



Environmental Functional Area

Water, Air, Monitoring and Analysis Group

LLNL-AR-411431-19-3

LLNL Experimental Test Site, Site 300 Compliance Monitoring Report for Waste Discharge Requirements (WDR) Order No. R5-2008-0148

Second Semester/Annual Report 2018

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**Lawrence Livermore
National Laboratory**

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Appendices

Appendix A Sewage Evaporation and Percolation Pond Network

- Sewer Pond Figures, Tables, and CoCs
- Field Tracking Forms
- Sewer Pond Inspection Reports
- Ground Water Sampling Data Forms

Appendix B Cooling Tower Network

- Cooling Tower Blowdown Effluent Monitoring Network with Discharges to Percolation Pits (Bldgs. 801, 817A, 825, 826, 827A, and 851) and Cooling Tower Percolation Pit Inspection Forms

Appendix C Mechanical Equipment Room Network

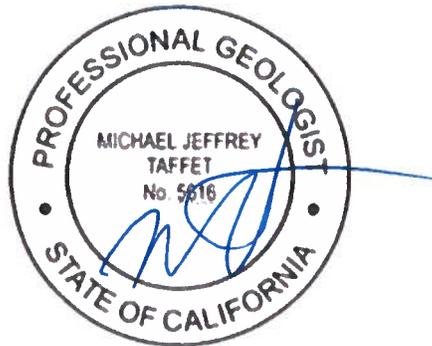
- Mechanical Equipment Discharge Effluent Monitoring for Buildings 806A and 827A, 827C, 827D, and 827E Mechanical Equipment Room and Cooling Tower Percolation Pit Inspection Forms

Appendix D California Regional Water Quality Control Board Central Valley Region Monitoring and Reporting - LLNL

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Certification

I certify that the work presented in this report was performed under my supervision. To the best of my knowledge, the data contained herein are true and accurate, and the work was performed in accordance with professional standards.



Michael Jeffrey Taffet 2/26/19

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List of Abbreviations and Acronyms

3CMP	Compliance Monitoring Program Site 300 ground water samples
3EMG	Environmental Support & Programmatic Outreach (ESPO) Group Site 300 ground water samples
3GIV	Ground water samples collected at Site 300 for site investigations
3VES	Sampling method requiring three casing volumes purged using an electric submersible pump
BCLABS-BAK	BC Laboratories, Inc. in Bakersfield, CA
BOD	biochemical oxygen demand
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CMP	Compliance Monitoring Program (conducted under CERCLA)
CMR	Compliance Monitoring Report (prepared under CERCLA)
CoC	chain-of-custody form
CVRWQCB	Central Valley Regional Water Quality Control Board
DO	dissolved oxygen
DSWP	sewage percolation pond influent sampling location
DTW	depth to (ground) water
EC	electrical conductivity, or specific conductance (SC)
EFA	Environmental Functional Area
ESWP	sampling location within sewage evaporation pond
GF	Grundfos pump
ft	feet
gal	gallons
gpm	gallons per minute (measurement of discharge or flow rate)
GWE	ground water elevation (above mean sea level)
HSU	hydrostratigraphic unit
ID	identification number
ISWP	sewage evaporation pond influent sampling location
LLNL	Lawrence Livermore National Laboratory
MCL	Maximum Contaminant Level (for drinking water)
mL	milliliters

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List of Abbreviations and Acronyms cont.

MPN	most probable number
MRP	monitoring and reporting program
mV	millivolts (measure of oxidation-reduction potential)
NA	not applicable
ND	none detected, or not detected
NO ₃	nitrate
NR	analysis not required by permit at this sampling location
pH	measure of the acidity or alkalinity of a solution
OG	off-gassing measured by scale of 1-5, 5 being highest amount of off-gassing
OU	Operable Unit under CERCLA
Q	discharge or flow rate, or number of well volumes purged (according to context)
QA	Quality Assurance
Qal	Quaternary Age alluvial deposits
QC	quality control
Qt	Quaternary Age terrace deposits
RHWM	Radioactive and Hazardous Waste Management
SC	specific conductance, or electrical conductivity (same as EC)
SHO	short analytical holding time (such as samples for coliform bacteria analyses)
VOA	samples collected for analysis of volatile organic compounds
WDR	waste discharge requirements (Permit)

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Executive Summary

Under authority of the State of California and as required by the Porter-Cologne Water Quality Control Act, the Central Valley Regional Water Quality Control Board (CVRWQCB) issued Order No. R5-2008-0148 for the Experimental Test Site (Site 300), to Lawrence Livermore National Laboratory (LLNL). Monitoring and Reporting Program (MRP) Number R5-2008-0148 was adopted in September 2008, and revised effective December 1, 2009. The revised MRP terms and conditions have been implemented in this report. Under the terms of this MRP, LLNL submits semi-annual and annual monitoring reports detailing its Site 300 discharges of domestic and wastewater effluent to the sewage evaporation pond and percolation pond in the Site 300 General Services Area, and cooling tower blowdown to percolation pits and septic systems, and mechanical equipment discharges to percolation pits located throughout Site 300.

This report contains all the elements required by Waste Discharge Requirement (WDR) Order R5-2008-0148 for the second semester of 2018 and updates the status of equipment and facilities since the adoption of R5-2008-0148. Proper operating conditions were met for all permitted networks. Compliance certification accompanies this report, as required by the permit.

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1. Introduction

Site 300, operated by Lawrence Livermore National Security, LLC, is located in the Altamont Hills approximately 10.5 kilometers (6.5 miles) southwest of downtown Tracy, California. Required monitoring for specific Lawrence Livermore National Laboratory (LLNL) Site 300 monitoring networks is defined in the Monitoring and Reporting Program (MRP) Order Number R5-2008-0148, which was adopted in September 2008, and revised effective December 1, 2009. The revised MRP has been implemented in this report. Applicable reporting requirements are found in the Standard Provisions and Reporting Requirements specified in the Waste Discharge Requirements (WDR) Order R5-2008-0148 (CVRWQCB, 2008) permit and in the MRP R5-2008-0148.

This report provides a summary of monitoring of designated networks conducted during the second semester of 2018 under the revised MRP R5-2008-0148 (CVRWQCB, 2008). The report details the monitoring results of the three compliance networks and presents analytical data, field summary sheets, and inspection logs associated with discharges at the networks.

Compliance monitoring networks discussed in the report include:

- Sewage evaporation and percolation ponds wastewater and ground water monitoring (Sections 2.1 through 2.5).
- Cooling tower blowdown discharge monitoring and percolation pit inspections (Sections 3.1 through 3.4).
- Mechanical equipment effluent discharge monitoring and percolation pit inspections (Sections 4.1 through 4.4).
- Permit related summaries and updates.

BC Laboratories, Inc. and Alpha Labs provided off-site analytical support for the monitoring networks.

This report summarizes the activities associated with these monitoring networks including: tabular summaries or data plots for all data for at least the last five years; a ground water elevation contour map with well locations; identification of any data gaps or deficiencies; and a discussion of any changes to the monitoring program.

Figure 1 shows the locations of the wastewater systems permitted under WDR R5-2008-0148, including mechanical equipment percolation pits and the sewage oxidation and percolation ponds (sewage ponds) located in the General Services Area. None of the permitted mechanical equipment percolation pits overflowed during this monitoring period, and no standing water was observed within the Christy boxes. There were no detected chemical impacts to ground water beneath and adjacent to the sewage ponds. Discharges from cooling towers and mechanical equipment were consistent with historic information provided in the previous Reports of Waste Discharge.

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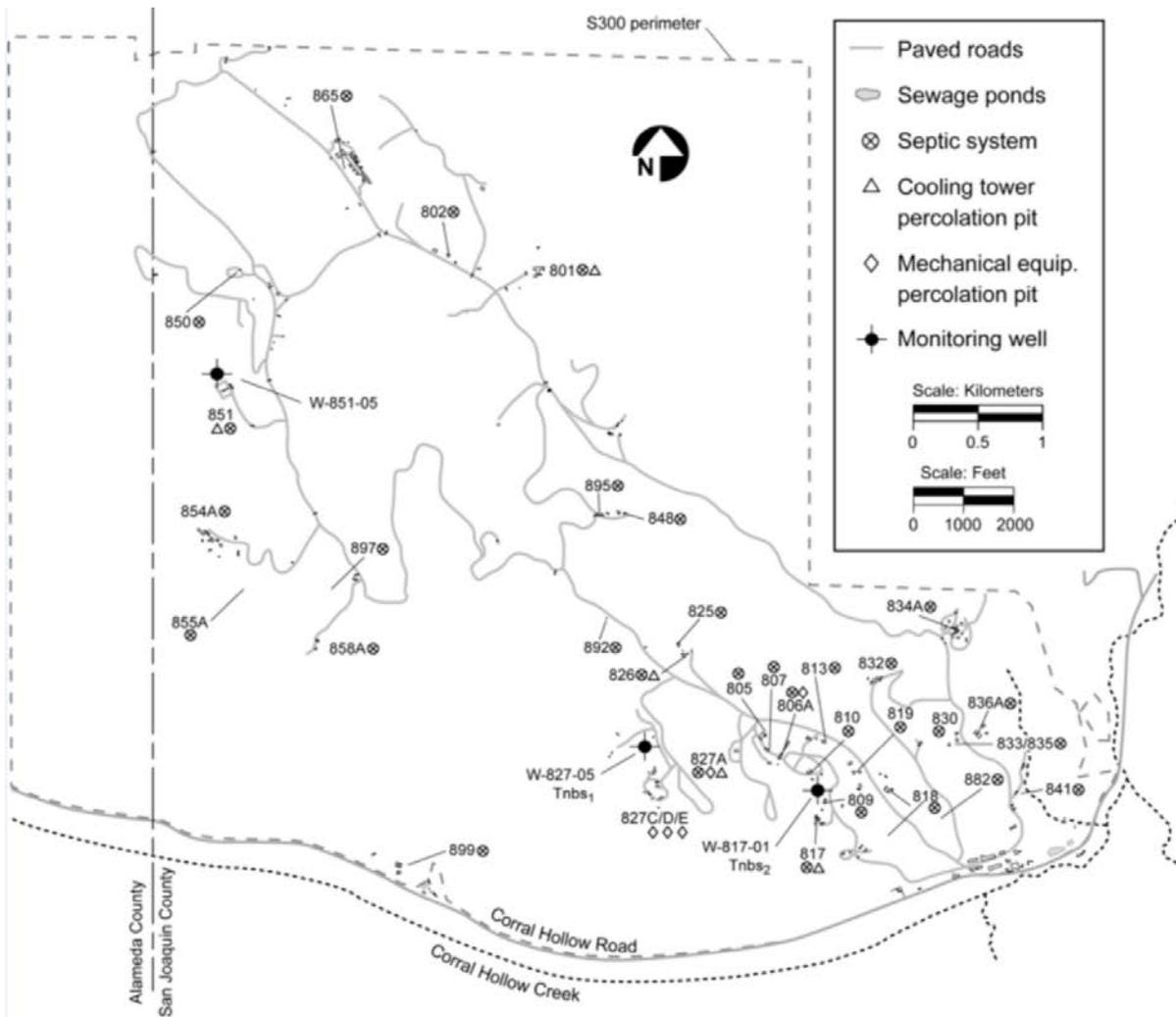


Figure 1. Locations of Site 300 facilities with septic systems and percolation pits.

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2. Sewage Evaporation and Percolation Ponds

2.1. Effluent and Pond Compliance Monitoring Program

MRP R5-2008-0148 requires semi-annual and annual sampling of wastewater flowing into the sewage evaporation pond (sewage pond) for chemical analysis. Grab samples are collected from a location west of the sewage pond (see sampling location ISWP in **Appendix A, Figure A-1** showing the Site 300 sewage evaporation and percolation ponds and ground water and wastewater compliance monitoring locations). Location ISWP is a port providing access to a section of pipe through which all liquid waste streams flow prior to entering the sewage pond. The samples are analyzed for specific conductance (SC, or electrical conductivity), pH, and biochemical oxygen demand (BOD).

MRP R5-2008-0148 also requires sampling and analysis of wastewater within the sewage pond and wastewater discharging into the sewage percolation pond. Semi-annual wastewater samples are collected by grab sampling from a dock at the eastern end of the sewage pond (sampling location ESWP) and analyzed for SC, pH, metals, dissolved oxygen (DO), BOD, and total and fecal coliform. Any discharge from the sewage pond to the sewage percolation pond (sampling location DSWP) is grab sampled and analyzed for the same constituents. Permit WDR R5-2008-0148 requires LLNL to operate the sewage pond with adequate freeboard to minimize the frequency of discharges to the sewage percolation pond.

Observations of the sewage pond and percolation pond are made and recorded at least monthly for freeboard, color, odor, and levee condition. **Appendix A** contains several second semester 2018 data sets and other material including; field tracking forms, sewage and percolation pond inspection reports, ground water sampling data forms, historical data plots for the sewage evaporation pond and percolation pond network, and ground water monitoring field observation forms for the sewage pond. Inspection reports indicate that from January to April, there was less than a foot of water in the percolation pond and from May to June, there was no reported water in the percolation pond. The sewage pond color ranged from green to brown green with sightings of algae and insects. However, there were no reports of odor, solids, or scum.

Leak detection and compliance monitoring at the sewage evaporation and percolation ponds is accomplished by monitoring the shallow ground water beneath and adjacent to the ponds. Ground water monitoring includes semi-annual sampling during the first and second semesters when ground water elevations are at their highest and lowest, respectively, and analysis of the collected samples for SC, pH, total and fecal coliform, chloride, nitrate, sulfate, total dissolved solids, sodium, and metals. In addition, ground water elevations are routinely recorded and potentiometric surface contour maps are created (**Appendix A, Figure A-2**). A map showing the locations of the monitor wells and ponds (**Appendix A, Figure A-1**) and tables of monitor well specifications and groundwater elevations for the second semester of 2018 for each well are provided (**Appendix A, Tables A-1 and A-2**).

In addition to normal operation of the sewer evaporation pond, there are also normal discharges to the sewer pond associated with the beneficial use of discharged water. These discharges are in preparation for potable water delivery to Site 300 from the San Francisco Public Utility District Hetch-Hetchy water system. During this operation, Hetch-Hetchy water is flushed periodically to maintain sanitary conditions in the potable water line. When a discharge to the sewage evaporation pond is scheduled, the chlorinated water in the Hetch-Hetchy line is analyzed for chlorine. When

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the water reaches a chlorine residual value at or below 1.0 mg/L, the water is ready to flush. When flushing, a 4-inch hose is used from the discharge of the Hetch-Hetchy line at the LLNL valve box to the sewage pond. Before the water is flushed, the residual chlorine concentration generally decreases to below 1.0 mg/L but above 0.2 mg/L. pH is checked and logged at the source.

During the second semester of 2018, no discharges of evaporation loss makeup water to the sewage pond were conducted. However, the Hetch-Hetchy line was flushed to prepare for potable water delivery to Site 300. Details of discharges are shown on **Table 1**, below, which provides the date of the discharge, the volume of water discharged, chlorine residual concentration, and pH of the discharged water. The pH was inadvertently not measured during the second semester flush as this was the first time flushing was conducted with new staff. Verbal communication was made with the Operations and Business Craft supervisor to be certain pH is measured during the next flush.

Table 1. Summary of water system pipeline flushing and pressure testing discharges at Site 300 during the second semester of 2018.

Discharge Date	Volume Discharged (gallons)	Chlorine Residual (mg/L)	pH (units)	Comment
First Semester	-	-	-	No flushing occurred during this period
Second Semester	36,000	<1	-	Flushing Hetch-Hetchy line

In August 2018, a Seametrics magmeter flow meter was installed on the 8" cast iron sewer line to the sewage evaporation pond to monitor the influent flow. The flow meter was installed outside the fence to the sewer pond at the southwest corner. The daily average flow is about 19 gallons as of this reporting period.

2.2. Sewage Pond Wastewater Sampling and Analysis

For sewage pond wastewater sampling and analysis, less than 12 hours before sampling and measurement, the DO, SC, and pH meters are calibrated. The DO, SC, pH, and temperatures of each sample are measured and written on the field tracking forms (field logs) when the grab samples from ISWP, ESWP, and DSWP are collected. For each analytical laboratory to which samples are submitted, chain-of-custody (CoC) forms are filled out appropriately and signed by the sampler. The CoC numbers are also written on the field logs. Appropriate EPA-approved analytical methods (U.S. Environmental Protection Agency, 2005) or Standard Methods (Clesceri et al., 1998) are used.

The samples required under MRP R5-2008-0148 for locations ISWP and ESWP were collected on May 8, 2018. These samples, and all samples collected with results presented in this report, were collected, analyzed, and the data entered into the Environmental Functional Area (EFA) database according to a complete set of protocols documented in the LLNL EFA Environmental Monitoring Plan (Gallegos, 2016).

2.3. Sewage Pond Wastewater Monitoring Results

Analytical results for second semester 2018 samples are summarized here as required under MRP R5-2008-0148. Monitoring data are tabulated in **Appendix A**. Coliform, anion, BOD, DO, and specific conductance data summaries are presented in **Table A-3**. A metal data summary for the ESWP location is presented in **Table A-4**. **Table A-5** provides a duplicate (QA) sampling data

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summary for the sewage pond's wastewater monitoring network. All results and observations were in compliance with the Permit's discharge specifications as shown in **Appendix D**. There was adequate free board in the sewage pond to prevent any over-topping or erosion of the pond embankment. Field tracking forms documenting operational conditions at Site 300 are provided in **Appendix A**, which also contains the field logs, including field measurements and CoCs. The original laboratory analytical result sheets are stored at LLNL and are available upon request. Appendix A also contains time-series plots of analytical results of constituents in sewage pond wastewater samples.

- As listed in **Table A-3**, samples from the two monitoring points (3-ESWP-OW and 3-ISWP-OW) had similar pH values of 9.6 and 8.7, respectively. The specific conductance in the effluent sample, 3-ESWP-OW, at 10,000 $\mu\text{mhos/cm}$, was substantially higher than in the influent sample, 3-ISWP-OW, at 1,800 $\mu\text{mhos/cm}$. There is no reporting limit for specific conductance. The reporting limit for BOD is 2 mg/L. The BOD values in the effluent and influent samples were 75 and 230 mg/L, respectively. The fecal and total coliform reporting limit is 2 most probable number (MPN)/100mL and the result for the effluent was >1,600 MPN/100mL for both fecal and total coliform.
- **Table A-4**, contains metals data for the sewer pond effluent monitoring samples (3-ESWP-OW). Of the metal analytes, only aluminum, cadmium, hexavalent chromium, iron, lead, manganese, mercury, silver, vanadium, and zinc were at concentrations below their reporting limit in the second semester samples.
- Table A-5 lists the 2018 QA data for the wastewater monitoring network. During the second semester, a duplicate sample was collected from the influent location, 3-ISWP-OW, as the quality assurance sample for BOD. The routine and duplicate sample had a similar result for BOD at 1,800 and 1,900 mg/L, respectively.

2.4. Ground Water Sampling and Analysis

Semi-annual sampling of ground water from monitor wells at the sewage evaporation and percolation ponds was performed during the second semester of 2018. The ground water samples were collected and analyzed, and results entered into the EFA database according to established protocols (Goodrich and Lorega, 2016). The monitor wells were purged and sampled during two phases, from February 12 through June 11, 2018, according to prescribed methods assigned to each monitor well. Information regarding the conditions during sampling, as well as field measurements taken at the time of sampling, is found in the ground water sampling data sheets in **Appendix A**. The collected samples were transferred to an offsite analytical laboratory for analysis of the physical and chemical parameters and analyses listed in **Section 2.1**. Following the initial sampling events, a pre-calculated dose of chlorine was added to each well and the well was briefly pumped to circulate the chlorine throughout the water column. On the following day, wells were tested for residual chlorine and samples were collected for analysis of total and fecal coliform bacteria at an offsite analytical laboratory.

2.5. Ground Water Monitoring Results

Analytical data for all monitored parameters were in compliance with the Permit limits. Ground water data are presented in tables in **Appendix A**. Sodium and anion data are tabulated in **Table A-6**. Fecal and total coliform data are listed in **Table A-7**. **Table A-8** provides a summary of

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physical chemical data and **Table A-9** lists metals data. QA data summaries for the monitoring well network are presented in **Table A-10**. During the second semester, a sample from one well, W-35A-04, contained fecal coliform (17 MPN/100mL) above the 1.8 MPN/100mL detection limit. Two wells yielded total coliform above the detection limit: upgradient well W-7ES (540 MPN/100mL) and cross-gradient well W-35A-04 (17 MPN/100mL) (**Table A-7**). LLNL will continue to monitor these wells for coliform.

Appendix A, Figure A-2 contains the ground water elevation contour map for the shallowest water-bearing zone (hydrostratigraphic unit [HSU]) in the sewage evaporation and percolation ponds area. This map depicts ground water elevations from the first semester of 2018. Nitrate concentrations in sewer pond ground water network monitor wells are depicted on **Appendix A Figure A-3**.

- The sewer pond ground water monitoring results for sodium and anions in Table A-6 indicate that nitrate concentrations at most wells this year were generally consistent where multiple samples were collected this semester. No second semester 2018 ground water samples exceeded the 45 mg/L maximum contaminant level (MCL) for nitrate in drinking water.
- In **Table A-7**, the fecal and total coliform data is presented for the sewer pond ground water monitoring network. Of all the wells, the samples collected from well W-7ES from June through December contained total coliform above the reporting limit of 1.8 MPN/100mL at 2.0 MPN/100mL to 540MPN/100mL. Wells W-7ES, W-35A-04, and W-26R-01 reported fecal coliform above the reporting limit of 1.8 MPN/100mL in August (8.3 MPN/100mL), June (17 MPN/100mL), and August (3.7 MPN/100mL), respectively. The rest of the wells yielded less than 1.8 MPN/100mL in all other samples collected in 2018.
- In **Table A-8**, the physical chemistry data for the ground water monitoring system indicate that with the exception of the February sample from well W-25N-22 (48 mg/L), phosphorus concentrations in all other samples were below the reporting limit of 1 mg/L. The other constituents reflect similar values to those reported last year.
- In **Table A-9**, of the metals listed, aluminum, cadmium, hexavalent chromium, iron, lead, mercury, silver, and vanadium were detected below the reporting limit in all 2018 samples. Zinc concentrations from the beginning of the year to the end fluctuated. Zinc concentrations in two wells, W-7ES and W-35A-04, decreased from 26 to below the 20 µg/L reporting limit, although zinc increased to 22 µg/L in the last sample collected from W-35A-04. Zinc concentration in W-25N-22 increased from below the 20 µg/L reporting limit to 31 µg/L. The other metals show generally consistent concentrations throughout the year.
- In **Table A-10**, for quality assurance, duplicate sampling was performed one day after the routine sampling. The duplicate sample results for pH, specific conductance, fecal coliform, total coliform, and nitrate were either identical or very similar to the routine sample results. However, the December samples from well W-7ES indicated a routine sample fecal coliform concentration of 2.0 MPN/100mL while the duplicate sample contained 17 MPN/100mL.

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3. Cooling Tower Network

3.1. Cooling Tower Compliance Monitoring Program

Monitoring requirements for cooling tower blowdown water are specified in MRP R5-2008-0148. LLNL implemented the cooling tower blowdown monitoring starting in the fourth quarter of 2008. Applicable reporting requirements are found in the Standard Provisions and Reporting Requirements of WDR R5-2008-0148 and the MRP.

Cooling towers located at Site 300 discharge either into percolation pits or into septic systems. Currently, there are five operating cooling towers. The cooling tower locations are identified on **Appendix B, Figure B-1**. The Building 825 cooling tower normally discharges to a septic system but was not operational during this last period and therefore no samples were collected. The remaining cooling towers located at Buildings 801, 817, 826, 827, and 851 all discharge to percolation pits and were operational this period. The two original cooling towers located at Building 851 were replaced in the second semester 2009 with a single new cooling tower. The two cooling towers located at Building 827 blend water from a combined discharge line and therefore only one sample is routinely collected to characterize the discharge from these cooling towers. As part of a facility upgrade, the cooling tower at Building 826 was replaced with a new cooling tower unit in January 2017 and has been operating normally.

MRP R5-2008-0148 requires semi-annual sampling of the cooling tower blowdown. Grab samples are collected from the water circulating in the cooling tower, either at a valve or a drainpipe. The grab samples are collected directly into the containers specified by the laboratory. Samples are analyzed for metals, pH, sodium, SC, sulfate, total alkalinity, total dissolved solids, total hardness, and total phosphorus.

3.2. Cooling Tower Blowdown Effluent Sampling and Analysis

Second semester 2018 routine cooling tower blowdown samples were collected on October 16, 2018. For the cooling tower blowdown sampling and analysis, calibration of SC and pH meters is performed less than 12 hours before sampling. SC and pH data measured in the field are written on field tracking forms. CoC forms are filled out appropriately and signed by the sampler for each analytical laboratory to which the samples are transferred; CoC numbers are also written on the field logs. Analytical methods used are appropriate EPA-approved Methods (U.S. Environmental Protection Agency, 2005) or Standard Methods (Clesceri et al., 1998).

3.3. Cooling Tower Blowdown Monitoring Results

All cooling tower sample results are listed in Appendix B along with the QA/QC results, field tracking forms, inspection checklists, and CoCs. **Table B-1** lists sodium and anion data, **Table B-2** lists metals results, and **Table B-3** provides required physical characteristics data. QA/QC data from duplicate sampling are provided in **Table B-4**.

The following section includes highlights and a summary of comparisons of second semester 2018 analytical results for each constituent in cooling tower blowdown samples to Designated Level Methodology-derived concentrations calculated using the water quality goals (where they exist) shown in Attachment 16 of the permit (WDR Order No. R5-2008-0148) and maximum historical values observed at the time of the permit. For reference, Appendix D of this document contains Attachment 16 of the WDR permit.

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- Aluminum, cadmium, mercury, nickel, silver, and vanadium were not detected in excess of reporting limits in any 2018 cooling tower blowdown samples (**Table B-2**).
- Copper concentrations in samples collected during 2018 ranged from 8 µg/L to 75 µg/L, below the maximum historical effluent concentration summarized in Appendix D (2,400 µg/L). Building 826 samples yielded the highest copper concentration (60 µg/L) of the samples from five cooling towers during the second semester (**Table B-2**), which is higher than the first semester concentration from the cooling tower (7.9 µg/L).
- Second semester molybdenum concentrations in blowdown samples ranged from 27 µg/L in Building 826 blowdown to 75 µg/L at Building 827A, as compared to the maximum historical effluent concentration summarized in Appendix D (45 µg/L). The reporting limit for molybdenum is 25 µg/L. Most of the molybdenum concentrations at the cooling towers are similar to those observed during the first semester.
- Zinc concentrations in second semester samples ranged from 31 µg/L to a maximum of 610 µg/L, exceeding the maximum historical zinc concentration in Appendix D (340 µg/L). The zinc concentrations at the Building 826 and Building 827 cooling towers were measured at 610 and 530 µg/L, respectively, higher than the previous semester's zinc concentrations of 25 and 41 µg/L. Monitoring will continue to observe the zinc trends.

Concentrations for molybdenum and zinc were the only cooling tower water constituents that exceeded the historical maxima in **Appendix D** (Attachment 16 of the WDR). The concentrations for all the metals in all 2018 cooling tower effluent samples are well below concentrations calculated using the Designated Level Methodology in Appendix D (WDR Order Attachment 16) for impact to ground water. LLNL will continue to evaluate metals concentrations in future samples of cooling tower effluent.

3.4. Cooling Tower Percolation Pit Monthly Inspections

LLNL implements monthly visual inspections of the cooling tower percolation pits located at Buildings 801, 817A, 826, 827A, and 851 (**Appendix B, Figure B-1**), which collect effluent from the cooling towers as specified in MRP R5-2008-0148.

If standing water is present, the MRP requires the inspection frequency to be increased to weekly until standing water is no longer visible. Visual inspections are conducted to verify the percolation pits are working properly and do not have the potential to overflow. Copies of the inspection forms are provided in **Appendix B**. A standing water height of 4-inches was observed in the Christy box at Building 826 in July and one-inch was observed in November. The Christy box at Building 827 had 6-inches of standing water from July through December. At Building 851, there was 6-7-inches of standing water from July through December. None of the standing water in either of these Christy boxes was near the surface spill point and thus none posed a potential threat to the environment.

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4. Mechanical Equipment Effluent Monitoring

4.1. Mechanical Equipment Discharge Monitoring Program

Monitoring requirements for mechanical equipment discharge effluent to percolation pits is specified in the MRP R5-2008-0148. LLNL monitors the mechanical equipment systems located at Buildings 806A, 827A, 827C, 827D, and 827E. **Appendix C, Figure C-1** provides the locations of those systems. Since mid-2016, Building 827D has been undergoing construction with plans of converting the existing ovens to electric ovens. With ongoing construction and electric ovens not needing boilers for heating, there has been no discharge to the percolation pit at Building 827D from the boilers. In addition to the boilers, two vacuum pumps and a DI water system periodically discharge to the Building 827D percolation pit. The vacuum pumps draw moisture from the air to dewater from the mixer, which is minimal, and the DI water system only discharges to the pit in the event of a failure. Monthly inspections are still being performed, however, no laboratory sampling was performed due to the limited discharge activity.

4.2. Mechanical Equipment Effluent Sampling and Analysis

The results for the mechanical equipment room effluent monitoring are reported in **Appendix C**. Monitoring is performed using composite sampling from Christy boxes that allows an automatic sampler to be placed within the boxes, allowing composite samples to be collected during operations. During this sampling period, samples were taken from the Christy boxes at Buildings 806A, 827A, 827C, and 827E.

For the sampling and analysis of mechanical equipment effluent, for each analytical laboratory to which the samples are to be submitted, CoC forms are filled out appropriately and signed by the sampler. CoC numbers are also written on the field logs, provided in **Appendix C**. Appropriate EPA-approved analytical methods (U.S. Environmental Protection Agency, 2005) or standard methods (Clesceri et al., 1998) are used.

4.3. Mechanical Equipment Effluent Monitoring Results

There are mechanical equipment percolation pits located at Buildings 806A, 827A, 827C, 827D, and 827E (**Appendix C, Figure C-1**). Sample analytical results for the monitoring network for these pits are presented in tables in **Appendix C**. **Table C-1** lists sodium and anion data, **Table C-2** lists metals results and **Table C-3** provides required physical characteristics data. Data from duplicate sampling is provided in the data tables. Constituent concentrations in 2018 effluent samples are protective of underlying ground water, for constituents possessing Designated Level Methodology-derived concentrations (Appendix D).

- In **Table C-1**, the second semester sodium and sulfate concentrations in 3-B827E-OW were lower than during first semester (360 mg/L vs. 310 mg/L). The fluoride concentrations in the mechanical equipment discharge samples were similar from the first to second semester ranging from 0.18 to 0.43 mg/L.
- In **Table C-2**, metals data are tabulated. Many metals (arsenic, barium, cadmium, chromium, hexavalent chromium, lead, manganese, mercury, nickel, selenium, silver, and vanadium) were not detected in excess of their reporting limits.

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4.4. Mechanical Equipment Percolation Pit Monthly Inspections

MRP R5-2008-0148 requires monthly inspections of the five mechanical equipment percolation pits located at Buildings 806A, 827A, 827C, 827D, and 827E. **Appendix C** contains the mechanical equipment percolation pit inspection checklists. If standing water is visible during an inspection, the inspection frequency for that percolation pit is increased to weekly until no standing water is visible.

During the second semester, standing water from recent rains was observed in December 2018 at Building 827C. Monitoring was performed weekly until there was no standing water observed in the Christy box. During several inspections at the mechanical equipment percolation pits, facilities demonstrated normal operations with notes about excessive brush and weeds near the Building 806A percolation pit in August. Landscaping was performed and there were no indications of maintenance needed in September.

5. Permit Related Summaries and Updates

5.1. Regulatory Correspondence and Activities

The following letters, verbal communication, or activities were conducted under the CVRWQCB WDR-R5-2008-0148 permit during the second semester of 2018:

- There was a water discharge from the Hetch-Hetchy water line to the sewer evaporation pond during the second semester of 2018. The purpose of such flushing is to keep the water system delivery line clean and to minimize algae growth. An effort continues to begin the delivery of Hetch-Hetchy water to Site 300 and system upgrades and retrofits are ongoing. LLNL is targeting sometime in 2019 for full delivery of Hetch-Hetchy water to Site 300.
- Verbal communication was made to Aimee Phiri of the Central Valley RWQCB on August 9, 2018 about a proposed septic system upgrade at Site 300. She provided information regarding septic system permitting and contact information for the San Joaquin County Environmental Health Department.

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Acknowledgments

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Appreciation is due to Environmental Restoration Department (ERD) sampling technologists Eric Walter and Mario Silva, and Bob Williams, Karl Brunckhorst, and Crystal Rosene from the Environmental Functional Area (EFA) for their field sampling support. Data management assistance was performed by Kim Swanson (EFA) and Suzie Chamberlain (ERD). Jonathan McKaskey (ERD) provided graphic arts contributions; Angelina Mora from EFA provided strong administrative and document preparation assistance. Additional appreciation goes to Jason Graham, Jason Wittig, Mark Krauhs, Joseph Walker, Lee Caldeira, Travis Madden, and Terry Cunningham for conducting Site 300 inspections, providing inspection data, and updating the processes for maintenance and operations of S300 waste discharge. EFA appreciates the support of the Site 300 Acting Manager, Valerie Dibley, for her support in this effort. Lastly, much appreciation goes to Michael Taffet, Professional Geologist, from ERD, who provided technical review and comments on the report.

Appendix A

Sewage Evaporation and Percolation Pond Network

- Sewer Pond Figures
- Sewer Pond Tables (well specifications)
- Field Tracking Forms/COC
- Sewer Pond Inspection Reports
- Ground Water Sampling Data Forms
- Historical Data Plots: Sewage Evaporation Pond and Percolation Pond Network (ISWP, ESWP, and Ground Water Wells) – Second Semester – Annual Report Only

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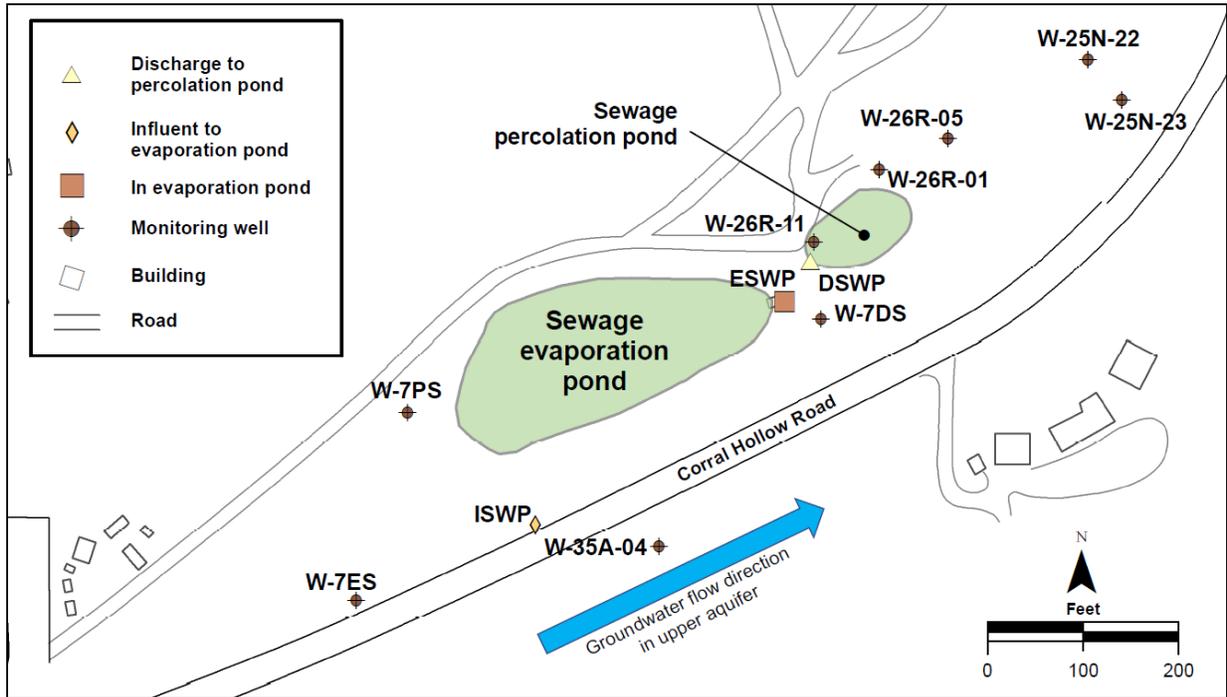


Figure A-1. Sewer pond wastewater and groundwater monitoring network.

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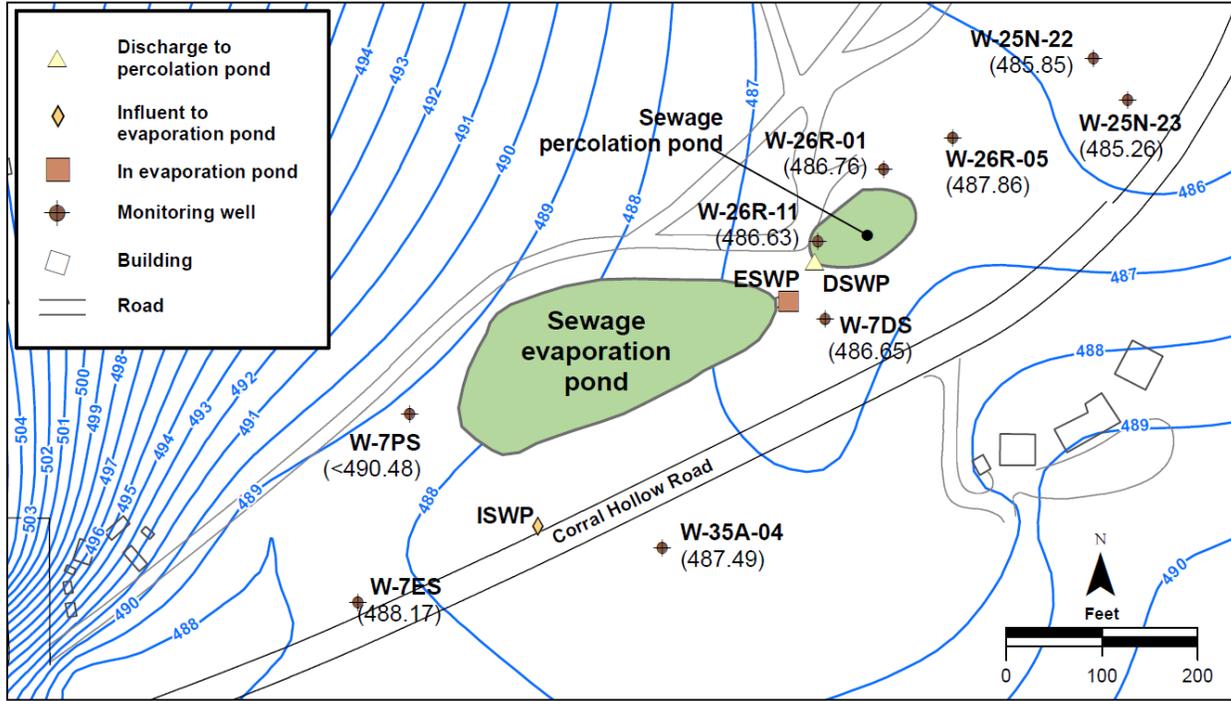


Figure A-2. Site 300 sewer pond wastewater and effluent monitoring network with groundwater elevation (ft-above mean sea level).

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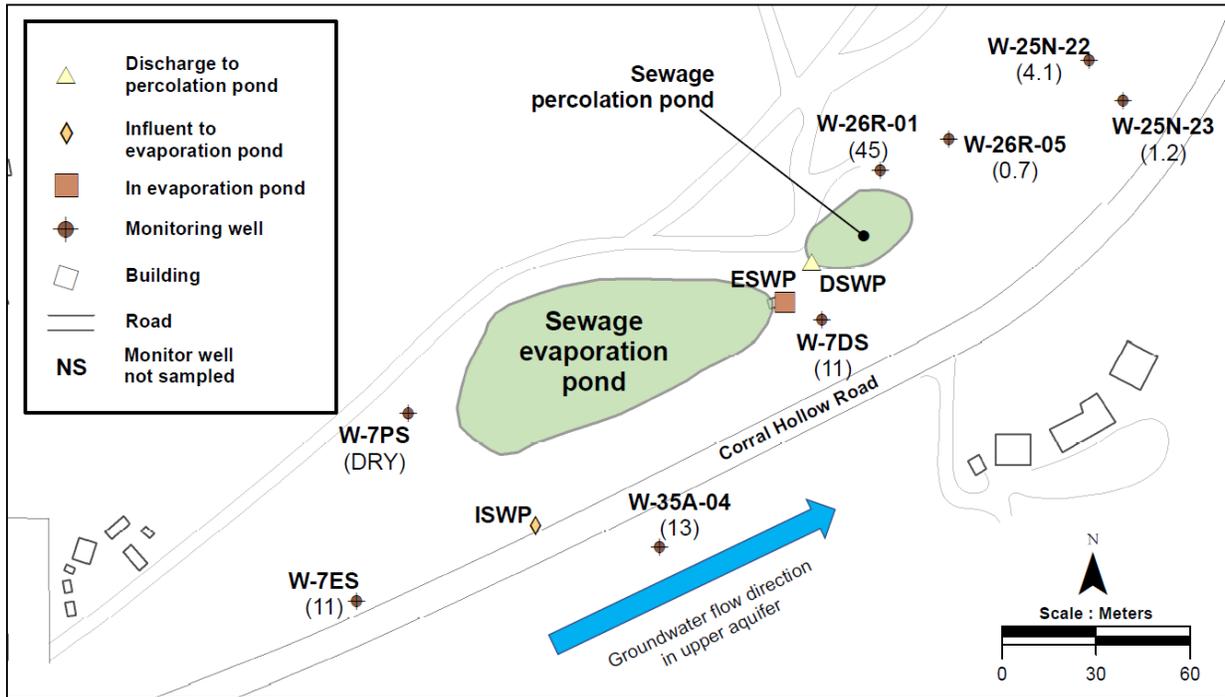


Figure A-3. Site 300 sewer pond wastewater and effluent monitoring network with nitrate (NO₃) concentration (in mg/L).

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Table A-1. Summary of Site 300 sewer pond well specifications.

Well	HSU	Easting	Northing	Ground surface elevation	Measuring point elevation	Screen top elevation	Screen bottom elevation	Bentonite top elevation	Filter pack top elevation	Well bottom elevation
W-7ES	Qal-Tnbs ₁	1,711,719	414,586	506.41	509.71	491.41	481.41	496.41	495.41	479.61
W-7PS	Qal-Tnbs ₁	1,711,773	414,782	506.10	508.78	489.60	486.60	494.10	492.10	486.60
W-35A-04	Qal-Tnbs ₁	1,712,036	414,642	504.07	503.98	485.07	475.07	494.87	486.27	475.07
W-26R-01	Qal-Tnbs ₁	1,712,267	415,036	506.74	509.71	486.94	481.94	494.24	490.74	476.94
W-26R-11	Qal-Tnbs ₁	1,712,198	414,961	504.93	507.21	489.13	479.13	493.13	491.13	477.93
W-26R-05	Qal-Tnbs ₁	1,712,339	415,070	511.31	513.11	491.11	486.11	500.81	498.81	485.81
W-25N-20*	Qal-Tnbs ₁	1,712,371	414,923	502.11	504.94	490.11	475.11	494.61	492.61	474.11
W-7DS	Qal-Tnbs ₁	1,712,206	414,880	503.30	506.60	487.80	477.80	491.80	489.80	476.30
W-25N-22	Qal-Tnbs ₁	1,712,486	415,152	510.25	513.06	492.25	482.25	497.25	495.25	481.75
W-25N-23	Qal-Tnbs ₁	1,712,521	415,109	507.58	510.39	488.58	473.58	495.08	493.08	472.28

Notes:

All measurements are made in feet; elevations are in feet above mean sea level.

HSU = Hydrostratigraphic unit.

Qal-Tnbs₁ = Miocene Neroly Formation Lower Blue Sandstone.

*Well W-25N-20 Abandoned

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Table A-2. Site 300 sewer pond ground water monitoring network 2018 ground water elevation summary.

Well	Date sampled	Pre-sampling measurement	Ground water depth (ft.)	Ground water elevation (ft. above MSL)
W-7ES	8-Jan		17.7	492.1
W-7ES	20-Feb	PS	18.3	491.4
W-7ES	21-Feb	PS	18.3	491.4
W-7ES	30-Apr		19.1	490.6
W-7ES	7-Jun	PS	19.7	490
W-7ES	11-Jun	PS	19.7	490
W-7ES	13-Aug		20.5	489.2
W-7ES	27-Aug	PS	20.7	489
W-7ES	28-Aug	PS	20.7	489
W-7ES	19-Nov		21.5	488.2
W-7ES	5-Dec	PS	21.6	488.1
W-7ES	6-Dec	PS	21.6	488.1
W-7PS	8-Jan		17.3	491.5
W-7PS	30-Apr		>18.3 [DRY]	<490.5 [DRY]
W-7PS	13-Aug		>18.3 [DRY]	<490.5 [DRY]
W-7PS	19-Nov		>18.3 [DRY]	<490.5 [DRY]
W-35A-04	18-Jan		13	491.1
W-35A-04	20-Feb	PS	13.6	490.5
W-35A-04	21-Feb	PS	13.6	490.5
W-35A-04	18-Apr		14.1	489.9
W-35A-04	6-Jun	PS	14.9	489.1
W-35A-04	7-Jun	PS	14.9	489.1
W-35A-04	24-Jul		15.4	488.6
W-35A-04	17-Sep	PS	15.9	488.1
W-35A-04	18-Sep	PS	16	488.1
W-35A-04	6-Nov		16.6	487.5
W-35A-04	10-Dec	PS	16.6	487.4
W-35A-04	11-Dec	PS	16.6	487.4
W-25N-23	8-Jan		21.6	488.5
W-25N-23	30-Apr		22.9	487.2
W-25N-23	13-Aug		24.1	486
W-25N-23	12-Sep	PS	24.3	485.8
W-25N-23	13-Sep	PS	24.3	485.8
W-25N-23	19-Nov		24.8	485.3
W-25N-22	8-Jan		23.9	488.9
W-25N-22	13-Feb	PS	24.4	488.3
W-25N-22	14-Feb	PS	24.4	488.3
W-25N-22	30-Apr		25.1	487.6
W-25N-22	13-Aug		26.3	486.4
W-25N-22	12-Sep	PS	26.3	486.4
W-25N-22	13-Sep	PS	26.3	486.4
W-25N-22	19-Nov		26.9	485.9

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Table A-2. Site 300 sewer pond ground water monitoring network 2018 ground water elevation summary continued.

Well	Date sampled	Pre-sampling measurement	Ground water depth (ft.)	Ground water elevation (ft. above MSL)
W-26R-01	8-Jan		19.3	490.4
W-26R-01	12-Feb	PS	20	489.7
W-26R-01	13-Feb	PS	20.1	489.6
W-26R-01	30-Apr		20.9	488.8
W-26R-01	4-Jun	PS	21.3	488.4
W-26R-01	5-Jun	PS	21.3	488.4
W-26R-01	13-Aug		22.2	487.5
W-26R-01	27-Aug	PS	21.9	487.8
W-26R-01	28-Aug	PS	21.9	487.8
W-26R-01	19-Nov		22.9	486.8
W-26R-01	3-Dec	PS	22.9	486.8
W-26R-01	4-Dec	PS	22.9	486.8
W-26R-05	8-Jan		22.8	490.3
W-26R-05	12-Feb	PS	23.2	489.9
W-26R-05	15-Feb	PS	23.2	489.9
W-26R-05	30-Apr		23.9	489.2
W-26R-05	4-Jun	PS	24.2	488.9
W-26R-05	11-Jun	PS	24.2	488.9
W-26R-05	13-Aug		24.8	488.3
W-26R-05	12-Sep	PS	24.9	488.2
W-26R-05	18-Sep	PS	25.7	487.4
W-26R-05	19-Nov		25.2	487.9
W-26R-05	3-Dec	PS	25.8	487.3
W-26R-05	6-Dec	PS	25.8	487.3
W-26R-11	8-Jan		16.8	490.4
W-26R-11	30-Apr		18.2	488.7
W-26R-11	13-Aug		19.4	487.5
W-26R-11	19-Nov		20.3	486.6
W-7DS	8-Jan		16.1	490.2
W-7DS	14-Feb	PS	16.7	489.6
W-7DS	30-Apr		17.6	488.7
W-7DS	13-Aug		18.8	487.5
W-7DS	19-Nov		19.7	486.7
W-7DS	3-Dec	PS	19.7	486.6

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Table A-3. Site 300 sewer pond wastewater monitoring network 2018 coliform, anion, and physical characteristic data summary.

Well	Date	pH	Specific Conductance µmhos/cm	Biochemical Oxygen Demand mg/L	Dissolved Oxygen mg/L	Fecal Coliform MPN/100mL	Total Coliform MPN/100mL	Sodium mg/L
3-ESWP-OW	May 8	9.6	6400	79	6.9	>1600	>1600	1500
3-ESWP-OW	Sep 25	9.6	10000	75	13	>1600	>1600	2600
3-ISWP-OW	May 8	8.7	2100	160	-	-	-	-
3-ISWP-OW	Sep 25	8.7	1800	120	-	-	-	-

Note:

- = Analysis not required.

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Table A-4. Site 300 sewer pond wastewater monitoring network 2018 metals data summary.

Analyte (mg/L)	Date	3-ESWP-OW
Aluminum	May 8	320
	Sep 25	<200
Arsenic	May 8	7.8
	Sep 25	11
Barium	May 8	30
	Sep 25	91
Boron	May 8	6600
	Sep 25	11000
Cadmium	May 8	<50
	Sep 25	<100
Calcium	May 8	7200
	Sep 25	11000
Chromium	May 8	6.9
	Sep 25	3.9
Hexavalent Chromium	May 8	<1
	Sep 25	<1
Copper	May 8	10
	Sep 25	8.0
Iron	May 8	830
	Sep 25	<400
Lead	May 8	<5
	Sep 25	<10
Magnesium	May 8	6200
	Sep 25	7100
Manganese	May 8	91
	Sep 25	<120
Mercury	May 8	<0.2
	Sep 25	<0.4
Molybdenum	May 8	170
	Sep 25	160
Nickel	May 8	7.9
	Sep 25	5.7
Potassium	May 8	68000
	Sep 25	120000
Selenium	May 8	9.7
	Sep 25	11
Silver	May 8	<10
	Sep 25	<20
Vanadium	May 8	<20
	Sep 25	<40
Zinc	May 8	39
	Sep 25	<40

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Table A-5. Site 300 sewer pond wastewater monitoring network 2018 QA data.

Well	Date	Type	pH	Specific Conductance µmhos/cm	Biochemical Oxygen Demand mg/L	Dissolved Oxygen mg/L	Fecal Coliform MPN/100mL	Total Coliform MPN/100mL	Sodium mg/L
3-ESWP-OW	May 8	Routine	9.6	6400	79	6.9	>1600	>1600	1500
3-ESWP-OW	May 8	Duplicate	-	6400	-	-	-	-	-
3-ISWP-OW	Sep 25	Routine	8.7	1800	120	-	-	-	-
3-ISWP-OW	Sep 25	Duplicate	-	1900	-	-	-	-	-

Note:

- = Analysis not required.

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Table A-6. Site 300 sewer pond ground water monitoring network 2018 anions data summary.

Well	Date	Sodium mg/L	Chloride mg/L	Nitrate (as NO ₃) mg/L	Sulfate mg/L	Fluoride mg/L
W-7ES	Feb 20	140	140	11	320	0.34
	Jun 7	-	-	9.7	-	-
	Aug 27	150	150	9.7	330	0.34
	Dec 5	-	-	11	-	-
W-35A-04	Feb 20	140	140	15	310	0.35
	Jun 6	-	-	13	-	-
	Sep 17	160	150	13	340	0.40
	Dec 10	-	-	13	-	-
W-25N-23	Sep 12	140	98	1.2	390	0.33
W-25N-22	Feb 13	160	130	4.1	460	0.36
	Sep 12	170	150	4.1	480	0.38
W-26R-01	Feb 12	200	160	46	250	0.30
	Jun 4	-	-	44	-	-
	Aug 27	200	160	45	230	0.29
	Dec 3	-	-	43	-	-
W-26R-05	Feb 12	160	100	46	220	0.29
	Jun 4	-	-	<0.5	-	-
	Sep 12	140	92	0.70	210	0.36
	Dec 3	-	-	0.69	-	-
W-7DS	Feb 14	150	140	11	310	0.34
	Dec 3	-	-	11	-	-

Note:

- = Analysis not required.

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Table A-7. Site 300 sewer pond ground water monitoring network 2018 coliform data summary.

Well	Date	Fecal Coliform MPN/100mL	Total Coliform MPN/100mL
W-7ES	Feb 21	<1.8	<1.8
	Jun 11	<1.8	540
	Aug 28	8.3	4.0
	Dec 6	<1.8	2.0
W-35A-04	Feb 21	<1.8	<1.8
	Jun 7	17	17
	Sep 18	<1.8	<1.8
	Dec 11	<1.8	2.0
W-25N-23	Sep 13	<1.8	<1.8
W-25N-22	Feb 14	<1.8	<1.8
	Sep 13	<1.8	2.0
W-26R-01	Feb 13	<1.8	<1.8
	Jun 5	<1.8	<1.8
	Aug 28	3.7	<1.8
	Dec 4	<1.8	<1.8
W-26R-05	Feb 15	<1.8	<1.8
	Jun 11	<1.8	<1.8
	Sep 18	<1.8	<1.8
	Dec 6	<1.8	<1.8

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Table A-8. Site 300 sewer pond ground water monitoring network 2018 physical chemistry data.

Well	Date	pH	Specific Conductance µmhos/cm	Total Alkalinity (as CaCO ₃) mg/L	Total dissolved solids (TDS) mg/L	Total Hardness (as CaCO ₃) mg/L	Total Phosphorus (as PO ₄) mg/L
W-7ES	Feb 20	7.9	1500	280	1000	470	<1
W-7ES	Jun 7	7.9	1510	-	-	-	-
W-7ES	Aug 27	7.7	1560	290	1400	450	<1
W-7ES	Dec 5	7.7	1570	-	-	-	-
W-35A-04	Feb 20	7.9	1490	280	980	450	<1
W-35A-04	Jun 6	7.9	1540	-	-	-	-
W-35A-04	Sep 17	7.9	1600	270	1100	450	<1
W-35A-04	Dec 10	7.9	1550	-	-	-	-
W-25N-23	Sep 12	7.6	1450	220	1000	410	<1
W-25N-22	Feb 13	7.8	1570	190	1200	450	48
W-25N-22	Sep 12	7.8	1670	190	1200	470	<1
W-26R-01	Feb 12	7.9	1450	250	990	280	<1
W-26R-01	Jun 4	7.8	1460	-	-	-	-
W-26R-01	Aug 27	7.9	1460	240	1000	270	<1
W-26R-01	Dec 3	7.8	1460	-	-	-	-
W-26R-05	Feb 12	8.1	1110	220	770	230	<1
W-26R-05	Jun 4	7.7	1070	-	-	-	-
W-26R-05	Sep 12	8.0	1110	220	750	220	<1
W-26R-05	Dec 3	8.0	1070	-	-	-	-
W-7DS	Feb 14	7.9	1480	280	1000	440	<1
W-7DS	Dec 3	7.9	1530	-	-	-	-

Note:

– = Analysis not required.

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Table A–9. Site 300 sewer pond ground water monitoring network 2018 metals data summary.

Analyte (µg/L)	Month	W-7ES	W-35A-04	W-25N-23	W-25N-22	W-26R-01	W-26R-05	W-7DS
Aluminum	Feb	<50	<50	-	<50	<50	<50	<50
	Aug	<50	-	-	-	<50	-	-
	Sep	-	<50	<50	<50	-	<50	-
Arsenic	Feb	3.1	4.0	-	8.0	8.7	6.5	<2
	Aug	2.5	-	-	-	8.7	-	-
	Sep	-	4.2	5.0	7.8	-	6.7	-
	Dec	-	3.7	-	-	-	-	-
Barium	Feb	53	45	-	31	37	29	50
	Aug	47	-	-	-	33	-	-
	Sep	-	46	30	26	-	28	-
	Dec	-	46	-	-	-	-	-
Boron	Feb	2400	2500	-	900	1500	1000	2200
	Aug	2500	-	-	-	1500	-	-
	Sep	-	2700	950	820	-	920	-
Cadmium	Feb	<50	<50	-	<50	<50	<50	<50
	Aug	<50	-	-	-	<50	-	-
	Sep	-	<50	<50	<50	-	<50	-
	Dec	-	<0.5	-	-	-	-	-
Calcium	Feb	110000	110000	-	110000	70000	58000	100000
	Aug	100000	-	-	-	66000	-	-
	Sep	-	100000	98000	120000	-	56000	-
Chromium	Feb	2.6	2.8	-	<1	<1	<1	4.0
	Aug	2.0	-	-	-	1.7	-	-
	Sep	-	1.6	1.0	1.5	-	1.5	-
	Dec	-	<1	-	-	-	-	-
Hexavalent Chromium	Feb	<1	<1	-	<1	<1	<1	<1
	Aug	<1	-	-	-	<1	-	-
	Sep	-	<1	<1	<1	-	<1	-
Copper	Feb	1.8	<1	-	1.3	2.0	1.1	1.4
	Aug	1.9	-	-	-	4.1	-	-
	Sep	-	1.1	1.9	2.9	-	2.8	-
	Dec	-	<10	-	-	-	-	-

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

Table A–9. Site 300 sewer pond ground water monitoring network 2018 metals data summary continued.

Analyte (µg/L)	Month	W-7ES	W-35A-04	W-25N-23	W-25N-22	W-26R-01	W-26R-05	W-7DS
Iron	Feb	<100	<100	-	<100	<100	<100	<100
	Aug	<100	-	-	-	<100	-	-
	Sep	-	<100	<100	<100	-	<100	-
Lead	Feb	<5	<5	-	<5	<5	<5	<5
	Aug	<5	-	-	-	<5	-	-
	Sep	-	<5	<5	<5	-	<5	-
	Dec	-	<2	-	-	-	-	-
Magnesium	Feb	47000	45000	-	43000	25000	21000	44000
	Aug	47000	-	-	-	24000	-	-
	Sep	-	47000	39000	44000	-	20000	-
Manganese	Feb	<30	<30	-	<30	<30	<30	<30
	Aug	<30	-	-	-	<30	-	-
	Sep	-	<30	<30	38	-	<30	-
Mercury	Feb	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2
	Aug	<0.2	-	-	-	<0.2	-	-
	Sep	-	<0.2	<0.2	<0.2	-	<0.2	-
	Dec	-	<0.2	-	-	-	-	-
Molybdenum	Feb	<25	<25	-	<25	<25	<25	<25
	Aug	<25	-	-	-	28	-	-
	Sep	-	<25	28	<25	-	27	-
	Dec	-	<25	-	-	-	-	-
Nickel	Feb	2.1	<2	-	8.6	2.5	2.0	4.6
	Aug	2.0	-	-	-	<2	-	-
	Sep	-	3.1	3.2	7.4	-	<2	-
	Dec	-	<5	-	-	-	-	-
Potassium	Feb	4900	4700	-	11000	11000	9700	5000
	Aug	5100	-	-	-	10000	-	-
	Sep	-	5200	9900	11000	-	9100	-
	Dec	-	5400	-	-	-	-	-

*LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018*

Table A–9. Site 300 sewer pond ground water monitoring network 2018 metals data summary continued.

Analyte (µg/L)	Month	W-7ES	W-35A-04	W-25N-23	W-25N-22	W-26R-01	W-26R-05	W-7DS
Selenium	Feb	6.1	6.4	-	3.2	8.5	2.7	4.6
	Aug	6.8	-	-	-	11	-	-
	Sep	-	6.7	<2	2.8	-	<2	-
	Dec	-	8.1	-	-	-	-	-
Silver	Feb	<10	<10	-	<10	<10	<10	<10
	Aug	<10	-	-	-	<10	-	-
	Sep	-	<10	<10	<10	-	<10	-
	Dec	-	<0.5	-	-	-	-	-
Vanadium	Feb	<20	<20	-	<20	<20	<20	<20
	Aug	<20	-	-	-	<20	-	-
	Sep	-	<20	<20	<20	-	<20	-
	Dec	-	<10	-	-	-	-	-
Zinc	Feb	26	26	-	<20	<20	<20	<20
	Aug	<20	-	-	-	<20	-	-
	Sep	-	<20	26	31	-	<20	-
	Dec	-	22	-	-	-	-	-

*LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018*

Table A-10. Site 300 sewer pond ground water monitoring network second semester 2018 QA data.

Constituent	Units	W-7ES	W-7ES	W-7ES	W-7ES	W-26R-01	W-26R-01	W-26R-01	W-26R-01
		Dec 5	Dec 5	Dec 6	Dec 6	Dec 3	Dec 3	Dec 4	Dec 4
		Routine	Duplicate	Routine	Duplicate	Routine	Duplicate	Routine	Duplicate
pH	Units	7.7	7.5	-	-	7.8	7.9	-	-
Specific Conductance	µmhos/cm	1570	1570	-	-	1460	1460	-	-
Fecal Coliform	MPN/100mL	-	-	<1.8	<1.8	-	-	<1.8	<1.8
Total Coliform	MPN/100mL	-	-	2.0	17	-	-	<1.8	<1.8
Nitrate (as NO ₃)	mg/L	11	11	-	-	43	44	-	-

FIELD TRACKING FORM

Semi-Annual Site 300 Mechanical Equipment Room/Percolation Pit Discharge

LAB	CoC#	Ship It #
BC Labs	77336	236722

Special Instructions: Should be sampled in early April and October.
 See back of form for additional access information
 ** For 3-B827A-OW Contact FPOC; Off-road travel
 Location name change info: 3-B827A-OW previously 3-CT-PERC-OW
 3-B806B-OW previously 3-806B-OW

pH meter calibrated on 10/8/18
 Specific Conductance meter calibrated on 10/8/18

Sample Date: 10/8/18

Location Identifier	Sample Time	Initials	pH	Field Meas	BC Labs	Comments
3-B827A-OW**	1420	KRS	8.97	Specific Conductance 1456 μ S	S3WETCHEM 1000mL Poly ✓ S3ANIONS 1 x 500ml Poly ✓ S3METALS 500mL Poly ✓	327C Started at 07:40 77, 130ml Samples collected over a 6 hour time period. one Sample collected every 5 min. Approx 7 Liters collected
3-B827C-OW	1400	RS	8.75	972 μ S	✓	827A Started at 0758 77 130ml Samples collected over a 6 hour time period one Sample collected every 5 min. Approx 7 Liters collected
3-B827D-OW						
3-B827E-OW						
3-B806A-OW						
Duplicate of 3-806A-OW	2nd Qtr					
Duplicate of 3-827A-OW	4th Qtr					
3-B8990-OW	1420				✓	827D under construction no discharge, no Sample collected

Revised 2/2/17

Copy to Analyst, Ada Chan.

FIELD TRACKING FORM

Semi-Annual Site 300 Mechanical Equipment Room/Percolation Pit Discharge

Special Instructions: Should be sampled in early April and October
 See back of form for additional access information
 ** For 3-B827A-OW Contact FPOC. Off-road travel
 Location name change info: 3-B827A-OW previously 3-CT-PERC-OW
 3-B806B-OW previously 3-806B-OW

LAB	CoC#	Ship It #
BC Labs	77322	236686

pH meter calibrated on: 10/3/18
 Specific Conductance meter calibrated on: 10/5/18

Sample Date: 10/3/18

Location Identifier	Sample Time	Initials	Field Meas		BC Labs		Comments
			pH	Specific Conductance	S3METALS 500mL Poly	S3ANIONS 1 x 500ml Poly	
3-B827A-OW**							806A STARTED AT 07:48 75, 150ml Samples Collected over a 6 hour time period 1 sample every 5 min Approx 7 liters Collected
3-B827C-OW							827E STARTED AT 08:20 74, 150ml Samples Collected over a 6 hour time period. 1 Sample Collected every 5 min.
3-B827D-OW	1420	KS	8.66	2.64ms			Approx 7 liters Collected
3-B827E-OW	1355	KS	8.67	984ms			
3-B806A-OW							
Duplicate of 3-806A-OW			2nd Qtr				
Duplicate of 3-827A-OW			4th Qtr				
3-B8900-OW							

Revised 2/2/17

Copy to Analyst, Ada Chan

LLNL Site 300 Sewer / Wastewater Evaporation Pond
Weekly Inspection & Monitoring Report

YEAR 2018 MONTH July

Treatment POND 1 3X per week

Day	Op. lhi	Fbdl. ft	Time	Pond East				Pond West				Color			Air temp	Wind	Odor Yes/No	Solids Yes/No	Insects Yes/No	Scum Yes/No	Algae Yes/No
				D.O. mg/L	pH	Temp	Time	D.O. mg/L	pH	Temp	Time	Green	Brown Green	Brown							
1	56	2'	0901	2.00	9.01	22.0	0935	2.06	9.21	22.7				70°	W/E	N	N	Y	N	Y	
3	56	2'	0946	5.00	8.77	22.5	1010	5.00	9.00	23.2				69°	E/W	N	N	Y	N	Y	
5	56	2'	0730	5.00	9.02	22.1	0800	5.00	9.20	22.9				68°	W/E	N	N	Y	N	Y	
7	56	2'	0940	8.00	8.88	23.8	1006	8.00	9.01	24.3				84°	W/W	N	N	Y	N	Y	
9	TC	2'	0830	12	8.21	27.7	0840	12	8.96	27.6				-	W/E	N	N	Y	N	Y	
12	TC	2'	1735	8.5	8.82	25.4	1730	12	8.90	32.6				94°	E/W	N	N	Y	N	Y	
14	TC	2'	0805	6.33	9.01	24.9	0805	14	8.82	24.6				-	E/W	N	N	Y	N	Y	
15	56	2'	1000	5.53	8.63	25.3	1020	5.01	8.86	24.5				78°	N/W	N	N	Y	N	Y	
17	56	2'	1201	5.01	9.05	22.1	1235	6.21	9.21	22.8				69°	N/E	N	N	Y	N	Y	
22	TC	2'	0835	7.2	9.4	24.5	0900	11.3	9.2	24.3				-	E/W	N	N	Y	N	Y	
24	56	2'	0950	4.40	9.12	25.1	1020	2.04	9.33	23.9				78°	E/E	N	N	Y	N	Y	
27	56	2'	1029	3.08	9.23	23.5	1045	3.38	9.31	24.1				78°	W/E	N	N	Y	N	Y	
30	56	2'	1255	11.55	9.10	26.1	1310	12.0	9.28	26.6				90°	N/W	N	N	Y	N	Y	

10/9/2017

LLNL Site 300 Sewer / Wastewater Evaporation Pond
Weekly Inspection & Monitoring Report

YEAR 2018 MONTH Aug

Day	Op. Inl	Fbd. ft	Pond East					Pond West					Color			Air temp	Wind	Odor Yes/No	Solids Yes/No	Insects Yes/No	Scum Yes/No	Algae Yes/No
			Time	D.O. mg/L	pH	Temp	Time	D.O. mg/L	pH	Temp	Green	Brown Green	Brown									
														Time	D.O. mg/L							
8/2/18	55	2'	0750	9	9.43	21.5	0800	10.12	9.47	22.0	X			65°	EtoW	N	N	YES	N	YES		
8/5/18	55	2'	0830	10	9.41	22.3	0900	10	9.46	23.1	X			76°	White	N	N		N			
8/8/18	55	2'	0800	10	9.47	20.3	0830	7.36	9.55	20.4	X			69°	N/A	N	N	Y	N	Y		
8/13/18	55	2'	0900	9.75	7.85	22.8	0930	9.23	7.87	23.1	X			78°	White	N	N	Y	N	Y		
8/19/18	55	2'	1100	12	9.10	23.6	1030	12	9.17	23.1	X			81°	White	N	N	Y	N	Y		
8/22/18	74	2'	1125	8.48	7.2	21.9	1135	10	7.31	26.4	X			72°	EtoW	N	N	Y	N	Y		
8/26/18	74	2'	0830	10.16	9.56	19.9	0845	4.5	9.56	18.8	Y			67°	N/A	N	N	Y	N	Y		
8/29/18	74	2'	1415	8.0	4.3	23.4	1420	10.0	8.36	27.1	X			75°	EtoW	N	N	Y	N	Y		
8/31/18	55	2'	0900	10	7.65	20.1	0930	8	7.31	20.2	X			65°	EtoW	N	N	Y	N	Y		

LLNL Site 300 Sewer / Wastewater Evaporation Pond
Weekly Inspection & Monitoring Report

YEAR 2018 MONTH SEPT

Treatment POND 1 3X per week										Observations										
Day	Op. Inj	Fbd. ft	Pond East				Pond West				Color			Air temp	Wind	Odor Yes/No	Solids Yes/No	Insects Yes/No	Scum Yes/No	Algae Yes/No
			Time	D.O. mg/L	pH	Temp	Time	D.O. mg/L	pH	Temp	Green	Brown Green	Brown							
9/5	5g	2'	0735	4	9.34	20.7	0740	5	9.55	20.8				-	NA	NO	NO	YES	NO	YES
9/11	5L	2	0901	11.75	9.30	19.7	0920	9.55	9.42	20.3				75°	WHE	N	N	Y	N	Y
9/13	5L	2	0945	7.89	9.24	17.0	0950	7.67	9.47	17.1				-	N/A	N	N	Y	N	Y
9/16	5L	2'	0915	9.96	9.43	16.9	0930	9.84	9.40	16.6				64°	NW	N	N	Y	N	Y
9/23	5L	2'	1215	10	9.30	20.9	1221	10	9.41	21.1				80°	WHE	N	N	Y	N	Y
9/26	5L	2'	1000	11	9.13	18.6	1025	11	9.34	19.7				72°	E6W	N	N	Y	N	Y

10/9/2017

LLNL Site 300 Sewer / Wastewater Evaporation Pond
Weekly Inspection & Monitoring Report

YEAR 2018 MONTH Nov

Treatment POND 1 3X per week

Day	Op. Inj	Fbd. ft	Pond East					Pond West					Color			Air temp	Wind	Odor Yes/No	Solids Yes/No	Insects Yes/No	Scum Yes/No	Algae Yes/No
			D.O. mg/L	pH	Temp	Time	D.O. mg/L	pH	Temp	Time	Green	Brown Green	Brown									
4	SG	7.5	0830	10	8.10	14.8	0900	10	8.01	15.0					60°	E/W	N	N	Y	N	Y	
3	SG	2.5	1515	10	8.85	15.7	1500	10	8.84	15.4					74°	N/A	N	N	Y	N	Y	
11	SG	2.5	0920	8	8.60	8.7	0900	8	8.34	8.3					57°	W/E	N	N	Y	N	Y	
13	SG	2.5	0940	10	6.99	7.6	0950	10	9.0	8.2					53°	E/W	N	N	Y	N	Y	
19	SG	2.5	0945	12	8.88	8.4	1000	10	8.99	8.8					60°	W/E	N	N	Y	N	Y	
21	SG	2.5	0900	6	7.82	8.3	0930	8	7.72	8.5					53°	W/E	N	N	Y	N	Y	
23	SG	2.5	0916	10	8.01	8.5	0925	10	7.99	8.4					56°	N/A	N	N	Y	N	Y	
27	SG	2.5	0850	10	8.04	8.4	0900	10	8.01	8.6					54°	W/E	N	N	Y	N	Y	

Observations

10/9/2017

LLNL Site 300 Sewer / Wastewater Evaporation Pond
Weekly Inspection & Monitoring Report

YEAR 2018 MONTH Dec

Day	Op. Inl	Fbd. ft	Time	Pond East				Pond West				Color			Air temp	Wind	Odor Yes/No	Solids Yes/No	Insects Yes/No	Scum Yes/No	Algae Yes/No
				D.O. mg/L	pH	Temp	Time	D.O. mg/L	pH	Temp	Green	Brown Green	Brown								
				Observations																	
2	56	2.5	0930	10	8.99	11.3	1000	10	9.11	11.7				50°	W/E	N	N	Y	N	Y	
4	56	2.5	0900	12	8.87	10.8	0930	12	9.01	10.8				46°	W/E	N	N	Y	N	Y	
6	56	2.5	1140	12	9.25	10.9	1200	10	9.12	10.4°				52°	N/A	N	N	Y	N	Y	
9	56	2.5	1335	12	10.41	9.6	1325	12	9.70	9.7				48°	W/E	N	N	Y	N	Y	
11	56	2.0	0910	12.6	8.75	9.6°	0930	12.2	9.25	9.6°				47°	W/E	N	N	Y	N	Y	
13	56	2.0	0930	11.47	8.85	9.6.6°	1000	12.5	9.11	9.4°				51°	N/A	N	N	Y	N	Y	
16	56	2.0	0901	12	8.88	9.5.8	0820	12	9.10	9.6.1				55°	W/E	N	N	Y	N	Y	
18	56	2.0	1205	10.51	8.6	51.4°	1230	12	9.01	51.2				60°	E/W	N	N	Y	N	Y	
23	56	2.0	0931	9.85	8.44	9.8.3	0950	9.61	9.07	9.8.3				54°	E/W	N	N	Y	N	Y	
30	56	2.0	1200	10.01	8.65	9.8.4	1145	9.89	8.99	9.8.2				52	E/W	N	N	Y	N	Y	

10/9/2017

BenSJB\LLNL_data\forms.xls_DO_pH_Temp

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/Annual Report 2018
 All Ground Water Sampling Data

Target Sample Date: 27-AUG-2018 Month: Norm Qtr: 3 Norm Year: 2018

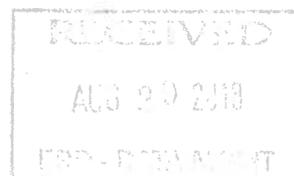
WELL ID: W-7DS AREA INFO: S300/GSA/EGSA
 DATE: 27-Aug-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38021
 PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: ND
 SCREENED INTERVAL (ft-bmp): 18.80 - 28.80 PUMP INTAKE DEPTH: 27.80
 CASING DEPTH(installed/sounded)(ft-bmp): 27.00 / 30.30 on 17-MAY-17 CASING VOL (Gal/Time): 10.24
 DEPTH TO WATER(ft-bmp): 17.60 on 30-APR-18 18.89 VOLUME FACTOR: 0.826
 WATER IN CASING (ft): 12.40 CASING DIAMETER/TCASING HT(in): 4.5 / 3.00
 TIME PUMP ON: _____ INITIAL FLOW RATE (Q=GPM): _____
 TIME PUMP OFF: _____ MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH: _____ YES/NO PROJECT: 3MRP
 SC: _____ YES/NO SAMPLE PRESERVATION/AMT of REAGENT: _____
 mV: _____ YES/NO PURGE VOL/EXCESS H2O DEST: 30.73 / S300-DRUM
 H2O: _____ YES/NO TF LOCATION: S300
 QC SAMPLE ID: _____ QC LAB(S): _____ QC SAMPLE TIME: _____
 SAMPLE ID (VERIFY): _____ TIME COLLECTED: _____

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7DS	S3ANIONS	1	250 ml P	
BB	W-7DS	S3METALS	1	500ml P	
BB	W-7DS	S3METALS:FILTER	0	O	
BB	W-7DS	S3WETCHEM	2	500ml P	
AA	W-7DS	SM9221	1	250 ml P	

Pump in-operable has new 4 prong connection to plug.



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

All Ground Water Sampling Data

Target Sample Date: 03-DEC-2018

Month: Norm Qtr: 4 Norm Year: 2018

WELL ID: W-7DS AREA INFO: S300/GSA/EGSA

DATE: 03-Dec-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38059

PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: ND

SCREENED INTERVAL (ft-bmp): 18.80 - 28.80 PUMP INTAKE DEPTH: 27.80

CASING DEPTH(installed/sounded)(ft-bmp): 27.00 / 30.30 on 17-MAY-17 CASING VOL (Gal/Time): 9.26 *8.8 Gal X 3 cu = 26.4 Gal*

DEPTH TO WATER(ft-bmp): 18.79 on 13-AUG-18 *19.69* VOLUME FACTOR: 0.826

WATER IN CASING (ft): 11.21 *10.61* CASING DIAMETER/TCASING HT(in): 4.5 / 3.00

TIME PUMP ON: 1101 INITIAL FLOW RATE (Q=GPM): 3.02

TIME PUMP OFF: 1137 MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1110		9.5	1	7.82	21.6	1547	100	1	19.74
1119		17.6	2	7.85	21.9	1543	103	1	20.03
1128		26.4	3	7.84	21.5	1550 1550	101	1	20.40
1130				7.82	21.5	1548	101	1	
1132				7.02	21.5	1550	99		

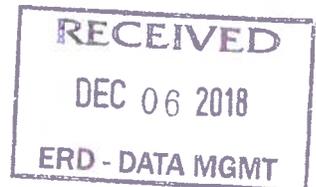
METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH : 61007M YES/NO PROJECT: 3CMP 3EMG
 SC : YES/NO SAMPLE PRESERVATION/AMT of REAGENT: NA
 mV : YES/NO PURGE VOL/EXCESS H2O DEST: 27.79 / S300-DRUM
 H2O: YES/NO TF LOCATION: S300

QC SAMPLE ID: _____ QC LAB(S): _____ QC SAMPLE TIME: _____

SAMPLE ID (VERIFY): W-7DS/gues TIME COLLECTED: 1137

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7DS	E300.0:NO3	1	250 ml P	
BB	W-7DS	E624MOD	3	40 mL V	
BB	W-7DS	SM2510B	1	250 ml P	
BB	W-7DS	SM4500PH	1	250 ml P	
AA	W-7DS	SM9221	1	250 ml P	

Added 02 of CC



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

All Ground Water Sampling Data

Target Sample Date: 04-DEC-2018

Month: Norm Qtr: 4 Norm Year: 2018

WELL ID: W-7DS AREA INFO: S300/GSA/EGSA

DATE: 04-Dec-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38059

PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: ND

SCREENED INTERVAL (ft-bmp): 18.80 - 28.80 PUMP INTAKE DEPTH: 27.80

CASING DEPTH(installed/sounded)(ft-bmp): 27.00 / 30.30 on 17-MAY-17 CASING VOL (Gal/Time): 9.26

DEPTH TO WATER(ft-bmp): 18.79 on 13-AUG-18 VOLUME FACTOR: 0.826

WATER IN CASING (ft): 11.21 CASING DIAMETER/TCASING HT(in): 4.5 / 3.00

TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):

TIME PUMP OFF: MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH : YES/NO PROJECT: 3EMG 3CMP
 SC : YES/NO SAMPLE PRESERVATION/AMT of REAGENT:
 mV : YES/NO PURGE VOL/EXCESS H2O DEST: 27.79 / S300-DRUM
 H2O: YES/NO TF LOCATION: S300

QC SAMPLE ID: QC LAB(S): QC SAMPLE TIME:

SAMPLE ID (VERIFY): TIME COLLECTED:

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7DS	E300.0:NO3	1	250 ml P	
BB	W-7DS	E624MOD	3	40 mL V	
BB	W-7DS	SM2510B	1	250 ml P	
BB	W-7DS	SM4500PH	1	250 ml P	
AA	W-7DS	SM9221	1	250 ml P	

* Pump inoperable.
 Pump worked yesterday

RECEIVED
 DEC 06 2018
 ERD - DATA MGMT

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/Annual Report 2018
 All Ground Water Sampling Data

Target Sample Date: 06-DEC-2018 Month: Norm Qtr: 4 Norm Year: 2018
 WELL ID: W-7E AREA INFO: S300/GSA/CGSA
 DATE: 06-Dec-2018 LOG BOOK (DOCUMENT CONTROL) #: AA3806±62
 PURGE METHOD/SAMPLE METHOD: GF / 3VES CONTAMINANT PRESENT: ND
 SCREENED INTERVAL (ft-bmp): 61.68 - 80.88 PUMP INTAKE DEPTH: 78.00
 CASING DEPTH(installed/sounded)(ft-bmp): 78.00 / 80.88 on 28-JAN-87 CASING VOL (Gal/Time): 49.76 49.2x302
 DEPTH TO WATER(ft-bmp): 20.35 on 13-AUG-18 2122 VOLUME FACTOR: 0.826 142.6 gal
 WATER IN CASING (ft): 60.23 59.66 CASING DIAMETER/TCASING HT(in): 4.5 / 2.58
 TIME PUMP ON: 0959 INITIAL FLOW RATE (Q=GPM): 3.00
 TIME PUMP OFF: 1054 MEASURED BY: FLOW METER GRAD CYL./ BUCKET/ OTHER

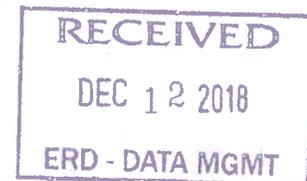
TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1015		49.2	1	8.61	20.6	1492	433	1	35.53
1031		98.4	2	8.59	20.6	1486	377	1	35.97
1047		147.6	3	8.58	20.5	1473	321	1	36.73
1049				8.59	20.5	1478	287		
1051				8.57	20.5	1481	239		

METER SERIAL # 610084 CALIBRATED YES
 pH: YES
 SC: YES
 mV: YES
 H2O: YES
 SAMPLER/EMPLOYER: silva90
 PROJECT: 3EMG 3CMP
 SAMPLE PRESERVATION/AMT of REAGENT: NA
 PURGE VOL/EXCESS H2O DEST: 147.29 / S300-DBM
 TF LOCATION: S300

QC SAMPLE ID: - QC LAB(S): - QC SAMPLE TIME: -
 SAMPLE ID (VERIFY): W-7E / 3VES TIME COLLECTED: 1054

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7E	E300.U:NO3	1	250 ml P	
BB	W-7E	E62+MOD	3	40 ml V	
BB	W-7E	SM2510B	1	250 ml P	
BB	W-7E	SM4500PH	1	250 ml P	
AA	W-7E	SM9221	1	250 ml P	

Evacuated all CL



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/Annual Report 2018
 All Ground Water Sampling Data

Target Sample Date: 27-AUG-2018

Month: Norm Qtr: 3 Norm Year: 2018

WELL ID: W-7ES AREA INFO: S300/GSA/CGSA

DATE: 27-Aug-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38021

PURGE METHOD/SAMPLE METHOD: GF / 3VES CONTAMINANT PRESENT: NO3-11

SCREENED INTERVAL (ft-bmp): 18.30 - 28.30 PUMP INTAKE DEPTH: 26.30

CASING DEPTH(installed/sounded)(ft-bmp): 26.80 / 30.10 on 21-JAN-87 CASING VOL (Gal/Time): 8.34 *7.8 x 30 = 234 Gal*

DEPTH TO WATER(ft-bmp): 19.71 on 11-JUN-18 *20.88* VOLUME FACTOR: 0.826

WATER IN CASING (ft): 10.09 *9.42* CASING DIAMETER/TCASING HT(in): 4.5 / 3.00

TIME PUMP ON: 1118 INITIAL FLOW RATE (Q=GPM): 2.0 Q

TIME PUMP OFF: _____ MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1122		7.8	1	8.07	22.4	1591	-22	1	23.17
1126		15.6	2	7.97	22.6	1592	-32	1	24.12
1130		23.4	3	7.98	22.4	1578	-21	1	Top of Pump
1132				7.95	22.5	1570	-20	1	
1134				7.92	22.5	1566	-18	1	

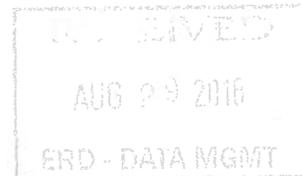
METER SERIAL # 610854 CALIBRATED YES SAMPLER/EMPLOYER: silva90
 pH: _____ YES/NO PROJECT: 3MRP
 SC: _____ YES/NO SAMPLE PRESERVATION/AMT of REAGENT: NA
 mV: _____ YES/NO PURGE VOL/EXCESS H2O DEST: 25.01 / S300-DRUM
 H2O: _____ YES/NO TF LOCATION: S300

QC SAMPLE ID: _____ QC LAB(S): _____ QC SAMPLE TIME: _____

SAMPLE ID (VERIFY): W-7ES / 3VES TIME COLLECTED: 1146

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7ES	S3ANIONS	1	250 ml P	
BB	W-7ES	S3METALS	1	500ml P	
BB	W-7ES	S3METALS:FILTER	0	O	
BB	W-7ES	S3WETCHEM	2	500ml P	
BB	W-7ES	SM9221	1	250 ml P	

Added oz of Cl



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

All Ground Water Sampling Data

Target Sample Date: 27-AUG-2018

Month: Norm Qtr: 3 Norm Year: 2018

WELL ID: W-7ES AREA INFO: S300/GSA/CGSA

DATE: 28-Aug-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38021²

PURGE METHOD/SAMPLE METHOD: GF / 3VES CONTAMINANT PRESENT: NO3-11

SCREENED INTERVAL (ft-bmp): 18.30 - 28.30 PUMP INTAKE DEPTH: 26.30

CASING DEPTH(installed/sounded)(ft-bmp): 26.80 / 30.10 on 21-JAN-87 CASING VOL (Gal/Time): 8.34 278x3w

DEPTH TO WATER(ft-bmp): 19.71 on 11-JUN-18 20.68 VOLUME FACTOR: 0.826 = 27.4 Gal

WATER IN CASING (ft): 10.09 9.42 CASING DIAMETER/TCASING HT(in): 4.5 / 3.00

TIME PUMP ON: 1122 INITIAL FLOW RATE (Q=GPM): 1.0

TIME PUMP OFF: 1157 MEASURED BY: FLOW METER GRAD CYL./ BUCKET/ OTHER

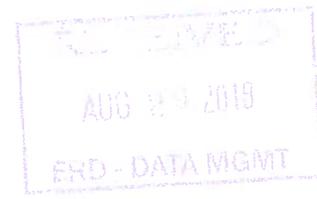
TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1130		7.8	1	8.04	22.4	1583	436	1	23.18
1138		15.6	2	8.01	22.6	1579	389	1	24.10
1146		23.4	3	7.98	22.6	1577	333	1	Top of Pump
1148				7.98	22.7	1569	219	1	↓
1150				7.95	22.6	1572	197	1	
1154				7.94	22.6	1571	188	1	

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH : _____ YES/NO PROJECT: 3MRP
 SC : _____ YES/NO SAMPLE PRESERVATION/AMT of REAGENT: _____
 mV : _____ YES/NO PURGE VOL/EXCESS H2O DEST: 25.01 / S300-DRUM
 H2O: _____ YES/NO TF LOCATION: S300

QC SAMPLE ID: _____ QC LAB(S): _____ QC SAMPLE TIME: _____

SAMPLE ID (VERIFY): W-7ES TIME COLLECTED: 1157

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7ES	S3ANIONS	1	250 ml P	
BB	W-7ES	S3METALS	1	500ml P	
BB	W-7ES	S3METALS:FILTER	0	O	
BB	W-7ES	S3WETCHEM	2	500ml P	
AA	W-7ES	SM9221	1	250 ml P	



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

All Ground Water Sampling Data

Target Sample Date: 05-DEC-2018

Month: Norm Qtr: 4 Norm Year: 2018

WELL ID: W-7ES AREA INFO: S300/GSA/CGSA

DATE: 05-Dec-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38061

PURGE METHOD/SAMPLE METHOD: GF / 3VES CONTAMINANT PRESENT: NO3-11

SCREENED INTERVAL (ft-bmp): 18.30 - 28.30 PUMP INTAKE DEPTH: 26.30

CASING DEPTH(installed/sounded)(ft-bmp): 26.80 / 30.10 on 21-JAN-87 CASING VOL (Gal/Time): 7.53 7.0x202

DEPTH TO WATER(ft-bmp): 20.68 on 28-AUG-18 21.58 VOLUME FACTOR: 0.826 21 Gal

WATER IN CASING (ft): 9.12 8.52 CASING DIAMETER/TCASING HT(in): 4.5 / 3.00

TIME PUMP ON: 1035 INITIAL FLOW RATE (Q=GPM): 200

TIME PUMP OFF: 1053 MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

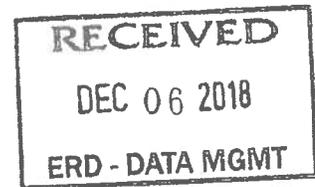
TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1037		7	1	7.49	22.0	1570	53	1	21.68
1041		14	2	7.44	22.0	1573	55	1	21.72
1045		21	3	7.44	22.1	1568	52	1	21.73
1047				7.43	22.0	1563	51	1	
1049				7.40	22.1	1566	52	1	

METER SERIAL # 60054 CALIBRATED YES SAMPLER/EMPLOYER: silva90
 pH: 7.49 YES/NO PROJECT: 3CMP 3EMG
 SC: 7.44 YES/NO SAMPLE PRESERVATION/AMT of REAGENT: NA
 mV: 53 YES/NO PURGE VOL/EXCESS H2O DEST: 22.60 / S300-DRUM
 H2O: 7.53 YES/NO TF LOCATION: S300

QC SAMPLE ID: W-76Y QC LAB(S): ECLABS-BAK, ALPHAANAL QC SAMPLE TIME: 1159

SAMPLE ID (VERIFY): W-7ES / 3VES TIME COLLECTED: 1053

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7ES	E300.0:NO3	1	250 ml P	
BB	W-76Y	E300.0:NO3	1	250 ml P	
BB	W-76Y	E624MOD	3	40 mL V	
BB	W-7ES	E624MOD	3	40 mL V	
BB	W-7ES	SM2510B	1	250 ml P	
BB	W-76Y	SM2510B	1	250 ml P	
BB	W-7ES	SM4500PH	1	250 ml P	
BB	W-76Y	SM4500PH	1	250 ml P	
AA	W-7ES	SM9221	1	250 ml P	
AA	W-76Y	SM9221	1	250 ml P	



Added on of CL

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/Annual Report 2018
 All Ground Water Sampling Data

Target Sample Date: 06-DEC-2018

Month: Norm Qtr: 4 Norm Year: 2018

WELL ID: W-7ES AREA INFO: S300/GSA/CGSA

DATE: 06-Dec-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38062

PURGE METHOD/SAMPLE METHOD: GF / 3VES CONTAMINANT PRESENT: NO3-11

SCREENED INTERVAL (ft-bmp): 18.30 - 28.30 PUMP INTAKE DEPTH: 26.30

CASING DEPTH(installed/sounded)(ft-bmp): 26.80 / 30.10 on 21-JAN-87 CASING VOL (Gal/Time): 7.53 7.0 x 30 =

DEPTH TO WATER(ft-bmp): 20.68 on 28-AUG-18 21.58 VOLUME FACTOR: 0.826 21.0 gal

WATER IN CASING (ft): 9.12 8.52 CASING DIAMETER/TCASING HT(in): 4.5 / 3.00

TIME PUMP ON: 1108 INITIAL FLOW RATE (Q=GPM): 2.0 G

TIME PUMP OFF: 1127 MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

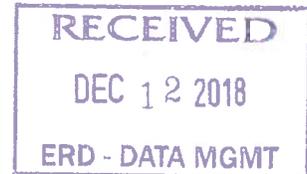
TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1112		7	1	7.53	22.1	1566	289	1	21.72
1116		14	2	7.50	22.1	1563	222	1	21.74
1119		21	3	7.47	22.0	1570	189	1	21.74
1121				7.45	22.1	1572	177	1	
1123				7.45	22.1	1570	151	1	

METER SERIAL # 610084 CALIBRATED YES/NO YES SAMPLER/EMPLOYER: silva90
 pH: _____ YES/NO _____ PROJECT: 3CMP 3EMG
 SC: _____ YES/NO _____ SAMPLE PRESERVATION/AMT of REAGENT: N
 mV: _____ YES/NO _____ PURGE VOL/EXCESS H2O DEST: 22.60 / S300-DRUM
 H2O: _____ YES/NO _____ TF LOCATION: S300

QC SAMPLE ID: W-76Y QC LAB(S): ALPHAANAL, BCLABS-BAK QC SAMPLE TIME: 1111

SAMPLE ID (VERIFY): W-7ES/3VES TIME COLLECTED: 1127

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7ES	E300-0:NO3	1	250 ml P	
BB	W-76Y	E300-0:NO3	1	250 ml P	
BB	W-76Y	B624MGD	3	40 ml V	
BB	W-7ES	B624MGD	3	40 ml V	
BB	W-7ES	SM2510B	1	250 ml P	
BB	W-76Y	SM2510B	1	250 ml P	
BB	W-7ES	SM4500PH	1	250 ml P	
BB	W-76Y	SM4500PH	1	250 ml P	
AA	W-7ES	SM9221	1	250 ml P	
AA	W-76Y	SM9221	1	250 ml P	



Evacuated all cc

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/Annual Report 2018
 All Ground Water Sampling Data

Target Sample Date: 27-AUG-2018 Month: Norm Qtr: 3 Norm Year: 2018

WELL ID: W-7PS AREA INFO: S300/GSA/CGSA
 DATE: 27-Aug-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38021
 PURGE METHOD/SAMPLE METHOD: GF / 3VES CONTAMINANT PRESENT: TCE-3/NO3-17
 SCREENED INTERVAL (ft-bmp): 19.48 - 22.48 INTAKE DEPTH: 0.00
 CASING DEPTH(installed/sounded)(ft-bmp): 19.50 / 22.48 on 12-APR-94 CASING VOL (Gal/Time): UNKNOWN
 DEPTH TO WATER(ft-bmp): UNKNOWN *Dry* VOLUME FACTOR: 0.826
 WATER IN CASING (ft): UNKNOWN CASING DIAMETER/TCASING HT(in): 4.5 / 2.68
 TIME PUMP ON: _____ INITIAL FLOW RATE (Q=GPM): _____
 TIME PUMP OFF: _____ MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

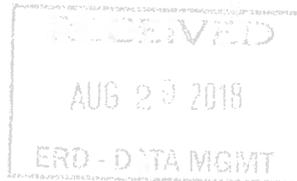
TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH: _____ YES/NO PROJECT: 3MRP
 SC: _____ YES/NO SAMPLE PRESERVATION/AMT of REAGENT: _____
 mV: _____ YES/NO PURGE VOL/EXCESS H2O DEST: UNKNOWN / S300-DRUM
 H2O: _____ YES/NO TF LOCATION: S300

QC SAMPLE ID: W-75Y EGSAFB QC LAB(S): BCLABS-BAK, ALPHAANAL QC SAMPLE TIME: _____

SAMPLE ID (VERIFY): _____ TIME COLLECTED: _____

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7PS	E245.1	1	1 L P	
BB	EGSAFB	E245.1	1	1 L P	
BB	W-75Y	E245.1	1	1 L P	
BB	W-75Y	S3ANIONS	1	250 ml P	
BB	EGSAFB	S3ANIONS	1	250 ml P	
BB	W-7PS	S3ANIONS	1	250 ml P	
BB	EGSAFB	S3METALS	1	500ml P	
BB	W-75Y	S3METALS	1	500ml P	
BB	W-7PS	S3METALS	1	500ml P	
BB	EGSAFB	S3METALS:FILTER	0	0	
BB	W-7PS	S3METALS:FILTER	0	0	
BB	W-75Y	S3METALS:FILTER	0	0	
BB	W-75Y	S3WETCHEM	2	500ml P	
BB	W-7PS	S3WETCHEM	2	500ml P	
BB	EGSAFB	S3WETCHEM	2	500ml P	
AA	EGSAFB	SM9221	1	250 ml P	
AA	W-7PS	SM9221	1	250 ml P	
AA	W-75Y	SM9221	1	250 ml P	



Dry, No Samples

NOTE:
 Purge rate/time: N/A since est_sus_flow = 0
 Purge Volume: 23.7900009 gal.
 Revision: 10/28/2015

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

All Ground Water Sampling Data

Target Sample Date: **05-DEC-2018** Month: Norm Qtr: **4** Norm Year: **2018**
 WELL ID: **W-7PS** AREA INFO: **S300/GSA/CGSA**
 DATE: **05-Dec-2018** LOG BOOK (DOCUMENT CONTROL) #: **AA38061**
 PURGE METHOD/SAMPLE METHOD: **GF / 3VES** CONTAMINANT PRESENT: **TCE-3/NO3-17**
 SCREENED INTERVAL (ft-bmp): **19.48 - 22.48** INTAKE DEPTH: **0.00**
 CASING DEPTH(installed/sounded)(ft-bmp): **19.50 / 22.48 on 12-APR-94** CASING VOL (Gal/Time): **UNKNOWN**
 DEPTH TO WATER(ft-bmp): **UNKNOWN** VOLUME FACTOR: **0.826**
 WATER IN CASING (ft): **UNKNOWN** CASING DIAMETER/TCASING HT(in): **4.5 / 2.68**
 TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):
 TIME PUMP OFF: MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

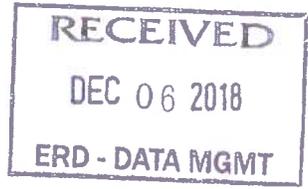
TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: **silva90**
 pH : YES/NO PROJECT: **3CMP 3EMG**
 SC : YES/NO SAMPLE PRESERVATION/AMT of REAGENT:
 mV : YES/NO PURGE VOL/EXCESS H2O DEST: **UNKNOWN / S300-DRUM**
 H2O: YES/NO TF LOCATION: **S300**

QC SAMPLE ID: QC LAB(S): QC SAMPLE TIME:
 SAMPLE ID (VERIFY): TIME COLLECTED:

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-7PS	E300.0:NO3	1	250 ml P	
TS	W-7PS	E624MOD	3	40 mL V	
BB	W-7PS	SM2510B	1	250 ml P	
BB	W-7PS	SM4500PH	1	250 ml P	
AA	W-7PS	SM9221	1	250 ml P	

** INSUFF H2O to collect samples*
** NO samples*



NOTE:
 Purge rate/time: N/A since est_sus_flow = 0
 Purge Volume: 23.7900009 gal.
 Revision: 10/28/2015

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

All Ground Water Sampling Data

Target Sample Date: 12-SEP-2018

Month: Norm Qtr: 3 Norm Year: 2018

WELL ID: W-25N-22 AREA INFO: S300/GSA/EGSA

DATE: 12-Sep-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38029

PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: TCE-1.2

SCREENED INTERVAL (ft-bmp): 20.80 - 30.80 PUMP INTAKE DEPTH: 31.05

CASING DEPTH(installed/sounded)(ft-bmp): 28.50 / 32.50 on 09-JAN-12 CASING VOL (Gal/Time): 3.86 5.1 x 3cu =

DEPTH TO WATER(ft-bmp): 26.33 on 13-AUG-18 26.32 VOLUME FACTOR: 0.826 15.3 cu /

WATER IN CASING (ft): 4.67 6.18 CASING DIAMETER/TCASING HT(in): 4.5 / 2.50

TIME PUMP ON: 0944 INITIAL FLOW RATE (Q=GPM): .8

TIME PUMP OFF: 1019 MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
0950		5.1	1	8.46	22.2	1621	13	1	28.95
0957		10.2	2	8.41	22.3	1652	33	1	29.42
1003		15.3	3	8.40	23.4	1650	31	1	29.80 * Top of Pump
1005				8.41	23.4	1647	30	1	
1007				8.42	23.3	1649	34	1	

METER SERIAL # 610084 CALIBRATED YES/NO YES
 pH : _____ YES/NO _____
 SC : _____ YES/NO _____
 mV : _____ YES/NO _____
 H2O: _____ YES/NO _____

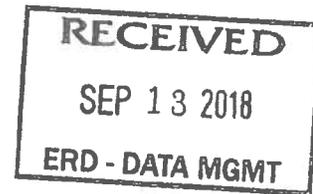
SAMPLER/EMPLOYER: silva90
 PROJECT: 3MRP
 SAMPLE PRESERVATION/AMT OF REAGENT: NA
 PURGE VOL/EXCESS H2O DESI: 11.58 / S300-DRUM
 TF LOCATION: S300

QC SAMPLE ID: _____ QC LAB(S): _____ QC SAMPLE TIME: _____

SAMPLE ID (VERIFY): W-25N-22 / 3VES TIME COLLECTED: 1010

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-25N-22	S3ANIONS	1	250 ml P	
BB	W-25N-22	S3METALS	1	500ml P	
BB	W-25N-22	S3METALS:FILTER	0	O	
BB	W-25N-22	S3WETCHEM	2	500ml P	
AA	W-25N-22	SM9221	1	250-ml-P	

Added or of CC



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
All Ground Water Sampling Data
Second Semester Annual Report 2018

Target Sample Date: 13-SEP-2018

Month: Norm Qtr: 3 Norm Year: 2018

WELL ID: W-25N-22 AREA INFO: S300/GSA/EGSA

DATE: 13-Sep-2018 LOG BOOK (DOCUMENT CONTROL) #: AA3802-30

PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: TCE-1.2

SCREENED INTERVAL (ft-bmp): 20.80 - 30.80 PUMP INTAKE DEPTH: 31.05

CASING DEPTH(installed/sounded)(ft-bmp): 28.50 / 32.50 on 09-JAN-12 CASING VOL (Gal/Time): 3.86 *5.1k300 =*

DEPTH TO WATER(ft-bmp): 26.33 on 13-AUG-18 26.30 VOLUME FACTOR: 0.826 15.3

WATER IN CASING (ft): 4.67 6.20 CASING DIAMETER/TCASING HT(in): 4.5 / 2.50

TIME PUMP ON: 1119 INITIAL FLOW RATE (Q=GPM): .8 Q

TIME PUMP OFF: 1145 MEASURED BY: FLOW METER GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1125		5.1	1	8.44	22.2	1644	372	1	28.95
1131		10.2	2	8.41	22.3	1659	282	1	29.45
1137		15.3	3		23.3	1653	244	1	29.79
1139					23.3	1650	179		
1141					23.3	1651	173		

METER SERIAL # 60084 CALIBRATED YES/NO
 pH : _____ YES/NO
 SC : _____ YES/NO
 mV : _____ YES/NO
 H2O: _____ YES/NO

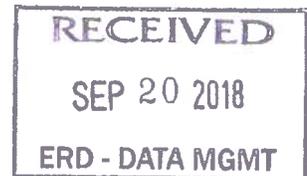
SAMPLER/EMPLOYER: silva90
 PROJECT: 3MRP
 SAMPLE PRESERVATION/AMT of REAGENT: NA
 PURGE VOL/EXCESS H2O DEST: 11.58 / S300-DRUM
 TF LOCATION: S300

QC SAMPLE ID: _____ QC LAB(S): _____ QC SAMPLE TIME: _____

SAMPLE ID (VERIFY): W-25N-22 / 3VES TIME COLLECTED: 1145

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-25N-22	S3ANIONS	1	250 ml P	
BB	W-25N-22	S3METALS	1	500ml P	
BB	W-25N-22	S3METALS+FILTER	0	0	
BB	W-25N-22	S3WETCHEM	2	500ml P	
AA	W-25N-22	SM9221	1	250 ml P	

Encountered all CL from well



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

All Ground Water Sampling Data

Target Sample Date: 12-SEP-2018

Month: Norm Qtr: 3 Norm Year: 2018

WELL ID: W-25N-23 AREA INFO: S300/GSA/EGSA

DATE: 12-Sep-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38029

PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: *TCE-6.0

SCREENED INTERVAL (ft-bmp): 21.80 - 36.80 PUMP INTAKE DEPTH: 36.14

CASING DEPTH(installed/sounded)(ft-bmp): 35.30 / 37.17 on 25-APR-18 CASING VOL (Gal/Time): 11.32 10.6x30 =

DEPTH TO WATER(ft-bmp): 24.10 on 13-AUG-18 24.30 VOLUME FACTOR: 0.826 31.8 Gal

WATER IN CASING (ft): 13.70 12.57 CASING DIAMETER/TCASING HT(in): 4.5 / 2.50

TIME PUMP ON: 1049 INITIAL FLOW RATE (Q=GPM): .78

TIME PUMP OFF: 1145 MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1102		10.6	1	7.91	26.1	1586	-111	1	25.33
1115		20.2	2	7.41	23.7	1450	-86	1	25.92
1129		31.8	3	7.40	23.6	1443	-84	1	26.33
1131				7.38	23.5	1440	-80	1	
1133				7.38	23.5	1442	-78		

METER SERIAL # 6100584 CALIBRATED YES/NO
 pH: YES/NO
 SC: YES/NO
 mV: YES/NO
 H2O: YES/NO

SAMPLER/EMPLOYER: silva90
 PROJECT: 3MRP
 SAMPLE PRESERVATION/AMT of REAGENT: ALA
 PURGE VOL/EXCESS H2O DEST: 33.96 / S300-DRUM
 TF LOCATION: S300

QC SAMPLE ID: _____ QC LAB(S): _____ QC SAMPLE TIME: _____

SAMPLE ID (VERIFY): W-25N-23 / 3VES TIME COLLECTED: 1136

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-25N-23	S3ANIONS	1	250 ml P	
BB	W-25N-23	S3METALS	1	500ml P	
BB	W-25N-23	S3METALS:FILTER	0	0	
BB	W-25N-23	S3WETCHEM	2	500ml P	
AA	W-25N-23	S3M922T	1	250 ml P	

Add of CL



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
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 Second Semester Annual Report 2018

Target Sample Date: 13-SEP-2018

Month: Norm Qtr: 3 Norm Year: 2018

WELL ID: W-25N-23 AREA INFO: S300/GSA/EGSA

DATE: 13-Sep-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38099 30

PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: *TCE-6.0

SCREENED INTERVAL (ft-bmp): 21.80 - 36.80 PUMP INTAKE DEPTH: 36.14

CASING DEPTH(installed/sounded)(ft-bmp): 35.30 / 37.17 on 25-APR-18 CASING VOL (Gal/Time): 11.32 10.6 x 30 =

DEPTH TO WATER(ft-bmp): 24.10 on 13-AUG-18 24.29 VOLUME FACTOR: 0.826 31.86 gal

WATER IN CASING (ft): 13.70 12.58 CASING DIAMETER/TCASING HT(in): 4.5 / 2.50

TIME PUMP ON: 1155 INITIAL FLOW RATE (Q=GPM): .80

TIME PUMP OFF: 1241 MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1208		10.8	1	7.55	24.1	1572	233	1	25.30
1221		21.2	2	7.49	24.1	1570	202	1	25.97
1234		31.8	3	7.45	24.2	1568	173	1	26.40
1236				7.44	24.2	1571	159		
1238				7.41	24.2	1570	155		

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH: 610564 YES/NO PROJECT: 3MRP
 SC: YES/NO SAMPLE PRESERVATION/AMT of REAGENT: NA
 mV: YES/NO PURGE VOL/EXCESS H2O DEST: 33.96 / S300-DRUM
 H2O: YES/NO TF LOCATION: S300

QC SAMPLE ID: _____ QC LAB(S): _____ QC SAMPLE TIME: _____

SAMPLE ID (VERIFY): W-25N-23 / 3VES TIME COLLECTED: 1241

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-25N-23	ANIONS	1	250 ml P	
BB	W-25N-23	METALS	1	500ml P	
BB	W-25N-23	METALS+FILTER	0	0	
BB	W-25N-23	SWETCHEM	2	500ml P	
AA	W-25N-23	SM9221	1	250 ml P	

Evacuated all CL



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/Annual Report 2018
 All Ground Water Sampling Data

Target Sample Date: 27-AUG-2018

Month: Norm Qtr: 3 Norm Year: 2018

WELL ID: W-26R-01 AREA INFO: S300/GSA/EGSA

DATE: 27-Aug-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38021

PURGE METHOD/SAMPLE METHOD: GF / 3VES CONTAMINANT PRESENT: *TCE-15/NO3-40

SCREENED INTERVAL (ft-bmp): 22.72 - 27.72 PUMP INTAKE DEPTH: 29.00

CASING DEPTH(installed/sounded)(ft-bmp): 29.80 / 30.00 on 16-NOV-88 CASING VOL (Gal/Time): 9.23 6.7 x 30 = 201 Gal

DEPTH TO WATER(ft-bmp): 21.30 on 05-JUN-18 21.92 VOLUME FACTOR: 0.826

WATER IN CASING (ft): 11.17 8.08 CASING DIAMETER/TCASING HT(in): 4.5 / 2.67

TIME PUMP ON: 0905 INITIAL FLOW RATE (Q=GPM): 1.00

TIME PUMP OFF: 0945 MEASURED BY: FLOW METER GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
0912		6.7	1	7.78	22.7	1506	70	1	23.63
0919		13.4	2	7.73	22.4	1501	63	1	25.82
0926		20.1	3	7.72	22.4	1512	60	1	27.12
0928				7.70	22.5	1518	59	1	
0930				7.71	22.5	1522	62	1	

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH: 616584 YES/NO PROJECT: 3MRP
 SC: YES/NO SAMPLE PRESERVATION/AMT OF REAGENT: NA
 mV: YES/NO PURGE VOL/EXCESS H2O DEST: 27.69 / TF-834
 H2O: YES/NO TF LOCATION: 834

QC SAMPLE ID: W-26R-42Y CGSAFB QC LAB(S): BCLABS-BAK, ALPHAANAL QC SAMPLE TIME: 1350

SAMPLE ID (VERIFY): W-26R-01/30ES TIME COLLECTED: 0935

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-26R-01	S3ANIONS	1	250 ml P	
BB	CGSAFB	S3ANIONS	1	250 ml P	
BB	W-26R-42Y	S3ANIONS	1	250 ml P	
BB	CGSAFB	S3METALS	1	500ml P	
BB	W-26R-01	S3METALS	1	500ml P	
BB	W-26R-42Y	S3METALS	1	500ml P	
BB	W-26R-42Y	S3METALS:FILTER	0	0	
BB	CGSAFB	S3METALS:FILTER	0	0	
BB	W-26R-01	S3METALS:FILTER	0	0	
BB	W-26R-01	S3WETCHEM	2	500ml P	
BB	CGSAFB	S3WETCHEM	2	500ml P	
BB	W-26R-42Y	S3WETCHEM	2	500ml P	
AA	W-26R-01	SM9221	1	250 ml P	
AA	CGSAFB	SM9221	1	250 ml P	
AA	W-26R-42Y	SM9321	1	250 ml P	



Added 02 of 02

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
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All Ground Water Sampling Data

Target Sample Date: 27-AUG-2018 Month: Norm Qtr: 3 Norm Year: 2018
 WELL ID: W-26R-01 AREA INFO: S300/GSA/EGSA
 DATE: 28-Aug-2018 LOG BOOK (DOCUMENT CONTROL) #: AA3802-2
 PURGE METHOD/SAMPLE METHOD: GF / 3VES CONTAMINANT PRESENT: *TCE-15/NO3-40
 SCREENED INTERVAL (ft-bmp): 22.72 - 27.72 PUMP INTAKE DEPTH: 29.00
 CASING DEPTH(installed/sounded)(ft-bmp): 29.80 / 30.00 on 16-NOV-88 CASING VOL (Gal/Time): 9.23 6.7 x 30 = 201 Gal
 DEPTH TO WATER(ft-bmp): 21.30 on 05-JUN-18 21.90 VOLUME FACTOR: 0.826
 WATER IN CASING (ft): 11.17 4.10 CASING DIAMETER/TCASING HT(in): 4.5 / 2.67
 TIME PUMP ON: 1019 INITIAL FLOW RATE (Q=GPM): _____
 TIME PUMP OFF: 1050 MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1026		6.7	1	7.73	22.6	1501	477	1	23.65
1033		13.4	2	7.70	22.4	1512	431	1	25.85
1034		20.1	3	7.70	22.4	1518	308	1	27.14
1041				7.72	22.5	1520	264	1	
1043				7.71	22.5	1514	219	1	
1045				7.71	22.4	1516	201	1	

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH: _____ YES/NO PROJECT: 3MRP
 SC: _____ YES/NO SAMPLE PRESERVATION/AMT of REAGENT: NA
 mV: _____ YES/NO PURGE VOL/EXCESS H2O DEST: 27.69 / TP-834
 H2O: _____ YES/NO TF LOCATION: 834

QC SAMPLE ID: W-26R-42Y CGSAFB QC LAB(S): BCLABS-BAX, ALPHANAL QC SAMPLE TIME: 1331
 SAMPLE ID (VERIFY): W-26R-01 3VES TIME COLLECTED: 1050

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-26R-01	S3ANIONS	1	250 ml P	
BB	CGSAFB	S3ANIONS	1	250 ml P	
BB	W-26R-42Y	S3ANIONS	1	250 ml P	
BB	CGSAFB	S3METALS	1	500ml P	
BB	W-26R-01	S3METALS	1	500ml P	
BB	W-26R-42Y	S3METALS	1	500ml P	
BB	W-26R-42Y	S3METALS:FILTER	0	O	
BB	CGSAFB	S3METALS:FILTER	0	O	
BB	W-26R-01	S3METALS:FILTER	0	O	
BB	W-26R-01	S3WETCHEM	2	500ml P	
BB	CGSAFB	S3WETCHEM	2	500ml P	
BB	W-26R-42Y	S3WETCHEM	2	500ml P	
AA	W-26R-01	SM9221	1	250 ml P	
AA	CGSAFB	SM9221	1	250 ml P	
AA	W-26R-42Y	SM9221	1	250 ml P	



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All Ground Water Sampling Data

Target Sample Date: 03-DEC-2018 Month: Norm Qtr: 4 Norm Year: 2018
 WELL ID: W-26R-01 AREA INFO: S300/GSA/EGSA
 DATE: 03-Dec-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38059
 PURGE METHOD/SAMPLE METHOD: GF / 3VBS CONTAMINANT PRESENT: *TCE-15/NO3-40
 SCREENED INTERVAL (ft-bmp): 22.72 - 27.72 PUMP INTAKE DEPTH: 29.00
 CASING DEPTH(installed/sounded)(ft-bmp): 29.80 / 30.00 on 16-NOV-88 CASING VOL (Gal/Time): 8.73 5.9 x 3w = 17.7 Gal
 DEPTH TO WATER(ft-bmp): 21.90 on 28-AUG-18 22.40 # VOLUME FACTOR: 0.826
 WATER IN CASING (ft): 10.57 7.10 CASING DIAMETER/TCASING HT(in): 4.5 / 2.67
 TIME PUMP ON: 0948 INITIAL FLOW RATE (Q=GPM): 1.02
 TIME PUMP OFF: 1013 MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

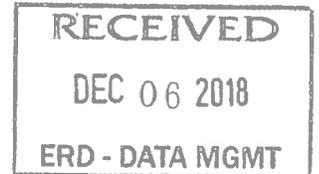
TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
0954		5.9	1	8.13	21.4	1487	130	1	24.31
1000		11.8	2	8.15	21.4	1484	123	1	27.78 27.12
1006		17.7	3	8.12	21.5	1481	118	1	Top of Pump
1008				8.12	21.5	1479	110	1	
1010				8.11	21.5	1477	111	1	

METER SERIAL # 610084 CALIBRATED YES
 pH: YES/NO
 SC: YES/NO
 mV: YES/NO
 H2O: YES/NO
 SAMPLER/EMPLOYER: silva90
 PROJECT: 3EMG
 SAMPLE PRESERVATION/AMT OF REAGENT: NA
 PURGE VOL/EXCESS H2O DEST: 26.20 / TB-834
 TF LOCATION: 834

QC SAMPLE ID: W-26R-42Y QC LAB(S): ALPHAANAL, BCLABS-BAR QC SAMPLE TIME: 1330
 SAMPLE ID (VERIFY): W-26R-01 / 3VES TIME COLLECTED: 1013

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-26R-01	E300.0:NO3	1	250 ml P	
BB	W-26R-42Y	E300.0:NO3	1	250 ml P	
BB	W-26R-01	SM2510B	1	250 ml P	
BB	W-26R-42Y	SM2510B	1	250 ml P	
BB	W-26R-01	SM4500PH	1	250 ml P	
BB	W-26R-42Y	SM4500PH	1	250 ml P	
AA	W-26R-01	SM9221	1	250 ml P	
AA	W-26R-42Y	SM9221	1	250 ml P	

Added to of CL



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
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All Ground Water Sampling Data

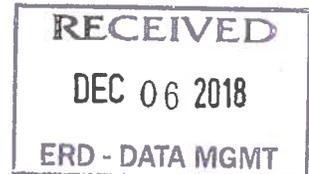
Target Sample Date: 04-DEC-2018 Month: Norm Qtr: 4 Norm Year: 2018
 WELL ID: W-26R-01 AREA INFO: S300/GSA/EGSA
 DATE: 04-Dec-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38059
 PURGE METHOD/SAMPLE METHOD: GP / 3VES CONTAMINANT PRESENT: *TCE-15/NO3-40
 SCREENED INTERVAL (ft-bmp): 22.72 - 27.72 PUMP INTAKE DEPTH: 29.00
 CASING DEPTH(installed/sounded)(ft-bmp): 29.80 / 30.00 on 16-NOV-88 CASING VOL (Gal/Time): 8.73 5.9 x 3cu =
 DEPTH TO WATER(ft-bmp): 21.90 on 28-AUG-18 22.93 VOLUME FACTOR: 0.826 17.7 gal
 WATER IN CASING (ft): 10.57 7.07 CASING DIAMETER/TCASING HT(in): 4.5 / 2.67
 TIME PUMP ON: 0950 INITIAL FLOW RATE (Q=GPM): 1.00
 TIME PUMP OFF: 1014 MEASURED BY: FLOW METER GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
0956		5.9	1	8.17	21.5	1480	421	1	23.97
1002		11.8	2	8.11	21.4	1477	339	1	25.81
1008		17.7	3	8.11	21.4	1479	277	1	Top of Pump
1010				8.12	21.4	1483	244		
1012				8.10	21.5	1481	179		

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH: YES/NO PROJECT: 3EMG
 SC: YES/NO SAMPLE PRESERVATION/AMT of REAGENT:
 mV: YES/NO PURGE VOL/EXCESS H2O DEST: 26.20 / TF-834
 H2O: YES/NO TF LOCATION: 834

QC SAMPLE ID: W-26R-42Y QC LAB(S): BCLABS-BAR, ALPHAAANAL QC SAMPLE TIME: 1310
 SAMPLE ID (VERIFY): W-26R-01 / 345 TIME COLLECTED: 1014

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
-BB	W-26R-01	E300.0:NO3	1	250 ml P	
-BB	W-26R-42Y	E300.0:NO3	1	250 ml P	
-BB	W-26R-01	SM2510B	1	250 ml P	
-BB	W-26R-42Y	SM2510B	1	250 ml P	
-BB	W-26R-01	SM4500PH	1	250 ml P	
-BB	W-26R-42Y	SM4500PH	1	250 ml P	
AA	W-26R-01	SM9221	1	250 ml P	
AA	W-26R-42Y	SM9221	1	250 ml P	



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All Ground Water Sampling Data

Target Sample Date: 12-SEP-2018

Month: Norm Qtr: 3 Norm Year: 2018

WELL ID: W-26R-05 AREA INFO: S300/GSA/EGSA

DATE: 12-Sep-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38029

PURGE METHOD/SAMPLE METHOD: PB / 90BA CONTAMINANT PRESENT: TCE-3.3/NO3-53

SCREENED INTERVAL (ft-bmp): 22.05 - 27.05 INTAKE DEPTH: 0.00

CASING DEPTH(installed/sounded)(ft-bmp): 25.50 / 26.68 on 10-FEB-91 CASING VOL (Gal/Time): 1.79 *14x90%*

DEPTH TO WATER(ft-bmp): 24.83 on 13-AUG-18 *24.94* VOLUME FACTOR: 0.826 *1.36a*

WATER IN CASING (ft): 2.17 *1.74* CASING DIAMETER/TCASING HT(in): 4.5 / 1.50

TIME PUMP ON: - INITIAL FLOW RATE (Q=GPM): -

TIME PUMP OFF: - MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

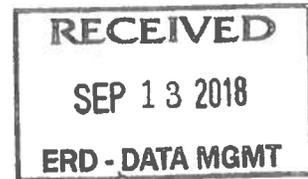
TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1240		1.36a	90%	7.86	21.3	1089	65	1	25.87

METER SERIAL # 610584 CALIBRATED YES/NO YES SAMPLER/EMPLOYER: silva90
 pH: _____ PROJECT: 3MRP
 SC: _____ SAMPLE PRESERVATION/AMT OF REAGENT: N/A
 mV: _____ PURGE VOL/EXCESS H2O DEST: 1.61 / S300-DRUM
 H2O: _____ YES/NO YES TF LOCATION: S300

QC SAMPLE ID: _____ QC LAB(S): _____ QC SAMPLE TIME: _____

SAMPLE ID (VERIFY): W-26R-05/90BA TIME COLLECTED: 1244

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-26R-05	S3ANIONS	1	250 ml P	
BB	W-26R-05	S3METALS	1	500ml P	
BB	W-26R-05	S3METALS:FILTER	0	0	
BB	W-26R-05	S3WETCHEM	2	500ml P	
AA	W-26R-05	SM9221	1	250 ml P	



Added or of CL

NOTE:
 Purge rate/time: N/A since est_sus_flow = 0
 Purge Volume: 10 gal.
 Revision: 10/28/2015
 ESH-EFA-WQ-19-16096 - BP/AC:am

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
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All Ground Water Sampling Data

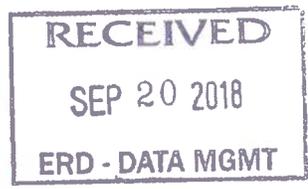
Target Sample Date: 18-SEP-2018 Month: Norm Qtr: 3 Norm Year: 2018
 WELL ID: W-26R-05 AREA INFO: S300/GSA/EGSA
 DATE: 18-Sep-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38029 32
 PURGE METHOD/SAMPLE METHOD: PB / 90BA CONTAMINANT PRESENT: TCE-3.3/NO3-53
 SCREENED INTERVAL (ft-bmp): 22.05 - 27.05 INTAKE DEPTH: 0.00
 CASING DEPTH(installed/sounded)(ft-bmp): 25.50 / 26.68 on 10-FEB-91 CASING VOL (Gal/Time): 1.70 , 85 Gal
 DEPTH TO WATER(ft-bmp): 24.94 on 12-SEP-18 25.73 VOLUME FACTOR: 0.826
 WATER IN CASING (ft): 2.06 1.95 CASING DIAMETER/TCASING HT(in): 4.5 / 1.50
 TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):
 TIME PUMP OFF: MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1040		185	90%	7.83	21.4	1077	110	1	25.82

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH : 610084 YES/NO PROJECT: 3MRP
 SC : YES/NO SAMPLE PRESERVATION/AMT of REAGENT: NA
 mV : YES/NO PURGE VOL/EXCESS H2O DEST: 1.53 / S300-DRUM
 H2O: YES/NO TF LOCATION: S300

QC SAMPLE ID: QC LAB(S): QC SAMPLE TIME:
 SAMPLE ID (VERIFY): W-26R-05 / 90BA TIME COLLECTED: 1047

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-26R-05	S3ANIONS	1	250 ml P	
BB	W-26R-05	S3METALS	1	500ml P	
BB	W-26R-05	S3METALS:FILTER	0	O	
BB	W-26R-05	S3WETCHEM	2	500ml P	
AA	W-26R-05	SM9221	1	250 ml P	



NOTE:
 Purge rate/time: N/A since est_sus_flow = 0
 Purge Volume: 10 gal.
 Revision: 10/28/2015

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

All Ground Water Sampling Data

Target Sample Date: 03-DEC-2018

Month: Norm Qtr: 4 Norm Year: 2018

WELL ID: W-26R-05 AREA INFO: S300/GSA/EGSA

DATE: 03-Dec-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38059

PURGE METHOD/SAMPLE METHOD: PB / 90BA CONTAMINANT PRESENT: TCE-3.3/NO3-53

SCREENED INTERVAL (ft-bmp): 22.05 - 27.05 INTAKE DEPTH: 0.00

CASING DEPTH(installed/sounded)(ft-bmp): 25.50 / 26.68 on 10-FEB-91 CASING VOL (Gal/Time): 1.05 .63 Gal

DEPTH TO WATER(ft-bmp): 25.73 on 18-SEP-18 25.8L VOLUME FACTOR: 0.826

WATER IN CASING (ft): 1.27 1.86 CASING DIAMETER/TCASING HT(in): 4.5 / 1.50

TIME PUMP ON: - INITIAL FLOW RATE (Q=GPM): -

TIME PUMP OFF: - MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
0857		.63	90%	8.16	17.1	1064	114	1	26.33

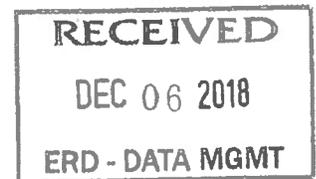
METER SERIAL # 610067 CALIBRATED YES/NO SAMPLER/EMPLOYER: silva90
 pH: - PROJECT: 3EMG
 SC: - SAMPLE PRESERVATION/AMT of REAGENT: -
 mV: - PURGE VOL/EXCESS H2O DEST: 0.94 / S300 DRUM
 H2O: - TF LOCATION: S300

QC SAMPLE ID: EGSAFE QC LAB(S): BCLABS-BAR, ALPHAANAL QC SAMPLE TIME: -

SAMPLE ID (VERIFY): W-26R-05 / 90BA TIME COLLECTED: 0902

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	EGSAFE	E300.0:NO3	1	250 ml P	
BB	W-26R-05	E300.0:NO3	1	250 ml P	
BB	EGSAFE	SM2510B	1	250 ml P	
BB	W-26R-05	SM2510B	1	250 ml P	
BB	EGSAFE	SM4500PH	1	250 ml P	
BB	W-26R-05	SM4500PH	1	250 ml P	
AA	EGSAFE	SM9221	1	250 ml P	
AA	W-26R-05	SM9221	1	250 ml P	

Added 02 of 66



NOTE:
 Purge rate/time: N/A since est_sus_flow = 0
 Purge Volume: 10 gal.
 Revision: 10/28/2015

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/Annual Report 2018
 All Ground Water Sampling Data

Target Sample Date: **06-DEC-2018** Month: Norm Qtr: 4 Norm Year: 2018
 WELL ID: **W-26R-05** AREA INFO: **S300/GSA/EGSA**
 DATE: **06-Dec-2018** LOG BOOK (DOCUMENT CONTROL) #: **AA38059 GAG 2**
 PURGE METHOD/SAMPLE METHOD: **PB / 90BA** CONTAMINANT PRESENT: **TCE-3.3/NO3-53**
 SCREENED INTERVAL (ft-bmp): **22.05 - 27.05** INTAKE DEPTH: **0.00**
 CASING DEPTH(installed/sounded)(ft-bmp): **25.50 / 26.68 on 10-FEB-91** CASING VOL (Gal/Time): **1.05 1.73 x 40 /**
 DEPTH TO WATER(ft-bmp): **25.73 on 18-SEP-18 25.79** VOLUME FACTOR: **0.826 0.66 Gal**
 WATER IN CASING (ft): **1.27 1.89** CASING DIAMETER/TCASING HT(in): **4.5 / 1.50**
 TIME PUMP ON: **-** INITIAL FLOW RATE (Q=GPM): _____
 TIME PUMP OFF: **-** MEASURED BY: FLOW METER/ **GRAD CYL.** BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1209		1.66	90%BA	7.44	19.0	1583	76	1	26.03

METER SERIAL # **6100584** CALIBRATED YES/NO
 pH: _____ YES/NO
 SC: _____ YES/NO
 mV: _____ YES/NO
 H2O: _____ YES/NO
 SAMPLER/EMPLOYER: **silva90**
 PROJECT: **3EMG**
 SAMPLE PRESERVATION/AMT of REAGENT: **NA**
 PURGE VOL/EXCESS H2O DEPT: **0.94 / S300-DRUM**
 TF LOCATION: **S300**

QC SAMPLE ID: **EGSAFB** QC LAB(S): **BCLABS-BAK, ALPHAANAL** QC SAMPLE TIME: **1217**
 SAMPLE ID (VERIFY): **W-26R-05 / 90BA** TIME COLLECTED: **1217**

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	EGSAB	E300.0:NO3	1	250-ml P	
BB	W-26R-05	E300.0:NO3	1	250-ml P	
BB	EGSAFB	SM2510B	1	250-ml P	
BB	W-26R-05	SM2510B	1	250-ml P	
BB	EGSAFB	SM4500PH	1	250-ml P	
BB	W-26R-05	SM4500PH	1	250-ml P	
AA	EGSAFB	SM9221	1	250 ml P	
AA	W-26R-05	SM9221	1	250 ml P	



Enumerated all cl

NOTE:
 Purge rate/time: N/A since est_sus_flow = 0
 Purge Volume: 10 gal.
 Revision: 10/28/2015

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/Annual Report 2018
 All Ground Water Sampling Data

Target Sample Date: 27-AUG-2018 Month: Norm Qtr: 3 Norm Year: 2018

WELL ID: W-26R-11 AREA INFO: S300/GSA/EGSA
 DATE: 27-Aug-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38021
 PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: TCE-1.6/N03-14
 SCREENED INTERVAL (ft-bmp): 18.08 - 28.08 PUMP INTAKE DEPTH: 31.08
 CASING DEPTH(installed/sounded)(ft-bmp): 27.00 / 29.28 on 01-MAR-18 CASING VOL (Gal/Time): 8.91
 DEPTH TO WATER(ft-bmp): 18.20 on 30-APR-18 VOLUME FACTOR: 0.826
 WATER IN CASING (ft): 10.78 CASING DIAMETER/TCASING HT(in): 4.5 / 1.98
 TIME PUMP ON: _____ INITIAL FLOW RATE (Q=GPM): _____
 TIME PUMP OFF: _____ MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

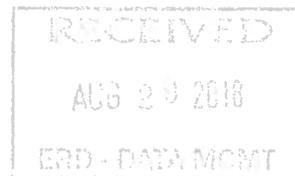
METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH : _____ YES/NO PROJECT: 3MRP
 SC : _____ YES/NO SAMPLE PRESERVATION/AMT of REAGENT: _____
 mV : _____ YES/NO PURGE VOL/EXCESS H2O DEST: 26.72 / S300-DRUM
 H2O: _____ YES/NO TF LOCATION: S300

QC SAMPLE ID: _____ QC LAB(S): _____ QC SAMPLE TIME: _____

SAMPLE ID (VERIFY): _____ TIME COLLECTED: _____

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-26R-11	S3ANIONS	1	250 ml P	
BB	W-26R-11	S3METALS	1	500ml P	
BB	W-26R-11	S3METALS:FILTER	0	O	
BB	W-26R-11	S3WETCHEM	2	500ml P	
AA	W-26R-11	SM9221	1	250 ml P	

Pump inoperable has new 4 plug connection to plug



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

All Ground Water Sampling Data

Target Sample Date: 03-DEC-2018 Month: Norm Qtr: 4 Norm Year: 2018

WELL ID: W-26R-11 AREA INFO: S300/GSA/EGSA

DATE: 03-Dec-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38059

PURGE METHOD/SAMPLE METHOD: Grundfos / 3VES CONTAMINANT PRESENT: TCE-1.6/NO3-14

SCREENED INTERVAL (ft-bmp): 18.08 - 28.08 PUMP INTAKE DEPTH: 31.08

CASING DEPTH(installed/sounded)(ft-bmp): 27.00 / 29.28 on 01-MAR-18 CASING VOL (Gal/Time): 7.92

DEPTH TO WATER(ft-bmp): 19.39 on 13-AUG-18 VOLUME FACTOR: 0.826

WATER IN CASING (ft): 9.59 CASING DIAMETER/TCASING HT(in): 4.5 / 1.98

TIME PUMP ON: _____ INITIAL FLOW RATE (Q=GPM): _____

TIME PUMP OFF: _____ MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90

pH: _____ YES/NO PROJECT: 3GIV 3EMG

SC: _____ YES/NO SAMPLE PRESERVATION/AMT OF REAGENT: _____

mV: _____ YES/NO PURGE VOL/EXCESS H2O DEST: 23.77 / S300-DRUM

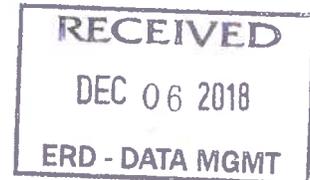
H2O: _____ YES/NO TF LOCATION: S300

QC SAMPLE ID: _____ QC LAB(S): _____ QC SAMPLE TIME: _____

SAMPLE ID (VERIFY): _____ TIME COLLECTED: _____

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-26R-11	E300.0:NO3	1	250 ml P	
BB	W-26R-11	E624MOD	3	40 mL V	
BB	W-26R-11	SM2510B	1	250 ml P	
BB	W-26R-11	SM4500PH	1	250 ml P	
AA	W-26R-11	SM9221	1	250 ml P	

*No Samples
Inoperable pump*



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 All Ground Water Sampling Data
 Second Semester/Annual Report 2018

Target Sample Date: 17-SEP-2018

Month: Norm Qtr: 3 Norm Year: 2018

WELL ID: W-35A-04 AREA INFO: S300/GSA/CGSA

DATE: 17-Sep-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38031

PURGE METHOD/SAMPLE METHOD: Grunfos / 3VES CONTAMINANT PRESENT: ND

SCREENED INTERVAL (ft-bmp): 19.30 - 29.30 PUMP INTAKE DEPTH: 26.28

CASING DEPTH(installed/sounded)(ft-bmp): 29.00 / 28.57 on 14-DEC-09 CASING VOL (Gal/Time): 11.20 10.4 x 30 =

DEPTH TO WATER(ft-bmp): 15.44 on 24-JUL-18 15.94 VOLUME FACTOR: 0.826 31.2 GY

WATER IN CASING (ft): 13.56 12.63 CASING DIAMETER/TCASING HT(in): 4.5 / 0.00

TIME PUMP ON: 0923 INITIAL FLOW RATE (Q=GPM): 1.0

TIME PUMP OFF: 1002 MEASURED BY: FLOW METER/ GRAD CYL./ BUCKET/ OTHER

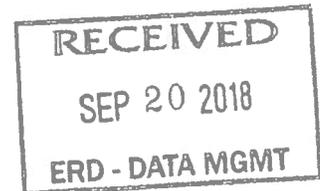
TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
0933		10.4	1	8.06	22.1	1577	70	1	16.29
0943		20.8	2	7.79	22.4	1573	64	1	17.33
0953		31.2	3	7.78	22.4	1570	66	1	17.92
0955				7.76	22.3	1572	64	1	
0957				7.73	22.3	1571	61		

METER SERIAL # 610084 CALIBRATED YES/NO SAMPLER/EMPLOYER: silva90
 pH: YES/NO PROJECT: 3MRP
 SC: YES/NO SAMPLE PRESERVATION/AMT of REAGENT: NA
 mV: YES/NO PURGE VOL/EXCESS H2O DEST: 33.61 / None
 H2O: YES/NO TF LOCATION: Collect

QC SAMPLE ID: CGSAFB W-75Y QC LAB(S): ALPHAANAL, BCLABS-BAK QC SAMPLE TIME: 1407

SAMPLE ID (VERIFY): W-35A-04 (302) TIME COLLECTED: 1002

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-35A-04	S3ANIONS	1	250 ml P	
BB	W-75Y	S3ANIONS	1	250 ml P	
BB	CGSAFB	S3ANIONS	1	250 ml P	
BB	W-75Y	S3METALS	1	500ml P	
BB	W-35A-04	S3METALS	1	500ml P	
BB	CGSAFB	S3METALS	1	500ml P	
BB	CGSAFB	S3METALS:FILTER	0	O	
BB	W-75Y	S3METALS:FILTER	0	O	
BB	W-35A-04	S3METALS:FILTER	0	O	
BB	W-75Y	S3WETCHEM	2	500ml P	
BB	W-35A-04	S3WETCHEM	2	500ml P	
BB	CGSAFB	S3WETCHEM	2	500ml P	
AA	W-35A-04	SM9221	1	250 ml P	
AA	W-75Y	SM9221	1	250 ml P	
AA	CGSAFB	SM9221	1	250 ml P	



Added 02 of 02

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

All Ground Water Sampling Data

Target Sample Date: 18-SEP-2018

Month: Norm Qtr: 3 Norm Year: 2018

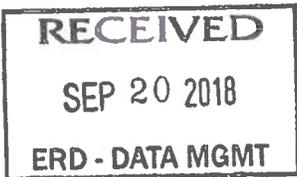
WELL ID: W-35A-04 AREA INFO: S300/GSA/CGSA
 DATE: 18-Sep-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38031 32
 PURGE METHOD/SAMPLE METHOD: Grunfos / 3VES CONTAMINANT PRESENT: ND
 SCREENED INTERVAL (ft-bmp): 19.30 - 29.30 PUMP INTAKE DEPTH: 26.28
 CASING DEPTH(installed/sounded)(ft-bmp): 29.00 / 28.57 on 14-DEC-09 CASING VOL (Gal/Time): 11.20
 DEPTH TO WATER(ft-bmp): 15.44 on 24-JUL-18 15.97 VOLUME FACTOR: 0.826
 WATER IN CASING (ft): 13.56 17.60 CASING DIAMETER/TCASING HT(in): 4.5 / 0.00
 TIME PUMP ON: 1119 INITIAL FLOW RATE (Q-GPM): 1.0 Q
 TIME PUMP OFF: 1158 MEASURED BY FLOW METER / GRAD CYL. / BUCKET / OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1129		10.4	1	7.85	22.2	1570	473	1	16.32
1139		20.8	2	7.79	22.2	1564	396	1	17.45
1149		31.2	3	7.74	22.3	1561	302	1	18.12
1151				7.72	22.2	1570	244		
1153				7.70	22.2	1563	221		

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH: 6100561 YES/NO PROJECT: 3MRP
 SC: YES/NO SAMPLE PRESERVATION/AMT of REAGENT: NA
 mV: YES/NO PURGE VOL/EXCESS H2O DEST: 33.61 / None
 H2O: YES/NO TF LOCATION: Collect

QC SAMPLE ID: W-75Y CGSAFB QC LAB(S): BCLABS-BAK, ALPHAANAL QC SAMPLE TIME: 1310
 SAMPLE ID (VERIFY): W-35A-04 308 TIME COLLECTED: 1158 1158

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
BB	W-35A-04	S3ANIONS	1	250 ml P	
BB	W-75Y	S3ANIONS	1	250 ml P	
BB	CGSAFB	S3ANIONS	1	250 ml P	
BB	W-75Y	S3METALS	1	500ml P	
BB	W-35A-04	S3METALS	1	500ml P	
BB	CGSAFB	S3METALS	1	500ml P	
BB	CGSAFB	S3METALS:FILTER	0	0	
BB	W-75Y	S3METALS:FILTER	0	0	
BB	W-35A-04	S3METALS:FILTER	0	0	
BB	W-75Y	S3WETCHEM	2	500ml P	
BB	W-35A-04	S3WETCHEM	2	500ml P	
BB	CGSAFB	S3WETCHEM	2	500ml P	
AA	W-35A-04	SM9221	1	250 ml P	
AA	W-75Y	SM9221	1	250 ml P	
AA	CGSAFB	SM9221	1	250 ml P	



Evacuated all CL from wells

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

All Ground Water Sampling Data

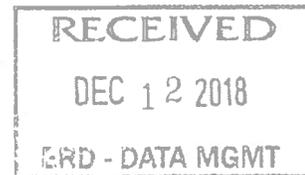
Target Sample Date: 10-DEC-2018 Month: Norm Qtr: 4 Norm Year: 2018
 WELL ID: W-35A-04 AREA INFO: S300/GSA/CGSA
 DATE: 10-Dec-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38063
 PURGE METHOD/SAMPLE METHOD: Grunfos / 3VES CONTAMINANT PRESENT: ND
 SCREENED INTERVAL (ft-bmp): 19.30 - 29.30 PUMP INTAKE DEPTH: 26.28
 CASING DEPTH(installed/sounded)(ft-bmp): 29.00 / 28.57 on 14-DEC-09 CASING VOL (Gal/Time): 10.77 9.4x30=
 DEPTH TO WATER(ft-bmp): 15.97 on 18-SEP-18 16.64 VOLUME FACTOR: 0.826 29.7 gal
 WATER IN CASING (ft): 13.03 11.93 CASING DIAMETER/TCASING HT(in): 4.5 / 0.00
 TIME PUMP ON: 0952 INITIAL FLOW RATE (Q=GPM): 2.0 Q
 TIME PUMP OFF: 1015 MEASURED BY: FLOW METER GRAD CYL./ BUCKET/ OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
0957		9.9	1	8.13	21.6	1606	117	1	16.73
1002		19.8	2	8.09	21.6	1600	114	1	16.77
1007		29.7	3	8.04	21.5	1597	111	1	16.82
1009				7.99	21.5	1593	107		
1011				7.99	21.6	1590	108		

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 PH: YES/NO PROJECT: 3EMG 3CMP
 SC: YES/NO SAMPLE PRESERVATION/AMT or REAGENT: NA
 mV: YES/NO PURGE VOL/EXCESS H2O DEST: 32.30 / None
 H2O: YES/NO TF LOCATION: Collect

QC SAMPLE ID: CGSAFB QC LAB(S): GEL, BCLABS-BAK, TALSAC QC SAMPLE TIME: 1015
 SAMPLE ID (VERIFY): W-35A-04/3045 TIME COLLECTED: 1015

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
GE	W-35A-04	AS:FILTER	0	O	
GE	CGSAFB	AS:FILTER	0	O	
GE	CGSAFB	AS:UIISO	2	1L P	
GE	W-35A-04	AS:UIISO	2	1L P	
BB	CGSAFB	E200.7:FILTER	0	O	
BB	W-35A-04	E200.7:FILTER	0	O	
BB	W-35A-04	E200.7:K	1	500 mL P	
BB	CGSAFB	E200.7:K	1	500 mL P	
BB	CGSAFB	E300.0:NO3	1	250 ml P	
BB	W-35A-04	E300.0:NO3	1	250 ml P	
BB	CGSAFB	E300.0:PERC	1	250 ml P	
BB	W-35A-04	E300.0:PERC	1	250 ml P	1/3-1/2 headspace, & agitate
BB	W-35A-04	E524.2MOD	6	40 mL V	1/3-1/2 headspace, & agitate
BB	CGSAFB	E524.2MOD	6	40 mL V	
TS	W-35A-04	E624MOD	3	40 mL V	
TS	CGSAFB	E624MOD	3	40 mL V	
BB	W-35A-04	E8330:R+H	3	1L A	
BB	CGSAFB	E8330:R+H	2	1L A	
GE	CGSAFB	E900	1	1L P	
GE	W-35A-04	E900	1	1L P	
GE	CGSAFB	E900:FILTER	0	O	
GE	W-35A-04	E900:FILTER	0	O	
GE	W-35A-04	E906	1	250 ml GA	



LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/Annual Report 2018

All Ground Water Sampling Data

Target Sample Date: 10-DEC-2018

Month: Norm Qtr: 4 Norm Year: 2018

WELL ID: W-35A-04 AREA INFO: S300/GSA/CGSA
 DATE: 10-Dec-2018 LOG BOOK (DOCUMENT CONTROL) #: AA38063
 PURGE METHOD/SAMPLE METHOD: Grunfos / 3VES CONTAMINANT PRESENT: ND
 SCREENED INTERVAL (ft-bmp): 19.30 - 29.30 PUMP INTAKE DEPTH: 26.28
 CASING DEPTH(installed/sounded)(ft-bmp): 29.00 / 28.57 on 14-DEC-09 CASING VOL (Gal/Time): 10.77
 DEPTH TO WATER(ft-bmp): 15.97 on 18-SEP-18 VOLUME FACTOR: 0.826
 WATER IN CASING (ft): 13.03 CASING DIAMETER/TCASING HT(in): 4.5 / 0.00
 TIME PUMP ON: INITIAL FLOW RATE (Q=GPM):
 TIME PUMP OFF: MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH : YES/NO PROJECT: 3EMG
 SC : YES/NO SAMPLE PRESERVATION/AMT of REAGENT:
 mV : YES/NO PURGE VOL/EXCESS H2O DEST: 32.30 / None
 H2O: YES/NO TF LOCATION: Collect

QC SAMPLE ID: CGSAFB QC LAB(S): GEL, BCLABS-BAR, ALPHAANAL QC SAMPLE TIME:

SAMPLE ID (VERIFY): TIME COLLECTED:

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
GE	CGSAFB	E906	1	250 ml GA	
BB	CGSAFB	SM2510B	1	250 ml P	
BB	W-35A-04	SM2510B	1	250 ml P	
BB	CGSAFB	SM4500PH	1	250 ml P	
BB	W-35A-04	SM4500PH	1	250 ml P	
AA	W-35A-04	SM9221	1	250 ml P	
AA	CGSAFB	SM9221	1	250 ml P	
BB	CGSAFB	WGMGMET3	1	1L P	
BB	W-35A-04	WGMGMET3	1	1L P	
BB	W-35A-04	WGMGMET3:FILTER	0	0	
BB	CGSAFB	WGMGMET3:FILTER	0	0	



Added or of CL

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

All Ground Water Sampling Data

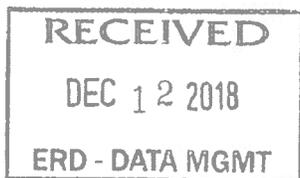
Target Sample Date: **11-DEC-2018** Month: Norm Qtr: 4 Norm Year: 2018
 WELL ID: W-35A-04 AREA INFO: S300/GSA/CGSA
 DATE: 11-Dec-2018 LOG BOOK (DOCUMENT CONTROL) #: AA380624
 PURGE METHOD/SAMPLE METHOD: Grunfos / JVES CONTAMINANT PRESENT: ND
 SCREENED INTERVAL (ft-bmp): 19.30 - 29.30 PUMP INTAKE DEPTH: 26.28
 CASING DEPTH(installed/sounded)(ft-bmp): 29.00 / 28.57 on 14-DEC-09 CASING VOL (Gal/Time): 10.77 9.9 x 30 = 29.7 Gal
 DEPTH TO WATER(ft-bmp): 15.97 on 18-SEP-18 16.64 VOLUME FACTOR: 0.826
 WATER IN CASING (ft): 13.03 11.93 CASING DIAMETER/TCASING HT(in): 4.5 / 0.00
 TIME PUMP ON: 1100 INITIAL FLOW RATE (Q=GPM): 2.02
 TIME PUMP OFF: 1121 MEASURED BY: FLOW METER / GRAD CYL. / BUCKET / OTHER

TIME	Q	GAL PURGED	VOLUMES	pH	TEMP C	SC	mV	OG	DTW
1105		9.9	1	8.11	21.5	1697	412	1	16.74
1110		19.8	2	8.11	21.5	1582	387	1	16.80
1115		29.7	3	8.07	21.5	1590	332	1	16.84
1117				8.06	21.6	1602	221		
1119				8.06	21.5	1593	210		

METER SERIAL # CALIBRATED SAMPLER/EMPLOYER: silva90
 pH: 610084 YES/NO PROJECT: 3EMG 3CMP
 SC: YES/NO SAMPLE PRESERVATION/AMT OF REAGENT: NA
 mV: YES/NO PURGE VOL/EXCESS H2O DEST: 32.30 / None
 H2O: YES/NO TF LOCATION: Collect

QC SAMPLE ID: CGSAFB QC LAB(S): BCLABS-BAK, TALSAC, GEL QC SAMPLE TIME: 1121
 SAMPLE ID (VERIFY): U-35A-04/3UES TIME COLLECTED: 1121

LAB	LAB_LOC_NAME	REQUESTED ANALYSIS	#	TYPE	SAMPLER_REMARKS
GE	W-35A-04	AS-FILTER	0	O	
GE	CGSAFB	AS-FILTER	0	O	
GE	CGSAFB	AS+VISO	2	1L P	
GE	W-35A-04	AS+VISO	2	1L P	
BB	CGSAFB	E200-7-FILTER	0	O	
BB	W-35A-04	E200-7-FILTER	0	O	
BB	W-35A-04	B200-7IK	1	500 mL P	
BB	CGSAFB	E200-7IK	1	500 mL P	
BB	CGSAFB	E300-0+NO3	1	250 ml P	
BB	W-35A-04	E300-0+NO3	1	250 ml P	
BB	CGSAFB	E300-0+PERC	1	250 ml P	1/3-1/2 headspace, & agitate
BB	W-35A-04	E300-0+PERC	1	250 ml P	1/3-1/2 headspace, & agitate
BB	W-35A-04	E524-2MOD	6	40 mL V	
BB	CGSAFB	E524-2MOD	6	40 mL V	
TS	W-35A-04	E624MOD	3	40 mL V	
TS	CGSAFB	B624MOD	3	40 mL V	
BB	W-35A-04	B8330-R+H	3	1L A	
BB	CGSAFB	E8330-R+H	2	1L A	
GE	CGSAFB	E900	1	1L P	
GE	W-35A-04	E900	1	1L P	
GE	CGSAFB	E900-FILTER	0	O	
GE	W-35A-04	B900-FILTER	0	O	
GE	W-35A-04	E906	1	250 ml GA	



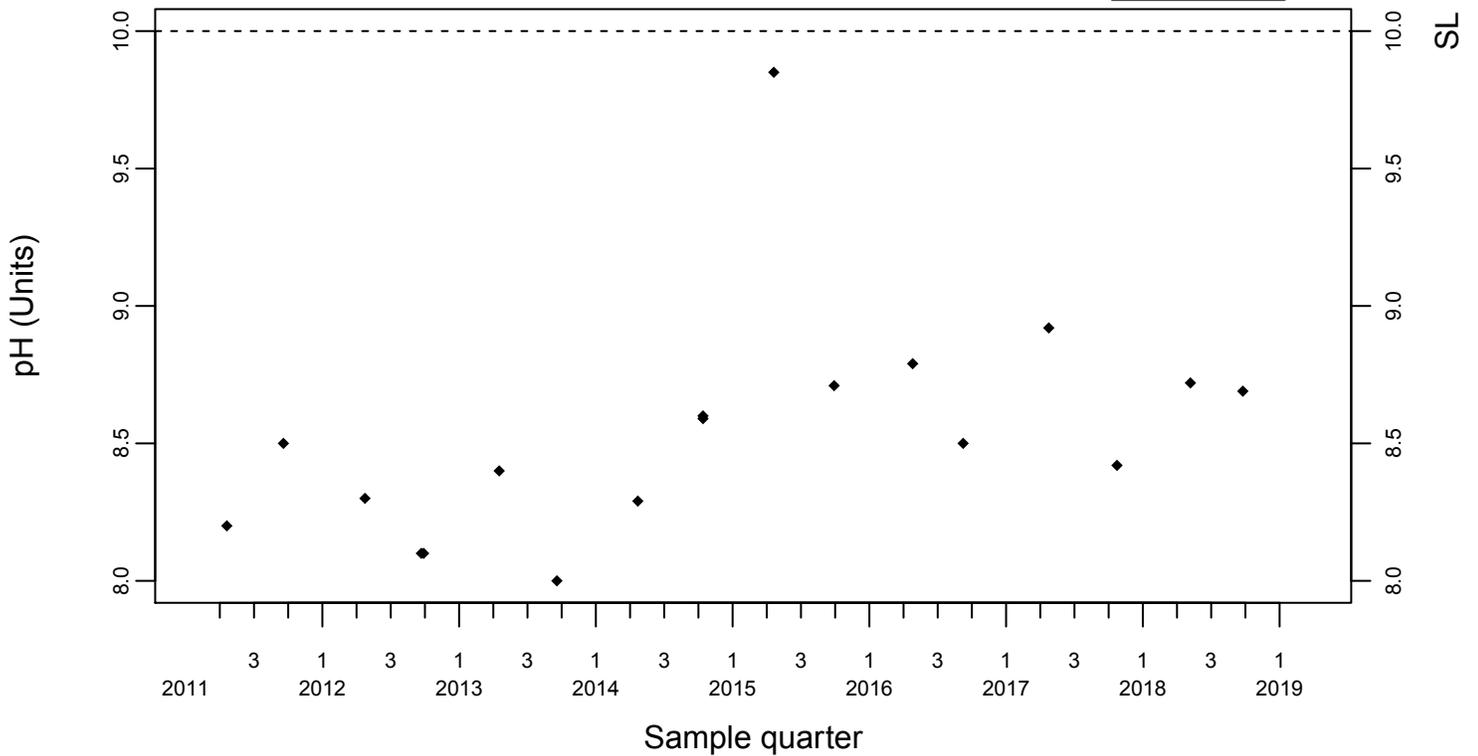
Evacuated all CC

Sewage Ponds Wastewater
 pH (Units)

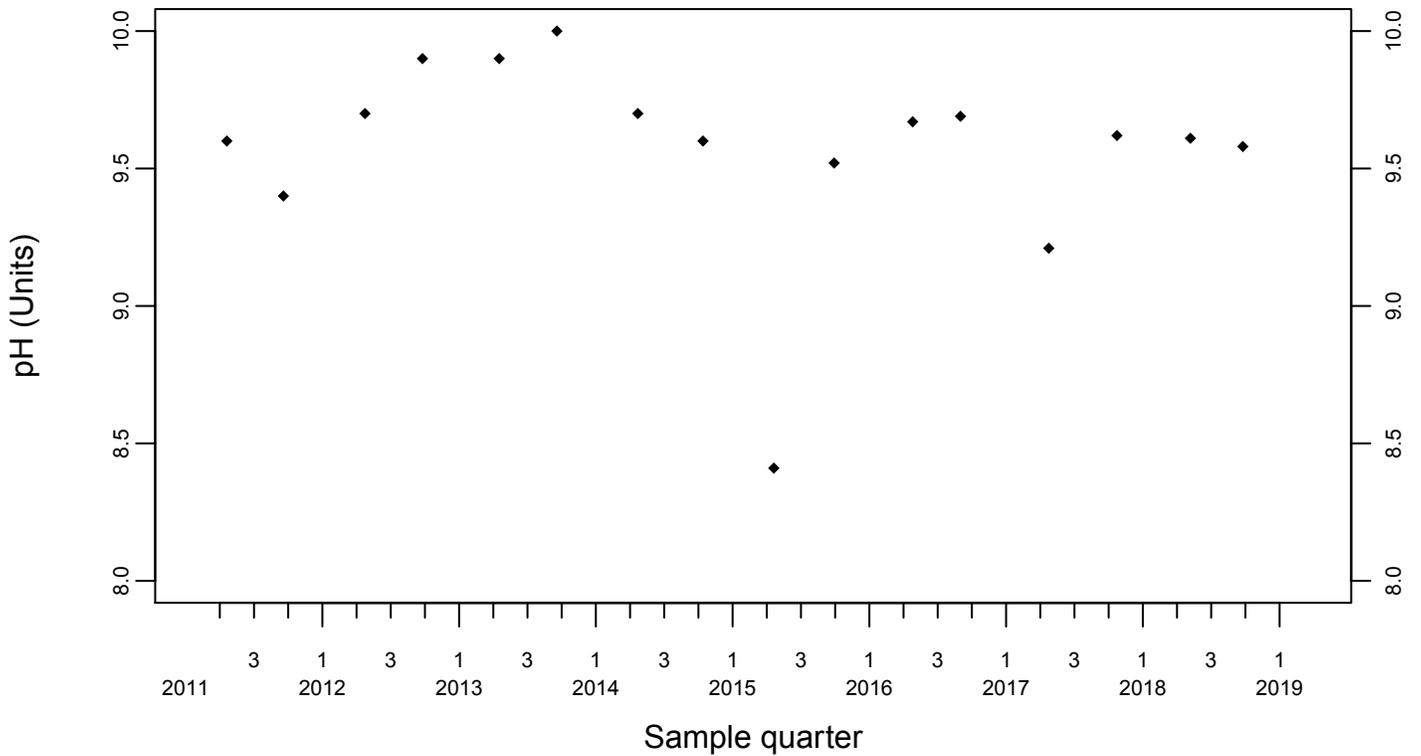
SL=10

◆ Above RL
 ▼ Below RL

Influent 3-ISWP-OW



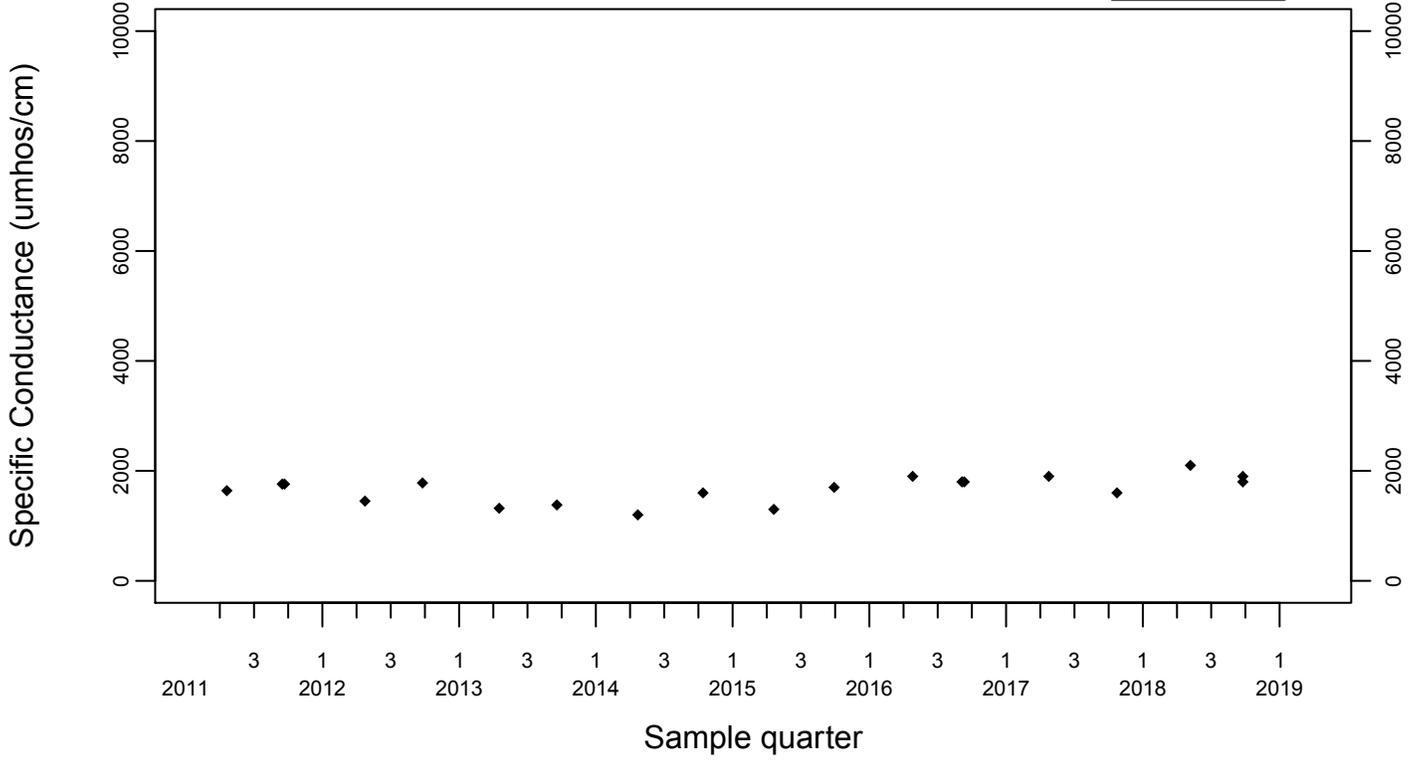
In-pond 3-ESWP-OW



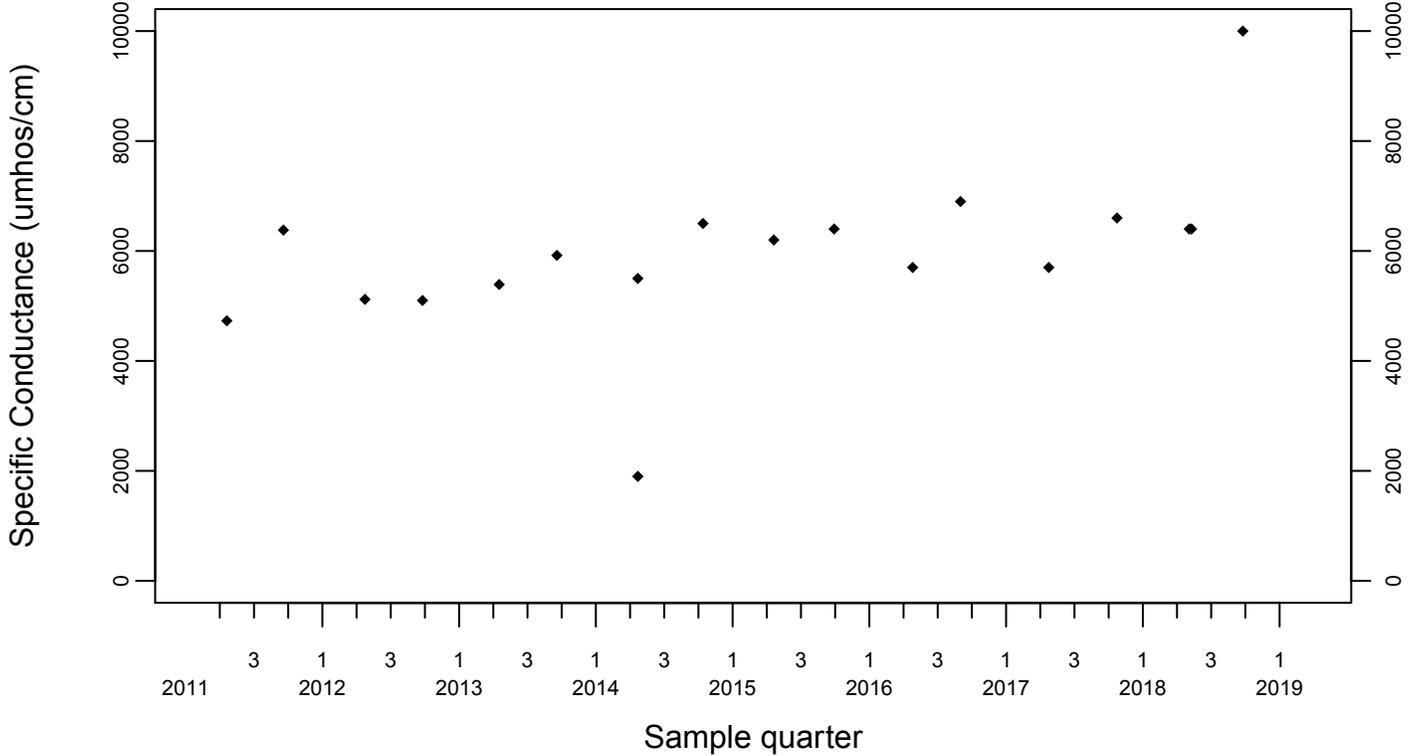
Sewage Ponds Wastewater
 Specific Conductance (umhos/cm)

Influent 3-ISWP-OW

◆ Above RL
 ▼ Below RL



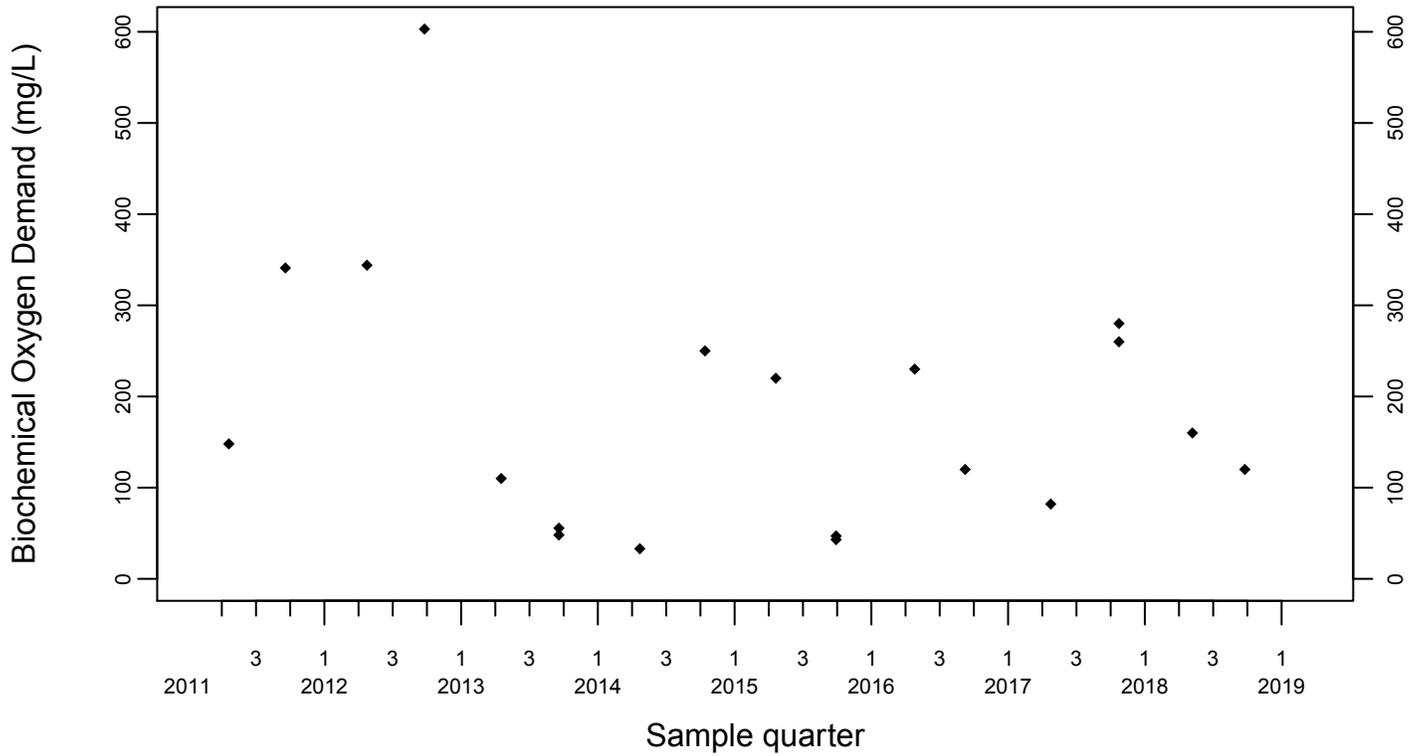
In-pond 3-ESWP-OW



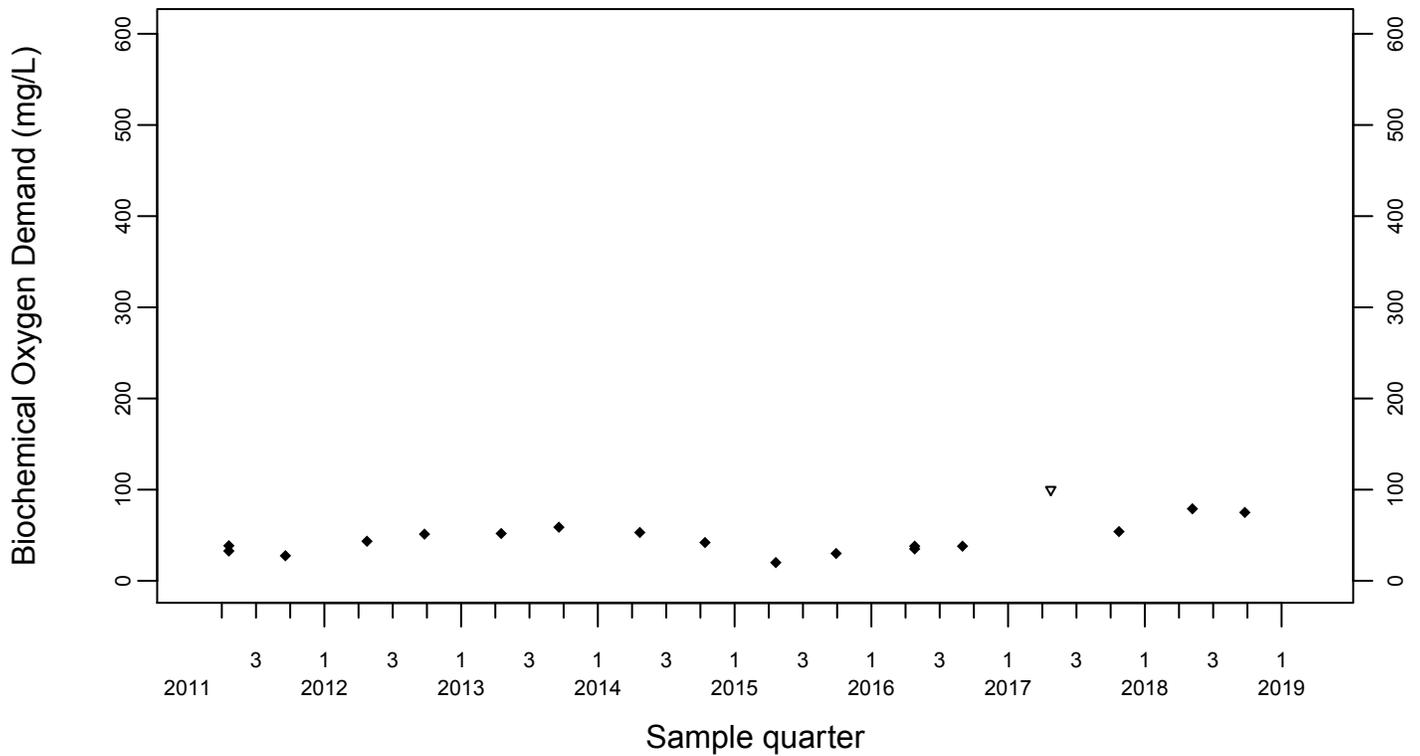
Sewage Ponds Wastewater
 Biochemical Oxygen Demand (mg/L)

Influent 3-ISWP-OW

◆ Above RL
 ▼ Below RL



In-pond 3-ESWP-OW

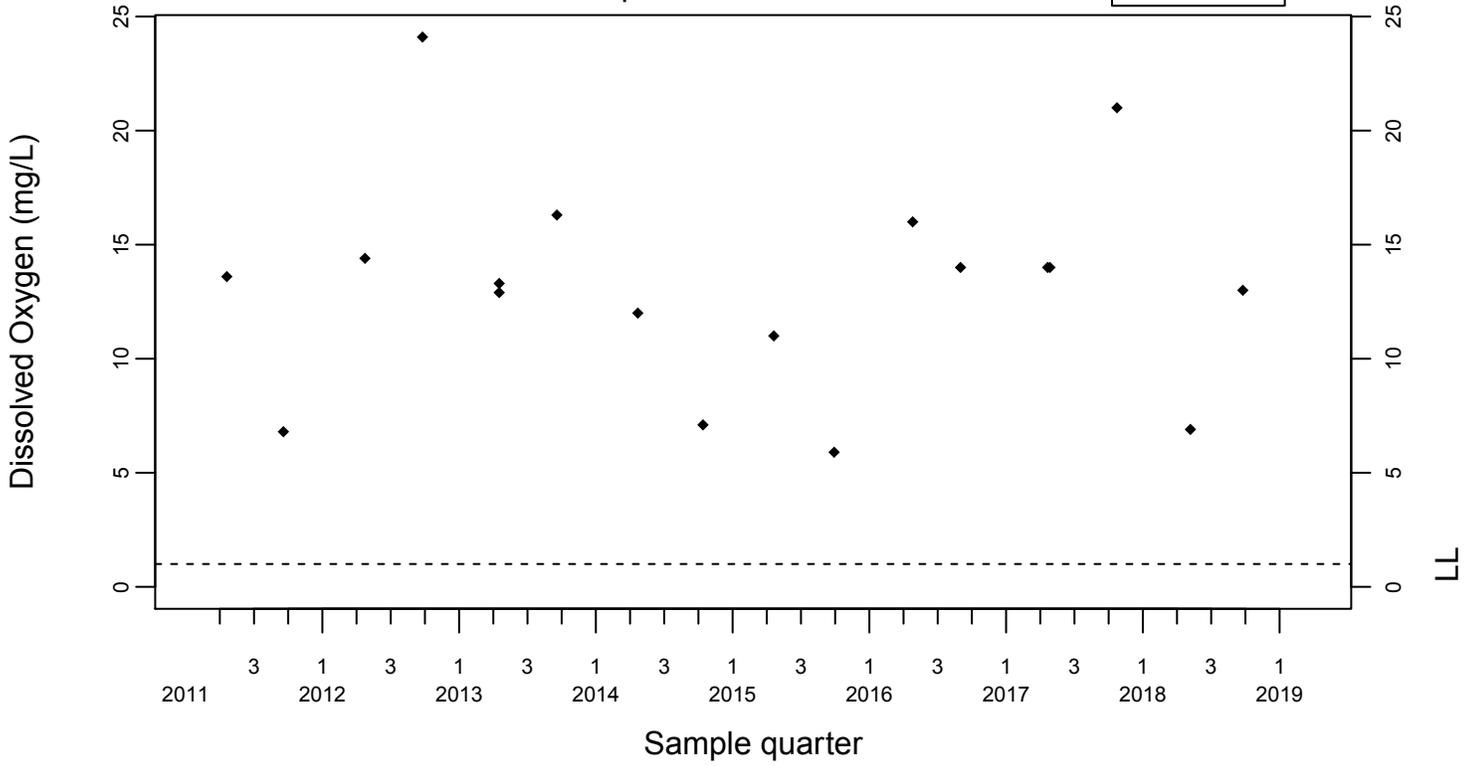


Sewage Ponds Wastewater
Dissolved Oxygen (mg/L)

LL=1

◆ Above RL
▽ Below RL

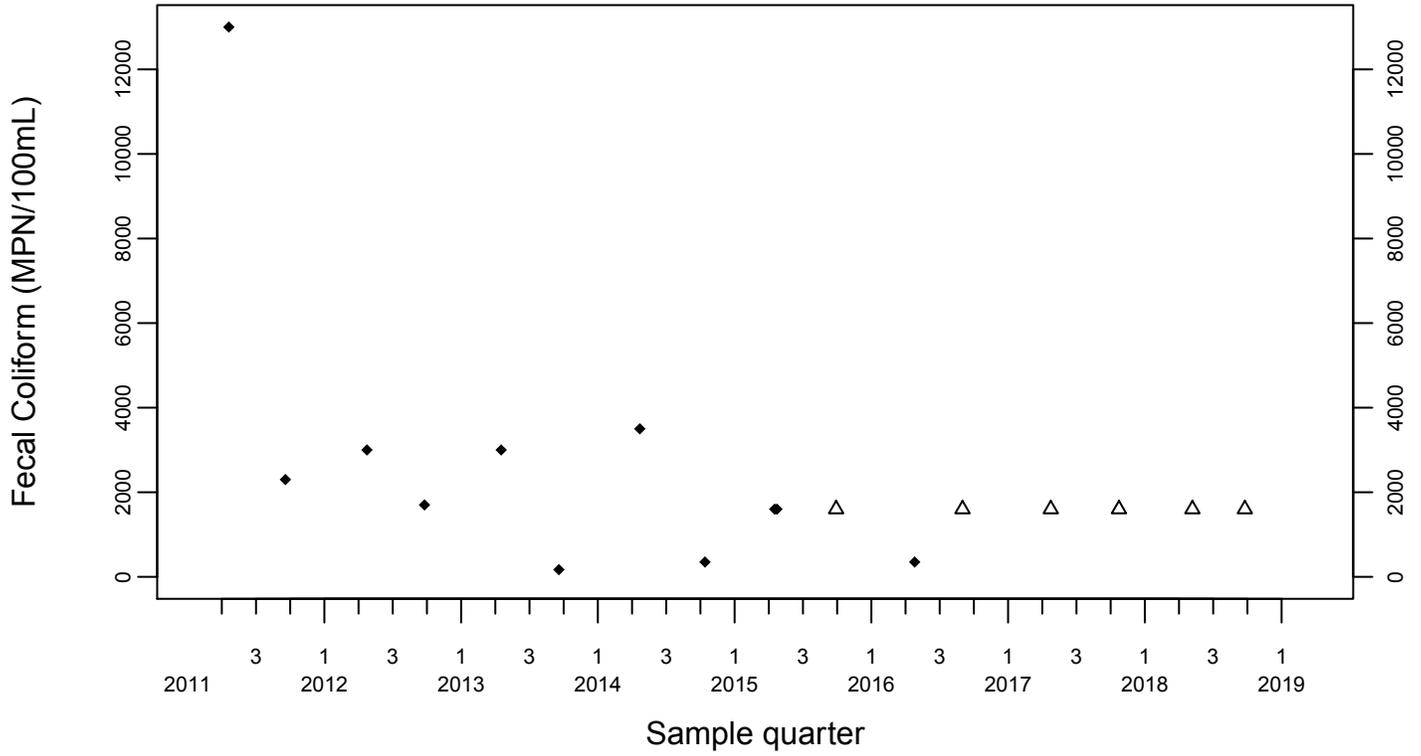
In-pond 3-ESWP-OW



Sewage Ponds Wastewater Fecal Coliform (MPN/100mL)

In-pond 3-ESWP-OW

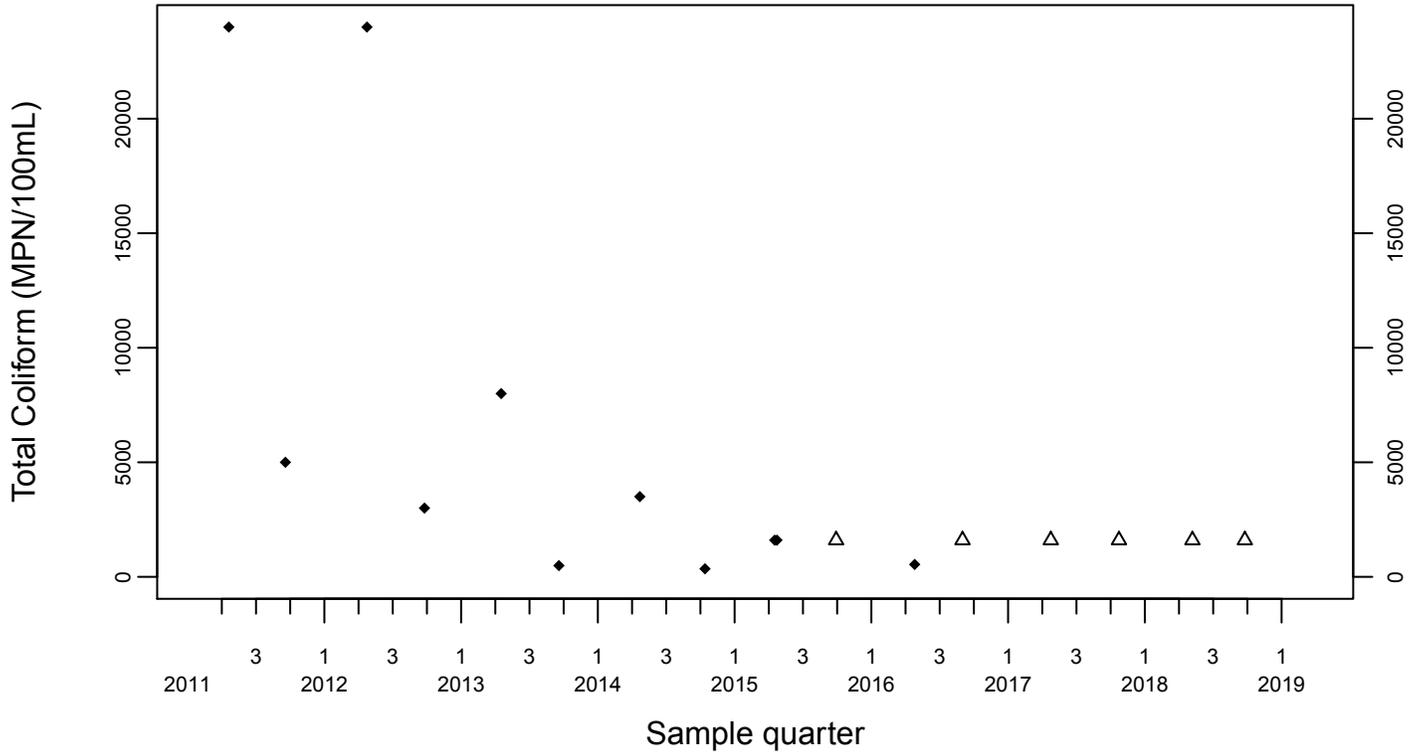
◆ Above RL
△ ">" RL



Sewage Ponds Wastewater Total Coliform (MPN/100mL)

In-pond 3-ESWP-OW

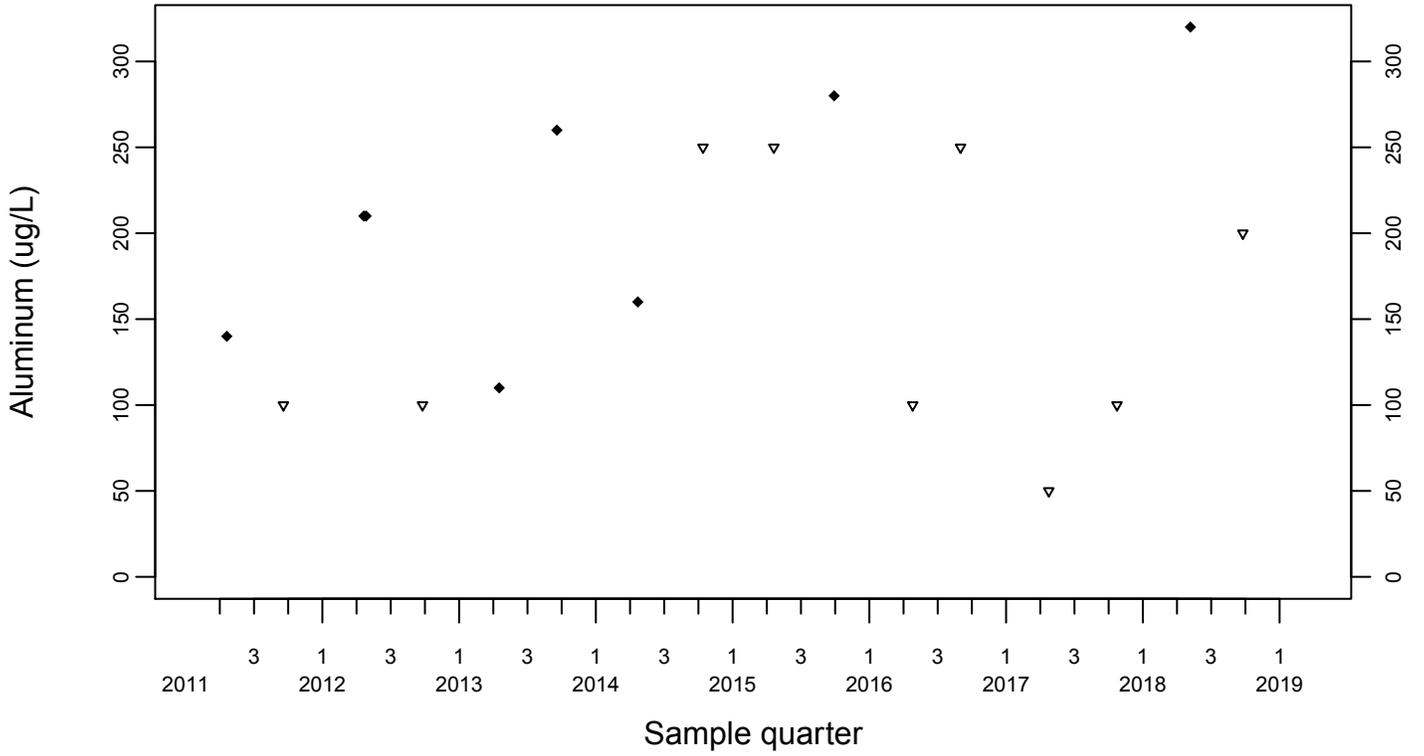
◆ Above RL
△ ">" RL



Sewage Ponds Wastewater Aluminum (ug/L)

In-pond 3-ESWP-OW

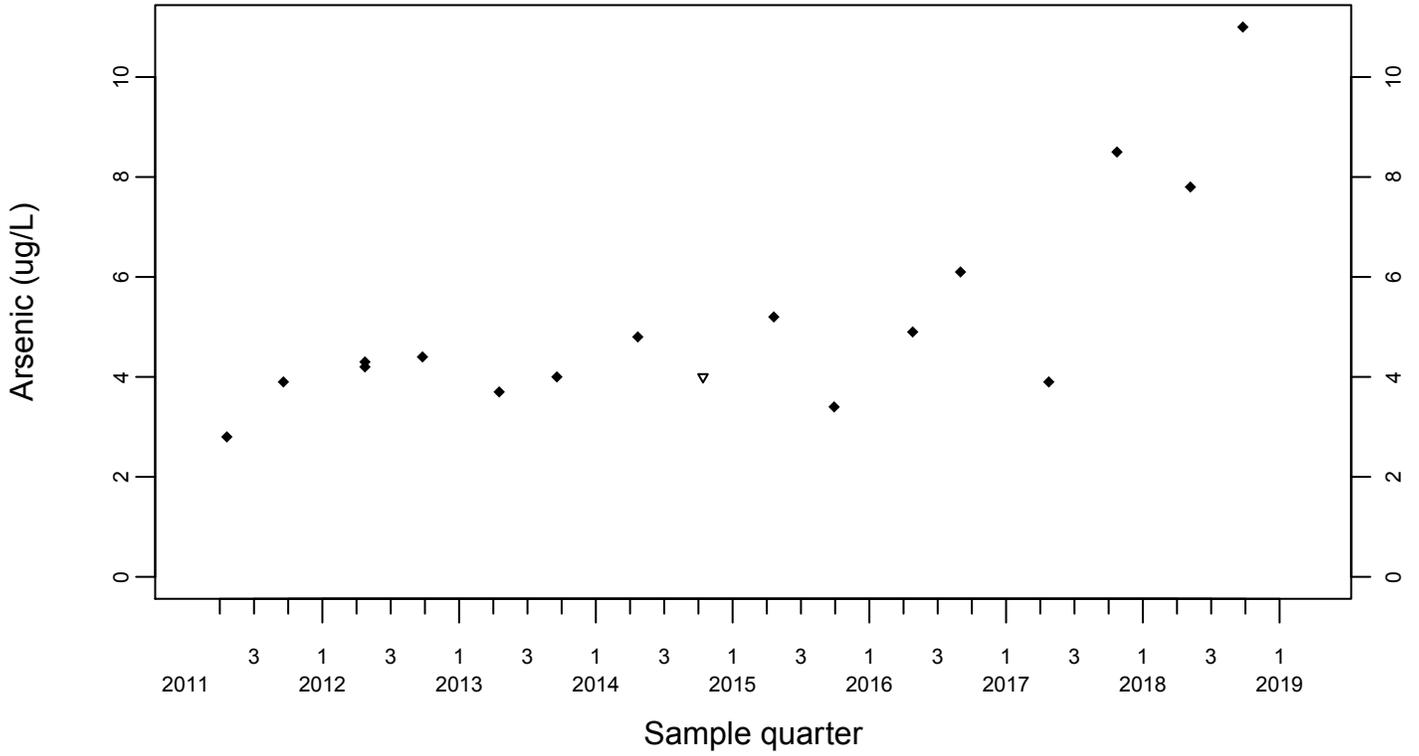
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Arsenic (ug/L)

In-pond 3-ESWP-OW

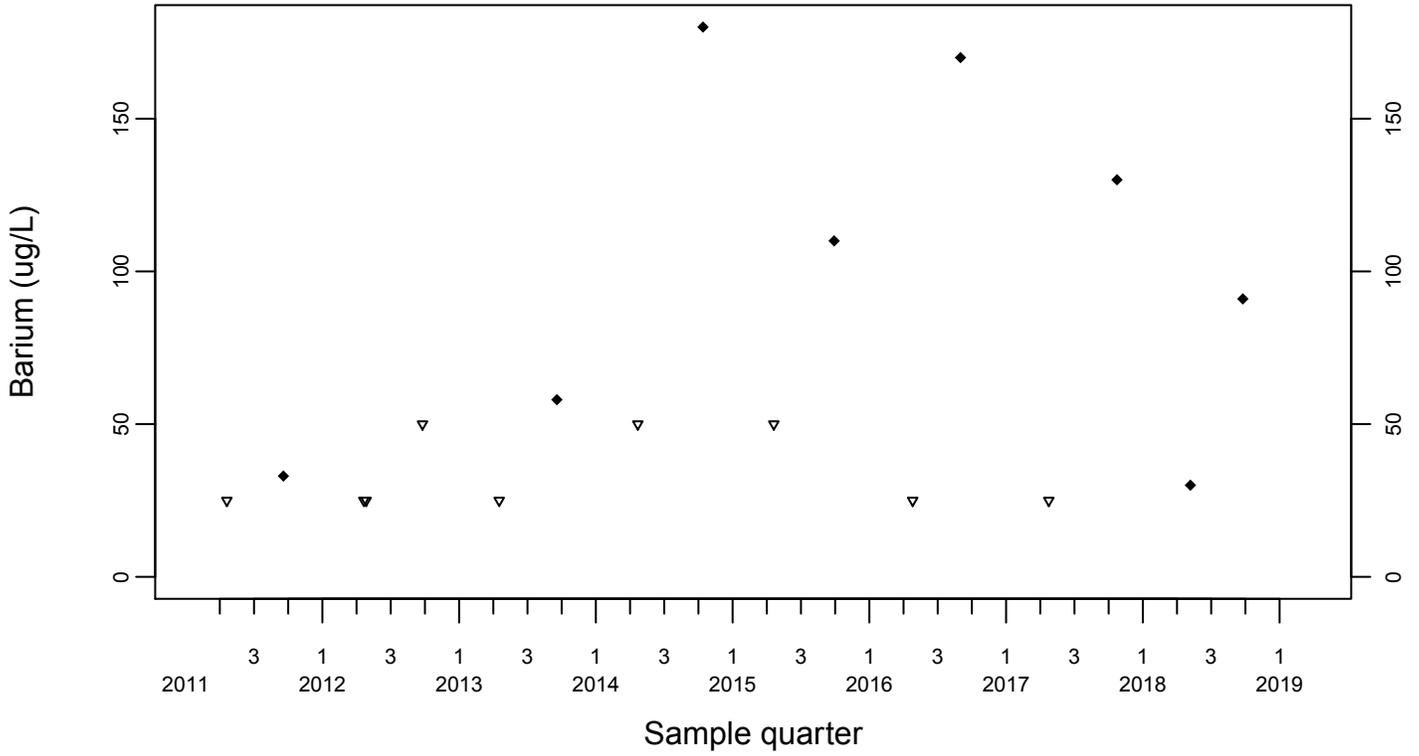
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Barium (ug/L)

In-pond 3-ESWP-OW

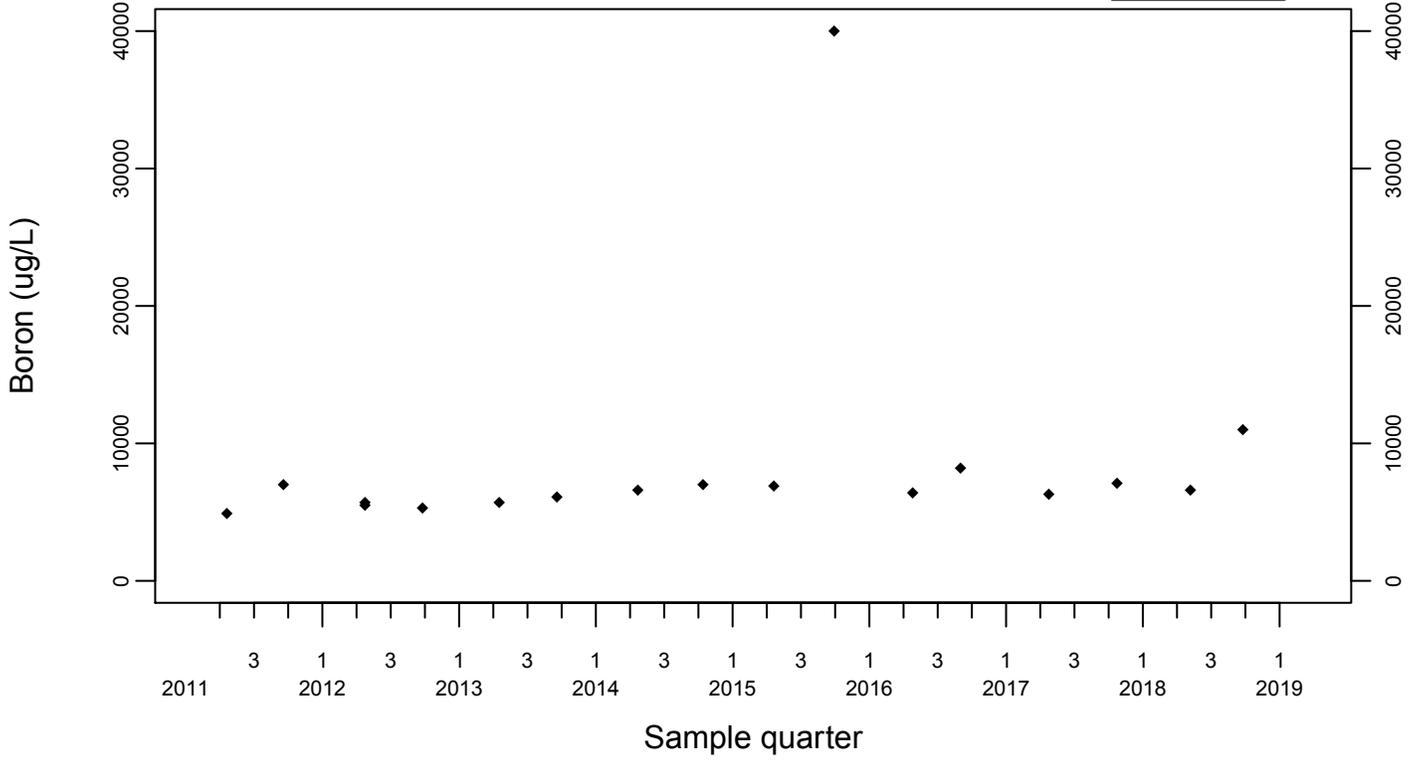
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Boron (ug/L)

In-pond 3-ESWP-OW

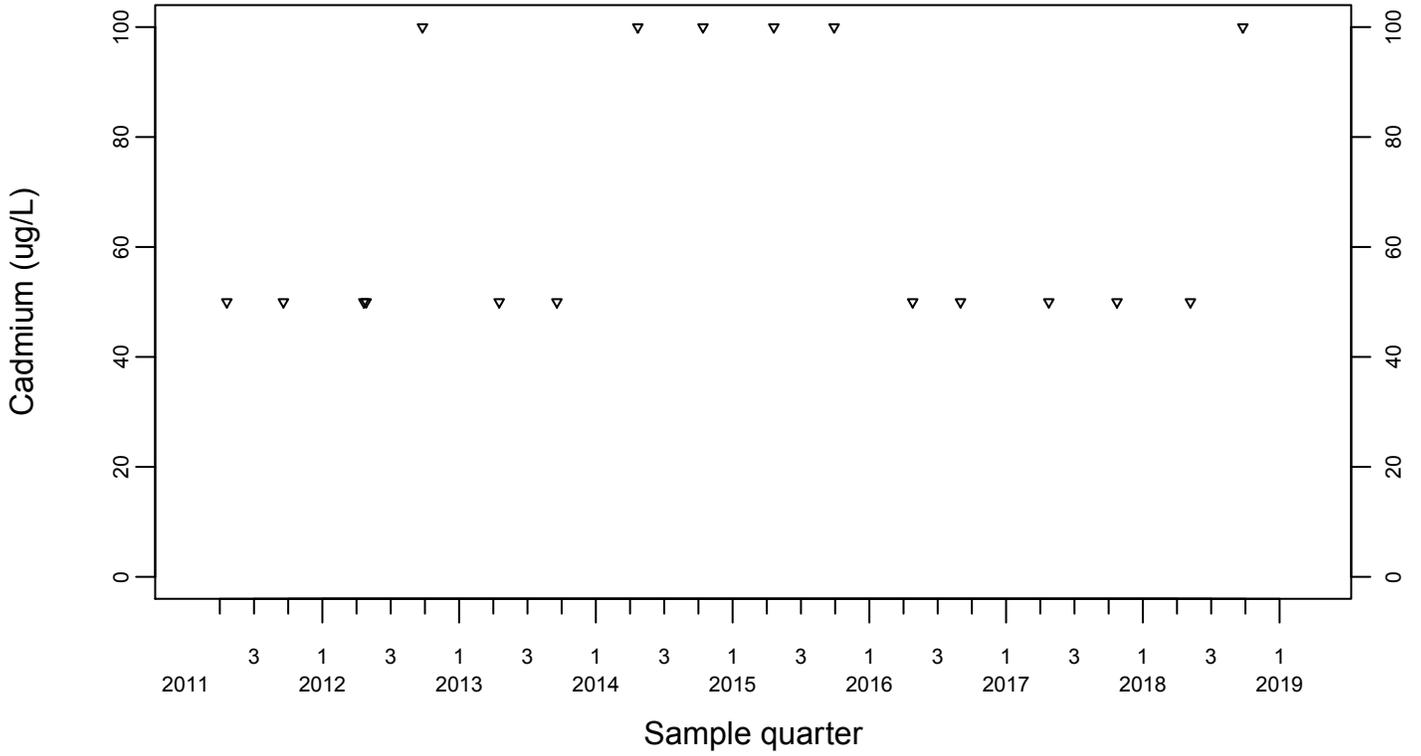
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Cadmium (ug/L)

In-pond 3-ESWP-OW

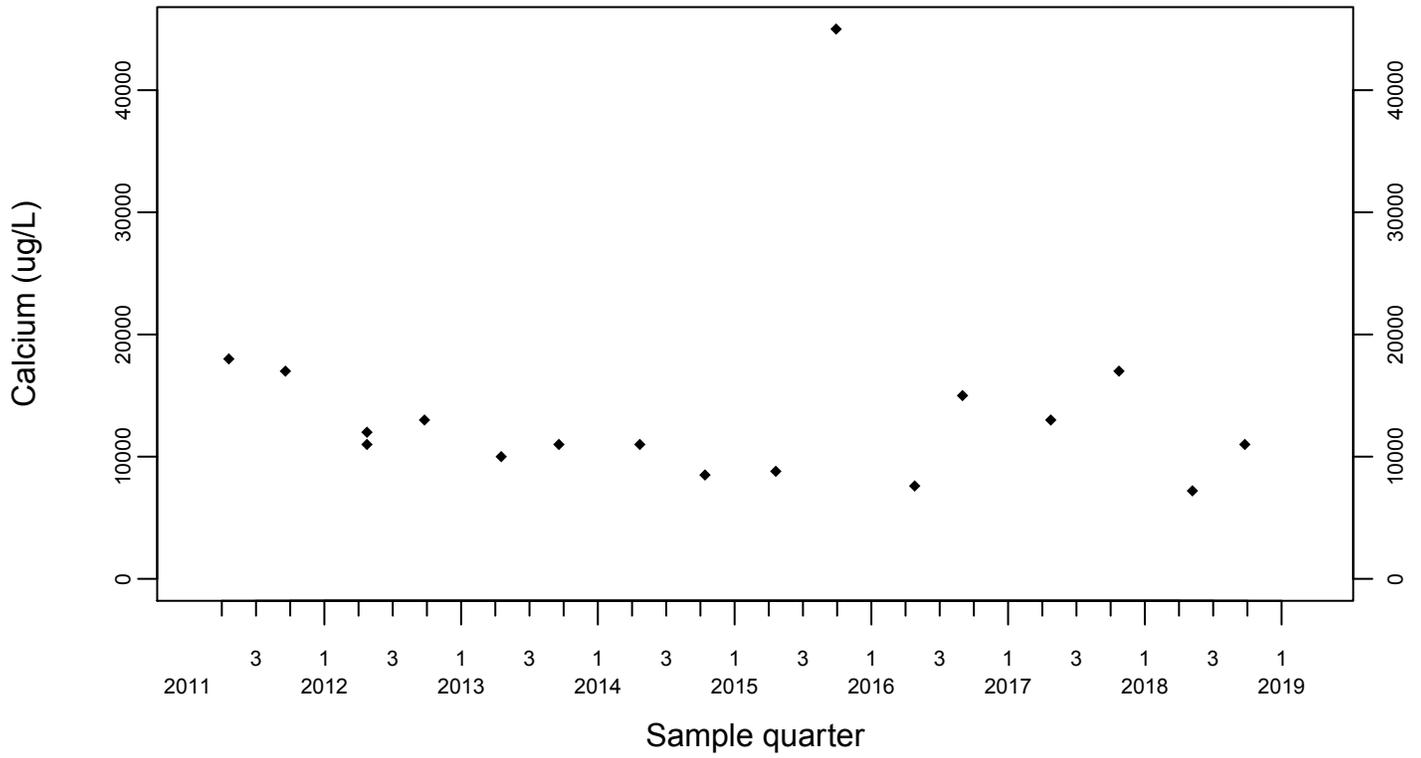
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Calcium (ug/L)

In-pond 3-ESWP-OW

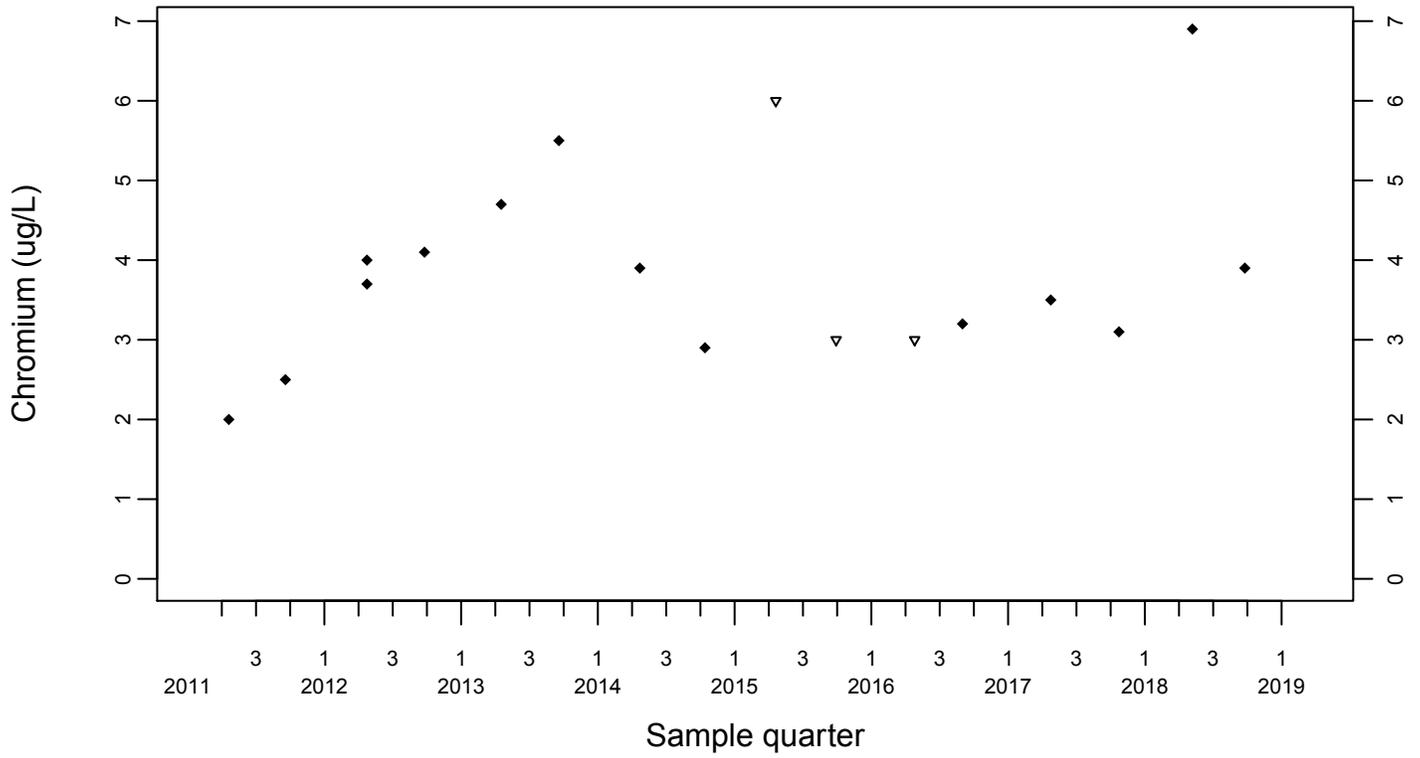
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Chromium (ug/L)

In-pond 3-ESWP-OW

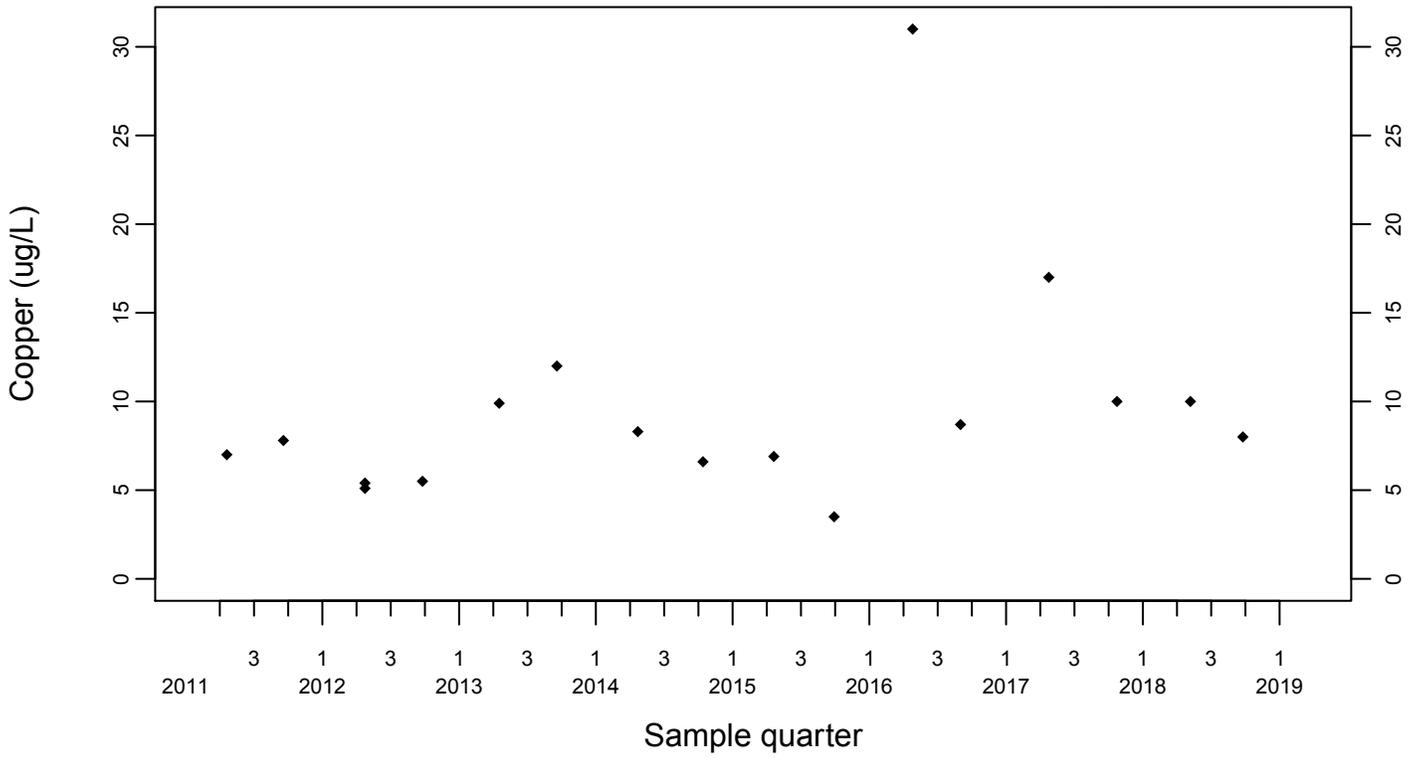
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Copper (ug/L)

In-pond 3-ESWP-OW

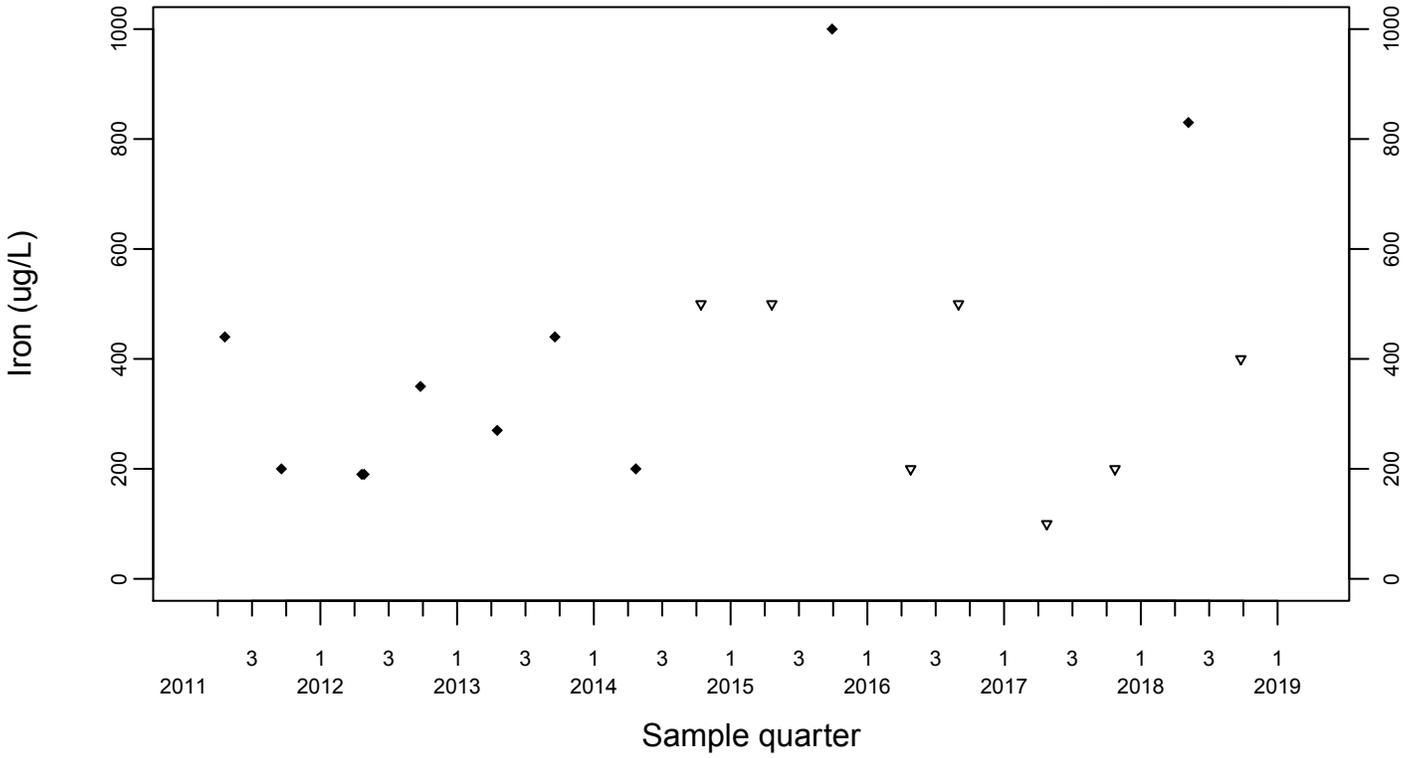
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Iron (ug/L)

In-pond 3-ESWP-OW

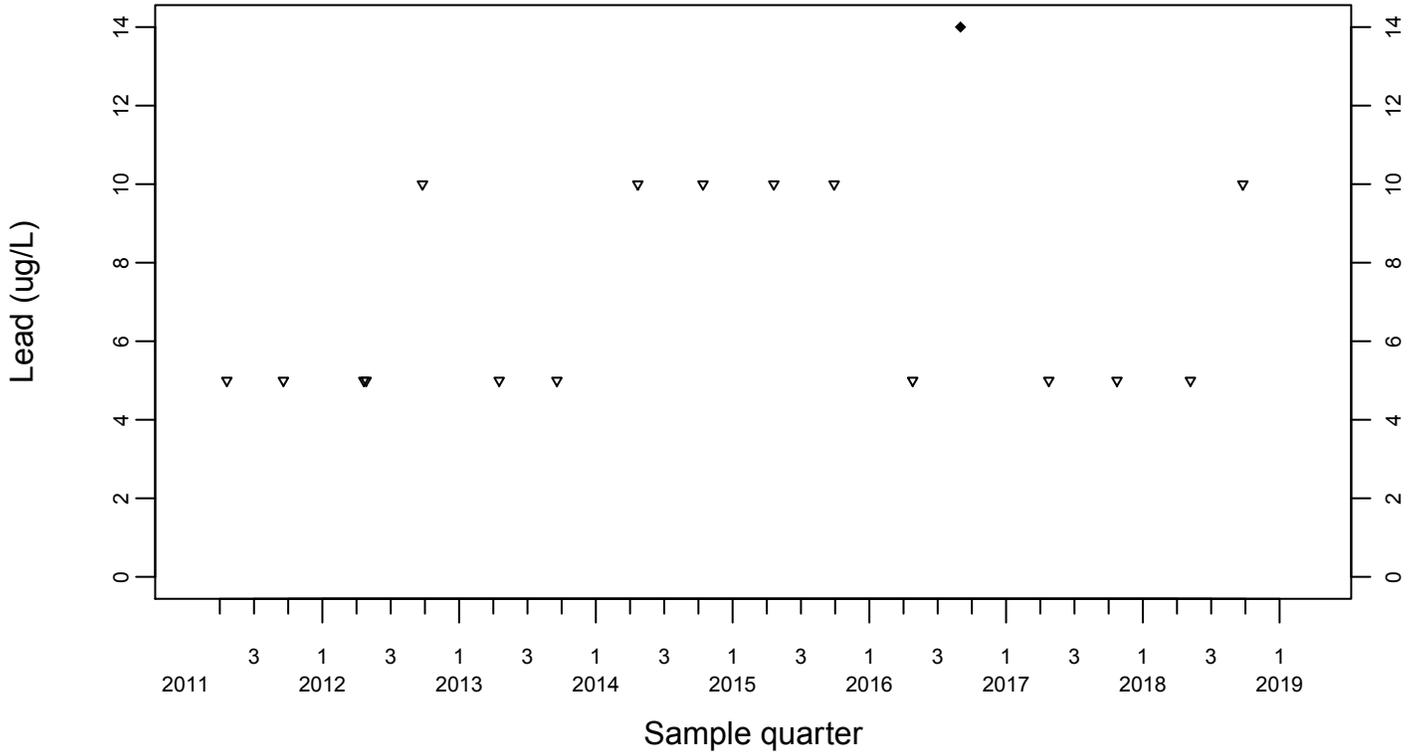
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Lead (ug/L)

In-pond 3-ESWP-OW

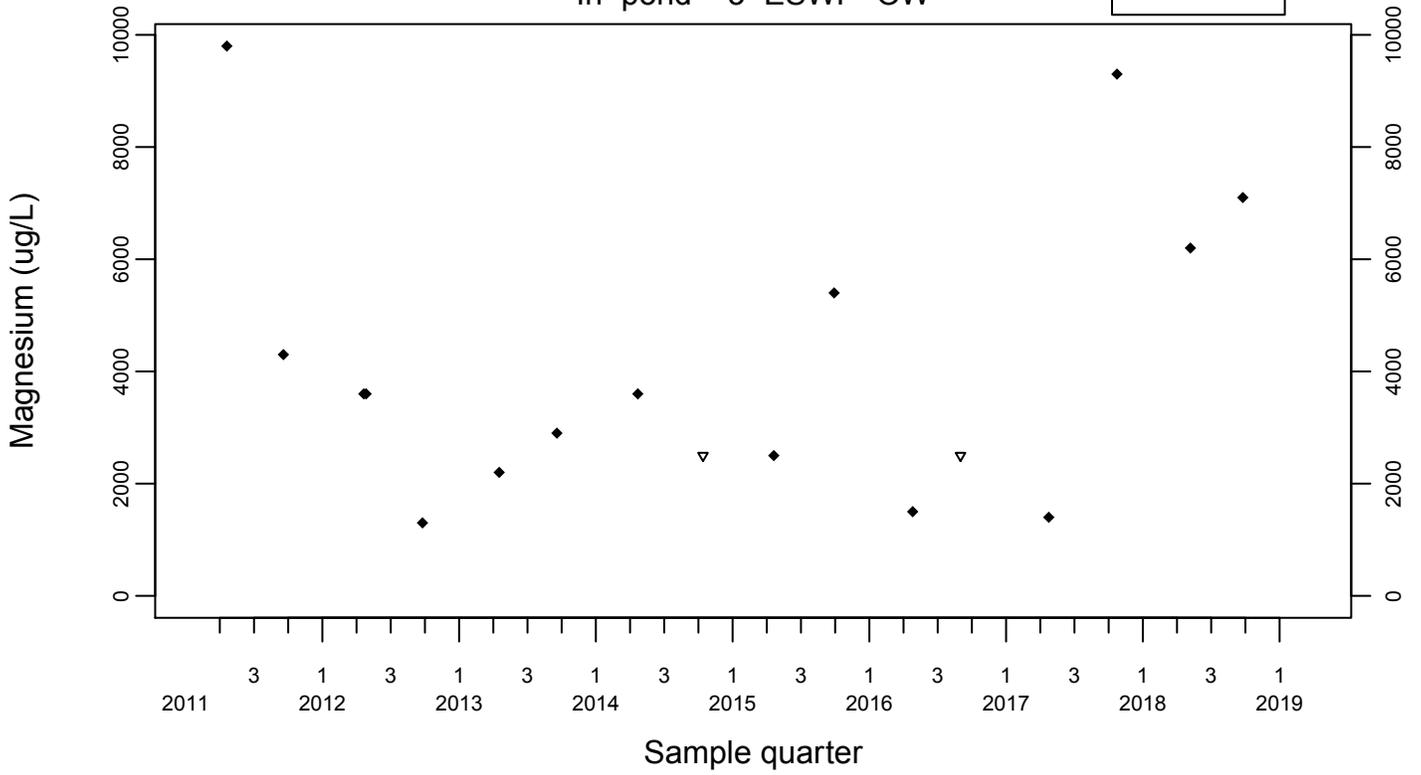
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Magnesium (ug/L)

In-pond 3-ESWP-OW

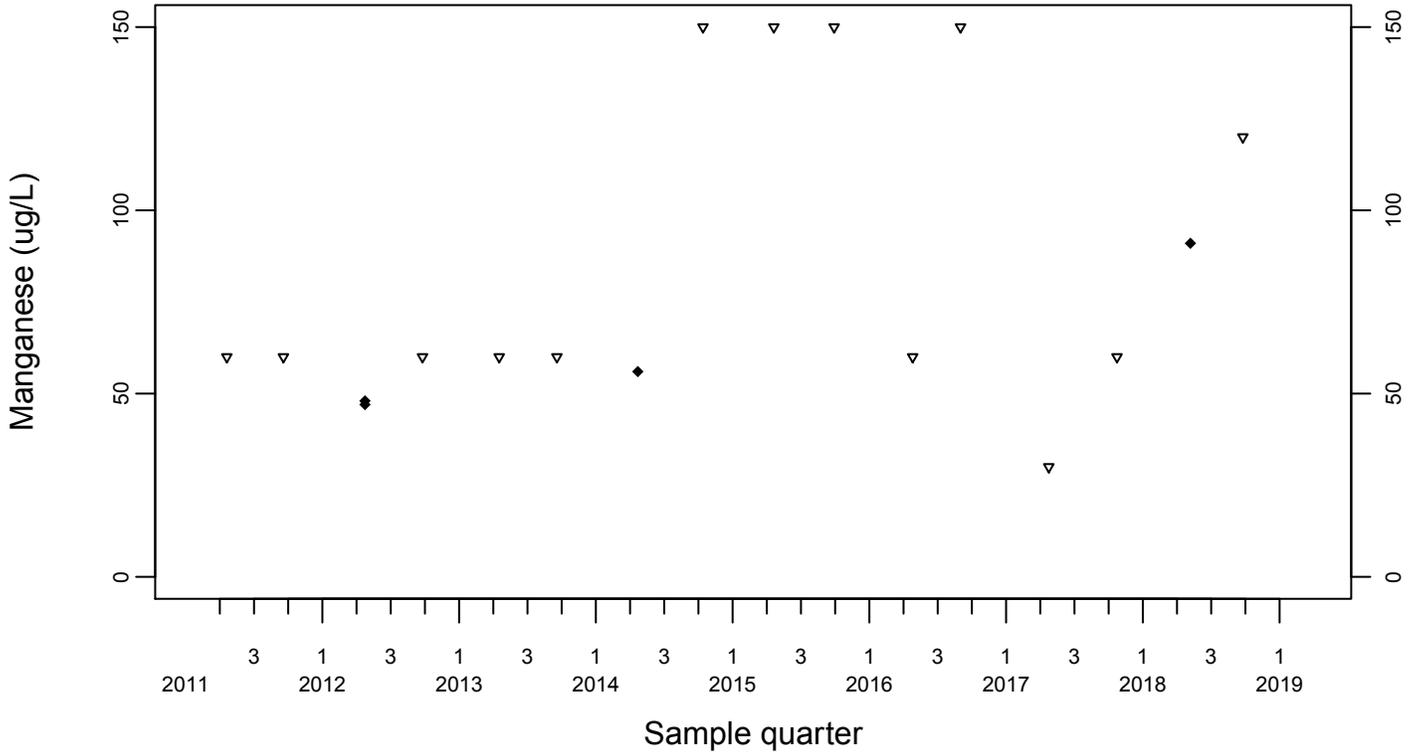
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Manganese (ug/L)

In-pond 3-ESWP-OW

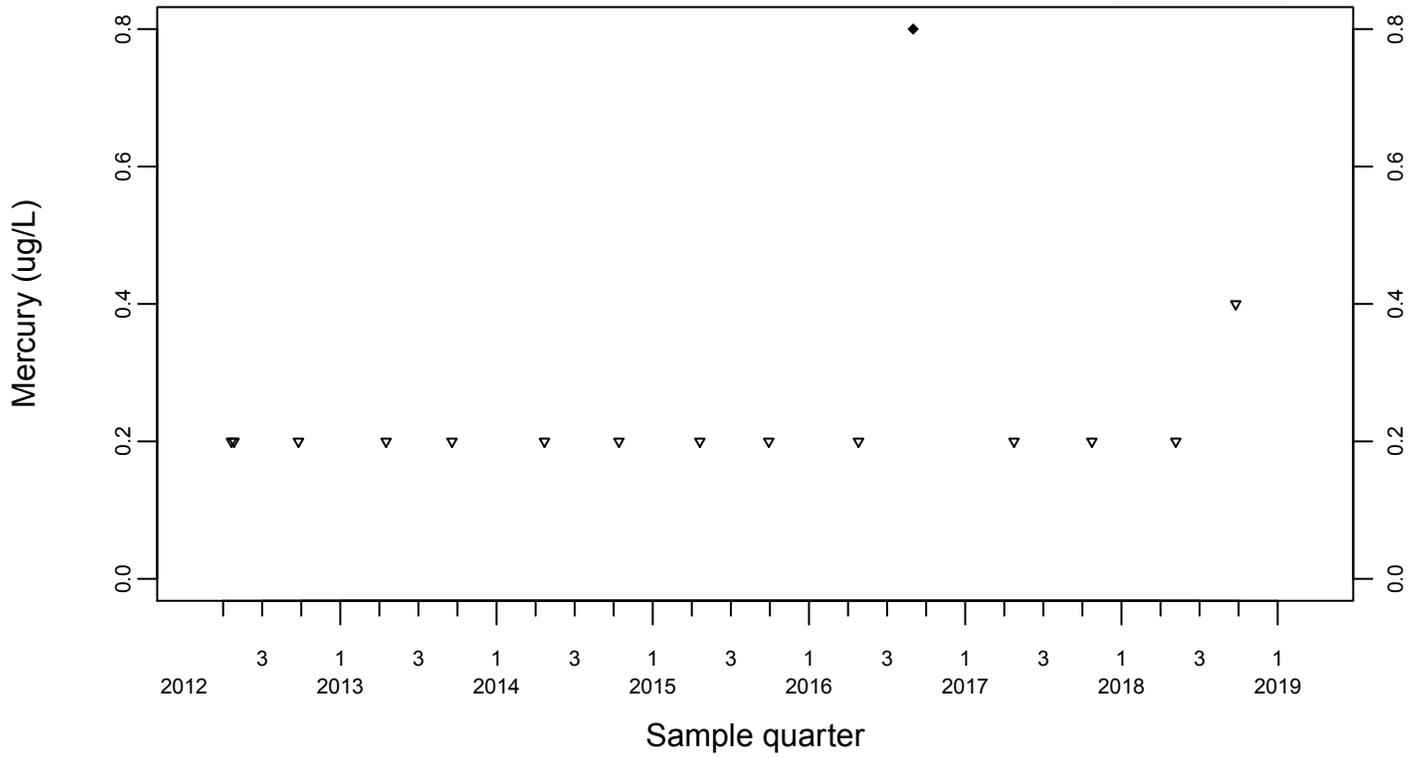
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Mercury (ug/L)

In-pond 3-ESWP-OW

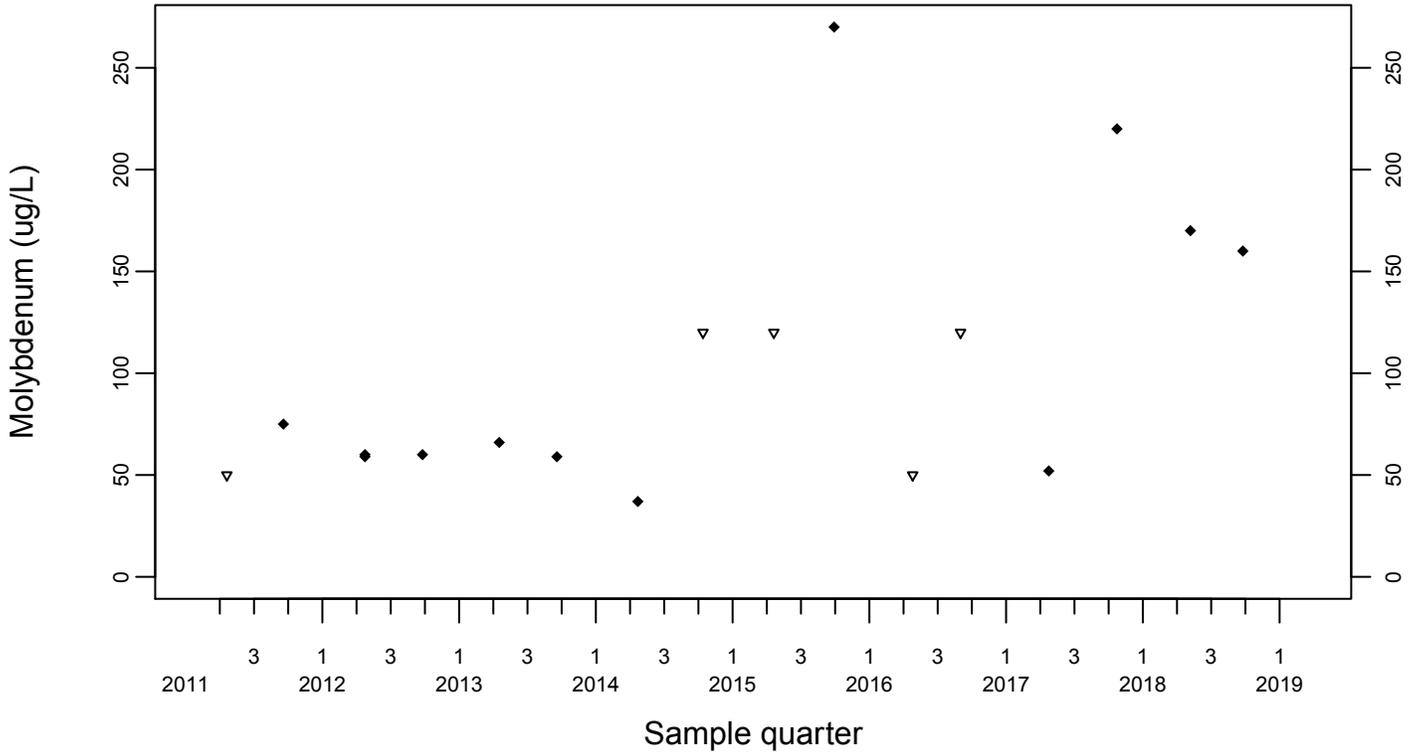
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater
Molybdenum (ug/L)

In-pond 3-ESWP-OW

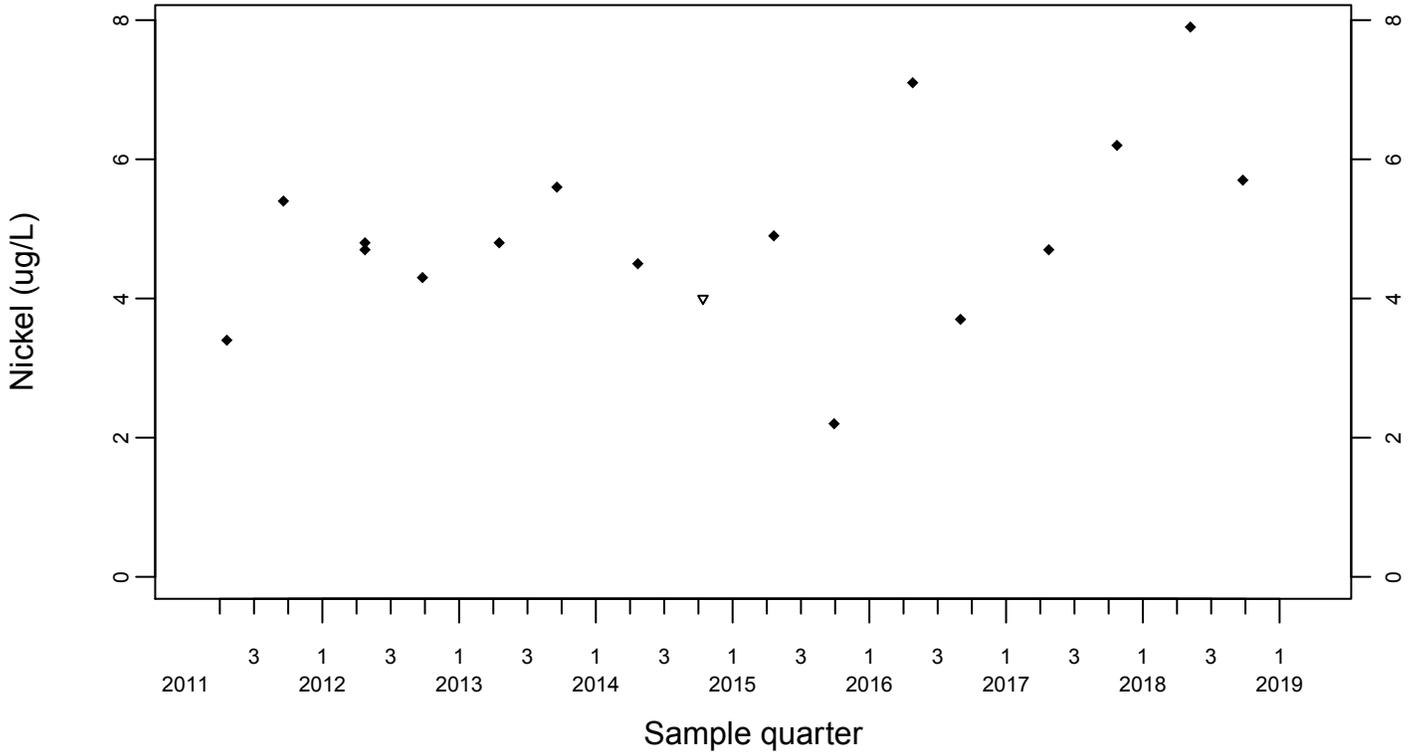
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Nickel (ug/L)

In-pond 3-ESWP-OW

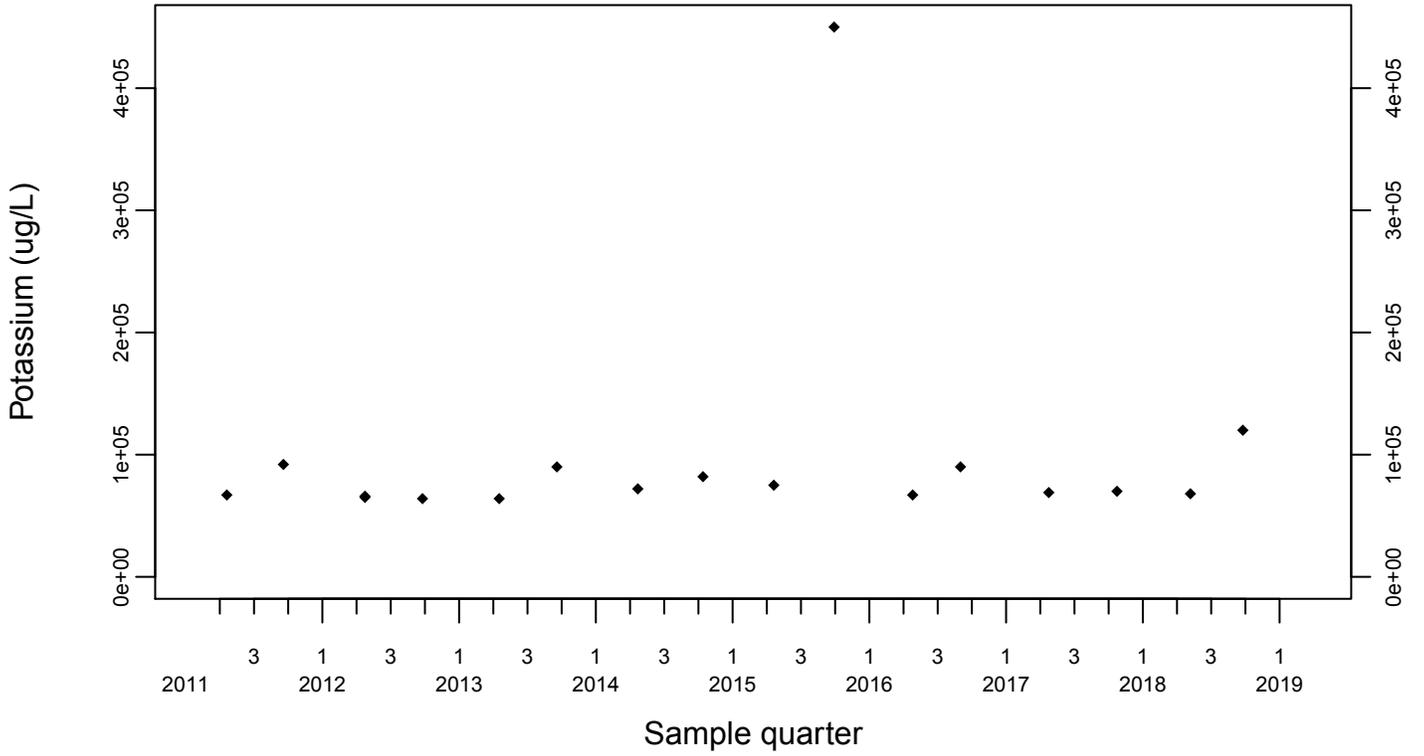
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Potassium (ug/L)

In-pond 3-ESWP-OW

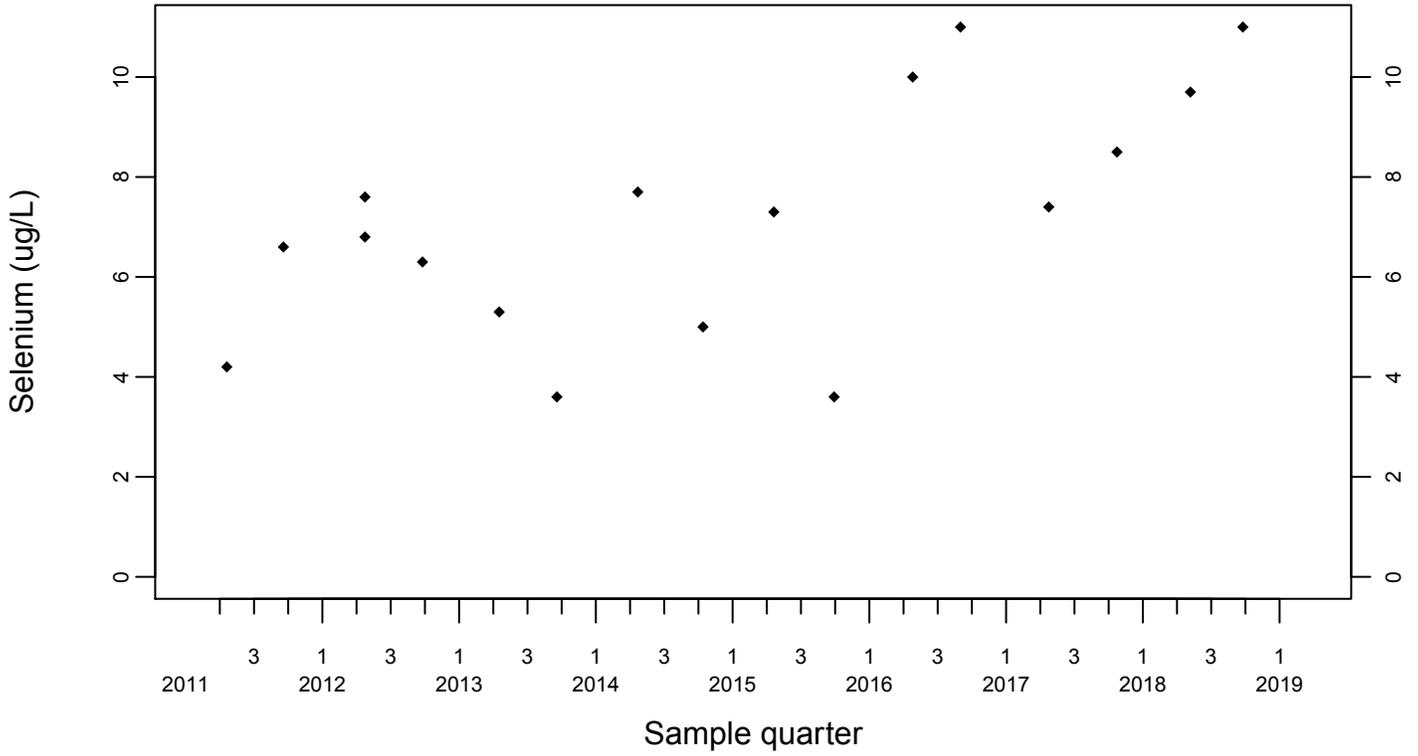
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Selenium (ug/L)

In-pond 3-ESWP-OW

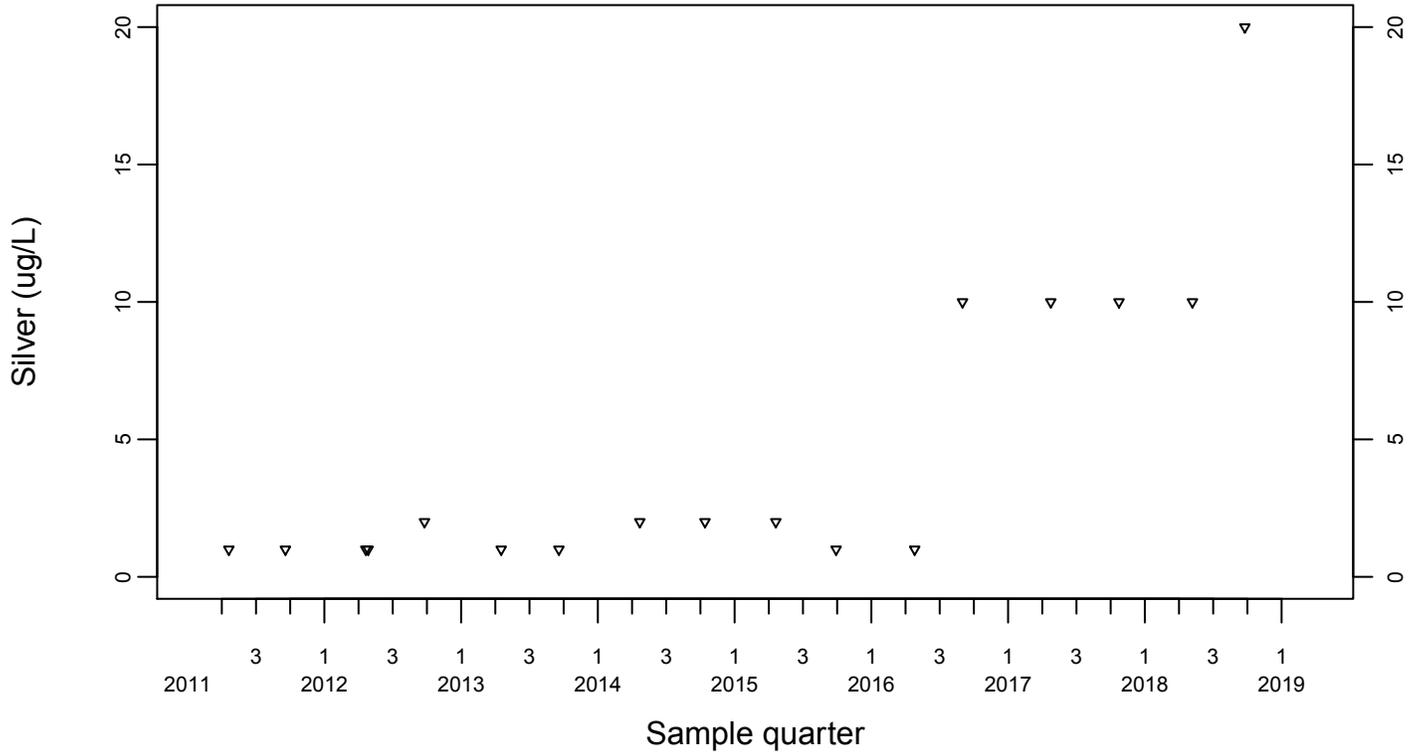
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Silver (ug/L)

In-pond 3-ESWP-OW

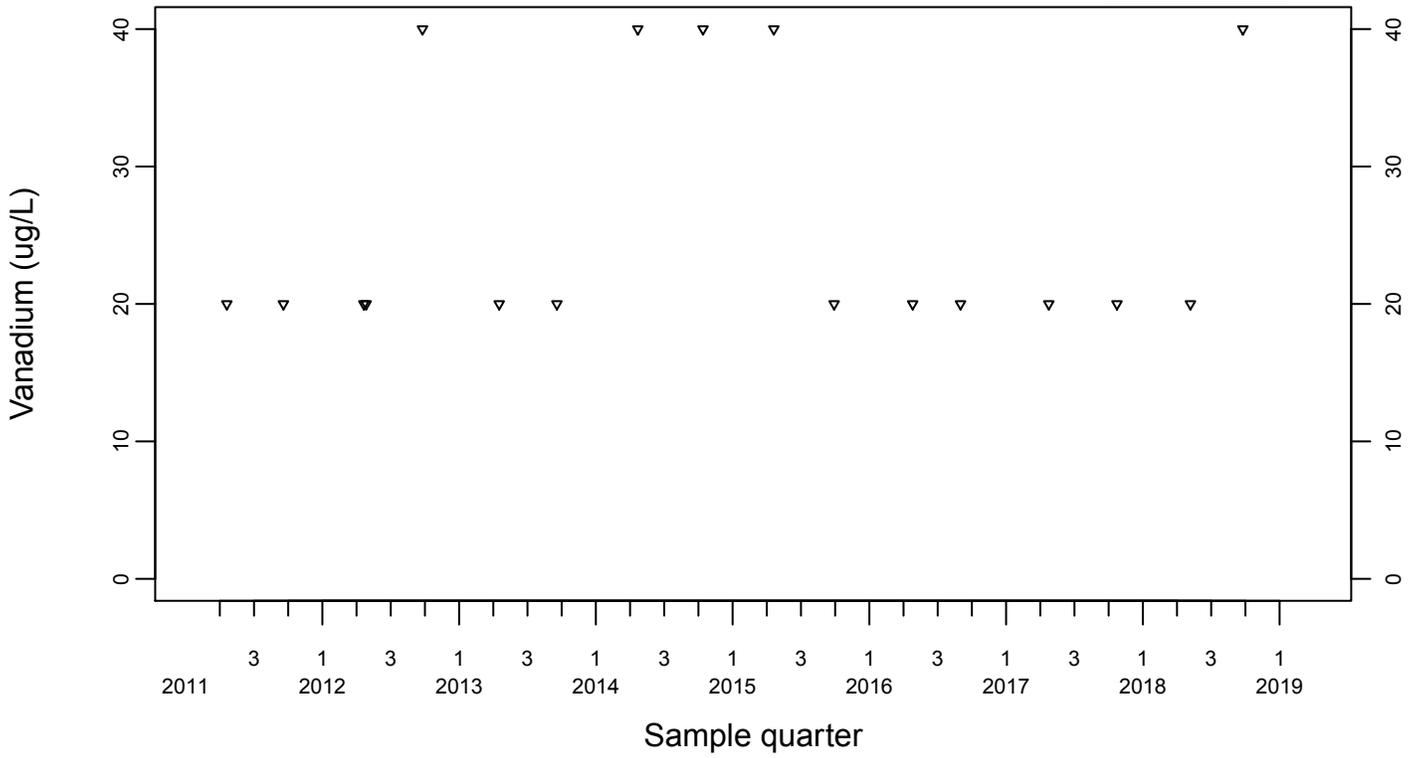
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Vanadium (ug/L)

In-pond 3-ESWP-OW

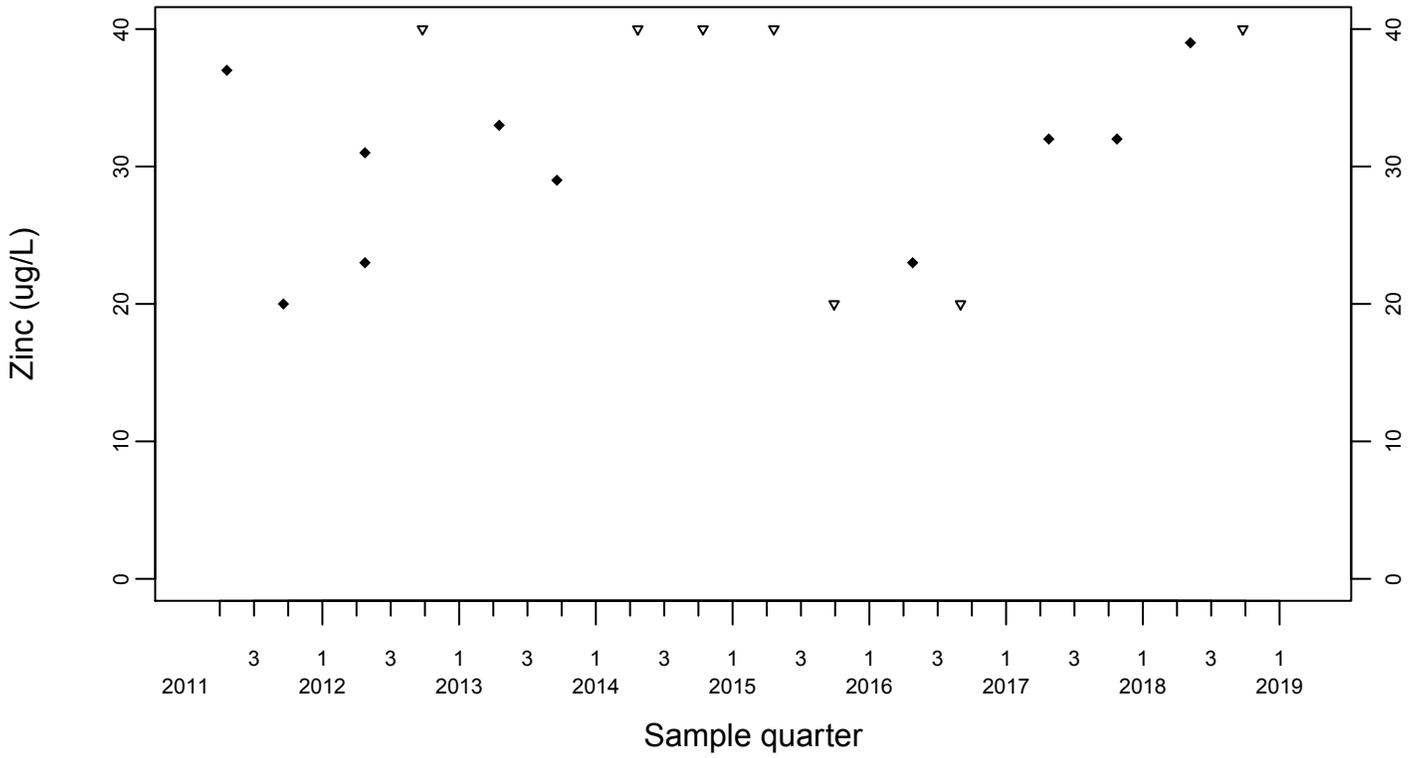
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Zinc (ug/L)

In-pond 3-ESWP-OW

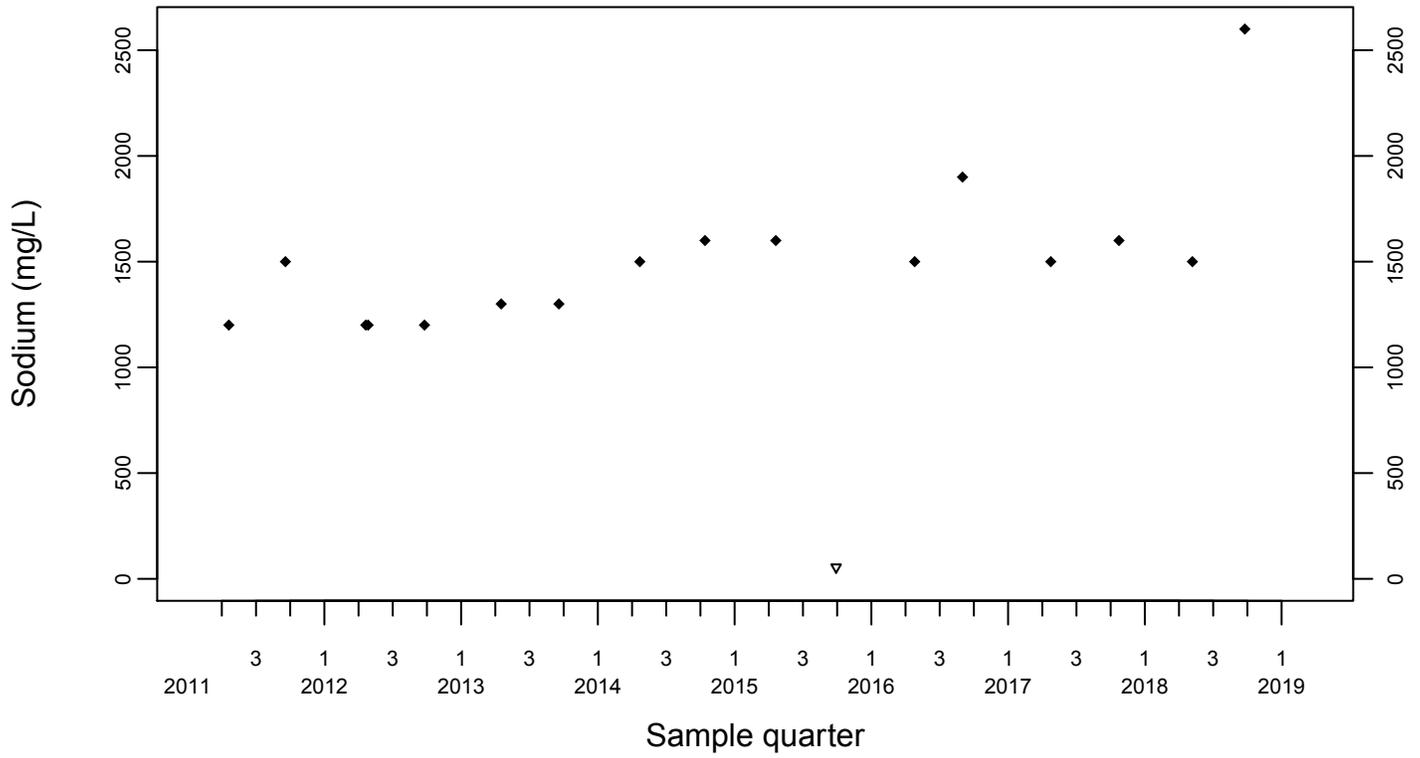
◆ Above RL
▽ Below RL



Sewage Ponds Wastewater Sodium (mg/L)

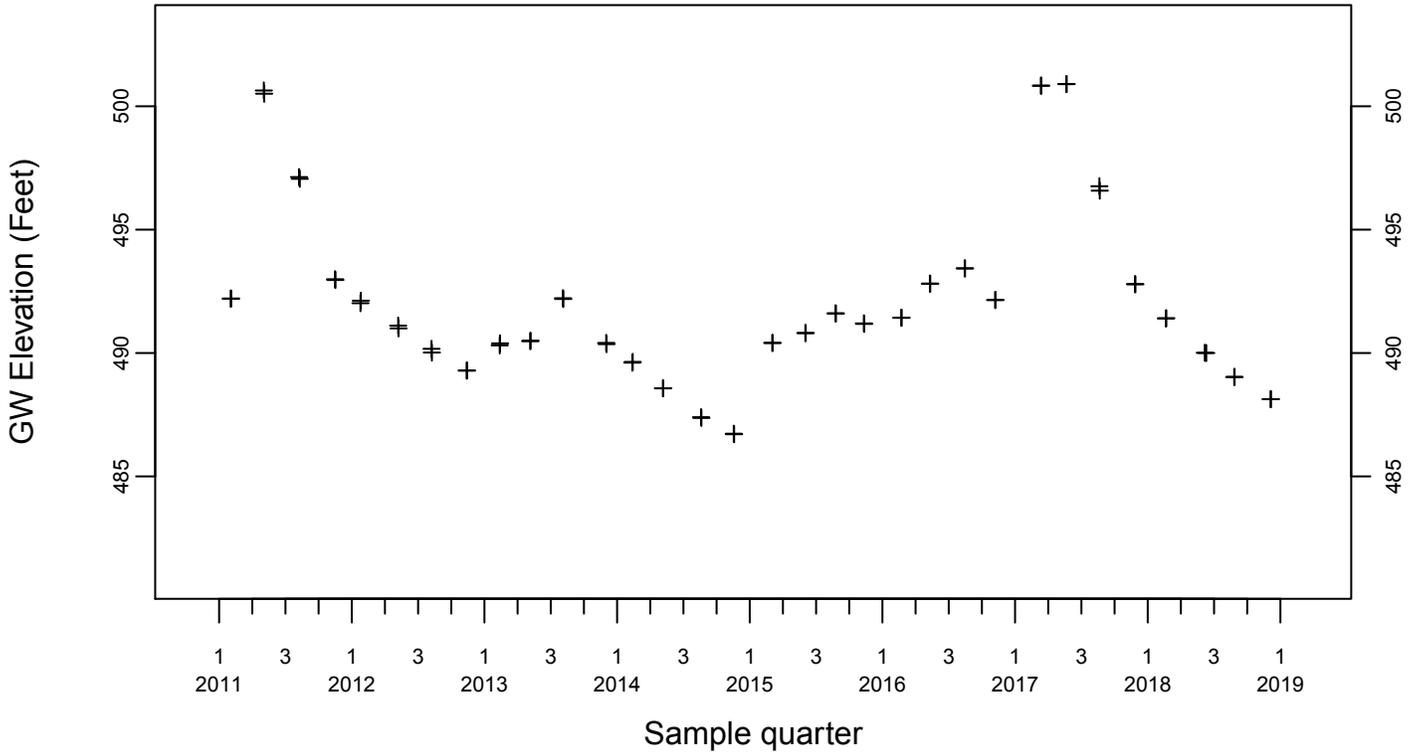
In-pond 3-ESWP-OW

◆ Above RL
▽ Below RL

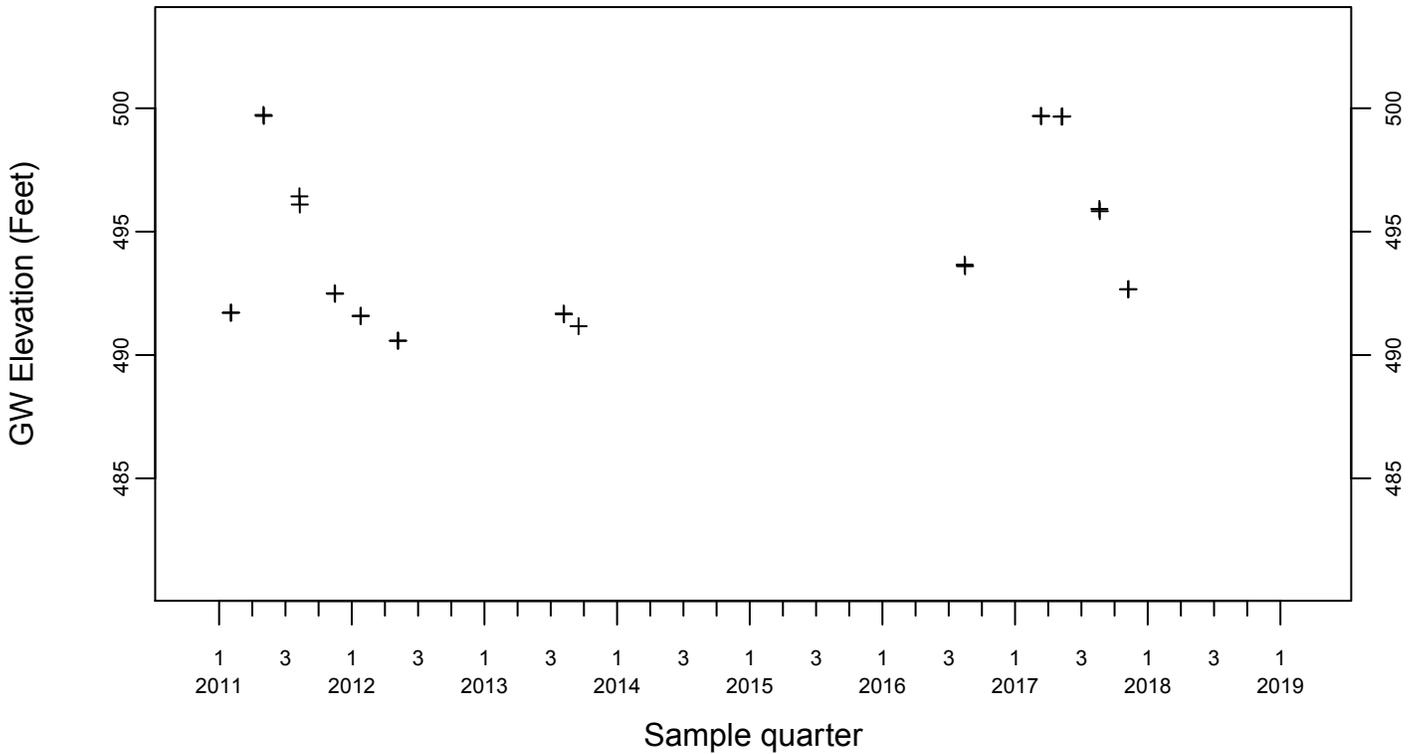


Sewage Ponds Ground Water GW Elevation (Feet)

Upgradient Monitor Well W-7ES

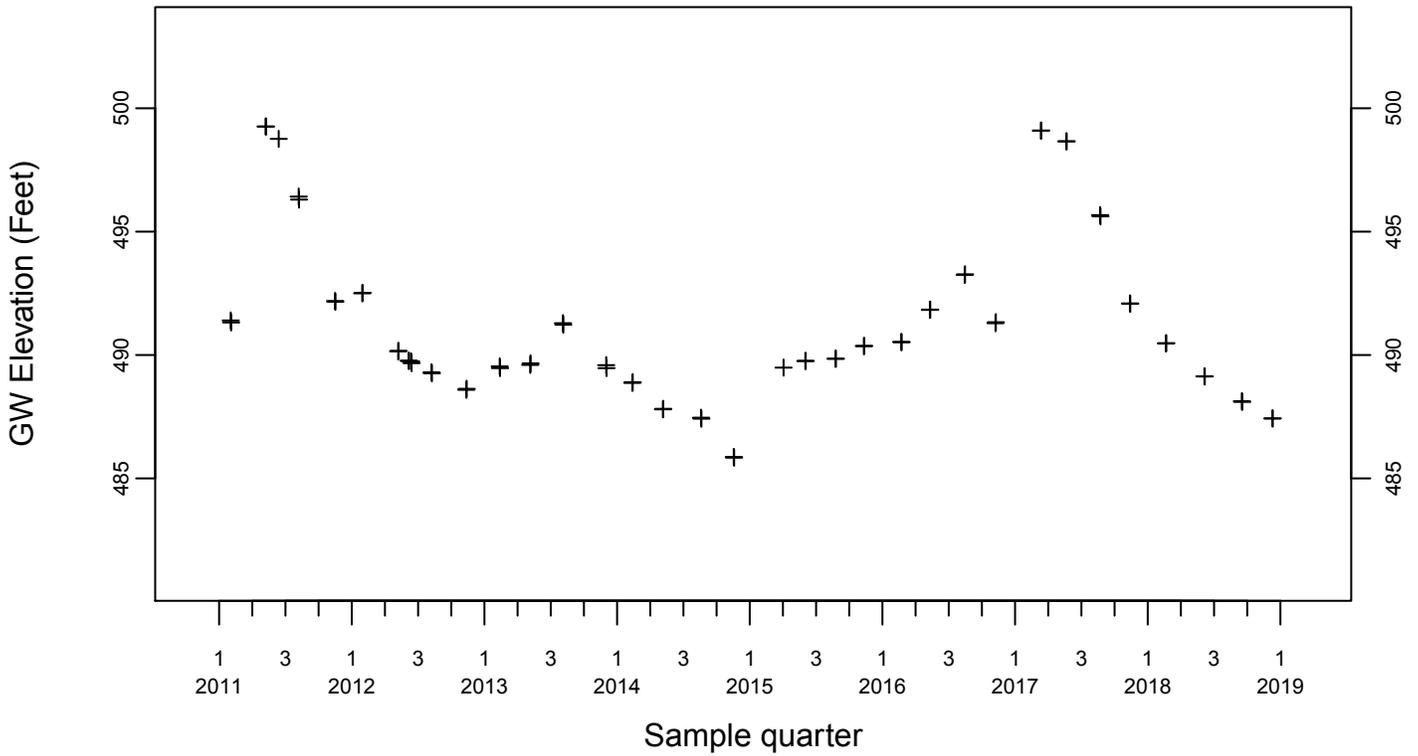


Upgradient Monitor Well W-7PS

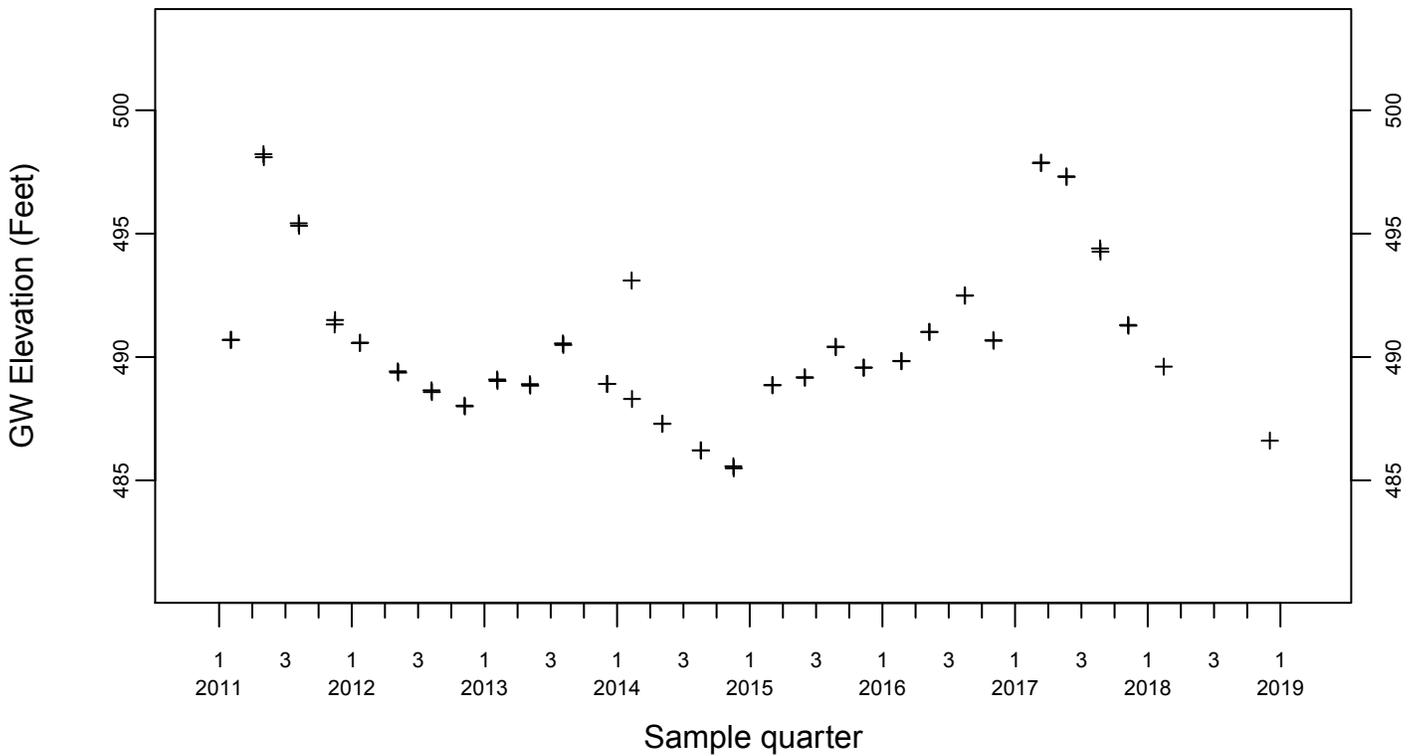


Sewage Ponds Ground Water GW Elevation (Feet)

Crossgradient Monitor Well W-35A-04

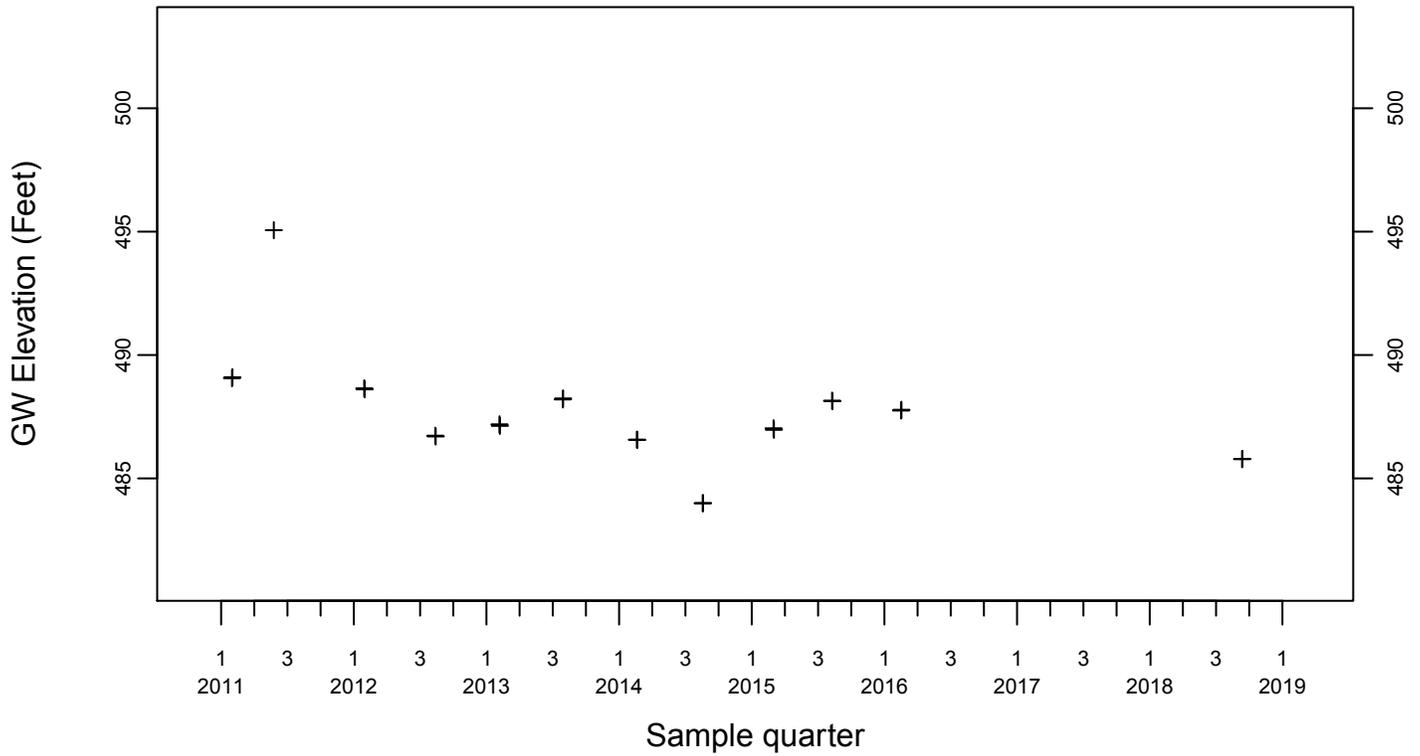


Downgradient Monitor Well W-7DS

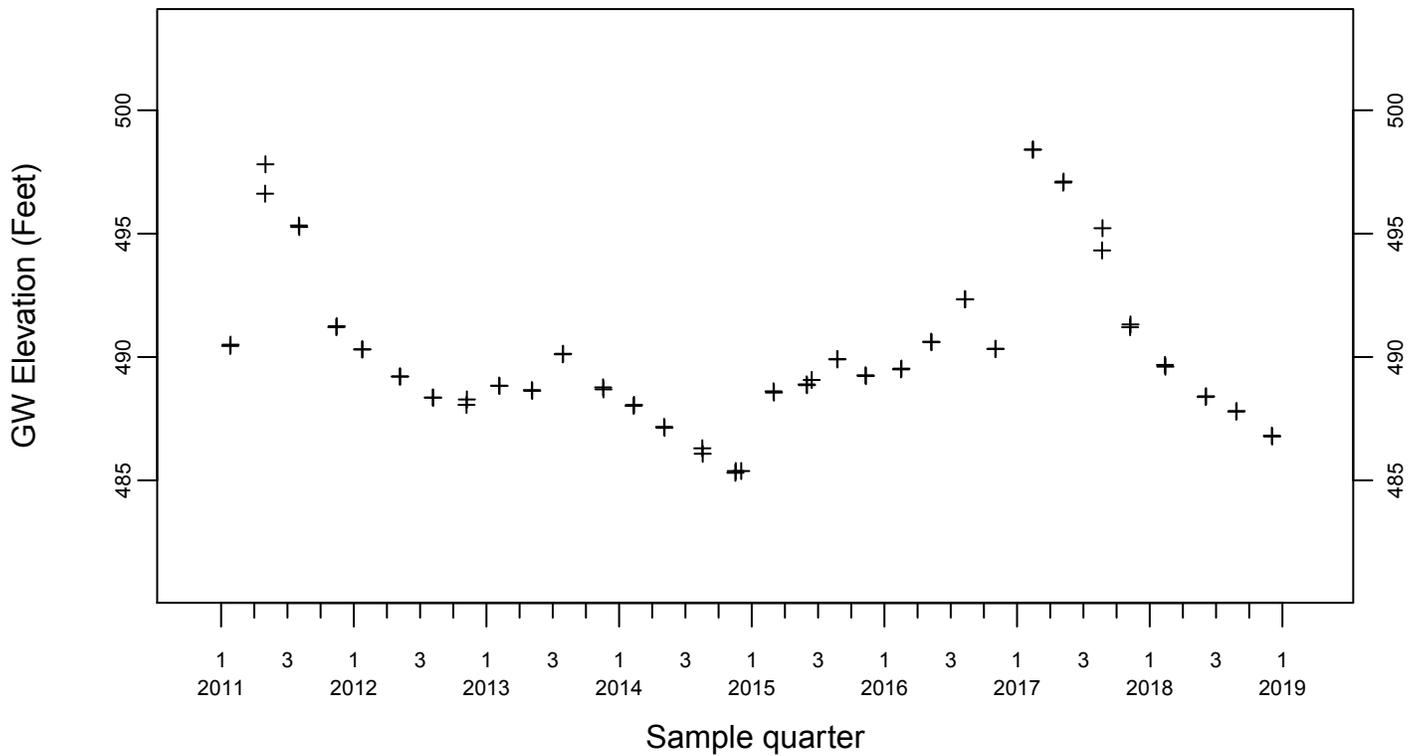


Sewage Ponds Ground Water GW Elevation (Feet)

Downgradient Monitor Well W-25N-23

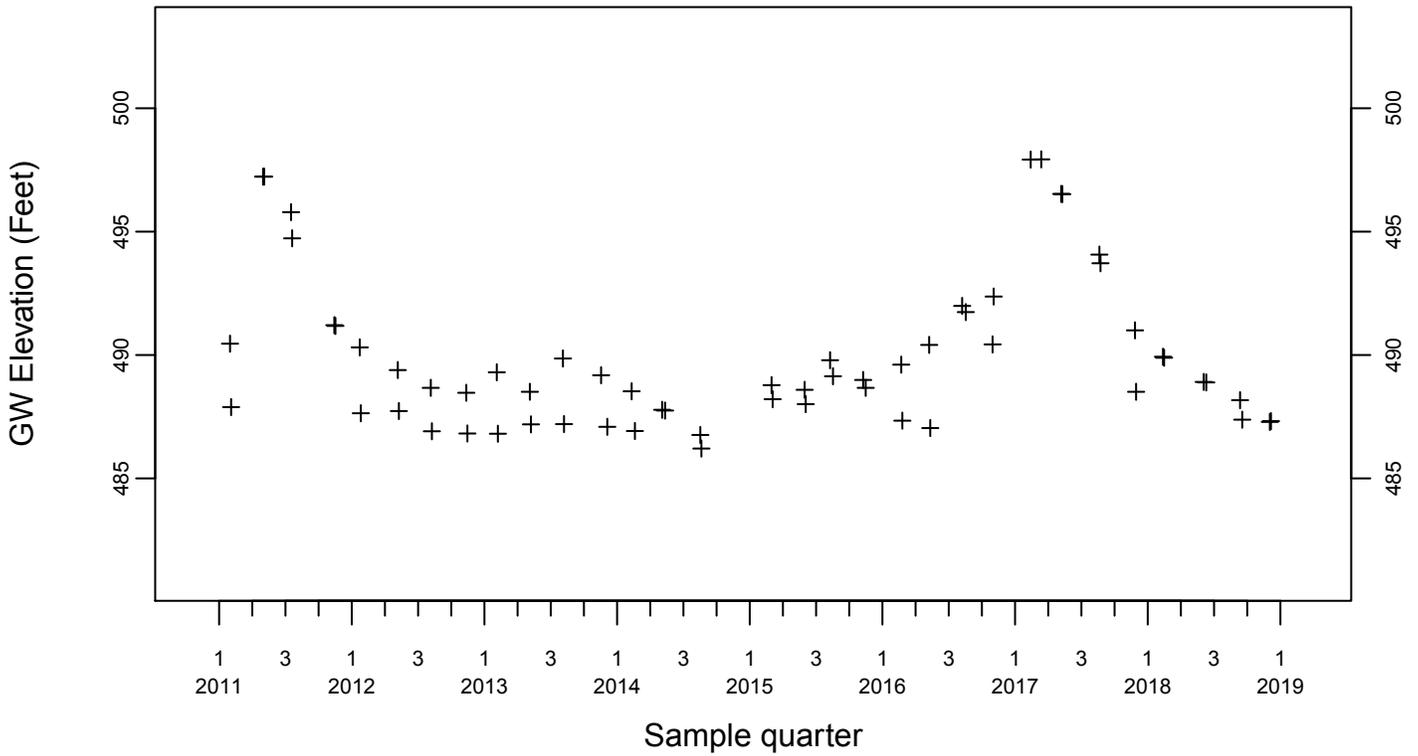


Downgradient Monitor Well W-26R-01

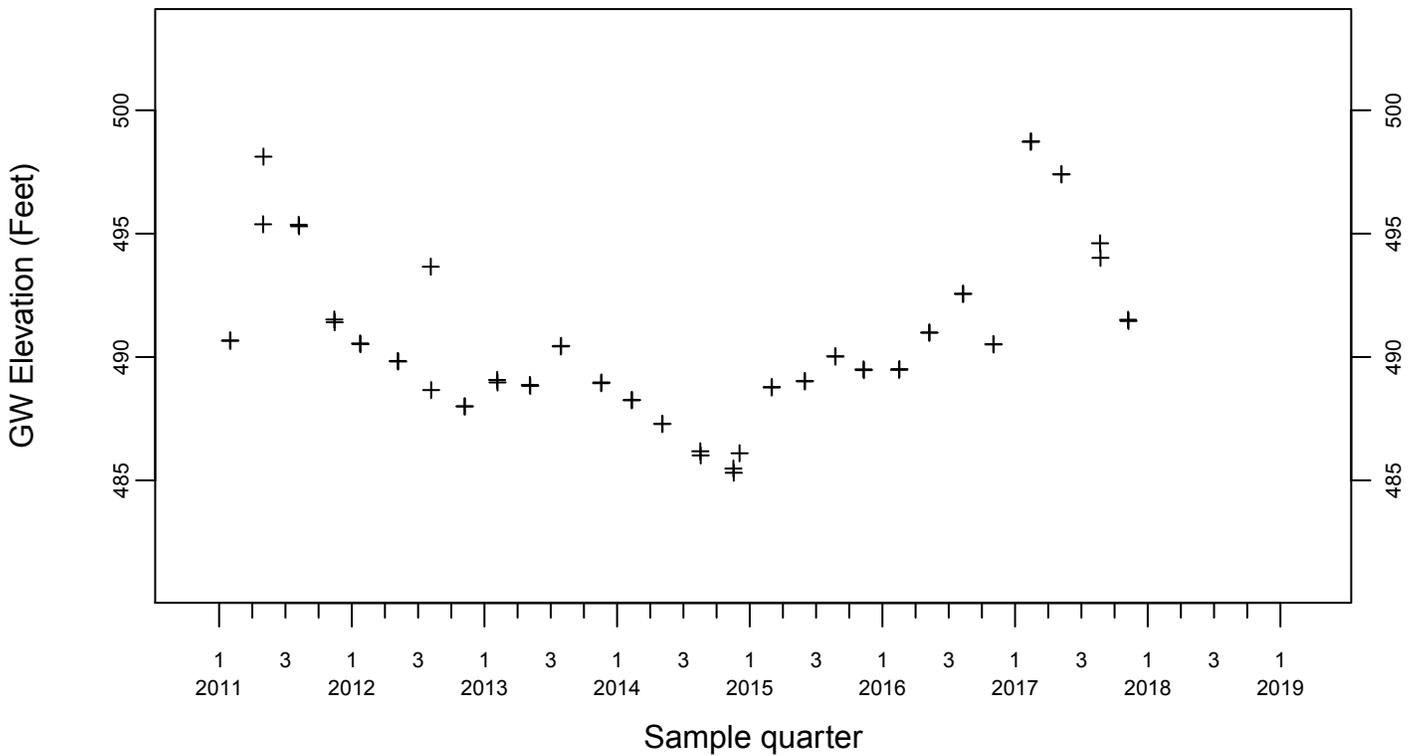


Sewage Ponds Ground Water GW Elevation (Feet)

Downgradient Monitor Well W-26R-05



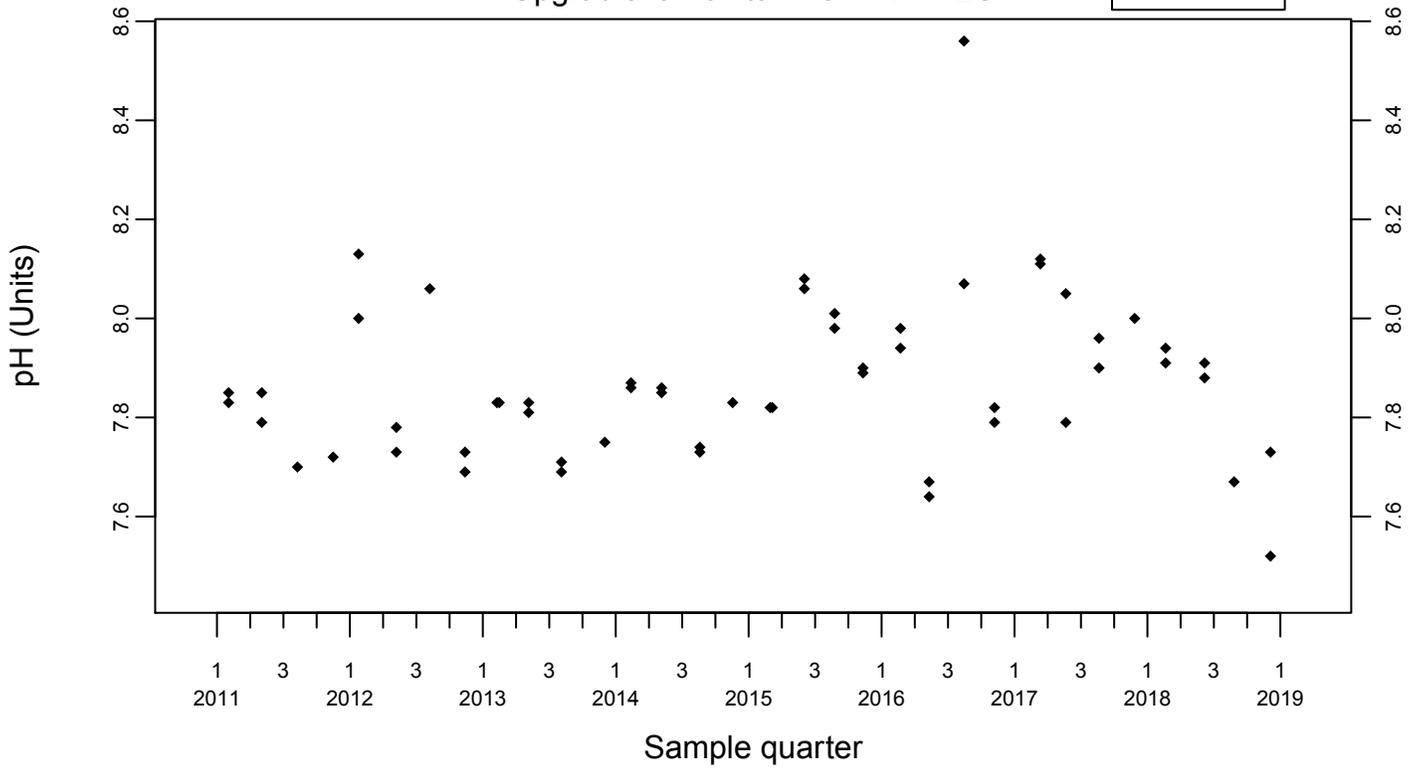
Downgradient Monitor Well W-26R-11



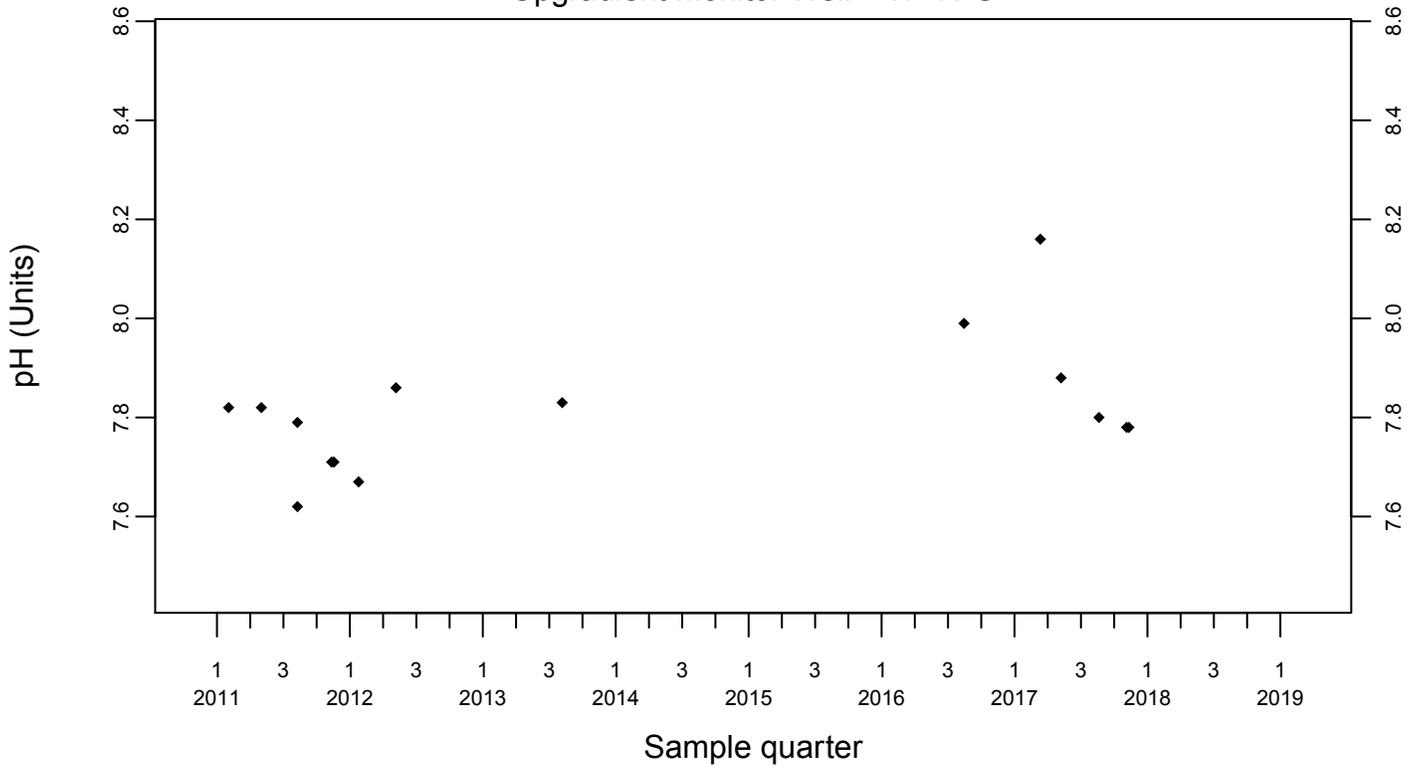
Sewage Ponds Ground Water pH (Units)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



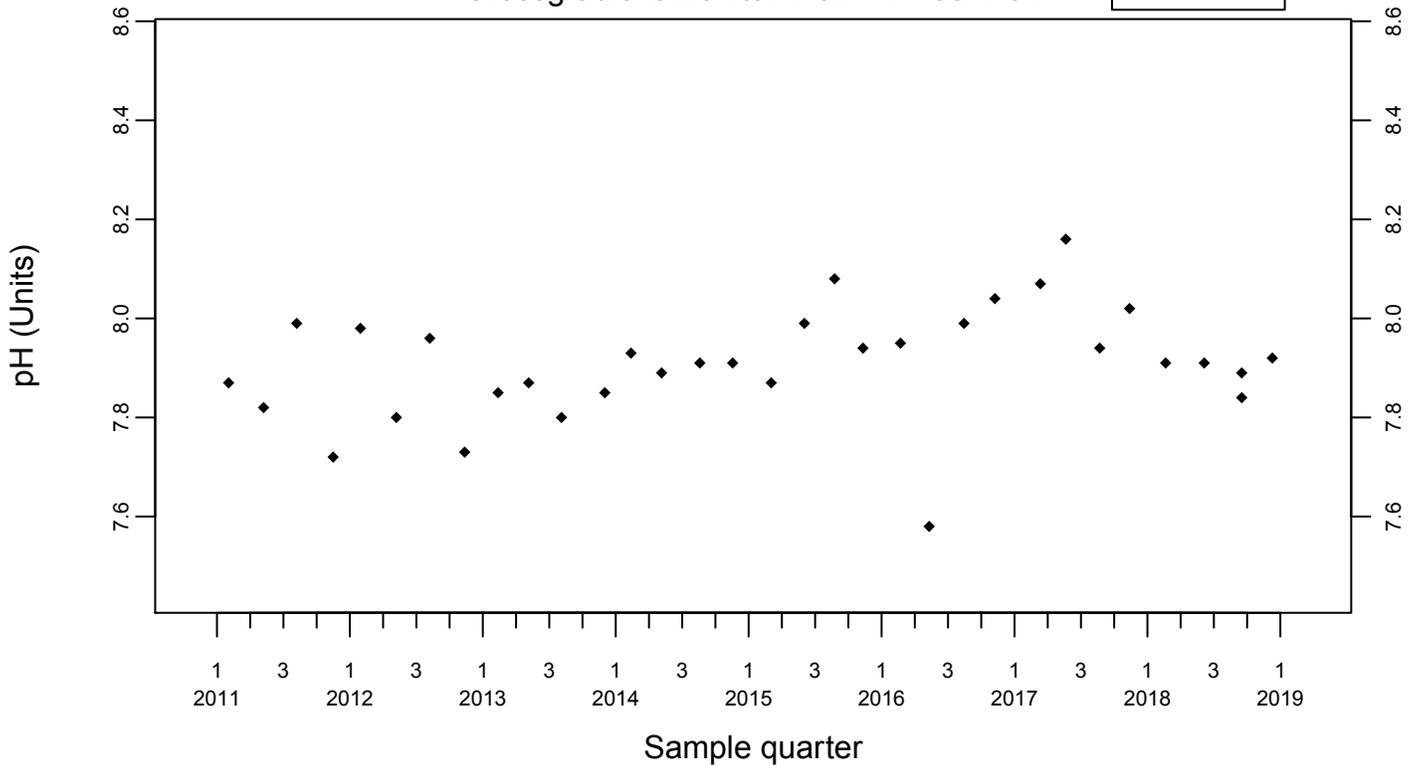
Upgradient Monitor Well W-7PS



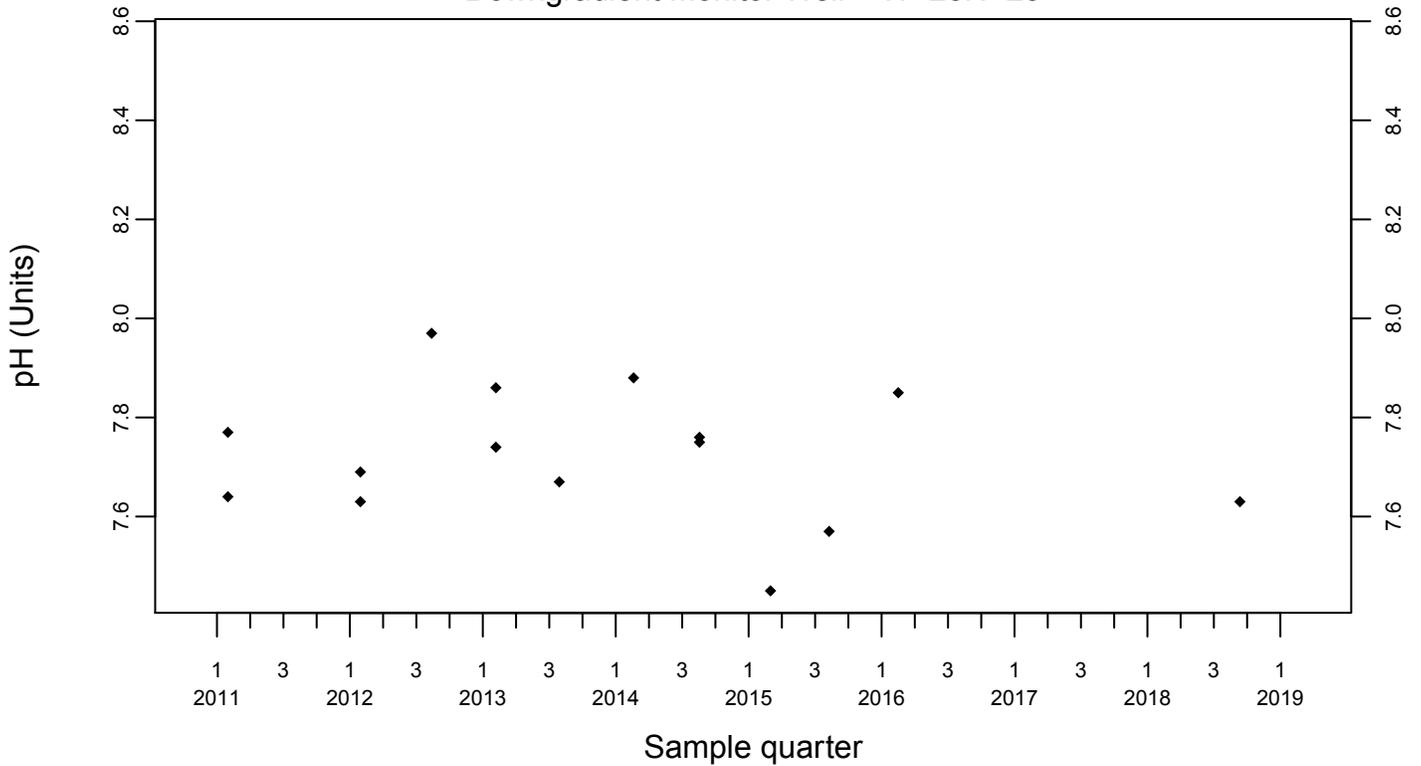
Sewage Ponds Ground Water
 pH (Units)

Crossgradient Monitor Well W-35A-04

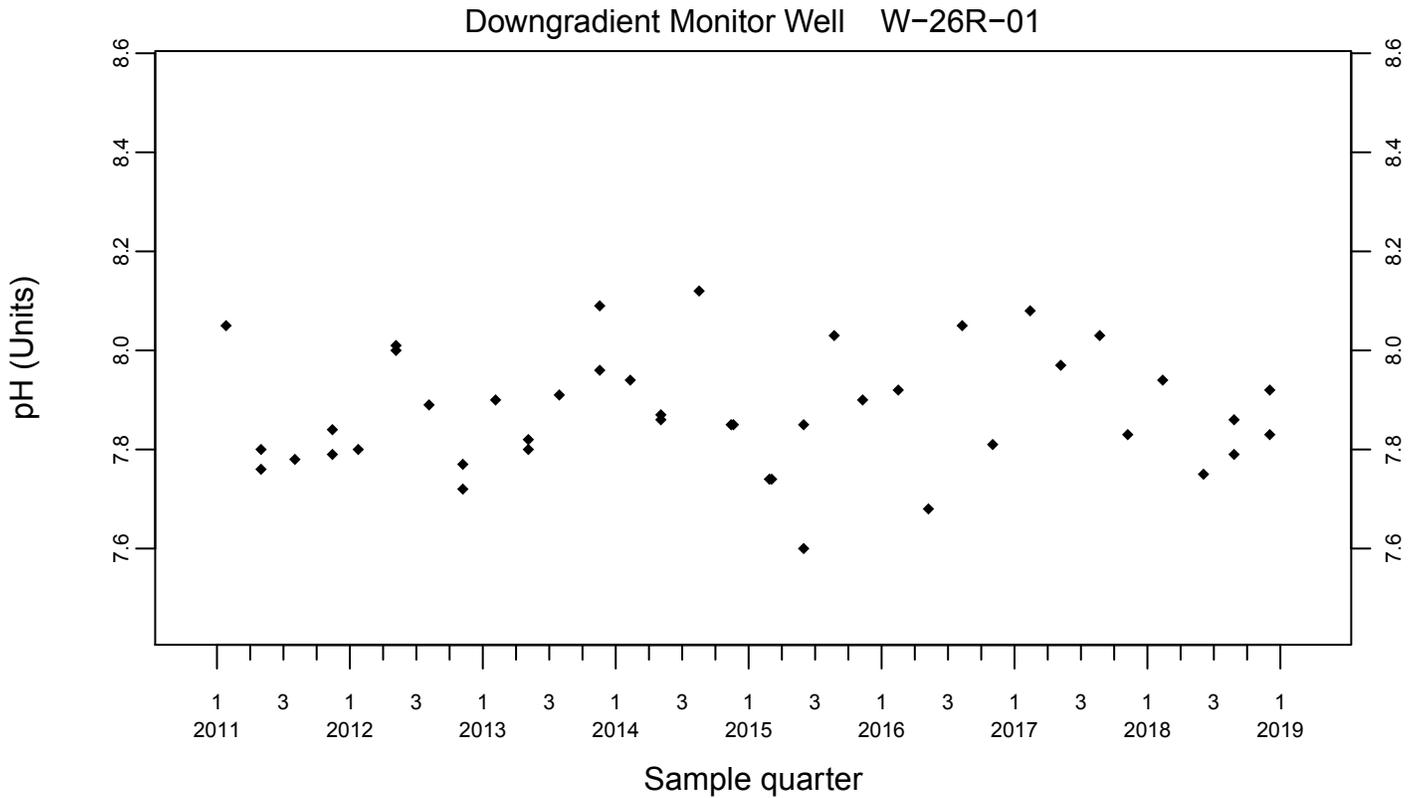
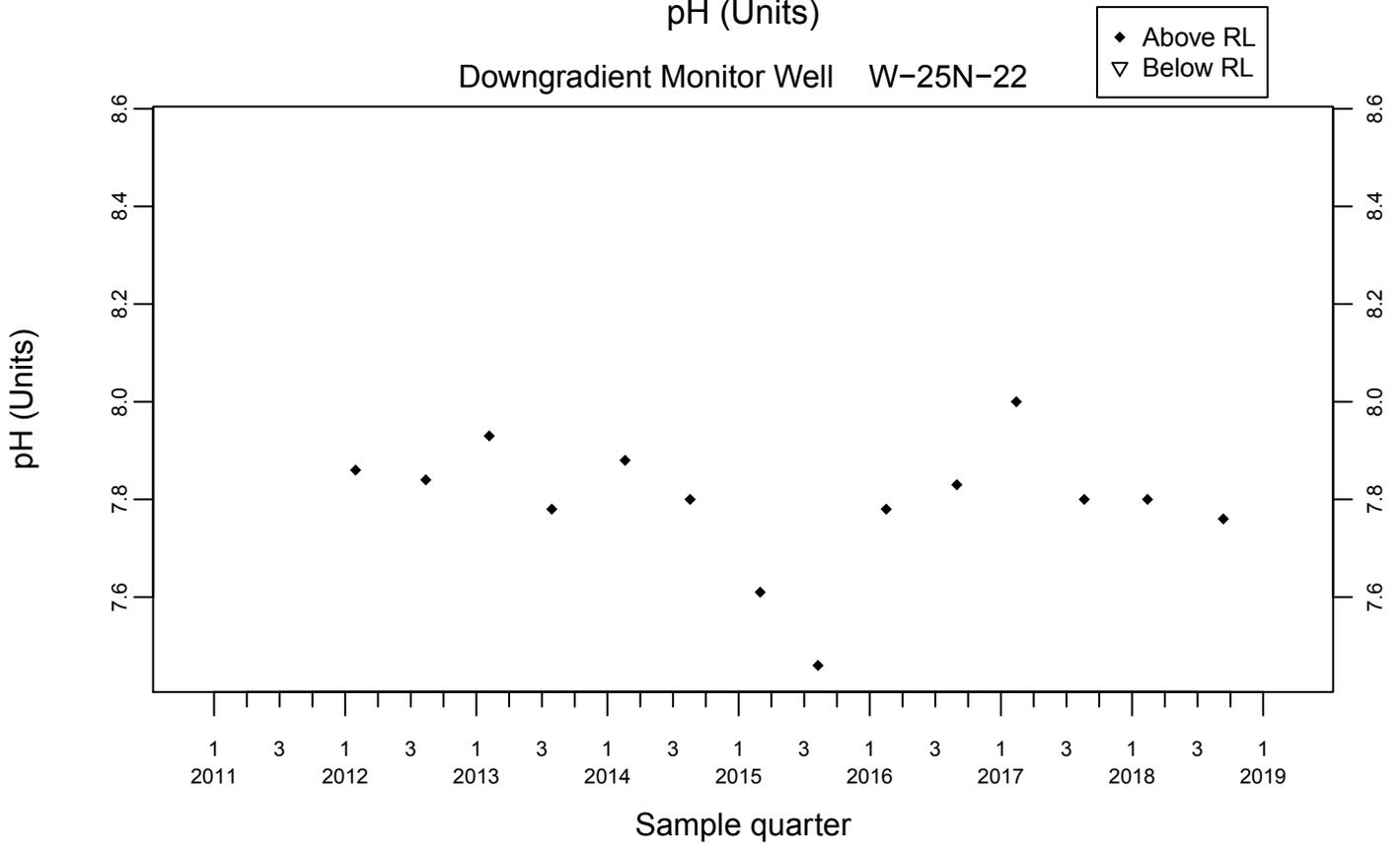
◆ Above RL
 ▼ Below RL



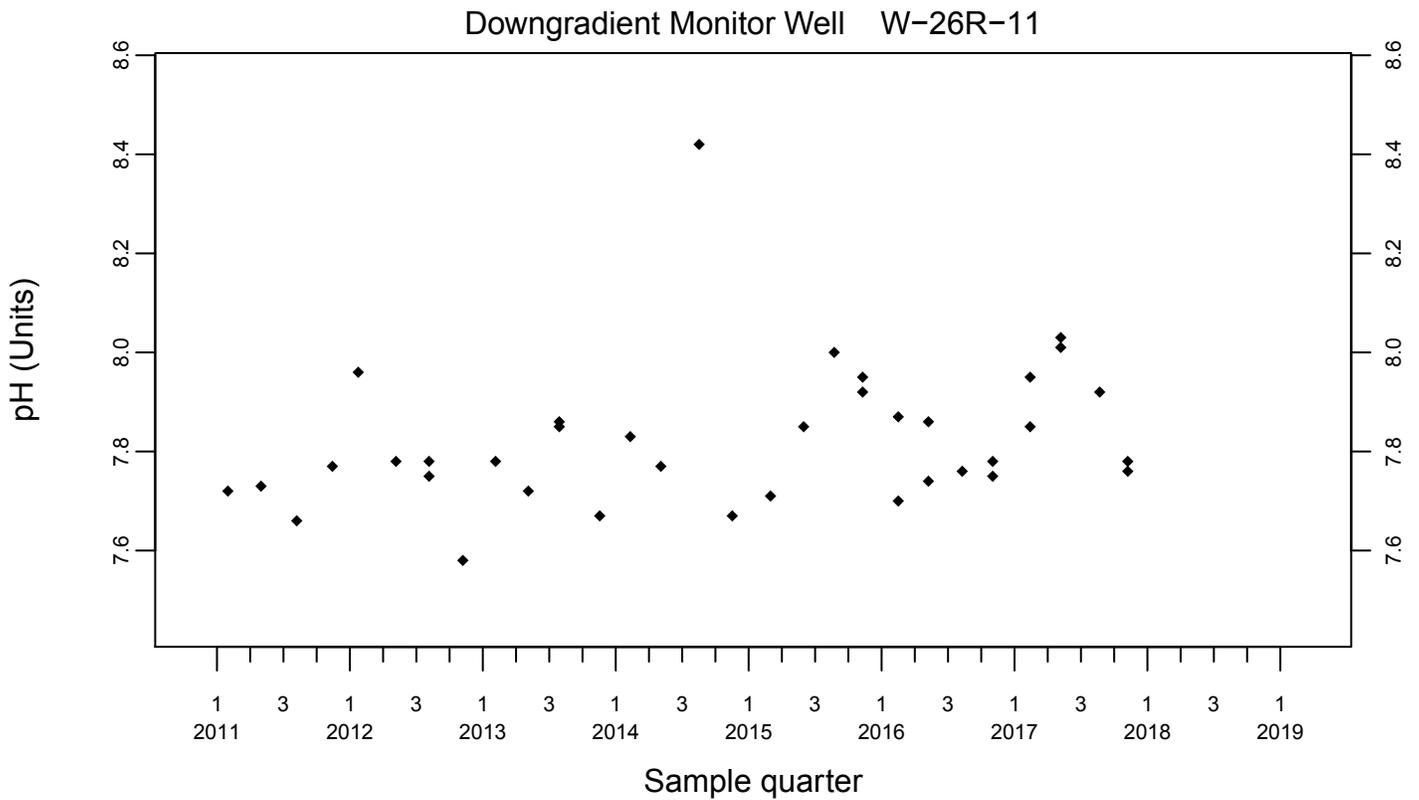
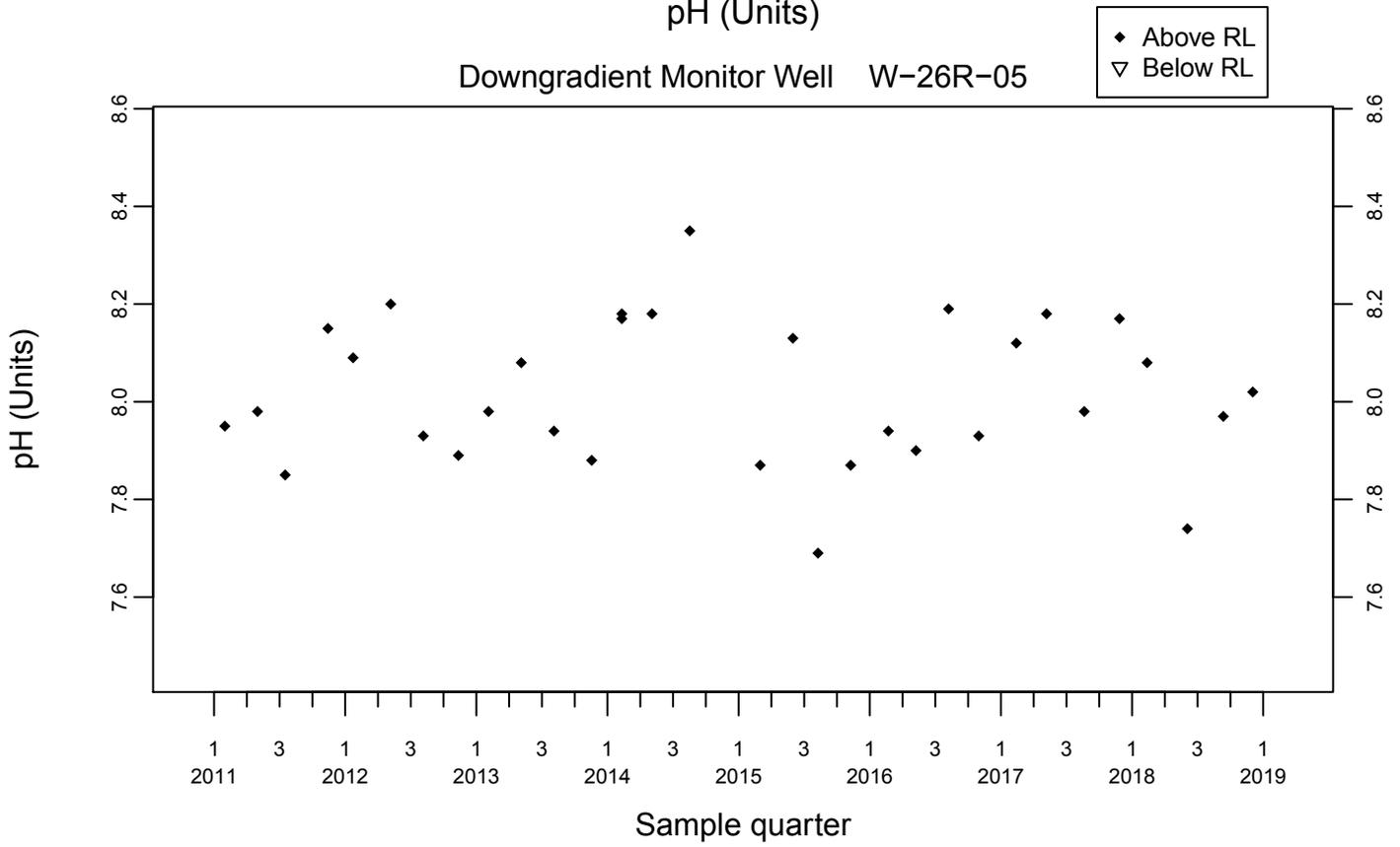
Downgradient Monitor Well W-25N-23



Sewage Ponds Ground Water pH (Units)



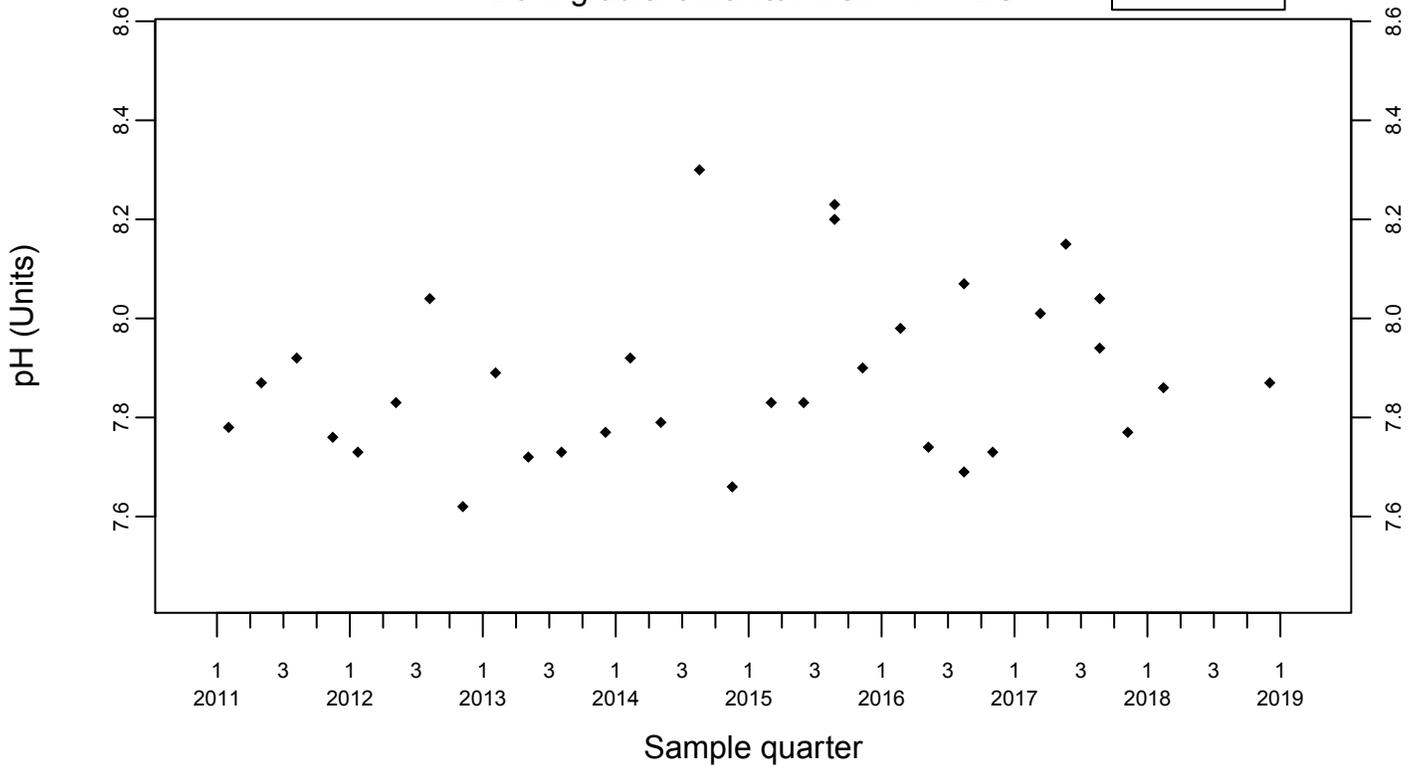
Sewage Ponds Ground Water pH (Units)



Sewage Ponds Ground Water pH (Units)

Downgradient Monitor Well W-7DS

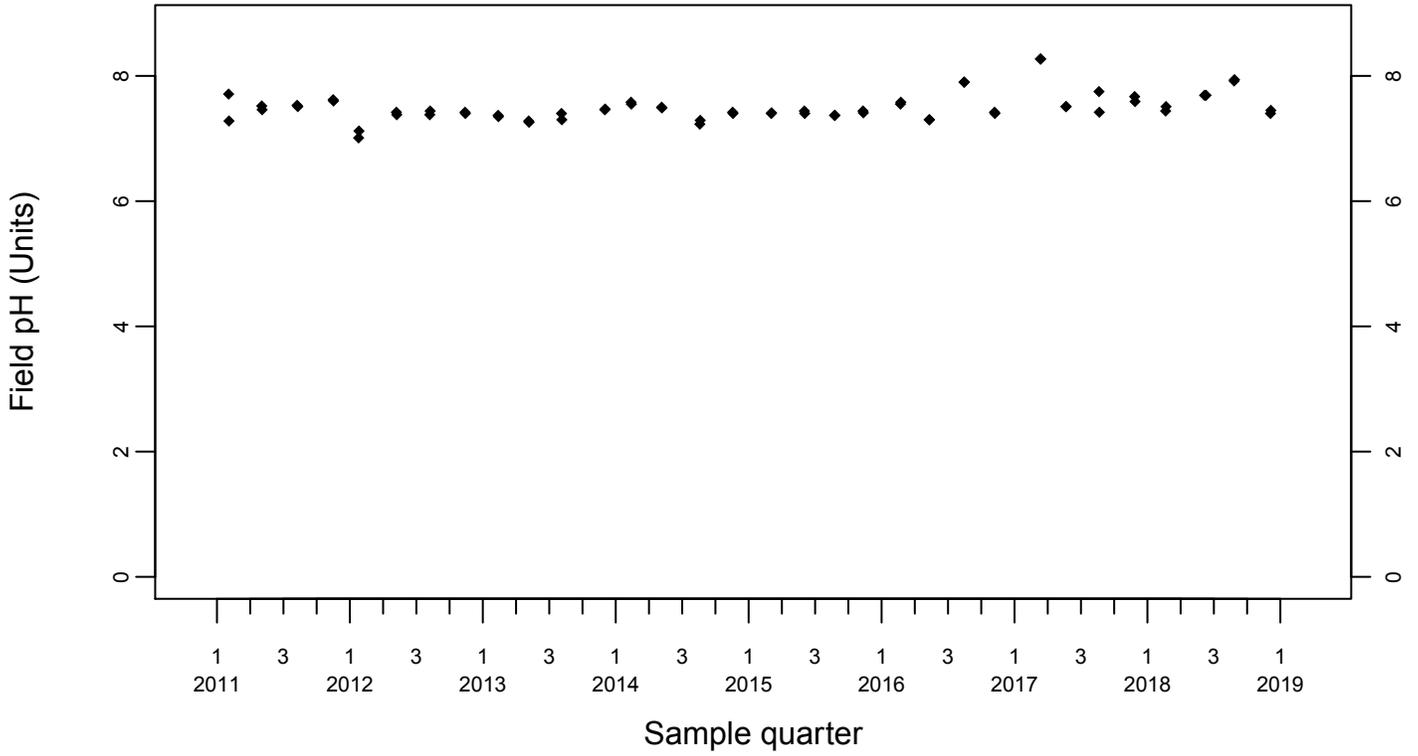
◆ Above RL
▽ Below RL



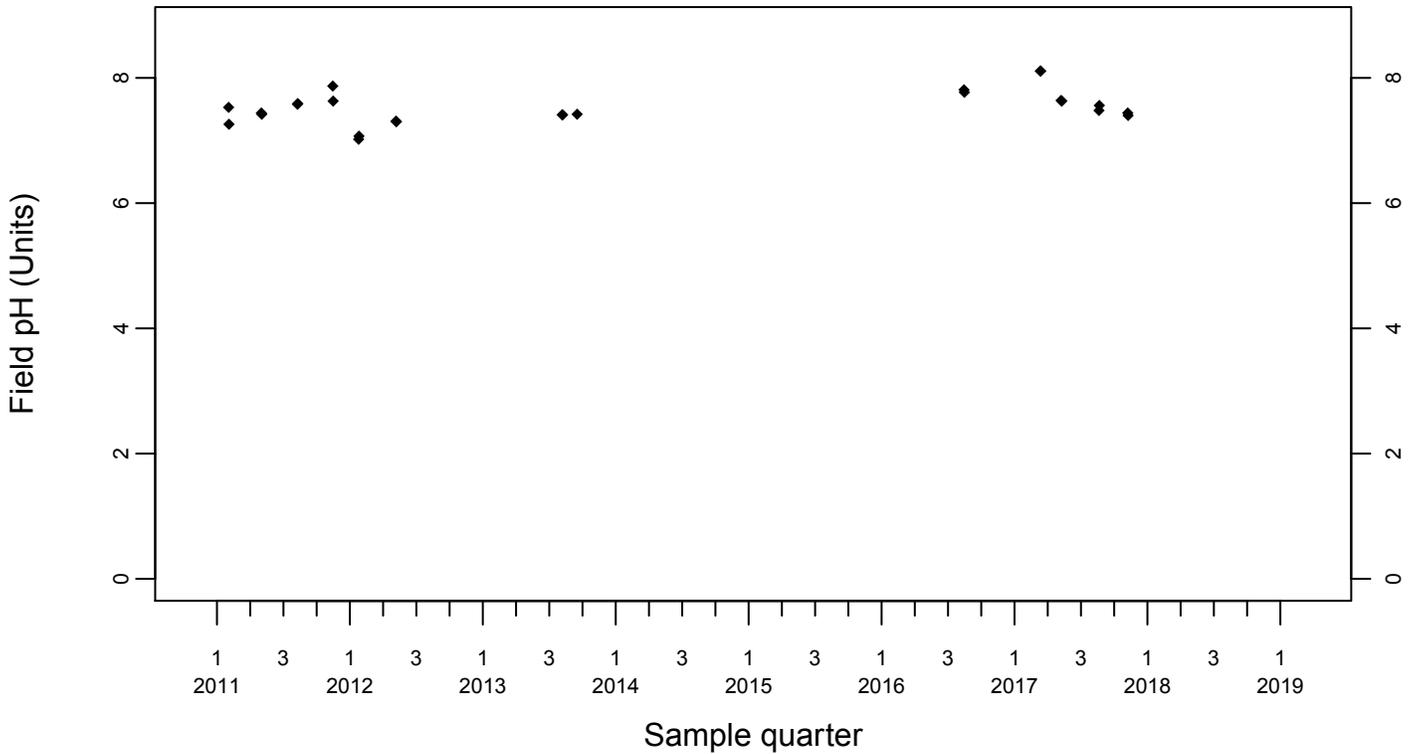
Sewage Ponds Ground Water Field pH (Units)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



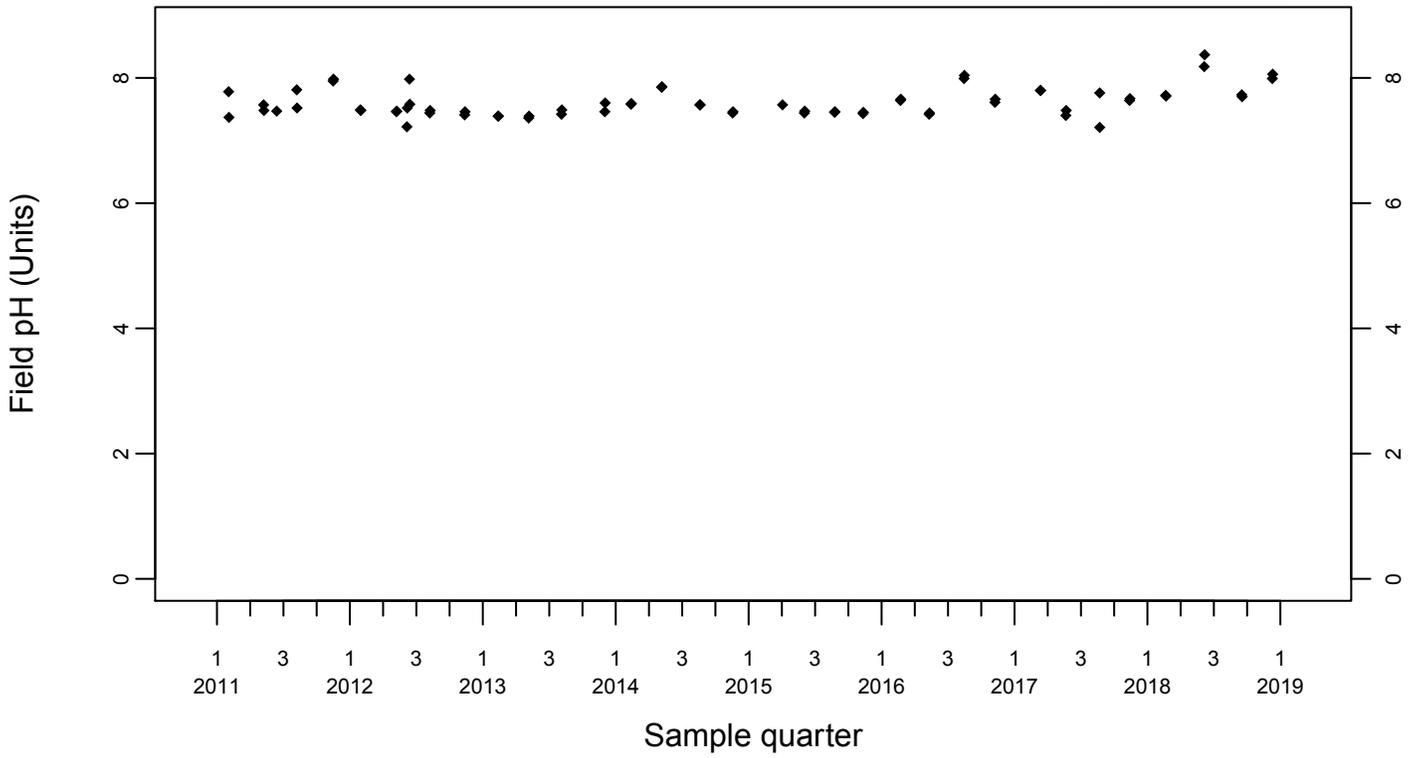
Upgradient Monitor Well W-7PS



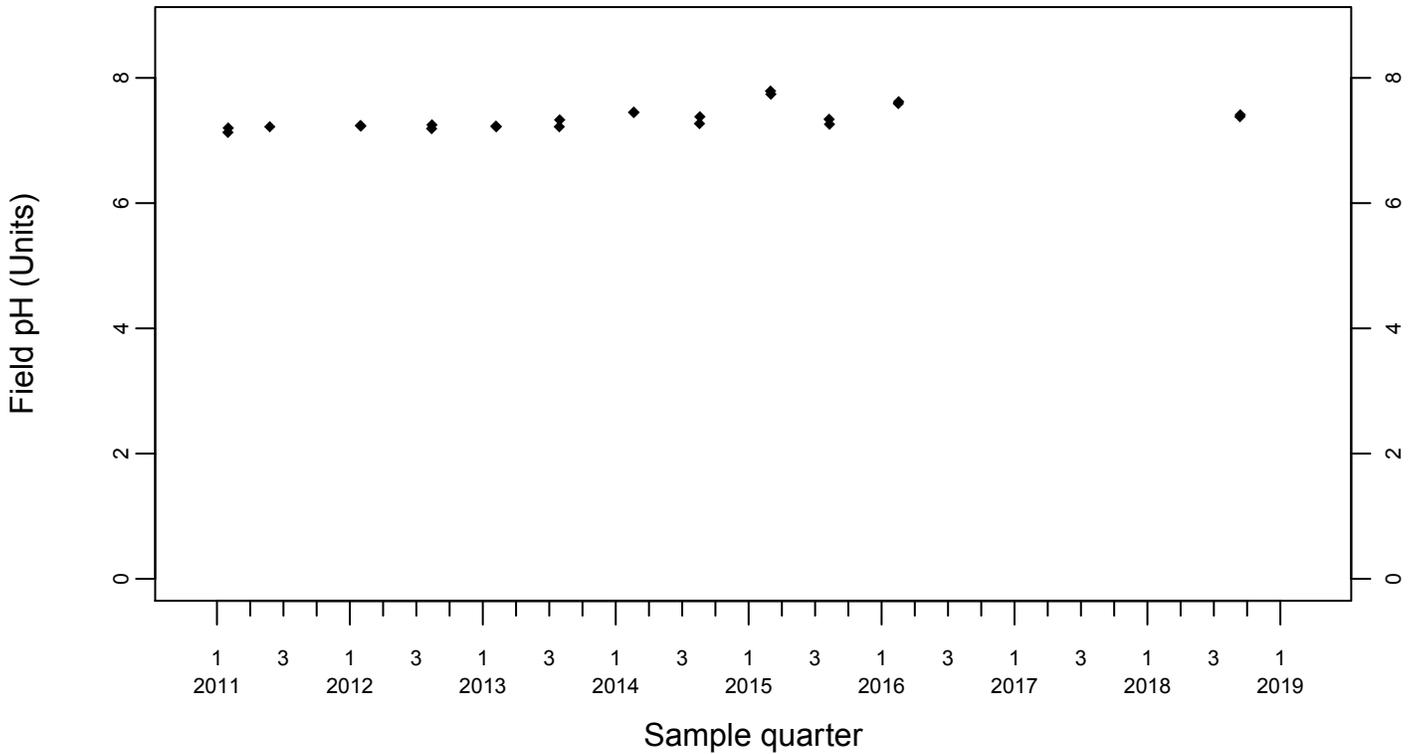
Sewage Ponds Ground Water Field pH (Units)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



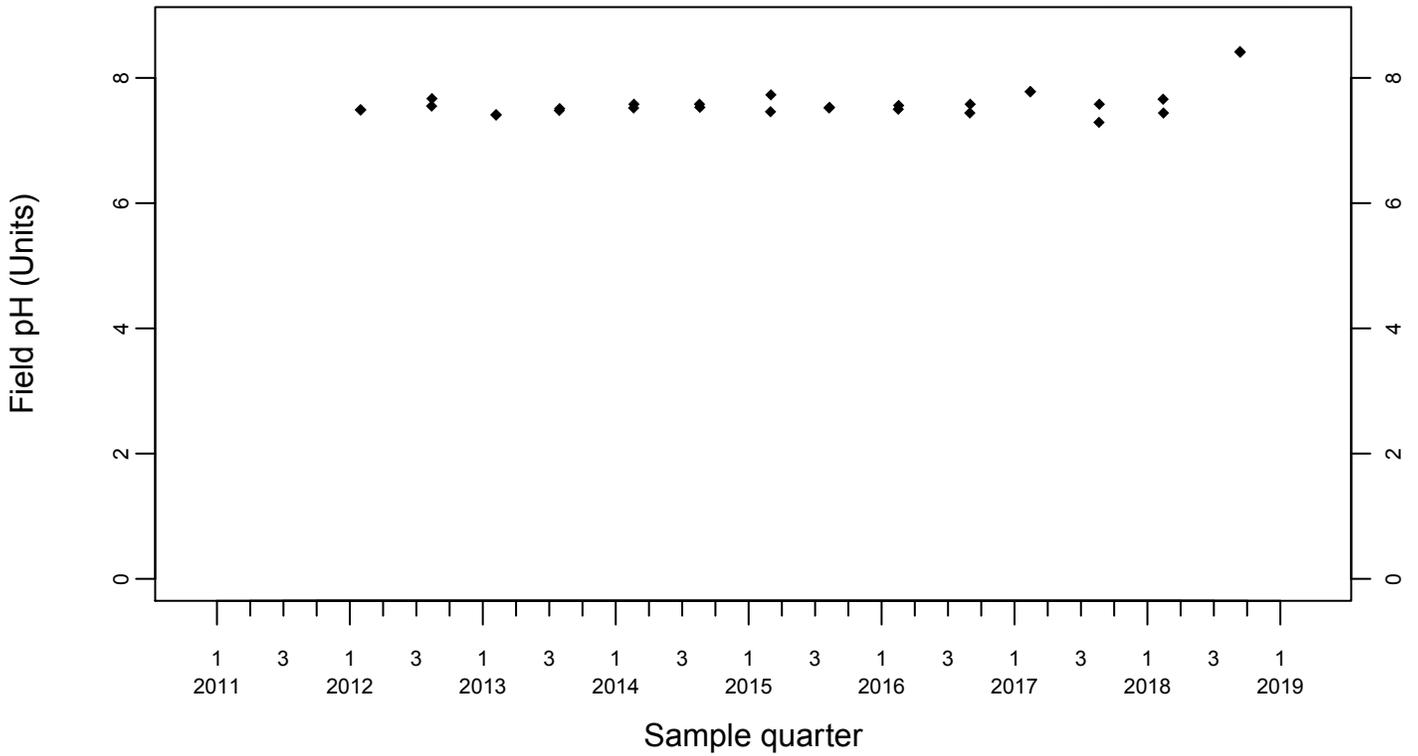
Downgradient Monitor Well W-25N-23



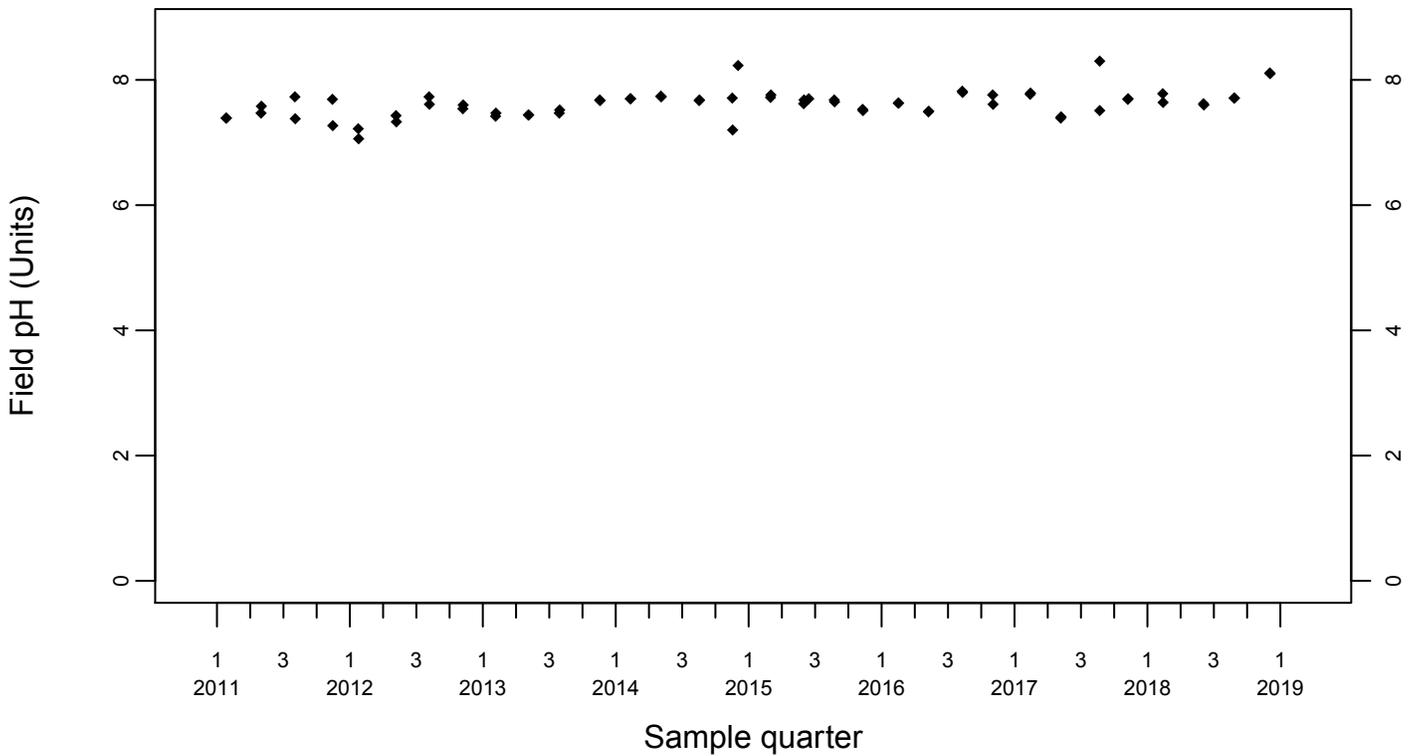
Sewage Ponds Ground Water
 Field pH (Units)

Downgradient Monitor Well W-25N-22

◆ Above RL
 ▼ Below RL



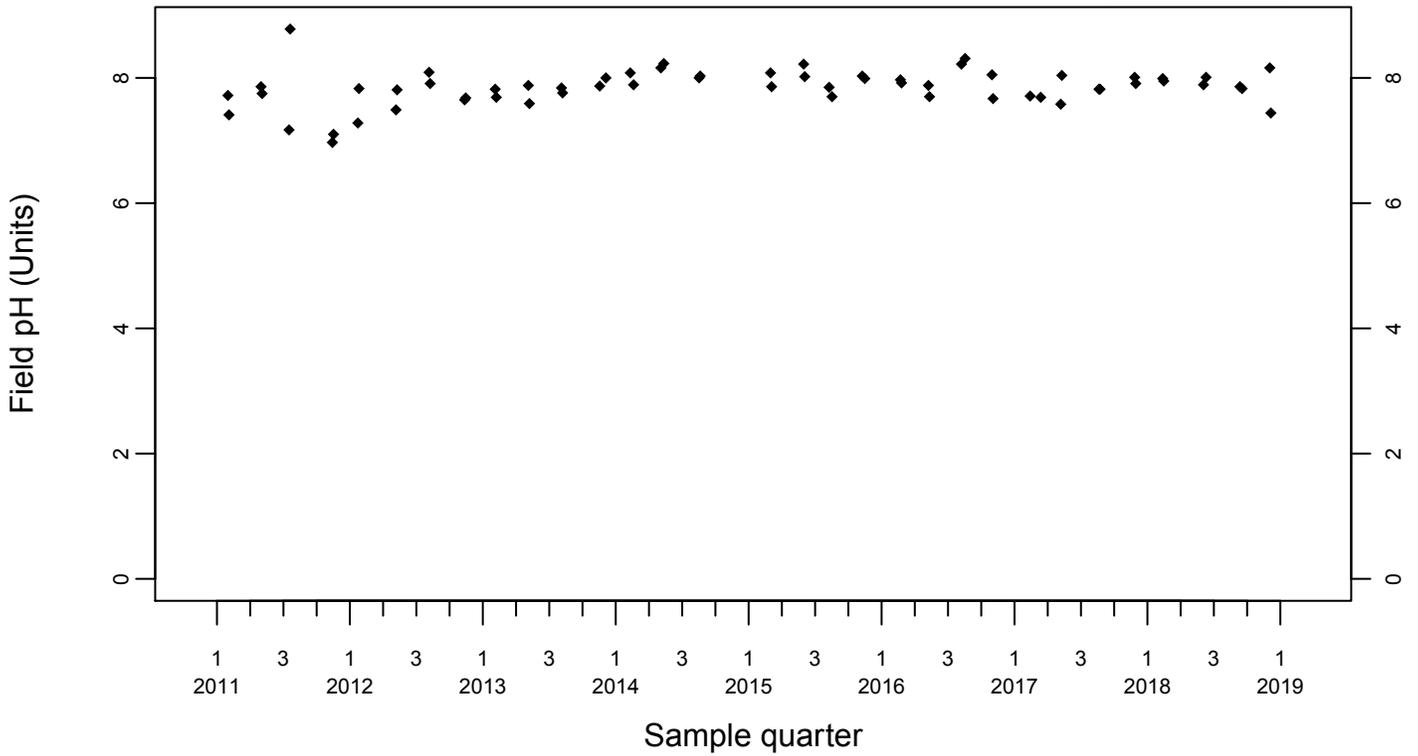
Downgradient Monitor Well W-26R-01



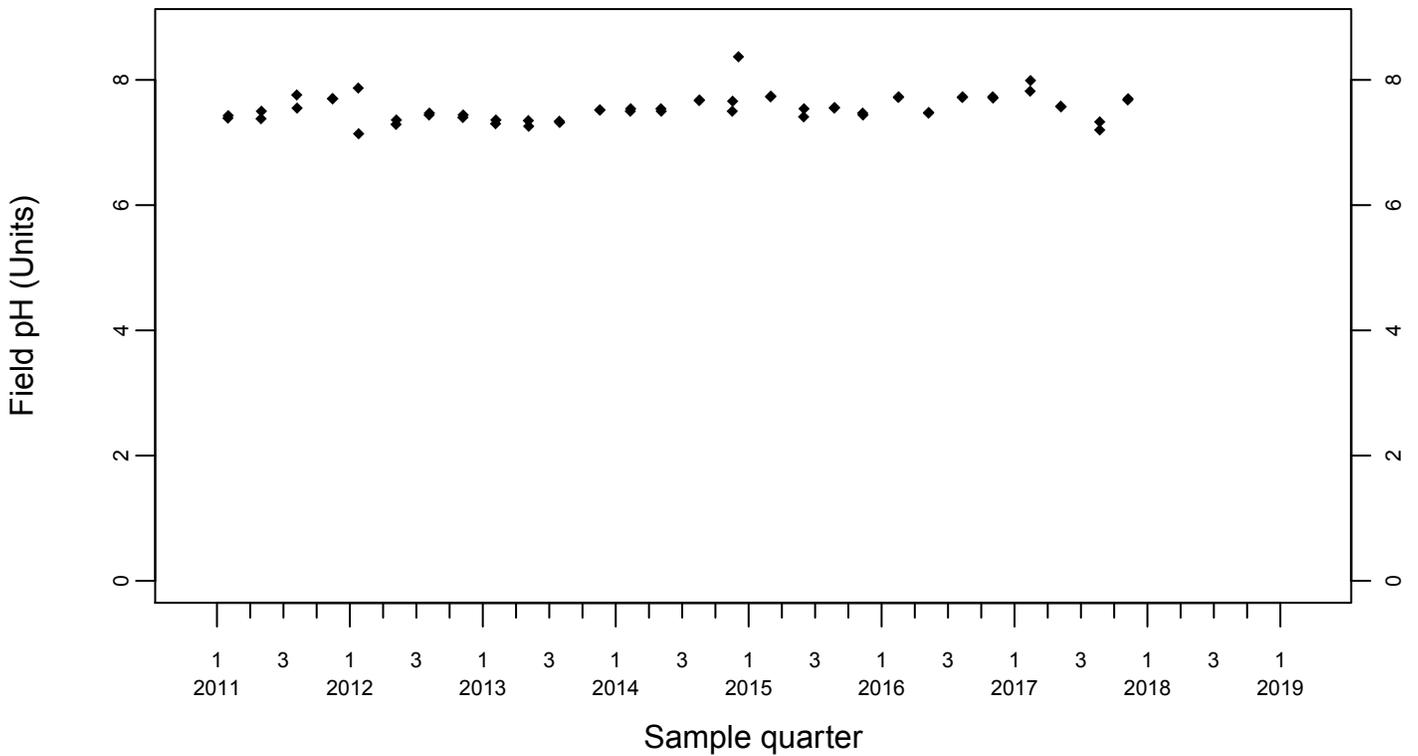
Sewage Ponds Ground Water Field pH (Units)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



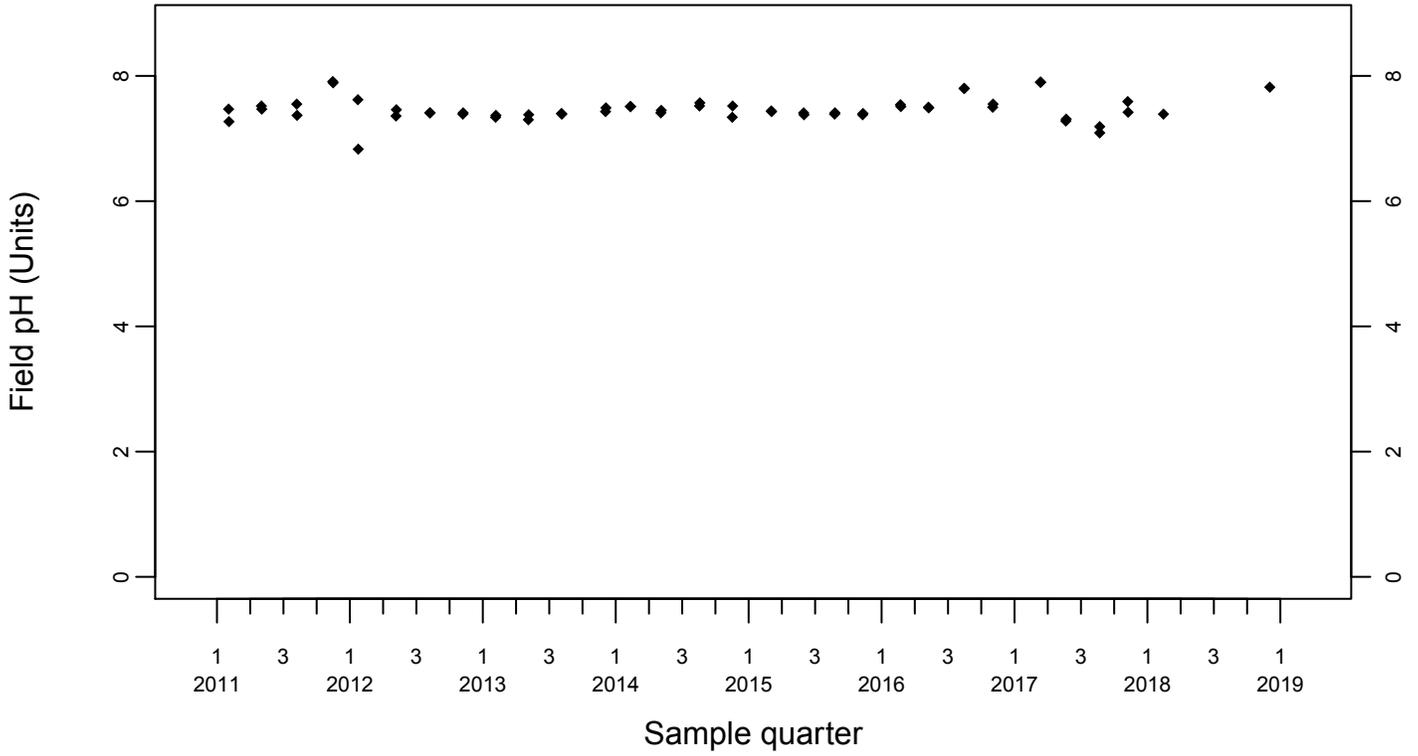
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Field pH (Units)

Downgradient Monitor Well W-7DS

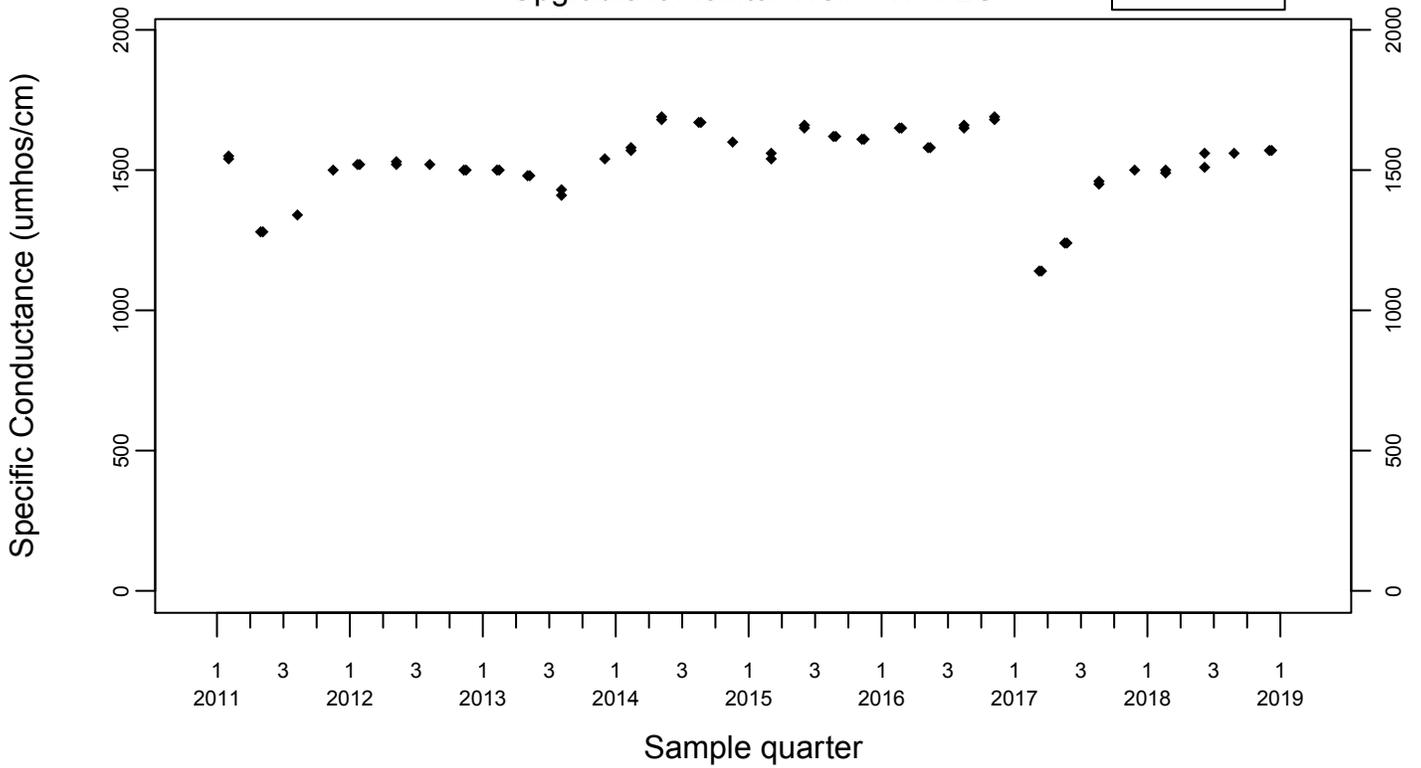
◆ Above RL
▽ Below RL



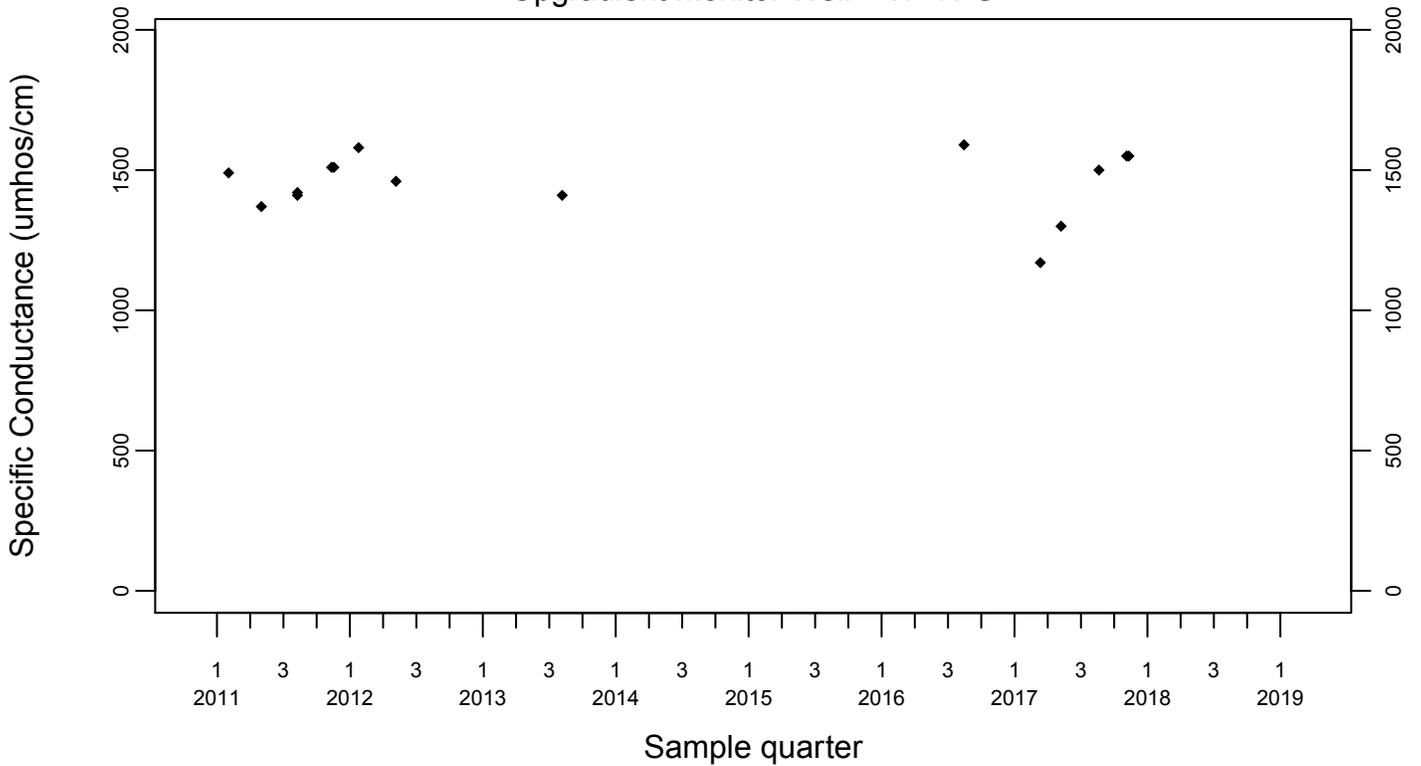
Sewage Ponds Ground Water
 Specific Conductance (umhos/cm)

Upgradient Monitor Well W-7ES

◆ Above RL
 ▼ Below RL



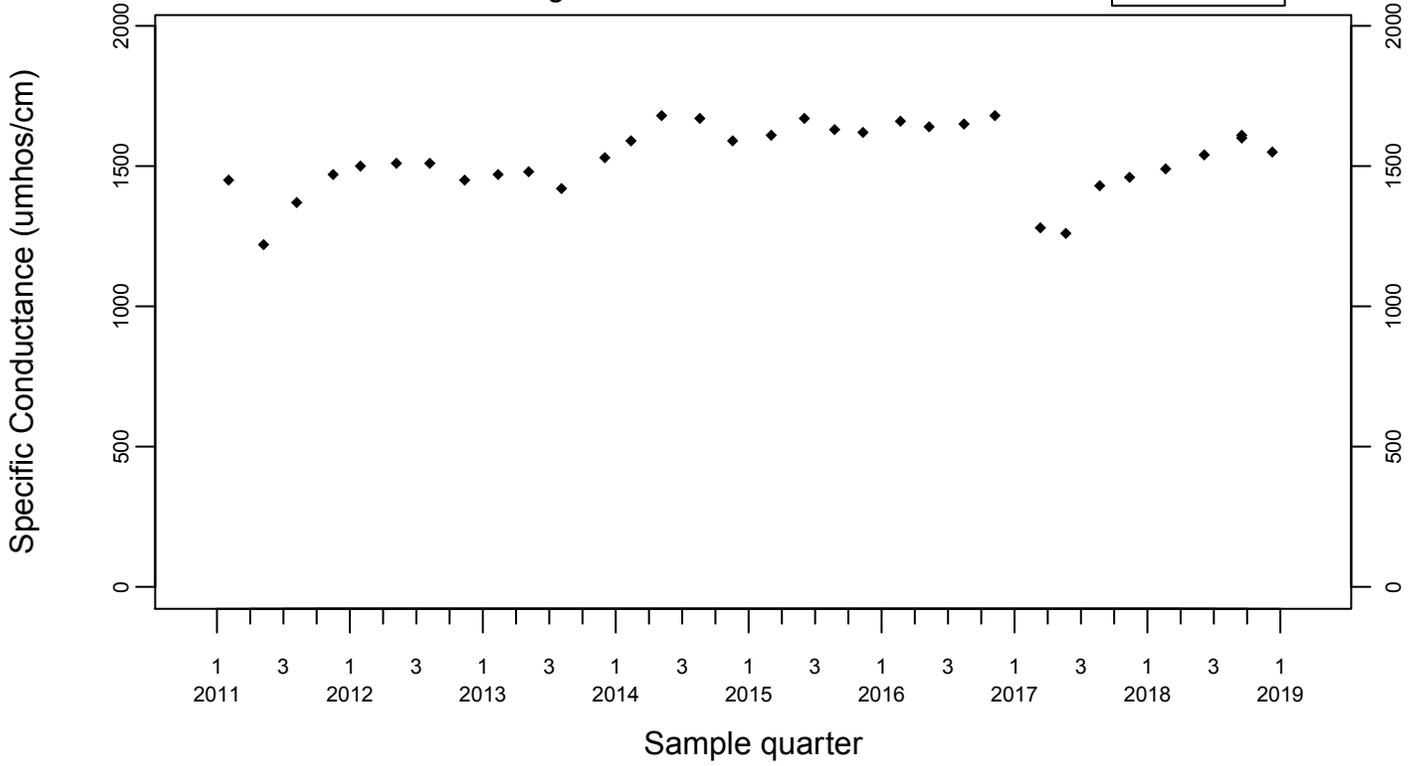
Upgradient Monitor Well W-7PS



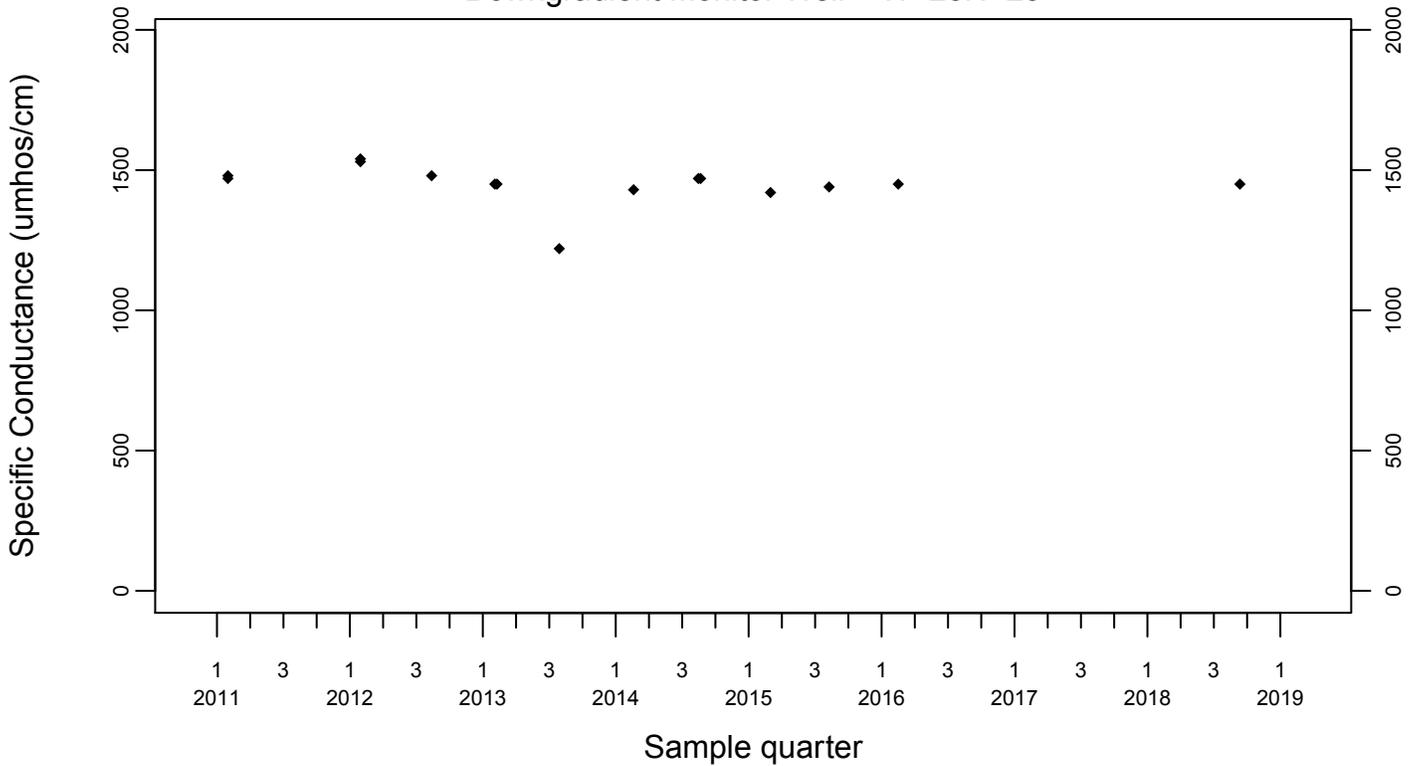
Sewage Ponds Ground Water
 Specific Conductance (umhos/cm)

Crossgradient Monitor Well W-35A-04

◆ Above RL
 ▼ Below RL



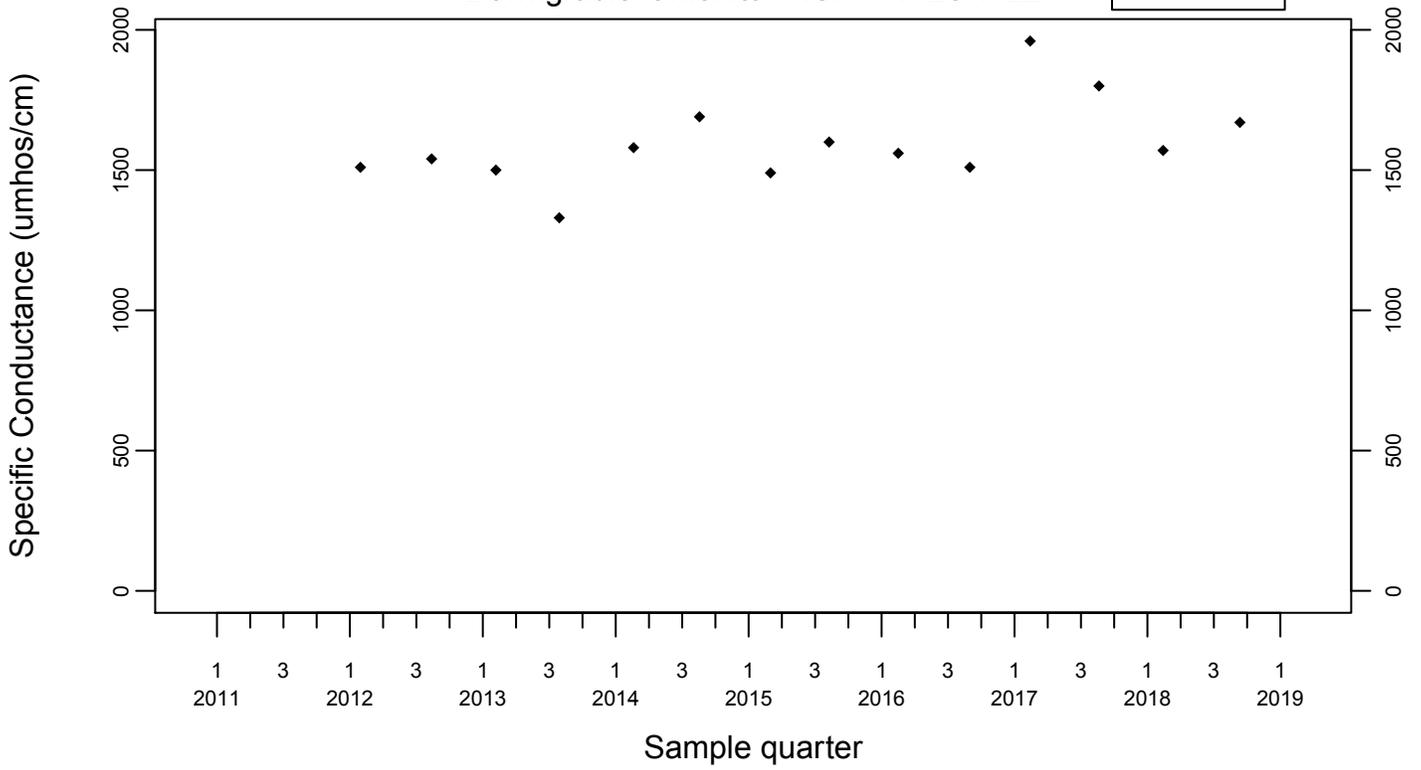
Downgradient Monitor Well W-25N-23



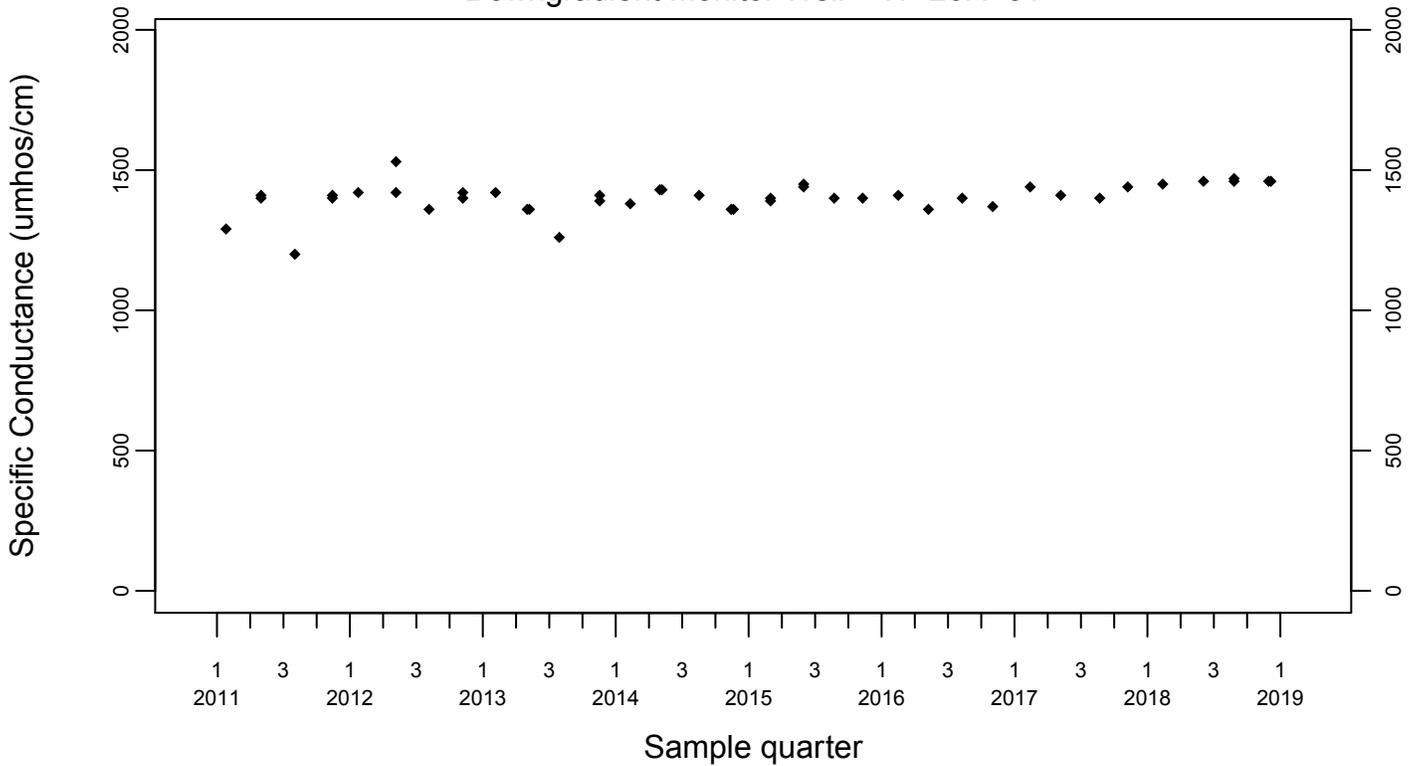
Sewage Ponds Ground Water Specific Conductance (umhos/cm)

Downgradient Monitor Well W-25N-22

◆ Above RL
▽ Below RL



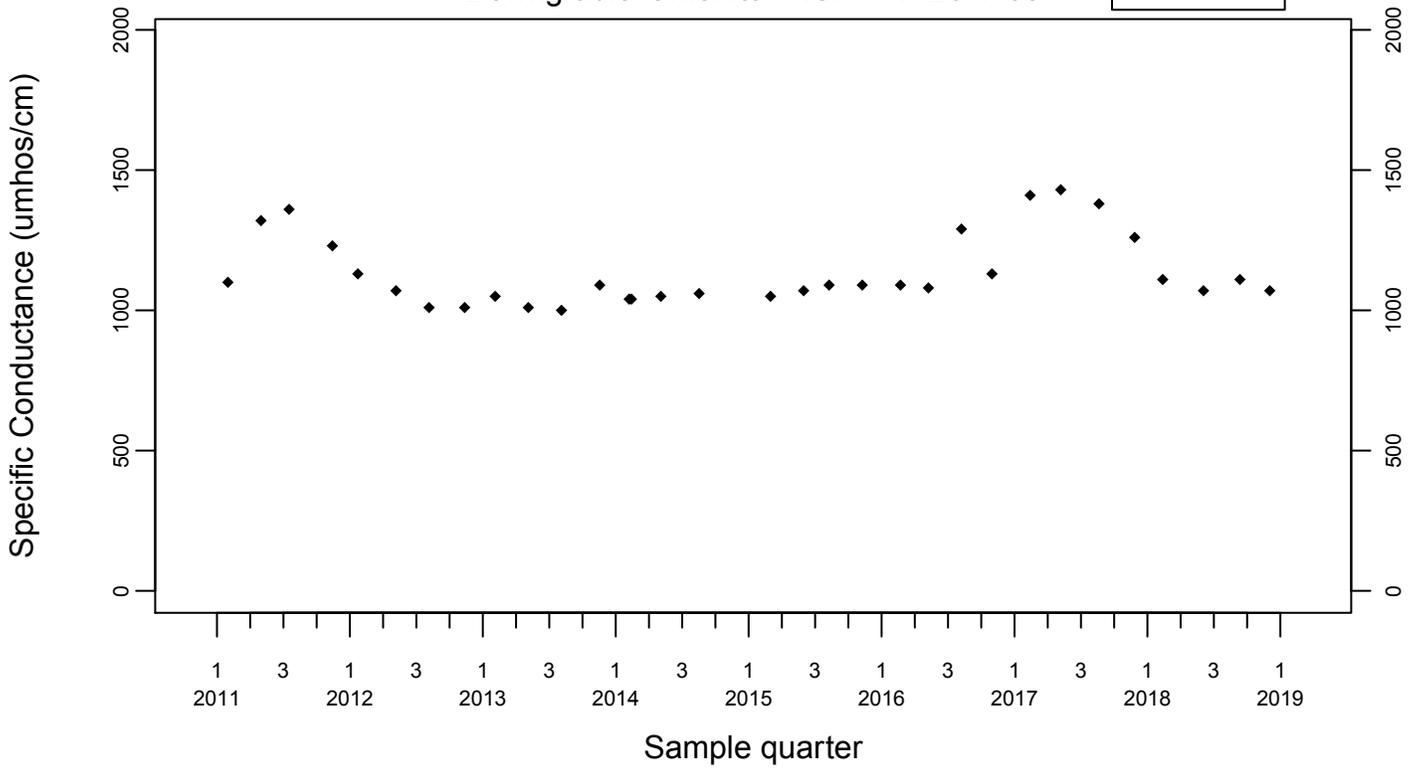
Downgradient Monitor Well W-26R-01



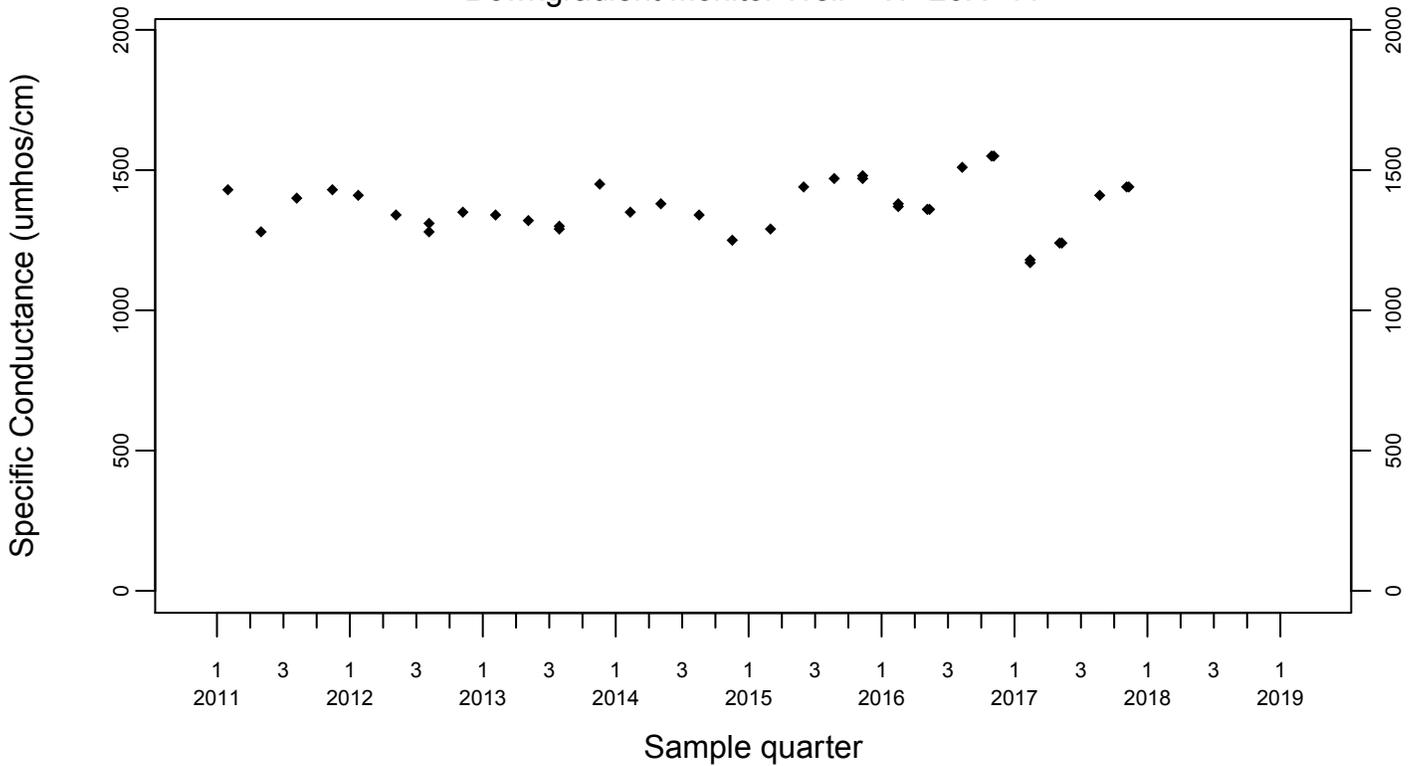
Sewage Ponds Ground Water Specific Conductance (umhos/cm)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



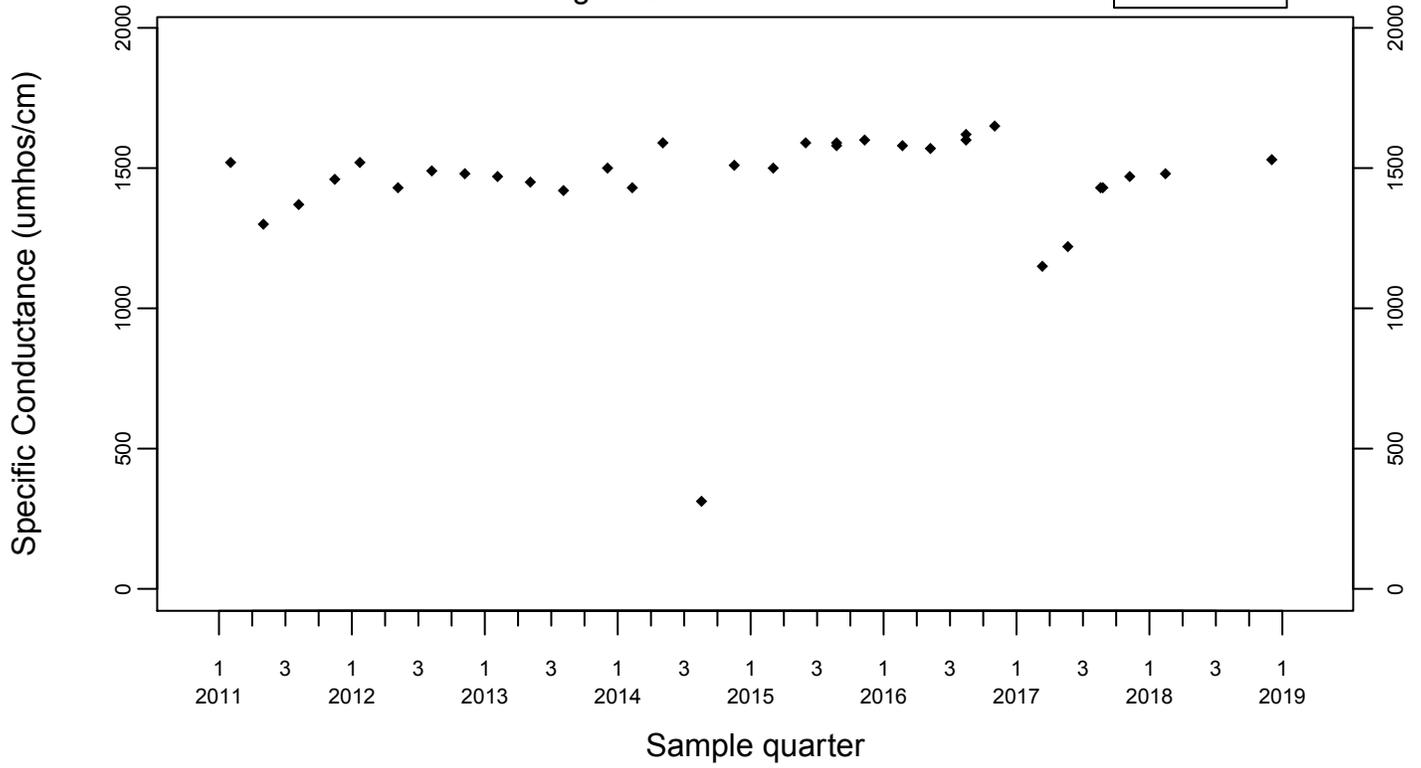
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Specific Conductance (umhos/cm)

Downgradient Monitor Well W-7DS

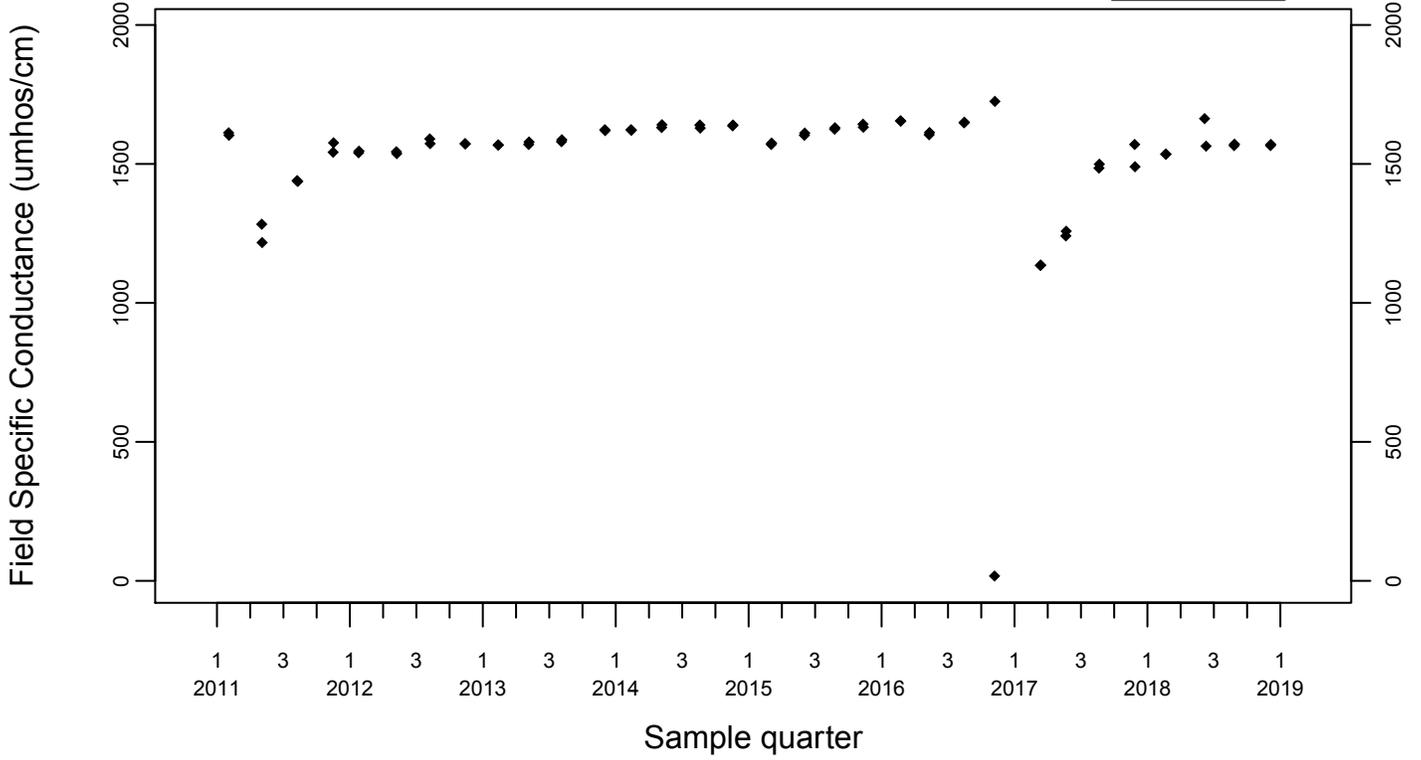
◆ Above RL
▽ Below RL



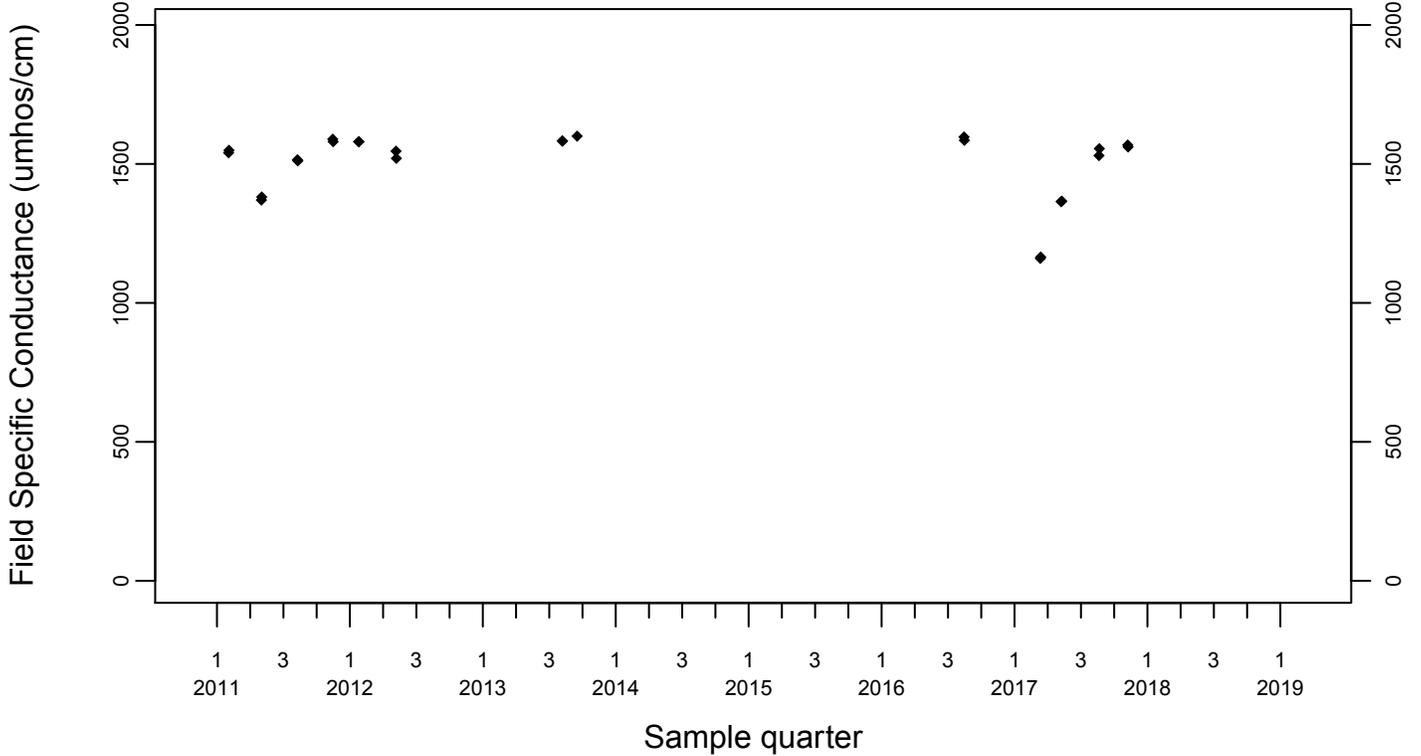
Sewage Ponds Ground Water
 Field Specific Conductance (umhos/cm)

Upgradient Monitor Well W-7ES

◆ Above RL
 ▼ Below RL



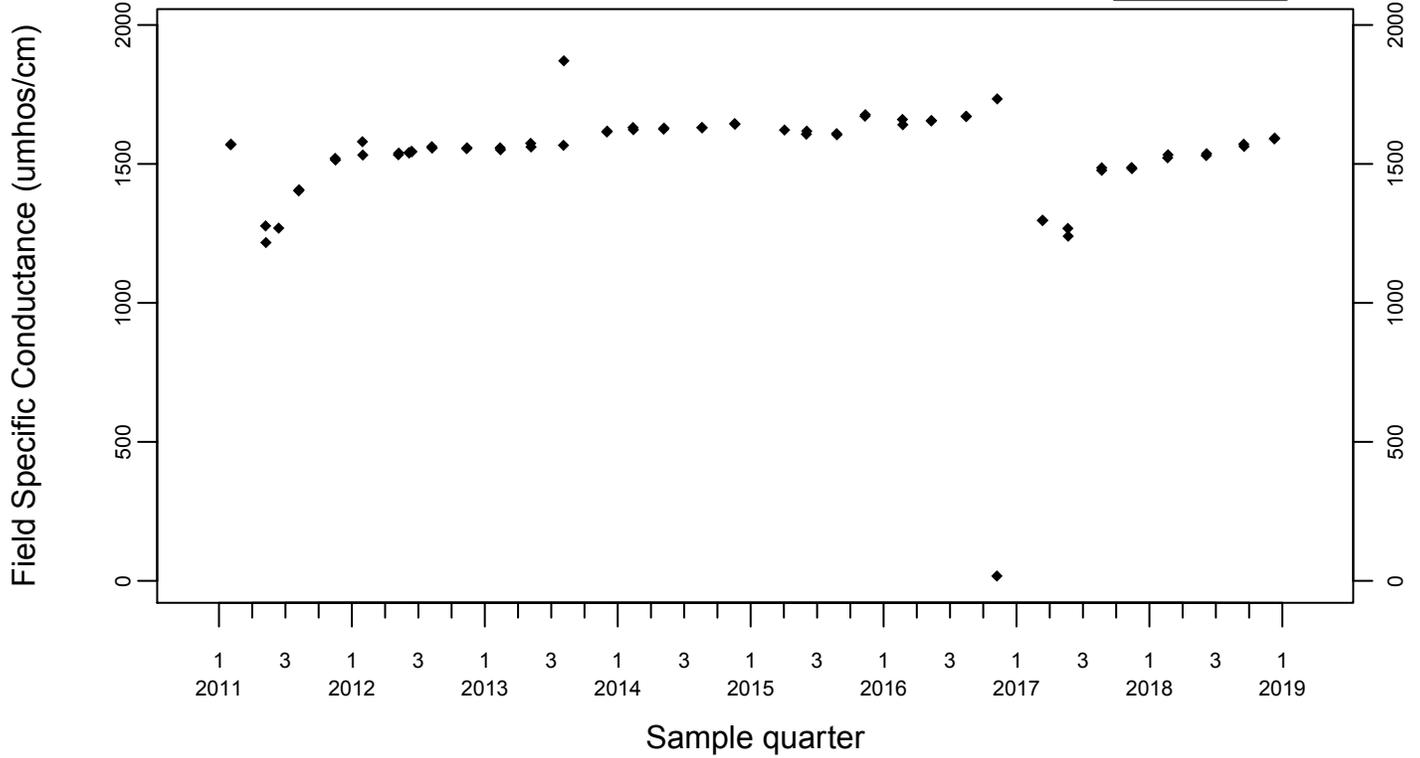
Upgradient Monitor Well W-7PS



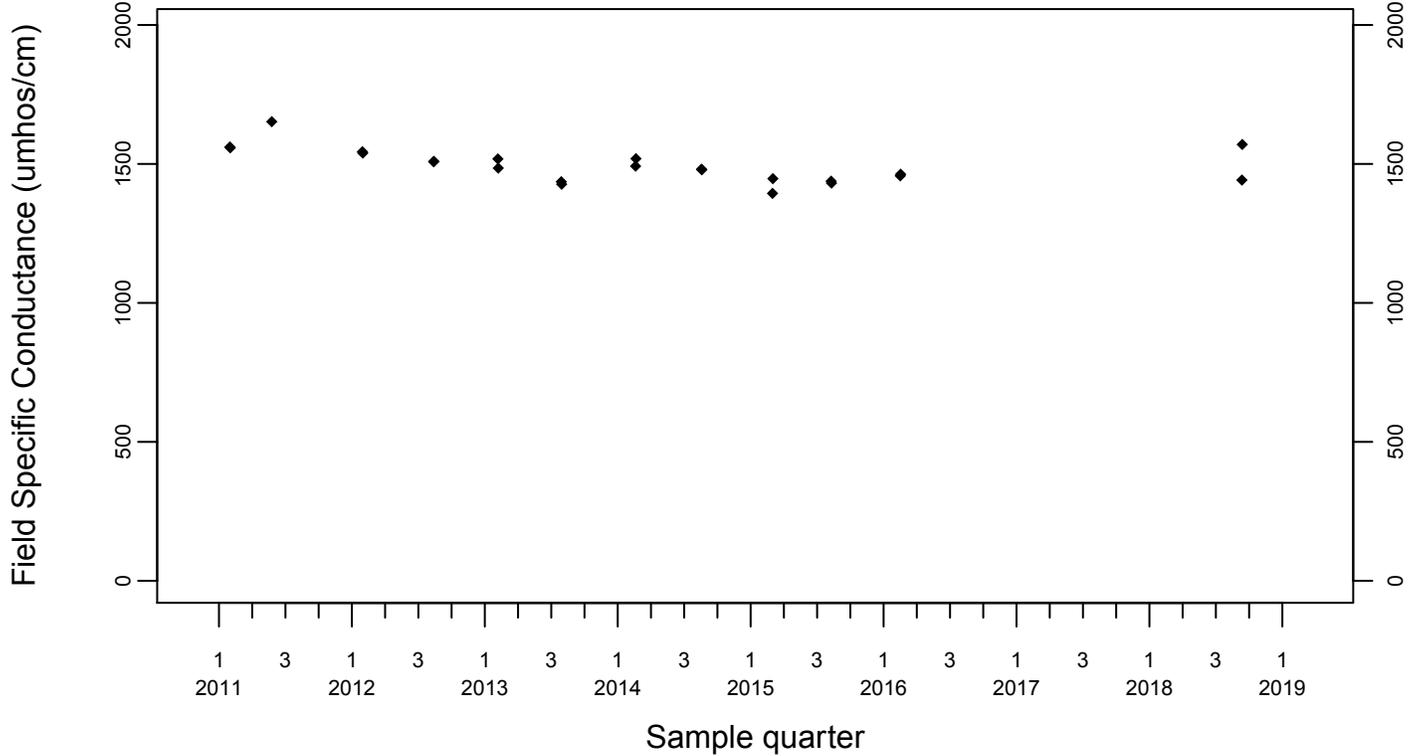
Sewage Ponds Ground Water Field Specific Conductance (umhos/cm)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



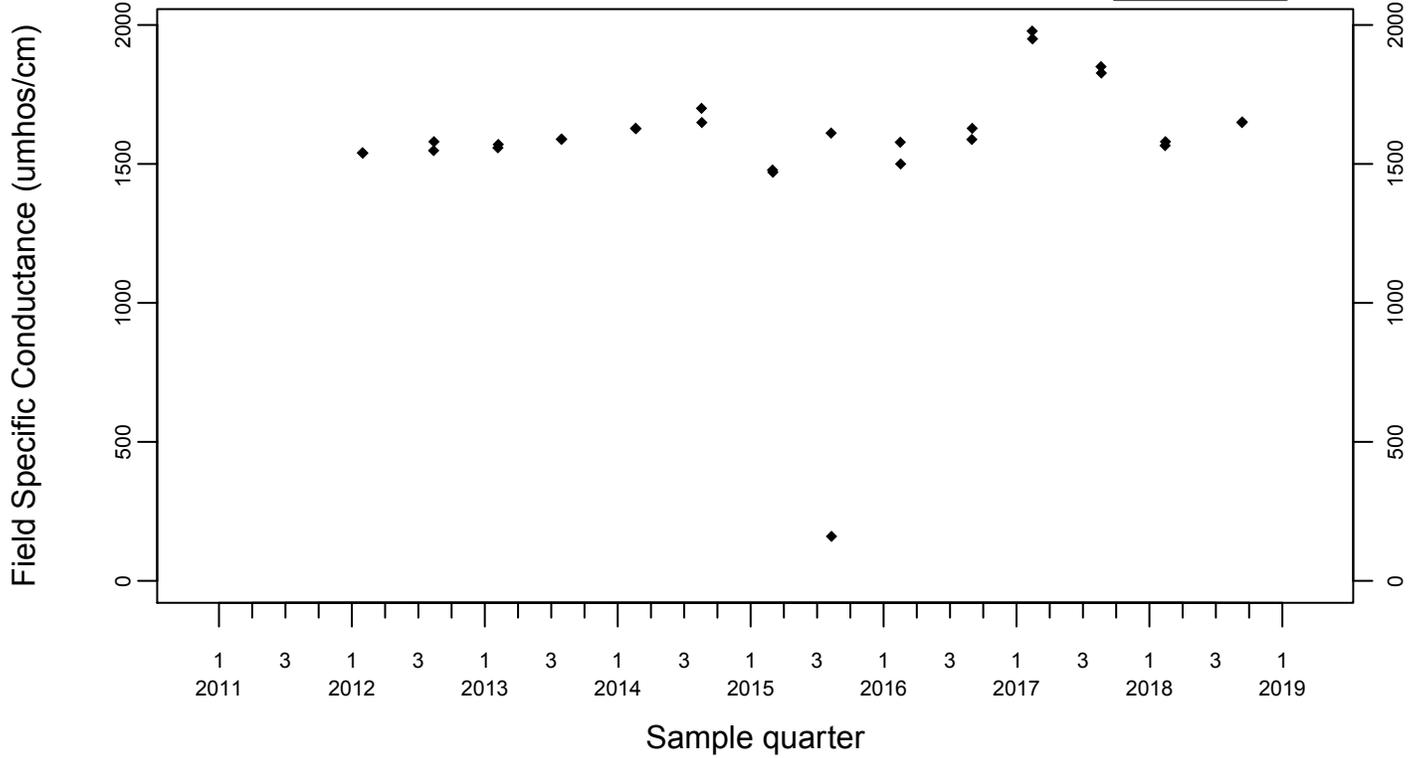
Downgradient Monitor Well W-25N-23



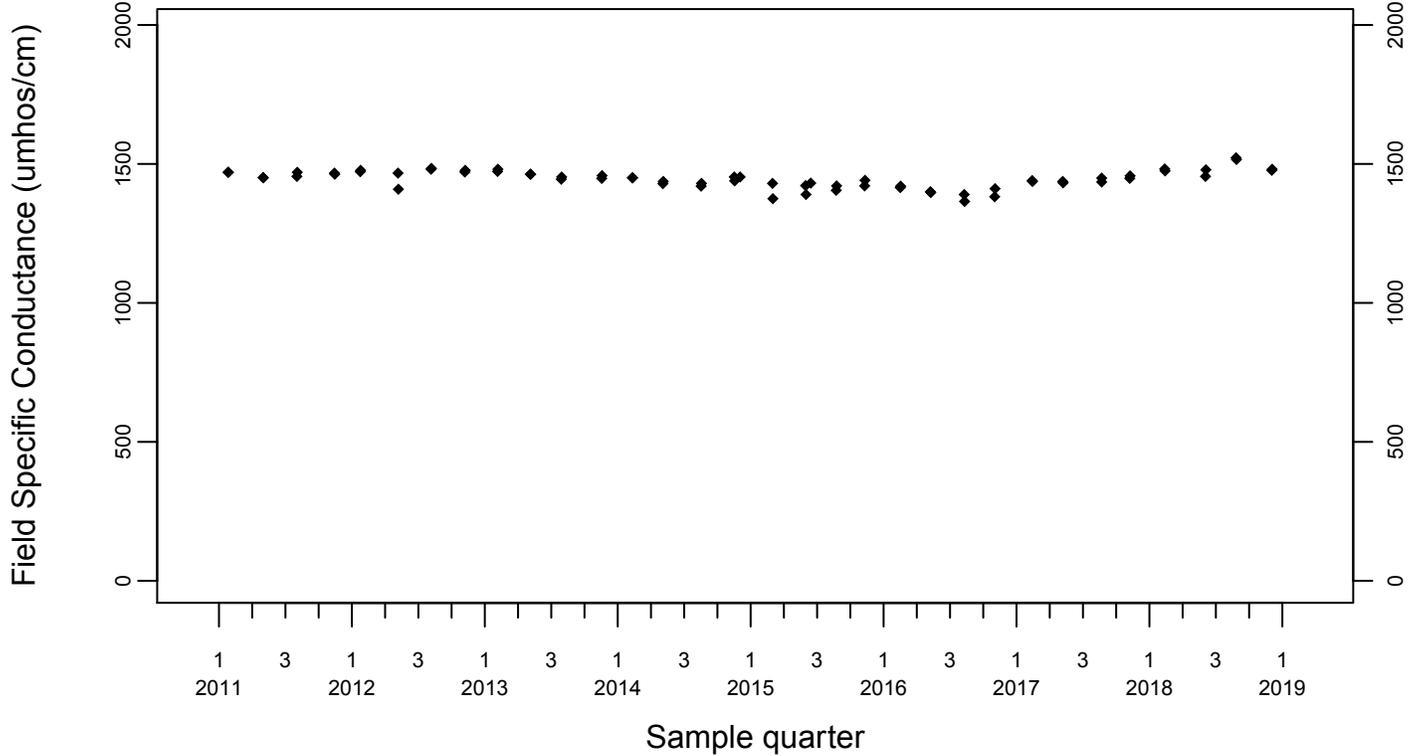
Sewage Ponds Ground Water
 Field Specific Conductance (umhos/cm)

Downgradient Monitor Well W-25N-22

◆ Above RL
 ▼ Below RL



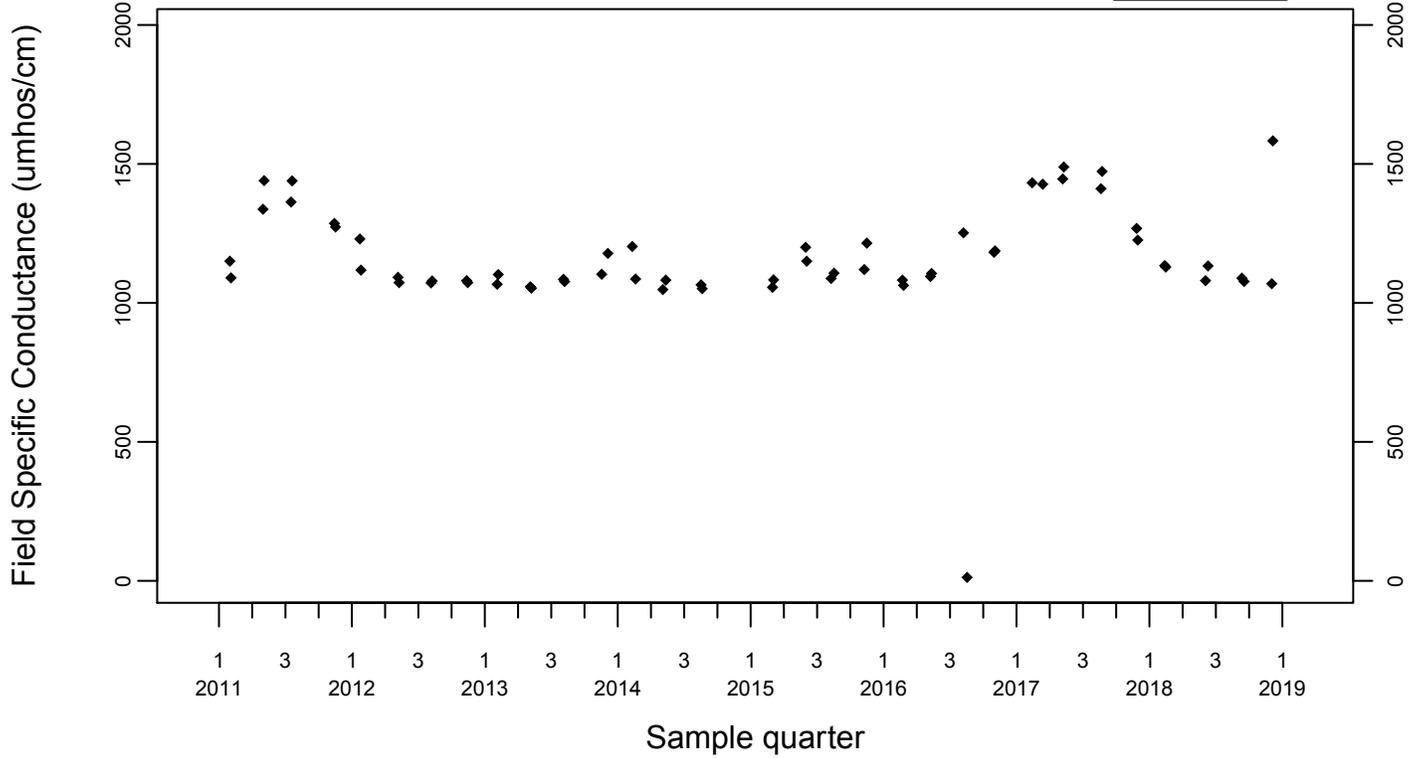
Downgradient Monitor Well W-26R-01



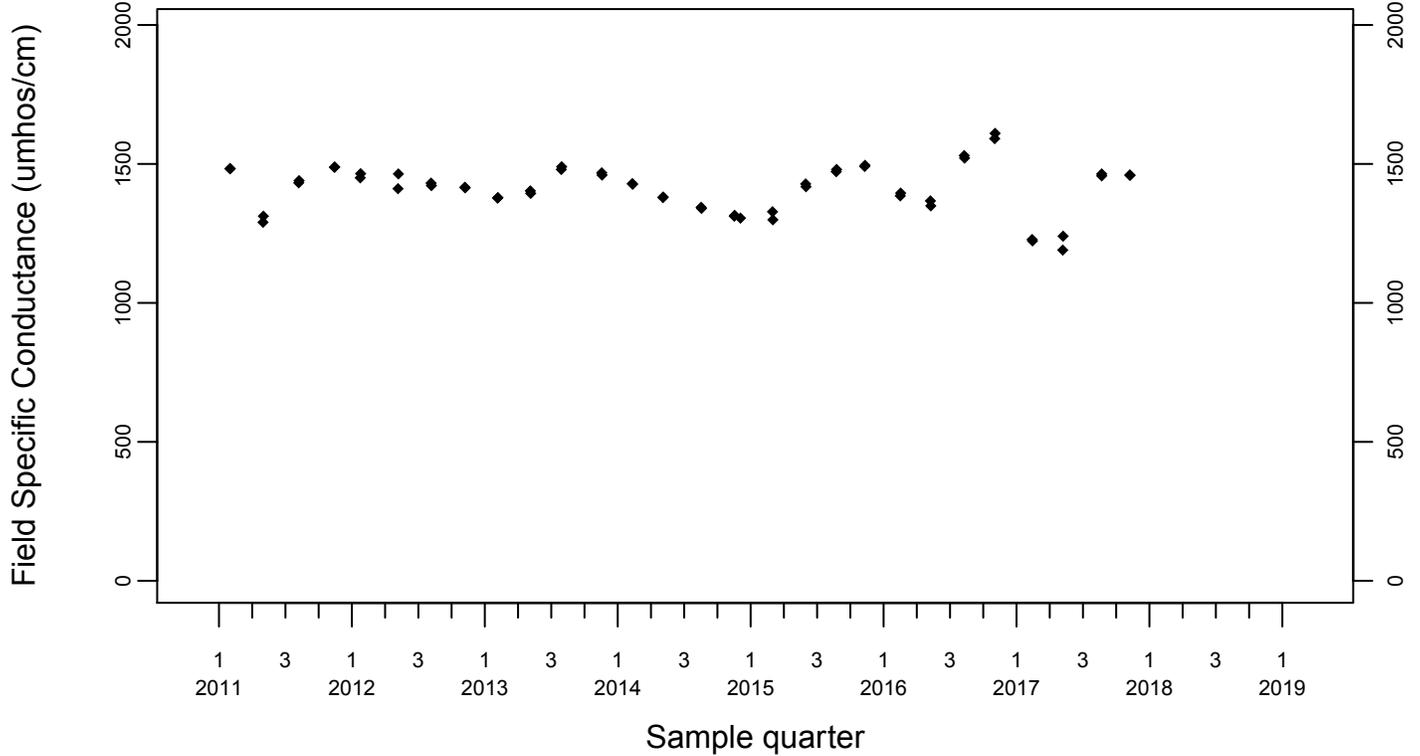
Sewage Ponds Ground Water
 Field Specific Conductance (umhos/cm)

Downgradient Monitor Well W-26R-05

◆ Above RL
 ▼ Below RL



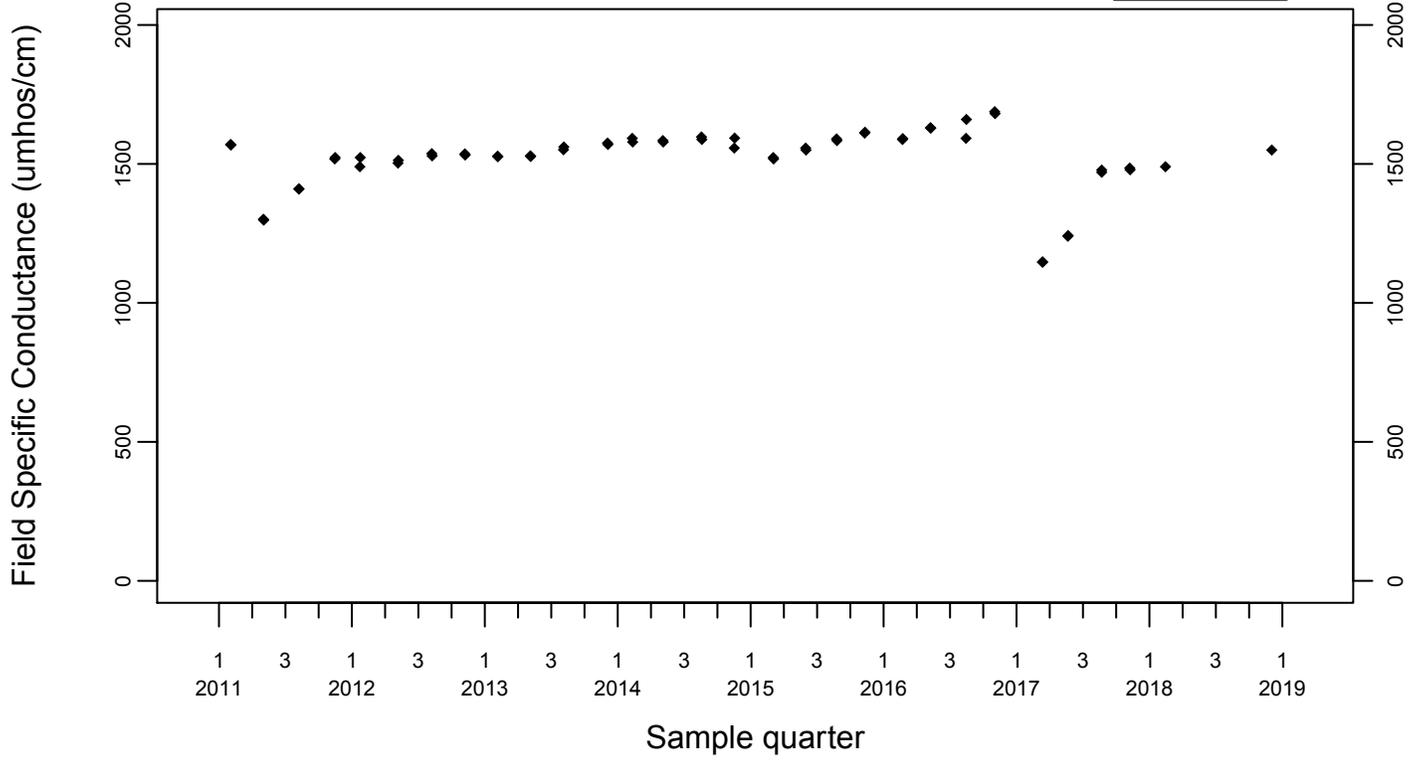
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water
Field Specific Conductance (umhos/cm)

Downgradient Monitor Well W-7DS

◆ Above RL
▽ Below RL

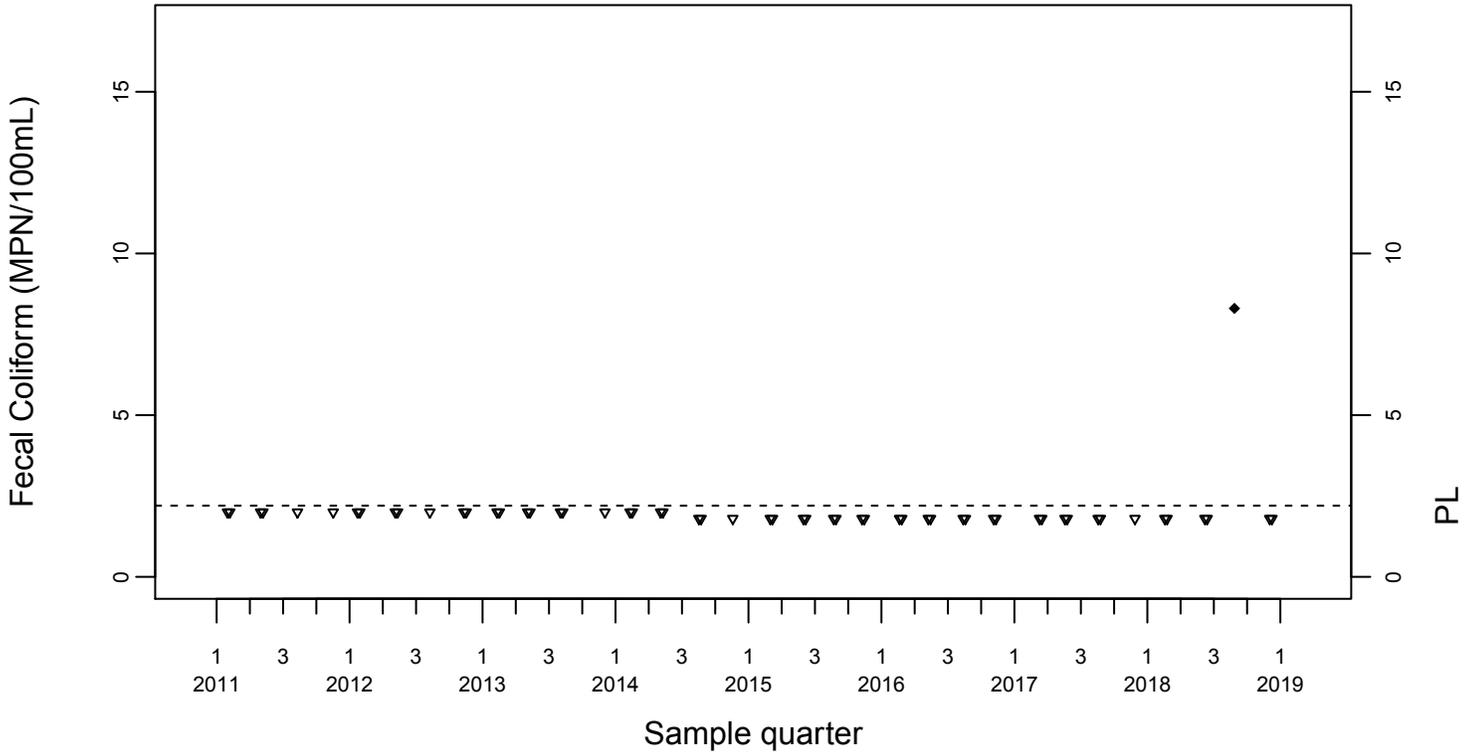


Sewage Ponds Ground Water
Fecal Coliform (MPN/100mL)

Upgradient Monitor Well W-7ES

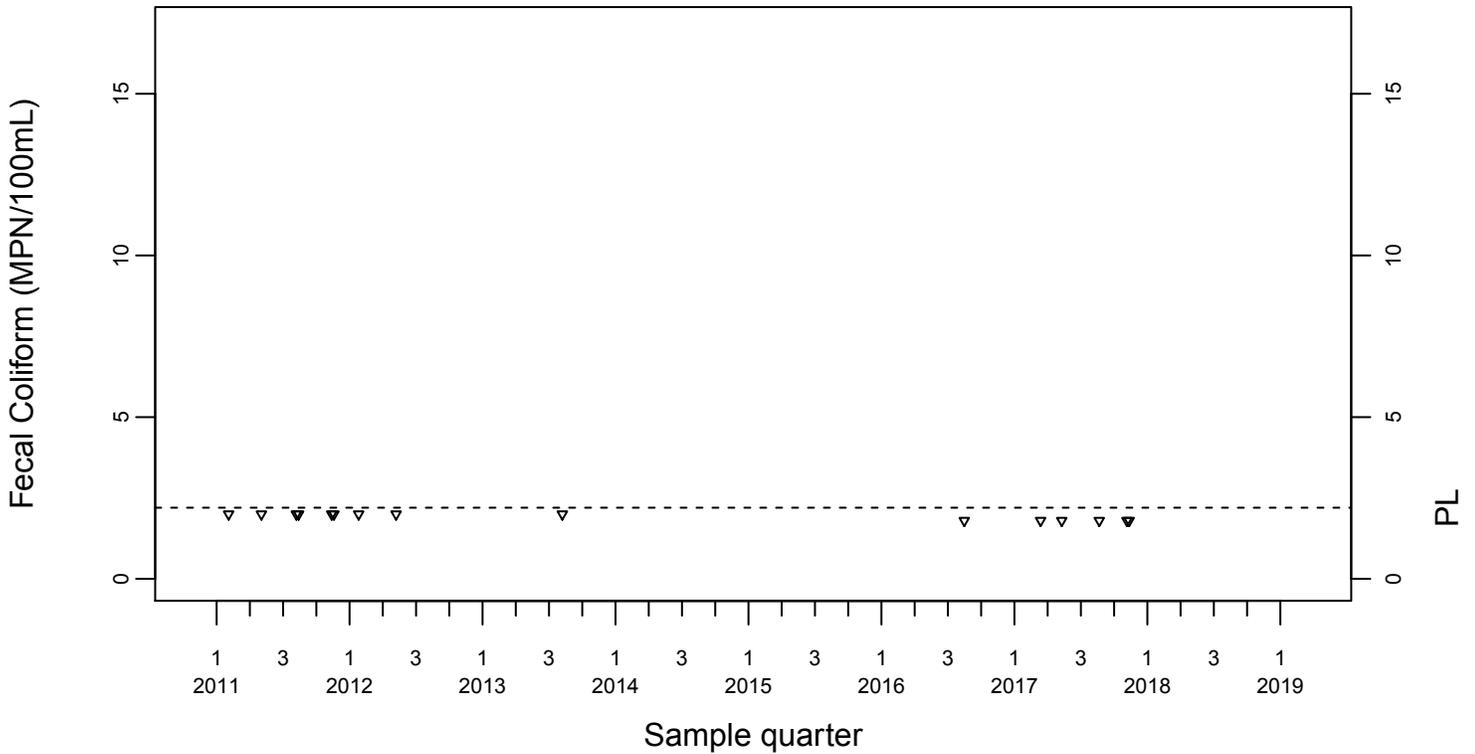
PL=2.2

◆ Above RL
▽ Below RL



PL=2.2

Upgradient Monitor Well W-7PS

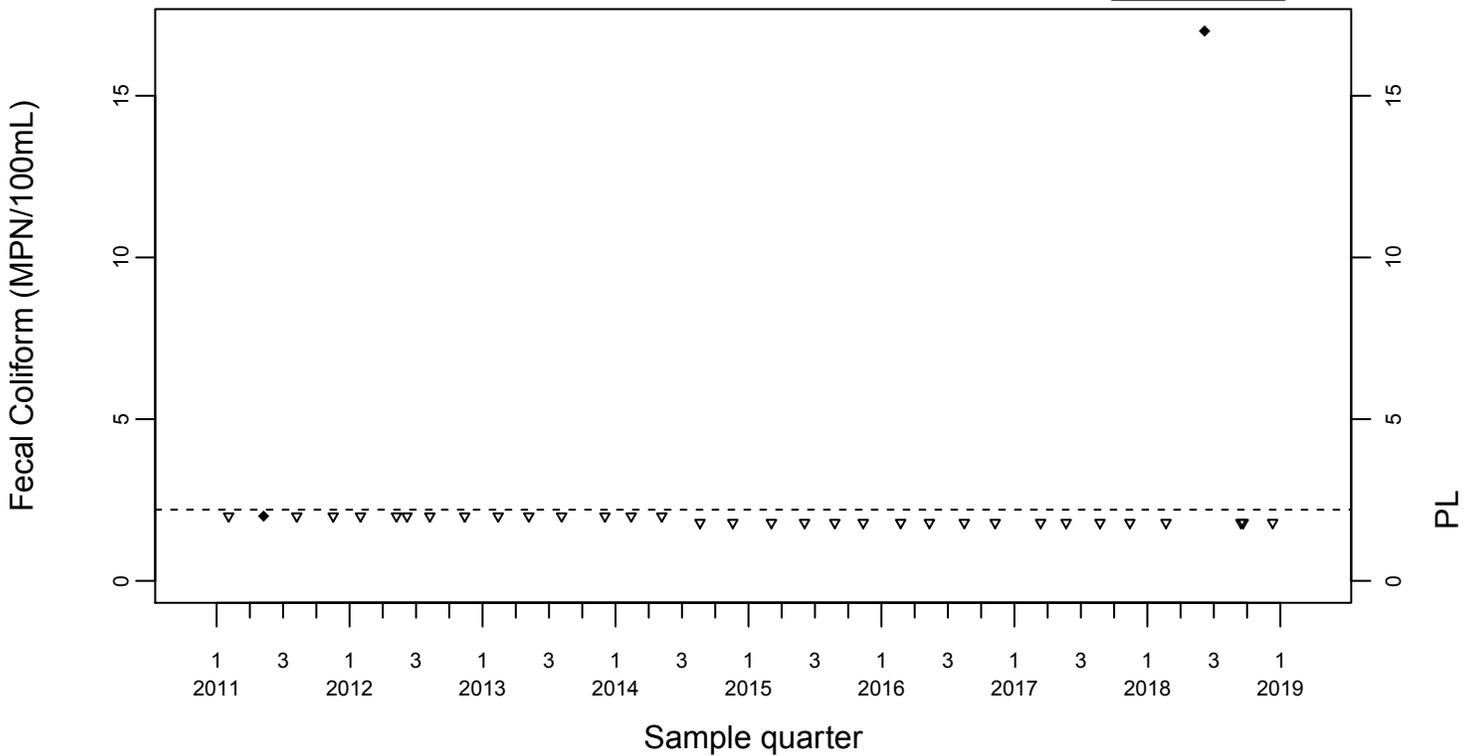


Sewage Ponds Ground Water Fecal Coliform (MPN/100mL)

Crossgradient Monitor Well W-35A-04

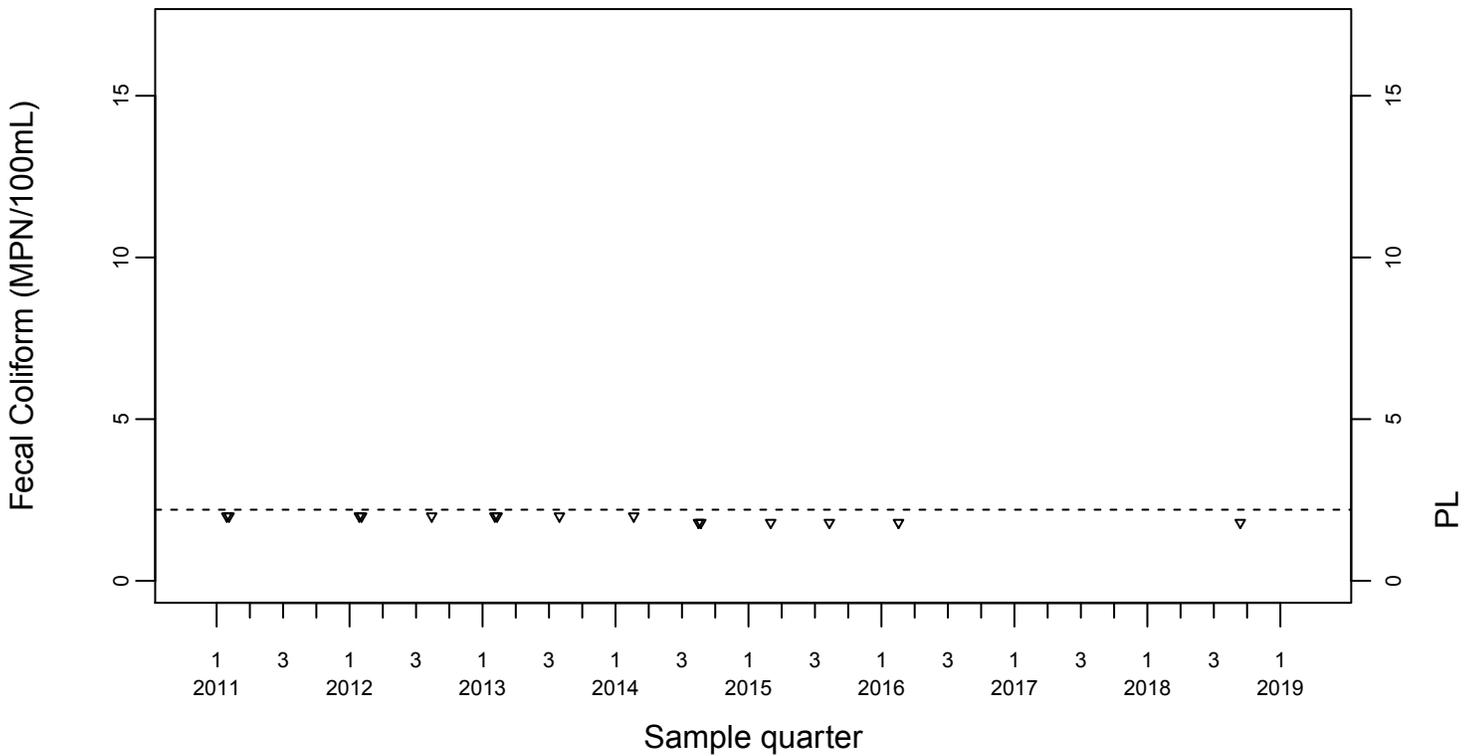
PL=2.2

◆ Above RL
▽ Below RL



Downgradient Monitor Well W-25N-23

PL=2.2

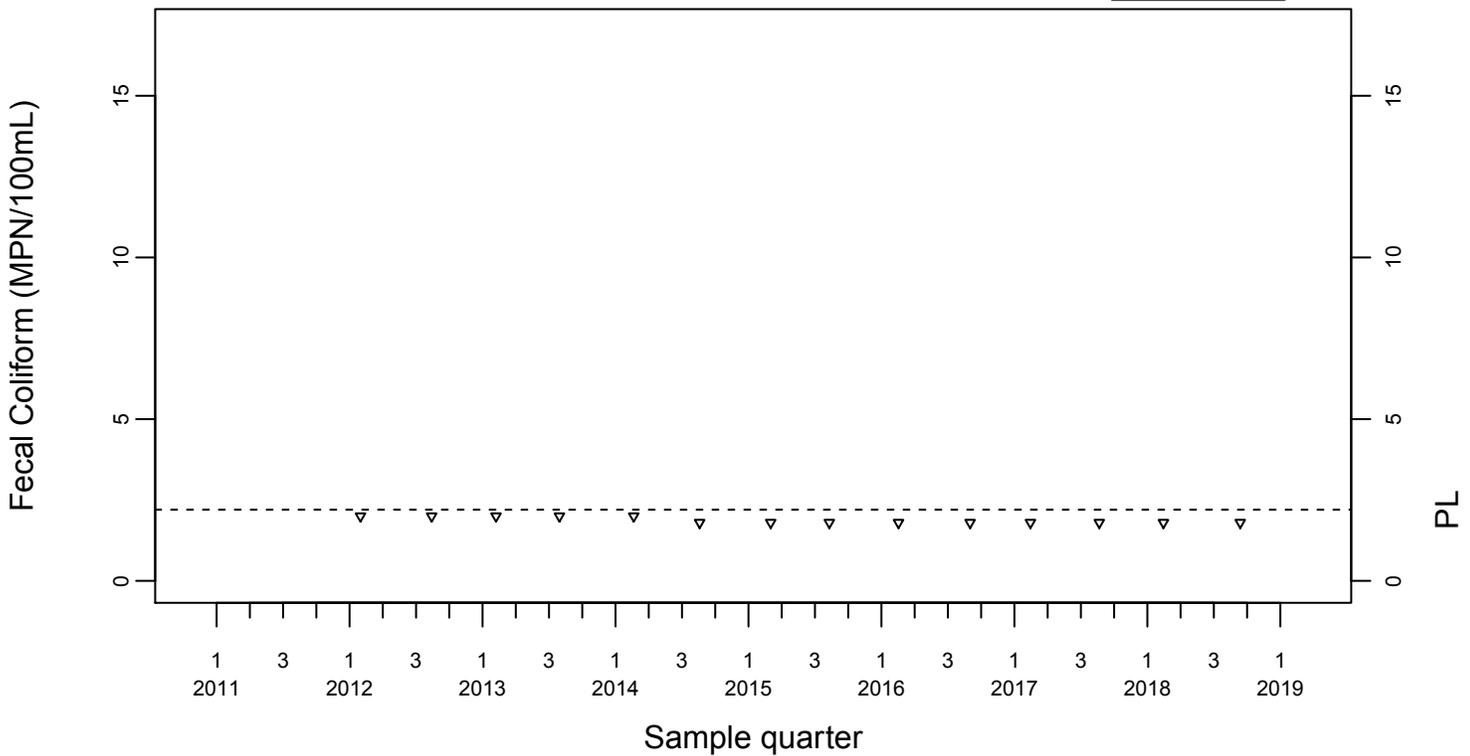


Sewage Ponds Ground Water Fecal Coliform (MPN/100mL)

PL=2.2

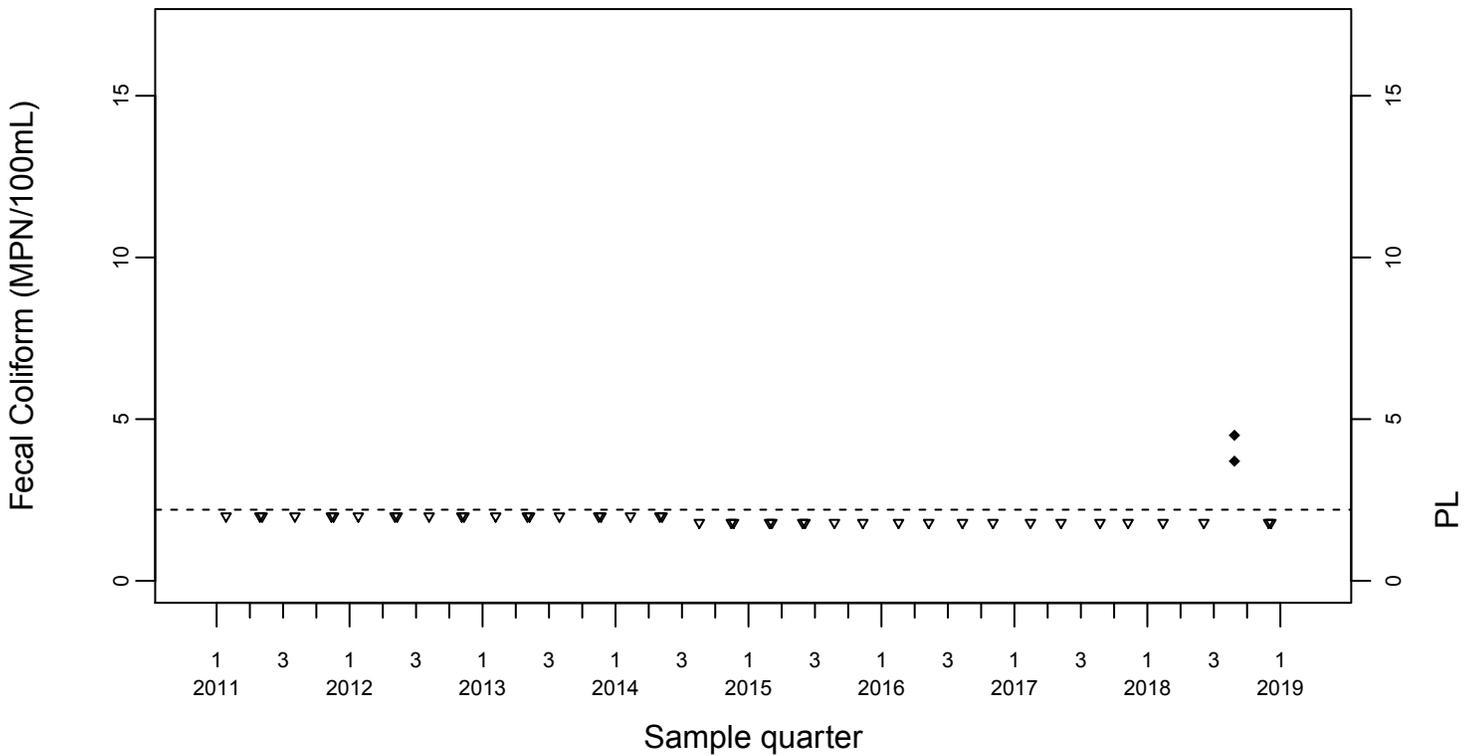
◆ Above RL
▽ Below RL

Downgradient Monitor Well W-25N-22



PL=2.2

Downgradient Monitor Well W-26R-01

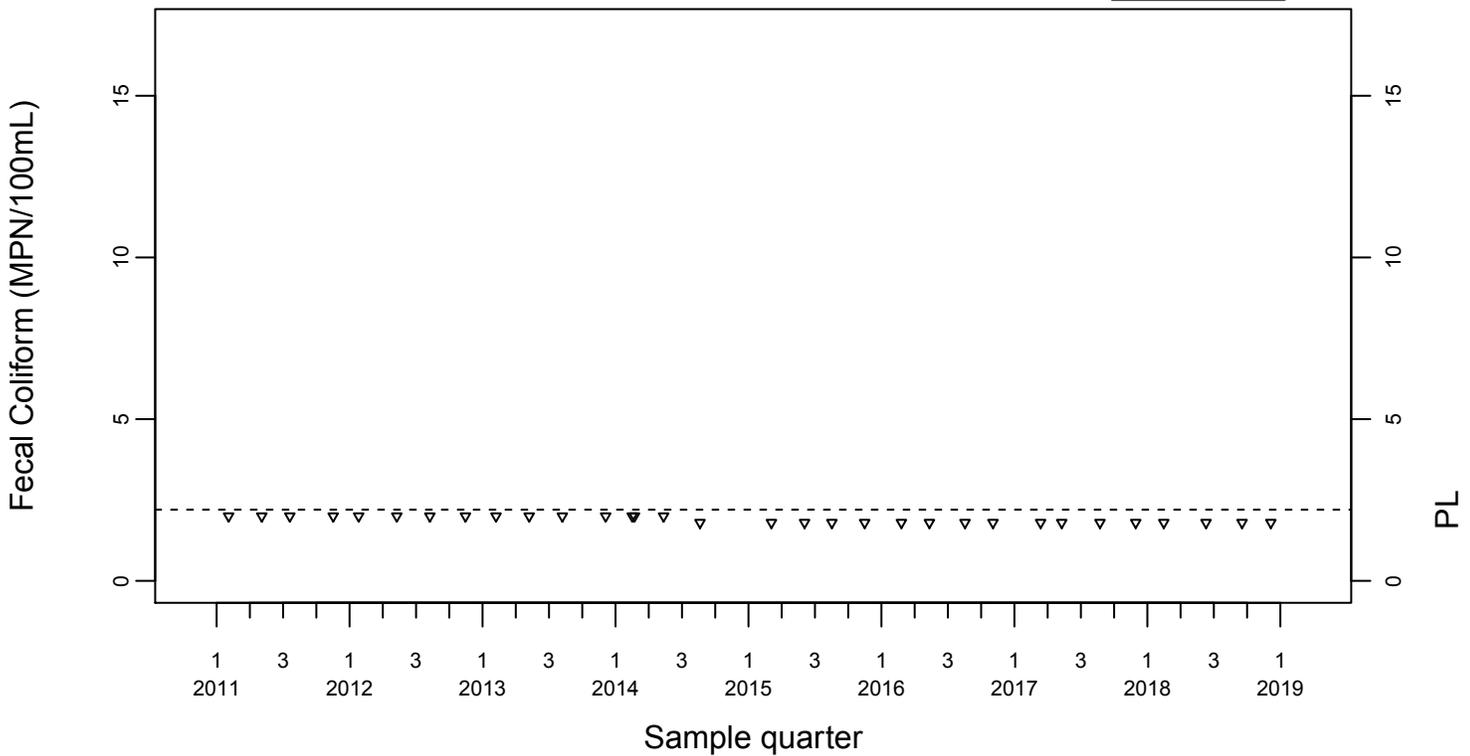


Sewage Ponds Ground Water Fecal Coliform (MPN/100mL)

PL=2.2

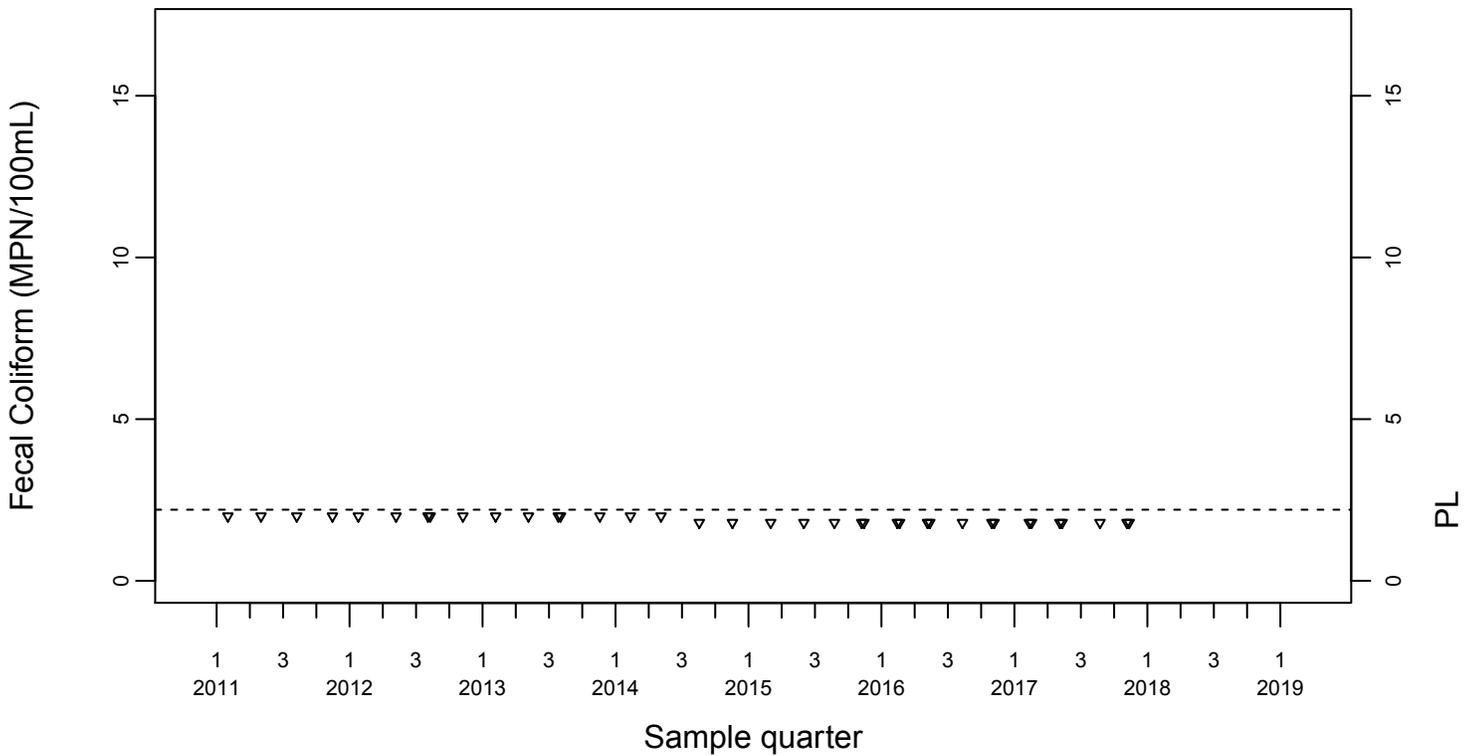
◆ Above RL
▽ Below RL

Downgradient Monitor Well W-26R-05



PL=2.2

Downgradient Monitor Well W-26R-11

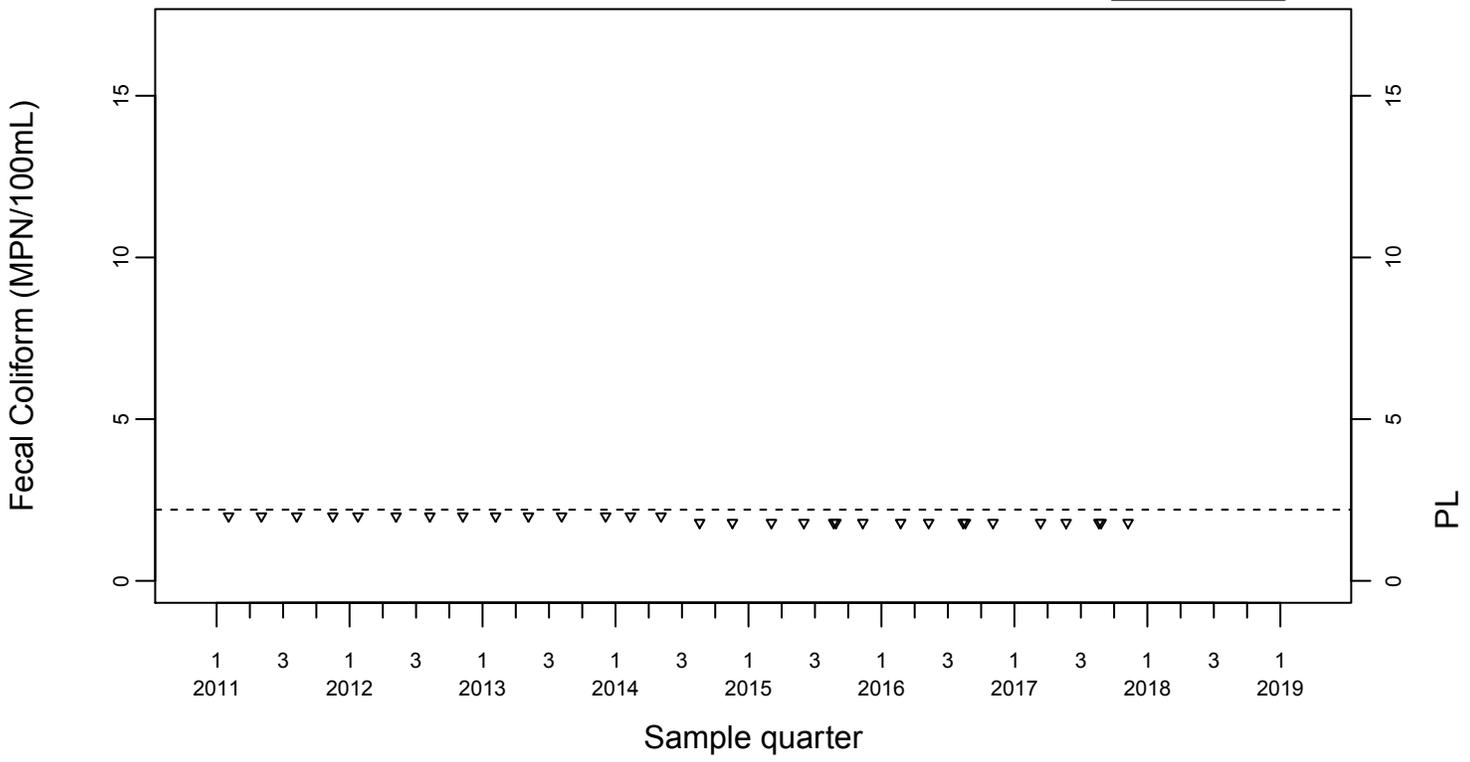


Sewage Ponds Ground Water Fecal Coliform (MPN/100mL)

PL=2.2

◆ Above RL
▽ Below RL

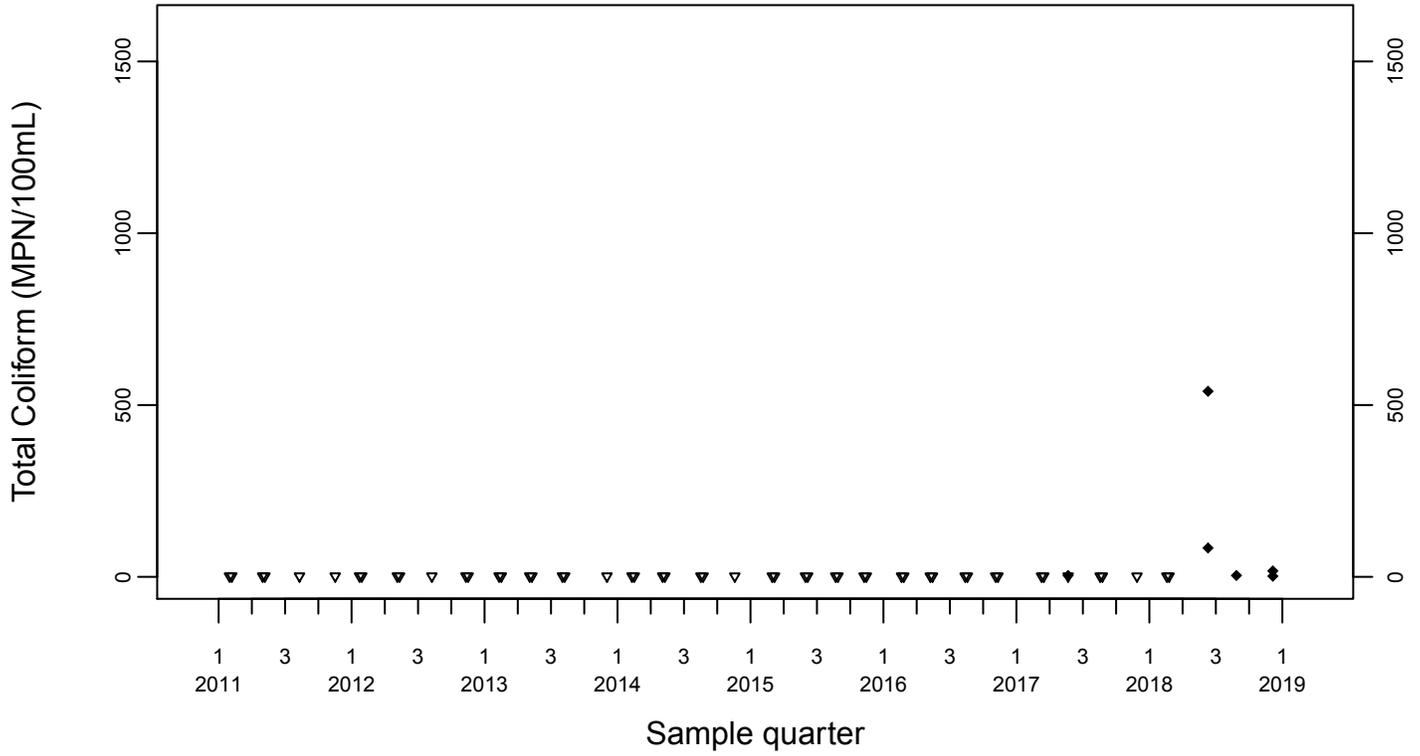
Downgradient Monitor Well W-7DS



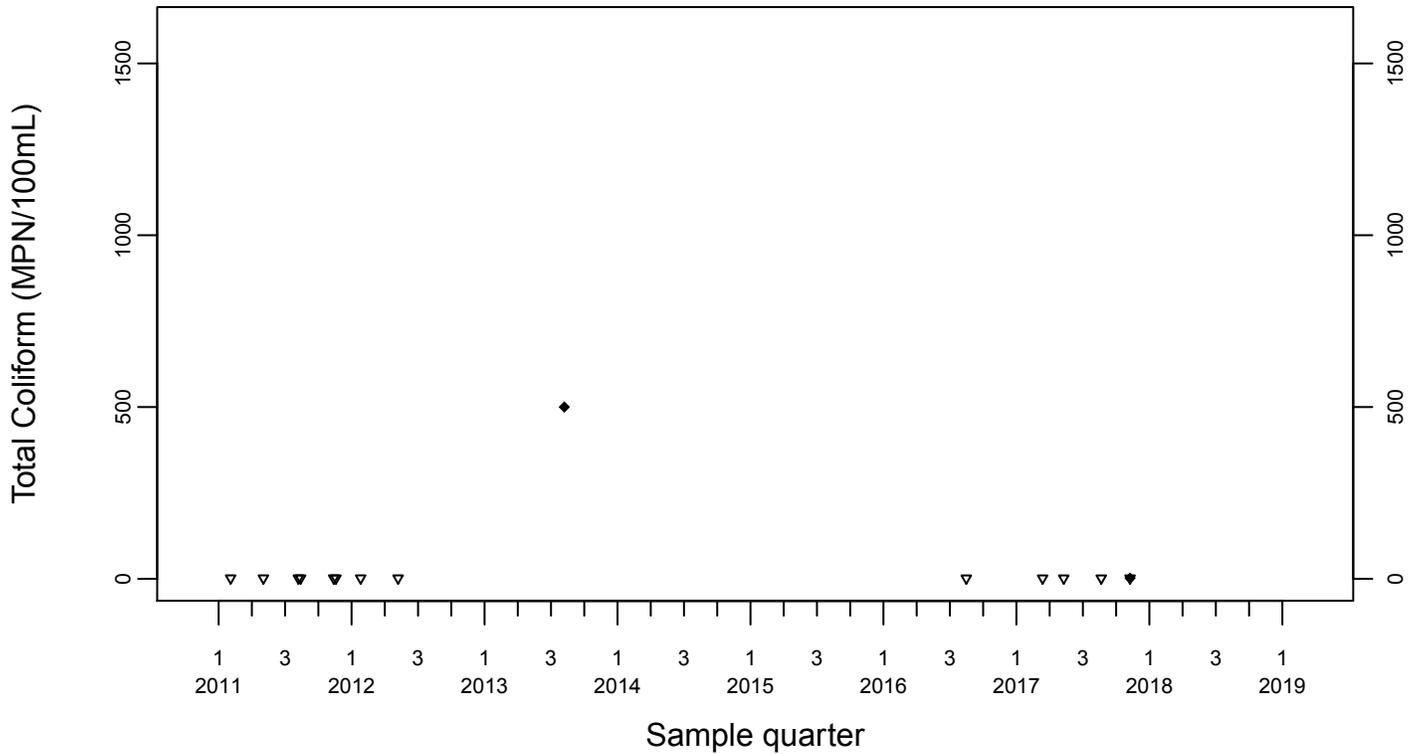
Sewage Ponds Ground Water Total Coliform (MPN/100mL)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



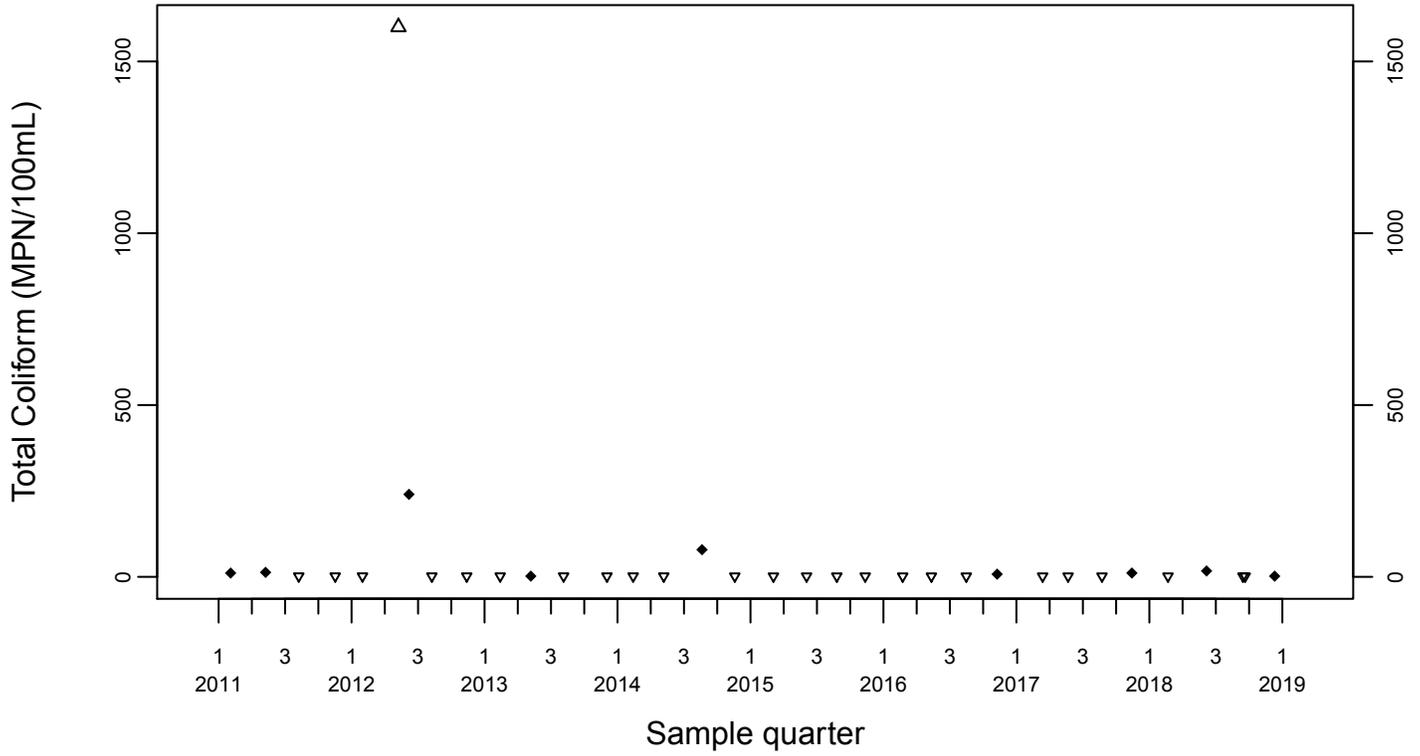
Upgradient Monitor Well W-7PS



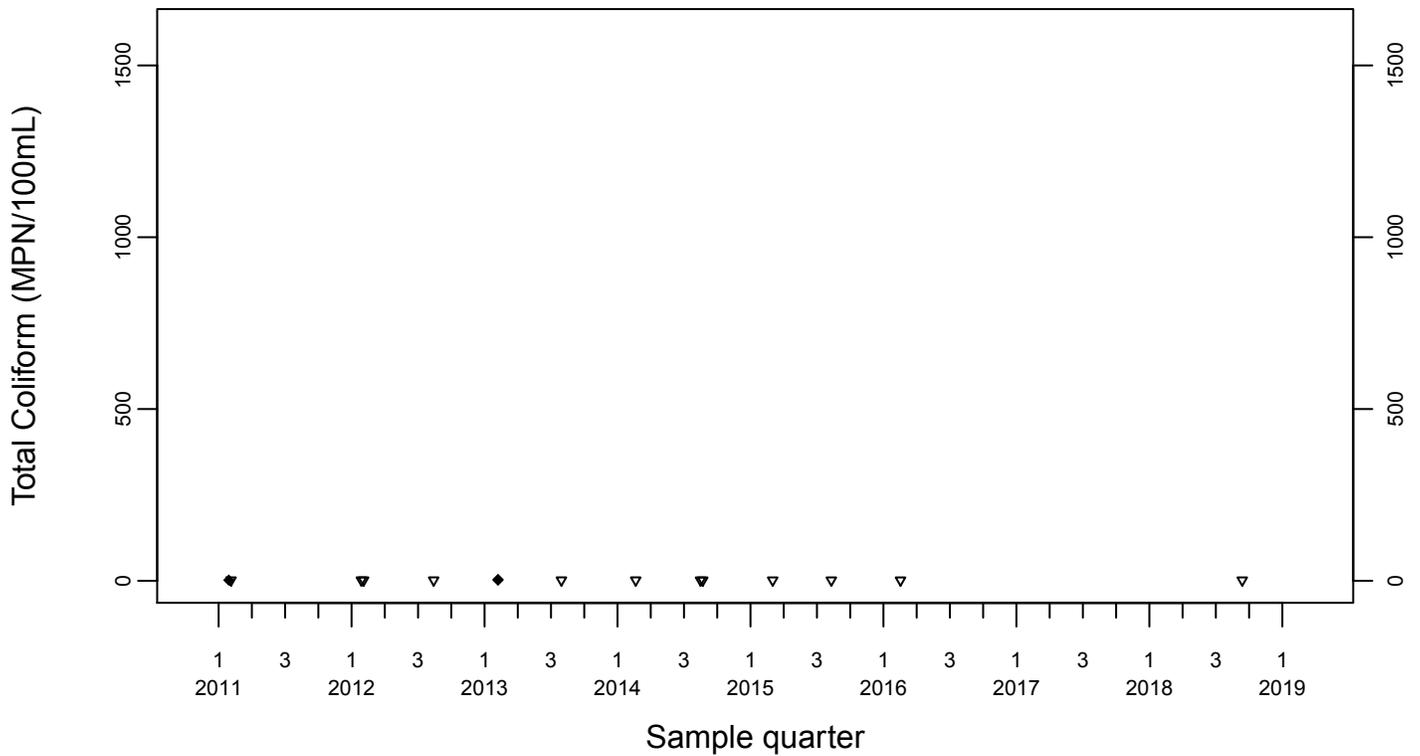
Sewage Ponds Ground Water Total Coliform (MPN/100mL)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



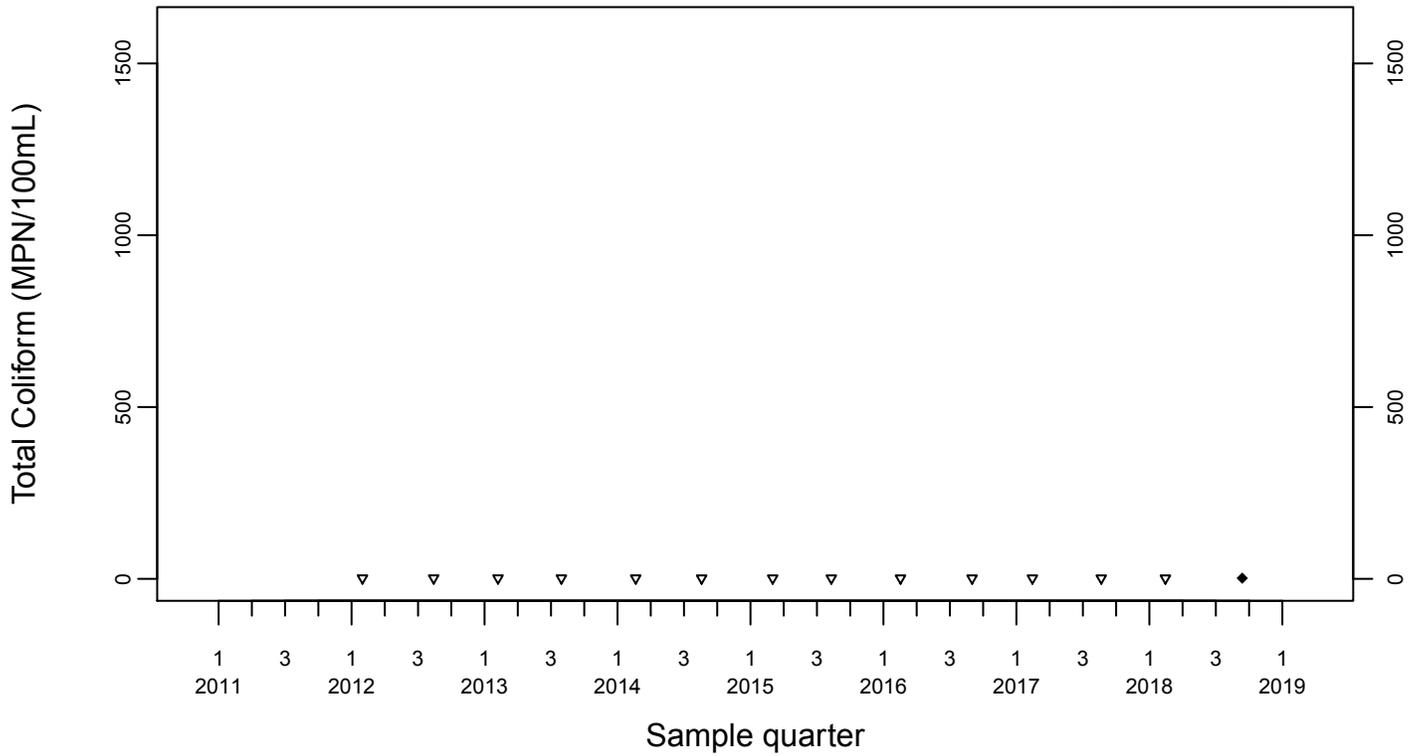
Downgradient Monitor Well W-25N-23



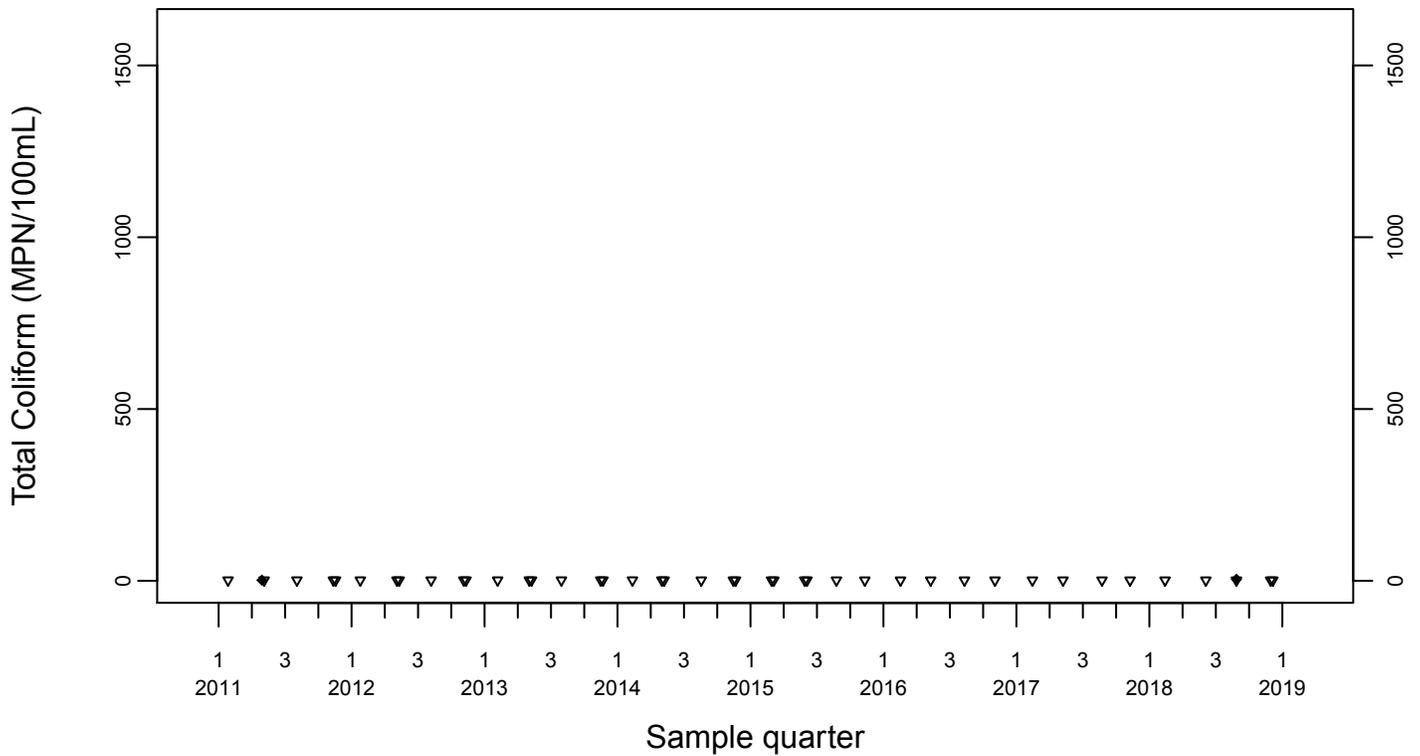
Sewage Ponds Ground Water Total Coliform (MPN/100mL)

Downgradient Monitor Well W-25N-22

◆ Above RL
▽ Below RL



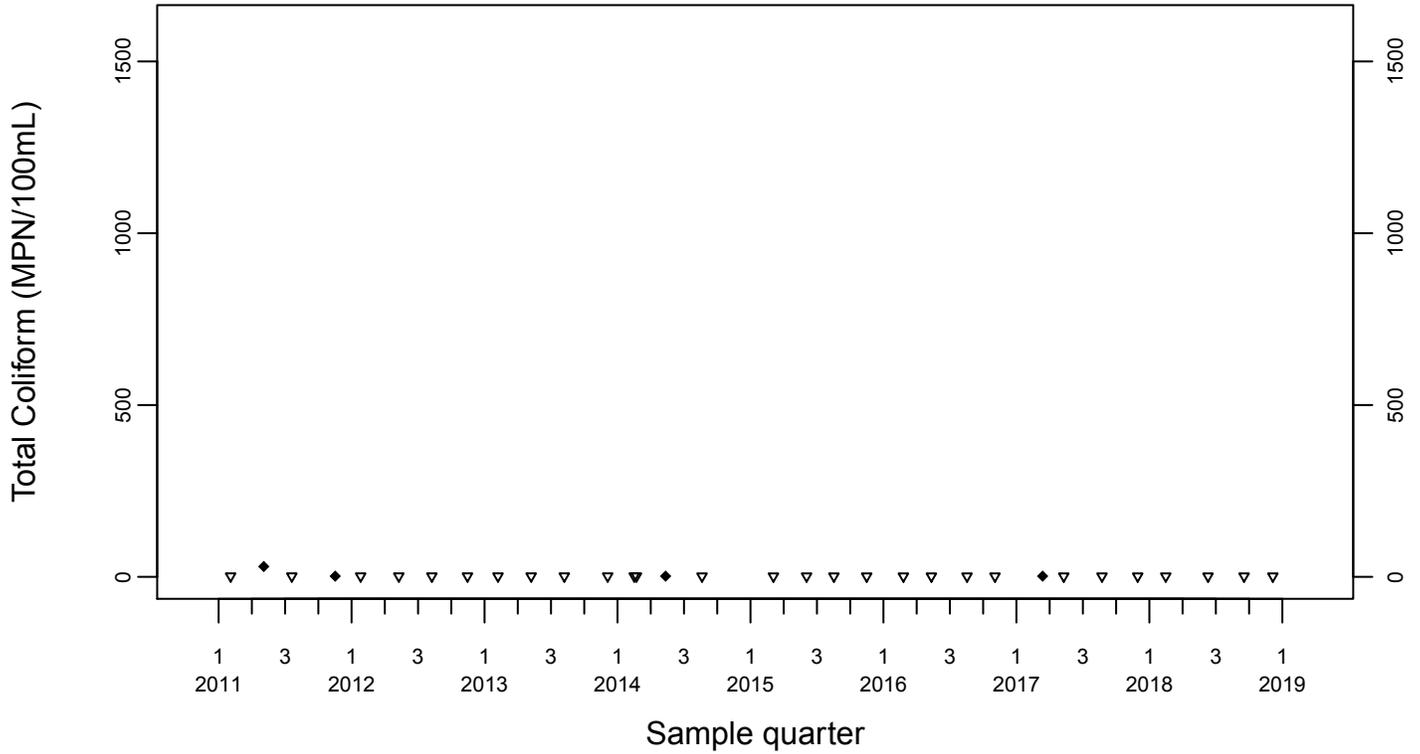
Downgradient Monitor Well W-26R-01



Sewage Ponds Ground Water Total Coliform (MPN/100mL)

Downgradient Monitor Well W-26R-05

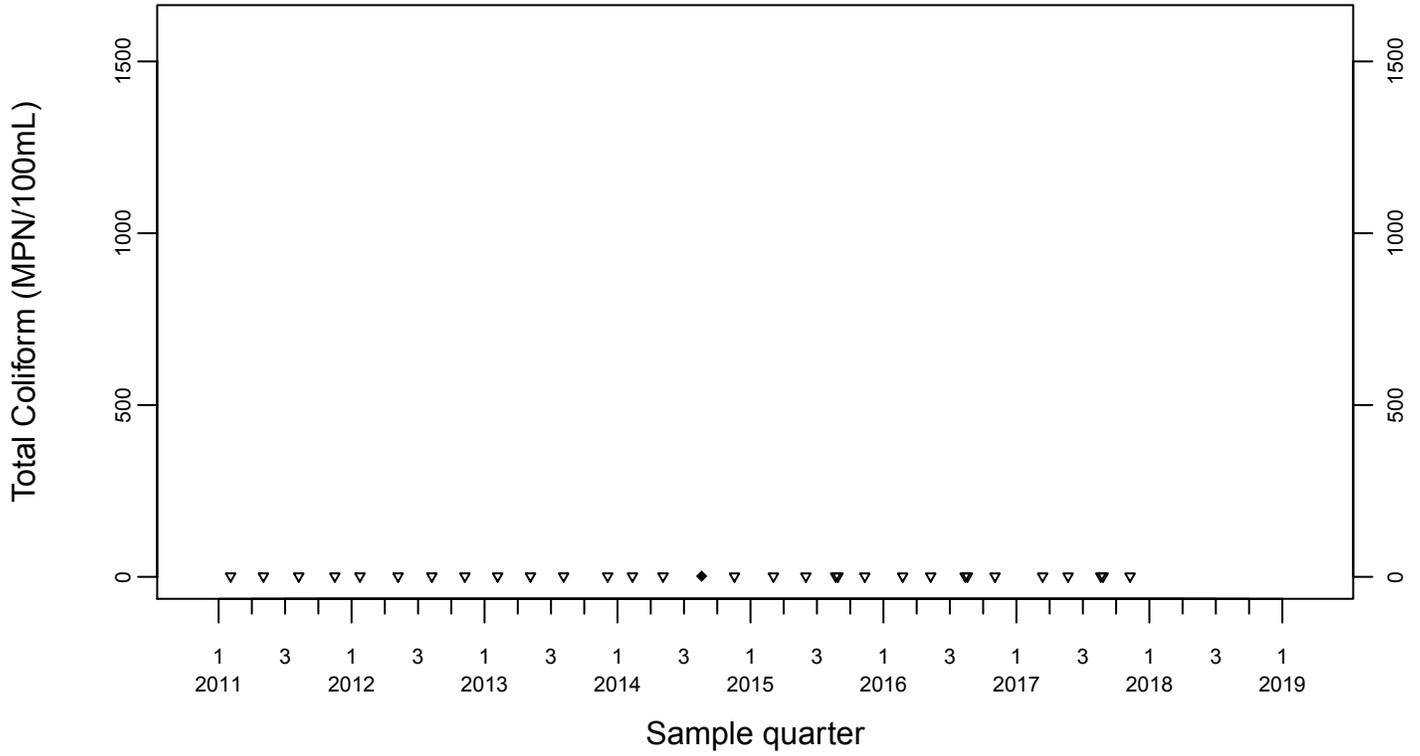
◆ Above RL
▽ Below RL



Sewage Ponds Ground Water
Total Coliform (MPN/100mL)

Downgradient Monitor Well W-7DS

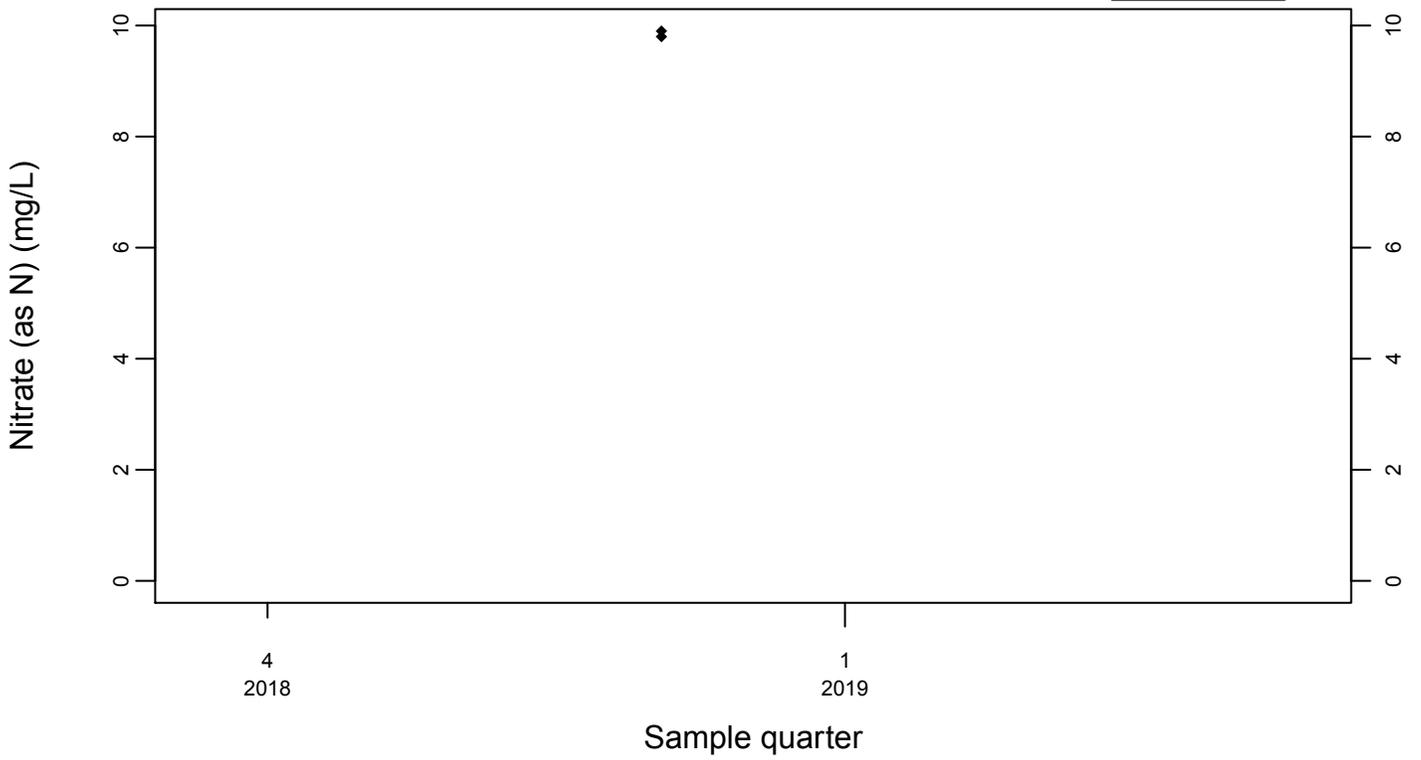
◆ Above RL
▽ Below RL



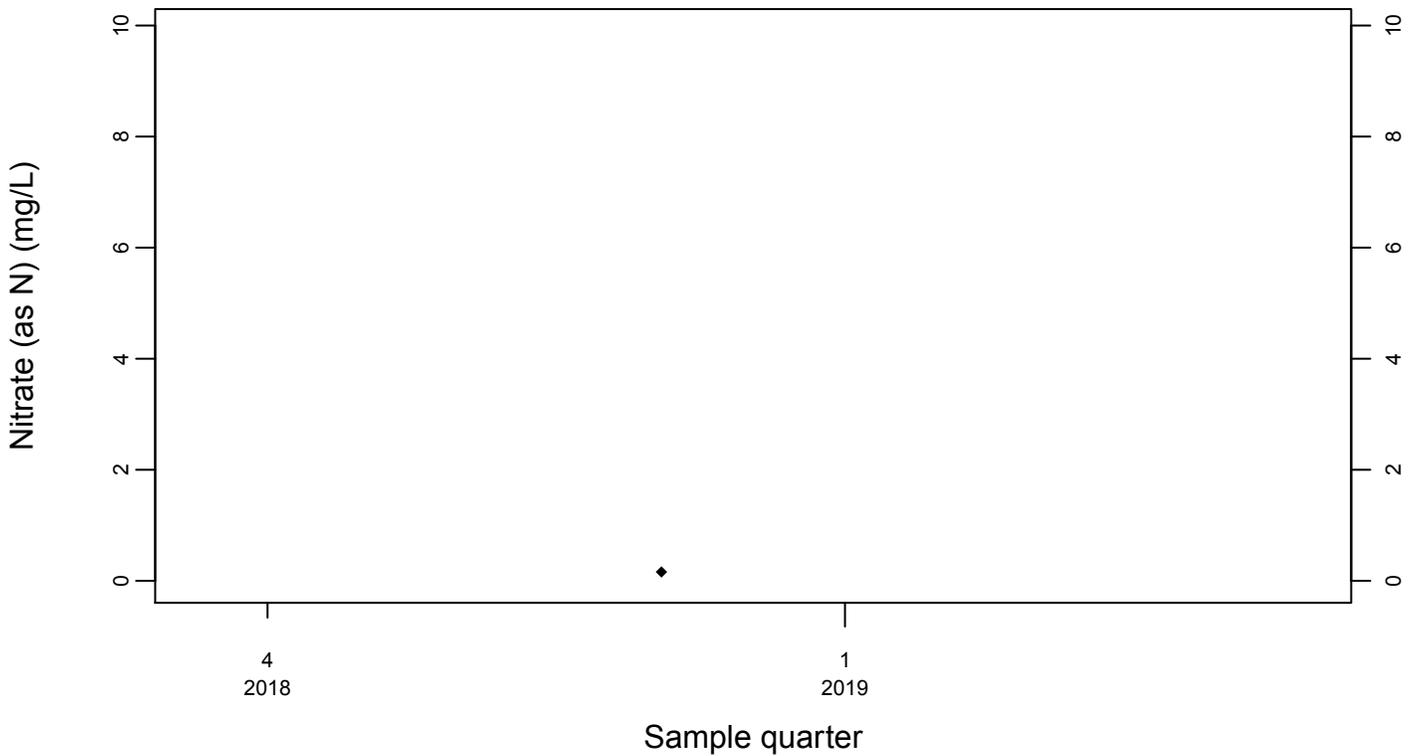
Sewage Ponds Ground Water Nitrate (as N) (mg/L)

Downgradient Monitor Well W-26R-01

◆ Above RL
▽ Below RL



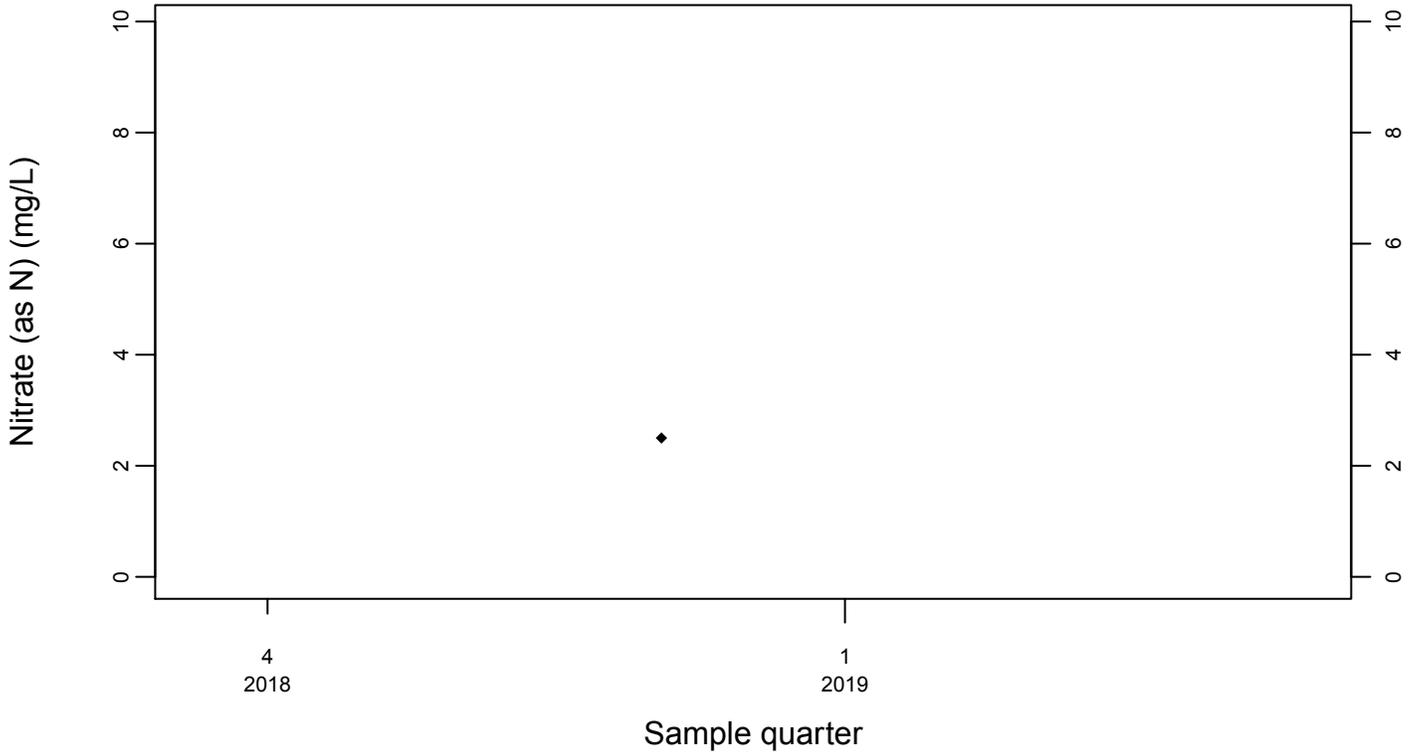
Downgradient Monitor Well W-26R-05



Sewage Ponds Ground Water
Nitrate (as N) (mg/L)

Downgradient Monitor Well W-7DS

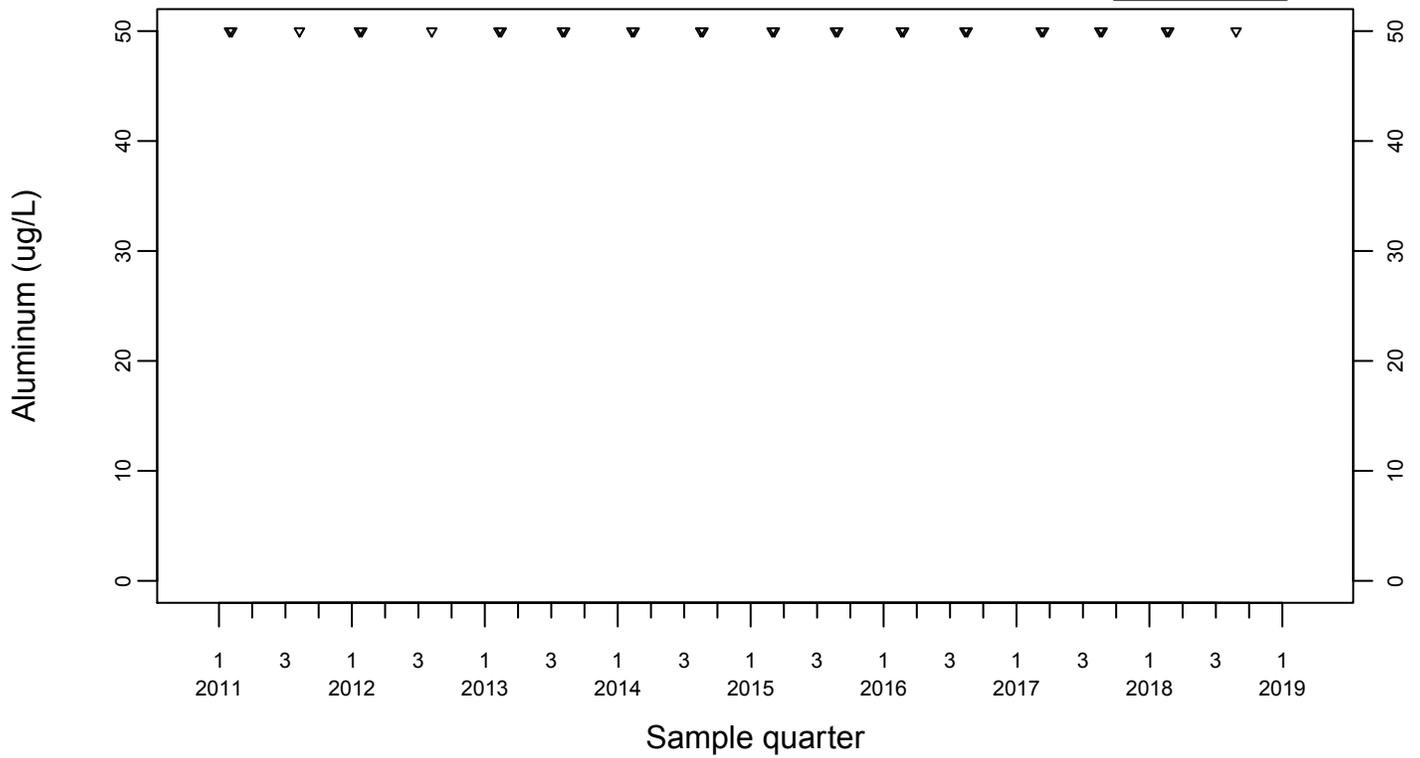
◆ Above RL
▽ Below RL



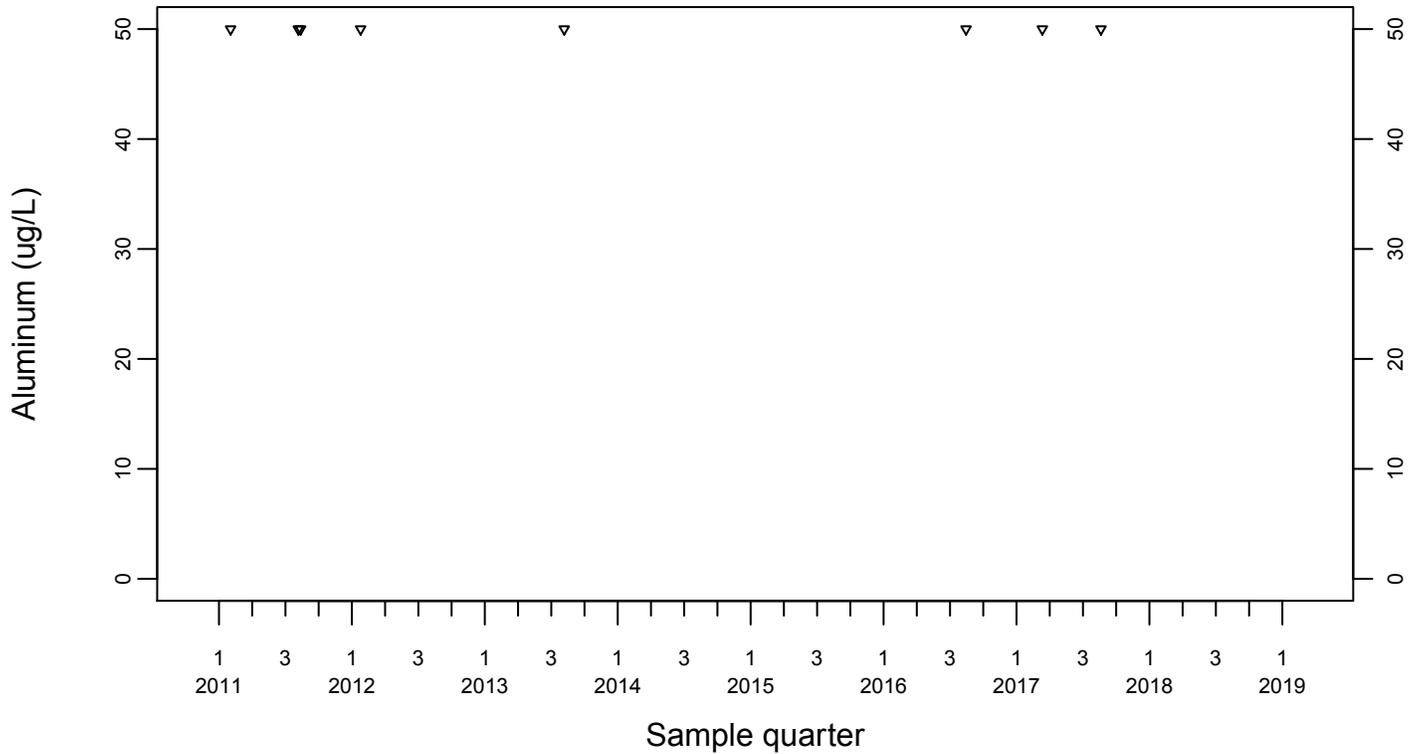
Sewage Ponds Ground Water Aluminum (ug/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



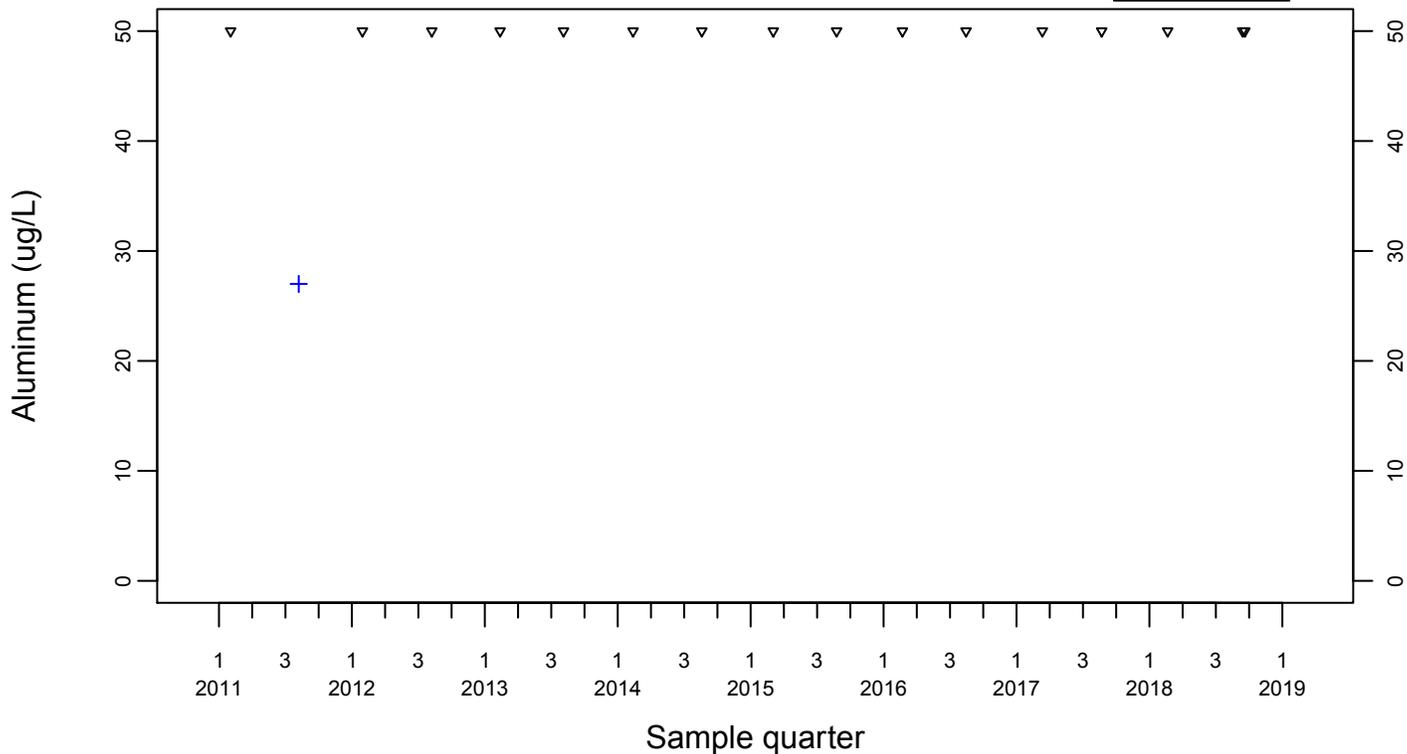
Upgradient Monitor Well W-7PS



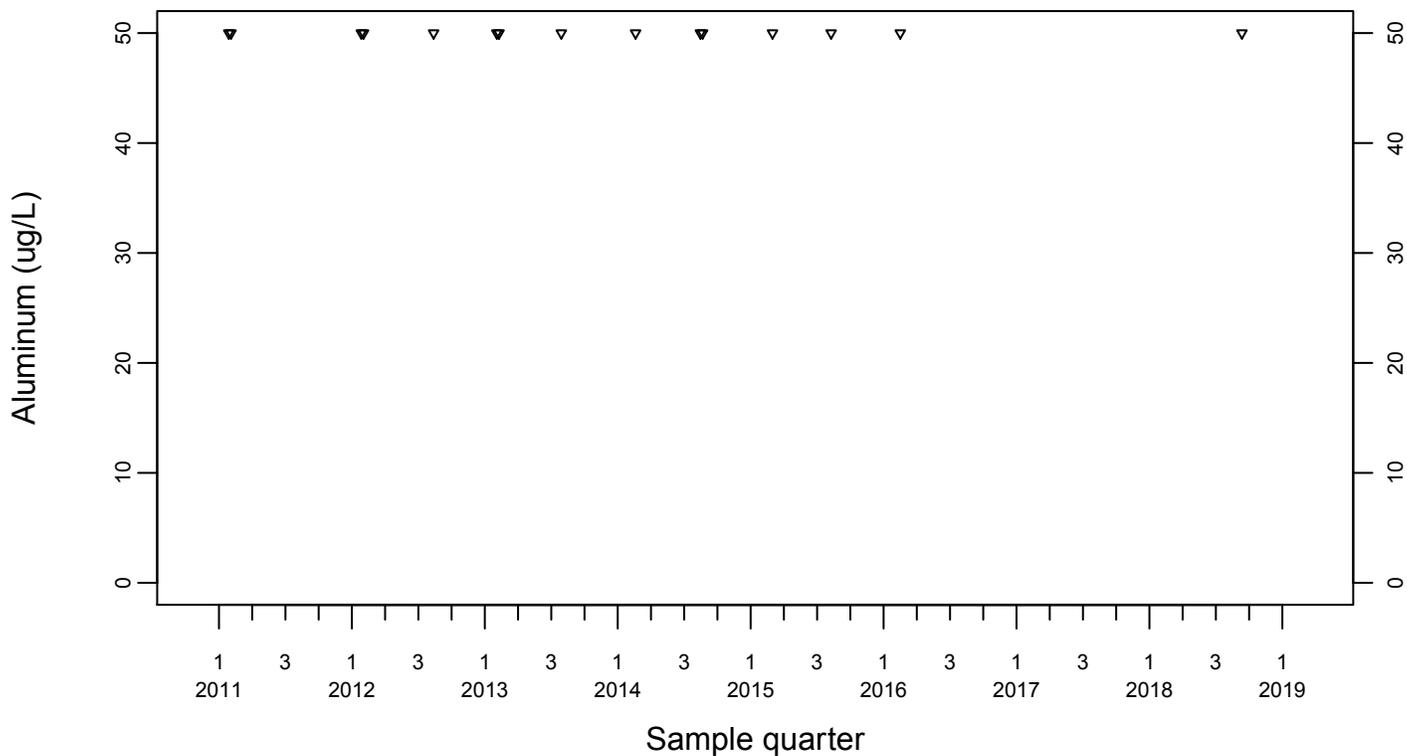
Sewage Ponds Ground Water Aluminum (ug/L)

Crossgradient Monitor Well W-35A-04

- ◆ Above RL
- ▽ Below RL
- + Estimated



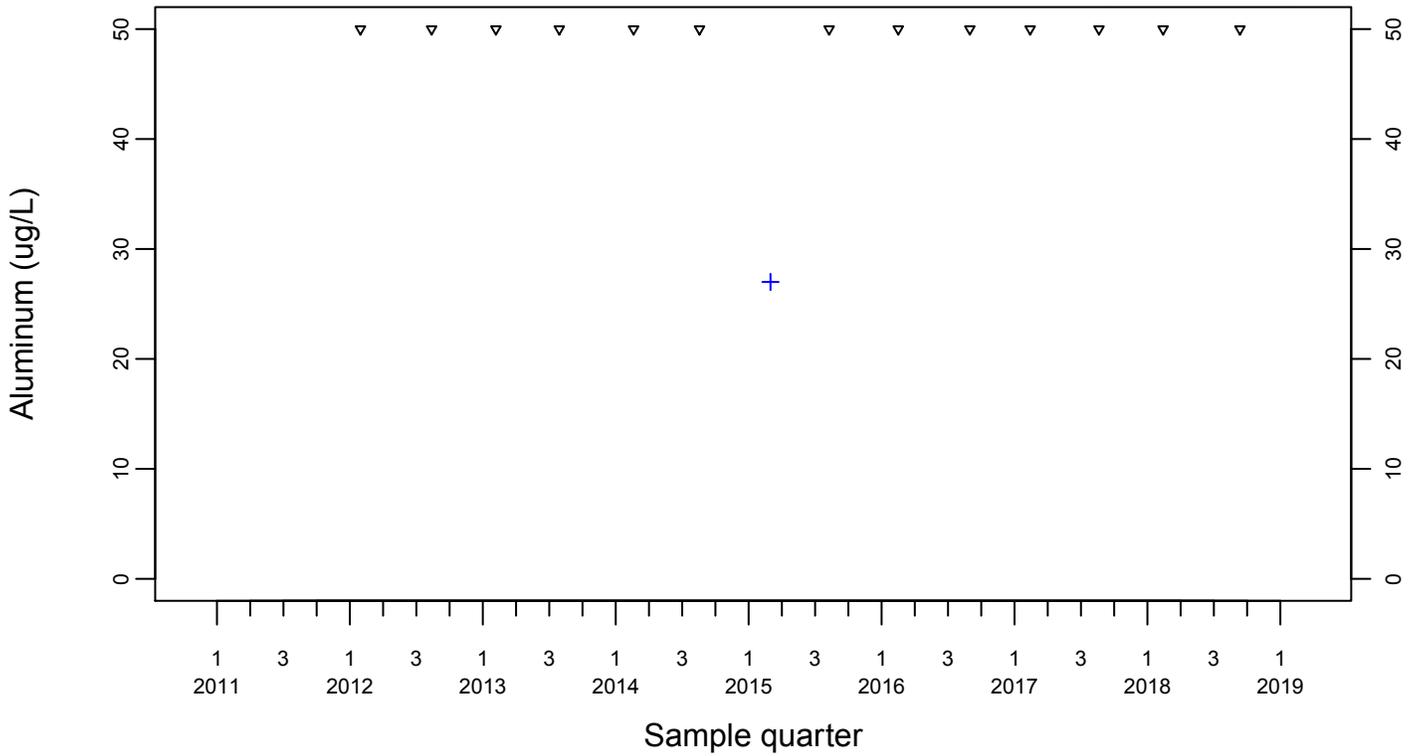
Downgradient Monitor Well W-25N-23



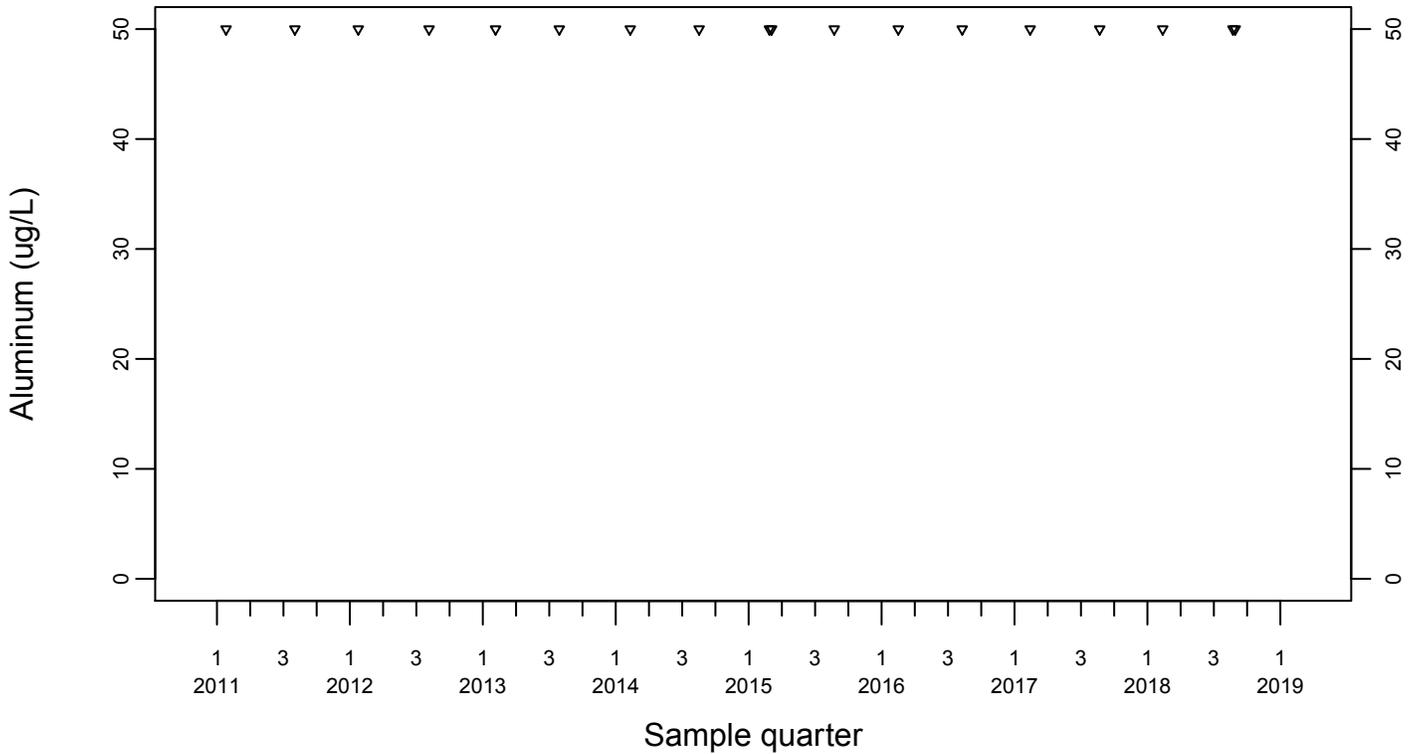
Sewage Ponds Ground Water Aluminum (ug/L)

Downgradient Monitor Well W-25N-22

- ◆ Above RL
- ▽ Below RL
- + Estimated



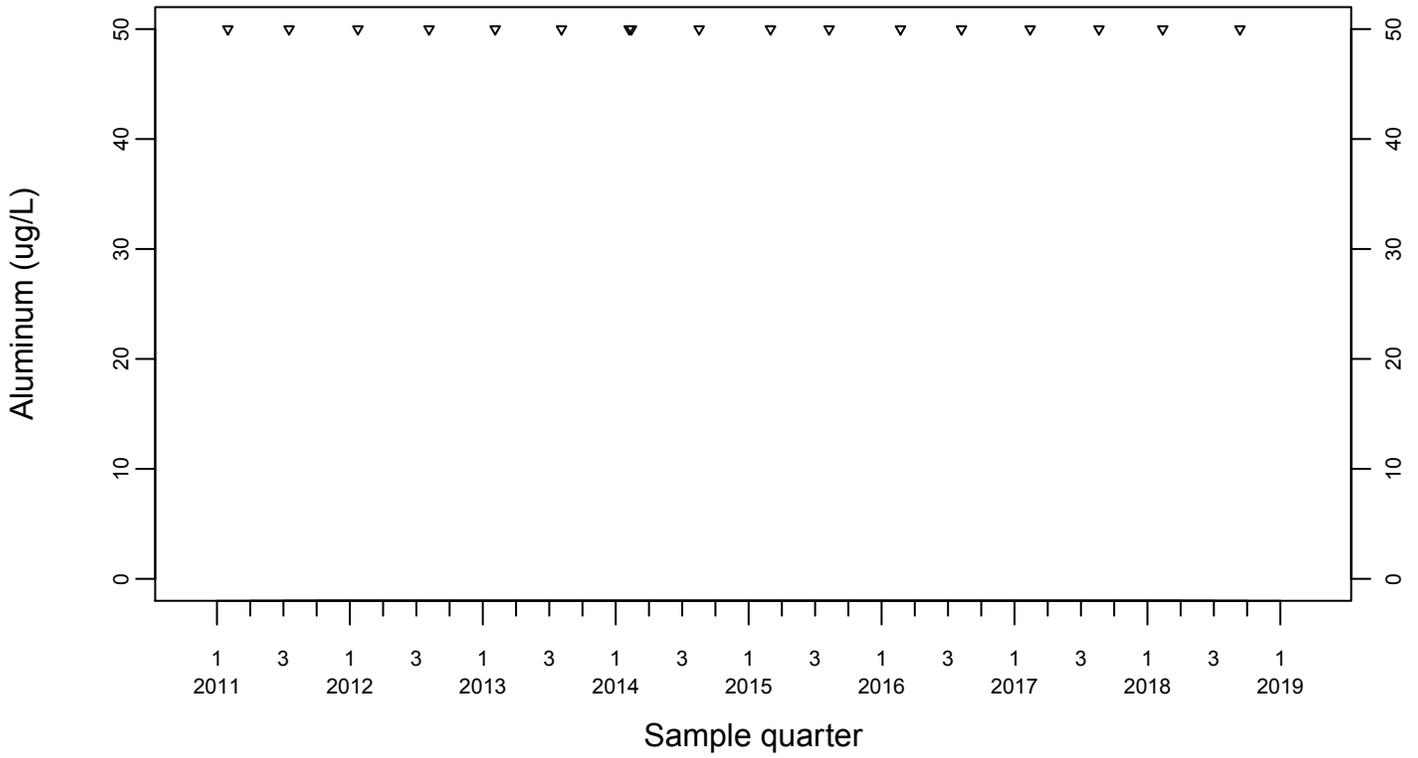
Downgradient Monitor Well W-26R-01



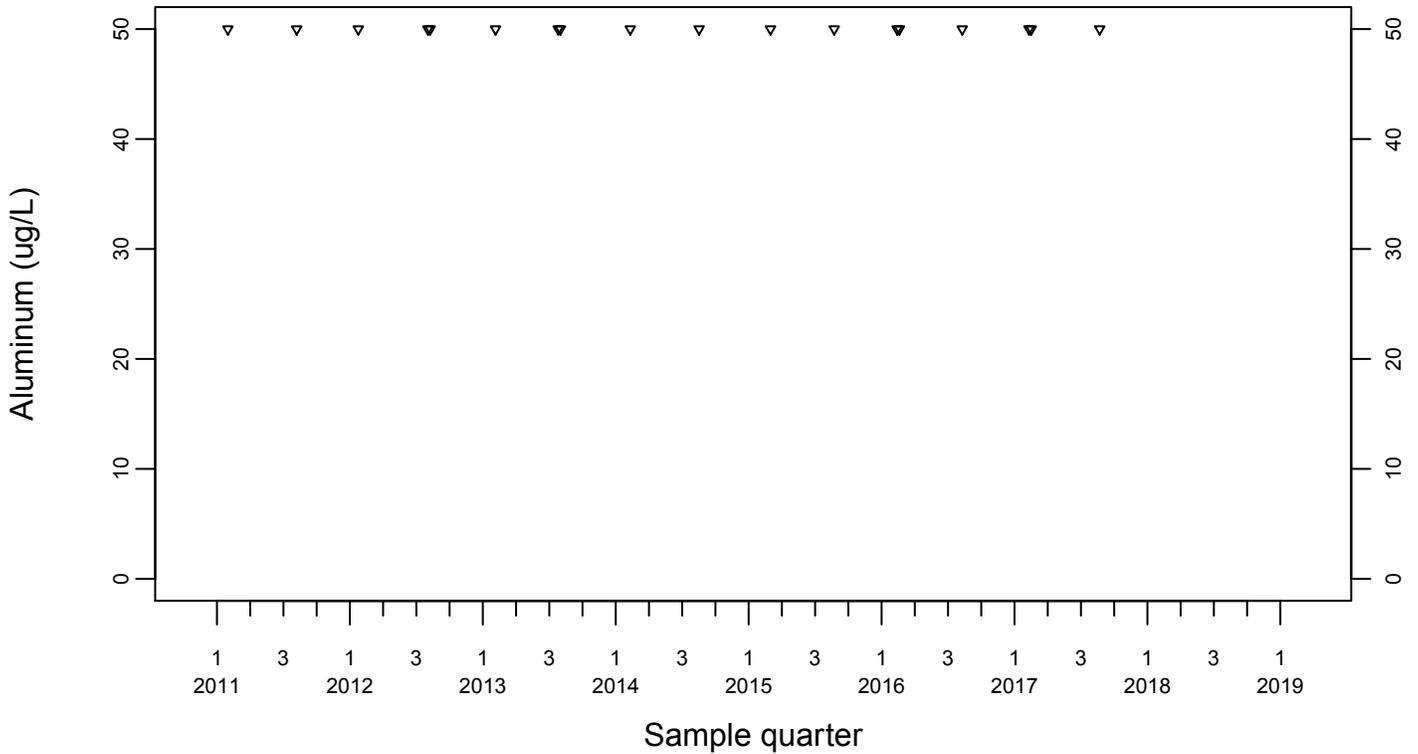
Sewage Ponds Ground Water Aluminum (ug/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



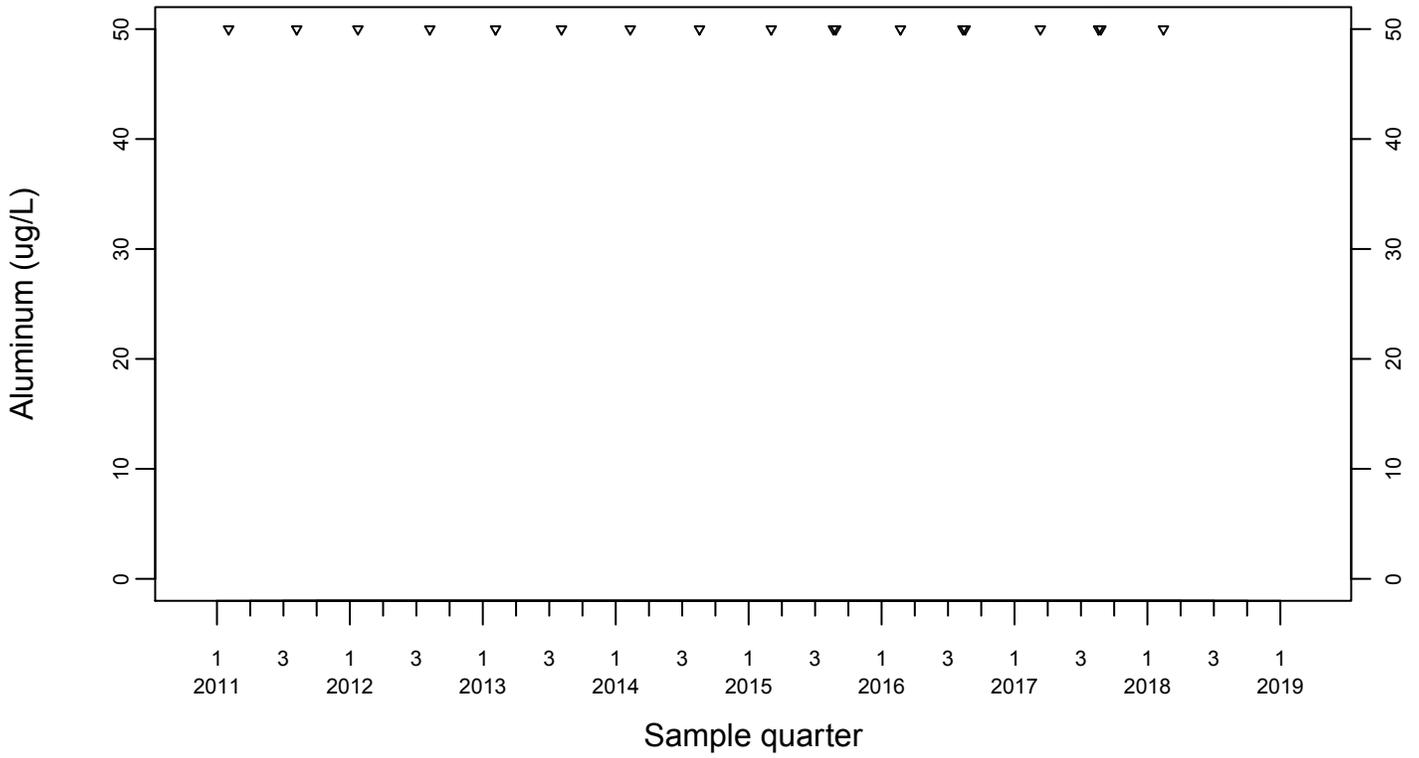
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Aluminum (ug/L)

Downgradient Monitor Well W-7DS

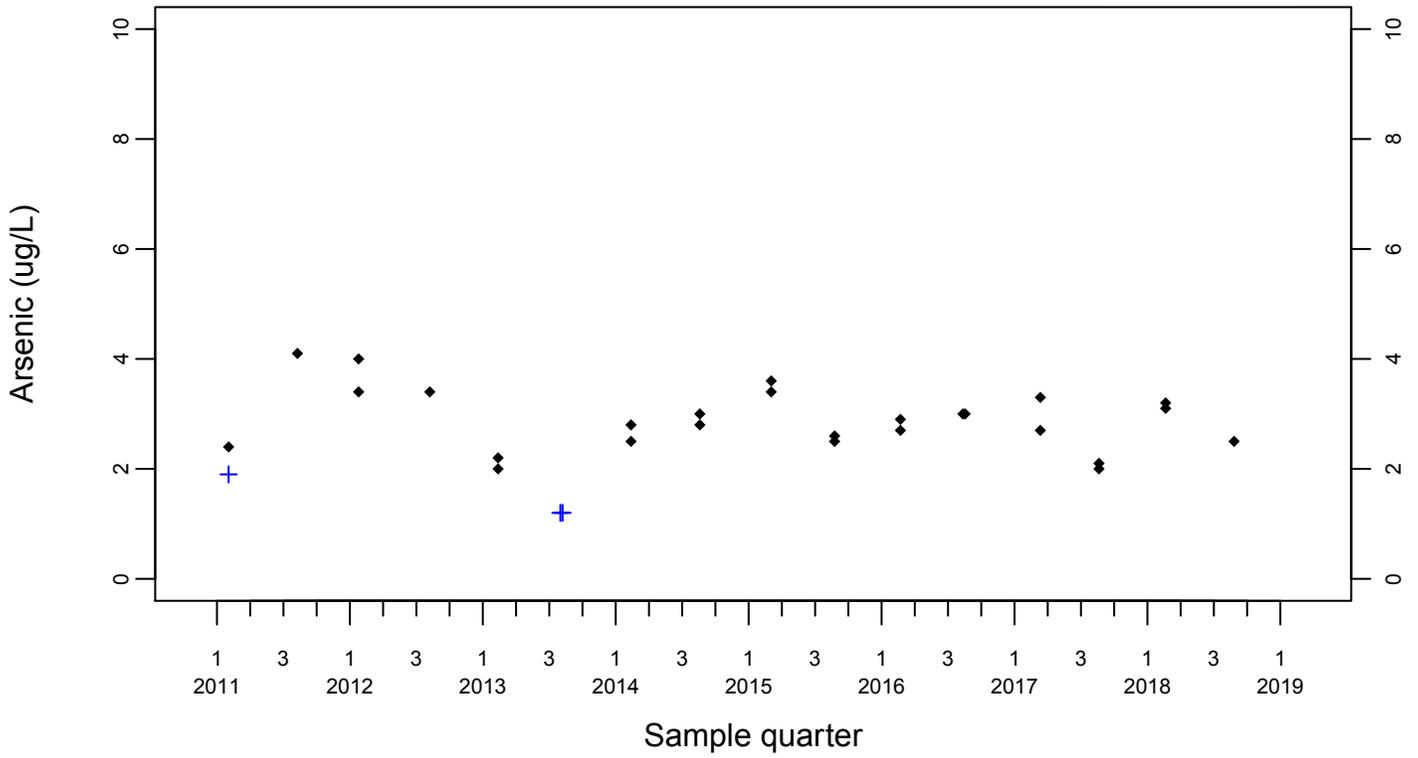
◆ Above RL
▽ Below RL



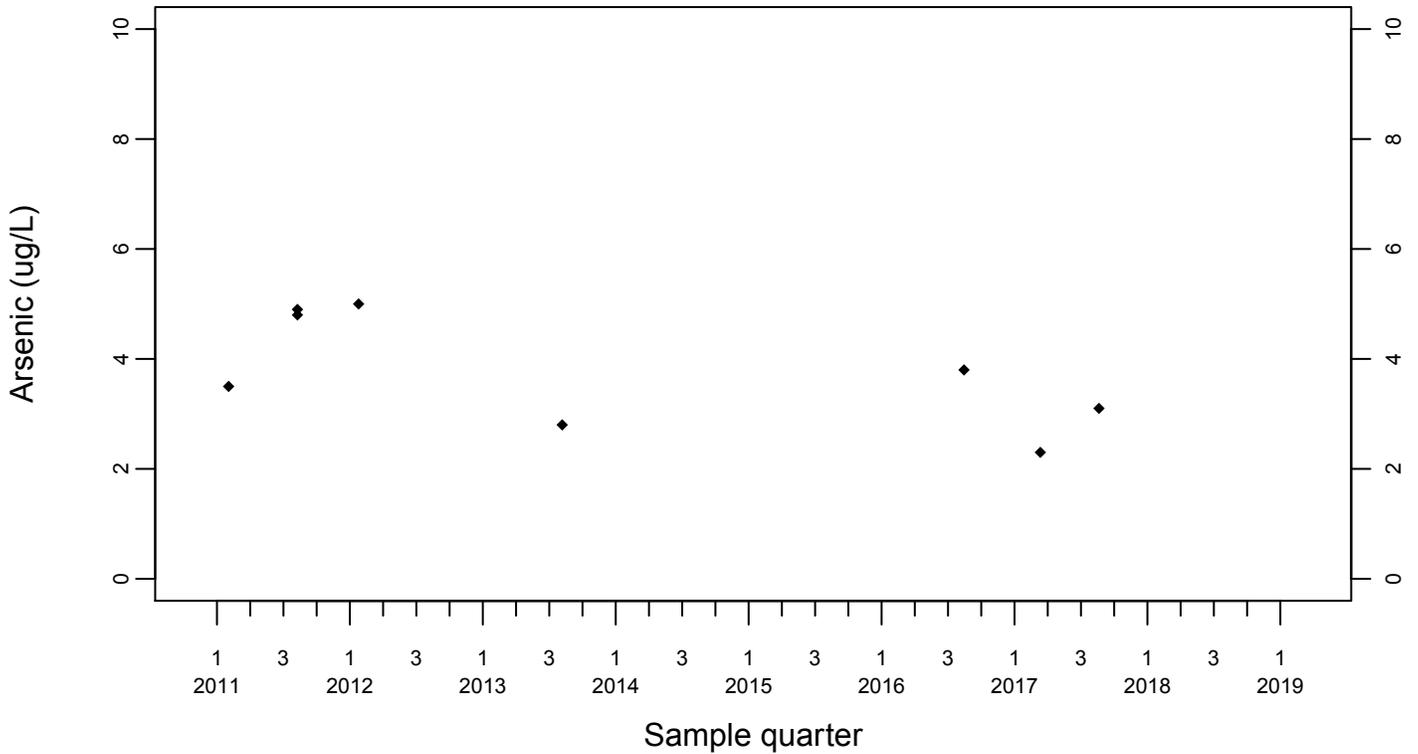
Sewage Ponds Ground Water Arsenic (ug/L)

Upgradient Monitor Well W-7ES

◆ Above RL
+ Estimated



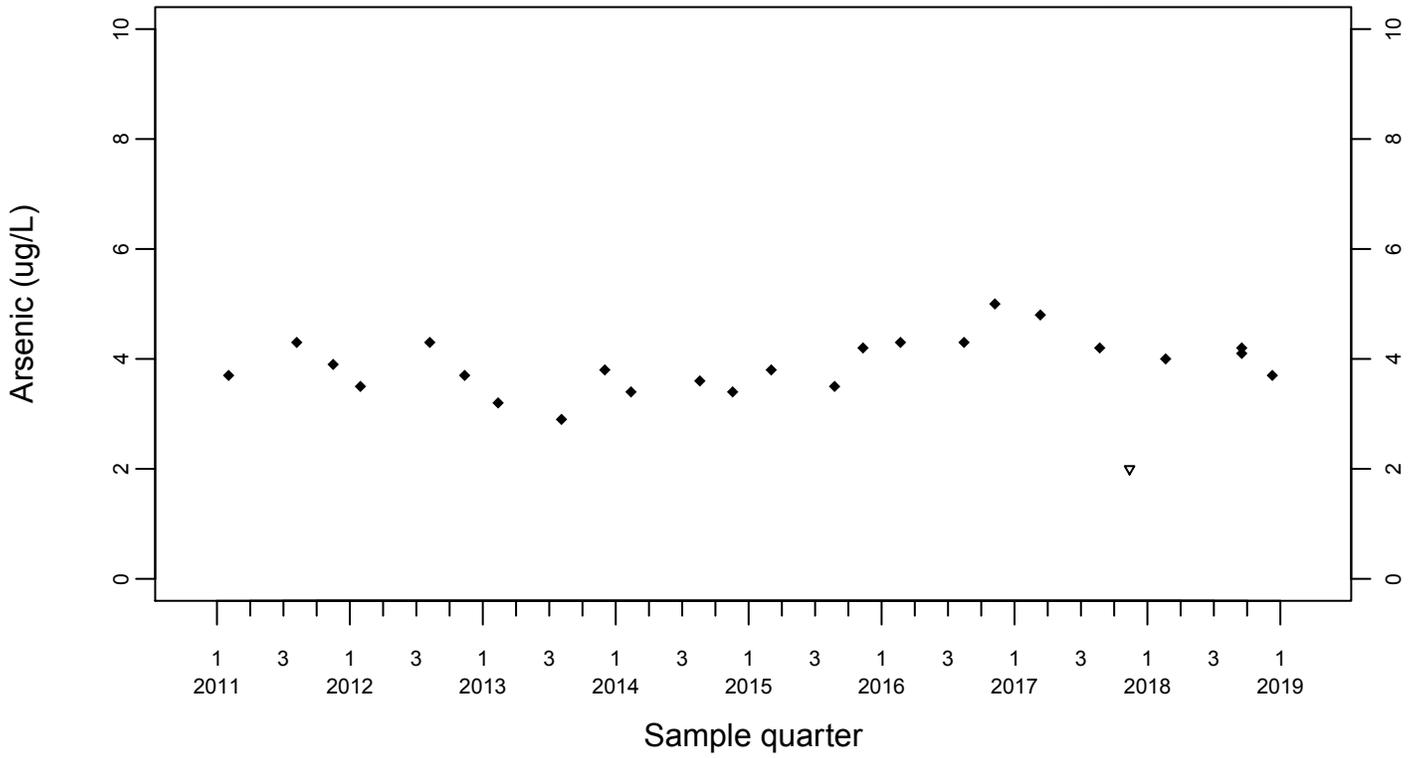
Upgradient Monitor Well W-7PS



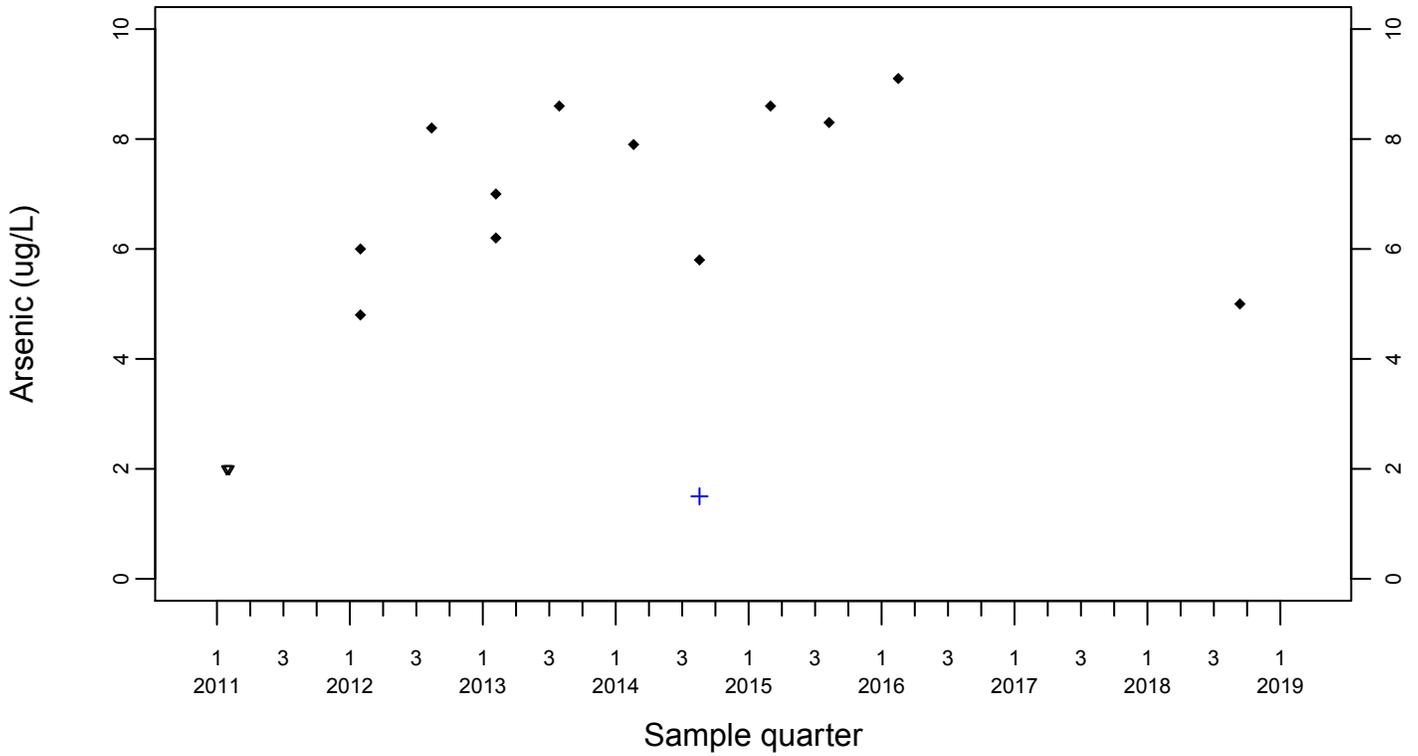
Sewage Ponds Ground Water Arsenic (ug/L)

Crossgradient Monitor Well W-35A-04

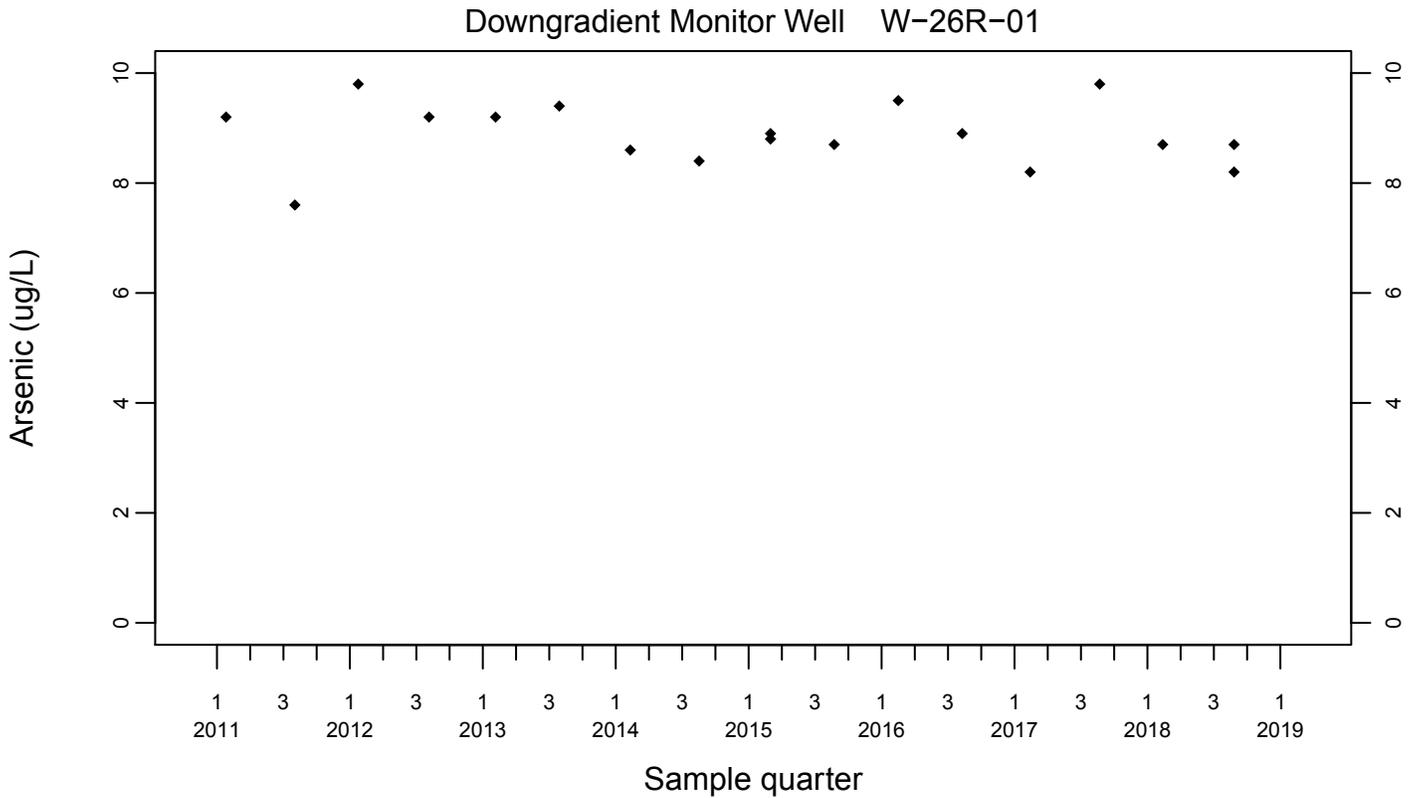
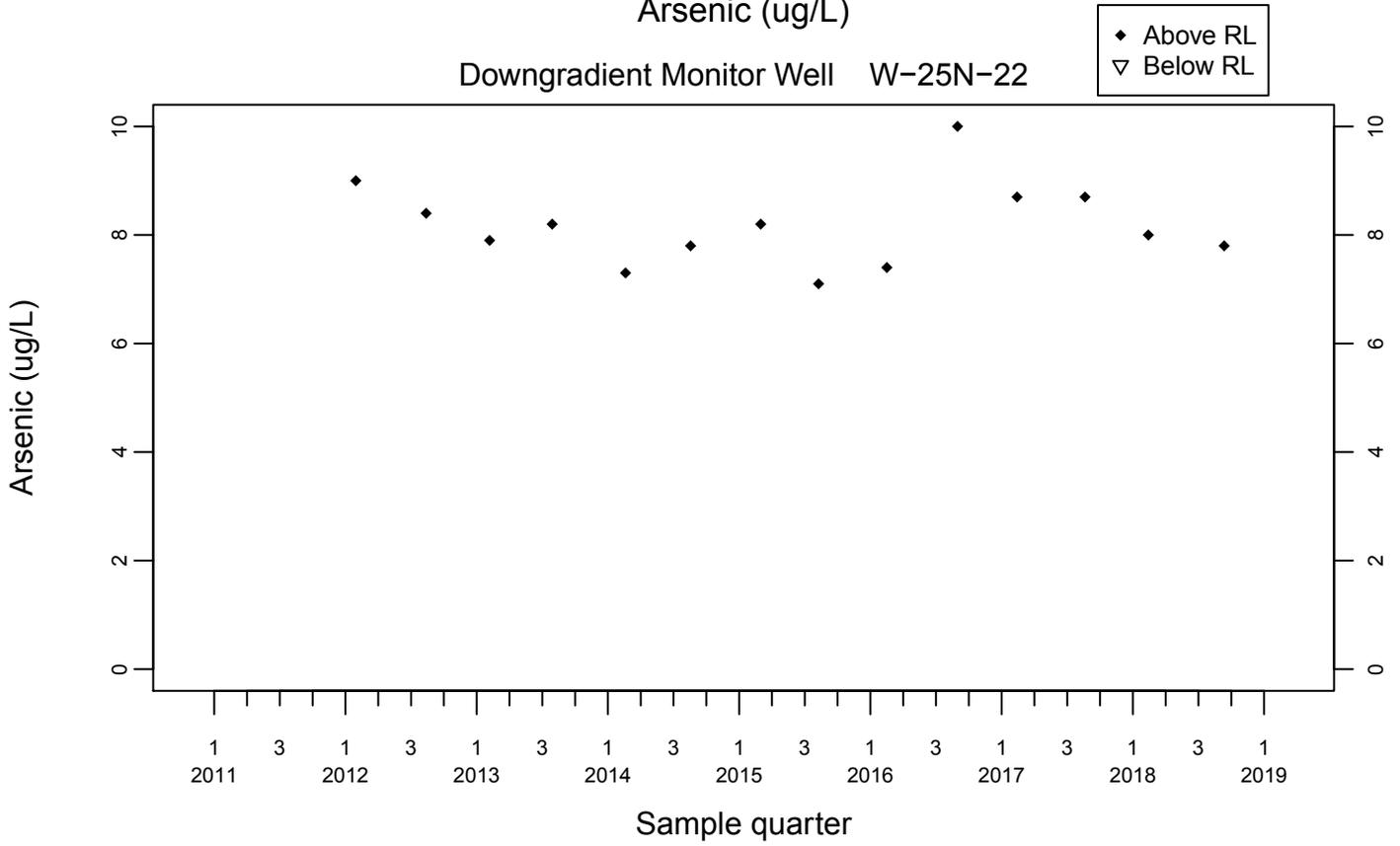
◆ Above RL
▽ Below RL



Downgradient Monitor Well W-25N-23



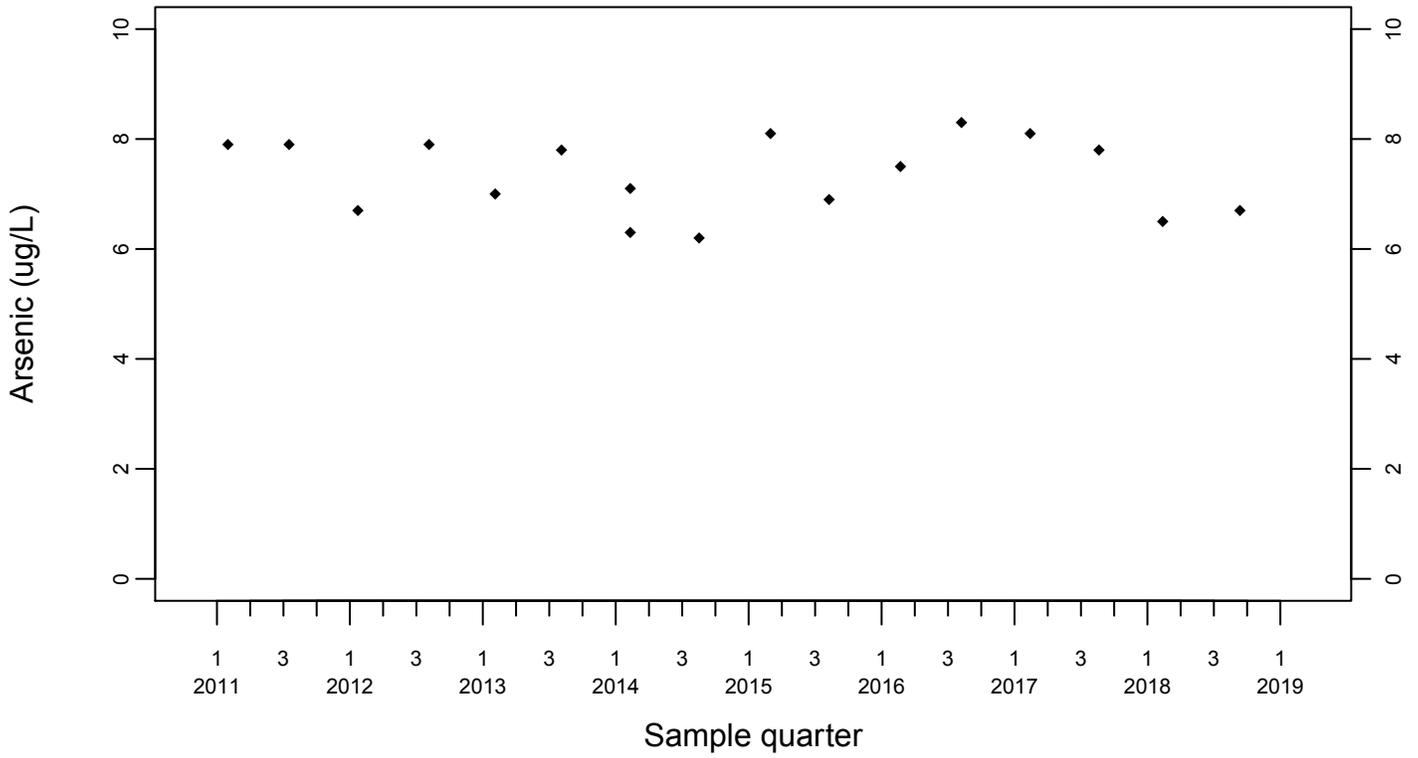
Sewage Ponds Ground Water Arsenic (ug/L)



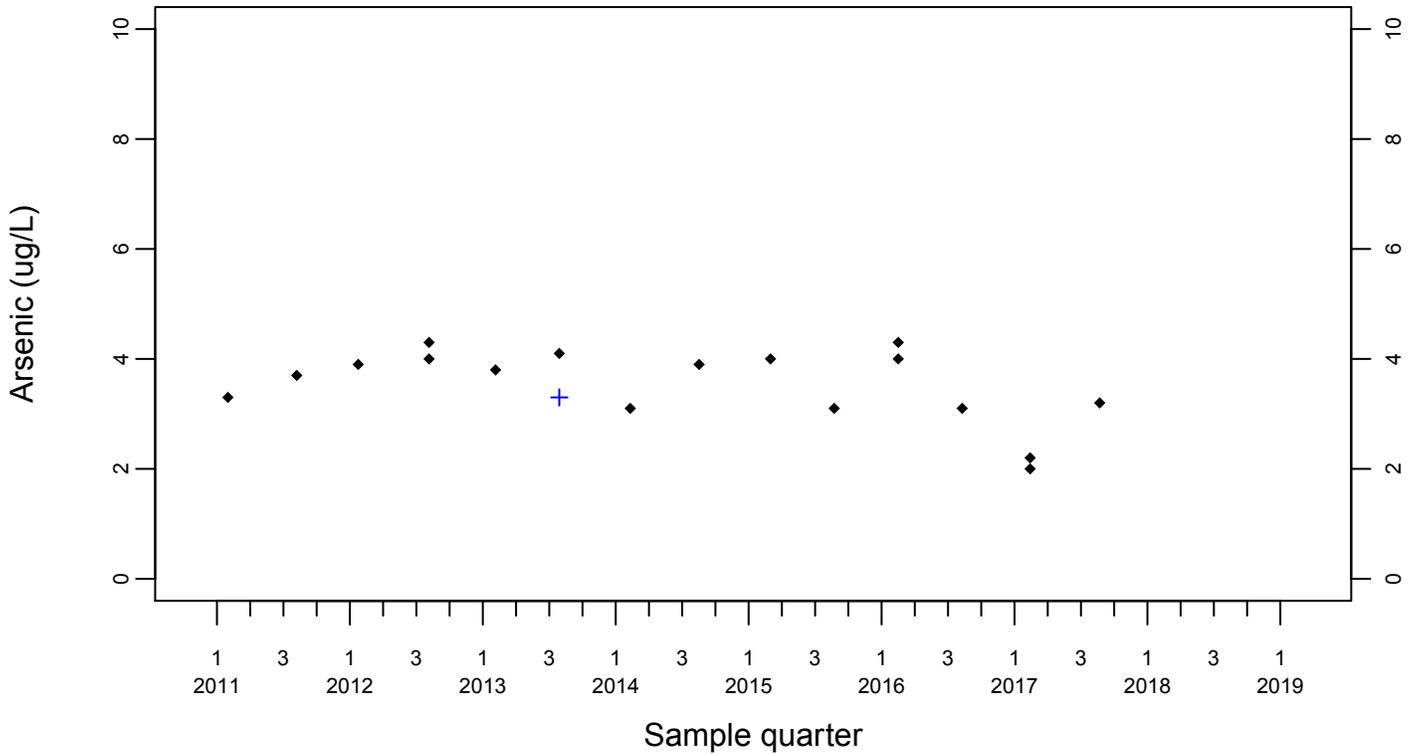
Sewage Ponds Ground Water Arsenic (ug/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



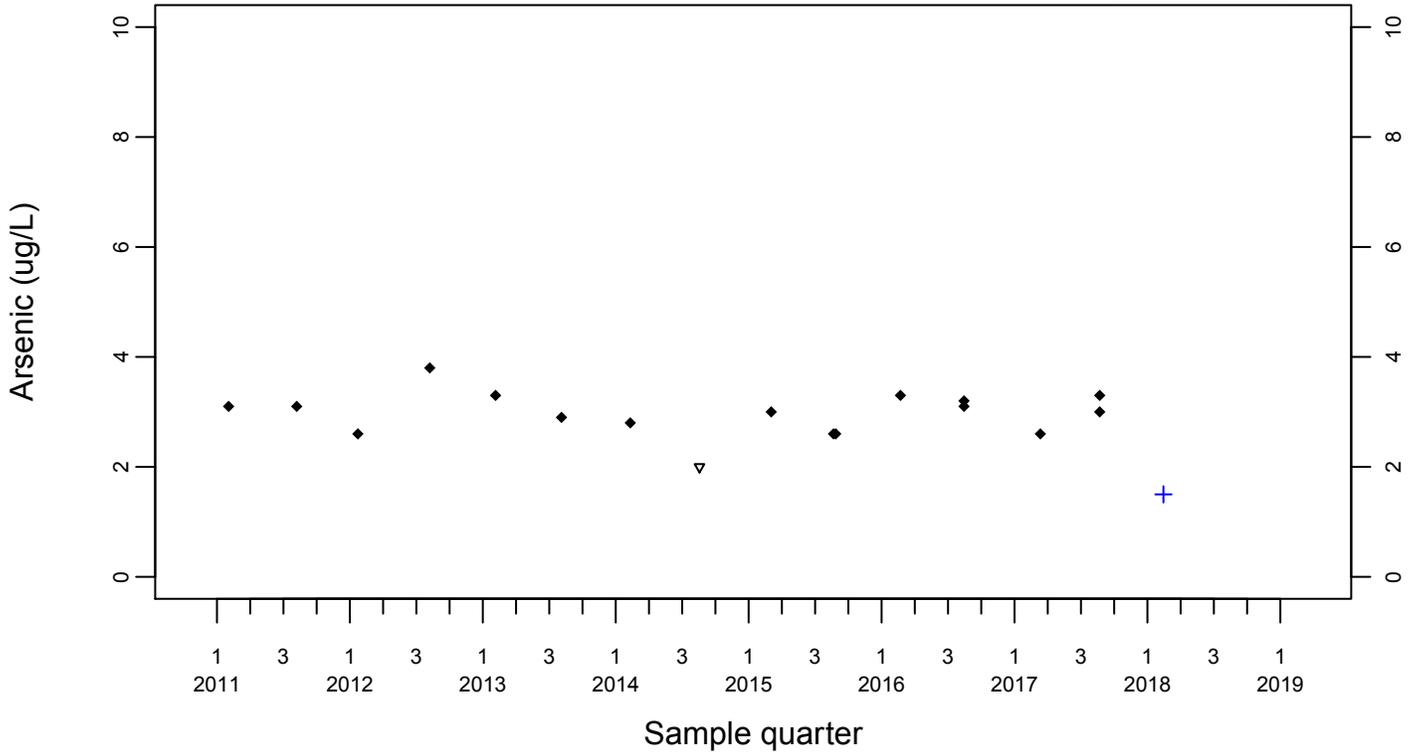
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Arsenic (ug/L)

Downgradient Monitor Well W-7DS

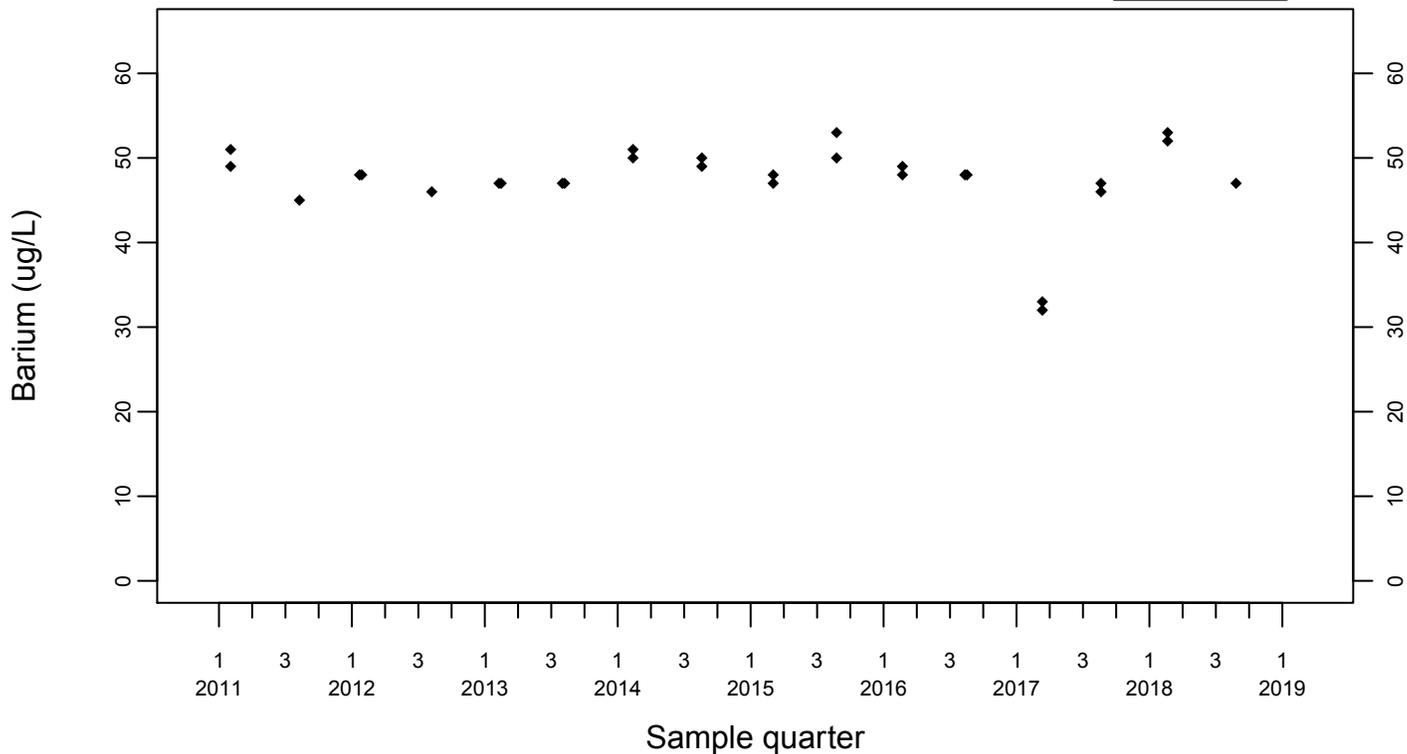
- ◆ Above RL
- ▽ Below RL
- + Estimated



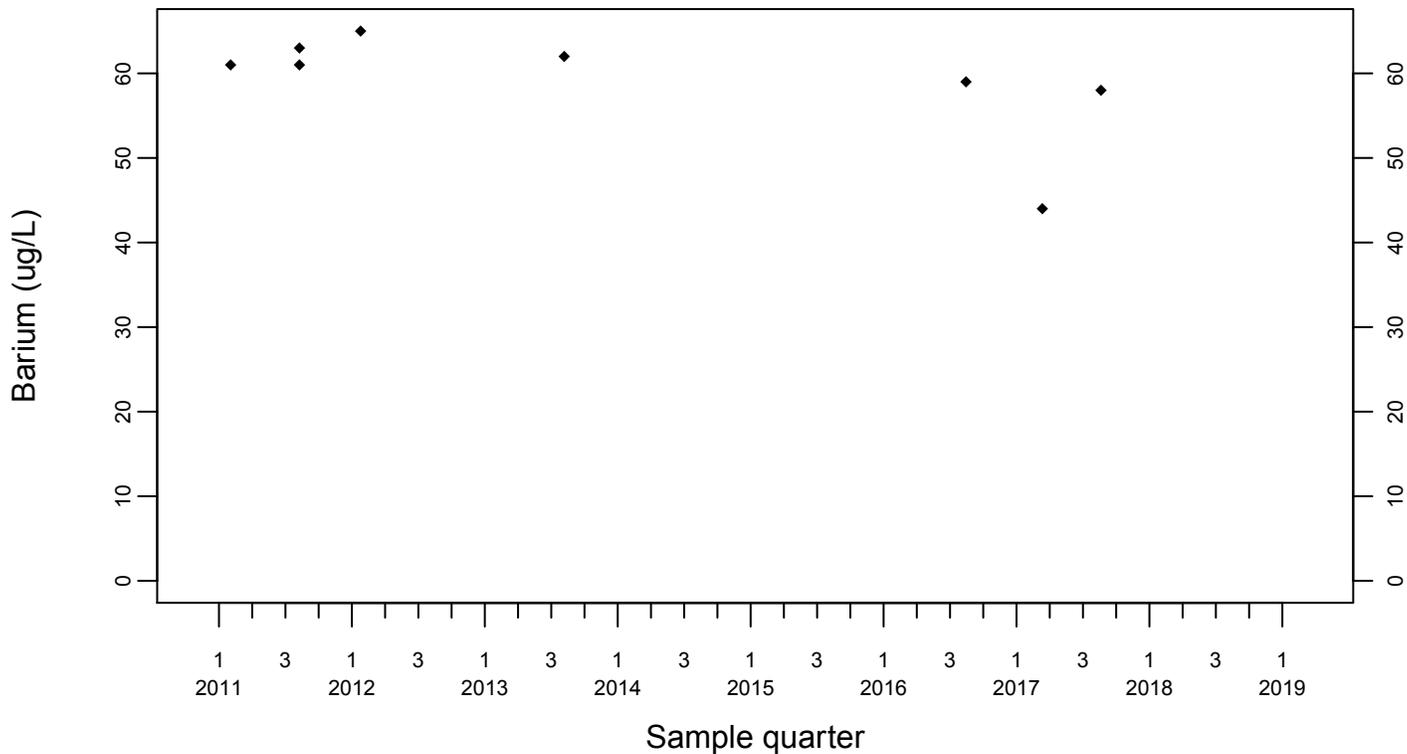
Sewage Ponds Ground Water Barium (ug/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



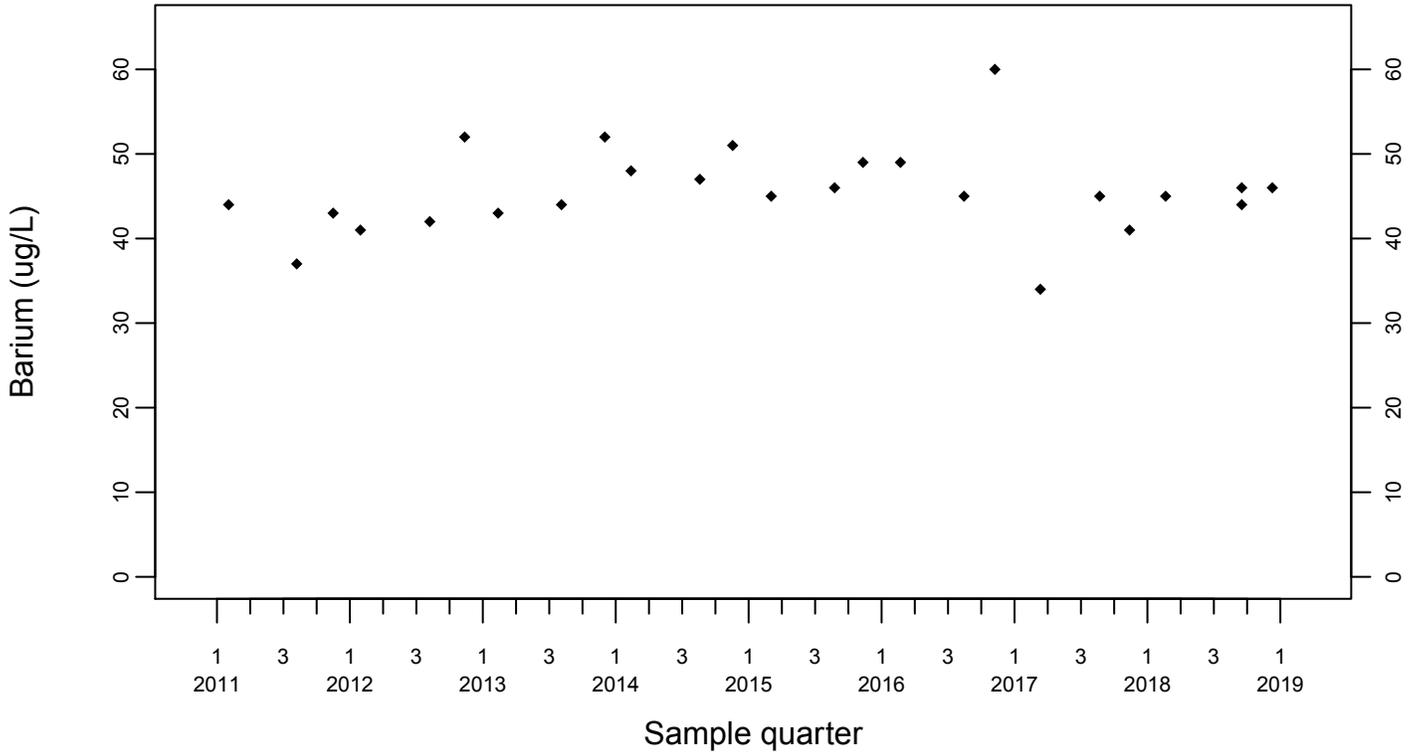
Upgradient Monitor Well W-7PS



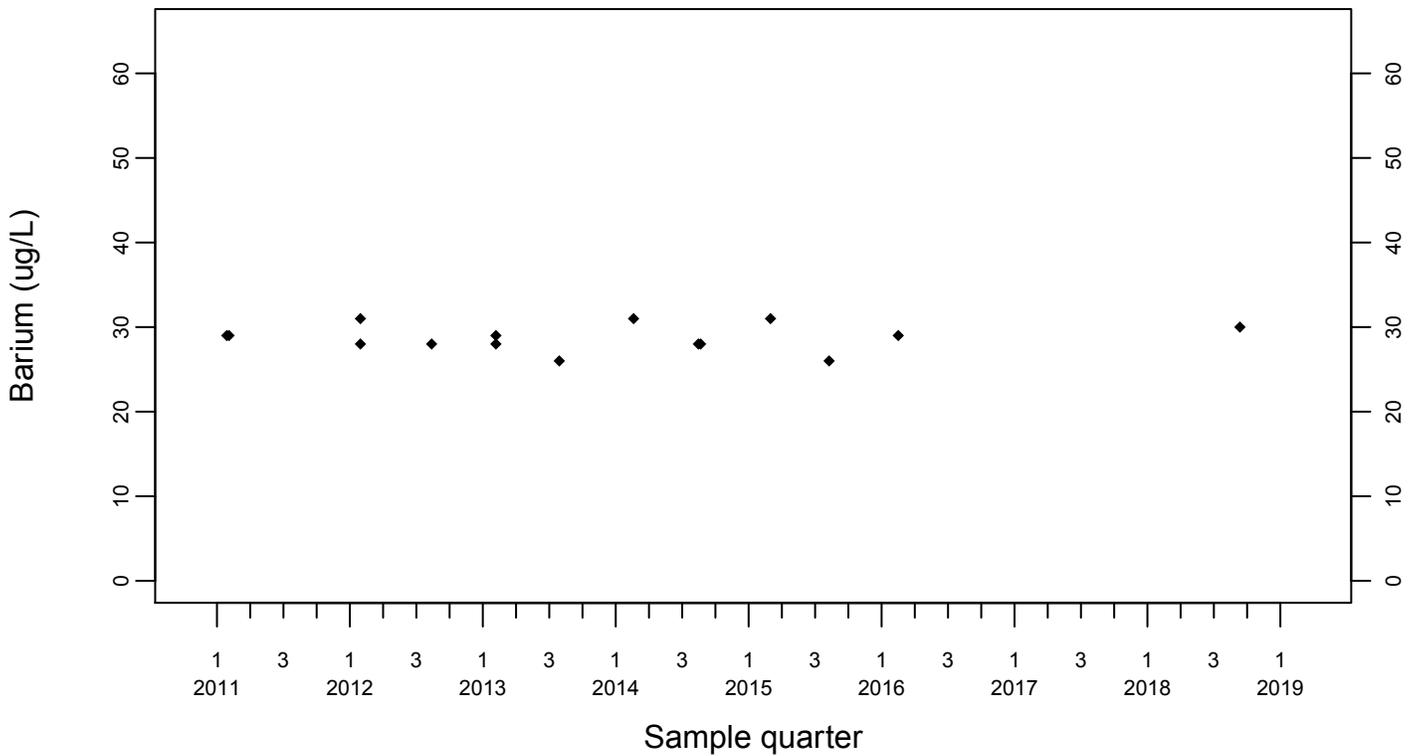
Sewage Ponds Ground Water Barium (ug/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



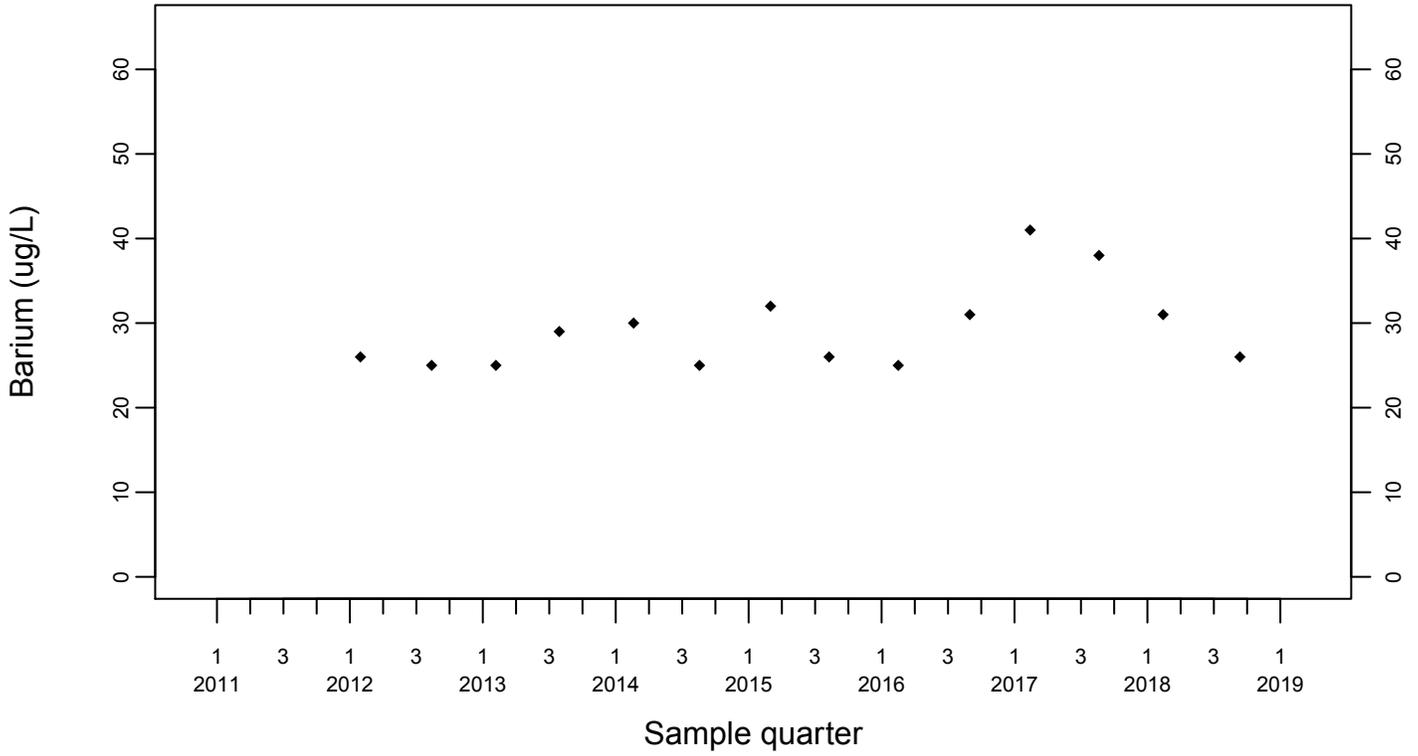
Downgradient Monitor Well W-25N-23



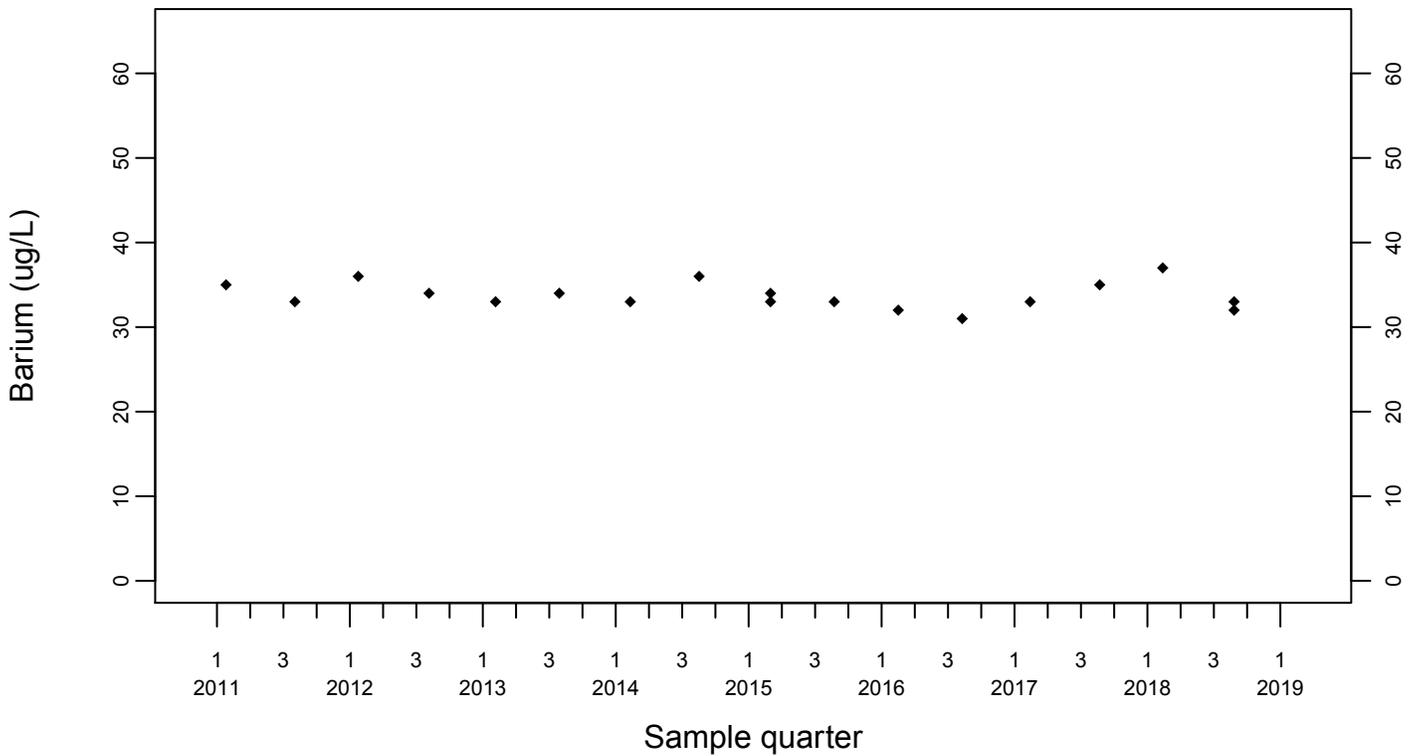
Sewage Ponds Ground Water
 Barium (ug/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
 ▼ Below RL



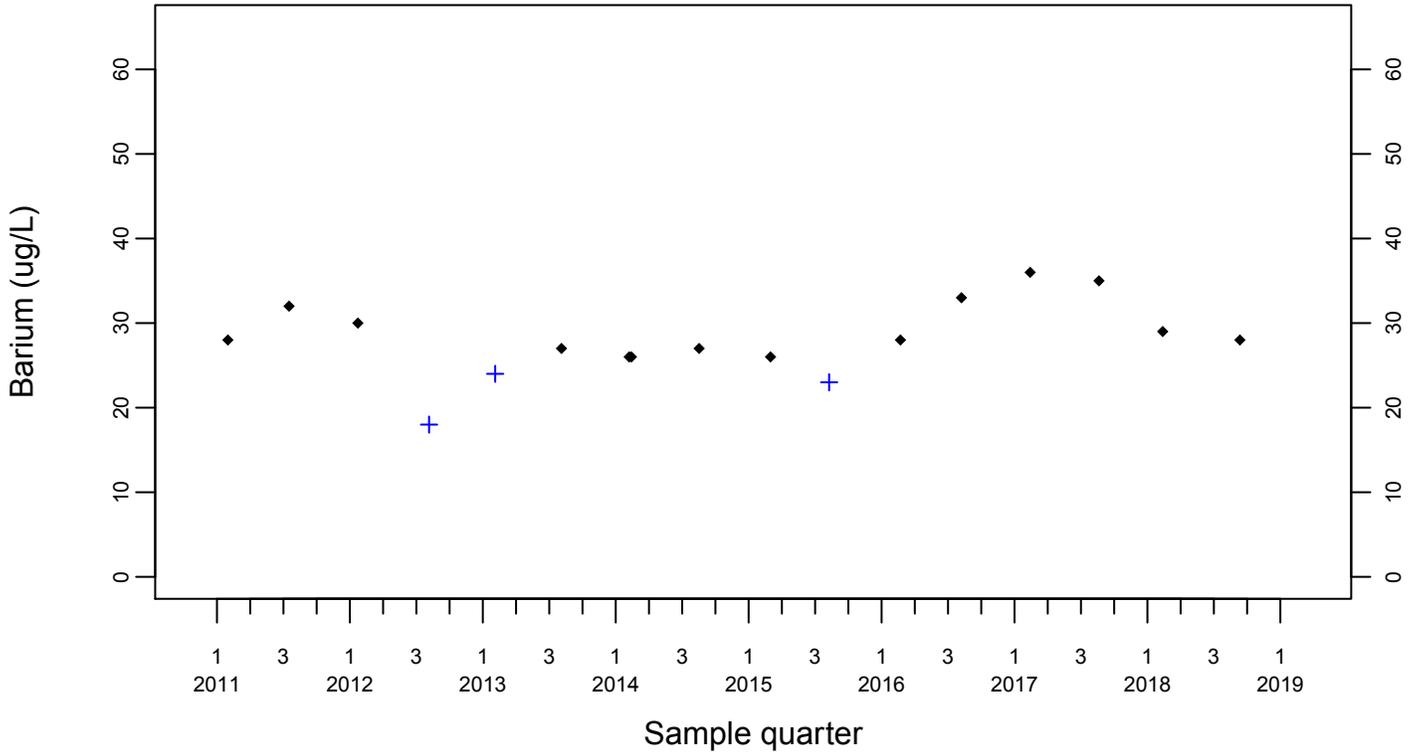
Downgradient Monitor Well W-26R-01



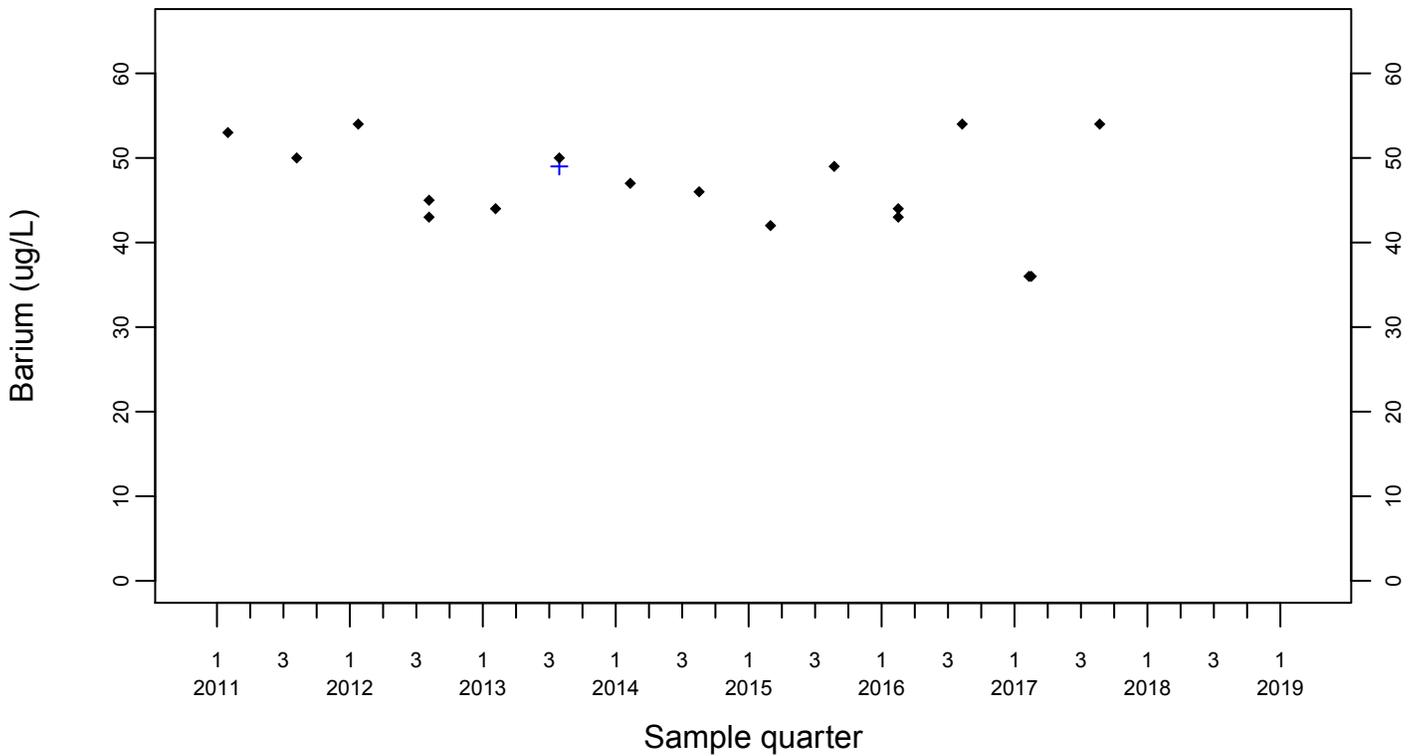
Sewage Ponds Ground Water
 Barium (ug/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
 + Estimated



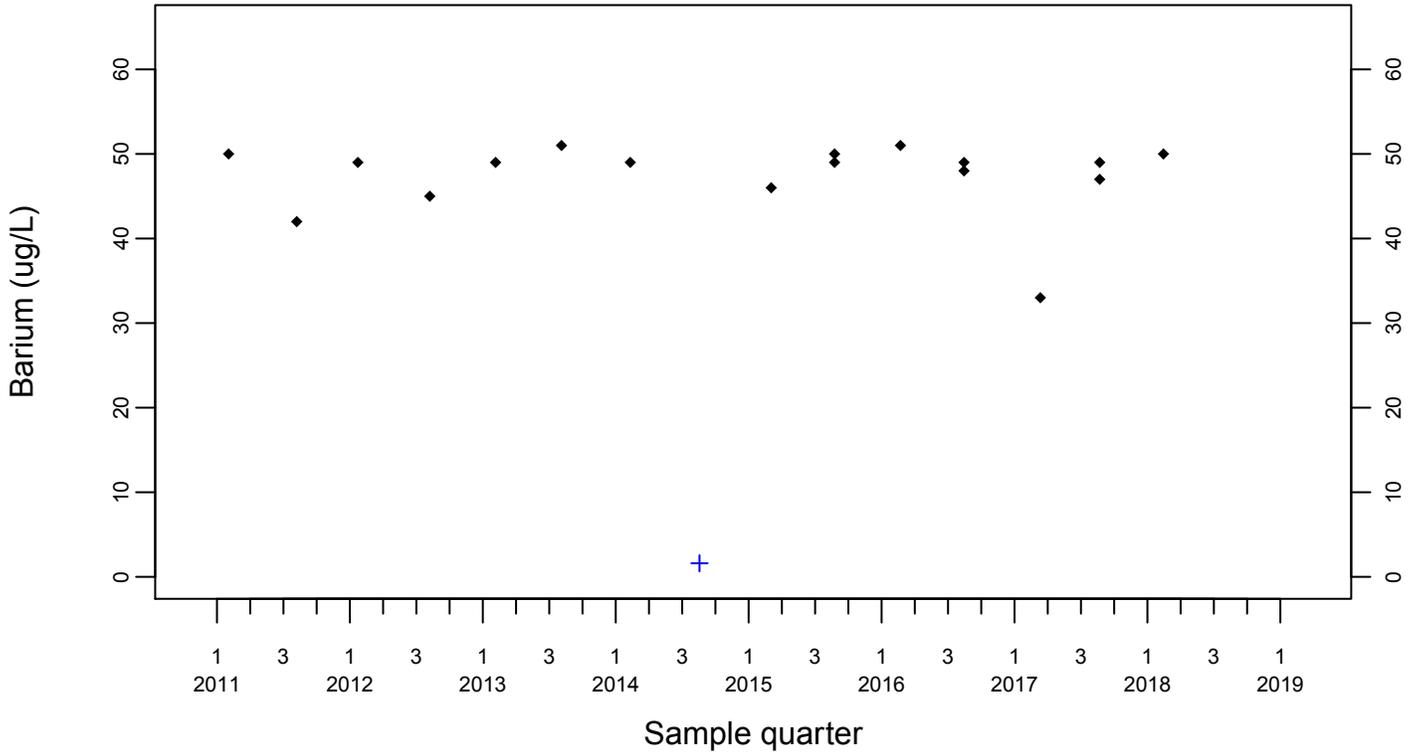
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Barium (ug/L)

Downgradient Monitor Well W-7DS

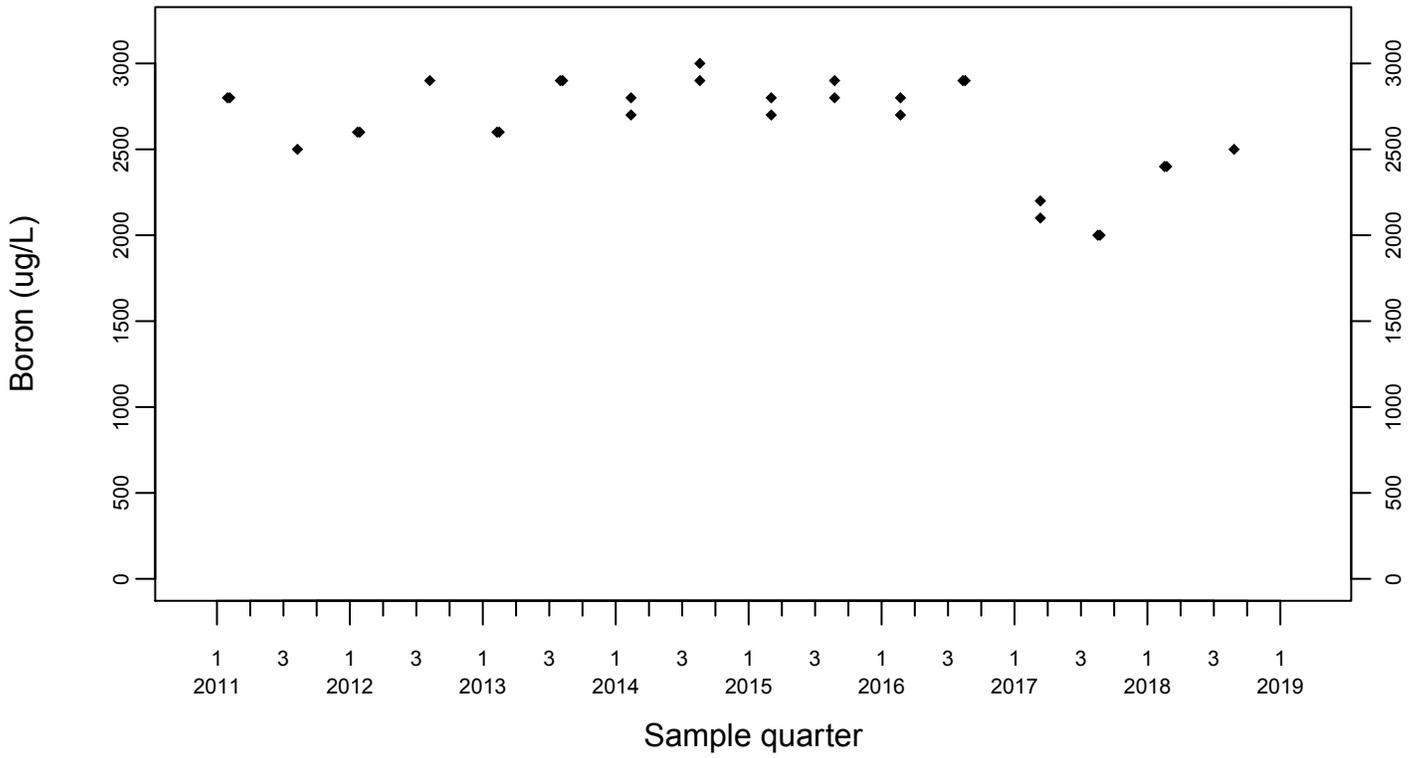
◆ Above RL
+ Estimated



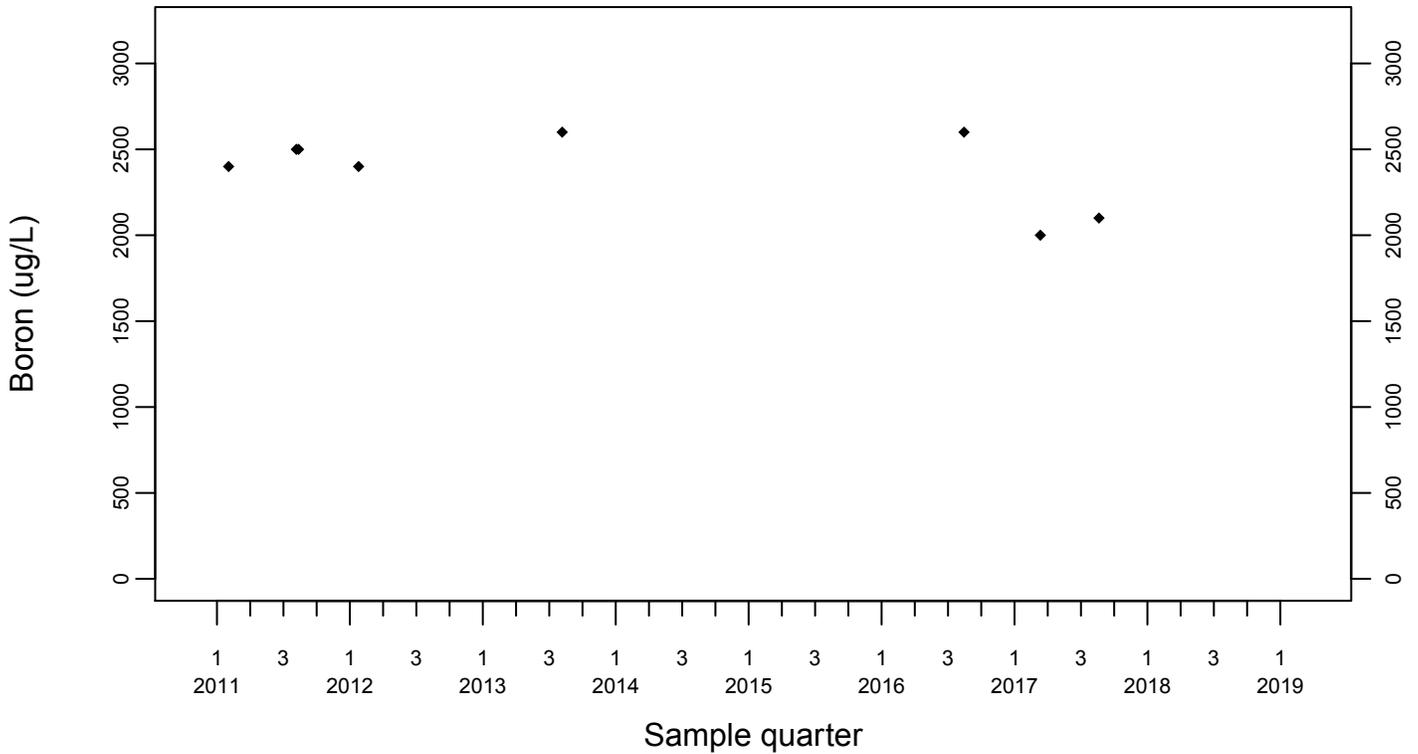
Sewage Ponds Ground Water Boron (ug/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



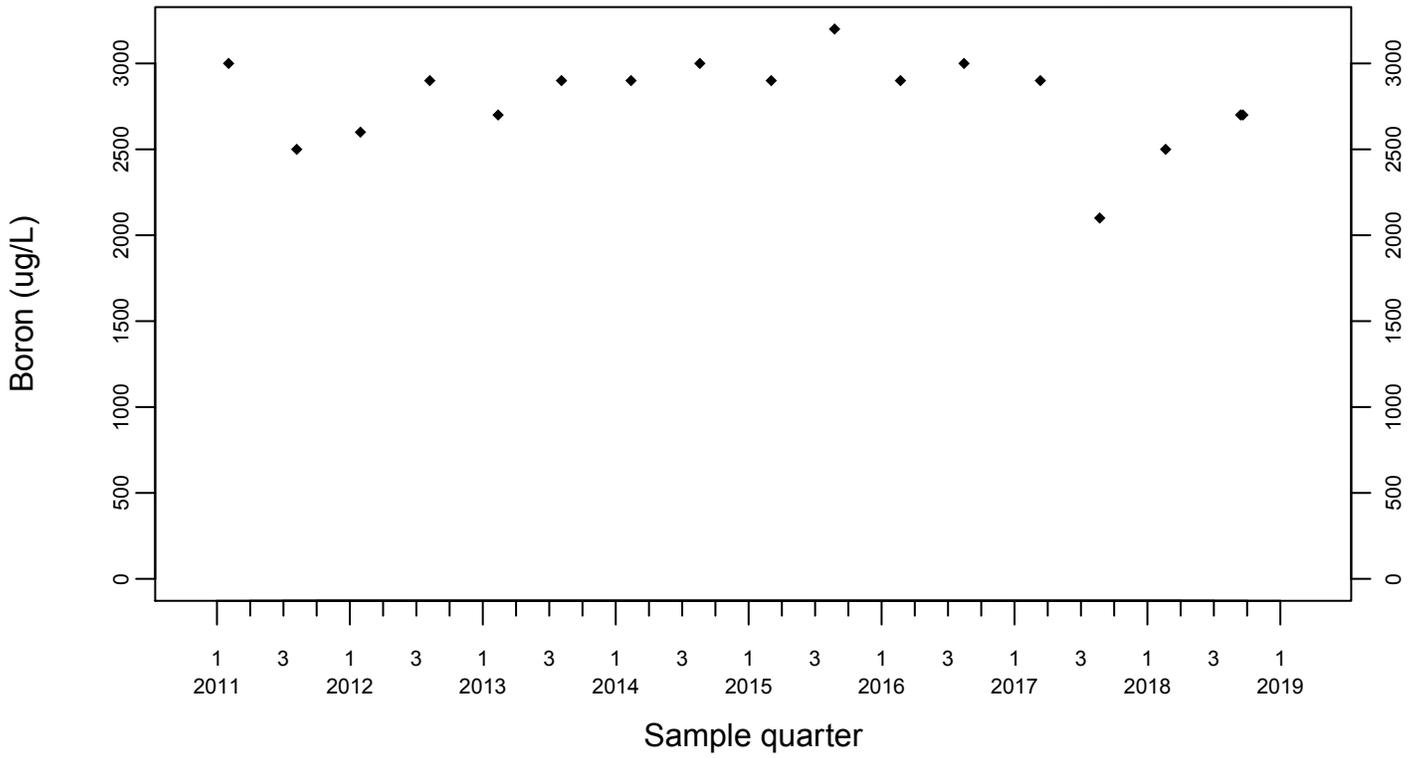
Upgradient Monitor Well W-7PS



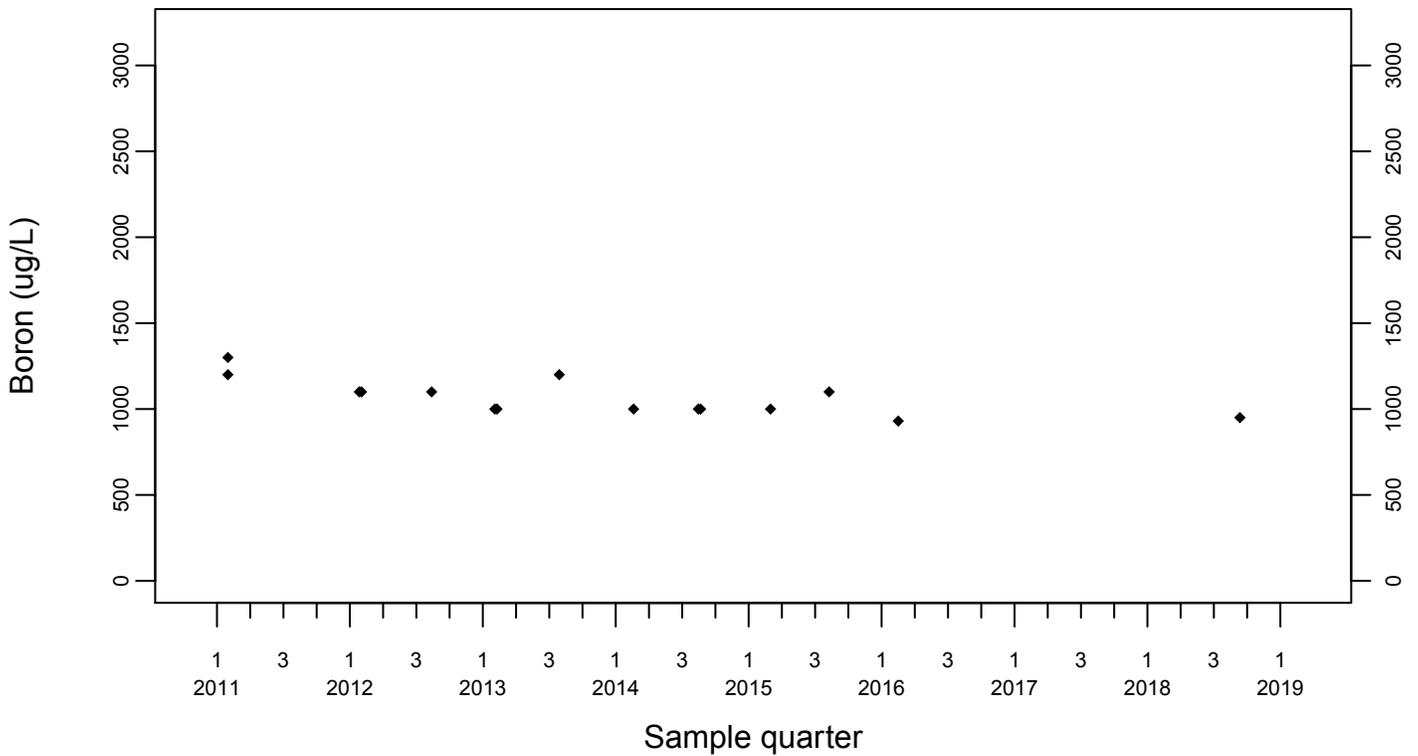
Sewage Ponds Ground Water Boron (ug/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



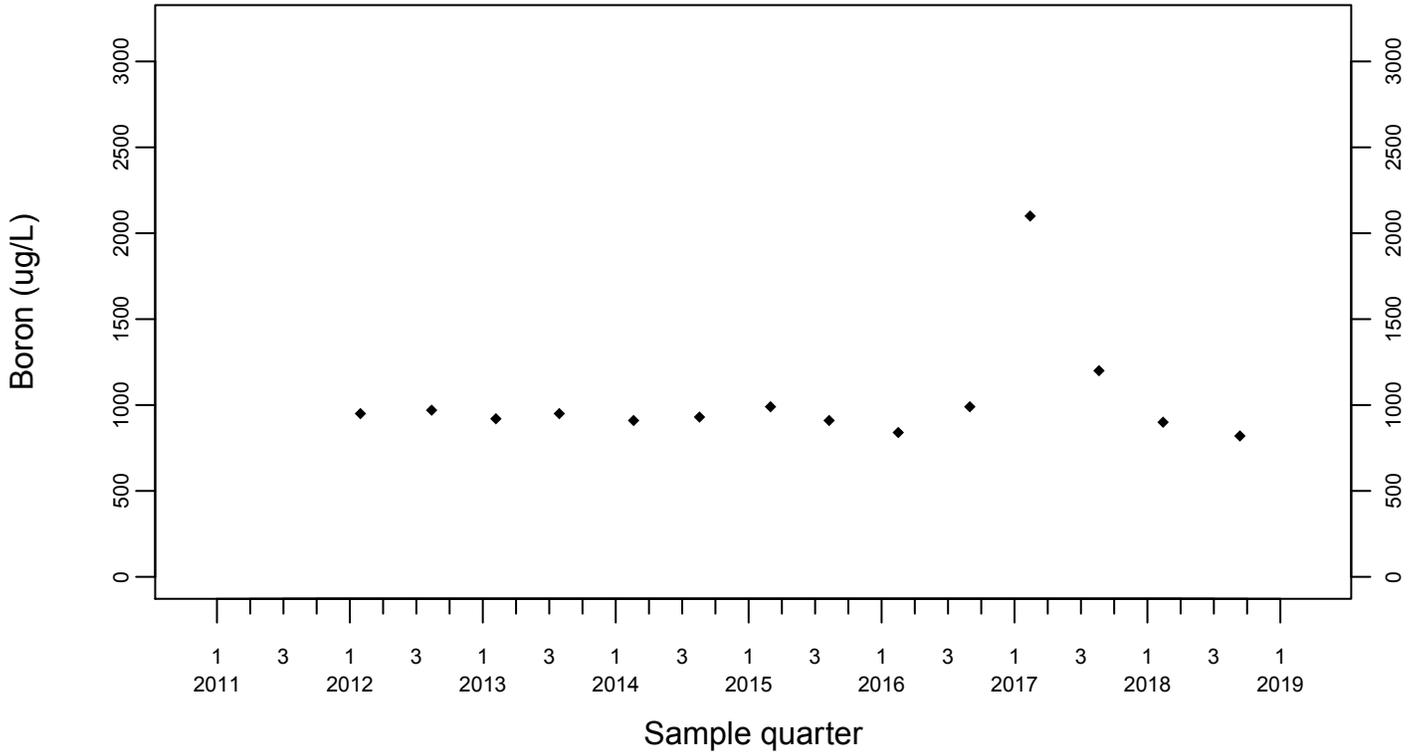
Downgradient Monitor Well W-25N-23



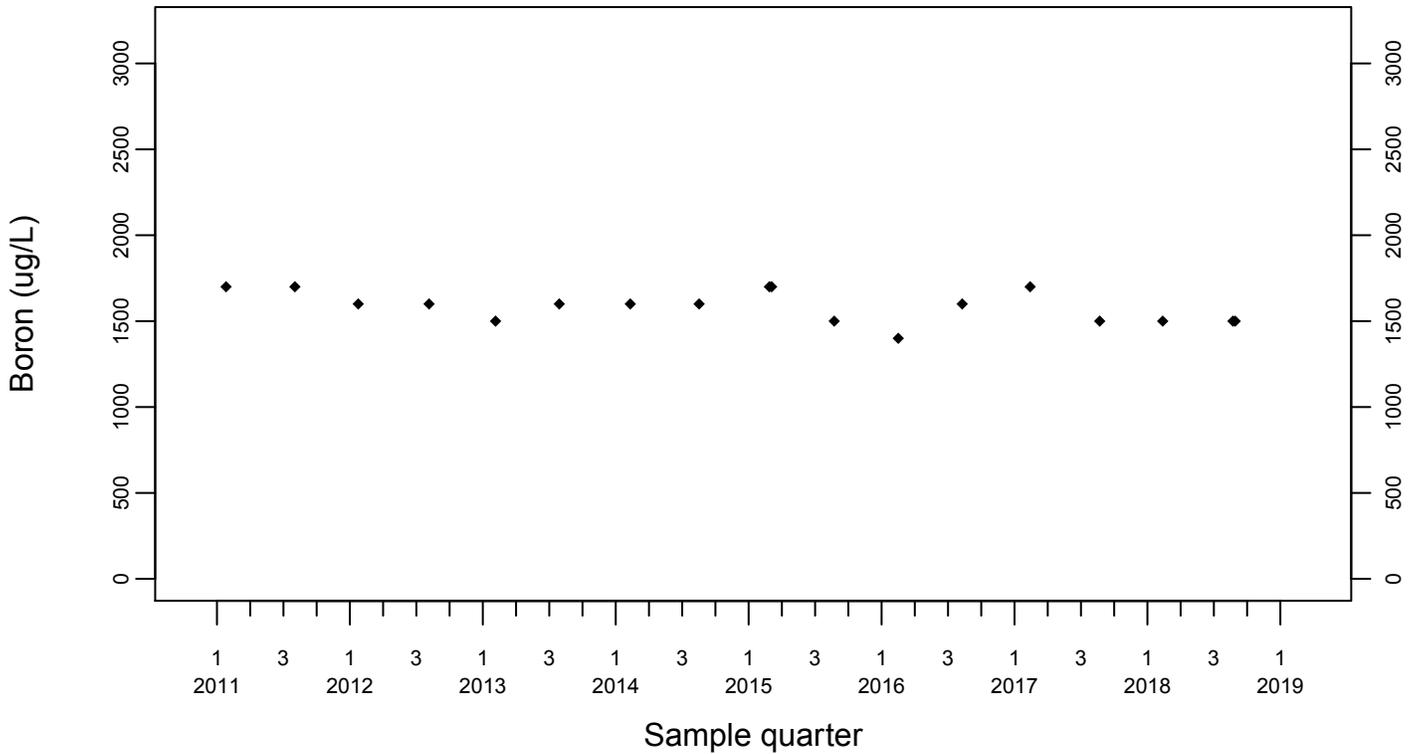
Sewage Ponds Ground Water Boron (ug/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
▽ Below RL



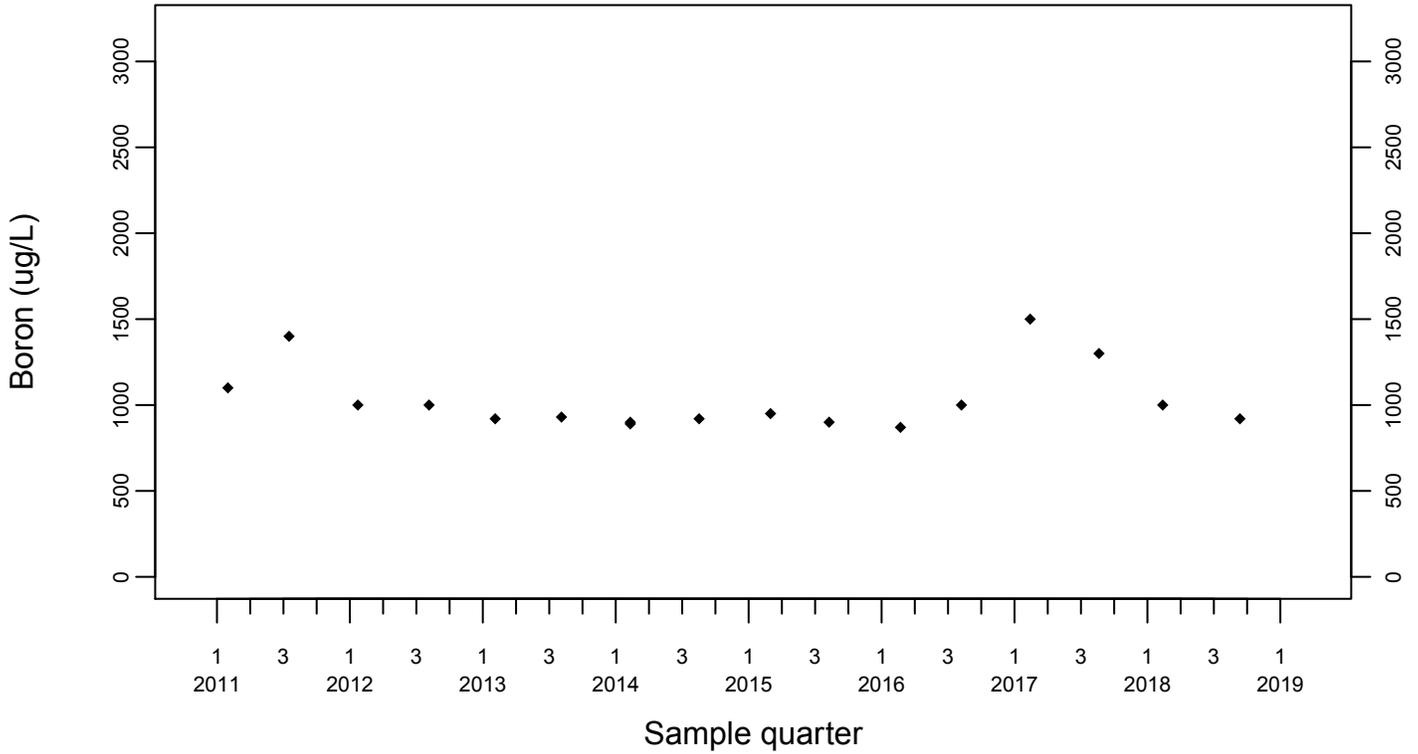
Downgradient Monitor Well W-26R-01



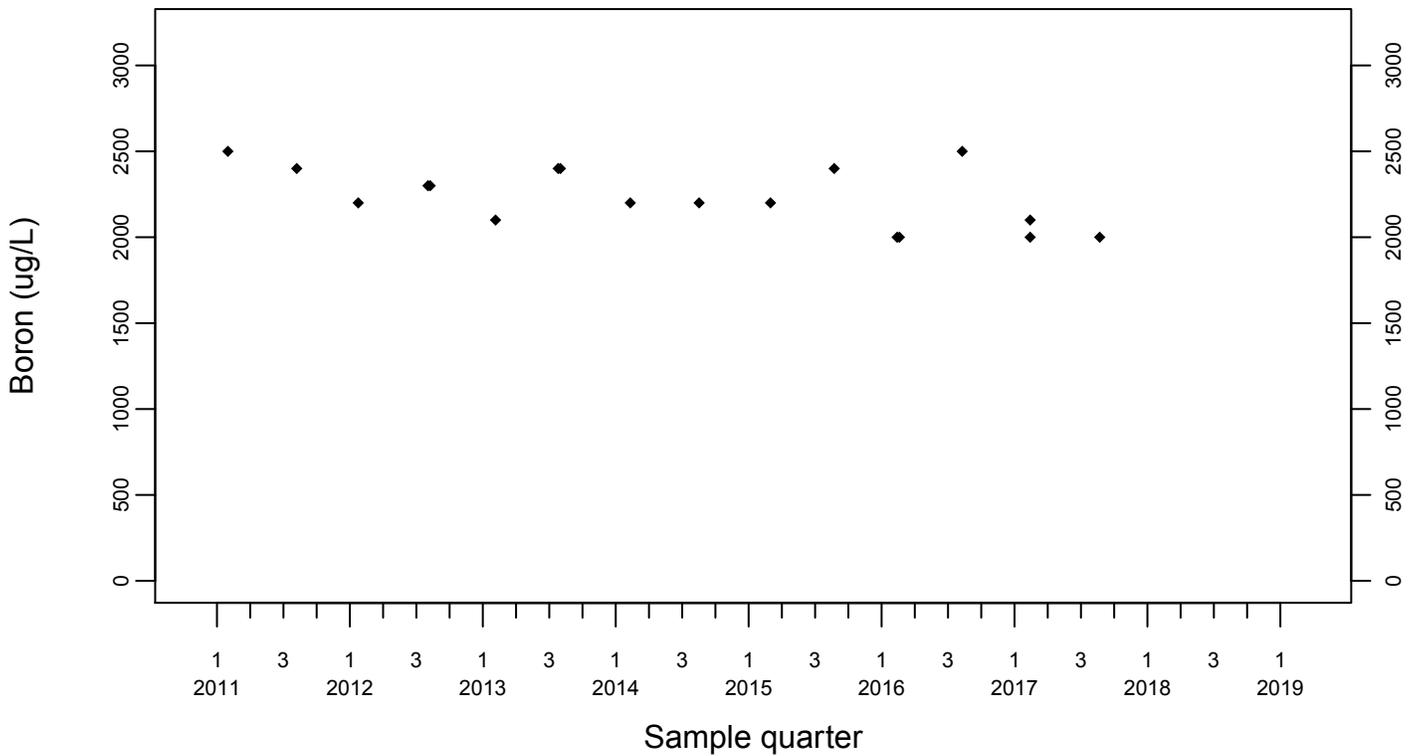
Sewage Ponds Ground Water Boron (ug/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



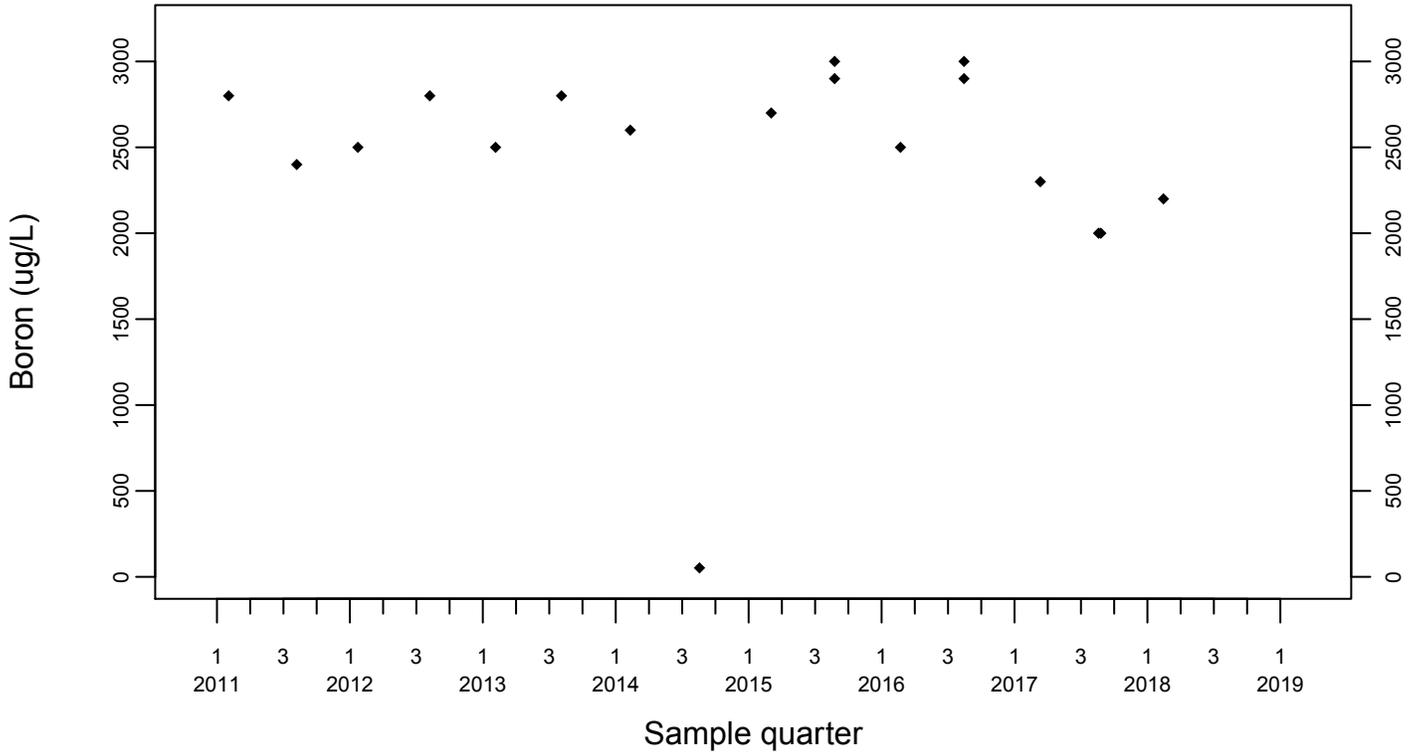
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Boron (ug/L)

Downgradient Monitor Well W-7DS

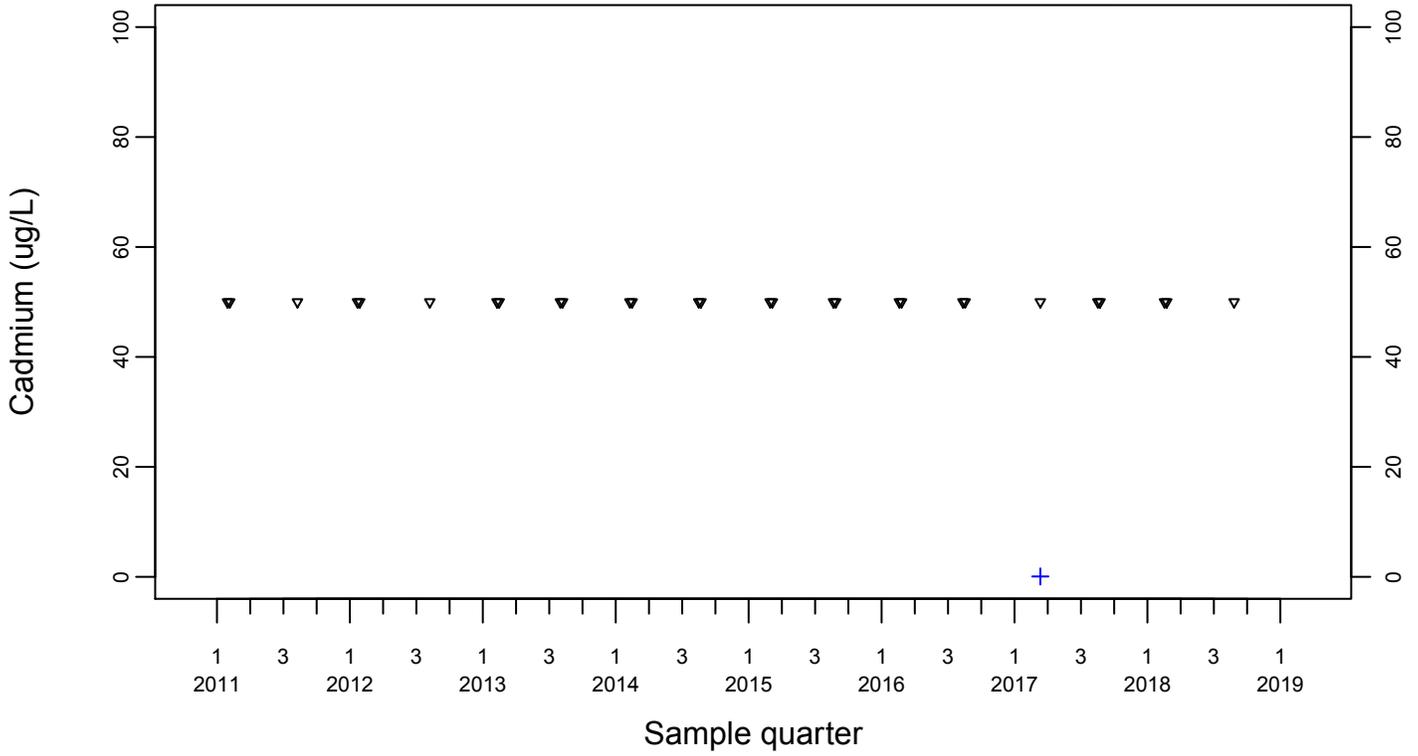
◆ Above RL
▽ Below RL



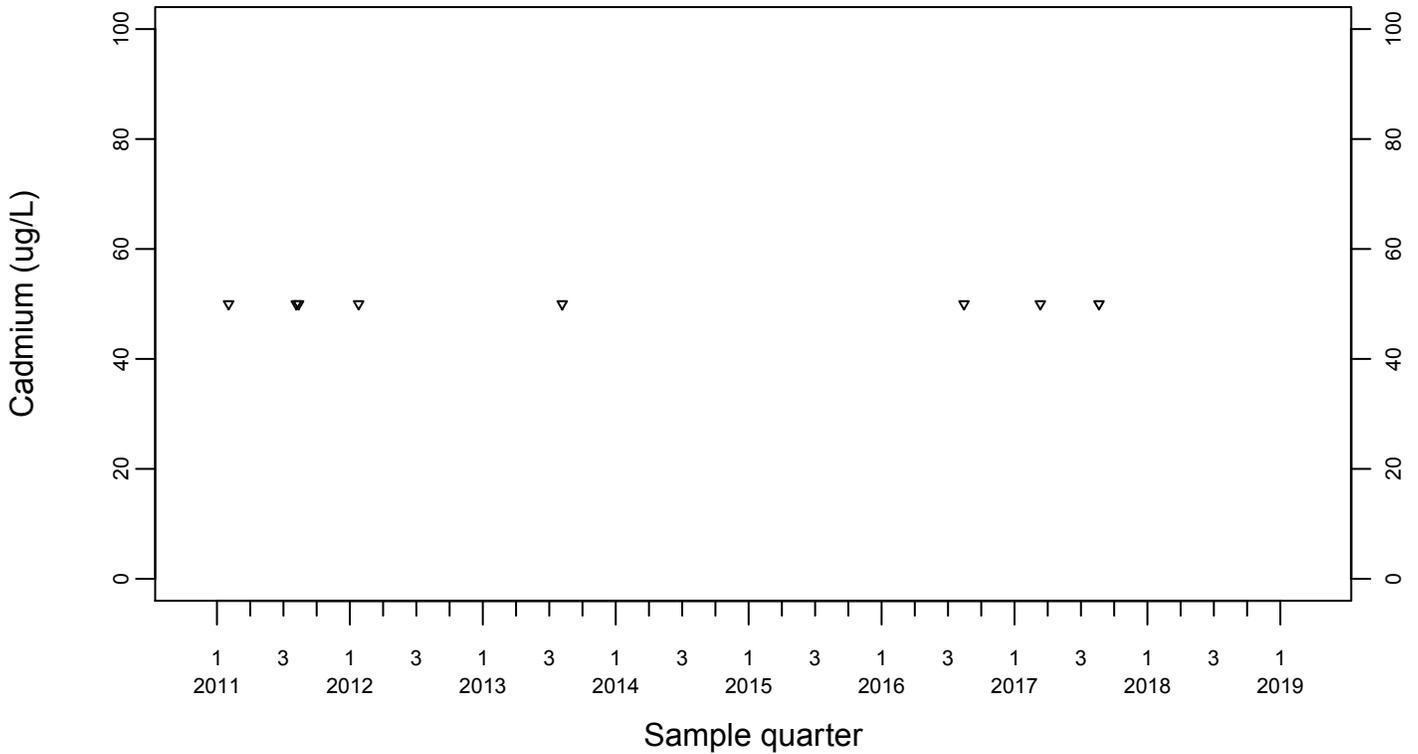
Sewage Ponds Ground Water Cadmium (ug/L)

Upgradient Monitor Well W-7ES

- ◆ Above RL
- ▽ Below RL
- + Estimated



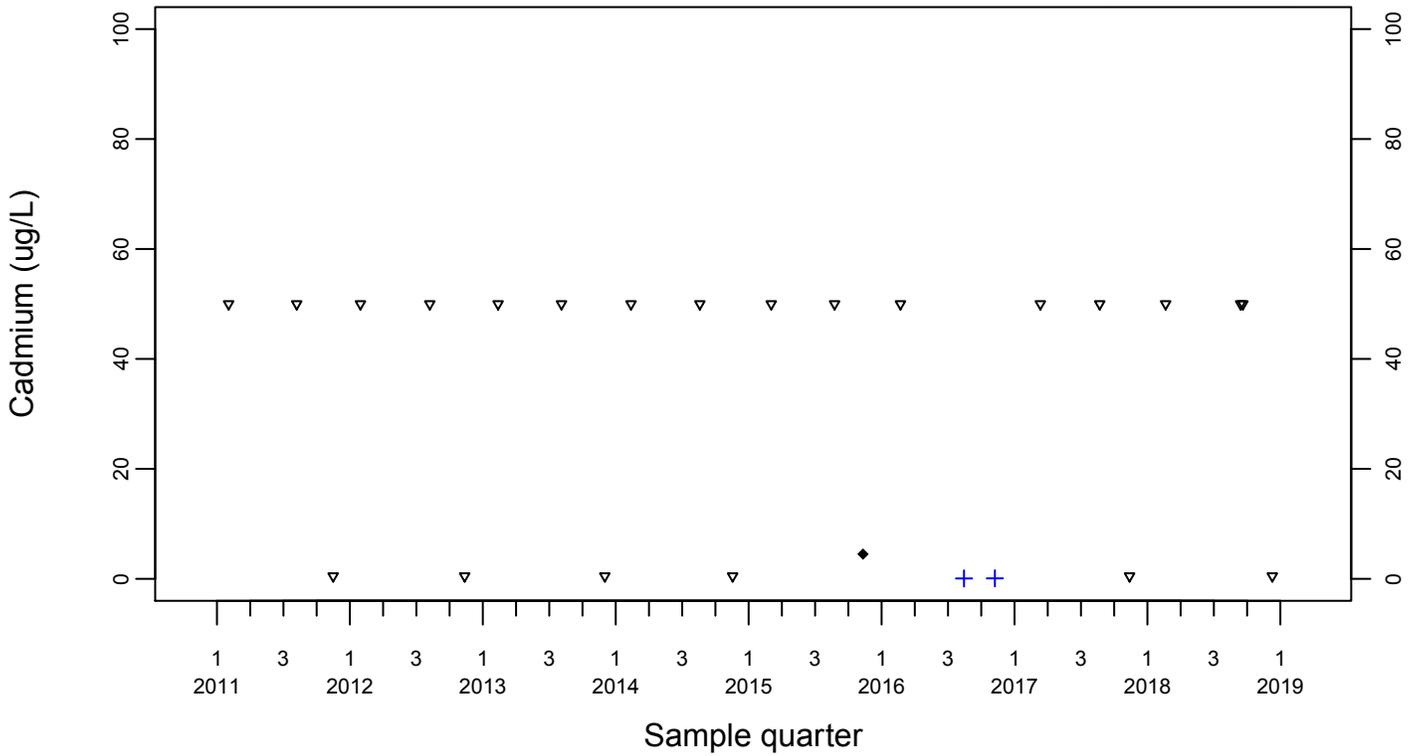
Upgradient Monitor Well W-7PS



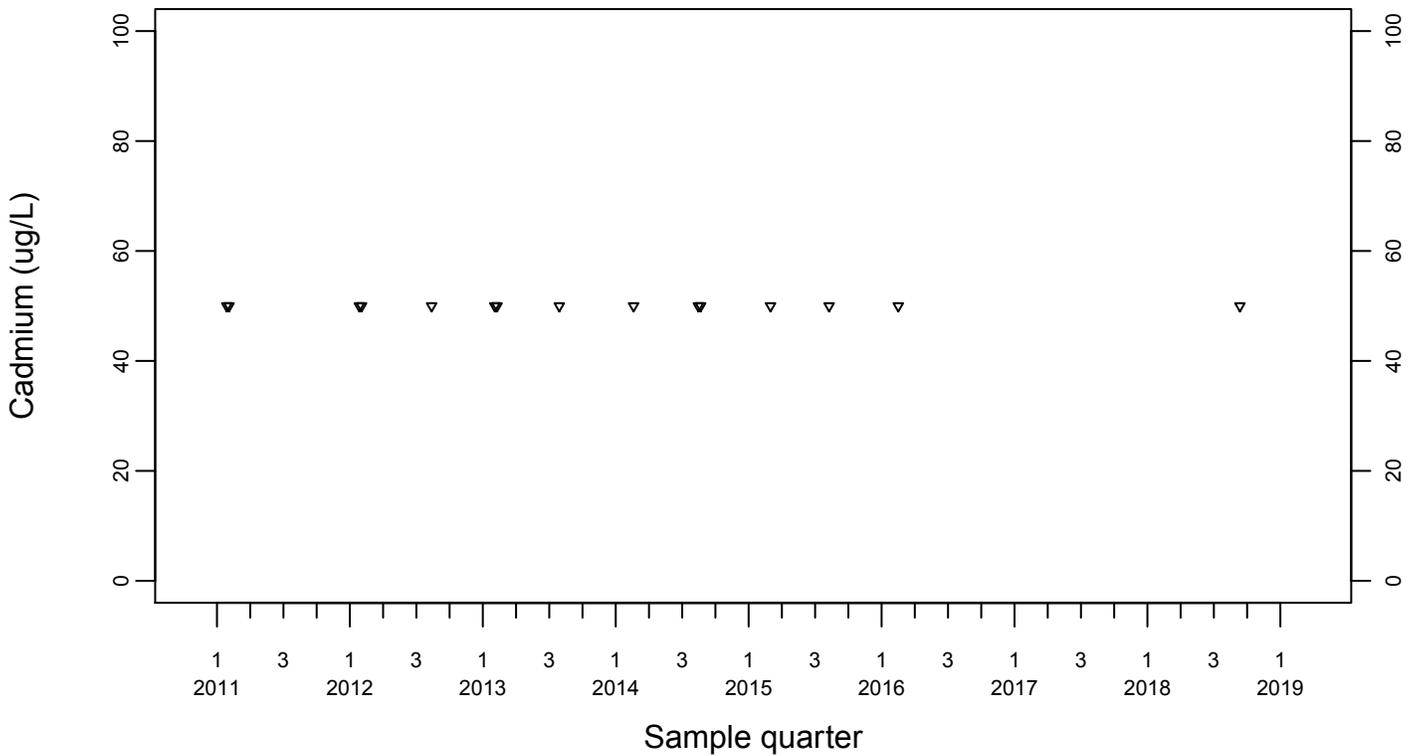
Sewage Ponds Ground Water Cadmium (ug/L)

Crossgradient Monitor Well W-35A-04

- ◆ Above RL
- ▽ Below RL
- + Estimated



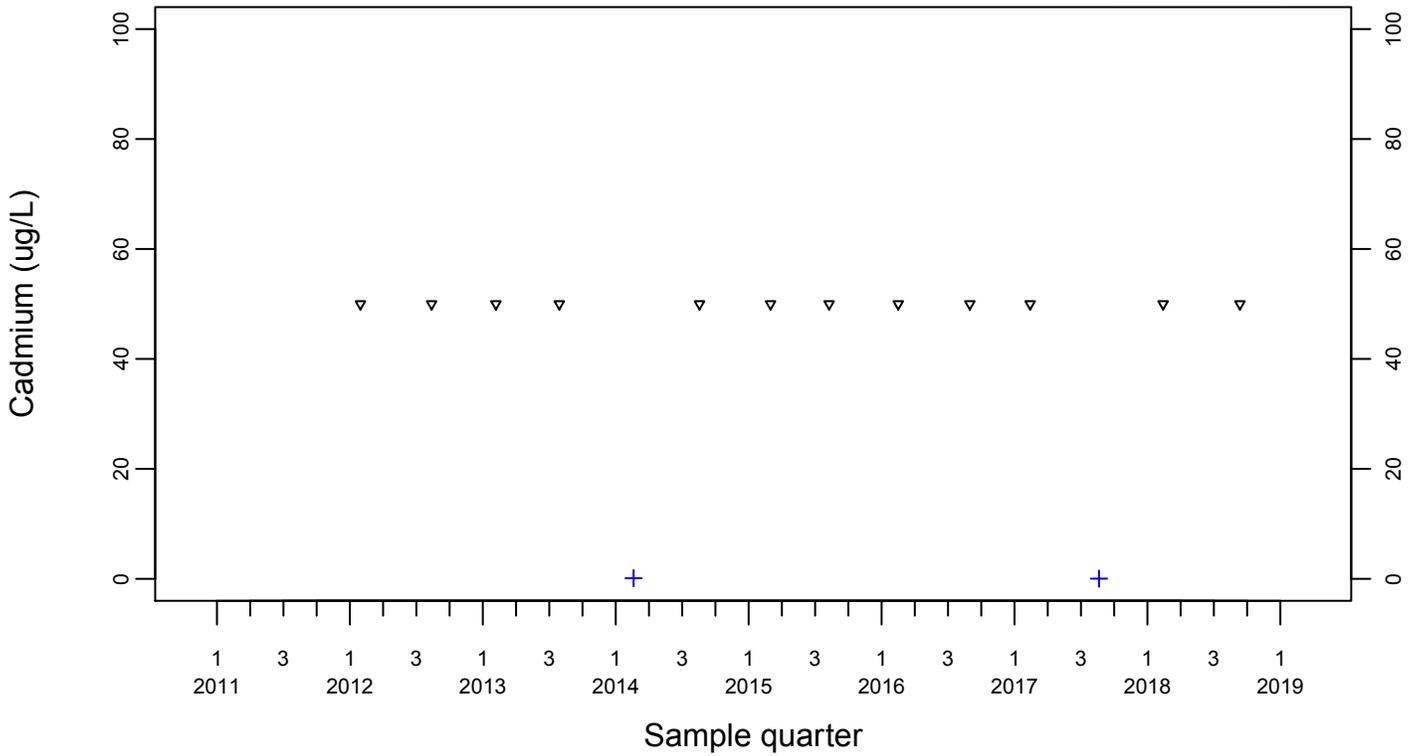
Downgradient Monitor Well W-25N-23



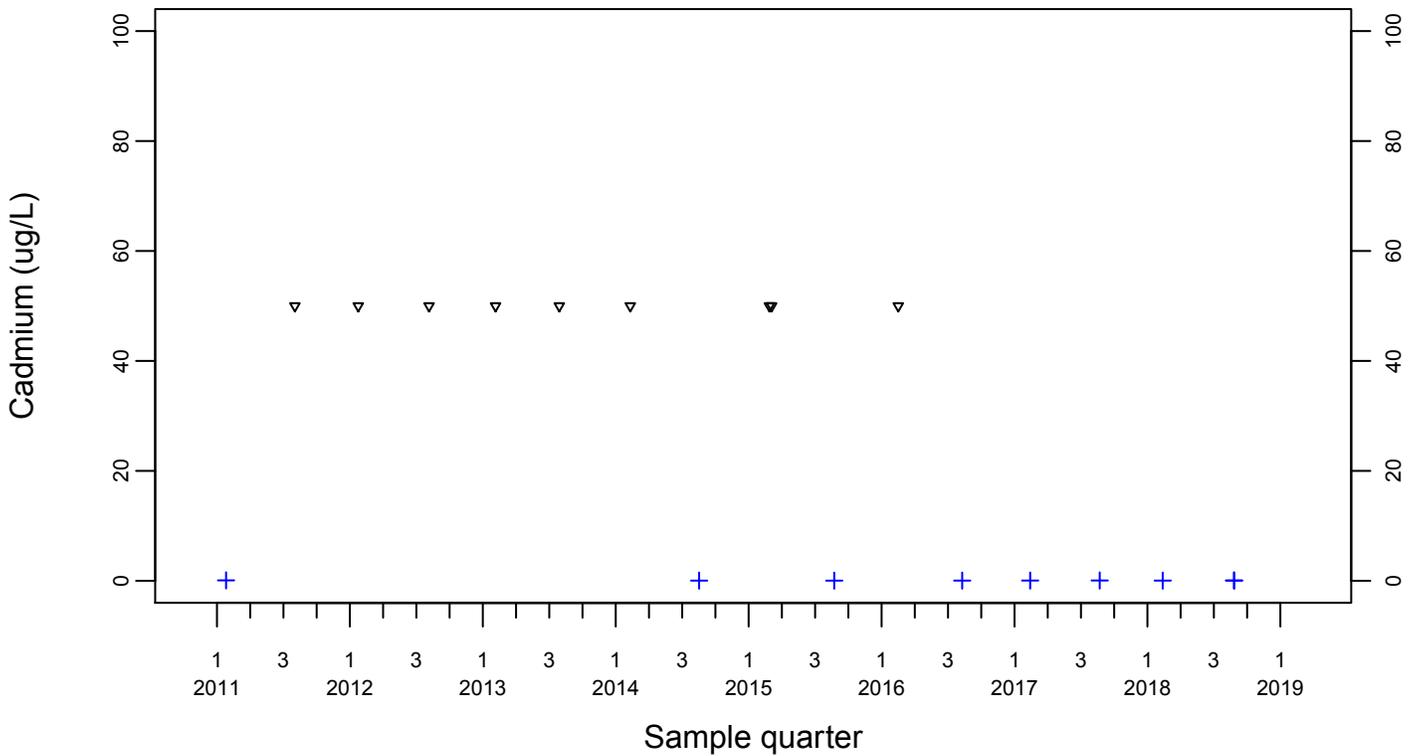
Sewage Ponds Ground Water Cadmium (ug/L)

Downgradient Monitor Well W-25N-22

- ◆ Above RL
- ▽ Below RL
- + Estimated



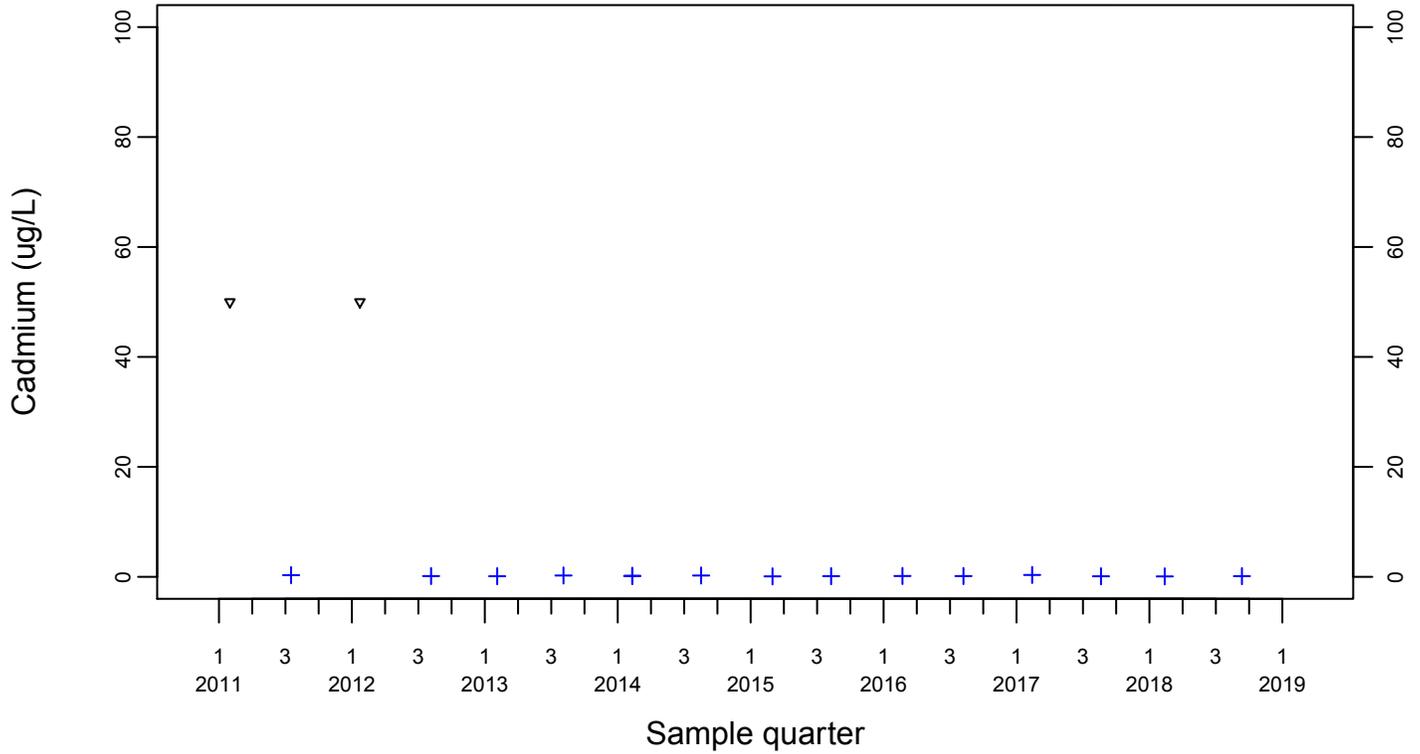
Downgradient Monitor Well W-26R-01



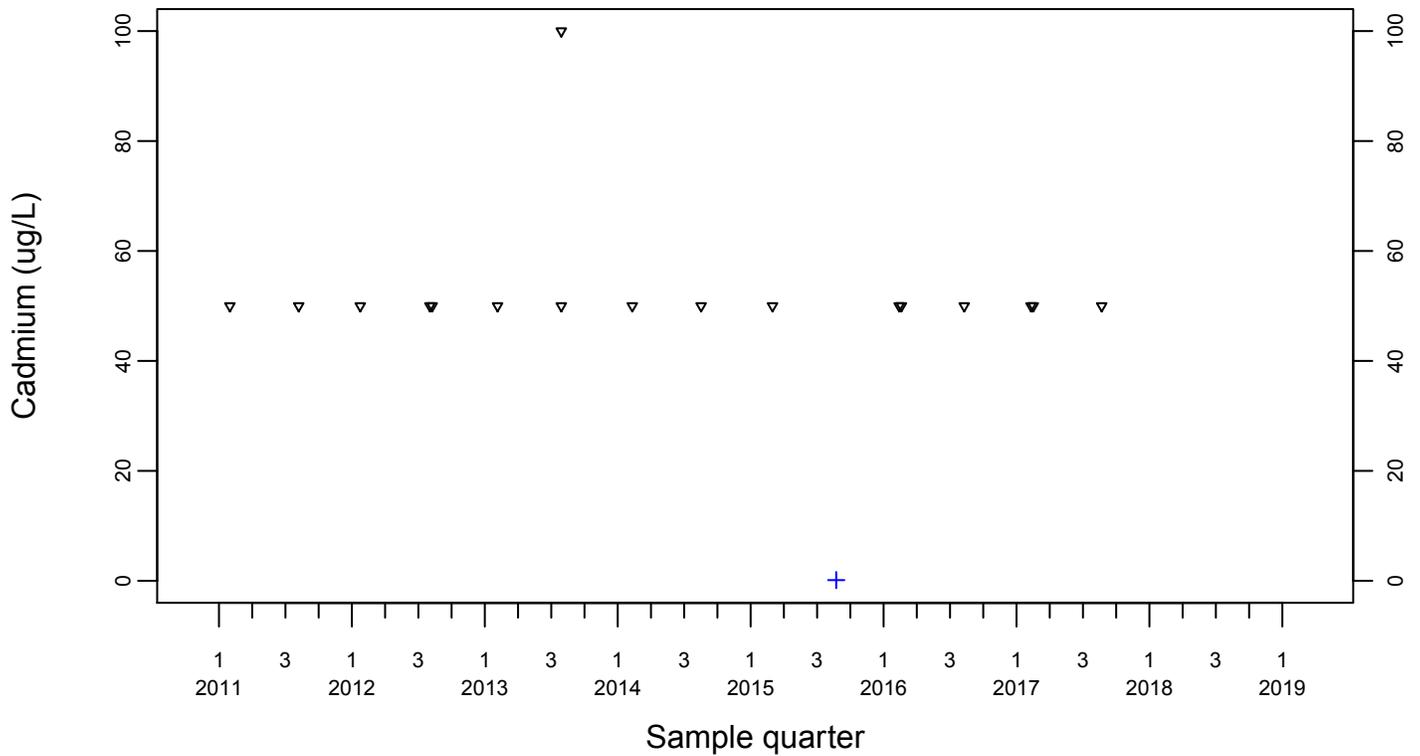
Sewage Ponds Ground Water Cadmium (ug/L)

Downgradient Monitor Well W-26R-05

- ◆ Above RL
- ▽ Below RL
- + Estimated



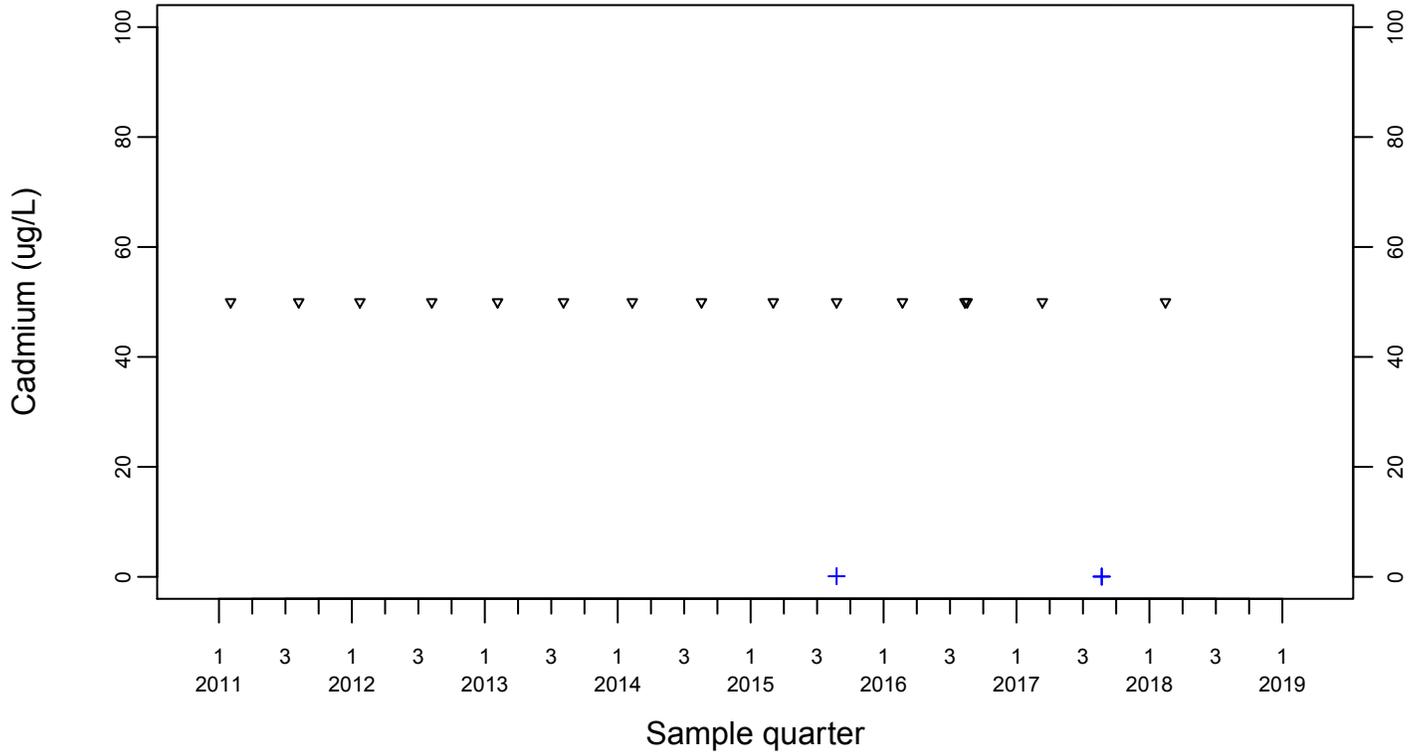
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Cadmium (ug/L)

Downgradient Monitor Well W-7DS

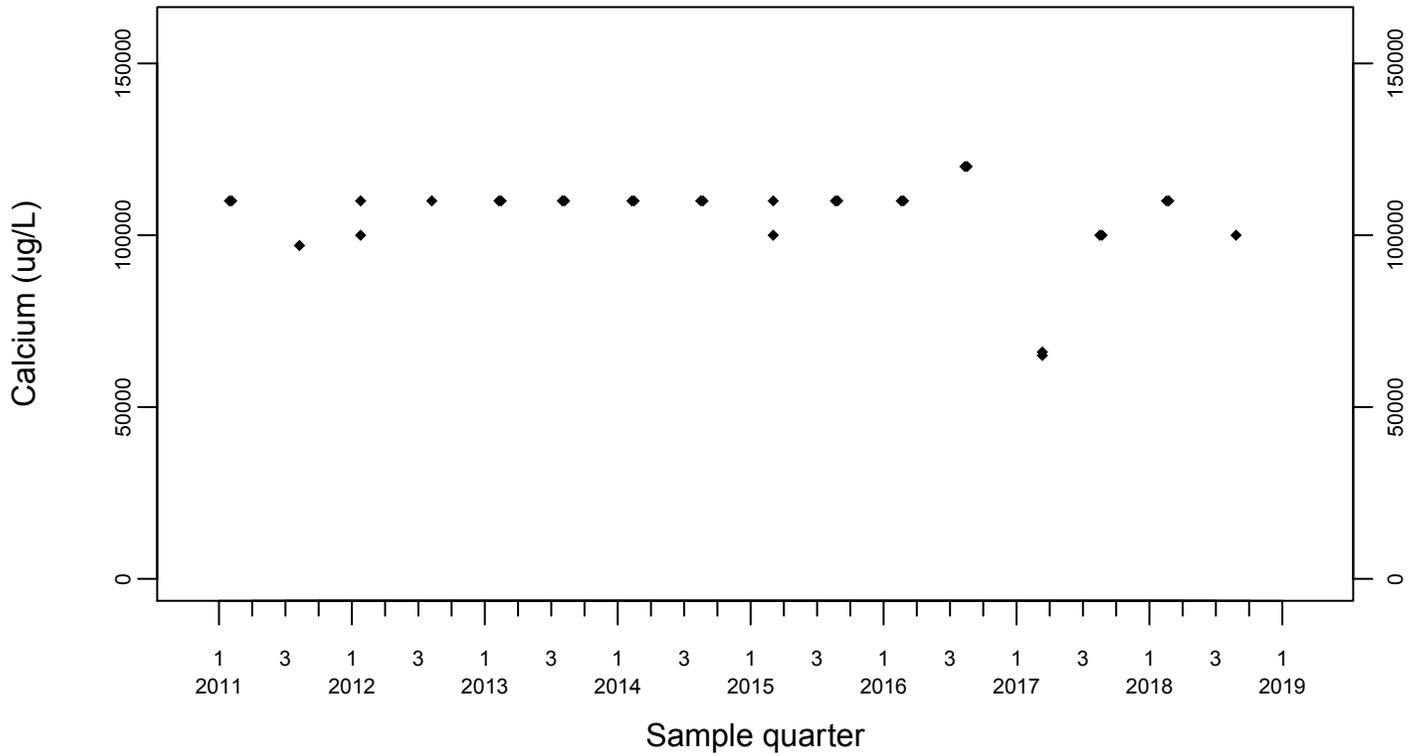
- ◆ Above RL
- ▽ Below RL
- + Estimated



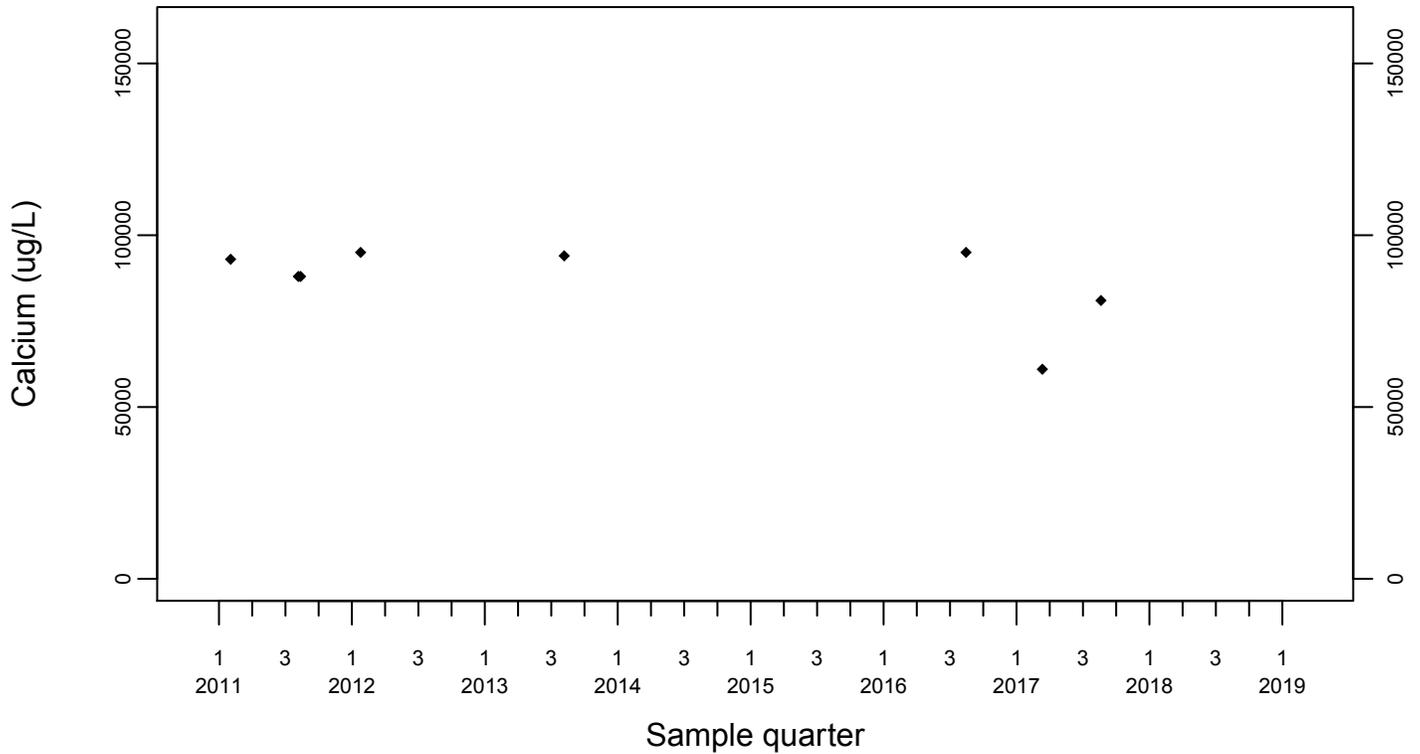
Sewage Ponds Ground Water Calcium (ug/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



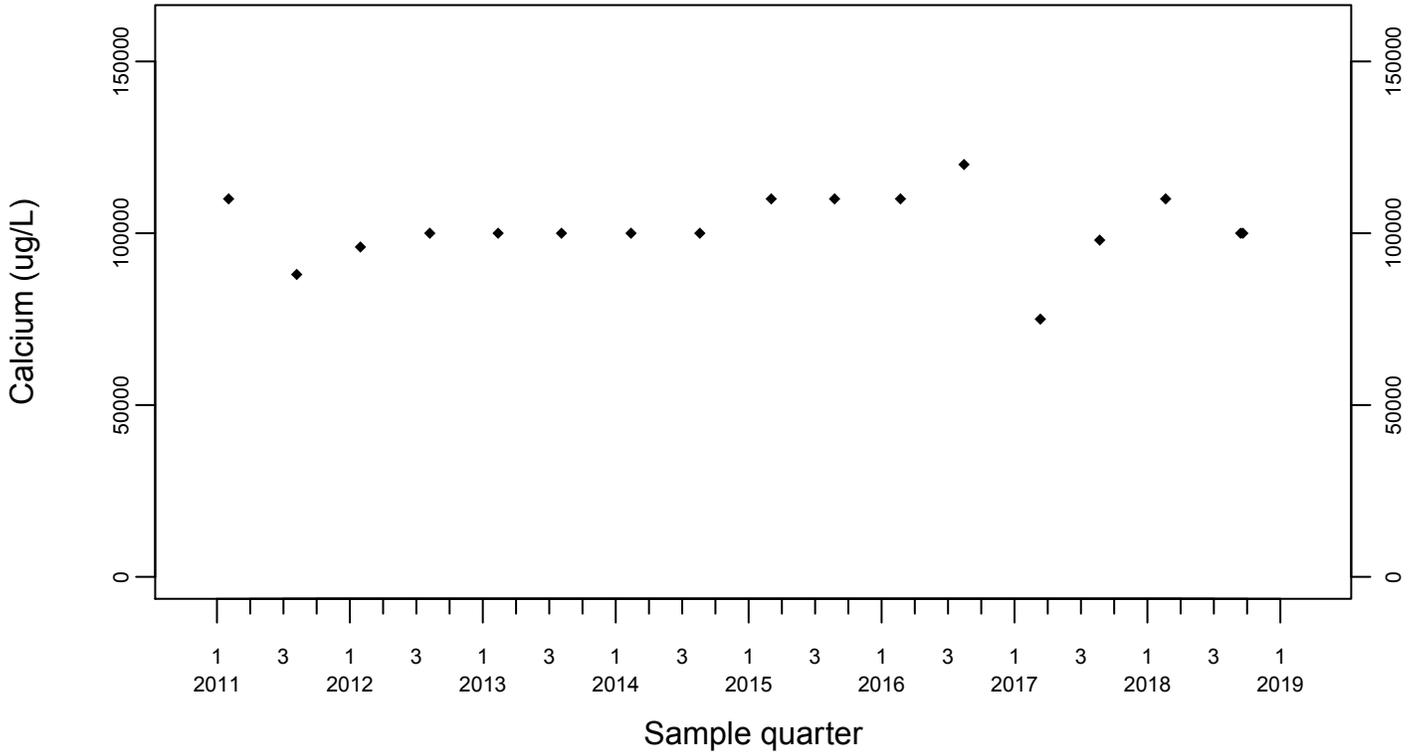
Upgradient Monitor Well W-7PS



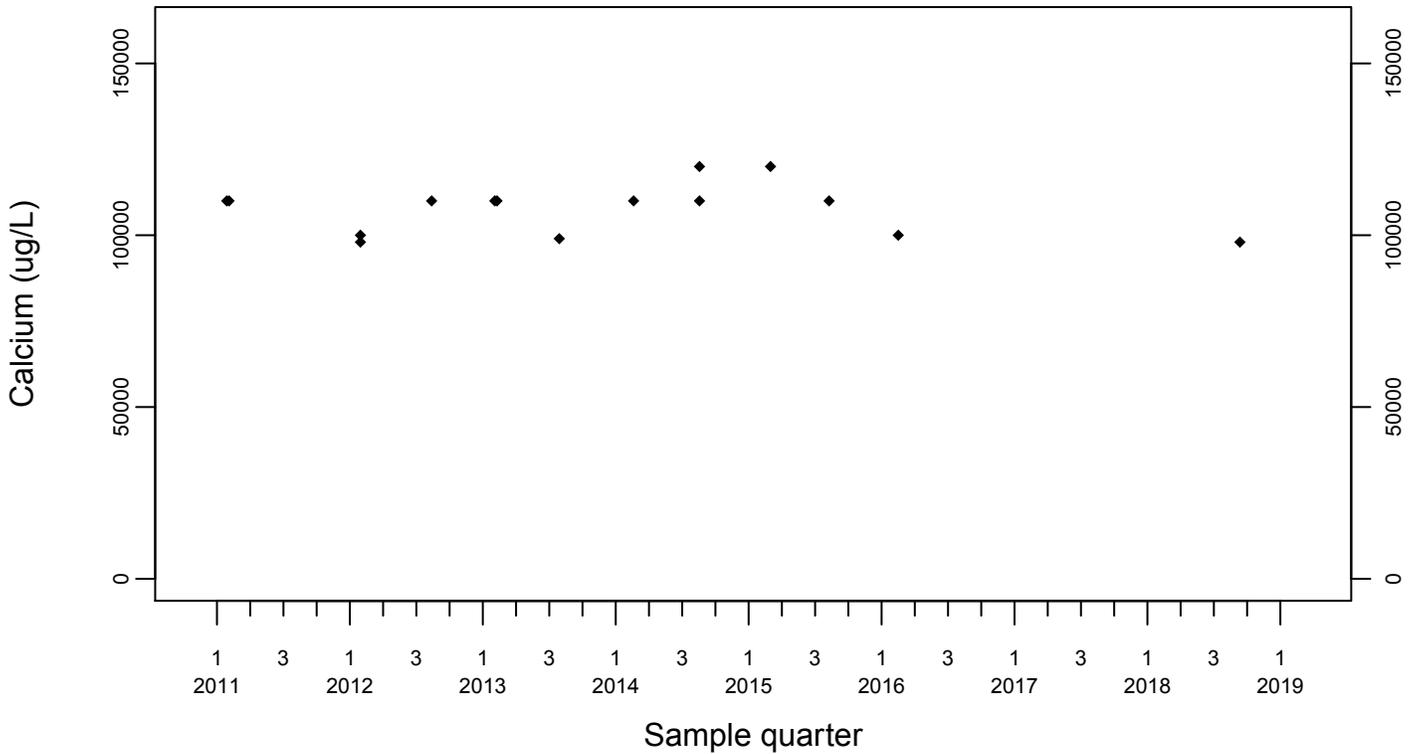
Sewage Ponds Ground Water Calcium (ug/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



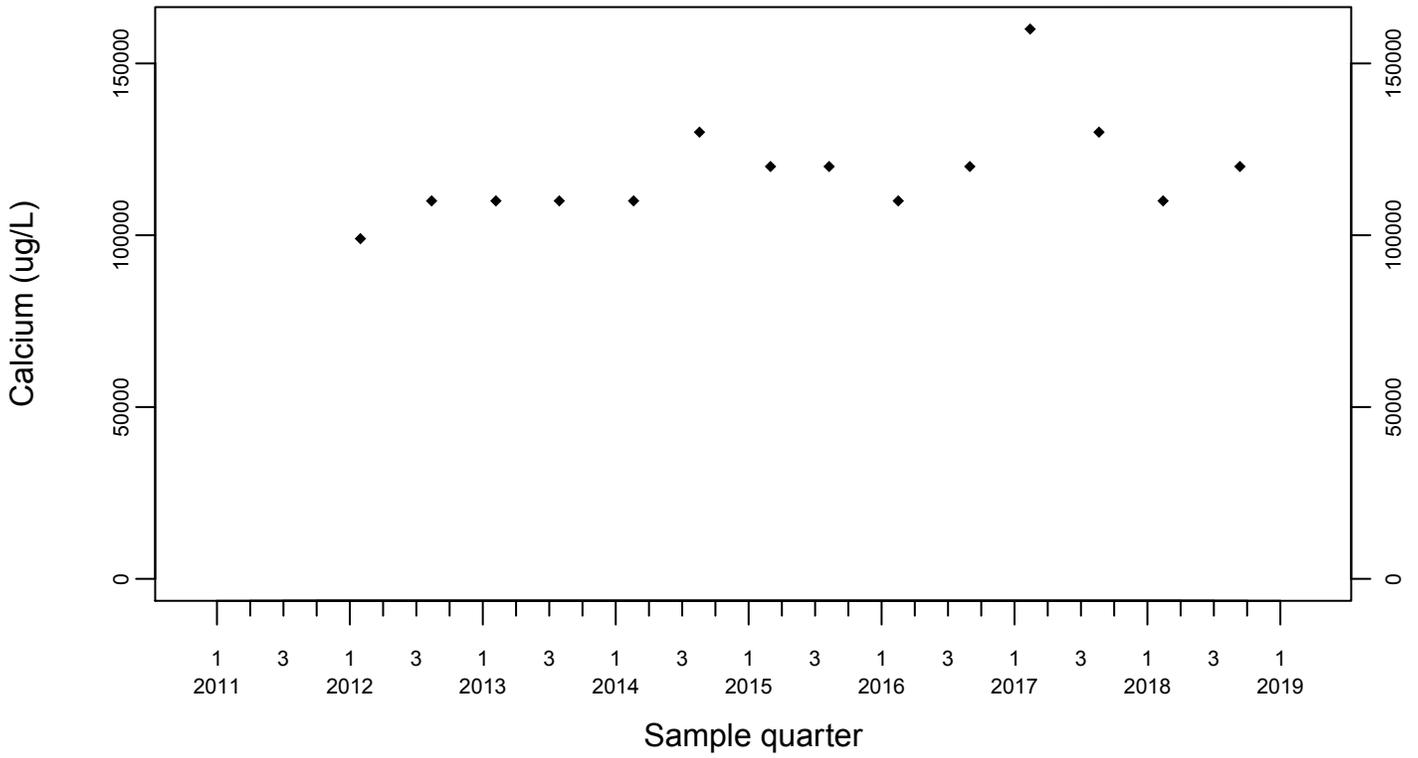
Downgradient Monitor Well W-25N-23



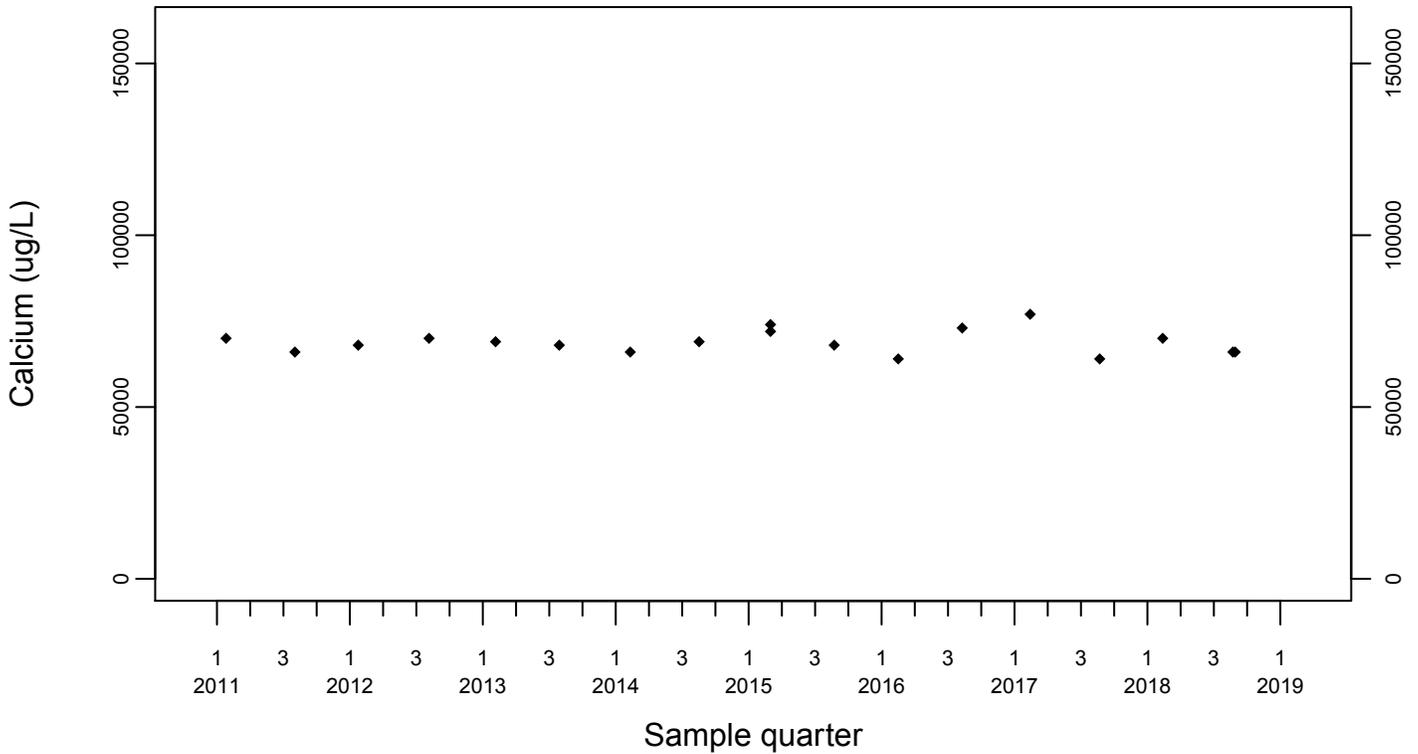
Sewage Ponds Ground Water
 Calcium (ug/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
 ▼ Below RL



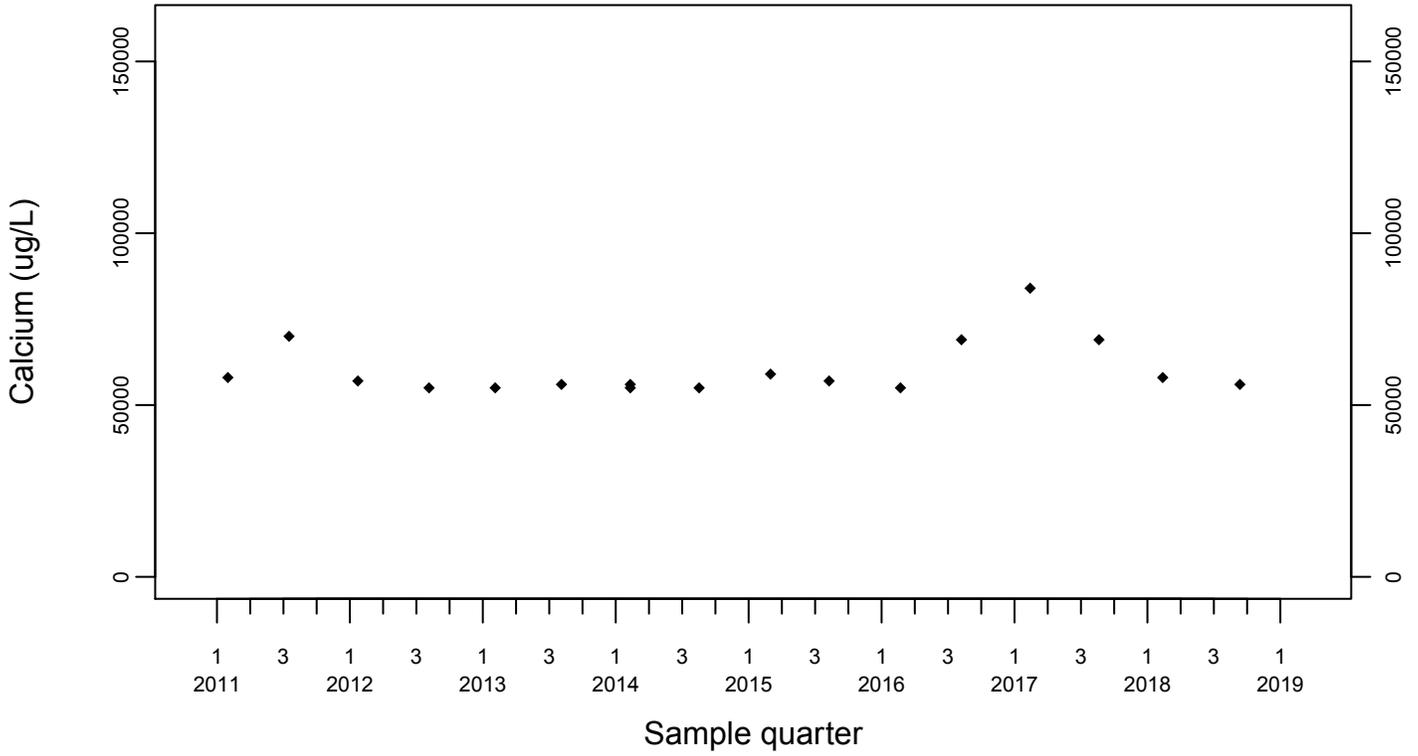
Downgradient Monitor Well W-26R-01



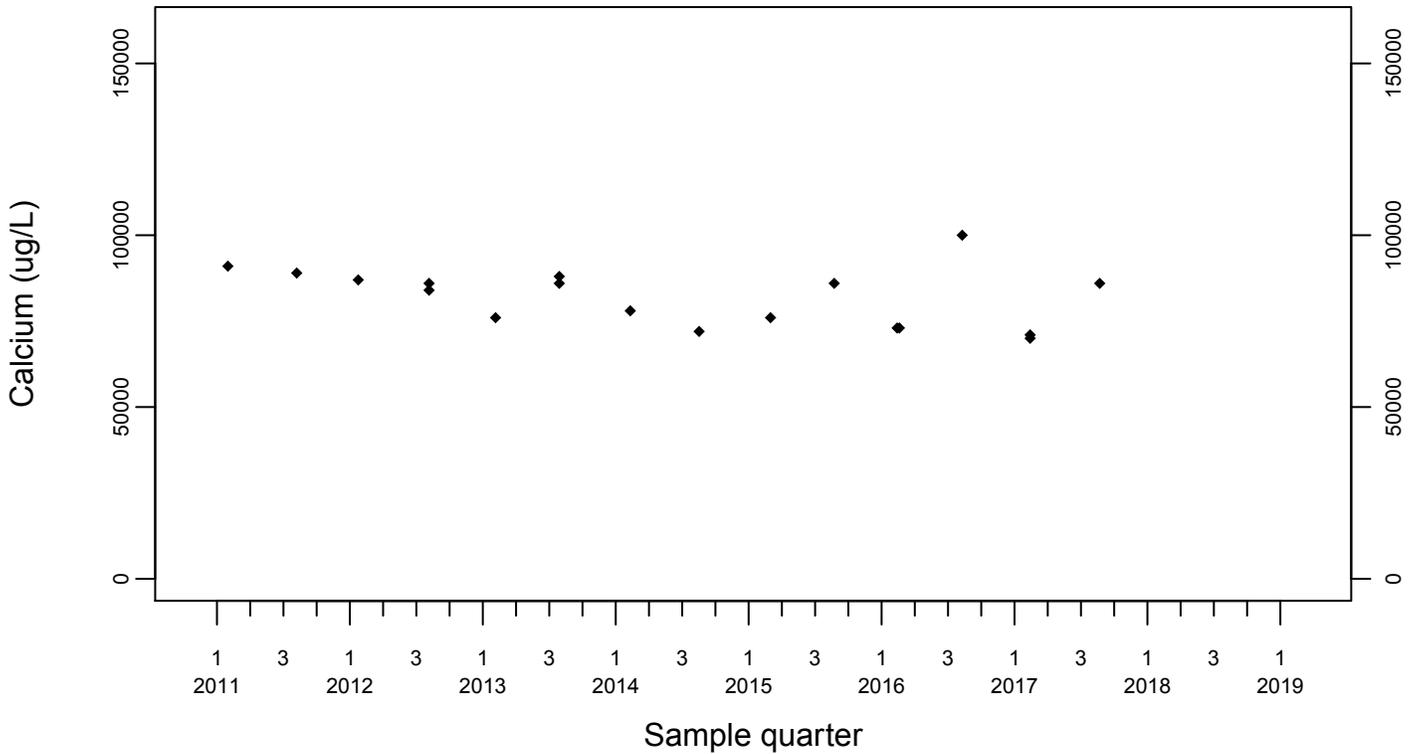
Sewage Ponds Ground Water Calcium (ug/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



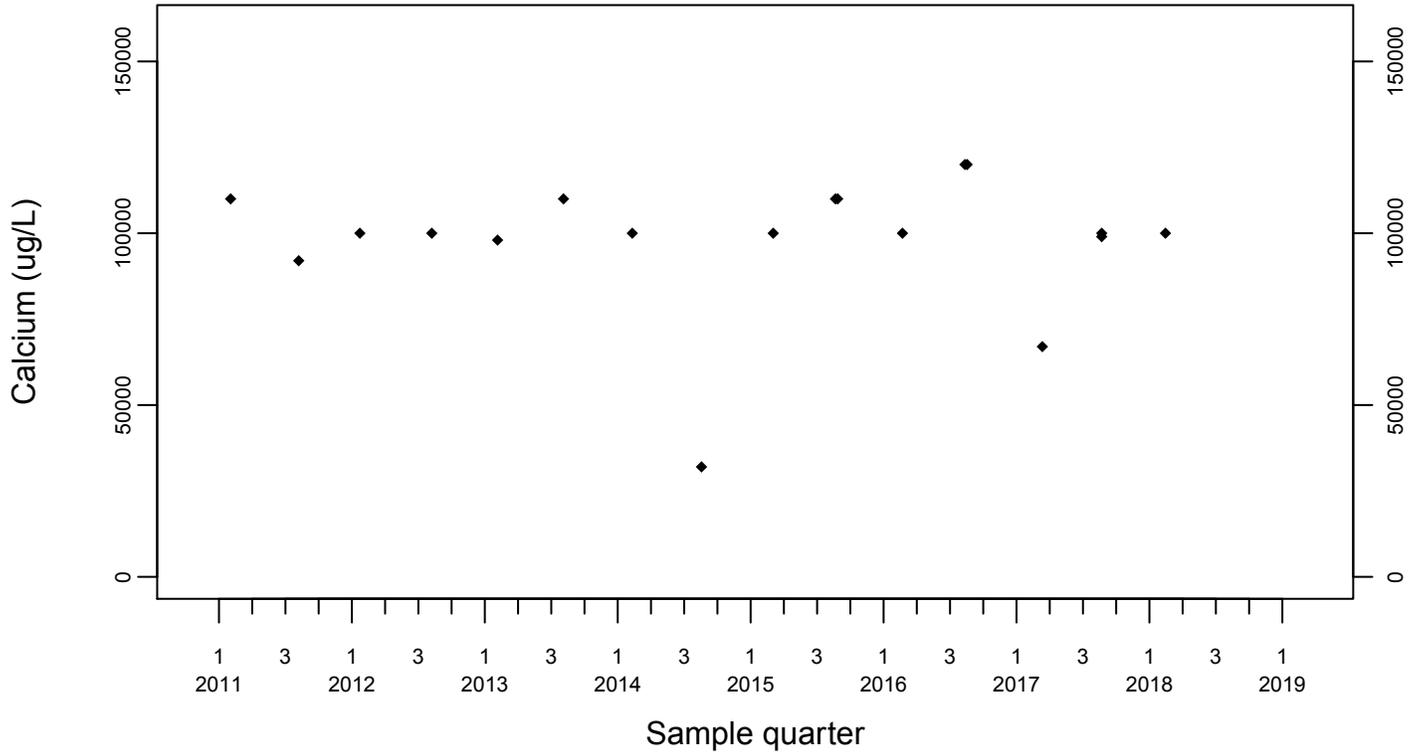
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Calcium (ug/L)

Downgradient Monitor Well W-7DS

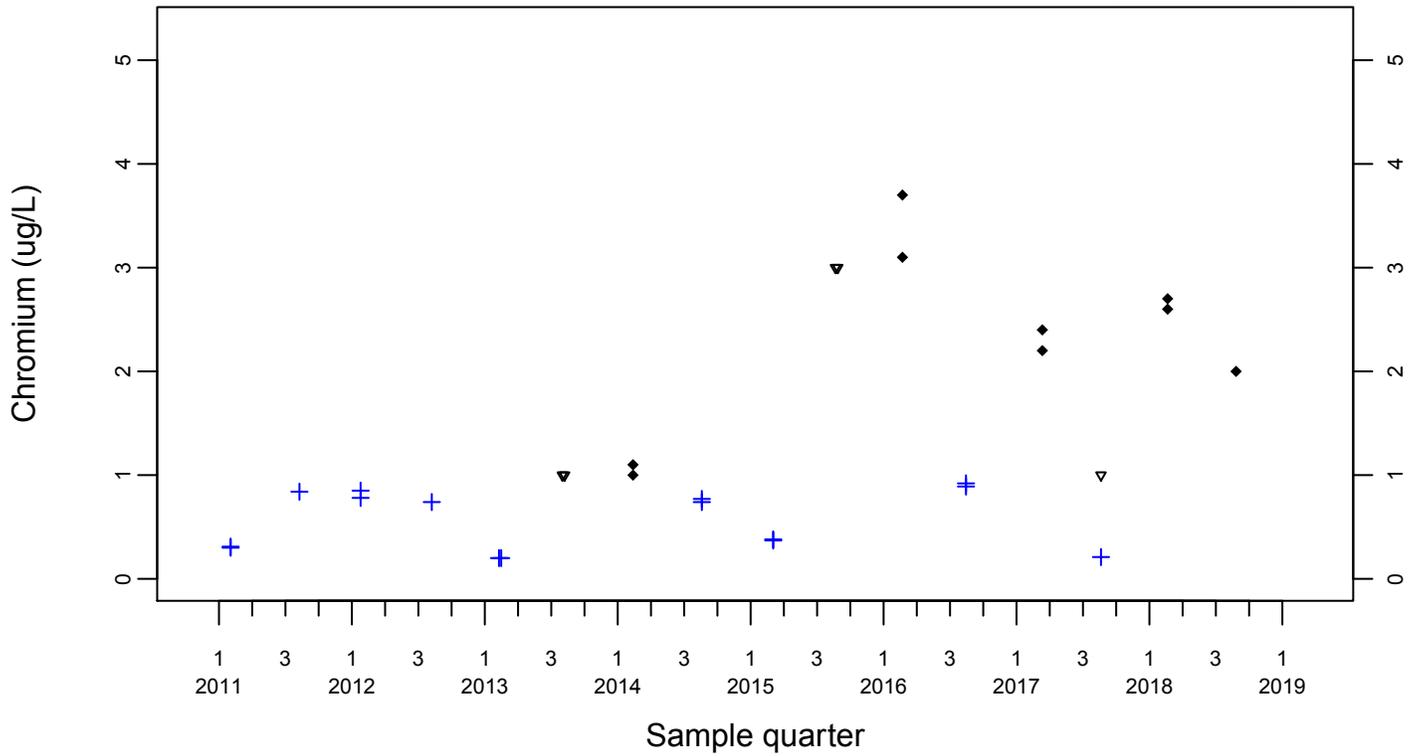
◆ Above RL
▽ Below RL



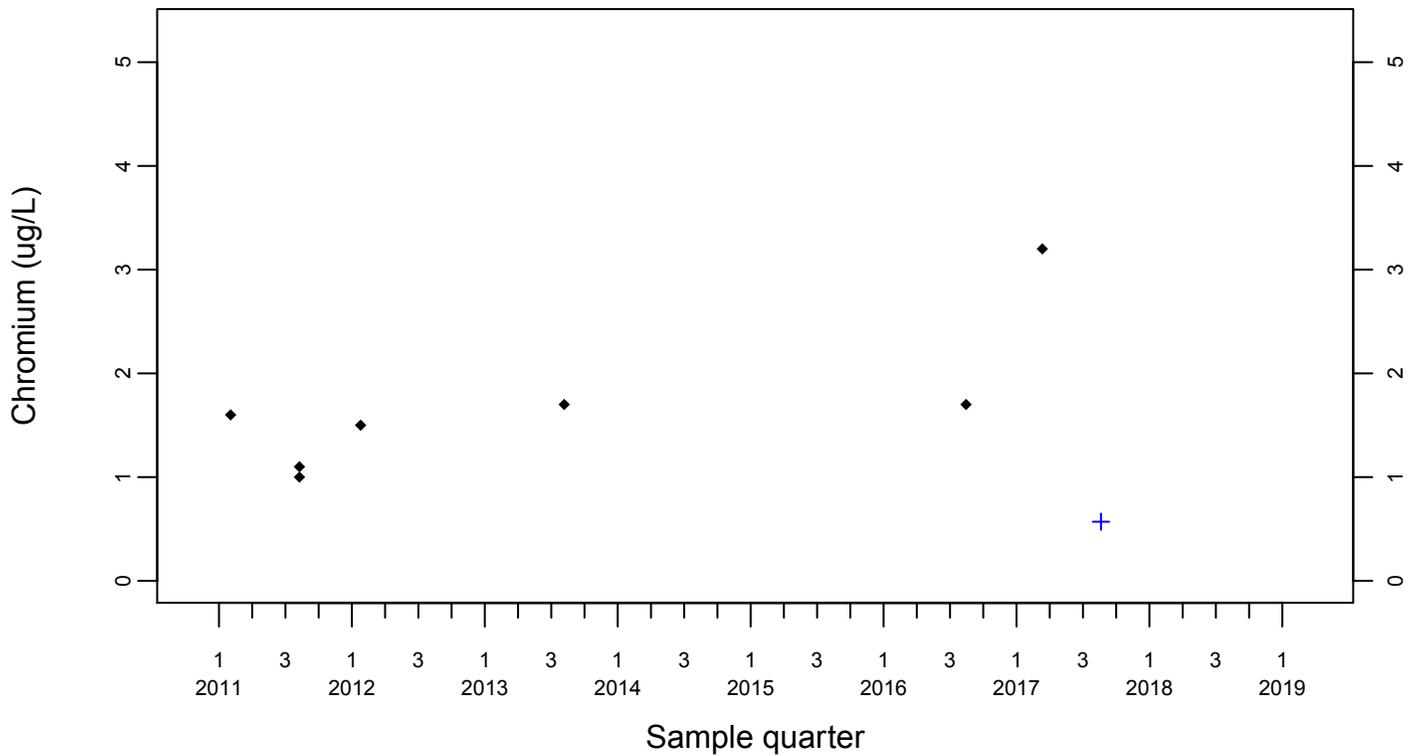
Sewage Ponds Ground Water
 Chromium (ug/L)

Upgradient Monitor Well W-7ES

- ◆ Above RL
- ▽ Below RL
- + Estimated



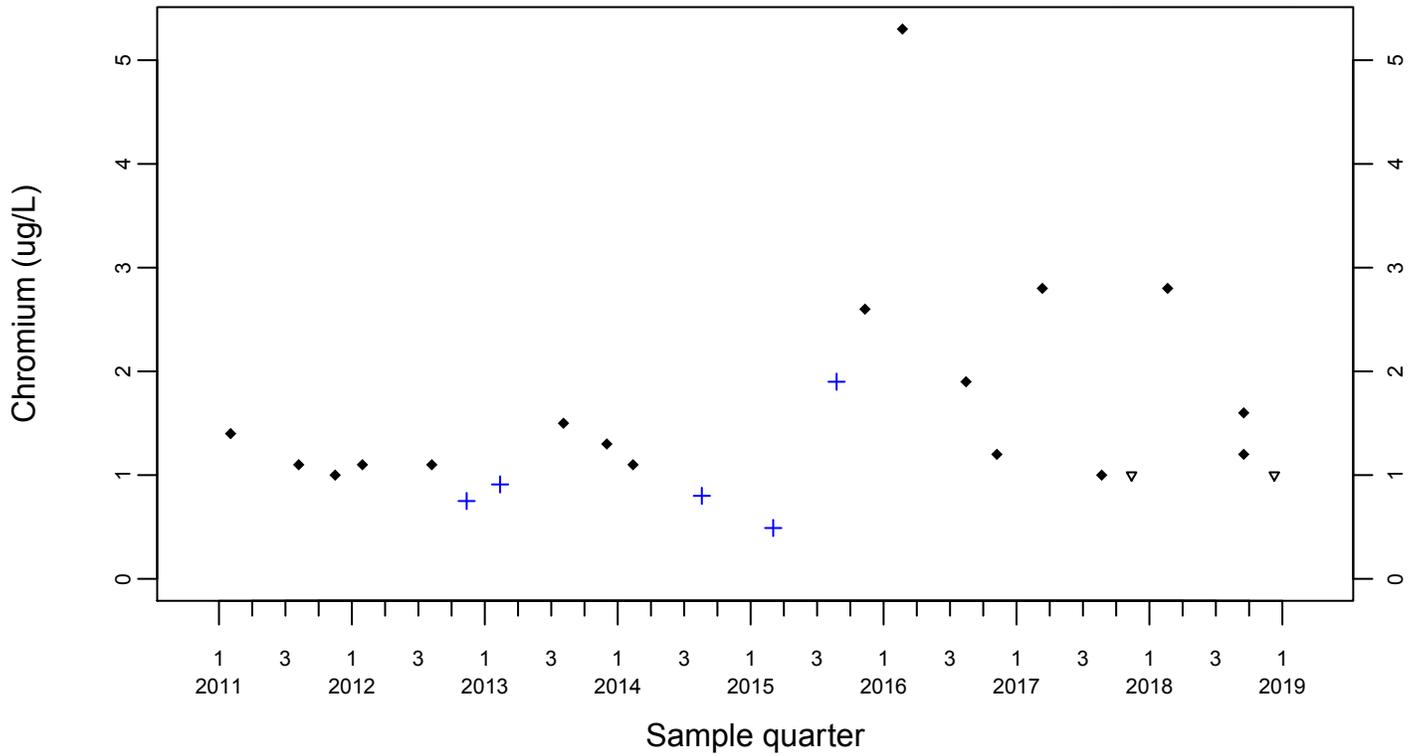
Upgradient Monitor Well W-7PS



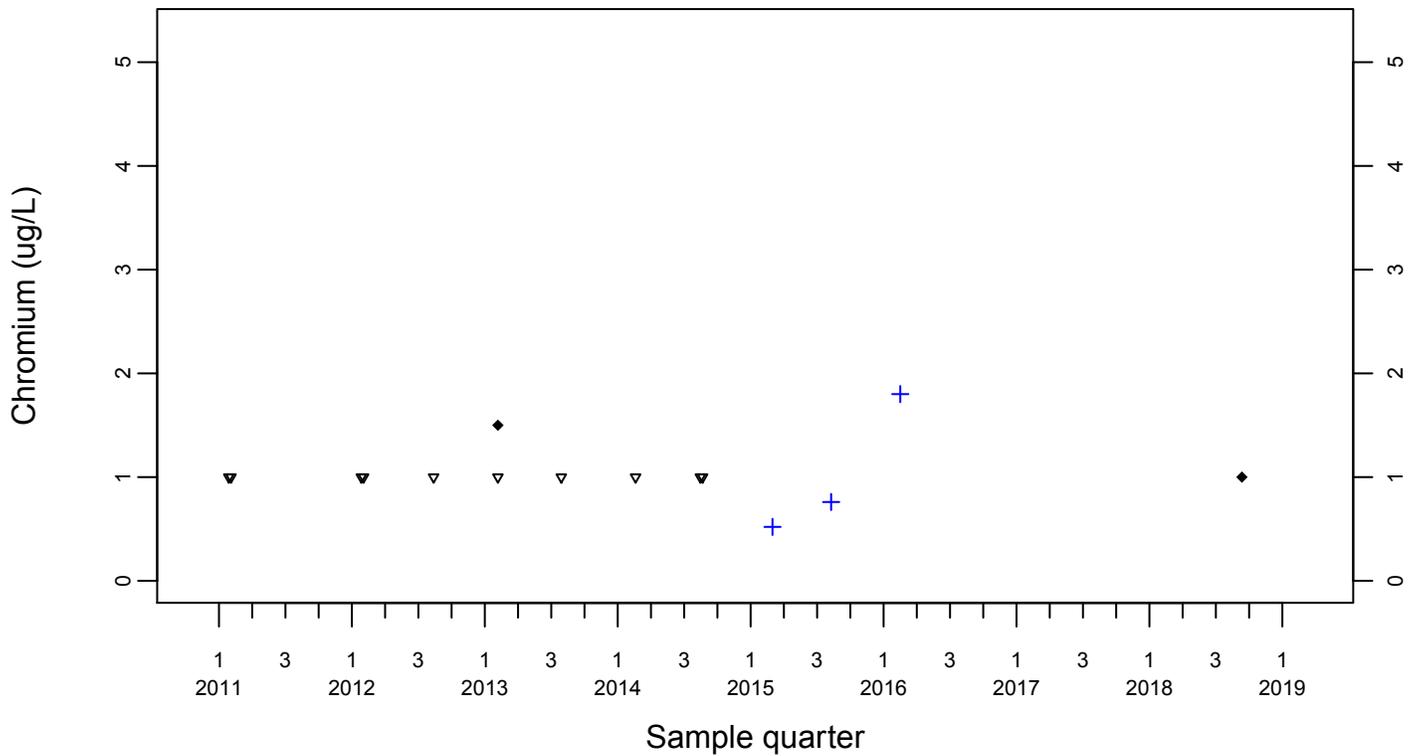
Sewage Ponds Ground Water
 Chromium (ug/L)

Crossgradient Monitor Well W-35A-04

- ◆ Above RL
- ▽ Below RL
- + Estimated



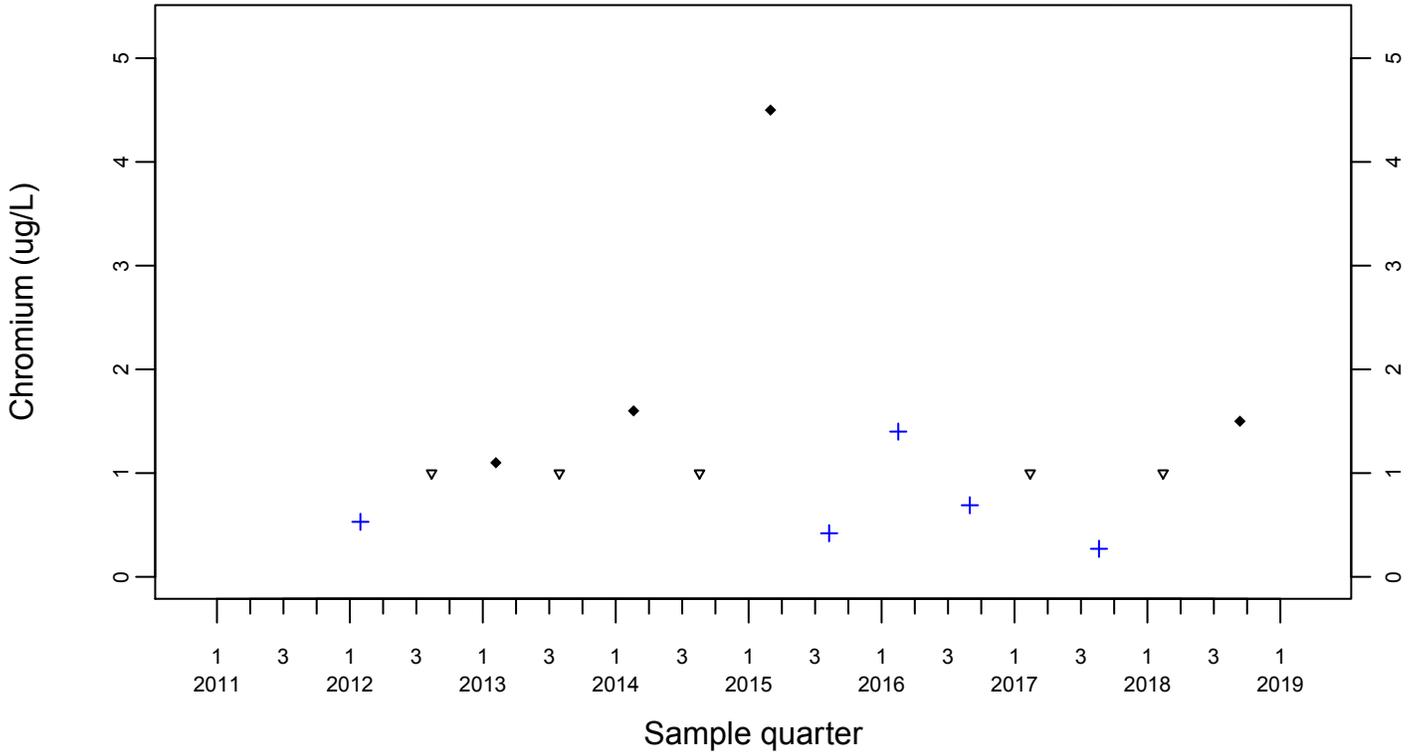
Downgradient Monitor Well W-25N-23



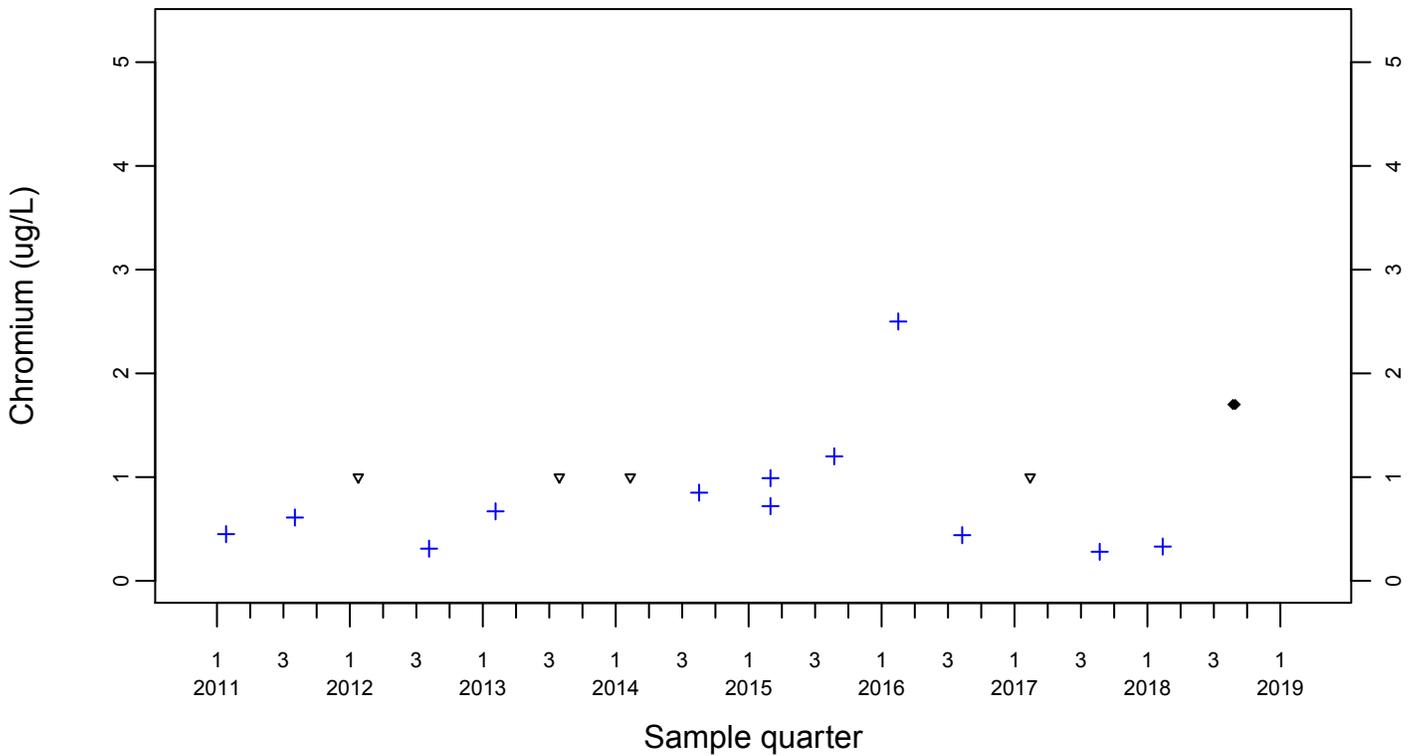
Sewage Ponds Ground Water
 Chromium (ug/L)

Downgradient Monitor Well W-25N-22

- ◆ Above RL
- ▽ Below RL
- + Estimated



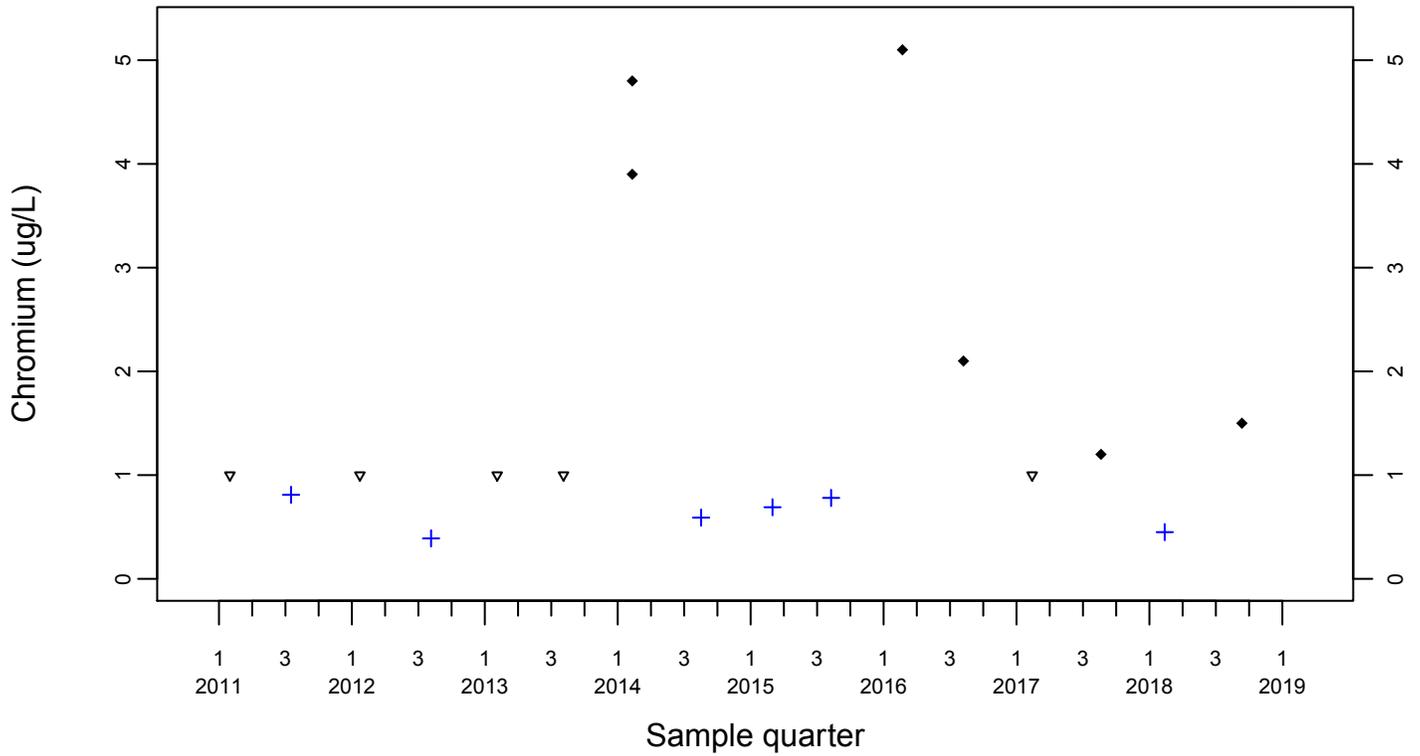
Downgradient Monitor Well W-26R-01



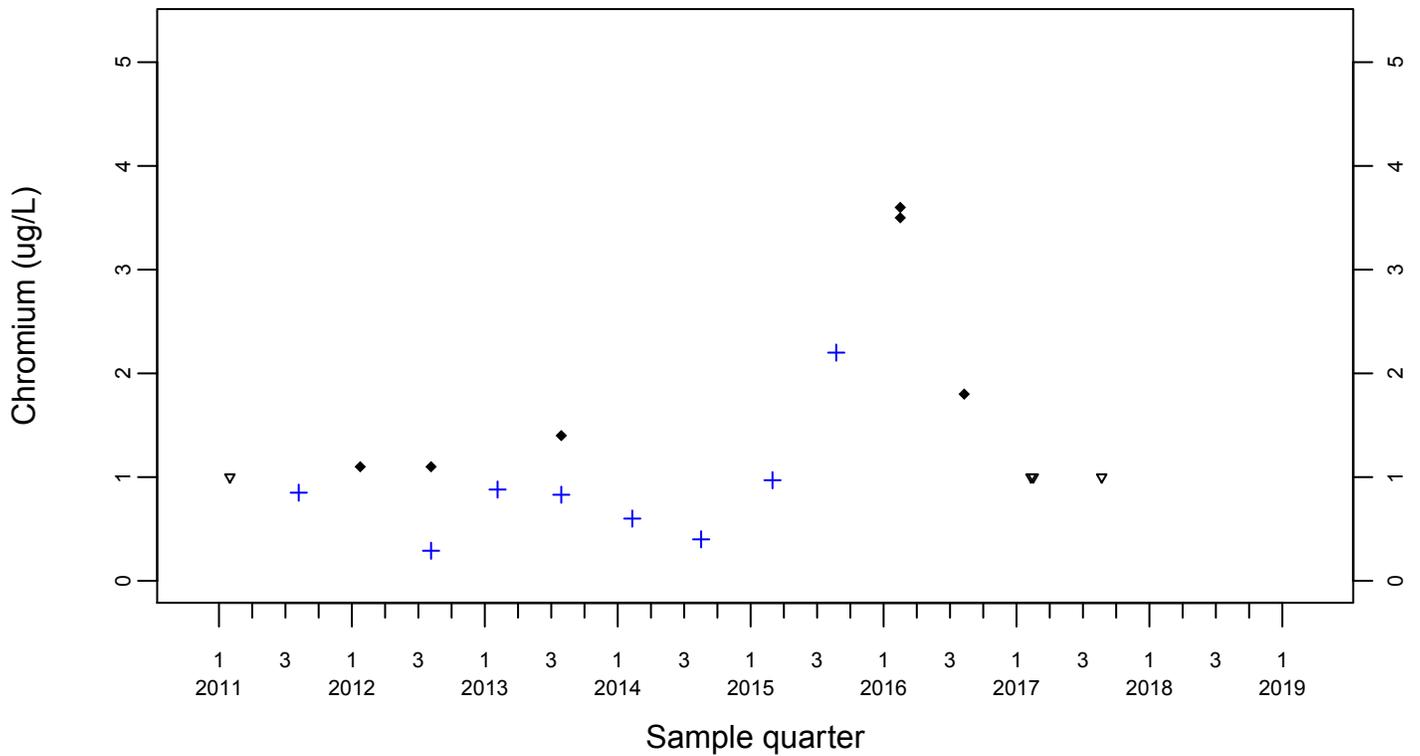
Sewage Ponds Ground Water
 Chromium (ug/L)

Downgradient Monitor Well W-26R-05

- ◆ Above RL
- ▽ Below RL
- + Estimated



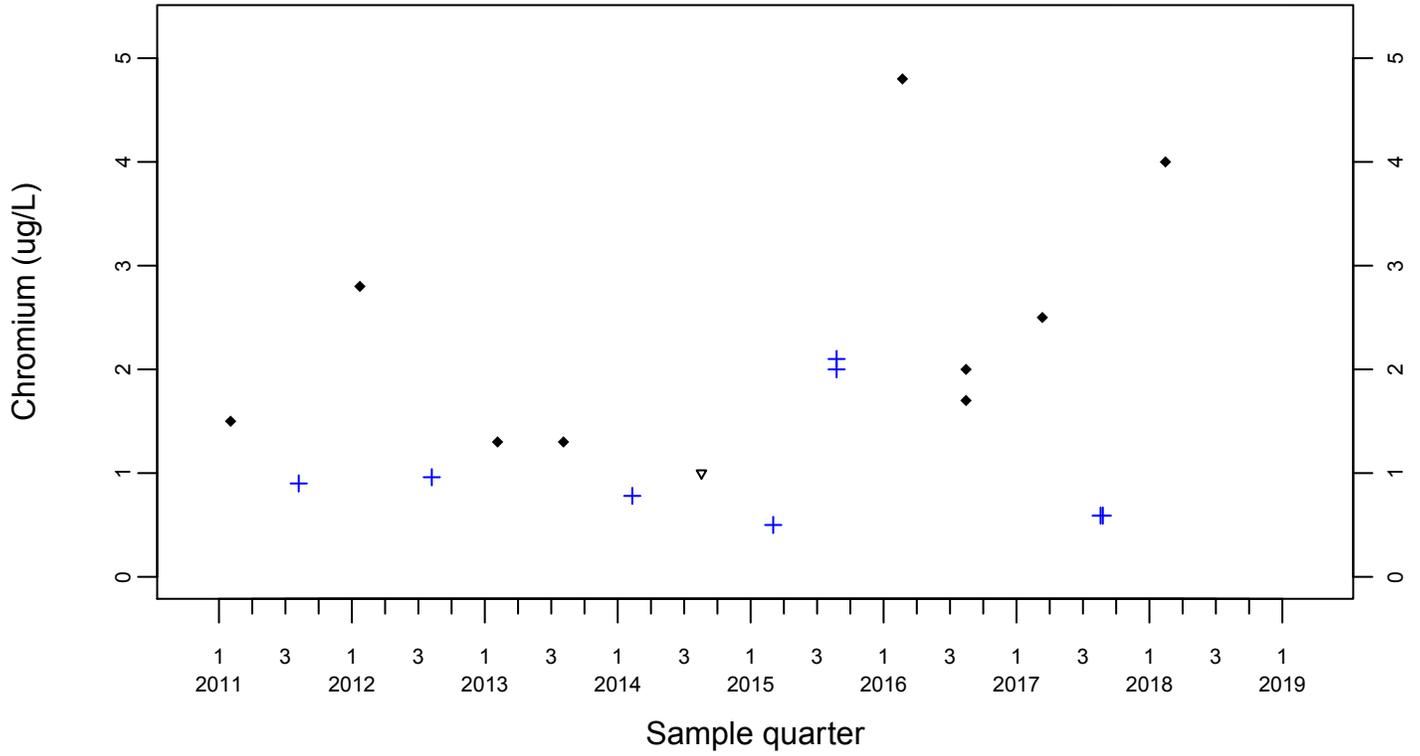
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Chromium (ug/L)

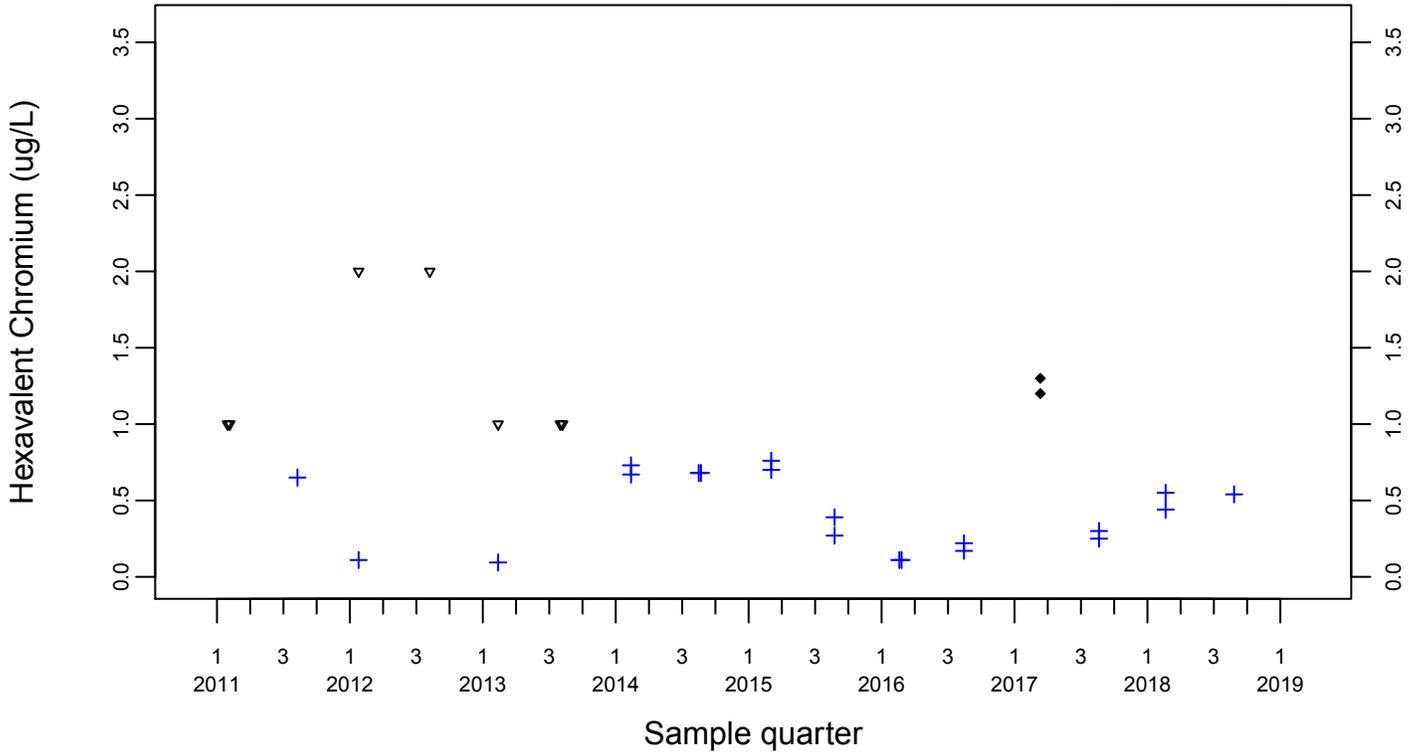
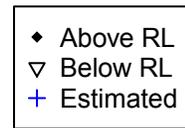
Downgradient Monitor Well W-7DS

- ◆ Above RL
- ▽ Below RL
- + Estimated

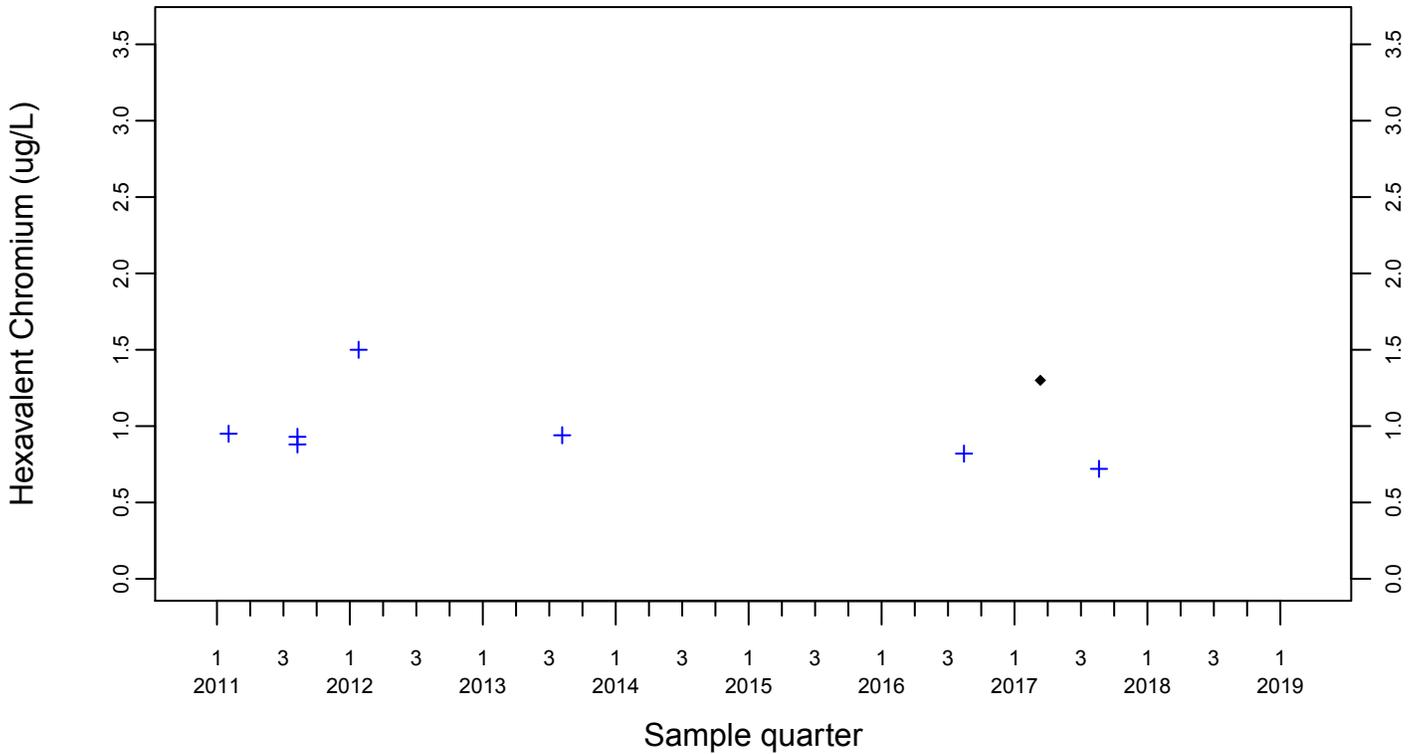


Sewage Ponds Ground Water
 Hexavalent Chromium (ug/L)

Upgradient Monitor Well W-7ES



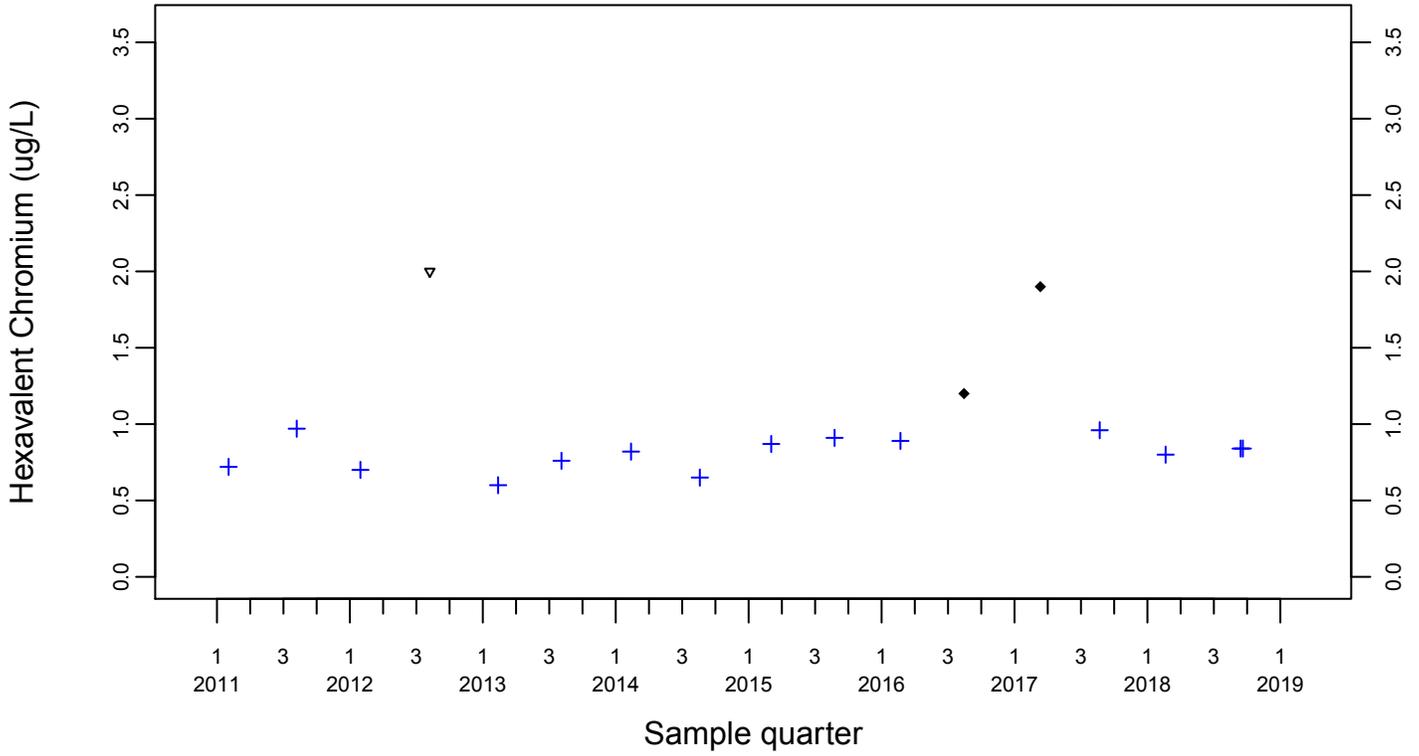
Upgradient Monitor Well W-7PS



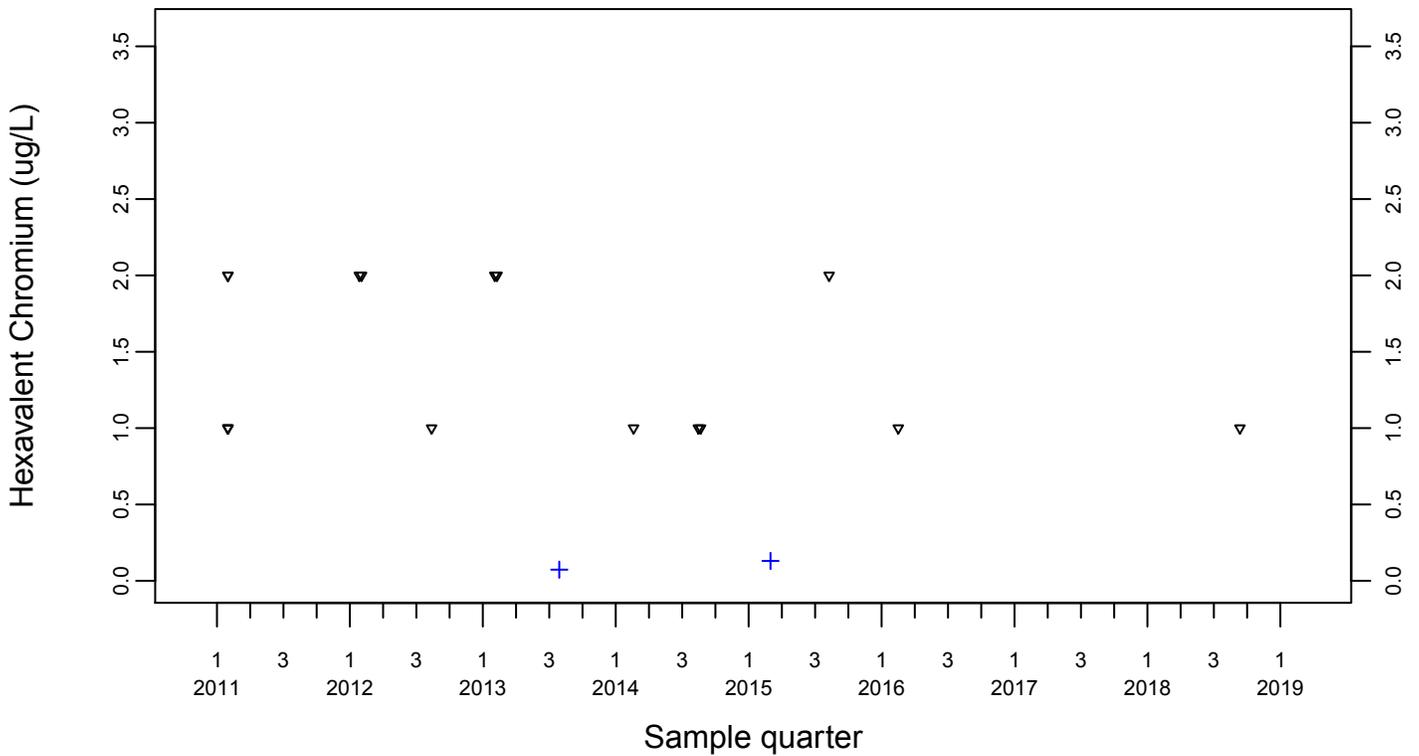
Sewage Ponds Ground Water
 Hexavalent Chromium (ug/L)

Crossgradient Monitor Well W-35A-04

- ◆ Above RL
- ▽ Below RL
- + Estimated



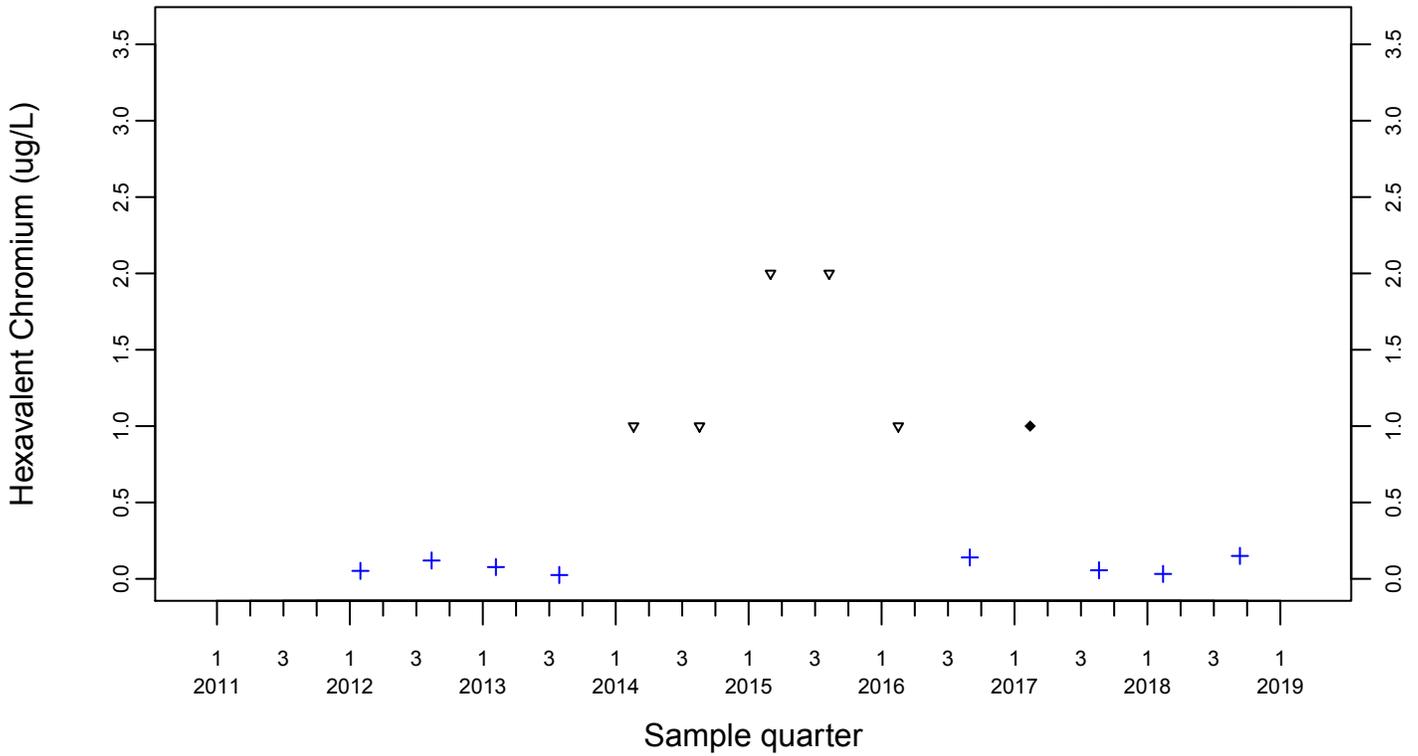
Downgradient Monitor Well W-25N-23



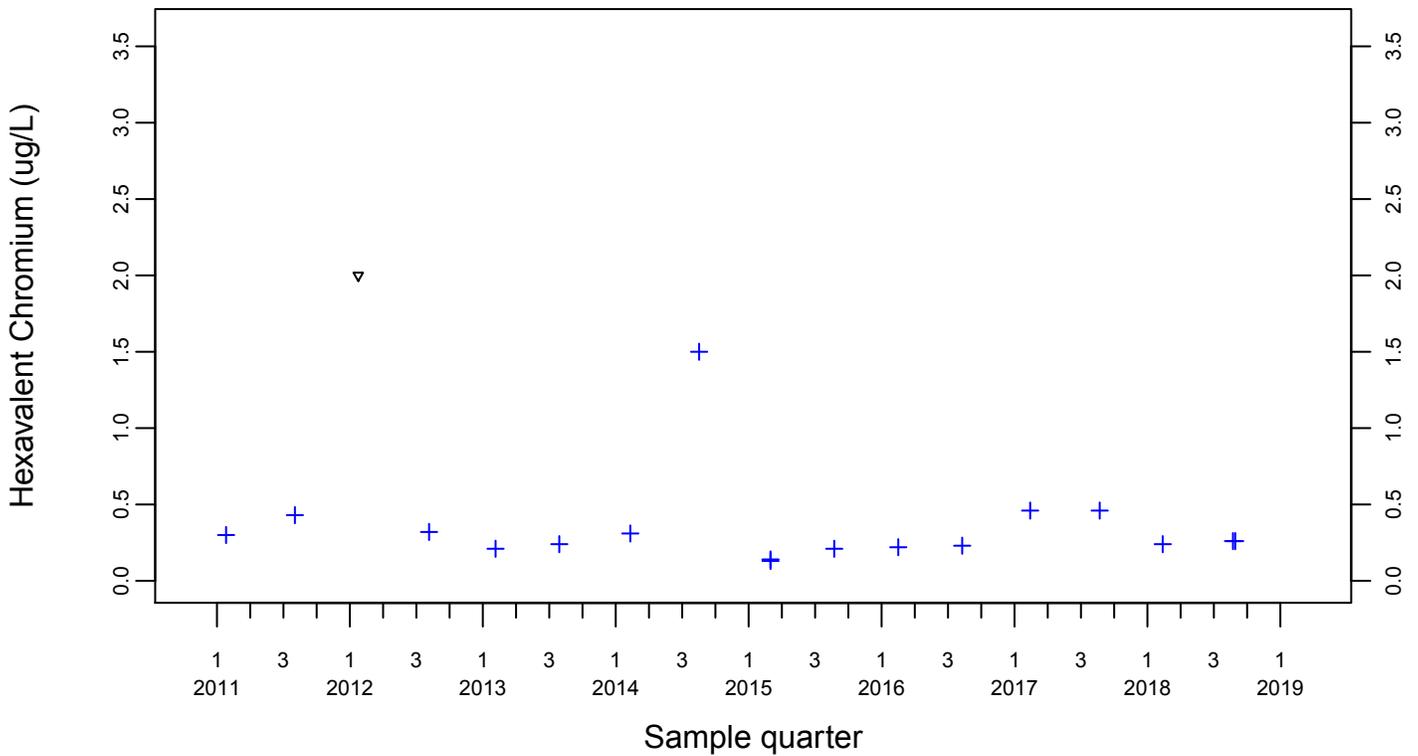
Sewage Ponds Ground Water Hexavalent Chromium (ug/L)

Downgradient Monitor Well W-25N-22

- ◆ Above RL
- ▽ Below RL
- + Estimated



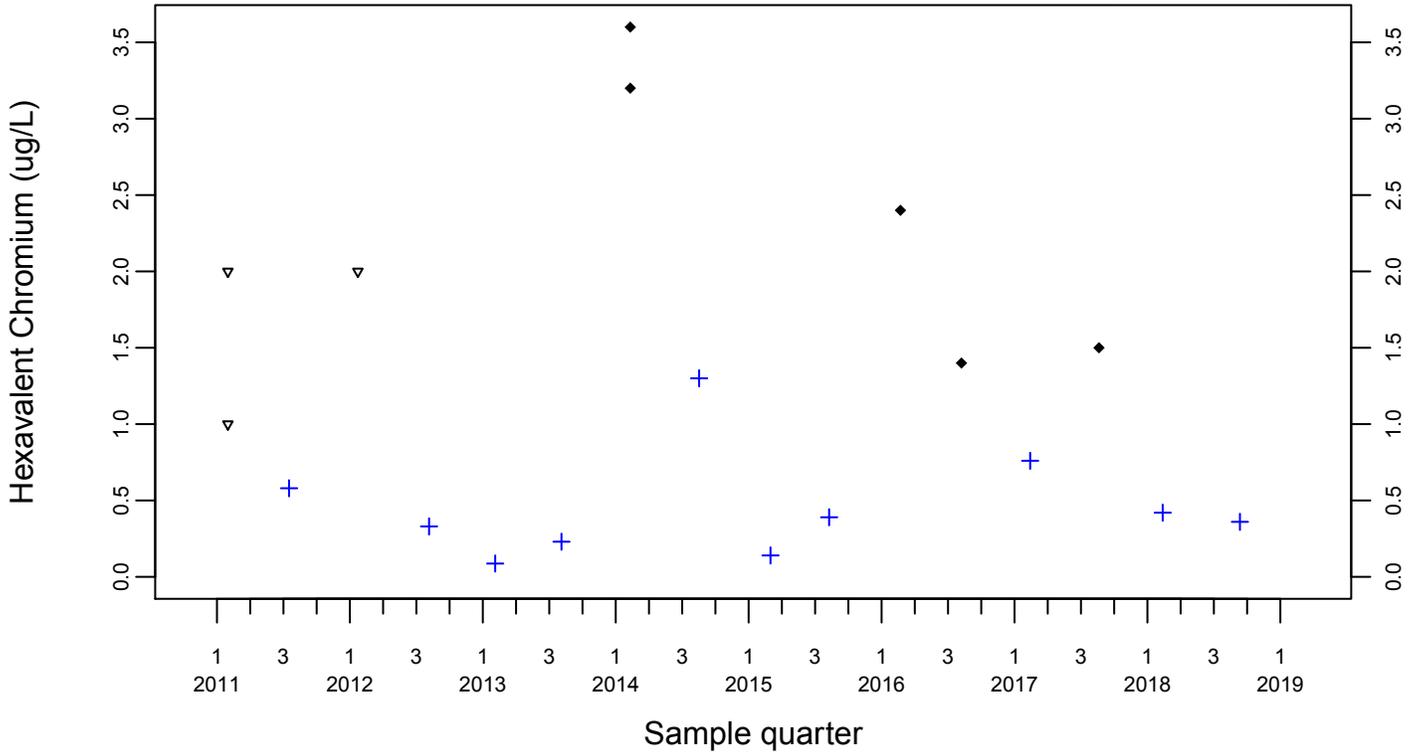
Downgradient Monitor Well W-26R-01



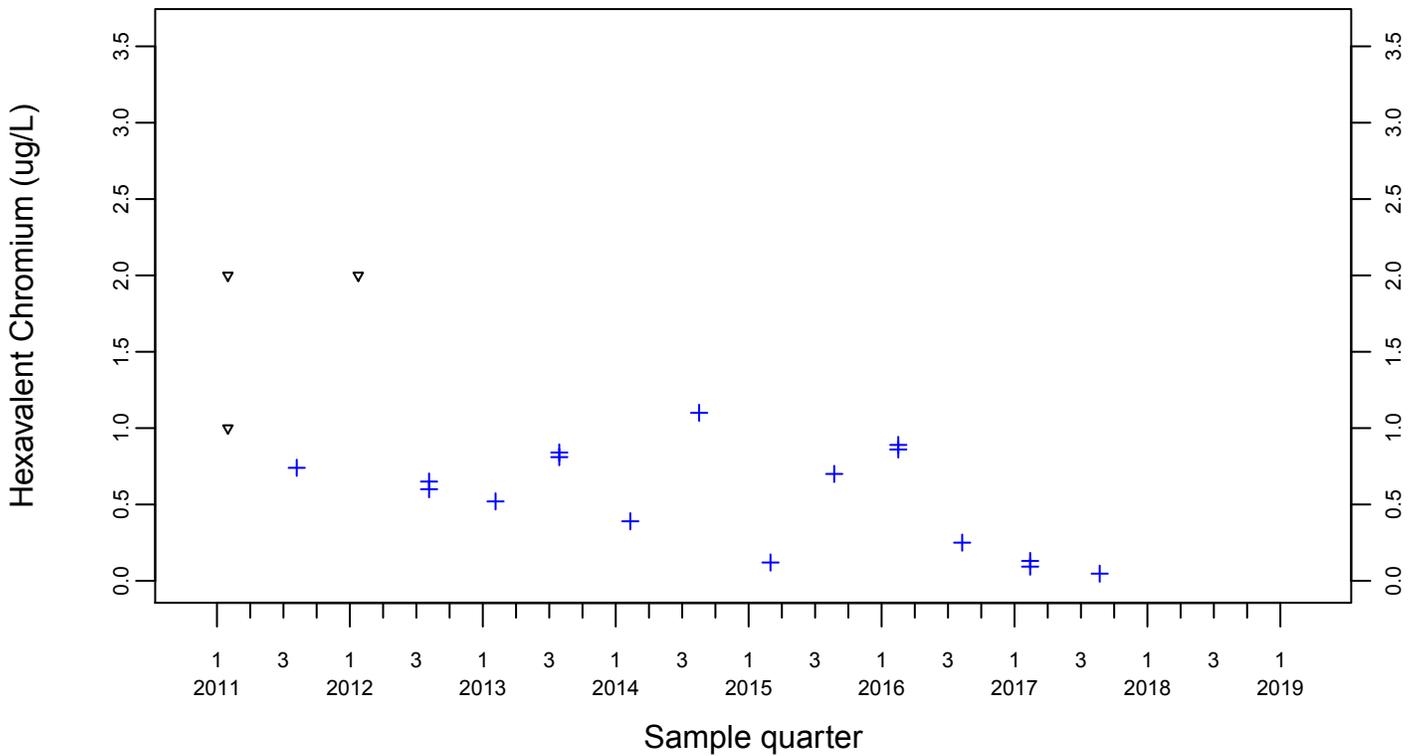
Sewage Ponds Ground Water
 Hexavalent Chromium (ug/L)

Downgradient Monitor Well W-26R-05

- ◆ Above RL
- ▽ Below RL
- + Estimated

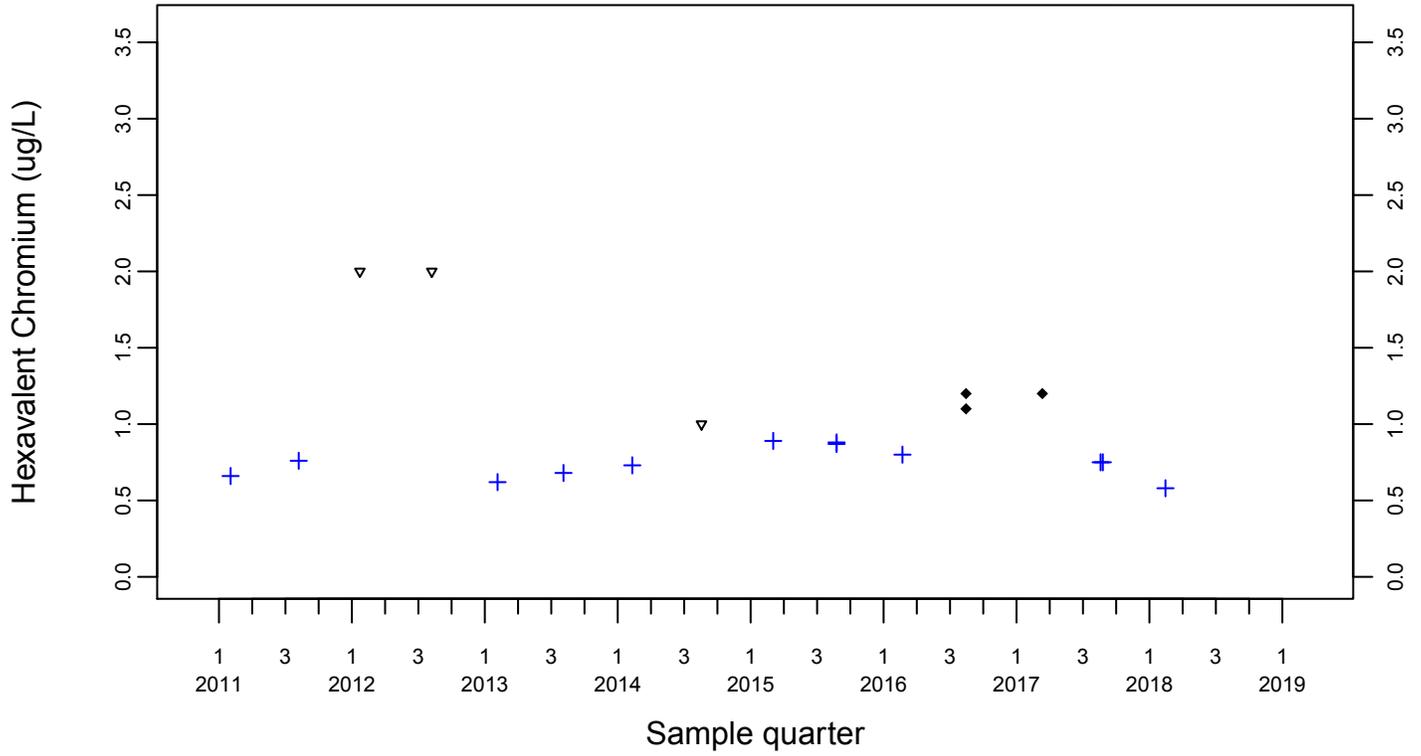


Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water
Hexavalent Chromium (ug/L)
Downgradient Monitor Well W-7DS

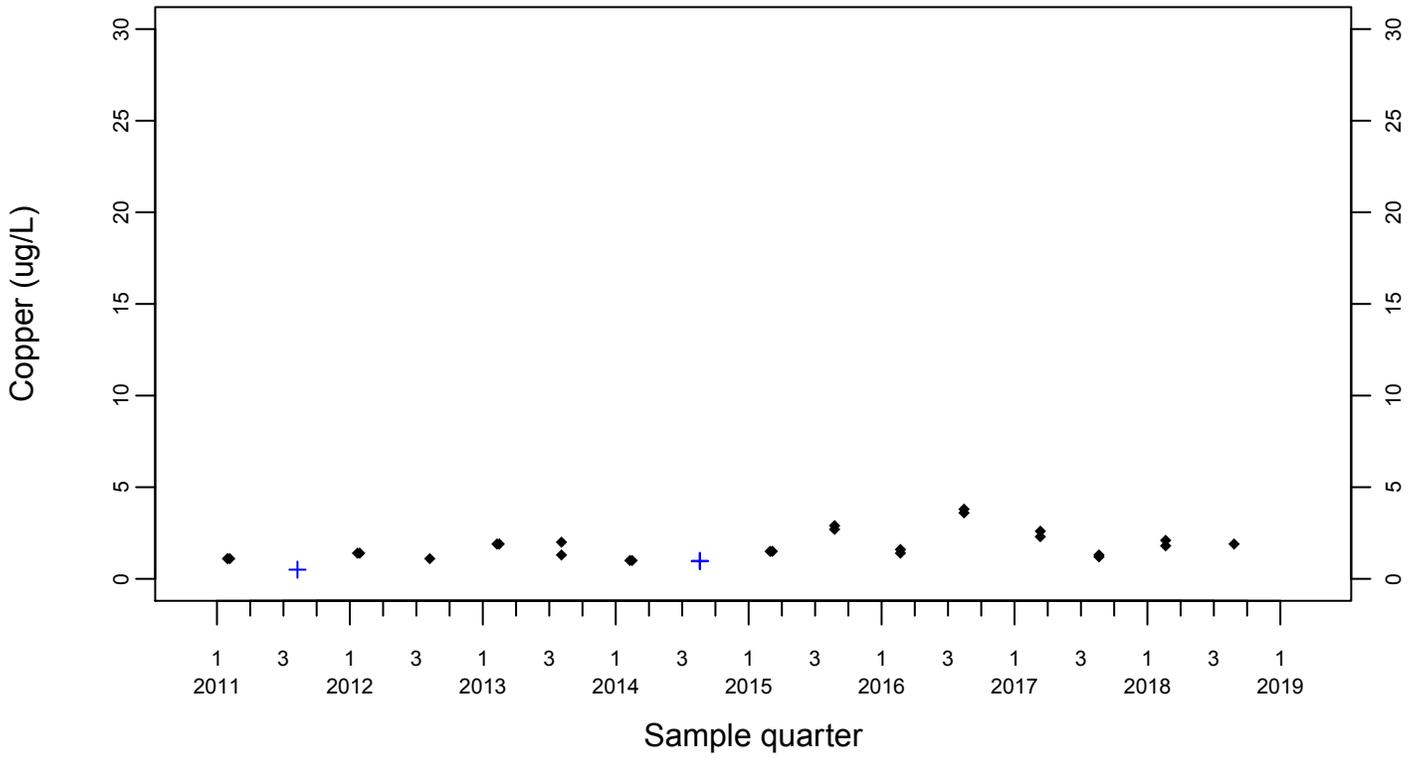
- ◆ Above RL
- ▽ Below RL
- + Estimated



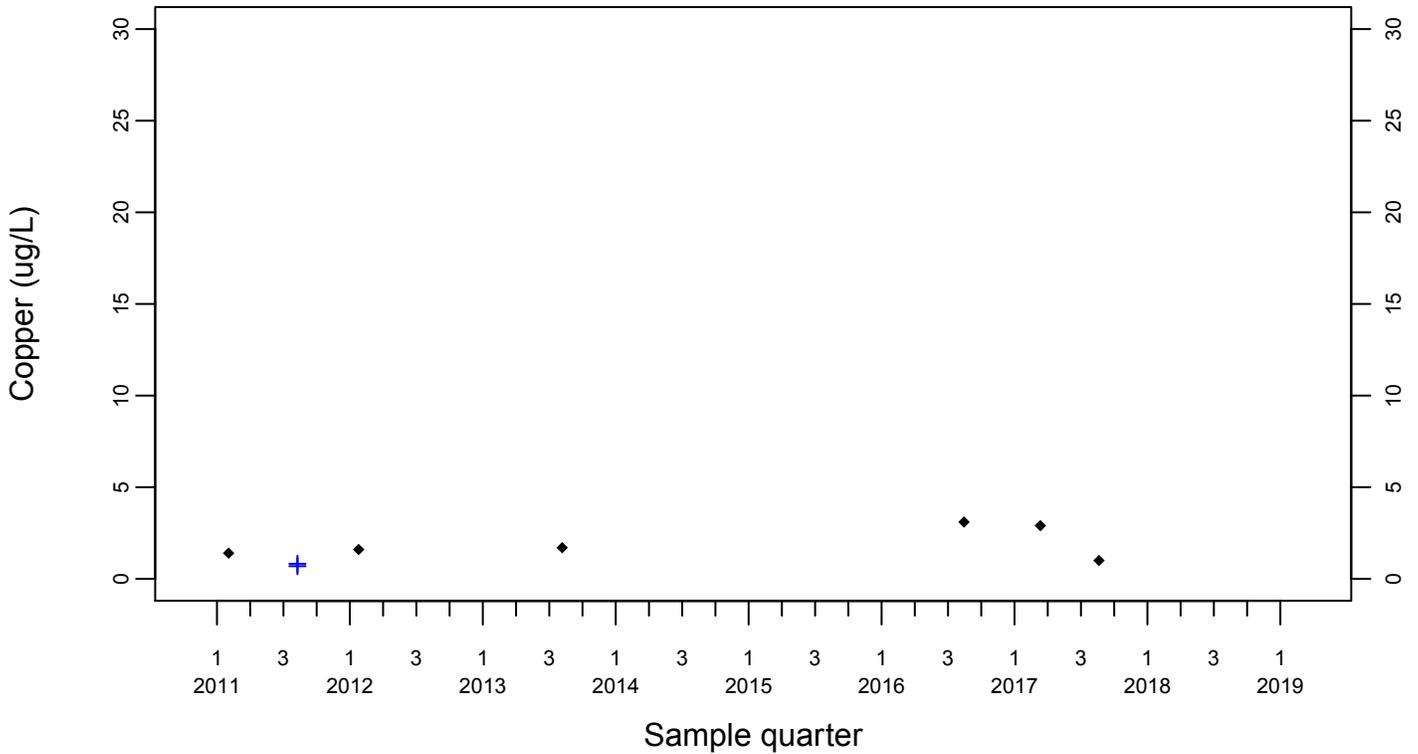
Sewage Ponds Ground Water Copper (ug/L)

Upgradient Monitor Well W-7ES

◆ Above RL
+ Estimated



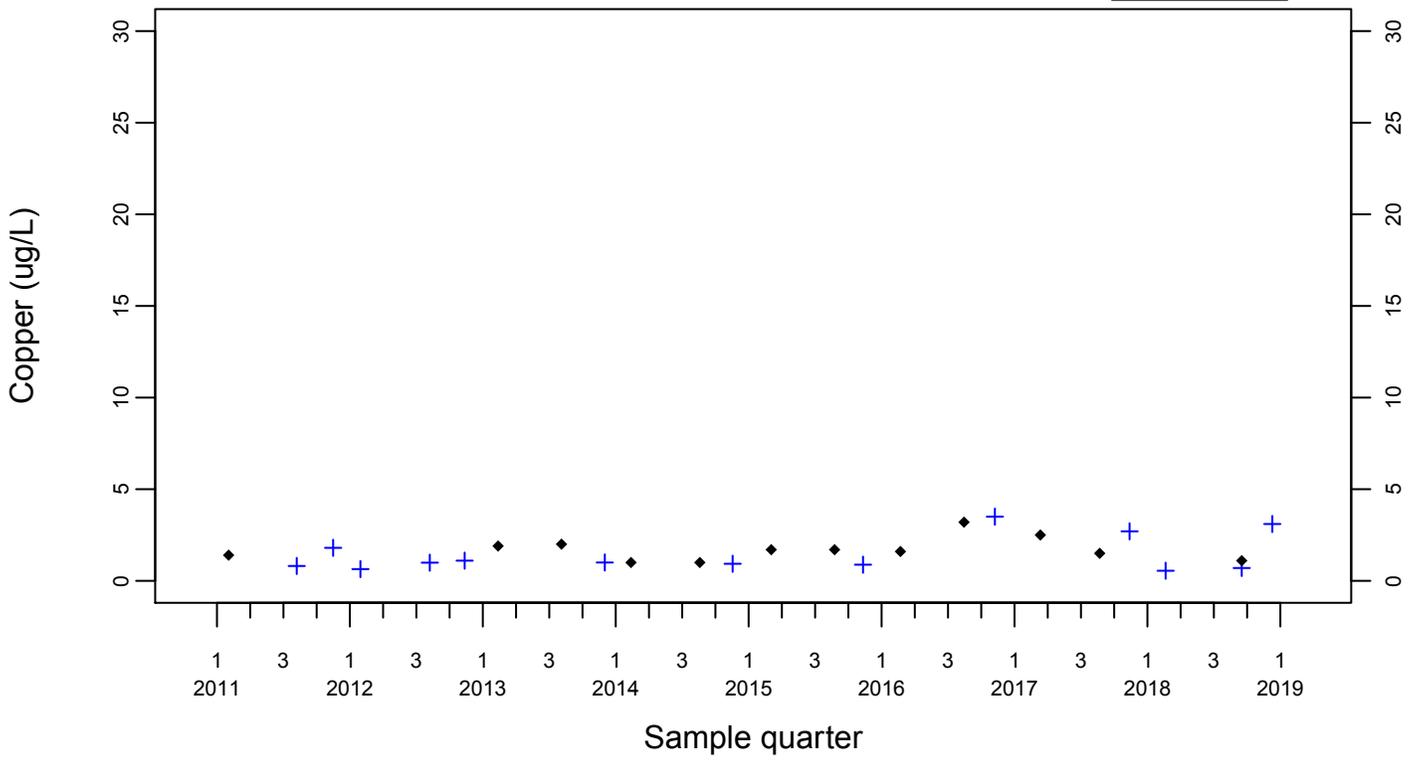
Upgradient Monitor Well W-7PS



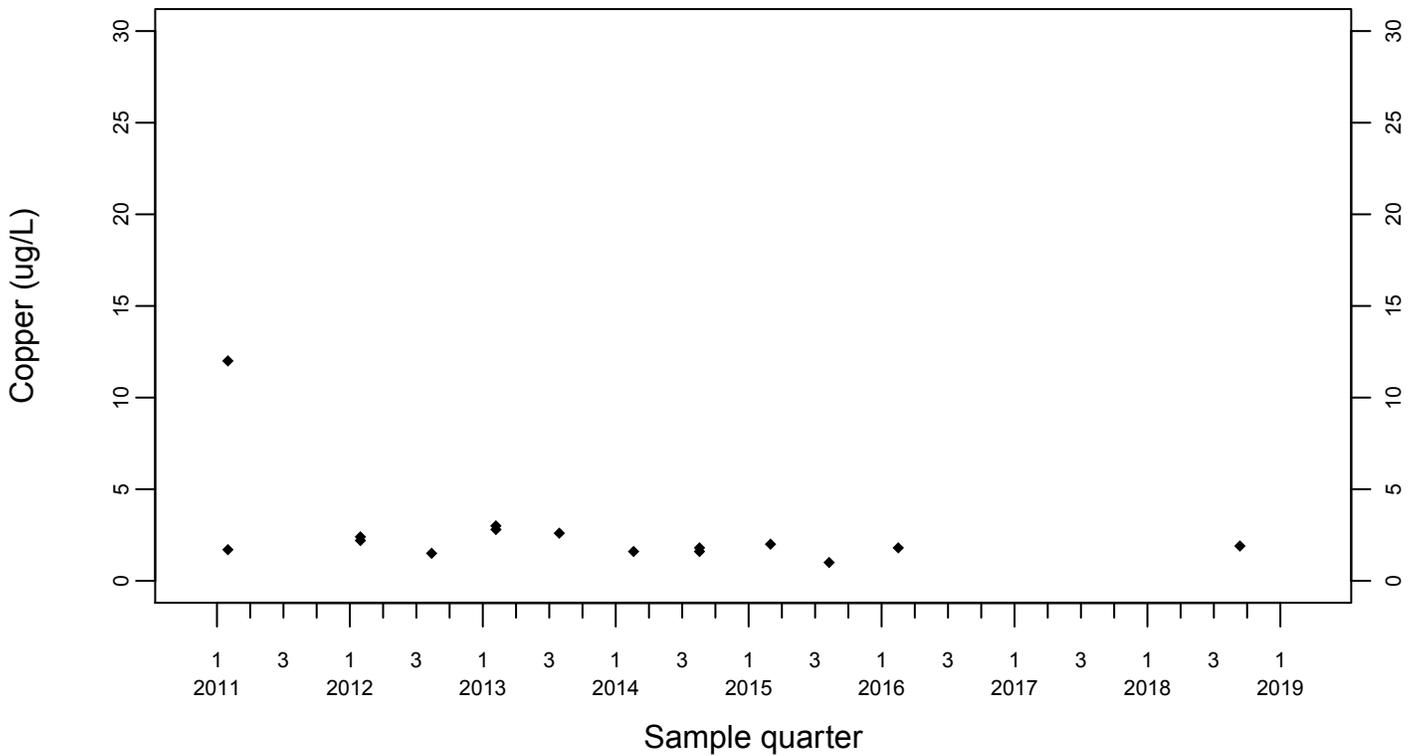
Sewage Ponds Ground Water Copper (ug/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
+ Estimated



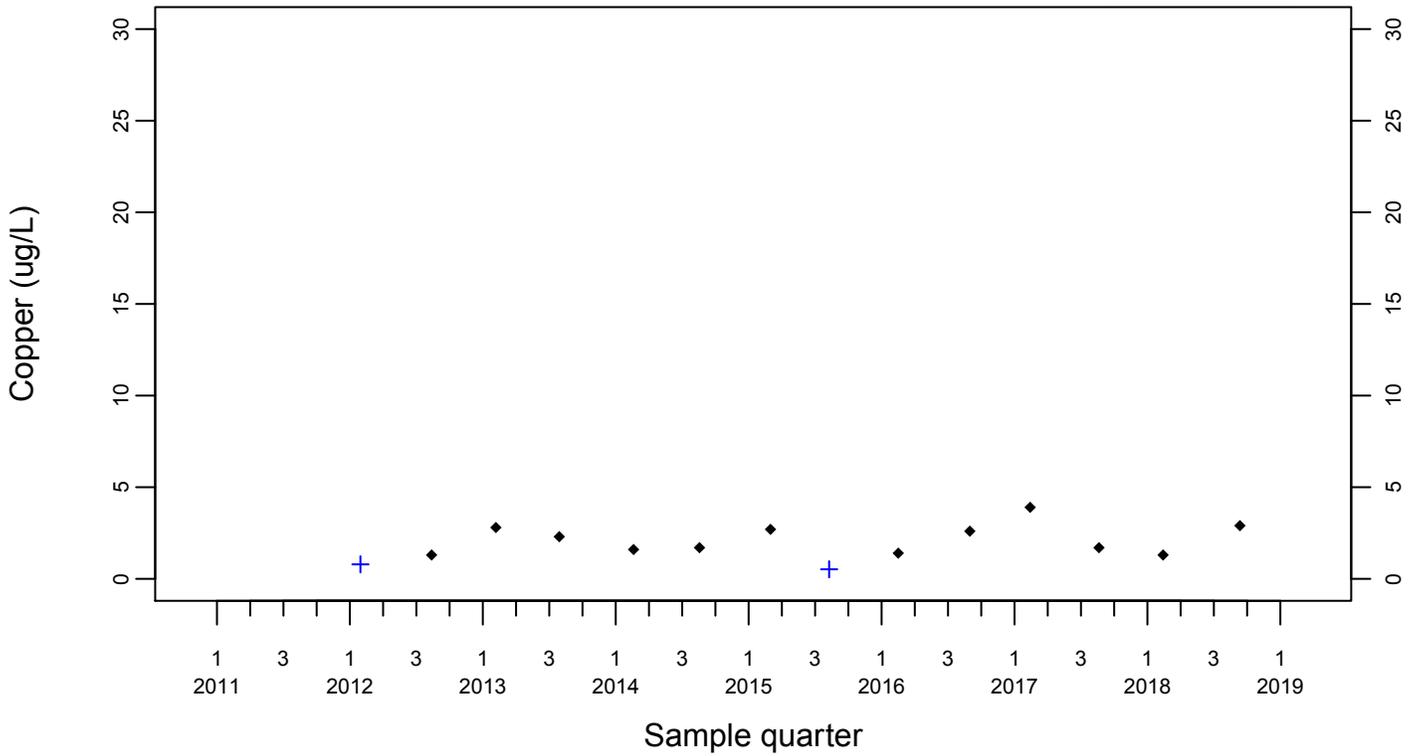
Downgradient Monitor Well W-25N-23



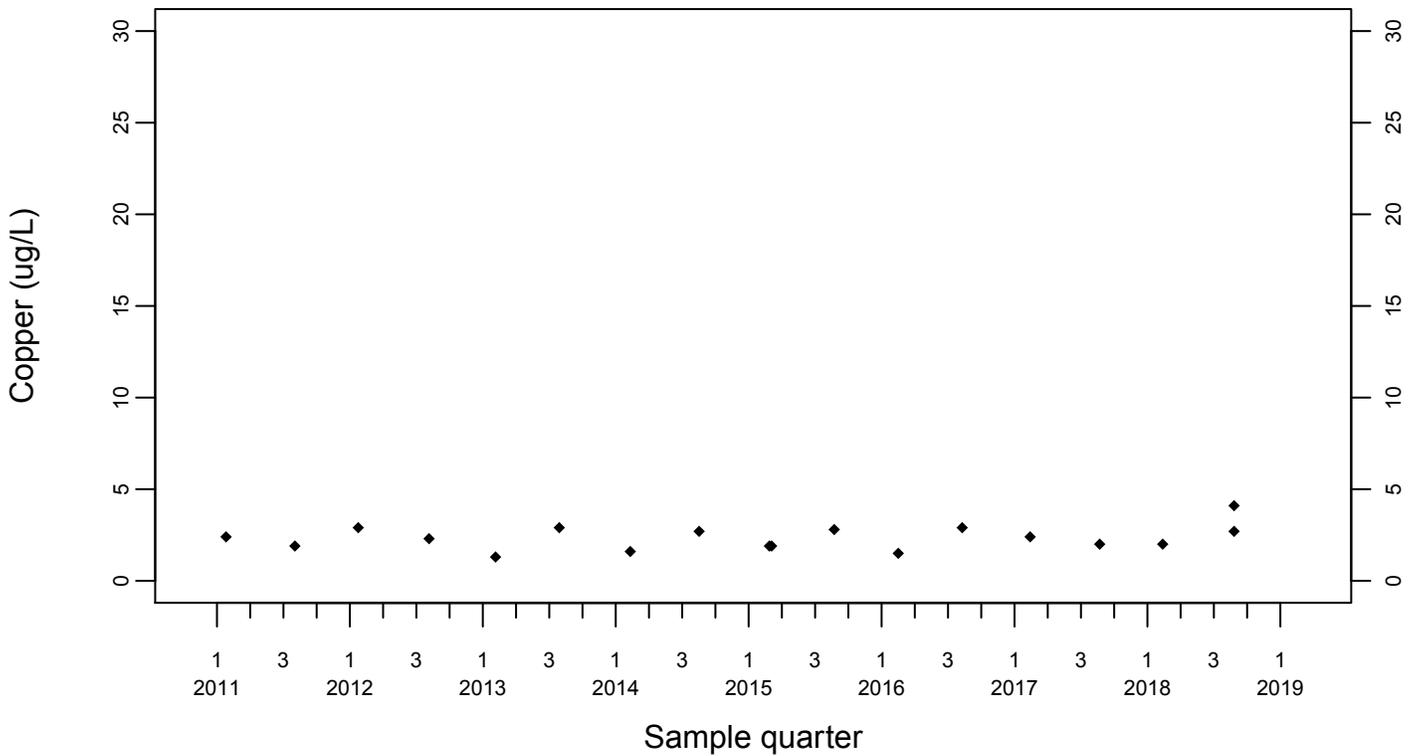
Sewage Ponds Ground Water Copper (ug/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
+ Estimated



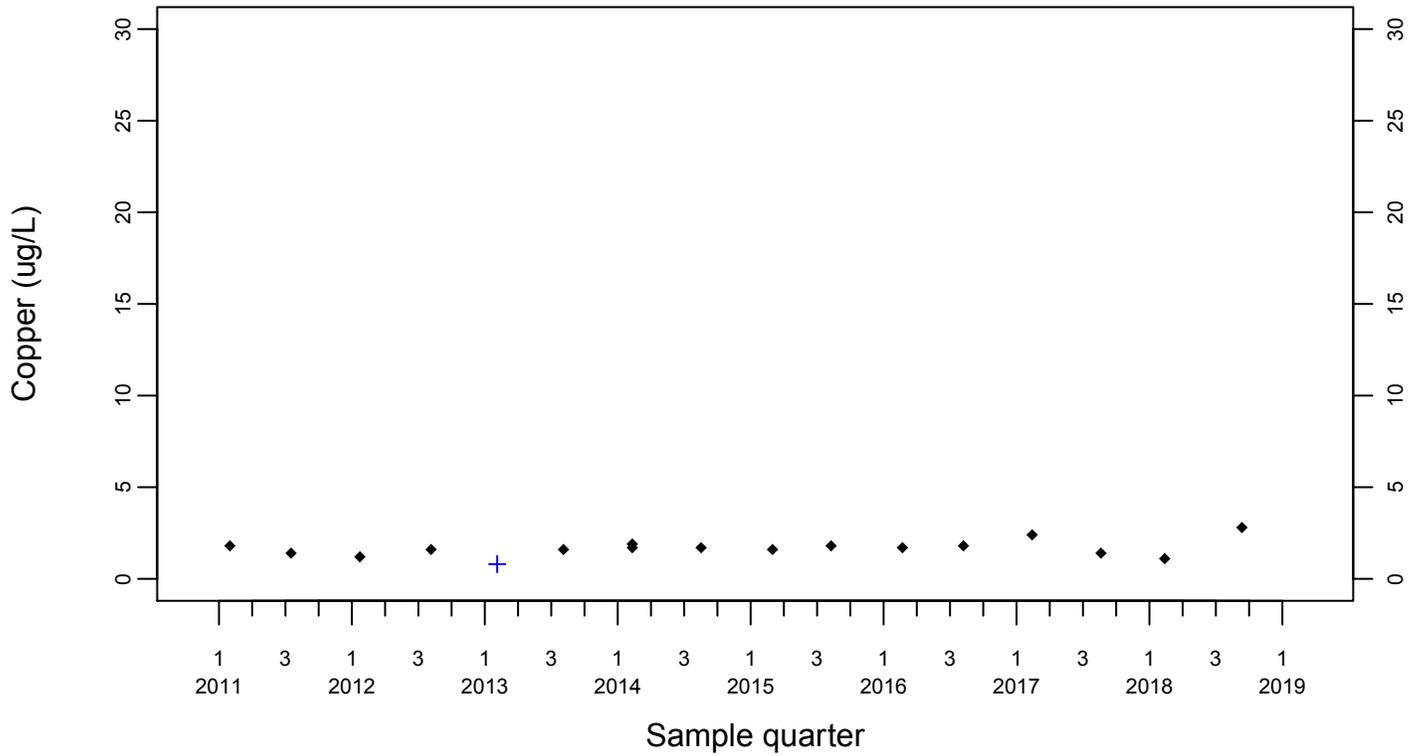
Downgradient Monitor Well W-26R-01



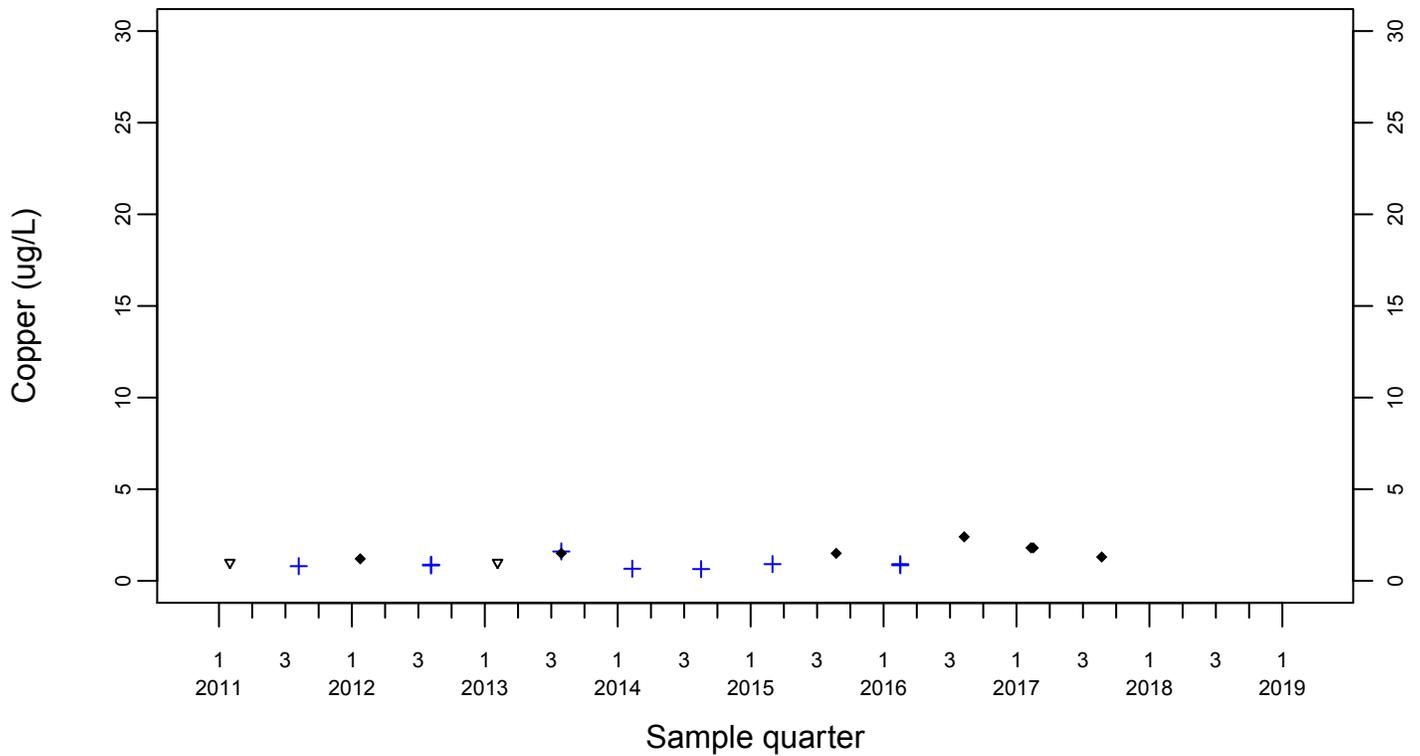
Sewage Ponds Ground Water
 Copper (ug/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
 + Estimated



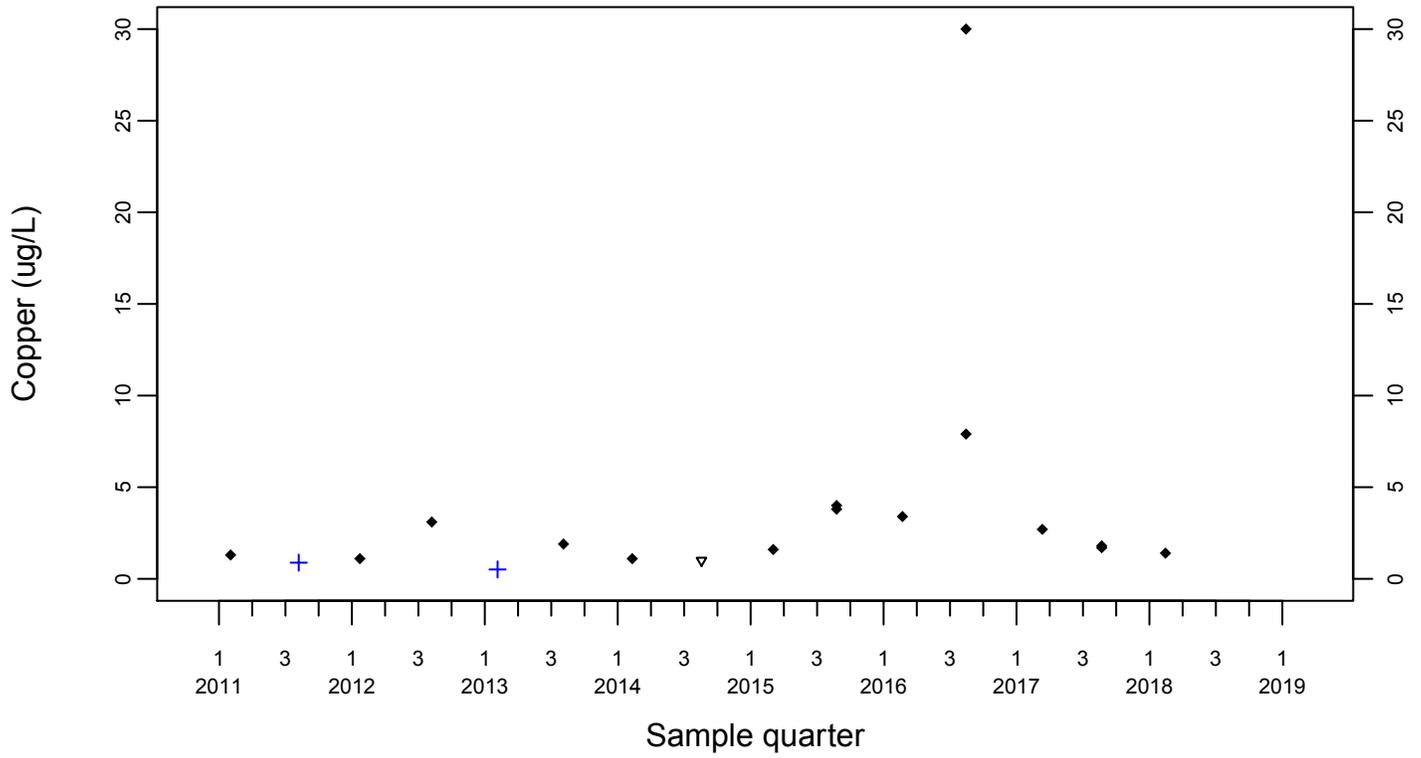
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Copper (ug/L)

Downgradient Monitor Well W-7DS

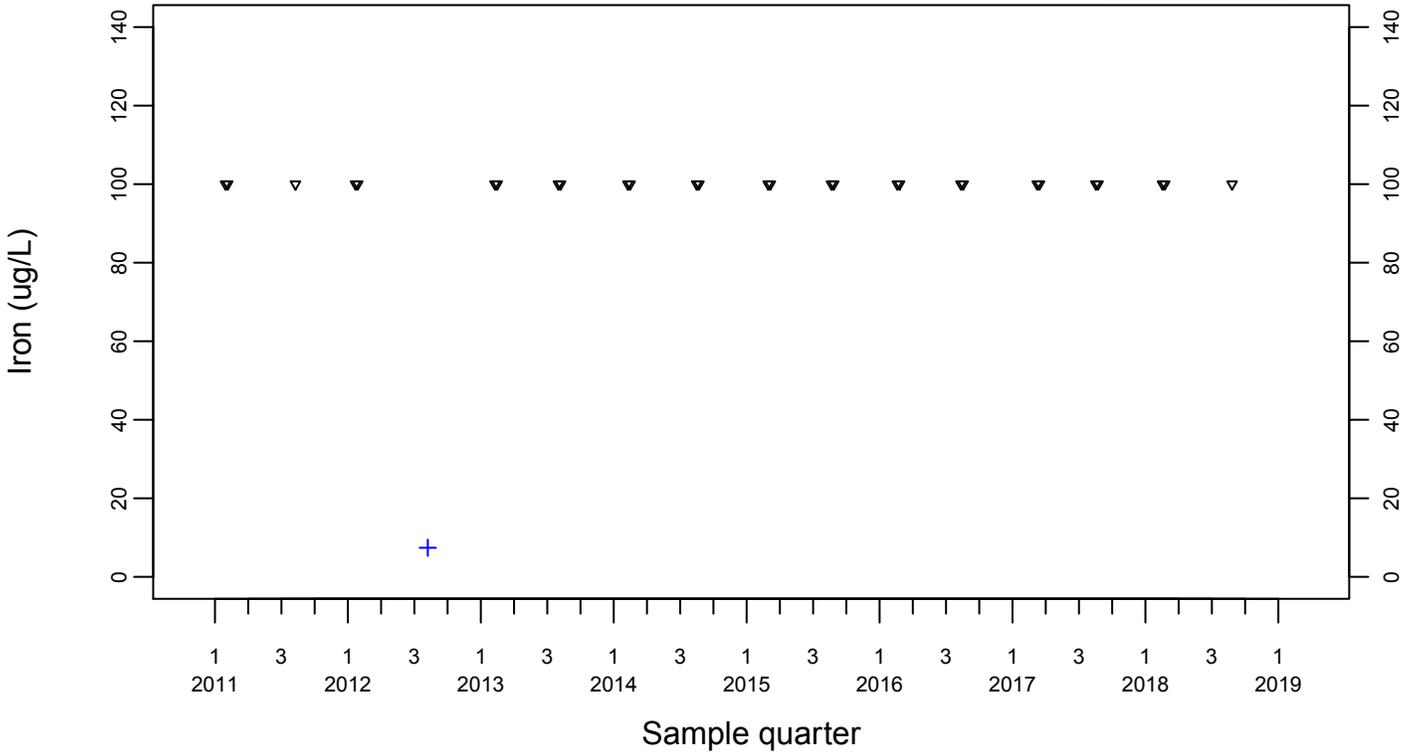
- ◆ Above RL
- ▽ Below RL
- + Estimated



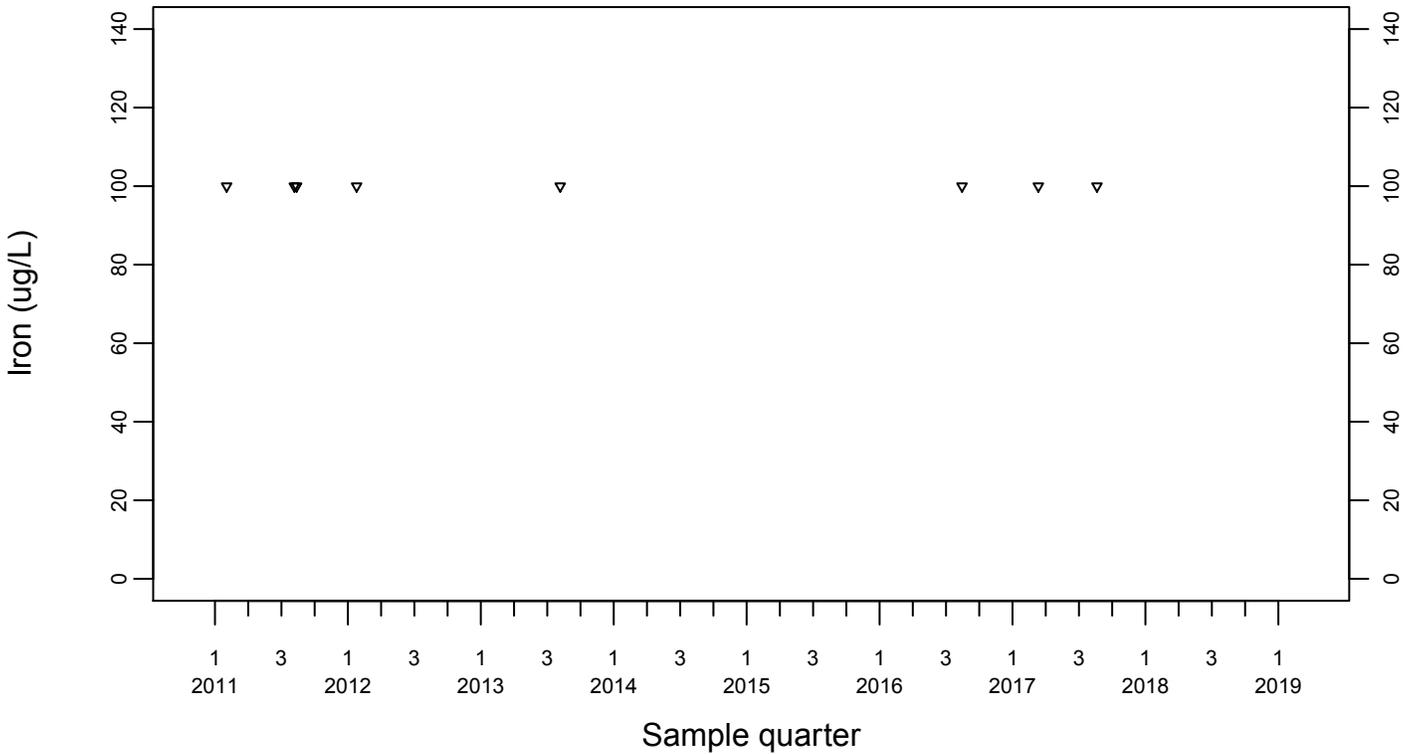
Sewage Ponds Ground Water Iron (ug/L)

Upgradient Monitor Well W-7ES

- ◆ Above RL
- ▽ Below RL
- + Estimated



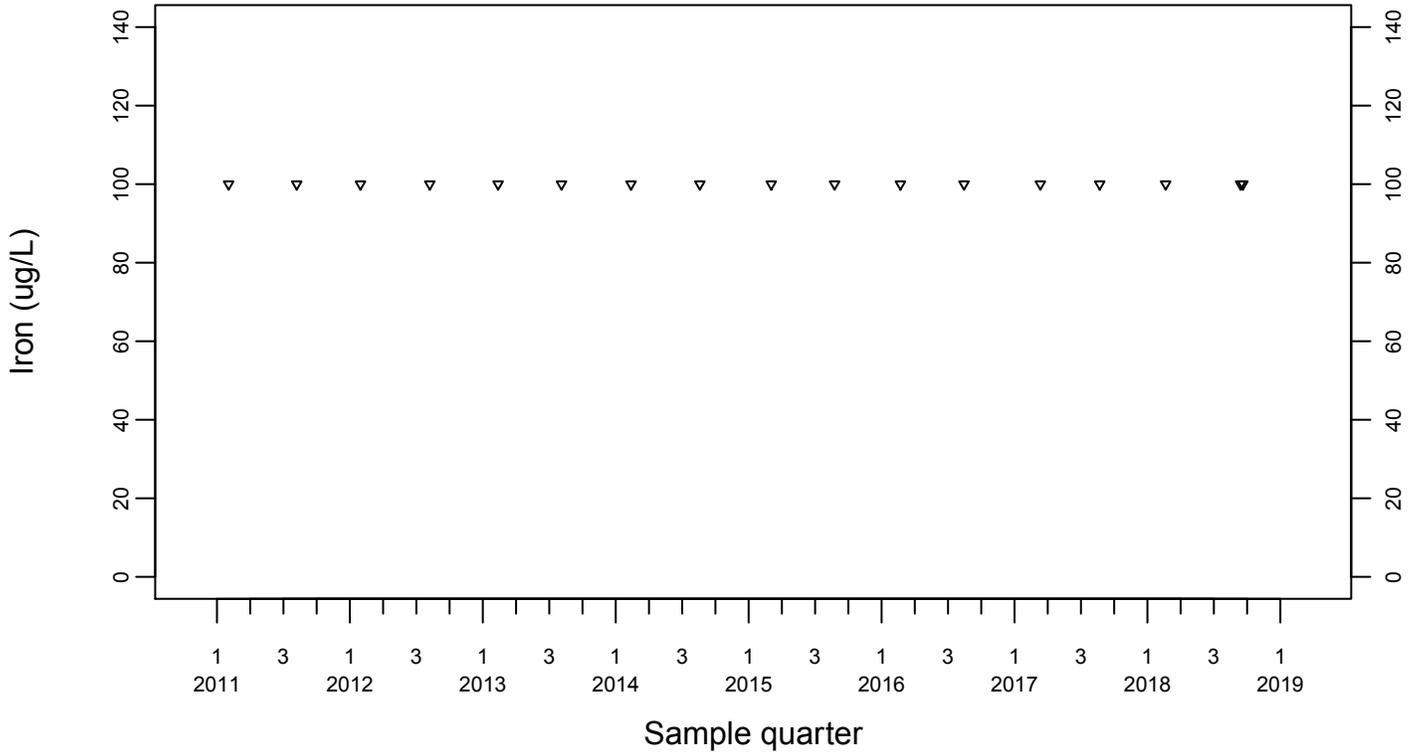
Upgradient Monitor Well W-7PS



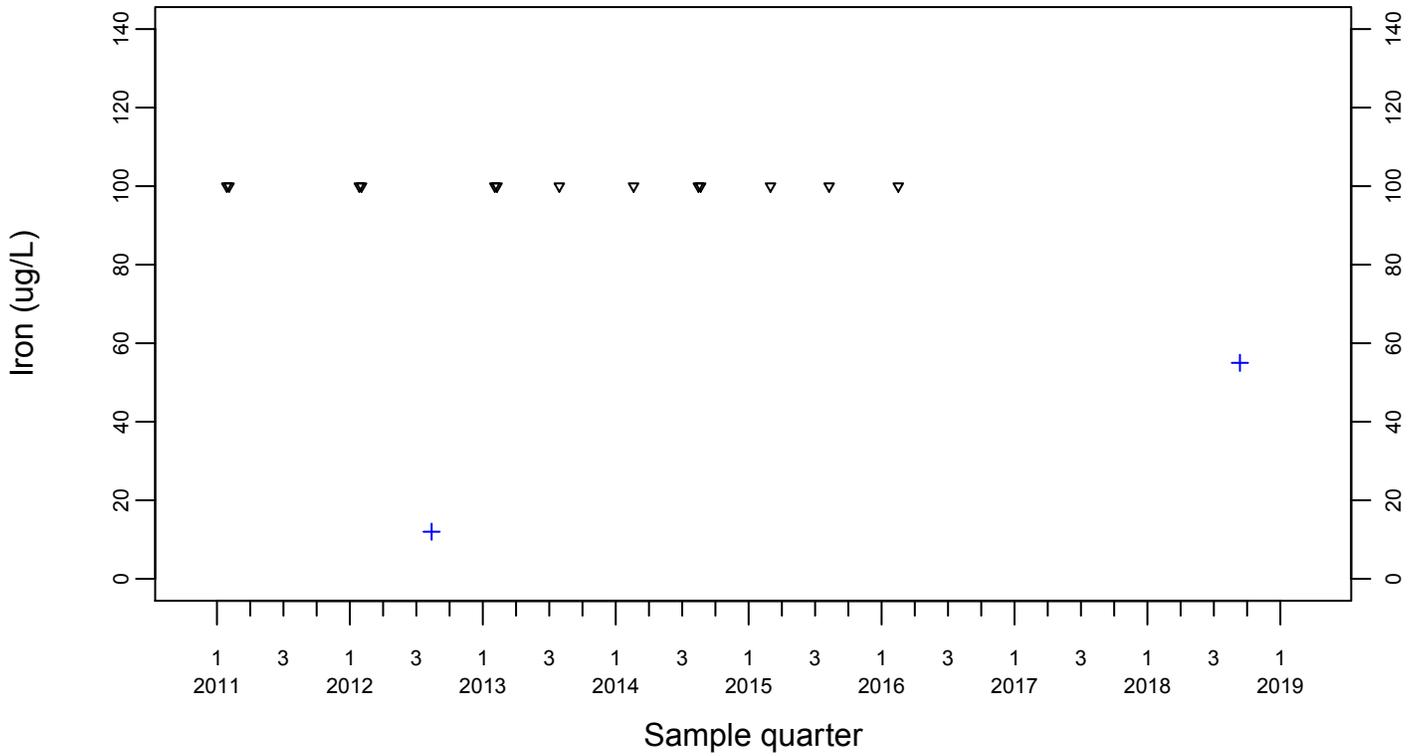
Sewage Ponds Ground Water Iron (ug/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



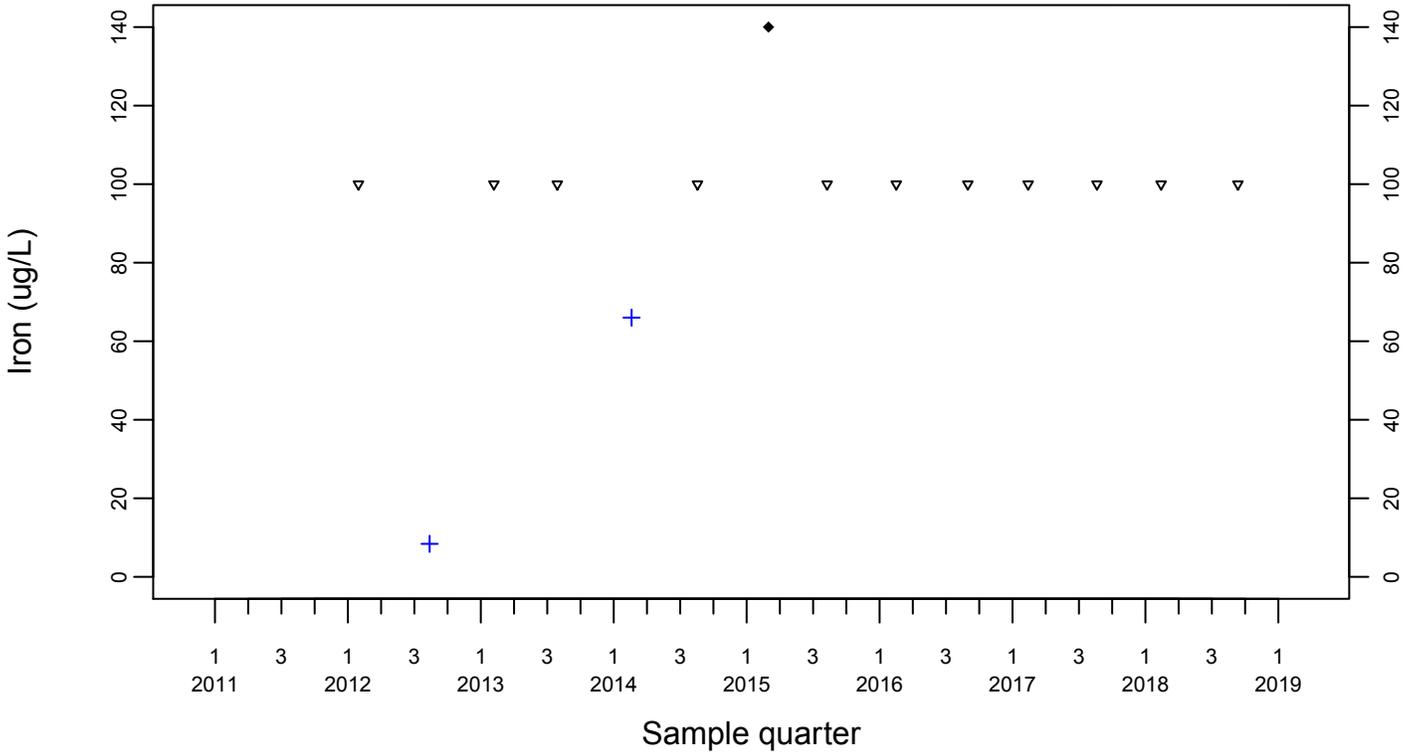
Downgradient Monitor Well W-25N-23



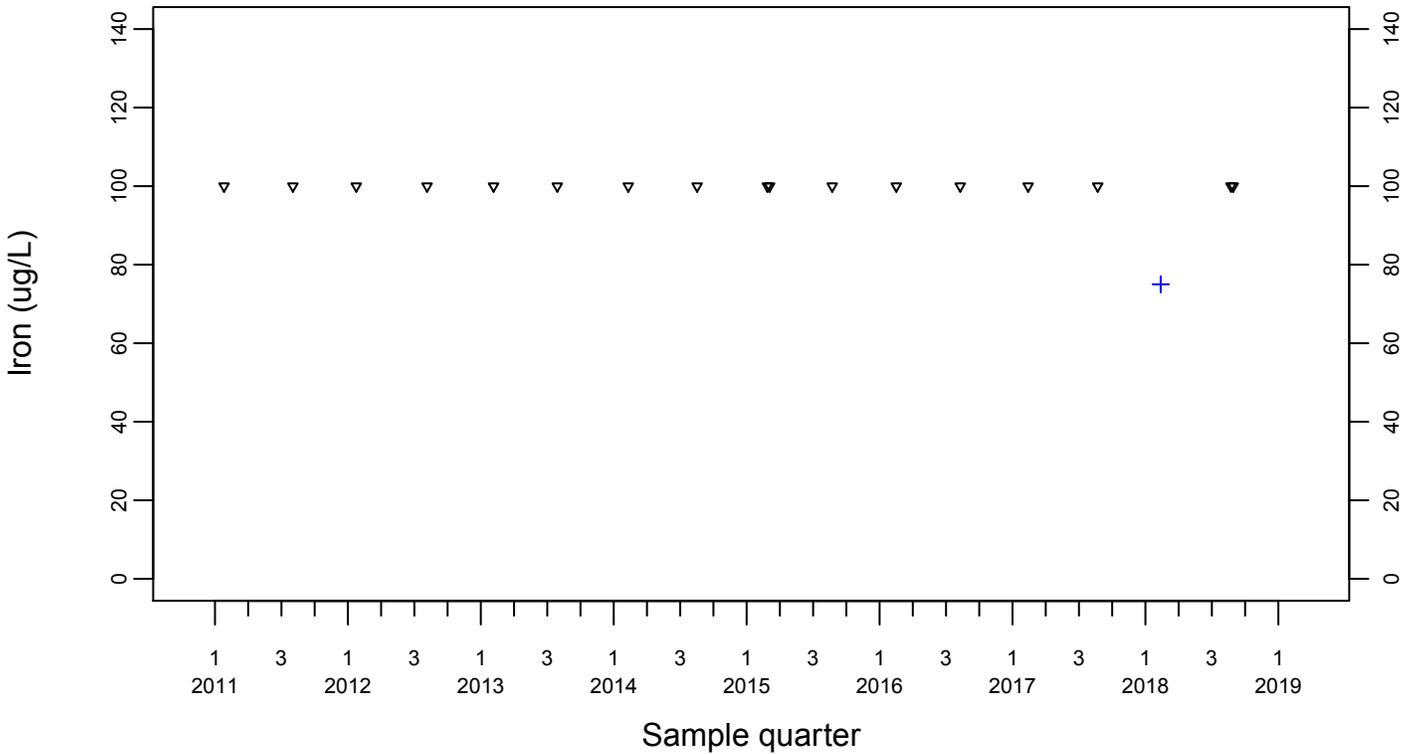
Sewage Ponds Ground Water Iron (ug/L)

Downgradient Monitor Well W-25N-22

- ◆ Above RL
- ▽ Below RL
- + Estimated



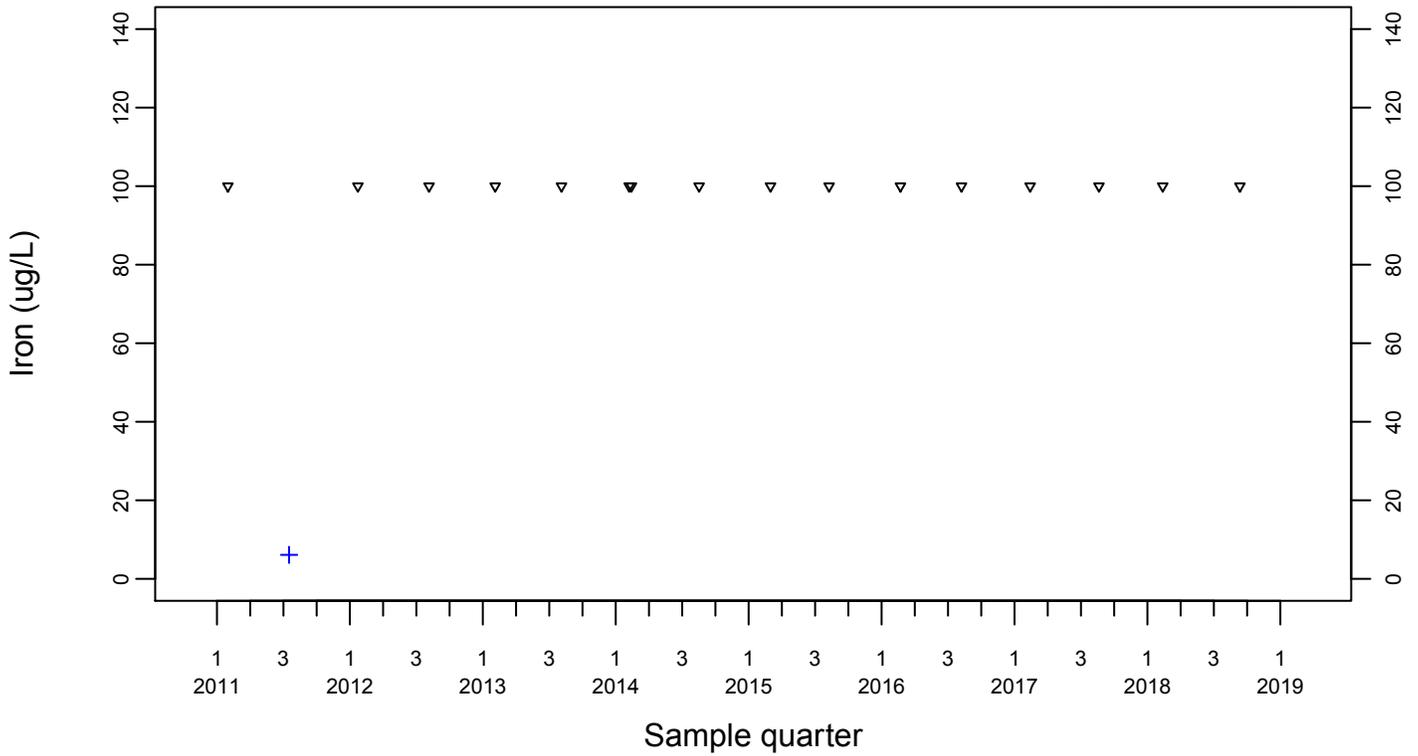
Downgradient Monitor Well W-26R-01



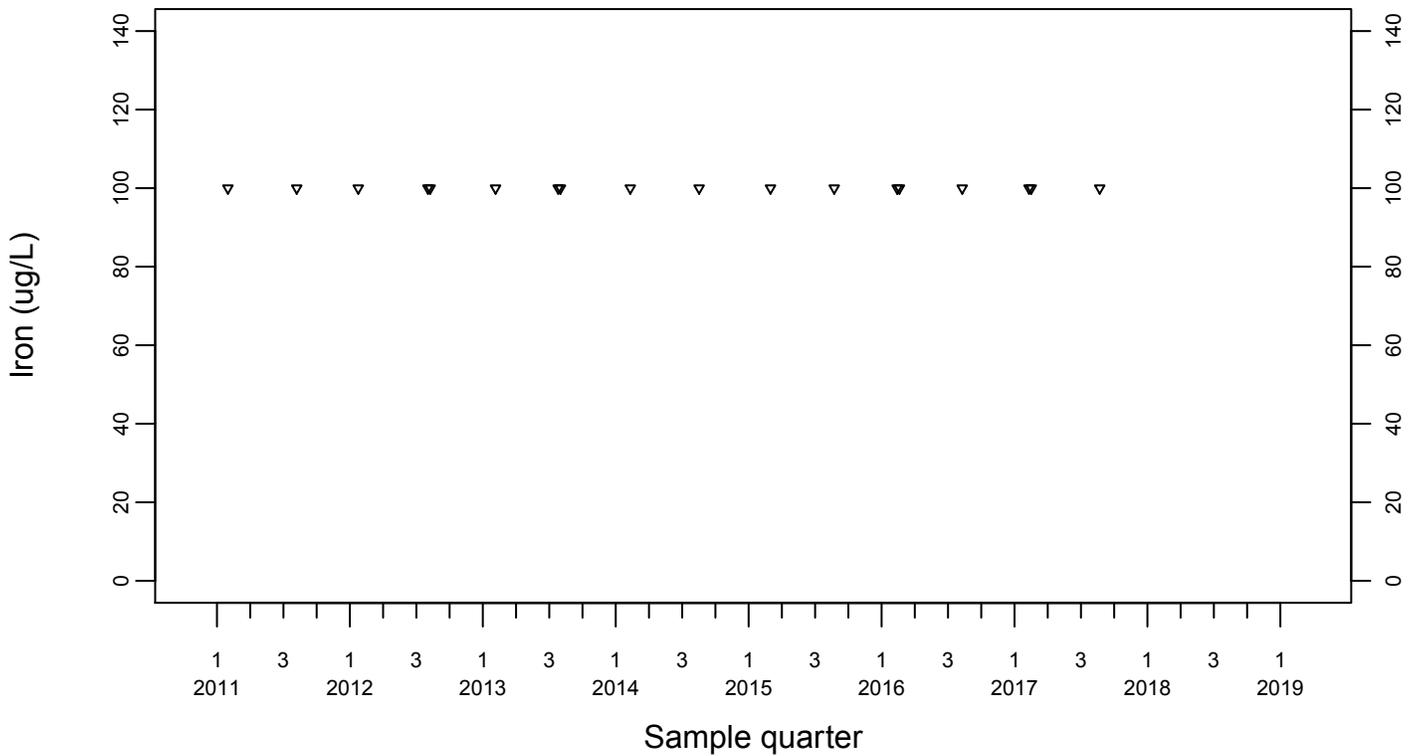
Sewage Ponds Ground Water Iron (ug/L)

Downgradient Monitor Well W-26R-05

- ◆ Above RL
- ▽ Below RL
- + Estimated



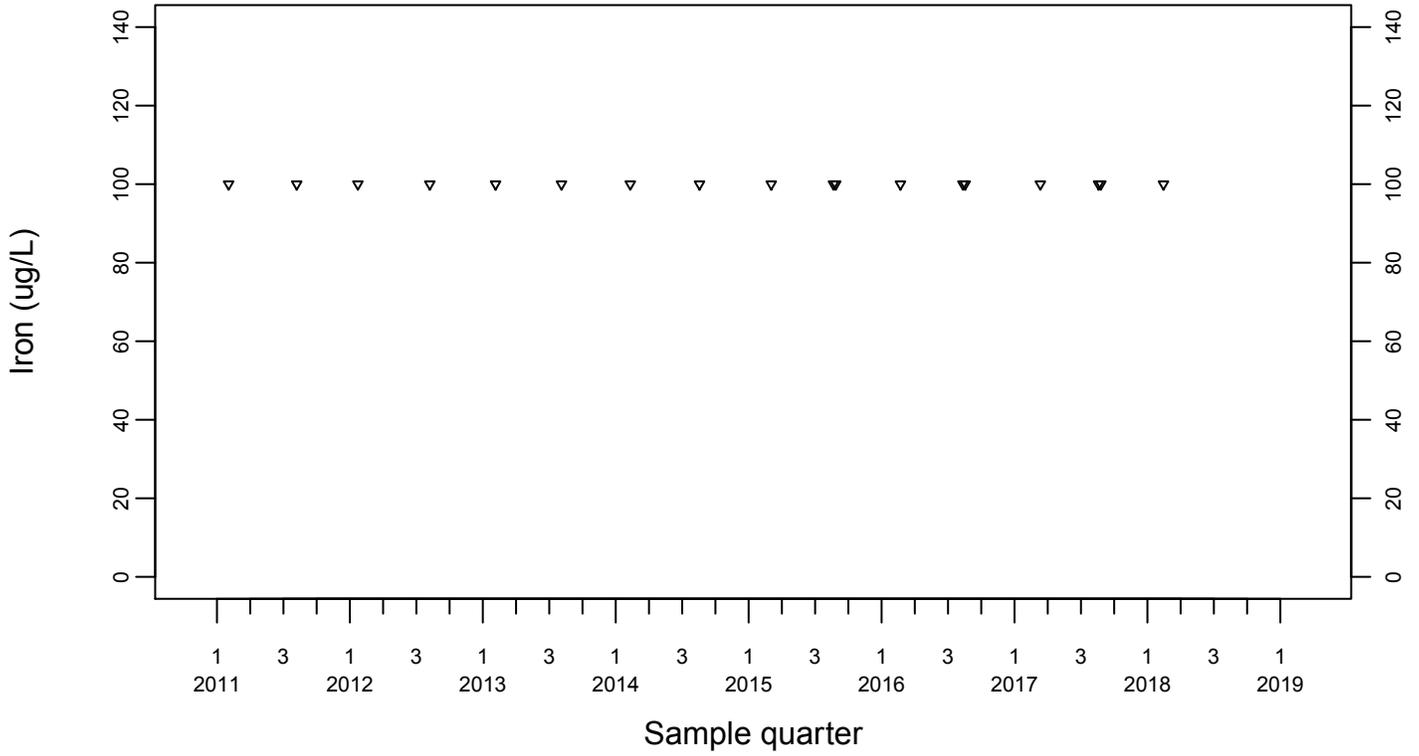
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Iron (ug/L)

Downgradient Monitor Well W-7DS

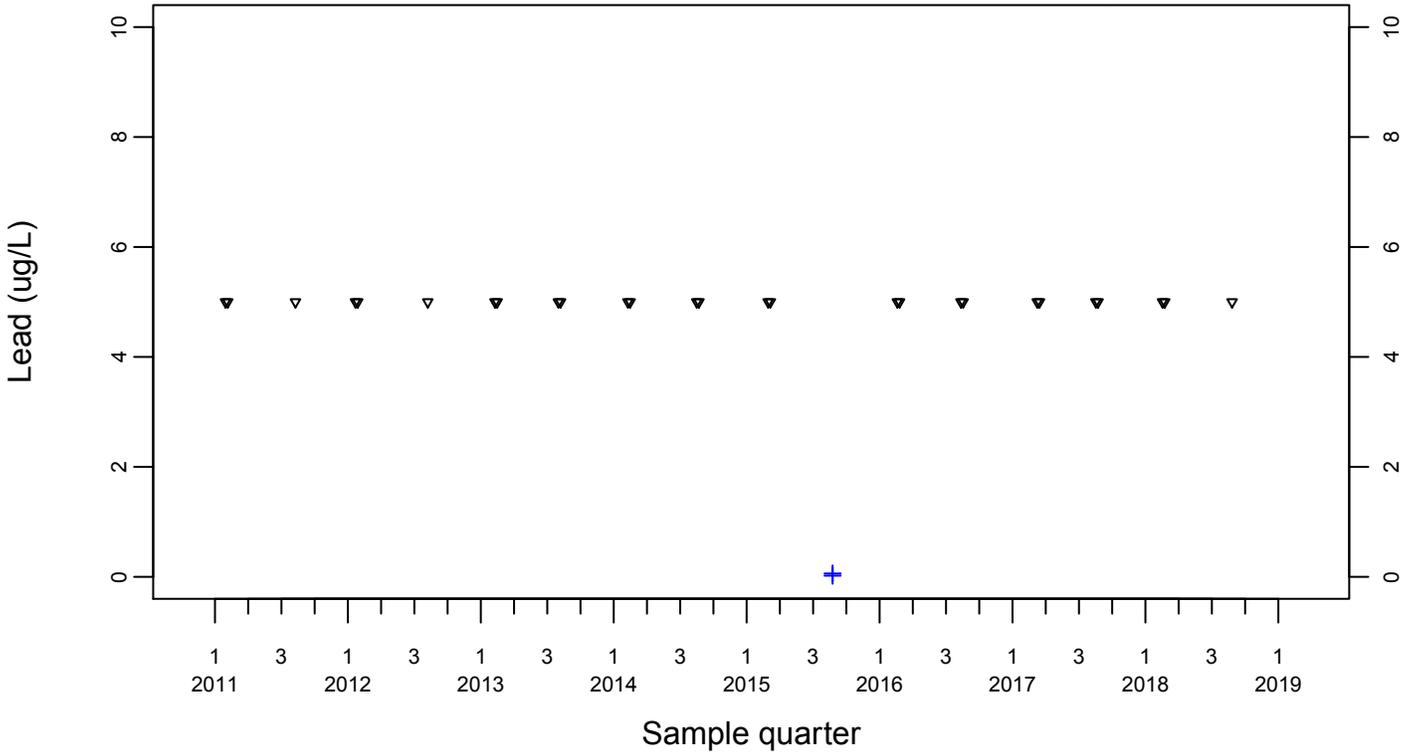
◆ Above RL
▽ Below RL



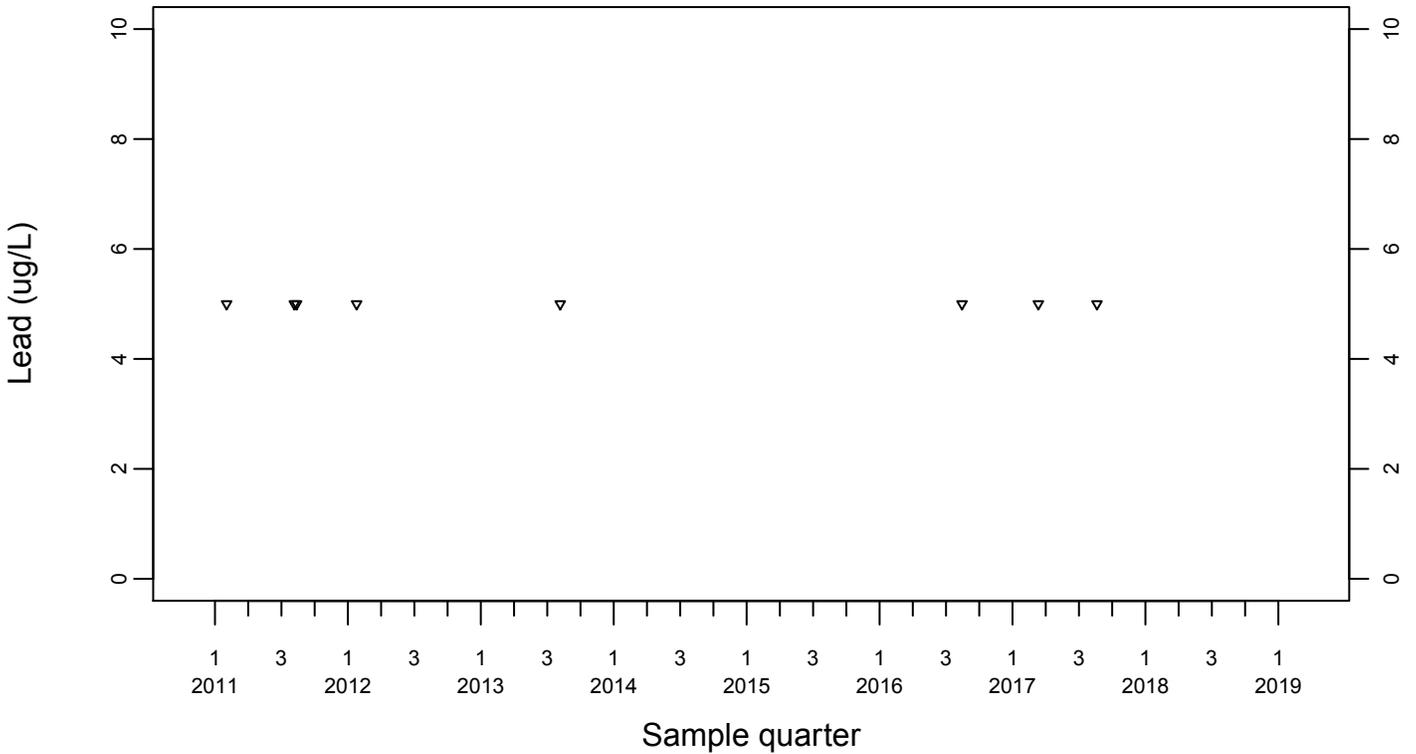
Sewage Ponds Ground Water Lead (ug/L)

Upgradient Monitor Well W-7ES

- ◆ Above RL
- ▽ Below RL
- + Estimated



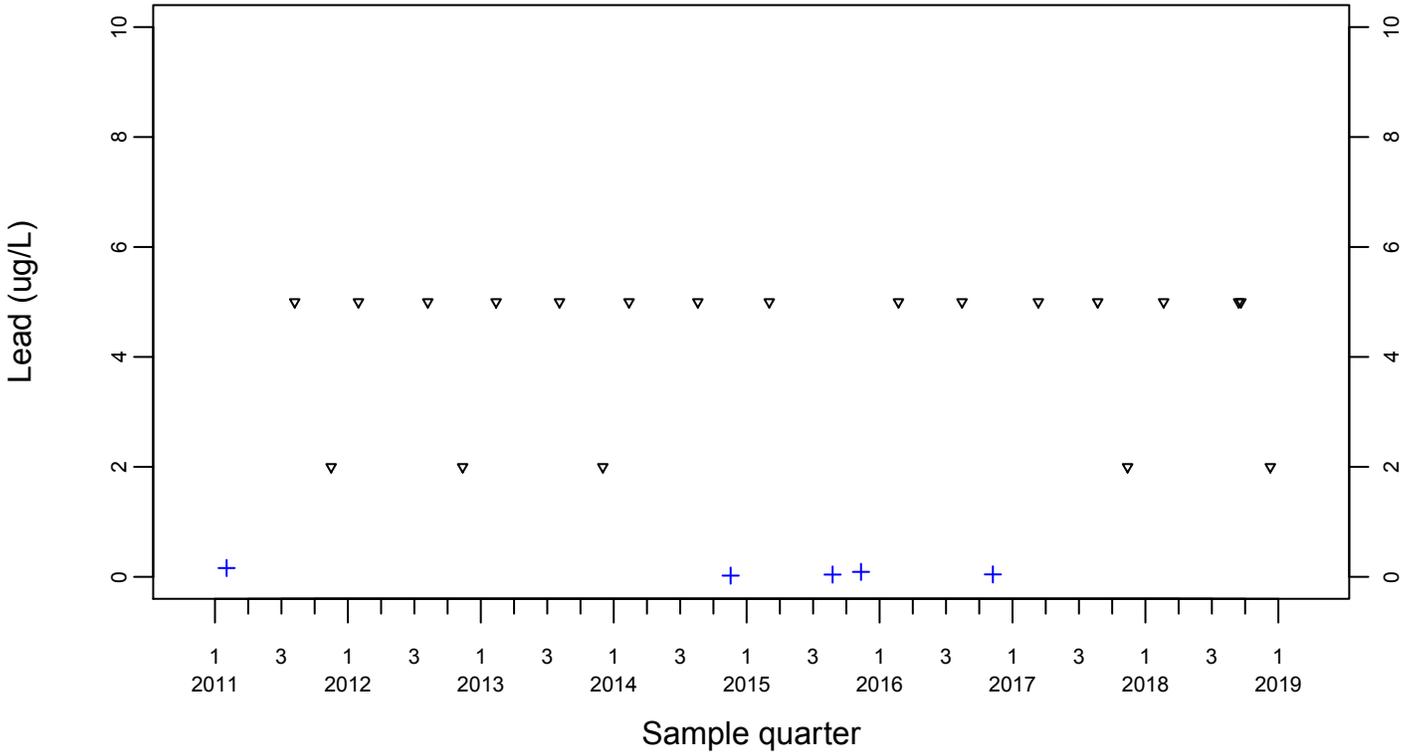
Upgradient Monitor Well W-7PS



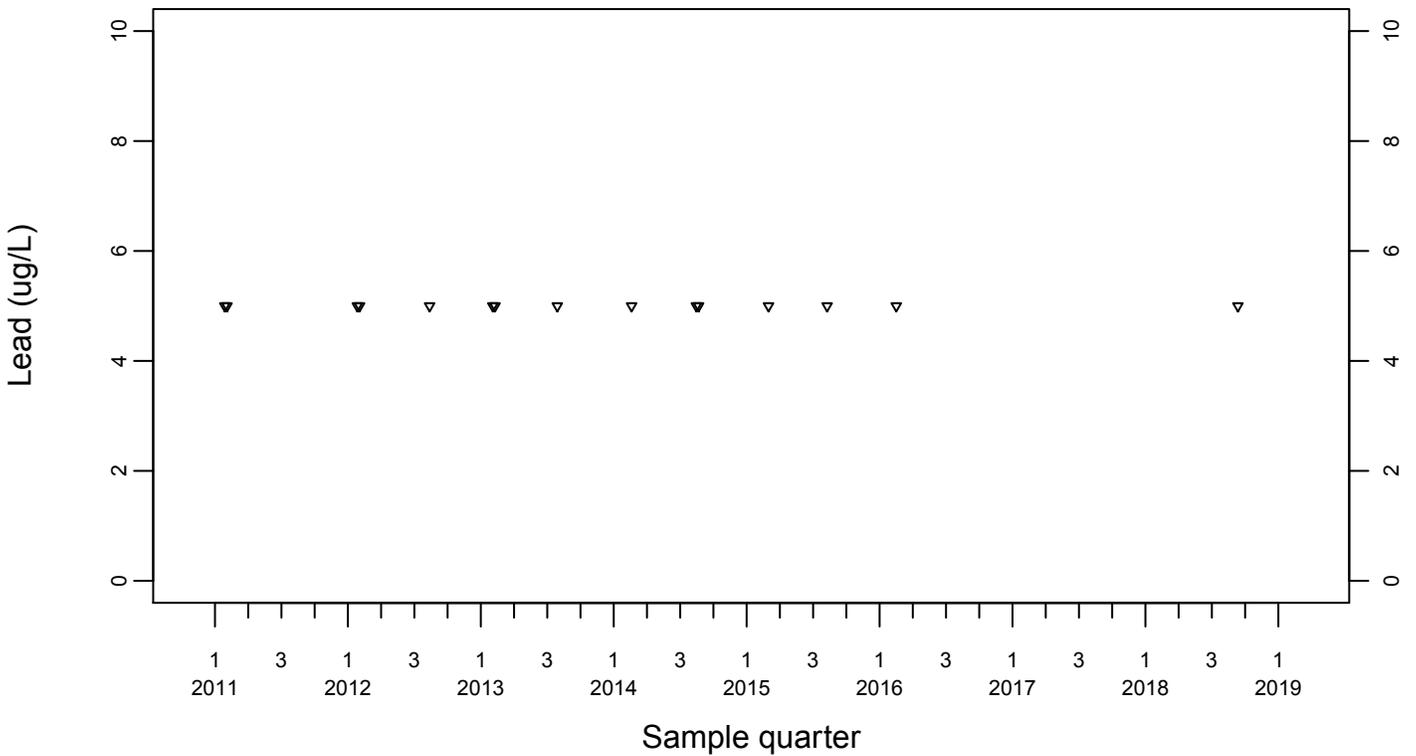
Sewage Ponds Ground Water Lead (ug/L)

Crossgradient Monitor Well W-35A-04

- ◆ Above RL
- ▽ Below RL
- + Estimated



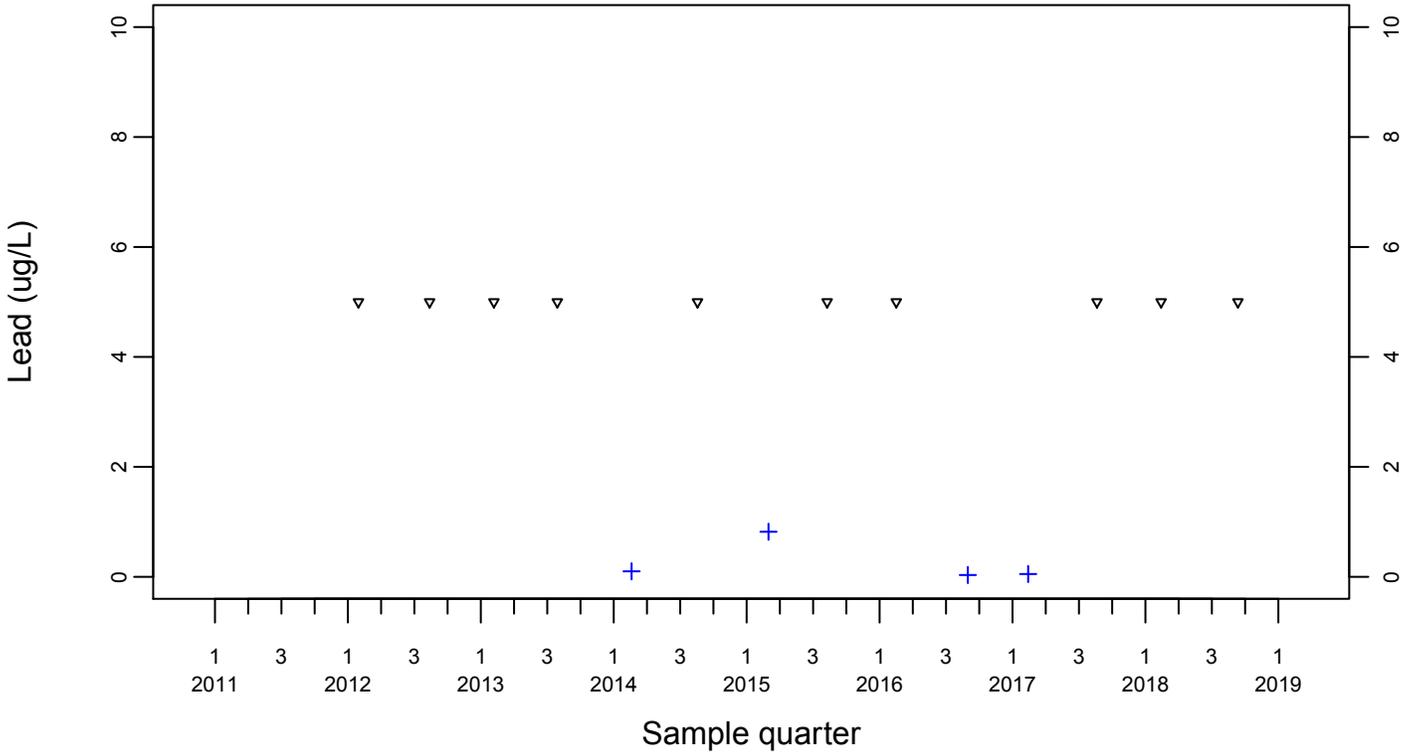
Downgradient Monitor Well W-25N-23



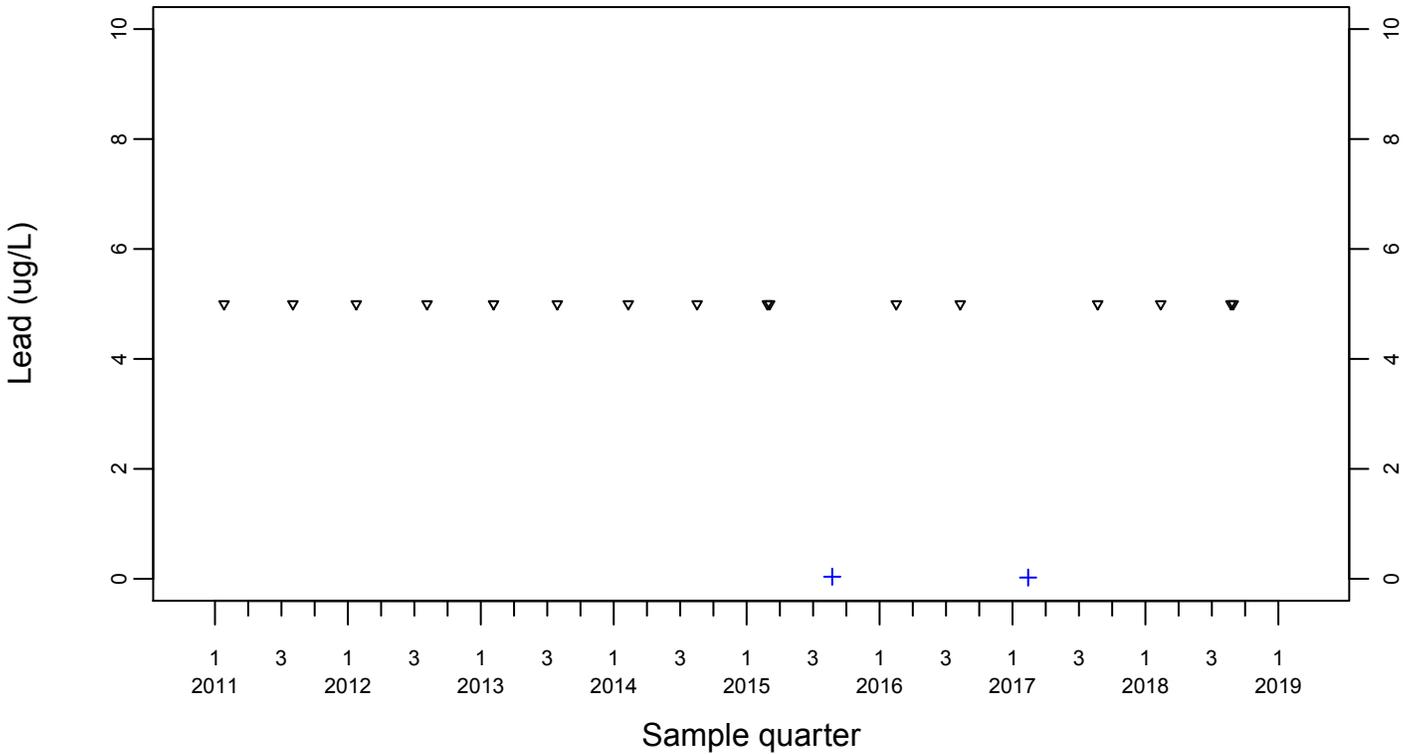
Sewage Ponds Ground Water Lead (ug/L)

Downgradient Monitor Well W-25N-22

- ◆ Above RL
- ▽ Below RL
- + Estimated



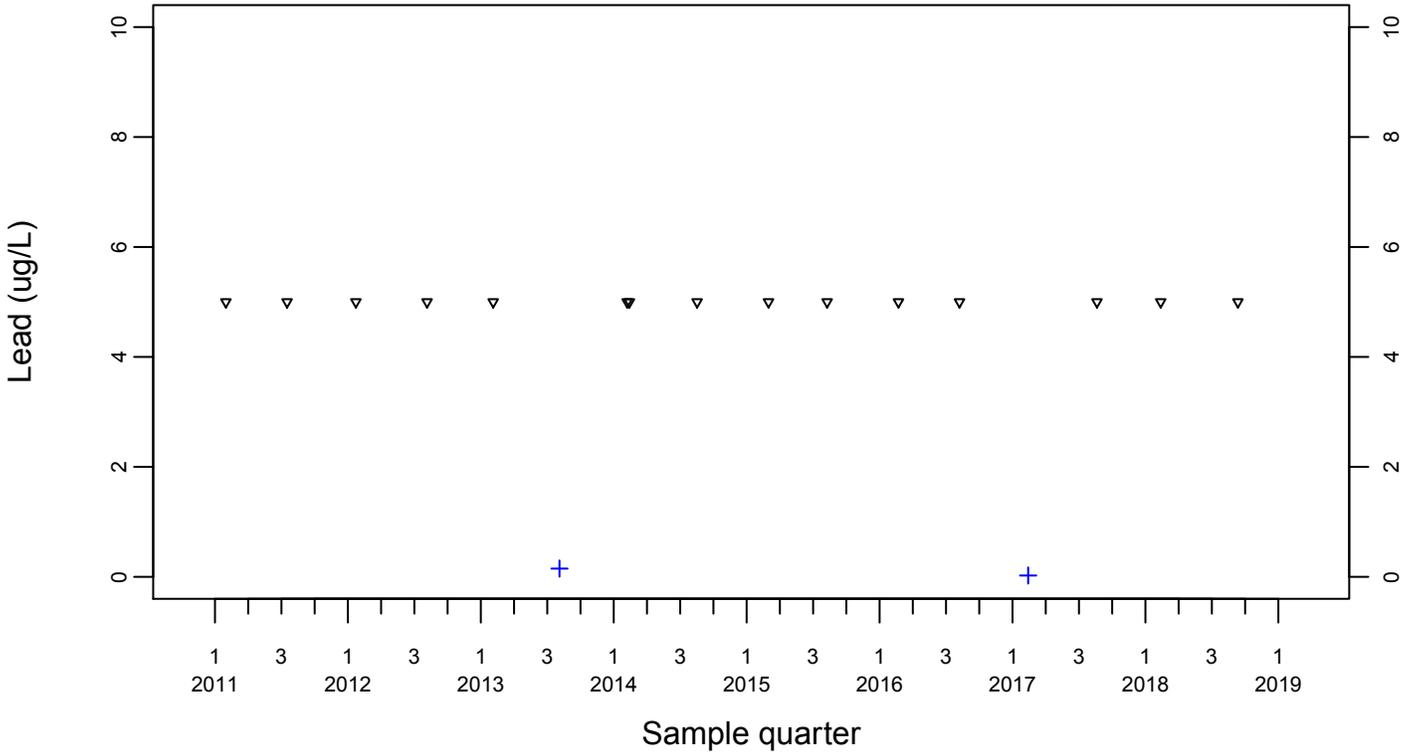
Downgradient Monitor Well W-26R-01



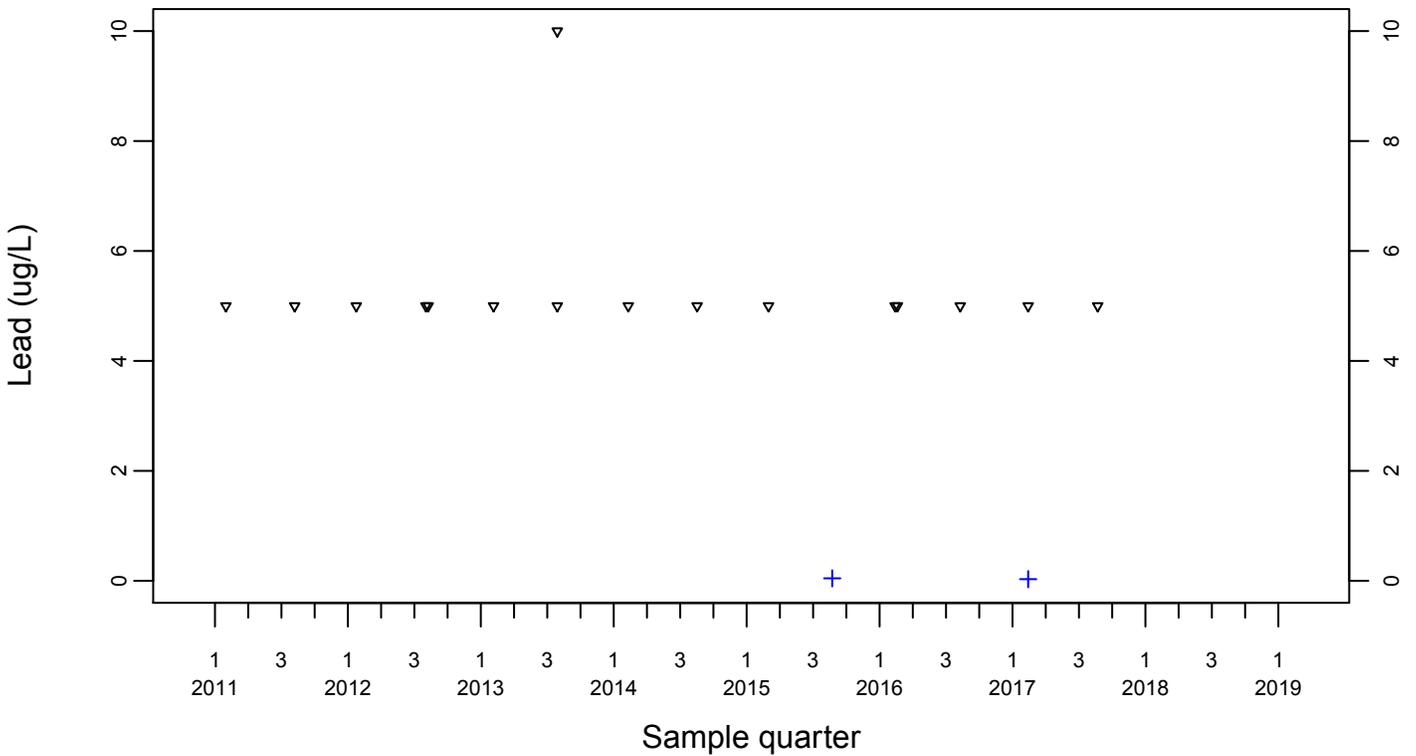
Sewage Ponds Ground Water Lead (ug/L)

Downgradient Monitor Well W-26R-05

- ◆ Above RL
- ▽ Below RL
- + Estimated



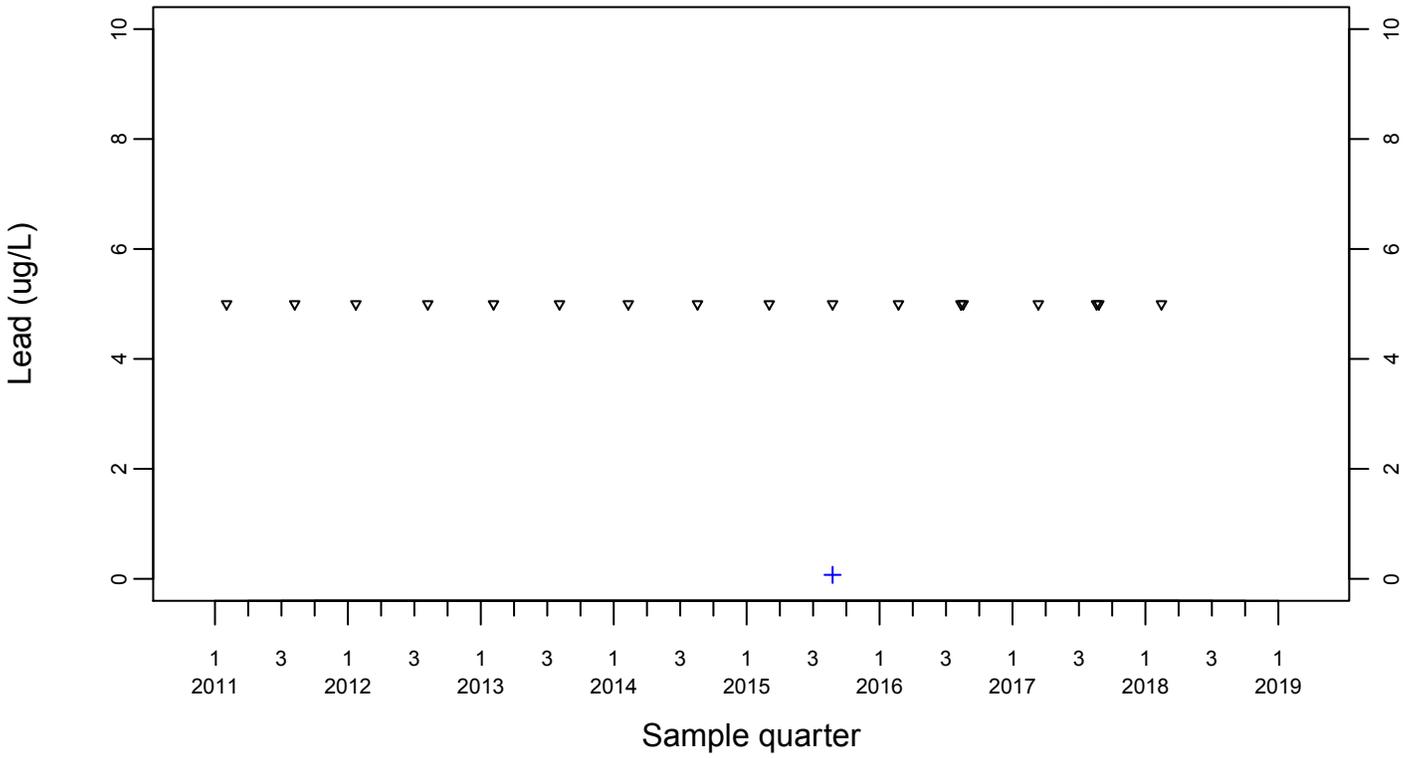
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Lead (ug/L)

Downgradient Monitor Well W-7DS

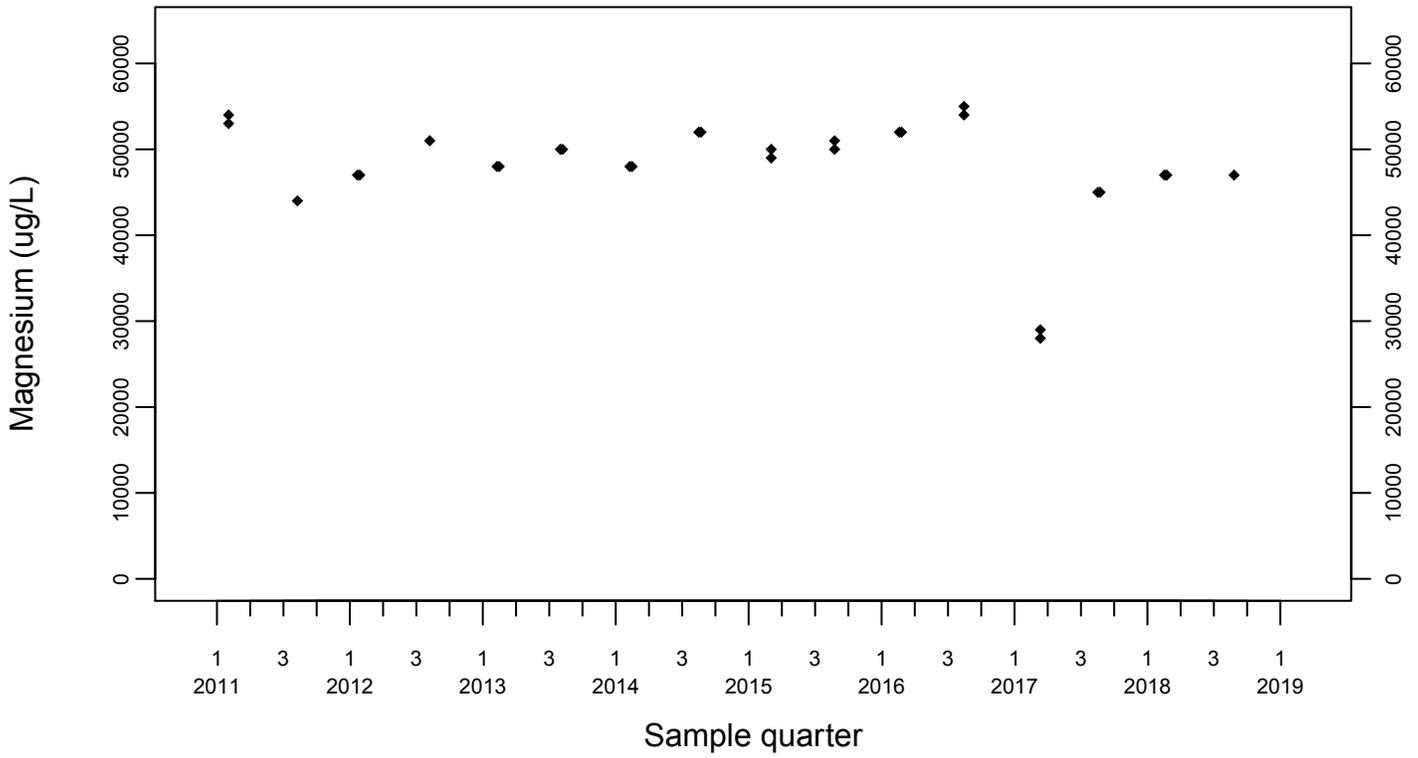
- ◆ Above RL
- ▽ Below RL
- + Estimated



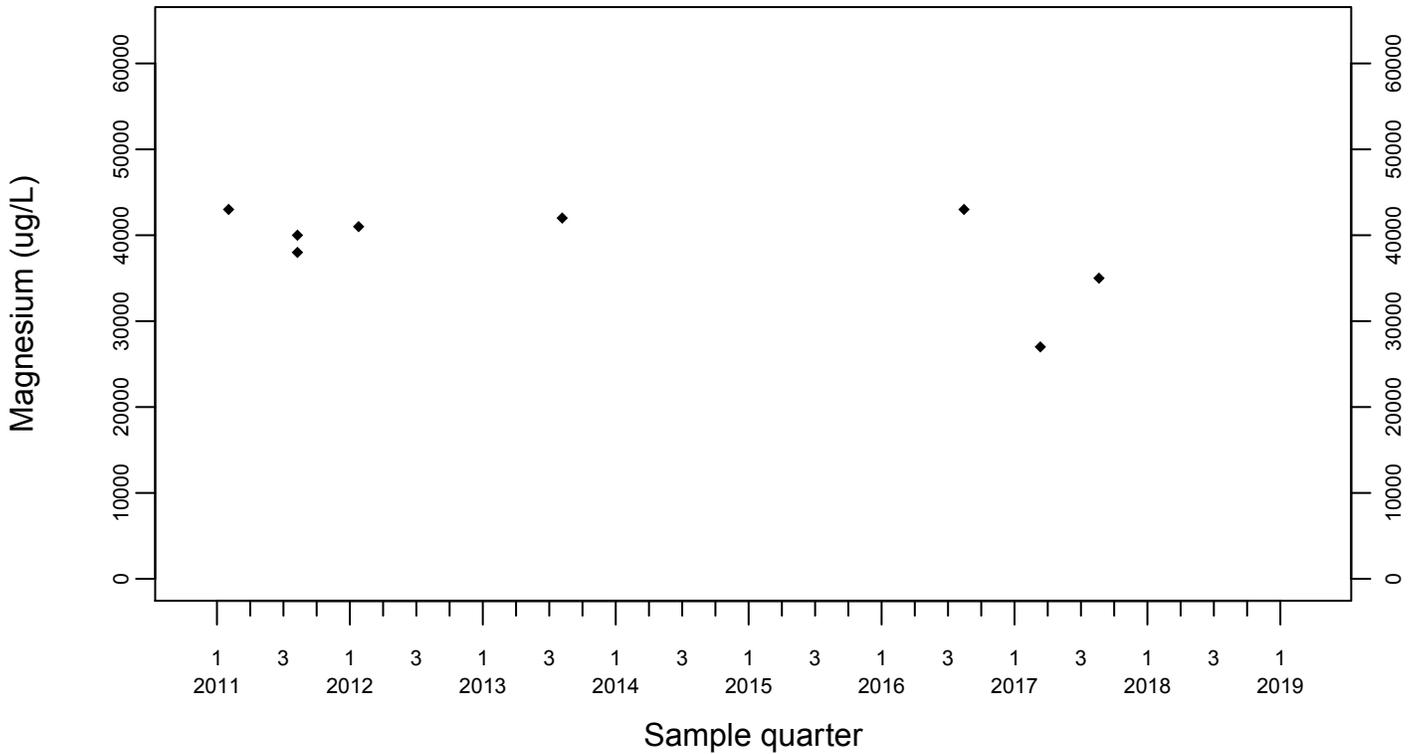
Sewage Ponds Ground Water Magnesium (ug/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



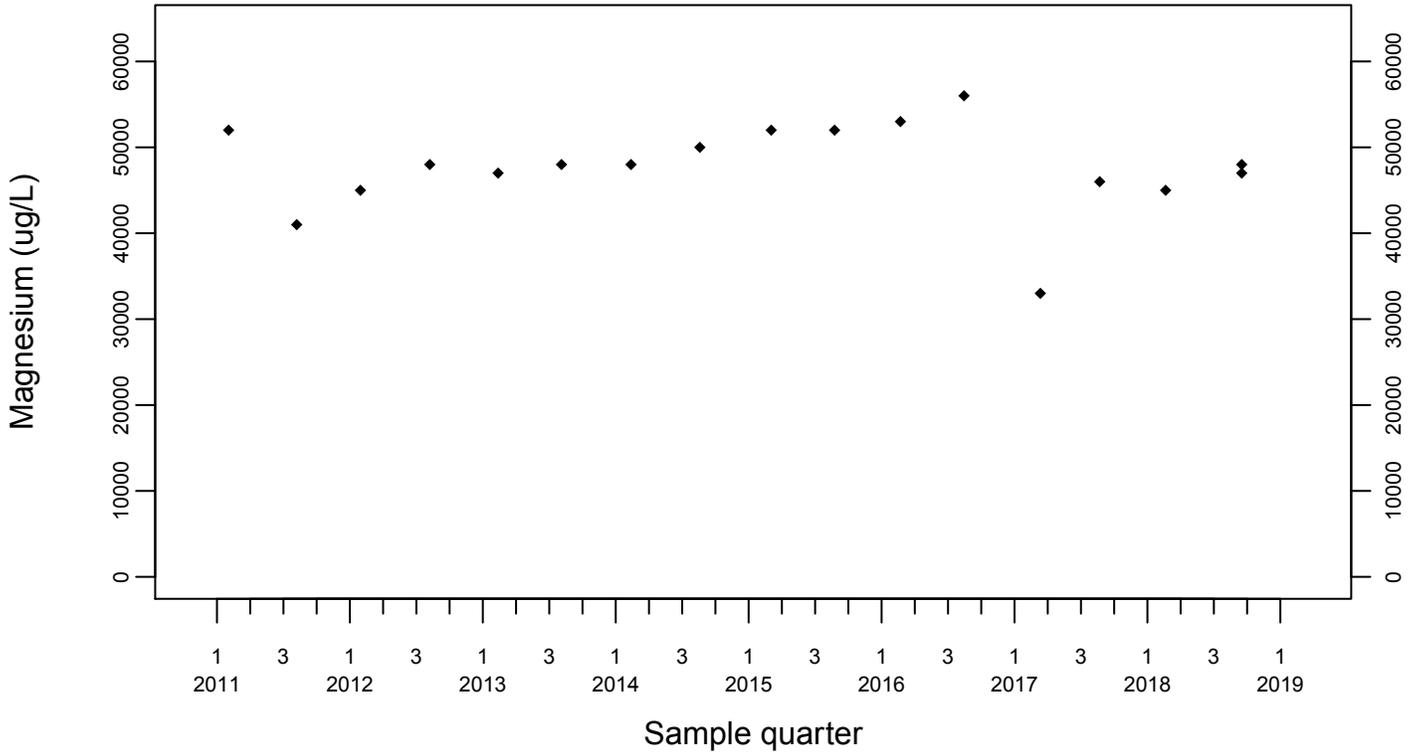
Upgradient Monitor Well W-7PS



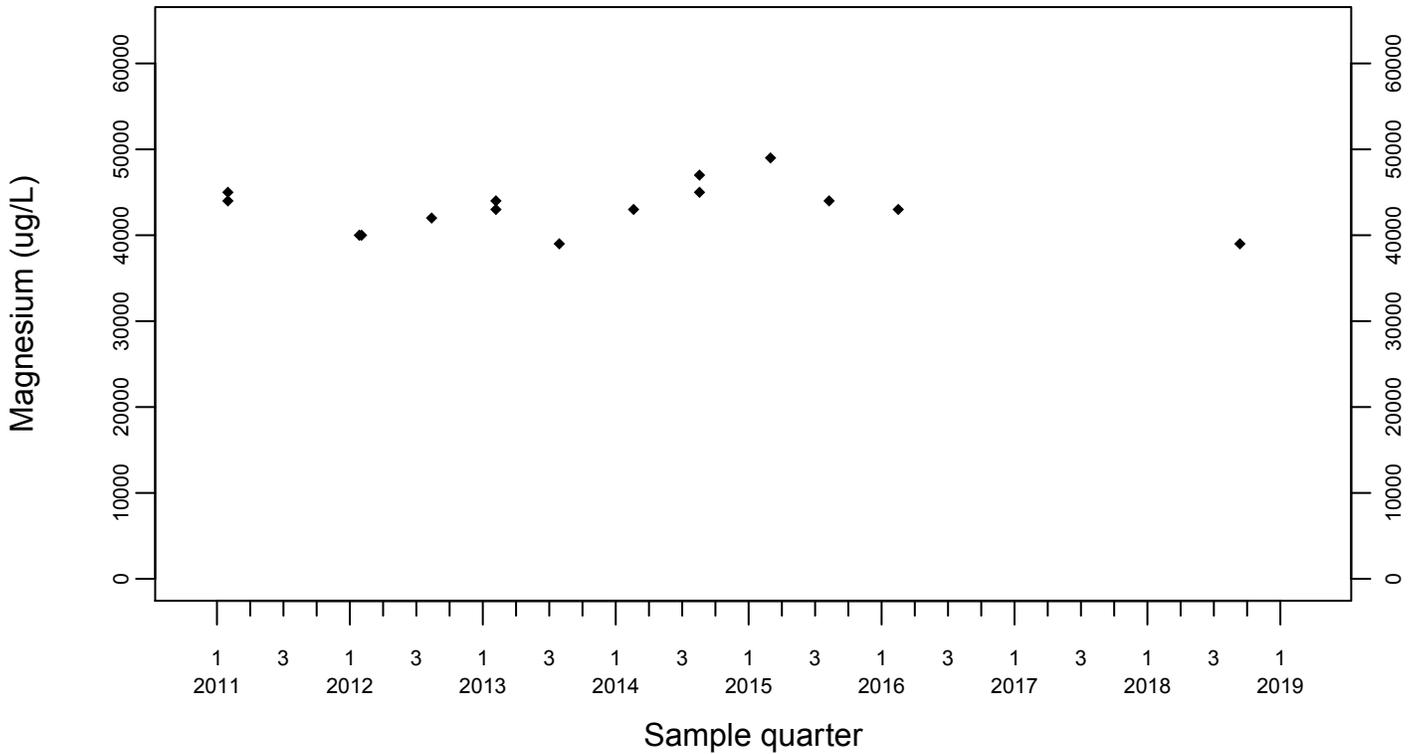
Sewage Ponds Ground Water Magnesium (ug/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



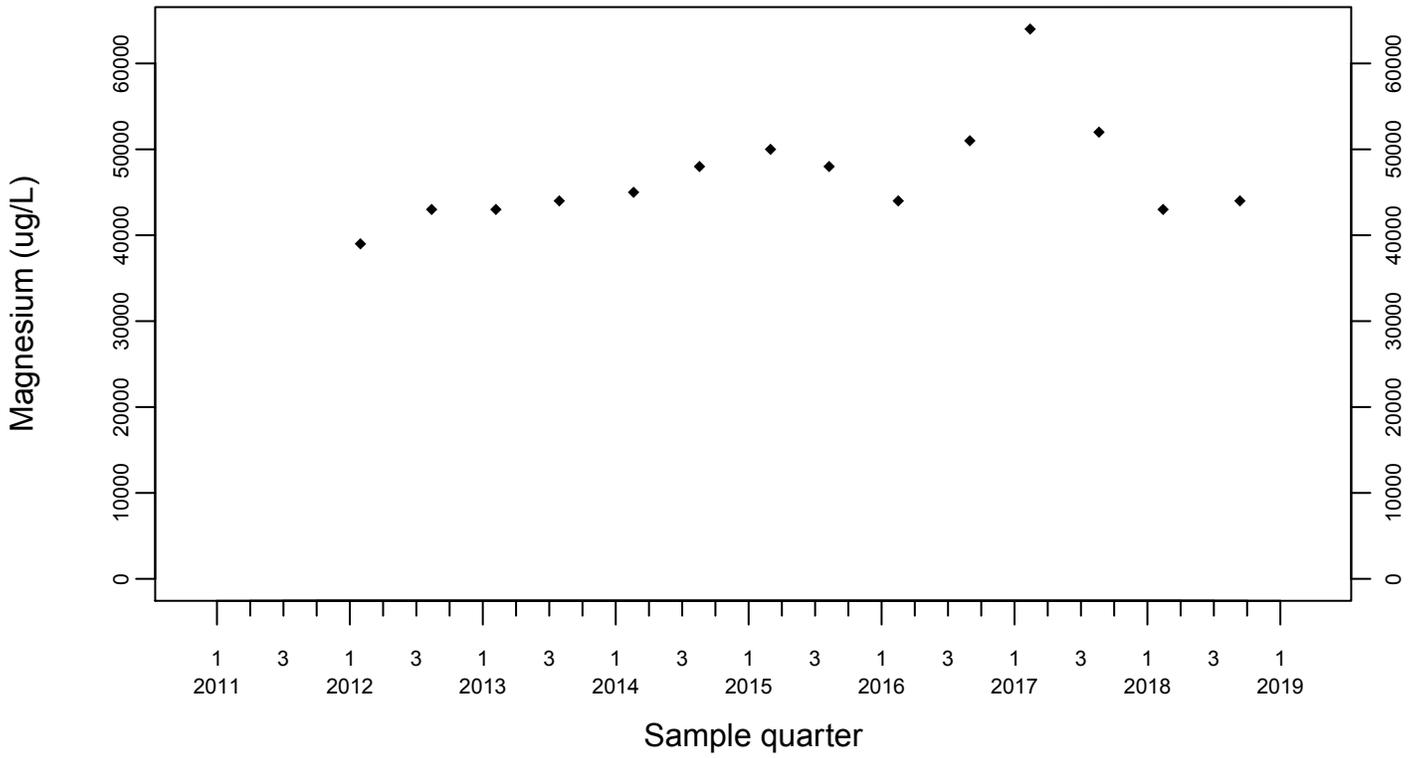
Downgradient Monitor Well W-25N-23



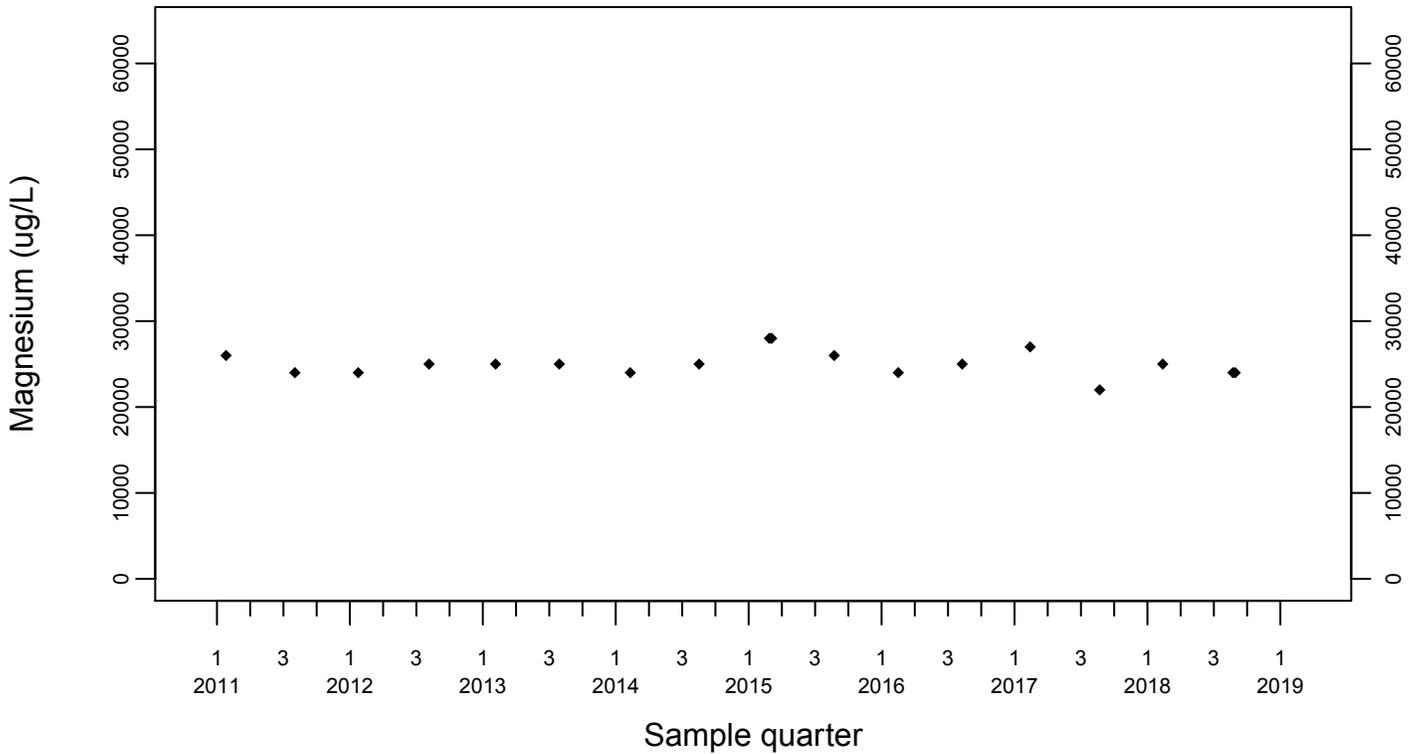
Sewage Ponds Ground Water Magnesium (ug/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
▽ Below RL



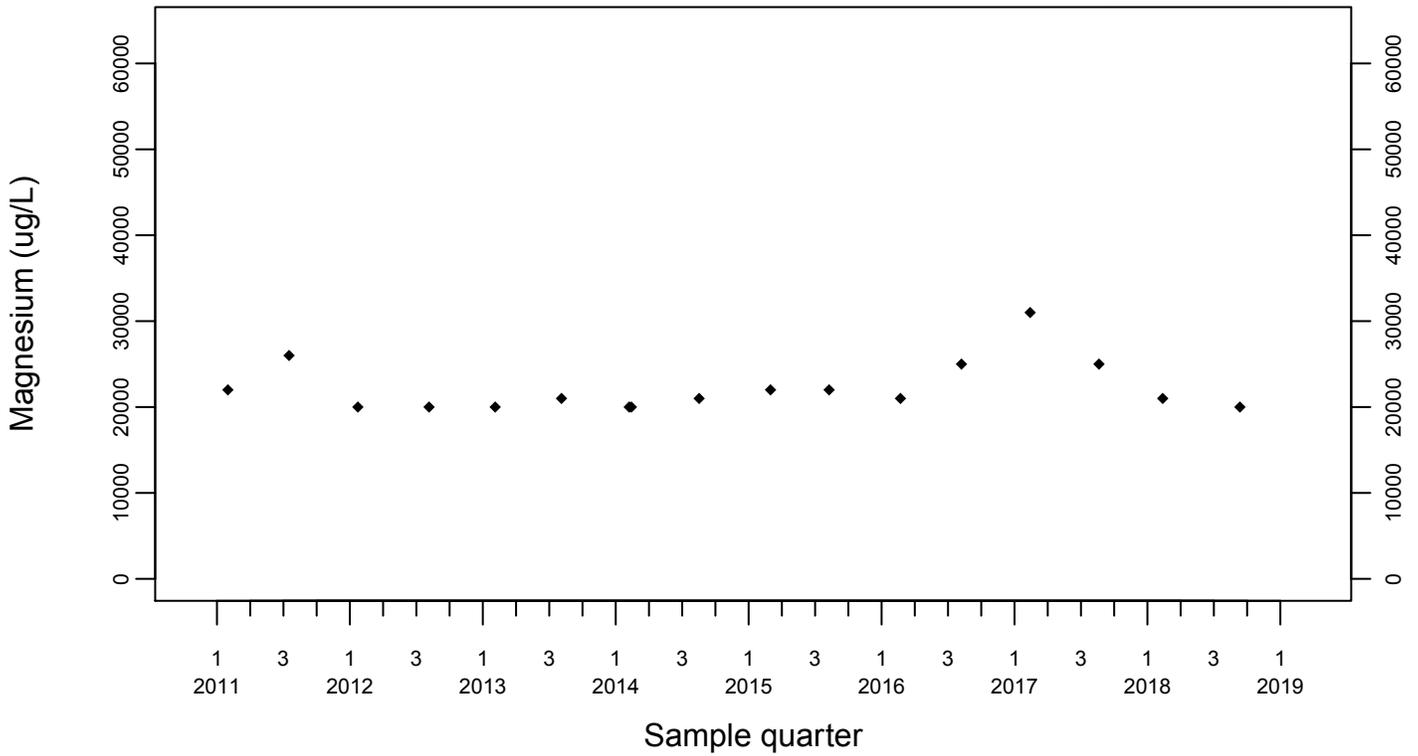
Downgradient Monitor Well W-26R-01



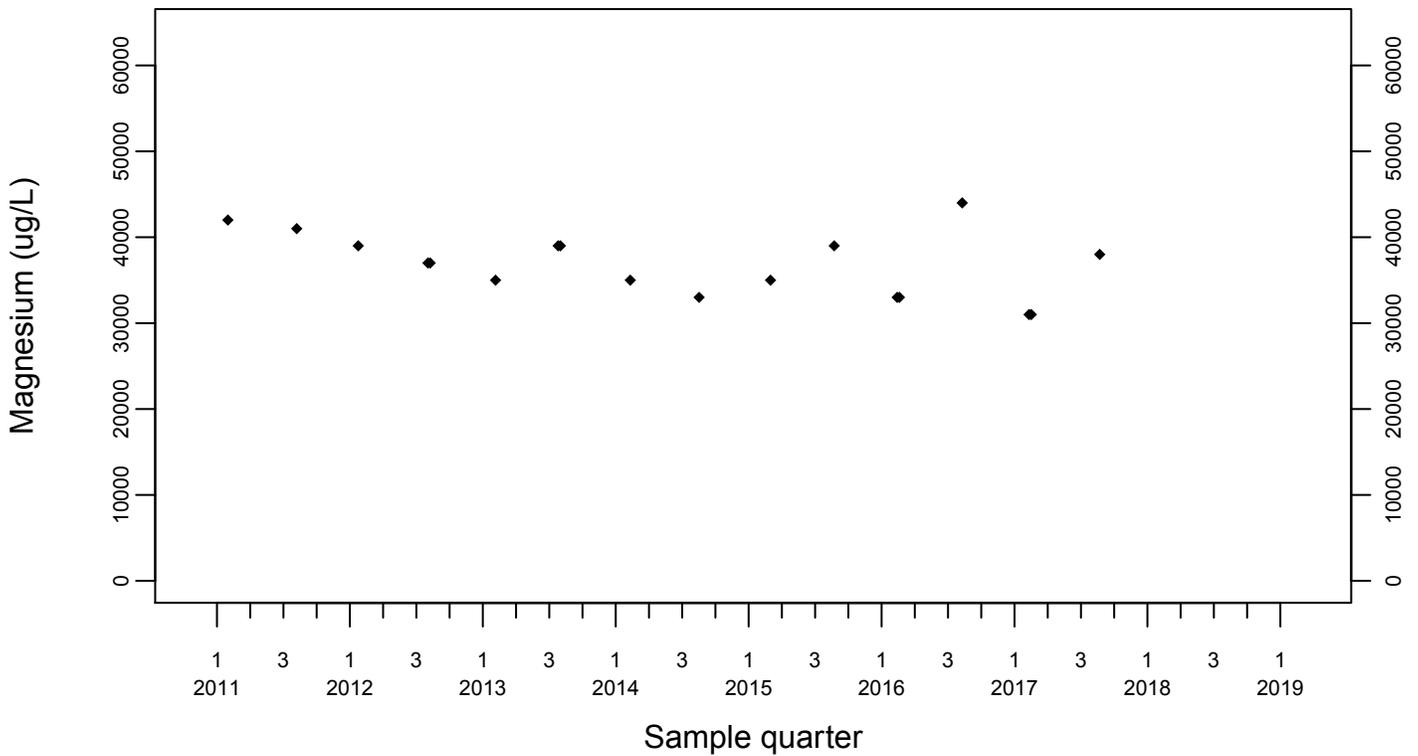
Sewage Ponds Ground Water Magnesium (ug/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



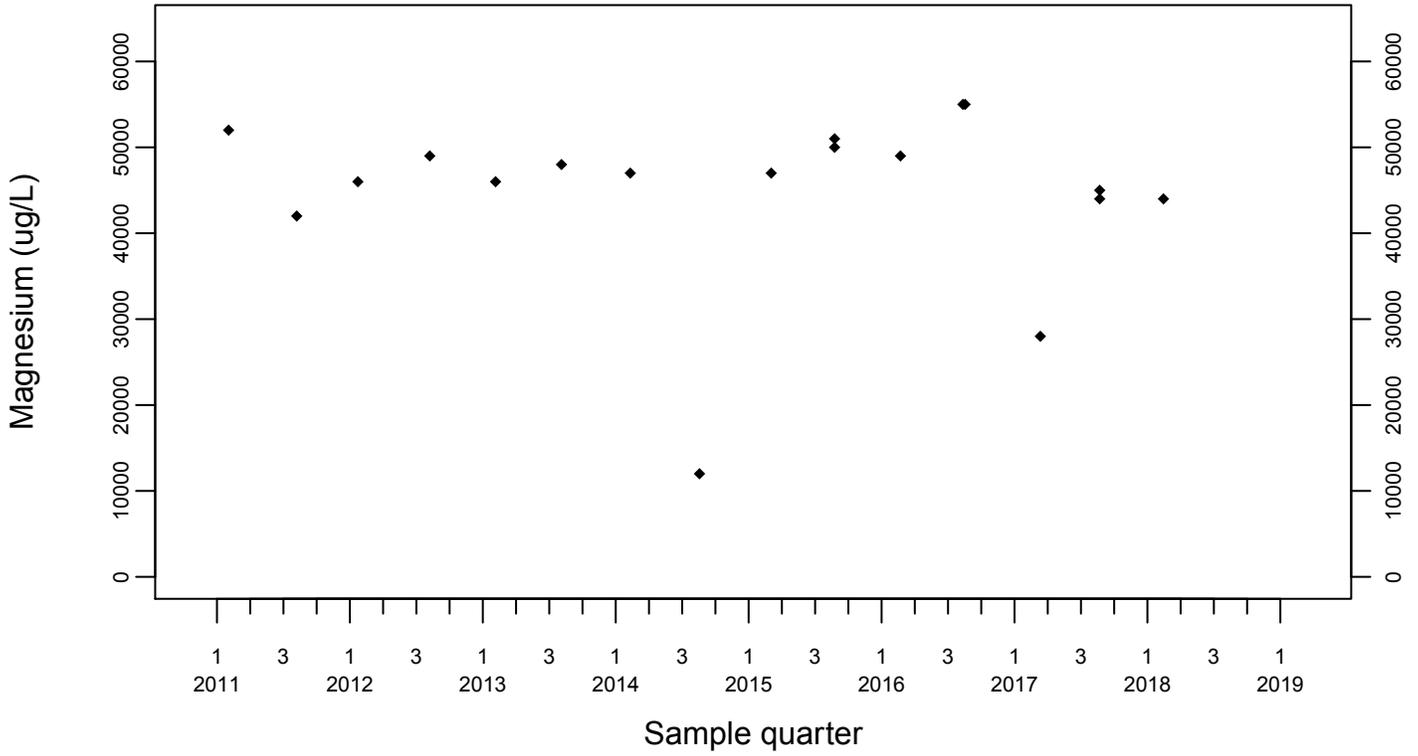
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Magnesium (ug/L)

Downgradient Monitor Well W-7DS

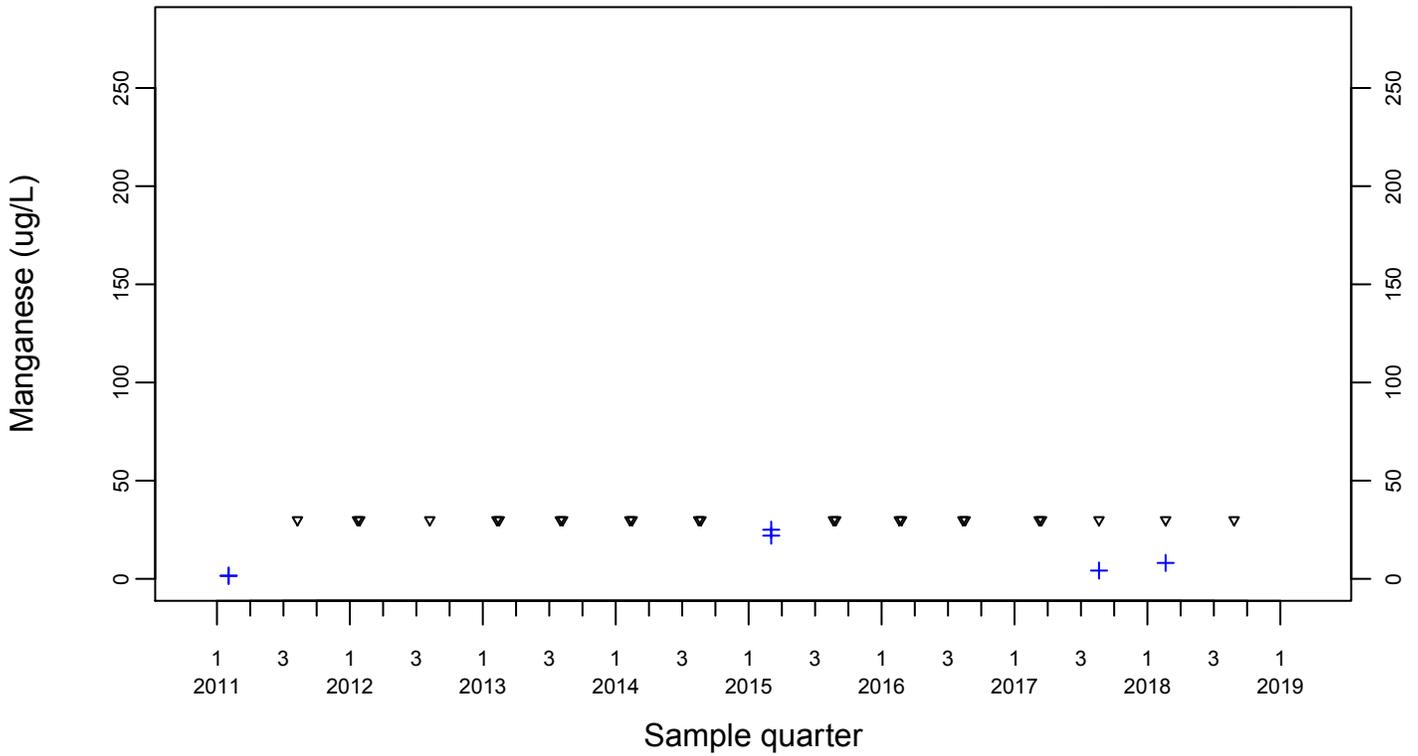
◆ Above RL
▽ Below RL



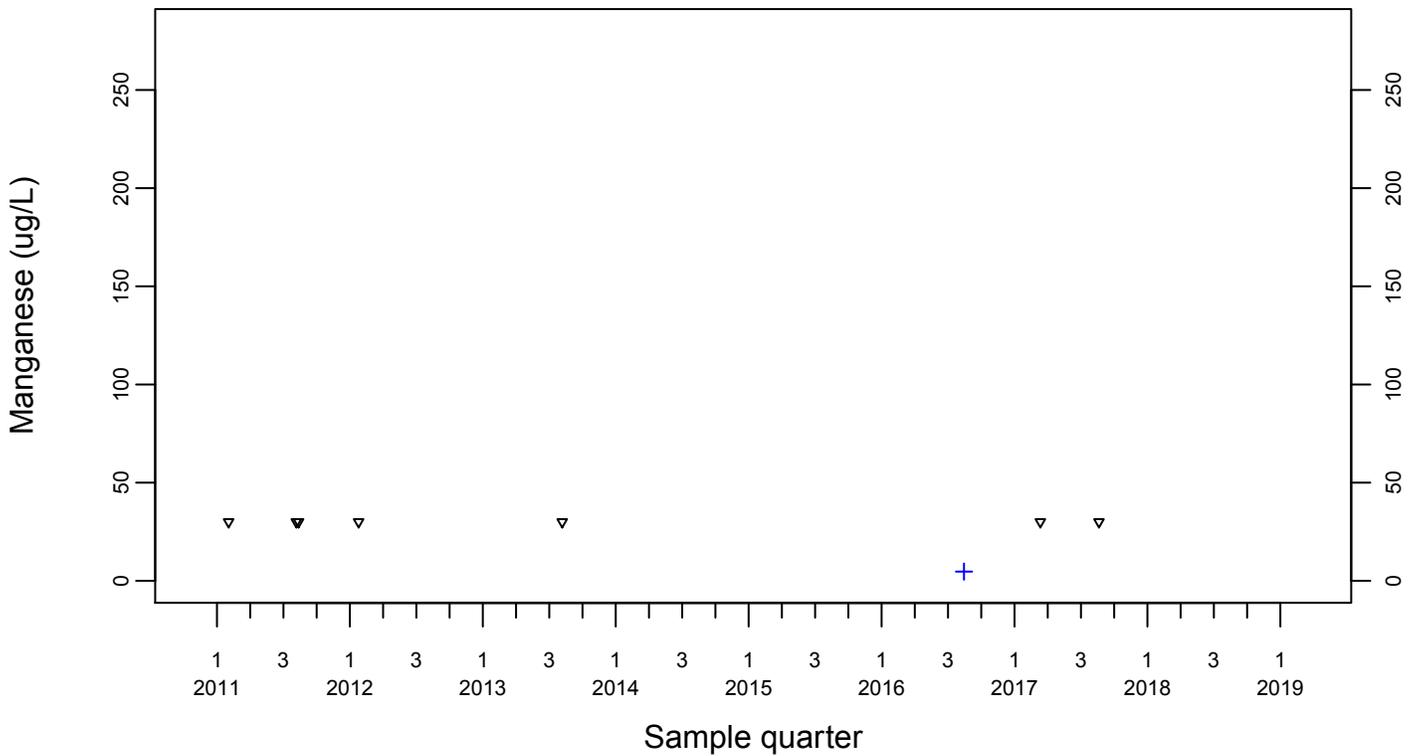
Sewage Ponds Ground Water
 Manganese (ug/L)

Upgradient Monitor Well W-7ES

- ◆ Above RL
- ▽ Below RL
- + Estimated



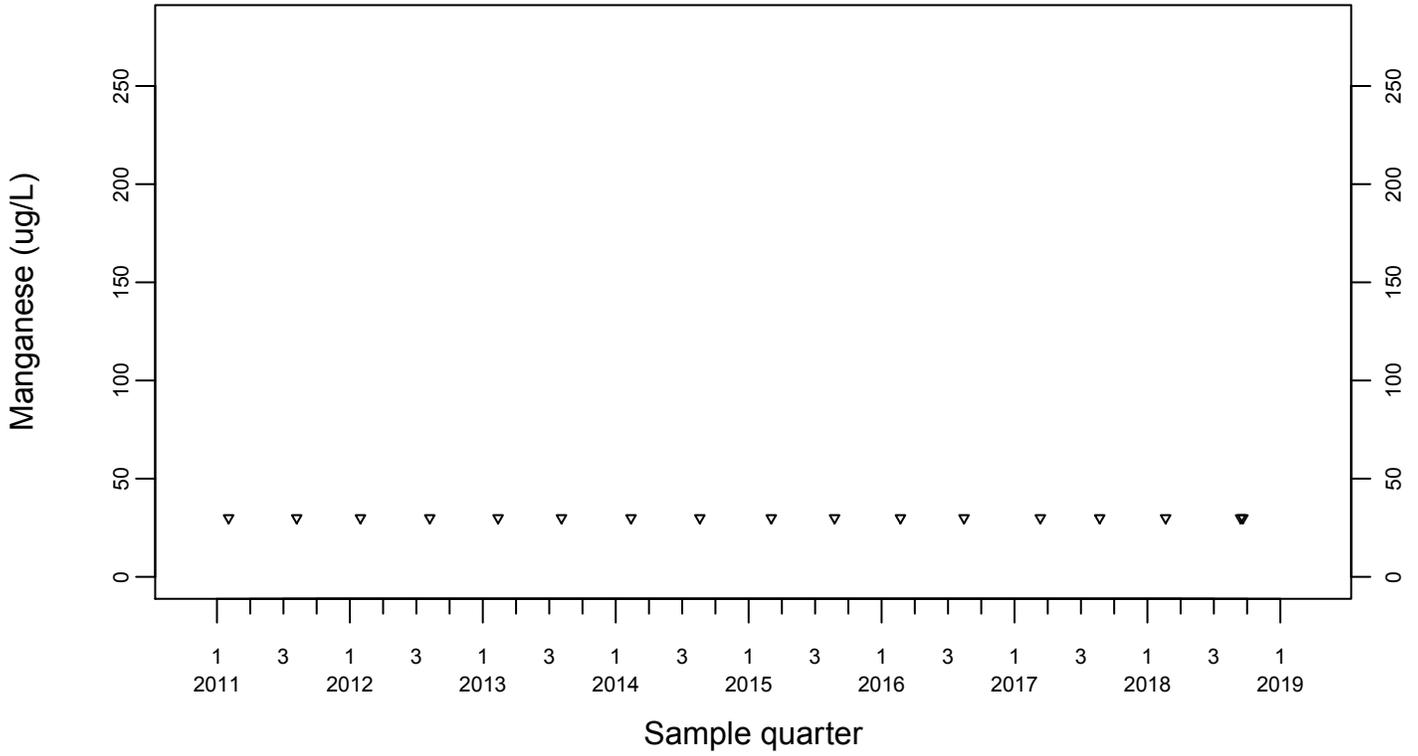
Upgradient Monitor Well W-7PS



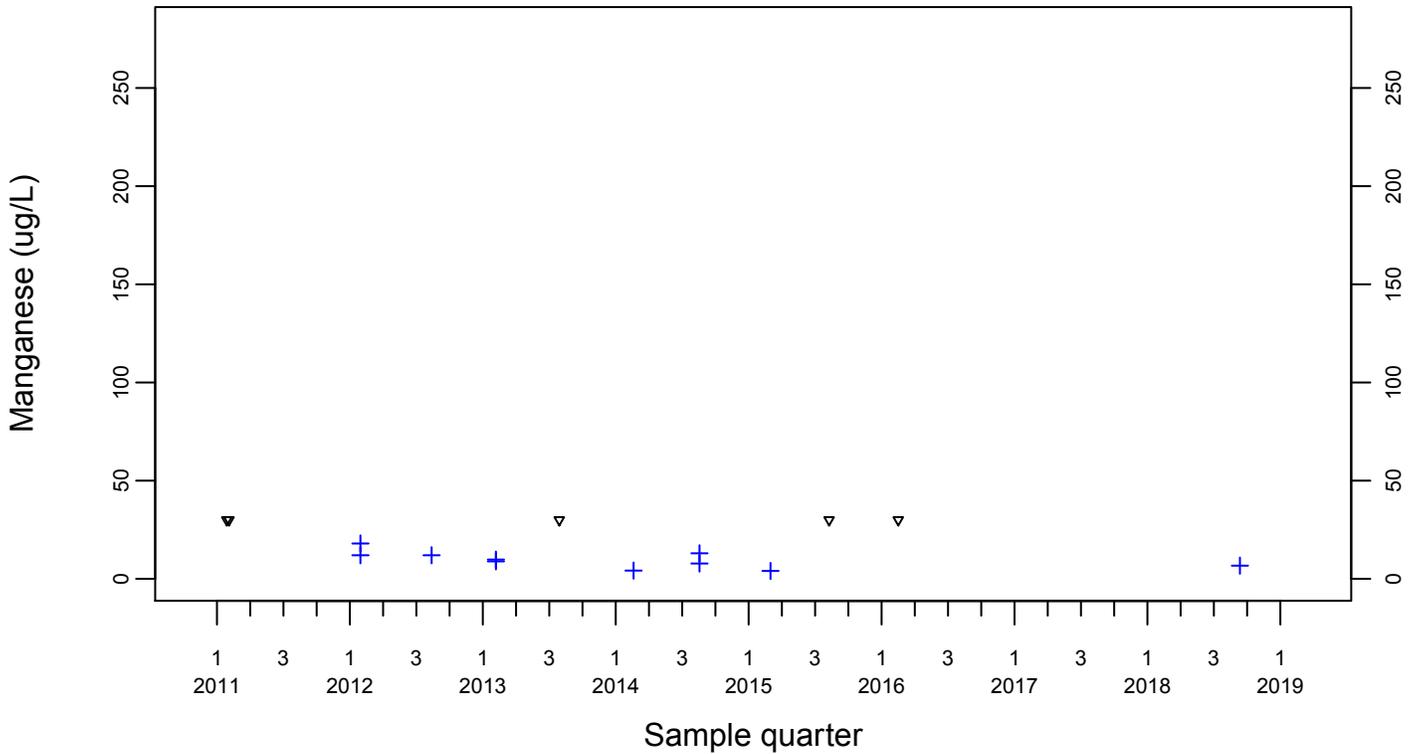
Sewage Ponds Ground Water Manganese (ug/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



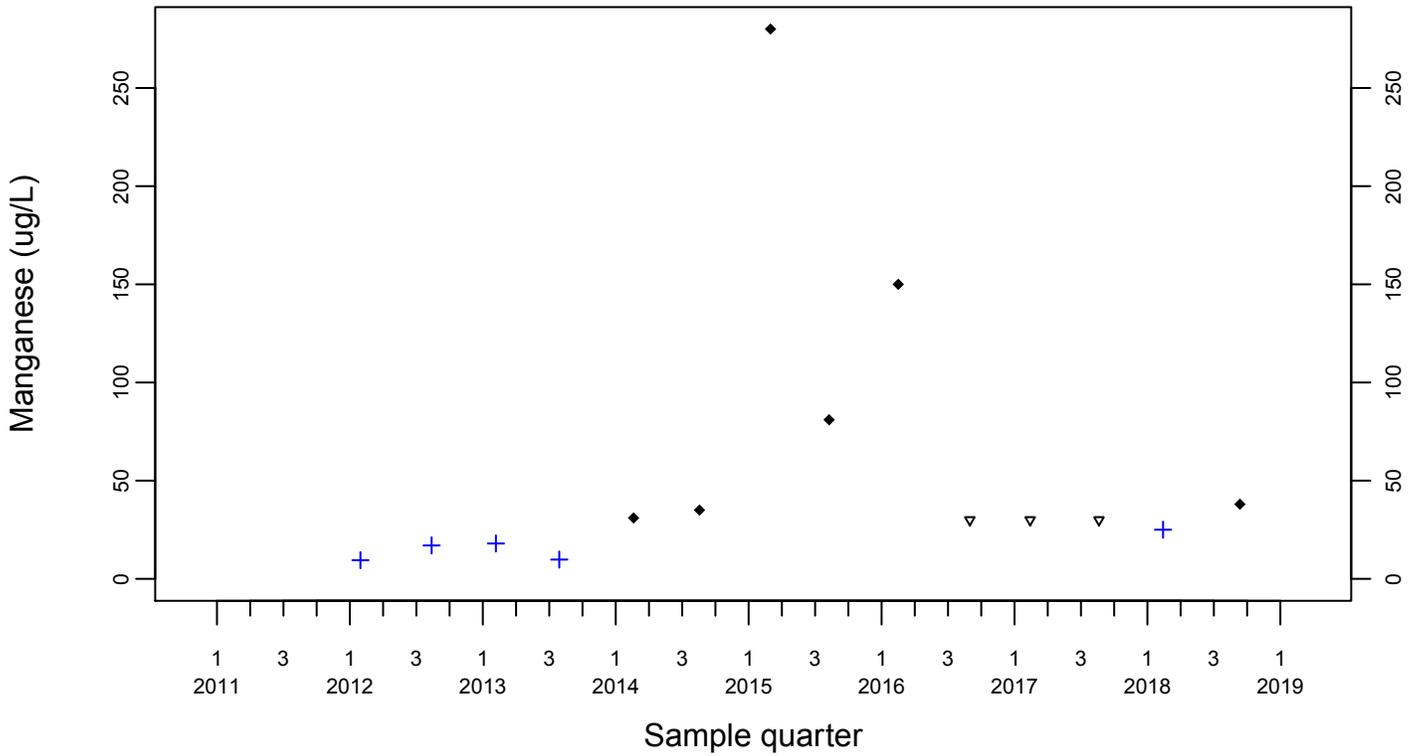
Downgradient Monitor Well W-25N-23



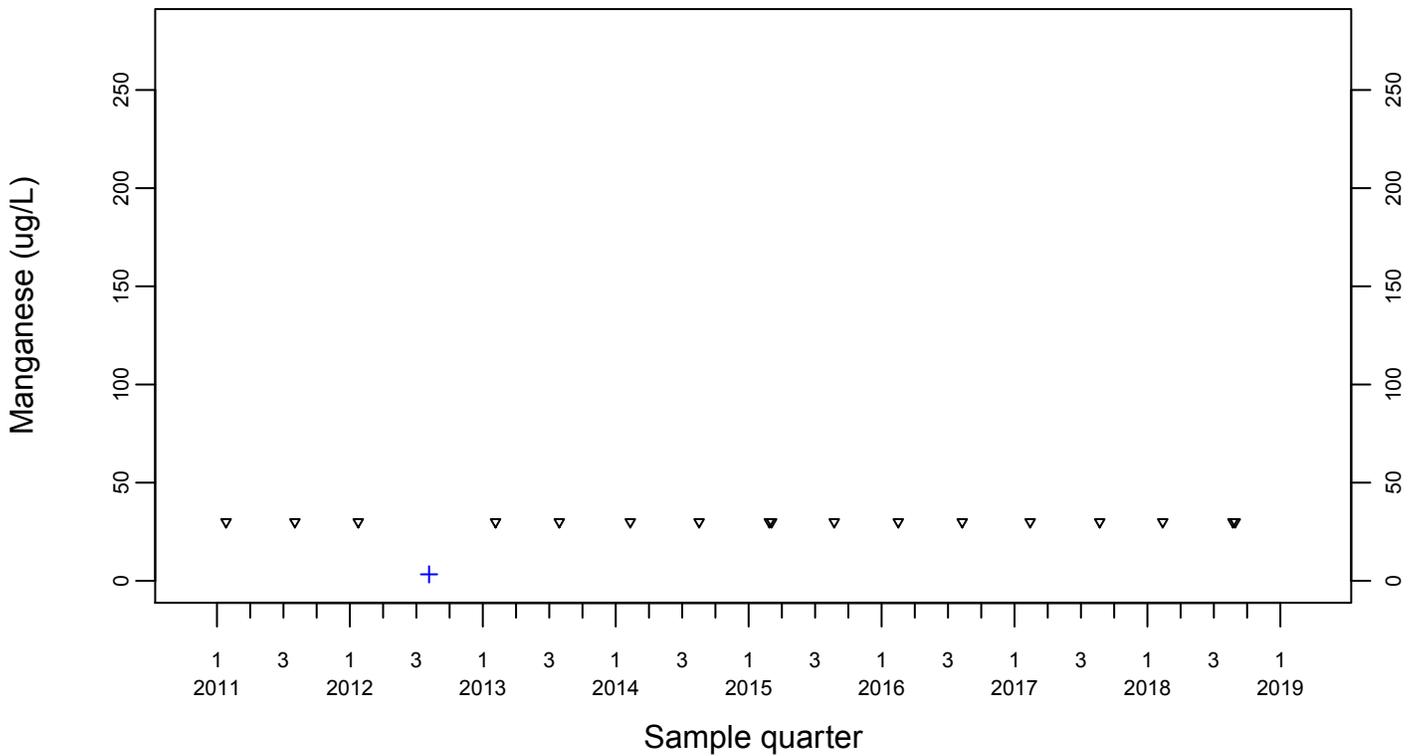
Sewage Ponds Ground Water
 Manganese (ug/L)

Downgradient Monitor Well W-25N-22

- ◆ Above RL
- ▽ Below RL
- + Estimated



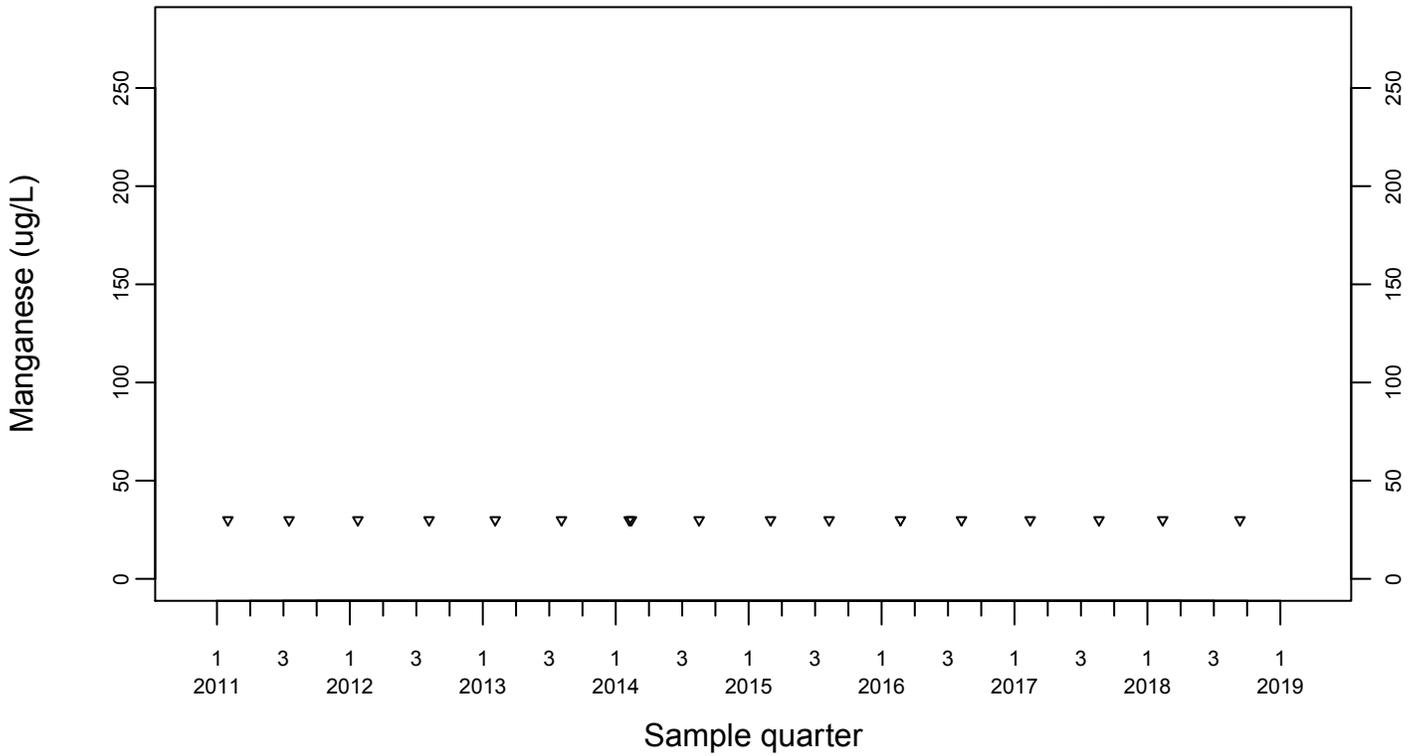
Downgradient Monitor Well W-26R-01



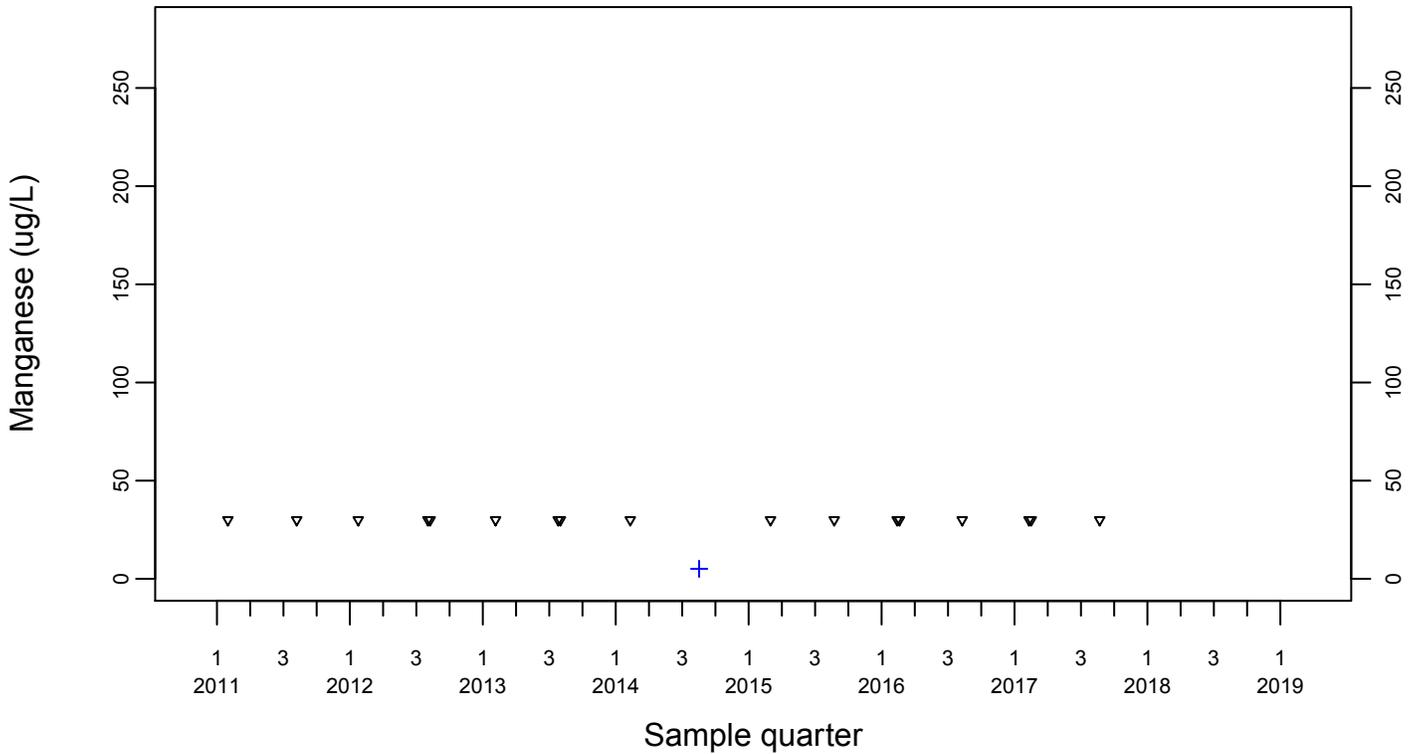
Sewage Ponds Ground Water Manganese (ug/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



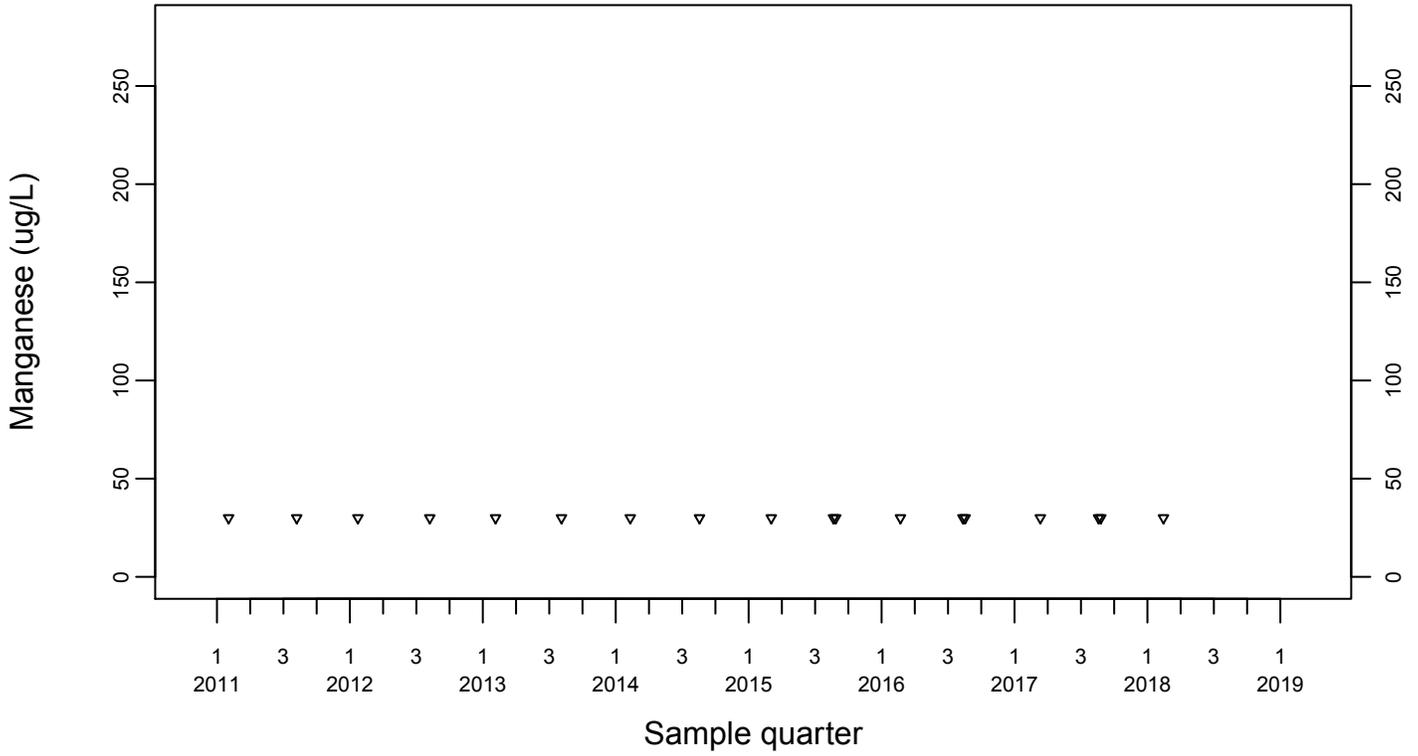
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Manganese (ug/L)

Downgradient Monitor Well W-7DS

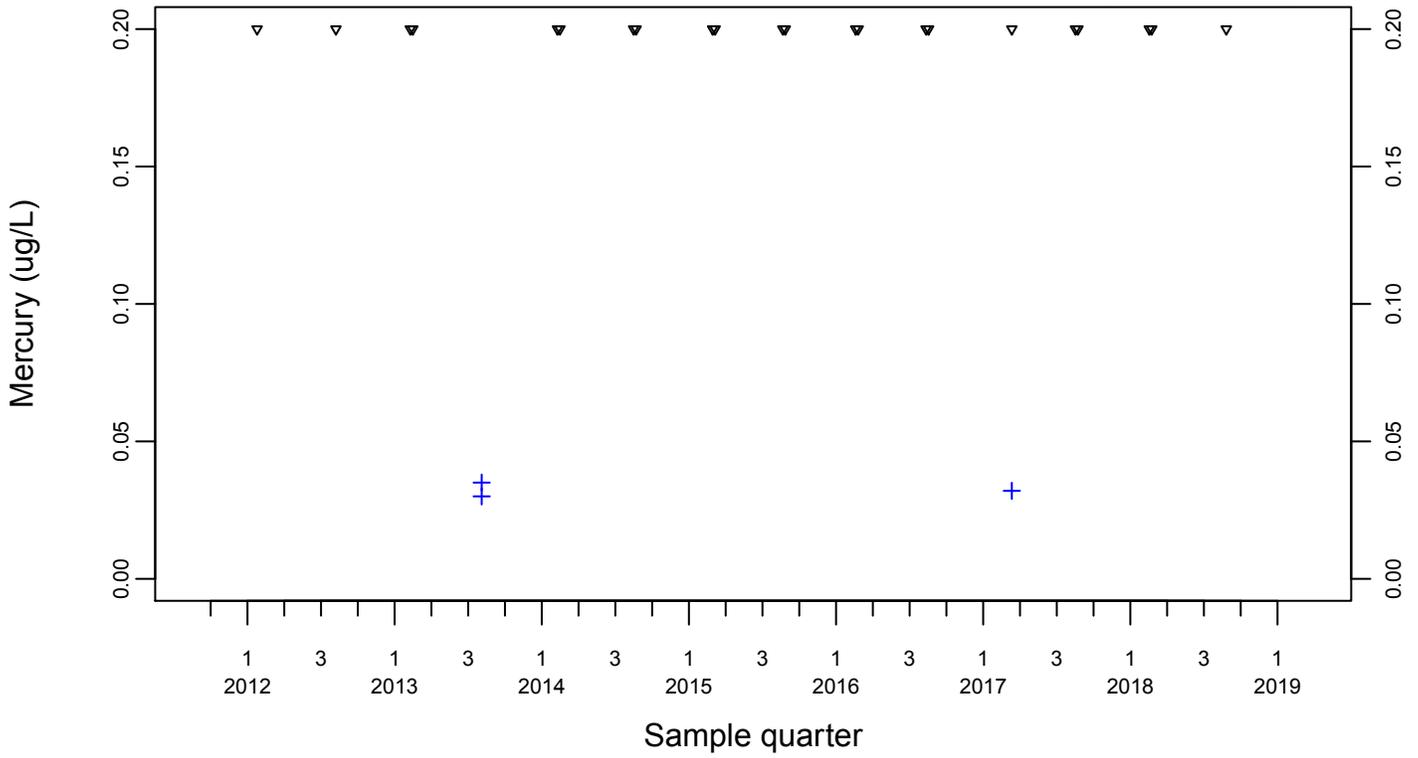
◆ Above RL
▽ Below RL



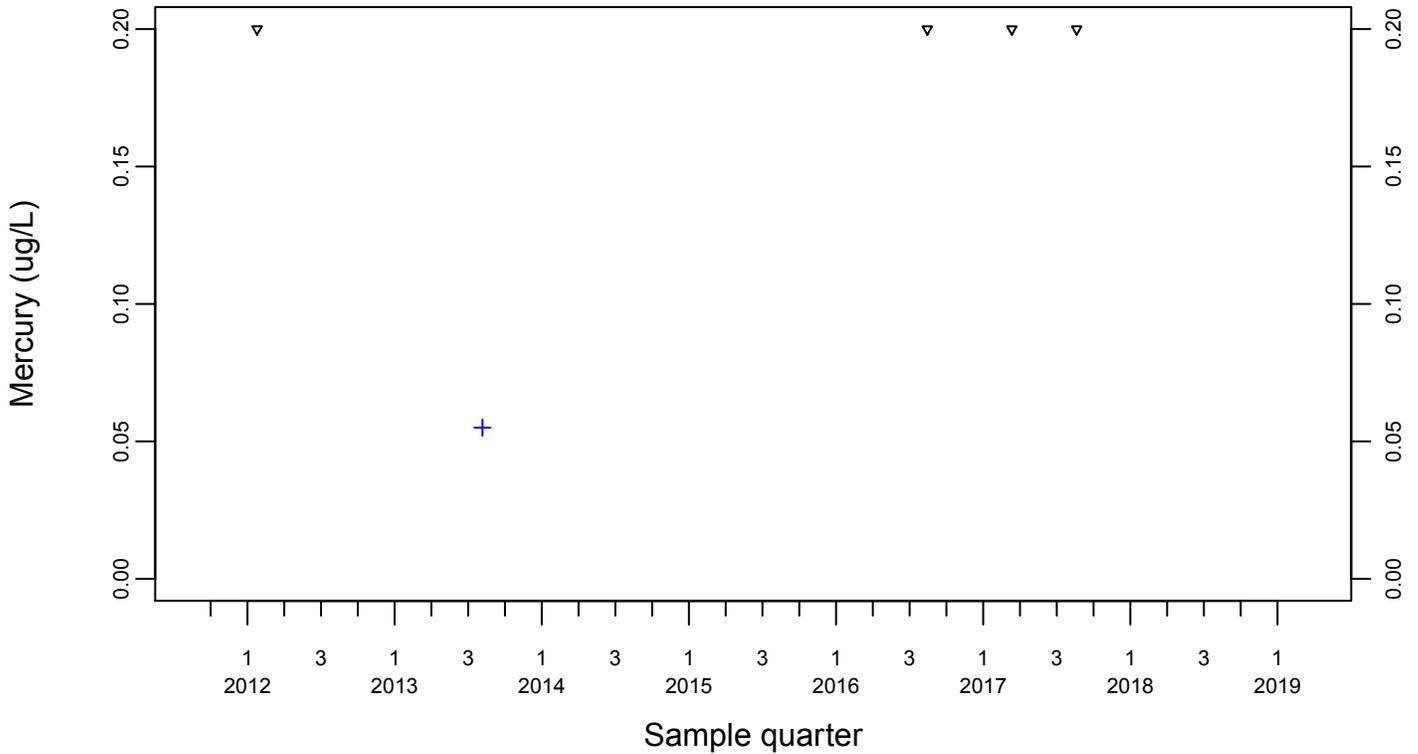
Sewage Ponds Ground Water Mercury (ug/L)

Upgradient Monitor Well W-7ES

- ◆ Above RL
- ▽ Below RL
- + Estimated



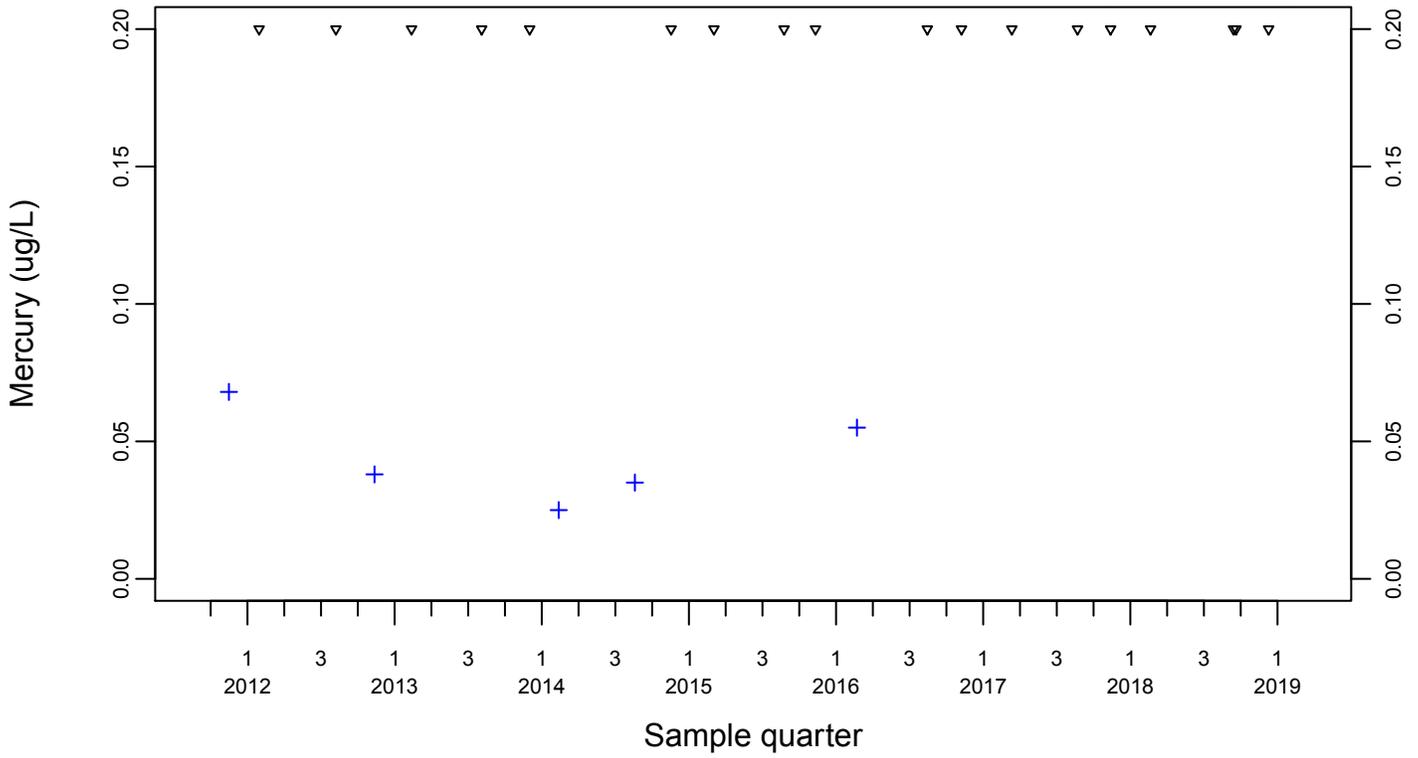
Upgradient Monitor Well W-7PS



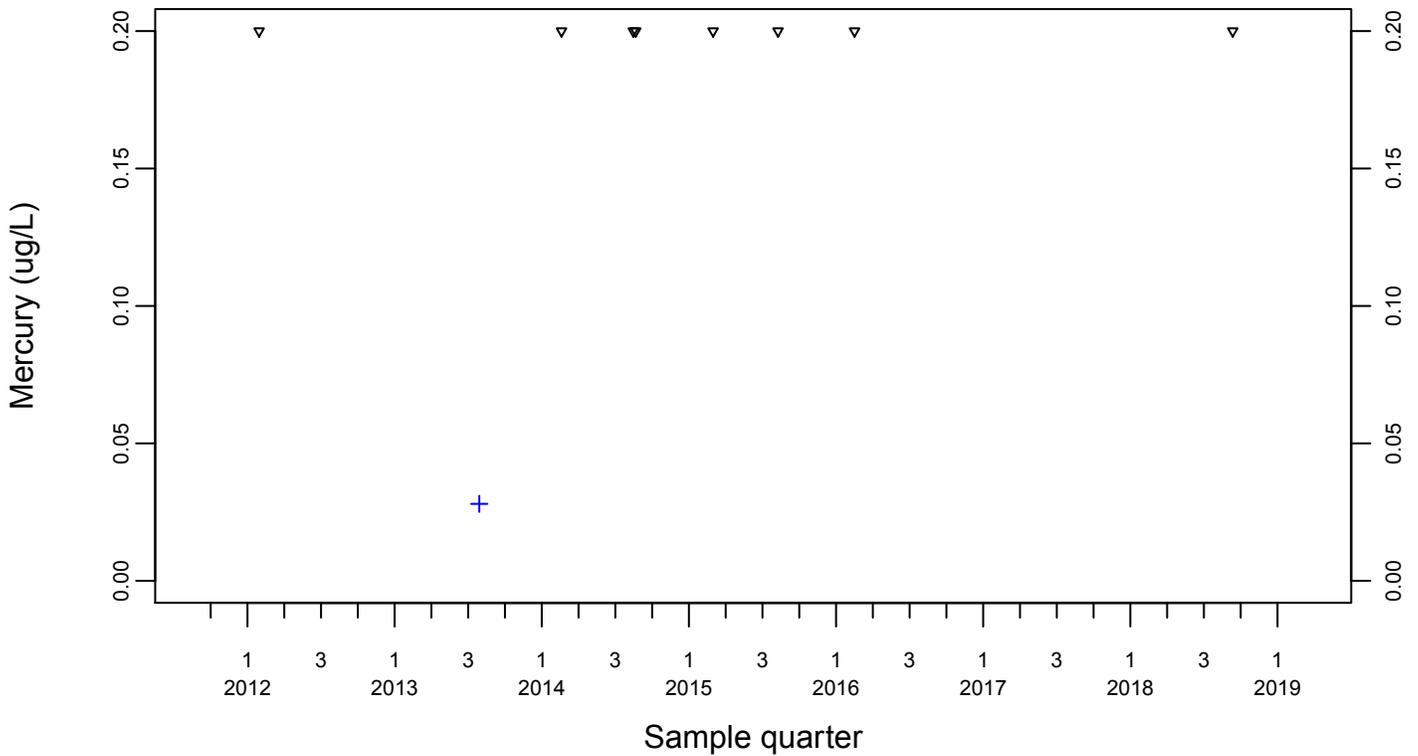
Sewage Ponds Ground Water Mercury (ug/L)

Crossgradient Monitor Well W-35A-04

- ◆ Above RL
- ▽ Below RL
- + Estimated



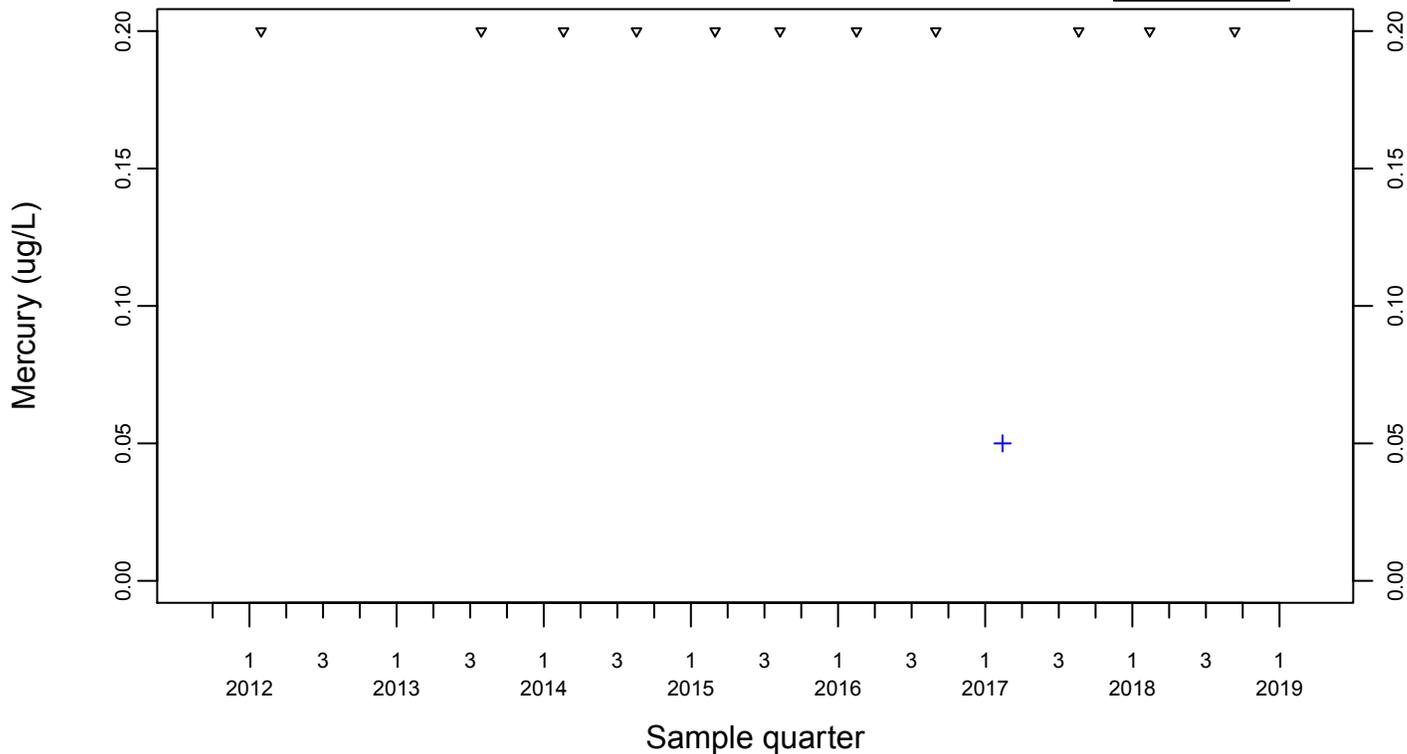
Downgradient Monitor Well W-25N-23



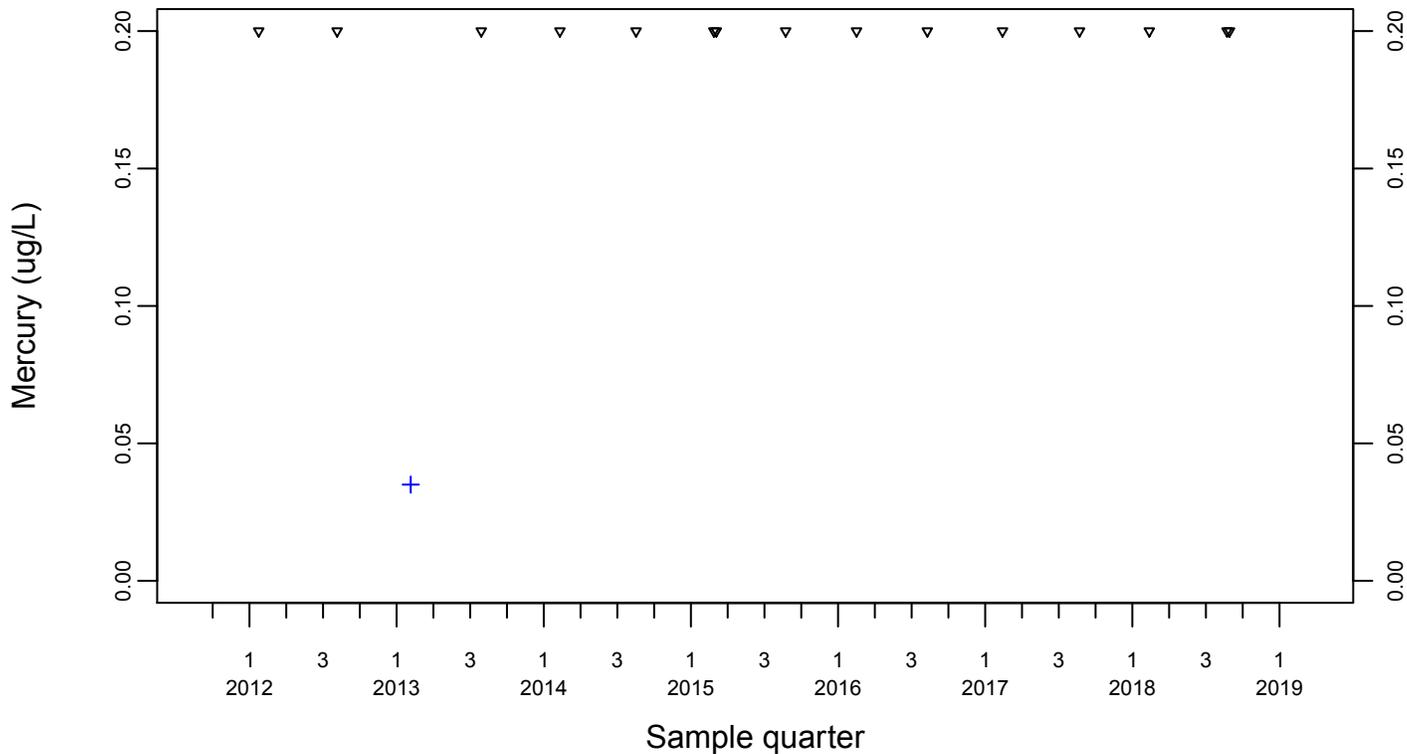
Sewage Ponds Ground Water Mercury (ug/L)

Downgradient Monitor Well W-25N-22

- ◆ Above RL
- ▽ Below RL
- + Estimated



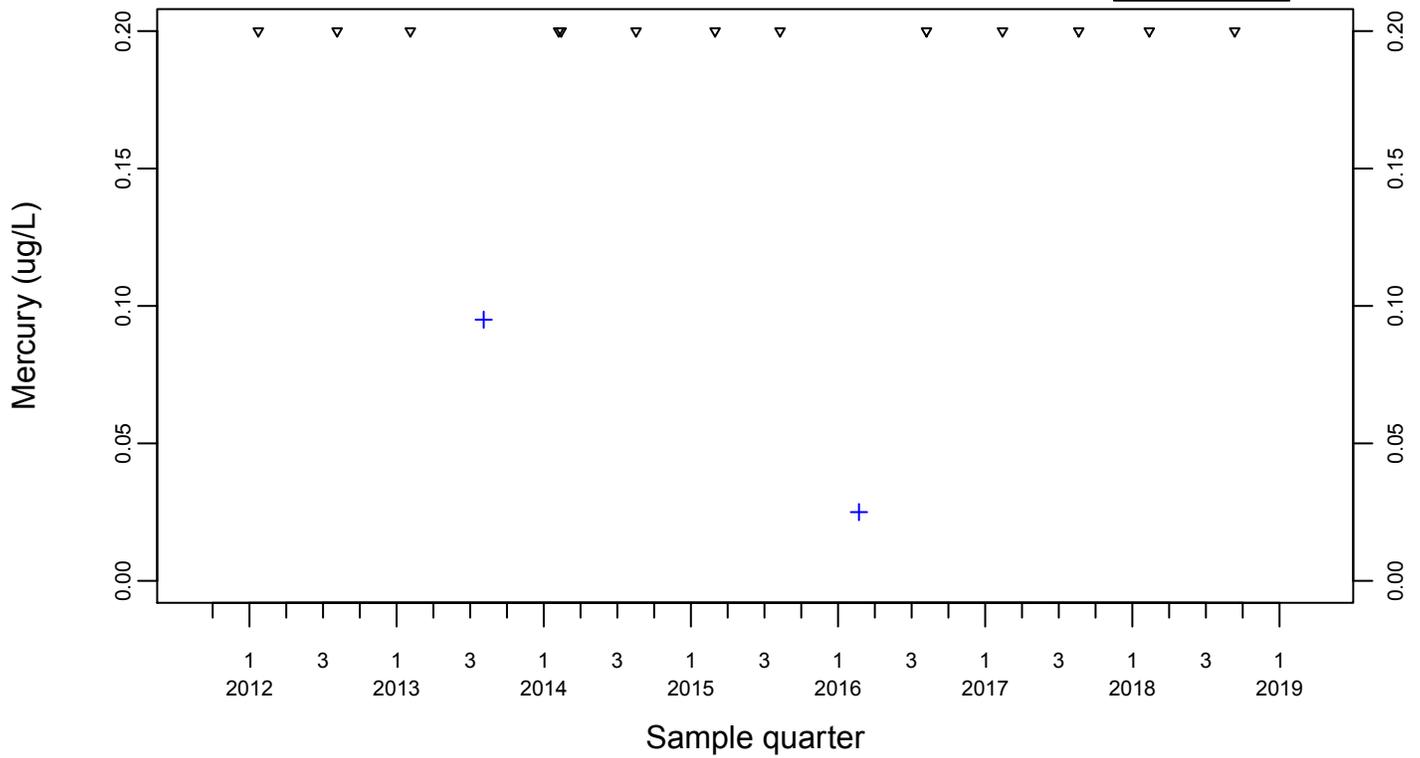
Downgradient Monitor Well W-26R-01



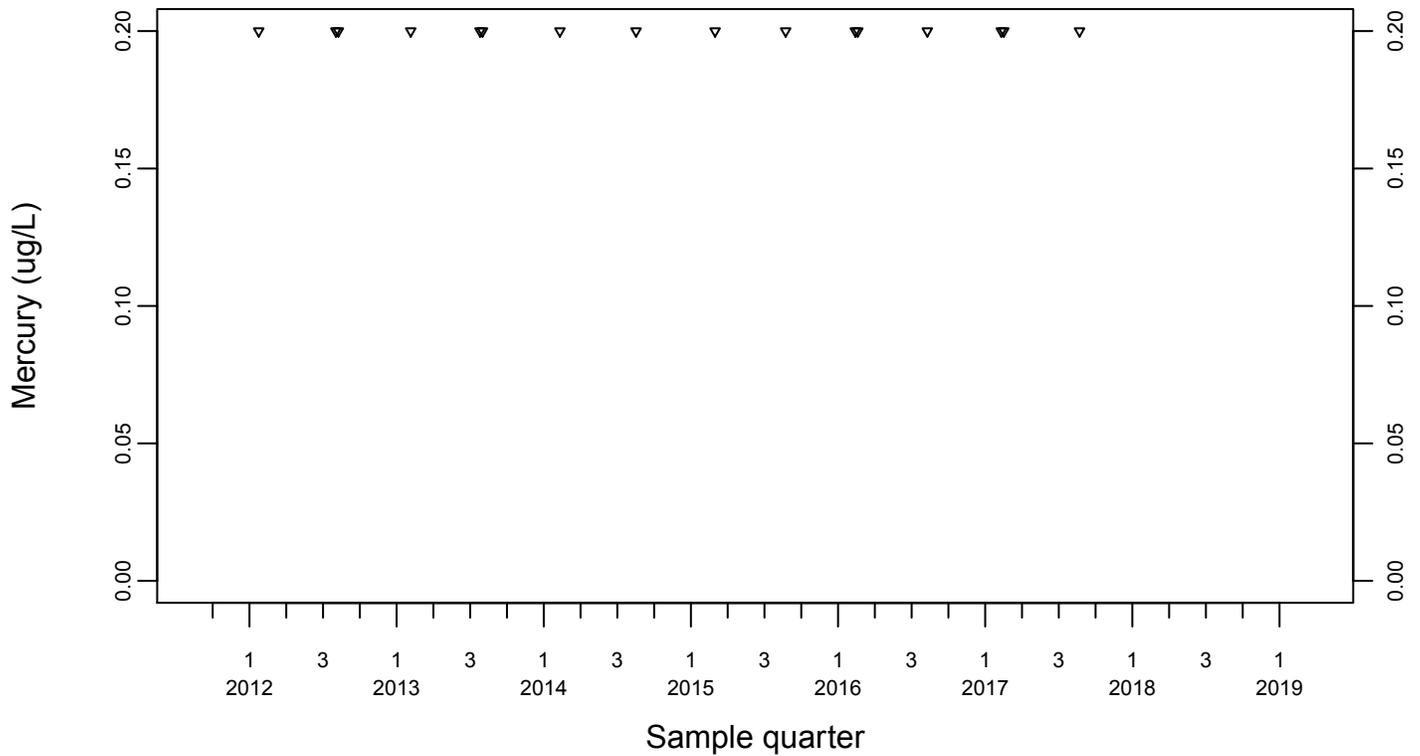
Sewage Ponds Ground Water Mercury (ug/L)

Downgradient Monitor Well W-26R-05

- ◆ Above RL
- ▽ Below RL
- + Estimated



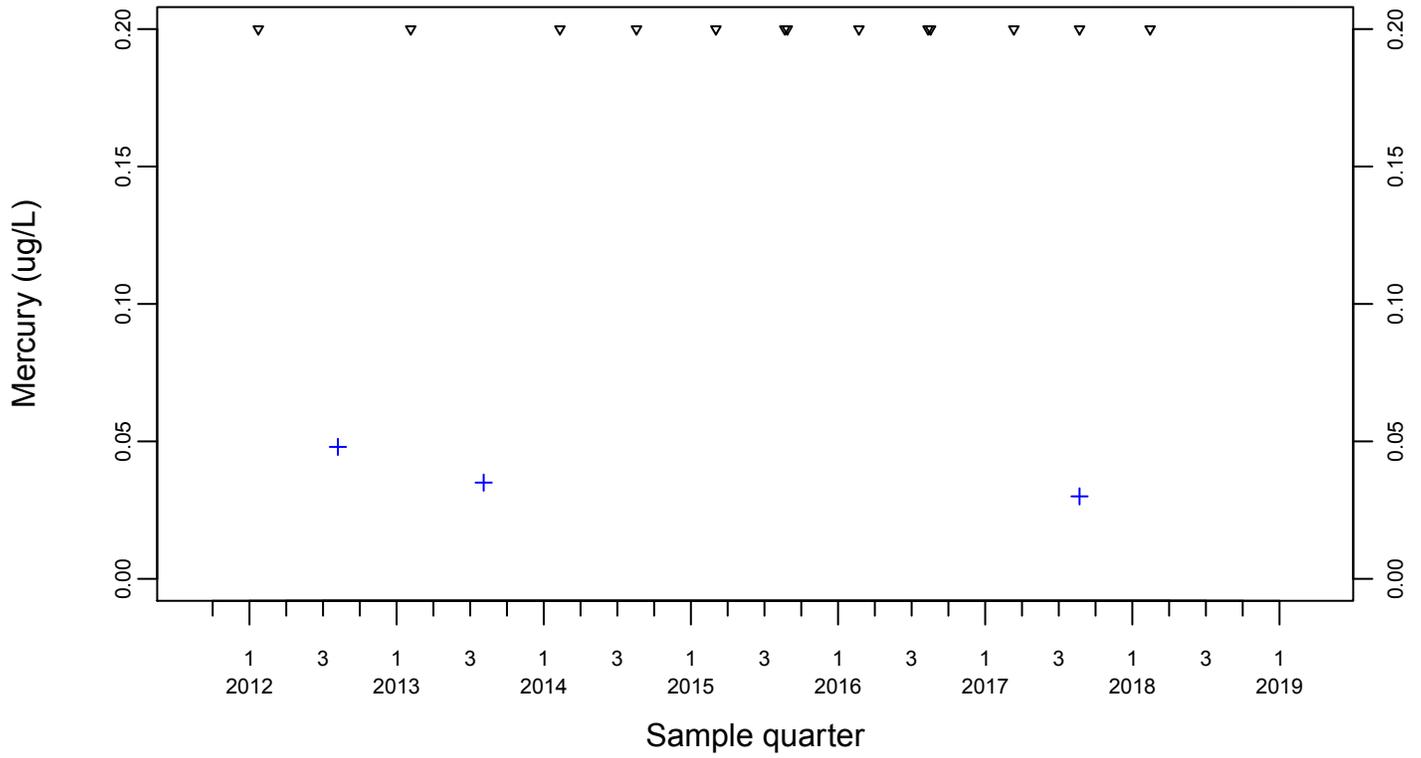
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Mercury (ug/L)

Downgradient Monitor Well W-7DS

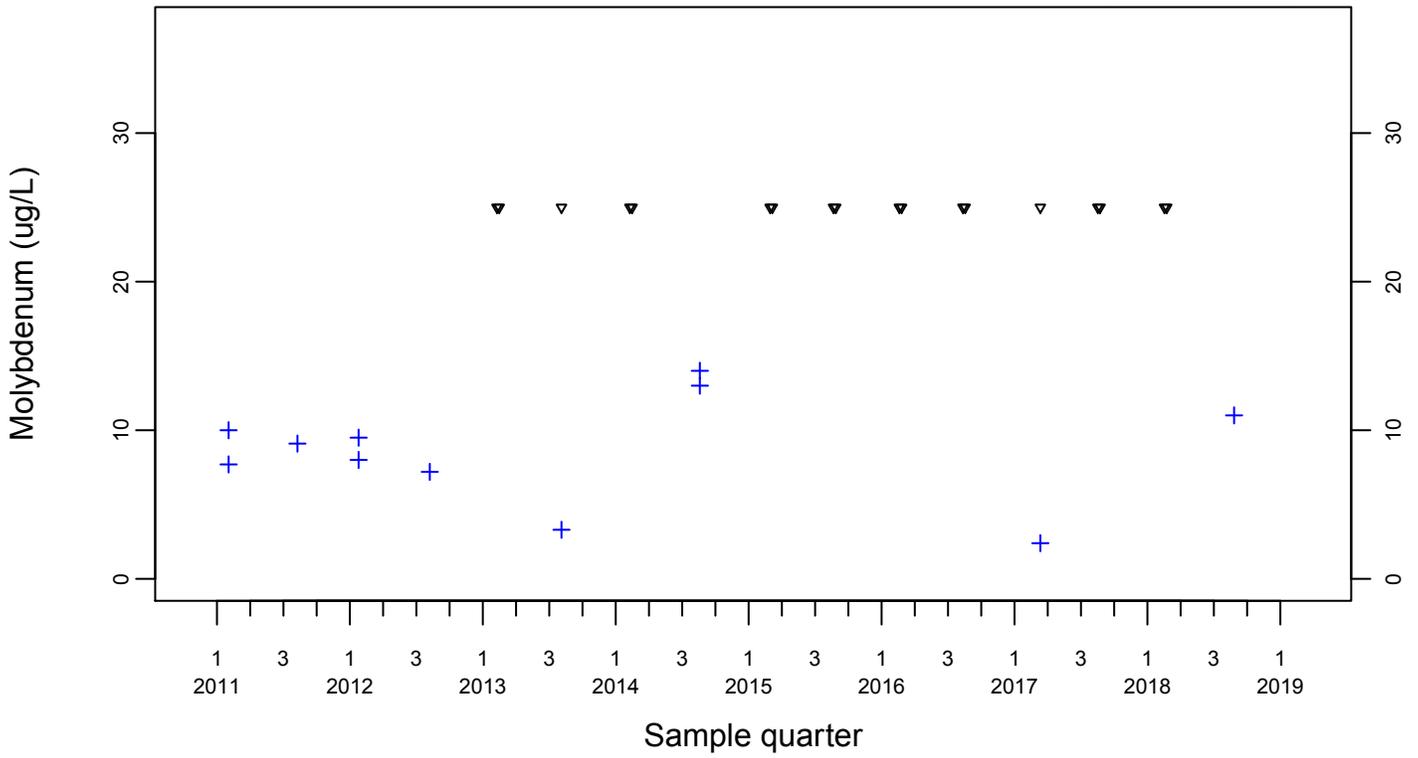
- ◆ Above RL
- ▽ Below RL
- + Estimated



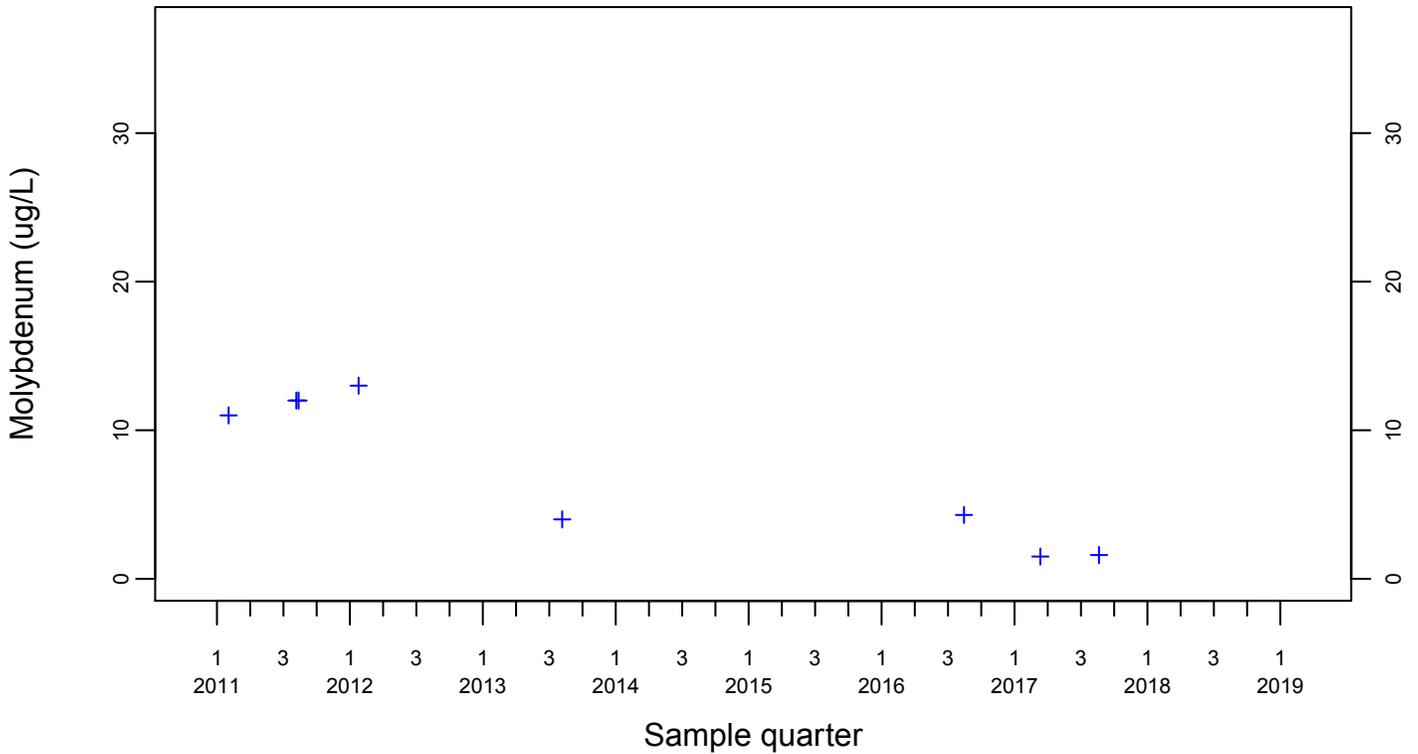
Sewage Ponds Ground Water
 Molybdenum (ug/L)

Upgradient Monitor Well W-7ES

- ◆ Above RL
- ▽ Below RL
- + Estimated



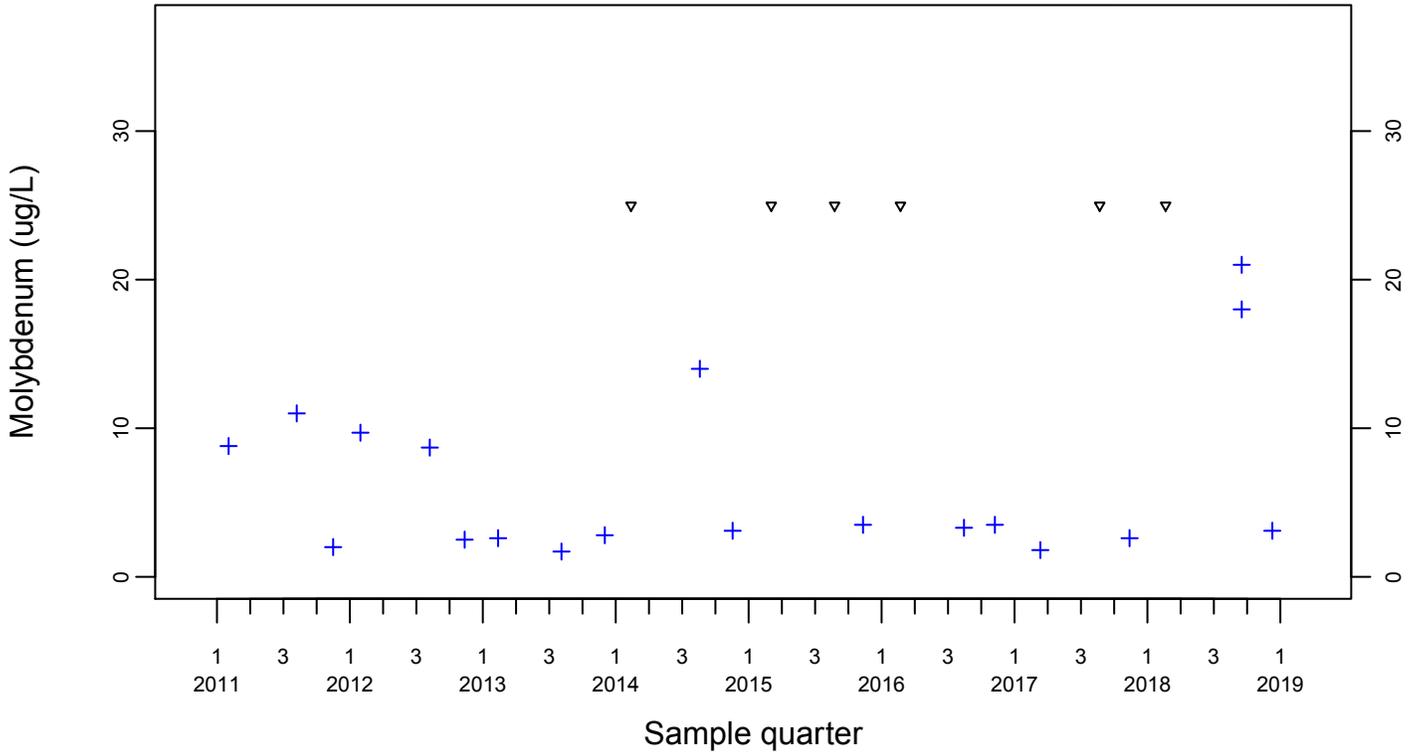
Upgradient Monitor Well W-7PS



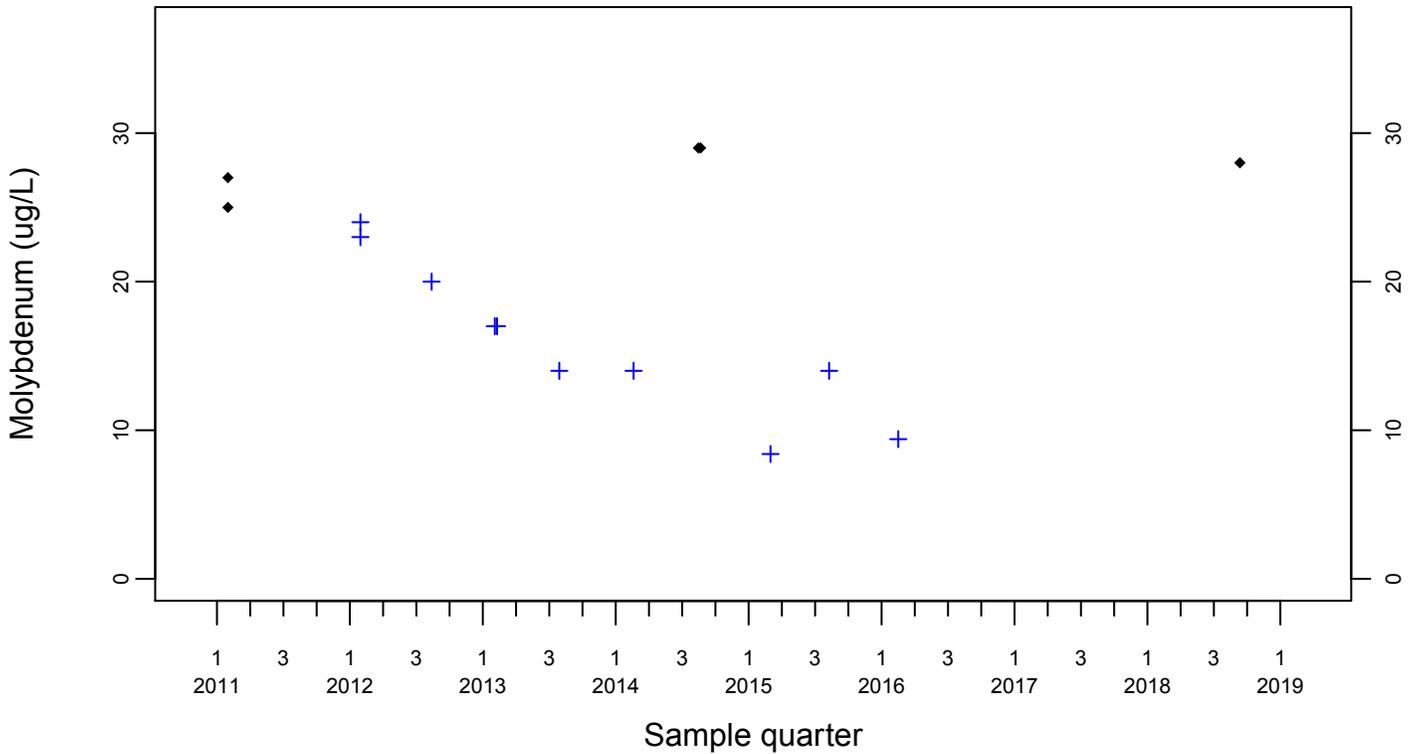
Sewage Ponds Ground Water
 Molybdenum (ug/L)

Crossgradient Monitor Well W-35A-04

- ◆ Above RL
- ▽ Below RL
- + Estimated



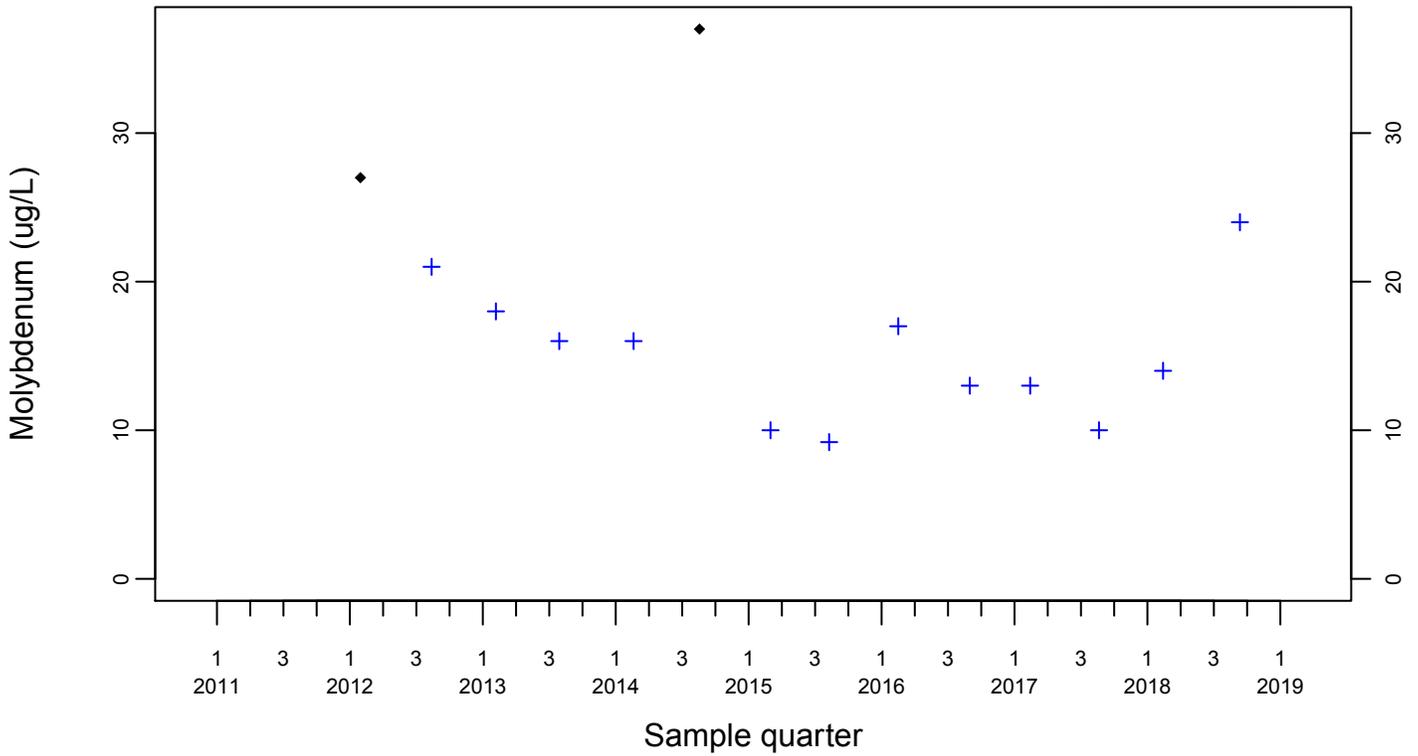
Downgradient Monitor Well W-25N-23



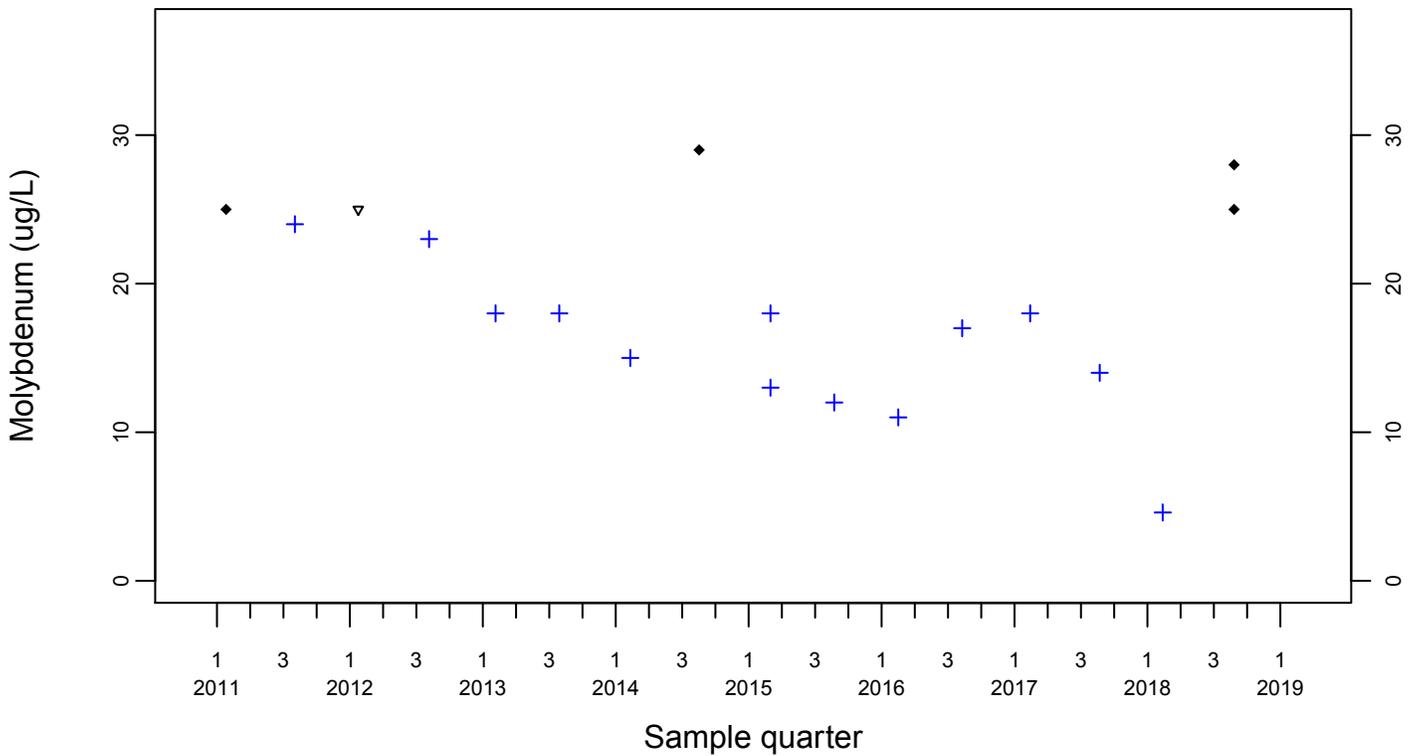
Sewage Ponds Ground Water Molybdenum (ug/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
+ Estimated



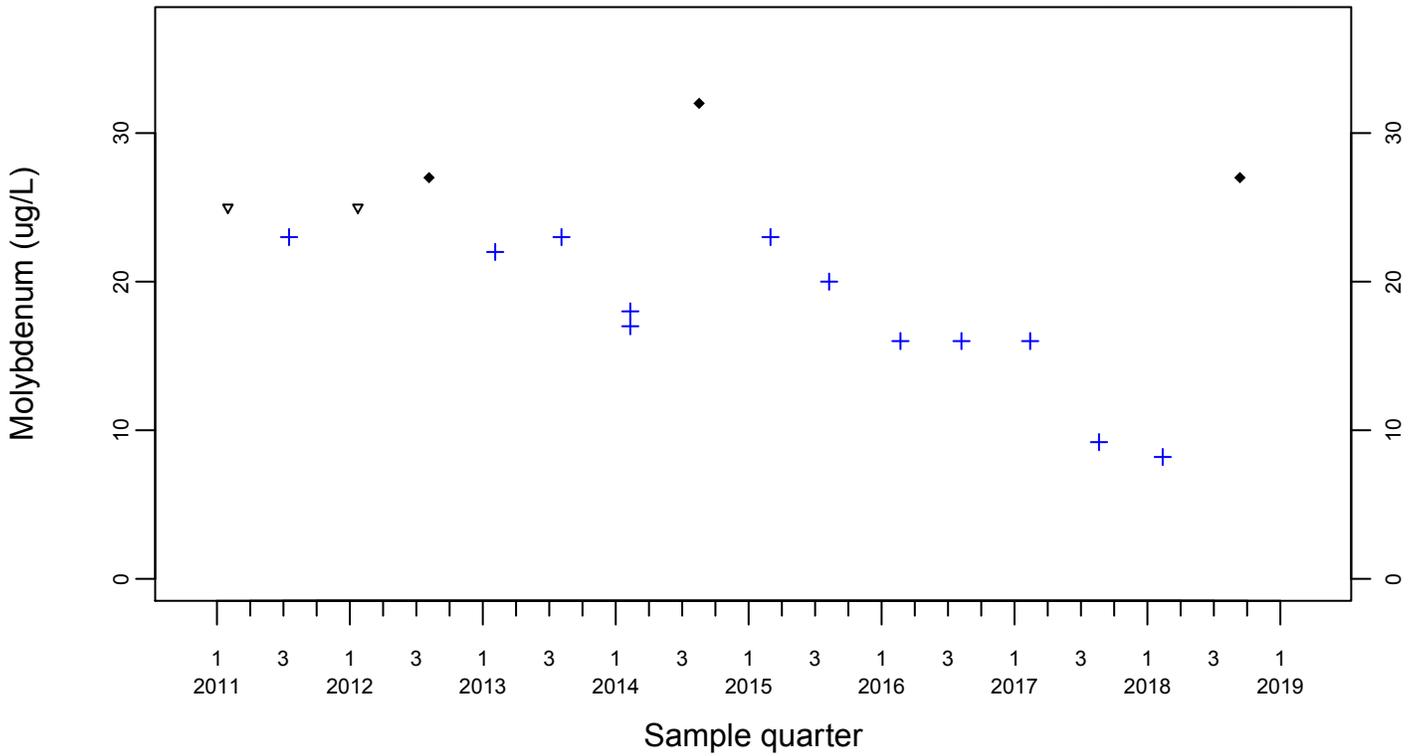
Downgradient Monitor Well W-26R-01



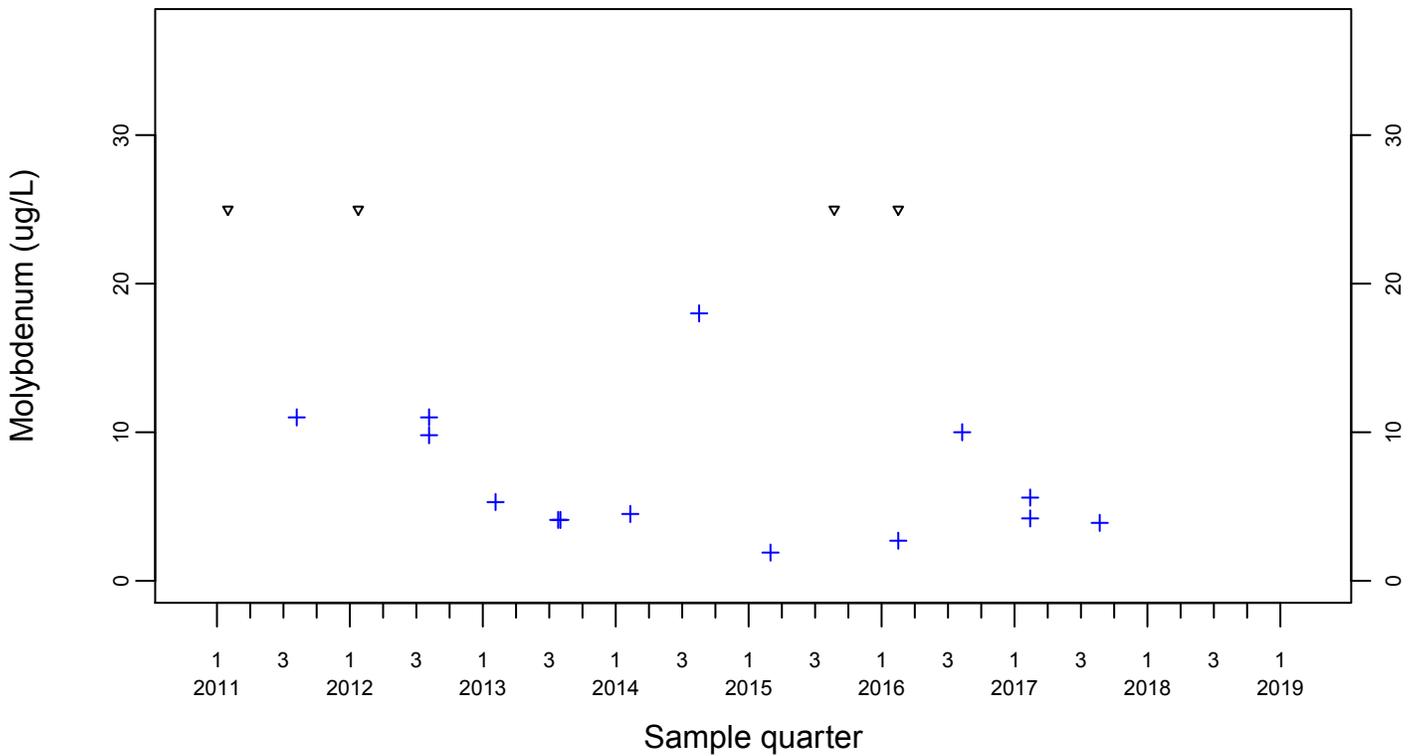
Sewage Ponds Ground Water
 Molybdenum (ug/L)

Downgradient Monitor Well W-26R-05

- ◆ Above RL
- ▽ Below RL
- + Estimated



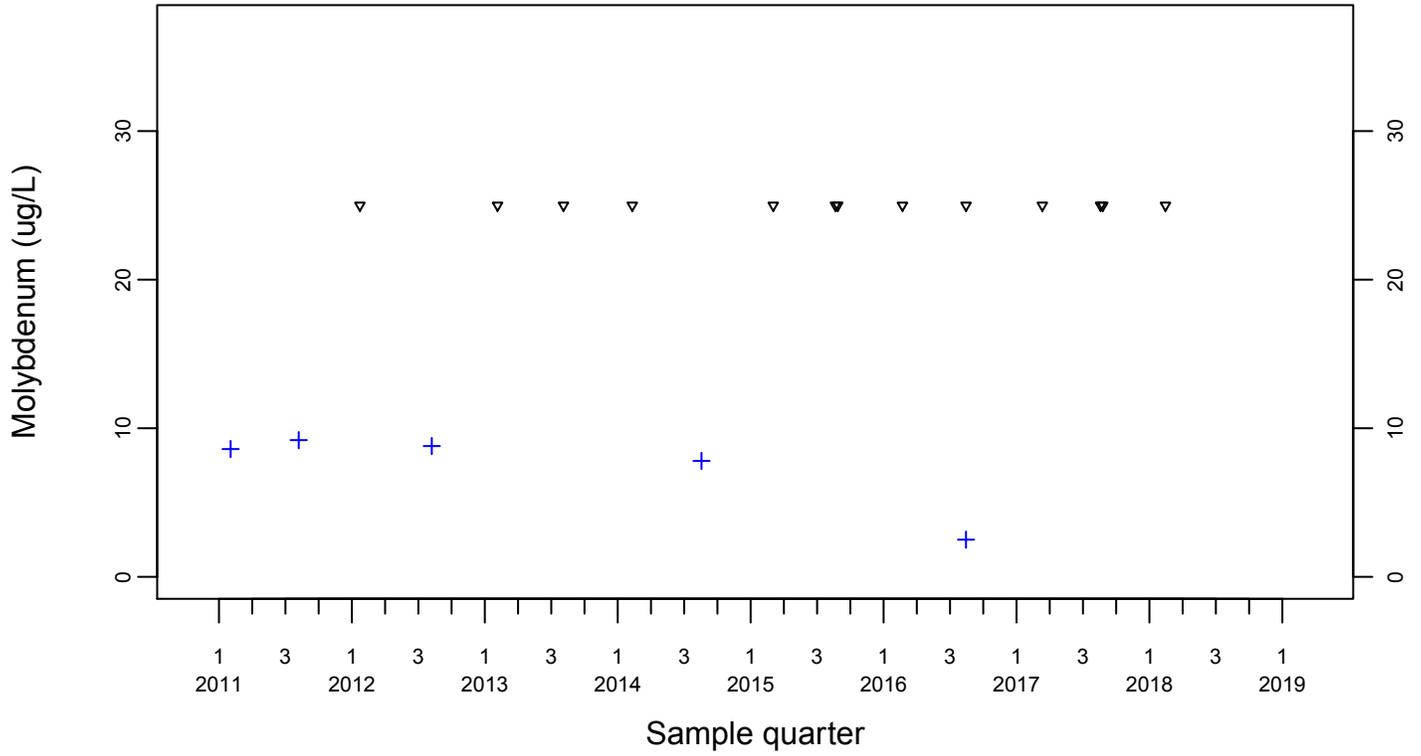
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Molybdenum (ug/L)

Downgradient Monitor Well W-7DS

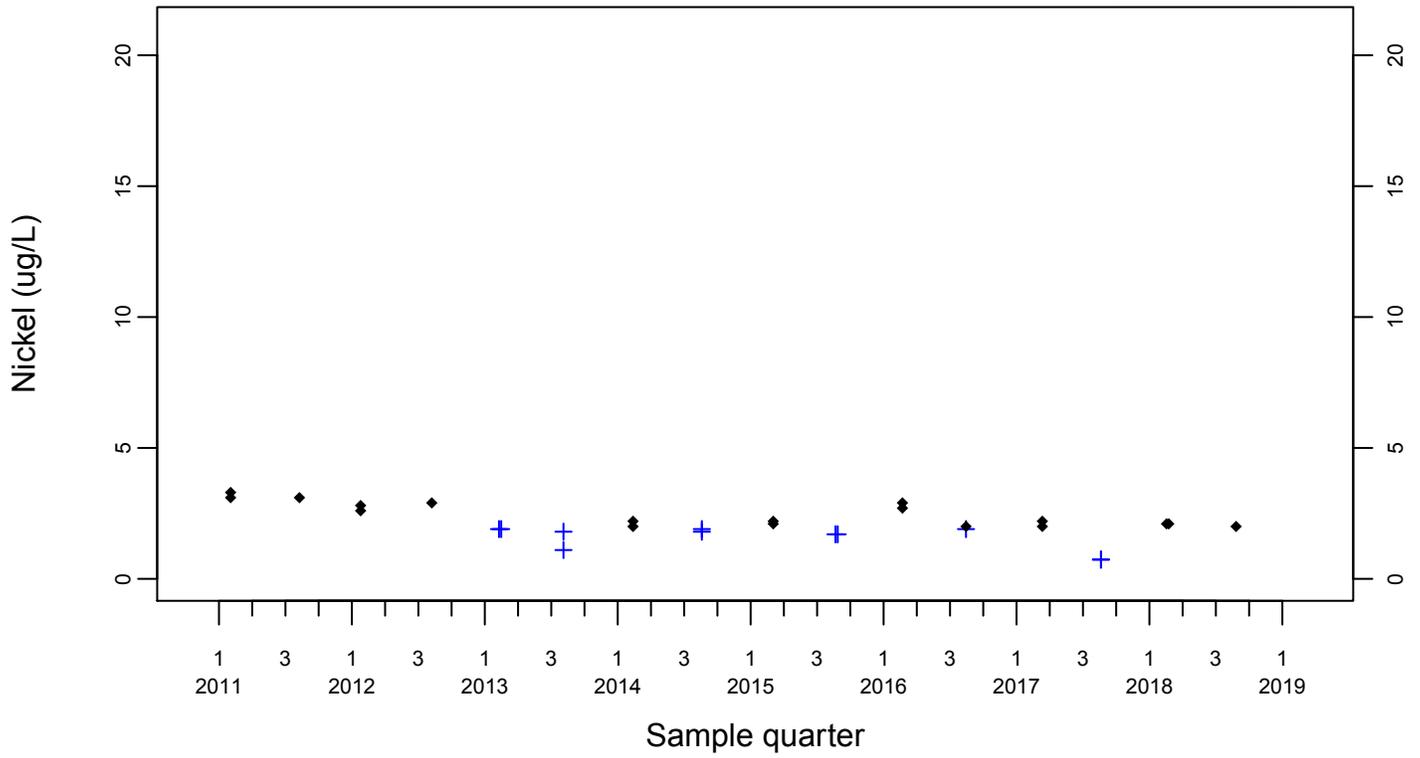
- ◆ Above RL
- ▽ Below RL
- + Estimated



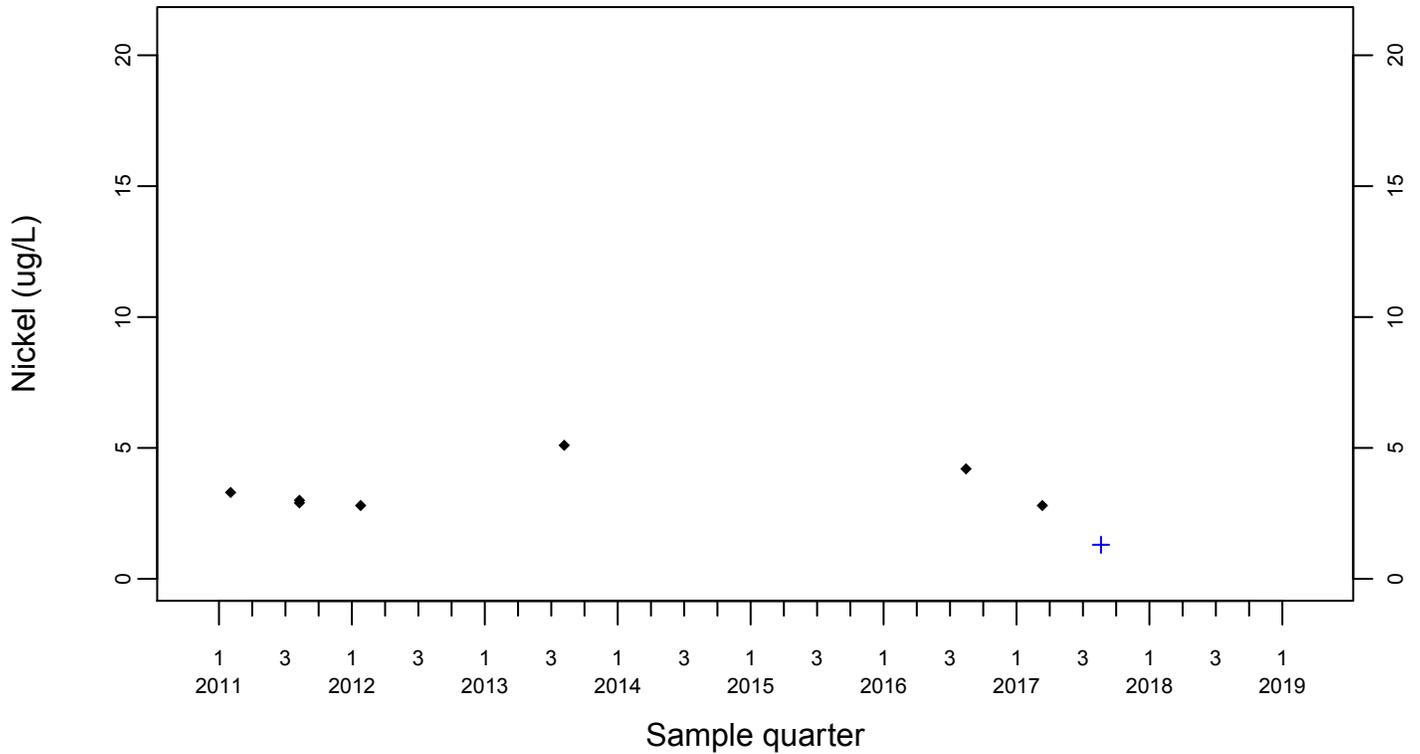
Sewage Ponds Ground Water Nickel (ug/L)

Upgradient Monitor Well W-7ES

◆ Above RL
+ Estimated



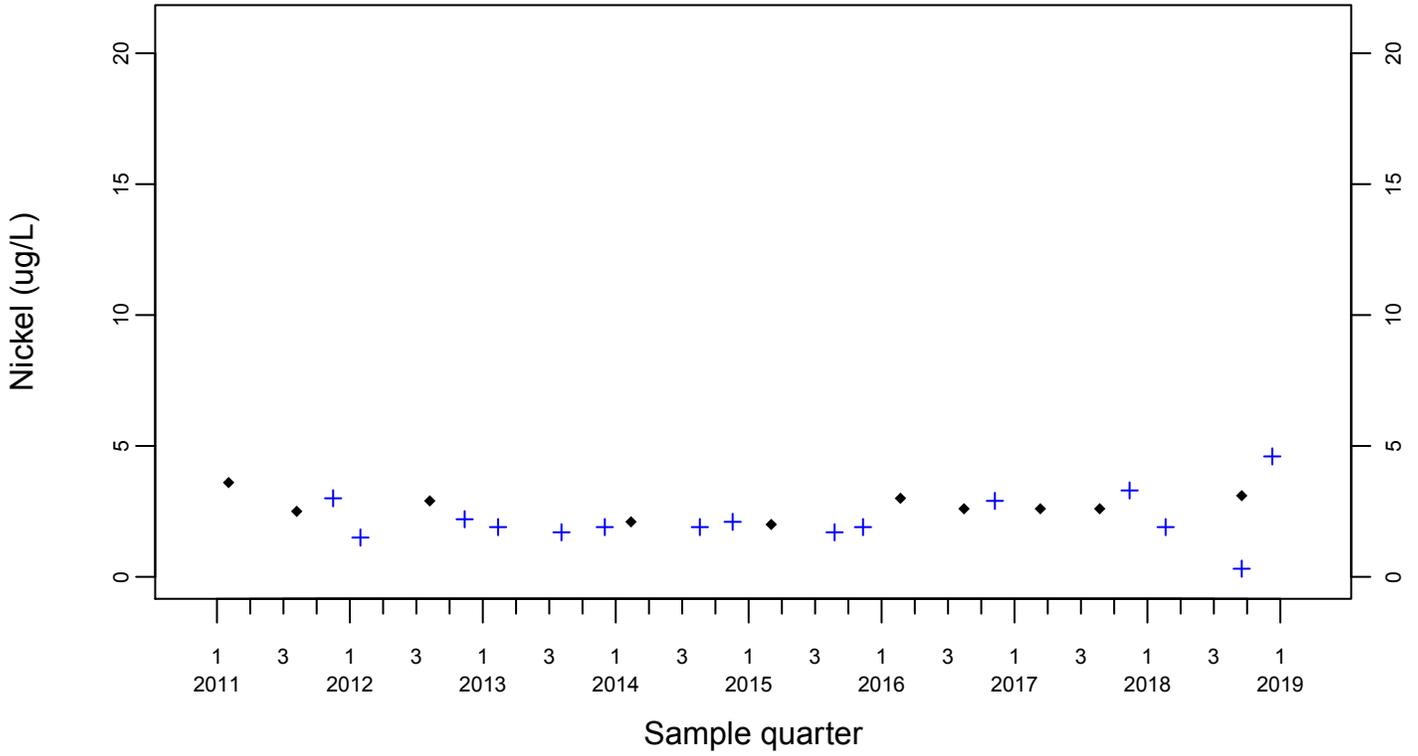
Upgradient Monitor Well W-7PS



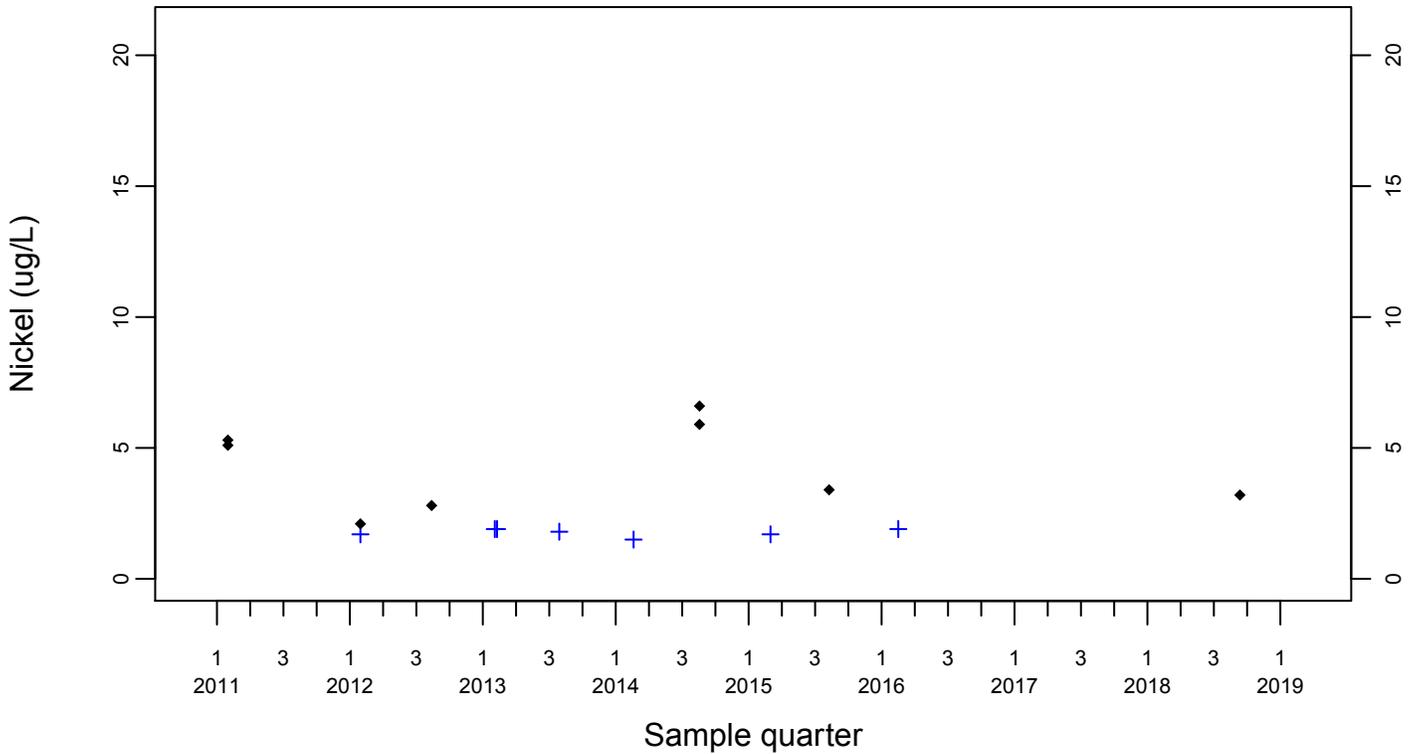
Sewage Ponds Ground Water Nickel (ug/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
+ Estimated



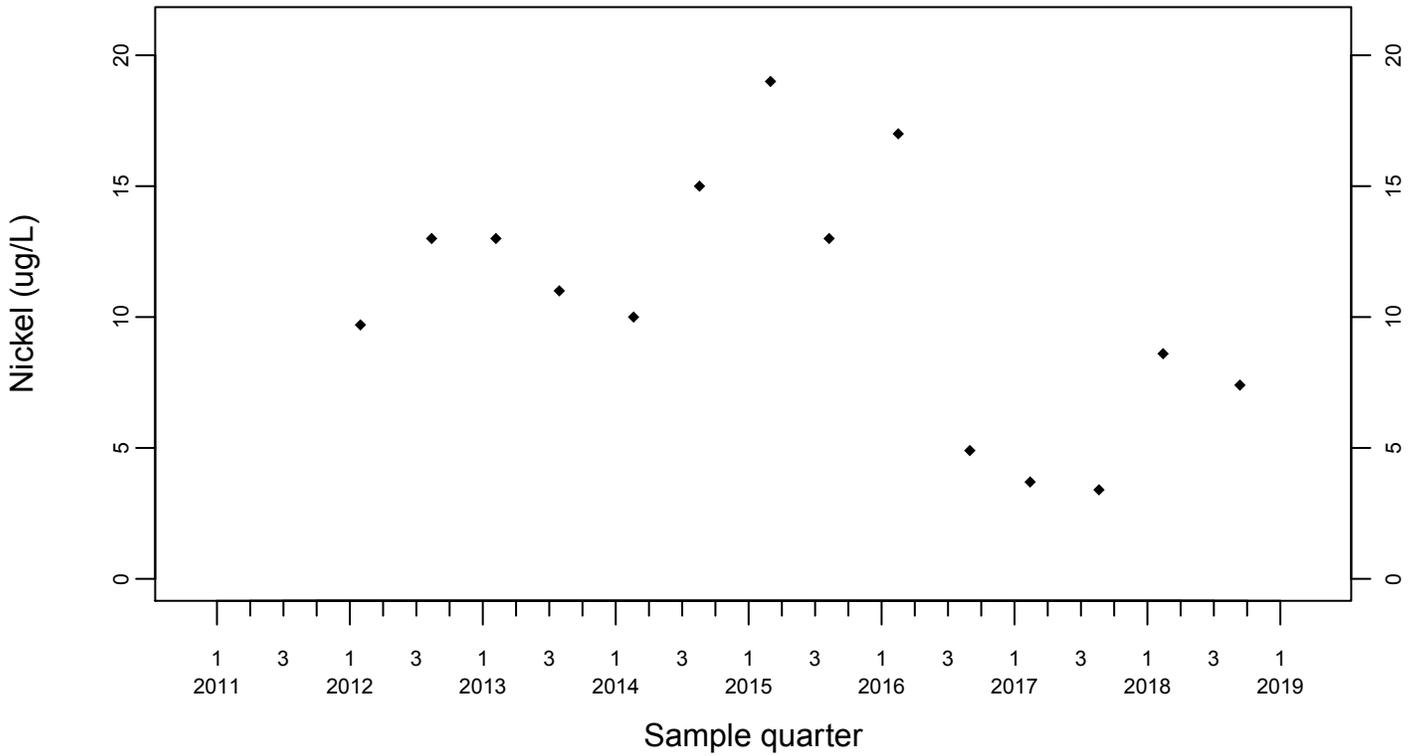
Downgradient Monitor Well W-25N-23



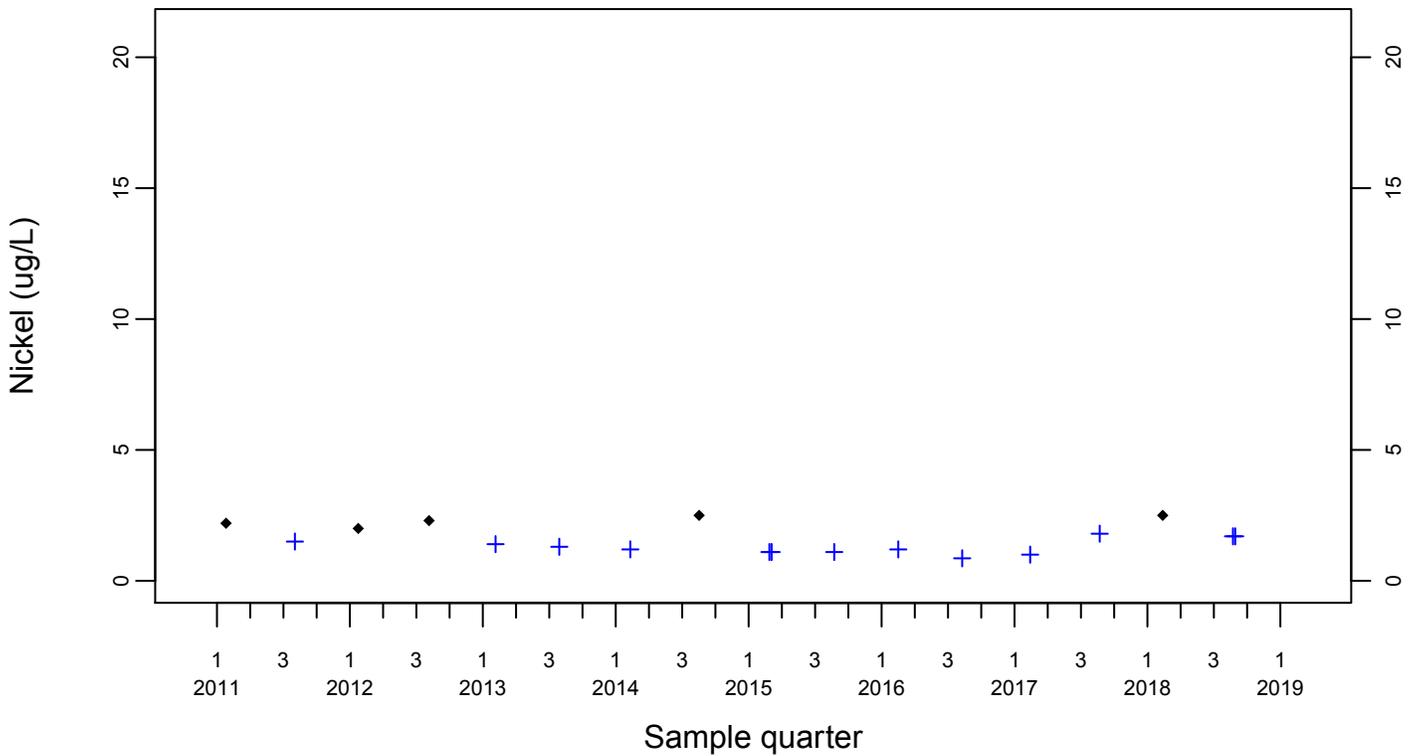
Sewage Ponds Ground Water Nickel (ug/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
▽ Below RL



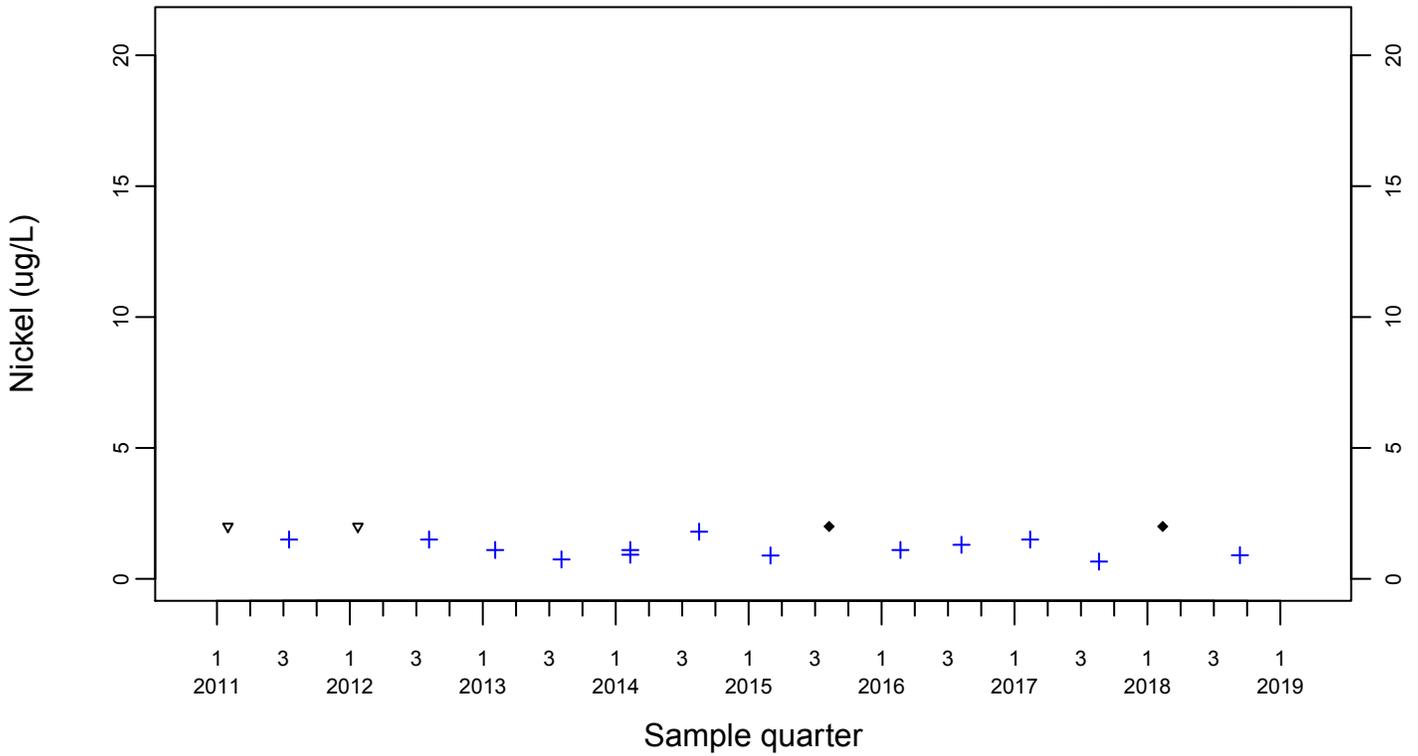
Downgradient Monitor Well W-26R-01



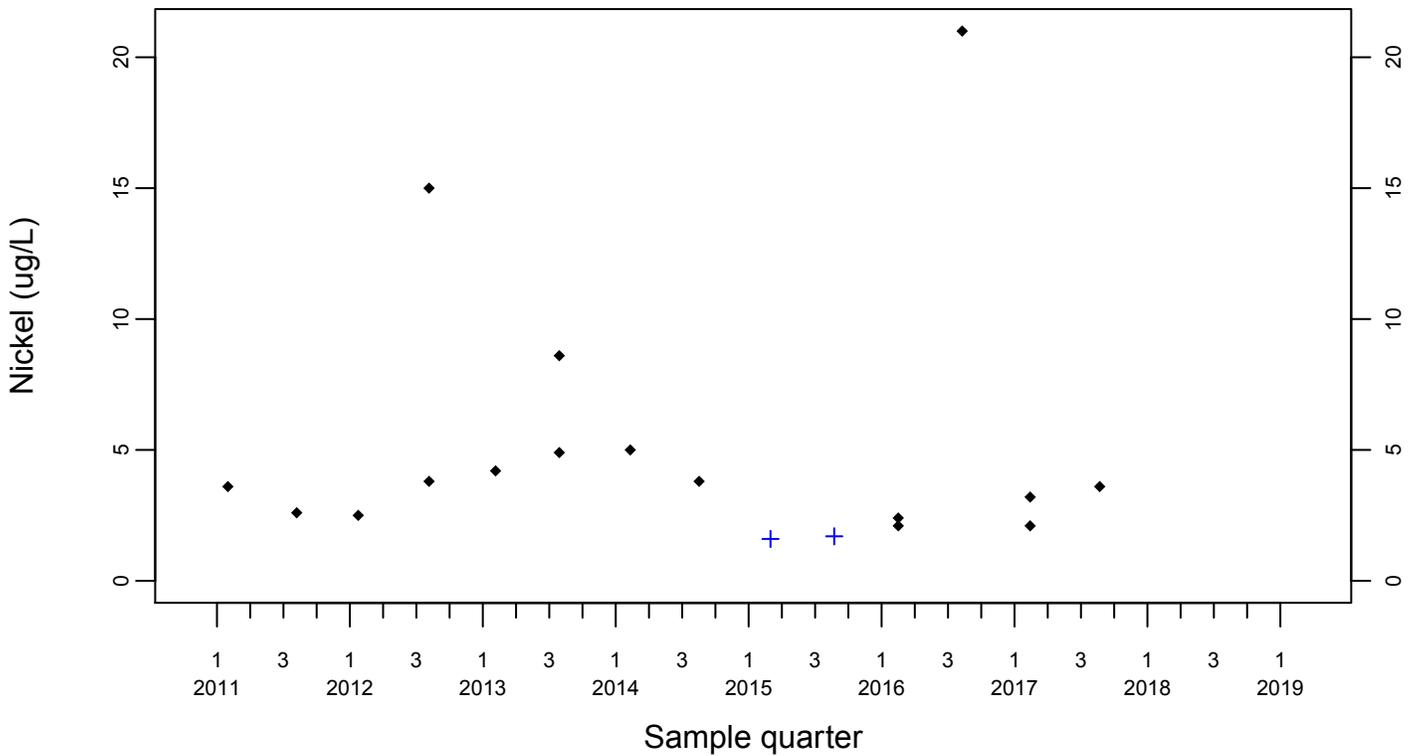
Sewage Ponds Ground Water
 Nickel (ug/L)

Downgradient Monitor Well W-26R-05

- ◆ Above RL
- ▽ Below RL
- + Estimated



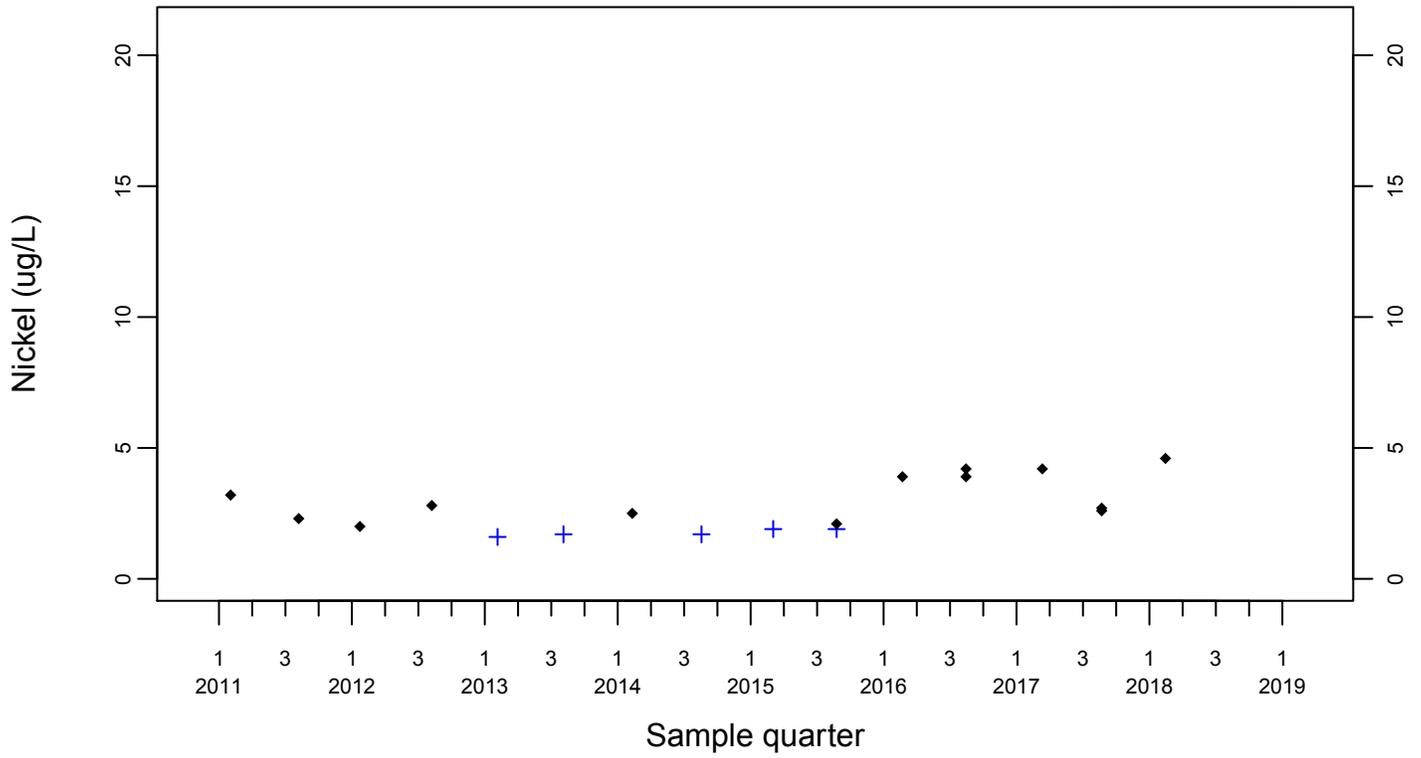
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Nickel (ug/L)

Downgradient Monitor Well W-7DS

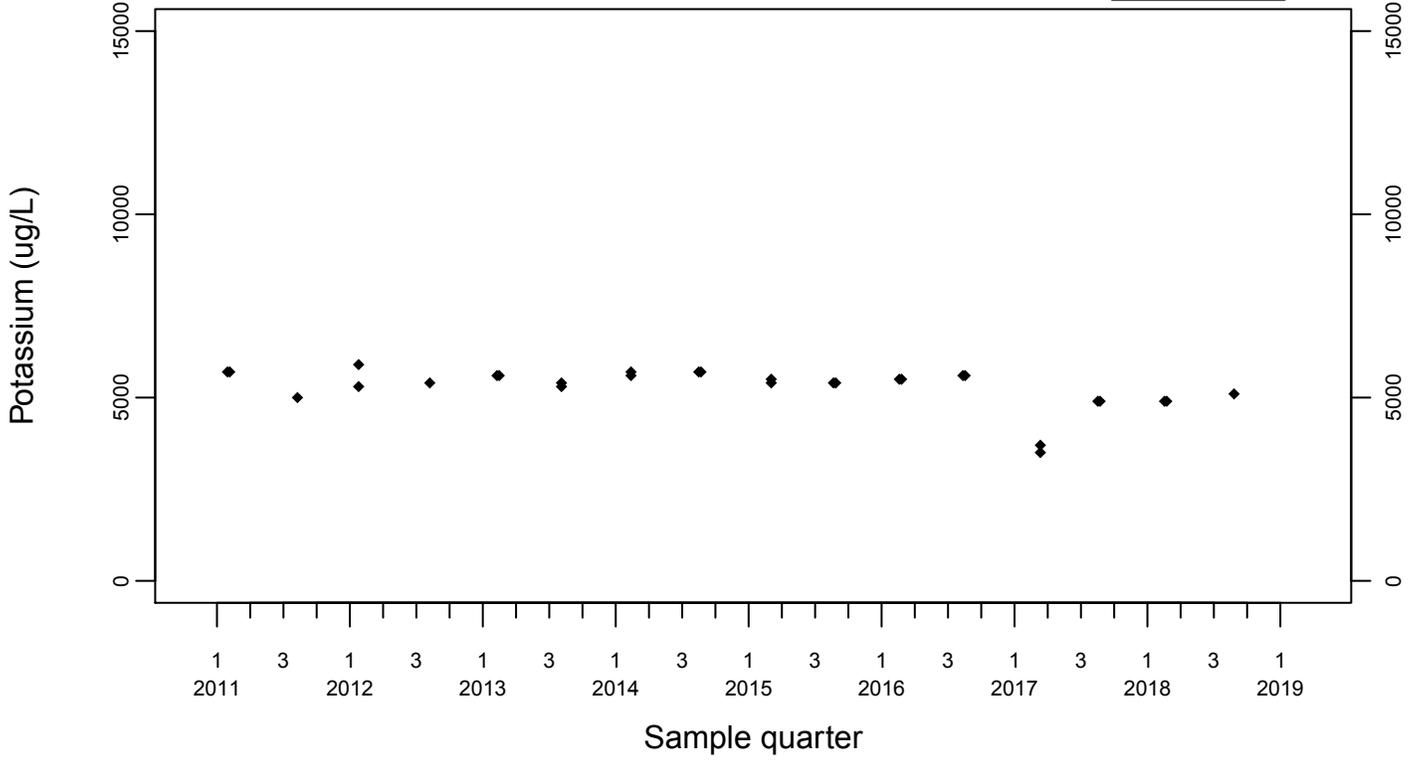
◆ Above RL
+ Estimated



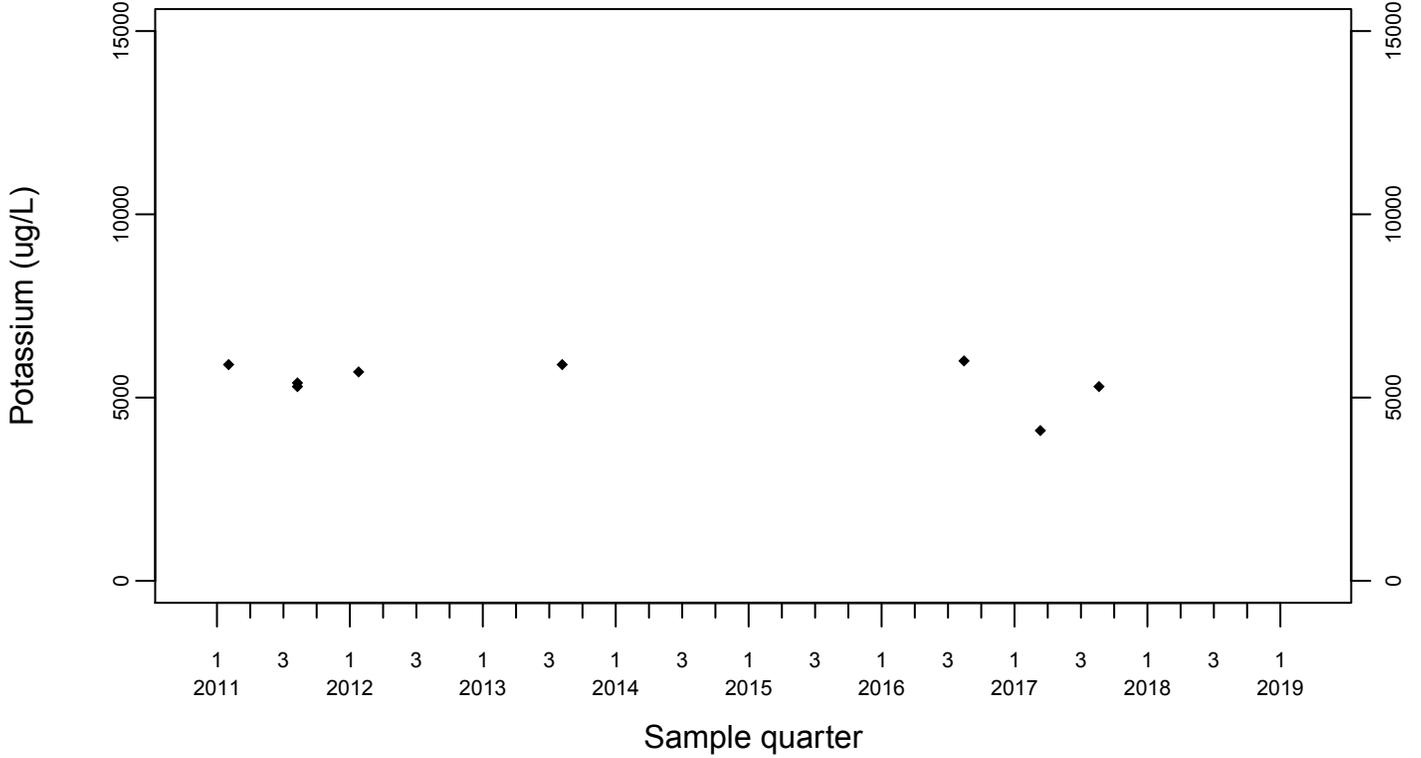
Sewage Ponds Ground Water Potassium (ug/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



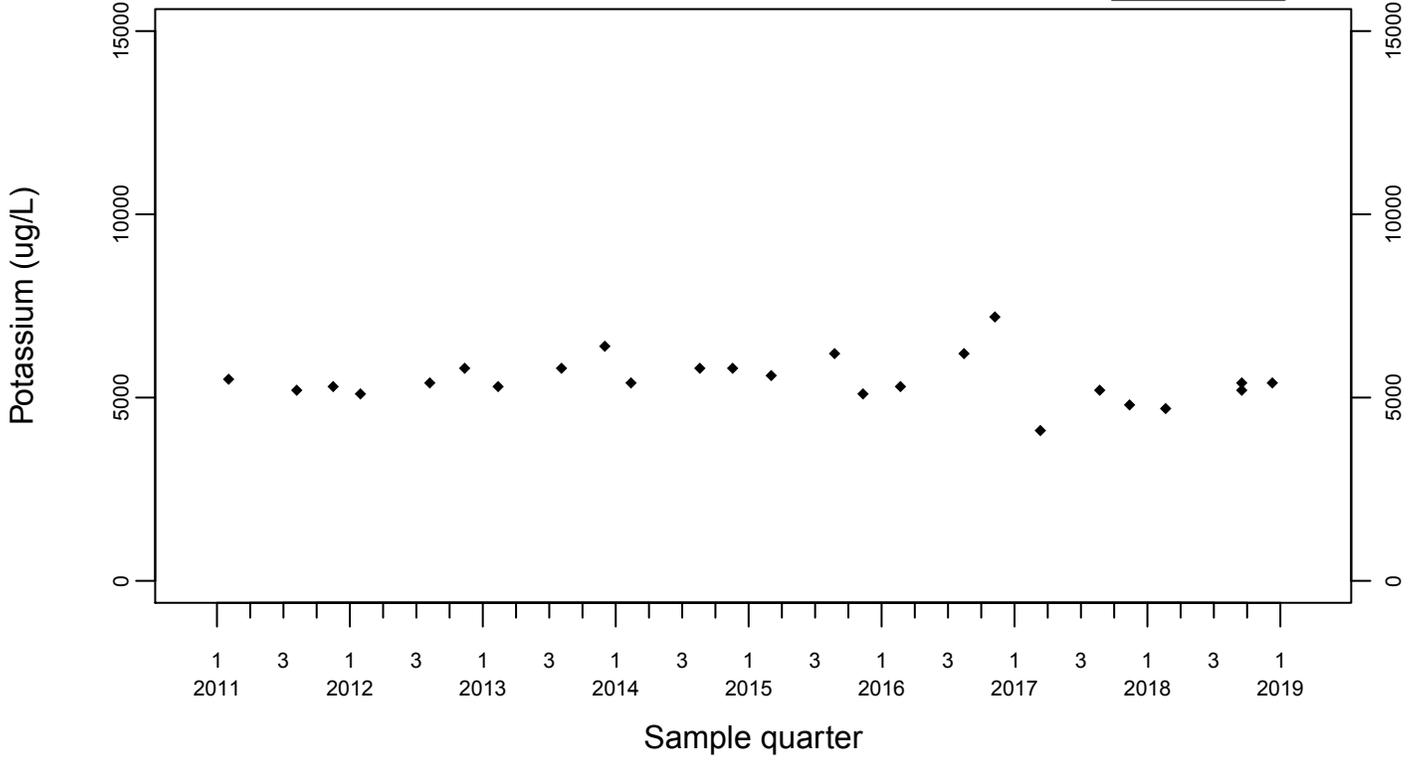
Upgradient Monitor Well W-7PS



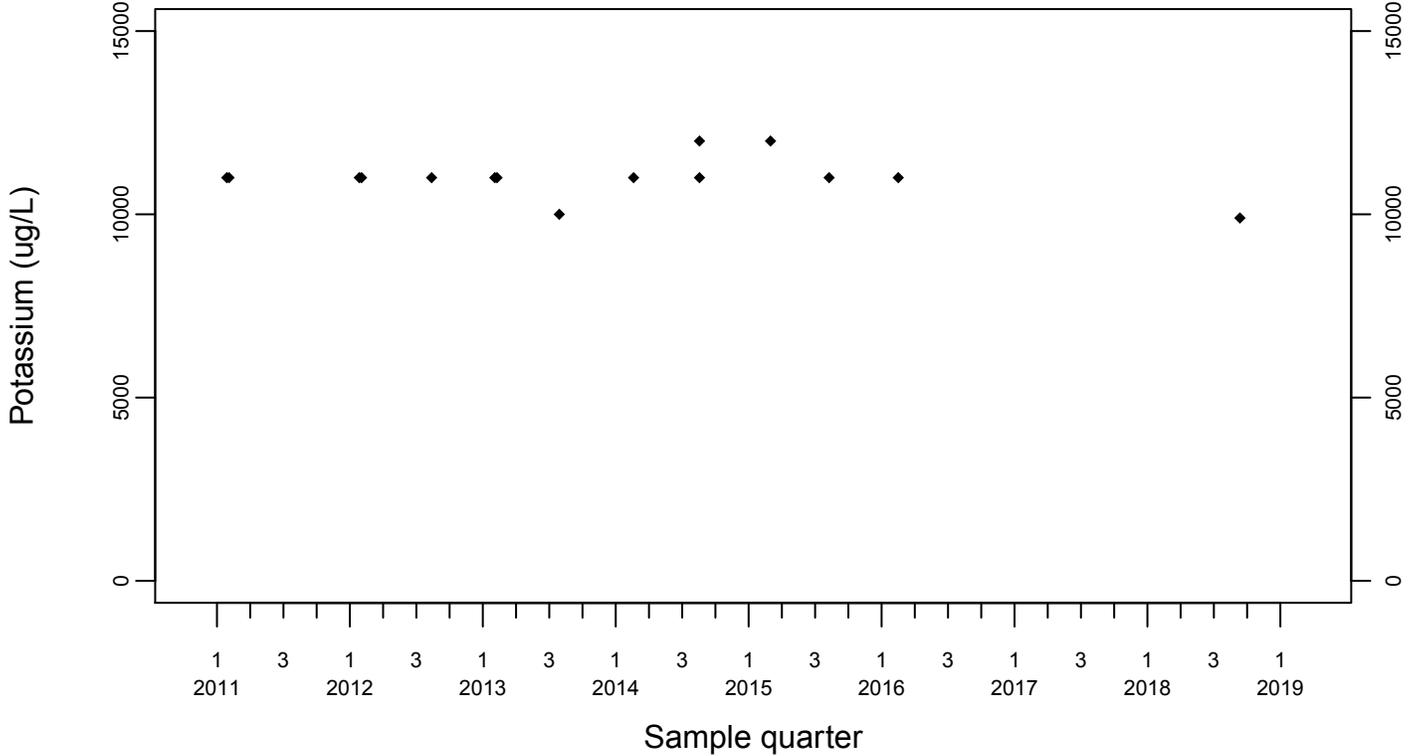
Sewage Ponds Ground Water
 Potassium (ug/L)

Crossgradient Monitor Well W-35A-04

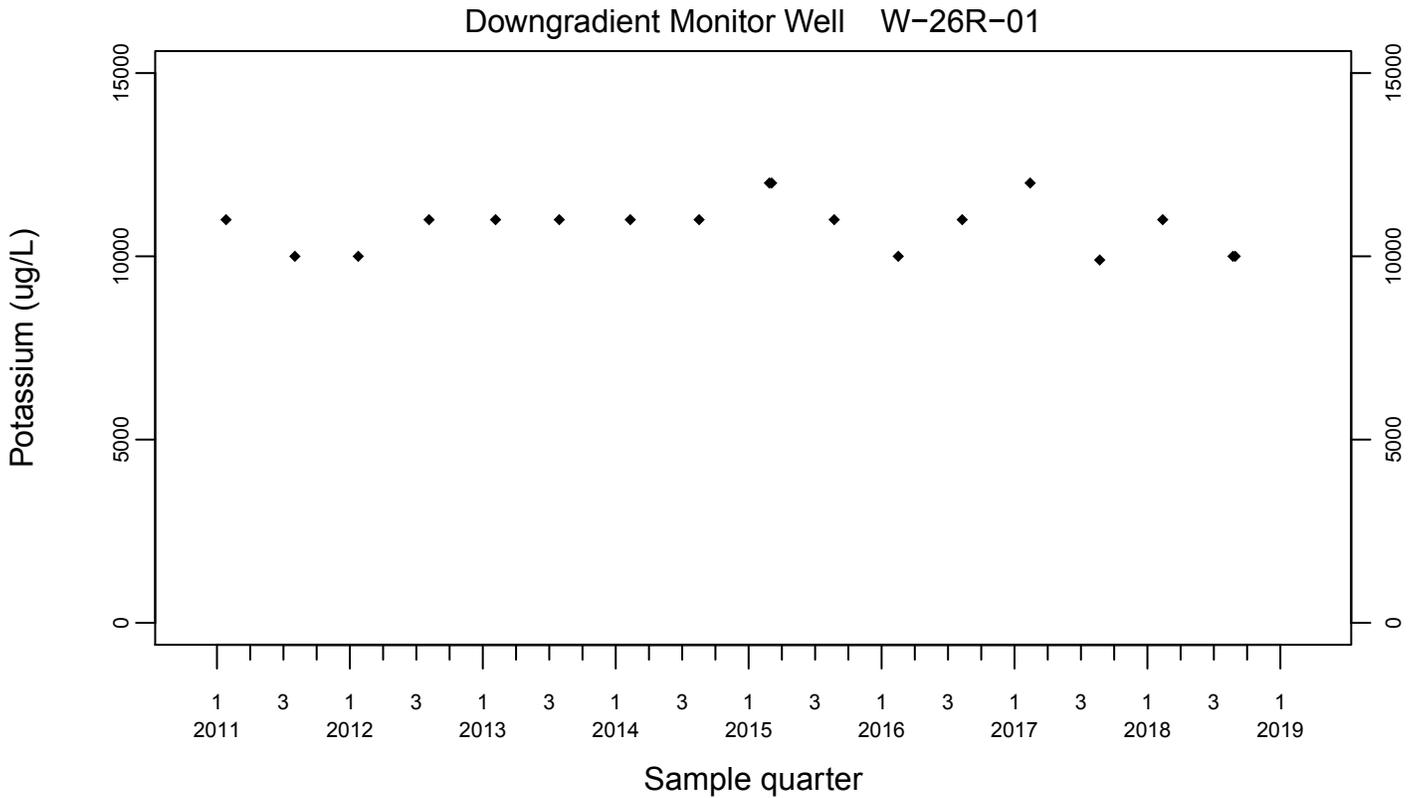
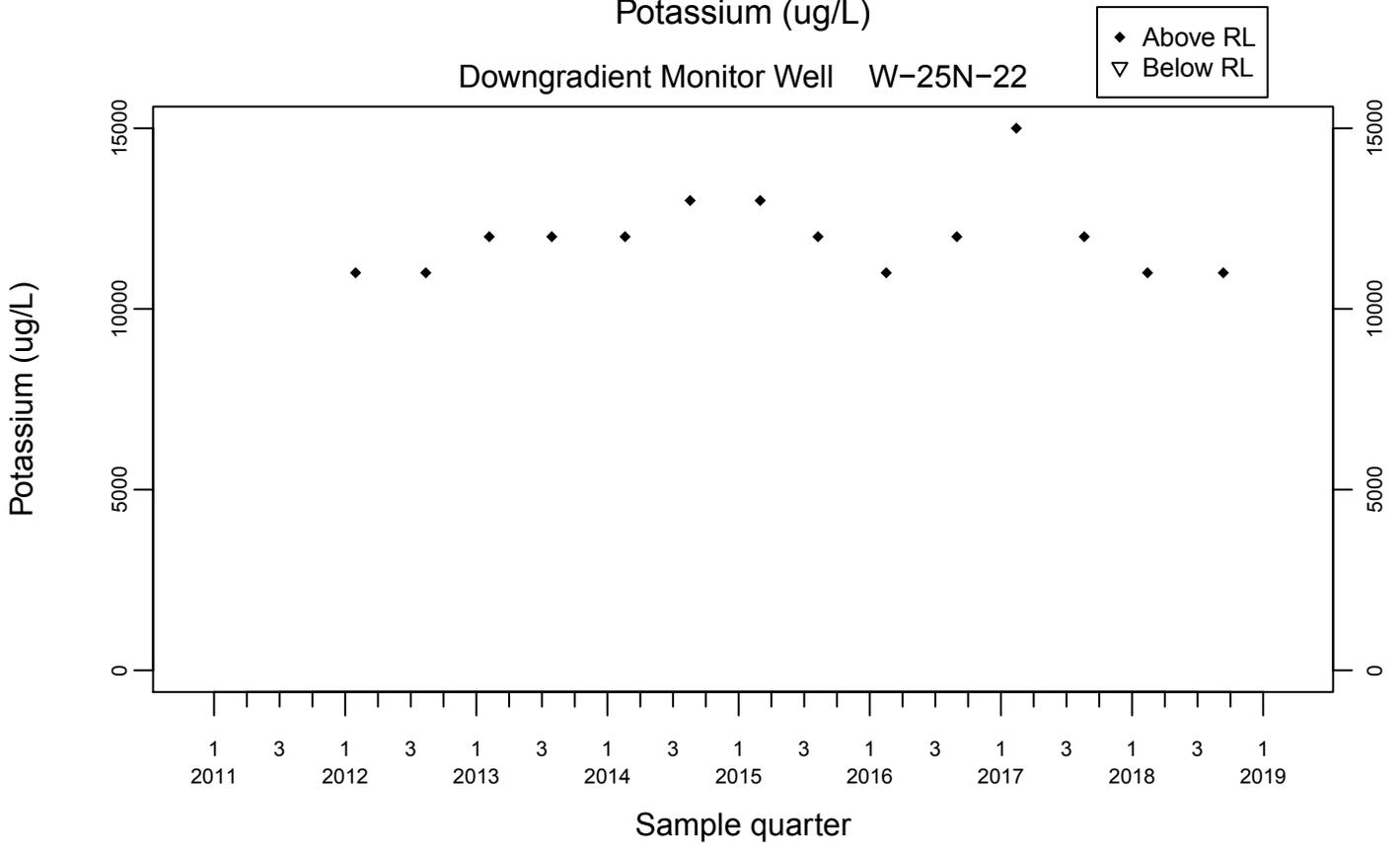
◆ Above RL
 ▼ Below RL



Downgradient Monitor Well W-25N-23



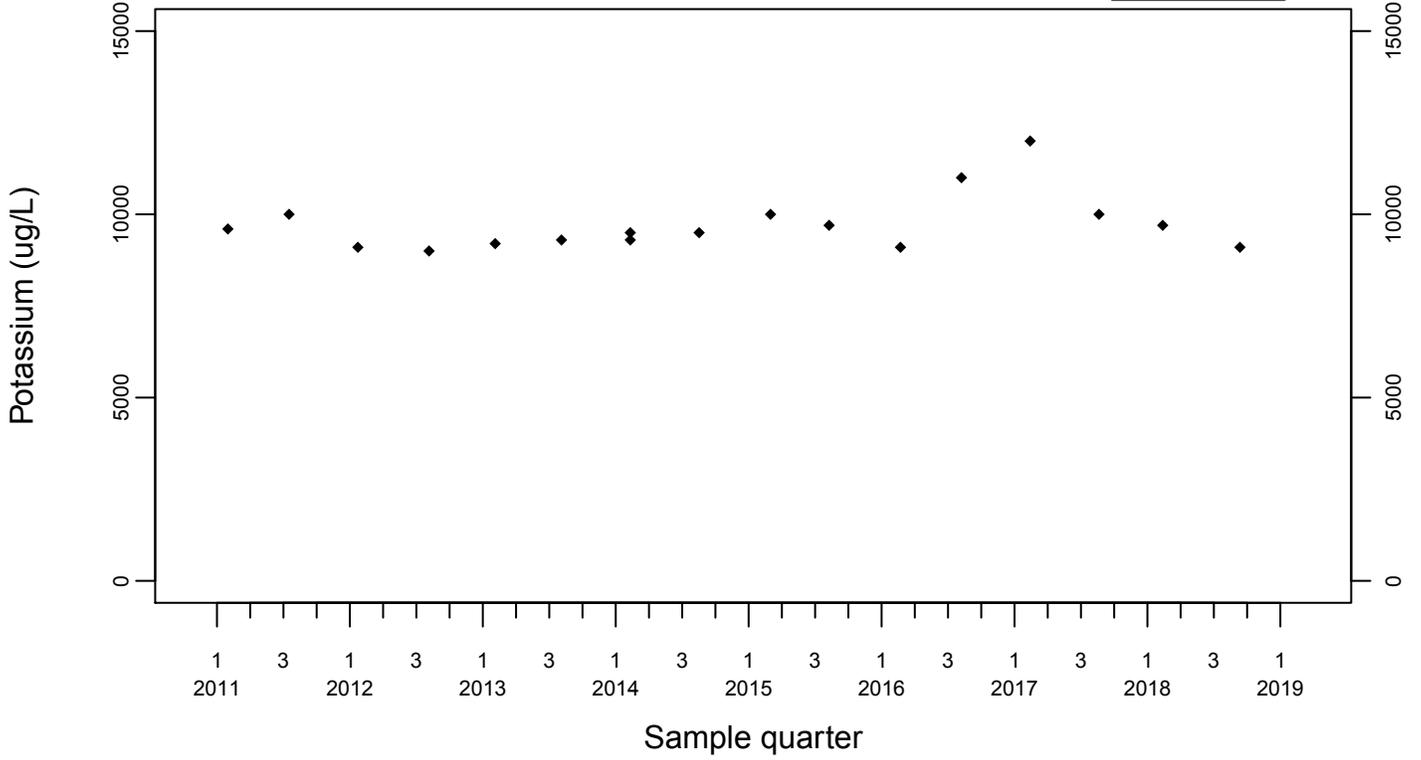
Sewage Ponds Ground Water Potassium (ug/L)



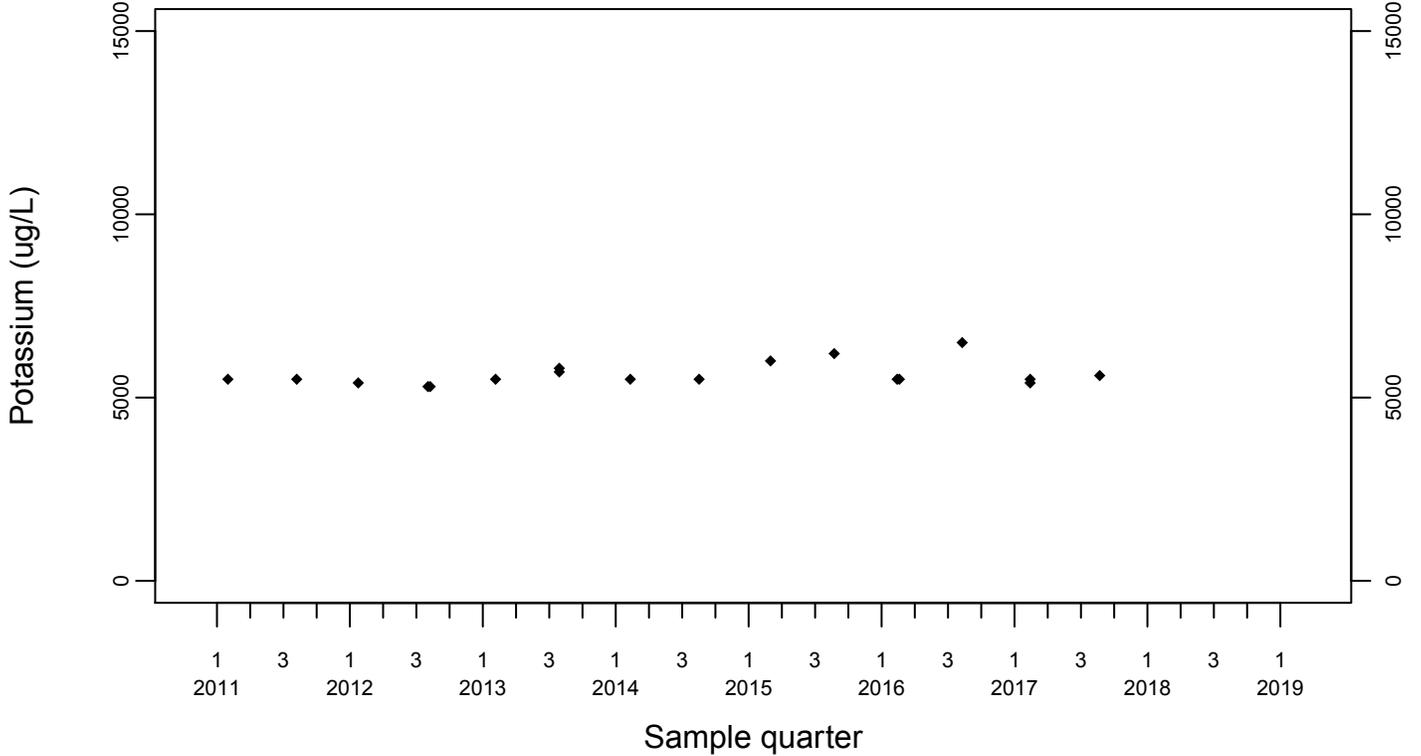
Sewage Ponds Ground Water Potassium (ug/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



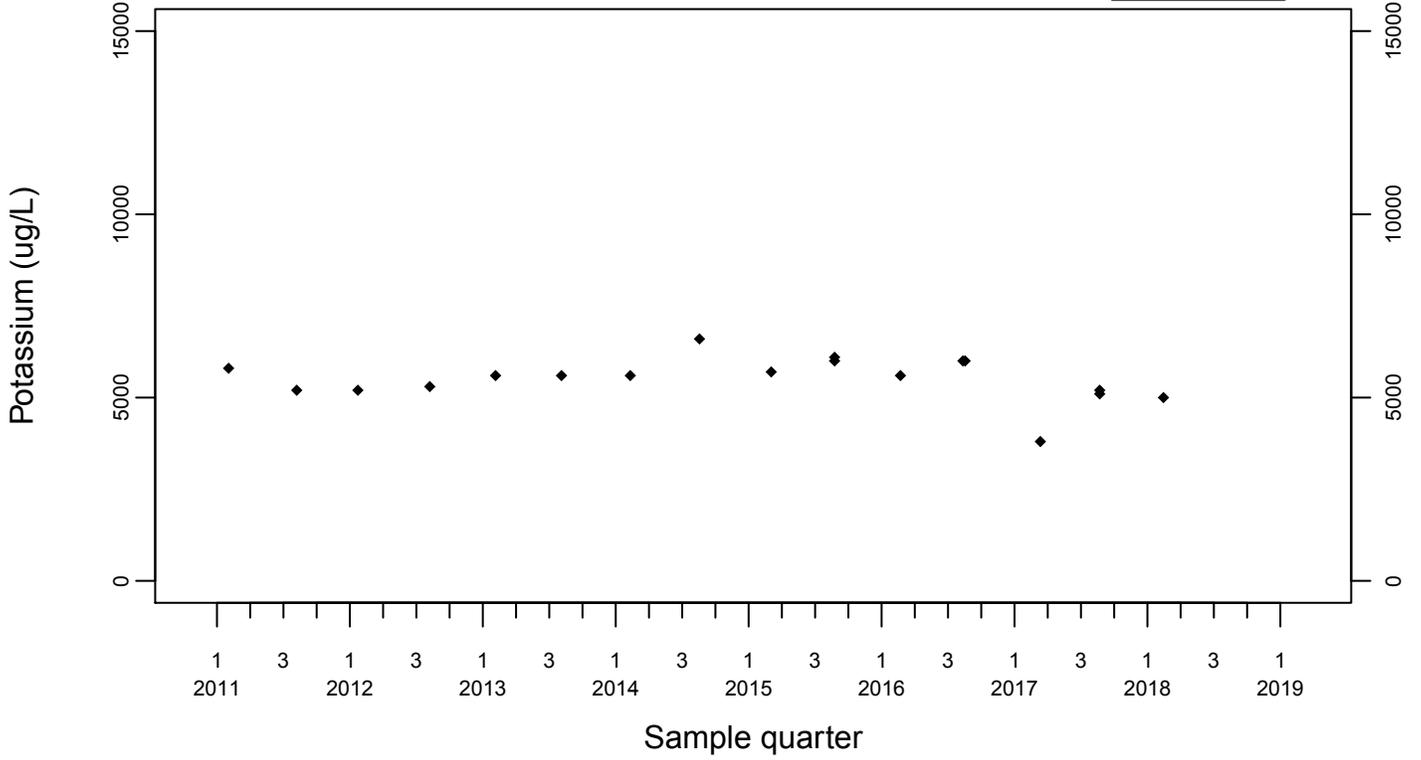
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Potassium (ug/L)

Downgradient Monitor Well W-7DS

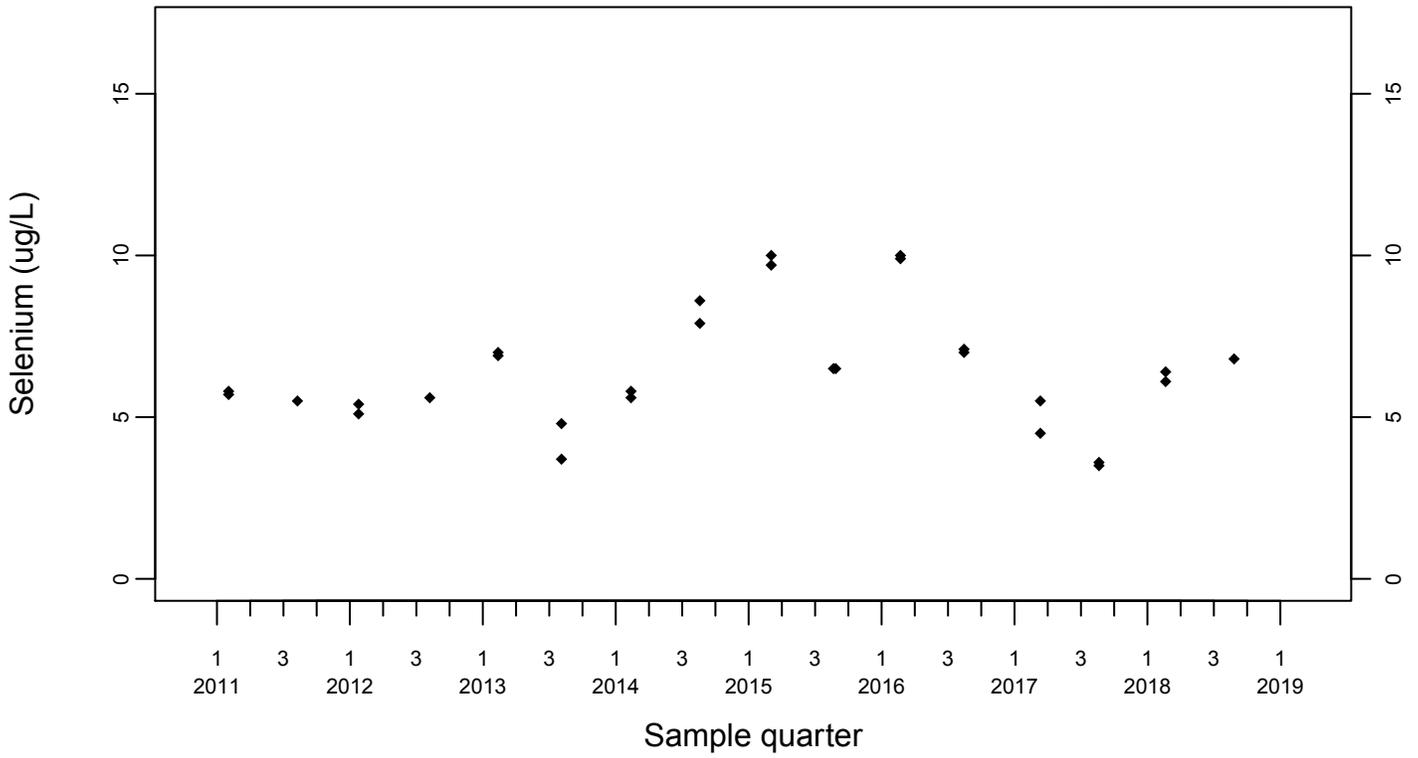
◆ Above RL
▽ Below RL



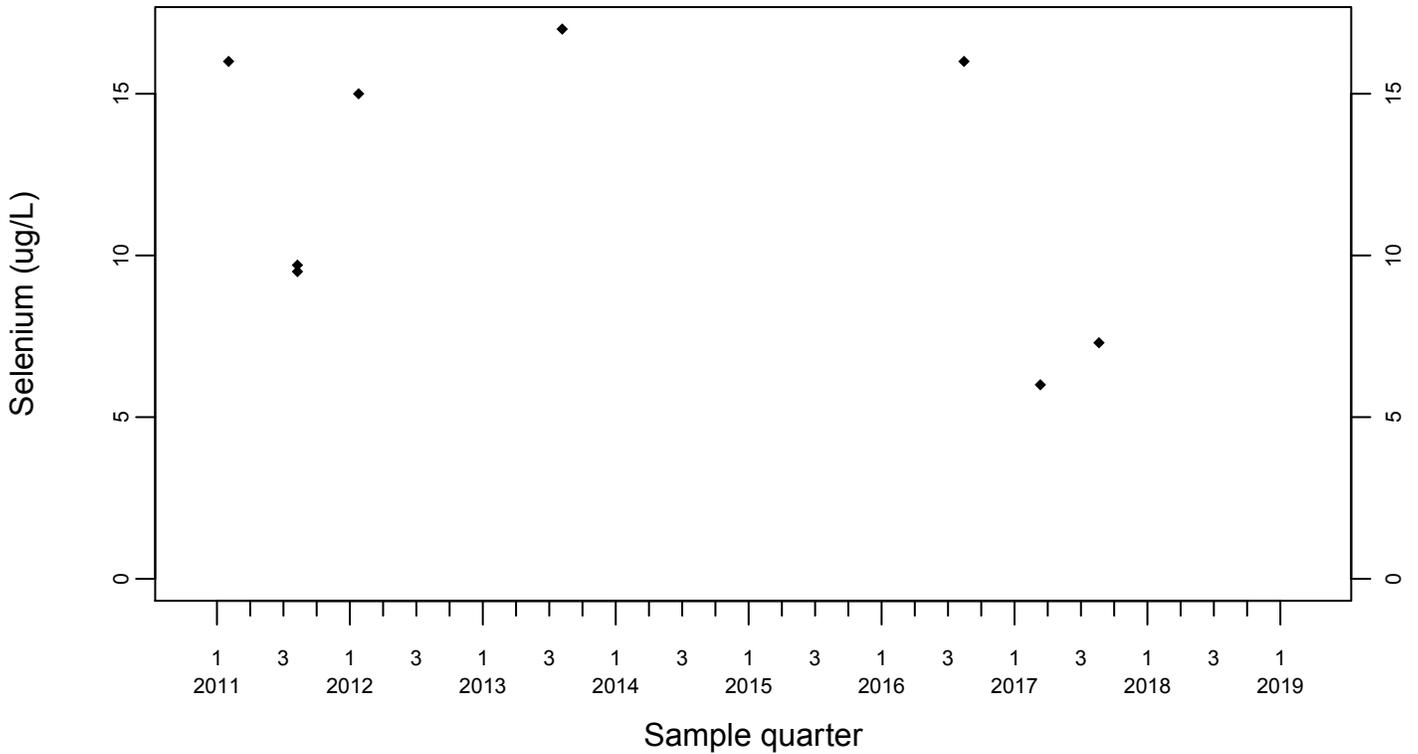
Sewage Ponds Ground Water Selenium (ug/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



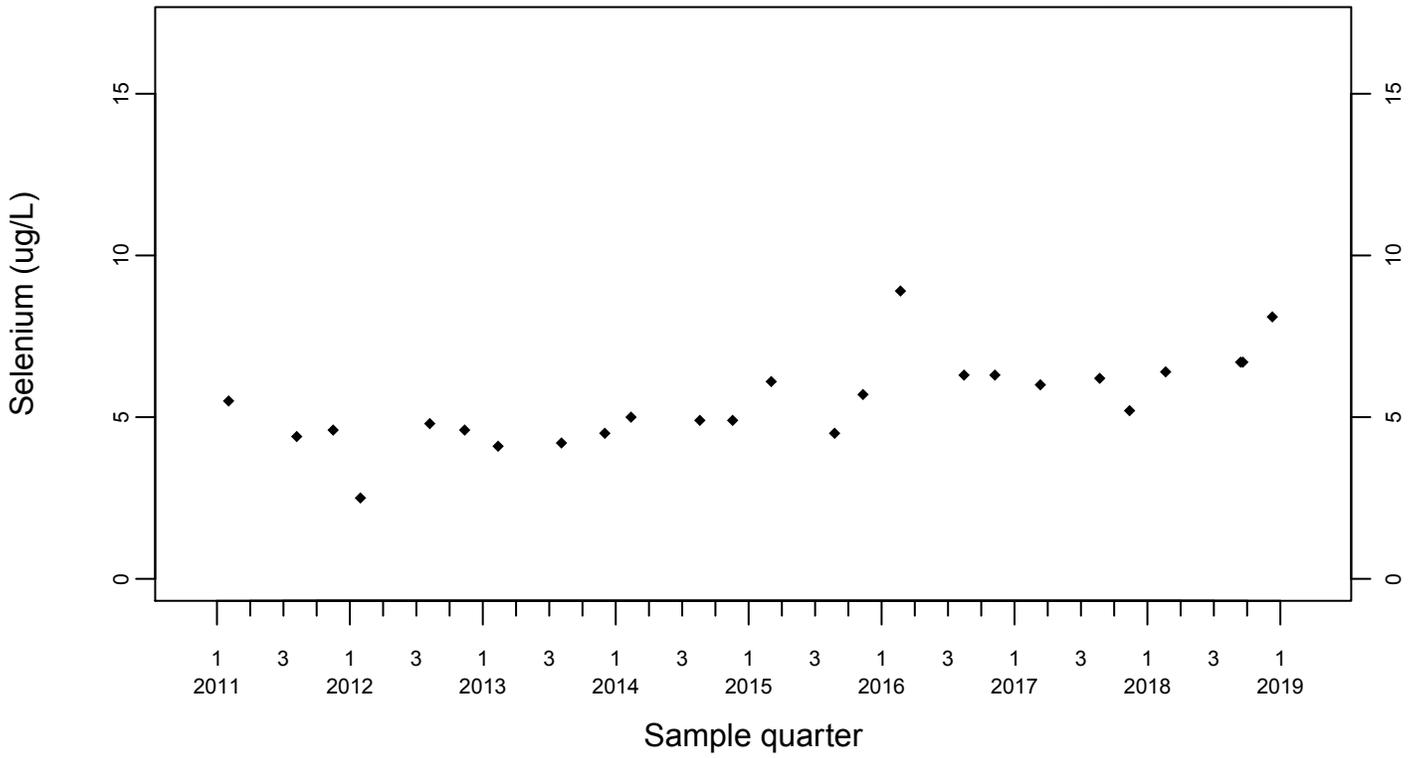
Upgradient Monitor Well W-7PS



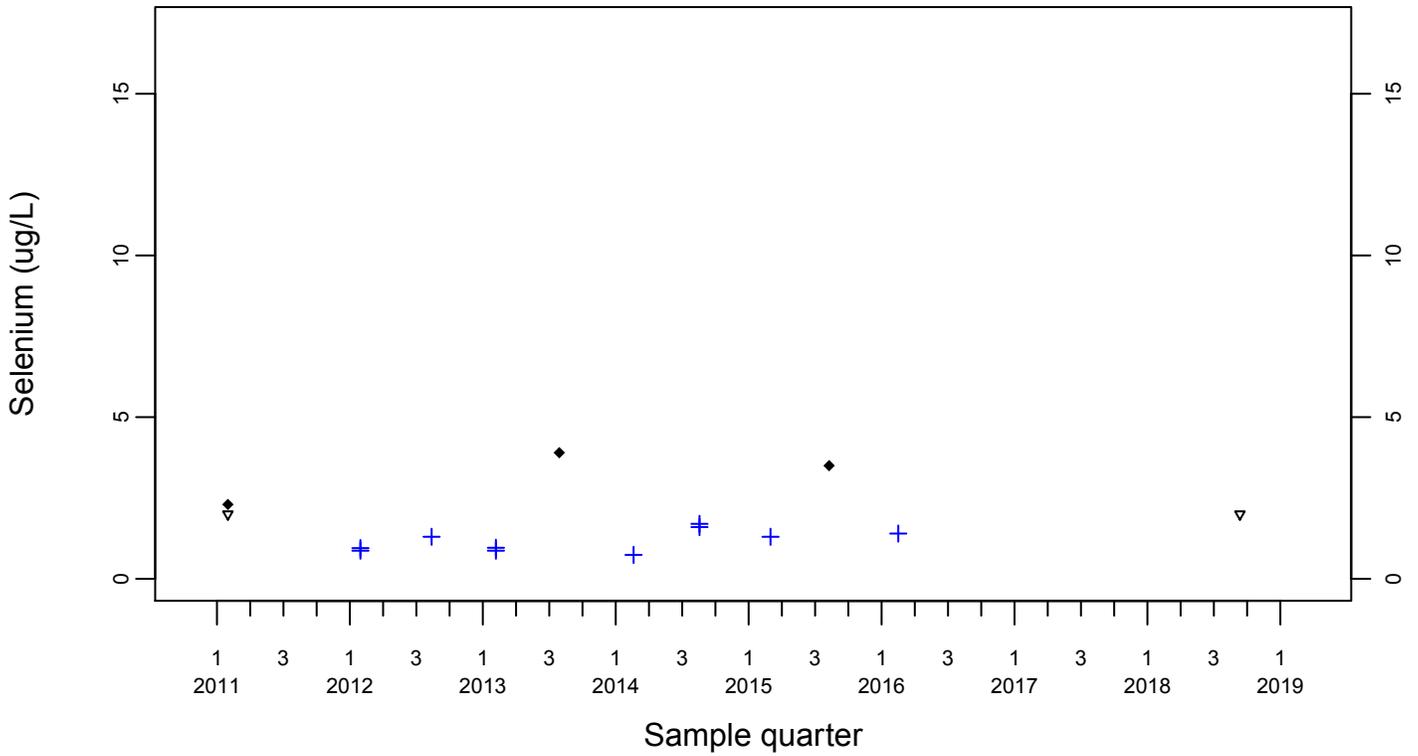
Sewage Ponds Ground Water Selenium (ug/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



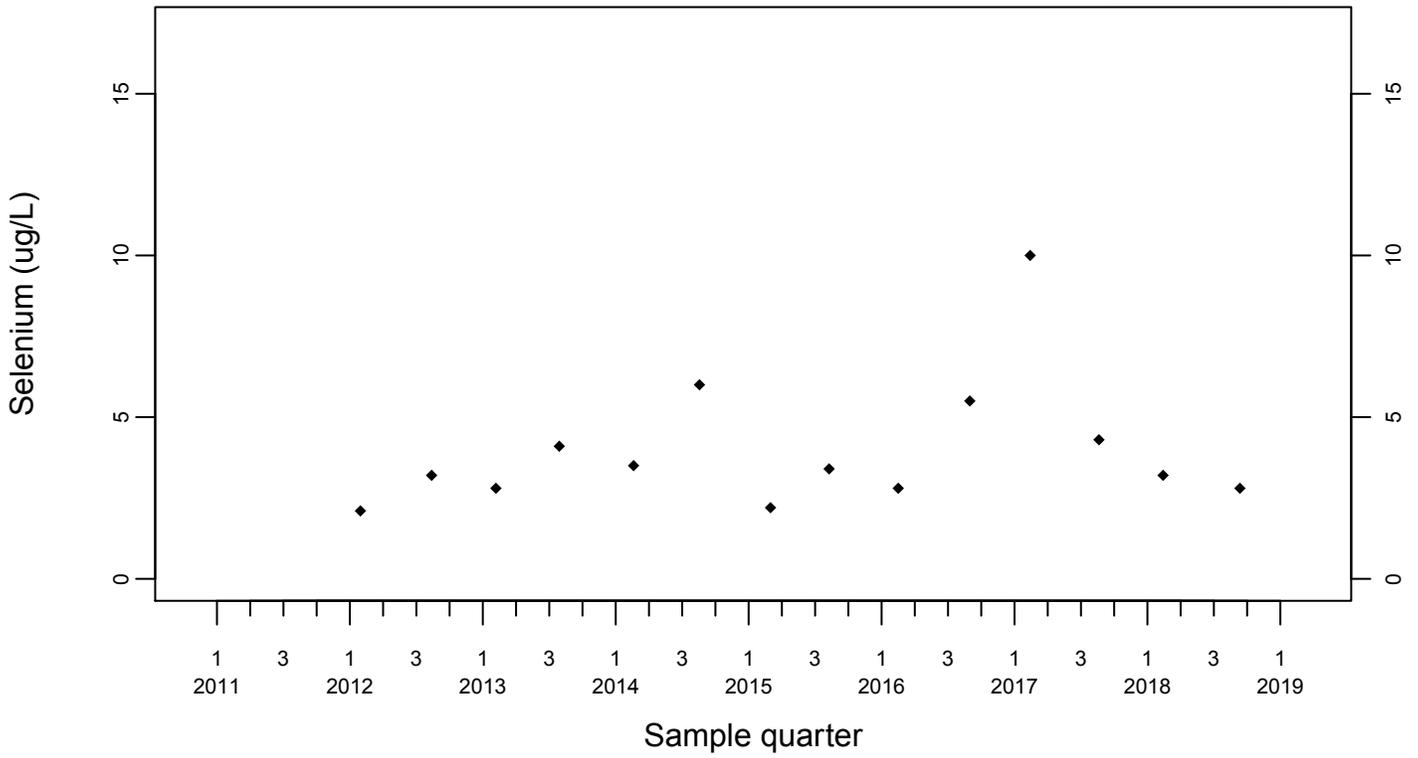
Downgradient Monitor Well W-25N-23



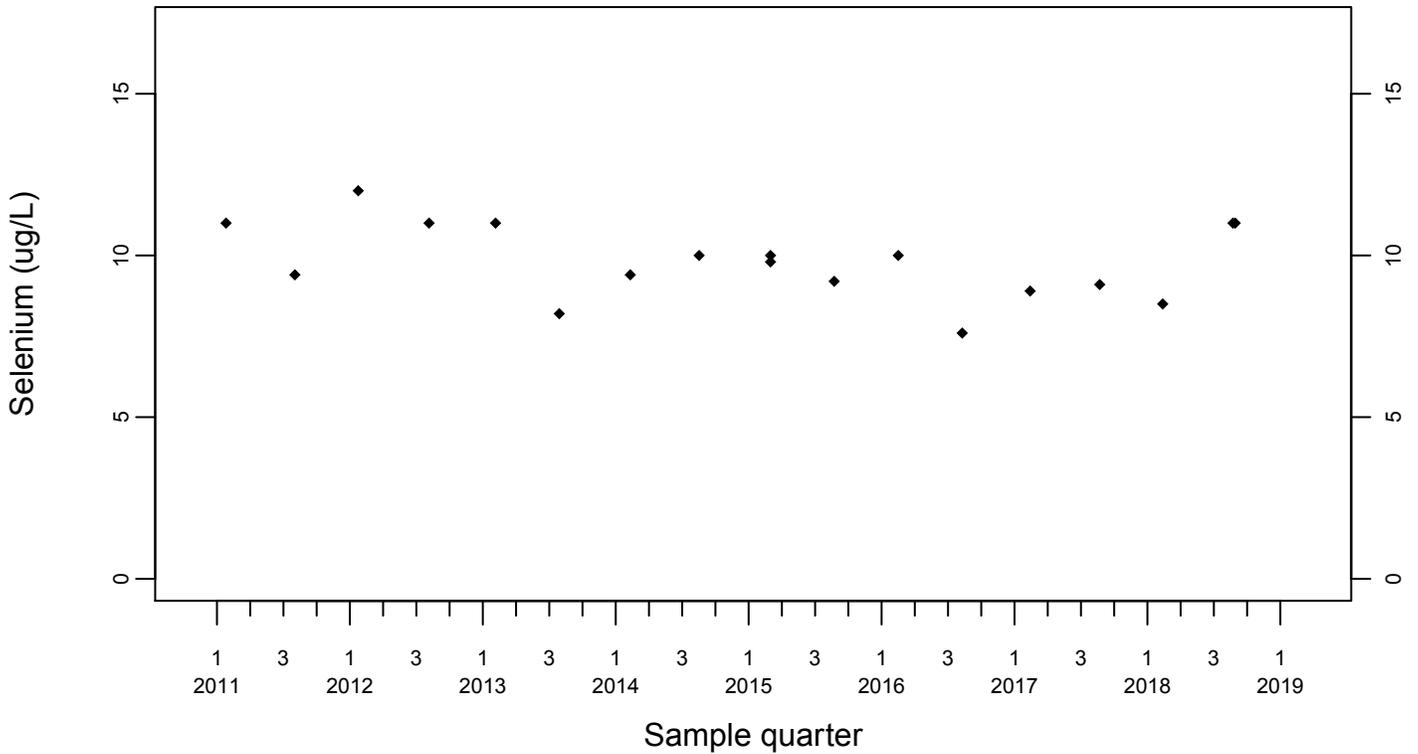
Sewage Ponds Ground Water Selenium (ug/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
▽ Below RL



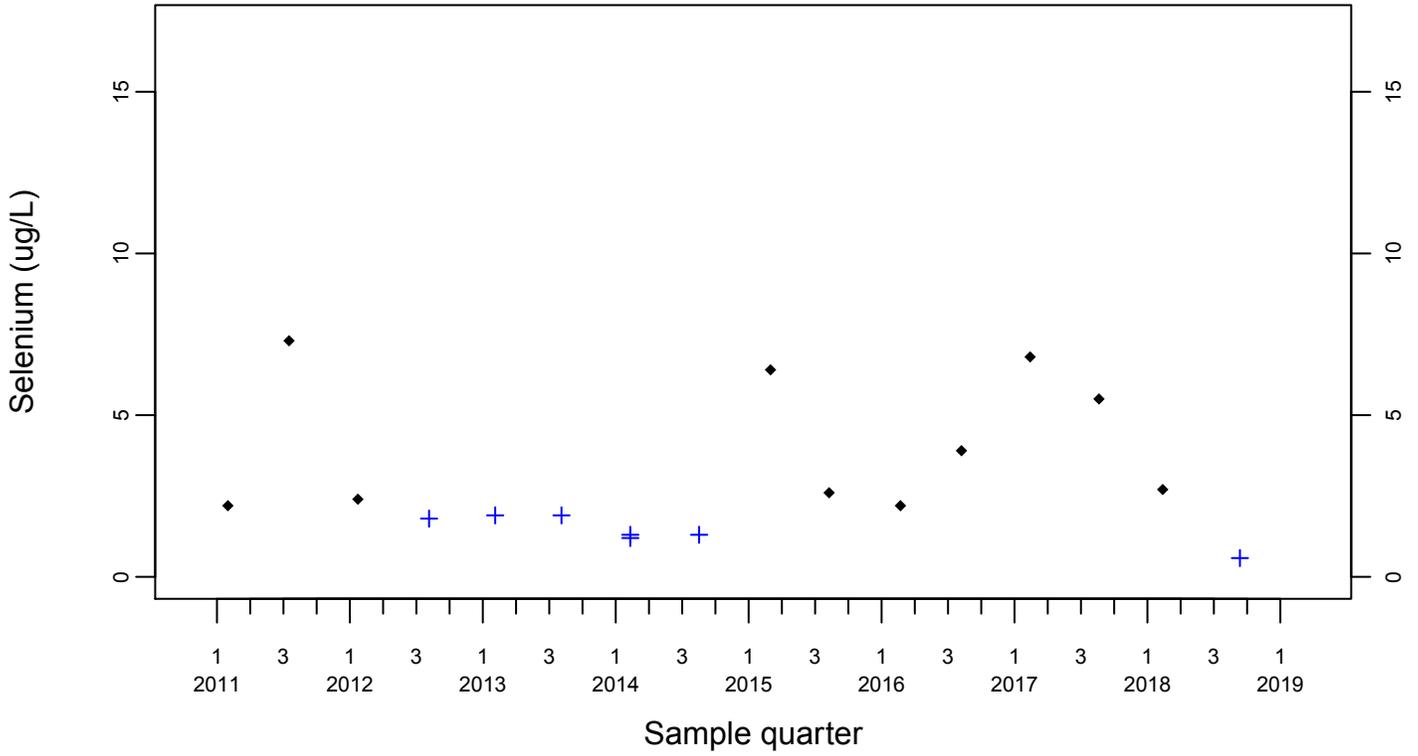
Downgradient Monitor Well W-26R-01



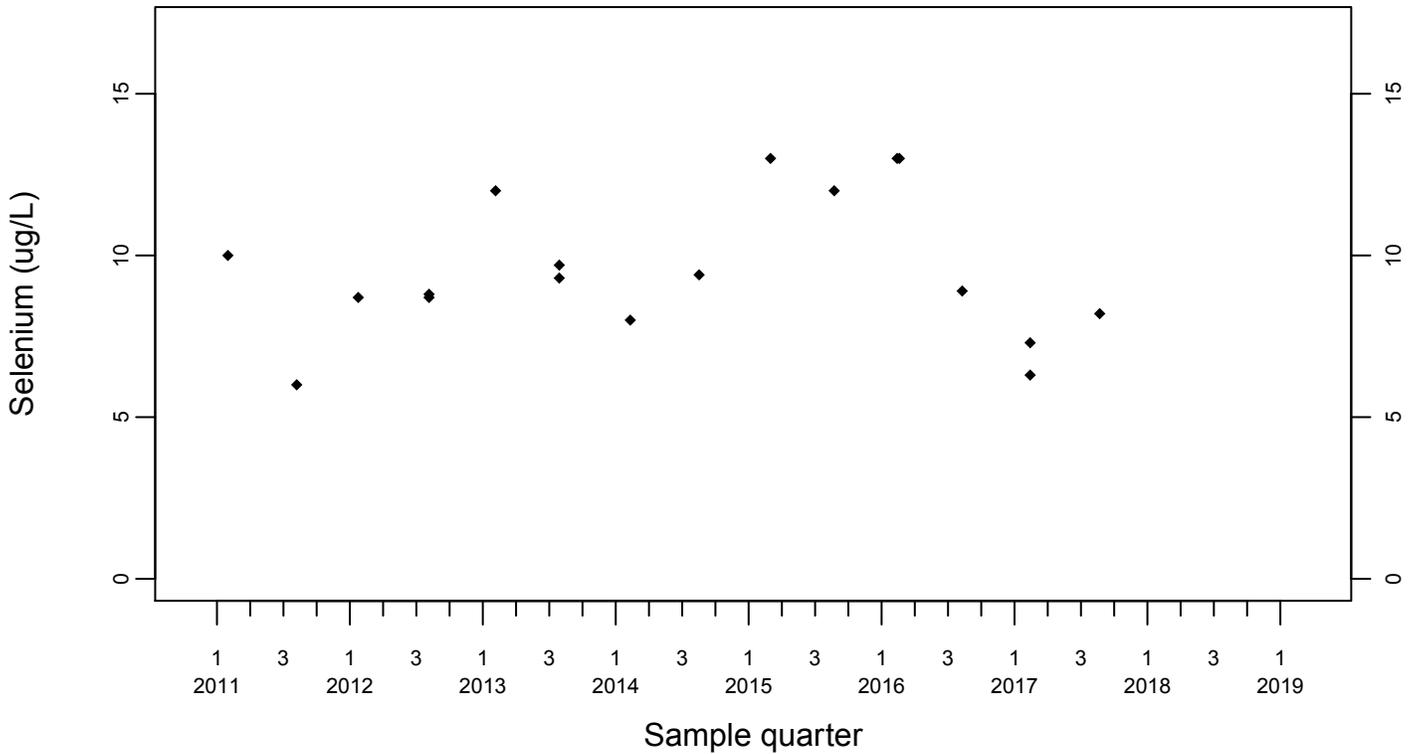
Sewage Ponds Ground Water Selenium (ug/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
+ Estimated



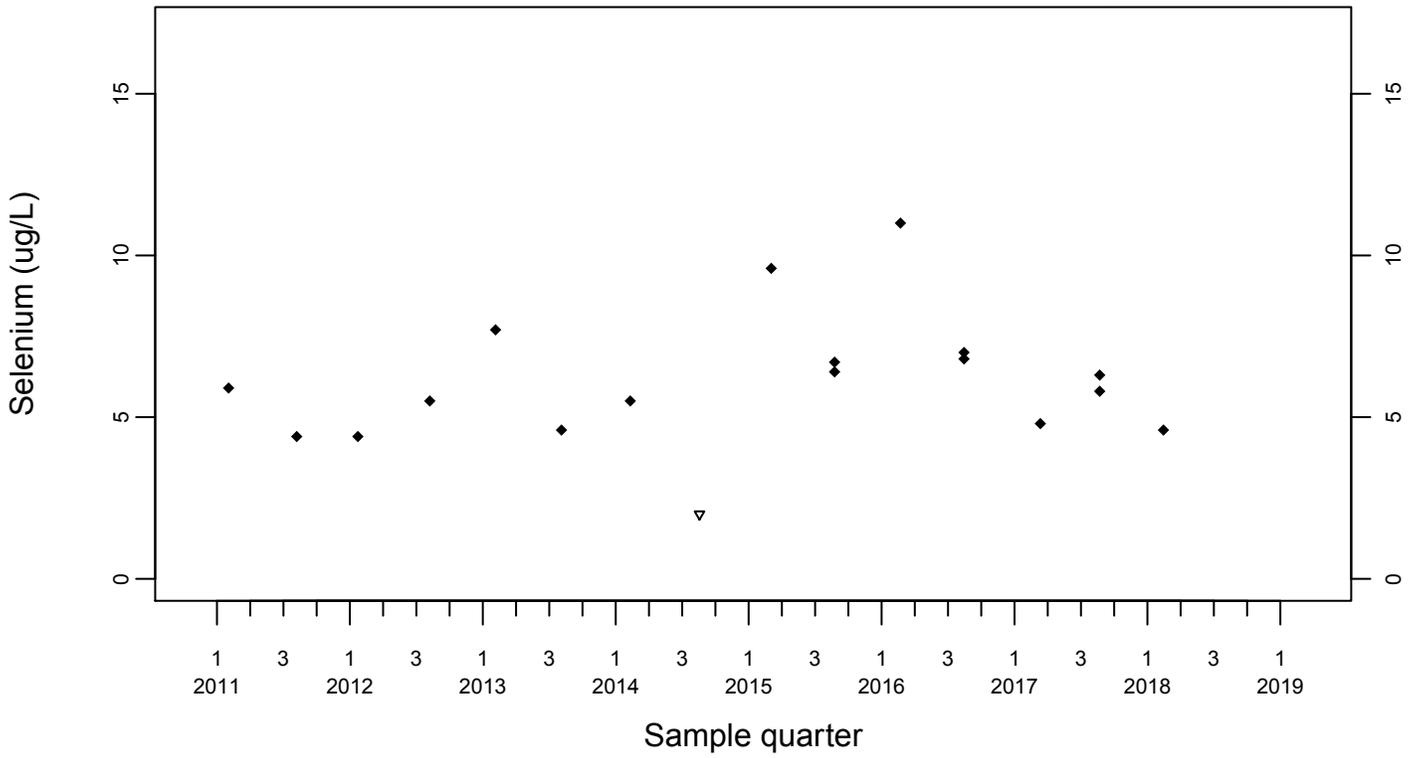
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Selenium (ug/L)

Downgradient Monitor Well W-7DS

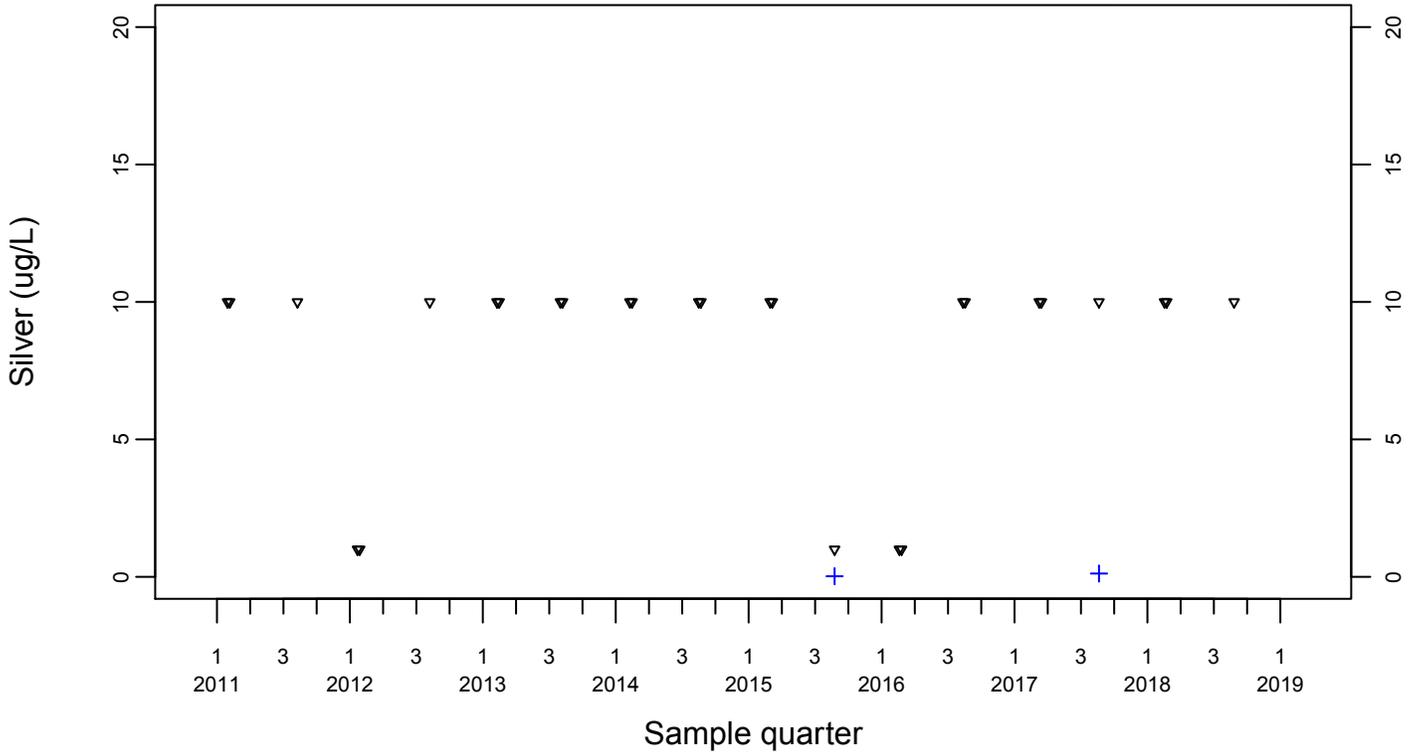
◆ Above RL
▽ Below RL



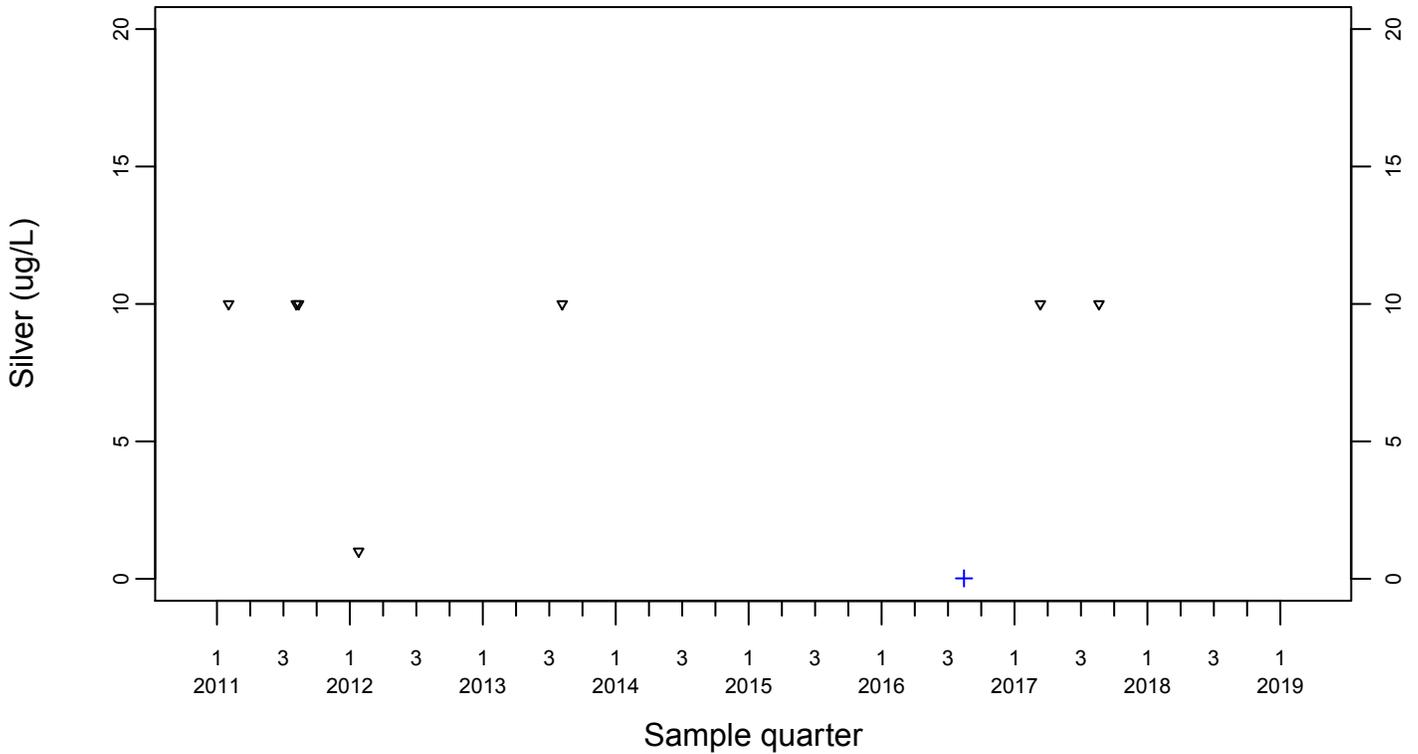
Sewage Ponds Ground Water Silver (ug/L)

Upgradient Monitor Well W-7ES

- ◆ Above RL
- ▽ Below RL
- + Estimated



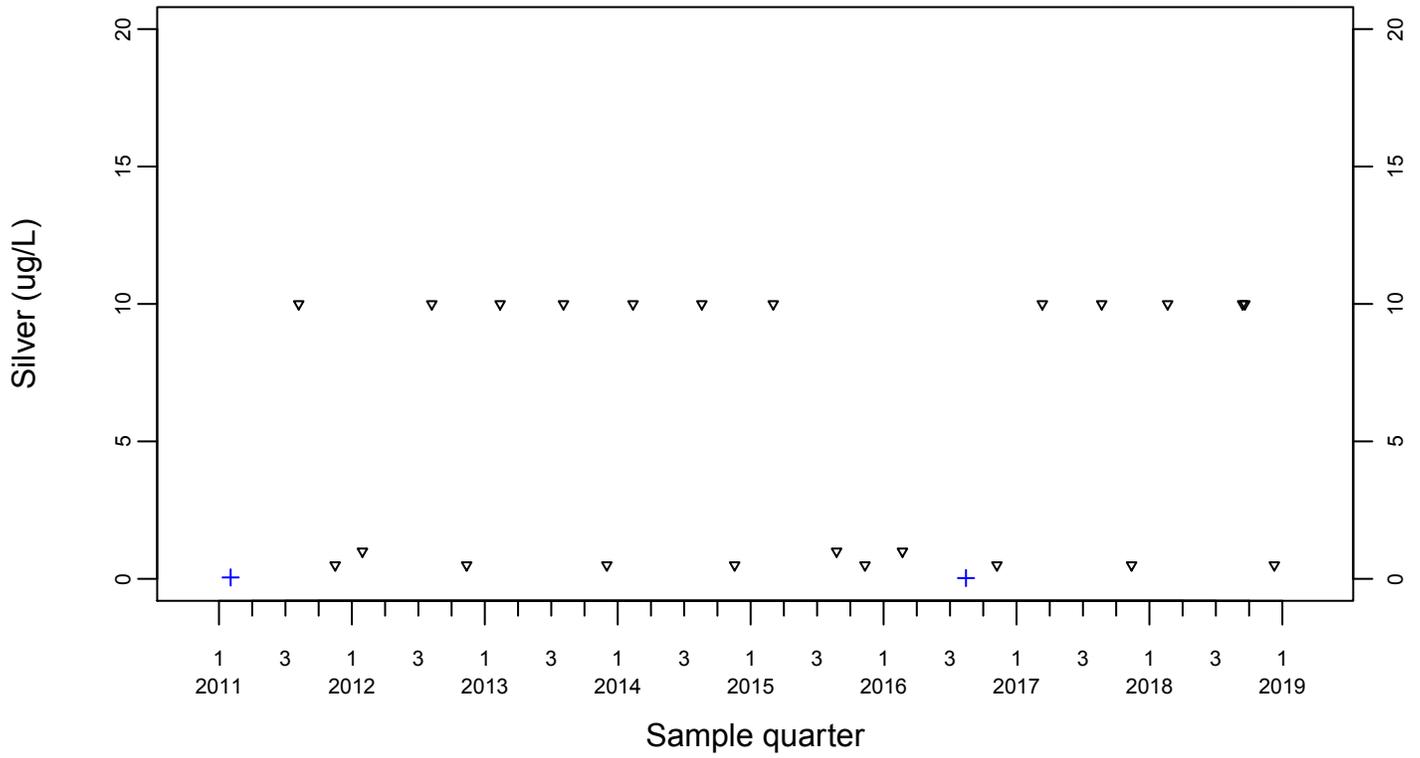
Upgradient Monitor Well W-7PS



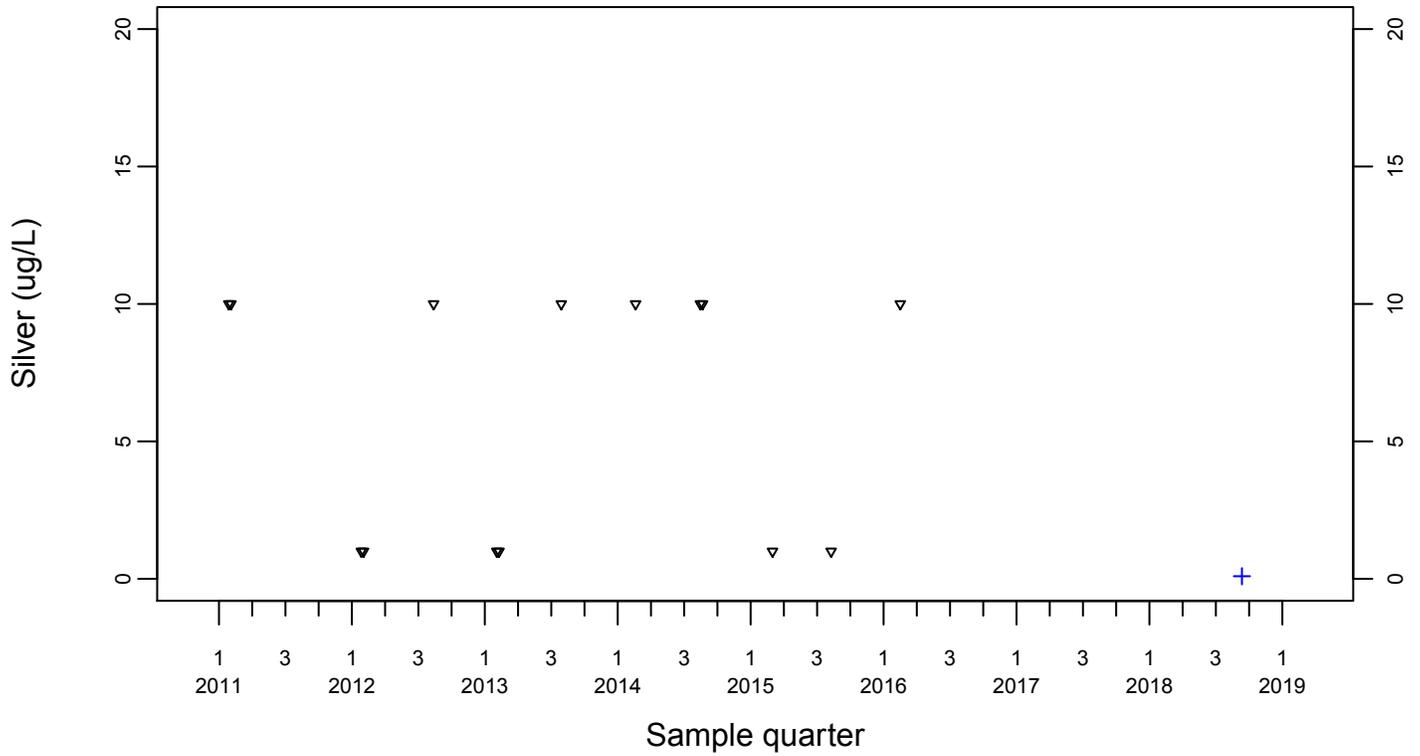
Sewage Ponds Ground Water
 Silver (ug/L)

Crossgradient Monitor Well W-35A-04

- ◆ Above RL
- ▽ Below RL
- + Estimated



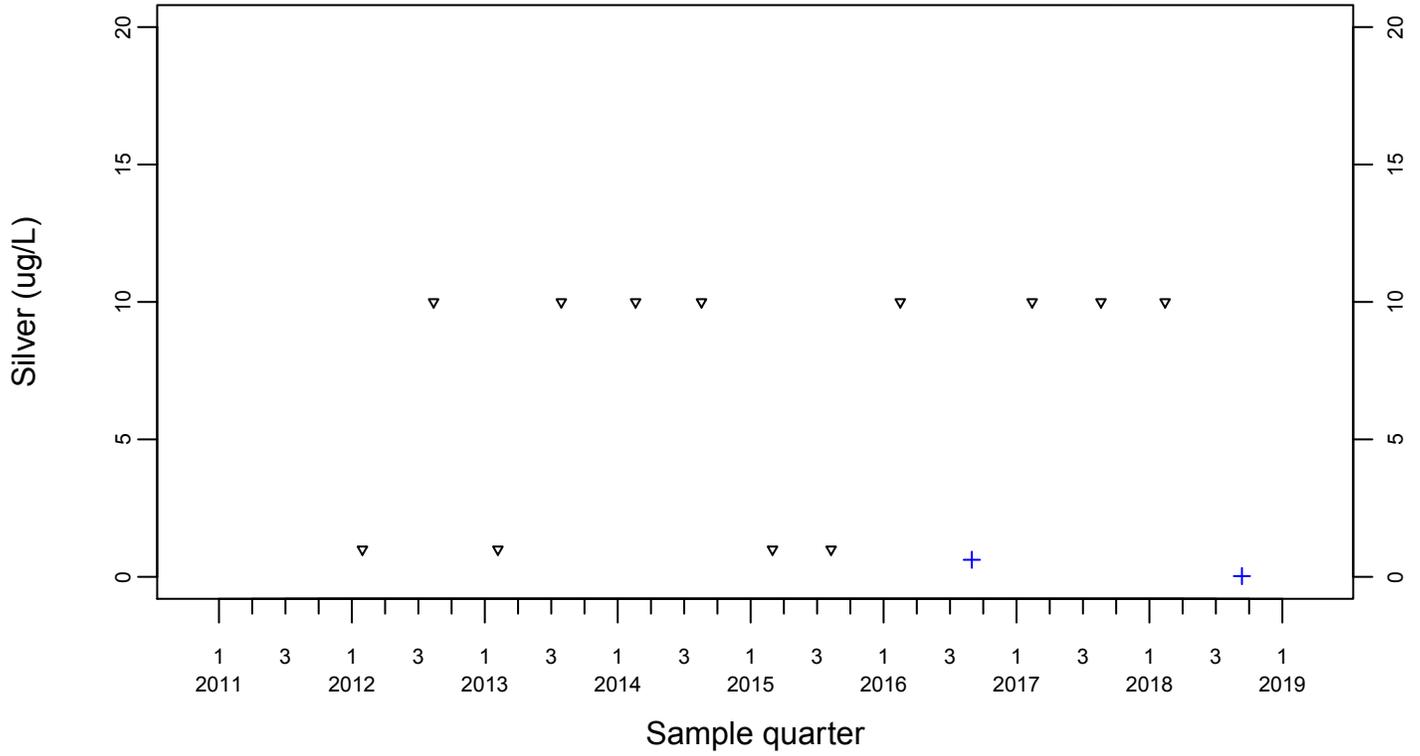
Downgradient Monitor Well W-25N-23



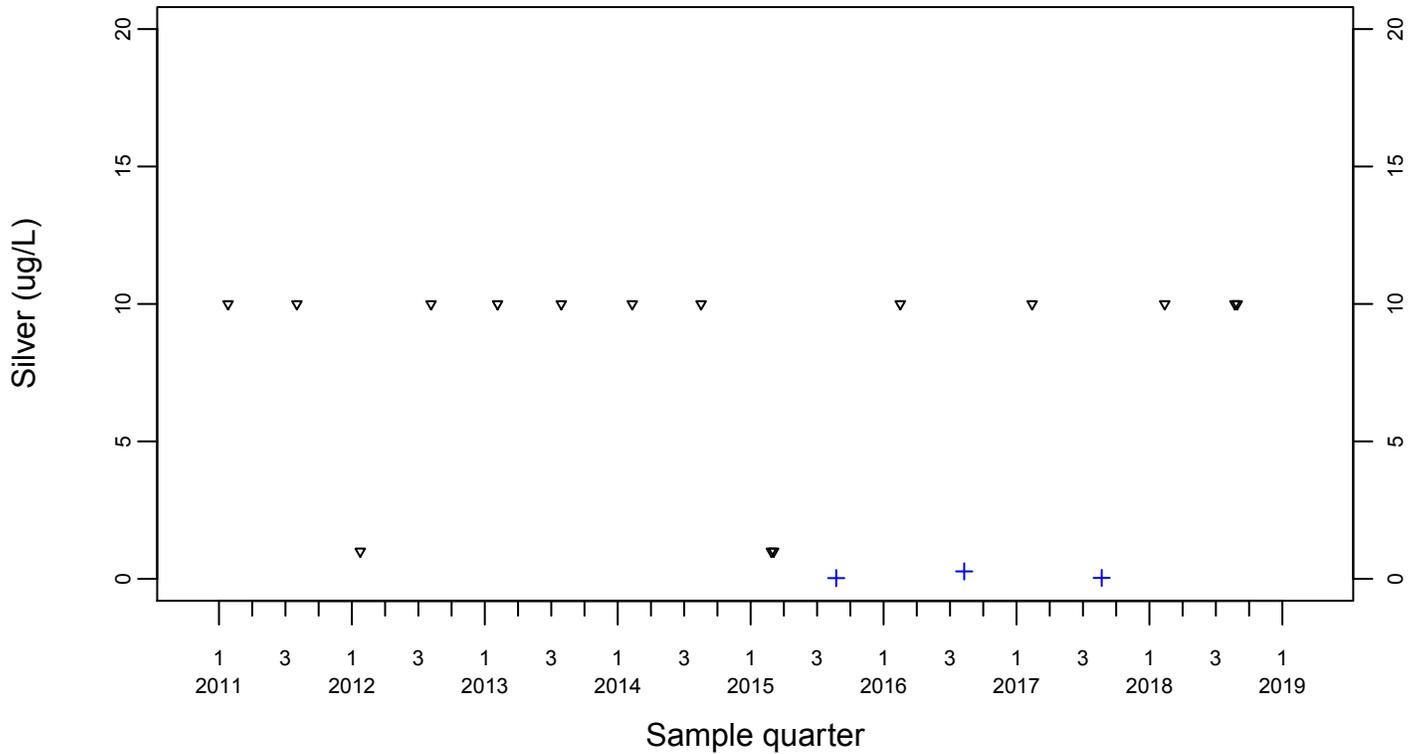
Sewage Ponds Ground Water Silver (ug/L)

Downgradient Monitor Well W-25N-22

- ◆ Above RL
- ▽ Below RL
- + Estimated



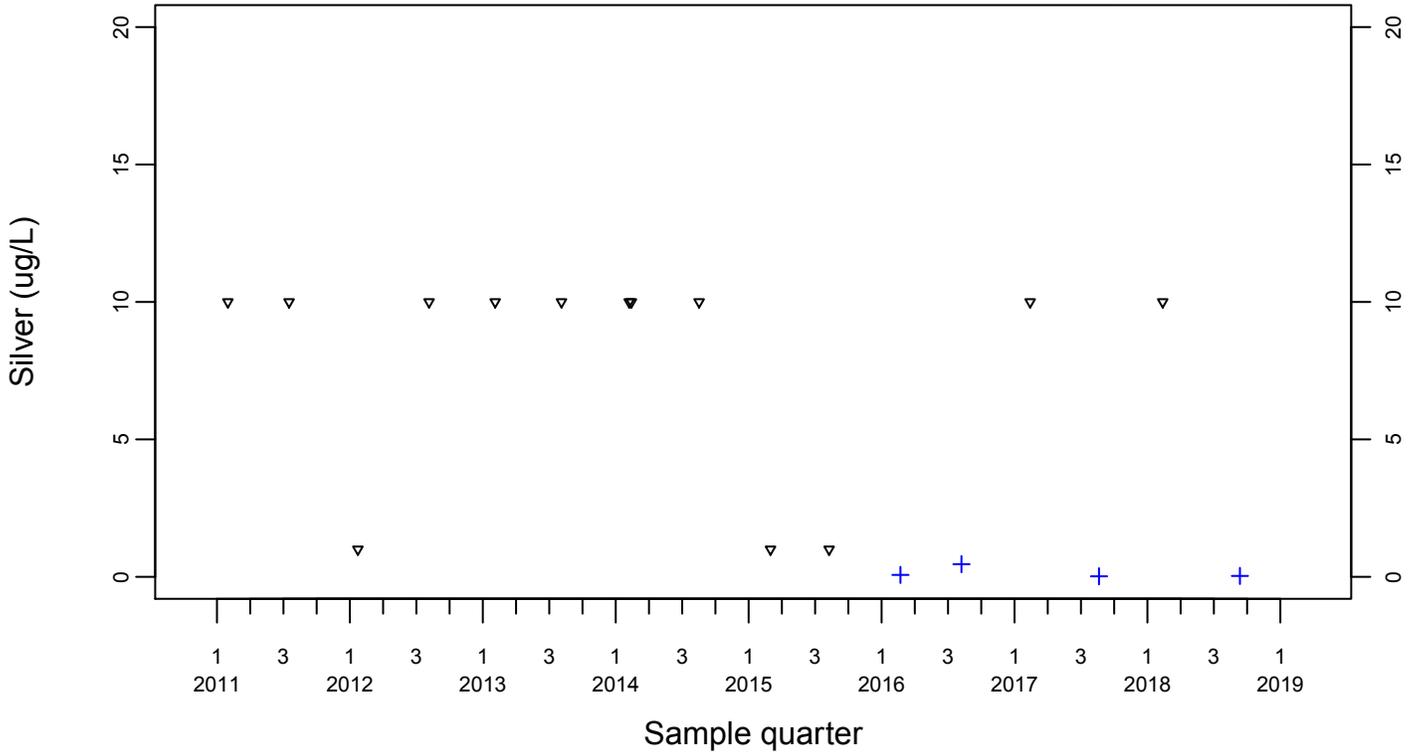
Downgradient Monitor Well W-26R-01



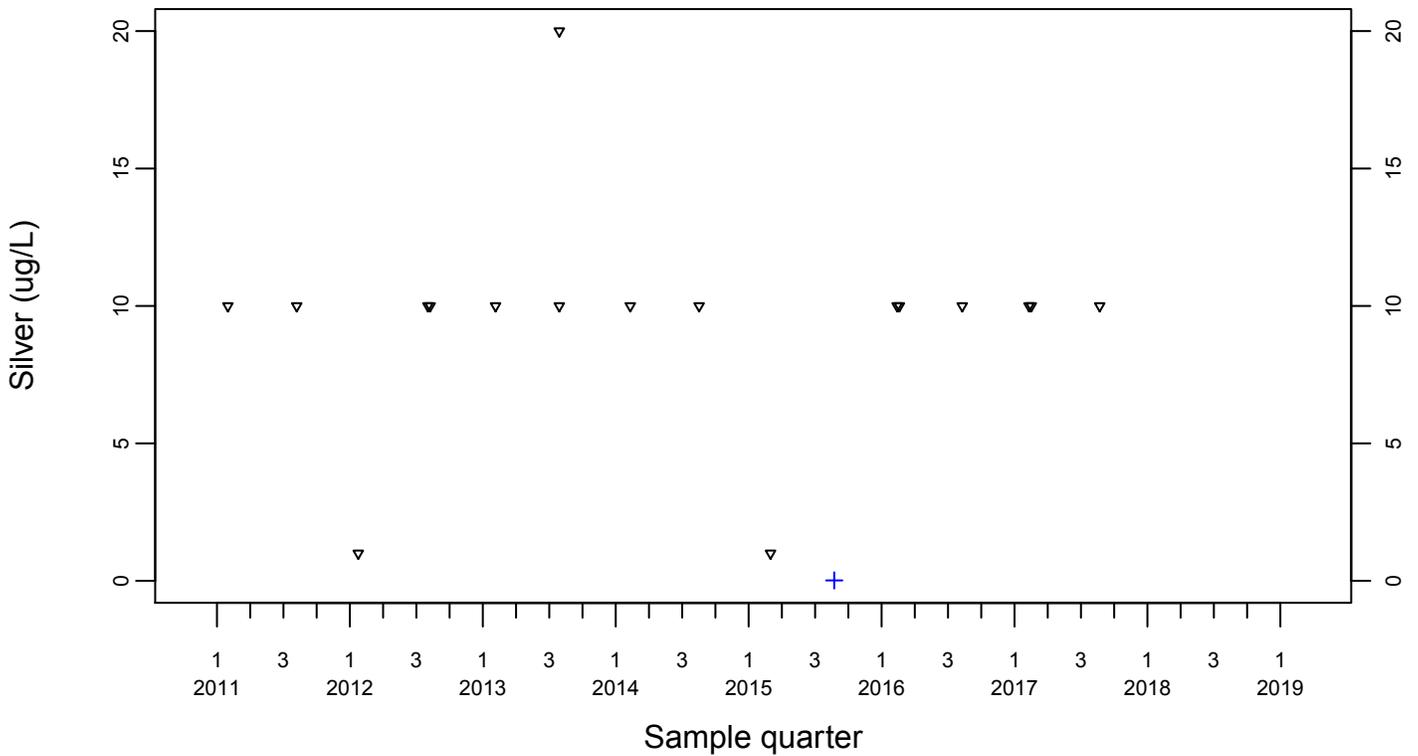
Sewage Ponds Ground Water Silver (ug/L)

Downgradient Monitor Well W-26R-05

- ◆ Above RL
- ▽ Below RL
- + Estimated



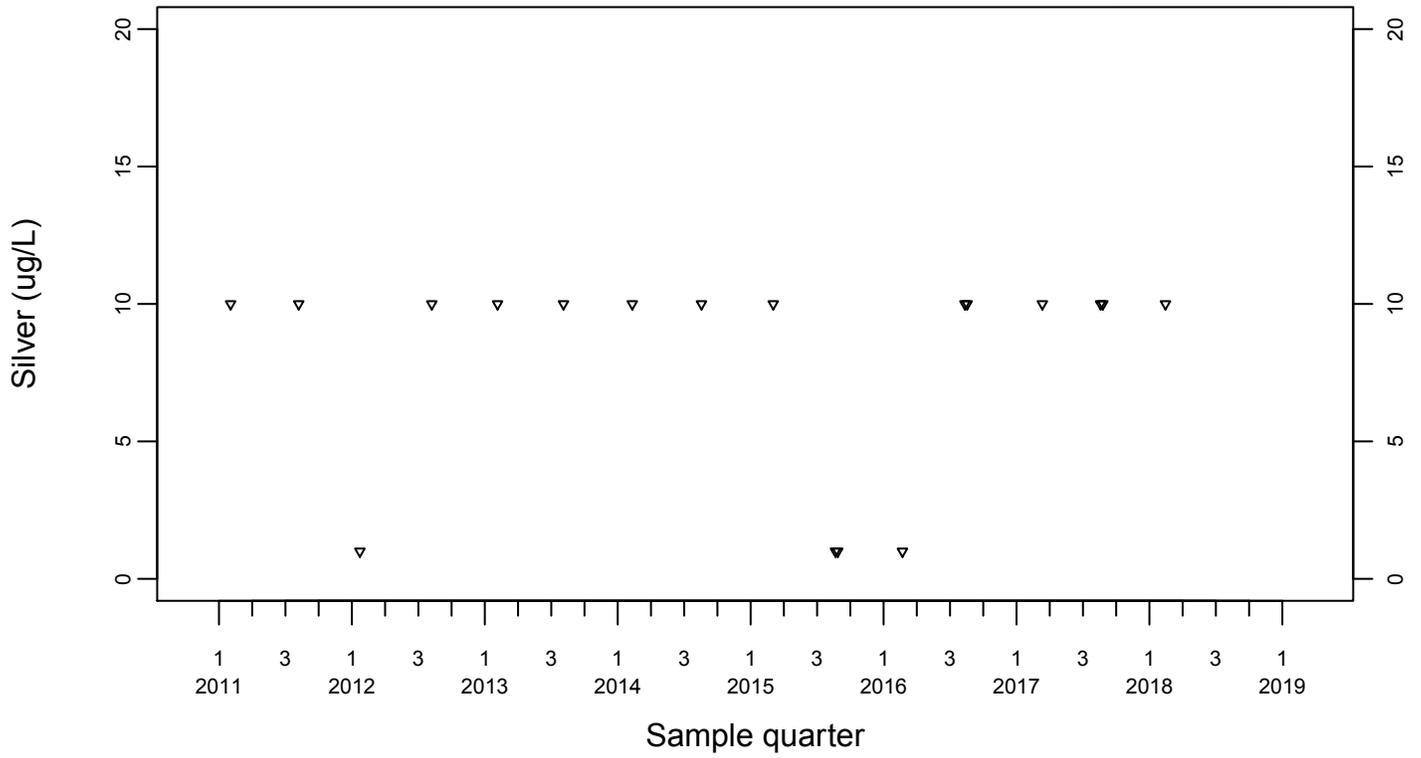
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Silver (ug/L)

Downgradient Monitor Well W-7DS

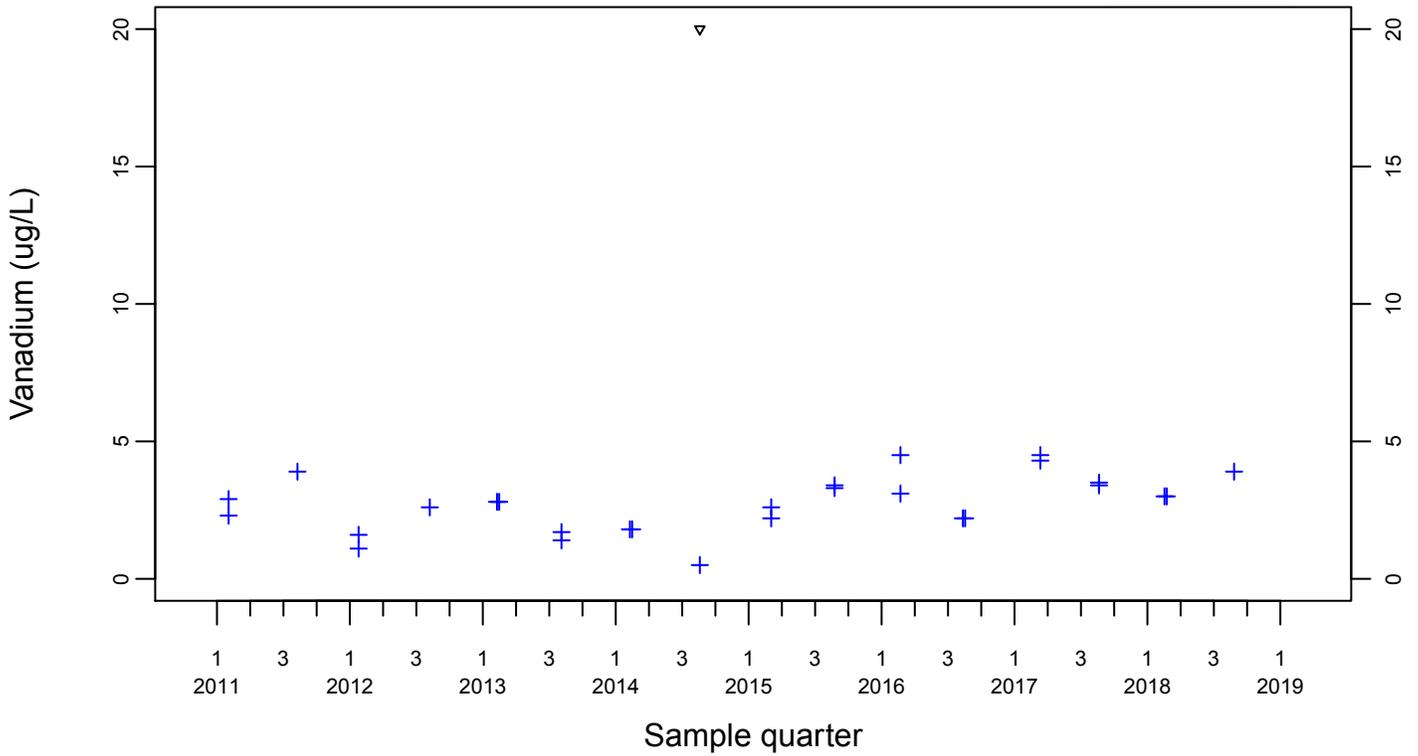
◆ Above RL
▽ Below RL



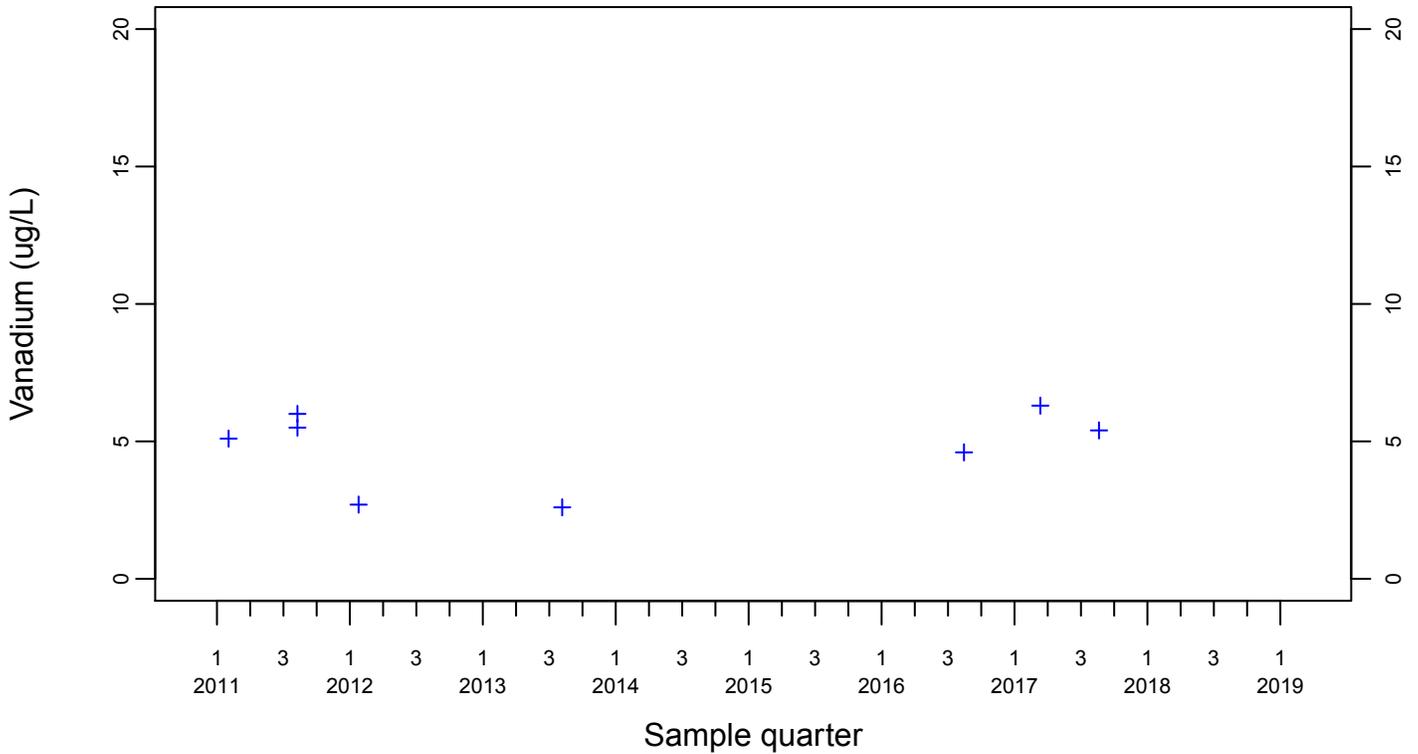
Sewage Ponds Ground Water
 Vanadium (ug/L)

Upgradient Monitor Well W-7ES

- ◆ Above RL
- ▽ Below RL
- + Estimated



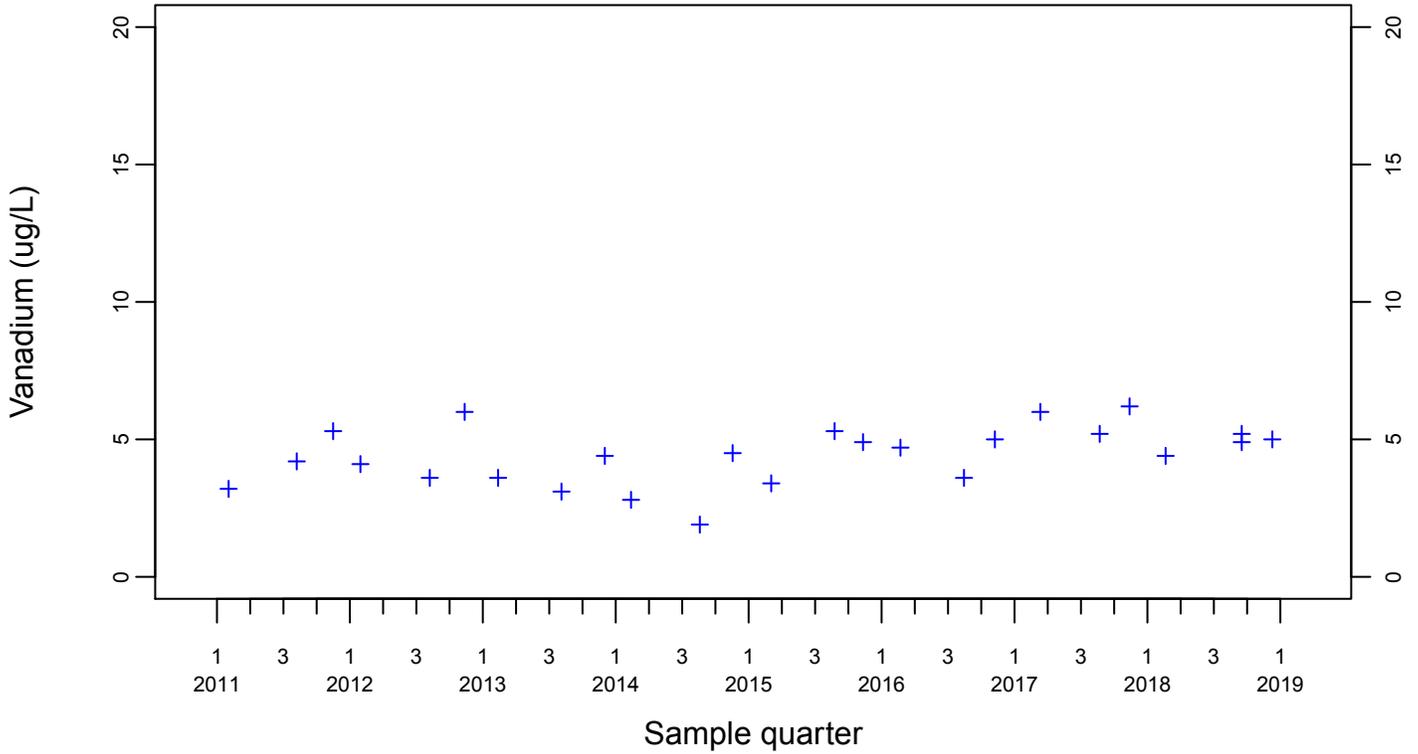
Upgradient Monitor Well W-7PS



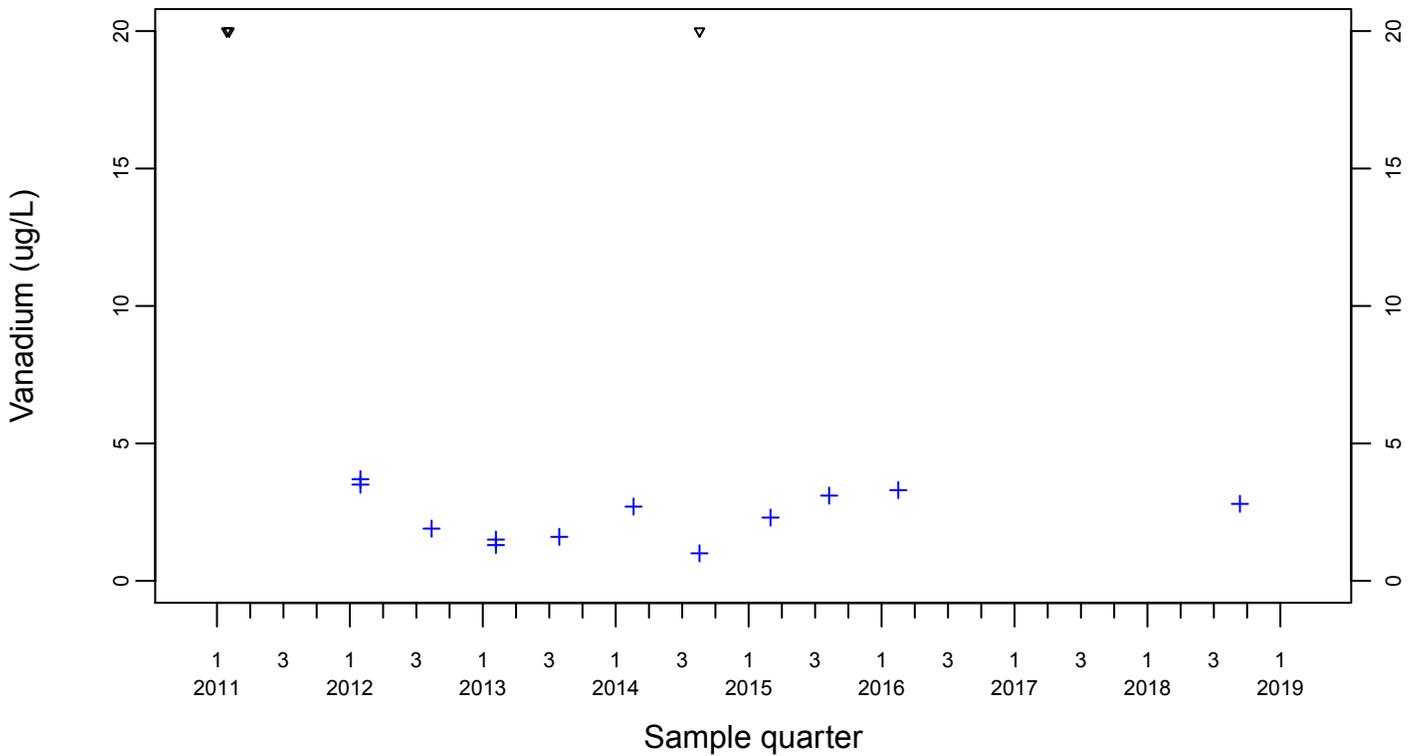
Sewage Ponds Ground Water Vanadium (ug/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
+ Estimated



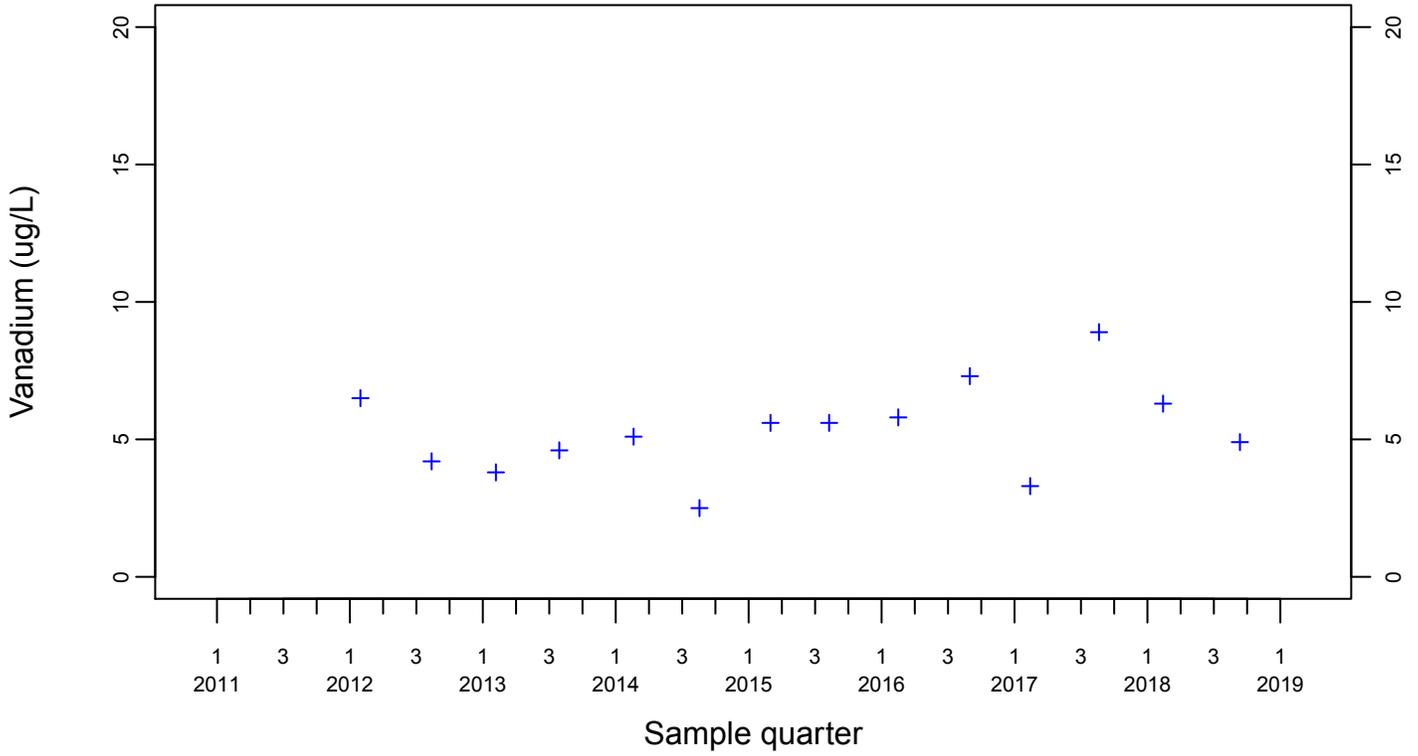
Downgradient Monitor Well W-25N-23



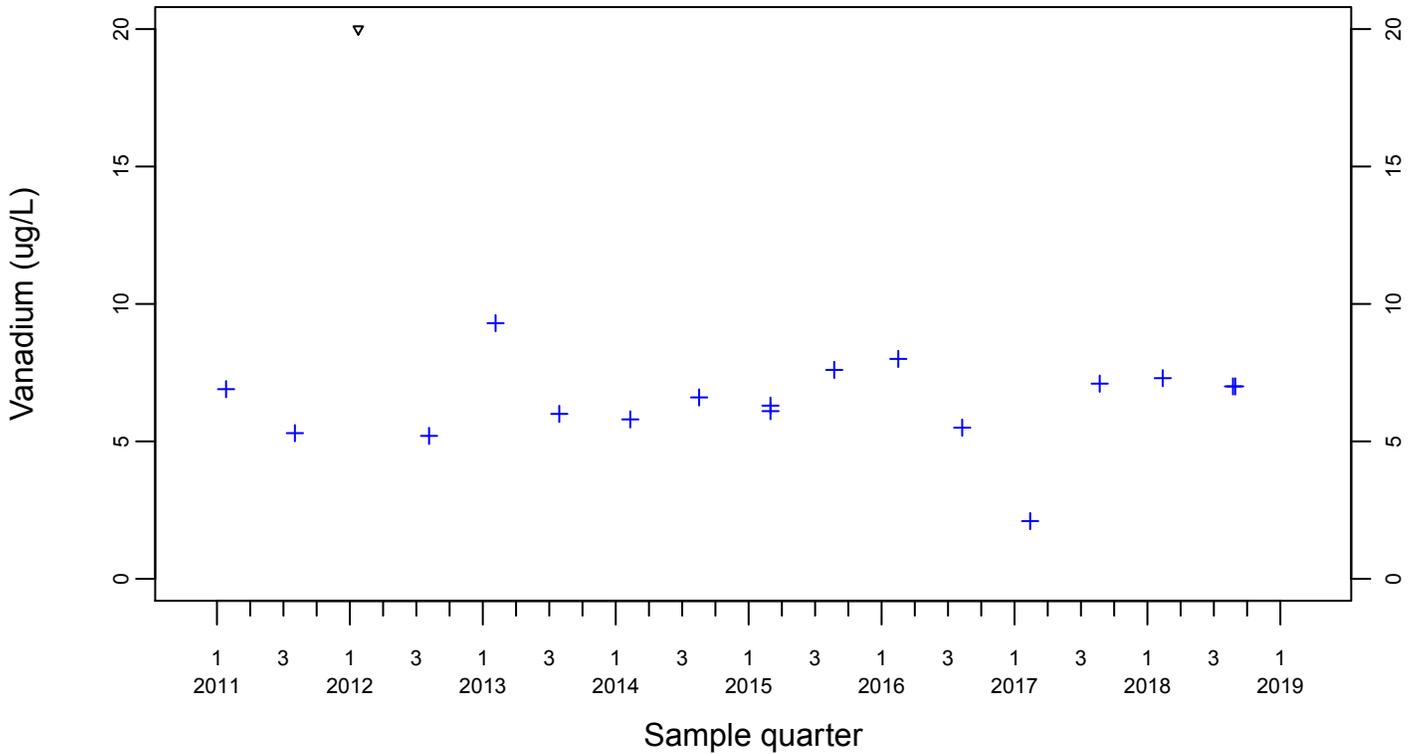
Sewage Ponds Ground Water Vanadium (ug/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
+ Estimated



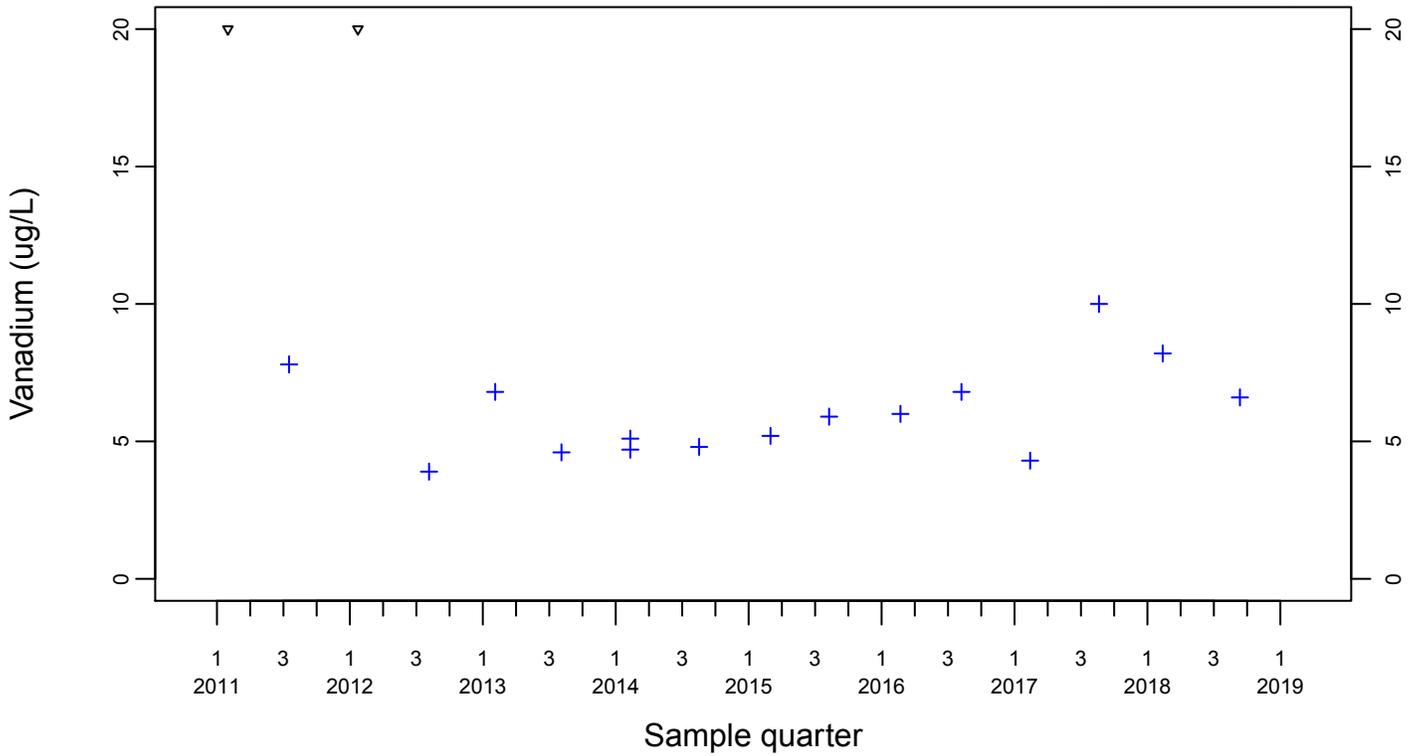
Downgradient Monitor Well W-26R-01



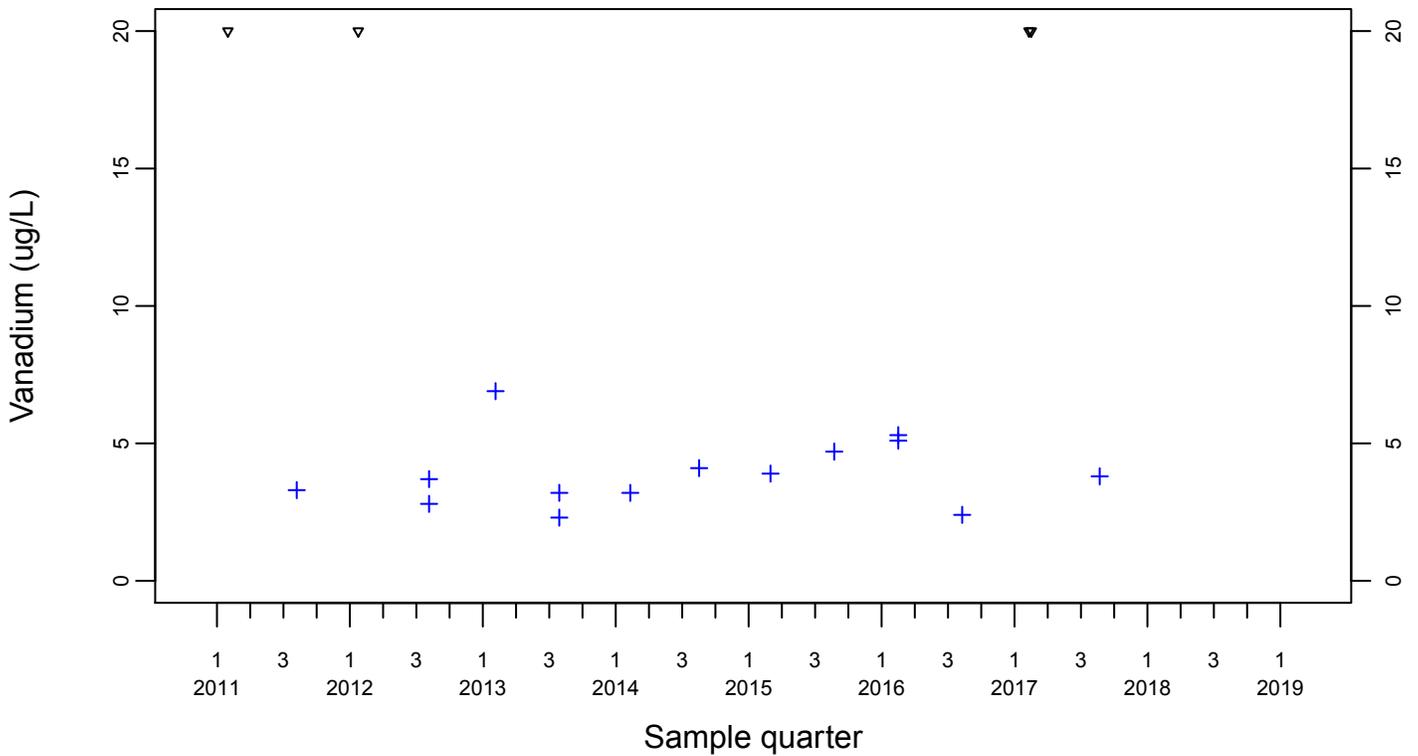
Sewage Ponds Ground Water Vanadium (ug/L)

Downgradient Monitor Well W-26R-05

- ◆ Above RL
- ▽ Below RL
- + Estimated



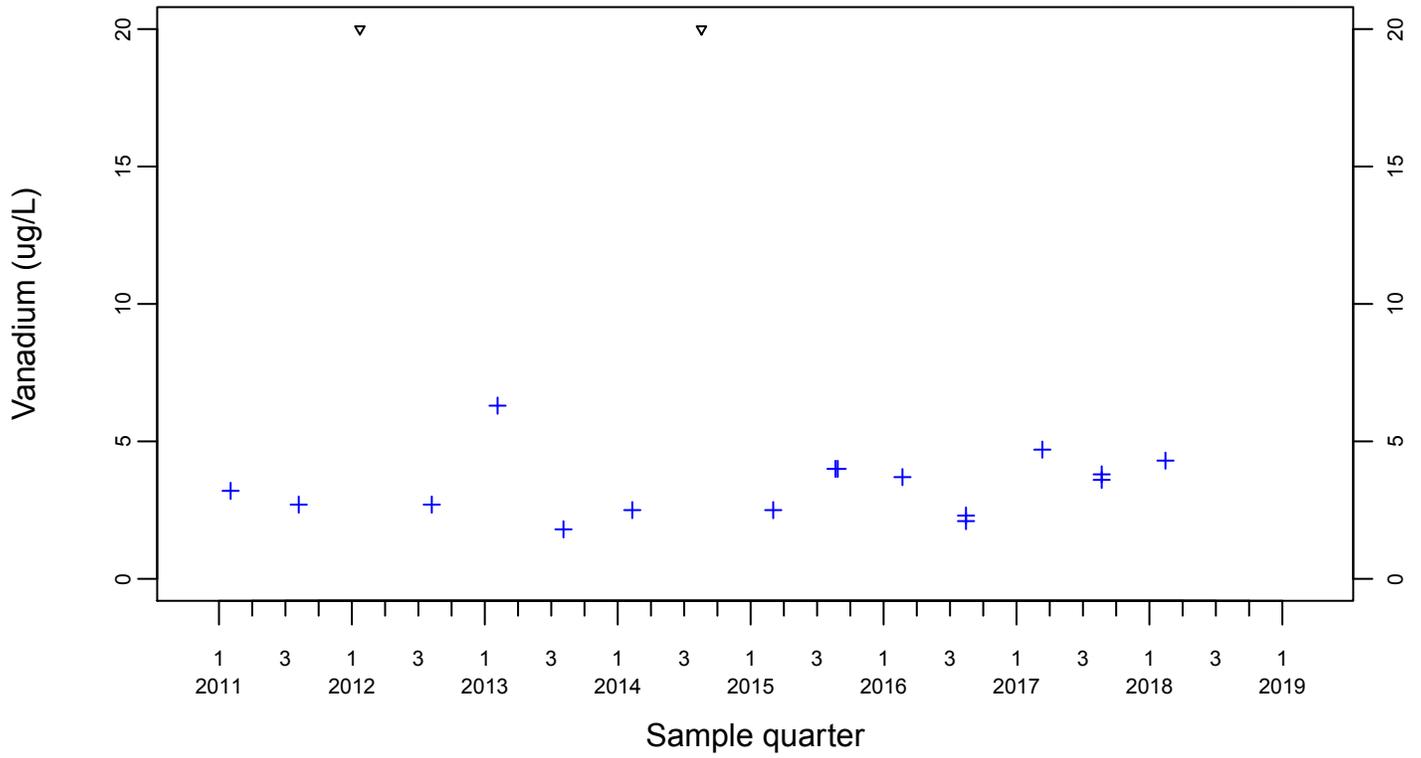
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Vanadium (ug/L)

Downgradient Monitor Well W-7DS

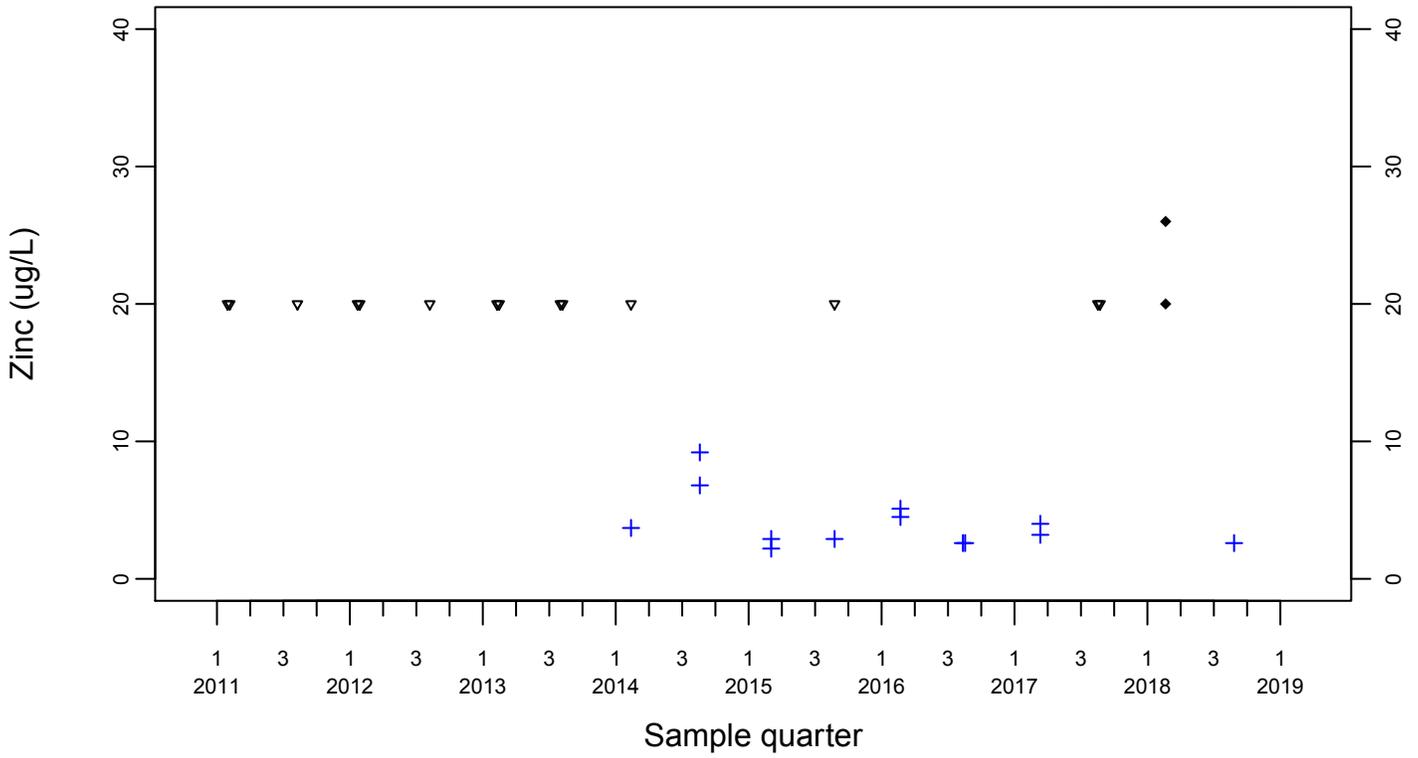
- ◆ Above RL
- ▽ Below RL
- + Estimated



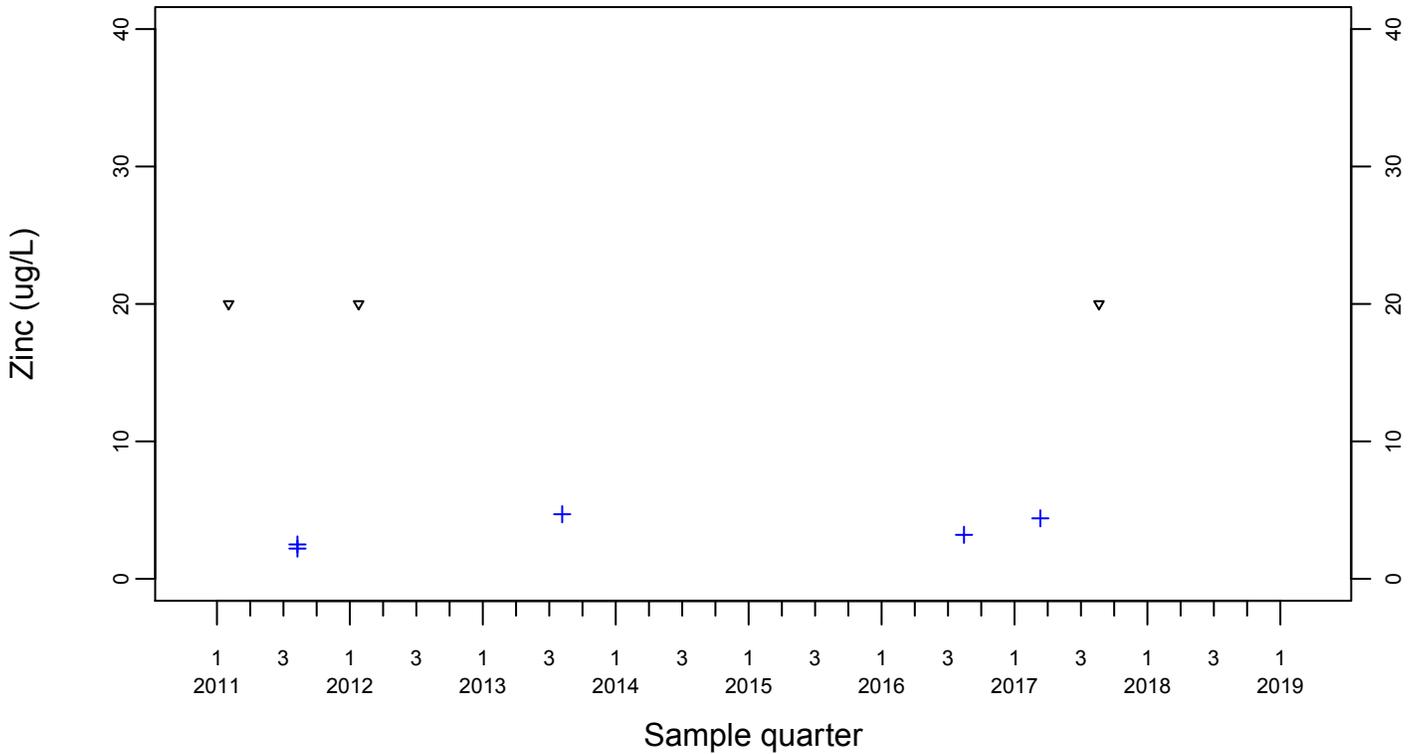
Sewage Ponds Ground Water
 Zinc (ug/L)

Upgradient Monitor Well W-7ES

- ◆ Above RL
- ▽ Below RL
- + Estimated



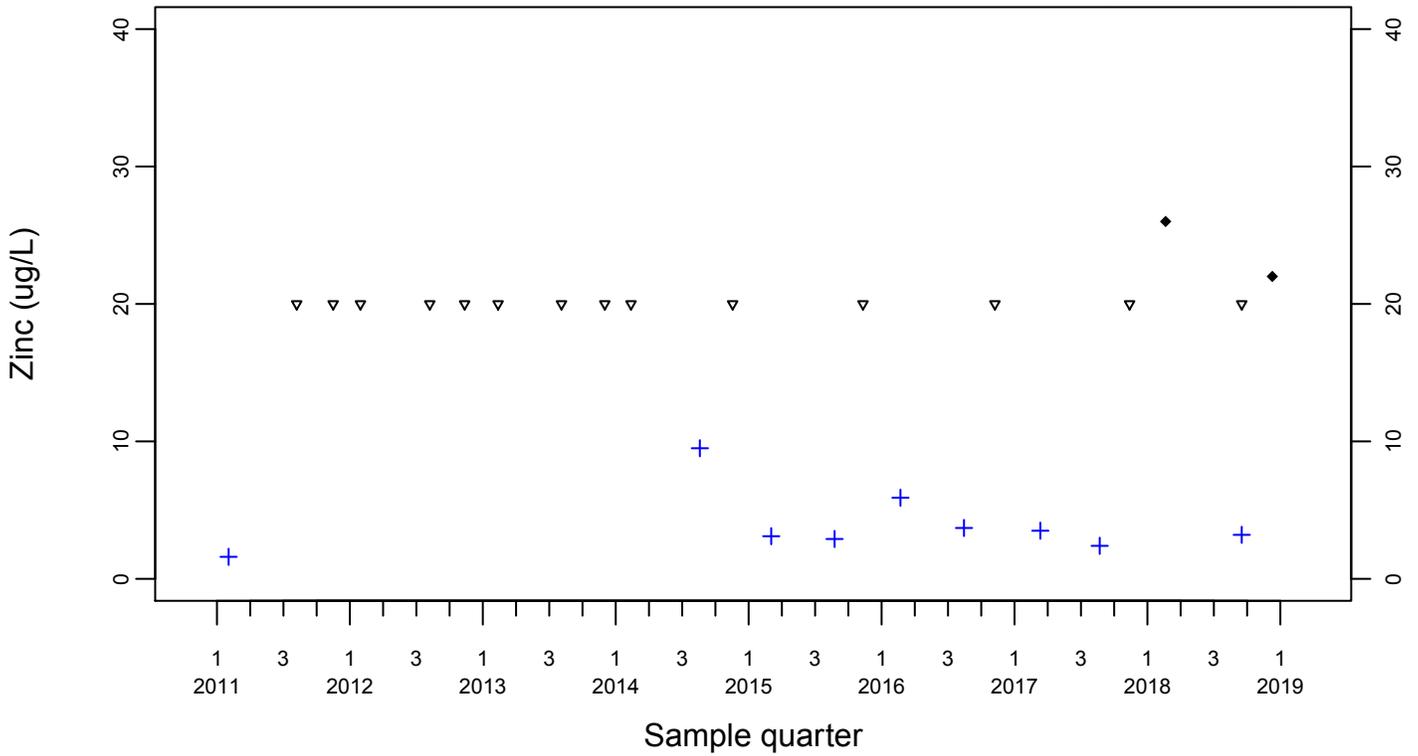
Upgradient Monitor Well W-7PS



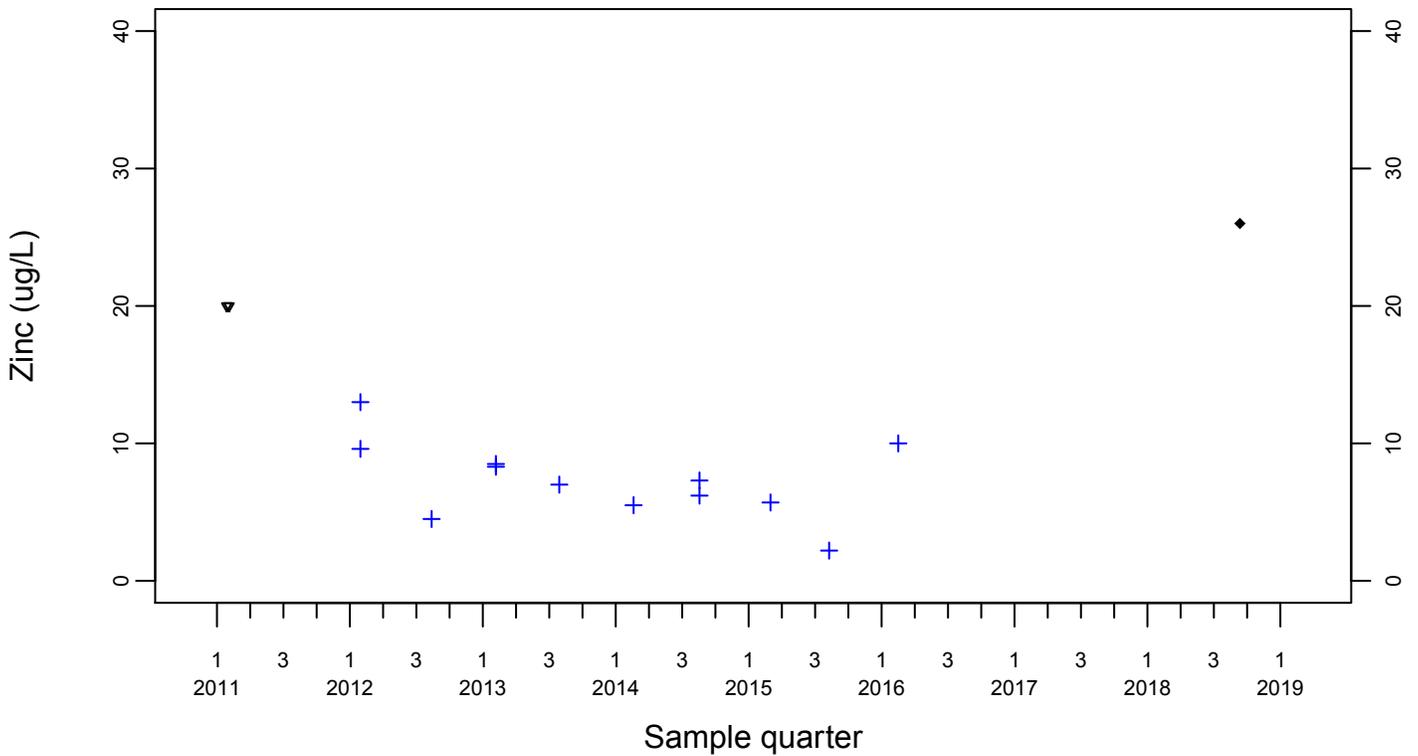
Sewage Ponds Ground Water
 Zinc (ug/L)

Crossgradient Monitor Well W-35A-04

- ◆ Above RL
- ▽ Below RL
- + Estimated



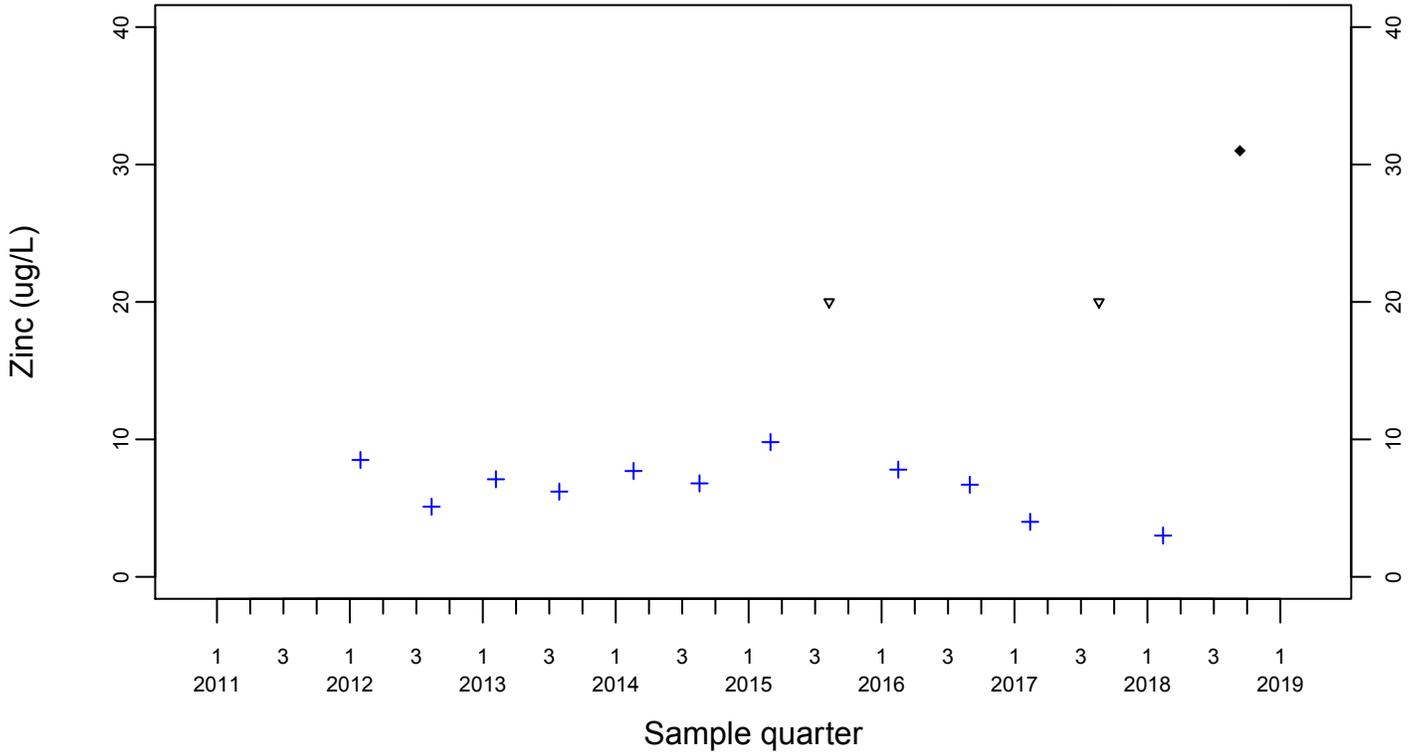
Downgradient Monitor Well W-25N-23



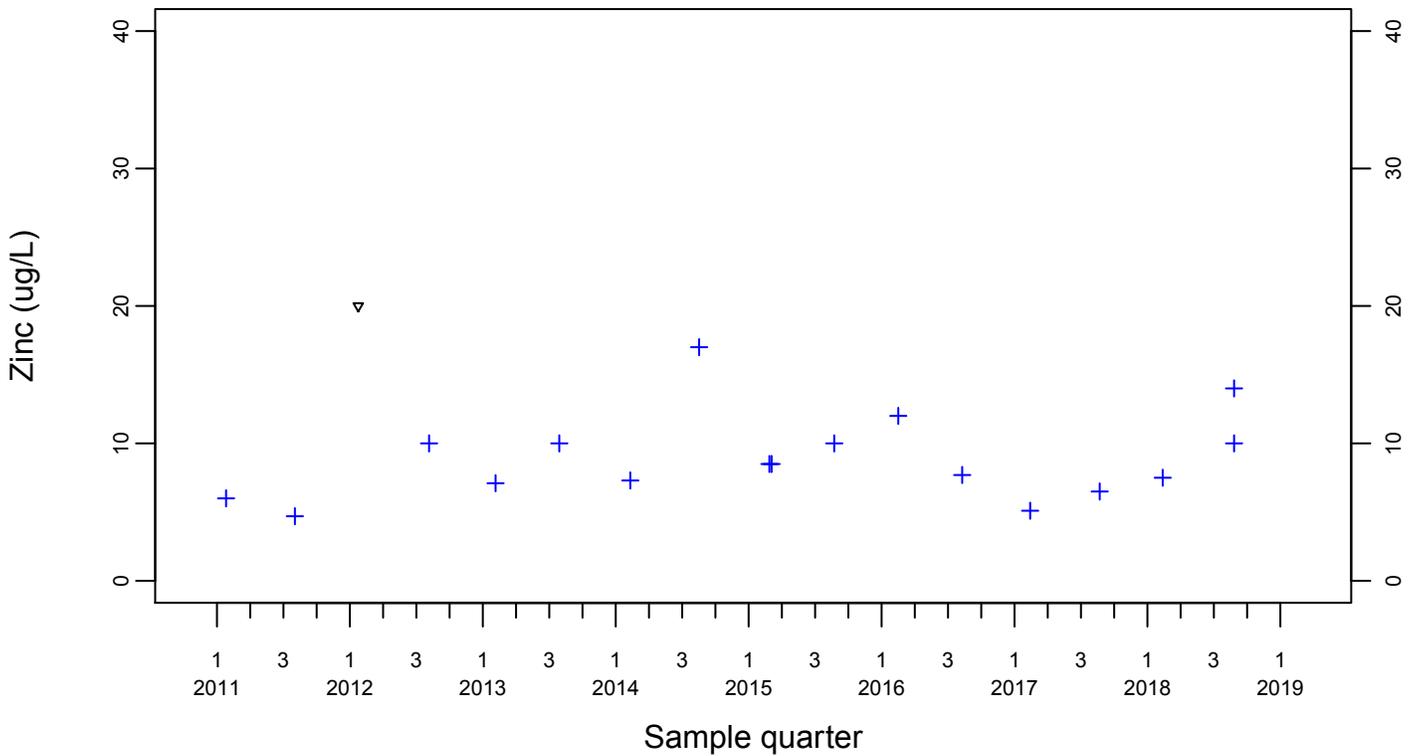
Sewage Ponds Ground Water Zinc (ug/L)

Downgradient Monitor Well W-25N-22

- ◆ Above RL
- ▽ Below RL
- + Estimated



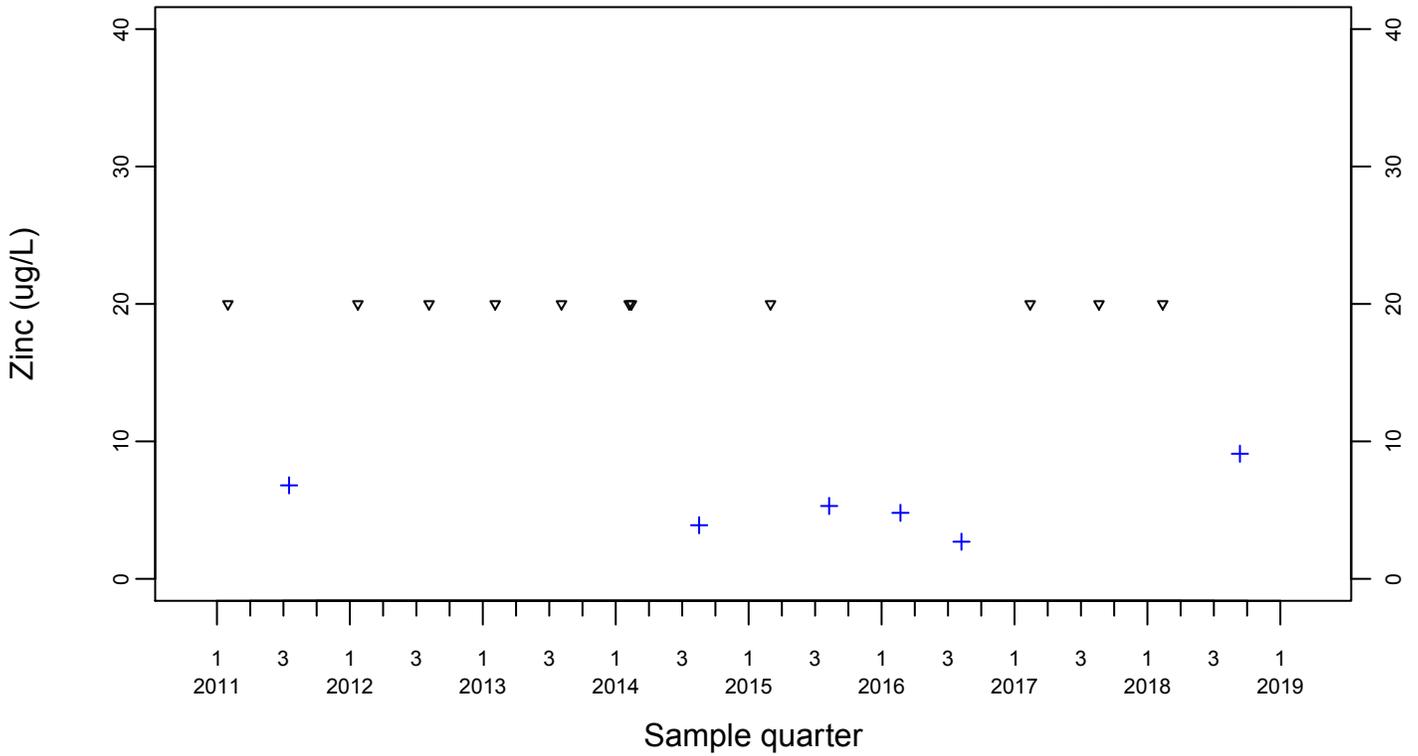
Downgradient Monitor Well W-26R-01



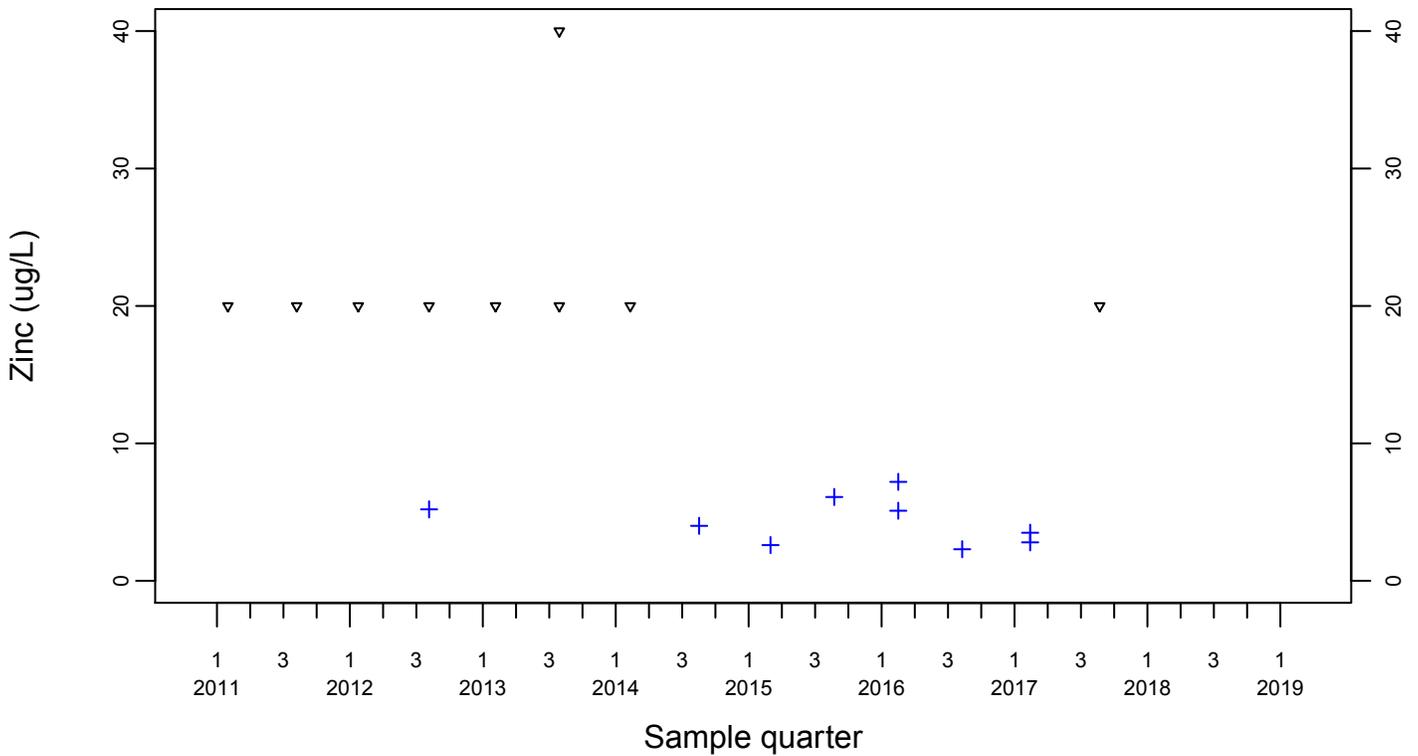
Sewage Ponds Ground Water
 Zinc (ug/L)

Downgradient Monitor Well W-26R-05

- ◆ Above RL
- ▽ Below RL
- + Estimated



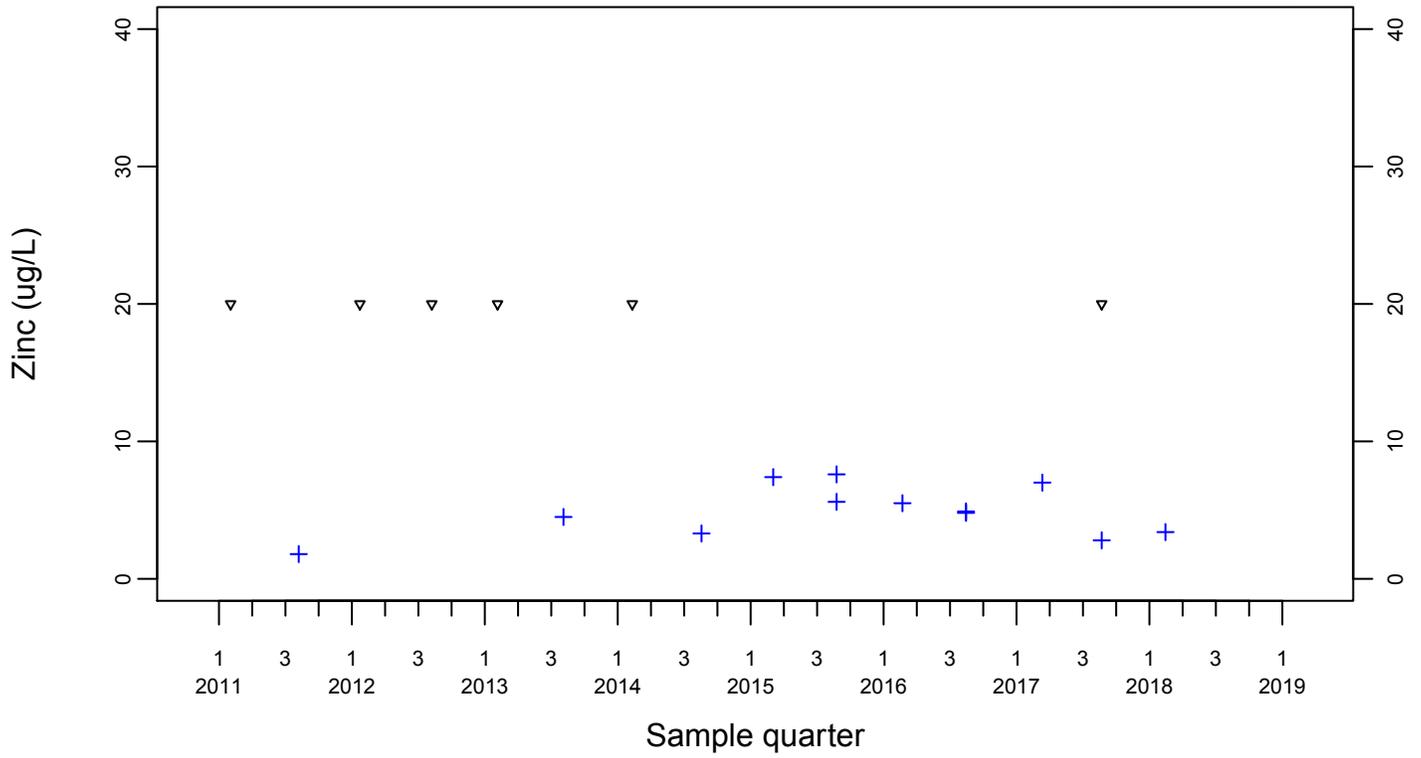
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Zinc (ug/L)

Downgradient Monitor Well W-7DS

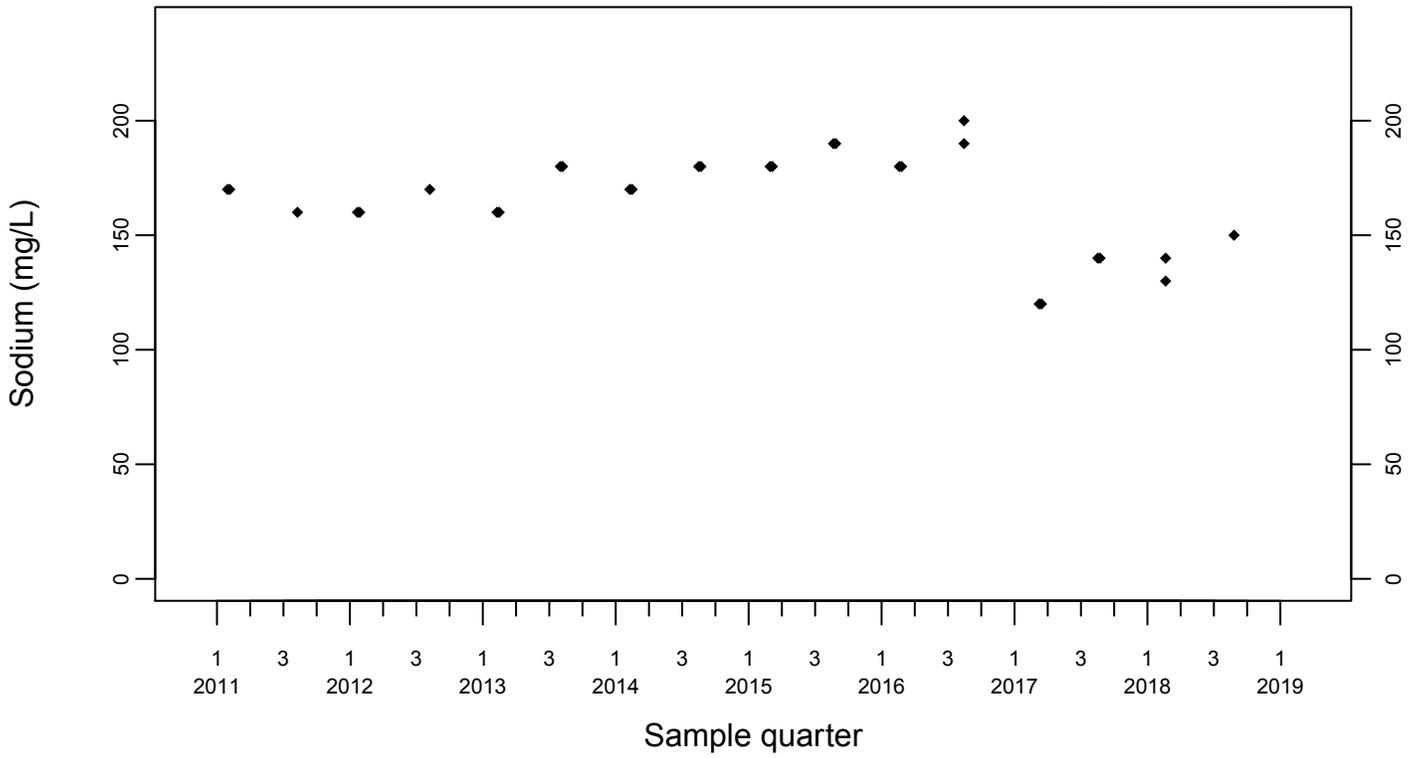
- ◆ Above RL
- ▽ Below RL
- + Estimated



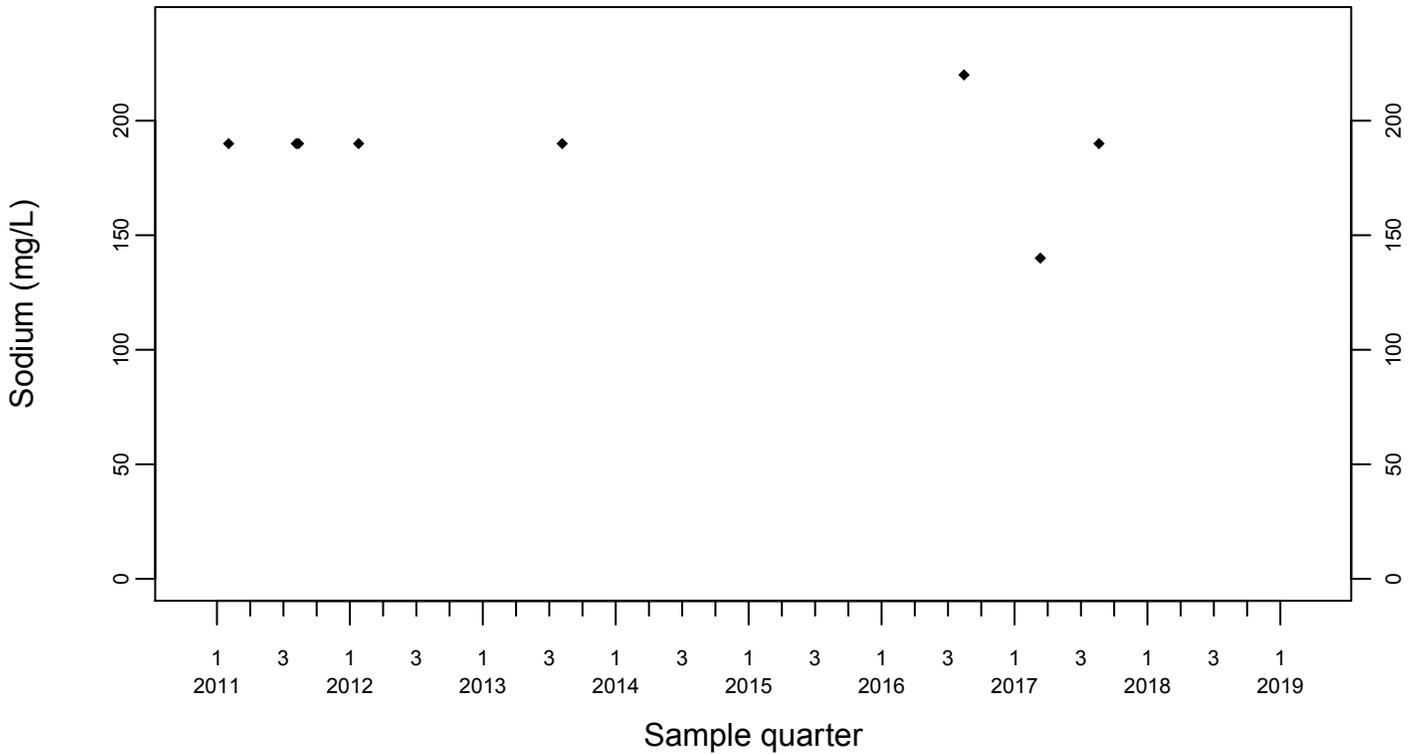
Sewage Ponds Ground Water Sodium (mg/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



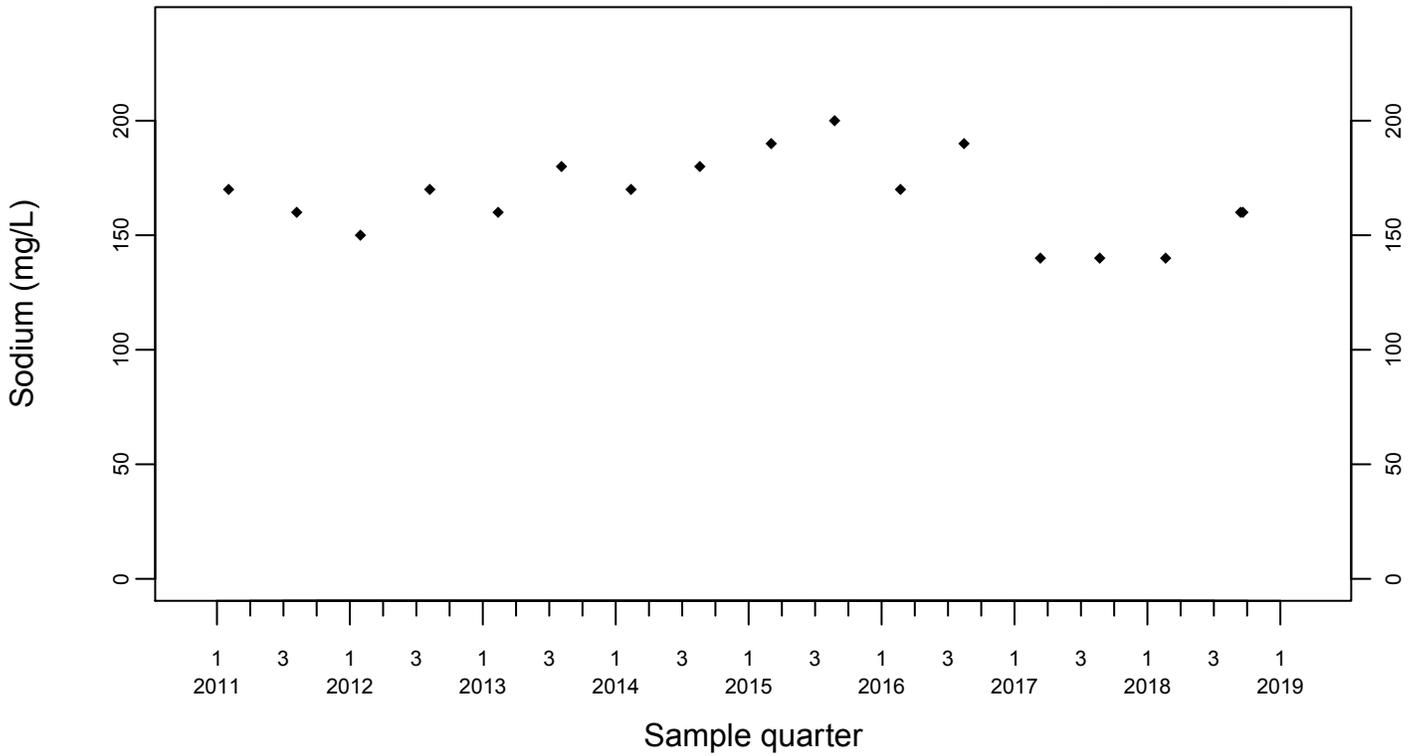
Upgradient Monitor Well W-7PS



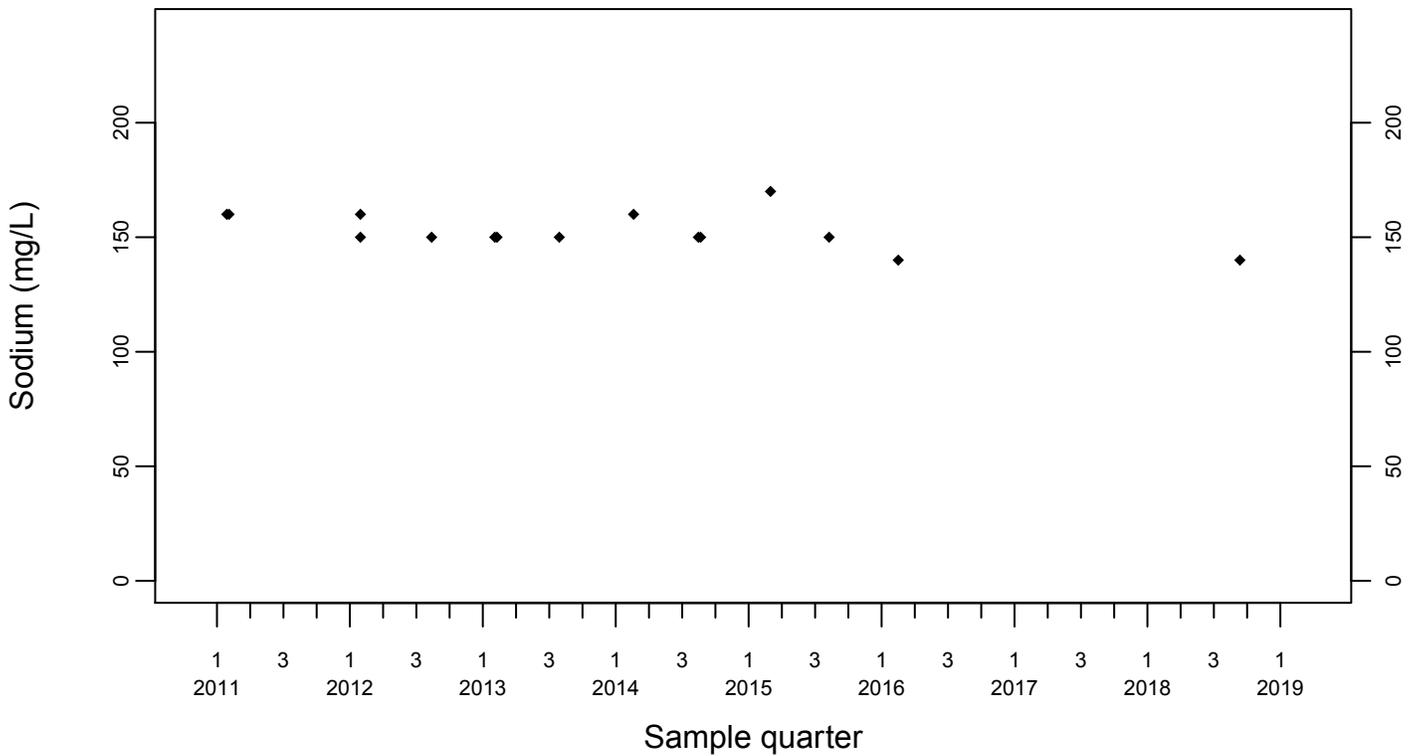
Sewage Ponds Ground Water Sodium (mg/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



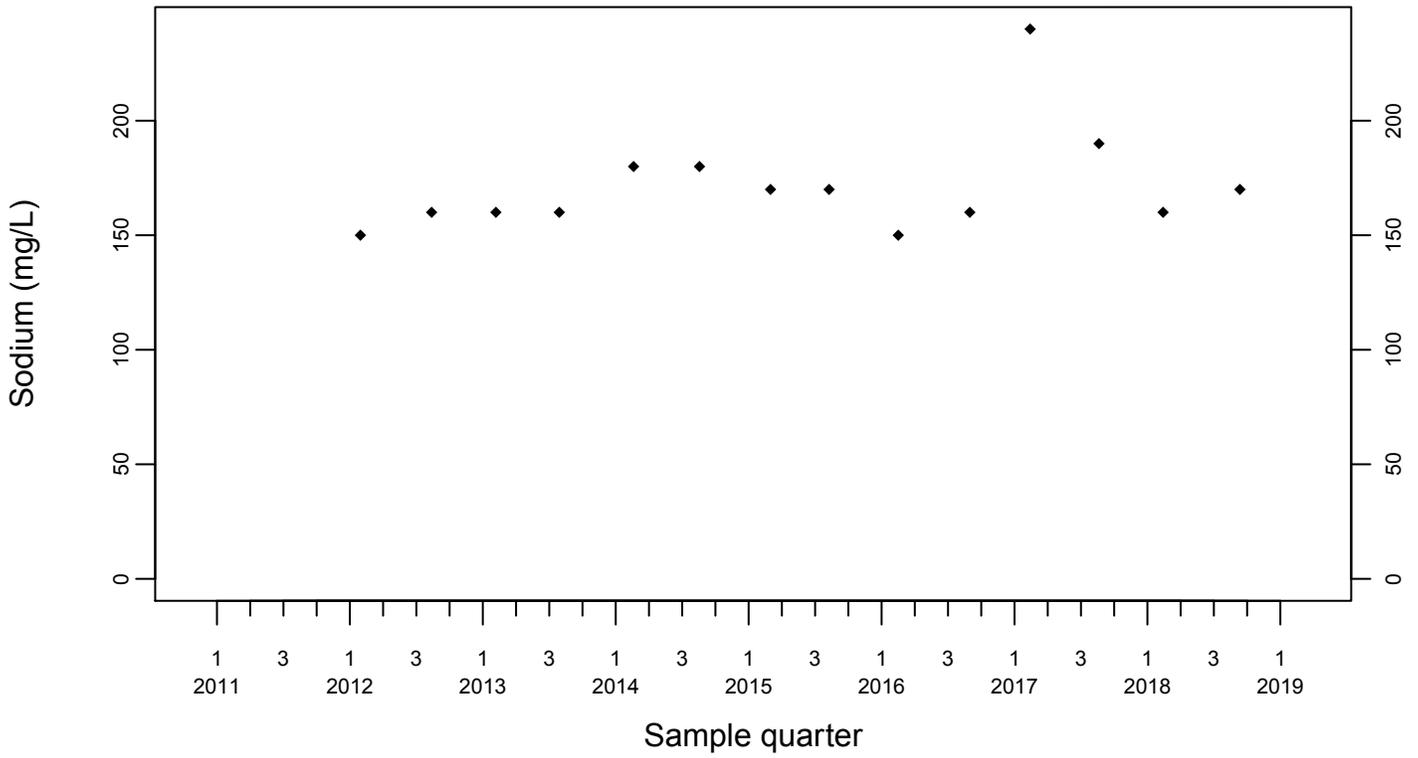
Downgradient Monitor Well W-25N-23



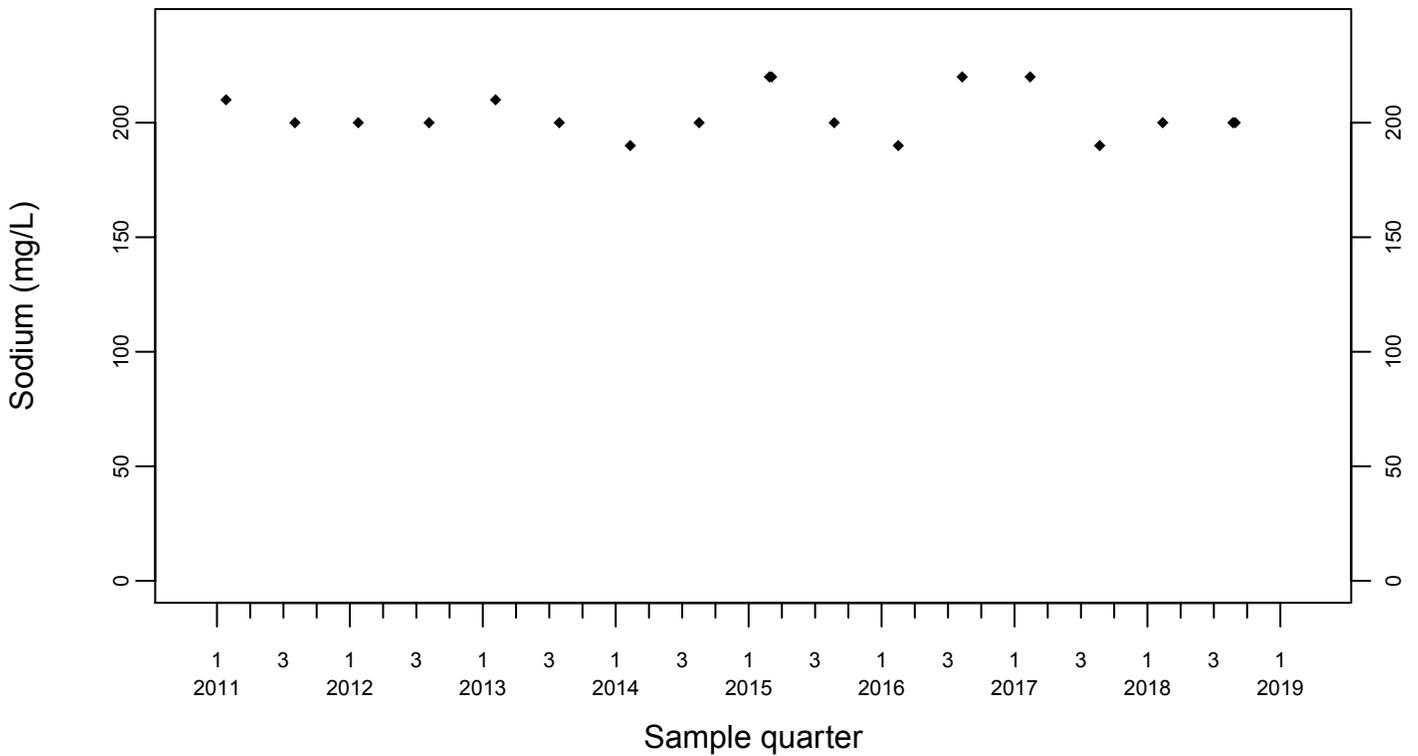
Sewage Ponds Ground Water Sodium (mg/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
▽ Below RL



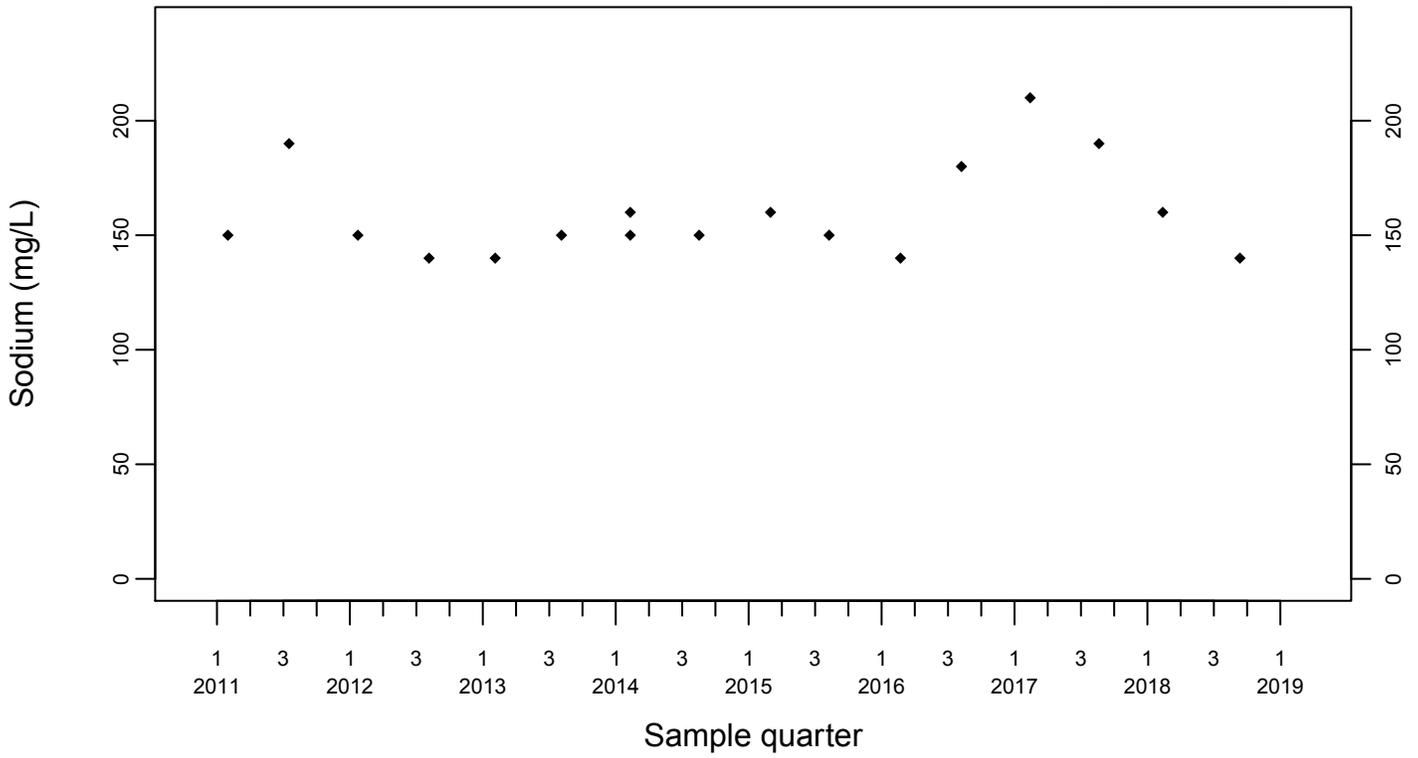
Downgradient Monitor Well W-26R-01



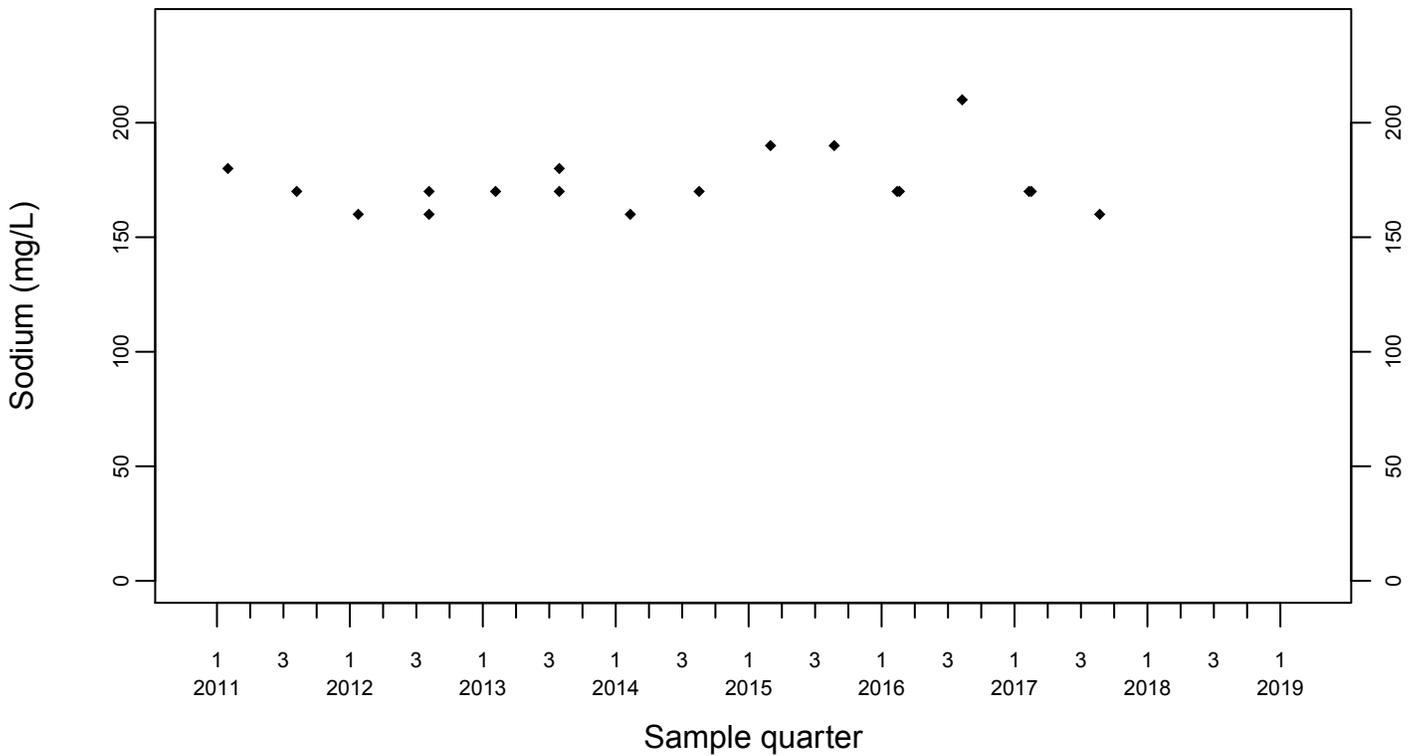
Sewage Ponds Ground Water Sodium (mg/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



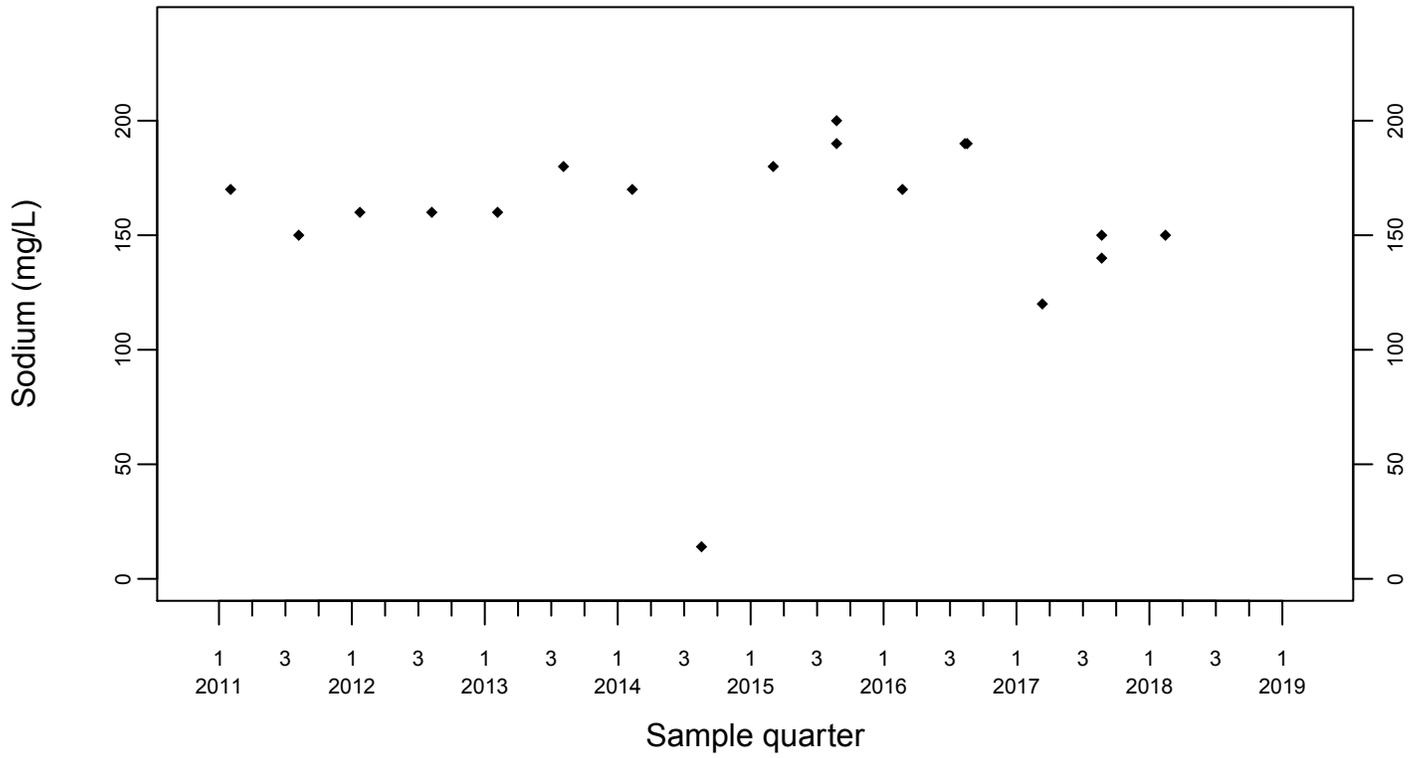
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Sodium (mg/L)

Downgradient Monitor Well W-7DS

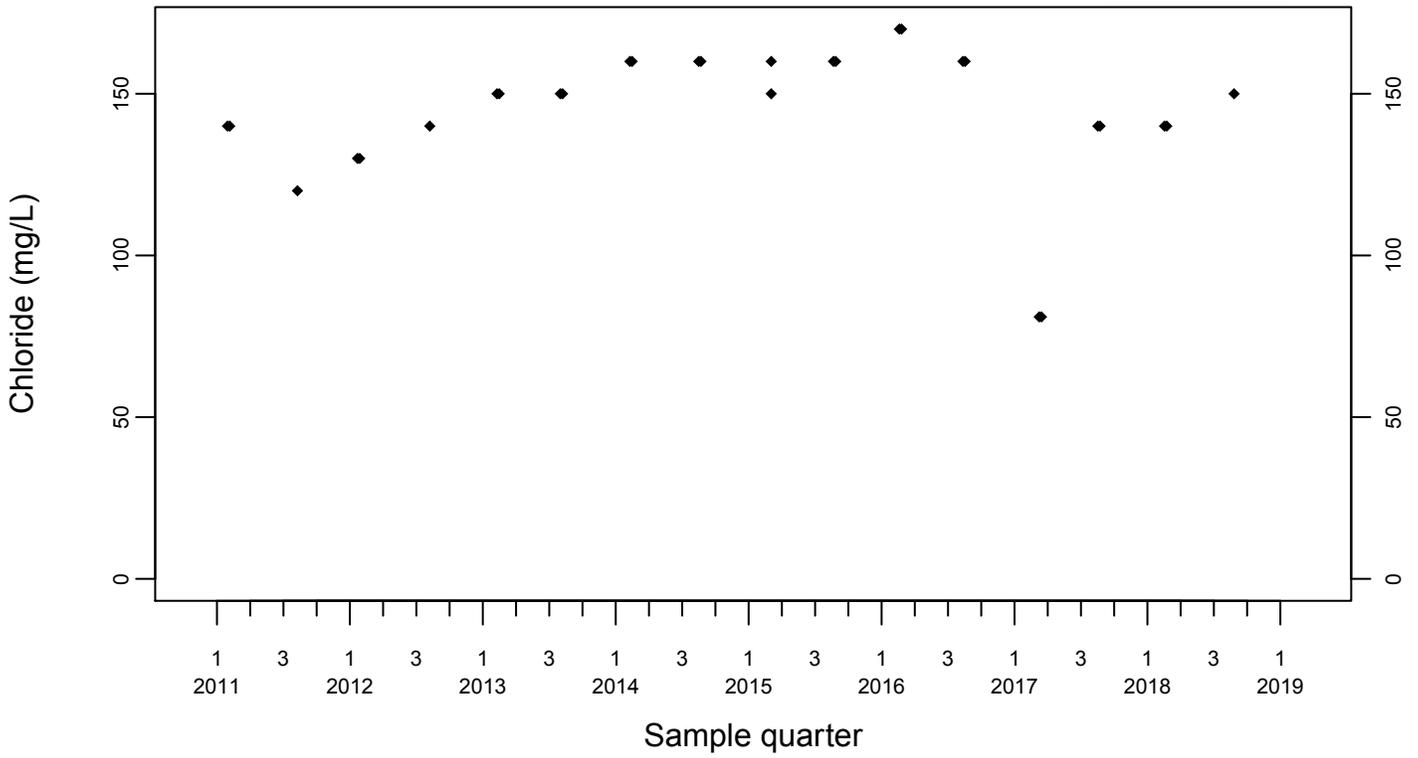
◆ Above RL
▽ Below RL



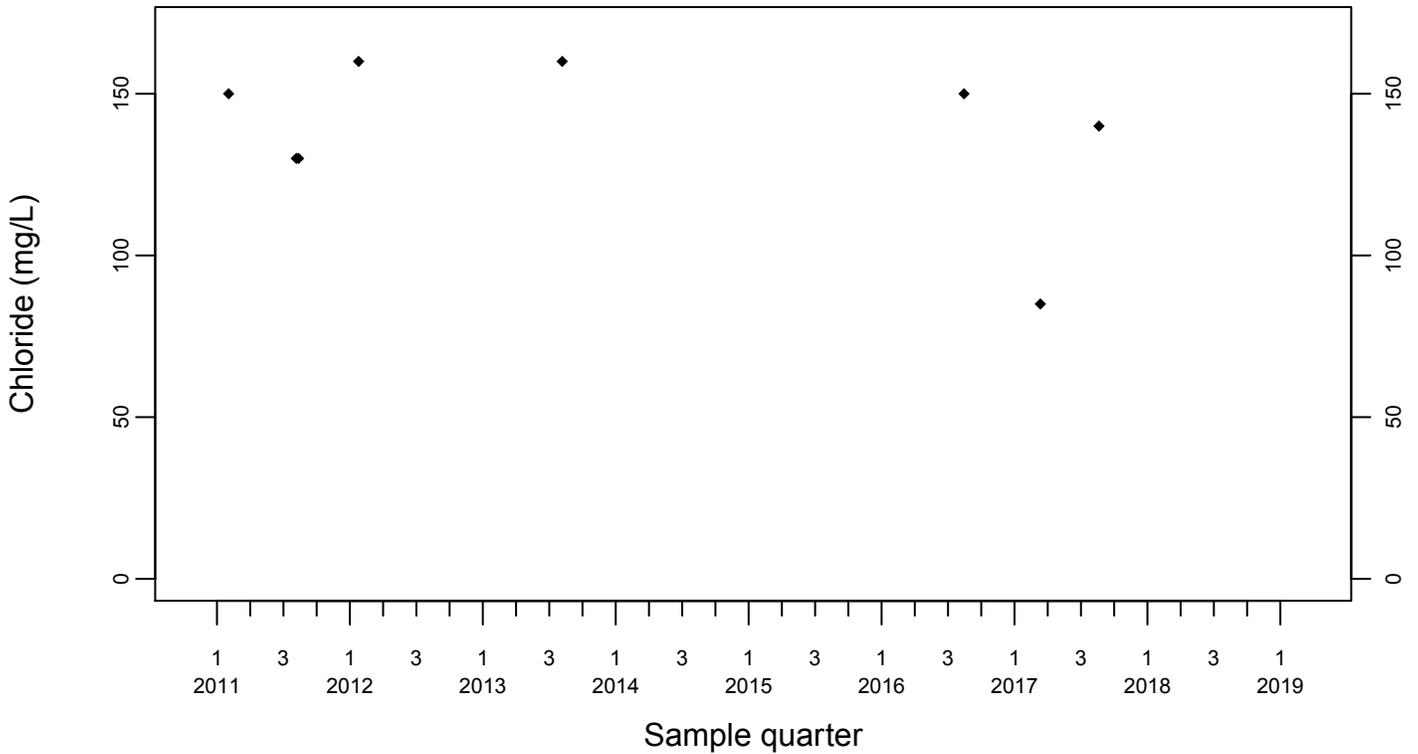
Sewage Ponds Ground Water Chloride (mg/L)

Upgradient Monitor Well W-7ES

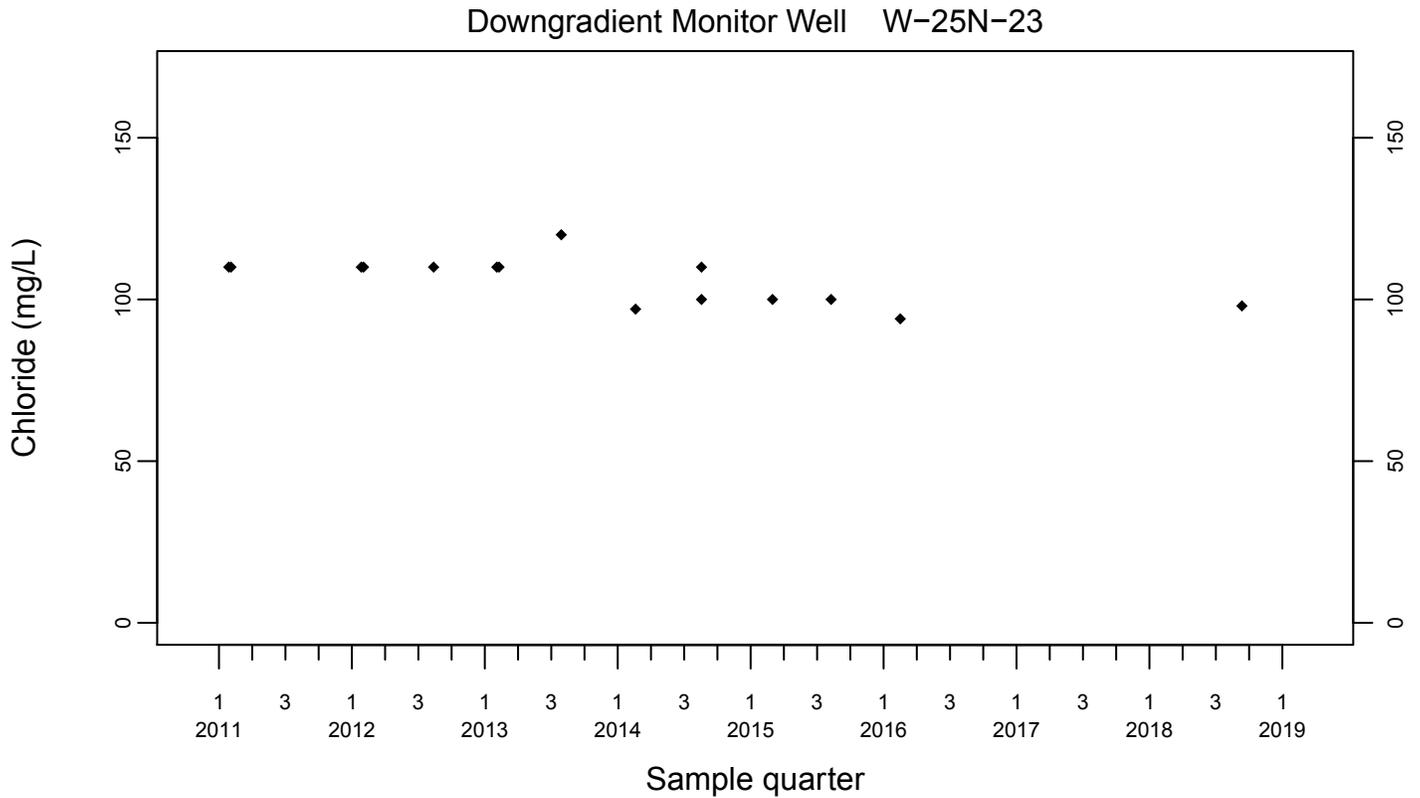
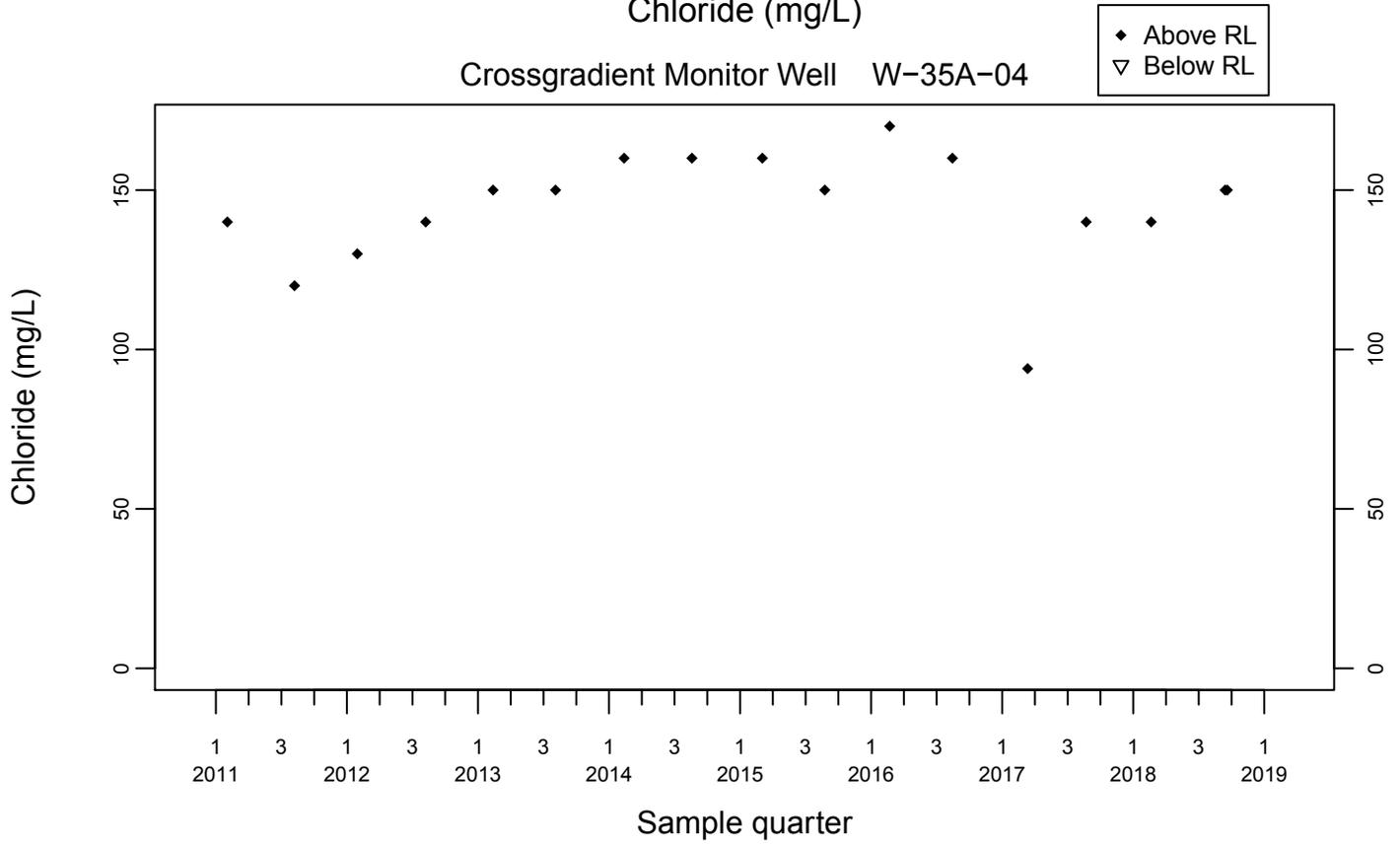
◆ Above RL
▽ Below RL



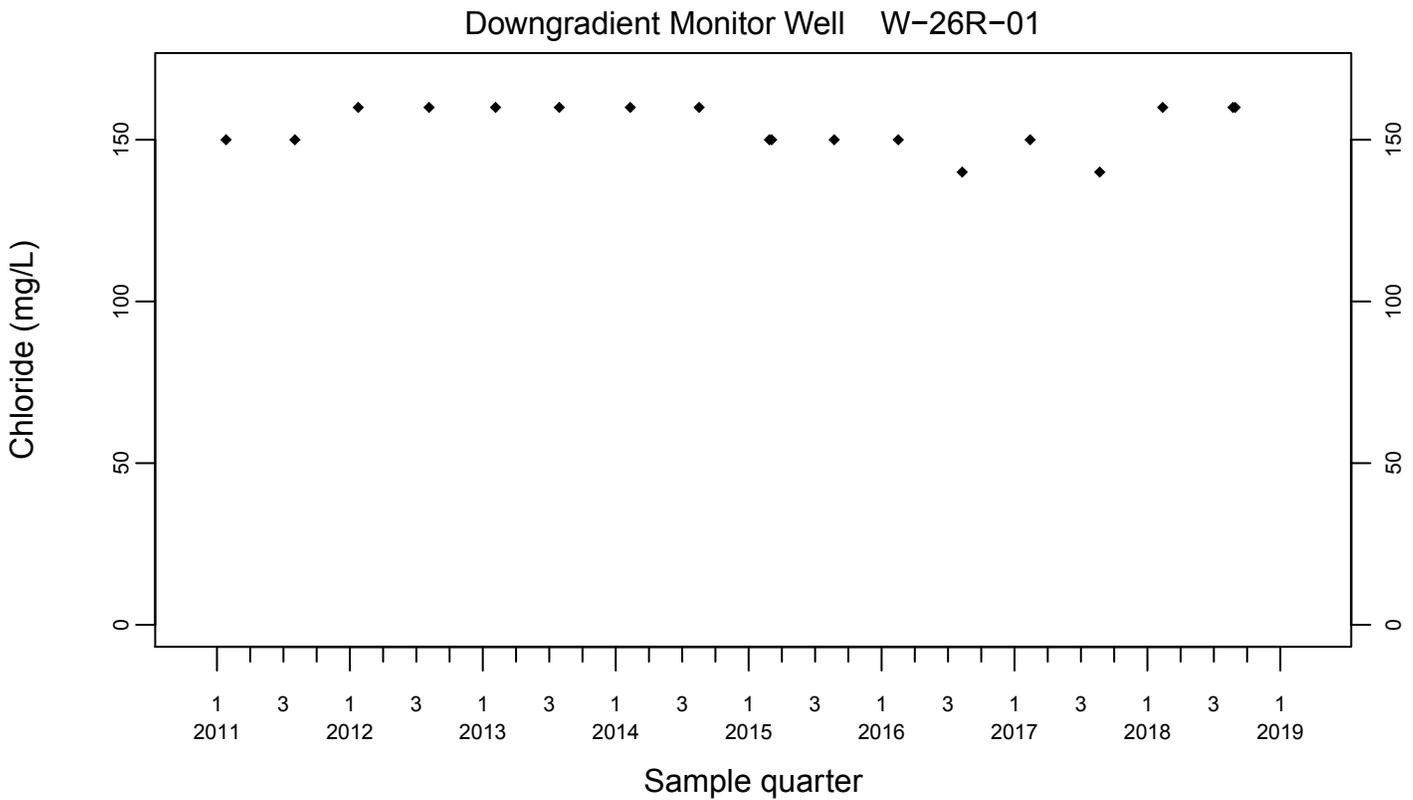
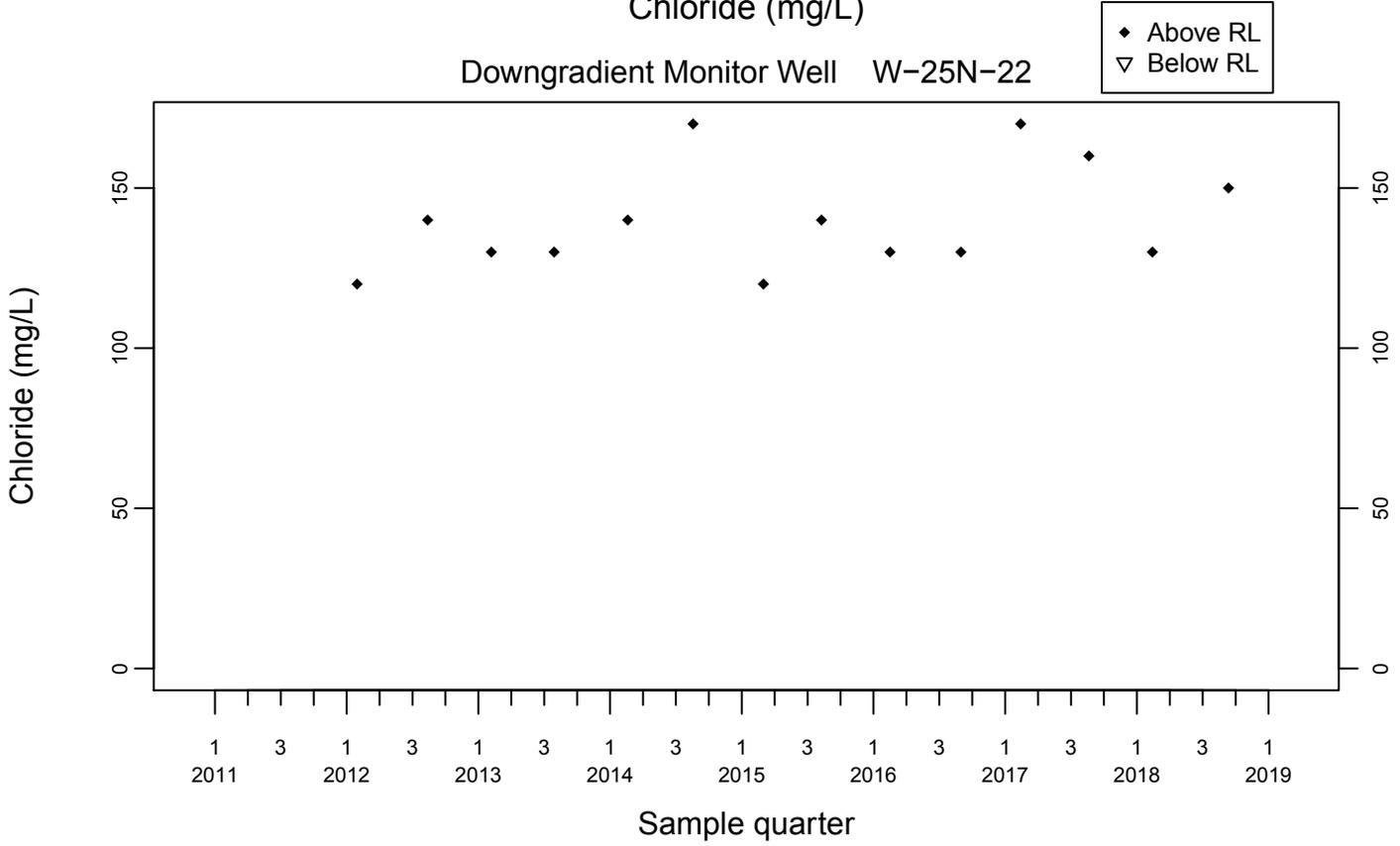
Upgradient Monitor Well W-7PS



Sewage Ponds Ground Water Chloride (mg/L)



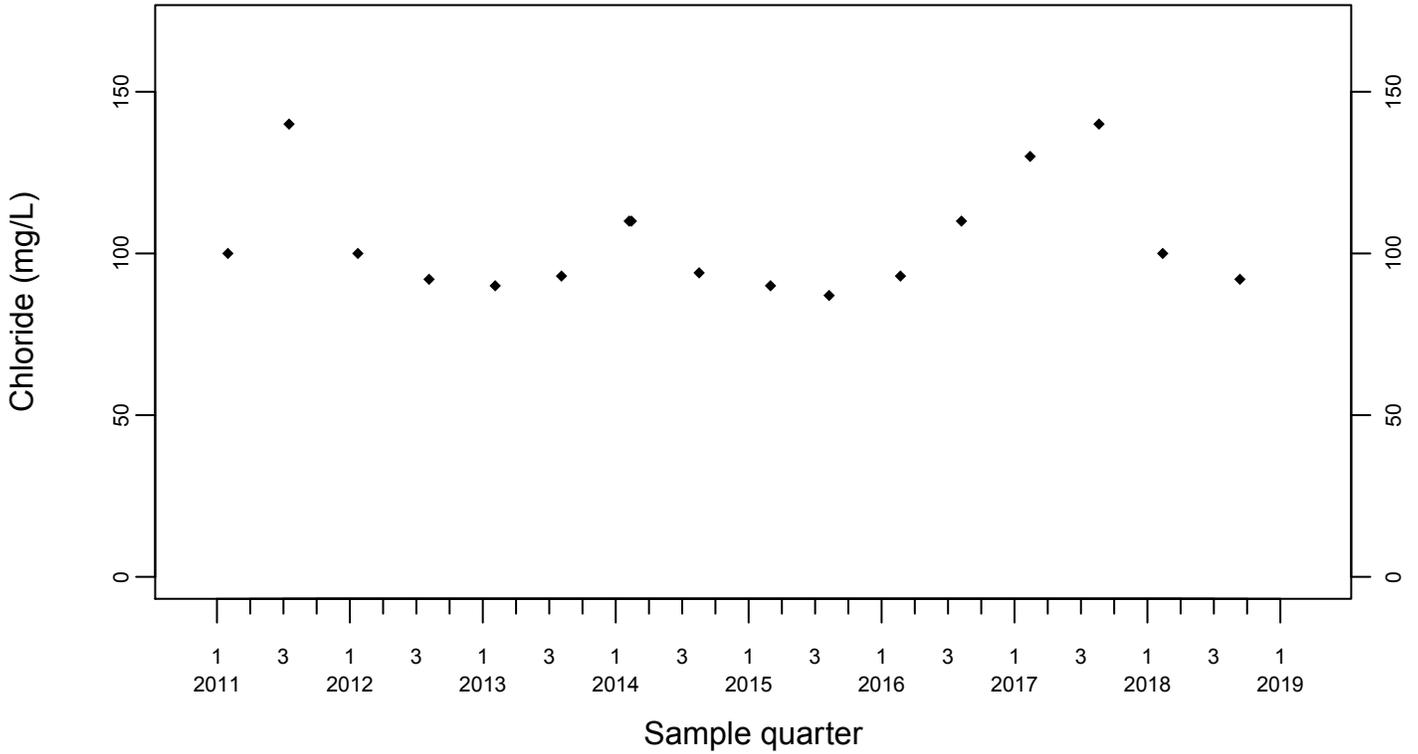
Sewage Ponds Ground Water Chloride (mg/L)



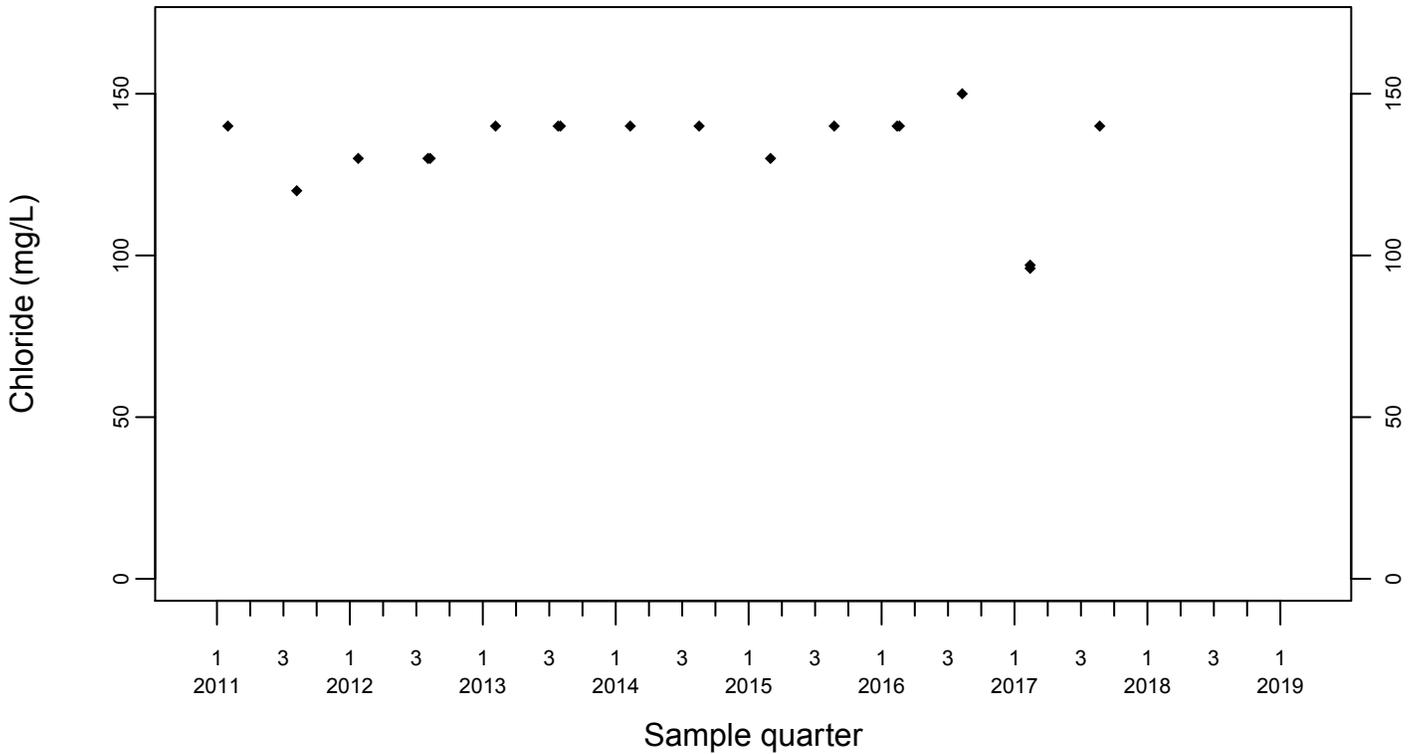
Sewage Ponds Ground Water Chloride (mg/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



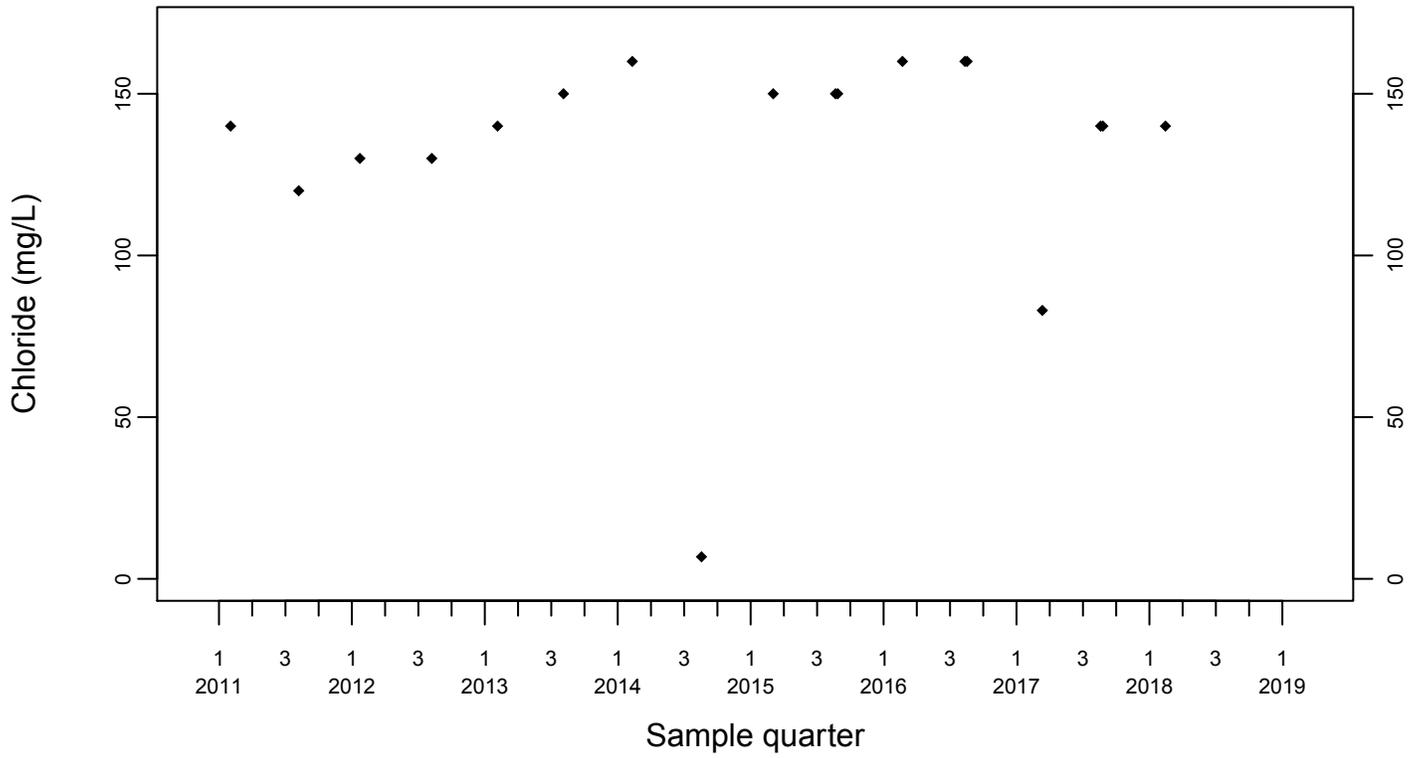
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Chloride (mg/L)

Downgradient Monitor Well W-7DS

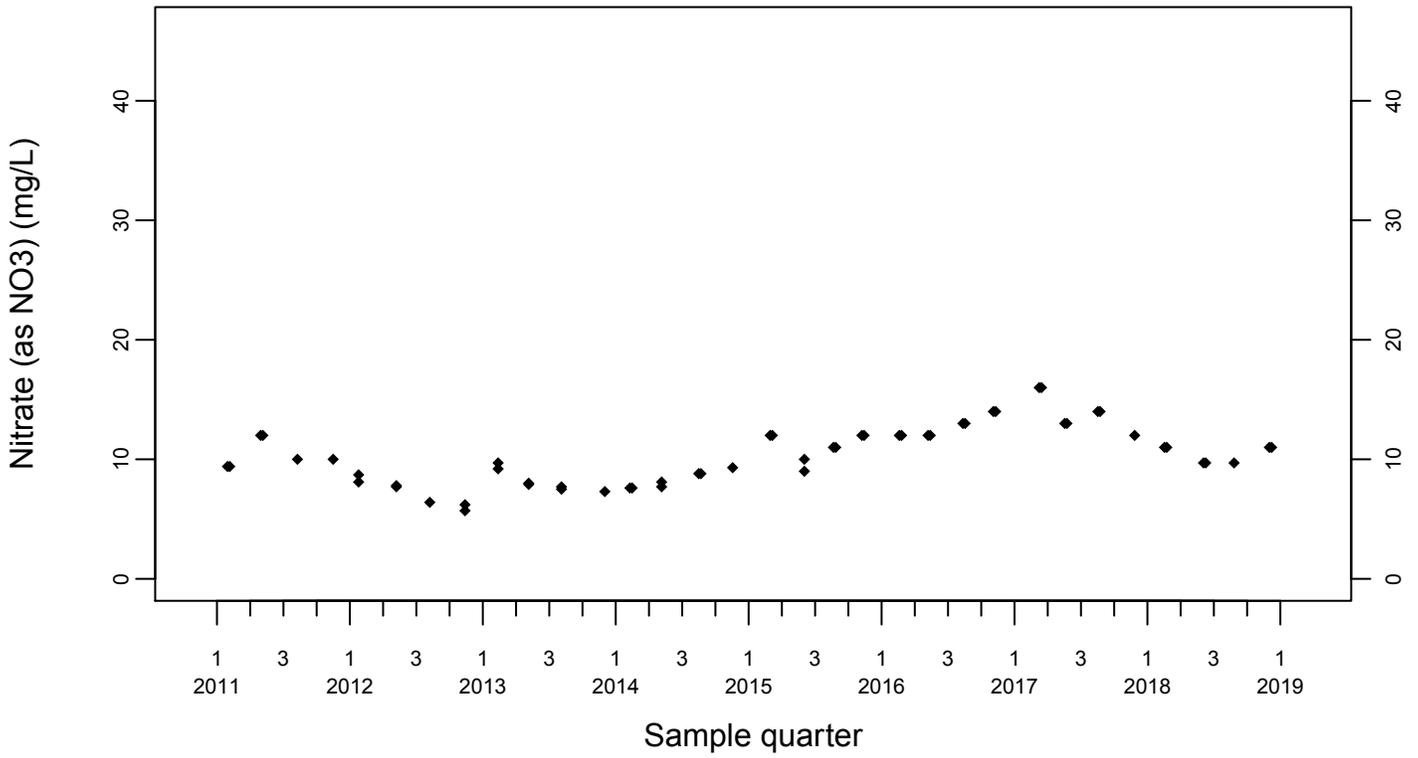
◆ Above RL
▽ Below RL



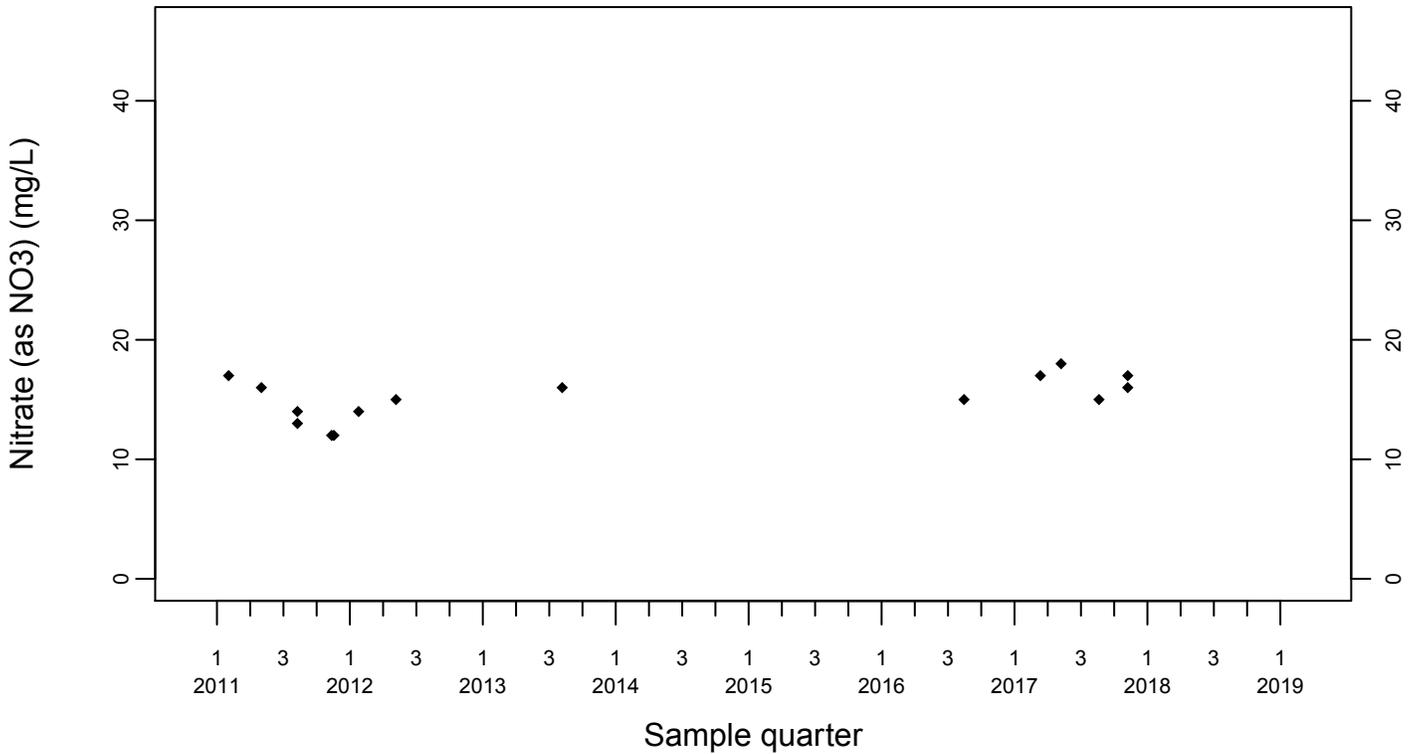
Sewage Ponds Ground Water Nitrate (as NO3) (mg/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



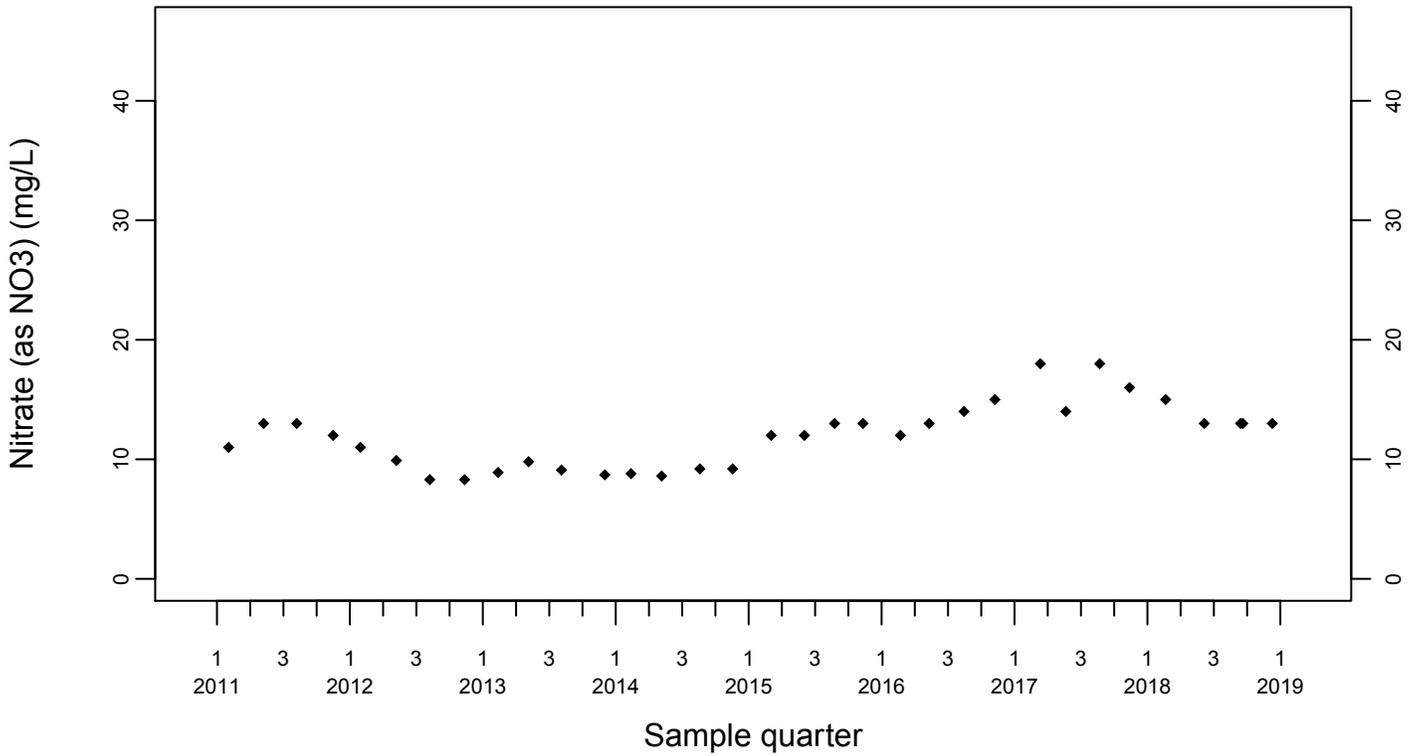
Upgradient Monitor Well W-7PS



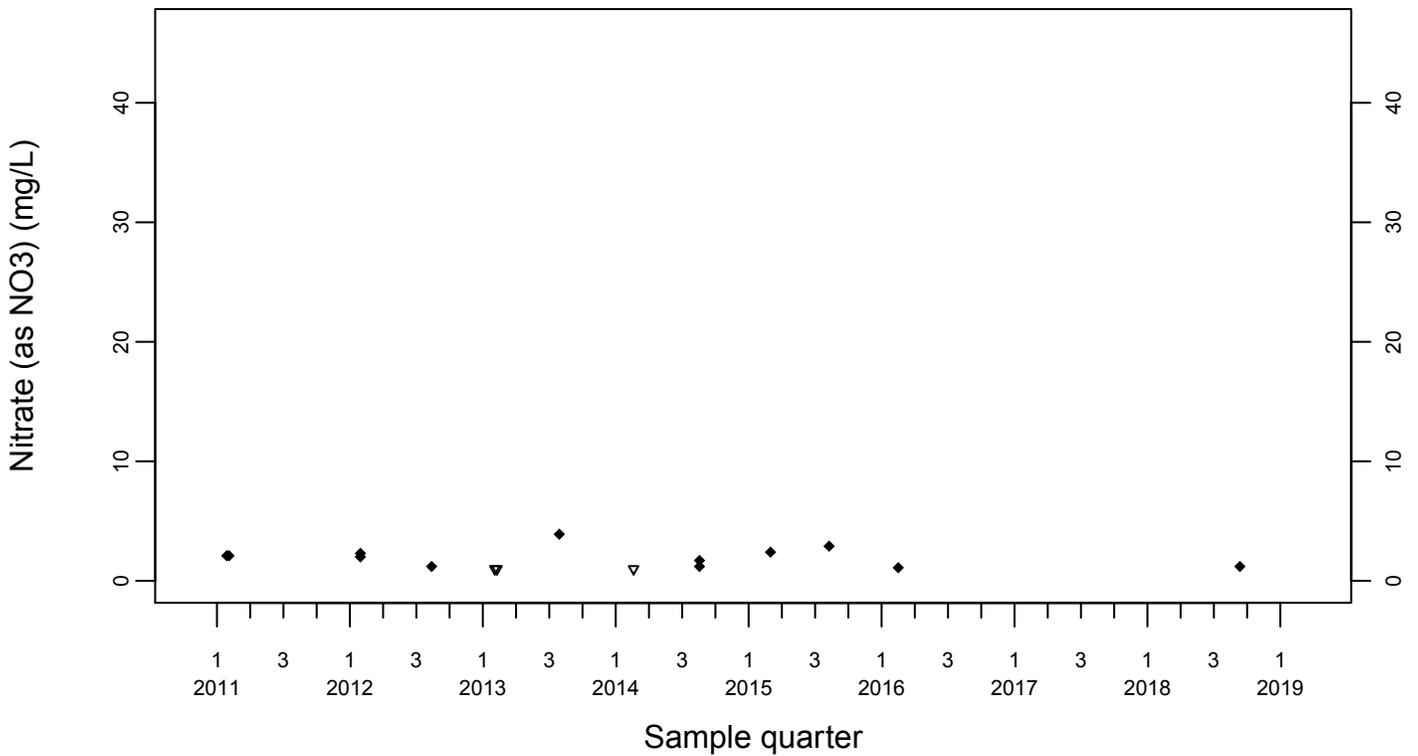
Sewage Ponds Ground Water Nitrate (as NO3) (mg/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



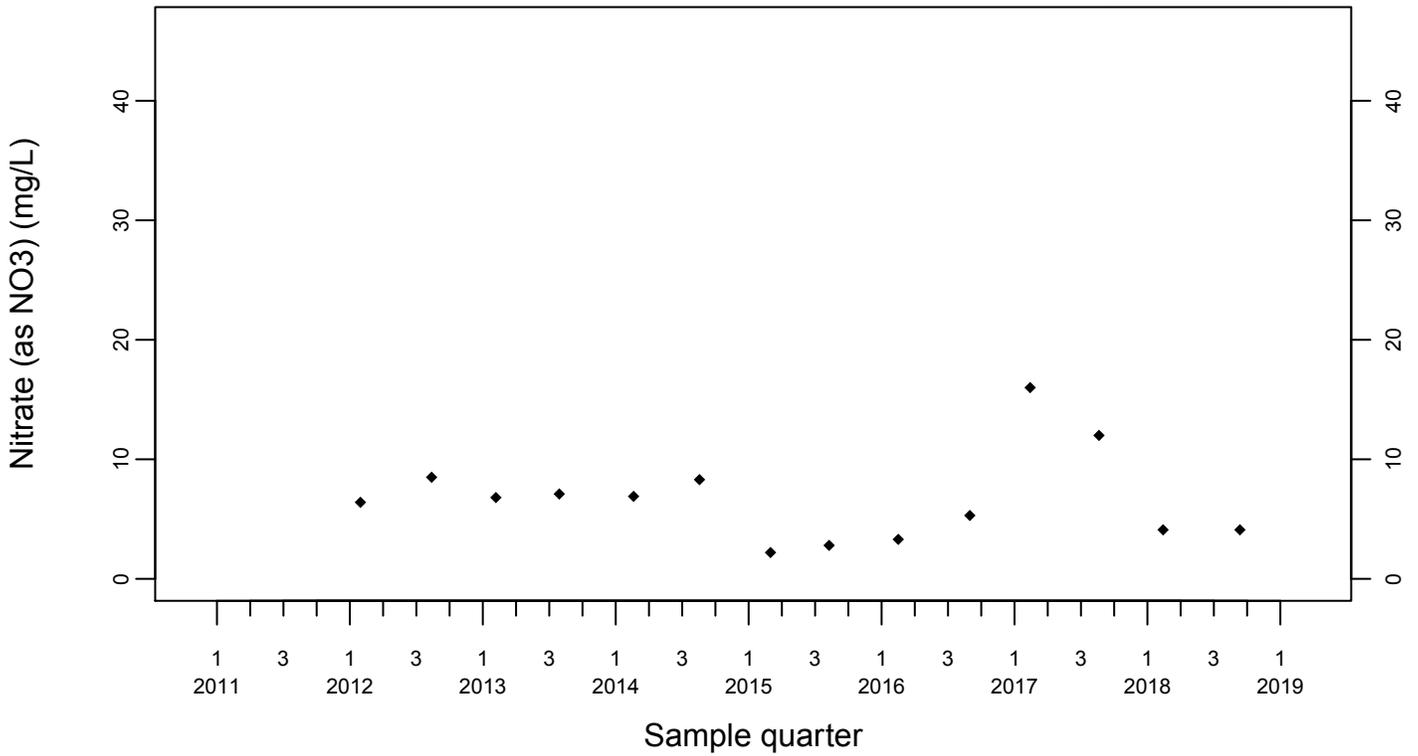
Downgradient Monitor Well W-25N-23



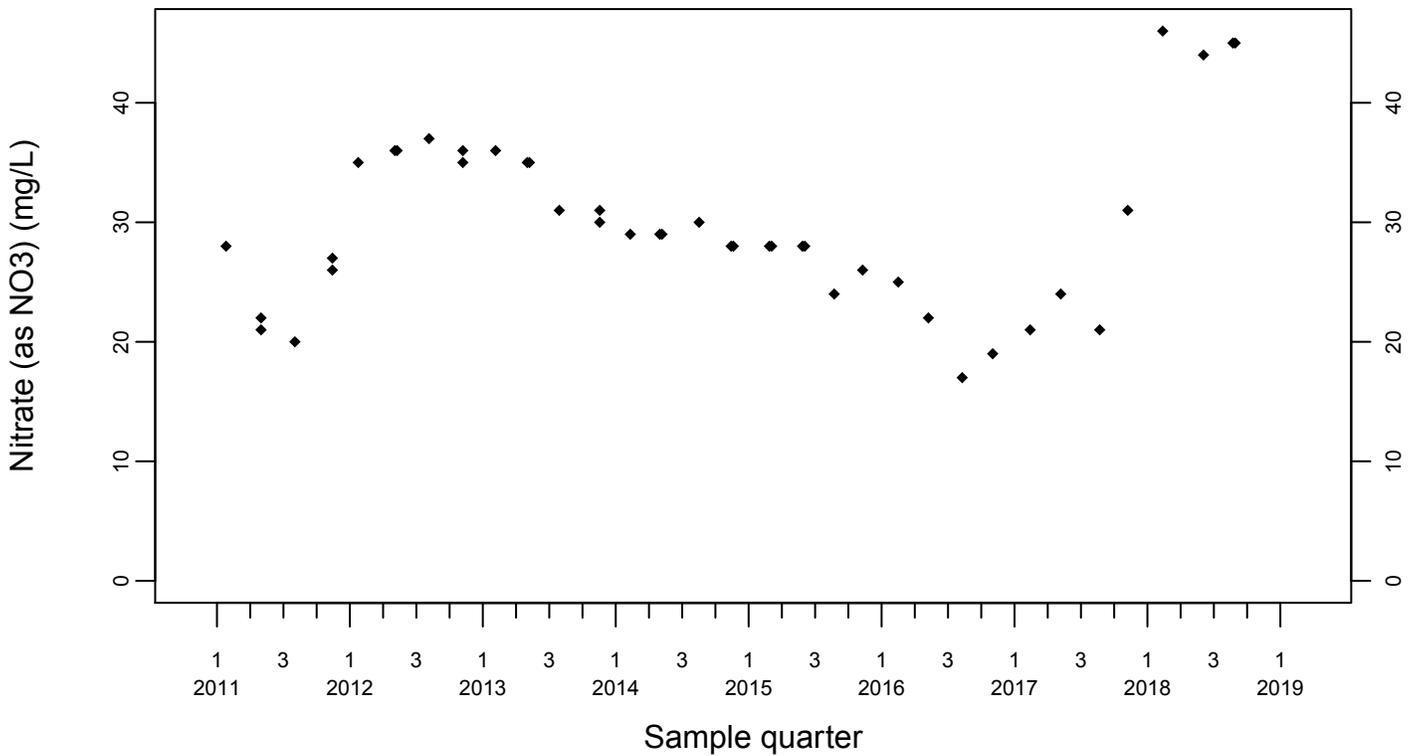
Sewage Ponds Ground Water Nitrate (as NO₃) (mg/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
▽ Below RL



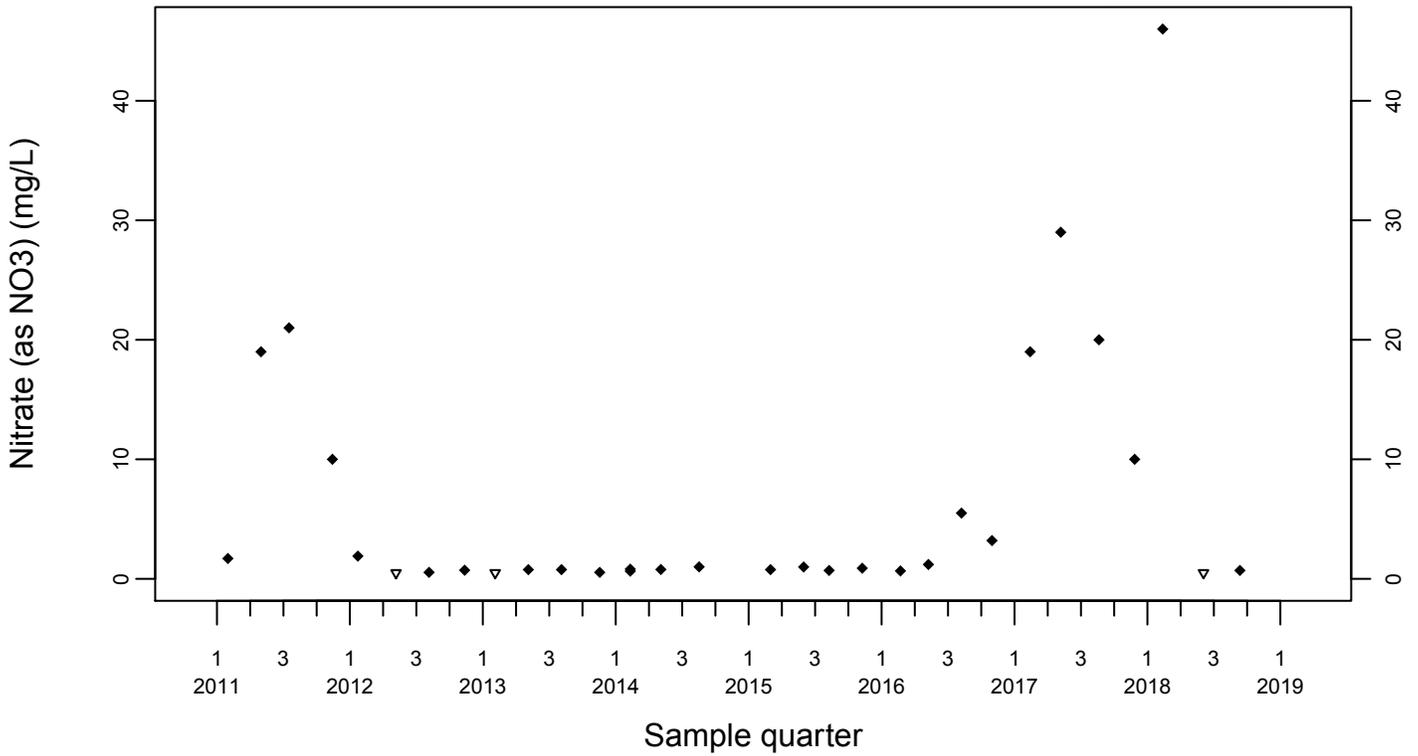
Downgradient Monitor Well W-26R-01



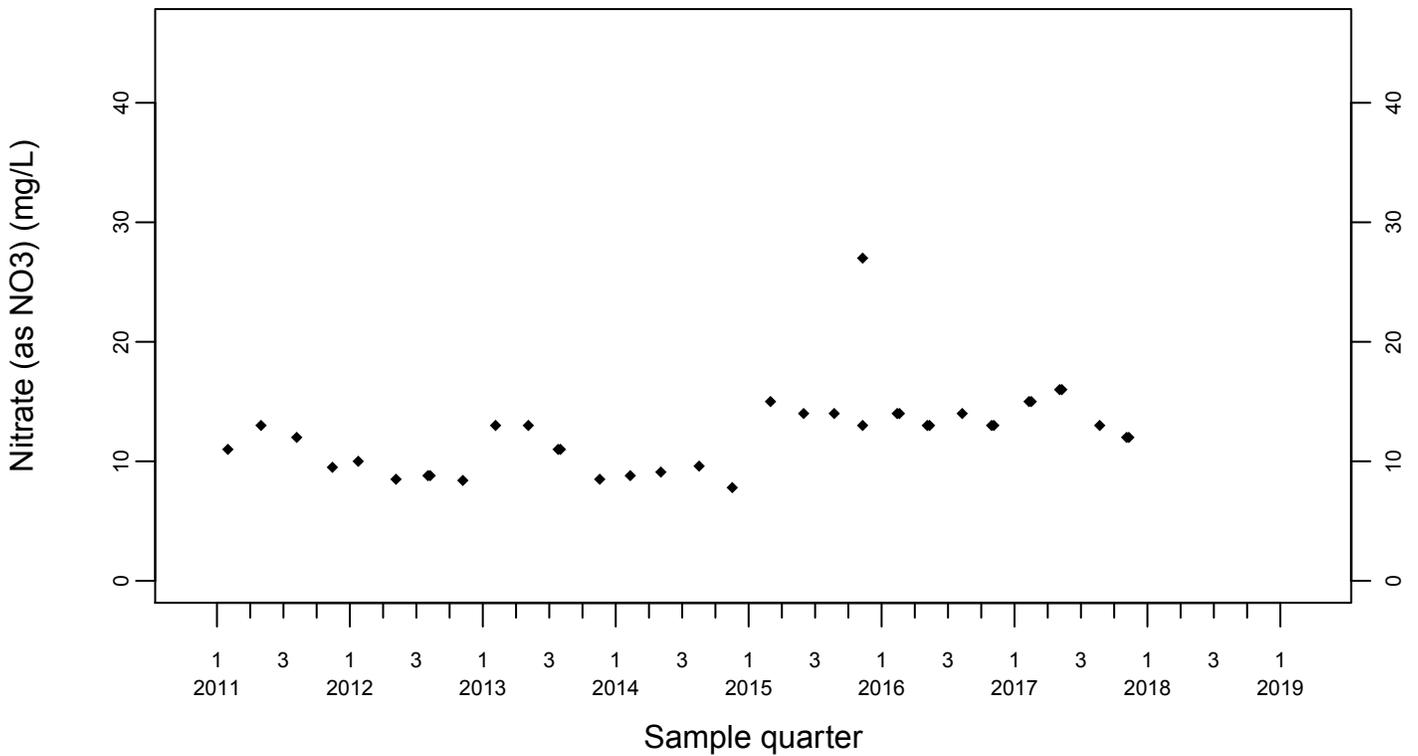
Sewage Ponds Ground Water Nitrate (as NO3) (mg/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



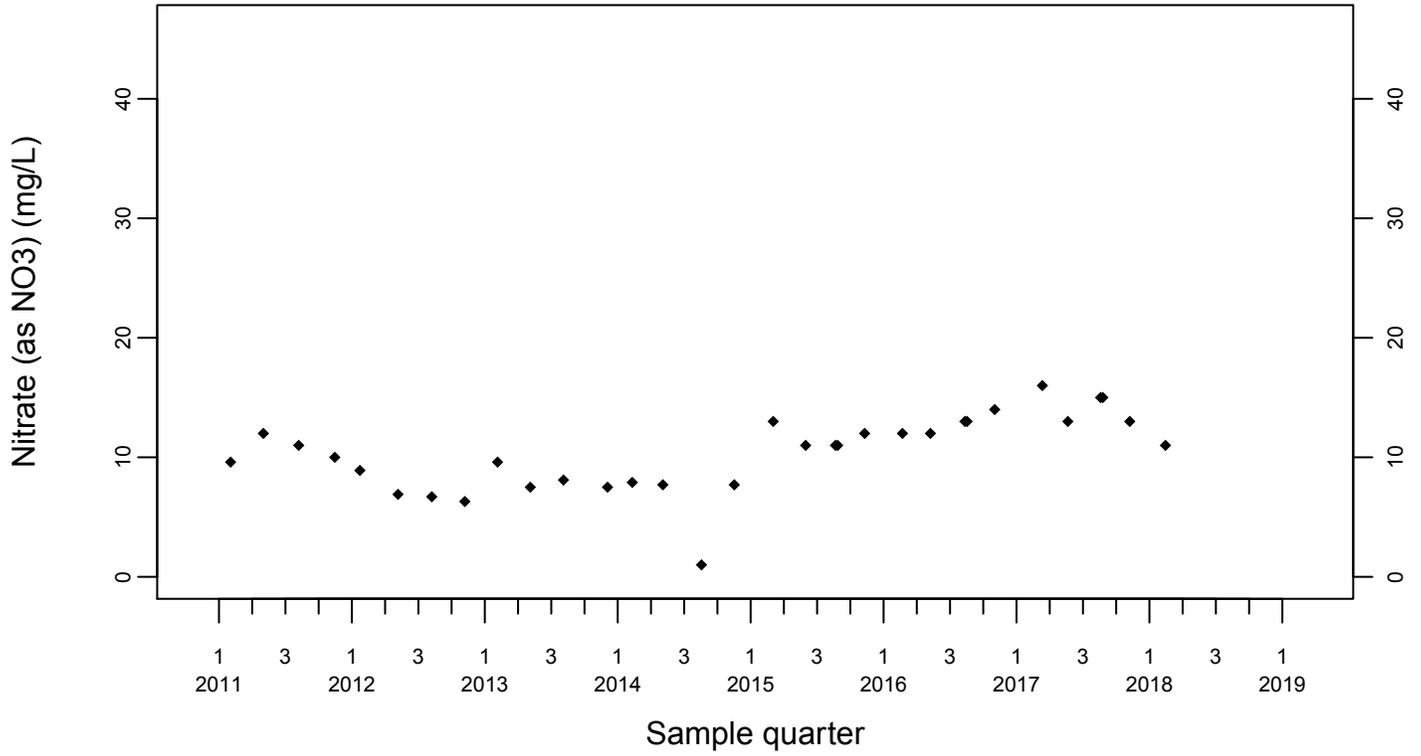
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water
Nitrate (as NO₃) (mg/L)

Downgradient Monitor Well W-7DS

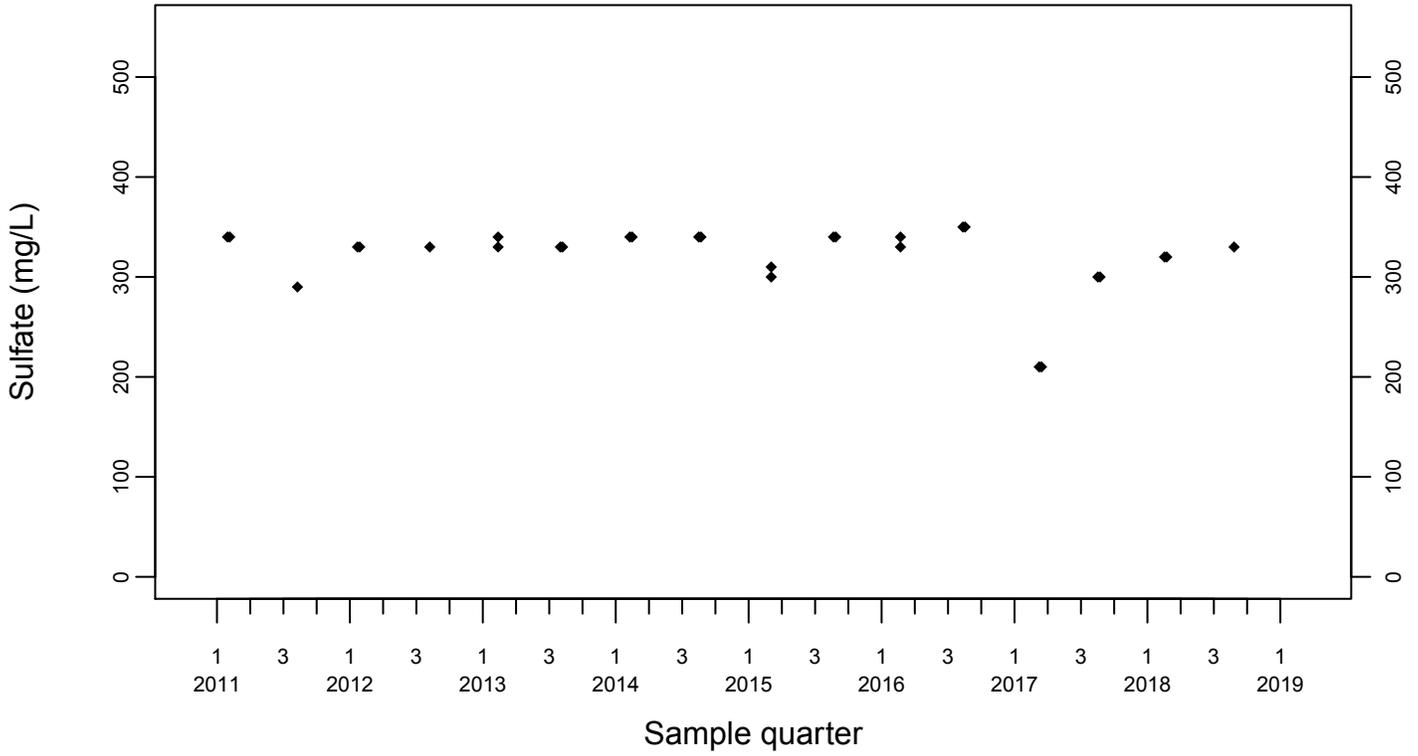
◆ Above RL
▽ Below RL



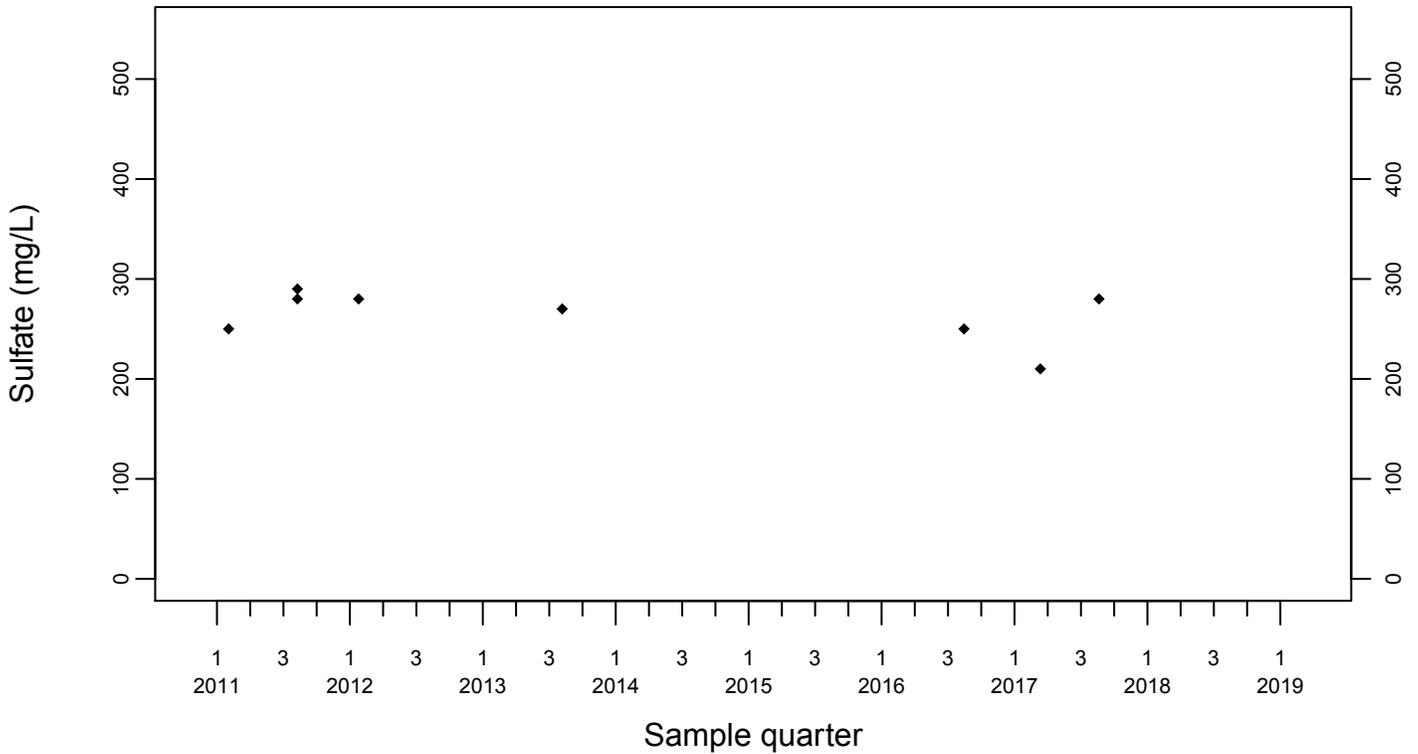
Sewage Ponds Ground Water Sulfate (mg/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



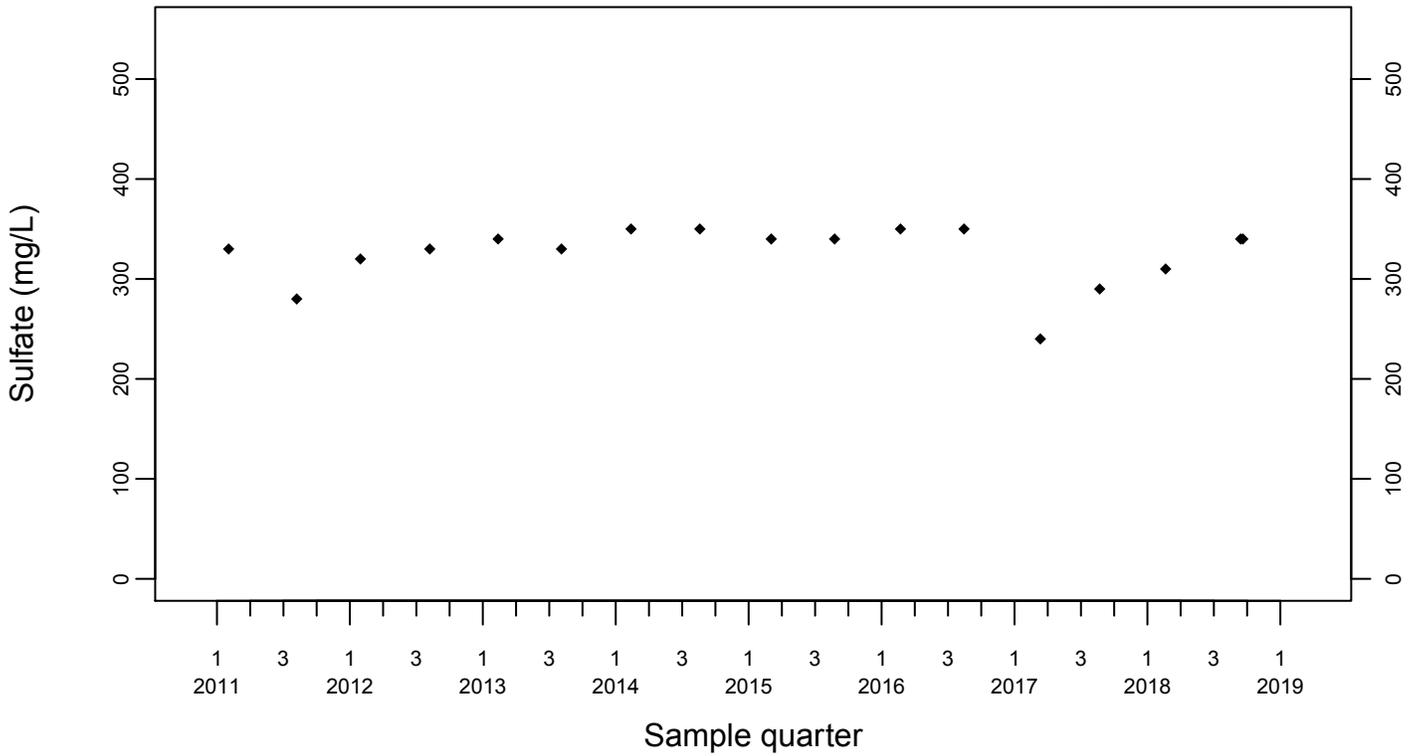
Upgradient Monitor Well W-7PS



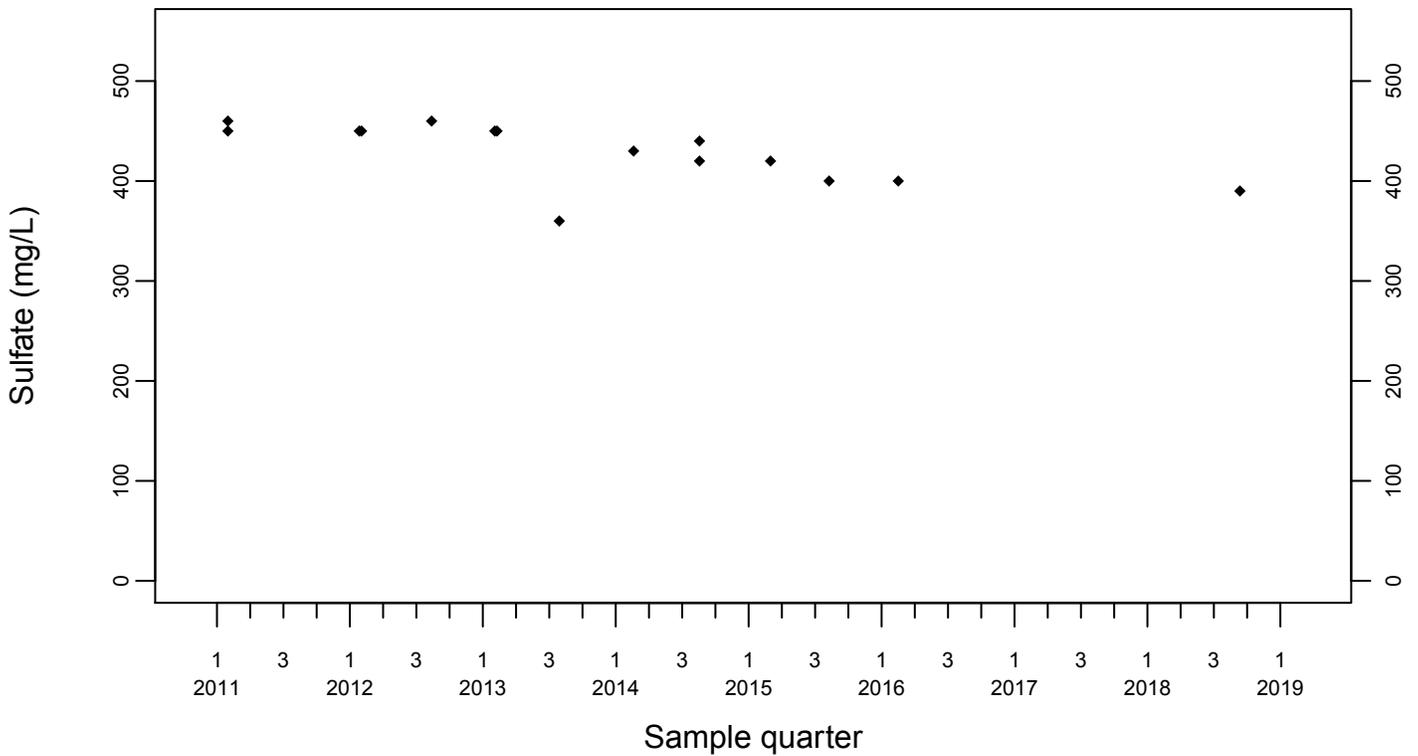
Sewage Ponds Ground Water Sulfate (mg/L)

Crossgradient Monitor Well W-35A-04

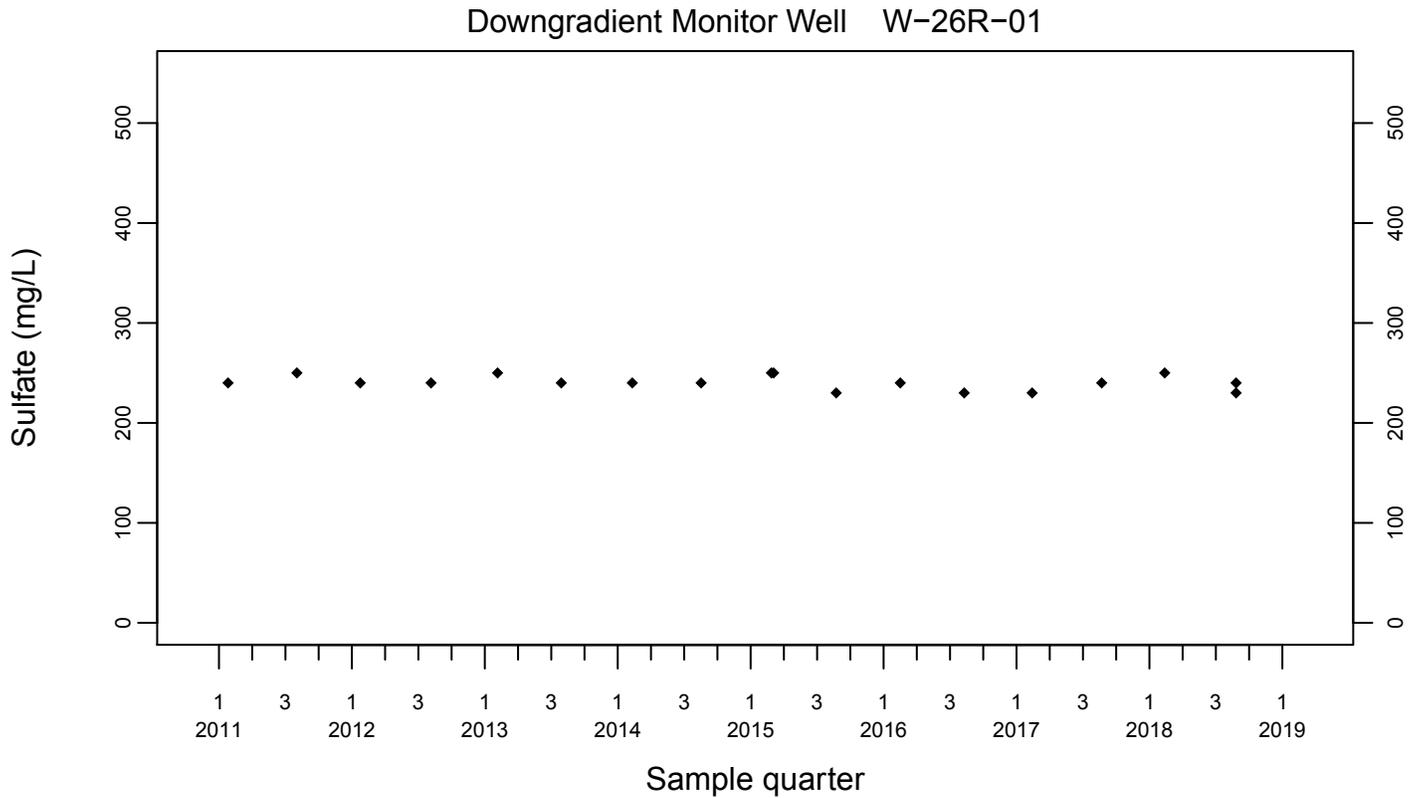
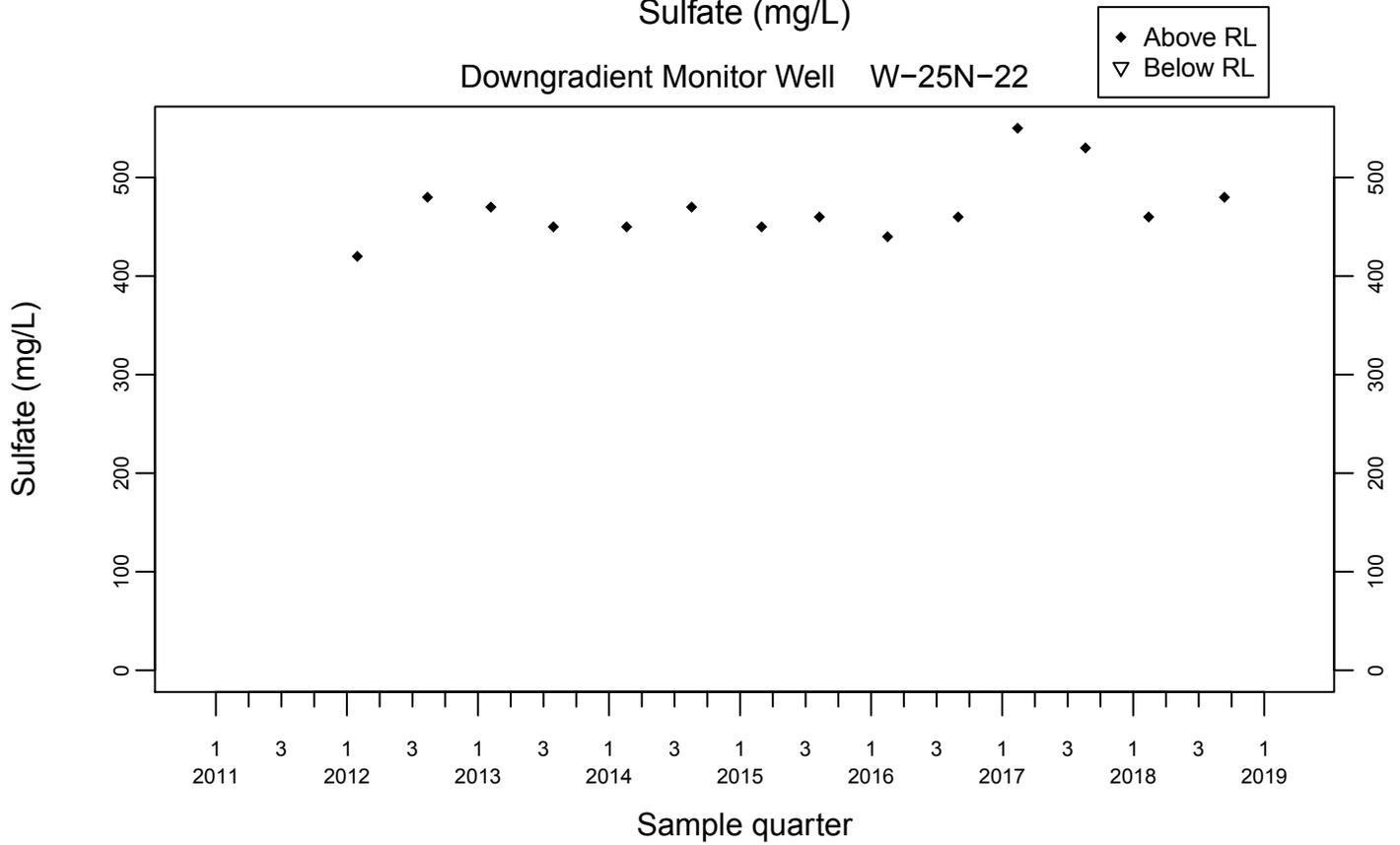
◆ Above RL
▽ Below RL



Downgradient Monitor Well W-25N-23



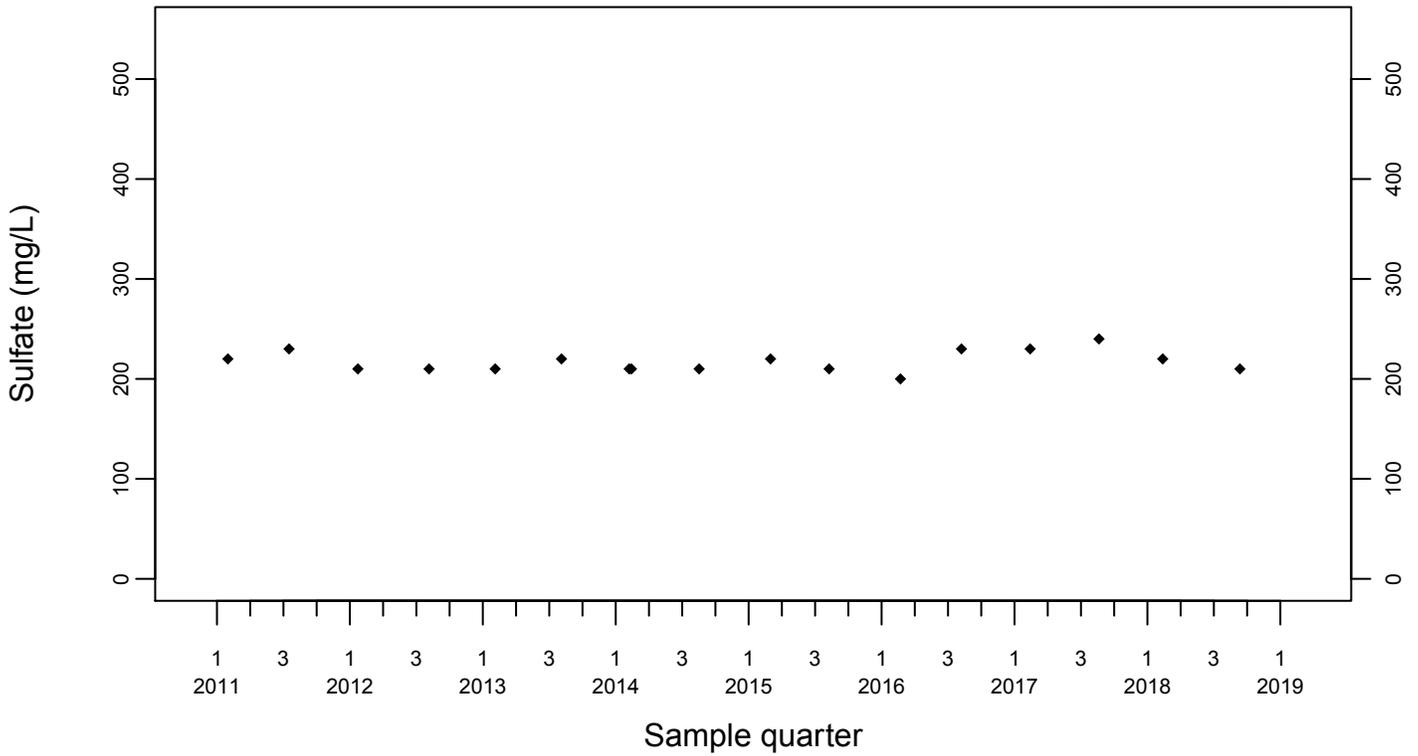
Sewage Ponds Ground Water Sulfate (mg/L)



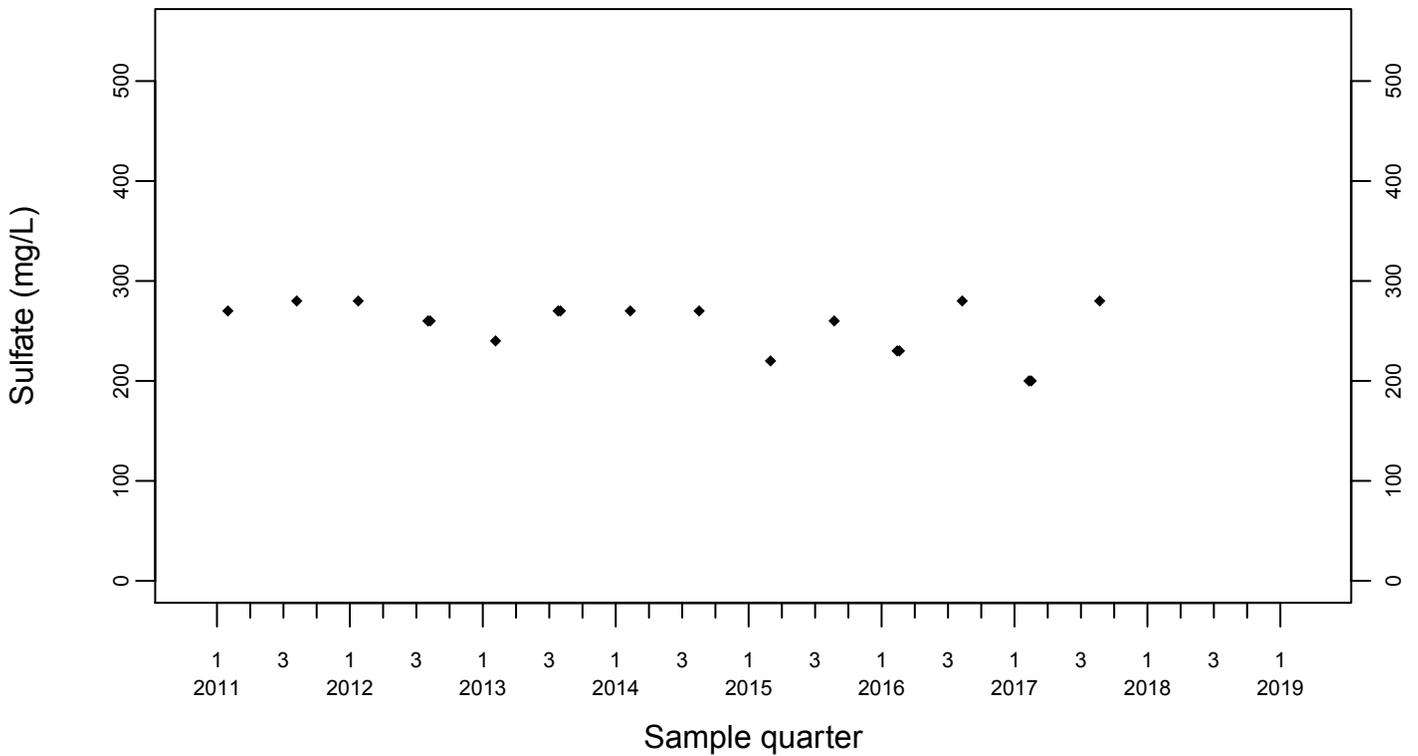
Sewage Ponds Ground Water Sulfate (mg/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



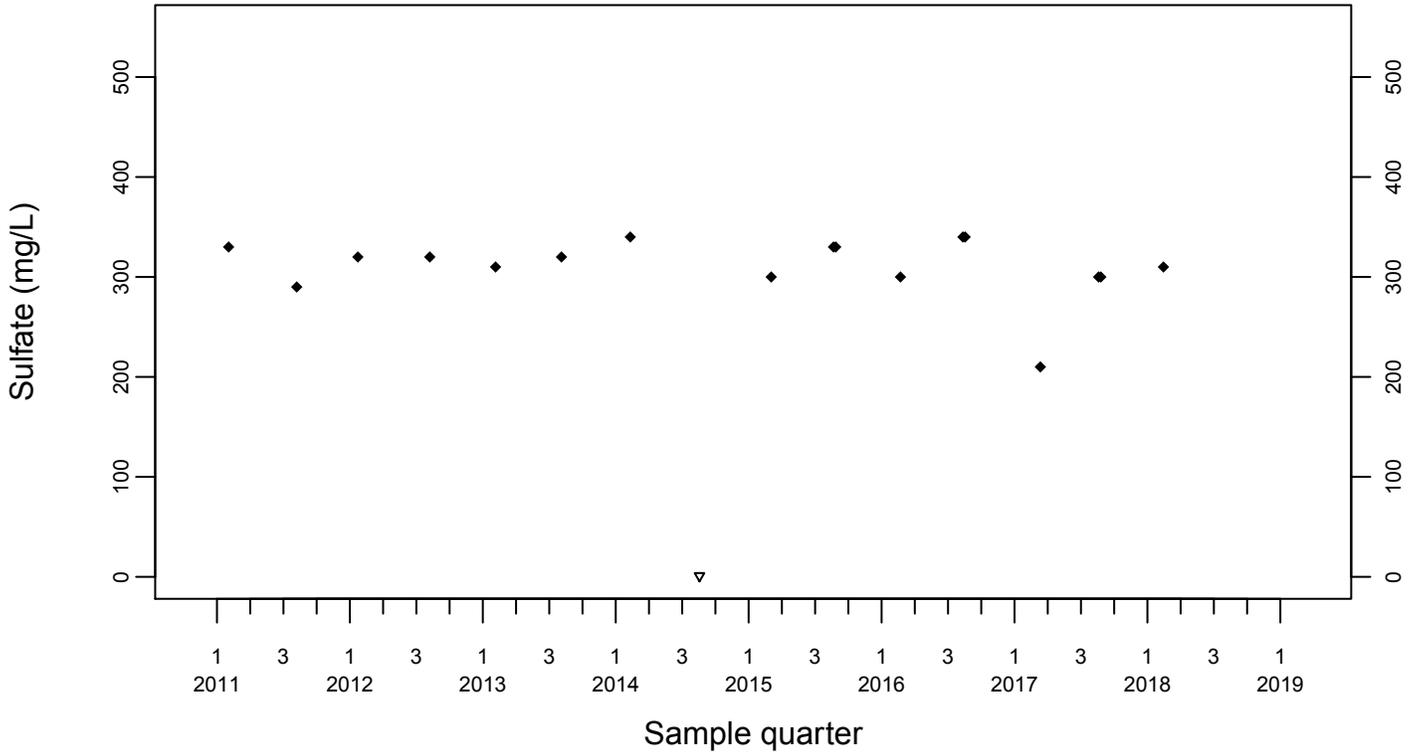
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Sulfate (mg/L)

Downgradient Monitor Well W-7DS

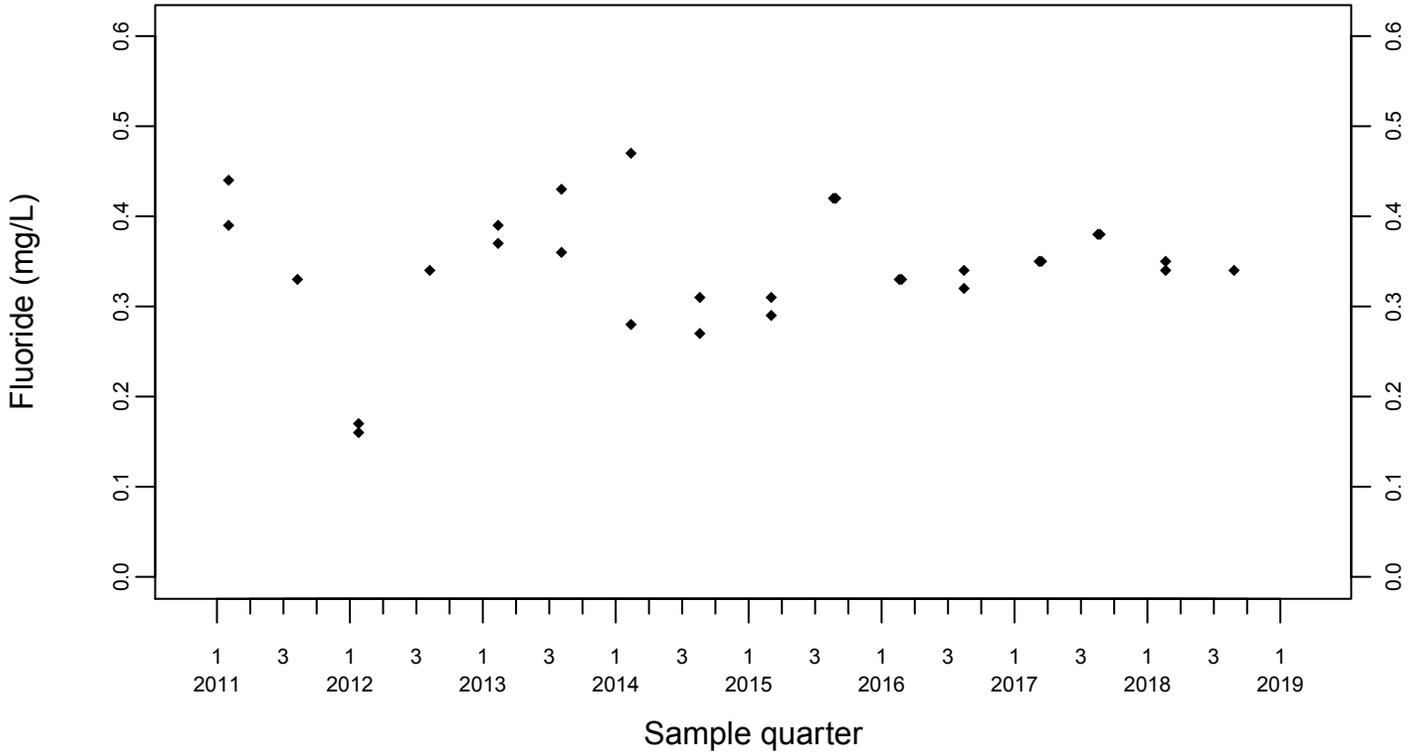
◆ Above RL
▽ Below RL



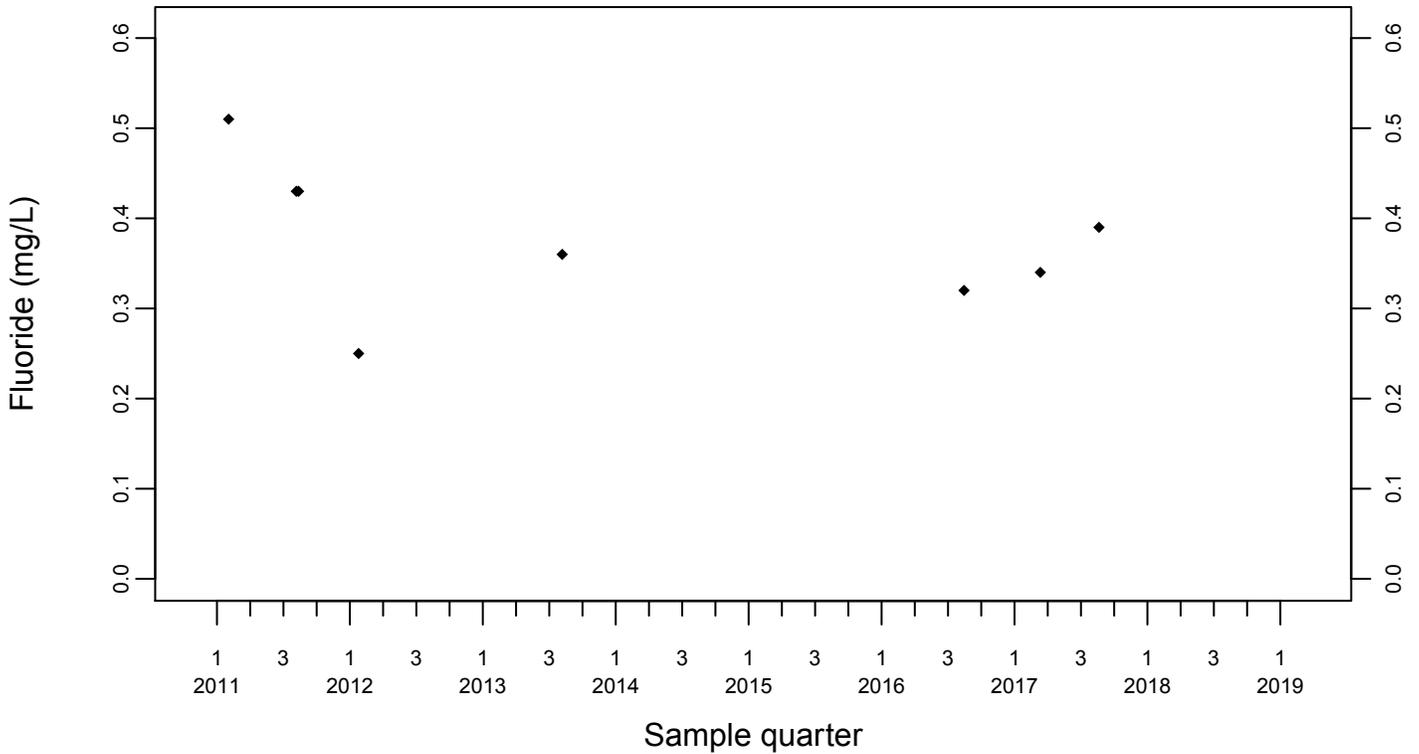
Sewage Ponds Ground Water Fluoride (mg/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



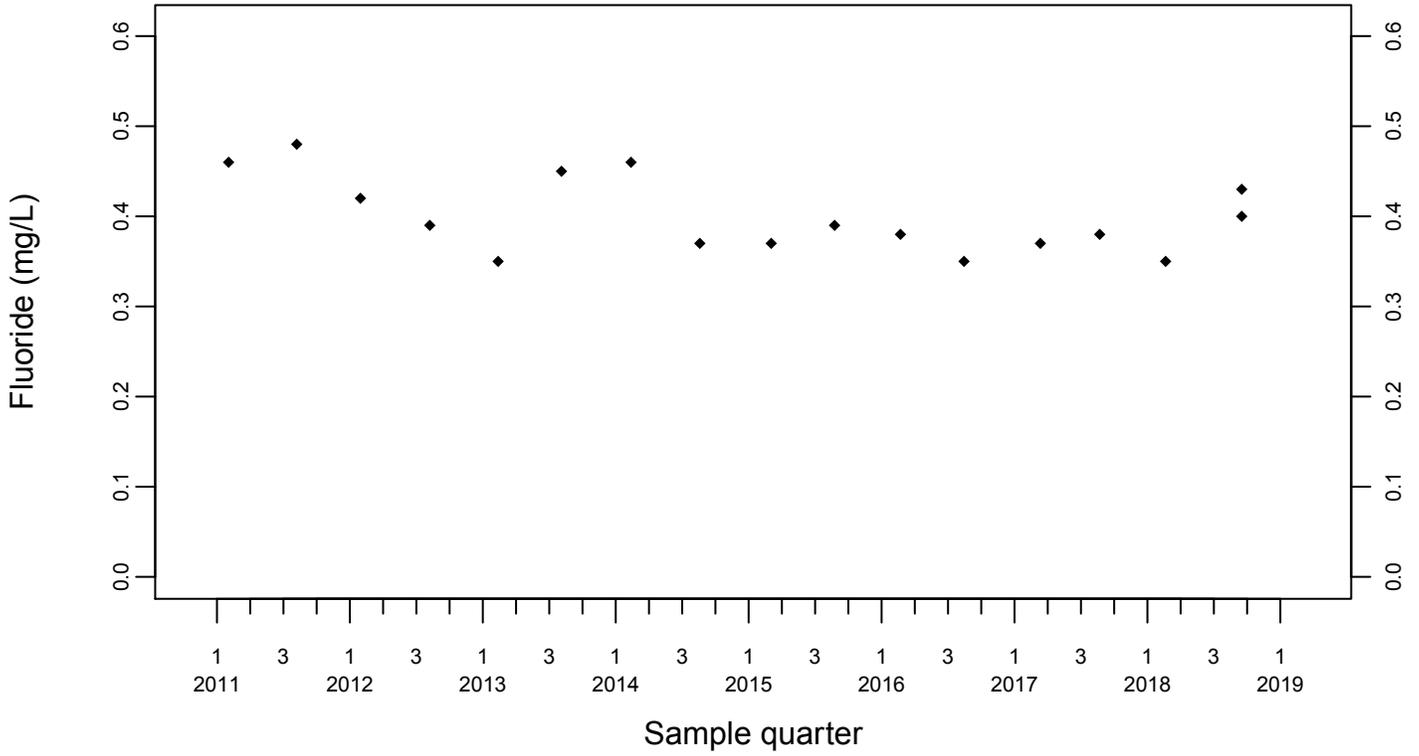
Upgradient Monitor Well W-7PS



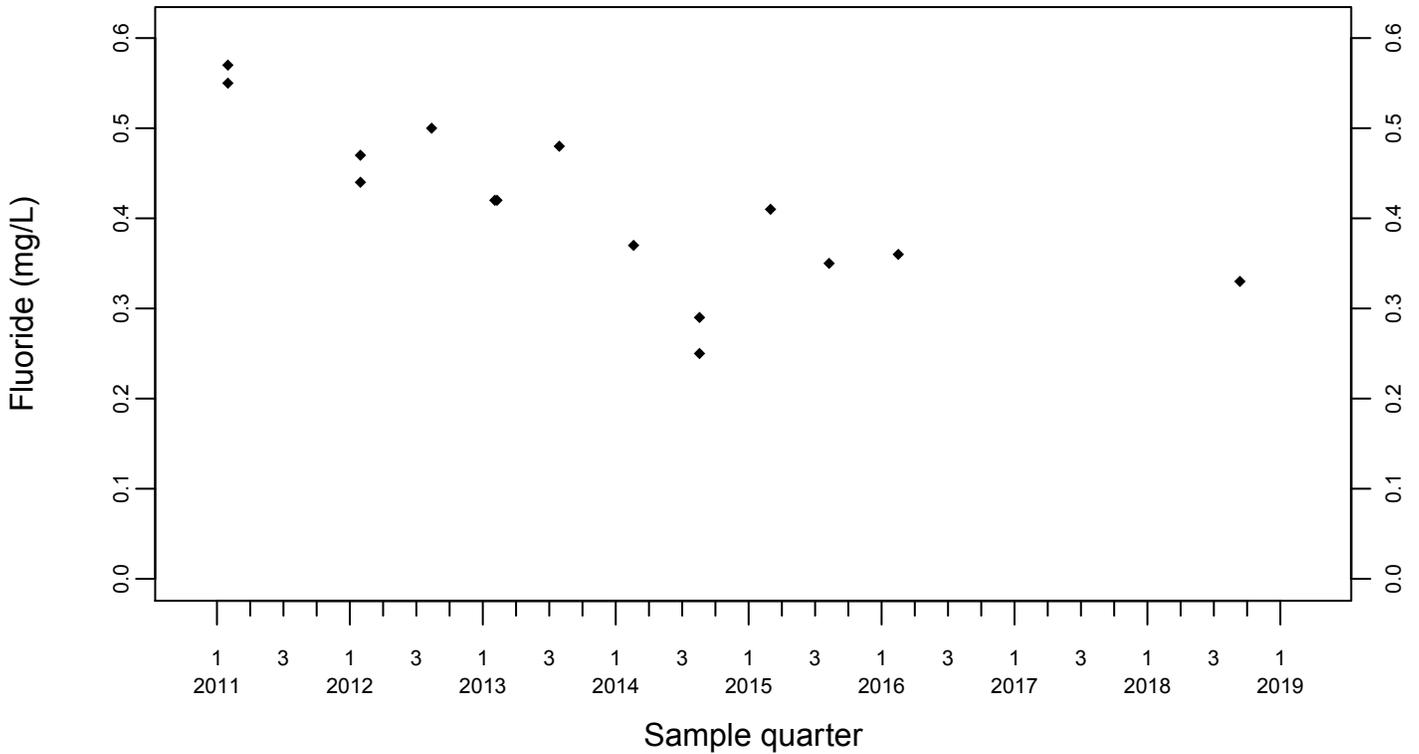
Sewage Ponds Ground Water Fluoride (mg/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



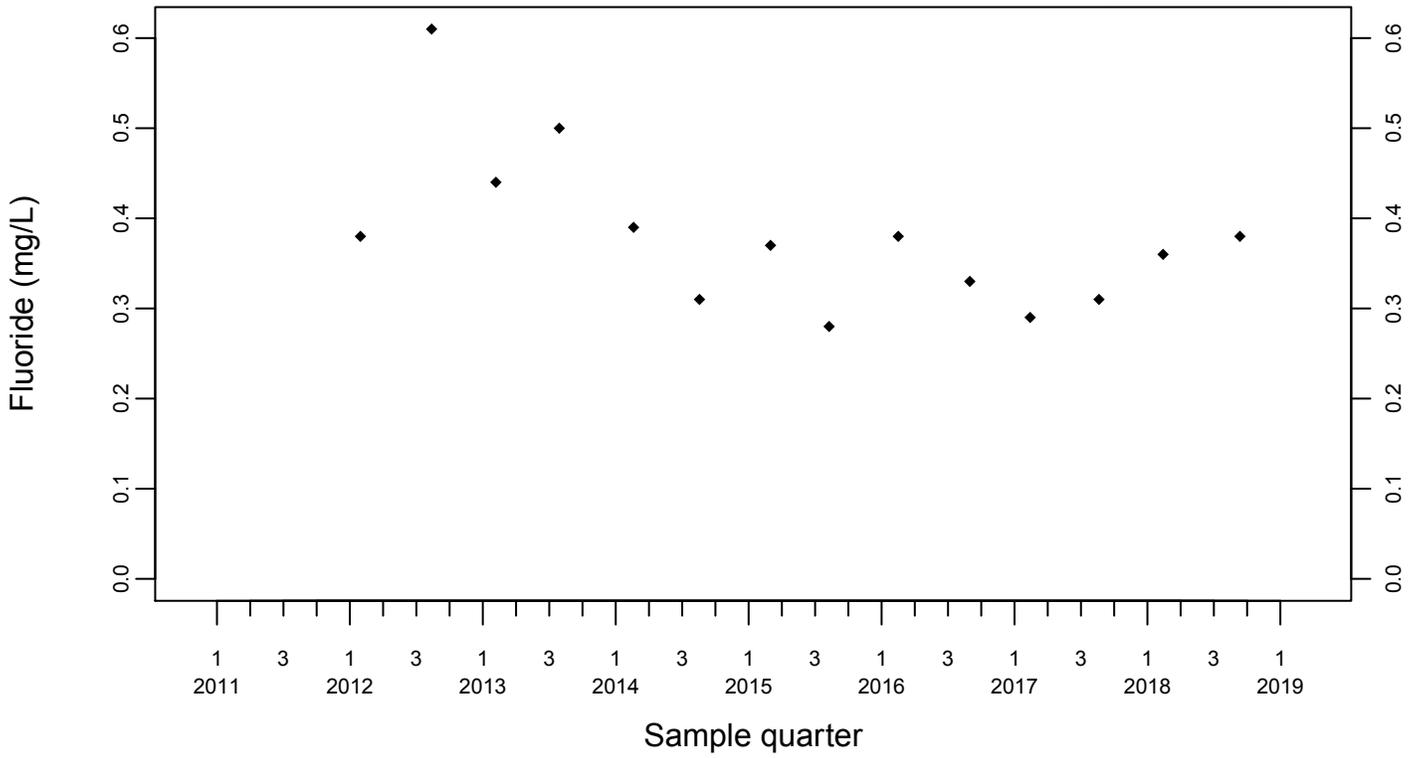
Downgradient Monitor Well W-25N-23



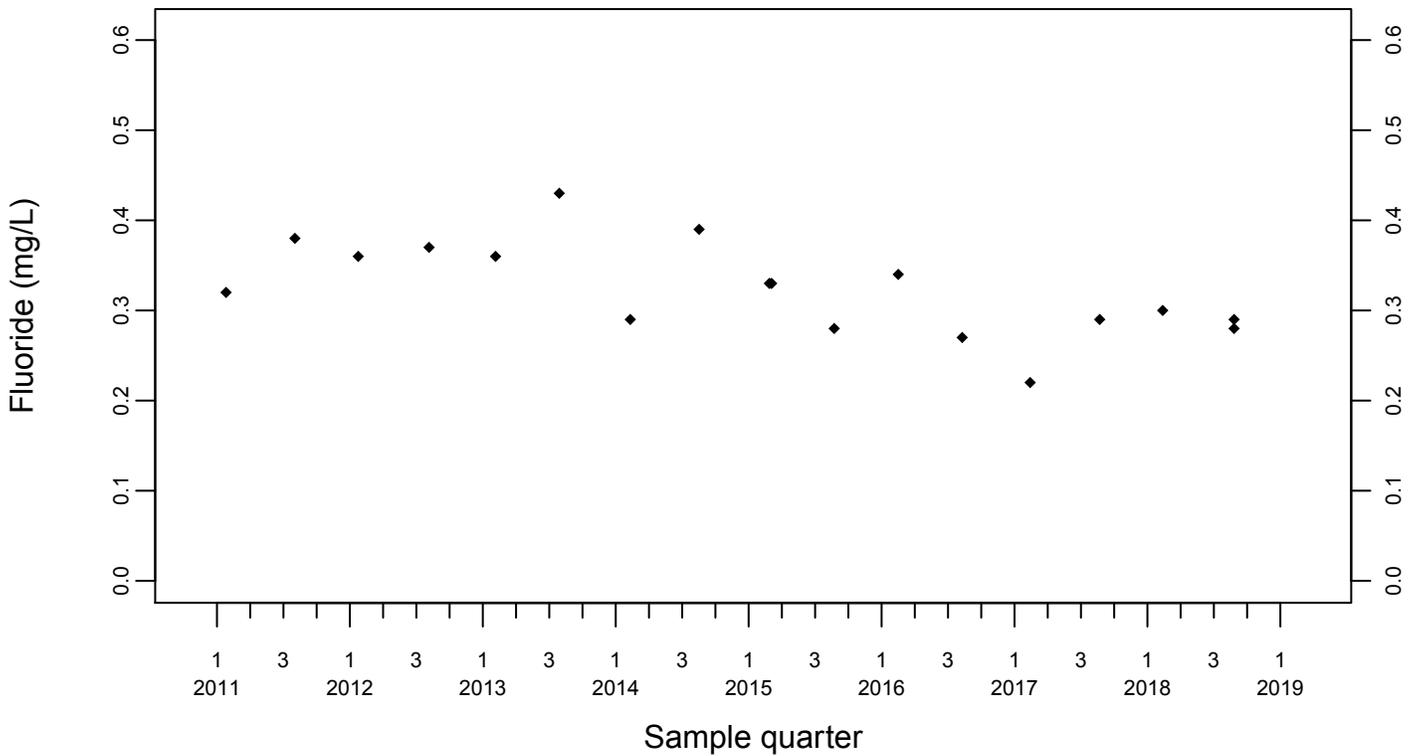
Sewage Ponds Ground Water Fluoride (mg/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
▽ Below RL



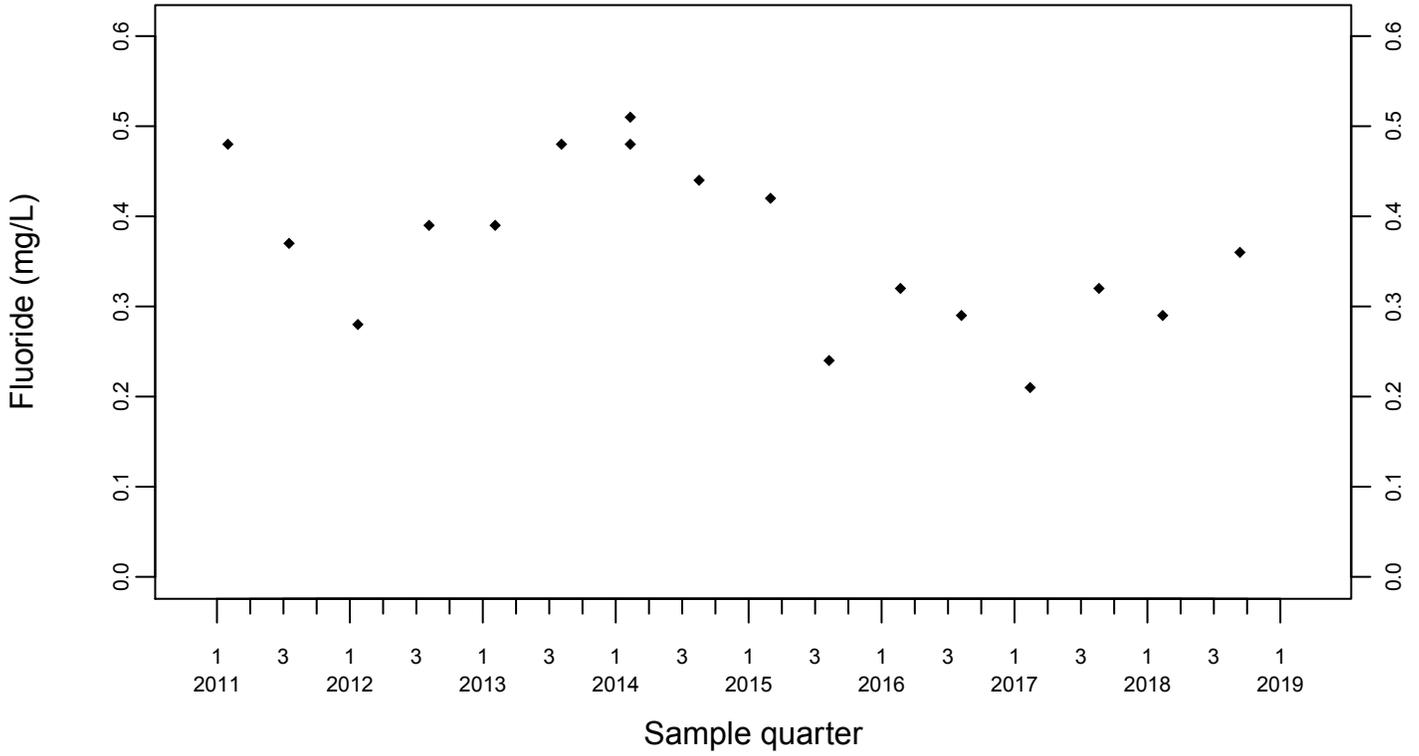
Downgradient Monitor Well W-26R-01



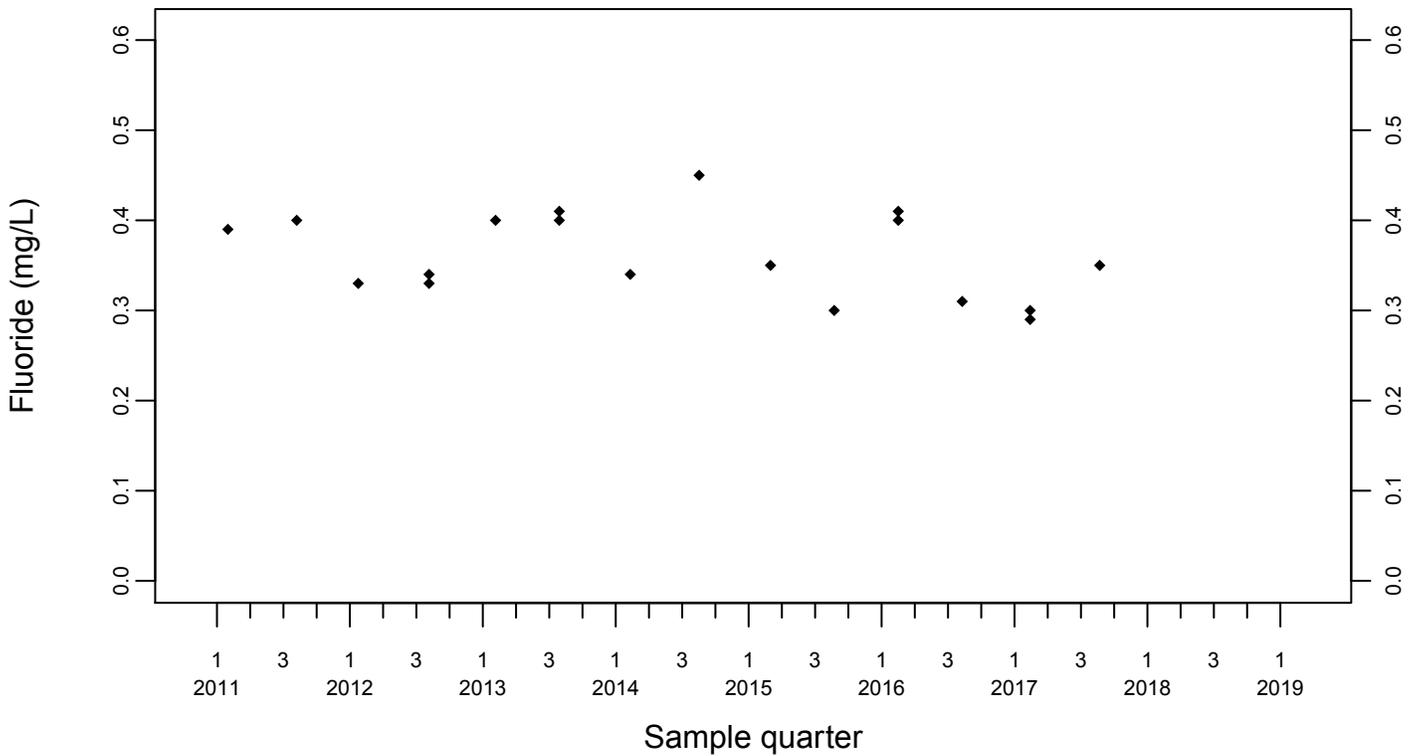
Sewage Ponds Ground Water
 Fluoride (mg/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
 ▼ Below RL



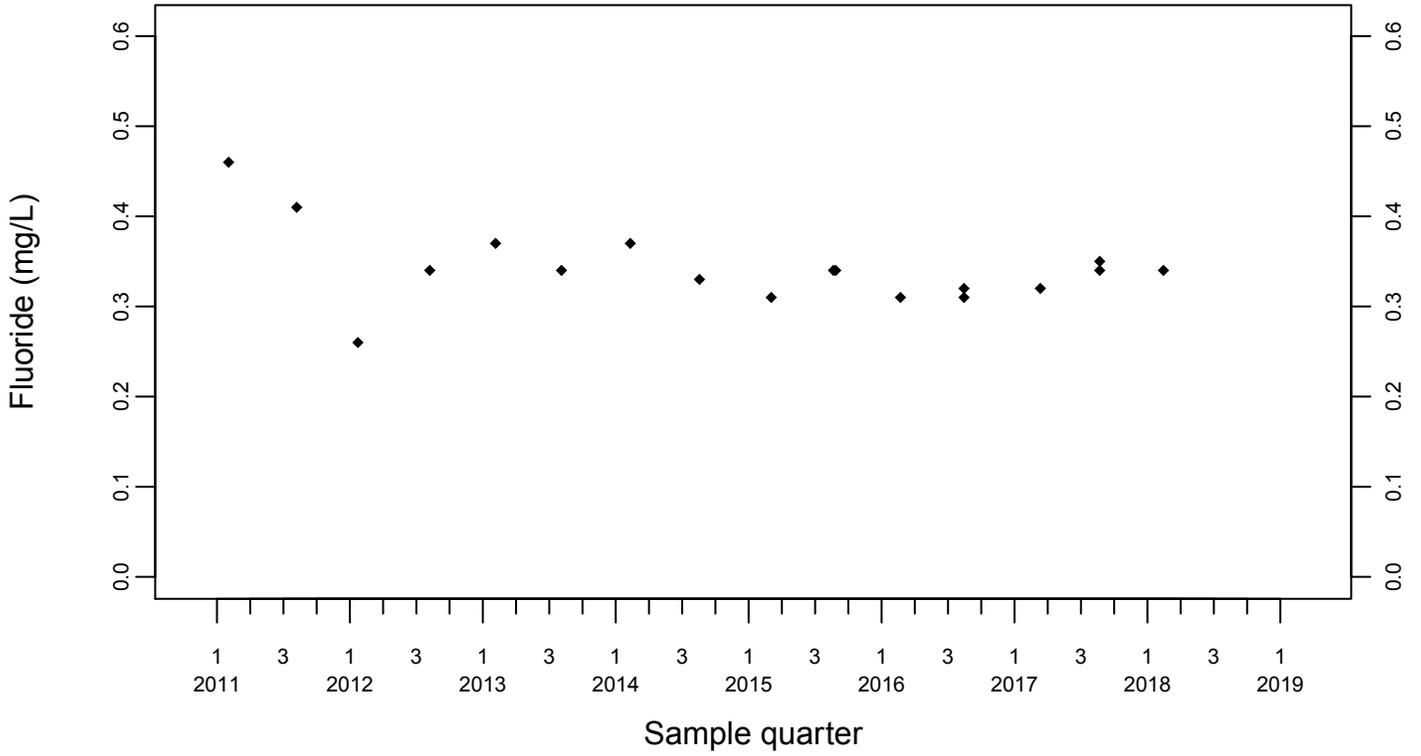
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water Fluoride (mg/L)

Downgradient Monitor Well W-7DS

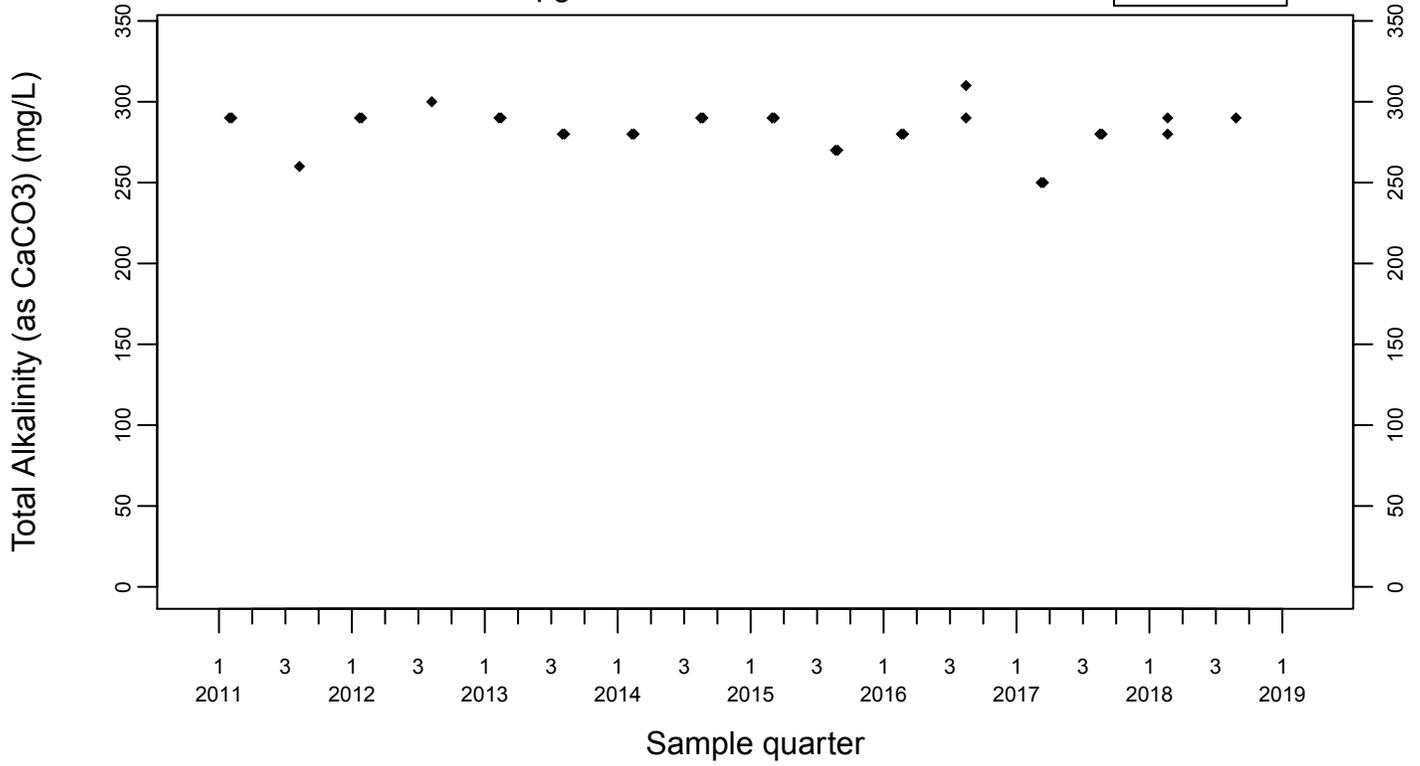
◆ Above RL
▽ Below RL



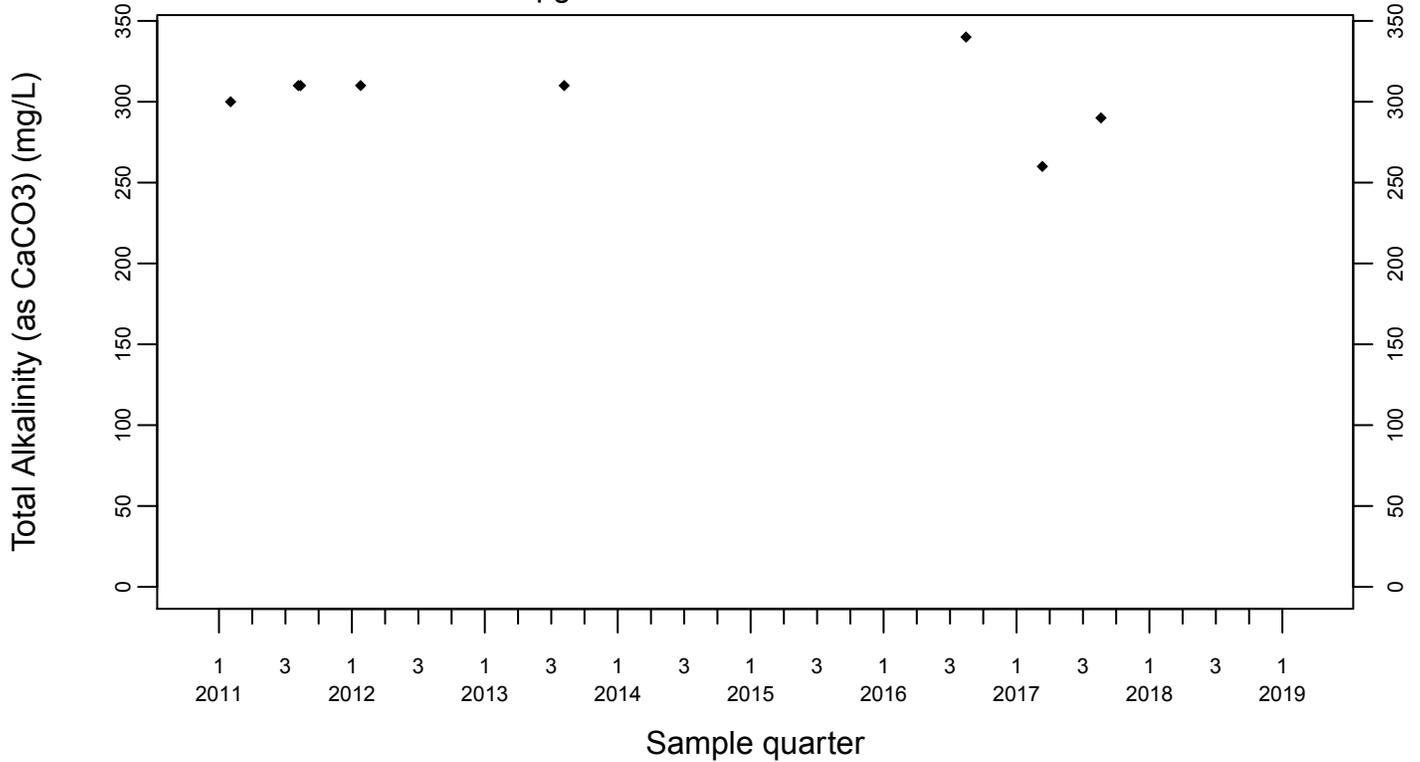
Sewage Ponds Ground Water Total Alkalinity (as CaCO₃) (mg/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



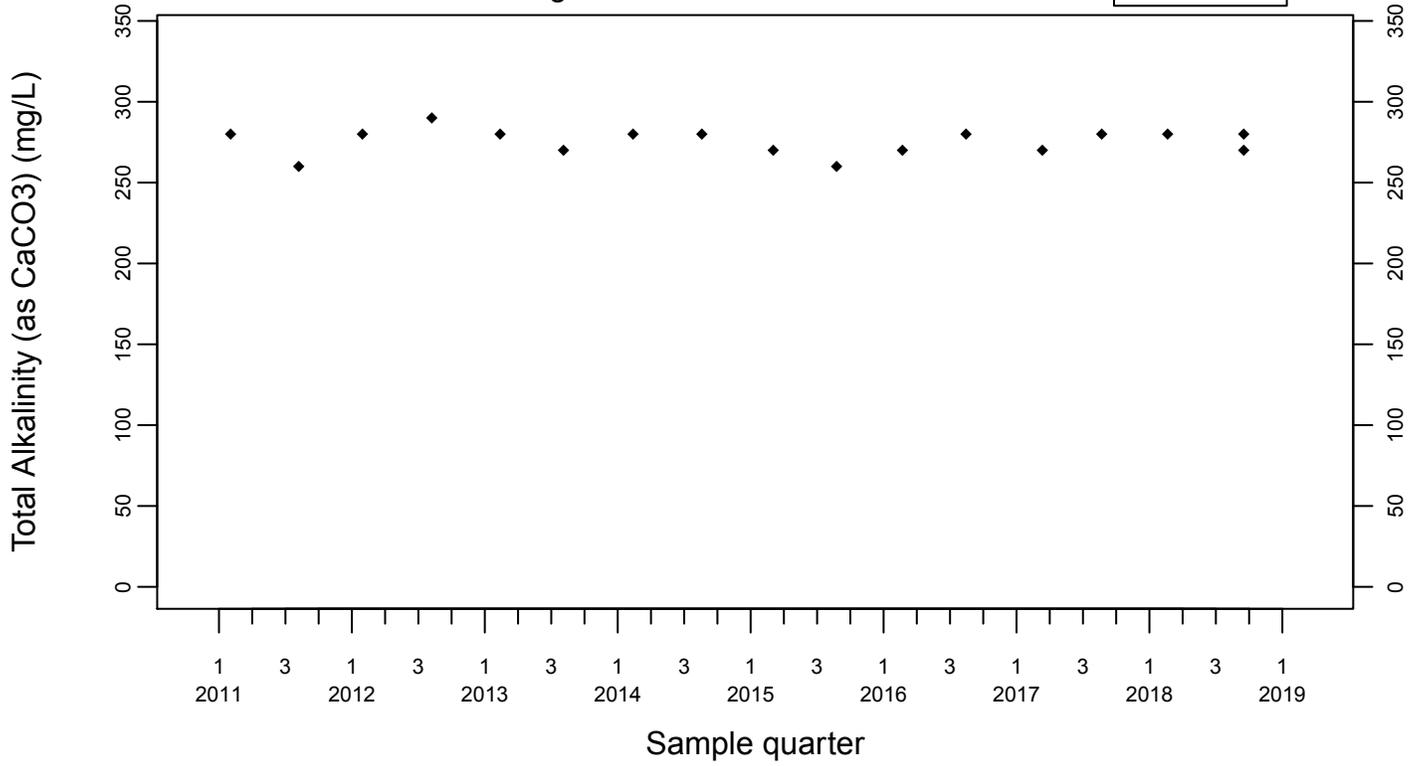
Upgradient Monitor Well W-7PS



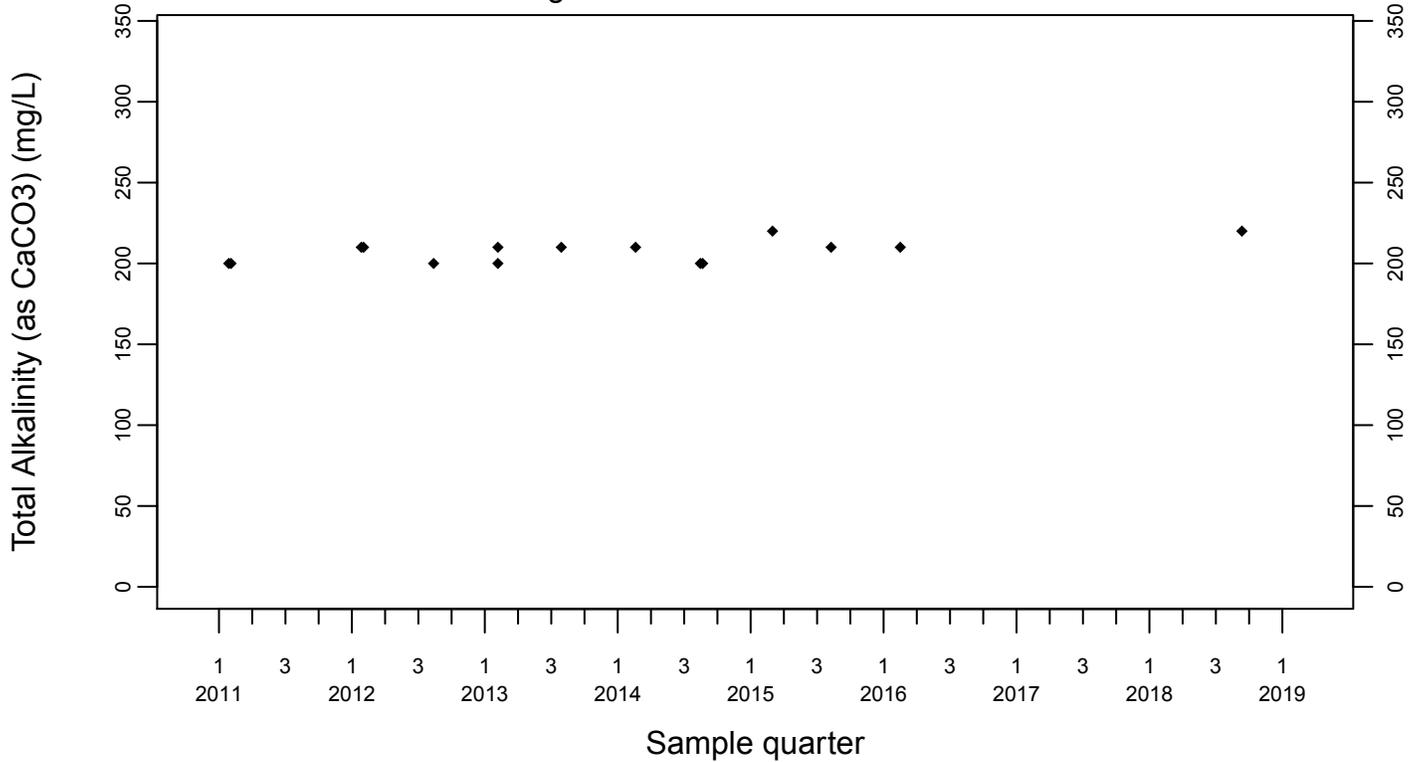
Sewage Ponds Ground Water Total Alkalinity (as CaCO₃) (mg/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



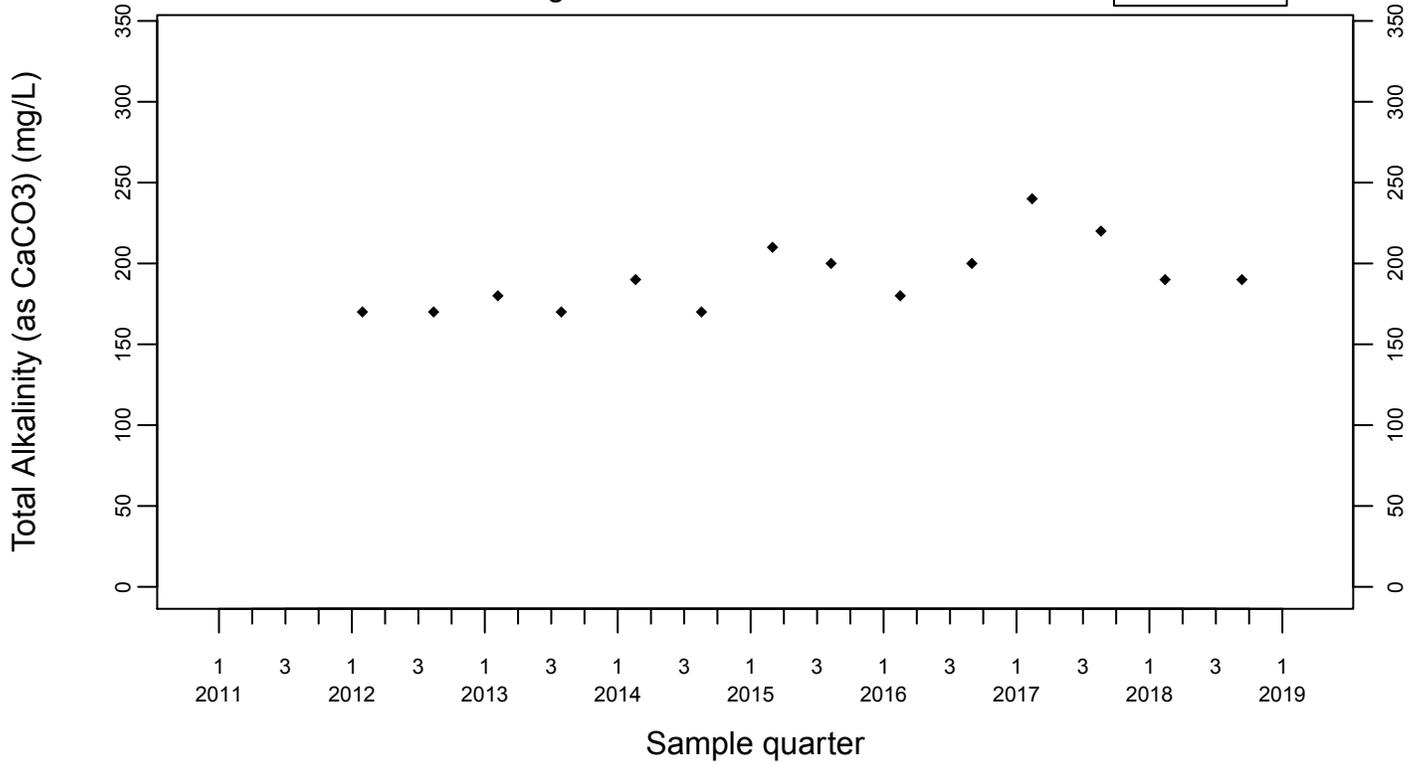
Downgradient Monitor Well W-25N-23



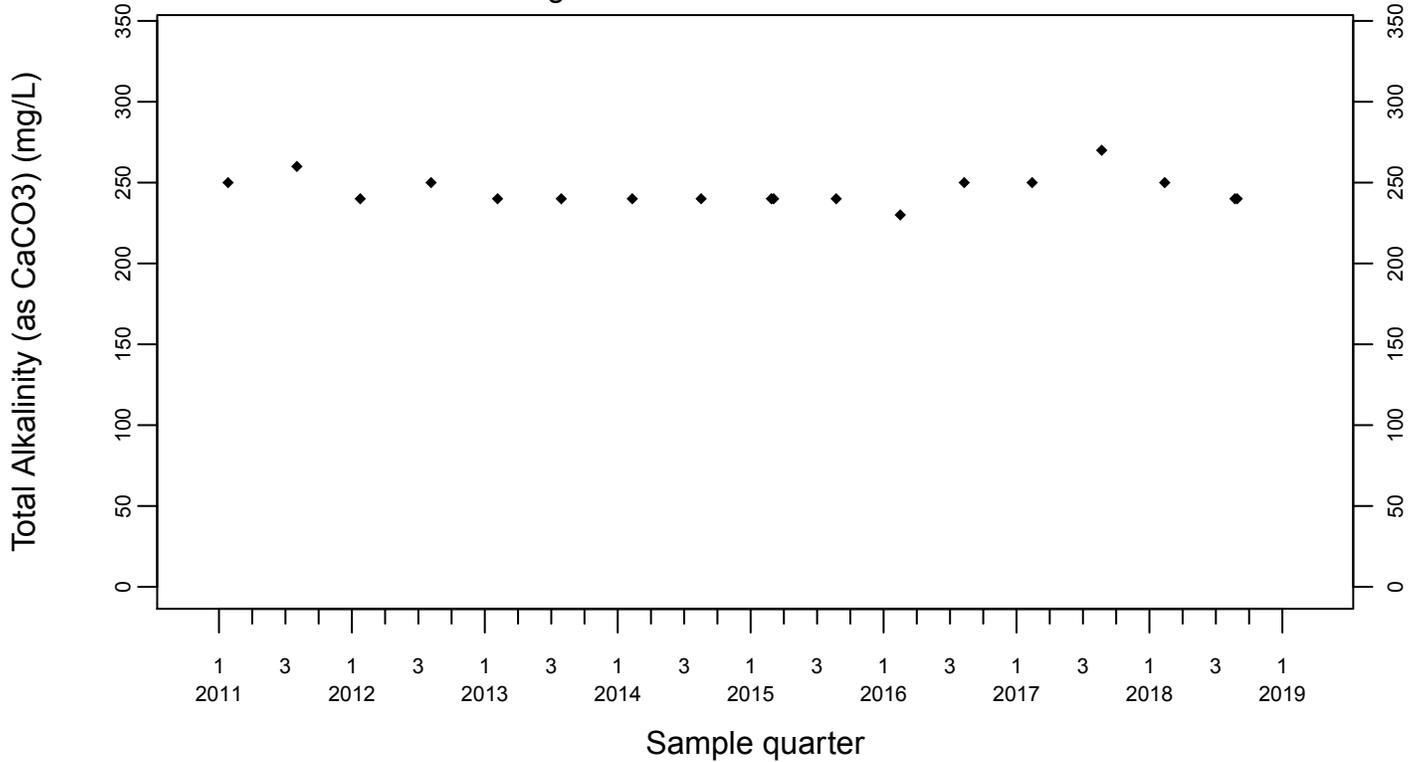
Sewage Ponds Ground Water Total Alkalinity (as CaCO₃) (mg/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
▽ Below RL



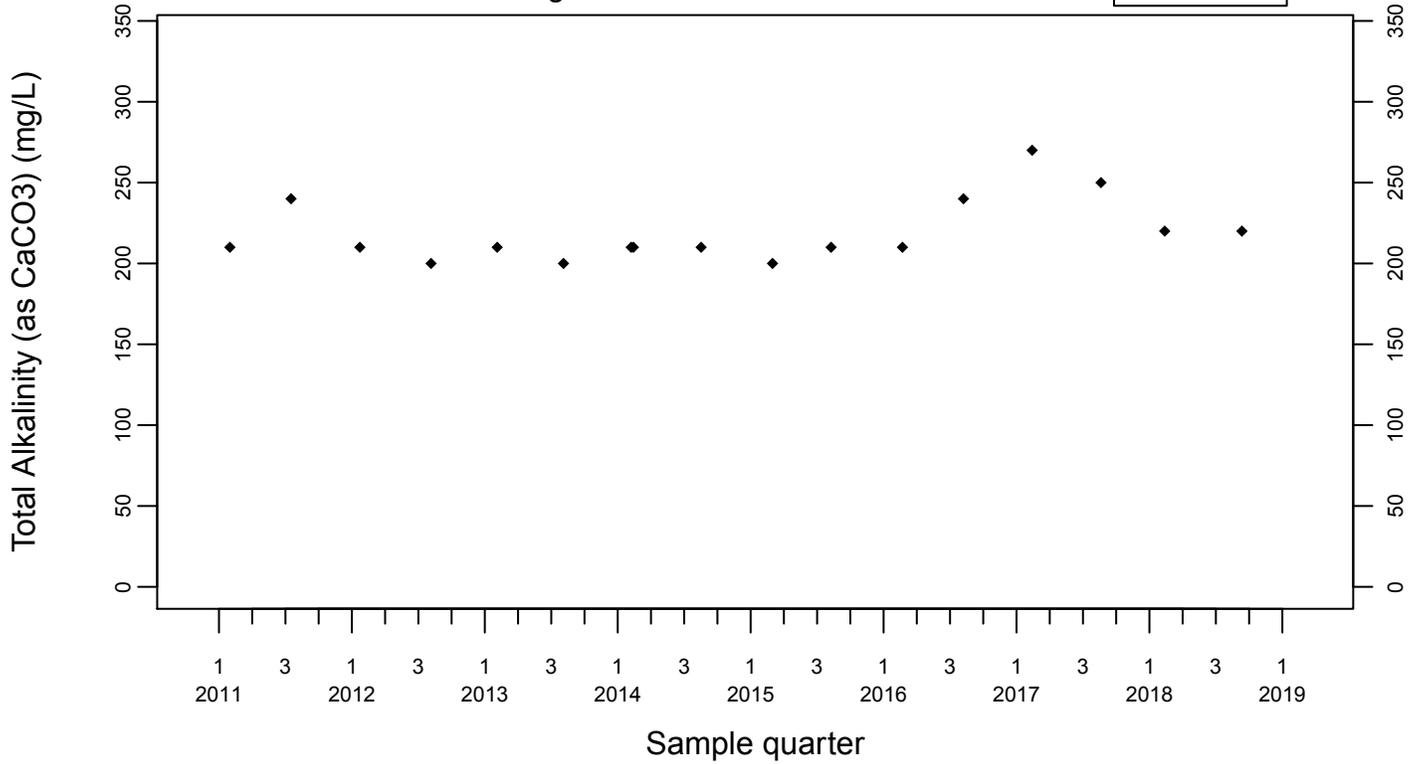
Downgradient Monitor Well W-26R-01



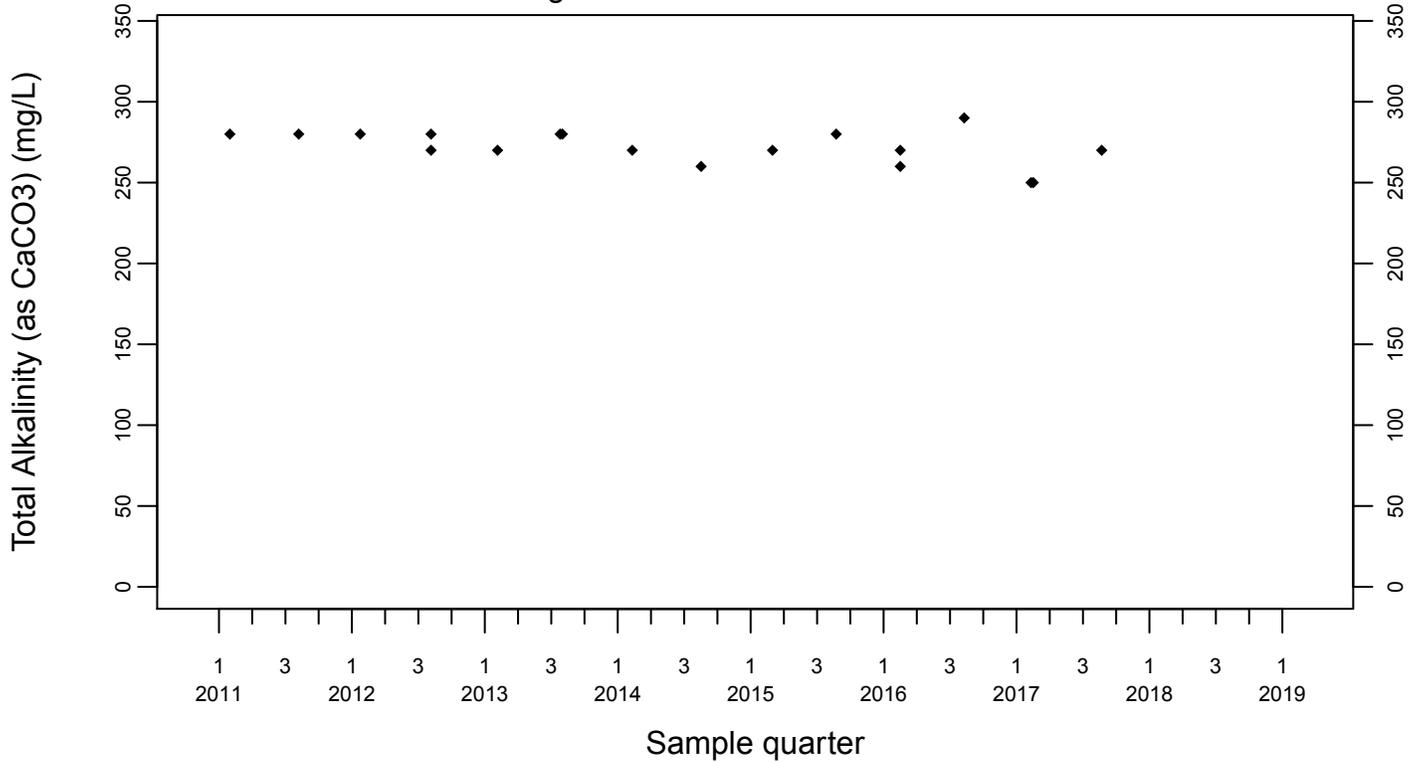
Sewage Ponds Ground Water Total Alkalinity (as CaCO₃) (mg/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



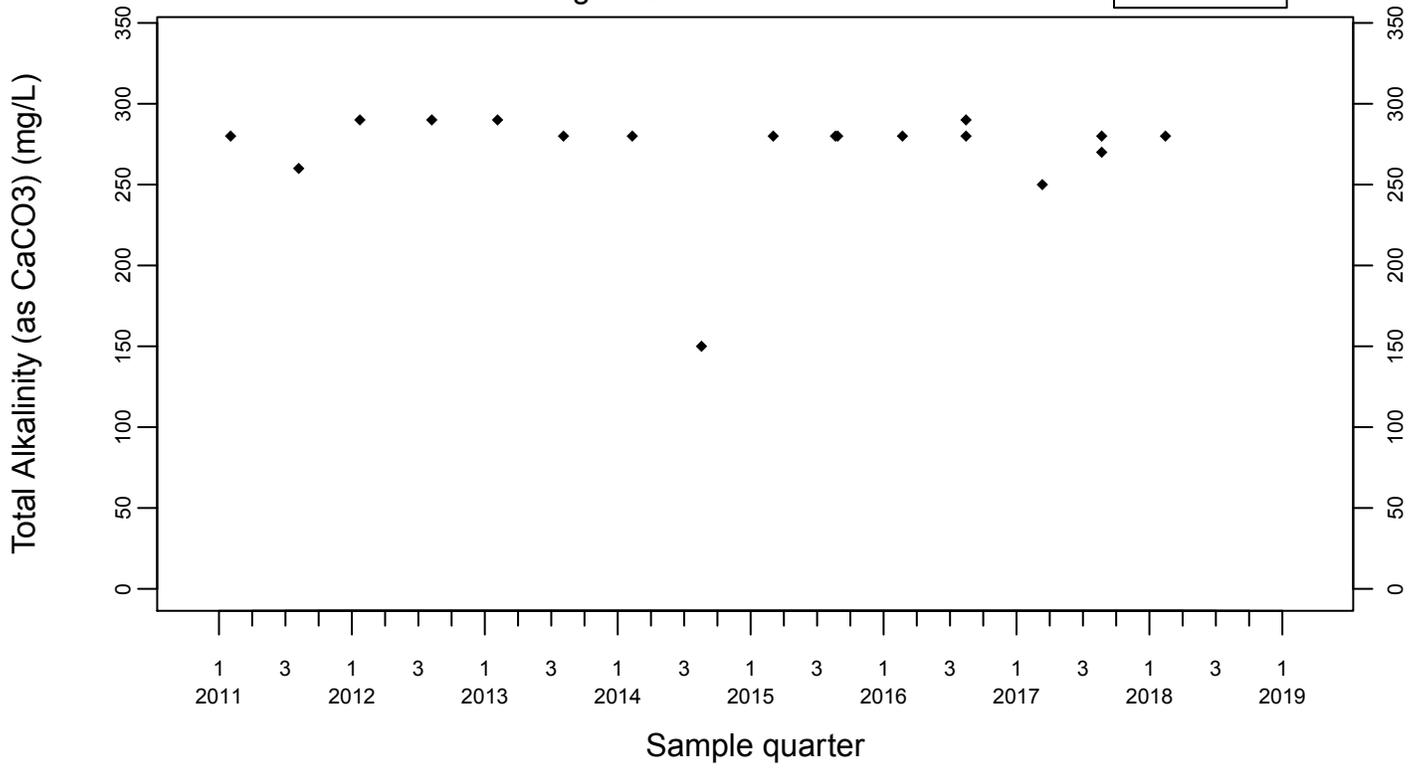
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water
Total Alkalinity (as CaCO₃) (mg/L)

Downgradient Monitor Well W-7DS

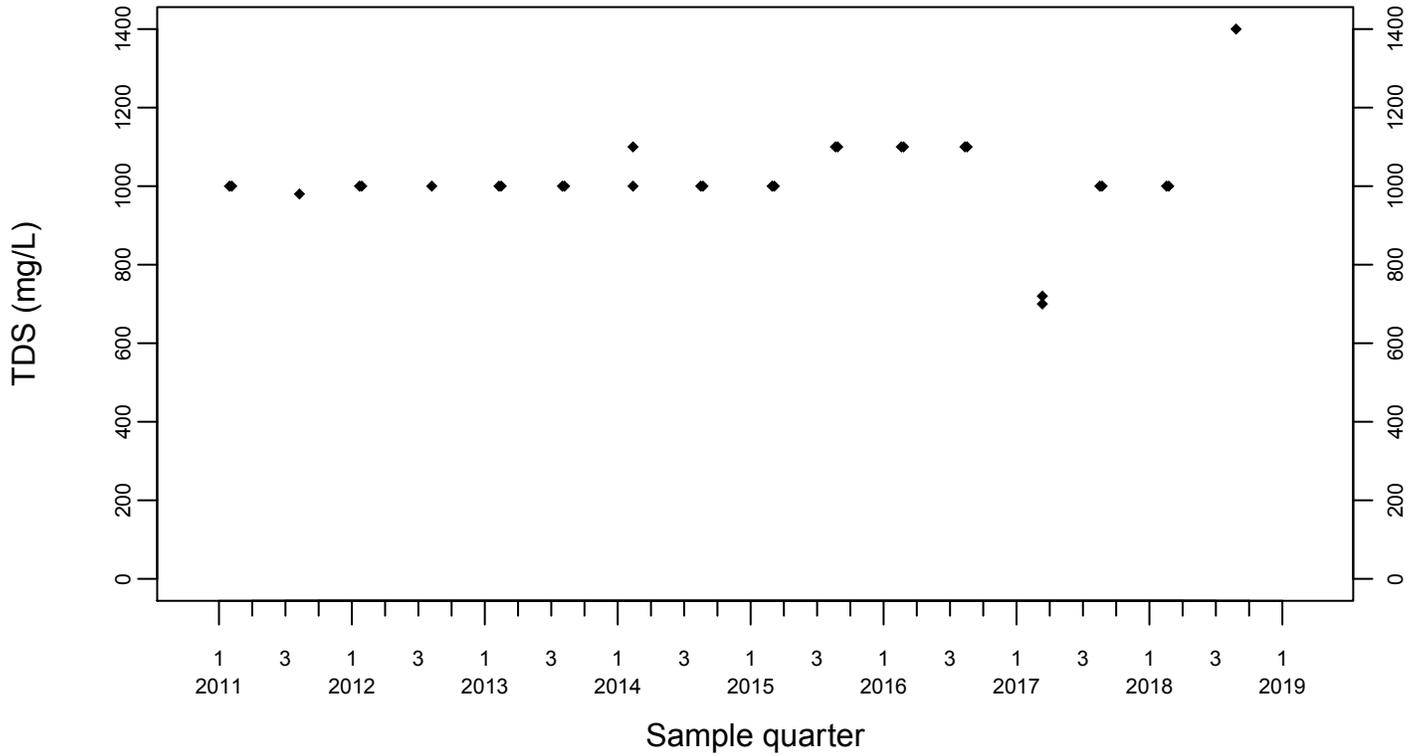
◆ Above RL
▽ Below RL



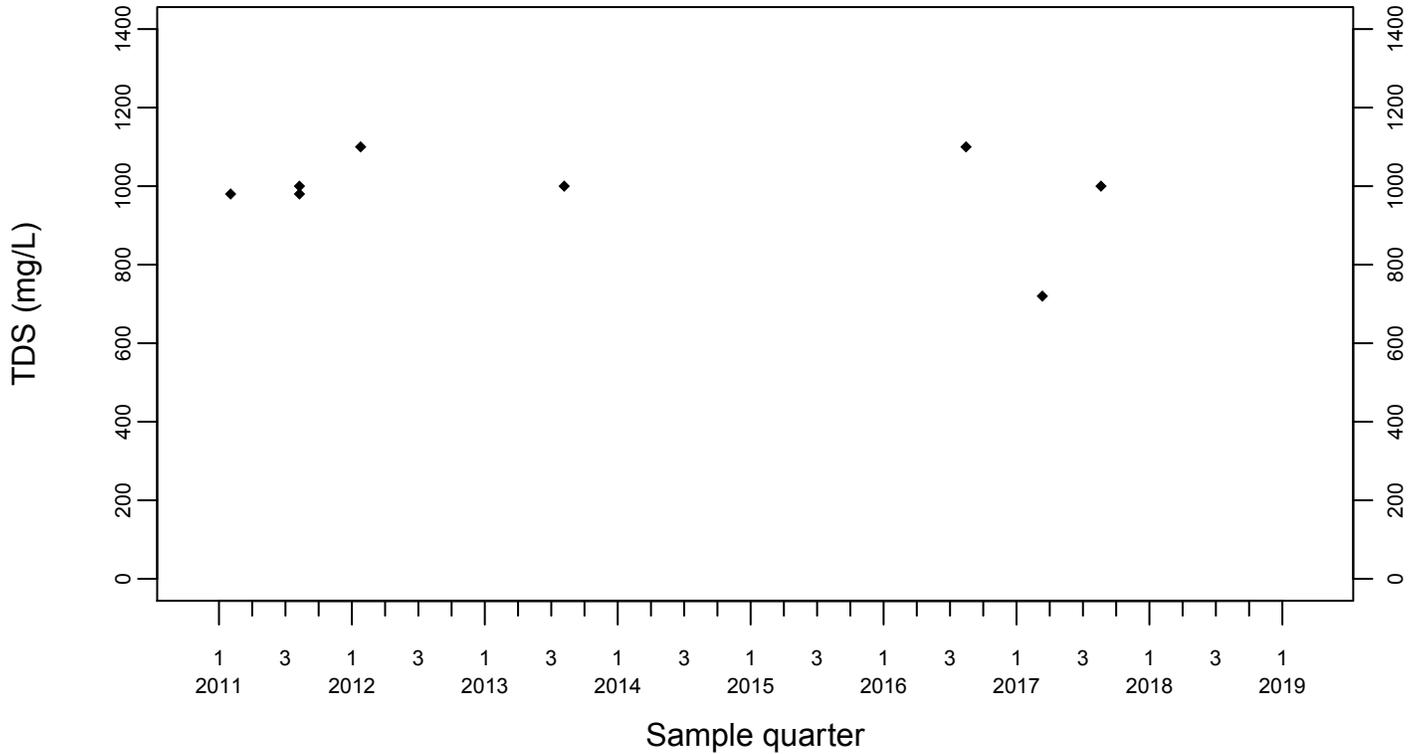
Sewage Ponds Ground Water TDS (mg/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



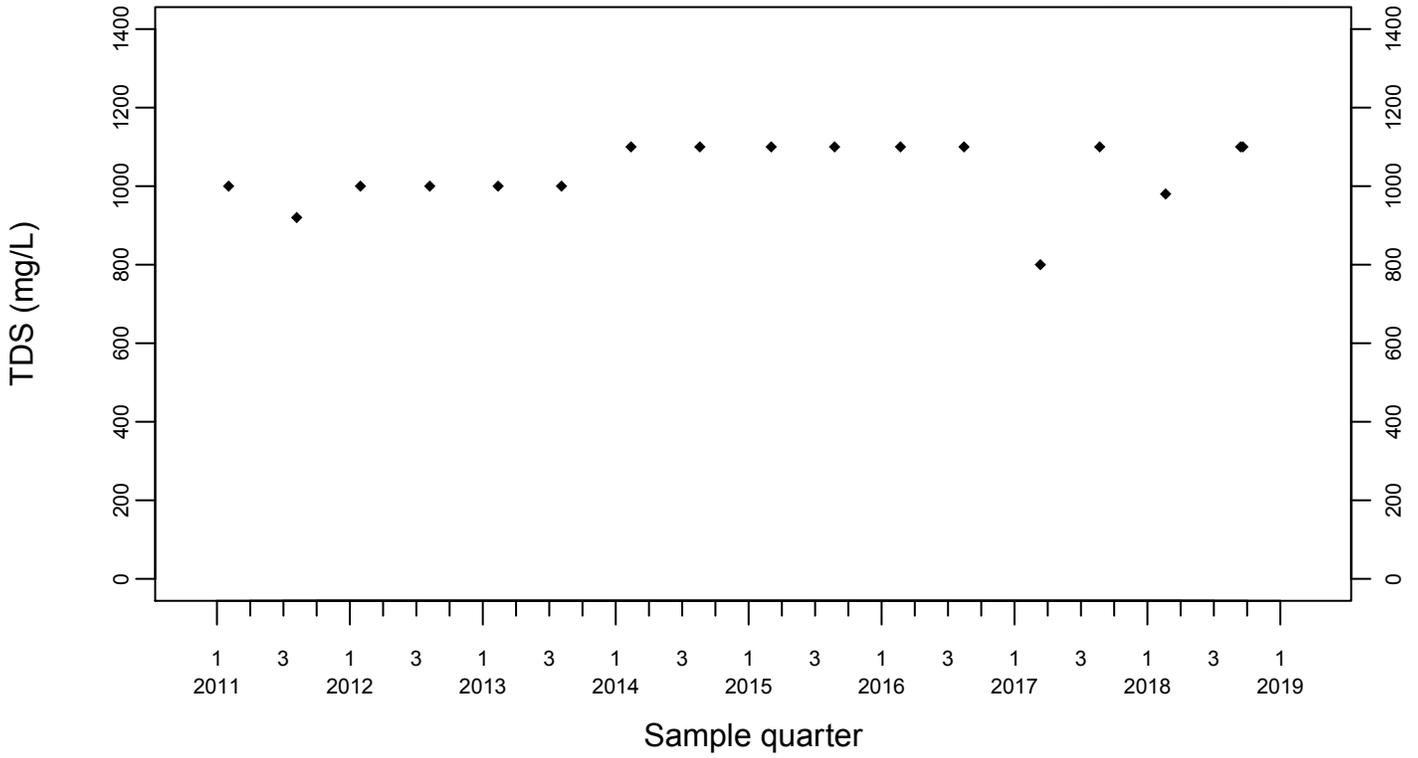
Upgradient Monitor Well W-7PS



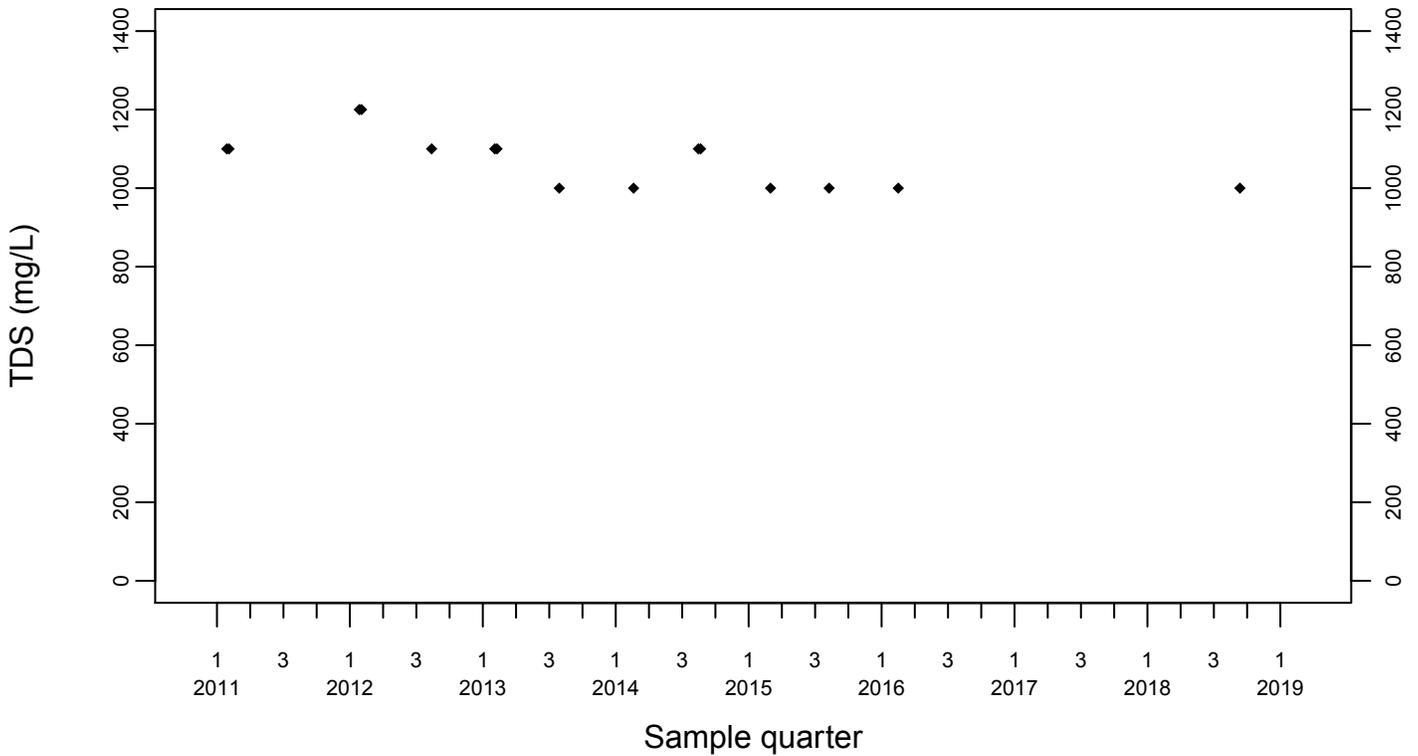
Sewage Ponds Ground Water TDS (mg/L)

Crossgradient Monitor Well W-35A-04

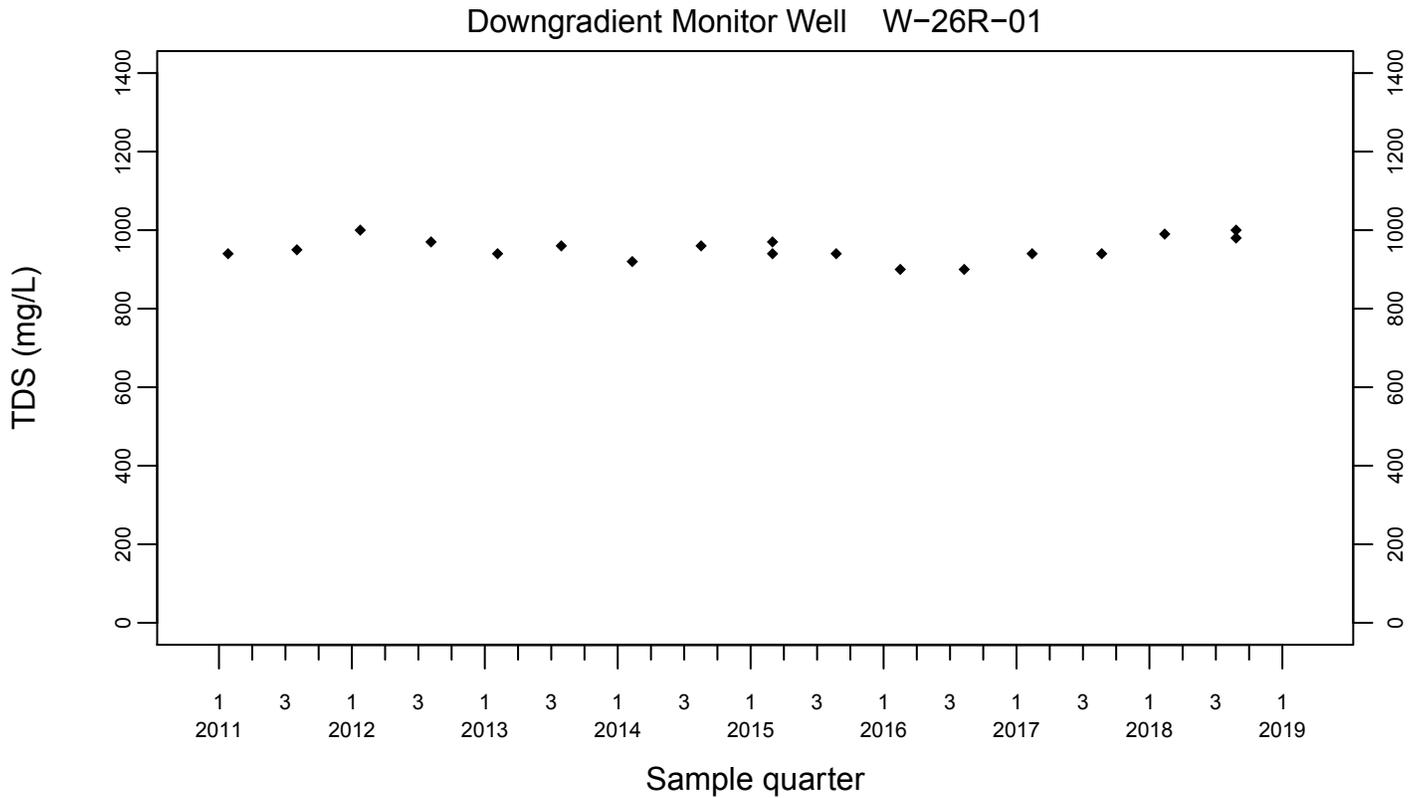
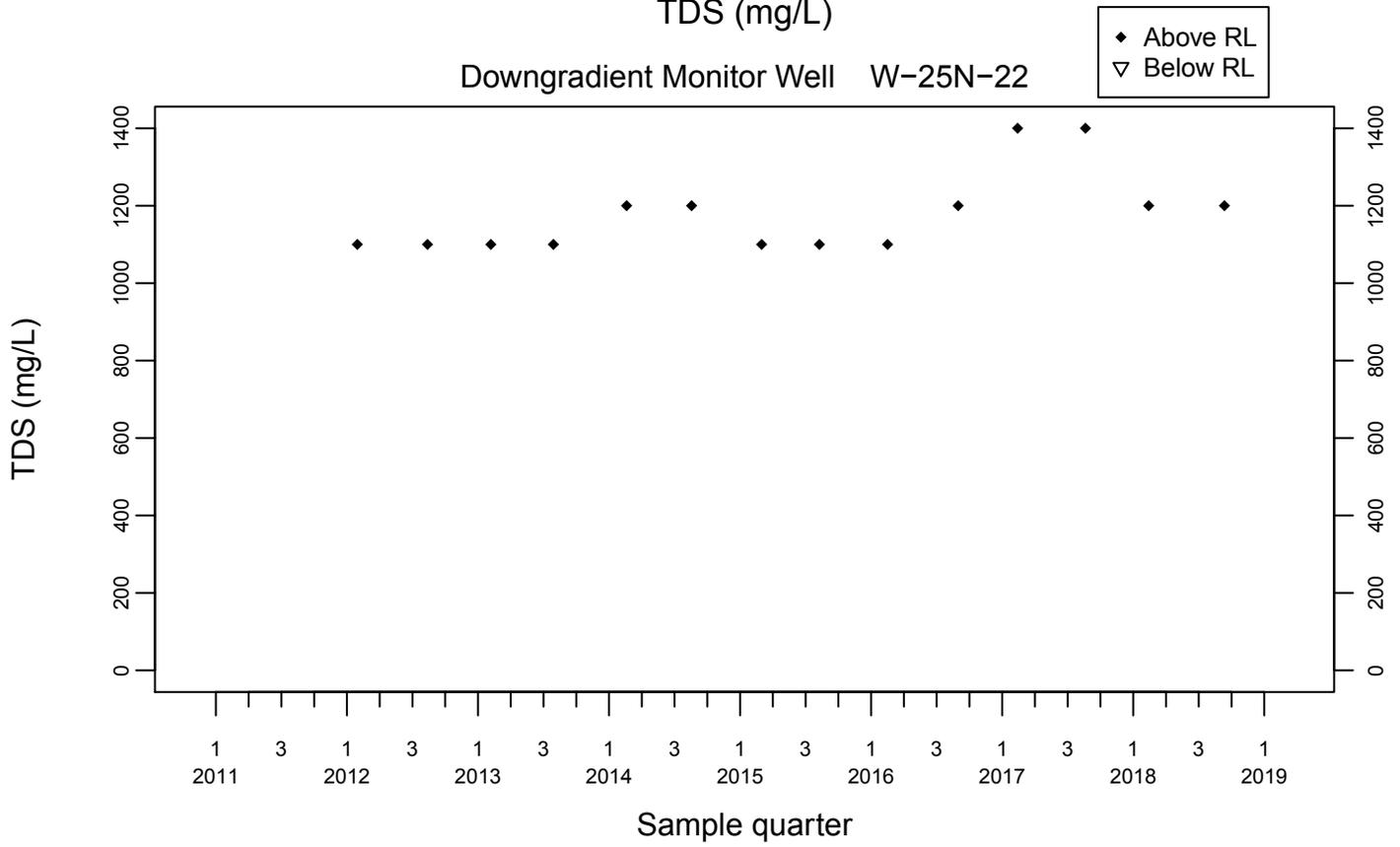
◆ Above RL
▽ Below RL



Downgradient Monitor Well W-25N-23



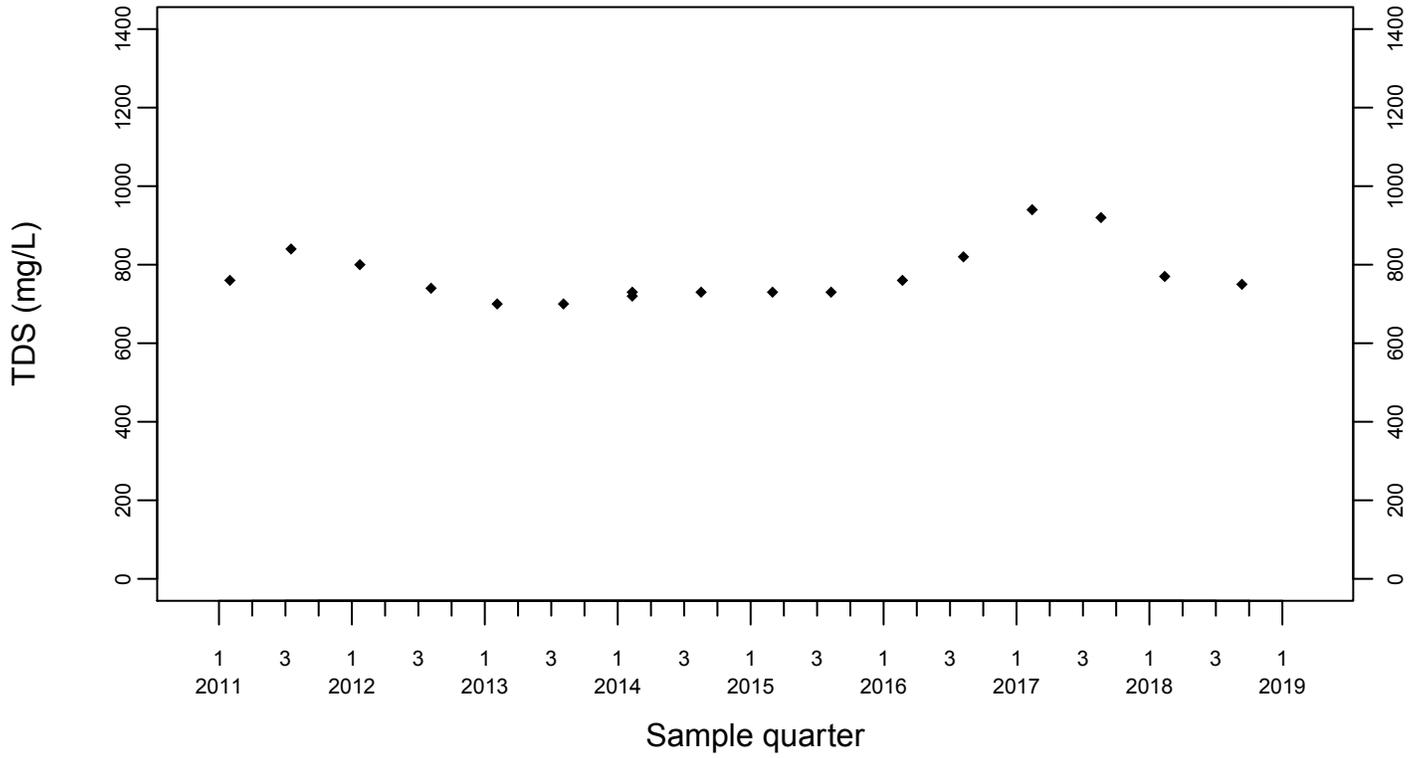
Sewage Ponds Ground Water TDS (mg/L)



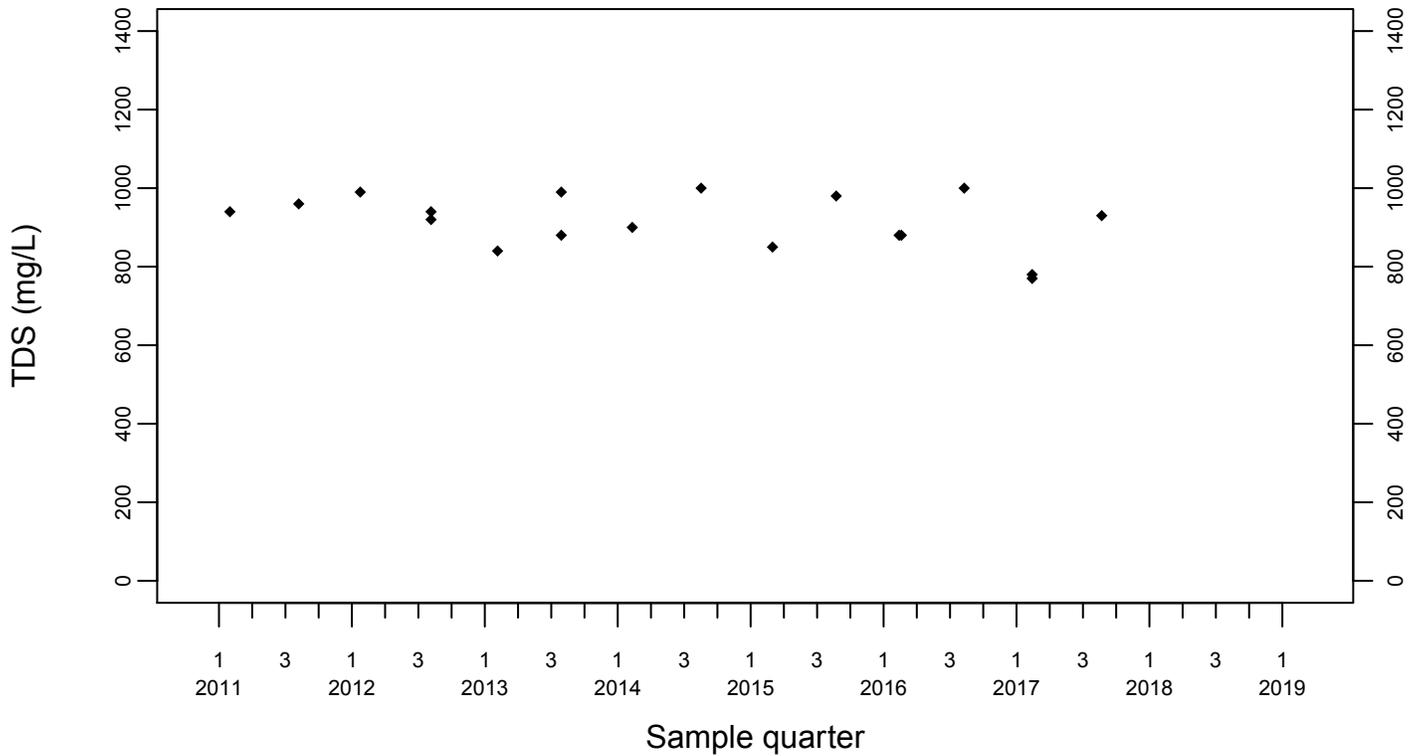
Sewage Ponds Ground Water TDS (mg/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



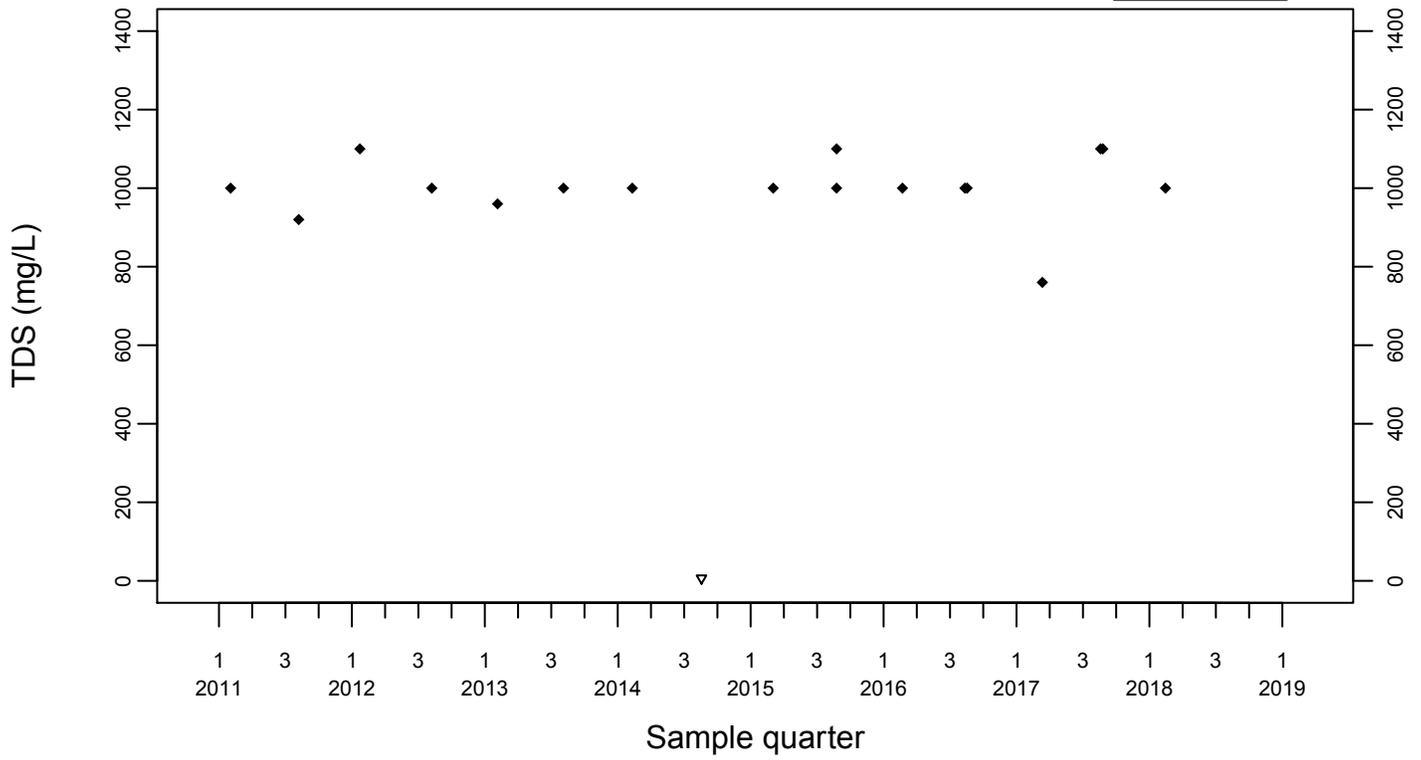
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water TDS (mg/L)

Downgradient Monitor Well W-7DS

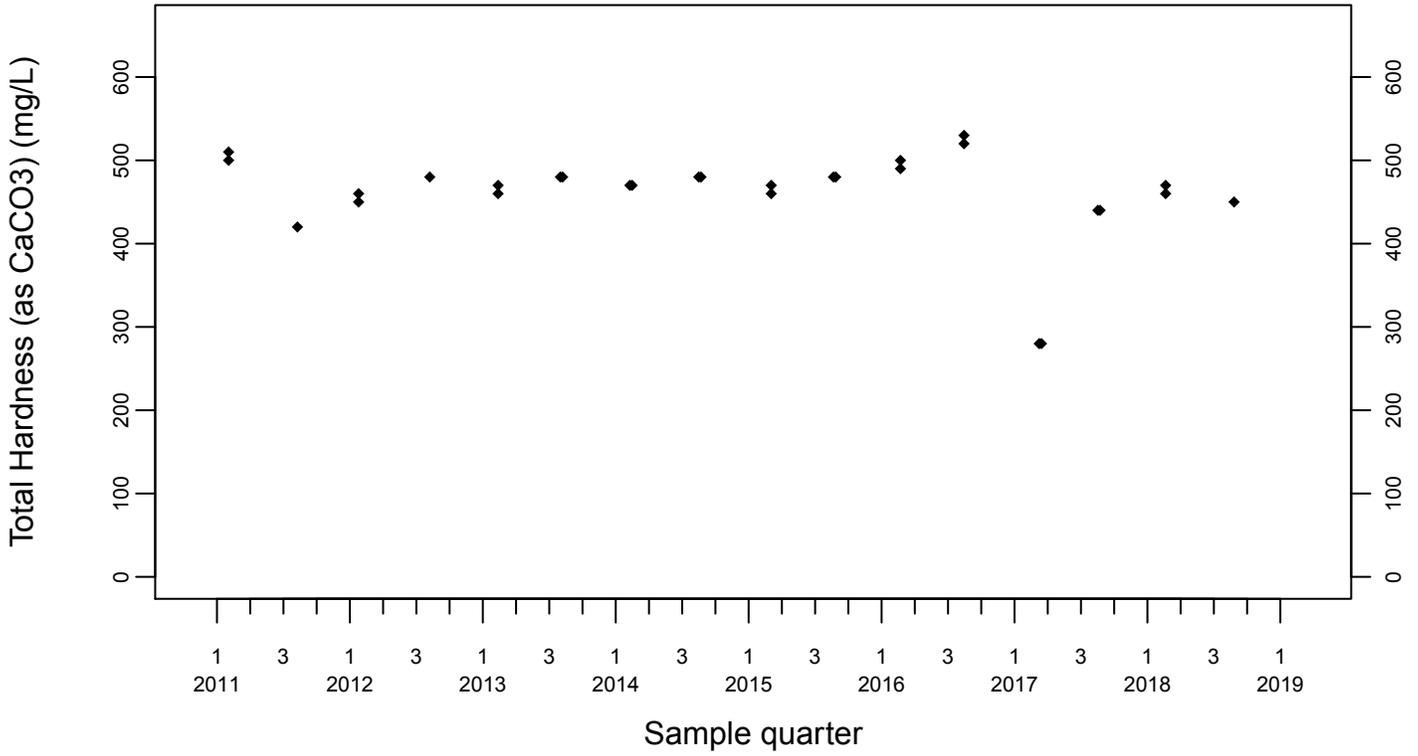
◆ Above RL
▽ Below RL



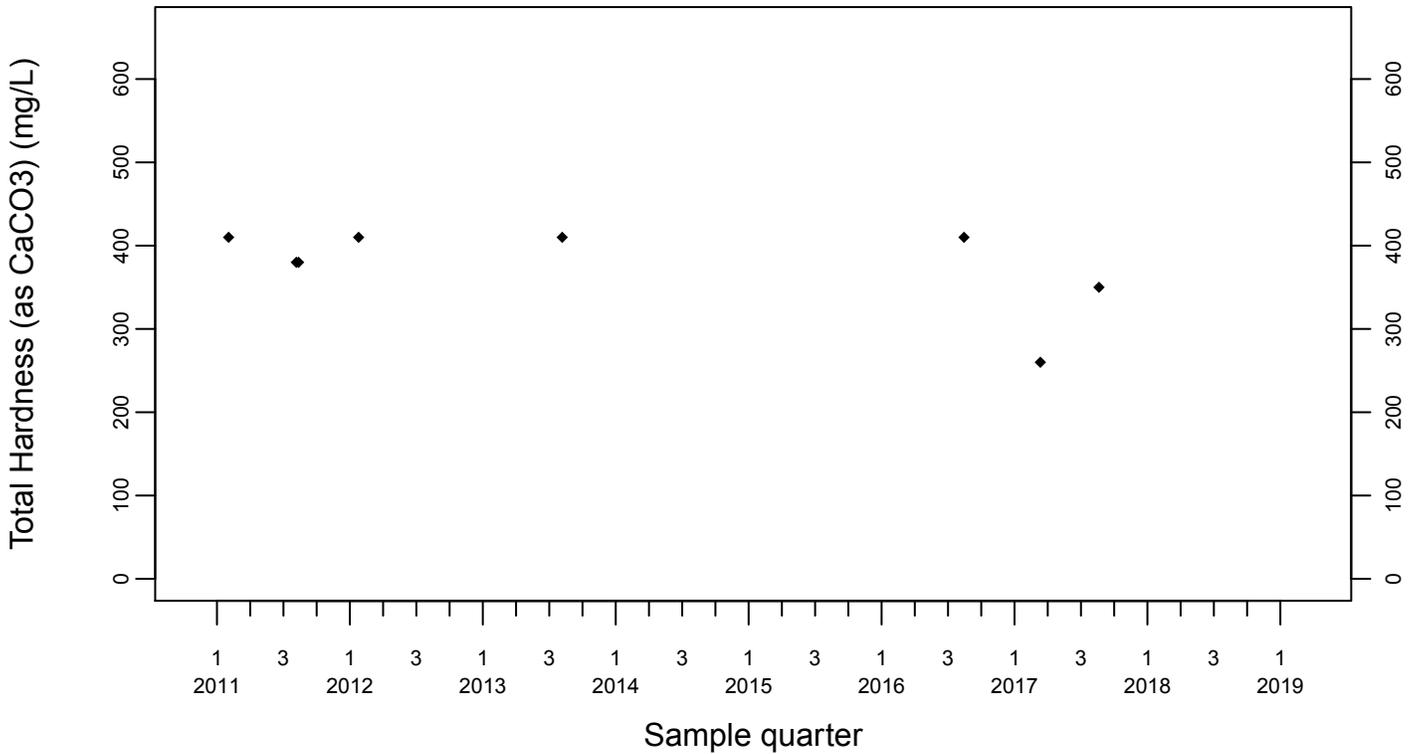
Sewage Ponds Ground Water
 Total Hardness (as CaCO₃) (mg/L)

Upgradient Monitor Well W-7ES

◆ Above RL
 ▼ Below RL



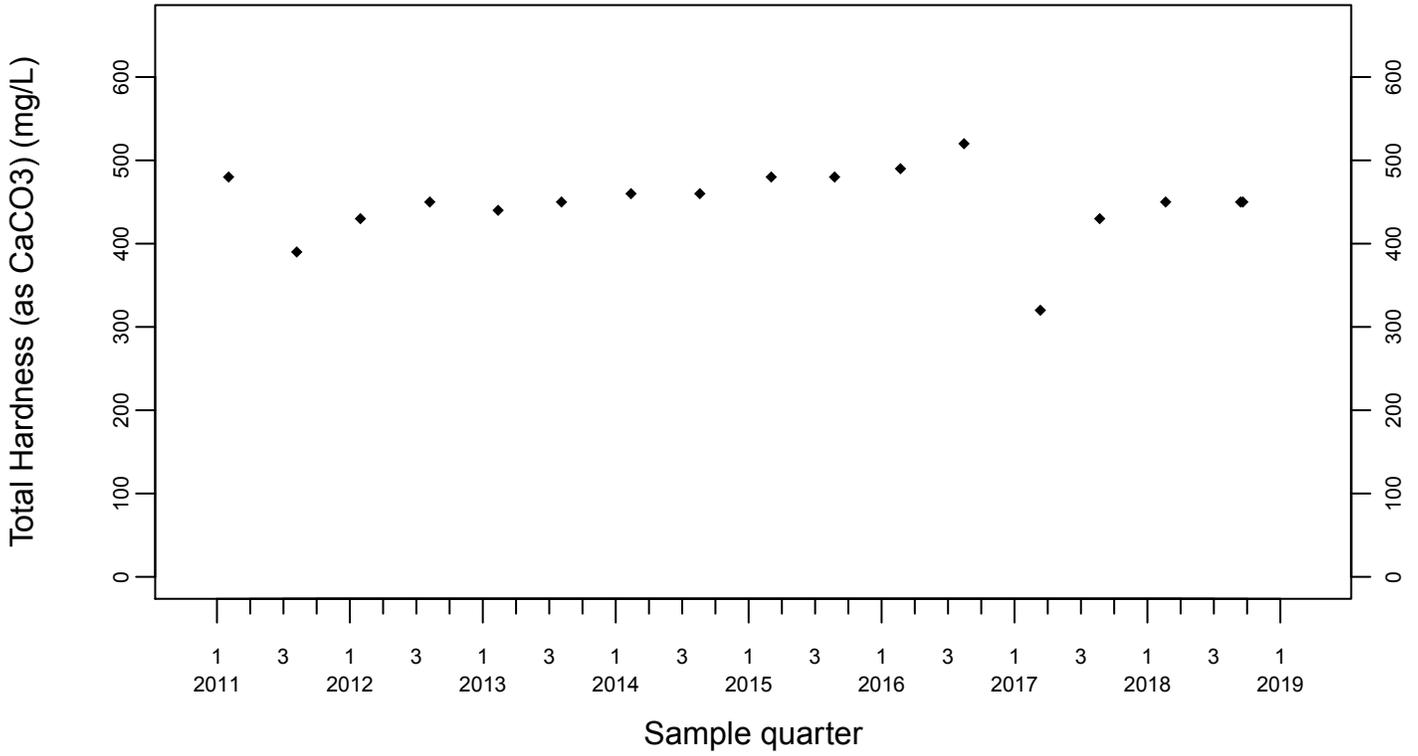
Upgradient Monitor Well W-7PS



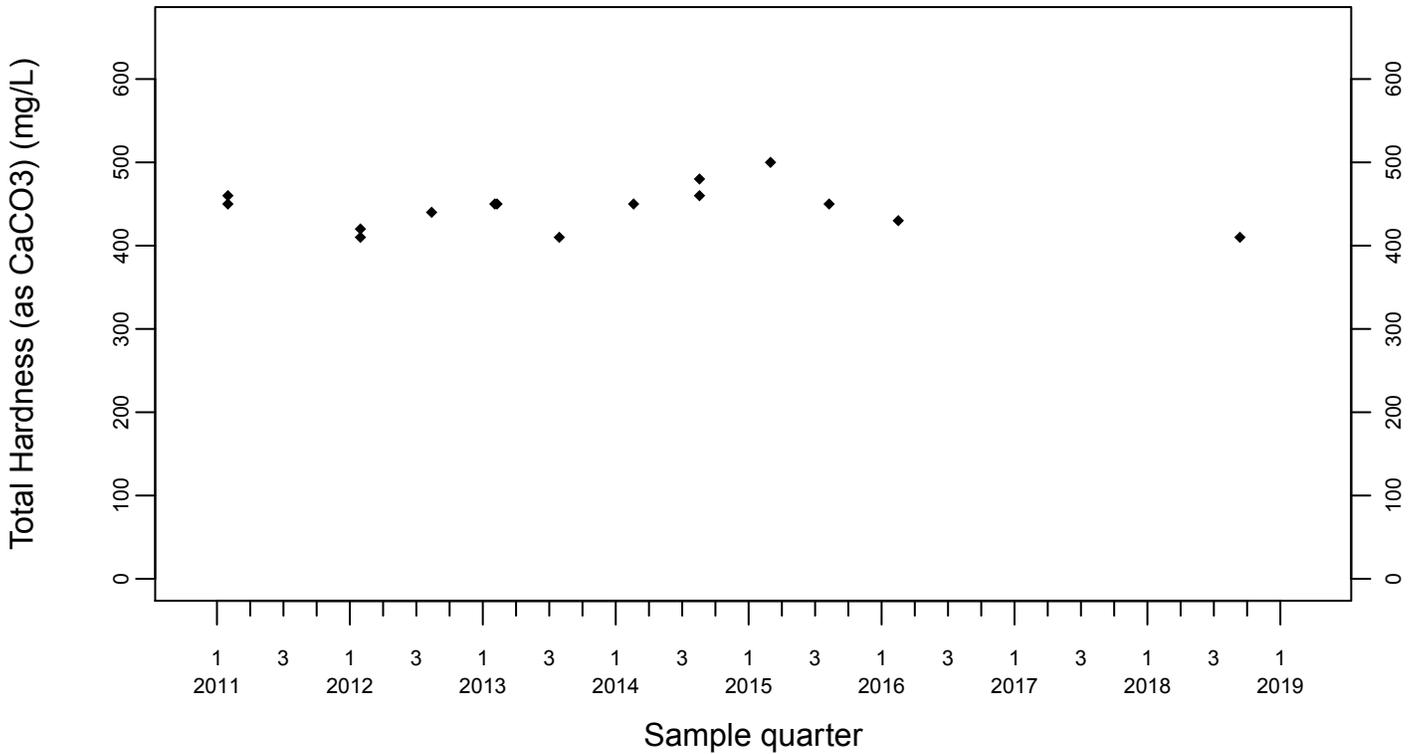
Sewage Ponds Ground Water
 Total Hardness (as CaCO₃) (mg/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
 ▼ Below RL



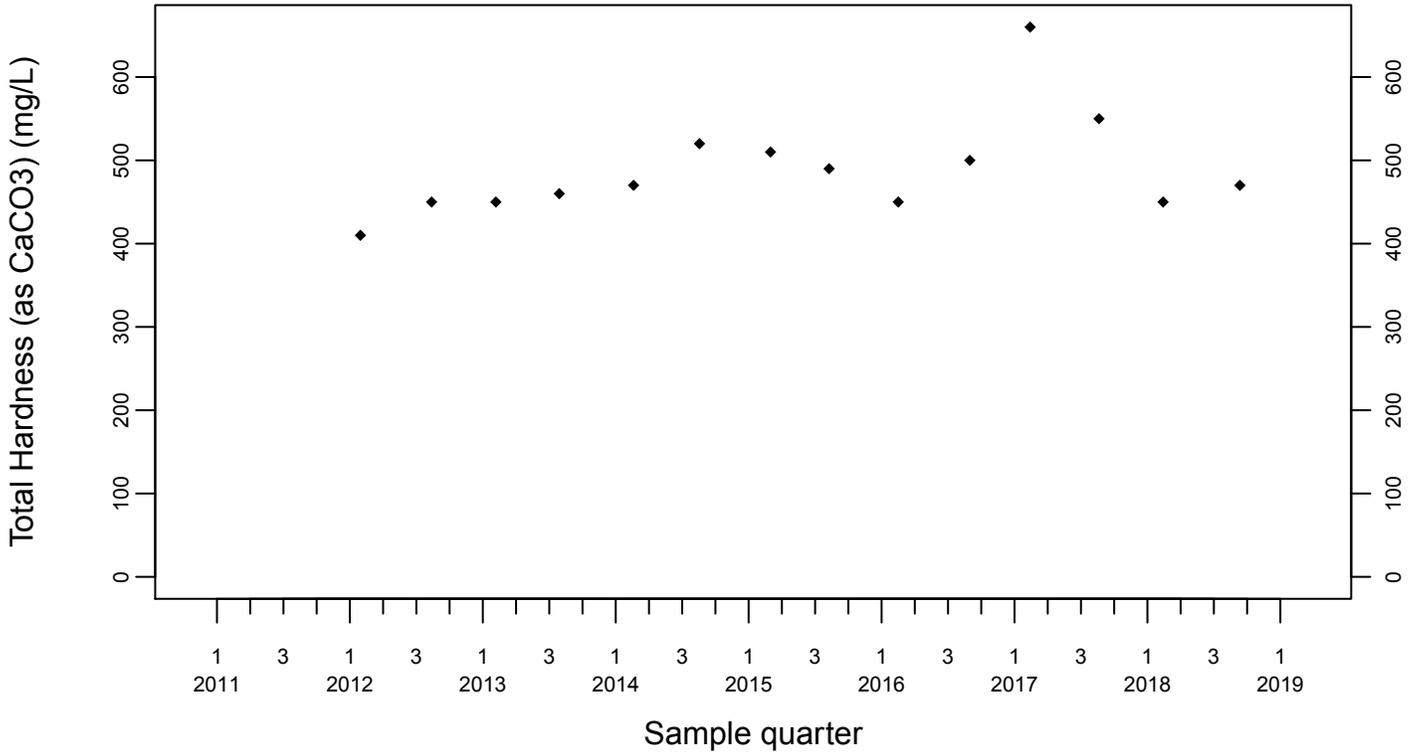
Downgradient Monitor Well W-25N-23



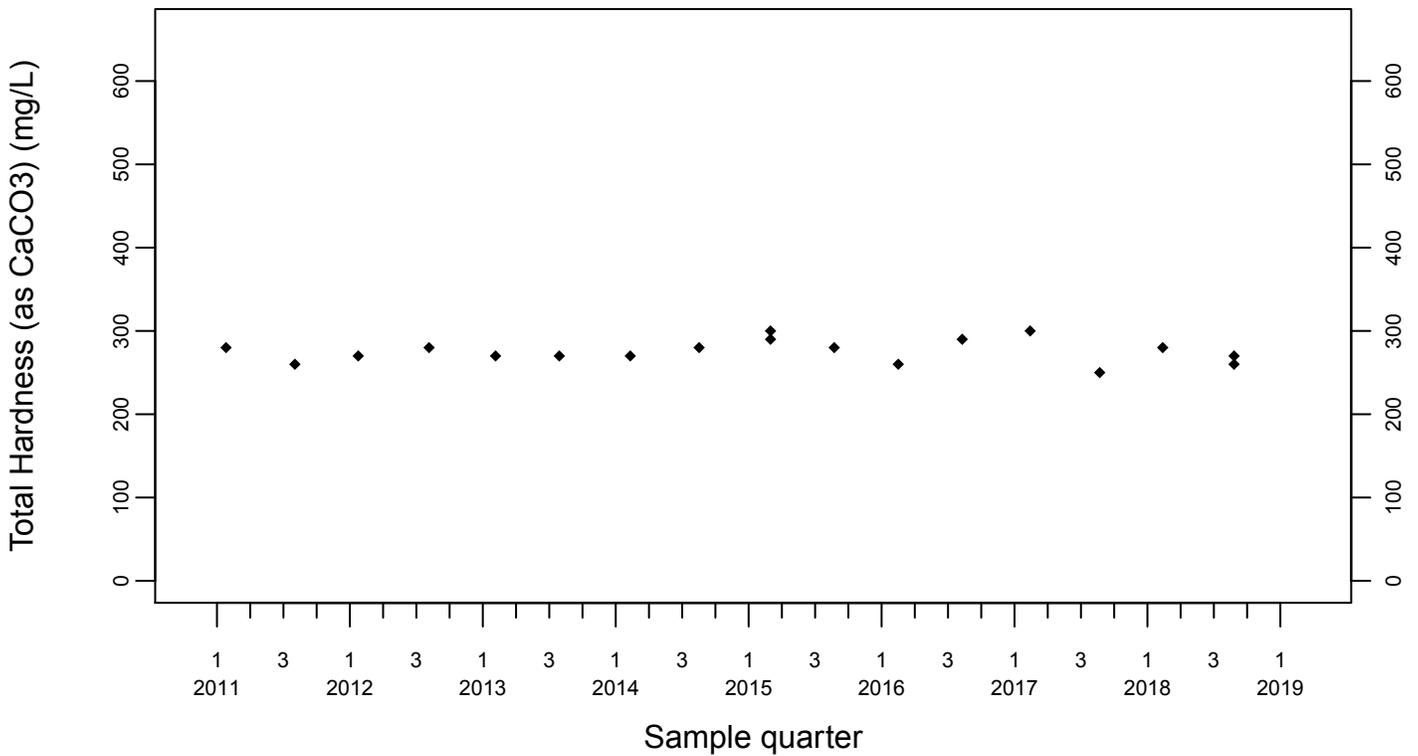
Sewage Ponds Ground Water Total Hardness (as CaCO₃) (mg/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
▽ Below RL



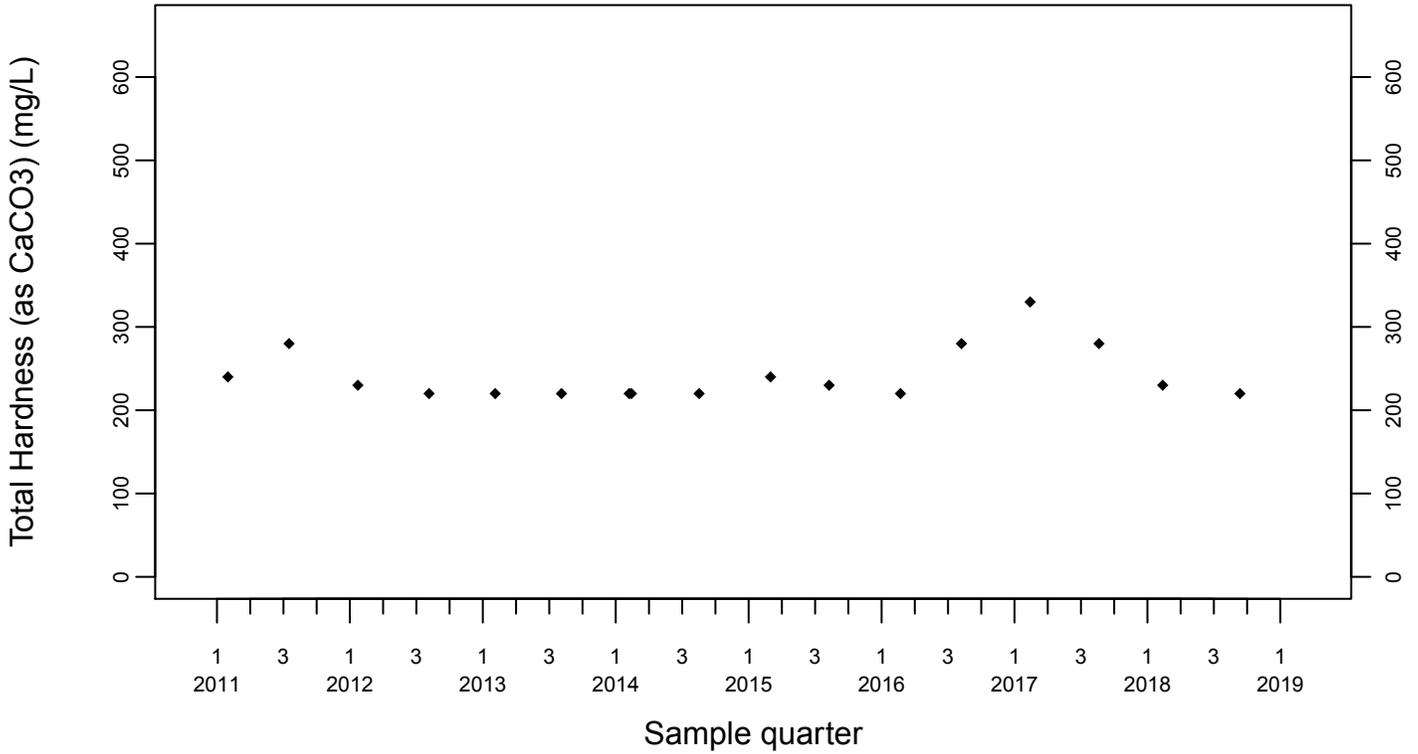
Downgradient Monitor Well W-26R-01



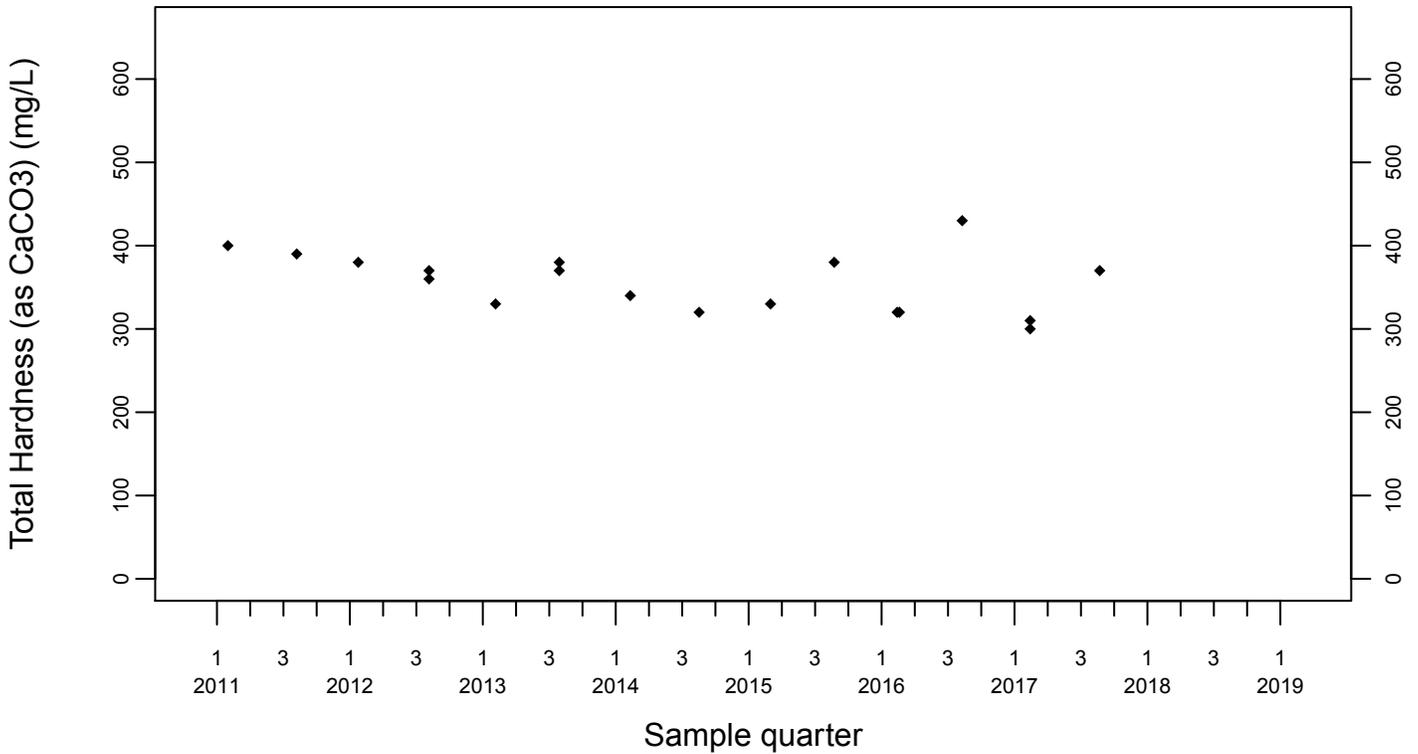
Sewage Ponds Ground Water Total Hardness (as CaCO₃) (mg/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



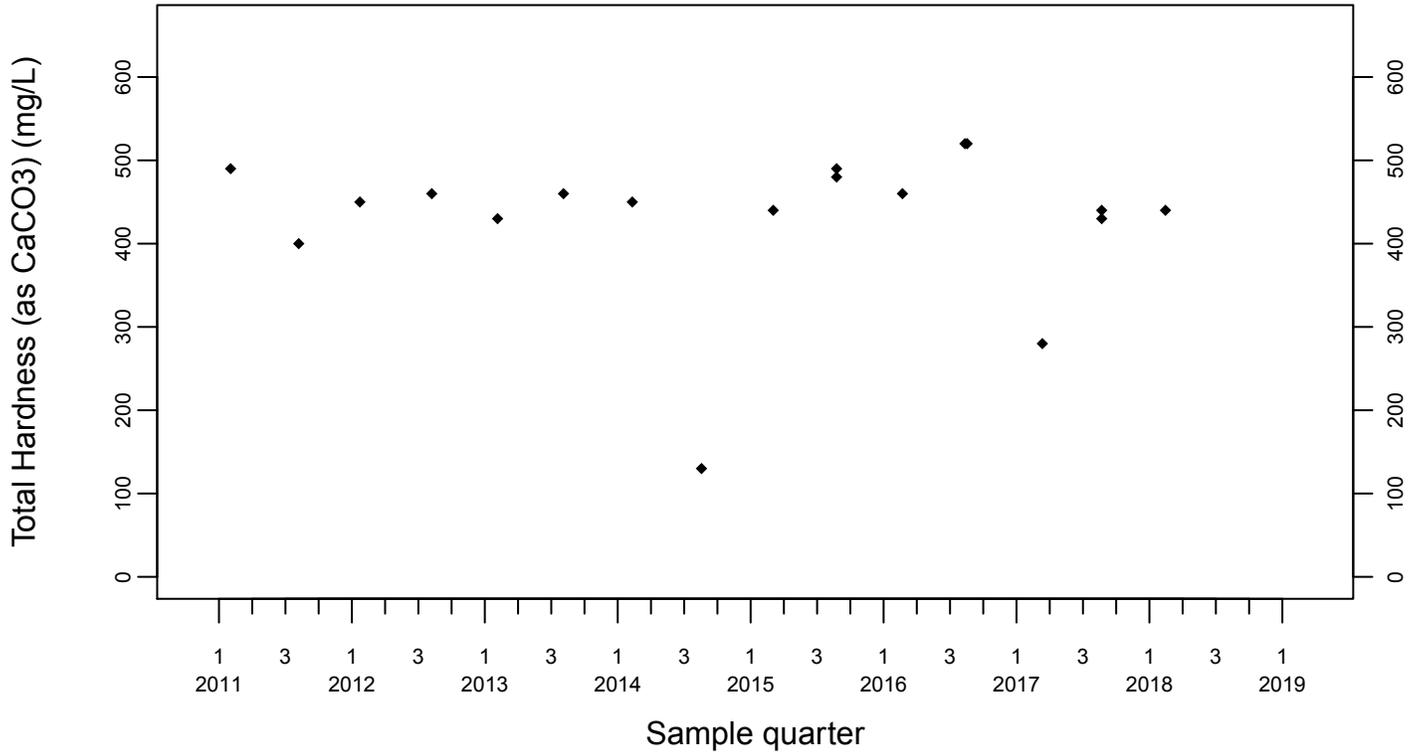
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water
Total Hardness (as CaCO₃) (mg/L)

Downgradient Monitor Well W-7DS

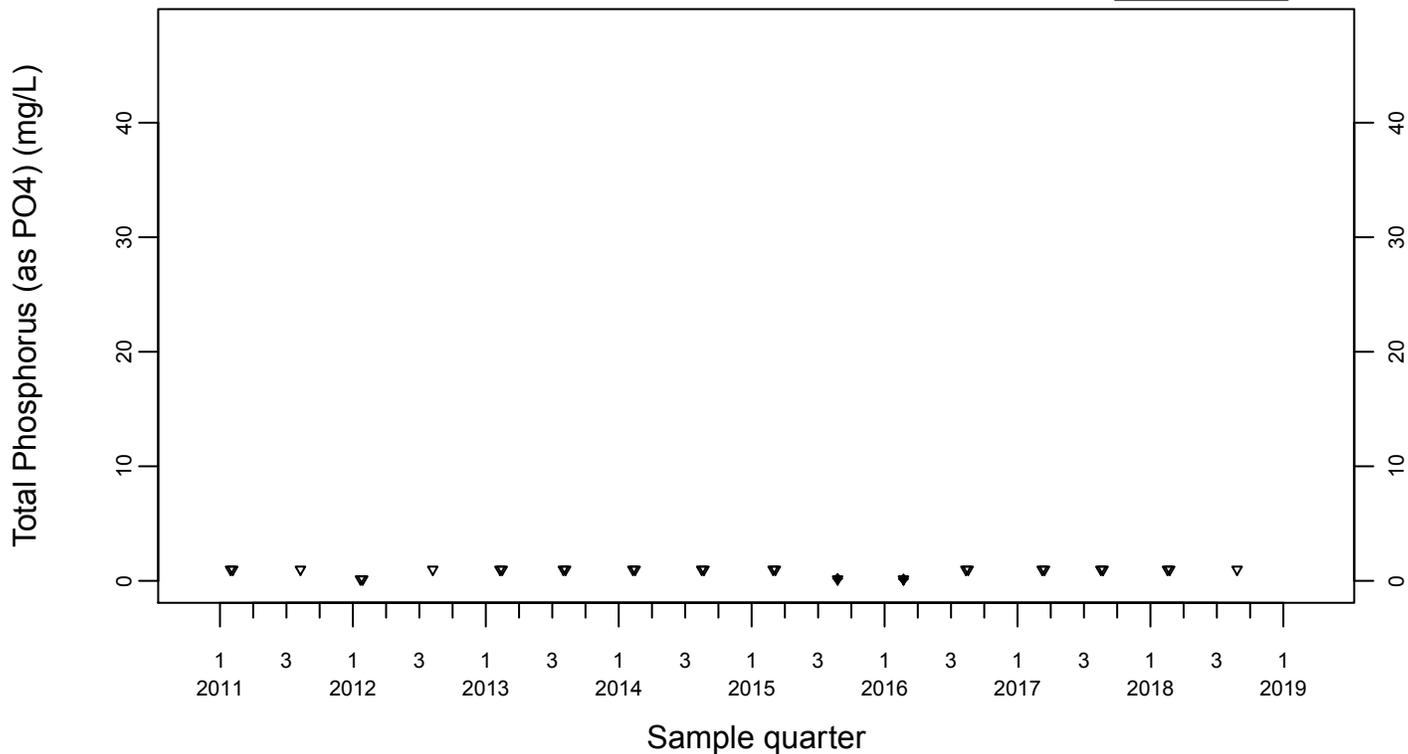
◆ Above RL
▽ Below RL



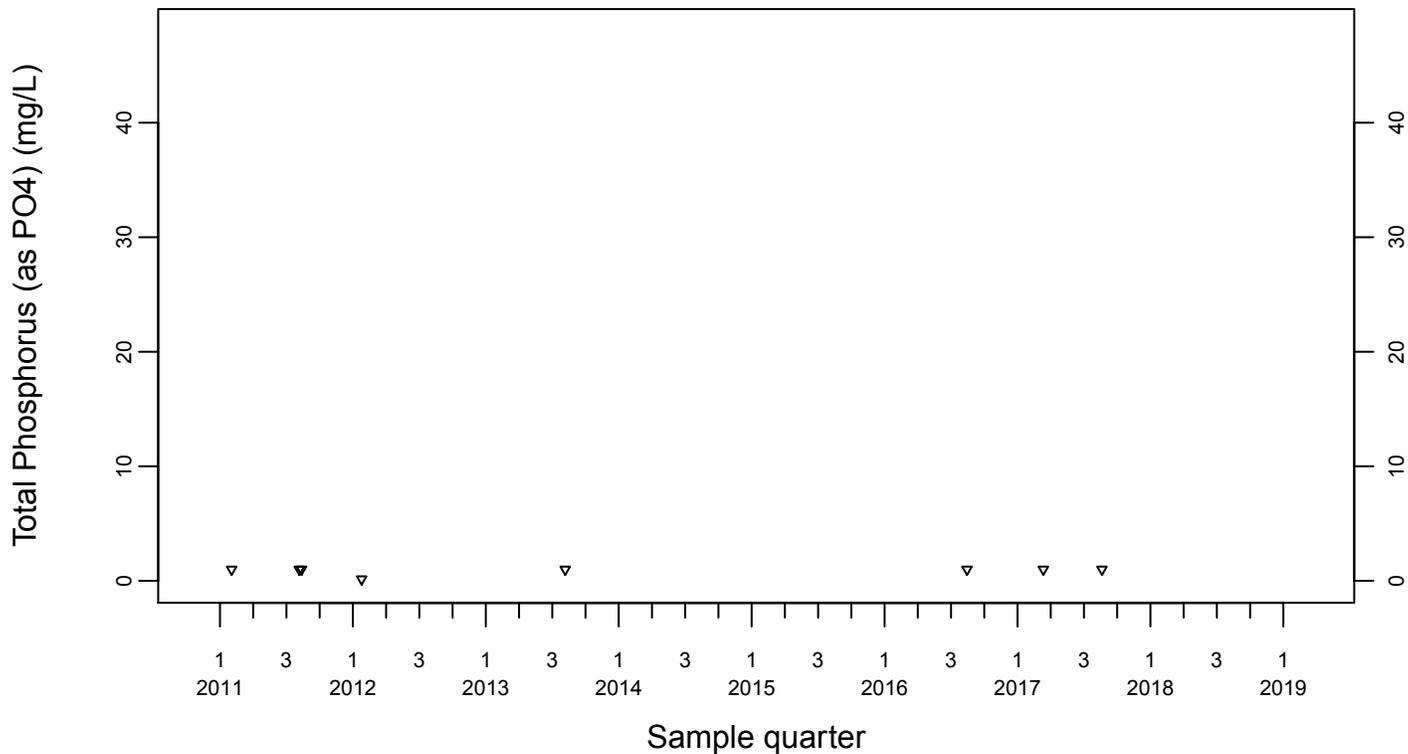
Sewage Ponds Ground Water Total Phosphorus (as PO4) (mg/L)

Upgradient Monitor Well W-7ES

◆ Above RL
▽ Below RL



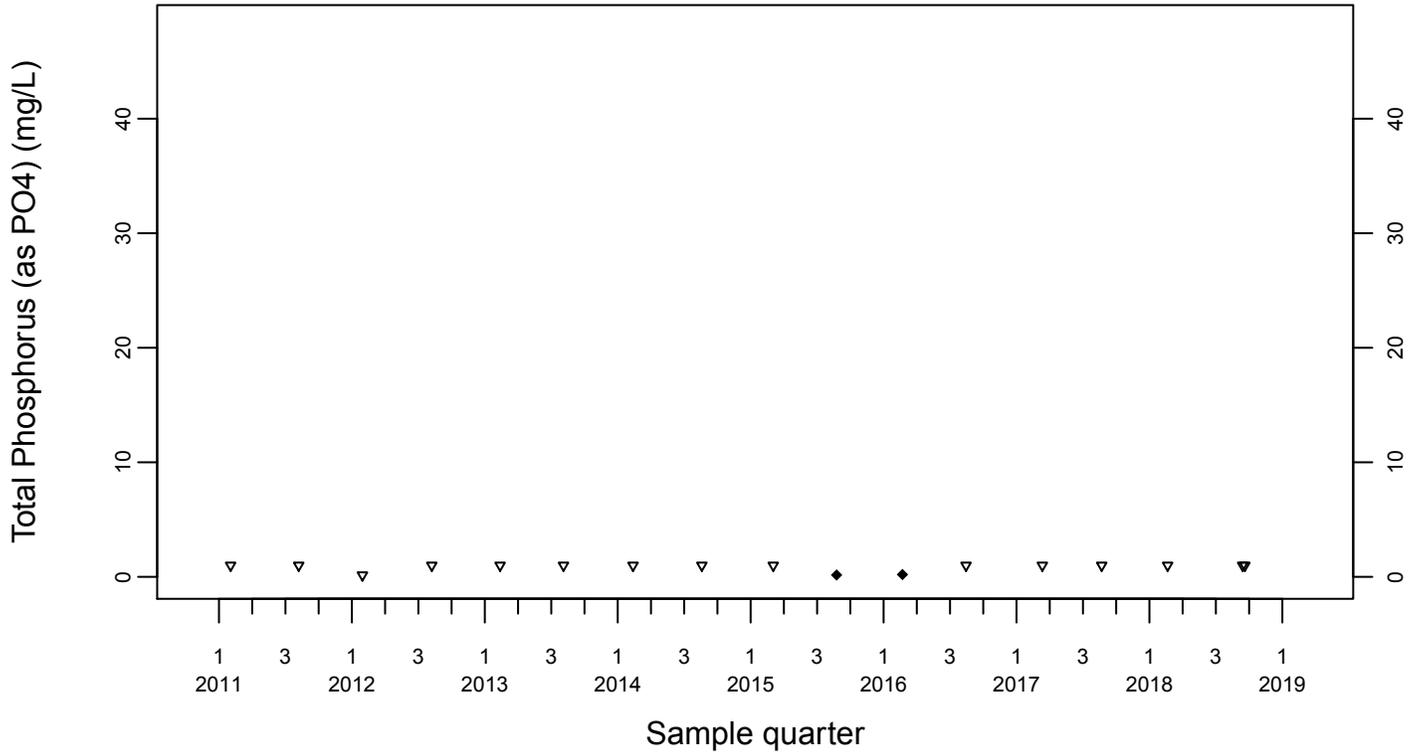
Upgradient Monitor Well W-7PS



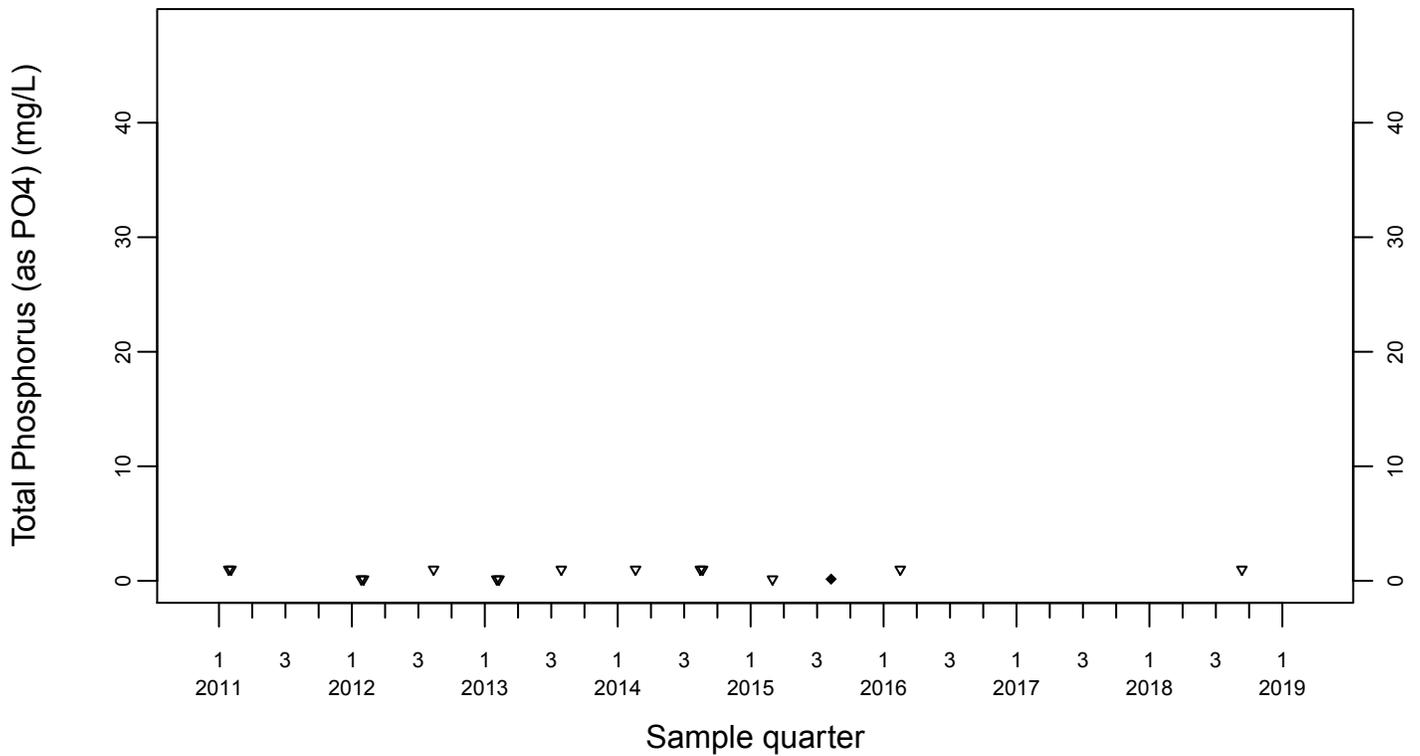
Sewage Ponds Ground Water
Total Phosphorus (as PO4) (mg/L)

Crossgradient Monitor Well W-35A-04

◆ Above RL
▽ Below RL



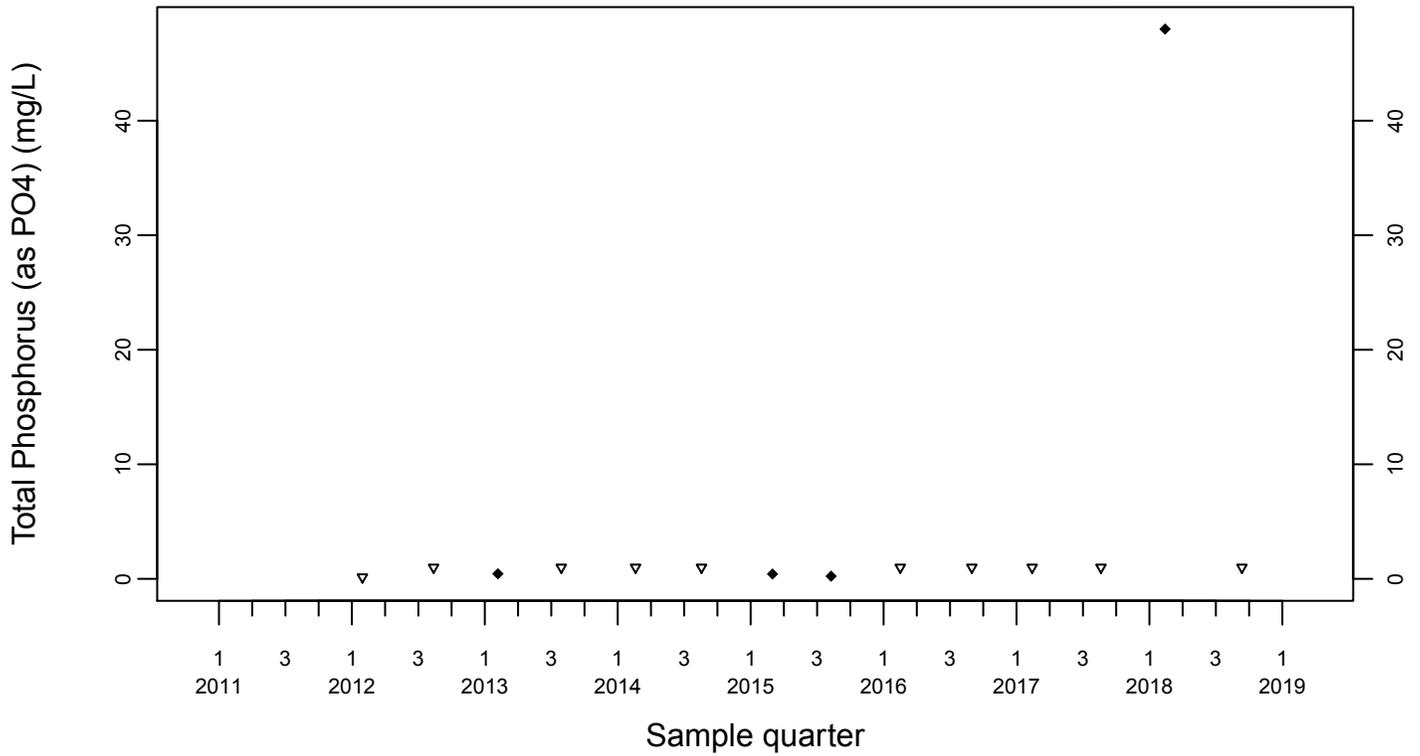
Downgradient Monitor Well W-25N-23



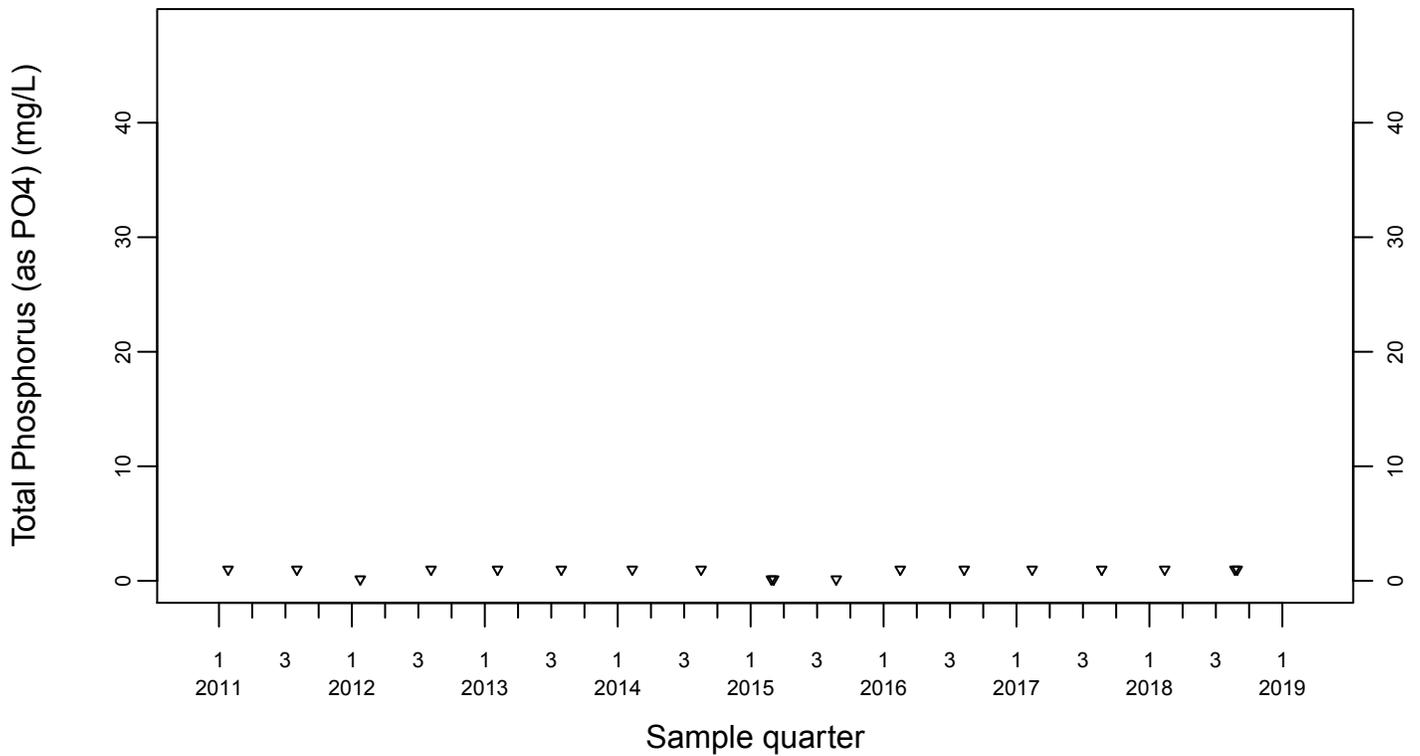
Sewage Ponds Ground Water
Total Phosphorus (as PO4) (mg/L)

Downgradient Monitor Well W-25N-22

◆ Above RL
▽ Below RL



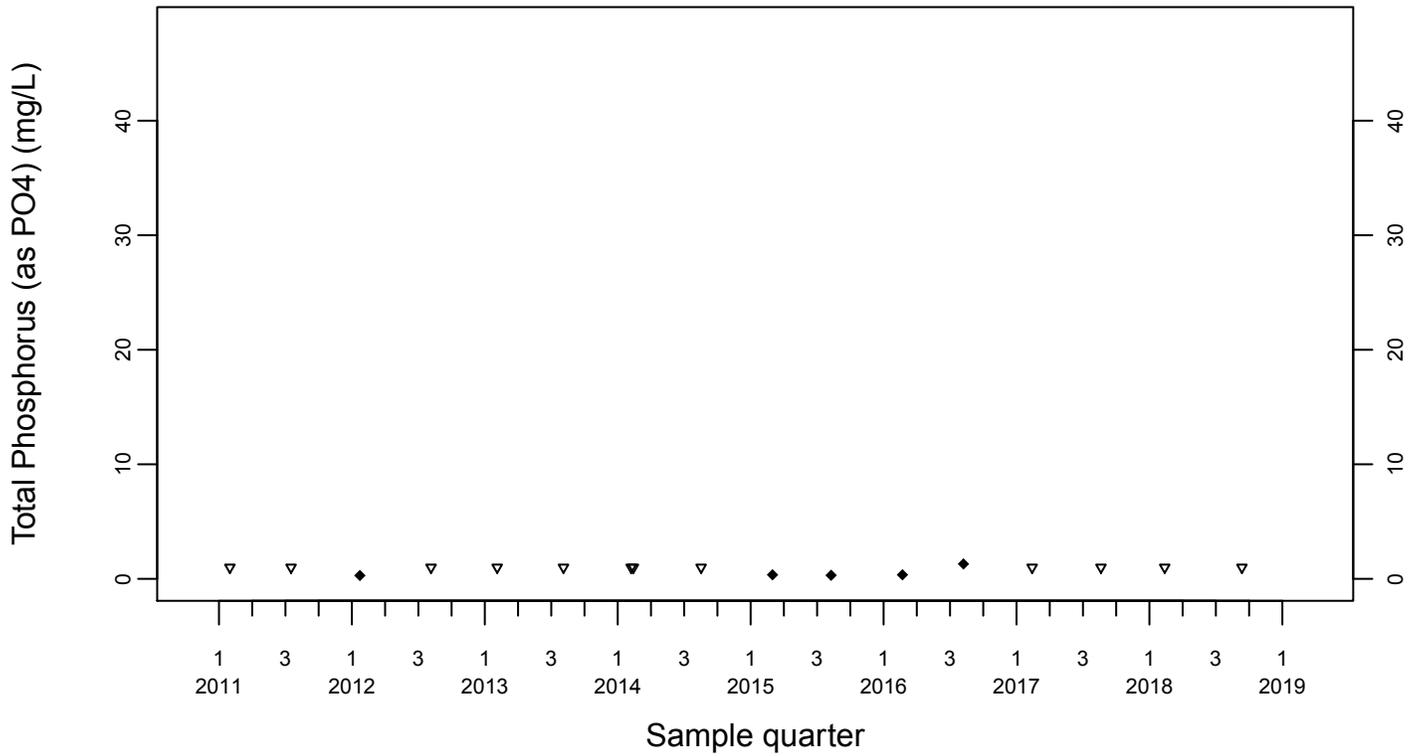
Downgradient Monitor Well W-26R-01



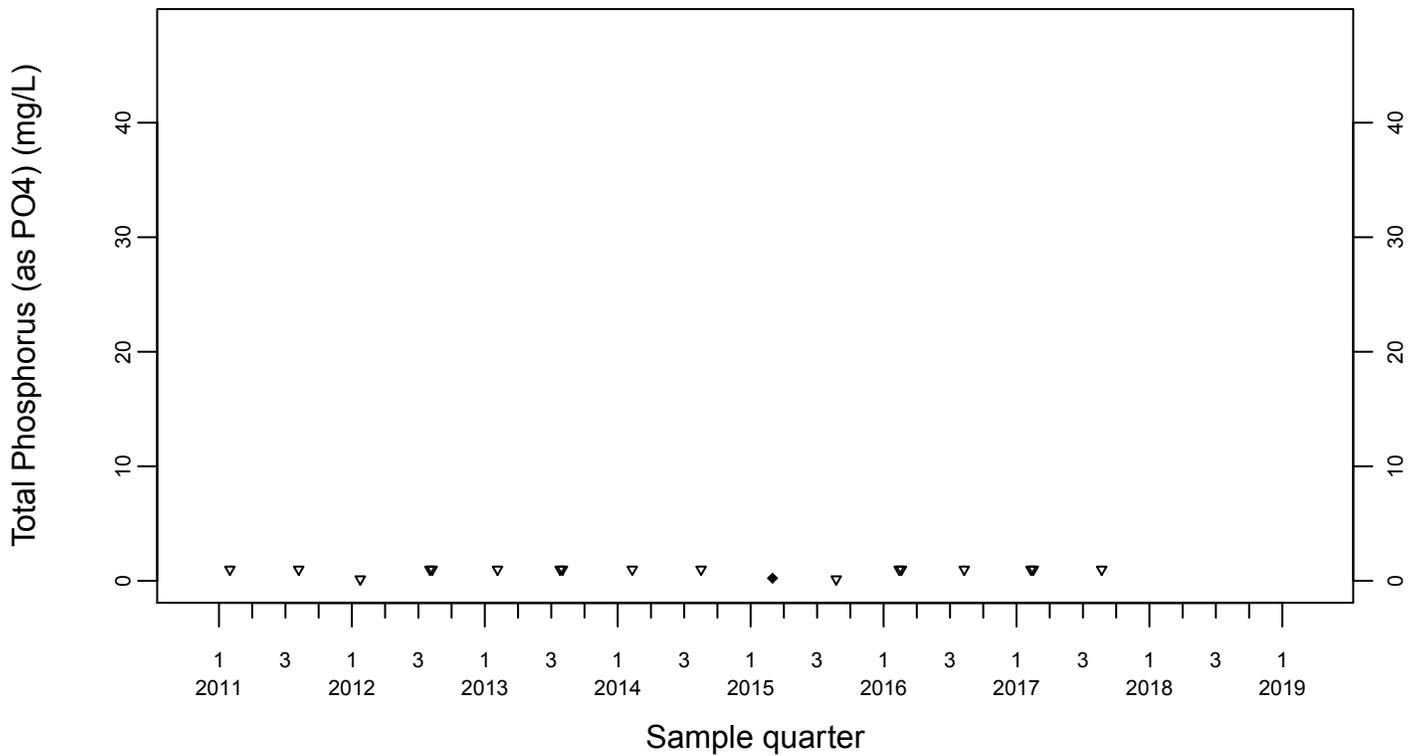
Sewage Ponds Ground Water
Total Phosphorus (as PO4) (mg/L)

Downgradient Monitor Well W-26R-05

◆ Above RL
▽ Below RL



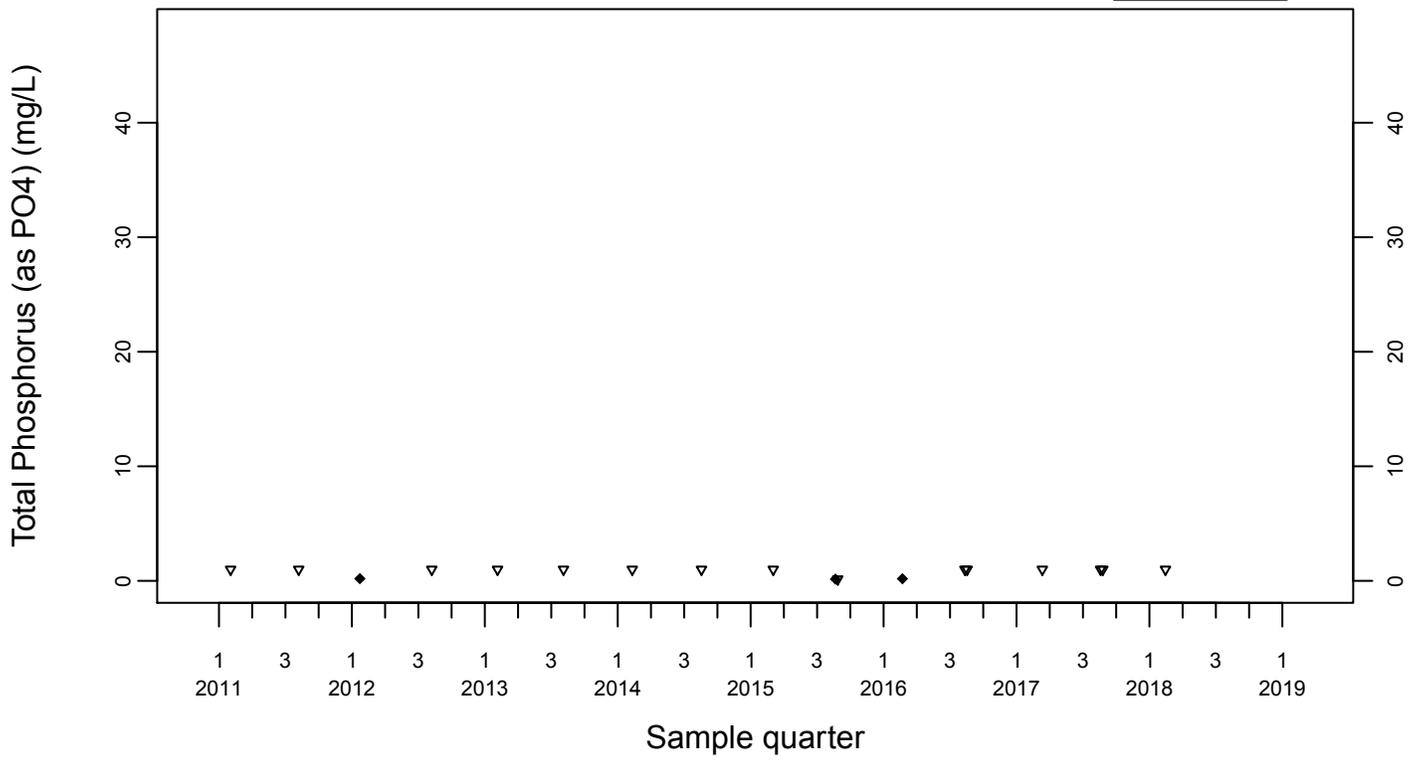
Downgradient Monitor Well W-26R-11



Sewage Ponds Ground Water
Total Phosphorus (as PO₄) (mg/L)

Downgradient Monitor Well W-7DS

◆ Above RL
▽ Below RL



Appendix B

Cooling Tower Network

Cooling Tower Blowdown Effluent Monitoring Network
with Discharges to Percolation Pits
(Bldgs. 801, 817A, 826, 827A, and 851)
and Cooling Tower Percolation Pit Inspection Forms

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

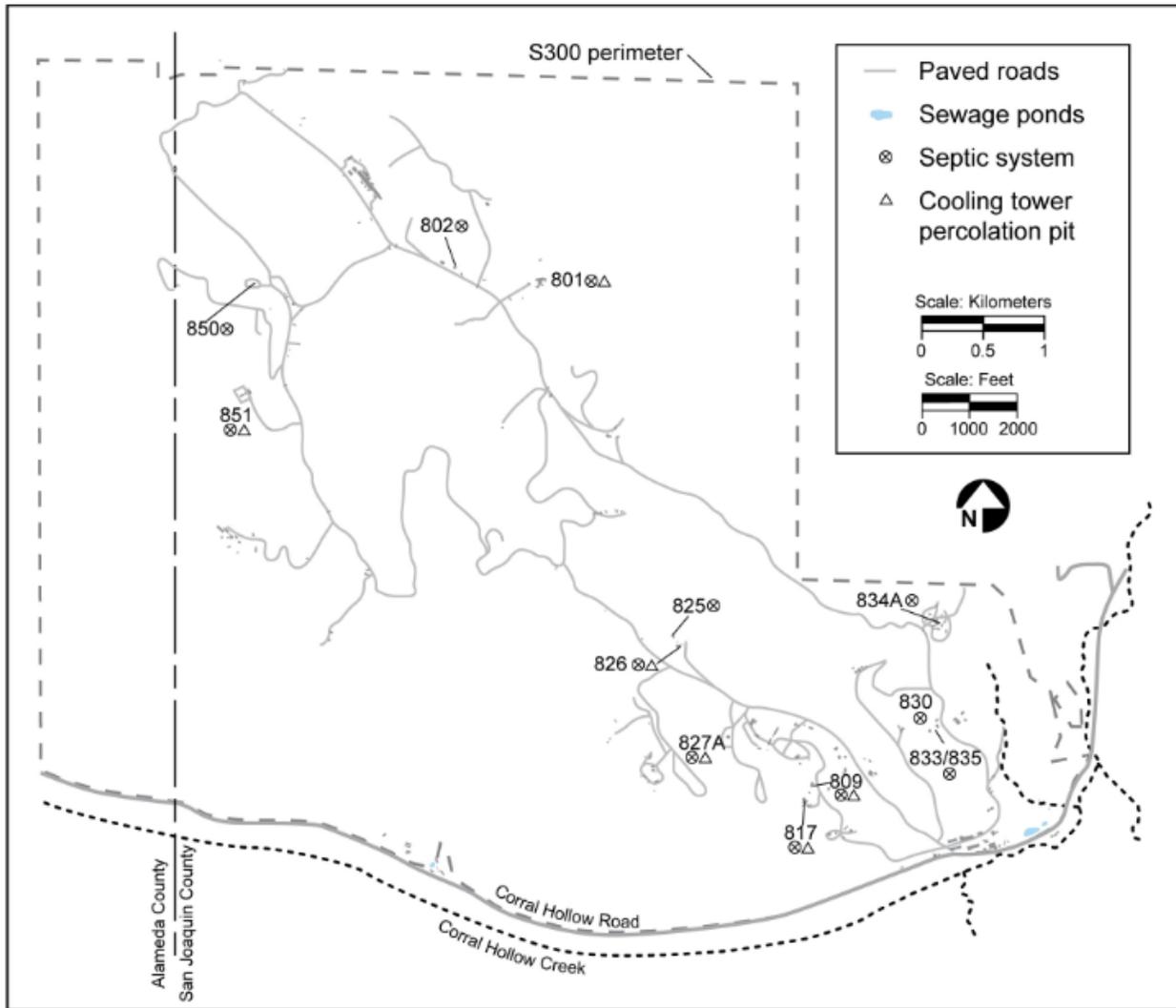


Figure B-1. Location of Site 300 cooling towers.

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

Table B-1. Site 300 cooling tower wastewater monitoring network 2018 anions data summary.

Building/Location	Date	Sodium (mg/L)	Chloride (mg/L)	Nitrate (as NO ₃) (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Bromide (mg/L)
3-801ACT01-TW	May 9	660	300	1.3	550	0.72	15
	Oct 16	820	320	1.5	560	0.57	18
3-817ACT01-TW	May 9	870	400	<2.5	730	0.94	17
	Oct 16	590	220	1.9	390	0.46	1.2
3-826FCT01-TW	May 9	240	100	<0.5	190	0.22	<0.1
	Dec 4	330	130	<1	230	0.33	0.80
3-827ACT01-TW	May 9	710	310	1.0	600	0.73	1.9
	Oct 16	880	320	<1	600	0.66	2.4
3-827ACT02-TW	Apr 1	680	310	1.6	580	0.71	12
	Oct 16	720	290	<1	520	0.53	13
3-851BFCT03-TW	May 9	670	310	1.5	550	0.68	4.0
	Oct 16	790	330	1.2	560	0.62	4.9

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

Table B-2. Site 300 cooling tower wastewater monitoring network 2018 metals analysis data summary.

Analyte (µg/L)	Month	3-801ACT01-TW	3-817ACT01-TW	3-826FCT01-TW	3-827ACT01-TW	3-827ACT02-TW	3-851BFCT03-TW
Aluminum	Q2	<50	<50	<50	<50	<50	<50
	Q4	<50	<50	<50	<50	<50	<50
Arsenic	Q2	7.0	3.9	<2	2.3	5.2	2.7
	Q4	7.5	<2	<2	3.0	2.8	4.9
Barium	Q2	32	<25	<25	31	26	27
	Q4	30	<25	53	44	32	32
Boron	Q2	2900	3600	1100	3000	2800	2800
	Q4	3000	2200	1400	3300	2700	3000
Cadmium	Q2	<50	<50	<50	<50	<50	<50
	Q4	<50	<50	<50	<50	<50	<50
Calcium	Q2	31000	20000	9700	30000	27000	33000
	Q4	33000	16000	23000	29000	28000	36000
Chromium	Q2	<1	<1	<1	<1	<1	<1
	Q4	<1	1.4	<1	<1	<1	<1
Hexavalent Chromium	Q2	<1	<1	<1	<1	<1	1.3
	Q4	1.7	1.9	<1	<1	2.8	1.5
Copper	Q2	75	19	7.9	8.7	12	17
	Q4	20	11	60	9.0	6.5	27
Iron	Q2	340	220	100	210	200	620
	Q4	270	250	850	200	200	520
Lead	Q2	<5	<5	<5	<5	<5	<5
	Q4	<5	<5	5.6	<5	<5	<5
Magnesium	Q2	<500	620	<500	<500	<500	<500
	Q4	<500	<500	620	<500	<500	<500
Manganese	Q2	<30	<30	<30	<30	<30	<30
	Q4	<30	<30	50	<30	<30	<30
Mercury	Q2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Q4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Molybdenum	Q2	55	81	<25	59	58	55
	Q4	72	49	27	75	60	61
Nickel	Q2	<2	<2	<2	<2	<2	<2
	Q4	<2	<2	<2	<2	<2	<2
Potassium	Q2	33000	37000	9400	29000	31000	29000
	Q4	34000	24000	41000	47000	27000	36000
Selenium	Q2	25	14	<2	2.2	21	8.2
	Q4	23	<2	3.9	9.2	6.6	13
Silver	Q2	<10	<10	<10	<10	<10	<10
	Q4	<10	<10	<10	<10	<10	<10
Vanadium	Q2	<20	<20	<20	<20	<20	<20
	Q4	<20	<20	<20	<20	<20	<20
Zinc	Q2	30	49	25	41	36	74
	Q4	43	31	610	530	<20	100

*LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/ Annual Report 2018*

Table B-3. Site 300 cooling tower wastewater monitoring network 2018 physical characteristics data summary.

Well/ Location	Date	pH	Specific Conductance µmhos/cm	Total Alkalinity (as CaCO ₃) mg/L	Total dissolved solids mg/L	Total Hardness (as CaCO ₃) mg/L	Total Phosphorus (as PO ₄) mg/L
3-801ACT01-TW	May 9	9.1	3340	690	2400	79	16
	Oct 16	9.1	3340	730	2500	84	7.0
3-817ACT01-TW	May 9	9.2	4260	850	3100	53	5.2
	Oct 16	9.1	2420	510	1700	40	1.2
3-826FCT01-TW	May 9	8.6	1220	240	820	25	<1
	Dec 4	8.6	1580	360	1400	59	75
3-827ACT01-TW	May 9	9.2	3520	740	2500	77	2.4
	Oct 16	9.2	3590	780	2700	74	37
3-827ACT02-TW	Apr 1	9.1	3390	690	2400	68	12
	Oct 16	9.2	3170	690	2400	72	2.4
3-851BFCT03-TW	May 9	9.1	3350	700	2400	84	7.1
	Oct 16	9.1	3420	750	2500	90	10

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

Table B-4. Site 300 cooling tower wastewater monitoring network 2018 QA data summary.

Constituent	Units	3-826FCT01-TW	3-826FCT01-TW	3-827ACT02-TW	3-827ACT02-TW
		May 9	May 9	Oct 16	Oct 16
		Routine	Duplicate	Routine	Duplicate
pH	Units	8.6	8.7	9.2	9.2
Specific Conductance	µmhos/cm	1220	1210	3170	3180
Aluminum	µg/L	<50	<50	<50	<50
Arsenic	µg/L	<2	<2	2.8	2.8
Barium	µg/L	<25	<25	32	34
Boron	µg/L	1100	960	2700	2700
Cadmium	µg/L	<50	<50	<50	<50
Calcium	µg/L	9700	9300	28000	28000
Chromium	µg/L	<1	<1	<1	<1
Hexavalent Chromium	µg/L	<1	<1	2.8	2.0
Copper	µg/L	7.9	68	6.5	6.3
Iron	µg/L	100	100	200	220
Lead	µg/L	<5	<5	<5	<5
Magnesium	µg/L	<500	<500	<500	<500
Manganese	µg/L	<30	<30	<30	<30
Mercury	µg/L	<0.2	<0.2	<0.2	<0.2
Molybdenum	µg/L	<25	<25	60	57
Nickel	µg/L	<2	<2	<2	<2
Potassium	µg/L	9400	9000	27000	27000
Selenium	µg/L	<2	<2	6.6	6.8
Silver	µg/L	<10	<10	<10	<10
Vanadium	µg/L	<20	<20	<20	<20
Zinc	µg/L	25	24	<20	21
Sodium	mg/L	240	240	720	710
Chloride	mg/L	100	100	290	290
Nitrate (as NO ₃)	mg/L	<0.5	<0.5	<1	1.2
Sulfate	mg/L	190	190	520	520
Fluoride	mg/L	0.22	0.23	0.53	0.53
Bromide	mg/L	<0.1	<0.1	13	14
Total Alkalinity (as CaCO ₃)	mg/L	240	240	690	700
Total dissolved solids (TDS)	mg/L	820	820	2400	2400
Total Hardness (as CaCO ₃)	mg/L	25	24	72	72
Total Phosphorus (as PO ₄)	mg/L	<1	<1	2.4	2.4

FIELD TRACKING FORM
 Semi-Annual SITE 300 Cooling Towers

Special Instructions:

Should be sampled in early April and October.
 See back of form for additional access information

LAB	CoC#	Ship It #
BC Labs	77455	237125

pH meter calibrated on: 10/16/18
 Specific Conductance meter calibrated on: 10/16/18

Sample Date: 10/16/18

Location Identifier	Location DUP taken - year/quarter	Sample Time	Initials	Field Measurements		BC Labs				Comments
				pH	Specific Conductance	S3METALS	S3ANIONS	S3WETCHEM	E300.0/BR	
3-801ACT01-TW	2017/2nd	1020	KS	9.32	3.64ms	✓	✓	✓	✓	
3-817ACT01-TW	2016/2nd	0900	KS	9.09	2.86ms	✓	✓	✓	✓	
3-825ACT01-TW	2015/2nd									
3-826FCT01-TW	2017/4th	0915	KS	8.85	1114ms	✓	✓	✓	✓	- 825 OFF LINE NO flow from sample port Sample collected from 5100 That was later determined to be well water. They're 5300 well water. They're looking into it, will sample AS A LOW DATE.
3-827ACT01-TW	2014/4TH	0925	KS	9.27	3.89ms	✓	✓	✓	✓	
3-827ACT02-TW	2018/4th	0940	KS	9.38	3.53ms	✓	✓	✓	✓	
3-851BFCT03-TW	2018/2nd	1000	KS	9.34	3.76ms	✓	✓	✓	✓	
Duplicate of 3-826FCT01-TW										
3-B9900-01-TW		0940	KS	9.38	3.53ms	✓	✓	✓	✓	KS

Copy to Analyst, Ada Chan.

Rev. 9-27-17

Chain of Custody

Additional Instructions:

Analytical Lab : BCLABS-BAK
TAT: 20d
Analytical Lab Log #:
Project/Network: COOLTOWER
Shipt Release #: 237125
Add'l Email:

Access/COC #: 77455
Document Control #: 77455
Requester/LLNL Analyst: A. Chan
Organization / Sampler: EFA / brunckhorst2
PCI Project #: 44497
PCI Task #: ES&H Bills and Taxes
Email: efa-dmt@llnl.gov
DMT Additional Copies:

EFA Data Management Team
Lawrence Livermore National Laboratory
P.O. Box 808 L-627
Livermore, CA 94551
Work Authorized By: EFA
TRR Approver: DELLA BURRUSS
Project Info:

ESH-EFA-WQ-19-16096 - BP/AC:am

Sample ID	Sampled Date/Time	Matrix	Cont. Type	Cont. Count	Study Area	Req. Analysis	Analysis Detail	Lab Instructions
3-801ACT01-01-TW	10/16/2018 10:20	TW	P	1	COOLTOWER	E300.0	BR	
3-801ACT01-01-TW	10/16/2018 10:20	TW	P	1	COOLTOWER	S3ANIONS	ALL	
3-801ACT01-01-TW	10/16/2018 10:20	TW	P	0	COOLTOWER	S3METALS	ALL	
3-801ACT01-01-TW	10/16/2018 10:20	TW	P	1	COOLTOWER	S3METALS	TOTAL	
3-801ACT01-01-TW	10/16/2018 10:20	TW	P	1	COOLTOWER	S3WETCHEM	ALL	
3-817ACT01-01-TW	10/16/2018 09:00	TW	P	1	COOLTOWER	E300.0	BR	
3-817ACT01-01-TW	10/16/2018 09:00	TW	P	1	COOLTOWER	S3ANIONS	ALL	
3-817ACT01-01-TW	10/16/2018 09:00	TW	P	0	COOLTOWER	S3METALS	ALL	
3-817ACT01-01-TW	10/16/2018 09:00	TW	P	1	COOLTOWER	S3METALS	TOTAL	
3-817ACT01-01-TW	10/16/2018 09:00	TW	P	1	COOLTOWER	S3WETCHEM	ALL	
3-827ACT01-01-TW	10/16/2018 09:25	TW	P	1	COOLTOWER	E300.0	BR	
3-827ACT01-01-TW	10/16/2018 09:25	TW	P	1	COOLTOWER	S3ANIONS	ALL	
3-827ACT01-01-TW	10/16/2018 09:25	TW	P	0	COOLTOWER	S3METALS	ALL	
3-827ACT01-01-TW	10/16/2018 09:25	TW	P	1	COOLTOWER	S3METALS	TOTAL	
3-827ACT01-01-TW	10/16/2018 09:25	TW	P	1	COOLTOWER	S3WETCHEM	ALL	
3-827ACT01-02-TW	10/16/2018 09:40	TW	P	1	COOLTOWER	S3ANIONS	ALL	
3-827ACT02-01-TW	10/16/2018 09:40	TW	P	1	COOLTOWER	E300.0	BR	
3-827ACT02-01-TW	10/16/2018 09:40	TW	P	0	COOLTOWER	S3METALS	ALL	
3-827ACT02-01-TW	10/16/2018 09:40	TW	P	1	COOLTOWER	S3METALS	TOTAL	
3-827ACT02-01-TW	10/16/2018 09:40	TW	P	1	COOLTOWER	S3WETCHEM	ALL	
3-827ACT02-01-TW	10/16/2018 09:40	TW	P	1	COOLTOWER	S3WETCHEM	ALL	
3-B9900-01-TW	10/16/2018 09:40	TW	P	1	COOLTOWER	E300.0	BR	
3-B9900-01-TW	10/16/2018 09:40	TW	P	1	COOLTOWER	S3ANIONS	ALL	
3-B9900-01-TW	10/16/2018 09:40	TW	P	0	COOLTOWER	S3METALS	ALL	
3-B9900-01-TW	10/16/2018 09:40	TW	P	1	COOLTOWER	S3METALS	TOTAL	
3-B9900-01-TW	10/16/2018 09:40	TW	P	1	COOLTOWER	S3WETCHEM	ALL	
3-851BFCT03-01-TW	10/16/2018 10:00	TW	P	1	COOLTOWER	E300.0	BR	
3-851BFCT03-01-TW	10/16/2018 10:00	TW	P	1	COOLTOWER	S3ANIONS	ALL	

Relinquished Signature	Company	Date	Time	Received Signature	Company	Date	Time
<i>Debra Burru</i>	LLNL/EFA	10/16/2018	1340	<i>Henry Bogar</i>	BCLAB	10-16-18	1630
			2				
			3				
			4				
			5				

FIELD TRACKING FORM
 Semi-Annual SITE 300 Cooling Towers

LAB	CoC#	Ship It #
BC Labs	77854	238709

pH meter calibrated on: 12/14
 Specific Conductance meter calibrated on: 12/14

Special Instructions:
 Should be sampled in early April and October.
 See back of form for additional access information

Sample Date: 12/18/18

Location Identifier	Location DUP taken -year/quarter	Sample Time	Initials	Field Measurements	BC Labs	Comments
3-801ACT01-TW	2012/2nd			pH	E300.0/BR 250ml Poly	
3-817ACT01-TW	2016/2nd				S3WETCHEM 1000mL Poly	
3-825ACT01-TW	2015/2nd				S3ANIONS 500mL Poly	
3-826FCT01-TW	2015/4th	0905	KS	Specific Conductance 8.72 / 443.45	S3METALS 500mL Poly	
3-827ACT01-TW	2014/4TH					
3-851BFCT03-TW	2016/4th					
Duplicate of 3-851BFCT03-TW						
3-B9900-01-TW						

Rev. 5-15-14

Copy to Analyst, Rick Blake
 ADA c/can

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7-23-18 Inspector Walker Building Number 801

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature  Date 7-27-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-24-18 Inspector Walker Building Number 801

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 8-24-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9-27-18 Inspector Walker Building Number 801

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature  Date 9/27/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 10-31-18 Inspector Walker Building Number 801

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No (No circled)	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No (No circled)	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No (No circled)	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No (No circled)	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature [Signature] Date 10/31/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

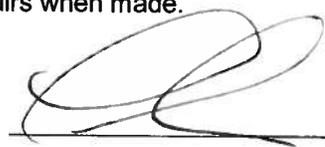
Date 11-20-18 Inspector Walker Building Number 801

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 11/20/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

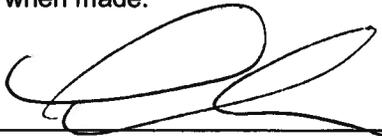
Date 12-29-18 Inspector Walker Building Number 801

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 12/29/19

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7-17-18 Inspector Walker Building Number 817

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <input checked="" type="radio"/> No	_____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature  Date 7-17-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-20-18 Inspector Walker Building Number 817

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 8-20-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9-27-18 Inspector Walker Building Number 817A

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 9/27/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 10-23-18 Inspector Walker Building Number 817A

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature [Signature] Date 10/23/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11-20-18 Inspector Walker Building Number 817

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 11/20/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 12-27-18 Inspector Walker Building Number 817

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature



Date

12/29/19

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7-23-18 Inspector Walker Building Number 826

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	<input checked="" type="radio"/> Yes/ <input type="radio"/> No	4" _____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature  Date 7-23-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-23-18 Inspector Walker Building Number 826

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 8-23-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9-27-18 Inspector Walker Building Number 826

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature [Signature] Date 9/27/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 10-31-18 Inspector Walker Building Number 826

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature [Signature] Date 10/31/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11-20-18 Inspector Walker Building Number 826

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	<input checked="" type="radio"/> Yes/ <input type="radio"/> No	1'2" _____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature  Date 11/20/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 12-29-18 Inspector Walker Building Number 826

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 12/29/19

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

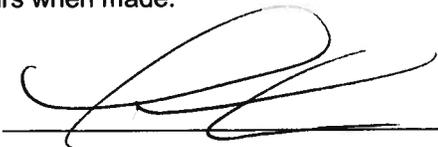
Date 7-23-18 Inspector Walker Building Number 827

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	<input checked="" type="radio"/> Yes <input type="radio"/> No	6" _____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature  Date 7-27-18

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-24-18 Inspector Walker Building Number 827

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	<input checked="" type="radio"/> Yes/No	<u>6"</u> _____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 8-24-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9-27-18 Inspector Walker Building Number 827A

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes <input type="radio"/> No <input checked="" type="radio"/>	6" _____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input type="radio"/> No <input checked="" type="radio"/>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [Signature] Date 9/27/18

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 10-30-18 Inspector Walker Building Number 827A

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No	6"
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature [Signature] Date 10/30/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11-20-18 Inspector Walker Building Number 827

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No	6" ⁷ _____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature [Signature] Date 11/20/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

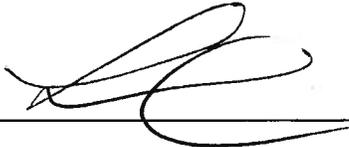
Date 12-29-18 Inspector Walker Building Number 827

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <input checked="" type="radio"/> No	6" _____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 12/29/18

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7-23-18 Inspector Walker Building Number 851

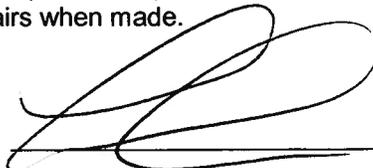
Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	<input checked="" type="radio"/> Yes / No <input type="radio"/>	6"
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature



Date 7-23-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

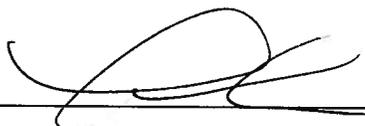
Date 8-24-18 Inspector Walker Building Number 851

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <input checked="" type="radio"/> No	6" _____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature  Date 8-24-18

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9-27-18 Inspector Walker Building Number 851

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	<input checked="" type="radio"/> Yes/ <input type="radio"/> No	<u>5"</u> _____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature [Signature] Date 9/27/18

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

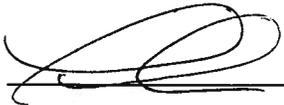
Date 10-31-18 Inspector Walker Building Number 851

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <input checked="" type="radio"/> No	6"
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 10/31/18

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11-20-18 Inspector Walker Building Number 851

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <input checked="" type="radio"/> No	7" _____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature  Date 11/20/18

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Monthly/Weekly Cooling Tower Percolation Pit Inspection Checklist*
For Buildings 801, 817A, 826, 827A, and 851
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 12-29-18 Inspector Walker Building Number 851

Instructions: Circle the appropriate response for each item below and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, EFA, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	<input checked="" type="radio"/> Yes/ <input type="radio"/> No	<u>6"</u> _____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature  Date 12/29/19

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Appendix C

Mechanical Room Network

Mechanical Equipment Discharge Effluent Monitoring for Buildings 806A, 827A,
827C, 827D, and 827E
Mechanical Equipment Room Percolation Pit Inspection Forms

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

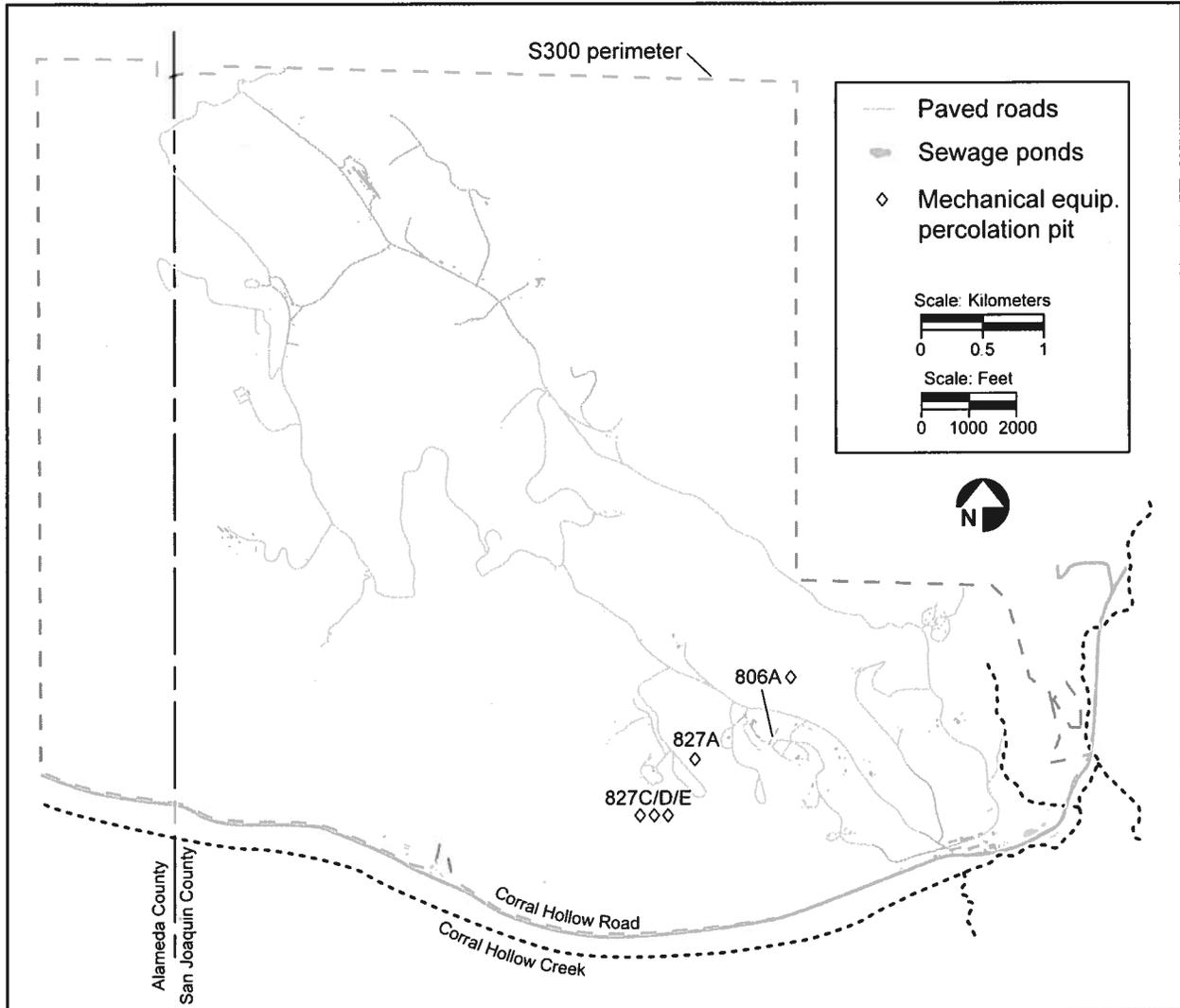


Figure C-1. Location of mechanical equipment wastewater percolation pits.

*LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018*

Table C-1. Site 300 mechanical equipment discharge effluent monitoring 2018 anions data summary.

Well	Date	Sodium mg/L	Chloride mg/L	Nitrate (as NO₃) mg/L	Sulfate mg/L	Fluoride mg/L
3-B806A-OW	May 1	230	91	<0.5	170	0.21
	May 1 DUP	230	92	<0.5	170	0.21
	Oct 3	240	95	<0.5	170	0.18
3-B827A-OW	May 1	300	120	<1	220	0.27
	Oct 8	390	150	<1	270	0.32
	Oct 8 DUP	380	140	<1	260	0.31
3-B827C-OW	May 2	340	140	<1	310	0.28
	Oct 8	260	93	<0.5	170	0.19
3-B827E-OW	May 2	590	240	<1	480	0.43
	Oct 3	230	95	<0.5	170	0.16

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/Annual Report 2018

Table C-2. Site 300 mechanical equipment discharge effluent monitoring 2018 metals data summary.

Analyte (µg/L)	Date	3-B806A-OW	3-B806A-OW DUP	3-B827A-OW	3-B827A-OW DUP	3-B827C-OW	3-B827E-OW
Aluminum	May 1	<50	<50	<50	-	-	-
	May 2	-	-	-	-	57	150
	Oct 3	<50	-	-	-	-	<50
	Oct 8	-	-	95	100	<50	-
Arsenic	May 1	<2	<2	<2	-	-	-
	May 2	-	-	-	-	<2	<2
	Oct 3	<2	-	-	-	-	<2
	Oct 8	-	-	<2	<2	<2	-
Barium	May 1	<25	<25	<25	-	-	-
	May 2	-	-	-	-	<25	<25
	Oct 3	<25	-	-	-	-	<25
	Oct 8	-	-	<25	<25	<25	-
Boron	May 1	900	880	1200	-	-	-
	May 2	-	-	-	-	1400	2200
	Oct 3	960	-	-	-	-	990
	Oct 8	-	-	1500	1400	970	-
Cadmium	May 1	<50	<50	<50	-	-	-
	May 2	-	-	-	-	<50	<50
	Oct 3	<50	-	-	-	-	<50
	Oct 8	-	-	<50	<50	<50	-
Calcium	May 1	9300	8900	13000	-	-	-
	May 2	-	-	-	-	9600	13000
	Oct 3	9200	-	-	-	-	8600
	Oct 8	-	-	15000	15000	10000	-

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/ Annual Report 2018

Table C-2. Site 300 mechanical equipment discharge effluent monitoring 2018 metals data summary (cont.).

Chromium	May 1	<1	<1	<1	-	-	-	-
	May 2	-	-	-	-	-	1.2	1.1
	Oct 3	<1	-	-	-	-	-	<1
	Oct 8	-	-	<1	<1	<1	<1	-
Chromium (VI)	May 1	<1	<1	<1	-	-	-	-
	May 2	-	-	-	-	-	<1	<1
	Oct 3	<1	-	-	-	-	-	<1
	Oct 8	-	-	<1	<1	<1	<1	-
Copper	May 1	14	14	3.6	-	-	-	-
	May 2	-	-	-	-	-	430	1300
	Oct 3	17	-	-	-	-	-	13
	Oct 8	-	-	5.4	5.7	20	-	-
Iron	May 1	<100	<100	140	-	-	-	-
	May 2	-	-	-	-	-	1900	6900
	Oct 3	120	-	-	-	-	-	<100
	Oct 8	-	-	160	180	170	-	-
Lead	May 1	<5	<5	<5	-	-	-	-
	May 2	-	-	-	-	-	7.5	32
	Oct 3	<5	-	-	-	-	-	<5
	Oct 8	-	-	<5	<5	<5	<5	-
Magnesium	May 1	<500	<500	<500	-	-	-	-
	May 2	-	-	-	-	-	<500	<500
	Oct 3	<500	-	-	-	-	-	<500
	Oct 8	-	-	510	<500	<500	<500	-

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/ Annual Report 2018

Table C-2. Site 300 mechanical equipment discharge effluent monitoring 2018 metals data summary (cont.).

Manganese	May 1	<30	<30	<30	-	-	-	-
	May 2	-	-	-	-	44	90	-
	Oct 3	<30	-	-	-	-	<30	-
	Oct 8	-	-	<30	<30	-	-	-
Mercury	May 1	<0.2	<0.2	<0.2	-	-	-	-
	May 2	-	-	-	-	<0.2	<0.2	-
	Oct 3	<0.2	-	-	-	-	<0.2	-
	Oct 8	-	<0.2	<0.2	<0.2	<0.2	<0.2	-
Molybdenum	May 1	<25	<25	<25	-	-	-	-
	May 2	-	-	-	-	36	51	-
	Oct 3	<25	-	-	-	-	<25	-
	Oct 8	-	32	32	33	<25	-	-
Nickel	May 1	<2	<2	<2	-	-	-	-
	May 2	-	-	-	-	16	23	-
	Oct 3	<2	-	-	-	-	<2	-
	Oct 8	-	<2	<2	<2	<2	-	-
Potassium	May 1	9100	8700	12000	-	-	-	-
	May 2	-	-	-	-	200000	220000	-
	Oct 3	8200	-	-	-	-	8700	-
	Oct 8	-	-	14000	14000	9600	-	-
Selenium	May 1	<2	<2	3.3	-	-	-	-
	May 2	-	-	-	-	<2	2.9	-
	Oct 3	<2	-	-	-	-	<2	-
	Oct 8	-	<2	<2	<2	<2	-	-

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
 Second Semester/ Annual Report 2018

Table C-2. Site 300 mechanical equipment discharge effluent monitoring 2018 metals data summary (cont.).

Silver	May 1	<10	<10	<10	-	-	-	-
	May 2	-	-	-	-	-	<10	<10
	Oct 3	<10	-	-	-	-	-	<10
	Oct 8	-	-	<10	<10	<10	<10	-
Vanadium	May 1	<20	<20	<20	-	-	-	-
	May 2	-	-	-	-	-	<20	<20
	Oct 3	<20	-	-	-	-	-	<20
	Oct 8	-	-	<20	<20	<20	<20	-
Zinc	May 1	<20	<20	24	-	-	-	-
	May 2	-	-	-	-	-	44	92
	Oct 3	<20	-	-	-	-	-	<20
	Oct 8	-	-	<20	20	<20	<20	-

Note:
 - = Sampling not required, sampling was performed for that analyte on a different date.

LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/Annual Report 2018

Table C-3. Site 300 mechanical equipment discharge effluent monitoring 2018 physical data.

Well	Date	pH	Specific Conductance $\mu\text{mhos/cm}$	Total Alkalinity (as CaCO_3) mg/L	Total dissolved solids (TDS) mg/L	Total Hardness (as CaCO_3) mg/L	Total Phosphorus (as PO_4) mg/L
3-B806A-OW	May 1	8.7	1130	220	720	24	<1
	May 1 DUP	8.7	1130	220	740	23	<1
	Oct 3	8.6	1060	220	730	24	<1
3-B827A-OW	May 1	8.8	1430	280	960	34	1.7
	Oct 8	8.9	1700	350	980	39	<1
	Oct 8 DUP	8.9	1710	350	1200	38	<1
3-B827C-OW	May 2	10.0	2330	520	1700	24	86
	Oct 8	8.6	1100	230	740	27	<1
3-B827E-OW	May 2	10.3	3310	690	2400	34	88
	Oct 3	8.6	1070	220	790	22	<1

FIELD TRACKING FORM

Semi-Annual Site 300 Mechanical Equipment Room/Percolation Pit Discharge

Special Instructions: Should be sampled in early April and October.
See back of form for additional access information
** For 3-B827A-OW Contact FPOC; Off-road travel
Location name change info: 3-B827A-OW previously 3-CT-PERC-OW
3-B806B-OW previously 3-806B-OW

LAB	CoC#	Ship It #
BC Labs	77336	236722

pH meter calibrated on 10/8/18
Specific Conductance meter calibrated on: 10/8/18

Sample Date: 10/8/18

Location Identifier	Sample Time	Initials	pH	Field Meas			BC Labs		Comments
				Specific Conductance	S3METALS 500mL Poly	S3ANIONS 1 x 500ml Poly	S3WETCHEM 1000mL Poly		
3-B827A-OW**	1400	KJS	8.97	1456 us	✓	✓	✓	827C Started at 07:40 77, 130ml Samples Collected over a 6 hour time period. one Sample Collected every 5 min. Approx 7 Liters collected	
3-B827C-OW	1400	KJS	8.75	972 us	✓	✓	✓	827A Started at 0758 77 130ml Samples Collected over a 6 hour time period one Sample Collected every 5 min. Approx 7 Liters collected	
3-B827D-OW								827D under construction no discharge, no sample collected	
3-B827E-OW									
3-B806A-OW									
Duplicate of 3-806A-OW		2nd Qtr							
Duplicate of 3-827A-OW		4th Qtr							
3-B9900-OW	1428					✓	✓		

Revised 2/2/17

Copy to Analyst, Ada Chan.

Chain of Custody

Additional Instructions:

Analytical Lab : BCLABS-BAK
TAT: 20d
Analytical Lab Log #:
Project/Network: MECHEQUIPMNTRMS
Shipt Release #: 236722
Add'l Email:

Access/COC #: 77336
Document Control #: 77336
Requester/LLNL Analyst: A. Chan
Organization / Sampler: EFA / brunckhors12
PCI Project #: 44497
PCI Task #: ES&H Bills and Taxes
Email: efa-dmt@llnl.gov

EFA Data Management Team
Lawrence Livermore National Laboratory
P.O. Box 808 L-627
Livermore, CA 94551
Work Authorized By: EFA
TRR Approver: DELLA BURRUSS
Project Info:

DMT Additional Copies:

Sample ID	Sampled Date/Time	Matrix	Cont. Type	Cont. Count	Study Area	Req. Analysis	Analysis Detail	Lab Instructions
3-B827A-01-OW	10/08/2018 14:20	AQ	P	1	MECHEQUIPM	S3ANIONS	ALL	
3-B827A-01-OW	10/08/2018 14:20	AQ	P	0	MECHEQUIPM	S3METALS	ALL	
3-B827A-01-OW	10/08/2018 14:20	AQ	P	1	MECHEQUIPM	S3METALS	TOTAL	
3-B827A-01-OW	10/08/2018 14:20	AQ	P	1	MECHEQUIPM	S3WETCHEM	ALL	
3-B9900-01-OW	10/08/2018 14:20	AQ	P	1	MECHEQUIPM	S3ANIONS	ALL	
3-B9900-01-OW	10/08/2018 14:20	AQ	P	0	MECHEQUIPM	S3METALS	ALL	
3-B9900-01-OW	10/08/2018 14:20	AQ	P	1	MECHEQUIPM	S3METALS	TOTAL	
3-B9900-01-OW	10/08/2018 14:20	AQ	P	1	MECHEQUIPM	S3WETCHEM	ALL	
3-B827C-01-OW	10/08/2018 14:00	AQ	P	1	MECHEQUIPM	S3ANIONS	ALL	
3-B827C-01-OW	10/08/2018 14:00	AQ	P	0	MECHEQUIPM	S3METALS	ALL	
3-B827C-01-OW	10/08/2018 14:00	AQ	P	1	MECHEQUIPM	S3METALS	TOTAL	
3-B827C-01-OW	10/08/2018 14:00	AQ	P	1	MECHEQUIPM	S3WETCHEM	ALL	

Relinquished Signature	Company	Date	Time	Received Signature	Company	Date	Time
<i>Handwritten Signature</i>	LLNUEFA	10/8/2018	1530	<i>Handwritten Signature</i>	BCLAB	10/8/18	1630
			2				
			3				
			4				
			5				

FIELD TRACKING FORM

Semi-Annual Site 300 Mechanical Equipment Room/Percolation Pit Discharge

Special Instructions: Should be sampled in early April and October.
See back of form for additional access information
** For 3-B827A-OW Contact FPOC; Off-road travel
Location name change info: 3-B827A-OW previously 3-CT-PERC-OW
3-B806B-OW previously 3-806B-OW

LAB	CoC#	Ship It #
BC Labs	77322	236686

pH meter calibrated on 10/3/16
Specific Conductance meter calibrated on: 10/5/18

Sample Date: 10/3/18

Location Identifier	Sample Time	Initials	Field Meas		BC Labs		Comments
			pH	Specific Conductance	S3WETCHEM	S3ANIONS	
3-B827A-OW**							806A STARTED AT 07:48 75, 130ml Samples Collected over a 6 Hour Time Period 1 Sample every 5 min Approx 7 Liters Collected
3-B827C-OW							827E STARTED AT 08:20 74, 130ml Samples Collected over a 6 Hour Time Period. 1 Sample Collected every 5 min.
3-B827D-OW							Approx 7 Liters Collected
3-B827E-OW	1420	LR	8.86	2,64µS			
3-B806A-OW	1355	LR	8.67	984µS			
Duplicate of 3-806A-OW			2nd Qtr				
Duplicate of 3-827A-OW			4th Qtr				
3-B9900-OW							

Copy to Analyst, Ada Chan.

Revised 2/2/17

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7-3-18 Inspector LEE P. CALDEIRA Building Number CT-PERK-0W

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Rick Blake, EFA (L-627), Environmental Functional Area.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 7-9-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

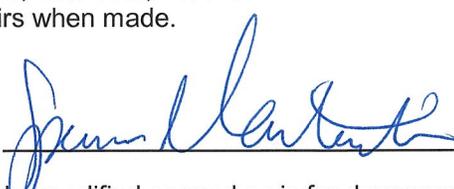
Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-1-18 Inspector JASON WITTIG Building Number CT-PERK-0W

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	<input checked="" type="radio"/> Yes/ <input type="radio"/> No	<u>Excessive brush/weeds around pit. Needs landscaping</u>
If yes to any of the above, note date, actions taken, and type of repairs when made.		
Supervisor's Signature <u></u>		Date <u>8-6-18</u>
* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.		
Revision 7		07/18
ESH-EFA-WQ-19-16096 – BP/AC:am		

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

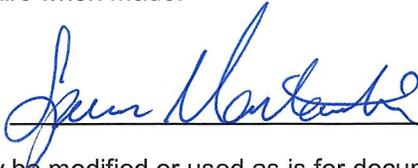
Date 9-5-18 Inspector JASON WITTIK Building Number CT-PERK-0W

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 9.6.18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 10/3/18 Inspector JASON WITTING Building Number CT-PERK-ow (827A)

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 10-8-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11-7-18 Inspector LEE P. CALDEIRA Building Number CT-PERK-ow

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 11-12-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

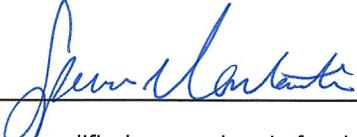
Date 12/5/18 Inspector JASON WITTIG Building Number CT-PERK-0W

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 12.6.18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7-3-18 Inspector LEE P. CALDEIRA Building Number 827C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Rick Blake, EFA (L-627), Environmental Functional Area.

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 7-9-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-1-18 Inspector JASON WITTIG Building Number 827C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 8-6-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

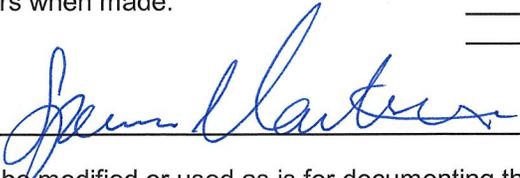
Date 9-5-18 Inspector JASON WITTIK Building Number 827C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 9.6.18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 10/3/18 Inspector JASON WITZIG Building Number 827C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 10-8-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11-7-18 Inspector Lee CALDEIRA Building Number 827C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 11-12-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 12/5/18 Inspector JASON WITTIG Building Number 827 C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____

If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.

3. Is there standing water in the Christy box?

Yes/No

12/5/18 8:00 AM
5-6" of water from recent rain.

If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted

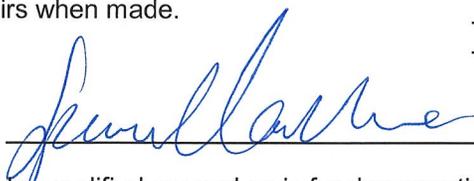
will increase monitoring to weekly

4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).

Yes/No

If yes to any of the above, note date, actions taken, and type of repairs when made.

Supervisor's Signature



Date

12-6-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7-3-18 Inspector LEE P. CALPEIRA Building Number 827 D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Rick Blake, EFA (L-627), Environmental Functional Area.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 7-9-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-1-18 Inspector JASON WITTIG Building Number 827D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature *Jason Wittig* Date 8.6.18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

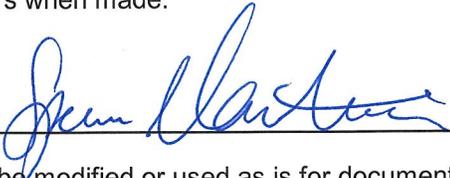
Date 9-5-18 Inspector JASON WITTIG Building Number 827 D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature  Date 9-6-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 10/3/18 Inspector JASON WITTIG Building Number 827 D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 10.8.18

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Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

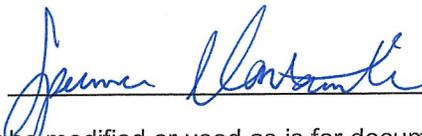
Date 11-7-18 Inspector LEE P. CADEIRA Building Number 827D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 11-12-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 12/5/18 Inspector JASON WITTIG Building Number 827 D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 12-6-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7-3-18 Inspector LEE P. CALDEIRA Building Number 827E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Rick Blake, EFA (L-627), Environmental Functional Area.

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 7-9-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8-1-18 Inspector JASON WITTIG Building Number 827E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 8-6-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 9-5-18 Inspector JASON WITTIK Building Number 827E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 9.6.18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 10/3/18 Inspector JASON WITTIK Building Number 827E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 10-8-18

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Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11-7-18 Inspector Lee CAUDERA Building Number 827E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 11-12-18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E, and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 12/5/18 Inspector JASON WITTIG Building Number 827E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Ada Chan, Environmental Functional Area, (L-627)

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____		

Supervisor's Signature  Date 12.6.18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

July

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 7/10/2018 Inspector MARK Krawko Building Number 806A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Rick Blake, EFA (L-627), Environmental Functional Area.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature [Signature] Date 7/11/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

[Signature] 7.18.18

August

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 8/6/2018 Inspector MARK KRAVINS Building Number 806A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Rick Blake, EFA (L-627), Environmental Functional Area.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
		_____ _____ _____

Supervisor's Signature  Date 8/6/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

September

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

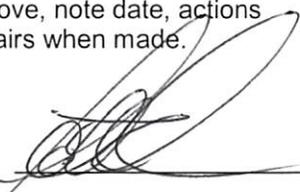
Date 9/4/2018 Inspector MARK KRAVHS Building Number 806A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Rick Blake, EFA (L-627), Environmental Functional Area.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <input checked="" type="radio"/> No	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 9/5/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 10/2/2018 Inspector MARK KRAVUS Building Number 806A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Rick Blake, EFA (L-627), Environmental Functional Area.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 11/10/19

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

LLNL-AR-411431-19-3
November



Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

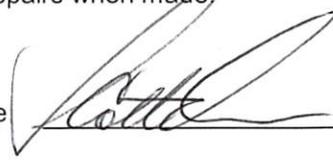
Date 11/5/2018 Inspector MARK KRAWK Building Number 806A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Rick Blake, EFA (L-627), Environmental Functional Area.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/No <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		

Supervisor's Signature  Date 11/7/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

Monthly/Weekly Mechanical Equipment Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number R5-2008-0148
Monitoring and Reporting Program Order No. R5-2008-0148, Revision 1

Date 11/29/2018 Inspector MARK KRAWIG Building Number 806A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Rick Blake, EFA (L-627), Environmental Functional Area.

Check Items	Response	Description and Comments:
1. Is water flowing from the Christy box?	Yes/No <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/No <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the ES&H Team EA or off hours contact the EDO (pager 04097 or 27595) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/No <u>No</u>	_____
If yes is indicated in 3, note depth and increase inspection frequency to weekly until no water is noted		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/No <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
_____ _____ _____		

Supervisor's Signature  Date 12/3/18

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Monitoring and Reporting Program Order Number R5-2008-0148, Revision 1. If standing water is observed in the monthly inspection, increase inspection frequency to weekly until no standing water is observed.

*LLNL Site 300 Compliance Monitoring Report for WDR Order No. R5-2008-0148
Second Semester/ Annual Report 2018*

Appendix D

California Regional Water Quality Control Board Central Valley Region
Monitoring and Reporting - LLNL

LAWRENCE LIVERMORE NATIONAL LABORATORY SITE 300
SAN JOAQUIN AND ALAMEDA COUNTIES**ATTACHMENT 16**

Evaluation of cooling tower and mechanical equipment discharges threat to groundwater quality using the designated level methodology (DLM); comparison of maximum value detected in samples with the DLM values for disposal units (percolation pits or septic systems) using attenuation factor of 100 for systems more than 30 feet above ground water.

Parameter	Units	Maximum value detected in effluent	Designated level methodology value	Corresponding water quality goal ^a	Source of water quality goal ^a
Aluminum	mg/L	0.25	100	1	CA primary MCL ^b
Bicarbonate alkalinity (as CaCO ₃)	mg/L	220	None	None	None
Boron	mg/L	2.2	140	1.4	IRIS ^c
Calcium	mg/L	22	None	None	None
Carbonate alkalinity (as CaCO ₃)	mg/L	800	None	None	None
Chloride	mg/L	210	Not applicable	250	CA secondary MCL
Chromium (total)	mg/L	0.0072	5	0.05	CA primary MCL
Chromium (hexavalent)	mg/L	0.0067	2.1	0.021	IRIS
Copper	mg/L	2.4	130	1.3	CA primary MCL
Fluoride	mg/L	1.1	200	2	CA primary MCL
Hydroxide alkalinity (as CaCO ₃)	mg/L	120	None	None	None
Iron	mg/L	2.3	30	0.3	CA secondary MCL
Lead	mg/L	0.0077	1.5	0.015	CA primary MCL
Magnesium	mg/L	1.4	None	None	None
Manganese	mg/L	0.2	5	0.05	CA secondary MCL
Molybdenum	mg/L	0.045	3.5	0.035	IRIS

continued

LAWRENCE LIVERMORE NATIONAL LABORATORY SITE 300
SAN JOAQUIN AND ALAMEDA COUNTIES**ATTACHMENT 16 - CONTINUED**

Evaluation of cooling tower and mechanical equipment discharges on ground water quality using the designated level methodology (DLM); comparison of maximum value detected in samples with the DLM values for disposal units (percolation pits or septic systems) using attenuation factor of 100 for systems more than 30 feet above ground water.

Parameter	Units	Maximum value detected in effluent	Designated level methodology value	Corresponding water quality goal ^a	Source of water quality goal ^a
Nickel	mg/L	0.019	10	0.1	CA primary MCL
Nitrate (as N)	mg/L	0.4	Not applicable	10	CA primary MCL
Nitrate (as NO ₃)	mg/L	1.8	Not applicable	45	CA primary MCL
Nitrate plus Nitrite (as N)	mg/L	0.17	Not applicable	10	CA primary MCL
Ortho-phosphate	mg/L	180	None	None	None
Potassium	mg/L	280	None	None	None
Selenium	mg/L	0.0036	5	0.05	CA primary MCL
Sodium	mg/L	740	Not applicable	30-60	Taste & odor
Specific conductance	µmhos/cm	4,340	Not applicable	900	CA secondary MCL
Sulfate	mg/L	885	Not applicable	250	CA secondary MCL
Total alkalinity (as CaCO ₃)	mg/L	920	None	None	None
Total dissolved solids	mg/L	3,300	Not applicable	500	CA secondary MCL
Total hardness (as CaCO ₃)	mg/L	58	None	None	None
Total phosphorus (as P)	mg/L	54	None	None	None
Total trihalomethanes	mg/L	0.011	Not applicable	0.08	CA primary MCL
Vanadium	mg/L	0.1	6.3	0.063	IRIS
Zinc	mg/L	0.34	500	5	CA secondary MCL

^a From *A Compilation of Water Quality Goals* (Marshack August 2007).

^b MCL – Maximum contaminant level.

^c IRIS – USEPA Integrated Risk Information System reference dose for drinking water.



**Environmental Functional Area, Lawrence Livermore National Laboratory
P.O. Box 808, Livermore, California 94551**