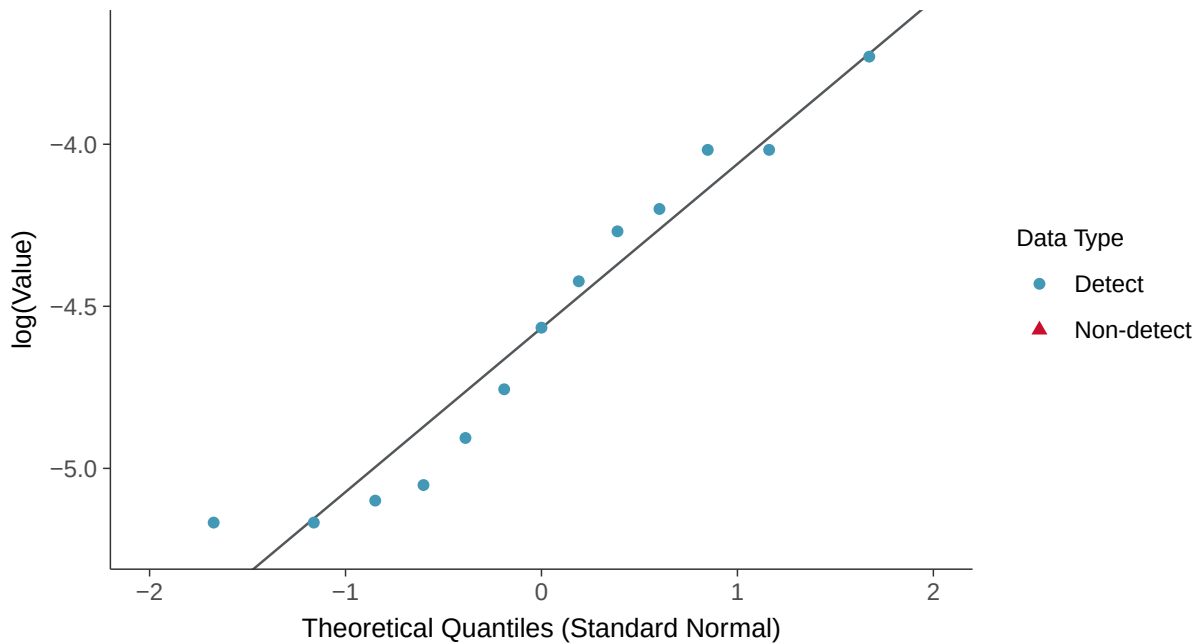
Normal Q-Q plot

Molybdenum, MW-17 (mg/l)



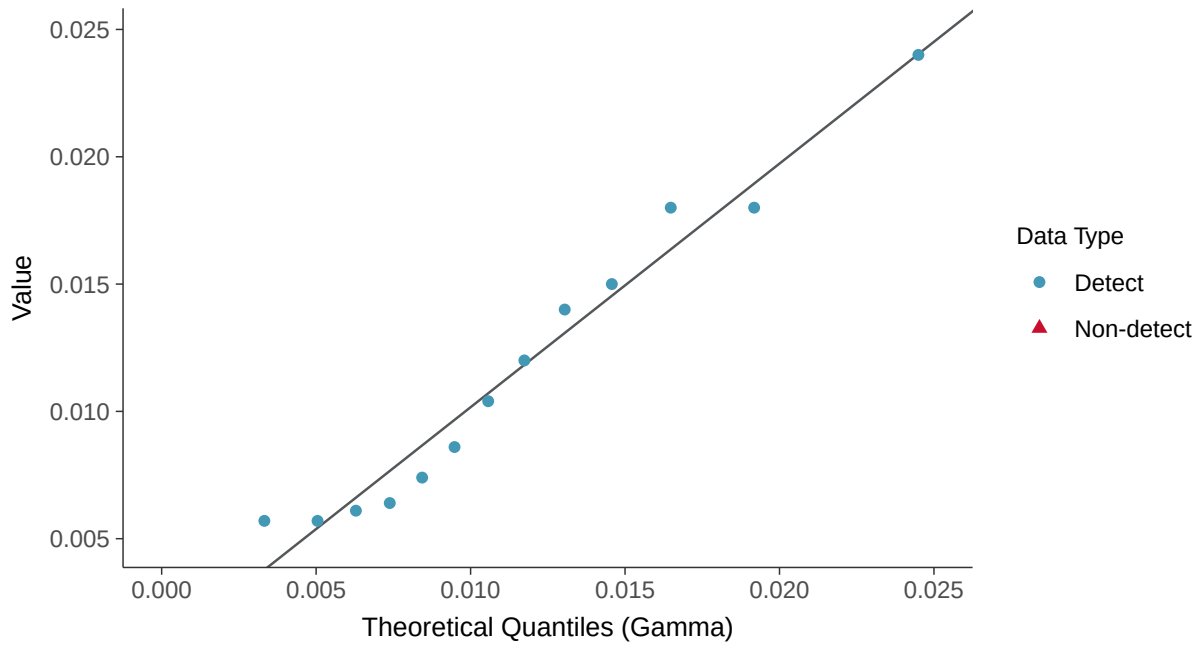
Lognormal Q-Q plot

Molybdenum, MW-17 (mg/l)



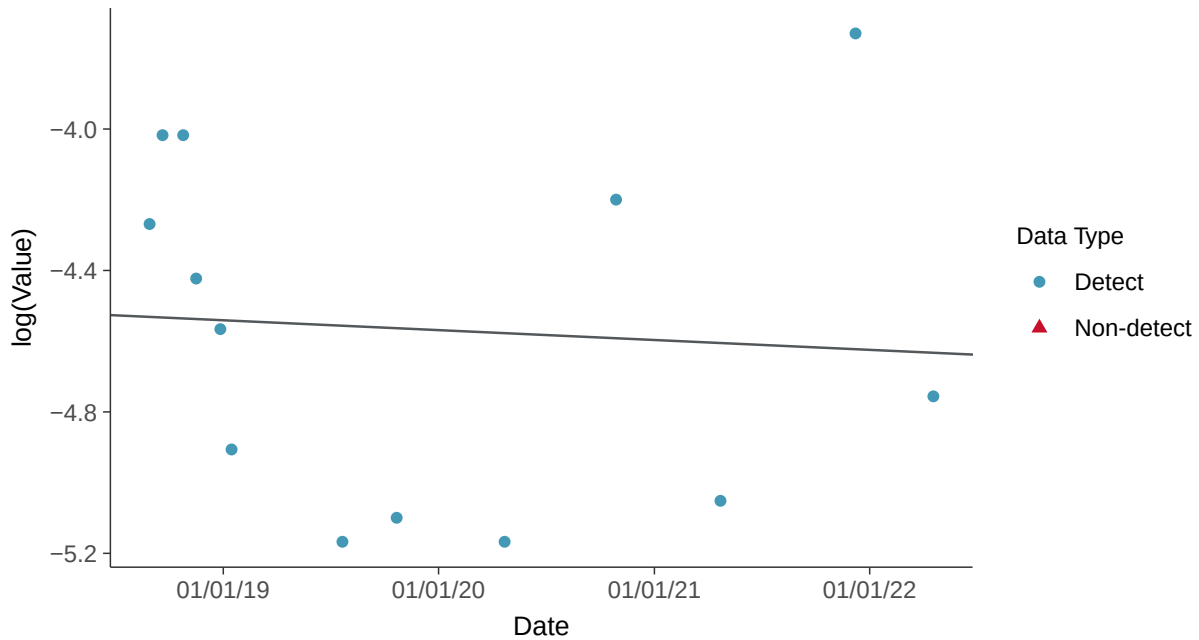
Gamma Q-Q plot

Molybdenum, MW-17 (mg/l)



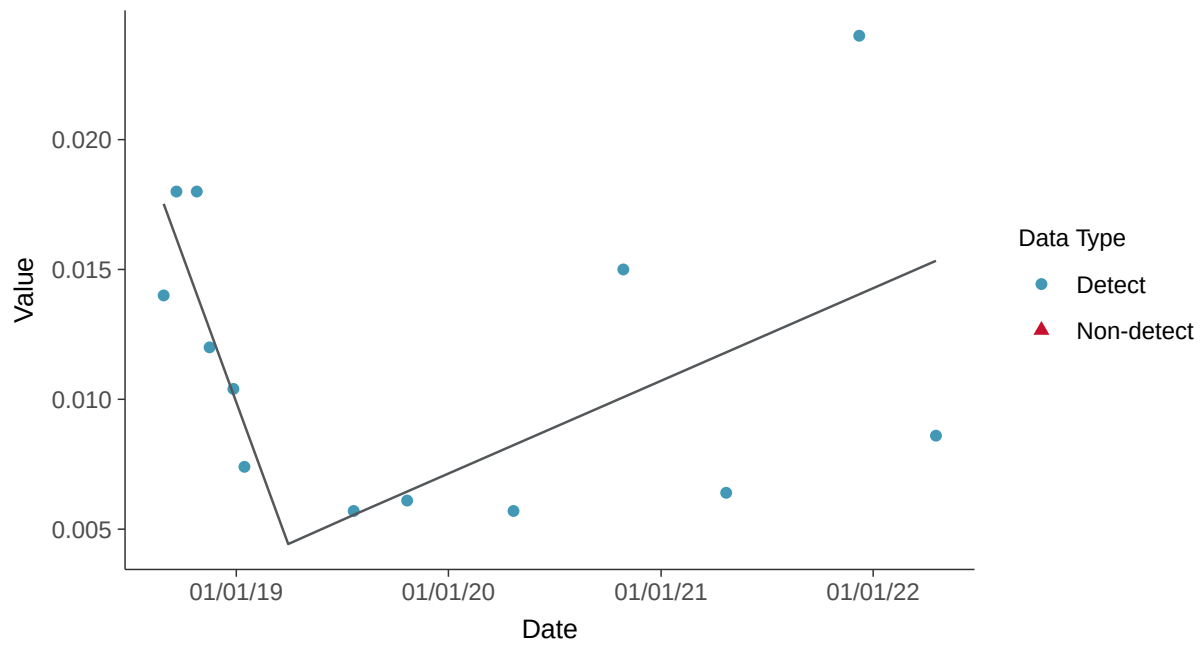
Trend Regression: Lognormal MLE

Molybdenum, MW-17 (mg/l)



Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-17 (mg/l)

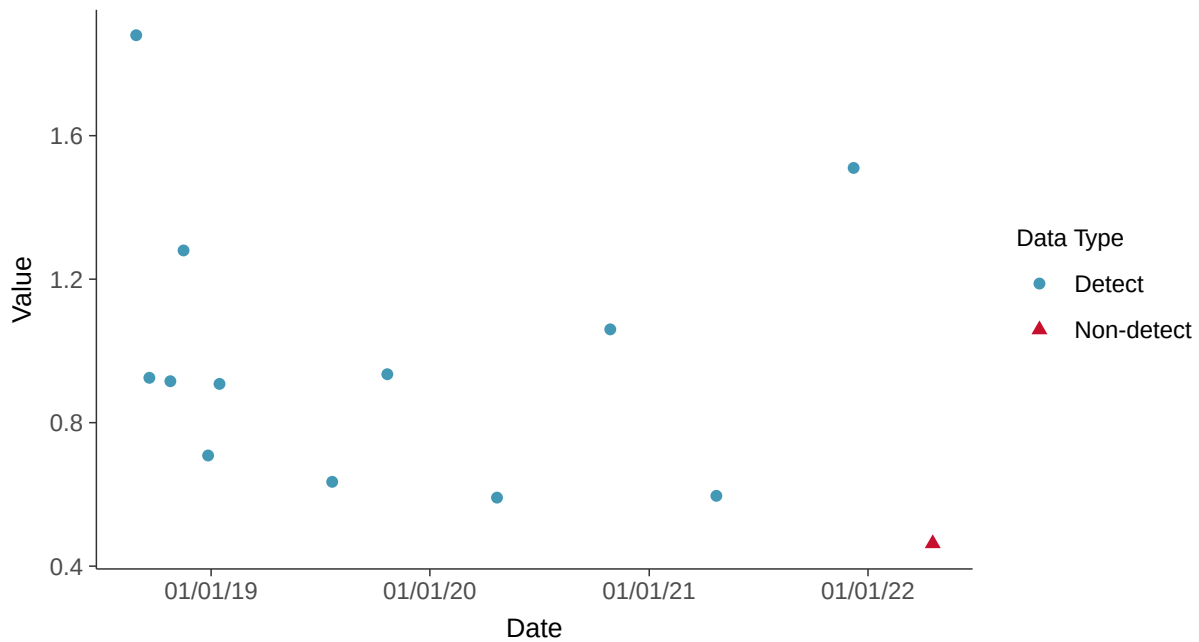


Appendix IV: Radium-226+228, MW-17

ID: 3_2_127

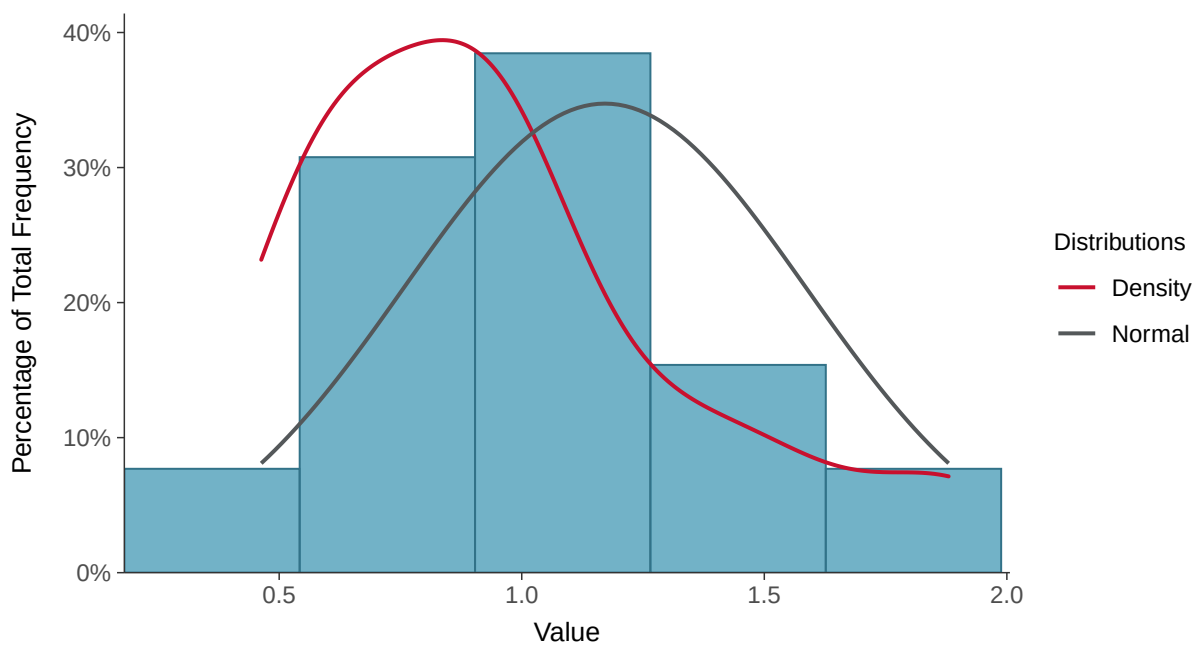
Scatter Plot

Radium-226+228, MW-17 (pci/l)



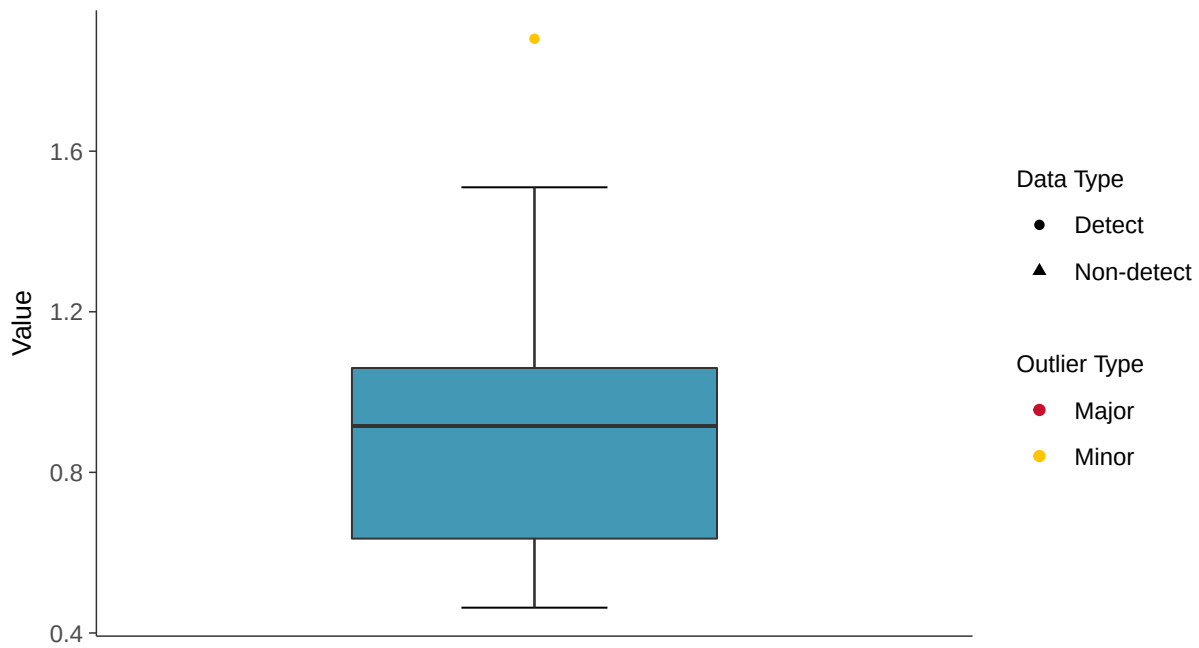
Histogram

Radium-226+228, MW-17 (pci/l)



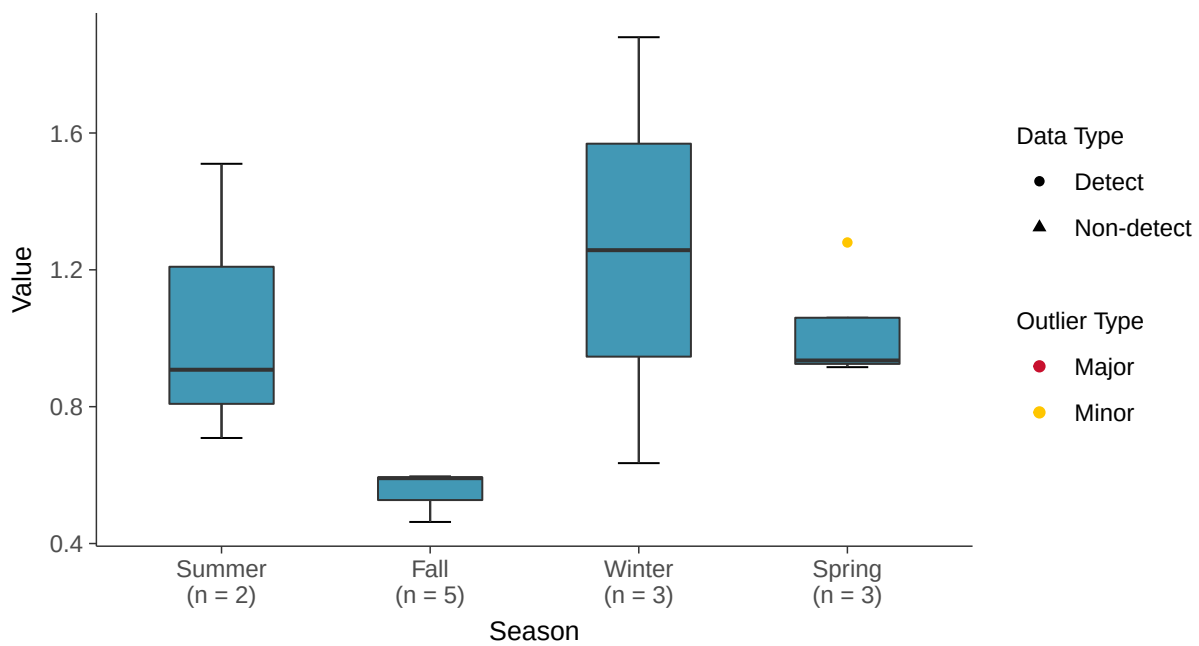
Boxplot

Radium-226+228, MW-17 (pci/l)



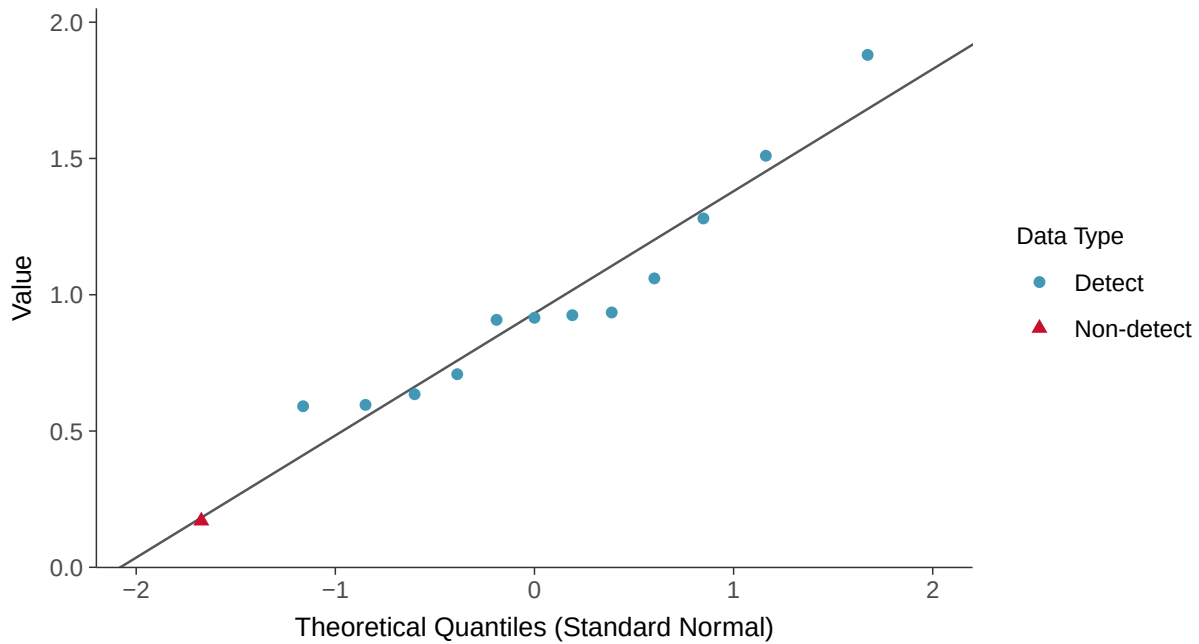
Boxplot by Season

Radium-226+228, MW-17 (pci/l)



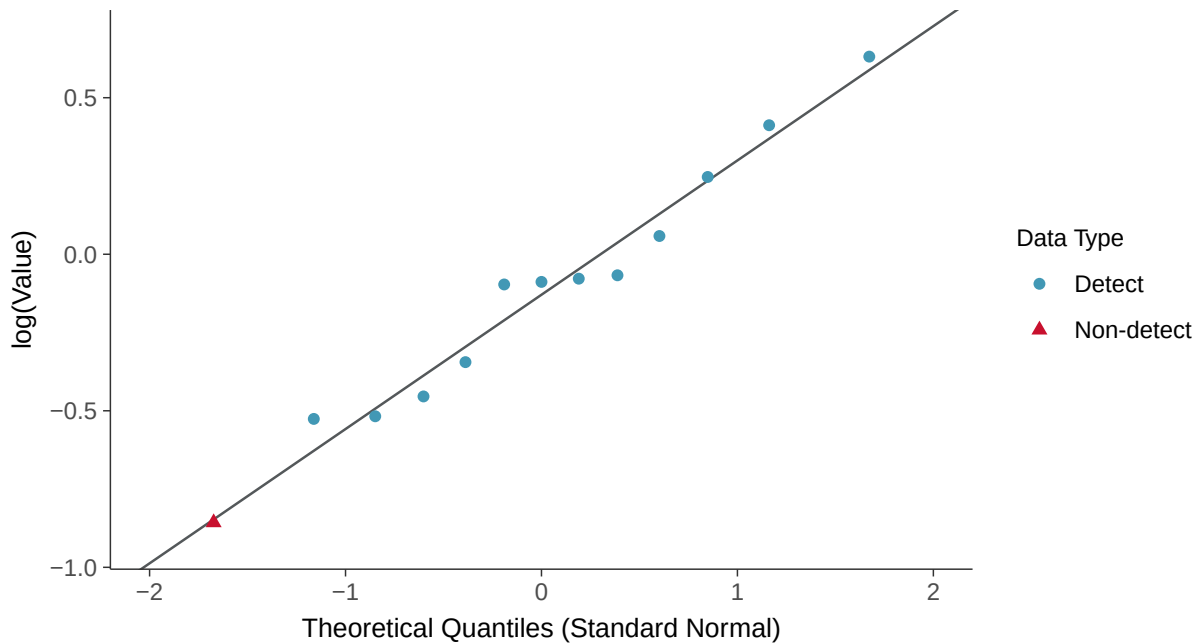
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-17 (pci/l)



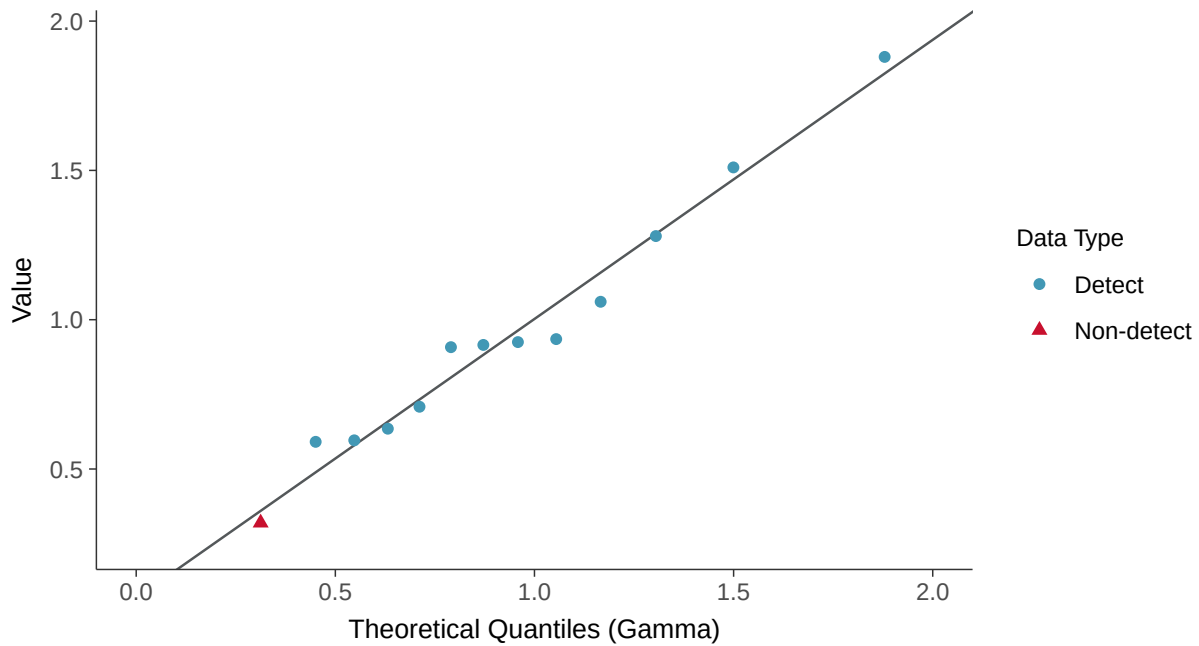
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-17 (pci/l)



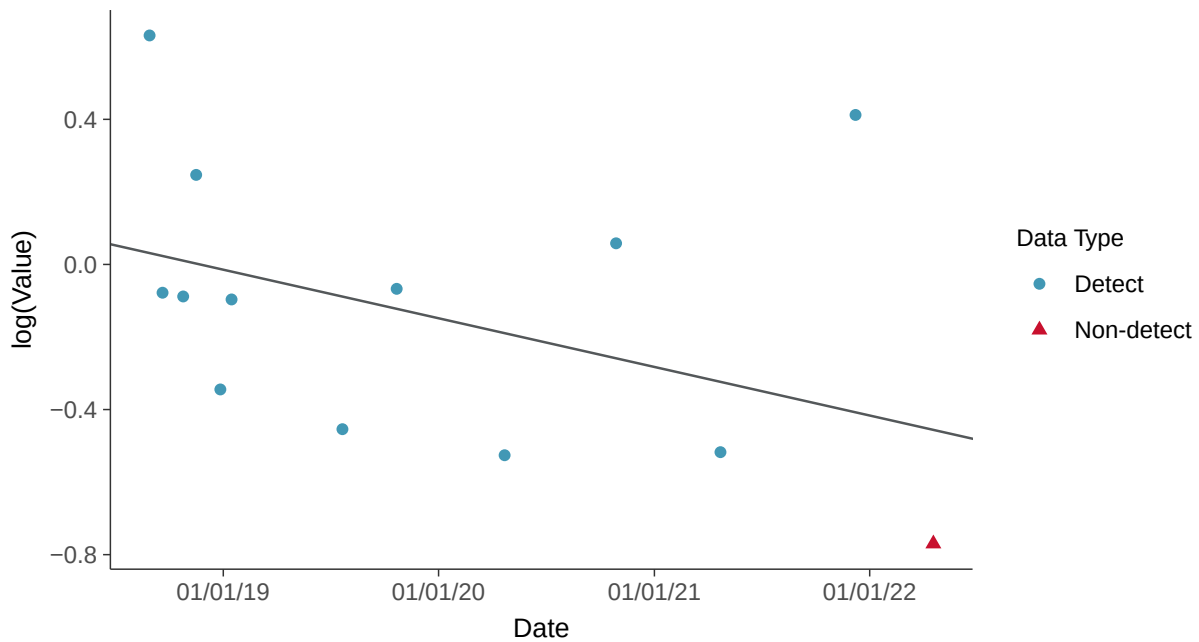
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-17 (pci/l)



Trend Regression: Lognormal MLE

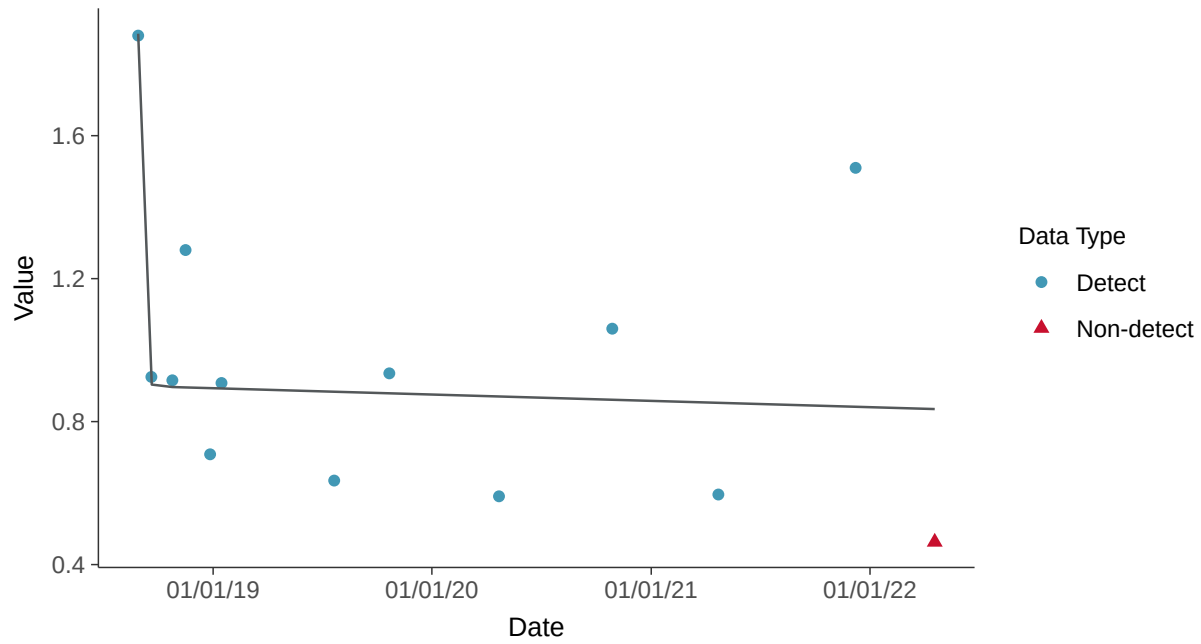
Radium-226+228, MW-17 (pci/l)





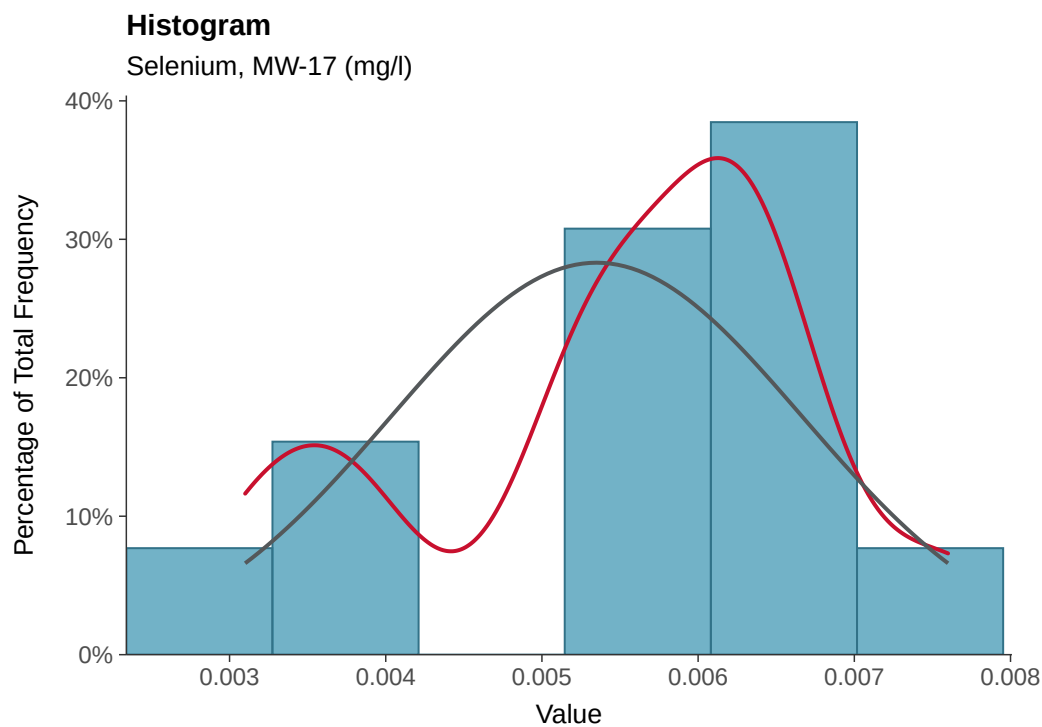
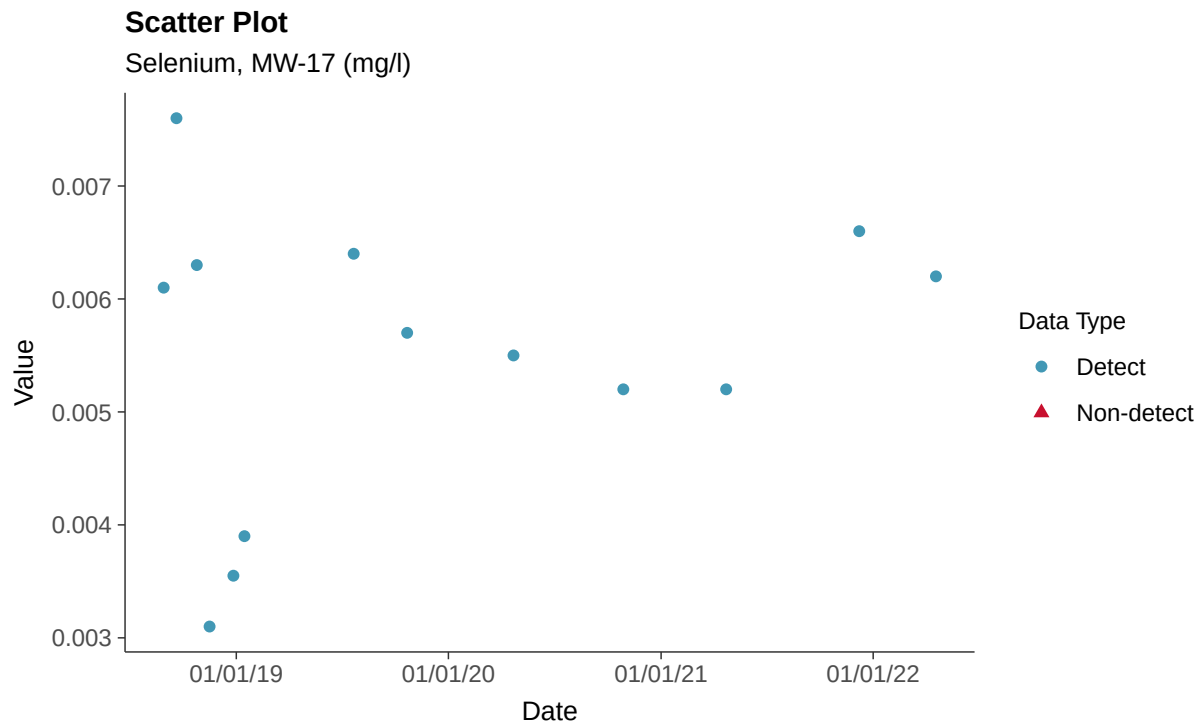
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-17 (pci/l)



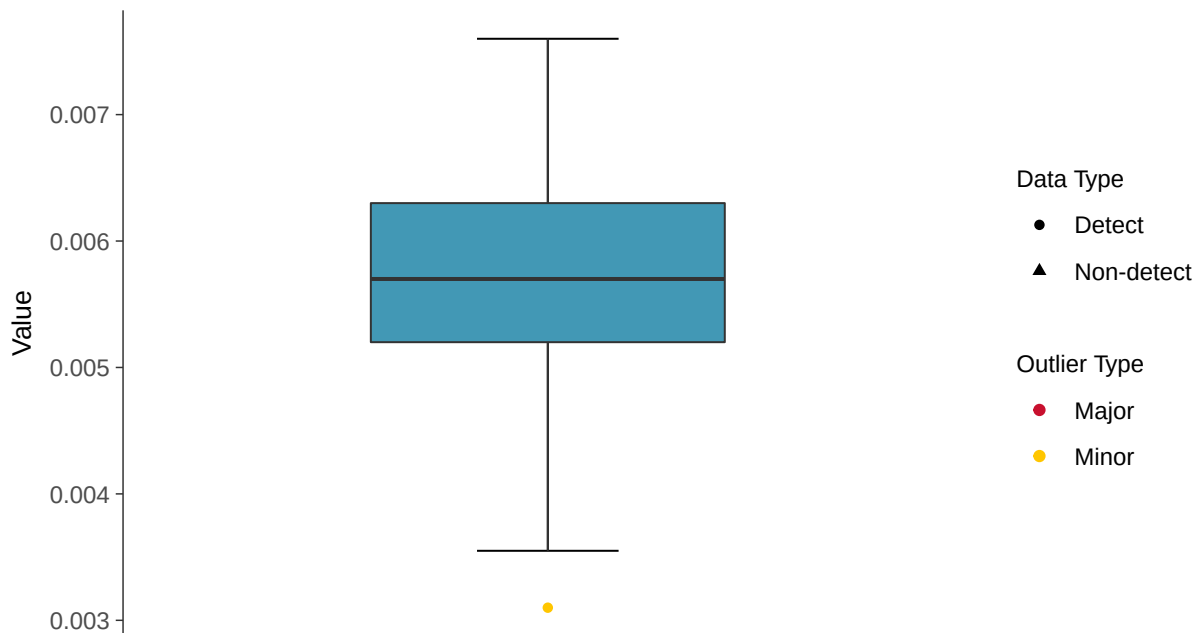
Appendix IV: Selenium, MW-17

ID: 3_2_129



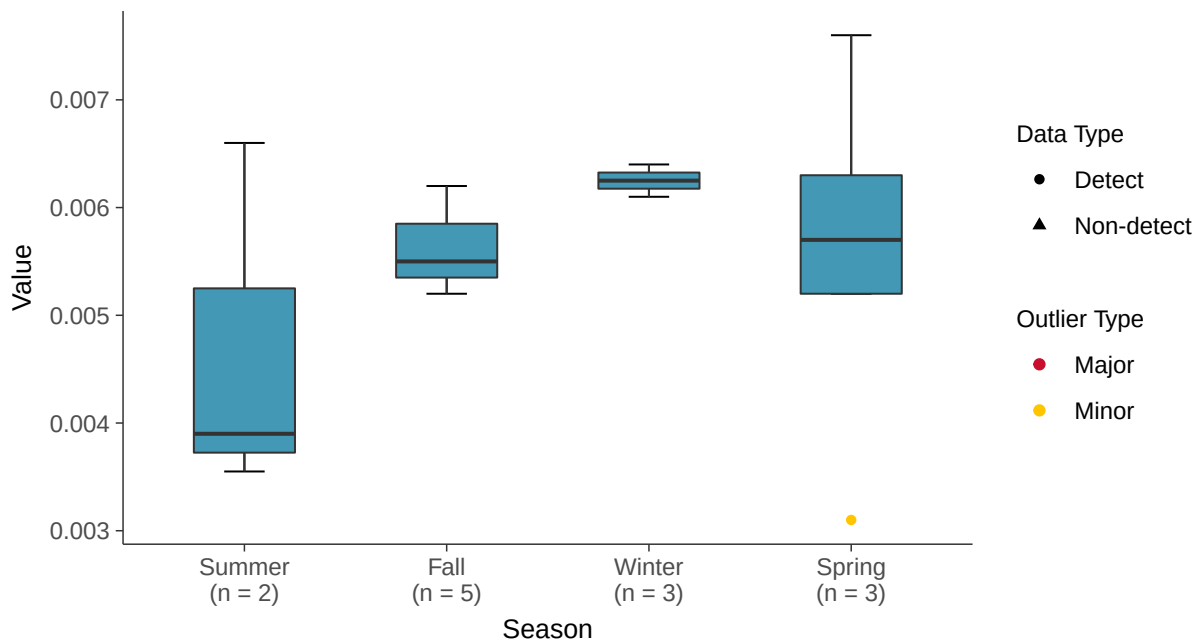
Boxplot

Selenium, MW-17 (mg/l)



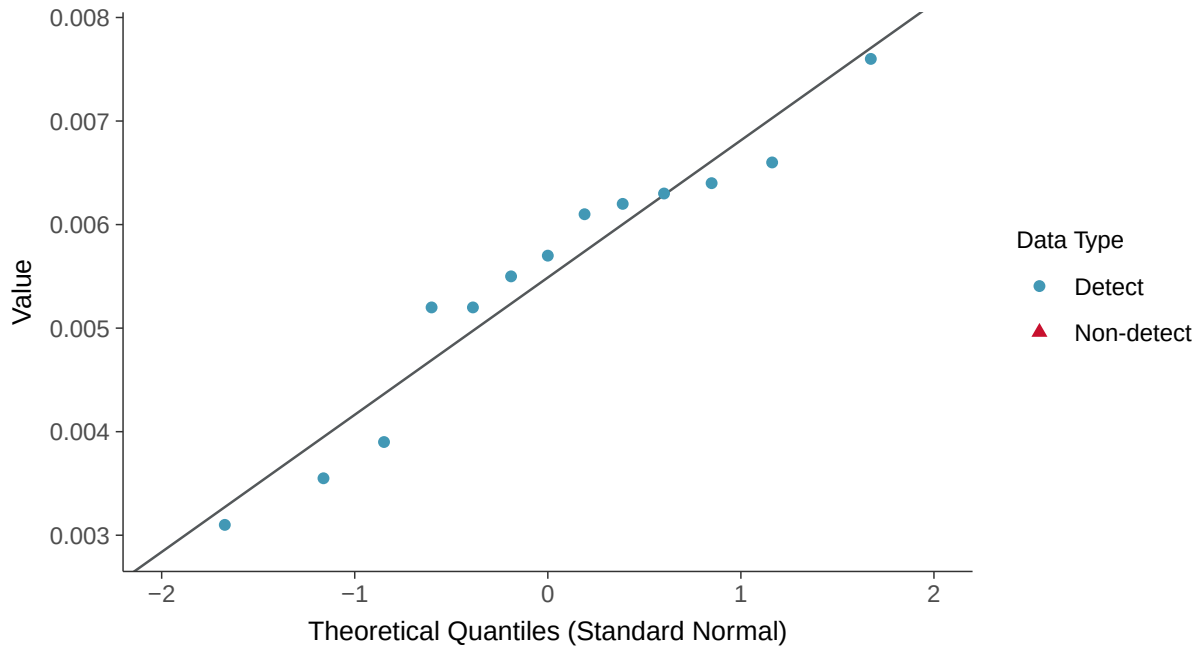
Boxplot by Season

Selenium, MW-17 (mg/l)



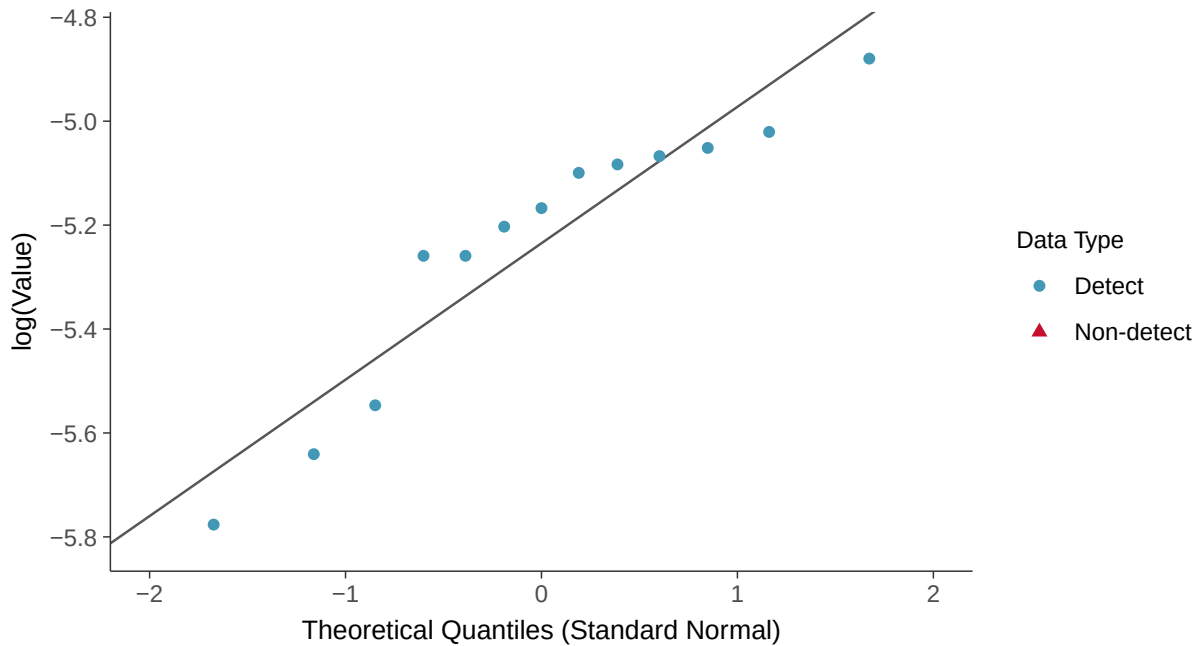
Normal Q-Q plot

Selenium, MW-17 (mg/l)



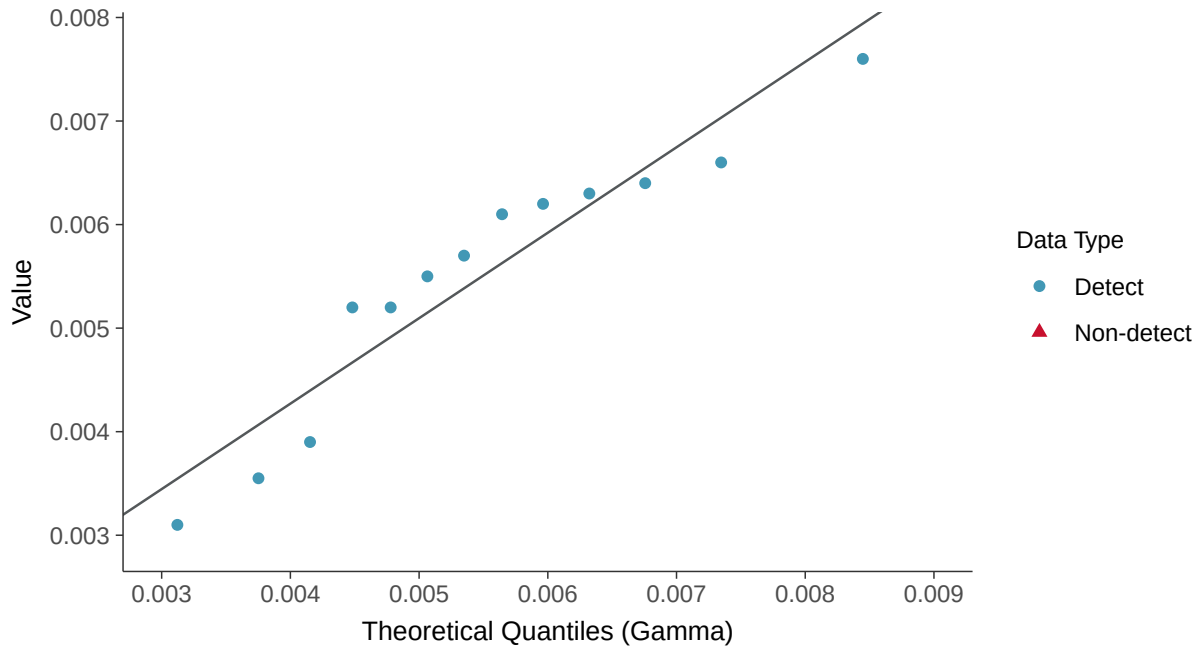
Lognormal Q-Q plot

Selenium, MW-17 (mg/l)



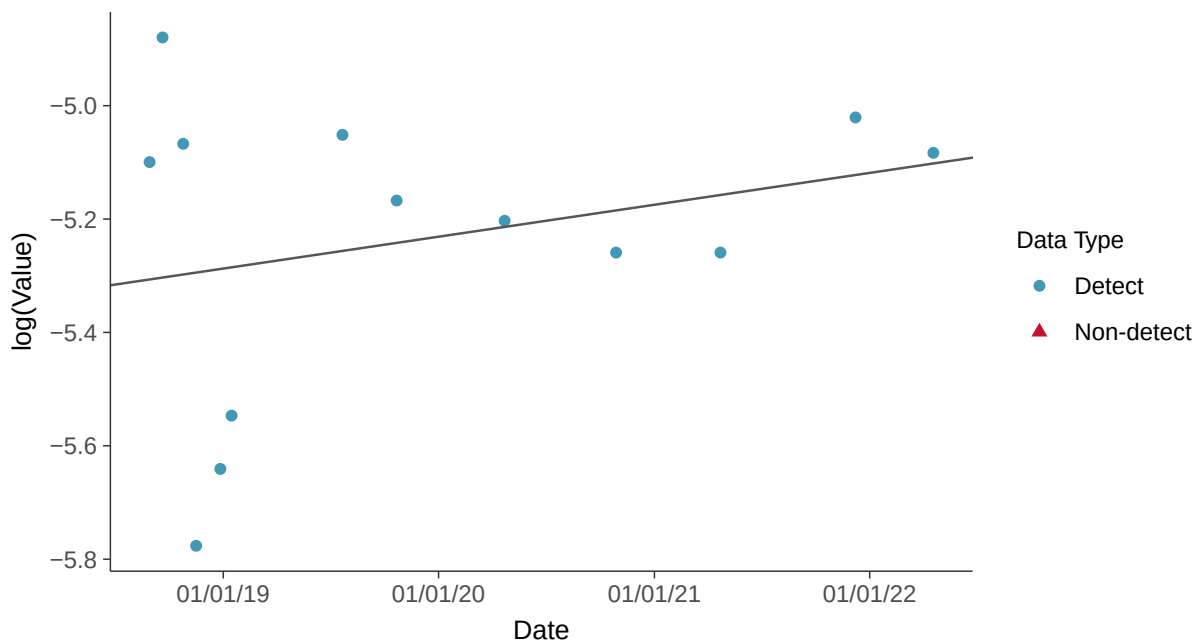
Gamma Q-Q plot

Selenium, MW-17 (mg/l)



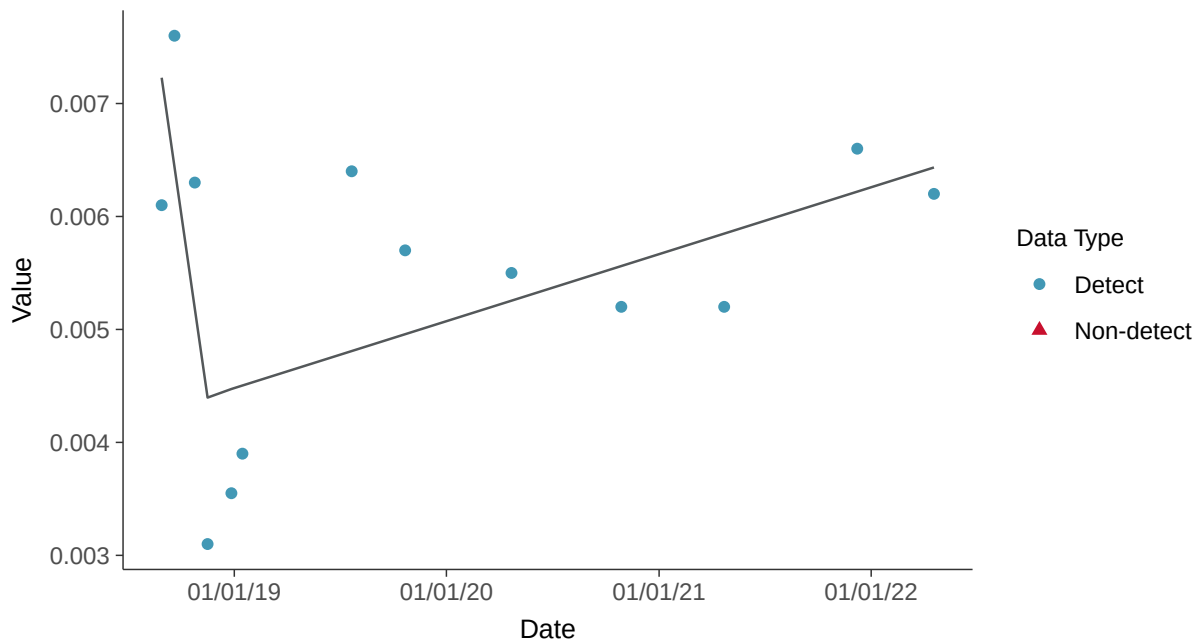
Trend Regression: Lognormal MLE

Selenium, MW-17 (mg/l)



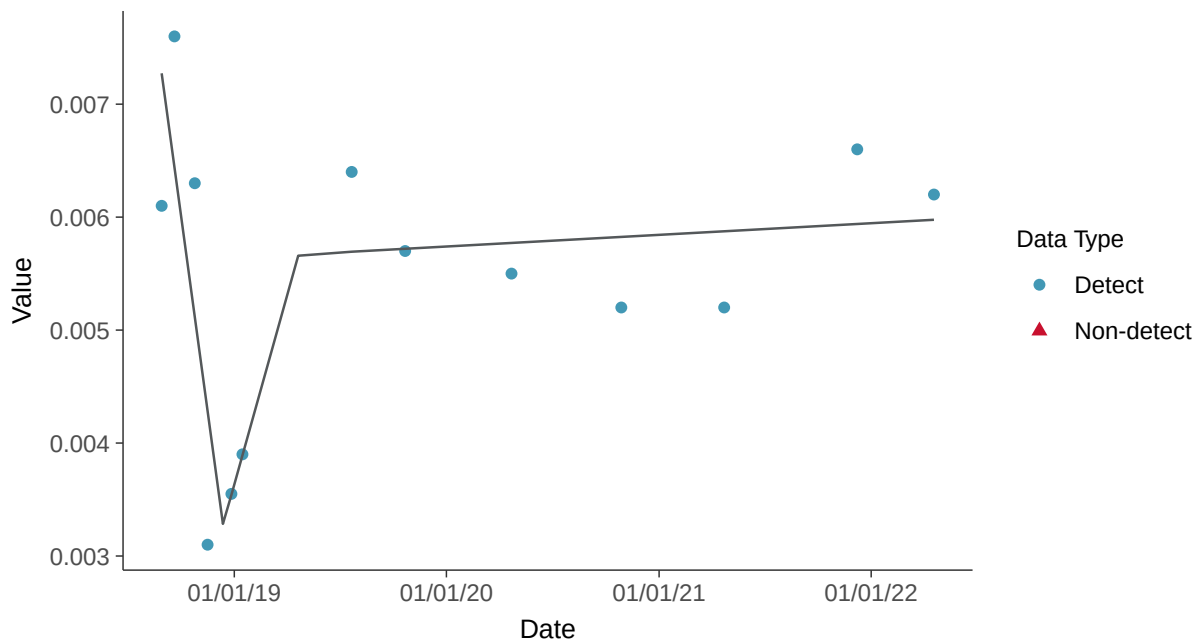
Trend Regression: Piecewise Linear-Linear

Selenium, MW-17 (mg/l)



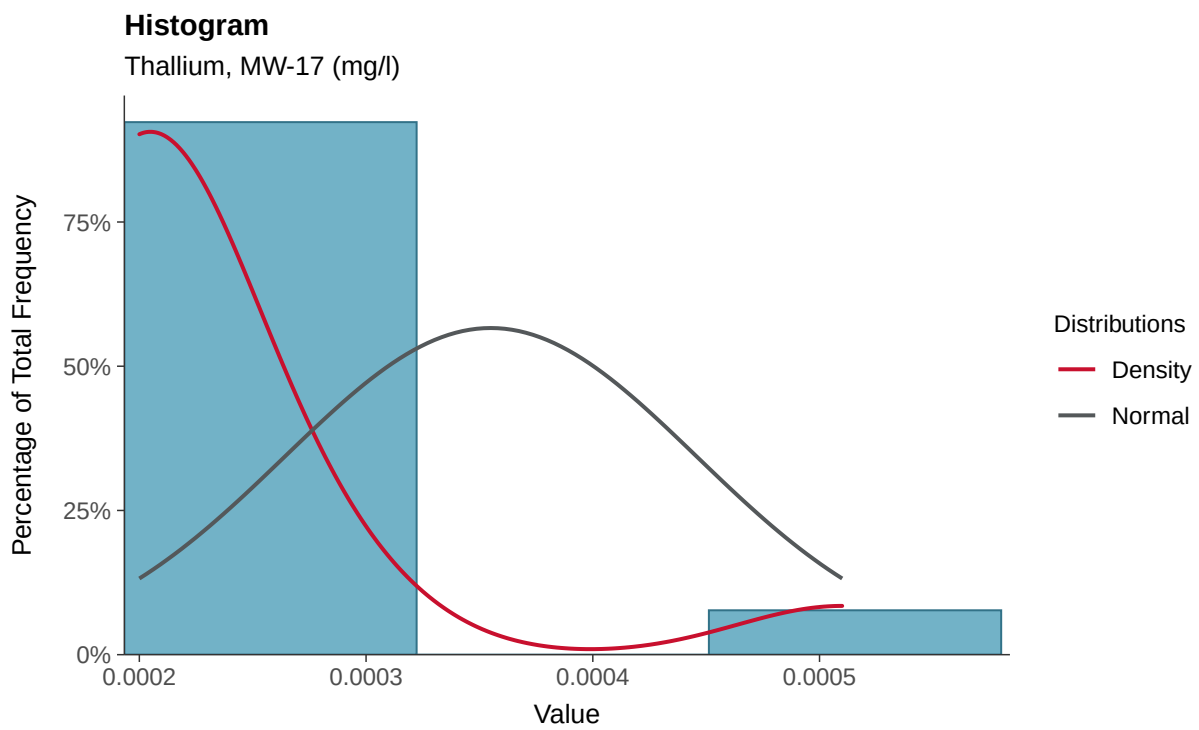
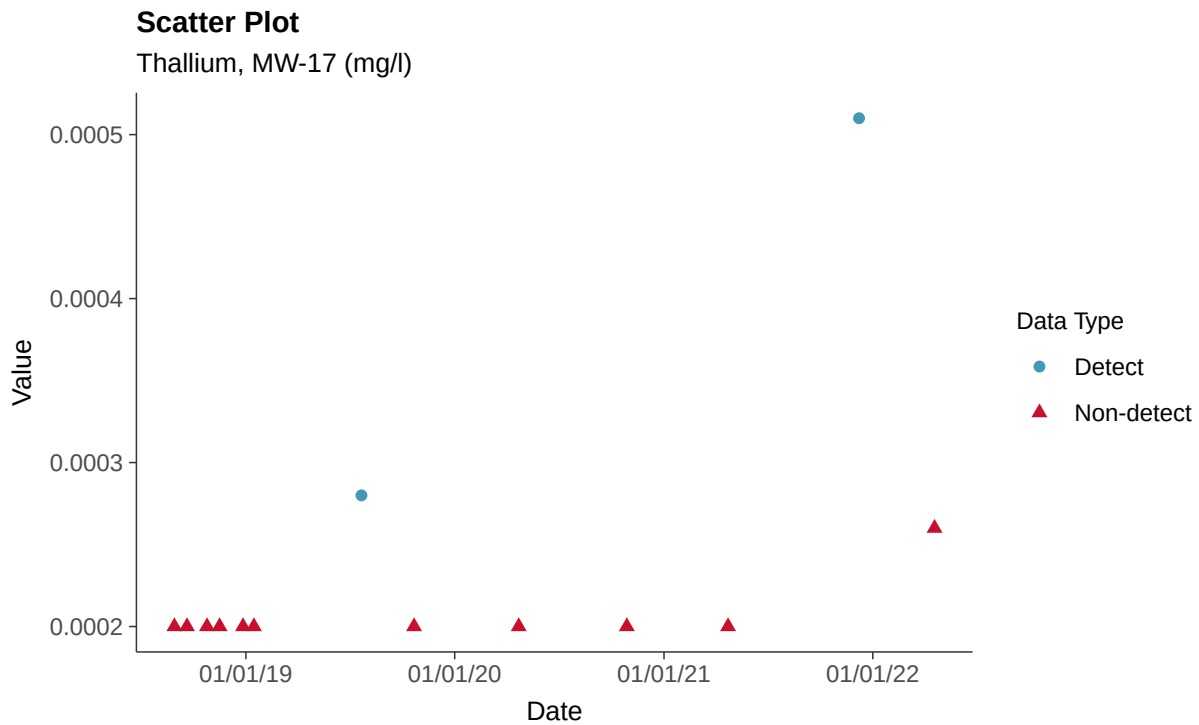
Trend Regression: Piecewise Linear-Linear-Linear

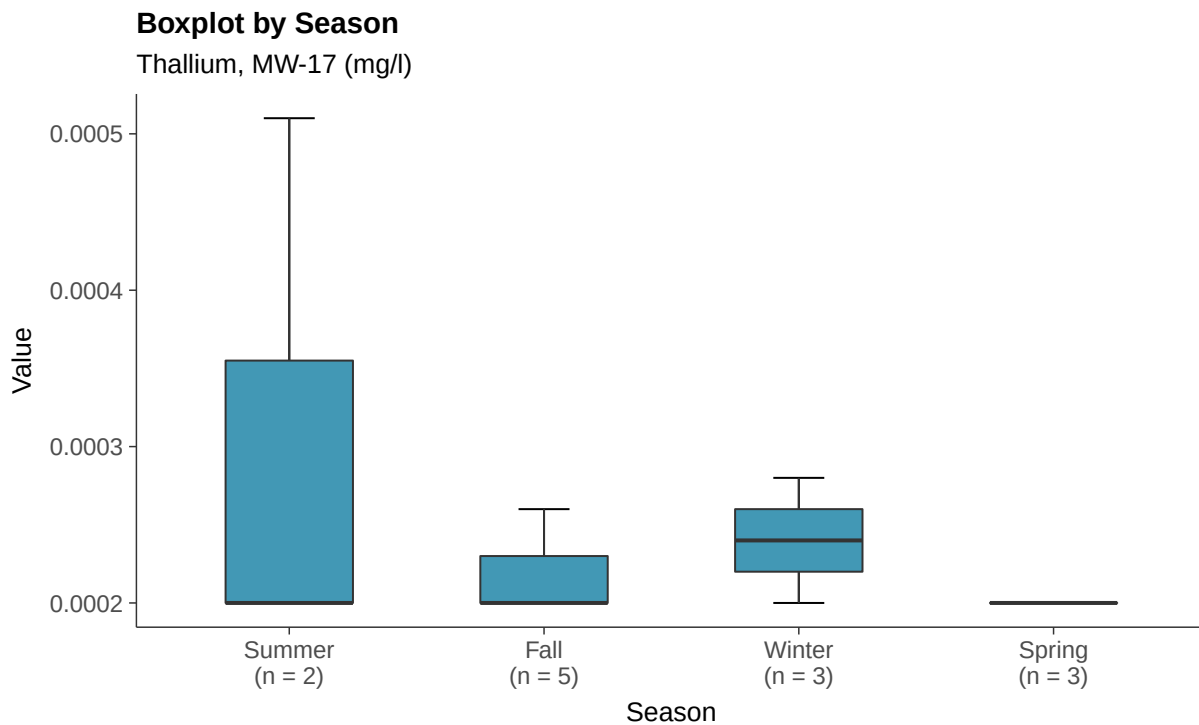
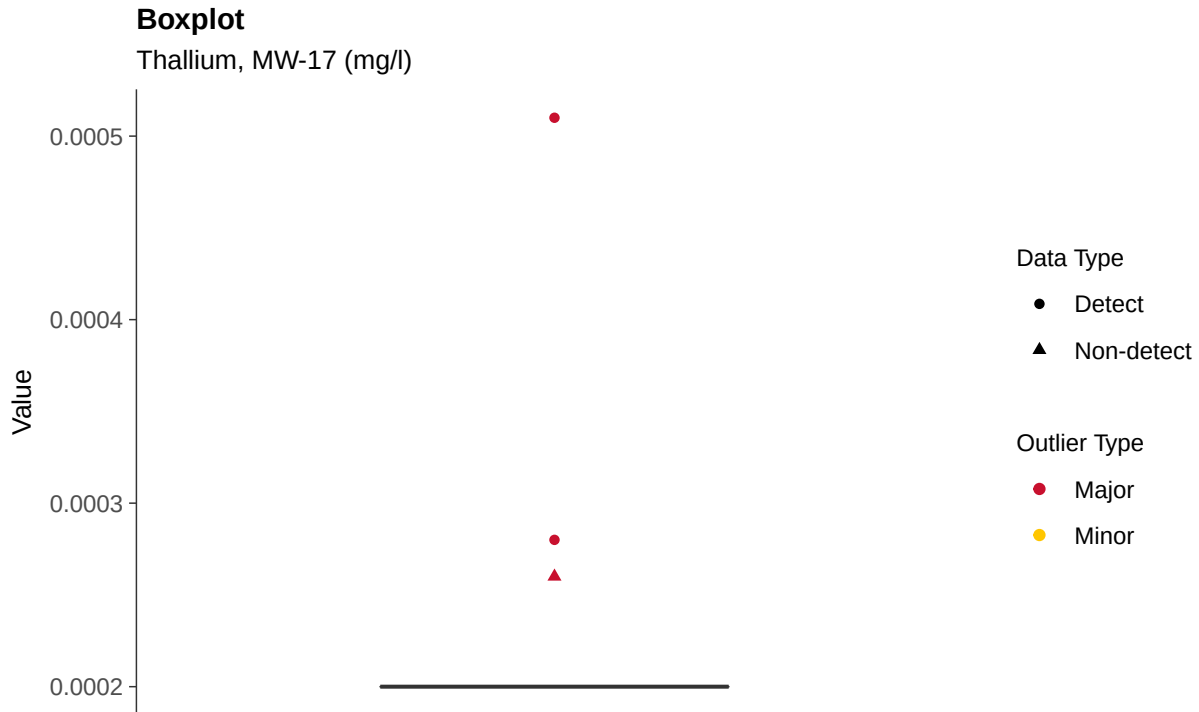
Selenium, MW-17 (mg/l)



Appendix IV: Thallium, MW-17

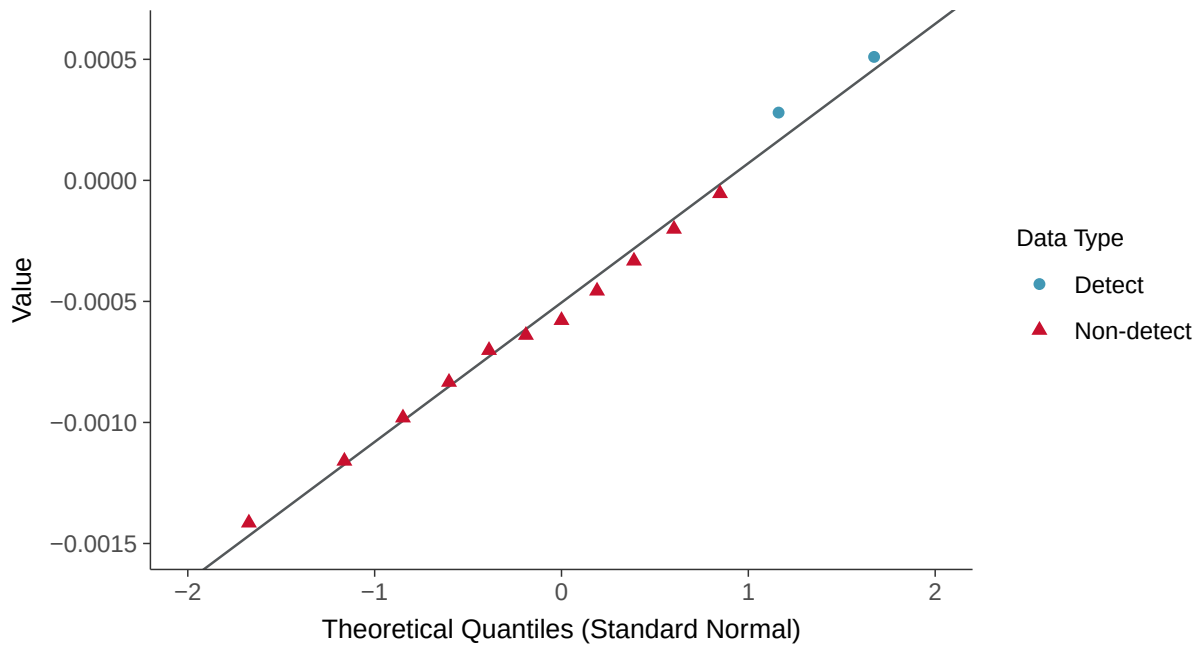
ID: 3_2_134





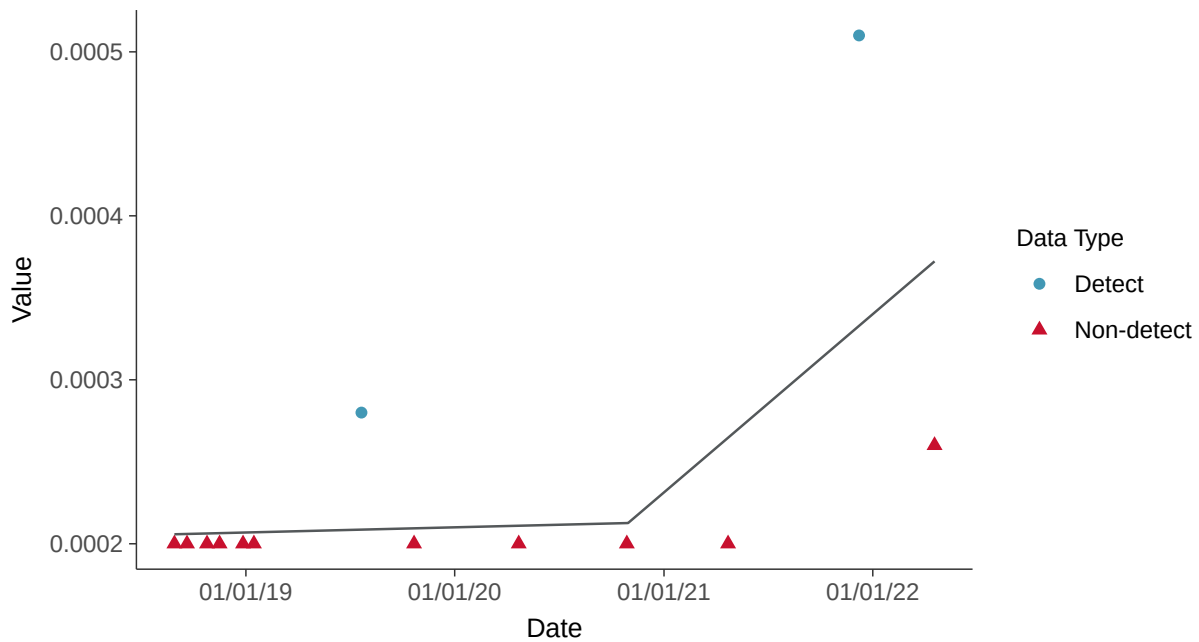
Normal Q-Q plot using ROS Imputed Estimates

Thallium, MW-17 (mg/l)



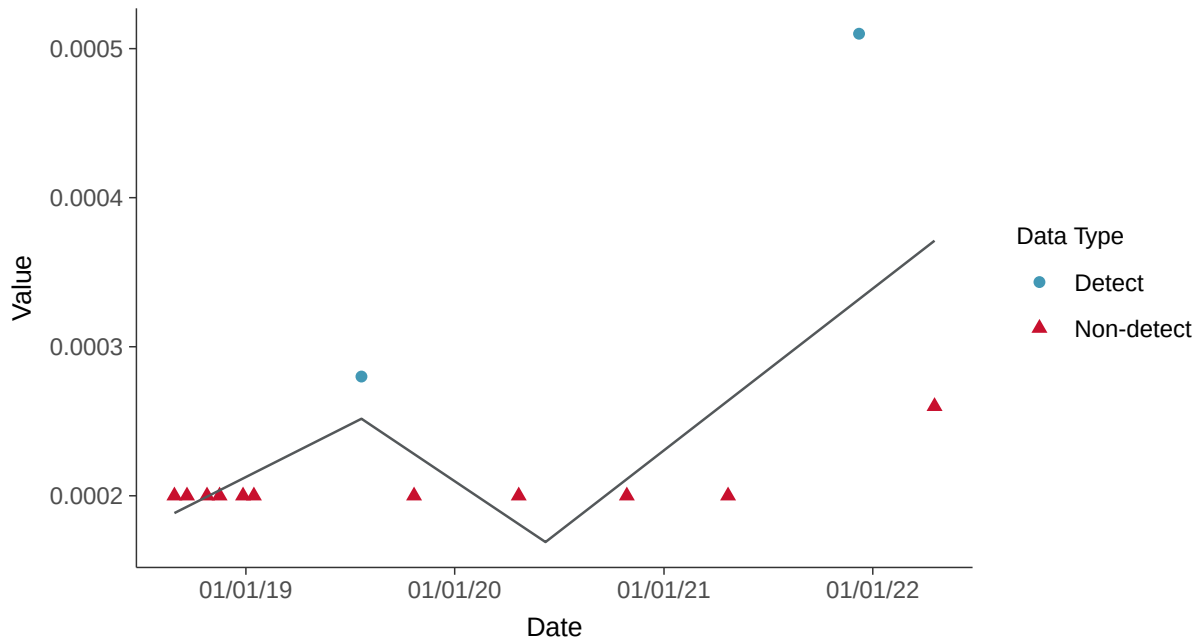
Trend Regression: Piecewise Linear-Linear

Thallium, MW-17 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

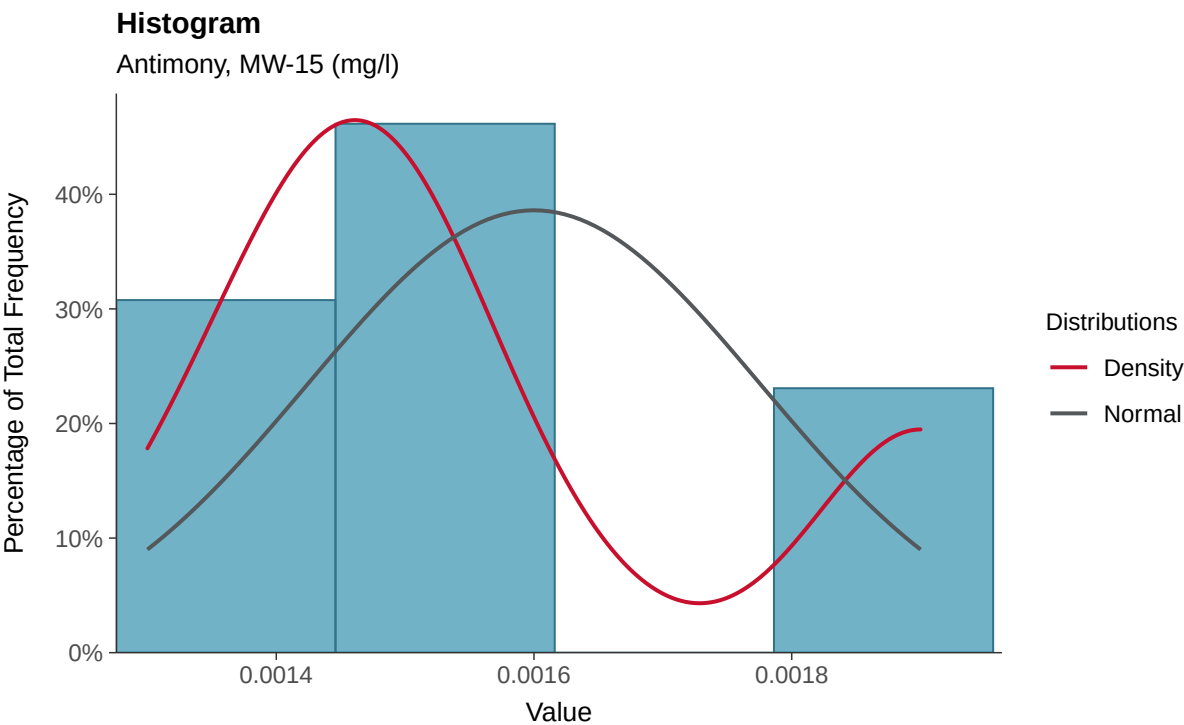
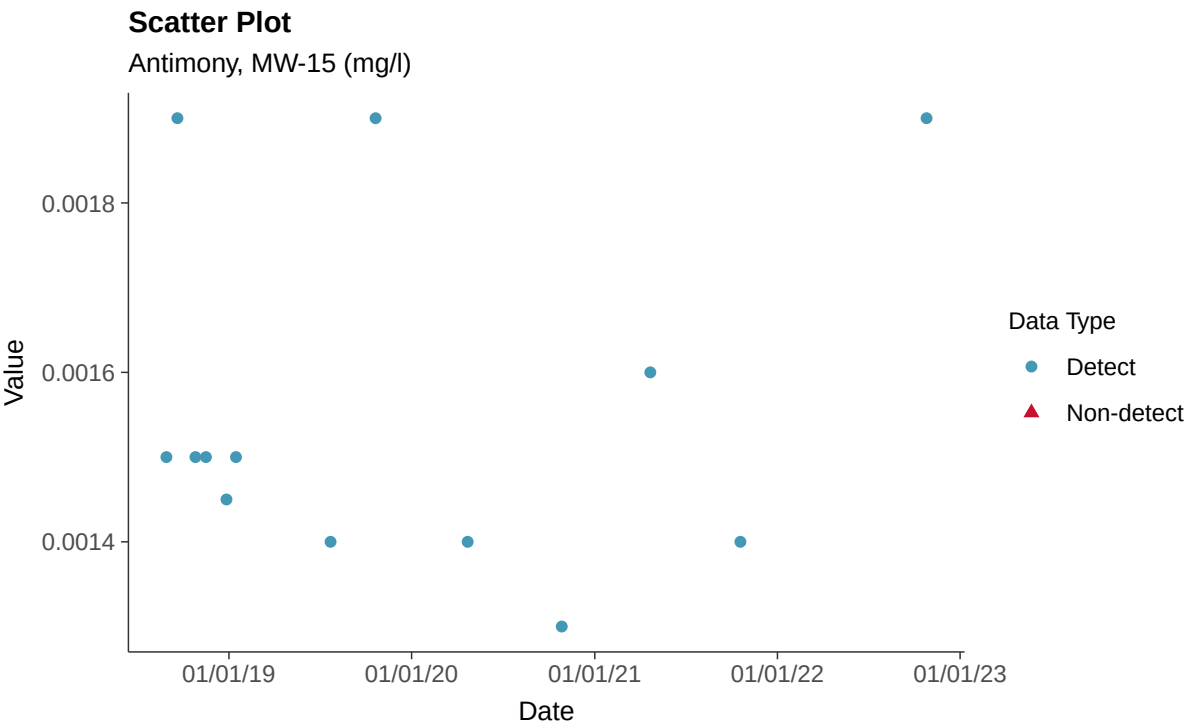
Thallium, MW-17 (mg/l)





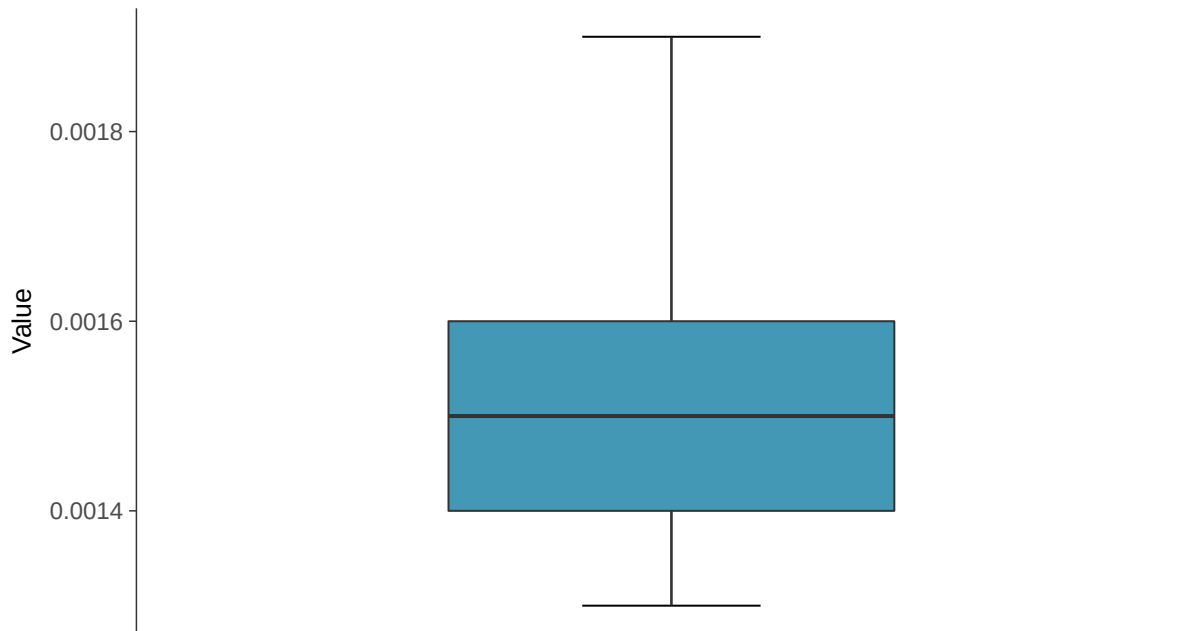
Appendix IV: Antimony, MW-15

ID: 1_2_104



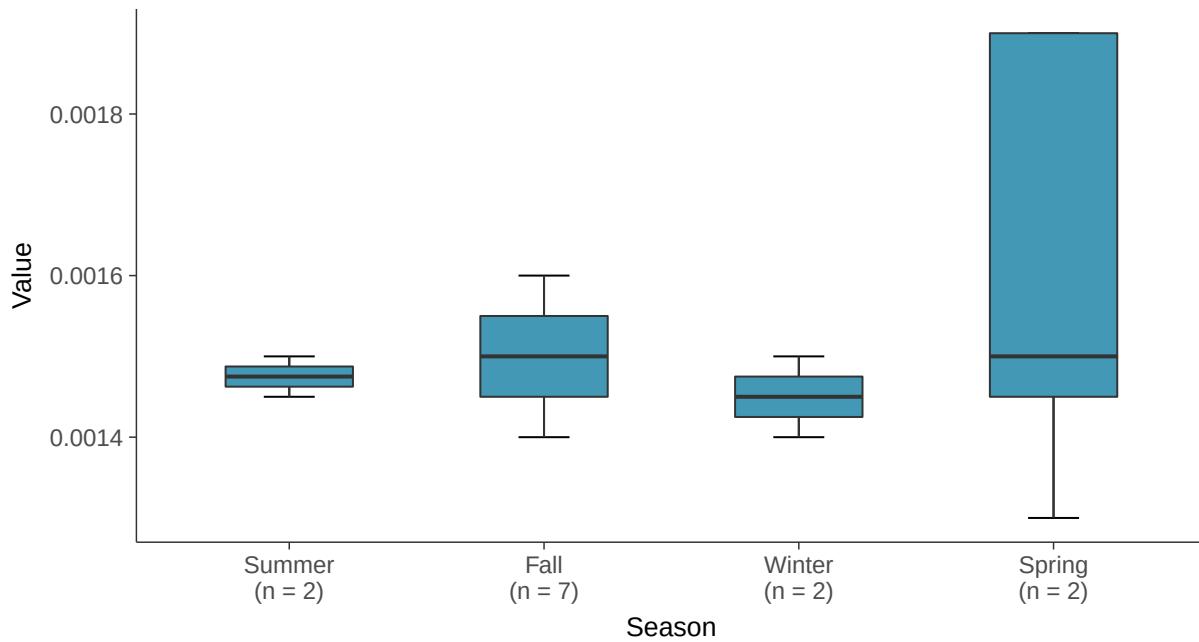
Boxplot

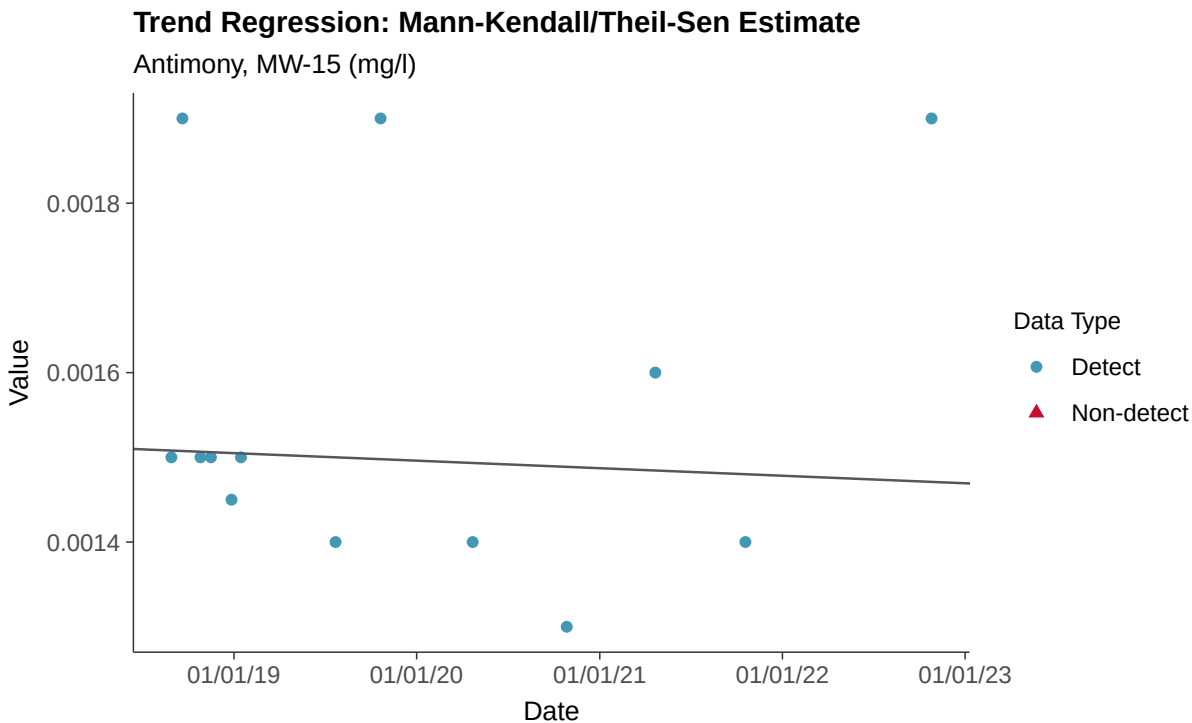
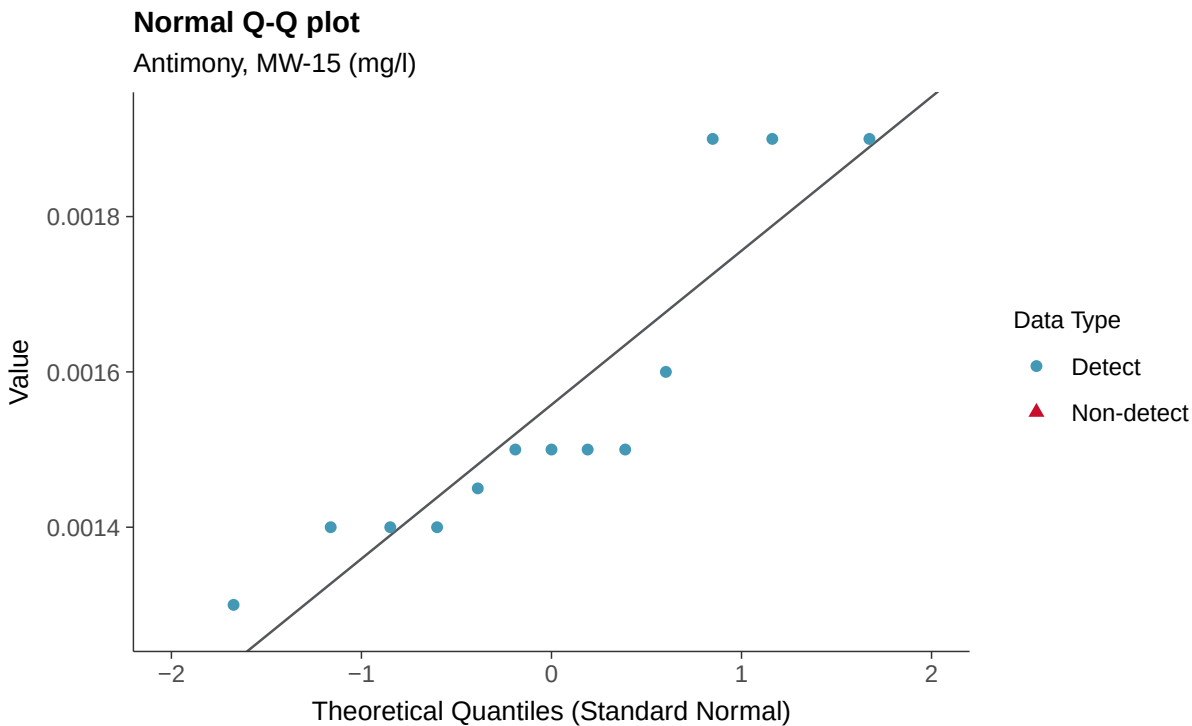
Antimony, MW-15 (mg/l)



Boxplot by Season

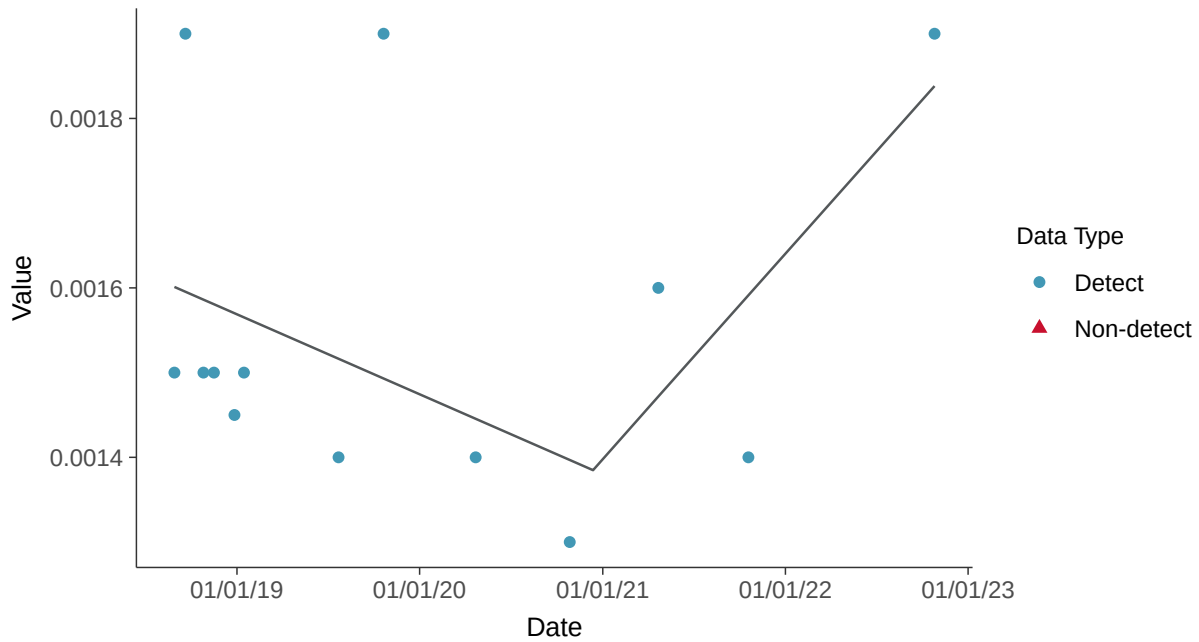
Antimony, MW-15 (mg/l)





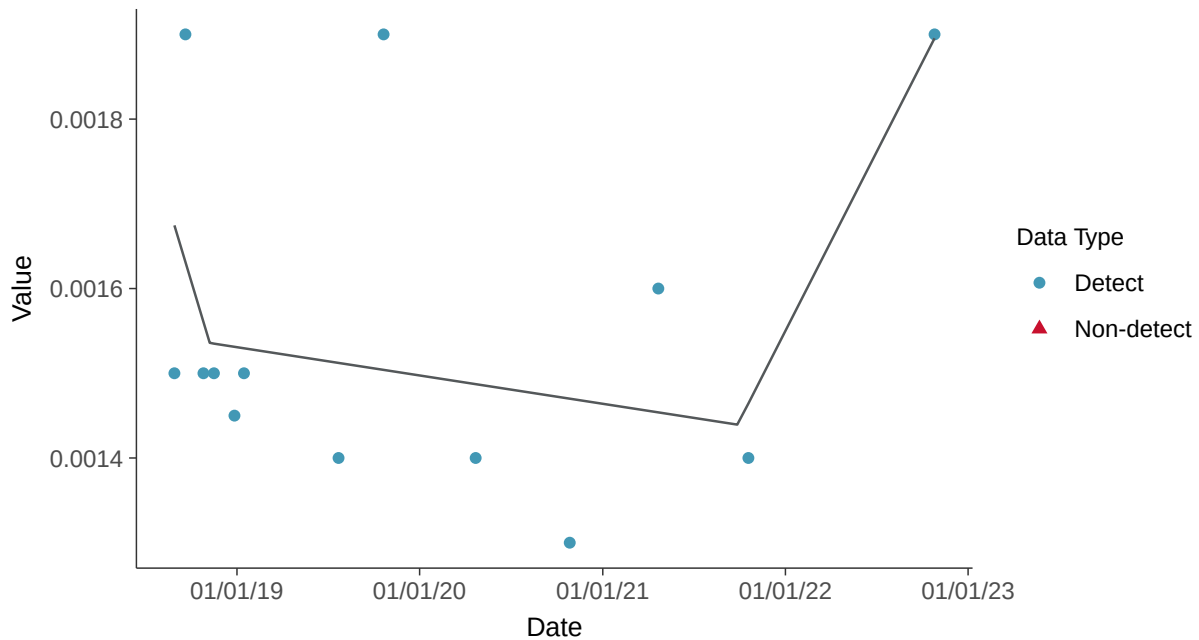
Trend Regression: Piecewise Linear-Linear

Antimony, MW-15 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

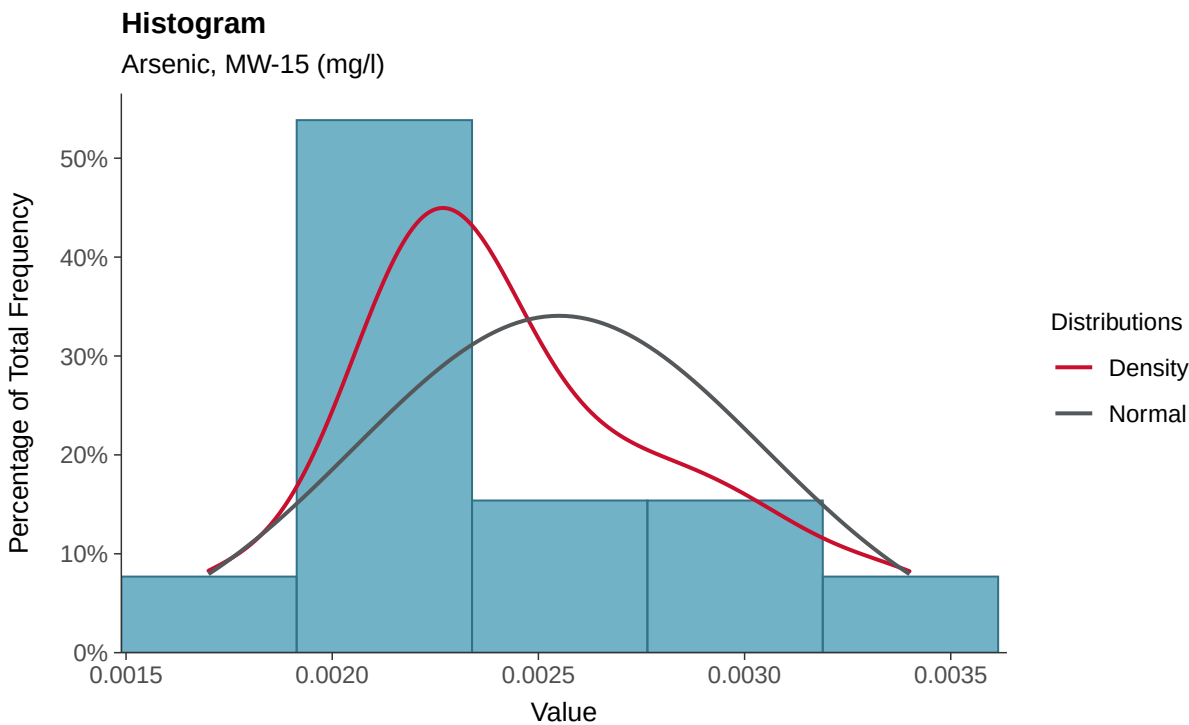
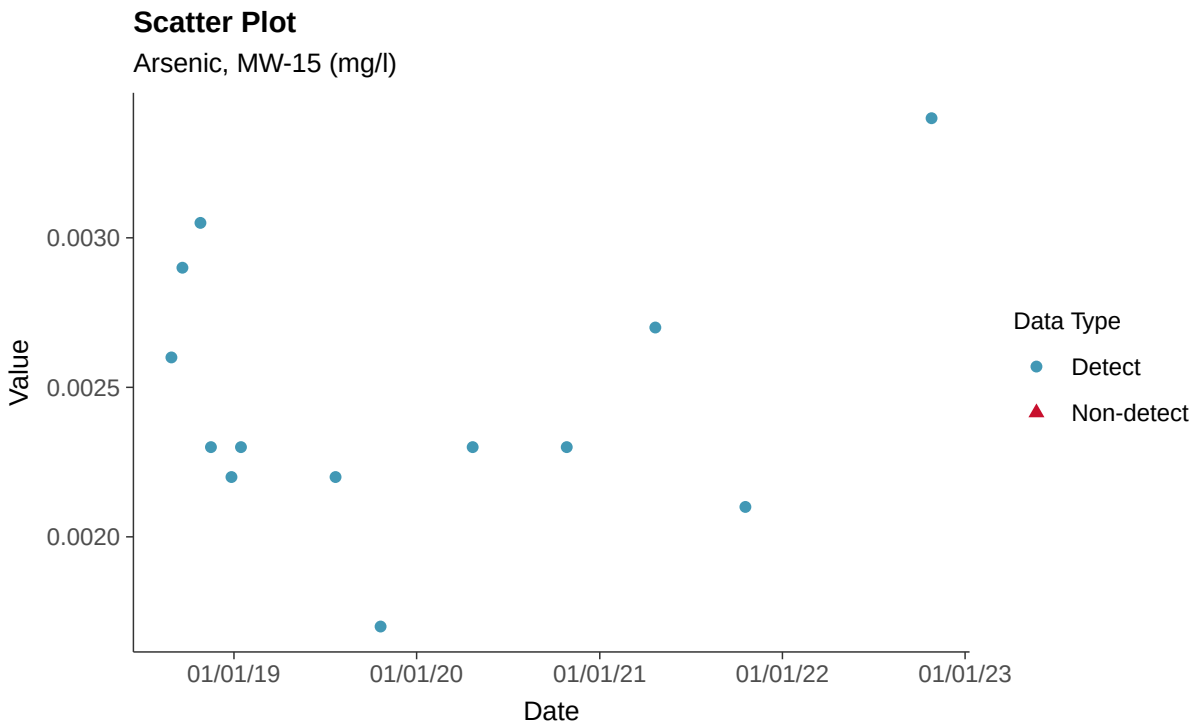
Antimony, MW-15 (mg/l)

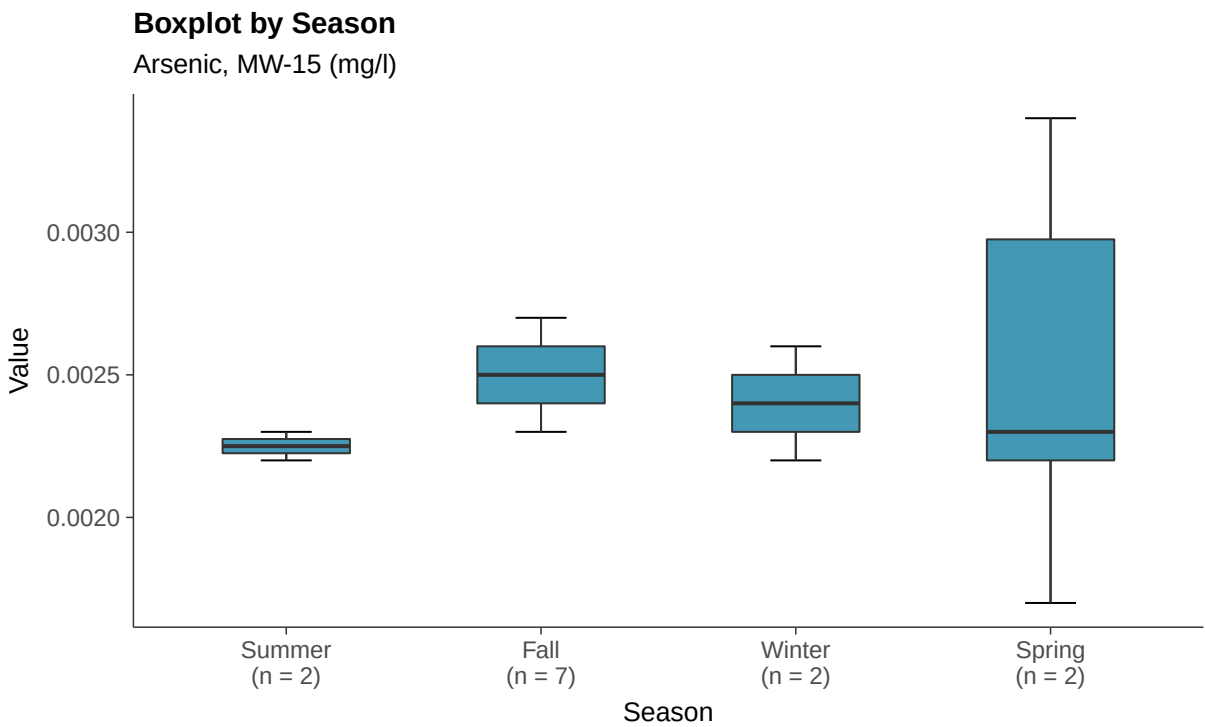
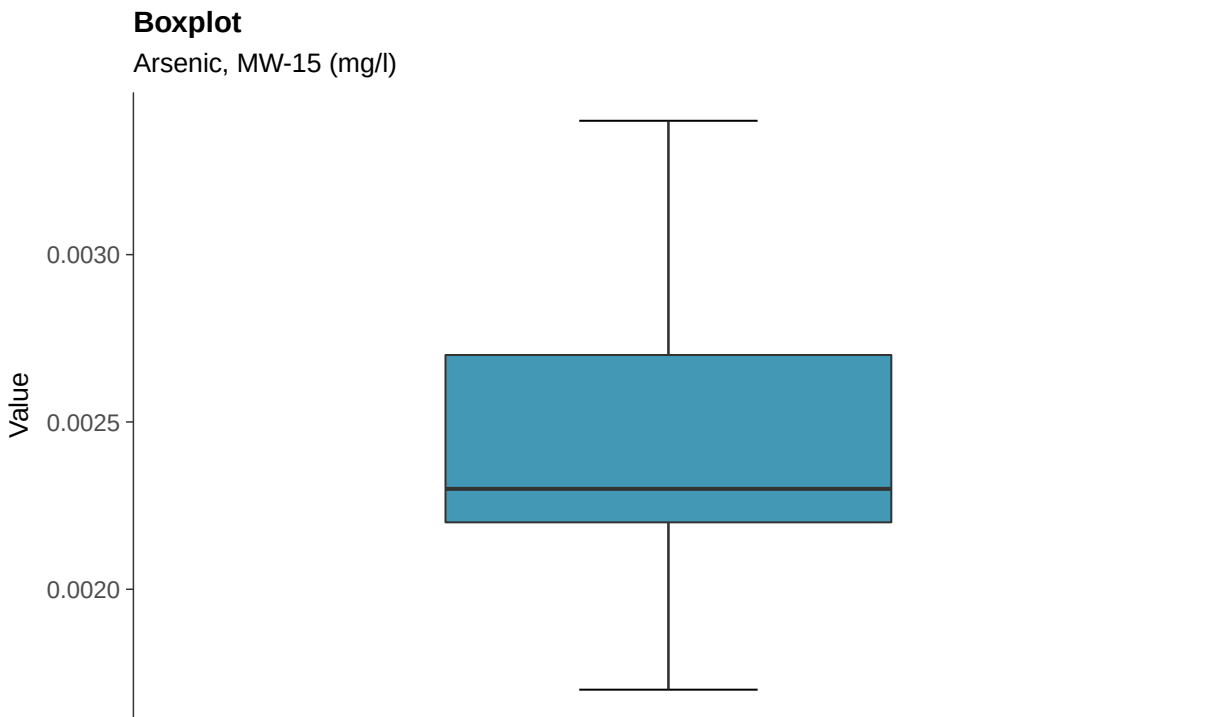


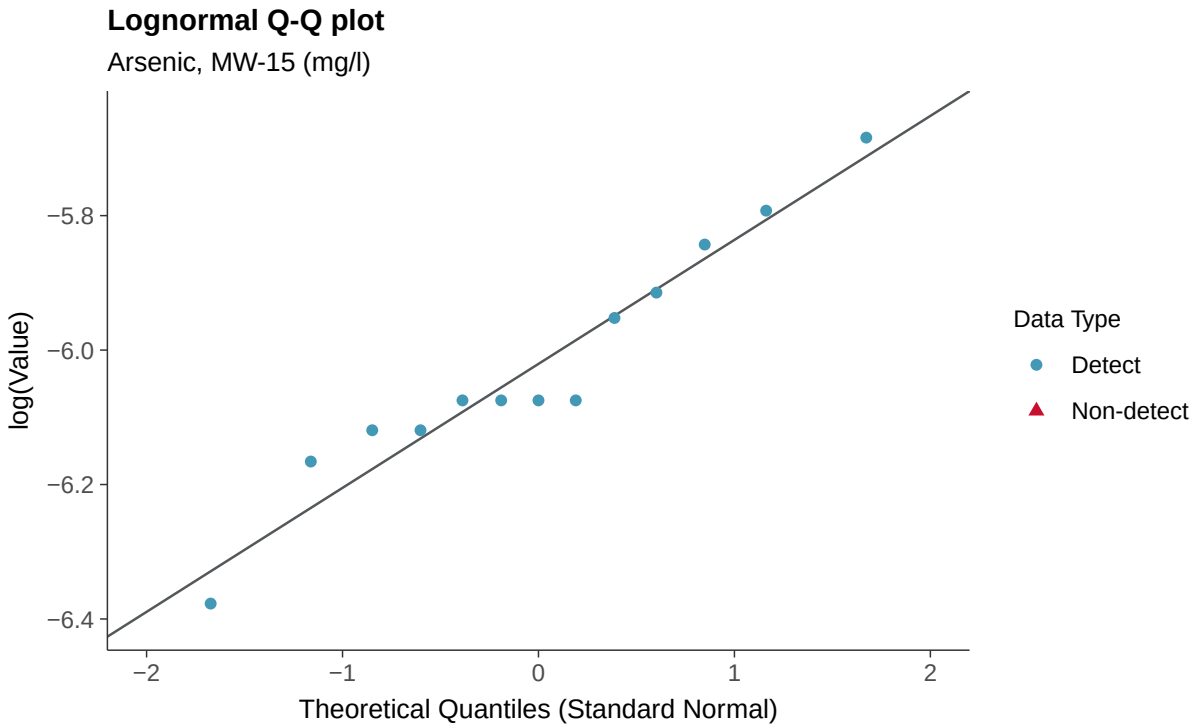
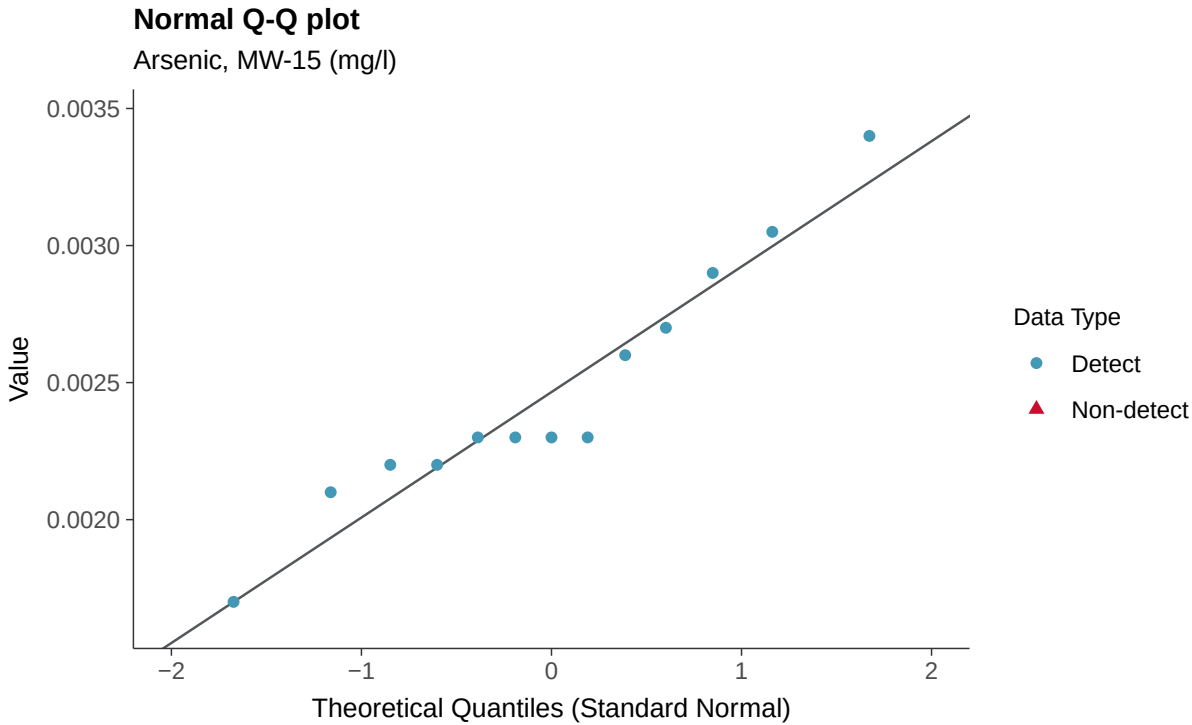


Appendix IV: Arsenic, MW-15

ID: 1_2_105

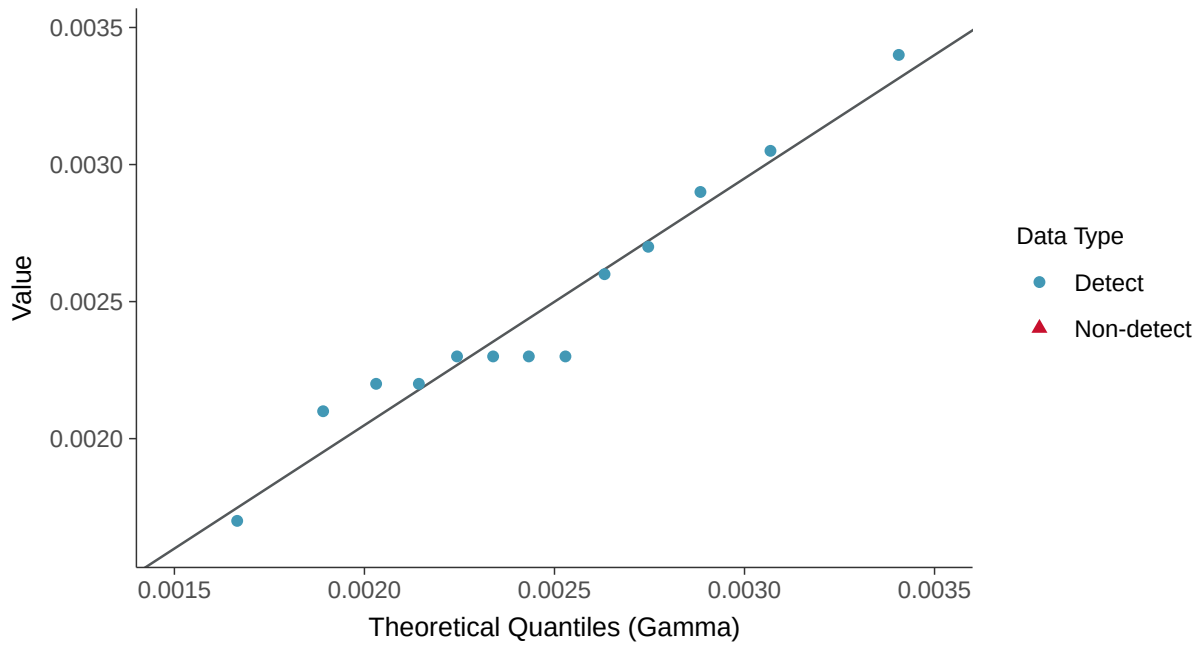






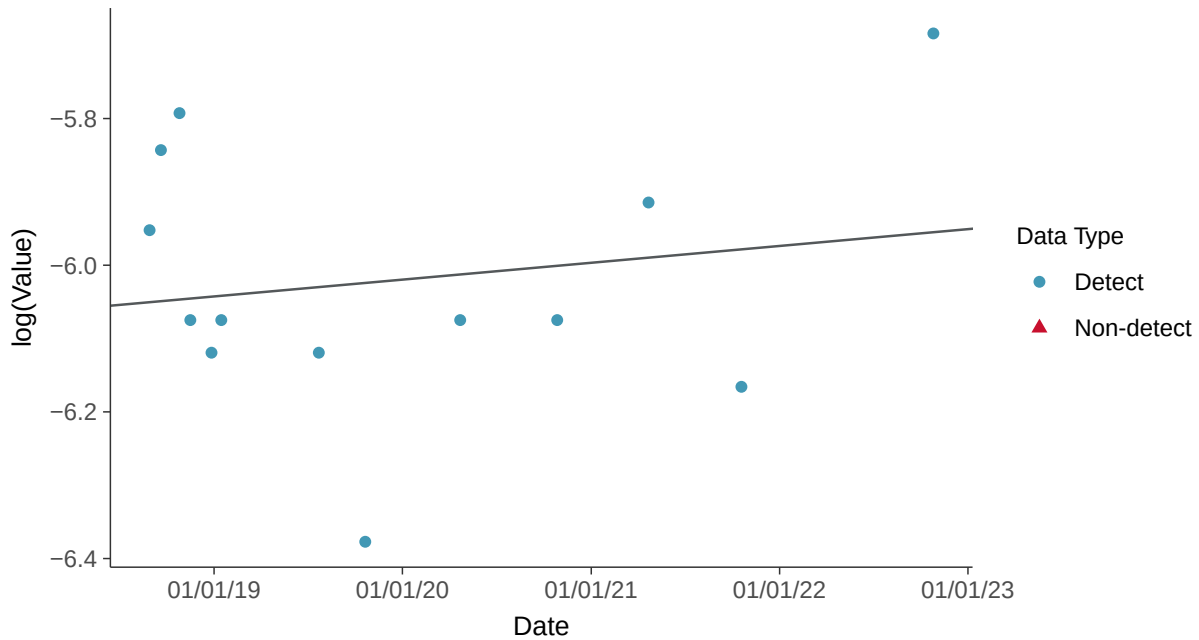
Gamma Q-Q plot

Arsenic, MW-15 (mg/l)



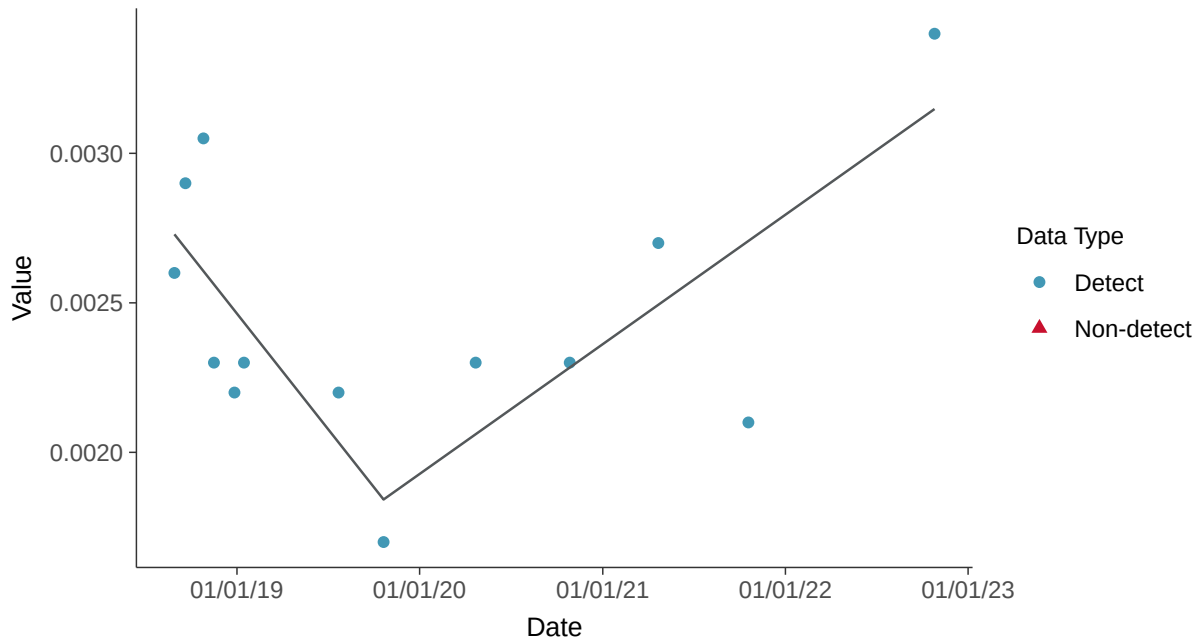
Trend Regression: Lognormal MLE

Arsenic, MW-15 (mg/l)



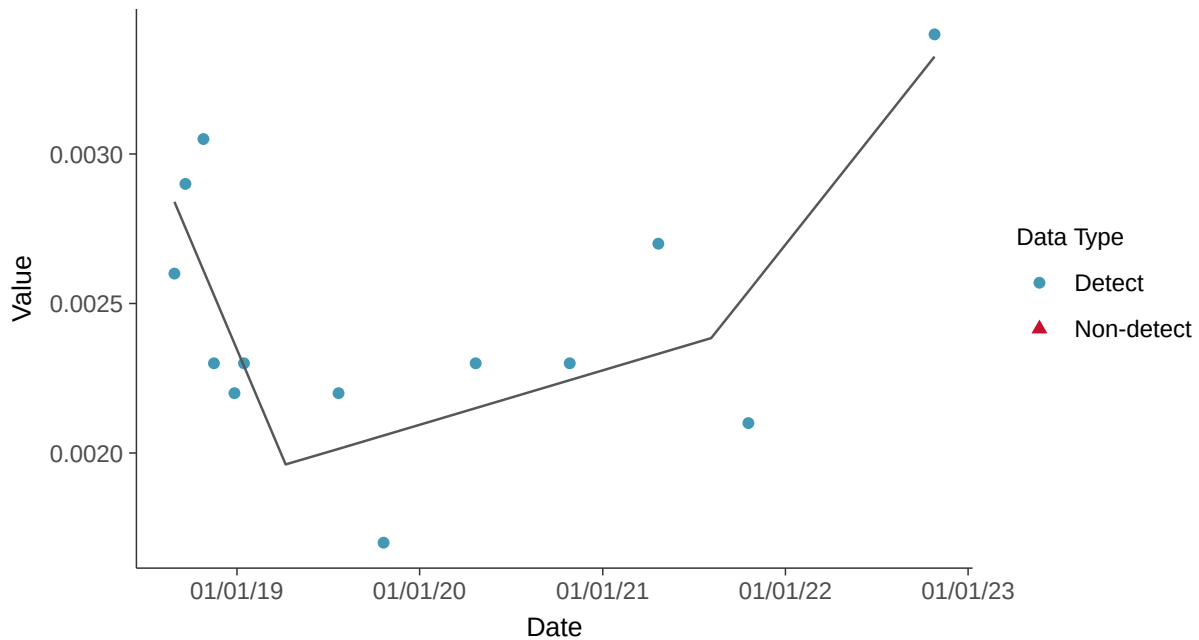
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-15 (mg/l)



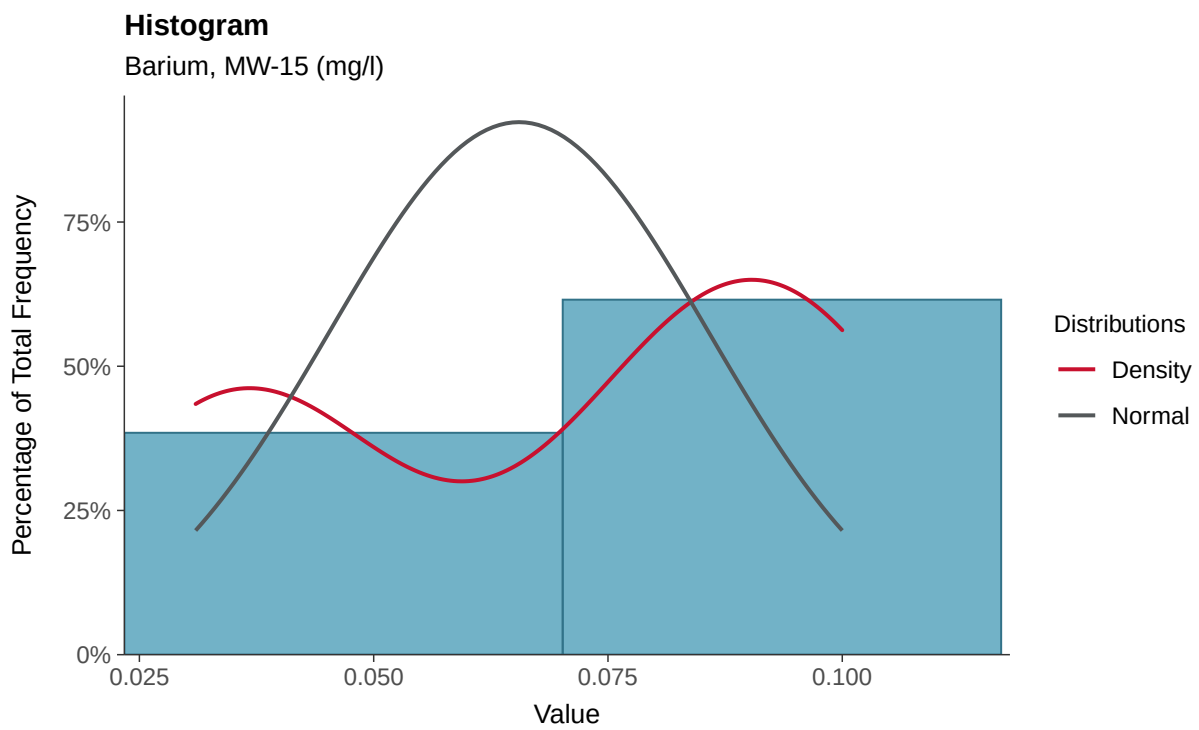
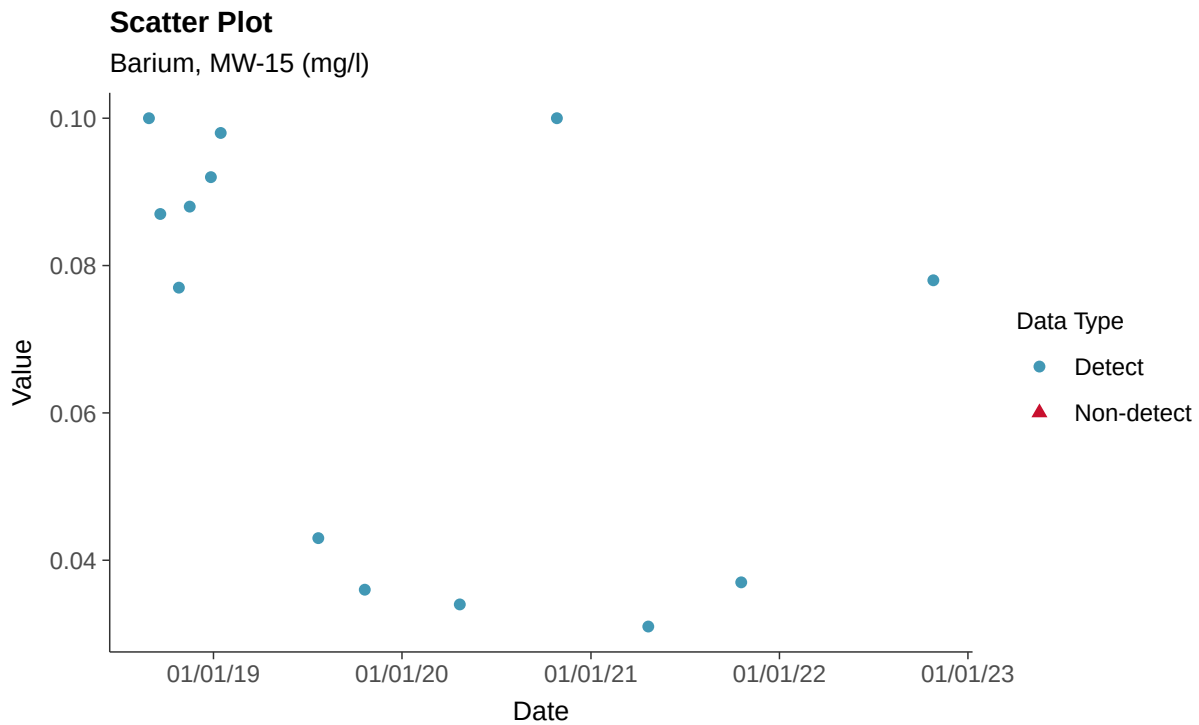
Trend Regression: Piecewise Linear-Linear-Linear

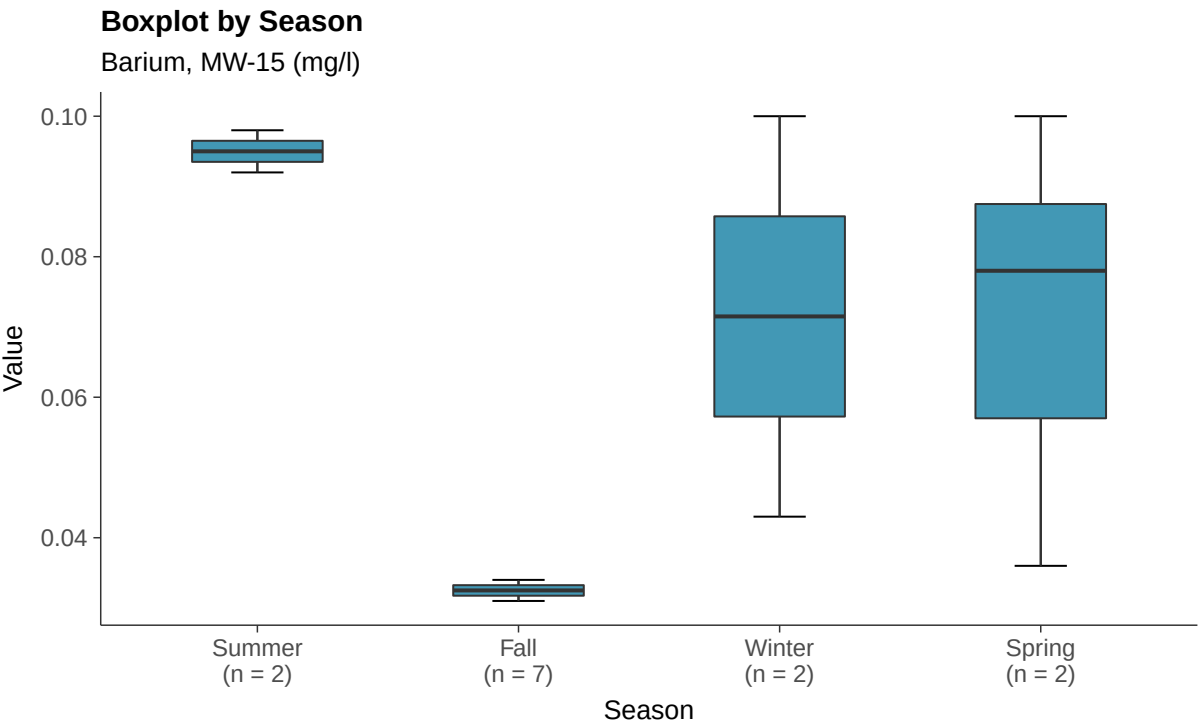
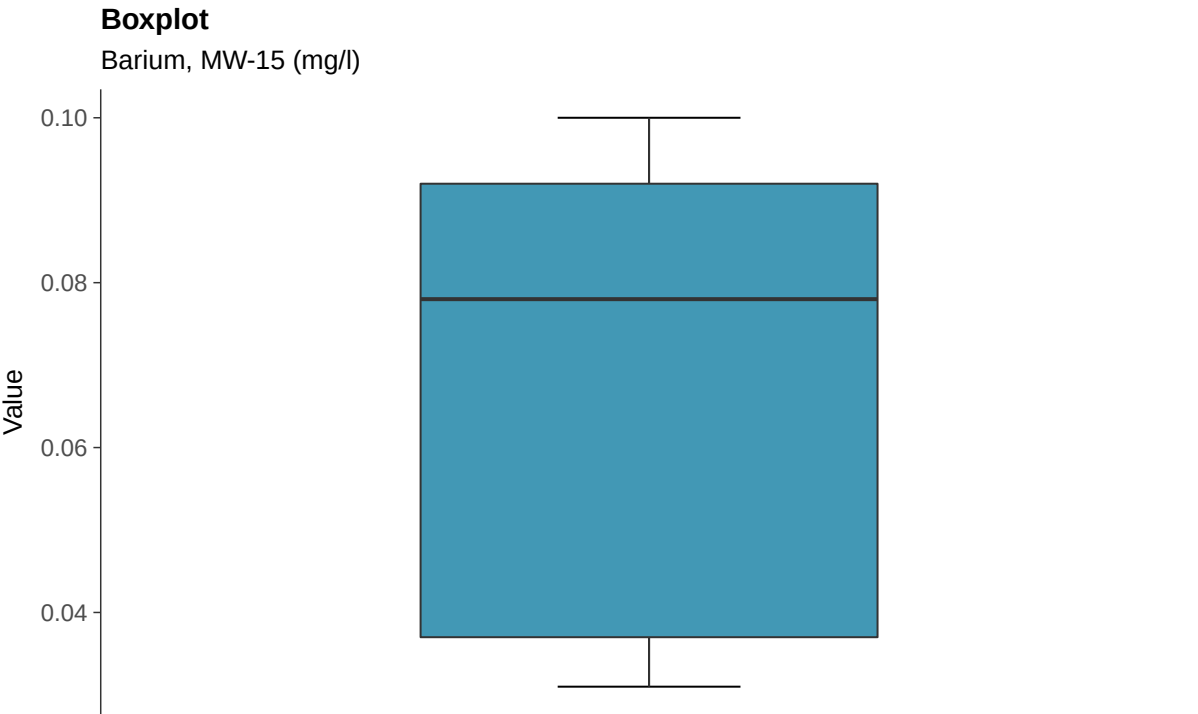
Arsenic, MW-15 (mg/l)



Appendix IV: Barium, MW-15

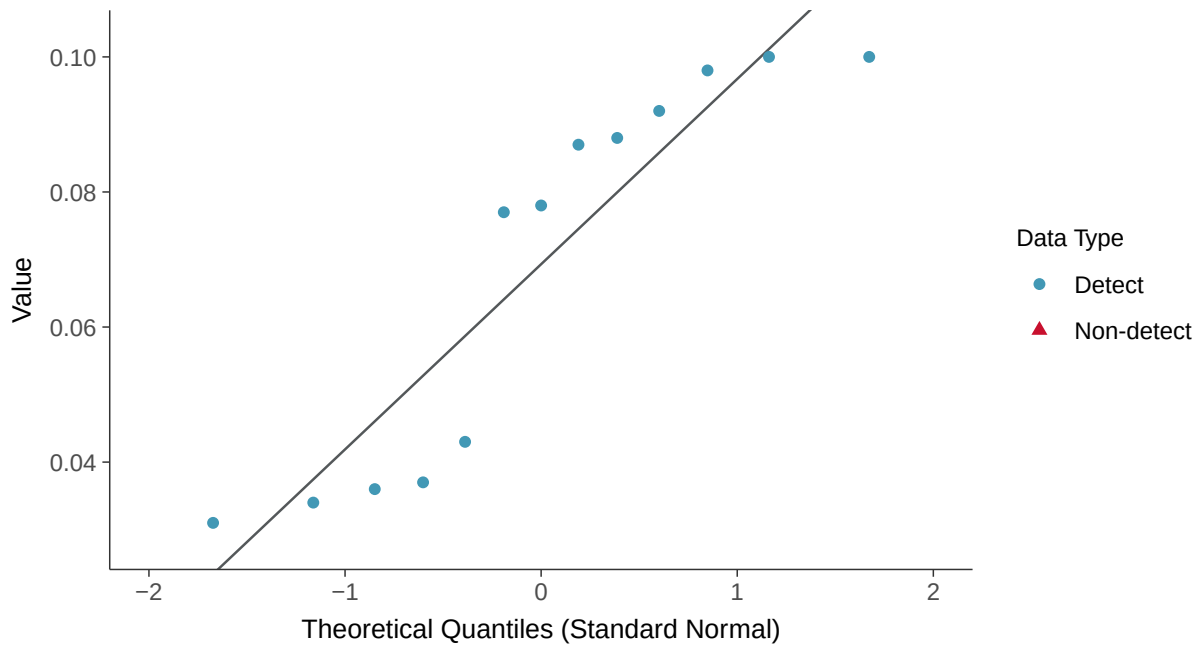
ID: 1_2_106





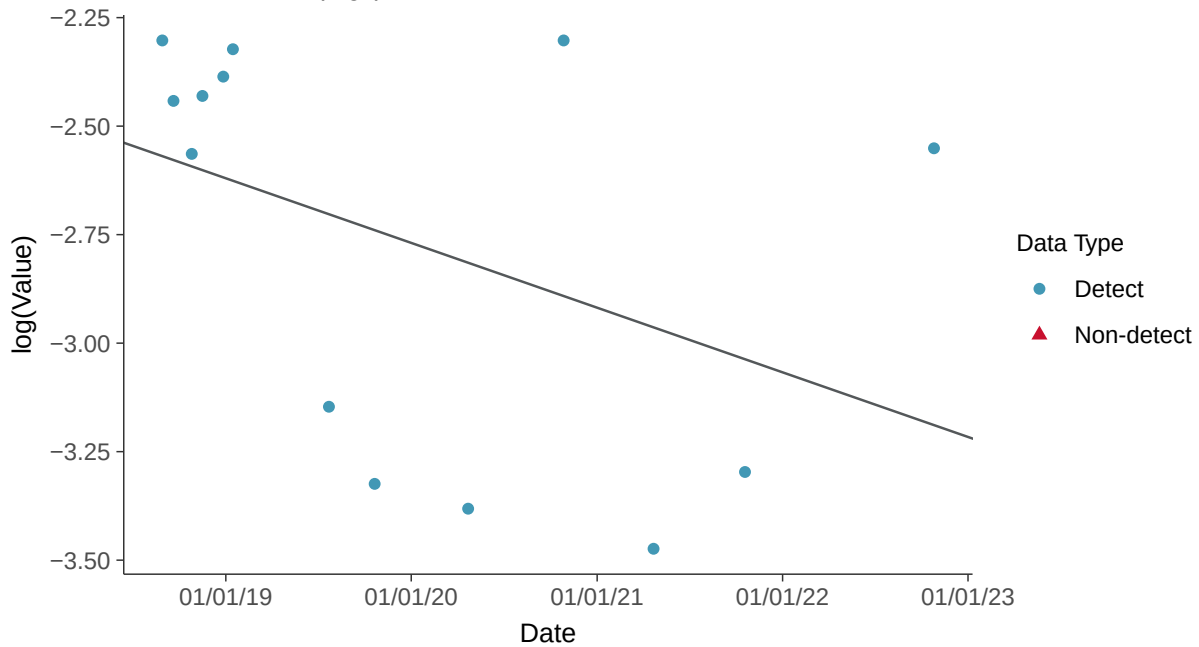
Normal Q-Q plot

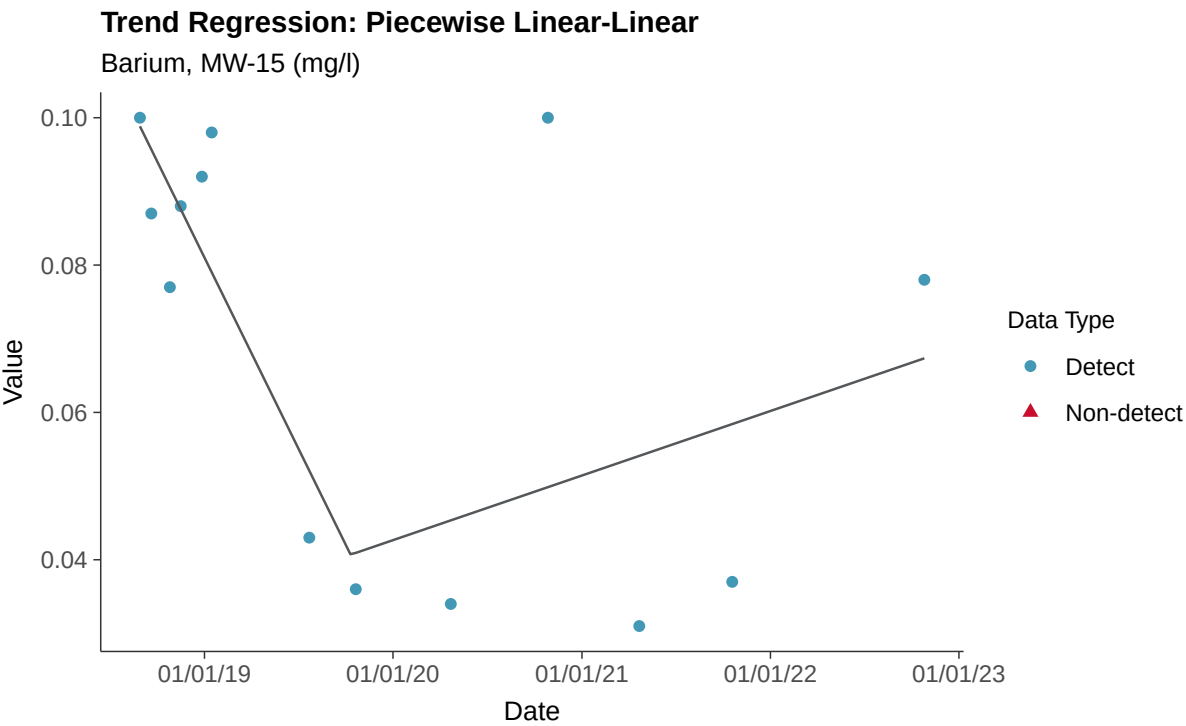
Barium, MW-15 (mg/l)



Trend Regression: Lognormal MLE

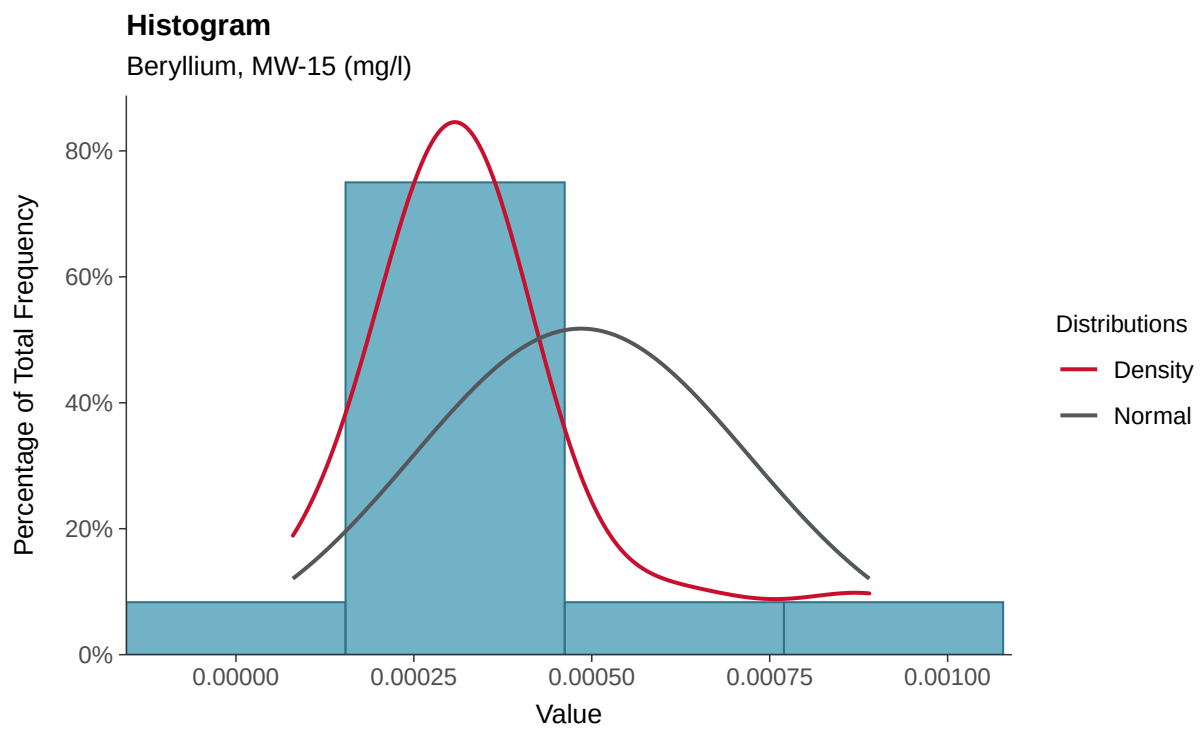
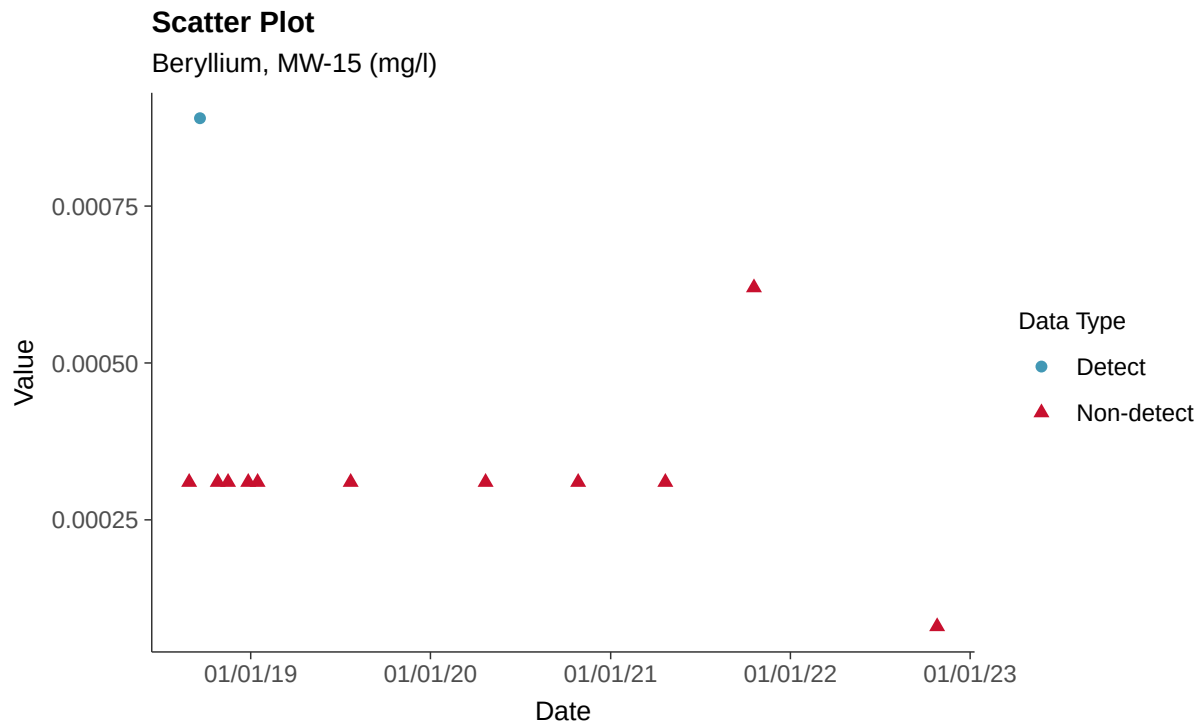
Barium, MW-15 (mg/l)





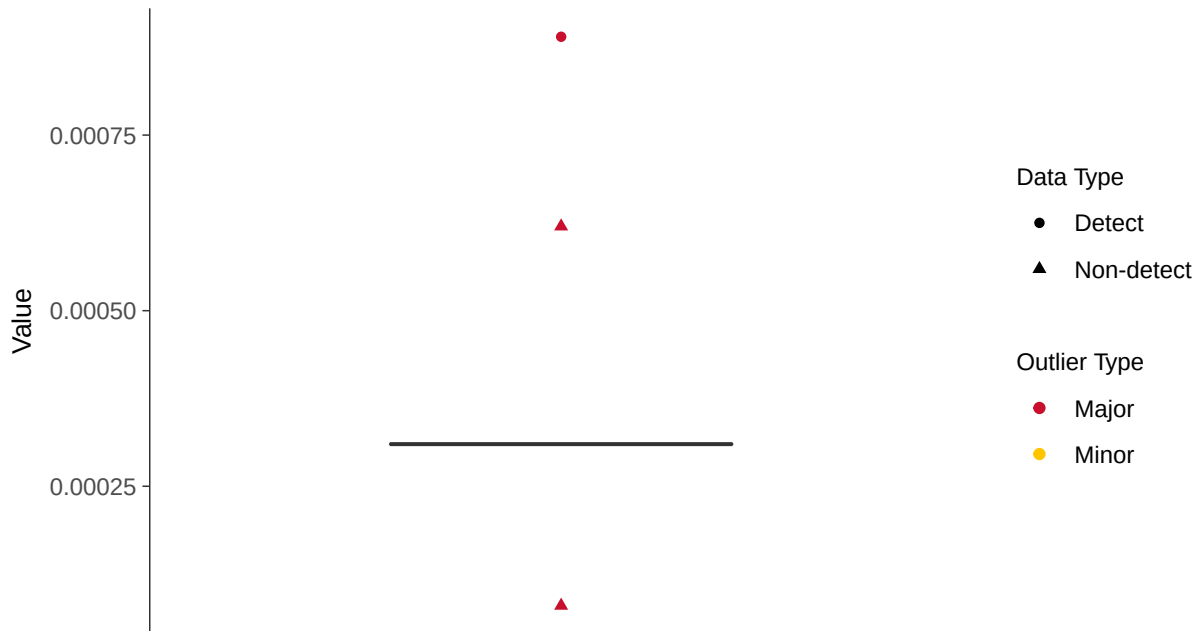
Appendix IV: Beryllium, MW-15

ID: 1_2_107



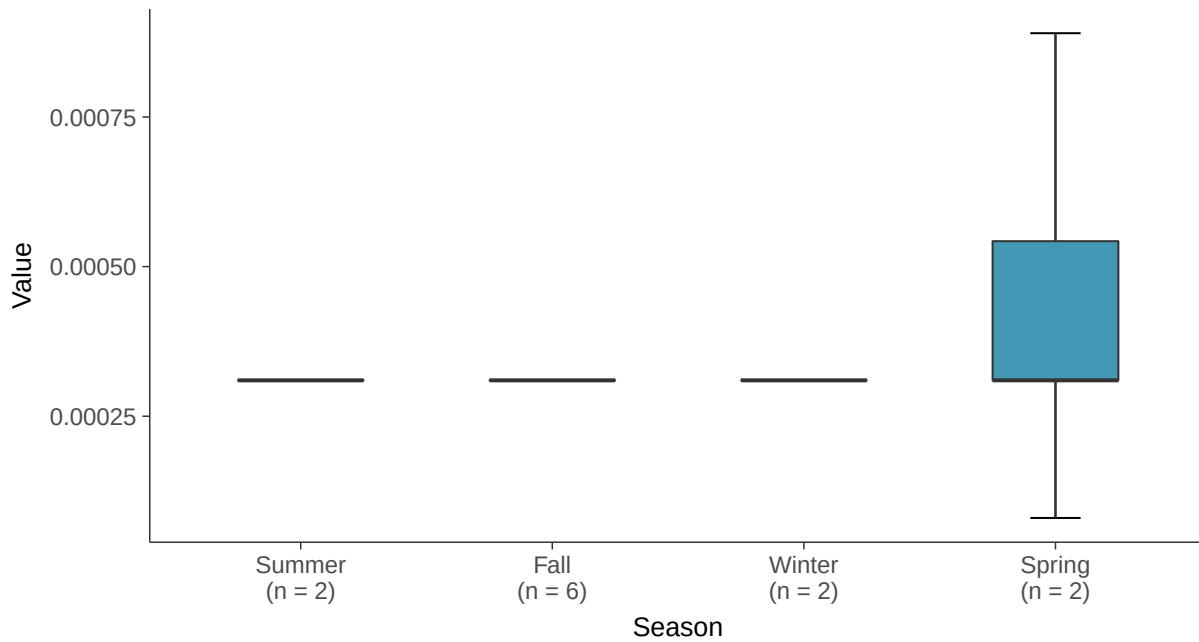
Boxplot

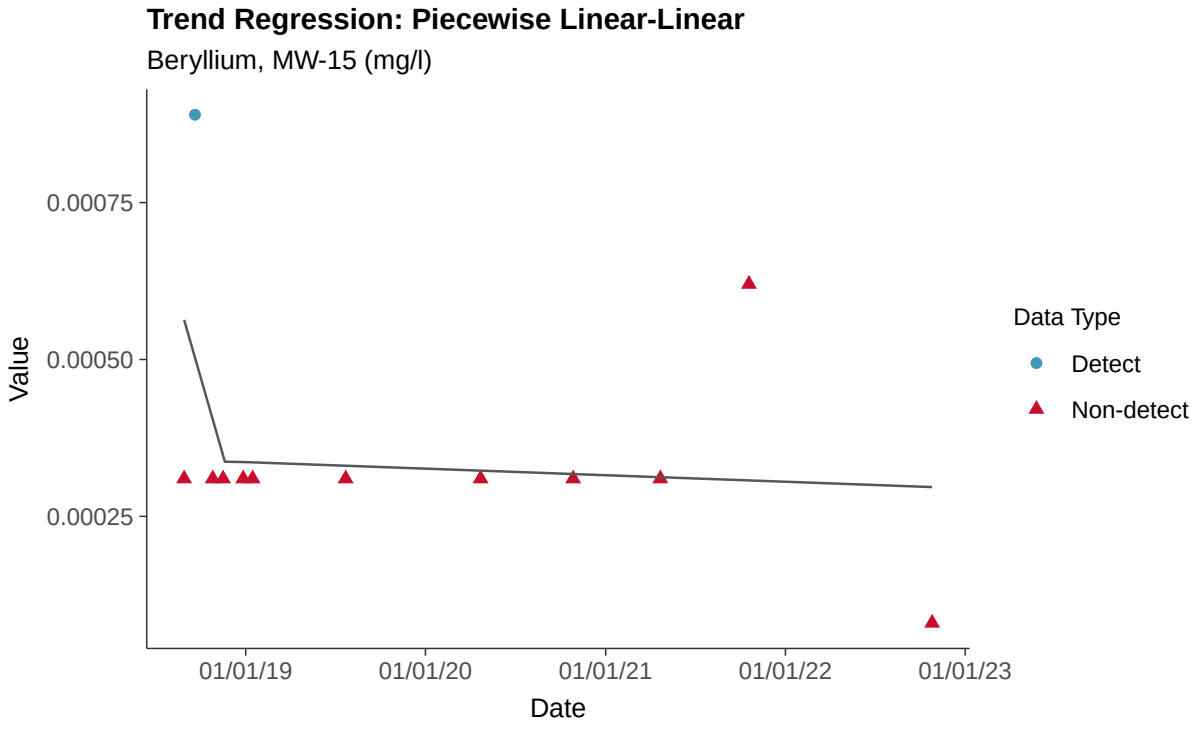
Beryllium, MW-15 (mg/l)



Boxplot by Season

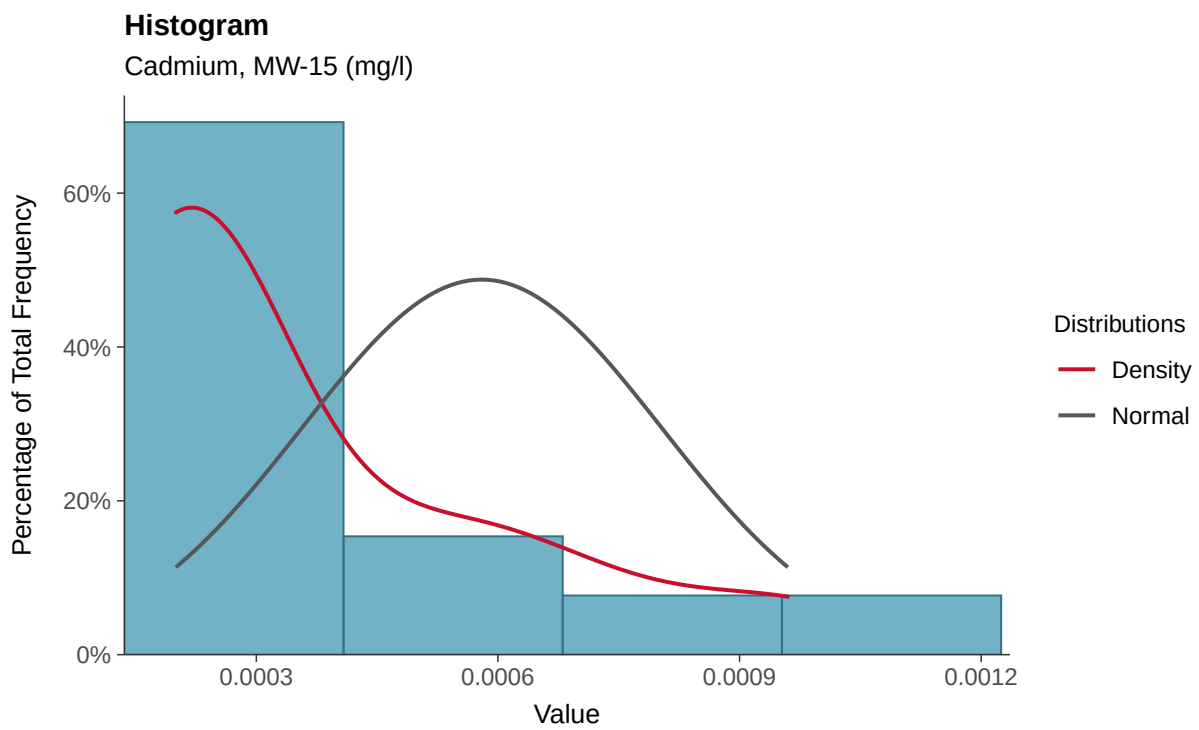
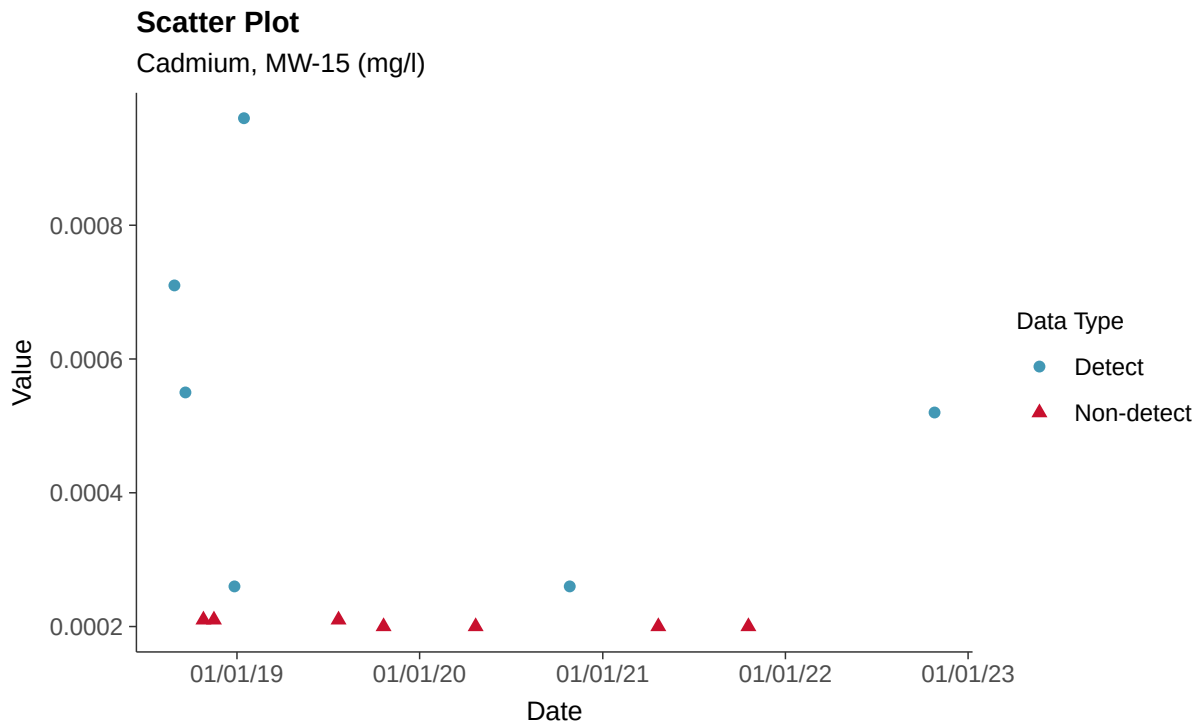
Beryllium, MW-15 (mg/l)

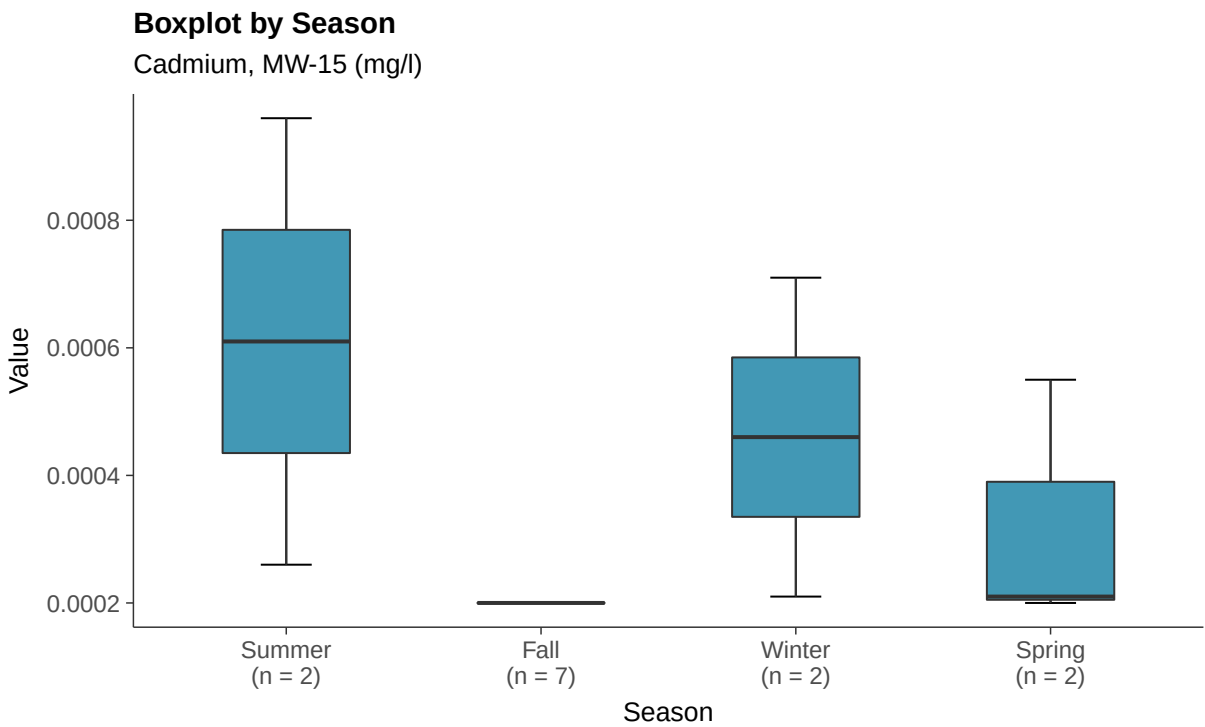
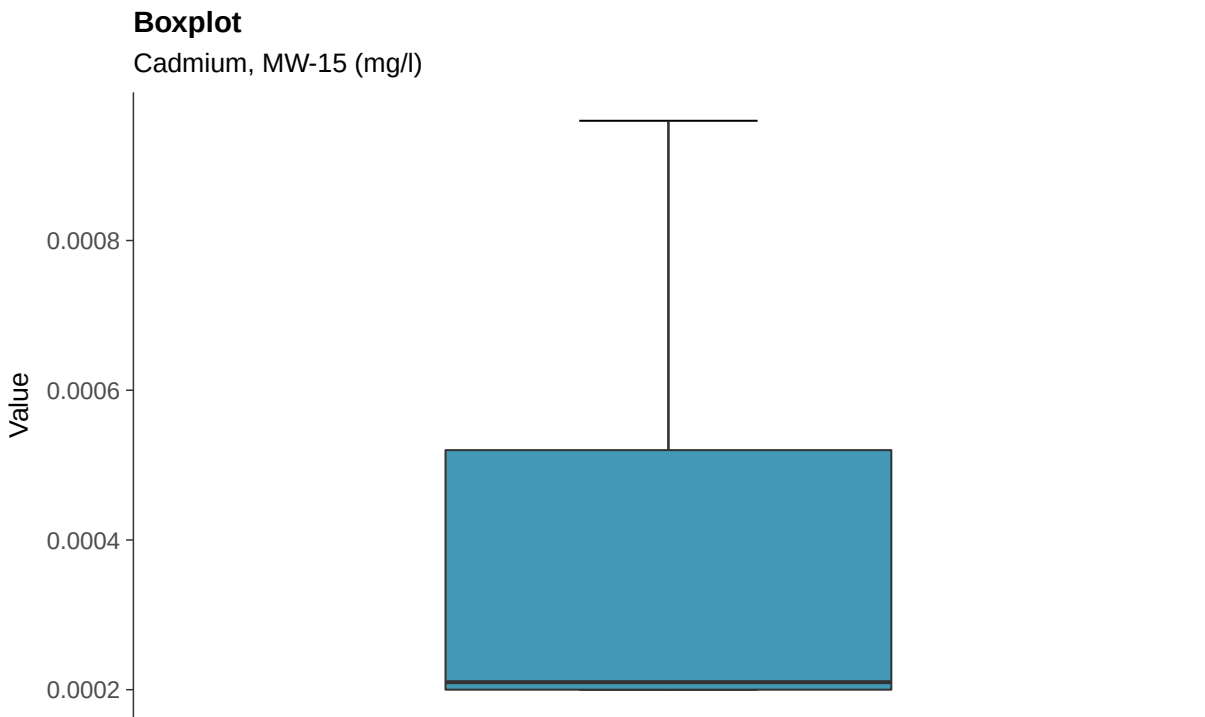




Appendix IV: Cadmium, MW-15

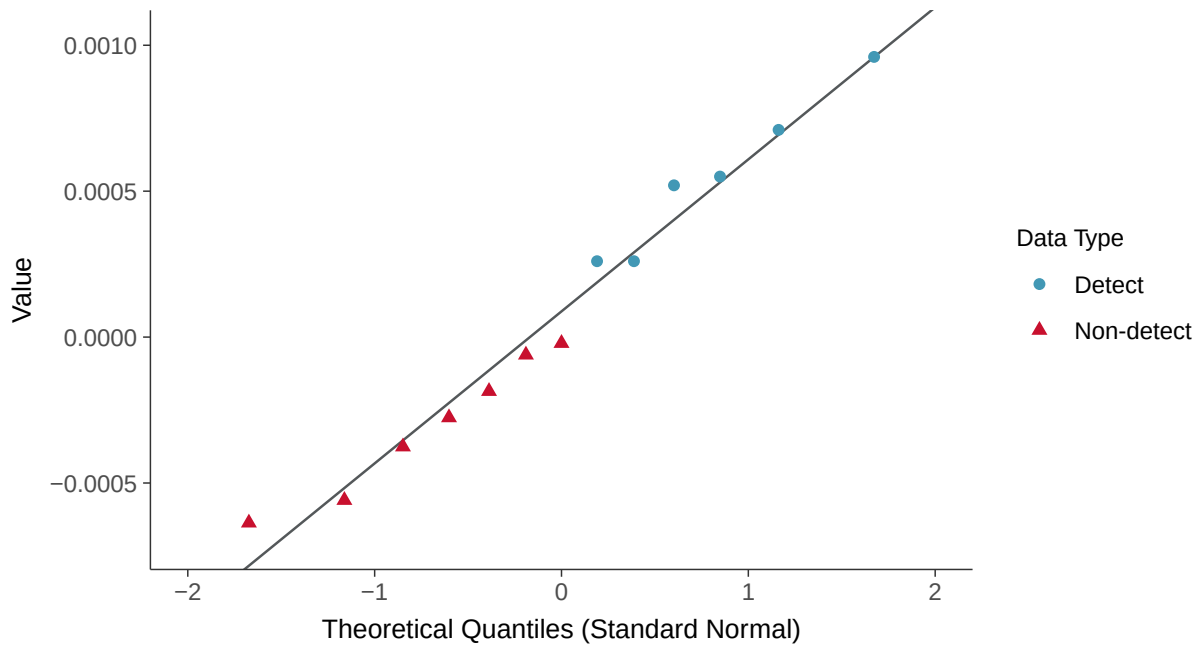
ID: 1_2_109





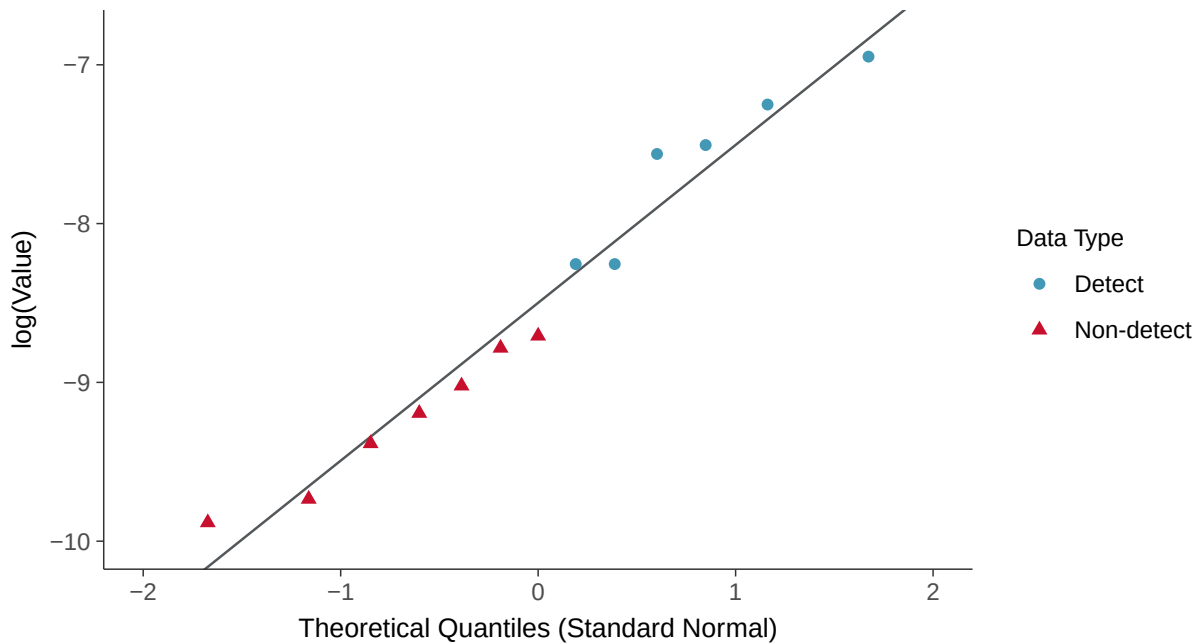
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-15 (mg/l)



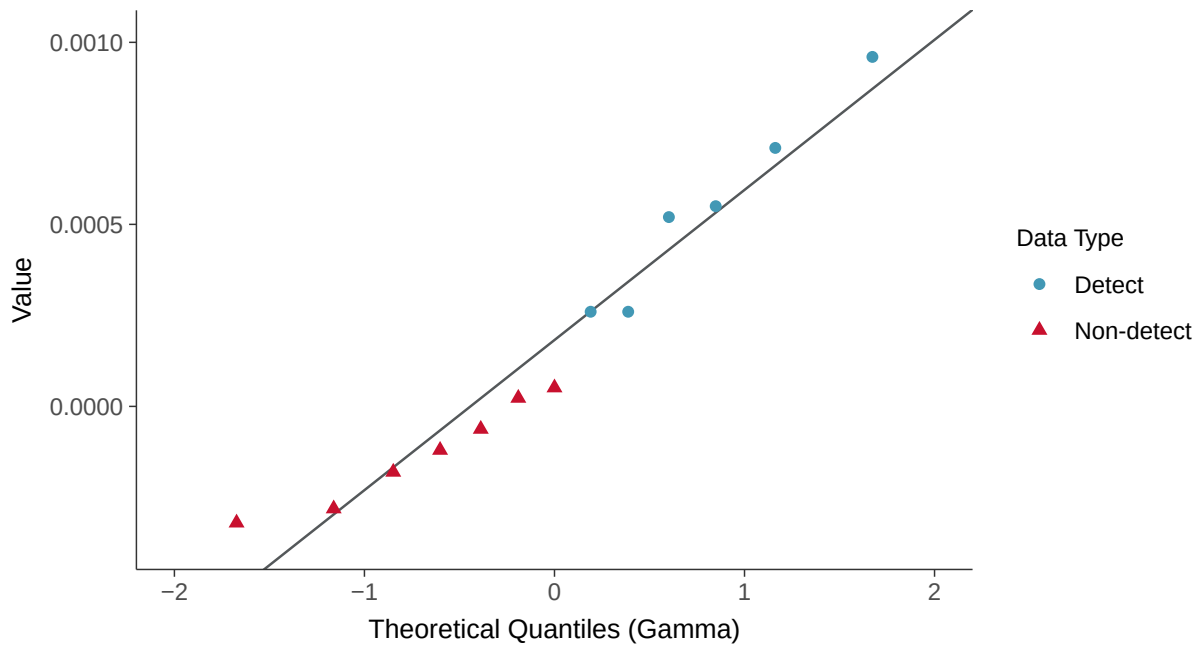
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-15 (mg/l)



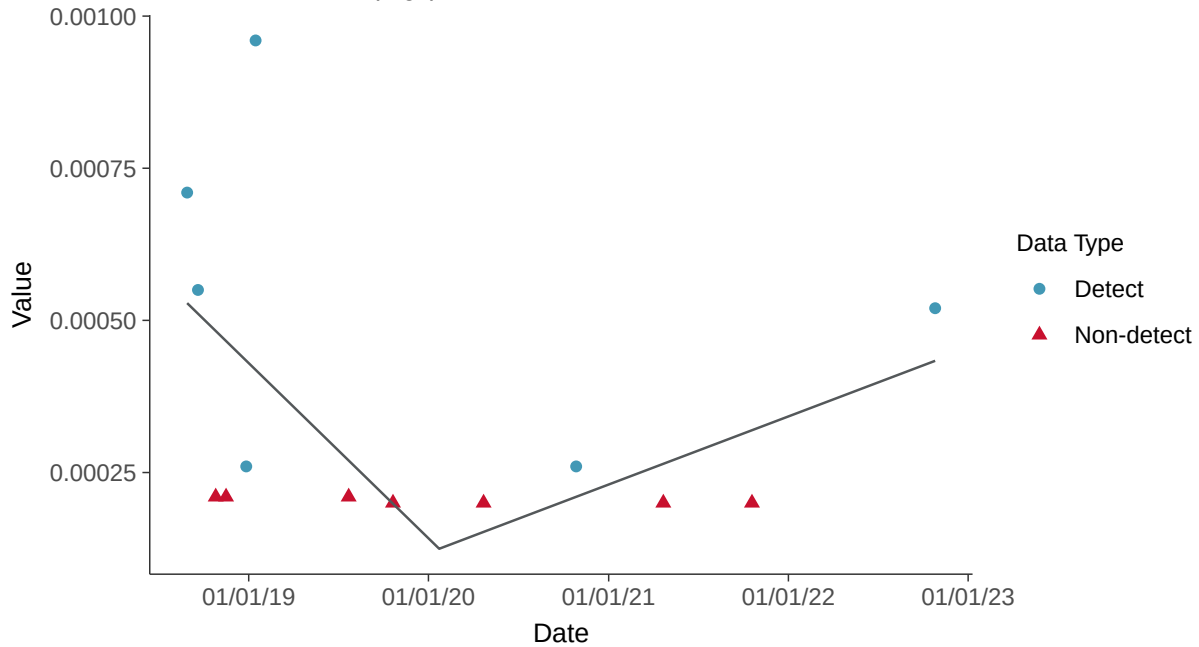
Gamma Q-Q plot using ROS Imputed Estimates

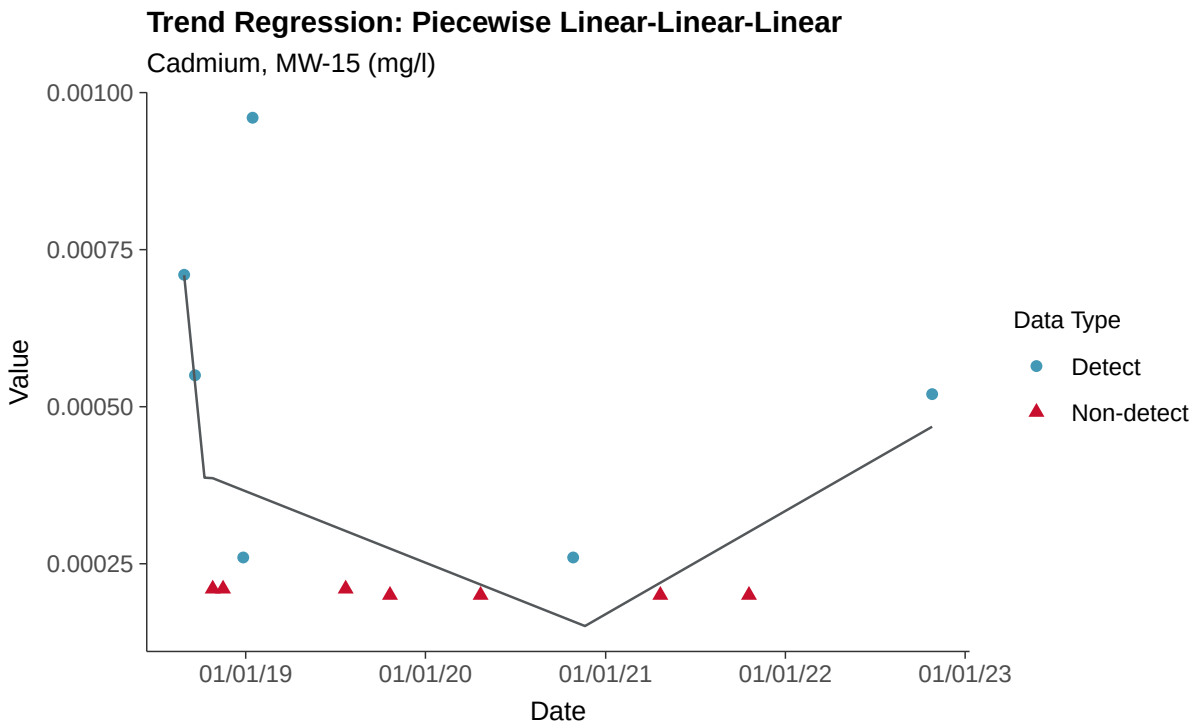
Cadmium, MW-15 (mg/l)



Trend Regression: Piecewise Linear-Linear

Cadmium, MW-15 (mg/l)



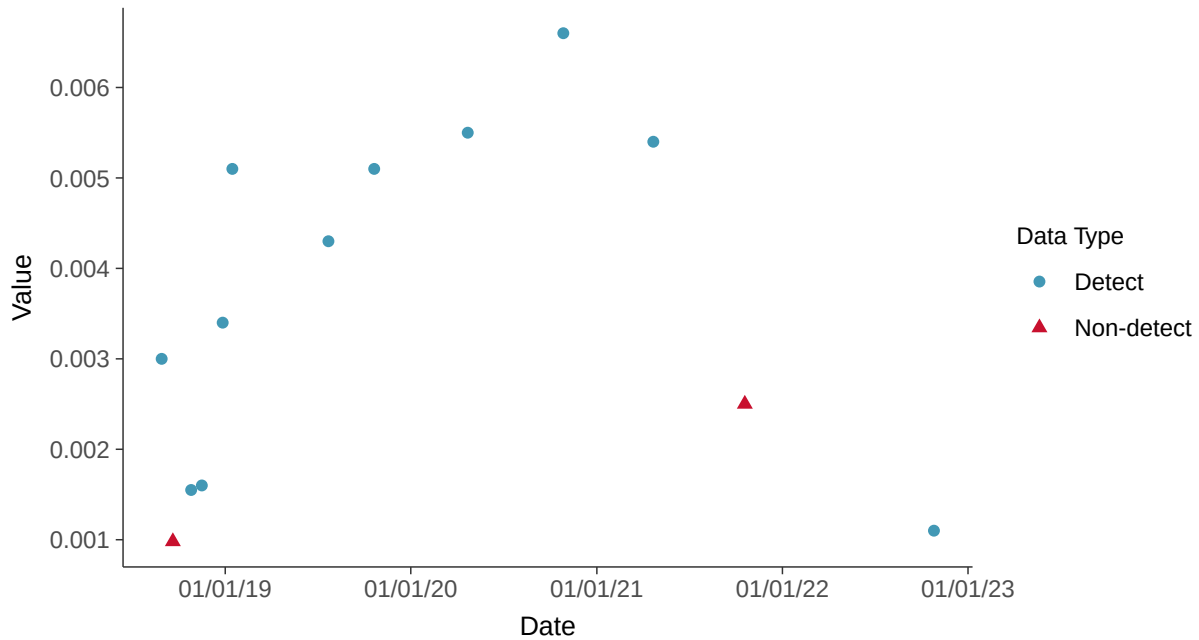


Appendix IV: Chromium, Total, MW-15

ID: 1_2_112

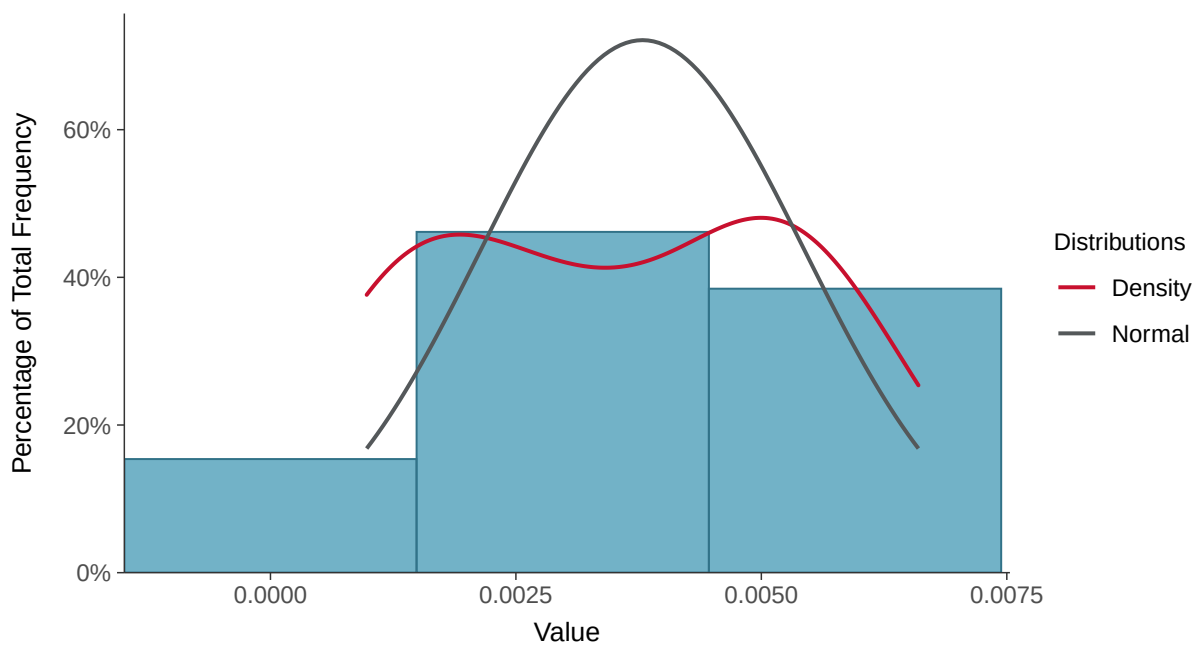
Scatter Plot

Chromium, Total, MW-15 (mg/l)



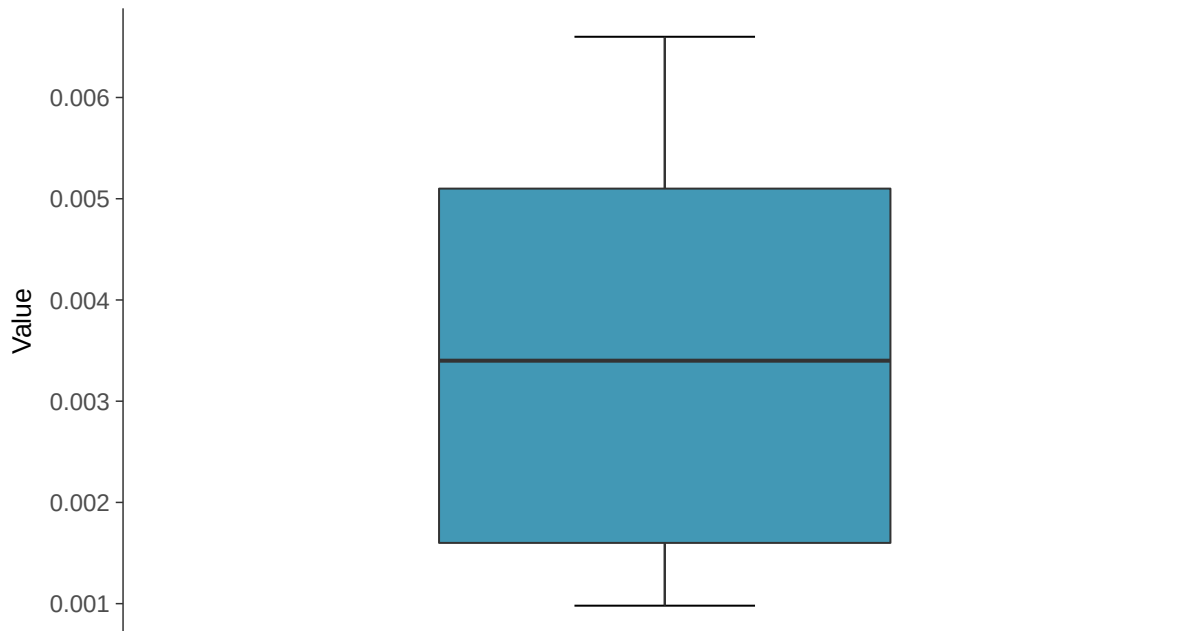
Histogram

Chromium, Total, MW-15 (mg/l)



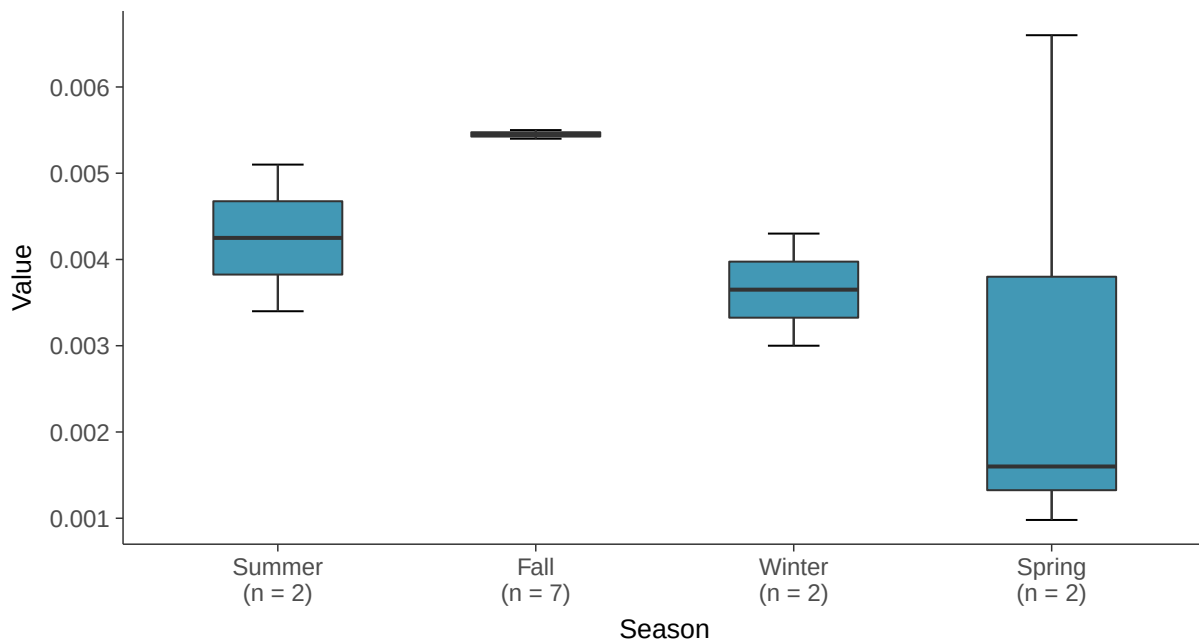
Boxplot

Chromium, Total, MW-15 (mg/l)



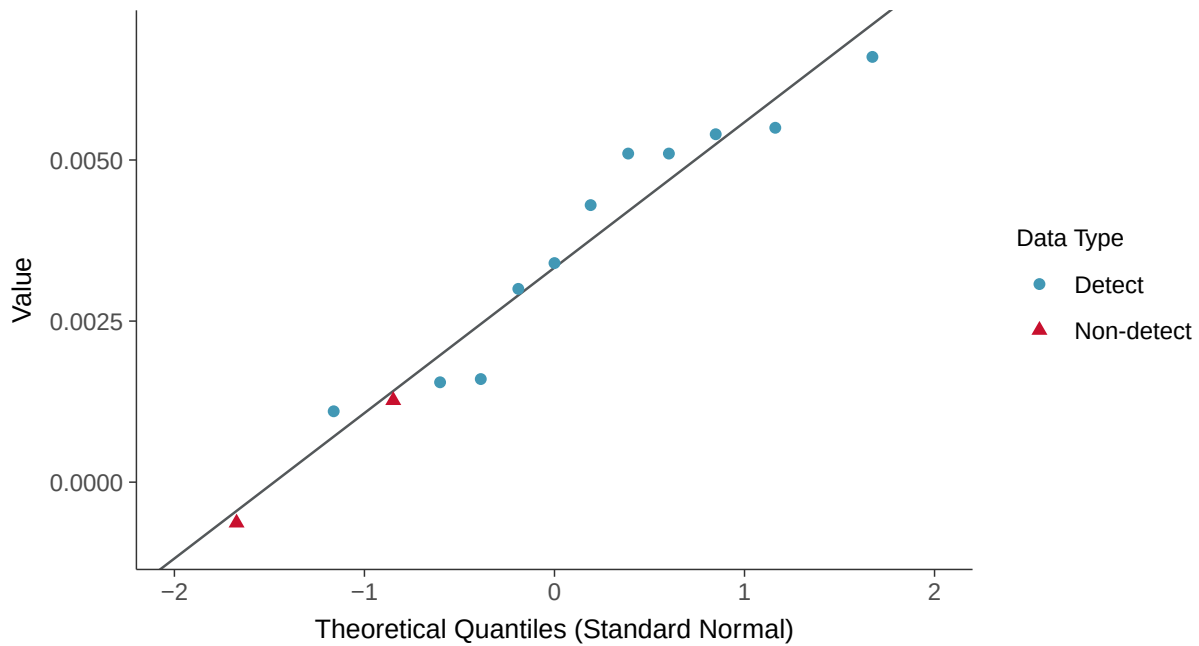
Boxplot by Season

Chromium, Total, MW-15 (mg/l)



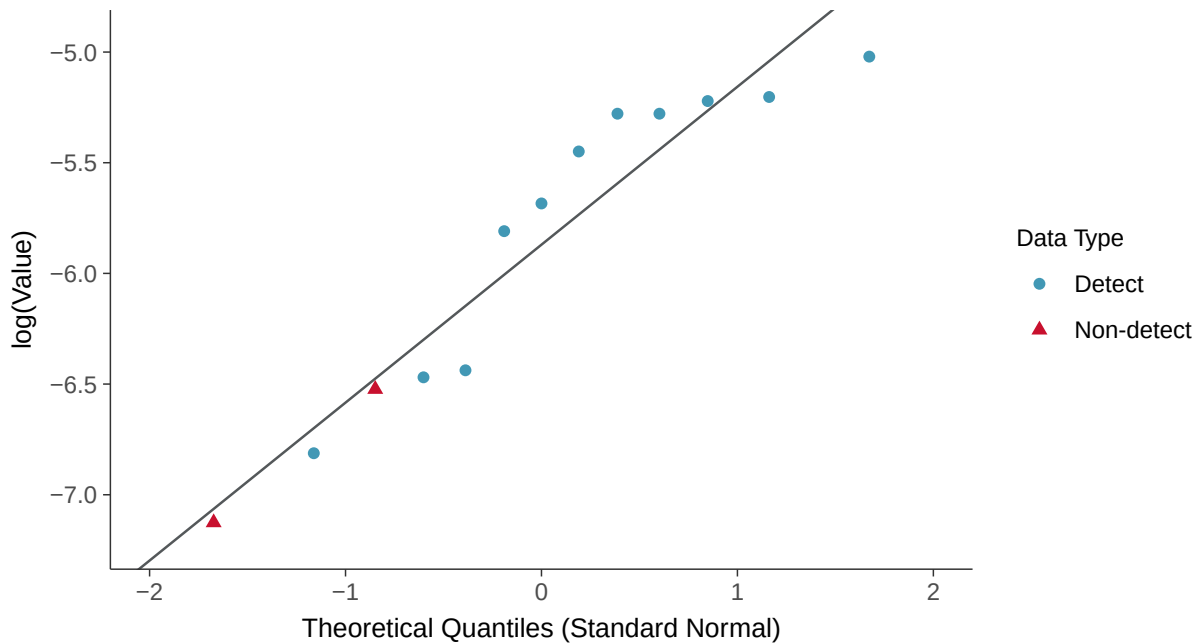
Normal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-15 (mg/l)



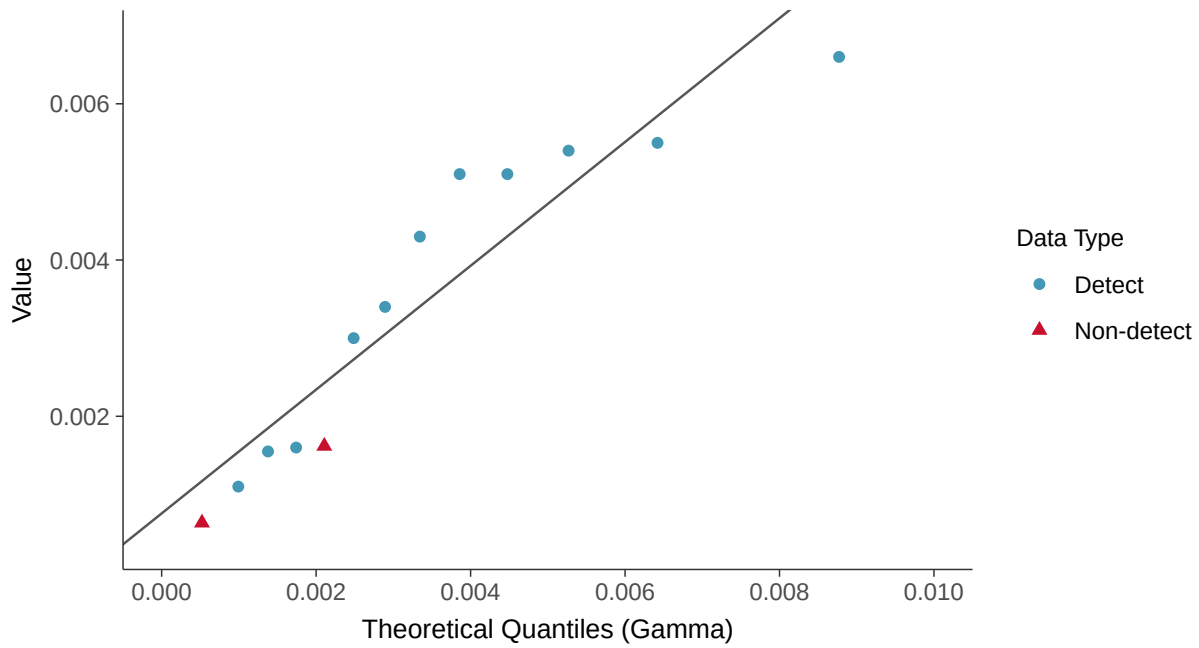
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-15 (mg/l)



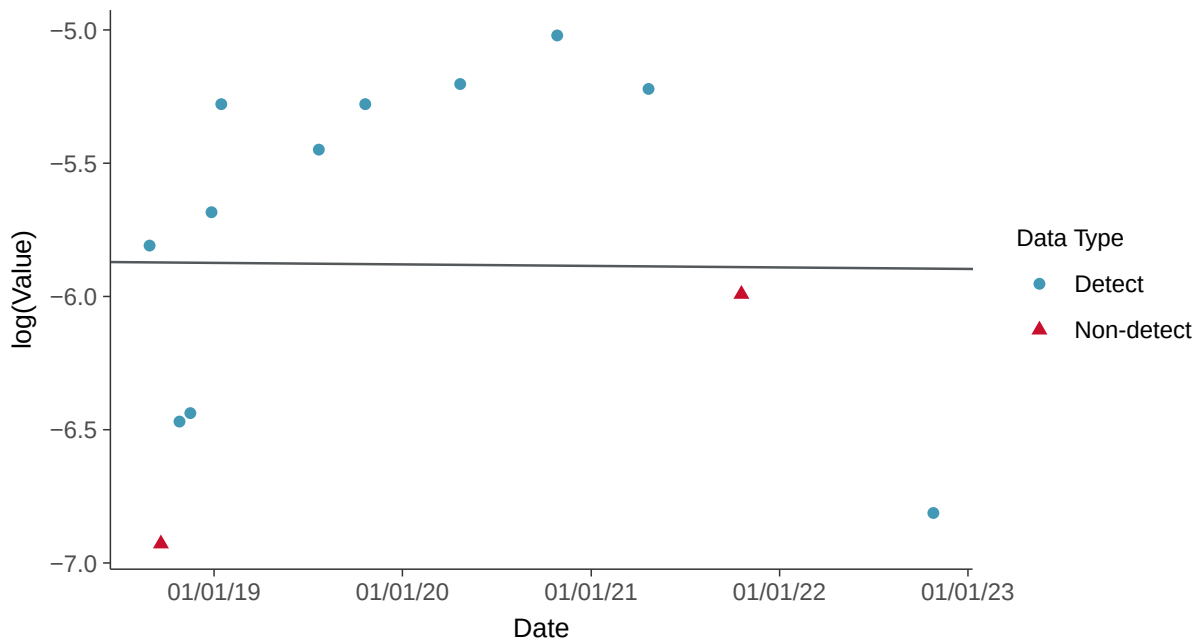
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-15 (mg/l)



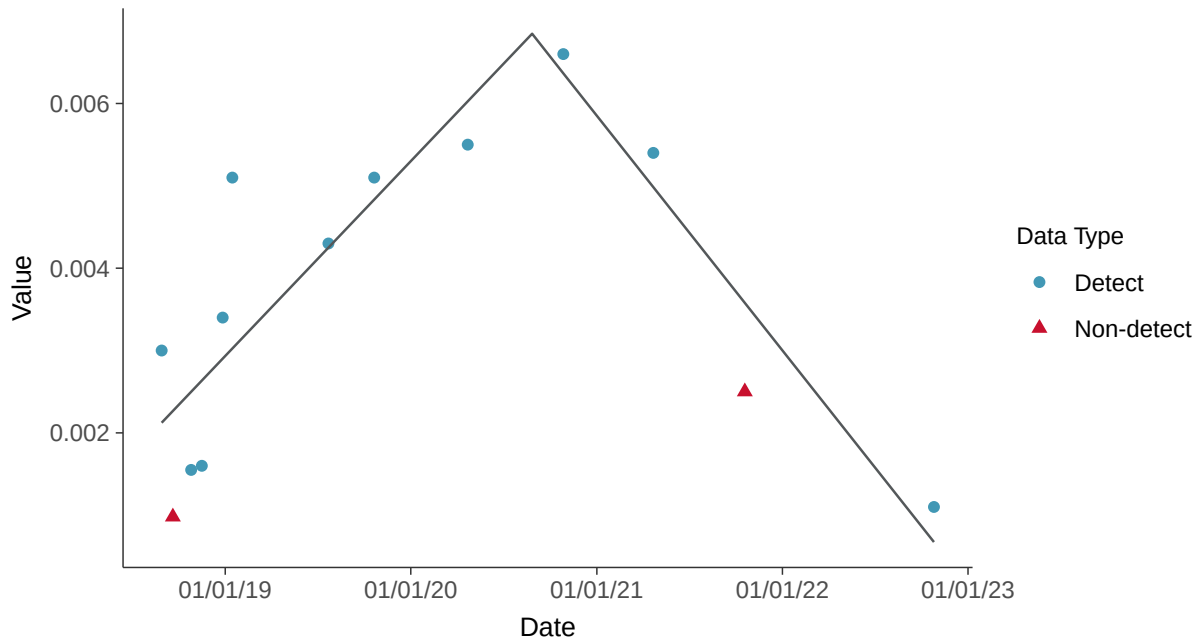
Trend Regression: Lognormal MLE

Chromium, Total, MW-15 (mg/l)



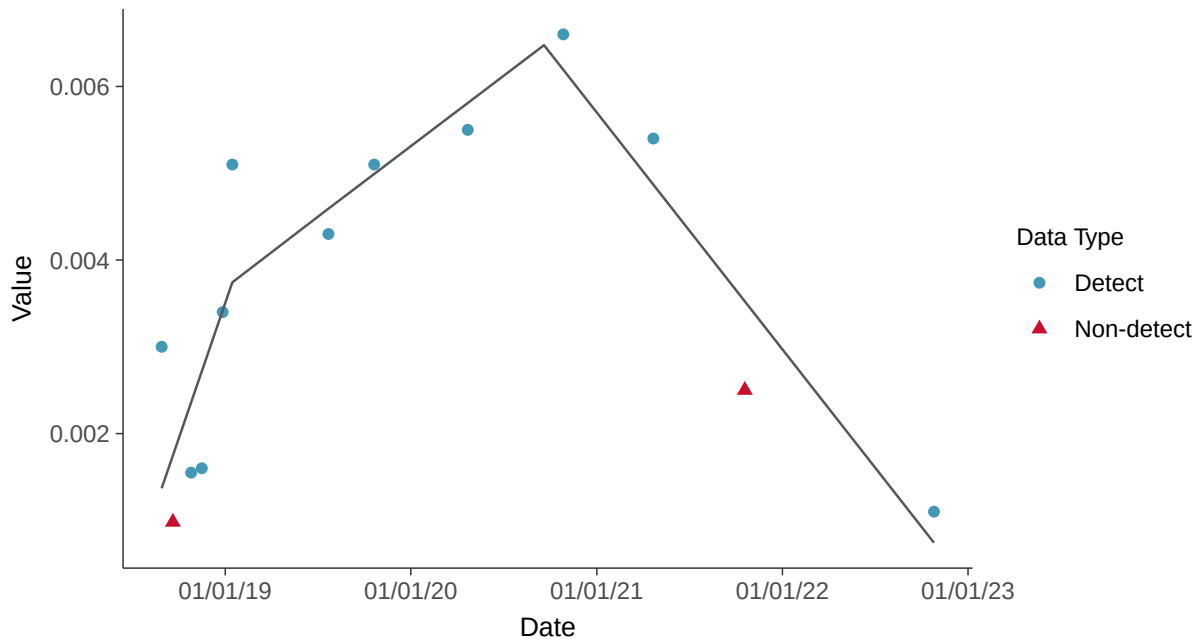
Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-15 (mg/l)



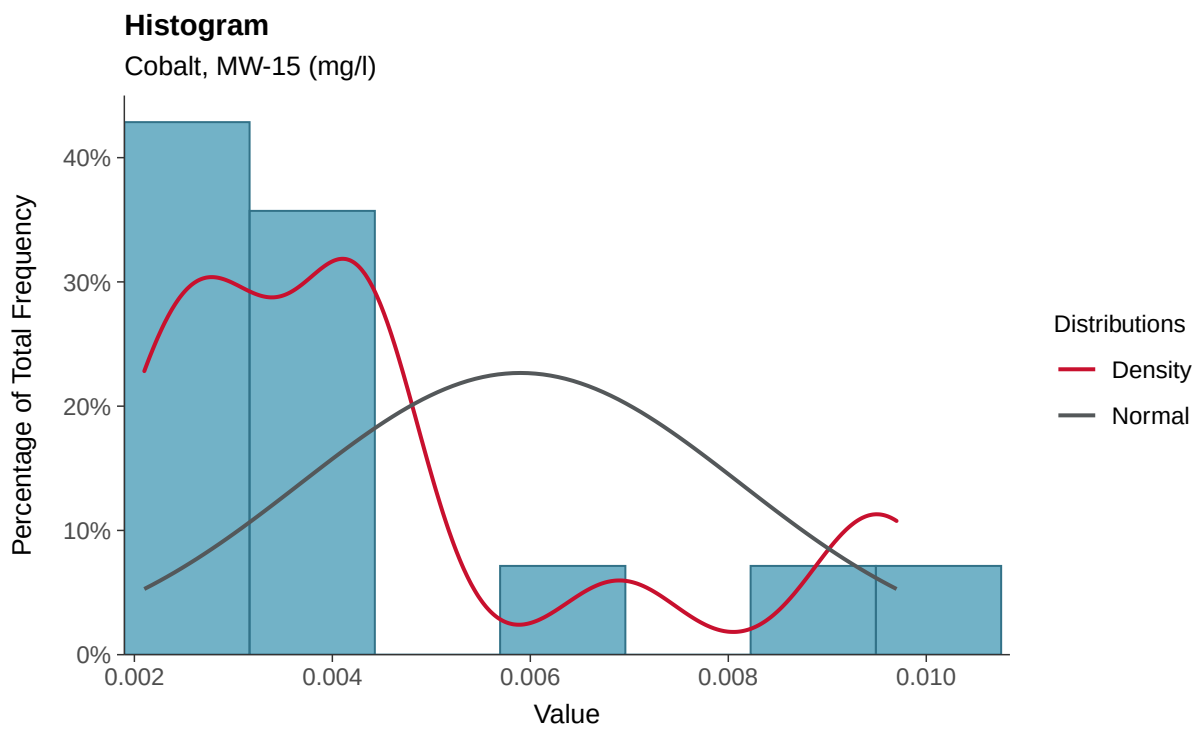
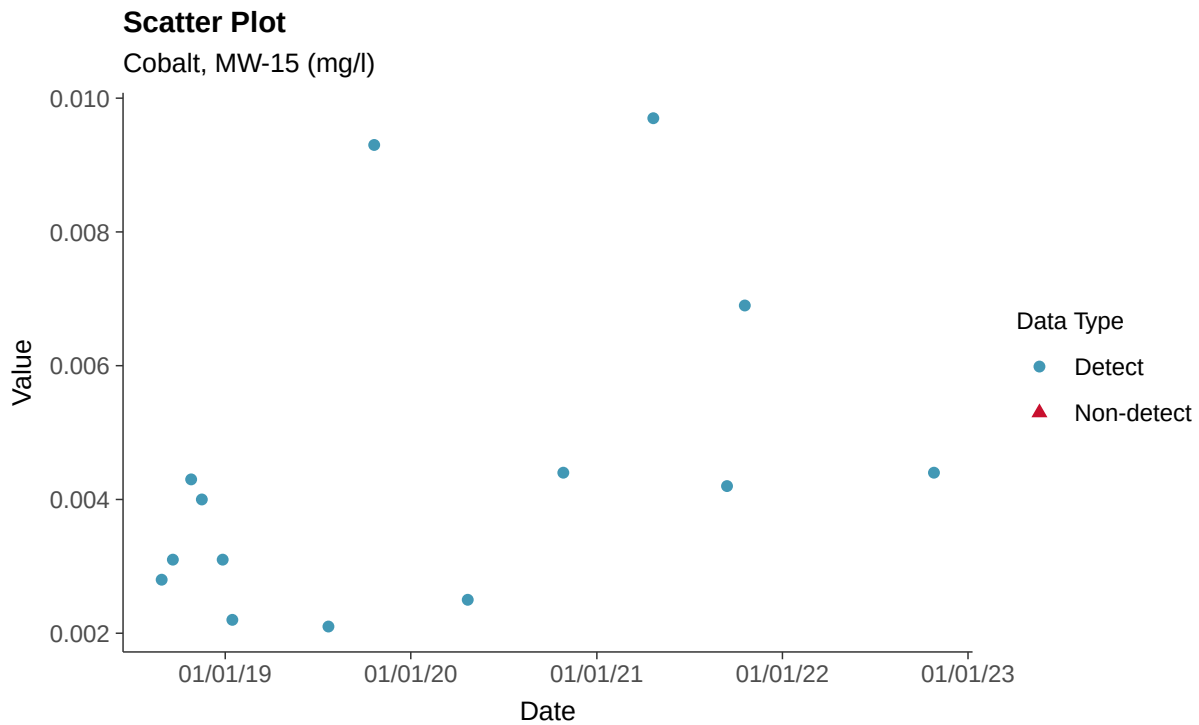
Trend Regression: Piecewise Linear-Linear-Linear

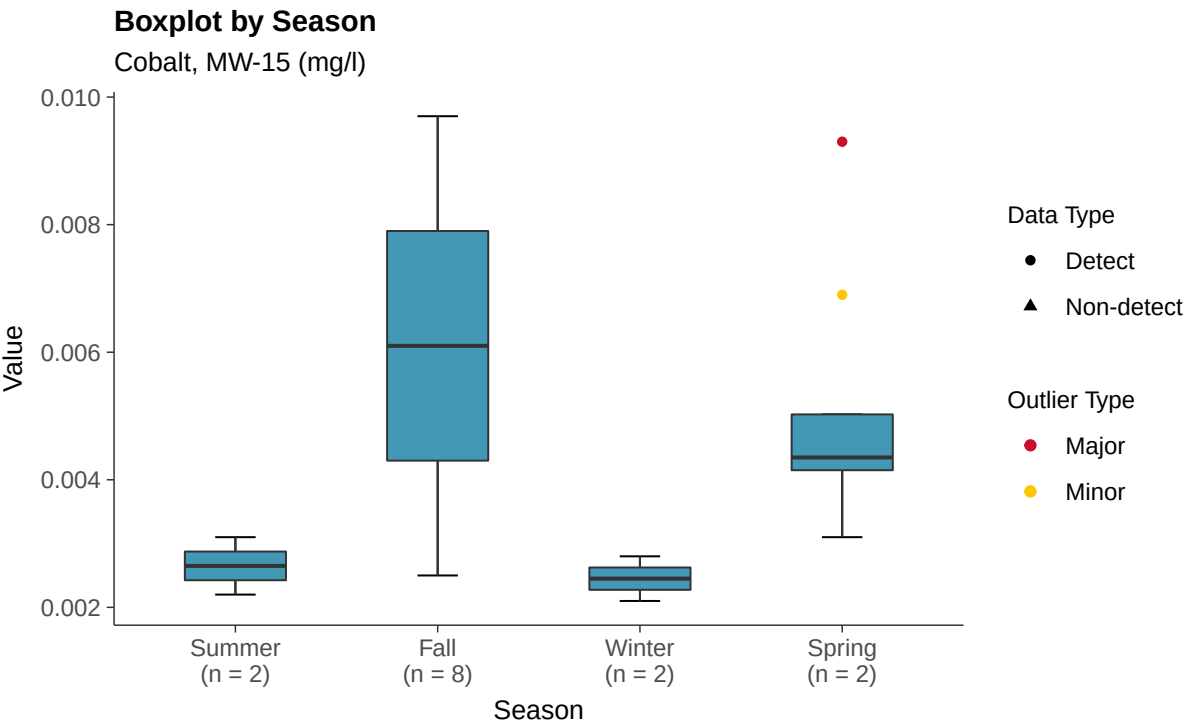
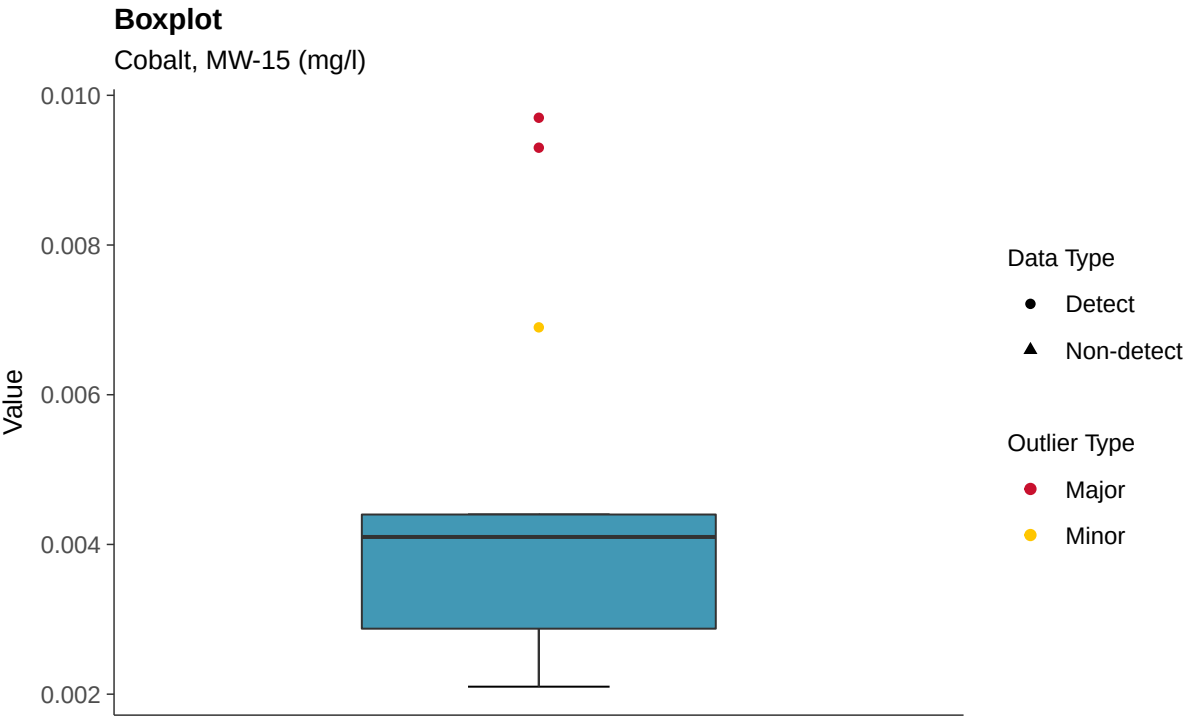
Chromium, Total, MW-15 (mg/l)



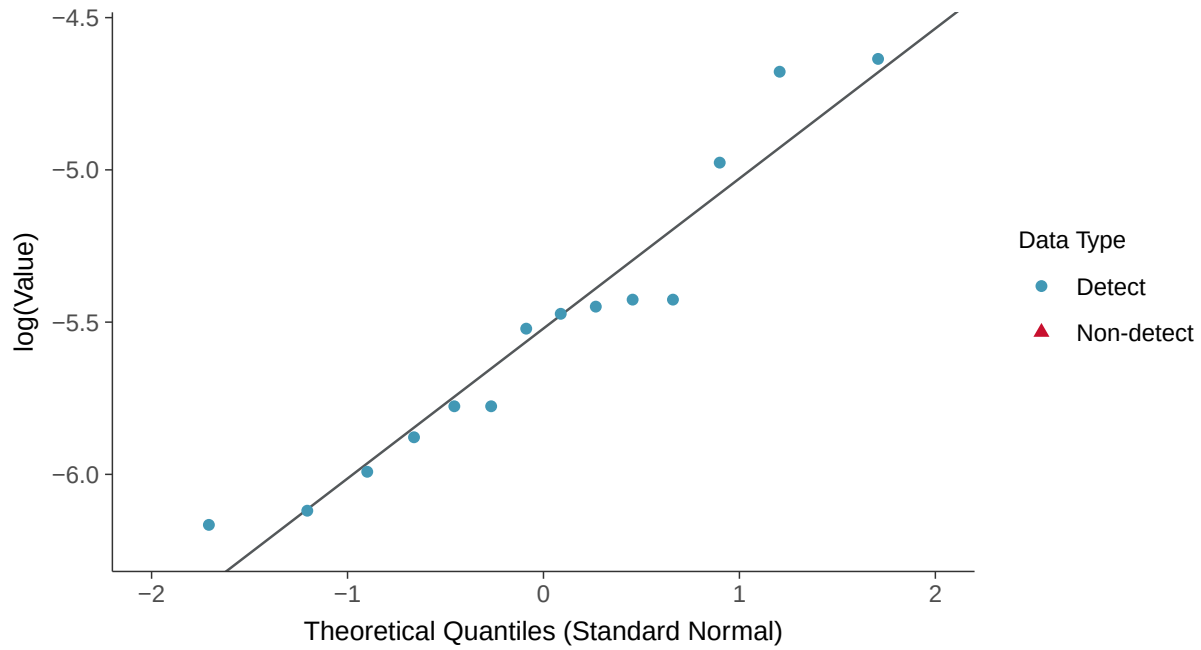
Appendix IV: Cobalt, MW-15

ID: 1_2_113

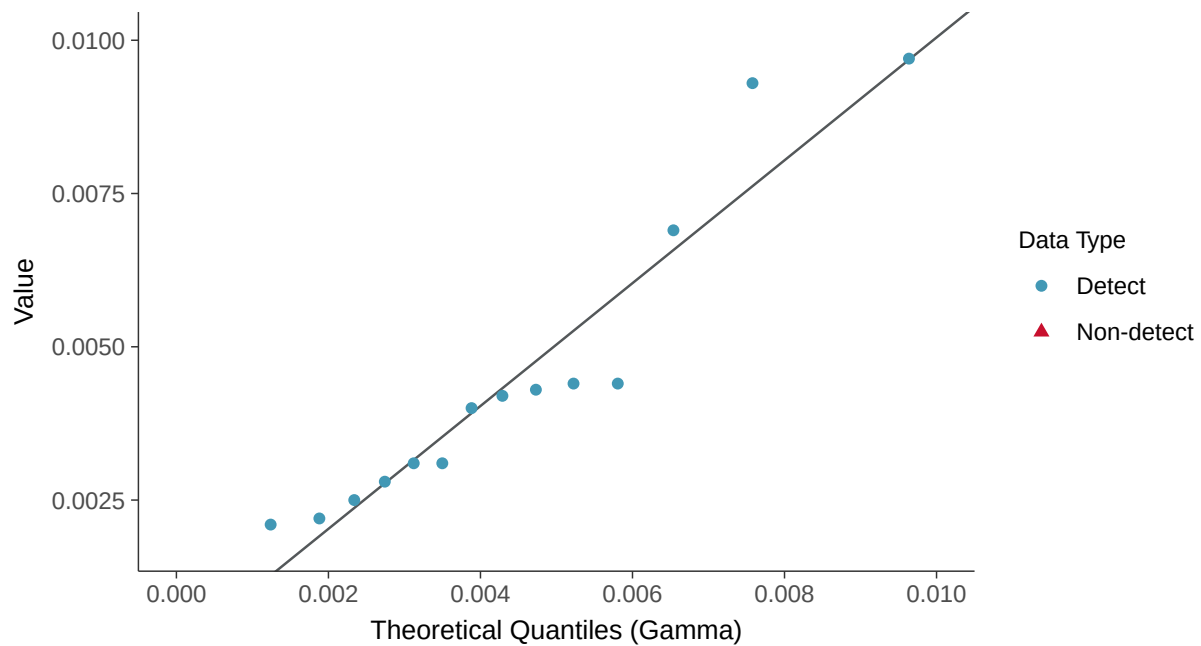




Lognormal Q-Q plot
Cobalt, MW-15 (mg/l)

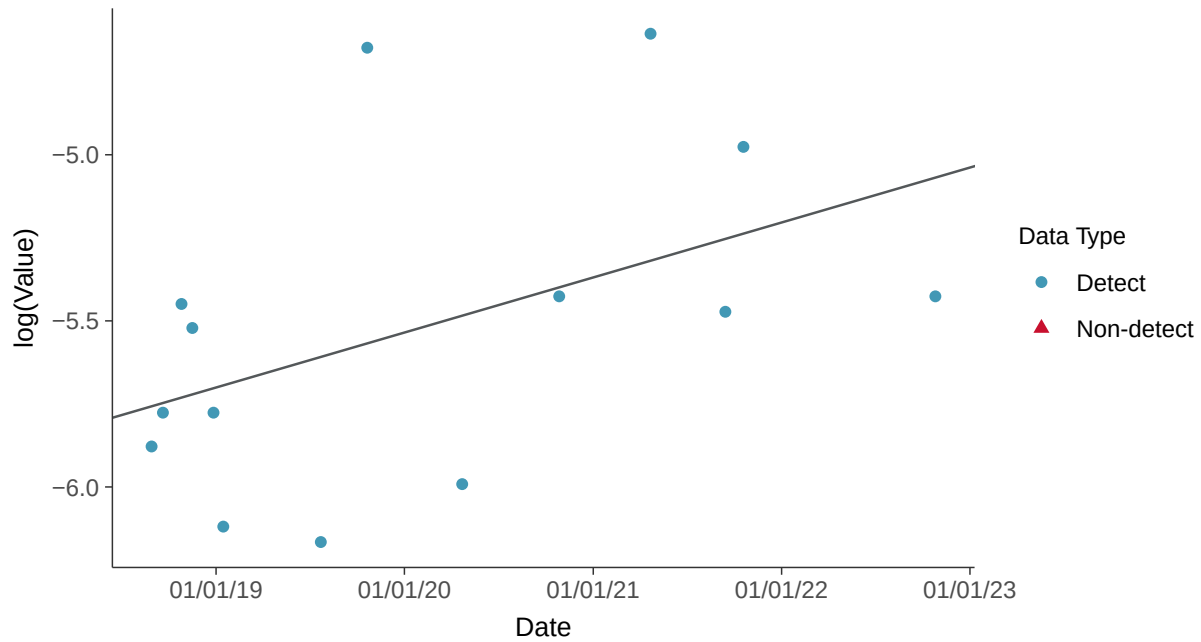


Gamma Q-Q plot
Cobalt, MW-15 (mg/l)



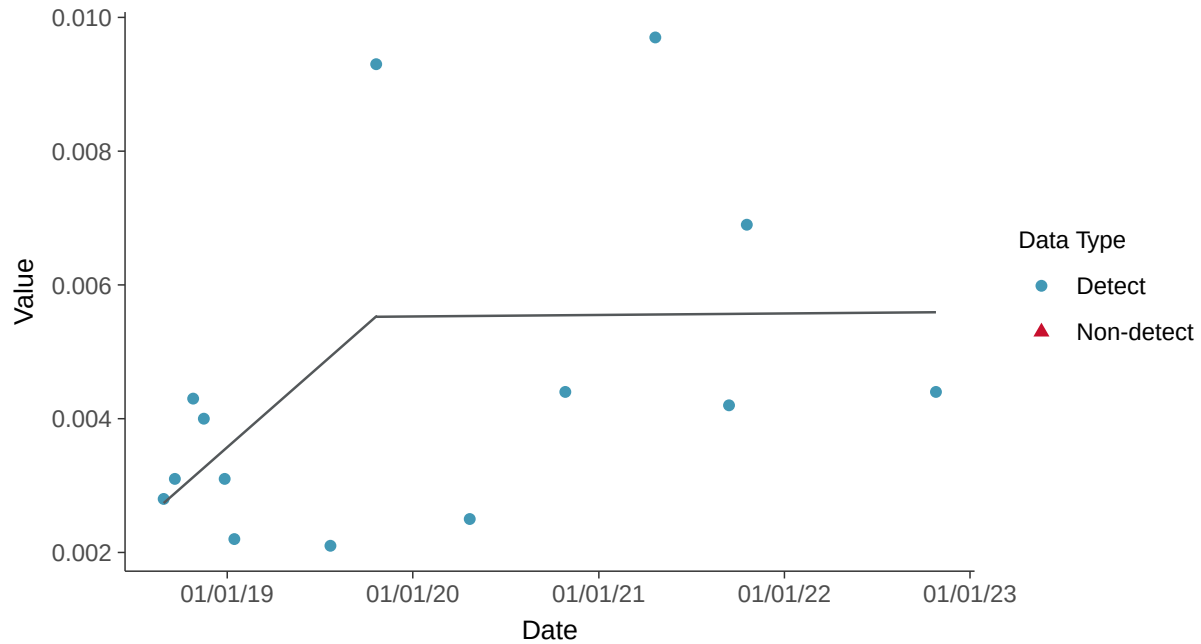
Trend Regression: Lognormal MLE

Cobalt, MW-15 (mg/l)



Trend Regression: Piecewise Linear-Linear

Cobalt, MW-15 (mg/l)

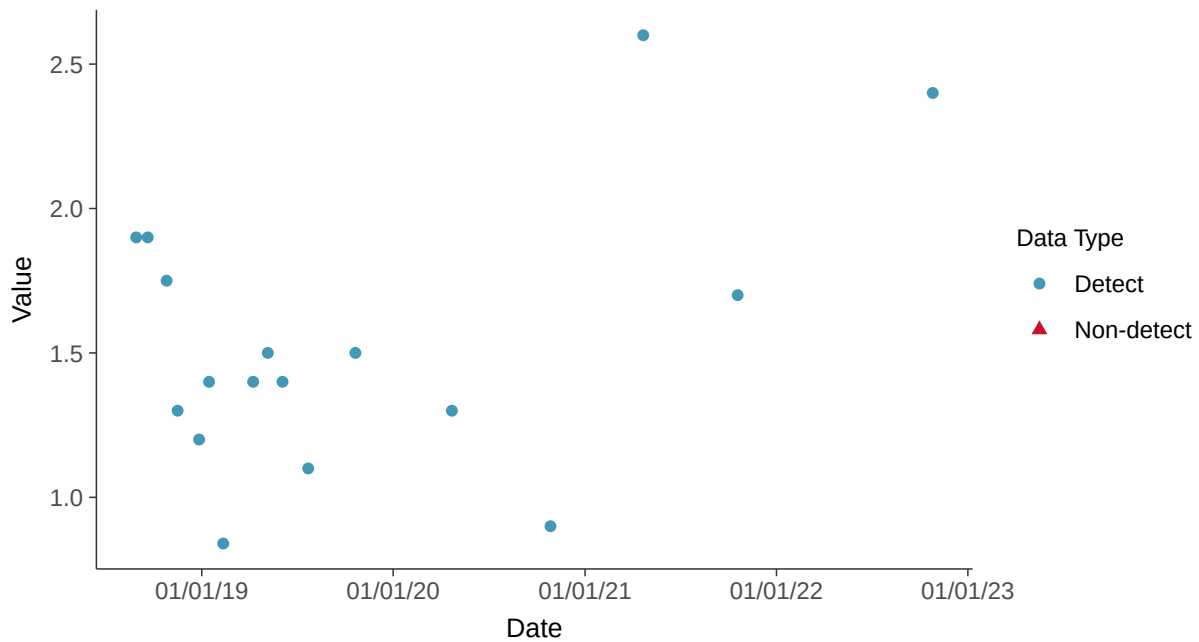


Appendix IV: Fluoride (App IV), MW-15

ID: 1_2_116

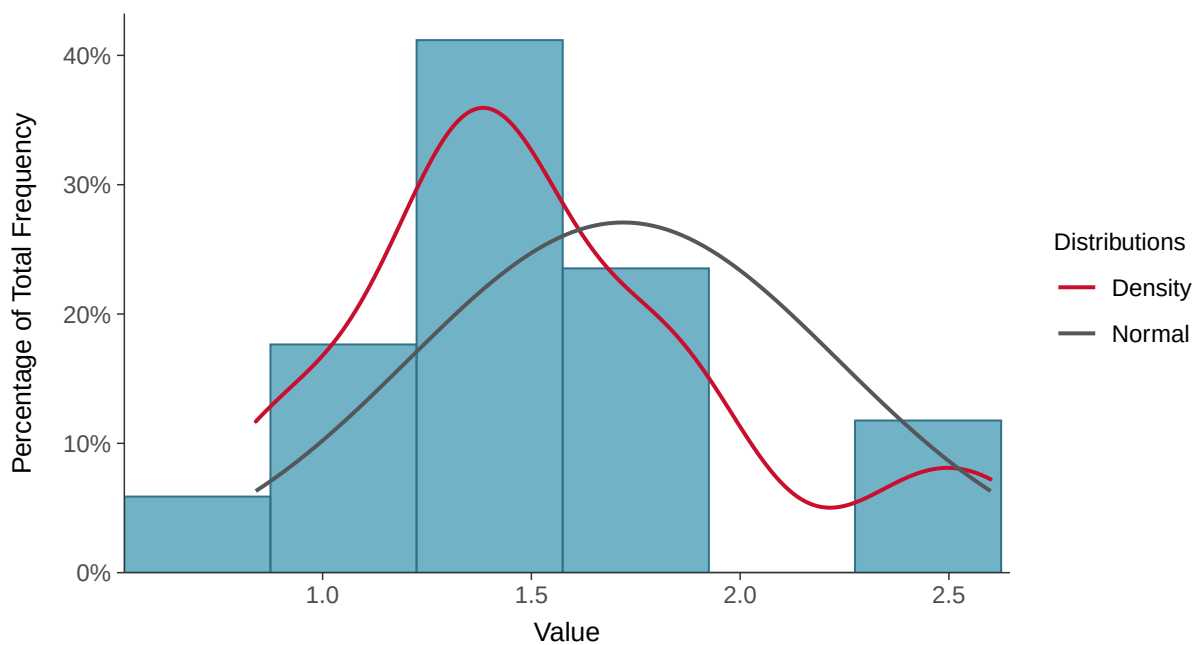
Scatter Plot

Fluoride (App IV), MW-15 (mg/l)



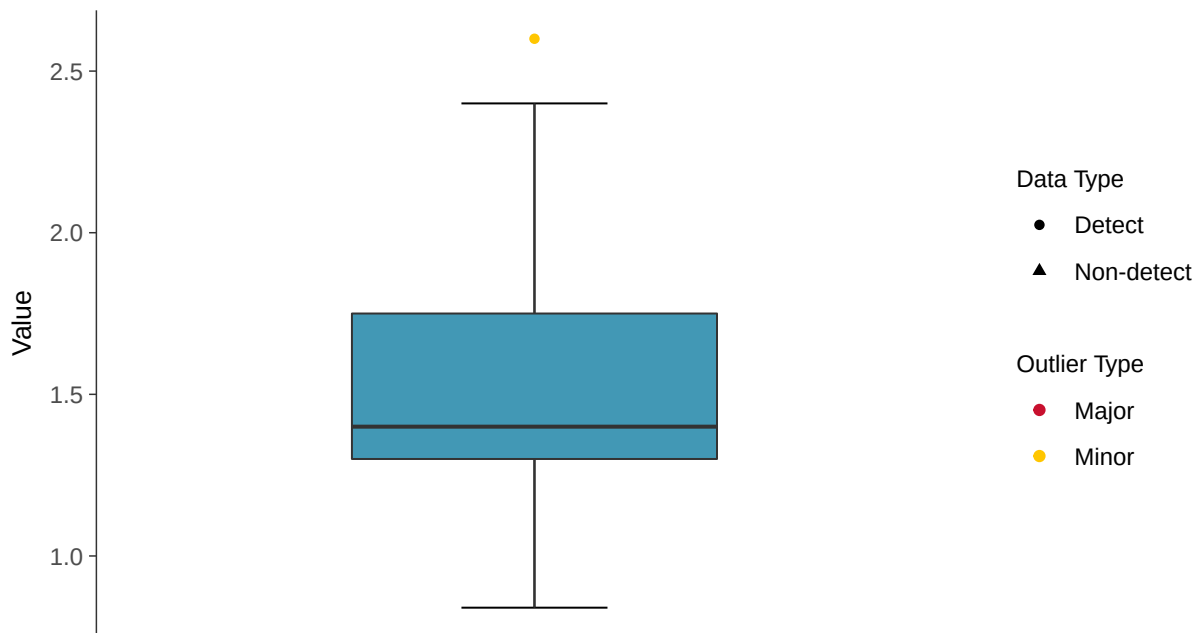
Histogram

Fluoride (App IV), MW-15 (mg/l)



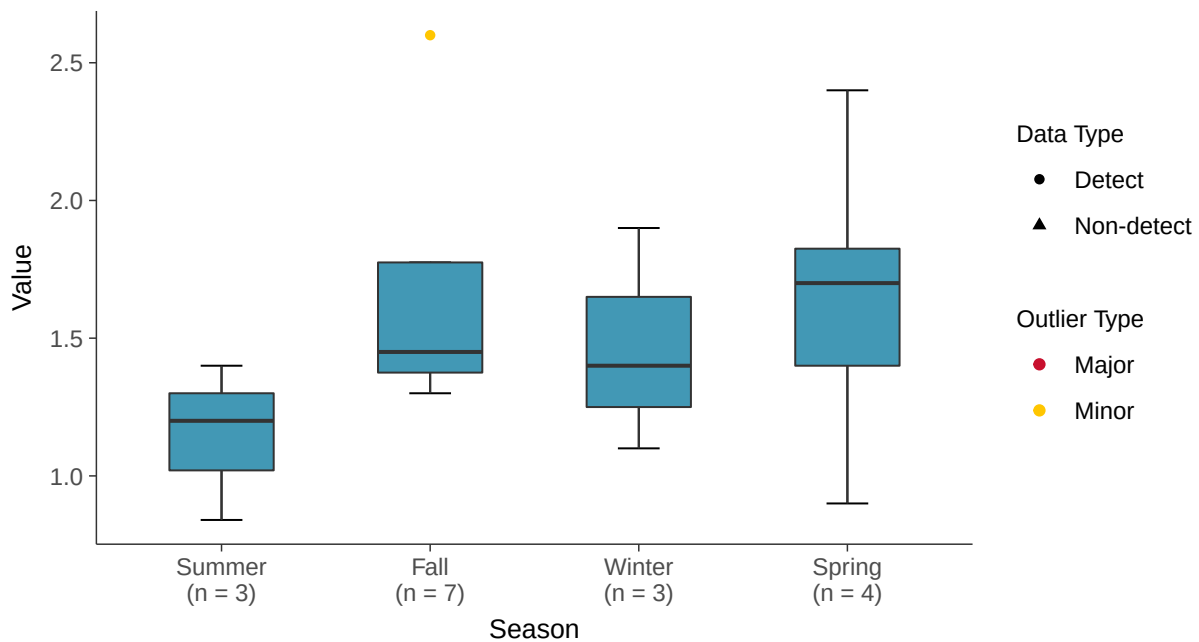
Boxplot

Fluoride (App IV), MW-15 (mg/l)



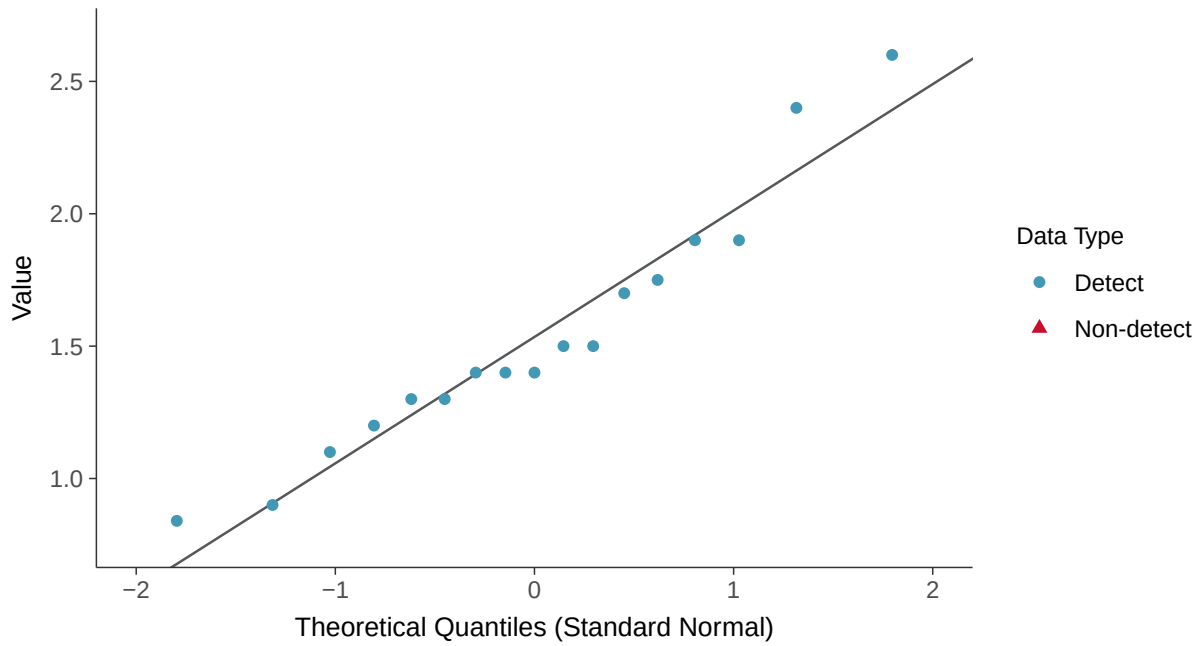
Boxplot by Season

Fluoride (App IV), MW-15 (mg/l)



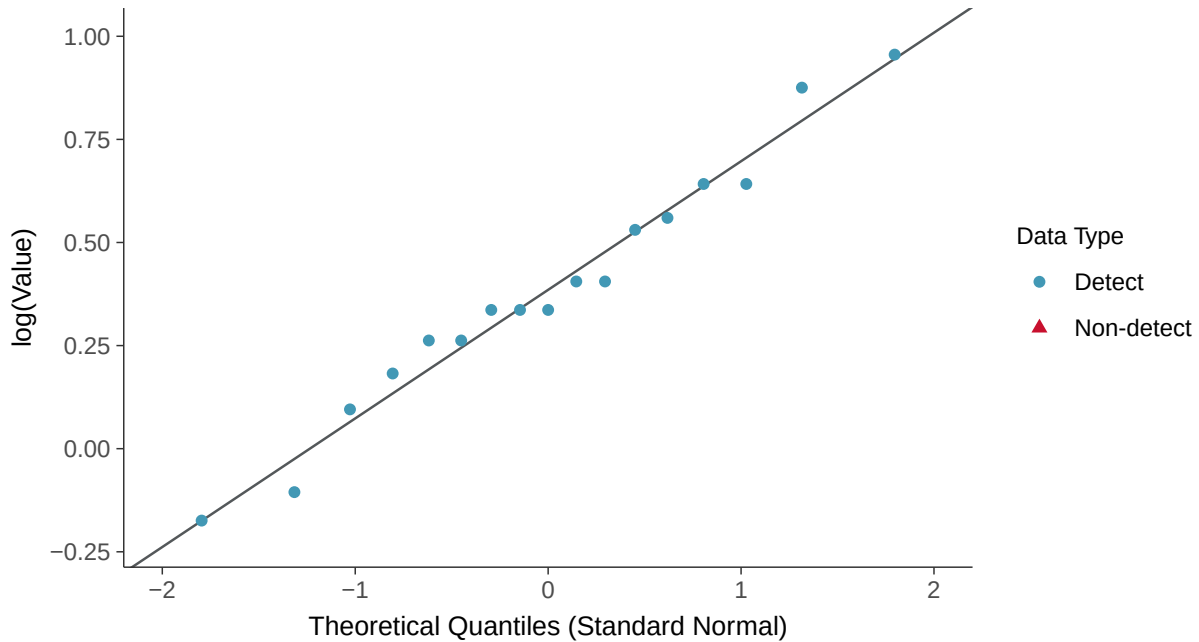
Normal Q-Q plot

Fluoride (App IV), MW-15 (mg/l)



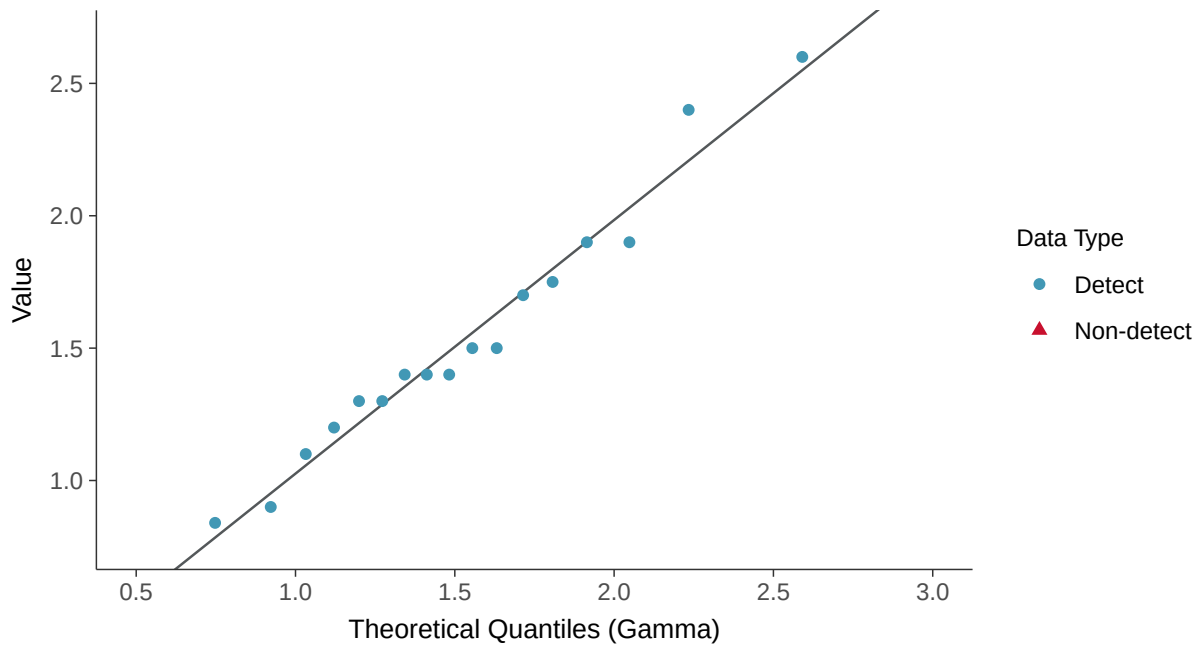
Lognormal Q-Q plot

Fluoride (App IV), MW-15 (mg/l)



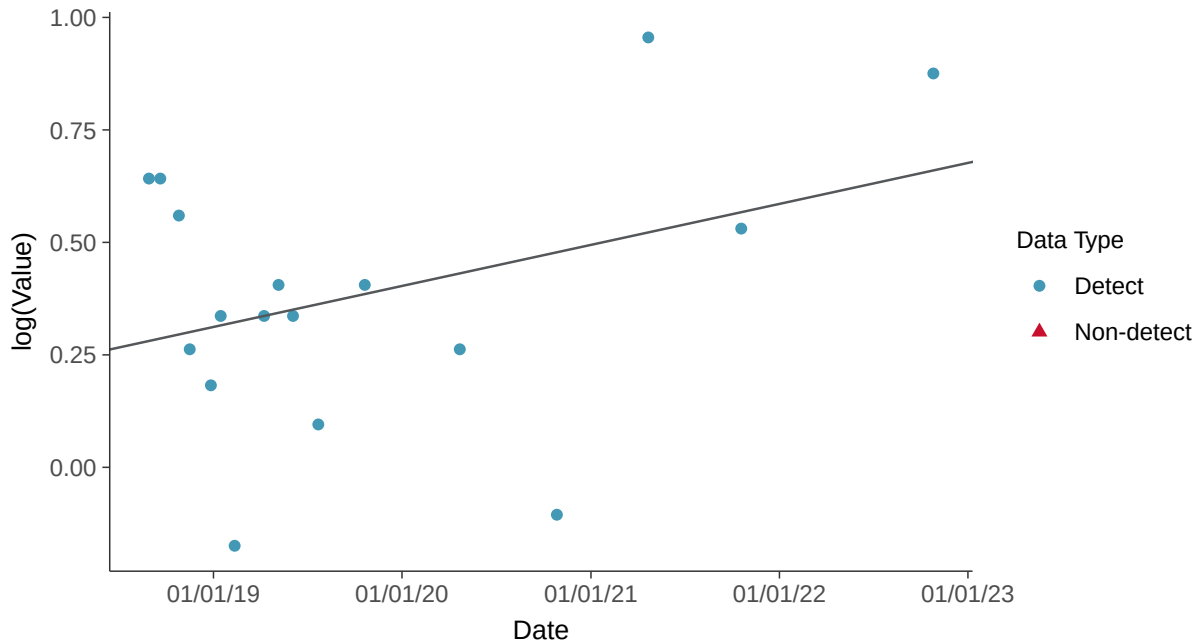
Gamma Q-Q plot

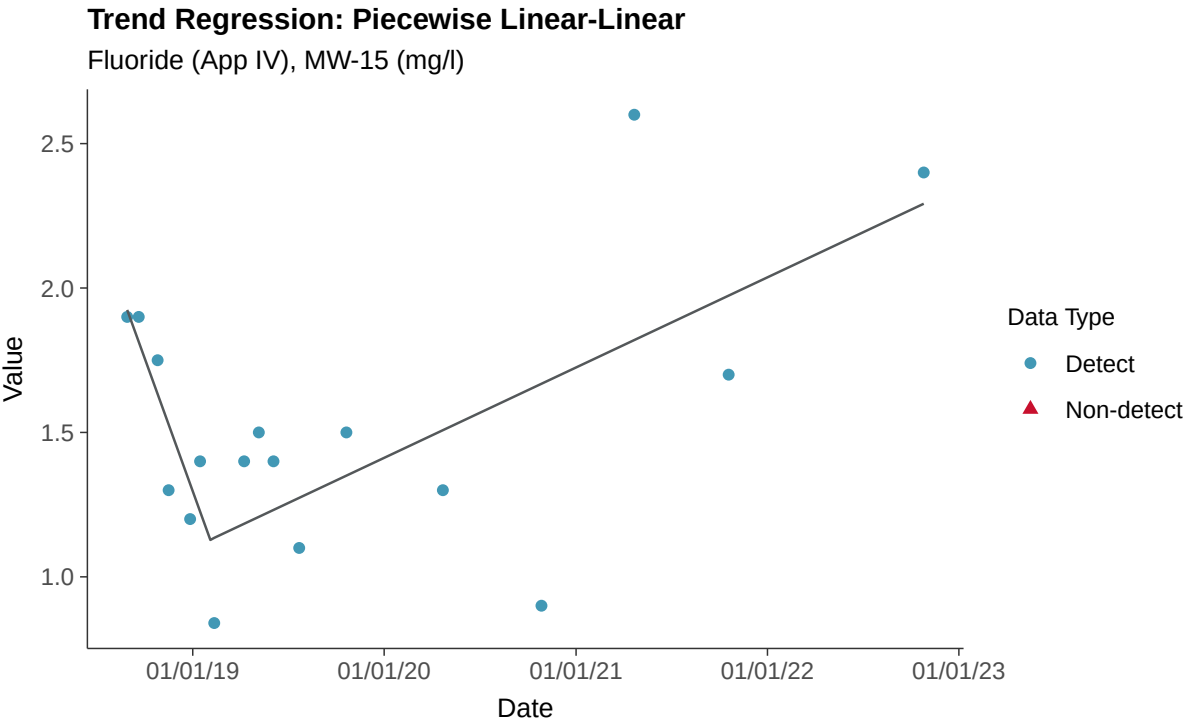
Fluoride (App IV), MW-15 (mg/l)



Trend Regression: Lognormal MLE

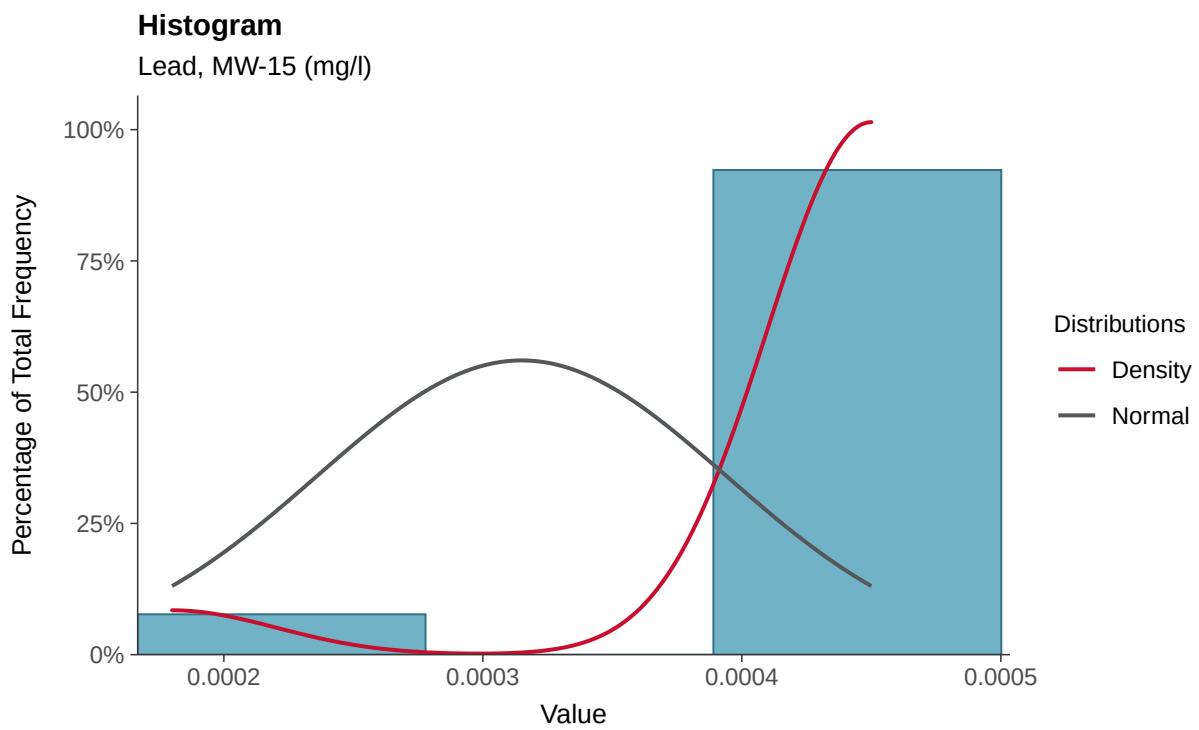
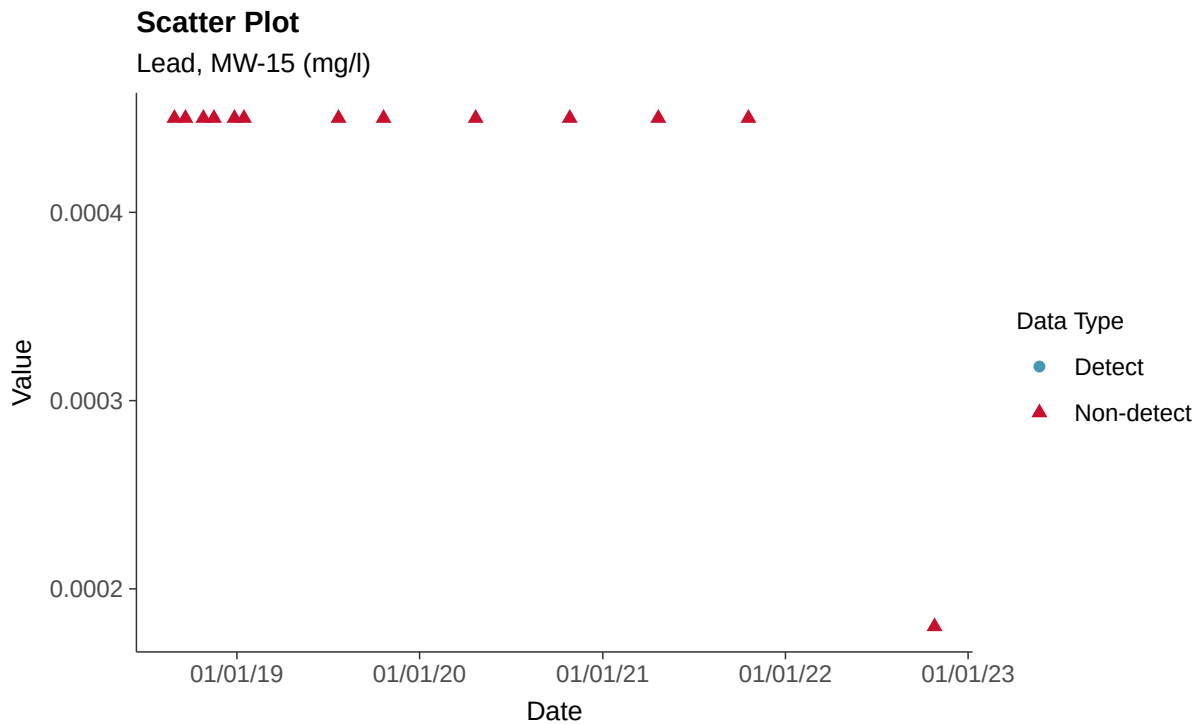
Fluoride (App IV), MW-15 (mg/l)

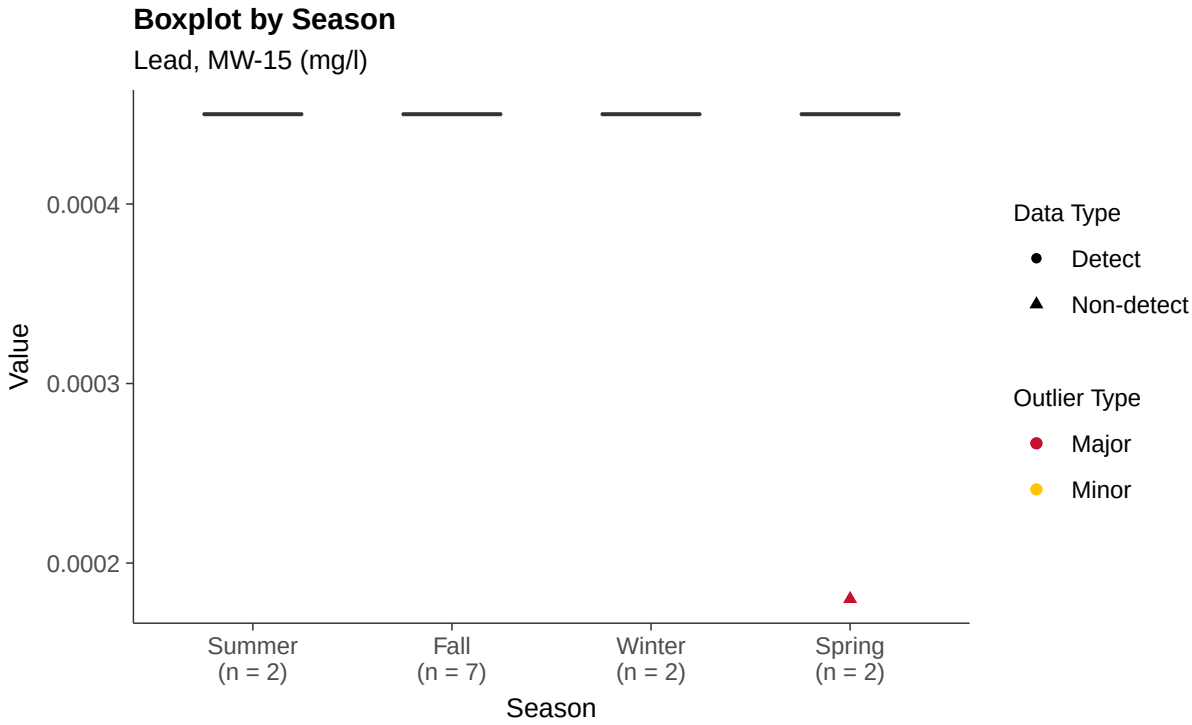
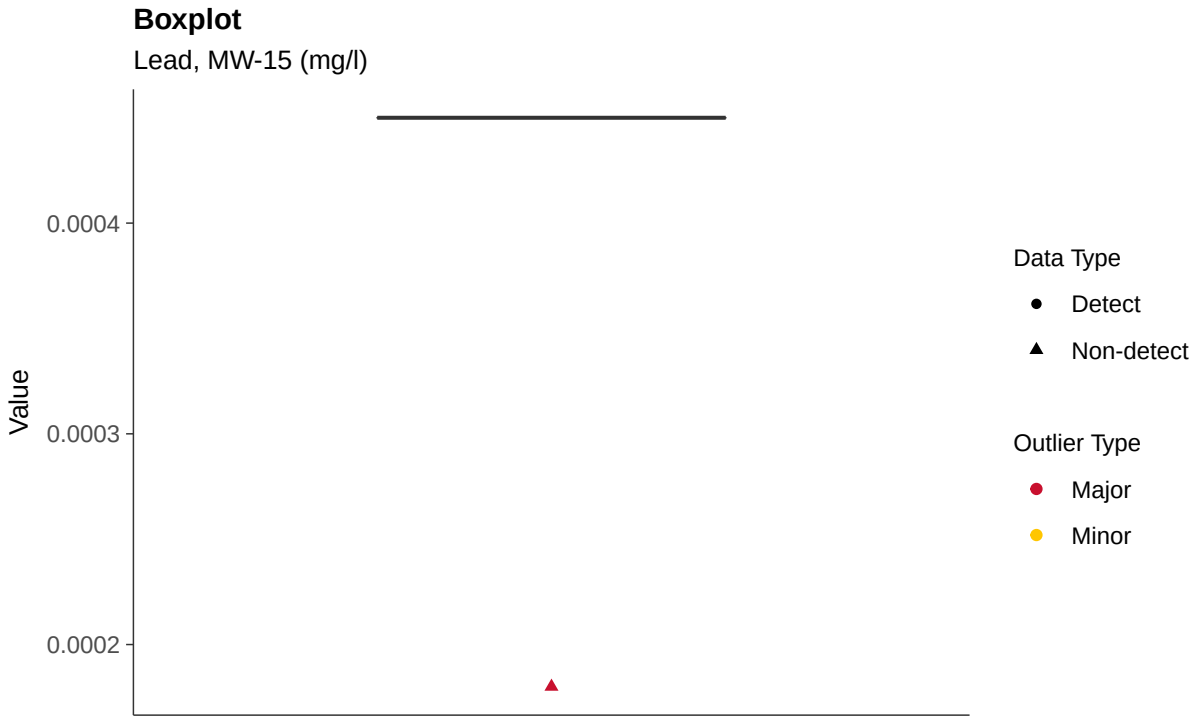




Appendix IV: Lead, MW-15

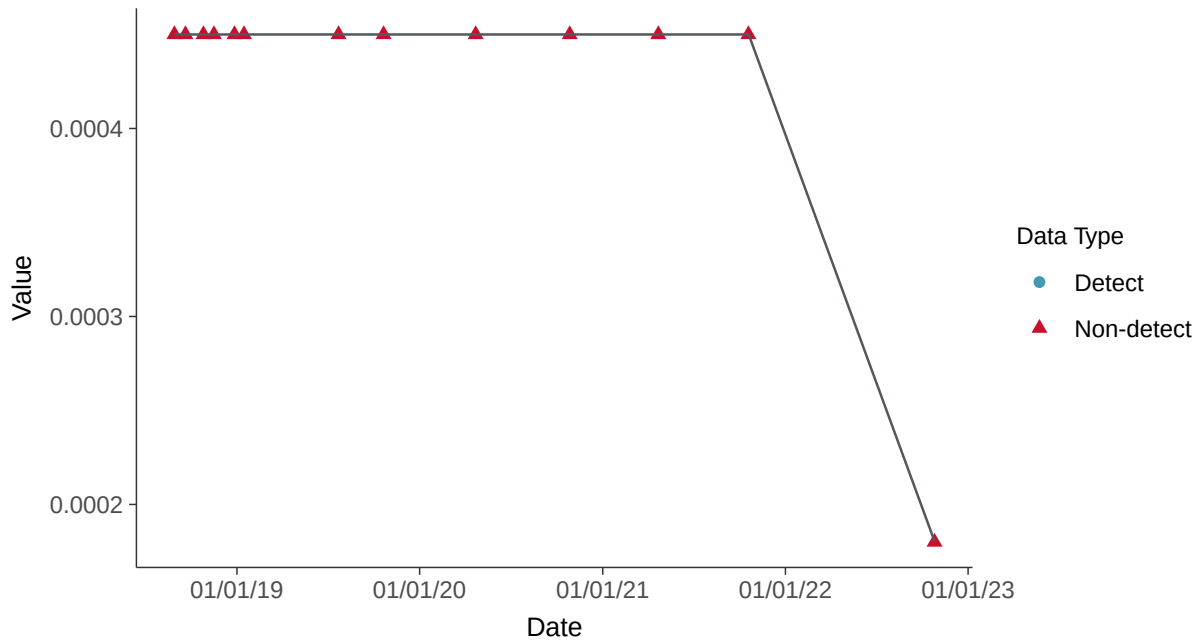
ID: 1_2_117





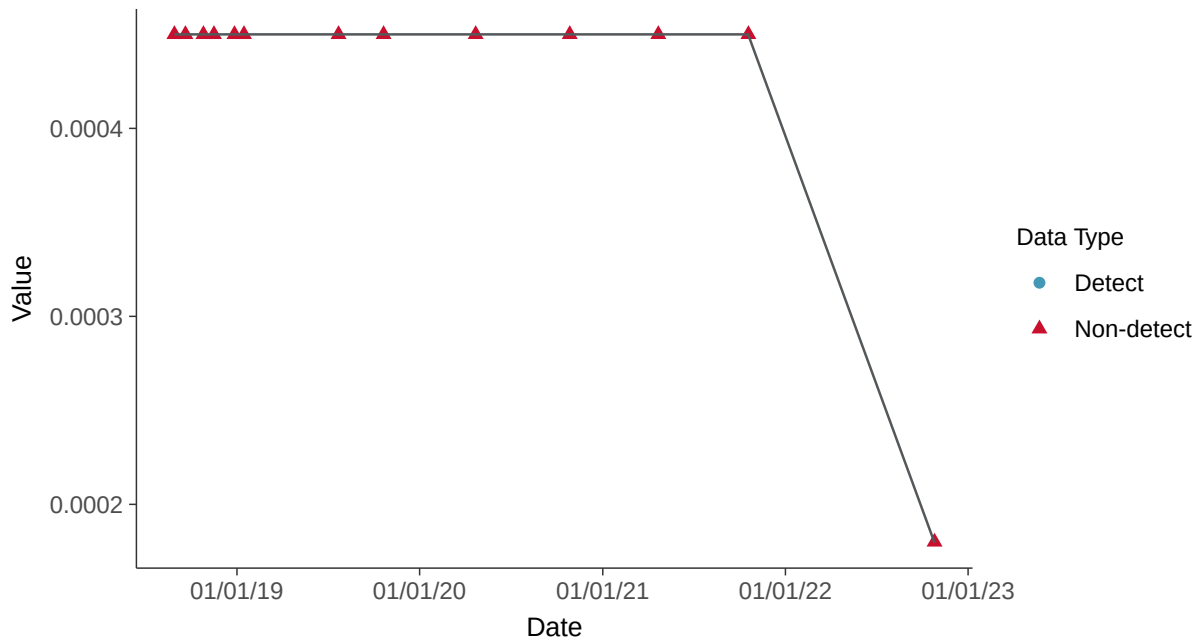
Trend Regression: Piecewise Linear-Linear

Lead, MW-15 (mg/l)



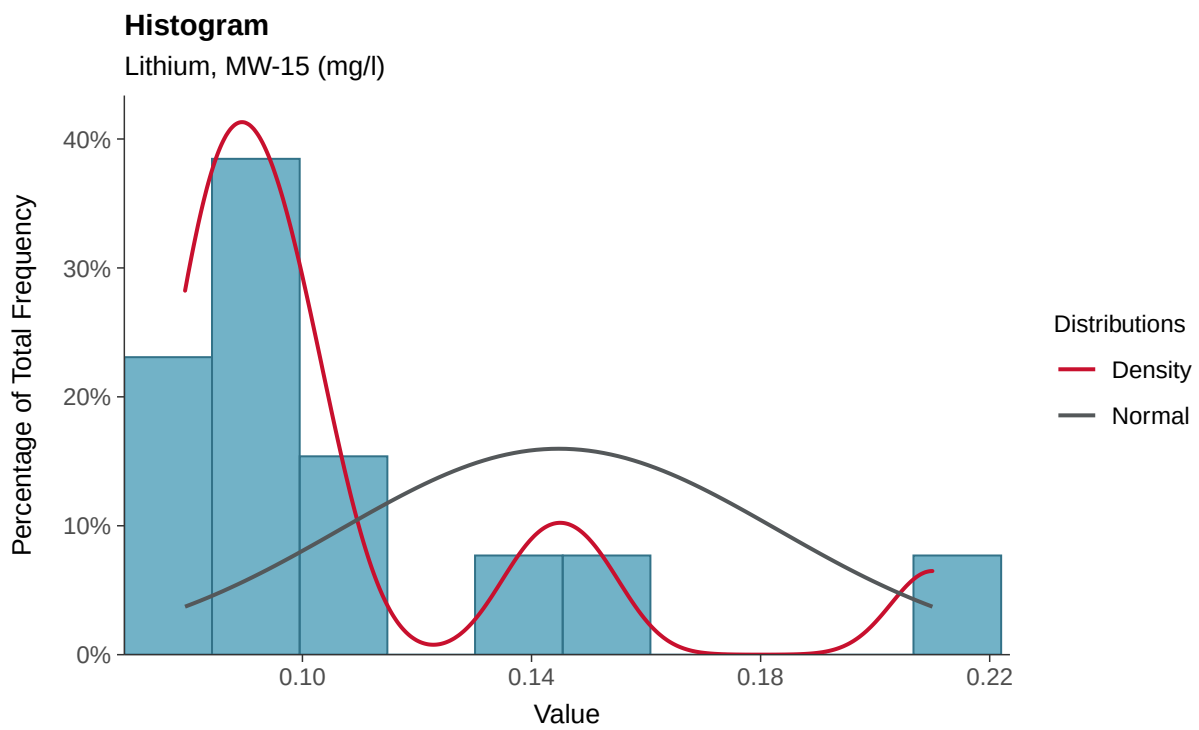
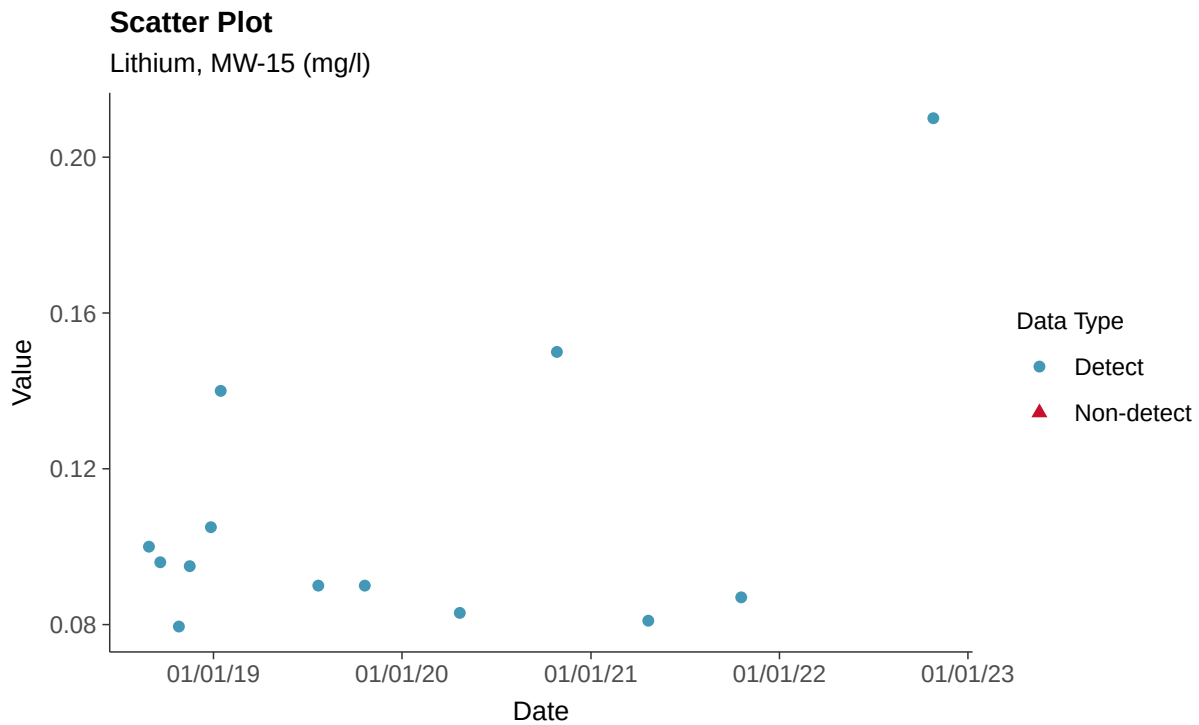
Trend Regression: Piecewise Linear-Linear-Linear

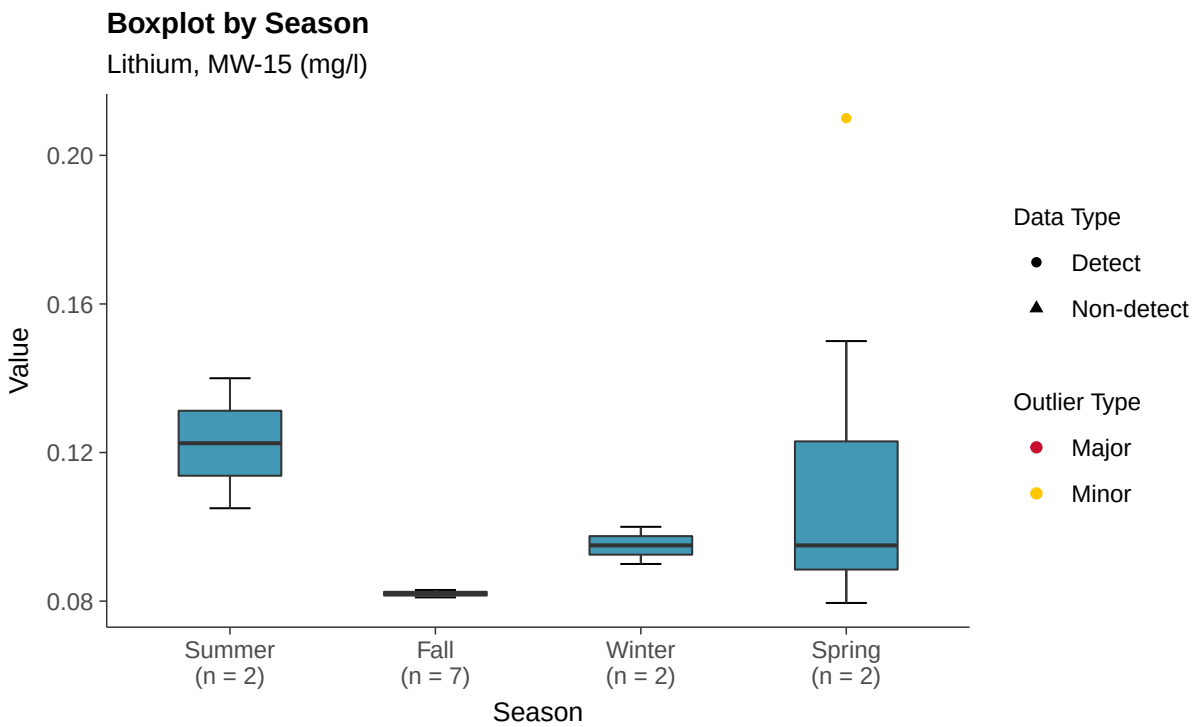
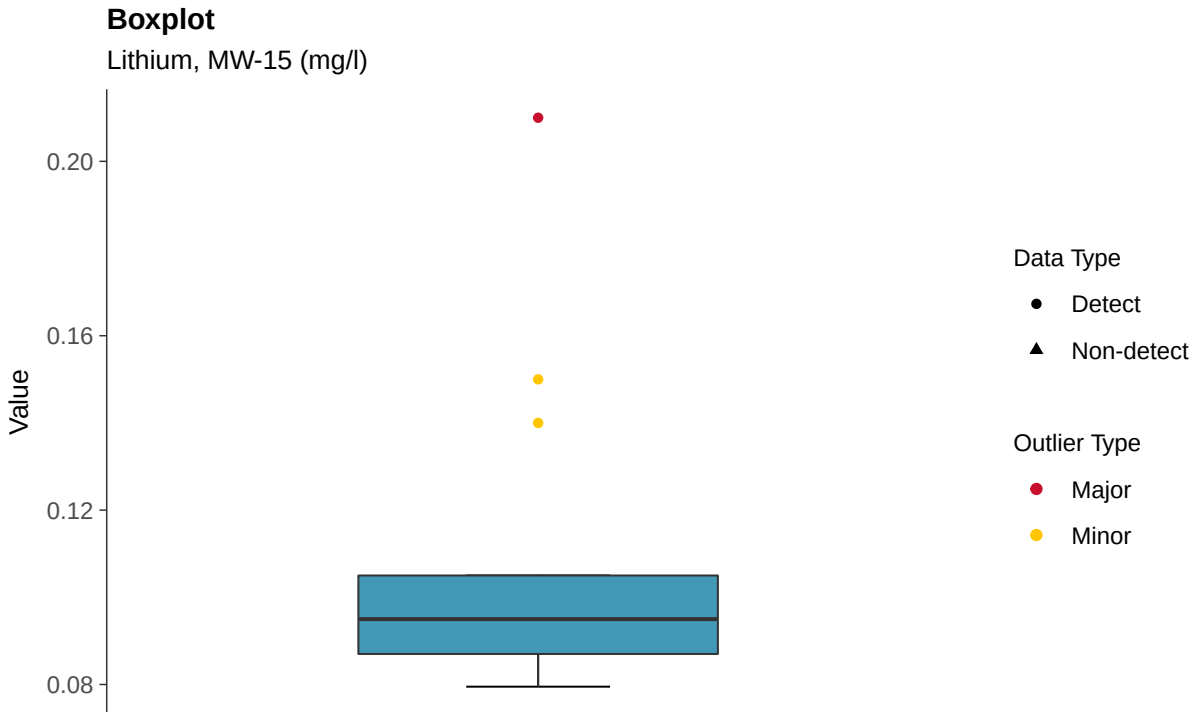
Lead, MW-15 (mg/l)



Appendix IV: Lithium, MW-15

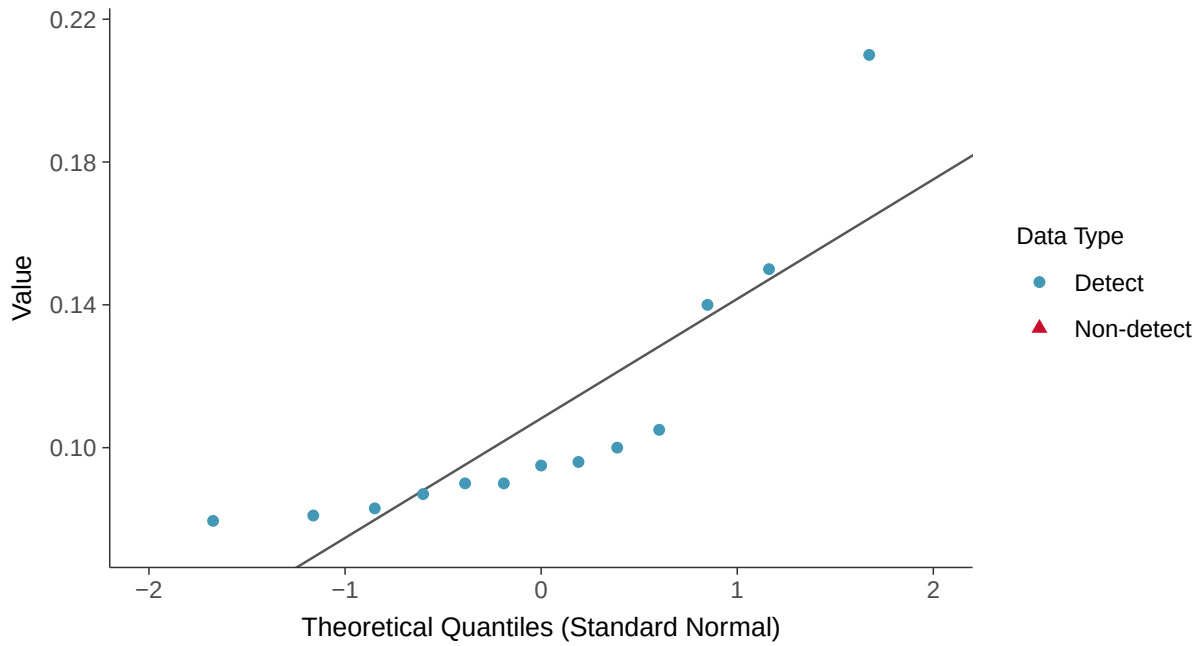
ID: 1_2_118





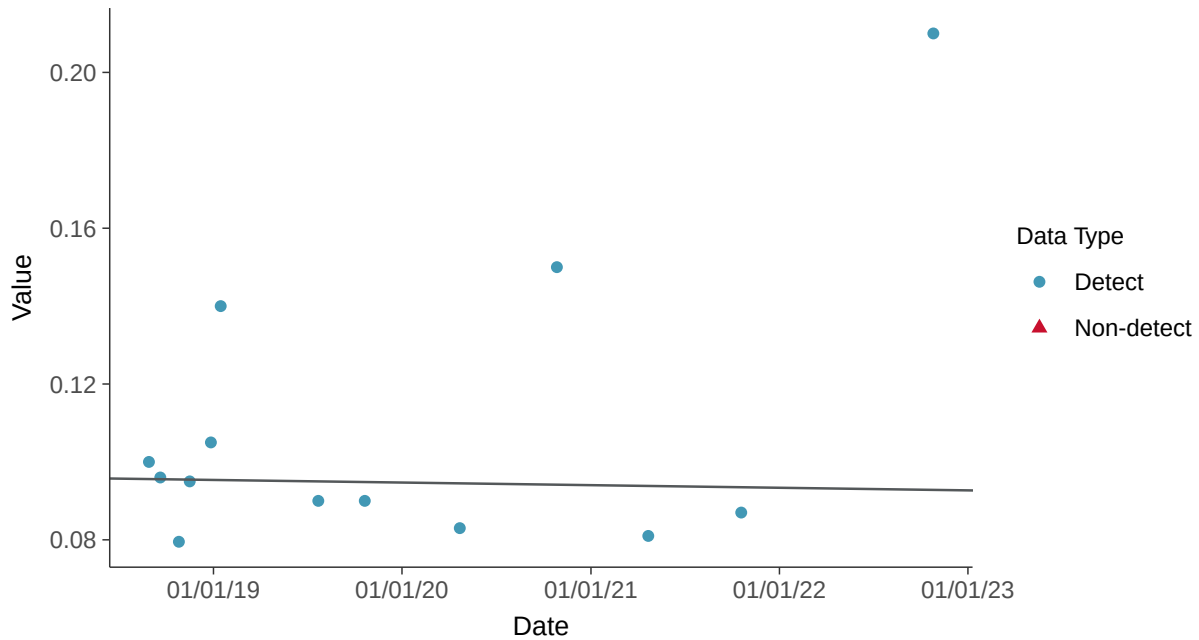
Normal Q-Q plot

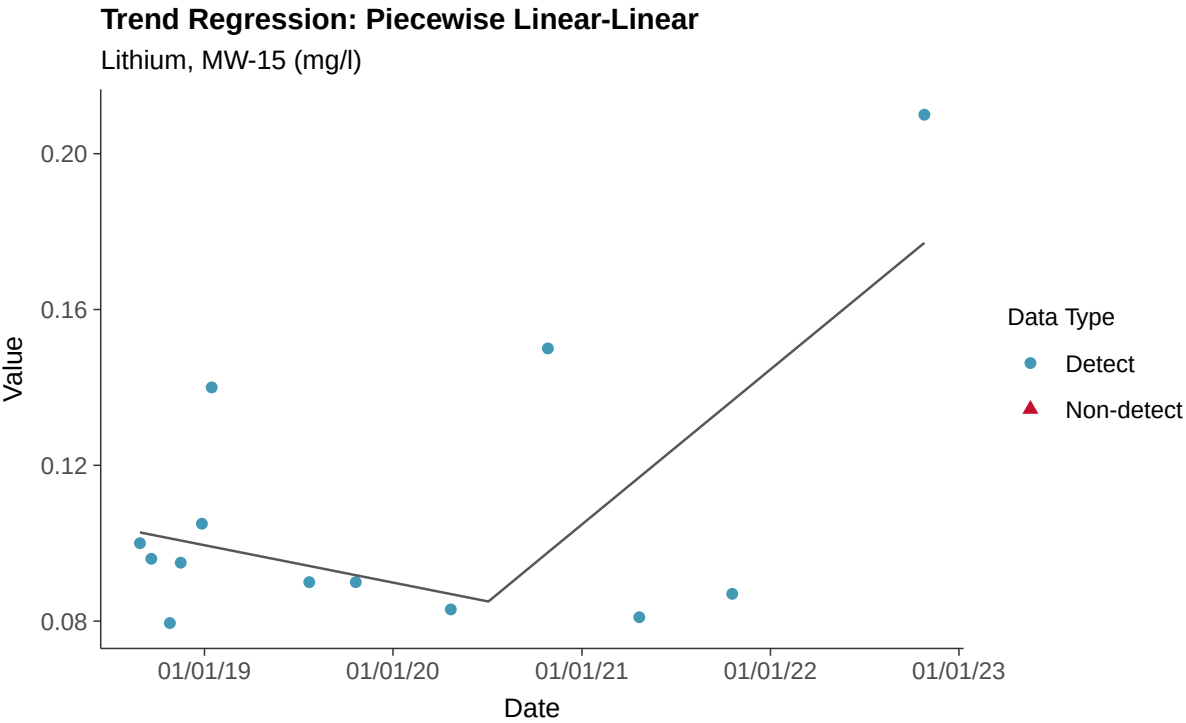
Lithium, MW-15 (mg/l)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

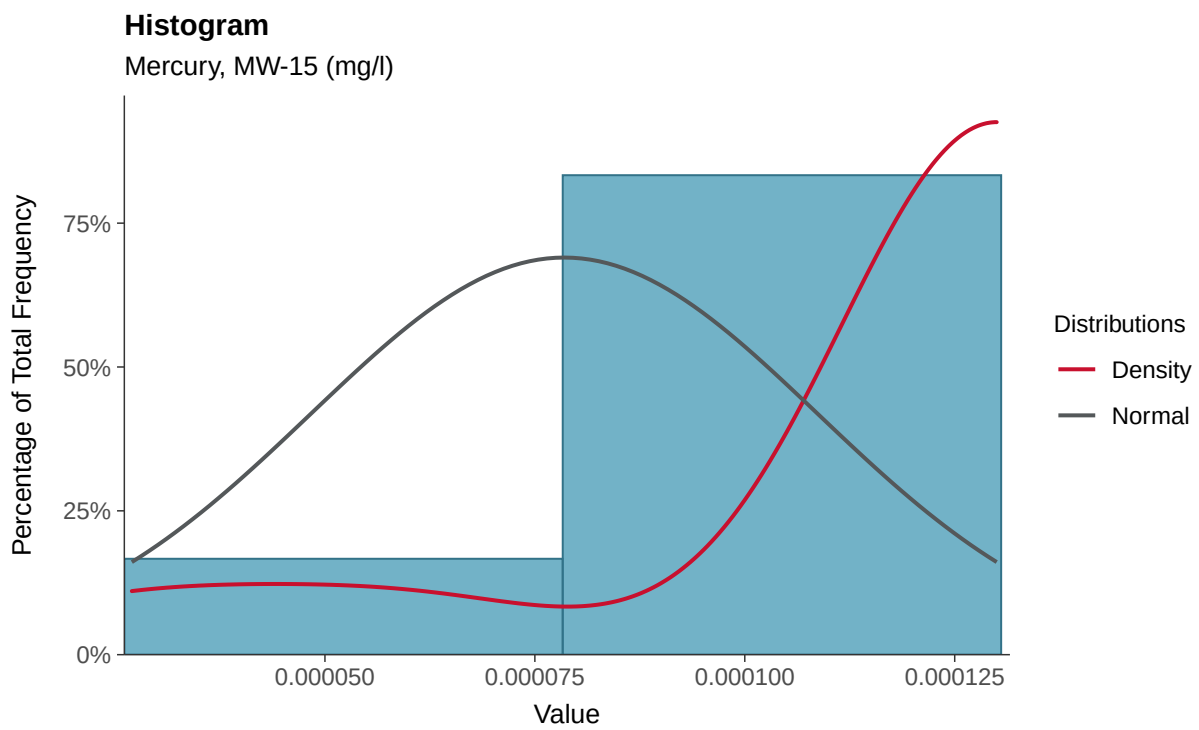
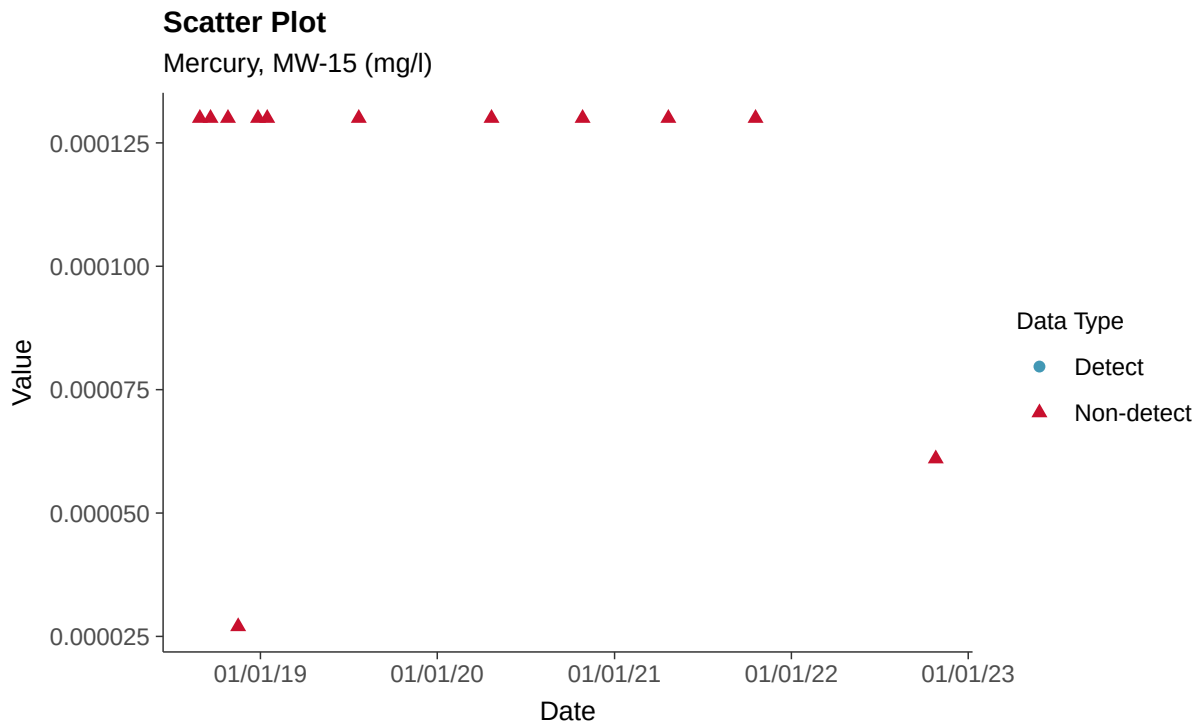
Lithium, MW-15 (mg/l)

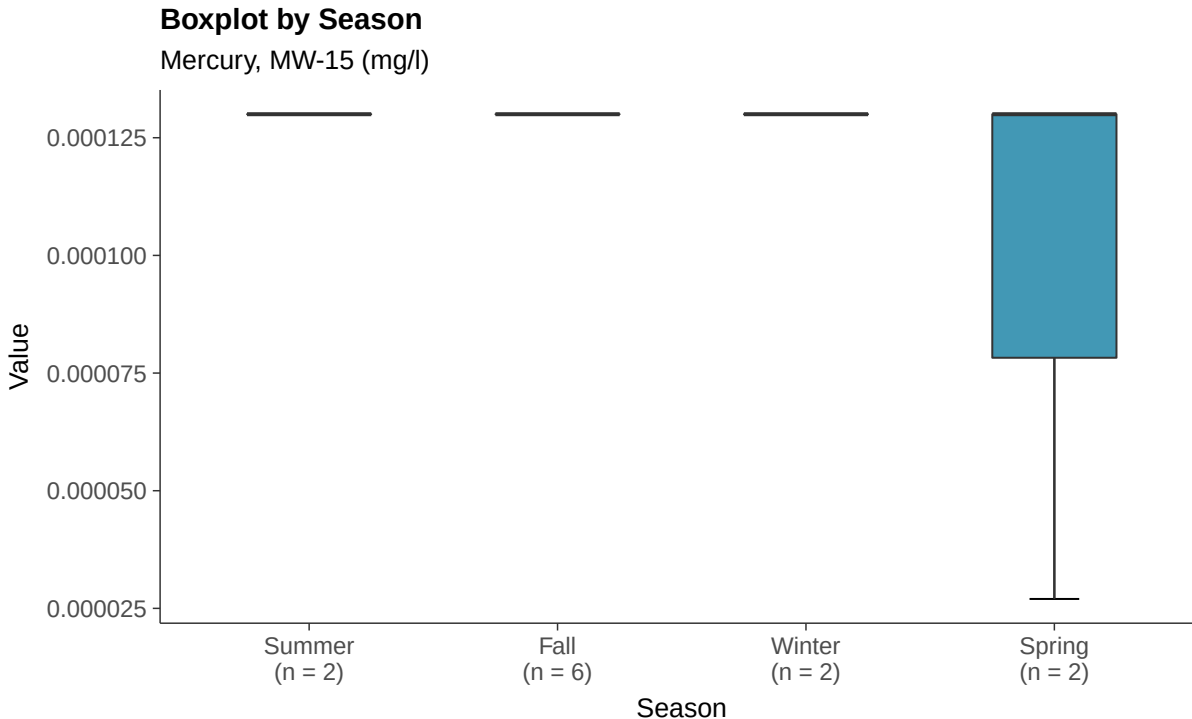
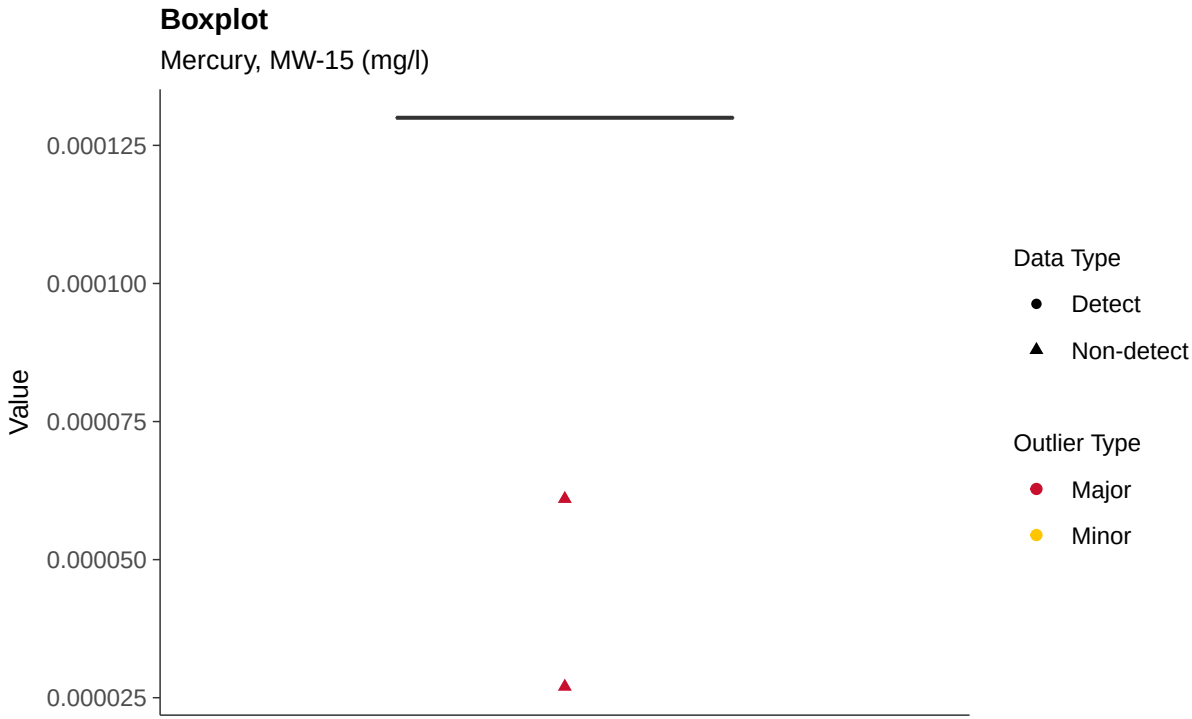




Appendix IV: Mercury, MW-15

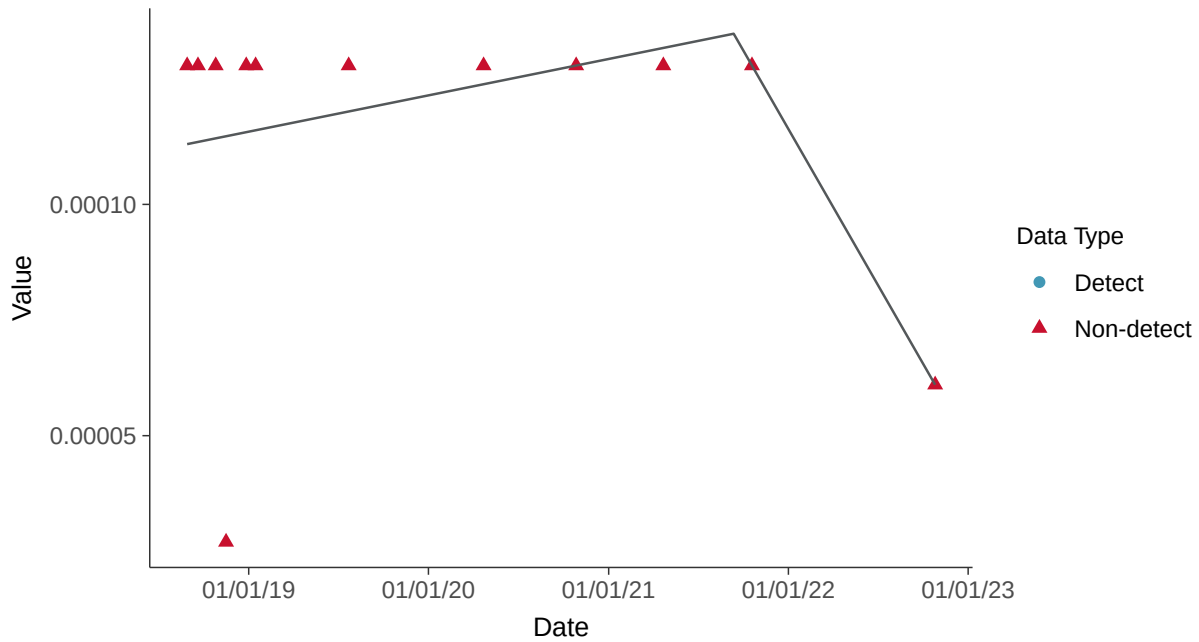
ID: 1_2_120





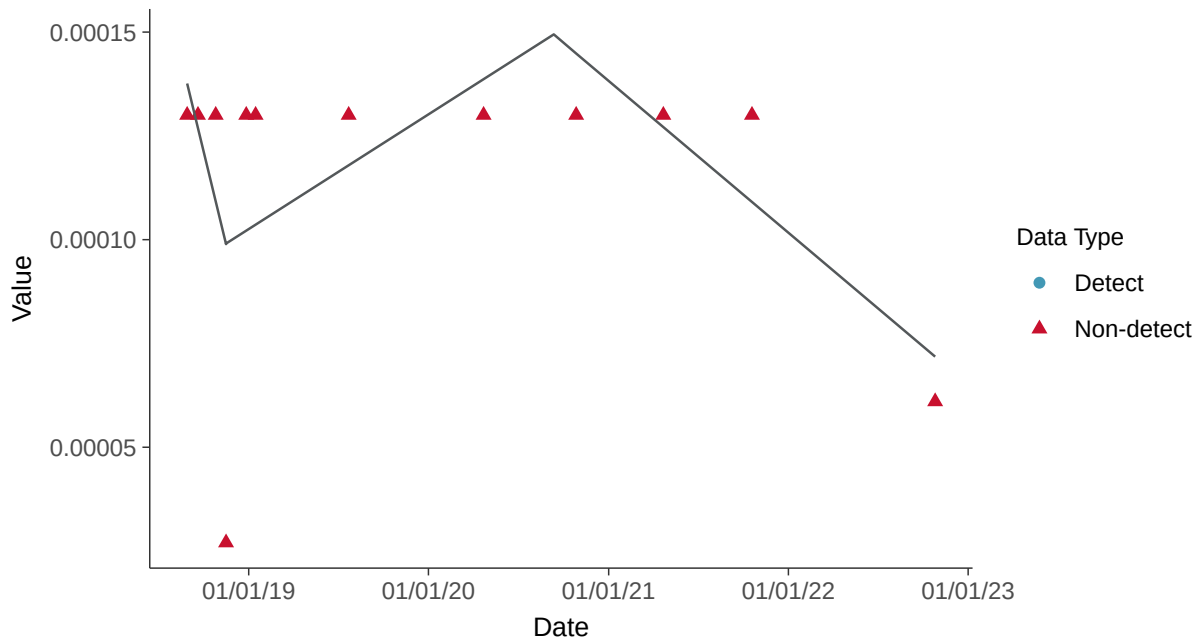
Trend Regression: Piecewise Linear-Linear

Mercury, MW-15 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

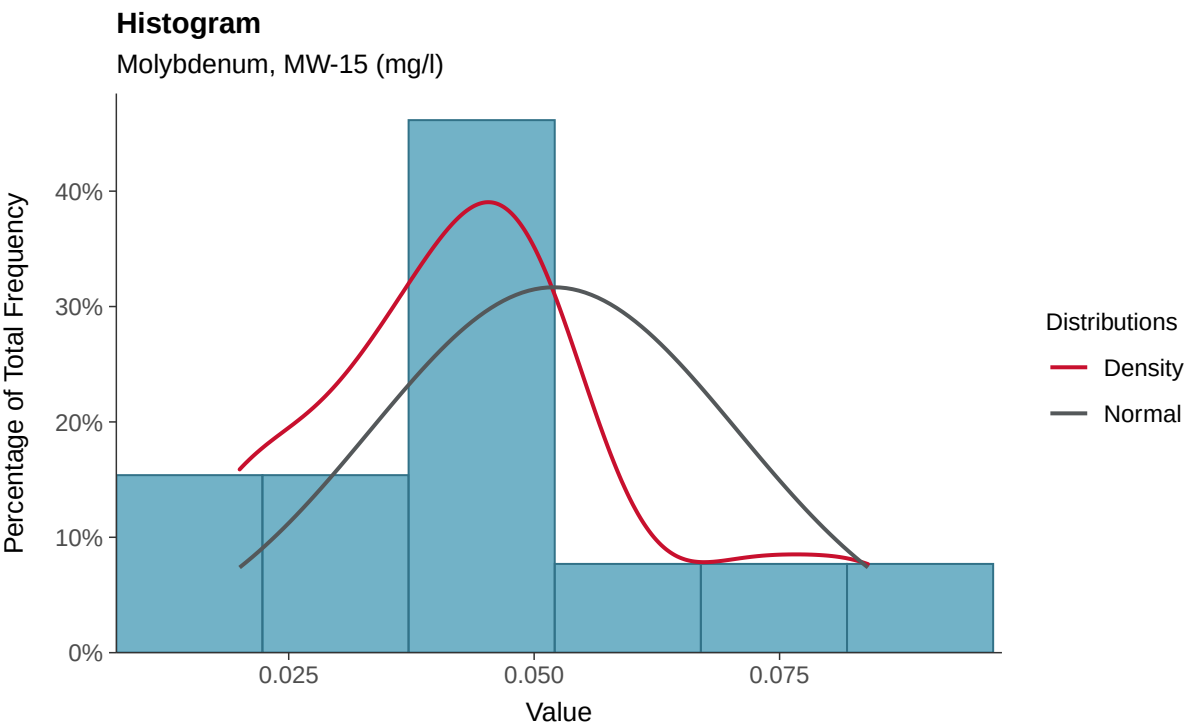
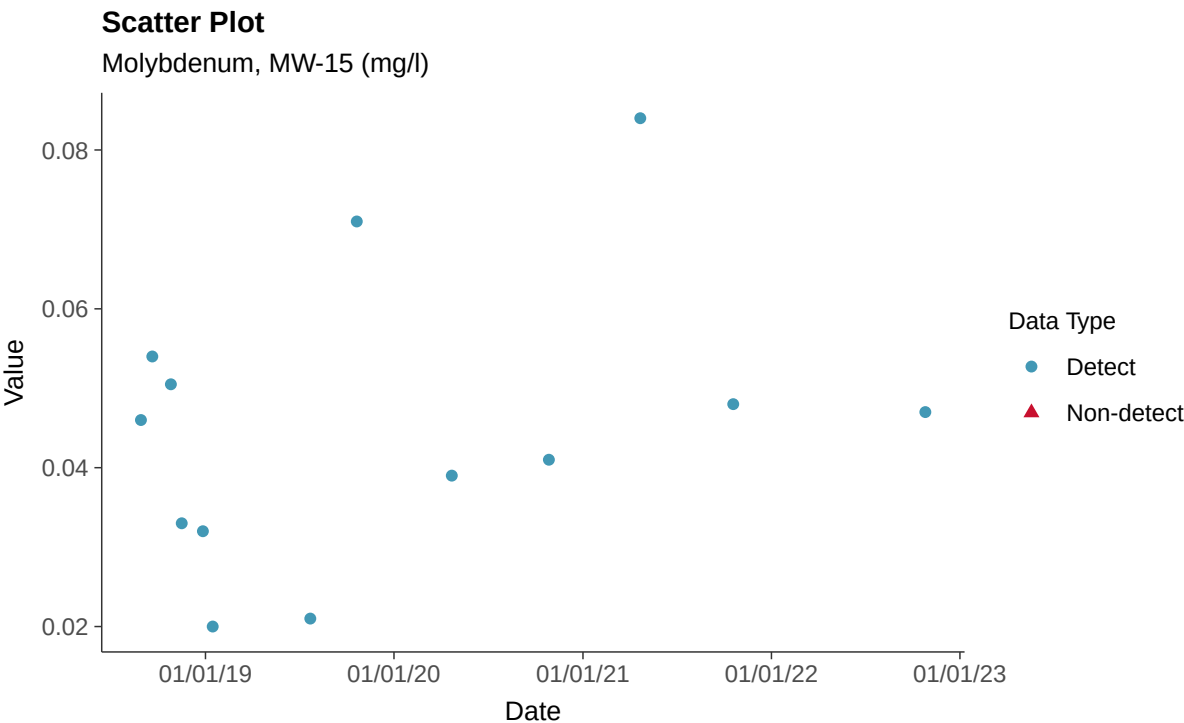
Mercury, MW-15 (mg/l)





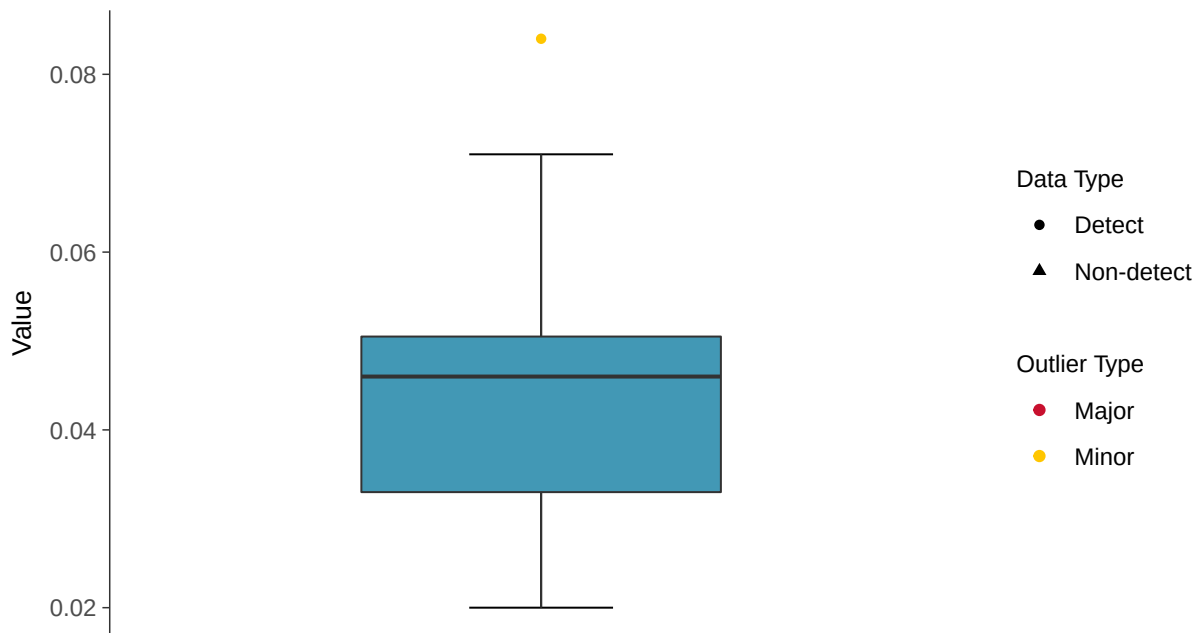
Appendix IV: Molybdenum, MW-15

ID: 1_2_121



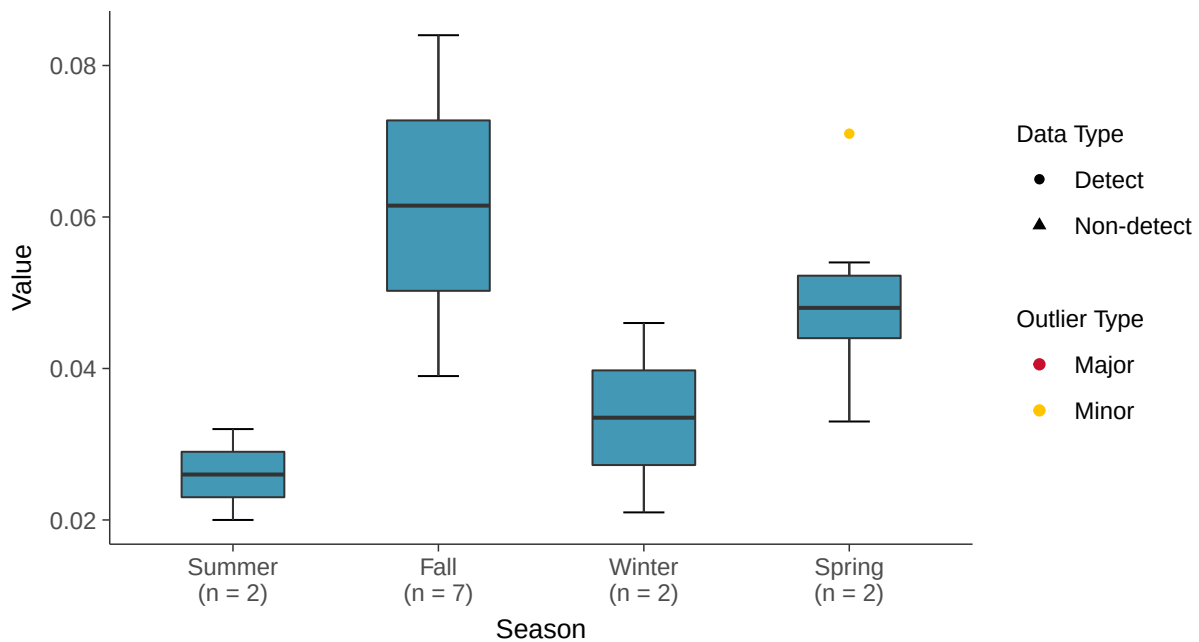
Boxplot

Molybdenum, MW-15 (mg/l)



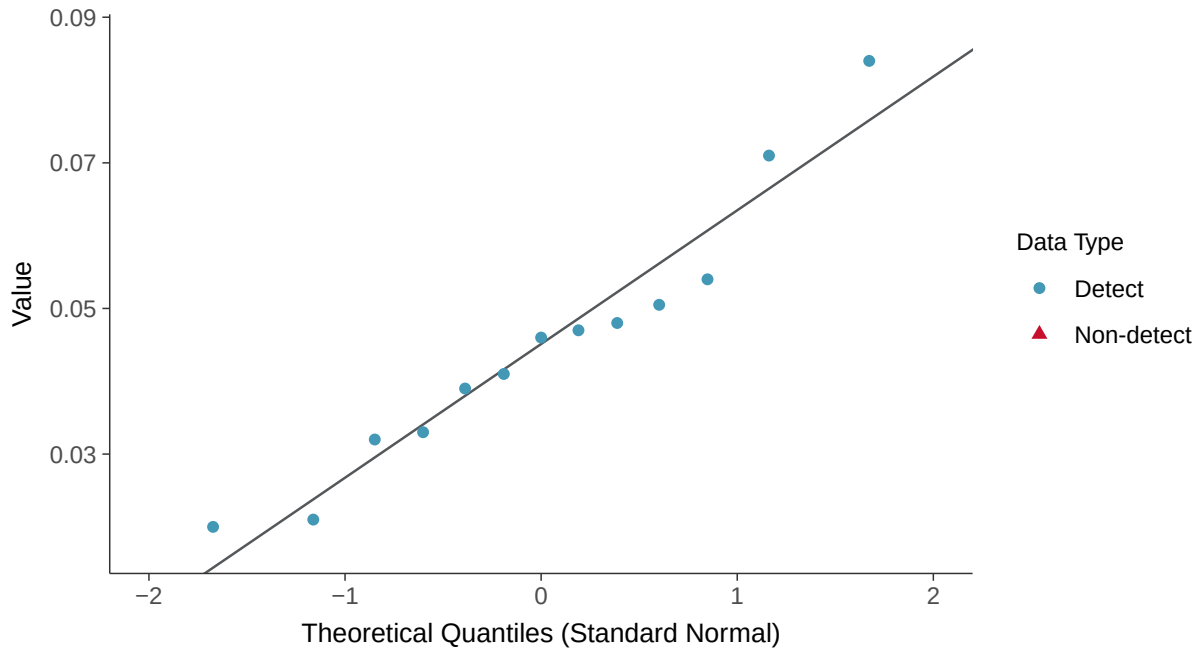
Boxplot by Season

Molybdenum, MW-15 (mg/l)



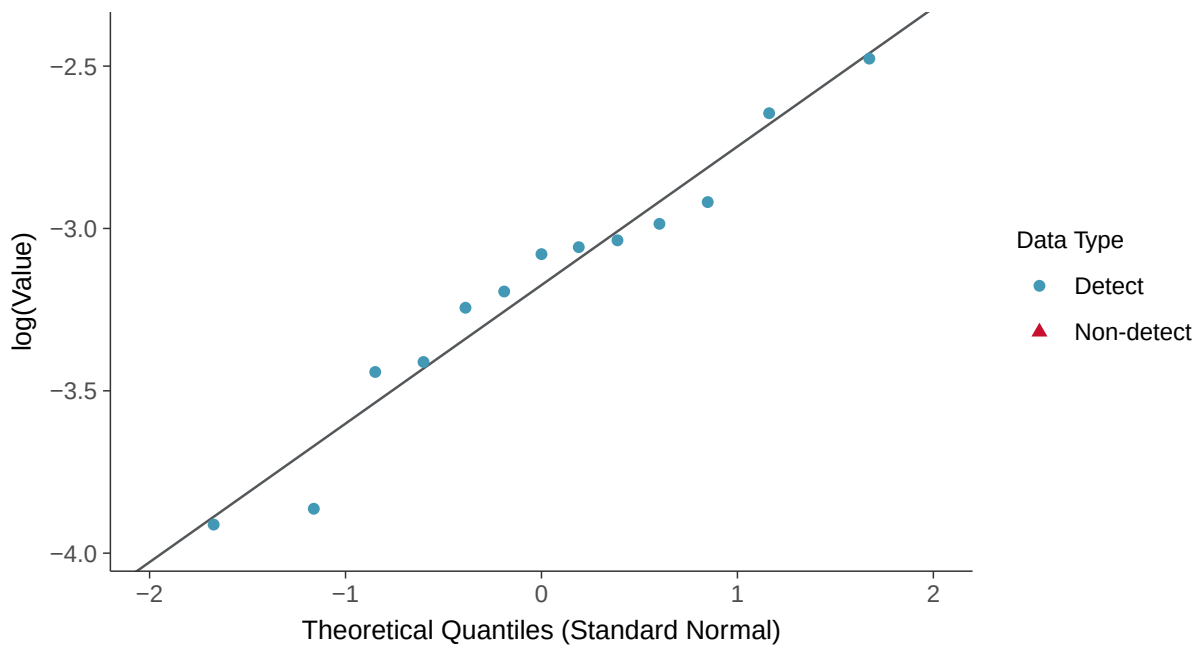
Normal Q-Q plot

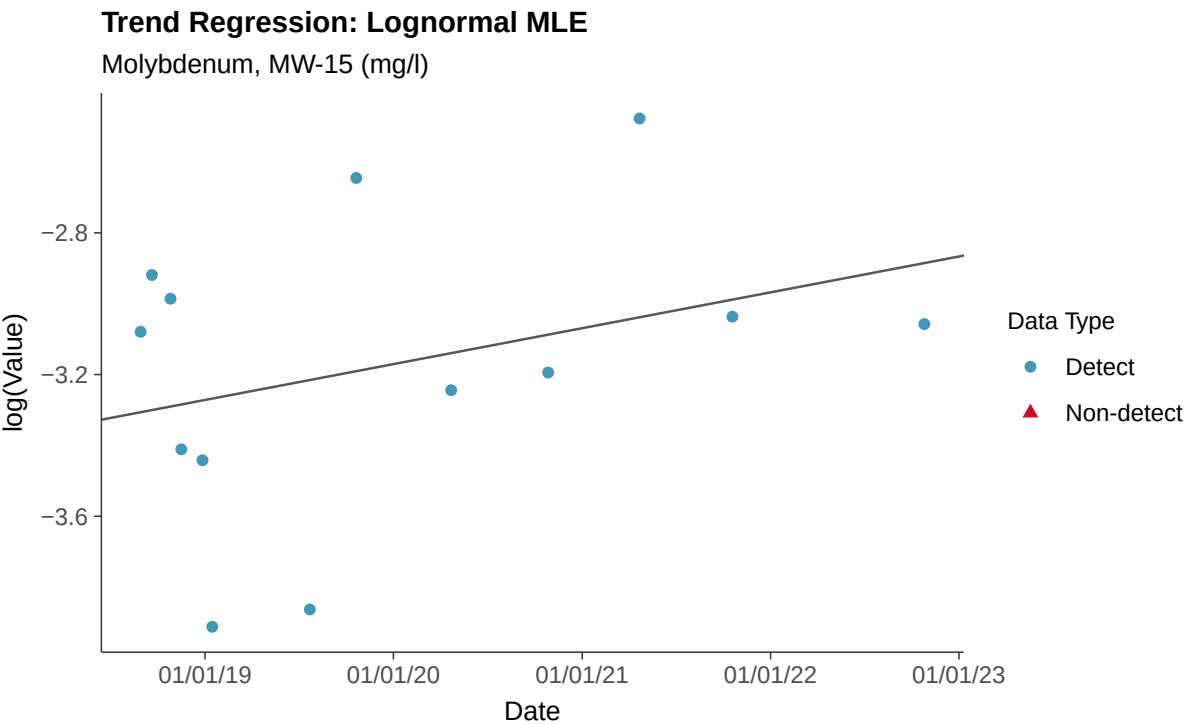
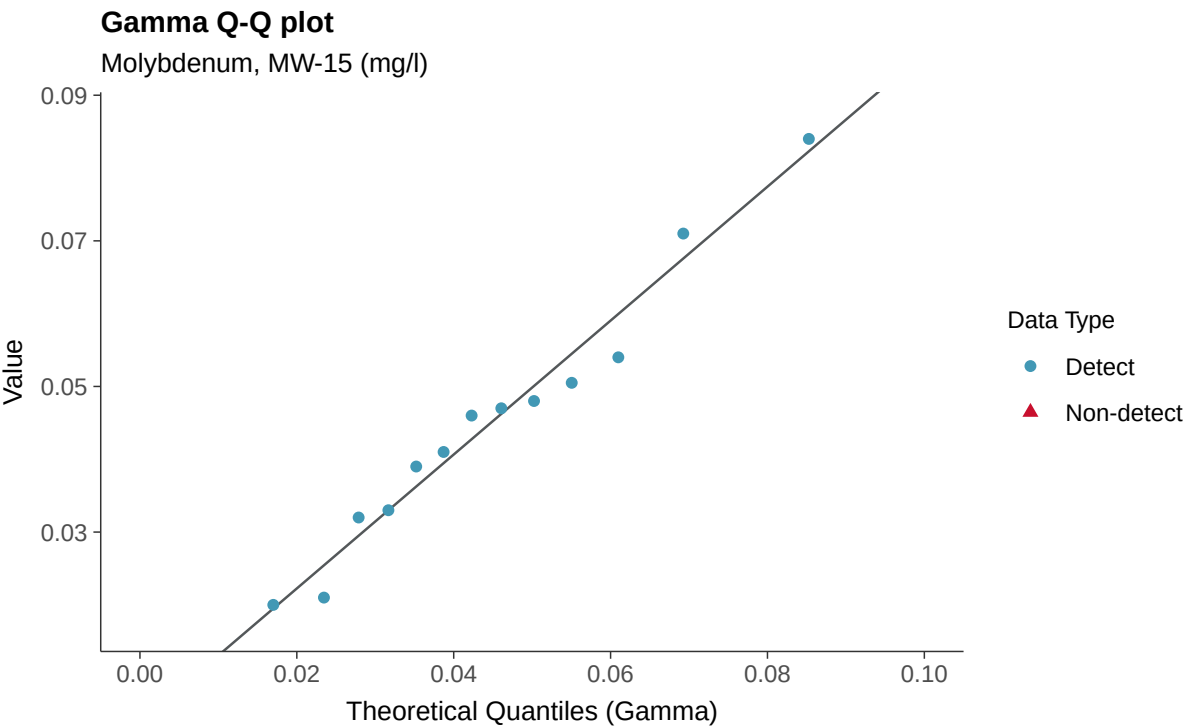
Molybdenum, MW-15 (mg/l)



Lognormal Q-Q plot

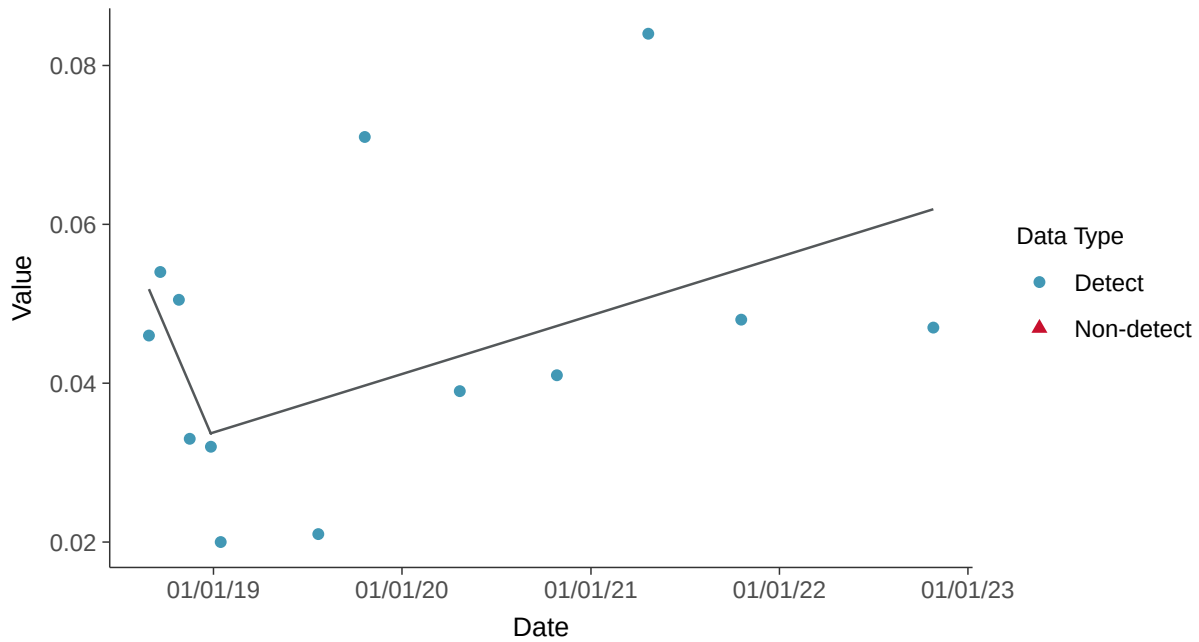
Molybdenum, MW-15 (mg/l)





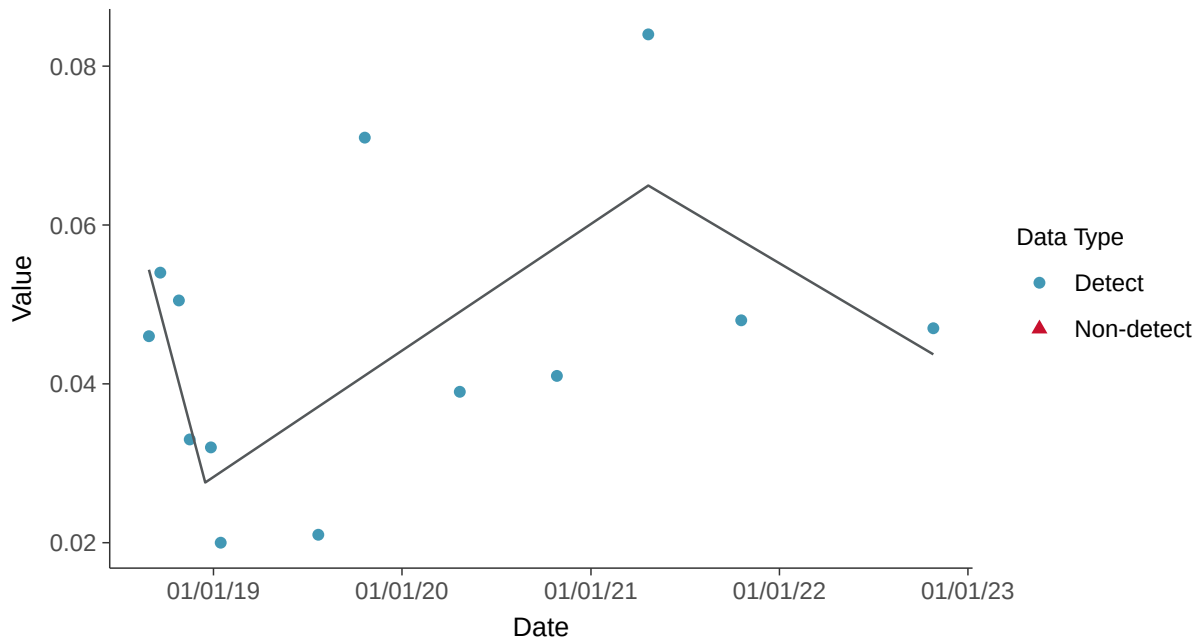
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-15 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-15 (mg/l)

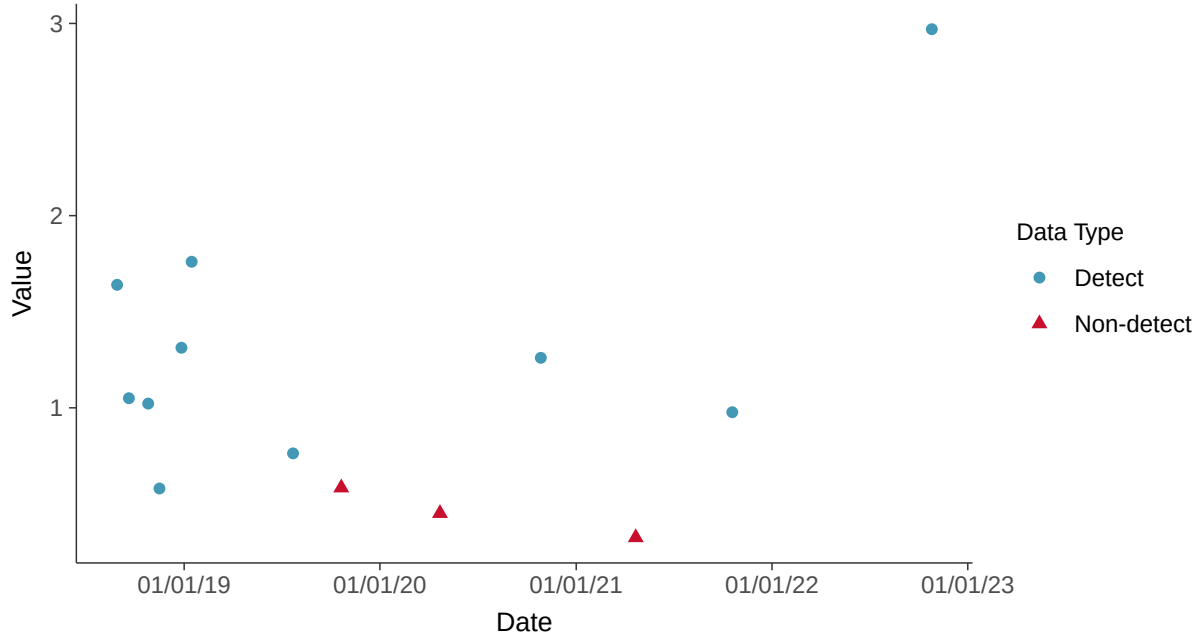


Appendix IV: Radium-226+228, MW-15

ID: 1_2_127

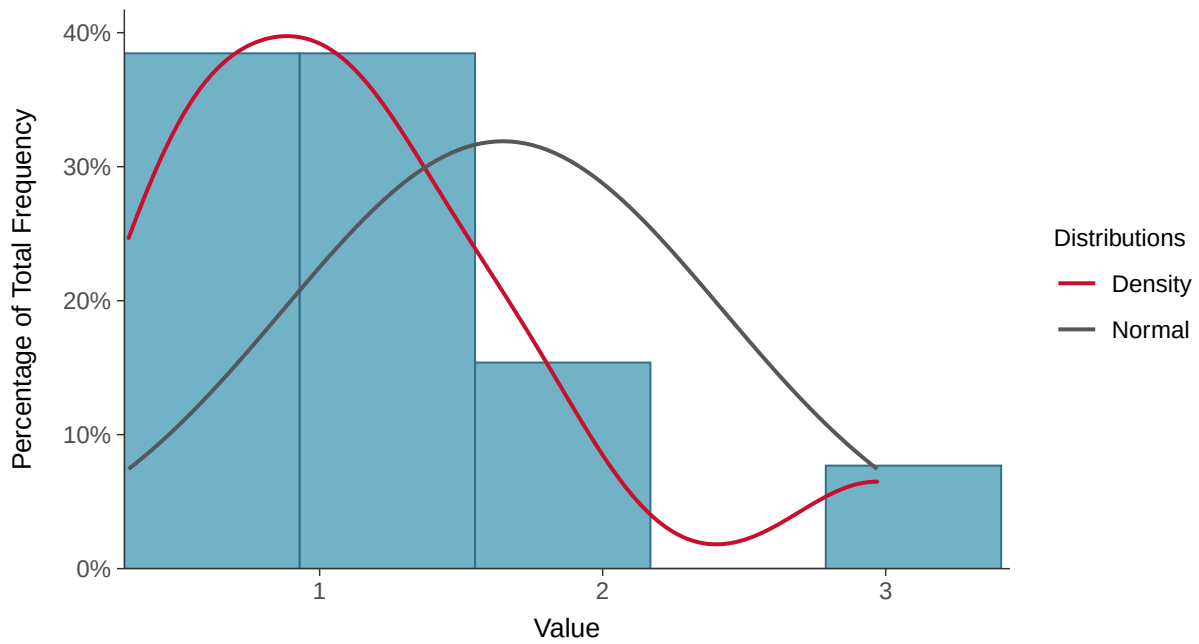
Scatter Plot

Radium-226+228, MW-15 (pci/l)



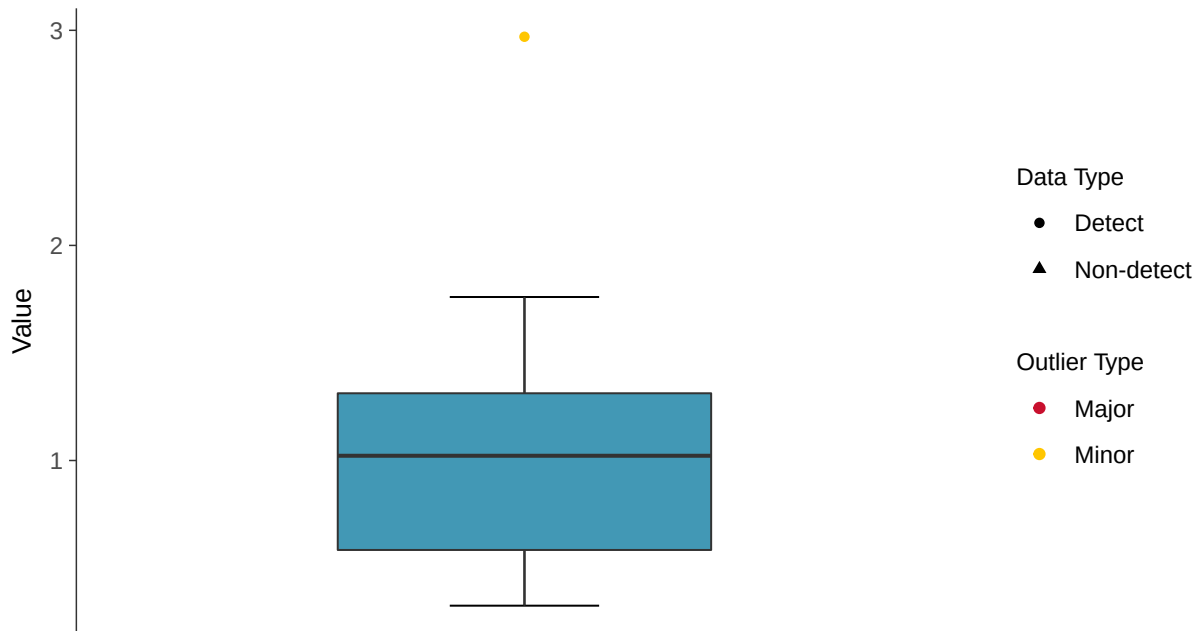
Histogram

Radium-226+228, MW-15 (pci/l)



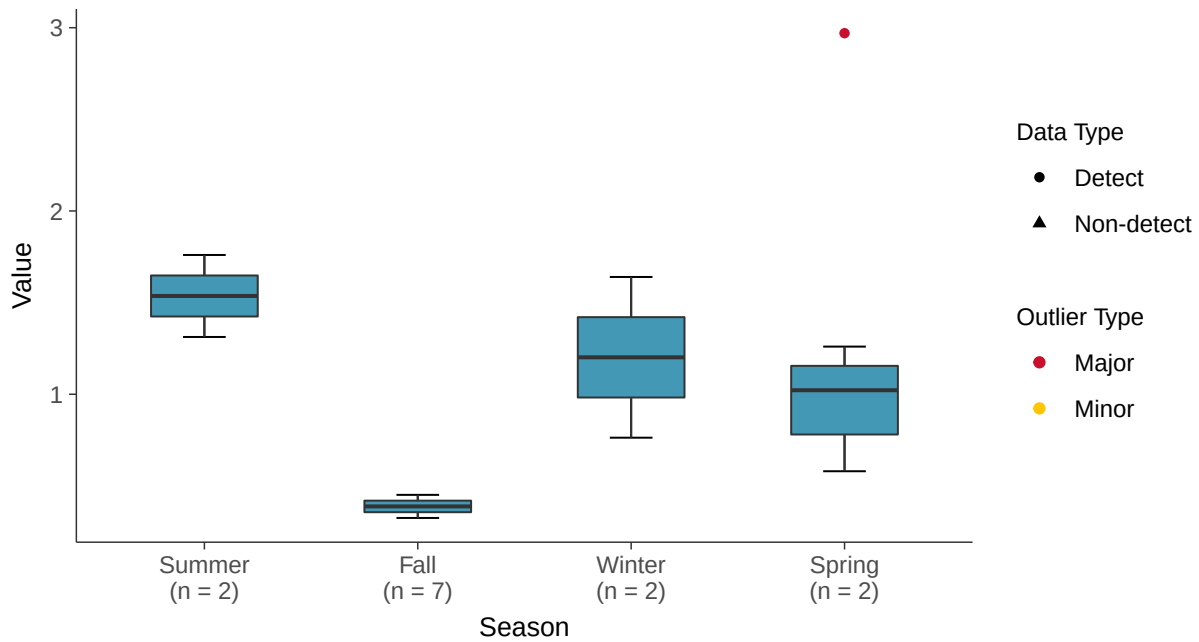
Boxplot

Radium-226+228, MW-15 (pci/l)



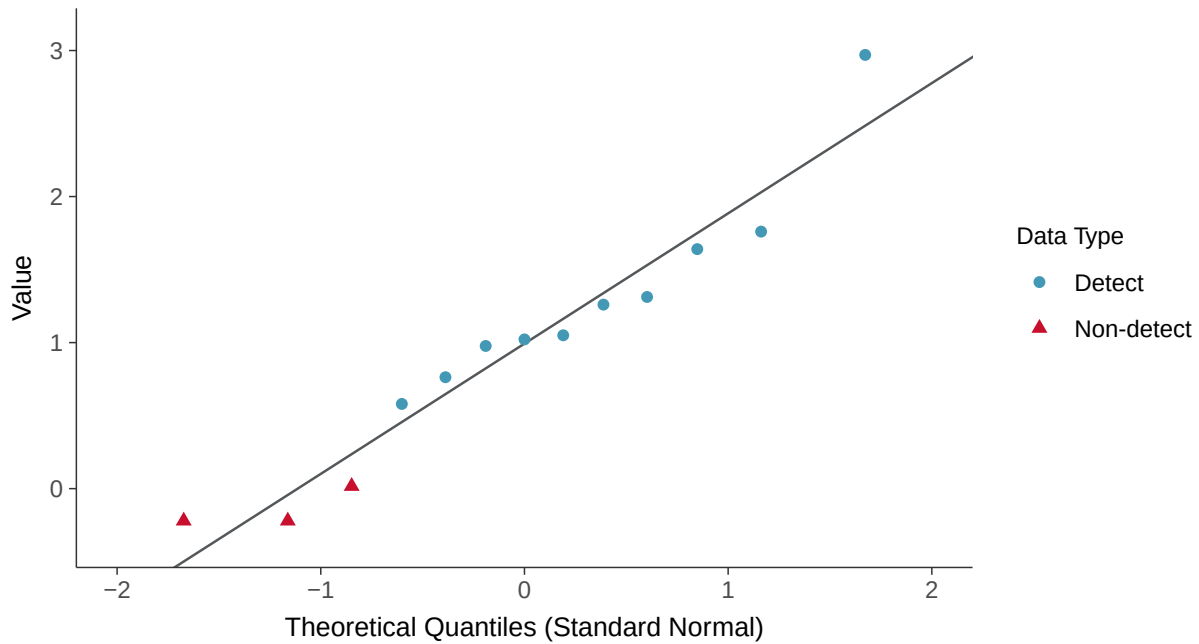
Boxplot by Season

Radium-226+228, MW-15 (pci/l)



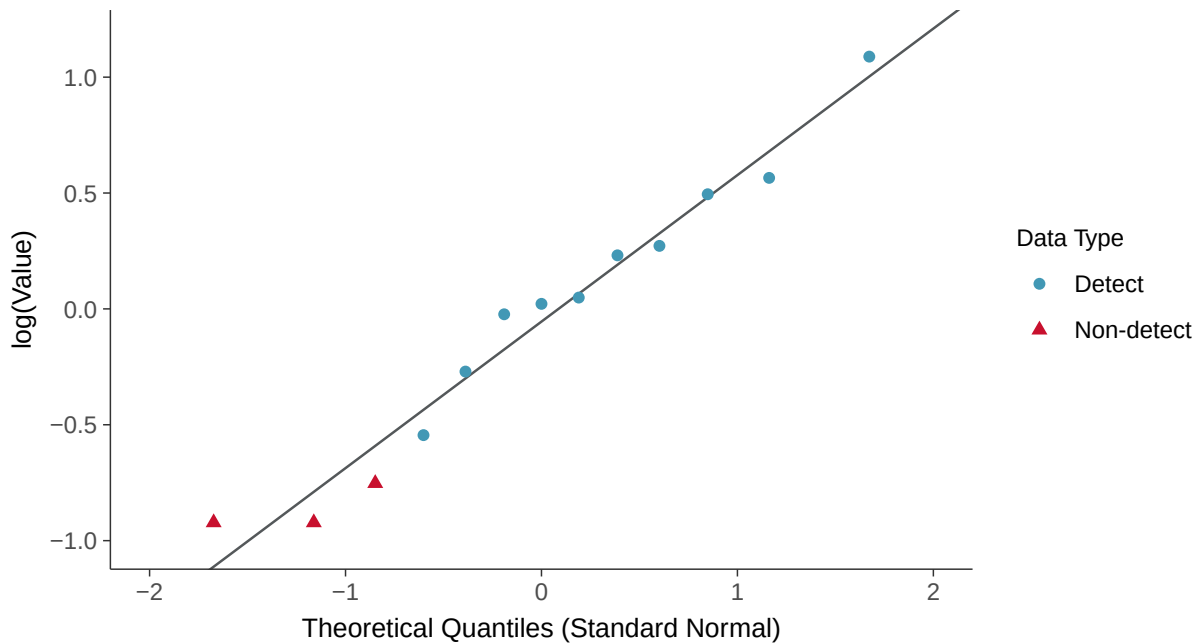
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-15 (pci/l)



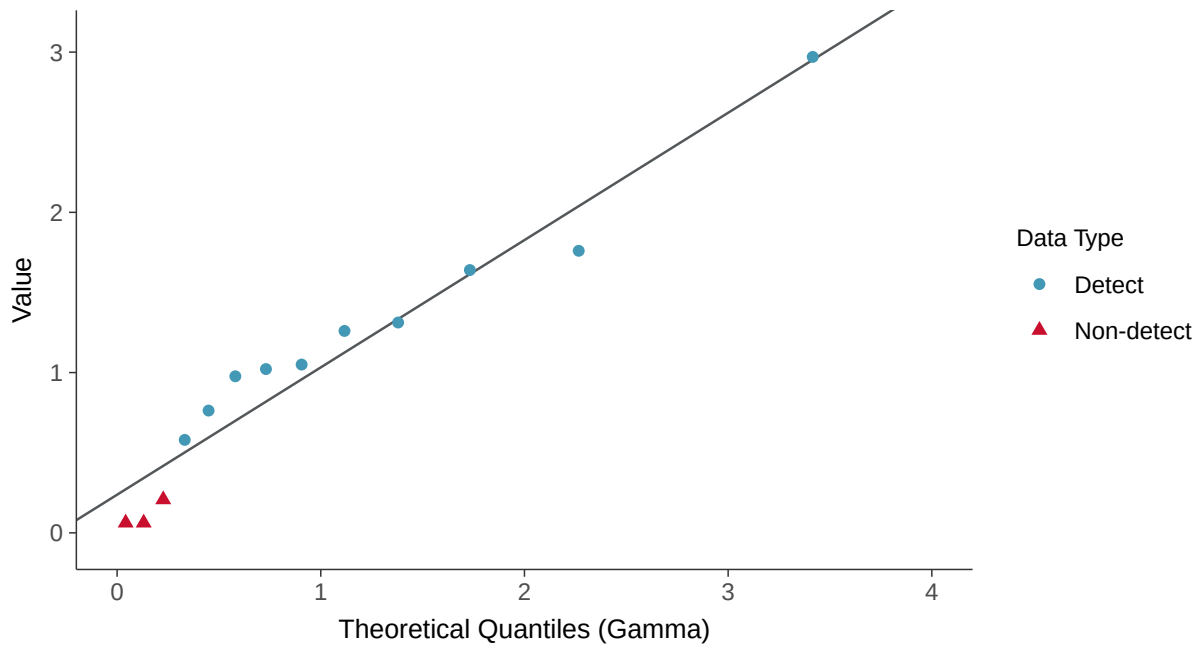
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-15 (pci/l)



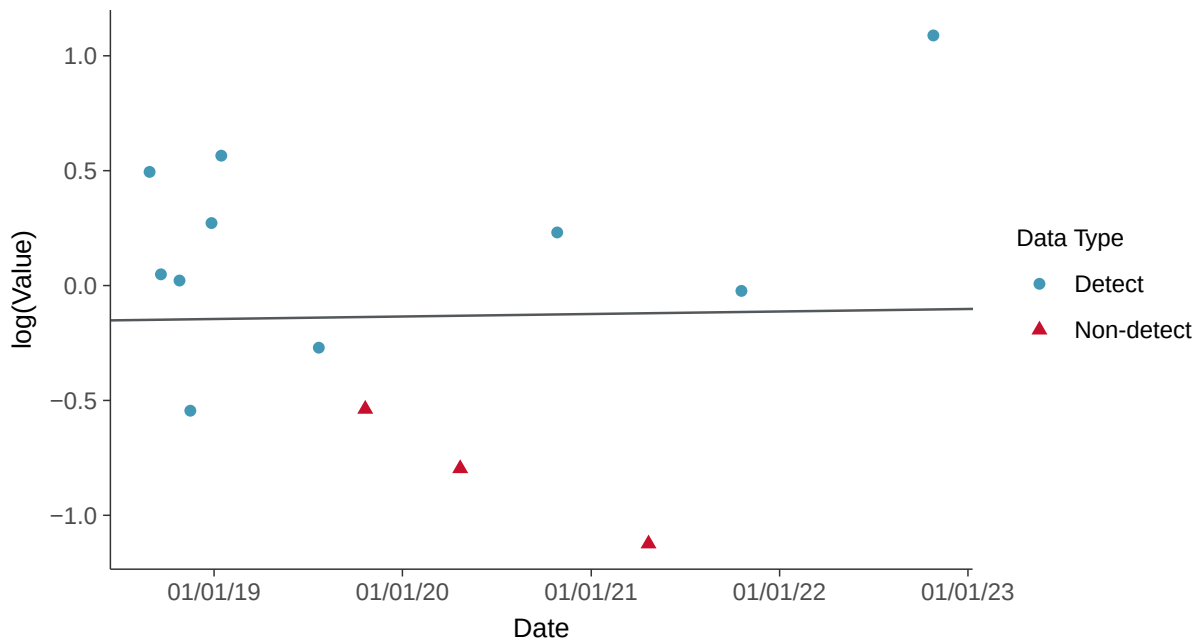
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-15 (pci/l)



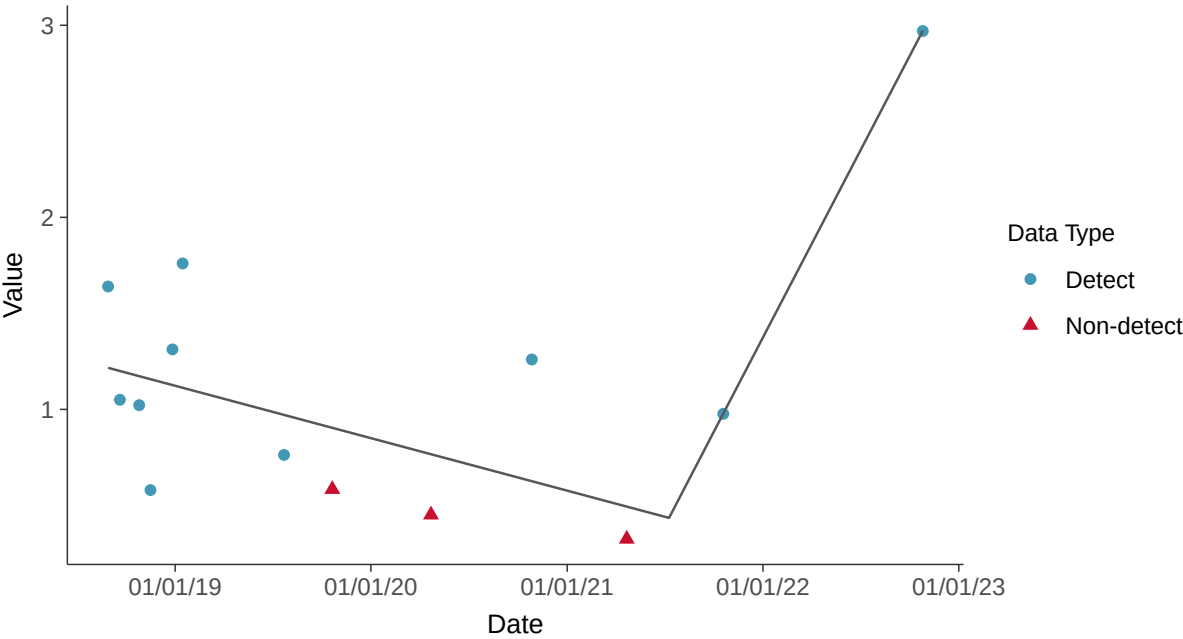
Trend Regression: Lognormal MLE

Radium-226+228, MW-15 (pci/l)



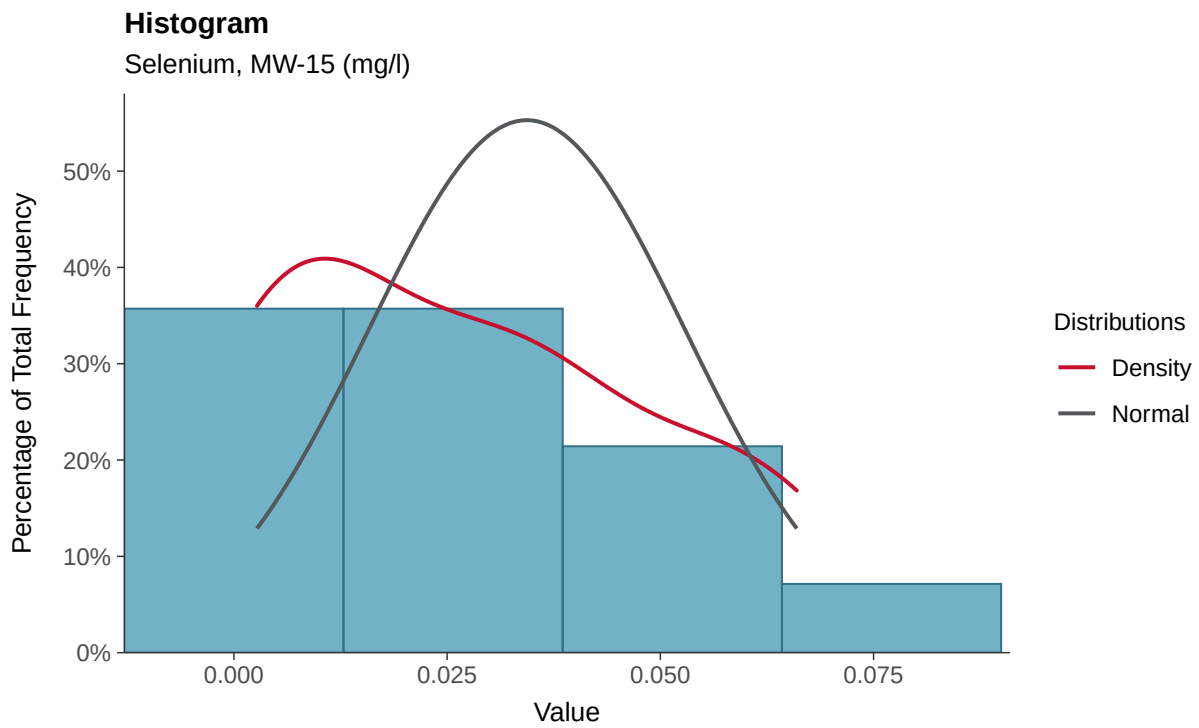
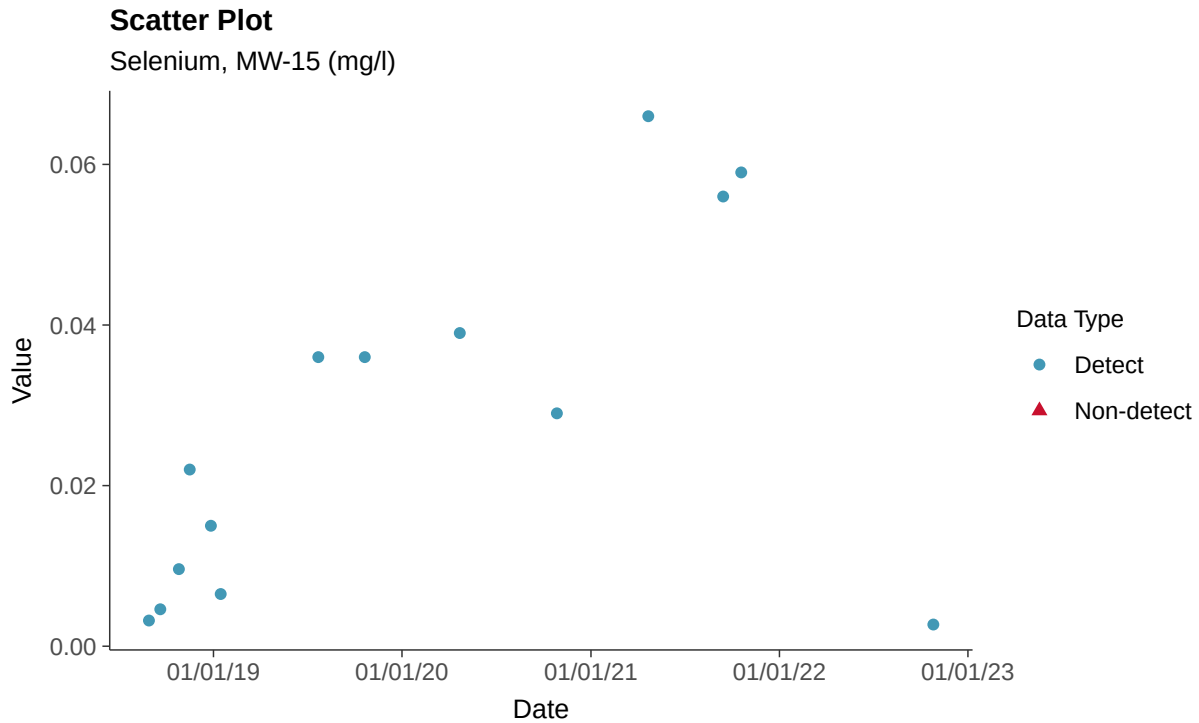


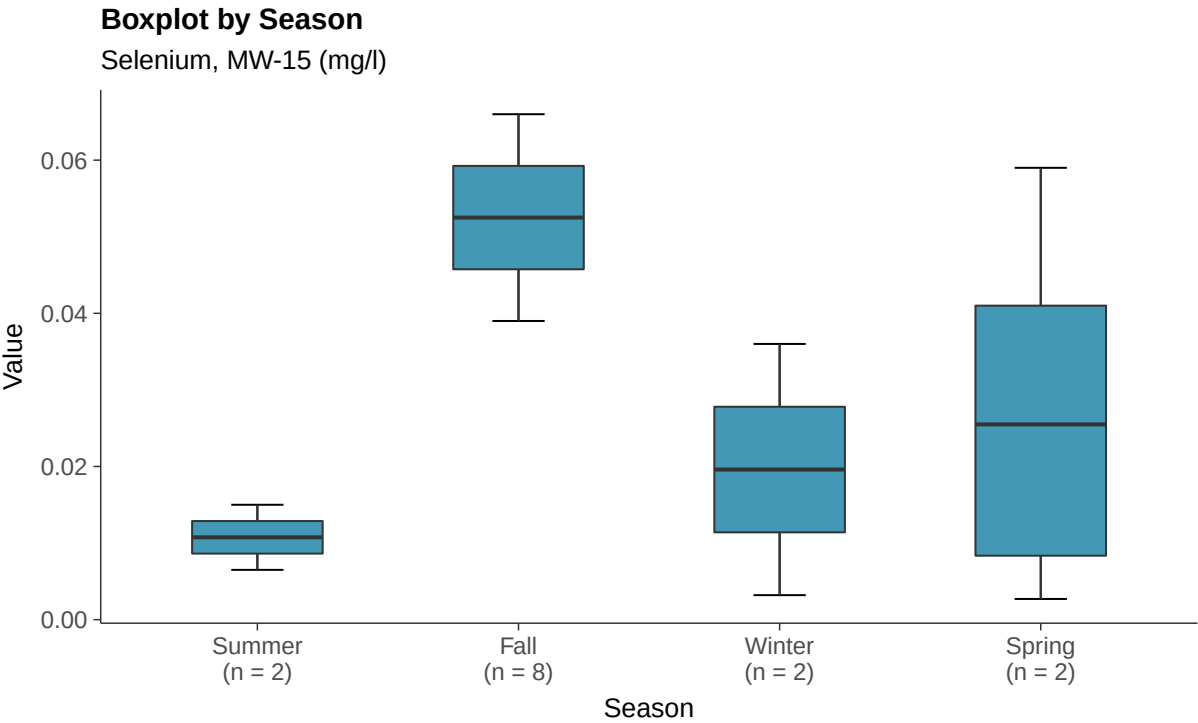
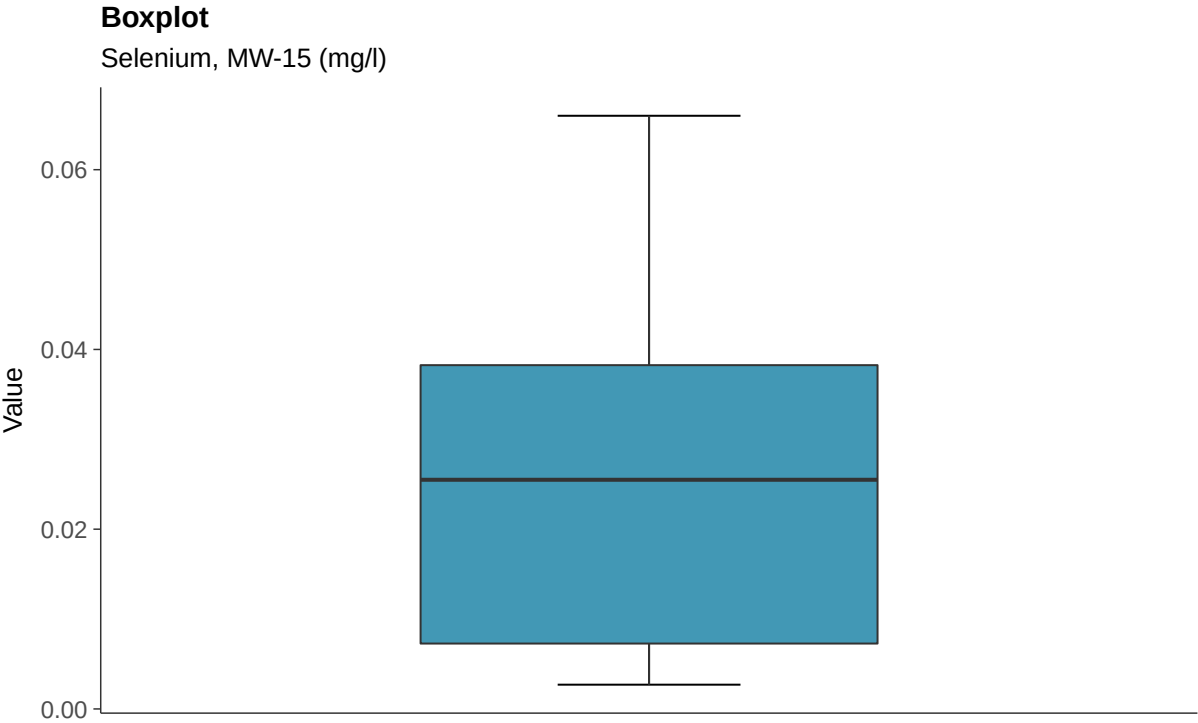
Trend Regression: Piecewise Linear-Linear
Radium-226+228, MW-15 (pci/l)



Appendix IV: Selenium, MW-15

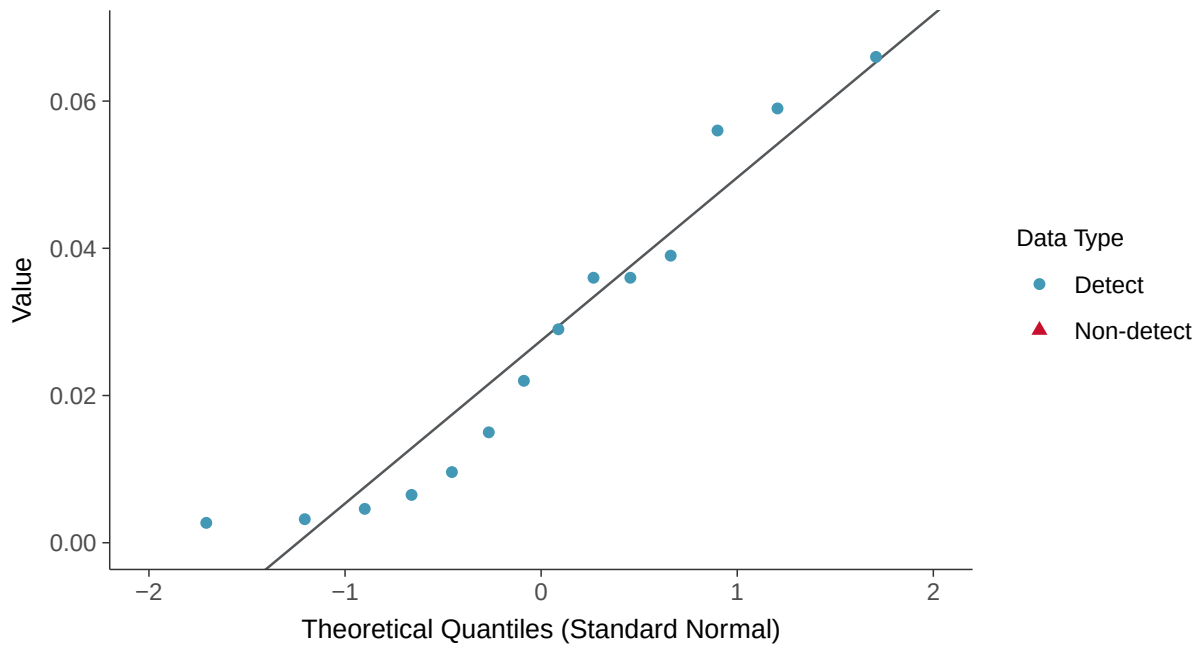
ID: 1_2_129





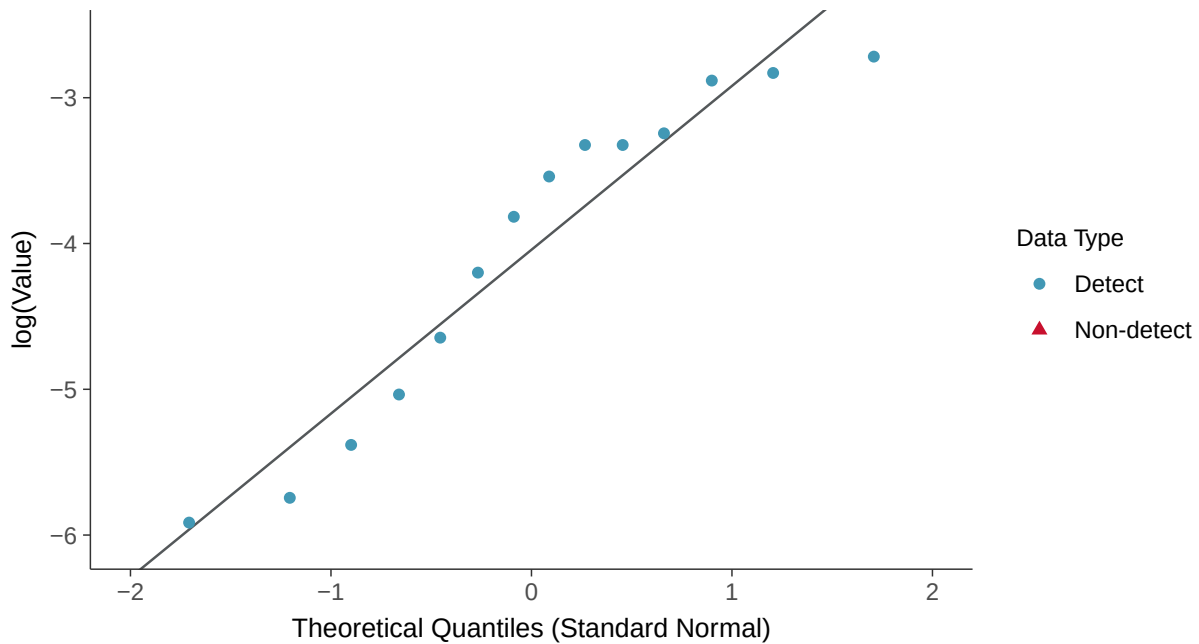
Normal Q-Q plot

Selenium, MW-15 (mg/l)



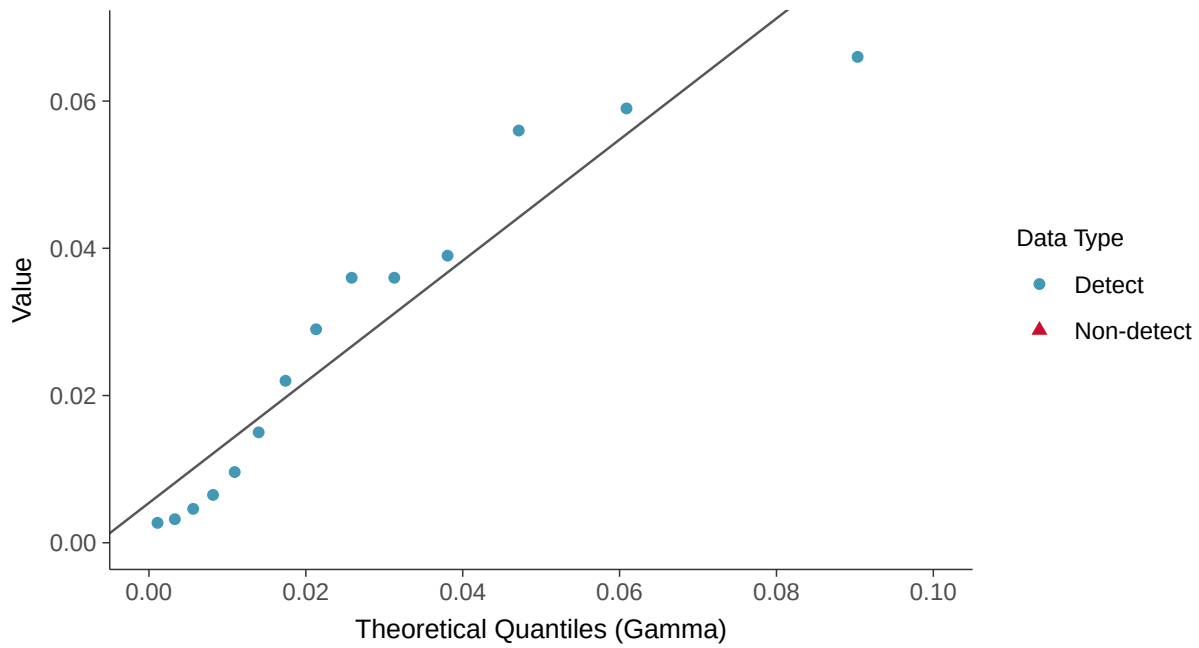
Lognormal Q-Q plot

Selenium, MW-15 (mg/l)



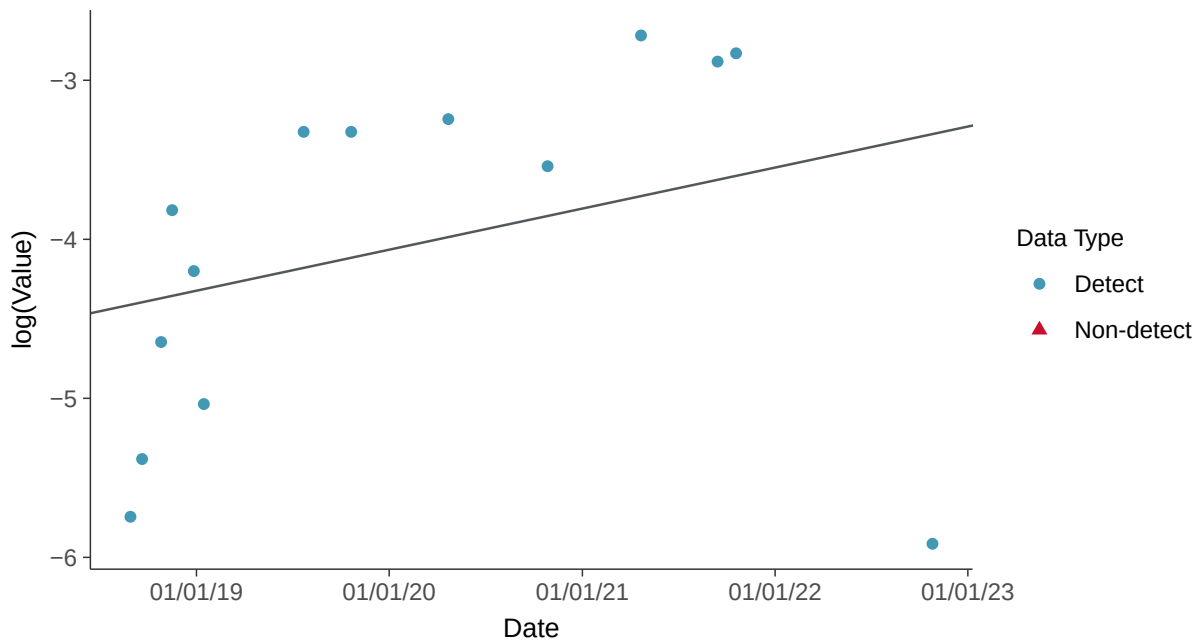
Gamma Q-Q plot

Selenium, MW-15 (mg/l)



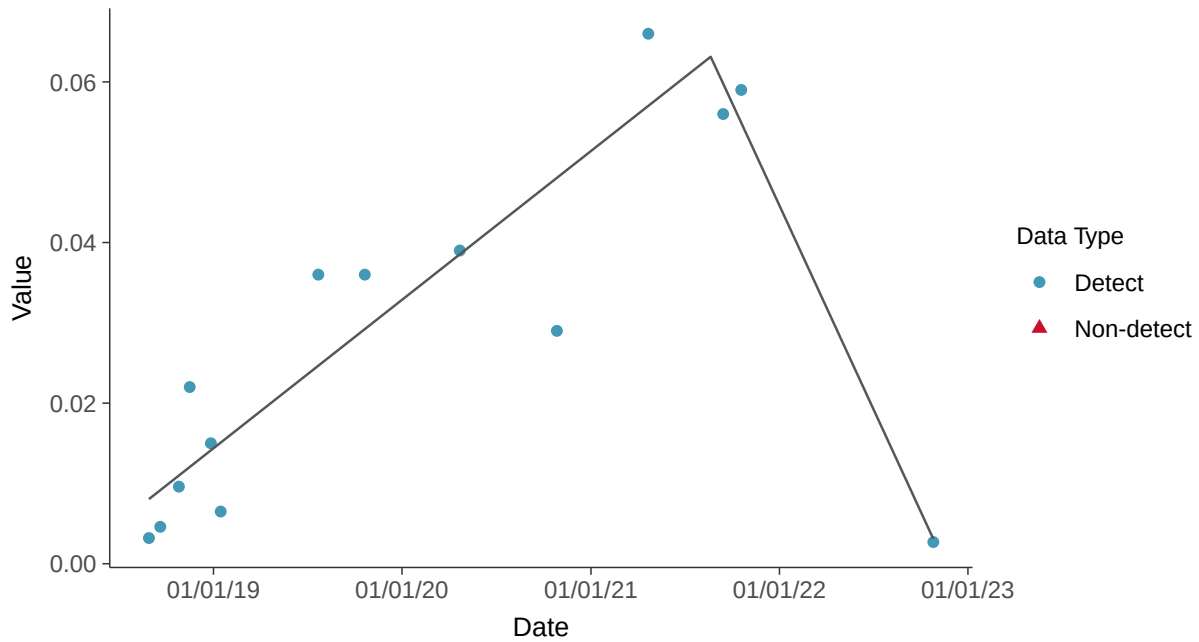
Trend Regression: Lognormal MLE

Selenium, MW-15 (mg/l)



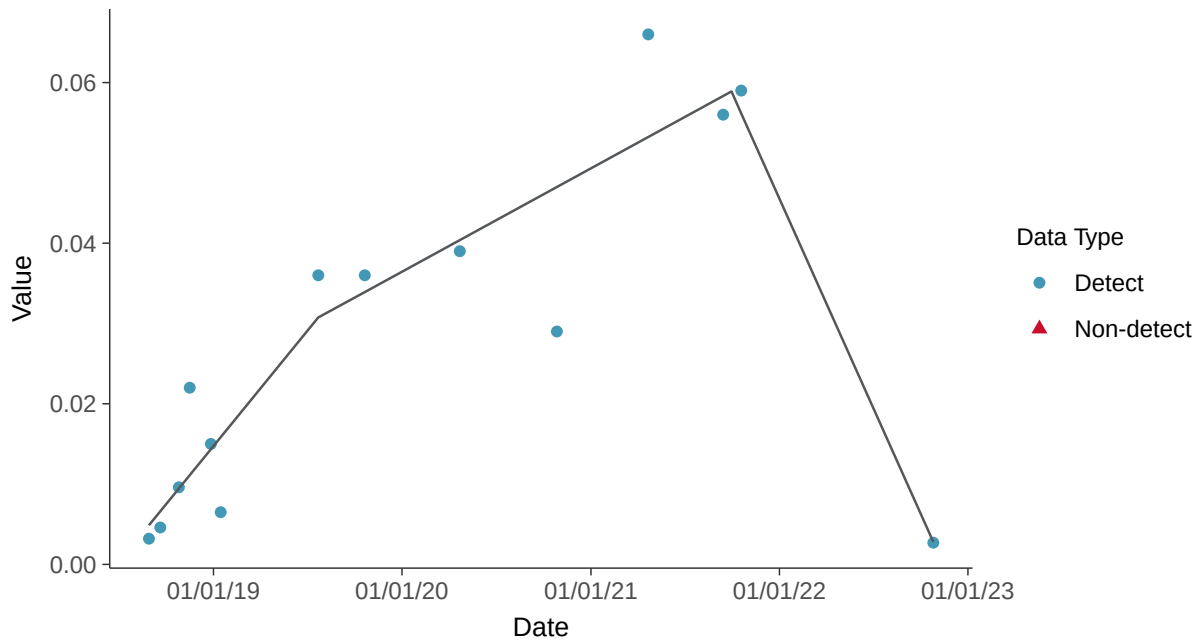
Trend Regression: Piecewise Linear-Linear

Selenium, MW-15 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

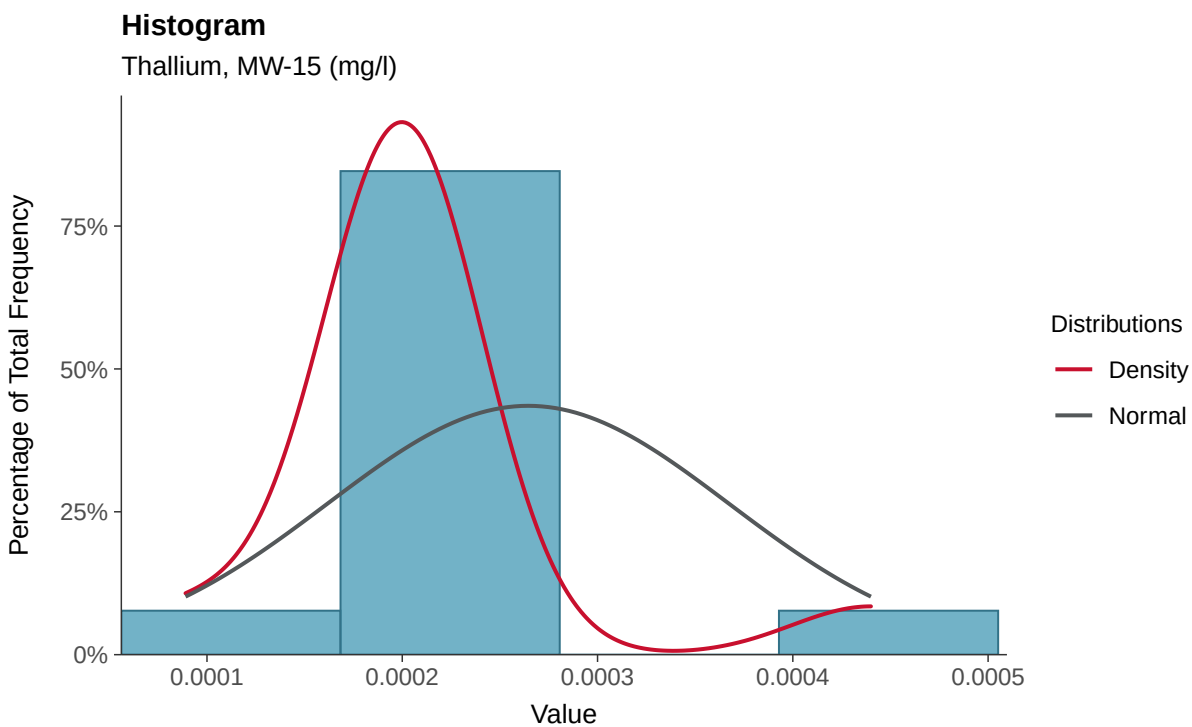
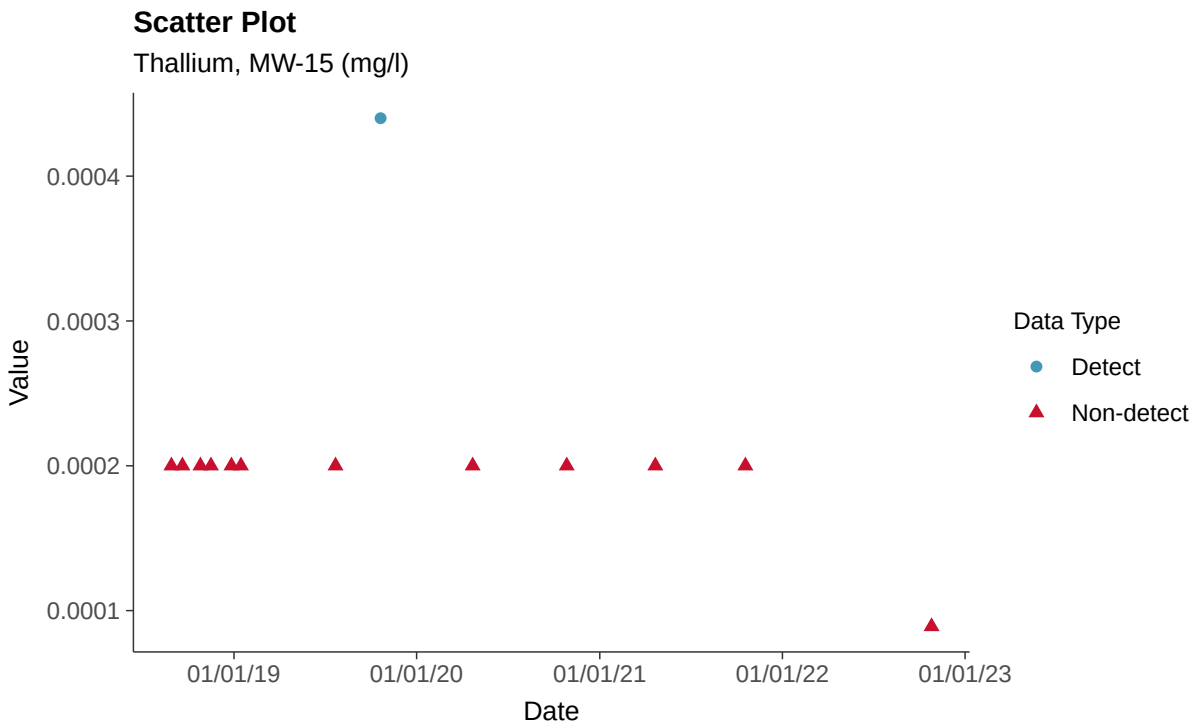
Selenium, MW-15 (mg/l)





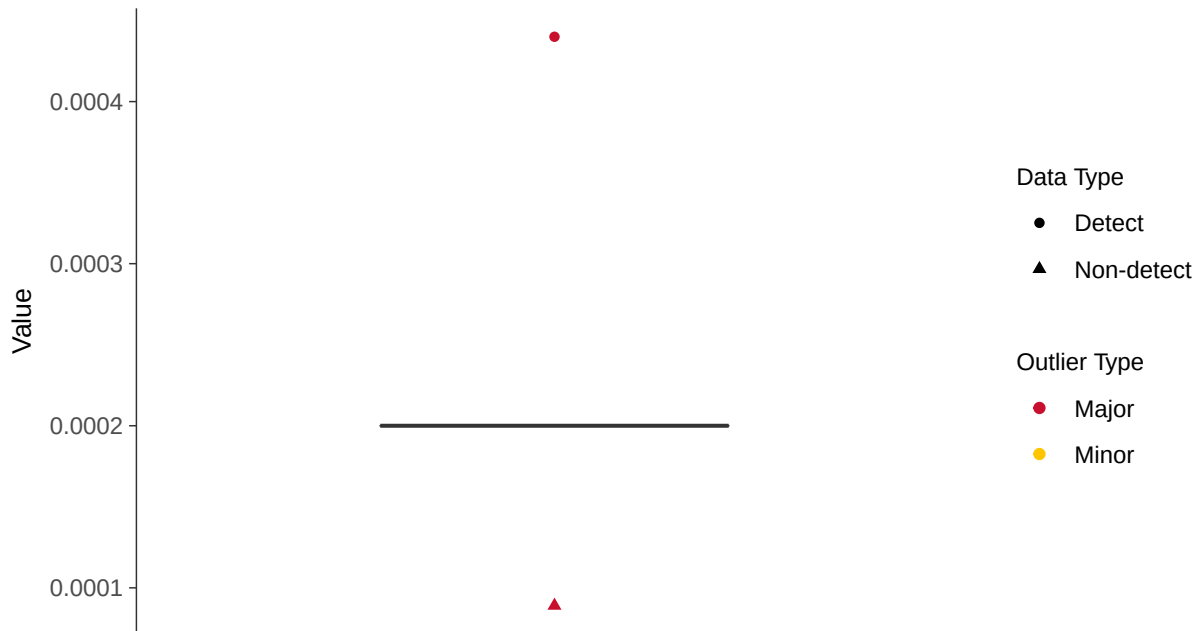
Appendix IV: Thallium, MW-15

ID: 1_2_134



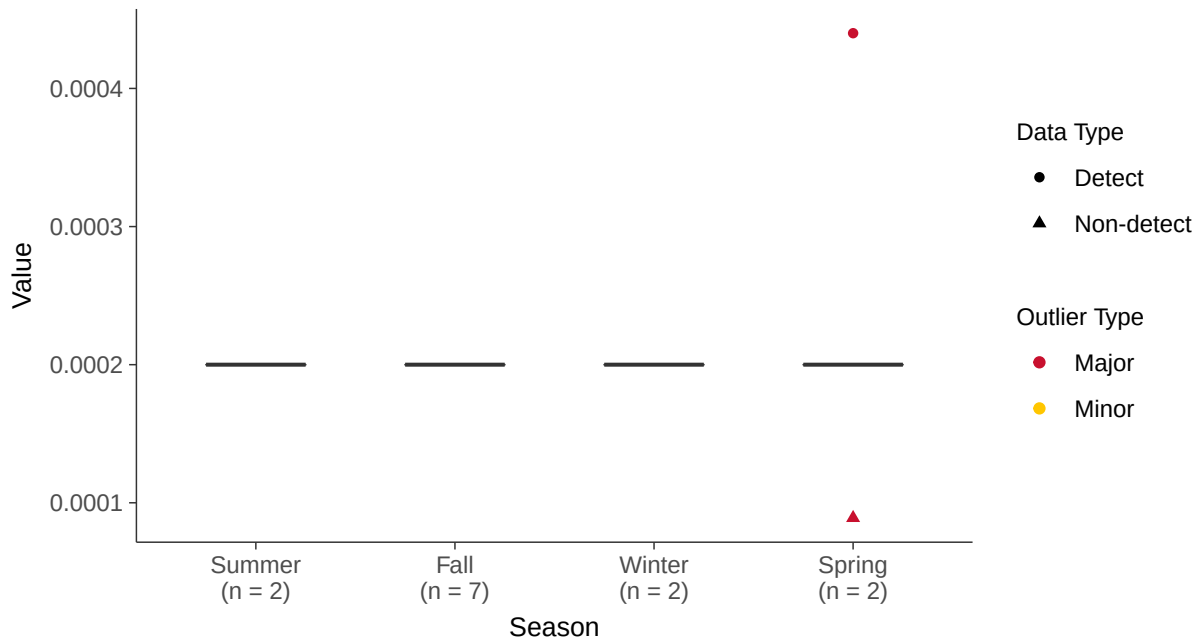
Boxplot

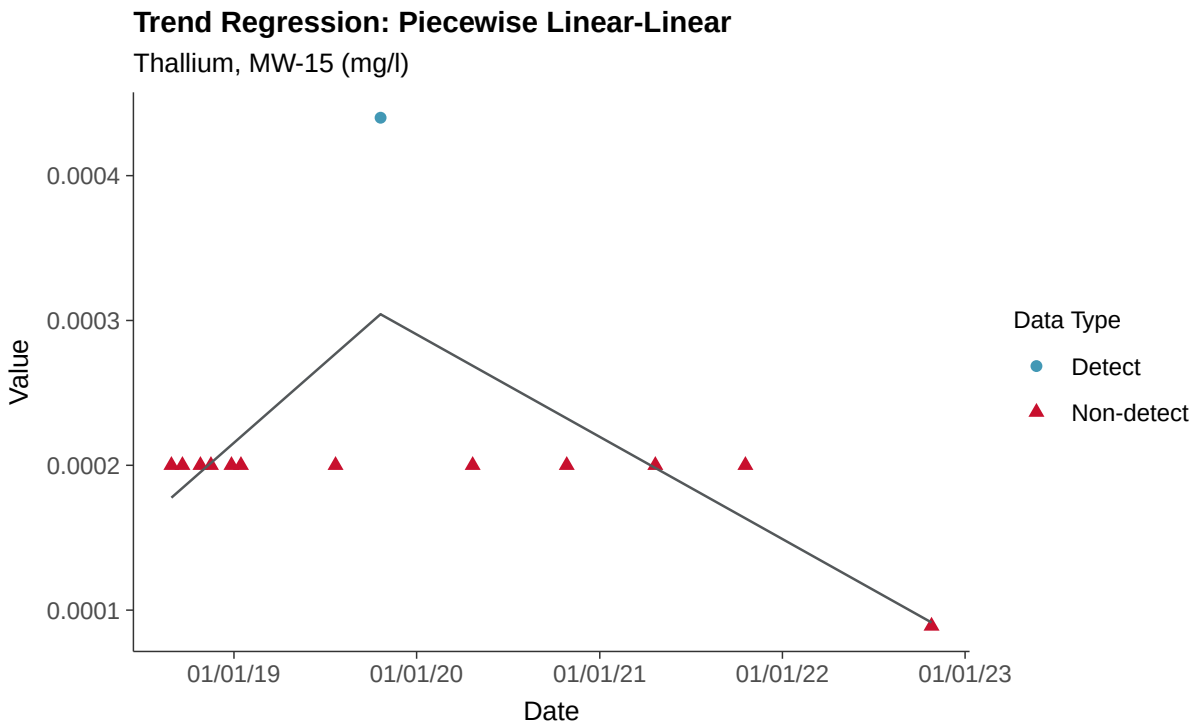
Thallium, MW-15 (mg/l)



Boxplot by Season

Thallium, MW-15 (mg/l)

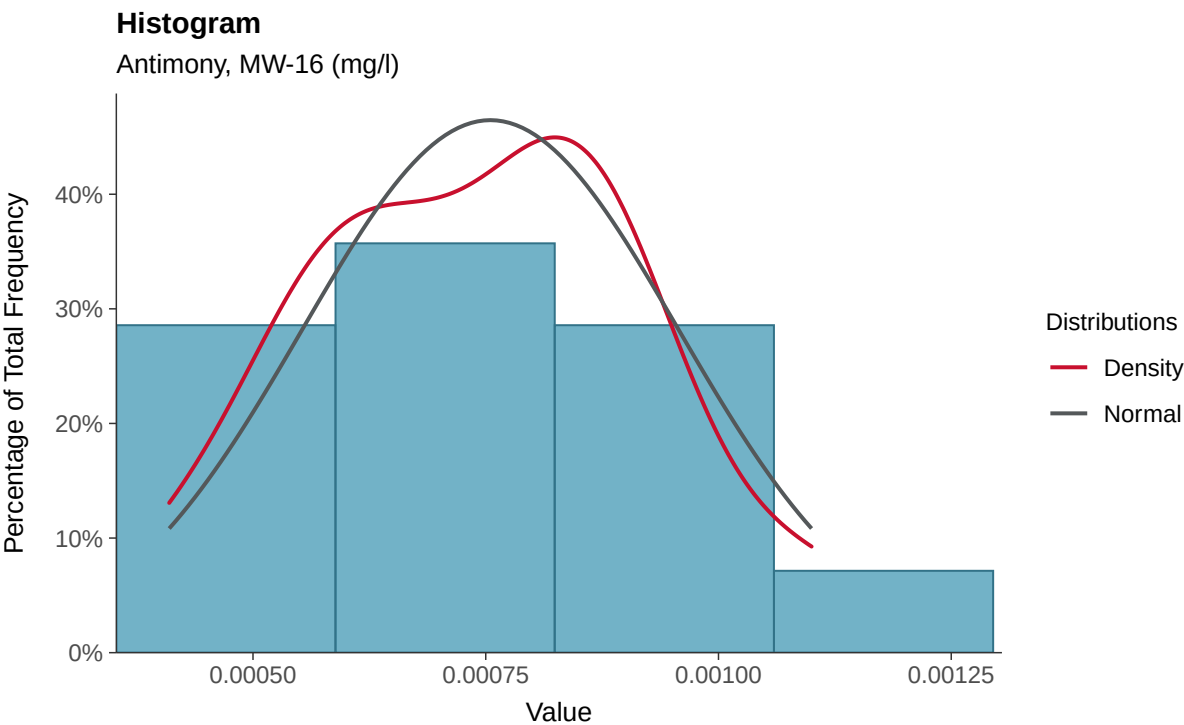
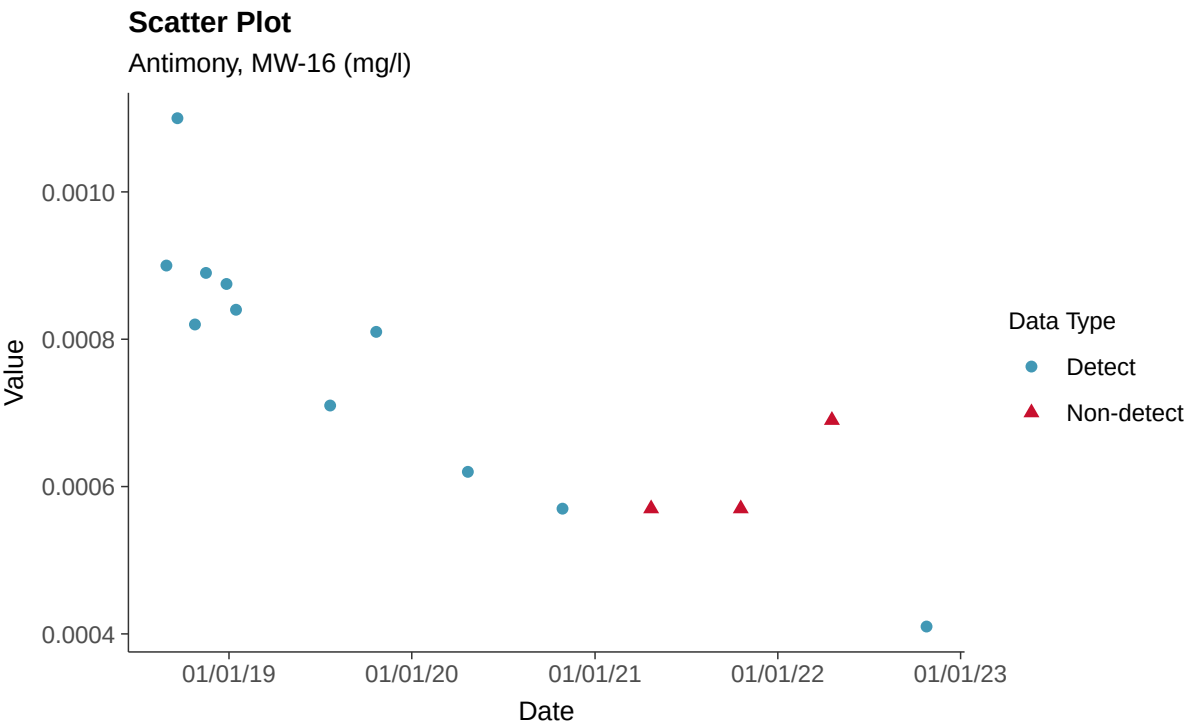


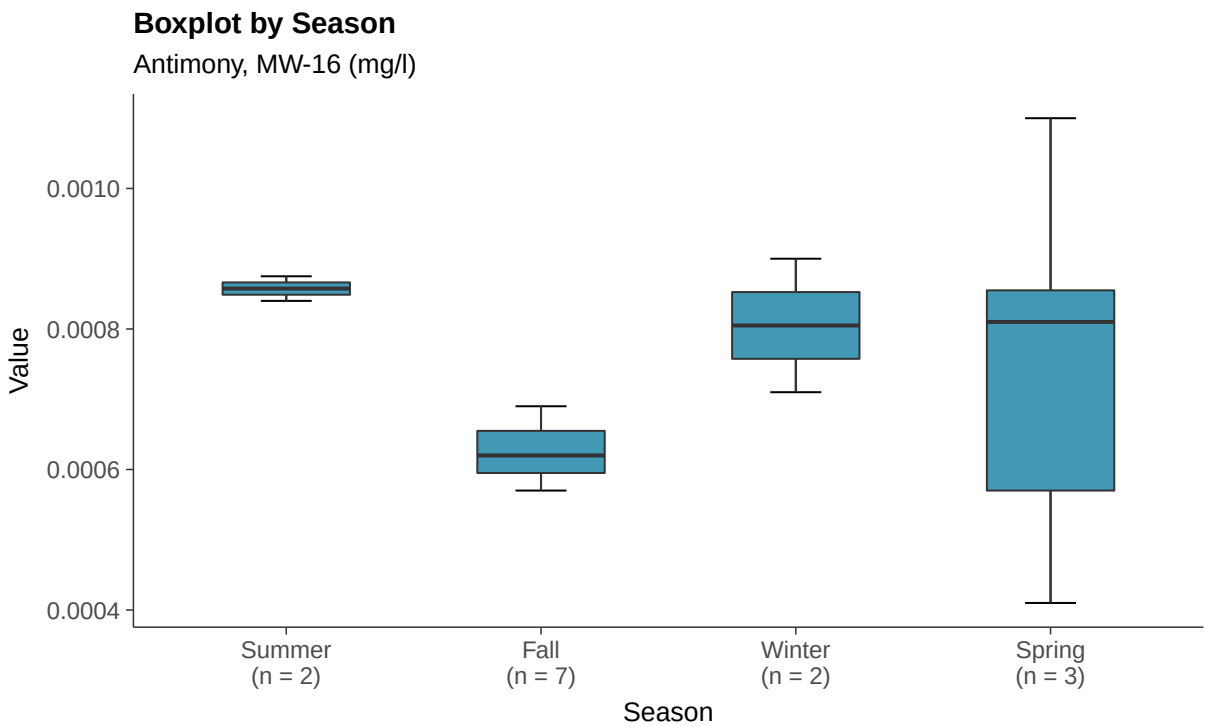
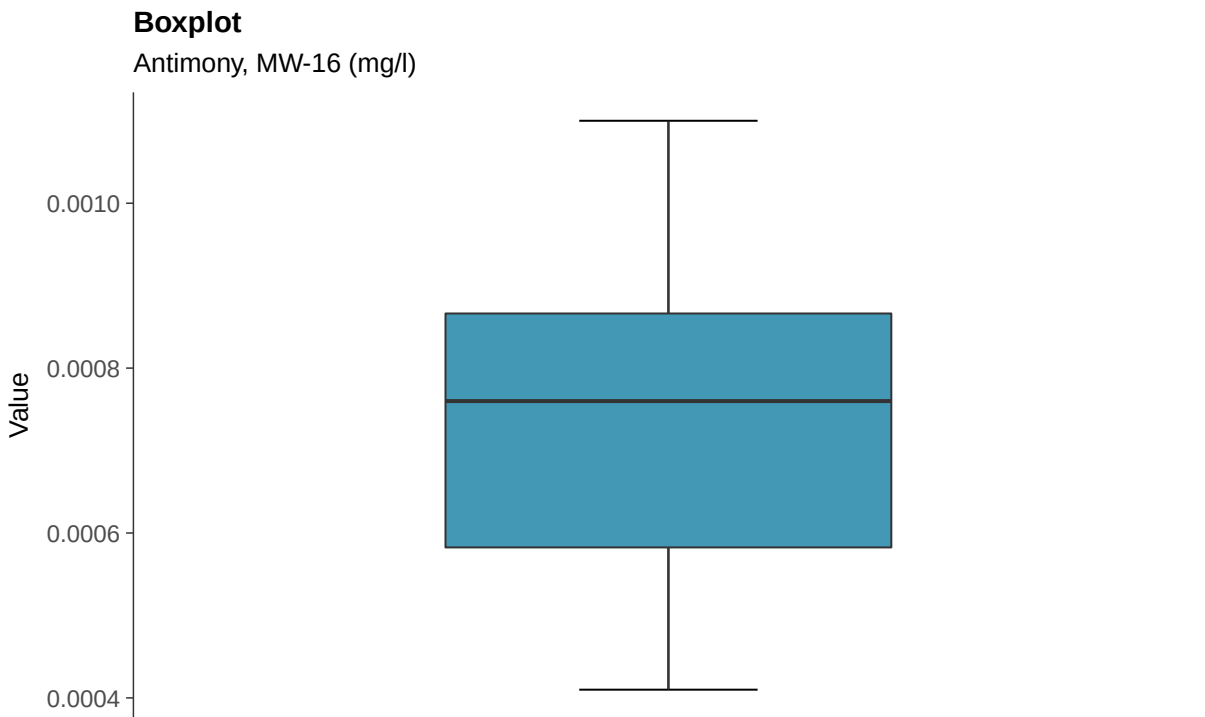




Appendix IV: Antimony, MW-16

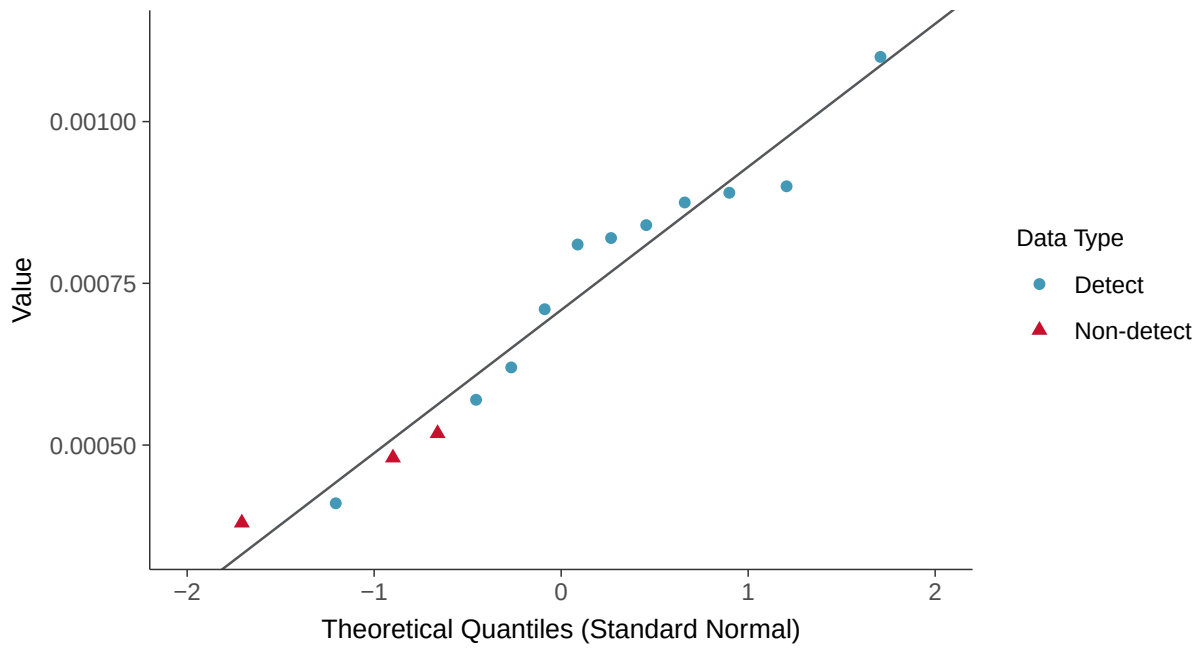
ID: 2_2_104





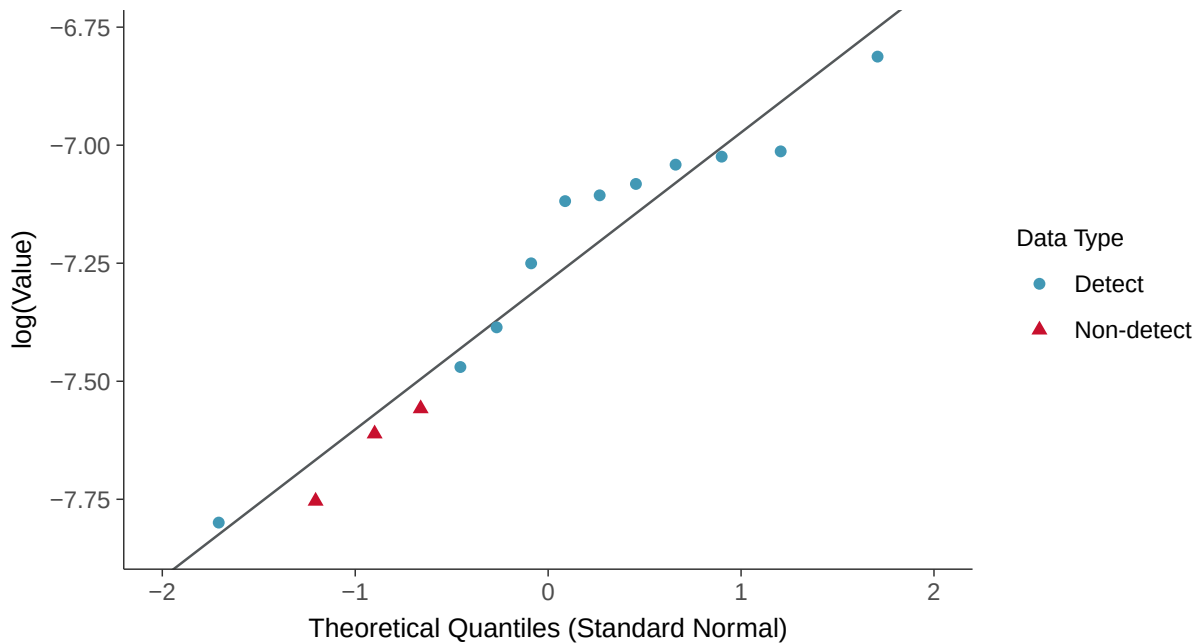
Normal Q-Q plot using ROS Imputed Estimates

Antimony, MW-16 (mg/l)



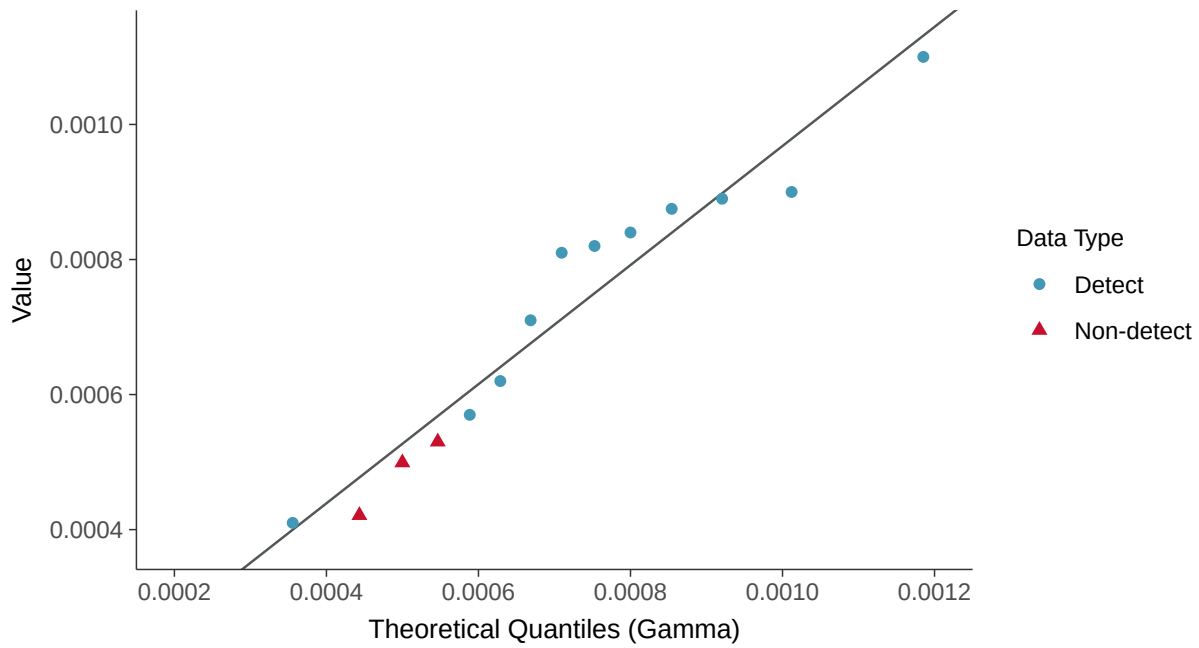
Lognormal Q-Q plot using ROS Imputed Estimates

Antimony, MW-16 (mg/l)



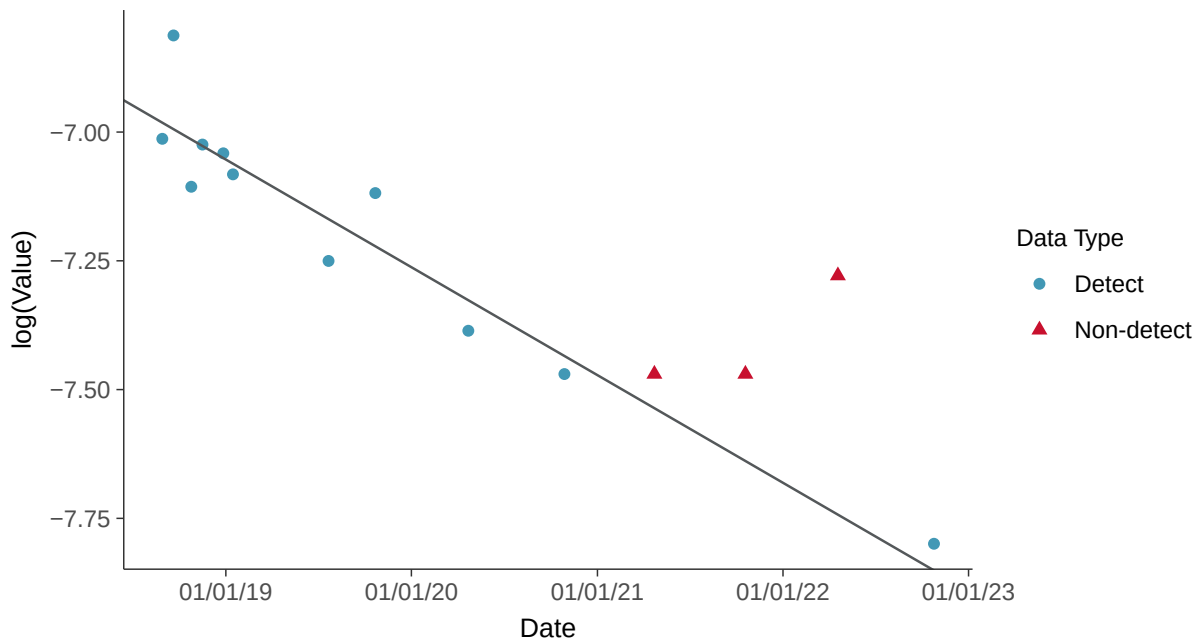
Gamma Q-Q plot using ROS Imputed Estimates

Antimony, MW-16 (mg/l)



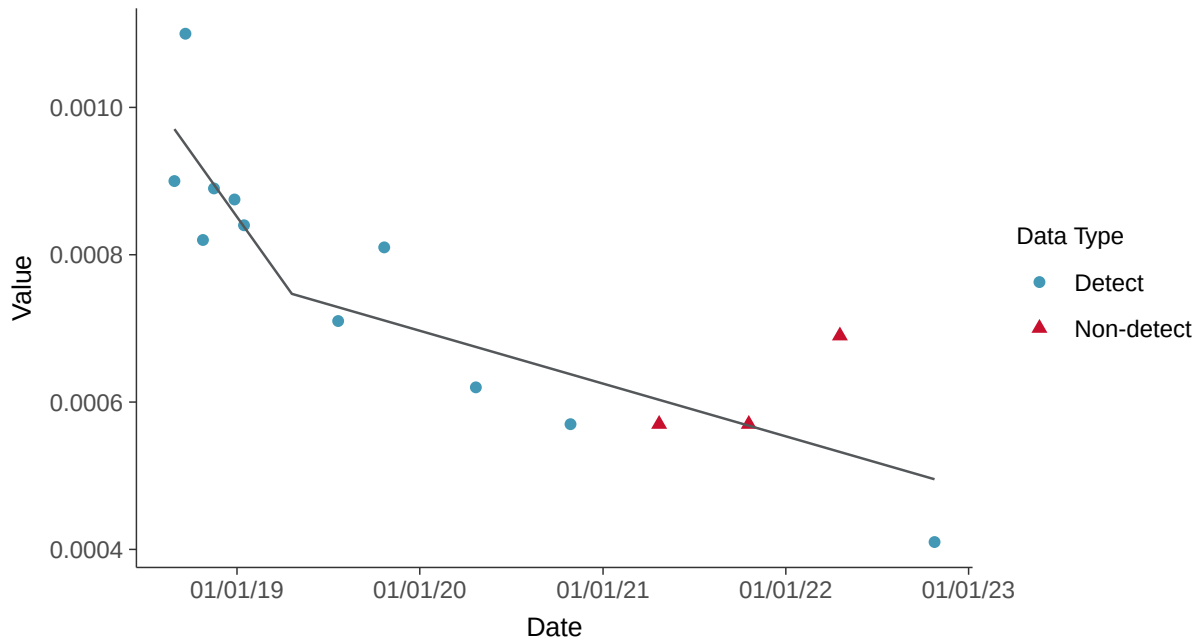
Trend Regression: Lognormal MLE

Antimony, MW-16 (mg/l)



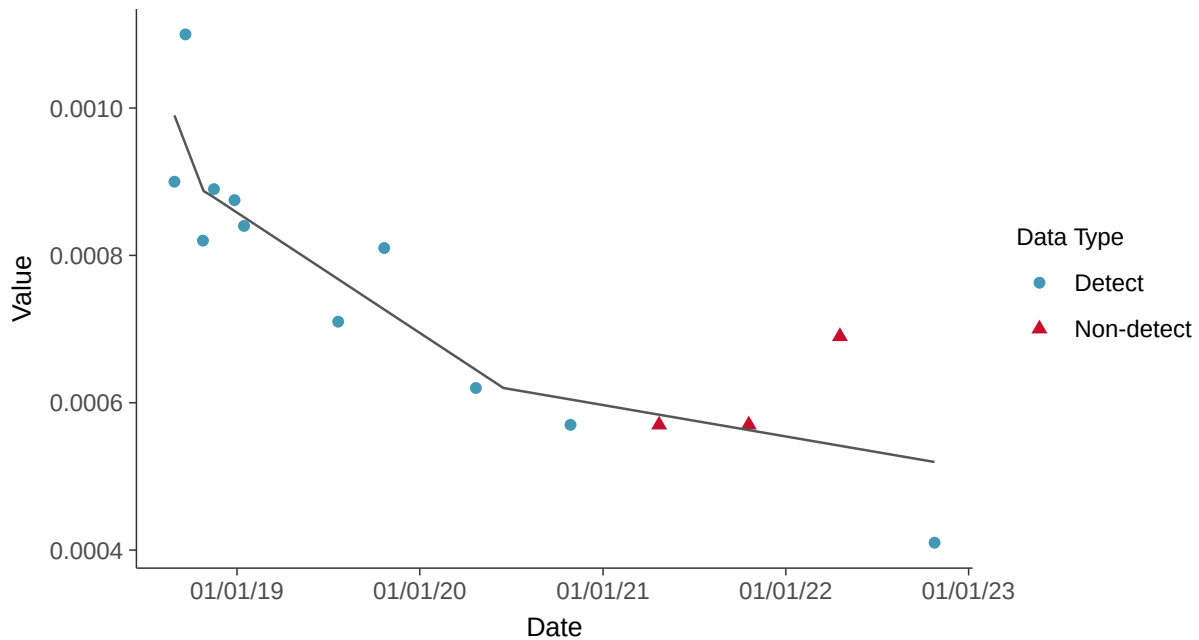
Trend Regression: Piecewise Linear-Linear

Antimony, MW-16 (mg/l)



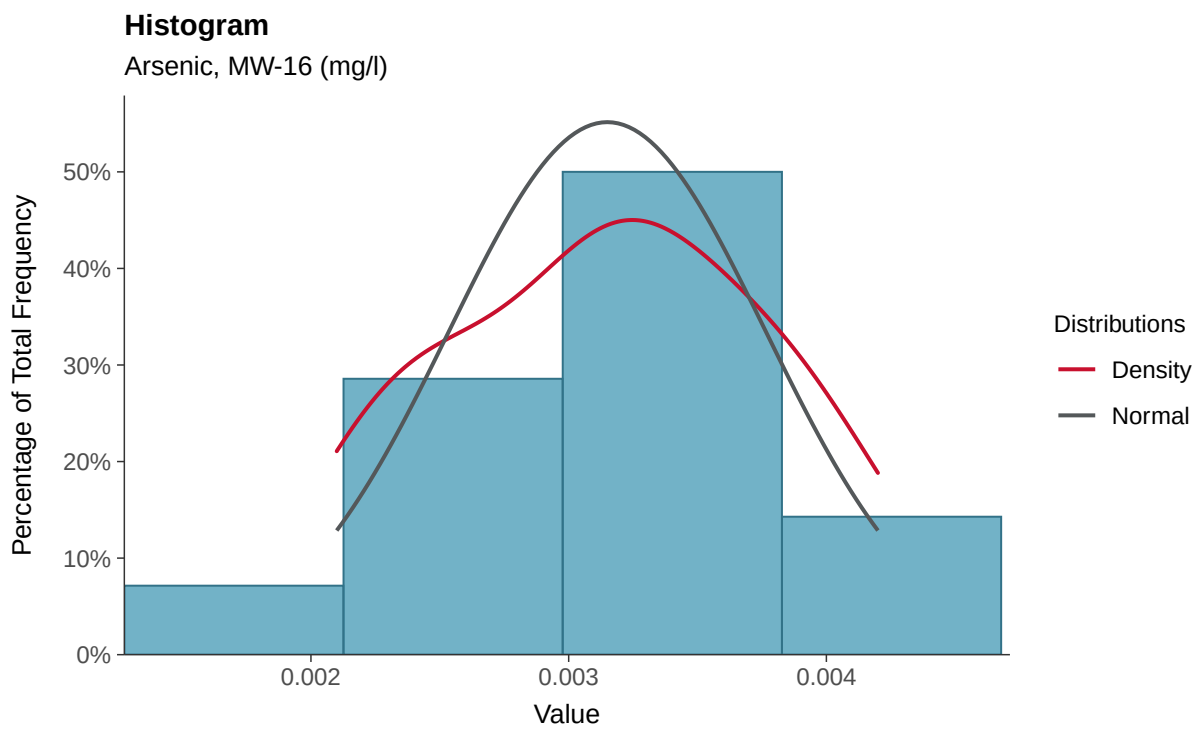
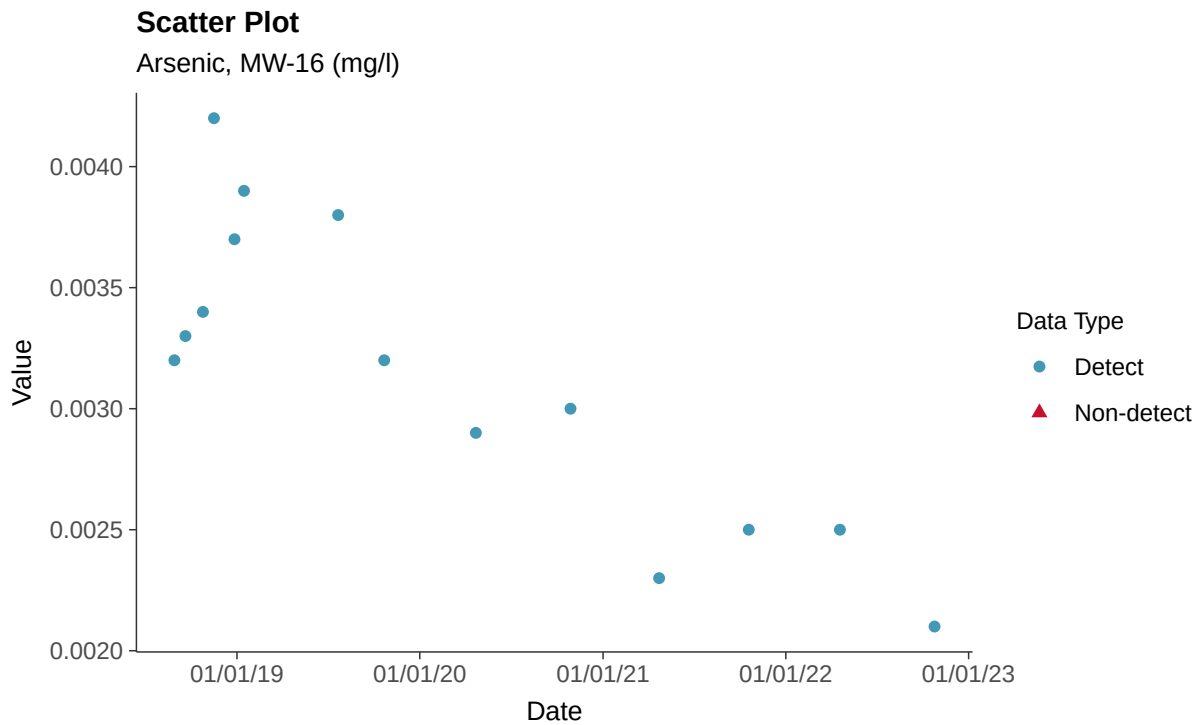
Trend Regression: Piecewise Linear-Linear-Linear

Antimony, MW-16 (mg/l)



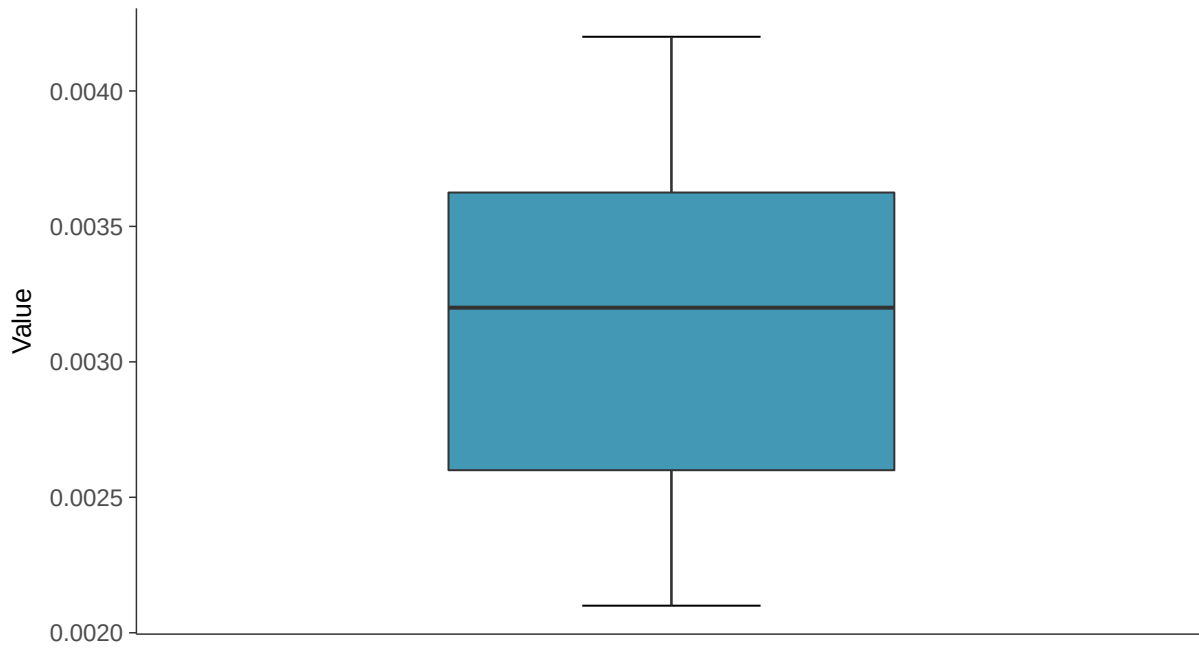
Appendix IV: Arsenic, MW-16

ID: 2_2_105



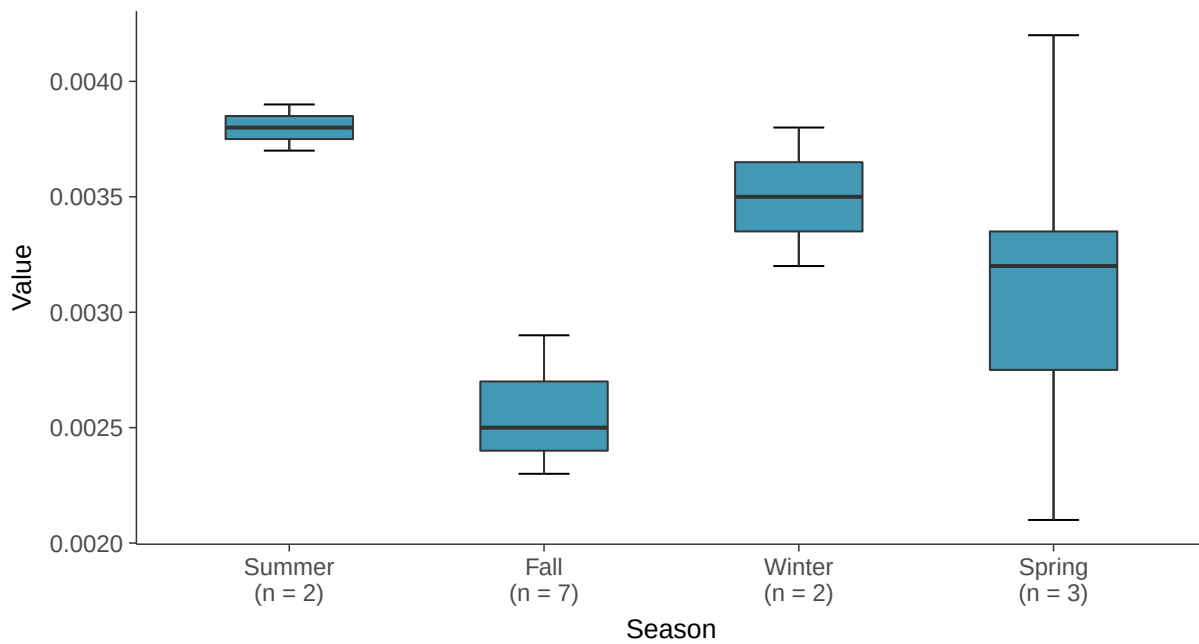
Boxplot

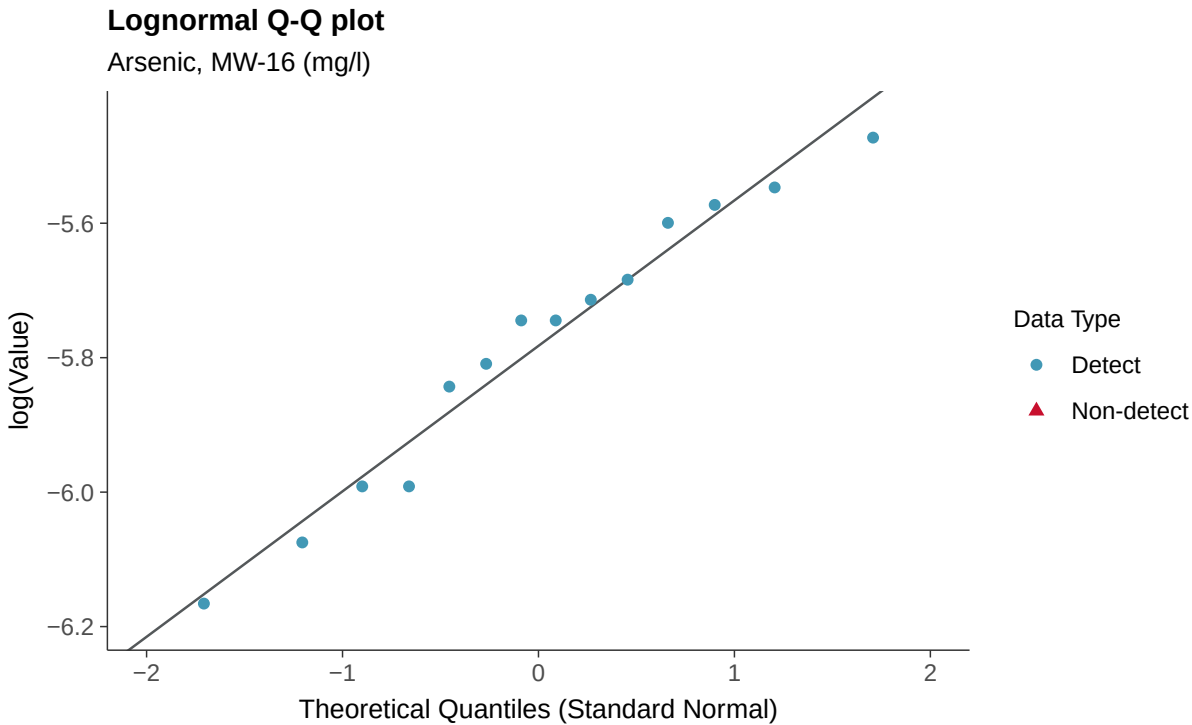
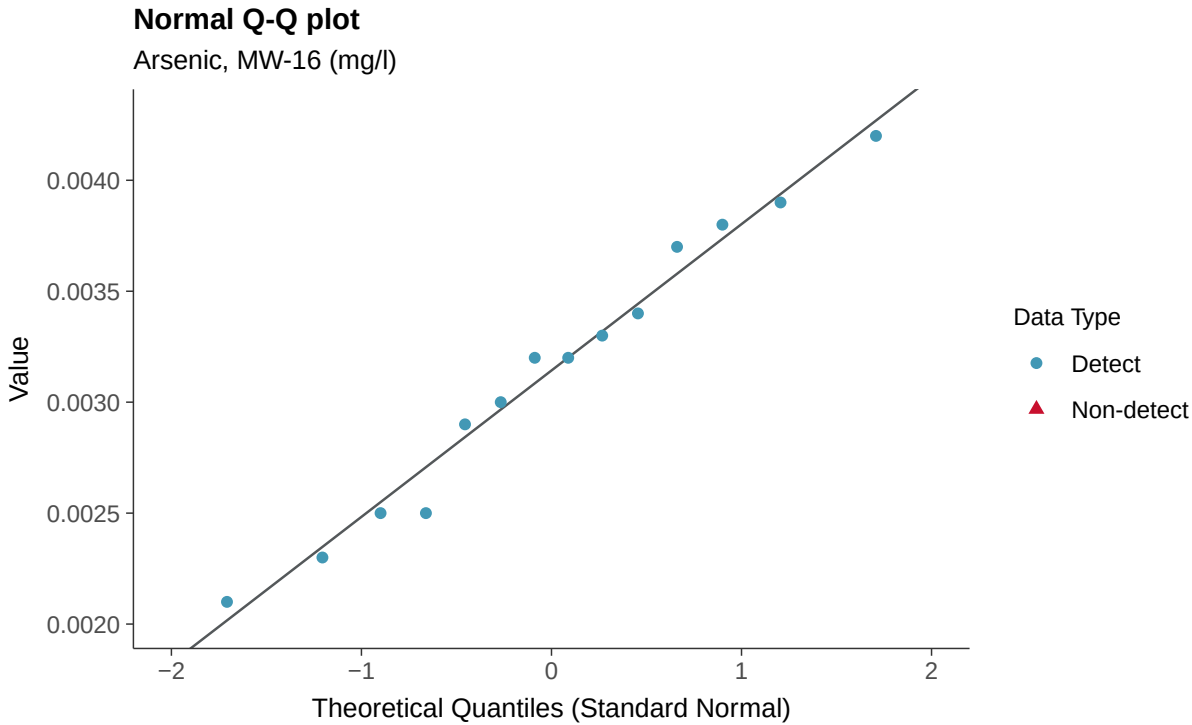
Arsenic, MW-16 (mg/l)



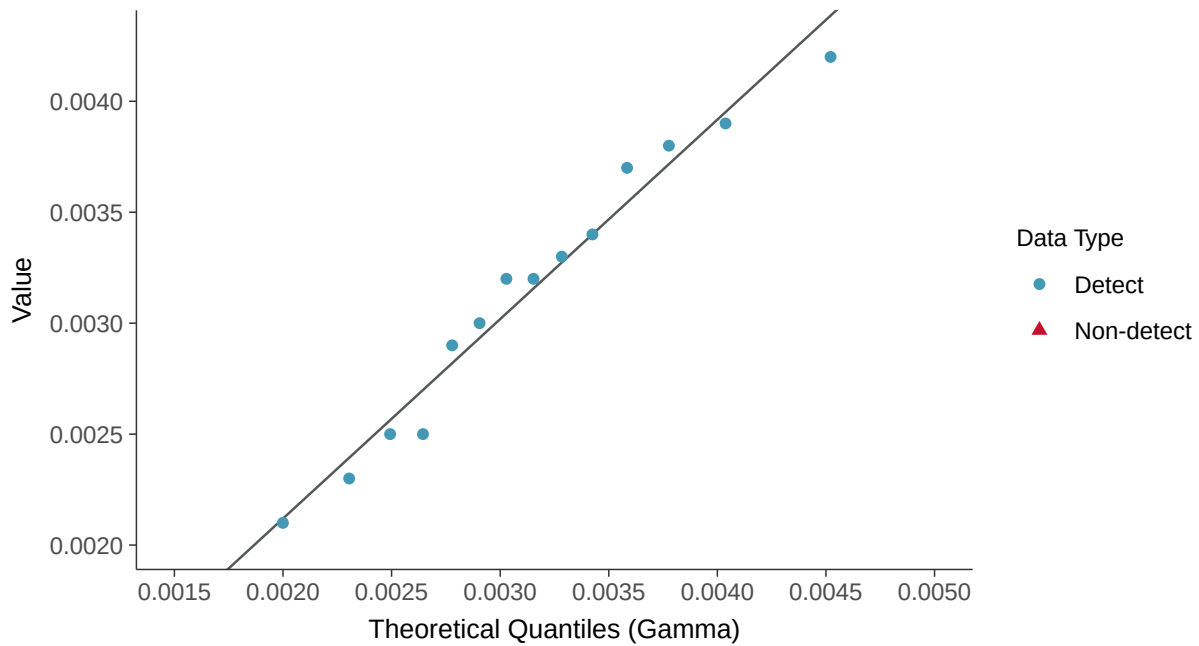
Boxplot by Season

Arsenic, MW-16 (mg/l)

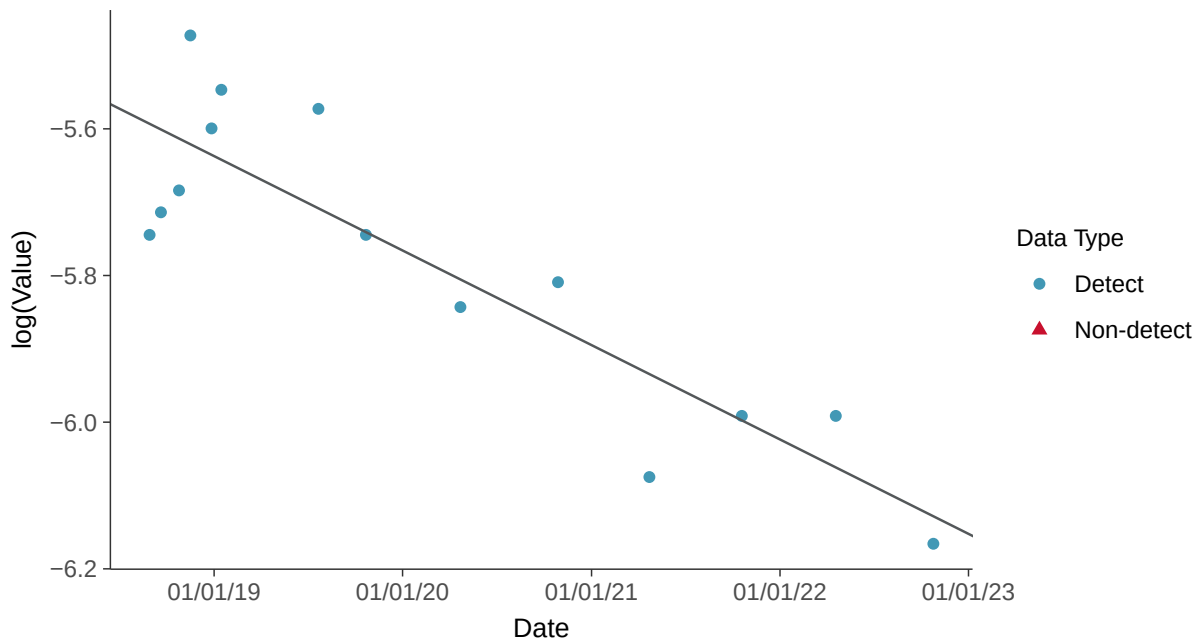




Gamma Q-Q plot
Arsenic, MW-16 (mg/l)

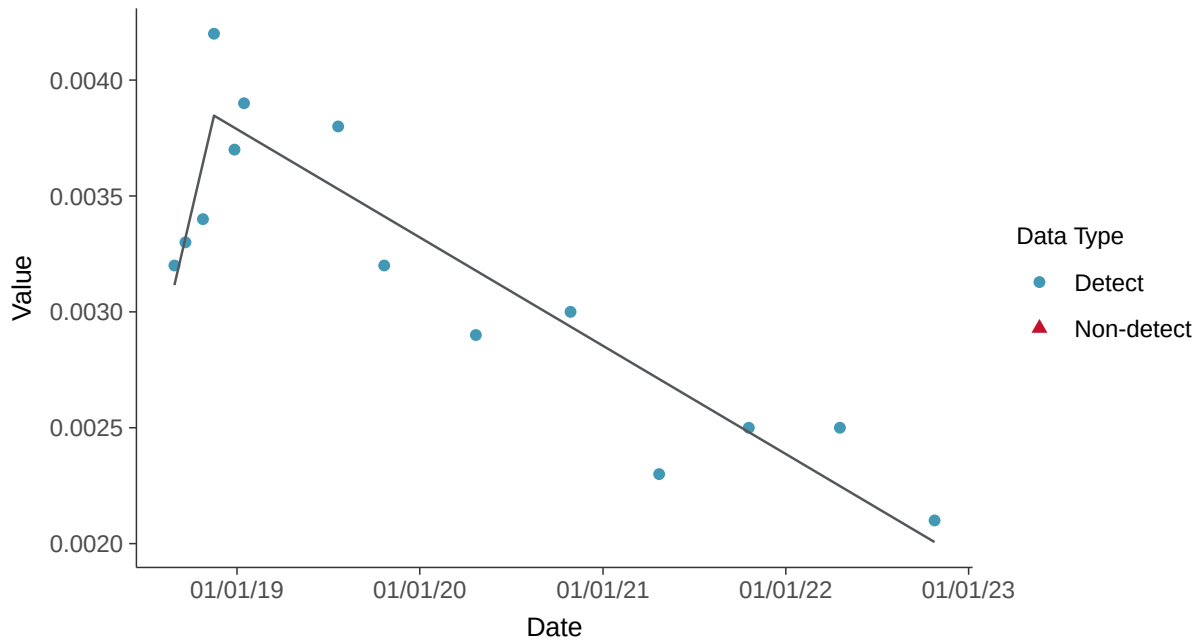


Trend Regression: Lognormal MLE
Arsenic, MW-16 (mg/l)



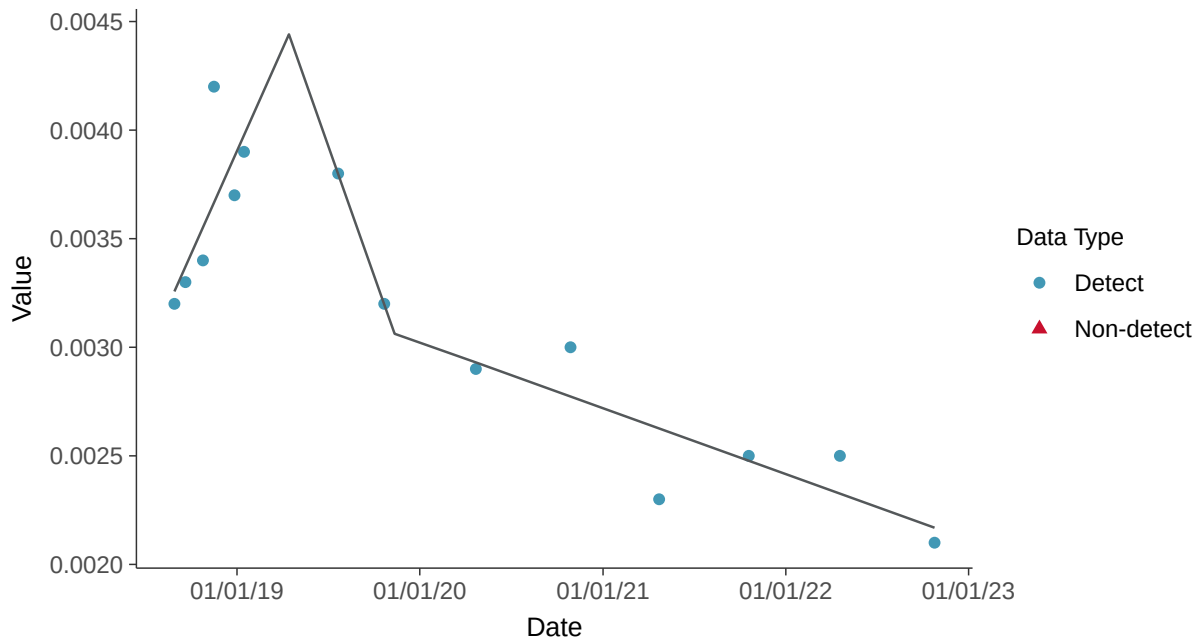
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-16 (mg/l)



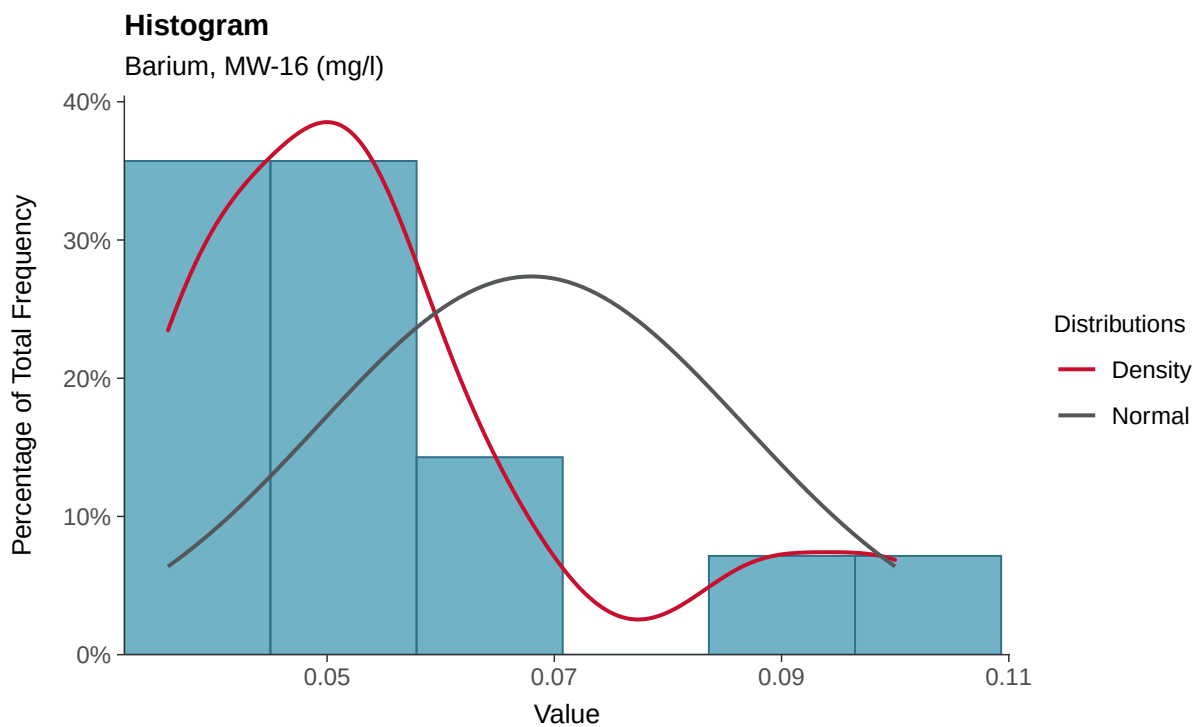
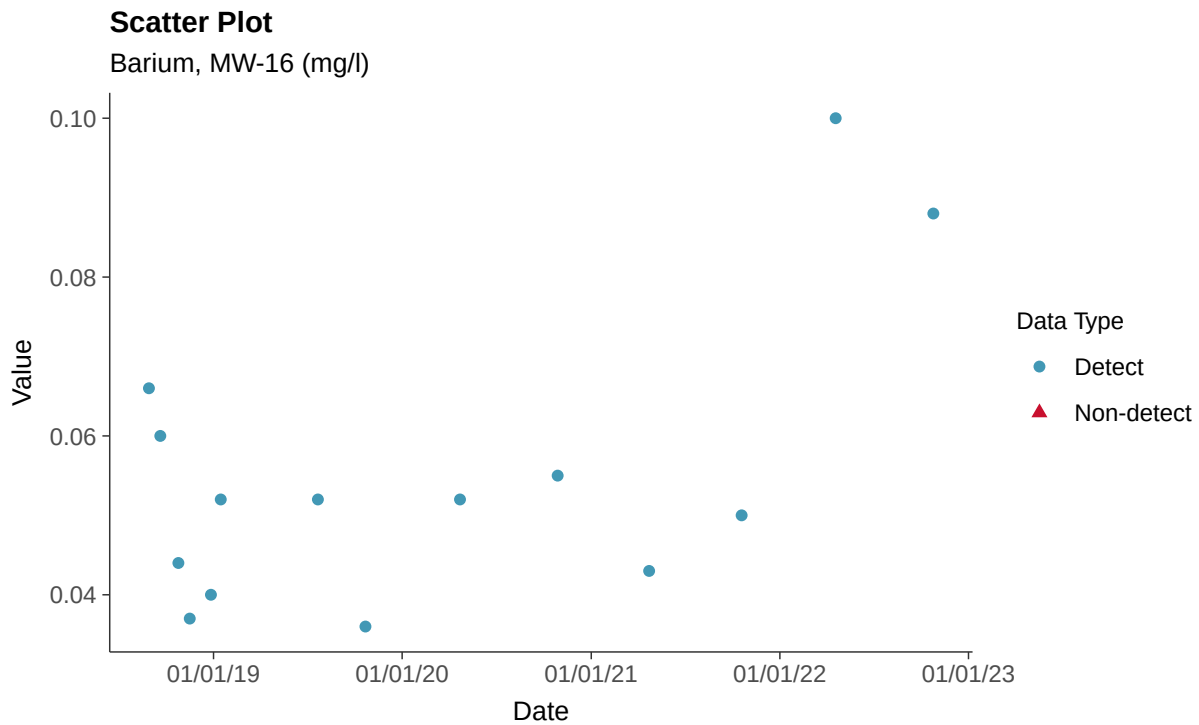
Trend Regression: Piecewise Linear-Linear-Linear

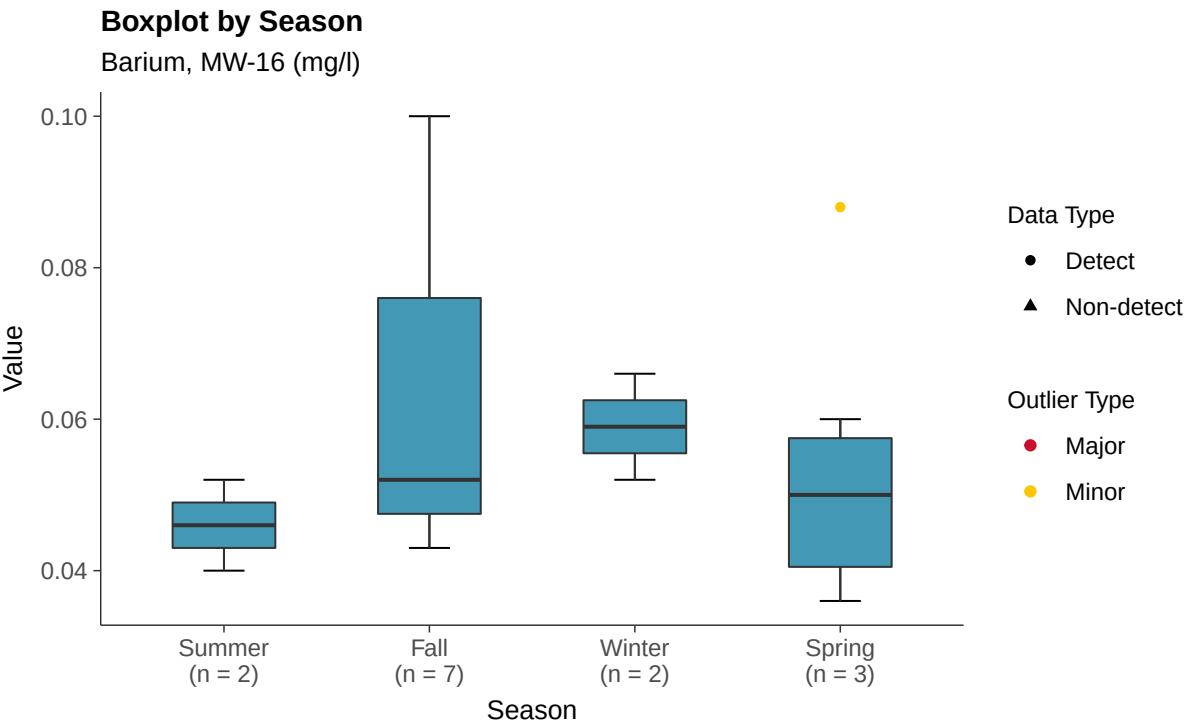
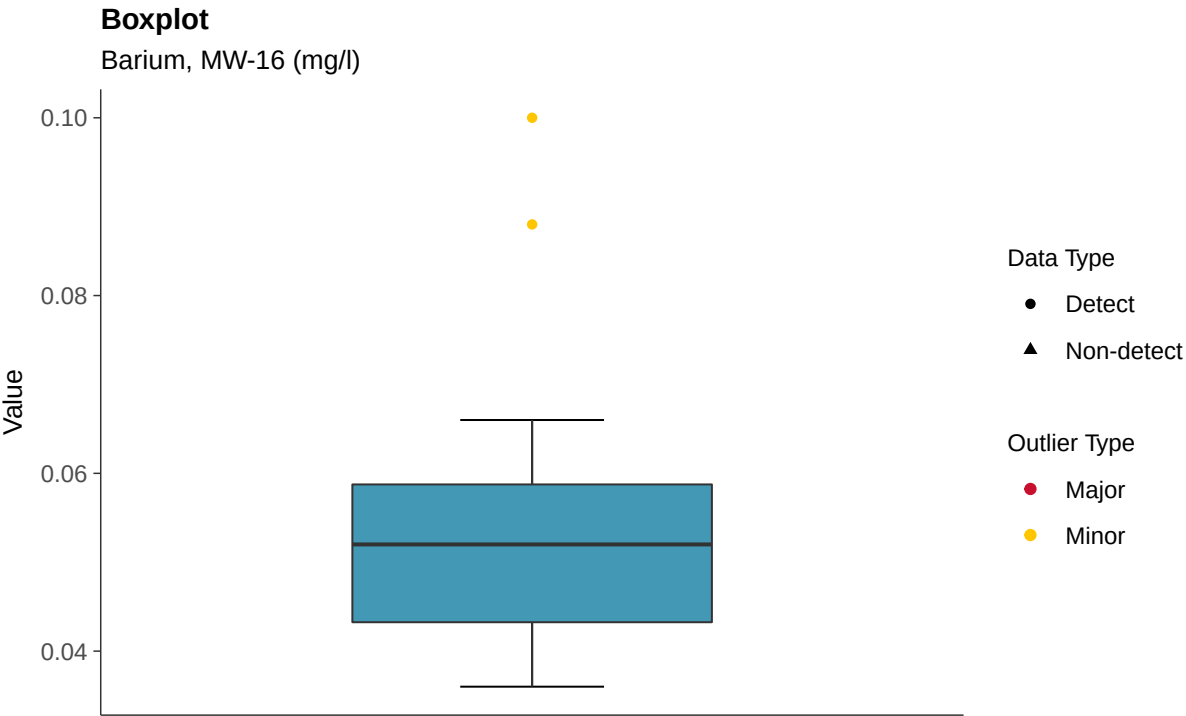
Arsenic, MW-16 (mg/l)



Appendix IV: Barium, MW-16

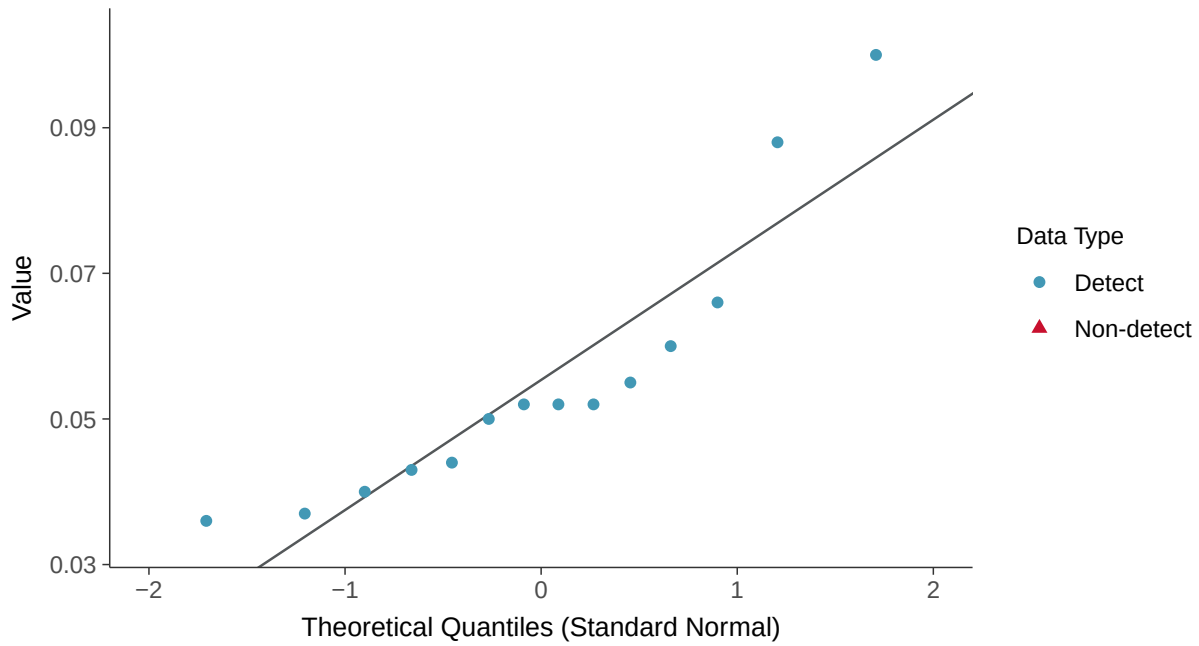
ID: 2_2_106





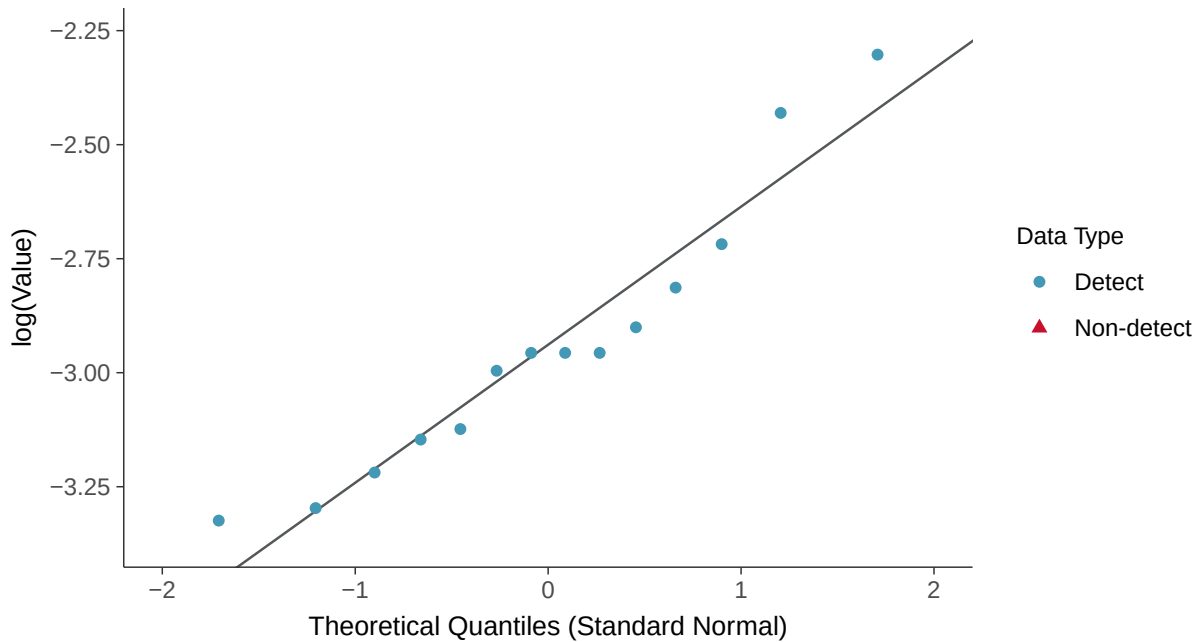
Normal Q-Q plot

Barium, MW-16 (mg/l)



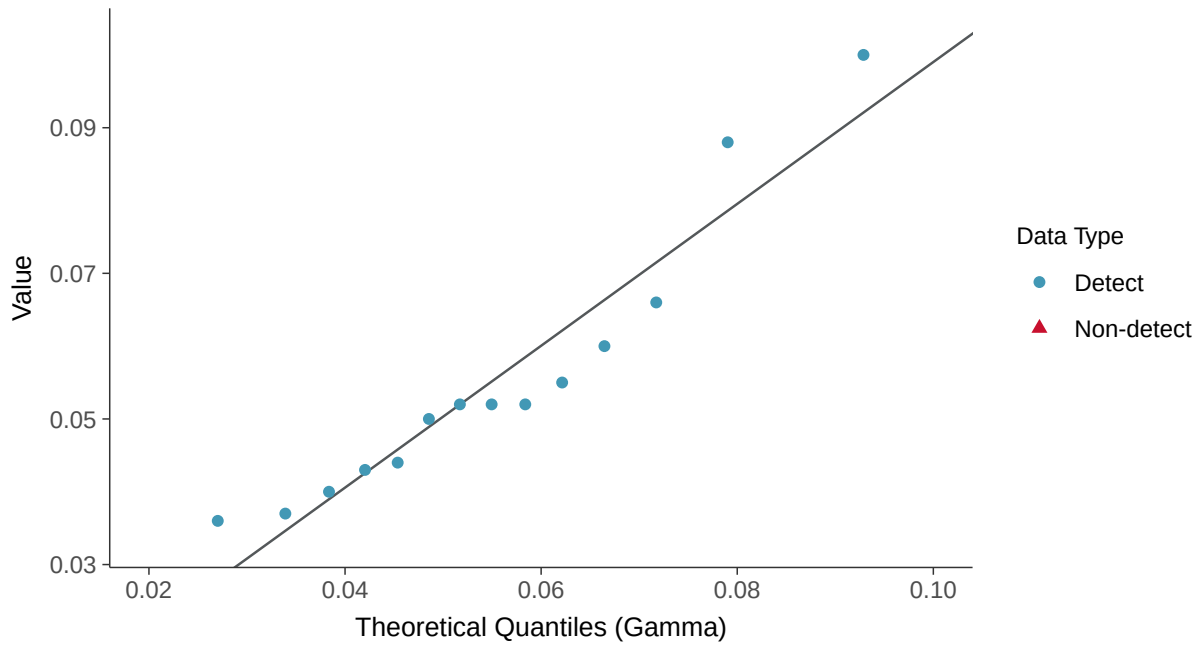
Lognormal Q-Q plot

Barium, MW-16 (mg/l)



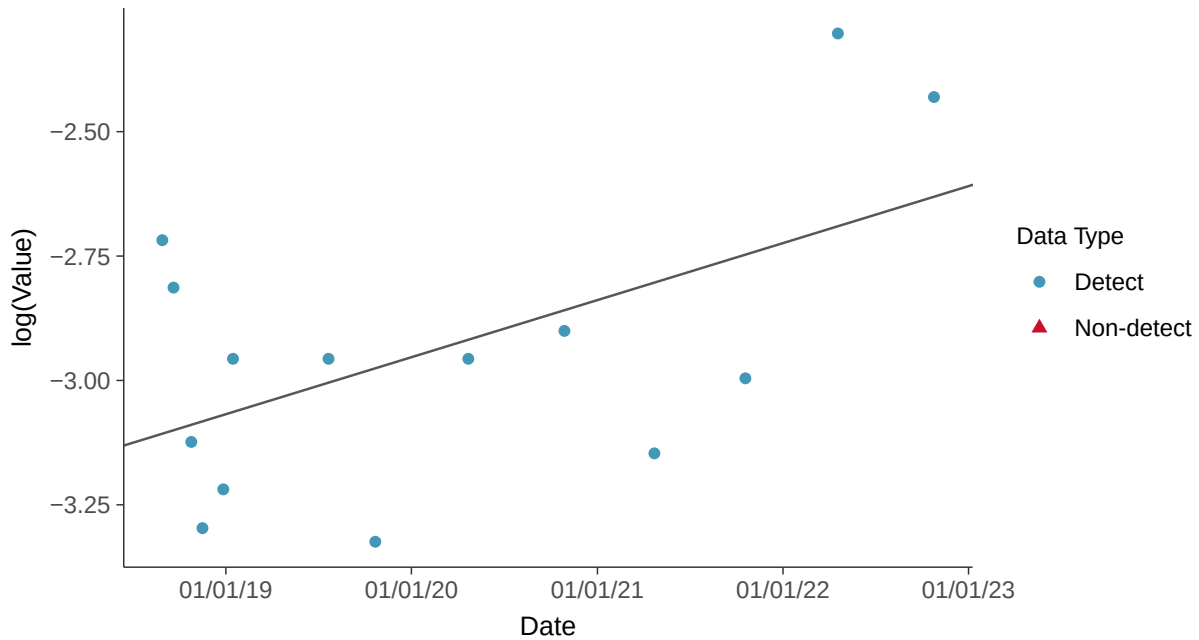
Gamma Q-Q plot

Barium, MW-16 (mg/l)



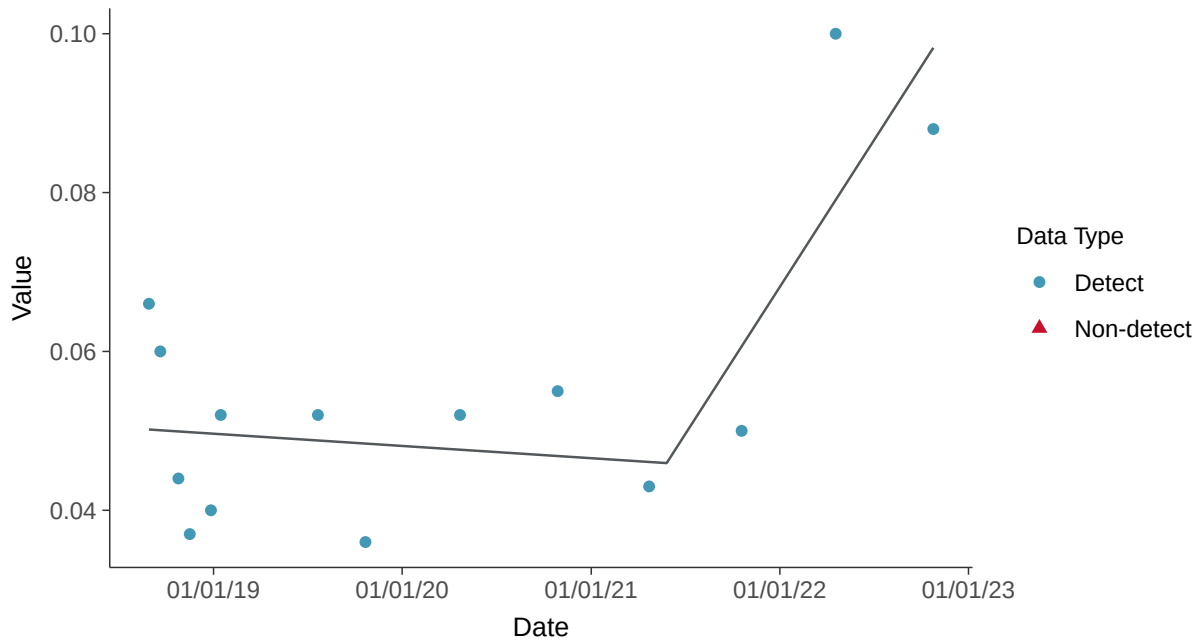
Trend Regression: Lognormal MLE

Barium, MW-16 (mg/l)



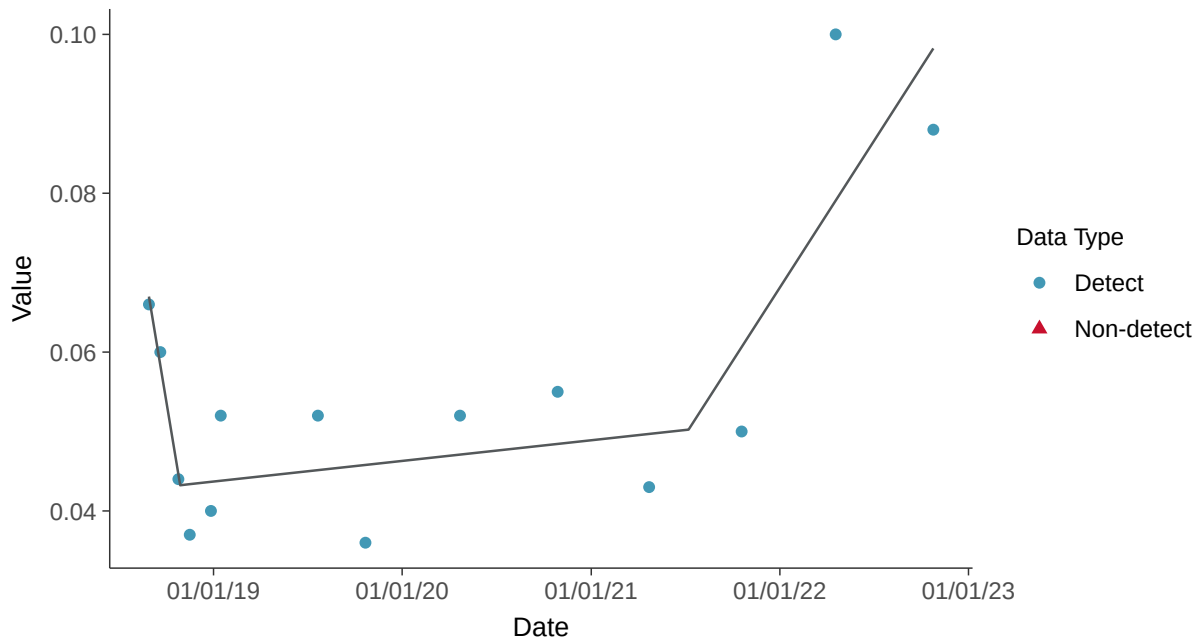
Trend Regression: Piecewise Linear-Linear

Barium, MW-16 (mg/l)



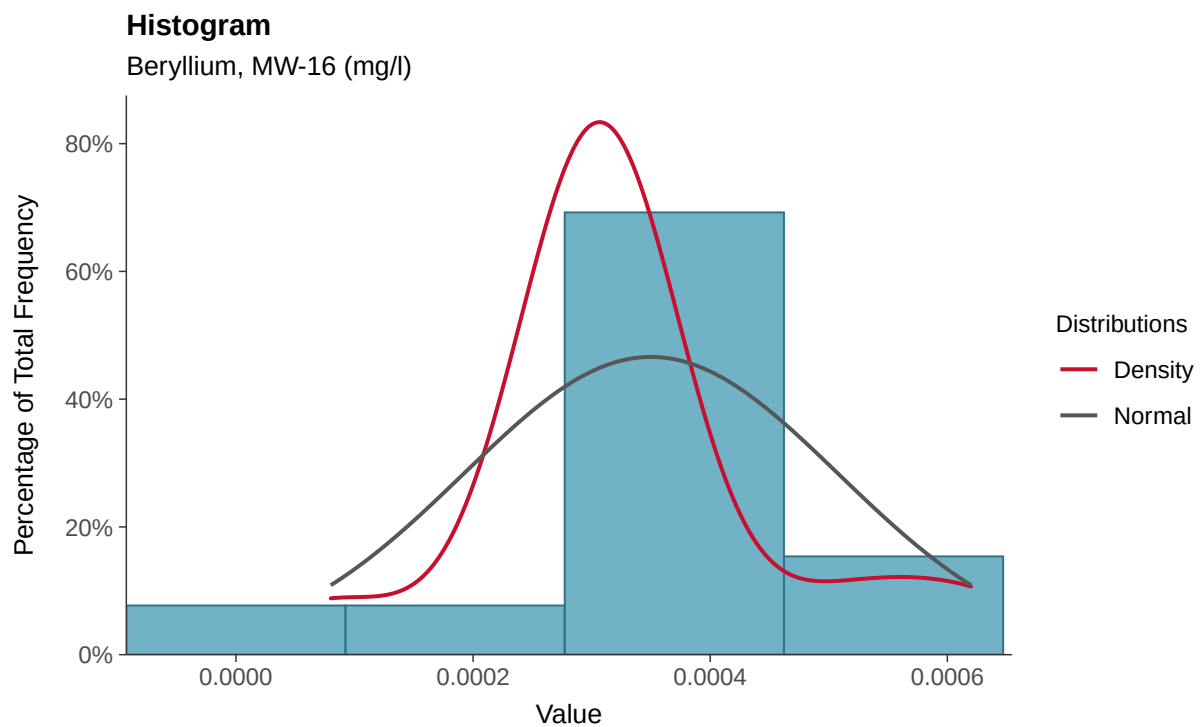
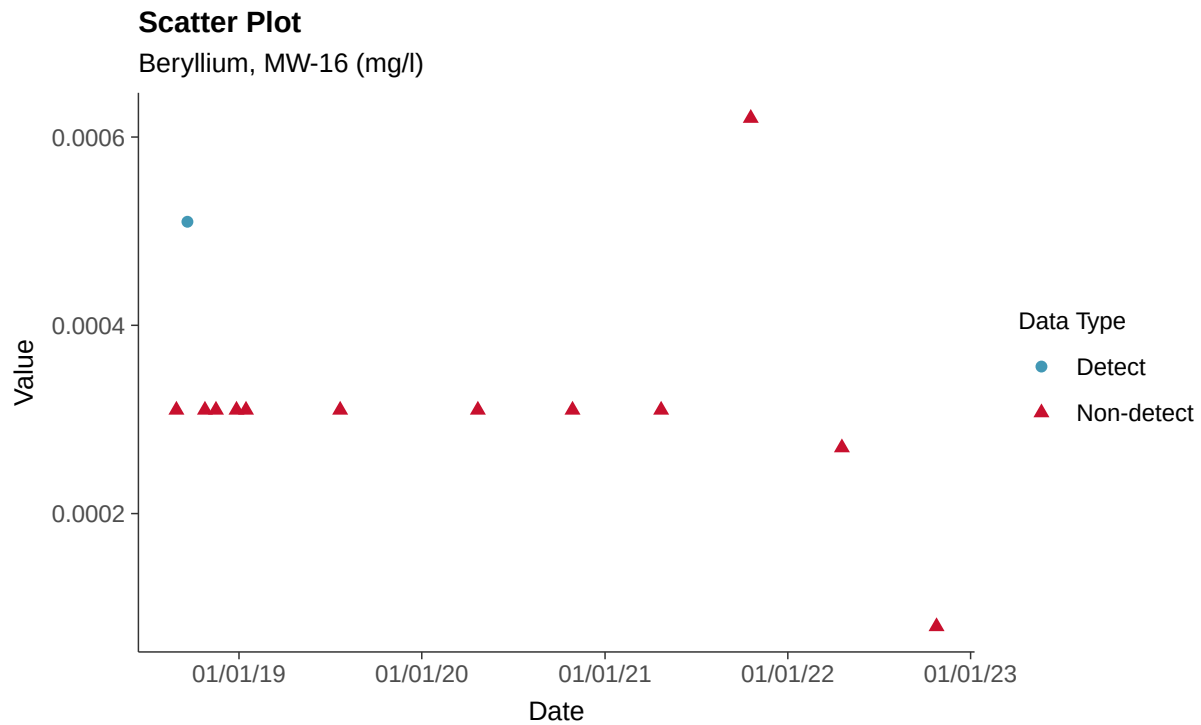
Trend Regression: Piecewise Linear-Linear-Linear

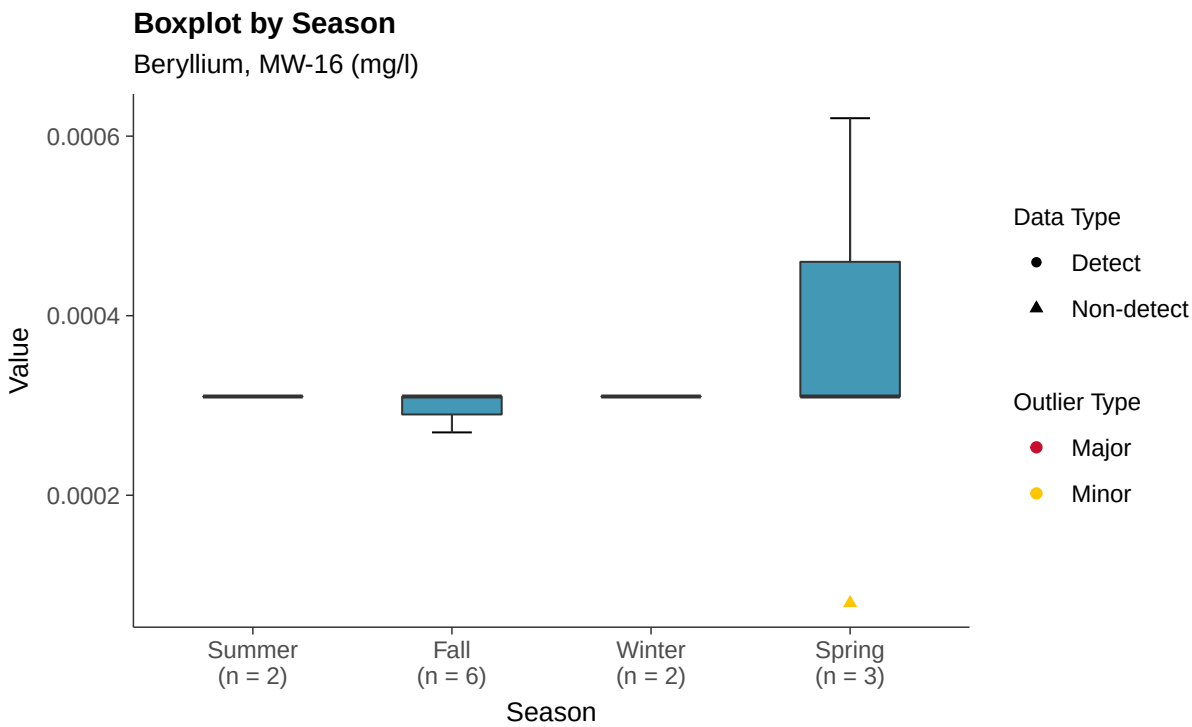
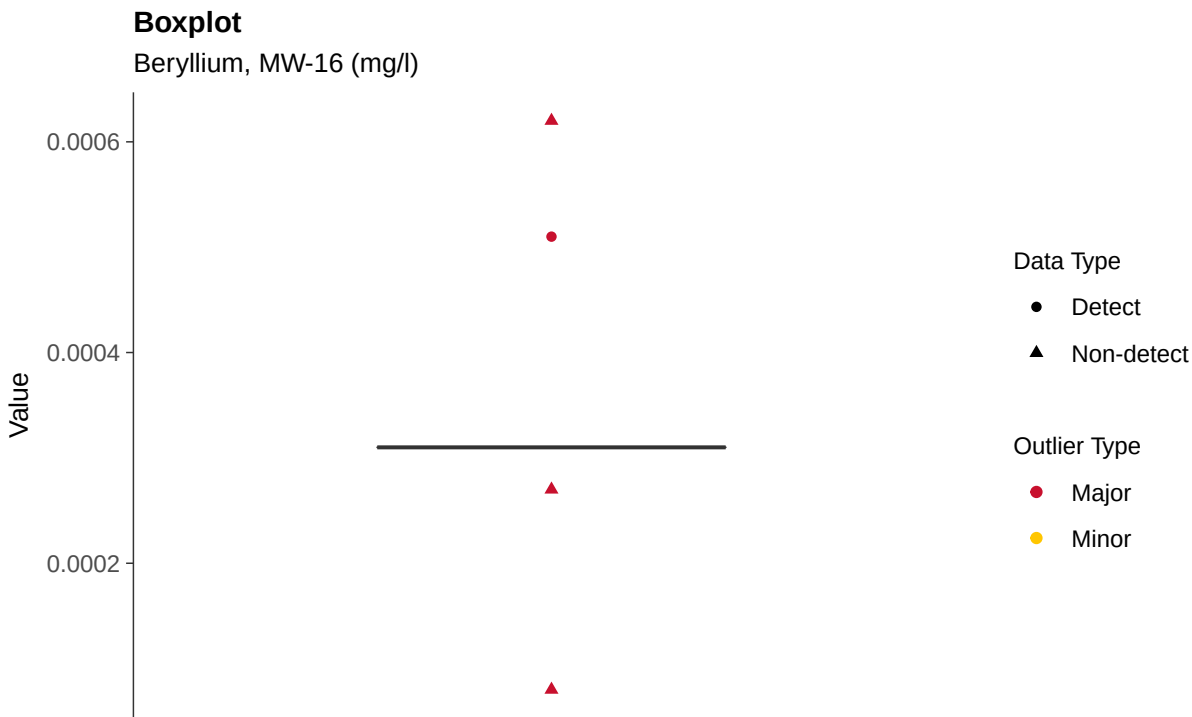
Barium, MW-16 (mg/l)



Appendix IV: Beryllium, MW-16

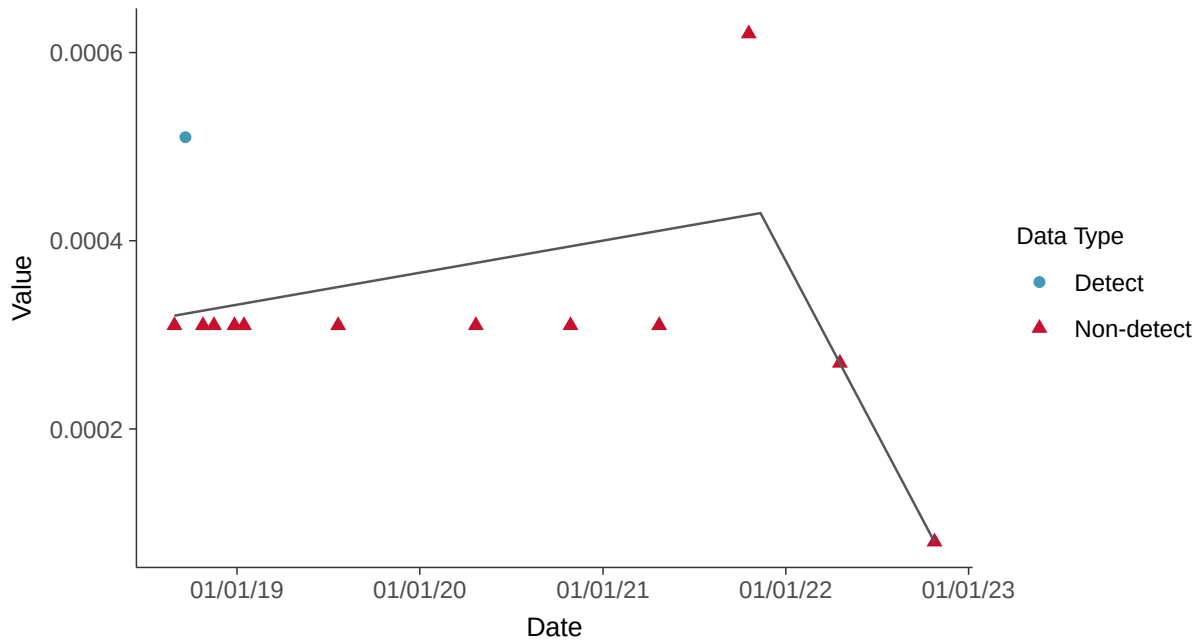
ID: 2_2_107





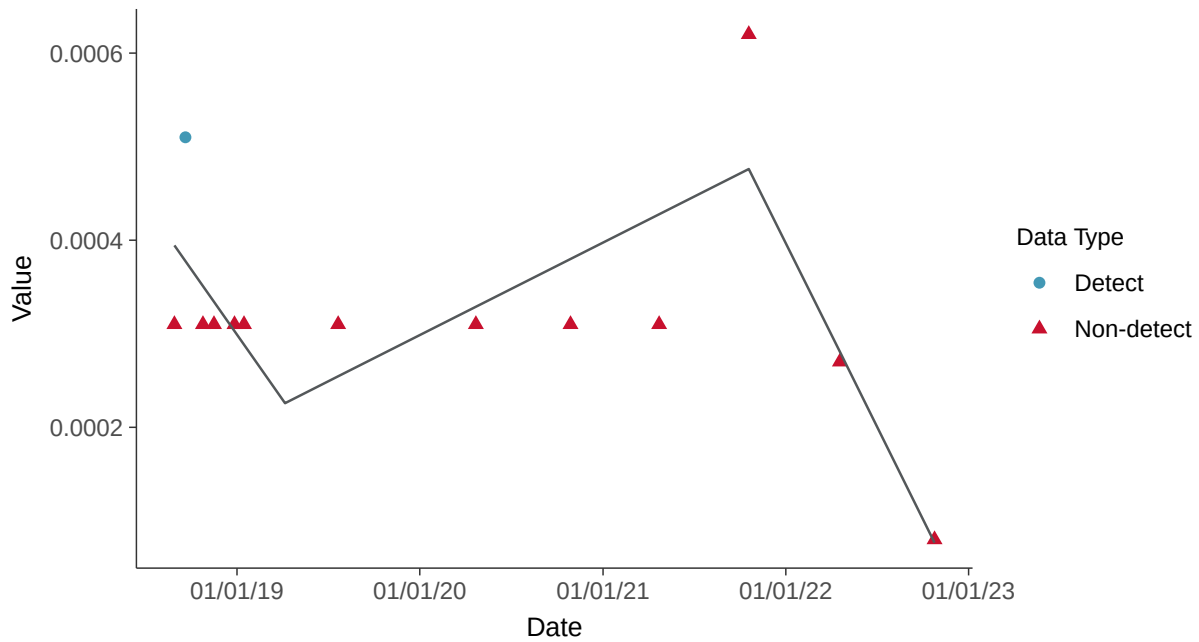
Trend Regression: Piecewise Linear-Linear

Beryllium, MW-16 (mg/l)



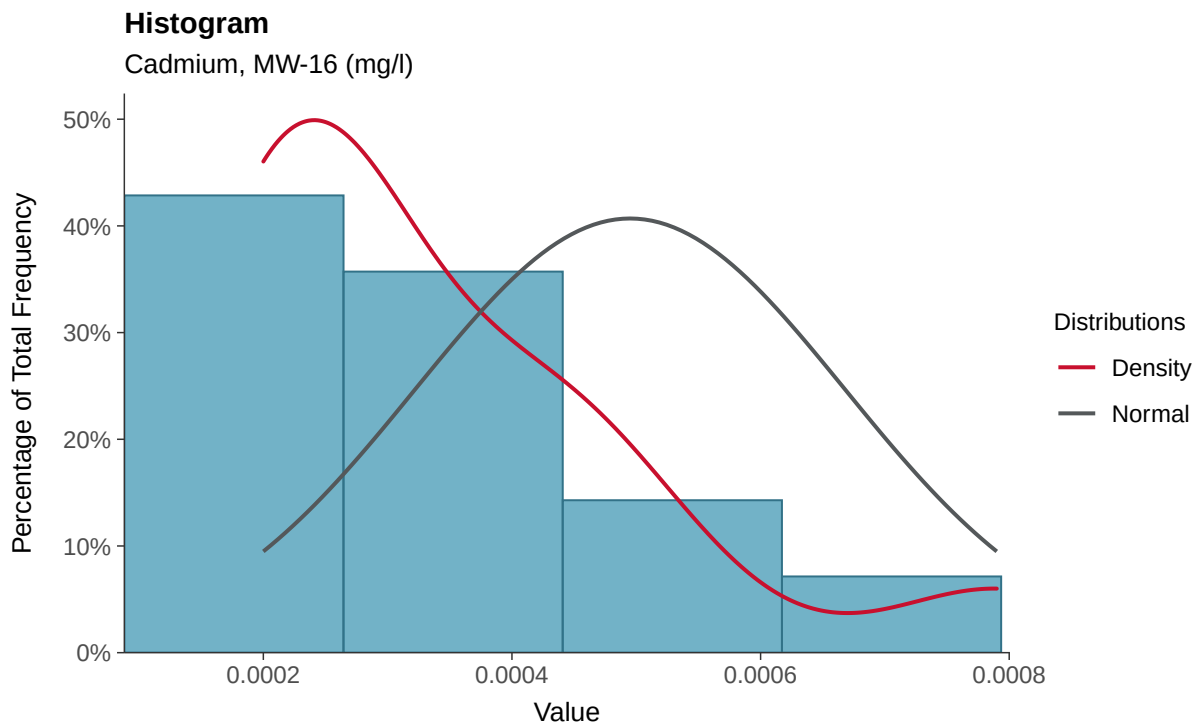
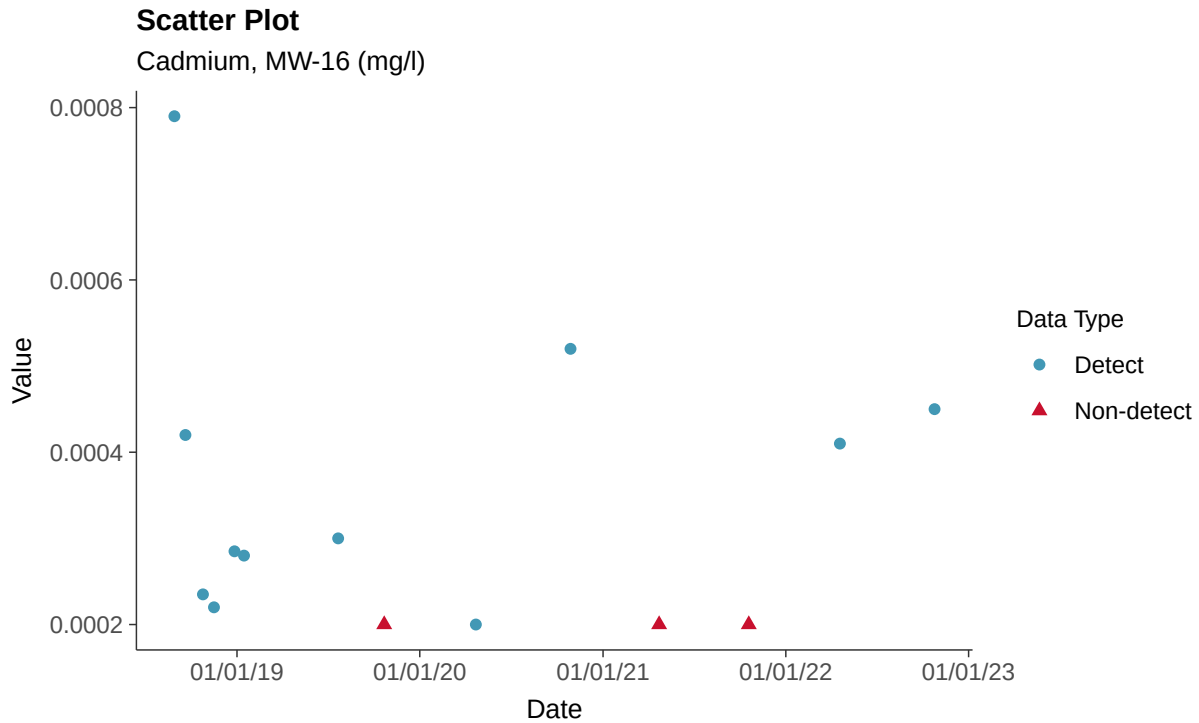
Trend Regression: Piecewise Linear-Linear-Linear

Beryllium, MW-16 (mg/l)



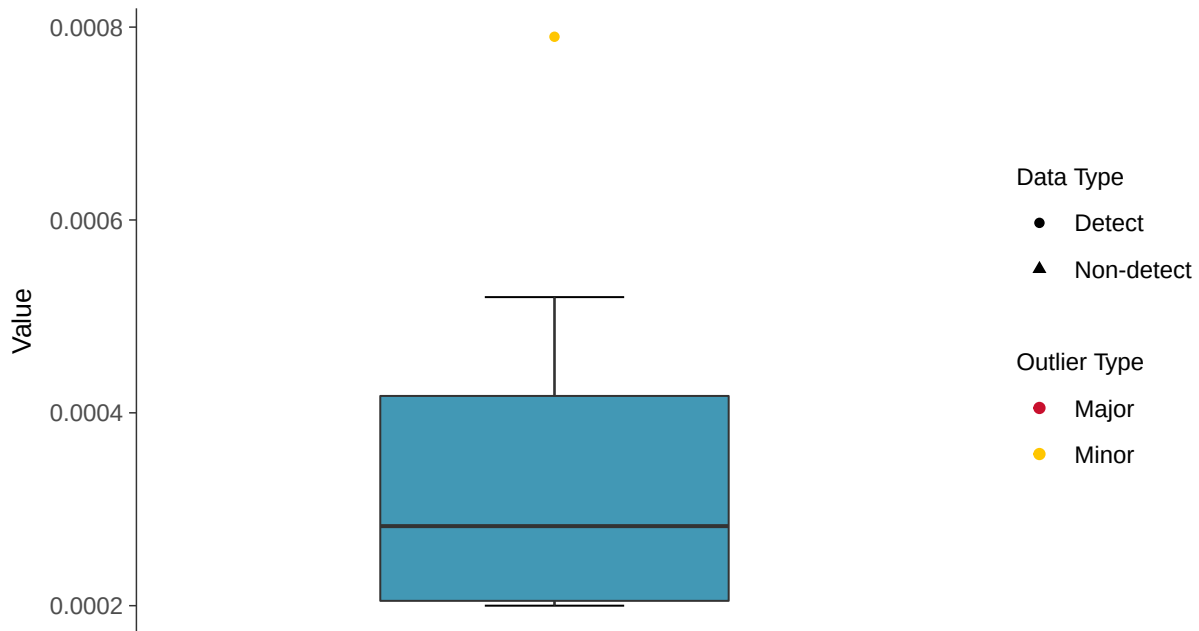
Appendix IV: Cadmium, MW-16

ID: 2_2_109



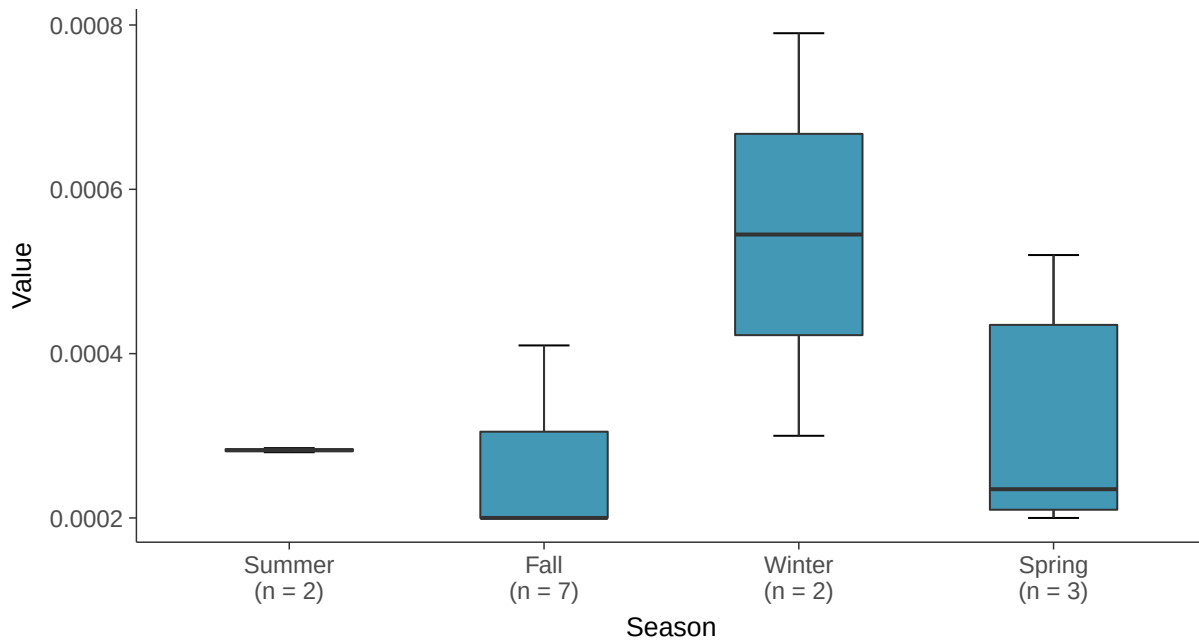
Boxplot

Cadmium, MW-16 (mg/l)



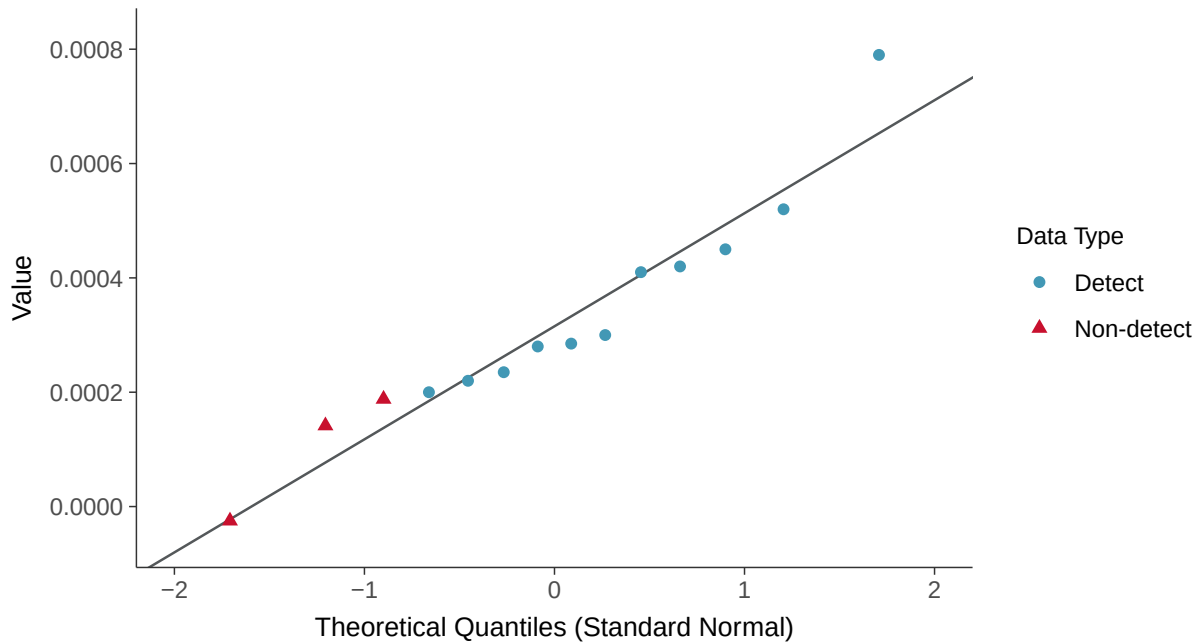
Boxplot by Season

Cadmium, MW-16 (mg/l)



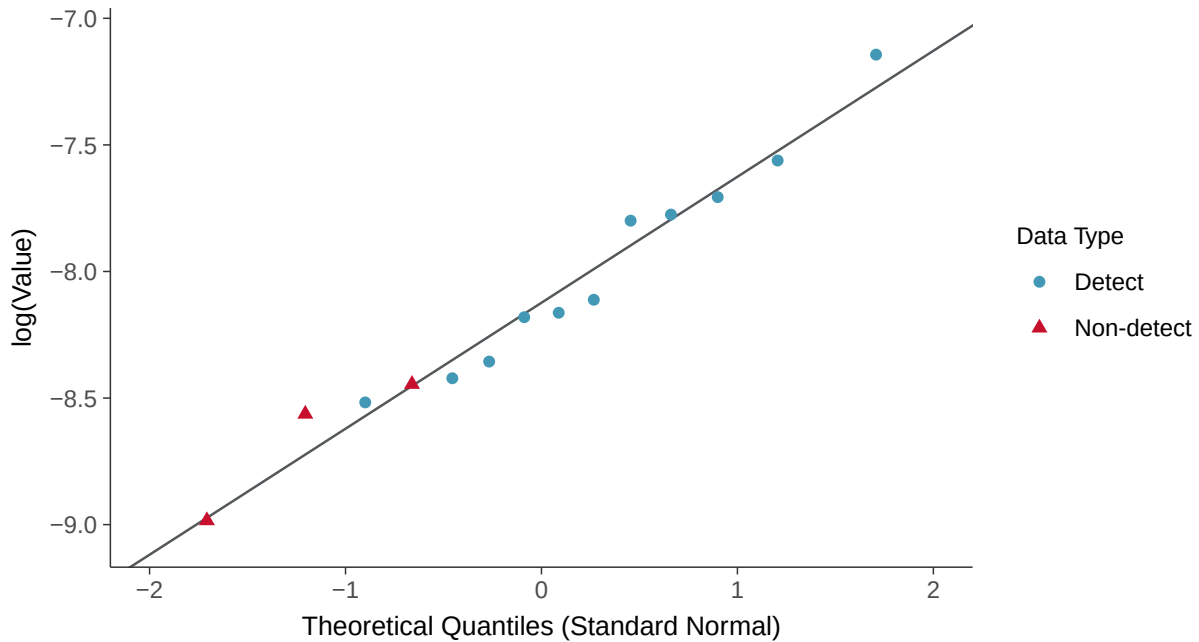
Normal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-16 (mg/l)



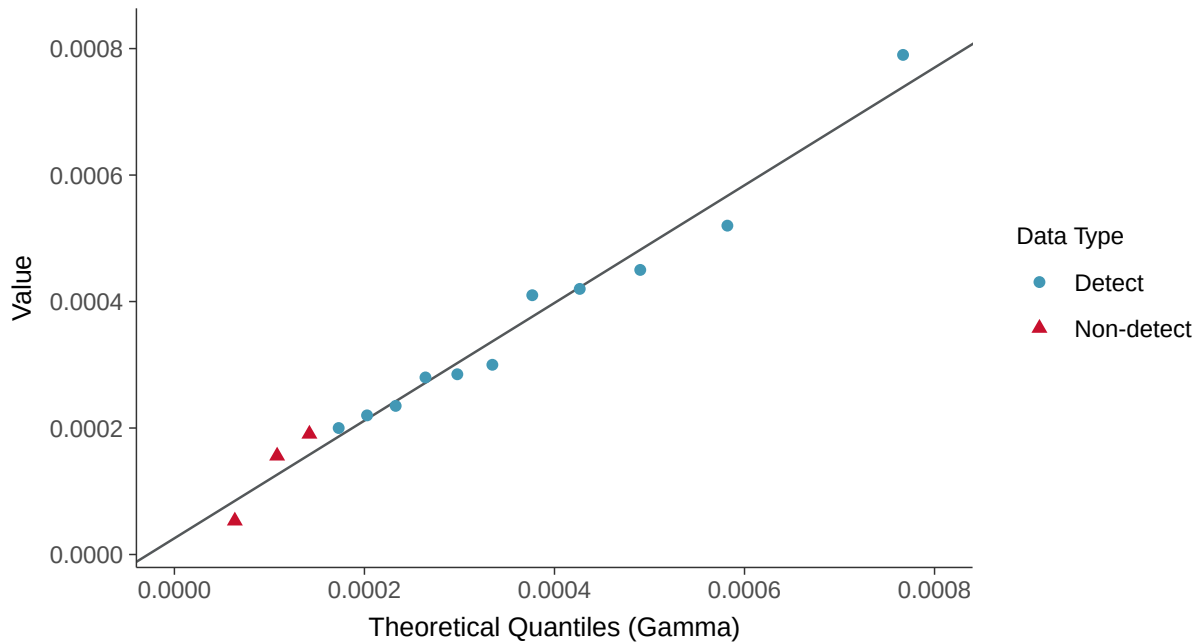
Lognormal Q-Q plot using ROS Imputed Estimates

Cadmium, MW-16 (mg/l)



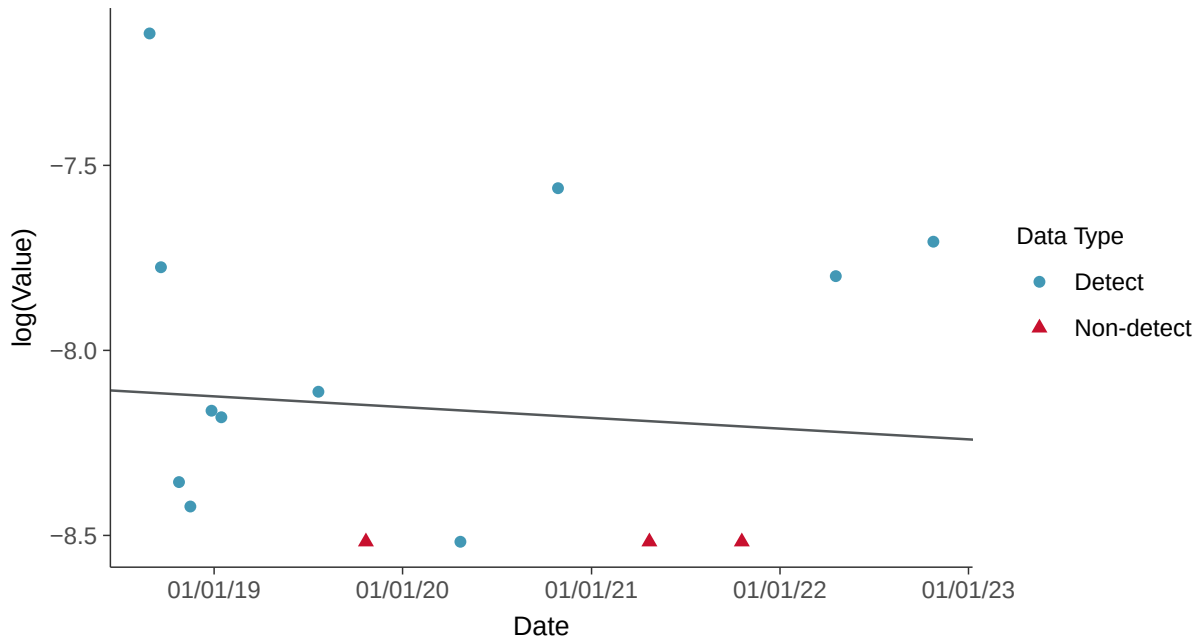
Gamma Q-Q plot using ROS Imputed Estimates

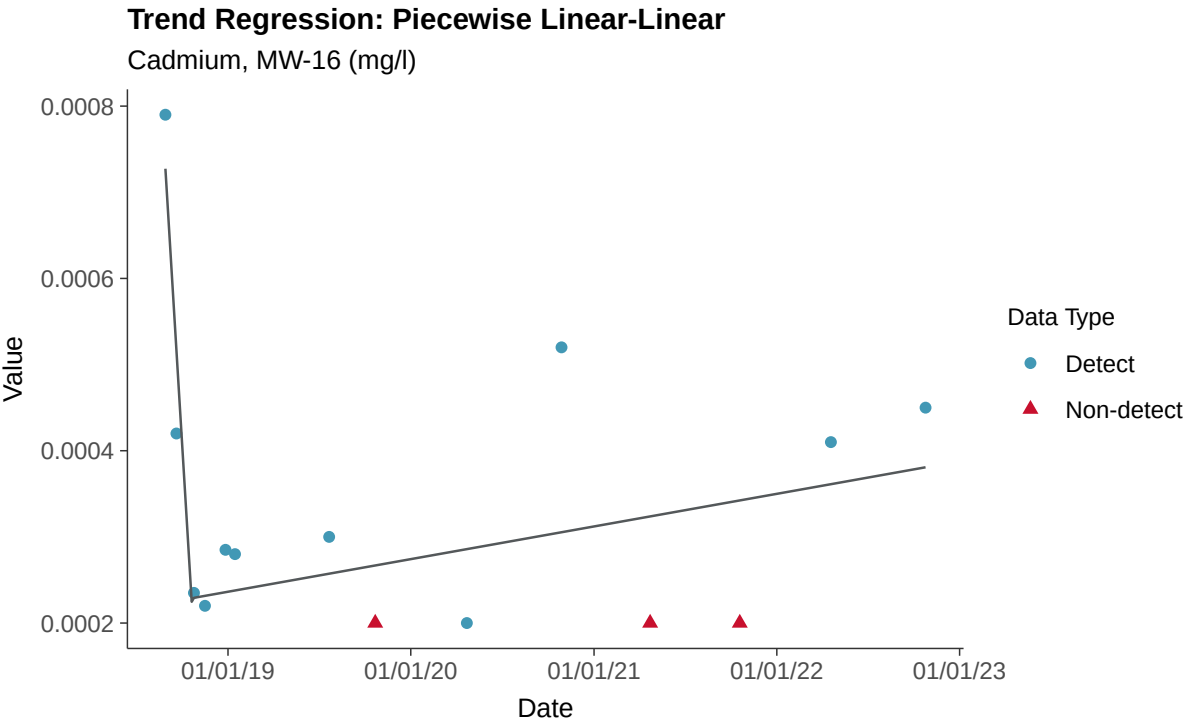
Cadmium, MW-16 (mg/l)



Trend Regression: Lognormal MLE

Cadmium, MW-16 (mg/l)



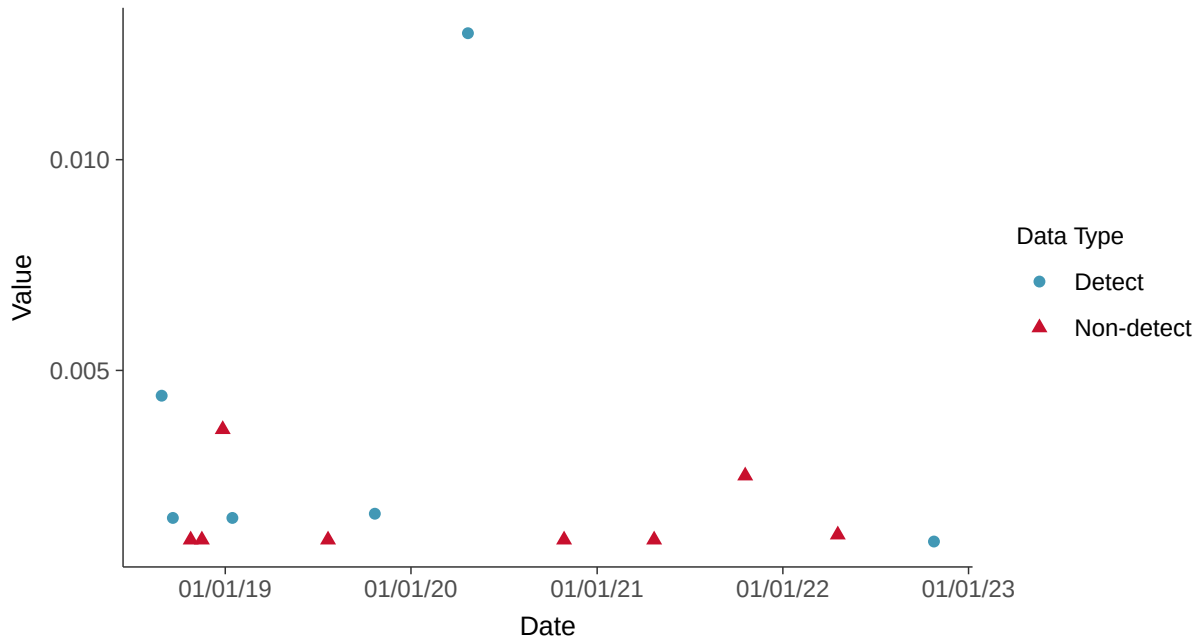


Appendix IV: Chromium, Total, MW-16

ID: 2_2_112

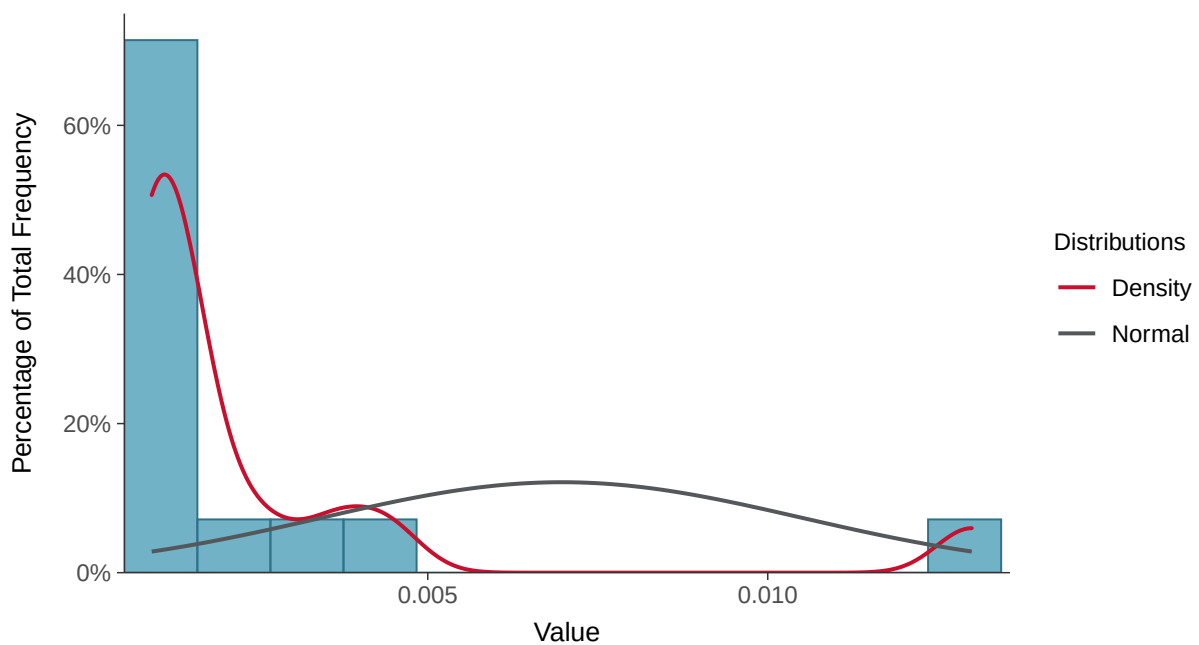
Scatter Plot

Chromium, Total, MW-16 (mg/l)



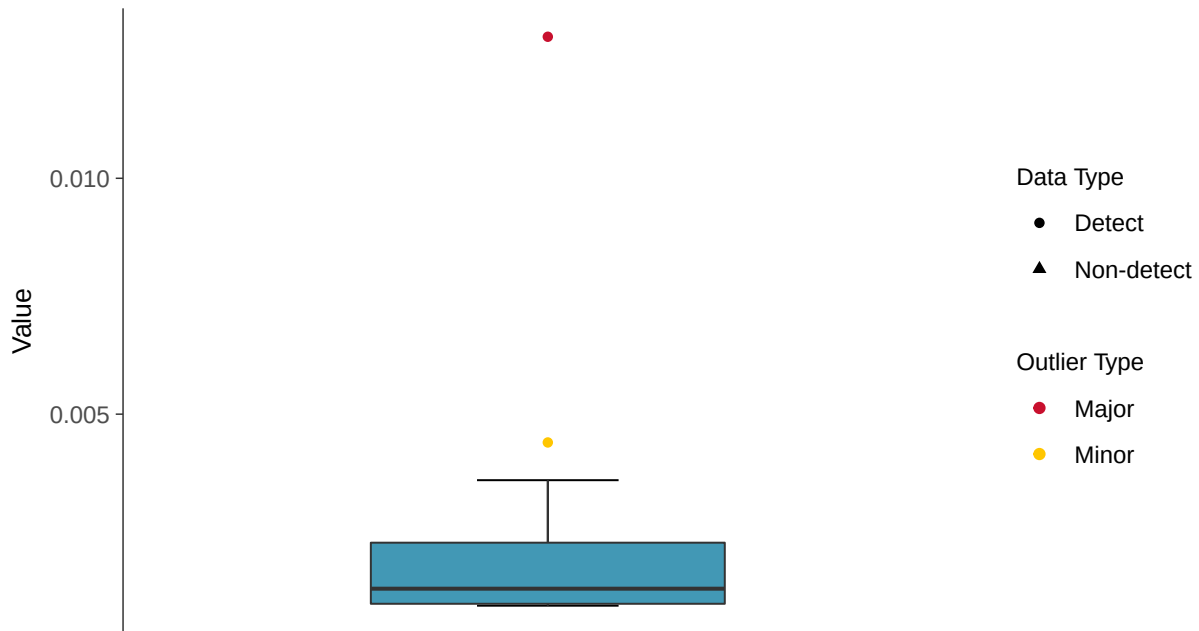
Histogram

Chromium, Total, MW-16 (mg/l)



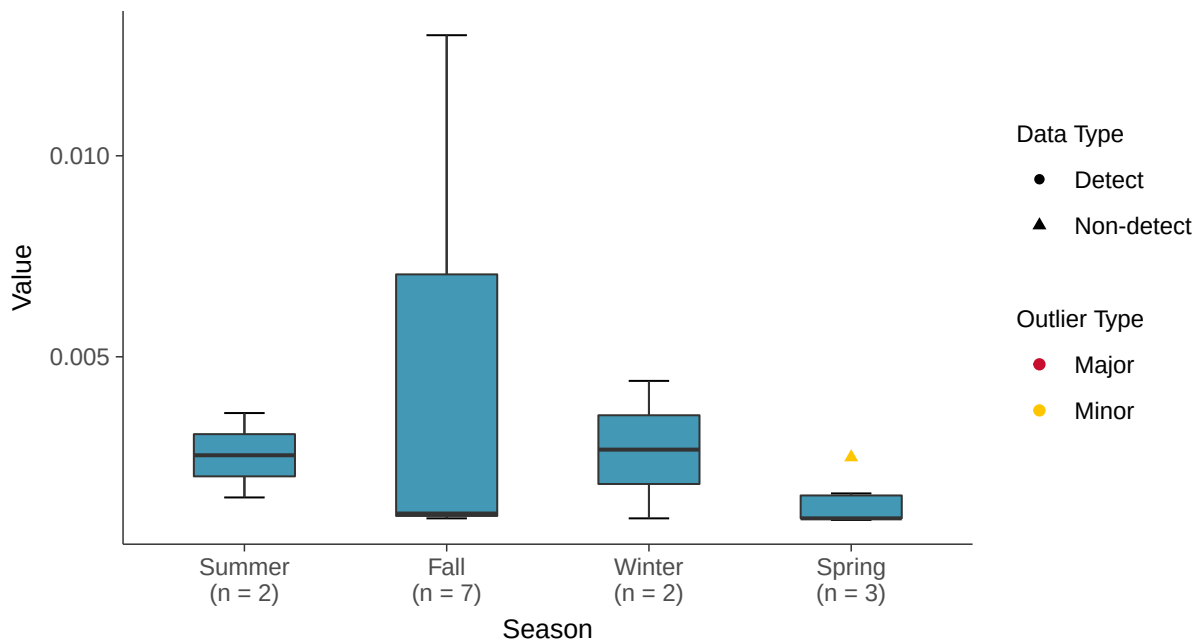
Boxplot

Chromium, Total, MW-16 (mg/l)



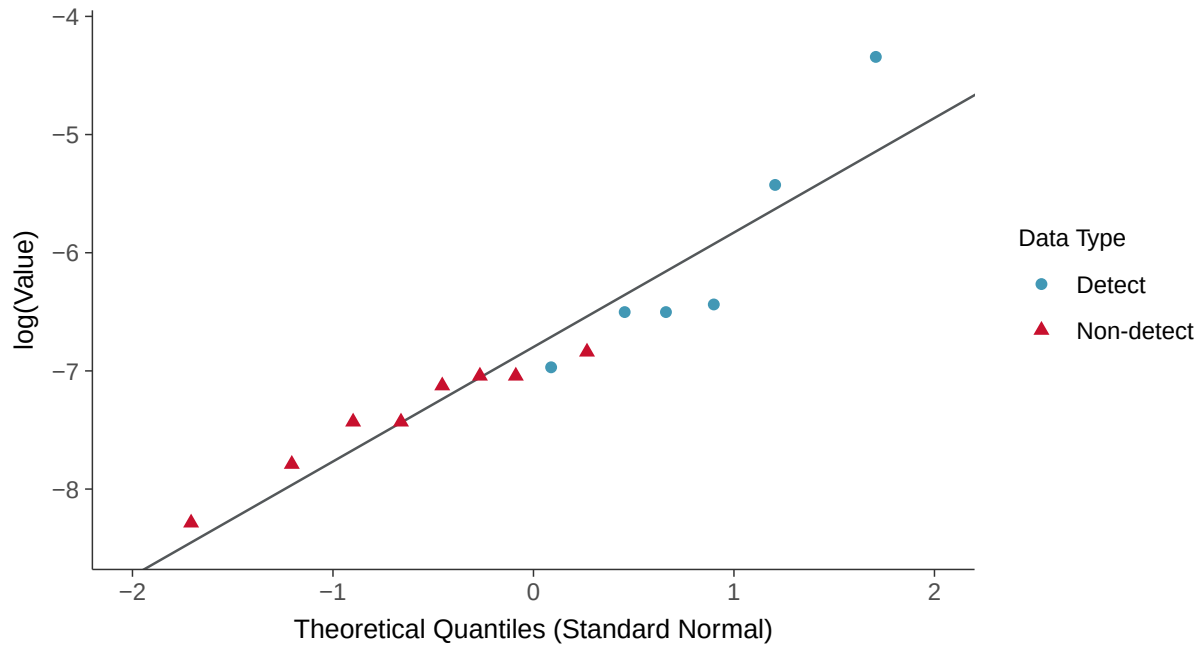
Boxplot by Season

Chromium, Total, MW-16 (mg/l)



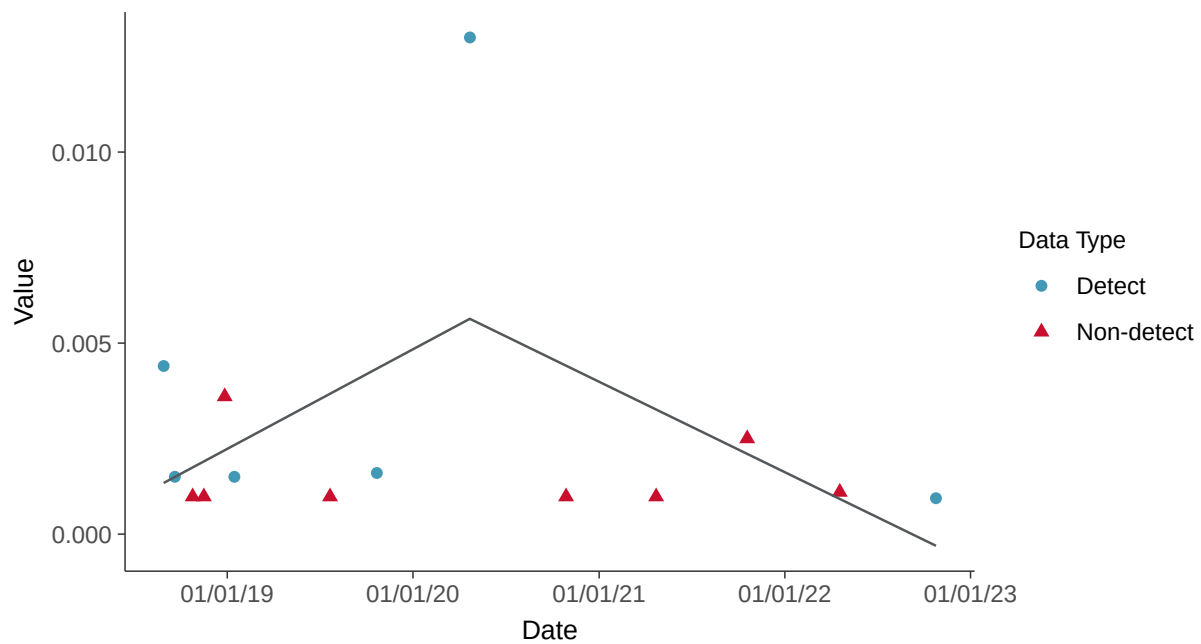
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-16 (mg/l)



Trend Regression: Piecewise Linear-Linear

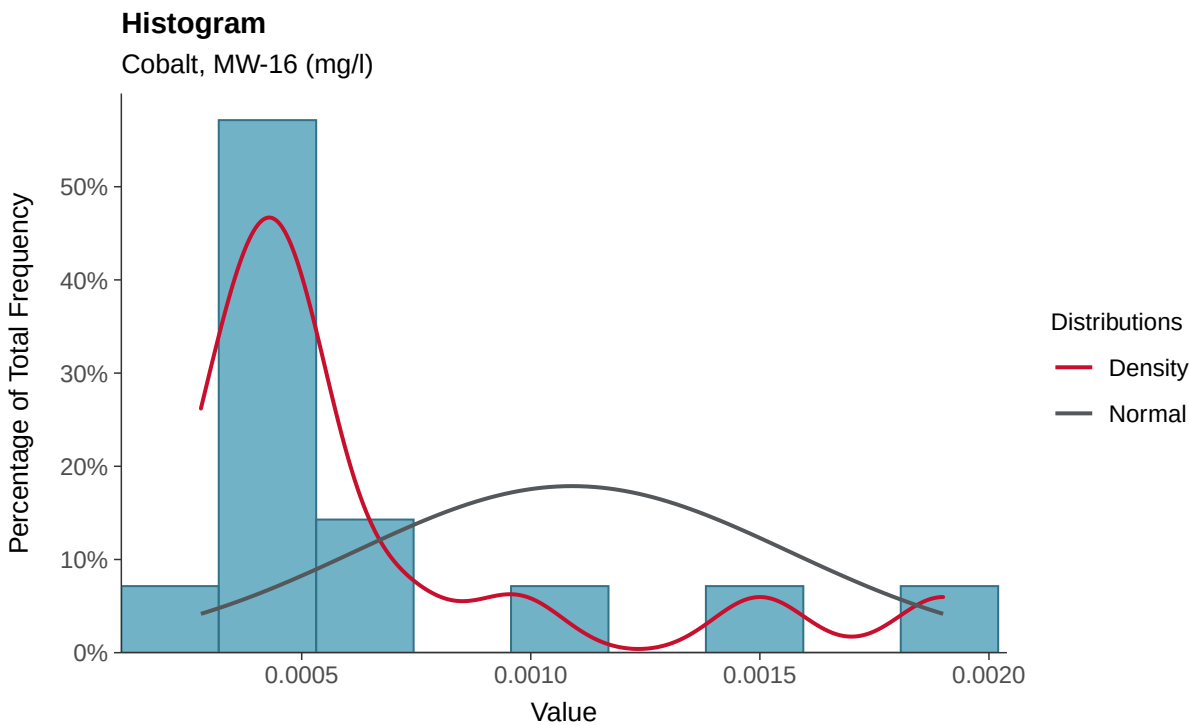
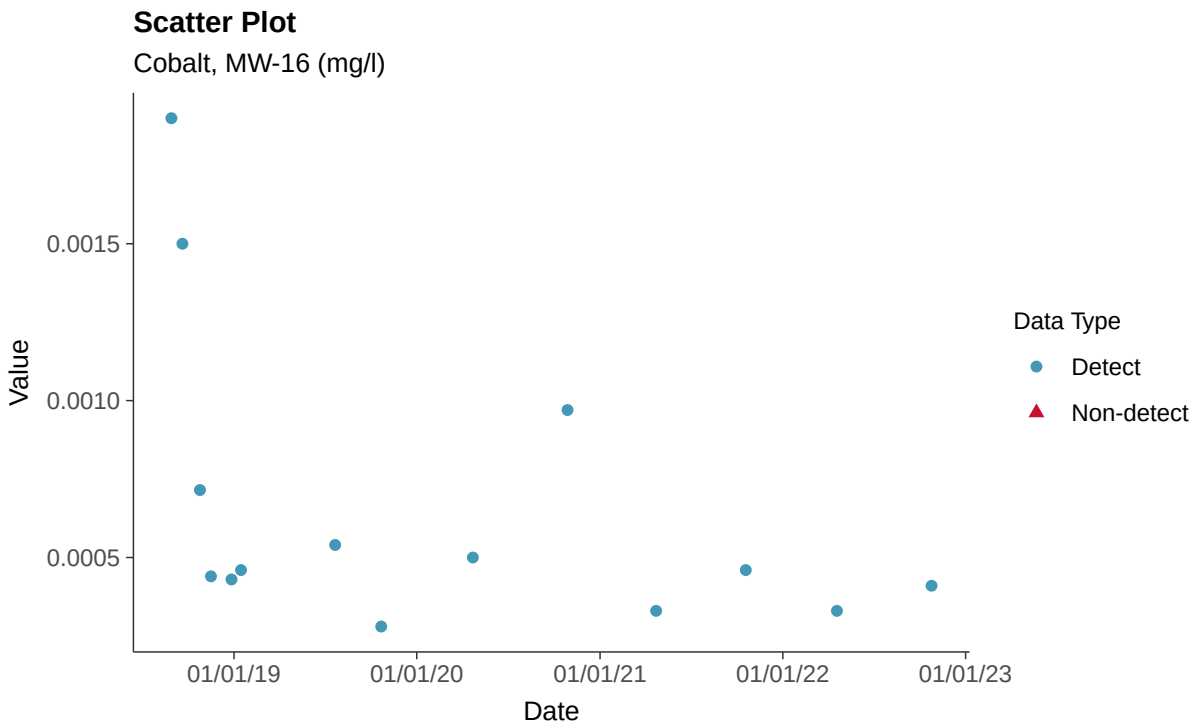
Chromium, Total, MW-16 (mg/l)





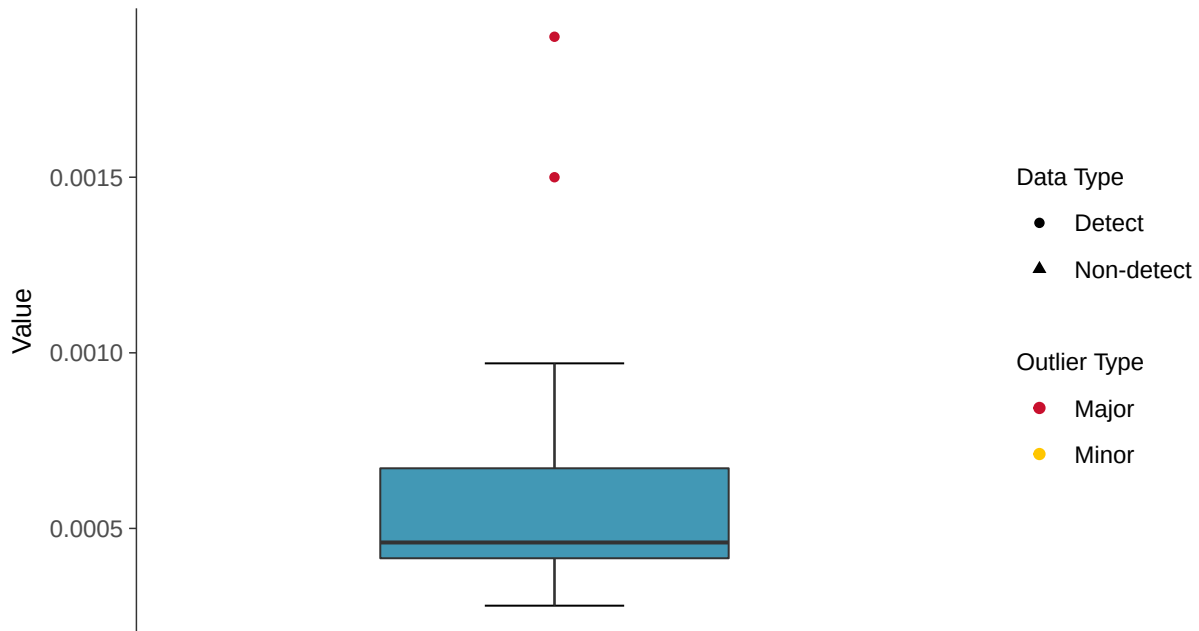
Appendix IV: Cobalt, MW-16

ID: 2_2_113



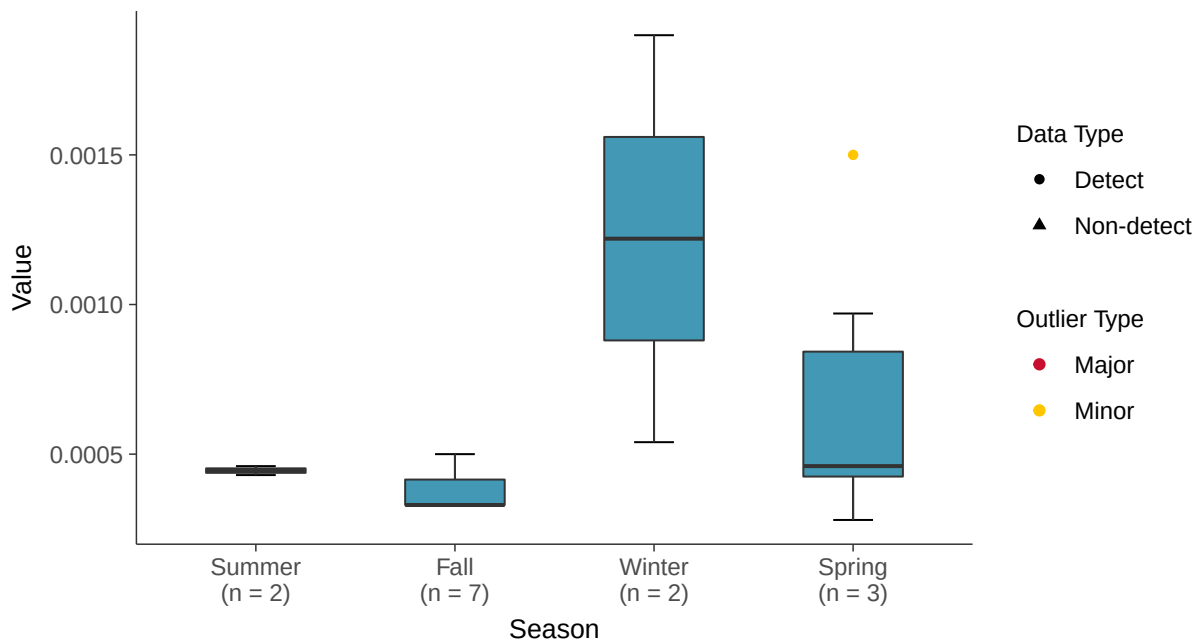
Boxplot

Cobalt, MW-16 (mg/l)



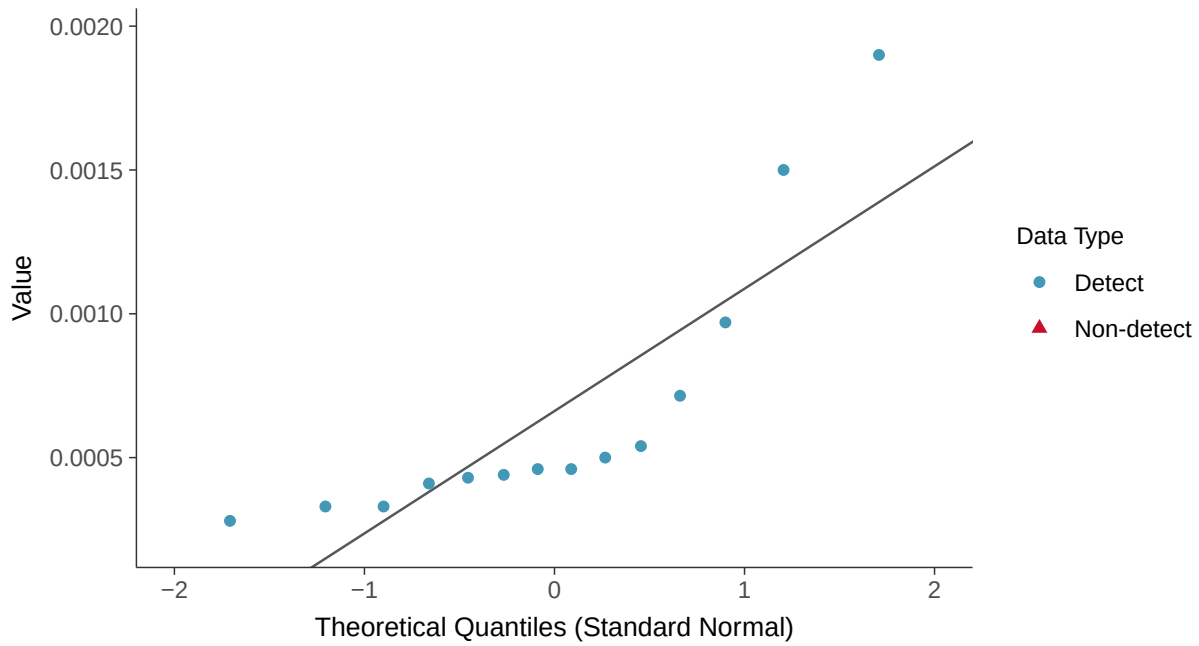
Boxplot by Season

Cobalt, MW-16 (mg/l)



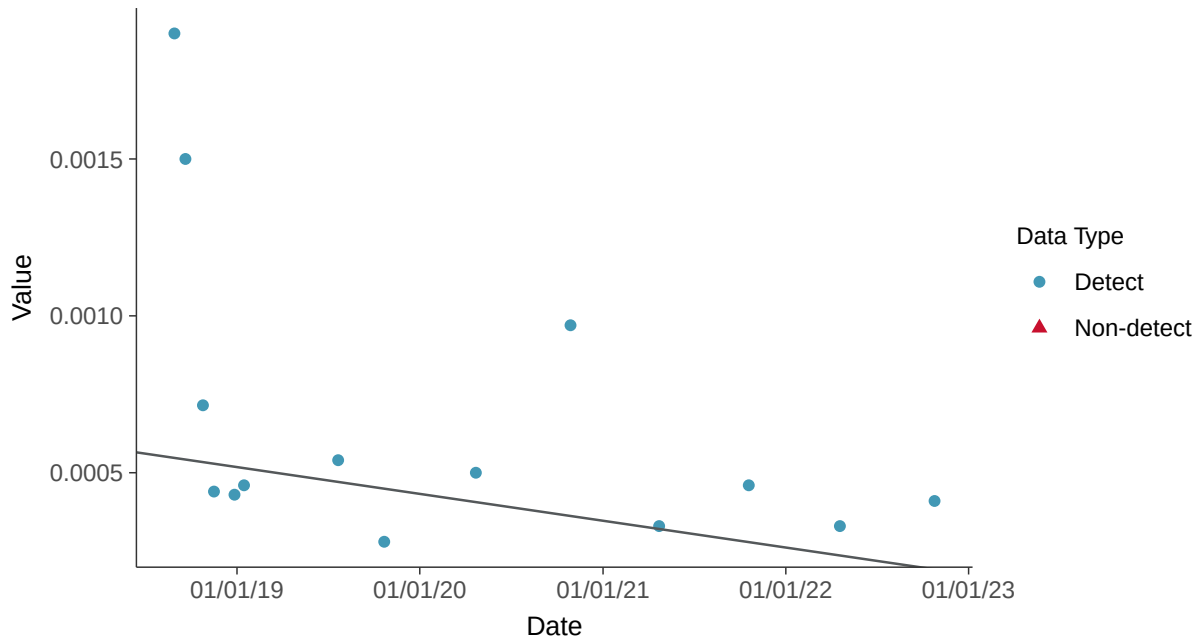
Normal Q-Q plot

Cobalt, MW-16 (mg/l)



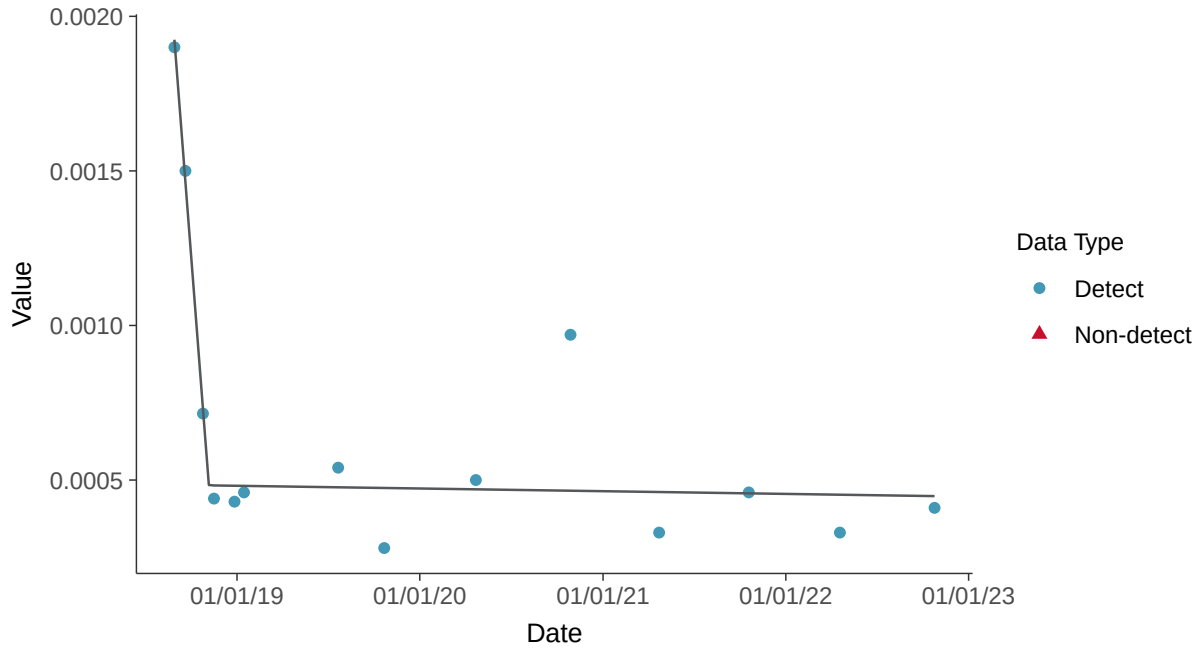
Trend Regression: Mann-Kendall/Theil-Sen Estimate

Cobalt, MW-16 (mg/l)



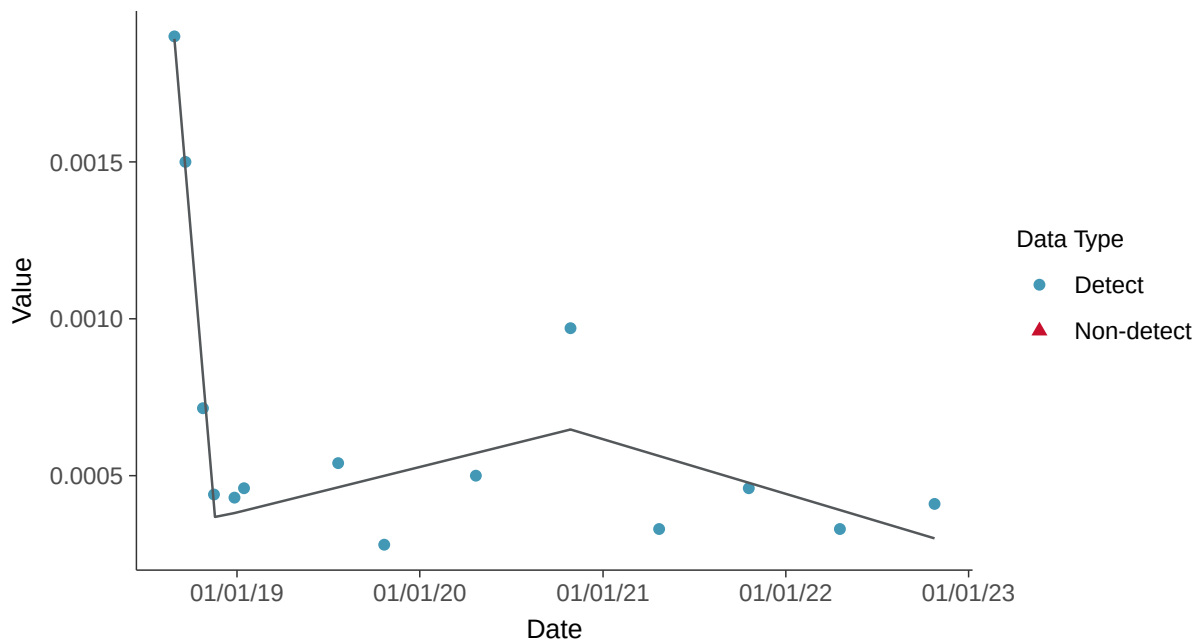
Trend Regression: Piecewise Linear-Linear

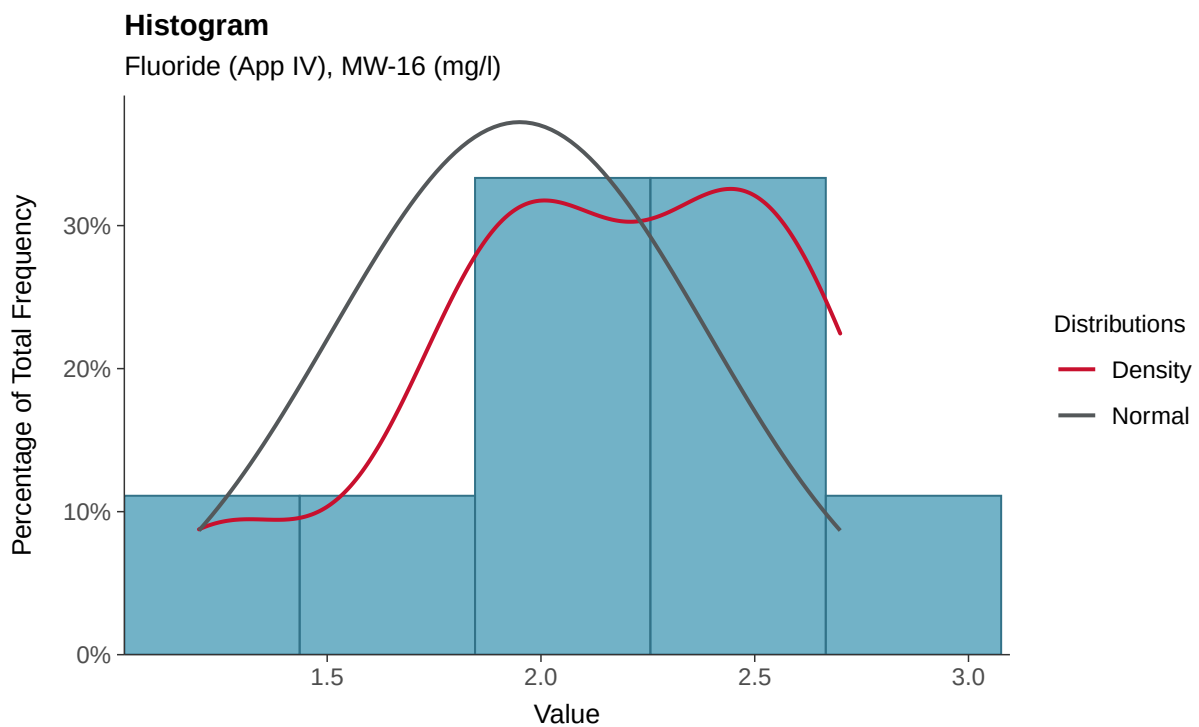
Cobalt, MW-16 (mg/l)

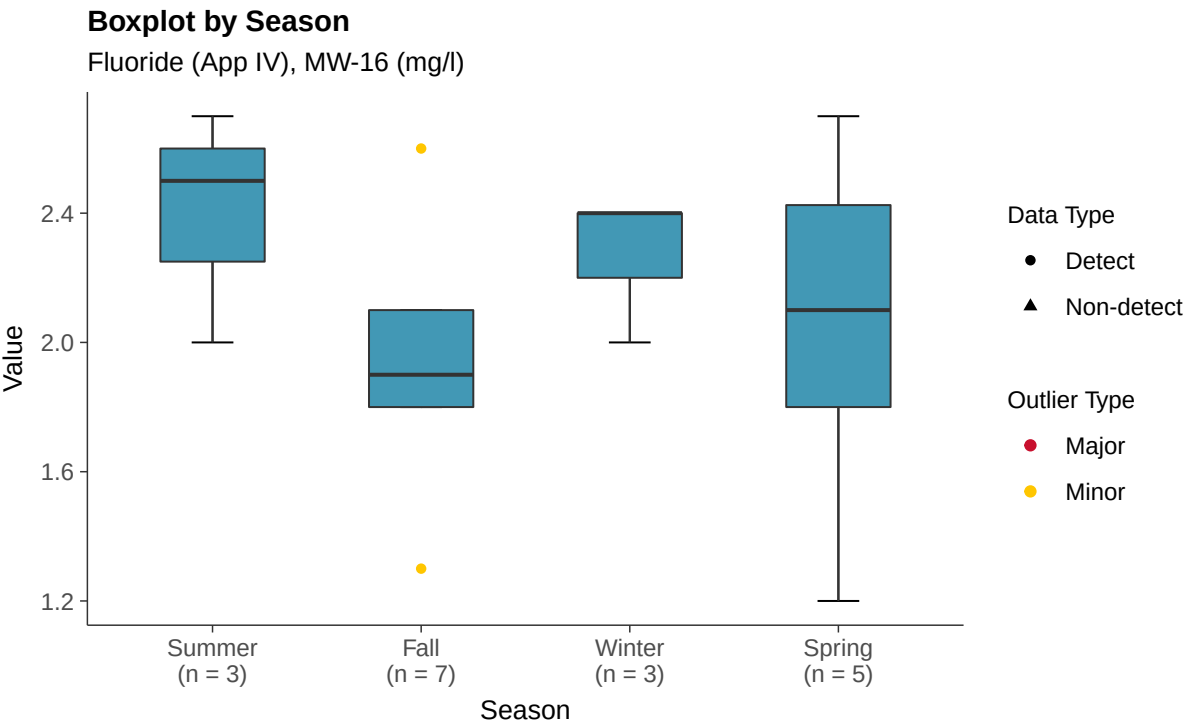
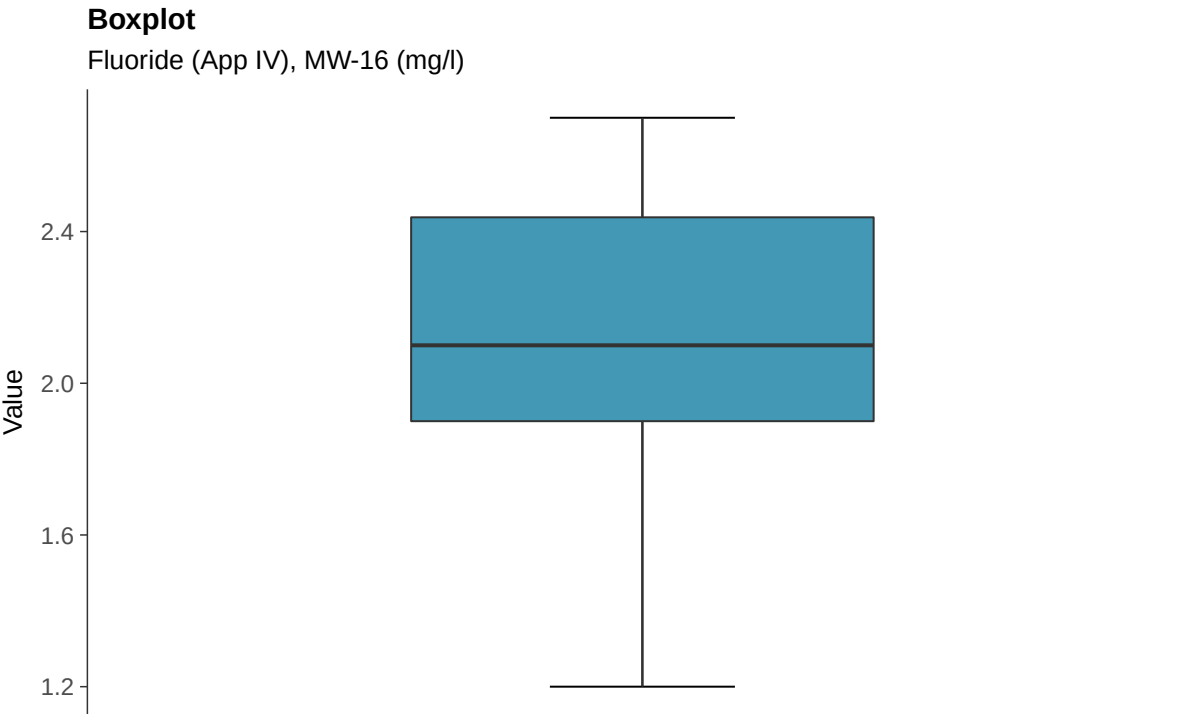


Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-16 (mg/l)

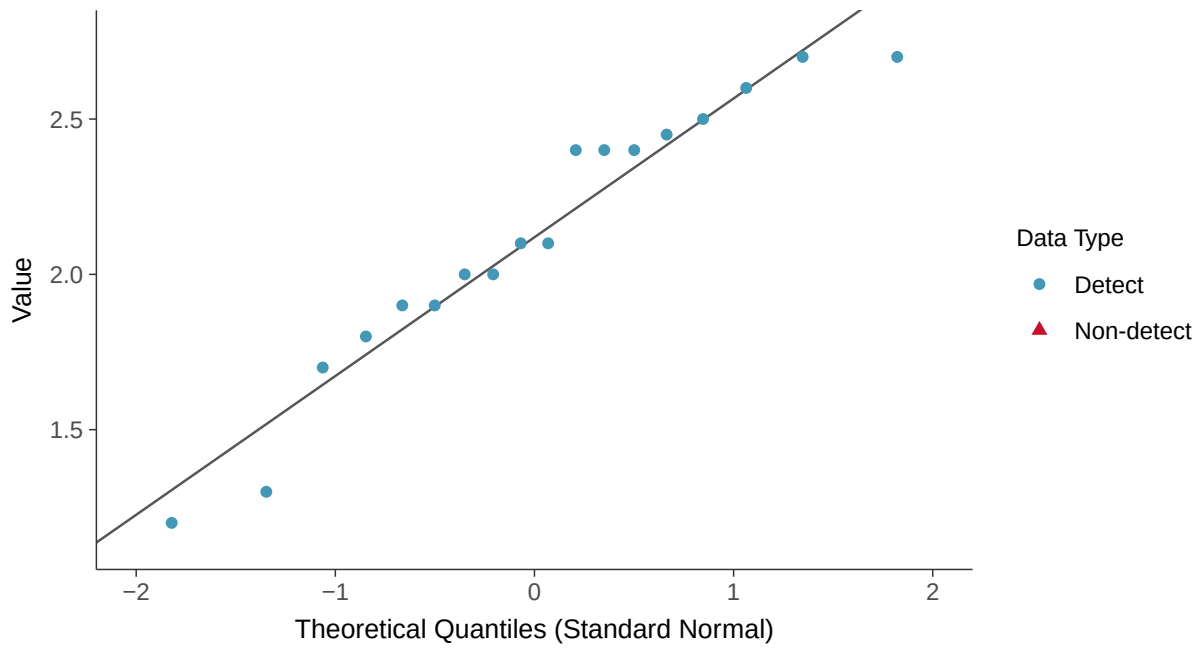






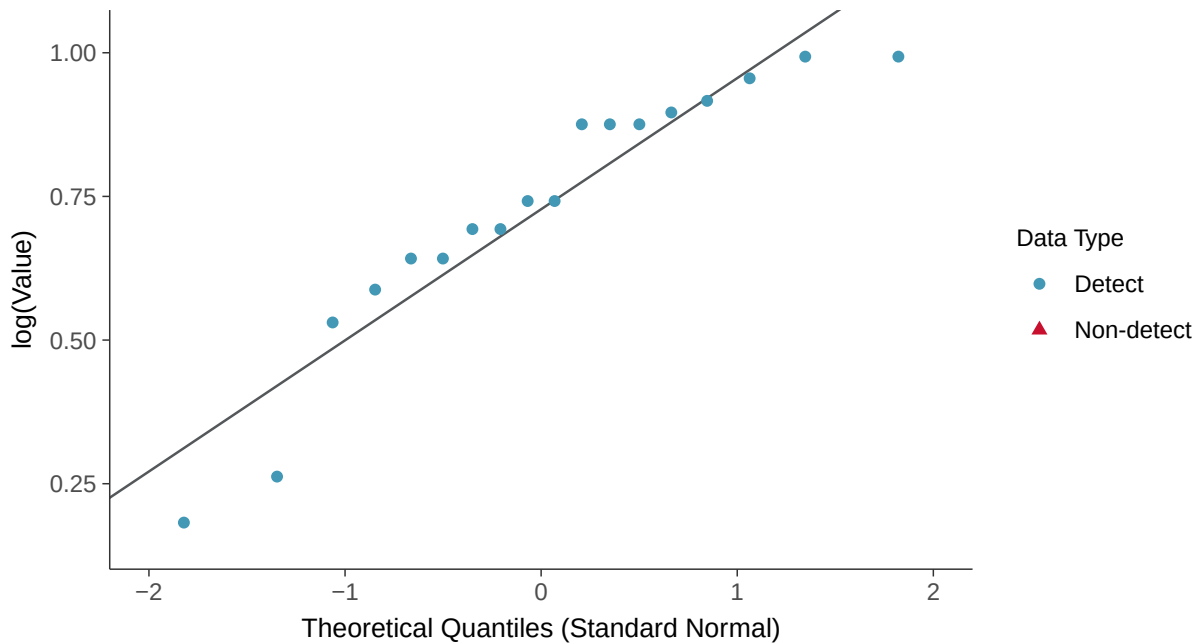
Normal Q-Q plot

Fluoride (App IV), MW-16 (mg/l)



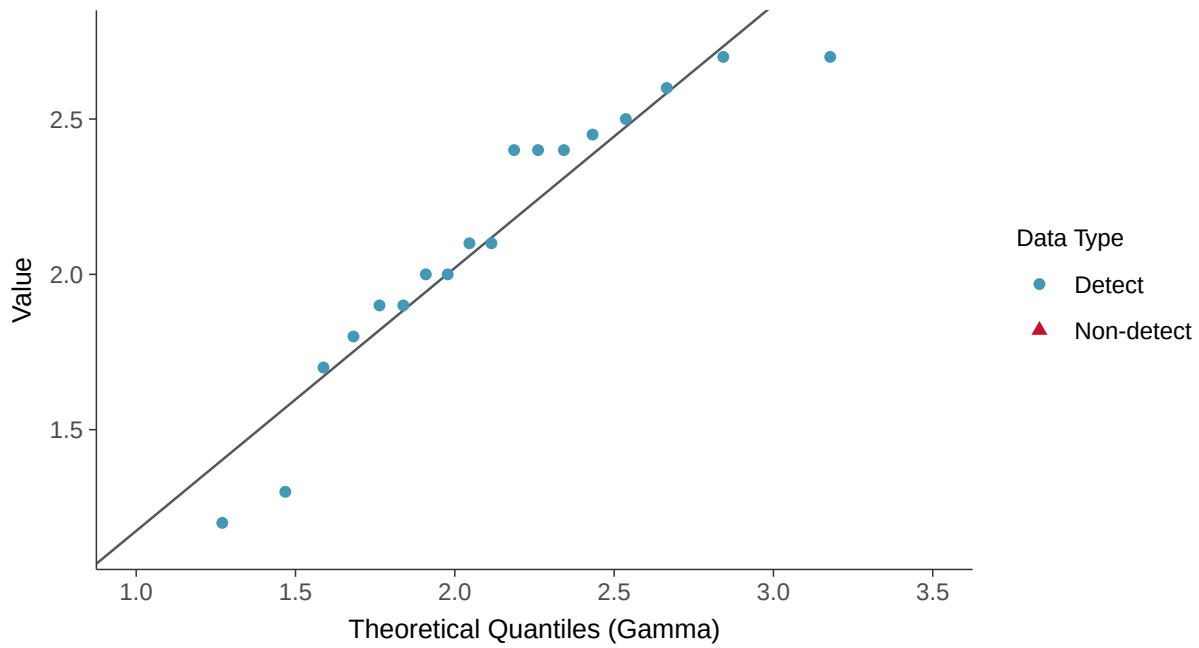
Lognormal Q-Q plot

Fluoride (App IV), MW-16 (mg/l)



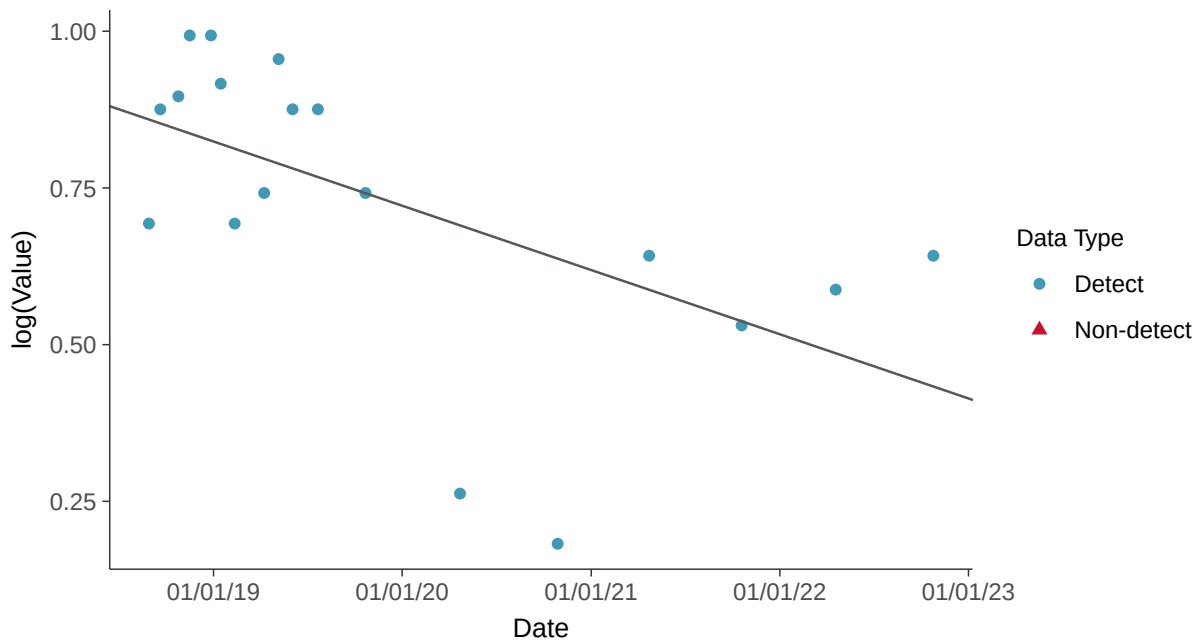
Gamma Q-Q plot

Fluoride (App IV), MW-16 (mg/l)



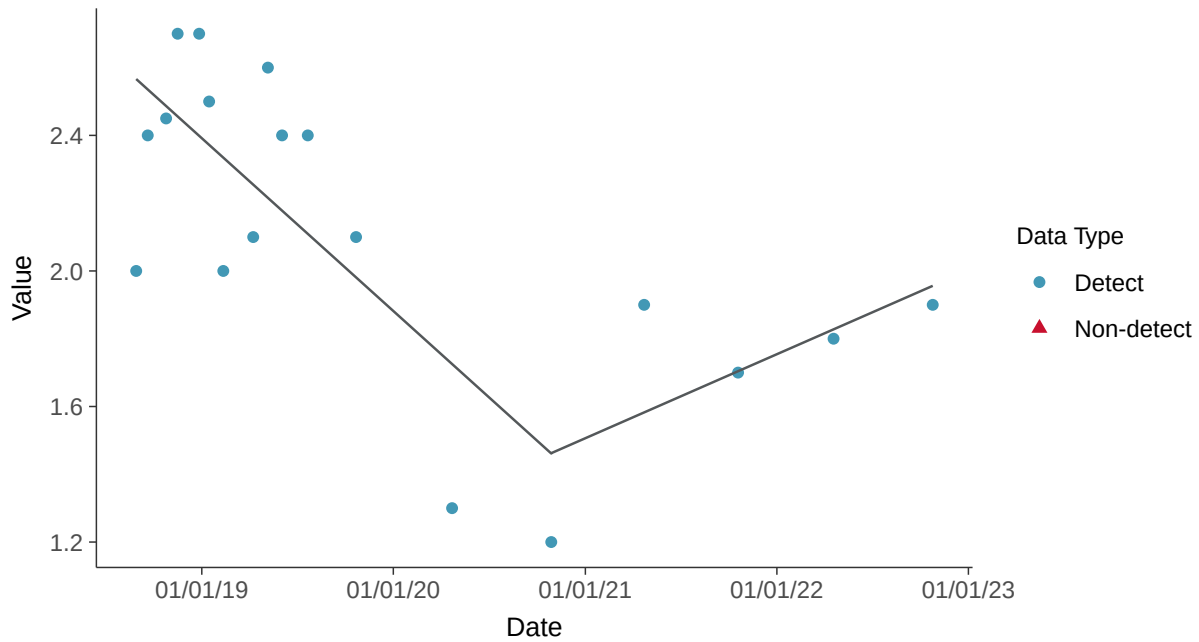
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-16 (mg/l)



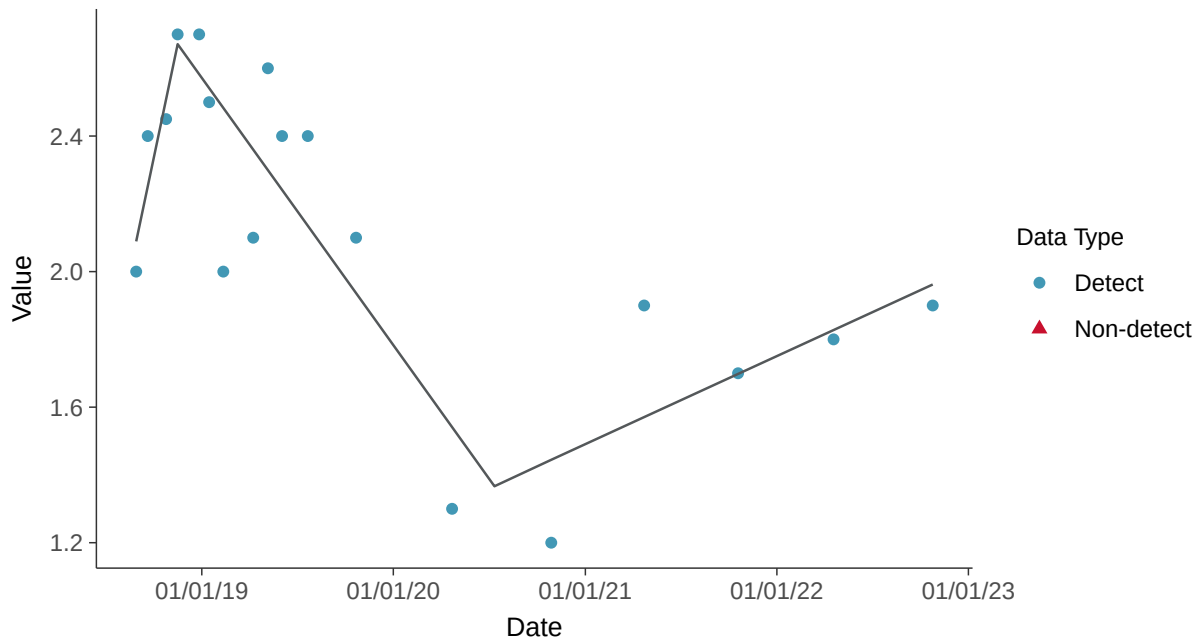
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-16 (mg/l)



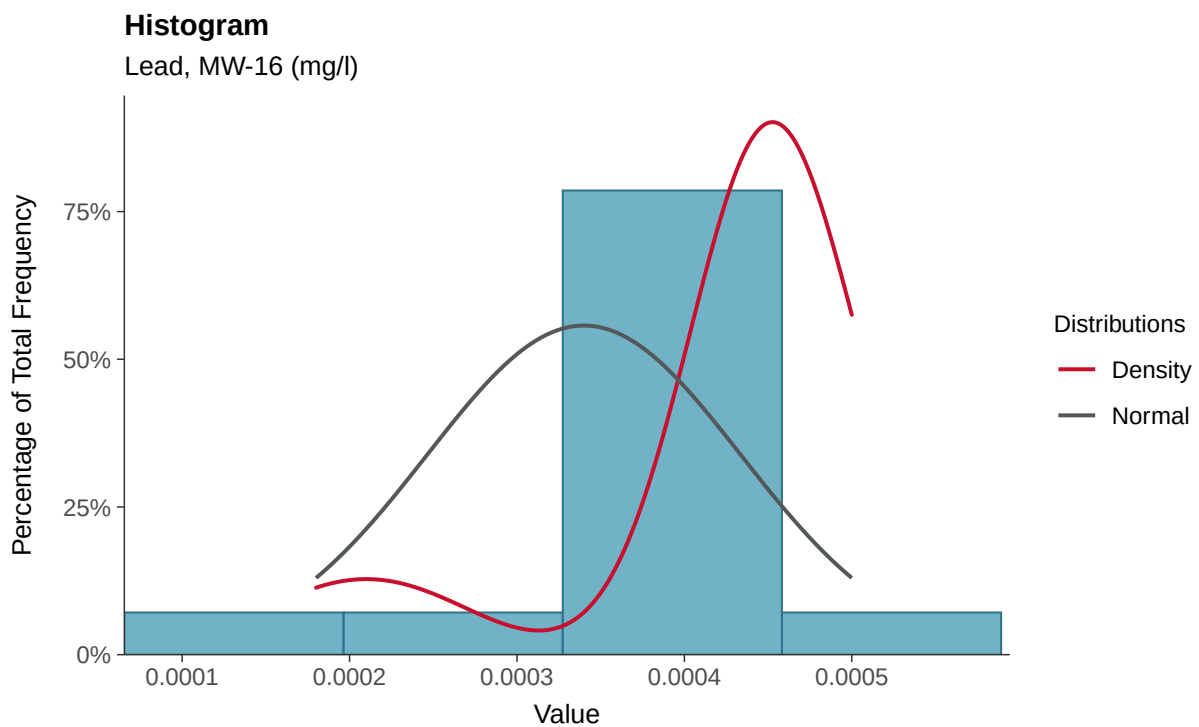
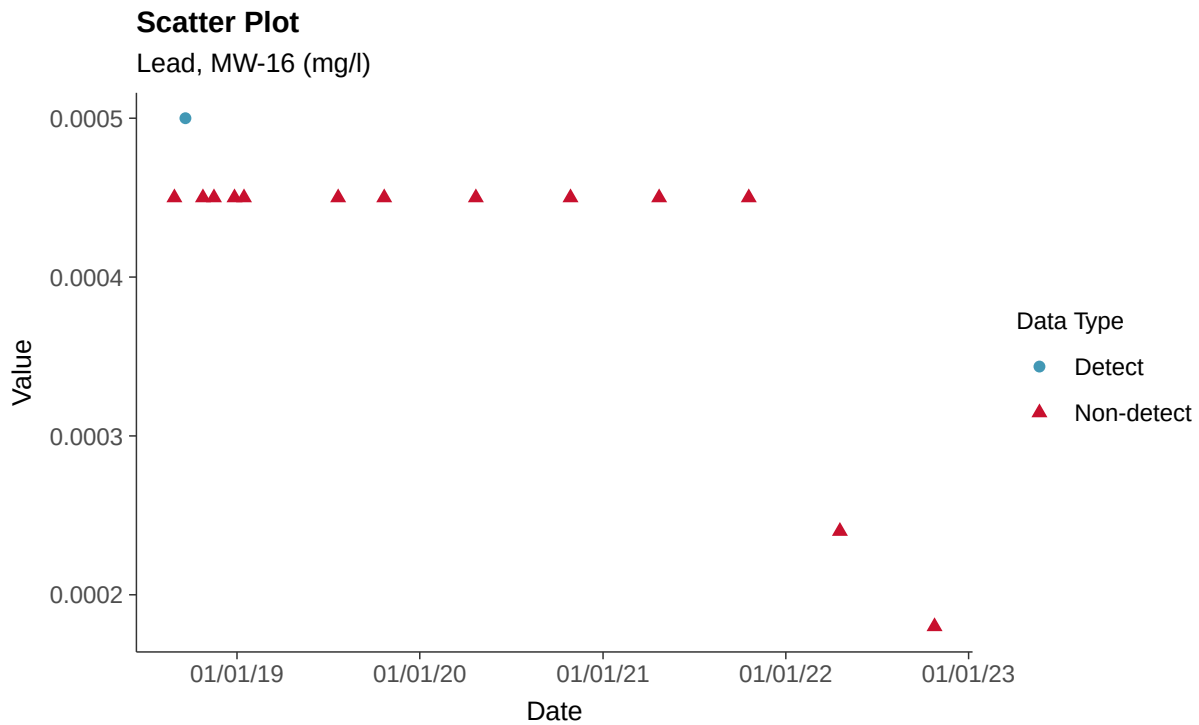
Trend Regression: Piecewise Linear-Linear-Linear

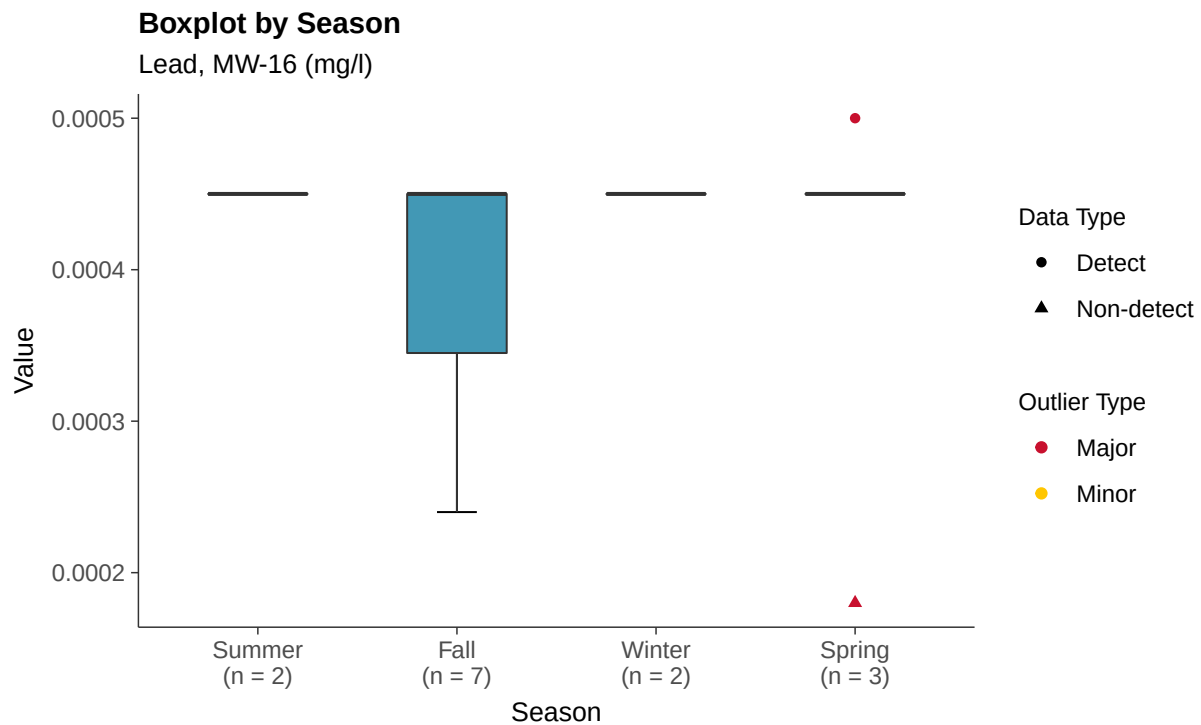
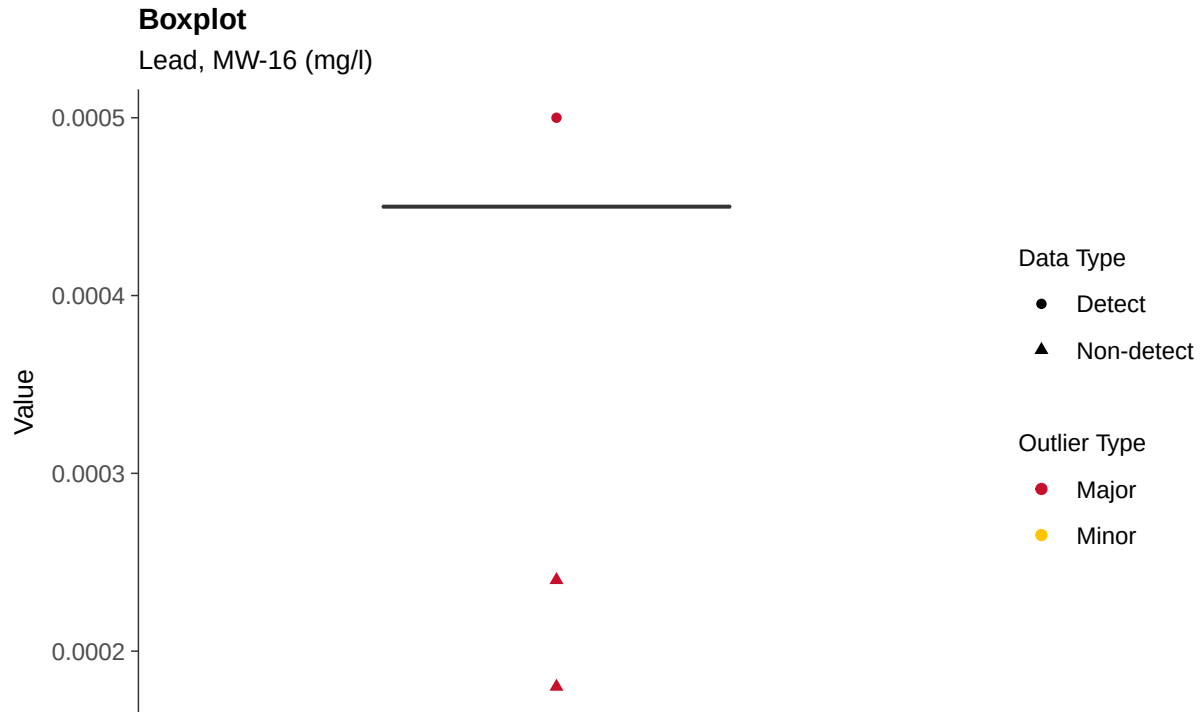
Fluoride (App IV), MW-16 (mg/l)



Appendix IV: Lead, MW-16

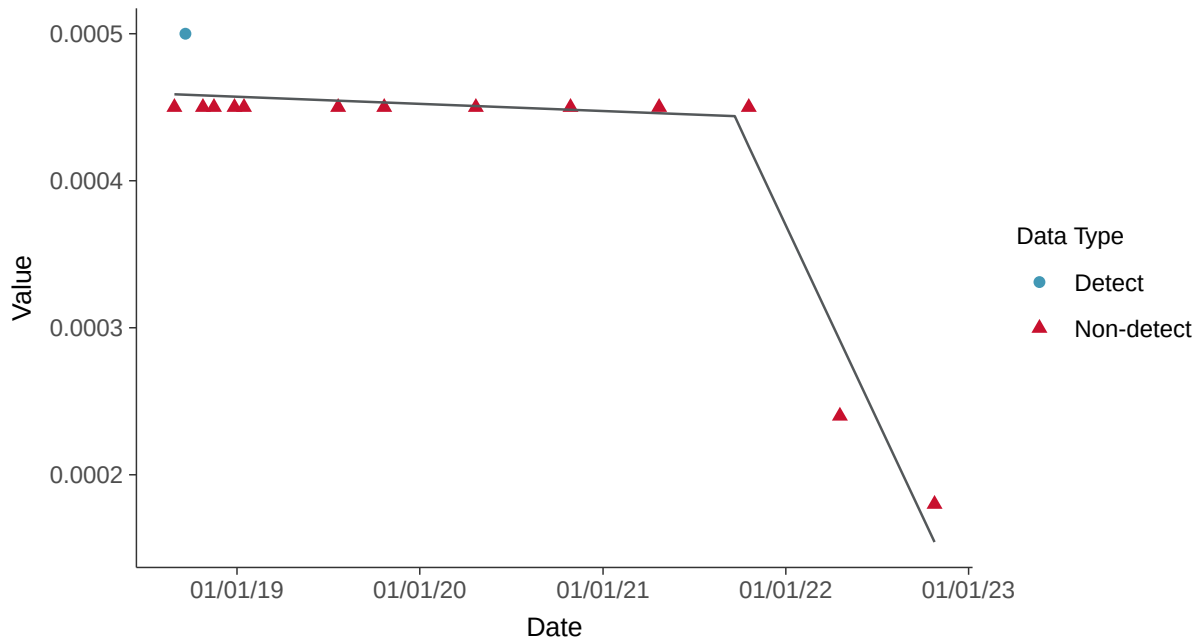
ID: 2_2_117





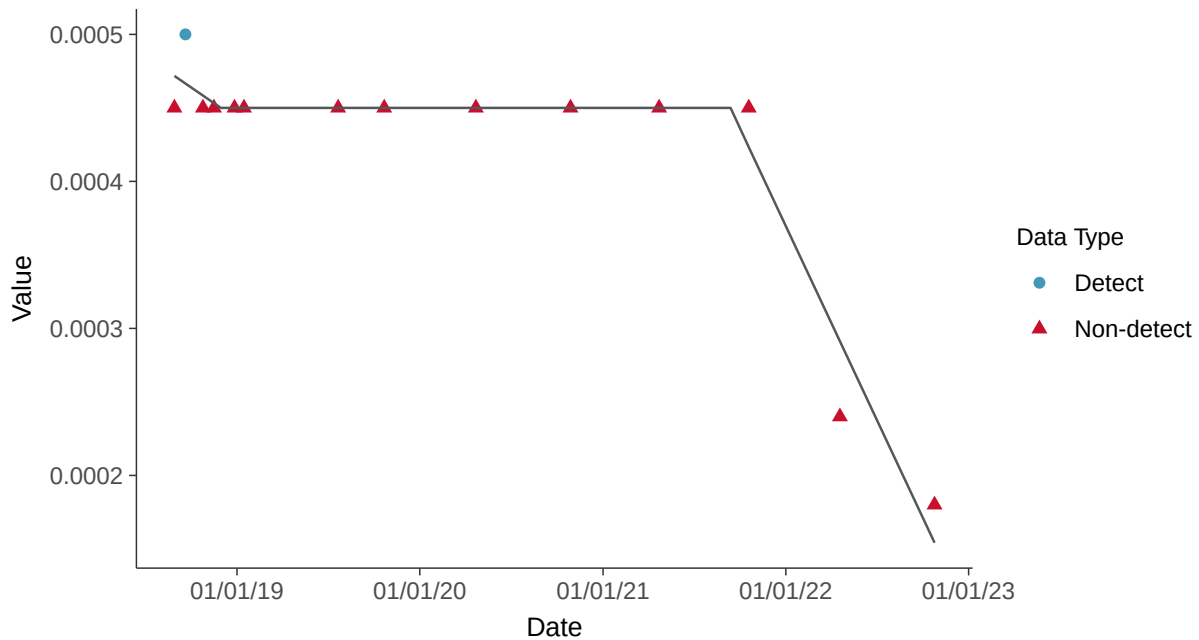
Trend Regression: Piecewise Linear-Linear

Lead, MW-16 (mg/l)



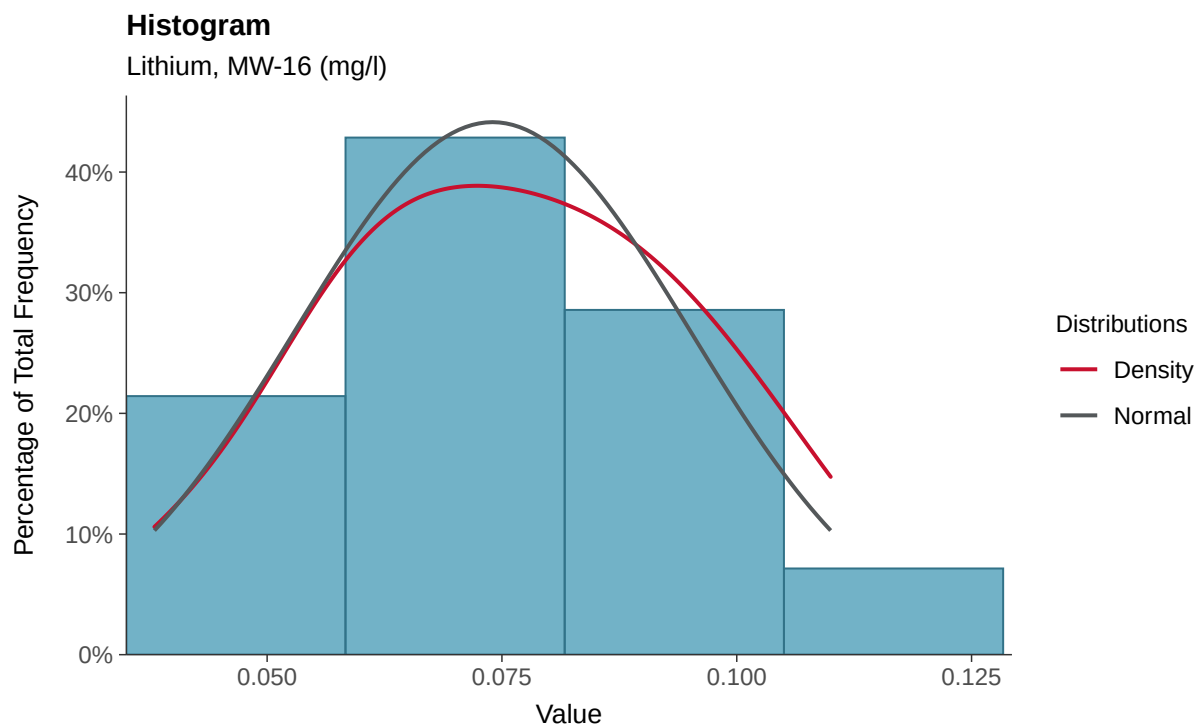
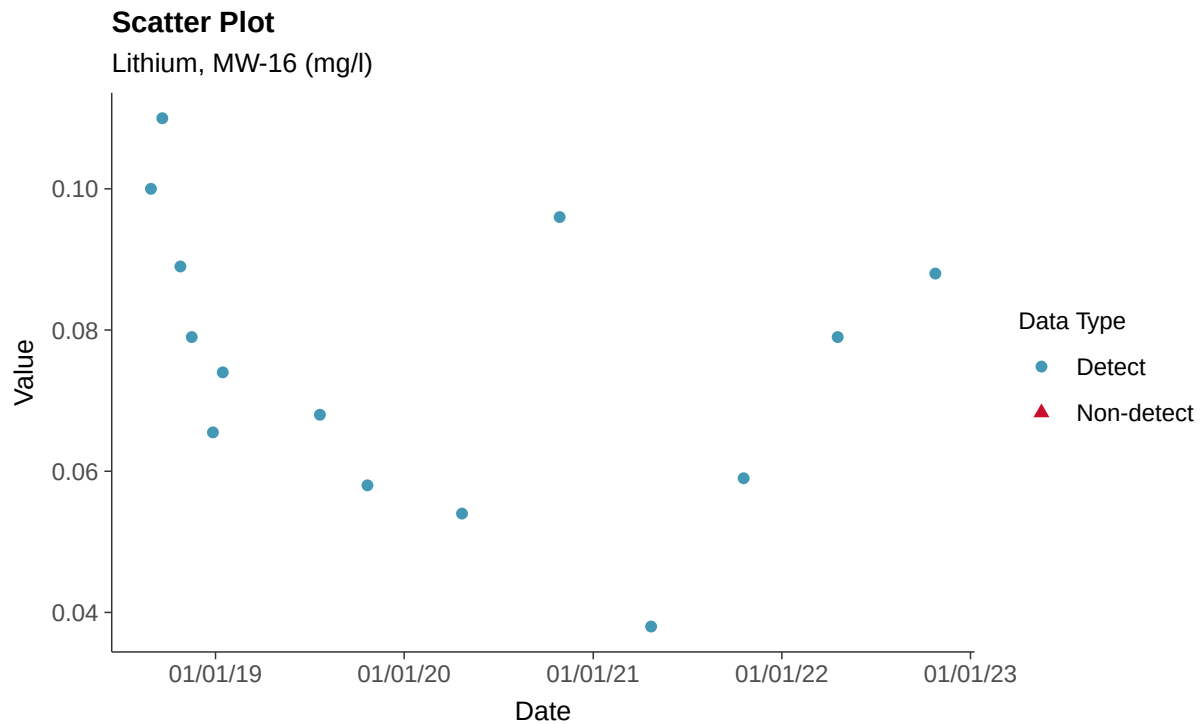
Trend Regression: Piecewise Linear-Linear-Linear

Lead, MW-16 (mg/l)



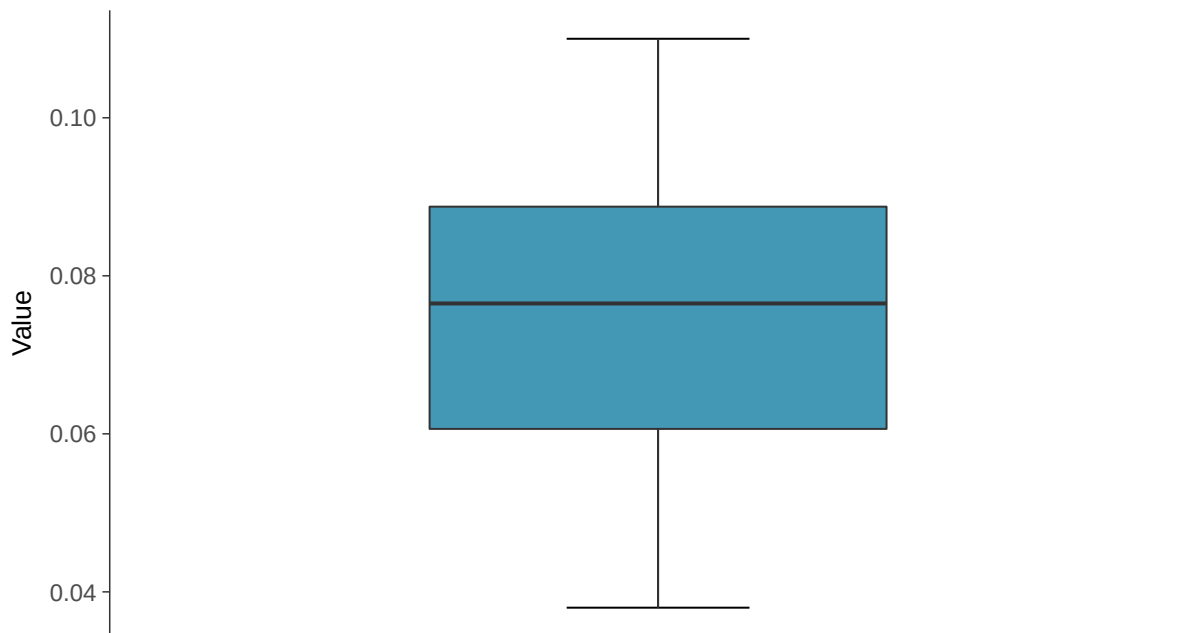
Appendix IV: Lithium, MW-16

ID: 2_2_118



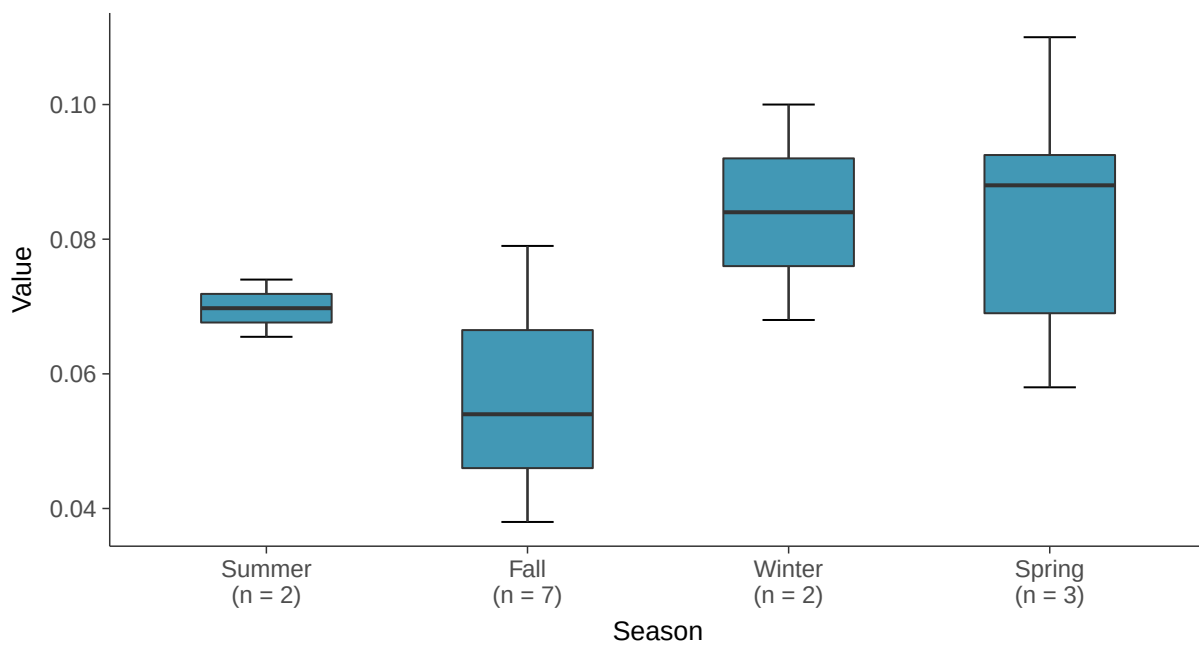
Boxplot

Lithium, MW-16 (mg/l)



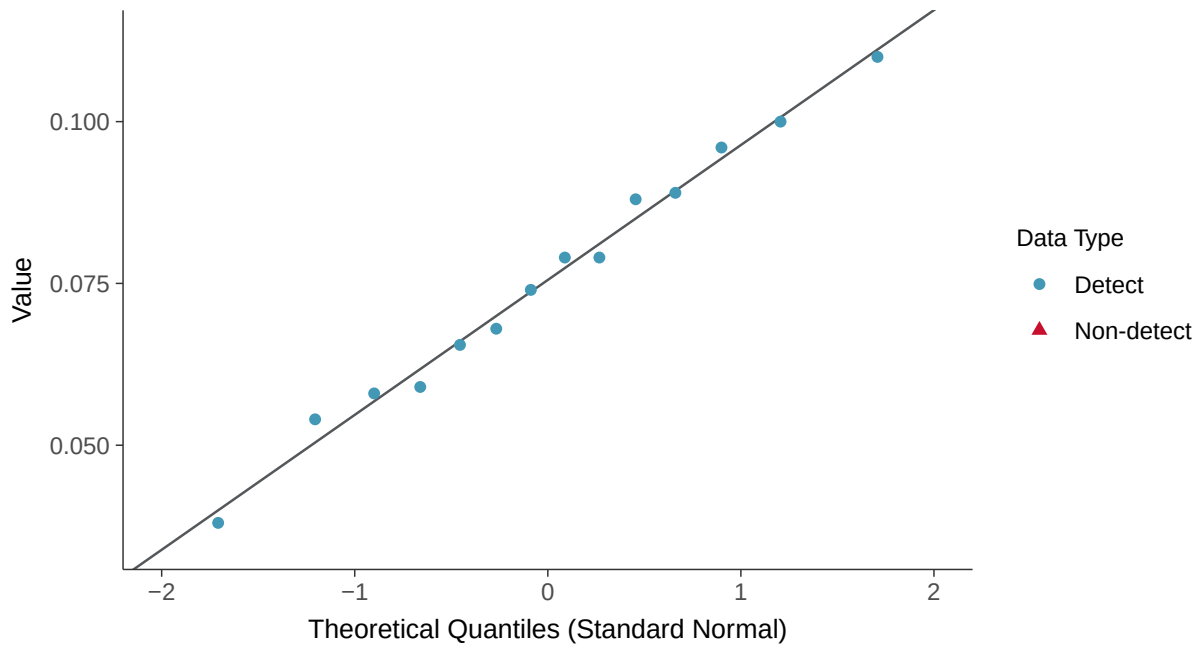
Boxplot by Season

Lithium, MW-16 (mg/l)



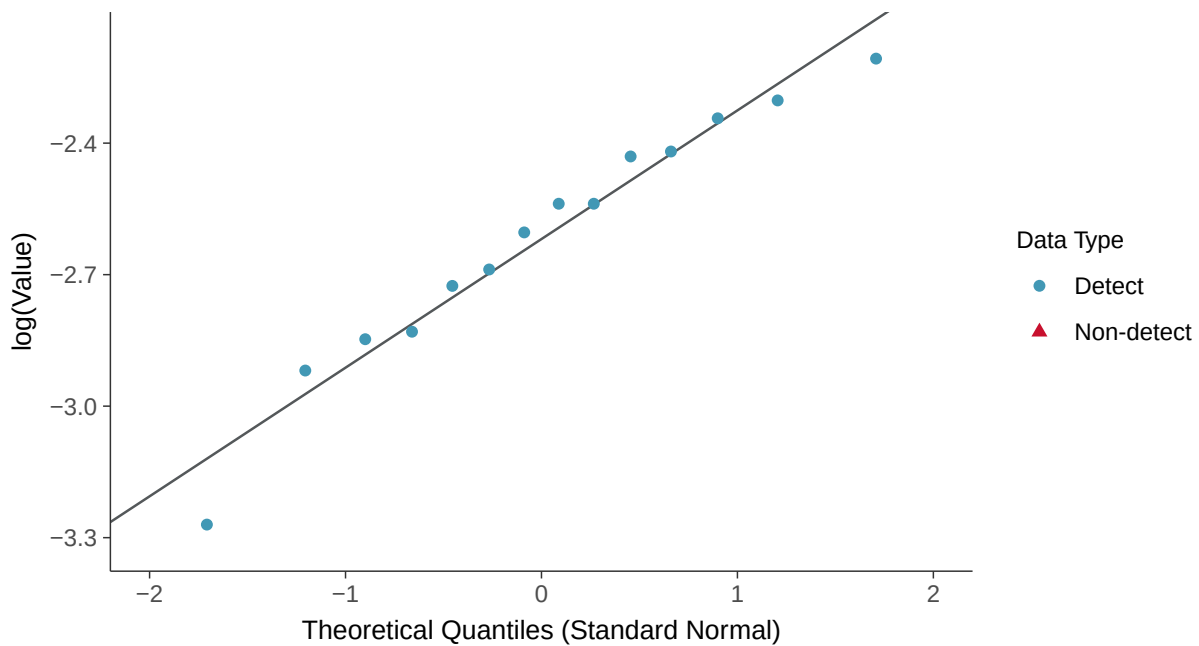
Normal Q-Q plot

Lithium, MW-16 (mg/l)



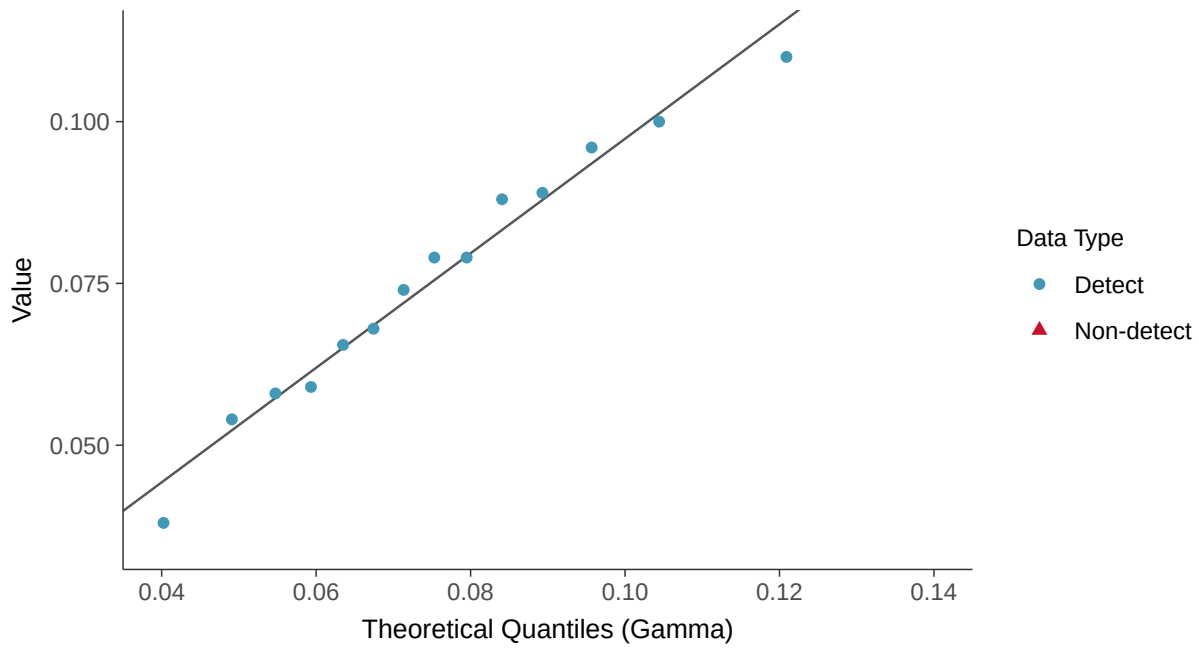
Lognormal Q-Q plot

Lithium, MW-16 (mg/l)



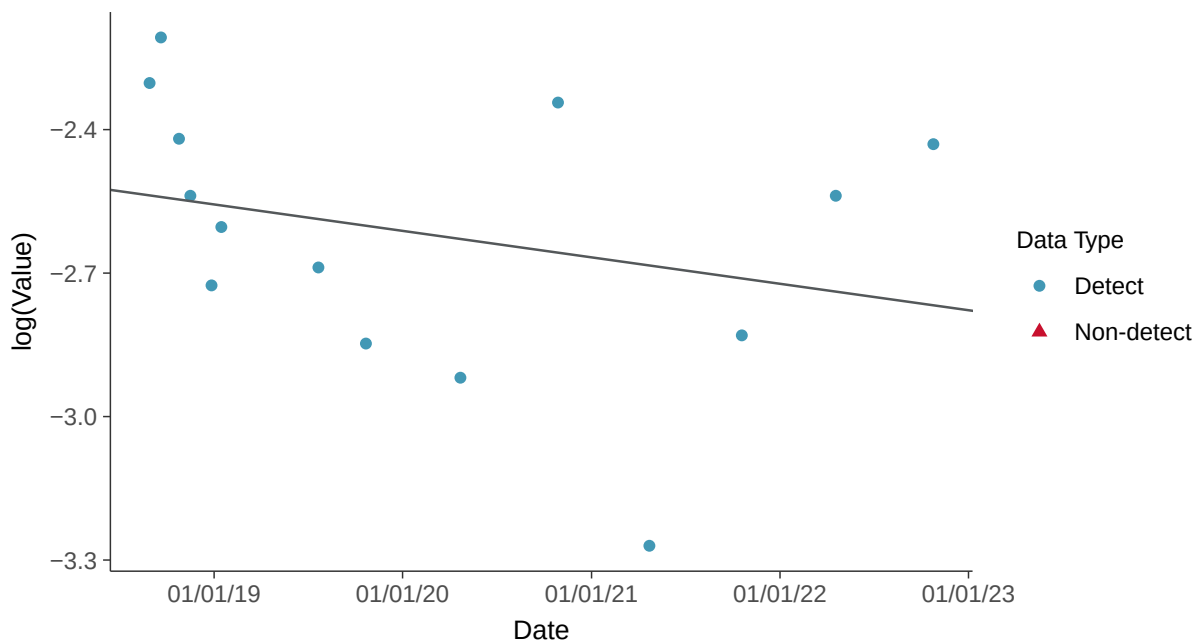
Gamma Q-Q plot

Lithium, MW-16 (mg/l)



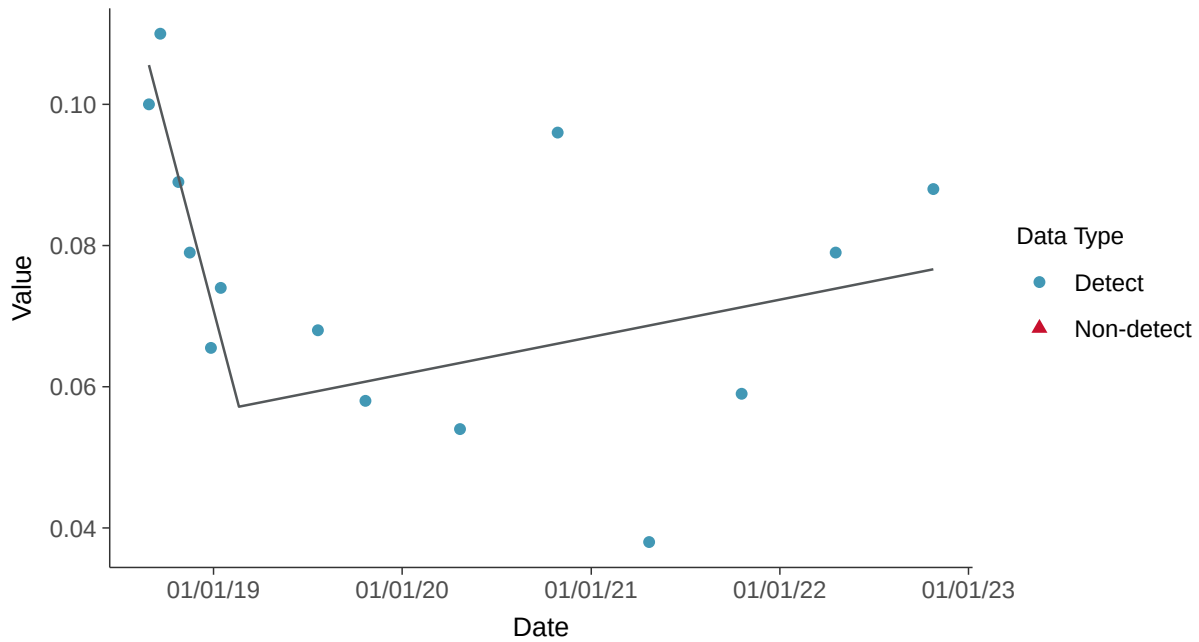
Trend Regression: Lognormal MLE

Lithium, MW-16 (mg/l)



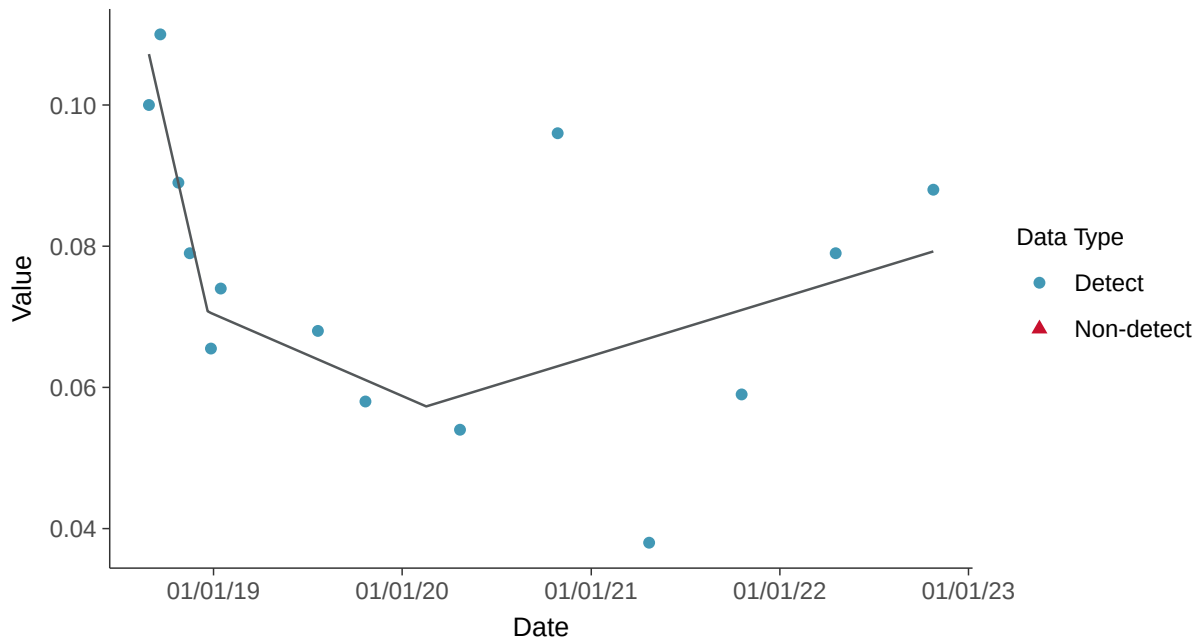
Trend Regression: Piecewise Linear-Linear

Lithium, MW-16 (mg/l)



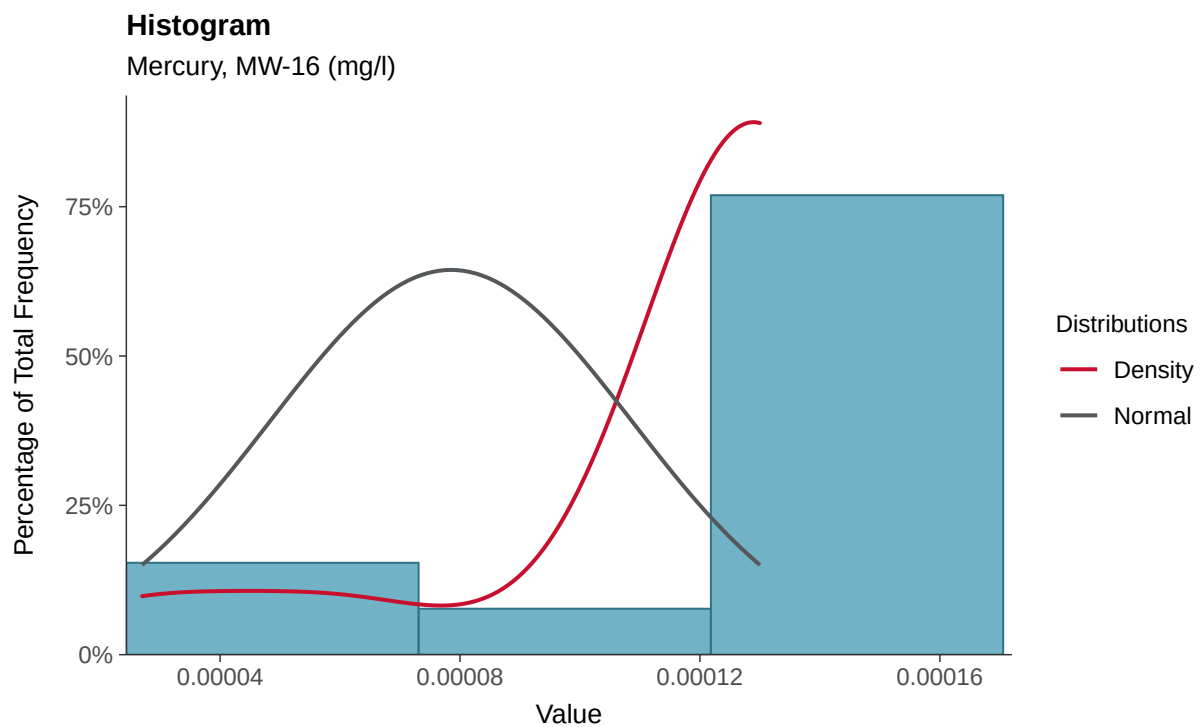
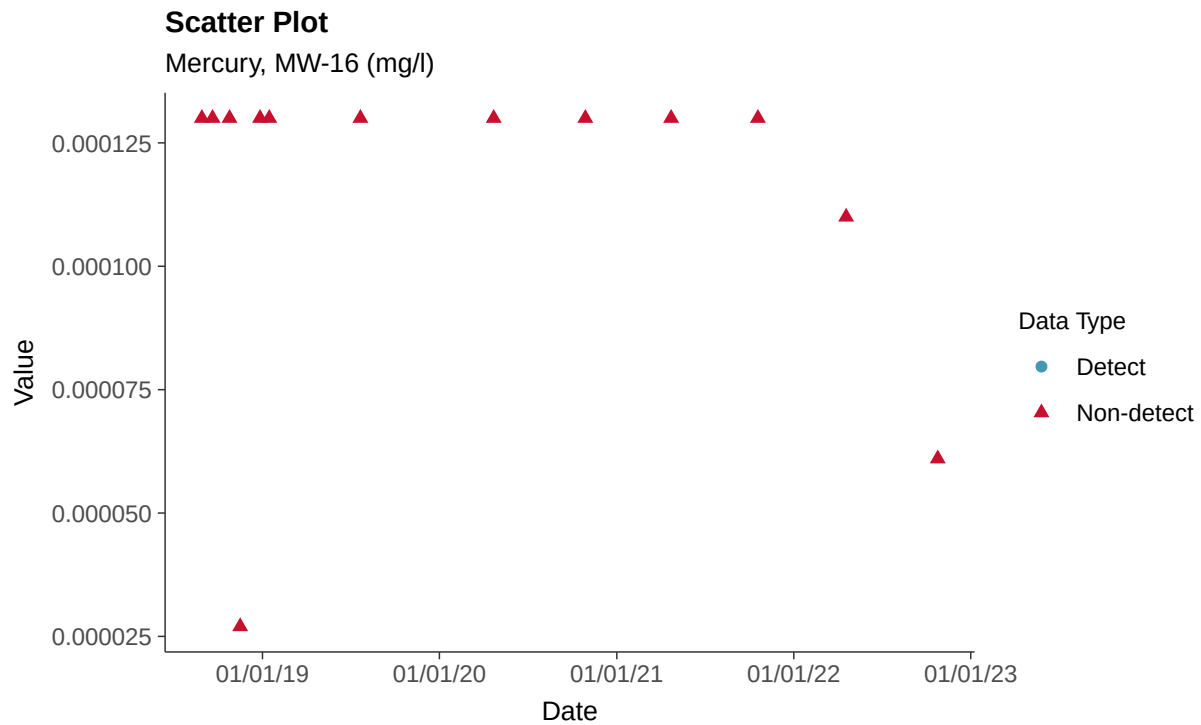
Trend Regression: Piecewise Linear-Linear-Linear

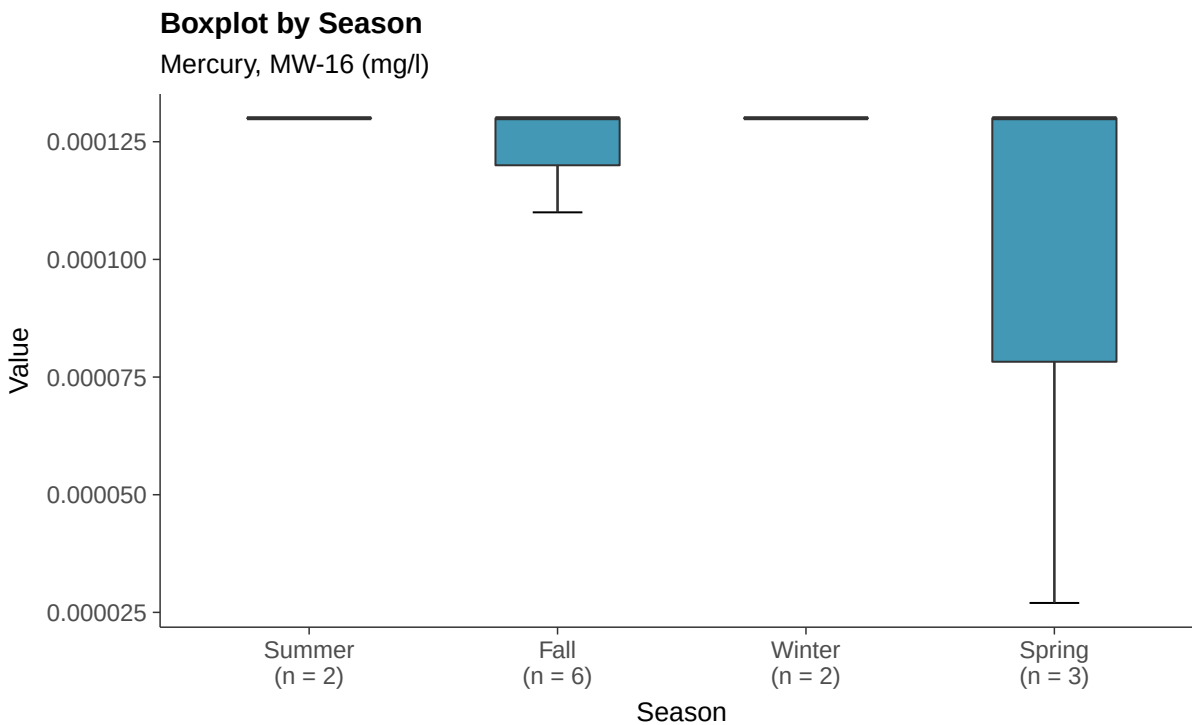
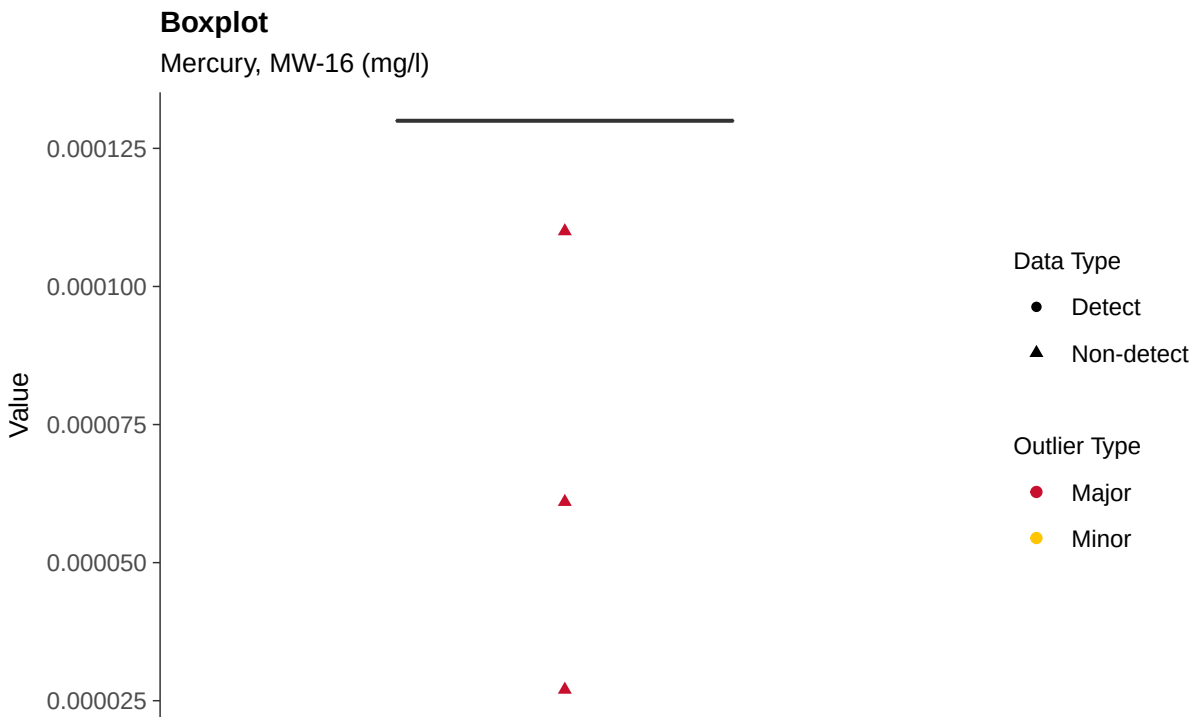
Lithium, MW-16 (mg/l)

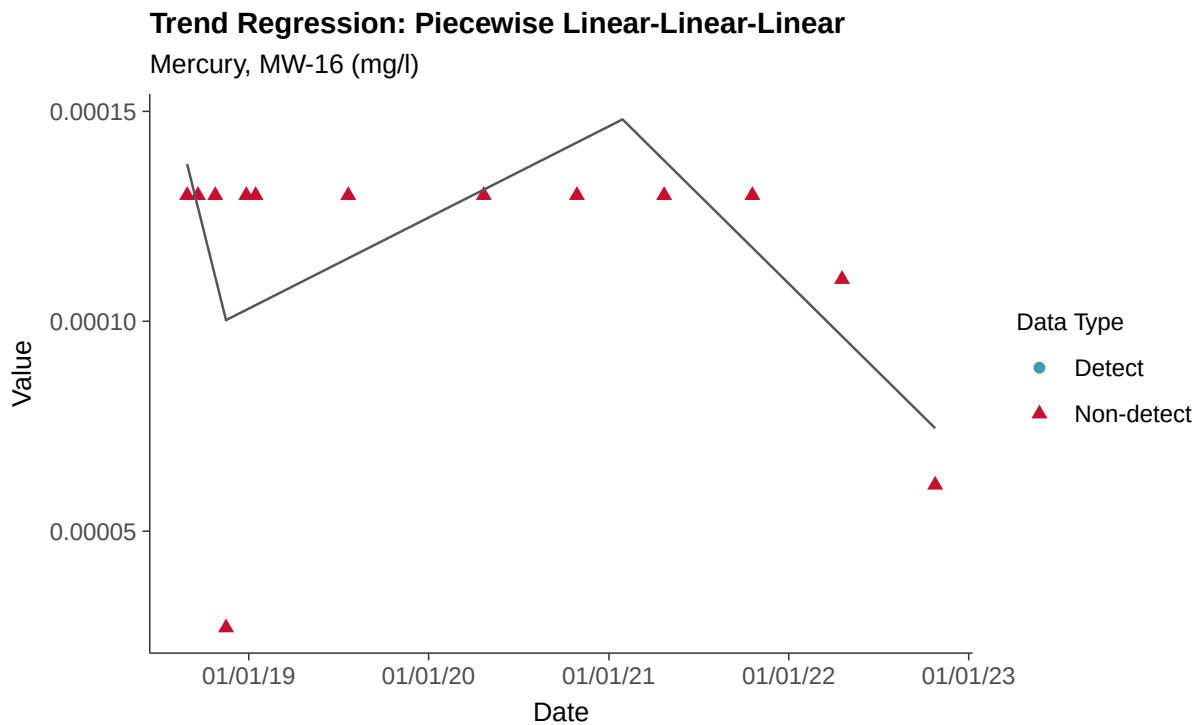
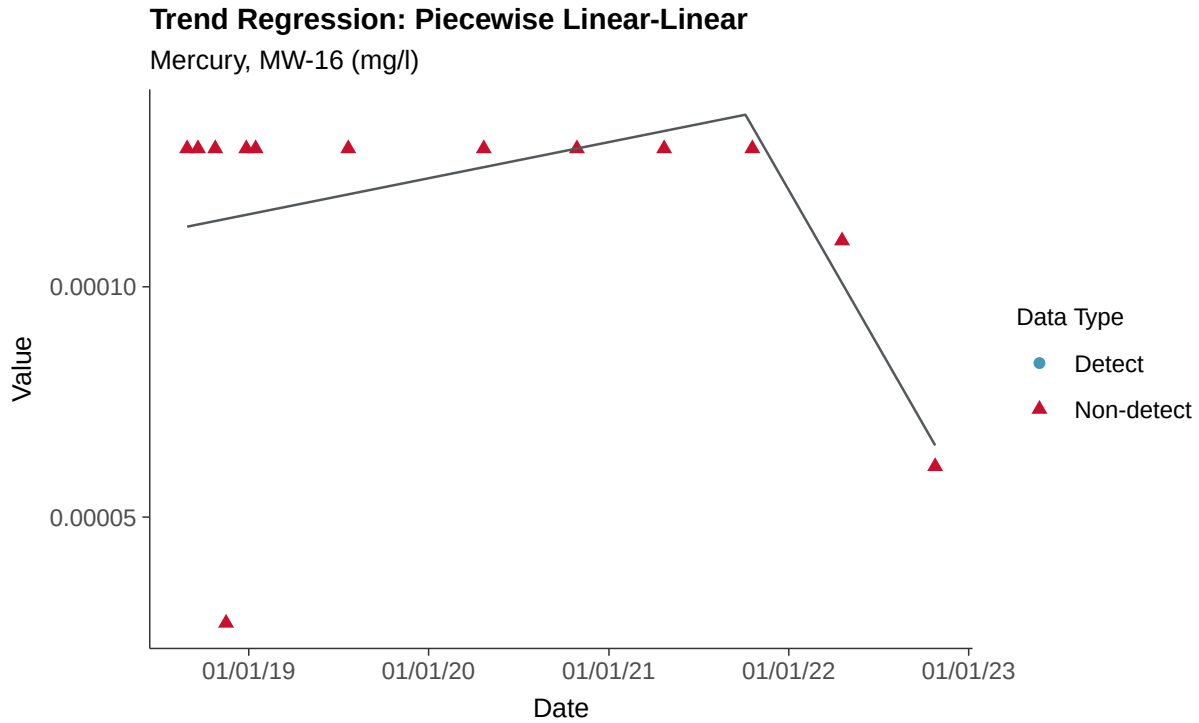


Appendix IV: Mercury, MW-16

ID: 2_2_120

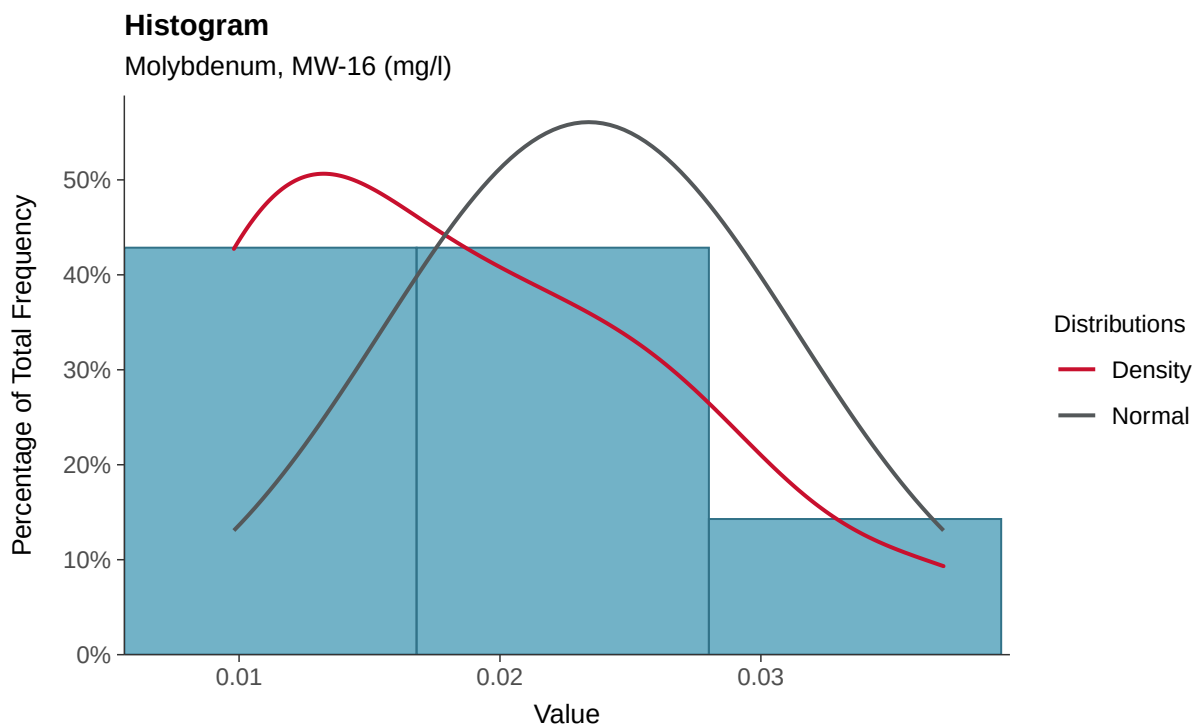
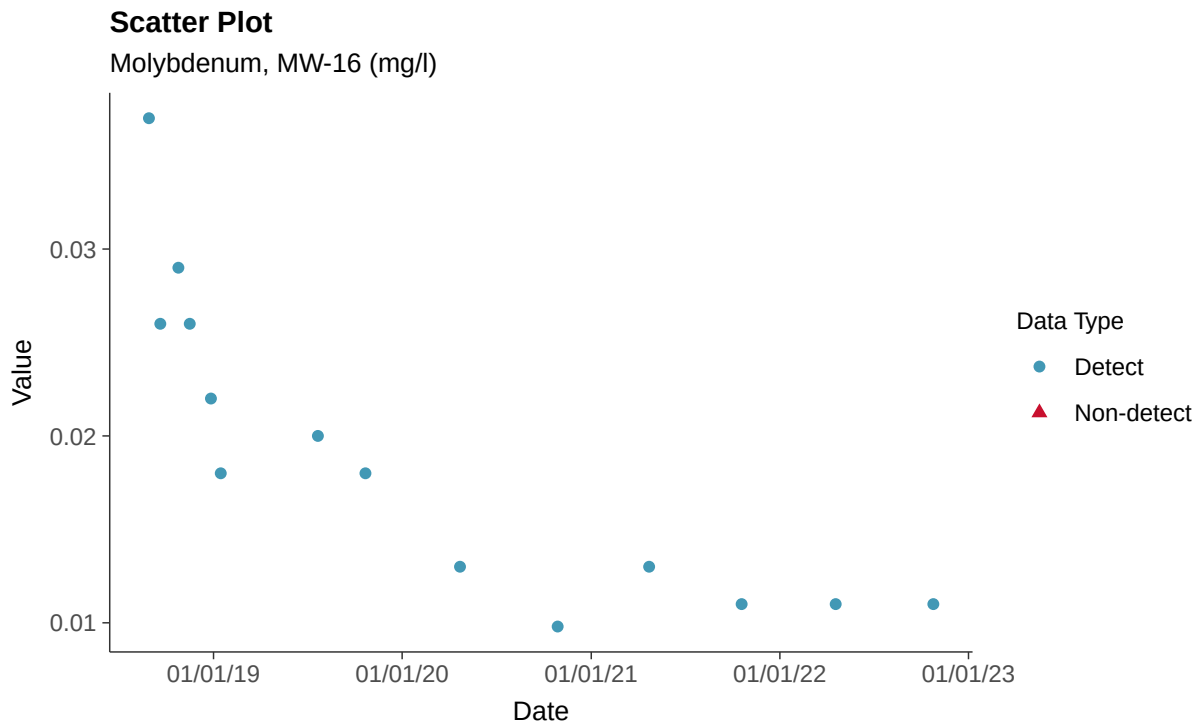


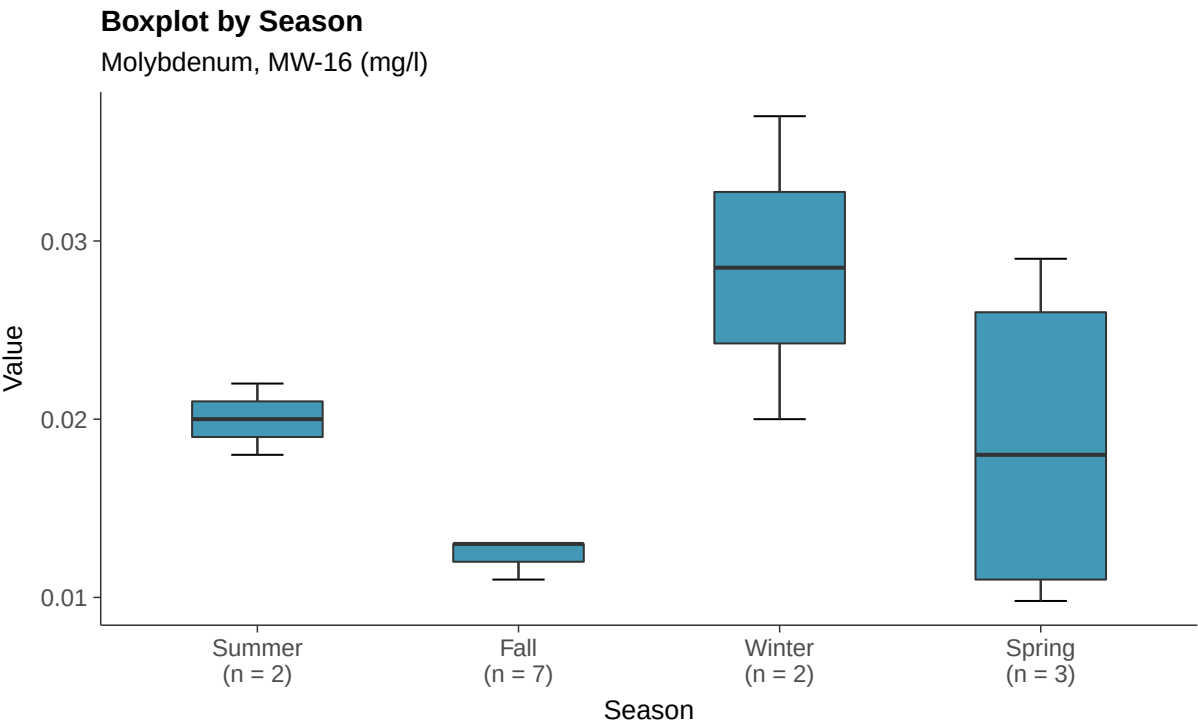
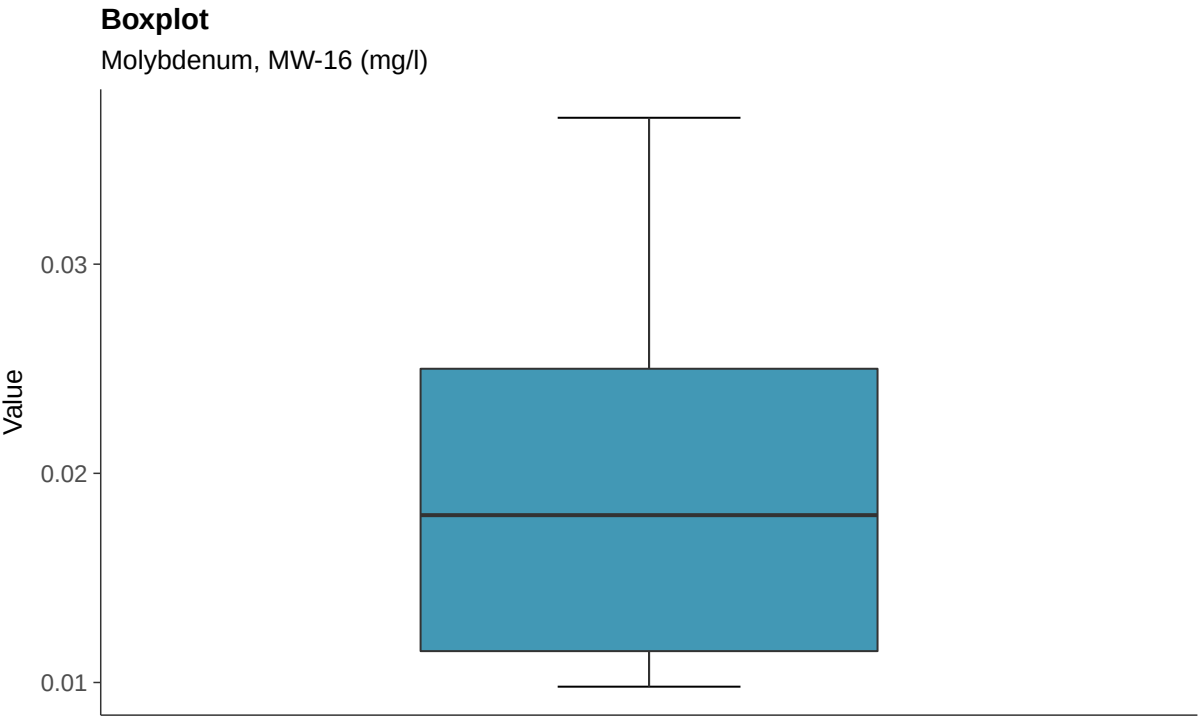


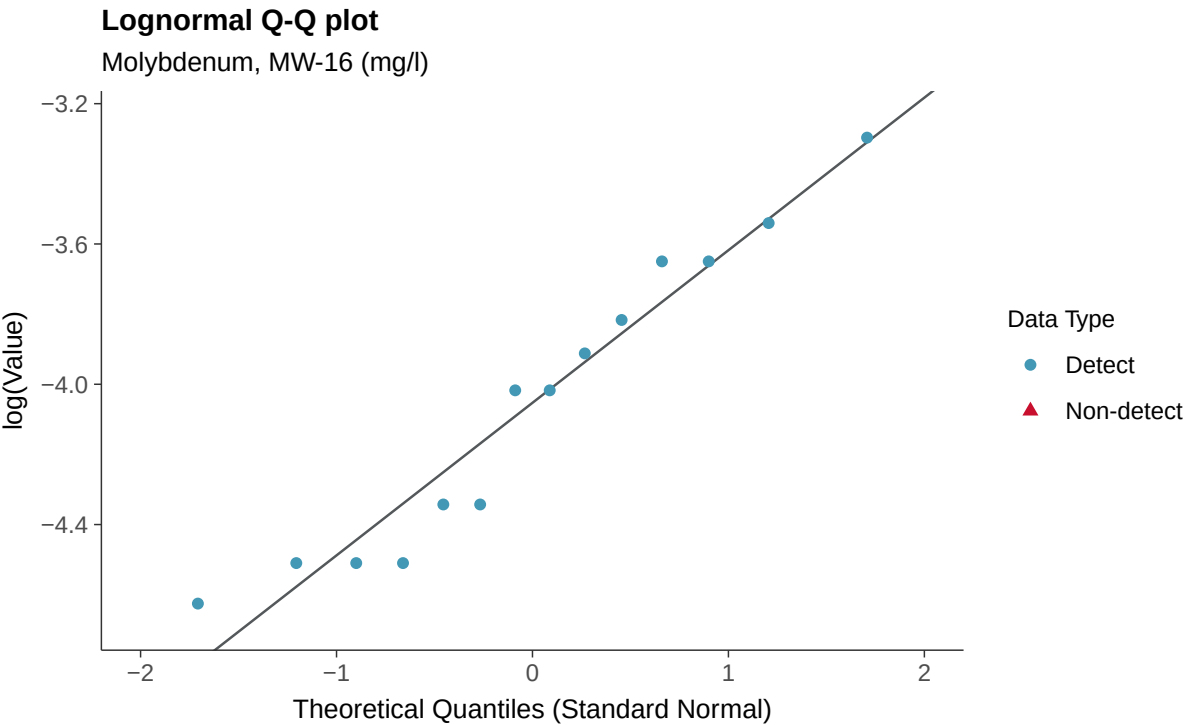
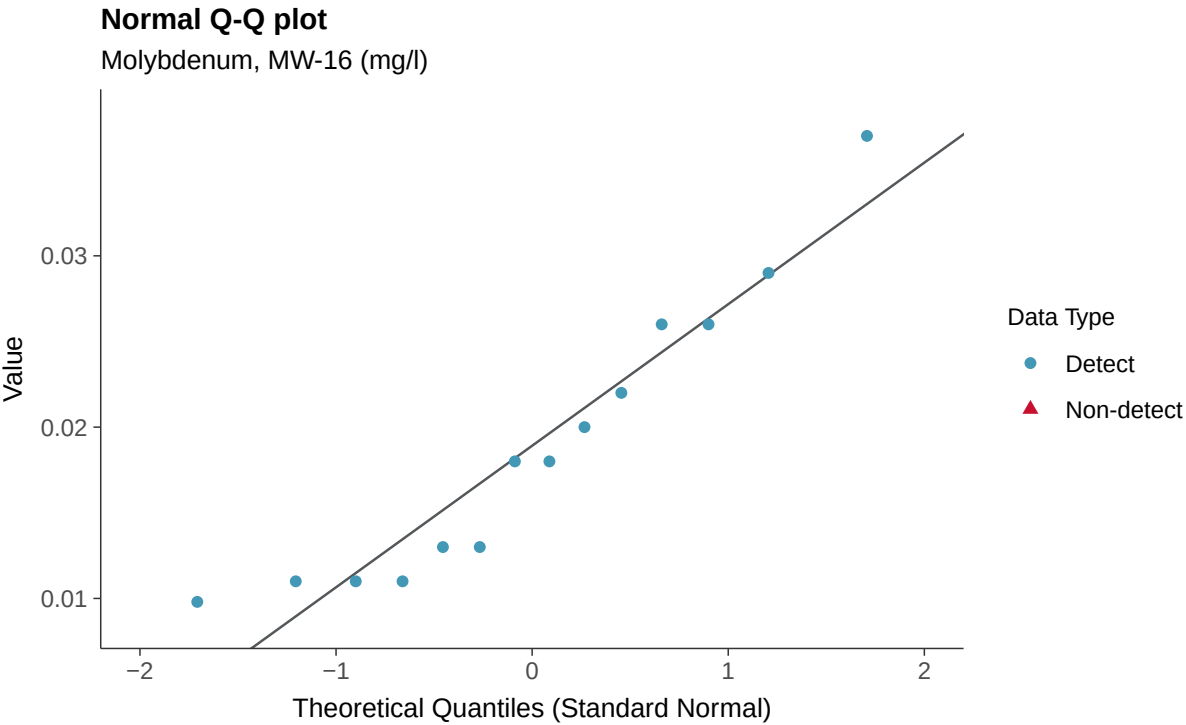


Appendix IV: Molybdenum, MW-16

ID: 2_2_121

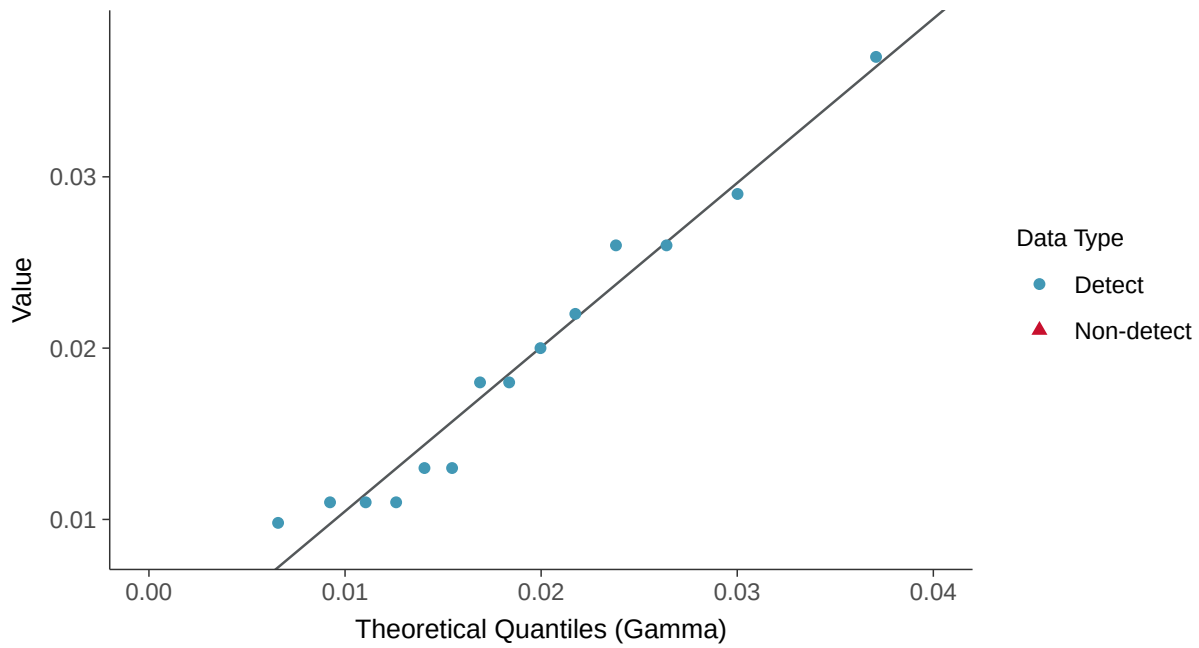






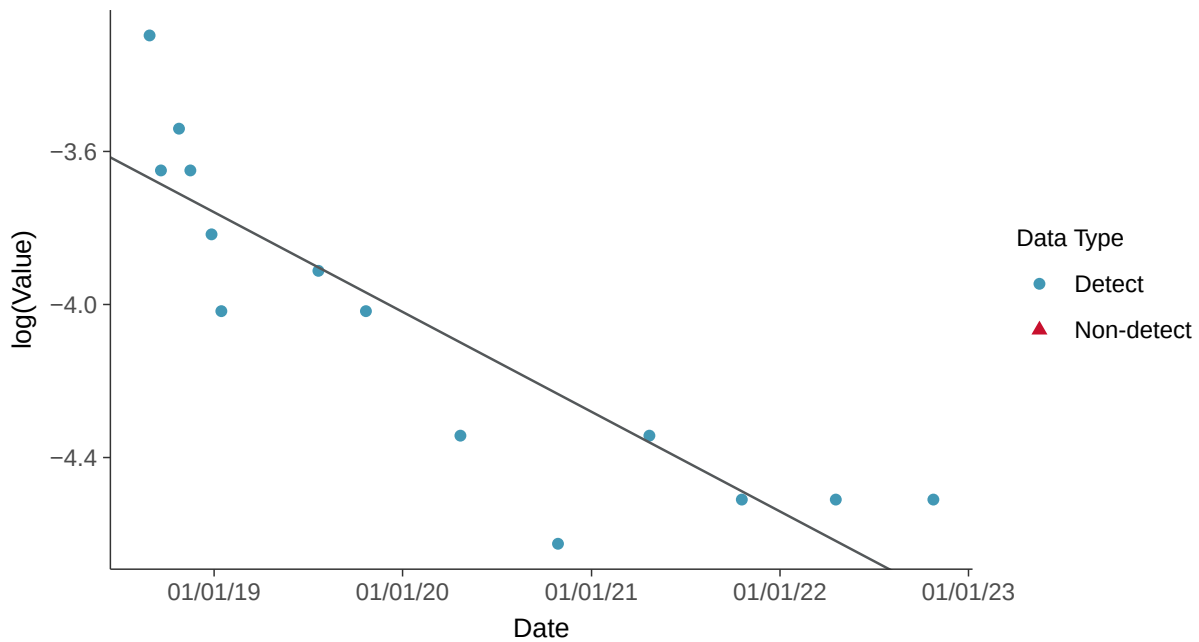
Gamma Q-Q plot

Molybdenum, MW-16 (mg/l)



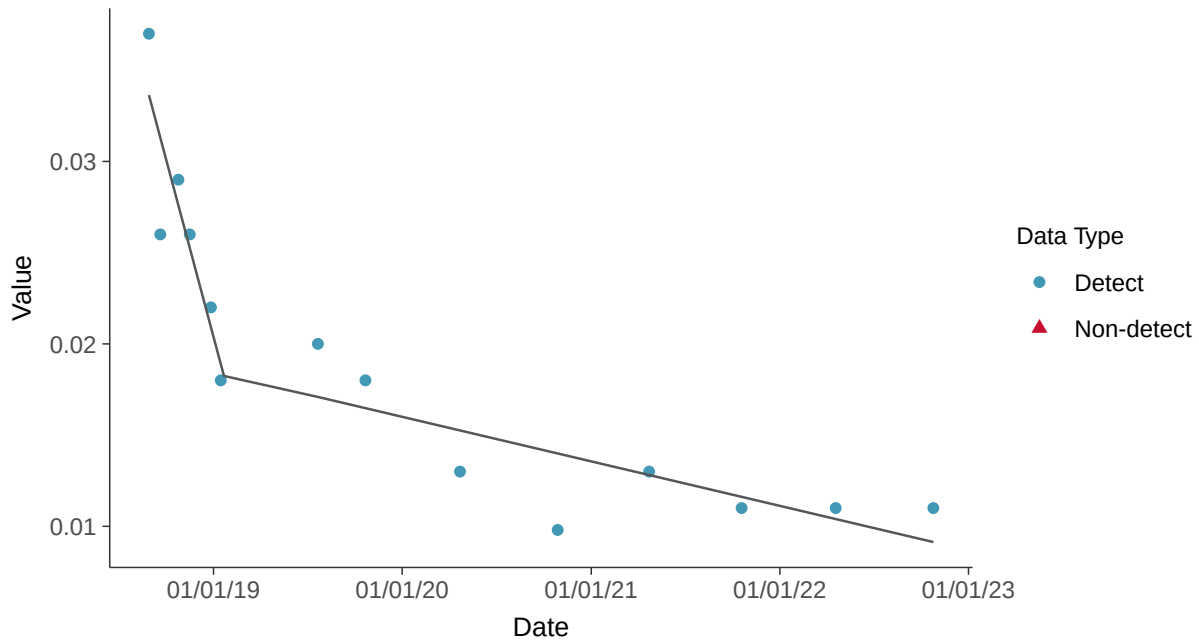
Trend Regression: Lognormal MLE

Molybdenum, MW-16 (mg/l)



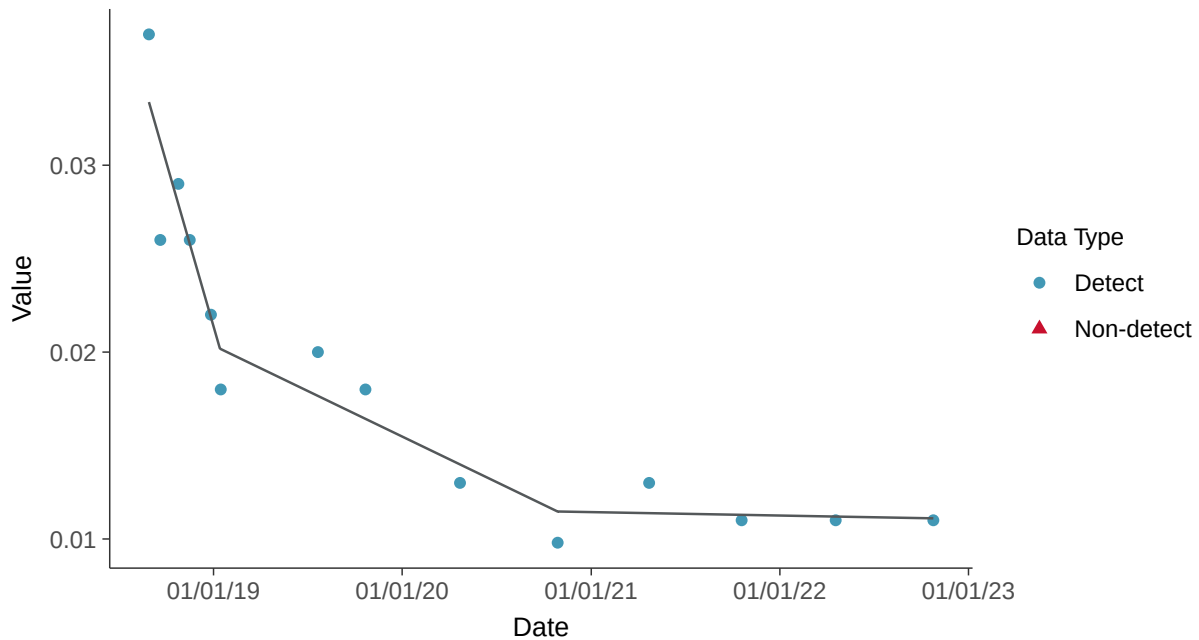
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-16 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

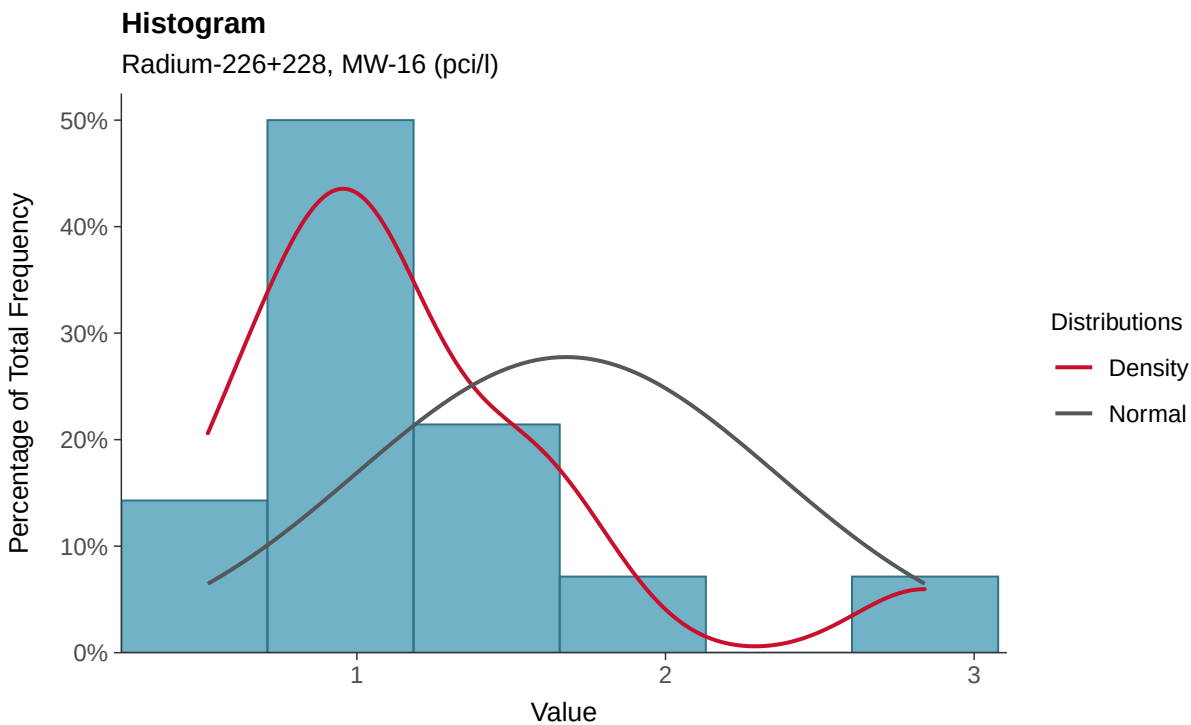
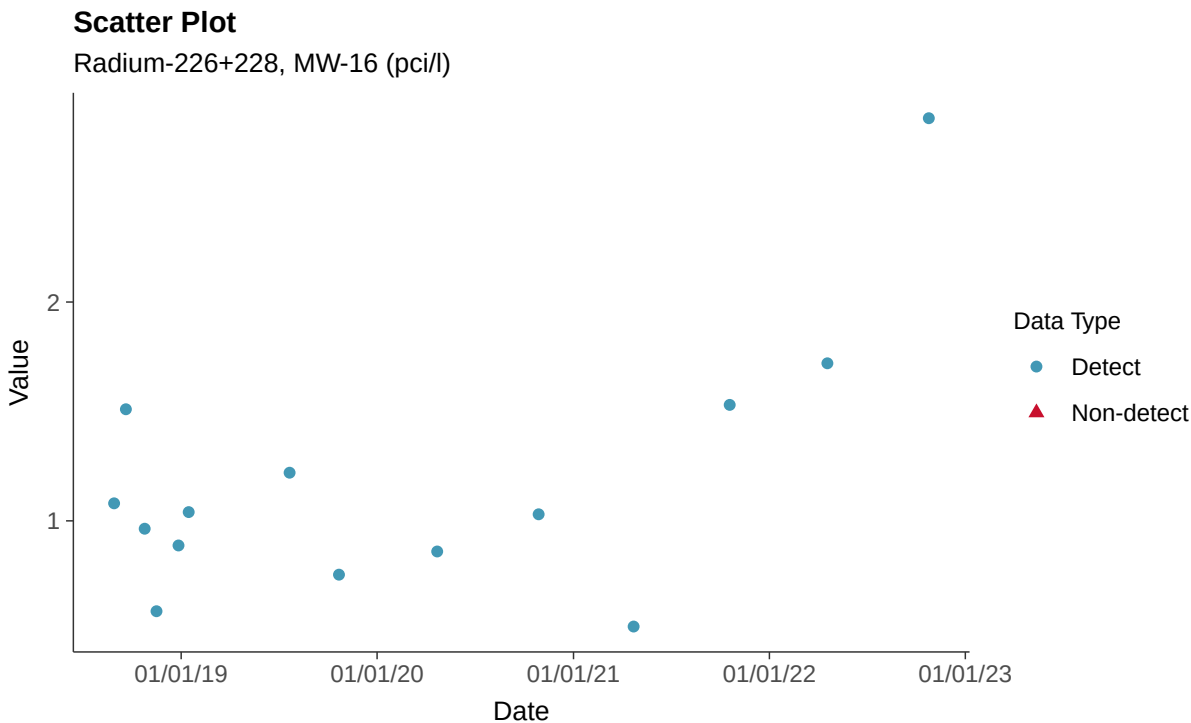
Molybdenum, MW-16 (mg/l)





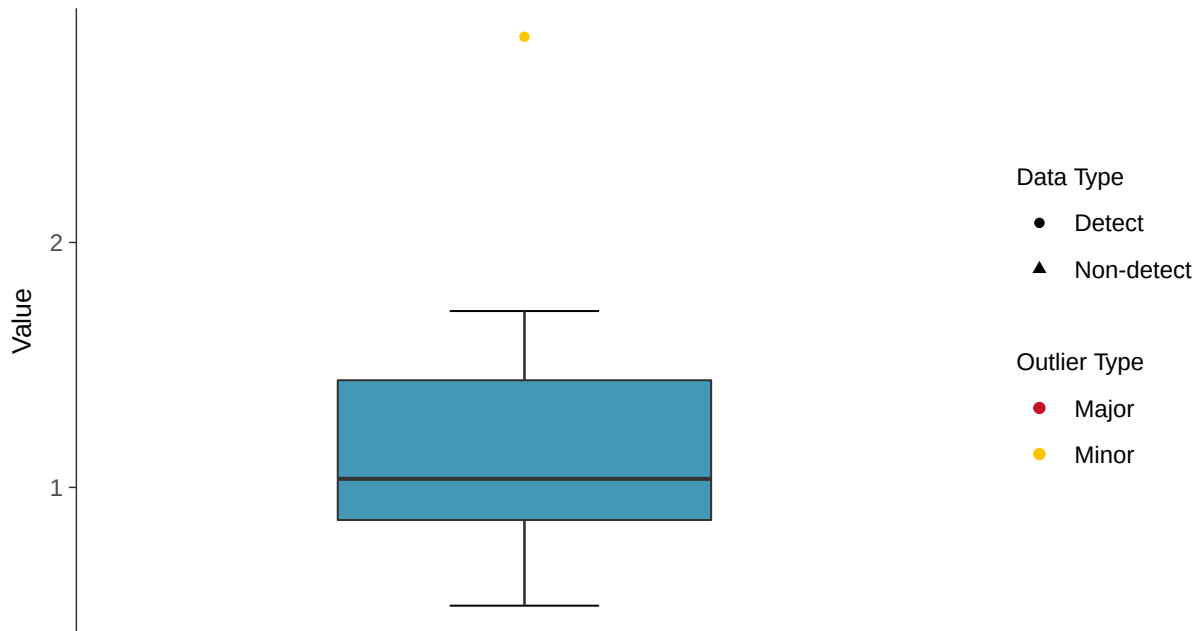
Appendix IV: Radium-226+228, MW-16

ID: 2_2_127



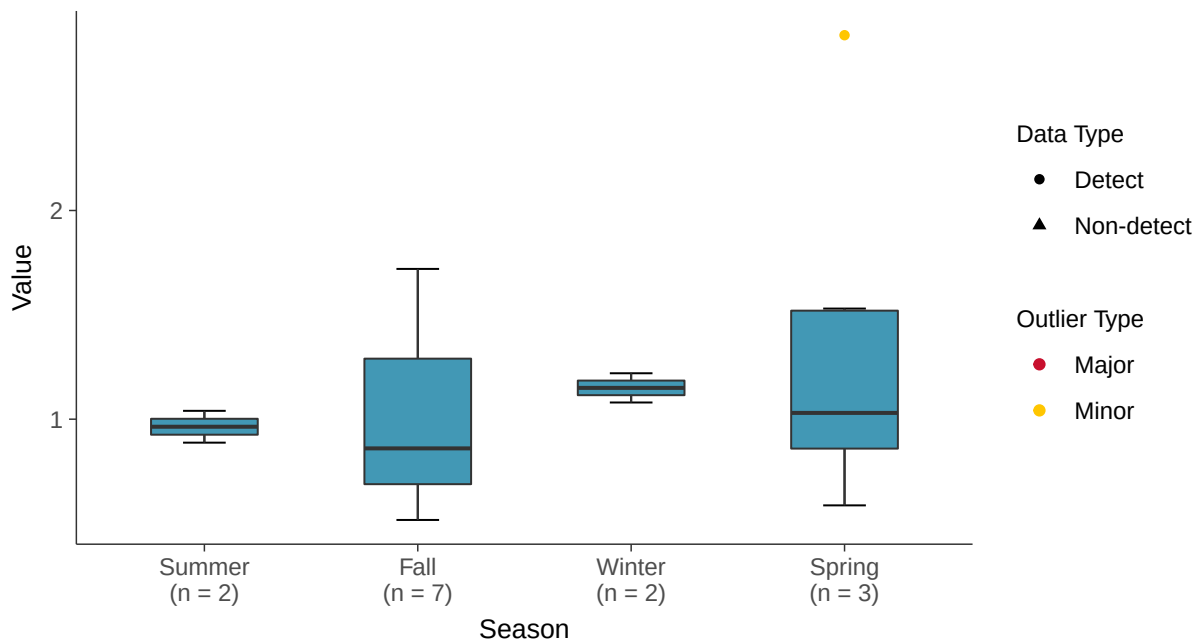
Boxplot

Radium-226+228, MW-16 (pci/l)



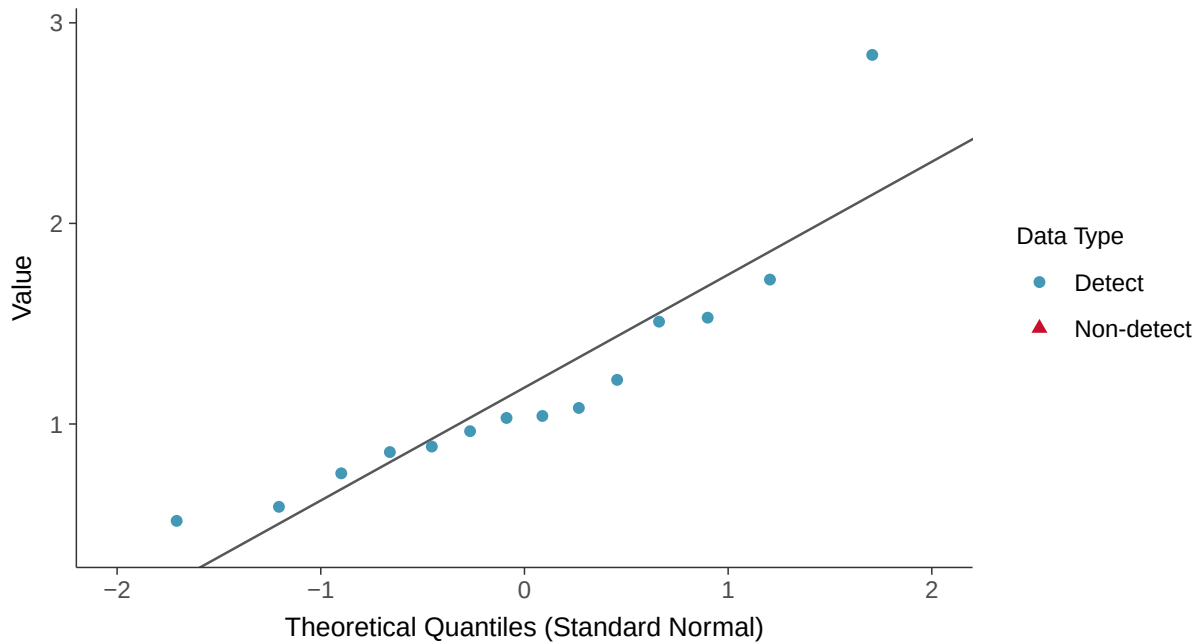
Boxplot by Season

Radium-226+228, MW-16 (pci/l)



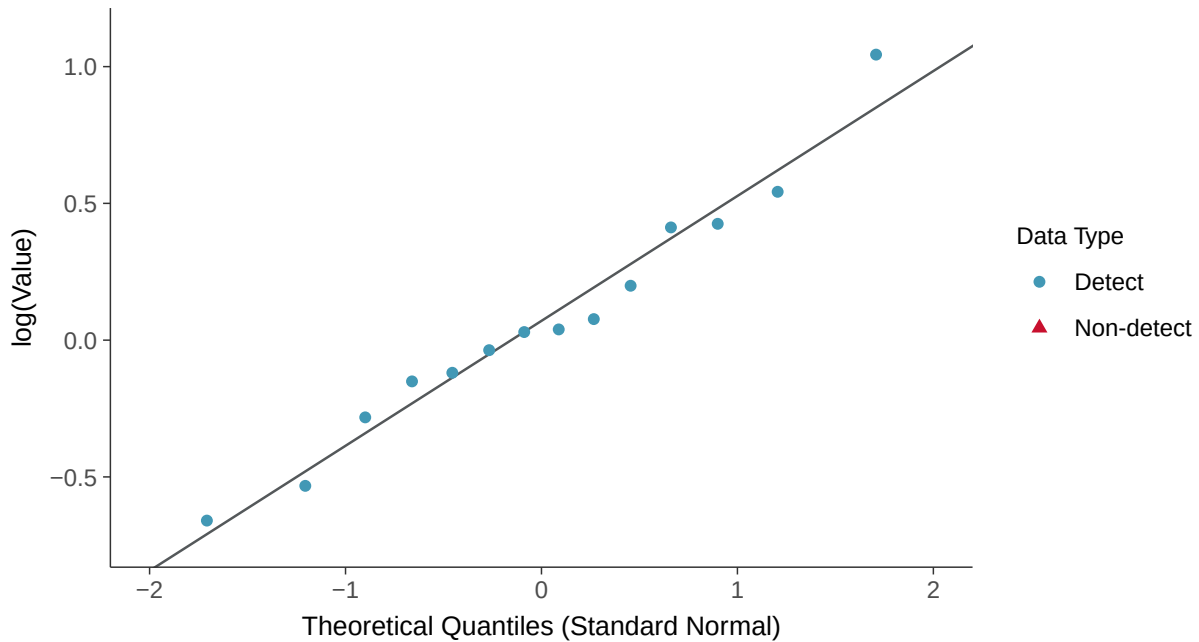
Normal Q-Q plot

Radium-226+228, MW-16 (pci/l)



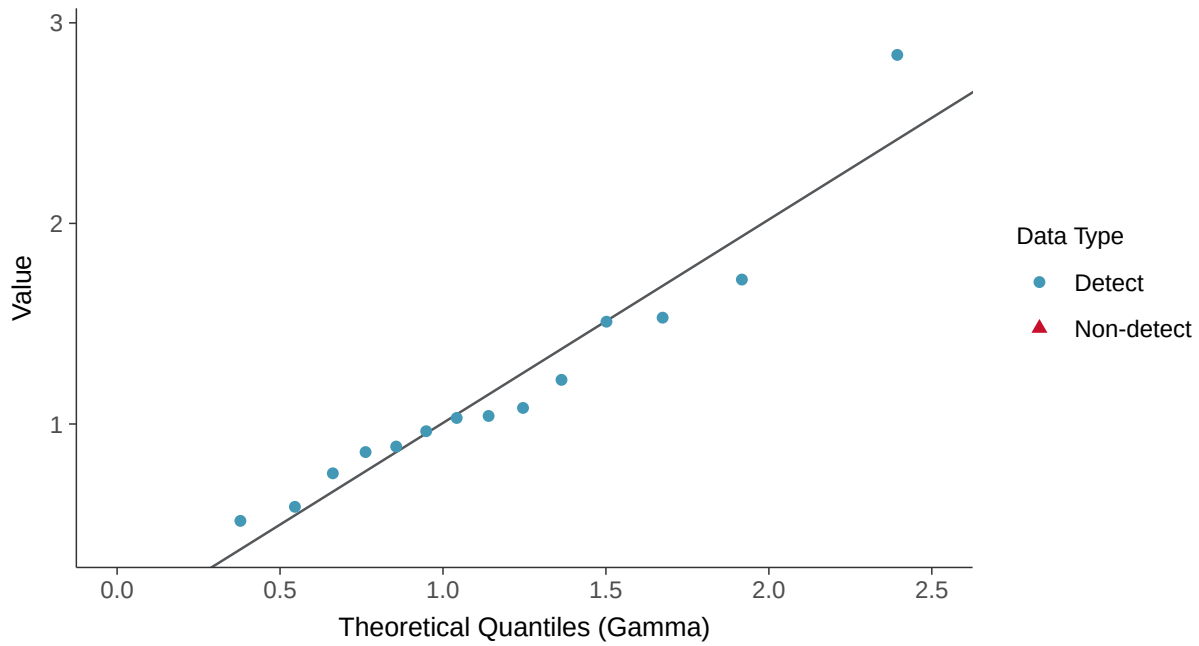
Lognormal Q-Q plot

Radium-226+228, MW-16 (pci/l)



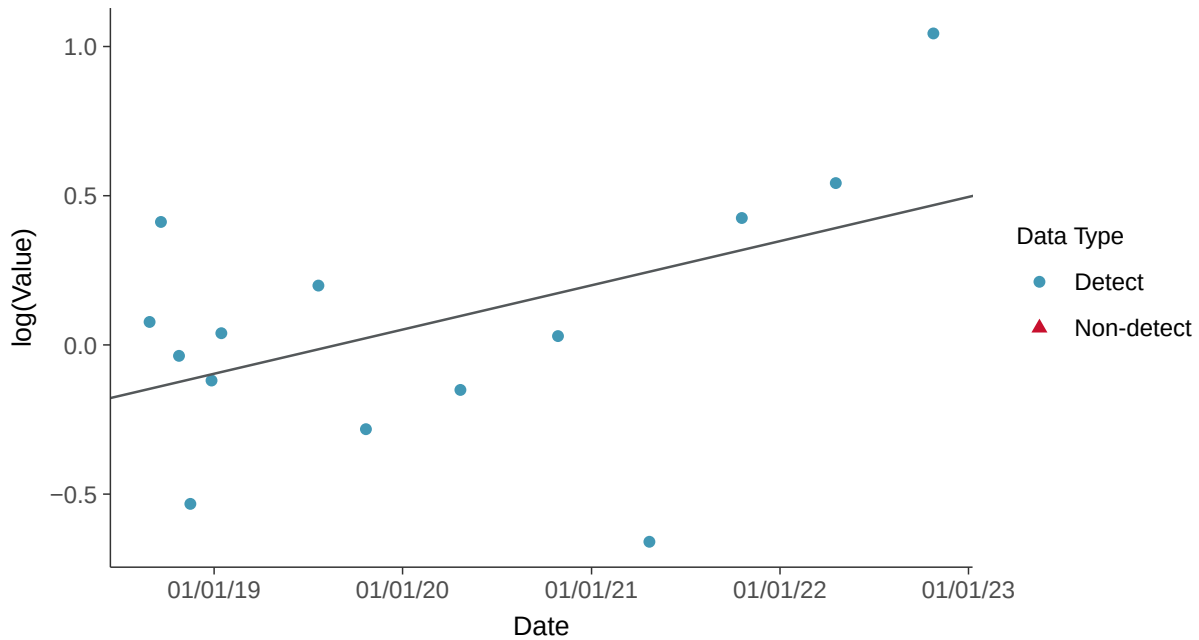
Gamma Q-Q plot

Radium-226+228, MW-16 (pci/l)



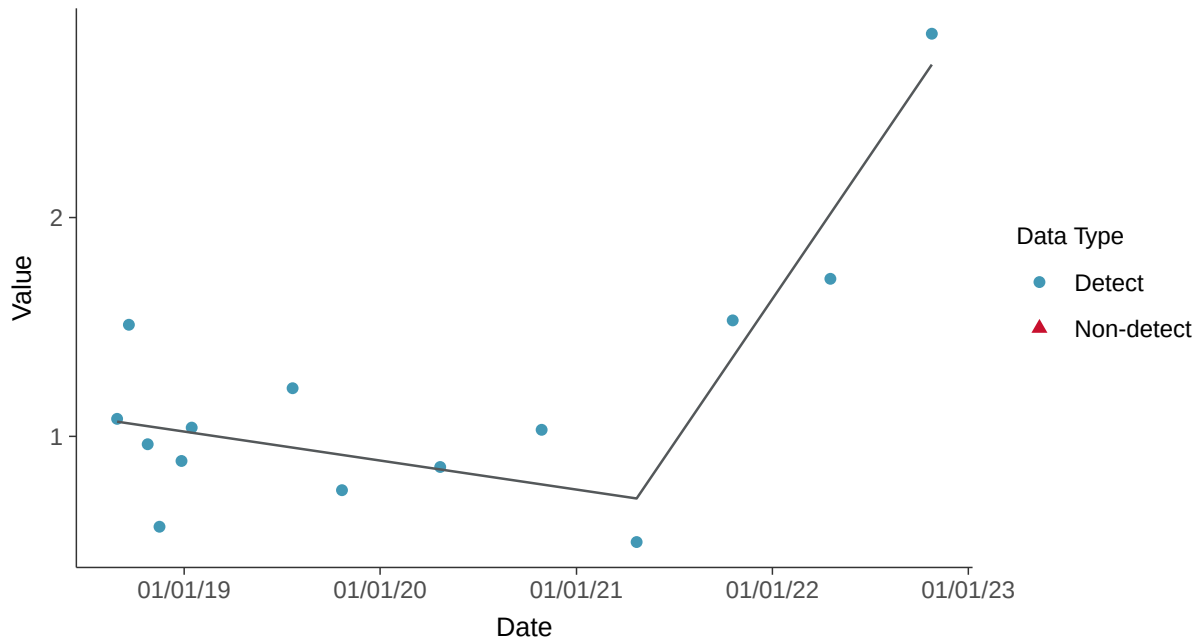
Trend Regression: Lognormal MLE

Radium-226+228, MW-16 (pci/l)



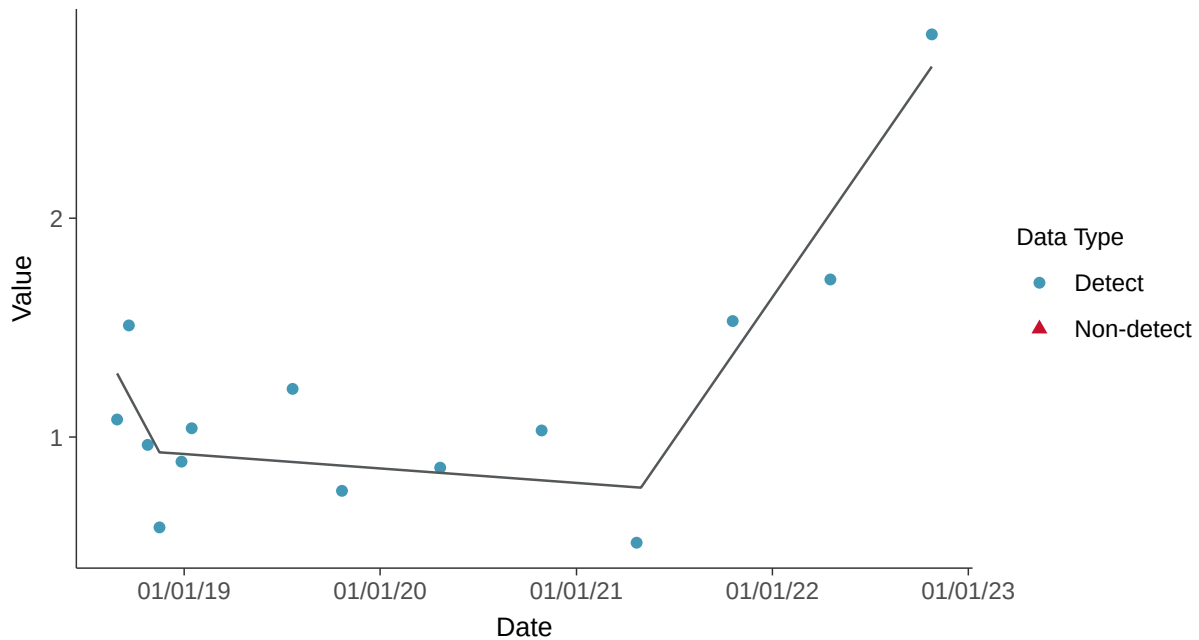
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-16 (pci/l)



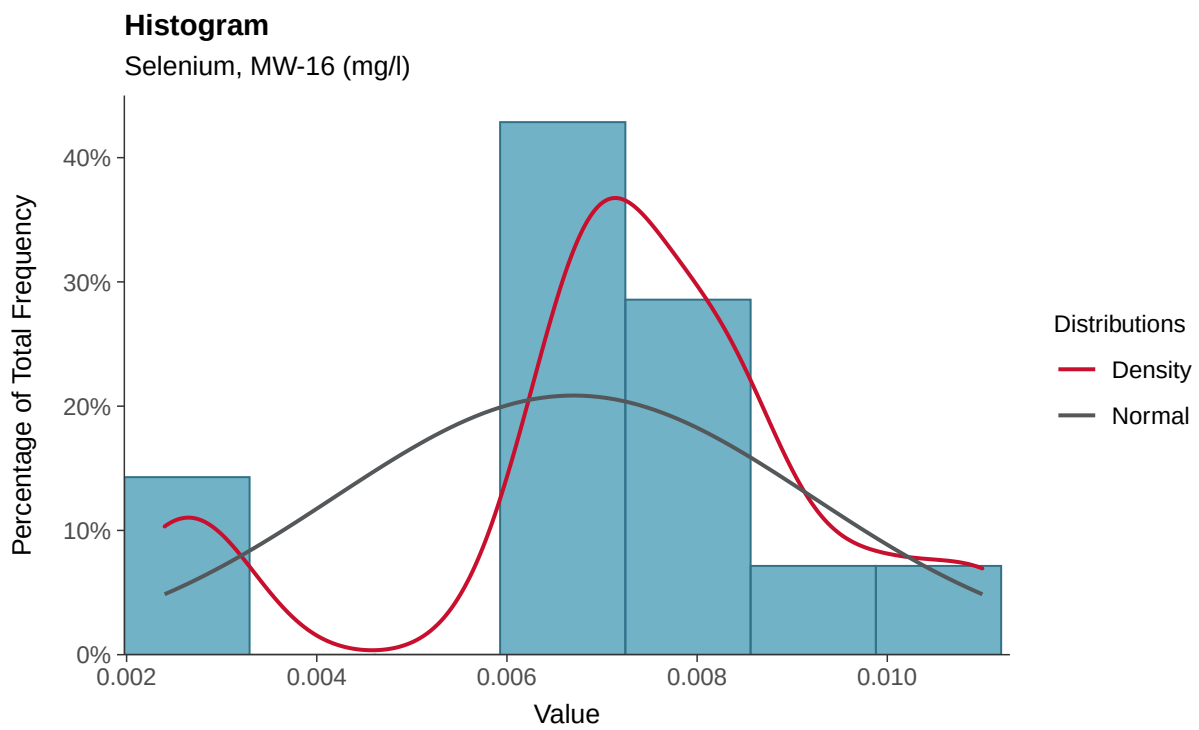
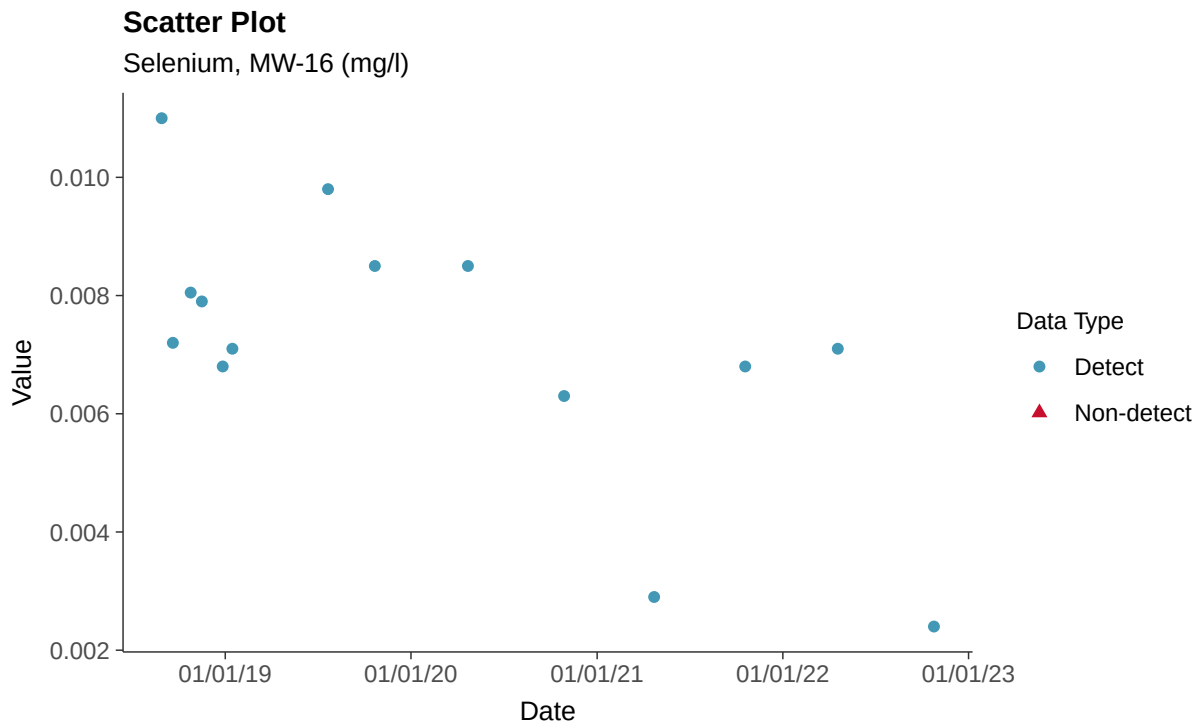
Trend Regression: Piecewise Linear-Linear-Linear

Radium-226+228, MW-16 (pci/l)



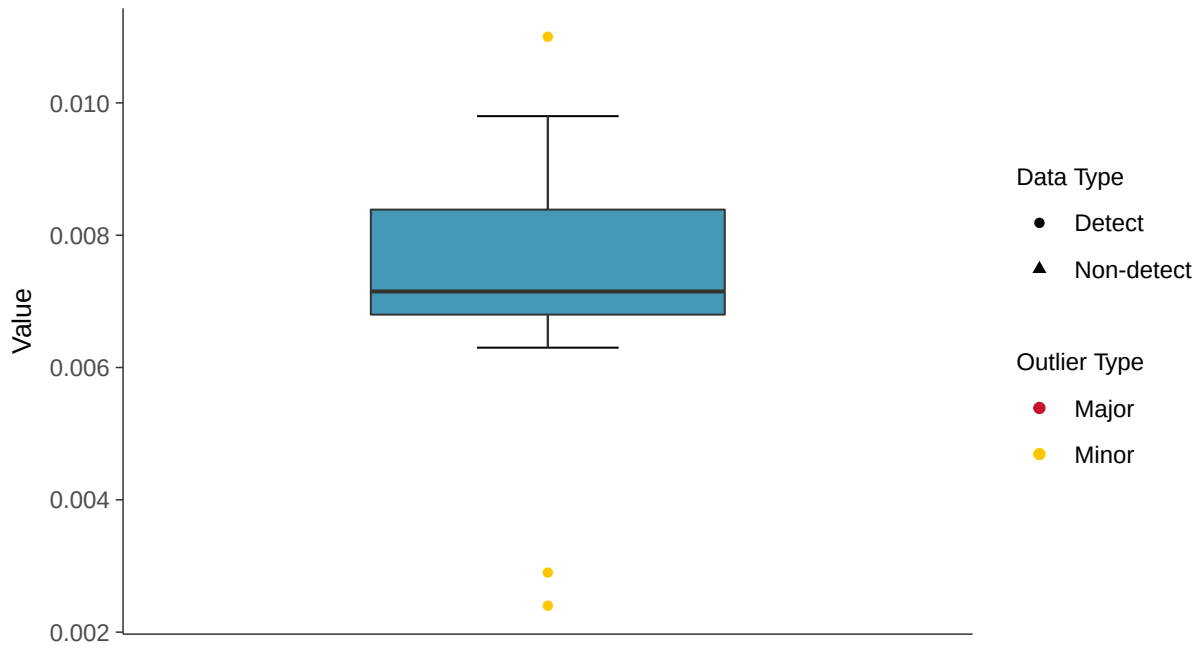
Appendix IV: Selenium, MW-16

ID: 2_2_129



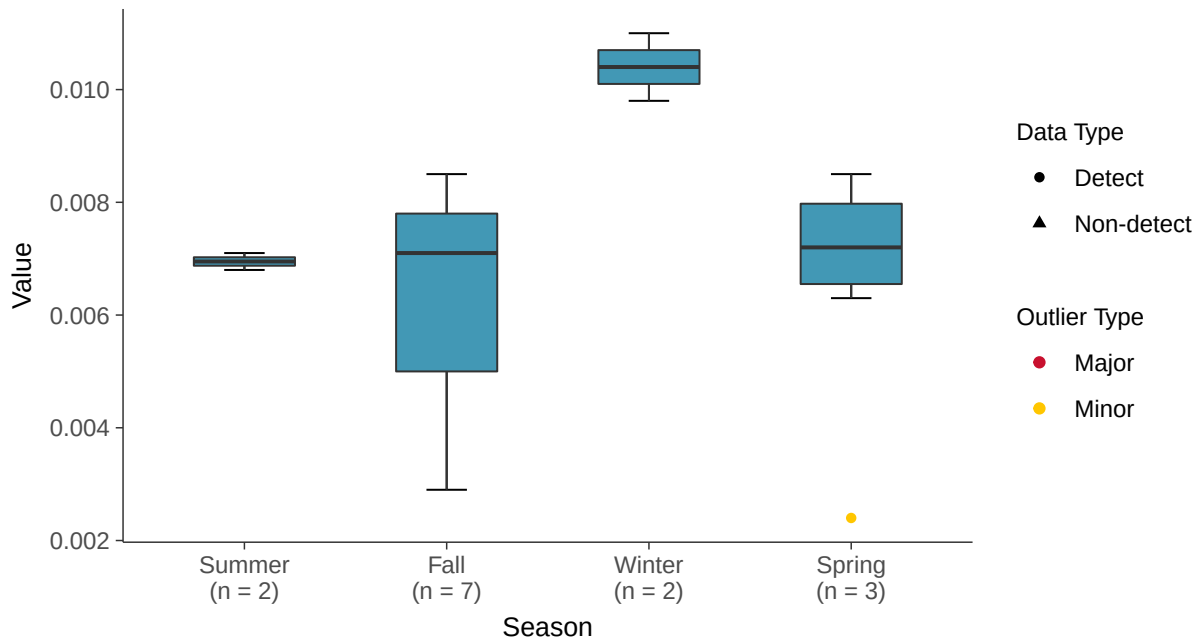
Boxplot

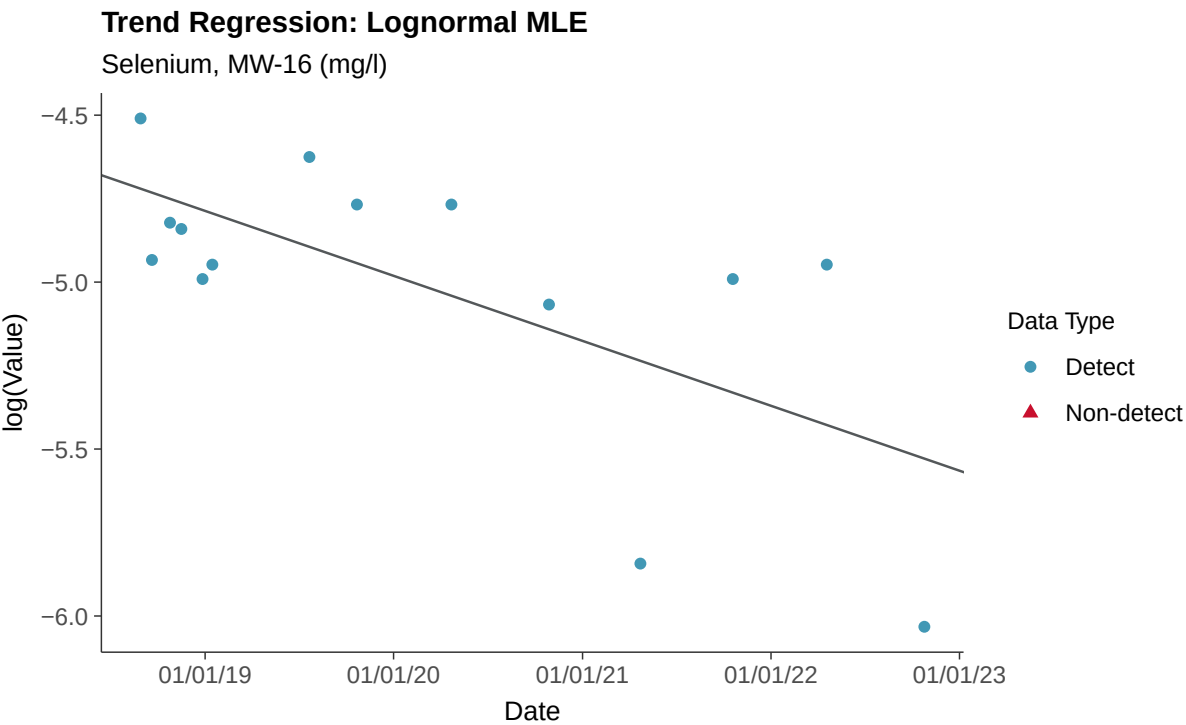
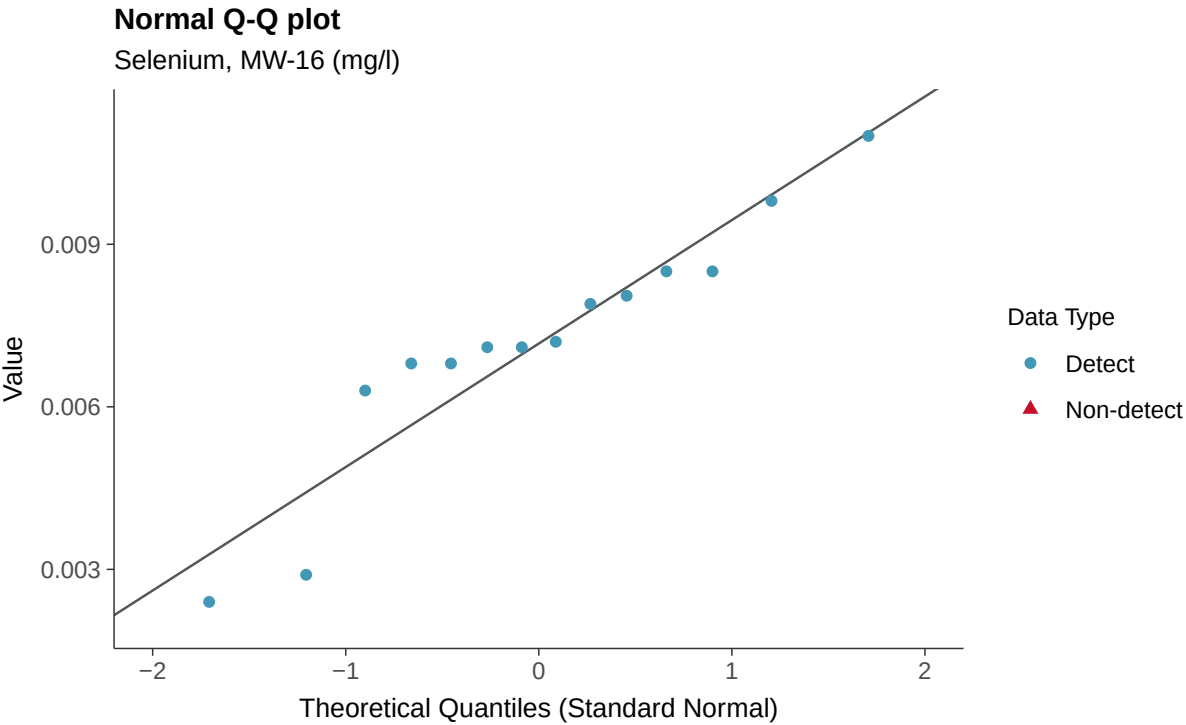
Selenium, MW-16 (mg/l)



Boxplot by Season

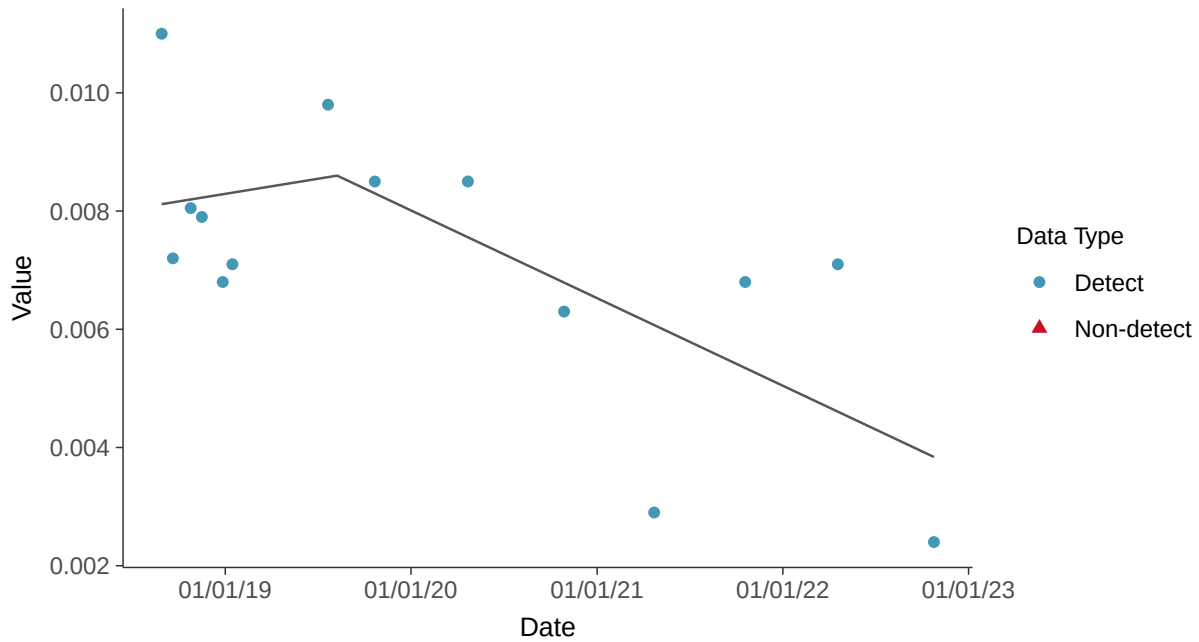
Selenium, MW-16 (mg/l)





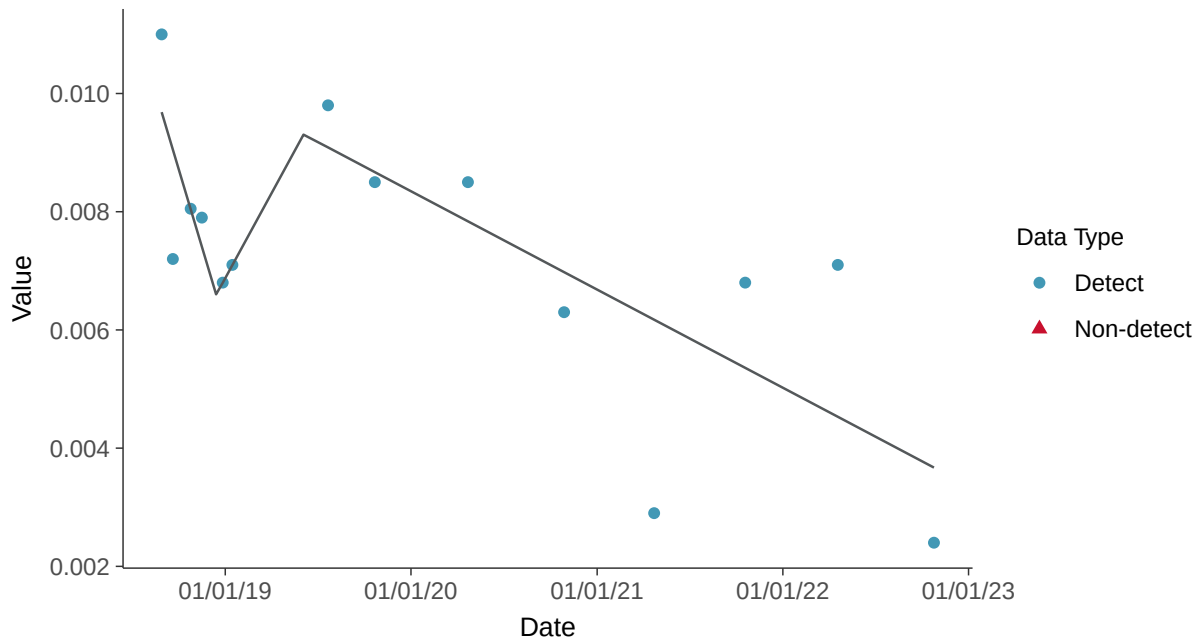
Trend Regression: Piecewise Linear-Linear

Selenium, MW-16 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

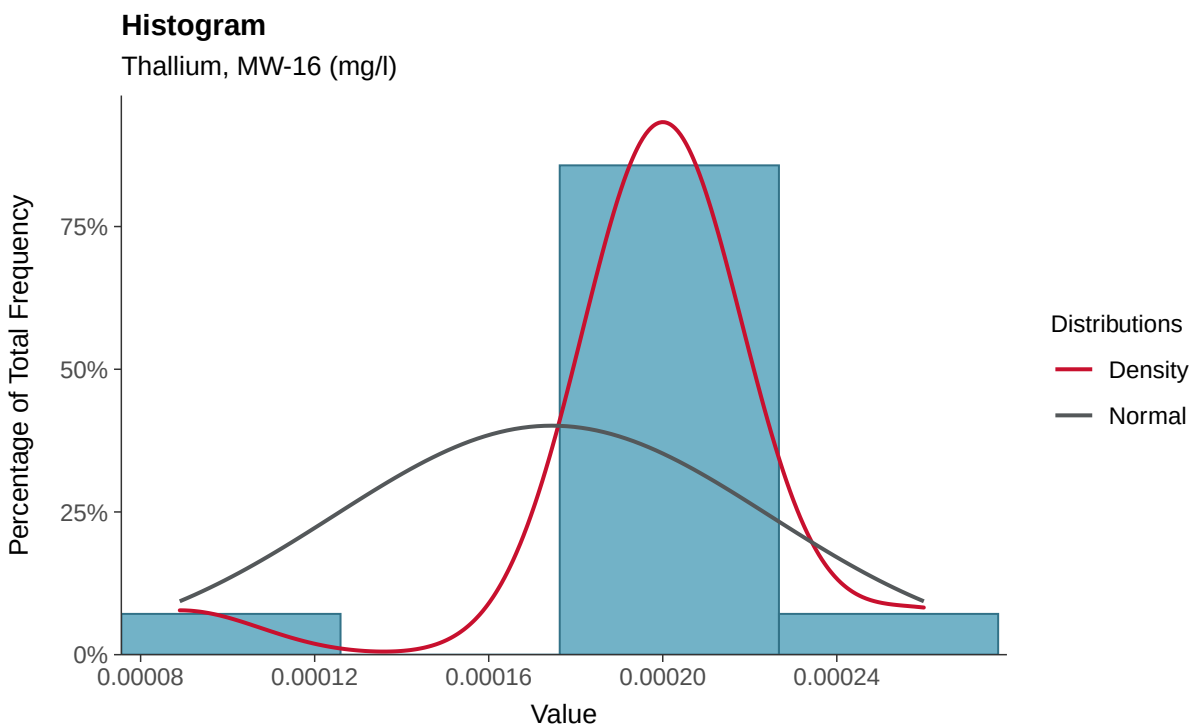
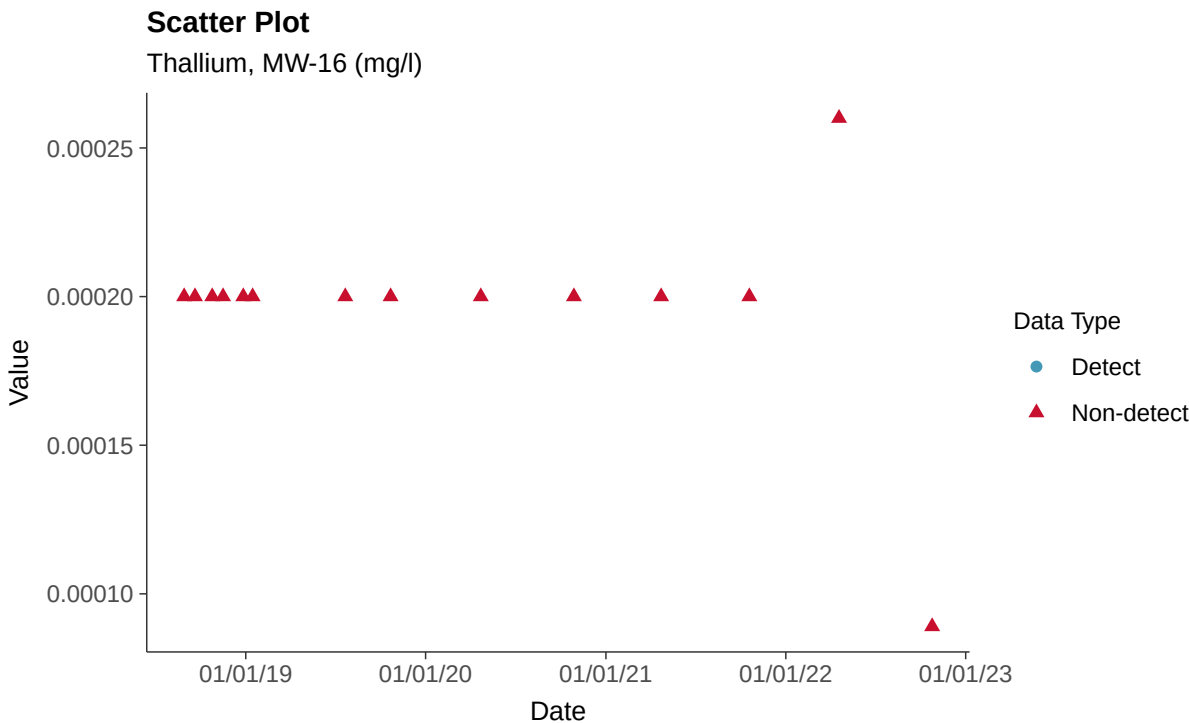
Selenium, MW-16 (mg/l)

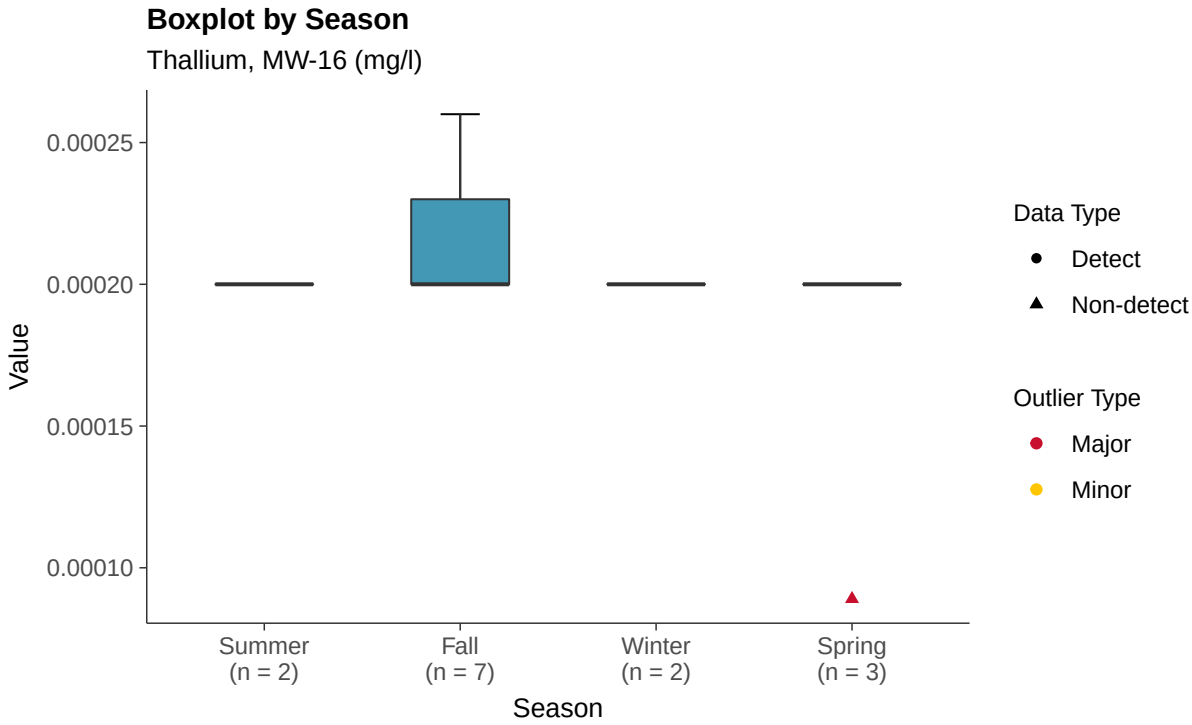
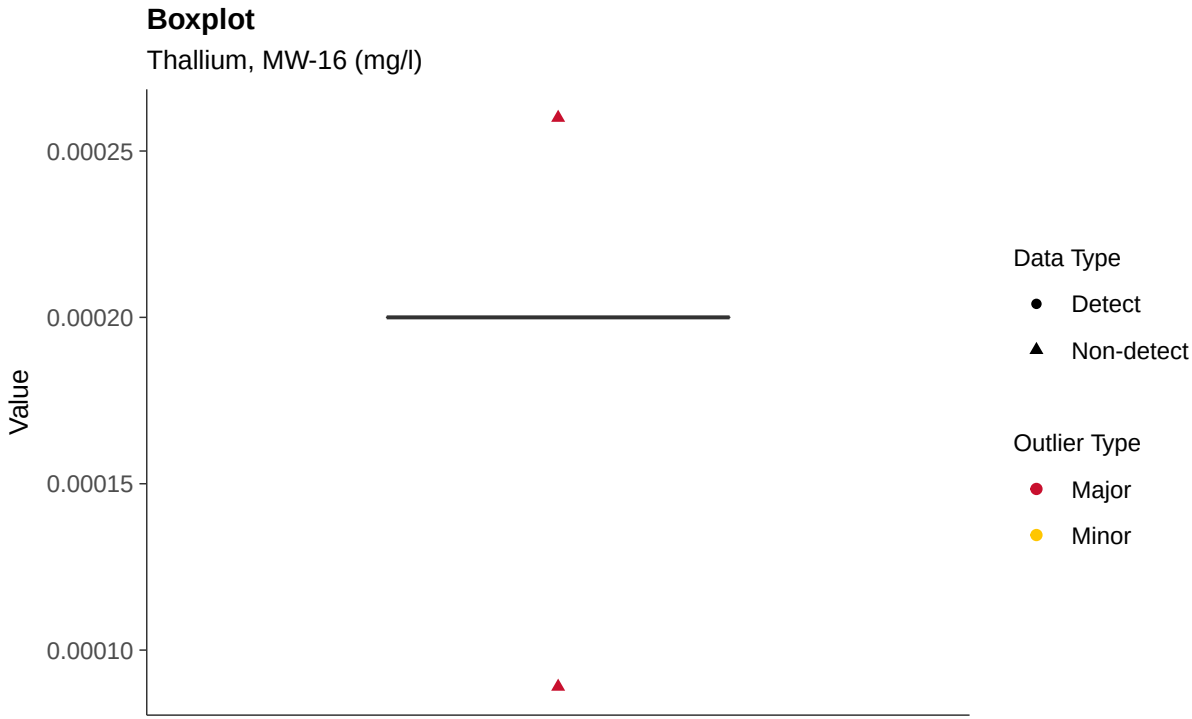




Appendix IV: Thallium, MW-16

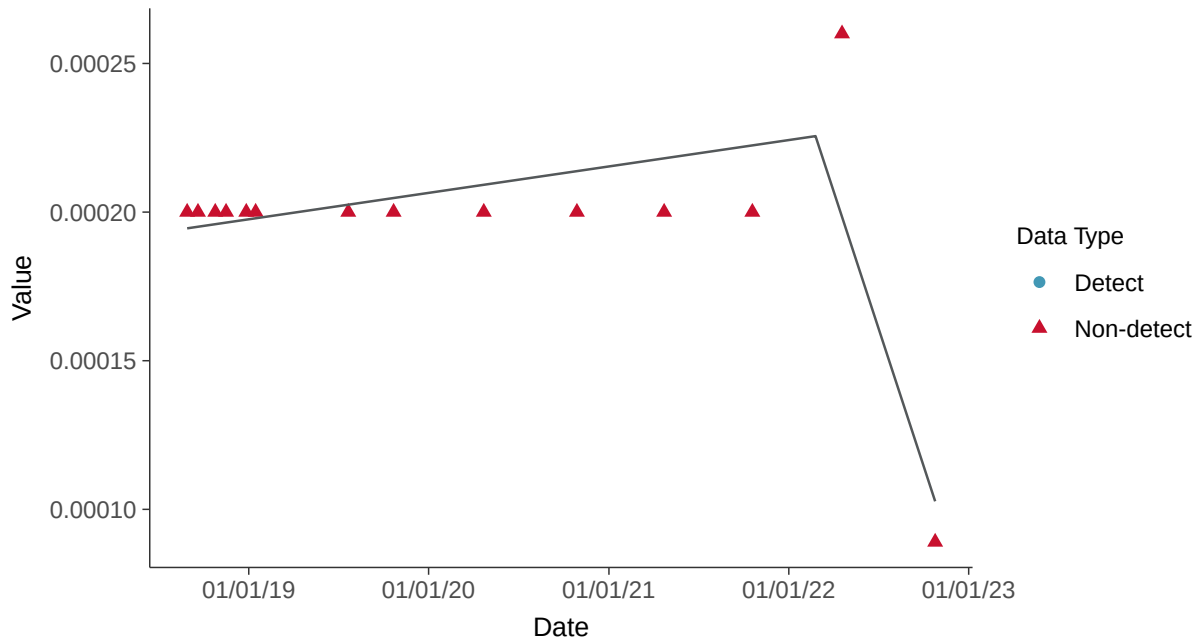
ID: 2_2_134





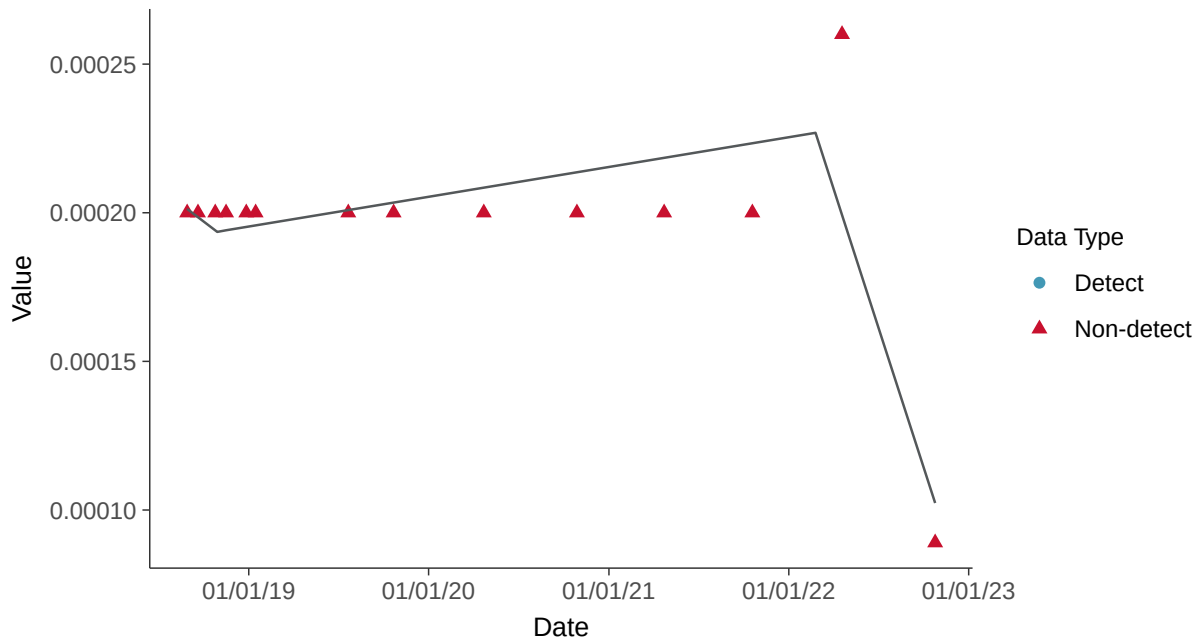
Trend Regression: Piecewise Linear-Linear

Thallium, MW-16 (mg/l)



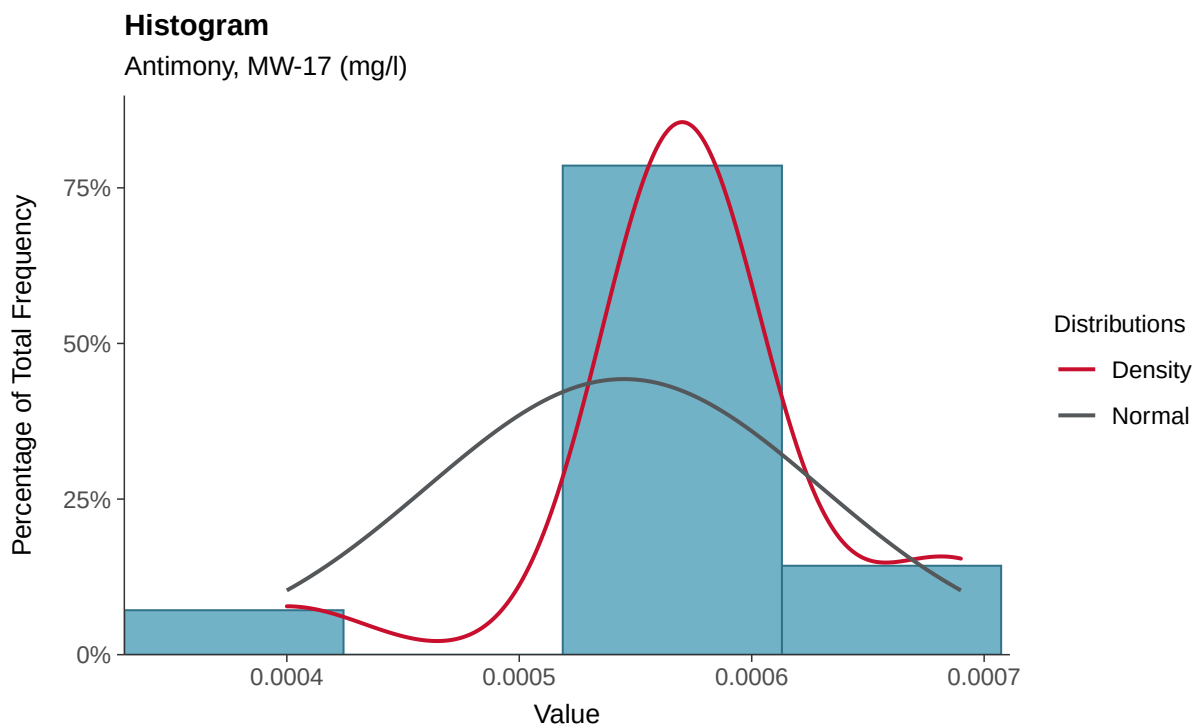
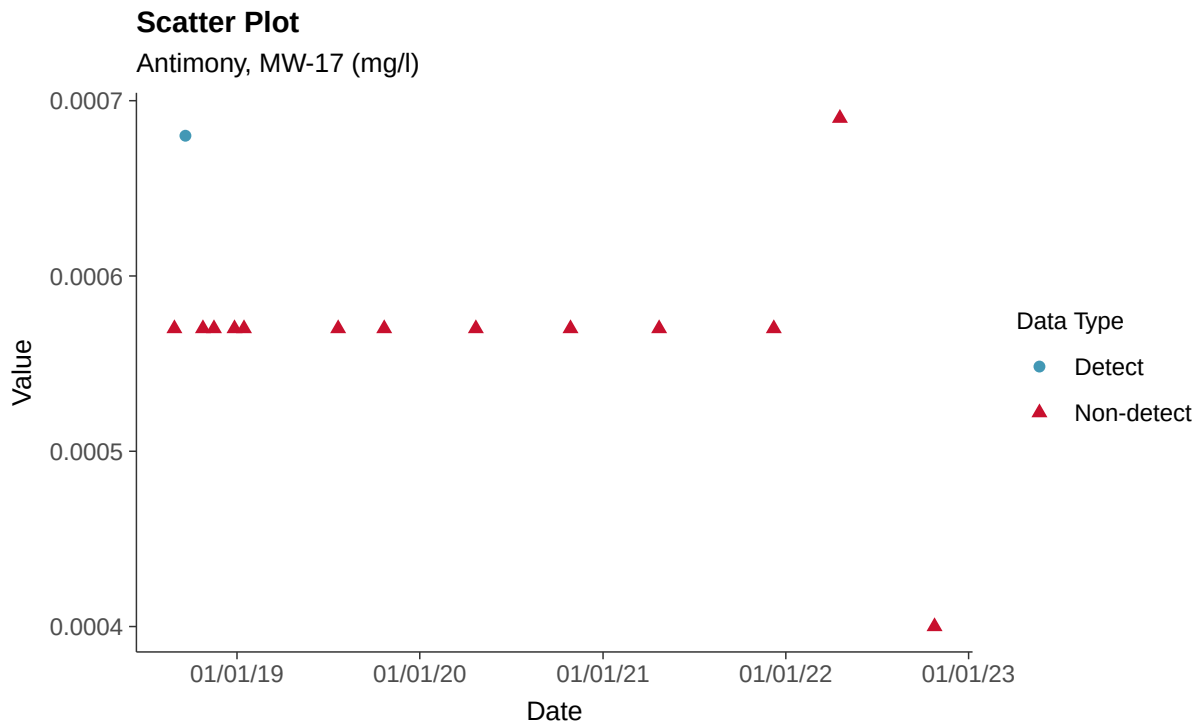
Trend Regression: Piecewise Linear-Linear-Linear

Thallium, MW-16 (mg/l)



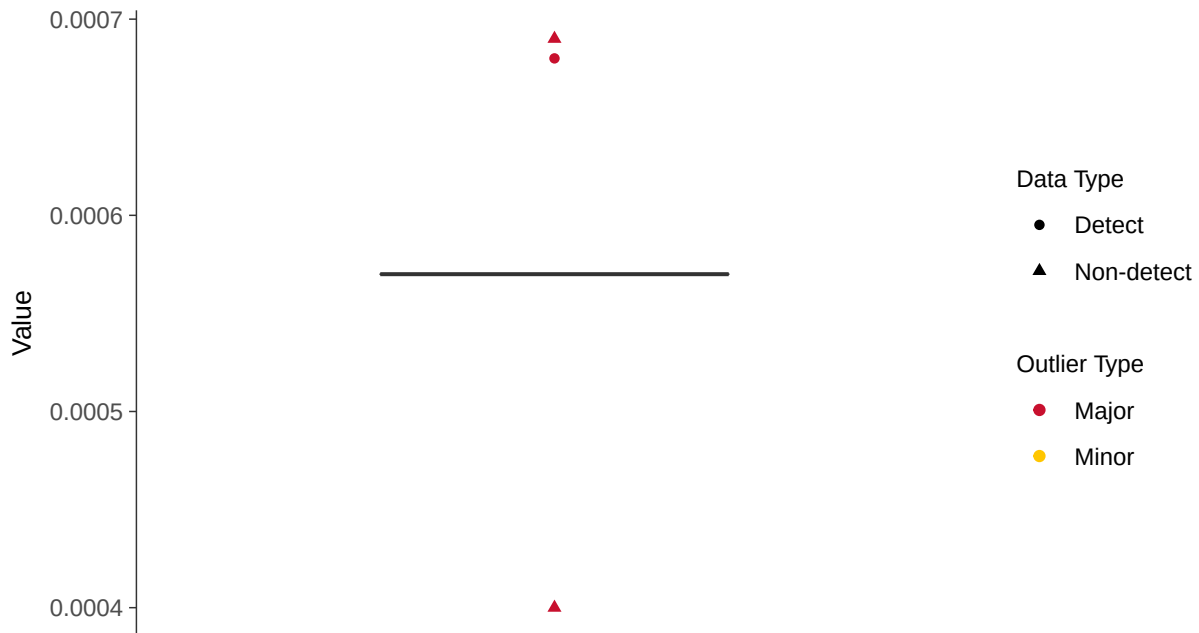
Appendix IV: Antimony, MW-17

ID: 3_2_104



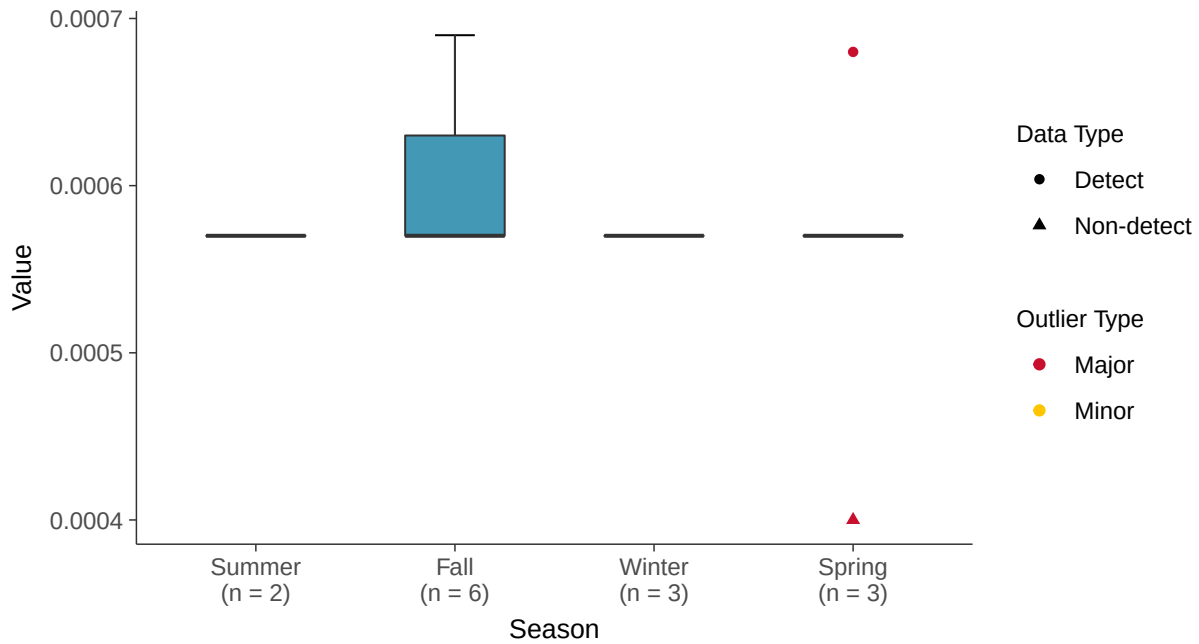
Boxplot

Antimony, MW-17 (mg/l)



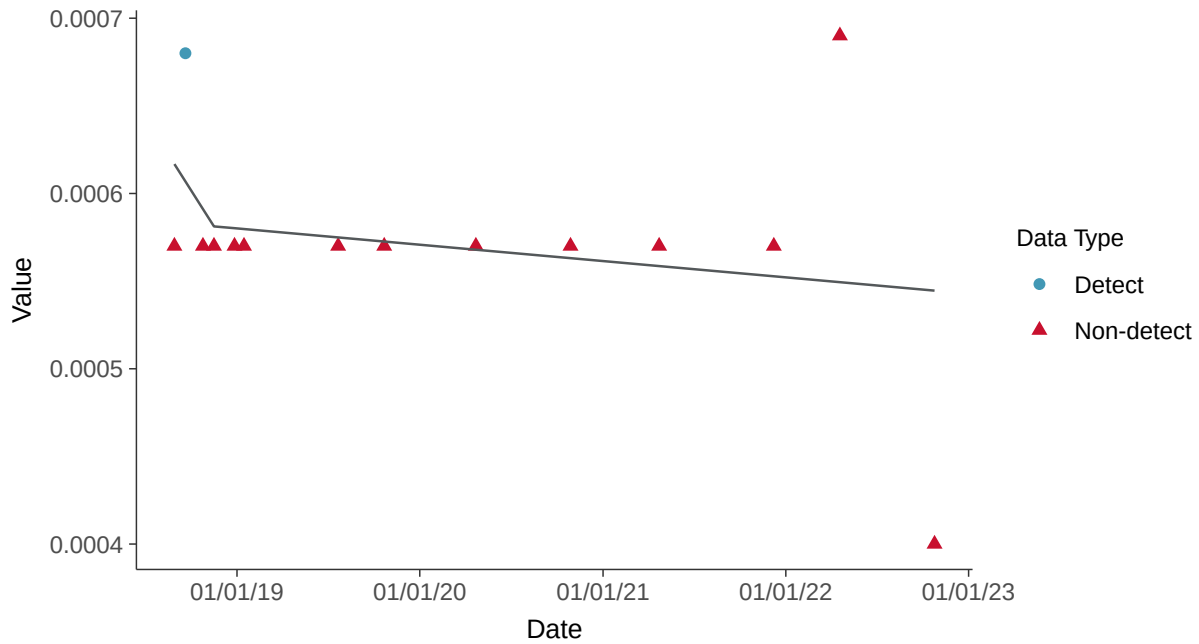
Boxplot by Season

Antimony, MW-17 (mg/l)



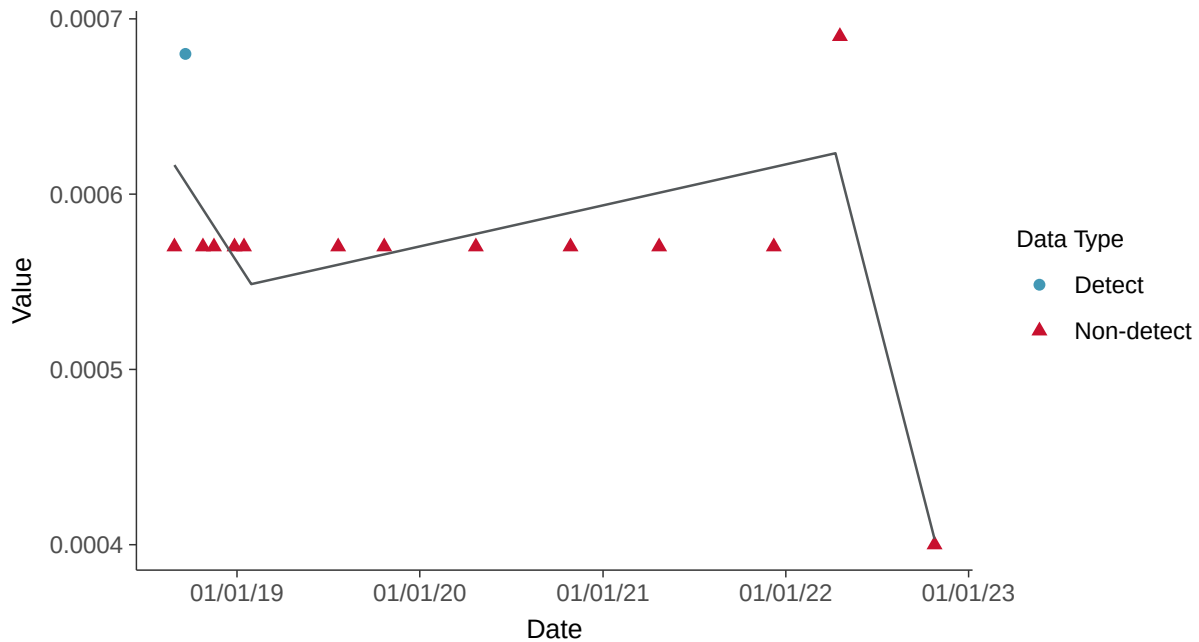
Trend Regression: Piecewise Linear-Linear

Antimony, MW-17 (mg/l)



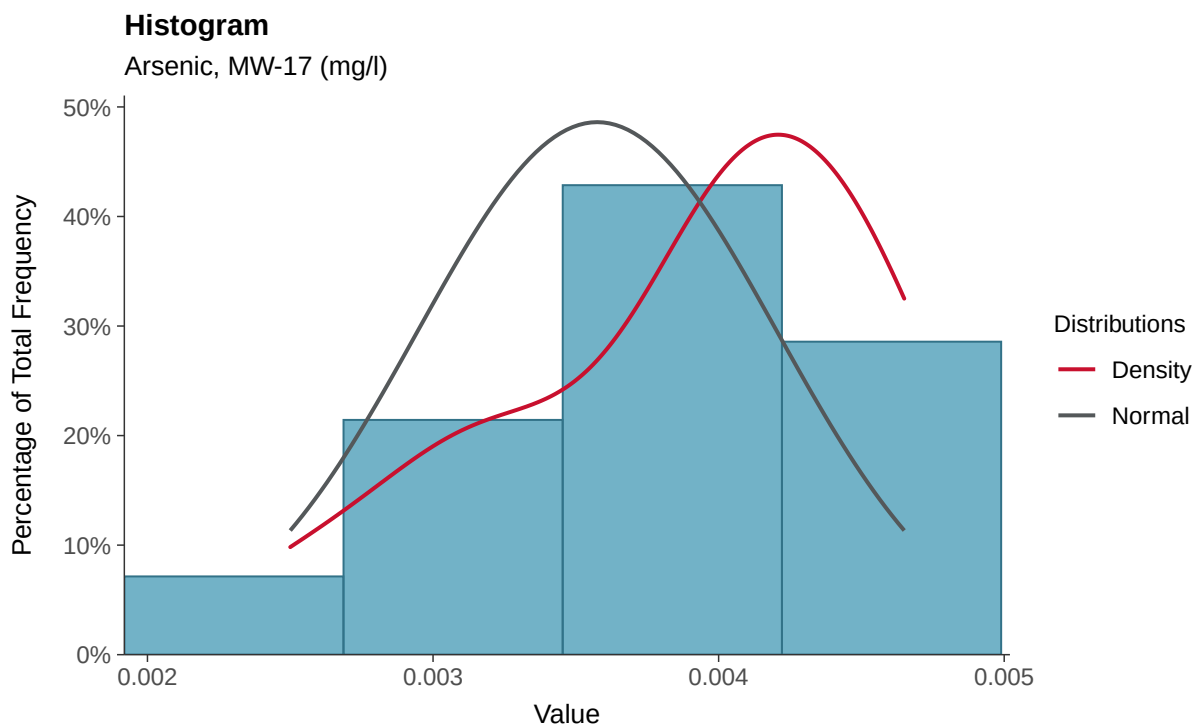
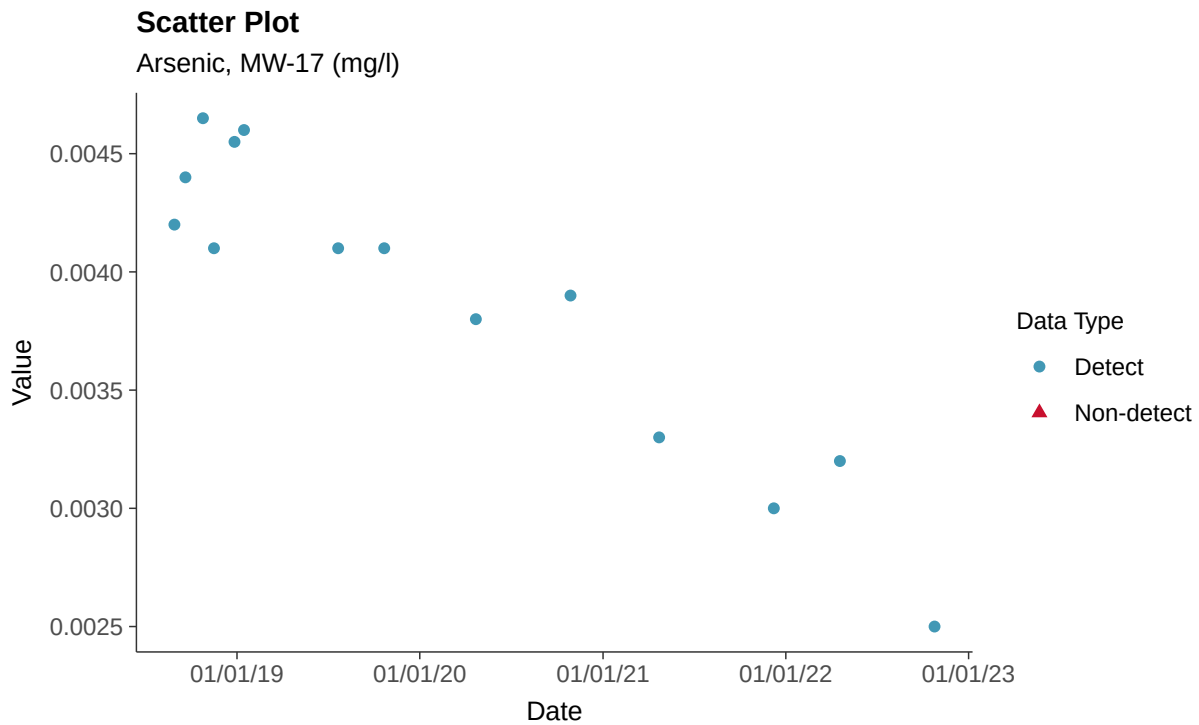
Trend Regression: Piecewise Linear-Linear-Linear

Antimony, MW-17 (mg/l)



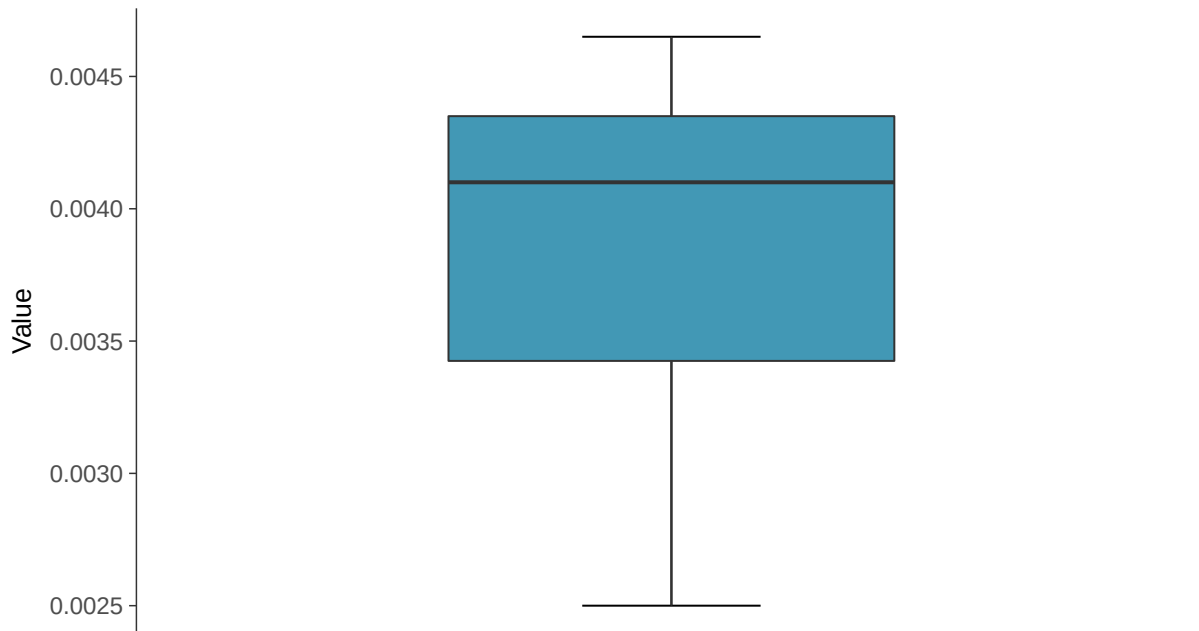
Appendix IV: Arsenic, MW-17

ID: 3_2_105



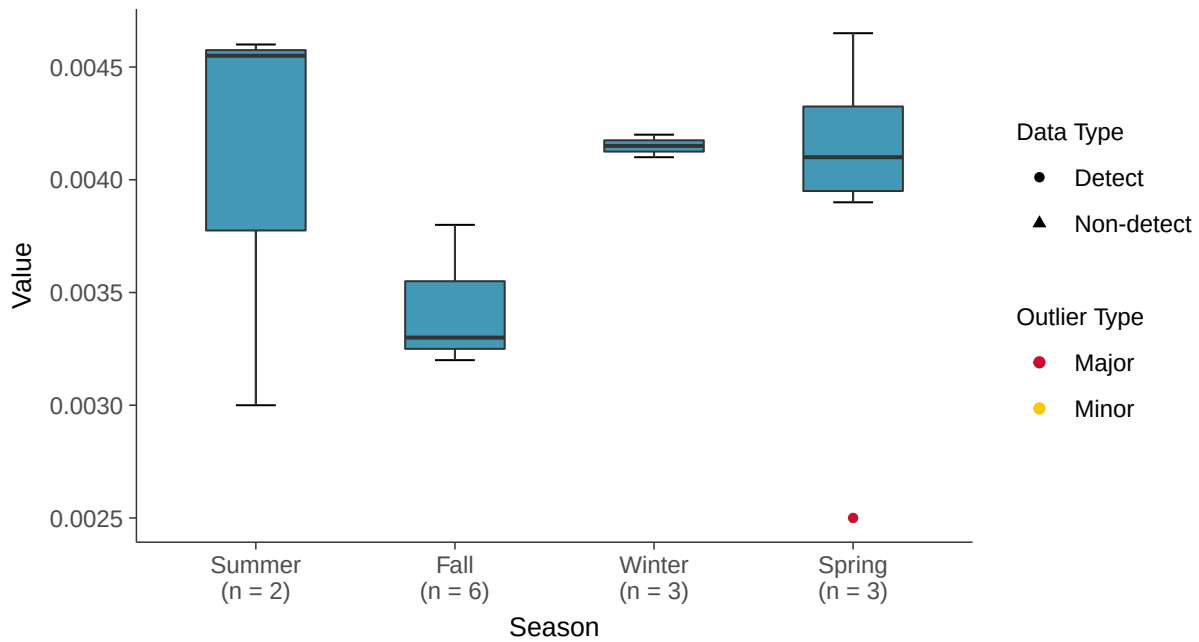
Boxplot

Arsenic, MW-17 (mg/l)



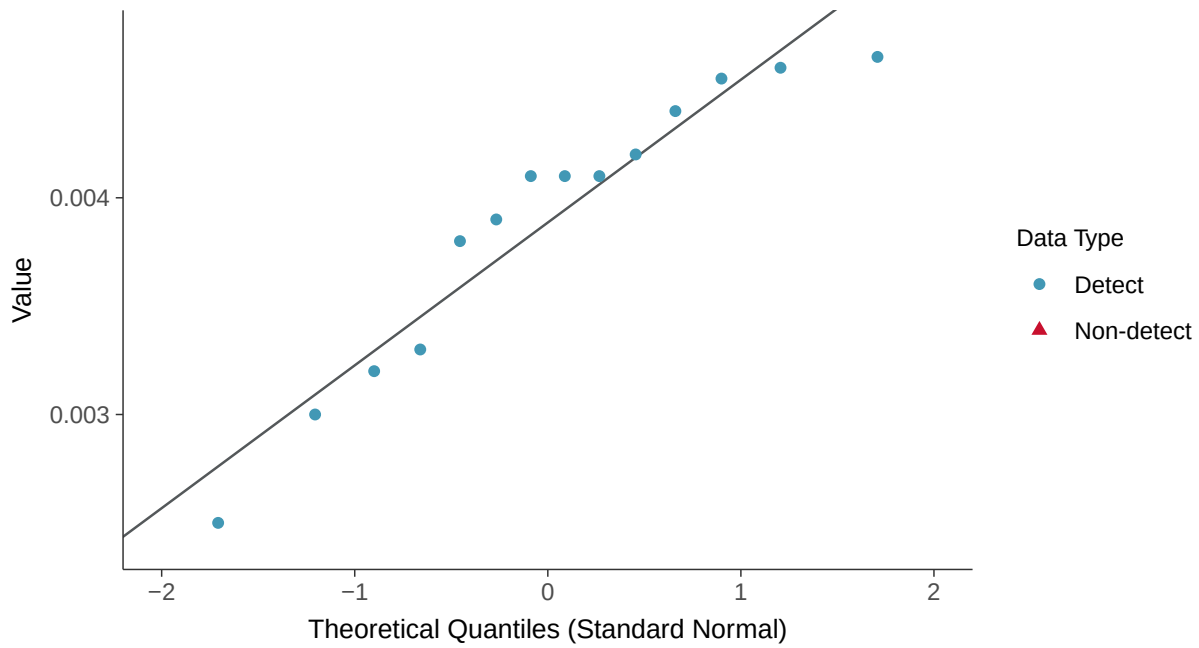
Boxplot by Season

Arsenic, MW-17 (mg/l)



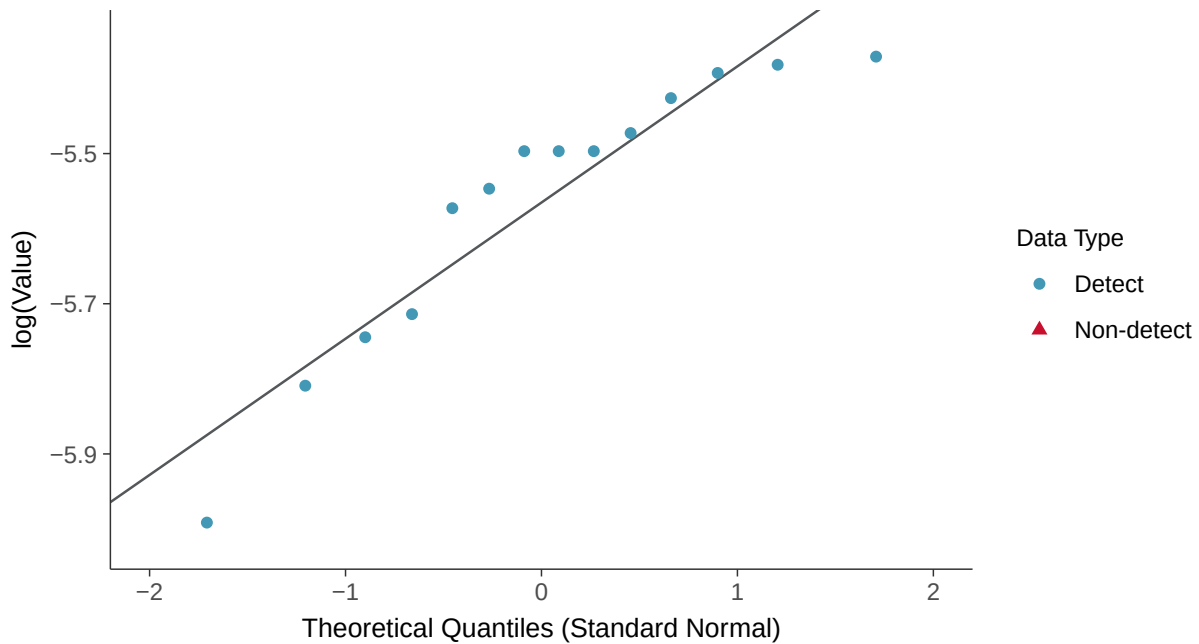
Normal Q-Q plot

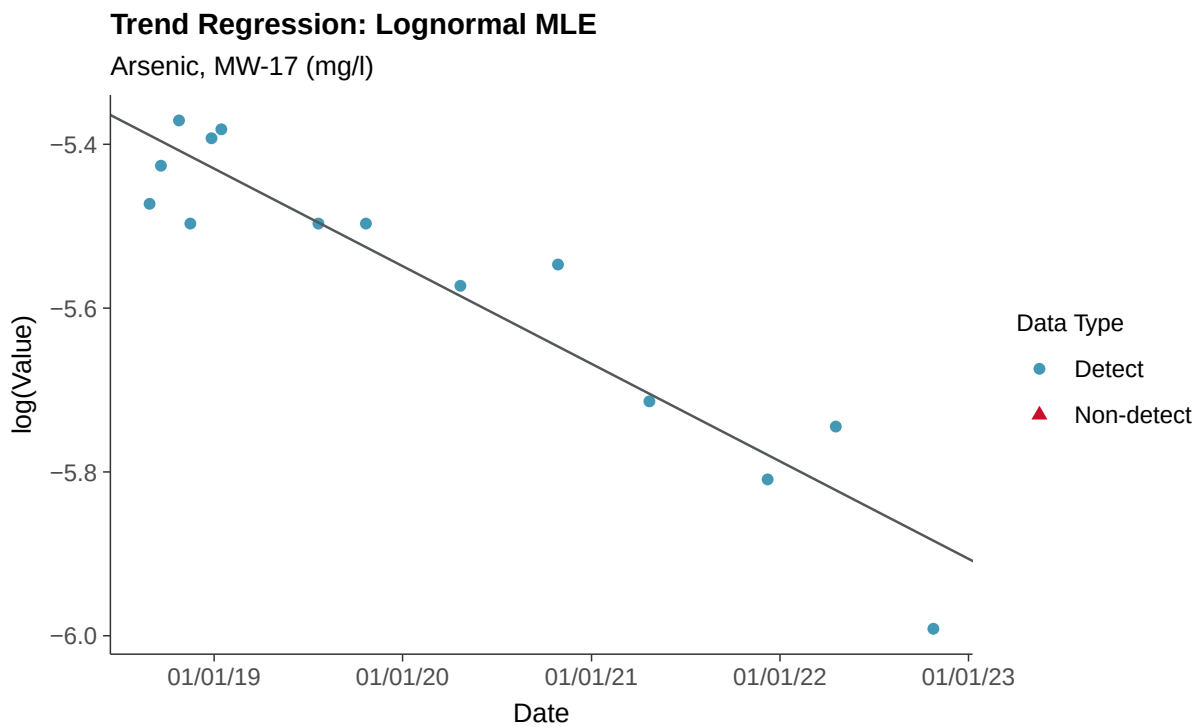
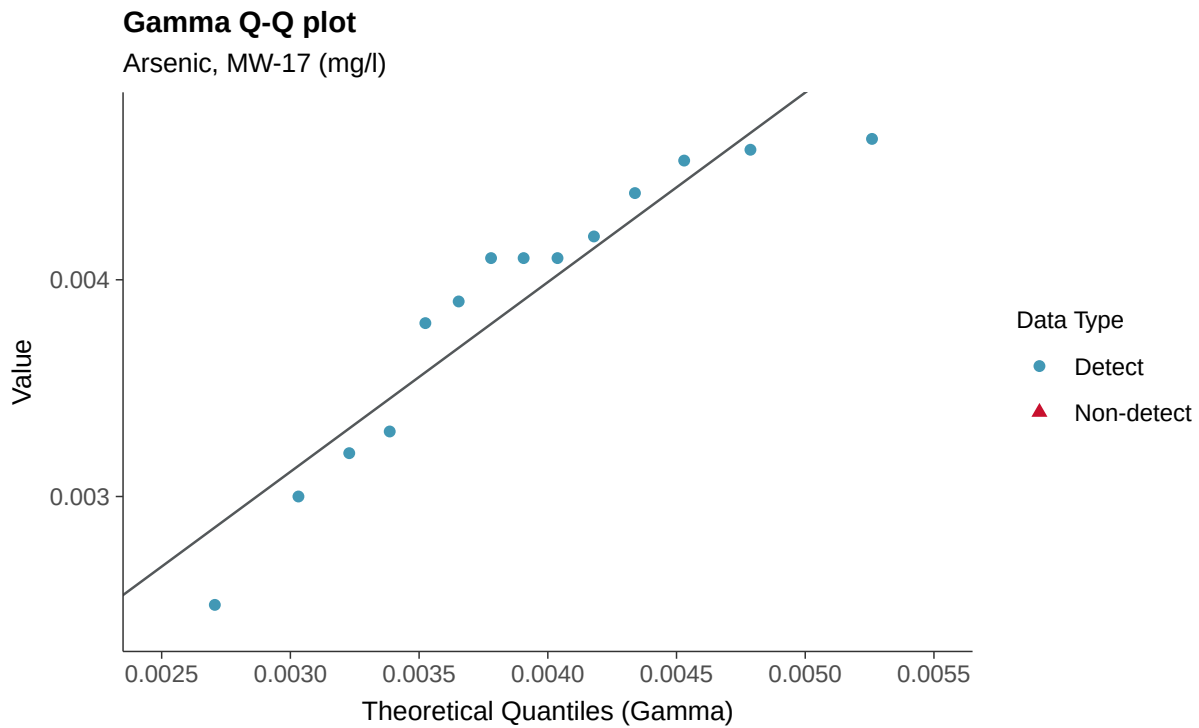
Arsenic, MW-17 (mg/l)



Lognormal Q-Q plot

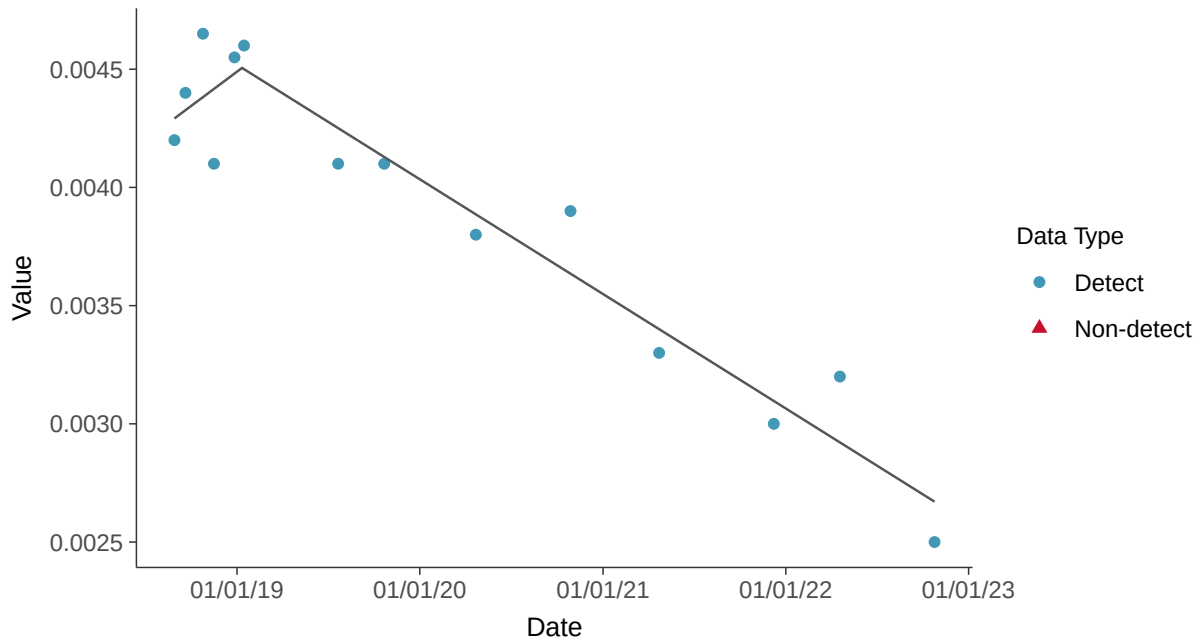
Arsenic, MW-17 (mg/l)





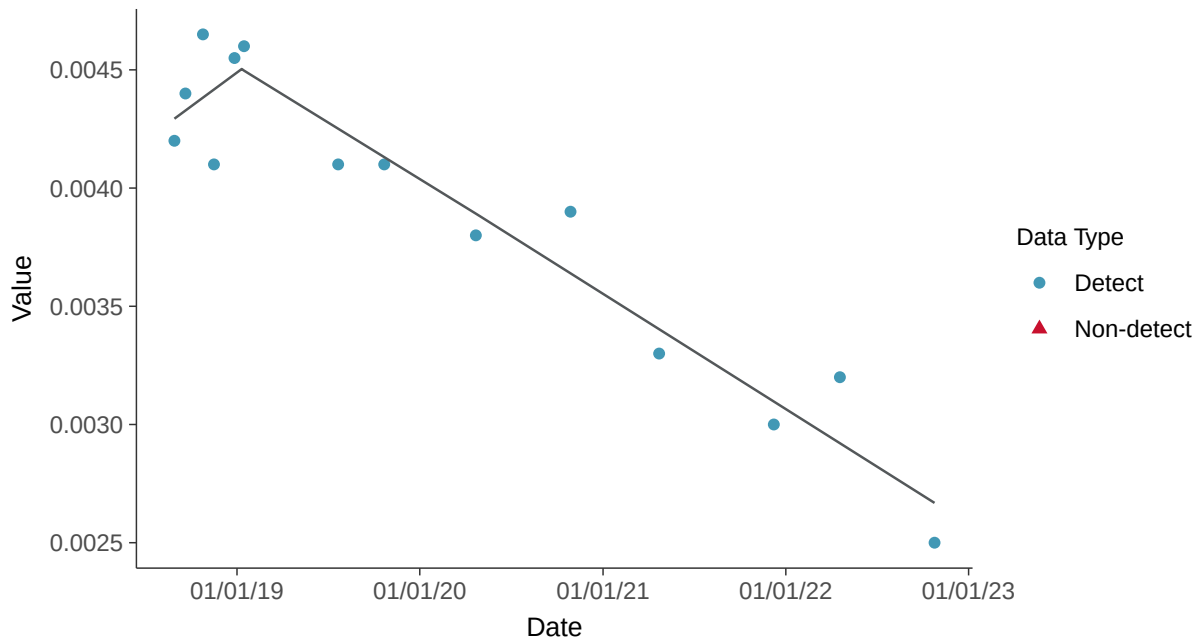
Trend Regression: Piecewise Linear-Linear

Arsenic, MW-17 (mg/l)



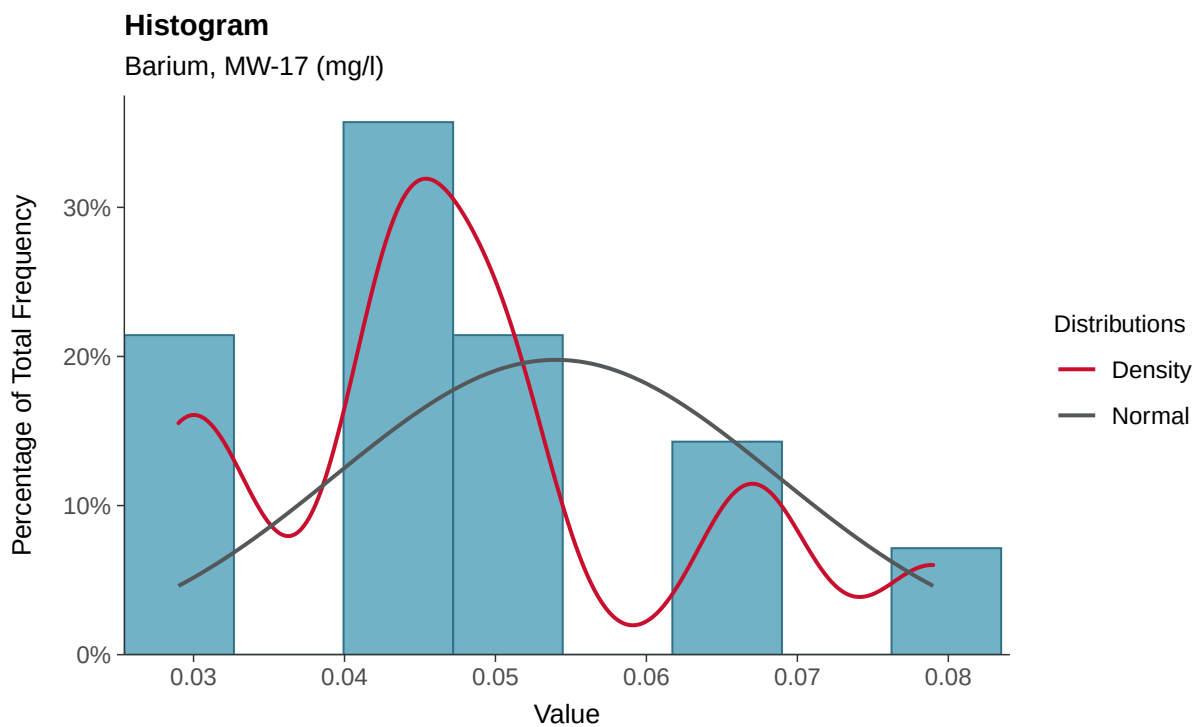
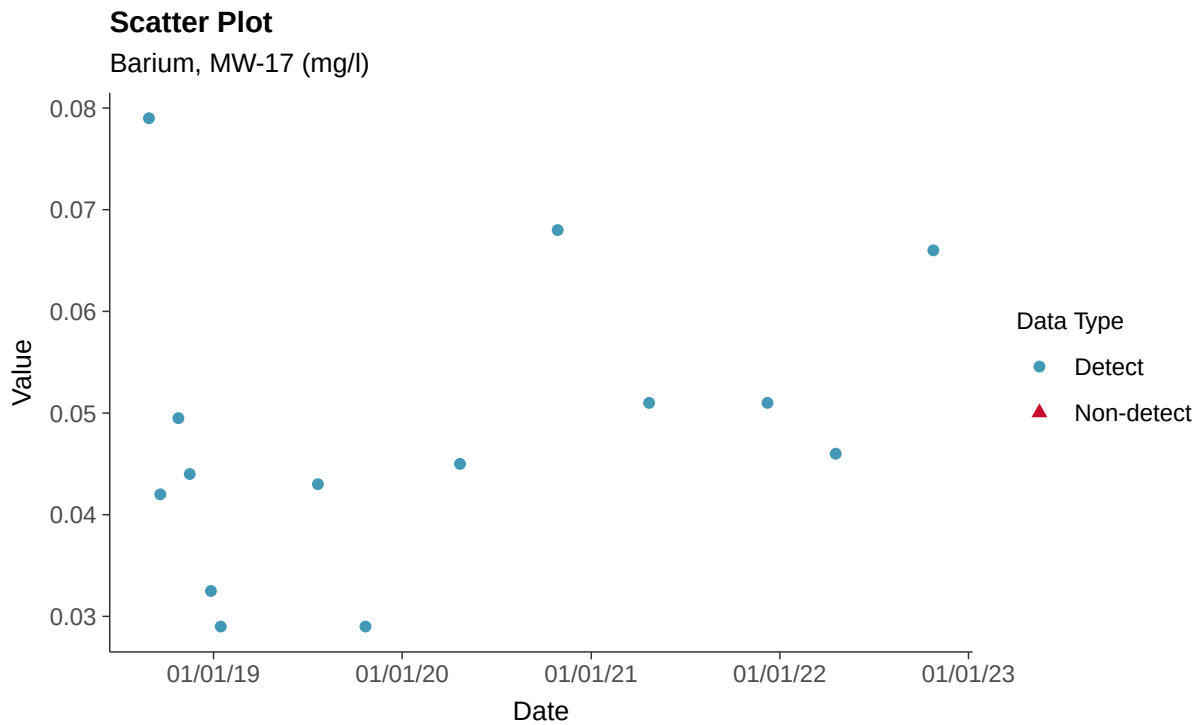
Trend Regression: Piecewise Linear-Linear-Linear

Arsenic, MW-17 (mg/l)



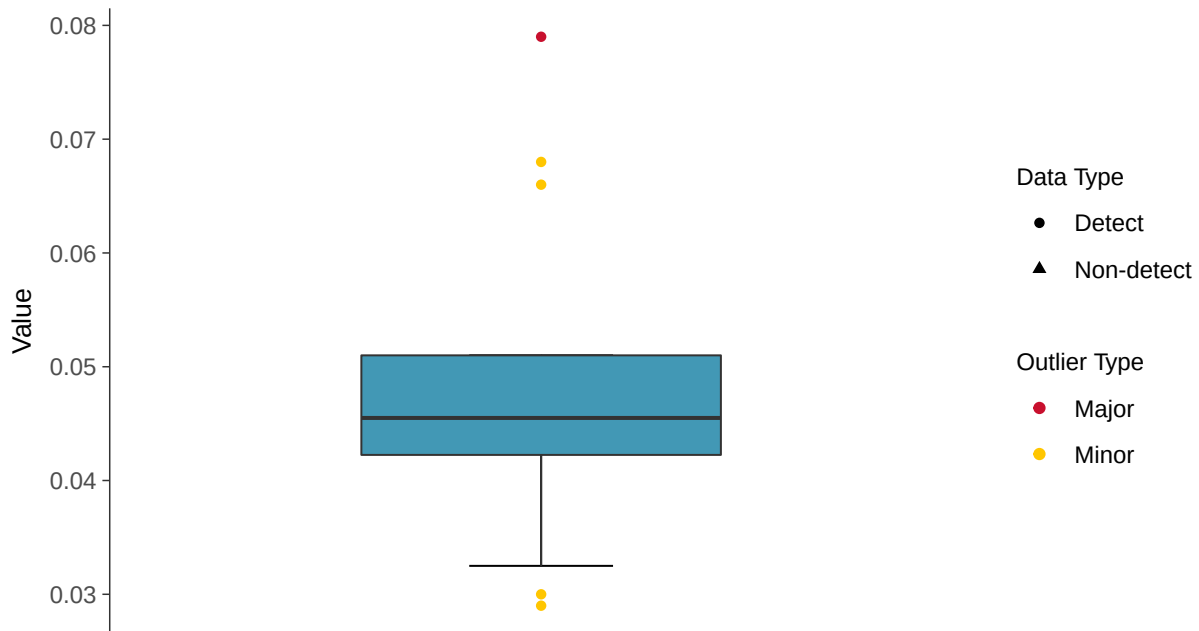
Appendix IV: Barium, MW-17

ID: 3_2_106



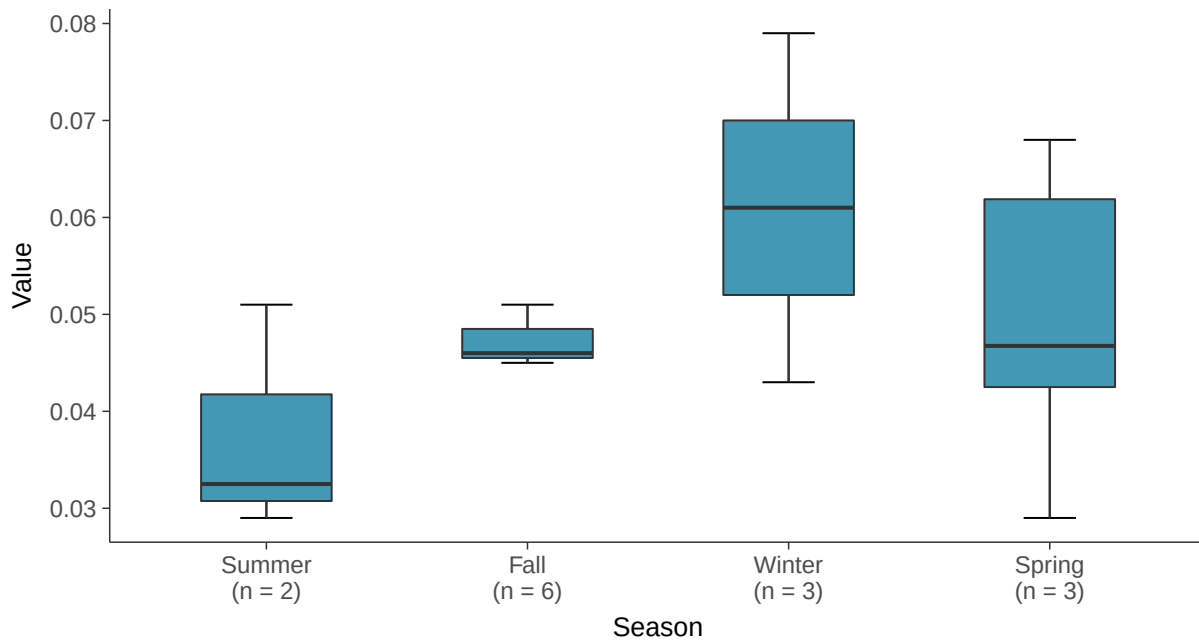
Boxplot

Barium, MW-17 (mg/l)



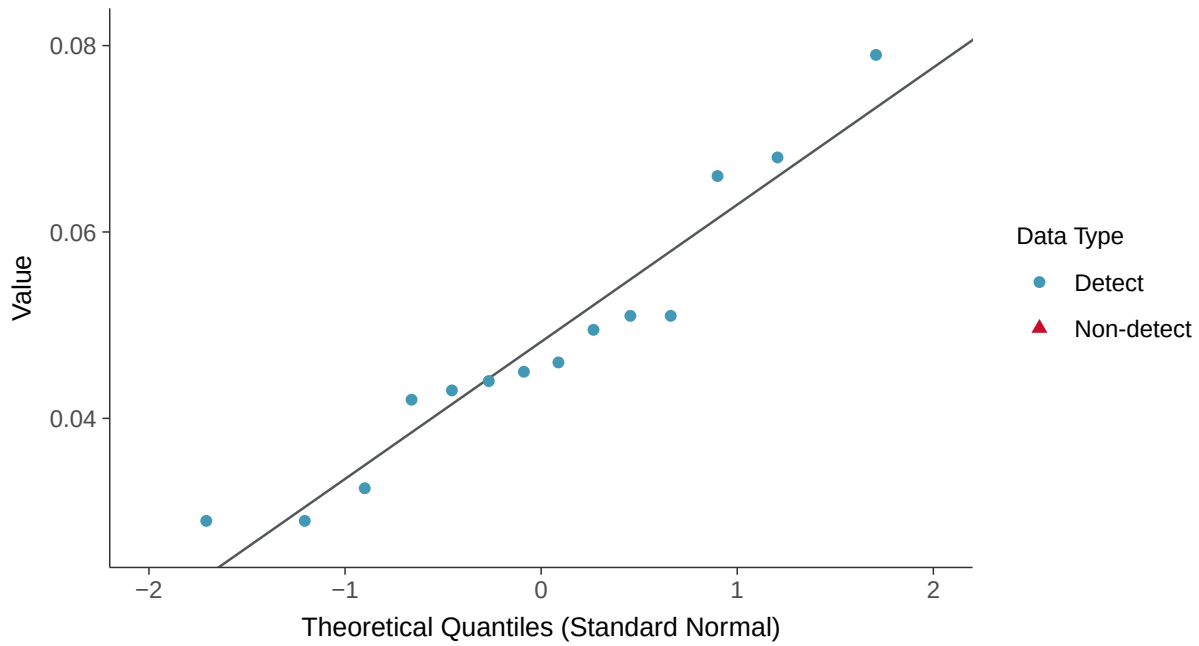
Boxplot by Season

Barium, MW-17 (mg/l)



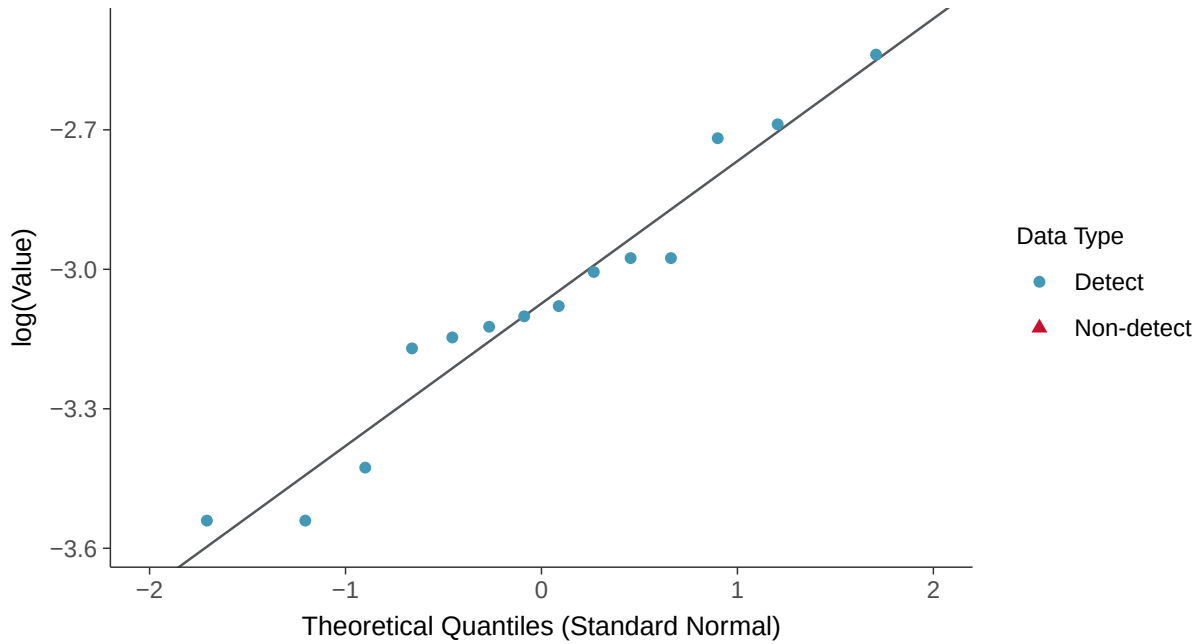
Normal Q-Q plot

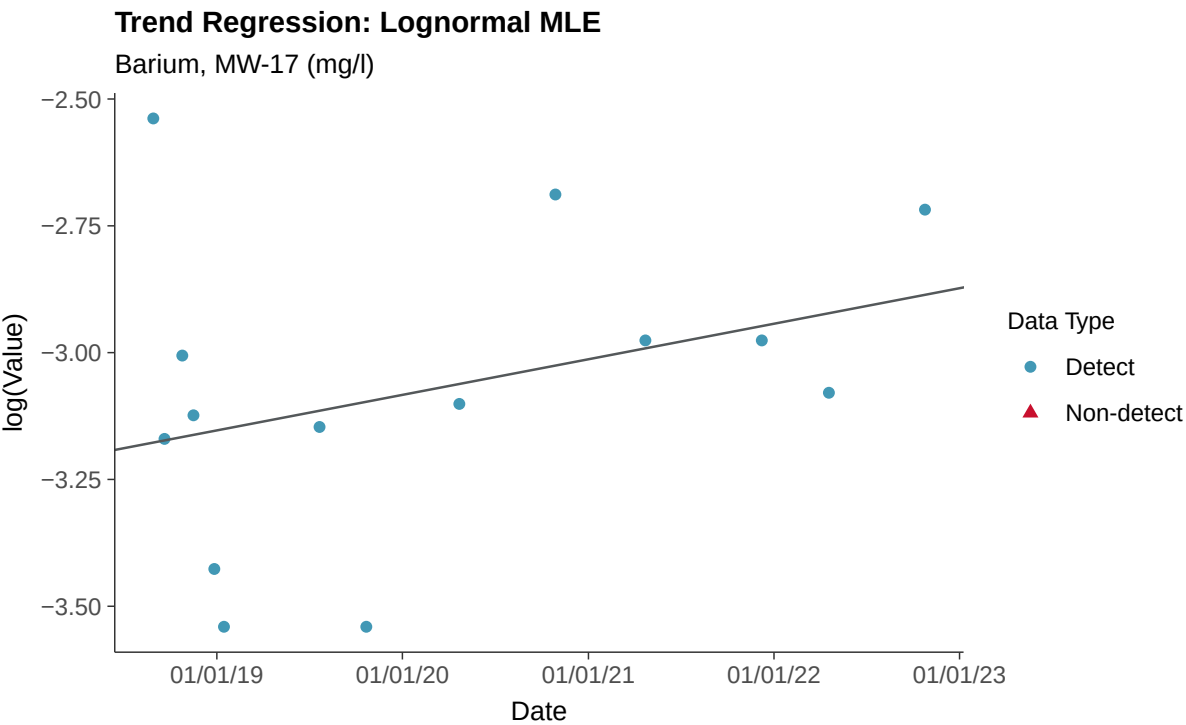
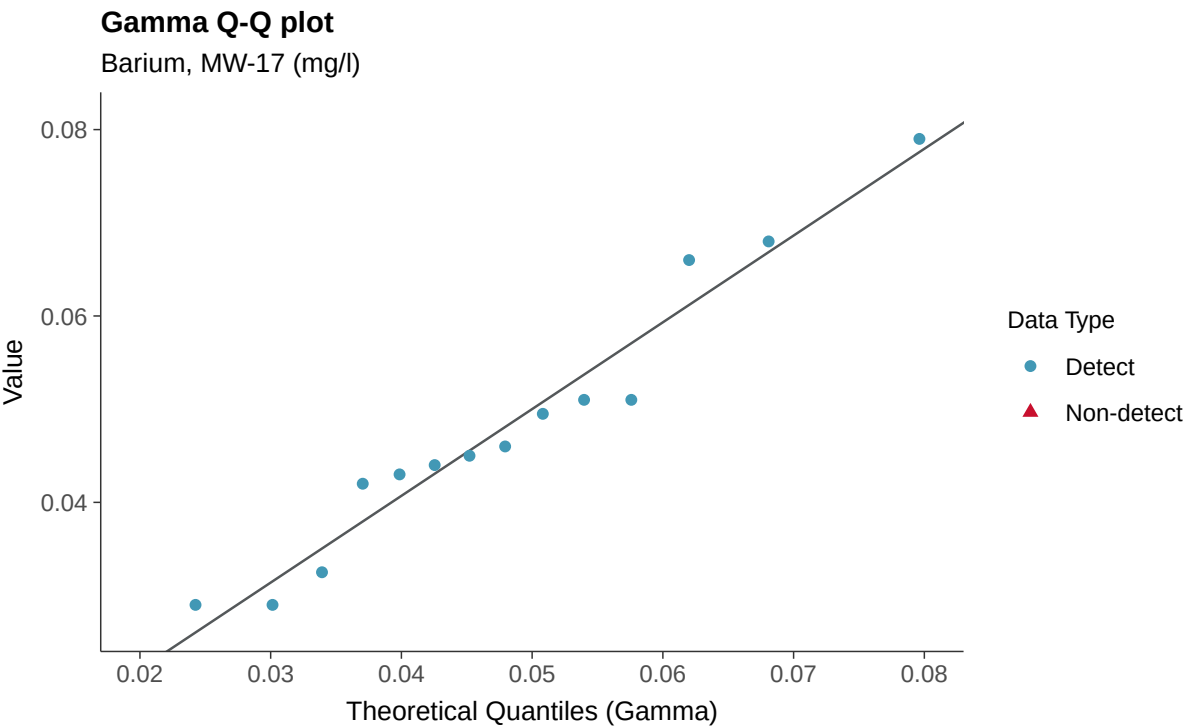
Barium, MW-17 (mg/l)



Lognormal Q-Q plot

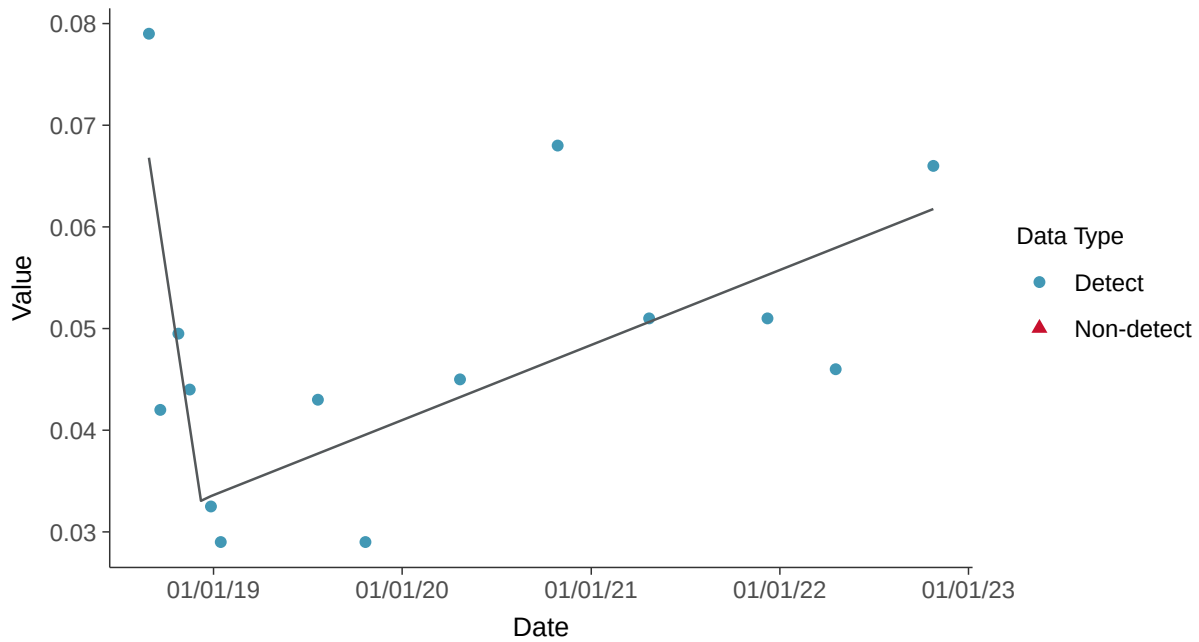
Barium, MW-17 (mg/l)





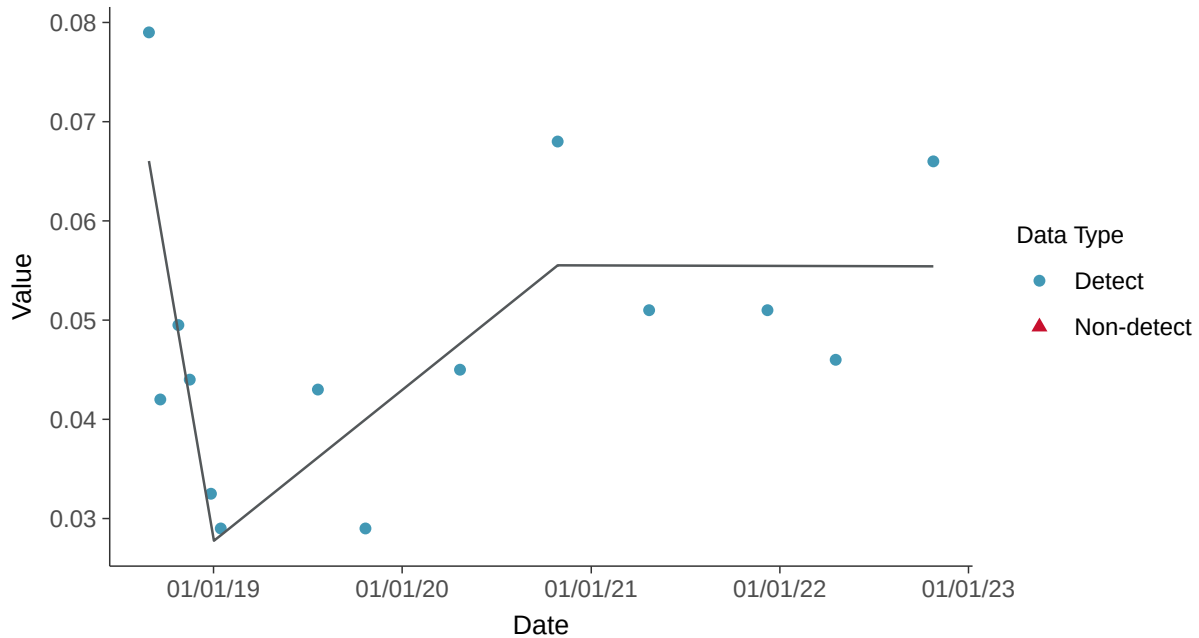
Trend Regression: Piecewise Linear-Linear

Barium, MW-17 (mg/l)



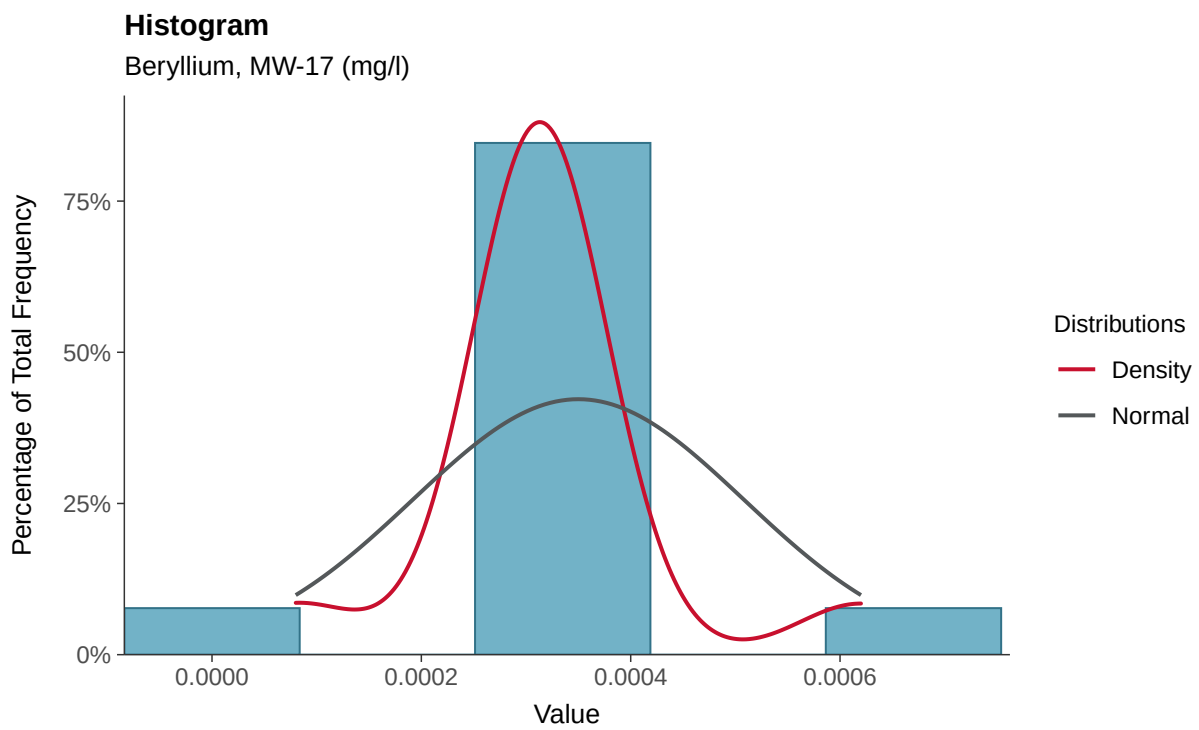
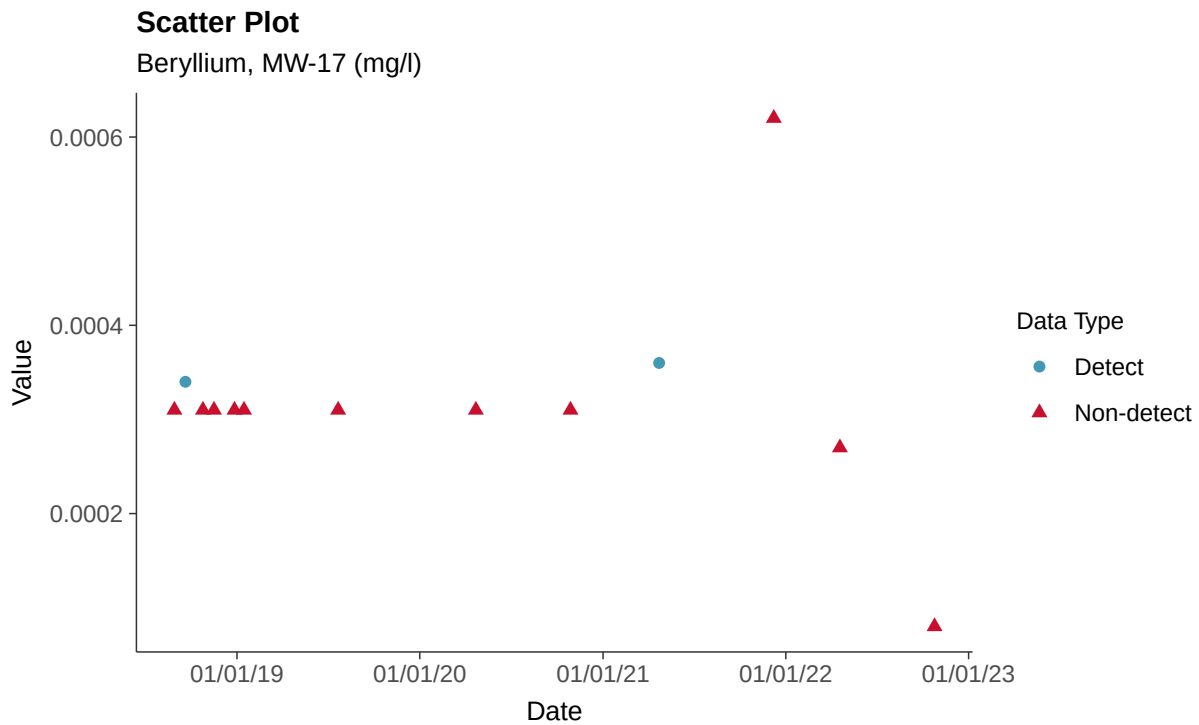
Trend Regression: Piecewise Linear-Linear-Linear

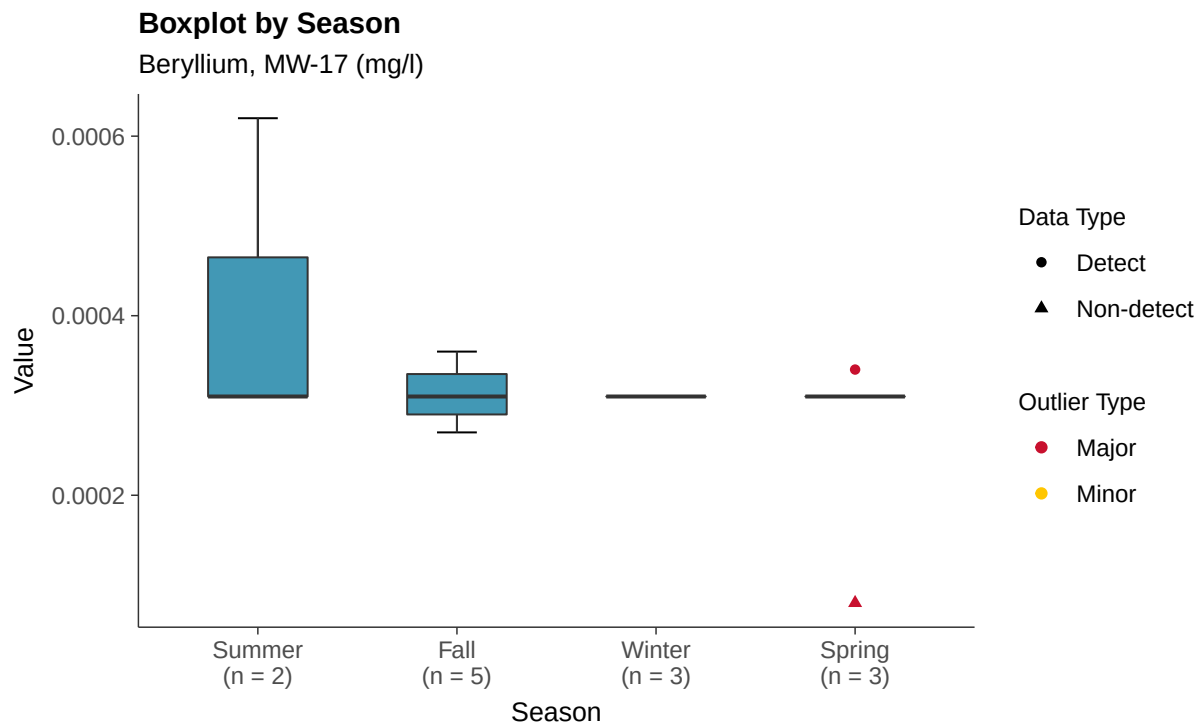
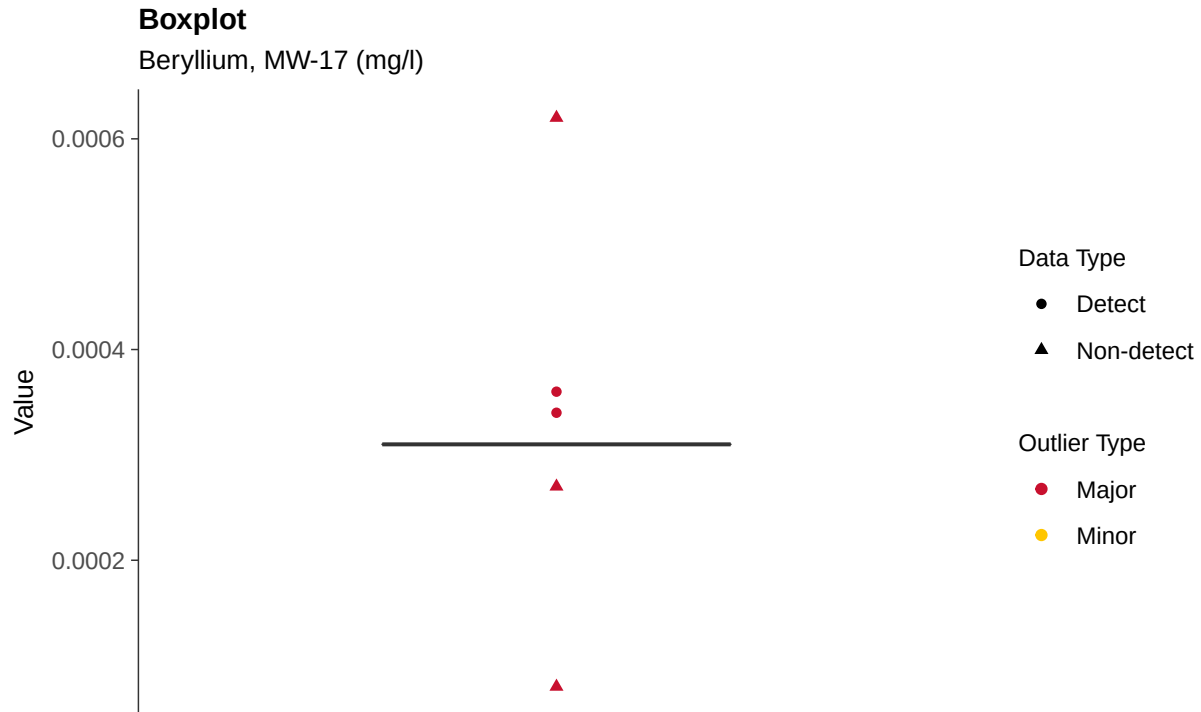
Barium, MW-17 (mg/l)



Appendix IV: Beryllium, MW-17

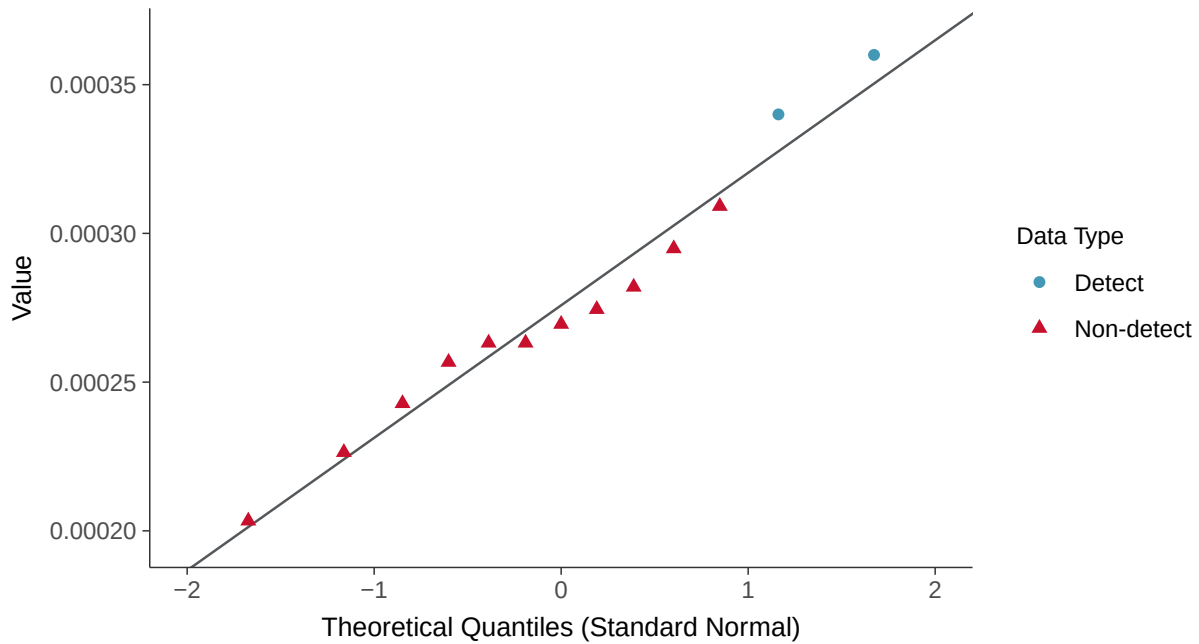
ID: 3_2_107





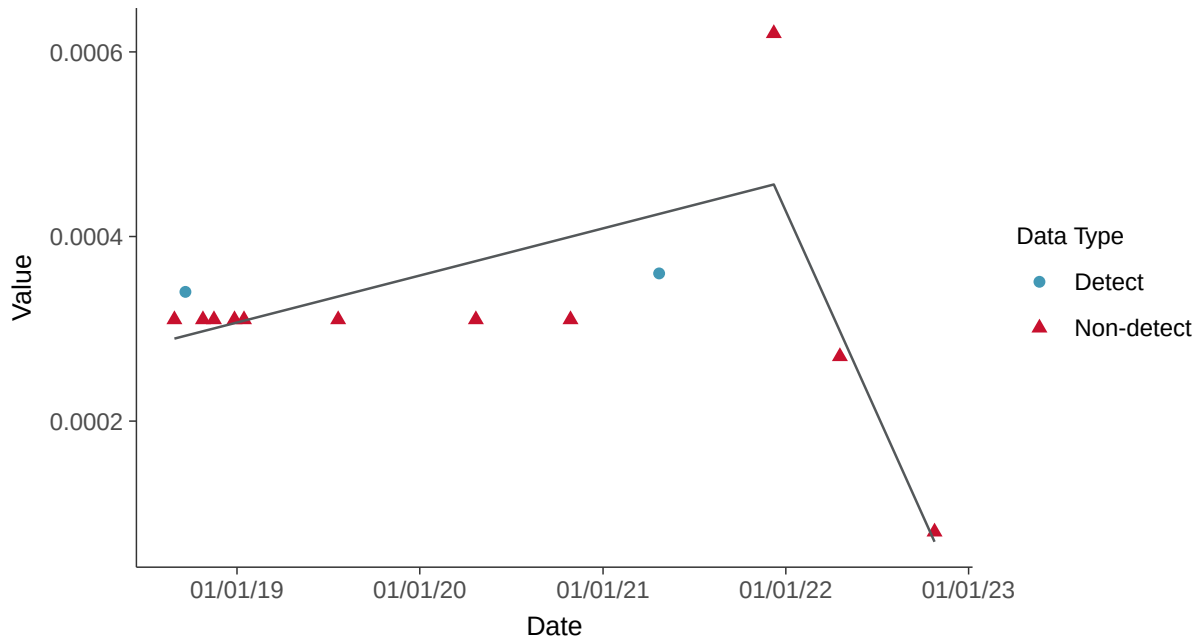
Normal Q-Q plot using ROS Imputed Estimates

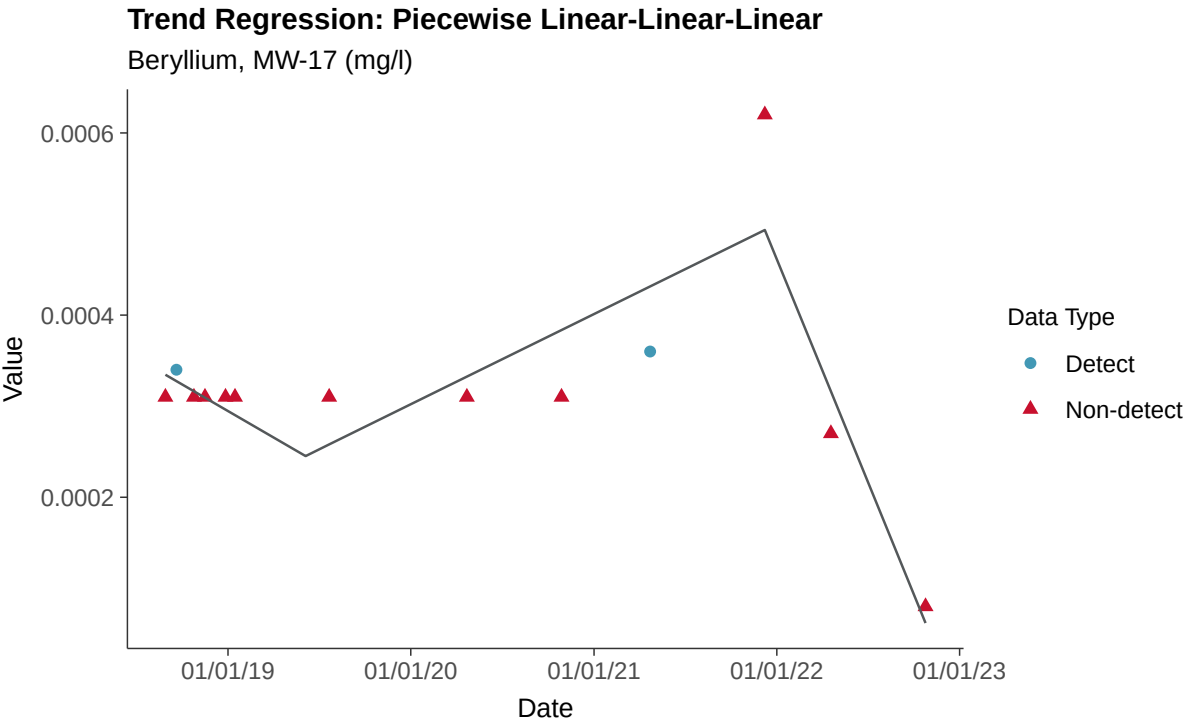
Beryllium, MW-17 (mg/l)



Trend Regression: Piecewise Linear-Linear

Beryllium, MW-17 (mg/l)

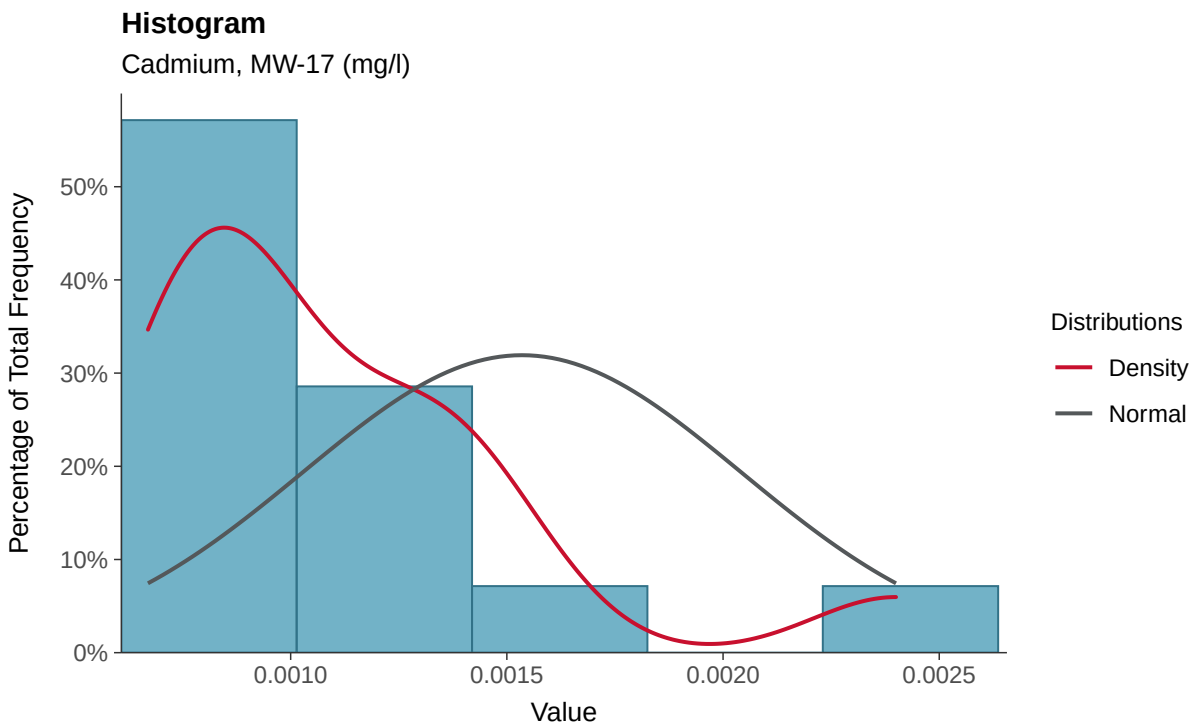
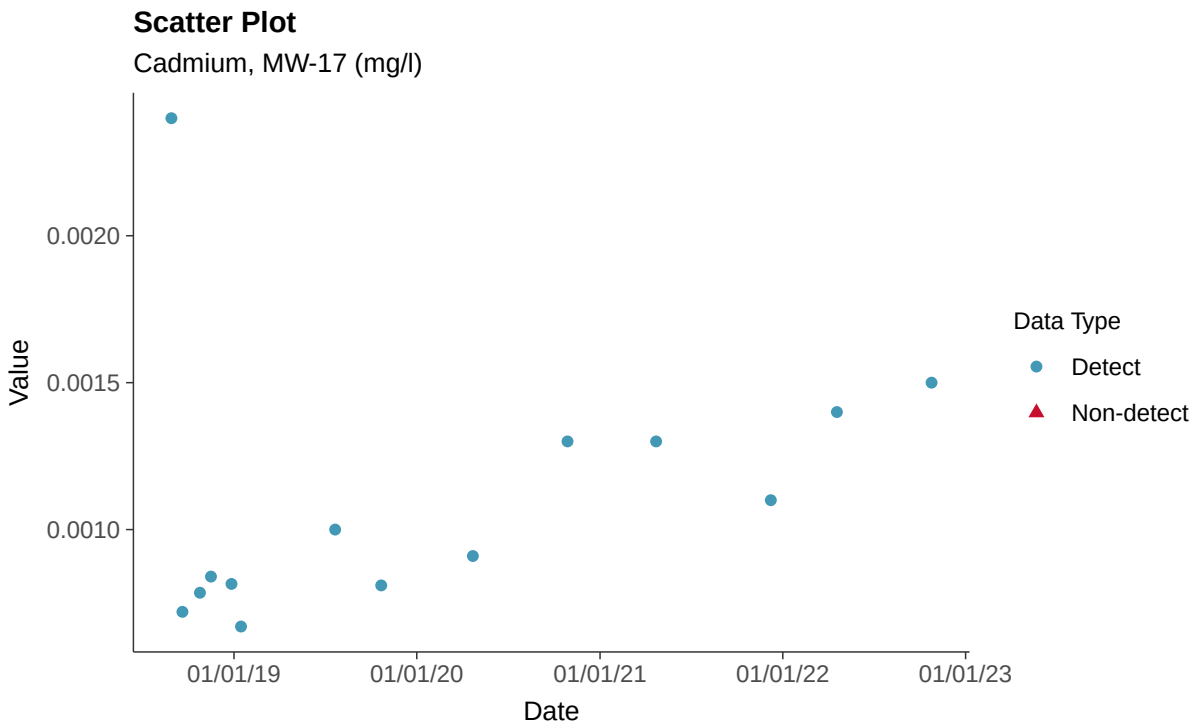






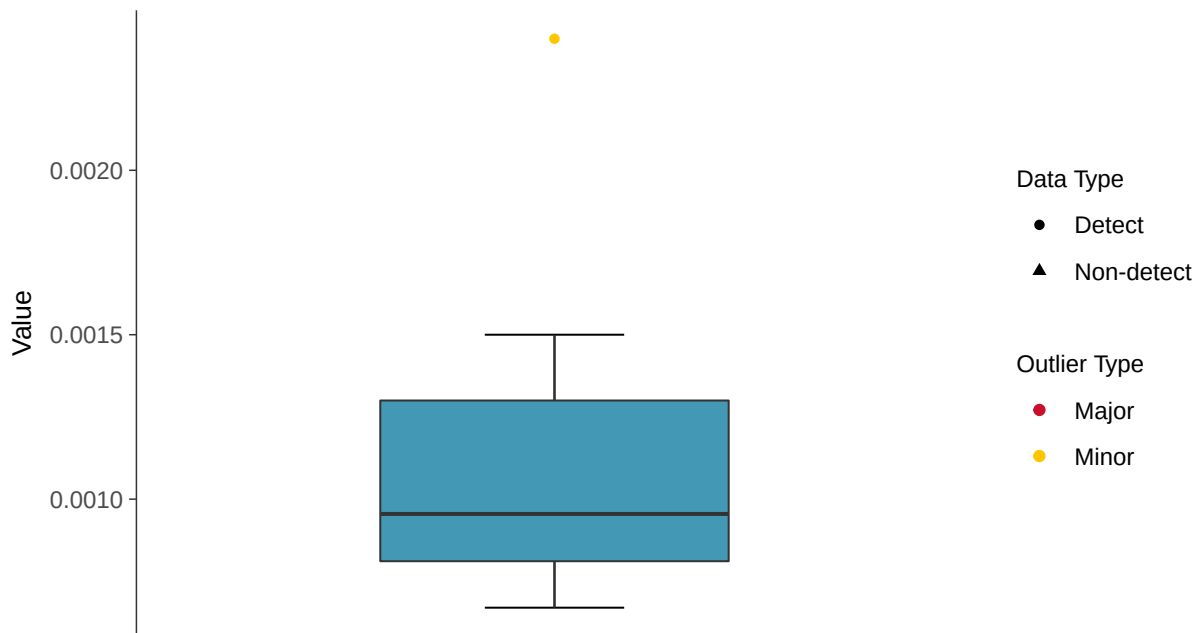
Appendix IV: Cadmium, MW-17

ID: 3_2_109



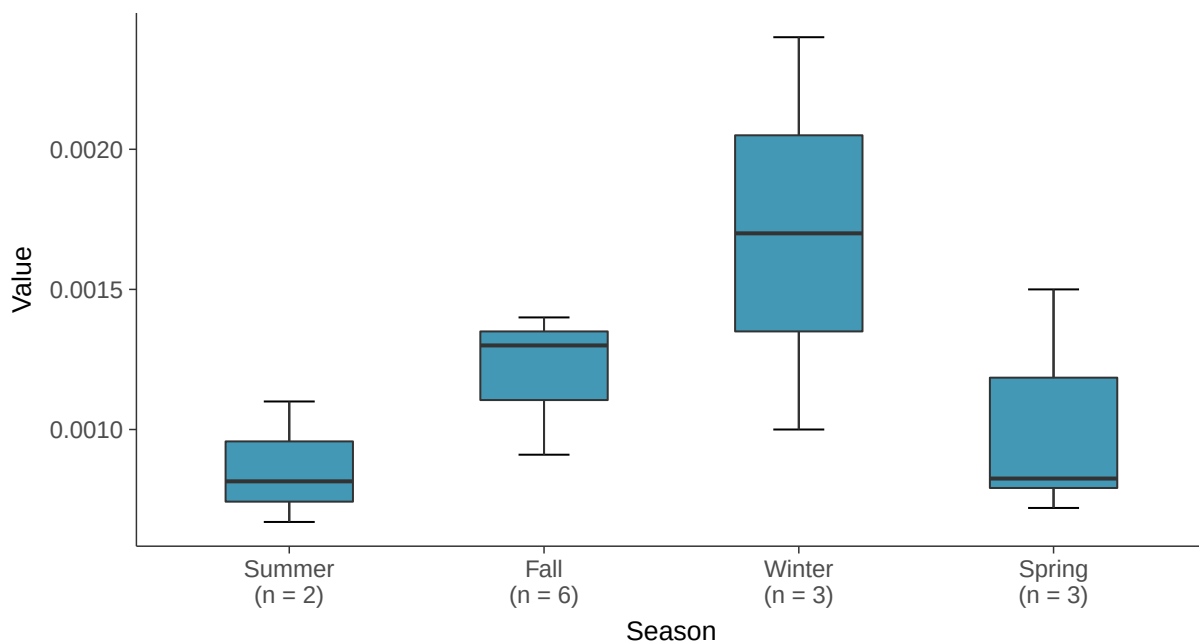
Boxplot

Cadmium, MW-17 (mg/l)



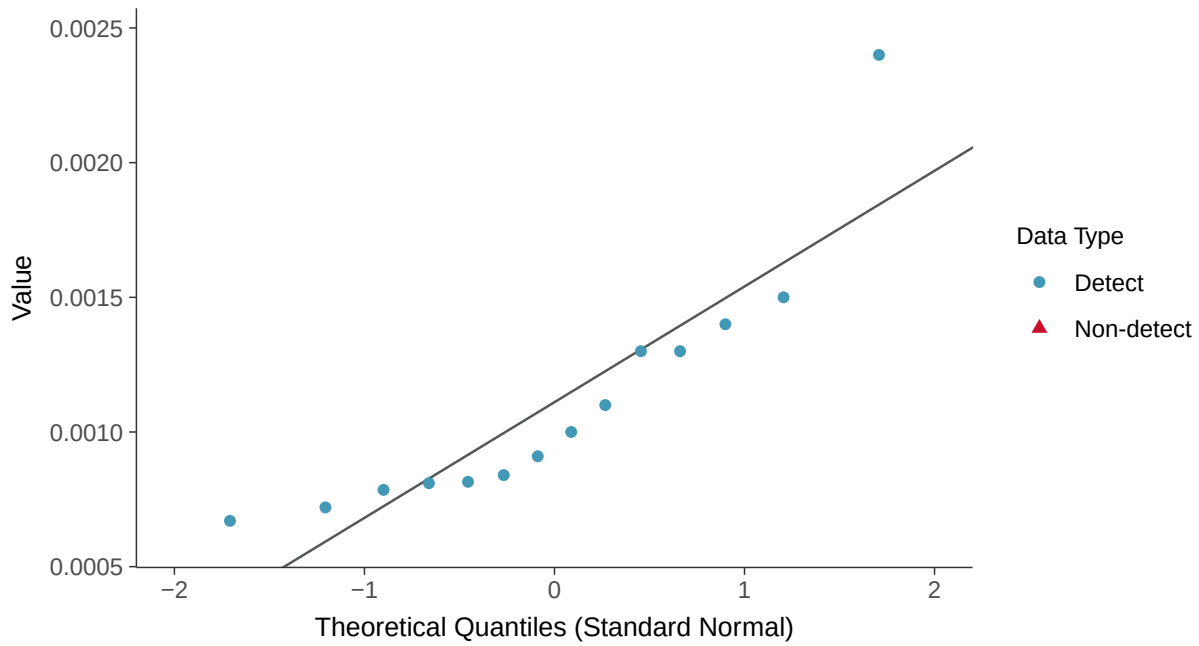
Boxplot by Season

Cadmium, MW-17 (mg/l)



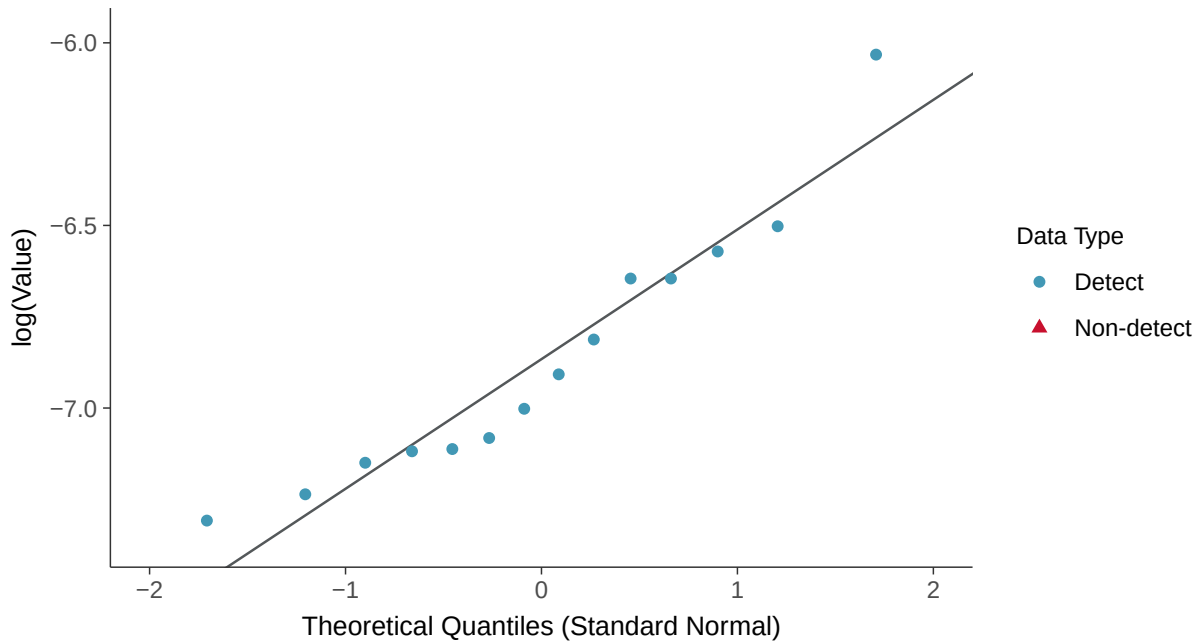
Normal Q-Q plot

Cadmium, MW-17 (mg/l)



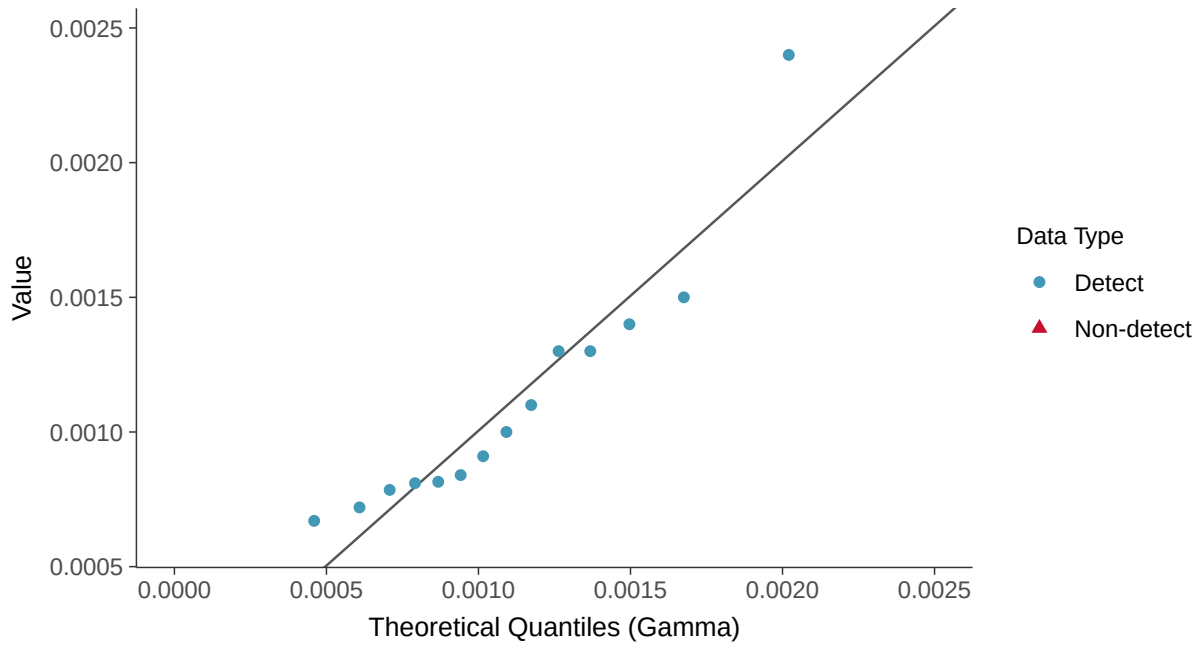
Lognormal Q-Q plot

Cadmium, MW-17 (mg/l)



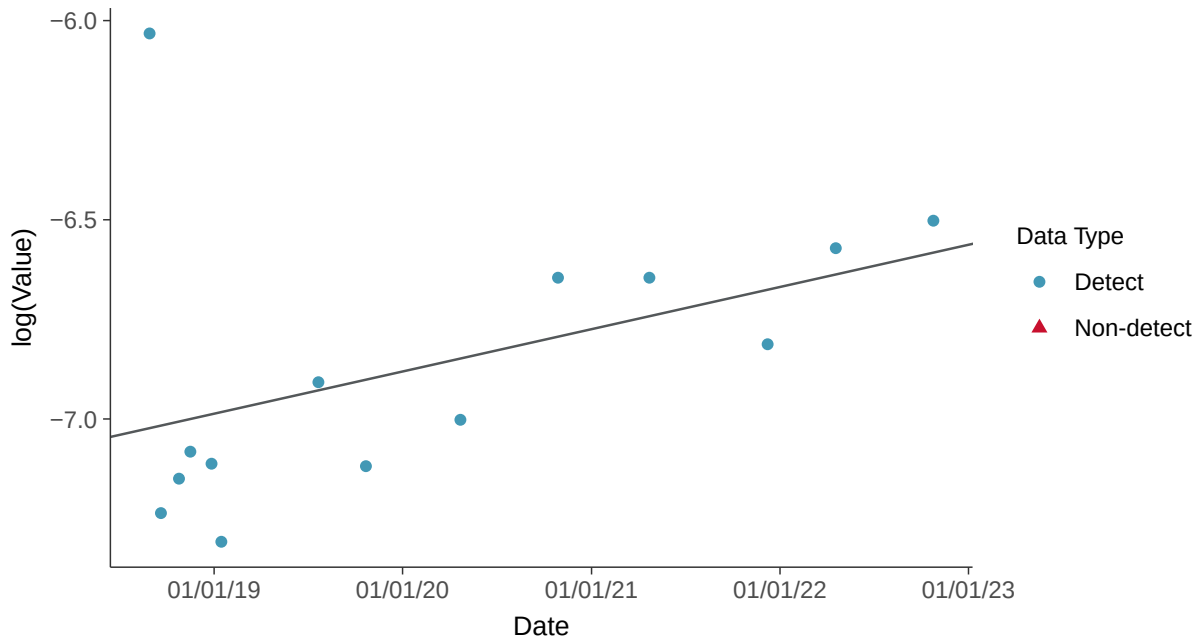
Gamma Q-Q plot

Cadmium, MW-17 (mg/l)



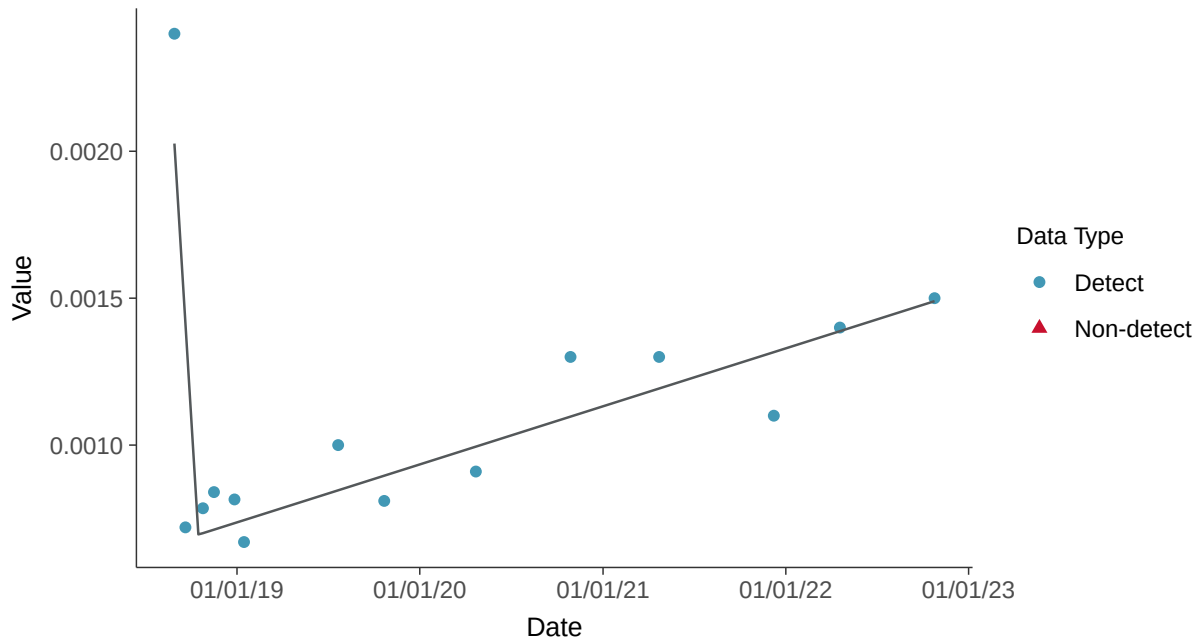
Trend Regression: Lognormal MLE

Cadmium, MW-17 (mg/l)



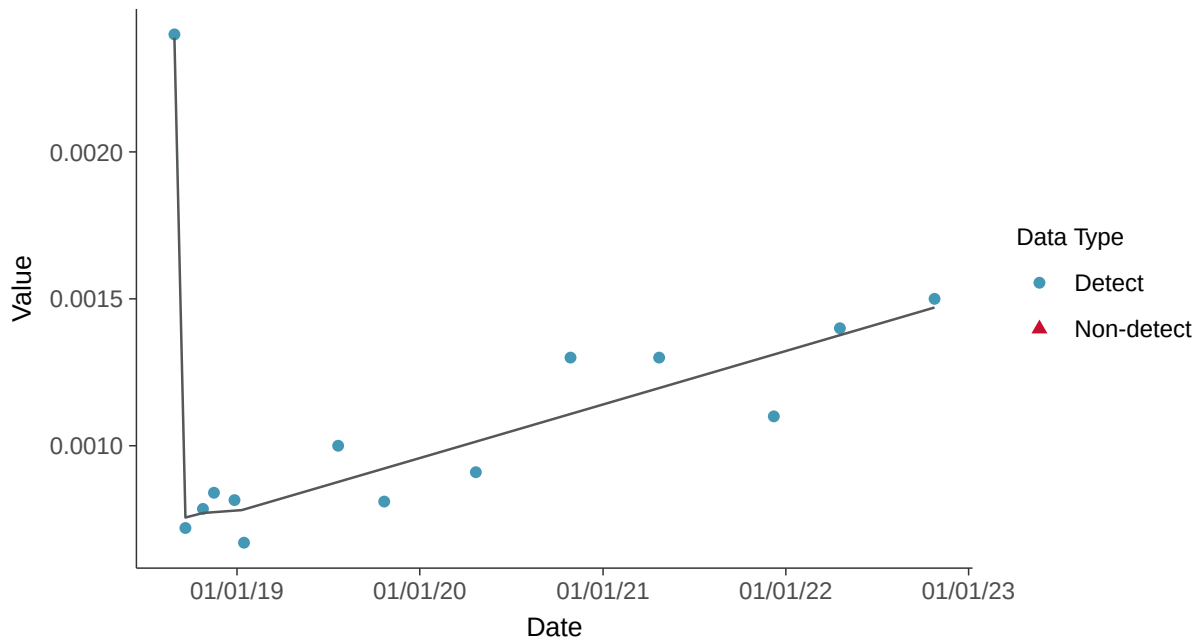
Trend Regression: Piecewise Linear-Linear

Cadmium, MW-17 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cadmium, MW-17 (mg/l)

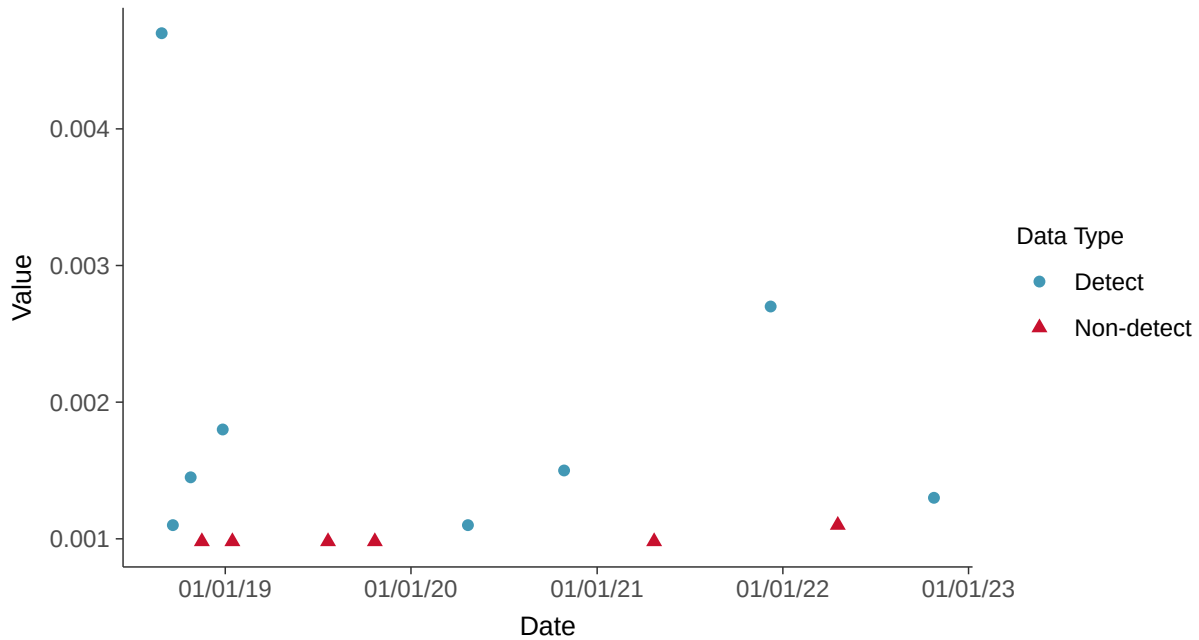


Appendix IV: Chromium, Total, MW-17

ID: 3_2_112

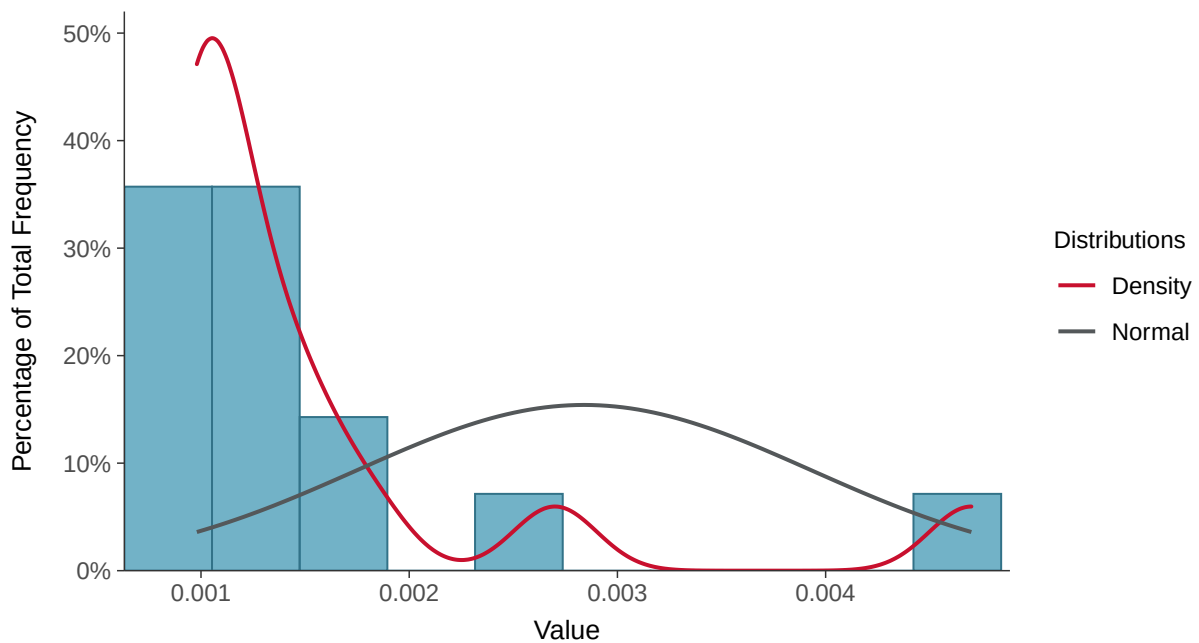
Scatter Plot

Chromium, Total, MW-17 (mg/l)



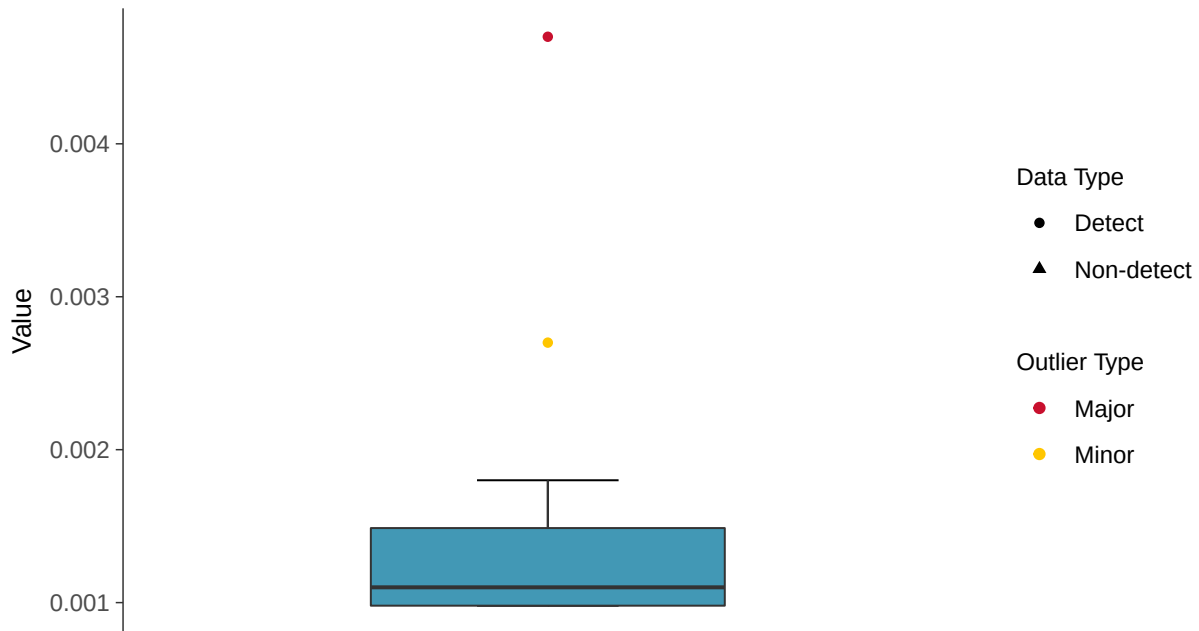
Histogram

Chromium, Total, MW-17 (mg/l)



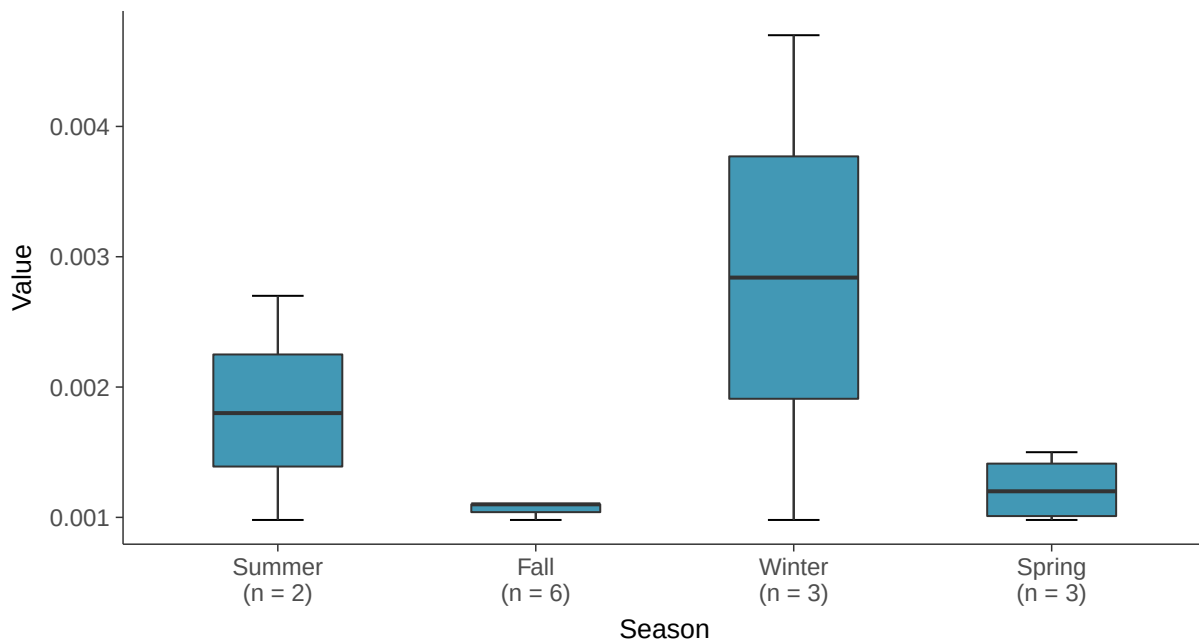
Boxplot

Chromium, Total, MW-17 (mg/l)



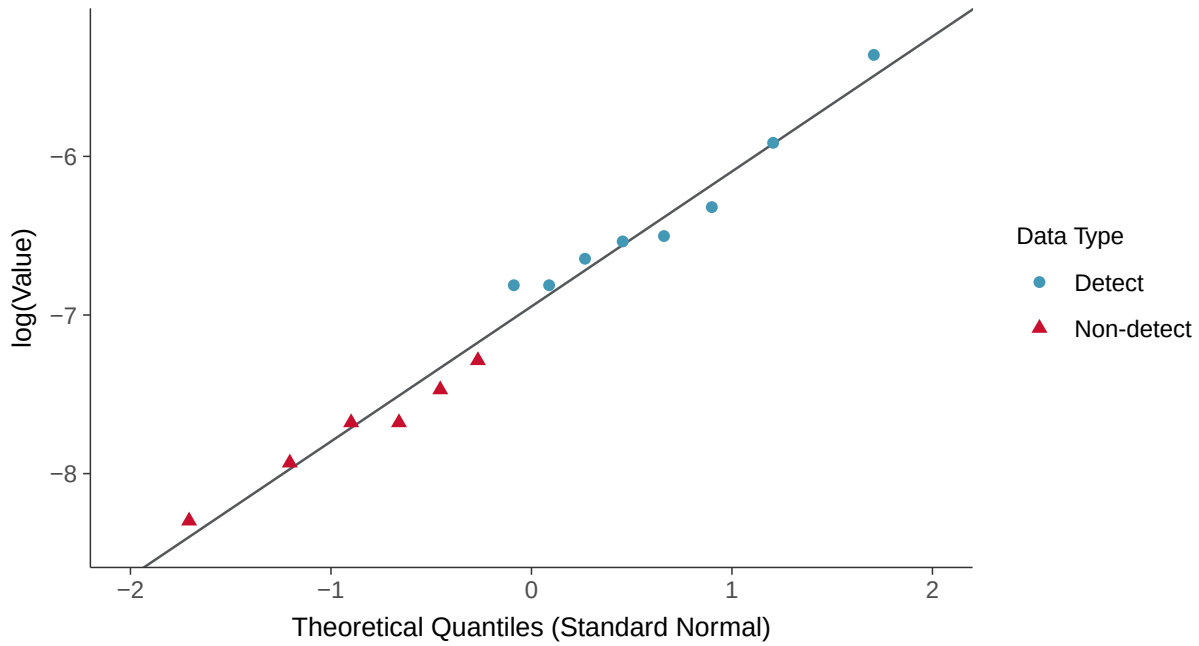
Boxplot by Season

Chromium, Total, MW-17 (mg/l)



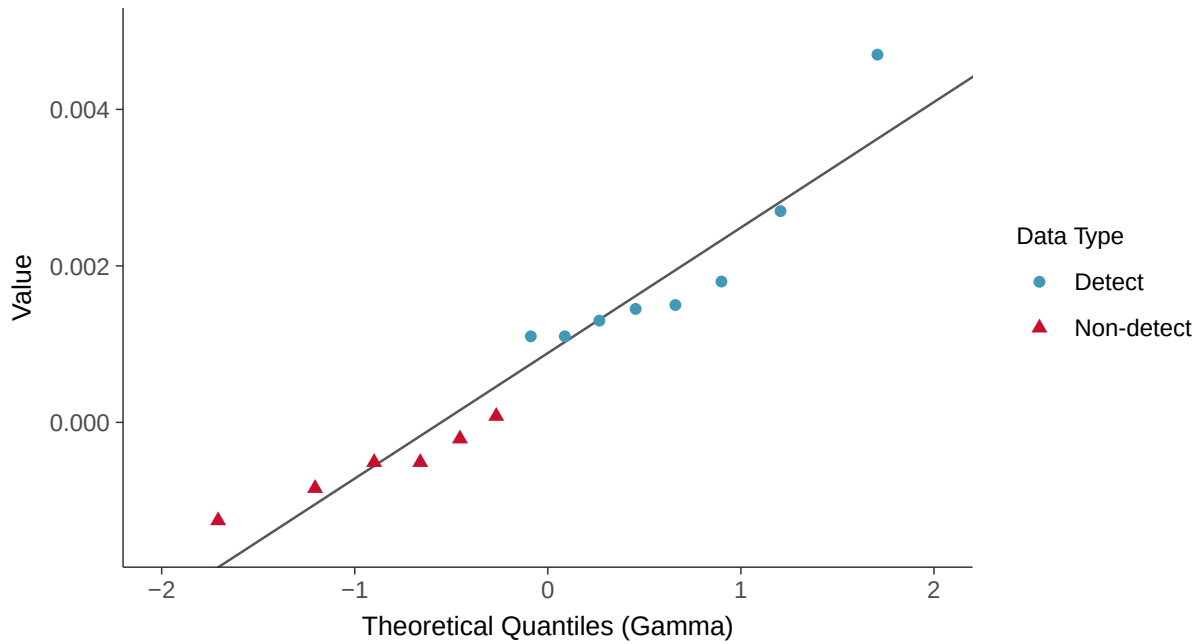
Lognormal Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-17 (mg/l)



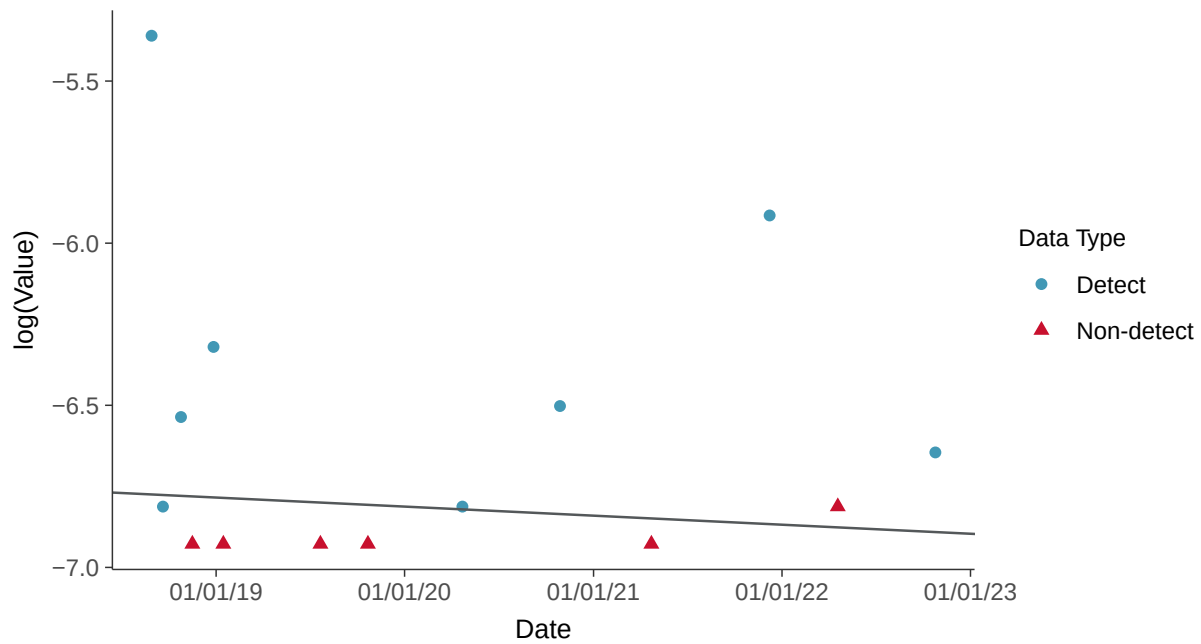
Gamma Q-Q plot using ROS Imputed Estimates

Chromium, Total, MW-17 (mg/l)



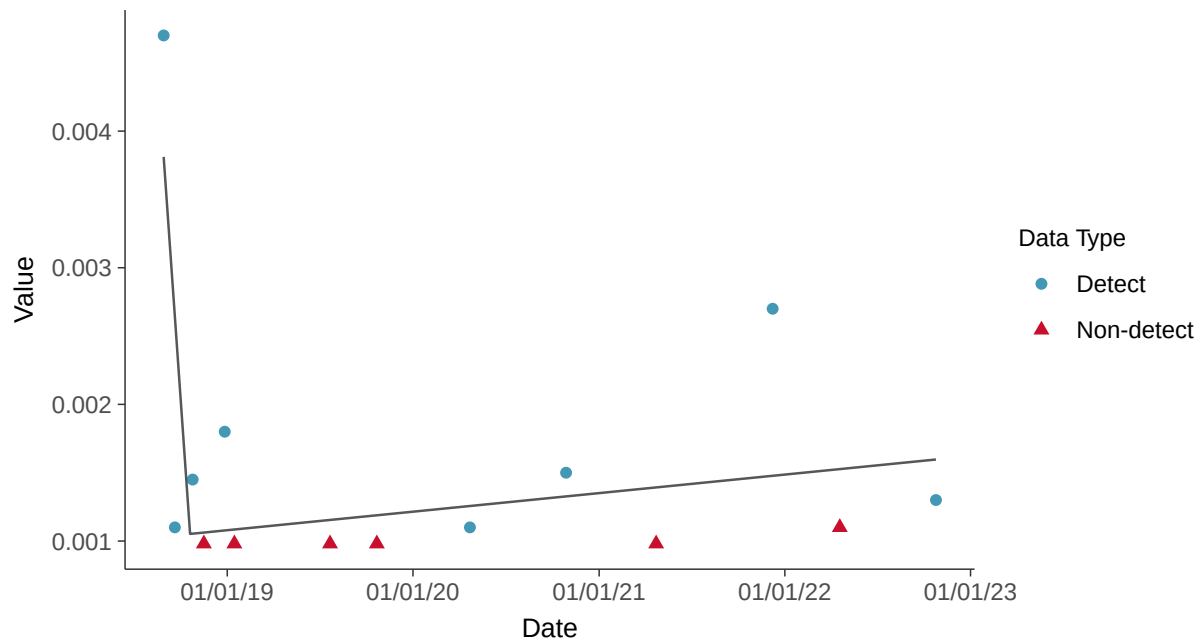
Trend Regression: Lognormal MLE

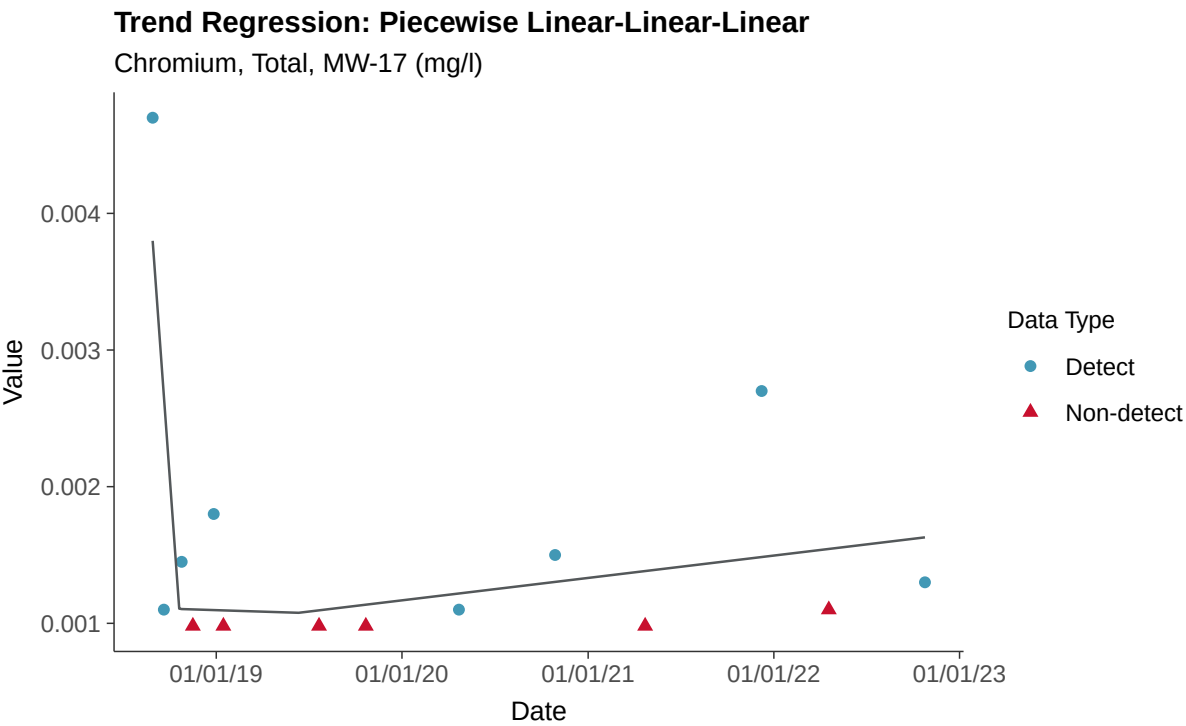
Chromium, Total, MW-17 (mg/l)



Trend Regression: Piecewise Linear-Linear

Chromium, Total, MW-17 (mg/l)

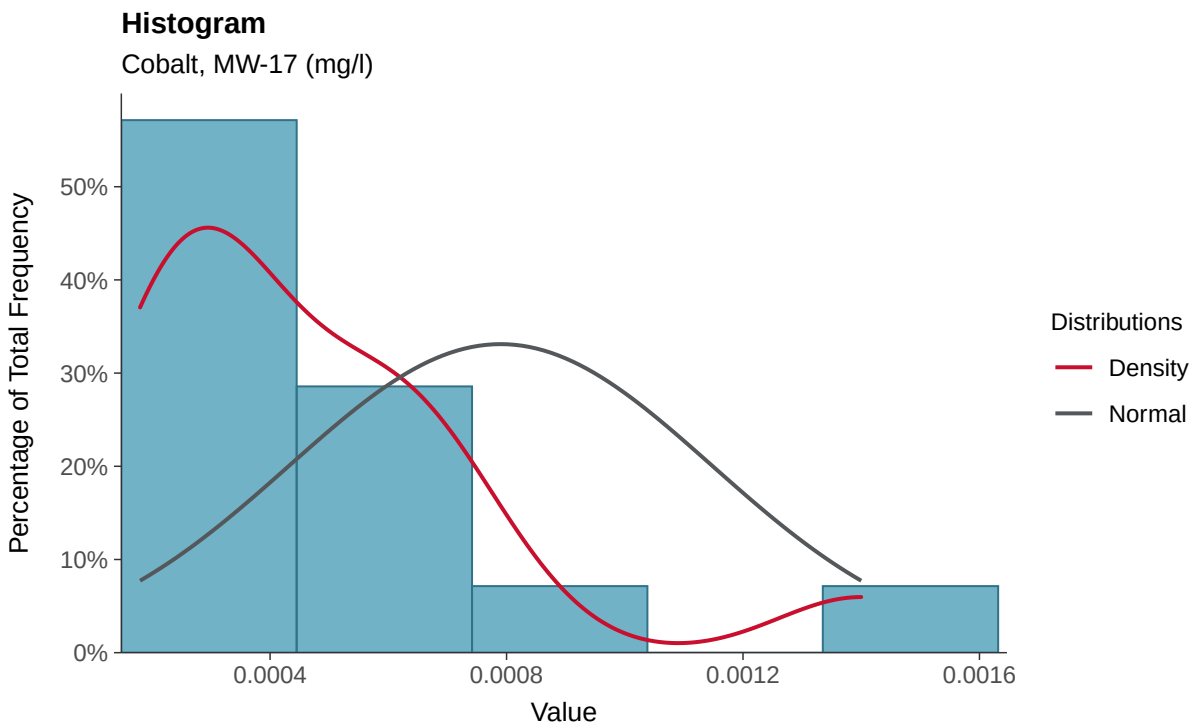
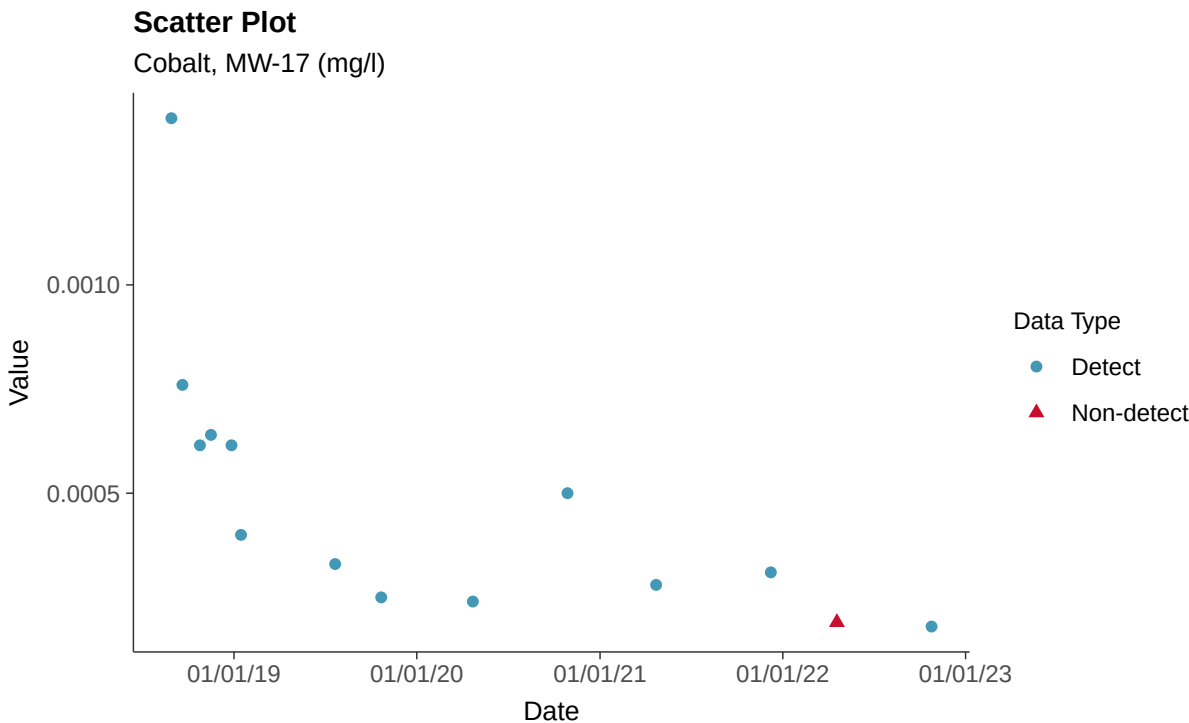


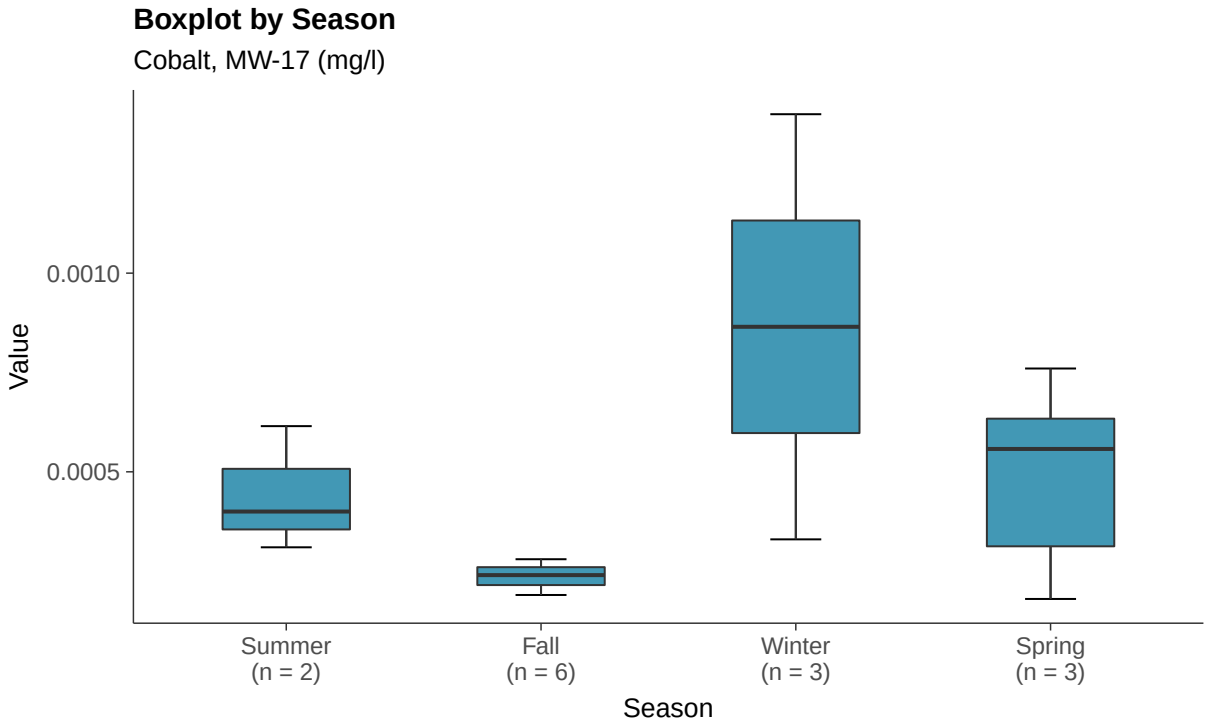
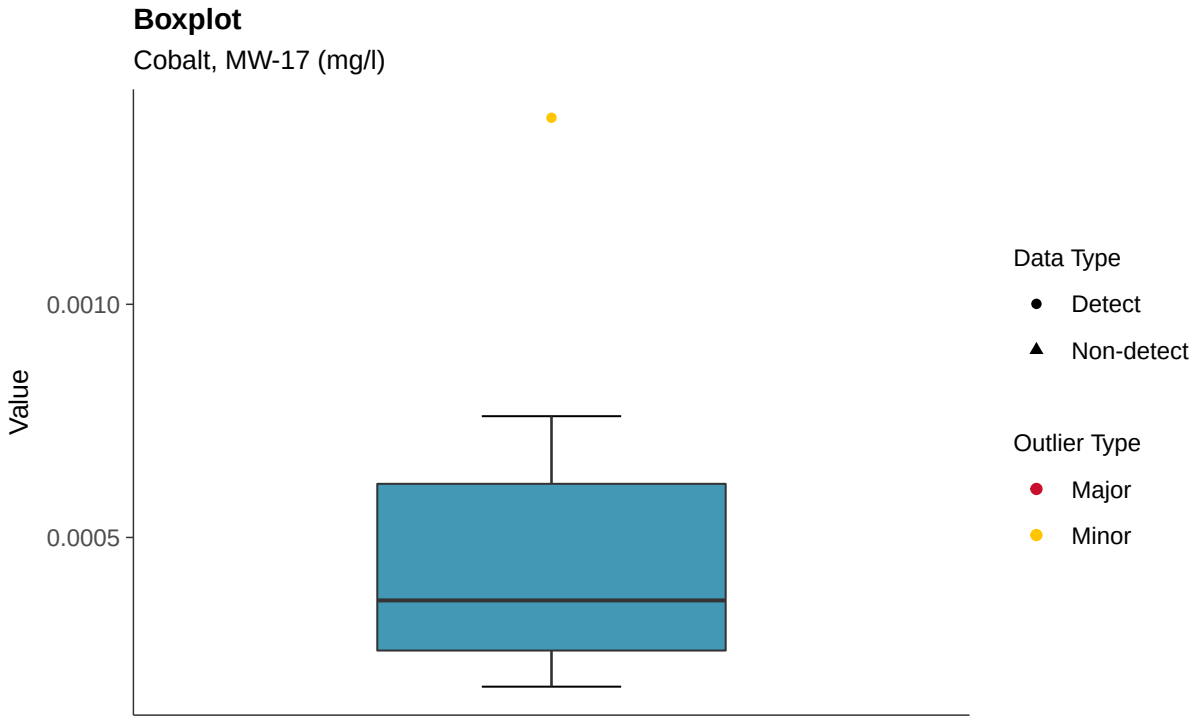




Appendix IV: Cobalt, MW-17

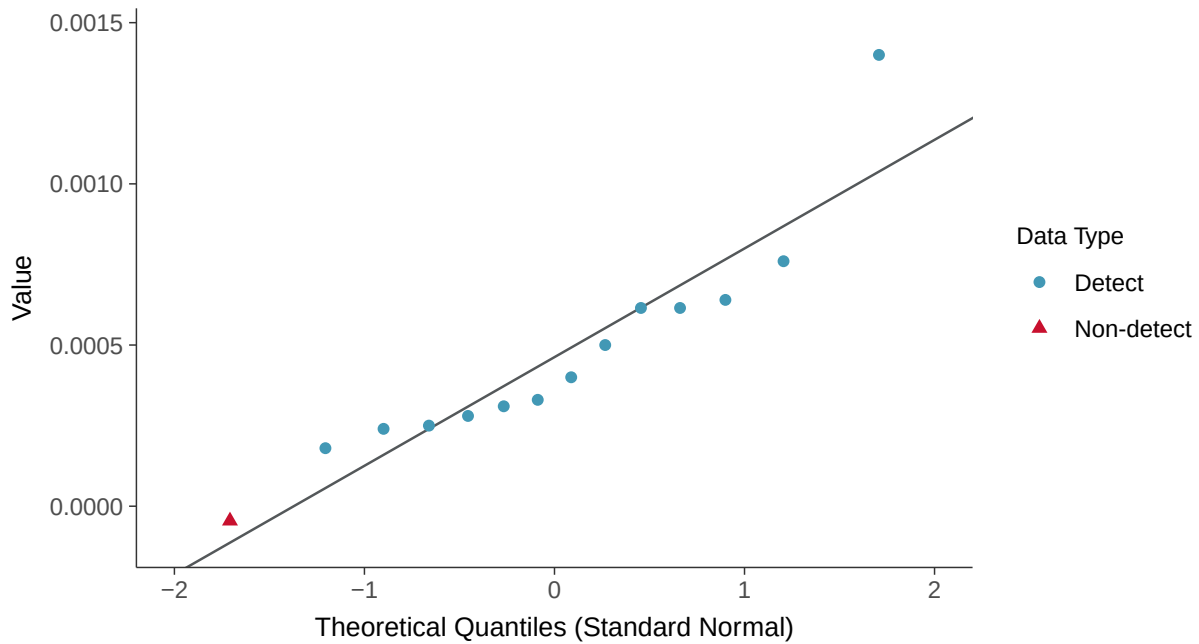
ID: 3_2_113





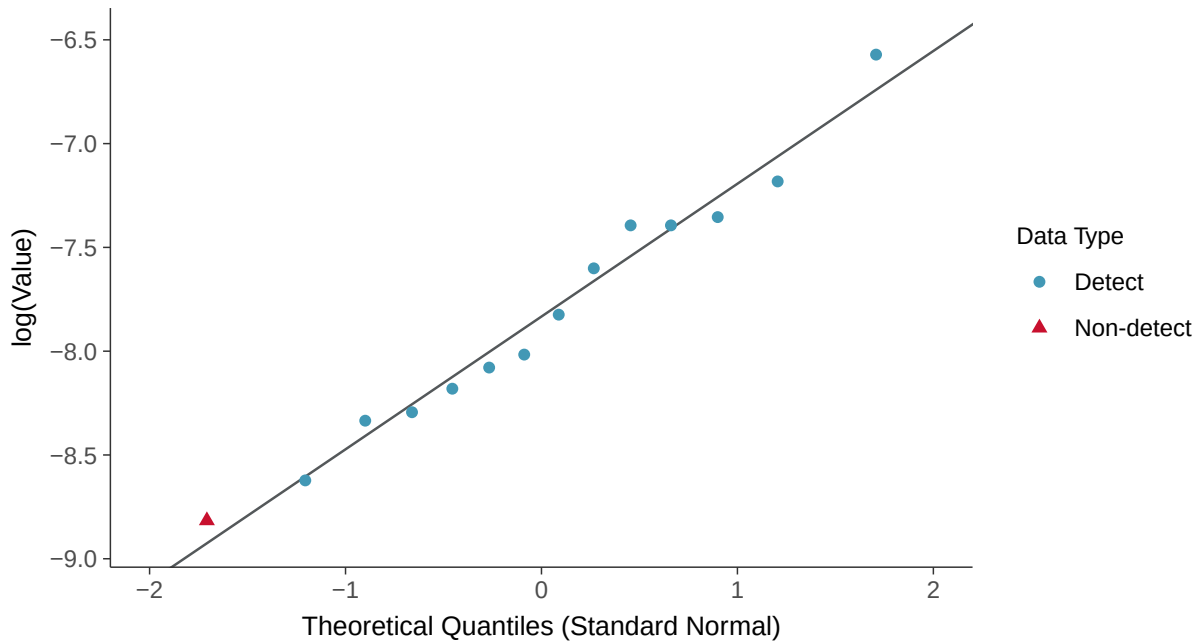
Normal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-17 (mg/l)



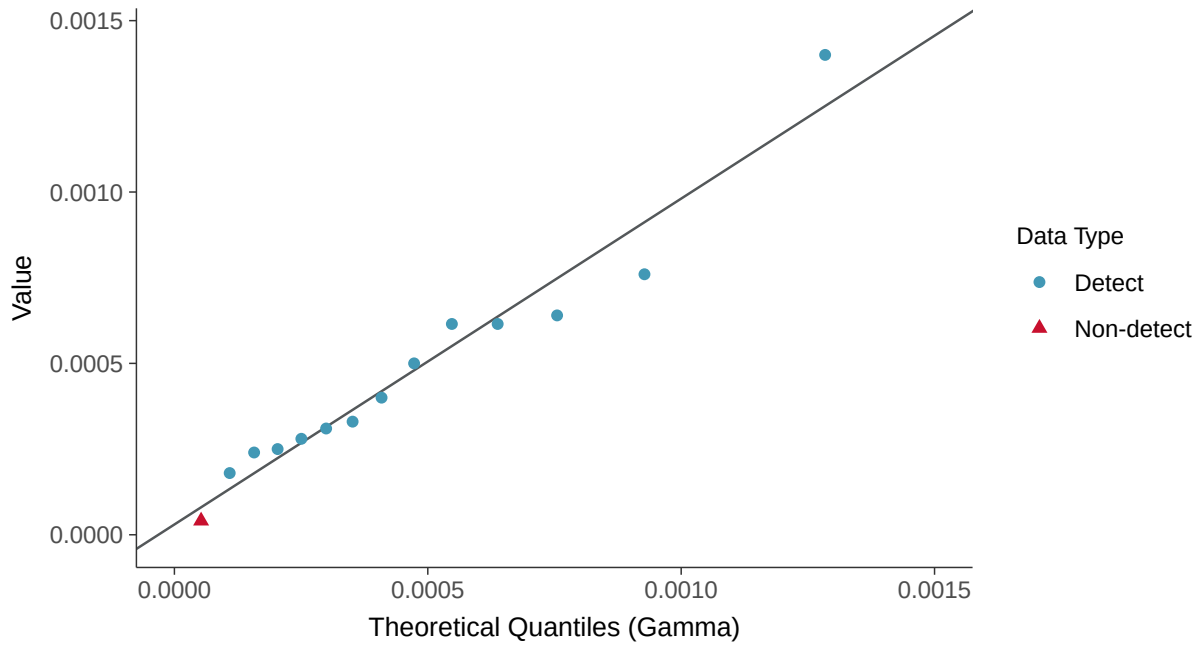
Lognormal Q-Q plot using ROS Imputed Estimates

Cobalt, MW-17 (mg/l)



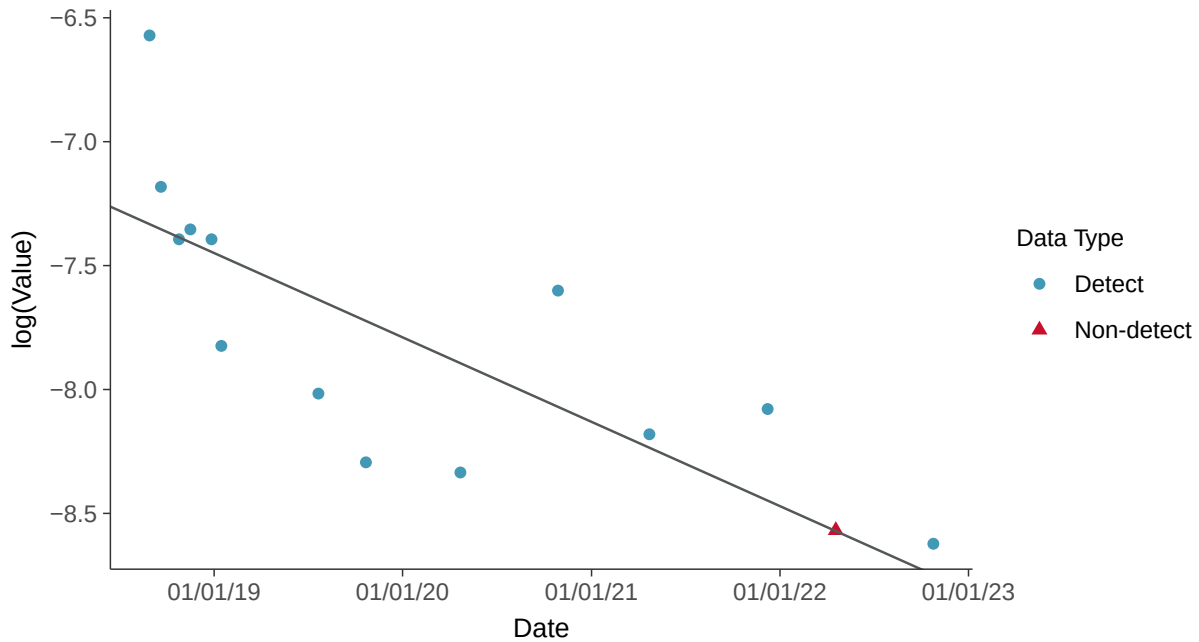
Gamma Q-Q plot using ROS Imputed Estimates

Cobalt, MW-17 (mg/l)



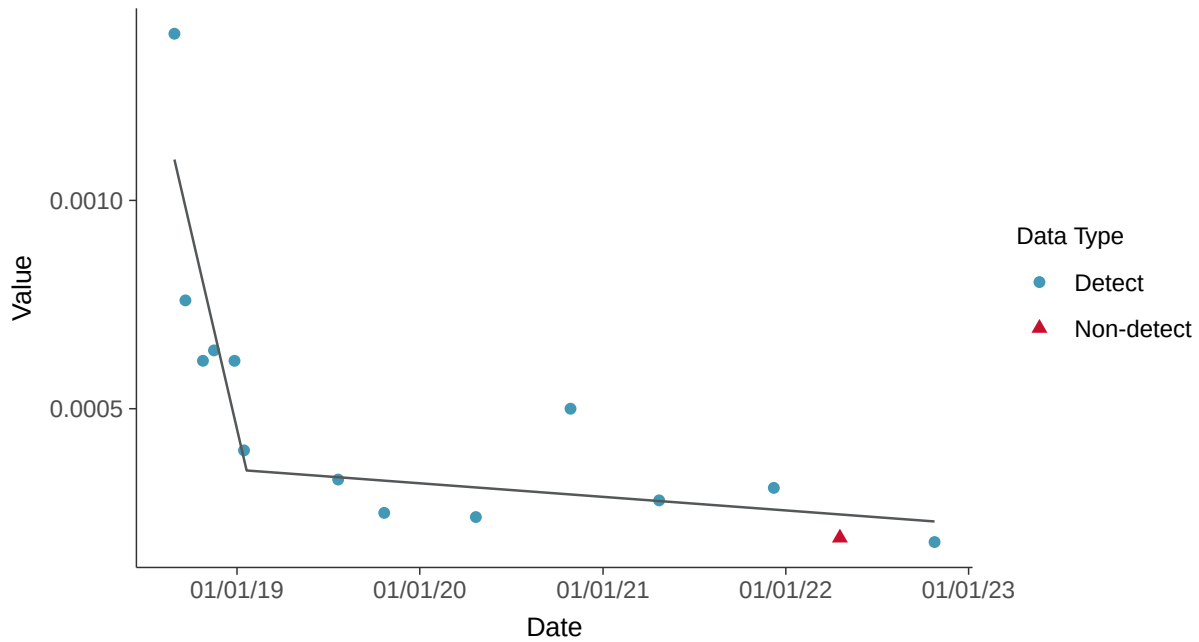
Trend Regression: Lognormal MLE

Cobalt, MW-17 (mg/l)



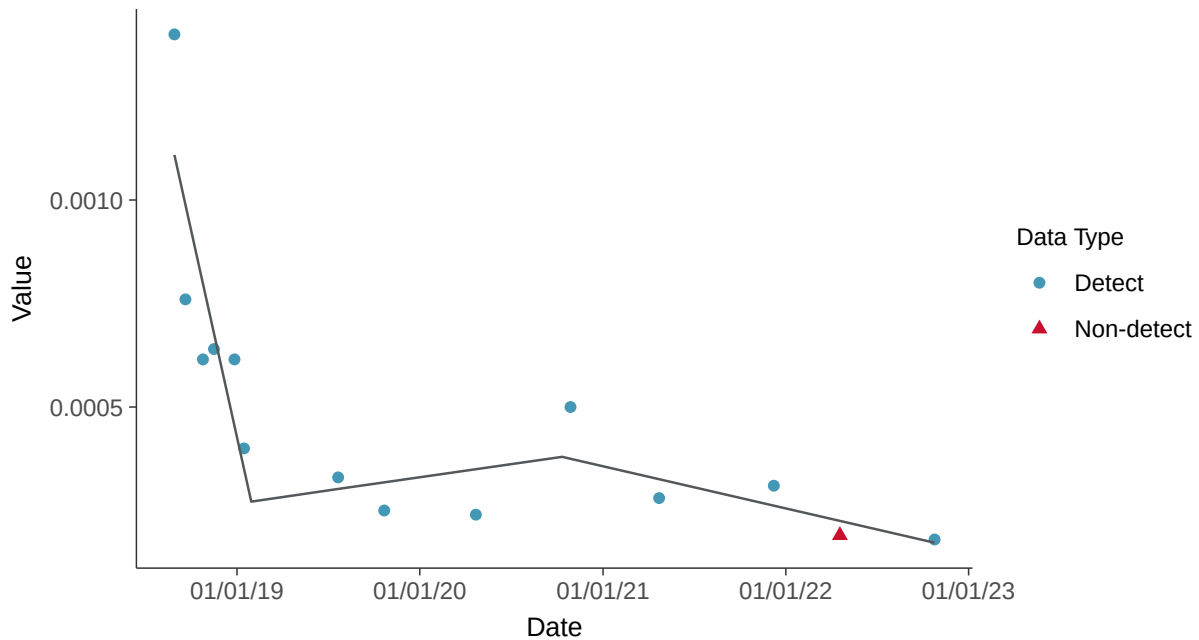
Trend Regression: Piecewise Linear-Linear

Cobalt, MW-17 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Cobalt, MW-17 (mg/l)

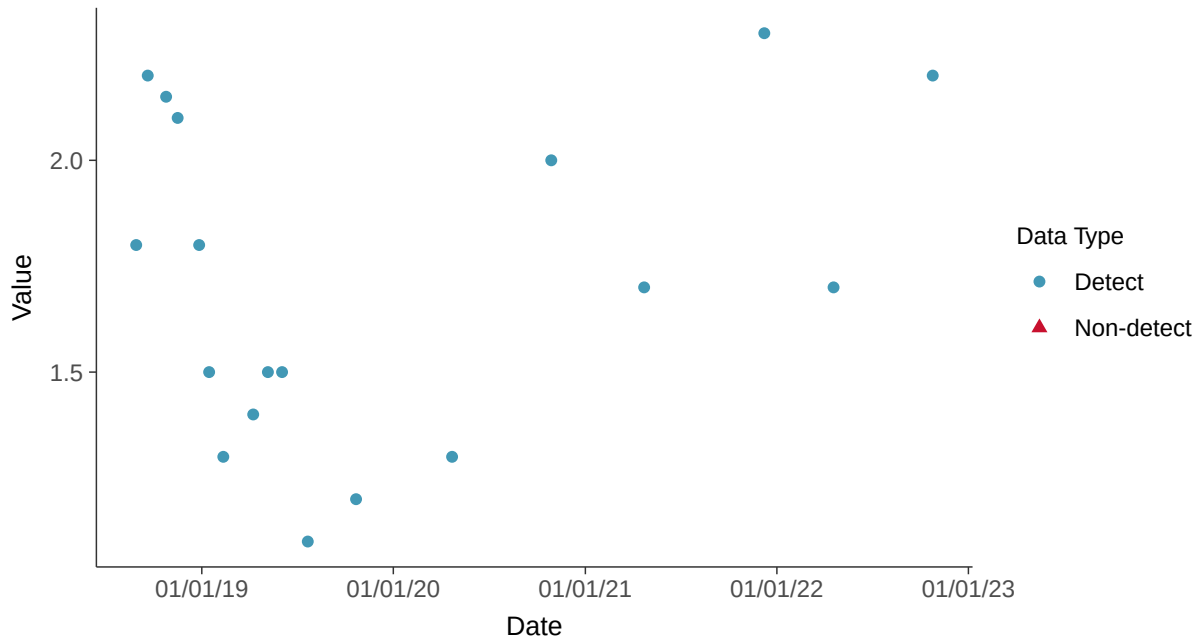


Appendix IV: Fluoride (App IV), MW-17

ID: 3_2_116

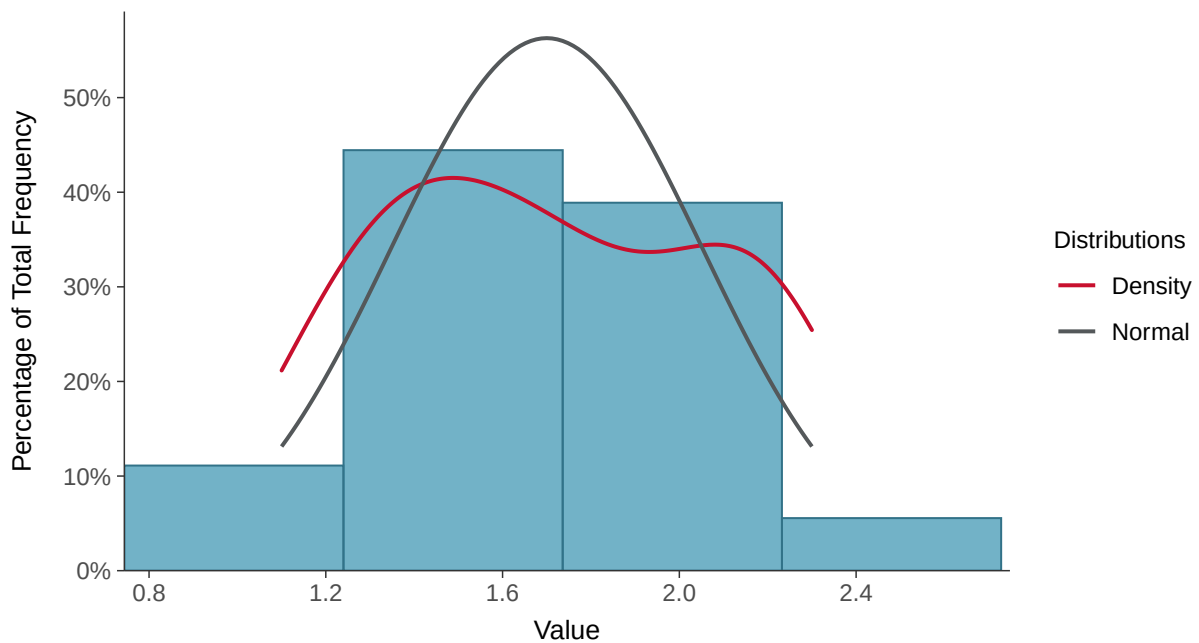
Scatter Plot

Fluoride (App IV), MW-17 (mg/l)



Histogram

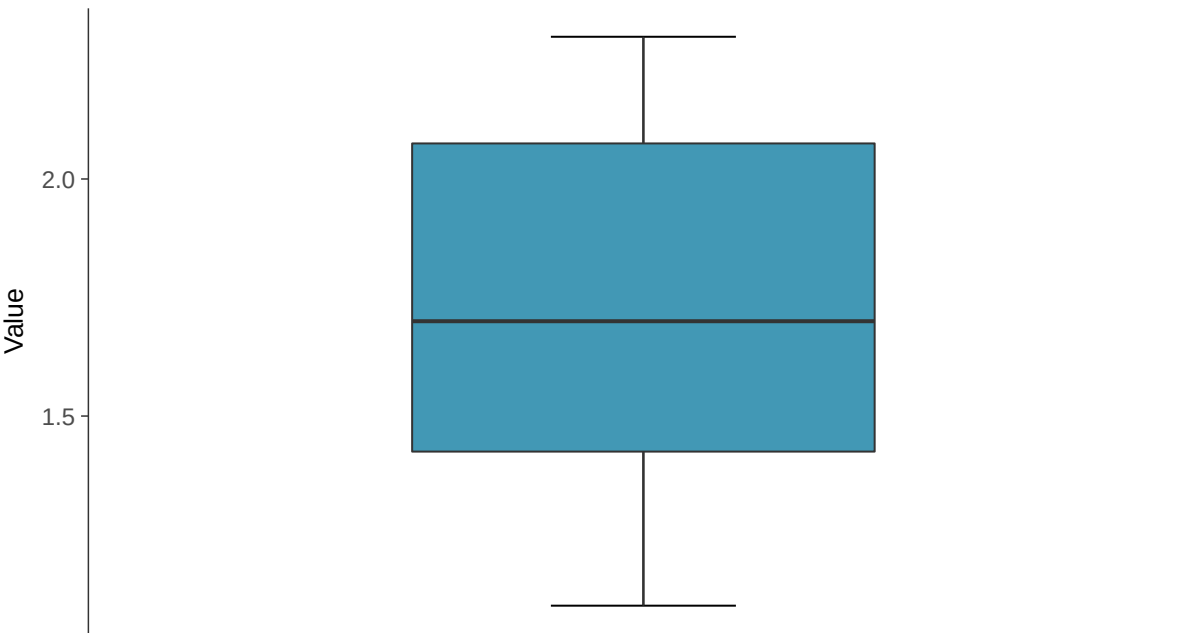
Fluoride (App IV), MW-17 (mg/l)





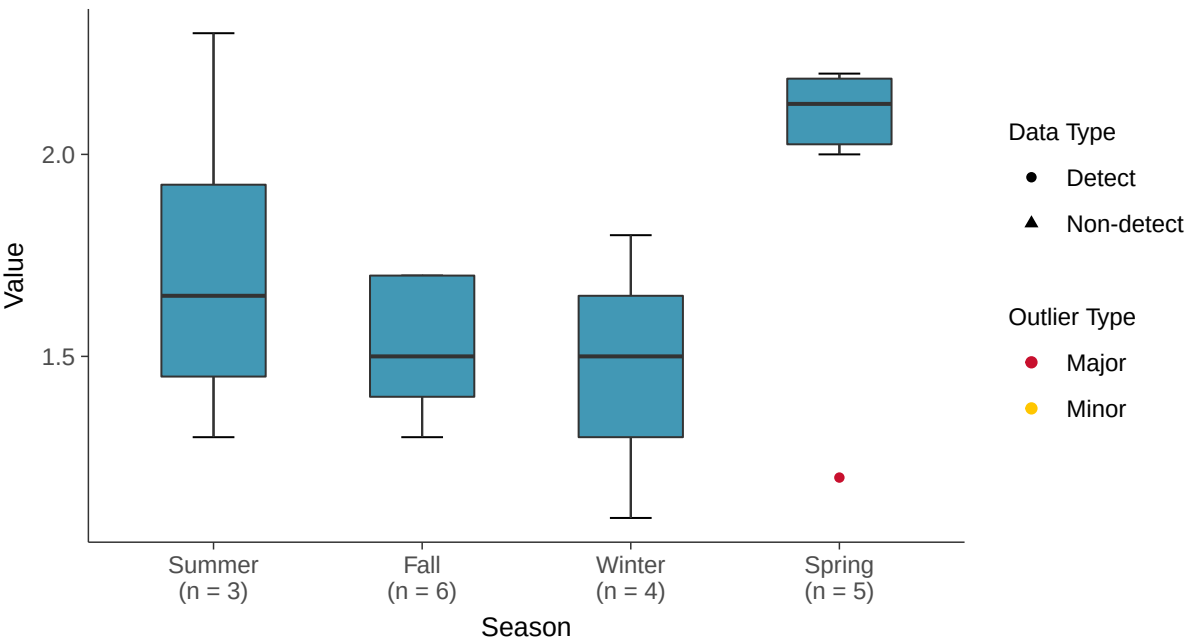
Boxplot

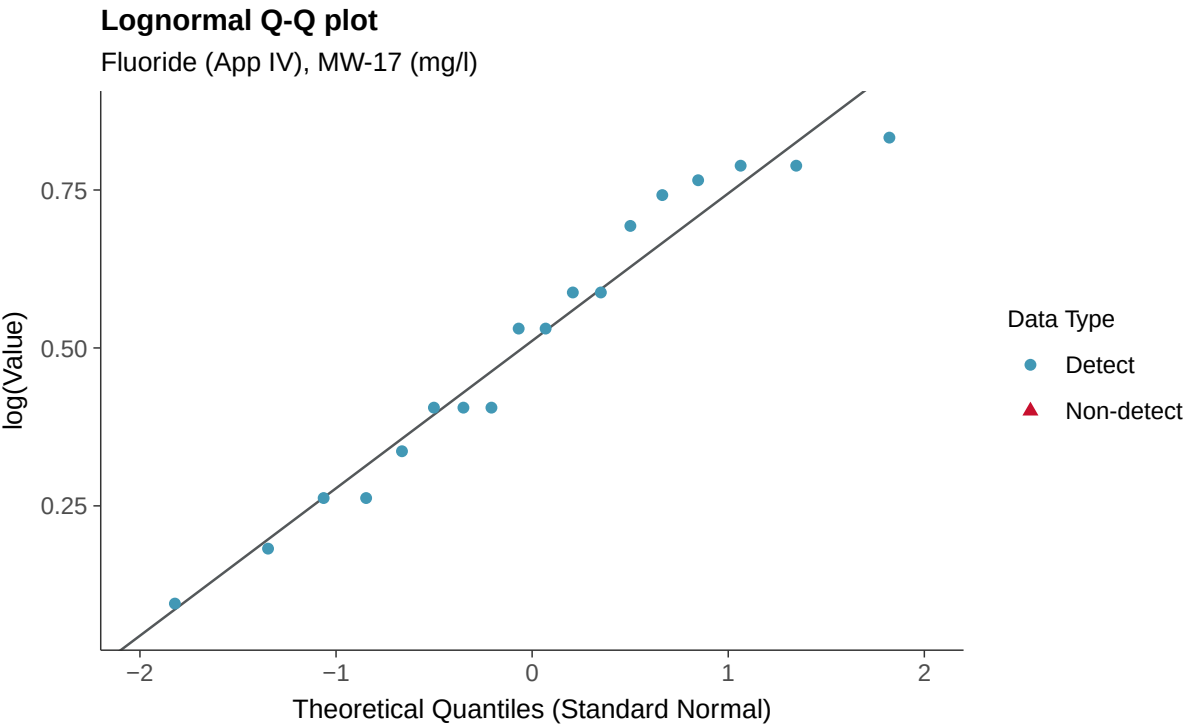
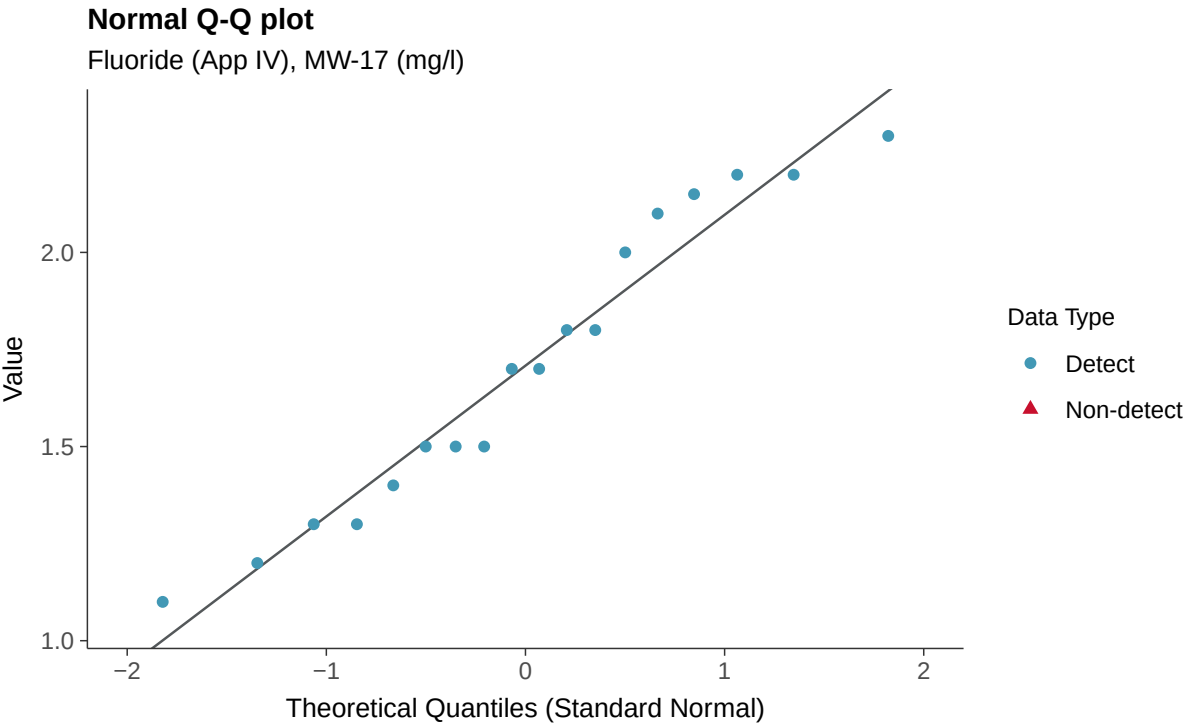
Fluoride (App IV), MW-17 (mg/l)



Boxplot by Season

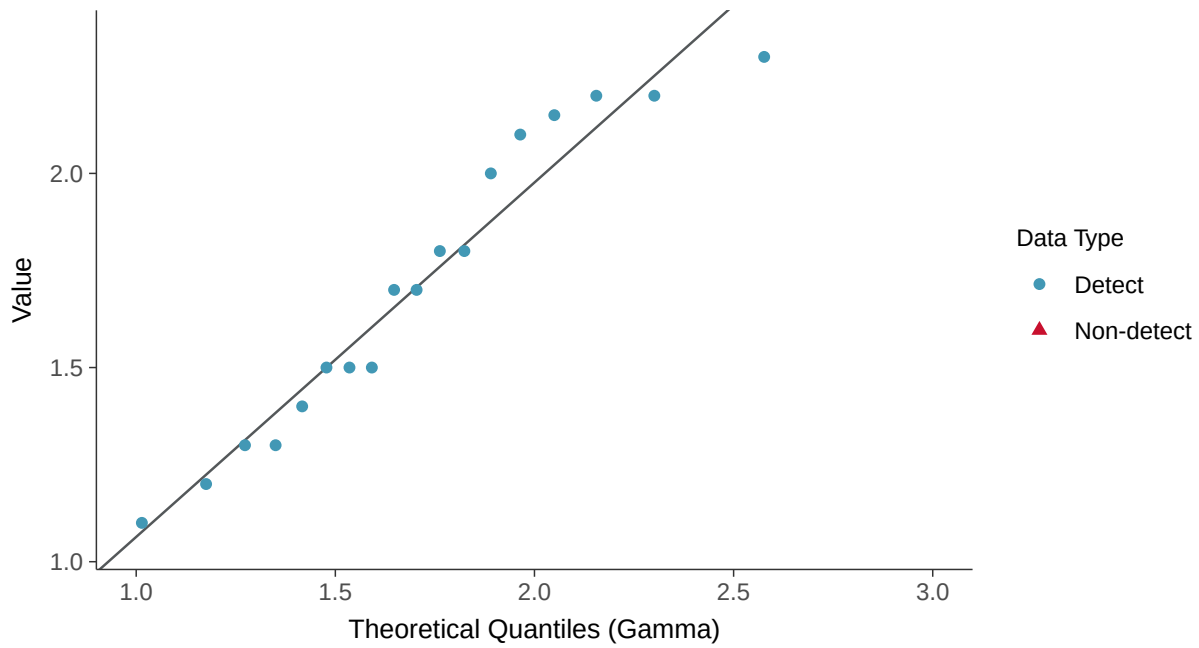
Fluoride (App IV), MW-17 (mg/l)





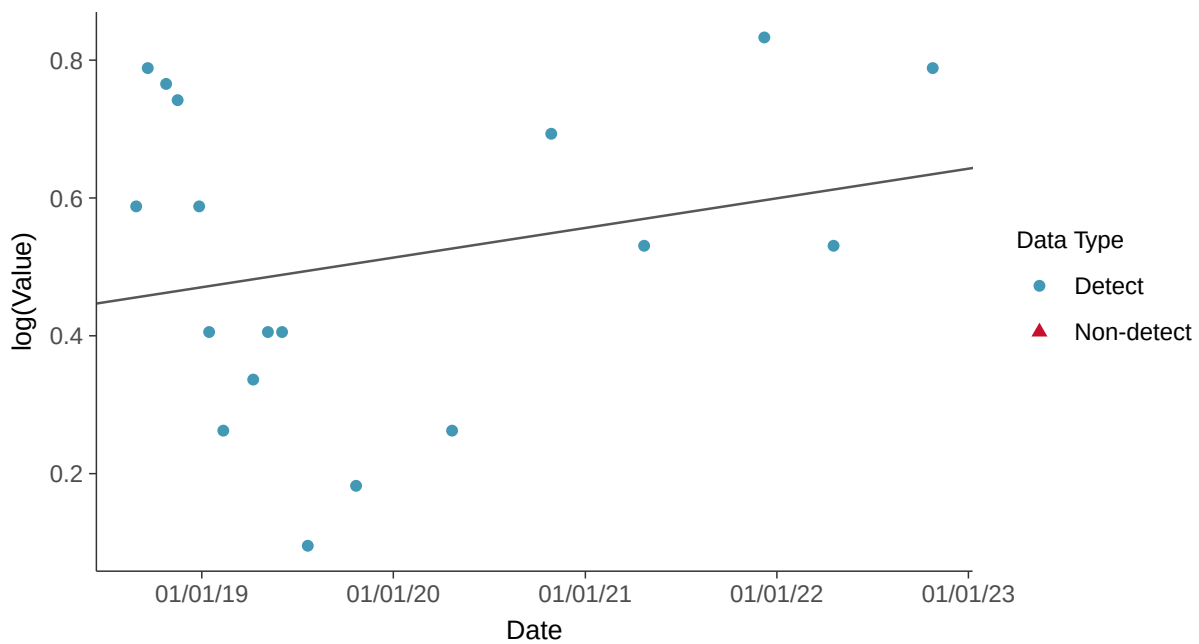
Gamma Q-Q plot

Fluoride (App IV), MW-17 (mg/l)



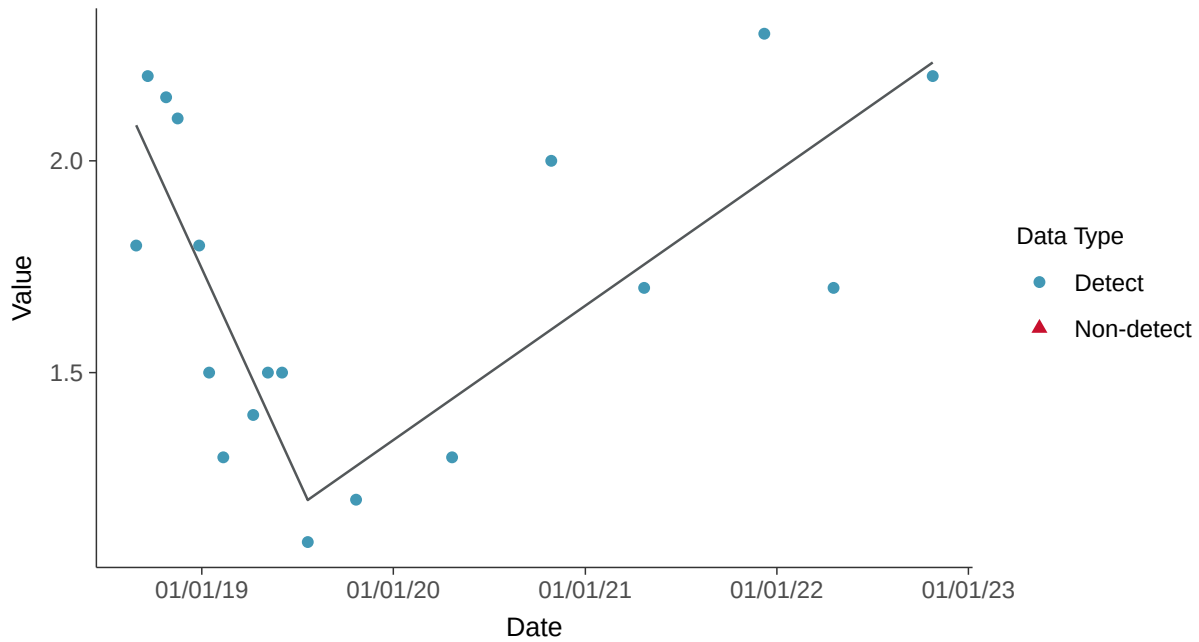
Trend Regression: Lognormal MLE

Fluoride (App IV), MW-17 (mg/l)



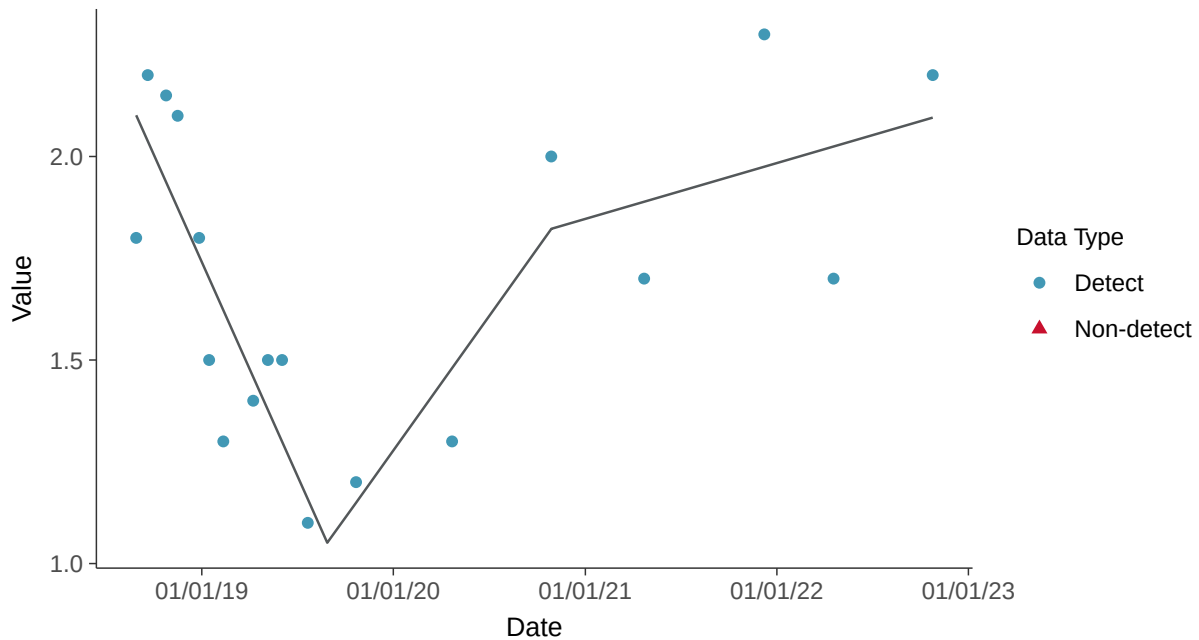
Trend Regression: Piecewise Linear-Linear

Fluoride (App IV), MW-17 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

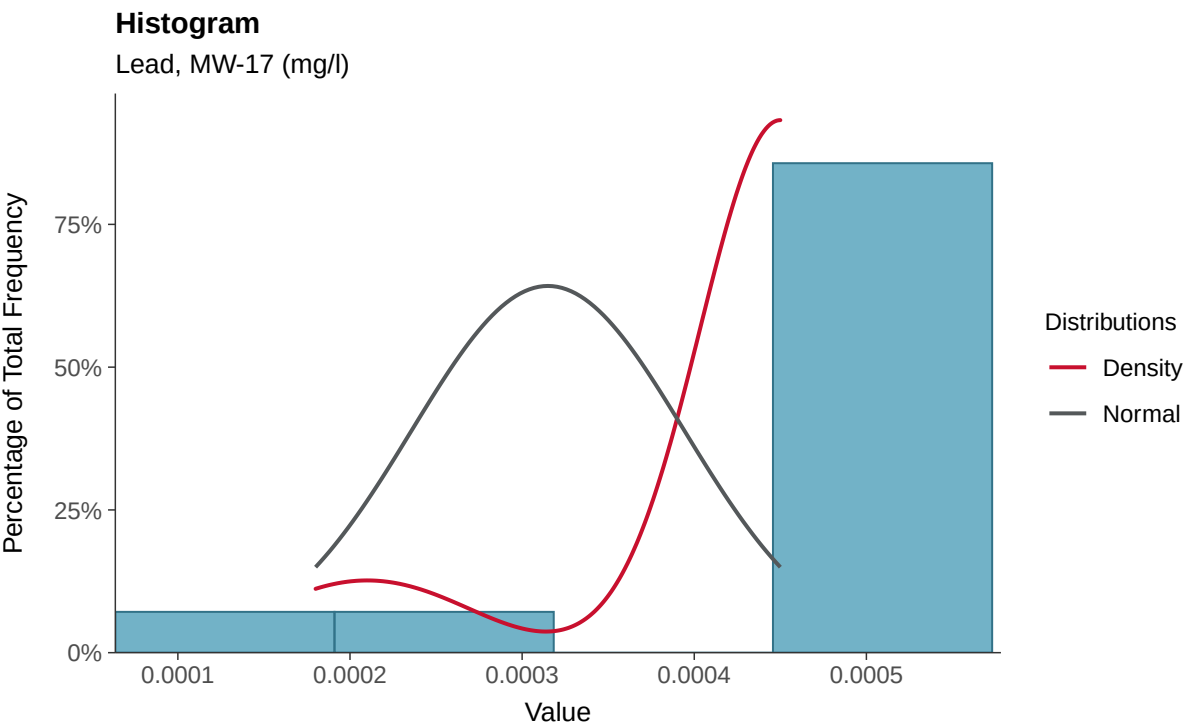
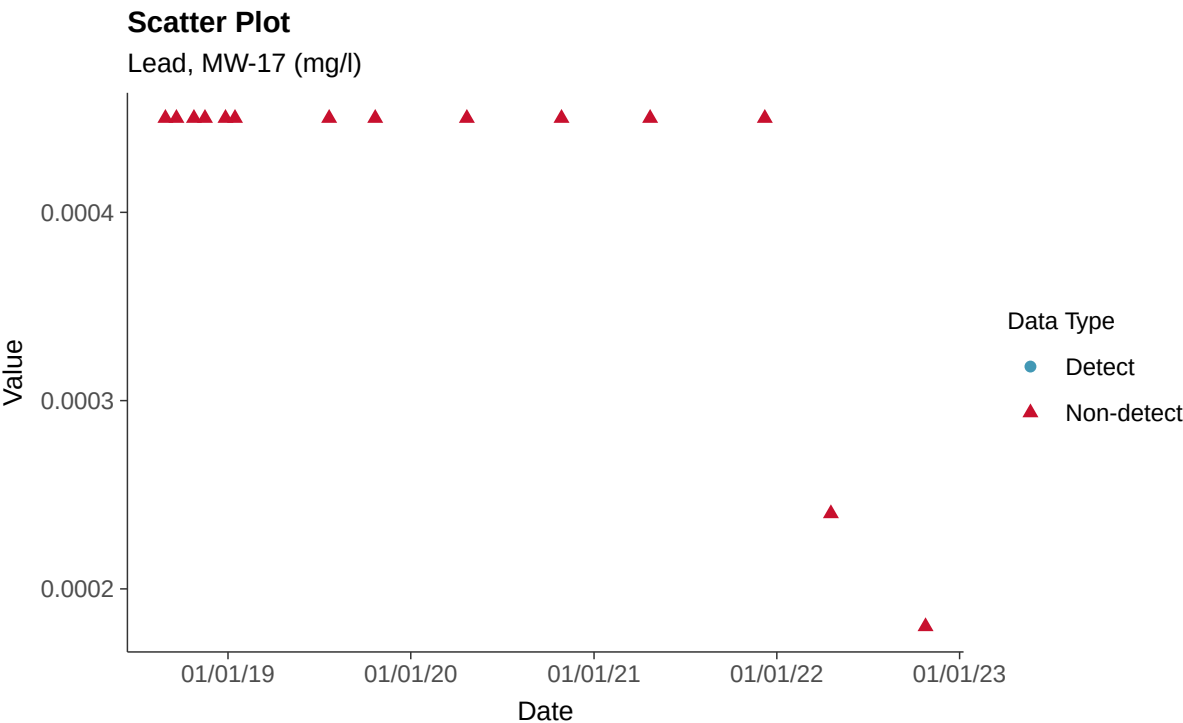
Fluoride (App IV), MW-17 (mg/l)

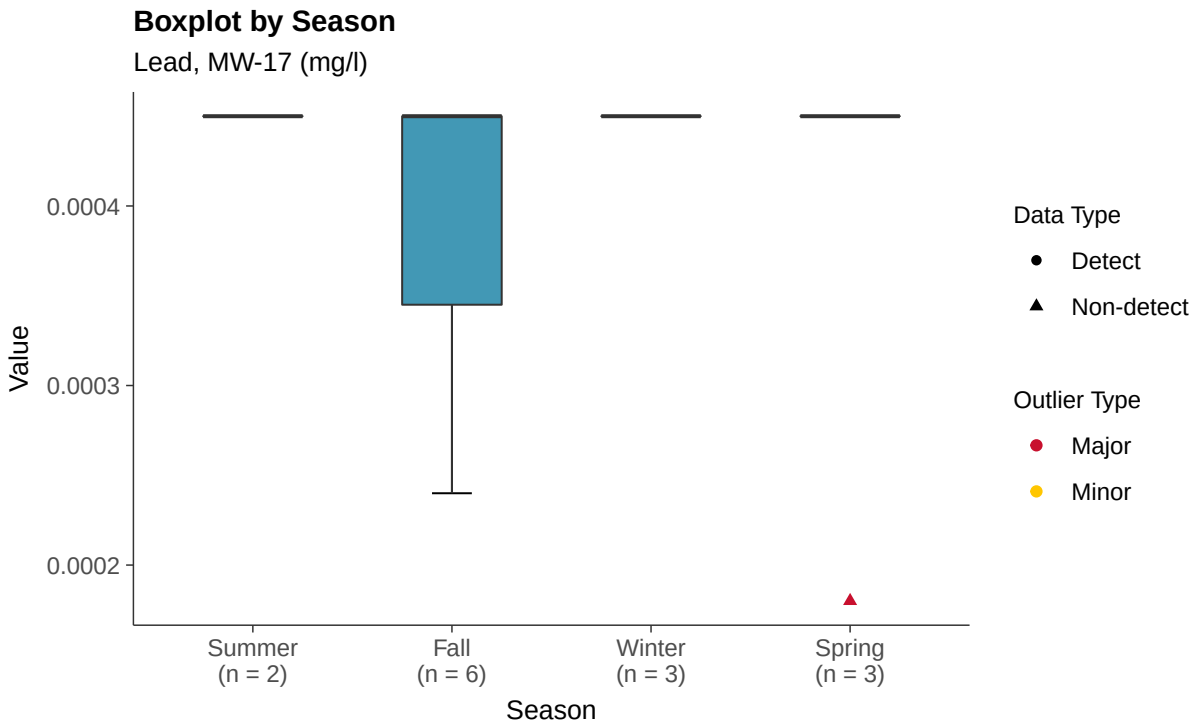
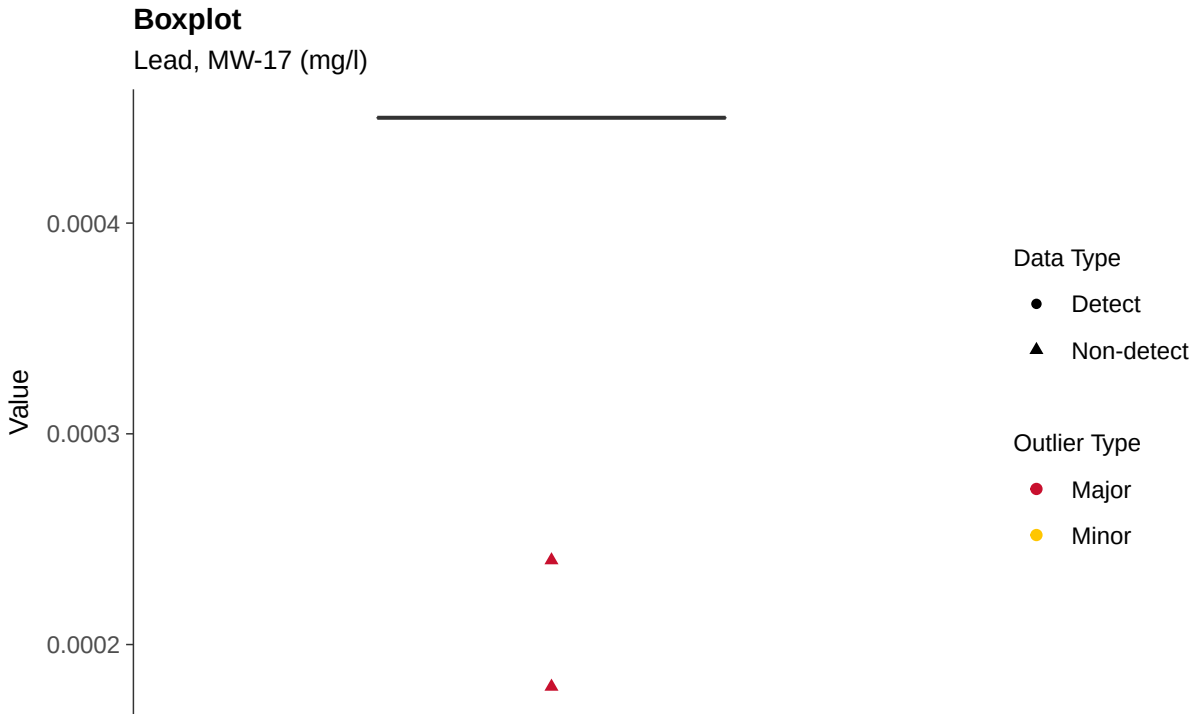


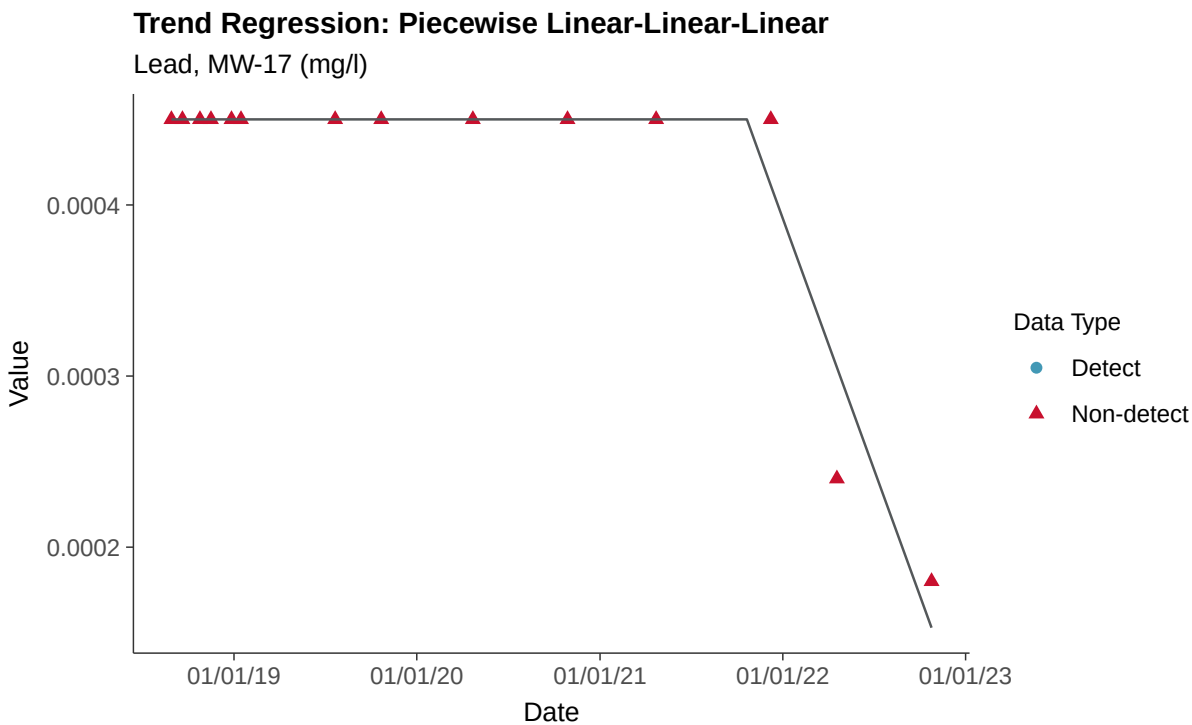
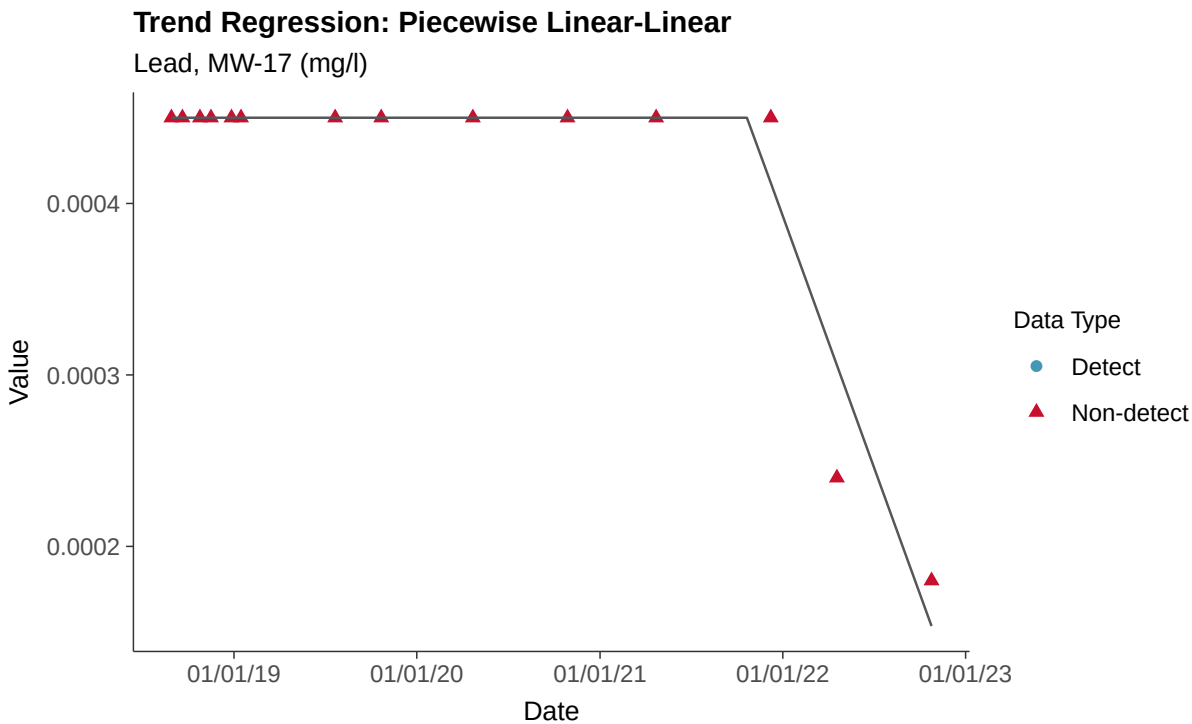


Appendix IV: Lead, MW-17

ID: 3_2_117



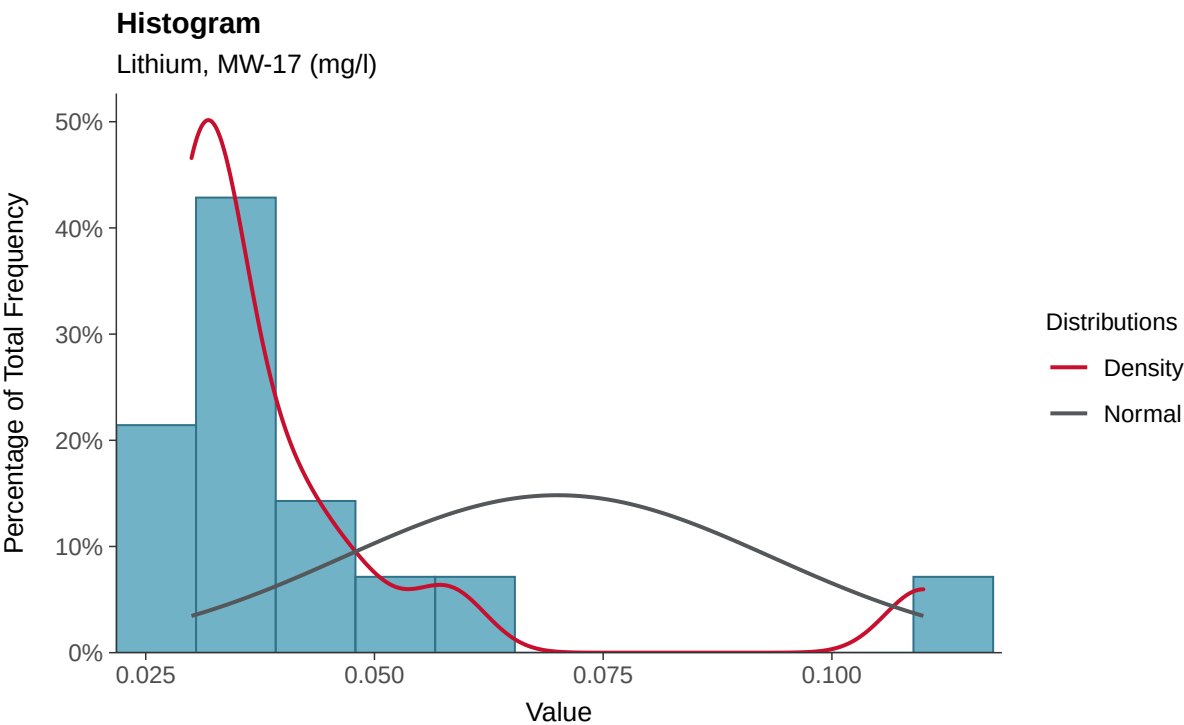
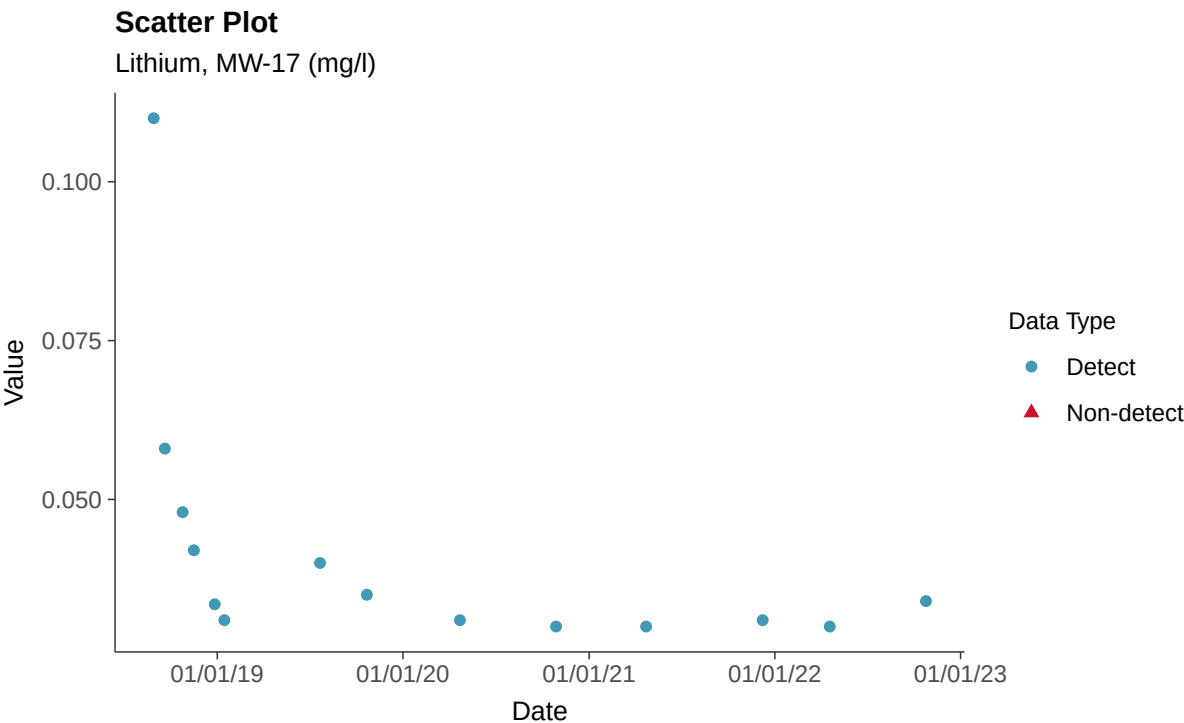






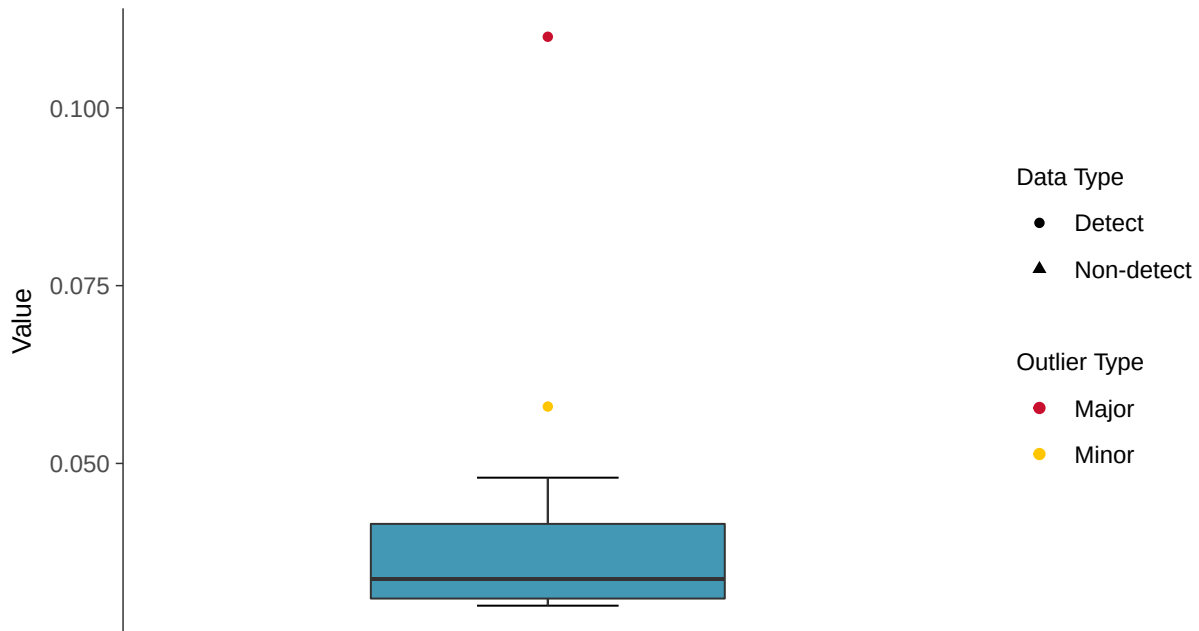
Appendix IV: Lithium, MW-17

ID: 3_2_118



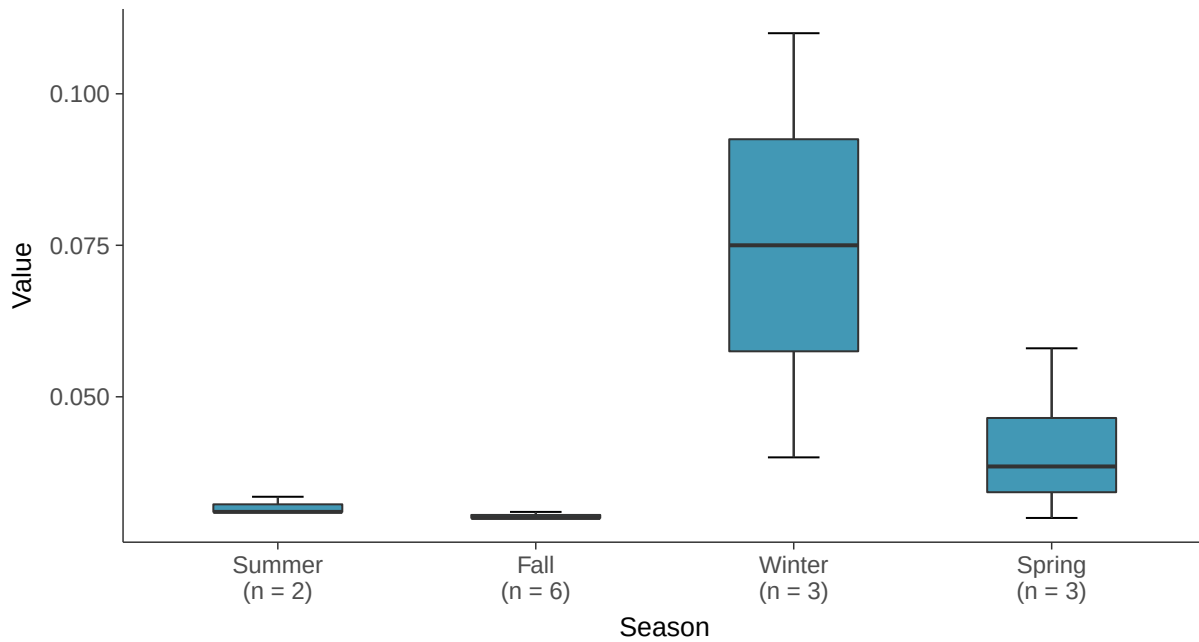
Boxplot

Lithium, MW-17 (mg/l)



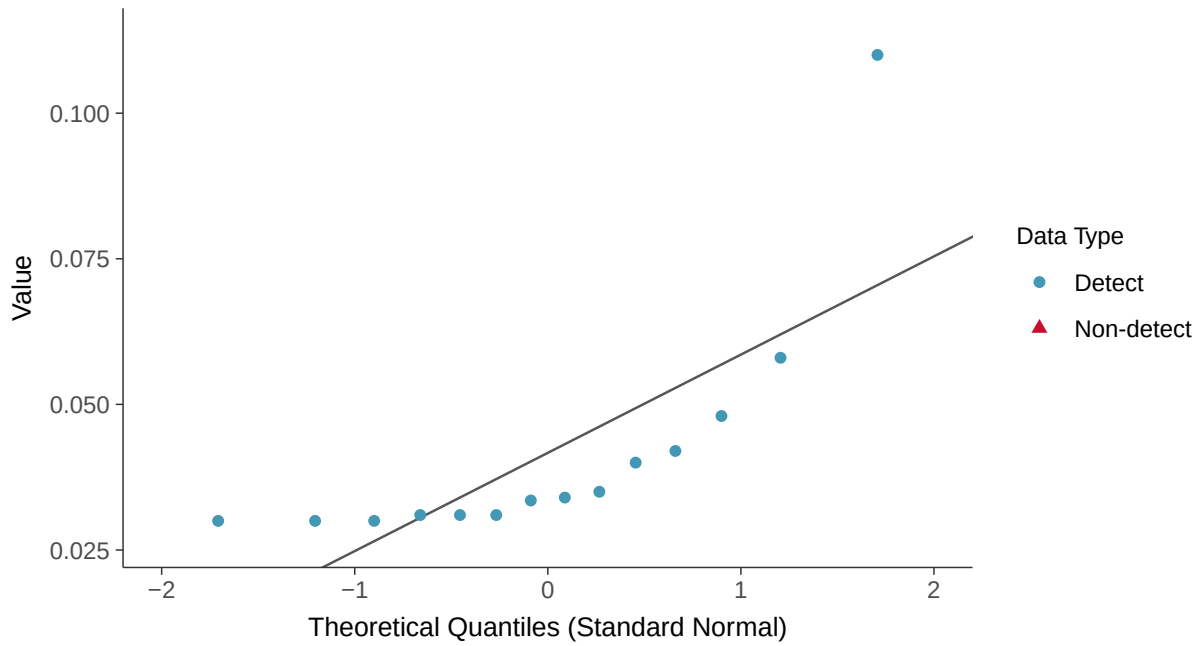
Boxplot by Season

Lithium, MW-17 (mg/l)



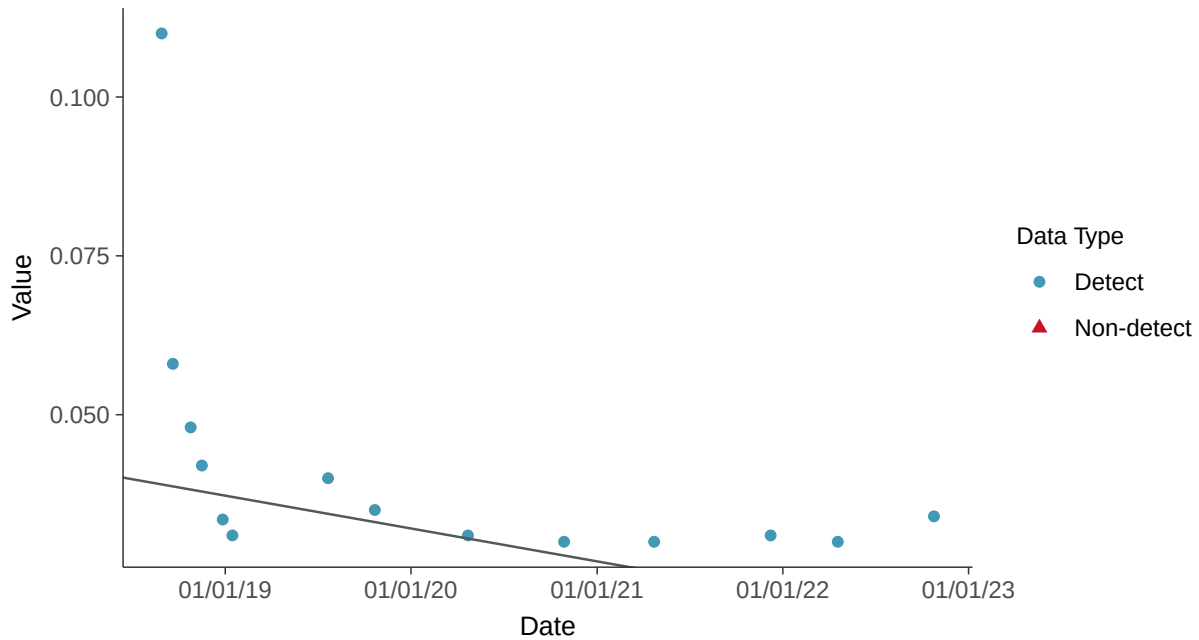
Normal Q-Q plot

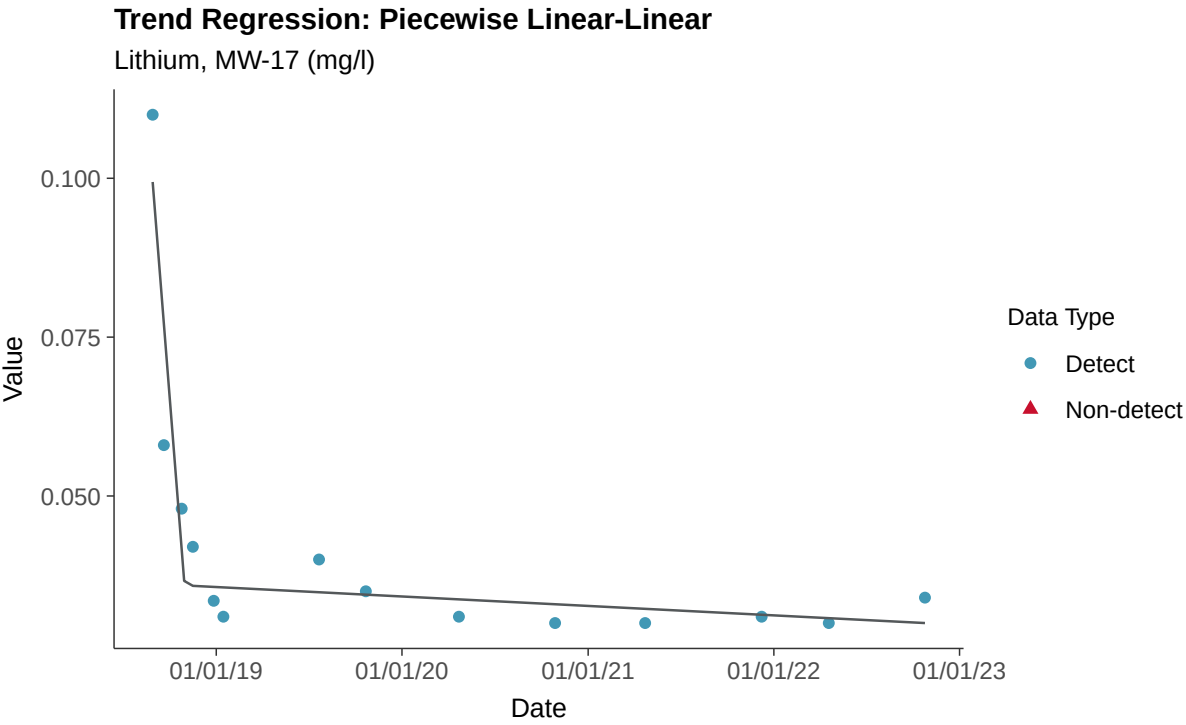
Lithium, MW-17 (mg/l)



Trend Regression: Mann-Kendall/Theil-Sen Estimate

Lithium, MW-17 (mg/l)

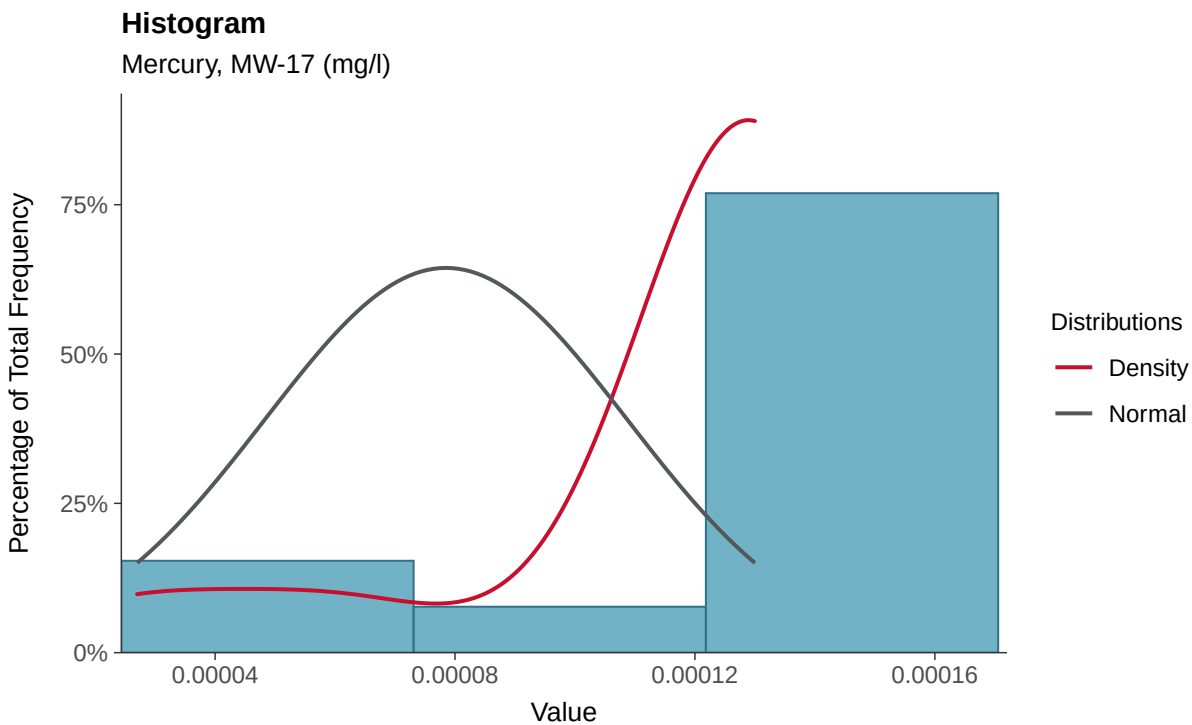
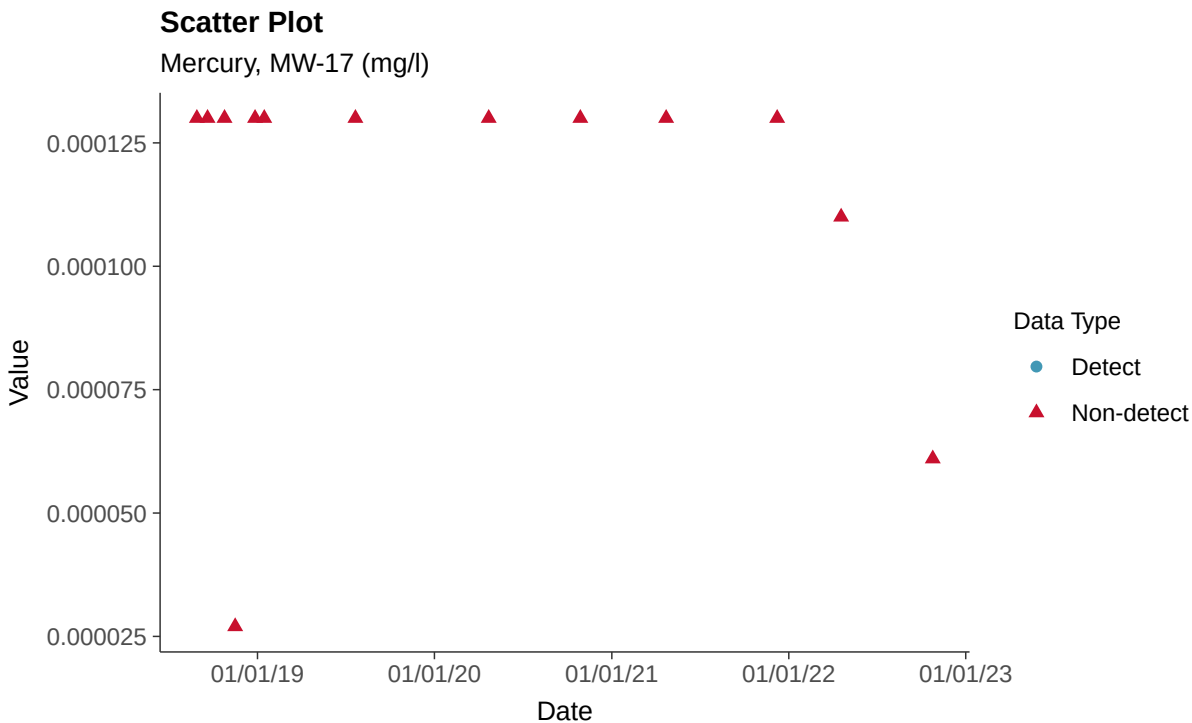


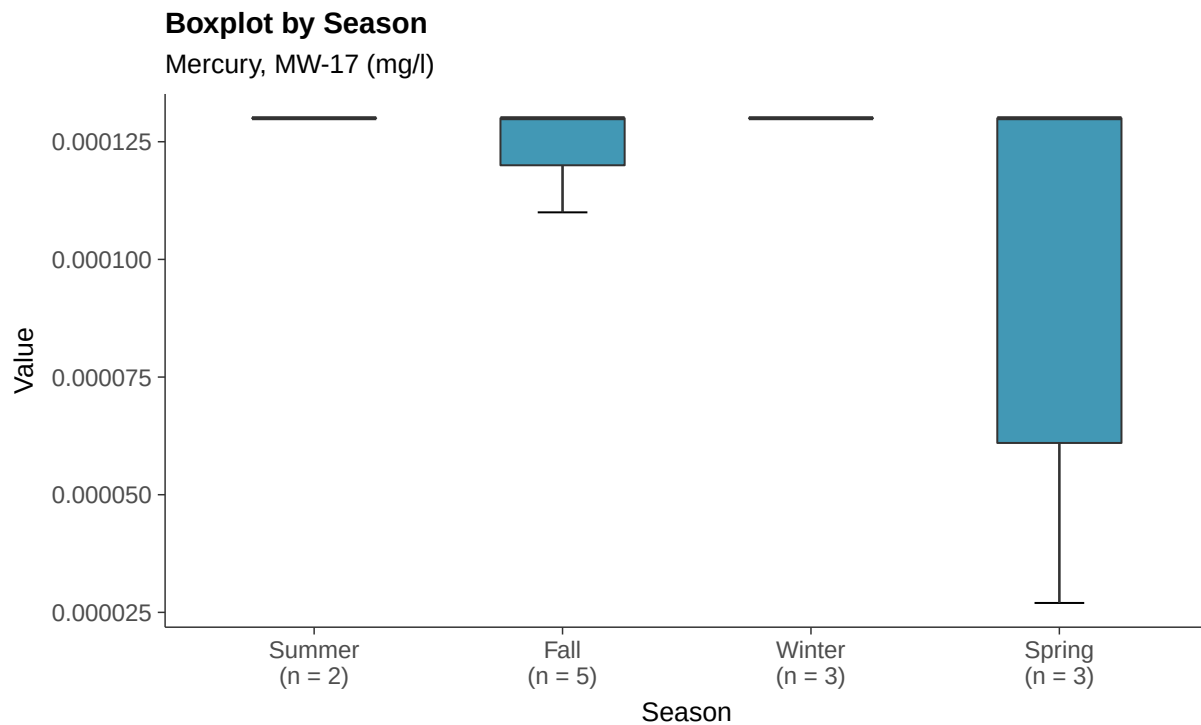
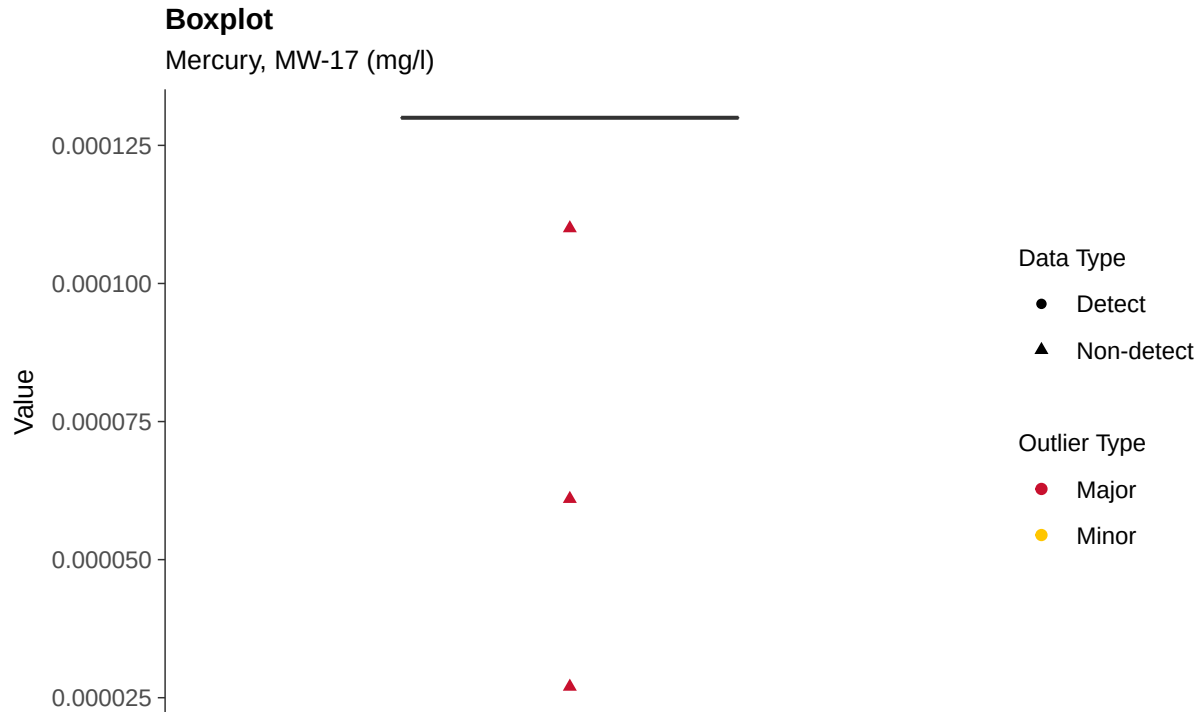


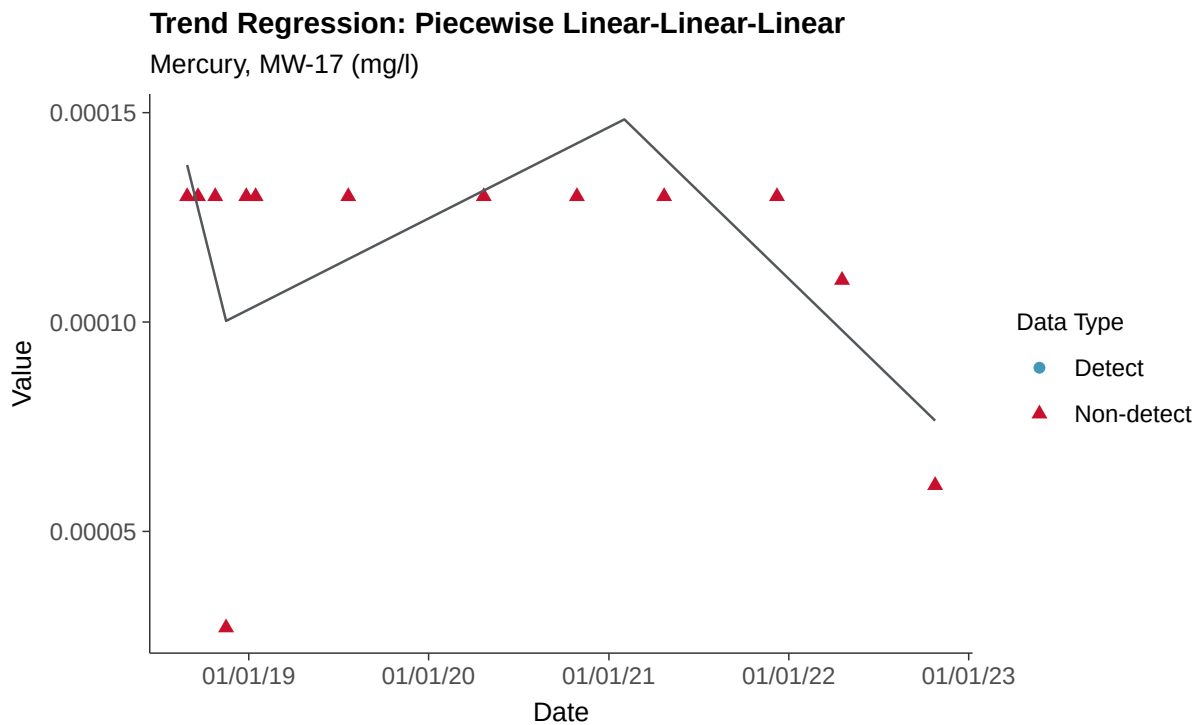
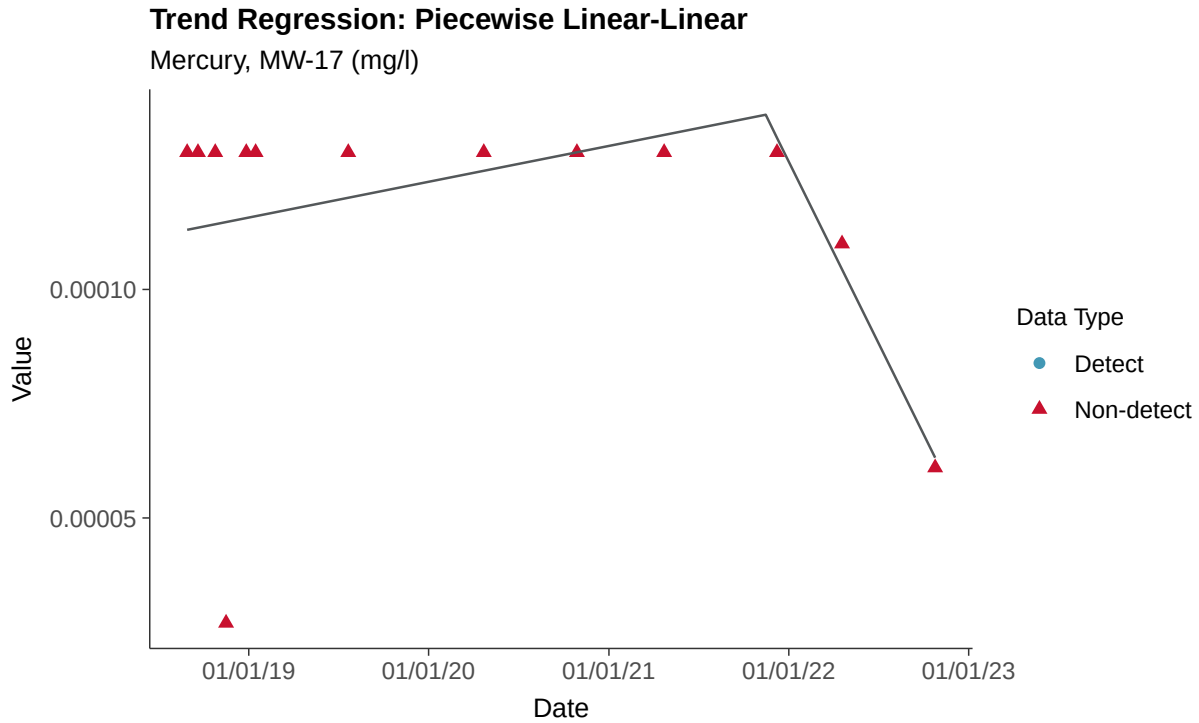


Appendix IV: Mercury, MW-17

ID: 3_2_120

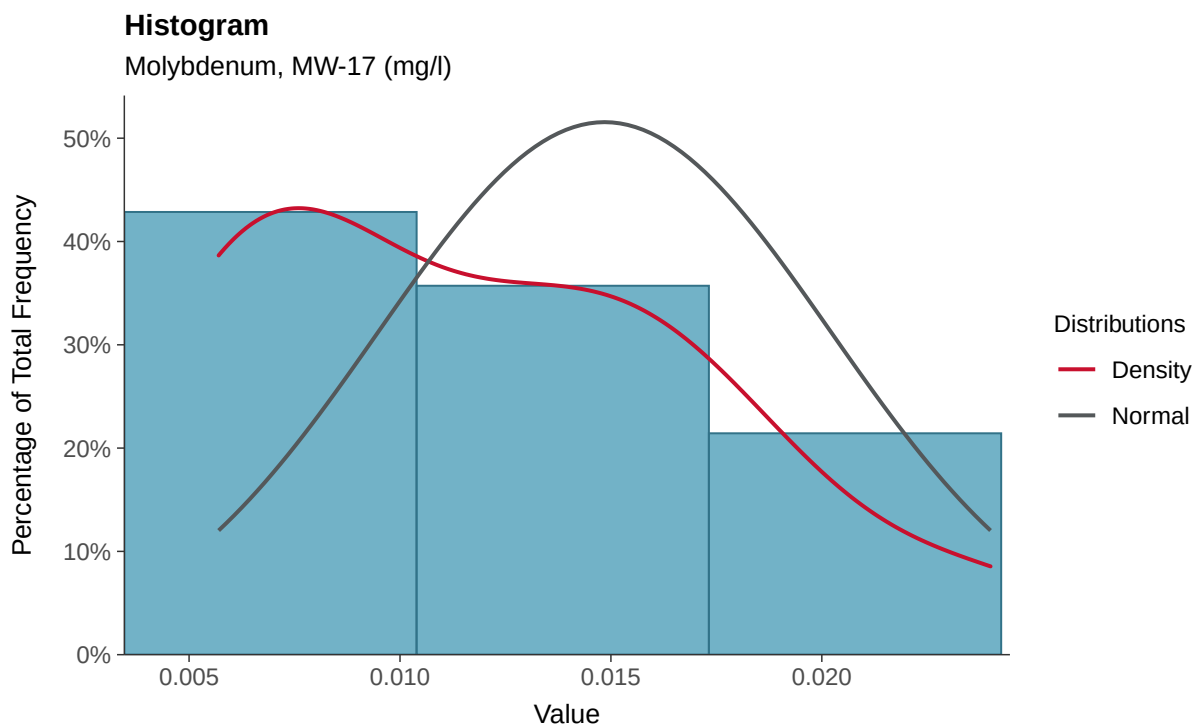
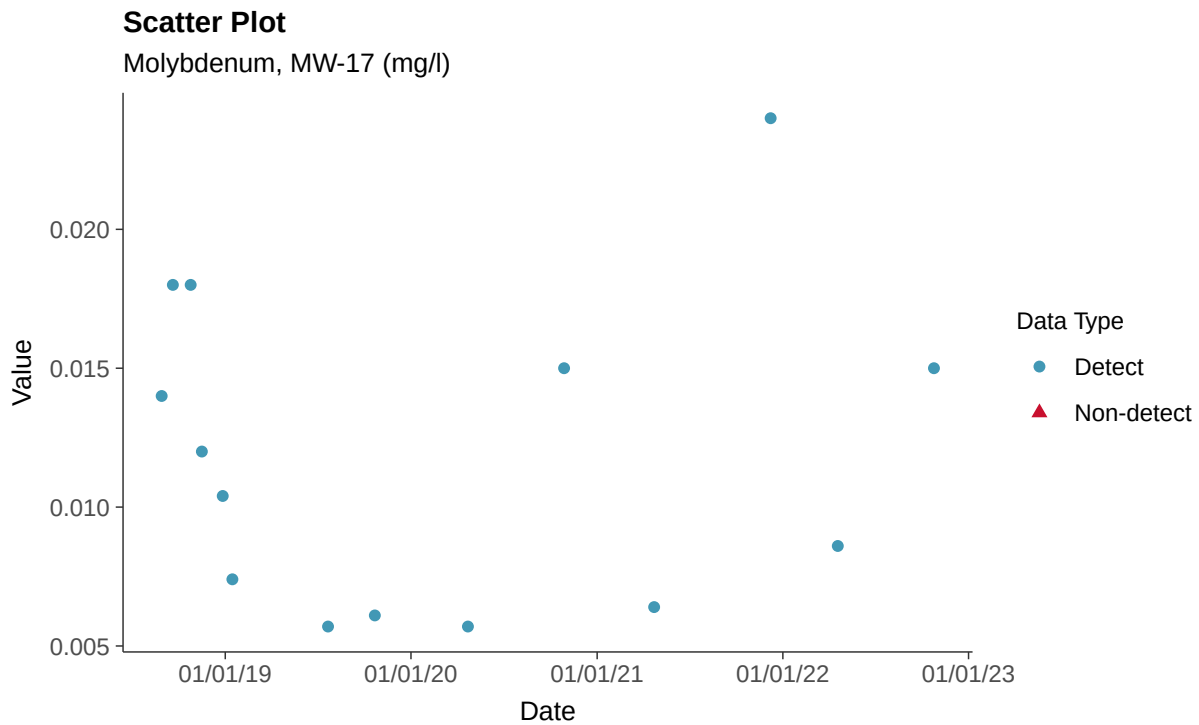


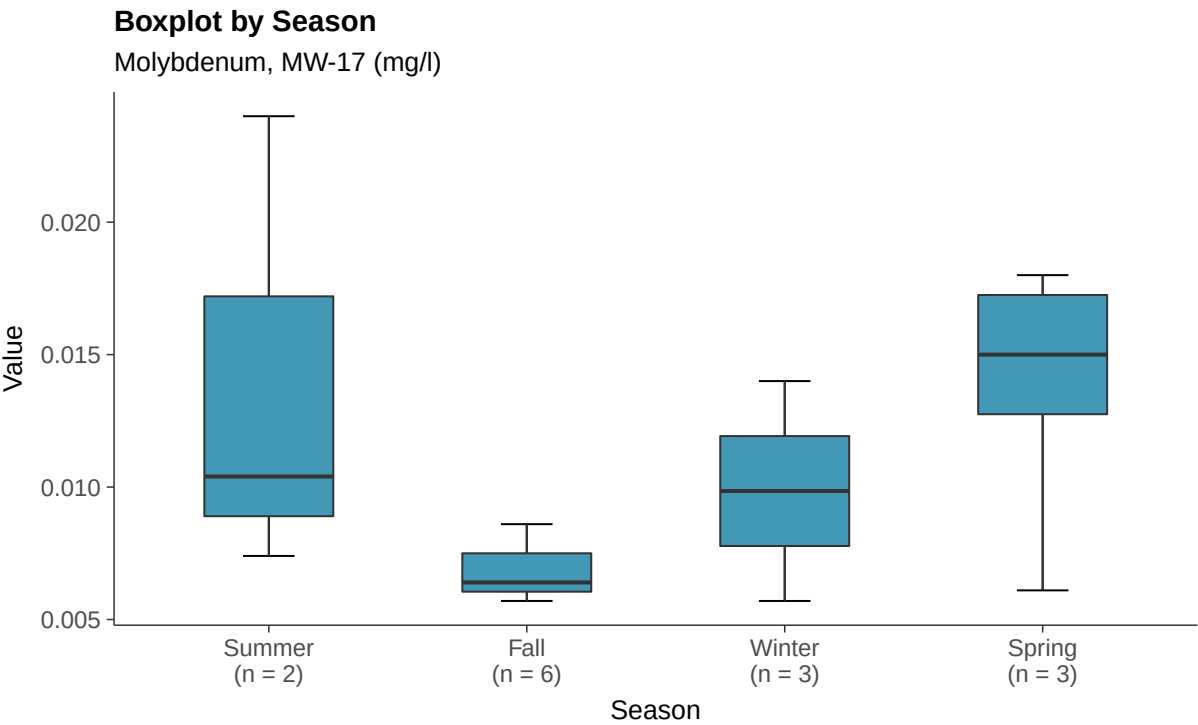
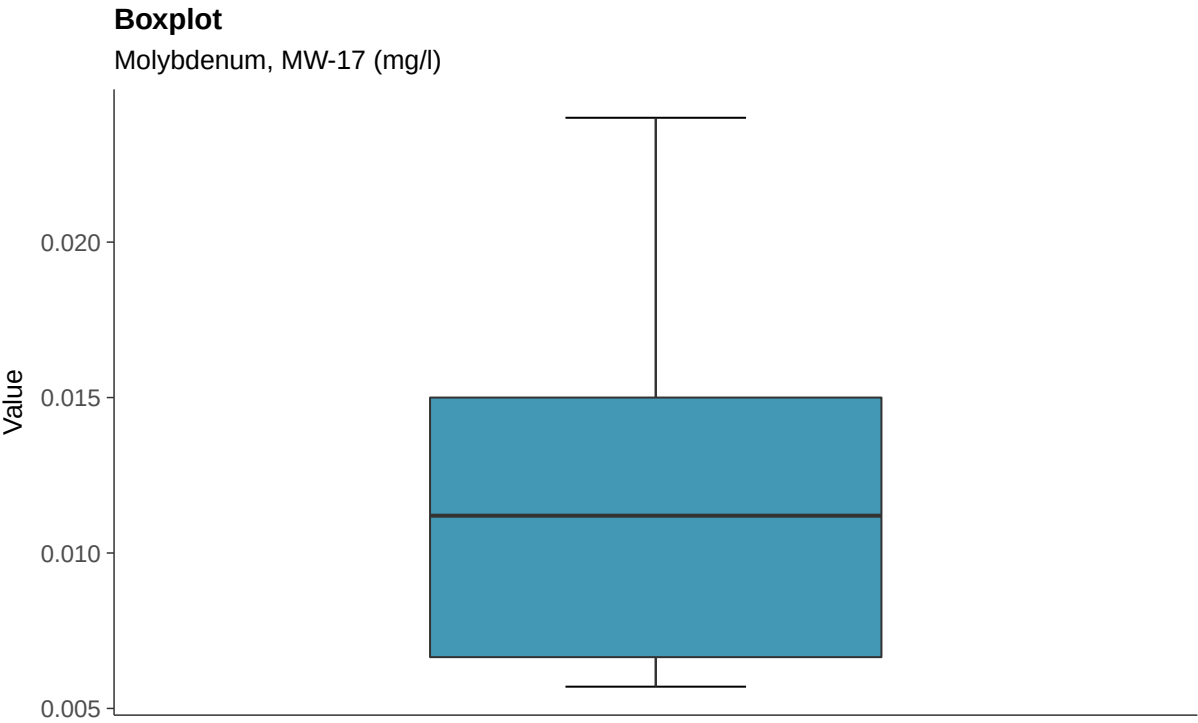




Appendix IV: Molybdenum, MW-17

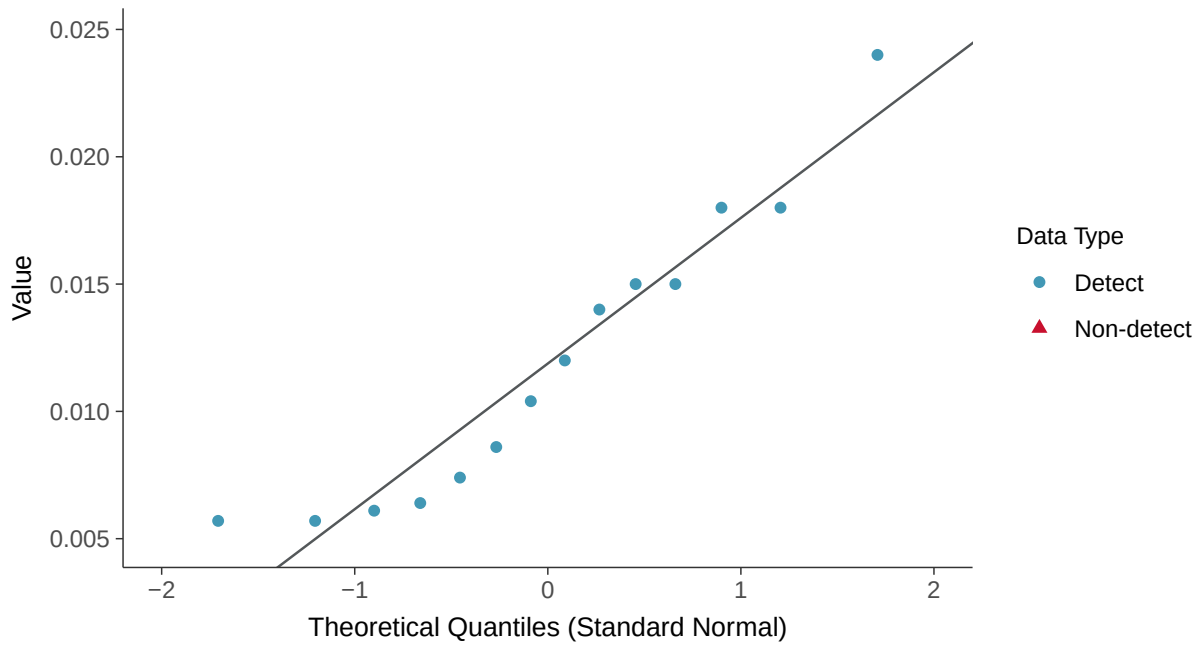
ID: 3_2_121





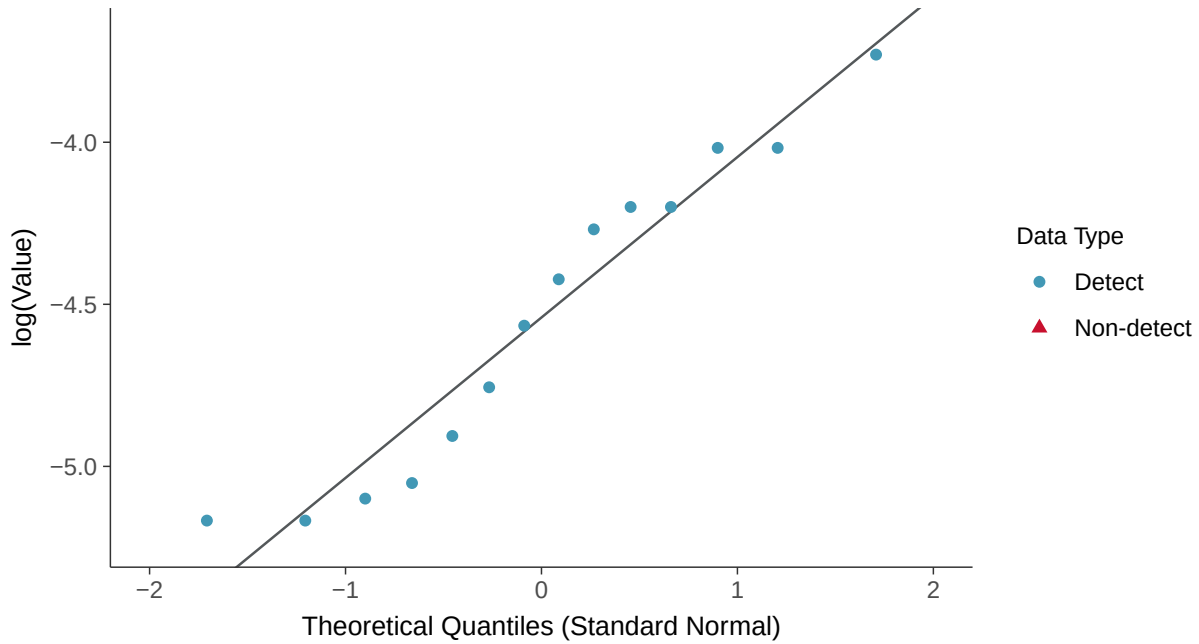
Normal Q-Q plot

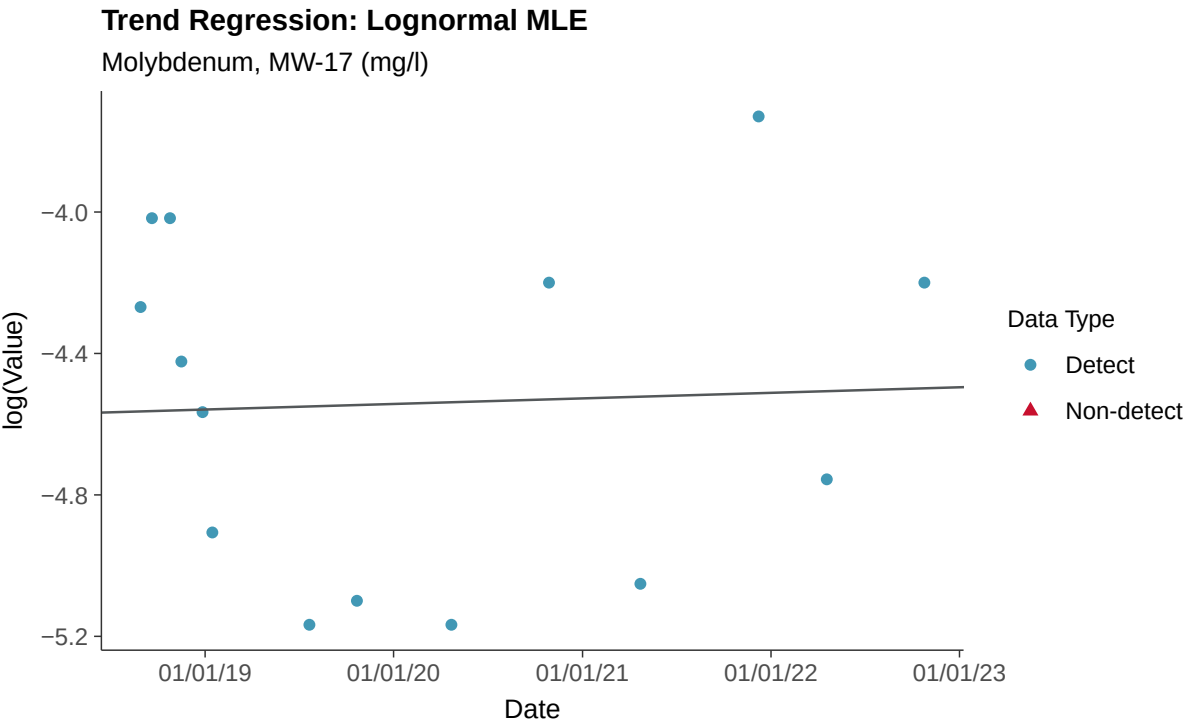
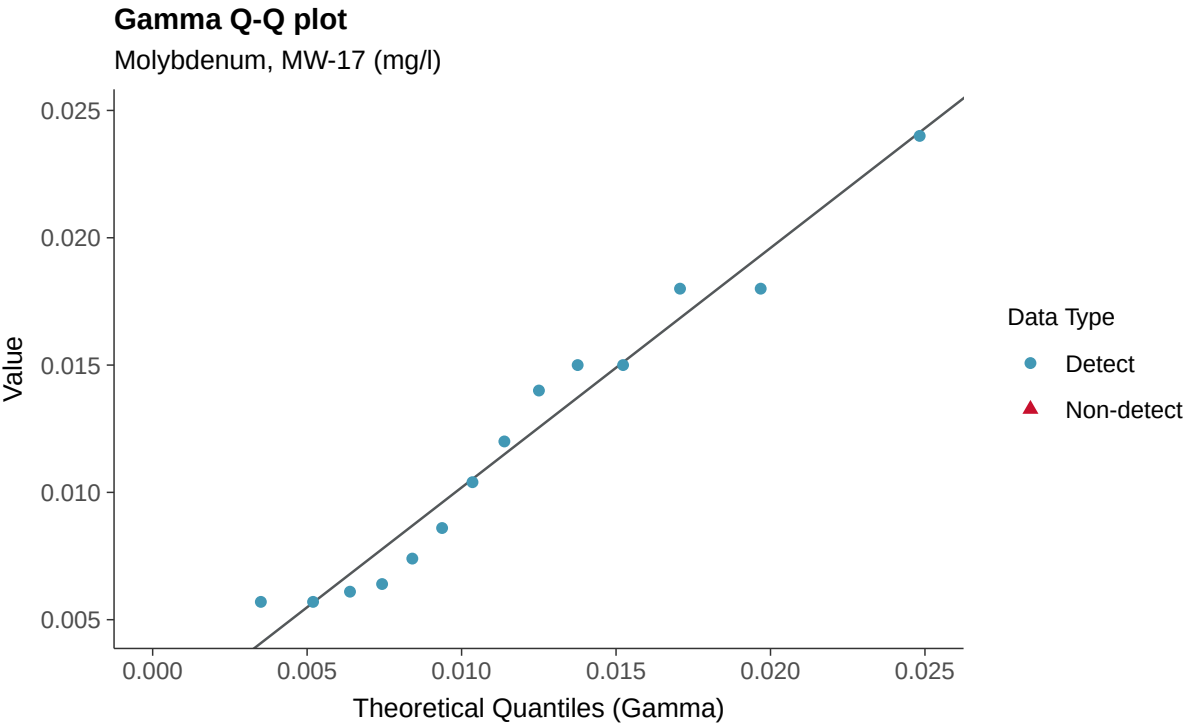
Molybdenum, MW-17 (mg/l)



Lognormal Q-Q plot

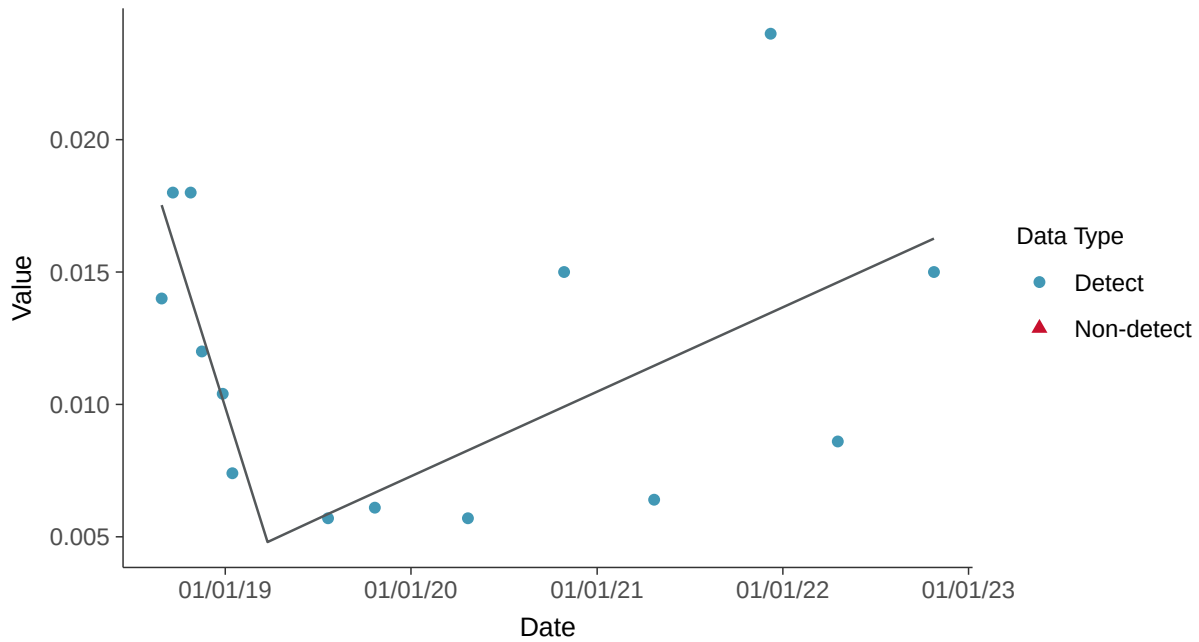
Molybdenum, MW-17 (mg/l)





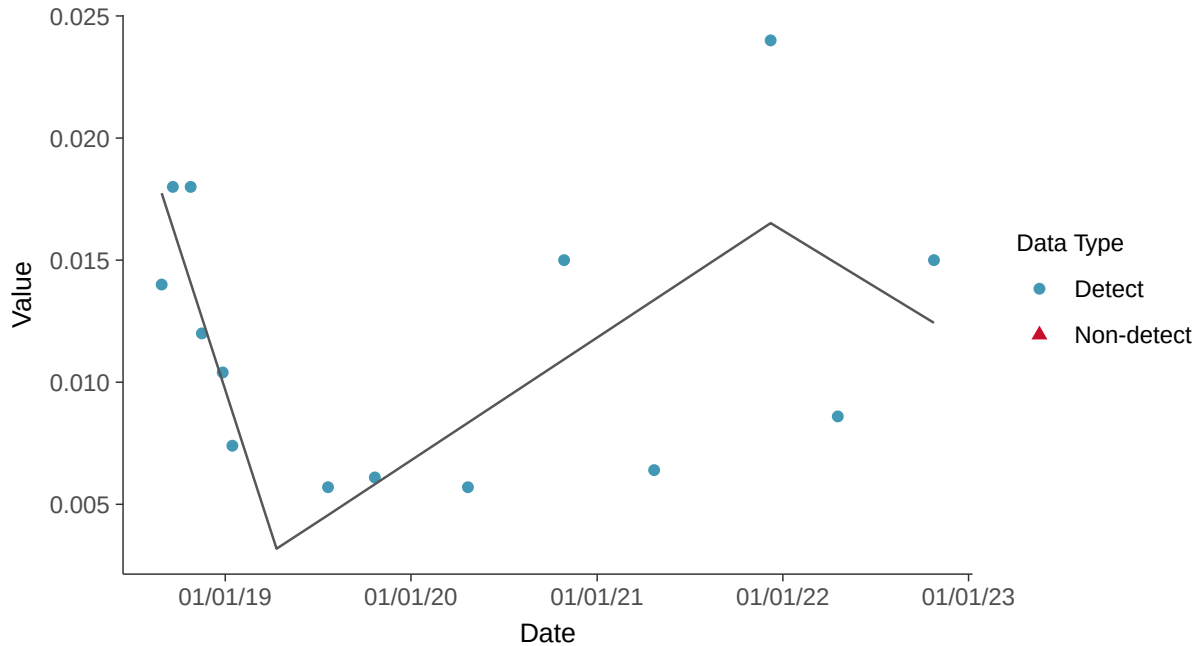
Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-17 (mg/l)



Trend Regression: Piecewise Linear-Linear-Linear

Molybdenum, MW-17 (mg/l)

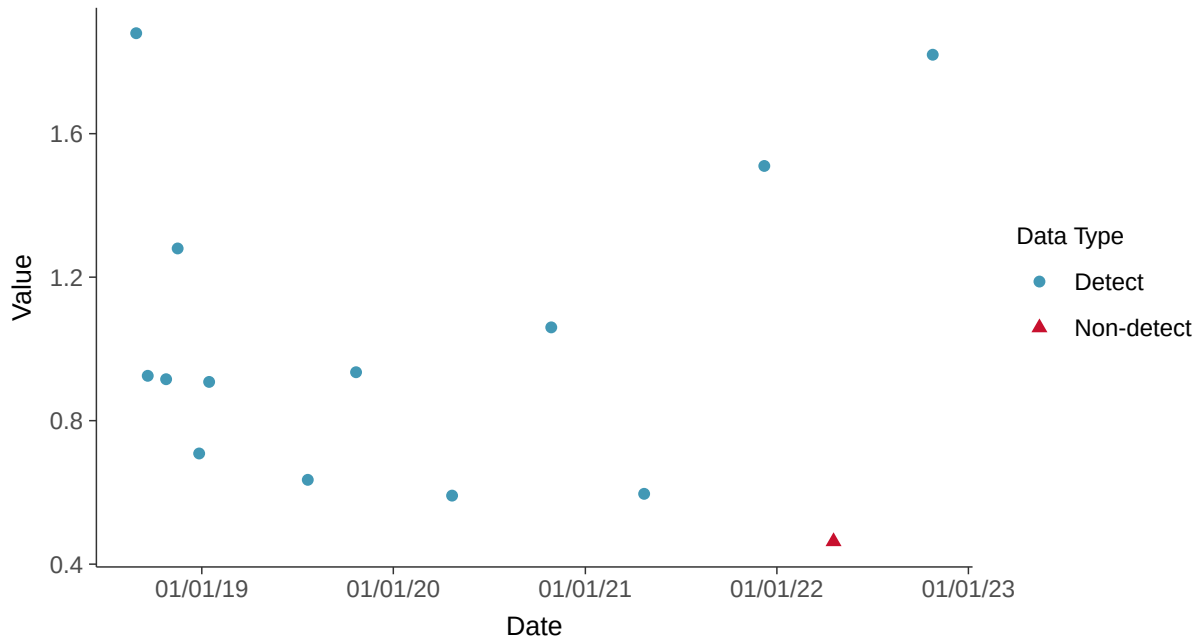


Appendix IV: Radium-226+228, MW-17

ID: 3_2_127

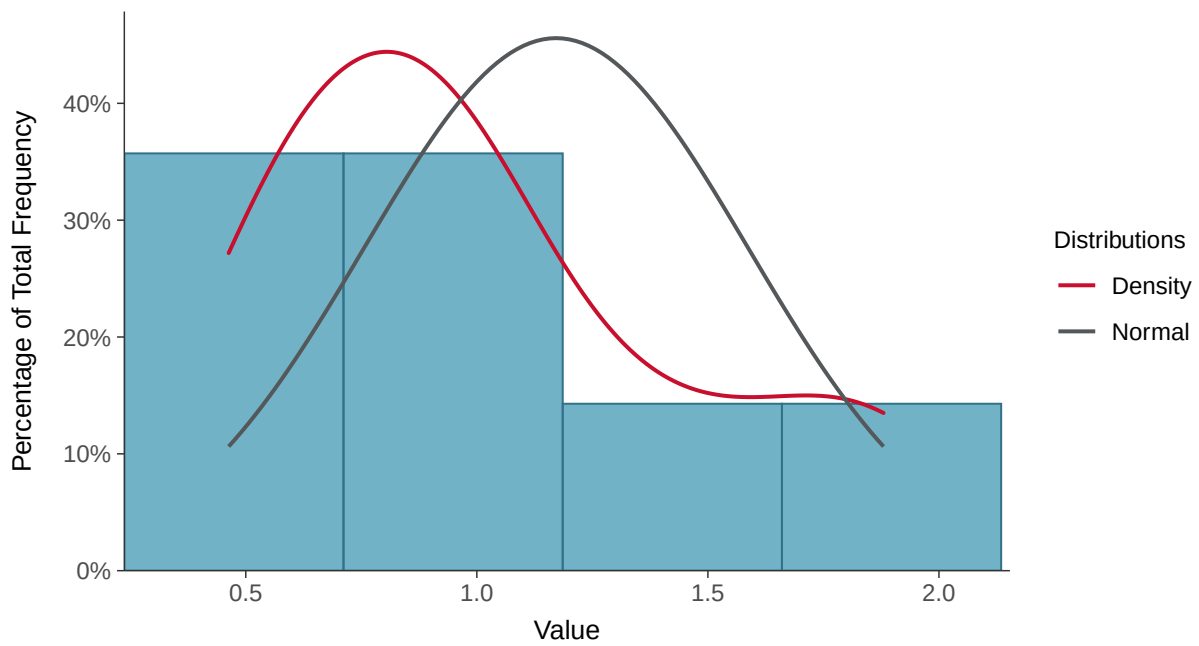
Scatter Plot

Radium-226+228, MW-17 (pci/l)



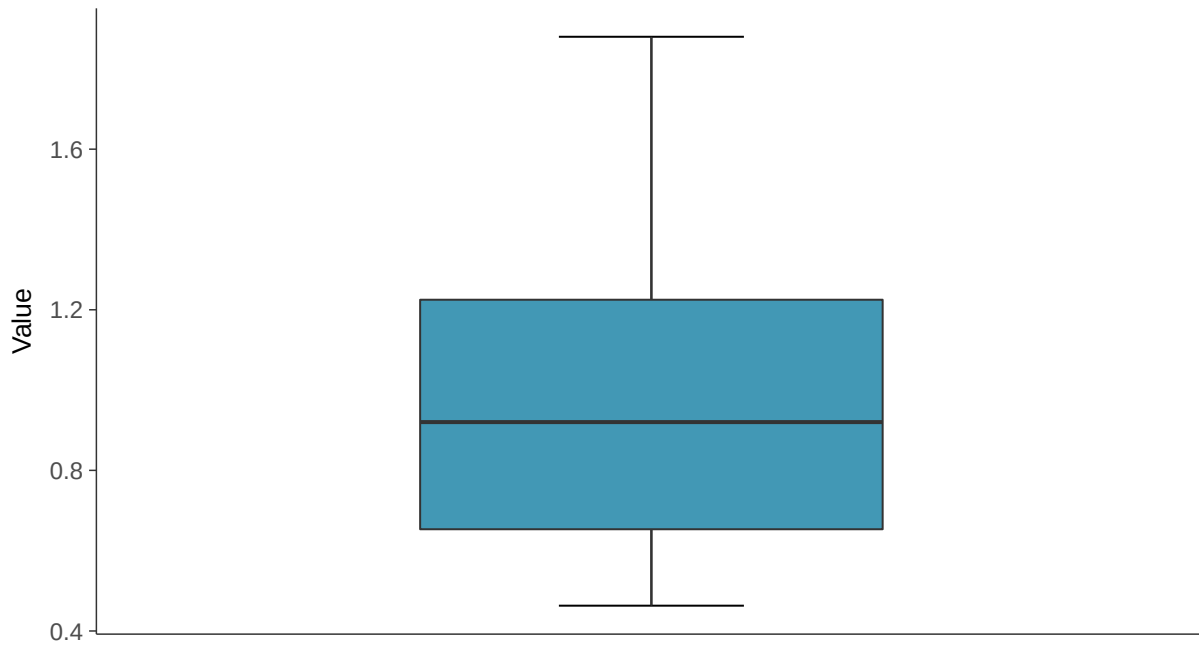
Histogram

Radium-226+228, MW-17 (pci/l)



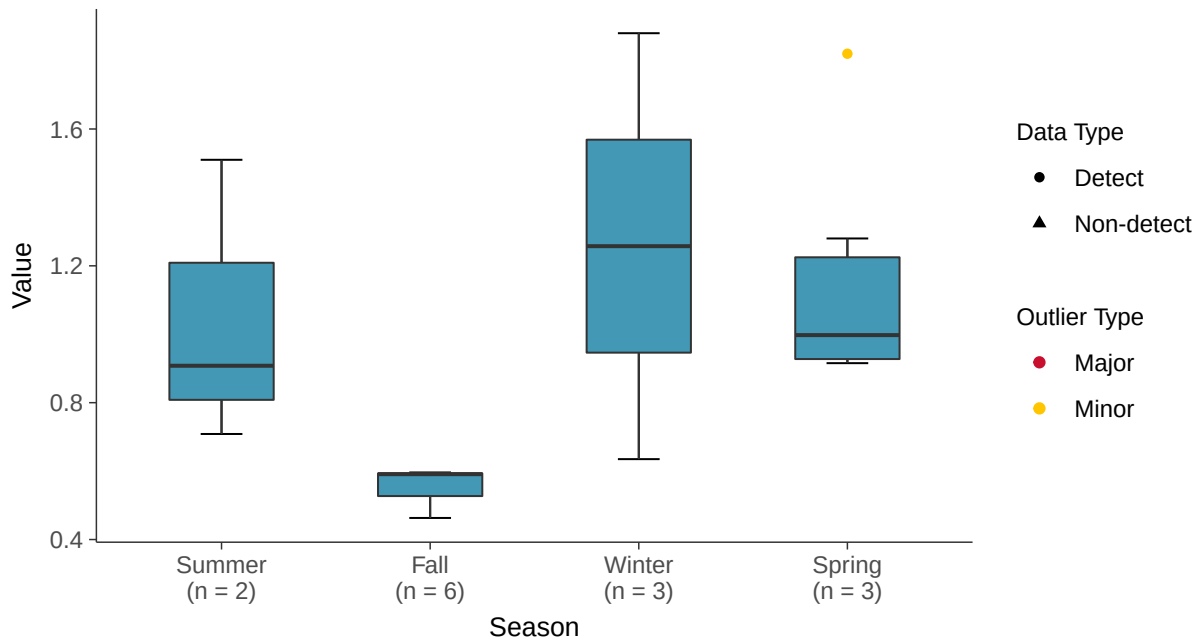
Boxplot

Radium-226+228, MW-17 (pci/l)



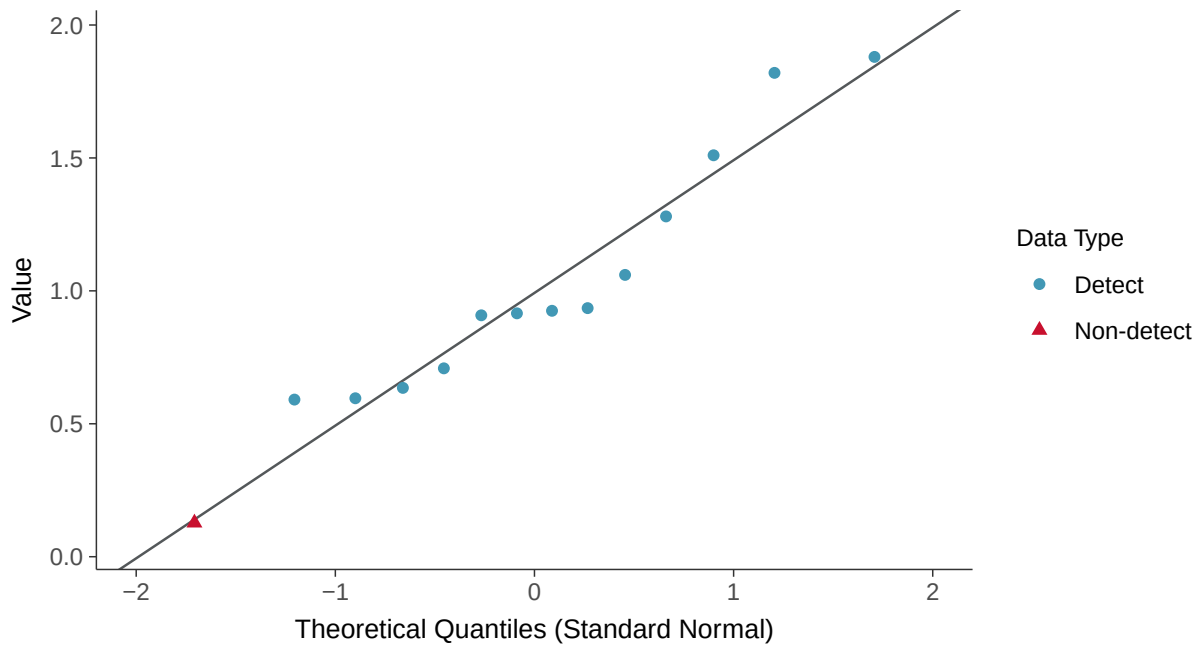
Boxplot by Season

Radium-226+228, MW-17 (pci/l)



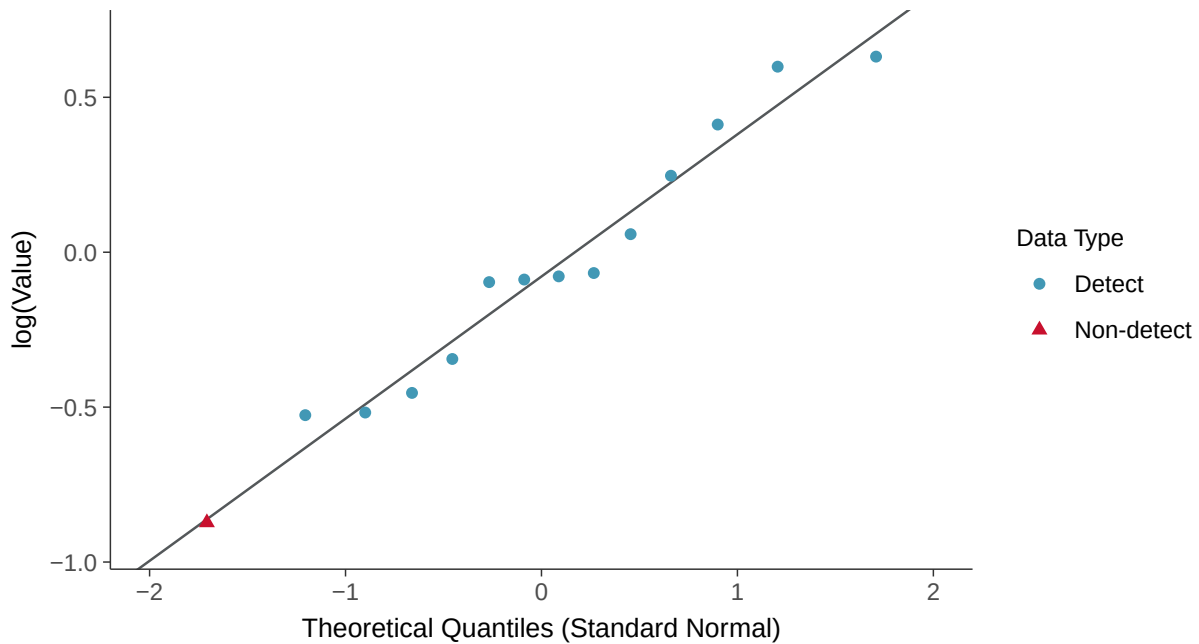
Normal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-17 (pci/l)



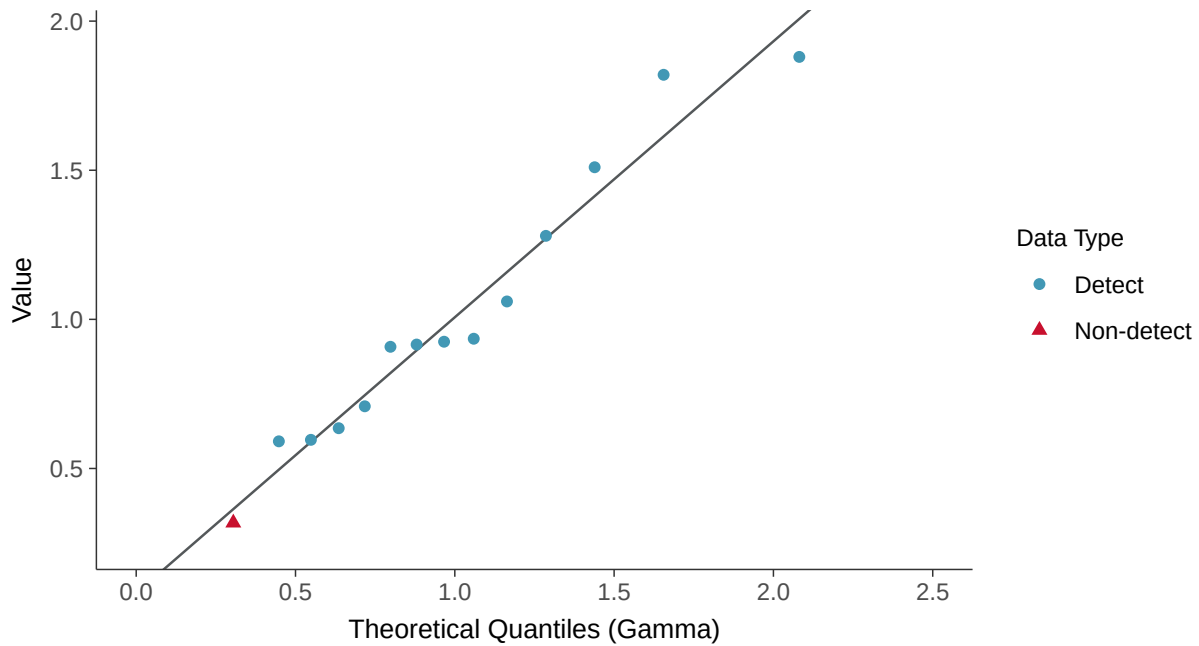
Lognormal Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-17 (pci/l)



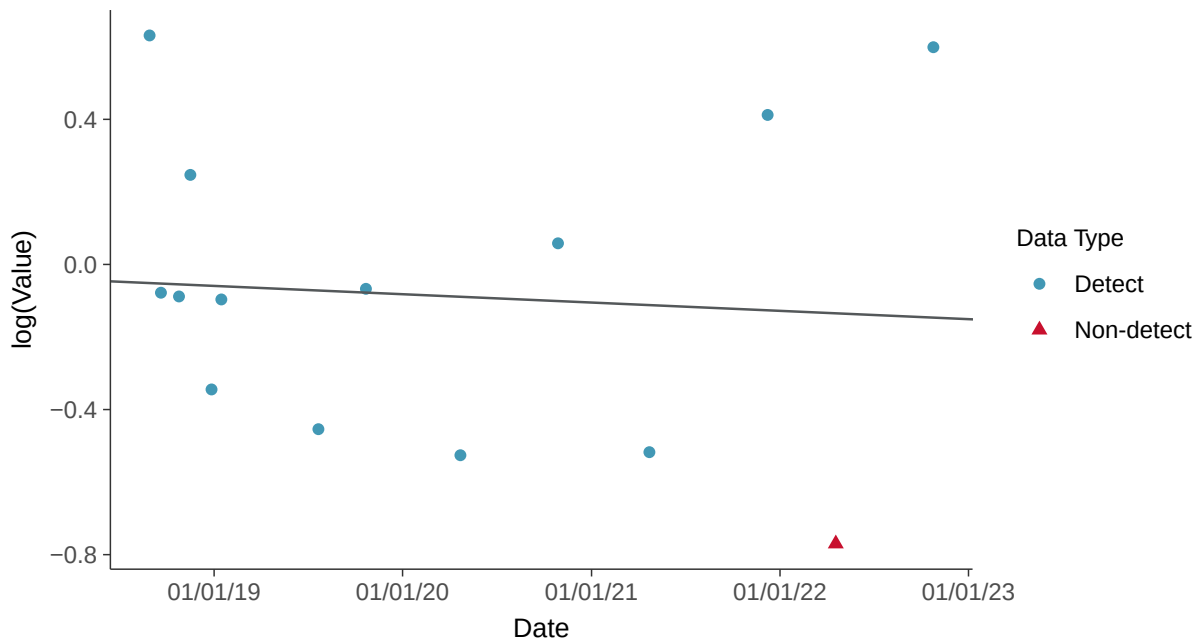
Gamma Q-Q plot using ROS Imputed Estimates

Radium-226+228, MW-17 (pci/l)



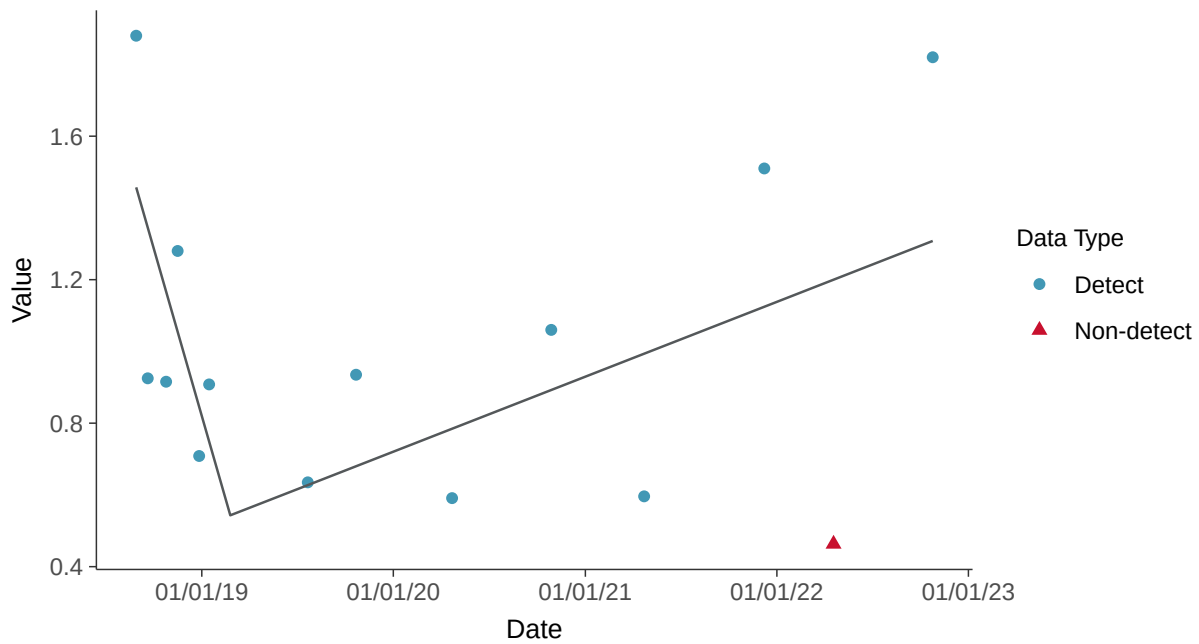
Trend Regression: Lognormal MLE

Radium-226+228, MW-17 (pci/l)



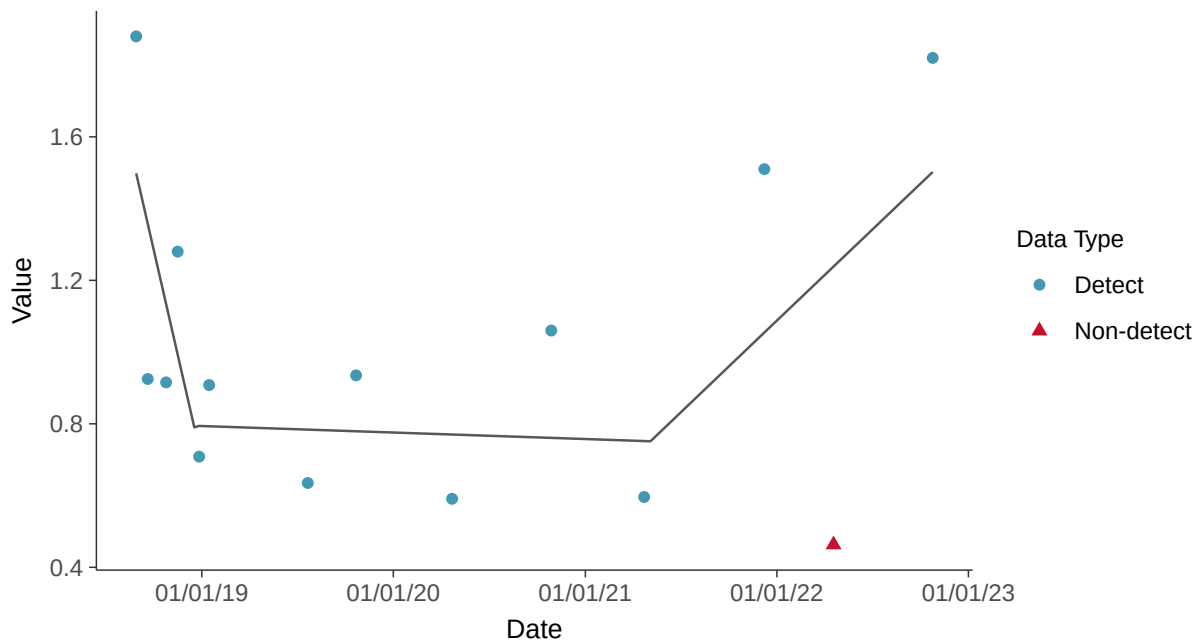
Trend Regression: Piecewise Linear-Linear

Radium-226+228, MW-17 (pci/l)



Trend Regression: Piecewise Linear-Linear-Linear

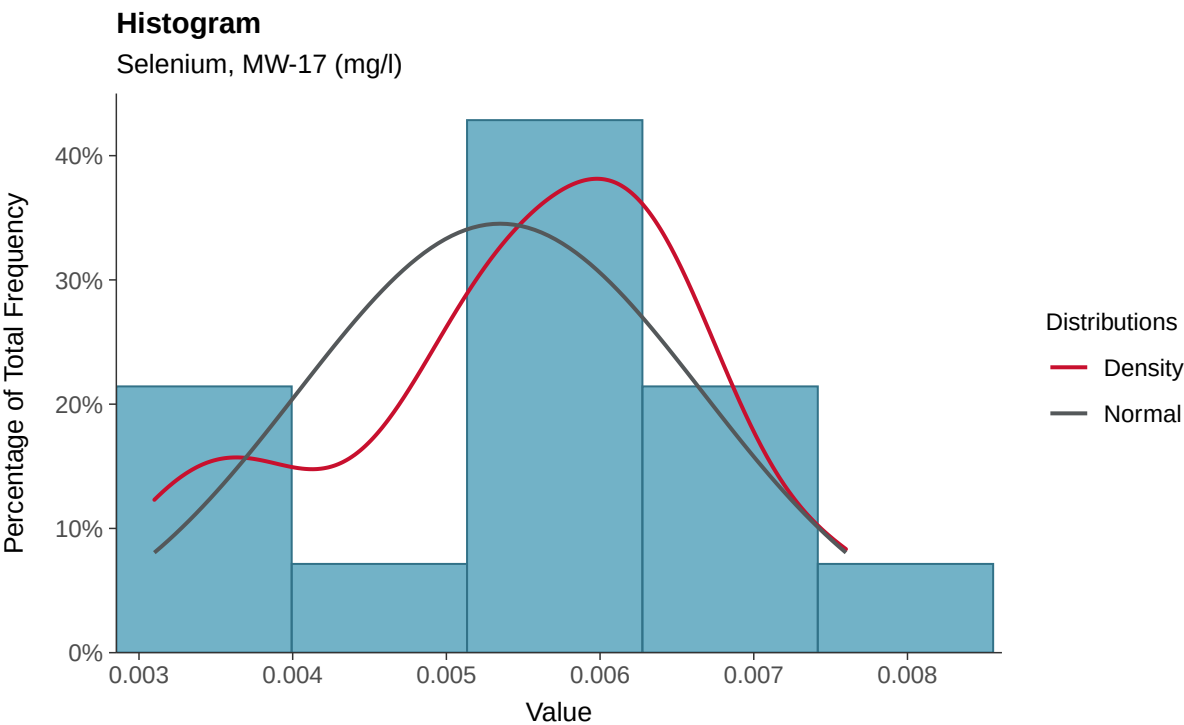
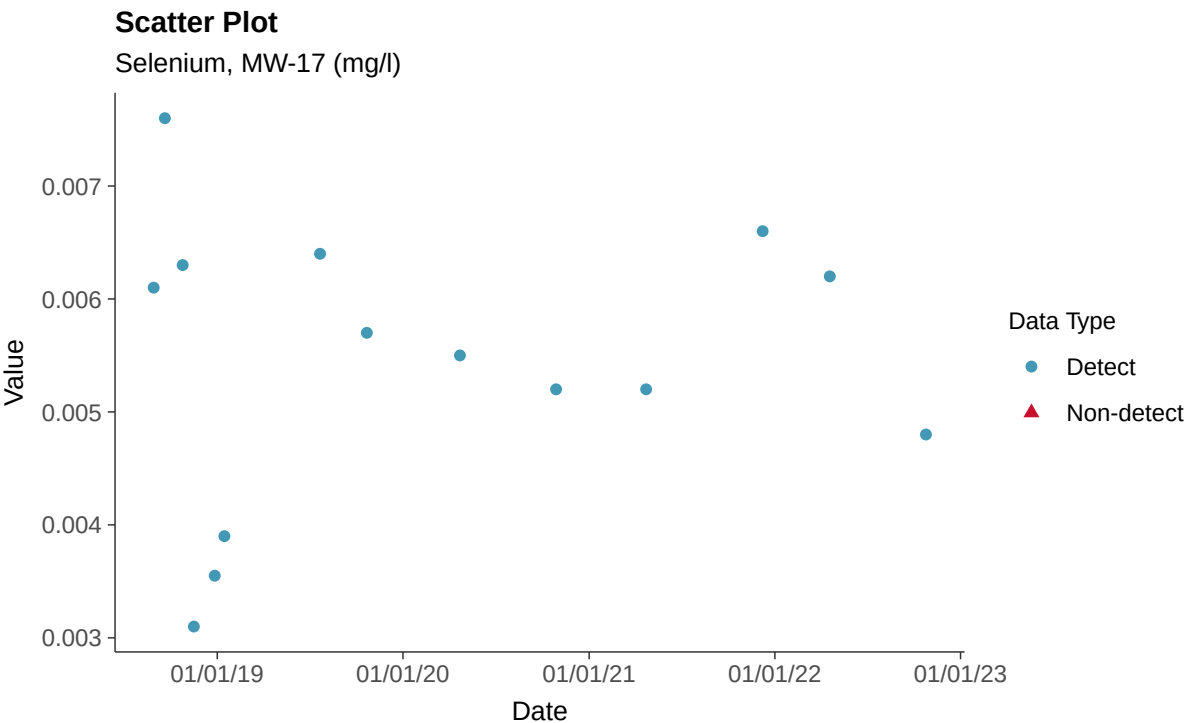
Radium-226+228, MW-17 (pci/l)

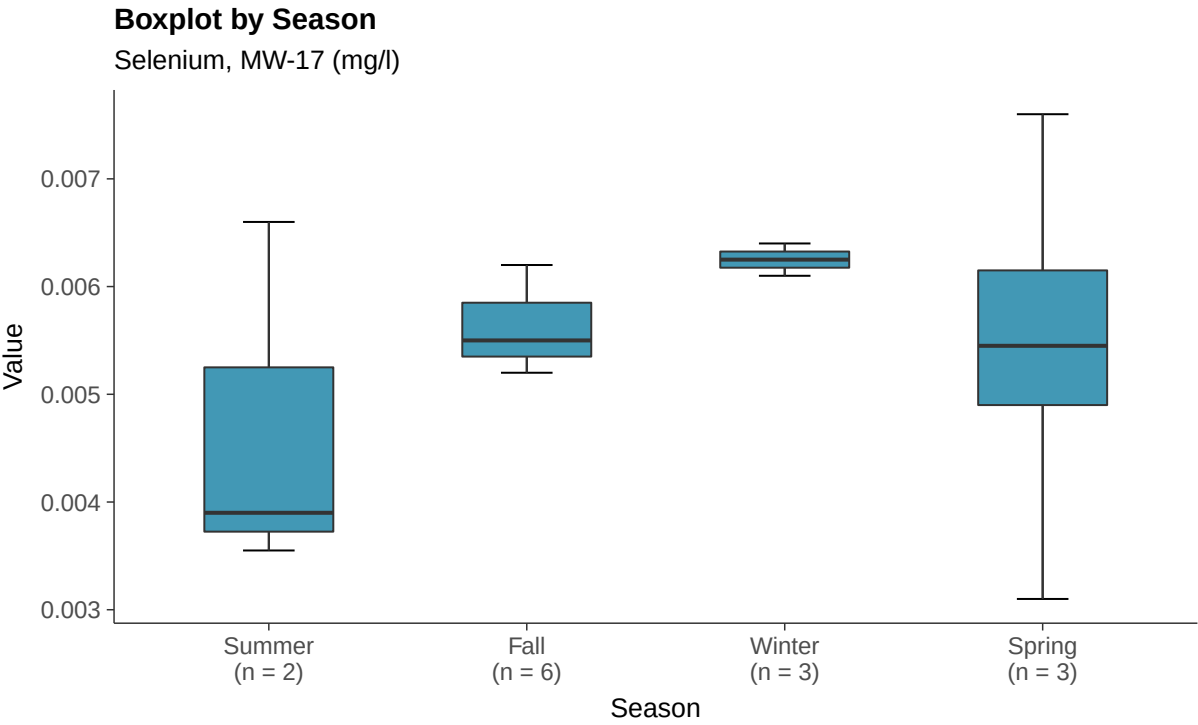
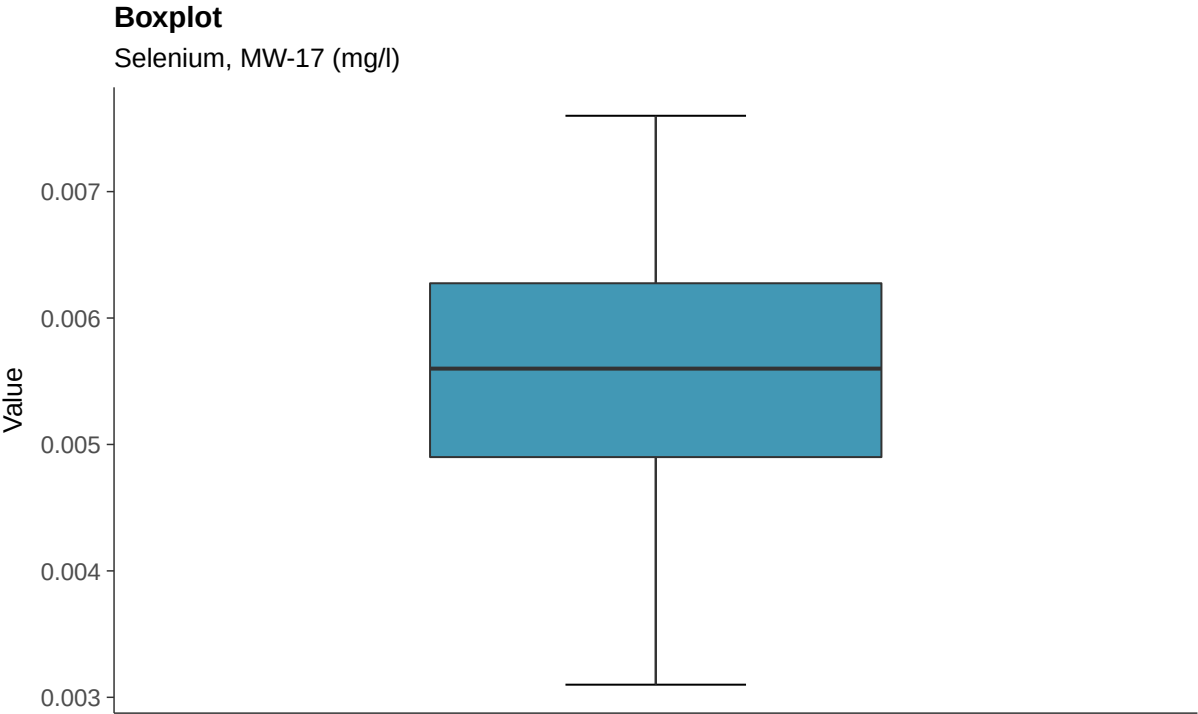




Appendix IV: Selenium, MW-17

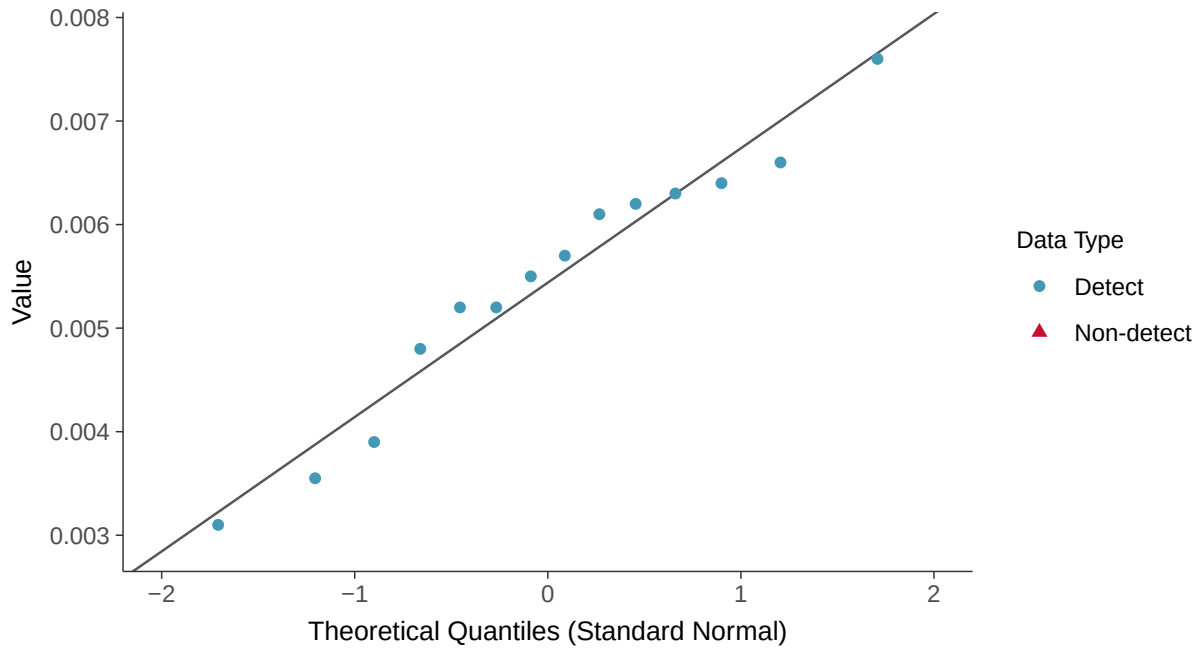
ID: 3_2_129





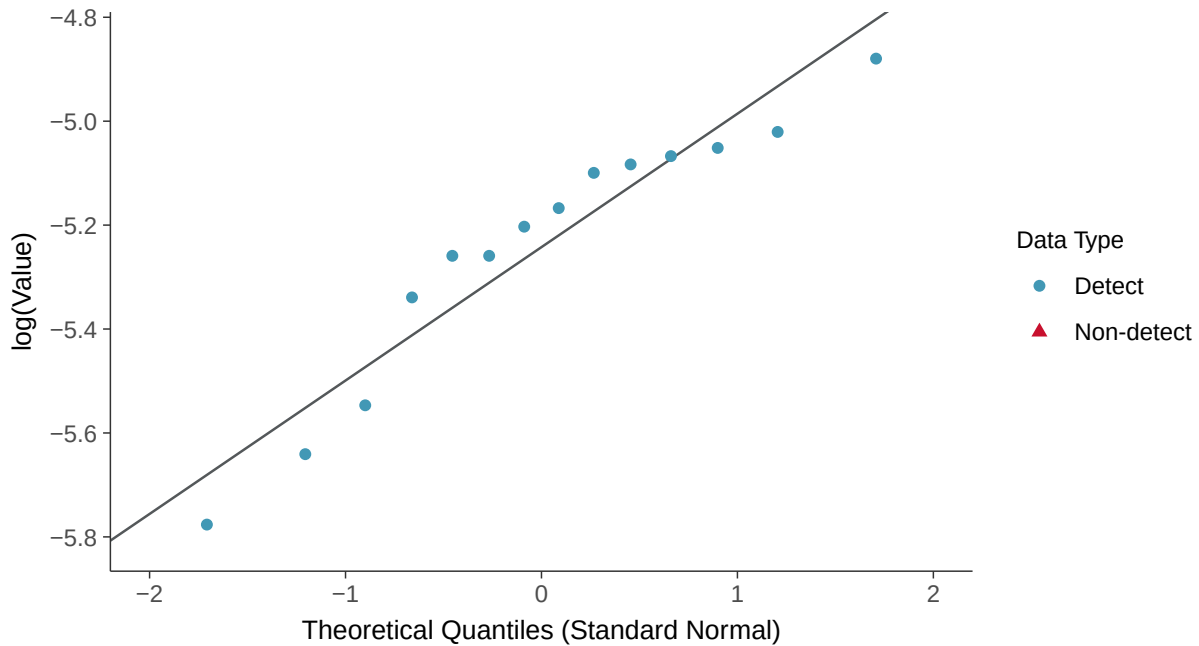
Normal Q-Q plot

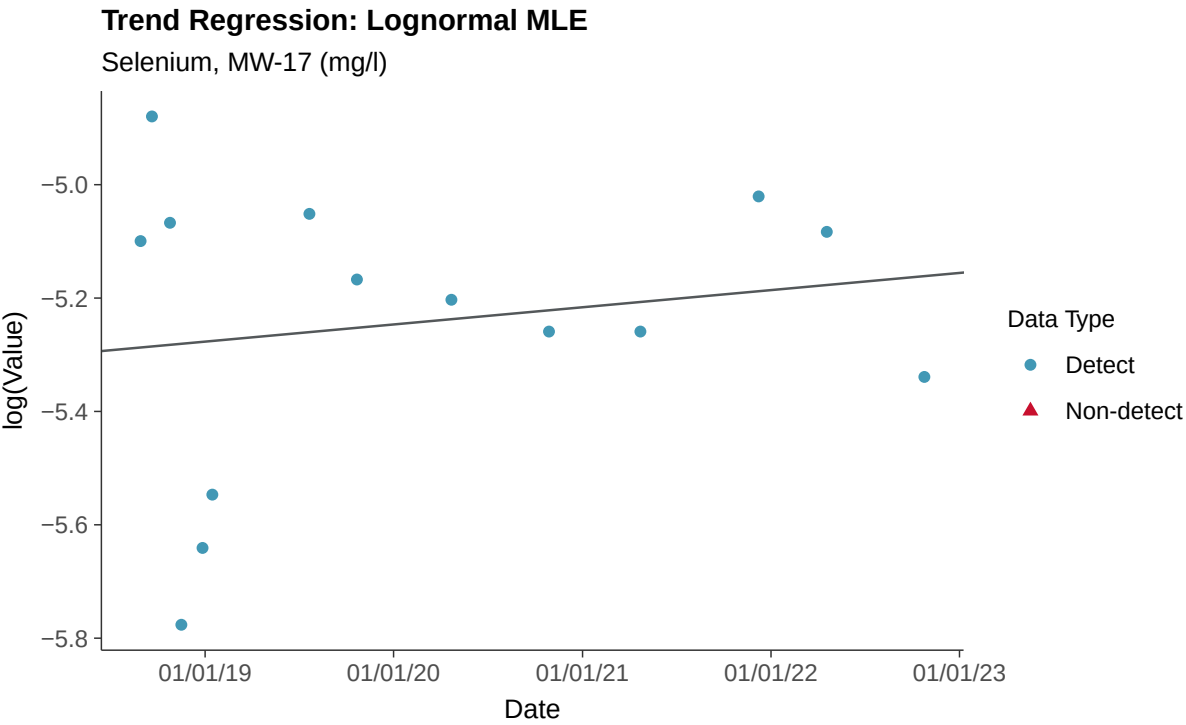
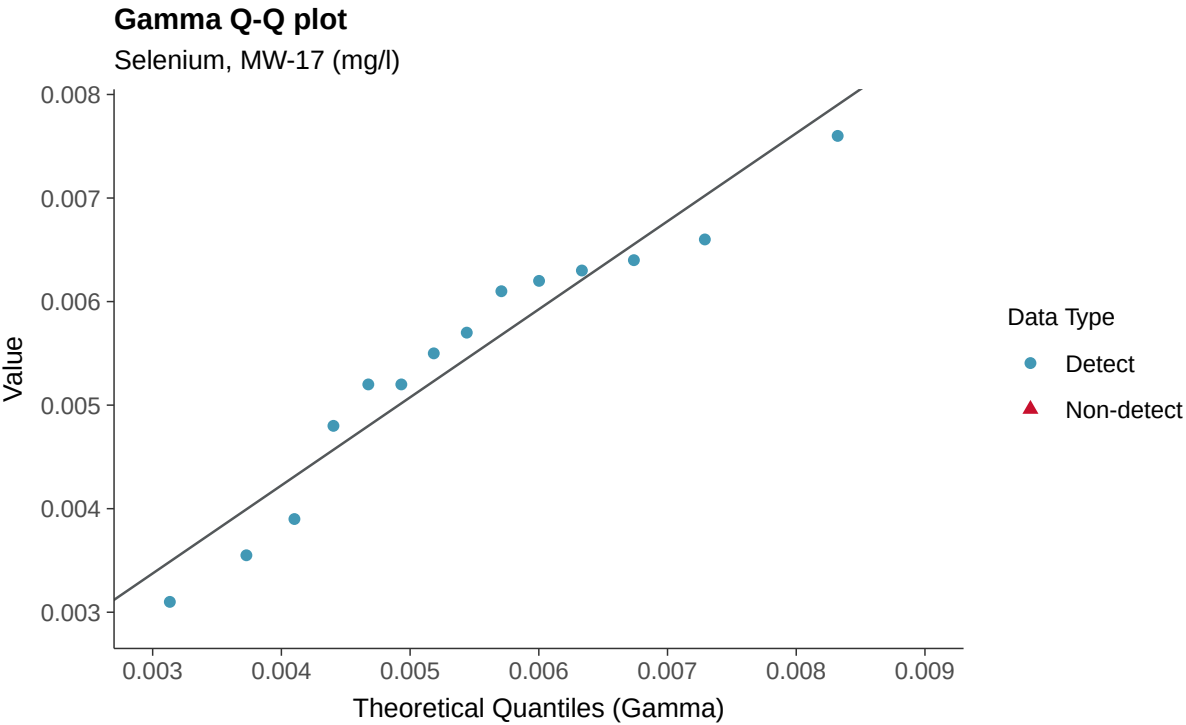
Selenium, MW-17 (mg/l)



Lognormal Q-Q plot

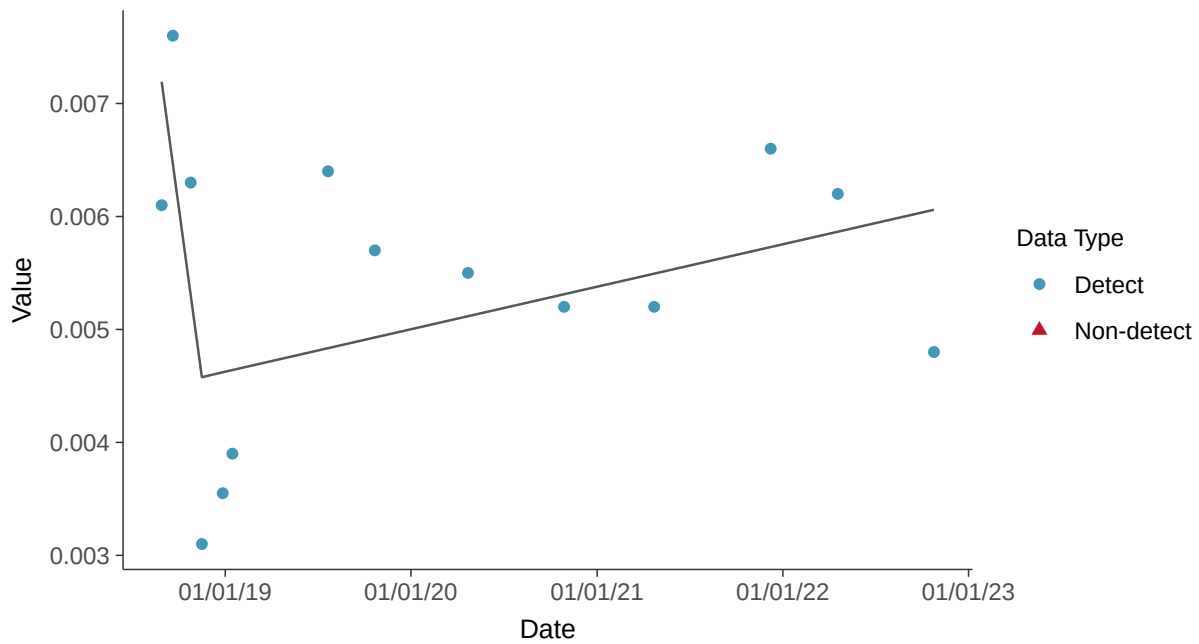
Selenium, MW-17 (mg/l)





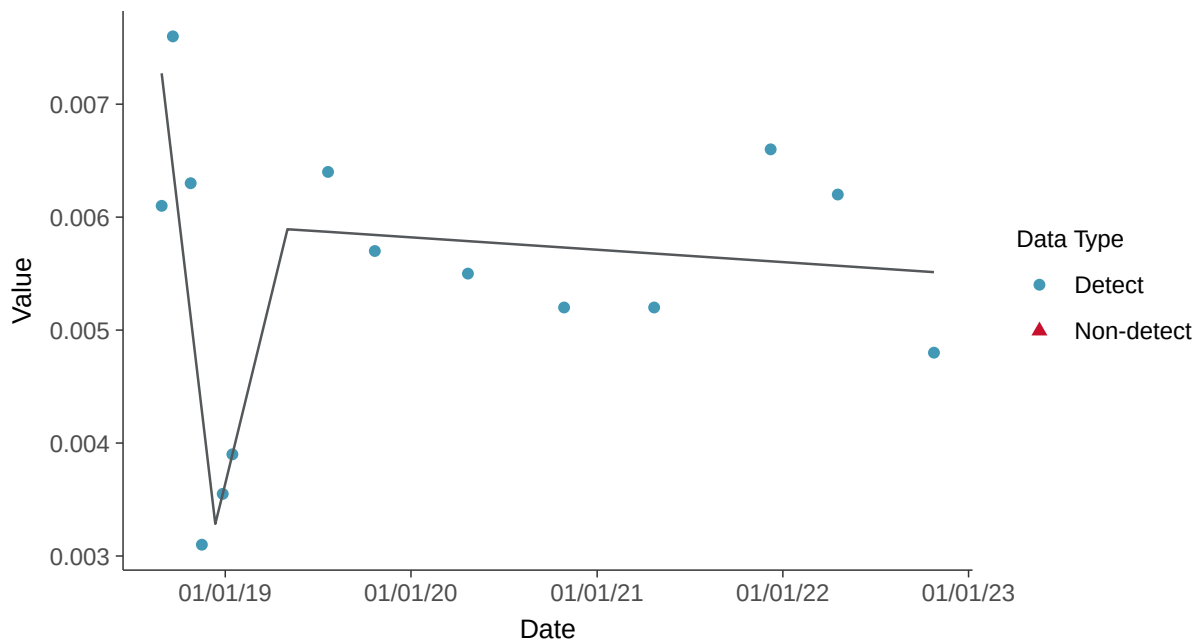
Trend Regression: Piecewise Linear-Linear

Selenium, MW-17 (mg/l)



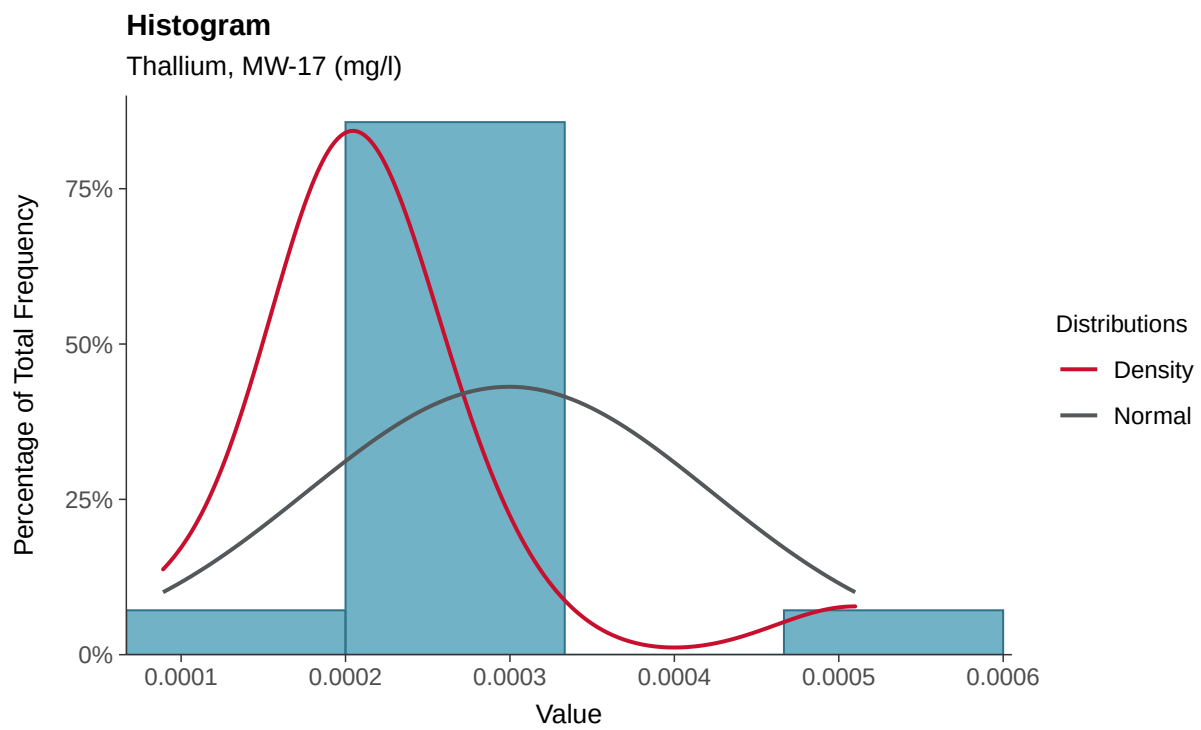
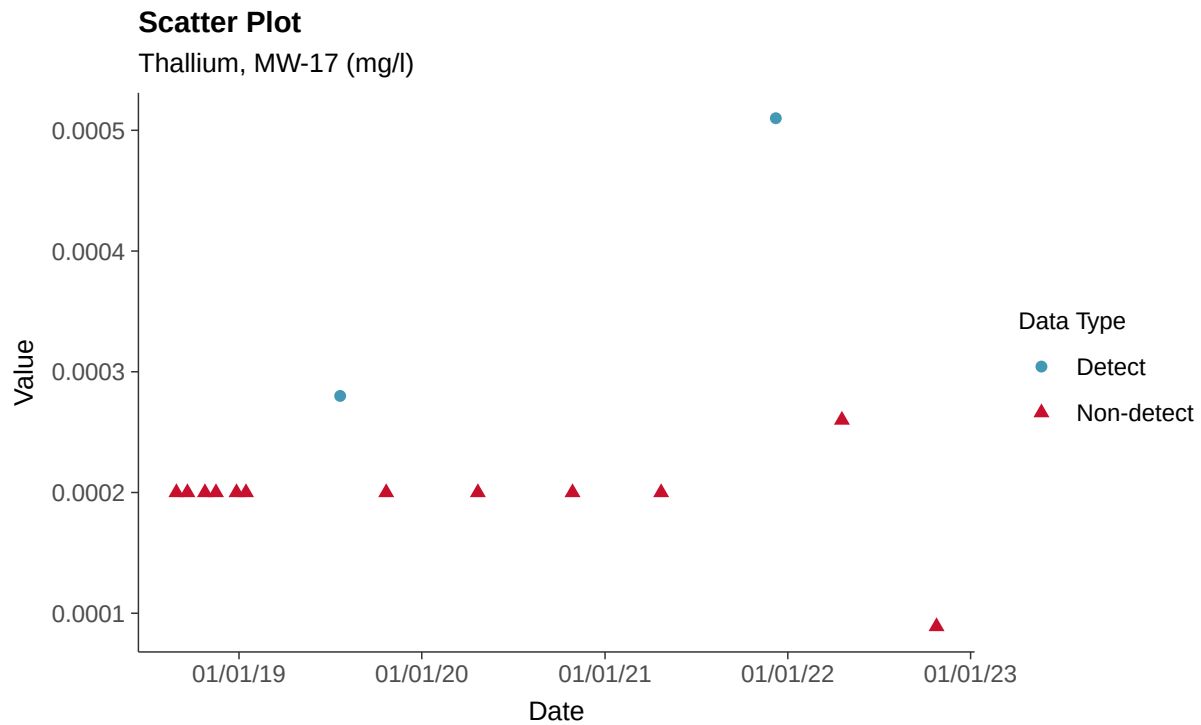
Trend Regression: Piecewise Linear-Linear-Linear

Selenium, MW-17 (mg/l)



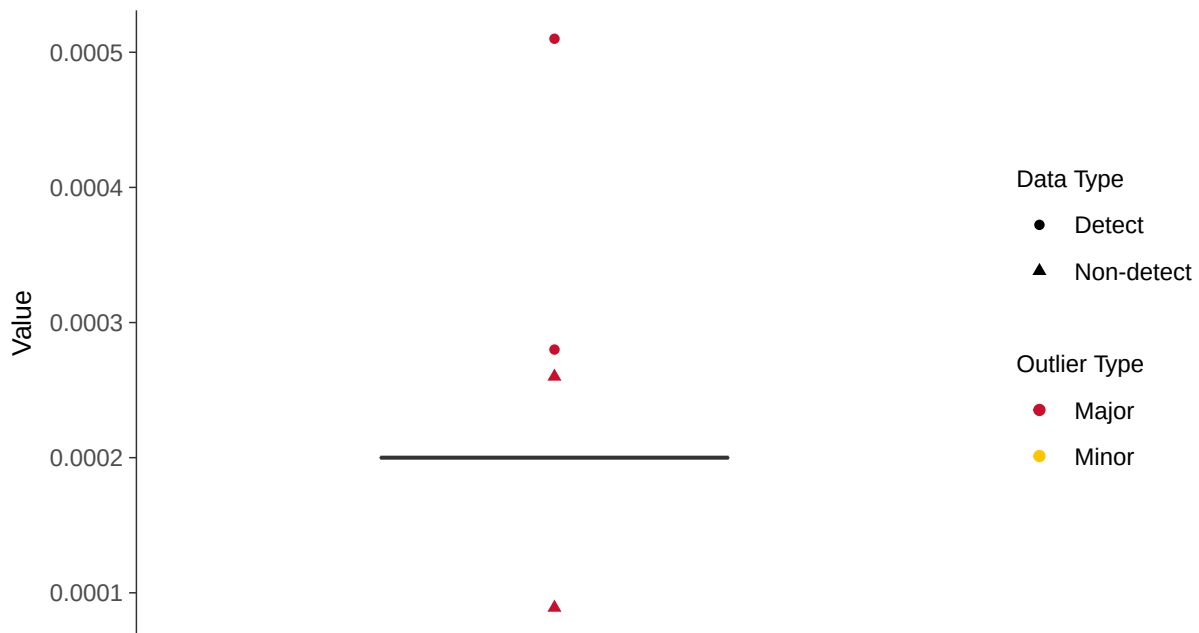
Appendix IV: Thallium, MW-17

ID: 3_2_134



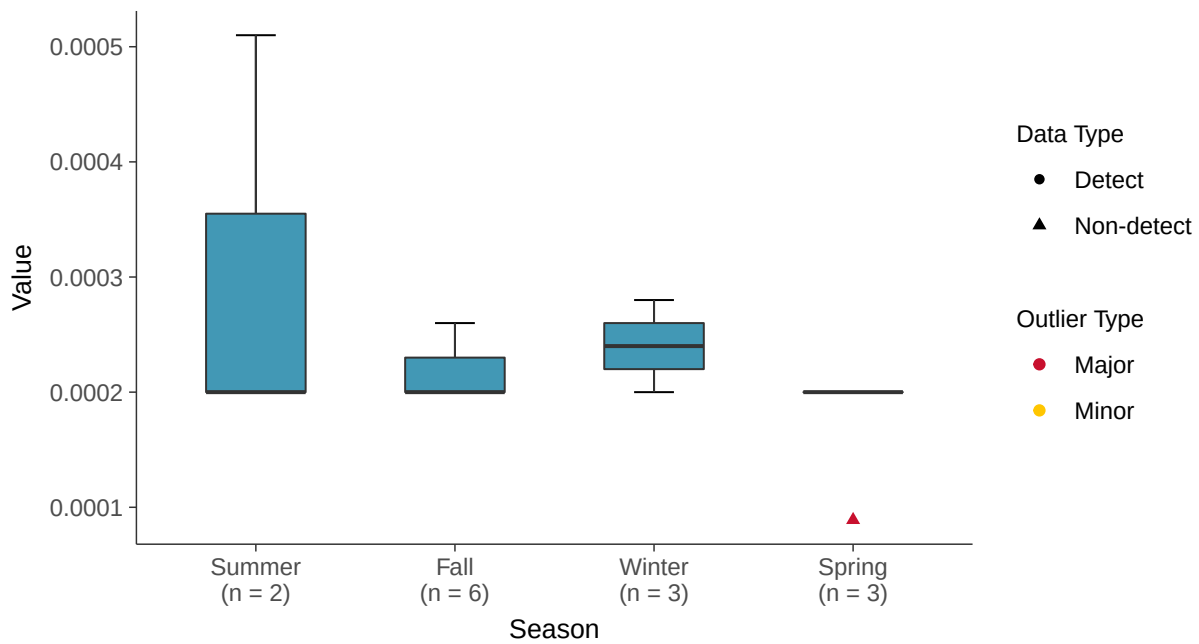
Boxplot

Thallium, MW-17 (mg/l)



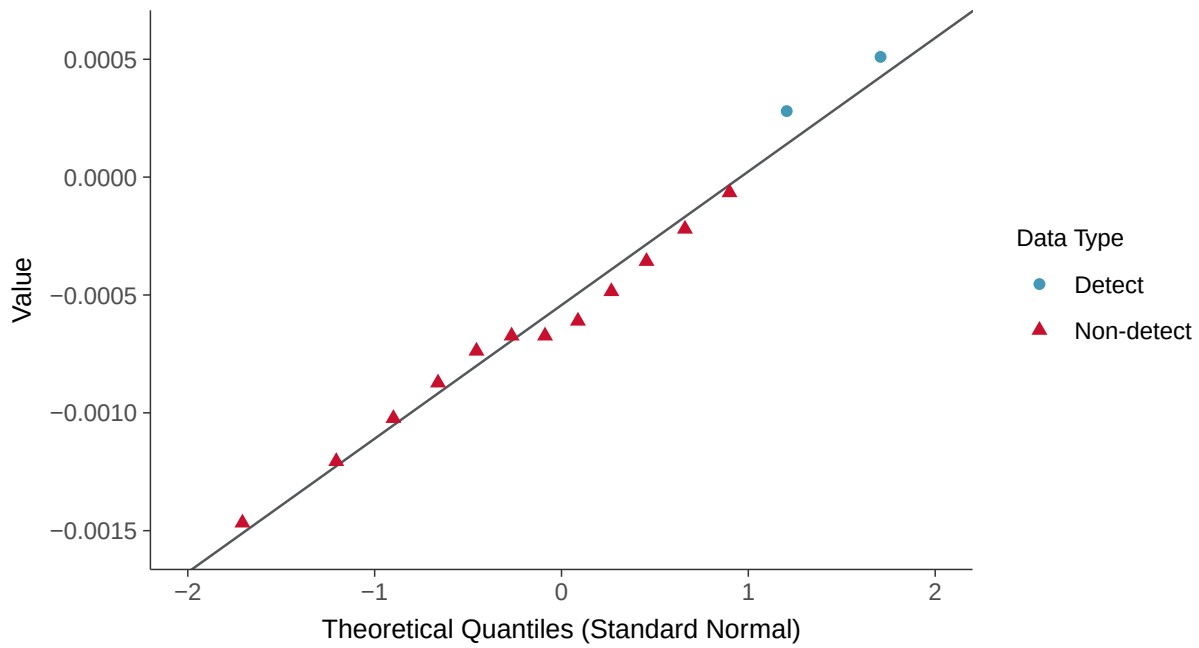
Boxplot by Season

Thallium, MW-17 (mg/l)



Normal Q-Q plot using ROS Imputed Estimates

Thallium, MW-17 (mg/l)



Trend Regression: Piecewise Linear-Linear

Thallium, MW-17 (mg/l)

