2019 Annual Report

LRI Landfill
Graham, Washington

Pierce County Recycling, Composting
& Disposal, LLC dba LRI
17925 Meridian Street East
Puyallup, Washington 98375

SCS ENGINEERS

04220001.02 | March 31, 2020, 2020

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This 2019 Annual Report for the LRI Landfill located in Graham, Washington, was prepared by Sam Graber and Kevin Lakey, LHG and was reviewed by Dan Venchiarutti, LHG, of SCS Engineers.

March 31, 2020

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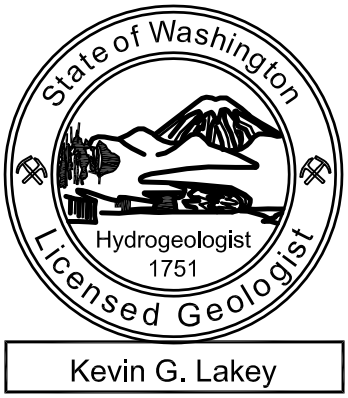

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1.0 INTRODUCTION

This document is the annual report for the LRI Landfill for 2019. The facility is a municipal solid waste landfill that operates in compliance with a *Full Permit for Solid Waste Handling* (Permit No. 27-050) issued by the Tacoma-Pierce County Health Department (TPCHD). The landfill is located approximately 15 miles south of Puyallup at 30919 Meridian East, in Graham, Washington (Figure 1). This report presents a summary of the 2019 solid waste disposal activities and monitoring results and meets the requirements of Section VI (11) of the *Full Permit for Solid Waste Handling*, and Sections 200(11) and 600(3)(ii) of *Chapter 173-351 WAC, Criteria for Municipal Solid Waste Landfills.*

1.1 FACILITY CONTENT INFORMATION

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1.2 FACILITY DESCRIPTION

The landfill property is approximately 320 acres in size and lies in the west half of Section 10, Township 17N, Range 4E. At completion, the landfill will encompass a footprint of approximately 169.2 acres. Figure 2 provides a site map showing the primary features of the landfill facility.

Nine refuse disposal cells (Cell 1, 2A, 2B, 3A, 4A, 4B, 5, 6 and 7) with a combined bottom liner area of approximately 117.1 acres have been constructed to date. Each of the nine disposal cells have been used for waste disposal. The landfill began accepting waste within a 16-acre refuse disposal cell referred to as Cell 1 in December 1999. Cell 2A, a 10.6-acre disposal cell, began accepting waste in July 2001. Cell 2B, an 11.3-acre disposal cell, began accepting waste in April 2003. Cell 3A, a 10.9-acre disposal cell, began accepting waste in December 2004. Cell 4A, a 17.5-acre disposal cell, was constructed in four phases and began accepting waste in April 2006. Cell 4B, a 17.8-acre disposal cell was constructed in three phases and began accepting waste in January 2009. Cell 5, a 9.3-acre disposal cell, was constructed in two phases and began accepting waste in May 2013. Cell 6, a 12-acre disposal cell, was constructed in two phases and began accepting waste in June 2017. Cell 7, an 11.5-acre disposal cell, began taking waste in December 2019.

Six final closure constructions, totaling 31.2 acres (in plan-view) have been completed to date over portions of Cells 1, 2A, 2B, 4A and 4B. The first phase of closure, referred to as the Phase I Closure, capped approximately 4.7 acres and was constructed during the summer of 2001. Closure construction included a foundation layer, bedding layer, geosynthetic clay liner (GCL), HDPE geomembrane, a 1-foot thick drainage layer, and a vegetative layer. In 2006, the Phase I Closure Addition was installed over an area approximately 4,500 square feet in size along the access roadway on the landfill and the perimeter roadway. The Phase IIA Closure capped approximately 13.3 acres and was completed over three construction seasons in 2006, 2007 and 2008. The Phase II Closure construction included a foundation layer, bedding layer, geosynthetic clay liner (GCL), HDPE geomembrane, a geonet composite, and a vegetative layer. The Phase III Closure capped approximately 6.3 acres and was completed in the summer of 2011. Closure construction

included a foundation layer, bedding layer, geosynthetic clay liner, HDPE geomembrane, geonet composite drainage layer, and a vegetative soil layer. The Phase IVA Closure capped approximately 6.8 acres and was completed over two construction seasons in 2018 and 2019. Closure construction included a foundation layer, bedding layer, geosynthetic clay liner, HDPE geomembrane DrainLiner, a geotextile filter, and a vegetative soil layer.

1.3 2019 MONITORING AND REPORTING ACTIVITIES

Groundwater monitoring activities were conducted quarterly in March, June, September, and December 2019 following the procedures described in the *LRI Landfill Groundwater Monitoring Plan* (March 20, 2014). In addition to water quality sampling, water level measurements were recorded during each monitoring event and are included in Appendix A. Monitoring results are provided in summary data tables in Appendix B and in the 2019 groundwater database in Appendix C. A geochemical evaluation including trilinear diagrams is included in Appendix D and groundwater statistical calculations are provided in Appendix E. Water quality time trends for the leak detection and collection system are presented in Appendix F. Laboratory reports for the 2019 Fourth Quarter groundwater sampling event were submitted to the TPCHD under separate cover.

Stormwater monitoring was conducted on a weekly, monthly and quarterly schedule during 2019 as outlined in the *LRI Landfill Surface Water Monitoring Plan* (SCS July 2009) and per an Industrial Stormwater General Permit (WAR002557) and a Construction Stormwater General Permit (WAR002603). Summary tables of surface water monitoring results are provided in Appendix G.

Landfill gas probe monitoring was conducted monthly and on-site buildings were monitored quarterly in 2019. Summary results of landfill gas monitoring are provided in Appendix H.

1.4 FINANCIAL ASSURANCE FOR POST-CLOSURE CARE

Summary tables of estimated costs for closure activities, post-closure care, and annual environmental monitoring are included in Appendix I.

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PROJECT NO. 04220001.02	DES BY LEL	SITE LOCATION MAP	DATE MARCH 2020
SCALE NOT TO SCALE	CHK BY SEG	LRI LANDFILL 30919 MERIDIAN STREET E. GRAHAM, WASHINGTON	FIGURE 1
CAD FILE FIGURE 1	APP BY KGL		

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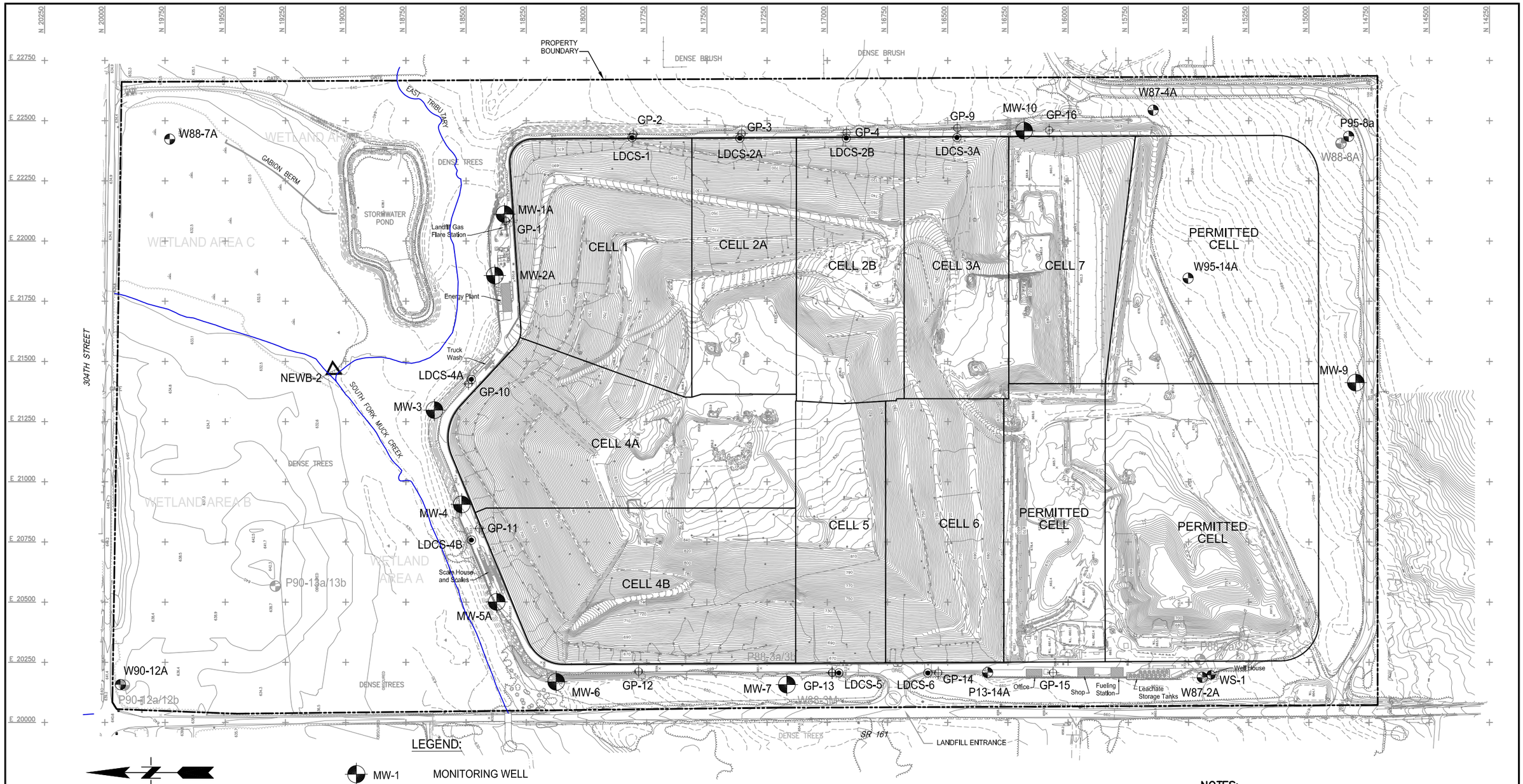

LEGEND:

MW-1	MONITORING WELL
WS-1	WATER SUPPLY WELL
W87-2A	CHARACTERIZATION WELL/ PIEZOMETER
LDCS-1	LEAK DETECTION/COLLECTION SUMP
NEWB-2	SURFACE WATER MONITORING LOCATION
GP-1	GAS PROBE

0 400 800

SCALE (ft)

NOTES:

1. TOPOGRAPHIC BASE MAP PREPARED BY MILLER CREEK ASSOCIATES, USING PHOTOGRAMMETRIC SURVEY METHODS, DATE OF PHOTOGRAPH FEBRUARY 20, 2020.
2. SOME EDGES OF LANDFILL IS BASED ON TOPOGRAPHIC BASE MAP PREPARED BY COOPER AERIAL SURVEYS CO., USING PHOTOGRAMMETRIC SURVEY METHODS, DATE OF PHOTOGRAPH MAY 09, 2017.
3. VERTICAL DATUM – BASED ON PIERCE COUNTY BENCH NO. 112–18, ELEVATION 660.29 NGVD29.

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PROJECT NO. 04220001.02	DES BY SEG	SITE MAP	DATE MARCH 2020
SCALE AS SHOWN	CHK BY KGL	LRI LANDFILL 30919 MERIDIAN STREET EAST GRAHAM, WASHINGTON	FIGURE 2
CAD FILE FIGURE 2	APP BY KGL		

2.0 2019 REPORT FORM AND FACILITY CAPACITY INFORMATION

Landfilling operations were conducted over portions of Cells 2A, 2B, 3A, 4A, 4B, 5, and 6 in 2019. The tonnage of waste materials landfilled at the LRI Landfill during 2019 was approximately 1,256,060 tons. The total tonnage landfilled at the LRI Landfill since opening in December 1999 through December 31, 2019 is approximately 18,995,120 tons. The in-place density of combined waste placed between December 1999 and March 8, 2019 (aerial topographic survey date) is approximately 2,073 pounds per cubic yard (lbs/CY). This estimate is based on the tonnage of waste landfilled and the calculated volume of fill from aerial photo topography data. Based on the in-place density estimate of 2,073 lbs/CY, the volume of airspace consumed through December 31, 2019 was approximately 18.3 million cubic yards, or approximately 53.0 percent of the 34.6 million cubic yard total facility capacity estimate (not including volume consumed by daily and interim soil cover).

A copy of the LRI Landfill 2019 Annual Report Form for Municipal Solid Waste Landfills required by the Washington Department of Ecology (Ecology) is included in Appendix J.

3.0 LEACHATE MONITORING

3.1 LEACHATE VOLUMES

Leachate is collected from each of the nine active landfill cells with depth-activated submersible pumps and pumped via force main to sixteen above ground storage tanks, with a combined on-site leachate storage capacity of approximately 218,400 gallons. Leachate collected in 2019 was truck-hauled to the Hidden Valley Landfill where it was pre-treated and discharged to the Pierce County sewer system in accordance with the Pierce County Utilities Department Industrial Discharge Permit Number PC03096. In addition, leachate was truck-hauled to the City of Tacoma in Tacoma, Washington, and the City of Salem in Salem, Oregon for proper disposal. The volume of leachate produced at the landfill was measured with flow meters installed at each sump using a programmable logic controller (PLC) system, and by recorded volumes of leachate truck-hauled off-site for proper disposal. A summary of 2019 leachate volumes truck-hauled off site for proper disposal is shown on Exhibit 1.

Exhibit 1. 2019 Leachate Volume Data

Month	Leachate Production (gallons)	Monthly Rainfall (inches)
January	2,352,863	3.47
February	2,293,109	3.44
March	2,366,050	1.78
April	2,321,189	3.86
May	2,152,277	1.05
June	2,185,958	1.22
July	2,357,911	1.20
August	2,336,023	0.76
September	2,618,234	3.25
October	2,375,256	2.86
November	2,144,496	1.63
December	2,734,794	6.56
Totals	28,238,160	31.08

Notes:
Leachate was trucked off-site for proper disposal.
Leachate volumes were determined by trucking records kept on a daily basis.
Rainfall totals were obtained from an on-site rain gauge and from Weather Underground Station KWAGRA.

3.2 LEACHATE QUALITY

Leachate samples were collected in December at each individual sump location from sampling ports installed near the leachate riser pipes. However, refuse had been placed in Cell 7 prior to the December monitoring event, therefore a leachate sample was not collected from this cell in 2019. LRI began filling Cell 7 with refuse on December 16, 2019, and the first leachate sample was subsequently collected on January 31, 2020. An additional leachate sample was collected from Cell

4B on June 18, 2019, during the second quarter monitoring event to assist LRI with leachate disposal options. Leachate samples were submitted to TestAmerica of Denver, Colorado and tested for the parameters listed in Appendix I and II of WAC 173-351. The results of leachate monitoring are included on summary tables in Appendix B and with the groundwater database in Appendix C. No significant changes in leachate quality were noted in 2019 (see attached leachate database in Appendix C).

4.0 LEAK DETECTION MONITORING

The LRI Landfill includes a Leak Detection/Collection System (LDCS) that consists of a high-permeability gravel layer beneath the composite liner of each of the disposal cells. The LDCS is designed to monitor groundwater quality beneath the composite liner for early leak detection and to collect any leachate in the event a leak develops in the liner. Each landfill cell has one LDCS sump where groundwater is removed and monitored (see Figure 2). The PLC system is used to monitor the LDCS at each landfill cell on a daily basis for the total volume of water pumped and specific conductance (conductivity). In addition, samples are collected quarterly and tested for the parameters listed in Appendix I and II of WAC 173-351. Metals are analyzed as dissolved metals. Samples for laboratory testing were submitted to TestAmerica of Denver, Colorado.

Summary tables of LDCS water quality results for each quarter are provided in Appendix B along with the groundwater monitoring results. Groundwater data generated from monitoring activities in 2019 were validated and input into a database utilizing Microsoft Office Access 2016 software. A data validation summary for Fourth Quarter 2019 groundwater monitoring is provided in Appendix B. A copy of the groundwater database for 2019 is included in Appendix C. Trilinear diagram plots of water quality data from the LDCS sumps are included in Appendix D.

Water quality results from the LDCS are evaluated for primary and secondary leachate indicator parameters and for landfill gas indicator parameters (see Section 12.5 of the GWMP). Primary leachate indicator parameters include acetone and 2-butanone (MEK). These constituents are consistently present in the leachate at elevated concentrations and are typically not naturally present in the groundwater. Secondary leachate indicator parameters include ammonia and chloride. These constituents are consistently present in the leachate at elevated concentrations and are naturally present in the groundwater at low concentrations. Landfill gas indicator parameters include dichlorodifluoromethane (Freon 12) and trichlorofluoromethane (Freon 11). These compounds are highly volatile, mobile, and dissolve readily in water, and are not naturally present in the groundwater.

4.1 LDCS DAILY MONITORING

Groundwater is removed from the LDCS using dedicated submersible pumps that are activated by high (on) and low (off) float switches or transducers. LDCS monitoring data were uploaded directly from the PLC and supplemented with manually recorded data by LRI staff. Summaries of daily rainfall totals, daily discharge from the LDCS, and daily conductivity measurements for each LDCS sump are included in Appendix F. Also included are time-series plots that show the volume of water pumped, precipitation, and groundwater conductivity. The volume of water pumped from the LDCS increases during periods of sustained rainfall as illustrated by the time series plots. This correlation is believed to be the result of lateral inflow of water perched on top of the low permeability glacial till present beneath the landfill.

During 2019, operation and maintenance activities associated with LDCS included cleaning vaults, checking electrical connections, and replacing equipment as needed within the vaults (pumps and meters) and the onsite panels that operate the system and record data. Specific activities included the following:

- New flowmeters were installed at LDCS-1 and LDCS-3A on February 21, 2019.
- The conductivity probe at LDCS-2B was recalibrated by LRI staff on May 23, 2019. Following recalibration, recorded conductivity values more closely reflected readings taken in the field.

- The vaults and riser pipes at LDCS-4A and LDCS-4B were cleaned and pressure washed on September 17, 2019. DrainPro was hired to perform the work. The inside areas of the surface vaults were cleaned using a vactor truck. The riser pipes and buried vaults were also cleaned with a vactor truck and were pressure-washed using potable water. The pumps and water-level transducers were temporarily removed to perform the work, pressure washed using potable water, and re-installed at completion. Some rocks were removed from the riser pipe of LDCS-4A. Silty water was removed from both riser pipes.
- The pump at LDCS-4A malfunctioned beginning October 10, 2019. The pump was removed and cleaned by LRI staff on November 1, 2019. Following the cleaning, the pumping data returned to levels consistent with historic data. LRI staff also replaced the conductivity probe at LDCS-4A on November 1, 2019.
- Beginning in October of 2019, there has been connectivity issues between the panel at Cell 5 and the PLC. It is believed the issue is related to a faulty fiber optic line at the panel. SCS is currently working with LRI to get this issue resolved.
- The conductivity probe at LDCS-5 was recalibrated by LRI staff on June 7, 2019 to expand the range of recorded values. The conductivity probe subsequently malfunctioned beginning on October 4, 2019. See below for additional discussion regarding water quality at LDCS-5.
- The conductivity probe at LDCS-6 was recalibrated on May 23, September 2 and October 8 of 2019. Following the calibration on October 8, conductivity values more closely reflected readings taken in the field.

Conductivity values displayed an increase at LDCS-1 between August and November of 2019, which directly coincided with a decrease in volume being removed from the cell. By mid-November, conductivity values decreased to levels consistent with historic data. Therefore, it appears likely that the groundwater within the LDCS came in contact with the overlying clay liner during this period, which in turn, caused the conductivity of the groundwater to rise.

The conductivity levels recorded by the in situ probe at LDCS-3 displayed a slight and steady increase over the course of 2019. However, the conductivity readings taken in the field during the quarterly monitoring events did not display a similar increase. This conductivity probe will be recalibrated by LRI.

The conductivity at LDCS-4A was somewhat sporadic during 2019. The silty water encountered in the riser pipe mentioned above likely influenced the conductivity values recorded at this location. Following the cleaning of the riser pipe in September and replacing the conductivity probe in November, the conductivity deceased to levels consistent with historic data.

Increases in conductivity at LDCS-4B were observed to coincide with large rain events in February, June, October and December of 2019. Following these rain events, the conductivity values decreased to levels consistent with historic trends.

The remaining conductivity data from the LDCS sumps generally trended within typical historical ranges during 2019 (see Appendix F).

4.2 LDCS QUARTERLY MONITORING

Groundwater samples were collected quarterly from each LDCS monitoring location. Samples were collected from the LDCS sump riser pipes using disposable bailers at LDCS-1, LDCS-2A and LDCS-2B, and from dedicated low-flow QED bladder pumps at LDCS-3A, LDCS-4A, LDCS-4B, LDCS-5, and LDCS-6. Background water quality sampling was performed monthly at LDCS-7 beginning in

August 2019. See below for more discussion regarding the background sampling at LDCS-7. Samples were submitted to TestAmerica of Denver, Colorado. Water quality test results for the LDCS samples are included on the summary tables in Appendix B and in the groundwater database in Appendix C.

Time-trend plots for inorganic parameter and dissolved metal concentrations at the LDCS sumps are included in Appendix F. These plots provide a means of tracking water quality trends in the LDCS system. The following four plots are included for each leak detection sump:

- Plot 1 — nitrate, ammonia, chloride, TOC
- Plot 2 — alkalinity, sulfate, TDS
- Plot 3 — calcium, magnesium, sodium, potassium
- Plot 4 — iron, manganese, zinc, arsenic

Water quality results from the leak detection sumps during 2019 were generally consistent with previously measured values (see Appendix F), except as noted below.

Low-level detections of ammonia (0.57 mg/L or less) were reported during one or more quarters at LDCS-1, LDCS-4A, LDCS-4B, and LDCS-6. Low-level detections of ammonia were also reported in nearly all of the groundwater monitoring wells in 2019. In addition, ammonia has been detected at upgradient well MW-10 several times in the past, including during the Second Quarter of 2018. Therefore, since ammonia has been detected in upgradient well MW-10 at a similar concentration to the downgradient monitoring wells, the ammonia concentrations appear to be due to a site-wide aquifer condition, which has also affected LDCS water quality.

Samples collected from LDCS-1 included a detection of acetone (11 µg/L) during the first quarter monitoring event and a detection of 1,4-dichlorobenzene (0.58 µg/L) during the third quarter monitoring event. However, 2-butanone and ammonia were non-detect, and chloride was reported at a low concentration (5.3 mg/L) during the first quarter and acetone and 2-butanone were non-detect and the secondary indicator parameters of ammonia and chloride remained low (0.14 mg/L and 4.2 mg/L, respectively) during the third quarter monitoring event. Therefore, these VOC detections do not appear to be related to landfill leachate.

Samples collected from LDCS-2B displayed elevated concentrations of dissolved iron during the second and third quarter monitoring events (1.2 mg/L and 1.3 mg/L, respectively). However, the leachate indicator parameters were non-detect or remained low. Therefore, the elevated iron concentration does not appear to be related to landfill leachate.

Samples collected from LDCS-4A displayed slightly elevated concentrations of chloride, dissolved iron and dissolved manganese during 2019. Primary leachate indicator parameters, acetone and 2-butanone, were not detected at LDCS-4A in 2019. In addition, the trilinear plots of this LDCS sump in Appendix D demonstrate the inherent water quality differences between the LDCS system and leachate. Therefore, the reported concentrations do not appear to be related to landfill leachate.

No VOCs were detected in the sample collected in the Second Quarter. However, as a precautionary measure, groundwater from LDCS-4B was directed to the leachate collection system, beginning on July 26, and was not being discharged through the concrete channel. As discussed earlier in this report, the pump, water level transducer, riser pipes and buried vaults were cleaned and pressure washed on September 17, 2019. Following this, concentrations of dissolved iron, ammonia, and

total organic carbon in samples collected during the Third Quarter and Fourth Quarter monitoring events, decreased. No other VOCs were detected in the samples collected at LDCS-4B after the First Quarter.

The sample collected from LDCS-4B during the first quarter monitoring event had reported concentrations of primary leachate indicator parameters acetone (16 µg /L) and 2-butanone (11 µg/L), and an elevated concentration of total organic carbon TOC (24 mg/L). The secondary leachate indicator parameter ammonia remained low (0.32 mg/L) and chloride was within levels recently observed (30 mg/L). LDCS-4B was resampled on April 5, 2019 and the sample was submitted to the TestAmerica laboratory in Fife, Washington. The re-sample results included no detections of VOCs, a decrease in TOC to a more typical level (4.3 mg/L), nearly unchanged ammonia (0.33 mg/L), and a slight decrease in chloride (24 mg/L). Acetone and 2-butanone are common laboratory contaminants recognized by the USEPA. Therefore, since the results of the reanalysis were non-detect, it appears that the initial first quarter LDCS-4B detections of acetone and 2-butanone represented laboratory artifacts.

During the second quarter monitoring event, the sample collected from LDCS-4B displayed an elevated concentration of iron (4.0 mg/L) and slight increases in ammonia (1.0 mg/L), chloride (32 mg/L), and total organic carbon (9.9 mg/L). The primary leachate indicator parameters acetone and 2-butanone were non-detect. However, as a precautionary measure, groundwater from LDCS-4B was directed to the leachate collection system, beginning on July 26, and is not being discharged through the concrete channel.

As noted previously, the concrete vaults and riser pipes at LDCS-4A and LDCS-4B were cleaned and pressure washed on September 17, 2019, prior to the third quarter monitoring event. A subsequent general improvement in water quality was noted at LDCS-4B during the third and fourth quarter monitoring events.

Samples collected from LDCS-5 displayed elevated concentrations of secondary leachate indicator parameters ammonia and chloride, as well as alkalinity, iron, manganese, sodium, potassium, total dissolved solids (TDS), and TOC (see summary tables and time trend plots in Appendix B). To further track water quality trends, additional samples were collected from LDCS-5 in July, August, October and November. Primary leachate indicator parameters acetone and 2-butanone were not detected in samples from LDCS-5 in 2019. However, the elevated concentrations of the inorganic parameters and metals listed above are indicative of a potential leachate leak.

Therefore, the two leachate forcemains that are present in front of the leachate riser pipes at Cell 5 were exposed for observation. This area experienced a leachate forcemain leak in 2016. Liquids observed in the excavation had a brownish color and displayed a conductivity range from 920 µS/cm to 4,400 µS/cm. However, cycling of the two leachate forcemains did not indicate a forcemain leak. Therefore, additional investigation is needed to determine the source of leachate. Groundwater withdrawn from LDCS-5 continues to be directed to the leachate collection system, as it has been since May of 2016, and is not being discharged through the concrete channel.

The sample collected from LDCS-6 during the fourth quarter monitoring event included reported detections of 1,1-dichloroethene (1.0 µg/L) and vinyl chloride (0.61 µg/L). The primary leachate indicator parameters acetone and 2-butanone were non-detect and secondary leachate indicator parameters ammonia (0.12 mg/L) and chloride (7.2 mg/L) remained low. LDCS-6 was resampled on January 30, 2020, and no VOCs were detected. Therefore, the VOC detections reported during the Fourth Quarter do not appear to be related to landfill leachate.

4.3 LDCS-7 BACKGROUND WATER QUALITY DATA

Five background water quality samples were collected at LDCS-7 on August 29, September 25, October 18, November 25, and December 16, 2019. The first four samples were collected from temporary lay-flat PVC discharge hose w/camlock couplings and a new 2-inch diameter electric submersible dewatering pump provided by Scarsella Brothers (the Cell 7 construction contractor). The dewatering pump was connected to the discharge hose with glued Sch. 40 PVC pipe. The December 16, 2019 sample was collected from a dedicated QED Sleeper pump.

Low-level detections of carbon disulfide were reported in samples collected on August 29 and December 16 (1.1 µg/L and 2.1 µg/L, respectively). Carbon disulfide is associated with the production of viscose rayon fibers, and therefore, one possible source is groundwater contact with either the woven stabilization geotextile beneath the LDCRS gravel or the non-woven geotextile filter above the LDCRS gravel. It is noteworthy that carbon disulfide was previously detected at LDCS-6 in March of 2016 after cell construction was completed in the fall of 2015. In addition, the sample collected on December 16 included a reported detection of toluene at 20 µg/L.

The background sampling results display a low-level detection of ammonia (0.14 mg/L), two low-level detections of nitrate (<1.0 mg/L), and relatively elevated concentrations of chloride (up to 98 mg/L), sulfate (up to 330 mg/L), TDS (up to 1,000 mg/L), and dissolved manganese (up to 2.2 mg/L), calcium (up to 190 mg/L), and sodium (up to 82 mg/L). TOC was detected at a concentration of 930 mg/L on September 25, but decreased in subsequent samples to a range of 3.6 mg/L to 18 mg/L.

During this time, the dewatering pump was operated manually. Therefore, groundwater contact with the soil liner occurred. Although the soil liner was constructed from on-site soil without a bentonite amendment, groundwater contact with the soil liner may have affected the background water quality results.

In addition, shallow perched groundwater and confined groundwater within a sand layer in the glacial till were encountered within the Cell 7 footprint. These conditions led to the need for groundwater dewatering during the construction of Cell 7. Therefore, the groundwater quality results recorded for LDCS-7 may be due to shallow background groundwater quality from the perched and confined zones that overlie the uppermost aquifer (see Section 5.1).

5.0 GROUNDWATER LEVELS AND FLOW DIRECTIONS

5.1 LOCAL HYDROGEOLOGY

The LRI Landfill site is located on low permeability glacial till and transitional till that is approximately 45 feet thick. Beneath the glacial till layer is a saturated glacial outwash deposit that forms a confined aquifer. Intermediate and deeper groundwater systems are present at the site, each of which is separated by layers of low permeability (aquitard) deposits. Summary descriptions of the individual hydrogeologic units are presented in the Groundwater Monitoring Plan.

5.2 WATER LEVEL MEASUREMENTS

Depth to water level measurements were collected quarterly in 2019. The water level database and water level contour maps for each quarter are included in Appendix C. Groundwater flow in the confined aquifer was to the northwest during all monitoring events. Horizontal hydraulic gradients in the confined aquifer ranged from approximately 0.007 to 0.012 beneath the active area of the landfill. This flow pattern is consistent with previous data. The horizontal hydraulic conductivity of the confined aquifer is inferred to range from 1×10^{-4} centimeters per second (cm/sec) to 1×10^{-2} cm/sec. This range of values is based on rising head slug test data and on observations of groundwater discharge during drilling. The effective porosity of the aquifer is assumed to be 25 to 40 percent, based on values documented in the scientific literature (Freeze and Cherry, 1979). Based on a horizontal hydraulic gradient of 0.0125, a horizontal hydraulic conductivity of 1×10^{3} cm/sec, and a porosity of 30 percent, the horizontal flow rate of water in the confined aquifer is estimated to be approximately 43 feet per year in the area of Cell 1.

6.0 GROUNDWATER MONITORING

The groundwater monitoring network for the LRI Landfill in 2019 included two background wells (MW-9 and MW-10) and seven downgradient wells (MW-1A, MW-2A, MW-3, MW-4, MW-5A, MW-6, and MW-7). Quarterly groundwater monitoring was conducted in March, June, September, and December using micro-purge techniques and dedicated QED Well Wizard pumps, or a non-dedicated QED Sample Pro pump (MW-4). Groundwater samples were analyzed for the parameters listed in Appendix I and Appendix II of WAC 173-351. Samples were submitted to TestAmerica of Denver, Colorado. Groundwater sampling locations are shown in Figure 2.

Summary tables of water quality results for each quarter are provided in Appendix B. Data provided in the tables include field parameters, laboratory parameters, and duplicate samples. Groundwater data generated from monitoring activities in 2019 were validated and input into a database utilizing Microsoft Office Access 2016 software, and uploaded into Ecology's Environmental Information Management (EIM) database system. A data validation summary for Fourth Quarter 2019 groundwater monitoring is provided in Appendix B. A copy of the groundwater database for 2019 is included in Appendix C. Trilinear diagram plots and anion/cation balance equations are included in Appendix D. Statistical calculations performed on groundwater data are presented in Appendix E. The groundwater database was provided to the TPCHD as a Microsoft Office Access file in electronic format (on compact disk) and analytical laboratory reports were provided as paper hardcopies under a separate submittal.

6.1 BACKGROUND DATA

The background water quality data set includes a minimum of eight rounds of water quality data collected from each downgradient monitoring well prior to the placement of waste in an upgradient landfill cell. In addition, ongoing background water quality data is collected each quarter from upgradient wells MW-9 and MW-10.

Low levels of inorganic parameters including alkalinity, bicarbonate alkalinity, ammonia, chloride, nitrate, sulfate, total organic carbon, and total dissolved solids, as well as low levels of total metals including barium, calcium, magnesium, potassium, sodium, vanadium, and zinc were reported in the background groundwater samples. VOCs, with two exceptions, have not been reported in the background samples.

6.2 GROUNDWATER QUALITY EVALUATION

Consistent with the GWMP, a nonparametric inter-well prediction limit approach is used to evaluate water quality results for Appendix I parameters (15 metals plus nitrate). Using this procedure, the highest concentration of each parameter in the background data set is selected as the prediction limit for that parameter. For total metals, prediction limits for non-detected metals were set equal to the method reporting limit (MRL). If more than one MRL was used over the eight-quarter evaluation period, the higher value was selected as the prediction limit.

Prediction limits are updated when water quality changes are observed from ongoing monitoring at upgradient (background) wells MW-9 and MW-10. For 2019, the groundwater prediction limits remained unchanged. Nitrate and total metal concentrations measured at downgradient monitoring wells were less than or equal to prediction limit values in 2019.

Downgradient water quality results were also compared to the groundwater quality criteria listed in WAC 173-200. Inorganic parameters and metals results measured at downgradient monitoring wells

that exceeded their respective groundwater quality criteria are included in Exhibit 2. With the exception of TDS at MW-3 during the First Quarter, the values listed in Exhibit 2 are typical of previous results (see time-trend plots in Appendix B), are interpreted to be within natural, background variation and are less than the background levels used to establish prediction limits. The MRL for arsenic is 0.005 milligrams per liter (mg/L), which is greater than the WAC 173-200 criteria of 0.00005 mg/L. Therefore, all arsenic results were greater than the WAC 173 200 criteria. However, all reported arsenic detections were less than or equal to the prediction limit and the Federal primary drinking water maximum contaminant level (MCL) of 0.010 mg/L.

Exhibit 2. 2019 Groundwater Results Greater Than WAC 173-200 Criteria

Parameter	Event	Ground-water Criteria	MW-1A	MW-2A	MW-3	MW-4	MW-5A	MW-6	MW-7
Arsenic	Q1	0.00005	**	**	**	0.0097	0.0057	0.0073	0.0053
	Q2		**	**	**	0.0091	0.0055	0.0070	0.0052
	Q3		**	**	**	0.0093	**	0.0068	0.0054
	Q4		**	**	**	0.010	0.0050	0.0077	0.0053
Iron	Q1	0.30	1.7	0.62	*	*	*	*	*
	Q2		1.6	0.67	*	*	*	*	*
	Q3		1.5	0.75	*	*	*	*	*
	Q4		1.9	1.0	*	*	*	*	*
Manganese	Q1	0.05	0.28	0.28	0.32	0.23	0.20	0.17	0.21
	Q2		0.27	0.29	0.31	0.24	0.21	0.20	0.25
	Q3		0.24	0.34	0.27	0.23	0.16	0.19	0.22
	Q4		0.25	0.40	0.27	0.23	0.18	0.20	0.21
Total Dissolved Solids	Q1	500	*	*	880	*	*	*	*
	Q2		*	*	*	*	*	*	*
	Q3		*	*	*	*	*	*	*
	Q4		*	*	*	*	*	*	*

Notes:
* = concentration less than WAC 173-200 criterion
** = analyte not detected at or above the MRL, but MRL is greater than the WAC 173-200 Groundwater Criteria

Time-trend plots for inorganic parameter and dissolved metal concentrations at the monitoring wells are included in Appendix B. The following four plots are included for each monitoring well:

- Plot 1 — nitrate, ammonia, chloride, TOC
- Plot 2 — alkalinity, sulfate, TDS
- Plot 3 — calcium, magnesium, sodium, potassium
- Plot 4 — iron, manganese, zinc, arsenic

As shown on the referenced time-trend plots, dissolved metal and inorganic parameter concentrations during 2019 were generally consistent with previously measured values, except as noted below.

Concentrations of chloride, sulfate and total dissolved solids, and dissolved magnesium and calcium, displayed slight increases at MW-2A, in the sample collected during the Fourth Quarter. However, primary indicator parameters, acetone and 2-butanone, were non-detect and the secondary indicator parameter, ammonia, remained low. Therefore, the increase in select parameter concentrations does not appear to be related to leachate.

TDS was detected at a concentration of 880 mg/L in the sample collected from MW-3 during the First Quarter monitoring event. The remaining field and laboratory results for the sample collected at MW-3 were within typical concentration ranges. Primary leachate indicator parameters and secondary leachate indicator parameters were non-detect and remained low, respectively. The subsequent samples collected from MW-3 in 2019 displayed decreased levels of TDS that were consistent with historic data. Therefore, the elevated TDS concentration measured at MW-3 during the First Quarter appears to be an anomalous result that may have been related to field or laboratory contamination.

Chloride and nitrate concentrations remain higher at upgradient well MW-10 compared to downgradient water quality. The pH values at MW-10 were below the WAC 173-200 criterion of 6.5 during the First, Third, and Fourth Quarter monitoring events. The pH values at upgradient well MW-9 were below the WAC 173-200 criterion of 6.5 during the Second and Third Quarter monitoring events. Since MW-9 and MW-10 are upgradient of the landfill, these values are interpreted to reflect background water quality conditions.

Low-level ammonia detections were reported during one or more monitoring events in 2019 at each monitoring well, except MW-9 and MW-10. Reported concentrations ranged up to 0.24 mg/L. Since ammonia has been frequently detected at background well MW-10 at similar concentrations to downgradient monitoring wells in the past, the ammonia concentrations appear to be due to a site-wide aquifer condition, and not landfill leachate.

A geochemical evaluation of Appendix II parameters was conducted quarterly at each well. This evaluation includes an examination of the cation/anion balance and the plotting of major ions on trilinear diagrams. Trilinear plots of major cations and anions are included in Appendix D. These plots demonstrate the inherent water quality difference between groundwater from the monitoring wells and LDCS system, versus leachate (see Appendix D).

The cation-anion balance evaluates the difference in the sum of cations and anions (in milliequivalents per liter [meq/L]) within a water sample to determine if it is electroneutral (balanced cation and anion charges). A threshold of ten percent difference is used if the total cation-anion sums are less than 5.0 meq/L, and a threshold of five percent difference is used if the total cation-anion sums are greater than or equal to 5.0 meq/L. During the First Quarter, cation-anion balance evaluations slightly exceeded the appropriate threshold for monitoring wells MW-3 (6.2 percent versus a threshold of 5.0 percent) and MW-7 (5.1 percent versus a threshold of 5.0 percent). The calculated ion balances do not appear to be due to either analytical error or poor well conditions. Since background water quality data at MW-10 have displayed cation-anion balance ratios greater than 10 percent in the past, and there were no detections of leachate indicator parameters at MW-3 or MW-7, the elevated balance ratios are likely due to natural groundwater conditions (see summary tables in Appendix B).

The following statistics were performed using background groundwater quality data:

- The background mean
- The background variance
- The standard deviation of the background data
- The coefficient of variation of the background data
- The standard error of the background data

The statistical method accounted for data below the limit of detection by using a simple substitution of one-half the value of the method reporting limit. The groundwater data tables used for statistical analyses, including prediction limits, are included in Appendix E.

Trichloroethene (TCE) was reported in the sample from monitoring well MW-4 at a concentration of 0.94 µg/L during the Second Quarter monitoring event. However, TCE was also detected in the Field Blank quality control sample at a concentration of 0.50 µg/L. The field blank sample is collected by pouring lab grade deionized water (provided by TestAmerica) over a water level meter and into the sample containers. As described in the Second Quarter monitoring report, since TCE was detected in the field blank, the concentration reported in MW-4 is likely the result of a laboratory artifact.

No other VOCs were reported present in groundwater samples collected from the monitoring wells in 2019.

6.3 MONITORING WELL CONSTRUCTION/MAINTENANCE

The casing at monitoring well MW-10 was extended by 4.5 feet in August 2019 to compensate for the rise in elevation of the landfill perimeter road, which was altered during the construction of Cell 7. No other significant well construction or well maintenance activities occurred in 2019.

7.0 SURFACE WATER MONITORING

Surface water monitoring was performed weekly and quarterly during periods of surface water discharge in accordance with the LRI Landfill Surface Water Monitoring Plan (July 2008), the National Pollution Discharge Elimination System (NPDES) Industrial Stormwater General Permit (ISGP Permit No. WAR002557), the NPDES Construction Stormwater General Permit (CSWGP Permit No. WAR002603), and Agreed Order 16272. Stormwater samples for both the CSWGP and the ISGP were initially collected at NEWB-2, located where Wetland Area C drains into South Creek. Then, consistent with Agreed Order 16272, four CSWGP monitoring stations (CS-1 through CS-4) were established in May at the limits of the defined construction area, and the ISGP monitoring location was relocated in December to SWPO-1, located immediately downstream of the stormwater detention pond (see Figure 2).

Weekly monitoring per the CSWGP consisted of visual site inspections and stormwater sampling for turbidity. Monthly monitoring included visual site inspections. Quarterly monitoring per the ISGP consisted of visual site inspections and stormwater sampling for field parameters of turbidity and pH, and laboratory analyses of ammonia, biological oxygen demand (BOD), chloride, copper (total), zinc (total), total suspended solids (TSS), total petroleum hydrocarbons (TPH) as oil and grease (visual inspection), and semi-volatile organic compounds (SVOCs) including benzoic acid, 4-methylphenol, alpha-terpineol, p-Cresol, and phenol. Samples for laboratory testing were submitted to TestAmerica of Fife, Washington.

No stormwater benchmarks or effluent limits were exceeded in 2019 with the exception of two turbidity readings at construction monitoring station CS-4. During both of these events (July 11th and September 10th), stormwater from the construction activity area breached and or leaked through a soil containment plug. The stormwater was contained within an existing on-site stormwater ditch and infiltrated into the subsurface within approximately 50 to 100 feet of the construction area. Turbid stormwater from the construction activity area did not reach waters of the state or flow off-site. Repair of the soil plug was completed promptly on both occasions.

Construction stormwater treatment began on September 10, 2019. The construction stormwater treatment system is located on the northwest corner of the construction activity area across from the LRI office building. Treated construction stormwater is discharged into a 36-inch diameter drainage pipe that leads to the site's stormwater detention pond. Industrial stormwater treatment began on December 6, 2019. The industrial stormwater treatment system is located on the east side of the detention pond. Treated industrial stormwater is discharged through the outlet piping at the detention pond. Both stormwater treatment systems utilize Chitosan enhanced sand filtration (CESF).

Copies of the 2019 Discharge Monitoring Reports (DMRs) for the construction and industrial permits are included in Appendix G.

8.0 LANDFILL GAS MONITORING

8.1 GAS PROBE CONSTRUCTION

A new landfill gas monitoring probe, GP-16, was constructed in the southeast portion of the site, between monitoring well MW-10 and the Cell 7 control panel, in November of 2019. A summary report regarding the gas probe construction was provided to the TPCHD on November 22, 2019.

8.2 GAS PROBE MONITORING

Landfill gas monitoring was conducted monthly during 2019 using a Landtec GEM 2000. Methane was not measured above the lower explosive limit of 5 percent methane by volume at performance gas probes GP-3, GP-4, GP-9, GP-11, GP-13, GP-14, GP-15 and GP-16. Concentrations of methane greater than 5 percent by volume were recorded at least once at performance probes GP-1, GP-2, GP-10 and GP-12. Table H-1 in Appendix H provides a summary of landfill gas monitoring results for 2019.

The gas probe-monitoring network was designed to allow for the early detection of landfill gas migration before subsurface migration to the property line (point of compliance) could occur. Previous barhole monitoring surveys have shown that the methane levels reported above do not result in the migration of landfill gas to the property line. However, in order to further evaluate potential landfill gas migration, SCS conducted a barhole survey on December 18, 2019 along the base of the perimeter berm adjacent to gas probe GP-2. This work was consistent with a Tier II subsurface gas migration study as described in the LRI Landfill Plan of Operations.

A total of seven (7) barhole locations were investigated. One location was directly east of GP-2, and the remaining locations were spaced 100 feet apart along the base of the berm (north/south) such that an area 300 feet in each direction was investigated. Each location was sampled using a three-foot long, 1-inch diameter hollow sampling tool equipped with 3/16-inch diameter holes in the lower 18 inches and a sampling port at ground surface. The sampling tool was pounded approximately 3 feet into the subgrade. Each location was purged for 300 seconds (5 minutes) and a gas reading was recorded with a GEM 5000 portable gas meter. After collecting a reading, the sampling tool was removed with a fence post puller and the boring was backfilled with bentonite chips. The methane concentration measured at GP-2 at the beginning of the survey was 17.3 % by volume. Methane was not detected at any of the barhole locations.

8.3 ON-SITE BUILDING MONITORING

On-site buildings were monitored once per quarter in 2019. Measurements were obtained using a GasTech or Photovac MicroFID (FID). Minor detections were noted with the FID at several of the buildings. However, the detections were determined to be attributed to natural background levels and/or the presence of aromatic incense in the building. For more details regarding the on-site building monitoring see Appendix H.

8.4 LANDFILL GAS EXTRACTION WELL CONSTRUCTION

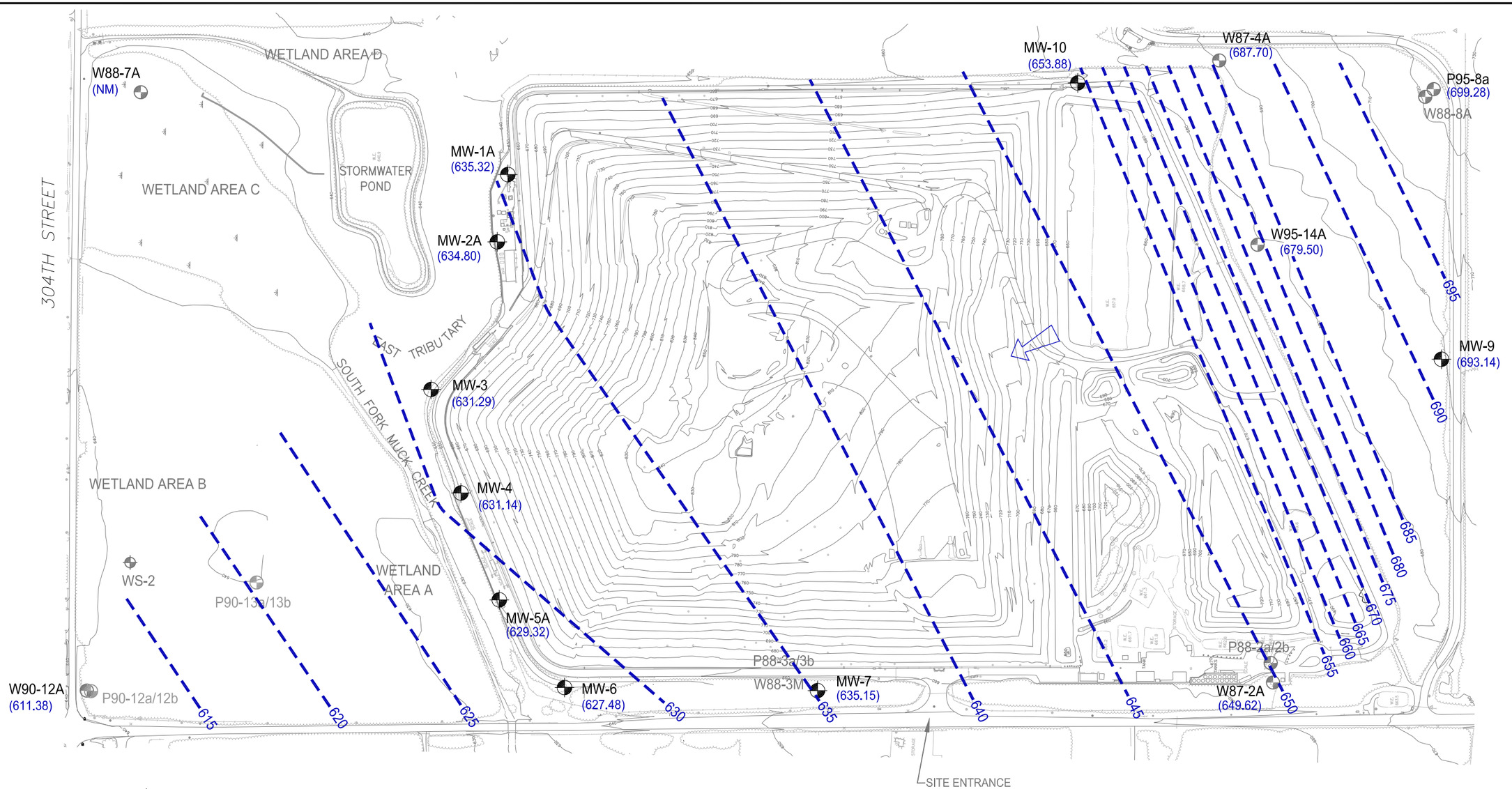
Fifteen vertical landfill gas extraction wells (WE-249 through WE-263) were installed in July and August of 2019. A summary of the gas well completion data is included in Appendix H.

9.0 FINANCIAL ASSURANCE COST ESTIMATES

Cost estimates for constructing the final closure over the refuse, as well as performing annual monitoring and maintenance are included in Appendix I. As required in Chapter 173-351-600(3)(a), the estimates are in current dollars for the total cost of hiring a third party to perform the work. Costs for post-closure monitoring and maintenance are based on the most expensive costs of post-closure care during the post-closure period. The closure and post-closure cost estimates are reviewed annually and updated as appropriate. The closure and post-closure cost estimates included in this report are consistent with the estimates provided to the TPCHD in December 2019.

Appendix A

Water Level Data



LEGEND:

MW-1A	MONITORING WELL
W87-2A	CHARACTERIZATION WELL/ PIEZOMETER
(649.62)	GROUNDWATER ELEVATION (IN FEET ABOVE MSL)
	INFERRED GROUNDWATER FLOW DIRECTION
*	WATER LEVEL ELEVATION NOT USED IN CONTOURING

NOTES:

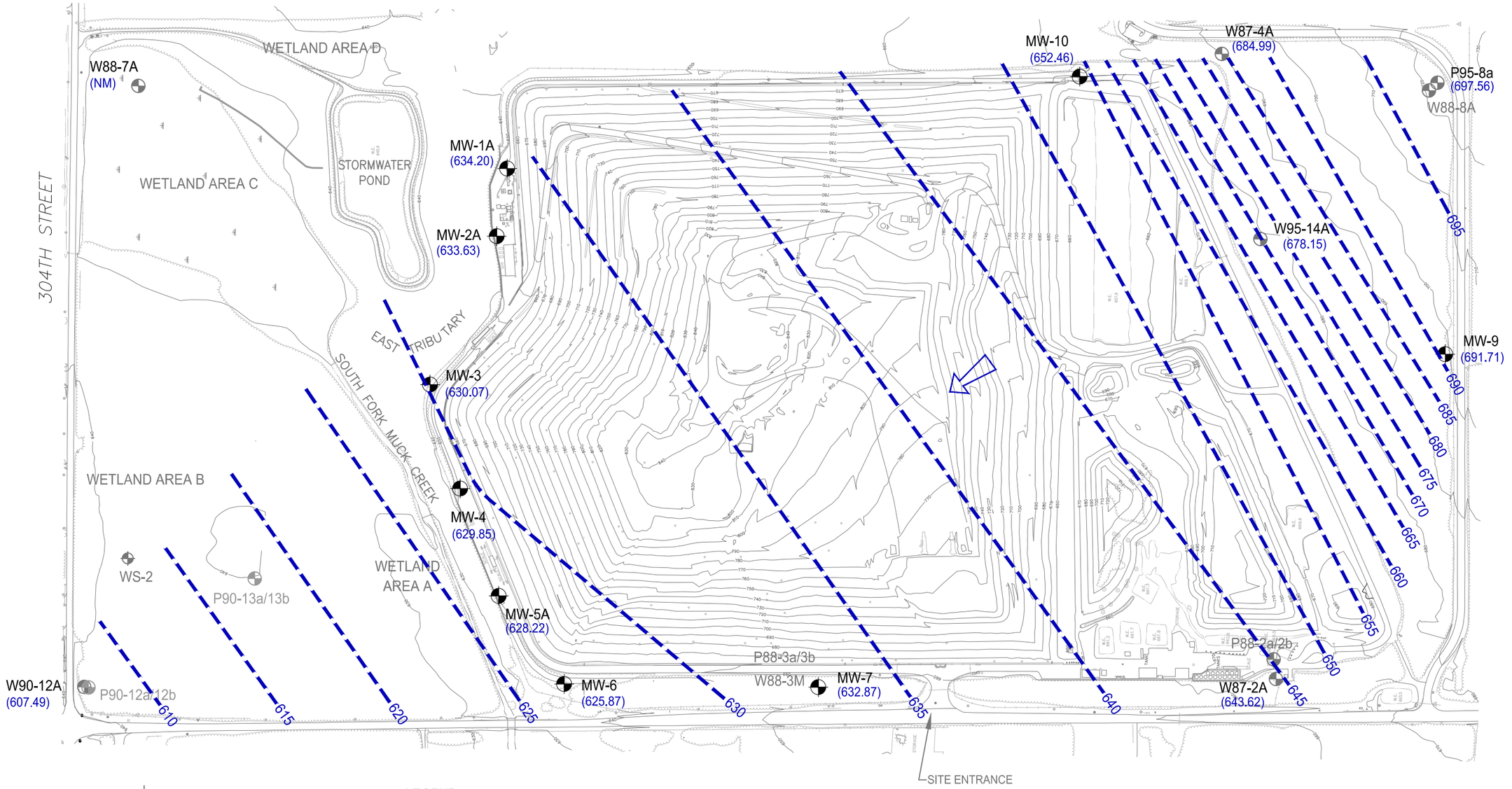
VERTICAL DATUM - BASED ON PIERCE COUNTY BENCH NO. 112-28, ELEVATION 660.29 NGVD29

0 400 800

SCALE (ft)

SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (425) 746-6747

PROJECT NO. 04219001.02	DES BY SG	POTENTIOMETRIC SURFACE CONTOUR MAP MARCH 12, 2019	DATE MAY 2019
SCALE AS SHOWN	CHK BY KGL	LRI LANDFILL 30919 MERIDIAN STREET E. GRAHAM, WASHINGTON	FIGURE 1
CAD FILE FIGURE 1	APP BY KGL		



NOTES:

VERTICAL DATUM - BASED ON PIERCE COUNTY BENCH NO. 112-28, ELEVATION 660.29 NGVD29

LEGEND:

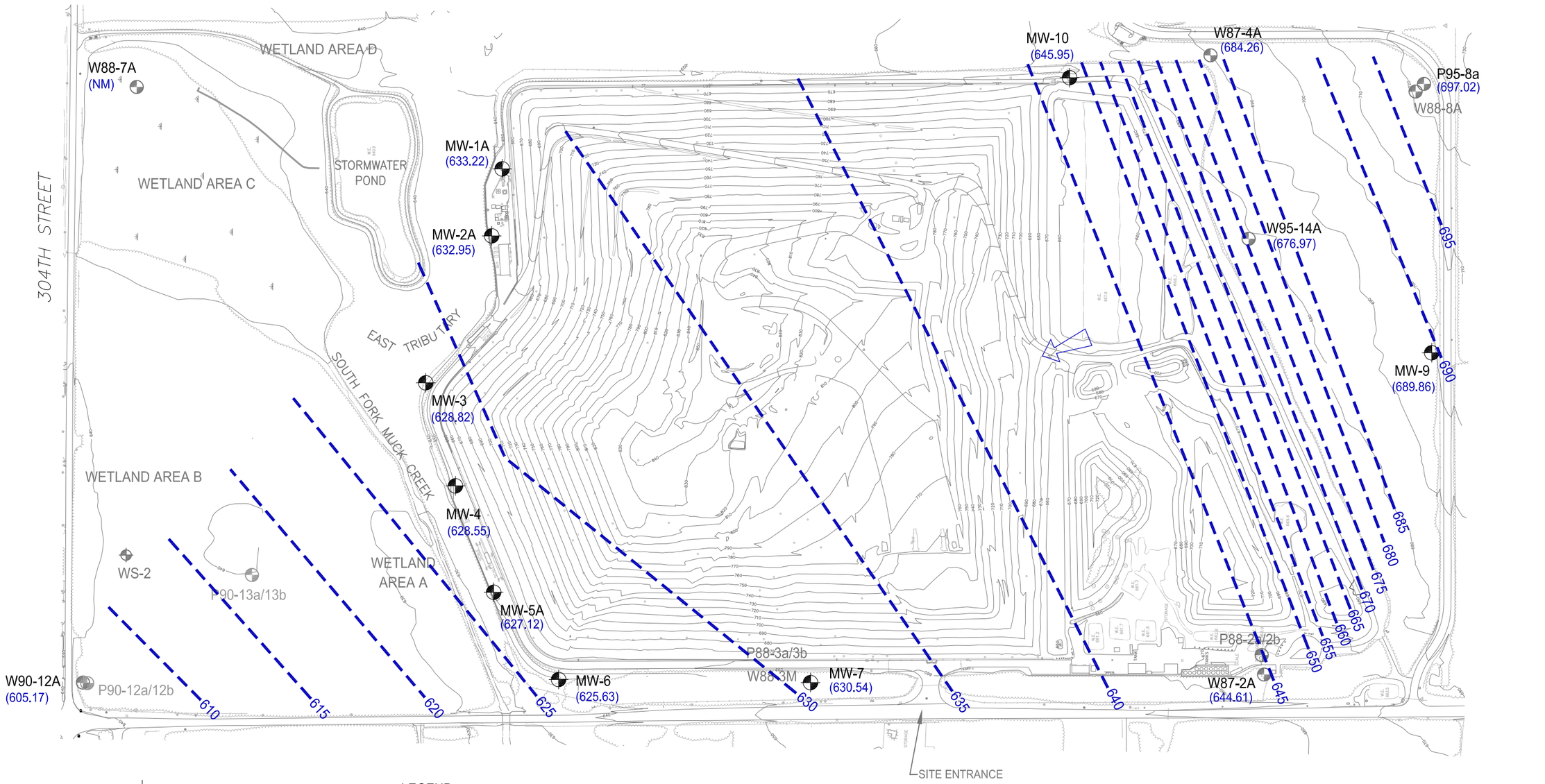
MW-1A	MONITORING WELL
W87-2A	CHARACTERIZATION WELL/ PIEZOMETER
(643.62)	GROUNDWATER ELEVATION (IN FEET ABOVE MSL)
	INFERRED GROUNDWATER FLOW DIRECTION
*	WATER LEVEL ELEVATION NOT USED IN CONTOURING

0 400 800

SCALE (ft)

SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (425) 746-6747

PROJECT NO. 04219001.02	DES BY SG	POTENTIOMETRIC SURFACE CONTOUR MAP JUNE 18, 2019	DATE AUGUST 2019
SCALE AS SHOWN	CHK BY KGL	LRI LANDFILL 30919 MERIDIAN STREET E. GRAHAM, WASHINGTON	FIGURE 1
CAD FILE FIGURE 1	APP BY KGL		



LEGEND:

MW-1A	MONITORING WELL
W87-2A	CHARACTERIZATION WELL/ PIEZOMETER
(643.62)	GROUNDWATER ELEVATION (IN FEET ABOVE MSL)
	INFERRED GROUNDWATER FLOW DIRECTION
*	WATER LEVEL ELEVATION NOT USED IN CONTOURING

NOTES:

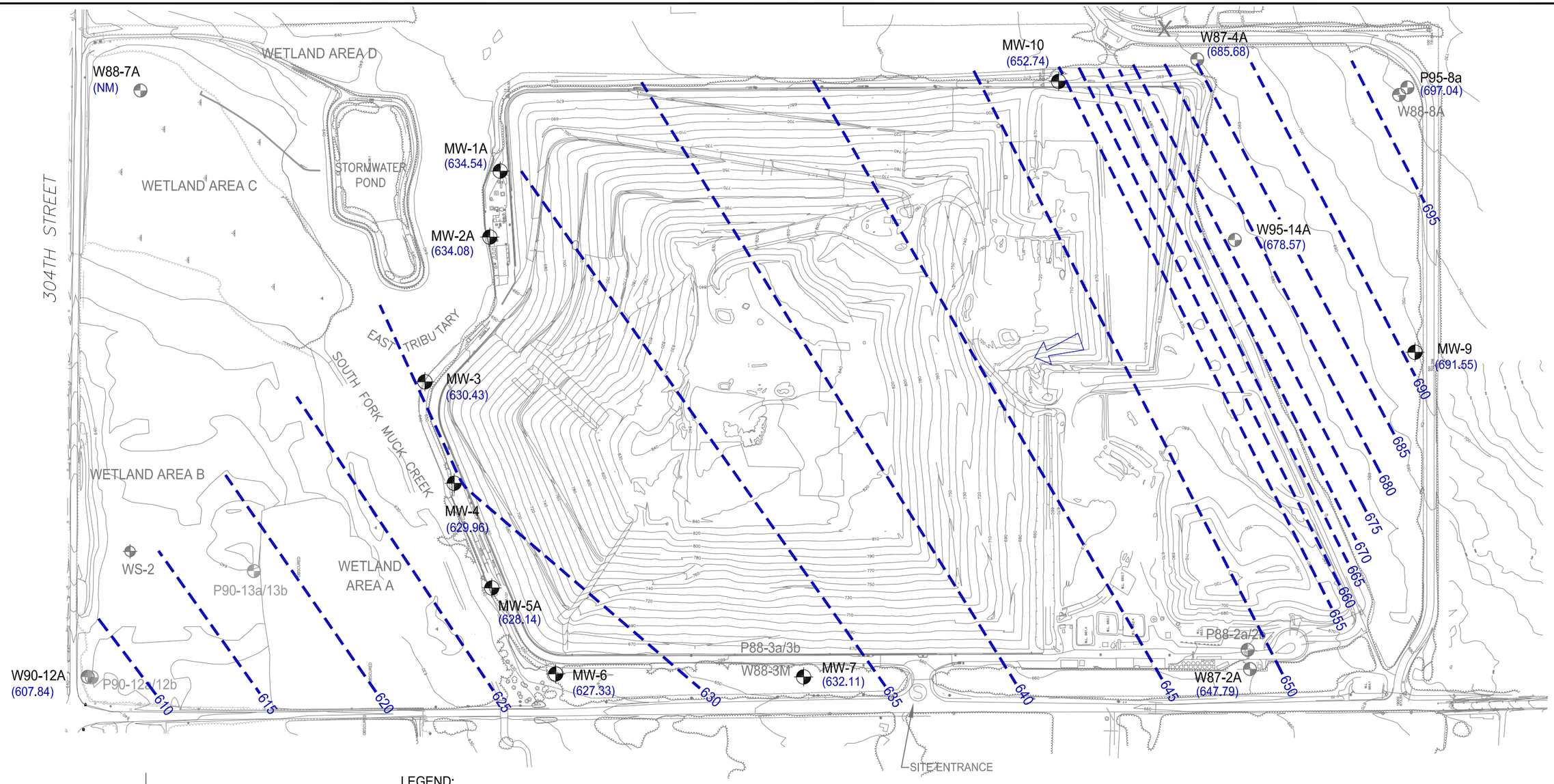
VERTICAL DATUM - BASED ON PIERCE COUNTY BENCH NO. 112-28, ELEVATION 660.29 NGVD29

0 400 800

SCALE (ft)

SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (425) 746-6747

PROJECT NO. 04219001.02	DES BY SG	POTENTIOMETRIC SURFACE CONTOUR MAP SEPTEMBER 26, 2019	DATE DECEMBER 2019
SCALE AS SHOWN	CHK BY KGL	LRI LANDFILL 30919 MERIDIAN STREET E. GRAHAM, WASHINGTON	FIGURE 1
CAD FILE FIGURE 1	APP BY KGL		



LEGEND:

MW-1A	MONITORING WELL
W87-2A	CHARACTERIZATION WELL/ PIEZOMETER
(643.62)	GROUNDWATER ELEVATION (IN FEET ABOVE MSL)
	INFERRED GROUNDWATER FLOW DIRECTION
(NM)	NOT MEASURED

NOTES:

VERTICAL DATUM - BASED ON PIERCE COUNTY BENCH NO. 112-28, ELEVATION 660.29 NGVD29

0 400 800

SCALE (ft)

SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (425) 746-6747

PROJECT NO. 04220001.02	DES BY SG	POTENTIOMETRIC SURFACE CONTOUR MAP DECEMBER 11, 2019	DATE MARCH 2020
SCALE AS SHOWN	CHK BY KGL	LRI LANDFILL 30919 MERIDIAN STREET E. GRAHAM, WASHINGTON	FIGURE 1
CAD FILE FIGURE 1	APP BY KGL		

Water Level Elevation Data
LRI Landfill, Pierce County Washington

WELL NUMBER	WELL CASING ELEVATION	11/6/1987	7/13/1988	7/26/1988	9/8/1988	12/22/1988	1/17/1989	2/27/1989	3/21/1989	4/11/1989	5/19/1989	7/5/1989	8/21/1989	9/22/1989	10/19/1989	11/13/1989	12/4/1989	12/21/1989	1/29/1990	3/5/1990	4/17/1990
W87-1A	661.27	649.01	653.52	650.48	650.25	656.26	656.32	656.36	656.44	656.38	655.51	653.13	650.80	649.55	648.87	649.61	655.43	655.76	656.26	656.14	656.07
W87-2A	664.01	648.28	651.18	648.71	645.31		653.66	651.41	651.95	652.31	651.64	649.58	647.12	646.34	646.52	647.39	649.73	650.69	652.01	652.26	652.55
W88-3M	658.11						649.88		650.30	650.41	650.06	649.04	647.23	646.07	645.80	645.82	647.45	648.45	650.72	651.18	651.05
W87-4a	693.29	681.38	685.21	683.23	683.17		687.80	687.86	687.77	687.64	686.52	684.68	683.14	682.20	681.53	683.47	687.11		687.69	687.85	687.17
W88-5A	645.26						634.45	636.09	636.09	635.96	635.22	633.24	631.05	630.20	629.75	630.91	634.81	635.53	635.83	635.67	635.71
W88-6A	652.23							646.99	646.42	646.01	645.05	642.74	643.34	639.23	638.45	639.87	646.99	646.60	647.23	646.38	645.97
W88-7A	632.51							628.25	628.52	628.44	627.25	625.71		623.33	623.42	625.20	627.21	627.41		626.84	626.72
W88-8M	721.05								684.20	684.28	683.42	682.49	681.68	681.26	681.17	681.85	682.86	683.05	683.98	684.17	683.81
W90-12A	640.84																				
W95-14A	680.49																				
MW-1	649.51																				
MW-1A	652.57																				
MW-2	639.25																				
MW-2A	651.93																				
MW-3	637.41																				
MW-4	652.37																				
MW-5	654.40																				
MW-5A	655.55																				
MW-6	635.71																				
MW-7	656.03	630.52	636.18	633.64	632.01	638.96	639.03	639.35	639.72	639.56	638.29	636.03	632.87	631.72	631.08	633.03	637.68	638.80	638.88	639.03	639.23
MW-9	701.77																				
MW-10	678.37																				
P88-1a	662.16					658.69	658.67	658.87	658.73	658.62	658.24	655.39	652.95	651.51	650.69	651.72	658.78	658.35	658.75	658.41	658.45
P88-1b	661.86					656.20	656.35	656.44	656.44	656.36	655.59	653.19	650.87	649.59	648.90	649.66	655.46	655.86	656.16	656.18	656.12
P88-2a	663.96						660.29	660.48	660.44	660.34	659.53	656.60	654.31	653.20	652.57	653.40	659.37	659.95	660.41	660.19	659.84
P88-2b	663.48						653.80	653.75	654.05	654.17	653.21	651.05	648.35	647.33	647.12	647.77	652.15	653.25	653.61	653.85	653.90
P88-3a	656.20					649.60	649.09	649.35	649.54	649.30	648.04	643.97	640.42	639.34	638.56	639.61	646.37	648.67	649.30	649.03	649.20
P88-3b	655.98					645.54	645.44	645.69	645.51	645.24	643.89	640.59	636.20	636.05	635.33	636.70	642.57	644.52	644.89	644.77	644.95
P87-4M	693.21	680.80	682.61	680.90	681.35		683.90	683.93	684.13	683.98	683.22	682.34	681.44	681.08	680.90	681.65	682.82	682.95	683.29	683.95	683.61
P88-5a	644.83						637.46	637.42	637.34	637.09	636.05	633.99	632.08	631.26	630.70	631.20	634.36	635.95	637.18	636.82	634.54
P88-5b	644.60						635.13	636.26	635.90	635.74	635.01	632.88	630.79	629.89	629.42	630.75	634.39	635.51	635.60	635.39	635.35
P95-8a	722.07																				
P88-9a	653.28							646.75	646.62	646.56	645.85	643.56	640.44	639.16	638.43	640.86	645.76	646.11		646.47	646.56
P88-9b	652.79							641.52	641.53	641.47	640.58	638.47	635.76	634.66	634.00	634.98	639.88	640.88	641.30	641.25	641.29
P88-10a	665.70						661.33	661.68	661.60	661.45	660.00	657.45	654.46	652.77	651.59	652.13	659.04	660.27	661.42	660.96	660.40
P88-10b	665.48						655.58	655.66	655.70	655.73	654.82	652.65	649.87	648.49	647.77	648.25	653.73	654.77	654.99	655.60	655.39
P90-12a	640.79																				
P90-12b	640.73																				
P90-13a	645.19																				
P90-13b	643.63																				
P13-14b	665.96																				
GP-1P	652.00																				
GP-2P	656.61																				
GP-3P	658.51																				
GP-4P	662.01																				
GP-5P	653.59																				
GP-6P	652.39																				
GP-7P	658.12																				
GP-8P	659.18																				
GP-9P	674.03																				
GP-10	649.86																				
GP-14																					
GP-15																					
GP-16																					
WS-1	646.07	613.37	617.99		612.73				619.27	619.86	618.55	616.37	608.54	613.09	612.91	613.44	616.55	618.43	617.39	617.21	617.51
SG-1	632.79																				
SG-2	629.95																				
LDCS-1	657.26																				
LDCS-2A	659.24																				
LDCS-2B	661.70																				

Well MW-4 casing adjusted from 639.35 to approximately 643.05 in September 2005, to 652.37 in May 2006
Well MW-5 adjusted from 644.83 to 654.40 in August 2008
Well MW-10 casing adjusted from 673.87 to 678.37 in August 2019
Well W88-3M casing adjusted from 656.03 to 658.11 in September 2000
Well MW-6 was previously referred to as MW-11A
Well MW-7 was previously referred to as MW-3A

Water Level Elevation Data
LRI Landfill, Pierce County Washington

WELL NUMBER	6/19/1990	9/24/1990	10/17/1990	11/19/1990	12/18/1990	1/25/1991	3/14/1991	5/2/1991	6/10/1991	7/11/1991	10/2/1991	10/23/1991	11/21/1991	12/13/1991	1/15/1992	3/25/1992	5/7/1992	6/25/1992	10/1/1992	10/29/1992	12/4/1992
W87-1A	656.08	650.00	649.72	655.18	656.27	656.17	656.33	656.10	655.82	653.94	649.74	649.19	650.66	655.56	655.96	656.02	655.77	651.61	647.61	647.65	653.88
W87-2A	652.74	647.98	648.42	650.31	651.74	651.91	652.43	653.15	653.05	651.46	648.63	648.48	649.01	650.88	651.94	652.80	652.69	649.35	646.32	646.78	648.53
W88-3M	651.08	646.90	646.81	648.08	649.85	650.18	650.44	650.26	650.12	649.99	646.95	646.63	646.78	648.10	648.90	649.96	650.08	645.01	646.86	637.31	638.19
W87-4a	687.16	682.94	683.05	686.78	687.70	687.43	687.83	687.17	686.58	685.27	682.70		684.23	686.93	687.39	687.22	686.76	684.03	681.74	681.53	686.29
W88-5A	635.62	630.59	630.63	634.59	636.05	635.76	636.03	635.88	635.50	634.17	630.63		631.84	635.20	635.81	635.80	635.49	632.00	628.84	628.95	633.11
W88-6A	645.40	643.54	639.29	645.78	646.48	645.11	645.56	644.90	644.56	643.16	639.26		640.18	644.48	644.86	644.75	644.38	640.68	637.43	637.64	643.12
W88-7A		623.10	624.15	626.83	628.09	627.89		628.20	627.62	626.51	623.56		625.48	627.26	627.70	627.73	627.38	625.72	623.14	623.72	625.70
W88-8M	683.95	681.85	682.04	682.84	684.08	684.12	684.05	684.12	683.76	683.16	681.78		682.33	683.11	683.33	683.85	683.58	682.41	681.34	681.54	682.61
W90-12A			606.11	610.40	612.46	612.72	613.50	614.36	613.71	611.72	607.30		608.87	611.05	612.33	613.03	612.84	607.30	605.29	606.26	608.66
W95-14A																					
MW-1																					
MW-1A																					
MW-2																					
MW-2A																					
MW-3																					
MW-4																					
MW-5																					
MW-5A																					
MW-6			625.93	629.27	629.63	629.05	629.56	628.45	627.48	626.64	625.02		628.26	629.12	628.89	628.48	627.85	625.91	625.27	625.66	629.01
MW-7	639.16	632.12	631.13	637.87	639.92	639.03	640.00	639.61	638.98	637.23	632.27	631.85	634.62	638.34	639.18	639.54	639.21	634.34	630.50	630.56	636.34
MW-9																					
MW-10																					
P88-1a	658.27	651.73	651.32	658.76	658.86	658.49	658.91	658.54	658.17	656.22	651.37	650.60	653.93	658.49	658.65	658.55	658.02	653.81	649.59	649.28	658.49
P88-1b	656.12	650.06	649.96	655.17	656.30	656.18	656.40	656.12	655.84	653.94	649.72	649.19	650.67	655.56	655.98	656.01	655.79	651.65	647.66	647.63	653.93
P88-2a	660.18	654.10	653.40	659.51	660.47	660.26	660.22	660.44	659.98	658.31	653.99	653.46	654.98	659.49	660.33	660.29	659.88	655.75	652.67	652.50	658.72
P88-2b	654.07	648.27	648.38	652.16	653.87	653.84	654.37	654.40	654.07	652.42	648.48	648.13	649.05	652.93	653.80	654.18	653.99	650.04	646.76	646.90	650.97
P88-3a	648.99	639.84	639.52	646.95	649.66	649.20	649.77	649.41	648.66	646.02	639.73	639.13	641.39	647.69		649.34	648.65	642.02	637.93	637.54	644.80
P88-3b	644.87	636.54	636.39	643.06	645.62	645.05	645.65	645.34	644.64	642.39	636.61	636.12	638.44	643.80		645.37	644.84	638.68	634.89	634.68	641.26
P87-4M	683.78	681.52	681.90	682.59	683.63	683.87	683.63	683.69	683.48	682.85	681.54		682.18	683.01	683.23	683.63	683.51	682.07	681.12	681.03	682.51
P88-5a	634.86	631.67	631.49	634.21	637.39	636.85	636.32	637.24	636.74	635.26	631.84		632.08	637.99	637.26	637.17	636.76	633.37	630.91	630.64	633.36
P88-5b	635.23	630.21	630.21	634.35	635.75	635.42	635.87	635.49	635.08	633.72	630.23		631.64	634.90	635.47	635.42	635.02	631.67	629.05	629.10	633.45
P95-8a																					
P88-9a	646.53	639.84	639.65	645.97	646.74	646.66	646.92	646.73	646.43	644.94	639.75		641.34	646.12	646.65	646.65	645.38	642.34	638.18	637.99	645.10
P88-9b	641.24	635.15	635.05	639.87	641.36	641.38	641.77	641.49	641.10	639.58	635.20		635.99	640.50	641.30	641.37	641.10	637.02	633.28	633.24	638.35
P88-10a	660.93	653.25	652.46	659.18	661.31	661.10	661.66	661.43	660.66	658.88	652.90		653.13	659.54	661.00	661.04	660.65	656.02	651.03	650.70	658.42
P88-10b	655.48	649.02	648.67	653.60	655.45	655.48	655.66	655.66	655.26	653.84	648.89		649.25	654.43	655.30	655.48	655.28	651.28	646.93	646.87	652.62
P90-12a			636.03	638.60	638.72	638.47	638.15	638.39	637.84	636.53	634.20		638.28	638.43	638.45	638.21	637.48	635.41	634.96	635.84	638.40
P90-12b			634.03	637.13	637.36	636.99	636.60	637.02	636.62	635.23	632.58		636.51	636.94	637.02	636.79	636.21	633.78	633.09	634.00	636.87
P90-13a			632.30	639.60	640.40	639.94	640.84	640.11	639.21	637.34	632.84		633.36	639.61	640.14	639.77	639.37	635.00	631.51	631.03	639.31
P90-13b			632.23	639.42	640.31	639.74	640.50	639.85	638.91	637.11	632.65		633.73	639.40	639.91	639.56	639.11	634.78	631.29	630.62	639.11
P13-14b																					
GP-1P																					
GP-2P																					
GP-3P																					
GP-4P																					
GP-5P																					
GP-6P																					
GP-7P																					
GP-8P																					
GP-9P																					
GP-10																					
GP-14																					
GP-15																					
GP-16																					
WS-1	617.87	612.47	613.24	616.44	618.54	618.41	618.18	619.78	618.42												
SG-1						628.55	629.45	628.23	627.94	627.63	626.79		628.15	628.72	628.31	628.13		628.75		628.97	629.25
SG-2						626.21	626.76	626.12	625.95	625.72			626.38	626.59	626.32	626.19		625.33		625.53	626.53
LDCS-1																					
LDCS-2A																					
LDCS-2B																					

Water Level Elevation Data
LRI Landfill, Pierce County Washington

WELL NUMBER	1/15/1993	4/20/1993	6/2/1993	9/20/1993	11/3/1993	11/30/1993	1/25/1994	5/12/1994	6/21/1994	9/15/1994	10/21/1994	11/4/1994	12/13/1994	12/30/1994	1/30/1995	4/5/1995	5/24/1995	7/17/1995	7/18/1995	7/21/1995	7/24/1995
W87-1A	655.18	655.79	655.70	650.34	650.13	650.59	655.53	655.14	654.27	648.07	647.13	649.37	654.31	655.59	655.55	655.48	655.00		650.85	650.41	
W87-2A	650.07	651.06	650.81	648.95	648.70	648.55	650.61	651.78	650.85	646.51	646.49	647.27	649.37	650.21	651.32	651.90	651.70			647.70	
W88-3M	644.93	647.85		638.64	637.33	640.19	646.62	648.05	642.43	636.37	635.77	639.81	643.21	645.92	646.94	648.04	648.16			639.44	
W87-4a	686.80	687.55	687.67	684.02	683.36	683.46	687.12	686.21	685.86	682.35	681.43	683.22	686.68	687.85	687.53	687.00	686.43		684.09	683.86	
W88-5A	635.04	635.74	635.81	631.33	631.05	631.40	635.60	634.98	634.06	629.19	628.45	630.57	634.23	635.64	635.67	635.48	635.07			631.45	
W88-6A	644.22	644.79	644.82	640.50	640.19	640.80	644.73	644.02	643.32	638.05	637.10	641.96	645.20	645.53	645.40	644.69	644.39			640.18	
W88-7A	626.92	627.94	627.57	623.94	624.67	625.37	627.60	626.80	626.41	622.57	622.53	624.89		628.00	627.68	627.74	627.40				
W88-8M	682.99	684.13	683.91	682.49	682.09	682.48	683.67	683.37	683.26	681.69	681.39	682.28	683.05	684.21	683.92	684.00	683.41		681.45	681.42	
W90-12A	610.74	612.09	611.37	608.23	608.89	608.82	611.66	610.96	609.79	605.14	605.74	607.45	609.79	611.44	612.14	612.73	612.14			605.72	
W95-14A																				677.55	677.77
MW-1																					
MW-1A																					
MW-2																					
MW-2A																					
MW-3																					
MW-4																					
MW-5																					
MW-5A																					
MW-6	628.20	629.29	629.53	625.99	626.13	626.73	629.31	627.32	627.30	625.47	625.29	628.39	629.73	629.53	629.46	628.27				626.13	
MW-7	638.24	639.64	639.43	634.12	633.33	632.55	639.44	638.47	637.64	631.14	630.30	633.25	637.35	639.50	639.44	639.49	638.66			634.07	
MW-9																		690.67		690.79	690.65
MW-10																		657.97	657.97	657.75	
P88-1a	657.94	658.74	658.86	653.95	653.21	653.79	658.74	657.94	657.73	650.95	649.65	651.80	658.80	658.72	658.81	658.48	657.69		654.06	653.70	
P88-1b	655.27	655.82	655.80	650.43	650.22	650.67	655.61	655.21	654.35	648.17	647.20	649.42	654.36	655.61	655.63	655.56	655.00		650.94	650.50	
P88-2a	659.59	660.19			655.05	654.93	660.18	659.65	659.18	653.40	652.60	653.57	658.67	660.13	660.36	660.22	659.31			655.43	
P88-2b	652.80	653.14			651.39	650.07	653.34	653.53	652.63	647.41	646.86	647.71	651.40	653.22	653.57	653.75	653.32			649.10	
P88-3a	648.18	649.52	649.40		640.88	640.59	649.33	648.12	646.89	638.99	637.79	639.69	645.56	649.40	649.48	649.33	648.05			641.74	
P88-3b	644.24	645.51	645.44		637.81	637.34	645.37	644.31	643.09	635.82	634.76	637.02	642.18	645.45	645.51	645.38	644.31			638.66	
P87-4M	682.93	683.89	683.77	682.27	682.04	682.29	683.60	683.16	683.12	681.56	681.14	682.06	682.52	683.98	683.79	683.80	683.23		681.49	681.23	
P88-5a	636.57	637.72	637.83	633.45	632.83	632.93	637.50	636.67	636.41	631.93	631.12	631.58	634.13	637.66	637.65	637.33	636.72			633.74	
P88-5b	634.87	635.52	635.65	631.59	631.39	631.83	635.44	634.64	634.29	629.61	628.90	630.80	634.34	635.50	635.54	635.23	634.67			631.70	
P95-8a																			697.86	697.63	697.55
P88-9a	646.08	646.59	646.56	642.22	641.12	641.08	646.57		645.51	639.02	638.06	641.47	645.57	646.66	646.61	646.48	646.06			642.21	
P88-9b	640.53	641.19	641.14	636.66	636.01	636.00	641.02		639.63	633.87	632.95	635.01	639.21	641.01	641.07	640.99	640.54			636.40	
P88-10a	660.32	661.38	661.20	655.86	653.96	653.61	661.05	660.51	659.40	652.55	651.14	652.50	658.88	660.97	661.22	661.20	660.26		656.20	655.86	
P88-10b	654.66	655.16	655.01	651.03	649.98	649.95	655.15	654.96	654.04	647.91	646.93	648.25	653.25	655.02	655.17	655.28	654.82		651.08	650.72	
P90-12a	637.54	638.48	638.61	635.43	636.10	637.48	638.61	637.09	637.88	635.61	632.85	638.21	638.57	637.89	638.60	637.76	637.01			635.95	
P90-12b	636.05	637.04	637.16	634.00	634.59	635.63	637.25	635.77	636.54	633.67	632.90	636.44	637.10	637.01	637.22	636.45	635.82			634.35	
P90-13a	639.03	640.62	640.79	635.07	633.63	633.38	640.17	638.94	638.55	632.79	631.78	634.25	640.01	640.37	640.32	639.78	638.94			635.06	
P90-13b	638.85	640.37	640.55	634.92	633.50	633.32	640.01	638.73	638.42	632.65	631.30	634.13	639.77	640.13	640.10	639.57	638.75			635.21	
P13-14b																					
GP-1P																					
GP-2P																					
GP-3P																					
GP-4P																					
GP-5P																					
GP-6P																					
GP-7P																					
GP-8P																					
GP-9P																					
GP-10																					
GP-14																					
GP-15																					
GP-16																					
WS-1				614.40																	
SG-1	629.20	629.50	630.34	629.50	628.75	628.65	629.25	628.49		628.21	628.19	628.61	632.11	631.18	629.67						
SG-2	626.08	626.78	628.13	625.28	625.63	625.88	626.78	625.81	625.86	625.25	625.41	626.43	629.45	627.93	627.01	626.22	626.01				
LDCS-1																					
LDCS-2A																					
LDCS-2B																					

Water Level Elevation Data
LRI Landfill, Pierce County Washington

WELL NUMBER	7/27/1995	10/11/1995	11/10/1995	12/13/1995	1/19/1996	4/26/1996	9/19/1996	10/18/1996	11/1/1996	12/13/1996	2/3/1997	3/24/1997	5/29/1997	6/9/1997	7/3/1997	8/27/1997	10/13/1997	11/11/1997	1/8/1998	4/16/1998	6/19/1998
W87-1A	650.06	647.75	651.79	655.47	655.85	655.85	647.85	648.57	651.77	655.53	655.82	655.85	655.05	655.61	655.05	650.81	651.02	654.45	655.66	655.50	653.90
W87-2A		646.58	648.03	650.73	651.60	652.30	646.69	647.34	648.37	651.15	651.93	652.25	651.74		651.65	648.24	648.89	650.46	651.50	652.27	651.38
W88-3M		635.91	641.23	645.59	646.93	647.88	636.29	640.38	642.44	646.30	647.52	647.97	647.97	648.04	647.93	645.71	639.76	645.01	647.49	648.04	
W87-4a		682.51	684.59	687.64	687.85	687.90	682.68		684.76	687.68	687.84	687.73	686.51		686.31	683.76	684.06	685.51	687.73	687.04	685.86
W88-5A		629.20	632.03	635.61	635.83	636.04	629.21	630.29	632.48	635.60	635.96	635.92	635.21			631.70	631.83	634.72	635.70	635.53	633.84
W88-6A		637.58	642.89	645.09	645.42	645.70	638.22	639.41	643.40	645.79	645.90	645.97	645.22		644.96	641.19	642.14	645.10	645.92	645.25	643.95
W88-7A	623.48	623.80	625.89	628.02	628.51	628.82	623.72	622.28	626.64	628.43	629.04	628.94	627.18		627.26	622.92	624.94	627.20	627.37	627.70	626.10
W88-8M		682.08	682.68	684.35	684.53	684.47	681.81	682.32	682.67	684.11	684.26	684.57	683.50		683.68	680.84	682.65	683.41	684.16	684.03	683.30
W90-12A		605.99	608.93	611.94	613.24	614.09	606.96	608.86	610.14	613.01	614.09	614.56	608.62	605.14	609.00	601.54	607.28	609.33	608.31	610.87	608.04
W95-14A	678.01	677.19	678.65			680.49	677.53	677.50	678.45	680.67	681.12		680.79		679.84	677.58	678.60	680.29	680.49	680.49	680.49
MW-1																					
MW-1A																					
MW-2																					
MW-2A																					
MW-3																					
MW-4																					
MW-5																					
MW-5A																					
MW-6		626.61	628.87	629.65	629.68	629.75	625.41	626.79	628.66	629.73	629.62	629.37	627.50	628.83	627.52	625.91	627.56	628.91	629.62	628.53	627.07
MW-7		631.34	635.77	639.82	640.18	640.15	631.36	632.34	635.76	640.13	640.27	640.21	639.12	640.04	638.85	634.08	634.99	638.54	640.47	640.11	638.15
MW-9	690.37	689.68	690.66	692.91	693.55	694.04	690.05	690.39	691.19	693.36	694.05	694.38	693.81		693.69	691.38	691.47	692.48	693.71	694.16	693.55
MW-10	657.20	655.36	657.43	660.89	661.76	662.04	655.38	655.78	657.75	661.19	662.18	662.27	661.71	661.95	661.71	659.02	657.94	660.15	661.73	662.20	660.17
P88-1a	653.27	650.59	657.05	658.58	658.69	658.85	650.26	650.41	657.45	658.62	658.92	658.69	658.36	658.55	658.03	656.27	654.37	658.66	658.87	658.58	657.52
P88-1b	650.16	647.82	651.79	655.51	655.89	655.88	647.94	648.57	651.84	653.20	655.88	656.40	655.13	655.66	655.08	650.91	651.11	657.54	655.67	655.52	653.96
P88-2a		652.82	655.78	660.00	660.50	660.38	653.26	653.01	656.73	660.20	660.50	660.42	659.54		659.38	655.23	655.05	658.72	660.42	660.24	659.02
P88-2b		647.07	649.08	653.36	653.96	654.19	647.34	647.61	649.47	653.66	654.11	654.24	653.38		653.31	649.36	649.65	652.45	653.91	654.13	653.09
P88-3a		638.21	642.30	649.28	649.76	649.72	638.81	638.69	642.47	649.44	649.84	649.71	648.35	649.41	648.15	641.45	642.03	645.78	649.81	649.37	647.37
P88-3b		635.39	639.37	645.51	645.98	645.87	635.78	636.04	639.53	645.72	646.00	645.89	644.57	645.61	644.37	638.48	638.96	642.68	646.02	645.58	643.63
P87-4M		681.89	682.28	684.28	684.21	684.37	681.63	681.83	682.69	683.87	684.11	684.50	683.35		683.44	680.75	682.52	683.25	683.97	683.78	683.16
P88-5a		631.62	632.67	637.44	637.66	638.11	632.05	631.87	632.92	637.48	636.01	635.86	635.24			631.62	633.24	635.81	637.93	637.49	636.27
P88-5b		629.75	632.23	635.47	635.65	635.80	629.72	630.32	632.51	635.62	637.82	637.65	636.75			633.31	632.15	634.57	635.55	635.20	634.10
P95-8a	697.58	697.29	697.29	700.89	702.18	700.84	697.51	697.64	697.48	701.39	702.52	702.53	722.07		700.13	698.57	697.72	698.73	700.25	700.74	699.30
P88-9a		638.69	646.35	646.64	646.84	646.82	638.95	639.13	643.58	646.74	646.87	646.80	646.21		646.07	642.02	641.88	645.85	646.84	646.50	645.50
P88-9b		633.52	636.60	640.99	641.24	641.33	633.74	634.32	637.15	641.13	641.34	641.36	640.59		640.46	636.55	636.65	640.03	641.26	641.00	639.60
P88-10a	655.33	651.55	655.66	660.99	661.40	661.39	652.42	651.75	655.76	660.88	661.38	661.33	660.14		660.19	655.84	654.97	659.85	661.39	661.07	659.71
P88-10b	650.21	647.29	650.17	655.21	655.54	655.50	647.73	647.68	650.53	655.24	655.55	655.62	654.78		654.69	650.71	650.45	654.09	655.45	655.36	654.26
P90-12a		637.46	638.20	638.68	638.68	638.47	635.80	637.29	637.94	638.59	638.39	638.10	638.29	637.67	637.65	636.69	638.11	638.21	638.53	638.50	638.43
P90-12b		635.24	636.71	637.28	637.33	637.27	634.02	635.44	636.61	637.31	637.24	636.98	636.69	636.44	636.40	634.66	636.58	636.87	637.02	636.99	636.70
P90-13a		632.11	636.97	640.24	640.56	640.96	632.89	632.51	637.91	640.20	640.79	640.44	638.98	640.41	639.48	635.15	636.92	640.22	640.75	639.91	638.37
P90-13b		632.06	636.72	640.05	640.36	640.71	632.80	632.46	637.75	639.95	640.60	640.23	638.91	640.17	639.29	634.94	636.75	639.68	640.49	638.66	638.15
P13-14b																					
GP-1P																					
GP-2P																					
GP-3P																					
GP-4P																					
GP-5P																					
GP-6P																					
GP-7P																					
GP-8P																					
GP-9P																					
GP-10																					
GP-14																					
GP-15																					
GP-16																					
WS-1																					
SG-1													629.63		629.45	629.09	629.86	630.04	630.79	629.88	630.33
SG-2													628.65	626.77	626.30	625.15	626.03	626.80	627.67	626.63	625.90
LDCS-1																					
LDCS-2A																					
LDCS-2B																					

Water Level Elevation Data
LRI Landfill, Pierce County Washington

WELL NUMBER	9/9/1998	10/28/1998	12/7/1998	1/28/1999	2/24/1999	3/30/1999	4/26/1999	5/26/1999	6/28/1999	7/29/1999	7/30/1999	8/6/1999	10/13/1999	11/1/1999	12/3/1999	3/29/2000	5/8/2000	6/14/2000	9/25/2000	10/19/2000	11/2/2000
W87-1A	647.40	646.89	653.58	655.44	655.48	655.48	655.12	655.00		651.14	651.07	650.60	647.14	648.67	654.42	655.35	655.35	654.32	648.65	649.10	650.32
W87-2A	645.83	646.19	648.80	651.28	651.79	652.01	651.68	651.56	650.23					646.83		651.56	649.56	650.76	646.23		646.73
W88-3M	635.33	638.16	642.91	646.78	647.43	647.67	647.67	647.64	643.60			639.74								640.56	641.43
W87-4a	682.67	681.95	687.02	687.87	687.63	687.62	686.63	686.67	685.31					682.06		687.54	687.37	686.91	682.57		682.89
W88-5A	628.86	628.94	634.38	635.88	635.77	635.75	635.34	635.30	634.11	632.56	632.48	632.75	630.23	631.09	634.02	634.36	634.50	633.73	630.74	632.89	632.64
W88-6A	636.43	638.17	644.43	645.56	645.48	645.46	644.96	644.88	643.71	642.26	642.23		Decommissioned 7/30/99								
W88-7A	621.64	624.21	627.18	628.57	628.09	628.15	627.74	627.59	625.70	623.40	623.36							626.45	623.31	624.06	623.85
W88-8M	681.44	681.57	683.37	684.30	684.10	684.18	683.45	683.41	682.70					681.75		684.18	683.92	683.57	681.82		681.94
W90-12A	601.13	604.54	608.23	610.49	610.22	610.82	610.67	608.81	605.66			604.88				610.84	611.39	610.81	605.31	605.84	606.71
W95-14A	677.20	676.81	679.72	680.49	680.49	680.49	680.49	680.41	679.46					676.85		680.49	680.49	680.49	677.21		677.39
MW-1				636.11	636.48	636.35	636.12	636.03	635.12	633.41	633.33	634.44	632.15	632.89	635.12	635.36	635.66	633.95	631.89	632.71	632.86
MW-1A																					
MW-2				637.44	638.15	638.01	637.23	636.28	635.19	633.40	633.33	634.08			636.12	636.67	636.75	635.48			
MW-2A																					
MW-3				633.75	634.02	633.45	633.02	632.89	631.81	630.16	630.04	630.01	627.95	628.70	631.46	632.39	632.46	630.91	628.49	629.96	630.41
MW-4				633.90	633.86	633.90	633.24	633.17	632.00			630.08	626.72	627.78	632.00	634.60	632.77	632.36	628.54	629.71	630.31
MW-5																				632.91	633.31
MW-5A																					
MW-6	624.92	625.49	629.16	629.78	629.45	629.51	628.06	628.24	627.14			625.95	624.98	625.93	629.26	629.16	629.46	629.36	625.65	628.53	628.66
MW-7	630.72	630.36	638.56	640.47	640.46	640.61	639.80	639.65	637.46			633.84		630.97	637.40	638.18	638.33	637.44	631.79	632.52	633.51
MW-9	690.23	689.55	691.92	693.37	693.61	693.80	693.39	693.35	692.41					689.32		693.62	695.67	693.21	689.59		689.90
MW-10		654.52	658.76	660.99	661.53	661.86	661.68	661.64	659.99					658.21		660.67	661.77	660.96	655.97	656.02	657.04
P88-1a	650.55	648.81	658.59	658.93	658.82	658.78	658.39	658.20				654.43	651.64	652.36	658.21	658.81	659.16	658.65	654.37	655.51	656.91
P88-1b	647.41	646.91	653.64	655.48	655.50	655.51	655.13	655.04				650.45	647.73	648.47	654.22	655.16	654.24	654.14	648.43	648.98	650.20
P88-2a	653.17	652.12	658.94	660.42	660.55	660.46	660.14	659.75	657.93					652.04		660.21	660.19	659.59	652.73		652.48
P88-2b	646.82	645.44	650.92	653.79	654.01	654.10	653.69	653.51	651.65					646.57		653.63	653.10	652.70	646.98		647.36
P88-3a	638.90	637.33	646.52	649.94	649.87	649.84	649.28	648.79	645.47			641.18		637.53	646.15	648.88	648.99	647.65	638.48	638.04	638.75
P88-3b	635.52	634.42	643.17	646.07	646.06	646.06	645.00	645.05	642.18			638.21		634.86	642.62	644.58	644.75	643.48	635.79	635.91	636.68
P87-4M	681.14	681.35	683.13	684.05	683.91	683.95	683.36	683.19	682.58					681.51			683.94	683.51	681.59		681.88
P88-5a	632.12	631.20	634.21	638.06	637.76	637.75	637.25	637.28	636.76	635.37	635.36		Decommissioned 7/30/99								
P88-5b	629.41	629.08	634.31	635.56	635.43	635.37	634.95	634.90	634.19	632.62	632.60		Decommissioned 7/30/99								
P95-8a	697.33	696.86	697.95	702.21	702.06	701.25	700.19	699.91	722.07					697.05		701.27	700.52	699.22	697.36		697.05
P88-9a	639.11	637.98	645.70	646.75	646.75	646.74	646.35	646.31	645.20	642.94	642.86	642.78	639.46		645.03	645.43	645.53	645.13	641.46	642.53	642.91
P88-9b	633.50	632.94	639.43	641.21	641.22	641.22	640.75	640.75	639.54	637.26	637.36	637.74	633.99		637.86		638.99	638.29	635.06	635.64	635.14
P88-10a	652.94	651.02	658.79	661.11	661.50	661.40	661.01	660.67	658.27					651.10		660.95	661.46	660.50	652.09		651.30
P88-10b	647.53	646.35	652.95	655.33	655.44	655.45	655.10	654.97	653.18					646.88			655.04	654.21	647.67		647.96
P90-12a	637.23	637.88	638.51	638.61	638.62	638.59	638.57	638.56	638.63			636.07				637.64	638.09	637.72	635.86	637.32	637.14
P90-12b	634.99	636.03	636.98	637.26	637.20	637.16	637.08	636.99	636.82			634.29				636.38	636.58	636.44	634.17	635.55	635.58
P90-13a	633.04	631.61	639.63	640.86	640.61	640.24	639.38	639.64	637.57			635.32				639.39	639.50	637.69	632.05		632.29
P90-13b	632.85	631.43	639.40	640.60	640.38	640.00	639.18	639.40	637.40			635.09				639.18	639.36	638.61	631.91		632.21
P13-14b																					
GP-1P																					
GP-2P																					
GP-3P																					
GP-4P																					
GP-5P																					
GP-6P																					
GP-7P																					
GP-8P																					
GP-9P																					
GP-10																					
GP-14																					
GP-15																					
GP-16																					
WS-1													602.10								
SG-1	628.52	630.24	629.82	631.55	630.69	630.56	630.46	630.06	629.97			629.95					630.39	630.11	629.15	629.79	629.74
SG-2		625.23	627.20	628.18	626.94	626.76	626.14	626.11	625.80			625.20					627.00	626.74		625.50	625.60
LDCS-1																					
LDCS-2A																					
LDCS-2B																					

Water Level Elevation Data
LRI Landfill, Pierce County Washington

WELL NUMBER	12/14/2000	3/16/2001	4/11/2001	6/22/2001	9/21/2001	12/10/2001	3/28/2002	6/17/2002	9/24/2002	12/31/2002	3/17/2003	3/25/2003	6/24/2003	9/16/2003	12/19/2003	3/22/2004	6/22/2004	9/29/2004	12/16/2004	3/23/2005	6/29/2005
W87-1A	653.45	654.27	654.61	653.14	648.69	653.74	654.46		Decommissioned 4/17/02												
W87-2A	647.61	645.76	645.43	641.60	640.28	645.34	648.25	643.90	640.46	640.38		642.44	640.36	638.33	642.70	644.97	641.4	645.02	644.15	647.47	646.90
W88-3M	644.71	648.10	648.50	642.31	636.43	641.98	645.03	640.56	635.39	641.26		645.39		634.43	641.64	645.78	638.08	637.33	644.40	646.23	641.84
W87-4a	684.46	686.86	687.97	685.39	682.94	687.57	687.56	685.49	682.09	683.75		687.61	683.49	681.08	686.02	687.07	685.08	684.88	687.69	686.42	686.08
W88-5A	633.76	632.49	632.71	631.21	628.75	632.08	632.67	631.58	628.76	632.06		633.56	631.55	628.61	633.10	636.90	632.58	632.56	634.03	633.96	633.21
W88-6A															622.80				636.90		
W88-7A	626.04	618.04	618.16	617.26	616.01	620.05	621.94	620.96	617.59	620.89		623.48	621.18	616.90	622.80	624.20		622.02		624.75	
W88-8M	682.65	683.45	684.14	682.16	681.62	683.74	684.34	683.12	681.12	682.50		683.94	682.42	680.68	683.00	683.53	682.23	682.59	684.55	683.27	683.33
W90-12A	608.14	598.04	596.58	593.64	589.90	593.97	597.94	597.79	593.61	596.69		600.87	599.19	594.34	599.63	603.09	600.15	599.74	602.83	603.92	603.95
W95-14A	678.99	679.51	679.74	679.39	676.47	679.76	680.49	679.39	676.05	677.93		679.88	678.36	675.44	679.08	679.49	678.56	678.78	679.98		679.91
MW-1	635.16	632.72	632.96	631.71		Decommissioned 6/28/01															
MW-1A					631.11	634.62	634.71	633.96	631.18	634.11		635.58	633.51	630.85	634.79	635.69	636.29	634.55	635.78	635.75	634.87
MW-2								Decommissioned 4/17/02													
MW-2A								633.17	630.89	633.58		635.14	633.24	630.64	630.63	635.40	634.23	634.39	635.43	635.26	634.72
MW-3	631.50	629.84	630.00	628.11	625.13	629.26	630.03	628.99	625.56	629.28		630.99	628.71	625.18	630.93	634.45	629.86	630.32	631.67	631.50	631.01
MW-4	631.93	629.37	629.46	627.85	624.91	629.24	630.10	629.10	625.52	629.40		631.25	628.96	625.12	633.04	631.77	630.3	630.89	632.19	631.99	631.36
MW-5	634.03	631.46	632.21	630.46	627.12	632.23	631.81	631.32	627.73	631.67		633.51	630.89	627.11	628.93	633.46	631.78	633.05	635.13	633.41	633.41
MW-5A																					
MW-6		628.84	629.77	627.11	625.05	629.14	628.90	626.48	623.74	628.76		629.14	626.11	623.17	628.93	628.79	626.37	628.54	629.24	627.99	627.26
MW-7	636.13	632.37	632.56	630.43	625.12	631.61	633.19	631.65	626.89	631.30		635.12	631.78	627.13	633.93	635.84	632.56	633.46	637.27	636.22	635.22
MW-9	690.96	691.26	691.72	691.17	688.27	691.08	692.82	691.62	688.14	690.78		691.72	689.53	687.66		692.11	692.15	691.17	692.10	692.65	692.77
MW-10	659.37	661.26	661.47	660.08	656.30	659.52	661.57	659.75	655.07	658.10		660.75	658.12	653.47	658.05	660.21	657.95	656.84	658.79	659.94	659.25
P88-1a	659.04	659.95	660.28	659.25	654.70	660.05	660.27		Decommissioned 4/17/02												
P88-1b	653.21	654.30	654.51	653.03	648.58	653.29	654.27		Decommissioned 4/17/02												
P88-2a	655.86	658.80	658.96	657.28	651.80	657.95	659.23	656.71	651.27	655.43		658.98	655.48	651.03	658.07	659.30	656.88	657.62	659.31	659.60	659.04
P88-2b	649.60	647.59	647.57	645.53	641.41	647.16	649.19	646.35	640.79	643.88		647.68	645.07	641.10	647.11	648.99	647.25	647.83	649.16	650.17	649.67
P88-3a	642.40	645.48	646.35	643.70	636.32	645.10	647.23	643.82	636.33	639.18		647.98	641.62	635.61	642.10	648.14	642.42	640.31	647.53	648.25	645.61
P88-3b	639.88	640.33	640.97	638.45	631.79	638.62	641.51	638.91	632.47	635.83		642.88	637.73	632.21	638.67	643.23	638.4	637.53	647.06	643.46	641.46
P87-4M	682.66	683.61	684.01	683.16	681.43	683.69	684.15	683.05	680.94	682.44		683.86	682.29	680.49	682.93	686.81		682.55	683.51	683.21	683.16
P88-5a																					
P88-5b																					
P95-8a	696.87	697.79	699.04	698.42	696.88	698.26	700.87	698.64	696.96	696.39		699.12	697.33	696.59	696.90	699.31	701.59	697.51	698.76	699.00	699.16
P88-9a	644.28	643.16	643.39	642.40	638.85	643.59	644.00	642.91	640.13	643.63		644.54	642.61	639.71	644.25	644.67	643.57	643.88	645.09	644.61	644.23
P88-9b	637.47	635.62	635.64	634.73	631.94	635.28	636.22	635.39	632.55	634.89		636.94	635.37	632.66	636.37	637.47	636.39	636.23	637.58	636.65	637.14
P88-10a	656.23	660.60	660.95	657.33	651.95	660.13	660.65	658.43	652.75	658.25		659.83	657.02	652.85	659.00	662.45	656.61	656.54			
P88-10b	650.83	650.48	650.60	649.31	643.97	650.31	651.52	649.63	644.47	649.24		660.68	649.45	645.40	650.64	651.48	649.79	649.94			
P90-12a	637.83	637.94	638.14	637.14	635.15	638.08	637.77	636.98	633.42	637.76		637.77	636.81	632.11	637.75	637.81	636.83	637.43	637.77	637.72	637.68
P90-12b	636.33	635.58	635.63	634.75	632.28	635.63	635.64	634.95	631.22	635.59		635.92	634.84	630.02	635.90	636.09	634.99	635.58	636.14	636.02	635.98
P90-13a	635.01	639.10	639.99	637.94	632.03	637.73	639.31	637.31	630.94	635.27		639.46	634.83	630.44	638.78	639.19	635.97	637.45	636.67	638.96	638.80
P90-13b	634.96	638.80	639.60	637.59	631.71	638.33	638.96	635.98	630.66	635.74		639.13	634.60	629.66	638.35	639.02	635.74	637.11	639.23	638.66	635.86
P13-14b																					
GP-1P		635.25	635.90	634.65	632.27	635.28	635.40	634.18	631.88	635.33		635.59	633.69	631.46	635.39	635.59	634.51	635.02		635.26	635.11
GP-2P		641.11	641.12	641.11	640.27	641.20	641.11	640.73	639.73	640.54		641.77	640.24	638.97	640.80	642.30	640.41	642.18		640.73	640.85
GP-3P		645.53	646.96	647.21	645.76	647.15	647.57	647.53	645.52	646.03		647.56	647.34	645.16	647.21	647.82	647.83	647.78		647.78	648.00
GP-4P													649.59		652.11	652.50	651.34	652.11			
GP-5P											646.11										
GP-6P											642.76		643.38		639.58	640.92	640.54	639.99		641.28	641.25
GP-7P											645.50		646.92	645.49	647.87	648.27	647.46	647.35		647.97	648.03
GP-8P											644.25		649.95	646.87	651.16	652.00	651.08	650.79		651.16	650.98
GP-9P																				664.87	664.64
GP-10																					
GP-14																					
GP-15																					
GP-16																					
WS-1																					
SG-1	630.29	630.17	632.20	629.51	628.64	630.64	630.07	628.94	628.47	630.44		630.34	628.48	626.01	629.94						630.94
SG-2	626.35	626.36	629.40	625.85	625.19	627.50	626.72	625.56		627.35		627.06	625.03								625.79
LDCS-1		632.01	632.06	631.51	631.88	632.19	632.65	632.92	633.08	632.41		632.31	632.11	632.29	632.44	632.64	632.23	632.75	638.34	632.12	632.21
LDCS-2A		633.64	633.04	633.14	633.19	632.94	633.16	633.21	634.67	634.58		633.74	634.73	634.61		634.72	635.26	634.78	634.05	633.99	634.72
LDCS-2B										634.28		633.71	634.16	633.60	634.44						634.64

Water Level Elevation Data
LRI Landfill, Pierce County Washington

WELL NUMBER	10/3/2005	12/27/2005	3/16/2006	6/12/2006	9/18/2006	12/27/2006	3/31/2007	6/18/2007	9/18/2007	12/11/2007	3/10/2008	6/5/2008	9/26/2008	12/8/2008	3/16/2009	6/23/2009	9/11/2009	12/21/2009	3/15/2010	6/9/2010	9/17/2010
W87-1A																					
W87-2A	642.38	647.85	649.76	649.59	643.06	647.96	647.93	643.90	640.76	646.17	646.58	645.82	643.38	645.95	650.2	647.12	641.38	645.76	647.45	648.00	641.37
W88-3M		645.01	646.08	641.37	634.45	643.55	646.49	639.93	635.33	641.75	645.94	639.96	634.38	639.86	644.21	638.96	634.00	641.38	643.44	644.87	635.85
W87-4a	682.74	687.67	687.34	686.67	682.02	686.77	687.76	684.36	681.67	688.51	687.14	693.29	682.01	684.48	687.17	684.84	682.03	686.27	688.29		
W88-5A																					
W88-6A																					
W88-7A			625.82		618.89	622.58	626.26	622.85	620.73	625.00	625.80	632.51	621.19	624.40	626.2	623.77	620.89	625.80	626.74		626.86
W88-8M	681.78	683.83	683.65	683.17	680.93	684.73	684.37	682.42	680.23	682.91	683.74	683.29	681.47	682.71	683.59	687.75	681.18	682.75	683.14		
W90-12A	580.33	604.41	606.25	605.02	597.06	604.97	607.92	602.98	600.02	604.70	607.13	606.66	601.32	604.47	607.69	604.80	601.14	606.12	608.70	608.89	604.19
W95-14A	677.07	680.29	680.29	680.19	676.51	680.36	680.49	678.74	676.98	679.07	680.39	680.49	676.79	678.87	680.11	678.96	676.30	679.39	680.08	680.49	
MW-1																					
MW-1A	632.48	635.59	635.43	634.66	631.39	635.21	635.69	633.55	631.81	635.96	634.91	634.36	631.72	634.51	635.96	633.49	631.27	634.48	635.31	635.31	632.19
MW-2																					
MW-2A	632.39	634.97	634.76	634.13	631.06	634.08	635.03	633.17	631.51	634.34	634.59	633.68	631.44	633.96	634.74	633.10	631.22	634.24	634.20	634.84	631.83
MW-3	627.92	631.26	631.17	630.46	626.17	628.70	631.59	629.07	626.79	630.60	631.04	630.19	627.07	630.04	631.23	629.23	626.57	630.80	631.21	631.51	627.60
MW-4	623.47	630.37	626.40	629.41	624.38		632.24	629.96	627.89	631.40	631.54	630.68	627.52	630.07	630.99	629.44	626.92	630.46	630.84	631.17	
MW-5	631.14	634.41	633.80	633.53	628.78		627.15	631.32	630.05	633.74	632.36	632.04				629.08	625.72	628.79	628.96	629.36	634.80
MW-5A																					
MW-6	626.47	629.58	628.71	627.71	624.16	626.14	629.37	626.38	626.82	629.01	626.39	627.20	625.30	628.64	629.23	626.47	625.08	629.35	629.00	628.88	626.40
MW-7	630.76	636.63	636.68	635.82	629.51	636.17				636.29	636.79	635.59	630.53	635.02	636.66	633.79	629.97	635.35	636.39	636.90	631.10
MW-9	689.93	692.99	693.67	693.47	689.28	691.54	693.90	691.59	689.20	691.85	692.93	692.66	689.16	691.38	693.04	691.89	689.07	692.04	692.84	693.80	
MW-10	655.42	659.52	659.85	659.14	653.63	659.57	660.47	657.39	653.94	658.46	659.93	658.66	649.60	652.48	655.00	651.64	647.99	649.30	650.05	651.32	649.90
P88-1a																					
P88-1b																					
P88-2a	653.04	659.78	659.88	659.47		659.75	659.87	655.83	652.07	658.95	659.78	659.45	654.21	658.62	660.31	657.20	654.03	659.08	659.76	651.29	656.87
P88-2b	644.68	650.77	651.40			651.55	651.06	647.40	643.98	649.81	650.61	649.71	645.42	649.51	651.71	648.51	643.92	649.04	650.24	659.76	645.71
P88-3a	639.32	647.89	648.21	646.32		647.67	648.68	642.88	643.38	648.32	648.45	646.79	638.26	643.04	647.51	643.22	638.62	643.76	647.37	647.76	637.68
P88-3b	635.79	643.47	643.67	642.05		643.45	644.08	638.96	638.07	643.57	643.80	642.16	635.58	639.62	643.18	639.34	634.95	640.15	643.89	643.36	634.48
P87-4M																			683.07		
P88-5a																					
P88-5b																					
P95-8a	697.36		700.81	699.64	697.33	699.44	702.25	702.25	722.07	697.28	699.60	698.64	697.06	697.13	698.86	698.27	696.96	697.30	699.21		697.53
P88-9a		Decommissioned 8/24/05																			
P88-9b		Decommissioned 8/24/05																			
P88-10a																					
P88-10b																					
P90-12a	637.41	637.91	637.66	637.81	633.93	637.70	637.89	636.80	635.15	637.68	637.63	637.68	635.52	637.86	637.92	637.11	636.07	638.03	637.74	638.47	636.88
P90-12b	634.99	636.30	636.18	636.19	631.73	635.28	636.33	635.06	633.05	636.14	636.13	636.11	633.65	636.25	636.44	635.46	634.01	636.47	636.37	636.62	635.14
P90-13a			639.52	638.89	631.32	635.06	639.78	634.41	630.41	638.35	639.23	637.10	631.02	635.83	639.3	634.99	630.45	638.86			
P90-13b			639.24	638.64	631.00	633.87	639.41	634.22	630.19	638.09	638.91	636.91	630.81	635.64	639.22	634.76	629.98	638.35			
P13-14b																					
GP-1P	633.20	635.60	635.37	634.76	632.76	635.79	636.02	634.11		635.69										636.48	633.42
GP-2P	639.94	640.61	642.16	640.80	639.42	640.72	640.72	640.11											641.35	641.41	639.90
GP-3P	646.26	647.69	647.74	647.98	645.87	647.38	647.98	647.38		647.62									647.48	647.74	646.70
GP-4P					648.14	652.03	652.55														
GP-5P																					
GP-6P																					
GP-7P																					
GP-8P			651.72	651.87	649.10	648.62	651.66	649.47													
GP-9P	662.86		665.01	664.99	659.60	661.08	665.26	662.21											662.57	663.15	661.27
GP-10																632.23	629.86				647.56
GP-14																					
GP-15																					
GP-16																					
WS-1																					
SG-1	629.89	631.69	631.02	629.16	627.09	630.15													631.22	631.39	
SG-2		628.25	627.64	625.92	624.75	629.98													626.52		
LDCS-1	632.65	631.74	632.31	632.56	632.57		632.08	630.65	630.40	631.05	630.67	630.27	630.33	630.44	630.85	630.99	631.02	630.84		630.29	630.75
LDCS-2A	634.18	633.95	633.88	634.21	634.15		633.51	632.29	632.71	632.42	632.39	632.53	632.46	632.12	632.63	630.44	632.32	632.37		632.08	637.57
LDCS-2B	634.37		633.58	634.59	634.58		634.11	634.49	634.26			634.04	633.80		634.09	634.48	634.35	633.94		641.66	634.46

Water Level Elevation Data
LRI Landfill, Pierce County Washington

WELL NUMBER	12/20/2010	3/24/2011	6/29/2011	9/12/2011	12/7/2011	2/29/2012	6/1/2012	9/20/2012	12/13/2012	3/26/2013	6/21/2013	9/24/2013	12/11/2013	3/25/2014	6/24/2014	9/18/2014	12/17/2014	3/24/2015	6/9/2015	9/17/2015	12/14/2015
W87-1A																					
W87-2A	645.65	647.60	645.71	641.81	645.31	648.01		643.69	648.56	649.95	646.16	645.61	647.60	649.53	646.12	644.01	647.01	649.15	645.69	643.92	649.48
W88-3M	645.23	646.89	643.16	636.52	641.96	646.01	646.18	637.03	644.43	646.11	645.26	643.96	645.98	646.11	645.21	642.96	644.56	645.92	644.71	640.86	644.49
W87-4a	687.71		686.08	682.79	684.23			682.54	684.26	687.49	685.84	683.84	687.51	687.79	685.81	683.66	687.39	687.80	685.11	680.91	687.64
W88-5A																					
W88-6A																					
W88-7A																					
W88-8M		684.25	683.53	681.28	682.43			681.15	663.67	684.08	683.40	682.67	683.99	684.57	683.4	681.05	683.65	683.95		679.53	681.85
W90-12A	608.64	609.99	609.83	602.93	607.91	610.45	610.54	603.92	609.33	610.96			608.33	611.09	609.92	607.17		612.54	609.40	603.82	610.22
W95-14A	680.49	680.49	680.49	680.49	680.49	680.49		677.52	680.24	680.49	680.49	678.40	680.49	680.49	680.49	680.49	680.49	680.49		680.49	680.19
MW-1																					
MW-1A	635.57	636.02	634.54	631.97	634.64	635.48	635.32	632.00	634.37	635.57	634.88	634.74	635.48	635.86	634.72	632.22	635.04	635.69	634.24	631.37	613.57
MW-2																					
MW-2A	634.82	634.78	633.94	642.03	633.98	634.72	634.60	631.77	634.60	634.76	634.21	634.09	634.83	635.09	633.93	631.83	634.72	634.98	633.96	631.48	634.58
MW-3	631.39	631.56	630.55	612.90	630.33	631.56	631.33	627.65	631.16	631.58	630.56	630.08	631.19	631.87	630.41	627.61	631.41	631.90	629.84	626.92	631.23
MW-4	631.34	631.32	630.37	624.34	630.06	631.35	630.87	627.88	630.97	630.97	630.37	629.85	631.16	631.74	630.25	627.84	631.15	631.67	629.22	626.99	630.85
MW-5	629.41	629.41		625.21	628.10	629.48		626.27	628.74	627.95	628.38	628.00	629.20	629.66	628.06	625.65	628.22		627.53	624.50	
MW-5A			628.59		627.97	629.70	628.92	626.38	628.60	629.45	628.58	628.05	629.20	629.79	628.43	626.25	629.38	629.76	628.66	625.35	629.33
MW-6	628.81	628.79	626.68	624.88	627.92	628.81	627.05	624.68	628.99	628.56	626.66	627.96	628.05	628.55	626.28	623.26	628.18	628.86	625.80	622.01	628.69
MW-7	636.61	636.82	635.41	630.99	634.43	636.76	635.69	630.70	636.03	636.68	634.68	633.41	635.82	636.47	634.41	630.48	635.56	636.43	633.93	629.63	635.31
MW-9	693.50	694.37	693.79	690.62	691.77	694.00	693.90	690.02	693.16	694.27	693.54	691.87	693.94	695.17	693.53	690.67	693.47	694.55	693.36	689.76	693.22
MW-10	654.47	655.59	664.78	650.30	652.39	648.95	657.95	649.47	650.84	663.87	658.46	656.92	658.97	659.42	658.43	653.4	658.5	654.94	653.27	649.58	654.32
P88-1a																					
P88-1b																					
P88-2a	660.12	655.39	659.69	655.67	658.90	660.65	660.19	655.45	660.44	660.98											
P88-2b	650.46	650.79	650.74	646.30	649.11	651.54	655.77	646.27	651.35	652.10											
P88-3a	647.25		644.63	639.00	640.50	646.27	643.69	638.56	642.70	647.10	642.85	639.17	644.72	647.11	642.8	640.15		646.71	642.32	636.48	640.95
P88-3b	642.97		640.84	635.61	637.80	643.07	640.02	635.26	639.85	640.83	639.48	636.77	641.16	642.83	639.46	636.55		642.60	638.98	633.53	638.67
P87-4M			683.22																		
P88-5a																					
P88-5b																					
P95-8a	701.61	702.12	701.03	697.60	697.40			697.50	698.66	700.51	699.37	697.57	700.02	703.34	699.34	696.9	699.07	700.49		697.08	700.48
P88-9a																					
P88-9b																					
P88-10a																					
P88-10b																					
P90-12a	637.75	637.77		634.36	636.82	637.75	638.22	633.58	637.94	637.79			637.73	638.09	636.95	634		637.99	636.49	632.62	637.95
P90-12b	636.42	636.52	636.03	632.71	635.93	636.48	636.97	631.97	636.53	636.49			636.52	636.83	635.83	632.88		636.78	635.28	630.40	636.61
P90-13a													-0.59	1.02		-1.78	-1.18				
P90-13b													-12.37	-12.04		-15.31	-12.63				
P13-14b													648.19	648.506		645.79	648.19		647.36	641.59	648.88
GP-1P					634.90						635.10	634.02	635.58	635.87	624.28	633.23		634.70		632.14	
GP-2P					640.71							640.89	641.26	641.97	633.87	640.25		643.00		640.28	
GP-3P					647.48	648.12					647.92							647.53		645.31	
GP-4P					651.89						652.16	651.48	652.58	653.26		650.11		652.74		647.90	
GP-5P																					
GP-6P																					
GP-7P																					
GP-8P																					
GP-9P					661.48	662.62	661.40				661.79	661.80	662.09	663.13		660.11		662.36		659.73	
GP-10							643.25				633.90	633.99	648.86	635.15	627.24	632.86					
GP-14																					
GP-15																					
GP-16																					
WS-1																					
SG-1	631.39					631.54	632.79		632.79	632.79		632.79	632.79	632.79	632.79	632.79	632.79				
SG-2	626.80	626.90	625.50			626.81	625.85		627.24			623.28	627.55	627.65	625.2	625.1	626.53	628.28	624.03		
LDCS-1	630.75				630.90						630.76	630.52	631.20	631.36	630.47	630.31	631.01	632.01	631.96	629.24	629.24
LDCS-2A	632.82				652.14						634.44	634.23	634.34	634.68	634.44	634.41	634.24		632.41	634.39	634.39
LDCS-2B	634.00				633.94						636.04	637.99	630.85	631.62	641.7	636.05	635.7	635.98	636.18	636.25	636.25

Water Level Elevation Data
LRI Landfill, Pierce County Washington

WELL NUMBER	3/22/2016	6/9/2016	9/16/2016	12/8/2016	3/31/2017	6/22/2017	9/28/2017	12/13/2017	3/21/2018	6/20/2018	9/19/2018	12/5/2018	3/12/2019	6/18/2019	9/26/2019	12/11/2019
W87-1A																
W87-2A	651.16	648.31	642.15	649.91	649.43	648.89	645.70	649.10	650.95	646.97	643.31	646.31	649.62	643.62	644.61	647.79
W88-3M	646.46	645.22	641.74	645.28	647.21	645.30	642.09	645.25	646.94	646.07	642.41	643.21	646.20	644.77	641.68	643.54
W87-4a	687.49	684.44	682.07	687.80	688.03	686.11	682.46	687.47	687.54	685.21	682.55	684.37	687.70	684.99	684.26	685.68
W88-5A																
W88-6A																
W88-7A																
W88-8M	681.75	680.35	679.43	681.69	682.48	681.52	679.71	681.90	682.47	680.79	679.69	680.40	680.67	680.63	680.18	680.89
W90-12A	612.64	608.66	605.26	610.84	613.22	611.24	608.21	610.73	613.01	609.79	604.84	606.63	611.38	607.49	605.17	607.84
W95-14A	680.49	678.84	678.06	679.79	680.49	679.28	677.01	680.49	680.49	679.21		677.60	679.50	678.15	676.97	678.57
MW-1																
MW-1A	604.43	634.17	632.81	635.48	635.77	635.06	632.44	635.12	634.86	634.46	632.35	634.17	635.32	634.20	633.22	634.54
MW-2																
MW-2A	634.91	633.61	632.22	634.84	635.06	634.45	631.84	634.43	634.93	633.94	631.86	633.67	634.80	633.63	632.95	634.08
MW-3	631.71	630.01	627.99	631.49	631.93	631.04	627.33	631.21	631.66	630.42	627.58	628.36	631.29	630.07	628.82	630.43
MW-4	630.87	629.89	627.88	630.65	631.53	630.67	627.16	630.79	631.35	630.21	627.48	629.13	631.14	629.85	628.55	629.96
MW-5																
MW-5A	629.55	628.23	626.24	629.23	629.43	628.83	625.80	629.08	629.60	628.70	629.09	626.42	629.32	628.22	627.12	628.14
MW-6	628.68	625.68	622.81	628.87	629.03	626.56	622.50	627.93	627.14	625.50	623.13	626.91	627.48	625.87	625.63	627.33
MW-7	636.25	633.25	630.27	635.15	636.51	634.72	629.98	634.71	635.97	633.74	630.05	631.52	635.15	632.87	630.54	632.11
MW-9	694.47	692.49	689.84	692.97	694.57	693.59	689.88	692.87	694.42	692.84	689.55	690.64	693.14	691.71	689.86	691.55
MW-10	655.12	653.82	650.48	654.19	655.51	653.61	650.19	654.26	655.35	653.89	649.63	651.58	653.88	652.46	645.95	652.74
P88-1a																
P88-1b																
P88-2a																
P88-2b																
P88-3a	646.37	640.74	636.87	639.17	646.58	642.22	640.99	638.78	646.20	641.30	636.69	636.10	641.26	640.17	636.39	636.69
P88-3b	642.29	637.68	634.11	637.50	642.47	639.13	637.83	637.15	642.13	638.20	633.93	634.14	638.73	637.97	633.95	635.02
P87-4M																
P88-5a																
P88-5b																
P95-8a		698.17	697.12	698.52	702.11	698.89	697.27	699.02	700.84	698.65	697.19	696.82	699.28	697.56	697.02	697.04
P88-9a																
P88-9b																
P88-10a																
P88-10b																
P90-12a	638.54	636.39	632.49	637.97	637.97	637.42	634.77	637.86	637.95	636.44	632.09	634.83	638.09	636.56	636.54	636.33
P90-12b	636.80	635.01	630.65	636.69	636.71	636.16	633.62	636.53	636.69	635.25	629.84	633.71	636.40	634.98	634.38	637.84
P90-13a																
P90-13b																
P13-14b	648.60	646.14	642.58	648.09	648.56	646.94	642.75	646.55	646.78	644.32	640.96	642.81	646.62	643.92	642.57	644.67
GP-1P	635.17	634.20				635.29	631.85	635.44	635.24	634.54	632.22	634.91	635.35	634.90	633.42	635.50
GP-2P	641.23	640.28				642.09	640.54		642.82	642.33	640.03	641.38	640.56	642.26	640.60	643.21
GP-3P	647.56	647.26				647.71	645.35	647.08	647.19	647.28	645.07	646.55	646.94	647.04	646.19	647.01
GP-4P	652.71	651.00				651.92	647.86	652.60	652.74	651.87	646.90	650.29	652.65	652.25	648.56	653.01
GP-5P																
GP-6P																
GP-7P																
GP-8P																
GP-9P	663.47	661.30				661.72	659.40	663.22	662.22		658.19	662.42	662.35	661.68	660.65	662.73
GP-10																
GP-14																
GP-15																
GP-16																668.81
WS-1																
SG-1	631.59	632.09	631.48													
SG-2	627.05	626.15		626.45												
LDCS-1	629.44	631.14	627.14	627.60	631.31	631.34	630.26	631.26	631.41	630.76	628.86	630.31	631.68	630.56	630.21	630.84
LDCS-2A	634.29	634.32	634.23	634.32	634.04	634.54	634.54	634.14	634.64	634.14	634.54	630.01	630.10	629.93	629.44	629.80
LDCS-2B	636.19	635.39	638.48	636.12	636.30	636.15	635.90	635.85	635.84	635.90	635.22	635.12	635.62	635.09	634.55	635.23

Table 1. Groundwater Level Elevations
March 12, 2019
LRI Landfill, Pierce County, Washington

Location	Well Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft, NGVD29)
Wells			
W87-2A	664.01	14.39	649.62
W87-4A	693.29	5.59	687.70
W88-3M	658.11	11.91	646.20
W88-7A	632.51	NM	--
W88-8M	721.05	40.38	680.67
W90-12A	640.84	29.46	611.38
W95-14A	680.49	0.99	679.50
MW-1A	652.57	17.25	635.32
MW-2A	651.93	17.13	634.80
MW-3	637.41	6.12	631.29
MW-4	652.37	21.23	631.14
MW-5A	655.55	26.23	629.32
MW-6	635.71	8.23	627.48
MW-7	656.03	20.88	635.15
MW-9	701.77	8.63	693.14
MW-10	673.87	19.99	653.88
Piezometers			
P13-14A	665.96	19.34	646.62
P88-2A	663.96	NM	--
P88-2B	663.48	NM	--
P88-3A	656.20	14.94	641.26
P88-3B	655.98	17.25	638.73
P95-8A	722.07	22.79	699.28
P90-12A	640.79	2.70	638.09
P90-12B	640.73	4.33	636.40
P90-13A	645.19	NM	--
P90-13B	643.63	NM	--
GP-1P[a]	652.00	16.65	635.35
GP-2P[a]	658.61	18.05	640.56
GP-3P[a]	658.51	11.57	646.94
GP-4P[a]	662.01	9.36	652.65
GP-9P[a]	674.03	11.68	662.35
South Creek			
SWSC-1	632.68	1.02	631.66
SWSC-2	629.98	5.95	624.03
Leak Detection System			
LDCS-1[b]	657.26	25.58	631.68
LDCS-2A[b]	659.24	29.14	630.10
LDCS-2B[b]	661.70	26.08	635.62

Notes:
NM= not measured
-- = not applicable
Measurements taken on 3/12/2019 unless otherwise noted
a = Measurement taken on 3/26/2019
b = Measurement taken on 3/11/2019

Table 1. Groundwater Level Elevations
June 18, 2019
LRI Landfill, Pierce County, Washington

Location	Well Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft, NGVD29)
Wells			
W87-2A	664.01	20.39	643.62
W87-4A	693.29	8.30	684.99
W88-3M	658.11	13.34	644.77
W88-7A	632.51	NM	--
W88-8M	721.05	40.42	680.63
W90-12A	640.84	33.35	607.49
W95-14A	680.49	2.34	678.15
MW-1A	652.57	18.37	634.20
MW-2A	651.93	18.30	633.63
MW-3	637.41	7.34	630.07
MW-4	652.37	22.52	629.85
MW-5A	655.55	27.33	628.22
MW-6	635.71	9.84	625.87
MW-7	656.03	23.16	632.87
MW-9	701.77	10.06	691.71
MW-10	673.87	21.41	652.46
Piezometers			
P13-14A	665.96	22.04	643.92
P88-2A	663.96	NM	--
P88-2B	663.48	NM	--
P88-3A	656.20	16.03	640.17
P88-3B	655.98	18.01	637.97
P95-8A	722.07	24.51	697.56
P90-12A	640.79	4.23	636.56
P90-12B	640.73	5.75	634.98
P90-13A	645.19	NM	--
P90-13B	643.63	NM	--
GP-1P[a]	652.00	17.10	634.90
GP-2P[a]	658.61	16.35	642.26
GP-3P[a]	658.51	11.47	647.04
GP-4P[a]	662.01	9.76	652.25
GP-9P[a]	674.03	12.35	661.68
South Creek			
SWSC-1	632.68	2.34	630.34
SWSC-2	629.98	6.35	623.63
Leak Detection System			
LDCS-1[b]	657.26	26.70	630.56
LDCS-2A[b]	659.24	29.31	629.93
LDCS-2B[b]	661.70	26.61	635.09

Notes:

NM= not measured

-- = not applicable

Measurements taken on 6/18/2019 unless otherwise noted

a = Measurement taken on 6/12/2019

b = Measurement taken on 6/17/2019

Table 1. Groundwater Level Elevations
September 26, 2019
LRI Landfill, Pierce County, Washington

Location	Well Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft, NGVD29)
Wells			
W87-2A	664.01	19.40	644.61
W87-4A	693.29	9.03	684.26
W88-3M	658.11	16.43	641.68
W88-7A	632.51	NM	--
W88-8M	721.05	40.87	680.18
W90-12A	640.84	35.67	605.17
W95-14A	680.49	3.52	676.97
MW-1A	652.57	19.35	633.22
MW-2A	651.93	18.98	632.95
MW-3	637.41	8.59	628.82
MW-4	652.37	23.82	628.55
MW-5A	655.55	28.43	627.12
MW-6	635.71	10.08	625.63
MW-7	656.03	25.49	630.54
MW-9	701.77	11.91	689.86
MW-10	673.87	27.92	645.95
Piezometers			
P13-14A	665.96	23.39	642.57
P88-2A	663.96	NM	--
P88-2B	663.48	NM	--
P88-3A	656.20	19.81	636.39
P88-3B	655.98	22.03	633.95
P95-8A	722.07	25.05	697.02
P90-12A	640.79	4.25	636.54
P90-12B	640.73	6.35	634.38
P90-13A	645.19	NM	--
P90-13B	643.63	NM	--
GP-1P[a]	652.00	18.58	633.42
GP-2P[a]	658.61	18.01	640.60
GP-3P[a]	658.51	12.32	646.19
GP-4P[a]	662.01	13.45	648.56
GP-9P[a]	674.03	13.38	660.65
South Creek			
SWSC-1	632.68	1.50	631.18
SWSC-2	629.98	6.27	623.71
Leak Detection System			
LDCS-1[b]	657.26	27.05	630.21
LDCS-2A[b]	659.24	29.80	629.44
LDCS-2B[b]	661.70	27.15	634.55

Notes:

NM= not measured

-- = not applicable

Measurements taken on 9/26/2019 unless otherwise noted

a = Measurement taken on 9/25/2019

b = Measurement taken on 9/24/2019

Table 1. Groundwater Level Elevations
December 11, 2019
LRI Landfill, Pierce County, Washington

Location	Well Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft, NGVD29)
Wells			
W87-2A	664.01	16.22	647.79
W87-4A	693.29	7.61	685.68
W88-3M	658.11	14.57	643.54
W88-7A	632.51	NM	--
W88-8M	721.05	40.16	680.89
W90-12A	640.84	33.00	607.84
W95-14A	680.49	1.92	678.57
MW-1A	652.57	18.03	634.54
MW-2A	651.93	17.85	634.08
MW-3	637.41	6.98	630.43
MW-4	652.37	22.41	629.96
MW-5A	655.55	27.41	628.14
MW-6	635.71	8.38	627.33
MW-7	656.03	23.92	632.11
MW-9	701.77	10.22	691.55
MW-10[1]	678.37	25.63	652.74
Piezometers			
P13-14A	665.96	21.29	644.67
P88-2A	663.96	NM	--
P88-2B	663.48	NM	--
P88-3A	656.20	19.51	636.69
P88-3B	655.98	20.96	635.02
P95-8A	722.07	25.03	697.04
P90-12A	640.79	4.46	636.33
P90-12B	640.73	2.89	637.84
P90-13A	645.19	NM	--
P90-13B	643.63	NM	--
GP-1P[b]	652.00	16.50	635.50
GP-2P[b]	658.61	15.40	643.21
GP-3P[b]	658.51	11.50	647.01
GP-4P[b]	662.01	9.00	653.01
GP-9P[b]	674.03	11.30	662.73
GP-16[b]	689.51	20.70	668.81
South Creek			
SWSC-1	632.68	0.95	631.73
SWSC-2	629.98	5.82	624.16
Leak Detection System			
LDCS-1[a]	657.26	26.42	630.84
LDCS-2A[a]	659.24	29.44	629.80
LDCS-2B[a]	661.70	26.47	635.23

Notes:

NM= not measured

-- = not applicable

Measurements taken on 12/11/2019 unless otherwise noted

a = Measurement taken on 12/9/2019

b = Measurement taken on 12/20/2019

[1] = MW-10 well casing extended 4.5 feet in August 2019

Appendix B

Groundwater Monitoring Data

Table 1. Groundwater Level Elevations
March 12, 2019
LRI Landfill, Pierce County, Washington

Location	Well Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft, NGVD29)
Wells			
W87-2A	664.01	14.39	649.62
W87-4A	693.29	5.59	687.70
W88-3M	658.11	11.91	646.20
W88-7A	632.51	NM	--
W88-8M	721.05	40.38	680.67
W90-12A	640.84	29.46	611.38
W95-14A	680.49	0.99	679.50
MW-1A	652.57	17.25	635.32
MW-2A	651.93	17.13	634.80
MW-3	637.41	6.12	631.29
MW-4	652.37	21.23	631.14
MW-5A	655.55	26.23	629.32
MW-6	635.71	8.23	627.48
MW-7	656.03	20.88	635.15
MW-9	701.77	8.63	693.14
MW-10	673.87	19.99	653.88
Piezometers			
P13-14A	665.96	19.34	646.62
P88-2A	663.96	NM	--
P88-2B	663.48	NM	--
P88-3A	656.20	14.94	641.26
P88-3B	655.98	17.25	638.73
P95-8A	722.07	22.79	699.28
P90-12A	640.79	2.70	638.09
P90-12B	640.73	4.33	636.40
P90-13A	645.19	NM	--
P90-13B	643.63	NM	--
GP-1P[a]	652.00	16.65	635.35
GP-2P[a]	658.61	18.05	640.56
GP-3P[a]	658.51	11.57	646.94
GP-4P[a]	662.01	9.36	652.65
GP-9P[a]	674.03	11.68	662.35
South Creek			
SWSC-1	632.68	1.02	631.66
SWSC-2	629.98	5.95	624.03
Leak Detection System			
LDCS-1[b]	657.26	25.58	631.68
LDCS-2A[b]	659.24	29.14	630.10
LDCS-2B[b]	661.70	26.08	635.62

Notes:
NM= not measured
-- = not applicable
Measurements taken on 3/12/2019 unless otherwise noted
a = Measurement taken on 3/26/2019
b = Measurement taken on 3/11/2019

Table 2. Field Parameters
First Quarter 2019
LRI Landfill, Pierce County, Washington

Location	Sample Number	Sample Date	Sampling Method	pH	Conductivity	Temperature
Units				(SU)	(µS/cm)	(°C)
WAC 173-200 Criteria				6.5-8.5	700[b]	—
Monitoring Wells						
MW-1A	304-031219-16	3/12/2019	DP	6.51	186	12.5
MW-2A	304-031119-01	3/11/2019	DP	6.75	250	12.2
MW-3	304-031119-03	3/11/2019	DP	6.90	391	9.9
MW-4	304-031219-13	3/12/2019	SP	7.47	328	12.4
MW-5A	304-031119-07	3/11/2019	DP	7.18	377	12.0
MW-6	304-031119-05	3/11/2019	DP	7.18	303	10.1
MW-7	304-031119-09	3/11/2019	DP	7.22	352	10.2
MW-9	304-031119-11	3/11/2019	DP	6.61	136	9.7
MW-10	304-031219-14	3/12/2019	DP	**6.12**	270	9.8
Leak Detection System						
LDCS-1	304-031119-10	3/11/2019	DB	6.08	374	20.3
LDCS-2A	304-031119-08	3/11/2019	DB	6.98	797	21.2
LDCS-2B	304-031119-06	3/11/2019	DB	6.87	739	20.2
LDCS-3A	304-031119-04	3/11/2019	DP	6.39	749	19.4
LDCS-4A	304-031119-02	3/11/2019	DP	6.25	772	19.4
LDCS-4B	304-031219-17	3/12/2019	DP	6.32	911	27.0
LDCS-4B (Resample)	304-040519-01	4/5/2019	DP	6.29	951	21.5
LDCS-5	304-031119-12	3/11/2019	DP	6.30	757	17.3
LDCS-6	304-031219-19	3/12/2019	DP	6.83	1,145	9.5

Notes:
WAC 173-200 GW Quality Criteria Exceedances are shown in **bold**.
b = Secondary Drinking Water Standard
DB = disposable bailer
DP = dedicated pump
GB = grab sample
SP = submersible pump
µS/cm = microsiemens per centimeter
°C = degrees celcius

Table 3. Inorganic Parameters
First Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	Alkalinity, Total	Ammonia	Chloride	Nitrate	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
MRL	10	0.10	0.2 - 3.0	0.50	0.2 - 1.0	10	1.0	4.0
WAC 173-200 Criteria	—	—	250	10	250	500	—	—
Prediction Limit	—	—	—	6.4	—	—	—	—
Monitoring Wells								
MW-1A	97	*	2.5	* H	3.6	160	*	*
MW-2A	120	*	3.5	*	6.8	180	*	*
MW-3	170	0.13	4.0	*	28	**880**	1.0	*
MW-4	160	0.15	3.7	* H	10	230	*	*
MW-5A	180	0.14	3.6	*	18	230	*	*
MW-6	140	0.12	5.4	*	7.2	200	*	*
MW-7	190	0.19	3.4	*	3.7	220	*	*
MW-9	70	*	1.9	*	1.7	110	*	*
MW-10	96	*	8.7	4.4 H	7.1	210	*	*
Leak Detection System								
LDCS-1	190	*	5.3	*	7.1	240	3.2	—
LDCS-2A	410	*	4.6	*	25	460	2.5	—
LDCS-2B	320	*	4.7	*	70	440	1.9	—
LDCS-3A	340	*	5.2	*	71	450	1.8	—
LDCS-4A	340	*	22	*	57	500	4.1	—
LDCS-4B	340	0.32	30	* H	95	590	24	—
LDCS-4B (Resample)	340	0.33 J	24	*	110 B	550	4.3	—
LDCS-5	310	1.4	34	*	77	500	3.9	—
LDCS-6	420	*	9.9	* H	170	680	3.7	—

Notes:
All sample units are milligrams per liter (mg/L)
Groundwater (monitoring well) concentrations greater than prediction limits or WAC 173-200 criteria are shown in **bold**
Analyses performed by TestAmerica of Denver, Colorado
Method Reporting Limit (MRL) is typical and may be elevated for some samples
* indicates the sample result was not reported at or above the MRL
— = not applicable or not performed
B = Compound found in the blank and the sample
H = Sample was prepped or analyzed beyond the specified holding time
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

Table 4. WAC 173-351 Appendix I Metals
First Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	Antimony-D	Antimony-T	Arsenic-D	Arsenic-T	Barium-D	Barium-T	Beryllium-D	Beryllium-T	Cadmium-D	Cadmium-T	Chromium-D	Chromium-T	Cobalt-D	Cobalt-T	Copper-D	Copper-T	Lead-D	Lead-T	Nickel-D	Nickel-T	Selenium-D	Selenium-T	Silver-D	Silver-T	Thallium-D	Thallium-T	Vanadium-D	Vanadium-T	Zinc-D	Zinc-T
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.05	0.05	0.005	0.005	0.005	0.005	0.001	0.001	0.001	0.001	0.005	0.005	0.001	0.001	0.01	0.01	0.002	0.002	0.02	0.02	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01
WAC 173-200 Criteria	—	—	—	0.00005	—	1.0	—	—	—	0.01	—	0.05	—	—	—	1.0	—	0.05	—	—	—	0.01	—	0.05	—	—	—	—	—	5.0
Prediction Limit	—	0.05	—	0.011	—	0.091	—	0.005	—	0.005	—	0.011	—	0.01	—	0.063	—	0.042	—	0.020	—	0.005	—	0.01	—	0.005	—	0.016	—	0.290
Monitoring Wells																														
MW-1A	—	*	—	*	—	0.023	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-2A	—	*	—	*	—	0.012	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-3	—	*	—	*	—	0.013	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-4	—	*	—	**0.0097**	—	0.016	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.016
MW-5A	—	*	—	**0.0057**	—	0.014	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-6	—	*	—	**0.0073**	—	0.012	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-7	—	*	—	**0.0053**	—	0.014	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
(BG) MW-9	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.014	—	*
(BG) MW-10	—	*	—	*	—	0.013	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
Leak Detection System																														
LDCS-1	*	—	0.0094	—	0.020	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-2A	*	—	0.0068	—	0.019	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-2B	*	—	0.0051	—	0.016	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-3A	*	—	*	—	0.014	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4A	*	—	0.0082	—	0.034	—	—	—	—	—	*	—	0.0024	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4B	*	—	0.0110	—	0.041	—	—	—	—	—	*	—	0.0017	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4B (Resample)	0.00013 J	—	0.0110	—	0.035	—	—	—	—	—	0.0003 J	—	0.0012	—	*	—	*	—	0.0038	—	—	—	—	—	—	—	0.0013 J	—	*	—
LDCS-5	*	—	0.0054	—	0.047	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-6	*	—	*	—	0.024	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—

Notes:
All sample units are milligrams per liter (mg/L).
WAC 173-200-040 Table 1 Groundwater Quality Criteria are for total metals.
Groundwater (monitoring well) concentrations greater than prediction limits or WAC 173-200 criteria are shown in **bold**.
Parameter concentrations for monitoring wells are total (T) metals.
Parameter concentrations for LDCS sumps are dissolved (D) metals.
Analyses performed by TestAmerica of Denver, Colorado.
Method Reporting Limit (MRL) is typical and may be elevated for some samples.
* indicates result was not reported at or above the MRL
— = not applicable or not performed
BG = Background
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Table 5. WAC 173-351 Appendix II Metals (Dissolved)
First Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	Calcium	Iron	Magnesium	Manganese	Potassium	Sodium
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.20	0.10	0.10	0.005	2.0	1.0
WAC 173-200 Criteria	—	0.30	—	0.050	—	—
Monitoring Wells						
MW-1A	14	**1.7**	9.2	**0.28**	3.7	12
MW-2A	17	**0.62**	9.5	**0.28**	2.8	13
MW-3	34	*	15	**0.32**	3.6	13
MW-4	29	*	16	**0.23**	5.4	11
MW-5A	27	*	11	**0.20**	4.1	30
MW-6	27	*	12	**0.17**	4.3	10
MW-7	27	0.14	19	**0.21**	4.8	12
(BG) MW-9	8.9	0.22	6.1	*	*	7.3
(BG) MW-10	24	*	10	*	2.1	13
Leak Detection System						
LDCS-1	32	0.31	13	1.6	4.5	16
LDCS-2A	78	*	30	0.09	8.7	28
LDCS-2B	80	*	28	0.04	6.8	20
LDCS-3A	77	*	33	0.62	5.2	19
LDCS-4A	68	1.8	40	1.9	5.6	21
LDCS-4B	91	1.7	45	1.8	7.3	29
LDCS-4B (Resample)	90	1.4	47	1.3	7.0	29
LDCS-5	73	*	36	1.1	6.6	26
LDCS-6	120	*	50	0.19	4.0	32

Notes:
All sample units are milligrams per liter (mg/L).
WAC 173-200-040 Table 1 Groundwater Quality Criteria are for total metals.
Groundwater (monitoring well) concentrations greater than WAC 173-200 criteria are shown in **bold**.
Analyses performed by TestAmerica of Denver, Colorado.
Method Reporting Limit (MRL) is typical and may be elevated for some samples.
* indicates result was not reported at or above the MRL.
— = not applicable or not performed
BG = Background

Table 6. Volatile Organic Compounds (µg/L)
First Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	2-Butanone (MEK)	Acetone	Methylene Chloride
Units	µg/L	µg/L	µg/L
MRL	6.0	10.0	2.0
WAC 173-200 Criteria	—	—	5.0
Monitoring Wells			
MW-1A	*	*	*
MW-2A	*	*	*
MW-3	*	*	*
MW-4	*	*	*
MW-5A	*	*	*
MW-6	*	*	*
MW-7	*	*	*
(BG) MW-9	*	*	*
(BG) MW-10	*	*	*
Leak Detection System			
LDCS-1	*	11	*
LDCS-2A	*	*	*
LDCS-2B	*	*	*
LDCS-3A	*	*	*
LDCS-4A	*	*	*
LDCS-4B	11	16	*
LDCS-4B (Resample)	*	*	*
LDCS-5	*	*	*
LDCS-6	*	*	*
Field Blank	*	*	9.6

Notes:
Analyses performed by TestAmerica of Denver, Colorado.
* = not reported at or above the MRL
— = not applicable or not performed
BG = Background

Table 7. Cation-Anion Balance
First Quarter 2019
LRI Landfill, Pierce County, Washington

Cations	mg/L					meq/L					% of Total		
	Ca	Mg	K	Na	Total	Ca	Mg	K	Na	Total	Na+K	Ca	Mg
MW-1A	14	9.2	3.7	12	38.9	0.70	0.76	0.08	0.52	2.06	29	34	37
MW-2A	17	9.5	2.8	13	42.3	0.85	0.78	0.06	0.57	2.26	28	38	35
MW-3	34	15	3.6	13	65.6	1.70	1.23	0.08	0.57	3.58	18	47	35
MW-4	29	16	5.4	11	61.4	1.45	1.32	0.12	0.48	3.36	18	43	39
MW-5A	27	11	4.1	30	72.1	1.35	0.91	0.09	1.31	3.65	38	37	25
MW-6	27	12	4.3	10	53.3	1.35	0.99	0.10	0.44	2.87	19	47	34
MW-7	27	19	4.8	12	62.8	1.35	1.56	0.11	0.52	3.54	18	38	44
MW-9	8.9	6.1	2.0	7.3	24.3	0.44	0.50	0.05	0.32	1.31	28	34	38
MW-10	24	10	2.1	13	49.1	1.20	0.82	0.05	0.57	2.63	23	45	31
LDCS-1	32	13	4.5	16	65.5	1.60	1.07	0.10	0.70	3.46	23	46	31
LDCS-2A	78	30	8.7	28	144.7	3.89	2.47	0.20	1.22	7.78	18	50	32
LDCS-2B	80	28	6.8	20	134.8	3.99	2.30	0.15	0.87	7.32	14	55	31
LDCS-3A	77	33	5.2	19	134.2	3.84	2.72	0.12	0.83	7.50	13	51	36
LDCS-4A	68	40	5.6	21	134.6	3.39	3.29	0.13	0.91	7.73	13	44	43
LDCS-4B	91	45	7.3	29	172.3	4.54	3.70	0.16	1.26	9.67	15	47	38
LDCS-4B (Resample)	90	47	7.0	29	173	4.49	3.87	0.16	1.26	9.78	15	46	40
LDCS-5	73	36	6.6	26	141.6	3.64	2.96	0.15	1.13	7.89	16	46	38
LDCS-6	120	50	4.0	32	206	5.99	4.12	0.09	1.39	11.59	13	52	36

Anions	mg/L					meq/L					% of Total			Total Ions (meq/L)	Cation - Anion Balance	Applicable Ratio (%)	Ratio Exceedance
	Alk	Cl	NO_3	SO_4	Total	Alk	Cl	NO_3	SO_4	Total	Cl	Alk	SO_4				
MW-1A	116	2.5	0.5	3.6	123	1.91	0.07	0.008	0.07	2.06	3	93	4	4.12	0.0	10	O
MW-2A	144	3.5	0.5	6.8	154.8	2.36	0.10	0.008	0.14	2.61	4	90	5	4.87	7.2	10	O
MW-3	204	4.0	0.5	28	236.5	3.35	0.11	0.008	0.58	4.05	3	83	14	7.63	6.2	5	Exceeds
MW-4	192	3.7	0.5	10	206.2	3.15	0.10	0.008	0.21	3.47	3	91	6	6.83	1.5	5	O
MW-5A	216	3.6	0.5	18	238.1	3.54	0.10	0.008	0.37	4.03	3	88	9	7.68	4.9	5	O
MW-6	168	5.4	0.5	7.2	181.1	2.76	0.15	0.008	0.15	3.07	5	90	5	5.93	3.3	5	O
MW-7	228	3.4	0.5	3.7	235.6	3.74	0.10	0.008	0.08	3.92	2	95	2	7.46	5.1	5	Exceeds
MW-9	84	1.9	0.5	1.7	88.1	1.38	0.05	0.008	0.04	1.47	4	93	2	2.78	6.0	10	O
MW-10	115	8.7	4.4	7.1	135.4	1.89	0.25	0.071	0.15	2.35	10	80	6	4.99	5.6	10	O
LDCS-1	228	5.3	0.5	7.1	240.9	3.74	0.15	0.008	0.15	4.04	4	92	4	7.51	7.7	5	Exceeds
LDCS-2A	492	4.6	0.5	25	522.1	8.07	0.13	0.008	0.52	8.73	1	92	6	16.50	5.8	5	Exceeds
LDCS-2B	384	4.7	0.5	70	459.2	6.30	0.13	0.008	1.46	7.89	2	80	18	15.21	3.8	5	O
LDCS-3A	408	5.2	0.5	71	484.7	6.69	0.15	0.008	1.48	8.32	2	80	18	15.82	5.2	5	Exceeds
LDCS-4A	408	22	0.5	57	487.5	6.69	0.62	0.008	1.19	8.51	7	79	14	16.23	4.8	5	O
LDCS-4B	408	30	0.5	95	533.5	6.69	0.85	0.008	1.98	9.52	9	70	21	19.19	0.8	5	O
LDCS-4B (Resample)	408	24	0.2	110	542.2	6.69	0.68	0.003	2.29	9.66	7	69	24	19.44	0.6	5	O
LDCS-5	372	34	0.5	77	483.5	6.10	0.96	0.008	1.60	8.67	11	70	18	16.55	4.7	5	O
LDCS-6	504	9.9	0.5	170	684	8.27	0.28	0.008	3.54	12.09	2	68	29	23.67	2.1	5	O

Notes:
mg/L = milligrams per liter
meq/L = milliequivalents per liter
Total alkalinity concentration, reported as calcium carbonate ($CaCO_3$), is converted to the bicarbonate (HCO_3^-) ion by multiplying by a factor of 1.2.
— = not applicable or not performed
The MRL was used for analytes that were non-detect
A 10% difference threshold is used if the total cation-anion sums are < 5.0 meq/liter.
A 5% difference threshold is used if the total cation-anion sums are > or = to 5.0 meq/liter.

Table 8. Duplicate Sample Results
First Quarter 2019 Monitoring Report
LRI Landfill, Pierce County, Washington

Parameter	MRL	MW-1A	MW-1A (Duplicate)	RPD (%)
Volatile Organic Compunds (µg/L)				
No Detections	-	-	-	-
Inorganic Parameters (mg/L)				
Alkalinity, Bicarbonate (as CaCO3)	10	97	100	3.0
Chloride	0.2	2.5	2.4	4.1
Sulfate	0.2	3.6	3.3	8.7
Total Dissolved Solids	10	160	170	6.1
Dissolved Metals (mg/L)				
Calcium	0.2	14	15	6.9
Iron	0.1	1.7	1.8	5.7
Magnesium	0.1	9.2	9.3	1.1
Manganese	0.005	0.28	0.27	3.6
Potassium	2.0	3.7	3.8	2.7
Sodium	1.0	12	12	0.0
Total Metals (mg/L)				
Barium	0.005	0.023	0.022	4.4

Notes:
Analyses performed by TestAmerica of Denver, Colorado.
VOCs not listed were not present at concentrations exceeding the Method Reporting Limit (MRL).
RPD = relative percent difference.
µg/L = micrograms per liter.
mg/L = milligrams per liter.
* = the sample results were not reported at or above the MRL
The MRL was used to calculate the RPD for analytes where one sample was non-detect.

Table 1. Groundwater Level Elevations
June 18, 2019
LRI Landfill, Pierce County, Washington

Location	Well Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft, NGVD29)
Wells			
W87-2A	664.01	20.39	643.62
W87-4A	693.29	8.30	684.99
W88-3M	658.11	13.34	644.77
W88-7A	632.51	NM	--
W88-8M	721.05	40.42	680.63
W90-12A	640.84	33.35	607.49
W95-14A	680.49	2.34	678.15
MW-1A	652.57	18.37	634.20
MW-2A	651.93	18.30	633.63
MW-3	637.41	7.34	630.07
MW-4	652.37	22.52	629.85
MW-5A	655.55	27.33	628.22
MW-6	635.71	9.84	625.87
MW-7	656.03	23.16	632.87
MW-9	701.77	10.06	691.71
MW-10	673.87	21.41	652.46
Piezometers			
P13-14A	665.96	22.04	643.92
P88-2A	663.96	NM	--
P88-2B	663.48	NM	--
P88-3A	656.20	16.03	640.17
P88-3B	655.98	18.01	637.97
P95-8A	722.07	24.51	697.56
P90-12A	640.79	4.23	636.56
P90-12B	640.73	5.75	634.98
P90-13A	645.19	NM	--
P90-13B	643.63	NM	--
GP-1P[a]	652.00	17.10	634.90
GP-2P[a]	658.61	16.35	642.26
GP-3P[a]	658.51	11.47	647.04
GP-4P[a]	662.01	9.76	652.25
GP-9P[a]	674.03	12.35	661.68
South Creek			
SWSC-1	632.68	2.34	630.34
SWSC-2	629.98	6.35	623.63
Leak Detection System			
LDCS-1[b]	657.26	26.70	630.56
LDCS-2A[b]	659.24	29.31	629.93
LDCS-2B[b]	661.70	26.61	635.09

Notes:

NM= not measured

-- = not applicable

Measurements taken on 6/18/2019 unless otherwise noted

a = Measurement taken on 6/12/2019

b = Measurement taken on 6/17/2019

Table 2. Field Parameters
Second Quarter 2019
LRI Landfill, Pierce County, Washington

Location	Sample Number	Sample Date	Sampling Method	pH	Conductivity	Temperature
Units				(SU)	(µS/cm)	(°C)
WAC 173-200 Criteria				6.5-8.5	700[b]	—
Monitoring Wells						
MW-1A	304-061819-13	6/18/2019	DP	6.63	173	13.4
MW-2A	304-061919-18	6/19/2019	DP	6.69	243	12.9
MW-3	304-061719-01	6/17/2019	DP	6.65	344	10.2
MW-4	304-061819-14	6/18/2019	SP	7.49	297	13.3
MW-5A	304-061719-05	6/17/2019	DP	7.20	359	12.0
MW-6	304-061719-03	6/17/2019	DP	7.12	298	10.4
MW-7	304-061719-09	6/17/2019	DP	7.22	379	10.3
MW-9	304-061919-19	6/19/2019	DP	**6.42**	137	10.5
MW-10	304-061719-11	6/17/2019	DP	6.98	258	10.8
Leak Detection System						
LDCS-1	304-061719-08	6/17/2019	DB	6.35	425	24.5
LDCS-2A	304-061719-06	6/17/2019	DB	7.20	776	23.3
LDCS-2B	304-061719-04	6/17/2019	DB	7.08	693	21.6
LDCS-3A	304-061719-02	6/17/2019	DP	6.45	806	21.8
LDCS-4A	304-061719-10	6/17/2019	DP	6.36	938	25.2
LDCS-4B	304-061719-12	6/17/2019	DP	6.47	1,095	25.5
LDCS-5	304-061819-17	6/18/2019	DP	6.84	1,329	26.3
LDCS-5 (Resample)	304-071219-01	7/12/2019	DP	6.68	1,389	28.3
LDCS-6	304-061919-20	6/19/2019	DP	6.98	1,037	20.7
Leachate Collection System						
Leachate, Cell 4B	304-061819-15	6/18/2019	GB	8.04	30,050	23.0

Notes:
WAC 173-200 GW Quality Criteria Exceedances are shown in **bold**.
b = Secondary Drinking Water Standard
DB = disposable bailer
DP = dedicated pump
GB = grab sample
SP = submersible pump
µS/cm = microsiemens per centimeter
°C = degrees celcius

Table 3. Inorganic Parameters
Second Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	Alkalinity, Total	Ammonia	Chloride	Nitrate	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
MRL	10	0.1-22	0.2-120	0.5-0.84	0.2-2.5	10-470	1-7.8	4.0
WAC 173-200 Criteria	—	—	250	10	250	500	—	—
Prediction Limit	—	—	—	6.4	—	—	—	—
Monitoring Wells								
MW-1A	92	0.12	2.0	*	3.0	160 B	*	*
MW-2A	120	0.10	3.0	*	5.2	170	*	11
MW-3	140	0.15	3.7	*	29	220	*	*
MW-4	150	0.18	3.0	*	9.6	210 B	*	*
MW-5A	170	0.17	3.1	*	14	220	*	*
MW-6	140	0.14	5.4	*	6.9	190	*	*
MW-7	200	0.24	3.2	*	3.2	220	*	*
MW-9	68	*	1.6	*	1.8	140	*	*
MW-10	100	*	8.0	4.7	7.1	200	*	*
Leak Detection System								
LDCS-1	200	0.12	4.4	*	6.1	260	2.5	—
LDCS-2A	410	*	4.0	*	21	470	2.5	—
LDCS-2B	310	*	4.0	*	58	430	2.4	—
LDCS-3A	350	*	4.7	*	75	490	1.6	—
LDCS-4A	380	0.15	20	*	56	520	5.0	—
LDCS-4B	470	1.0	32	*	60	630	9.9	—
LDCS-5	640	13.0	70	*	19	780	28	—
LDCS-5 (Resample)	510	16.0	48	*	20	610	16	—
LDCS-6	440	*	8.8	*	160	710	3.7	—
Leachate Collection System								
Leachate, Cell 4B	14000 H B	1,700	3,700	4.9	5.4	18,000	1800 H	—

Notes:
All sample units are milligrams per liter (mg/L)
Groundwater (monitoring well) concentrations greater than prediction limits or WAC 173-200 criteria are shown in **bold**
Analyses performed by TestAmerica of Denver, Colorado
Method Reporting Limit (MRL) is typical and may be elevated for some samples
* indicates the sample result was not reported at or above the MRL
— = not applicable or not performed
B = Compound found in the blank and the sample
H = Sample was prepped or analyzed beyond the specified holding time
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

Table 4. WAC 173-351 Appendix I Metals
Second Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	Antimony-D	Antimony-T	Arsenic-D	Arsenic-T	Barium-D	Barium-T	Beryllium-D	Beryllium-T	Cadmium-D	Cadmium-T	Chromium-D	Chromium-T	Cobalt-D	Cobalt-T	Copper-D	Copper-T	Lead-D	Lead-T	Nickel-D	Nickel-T	Selenium-D	Selenium-T	Silver-D	Silver-T	Thallium-D	Thallium-T	Vanadium-D	Vanadium-T	Zinc-D	Zinc-T
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.05	0.05	0.005	0.005	0.005	0.005	0.001	0.001	0.001	0.001	0.005	0.005	0.001	0.001	0.01	0.01	0.002	0.002	0.02	0.02	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01
WAC 173-200 Criteria	—	—	—	0.00005	—	1.0	—	—	—	0.01	—	0.05	—	—	—	1.0	—	0.05	—	—	—	0.01	—	0.05	—	—	—	—	—	5.0
Prediction Limit	—	0.05	—	0.011	—	0.091	—	0.005	—	0.005	—	0.011	—	0.01	—	0.063	—	0.042	—	0.020	—	0.005	—	0.01	—	0.005	—	0.016	—	0.290
Monitoring Wells																														
MW-1A	—	*	—	*	—	0.021	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-2A	—	*	—	*	—	0.013	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-3	—	*	—	*	—	0.012	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-4	—	*	—	**0.0091**	—	0.016	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.026
MW-5A	—	*	—	**0.0055**	—	0.012	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-6	—	*	—	**0.0070**	—	0.011	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-7	—	*	—	**0.0052**	—	0.015	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
(BG) MW-9	—	*	—	*	—	0.0051	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.013	—	*
(BG) MW-10	—	*	—	*	—	0.015	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
Leak Detection System																														
LDCS-1	*	—	0.0094	—	0.024	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-2A	*	—	0.0072	—	0.017	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-2B	*	—	*	—	0.015	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-3A	*	—	*	—	0.019	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4A	*	—	0.016	—	0.045	—	—	—	—	—	*	—	0.0050	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4B	*	—	0.034	—	0.059	—	—	—	—	—	*	—	0.0015	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-5	*	—	0.014	—	0.120	—	*	—	*	—	*	—	0.0018	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-5 (Resample)	*	—	0.015	—	0.110	—	*	—	*	—	*	—	0.0014	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-6	*	—	*	—	0.032	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.016	—
Leachate Collection System																														
Leachate, Cell 4B	—	*	—	0.11	—	1.3	—	*	—	*	—	0.58	—	0.038	—	0.074	—	0.019	—	0.62	—	0.012	—	*	—	*	—	0.13	—	0.14

Notes:
All sample units are milligrams per liter (mg/L).
WAC 173-200-040 Table 1 Groundwater Quality Criteria are for total metals.
Groundwater (monitoring well) concentrations greater than prediction limits or WAC 173-200 criteria are shown in **bold**.
Parameter concentrations for monitoring wells are total (T) metals.
Parameter concentrations for LDCS sumps are dissolved (D) metals.
Analyses performed by TestAmerica of Denver, Colorado.
Method Reporting Limit (MRL) is typical and may be elevated for some samples.
* indicates result was not reported at or above the MRL
— = not applicable or not performed
BG = Background
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Table 5. WAC 173-351 Appendix II Metals (Dissolved)
Second Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	Calcium	Iron	Magnesium	Manganese	Potassium	Sodium
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.20	0.10	0.10	0.005	2.0	1.0
WAC 173-200 Criteria	—	0.30	—	0.050	—	—
Monitoring Wells						
MW-1A	14	**1.6**	8.8	**0.27**	3.6	11
MW-2A	18	**0.67**	10	**0.29**	2.8	14
MW-3	35	0.11	15	**0.31**	3.7	13
MW-4	29	*	16	**0.24**	5.4	12
MW-5A	28	0.14	11	**0.21**	4.2	31
MW-6	31	*	14	**0.20**	4.7	9.9
MW-7	33	0.19	22	**0.25**	5.4	13
(BG) MW-9	9.5	*	6.5	*	*	7.1
(BG) MW-10	24	*	10	*	2.1	13
Leak Detection System						
LDCS-1	42	0.35	17	1.6	5.3	18
LDCS-2A	88	*	33	0.031	9.3	29
LDCS-2B	87	1.2	30	0.25	6.7	19
LDCS-3A	90	*	40	0.63	6.2	21
LDCS-4A	86	2.5	46	1.9	6.6	23
LDCS-4B	110	4.0	55	2.0	9.4	40
LDCS-5	100	0.81	57	2.3	16	90
LDCS-5 (Resample)	80	1.4	44	1.7	17	73
LDCS-6	110	*	58	1.2	4.4	34
Leachate Collection System ^						
Leachate, Cell 4B	41	6.5	58	0.23	1,200	5,100

Notes:
All sample units are milligrams per liter (mg/L).
WAC 173-200-040 Table 1 Groundwater Quality Criteria are for total metals.
Groundwater (monitoring well) concentrations greater than WAC 173-200 criteria are shown in **bold**.
Analyses performed by TestAmerica of Denver, Colorado.
Method Reporting Limit (MRL) is typical and may be elevated for some samples.
^ Leachate reported concentraions are total metals.
* indicates result was not reported at or above the MRL.
— = not applicable or not performed
BG = Background

Table 6. Volatile Organic Compounds (µg/L)
Second Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	1,4-Dichlorobenzene	2-Butanone (MEK)	2-Hexanone	4-Methyl-2-pentanone (MIBK)	Acetone	Benzene	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	Ethylbenzene	Methylene Chloride	m-Xylene & p-Xylene	o-Xylene	Styrene	Toluene	Trichloroethene
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MRL	0.5	6.0	5.0	5.0	10.0	0.5	0.5	0.5	0.5	1.0	2.0	0.5	0.5	0.5	0.5	0.5
WAC 173-200 Criteria	4.0	—	—	—	—	1.0	—	7.0	—	—	5.0	—	—	—	—	3.0
Monitoring Wells																
MW-1A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-2A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.94
MW-5A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-7	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
(BG) MW-9	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
(BG) MW-10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Leak Detection System																
LDCS-1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-2A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-2B	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-3A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-4A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-4B	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-5 (Resample)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Leachate Collection System																
Leachate, Cell 4B	8.8	660	380	14	910	37	1.4	*	3	33	*	52	27	2.6	59	5.1
Quality Control Sample																
Field Blank	*	*	*	*	*	*	*	0.63	*	*	11.0	*	*	*	*	0.5

Notes:
Analyses performed by TestAmerica of Denver, Colorado.
* = not reported at or above the MRL
— = not applicable or not performed
BG = Background

Table 7. Cation-Anion Balance
Second Quarter 2019
LRI Landfill, Pierce County, Washington

Cations	mg/L					meq/L					% of Total		
	Ca	Mg	K	Na	Total	Ca	Mg	K	Na	Total	Na+K	Ca	Mg
MW-1A	14	8.8	3.6	11	37.4	0.70	0.72	0.08	0.48	1.98	28	35	37
MW-2A	18	10.0	2.8	14	44.8	0.90	0.82	0.06	0.61	2.39	28	38	34
MW-3	35	15	3.7	13	66.7	1.75	1.23	0.08	0.57	3.63	18	48	34
MW-4	29	16	5.4	12	62.4	1.45	1.32	0.12	0.52	3.41	19	42	39
MW-5A	28	11	4.2	31	74.2	1.40	0.91	0.09	1.35	3.75	39	37	24
MW-6	31	14	4.7	9.9	59.6	1.55	1.15	0.11	0.43	3.24	17	48	36
MW-7	33	22	5.4	13	73.4	1.65	1.81	0.12	0.57	4.14	17	40	44
MW-9	9.5	6.5	2.0	7.1	25.1	0.47	0.53	0.05	0.31	1.36	26	35	39
MW-10	24	10	2.1	13	49.1	1.20	0.82	0.05	0.57	2.63	23	45	31
LDCS-1	42	17	5.3	18	82.3	2.10	1.40	0.12	0.78	4.40	21	48	32
LDCS-2A	88	33	9.3	29	159.3	4.39	2.72	0.21	1.26	8.58	17	51	32
LDCS-2B	87	30	6.7	19	142.7	4.34	2.47	0.15	0.83	7.79	13	56	32
LDCS-3A	90	40	6.2	21	157.2	4.49	3.29	0.14	0.91	8.84	12	51	37
LDCS-4A	86	46	6.6	23	161.6	4.29	3.79	0.15	1.00	9.23	12	47	41
LDCS-4B	110	55	9.4	40	214.4	5.49	4.53	0.21	1.74	11.97	16	46	38
LDCS-5	100	57	16	90	263.0	4.99	4.69	0.36	3.92	13.96	31	36	34
LDCS-5 (Resample)	80	44	17	73	214.0	3.99	3.62	0.38	3.18	11.17	32	36	32
LDCS-6	110	58	4.4	34	206.4	5.49	4.77	0.10	1.48	11.84	13	46	40
Leachate, Cell 4B	41	58	1200	5100	6399	2.05	4.77	27.10	221.85	255.77	97	1	2

Anions	mg/L					meq/L					% of Total			Total Ions (meq/L)	Cation - Anion Balance	Applicable Ratio (%)	Ratio Exceedance
	Alk	Cl	NO_3	SO_4	Total	Alk	Cl	NO_3	SO_4	Total	Cl	Alk	SO_4				
MW-1A	110.4	2.0	0.5	3.0	115.9	1.81	0.06	0.008	0.06	1.94	3	93	3	3.92	1.2	10	O
MW-2A	144	3.0	0.5	5.2	152.7	2.36	0.08	0.008	0.11	2.56	3	92	4	4.96	3.4	10	O
MW-3	168	3.7	0.5	29	201.2	2.76	0.10	0.008	0.60	3.47	3	79	17	7.10	2.2	5	O
MW-4	180	3.0	0.5	9.6	193.1	2.95	0.08	0.008	0.20	3.24	3	91	6	6.65	2.5	5	O
MW-5A	204	3.1	0.5	14	221.6	3.35	0.09	0.008	0.29	3.73	2	90	8	7.48	0.2	5	O
MW-6	168	5.4	0.5	6.9	180.8	2.76	0.15	0.008	0.14	3.06	5	90	5	6.29	2.8	5	O
MW-7	240	3.2	0.5	3.2	246.9	3.94	0.09	0.008	0.07	4.10	2	96	2	8.25	0.5	5	O
MW-9	81.6	1.6	0.5	1.8	85.5	1.34	0.05	0.008	0.04	1.43	3	94	3	2.79	2.4	10	O
MW-10	120	8.0	4.7	7.1	139.8	1.97	0.23	0.076	0.15	2.42	9	81	6	5.05	4.3	5	O
LDCS-1	240	4.4	0.5	6.1	251	3.94	0.12	0.008	0.13	4.20	3	94	3	8.59	2.4	5	O
LDCS-2A	492	4.0	0.5	21	517.5	8.07	0.11	0.008	0.44	8.63	1	94	5	17.21	0.3	5	O
LDCS-2B	372	4.0	0.5	58	434.5	6.10	0.11	0.008	1.21	7.43	2	82	16	15.22	2.4	5	O
LDCS-3A	420	4.7	0.5	75	500.2	6.89	0.13	0.008	1.56	8.59	2	80	18	17.43	1.4	5	O
LDCS-4A	456	20	0.5	56	532.5	7.48	0.56	0.008	1.16	9.22	6	81	13	18.44	0.1	5	O
LDCS-4B	564	32	0.5	60	656.5	9.25	0.90	0.008	1.25	11.41	8	81	11	23.38	2.4	5	O
LDCS-5	768	70	0.5	19	857.5	12.60	1.97	0.008	0.40	14.97	13	84	3	28.93	3.5	5	O
LDCS-5 (Resample)	612	48	0.5	20	681	10.04	1.35	0.008	0.42	11.81	11	85	4	22.99	2.8	5	O
LDCS-6	528	8.8	0.5	160	697	8.66	0.25	0.008	3.33	12.24	2	71	27	24.08	1.7	5	O
Leachate, Cell 4B	16800	3700	4.9	5.4	20510	275.52	104.34	0.079	0.11	380.05	27	72	0	635.82	19.5	5	Exceeds

Notes:
mg/L = milligrams per liter
meq/L = milliequivalents per liter
Total alkalinity concentration, reported as calcium carbonate ($CaCO_3$), is converted to the bicarbonate (HCO_3^-) ion by multiplying by a factor of 1.2.
— = not applicable or not performed
The MRL was used for analytes that were non-detect
A 10% difference threshold is used if the total cation-anion sums are < 5.0 meq/liter.
A 5% difference threshold is used if the total cation-anion sums are > or = to 5.0 meq/liter.

Table 8. Duplicate Sample Results
Second Quarter 2019 Monitoring Report
LRI Landfill, Pierce County, Washington

Parameter	MRL	MW-5A	MW-5A (Duplicate)	RPD (%)
Volatile Organic Compunds (µg/L)				
No Detections	-	-	-	-
Inorganic Parameters (mg/L)				
Alkalinity, Bicarbonate (as CaCO3)	10	170	170	0.0
Ammonia	0.1	0.17	0.17	0.0
Chloride	0.2	3.1	3.1	0.0
Sulfate	0.2	14	14	0.0
Total Dissolved Solids	10	220	230	4.4
Dissolved Metals (mg/L)				
Calcium	0.2	28	28	0.0
Iron	0.1	0.14	0.11	24.0
Magnesium	0.1	11	11	0.0
Manganese	0.005	0.21	0.2	4.9
Potassium	2.0	4.2	4.3	2.4
Sodium	1.0	31	31	0.0
Total Metals (mg/L)				
Arsenic	0.005	0.0055	0.0052	5.6
Barium	0.005	0.012	0.012	0.0

Notes:
Analyses performed by TestAmerica of Denver, Colorado.
VOCs not listed were not present at concentrations exceeding the Method Reporting Limit (MRL).
RPD = relative percent difference.
µg/L = micrograms per liter.
mg/L = milligrams per liter.
* = the sample results were not reported at or above the MRL
The MRL was used to calculate the RPD for analytes where one sample was non-detect.

Table 1. Groundwater Level Elevations
September 26, 2019
LRI Landfill, Pierce County, Washington

Location	Well Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft, NGVD29)
Wells			
W87-2A	664.01	19.40	644.61
W87-4A	693.29	9.03	684.26
W88-3M	658.11	16.43	641.68
W88-7A	632.51	NM	--
W88-8M	721.05	40.87	680.18
W90-12A	640.84	35.67	605.17
W95-14A	680.49	3.52	676.97
MW-1A	652.57	19.35	633.22
MW-2A	651.93	18.98	632.95
MW-3	637.41	8.59	628.82
MW-4	652.37	23.82	628.55
MW-5A	655.55	28.43	627.12
MW-6	635.71	10.08	625.63
MW-7	656.03	25.49	630.54
MW-9	701.77	11.91	689.86
MW-10	673.87	27.92	645.95
Piezometers			
P13-14A	665.96	23.39	642.57
P88-2A	663.96	NM	--
P88-2B	663.48	NM	--
P88-3A	656.20	19.81	636.39
P88-3B	655.98	22.03	633.95
P95-8A	722.07	25.05	697.02
P90-12A	640.79	4.25	636.54
P90-12B	640.73	6.35	634.38
P90-13A	645.19	NM	--
P90-13B	643.63	NM	--
GP-1P[a]	652.00	18.58	633.42
GP-2P[a]	658.61	18.01	640.60
GP-3P[a]	658.51	12.32	646.19
GP-4P[a]	662.01	13.45	648.56
GP-9P[a]	674.03	13.38	660.65
South Creek			
SWSC-1	632.68	1.50	631.18
SWSC-2	629.98	6.27	623.71
Leak Detection System			
LDCS-1[b]	657.26	27.05	630.21
LDCS-2A[b]	659.24	29.80	629.44
LDCS-2B[b]	661.70	27.15	634.55

Notes:

NM= not measured

-- = not applicable

Measurements taken on 9/26/2019 unless otherwise noted

a = Measurement taken on 9/25/2019

b = Measurement taken on 9/24/2019

Table 2. Field Parameters
Third Quarter 2019
LRI Landfill, Pierce County, Washington

Location	Sample Number	Sample Date	Sampling Method	pH	Conductivity	Temperature
Units				(SU)	(µS/cm)	(°C)
WAC 173-200 Criteria				6.5-8.5	700[b]	—
Monitoring Wells						
MW-1A	304-092319-01	9/23/2019	DP	6.53	192	13.3
MW-2A	304-092319-02	9/23/2019	DP	7.05	345	12.8
MW-3	304-092319-03	9/23/2019	DP	7.01	343	10.3
MW-4	304-092519-16	9/25/2019	SP	7.17	332	13.6
MW-5A	304-092319-04	9/23/2019	DP	7.20	299	12.2
MW-6	304-092319-06	9/23/2019	DP	7.16	322	10.4
MW-7	304-092319-07	9/23/2019	DP	7.34	358	10.4
MW-9	304-092619-18	9/26/2019	DP	**6.26**	137	10.6
MW-10	304-092519-14	9/25/2019	DP	**6.15**	295	10.2
Leak Detection System						
LDCS-1	304-092419-11	9/24/2019	DB	6.01	512	20.8
LDCS-2A	304-092419-10	9/24/2019	DB	6.73	817	20.3
LDCS-2B	304-092419-09	9/24/2019	DB	6.55	718	18.6
LDCS-3A	304-092419-08	9/24/2019	DP	7.07	780	18.2
LDCS-4A	304-092419-12	9/24/2019	DP	6.36	910	24.6
LDCS-4B	304-092419-13	9/24/2019	DP	6.33	1,071	25.0
LDCS-5^ (7/12/19)	304-071219-01	7/12/2019	DP	6.68	1,389	28.3
LDCS-5^ (8/23/19)	304-082319-01	8/23/2019	DP	7.35	1,074	28.2
LDCS-5 (9/25/19)	304-092519-17	9/25/2019	DP	6.46	838	22.8
LDCS-6	304-092619-19	9/26/2019	DP	6.66	1,113	18.8
LDCS-7 (8/29/19)	304-082919-01	8/29/2019	GB	6.20	866	18.4
LDCS-7 (9/25/19)	304-092519-15	9/25/2019	GB	6.40	1,395	17.7

Notes:
WAC 173-200 GW Quality Criteria exceedances are shown in **bold**.

b = Secondary Drinking Water Standard

DB = disposable bailer

DP = dedicated pump

GB = grab sample

SP = submersible pump

µS/cm = microsiemens per centimeter

°C = degrees celcius

^ = Additional samples collected from LDCS-5 to monitor water quality trends.

Additional samples collected from LDCS-7 to establish background water quality.

Table 3. Inorganic Parameters
Third Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	Alkalinity, Total	Ammonia	Chloride	Nitrate	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
MRL	10	0.1-2.2	0.2-3.0	0.50	0.2-2.5	10.0	1-35	4.0
WAC 173-200 Criteria	—	—	250	10	250	500	—	—
Prediction Limit	—	—	—	6.4	—	—	—	—
Monitoring Wells								
MW-1A	93	*	2.2	*	3.1	140	*	*
MW-2A	140	0.15	5.0	*	25	210	1.2	*
MW-3	150	*	4.1	*	28	200	1.0	*
MW-4	160	0.13	3.3	*	11	190	*	*
MW-5A	150	*	2.3	*	5.3	160	*	*
MW-6	150	*	5.4	*	7.0	190	1.0	*
MW-7	180	0.17	3.1	*	4.1	200	*	*
(BG) MW-9	69	*	1.8	*	1.7	130	*	*
(BG) MW-10	110	*	8.8	4.2	7.4	200	*	12
Leak Detection System								
LDCS-1	270	0.17	4.5	*	8.5	300	3.9	—
LDCS-2A	450	*	4.8	*	16	490	2.3	—
LDCS-2B	330	*	4.9	*	54	420	2.3	—
LDCS-3A	360	*	4.9	*	75	480	1.6	—
LDCS-4A	390	0.42	25	*	57	530	6.8	—
LDCS-4B	410	0.58	30	*	130	660	4.5	—
LDCS-5^ (7/12/19)	510	16.0	48	*	20	610	16	—
LDCS-5^ (8/23/19)	510	13.0	37	*	17	660	14	—
LDCS-5 (9/25/19)	410	6.8	23	*	12	500	9.5	—
LDCS-6	490	*	9.1	*	130	660	3.5	—
LDCS-7 (8/29/19)	380	*	9.7 H	*	87 H	560	4.0	—
LDCS-7 (9/25/19)	560	*	32	0.77	180	900	930	—

Notes:

All sample units are milligrams per liter (mg/L)

Groundwater (monitoring well) concentrations greater than prediction limits or WAC 173-200 criteria are shown in **bold**

Analyses performed by TestAmerica of Denver, Colorado

Method Reporting Limit (MRL) is typical and may be elevated for some samples

H = Analyzed past holding time due to lab error.

^ = Additional samples collected from LDCS-5 to monitor water quality trends.

Additional samples collected from LDCS-7 to establish background water quality.

* = sample result was not reported at or above the MRL

— = not applicable or not performed

B = Compound found in the blank and the sample

H = Sample was prepped or analyzed beyond the specified holding time

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

Table 4. WAC 173-351 Appendix I Metals
Third Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	Antimony-D	Antimony-T	Arsenic-D	Arsenic-T	Barium-D	Barium-T	Beryllium-D	Beryllium-T	Cadmium-D	Cadmium-T	Chromium-D	Chromium-T	Cobalt-D	Cobalt-T	Copper-D	Copper-T	Lead-D	Lead-T	Nickel-D	Nickel-T	Selenium-D	Selenium-T	Silver-D	Silver-T	Thallium-D	Thallium-T	Vanadium-D	Vanadium-T	Zinc-D	Zinc-T
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.05	0.05	0.005	0.005	0.005	0.005	0.001	0.001	0.001	0.001	0.005	0.005	0.001	0.001	0.01	0.01	0.002	0.002	0.02	0.02	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.01
WAC 173-200 Criteria	—	—	—	0.00005	—	1.0	—	—	—	0.01	—	0.05	—	—	—	1.0	—	0.05	—	—	—	0.01	—	0.05	—	—	—	—	—	5.0
Prediction Limit	—	0.05	—	0.011	—	0.091	—	0.005	—	0.005	—	0.011	—	0.01	—	0.063	—	0.042	—	0.020	—	0.005	—	0.01	—	0.005	—	0.016	—	0.290
Monitoring Wells																														
MW-1A	—	*	—	*	—	0.019	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.019
MW-2A	—	*	—	*	—	0.017	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-3	—	*	—	*	—	0.0095	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-4	—	*	—	**0.0093**	—	0.015	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.031
MW-5A	—	*	—	*	—	0.0099	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-6	—	*	—	**0.0068**	—	0.011	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-7	—	*	—	**0.0054**	—	0.013	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
(BG) MW-9	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.014	—	*
(BG) MW-10	—	*	—	*	—	0.014	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
Leak Detection System																														
LDCS-1	*	—	0.0120	—	0.025	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-2A	*	—	0.0070	—	0.013	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-2B	*	—	0.0053	—	0.018	—	—	—	—	—	*	—	0.0013	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-3A	*	—	*	—	0.016	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4A	*	—	0.0170	—	0.039	—	—	—	—	—	*	—	0.0037	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4B	*	—	*	—	0.038	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-5^ (7/12/19)	*	—	0.0150	—	0.110	—	*	—	*	—	*	—	0.0014	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-5^ (8/23/19)	*	—	0.0058	—	0.080	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-5 (9/25/19)	*	—	0.0110	—	0.062	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-6	*	—	*	—	0.026	—	*	—	*	—	*	—	0.0024	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.017	—
LDCS-7 (8/29/19)	*	—	*	—	0.040	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.027	—
LDCS-7 (9/25/19)	*	—	*	—	0.044	—	*	—	*	—	*	—	0.0013	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—

Notes:
All sample units are milligrams per liter (mg/L).
WAC 173-200-040 Table 1 Groundwater Quality Criteria are for total metals.
Groundwater (monitoring well) concentrations greater than prediction limits or WAC 173-200 criteria are shown in **bold**.
Parameter concentrations for monitoring wells are total (T) metals.
Parameter concentrations for LDCS sumps are dissolved (D) metals.
Analyses performed by TestAmerica of Denver, Colorado.
Method Reporting Limit (MRL) is typical and may be elevated for some samples.
^ = Additional samples collected from LDCS-5 to monitor water quality trends.
Additional samples collected from LDCS-7 to establish background water quality.
* = sample result was not reported at or above the MRL
— = not applicable or not performed
BG = Background

Table 5. WAC 173-351 Appendix II Metals (Dissolved)
Third Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	Calcium	Iron	Magnesium	Manganese	Potassium	Sodium
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.20	0.10	0.10	0.005	2.0	1.0
WAC 173-200 Criteria	—	0.30	—	0.050	—	—
Monitoring Wells						
MW-1A	13	**1.5**	7.9	**0.24**	3.1	11
MW-2A	25	**0.75**	13	**0.34**	3.7	20
MW-3	31	*	14	**0.27**	3.5	13
MW-4	28	*	15	**0.23**	5.4	13
MW-5A	25	*	10	**0.16**	3.5	16
MW-6	29	*	13	**0.19**	4.3	9.9
MW-7	27	0.14	19	**0.22**	4.7	11
(BG) MW-9	10	*	6.7	*	2.0	7.6
(BG) MW-10	24	*	11	*	2.0	15
Leak Detection System						
LDCS-1	45	0.10	20	2.1	5.1	17 B
LDCS-2A	86	*	35	0.021	8.9	29 B
LDCS-2B	72	1.3	27	0.71	5.6	16 B
LDCS-3A	82	*	36	0.73	5.8	21 B
LDCS-4A	74	4.1	43	2.4	6.4	30 B
LDCS-4B	100	*	49	1.1	7.9	35 B
LDCS-5^ (7/12/19)	80	1.4	44	1.7	17	73
LDCS-5^ (8/23/19)	83	0.10	49	1.6	14	50
LDCS-5 (9/25/19)	65	0.72	38	1.4	12	38
LDCS-6	120	*	54	2.2	4.7	38
LDCS-7 (8/29/19)	110	*	22	0.30	3.5	42
LDCS-7 (9/25/19)	190	*	26	0.64	3.6	82

Notes:

All sample units are milligrams per liter (mg/L).

WAC 173-200-040 Table 1 Groundwater Quality Criteria are for total metals.
Groundwater (monitoring well) concentrations greater than WAC 173-200 criteria are shown in **bold**.

Analyses performed by TestAmerica of Denver, Colorado.

Method Reporting Limit (MRL) is typical and may be elevated for some samples.

B = Compound found in the sample and the blank.

^ = Additional samples collected from LDCS-5 to monitor water quality trends.

Additional samples collected from LDCS-7 to establish background water quality.

* = sample result was not reported at or above the MRL

— = not applicable or not performed

BG = Background

Table 6. Volatile Organic Compounds (µg/L)
Third Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	1,4-Dichlorobenzene	Carbon Disulfide	Chloroform	Methylene Chloride
Units	µg/L	µg/L	µg/L	µg/L
MRL	0.5	0.5	0.5	2.0
WAC 173-200 Criteria	4.0	—	7.0	5.0
Monitoring Wells				
MW-1A	*	*	*	*
MW-2A	*	*	*	*
MW-3	*	*	*	*
MW-4	*	*	*	*
MW-5A	*	*	*	*
MW-6	*	*	*	*
MW-7	*	*	*	*
(BG) MW-9	*	*	*	*
(BG) MW-10	*	*	*	*
Leak Detection System				
LDCS-1	0.58	*	*	*
LDCS-2A	*	*	*	*
LDCS-2B	*	*	*	*
LDCS-3A	*	*	*	*
LDCS-4A	*	*	*	*
LDCS-4B	*	*	*	*
LDCS-5^ (7/12/19)	*	*	*	*
LDCS-5^ (8/23/19)	*	*	*	*
LDCS-5 (9/25/19)	*	*	*	*
LDCS-6	*	*	*	*
LDCS-7 (8/29/19)	*	1.1	*	*
LDCS-7 (9/25/19)	*	*	*	*
Quality Control Sample				
Field Blank	*	*	0.50	10.0

Notes:

All sample units are milligrams per liter (µg/L).

Analyses performed by TestAmerica of Denver, Colorado.

^ = Additional samples collected from LDCS-5 to monitor water quality trends.

Additional samples collected from LDCS-7 to establish background water quality.

* = sample result was not reported at or above the MRL

— = not applicable or not performed

BG = Background

Table 7. Cation-Anion Balance
Third Quarter 2019
LRI Landfill, Pierce County, Washington

Cations	mg/L					meq/L					% of Total		
	Ca	Mg	K	Na	Total	Ca	Mg	K	Na	Total	Na+K	Ca	Mg
MW-1A	13	7.9	3.1	11	35	0.65	0.65	0.07	0.48	1.85	30	35	35
MW-2A	25	13	3.7	20	61.7	1.25	1.07	0.08	0.87	3.27	29	38	33
MW-3	31	14	3.5	13	61.5	1.55	1.15	0.08	0.57	3.34	19	46	34
MW-4	28	15	5.4	13	61.4	1.40	1.23	0.12	0.57	3.32	21	42	37
MW-5A	25	10	3.5	16	54.5	1.25	0.82	0.08	0.70	2.85	27	44	29
MW-6	29	13	4.3	9.9	56.2	1.45	1.07	0.10	0.43	3.04	17	48	35
MW-7	27	19	4.7	11	61.7	1.35	1.56	0.11	0.48	3.50	17	39	45
MW-9	10	6.7	2.0	7.6	26.3	0.50	0.55	0.05	0.33	1.43	26	35	39
MW-10	24	11	2.0	15	52.0	1.20	0.91	0.05	0.65	2.80	25	43	32
LDCS-1	45	20	5.1	17	87.1	2.25	1.65	0.12	0.74	4.75	18	47	35
LDCS-2A	86	35	8.9	29	158.9	4.29	2.88	0.20	1.26	8.63	17	50	33
LDCS-2B	72	27	5.6	16	120.6	3.59	2.22	0.13	0.70	6.64	12	54	33
LDCS-3A	82	36	5.8	21	144.8	4.09	2.96	0.13	0.91	8.10	13	51	37
LDCS-4A	74	43	6.4	30	153.4	3.69	3.54	0.14	1.31	8.68	17	43	41
LDCS-4B	100	49	7.9	35	191.9	4.99	4.03	0.18	1.52	10.72	16	47	38
LDCS-5^ (7/12/19)	80	44	17	73	214.0	3.99	3.62	0.38	3.18	11.17	32	36	32
LDCS-5^ (8/23/19)	83	49	14	50	196.0	4.14	4.03	0.32	2.18	10.67	23	39	38
LDCS-5 (9/25/19)	65	38	12	38	153.0	3.24	3.13	0.27	1.65	8.29	23	39	38
LDCS-6	120	54	4.7	38	216.7	5.99	4.44	0.11	1.65	12.19	14	49	36
LDCS-7 (8/29/19)	110	22	3.5	42	177.5	5.49	1.81	0.08	1.83	9.21	21	60	20
LDCS-7 (9/25/19)	190	26	3.6	82	301.6	9.48	2.14	0.08	3.57	15.27	24	62	14

Anions	mg/L					meq/L					% of Total			Total Ions (meq/L)	Cation - Anion Balance	Applicable Ratio (%)	Ratio Exceedance
	Alk	Cl	NO_3	SO_4	Total	Alk	Cl	NO_3	SO_4	Total	Cl	Alk	SO_4				
MW-1A	111.6	2.2	0.5	3.1	117.4	1.83	0.06	0.008	0.06	1.96	3	93	3	3.81	3.1	10	O
MW-2A	168	5.0	0.5	25	198.5	2.76	0.14	0.008	0.52	3.42	4	80	15	6.70	2.3	5	O
MW-3	180	4.1	0.5	28	212.6	2.95	0.12	0.008	0.58	3.66	3	81	16	7.00	4.5	5	O
MW-4	192	3.3	0.5	11	206.8	3.15	0.09	0.008	0.23	3.48	3	91	7	6.80	2.3	5	O
MW-5A	180	2.3	0.5	5.3	188.1	2.95	0.06	0.008	0.11	3.14	2	94	4	5.98	4.8	5	O
MW-6	180	5.4	0.5	7.0	192.9	2.95	0.15	0.008	0.15	3.26	5	91	4	6.30	3.4	5	O
MW-7	216	3.1	0.5	4.1	223.7	3.54	0.09	0.008	0.09	3.72	2	95	2	7.22	3.2	5	O
MW-9	82.8	1.8	0.5	1.7	86.8	1.36	0.05	0.008	0.04	1.45	3	94	2	2.88	0.9	10	O
MW-10	132	8.8	4.2	7.4	152.4	2.16	0.25	0.068	0.15	2.63	9	82	6	5.44	3.1	5	O
LDCS-1	324	4.5	0.5	8.5	337.5	5.31	0.13	0.008	0.18	5.63	2	94	3	10.37	8.5	5	Exceeds
LDCS-2A	540	4.8	0.5	16	561.3	8.86	0.14	0.008	0.33	9.33	1	95	4	17.97	3.9	5	O
LDCS-2B	396	4.9	0.5	54	455.4	6.49	0.14	0.008	1.12	7.76	2	84	14	14.40	7.8	5	Exceeds
LDCS-3A	432	4.9	0.5	75	512.4	7.08	0.14	0.008	1.56	8.79	2	81	18	16.89	4.1	5	O
LDCS-4A	468	25	0.5	57	550.5	7.68	0.71	0.008	1.19	9.57	7	80	12	18.25	4.9	5	O
LDCS-4B	492	30	0.5	130	653	8.07	0.85	0.008	2.70	11.63	7	69	23	22.35	4.0	5	O
LDCS-5^ (7/12/19)	612	48	0.5	20	681	10.04	1.35	0.008	0.42	11.81	11	85	4	22.99	2.8	5	O
LDCS-5^ (8/23/19)	612	37	0.5	17	667	10.04	1.04	0.008	0.35	11.44	9	88	3	22.11	3.5	5	O
LDCS-5 (9/25/19)	492	23	0.5	12	528	8.07	0.65	0.008	0.25	8.98	7	90	3	17.27	3.9	5	O
LDCS-6	588	9.1	0.5	130	728	9.64	0.26	0.008	2.70	12.61	2	76	21	24.80	1.7	5	O
LDCS-7 (8/29/19)	456	9.7	0.5	87	553	7.48	0.27	0.008	1.81	9.57	3	78	19	18.78	1.9	5	O
LDCS-7 (9/25/19)	672	32	0.77	180	885	11.02	0.90	0.012	3.74	15.68	6	70	24	30.95	1.3	5	O

Notes:
mg/L = milligrams per liter
meq/L = milliequivalents per liter
Total alkalinity concentration, reported as calcium carbonate ($CaCO_3$), is converted to the bicarbonate (HCO_3^-) ion by multiplying by a factor of 1.2.
^ = Additional samples collected from LDCS-5 to monitor water quality trends.
Additional samples collected from LDCS-7 to establish background water quality.
The MRL was used for analytes that were non-detect
A 10% difference threshold is used if the total cation-anion sums are < 5.0 meq/liter.
A 5% difference threshold is used if the total cation-anion sums are > or = to 5.0 meq/liter.

Table 8. Duplicate Sample Results
Third Quarter 2019 Monitoring Report
LRI Landfill, Pierce County, Washington

Parameter	MRL	MW-5A	MW-5A (Duplicate)	RPD (%)
Volatile Organic Compunds (µg/L)				
No Detections	-	-	-	-
Inorganic Parameters (mg/L)				
Alkalinity, Bicarbonate (as CaCO3)	10	150	150	0.0
Chloride	0.2	2.3	2.4	4.3
Sulfate	0.2	5.3	5.4	1.9
Total Dissolved Solids	10	160	160	0.0
Dissolved Metals (mg/L)				
Calcium	0.2	25	25	0.0
Magnesium	0.1	10	11	9.5
Manganese	0.005	0.16	0.16	0.0
Potassium	2.0	3.5	3.5	0.0
Sodium	1.0	16	16	0.0
Total Metals (mg/L)				
Barium	0.005	0.0099	0.01	1.0

Notes:
Analyses performed by TestAmerica of Denver, Colorado.
VOCs not listed were not present at concentrations exceeding the Method Reporting Limit (MRL).
RPD = relative percent difference.
µg/L = micrograms per liter.
mg/L = milligrams per liter.
The MRL was used to calculate the RPD for analytes where one sample was non-detect.

Table 1. Groundwater Level Elevations
December 11, 2019
LRI Landfill, Pierce County, Washington

Location	Well Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft, NGVD29)
Wells			
W87-2A	664.01	16.22	647.79
W87-4A	693.29	7.61	685.68
W88-3M	658.11	14.57	643.54
W88-7A	632.51	NM	--
W88-8M	721.05	40.16	680.89
W90-12A	640.84	33.00	607.84
W95-14A	680.49	1.92	678.57
MW-1A	652.57	18.03	634.54
MW-2A	651.93	17.85	634.08
MW-3	637.41	6.98	630.43
MW-4	652.37	22.41	629.96
MW-5A	655.55	27.41	628.14
MW-6	635.71	8.38	627.33
MW-7	656.03	23.92	632.11
MW-9	701.77	10.22	691.55
MW-10[1]	678.37	25.63	652.74
Piezometers			
P13-14A	665.96	21.29	644.67
P88-2A	663.96	NM	--
P88-2B	663.48	NM	--
P88-3A	656.20	19.51	636.69
P88-3B	655.98	20.96	635.02
P95-8A	722.07	25.03	697.04
P90-12A	640.79	4.46	636.33
P90-12B	640.73	2.89	637.84
P90-13A	645.19	NM	--
P90-13B	643.63	NM	--
GP-1P[b]	652.00	16.50	635.50
GP-2P[b]	658.61	15.40	643.21
GP-3P[b]	658.51	11.50	647.01
GP-4P[b]	662.01	9.00	653.01
GP-9P[b]	674.03	11.30	662.73
GP-16[b]	689.51	20.70	668.81
South Creek			
SWSC-1	632.68	0.95	631.73
SWSC-2	629.98	5.82	624.16
Leak Detection System			
LDCS-1[a]	657.26	26.42	630.84
LDCS-2A[a]	659.24	29.44	629.80
LDCS-2B[a]	661.70	26.47	635.23

Notes:

NM= not measured

-- = not applicable

Measurements taken on 12/11/2019 unless otherwise noted

a = Measurement taken on 12/9/2019

b = Measurement taken on 12/20/2019

[1] = MW-10 well casing extended 4.5 feet in August 2019

Table 2. Field Parameters
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

Location	Sample Number	Sample Date	Sampling Method	pH	Conductivity	Temperature
Units				(SU)	(µS/cm)	(°C)
WAC 173-200 Criteria				6.5-8.5	700[b]	—
Monitoring Wells						
MW-1A	304-121019-23	12/10/2019	DP	6.99	210	12.2
MW-2A	304-121119-25	12/11/2019	DP	7.14	375	12.8
MW-3	304-121119-26	12/11/2019	DP	7.39	339	10.4
MW-4	304-121119-18	12/11/2019	SP	7.24	340	12.3
MW-5A	304-121019-14	12/10/2019	DP	7.53	320	11.5
MW-6	304-121019-12	12/10/2019	DP	7.42	329	9.9
MW-7	304-121119-27	12/11/2019	DP	7.49	341	10.3
MW-9	304-121119-28	12/11/2019	DP	6.78	135	10.0
MW-10	304-121119-16	12/11/2019	DP	**6.21**	270	10.0
Leak Detection System						
LDCS-1	304-120919-04	12/9/2019	DB	6.36	409	15.8
LDCS-2A	304-120919-03	12/9/2019	DB	7.28	816	15.0
LDCS-2B	304-120919-02	12/9/2019	DB	6.89	719	13.5
LDCS-3A	304-120919-01	12/9/2019	DP	6.44	828	15.1
LDCS-4A	304-120919-05	12/9/2019	DP	6.14	747	20.5
LDCS-4B	304-120919-06	12/9/2019	DP	6.31	1,004	20.8
LDCS-5^ (10/30/2019)	304-103019-01	10/30/2019	DP	6.58	1,038	17.1
LDCS-5^ (11/25/2019)	304-112519-01	11/25/2019	DP	6.59	1,371	16.3
LDCS-5 (12/10/2019)	304-121019-10	12/10/2019	DP	6.62	1,212	14.4
LDCS-6	304-121019-08	12/10/2019	DP	6.53	1,029	9.9
LDCS-7 (10/18/2019)	304-101819-01	10/18/2019	DP	6.23	1,426	12.8
LDCS-7 (11/25/2019)	304-112519-02	11/25/2019	DP	6.31	1,646	12.0
LDCS-7 (12/16/2019)	304-121619-24	12/16/2019	DP	5.92	1,139	8.4
Leachate Collection System						
Leachate, Cell 1	304-121019-13	12/10/2019	GB	7.40	37,427	19.9
Leachate, Cell 2A	304-121019-11	12/10/2019	GB	7.76	32,505	18.4
Leachate, Cell 2B	304-121019-09	12/10/2019	GB	7.47	26,854	18.5
Leachate, Cell 3A	304-121019-07	12/10/2019	GB	7.29	16,250	15.8
Leachate, Cell 4A	304-121019-15	12/10/2019	GB	7.85	32,535	19.2
Leachate, Cell 4B	304-121019-17	12/10/2019	GB	7.64	25,233	16.3
Leachate, Cell 5	304-121119-19	12/11/2019	GB	7.61	25,575	18.1
Leachate, Cell 6	304-121019-21	12/10/2019	GB	7.66	26,802	12.8

Groundwater (monitoring well) concentrations greater than the WAC 173-200 criteria are shown in **bold**

b = Secondary Drinking Water Standard

DB = disposable bailer

DP = dedicated pump

GB = grab sample

SP = submersible pump

µS/cm = microsiemens per centimeter

°C = degrees celcius

^ = Additional samples collected from LDCS-5 to monitor water quality trends

Additional samples collected from LDCS-7 to establish background water quality

Table 3. Inorganic Parameters
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	Alkalinity, Total	Ammonia	Chloride	Nitrate	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
MRL	10	0.1-22	0.3-120	0.50	0.2-5.0	10-470	17-21	4.0
WAC 173-200 Criteria	—	—	250	10	250	500	—	—
Prediction Limit	—	—	—	6.4	—	—	—	—
Monitoring Wells								
MW-1A	100	0.16	2.3	*	3.5	160	*	23
MW-2A	140	0.21	6.4	*	42	240	*	*
MW-3	140	0.15	3.6	*	28	200	*	*
MW-4	160	0.16	3.2	*	15	210	*	6.4
MW-5A	160	0.12	2.6	*	9.0	200	*	*
MW-6	160	0.14	5.4	*	7.7	210	*	*
MW-7	180	0.17	2.8	*	4.6	190	*	*
(BG) MW-9	67	*	1.6	*	1.8	130	*	*
(BG) MW-10	100	*	8.3	3.9	6.8	180	*	11
Leak Detection System								
LDCS-1	210	0.14	4.2	*	7.8	250	3.1	—
LDCS-2A	430	*	3.7	*	22	490	2.4	—
LDCS-2B	330	*	4.6	*	59	410	2.3	—
LDCS-3A	370	*	4.6	*	78	510	1.8	—
LDCS-4A	330	0.57	15	*	57	460	6.2	—
LDCS-4B	410	0.41	21	*	110	620	3.9	—
LDCS-5^ (10/30/2019)	490	13.0	41	*	21	580	16	—
LDCS-5^ (11/25/2019)	610	13.0	94	* H	10	800	49 H	—
LDCS-5 (12/10/2019)	550	16.0	58	*	13	640	19	—
LDCS-6	490	0.12	7.2	*	92	640	3.3	—
LDCS-7 (10/18/2019)	440	*	21	0.99	330	1,000	3.6	—
LDCS-7 (11/25/2019)	540	0.16	98	* H	230	1,000	12	—
LDCS-7 (12/16/2019)	580	0.14	68	* H	200	1,000	18	—
Leachate Collection System								
Leachate, Cell 1	11,000	1,800	7,400	2.3	2.6	22,000	1,100	—
Leachate, Cell 2A	13,000 H B	1,600	4,600	1.8	2.6	19,000	1,300	—
Leachate, Cell 2B	10,000	2,400	3,300	1.3	2.7	13,000	380	—
Leachate, Cell 3A	6,500	1,600	1,800	0.58	2.6	16,000	800	—
Leachate, Cell 4A	14,000 H B	2,100	4,600	1.9	3.8	19,000	2,800	—
Leachate, Cell 4B	9,900	1,300	2,600	1.2	5.1	15,000	1,300	—
Leachate, Cell 5	10,000	1,500	3,700	13	8.9	13,000	1,900	—
Leachate, Cell 6	11,000	1,600	3,100	1.0	7.3	12,000	1,800	—

Notes:

All sample units are milligrams per liter (mg/L)

Groundwater (monitoring well) concentrations greater than prediction limits or WAC 173-200 criteria are shown in **bold**

Analyses performed by TestAmerica of Denver, Colorado

Method Reporting Limit (MRL) is typical and may be elevated for some samples

^ = Additional samples collected from LDCS-5 to monitor water quality trends

Additional samples collected from LDCS-7 to establish background water quality

* = sample result was not reported at or above the MRL

— = not applicable or not performed

BG = Background

B = Compound found in the blank and the sample

H = Sample was prepped or analyzed beyond the specified holding time

Table 4. WAC 173-351 Appendix I Metals
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter		Antimony-D	Antimony-T	Arsenic-D	Arsenic-T	Barium-D	Barium-T	Beryllium-D	Beryllium-T	Cadmium-D	Cadmium-T	Chromium-D	Chromium-T	Cobalt-D	Cobalt-T	Copper-D	Copper-T	Lead-D	Lead-T	Nickel-D	Nickel-T	Selenium-D	Selenium-T	Silver-D	Silver-T	Thallium-D	Thallium-T	Vanadium-D	Vanadium-T	Zinc-D	Zinc-T
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL		0.05	0.05	0.005	0.005	0.005	0.005	0.0007-.001	0.001	.0005-.001	.001-.0013	0.005	0.005	.0003-.001	0.001	0.01	0.01	0.002	0.002	0.02	0.02	0.005	0.005	.0005-.005	0.005	0.005	0.005	.004-.005	0.005-.0062	0.01	0.01
WAC 173-200 Criteria		—	—	—	0.00005	—	1.0	—	—	—	0.01	—	0.05	—	—	—	1.0	—	0.05	—	—	—	0.01	—	0.05	—	—	—	—	—	5.0
Prediction Limit		—	0.05	—	0.011	—	0.091	—	0.005	—	0.005	—	0.011	—	0.01	—	0.063	—	0.042	—	0.020	—	0.005	—	0.01	—	0.005	—	0.016	—	0.290
Monitoring Wells																															
MW-1A		—	*	—	*	—	0.022	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-2A		—	*	—	*	—	0.018	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-3		—	*	—	*	—	0.012	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-4		—	*	—	**0.0100**	—	0.018	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.031
MW-5A		—	*	—	**0.0050**	—	0.012	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-6		—	*	—	**0.0077**	—	0.013	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
MW-7		—	*	—	**0.0053**	—	0.014	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
(BG)	MW-9	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.016	—	*
(BG)	MW-10	—	*	—	*	—	0.014	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*
Leak Detection System																															
LDCS-1		*	—	0.0082	—	0.022	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-2A		*	—	0.0067	—	0.0093	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-2B		*	—	*	—	0.013	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-3A		*	—	*	—	0.017	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4A		*	—	0.0120	—	0.034	—	—	—	—	—	*	—	0.0043	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-4B		*	—	*	—	0.036	—	—	—	—	—	*	—	*	—	*	—	*	—	*	—	—	—	—	—	—	—	*	—	*	—
LDCS-5^ (10/30/2019)		*	—	0.0086	—	0.076	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-5^ (11/25/2019)		*	—	0.0150	—	0.130	—	*	—	*	—	*	—	0.0014	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-5 (12/10/2019)		*	—	0.0130	—	0.099	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-6		*	—	*	—	0.026	—	*	—	*	—	*	—	0.0012	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.016	—
LDCS-7 (10/18/2019)		*	—	*	—	0.220	—	*	—	*	—	*	—	0.0017	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-7 (11/25/2019)		*	—	*	—	0.050	—	*	—	*	—	*	—	0.0051	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—
LDCS-7 (12/16/2019)		*	—	*	—	0.060	—	*	—	*	—	*	—	0.0050	—	*	—	*	—	*	—	*	—	*	—	*	—	*	—	0.011	—
Leachate Collection System																															
Leachate, Cell 1		—	*	—	0.110	—	1.2	—	*	—	*	—	0.36	—	0.030	—	0.011	—	0.0076	—	0.61	—	*	—	*	—	*	—	0.26	—	0.025
Leachate, Cell 2A		—	*	—	0.120	—	1.1	—	*	—	*	—	0.58	—	0.051	—	0.023	—	0.021	—	0.78	—	*	—	*	—	*	—	0.46	—	0.070
Leachate, Cell 2B		—	0.054	—	0.150	—	1.2	—	*	—	*	—	0.46	—	0.039	—	0.170	—	0.013	—	0.50	—	*	—	*	—	*	—	0.38	—	0.110
Leachate, Cell 3A		—	*	—	0.053	—	0.83	—	*	—	*	—	0.30	—	0.028	—	0.014	—	0.010	—	0.26	—	*	—	*	—	*	—	0.16	—	0.056
Leachate, Cell 4A		—	0.097	—	0.260	—	1.1	—	*	—	*	—	0.59	—	0.038	—	0.044	—	0.016	—	0.52	—	*	—	*	—	*	—	0.33	—	0.140
Leachate, Cell 4B		—	*	—	0.089	—	0.58	—	*	—	*	—	0.23	—	0.016	—	0.039	—	0.010	—	0.25	—	*	—	*	—	*	—	0.054	—	0.047
Leachate, Cell 5		—	*	—	0.190	—	1.2	—	*	—	*	—	0.72	—	0.041	—	0.078	—	0.036	—	0.61	—	*	—	*	—	*	—	0.27	—	0.220
Leachate, Cell 6		—	*	—	0.230	—	1.0	—	*	—	0.0016	—	1.0	—	0.044	—	0.082	—	0.084	—	0.69	—	*	—	*	—	*	—	0.14	—	0.660

Notes:
All sample units are milligrams per liter (mg/L)
WAC 173-200-040 Table 1 Groundwater Quality Criteria are for total metals
Groundwater (monitoring well) concentrations greater than prediction limits or WAC 173-200 criteria are shown in **bold**
Parameter concentrations for monitoring wells are total (T) metals
Parameter concentrations for LDCS sumps are dissolved (D) metals
Parameter concentrations for leachate samples are total (T) metals
Analyses performed by TestAmerica of Denver, Colorado
Method Reporting Limit (MRL) is typical and may be elevated for some samples
^ = Additional samples collected from LDCS-5 to monitor water quality trends
Additional samples collected from LDCS-7 to establish background water quality
* = sample result was not reported at or above the MRL
— = not applicable or not performed
BG = Background

Table 5. WAC 173-351 Appendix II Metals (Dissolved)
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	Calcium	Iron	Magnesium	Manganese	Potassium	Sodium
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MRL	0.20	0.10	0.10	0.005	2.0-2.4	1.0-3.7
WAC 173-200 Criteria	—	0.30	—	0.050	—	—
Monitoring Wells						
MW-1A	15	**1.9**	9.8	**0.25**	3.9	12
MW-2A	32	**1.0**	15	**0.40**	4.0	19
MW-3	33	*	14	**0.27**	3.6	12
MW-4	30	0.10	15	**0.23**	5.3	12
MW-5A	30	*	13	**0.18**	4.3	21
MW-6	34	*	16	**0.20**	5.3	11
MW-7	29	0.16	19	**0.21**	4.8	11
(BG) MW-9	10	*	6.4	*	*	7.0
(BG) MW-10	24	*	10	*	2.2	12
Leak Detection System						
LDCS-1	42	0.43	17	1.7	5.0	18
LDCS-2A	95	*	37	*	9.8	32
LDCS-2B	87	*	31	0.49	6.3	19
LDCS-3A	100	*	39	0.86	6.0	24
LDCS-4A	73	2.2	39	2.0	6.4	25
LDCS-4B	110	*	50	0.95	7.8	34
LDCS-5^ (10/30/2019)	74	0.24	43	1.4	15	57
LDCS-5^ (11/25/2019)	92	1.9	53	2.6	18	89
LDCS-5 (12/10/2019)	84	0.88	47	1.8	17	73
LDCS-6	130	*	53	1.2	4.6	38
LDCS-7 (10/18/2019)	170 B	*	56 B	0.98	4.2	55
LDCS-7 (11/25/2019)	190	*	59	2.1	4.7	59
LDCS-7 (12/16/2019)	190	*	67	2.2	4.6	61
Leachate Collection System**						
Leachate, Cell 1	38	13	100	0.20	1,000	5,600
Leachate, Cell 2A	18	8.4	33	0.12	840	4,500
Leachate, Cell 2B	36	11	58	0.19	680	3,400
Leachate, Cell 3A	59	9.5	50	0.97	460	2,100
Leachate, Cell 4A	27	9.7	62	0.14	1,200	4,600
Leachate, Cell 4B	47	4.3	64	0.17	730	2,800
Leachate, Cell 5	46	11	65	0.46	830	3,200
Leachate, Cell 6	61	4.8	85	0.69	1,000	3,100

Notes:

All sample units are milligrams per liter (mg/L)

WAC 173-200-040 Table 1 Groundwater Quality Criteria are for total metals

Groundwater (monitoring well) concentrations greater than WAC 173-200 criteria are shown in **bold**

Analyses performed by TestAmerica of Denver, Colorado

Method Reporting Limit (MRL) is typical and may be elevated for some samples

^ = Additional samples collected from LDCS-5 to monitor water quality trends

Additional samples collected from LDCS-7 to establish background water quality

* = sample result was not reported at or above the MRL

** = Reported concentrations for leachate are total metals

— = not applicable or not performed

BG = Background

B = Compound found in the sample and the blank

Table 6. Volatile Organic Compounds (µg/L)
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

Parameter	1,1-Dichloroethene	1,2-Dichloropropane	1,4-Dichlorobenzene	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Acetone	Benzene	Carbon disulfide	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	Ethylbenzene	m-Xylene & p-Xylene	o-Xylene	Styrene	Toluene	Trichloroethene	Vinyl chloride
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MRL	0.5	0.5	0.5-3.2	6.0-40	5.0-20	10-38	0.5-3.2	0.5	0.5-1.7	0.8-3.2	0.5-0.75	1.0-3.2	0.5-3.1	0.5-3.8	0.5-1.8	0.5-3.4	0.8	0.5
WAC 173-200 Criteria	—	0.6	4.0	—	—	—	1.0	—	—	7.0	—	—	—	—	—	—	3.0	0.02
Monitoring Wells																		
MW-1A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-2A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-5A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW-7	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
(BG) MW-9	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
(BG) MW-10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Leak Detection System																		
LDCS-1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-2A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-2B	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-3A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-4A	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-4B	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-5^ (10/30/2019)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-5^ (11/25/2019)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-5 (12/10/2019)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-6	1.0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.61
LDCS-7 (10/18/2019)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-7 (11/25/2019)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LDCS-7 (12/16/2019)	*	*	*	*	*	*	*	2.1	*	*	*	*	*	*	*	20	*	*
Leachate Collection System																		
Leachate, Cell 1	*	*	12	3,500	180	4,000	20	*	2.5	*	*	53	98	47	*	53	*	*
Leachate, Cell 2A	*	*	5.3	37	*	160	5.6	*	0.74	*	1.2	24	38	19	1.8	49	*	*
Leachate, Cell 2B	*	*	8.9	1,400	69	2,100	6.1	*	1.4	1.1	1.2	35	58	29	2.9	32	4.4	*
Leachate, Cell 3A	0.7	*	13	*	*	22	11	*	2.1	*	0.87	64	80	39	2.8	5.9	*	2.1
Leachate, Cell 4A	*	*	12	5,200	110	8,800	19	*	*	5.2	*	40	68	33	*	67	*	*
Leachate, Cell 4B	*	*	7.4	3,400	110	2,900	29	*	1.3	1.2	2.6	27	44	23	2.1	53	*	*
Leachate, Cell 5	*	*	4.5	770	32	1,200	4.9	*	0.7	*	0.73	17	26	13	*	16	*	*
Leachate, Cell 6	*	0.98	3.1	230	13	340	5.8	1.3	*	*	3.2	26	49	27	2.6	39	*	3.5

Notes:
All sample units are milligrams per liter (µg/L)
Analyses performed by TestAmerica of Denver, Colorado
^ = Additional samples collected from LDCS-5 to monitor water quality trends
Additional samples collected from LDCS-7 to establish background water quality
* = sample result was not reported at or above the MRL
— = not applicable or not performed
BG = Background

Table 7. Cation-Anion Balance
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

Cations	mg/L					meq/L					% of Total		
	Ca	Mg	K	Na	Total	Ca	Mg	K	Na	Total	Na+K	Ca	Mg
MW-1A	15	9.8	3.9	12	40.7	0.75	0.81	0.09	0.52	2.17	28	35	37
MW-2A	32	15	4.0	19	70	1.60	1.23	0.09	0.83	3.75	24	43	33
MW-3	33	14	3.6	12	62.6	1.65	1.15	0.08	0.52	3.40	18	48	34
MW-4	30	15	5.3	12	62.3	1.50	1.23	0.12	0.52	3.37	19	44	37
MW-5A	30	13	4.3	21	68.3	1.50	1.07	0.10	0.91	3.58	28	42	30
MW-6	34	16	5.3	11	66.3	1.70	1.32	0.12	0.48	3.61	17	47	36
MW-7	29	19	4.8	11	63.8	1.45	1.56	0.11	0.48	3.60	16	40	43
MW-9	9.7	6.4	2.0	7	25.1	0.48	0.53	0.05	0.30	1.36	26	36	39
MW-10	24	10	2.2	12	48.2	1.20	0.82	0.05	0.52	2.59	22	46	32
LDCS-1	42	17	5.0	18	82	2.10	1.40	0.11	0.78	4.39	20	48	32
LDCS-2A	95	37	9.8	32	173.8	4.74	3.05	0.22	1.39	9.40	17	50	32
LDCS-2B	87	31	6.3	19	143.3	4.34	2.55	0.14	0.83	7.86	12	55	32
LDCS-3A	100	39	6.0	24	169	4.99	3.21	0.14	1.04	9.38	13	53	34
LDCS-4A	73	39	6.4	25	143.4	3.64	3.21	0.14	1.09	8.08	15	45	40
LDCS-4B	110	50	7.8	34	201.8	5.49	4.12	0.18	1.48	11.26	15	49	37
LDCS-5^ (10/30/2019)	74	43	15	57	189.0	3.69	3.54	0.34	2.48	10.05	28	37	35
LDCS-5^ (11/25/2019)	92	53	18	89	252.0	4.59	4.36	0.41	3.87	13.23	32	35	33
LDCS-5 (12/10/2019)	84	47	17	73	221.0	4.19	3.87	0.38	3.18	11.62	31	36	33
LDCS-6	130	53	4.6	38	225.6	6.49	4.36	0.10	1.65	12.61	14	51	35
LDCS-7 (10/18/2019)	170	56	4.2	55	285.2	8.48	4.61	0.09	2.39	15.58	16	54	30
LDCS-7 (11/25/2019)	190	59	4.7	59	312.7	9.48	4.86	0.11	2.57	17.01	16	56	29
LDCS-7 (12/16/2019)	190	67	4.6	61	322.6	9.48	5.51	0.10	2.65	17.75	16	53	31
Leachate, Cell 1	38	100	1,000	5,600	6,738	1.90	8.23	22.58	243.60	276.31	96	1	3
Leachate, Cell 2A	18	33	840	4,500	5,391	0.90	2.72	18.97	195.75	218.33	98	0	1
Leachate, Cell 2B	36	58	680	3,400	4,174	1.80	4.77	15.35	147.90	169.82	96	1	3
Leachate, Cell 3A	59	50	460	2,100	2,669	2.94	4.12	10.39	91.35	108.80	94	3	4
Leachate, Cell 4A	27	62	1,200	4,600	5,889	1.35	5.10	27.10	200.10	233.65	97	1	2
Leachate, Cell 4B	47	64	730	2,800	3,641	2.35	5.27	16.48	121.80	145.90	95	2	4
Leachate, Cell 5	46	65	830	3,200	4,141	2.30	5.35	18.74	139.20	165.59	95	1	3
Leachate, Cell 6	61	85	1,000	3,100	4,246	3.04	7.00	22.58	134.85	167.47	94	2	4

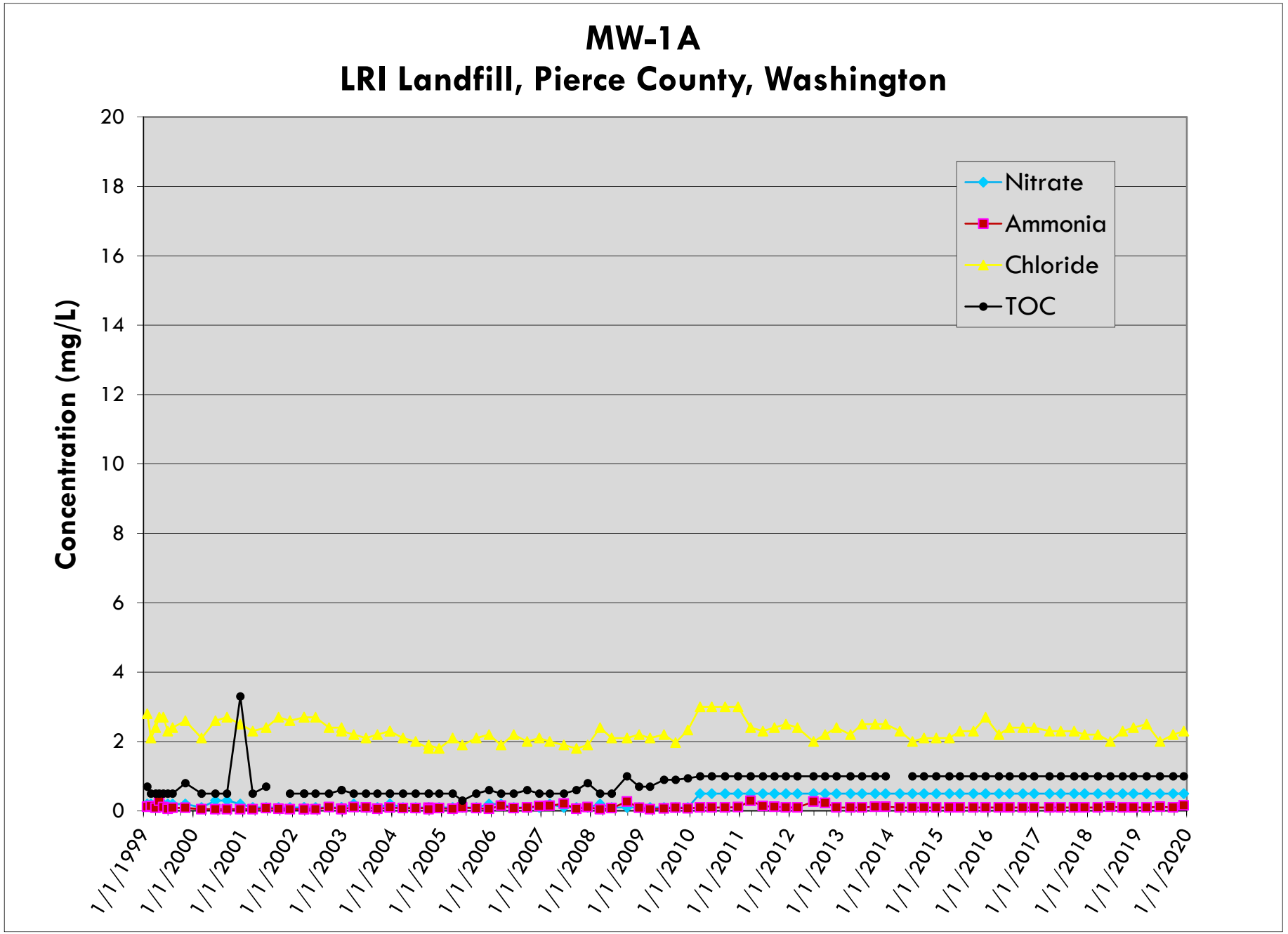
Anions	mg/L					meq/L					% of Total			Total Ions (meq/L)	Cation - Anion Balance	Applicable Ratio (%)	Ratio Exceedance
	Alk	Cl	NO_3	SO_4	Total	Alk	Cl	NO_3	SO_4	Total	Cl	Alk	SO_4				
MW-1A	120	2.3	0.5	3.5	126.3	1.97	0.06	0.008	0.07	2.11	3	93	3	4.28	1.2	10	O
MW-2A	168	6.4	0.5	42	216.9	2.76	0.18	0.008	0.87	3.82	5	72	23	7.57	0.9	5	O
MW-3	168	3.6	0.5	28	200.1	2.76	0.10	0.008	0.58	3.45	3	80	17	6.85	0.7	5	O
MW-4	192	3.2	0.5	15	210.7	3.15	0.09	0.008	0.31	3.56	3	88	9	6.93	2.7	5	O
MW-5A	192	2.6	0.5	9.0	204.1	3.15	0.07	0.008	0.19	3.42	2	92	5	6.99	2.3	5	O
MW-6	192	5.4	0.5	7.7	205.6	3.15	0.15	0.008	0.16	3.47	4	91	5	7.08	2.0	5	O
MW-7	216	2.8	0.5	4.6	223.9	3.54	0.08	0.008	0.10	3.73	2	95	3	7.32	1.7	5	O
MW-9	80.4	1.6	0.5	1.8	84.3	1.32	0.05	0.008	0.04	1.41	3	94	3	2.77	1.8	10	O
MW-10	120	8.3	3.9	6.8	139	1.97	0.23	0.063	0.14	2.41	10	82	6	5.00	3.7	5	O
LDCS-1	252	4.2	0.5	7.8	264.5	4.13	0.12	0.008	0.16	4.42	3	93	4	8.81	0.3	5	O
LDCS-2A	516	3.7	0.5	22	542.2	8.46	0.10	0.008	0.46	9.03	1	94	5	18.43	2.0	5	O
LDCS-2B	396	4.6	0.5	59	460.1	6.49	0.13	0.008	1.23	7.86	2	83	16	15.72	0.0	5	O
LDCS-3A	444	4.6	0.5	78	527.1	7.28	0.13	0.008	1.62	9.04	1	81	18	18.42	1.8	5	O
LDCS-4A	396	15	0.5	57	468.5	6.49	0.42	0.008	1.19	8.11	5	80	15	16.20	0.2	5	O
LDCS-4B	492	21	0.5	110	624	8.07	0.59	0.008	2.29	10.96	5	74	21	22.22	1.4	5	O
LDCS-5^ (10/30/2019)	588	41	0.5	21	651	9.64	1.16	0.008	0.44	11.24	10	86	4	21.29	5.6	5	Exceeds
LDCS-5^ (11/25/2019)	732	94	0.5	10	837	12.00	2.65	0.008	0.21	14.87	18	81	1	28.10	5.8	5	Exceeds
LDCS-5 (12/10/2019)	660	58	0.5	13	732	10.82	1.64	0.008	0.27	12.74	13	85	2	24.36	4.6	5	O
LDCS-6	588	7.2	0.5	92	688	9.64	0.20	0.008	1.91	11.77	2	82	16	24.37	3.4	5	O
LDCS-7 (10/18/2019)	528	21	0.99	330	880	8.66	0.59	0.016	6.86	16.13	4	54	43	31.71	1.7	5	O
LDCS-7 (11/25/2019)	648	98	0.5	230	977	10.63	2.76	0.008	4.78	18.18	15	58	26	35.19	3.3	5	O
LDCS-7 (12/16/2019)	696	68	0.5	200	965	11.41	1.92	0.008	4.16	17.50	11	65	24	35.25	0.7	5	O
Leachate, Cell 1	13,200	7,400	2.3	2.6	20,605	216.48	208.68	0.037	0.05	425.25	49	51	0	701.56	21.2	5	Exceeds
Leachate, Cell 2A	15,600	4,600	1.8	2.6	20,204	255.84	129.72	0.029	0.05	385.64	34	66	0	603.97	27.7	5	Exceeds
Leachate, Cell 2B	12,000	3,300	1.3	2.7	15,304	196.80	93.06	0.021	0.06	289.94	32	68	0	459.76	26.1	5	Exceeds
Leachate, Cell 3A	7,800	1,800	0.58	2.6	9,603	127.92	50.76	0.009	0.05	178.74	28	72	0	287.54	24.3	5	Exceeds
Leachate, Cell 4A	16,800	4,600	1.9	3.8	21,406	275.52	129.72	0.031	0.08	405.35	32	68	0	639.00	26.9	5	Exceeds
Leachate, Cell 4B	11,880	2,600	1.2	5.1	14,486	194.83	73.32	0.019	0.11	268.28	27	73	0	414.17	29.5	5	Exceeds
Leachate, Cell 5	12,000	3,700	13	8.9	15,722	196.80	104.34	0.209	0.19	301.53	35	65	0	467.12	29.1	5	Exceeds
Leachate, Cell 6	13,200	3,100	1.0	7.3	16,308	216.48	87.42	0.016	0.15	304.07	29	71	0	471.54	29.0	5	Exceeds

Notes:
mg/L = milligrams per liter
meq/L = milliequivalents per liter
Total alkalinity concentration, reported as calcium carbonate ($CaCO_3$), is converted to the bicarbonate (HCO_3^-) ion by multiplying by a factor of 1.2
^ = Additional samples collected from LDCS-5 to monitor water quality trends
Additional samples collected from LDCS-7 to establish background water quality
The MRL was used for analytes that were non-detect
A 10% difference threshold is used if the total cation-anion sums are < 5.0 meq/liter
A 5% difference threshold is used if the total cation-anion sums are > or = to 5.0 meq/liter

Table 8. Duplicate Sample Results
Fourth Quarter 2019 Monitoring Report
LRI Landfill, Pierce County, Washington

Parameter	MRL	MW-4	MW-4 (Duplicate)	RPD (%)
Volatile Organic Compunds (µg/L)				
No Detections	-	-	-	-
Inorganic Parameters (mg/L)				
Alkalinity, Bicarbonate (as CaCO3)	10	160	160	0.0
Ammonia	0.1	0.16	0.12	28.6
Chloride	0.2	3.2	3.2	0.0
Sulfate	0.2	15	15	0.0
Total Dissolved Solids	10	210	210	0.0
Total Suspended Solids	4.0	6.4	6.0	6.5
Dissolved Metals (mg/L)				
Calcium	0.2	30	30	0.0
Iron	0.1	0.1	*	0.0
Magnesium	0.1	15	15	0.0
Manganese	0.005	0.23	0.23	0.0
Potassium	2.0	5.3	5.3	0.0
Sodium	1.0	12	12	0.0
Total Metals (mg/L)				
Arsenic	0.005	0.010	0.011	9.5
Barium	0.005	0.018	0.019	5.4
Zinc	0.01	0.031	0.030	3.3

Notes:
Analyses performed by TestAmerica of Denver, Colorado
VOCs not listed were not present at concentrations exceeding the Method Reporting Limit (MRL)
RPD = relative percent difference
µg/L = micrograms per liter
mg/L = milligrams per liter
* = sample result was not reported at or above the MRL
The MRL was used to calculate the RPD for analytes where one sample was non-detect


MW-1A
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
20
18
16
14
12
10
8
6
4
2
0
Nitrate
Ammonia
Chloride
TOC
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
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1/1/2011
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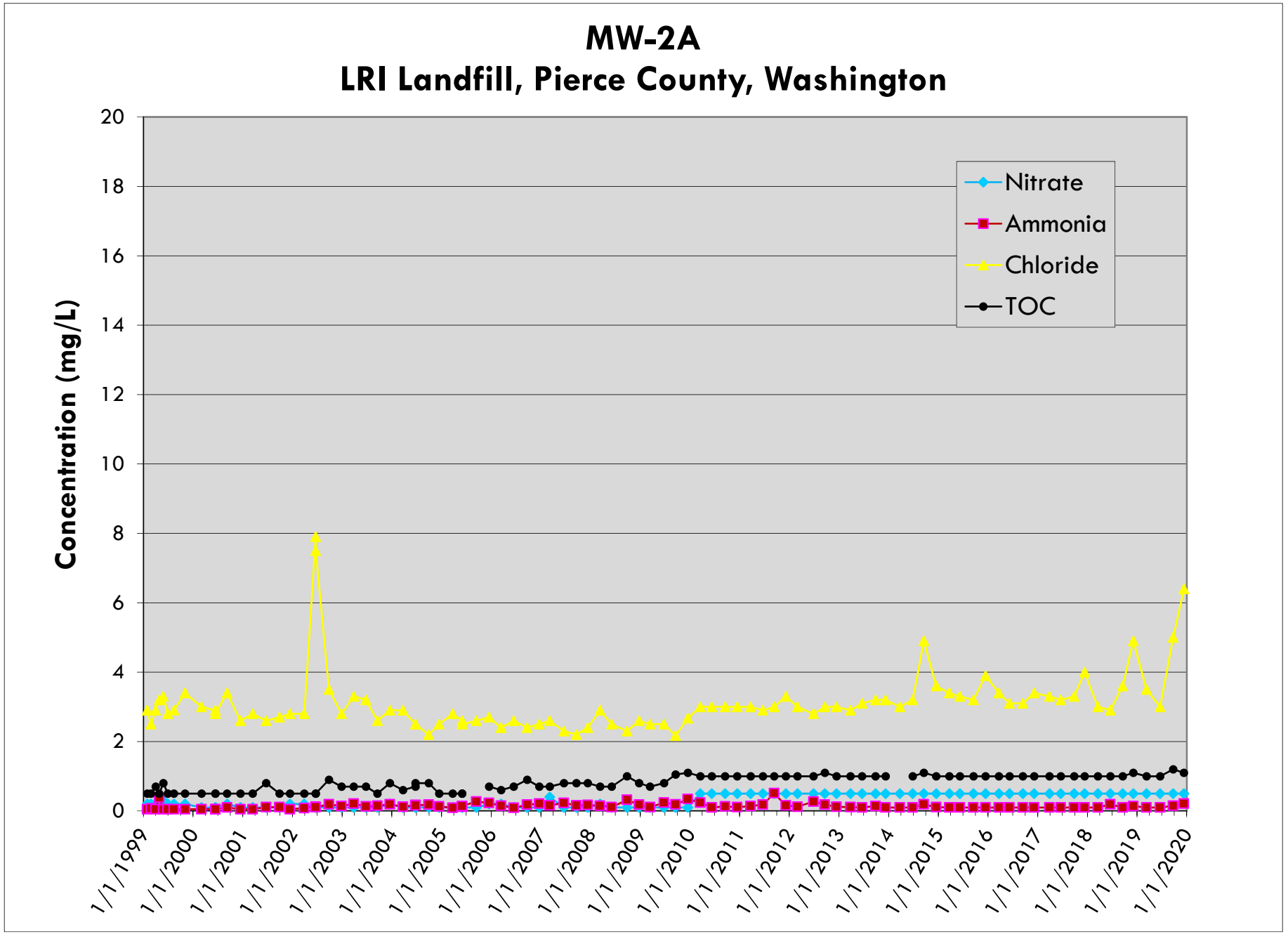
1/1/2017
1/1/2018
1/1/2019
1/1/2020


MW-2A
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
20
18
16
14
12
10
8
6
4
2
0
Nitrate
Ammonia
Chloride
TOC
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
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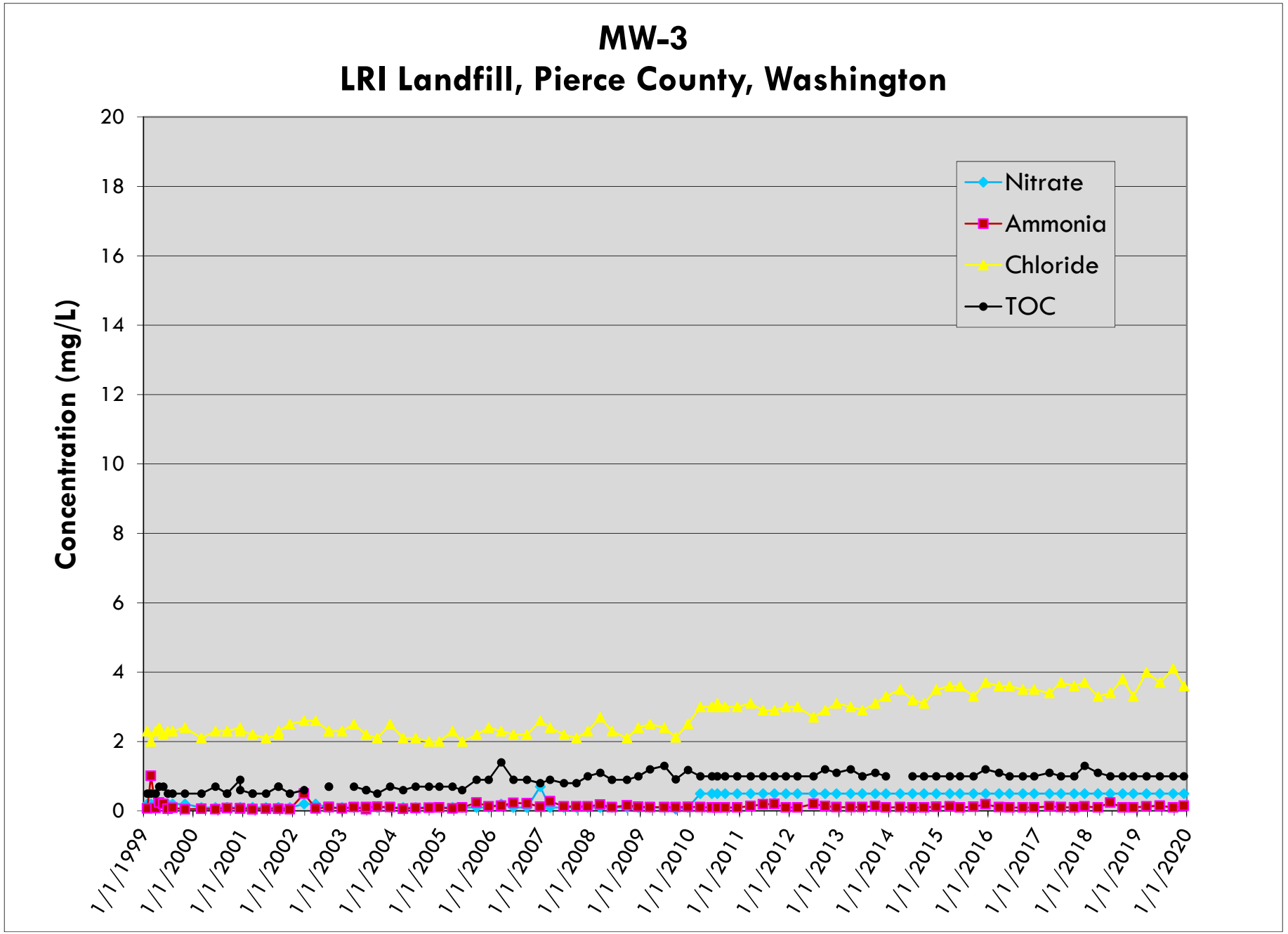
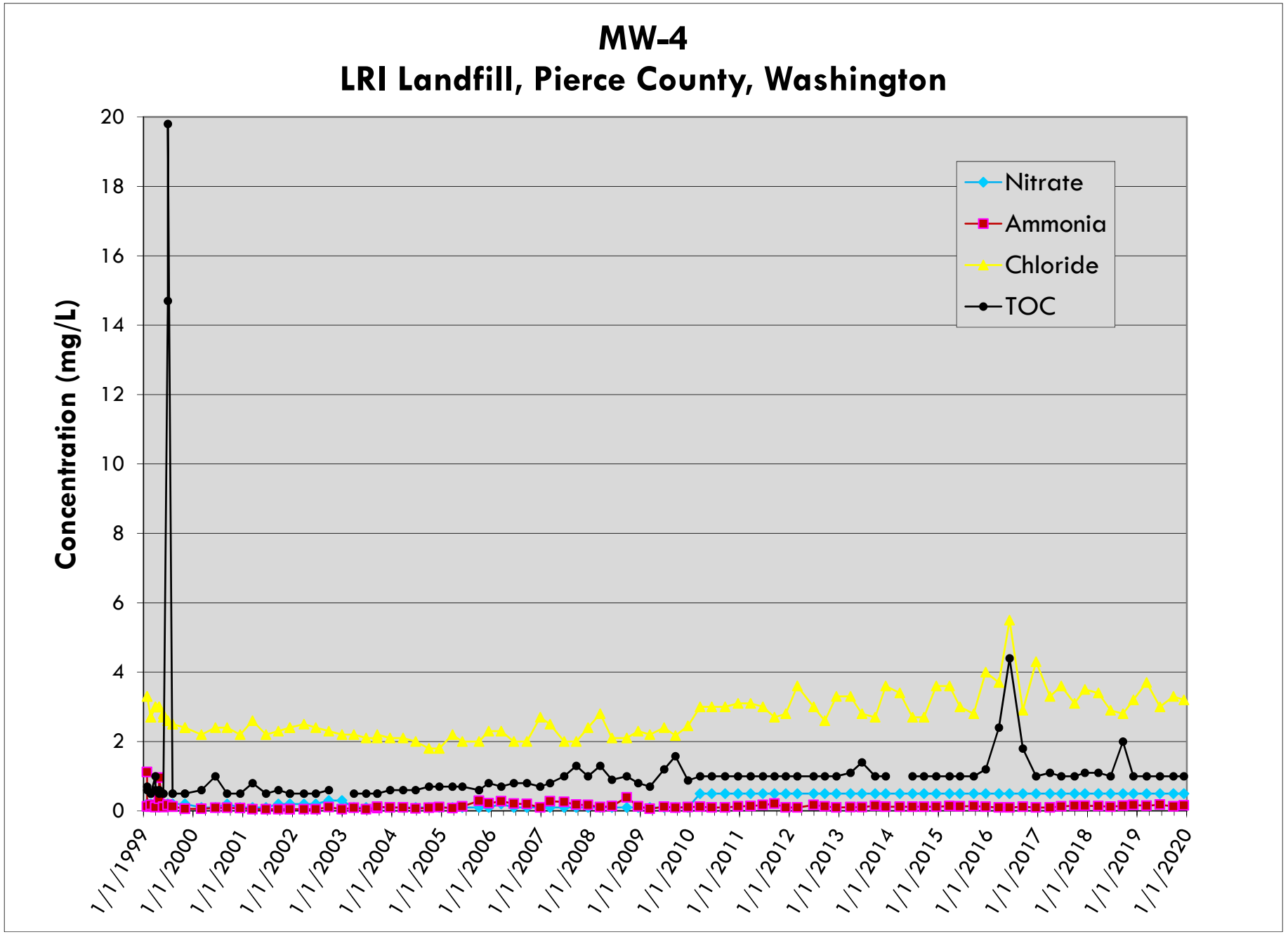
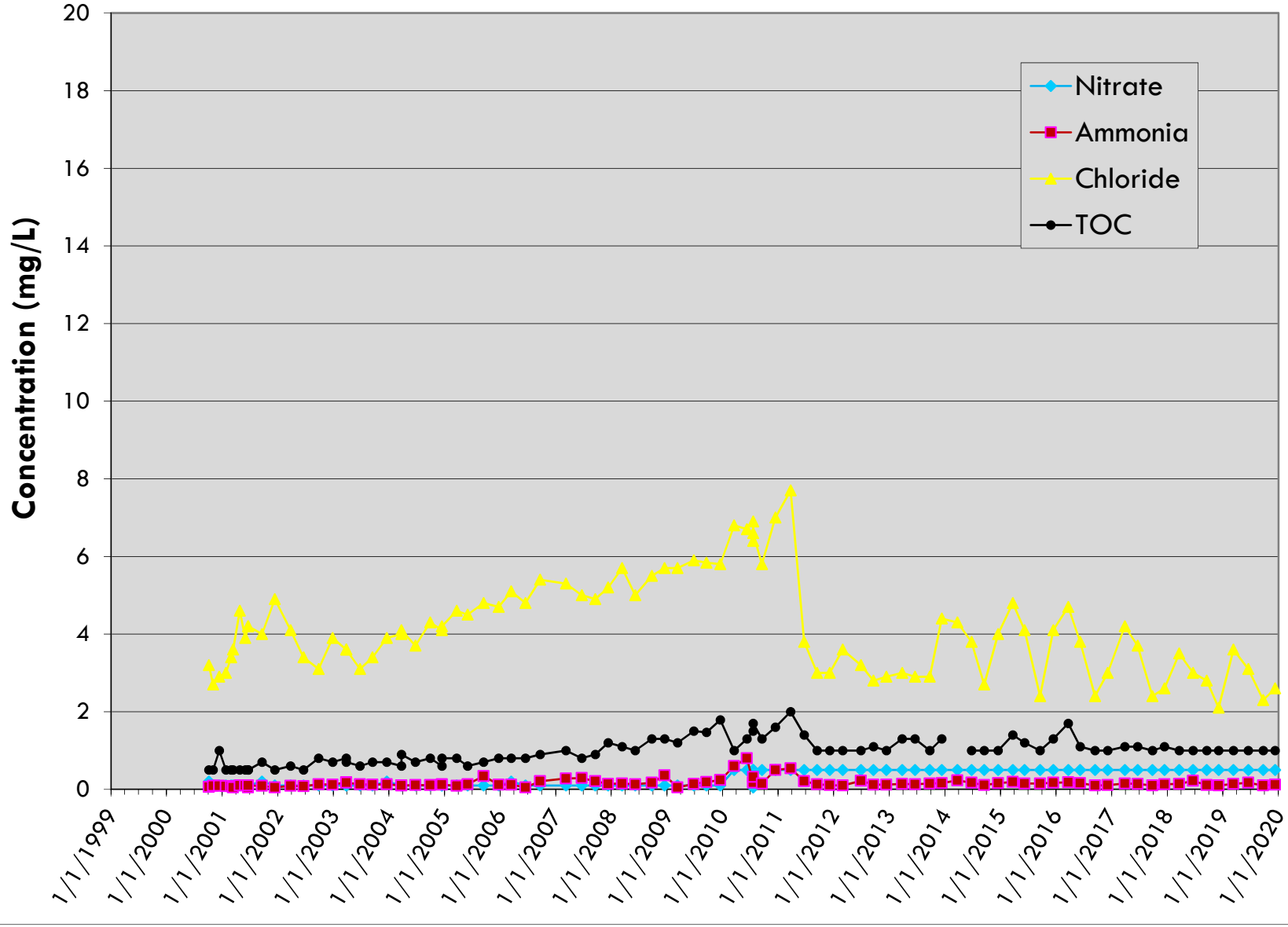
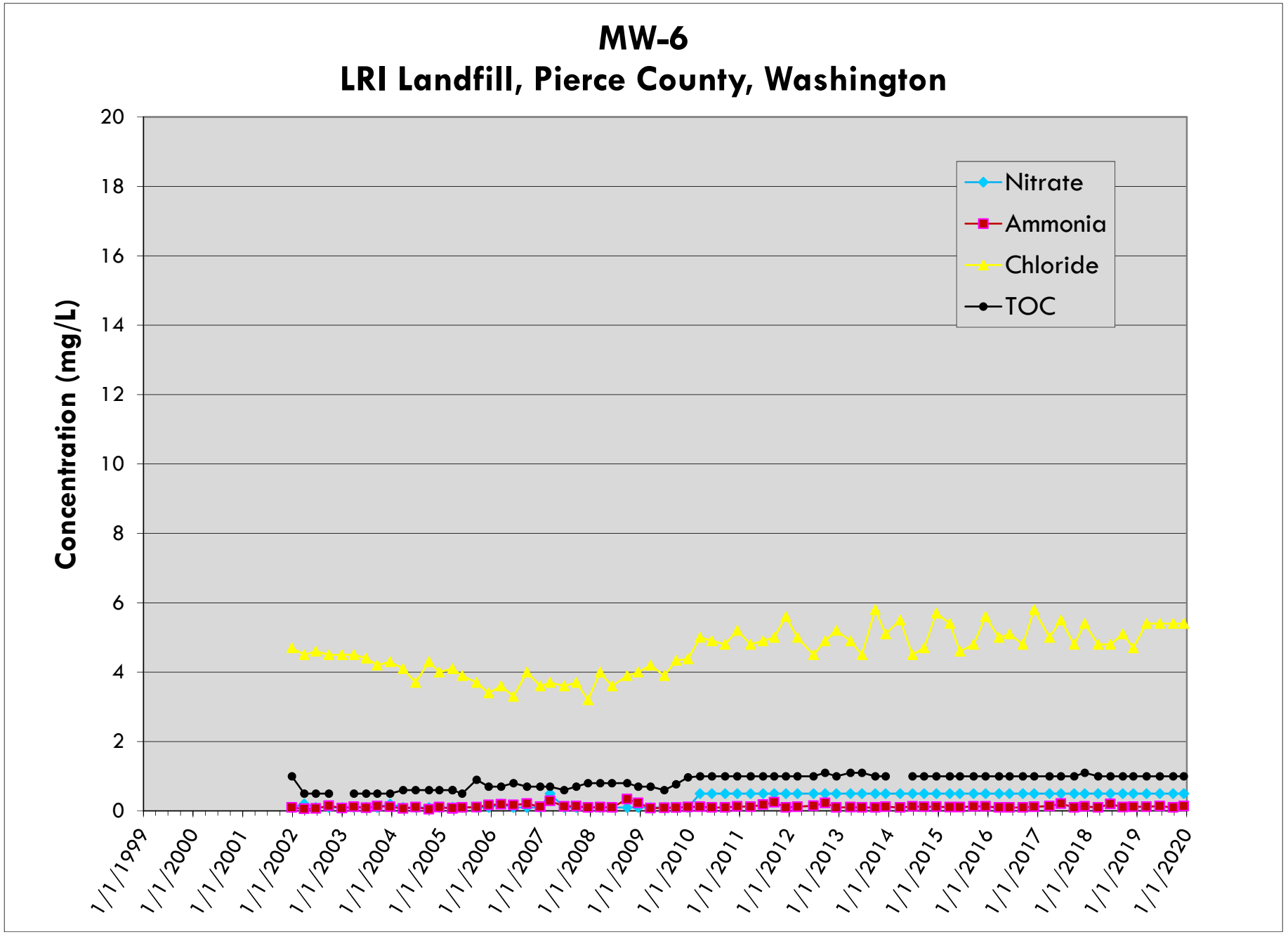
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

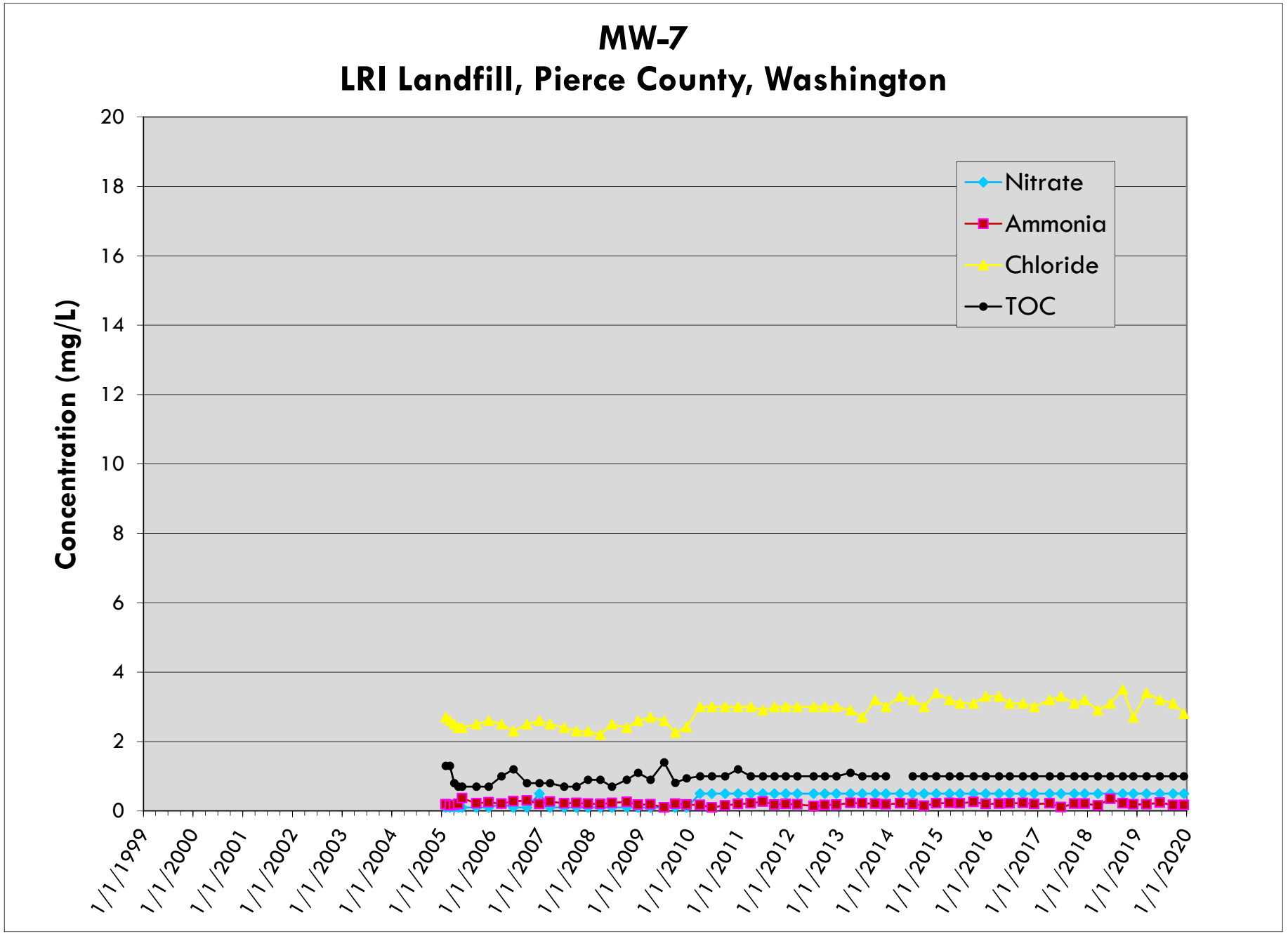

MW-3
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
20
18
16
14
12
10
8
6
4
2
0
Nitrate
Ammonia
Chloride
TOC
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

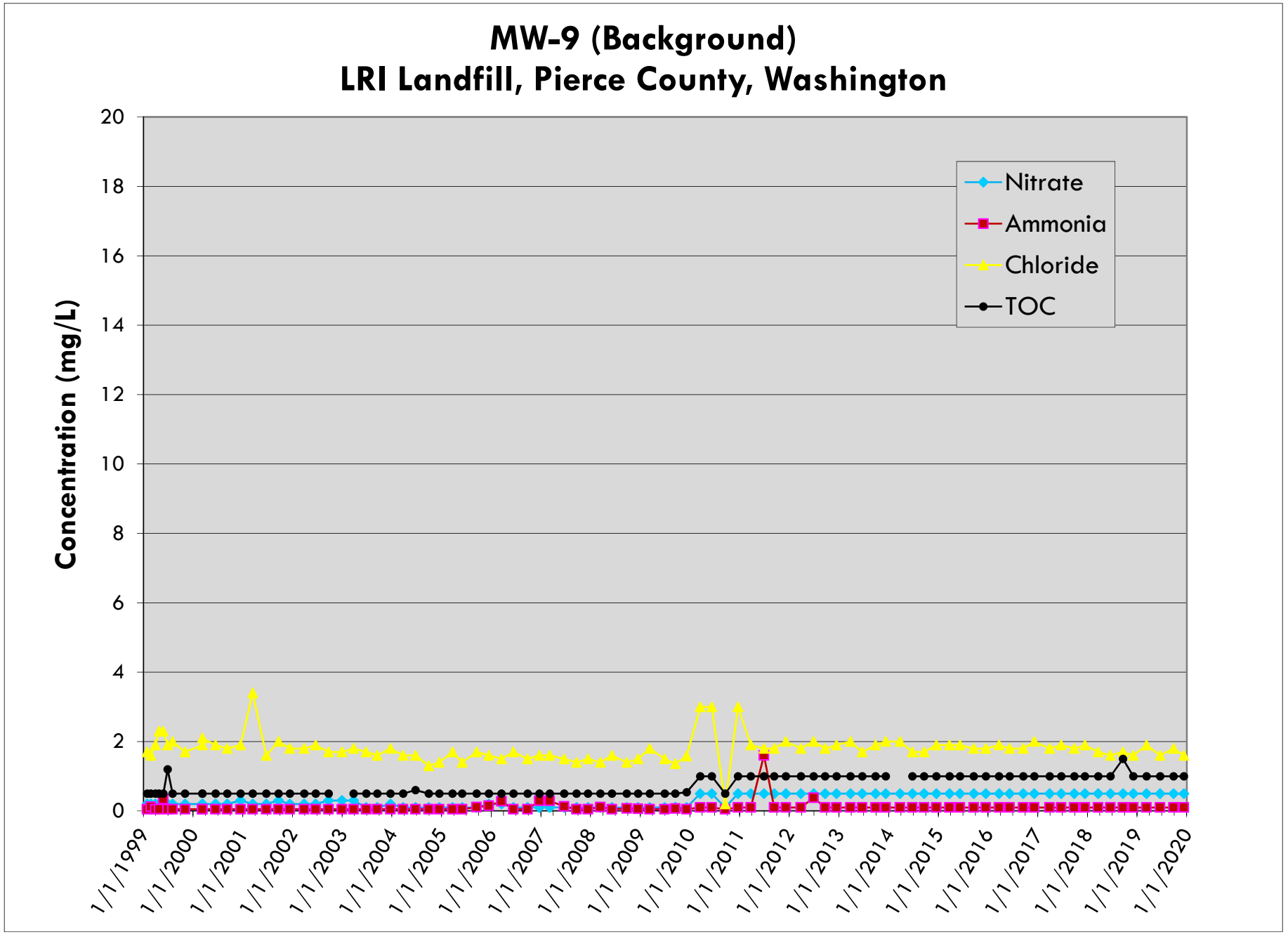

MW-4
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
20
18
16
14
12
10
8
6
4
2
0
Nitrate
Ammonia
Chloride
TOC
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

MW-5A
LRI Landfill, Pierce County, Washington




MW-6
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
20
18
16
14
12
10
8
6
4
2
0
Nitrate
Ammonia
Chloride
TOC
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020


MW-7
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
20
18
16
14
12
10
8
6
4
2
0
Nitrate
Ammonia
Chloride
TOC
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020


MW-9 (Background)
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
20
18
16
14
12
10
8
6
4
2
0
Nitrate
Ammonia
Chloride
TOC
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
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1/1/2015
1/1/2016
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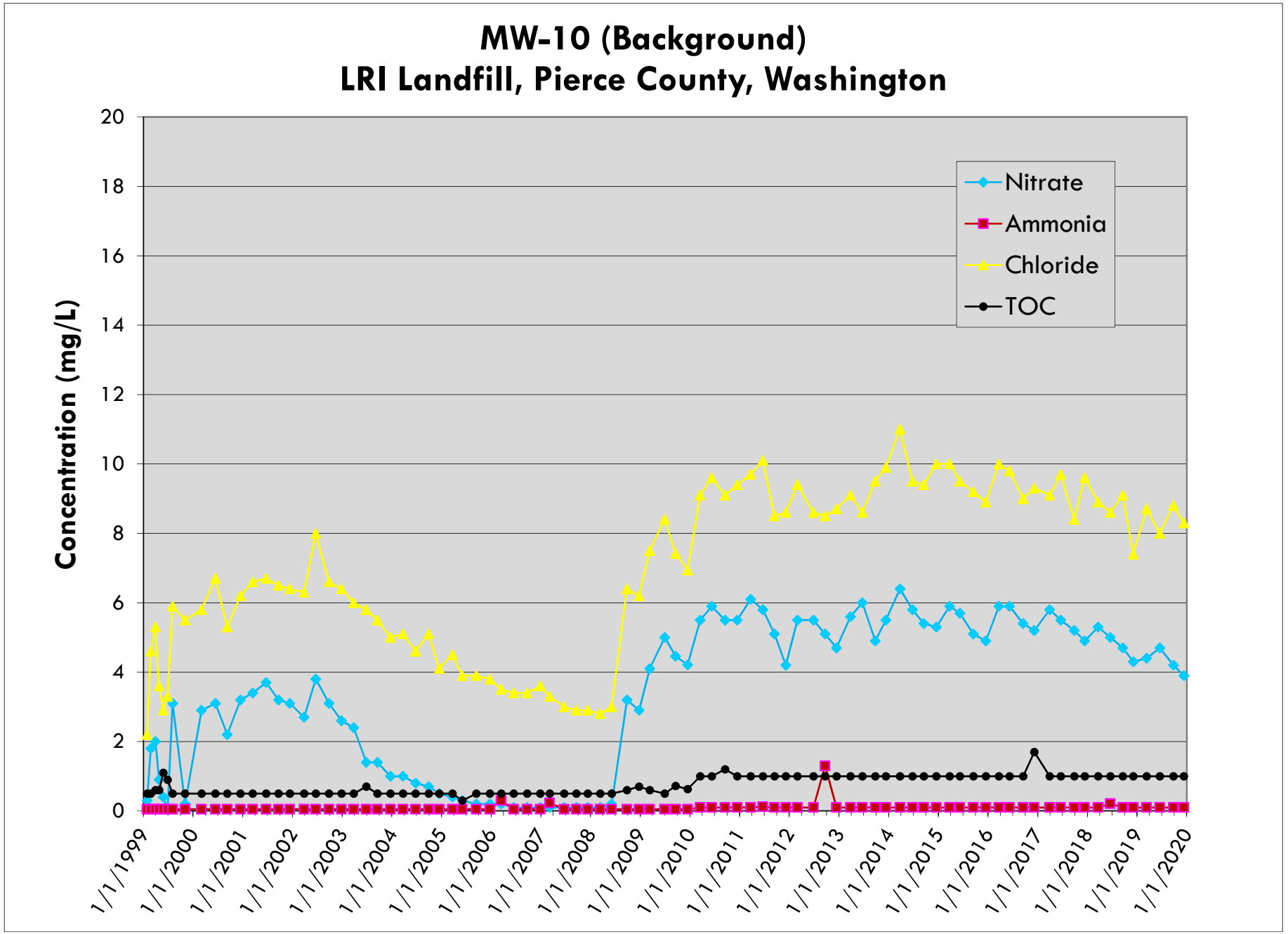
1/1/2020


MW-10 (Background)
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
20
18
16
14
12
10
8
6
4
2
0
Nitrate
Ammonia
Chloride
TOC
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
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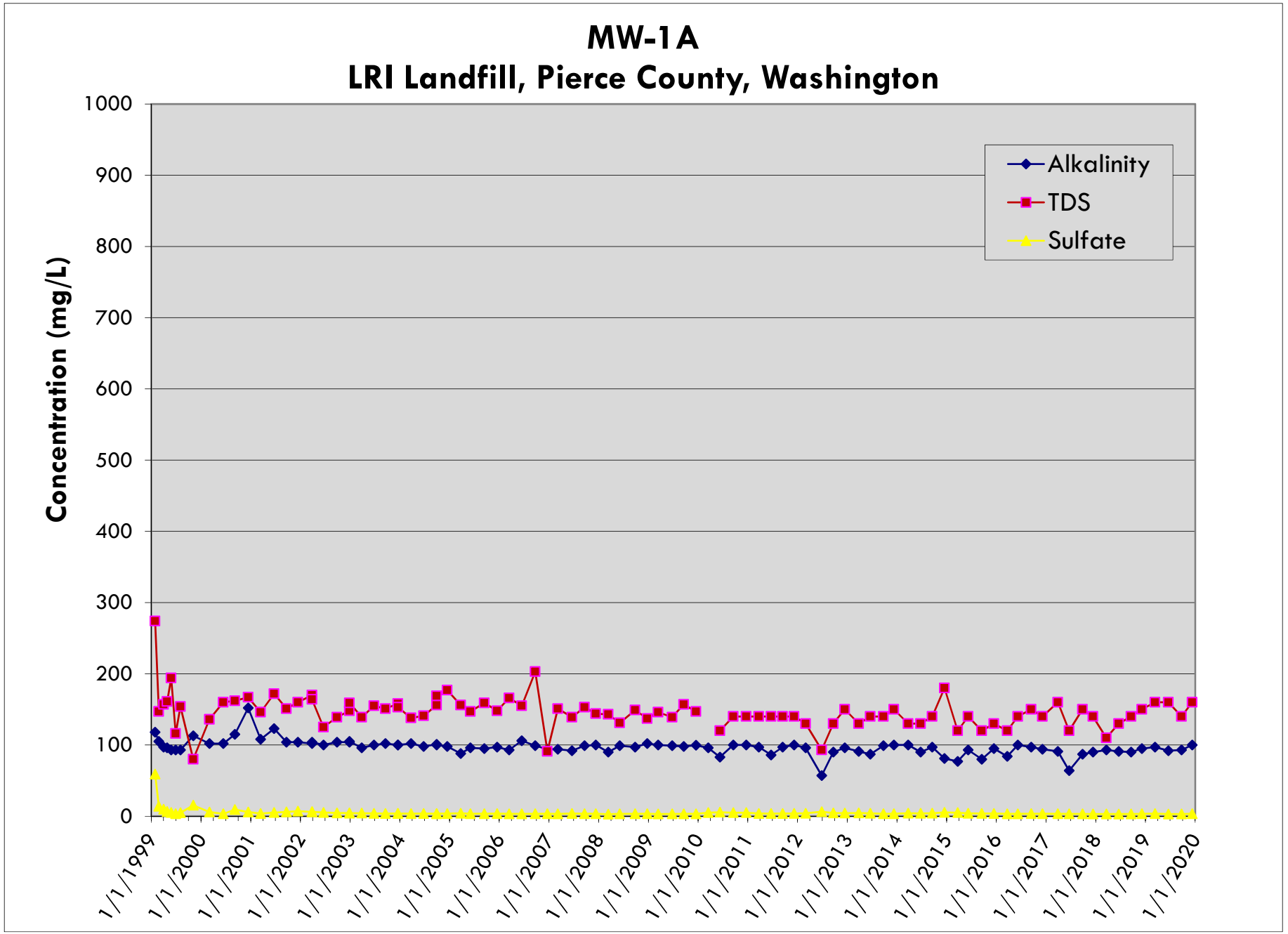
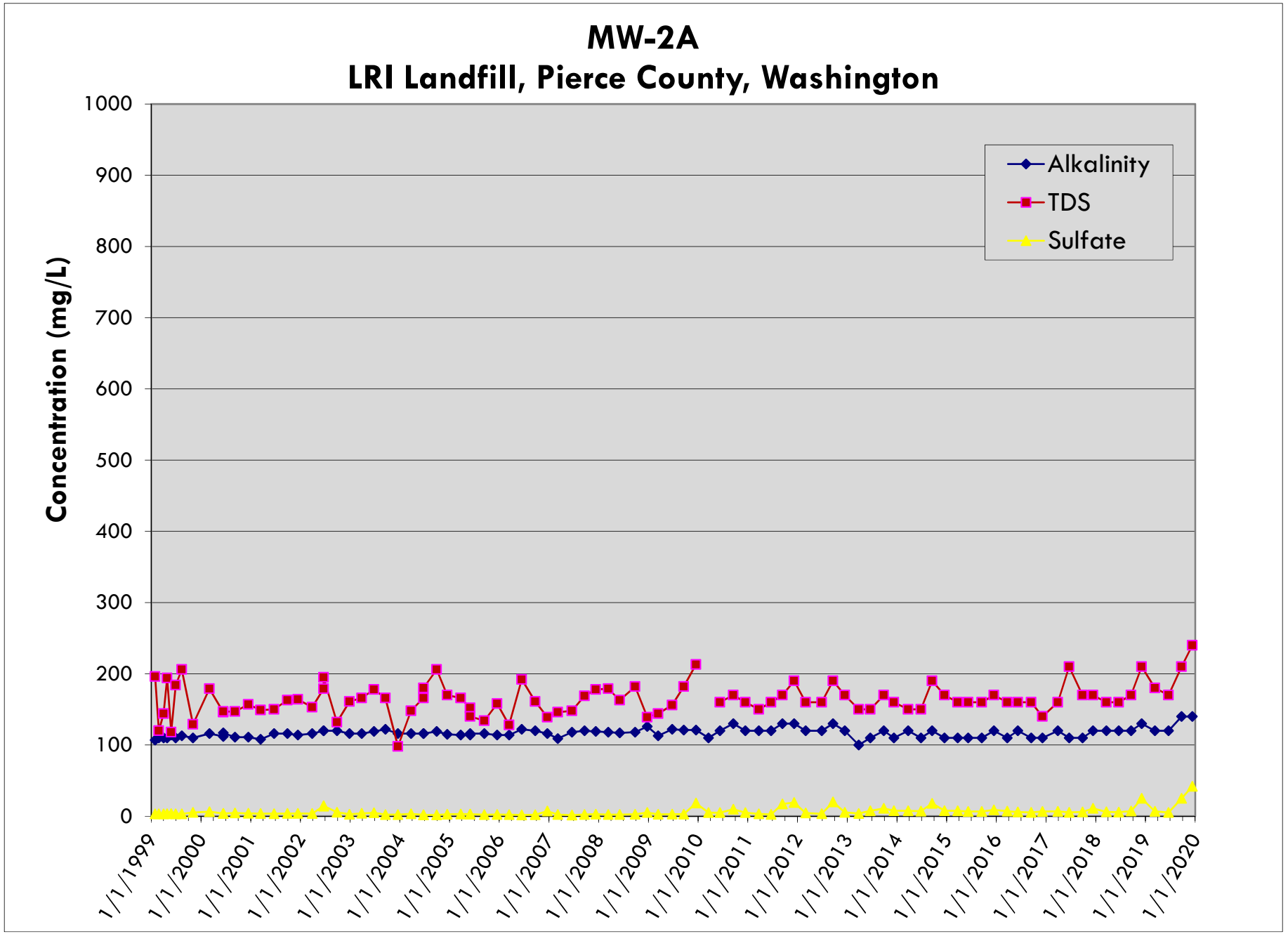
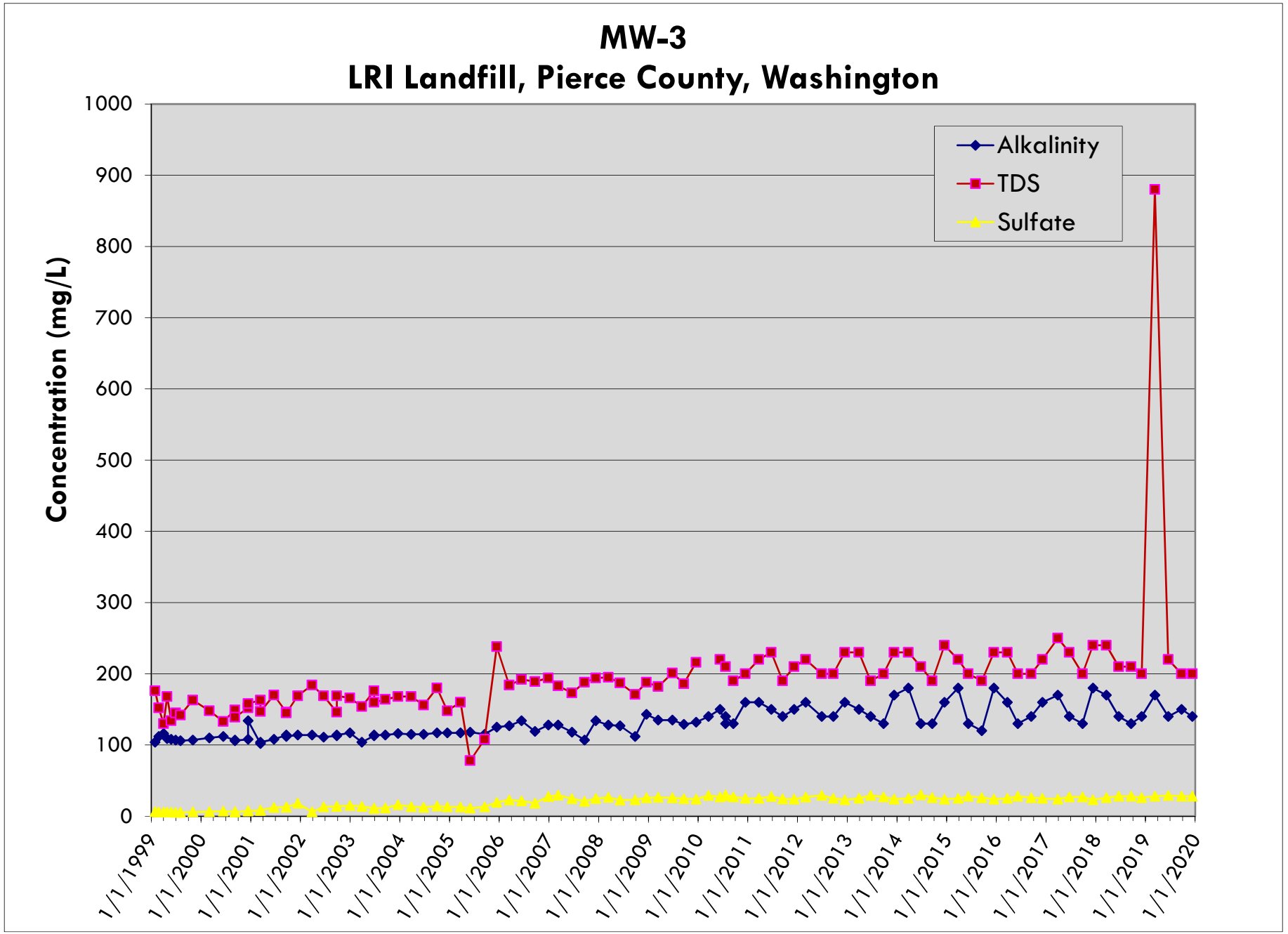
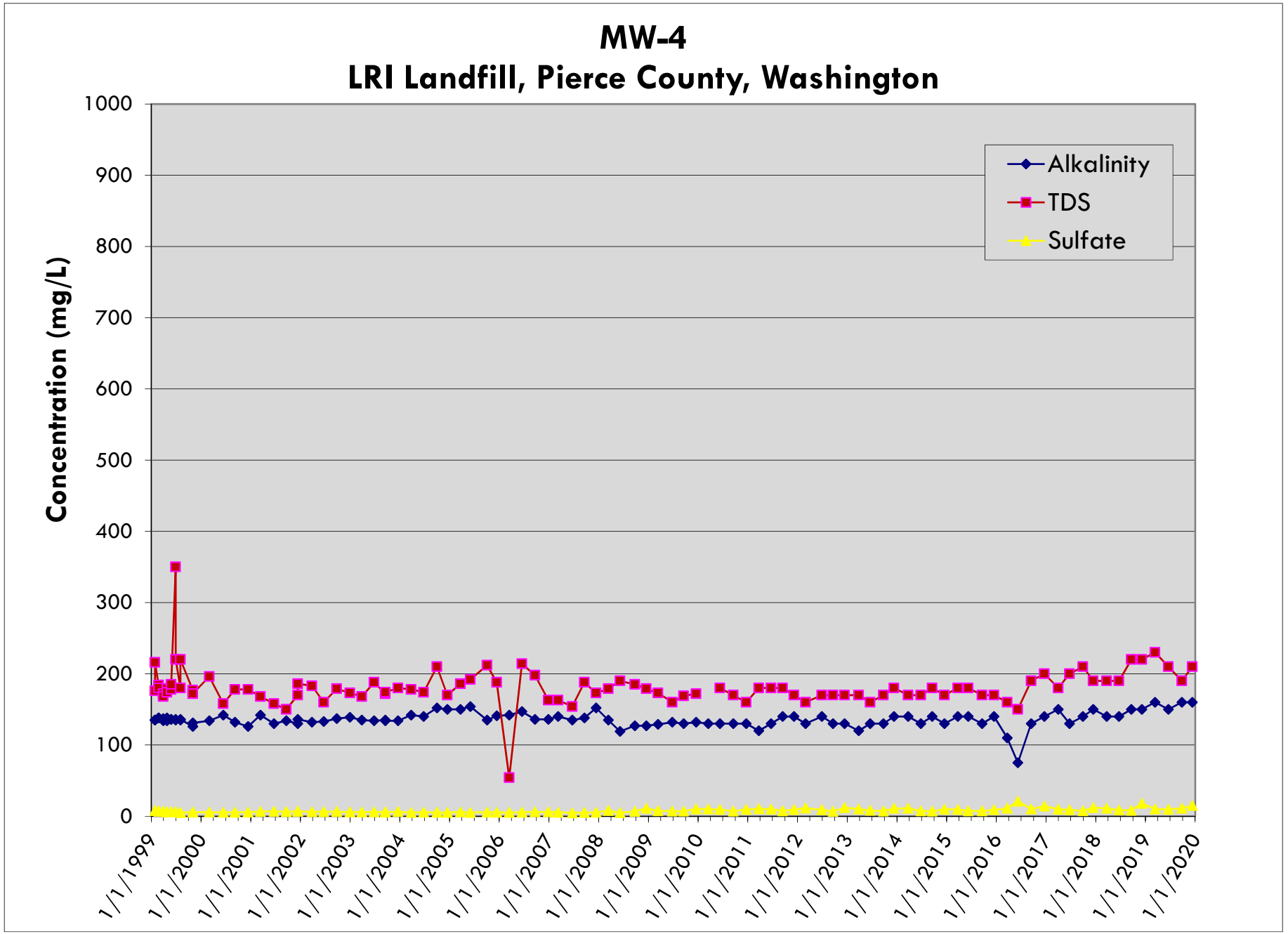
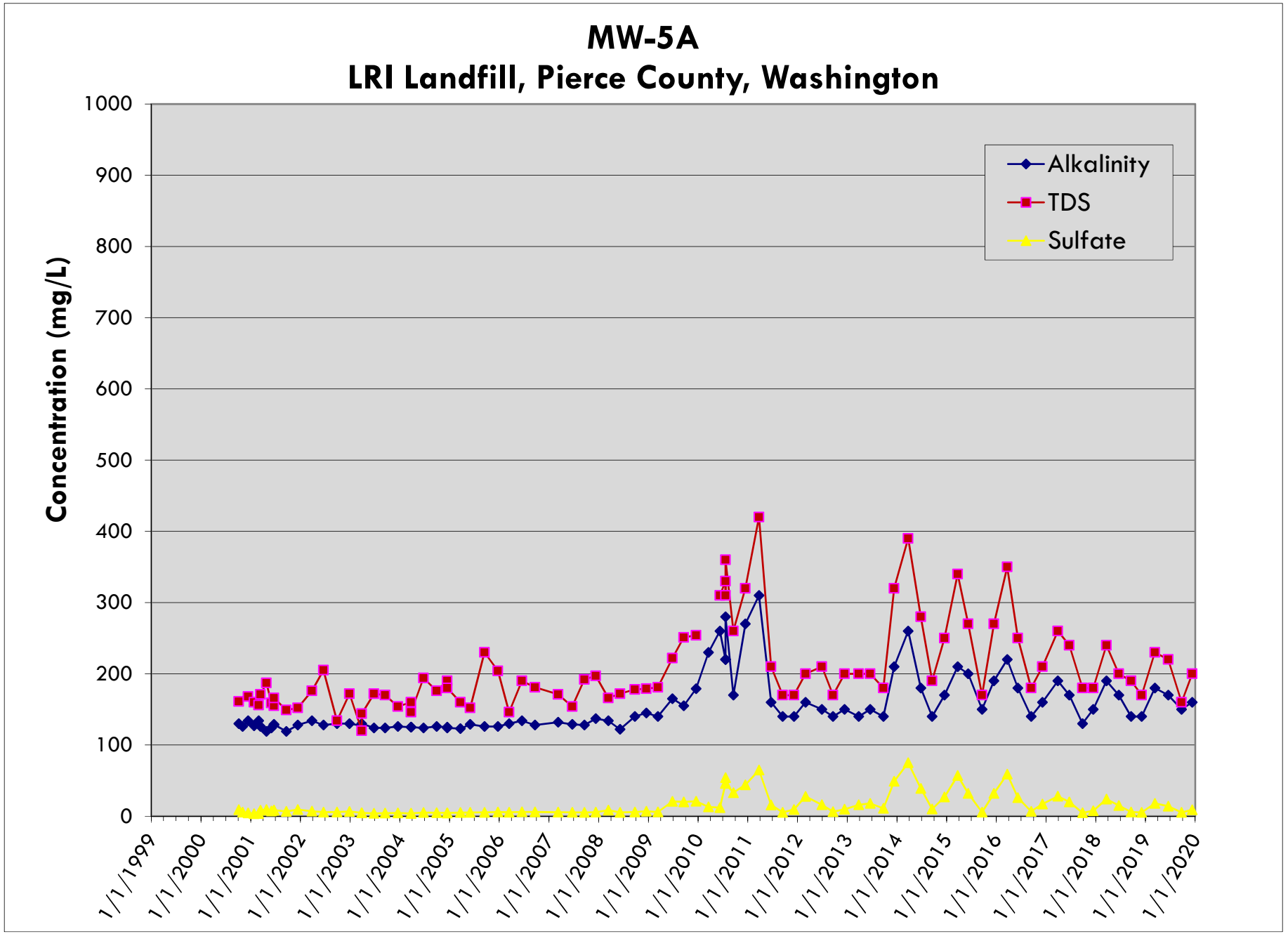
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

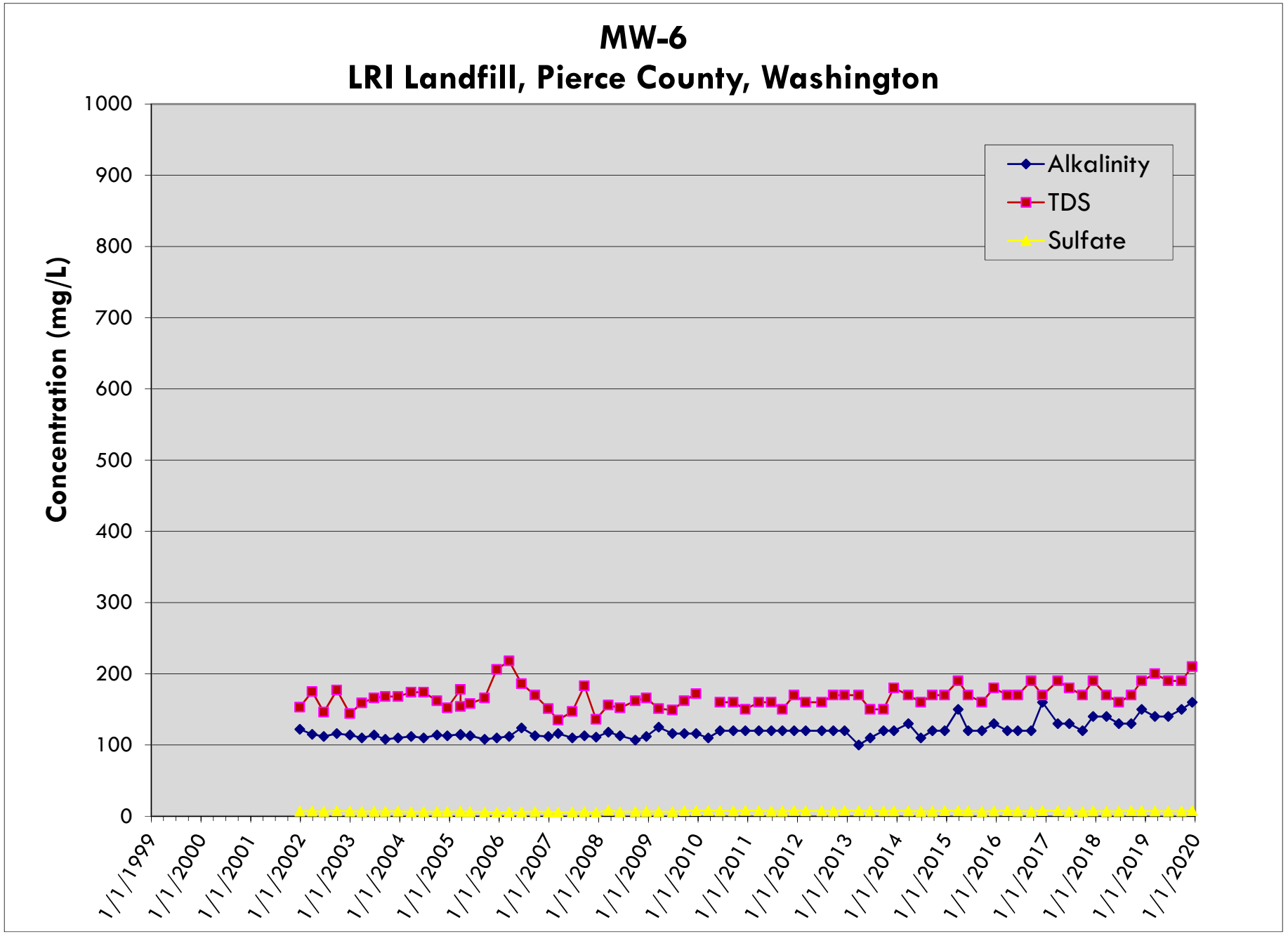

MW-1A
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
1000
900
800
700
600
500
400
300
200
100
0
Alkalinity
TDS
Sulfate
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

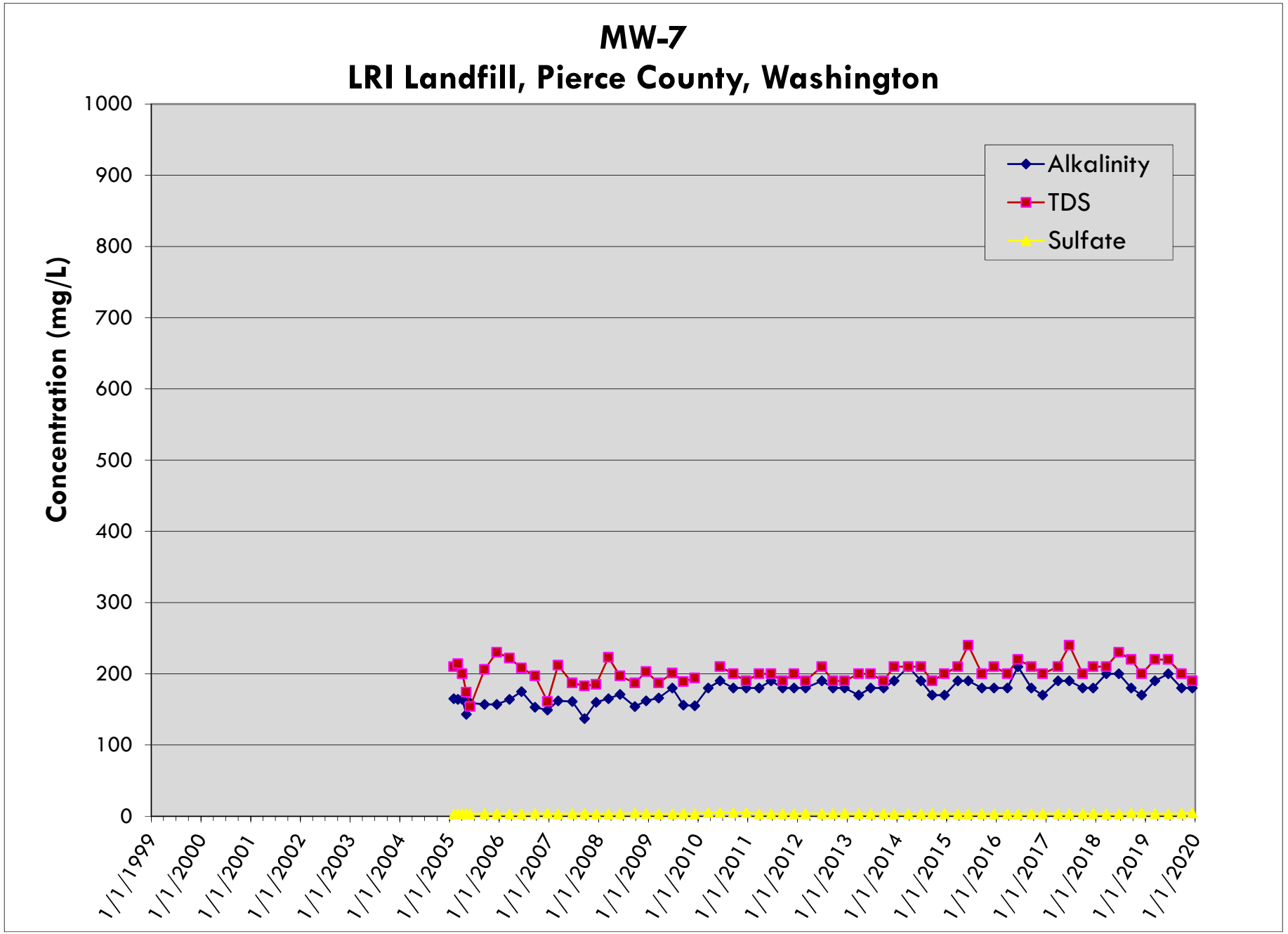

MW-2A
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
1000
900
800
700
600
500
400
300
200
100
0
Alkalinity
TDS
Sulfate
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

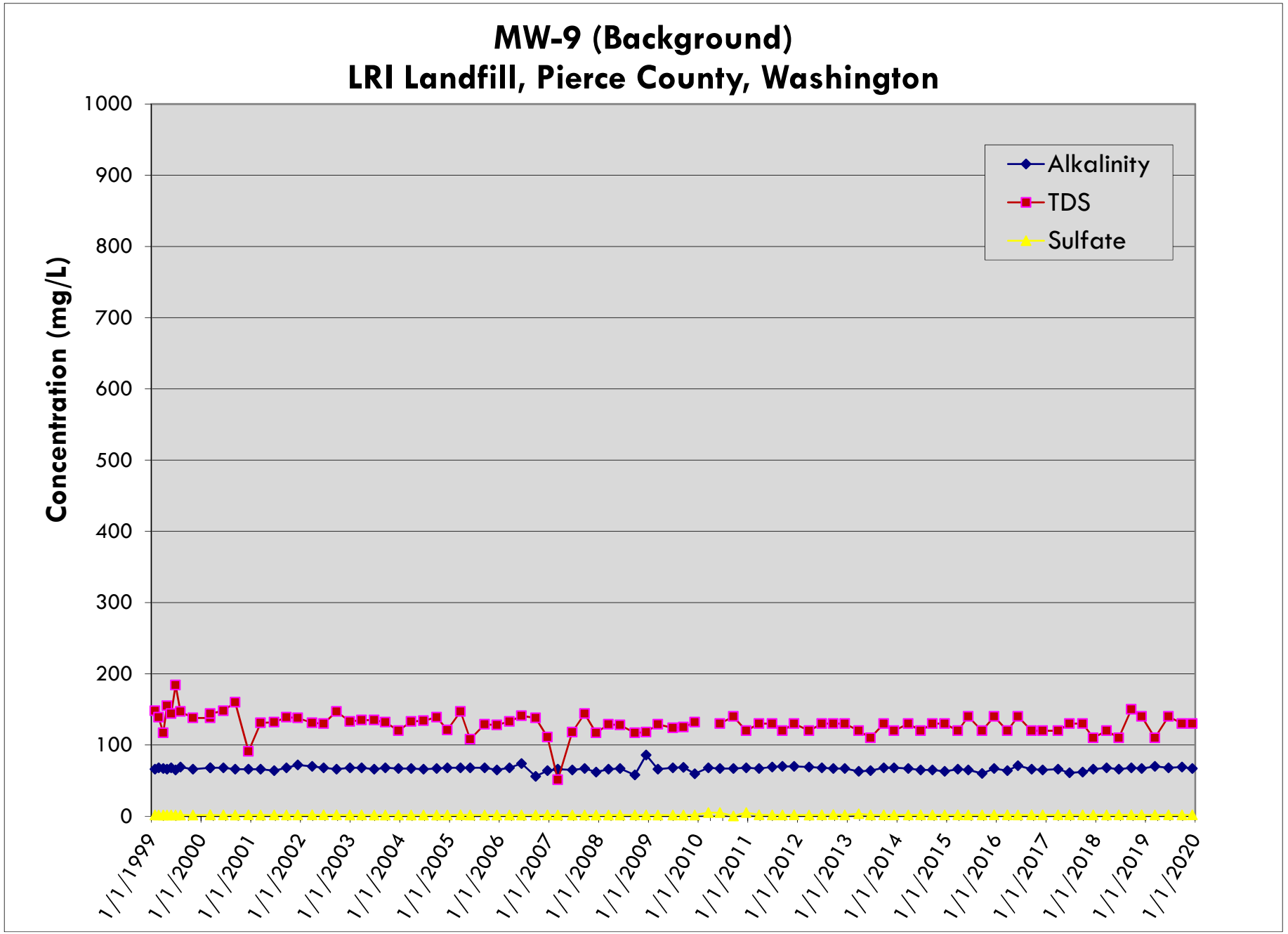

MW-3
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
1000
900
800
700
600
500
400
300
200
100
0
Alkalinity
TDS
Sulfate
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

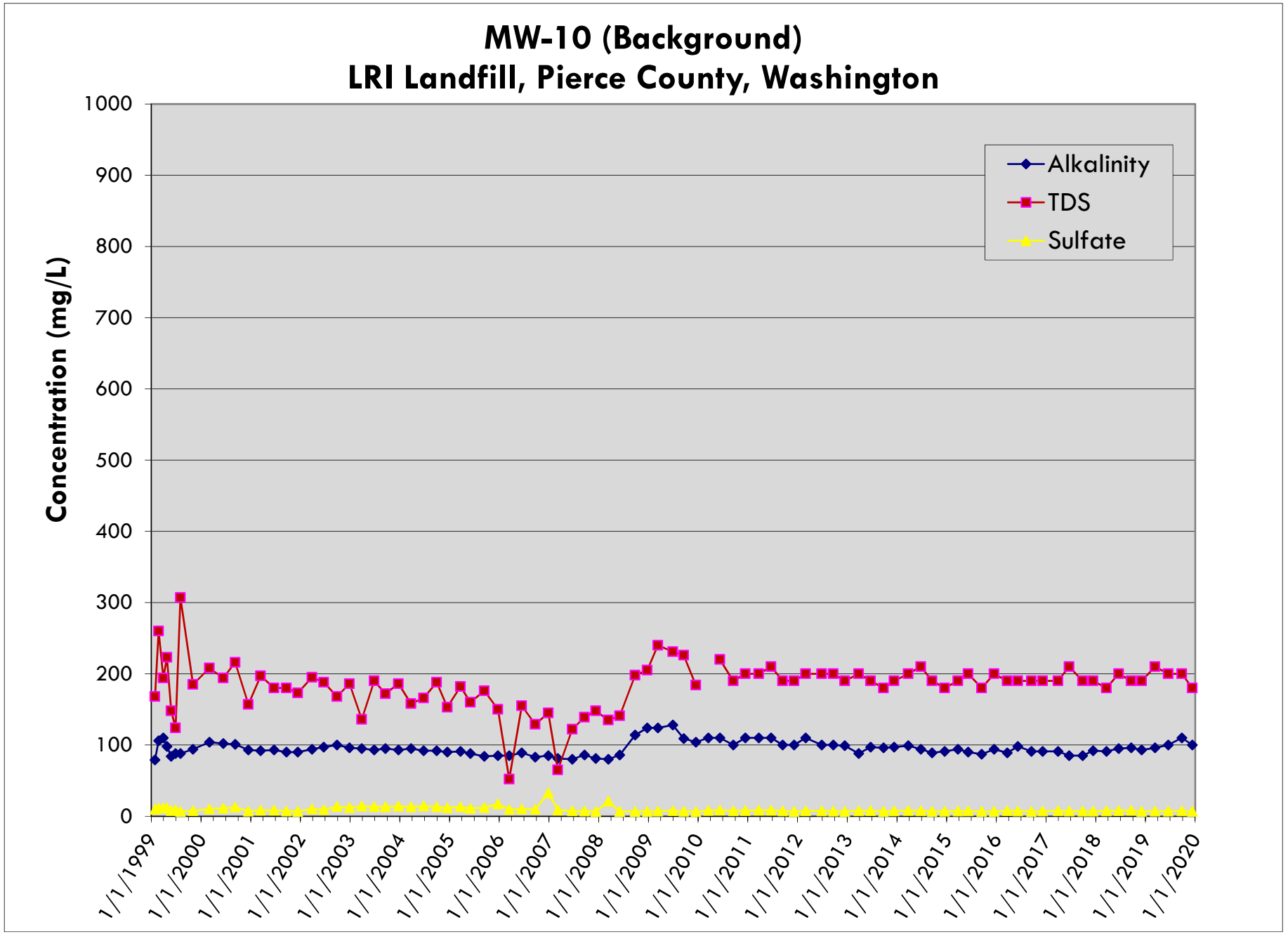

MW-4
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
1000
900
800
700
600
500
400
300
200
100
0
Alkalinity
TDS
Sulfate
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020


MW-5A
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
1000
900
800
700
600
500
400
300
200
100
0
Alkalinity
TDS
Sulfate
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

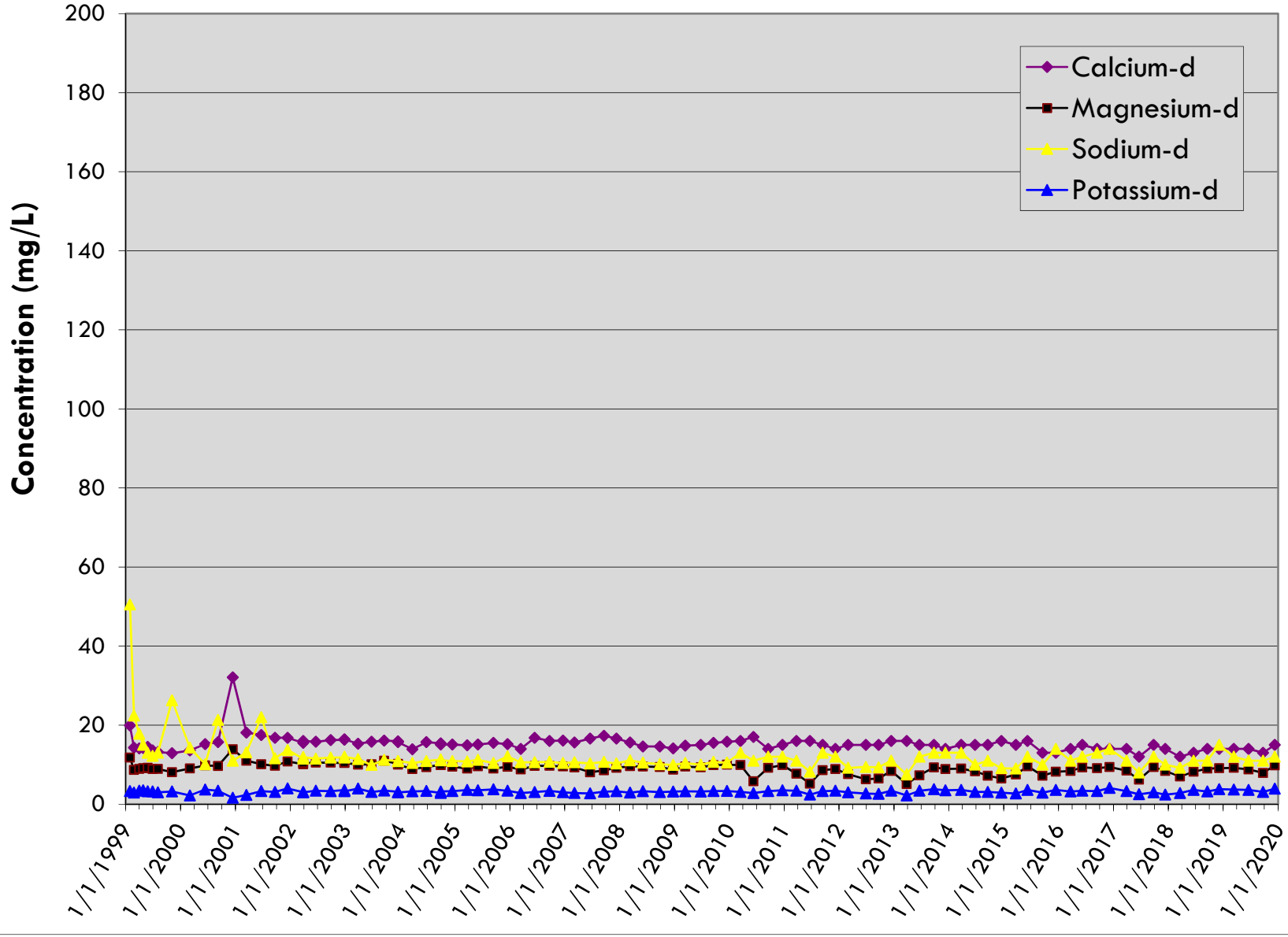

MW-6
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
1000
900
800
700
600
500
400
300
200
100
0
Alkalinity
TDS
Sulfate
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

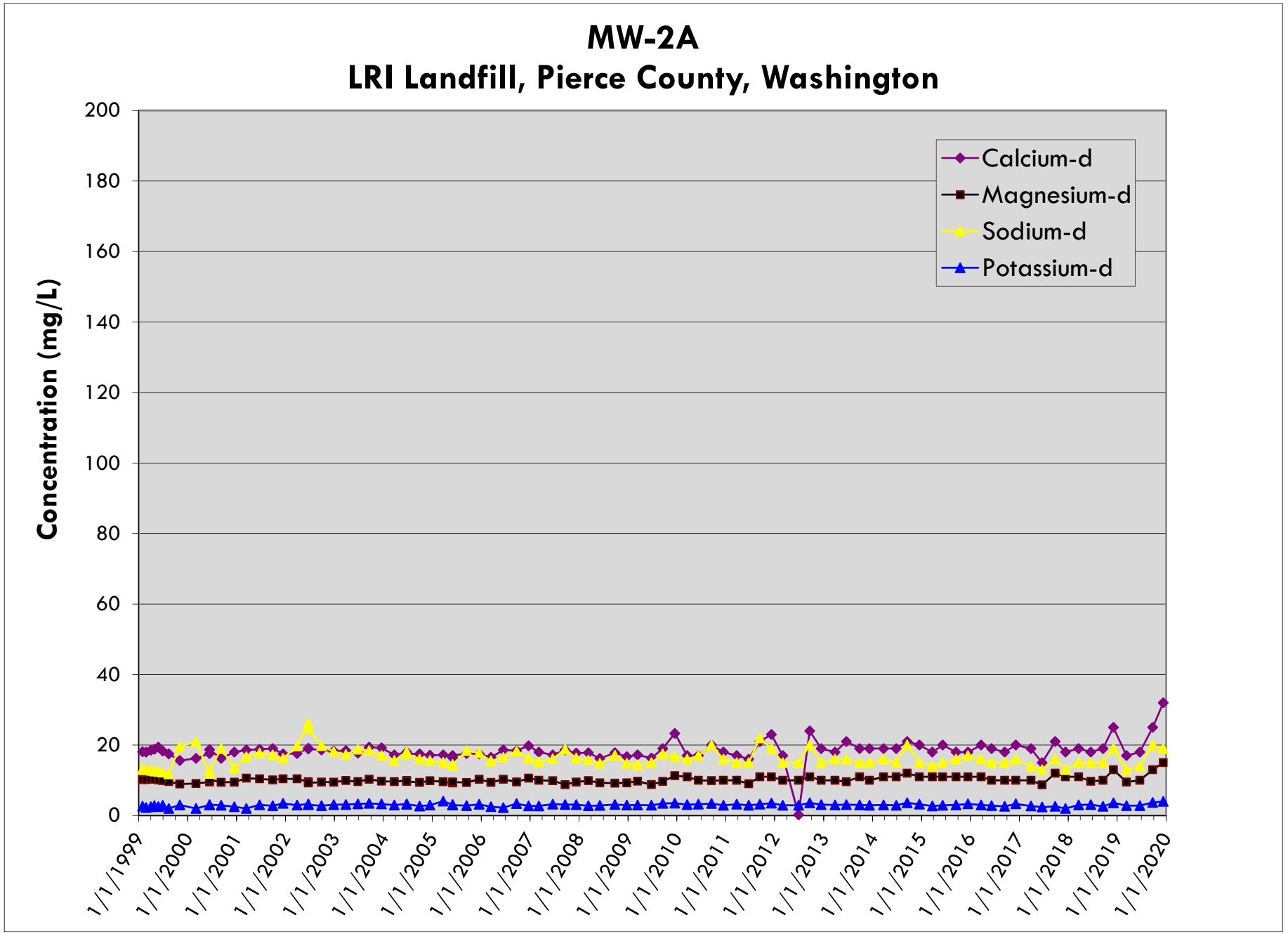

MW-7
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
1000
900
800
700
600
500
400
300
200
100
0
Alkalinity
TDS
Sulfate
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

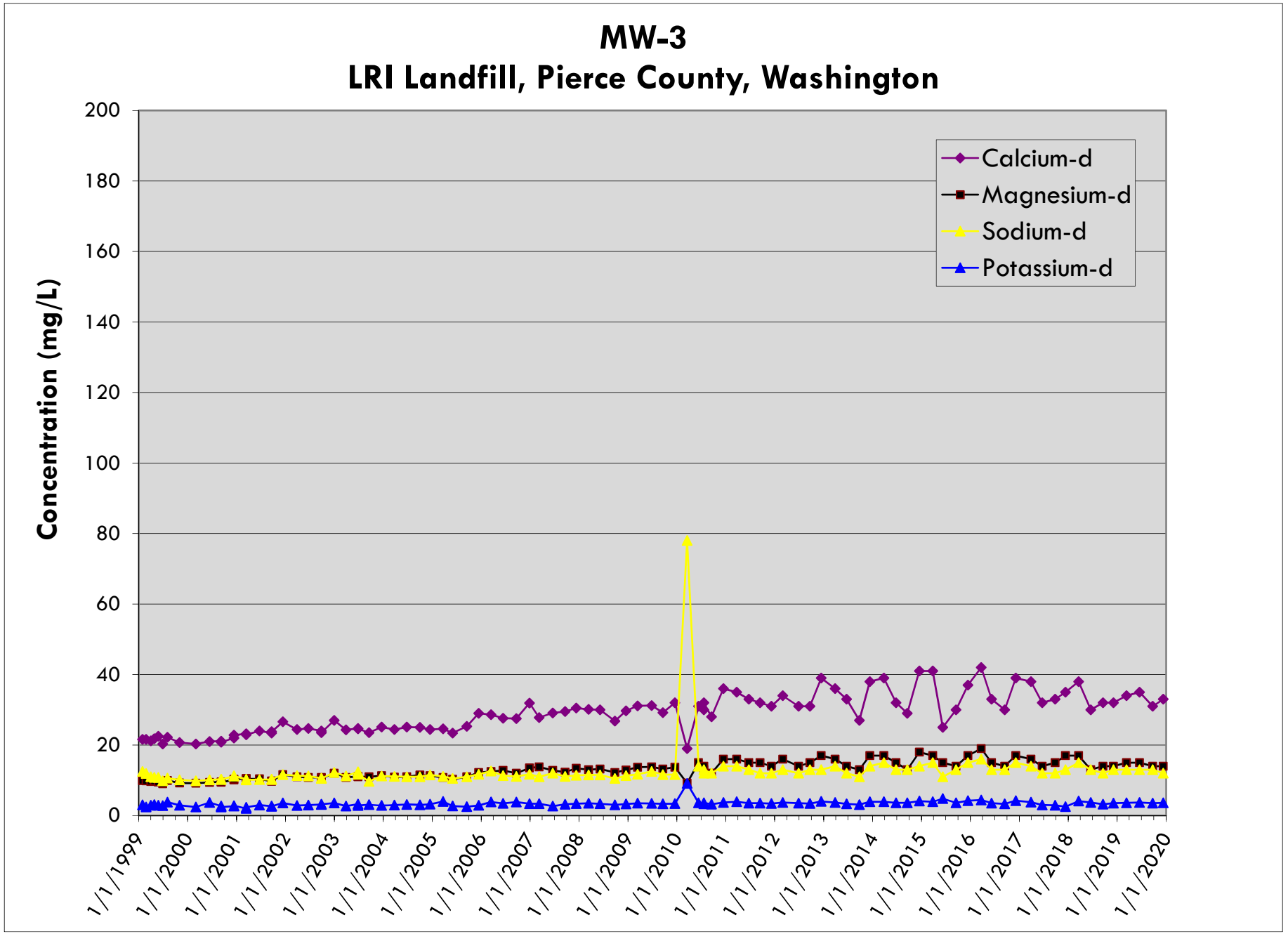

MW-9 (Background)
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
1000
900
800
700
600
500
400
300
200
100
0
Alkalinity
TDS
Sulfate
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020


MW-10 (Background)
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
1000
900
800
700
600
500
400
300
200
100
0
Alkalinity
TDS
Sulfate
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

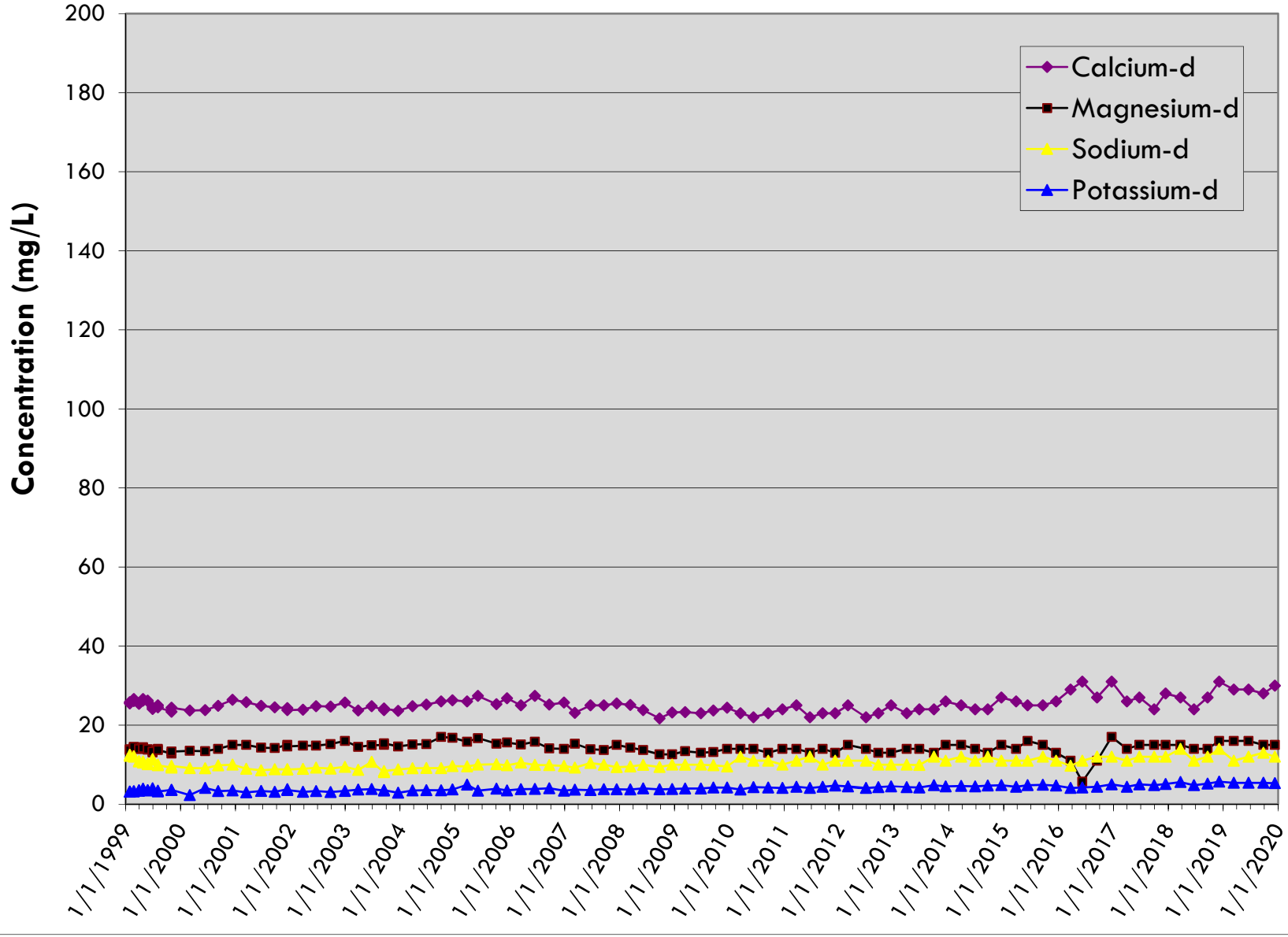
MW-1A
LRI Landfill, Pierce County, Washington

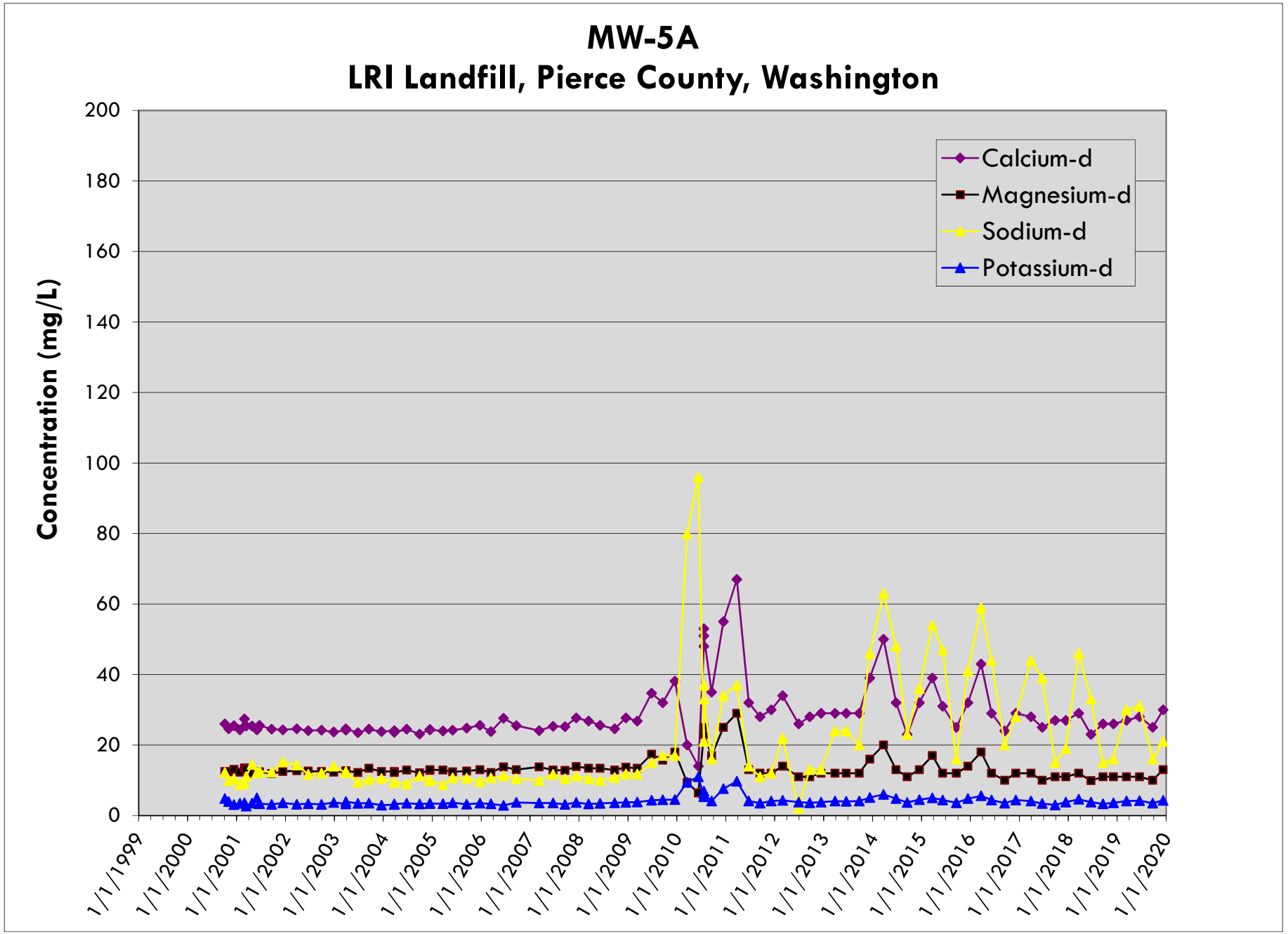



MW-2A
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
200
180
160
140
120
100
80
60
40
20
0
Calcium-d
Magnesium-d
Sodium-d
Potassium-d
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

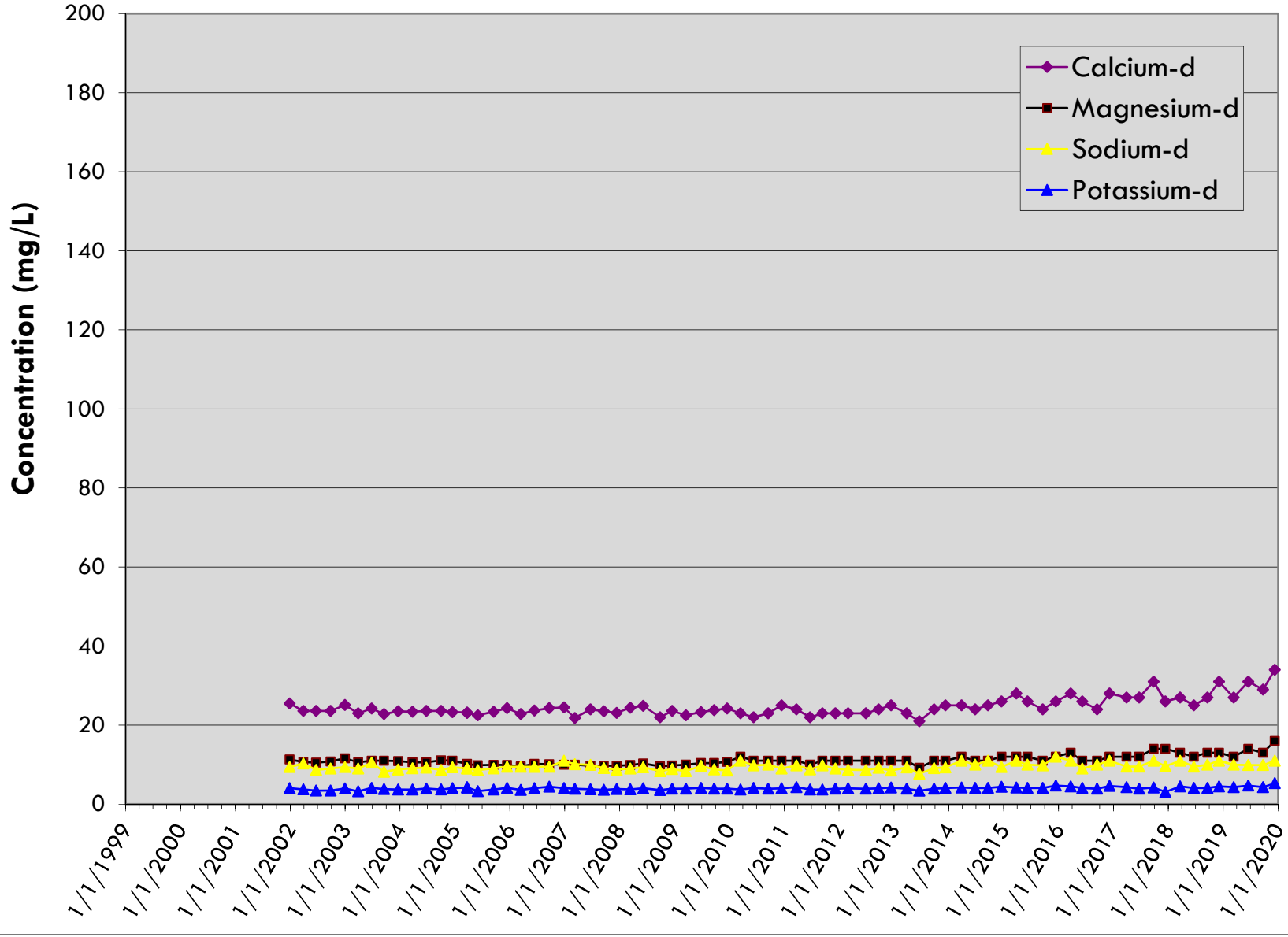

MW-3
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
200
180
160
140
120
100
80
60
40
20
0
Calcium-d
Magnesium-d
Sodium-d
Potassium-d
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

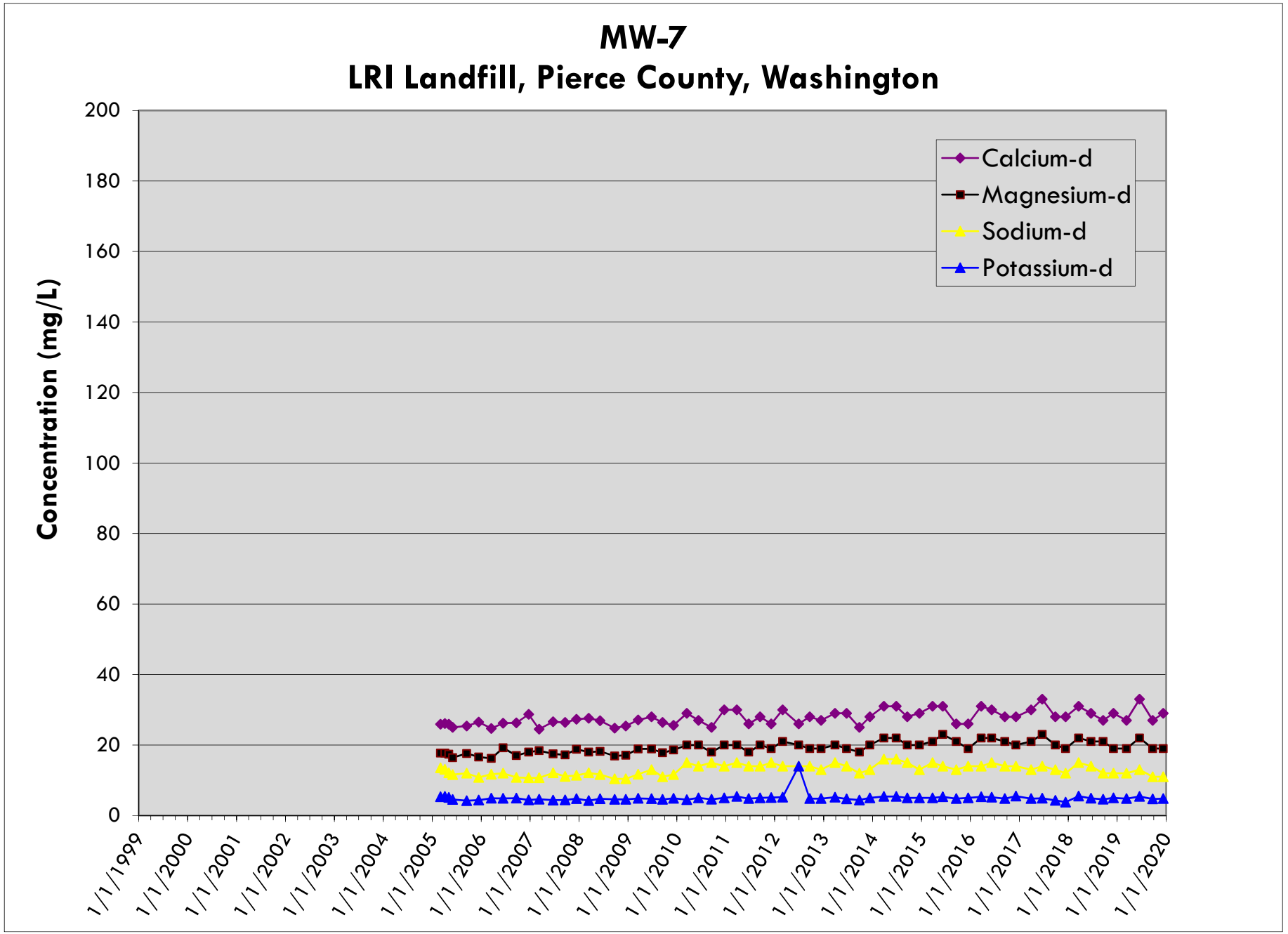
MW-4
LRI Landfill, Pierce County, Washington

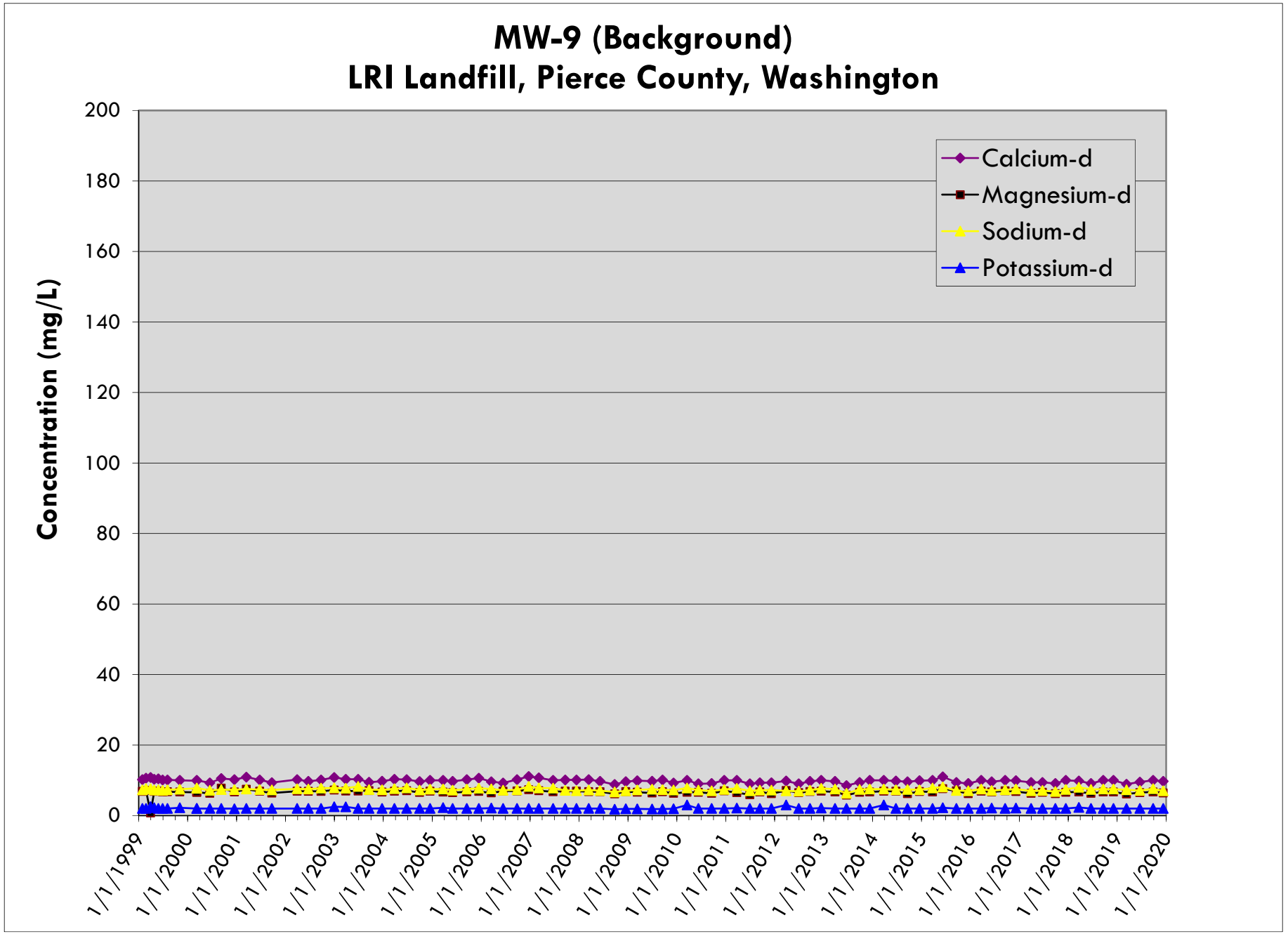


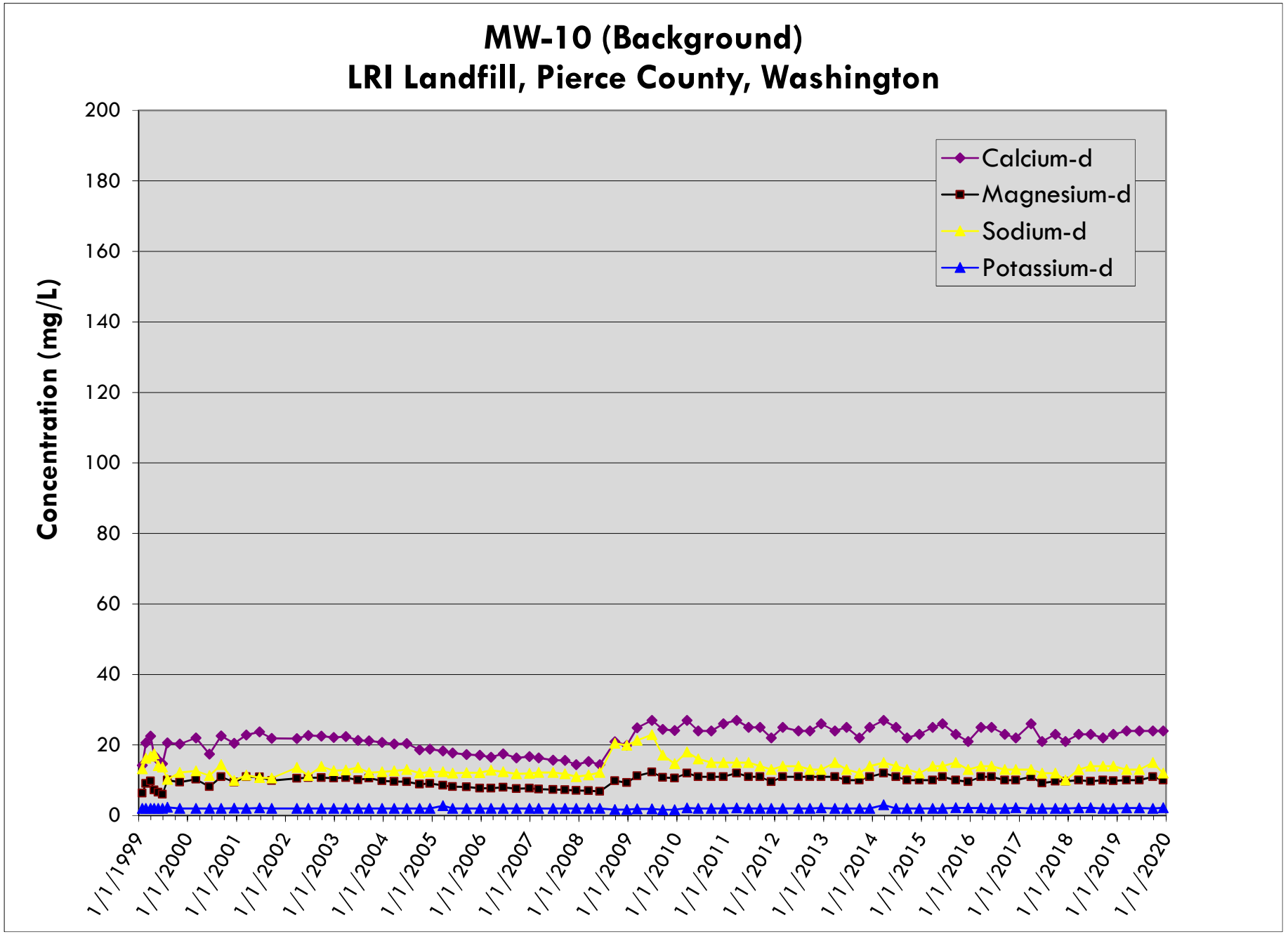

MW-5A
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
200
180
160
140
120
100
80
60
40
20
0
Calcium-d
Magnesium-d
Sodium-d
Potassium-d
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

MW-6
LRI Landfill, Pierce County, Washington

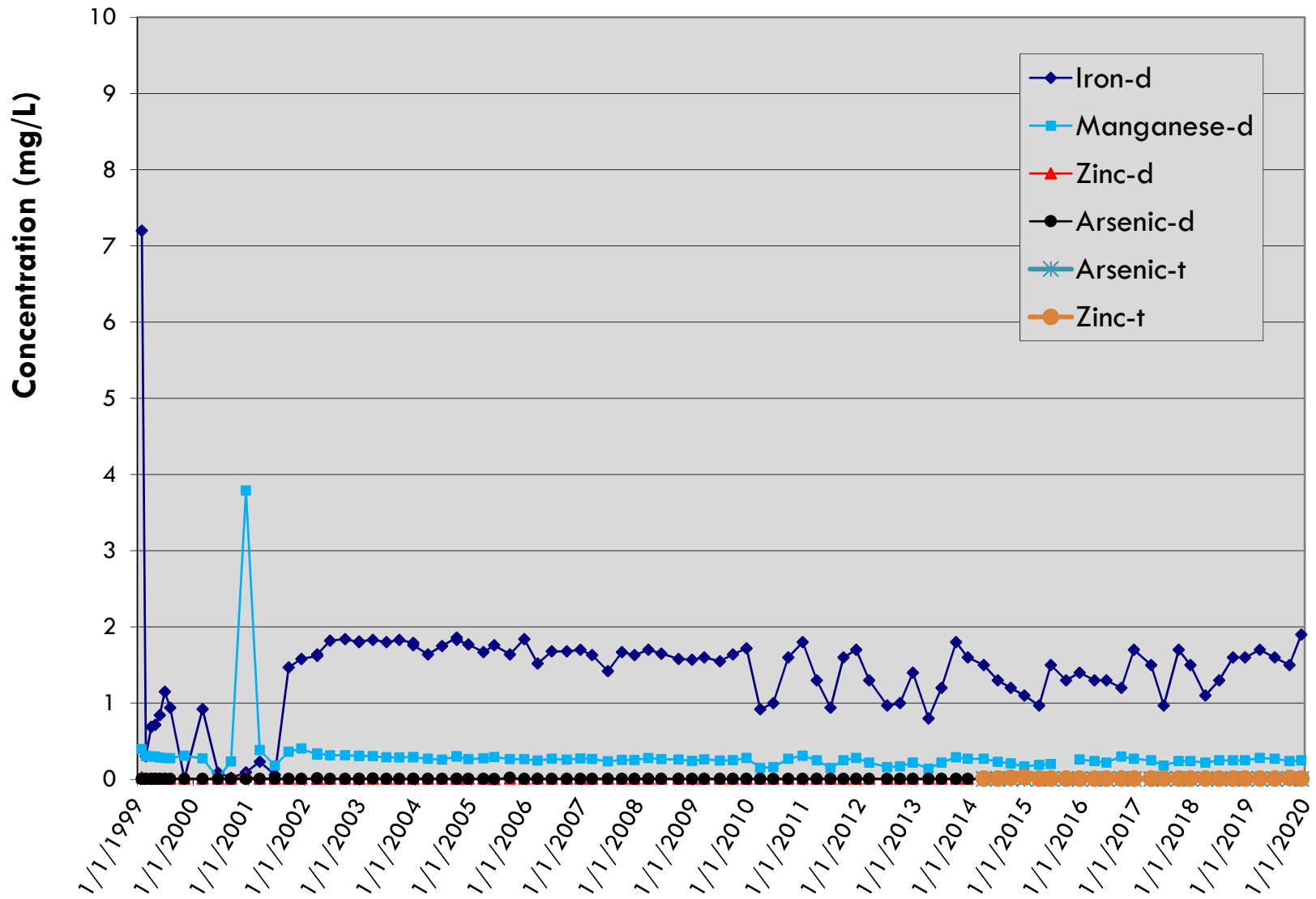



MW-7
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
200
180
160
140
120
100
80
60
40
20
0
Calcium-d
Magnesium-d
Sodium-d
Potassium-d
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

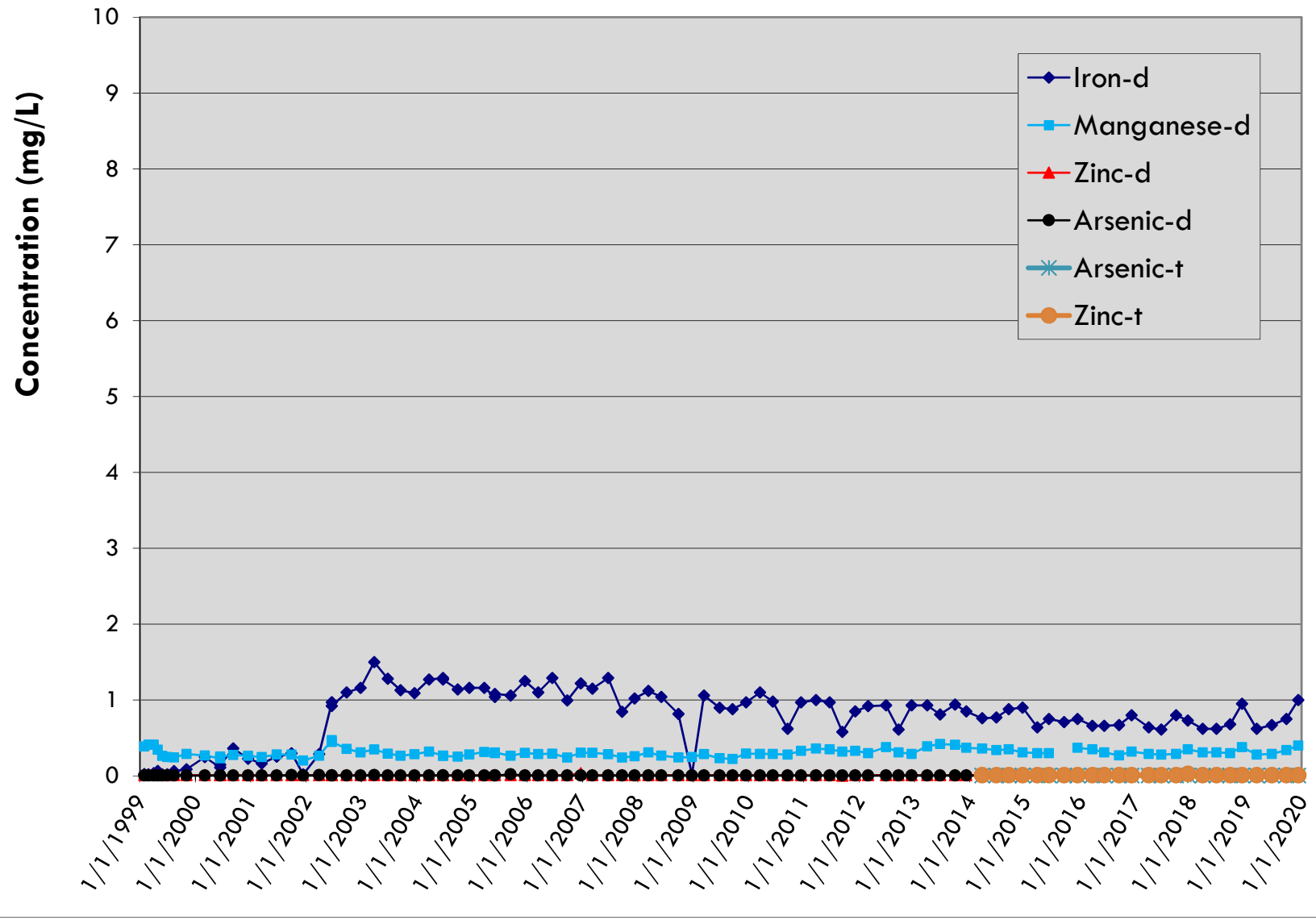

MW-9 (Background)
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
200
180
160
140
120
100
80
60
40
20
0
Calcium-d
Magnesium-d
Sodium-d
Potassium-d
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020


MW-10 (Background)
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
200
180
160
140
120
100
80
60
40
20
0
Calcium-d
Magnesium-d
Sodium-d
Potassium-d
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

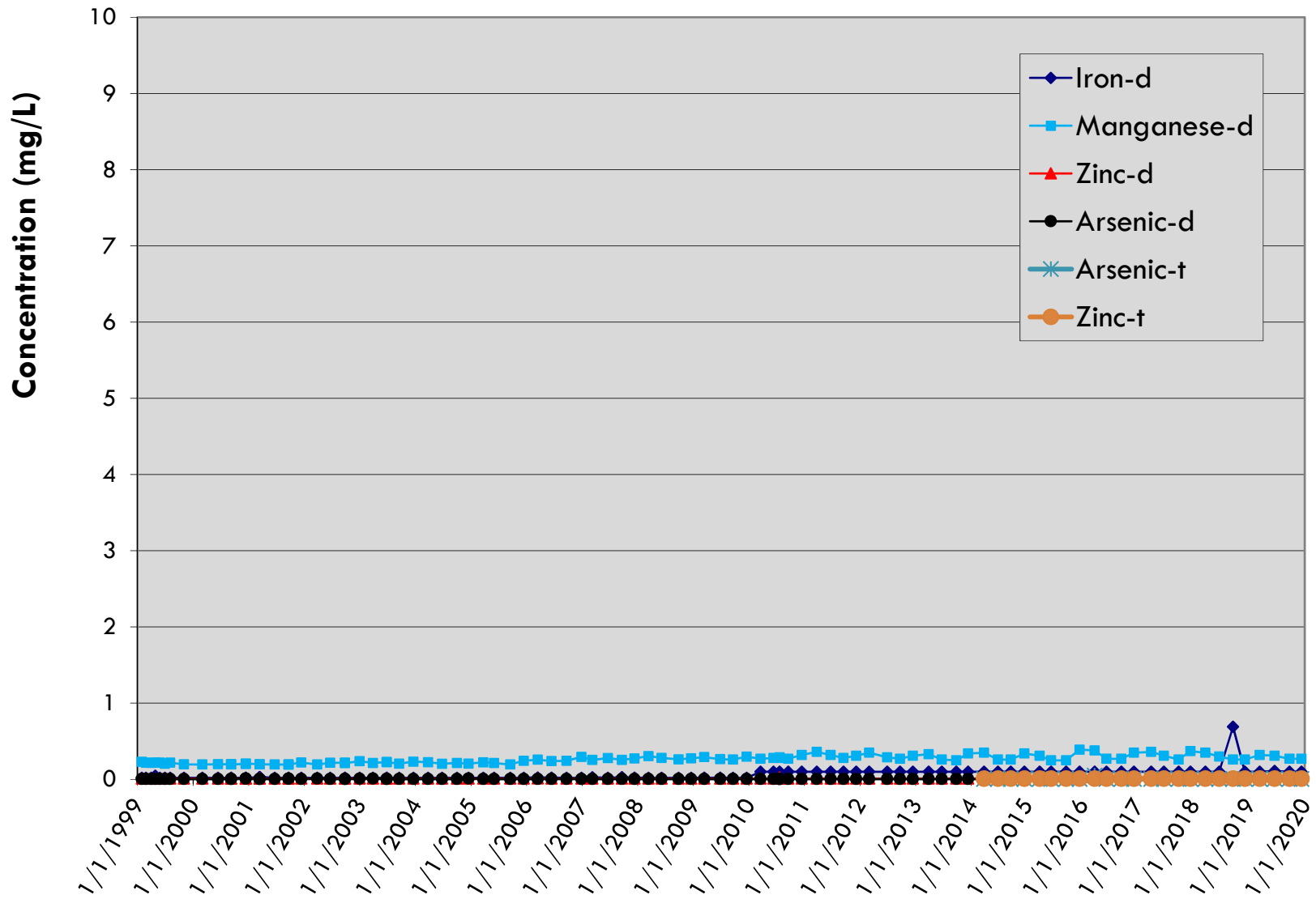
MW-1A
LRI Landfill, Pierce County, Washington



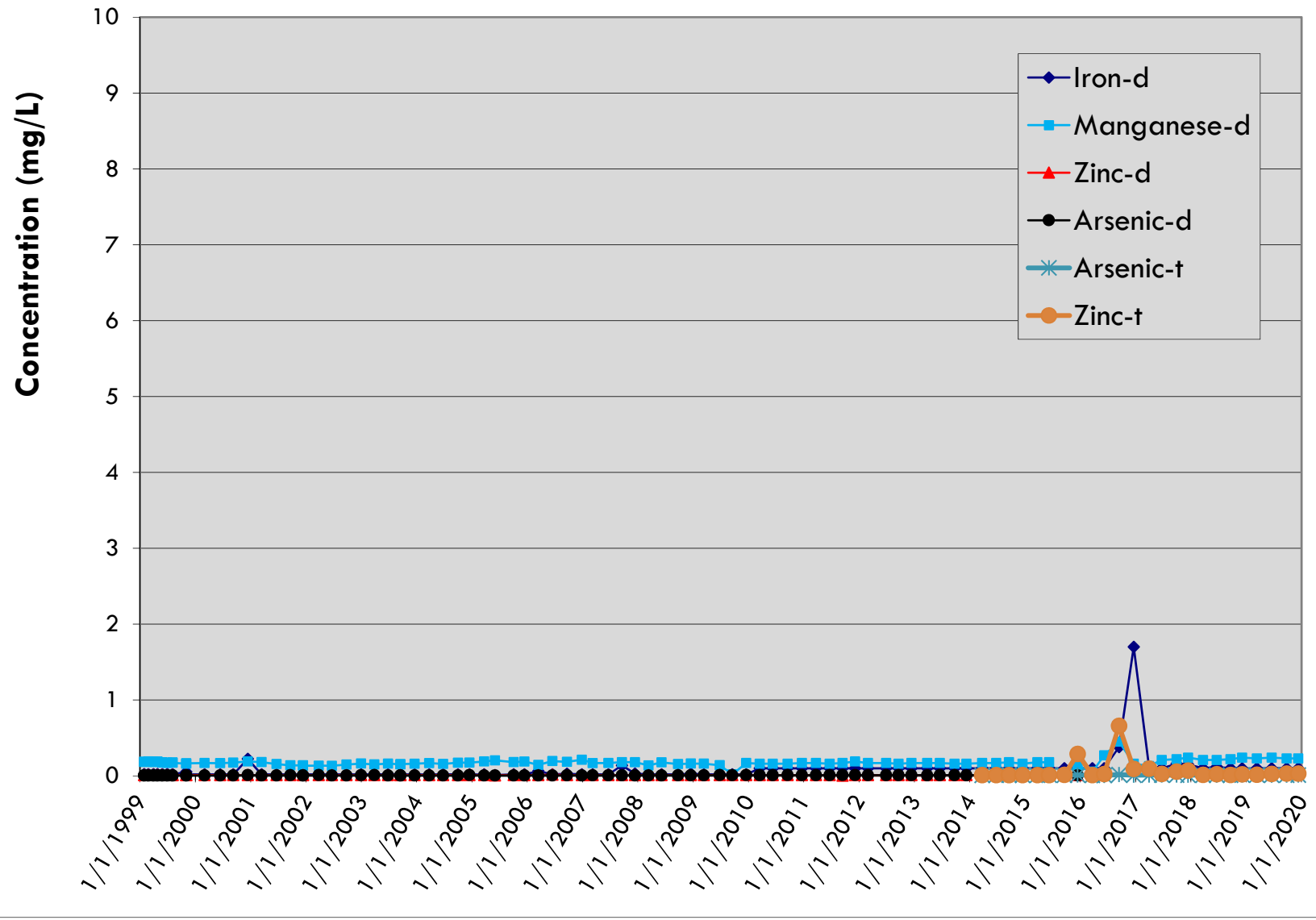
MW-2A
LRI Landfill, Pierce County, Washington



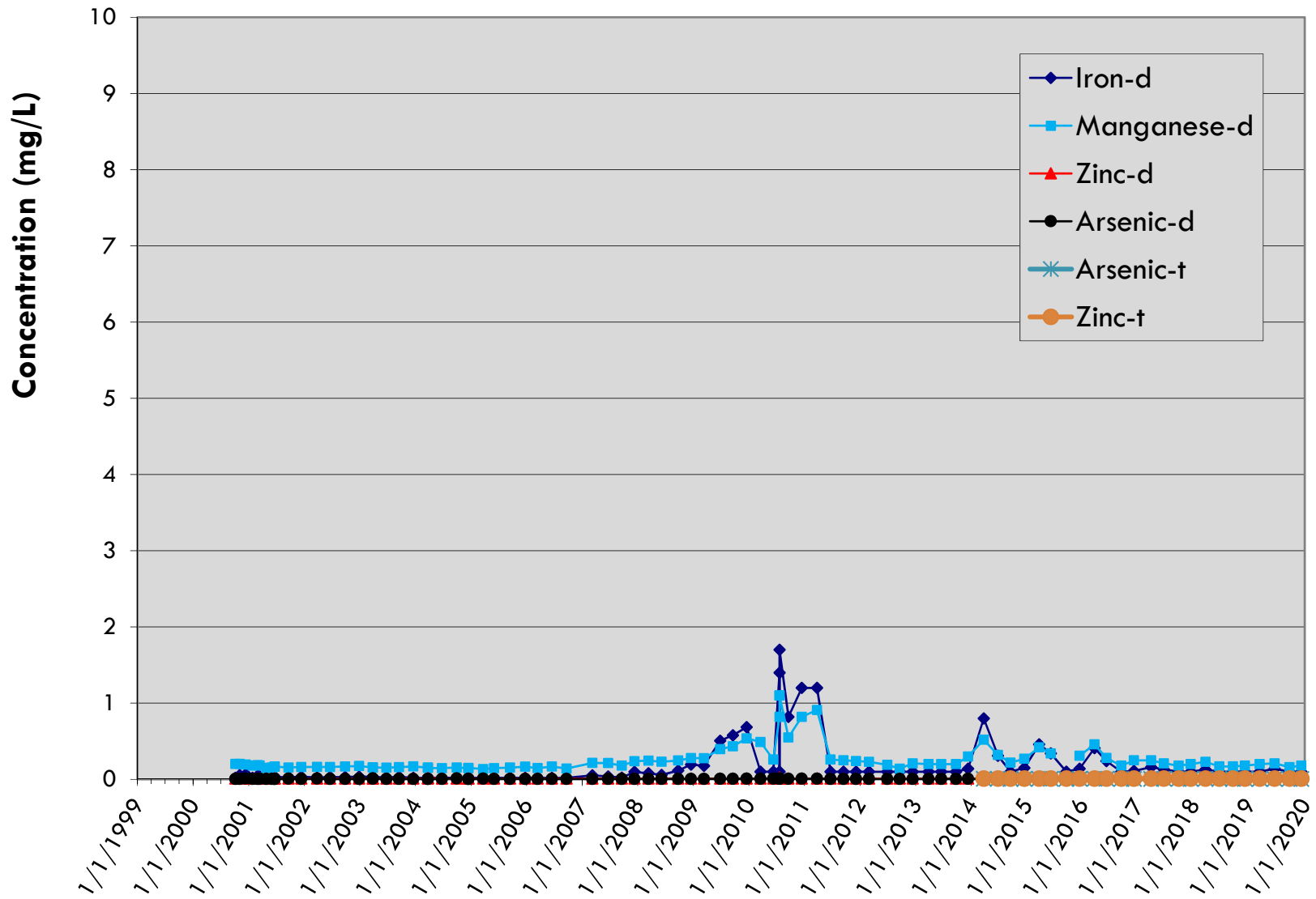
MW-3
LRI Landfill, Pierce County, Washington



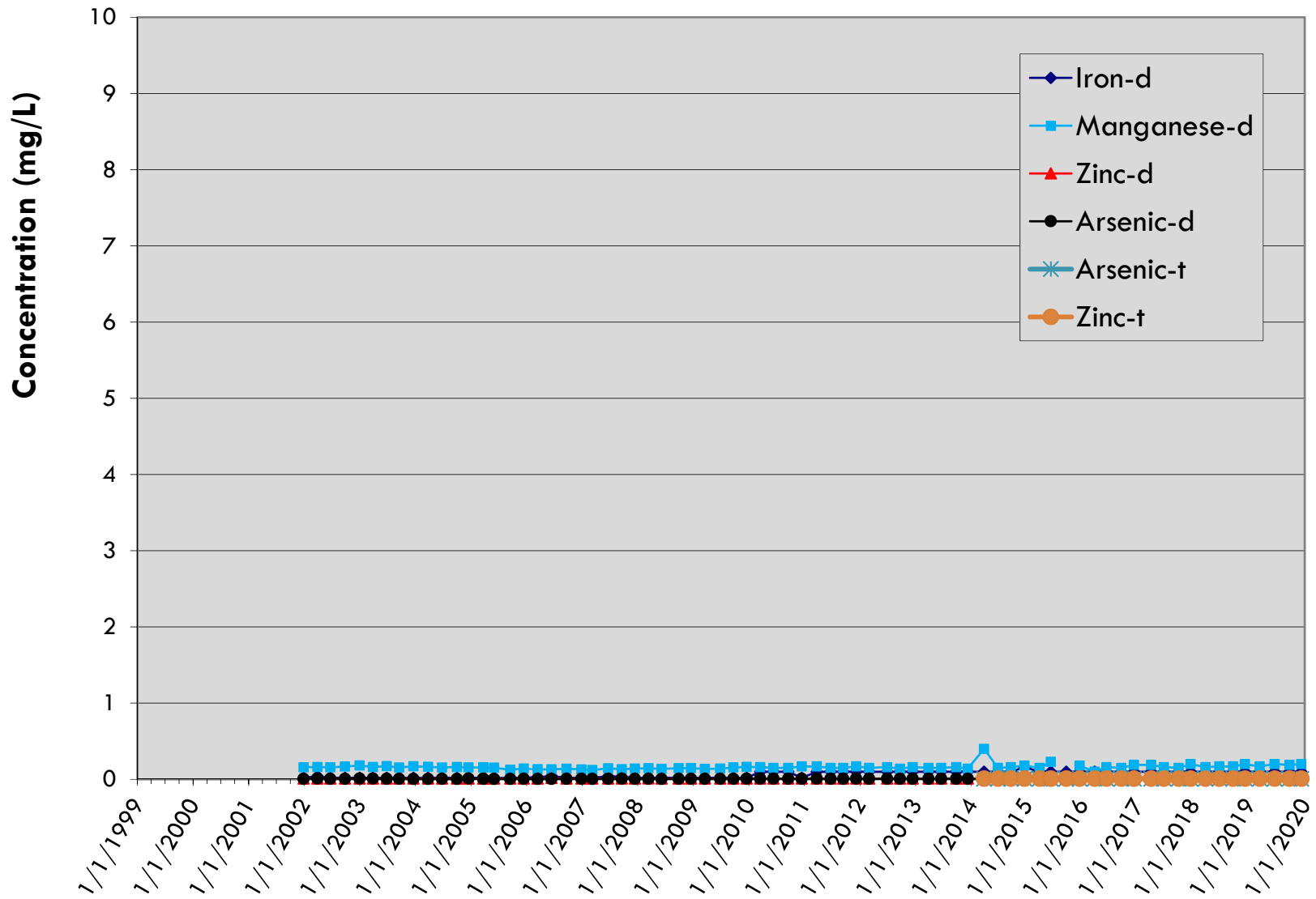
MW-4
LRI Landfill, Pierce County, Washington



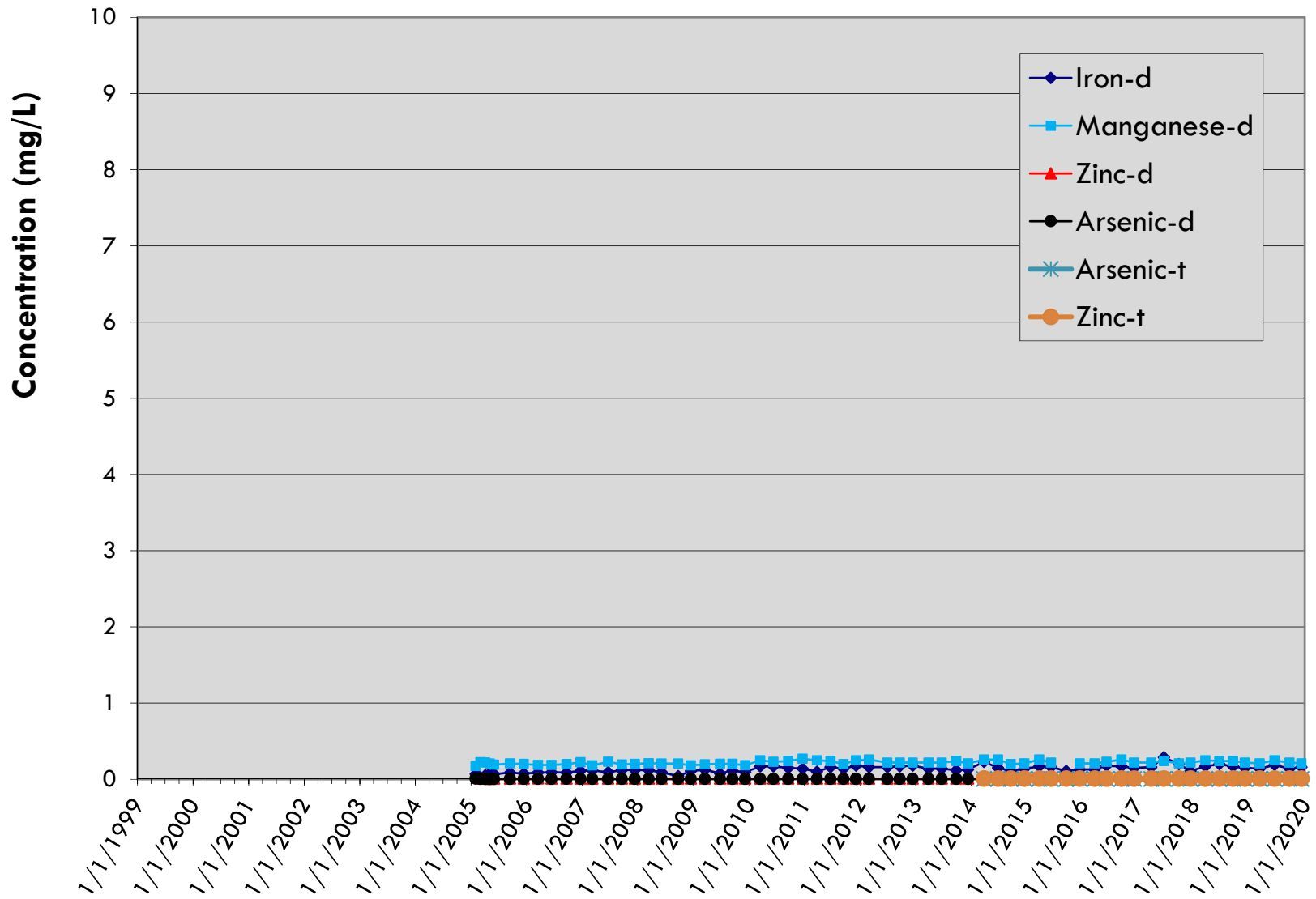
MW-5A
LRI Landfill, Pierce County, Washington

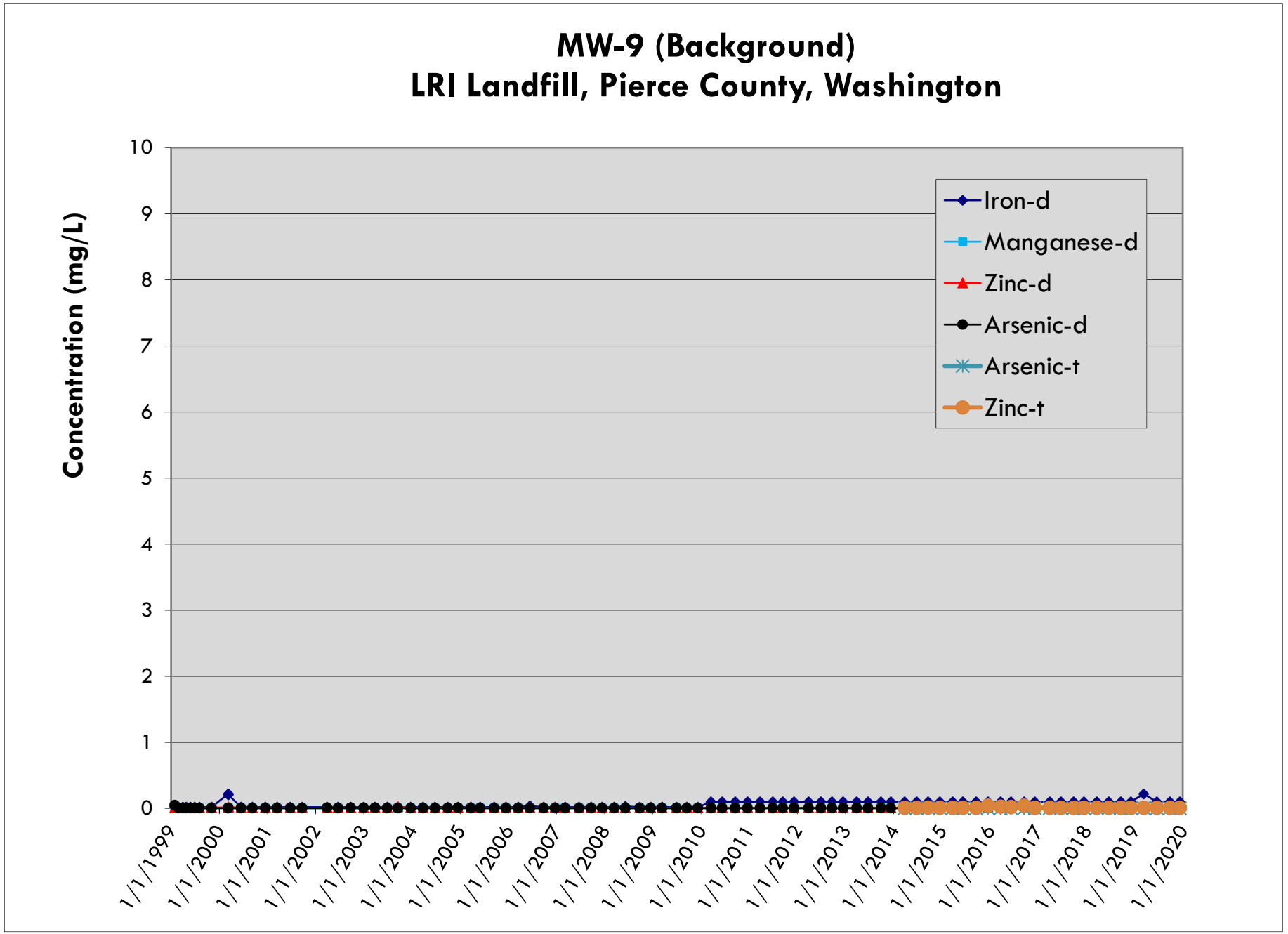


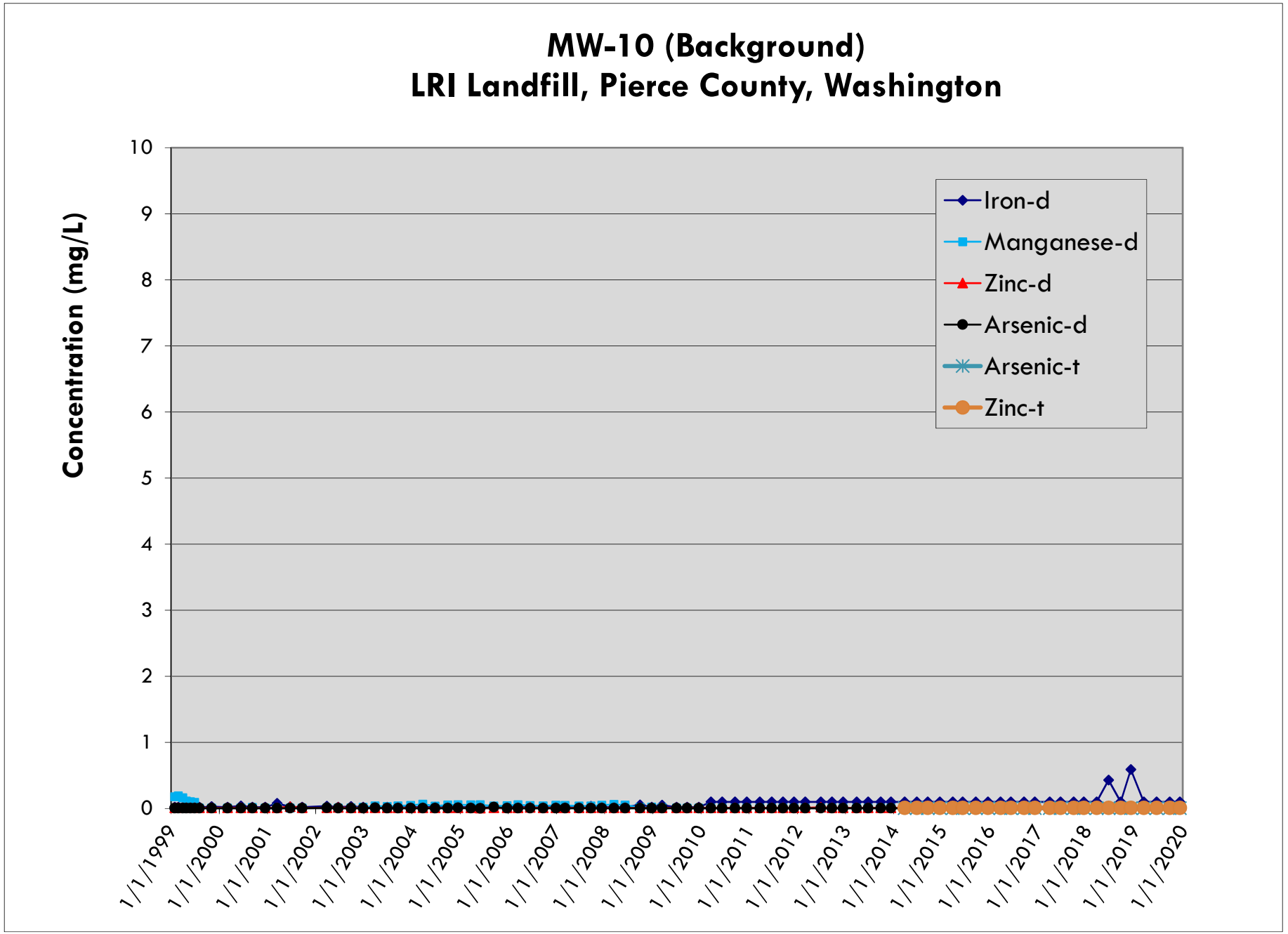
MW-6
LRI Landfill, Pierce County, Washington



MW-7
LRI Landfill, Pierce County, Washington




MW-9 (Background)
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
10
9
8
7
6
5
4
3
2
1
0
Iron-d
Manganese-d
Zinc-d
Arsenic-d
Arsenic-t
Zinc-t
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020


MW-10 (Background)
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
10
9
8
7
6
5
4
3
2
1
0
Iron-d
Manganese-d
Zinc-d
Arsenic-d
Arsenic-t
Zinc-t
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

FOURTH QTR. 2019 DATA VALIDATION REPORT – LRI LANDFILL

Project Details

Project No.	04219001.02	**Site Name**	LRI 304th Street LF
Data Validator	Travis Berndahl	**Data Level**	Level 2
Date	2/11/2020	**DV Tier**	Tier 1
QA Document	LRI Landfill Groundwater Monitoring Plan, March 10, 2014		

Sample Login Summary

Sample Group	Sample Login Comments	Analytical Lab (Primary)
280-129849-1	No comments.	TestAmerica, Denver, CO
280-130290-1	No comments.	TestAmerica, Denver, CO
280-131406-1	Due to Fedex shipping delay, nitrate samples were analyzed outside of holding time. Original TOC analysis in sample 304-112519-01 was over calibration range, therefore reanalysis was analyzed outside of holding time.	TestAmerica, Denver, CO
280-131762-1	No comments.	TestAmerica, Denver, CO
280-131856-1	The original Alkalinity analysis for the samples 304-121019-11 and 304-121019-15 were within the holding time, however the samples required reanalysis by manual titration, and therefore reanalysis was performed outside of the holding time.	TestAmerica, Denver, CO
280-131859-1	No comments.	TestAmerica, Denver, CO
280-131862-1	No comments.	TestAmerica, Denver, CO
280-131873-1	No comments.	TestAmerica, Denver, CO
280-131874-1	No comments.	TestAmerica, Denver, CO
280-132171-1	Sample 304-121619-24 was analyzed for anions outside of the holding time due to laboratory oversight.	TestAmerica, Denver, CO

Analytical Summary

Sample Group	Analyses					
	TDS/Alk/NO3	Metals	NH4/TOC	VOCs	Anions	TSS
280-129849-1	X	X[1]	X	X	X	--
280-130290-1	X	X[1]	X	X	X	--
280-131406-1	X	X[1]	X	X	X	--

280-131762-1	X	X[1]	X	X	X	--
280-131856-1	X	X[3]	X	X	X	--
280-131859-1	X	X[1]	X	X	X	--
280-131862-1	X	X[2]	X	X	X	X
280-131873-1	X	X[2]	X	X	X	X
280-131874-1	X	X[3]	X	X	X	--
280-132171-1	X	X[1]	X	X	X	--

Notes:

1. Dissolved metals analysis performed (field filtered)
2. Dissolved and Total metals analysis performed
3. Total Metals analysis performed

Laboratory Quality Assurance Samples

Lab QA Samples	Results	Comments
Method Blank	Acceptable.	Dissolved Calcium and Magnesium are present at levels greater than reporting limit. Associated samples are ten times greater than MB, corrective action deemed unnecessary (280-129849-1).
LCS/LCSD	Acceptable.	Trichlorofluoromethane recovered outside control limits but is identified as a poor performing analyte using this method. No reanalysis performed (280-131762-1). The LCS for Iodomethane was below control limits. Because analyte was recovered within the marginal exceedance limits, no corrective action was deemed necessary (280-131406-1). The LCS for dissolved antimony was above control limits. Because data are considered biased high and the associated samples were non-detect above the RL, corrective action was deemed unnecessary. (280-131406-1).
MS/MSD	Acceptable.	Chloride on sample "-01" exhibited values outside control limits and may be due to matrix interference, no corrective action deemed unnecessary (280-129849-1). Dissolved barium and manganese MSD recovery for "-01" outside control limits. Because LCS and MB were within control limits, no corrective action was taken (280-129849-01). Dissolved Silver and Dissolved Zinc failed the recovery criteria low for MS and MSD. Dissolved Manganese failed the recovery criteria high. See QC report for details (280-132171-1). MS/MSD for dissolved beryllium on sample "-01" exhibited recoveries outside control limits. Because LCS and MB were within control limits, this anomaly may be due to

Lab QA Samples	Results	Comments
		matrix interference and no corrective action was taken (280-130290-1). The MS/MSD for dissolved manganese on sample "-01" were outside control limits. Because the LCS and MB were within control limits, no corrective action was taken (280-130290-1). MS/MSD for chloride, dissolved antimony and dissolved selenium were outside control limits. Because corresponding LCS and MB were within control limits, this anomaly may be due to matrix interference and no corrective action was taken (280-131406-1).
Metals	Acceptable.	Dissolved Sodium was detected in the instrument blank sample. Associated samples were not reanalyzed because they contained dissolved sodium greater than 10x the result found in the blank. (280-127627-1, 280-128717-1). The CCV was above control limits for dissolved zinc. Because the data are considered to be biased high and dissolved zinc was not detected in the samples above the RL, corrective action was deemed unnecessary. (280-130290-1). The CCV was above control limits for dissolved antimony. Because the data are considered to be biased high and dissolved antimony was not detected in the samples above the RL, corrective action was deemed unnecessary. (280-131406-1).
Duplicates	Acceptable.	No comments.
Organics	Acceptable.	The prepreserved HCl preserved vials exhibited a pH value greater than 2. Because this sample was a leachate sample, a buffering effect was suspected (280-131856-1, 280-131874-1). Samples were diluted for method 8260B due to high concentration of target compounds, therefore reporting limits were elevated (280-131856-1). Samples analyzed with headspace greater than 6 mm in diameter (280-131856-1).
General Comments	Acceptable.	See case narratives.

Field Quality Assurance Samples

Field QA Samples	Sample Group	Analytes	Notes
QC-FB	280-131873-1	Methylene Chloride (9.1 ug/L) Dissolved Calcium (0.70 mg/L) Dissolved Sodium (1.3 mg/L)	
QC-TB	280-131762-1	None.	

QC-TB	280-131856-1	None.	
QC-TB	280-131859-1	None.	
QC-TB	280-131862-1	None.	
QC-TB	280-131873-1	None.	
QC-TB	280-132171-1	None.	

Lab Quality Flags

Flag	Sample Groups	Comments
*	280-131762-1 280-131406-1	RPD of the LCS and LCSD exceeds the control limits.
4	280-131762-1, 280-131856-1, 280-131859-1, 280-131862-1, 280-131873-1, 280-131874-1, 280-132171-1, 280-129849-1, 280-130290-1, 280-131406-1	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	280-131856-1, 280-129849-1	Compound was found in the blank and sample.
E	280-131874-1, 280-132171-1	Result exceeded calibration range.
F1	280-131762-1, 280-131856-1, 280-131859-1, 280-131874-1, 280-132171-1, 280-129849-1, 280-130290-1, 280-131406-1	MS and/or MSD recovery exceeds the control limits.
F2	280-131856-1	MS/MSD RPD exceeds control limits.
F3	280-131862-1, 280-131873-1	Duplicate RPD exceeds the control limit.
H	280-131856-1, 280-132171-1, 280-131406-1	Sample was prepped or analyzed beyond specified holding time.
H3	280-131406-1, 280-131406-1	Sample was received and analyzed past holding time.
J	280-131762-1, 280-131856-1, 280-131859-1, 280-131862-1, 280-131873-1, 280-131874-1, 280-132171-1, 280-129849-1, 280-130290-1, 280-131406-1	Result is <RL, >MDL and concentration is approximate value.
^	280-131856-1, 280-130290-1, 280-131406-1	ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, DLCK, or MRL standard: instrument related QC is outside acceptance limits.

Duplicate Evaluation

Analyte	Units	MW-4 (304-121119-18)	MW-4 DUP (304-121119-20)	RPD (%)
Alkalinity, Total	mg/L	160	160	0.0
Ammonia	mg/L	0.16	0.12	28.6
Arsenic, Total	mg/L	0.010	0.011	9.5
Barium, Total	mg/L	0.018	0.019	5.4
Calcium, Dissolved	mg/L	30	30	0.0
Chloride	mg/L	3.2	3.2	0.0
Iron, Dissolved	mg/L	0.1	0.1 U	0.0
Magnesium, Dissolved	mg/L	15	15	0.0
Manganese, Dissolved	mg/L	0.23	0.23	0.0
Potassium, Dissolved	mg/L	5.3	5.3	0.0
Sodium, Dissolved	mg/L	12	12	0.0
Sulfate	mg/L	15	15	0.0
Total Dissolved Solids	mg/L	210	210	0.0
Total Suspended Solids	mg/L	6.4	6.0	6.5
Zinc, Total	mg/L	0.031	0.030	3.3

U = Non-detection. Reporting limit (RL) used for calculation of RPD when necessary.

Additional Data Flags

Flag	Description
U	Not detected above the method reporting limit.

Qualified Data and Usability

Lab qualifiers are noted. All data, as qualified, are acceptable for use.

Appendix C

Groundwater Database

Groundwater Database - Waterlevels
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Location	Sample Number	Field_Date	Well Casing Elevation	Depth-To-Water	Water Level Elevation	Notes
Monitoring Well						
MW-1A	304-031219-16	3/12/2019	652.57	17.25	635.32	
	304-061819-13	6/18/2019	652.57	18.37	634.20	
	304-092319-01	9/26/2019	652.57	19.35	633.22	
	304-121019-23	12/11/2019	652.57	18.03	634.54	
MW-2A	304-031119-01	3/12/2019	651.93	17.13	634.80	
	304-061919-18	6/18/2019	651.93	18.30	633.63	
	304-092319-02	9/26/2019	651.93	18.98	632.95	
	304-121119-25	12/11/2019	651.93	17.85	634.08	
MW-3	304-031119-03	3/12/2019	637.41	6.12	631.29	
	304-061719-01	6/18/2019	637.41	7.34	630.07	
	304-092319-03	9/26/2019	637.41	8.59	628.82	
	304-121119-26	12/11/2019	637.41	6.98	630.43	
MW-4	304-031219-13	3/12/2019	652.37	21.23	631.14	
	304-061819-14	6/18/2019	652.37	22.52	629.85	
	304-092519-16	9/26/2019	652.37	23.82	628.55	
	304-121119-18	12/11/2019	652.37	22.41	629.96	
MW-5A	304-031119-07	3/12/2019	655.55	26.23	629.32	
	304-061719-05	6/18/2019	655.55	27.33	628.22	
	304-092319-04	9/26/2019	655.55	28.43	627.12	
	304-121019-14	12/11/2019	655.55	27.41	628.14	
MW-6	304-031119-05	3/12/2019	635.71	8.23	627.48	
	304-061719-03	6/18/2019	635.71	9.84	625.87	
	304-092319-06	9/26/2019	635.71	10.08	625.63	
	304-121019-12	12/11/2019	635.71	8.38	627.33	
MW-7	304-031119-09	3/12/2019	656.03	20.88	635.15	
	304-061719-09	6/18/2019	656.03	23.16	632.87	
	304-092319-07	9/26/2019	656.03	25.49	630.54	
	304-121119-27	12/11/2019	656.03	23.92	632.11	
MW-9	304-031119-11	3/12/2019	701.77	8.63	693.14	
	304-061919-19	6/18/2019	701.77	10.06	691.71	
	304-092619-18	9/26/2019	701.77	11.91	689.86	
	304-121119-28	12/11/2019	701.77	10.22	691.55	
MW-10	304-031219-14	3/12/2019	673.87	19.99	653.88	
	304-061719-11	6/18/2019	673.87	21.41	652.46	
	304-092519-14	9/26/2019	678.37	27.92	650.45	
	304-121119-16	12/11/2019	678.37	25.63	652.74	
Leak Detection System						
LDCS-1	304-031119-10	3/11/2019	657.26	25.58	631.68	
	304-061719-08	6/17/2019	657.26	26.70	630.56	
	304-092419-11	9/24/2019	657.26	27.05	630.21	
	304-120919-04	12/9/2019	657.26	26.42	630.84	
LDCS-2A	304-031119-08	3/11/2019	659.24	29.14	630.10	
	304-061719-06	6/17/2019	659.24	29.31	629.93	
	304-092419-10	9/24/2019	659.24	29.80	629.44	
	304-120919-03	12/9/2019	659.24	29.44	629.80	
LDCS-2B	304-031119-06	3/11/2019	661.70	26.08	635.62	
	304-061719-04	6/17/2019	661.70	26.61	635.09	
	304-092419-09	9/24/2019	661.70	27.15	634.55	
	304-120919-02	12/9/2019	661.70	26.47	635.23	

Groundwater Database - Field Parameters
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Location	Sample Number	Sample Date	Sampling Method	pH	Specific Conductivity	Temperature
Monitoring Well						
MW-1A	304-031219-16	3/12/2019	DP	6.51	186	12.48
	304-061819-13	6/18/2019	DP	6.63	173	13.40
	304-092319-01	9/26/2019	DP	6.53	192	13.34
	304-121019-23	12/11/2019	DP	6.99	210	12.20
MW-2A	304-031119-01	3/12/2019	DP	6.75	250	12.22
	304-061919-18	6/18/2019	DP	6.69	243	12.94
	304-092319-02	9/26/2019	DP	7.05	345	12.80
	304-121119-25	12/11/2019	DP	7.14	375	12.80
MW-3	304-031119-03	3/12/2019	DP	6.90	391	9.91
	304-061719-01	6/18/2019	DP	6.65	344	10.15
	304-092319-03	9/26/2019	DP	7.01	343	10.34
	304-121119-26	12/11/2019	DP	7.39	339	10.40
MW-4	304-031219-13	3/12/2019	SP	7.47	328	12.40
	304-061819-14	6/18/2019	SP	7.49	297	13.30
	304-092519-16	9/26/2019	SP	7.17	332	13.60
	304-121119-18	12/11/2019	SP	7.24	340	12.27
MW-5A	304-031119-07	3/12/2019	DP	7.18	377	11.99
	304-061719-05	6/18/2019	DP	7.20	359	12.03
	304-092319-04	9/26/2019	DP	7.20	299	12.18
	304-121019-14	12/11/2019	DP	7.53	320	11.49
MW-6	304-031119-05	3/12/2019	DP	7.18	303	10.08
	304-061719-03	6/18/2019	DP	7.12	298	10.35
	304-092319-06	9/26/2019	DP	7.16	322	10.44
	304-121019-12	12/11/2019	DP	7.42	329	9.88
MW-7	304-031119-09	3/12/2019	DP	7.22	352	10.21
	304-061719-09	6/18/2019	DP	7.22	379	10.31
	304-092319-07	9/26/2019	DP	7.34	358	10.43
	304-121119-27	12/11/2019	DP	7.49	341	10.30
MW-9	304-031119-11	3/12/2019	DP	6.61	136	9.68
	304-061919-19	6/18/2019	DP	6.42	137	10.49
	304-092619-18	9/26/2019	DP	6.26	137	10.60
	304-121119-28	12/11/2019	DP	6.78	135	10.00
MW-10	304-031219-14	3/12/2019	DP	6.12	270	9.80
	304-061719-11	6/18/2019	DP	6.98	258	10.76
	304-092519-14	9/26/2019	DP	6.15	295	10.22
	304-121119-16	12/11/2019	DP	6.21	270	10.03

Groundwater Database - Field Parameters
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Location	Sample Number	Sample Date	Sampling Method	pH	Specific Conductivity	Temperature
Leak Detection System						
LDCS-1	304-031119-10	3/11/2019	DB	6.08	374	20.30
	304-061719-08	6/17/2019	DB	6.35	425	24.50
	304-092419-11	9/24/2019	DB	6.01	512	20.82
	304-120919-04	12/9/2019	DB	6.36	409	15.83
LDCS-2A	304-031119-08	3/11/2019	DB	6.98	797	21.20
	304-061719-06	6/17/2019	DB	7.20	776	23.30
	304-092419-10	9/24/2019	DB	6.73	817	20.27
	304-120919-03	12/9/2019	DB	7.28	816	15.00
LDCS-2B	304-031119-06	3/11/2019	DB	6.87	739	20.20
	304-061719-04	6/17/2019	DB	7.08	693	21.60
	304-092419-09	9/24/2019	DB	6.55	718	18.60
	304-120919-02	12/9/2019	DB	6.89	719	13.51
LDCS-3A	304-031119-04	3/11/2019	DP	6.39	749	19.40
	304-061719-02	6/17/2019	DP	6.45	806	21.80
	304-092419-08	9/24/2019	DP	7.07	780	18.17
	304-120919-01	12/9/2019	DP	6.44	828	15.08
LDCS-4A	304-031119-02	3/11/2019	DP	6.25	772	19.40
	304-061719-10	6/17/2019	DP	6.36	938	25.20
	304-092419-12	9/24/2019	DP	6.36	910	24.56
	304-120919-05	12/9/2019	DP	6.14	747	20.48
LDCS-4B	304-031219-17	3/12/2019	DP	6.32	911	27.00
	304-040519-01	4/5/2019	DP	6.29	951	21.46
	304-061719-12	6/17/2019	DP	6.47	1,095	25.50
	304-092419-13	9/24/2019	DP	6.33	1,071	24.98
	304-120919-06	12/9/2019	DP	6.31	1,004	20.75
LDCS-5	304-031119-12	3/11/2019	DP	6.30	757	17.30
	304-061819-17	6/18/2019	DP	6.84	1,329	26.28
	304-071219-01	7/12/2019	DP	6.68	1,389	28.27
	304-082319-01	8/23/2019	DP	7.35	1,074	28.21
	304-092519-17	9/25/2019	DP	6.46	838	22.81
	304-103019-01	10/30/2019	DP	6.58	1,038	17.13
	304-112519-01	11/25/2019	DP	6.59	1,371	16.29
	304-121019-10	12/10/2019	DP	6.62	1,212	14.42

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Location	Sample Number	Sample Date	Sampling Method	pH	Specific Conductivity	Temperature
LDCS-6	304-031219-19	3/12/2019	DP	6.83	1,145	9.50
	304-061919-20	6/19/2019	DP	6.98	1,037	20.70
	304-092619-19	9/26/2019	DP	6.66	1,113	18.81
	304-121019-08	12/10/2019	DP	6.53	1,029	9.89
LDCS-7	304-082919-01	8/29/2019	DP	6.20	866	18.40
	304-092519-15	9/25/2019	DP	6.40	1,395	17.66
	304-101819-01	10/18/2019	DP	6.23	1,426	12.75
	304-112519-02	11/25/2019	DP	6.31	1,646	12.04
	304-121619-24	12/16/2019	DP	5.92	1,139	8.40
Leachate						
Leachate, Cell 1	304-121019-13	12/10/2019	GB	7.40	37,427	19.90
Leachate, Cell 2A	304-121019-11	12/10/2019	GB	7.76	32,505	18.40
Leachate, Cell 2B	304-121019-09	12/10/2019	GB	7.47	26,854	18.50
Leachate, Cell 3A	304-121019-07	12/10/2019	GB	7.29	16,250	15.80
Leachate, Cell 4A	304-121019-15	12/10/2019	GB	7.85	32,535	19.20
Leachate, Cell 4B	304-061819-15	6/18/2019	GB	8.04	30,050	23.02
Leachate, Cell 4B	304-121019-17	12/10/2019	GB	7.64	25,233	16.30
Leachate, Cell 5	304-121119-19	12/11/2019	GB	7.61	25,575	18.10
Leachate, Cell 6	304-121019-21	12/10/2019	GB	7.66	26,802	12.80

Notes:
DB = Dedicated bailer
DP = Dedicated pump
GB = Grab sample
SP = Submersible pump

Groundwater Database - Inorganic Parameters
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Location	Sample ID	Sample Date	Alkalinity, Total	Ammonia	Chloride	Nitrate	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
Monitoring Well										
MW-1A	304-031219-16	3/12/2019	97	0.1 U	2.5	0.5 U H	3.6	160	1 U	4 U
	304-061819-13	6/18/2019	92	0.12	2.0	0.5 U	3	160 B	1 U	4 U
	304-092319-01	9/26/2019	93	0.1 U	2.2	0.5 U	3.1	140	1 U	4 U
	304-121019-23	12/11/2019	100	0.16	2.3	0.5 U	3.5	160	1 U	23
MW-2A	304-031119-01	3/12/2019	120	0.1 U	3.5	0.5 U	6.8	180	1 U	4 U
	304-061919-18	6/18/2019	120	0.10	3.0	0.5 U	5.2	170	1 U	11
	304-092319-02	9/26/2019	140	0.15	5.0	0.5 U	25	210	1.2	4 U
	304-121119-25	12/11/2019	140	0.21	6.4	0.5 U	42	240	1.1	4 U
MW-3	304-031119-03	3/12/2019	170	0.13	4.0	0.5 U	28	880	1	4 U
	304-061719-01	6/18/2019	140	0.15	3.7	0.5 U	29	220	1 U	4 U
	304-092319-03	9/26/2019	150	0.1 U	4.1	0.5 U	28	200	1	4 U
	304-121119-26	12/11/2019	140	0.15	3.6	0.5 U	28	200	1 U	4 U
MW-4	304-031219-13	3/12/2019	160	0.15	3.7	0.5 U H	10	230	1 U	4 U
	304-061819-14	6/18/2019	150	0.18	3.0	0.5 U	9.6	210 B	1 U	4 U
	304-092519-16	9/26/2019	160	0.13	3.3	0.5 U	11	190	1 U	4 U
	304-121119-18	12/11/2019	160	0.16	3.2	0.5 U	15	210	1 U	6.4
MW-5A	304-031119-07	3/12/2019	180	0.14	3.6	0.5 U	18	230	1 U	4 U
	304-061719-05	6/18/2019	170	0.17	3.1	0.5 U	14	220	1 U	4 U
	304-092319-04	9/26/2019	150	0.1 U	2.3	0.5 U	5.3	160	1 U	4 U
	304-121019-14	12/11/2019	160	0.12	2.6	0.5 U	9.0	200	1 U	4 U
MW-6	304-031119-05	3/12/2019	140	0.12	5.4	0.5 U	7.2	200	1 U	4 U
	304-061719-03	6/18/2019	140	0.14	5.4	0.5 U	6.9	190	1 U	4 U
	304-092319-06	9/26/2019	150	0.1 U	5.4	0.5 U	7.0	190	1.0	4 U
	304-121019-12	12/11/2019	160	0.14	5.4	0.5 U	7.7	210	1 U	4 U

Groundwater Database - Inorganic Parameters
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Location	Sample ID	Sample Date	Alkalinity, Total	Ammonia	Chloride	Nitrate	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
MW-7	304-031119-09	3/12/2019	190	0.19	3.4	0.5 U	3.7	220	1 U	4 U
	304-061719-09	6/18/2019	200	0.24	3.2	0.5 U	3.2	220	1 U	4 U
	304-092319-07	9/26/2019	180	0.17	3.1	0.5 U	4.1	200	1 U	4 U
	304-121119-27	12/11/2019	180	0.17	2.8	0.5 U	4.6	190	1 U	4 U
MW-9	304-031119-11	3/12/2019	70	0.1 U	1.9	0.5 U	1.7	110	1 U	4 U
	304-061919-19	6/18/2019	68	0.1 U	1.6	0.5 U	1.8	140	1 U	4 U
	304-092619-18	9/26/2019	69	0.1 U	1.8	0.5 U	1.7	130	1 U	4 U
	304-121119-28	12/11/2019	67	0.1 U	1.6	0.5 U	1.8	130	1 U	4 U
MW-10	304-031219-14	3/12/2019	96	0.1 U	8.7	4.4 H	7.1	210	1 U	4 U
	304-061719-11	6/18/2019	100	0.1 U	8.0	4.7	7.1	200	1 U	4 U
	304-092519-14	9/26/2019	110	0.1 U	8.8	4.2	7.4	200	1 U	12
	304-121119-16	12/11/2019	100	0.1 U	8.3	3.9	6.8	180	1 U	11
Leak Detection System										
LDCS-1	304-031119-10	3/11/2019	190	0.1 U	5.3	0.5 U	7.1	240	3.2	
	304-061719-08	6/17/2019	200	0.12	4.4	0.5 U	6.1	260	2.5	
	304-092419-11	9/24/2019	270	0.17	4.5	0.5 U	8.5	300	3.9	
	304-120919-04	12/9/2019	210	0.14	4.2	0.5 U	7.8	250	3.1	
LDCS-2A	304-031119-08	3/11/2019	410	0.1 U	4.6	0.5 U	25	460	2.5	
	304-061719-06	6/17/2019	410	0.1 U	4.0	0.5 U	21	470	2.5	
	304-092419-10	9/24/2019	450	0.1 U	4.8	0.5 U	16	490	2.3	
	304-120919-03	12/9/2019	430	0.1 U	3.7	0.5 U	22	490	2.4	
LDCS-2B	304-031119-06	3/11/2019	320	0.1 U	4.7	0.5 U	70	440	1.9	
	304-061719-04	6/17/2019	310	0.1 U	4.0	0.5 U	58	430	2.4	
	304-092419-09	9/24/2019	330	0.1 U	4.9	0.5 U	54	420	2.3	
	304-120919-02	12/9/2019	330	0.1 U	4.6	0.5 U	59	410	2.3	

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Location	Sample ID	Sample Date	Alkalinity, Total	Ammonia	Chloride	Nitrate	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
LDCS-3A	304-031119-04	3/11/2019	340	0.1 U	5.2	0.5 U	71	450	1.8	
	304-061719-02	6/17/2019	350	0.1 U	4.7	0.5 U	75	490	1.6	
	304-092419-08	9/24/2019	360	0.1 U	4.9	0.5 U	75	480	1.6	
	304-120919-01	12/9/2019	370	0.1 U	4.6	0.5 U	78	510	1.8	
LDCS-4A	304-031119-02	3/11/2019	340	0.1 U	22	0.5 U	57	500	4.1	
	304-061719-10	6/17/2019	380	0.15	20	0.5 U	56	520	5.0	
	304-092419-12	9/24/2019	390	0.42	25	0.5 U	57	530	6.8	
	304-120919-05	12/9/2019	330	0.57	15	0.5 U	57	460	6.2	
LDCS-4B	304-031219-17	3/12/2019	340	0.32	30	0.5 U H	95	590	24	
	304-040519-01	4/5/2019	340	0.33 J	24	0.2 U	110 B	550	4.3	
	304-061719-12	6/17/2019	470	1.0	32	0.5 U	60	630	9.9	
	304-092419-13	9/24/2019	410	0.58	30	0.5 U	130	660	4.5	
	304-120919-06	12/9/2019	410	0.41	21	0.5 U	110	620	3.9	
LDCS-5	304-031119-12	3/11/2019	310	1.4	34	0.5 U	77	500	3.9	
	304-061819-17	6/18/2019	640	13	70	0.5 U	19	780	28	
	304-071219-01	7/12/2019	510	16	48	0.5 U	20	610	16	
	304-082319-01	8/23/2019	510	13	37	0.5 U	17	660	14	
	304-092519-17	9/25/2019	410	6.8	23	0.5 U	12	500	9.5	
	304-103019-01	10/30/2019	490	13	41	0.5 U	21	580	16	
	304-112519-01	11/25/2019	610	13	94	0.5 U H	10	800	49 H	
	304-121019-10	12/10/2019	550	16	58	0.5 U	13	640	19	
LDCS-6	304-031219-19	3/12/2019	420	0.1 U	9.9	0.5 U H	170	680	3.7	
	304-061919-20	6/19/2019	440	0.1 U	8.8	0.5 U	160	710	3.7	
	304-092619-19	9/26/2019	490	0.1 U	9.1	0.5 U	130	660	3.5	
	304-121019-08	12/10/2019	490	0.12	7.2	0.5 U	92	640	3.3	

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Location	Sample ID	Sample Date	Alkalinity, Total	Ammonia	Chloride	Nitrate	Sulfate	Total Dissolved Solids	Total Organic Carbon	Total Suspended Solids
LDCS-7	304-082919-01	8/29/2019	380	0.1 U	9.7 H	0.5 U	87 H	560	4.0	
	304-092519-15	9/25/2019	560	0.1 U	32	0.77	180	900	930	
	304-101819-01	10/18/2019	440	0.1 U	21	0.99	330	1,000	3.6	
	304-112519-02	11/25/2019	540	0.16	98	0.5 U H	230	1,000	12	
	304-121619-24	12/16/2019	580	0.14	68	0.5 U H	200	1,000	18	
Leachate										
Leachate, Cell 1	304-121019-13	12/10/2019	11,000	1,800	7,400	2.3	2.6	22,000	1,100	
Leachate, Cell 2A	304-121019-11	12/10/2019	13,000 H B	1,600	4,600	1.8	2.6	19,000	1,300	
Leachate, Cell 2B	304-121019-09	12/10/2019	10,000	2,400	3,300	1.3	2.7	13,000	380	
Leachate, Cell 3A	304-121019-07	12/10/2019	6,500	1,600	1,800	0.58	2.6	16,000	800	
Leachate, Cell 4A	304-121019-15	12/10/2019	14,000 H B	2,100	4,600	1.9	3.8	19,000	2,800	
Leachate, Cell 4B	304-061819-15	6/18/2019	14,000 H B	1,700	3,700	4.9	5.4	18,000	1,800 H	
Leachate, Cell 4B	304-121019-17	12/10/2019	9,900	1,300	2,600	1.2	5.1	15,000	1,300	
Leachate, Cell 5	304-121119-19	12/11/2019	10,000	1,500	3,700	13	8.9	13,000	1,900	
Leachate, Cell 6	304-121019-21	12/10/2019	11,000	1,600	3,100	1.0	7.3	12,000	1,800	
Quality Control										
QC, FB	304-031219-15	3/12/2019	10 U	0.1 U	0.2 U	0.5 U	0.2 U	16	1 U	4 U
	304-061819-16	6/18/2019	10 U	0.1 U	0.2 U	0.5 U	0.2 U	10 U	1 U	4 U
	304-092619-20	9/26/2019	10 U	0.1 U	0.2 U	0.5 U	0.2 U	10 U	1 U	4 U
	304-121119-22	12/11/2019	10 U	0.1 U	0.2 U	0.5 U	0.2 U	10 U	1 U	4 U

Notes:
B = Compound found in the blank and the sample
H = Sample was prepped or analyzed beyond the specified holding time
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
U = Sample result was not reported at or above the MRL

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Location	Sample Number	Sample Date	Antimony, Dissolved	Antimony, Total	Arsenic, Dissolved	Arsenic, Total	Barium, Dissolved	Barium, Total	Beryllium, Dissolved	Beryllium, Total	Cadmium, Dissolved	Cadmium, Total
Monitoring Well												
MW-1A	304-031219-16	3/12/2019		0.05 U		0.005 U		0.023		0.001 U		0.001 U
	304-061819-13	6/18/2019		0.05 U		0.005 U		0.021		0.001 U		0.001 U
	304-092319-01	9/26/2019		0.05 U		0.005 U		0.019		0.001 U		0.001 U
	304-121019-23	12/11/2019		0.05 U		0.005 U		0.022		0.001 U		0.001 U
MW-2A	304-031119-01	3/12/2019		0.05 U		0.005 U		0.012		0.001 U		0.001 U
	304-061919-18	6/18/2019		0.05 U		0.005 U		0.013		0.001 U		0.001 U
	304-092319-02	9/26/2019		0.05 U		0.005 U		0.017		0.001 U		0.001 U
	304-121119-25	12/11/2019		0.05 U		0.005 U		0.018		0.001 U		0.001 U
MW-3	304-031119-03	3/12/2019		0.05 U		0.005 U		0.013		0.001 U		0.001 U
	304-061719-01	6/18/2019		0.05 U		0.005 U		0.012		0.001 U		0.001 U
	304-092319-03	9/26/2019		0.05 U		0.005 U		0.0095		0.001 U		0.001 U
	304-121119-26	12/11/2019		0.05 U		0.005 U		0.012		0.001 U		0.001 U
MW-4	304-031219-13	3/12/2019		0.05 U		0.0097		0.016		0.001 U		0.001 U
	304-061819-14	6/18/2019		0.05 U		0.0091		0.016		0.001 U		0.001 U
	304-092519-16	9/26/2019		0.05 U		0.0093		0.015		0.001 U		0.001 U
	304-121119-18	12/11/2019		0.05 U		0.010		0.018		0.001 U		0.001 U
MW-5A	304-031119-07	3/12/2019		0.05 U		0.0057		0.014		0.001 U		0.001 U
	304-061719-05	6/18/2019		0.05 U		0.0055		0.012		0.001 U		0.001 U
	304-092319-04	9/26/2019		0.05 U		0.005 U		0.0099		0.001 U		0.001 U
	304-121019-14	12/11/2019		0.05 U		0.0050		0.012		0.001 U		0.001 U
MW-6	304-031119-05	3/12/2019		0.05 U		0.0073		0.012		0.001 U		0.001 U
	304-061719-03	6/18/2019		0.05 U		0.0070		0.011		0.001 U		0.001 U
	304-092319-06	9/26/2019		0.05 U		0.0068		0.011		0.001 U		0.001 U
	304-121019-12	12/11/2019		0.05 U		0.0077		0.013		0.001 U		0.001 U
MW-7	304-031119-09	3/12/2019		0.05 U		0.0053		0.014		0.001 U		0.001 U
	304-061719-09	6/18/2019		0.05 U		0.0052		0.015		0.001 U		0.001 U
	304-092319-07	9/26/2019		0.05 U		0.0054		0.013		0.001 U		0.001 U
	304-121119-27	12/11/2019		0.05 U		0.0053		0.014		0.001 U		0.001 U

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Location	Sample Number	Sample Date	Chromium, Dissolved	Chromium, Total	Cobalt, Dissolved	Cobalt, Total	Copper, Dissolved	Copper, Total	Lead, Dissolved	Lead, Total	Nickel, Dissolved	Nickel, Total
Monitoring Well												
MW-1A	304-031219-16	3/12/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-061819-13	6/18/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-092319-01	9/26/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-121019-23	12/11/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
MW-2A	304-031119-01	3/12/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-061919-18	6/18/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-092319-02	9/26/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-121119-25	12/11/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
MW-3	304-031119-03	3/12/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-061719-01	6/18/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-092319-03	9/26/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-121119-26	12/11/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
MW-4	304-031219-13	3/12/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-061819-14	6/18/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-092519-16	9/26/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-121119-18	12/11/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
MW-5A	304-031119-07	3/12/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-061719-05	6/18/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-092319-04	9/26/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-121019-14	12/11/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
MW-6	304-031119-05	3/12/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-061719-03	6/18/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-092319-06	9/26/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-121019-12	12/11/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
MW-7	304-031119-09	3/12/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-061719-09	6/18/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-092319-07	9/26/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-121119-27	12/11/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U

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Location	Sample Number	Sample Date	Selenium, Dissolved	Selenium, Total	Silver, Dissolved	Silver, Total	Thallium, Dissolved	Thallium, Total	Vanadium, Dissolved	Vanadium, Total	Zinc, Dissolved	Zinc, Total
Monitoring Well												
MW-1A	304-031219-16	3/12/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-061819-13	6/18/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-092319-01	9/26/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.019
	304-121019-23	12/11/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
MW-2A	304-031119-01	3/12/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-061919-18	6/18/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-092319-02	9/26/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-121119-25	12/11/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
MW-3	304-031119-03	3/12/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-061719-01	6/18/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-092319-03	9/26/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-121119-26	12/11/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
MW-4	304-031219-13	3/12/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.016
	304-061819-14	6/18/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.026
	304-092519-16	9/26/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.031
	304-121119-18	12/11/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.031
MW-5A	304-031119-07	3/12/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-061719-05	6/18/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-092319-04	9/26/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-121019-14	12/11/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
MW-6	304-031119-05	3/12/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-061719-03	6/18/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-092319-06	9/26/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-121019-12	12/11/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
MW-7	304-031119-09	3/12/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-061719-09	6/18/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-092319-07	9/26/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-121119-27	12/11/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U

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Location	Sample Number	Sample Date	Antimony, Dissolved	Antimony, Total	Arsenic, Dissolved	Arsenic, Total	Barium, Dissolved	Barium, Total	Beryllium, Dissolved	Beryllium, Total	Cadmium, Dissolved	Cadmium, Total
MW-9	304-031119-11	3/12/2019		0.05 U		0.005 U		0.005 U		0.001 U		0.001 U
	304-061919-19	6/18/2019		0.05 U		0.005 U		0.0051		0.001 U		0.001 U
	304-092619-18	9/26/2019		0.05 U		0.005 U		0.005 U		0.001 U		0.001 U
	304-121119-28	12/11/2019		0.05 U		0.005 U		0.005 U		0.001 U		0.001 U
MW-10	304-031219-14	3/12/2019		0.05 U		0.005 U		0.013		0.001 U		0.001 U
	304-061719-11	6/18/2019		0.05 U		0.005 U		0.015		0.001 U		0.001 U
	304-092519-14	9/26/2019		0.05 U		0.005 U		0.014		0.001 U		0.001 U
	304-121119-16	12/11/2019		0.05 U		0.005 U		0.014		0.001 U		0.001 U
Leak Detection System												
LDCS-1	304-031119-10	3/11/2019	0.05 U		0.0094		0.020					
	304-061719-08	6/17/2019	0.05 U		0.0094		0.024					
	304-092419-11	9/24/2019	0.05 U		0.0120		0.025					
	304-120919-04	12/9/2019	0.05 U		0.0082		0.022					
LDCS-2A	304-031119-08	3/11/2019	0.05 U		0.0068		0.019					
	304-061719-06	6/17/2019	0.05 U		0.0072		0.017					
	304-092419-10	9/24/2019	0.05 U		0.0070		0.013					
	304-120919-03	12/9/2019	0.05 U		0.0067		0.0093					
LDCS-2B	304-031119-06	3/11/2019	0.05 U		0.0051		0.016					
	304-061719-04	6/17/2019	0.05 U		0.005 U		0.015					
	304-092419-09	9/24/2019	0.05 U		0.0053		0.018					
	304-120919-02	12/9/2019	0.05 U		0.005 U		0.013					
LDCS-3A	304-031119-04	3/11/2019	0.05 U		0.005 U		0.014					
	304-061719-02	6/17/2019	0.05 U		0.005 U		0.019					
	304-092419-08	9/24/2019	0.05 U		0.005 U		0.016					
	304-120919-01	12/9/2019	0.05 U		0.005 U		0.017					
LDCS-4A	304-031119-02	3/11/2019	0.05 U		0.0082		0.034					
	304-061719-10	6/17/2019	0.05 U		0.0160		0.045					
	304-092419-12	9/24/2019	0.05 U		0.0170		0.039					
	304-120919-05	12/9/2019	0.05 U		0.0120		0.034					
LDCS-4B	304-031219-17	3/12/2019	0.05 U		0.011		0.041					
	304-040519-01	4/5/2019	0.00013 J		0.011		0.035					
	304-061719-12	6/17/2019	0.05 U		0.034		0.059					
	304-092419-13	9/24/2019	0.05 U		0.005 U		0.038					
	304-120919-06	12/9/2019	0.05 U		0.005 U		0.036					

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Location	Sample Number	Sample Date	Chromium, Dissolved	Chromium, Total	Cobalt, Dissolved	Cobalt, Total	Copper, Dissolved	Copper, Total	Lead, Dissolved	Lead, Total	Nickel, Dissolved	Nickel, Total
MW-9	304-031119-11	3/12/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-061919-19	6/18/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-092619-18	9/26/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-121119-28	12/11/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
MW-10	304-031219-14	3/12/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-061719-11	6/18/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-092519-14	9/26/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-121119-16	12/11/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
Leak Detection System												
LDCS-1	304-031119-10	3/11/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-061719-08	6/17/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-092419-11	9/24/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-120919-04	12/9/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
LDCS-2A	304-031119-08	3/11/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-061719-06	6/17/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-092419-10	9/24/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-120919-03	12/9/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
LDCS-2B	304-031119-06	3/11/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-061719-04	6/17/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-092419-09	9/24/2019	0.005 U		0.0013		0.01 U		0.002 U		0.02 U	
	304-120919-02	12/9/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
LDCS-3A	304-031119-04	3/11/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-061719-02	6/17/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-092419-08	9/24/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-120919-01	12/9/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
LDCS-4A	304-031119-02	3/11/2019	0.005 U		0.0024		0.01 U		0.002 U		0.02 U	
	304-061719-10	6/17/2019	0.005 U		0.0050		0.01 U		0.002 U		0.02 U	
	304-092419-12	9/24/2019	0.005 U		0.0037		0.01 U		0.002 U		0.02 U	
	304-120919-05	12/9/2019	0.005 U		0.0043		0.01 U		0.002 U		0.02 U	
LDCS-4B	304-031219-17	3/12/2019	0.005 U		0.0017		0.01 U		0.002 U		0.02 U	
	304-040519-01	4/5/2019	0.0003 J		0.0012		0.002 U		0.0008 U		0.0038	
	304-061719-12	6/17/2019	0.005 U		0.0015		0.01 U		0.002 U		0.02 U	
	304-092419-13	9/24/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-120919-06	12/9/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	

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Location	Sample Number	Sample Date	Selenium, Dissolved	Selenium, Total	Silver, Dissolved	Silver, Total	Thallium, Dissolved	Thallium, Total	Vanadium, Dissolved	Vanadium, Total	Zinc, Dissolved	Zinc, Total
MW-9	304-031119-11	3/12/2019		0.005 U		0.005 U		0.005 U		0.014		0.01 U
	304-061919-19	6/18/2019		0.005 U		0.005 U		0.005 U		0.013		0.01 U
	304-092619-18	9/26/2019		0.005 U		0.005 U		0.005 U		0.014		0.01 U
	304-121119-28	12/11/2019		0.005 U		0.005 U		0.005 U		0.016		0.01 U
MW-10	304-031219-14	3/12/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-061719-11	6/18/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-092519-14	9/26/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-121119-16	12/11/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
Leak Detection System												
LDCS-1	304-031119-10	3/11/2019							0.005 U		0.01 U	
	304-061719-08	6/17/2019							0.005 U		0.01 U	
	304-092419-11	9/24/2019							0.005 U		0.01 U	
	304-120919-04	12/9/2019							0.005 U		0.01 U	
LDCS-2A	304-031119-08	3/11/2019							0.005 U		0.01 U	
	304-061719-06	6/17/2019							0.005 U		0.01 U	
	304-092419-10	9/24/2019							0.005 U		0.01 U	
	304-120919-03	12/9/2019							0.005 U		0.01 U	
LDCS-2B	304-031119-06	3/11/2019							0.005 U		0.01 U	
	304-061719-04	6/17/2019							0.005 U		0.01 U	
	304-092419-09	9/24/2019							0.005 U		0.01 U	
	304-120919-02	12/9/2019							0.005 U		0.01 U	
LDCS-3A	304-031119-04	3/11/2019							0.005 U		0.01 U	
	304-061719-02	6/17/2019							0.005 U		0.01 U	
	304-092419-08	9/24/2019							0.005 U		0.01 U	
	304-120919-01	12/9/2019							0.005 U		0.01 U	
LDCS-4A	304-031119-02	3/11/2019							0.005 U		0.01 U	
	304-061719-10	6/17/2019							0.005 U		0.01 U	
	304-092419-12	9/24/2019							0.005 U		0.01 U	
	304-120919-05	12/9/2019							0.005 U		0.01 U	
LDCS-4B	304-031219-17	3/12/2019							0.005 U		0.01 U	
	304-040519-01	4/5/2019							0.0013 J		0.007 U	
	304-061719-12	6/17/2019							0.005 U		0.01 U	
	304-092419-13	9/24/2019							0.005 U		0.01 U	
	304-120919-06	12/9/2019							0.005 U		0.01 U	

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Location	Sample Number	Sample Date	Antimony, Dissolved	Antimony, Total	Arsenic, Dissolved	Arsenic, Total	Barium, Dissolved	Barium, Total	Beryllium, Dissolved	Beryllium, Total	Cadmium, Dissolved	Cadmium, Total
LDCS-5	304-031119-12	3/11/2019	0.05 U		0.0054		0.047		0.001 U		0.001 U	
	304-061819-17	6/18/2019	0.05 U		0.0140		0.120		0.001 U		0.001 U	
	304-071219-01	7/12/2019	0.05 U		0.0150		0.110		0.001 U		0.001 U	
	304-082319-01	8/23/2019	0.05 U		0.0058		0.080		0.001 U		0.001 U	
	304-092519-17	9/25/2019	0.05 U		0.0110		0.062		0.001 U		0.001 U	
	304-103019-01	10/30/2019	0.05 U		0.0086		0.076		0.001 U		0.001 U	
	304-112519-01	11/25/2019	0.05 U		0.0150		0.130		0.0007 U		0.0005 U	
	304-121019-10	12/10/2019	0.05 U		0.0130		0.099		0.001 U		0.001 U	
LDCS-6	304-031219-19	3/12/2019	0.05 U		0.005 U		0.024		0.001 U		0.001 U	
	304-061919-20	6/19/2019	0.05 U		0.005 U		0.032		0.001 U		0.001 U	
	304-092619-19	9/26/2019	0.05 U		0.005 U		0.026		0.001 U		0.001 U	
	304-121019-08	12/10/2019	0.05 U		0.005 U		0.026		0.001 U		0.001 U	
LDCS-7	304-082919-01	8/29/2019	0.05 U		0.005 U		0.04		0.001 U		0.001 U	
	304-092519-15	9/25/2019	0.05 U		0.005 U		0.044		0.001 U		0.001 U	
	304-101819-01	10/18/2019	0.05 U		0.005 U		0.22		0.001 U		0.001 U	
	304-112519-02	11/25/2019	0.05 U		0.005 U		0.05		0.0007 U		0.0005 U	
	304-121619-24	12/16/2019	0.05 U		0.005 U		0.06		0.001 U		0.001 U	
Leachate												
Leachate, Cell 1	304-121019-13	12/10/2019		0.05 U		0.110		1.2		0.001 U		0.0013 U
Leachate, Cell 2A	304-121019-11	12/10/2019		0.05 U		0.120		1.1		0.001 U		0.0013 U
Leachate, Cell 2B	304-121019-09	12/10/2019		0.054		0.150		1.2		0.001 U		0.0013 U
Leachate, Cell 3A	304-121019-07	12/10/2019		0.05 U		0.053		0.83		0.001 U		0.0013 U
Leachate, Cell 4A	304-121019-15	12/10/2019		0.097		0.260		1.1		0.001 U		0.0013 U
Leachate, Cell 4B	304-061819-15	6/18/2019		0.05 U		0.110		1.3		0.001 U		0.001 U
Leachate, Cell 4B	304-121019-17	12/10/2019		0.05 U		0.089		0.58		0.001 U		0.0013 U
Leachate, Cell 5	304-121119-19	12/11/2019		0.05 U		0.190		1.2		0.001 U		0.0013 U
Leachate, Cell 6	304-121019-21	12/10/2019		0.05 U		0.230		1.0		0.001 U		0.0016
Quality Control												
QC, FB	304-031219-15	3/12/2019		0.05 U		0.005 U		0.005 U		0.001 U		0.001 U
	304-061819-16	6/18/2019		0.05 U		0.005 U		0.005 U		0.001 U		0.001 U
	304-092619-20	9/26/2019		0.05 U		0.005 U		0.005 U		0.001 U		0.001 U
	304-121119-22	12/11/2019		0.05 U		0.005 U		0.005 U		0.001 U		0.001 U

Notes:
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
U = Sample result was not reported at or above the MRL

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Location	Sample Number	Sample Date	Chromium, Dissolved	Chromium, Total	Cobalt, Dissolved	Cobalt, Total	Copper, Dissolved	Copper, Total	Lead, Dissolved	Lead, Total	Nickel, Dissolved	Nickel, Total
LDCS-5	304-031119-12	3/11/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-061819-17	6/18/2019	0.005 U		0.0018		0.01 U		0.002 U		0.02 U	
	304-071219-01	7/12/2019	0.005 U		0.0014		0.01 U		0.002 U		0.02 U	
	304-082319-01	8/23/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-092519-17	9/25/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-103019-01	10/30/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-112519-01	11/25/2019	0.005 U		0.0014		0.01 U		0.002 U		0.02 U	
	304-121019-10	12/10/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
LDCS-6	304-031219-19	3/12/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-061919-20	6/19/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-092619-19	9/26/2019	0.005 U		0.0024		0.01 U		0.002 U		0.02 U	
	304-121019-08	12/10/2019	0.005 U		0.0012		0.01 U		0.002 U		0.02 U	
LDCS-7	304-082919-01	8/29/2019	0.005 U		0.001 U		0.01 U		0.002 U		0.02 U	
	304-092519-15	9/25/2019	0.005 U		0.0013		0.01 U		0.002 U		0.02 U	
	304-101819-01	10/18/2019	0.005 U		0.0017		0.01 U		0.002 U		0.02 U	
	304-112519-02	11/25/2019	0.005 U		0.0051		0.01 U		0.002 U		0.02 U	
	304-121619-24	12/16/2019	0.005 U		0.0050		0.01 U		0.002 U		0.02 U	
Leachate												
Leachate, Cell 1	304-121019-13	12/10/2019		0.36		0.030		0.011		0.0076		0.61
Leachate, Cell 2A	304-121019-11	12/10/2019		0.58		0.051		0.023		0.021		0.78
Leachate, Cell 2B	304-121019-09	12/10/2019		0.46		0.039		0.170		0.013		0.50
Leachate, Cell 3A	304-121019-07	12/10/2019		0.30		0.028		0.014		0.010		0.26
Leachate, Cell 4A	304-121019-15	12/10/2019		0.59		0.038		0.044		0.016		0.52
Leachate, Cell 4B	304-061819-15	6/18/2019		0.58		0.038		0.074		0.019		0.62
Leachate, Cell 4B	304-121019-17	12/10/2019		0.23		0.016		0.039		0.010		0.25
Leachate, Cell 5	304-121119-19	12/11/2019		0.72		0.041		0.078		0.036		0.61
Leachate, Cell 6	304-121019-21	12/10/2019		1.0		0.044		0.082		0.084		0.69
Quality Control												
QC, FB	304-031219-15	3/12/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-061819-16	6/18/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-092619-20	9/26/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U
	304-121119-22	12/11/2019		0.005 U		0.001 U		0.01 U		0.002 U		0.02 U

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Location	Sample Number	Sample Date	Selenium, Dissolved	Selenium, Total	Silver, Dissolved	Silver, Total	Thallium, Dissolved	Thallium, Total	Vanadium, Dissolved	Vanadium, Total	Zinc, Dissolved	Zinc, Total
LDCS-5	304-031119-12	3/11/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.01 U	
	304-061819-17	6/18/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.01 U	
	304-071219-01	7/12/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.01 U	
	304-082319-01	8/23/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.01 U	
	304-092519-17	9/25/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.01 U	
	304-103019-01	10/30/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.01 U	
	304-112519-01	11/25/2019	0.005 U		0.0005 U		0.005 U		0.004 U		0.01 U	
	304-121019-10	12/10/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.01 U	
LDCS-6	304-031219-19	3/12/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.01 U	
	304-061919-20	6/19/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.016	
	304-092619-19	9/26/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.017	
	304-121019-08	12/10/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.016	
LDCS-7	304-082919-01	8/29/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.027	
	304-092519-15	9/25/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.01 U	
	304-101819-01	10/18/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.01 U	
	304-112519-02	11/25/2019	0.005 U		0.0005 U		0.005 U		0.004 U		0.01 U	
	304-121619-24	12/16/2019	0.005 U		0.005 U		0.005 U		0.005 U		0.011	
Leachate												
Leachate, Cell 1	304-121019-13	12/10/2019		0.005 U		0.005 U		0.005 U		0.26		0.025
Leachate, Cell 2A	304-121019-11	12/10/2019		0.005 U		0.005 U		0.005 U		0.46		0.07
Leachate, Cell 2B	304-121019-09	12/10/2019		0.005 U		0.005 U		0.005 U		0.38		0.11
Leachate, Cell 3A	304-121019-07	12/10/2019		0.005 U		0.005 U		0.005 U		0.16		0.056
Leachate, Cell 4A	304-121019-15	12/10/2019		0.005 U		0.005 U		0.005 U		0.33		0.14
Leachate, Cell 4B	304-061819-15	6/18/2019		0.012		0.005 U		0.005 U		0.13		0.14
Leachate, Cell 4B	304-121019-17	12/10/2019		0.005 U		0.005 U		0.005 U		0.054		0.047
Leachate, Cell 5	304-121119-19	12/11/2019		0.005 U		0.005 U		0.005 U		0.27		0.22
Leachate, Cell 6	304-121019-21	12/10/2019		0.005 U		0.005 U		0.005 U		0.14		0.66
Quality Control												
QC, FB	304-031219-15	3/12/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-061819-16	6/18/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-092619-20	9/26/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U
	304-121119-22	12/11/2019		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U

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Location	Sample Number	Sample Date	Calcium, Dissolved	Calcium, Total	Iron, Dissolved	Iron, Total	Magnesium, Dissolved	Magnesium, Total	Manganese, Dissolved	Manganese, Total	Potassium, Dissolved	Potassium, Total	Sodium, Dissolved	Sodium, Total
Monitoring Well														
MW-1A	304-031219-16	3/12/2019	14		1.7		9.2		0.28		3.7		12	
	304-061819-13	6/18/2019	14		1.6		8.8		0.27		3.6		11	
	304-092319-01	9/26/2019	13		1.5		7.9		0.24		3.1		11	
	304-121019-23	12/11/2019	15		1.9		9.8		0.25		3.9		12	
MW-2A	304-031119-01	3/12/2019	17		0.62		9.5		0.28		2.8		13	
	304-061919-18	6/18/2019	18		0.67		10		0.29		2.8		14	
	304-092319-02	9/26/2019	25		0.75		13		0.34		3.7		20	
	304-121119-25	12/11/2019	32		1.0		15		0.40		4.0		19	
MW-3	304-031119-03	3/12/2019	34		0.1 U		15		0.32		3.6		13	
	304-061719-01	6/18/2019	35		0.11		15		0.31		3.7		13	
	304-092319-03	9/26/2019	31		0.1 U		14		0.27		3.5		13	
	304-121119-26	12/11/2019	33		0.1 U		14		0.27		3.6		12	
MW-4	304-031219-13	3/12/2019	29		0.1 U		16		0.23		5.4		11	
	304-061819-14	6/18/2019	29		0.1 U		16		0.24		5.4		12	
	304-092519-16	9/26/2019	28		0.1 U		15		0.23		5.4		13	
	304-121119-18	12/11/2019	30		0.1		15		0.23		5.3		12	
MW-5A	304-031119-07	3/12/2019	27		0.1 U		11		0.20		4.1		30	
	304-061719-05	6/18/2019	28		0.14		11		0.21		4.2		31	
	304-092319-04	9/26/2019	25		0.1 U		10		0.16		3.5		16	
	304-121019-14	12/11/2019	30		0.1 U		13		0.18		4.3		21	
MW-6	304-031119-05	3/12/2019	27		0.1 U		12		0.17		4.3		10	
	304-061719-03	6/18/2019	31		0.1 U		14		0.20		4.7		9.9	
	304-092319-06	9/26/2019	29		0.1 U		13		0.19		4.3		9.9	
	304-121019-12	12/11/2019	34		0.1 U		16		0.20		5.3		11	
MW-7	304-031119-09	3/12/2019	27		0.14		19		0.21		4.8		12	
	304-061719-09	6/18/2019	33		0.19		22		0.25		5.4		13	
	304-092319-07	9/26/2019	27		0.14		19		0.22		4.7		11	
	304-121119-27	12/11/2019	29		0.16		19		0.21		4.8		11	
MW-9	304-031119-11	3/12/2019	8.9		0.22		6.1		0.005 U		2 U		7.3	
	304-061919-19	6/18/2019	9.5		0.1 U		6.5		0.005 U		2 U		7.1	
	304-092619-18	9/26/2019	10		0.1 U		6.7		0.005 U		2.0		7.6	
	304-121119-28	12/11/2019	9.7		0.1 U		6.4		0.005 U		2 U		7.0	
MW-10	304-031219-14	3/12/2019	24		0.1 U		10		0.005 U		2.1		13	
	304-061719-11	6/18/2019	24		0.1 U		10		0.005 U		2.1		13	
	304-092519-14	9/26/2019	24		0.1 U		11		0.005 U		2.0		15	
	304-121119-16	12/11/2019	24		0.1 U		10		0.005 U		2.2		12	
Leak Detection System														
LDCS-1	304-031119-10	3/11/2019	32		0.31		13		1.6		4.5		16	
	304-061719-08	6/17/2019	42		0.35		17		1.6		5.3		18	
	304-092419-11	9/24/2019	45		0.1		20		2.1		5.1		17 B	
	304-120919-04	12/9/2019	42		0.43		17		1.7		5.0		18	
LDCS-2A	304-031119-08	3/11/2019	78		0.1 U		30		0.090		8.7		28	
	304-061719-06	6/17/2019	88		0.1 U		33		0.031		9.3		29	
	304-092419-10	9/24/2019	86		0.1 U		35		0.021		8.9		29 B	
	304-120919-03	12/9/2019	95		0.1 U		37		0.005 U		9.8		32	

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Location	Sample Number	Sample Date	Calcium, Dissolved	Calcium, Total	Iron, Dissolved	Iron, Total	Magnesium, Dissolved	Magnesium, Total	Manganese, Dissolved	Manganese, Total	Potassium, Dissolved	Potassium, Total	Sodium, Dissolved	Sodium, Total
LDCS-2B	304-031119-06	3/11/2019	80		0.1 U		28		0.04		6.8		20	
	304-061719-04	6/17/2019	87		1.2		30		0.25		6.7		19	
	304-092419-09	9/24/2019	72		1.3		27		0.71		5.6		16 B	
	304-120919-02	12/9/2019	87		0.1 U		31		0.49		6.3		19	
LDCS-3A	304-031119-04	3/11/2019	77		0.1 U		33		0.62		5.2		19	
	304-061719-02	6/17/2019	90		0.1 U		40		0.63		6.2		21	
	304-092419-08	9/24/2019	82		0.1 U		36		0.73		5.8		21 B	
	304-120919-01	12/9/2019	100		0.1 U		39		0.86		6		24	
LDCS-4A	304-031119-02	3/11/2019	68		1.8		40		1.9		5.6		21	
	304-061719-10	6/17/2019	86		2.5		46		1.9		6.6		23	
	304-092419-12	9/24/2019	74		4.1		43		2.4		6.4		30 B	
	304-120919-05	12/9/2019	73		2.2		39		2		6.4		25	
LDCS-4B	304-031219-17	3/12/2019	91		1.7		45		1.8		7.3		29	
	304-040519-01	4/5/2019	90		1.4		47		1.3		7		29	
	304-061719-12	6/17/2019	110		4		55		2		9.4		40	
	304-092419-13	9/24/2019	100		0.1 U		49		1.1		7.9		35 B	
	304-120919-06	12/9/2019	110		0.1 U		50		0.95		7.8		34	
LDCS-5	304-031119-12	3/11/2019	73		0.1 U		36		1.1		6.6		26	
	304-061819-17	6/18/2019	100		0.81		57		2.3		16		90	
	304-071219-01	7/12/2019	80		1.4		44		1.7		17		73	
	304-082319-01	8/23/2019	83		0.1		49		1.6		14		50	
	304-092519-17	9/25/2019	65		0.72		38		1.4		12		38	
	304-103019-01	10/30/2019	74		0.24		43		1.4		15		57	
	304-112519-01	11/25/2019	92		1.9		53		2.6		18		89	
	304-121019-10	12/10/2019	84		0.88		47		1.8		17		73	
LDCS-6	304-031219-19	3/12/2019	120		0.1 U		50		0.19		4		32	
	304-061919-20	6/19/2019	110		0.1 U		58		1.2		4.4		34	
	304-092619-19	9/26/2019	120		0.1 U		54		2.2		4.7		38	
	304-121019-08	12/10/2019	130		0.1 U		53		1.2		4.6		38	
	304-082919-01	8/29/2019	110		0.1 U		22		0.3		3.5		42	
LDCS-7	304-092519-15	9/25/2019	190		0.1 U		26		0.64		3.6		82	
	304-101819-01	10/18/2019	170 B		0.1 U		56 B		0.98		4.2		55	
	304-112519-02	11/25/2019	190		0.1 U		59		2.1		4.7		59	
	304-121619-24	12/16/2019	190		0.1 U		67		2.2		4.6		61	
Leachate														
Leachate, Cell 1	304-121019-13	12/10/2019		38		13		100		0.20		1,000		5,600
Leachate, Cell 2A	304-121019-11	12/10/2019		18		8.4		33		0.12		840		4,500
Leachate, Cell 2B	304-121019-09	12/10/2019		36		11		58		0.19		680		3,400
Leachate, Cell 3A	304-121019-07	12/10/2019		59		9.5		50		0.97		460		2,100
Leachate, Cell 4A	304-121019-15	12/10/2019		27		9.7		62		0.14		1,200		4,600
Leachate, Cell 4B	304-061819-15	6/18/2019		41		6.5		58		0.23		1,200		5,100
Leachate, Cell 4B	304-121019-17	12/10/2019		47		4.3		64		0.17		730		2,800
Leachate, Cell 5	304-121119-19	12/11/2019		46		11		65		0.46		830		3,200
Leachate, Cell 6	304-121019-21	12/10/2019		61		4.8		85		0.69		1,000		3,100
Quality Control														
QC, FB	304-031219-15	3/12/2019	0.2 U		0.1 U		0.1 U		0.005 U		2 U		1 U	
	304-061819-16	6/18/2019	0.2 U		0.1 U		0.1 U		0.005 U		2 U		1 U	
	304-092619-20	9/26/2019	0.57		0.1 U		0.1 U		0.005 U		2 U		1.2	
	304-121119-22	12/11/2019	0.70		0.1 U		0.1 U		0.005 U		2 U		1.3	

Notes:
B = Compound found in the blank and the sample
U = Sample result was not reported at or above the MRL

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Location	Sample Number	Sample Date	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichloropropane	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,4-Dichlorobenzene	2-Butanone (MEK)
Monitoring Well																
MW-1A	304-031219-16	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061819-13	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092319-01	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121019-23	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
MW-2A	304-031119-01	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061919-18	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092319-02	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121119-25	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
MW-3	304-031119-03	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061719-01	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092319-03	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121119-26	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
MW-4	304-031219-13	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061819-14	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092519-16	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121119-18	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
MW-5A	304-031119-07	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061719-05	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092319-04	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121019-14	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U

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Location	Sample Number	Sample Date	2-Hexanone	4-Methyl-2-pentanone (MIBK)	Acetone	Acrylonitrile	Benzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane
Monitoring Well																	
MW-1A	304-031219-16	3/12/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061819-13	6/18/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092319-01	9/26/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-121019-23	12/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-2A	304-031119-01	3/12/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061919-18	6/18/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092319-02	9/26/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-121119-25	12/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-3	304-031119-03	3/12/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061719-01	6/18/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092319-03	9/26/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-121119-26	12/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-4	304-031219-13	3/12/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061819-14	6/18/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092519-16	9/26/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-121119-18	12/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-5A	304-031119-07	3/12/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061719-05	6/18/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092319-04	9/26/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-121019-14	12/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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Location	Sample Number	Sample Date	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Ethylbenzene	Iodomethane	Methylene Chloride	m-Xylene & p-Xylene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene
Monitoring Well																	
MW-1A	304-031219-16	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061819-13	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092319-01	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121019-23	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
MW-2A	304-031119-01	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061919-18	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092319-02	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121119-25	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
MW-3	304-031119-03	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061719-01	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092319-03	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121119-26	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
MW-4	304-031219-13	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061819-14	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092519-16	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121119-18	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
MW-5A	304-031119-07	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061719-05	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092319-04	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121019-14	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U

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Location	Sample Number	Sample Date	Trichloroethene	Trichlorofluoromethane	Vinyl acetate	Vinyl Chloride
Monitoring Well						
MW-1A	304-031219-16	3/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061819-13	6/18/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092319-01	9/26/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121019-23	12/11/2019	0.5 U	0.5 U	3 U	0.5 U
MW-2A	304-031119-01	3/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061919-18	6/18/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092319-02	9/26/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121119-25	12/11/2019	0.5 U	0.5 U	3 U	0.5 U
MW-3	304-031119-03	3/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061719-01	6/18/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092319-03	9/26/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121119-26	12/11/2019	0.5 U	0.5 U	3 U	0.5 U
MW-4	304-031219-13	3/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061819-14	6/18/2019	0.94	0.5 U	3 U	0.5 U
	304-092519-16	9/26/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121119-18	12/11/2019	0.5 U	0.5 U	3 U	0.5 U
MW-5A	304-031119-07	3/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061719-05	6/18/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092319-04	9/26/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121019-14	12/11/2019	0.5 U	0.5 U	3 U	0.5 U

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Location	Sample Number	Sample Date	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichloropropane	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,4-Dichlorobenzene	2-Butanone (MEK)
MW-6	304-031119-05	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061719-03	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092319-06	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121019-12	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
MW-7	304-031119-09	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061719-09	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092319-07	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121119-27	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
MW-9	304-031119-11	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061919-19	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092619-18	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121119-28	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
MW-10	304-031219-14	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061719-11	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092519-14	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121119-16	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
Leak Detection System																
LDCS-1	304-031119-10	3/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061719-08	6/17/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092419-11	9/24/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.58	6 U
	304-120919-04	12/9/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
LDCS-2A	304-031119-08	3/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061719-06	6/17/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092419-10	9/24/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-120919-03	12/9/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U

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Location	Sample Number	Sample Date	2-Hexanone	4-Methyl-2-pentanone (MIBK)	Acetone	Acrylonitrile	Benzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane
MW-6	304-031119-05	3/12/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061719-03	6/18/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092319-06	9/26/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-121019-12	12/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7	304-031119-09	3/12/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061719-09	6/18/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092319-07	9/26/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-121119-27	12/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-9	304-031119-11	3/12/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061919-19	6/18/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092619-18	9/26/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-121119-28	12/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-10	304-031219-14	3/12/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061719-11	6/18/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092519-14	9/26/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-121119-16	12/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Leak Detection System																	
LDCS-1	304-031119-10	3/11/2019	5 U	5 U	11	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061719-08	6/17/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092419-11	9/24/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-120919-04	12/9/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
LDCS-2A	304-031119-08	3/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061719-06	6/17/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092419-10	9/24/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-120919-03	12/9/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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Location	Sample Number	Sample Date	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Ethylbenzene	Iodomethane	Methylene Chloride	m-Xylene & p-Xylene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene
MW-6	304-031119-05	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061719-03	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092319-06	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121019-12	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
MW-7	304-031119-09	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061719-09	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092319-07	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121119-27	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
MW-9	304-031119-11	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061919-19	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092619-18	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121119-28	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
MW-10	304-031219-14	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061719-11	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092519-14	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121119-16	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
Leak Detection System																	
LDCS-1	304-031119-10	3/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061719-08	6/17/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092419-11	9/24/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-120919-04	12/9/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
LDCS-2A	304-031119-08	3/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061719-06	6/17/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092419-10	9/24/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-120919-03	12/9/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U

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Location	Sample Number	Sample Date	Trichloroethene	Trichlorofluoromethane	Vinyl acetate	Vinyl Chloride
MW-6	304-031119-05	3/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061719-03	6/18/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092319-06	9/26/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121019-12	12/11/2019	0.5 U	0.5 U	3 U	0.5 U
MW-7	304-031119-09	3/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061719-09	6/18/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092319-07	9/26/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121119-27	12/11/2019	0.5 U	0.5 U	3 U	0.5 U
MW-9	304-031119-11	3/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061919-19	6/18/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092619-18	9/26/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121119-28	12/11/2019	0.5 U	0.5 U	3 U	0.5 U
MW-10	304-031219-14	3/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061719-11	6/18/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092519-14	9/26/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121119-16	12/11/2019	0.5 U	0.5 U	3 U	0.5 U
Leak Detection System						
LDCS-1	304-031119-10	3/11/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061719-08	6/17/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092419-11	9/24/2019	0.5 U	0.5 U	3 U	0.5 U
	304-120919-04	12/9/2019	0.5 U	0.5 U	3 U	0.5 U
LDCS-2A	304-031119-08	3/11/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061719-06	6/17/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092419-10	9/24/2019	0.5 U	0.5 U	3 U	0.5 U
	304-120919-03	12/9/2019	0.5 U	0.5 U	3 U	0.5 U

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Location	Sample Number	Sample Date	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichloropropane	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,4-Dichlorobenzene	2-Butanone (MEK)
LDCS-2B	304-031119-06	3/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061719-04	6/17/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092419-09	9/24/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-120919-02	12/9/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
LDCS-3A	304-031119-04	3/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061719-02	6/17/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092419-08	9/24/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-120919-01	12/9/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
LDCS-4A	304-031119-02	3/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061719-10	6/17/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092419-12	9/24/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-120919-05	12/9/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
LDCS-4B	304-031219-17	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	11
	304-040519-01	4/5/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
	304-061719-12	6/17/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092419-13	9/24/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-120919-06	12/9/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
LDCS-5	304-031119-12	3/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061819-17	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-071219-01	7/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-082319-01	8/23/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092519-17	9/25/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-103019-01	10/30/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-112519-01	11/25/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121019-10	12/10/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U

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Location	Sample Number	Sample Date	2-Hexanone	4-Methyl-2-pentanone (MIBK)	Acetone	Acrylonitrile	Benzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane
LDCS-2B	304-031119-06	3/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061719-04	6/17/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092419-09	9/24/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-120919-02	12/9/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
LDCS-3A	304-031119-04	3/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061719-02	6/17/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092419-08	9/24/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-120919-01	12/9/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
LDCS-4A	304-031119-02	3/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061719-10	6/17/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092419-12	9/24/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-120919-05	12/9/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
LDCS-4B	304-031219-17	3/12/2019	5 U	5 U	16	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-040519-01	4/5/2019	5 U	5 U	10 U	10 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061719-12	6/17/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092419-13	9/24/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-120919-06	12/9/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
LDCS-5	304-031119-12	3/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061819-17	6/18/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-071219-01	7/12/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-082319-01	8/23/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092519-17	9/25/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-103019-01	10/30/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-112519-01	11/25/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-121019-10	12/10/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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Location	Sample Number	Sample Date	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Ethylbenzene	Iodomethane	Methylene Chloride	m-Xylene & p-Xylene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene
LDCS-2B	304-031119-06	3/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061719-04	6/17/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092419-09	9/24/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-120919-02	12/9/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
LDCS-3A	304-031119-04	3/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061719-02	6/17/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092419-08	9/24/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-120919-01	12/9/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
LDCS-4A	304-031119-02	3/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061719-10	6/17/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092419-12	9/24/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-120919-05	12/9/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
LDCS-4B	304-031219-17	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-040519-01	4/5/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061719-12	6/17/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092419-13	9/24/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-120919-06	12/9/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
LDCS-5	304-031119-12	3/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061819-17	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-071219-01	7/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-082319-01	8/23/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092519-17	9/25/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-103019-01	10/30/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-112519-01	11/25/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121019-10	12/10/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U

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Location	Sample Number	Sample Date	Trichloroethene	Trichlorofluoromethane	Vinyl acetate	Vinyl Chloride
LDCS-2B	304-031119-06	3/11/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061719-04	6/17/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092419-09	9/24/2019	0.5 U	0.5 U	3 U	0.5 U
	304-120919-02	12/9/2019	0.5 U	0.5 U	3 U	0.5 U
LDCS-3A	304-031119-04	3/11/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061719-02	6/17/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092419-08	9/24/2019	0.5 U	0.5 U	3 U	0.5 U
	304-120919-01	12/9/2019	0.5 U	0.5 U	3 U	0.5 U
LDCS-4A	304-031119-02	3/11/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061719-10	6/17/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092419-12	9/24/2019	0.5 U	0.5 U	3 U	0.5 U
	304-120919-05	12/9/2019	0.5 U	0.5 U	3 U	0.5 U
LDCS-4B	304-031219-17	3/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-040519-01	4/5/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061719-12	6/17/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092419-13	9/24/2019	0.5 U	0.5 U	3 U	0.5 U
	304-120919-06	12/9/2019	0.5 U	0.5 U	3 U	0.5 U
LDCS-5	304-031119-12	3/11/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061819-17	6/18/2019	0.5 U	0.5 U	3 U	0.5 U
	304-071219-01	7/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-082319-01	8/23/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092519-17	9/25/2019	0.5 U	0.5 U	3 U	0.5 U
	304-103019-01	10/30/2019	0.5 U	0.5 U	3 U	0.5 U
	304-112519-01	11/25/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121019-10	12/10/2019	0.5 U	0.5 U	3 U	0.5 U

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Location	Sample Number	Sample Date	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,3-Trichloropropane	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,4-Dichlorobenzene	2-Butanone (MEK)
LDCS-6	304-031219-19	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061919-20	6/19/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092619-19	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121019-08	12/10/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
LDCS-7	304-082919-01	8/29/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092519-15	9/25/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-101819-01	10/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-112519-02	11/25/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121619-24	12/16/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
Leachate																
Leachate, Cell 1	304-121019-13	12/10/2019	2.1 U	1.6 U	2.1 U	2.7 U	2.2 U	2.3 U	3.3 U	4.7 U	1.8 U	1.5 U	1.3 U	1.8 U	12	3500
Leachate, Cell 2A	304-121019-11	12/10/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	5.3	37
Leachate, Cell 2B	304-121019-09	12/10/2019	1.1 U	0.8 U	1.1 U	1.4 U	1.1 U	1.2 U	1.7 U	2.4 U	1 U	0.75 U	0.65 U	0.9 U	8.9	1400
Leachate, Cell 3A	304-121019-07	12/10/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.7	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	13	6 U
Leachate, Cell 4A	304-121019-15	12/10/2019	4.2 U	3.2 U	4.2 U	5.4 U	4.4 U	4.6 U	6.6 U	9.4 U	3.6 U	3 U	2.6 U	3.6 U	12	5200
Leachate, Cell 4B	304-061819-15	6/18/2019	0.5 U	0.5 U	0.5 U	0.54 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	8.8	660
Leachate, Cell 4B	304-121019-17	12/10/2019	1.1 U	0.8 U	1.1 U	1.4 U	1.1 U	1.2 U	1.7 U	2.4 U	1 U	0.75 U	0.65 U	0.9 U	7.4	3400
Leachate, Cell 5	304-121119-19	12/11/2019	0.5 U	0.5 U	0.5 U	0.54 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	4.5	770
Leachate, Cell 6	304-121019-21	12/10/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.98	3.1	250
Quality Control																
QC, FB	304-031219-15	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-061819-16	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-092619-20	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U
	304-121119-22	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	6 U

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Location	Sample Number	Sample Date	2-Hexanone	4-Methyl-2-pentanone (MIBK)	Acetone	Acrylonitrile	Benzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane
LDCS-6	304-031219-19	3/12/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061919-20	6/19/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092619-19	9/26/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-121019-08	12/10/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
LDCS-7	304-082919-01	8/29/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-092519-15	9/25/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-101819-01	10/18/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-112519-02	11/25/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-121619-24	12/16/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Leachate																	
Leachate, Cell 1	304-121019-13	12/10/2019	17 U	180	4000	14 U	20	1 U	1.7 U	4.6 U	2.1 U	1.7 U	1.9 U	2.5	4.1 U	1.6 U	3 U
Leachate, Cell 2A	304-121019-11	12/10/2019	5 U	5 U	160	5 U	5.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.74	0.5 U	0.5 U	0.5 U
Leachate, Cell 2B	304-121019-09	12/10/2019	8.5 U	69	2100	7 U	6.1	0.5 U	0.85 U	2.3 U	1.1 U	0.84 U	0.95 U	1.4	2.1 U	1.1	1.5 U
Leachate, Cell 3A	304-121019-07	12/10/2019	5 U	5 U	22	5 U	11	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.1	0.5 U	0.5 U	0.5 U
Leachate, Cell 4A	304-121019-15	12/10/2019	34 U	110	8800	28 U	19	2 U	3.4 U	9.2 U	4.2 U	3.3 U	3.8 U	3.4 U	8.2 U	5.2	6 U
Leachate, Cell 4B	304-061819-15	6/18/2019	380	14	910	5 U	37	0.5 U	0.5 U	0.92 U	0.5 U	0.5 U	0.5 U	1.4	0.82 U	0.5 U	0.6 U
Leachate, Cell 4B	304-121019-17	12/10/2019	8.5 U	110	2900	7 U	29	0.5 U	0.85 U	2.3 U	1.1 U	0.84 U	0.95 U	1.3	2.1 U	1.2	1.5 U
Leachate, Cell 5	304-121119-19	12/11/2019	5 U	32	1200	5 U	4.9	0.5 U	0.5 U	0.92 U	0.5 U	0.5 U	0.5 U	0.7	0.82 U	0.5 U	0.6 U
Leachate, Cell 6	304-121019-21	12/10/2019	5 U	13	340	5 U	5.8	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Quality Control																	
QC, FB	304-031219-15	3/12/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
	304-061819-16	6/18/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.63	0.5 U
	304-092619-20	9/26/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5	0.5 U
	304-121119-22	12/11/2019	5 U	5 U	10 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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Location	Sample Number	Sample Date	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Ethylbenzene	Iodomethane	Methylene Chloride	m-Xylene & p-Xylene	o-Xylene	Styrene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene
LDCS-6	304-031219-19	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061919-20	6/19/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092619-19	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121019-08	12/10/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
LDCS-7	304-082919-01	8/29/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092519-15	9/25/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-101819-01	10/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-112519-02	11/25/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121619-24	12/16/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	20	0.5 U	0.5 U	3 U
Leachate																	
Leachate, Cell 1	304-121019-13	12/10/2019	1.5 U	1.6 U	1.7 U	1.7 U	53	2.3 U	9.4 U	98	47	3.6 U	2 U	53	1.5 U	1.9 U	8 U
Leachate, Cell 2A	304-121019-11	12/10/2019	1.2	0.5 U	0.5 U	0.5 U	24	1 U	2 U	38	19	1.8	0.5 U	49	0.5 U	0.5 U	3 U
Leachate, Cell 2B	304-121019-09	12/10/2019	1.2	0.8 U	0.85 U	0.85 U	35	1.2 U	4.7 U	58	29	2.9	1 U	32	0.75 U	0.95 U	4 U
Leachate, Cell 3A	304-121019-07	12/10/2019	0.87	0.5 U	0.5 U	0.5 U	64	1 U	2 U	80	39	2.8	0.5 U	5.9	0.5 U	0.5 U	3 U
Leachate, Cell 4A	304-121019-15	12/10/2019	3 U	3.2 U	3.4 U	3.4 U	40	4.6 U	19 U	68	33	7.1 U	4 U	67	3 U	3.8 U	16 U
Leachate, Cell 4B	304-061819-15	6/18/2019	3	0.5 U	0.5 U	0.5 U	33	1 U	2 U	52	27	2.6	0.5 U	59	0.5 U	0.5 U	3 U
Leachate, Cell 4B	304-121019-17	12/10/2019	2.6	0.8 U	0.85 U	0.85 U	27	1.2 U	4.7 U	44	23	2.1	1 U	53	0.75 U	0.95 U	4 U
Leachate, Cell 5	304-121119-19	12/11/2019	0.73	0.5 U	0.5 U	0.5 U	17	1 U	2 U	26	13	0.71 U	0.5 U	16	0.5 U	0.5 U	3 U
Leachate, Cell 6	304-121019-21	12/10/2019	3.2	0.5 U	0.5 U	0.5 U	26	1 U	2 U	49	27	2.6	0.5 U	39	0.5 U	0.5 U	3 U
Quality Control																	
QC, FB	304-031219-15	3/12/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	9.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-061819-16	6/18/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	11	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-092619-20	9/26/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	10	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U
	304-121119-22	12/11/2019	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	9.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U

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Location	Sample Number	Sample Date	Trichloroethene	Trichlorofluoromethane	Vinyl acetate	Vinyl Chloride
LDCS-6	304-031219-19	3/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061919-20	6/19/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092619-19	9/26/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121019-08	12/10/2019	0.5 U	0.5 U	3 U	0.61
LDCS-7	304-082919-01	8/29/2019	0.5 U	0.5 U	3 U	0.5 U
	304-092519-15	9/25/2019	0.5 U	0.5 U	3 U	0.5 U
	304-101819-01	10/18/2019	0.5 U	0.5 U	3 U	0.5 U
	304-112519-02	11/25/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121619-24	12/16/2019	0.5 U	0.5 U	3 U	0.5 U
Leachate						
Leachate, Cell 1	304-121019-13	12/10/2019	1.6 U	2.9 U	9.4 U	1 U
Leachate, Cell 2A	304-121019-11	12/10/2019	0.5 U	0.5 U	3 U	0.5 U
Leachate, Cell 2B	304-121019-09	12/10/2019	4.4	1.5 U	4.7 U	0.5 U
Leachate, Cell 3A	304-121019-07	12/10/2019	0.5 U	0.5 U	3 U	2.1
Leachate, Cell 4A	304-121019-15	12/10/2019	3.2 U	5.8 U	19 U	2 U
Leachate, Cell 4B	304-061819-15	6/18/2019	5.1	0.58 U	3 U	0.5 U
Leachate, Cell 4B	304-121019-17	12/10/2019	0.8 U	1.5 U	4.7 U	0.5 U
Leachate, Cell 5	304-121119-19	12/11/2019	0.5 U	0.58 U	3 U	0.5 U
Leachate, Cell 6	304-121019-21	12/10/2019	0.5 U	0.5 U	3 U	3.5
Quality Control						
QC, FB	304-031219-15	3/12/2019	0.5 U	0.5 U	3 U	0.5 U
	304-061819-16	6/18/2019	0.5	0.5 U	3 U	0.5 U
	304-092619-20	9/26/2019	0.5 U	0.5 U	3 U	0.5 U
	304-121119-22	12/11/2019	0.5 U	0.5 U	3 U	0.5 U

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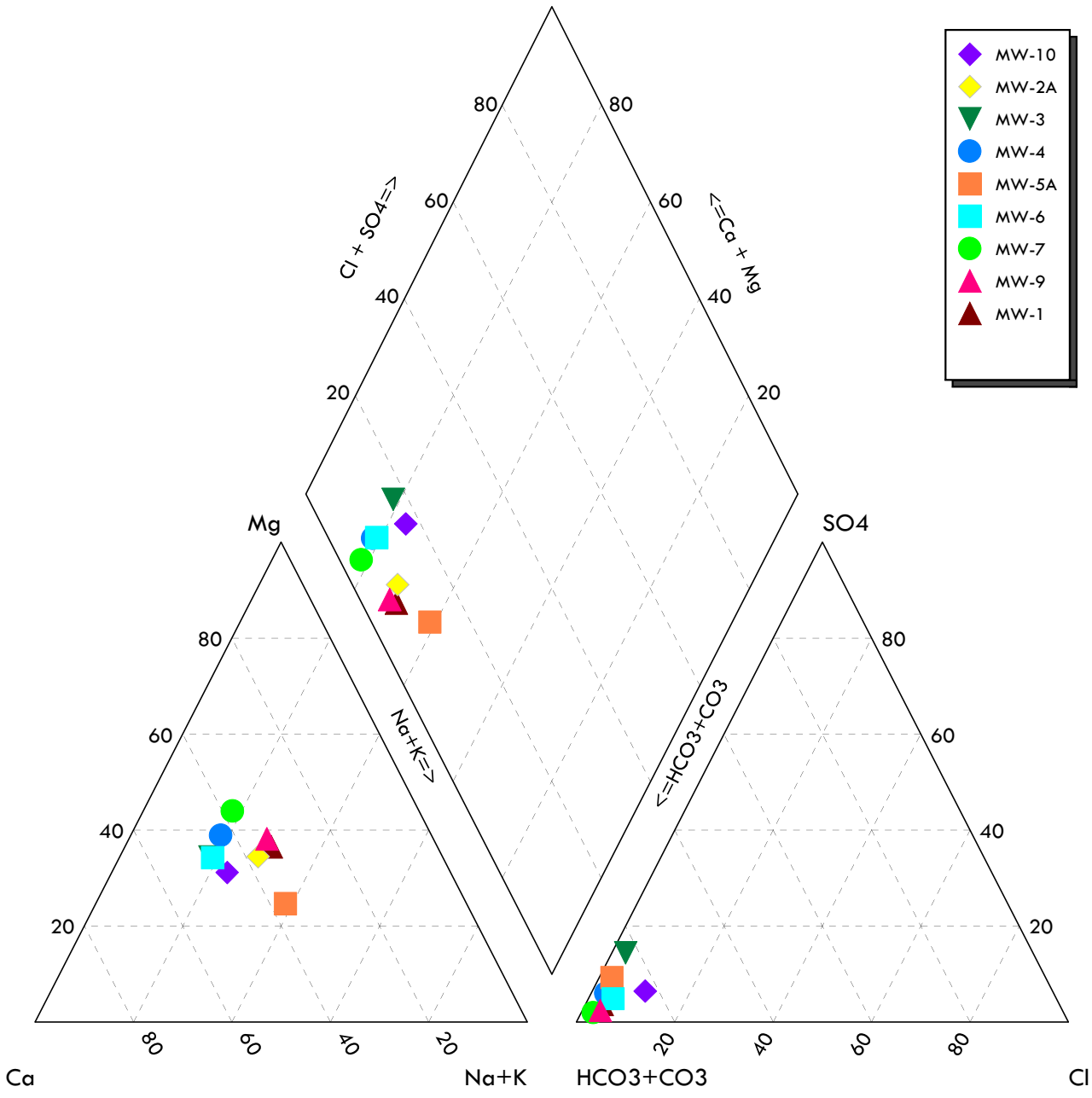
Appendix D

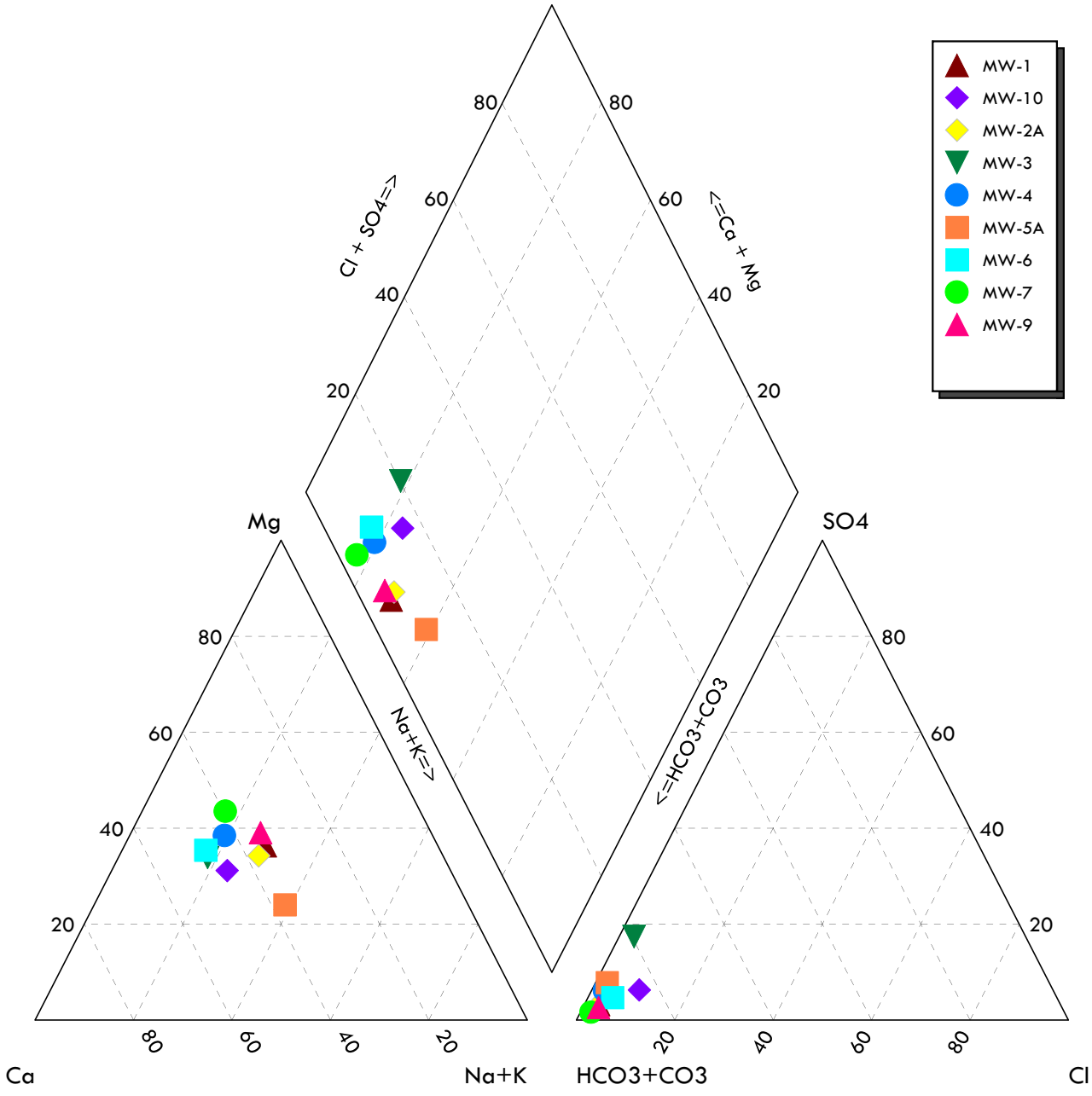
Geochemical Evaluation

First Quarter 2019, Groundwater Monitoring Wells



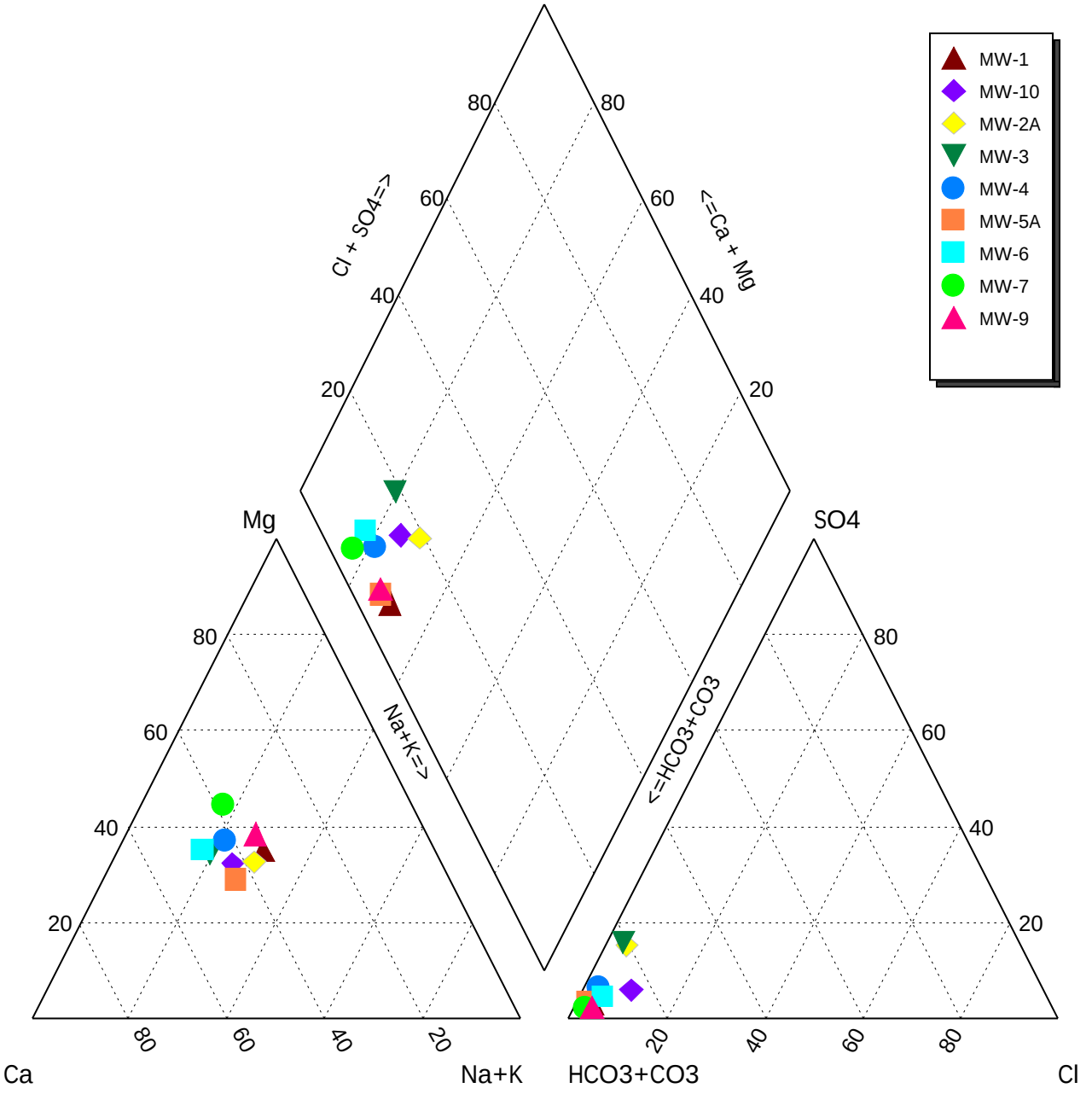
DESCRIPTION: LRI LF 1Q19 Groundwater Piper Diagram		
	PROJECT: LRI Landfill	PROJECT NO: 04219001.02
	CLIENT: LRI, Inc.	DATE: May 2019

Second Quarter 2019, Groundwater Monitoring Wells



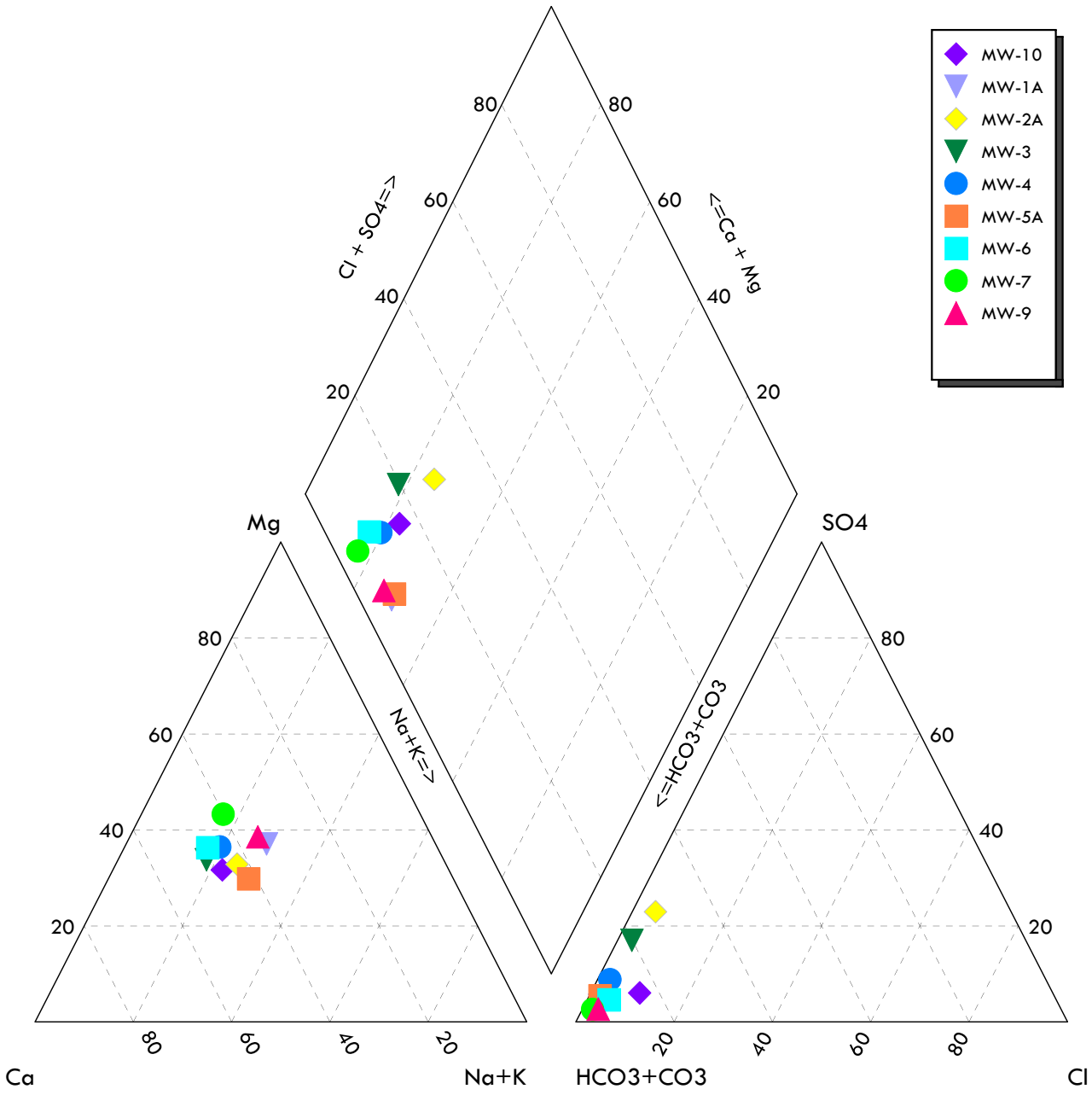
DESCRIPTION: LRI LF 2Q19 Groundwater Piper Diagram		
	PROJECT: LRI Landfill	PROJECT NO: 04219001.02
	CLIENT: LRI, Inc.	DATE: August 2019

Third Quarter 2019, Groundwater Monitoring Wells



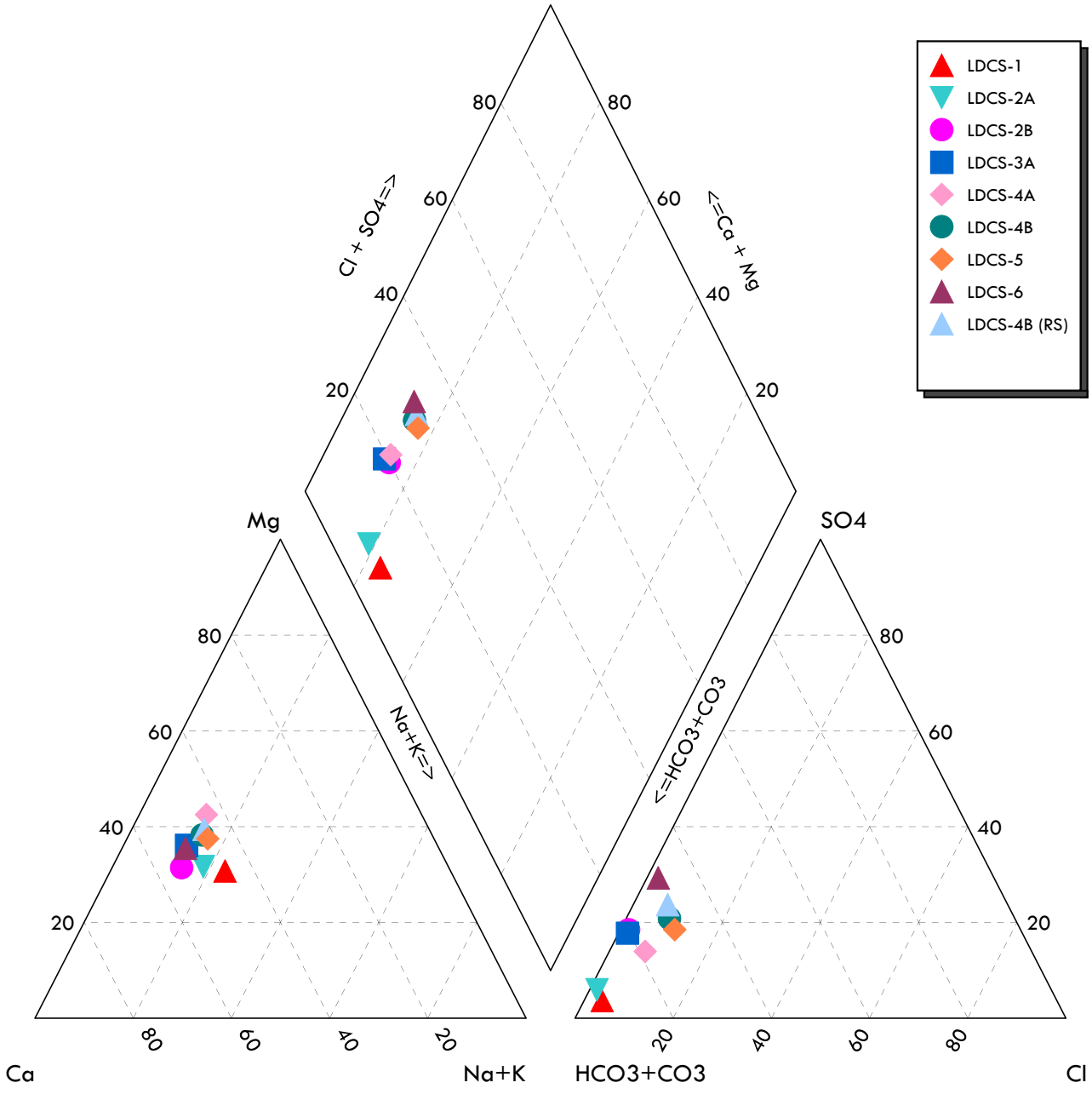
DESCRIPTION: Piper Diagram - Groundwater - 3Q19		
	PROJECT: LRI Landfill	PROJECT NO: 04219001.02
	CLIENT: LRI, Inc.	DATE: November 2019

Fourth Quarter 2019, Groundwater Monitoring Wells



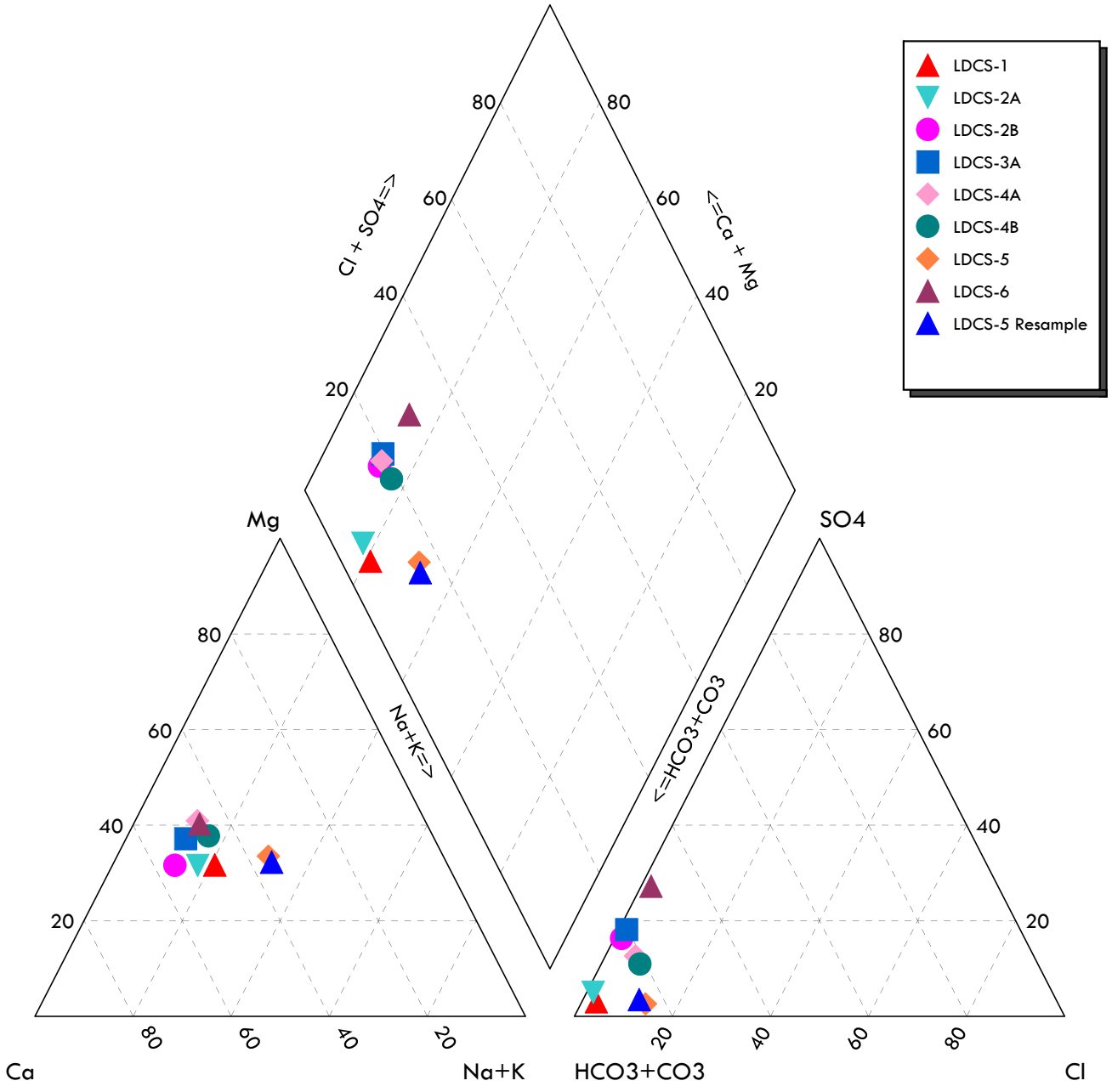
DESCRIPTION: Piper Diagram - Groundwater - 4Q19		
	PROJECT: LRI Landfill	PROJECT NO: 04219001.02
	CLIENT: LRI, Inc.	DATE: March 2020

First Quarter 2019, Leak Detection Collection Recovery System



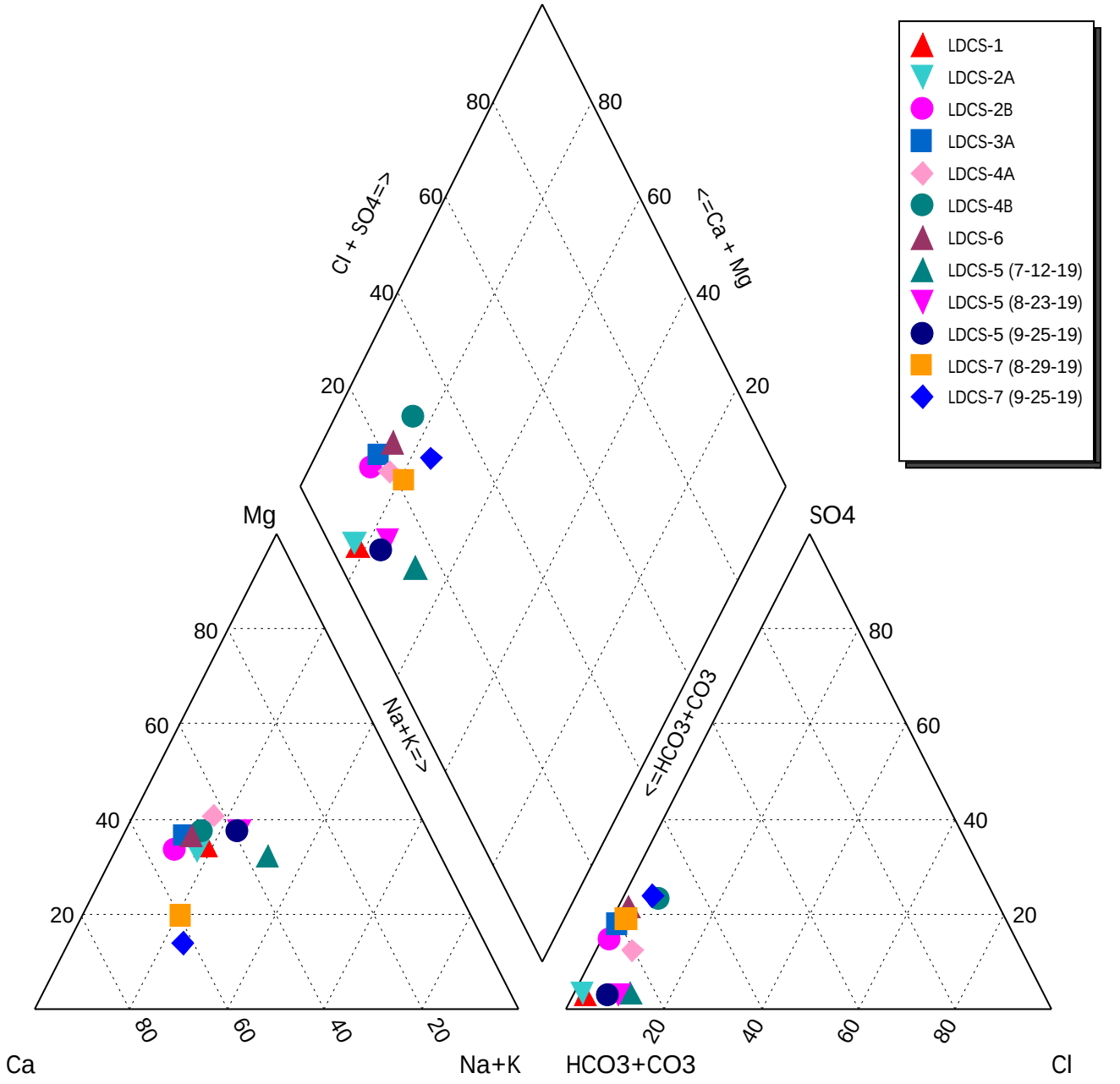
DESCRIPTION: LRI LF 1Q19 LDCRS Piper Diagram		
	PROJECT: LRI Landfill	PROJECT NO: 04219001.02
	CLIENT: LRI, Inc.	DATE: May 2019

Second Quarter 2019, Leak Detection Collection Recovery System



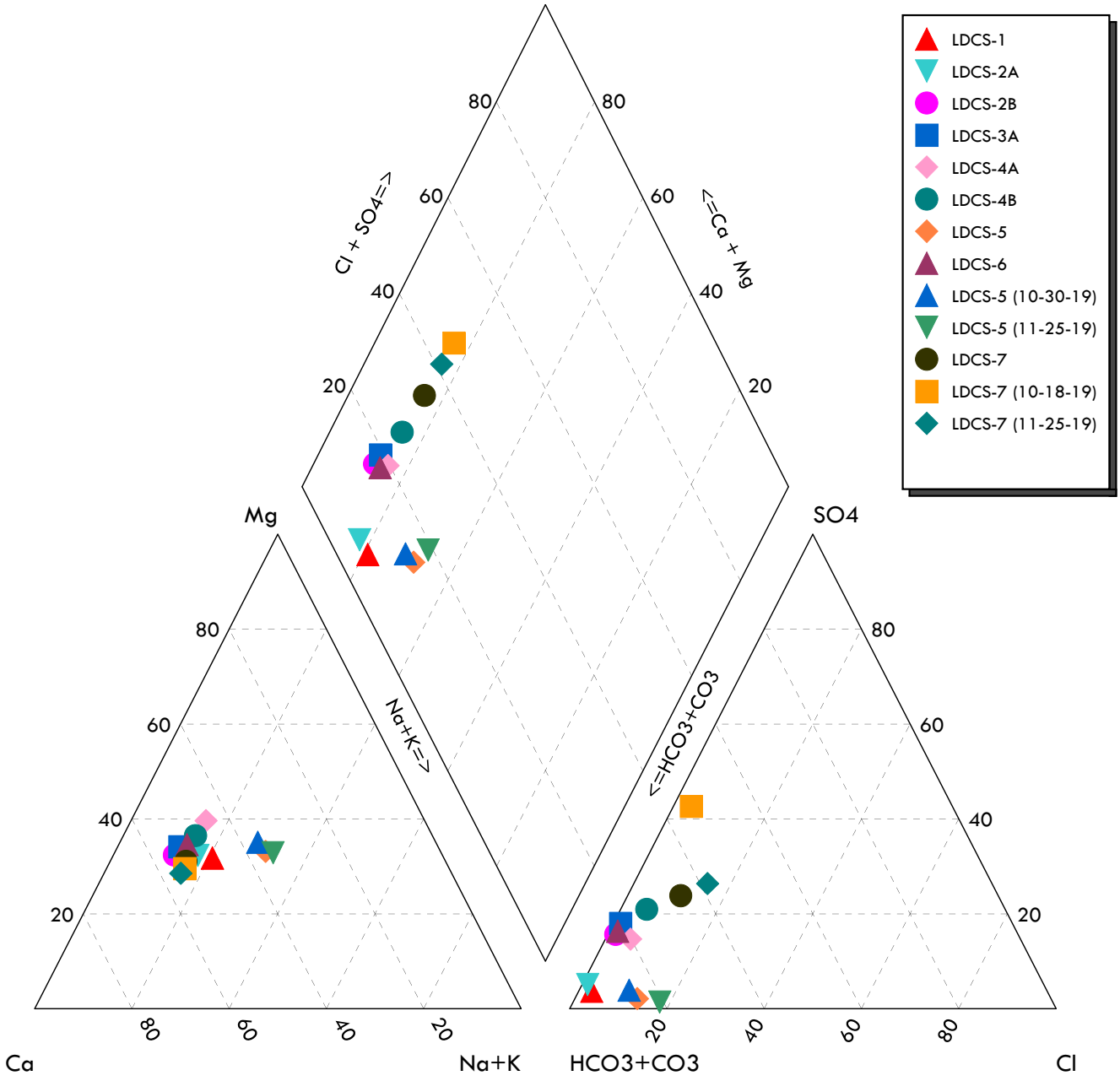
DESCRIPTION: LRI LF 2Q19 LDCRS Piper Diagram		
	PROJECT: LRI Landfill	PROJECT NO: 04219001.02
	CLIENT: LRI, Inc.	DATE: August 2019

Third Quarter 2019, Leak Detection Collection Recovery System



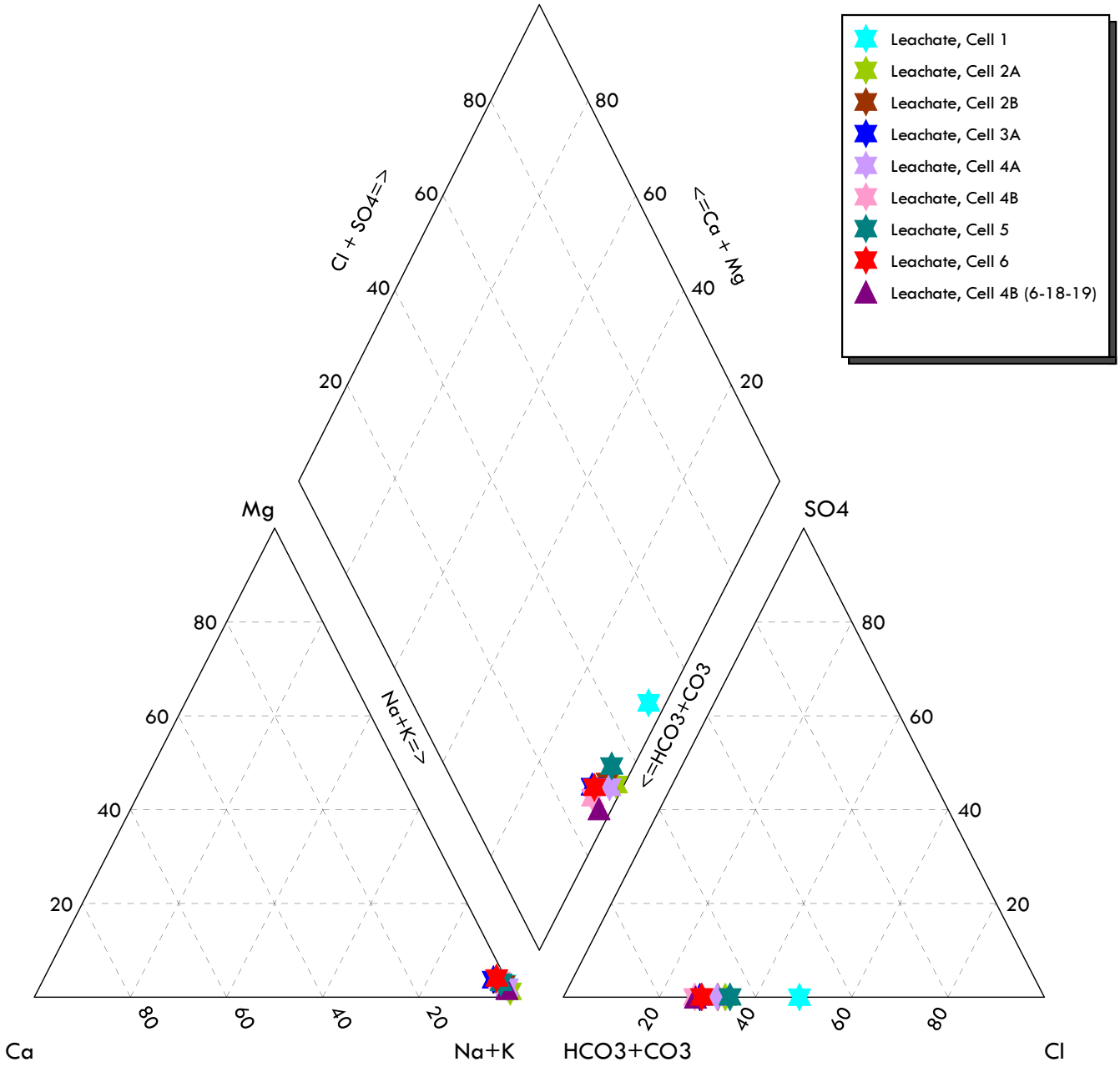
DESCRIPTION: Piper Diagram - LDCRS - 3Q19		
	PROJECT: LRI Landfill	PROJECT NO: 04219001.02
	CLIENT: LRI, Inc.	DATE: November 2019

Fourth Quarter 2019, Leak Detection Collection Recovery System



DESCRIPTION: Piper Diagram - LDCRS - 4Q19		
	PROJECT: LRI Landfill	PROJECT NO: 04219001.02
	CLIENT: LRI, Inc.	DATE: March 2020

Fourth Quarter 2019, Leachate



DESCRIPTION: Piper Diagram - Leachate - 4Q19

	PROJECT: LRI Landfill	PROJECT NO: 04219001.02
	CLIENT: LRI, Inc.	DATE: March 2020

Appendix E

Statistical Calculations

Groundwater Prediction Limits (mg/L)
Appendix I Parameters, Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

	MRL (typical)	Prediction Limit	MW-1/ MW-1A	MW-2/ MW-2A	MW-3	MW-4	MW-5/ MW-5A	MW-6	MW-7	MW-9	MW-10
Antimony	0.050	**0.050 L**	**0.050 L**	0.050 L	0.050 L	0.050 L	0.050 L	0.050 L	0.050 L	0.050 L	0.050 L
Arsenic	0.005	**0.011**	0.005 L	0.005 L	0.005 L	**0.011**	0.008	0.008	0.006	0.005 L	0.005 L
Barium	0.005	**0.091**	0.030	0.018	0.015	**0.091**	0.036	0.014	0.016	0.0057	0.016
Beryllium	0.005	**0.005 L**	**0.005 L**	0.005 L	0.005 L	0.005 L	0.005 L	0.001 L	0.005 L	0.001 L	0.005 L
Cadmium	0.005	**0.005 L**	**0.005 L**	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L
Chromium	0.005	**0.011**	0.005 L	0.005 L	0.005 L	**0.011**	0.005	0.005 L	0.005 L	0.005 L	0.005 L
Cobalt	0.010	**0.010 L**	**0.010 L**	0.010 L	0.010 L	0.004	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L
Copper	0.010	**0.063**	0.010 L	0.010 L	0.010 L	**0.063**	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L
Lead	0.002	**0.042**	0.002 L	0.002 L	0.002 L	**0.042**	0.002 L	0.002 L	0.002 L	0.002 L	0.002 L
Nickel	0.020	**0.020 L**	**0.020 L**	0.020 L	0.020 L	0.020 L	0.020 L	0.020 L	0.020 L	0.020 L	0.020 L
Selenium	0.005	**0.005 L**	**0.005 L**	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L
Silver	0.010	**0.010 L**	**0.010 L**	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L	0.010 L
Thallium	0.005	**0.005 L**	**0.005 L**	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L	0.005 L
Vanadium	0.010	**0.016**	0.010 L	0.010 L	0.010 L	0.014	0.010 L	0.010 L	0.010 L	**0.016**	0.010 L
Zinc	0.01	**0.290**	0.032	0.010 L	0.010 L	**0.290**	0.010	0.010 L	0.010 L	0.043	0.011
Nitrate as Nitrogen	0.50	**6.40**	0.500 L	0.500 L	0.500 L	0.500 L	0.500 L	0.500 L	0.500 L	0.500 L	**6.40**

Notes:

Prediction Limits are shown in bold.

Prediction Limits for metals are for total metals.

L = not reported at or above the MRL (Method Reporting Limit).

mg/L = milligrams per liter.

Statistical Summary of Total Metals Groundwater Data
Appendix I Parameters, Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

Location ID	Antimony (Sb)		Arsenic (As)		Barium (Ba)		Beryllium (Be)		Cadmium (Cd)		Chromium (Cr)		Cobalt (Co)		Copper (Cu)		Lead (Pb)		Nickel (Ni)		Selenium (Se)		Silver (Ag)		Thallium (Tl)		Vanadium (V)		Zinc (Zn)		Nitrate (NO_3)	
Monitoring Date	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
MW-1																																
3/24/2014	0.002	L 0.001	0.005	L 0.0025	0.022	0.022	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
6/24/2014	0.002	L 0.001	0.005	L 0.0025	0.02	0.02	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
9/17/2014	0.05	L 0.025	0.005	L 0.0025	0.024	0.024	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.01	L 0.005	0.005	L 0.0025	0.01	L 0.005	0.02	0.02	0.5	L 0.25
12/16/2014	0.05	L 0.025	0.005	L 0.0025	0.03	0.03	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.032	0.032	0.5	L 0.25
3/23/2015	0.05	L 0.025	0.005	L 0.0025	0.02	0.02	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
6/8/2015	0.05	L 0.025	0.005	L 0.0025	0.022	0.022	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
9/16/2015	0.05	L 0.025	0.005	L 0.0025	0.021	0.021	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
12/14/2015	0.05	L 0.025	0.005	L 0.0025	0.024	0.024	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
Number Analyzed	8		8		8		8		8		8		8		8		8		8		8		8		8		8		8		8	
Number Detected	0		0		8		0		0		0		0		0		0		0		0		0		0		0		2		0	
Minimum Concentration		0.001		0.0025		0.02		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25
Maximum Concentration		0.025		0.0025		0.03		0.0025		0.0025		0.0025		0.005		0.005		0.001		0.01		0.0025		0.005		0.0025		0.005		0.032		0.25
Average Concentration		NC		NC		0.02288		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Variance		NC		NC		1.1E-05		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Deviation		NC		NC		0.0033		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Coefficient of Variation (%)		NC		NC		14.2974		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Error		NC		NC		0.00116		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
MW-2																																
3/24/2014	0.002	L 0.001	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
6/26/2014	0.002	L 0.001	0.005	L 0.0025	0.015	0.015	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
9/16/2014	0.05	L 0.025	0.005	L 0.0025	0.018	0.018	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.01	L 0.005	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
12/16/2014	0.05	L 0.025	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
3/23/2015	0.05	L 0.025	0.005	L 0.0025	0.012	0.012	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
6/8/2015	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
9/16/2015	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
12/14/2015	0.05	L 0.025	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
Number Analyzed	8		8		8		8		8		8		8		8		8		8		8		8		8		8		8		8	
Number Detected	0		0		8		0		0		0		0		0		0		0		0		0		0		0		0		0	
Minimum Concentration		0.001		0.0025		0.012		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25
Maximum Concentration		0.025		0.0025		0.018		0.0025		0.0025		0.0025		0.005		0.005		0.001		0.01		0.0025		0.005		0.0025		0.005		0.005		0.25
Average Concentration		NC		NC		0.01413		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Variance		NC		NC		3.3E-06		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Deviation		NC		NC		0.00181		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Coefficient of Variation (%)		NC		NC		12.798		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Error		NC		NC		0.00064		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
MW-3																																
3/26/2014	0.002	L 0.001	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
6/25/2014	0.002	L 0.001	0.005	L 0.0025	0.011	0.011	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
9/17/2014	0.05	L 0.025	0.005	L 0.0025	0.01	0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.01	L 0.005	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
12/16/2014	0.05	L 0.025	0.005	L 0.0025	0.012	0.012	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
3/26/2015	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
6/9/2015	0.05	L 0.025	0.005	L 0.0025	0.011	0.011	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
9/16/2015	0.05	L 0.025	0.005	L 0.0025	0.01	0.01	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
12/14/2015	0.05	L 0.025	0.005	L 0.0025	0.015	0.015	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
Number Analyzed	8		8		8		8		8		8		8		8		8		8		8		8		8		8		8		8	
Number Detected	0		0		8		0		0		0		0		0		0		0		0		0		0		0		0		0	
Minimum Concentration		0.001		0.0025		0.01		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25
Maximum Concentration		0.025		0.0025		0.015		0.0025		0.0025		0.0025		0.005		0.005		0.001		0.01		0.0025		0.005		0.0025		0.005		0.005		0.25
Average Concentration		NC		NC		0.012		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Variance		NC		NC		3.4E-06		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Deviation		NC		NC		0.00185		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Coefficient of Variation (%)		NC		NC		15.4303		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Error		NC		NC		0.00065		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC

Statistical Summary of Total Metals Groundwater Data
Appendix I Parameters, Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

Location ID / Monitoring Date	Antimony (Sb) Result	Conc.	Arsenic (As) Result	Conc.	Barium (Ba) Result	Conc.	Beryllium (Be) Result	Conc.	Cadmium (Cd) Result	Conc.	Chromium (Cr) Result	Conc.	Cobalt (Co) Result	Conc.	Copper (Cu) Result	Conc.	Lead (Pb) Result	Conc.	Nickel (Ni) Result	Conc.	Selenium (Se) Result	Conc.	Silver (Ag) Result	Conc.	Thallium (Tl) Result	Conc.	Vanadium (V) Result	Conc.	Zinc (Zn) Result	Conc.	Nitrate (NO_3) Result	Conc.
MW-4																																
3/24/2014	0.002	L 0.001	0.0074	0.0074	0.012	0.012	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
6/25/2014	0.002	L 0.001	0.0086	0.0086	0.012	0.012	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
9/17/2014	0.05	L 0.025	0.0099	0.0099	0.013	0.013	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.01	L 0.005	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
12/16/2014	0.05	L 0.025	0.0076	0.0076	0.011	0.011	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
3/24/2015	0.05	L 0.025	0.0079	0.0079	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
6/9/2015	0.05	L 0.025	0.0094	0.0094	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
9/18/2015	0.05	L 0.025	0.0094	0.0094	0.017	0.017	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.5	L 0.25
12/15/2015	0.05	L 0.025	0.011	0.011	0.091	0.091	0.001	L 0.0005	0.001	L 0.0005	0.011	0.011	0.0039	0.0039	0.063	0.063	0.042	0.042	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.29	0.29	0.5	L 0.25
Number Analyzed	8		8		8		8		8		8		8		8		8		8		8		8		8		8		8		8	
Number Detected	0		8		8		0		0		1		1		1		1		0		0		0		0		1		2		0	
Minimum Concentration		0.001		0.0074		0.011		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25
Maximum Concentration		0.025		0.011		0.091		0.0025		0.0025		0.011		0.005		0.063		0.042		0.01		0.0025		0.005		0.0025		0.014		0.29		0.25
Average Concentration		NC		0.0089		0.02275		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Variance		NC		1.6E-06		0.00076		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Deviation		NC		0.00125		0.02763		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Coefficient of Variation (%)		NC		14.0465		121.469		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Error		NC		0.00044		0.00977		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
MW-5																																
3/24/2014	0.002	L 0.001	0.0072	0.0072	0.032	0.032	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
6/25/2014	0.002	L 0.001	0.0067	0.0067	0.033	0.033	0.001	L 0.0005	0.005	L 0.0025	0.0036	0.0036	0.01	L 0.005	0.0061	0.0061	0.001	L 0.0005	0.0043	0.0043	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
9/16/2014	0.05	L 0.025	0.0059	0.0059	0.036	0.036	0.005	L 0.0025	0.005	L 0.0025	0.0051	0.0051	0.01	L 0.005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.01	L 0.005	0.005	L 0.0025	0.01	L 0.005	0.01	0.01	0.5	L 0.25
12/16/2014	0.05	L 0.025	0.0055	0.0055	0.022	0.022	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
3/23/2015	0.05	L 0.025	0.008	0.008	0.03	0.03	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
6/8/2015	0.05	L 0.025	0.0075	0.0075	0.02	0.02	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
9/18/2015	0.05	L 0.025	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
12/14/2015	0.05	L 0.025	0.0072	0.0072	0.021	0.021	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.5	L 0.25
Number Analyzed	8		8		8		8		8		8		8		8		8		8		8		8		8		8		8		8	
Number Detected	0		7		8		0		0		2		0		1		0		1		0		0		0		0		1		0	
Minimum Concentration		0.001		0.0025		0.014		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25
Maximum Concentration		0.025		0.008		0.036		0.0025		0.0025		0.0051		0.005		0.0061		0.001		0.01		0.0025		0.005		0.0025		0.005		0.01		0.25
Average Concentration		NC		0.00631		0.026		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Variance		NC		3E-06		6E-05		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Deviation		NC		0.00175		0.00776		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Coefficient of Variation (%)		NC		27.6653		29.863		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Error		NC		0.00062		0.00275		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
MW-6																																
3/26/2014	0.002	L 0.001	0.0075	0.0075	0.014	0.014	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
6/25/2014	0.002	L 0.001	0.0065	0.0065	0.011	0.011	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
9/18/2014	0.002	L 0.001	0.0078	0.0078	0.01	0.01	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
12/17/2014	0.05	L 0.025	0.0068	0.0068	0.012	0.012	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
3/26/2015	0.05	L 0.025	0.0068	0.0068	0.01	0.01	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
6/8/2015	0.05	L 0.025	0.0075	0.0075	0.01	0.01	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
9/17/2015	0.05	L 0.025	0.0069	0.0069	0.011	0.011	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
12/14/2015	0.05	L 0.025	0.0074	0.0074	0.011	0.011	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
Number Analyzed	8		8		8		8		8		8		8		8		8		8		8		8		8		8		8		8	
Number Detected	0		8		8		0		0		0		0		0		0		0		0		0		0		0		0		0	
Minimum Concentration		0.001		0.0065		0.01		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25
Maximum Concentration		0.025		0.0078		0.014		0.0005		0.0025		0.0025		0.005		0.005		0.001		0.01		0.0025		0.005		0.0025		0.005		0.005		0.25
Average Concentration		NC		0.00715		0.01113		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Variance		NC		2.1E-07		1.8E-06		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Deviation		NC		0.00046		0.00136		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Coefficient of Variation (%)		NC		6.38736		12.1906		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Error		NC		0.00016		0.00048		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
MW-7																																
3/26/2014	0.002	L 0.001	0.0054	0.0054	0.016	0.016	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
6/26/2014	0.002	L 0.001	0.0053	0.0053	0.016	0.016	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
9/17/2014	0.05	L 0.025	0.0052	0.0052	0.015	0.015	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.01	L 0.005	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.5	L 0.25
12/16/2014	0.05	L 0.025	0.005	0.005	0.014	0.014	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
3/24/2015	0.05	L 0.025	0.005	L 0.0025	0.015	0.015	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
6/9/2015	0.05	L 0.025	0.0054	0.0054	0.015	0.015	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
9/17/2015	0.05	L 0.025	0.005	L 0.0025	0.012	0.012	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
12/15/2015	0.05	L 0.025	0.0055	0.0055	0.016	0.016	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.5	L 0.25
Number Analyzed	8		8		8		8		8		8		8		8		8		8		8		8		8		8		8		8	
Number Detected	0		6		8		0		0		0		0		0		0		0		0		0		0		0		0		0	
Minimum Concentration		0.001		0.0025		0.012		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		0.25
Maximum Concentration		0.025		0.0055		0.016		0.0025		0.0025		0.0025		0.005		0.005		0.001		0.01		0.0025		0.005		0.0025		0.005		0.005		0.25
Average Concentration		NC		0.0046		0.01488		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Variance		NC		1.7E-06		1.8E-06		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Deviation		NC		0.0013		0.00136		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Coefficient of Variation (%)		NC		28.3682		9.11733		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC
Standard Error		NC		0.00046		0.00048		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC

Statistical Summary of Total Metals Groundwater Data
Appendix I Parameters, Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

Location ID	Antimony (Sb)		Arsenic (As)		Barium (Ba)		Beryllium (Be)		Cadmium (Cd)		Chromium (Cr)		Cobalt (Co)		Copper (Cu)		Lead (Pb)		Nickel (Ni)		Selenium (Se)		Silver (Ag)		Thallium (Tl)		Vanadium (V)		Zinc (Zn)		Nitrate (NO_3)	
Monitoring Date	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.
MW-9																																
3/25/2014	0.002	L 0.001	0.005	L 0.0025	0.0047	0.0047	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.016	0.016	0.01	0.01	0.5	L 0.25
6/24/2014	0.002	L 0.001	0.005	L 0.0025	0.0045	0.0045	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.016	0.016	0.01	L 0.005	0.5	L 0.25
9/18/2014	0.002	L 0.001	0.005	L 0.0025	0.0057	0.0057	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.014	0.014	0.014	0.014	0.5	L 0.25
12/17/2014	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.01	L 0.005	0.5	L 0.25
3/24/2015	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.013	0.013	0.01	L 0.005	0.5	L 0.25
6/9/2015	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.01	L 0.005	0.5	L 0.25
9/18/2015	0.05	L 0.025	0.005	L 0.0025	0.005	0.005	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.01	L 0.005	0.5	L 0.25
12/16/2015	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.042	0.042	0.5	L 0.25
3/22/2016	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.028	0.028	0.5	L 0.25
6/8/2016	0.05	L 0.025	0.005	L 0.0025	0.005	0.005	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.023	0.023	0.5	L 0.25
9/16/2016	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.015	0.015	0.043	0.043	0.5	L 0.25
12/6/2016	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.01	L 0.005	0.5	L 0.25
3/29/2017	0.05	L 0.025	0.005	L 0.0025	0.0056	0.0056	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.01	L 0.005	0.5	L 0.25
6/22/2017	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.01	L 0.005	0.5	L 0.25
9/26/2017	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.012	0.012	0.01	L 0.005	0.5	L 0.25
12/13/2017	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.013	0.013	0.01	L 0.005	0.5	L 0.25
3/21/2018	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.016	0.016	0.01	L 0.005	0.5	L 0.25
6/19/2018	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.013	0.013	0.01	L 0.005	0.5	L 0.25
9/19/2018	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.013	0.013	0.01	L 0.005	0.5	L 0.25
12/4/2018	0.05	L 0.025	0.005	L 0.0025	0.0051	0.0051	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.01	L 0.005	0.5	L 0.25
3/11/2019	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.01	L 0.005	0.5	L 0.25
6/19/2019	0.05	L 0.025	0.005	L 0.0025	0.0051	0.0051	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.013	0.013	0.01	L 0.005	0.5	L 0.25
9/26/2019	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.014	0.014	0.01	L 0.005	0.5	L 0.25
12/11/2019	0.05	L 0.025	0.005	L 0.0025	0.005	L 0.0025	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.016	0.016	0.01	L 0.005	0.5	L 0.25
Number Analyzed	24		24		24		24		24		24		24		24		24		24		24		24		24		24		24		24	
Number Detected	0		0		8		0		0		0		0		0		0		0		0		0		0		24		6		0	
Minimum Concentration		0.001		0.0025		0.0025		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.012		0.005		0.25
Maximum Concentration		0.025		0.0025		0.0057		0.0005		0.0025		0.0025		0.005		0.005		0.001		0.01		0.0025		0.005		0.0025		0.016		0.043		0.25
Average Concentration		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		0.01408		NC		NC
Variance		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		1.1E-06		NC		NC
Standard Deviation		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		0.00106		NC		NC
Coefficient of Variation (%)		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		7.52525		NC		NC
Standard Error		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		0.00022		NC		NC
MW-10																																
3/25/2014	0.002	L 0.001	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	L 0.005	6.4	6.4
6/25/2014	0.002	L 0.001	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.005	L 0.0025	0.002	L 0.001	0.01	L 0.005	0.002	L 0.001	0.001	L 0.0005	0.002	L 0.001	0.005	L 0.0025	0.01	L 0.005	0.001	L 0.0005	0.01	L 0.005	0.01	0.01	5.8	5.8
9/16/2014	0.05	L 0.025	0.005	L 0.0025	0.015	0.015	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.01	L 0.005	0.005	L 0.0025	0.01	L 0.005	0.011	0.011	5.4	5.4
12/17/2014	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.3	5.3
3/25/2015	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.9	5.9
6/8/2015	0.05	L 0.025	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.7	5.7
9/15/2015	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.1	5.1
12/16/2015	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	4.9	4.9
3/21/2016	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.9	5.9
6/6/2016	0.05	L 0.025	0.005	L 0.0025	0.012	0.012	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.9	5.9
9/15/2016	0.05	L 0.025	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.4	5.4
12/6/2016	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.2	5.2
3/29/2017	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.8	5.8
6/19/2017	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.5	5.5
9/26/2017	0.05	L 0.025	0.005	L 0.0025	0.012	0.012	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.2	5.2
12/12/2017	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	4.9	4.9
3/20/2018	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.3	5.3
6/18/2018	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	5.0	5.0
9/18/2018	0.05	L 0.025	0.005	L 0.0025	0.016	0.016	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	4.7	4.7
12/4/2018	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	4.3	4.3
3/12/2019	0.05	L 0.025	0.005	L 0.0025	0.013	0.013	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	4.4	4.4
6/17/2019	0.05	L 0.025	0.005	L 0.0025	0.015	0.015	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	4.7	4.7
9/25/2019	0.05	L 0.025	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	4.2	4.2
12/11/2019	0.05	L 0.025	0.005	L 0.0025	0.014	0.014	0.001	L 0.0005	0.001	L 0.0005	0.005	L 0.0025	0.001	L 0.0005	0.01	L 0.005	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.005	L 0.0025	0.01	L 0.005	3.9	3.9
Number Analyzed	24		24		24		24		24		24		24		24		24		24		24		24		24		24		24		24	
Number Detected	0		0		24		0		0		0		0		0		0		0		0		0		0		0		2		24	
Minimum Concentration		0.001		0.0025		0.012		0.0005		0.0005		0.001		0.0005		0.001		0.0005		0.001		0.0025		0.0025		0.0005		0.0025		0.005		3.9
Maximum Concentration		0.025		0.0025		0.016		0.0025		0.0025		0.0025		0.005		0.005		0.001		0.01		0.0025		0.005		0.0025		0.005		0.011		6.4
Average Concentration		NC		NC		0.01346		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		5.2
Variance		NC		NC		8.7E-07		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		0.388696
Standard Deviation		NC		NC		0.00093		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		0.623455
Coefficient of Variation (%)		NC		NC		6.92161		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		11.98951
Standard Error		NC		NC		0.00019		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		0.127262

Notes: Metals results are for total metals.
mg/L = milligrams per liter.
L = not reported at or above the MRL (Method Reporting Limit).
One-half the MRL value used for statistical calculations when concentrations not reported at or above the MRL.
NC = not calculated due to insufficient number of reported detections.

Appendix F

Leak Detection System Data

Summary of LDCS Volumes Pumped and Conductivity Data
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

Date	Rainfall	LDCS-1 Vol. (Gal.)	LDCS-1 Cond. (µS/cm)	LDCS-2A Vol. (Gal)	LDCS-2A Cond. (µS/cm)	LDCS-2B Vol. (Gal)	LDCS-2B Cond. (µS/cm)	LDCS-3A Vol. (Gal)	LDCS-3A Cond. (µS/cm)	LDCS-4A Vol. (Gal)	LDCS-4A Cond. (µS/cm)	LDCS-4B Vol. (Gal)	LDCS-4B Cond. (µS/cm)	LDCS-5 Vol. (Gal)	LDCS-5 Cond. (µS/cm) ^	LDCS-6 Vol. (Gal)	LDCS-6 Cond. (µS/cm)	LDCS-7 Vol. (Gal)	LDCS-7 Cond. (µS/cm)
10/1/2019	0.01	2,390	479	300	721	500	727	293	831	1,290	888	633	1,029	121	968	1,166	1,498	-	-
10/2/2019	0.00	2,980	486	360	734	950	728	426	829	1,430	901	283	1,046	416	986	1,052	1,499	-	-
10/3/2019	0.06	2,420	493	370	744	1400	736	306	827	1,560	846	85	1,091	269	992	1,027	1,500	-	-
10/4/2019	0.04	2,390	492	300	743	500	739	288	829	1,420	840	345	1,117	257	995	1,030	1,500	-	-
10/5/2019	0.10	2,390	486	360	729	1000	736	288	832	1,250	840	612	1,128	257	995	921	1,500	-	-
10/6/2019	0.01	2,390	486	300	733	500	729	288	833	1,180	840	672	1,127	257	987	928	1,500	-	-
10/7/2019	0.14	2,420	500	350	746	650	737	438	830	1,290	790	730	1,122	225	965	982	1,500	-	-
10/8/2019	0.14	2,640	507	360	753	550	746	293	827	1,170	810	963	1,110	369	944	1,107	1,015	-	-
10/9/2019	0.00	2,230	488	360	733	500	746	583	830	1,420	770	1,978	1,095	816	959	1,112	998	-	-
10/10/2019	0.01	2,290	478	310	720	500	737	390	835	*	740	788	1,083	268	982	1,115	1,000	-	-
10/11/2019	0.01	3,220	489	360	737	600	736	390	834	*	700	614	1,057	268	991	1,073	1,000	-	-
10/12/2019	0.00	5,650	490	360	745	600	740	390	830	*	700	1,262	1,060	268	994	1,121	1,000	-	-
10/13/2019	0.01	8,390	483	360	742	600	743	293	829	*	700	680	1,047	228	995	1,062	1,038	-	-
10/14/2019	0.00	2,870	476	360	732	650	741	439	462	*	720	693	1,043	258	996	1,017	1,037	-	-
10/15/2019	0.00	2,410	480	310	737	600	737	293	541	*	732	631	1,028	607	996	1,003	1,047	-	-
10/16/2019	0.31	3,210	483	400	744	650	736	439	725	*	700	730	1,026	1,764	996	1,014	1,010	-	-
10/17/2019	0.39	2,450	482	360	755	650	739	441	791	*	746	2,124	1,028	1,848	996	1,269	983	-	-
10/18/2019	0.45	2,410	476	300	750	550	740	441	818	*	760	3,515	1,039	1,848	996	1,704	983	-	-
10/19/2019	0.82	3,240	478	370	744	650	738	441	843	*	760	7,511	1,051	1,848	996	4,116	983	-	-
10/20/2019	0.01	3,090	467	350	730	650	734	441	881	*	760	4,528	1,020	1,848	996	2,917	983	-	-
10/21/2019	0.23	2,520	465	370	735	1250	731	594	897	*	730	2,886	1,004	492	996	2,088	1,001	-	-
10/22/2019	0.06	3,240	466	380	742	1900	731	594	900	*	780	1,363	1,013	703	996	1,894	993	-	-
10/23/2019	0.01	3,280	462	400	735	600	726	428	902	*	743	793	997	379	996	1,945	978	-	-
10/24/2019	0.00	3,280	435	430	697	900	682	601	847	1,380	761	645	989	318	996	1,703	985	-	-
10/25/2019	0.02	3,573	471	380	756	700	743	336	868	*	745	581	1,028	279	538	1,439	995	-	-
10/26/2019	0.01	3,573	471	380	756	700	743	336	868	*	745	581	1,028	279	538	1,439	995	-	-
10/27/2019	0.00	4,288	471	390	756	750	743	336	868	6,570	745	581	1,028	279	538	1,439	995	-	-
10/28/2019	0.01	4,370	441	180	720	1550	720	455	830	1,300	812	752	1,002	259	545	1,364	1,004	-	-
10/29/2019	0.01	3,790	436	360	712	700	727	278	832	*	794	765	1,038	258	546	1,259	1,009	-	-
10/30/2019	0.00	3,790	435	420	739	500	719	437	832	*	805	761	1,047	238	547	1,208	1,015	-	-
10/31/2019	0.00	4,258	433	420	727	850	723	440	829	*	823	770	1,054	260	550	1,154	1,022	-	-
11/1/2019	0.00	4,170	433	420	726	750	722	347	836	90	*	764	1,016	251	551	1,118	1,022	-	-
11/2/2019	0.01	4,490	437	420	735	1500	728	347	836	2,320	*	808	1,016	251	551	1,065	1,023	-	-
11/3/2019	0.00	4,500	438	490	740	2200	735	347	834	1,620	*	792	1,040	251	551	3,307	1,027	-	-
11/4/2019	0.01	4,460	437	420	735	700	734	440	834	1,630	*	793	1,036	260	827	1,162	1,033	-	-
11/5/2019	0.01	3,960	174	410	735	700	732	432	323	1,490	661	724	1,006	264	996	1,117	1,039	-	-
11/6/2019	0.01	7,990	326	480	735	700	732	298	633	1,610	691	814	1,007	272	996	1,111	1,042	-	-
11/7/2019	0.00	4,480	392	420	735	700	732	442	762	1,490	688	946	1,021	307	996	1,074	1,035	-	-
11/8/2019	0.01	4,173	429	460	737	650	736	385	832	1,630	694	915	1,005	426	996	1,181	1,038	-	-
11/9/2019	0.27	4,460	424	460	735	700	732	385	827	1,630	694	1,002	1,011	426	996	1,181	963	-	-
11/10/2019	0.04	4,460	429	470	735	700	732	385	836	1,630	694	830	1,015	426	996	3,544	997	-	-
11/11/2019	0.00	4,540	430	420	735	700	732	442	839	1,630	694	666	1,030	416	996	1,451	998	-	-
11/12/2019	0.15	4,620	434	490	735	700	732	306	839	3,400	690	1,412	1,038	495	996	1,458	1,007	-	-
11/13/2019	0.01	4,730	433	420	735	700	732	438	840	5,170	735	2,137	1,051	395	996	1,554	1,007	-	-
11/14/2019	0.00	4,760	435	490	735	700	732	439	841	1,920	708	647	1,050	454	996	1,555	1,012	-	-
11/15/2019	0.23	4,700	428	460	739	750	731	385	835	1,130	702	787	1,037	979	996	1,781	1,025	-	-
11/16/2019	0.00	4,700	428	460	739	750	731	385	835	1,130	702	787	1,037	979	996	1,781	1,025	-	-
11/17/2019	0.06	4,700	428	490	739	700	731	385	835	1,120	702	787	1,037	979	996	1,781	1,025	-	-
11/18/2019	0.10	5,215	432	480	751	750	722	590	841	0	787	873	1,096	1,105	996	2,258	998	-	-
11/19/2019	0.07	4,900	421	490	729	750	724	590	862	0	739	1,002	1,045	1,669	996	3,191	1,009	-	-
11/20/2019	0.00	5,140	416	480	722	700	723	440	869	670	732	980	1,031	546	996	3,018	1,013	-	-
11/21/2019	0.01	5,460	418	490	735	800	726	587	876	2,580	724	935	1,025	355	996	2,296	1,008	-	-
11/22/2019	0.01	4,820	415	480	730	1550	726	375	883	2,260	716	1,054	1,042	284	996	2,003	1,001	-	-
11/23/2019	0.03	5,830	414	480	732	750	721	375	890	2,260	715	1,009	1,047	284	996	1,745	1,001	-	-
11/24/2019	0.04	10,820	418	480	743	800	726	375	885	2,130	726	1,029	1,031	284	996	1,621	1,002	-	-
11/25/2019	0.04	16,960	422	530	746	750	730	927	874	2,150	730	1,059	1,023	266	996	1,566	998	-	-
11/26/2019	0.01	23,370	423	480	747	1050	731	586	861	2,110	723	1,139	1,039	262	996	1,593	999	-	-
11/27/2019	0.01	6,130	423	540	747	1950	734	437	850	1,950	720	1,088	1,045	220	996	1,662	1,004	-	-
11/28/2019	0.00	4,930	411	550	724	2700	733	437	849	2,000	723	1,282	1,044	220	996	1,558	1,011	-	-
11/29/2019	0.00	5,950	407	540	728	800	727	688	849	2,060	724	1,421	1,037	365	996	1,485	1,017	-	-
11/30/2019	0.01	11,860	406	480	727	800	721	688	846	1,840	718	1,479	1,012	365	996	1,368	1,019	-	-

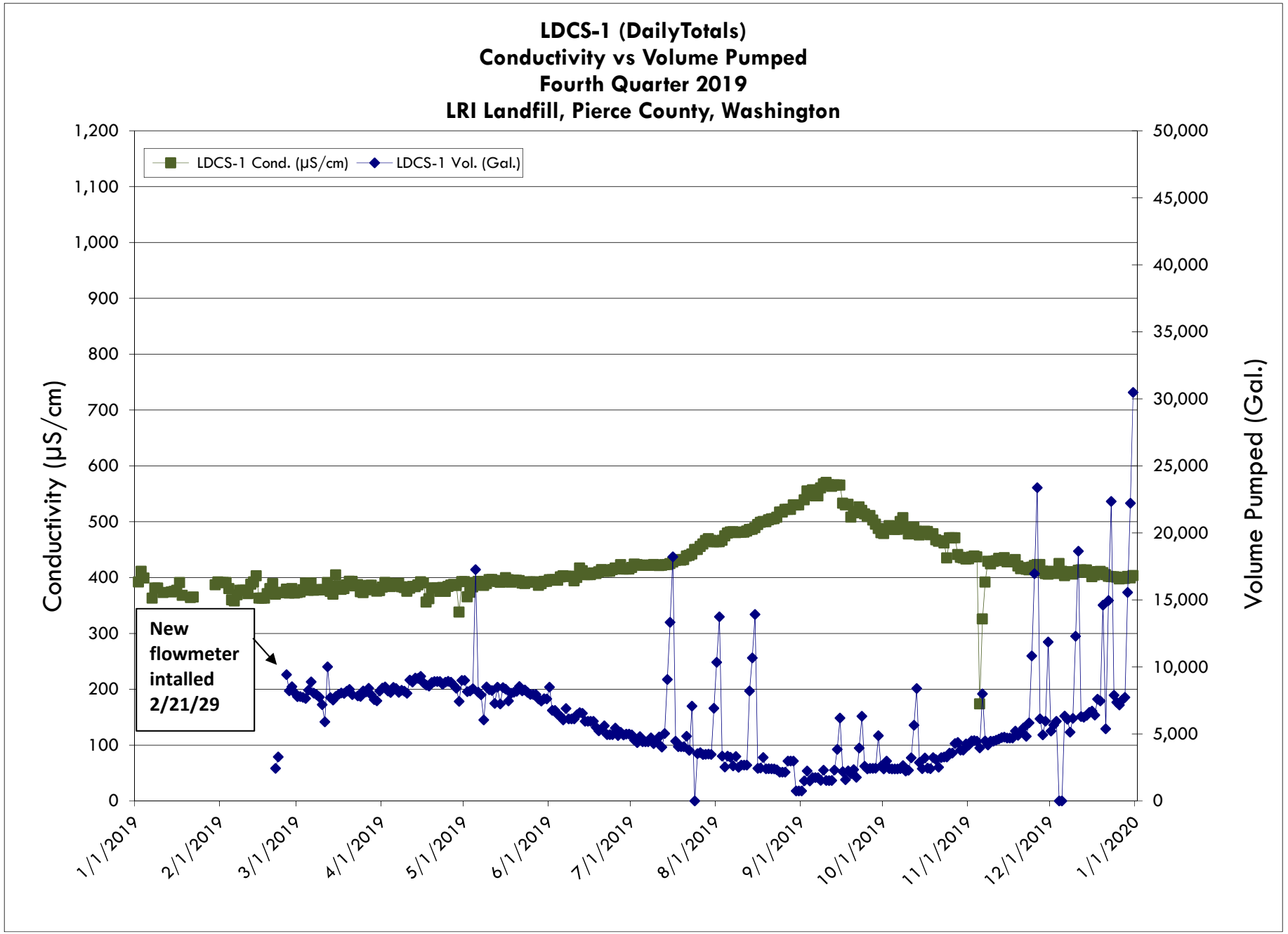
Summary of LDCS Volumes Pumped and Conductivity Data
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

Date	Rainfall	LDCS-1 Vol. (Gal.)	LDCS-1 Cond. (µS/cm)	LDCS-2A Vol. (Gal)	LDCS-2A Cond. (µS/cm)	LDCS-2B Vol. (Gal)	LDCS-2B Cond. (µS/cm)	LDCS-3A Vol. (Gal)	LDCS-3A Cond. (µS/cm)	LDCS-4A Vol. (Gal)	LDCS-4A Cond. (µS/cm)	LDCS-4B Vol. (Gal)	LDCS-4B Cond. (µS/cm)	LDCS-5 Vol. (Gal)	LDCS-5 Cond. (µS/cm) ^	LDCS-6 Vol. (Gal)	LDCS-6 Cond. (µS/cm)	LDCS-7 Vol. (Gal)	LDCS-7 Cond. (µS/cm)
12/1/2019	0.07	5,220	411	540	737	800	726	385	845	2,100	710	1,378	1,000	257	996	1,302	1,022	-	-
12/2/2019	0.00	5,660	409	480	728	750	726	439	845	1,880	711	1,622	997	514	996	1,326	1,000	-	-
12/3/2019	0.02	5,943	407	540	747	750	718	439	854	4,450	785	1,594	994	491	996	1,440	1,007	-	-
12/4/2019	0.16	0	425	490	758	800	718	439	854	2,480	785	865	994	426	996	1,498	1,020	-	-
12/5/2019	0.01	0	411	0	758	0	718	329	854	2,370	752	865	1,034	634	996	1,498	984	-	-
12/6/2019	0.17	6,340	403	490	718	1650	710	329	816	2,660	746	975	1,036	634	996	1,590	984	-	-
12/7/2019	0.18	6,100	410	540	734	850	722	329	830	3,800	759	1,007	1,038	634	996	1,957	984	-	-
12/8/2019	0.00	5,130	410	540	728	1650	730	329	847	2,880	766	1,178	1,016	634	996	2,262	984	-	-
12/9/2019	0.01	6,160	406	440	722	2450	726	425	858	2,750	770	1,056	1,004	358	996	2,059	920	-	-
12/10/2019	0.23	12,290	410	540	738	800	726	733	856	3,090	773	248	1,001	1,791	996	590	969	-	-
12/11/2019	0.18	18,640	413	490	745	850	729	733	853	3,070	773	76	1,018	3,093	996	9,776	989	-	-
12/12/2019	0.58	6,300	414	540	745	750	732	587	857	6,920	785	124	1,028	688	996	7,873	982	-	-
12/13/2019	0.08	6,250	409	530	735	900	728	587	868	3,620	796	45	1,039	688	996	5,568	982	-	-
12/14/2019	0.12	6,380	413	530	740	850	727	587	878	3,070	786	44	1,068	688	996	3,715	982	-	-
12/15/2019	0.01	6,610	409	500	734	750	723	587	881	2,720	792	46	1,084	688	996	3,178	888	-	-
12/16/2019	0.00	6,710	402	550	724	900	713	442	883	2,260	779	46	1,094	324	996	2,592	929	21,645	-
12/17/2019	0.01	6,410	404	540	738	850	719	587	878	4,340	762	15,038	1,116	389	996	2,192	947	0	-
12/18/2019	0.14	7,600	411	540	747	1100	730	587	867	2,240	755	9,432	1,153	4,075	996	1,988	961	0	-
12/19/2019	0.49	7,460	411	590	747	850	735	516	858	4,700	769	14,904	1,148	2,226	996	2,125	970	0	-
12/20/2019	0.68	14,610	409	300	743	900	734	516	856	5,290	799	6,961	1,111	2,226	996	7,626	967	0	-
12/21/2019	0.64	5,380	405	540	733	900	729	516	847	3,220	790	5,120	1,082	2,226	996	4,855	960	0	-
12/22/2019	0.24	14,960	402	250	737	1000	722	516	874	3,240	803	6,352	1,034	2,226	996	4,022	925	0	-
12/23/2019	0.12	22,350	401	600	733	900	722	586	880	3,440	788	6,049	1,023	1,217	996	4,149	914	0	846
12/24/2019	0.01	7,890	401	540	737	850	724	661	881	2,880	757	5,129	1,014	455	996	3,265	909	0	900
12/25/2019	0.00	7,360	401	600	737	850	726	661	875	2,360	744	4,023	1,015	455	996	2,559	909	0	-
12/26/2019	0.04	7,160	397	540	726	1000	717	586	873	2,180	742	3,282	1,016	325	996	2,037	941	2,834	916
12/27/2019	0.01	7,540	398	610	733	850	719	538	867	2,180	744	3,255	1,011	303	996	1,913	948	0	920
12/28/2019	0.00	7,730	398	540	733	1700	715	538	862	2,030	759	2,929	993	303	996	1,792	914	0	-
12/29/2019	0.01	15,560	402	600	742	900	727	538	856	2,020	770	2,954	986	303	996	1,775	939	0	-
12/30/2019	0.02	22,220	399	550	731	1850	729	439	853	1,860	767	2,907	983	292	996	1,728	955	7,455	935
12/31/2019	0.00	30,480	403	610	738	850	727	0	852	2,650	767	3,952	983	0	996	1,956	964	0	940

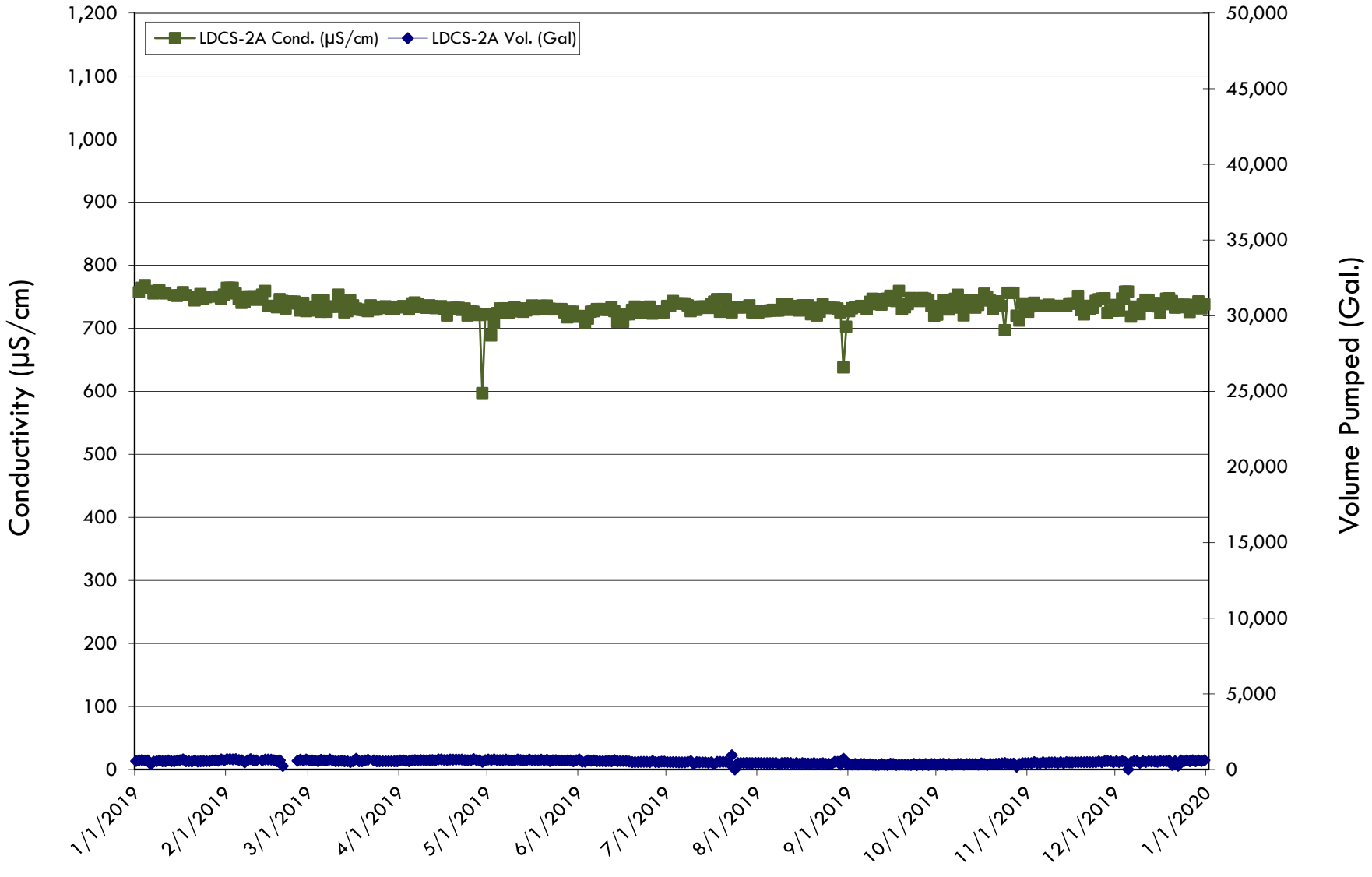
- = No data collected

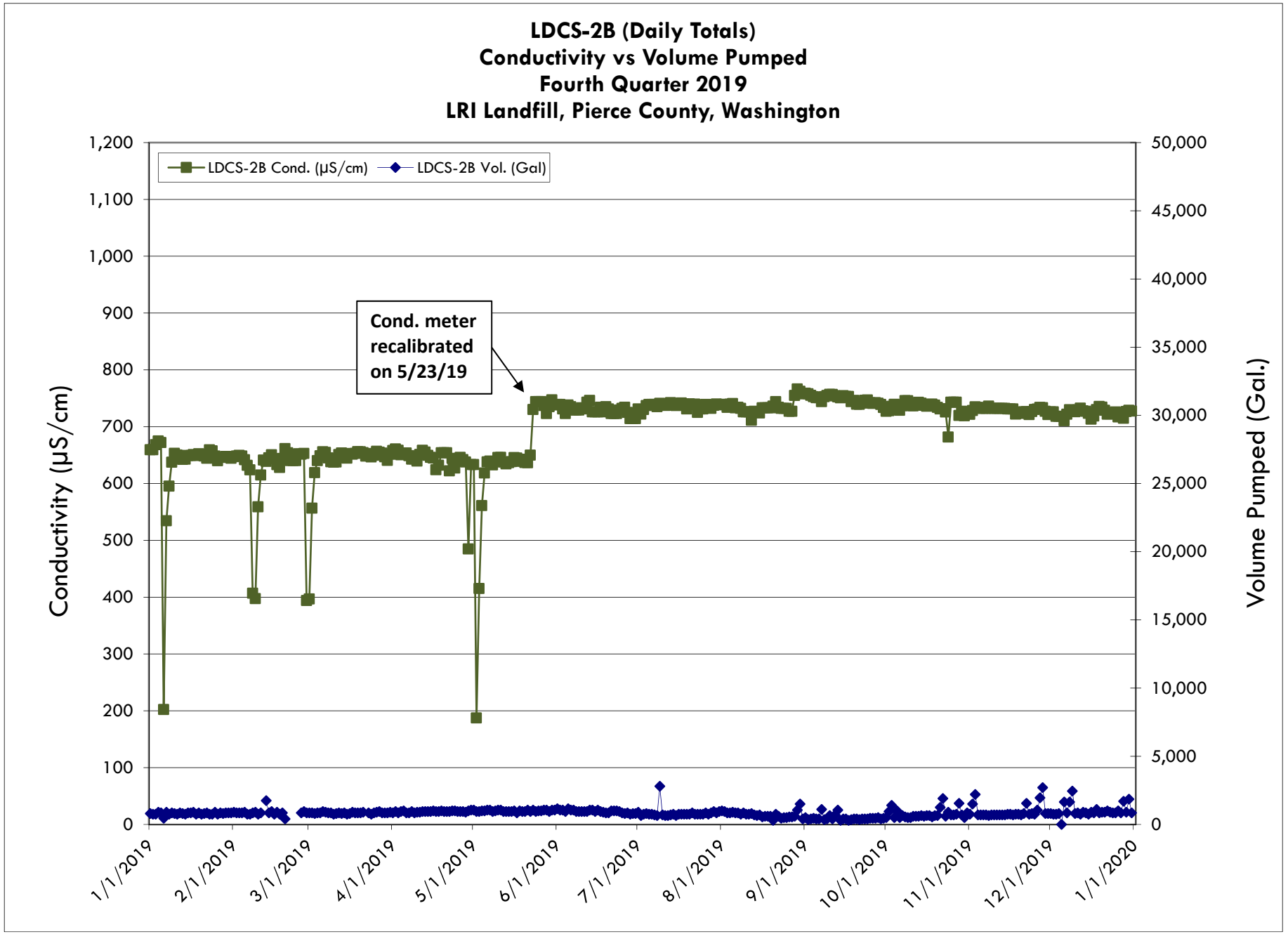
* = Meter malfunction

^ = Meter malfunction at Cell 5 during Fourth Quarter, conductivity data not accurate


LDCS-1 (DailyTotals)
Conductivity vs Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
LDCS-1 Cond. (µS/cm)
LDCS-1 Vol. (Gal.)
Conductivity (µS/cm)
Volume Pumped (Gal.)
New flowmeter intalled 2/21/29
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020

LDCS-2A (Daily Totals)
Conductivity vs Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington




LDCS-2B (Daily Totals)
Conductivity vs Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
LDCS-2B Cond. (µS/cm)
LDCS-2B Vol. (Gal)
Cond. meter recalibrated on 5/23/19
Conductivity (µS/cm)
Volume Pumped (Gal.)
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
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7/1/2019
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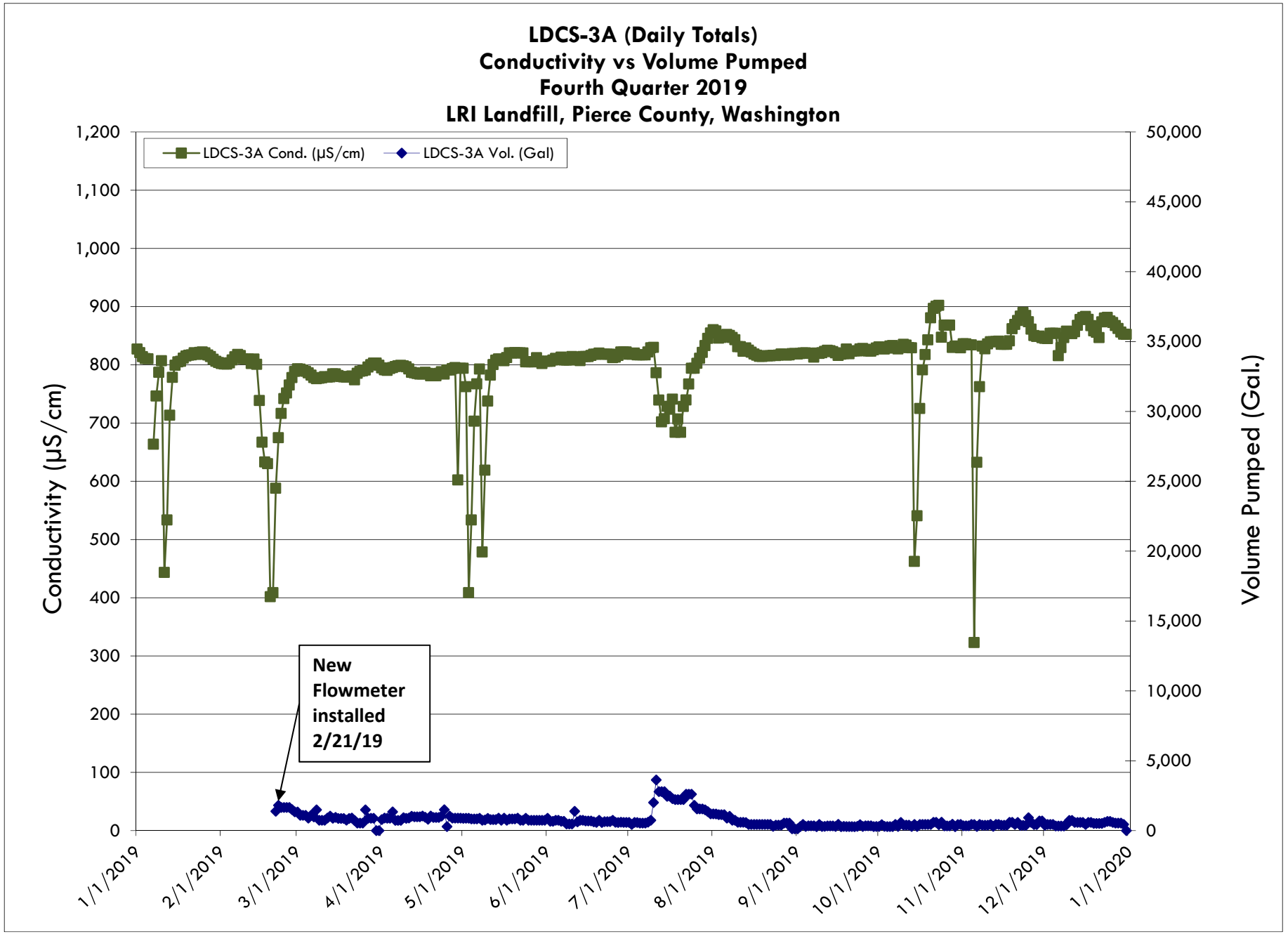
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020


LDCS-3A (Daily Totals)
Conductivity vs Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
LDCS-3A Cond. (µS/cm)
LDCS-3A Vol. (Gal)
Conductivity (µS/cm)
Volume Pumped (Gal.)
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
New Flowmeter installed 2/21/19
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
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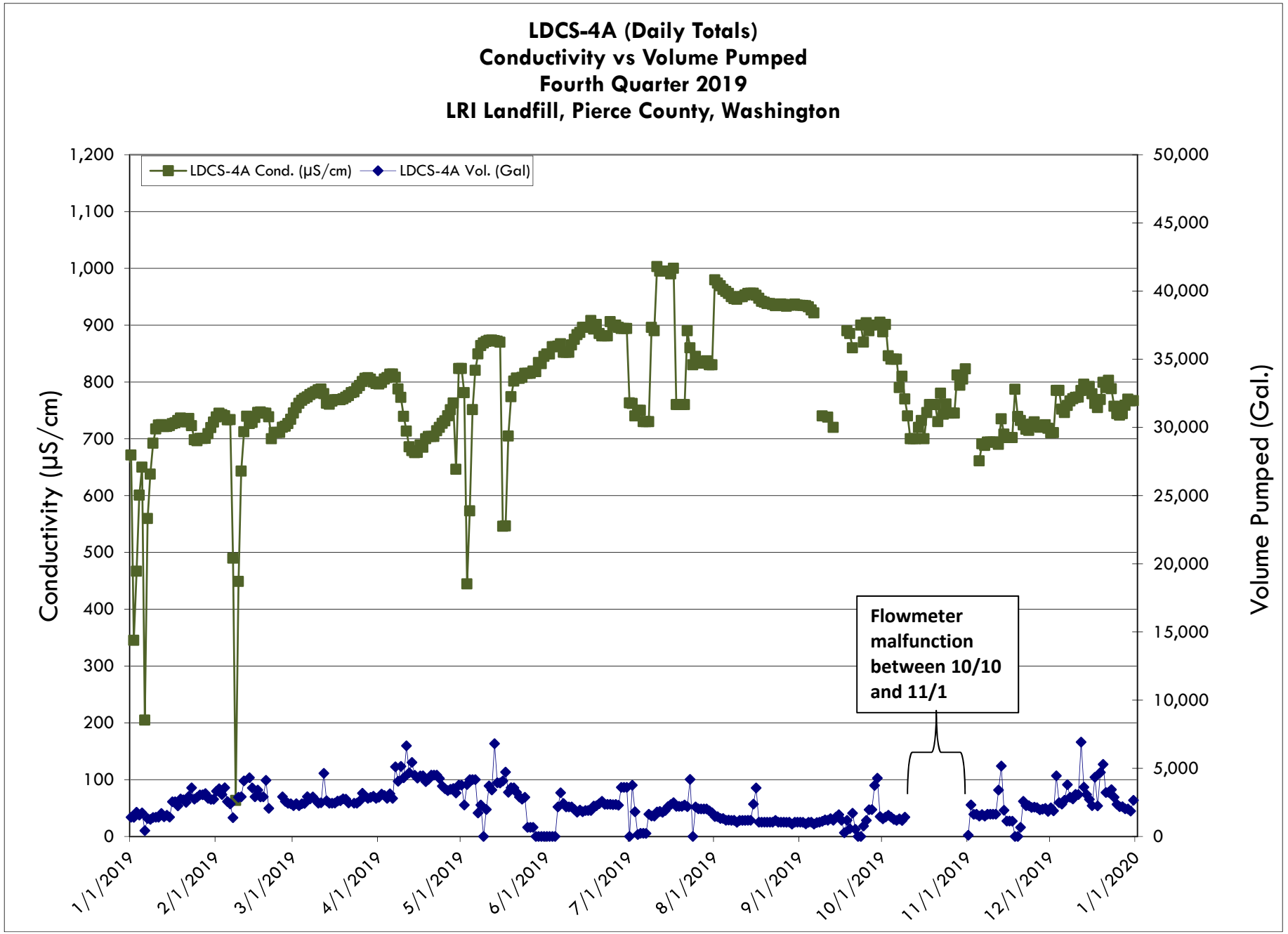
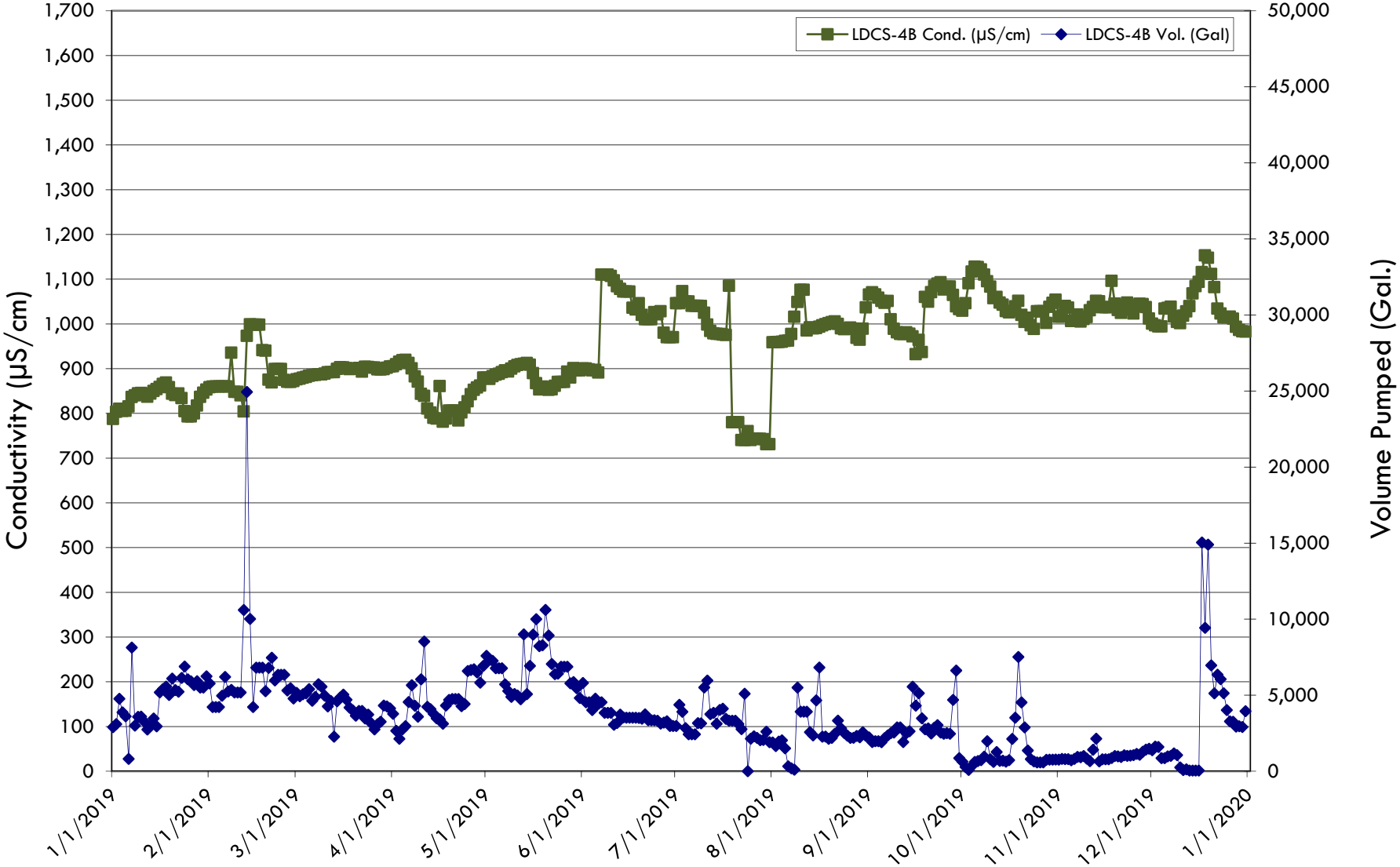
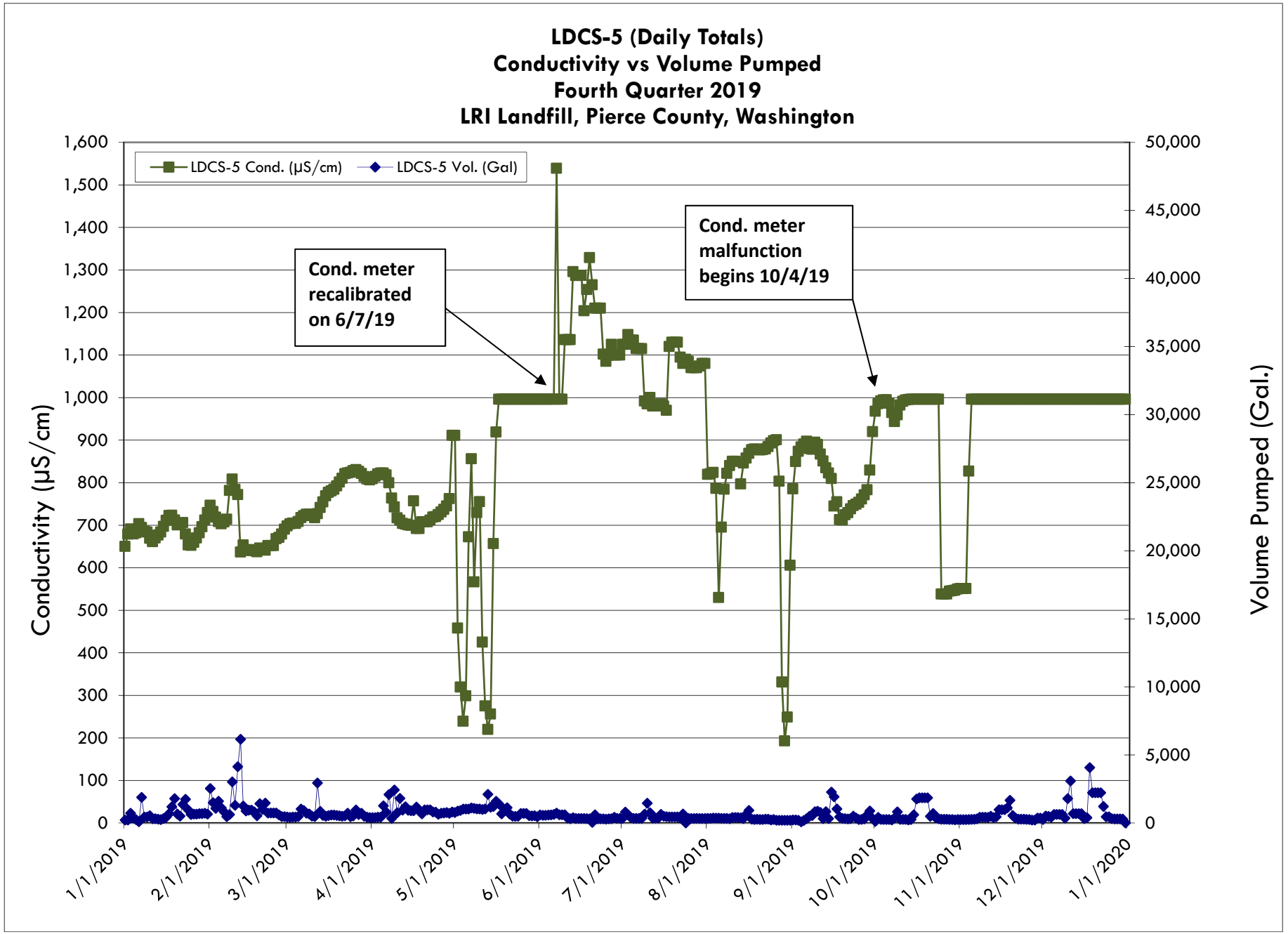
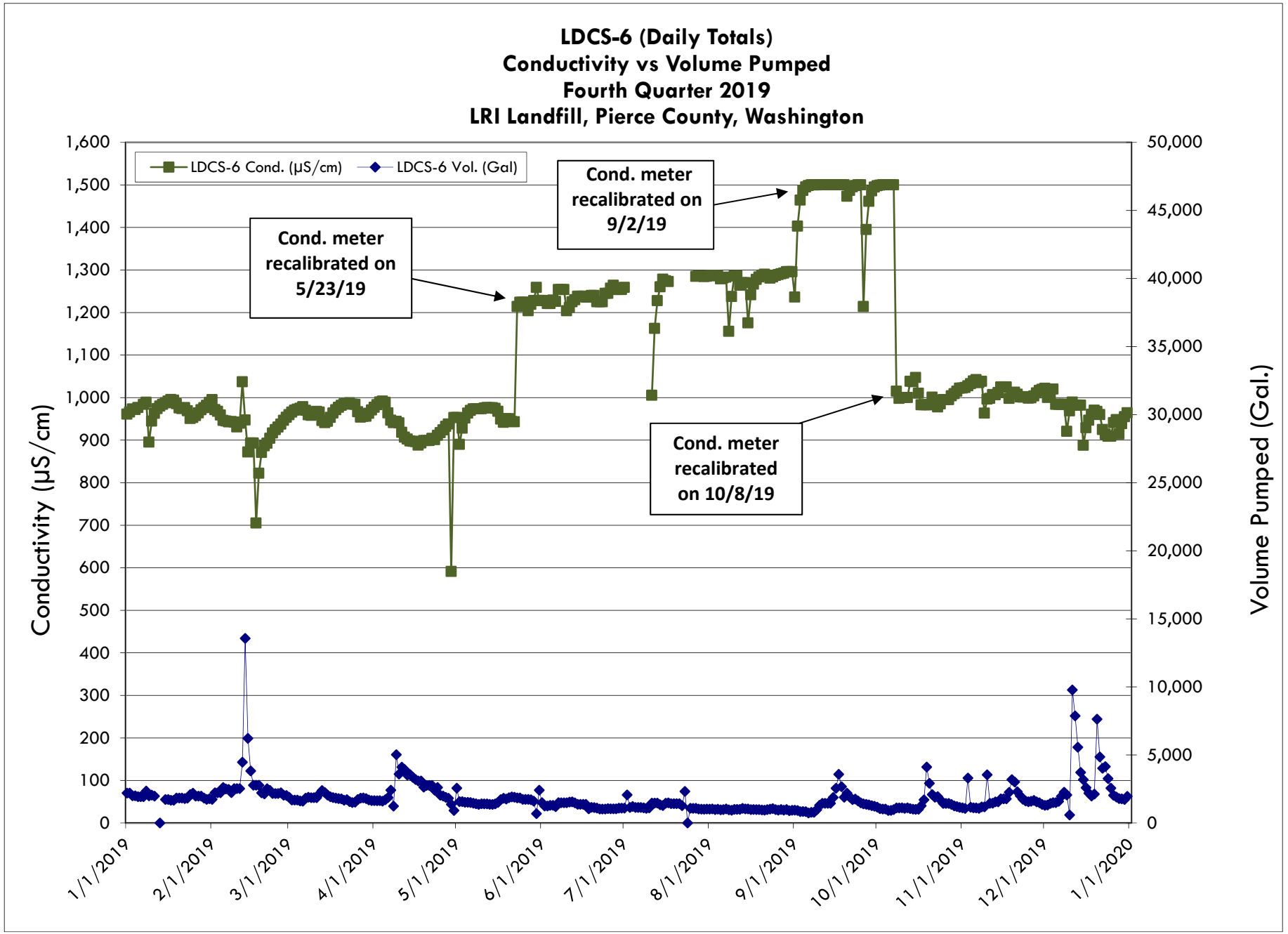
10/1/2019
11/1/2019
12/1/2019
1/1/2020

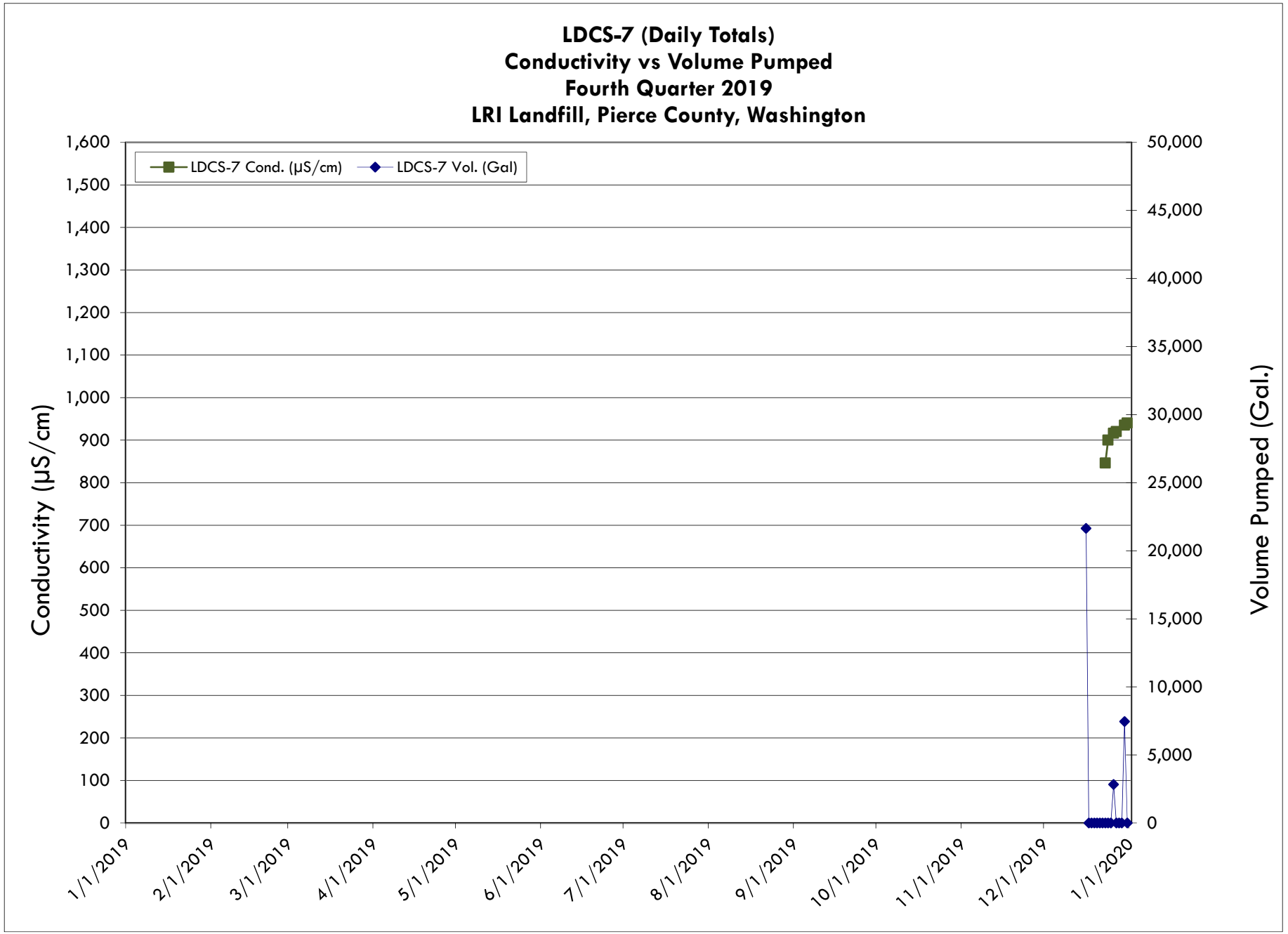

LDCS-4A (Daily Totals)
Conductivity vs Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
LDCS-4A Cond. (µS/cm)
LDCS-4A Vol. (Gal)
Conductivity (µS/cm)
Volume Pumped (Gal.)
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020
Flowmeter malfunction between 10/10 and 11/1

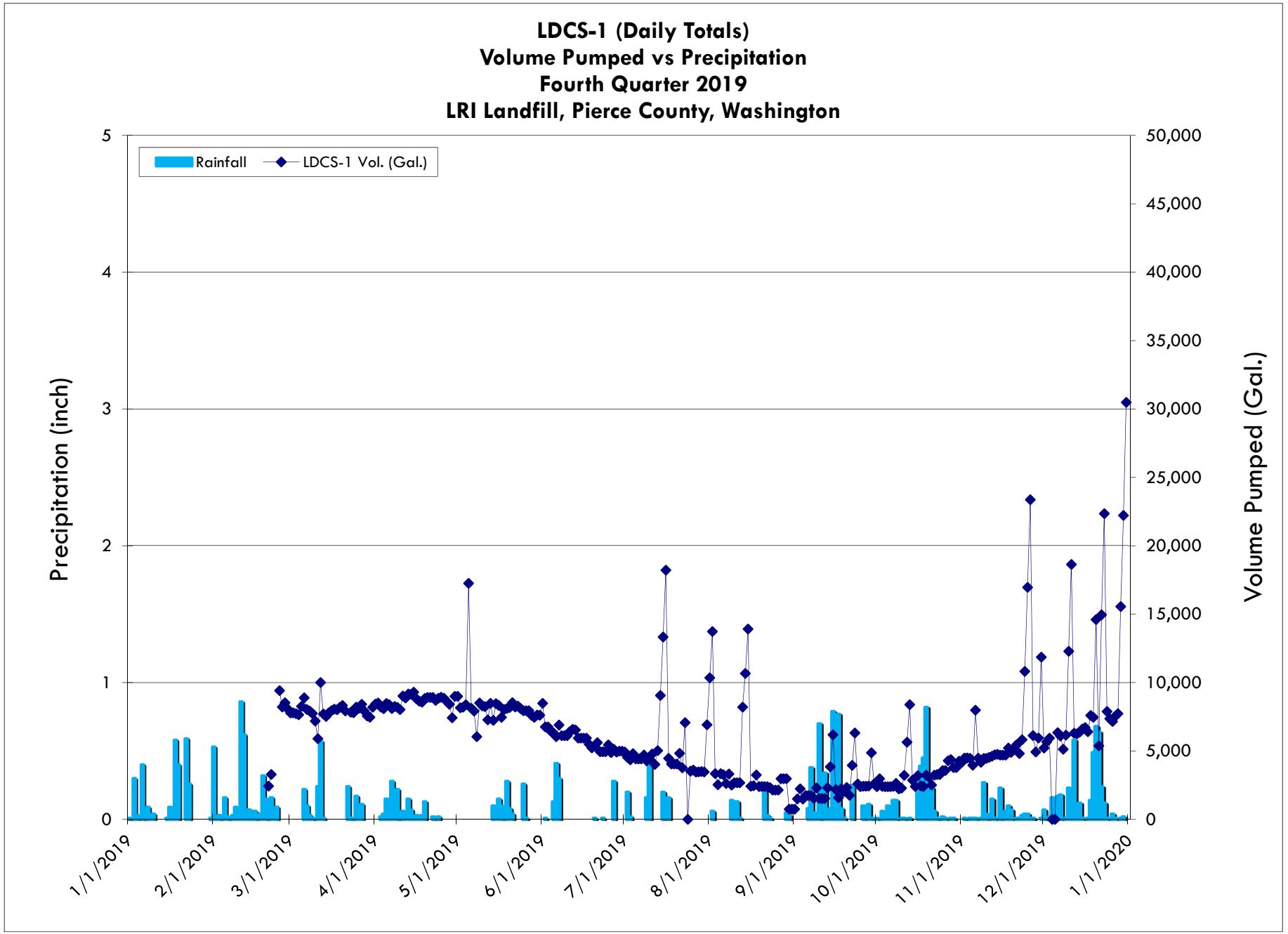
LDCS-4B (Daily Totals)
Conductivity vs Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

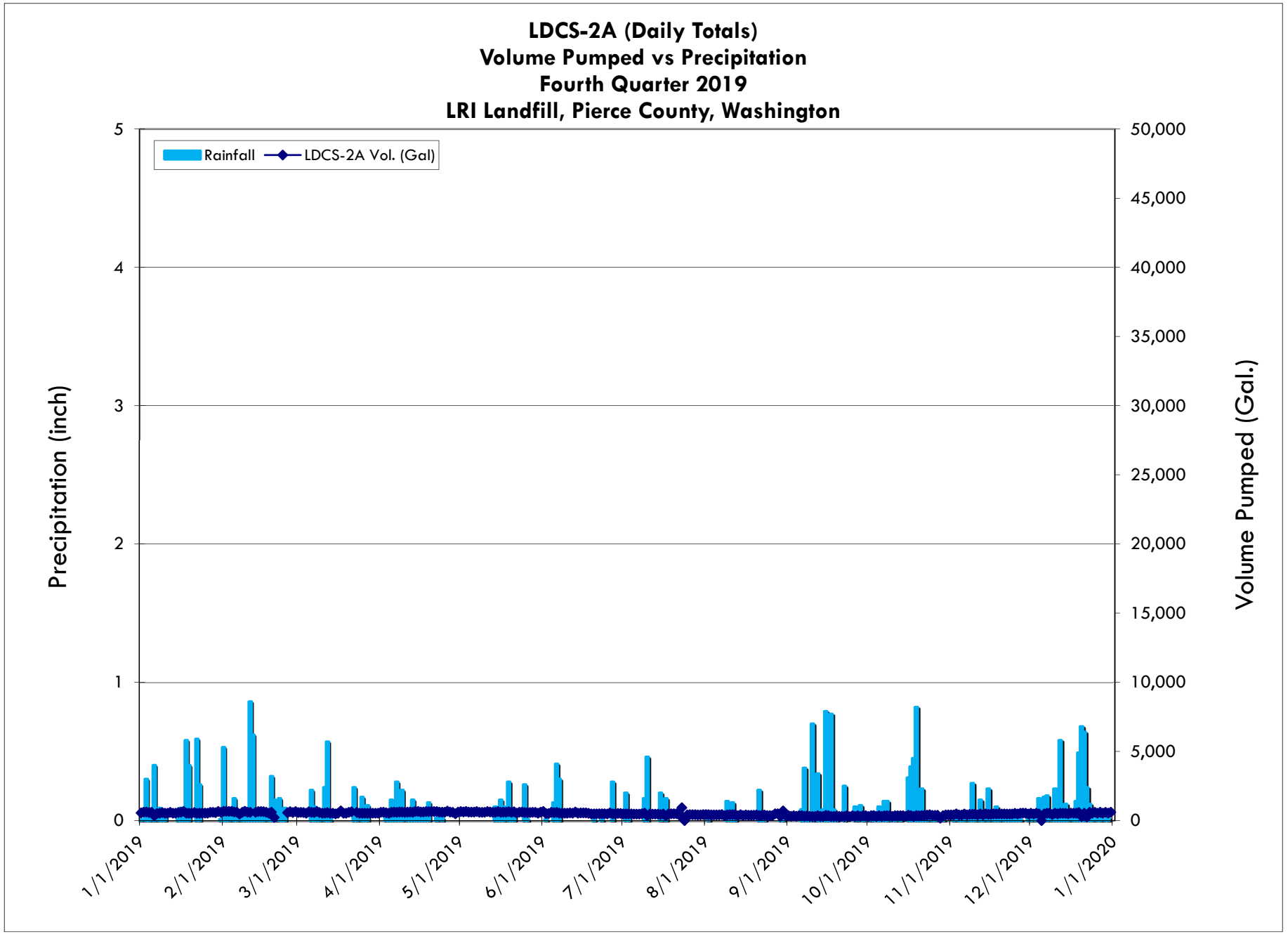


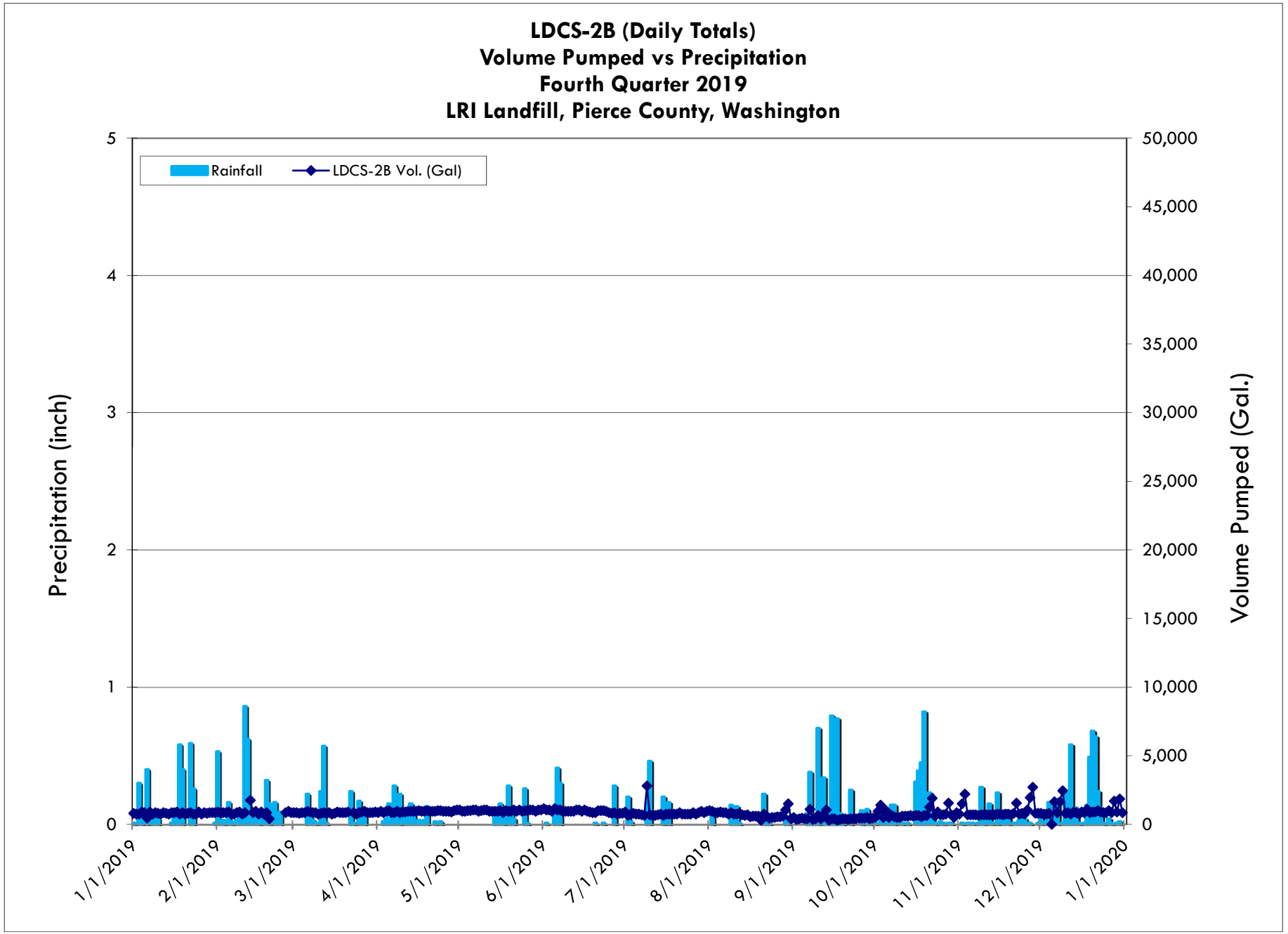

LDCS-5 (Daily Totals)
Conductivity vs Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
LDCS-5 Cond. (µS/cm)
LDCS-5 Vol. (Gal)
Cond. meter recalibrated on 6/7/19
Cond. meter malfunction begins 10/4/19
Conductivity (µS/cm)
Volume Pumped (Gal.)
1,600
1,500
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020


LDCS-6 (Daily Totals)
Conductivity vs Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
LDCS-6 Cond. (µS/cm)
LDCS-6 Vol. (Gal)
Cond. meter recalibrated on 5/23/19
Cond. meter recalibrated on 9/2/19
Cond. meter recalibrated on 10/8/19
Conductivity (µS/cm)
Volume Pumped (Gal.)
1,600
1,500
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020

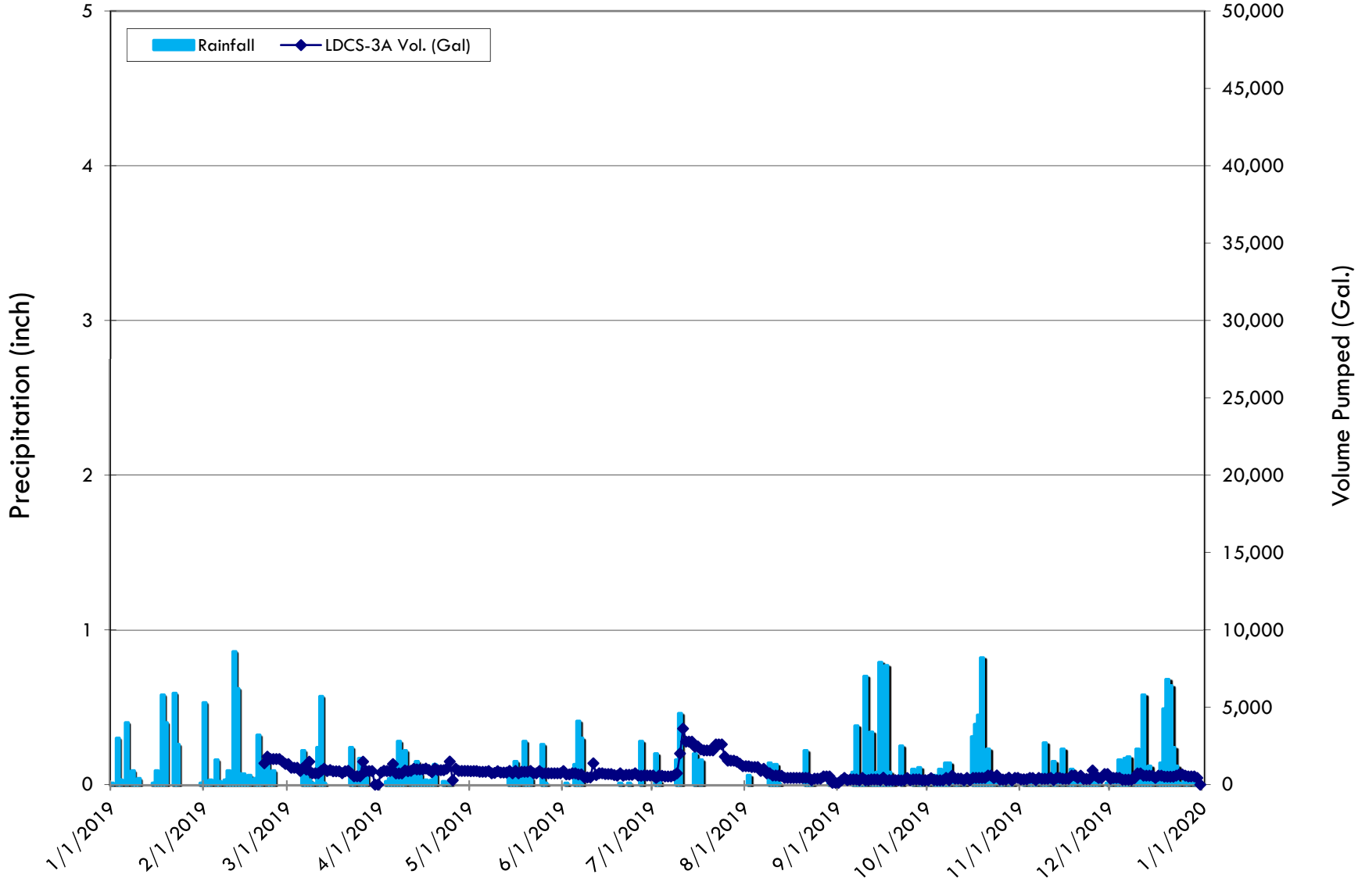

LDCS-7 (Daily Totals)
Conductivity vs Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
LDCS-7 Cond. (µS/cm)
LDCS-7 Vol. (Gal)
Conductivity (µS/cm)
Volume Pumped (Gal.)
1,600
1,500
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020

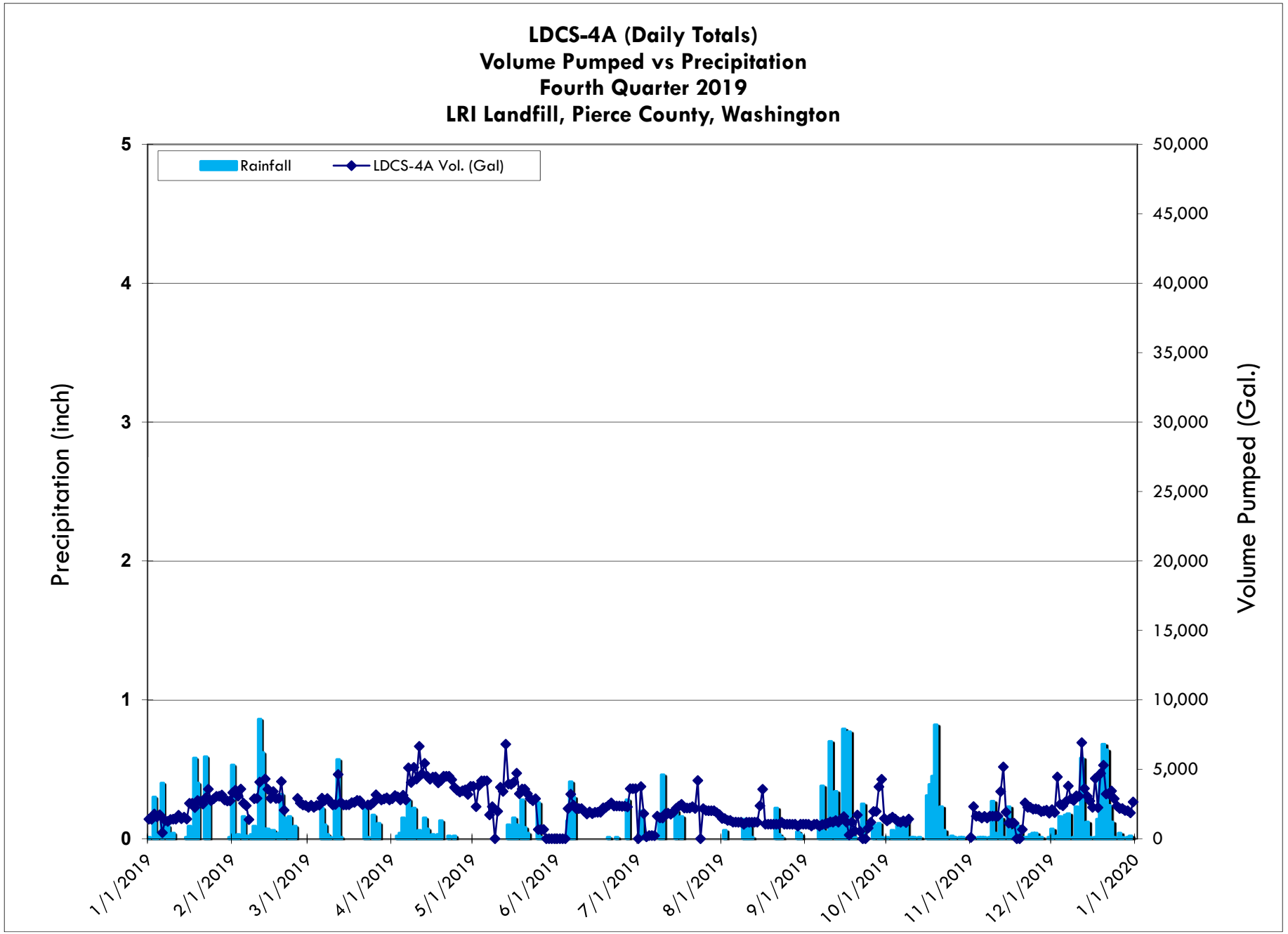

LDCS-1 (Daily Totals)
Volume Pumped vs Precipitation
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
Rainfall
LDCS-1 Vol. (Gal.)
Precipitation (inch)
Volume Pumped (Gal.)
0
1
2
3
4
5
0
5,000
10,000
15,000
20,000
25,000
30,000
35,000
40,000
45,000
50,000
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020

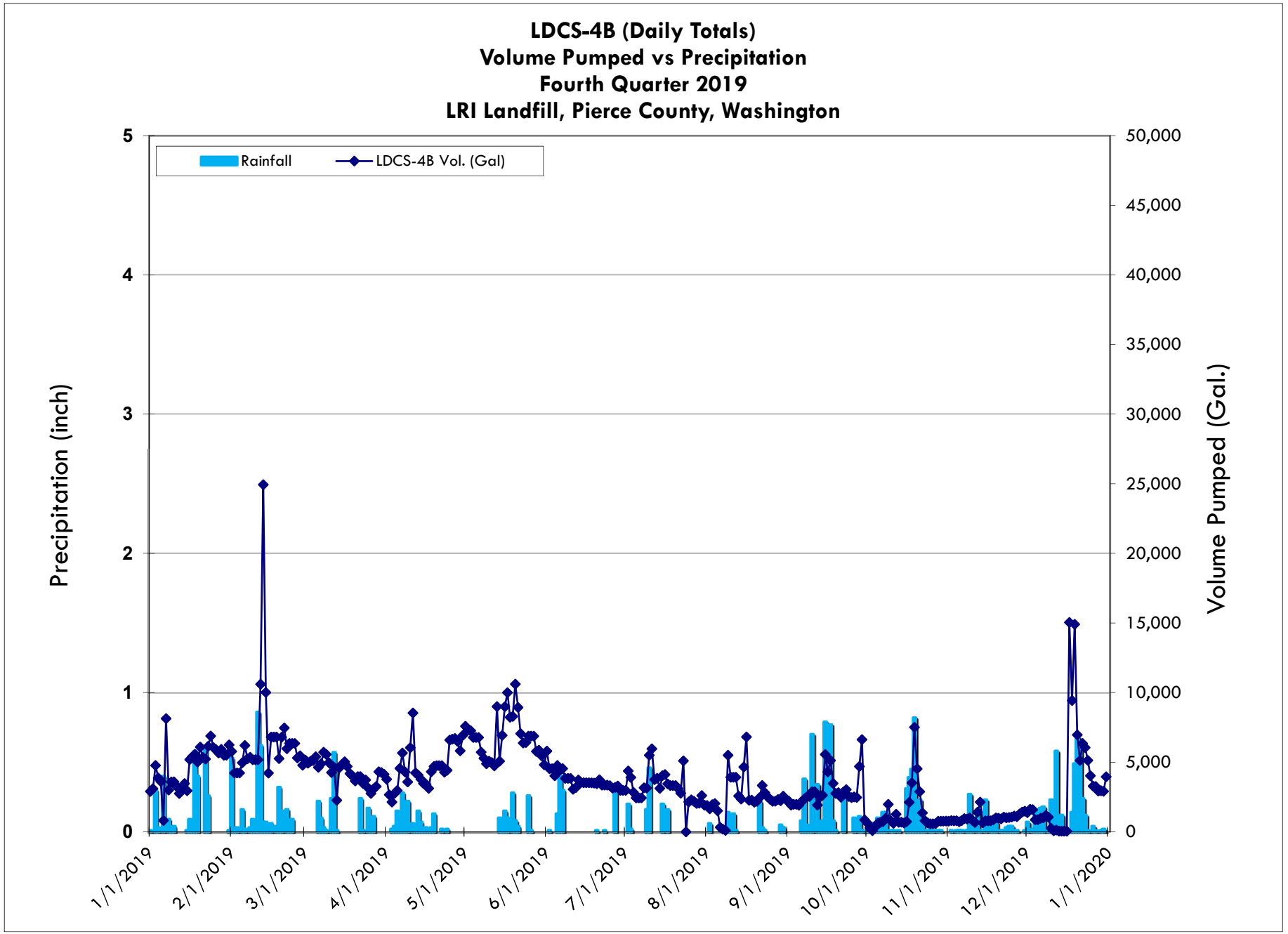

LDCS-2A (Daily Totals)
Volume Pumped vs Precipitation
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
Rainfall
LDCS-2A Vol. (Gal)
Precipitation (inch)
Volume Pumped (Gal.)
0
1
2
3
4
5
0
5,000
10,000
15,000
20,000
25,000
30,000
35,000
40,000
45,000
50,000
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020

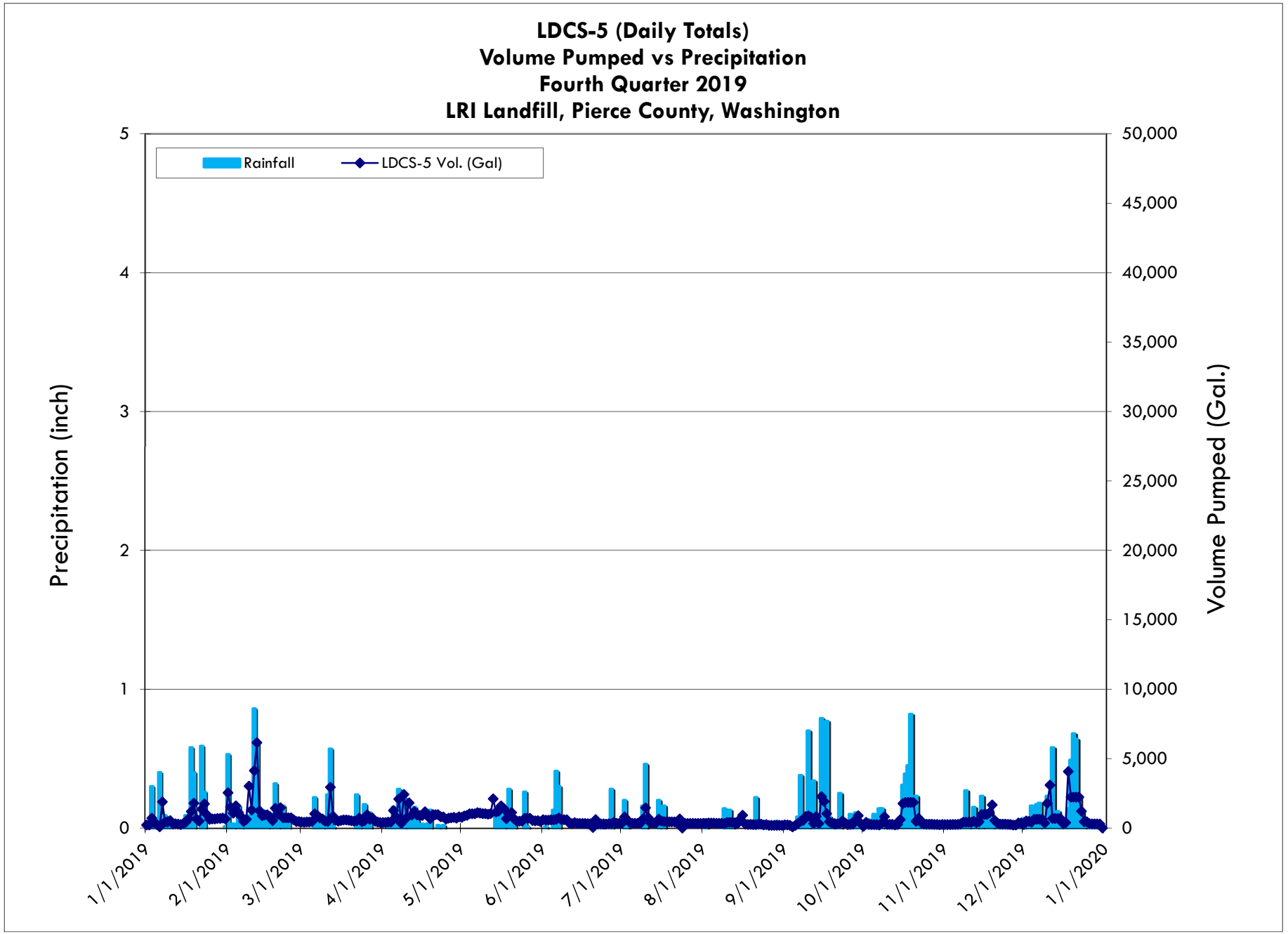

LDCS-2B (Daily Totals)
Volume Pumped vs Precipitation
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
Rainfall
LDCS-2B Vol. (Gal)
Precipitation (inch)
Volume Pumped (Gal.)
0
1
2
3
4
5
0
5,000
10,000
15,000
20,000
25,000
30,000
35,000
40,000
45,000
50,000
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020

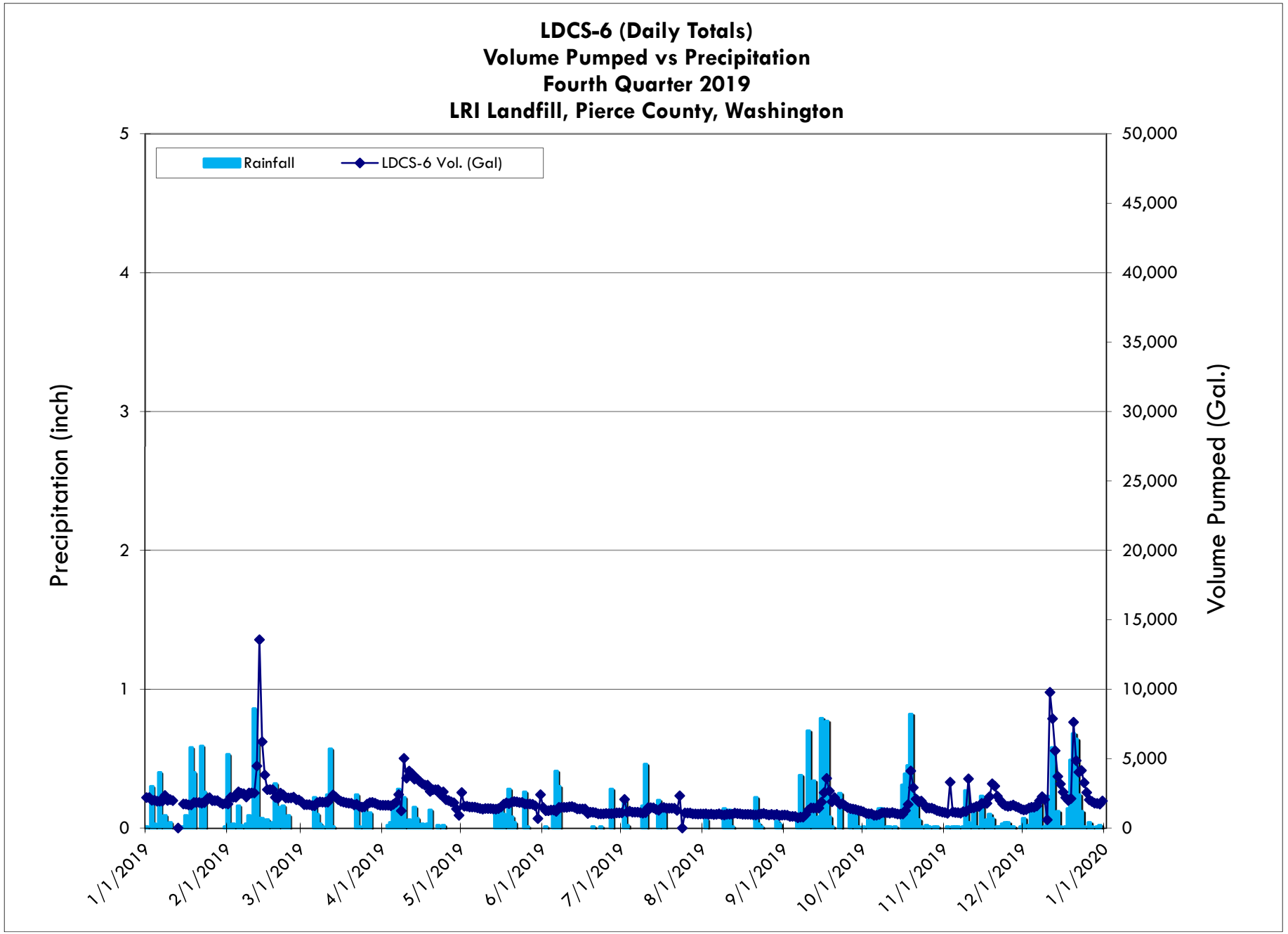
LDCS-3A (Daily Totals)
Volume Pumped vs Precipitation
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

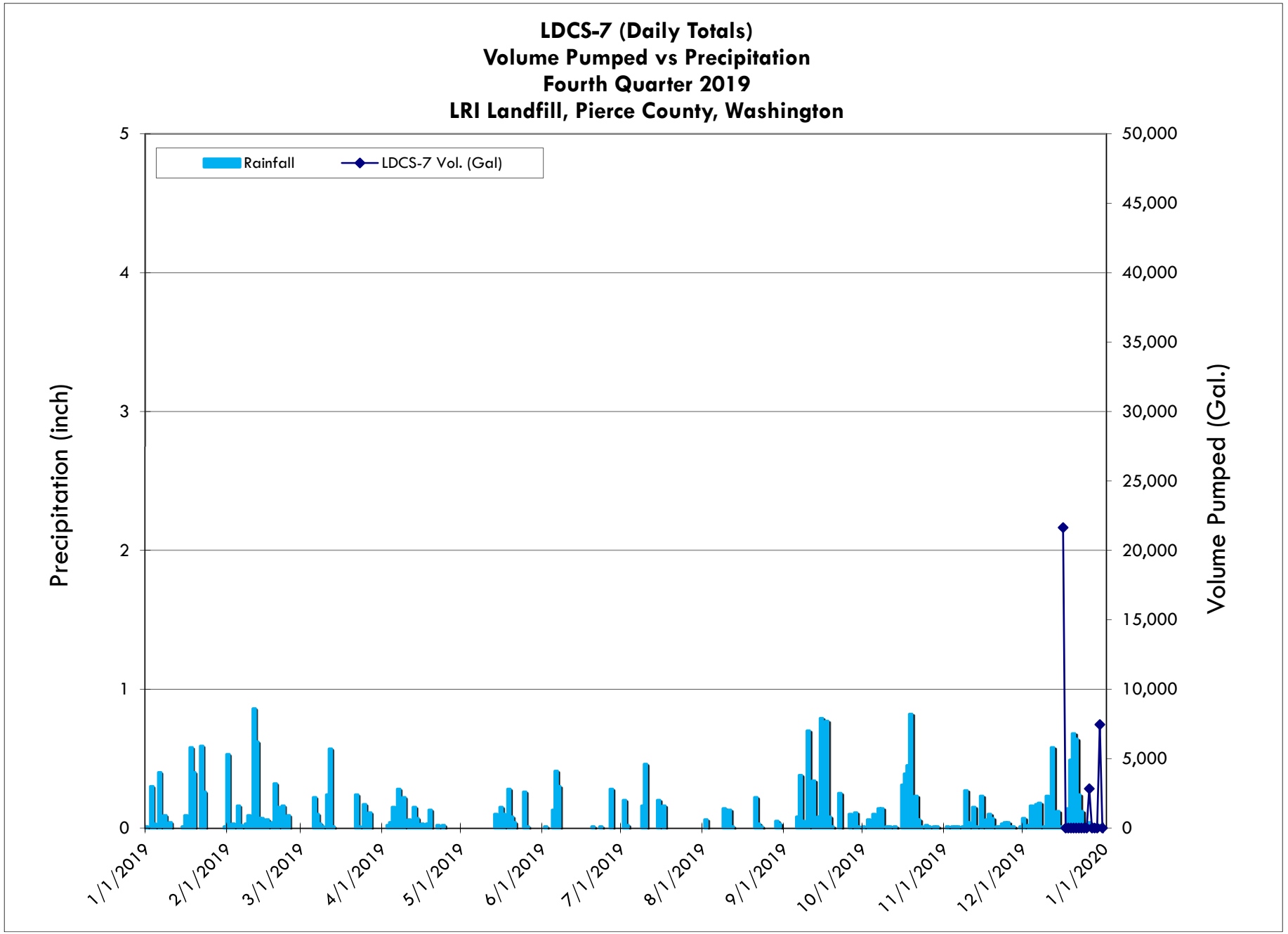



LDCS-4A (Daily Totals)
Volume Pumped vs Precipitation
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
Rainfall
LDCS-4A Vol. (Gal)
Precipitation (inch)
Volume Pumped (Gal.)
0
1
2
3
4
5
0
5,000
10,000
15,000
20,000
25,000
30,000
35,000
40,000
45,000
50,000
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020

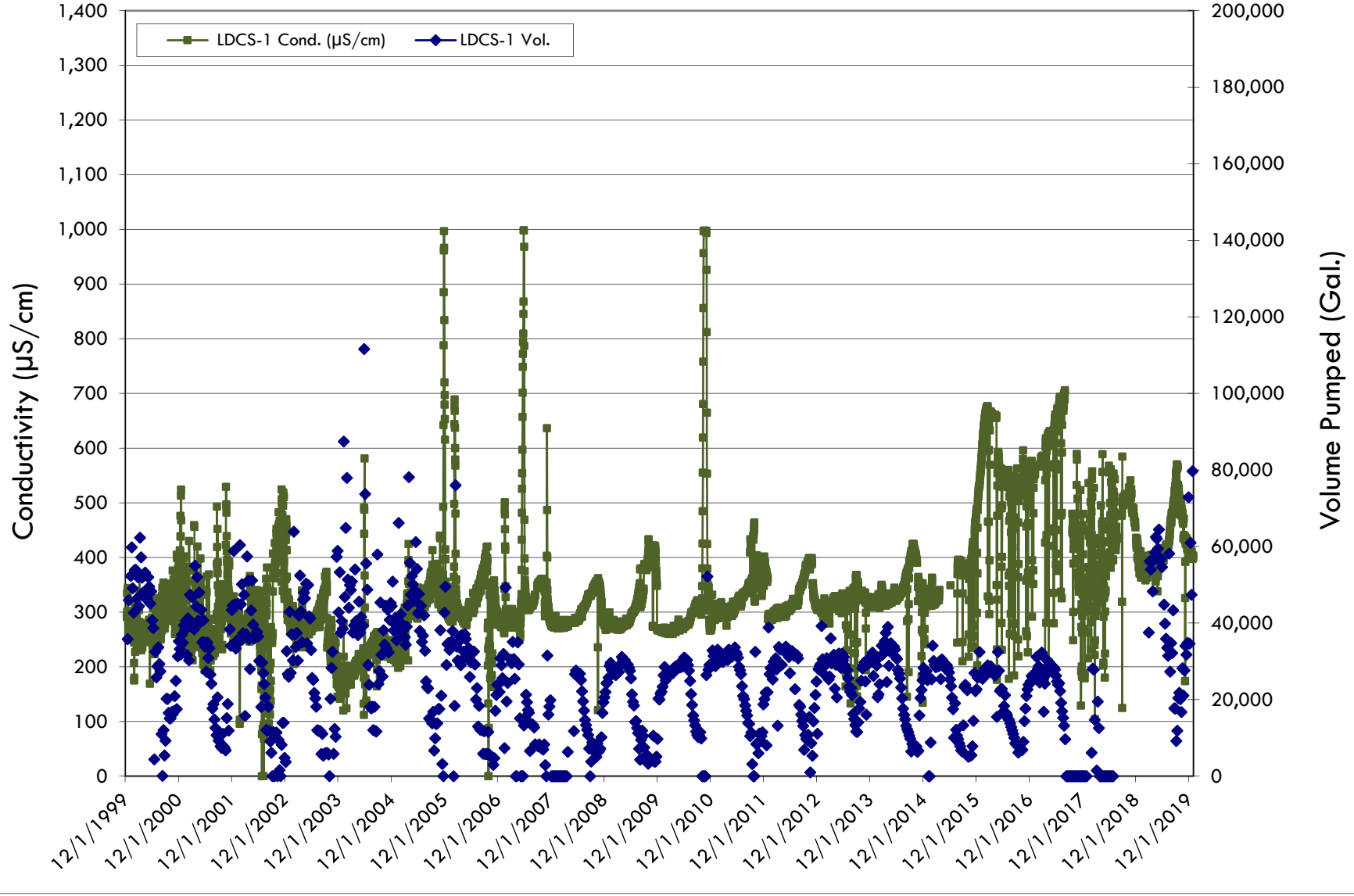

LDCS-4B (Daily Totals)
Volume Pumped vs Precipitation
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
Rainfall
LDCS-4B Vol. (Gal)
Precipitation (inch)
Volume Pumped (Gal.)
0
1
2
3
4
5
0
5,000
10,000
15,000
20,000
25,000
30,000
35,000
40,000
45,000
50,000
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020


LDCS-5 (Daily Totals)
Volume Pumped vs Precipitation
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
Rainfall
LDCS-5 Vol. (Gal)
Precipitation (inch)
Volume Pumped (Gal.)
0
1
2
3
4
5
0
5,000
10,000
15,000
20,000
25,000
30,000
35,000
40,000
45,000
50,000
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020

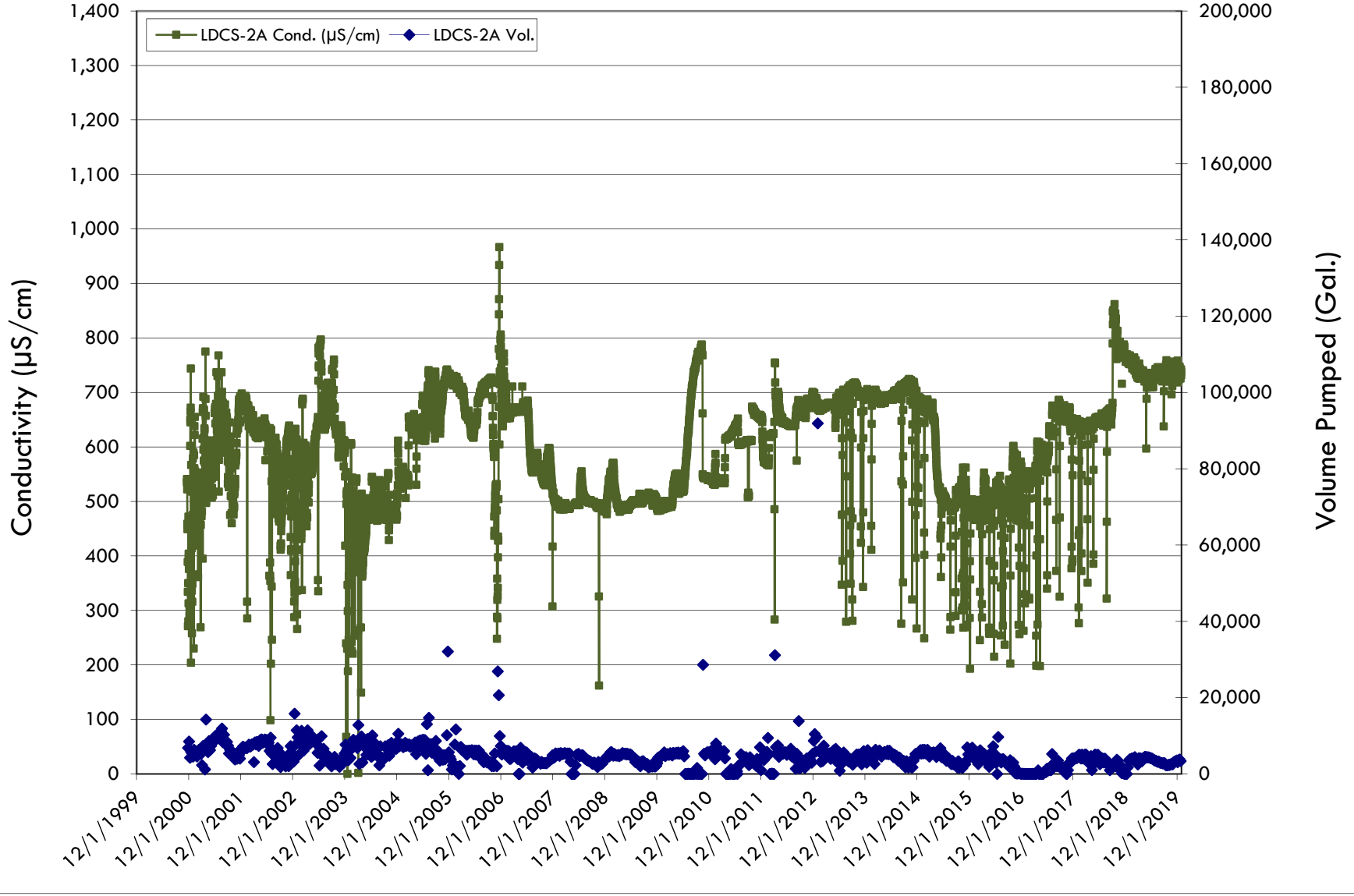

LDCS-6 (Daily Totals)
Volume Pumped vs Precipitation
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
Rainfall
LDCS-6 Vol. (Gal)
Precipitation (inch)
Volume Pumped (Gal.)
0
1
2
3
4
5
0
5,000
10,000
15,000
20,000
25,000
30,000
35,000
40,000
45,000
50,000
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020

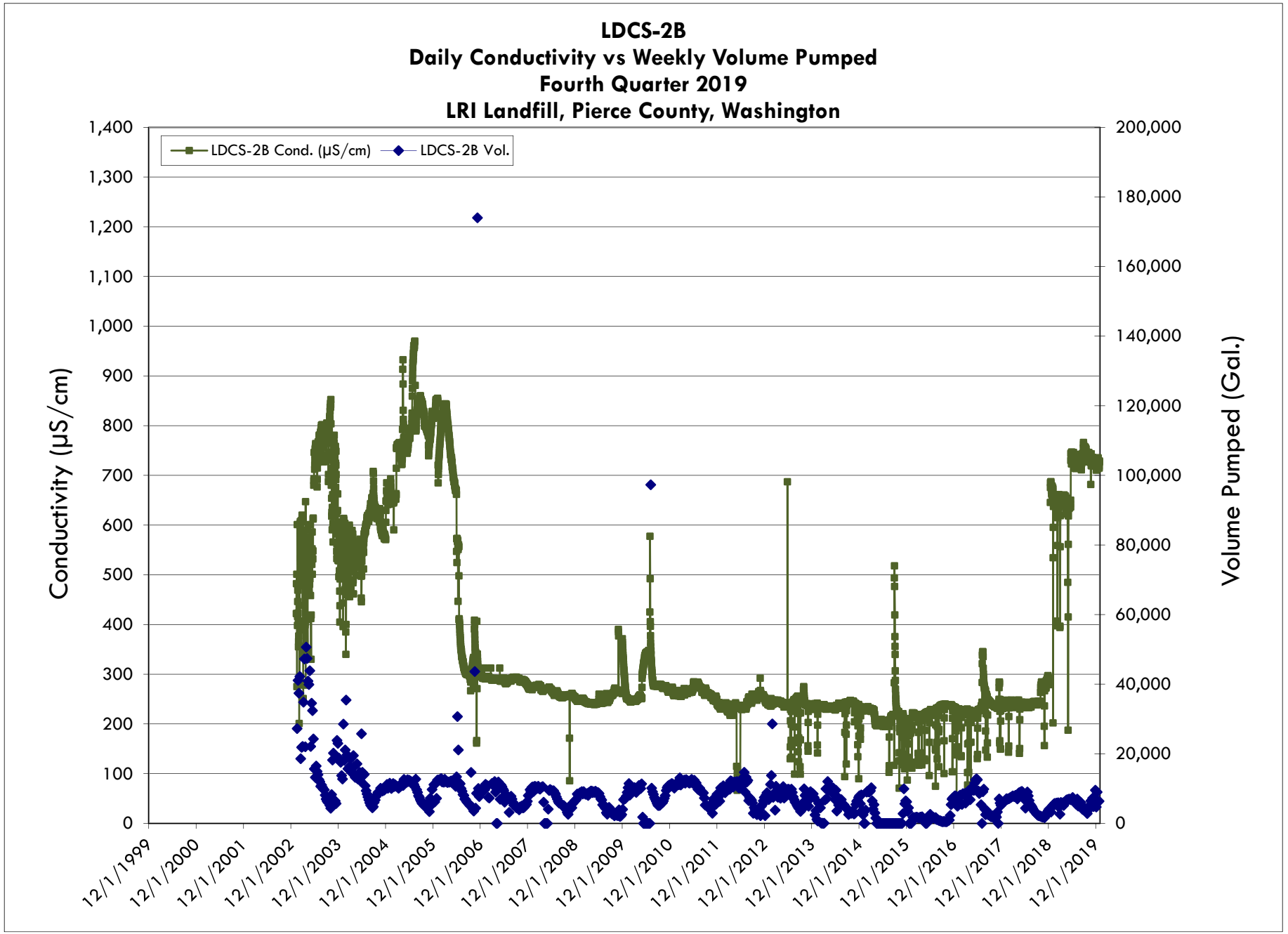

LDCS-7 (Daily Totals)
Volume Pumped vs Precipitation
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
Rainfall
LDCS-7 Vol. (Gal)
Precipitation (inch)
Volume Pumped (Gal.)
0
1
2
3
4
5
0
5,000
10,000
15,000
20,000
25,000
30,000
35,000
40,000
45,000
50,000
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020

LDCS-1
Daily Conductivity vs Weekly Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

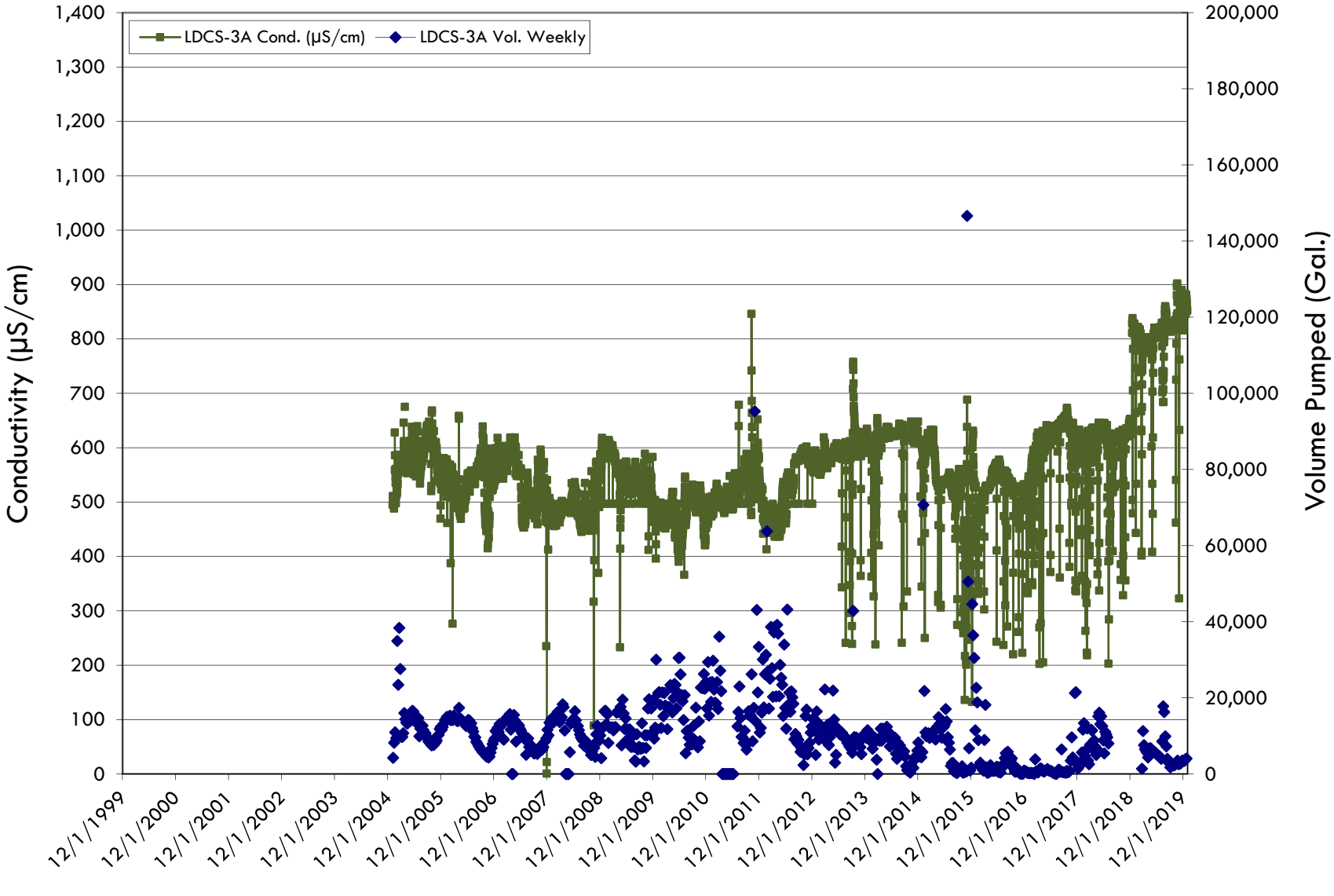


LDCS-2A
Daily Conductivity vs Weekly Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

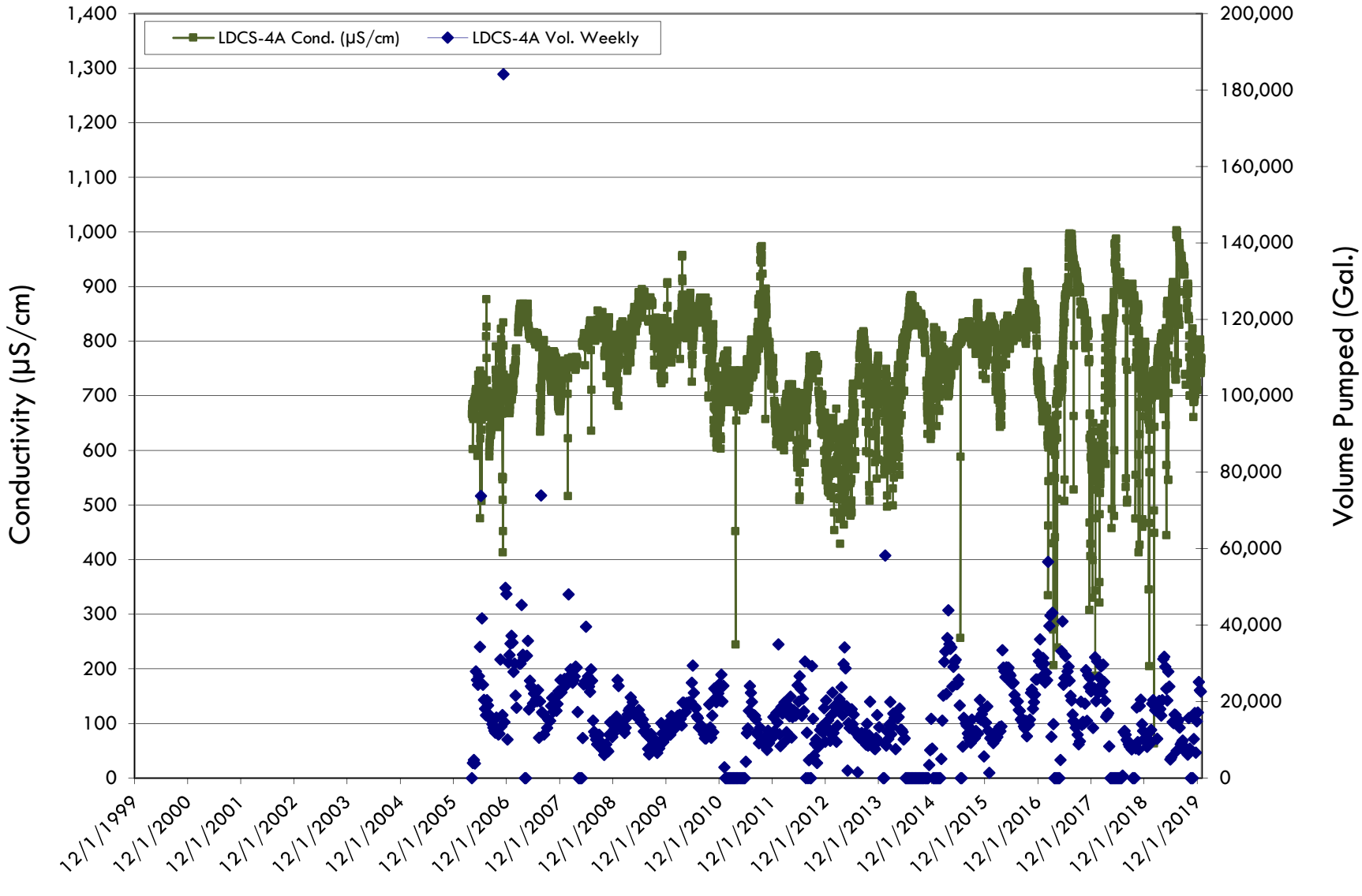



LDCS-2B
Daily Conductivity vs Weekly Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington
LDCS-2B Cond. (µS/cm)
LDCS-2B Vol.
Conductivity (µS/cm)
Volume Pumped (Gal.)
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
12/1/1999
12/1/2000
12/1/2001
12/1/2002
12/1/2003
12/1/2004
12/1/2005
12/1/2006
12/1/2007
12/1/2008
12/1/2009
12/1/2010
12/1/2011
12/1/2012
12/1/2013
12/1/2014
12/1/2015
12/1/2016
12/1/2017
12/1/2018
12/1/2019

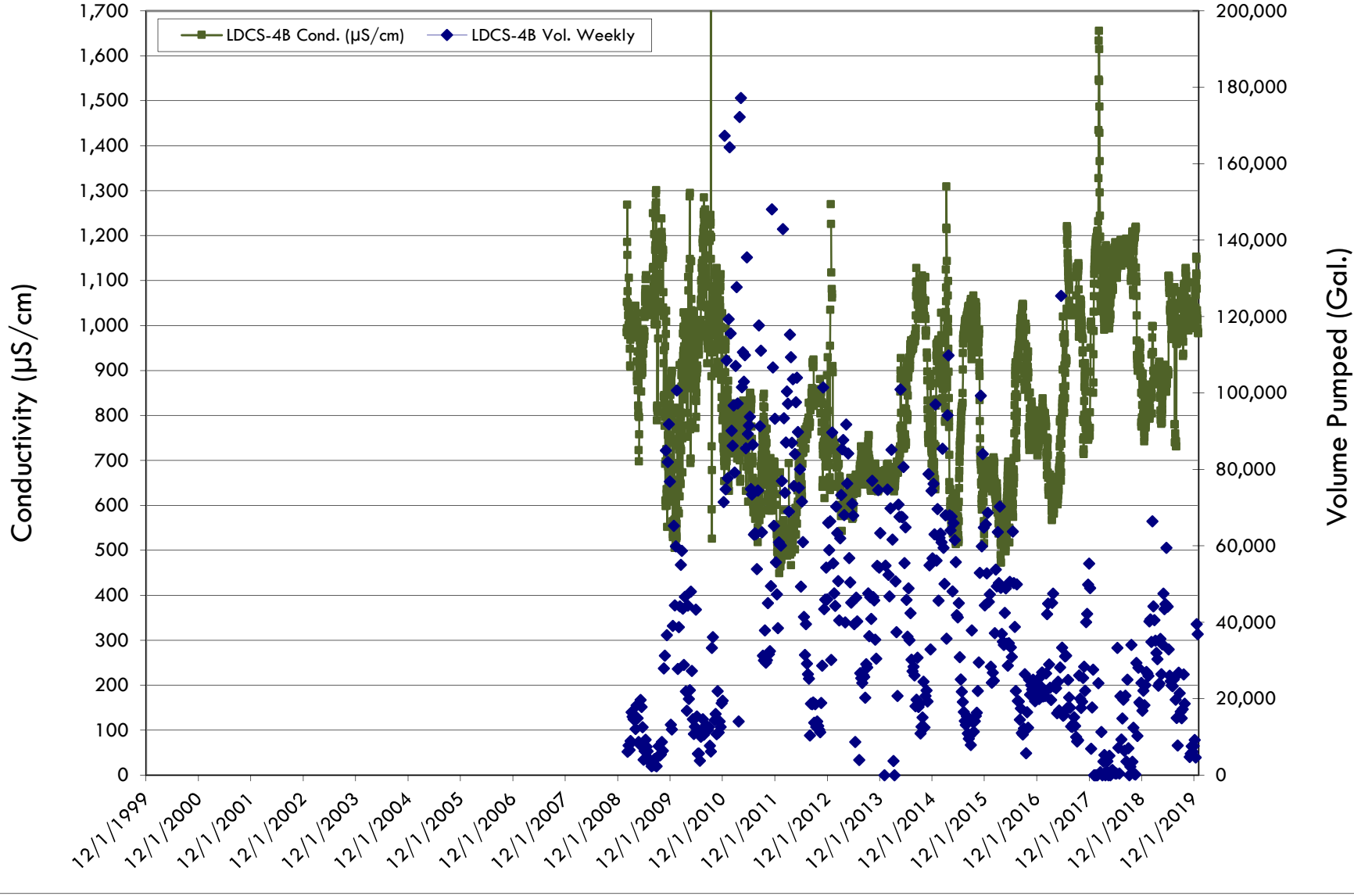
LDCS-3A
Daily Conductivity vs Weekly Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington



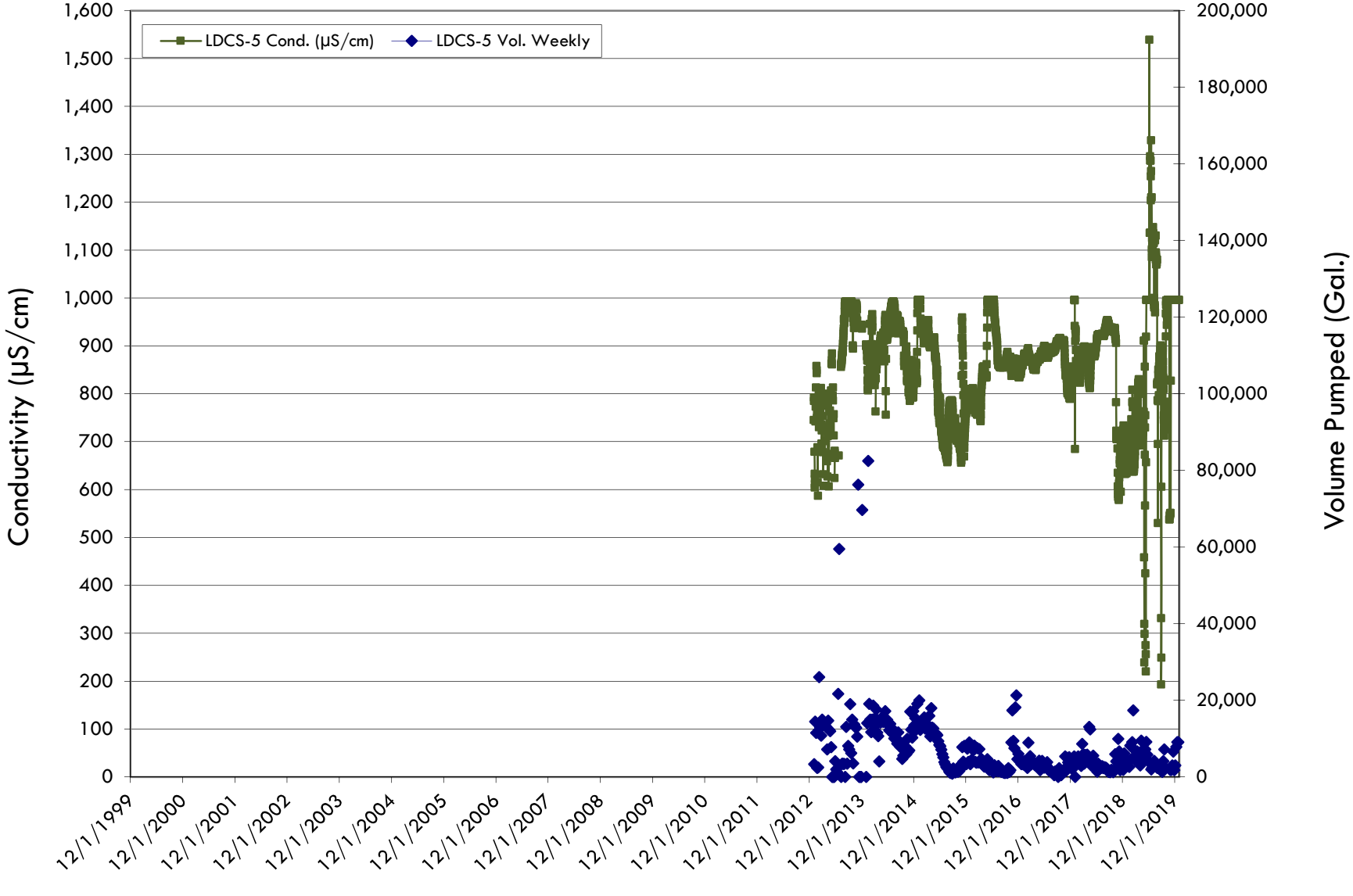
LDCS-4A
Daily Conductivity vs Weekly Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington



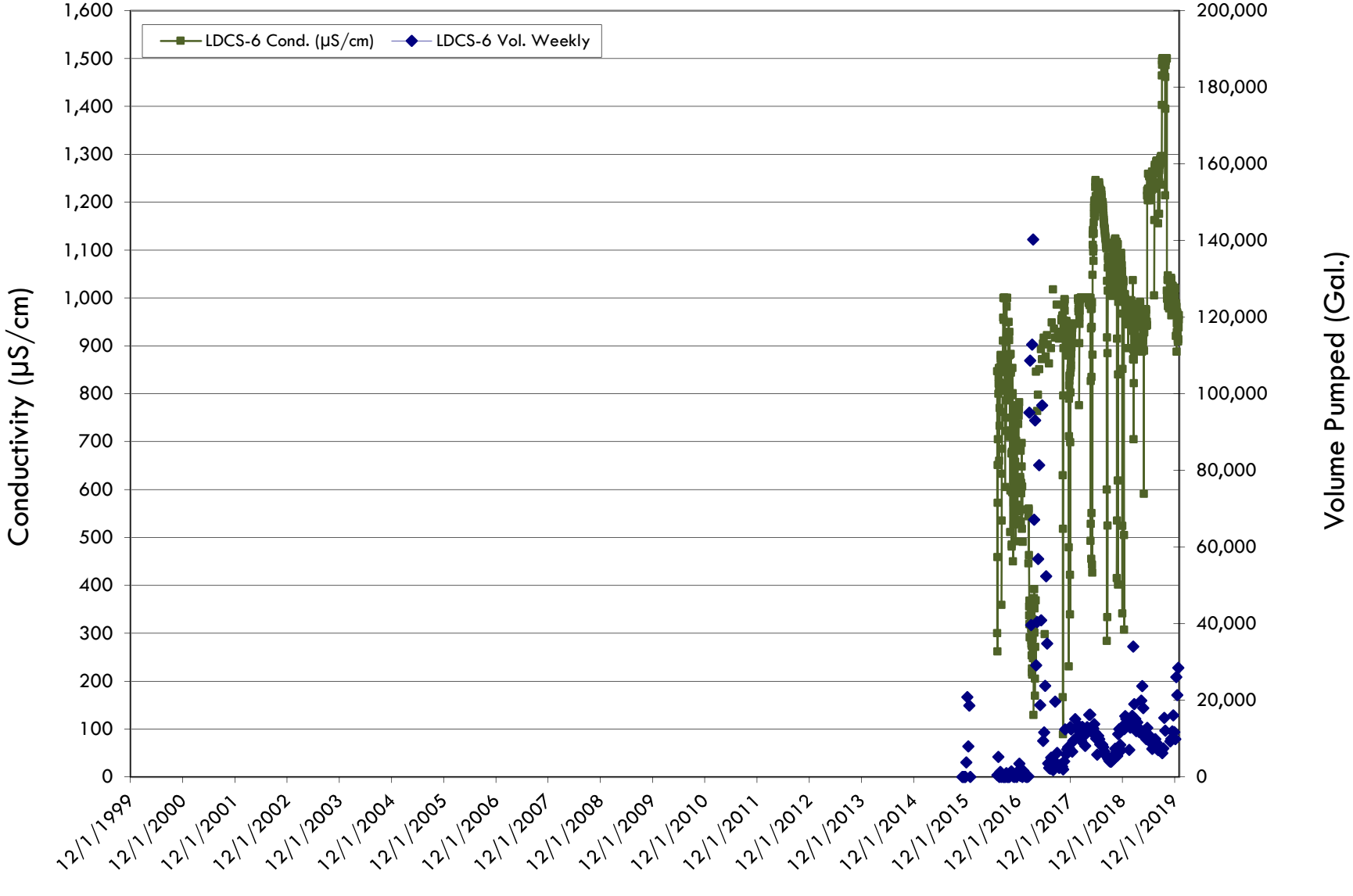
LDCS-4B
Daily Conductivity vs Weekly Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington



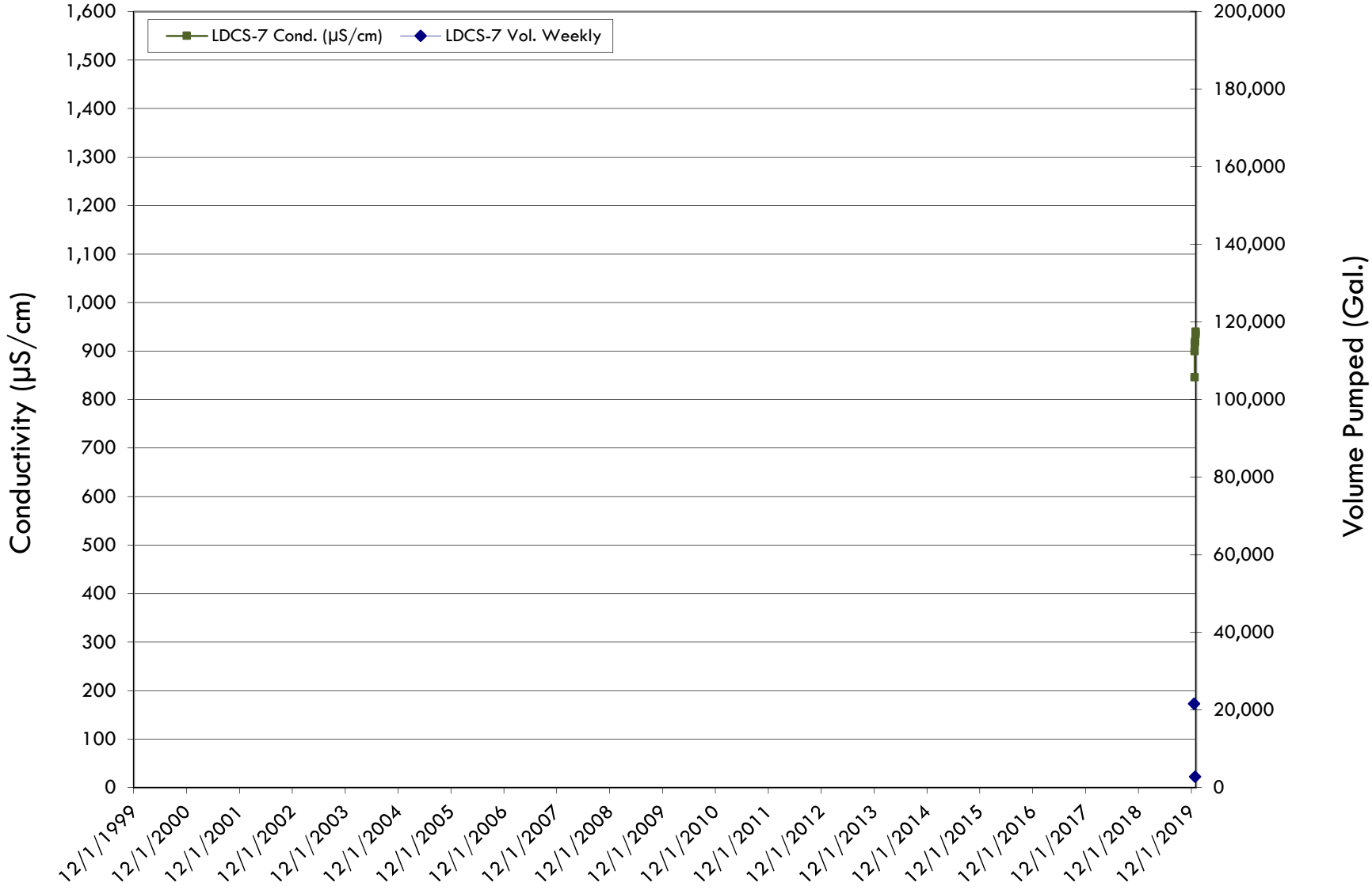
LDCS-5
Daily Conductivity vs Weekly Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington



LDCS-6
Daily Conductivity vs Weekly Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

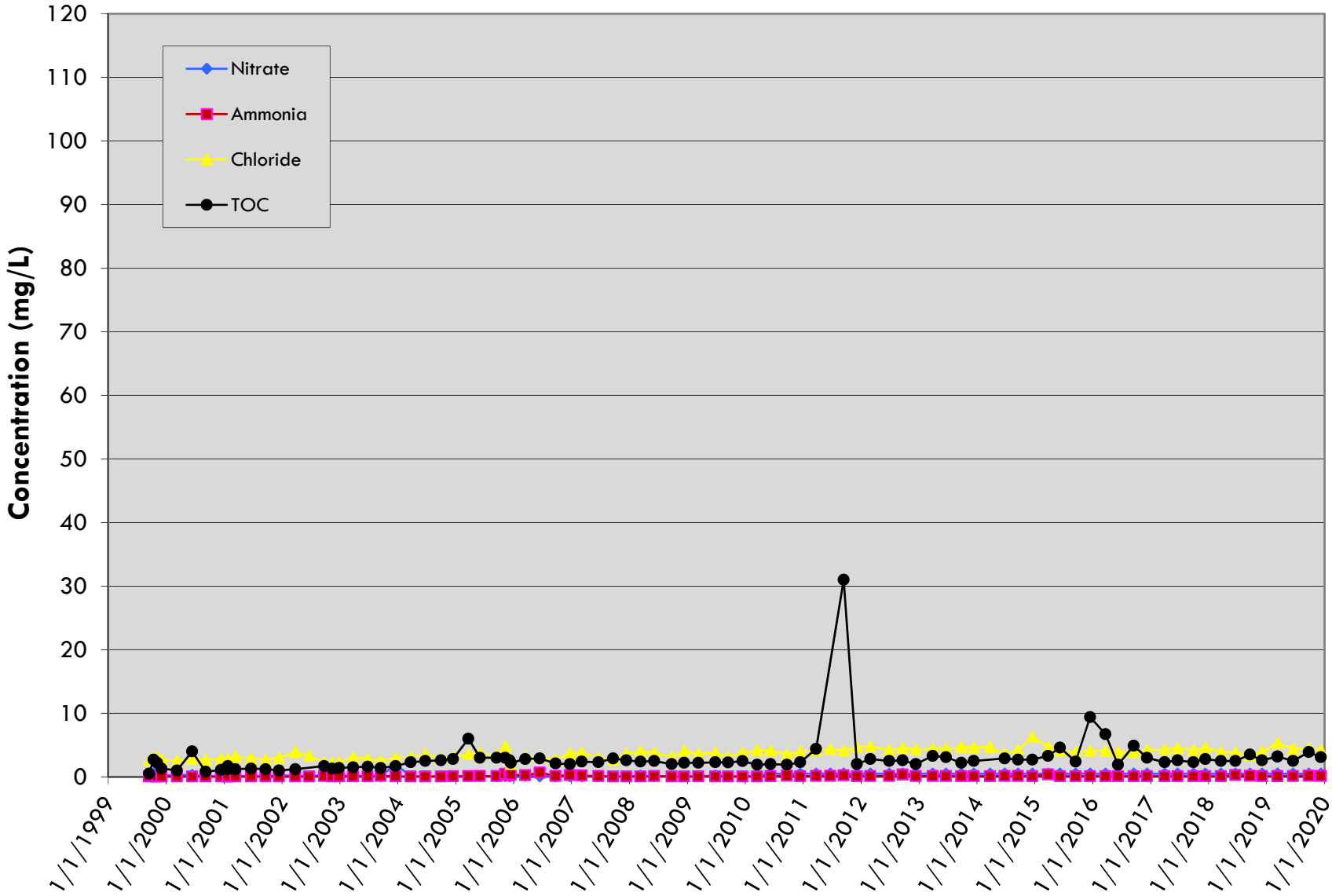


LDCS-7
Daily Conductivity vs Weekly Volume Pumped
Fourth Quarter 2019
LRI Landfill, Pierce County, Washington

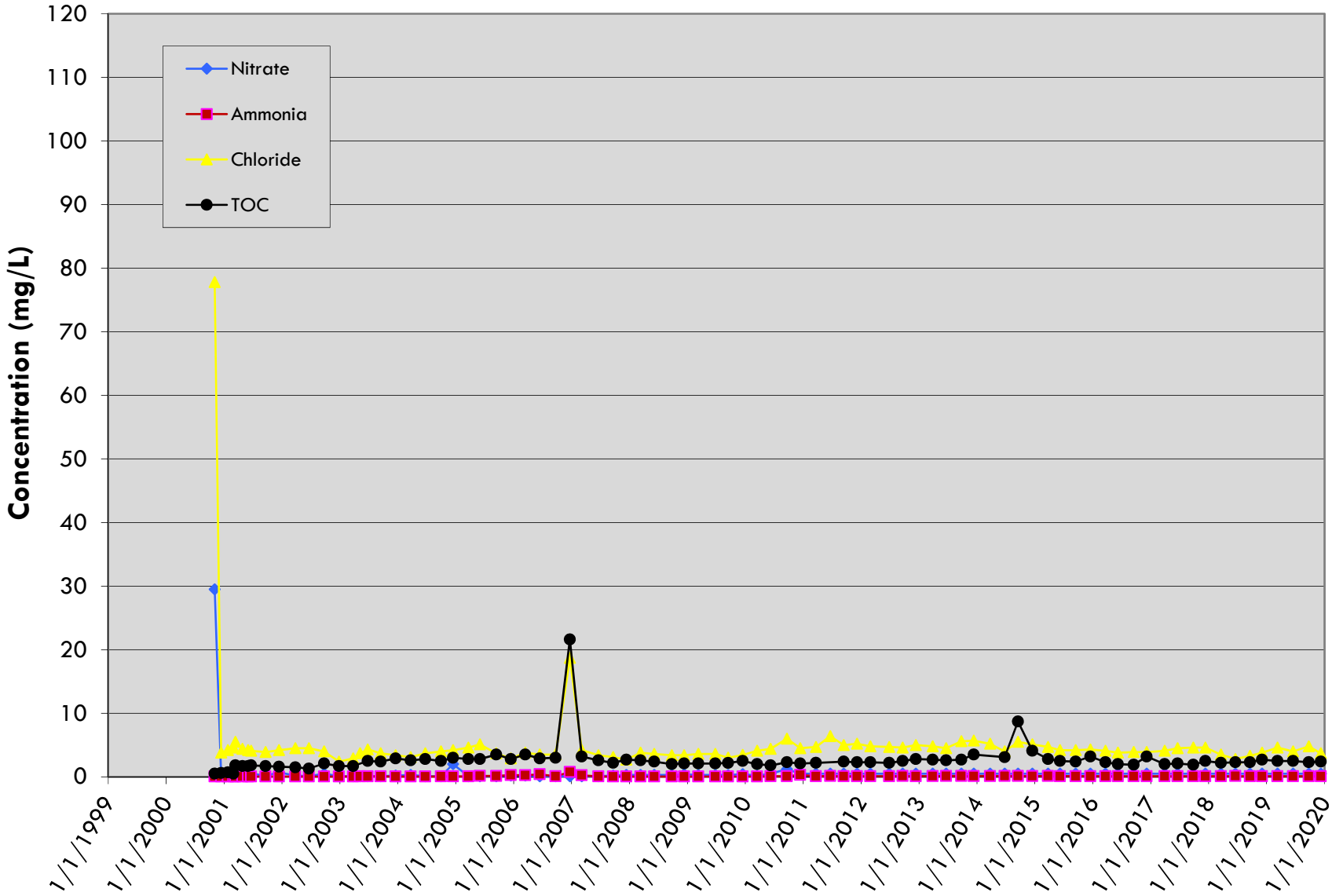


LDCS-1

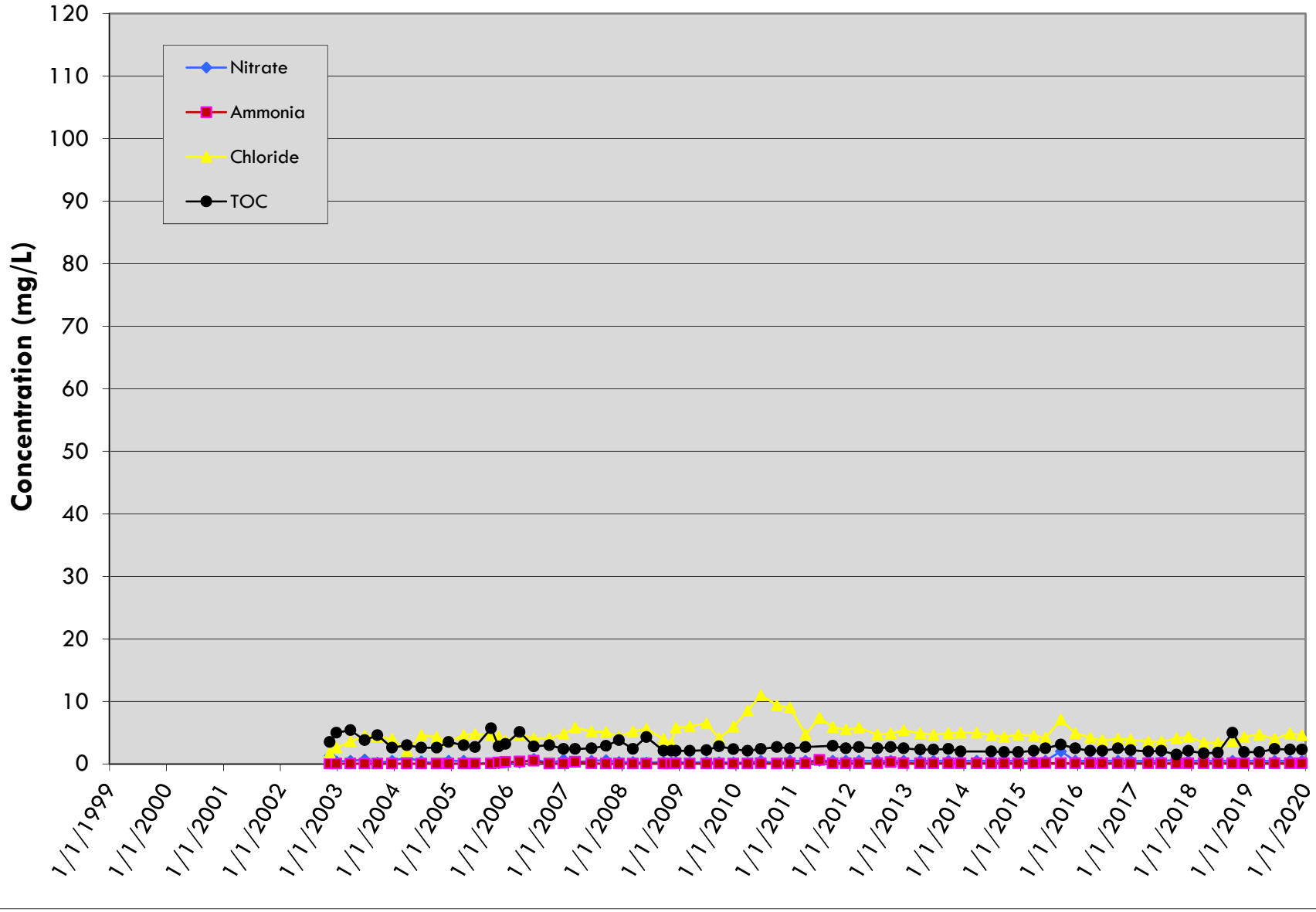
LRI Landfill, Pierce County, Washington



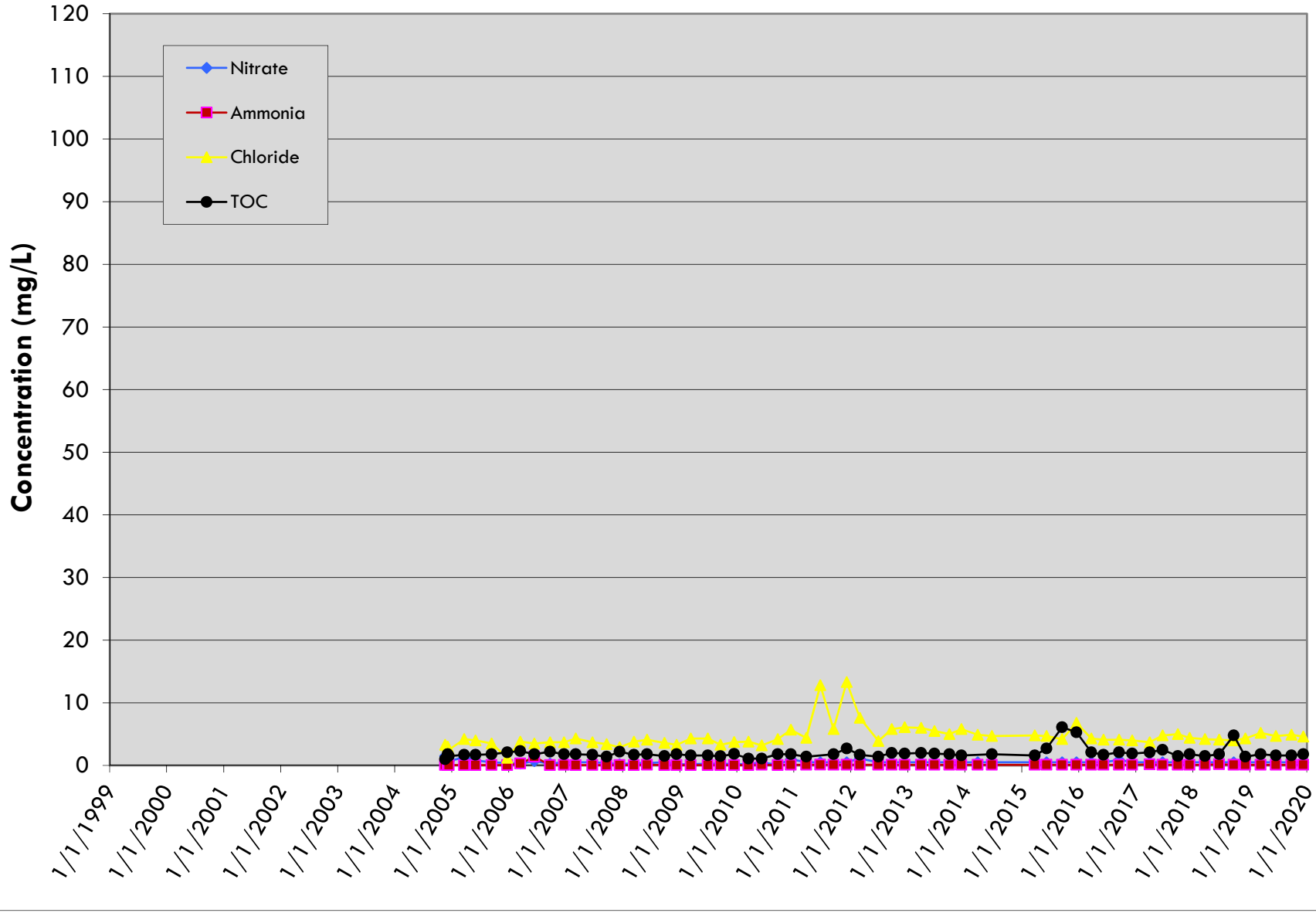
LDCS-2A
LRI Landfill, Pierce County, Washington



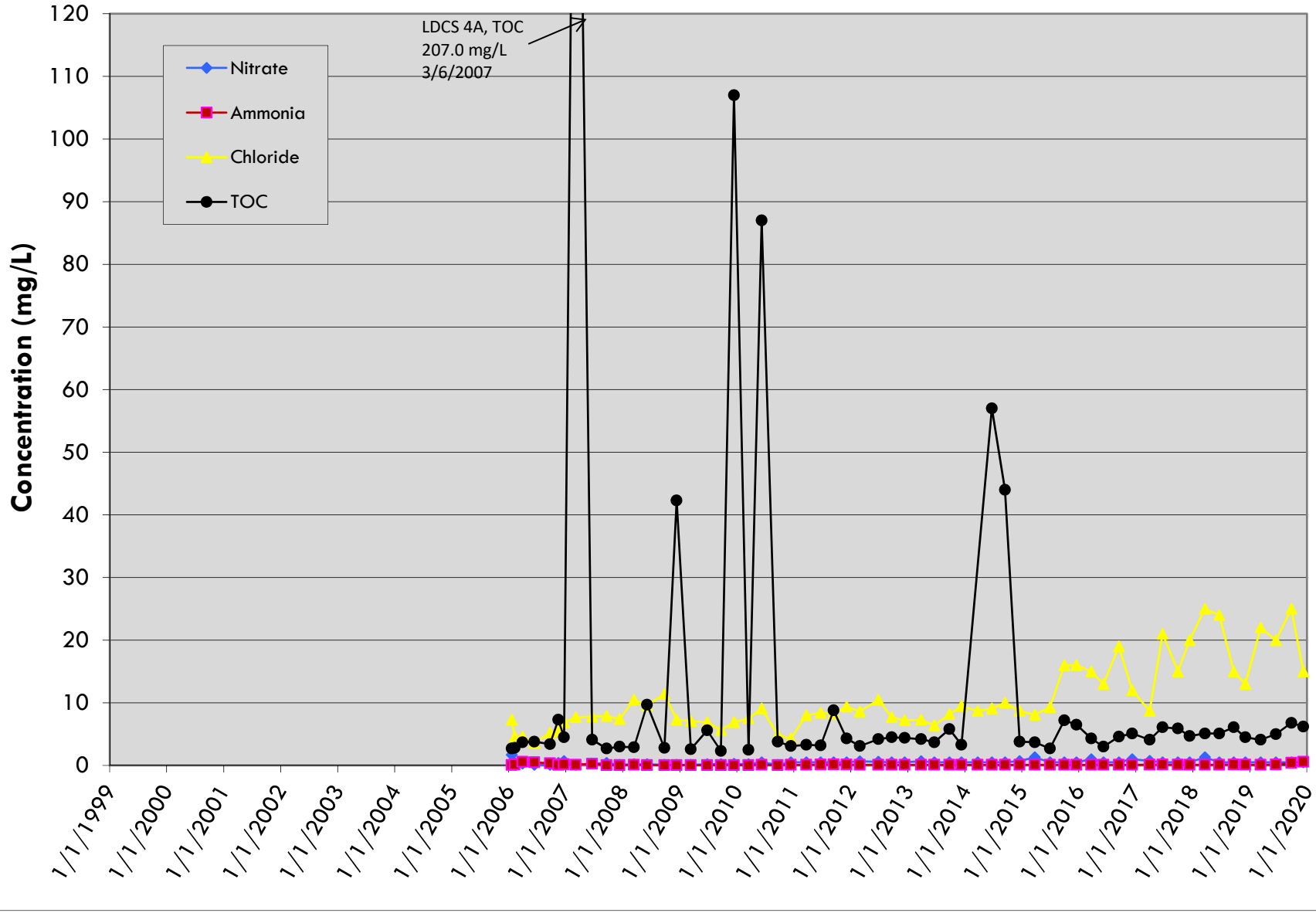
LDCS-2B
LRI Landfill, Pierce County, Washington



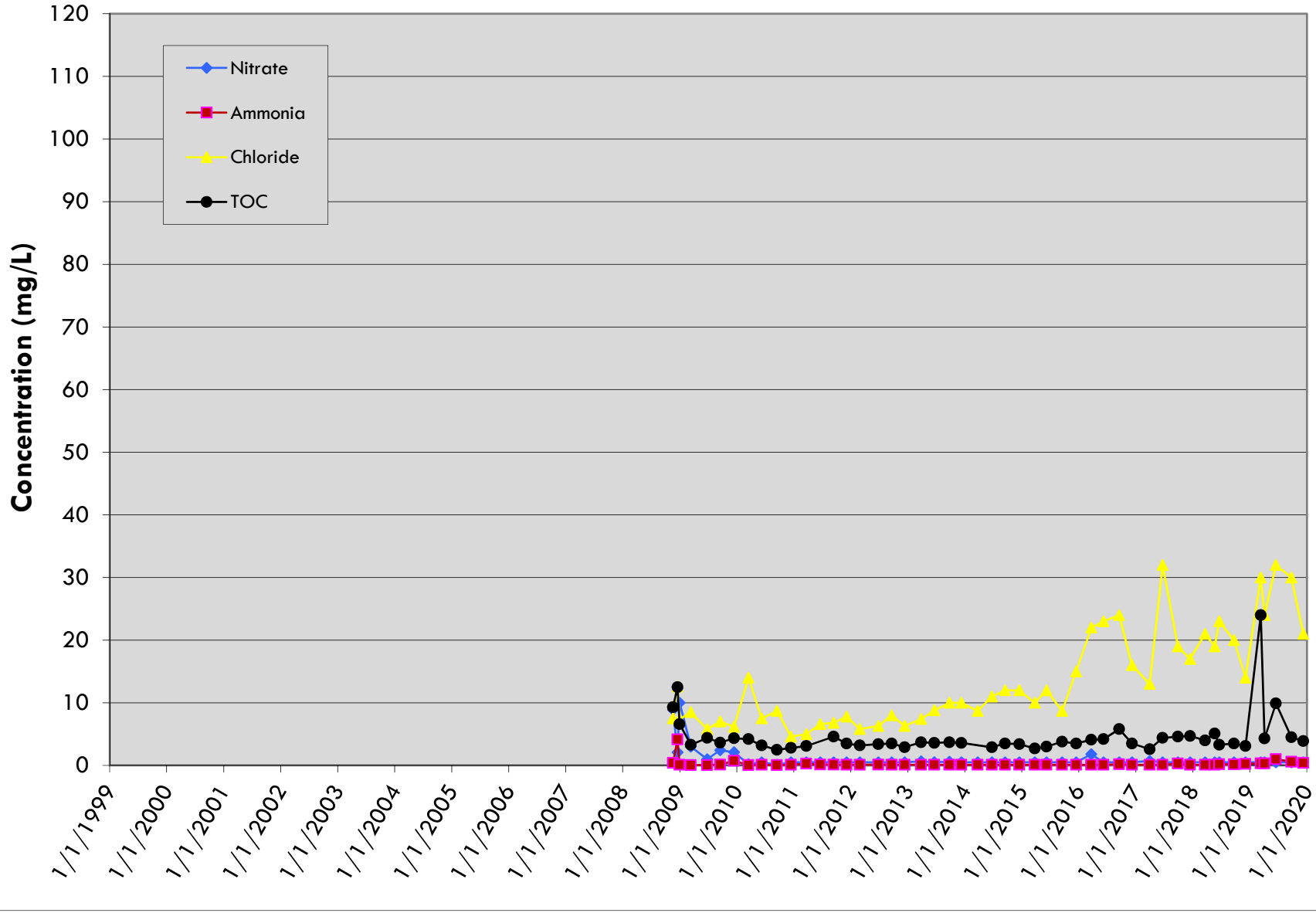
LDCS-3A
LRI Landfill, Pierce County, Washington



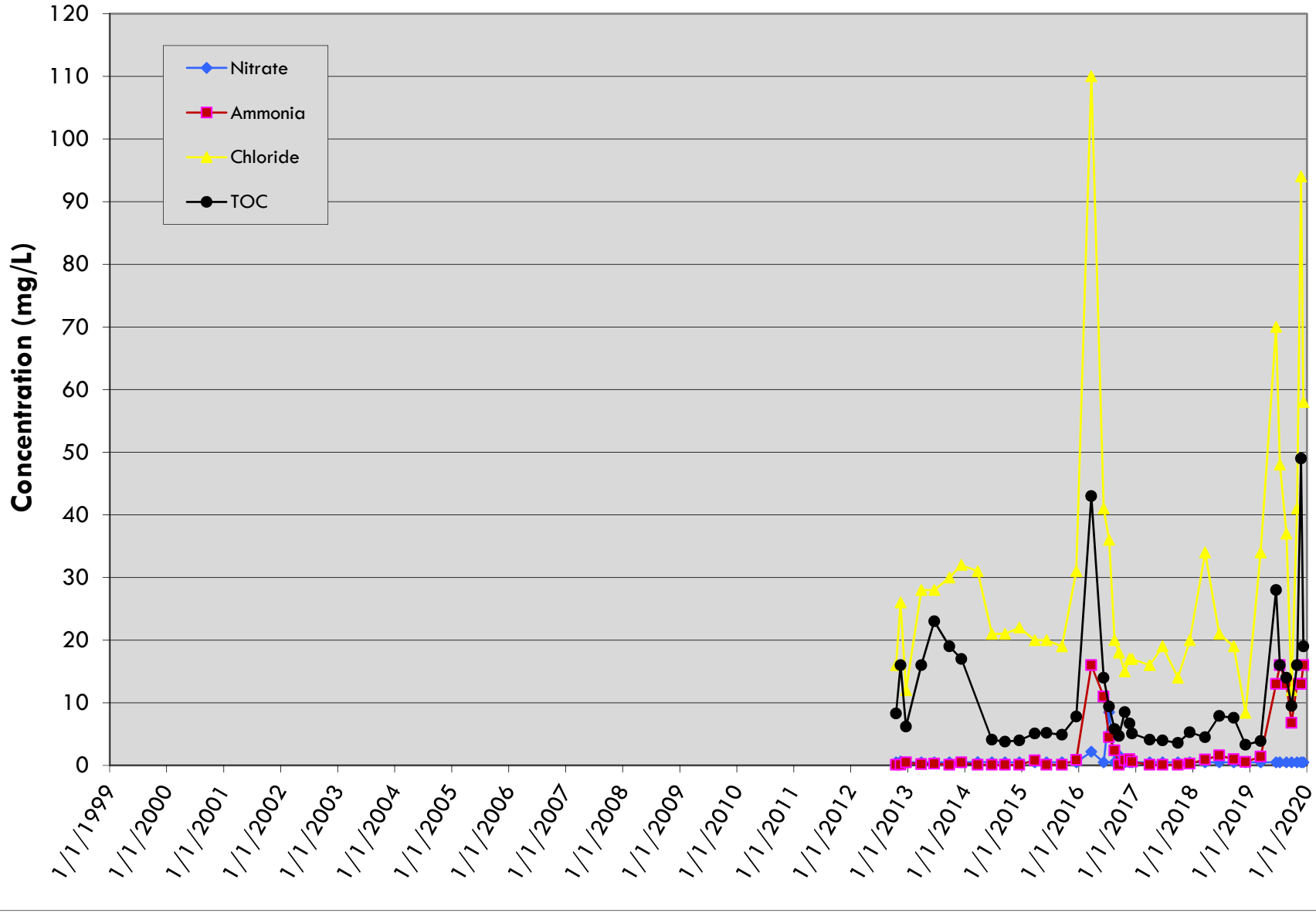
LDCS-4A
LRI Landfill, Pierce County, Washington



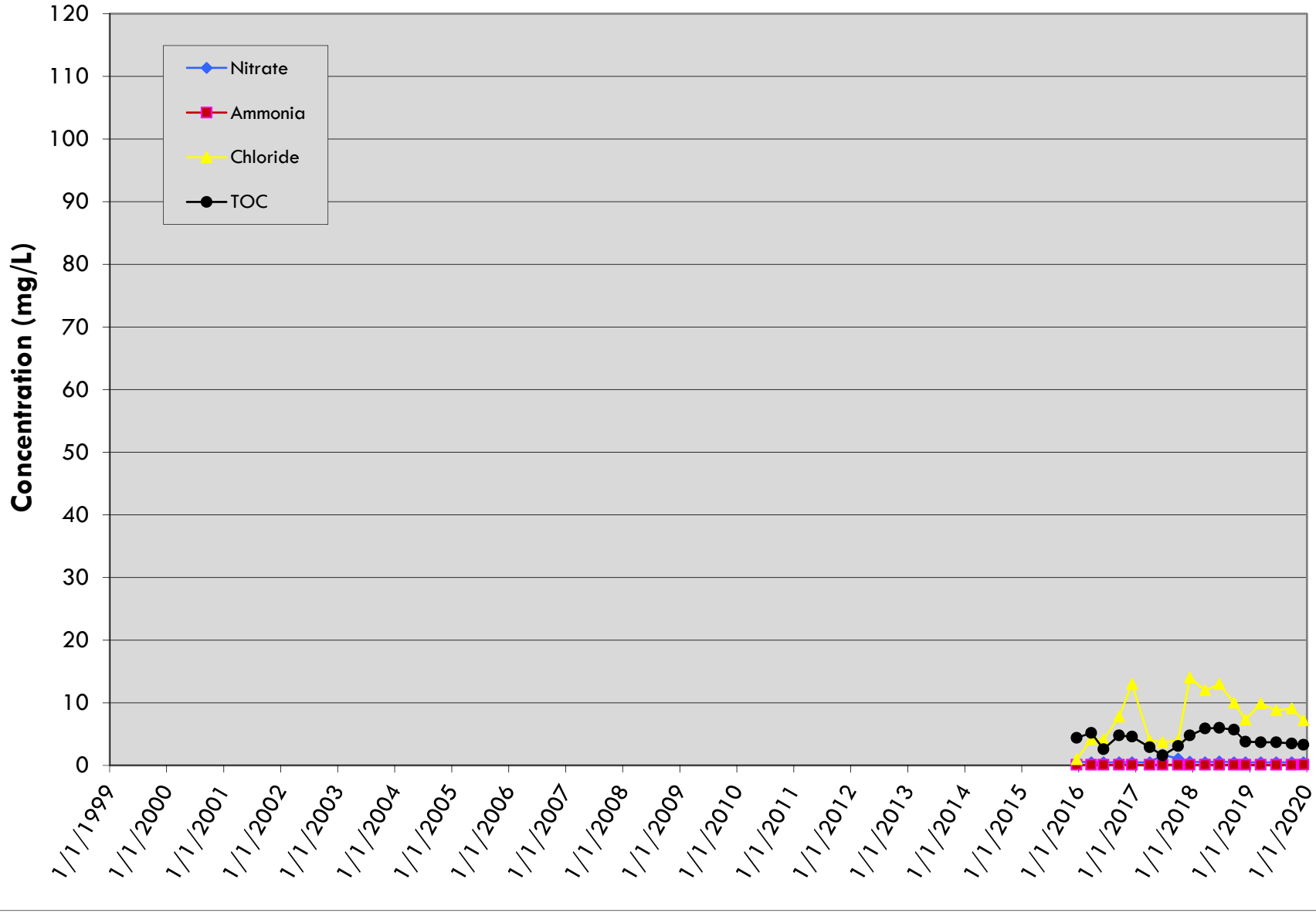
LDCS-4B
LRI Landfill, Pierce County, Washington



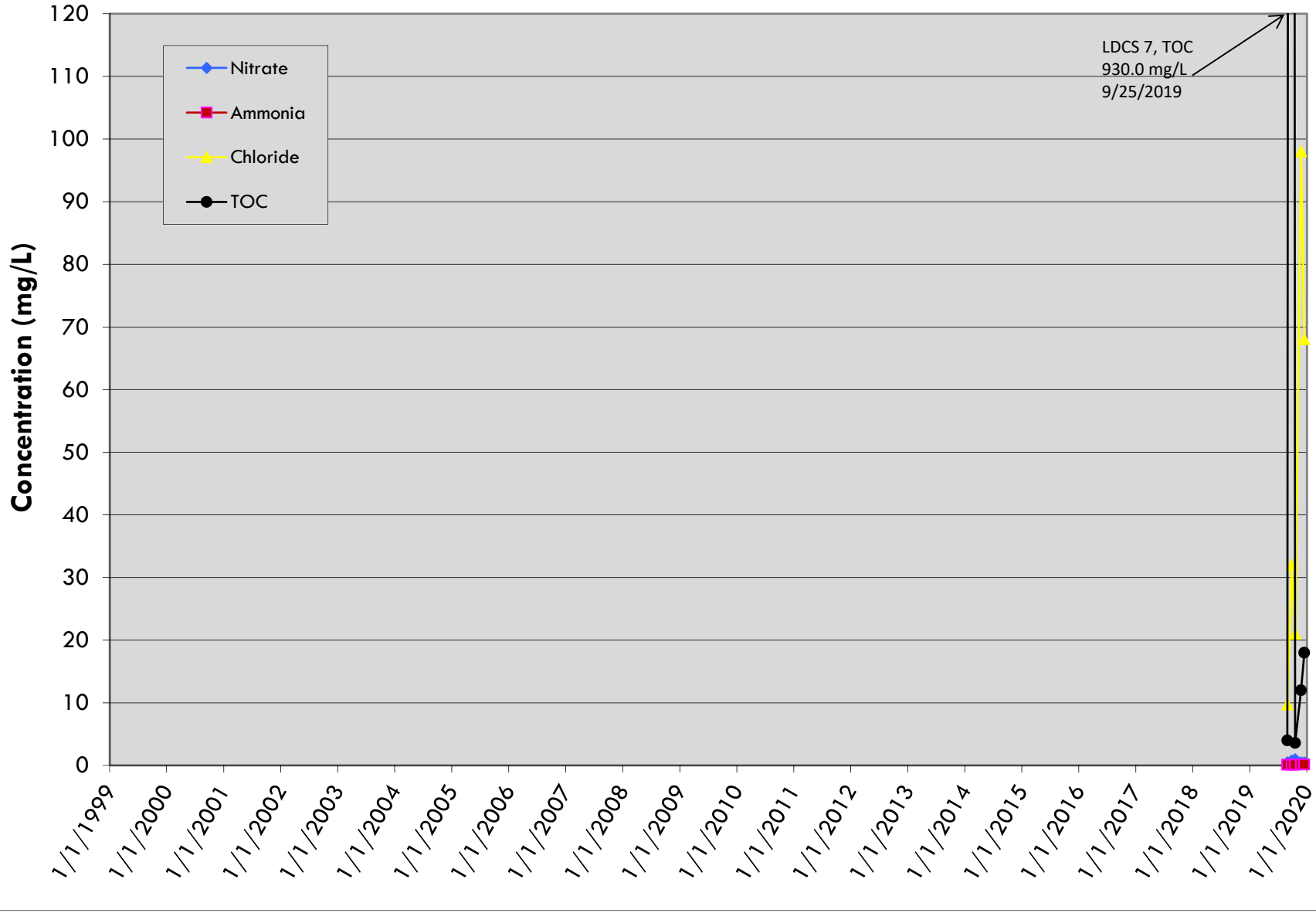
LDCS-5
LRI Landfill, Pierce County, Washington



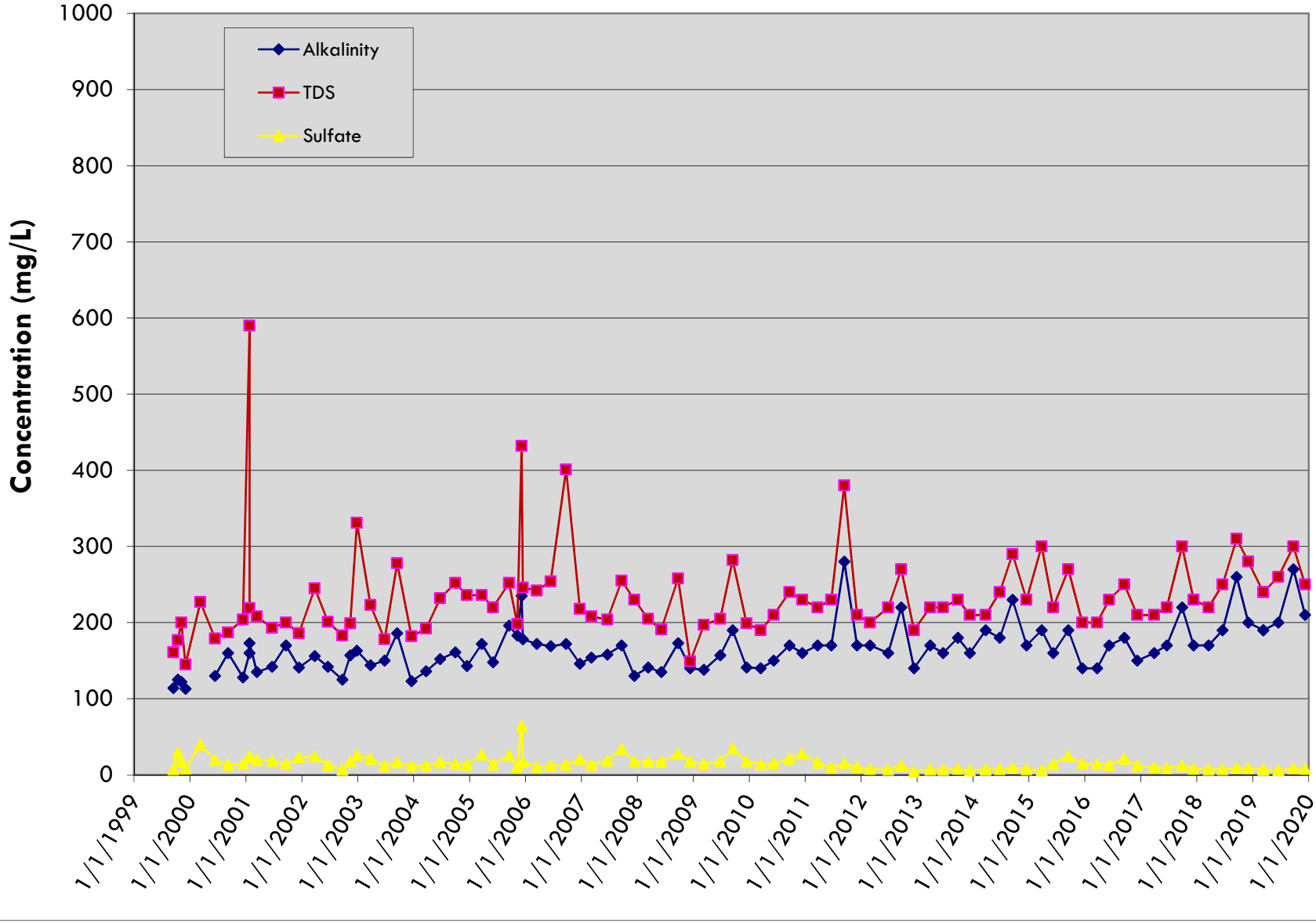
LDCS-6A
LRI Landfill, Pierce County, Washington



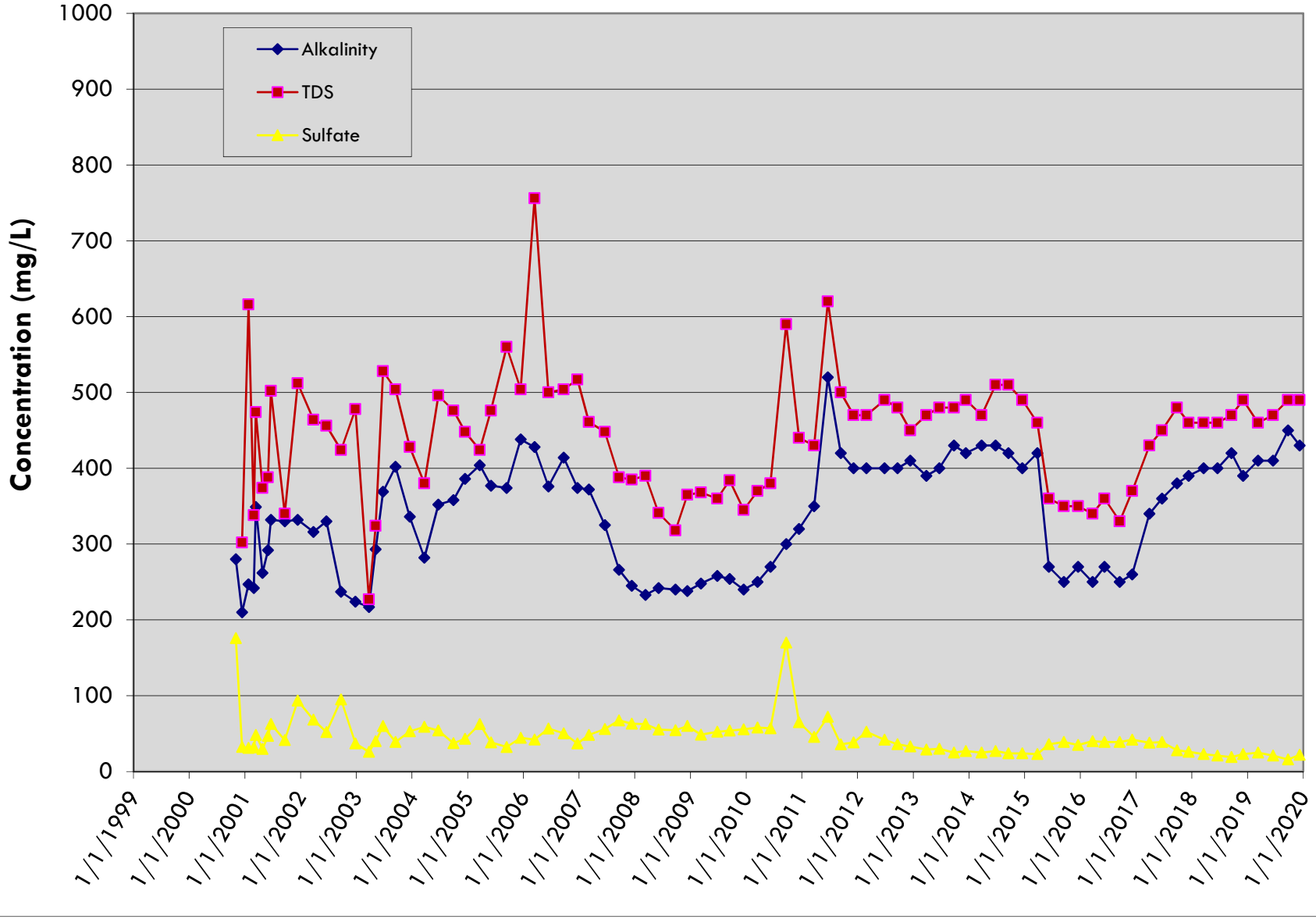
LDCS-7
LRI Landfill, Pierce County, Washington



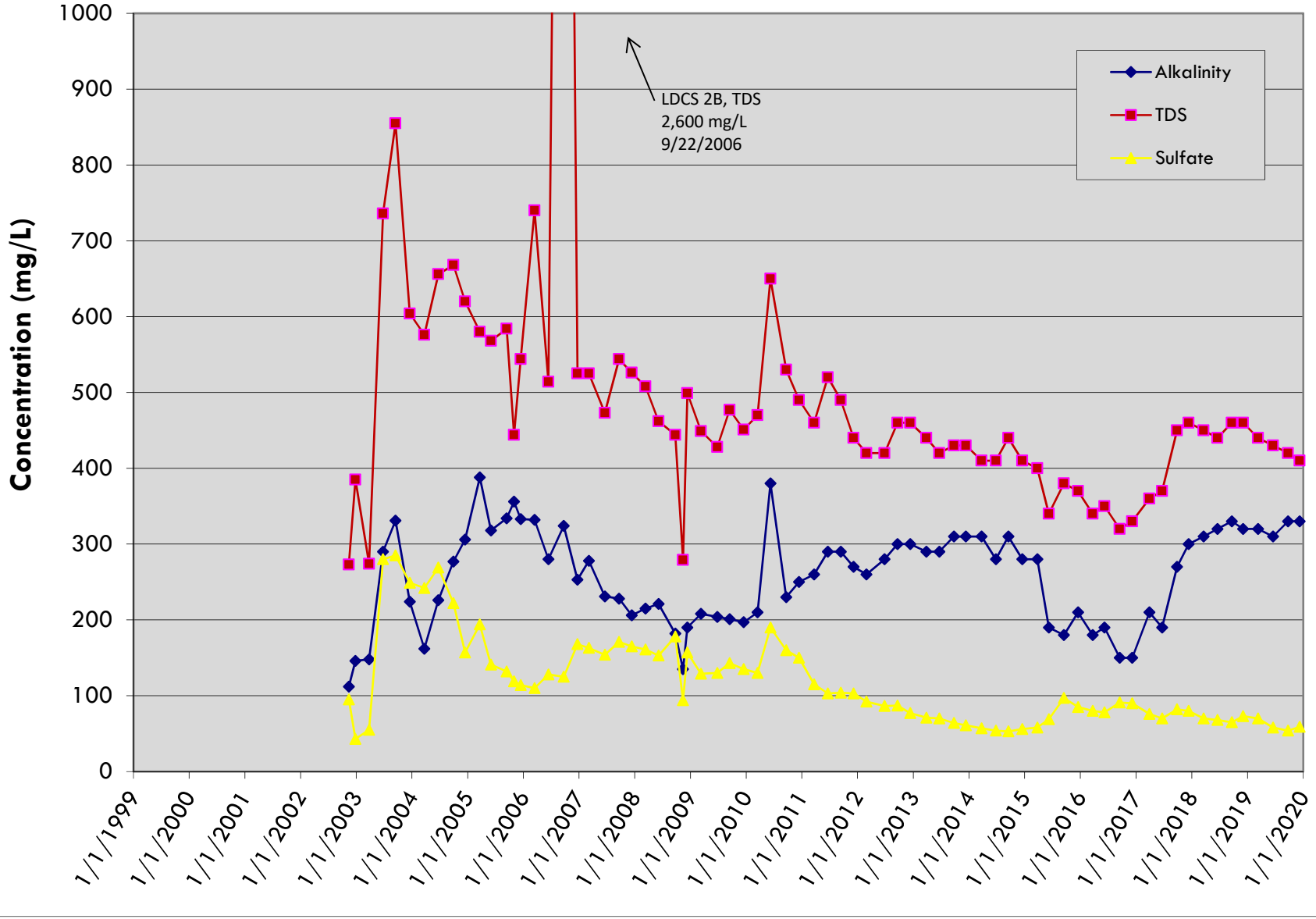
LDCS-1
LRI Landfill, Pierce County, Washington



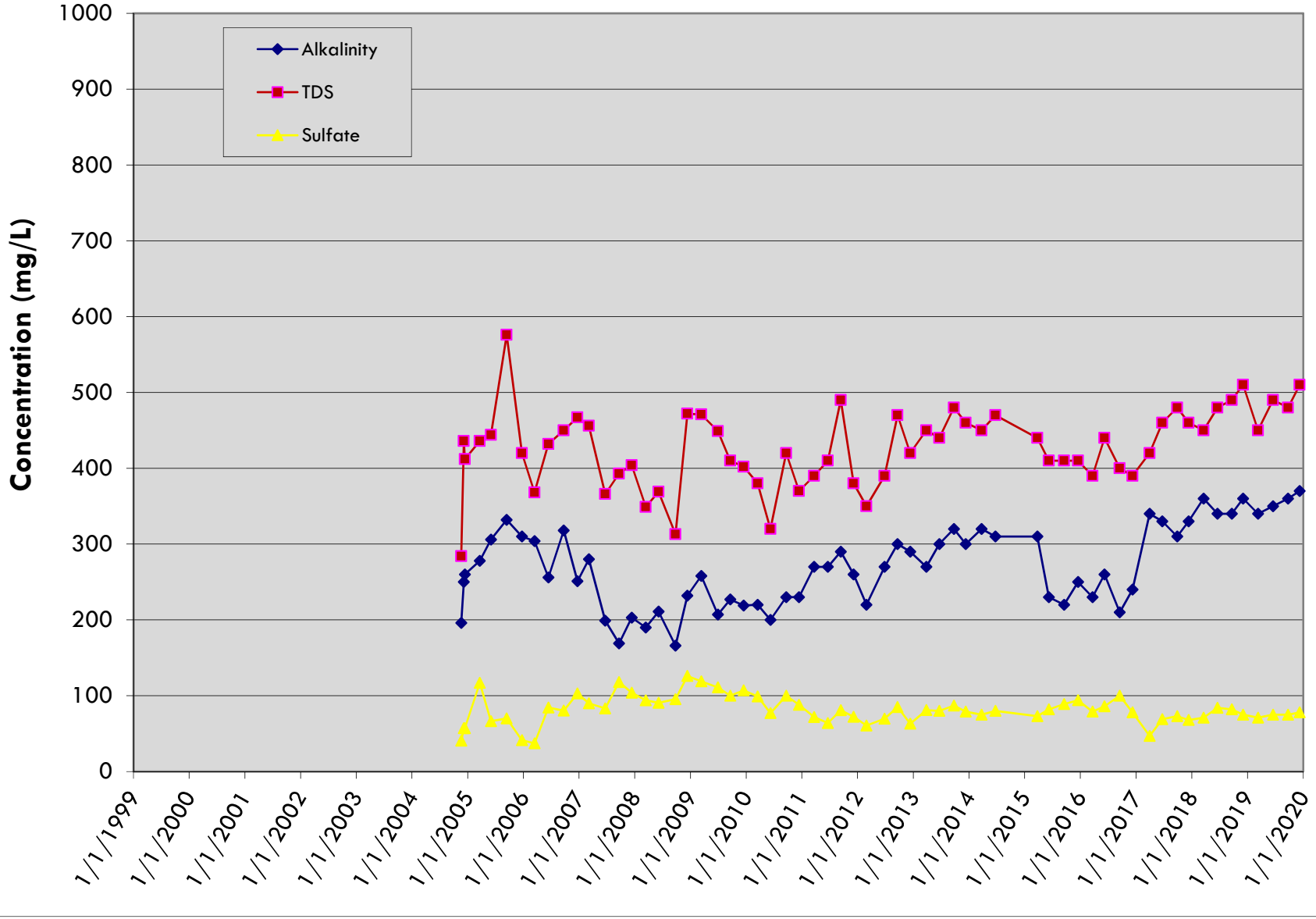
LDCS-2A
LRI Landfill, Pierce County, Washington

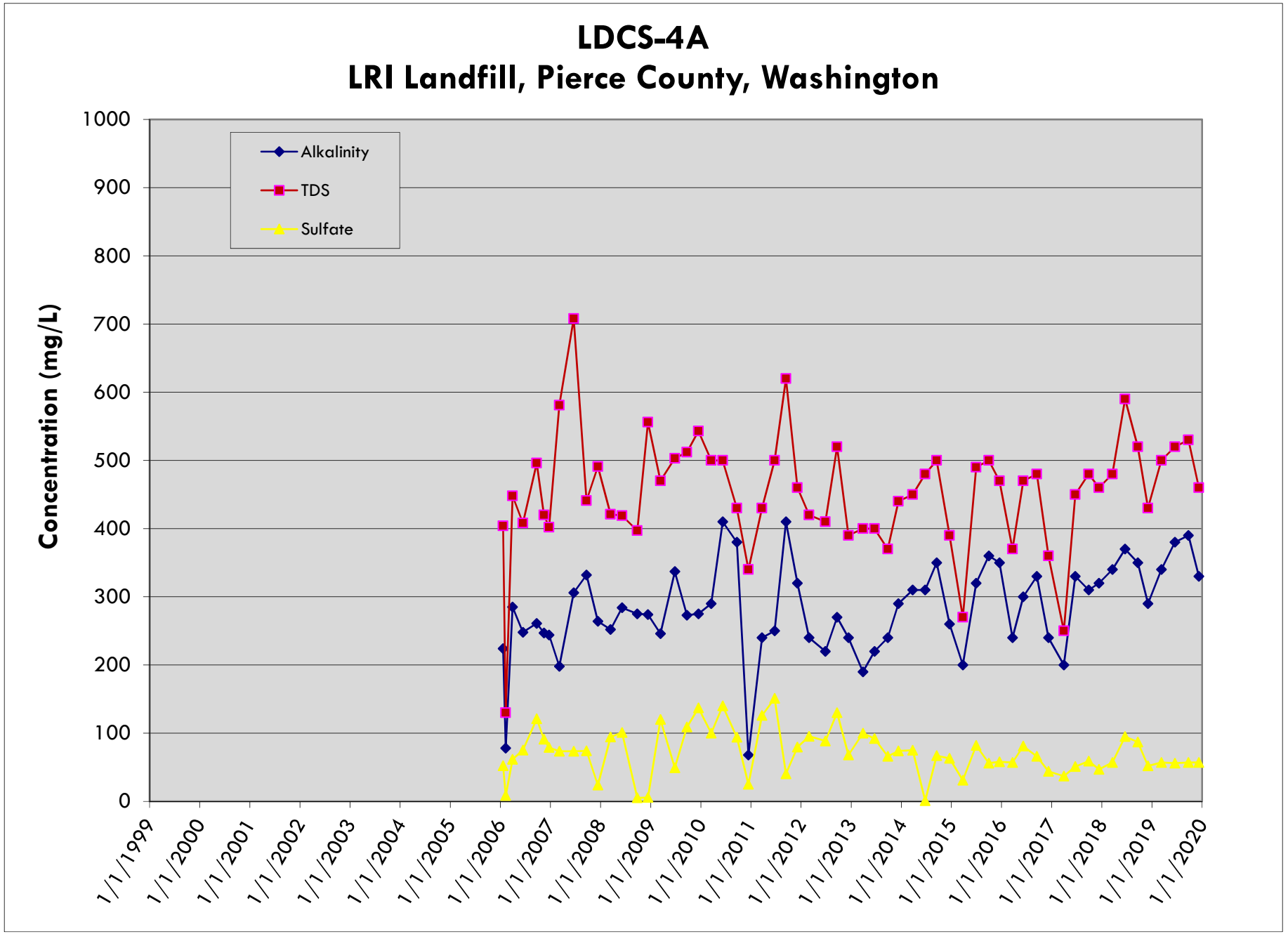


LDCS-2B
LRI Landfill, Pierce County, Washington

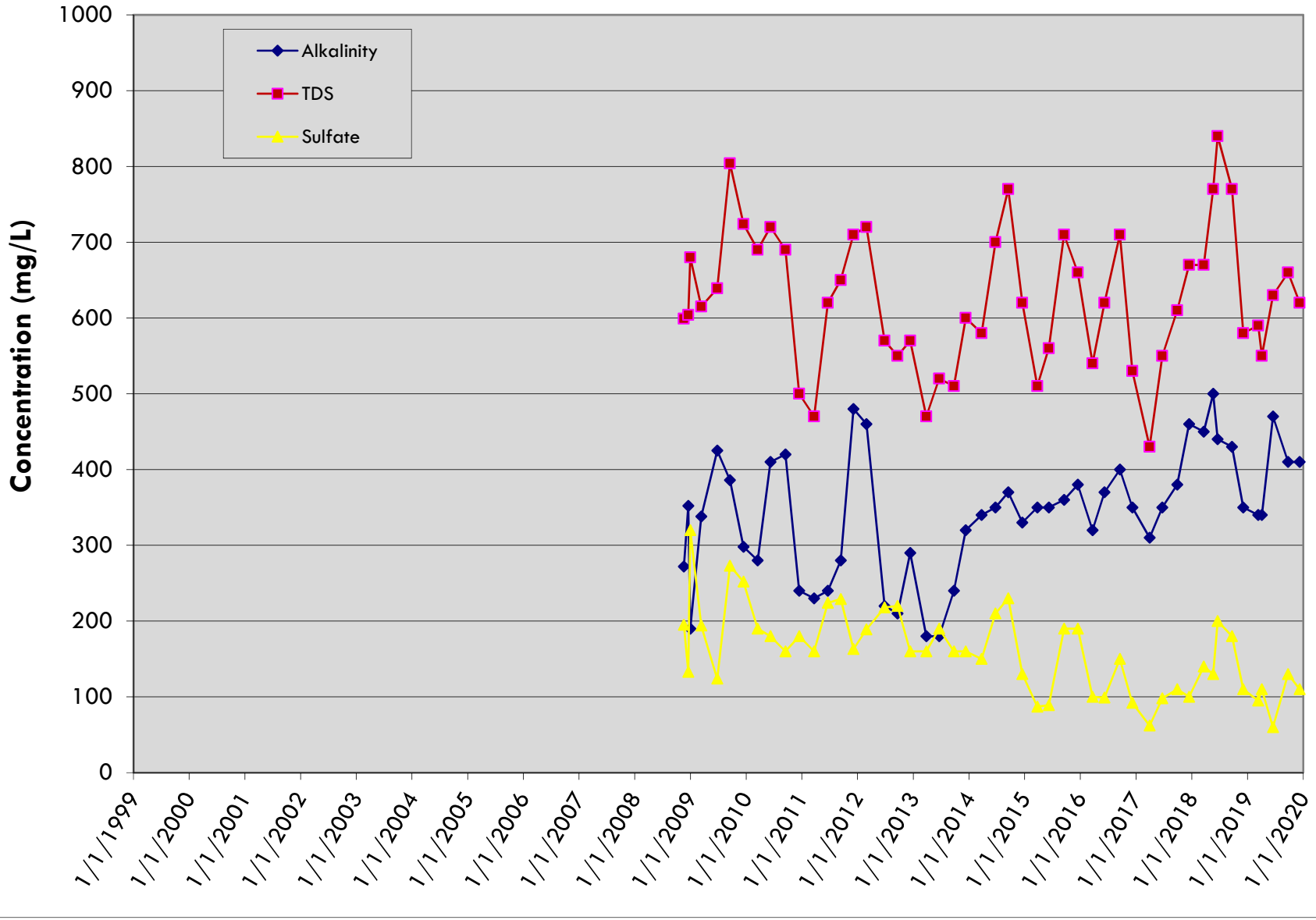


LDCS-3A
LRI Landfill, Pierce County, Washington

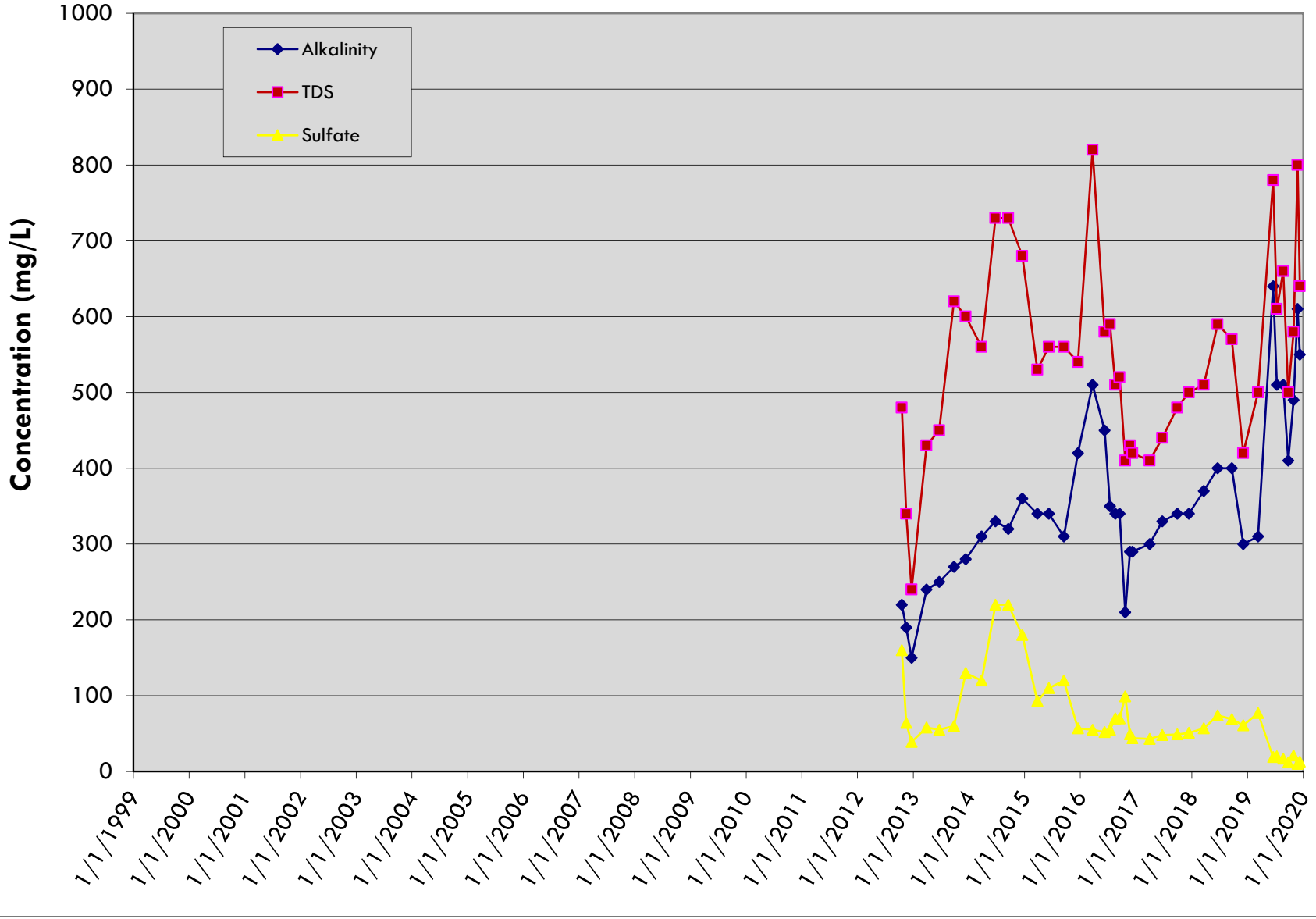



LDCS-4A
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
Alkalinity
TDS
Sulfate
1000
900
800
700
600
500
400
300
200
100
0
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

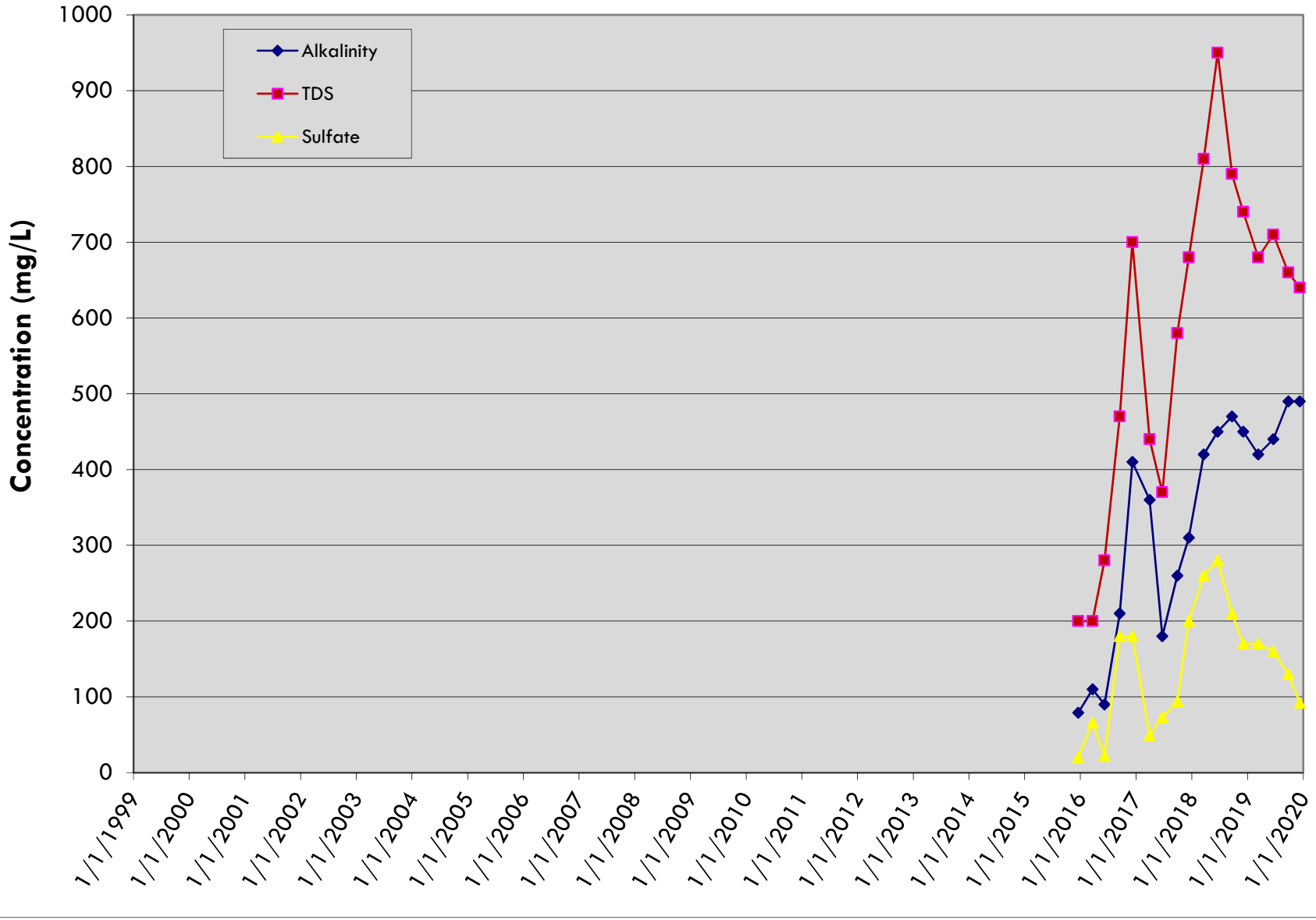
LDCS-4B
LRI Landfill, Pierce County, Washington



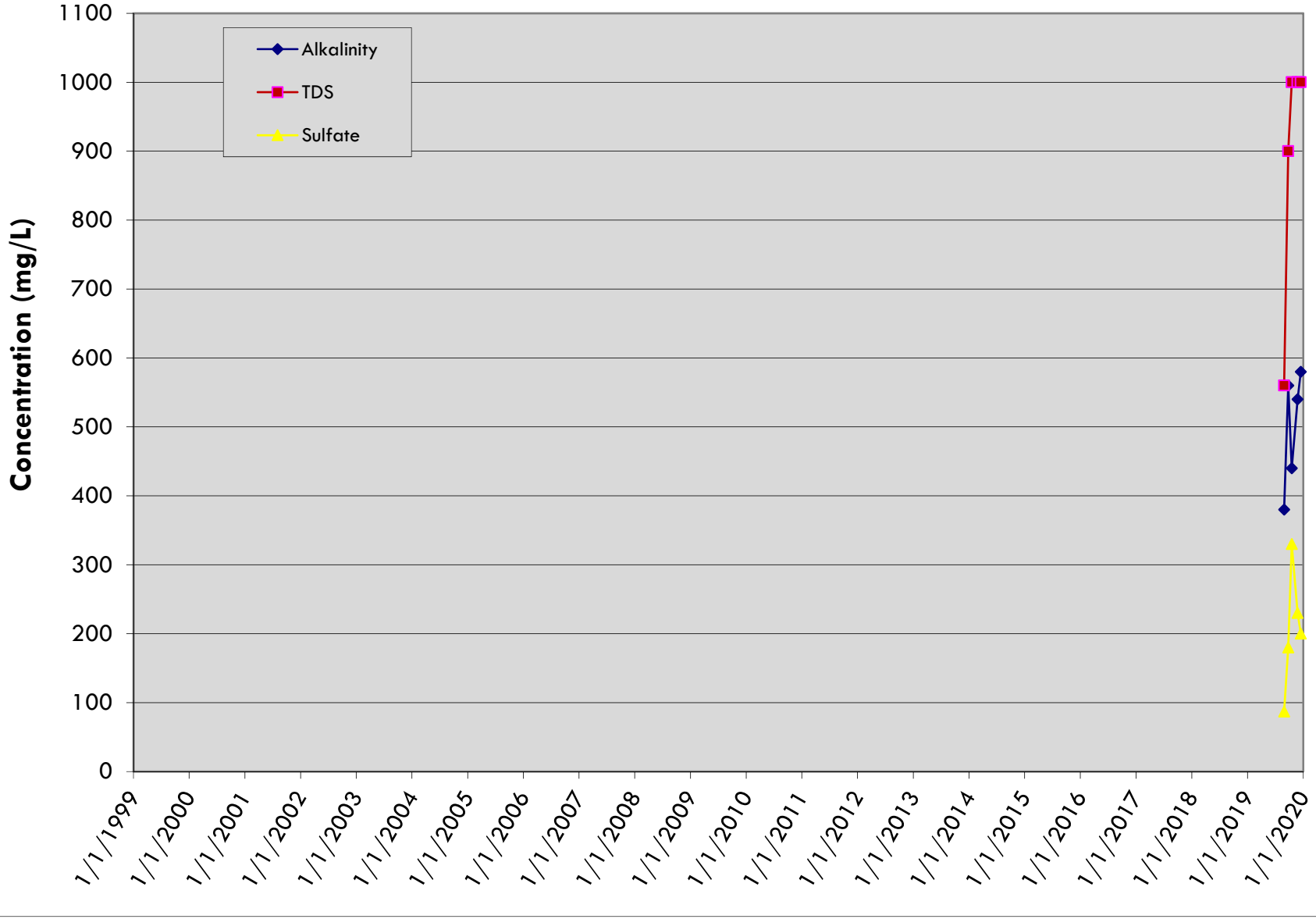
LDCS-5
LRI Landfill, Pierce County, Washington



LDCS-6A
LRI Landfill, Pierce County, Washington

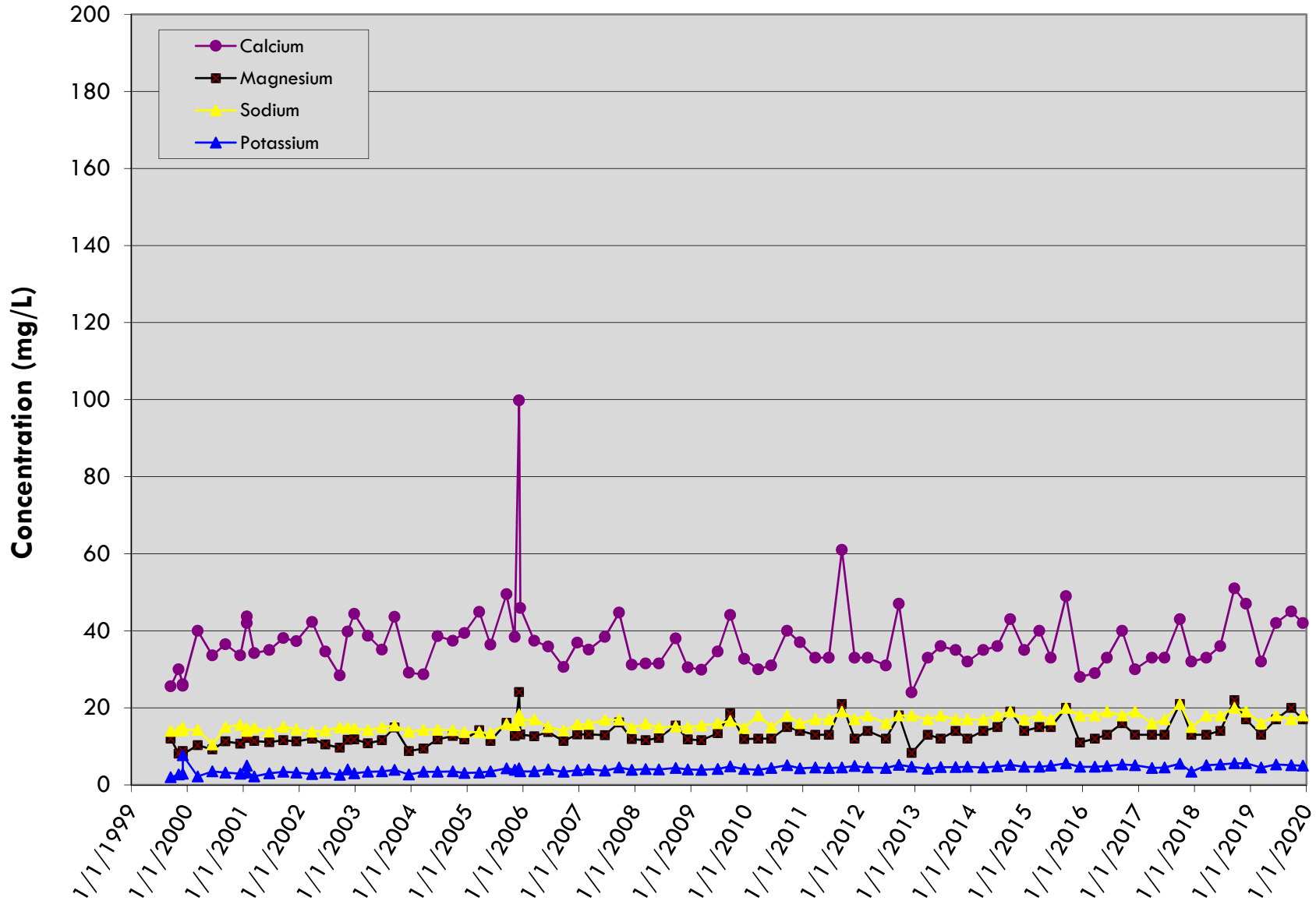


LDCS-7
LRI Landfill, Pierce County, Washington

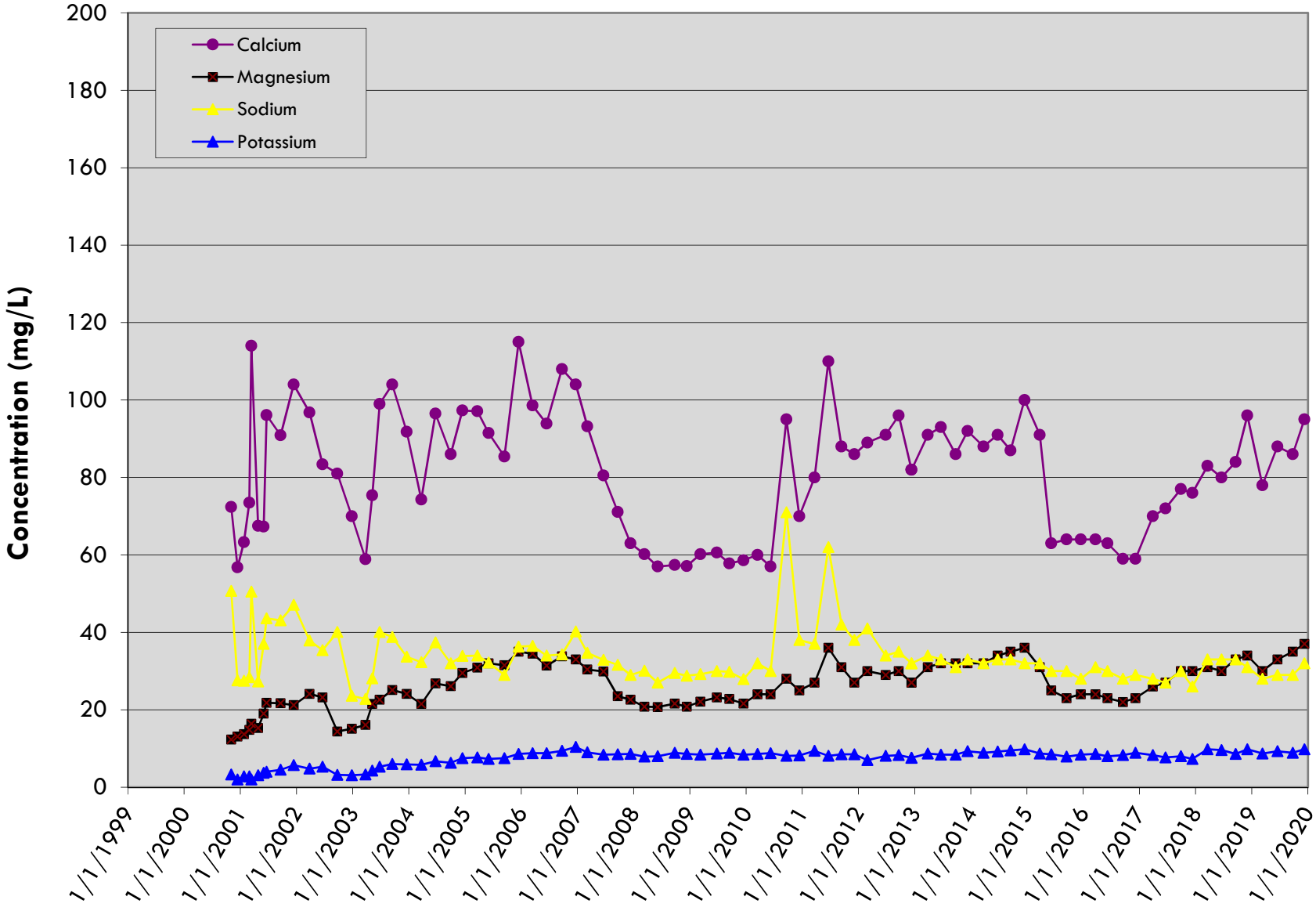


LDCS-1

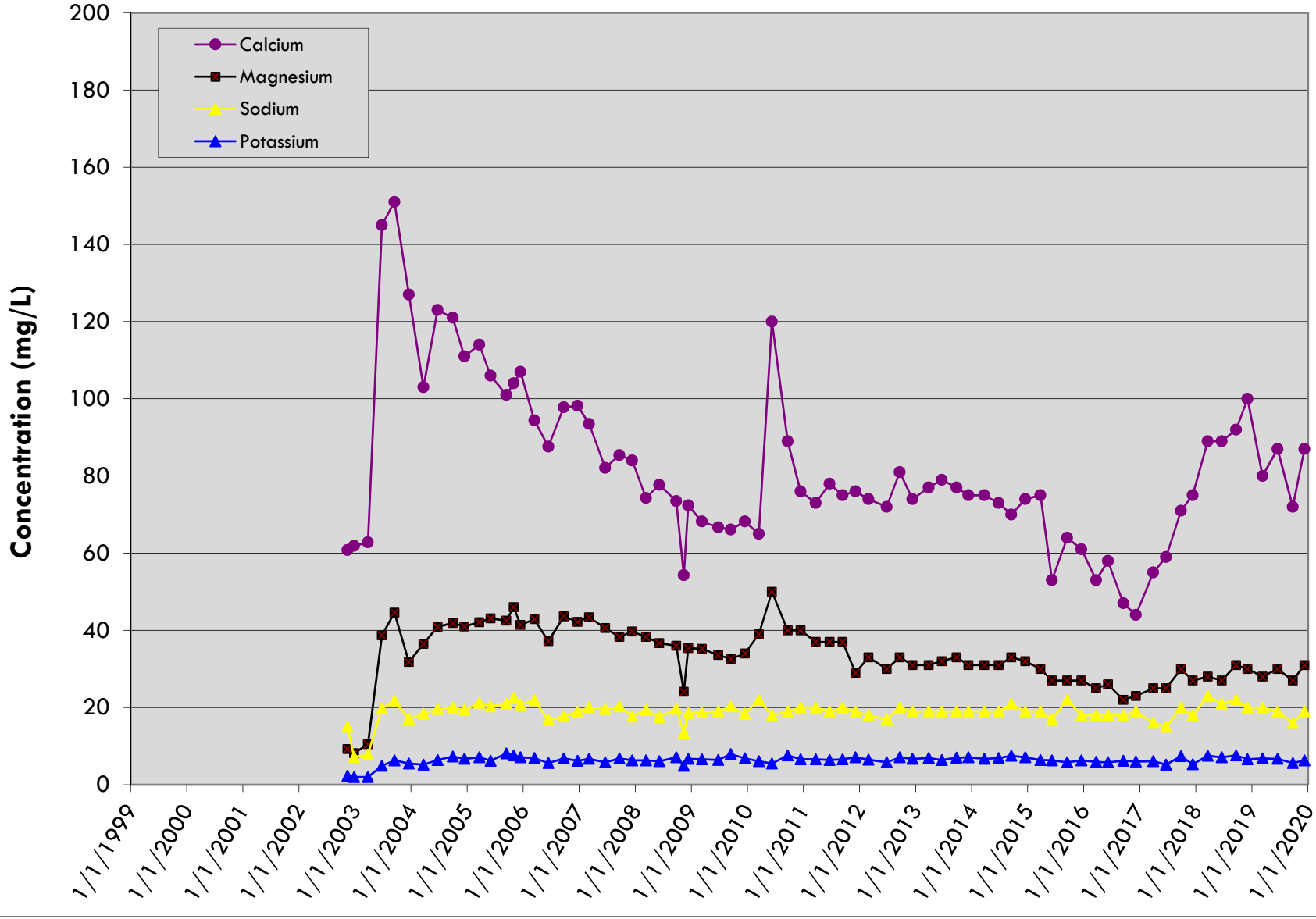
LRI Landfill, Pierce County, Washington



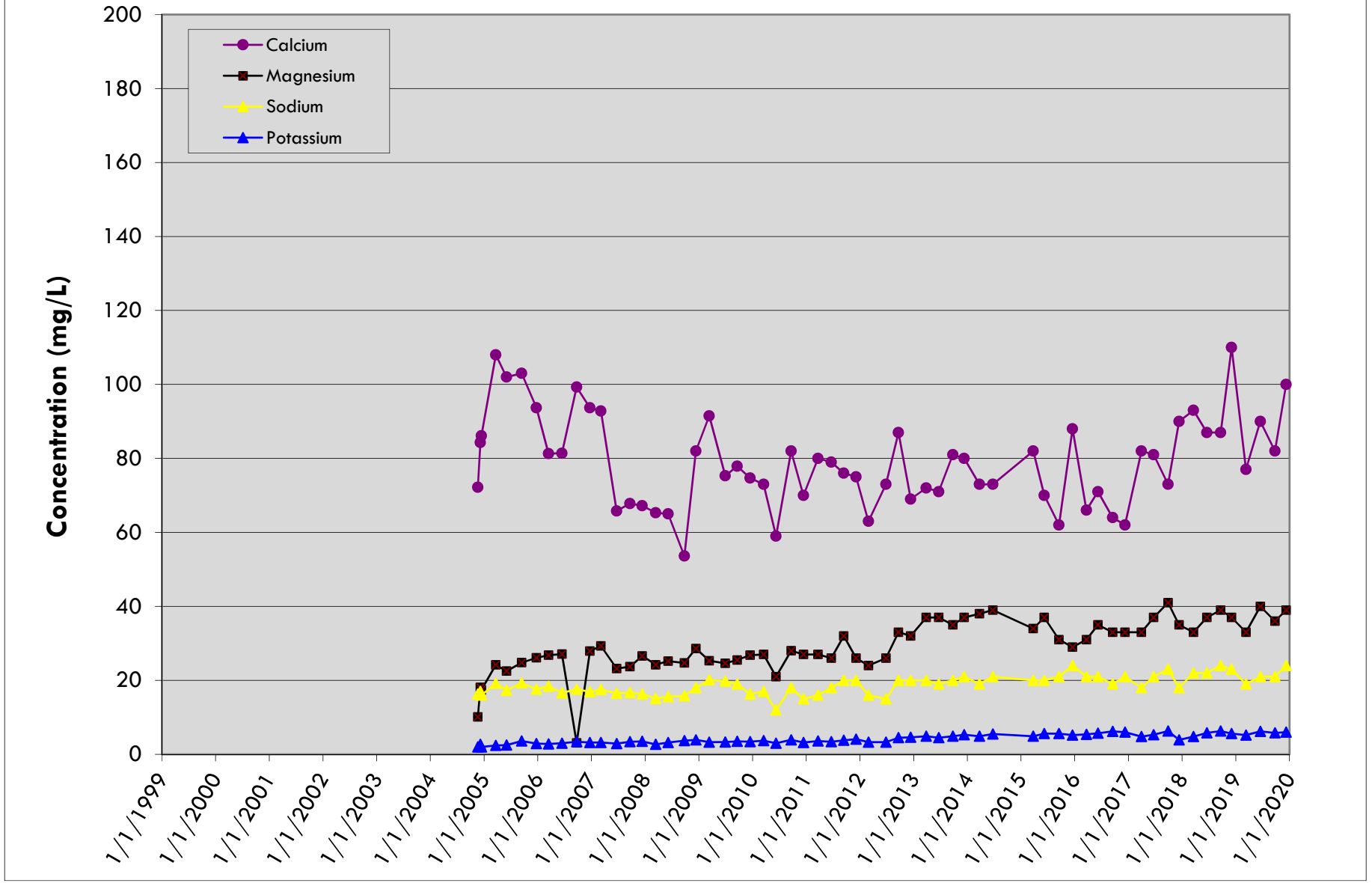
LDCS-2A
LRI Landfill, Pierce County, Washington



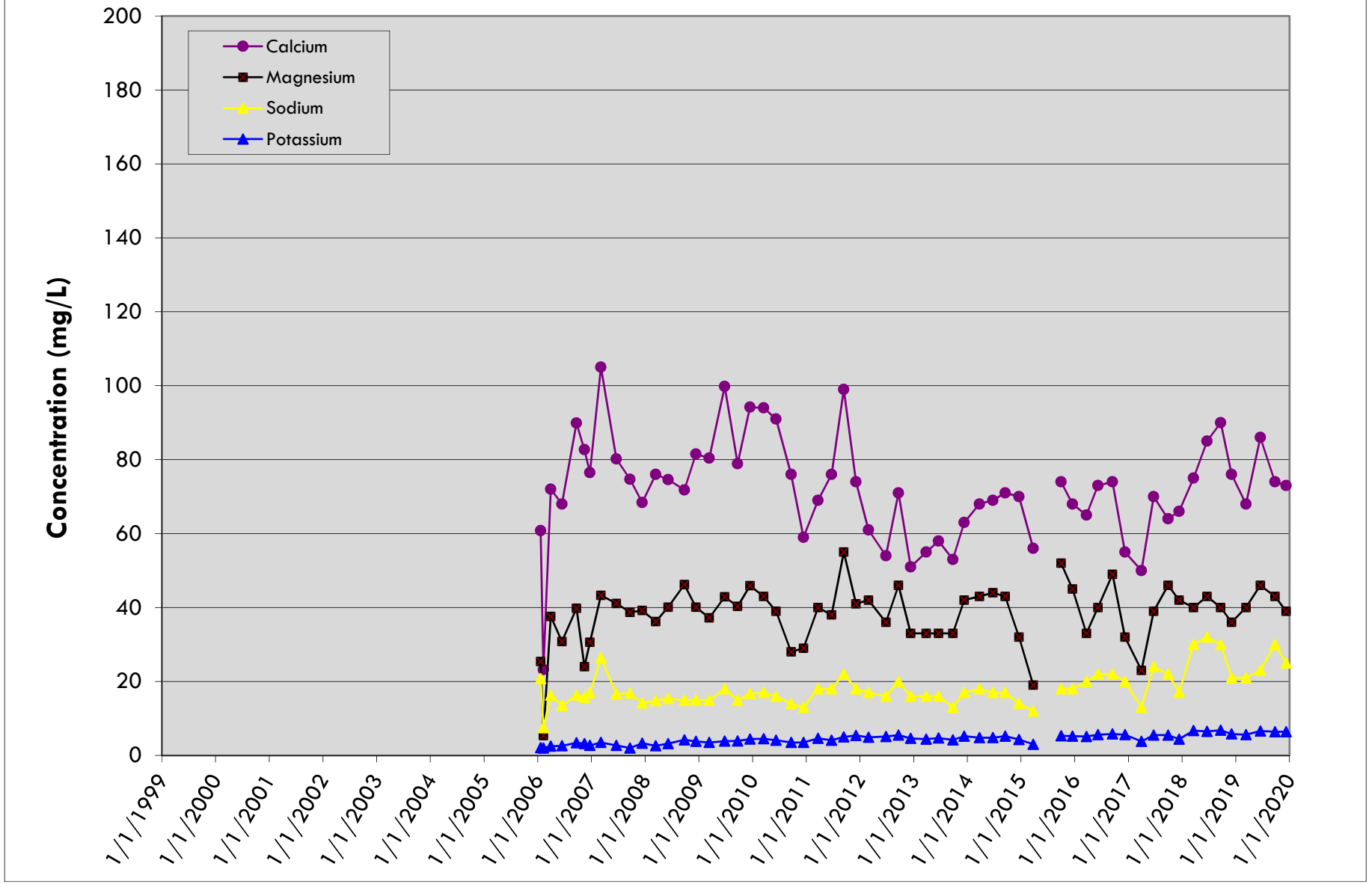
LDCS-2B
LRI Landfill, Pierce County, Washington



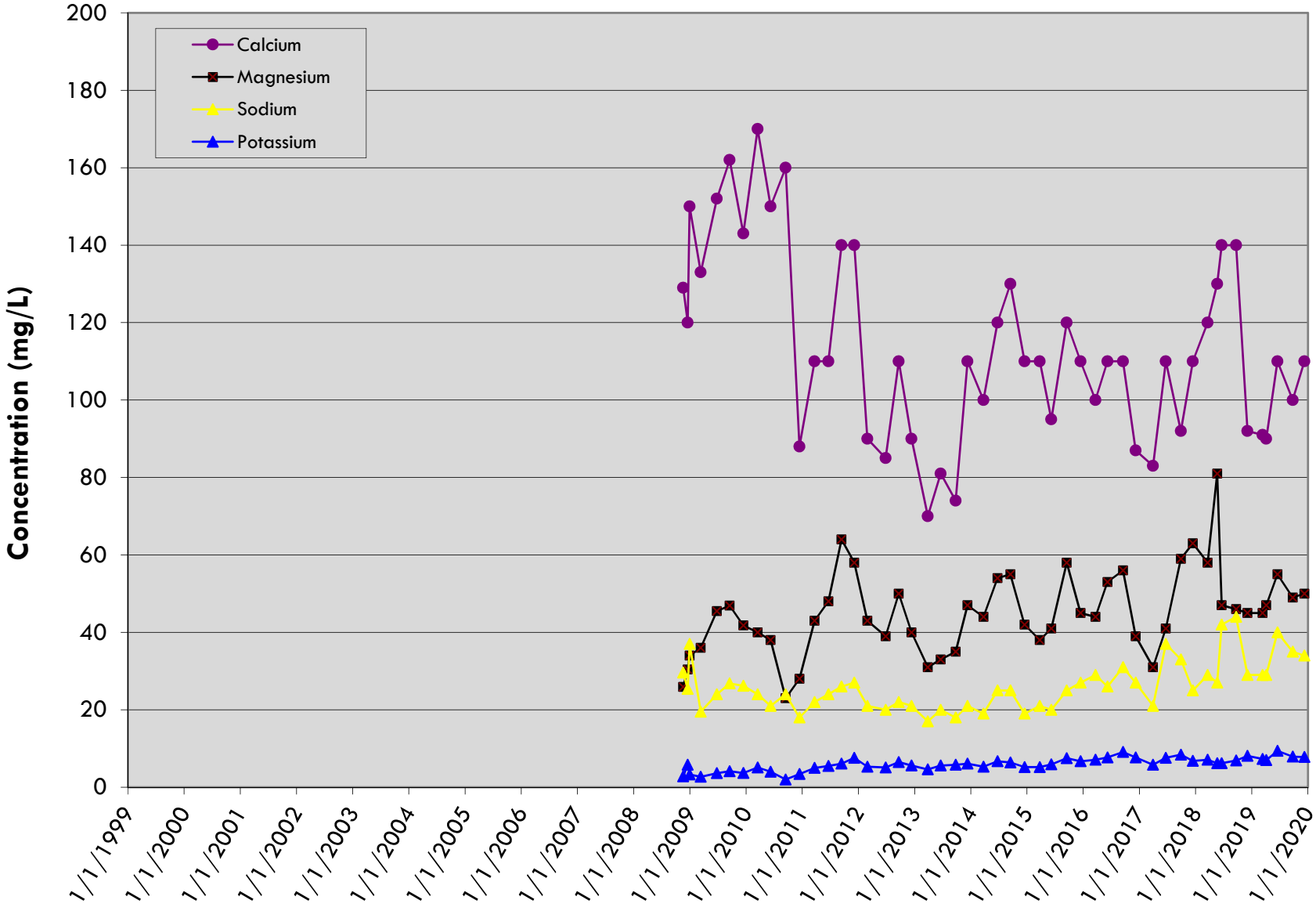
LDCS-3A
LRI Landfill, Pierce County, Washington



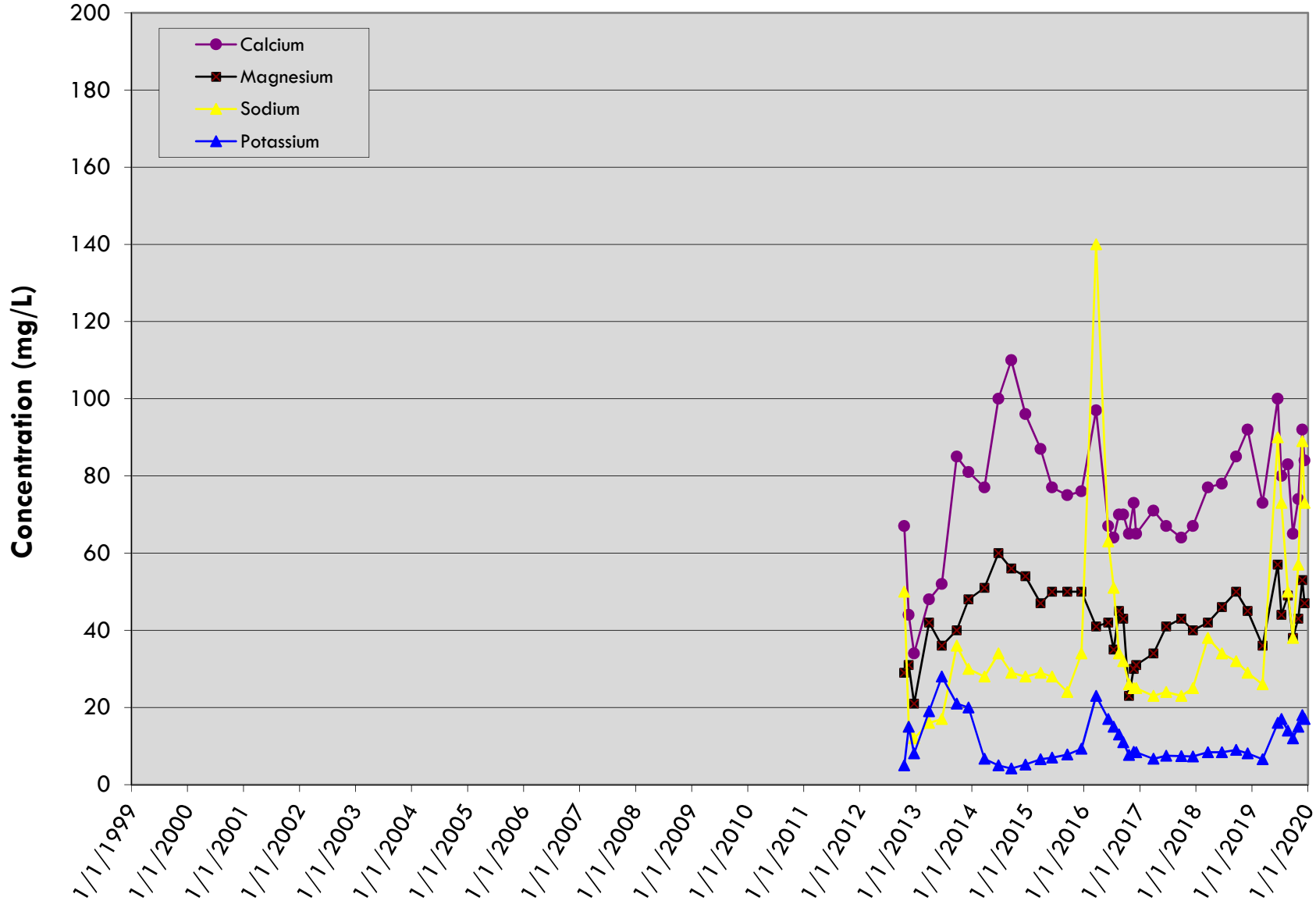
LDCS-4A
LRI Landfill, Pierce County, Washington



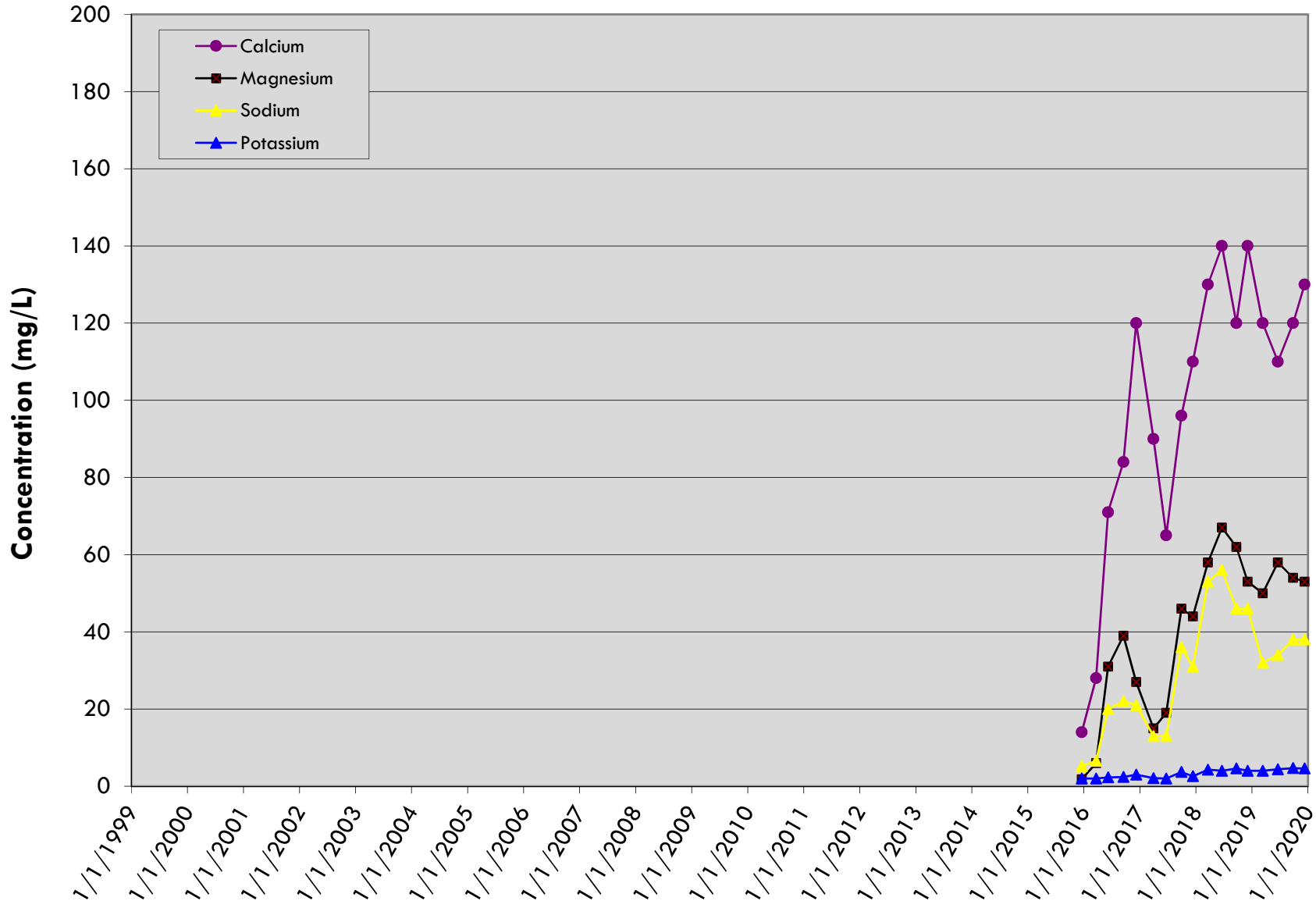
LDCS-4B
LRI Landfill, Pierce County, Washington



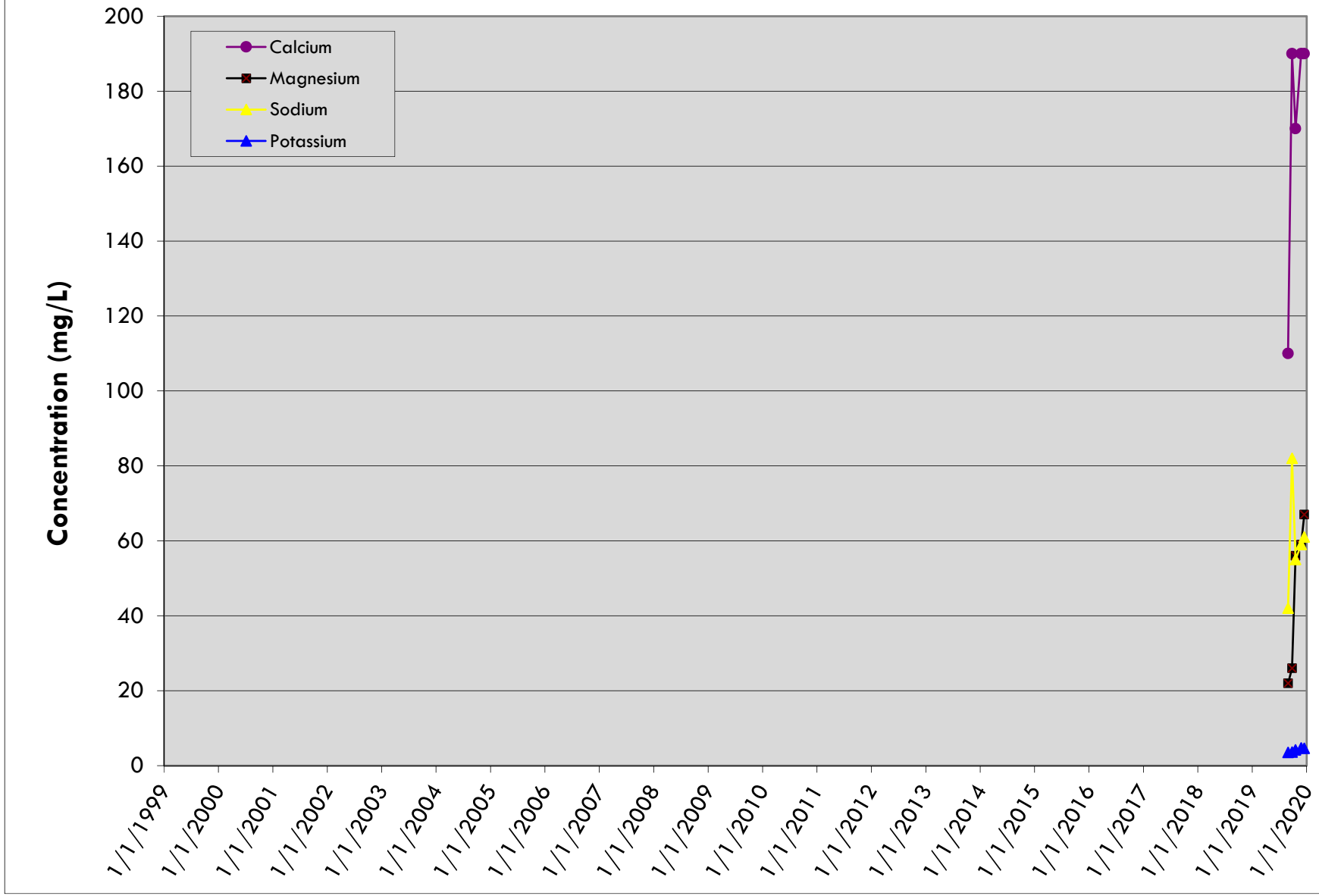
LDCS-5
LRI Landfill, Pierce County, Washington



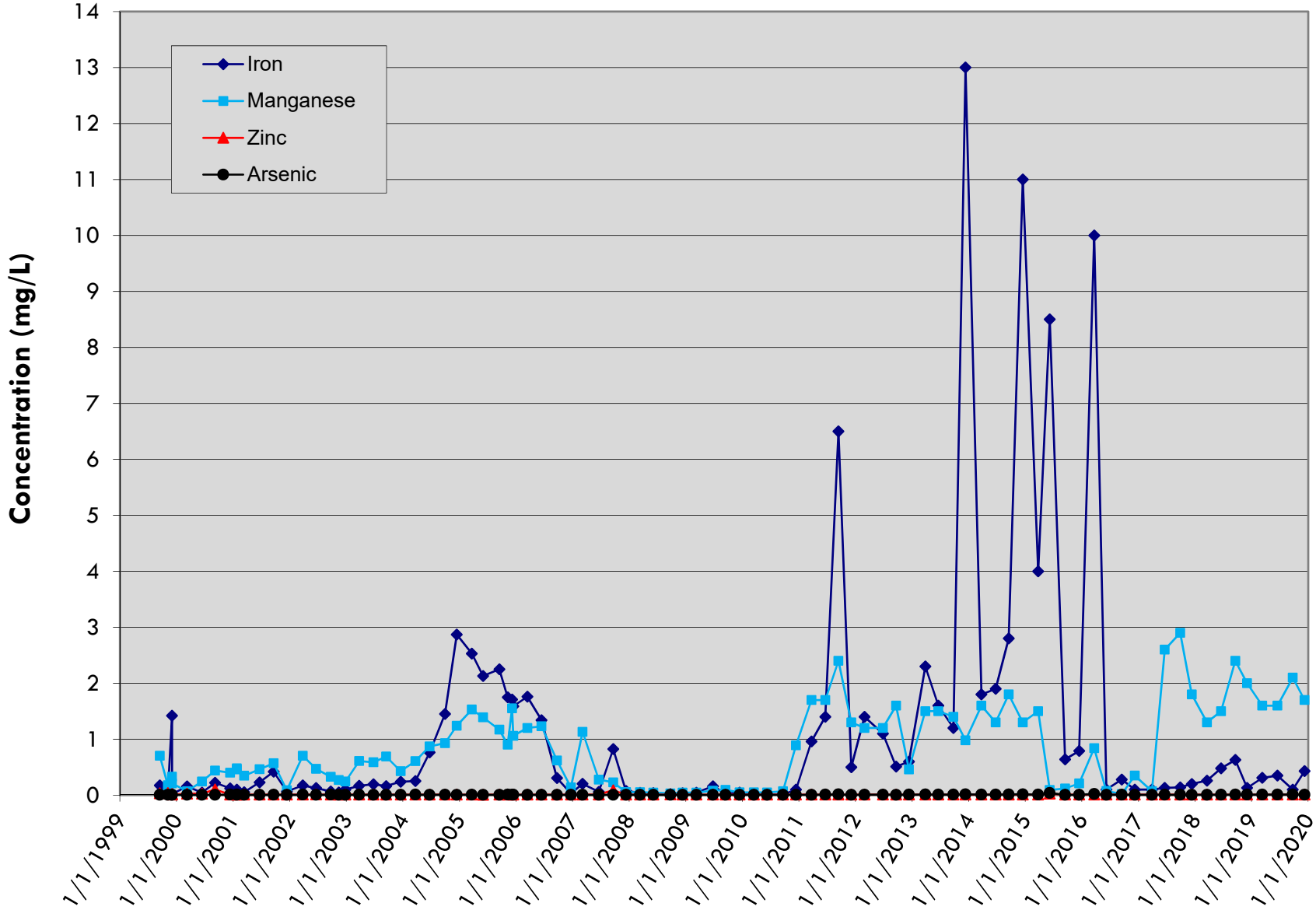
LDCS-6A
LRI Landfill, Pierce County, Washington



LDCS-7
LRI Landfill, Pierce County, Washington

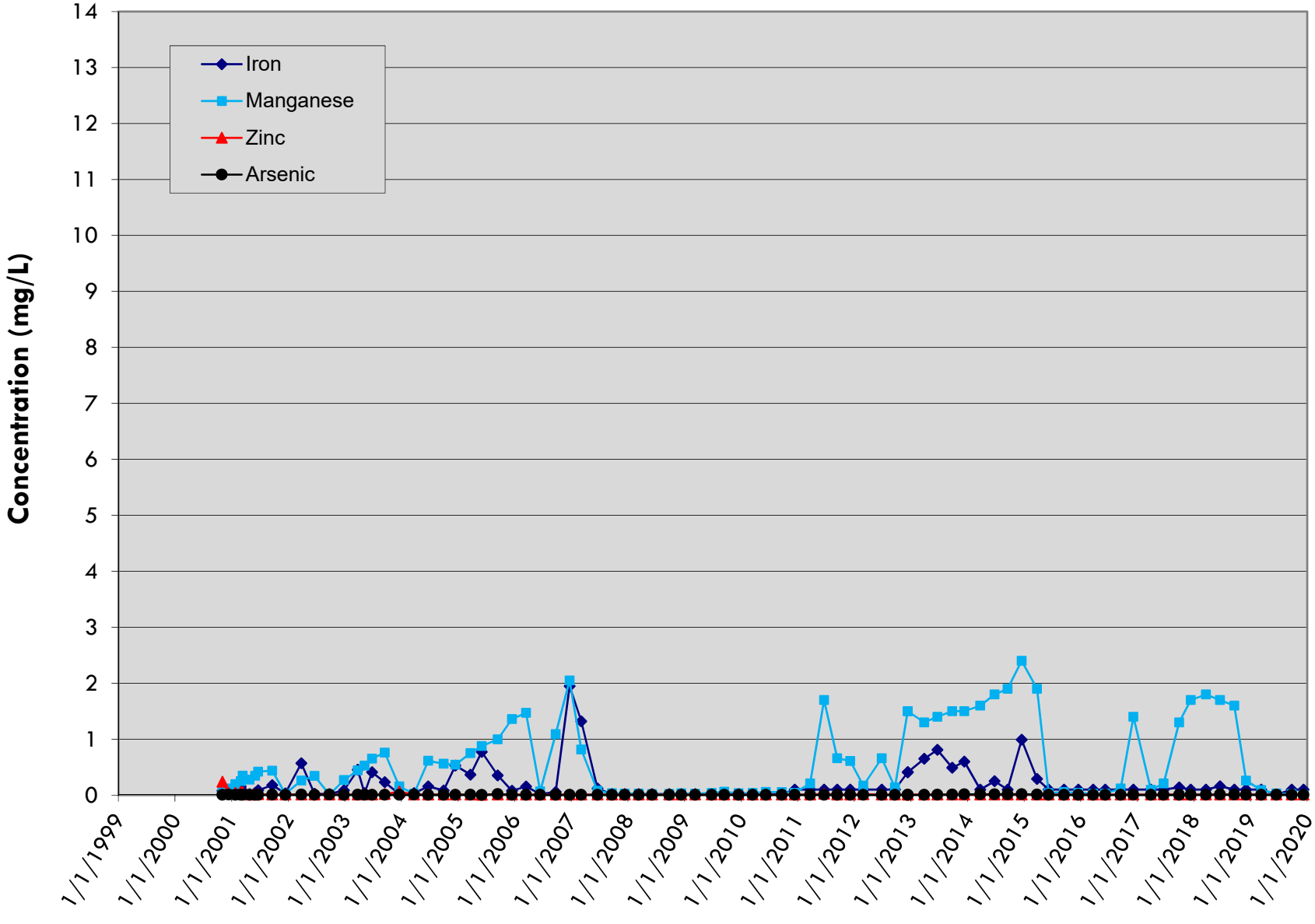


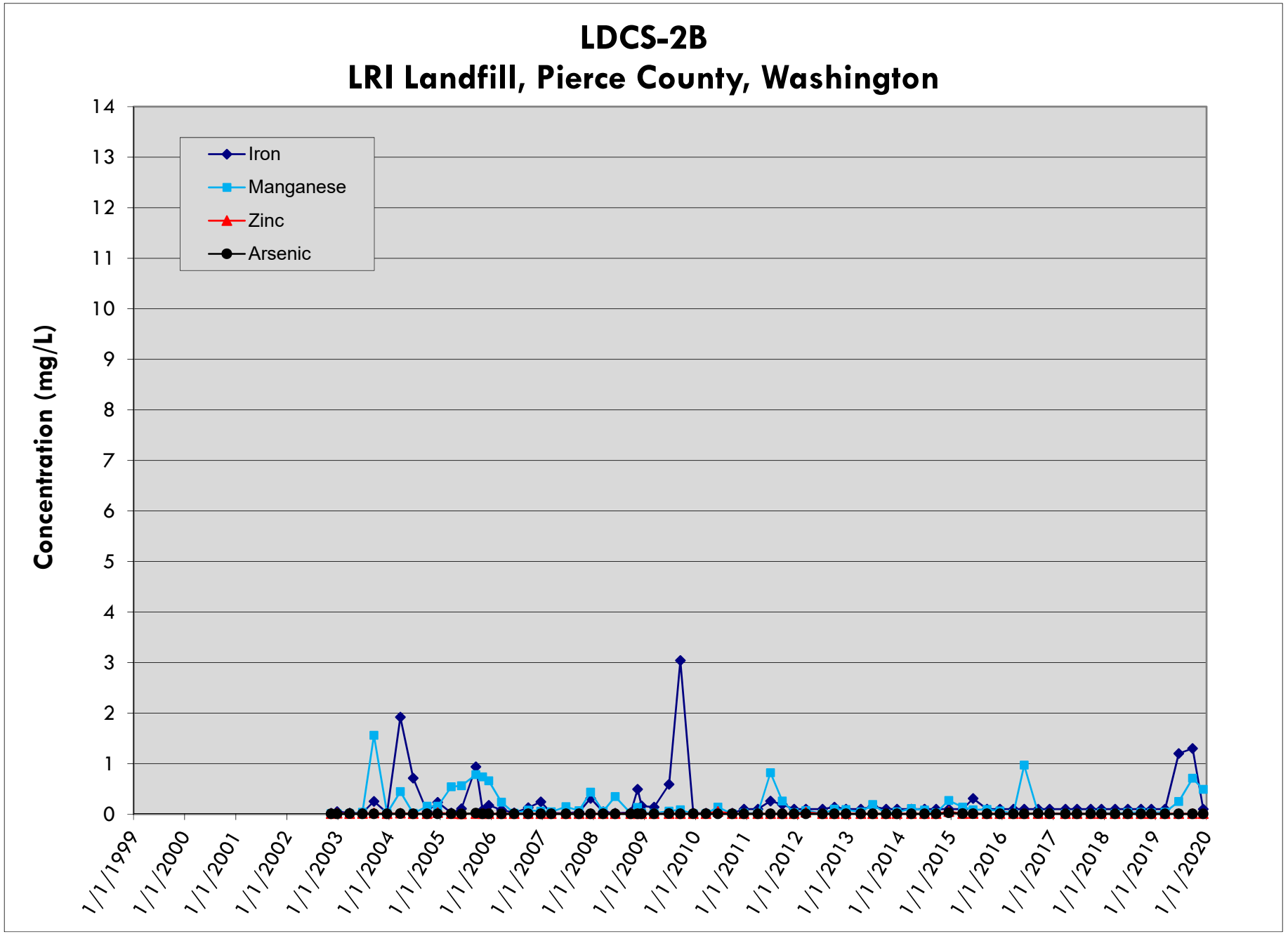
LDCS-1
LRI Landfill, Pierce County, Washington



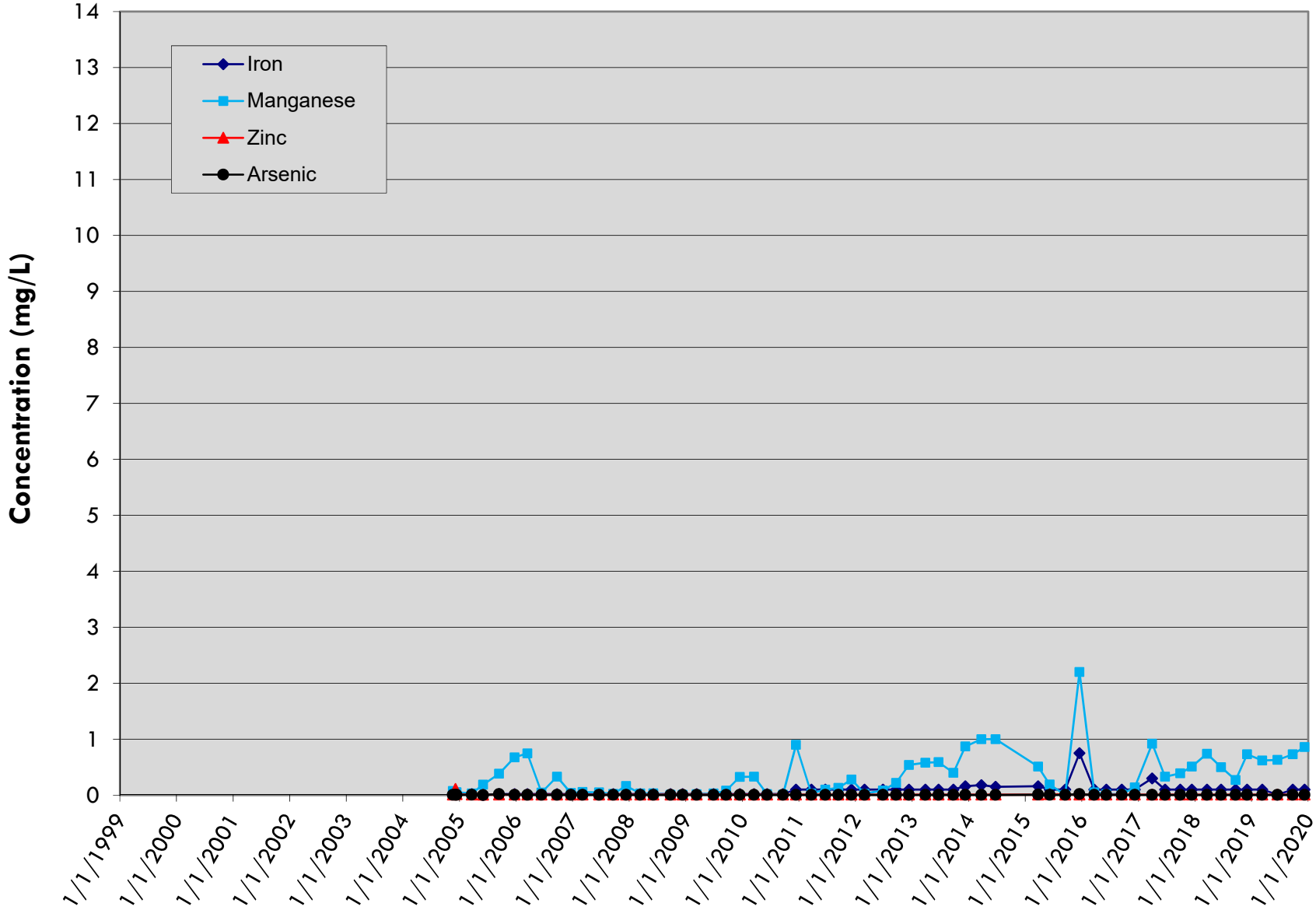
LDCS-2A

LRI Landfill, Pierce County, Washington

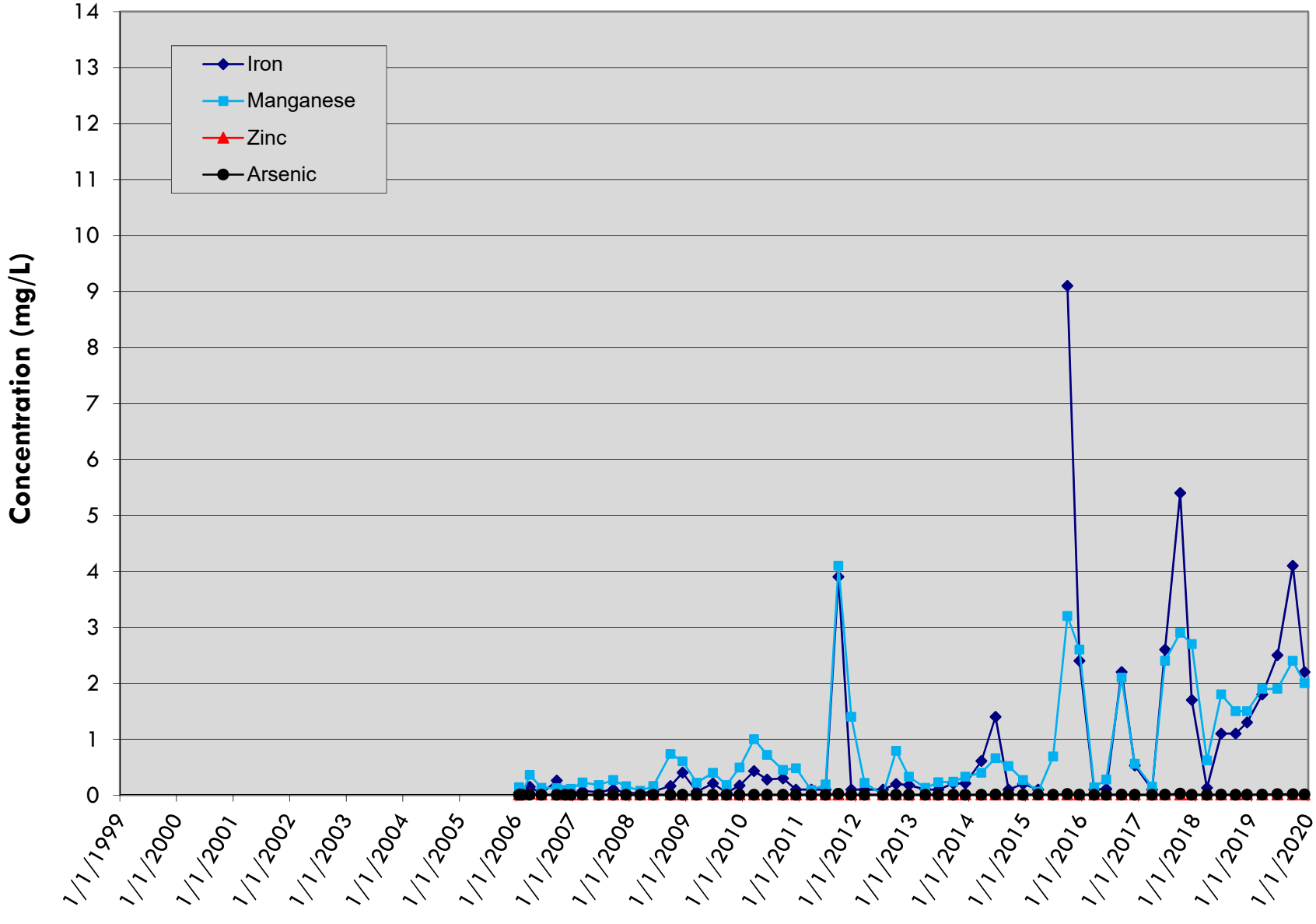


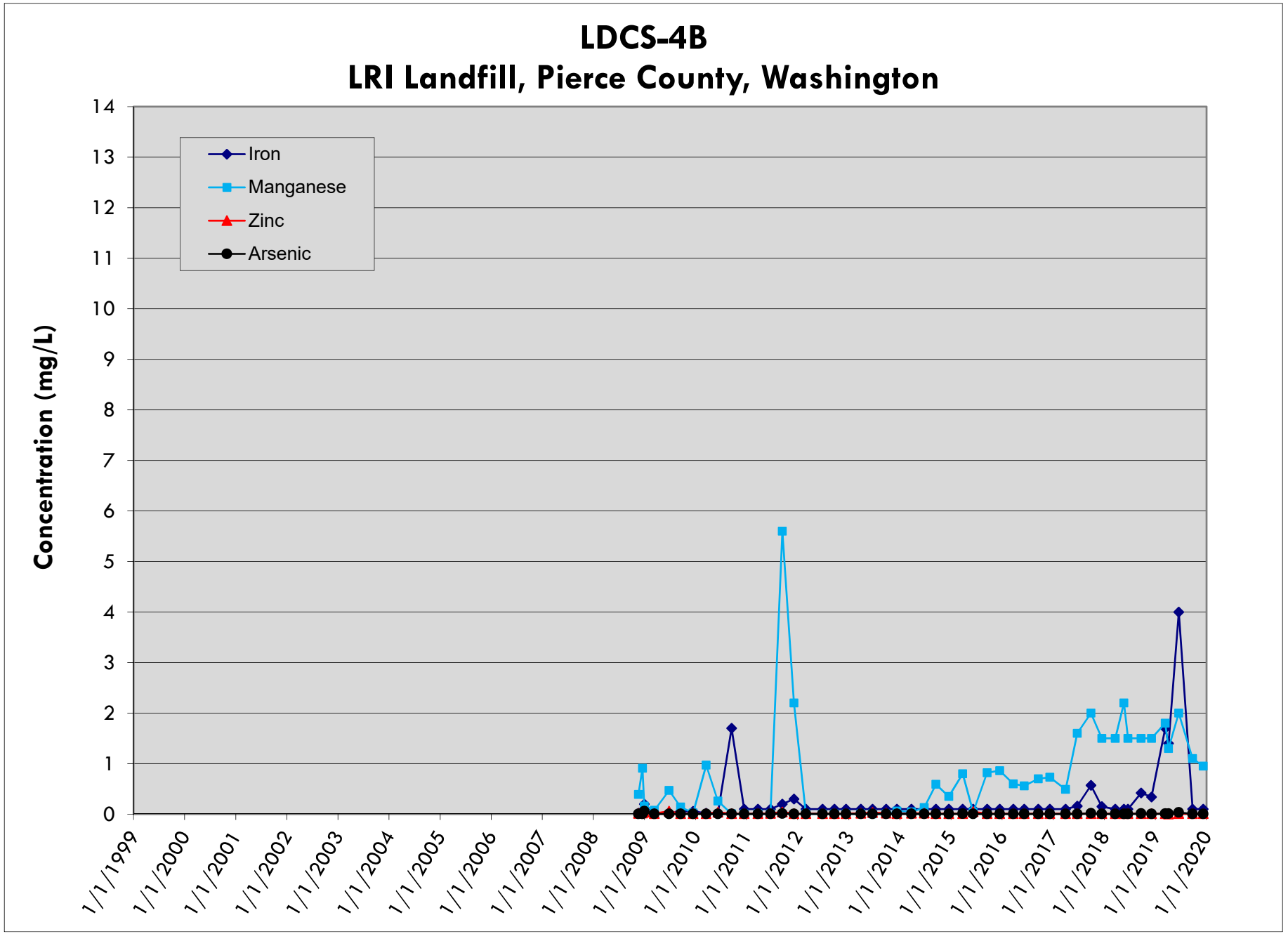

LDCS-2B
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
Iron
Manganese
Zinc
Arsenic
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

LDCS-3A
LRI Landfill, Pierce County, Washington



LDCS-4A
LRI Landfill, Pierce County, Washington




LDCS-4B
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
Iron
Manganese
Zinc
Arsenic
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
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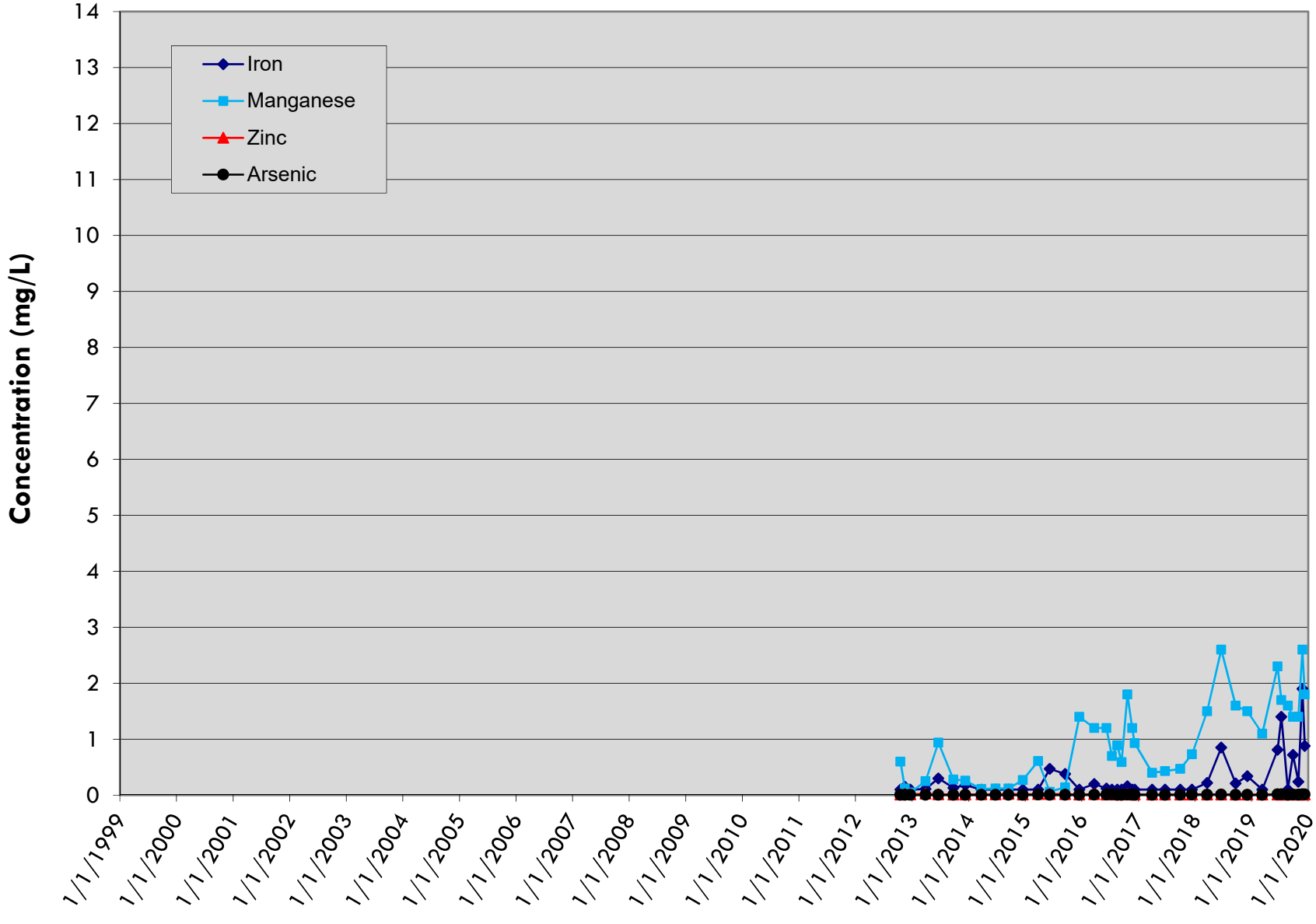
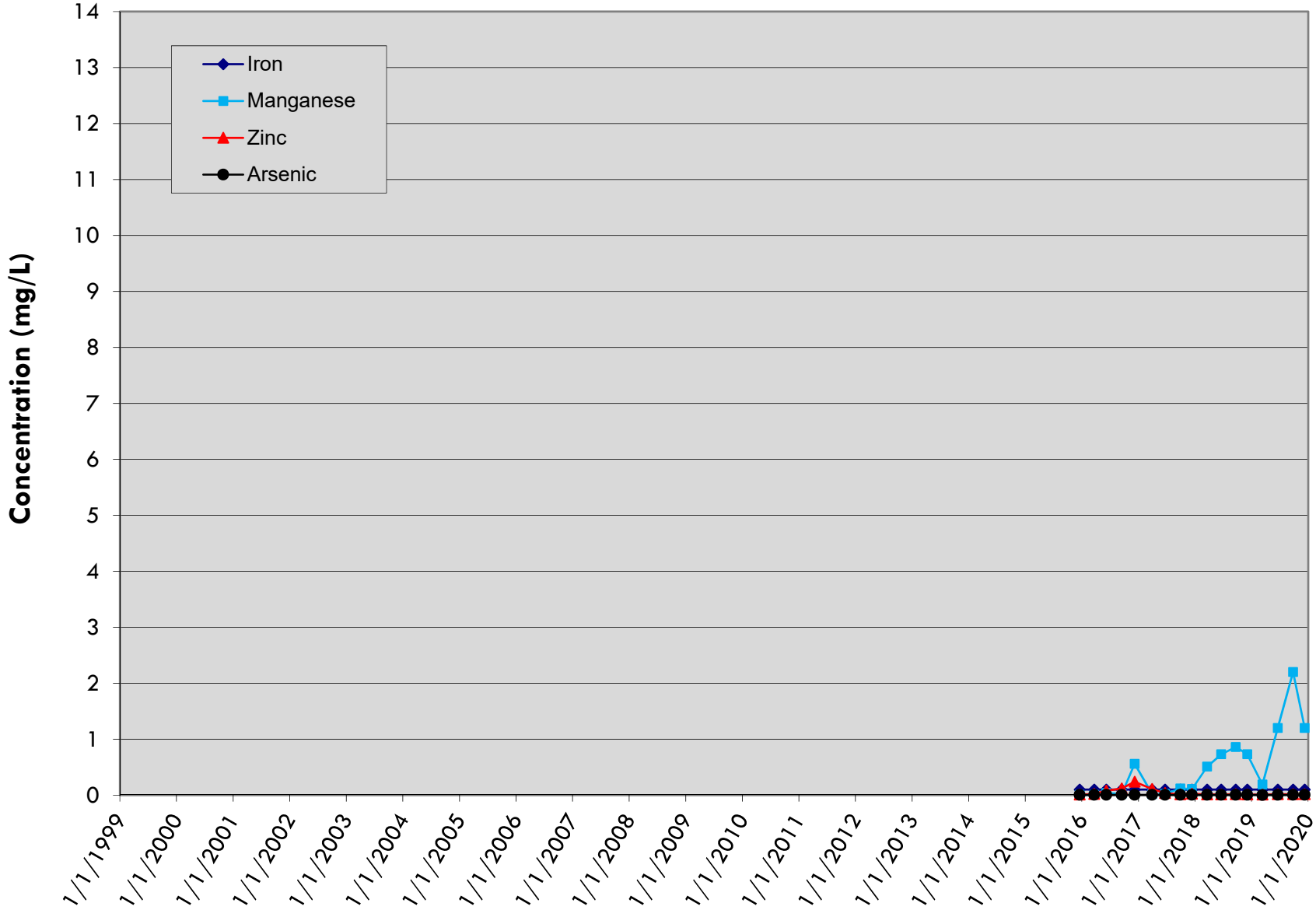
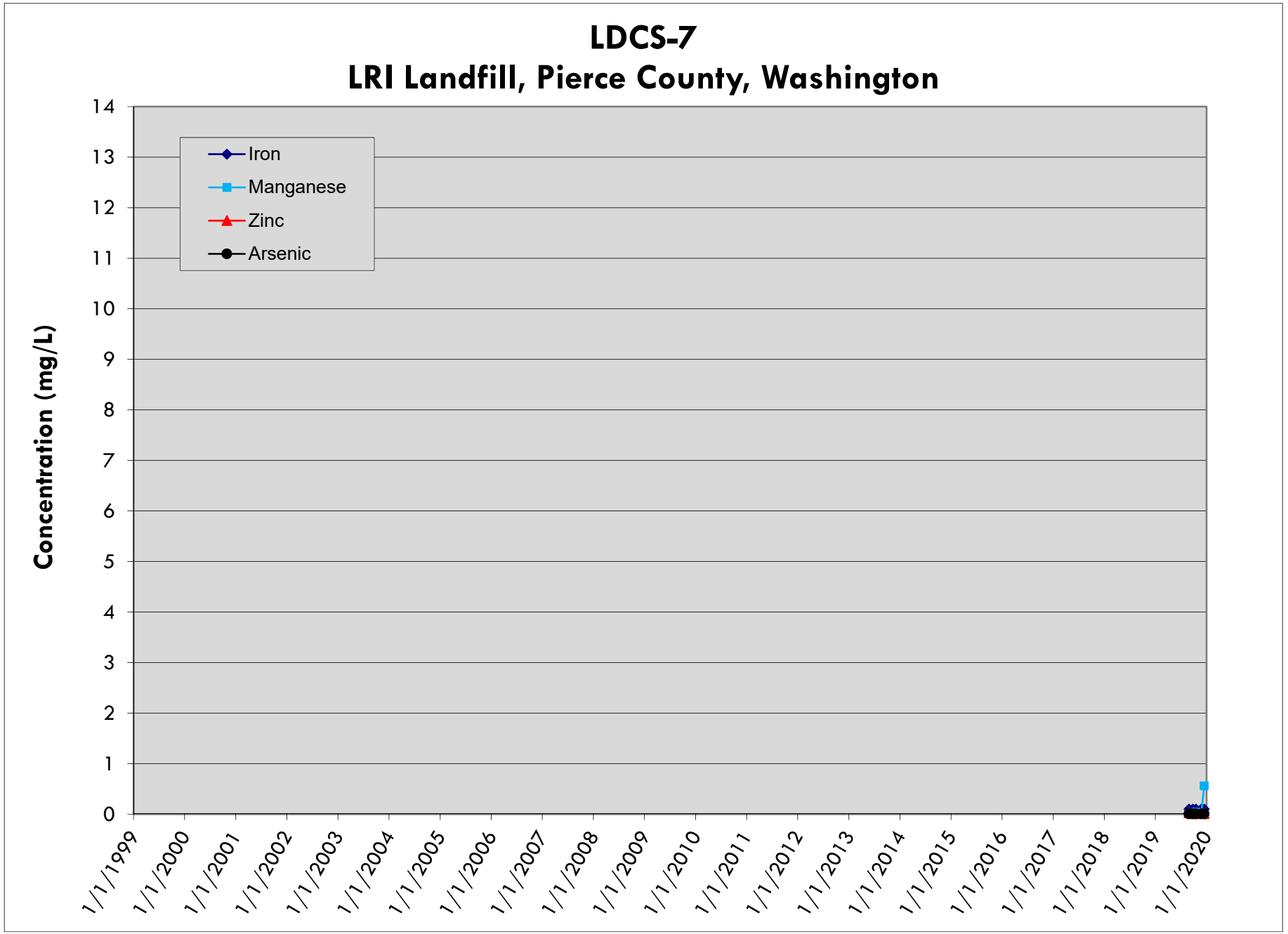
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

LDCS-5
LRI Landfill, Pierce County, Washington

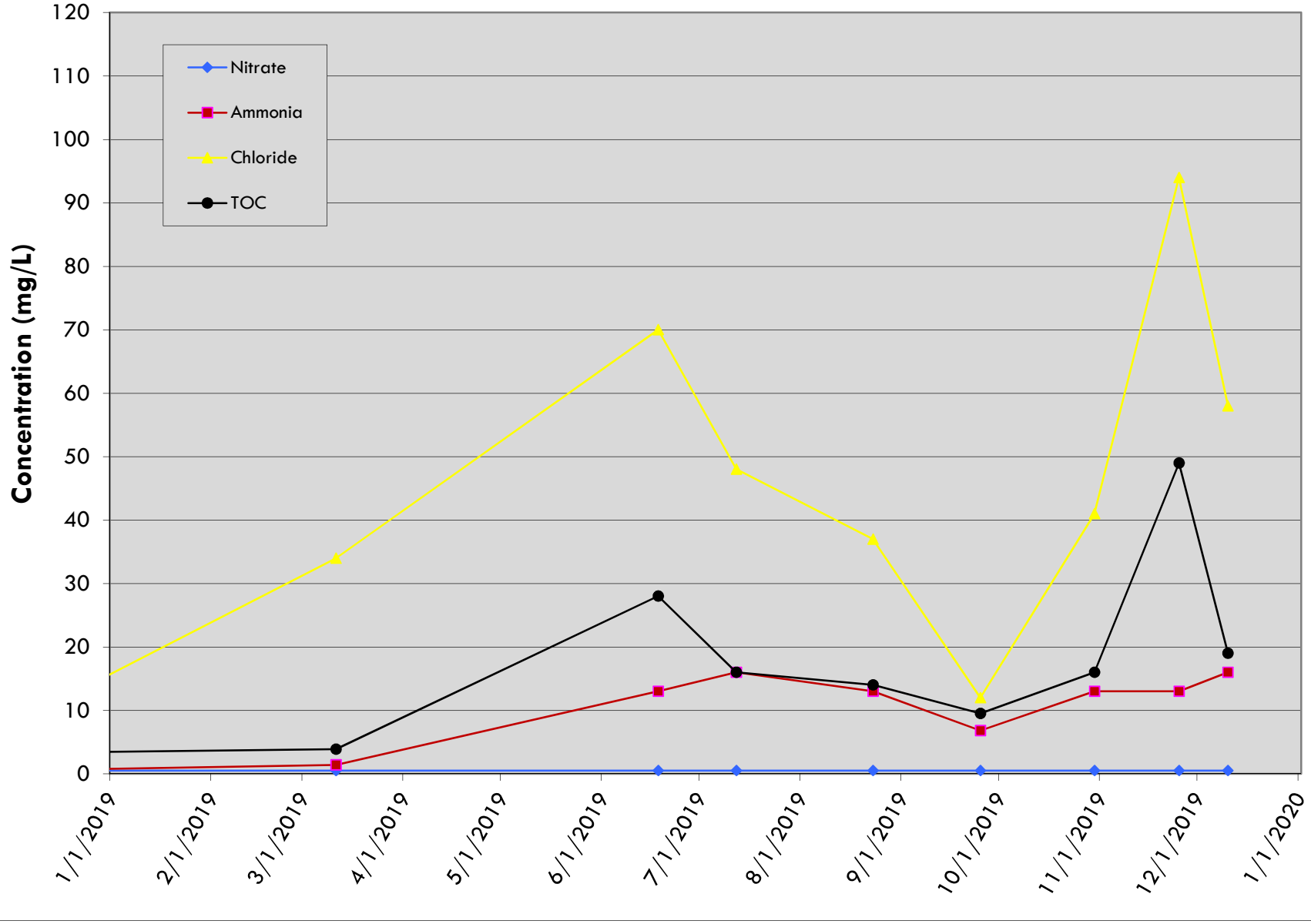


LDCS-6A
LRI Landfill, Pierce County, Washington

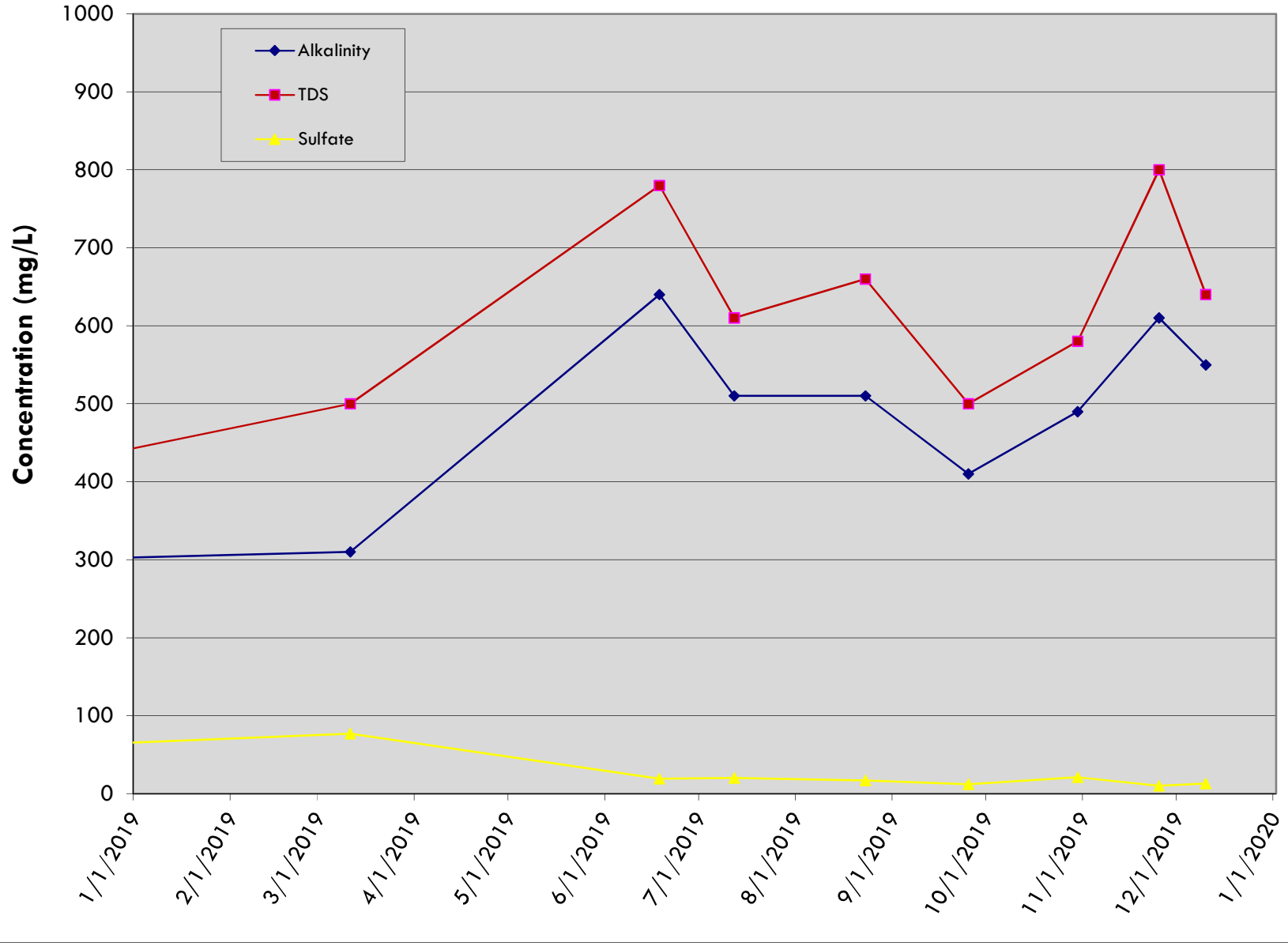



LDCS-7
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
Iron
Manganese
Zinc
Arsenic
1/1/1999
1/1/2000
1/1/2001
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
1/1/2012
1/1/2013
1/1/2014
1/1/2015
1/1/2016
1/1/2017
1/1/2018
1/1/2019
1/1/2020

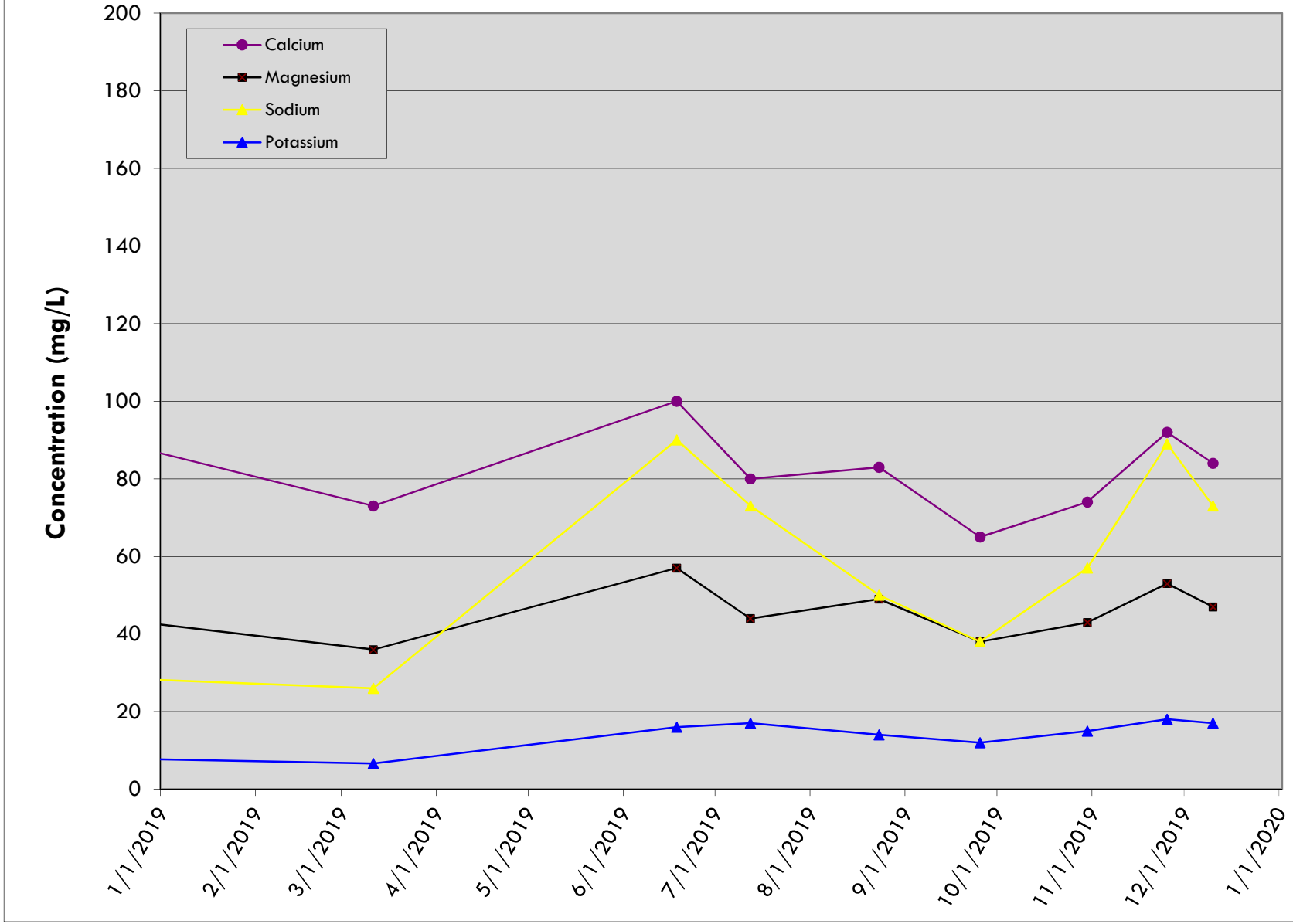
LDCS-5
LRI Landfill, Pierce County, Washington



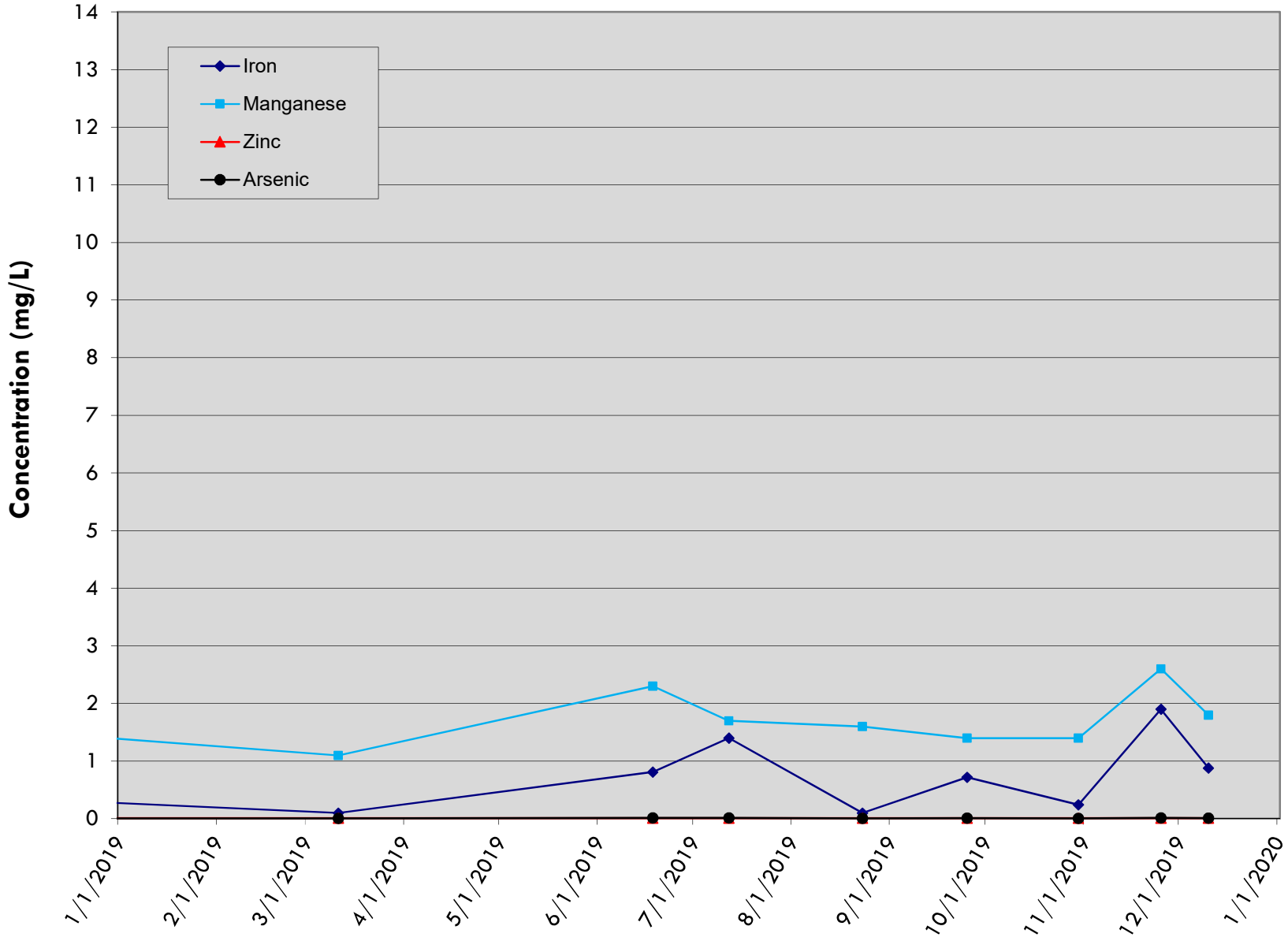
LDCS-5
LRI Landfill, Pierce County, Washington



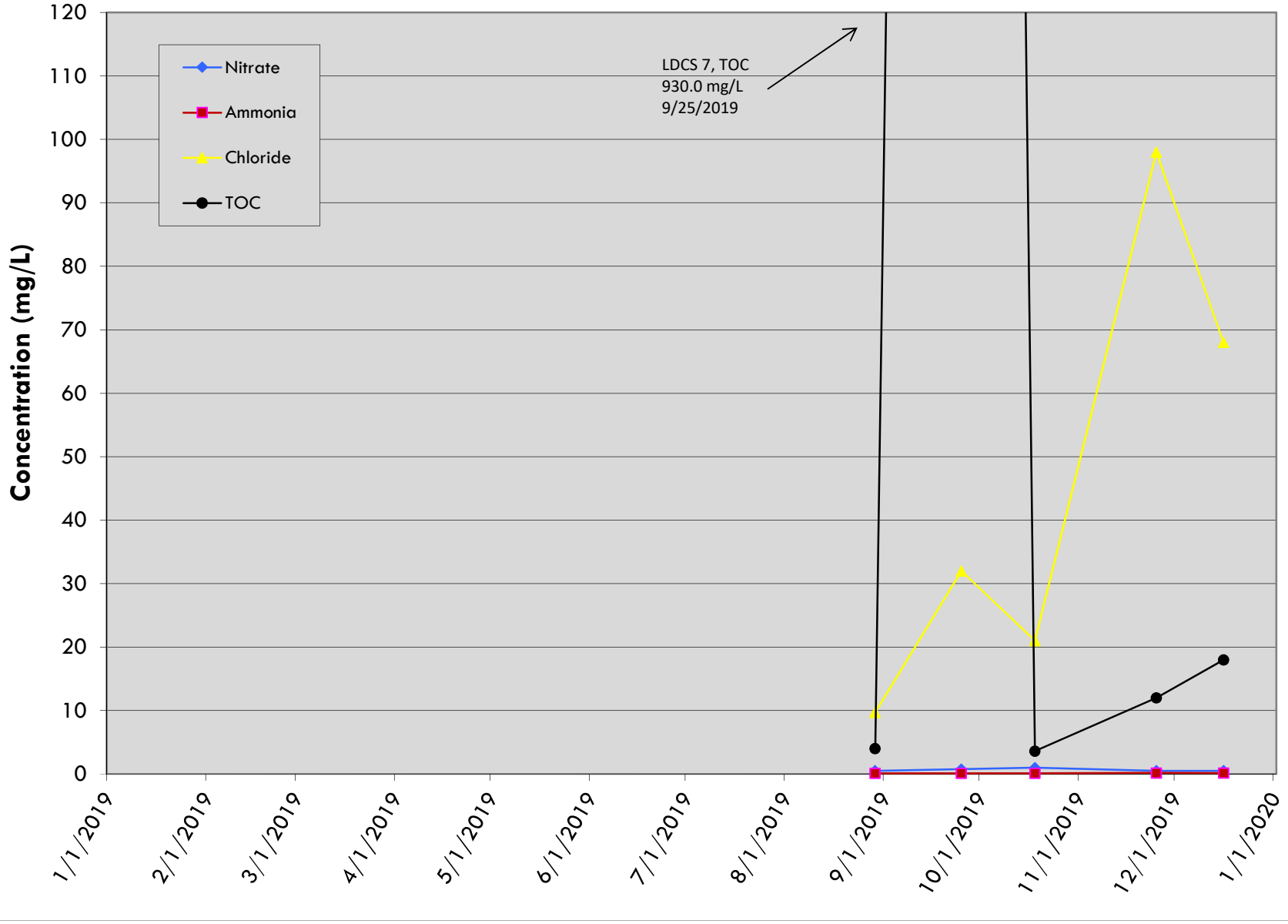
LDCS-5
LRI Landfill, Pierce County, Washington

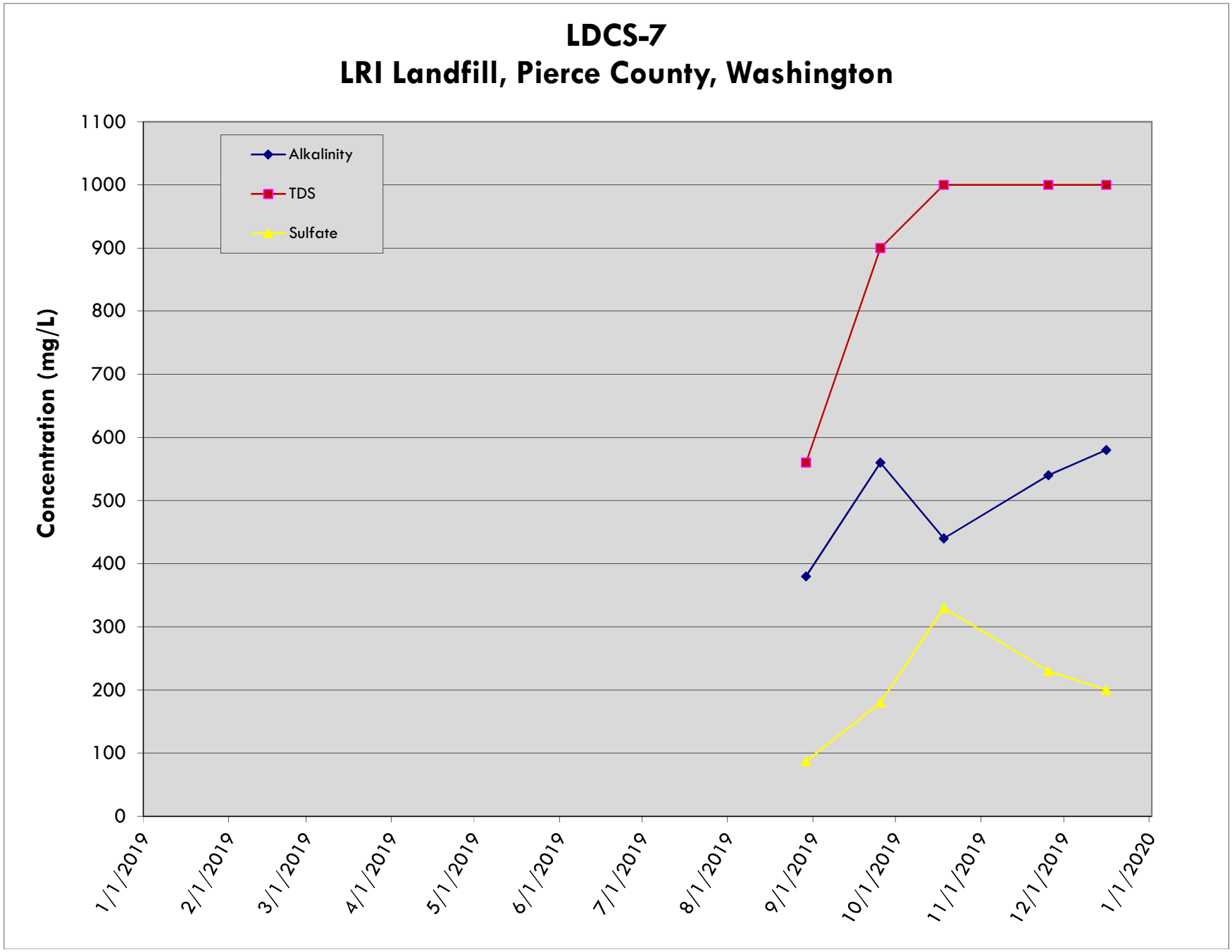


LDCS-5
LRI Landfill, Pierce County, Washington

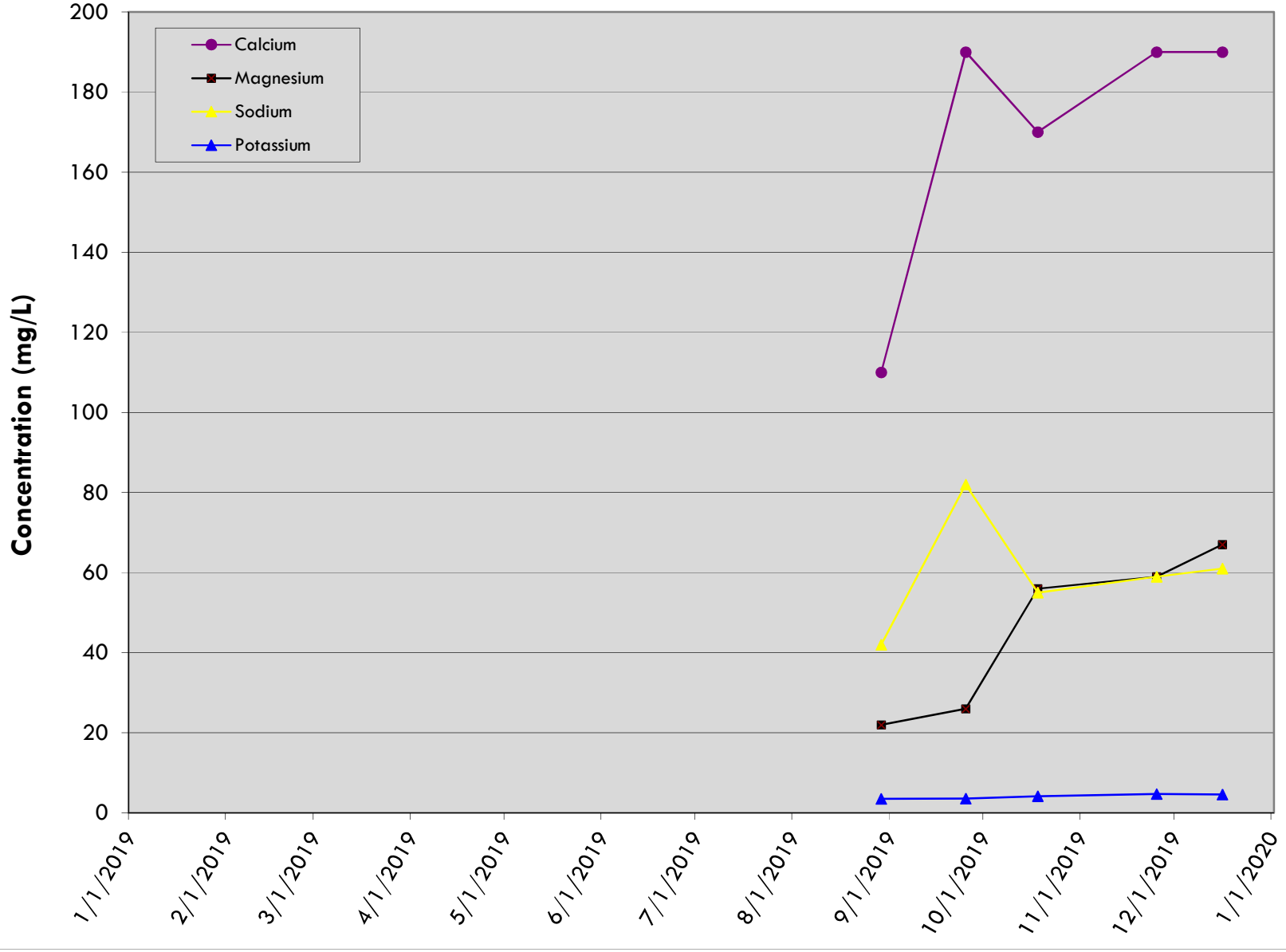


LDCS-7
LRI Landfill, Pierce County, Washington

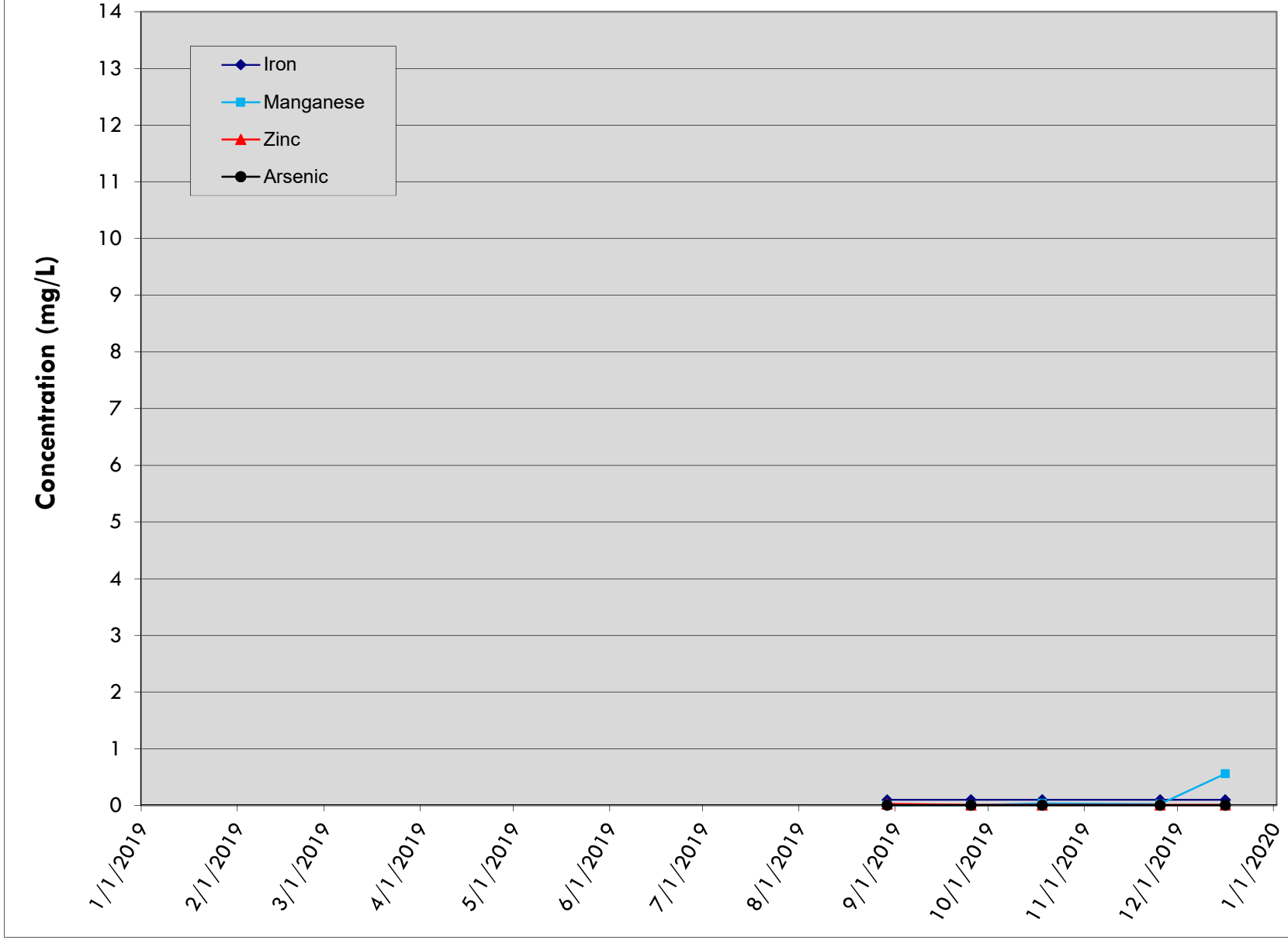



LDCS-7
LRI Landfill, Pierce County, Washington
Concentration (mg/L)
1100
1000
900
800
700
600
500
400
300
200
100
0
Alkalinity
TDS
Sulfate
1/1/2019
2/1/2019
3/1/2019
4/1/2019
5/1/2019
6/1/2019
7/1/2019
8/1/2019
9/1/2019
10/1/2019
11/1/2019
12/1/2019
1/1/2020

LDCS-7
LRI Landfill, Pierce County, Washington



LDCS-7
LRI Landfill, Pierce County, Washington



Appendix G

Surface Water Monitoring Data

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002603 **Permittee:** LRI 304th Street Landfill

Facility County: Pierce **Receiving Waterbody:**

Monitoring Period: 01/01/2019 - 01/31/2019 **Outfall:** 001 - NEWB 2 **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Optional Grab	Turbidity (cm) Measured Centimeters Optional Grab	pH Standard Units Optional Grab
		001	001	001
1-F	**1/4/19**	10		7.1
2-Th	**1/10/19**	3		6.7
3-Th	**1/17/19**	6		6.9
4-M	**1/21/19**	10		7.1
5-W	**1/30/19**	8		7.0
Minimum				
			BM: >= 33 (RO)	BM: >= 6.5 (RO)
Maximum				
		BM: <= 25 (RO)		BM: <= 8.5 (RO)

Overall DMR Notes/Comment

Listed BMP's were in operation for the entire month.

BMPs

Monitoring Point	Week	BMP
001		Check Dams
001		Other
001		Sediment Trap
001		Silt Fence
001		Straw Wattles

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack — **Signature**

2/14/2019 8:04:06 AM — **Date**

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002603 **Permittee:** LRI 304th Street Landfill

Facility County: Pierce **Receiving Waterbody:**

Monitoring Period: 02/01/2019 - 02/28/2019 **Outfall:** 001 - NEWB 2 **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Optional Grab	Turbidity (cm) Measured Centimeters Optional Grab	pH Standard Units Optional Grab
		001	001	001
2-F	**2/8/19**	FC		FC
3-W	**2/13/19**	18		6.9
4-T	**2/19/19**	9		6.8
5-T	**2/26/19**	5		6.9
Minimum				6.8
			BM: >= 33 (RO)	BM: >= 6.5 (RO)
Maximum		18		6.9
		BM: <= 25 (RO)		BM: <= 8.5 (RO)

Reporting Codes Used: FC - Frozen Conditions/Unsafe conditions

Overall DMR Notes/Comment

Listed BMP's were in operation for the entire month.

BMPs

Monitoring Point	Week	BMP
001		Check Dams
001		Other
001		Sediment Trap
001		Silt Fence
001		Straw Wattles

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack — **Signature**

3/8/2019 1:19:04 PM — **Date**

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002603 **Permittee:** LRI 304th Street Landfill

Facility County: Pierce **Receiving Waterbody:**

Monitoring Period: 03/01/2019 - 03/31/2019 **Outfall:** 001 - NEWB 2 **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Optional Grab	Turbidity (cm) Measured Centimeters Optional Grab	pH Standard Units Optional Grab
		001	001	001
2-W	**3/6/19**	6		6.8
3-T	**3/12/19**	8		6.9
4-F	**3/22/19**	8		7.0
5-W	**3/27/19**	9		6.8
Minimum				
			BM: >= 33 (RO)	BM: >= 6.5 (RO)
Maximum				
		BM: <= 25 (RO)		BM: <= 8.5 (RO)

Overall DMR Notes/Comment

Listed BMP's were in operation for the entire month.

BMPs

Monitoring Point	Week	BMP
001		Check Dams
001		Other
001		Sediment Trap
001		Silt Fence
001		Straw Wattles

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack

Signature

4/10/2019 8:35:39 PM

Date

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002603 **Permittee:** LRI 304th Street Landfill

Facility County: Pierce **Receiving Waterbody:**

Monitoring Period: 04/01/2019 - 04/30/2019 **Outfall:** 001 - NEWB 2 **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Optional Grab	Turbidity (cm) Measured Centimeters Optional Grab	pH Standard Units Optional Grab
		001	001	001
1-Th	**4/4/19**	12		7.0
2-Th	**4/11/19**	10		6.9
3-Th	**4/18/19**	11		6.9
4-M	**4/22/19**	8		7.0
Minimum				6.9
			BM: >= 33 (RO)	BM: >= 6.5 (RO)
Maximum		12		7
		BM: <= 25 (RO)		BM: <= 8.5 (RO)

Overall DMR Notes/Comment

Listed BMP's were in operation for the entire month.

BMPs

Monitoring Point	Week	BMP
001		Check Dams
001		Other
001		Sediment Trap
001		Silt Fence
001		Straw Wattles

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack — **Signature**

5/14/2019 4:35:12 PM — **Date**

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002603 **Permittee:** LRI 304th Street Landfill

Facility County: Pierce **Receiving Waterbody:** South Creek

Monitoring Period: 05/01/2019 - 05/31/2019 **Outfall:** UNK - South Creek **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab
		C7-1	C7-1	C7-2	C7-2	C7-3	C7-3	C7-4	C7-4
1-W	**5/1/19**	M	M	M	M	M	M	M	M
2-Su	**5/5/19**	M	M	M	M	M	M	M	M
3-F	**5/17/19**	5	M	C	M	C	M	C	M
4-F	**5/24/19**	M	M	M	M	14	M	M	M
5-Su	**5/26/19**	M	M	M	M	M	M	M	M
Minimum			M		M		M		M
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		5	M	C	M	14	M	C	M
		BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

Overall DMR Notes/Comment

The construction site was inactive and temporarily stabilized during the month of May. Listed BMPs were in operation for the entire month.

BMPs

Monitoring Point	Week	BMP
C7-1		Check Dams
C7-1		Other
C7-1		Sediment Trap
C7-1		Silt Fence
C7-1		Straw Wattles
C7-2		Other
C7-3		Other
C7-4		Check Dams
C7-4		Other

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack — **Signature**

6/12/2019 9:44:18 PM — **Date**

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002603 **Permittee:** LRI 304th Street Landfill

Facility County: Pierce **Receiving Waterbody:** South Creek

Monitoring Period: 06/01/2019 - 06/30/2019 **Outfall:** UNK - South Creek **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab
		C7-1	C7-1	C7-2	C7-2	C7-3	C7-3	C7-4	C7-4
2-T	**6/4/19**	C	M	C	M	16	M	C	M
3-M	**6/10/19**	C	M	C	M	11	M	C	M
4-Th	**6/20/19**	C	M	C	M	C	M	C	M
5-Th	**6/27/19**	C	M	C	M	C	M	C	M
Minimum			M		M		M		M
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		C	M	C	M	16	M	C	M
		BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

BMPs

Monitoring Point	Week	BMP
C7-1		Check Dams
C7-1		Other
C7-1		Sediment Trap
C7-1		Silt Fence
C7-1		Straw Wattles
C7-2		Other
C7-3		Other
C7-4		Check Dams
C7-4		Other
C7-4		Silt Fence

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack — **Signature**

7/15/2019 7:20:10 AM — **Date**

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002603 **Permittee:** LRI 304th Street Landfill

Facility County: Pierce **Receiving Waterbody:** South Creek

Monitoring Period: 07/01/2019 - 07/31/2019 **Outfall:** UNK - South Creek **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab
		C7-1	C7-1	C7-2	C7-2	C7-3	C7-3	C7-4	C7-4
1-F	**7/5/19**	C	M	C	M	C	M	C	M
2-Th	**7/11/19**	C	M	C	M	C	M	151	M
3-Th	**7/18/19**	C	M	C	M	3	M	C	M
4-M	**7/22/19**	C	M	C	M	5	M	C	M
5-M	**7/29/19**	C	M	C	M	5	M	C	M
Minimum			M		M		M		M
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		C	M	C	M	5	M	151	M
		BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

Outfall: UNK - South Creek

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
C7-4	All Parameters			Stormwater from the construction activity area breached a soil plug near C7-4 on July 11th. The stormwater was contained within an existing stormwater ditch and infiltrated into the subsurface within approximately 50 feet. Turbid stormwater from the construction activity area did not reach waters of the state or flow off-site. Repair and reinforcement of the soil plug began on July 11th and was completed within two days.

BMPs

Monitoring Point	Week	BMP
C7-1		Check Dams
C7-1		Other
C7-1		Sediment Trap
C7-1		Silt Fence
C7-1		Straw Wattles
C7-2		Other
C7-3		Other
C7-4		Check Dams
C7-4		Other
C7-4		Silt Fence

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George Duvendack — **Signature**

8/12/2019 9:20:27 AM — **Date**

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002603 **Permittee:** LRI 304th Street Landfill

Facility County: Pierce **Receiving Waterbody:** South Creek

Monitoring Period: 08/01/2019 - 08/31/2019 **Outfall:** UNK - South Creek **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab
		C7-1	C7-1	C7-2	C7-2	C7-3	C7-3	C7-4	C7-4
2-M	**8/5/19**	C	M	C	M	3	M	C	M
3-M	**8/12/19**	C	M	C	M	C	M	C	M
4-W	**8/21/19**	C	M	C	M	C	M	C	M
5-M	**8/26/19**	C	M	C	M	C	M	C	M
Minimum			M		M		M		M
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		C	M	C	M	3	M	C	M
		BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

BMPs

Monitoring Point	Week	BMP
C7-1		Check Dams
C7-1		Other
C7-1		Sediment Trap
C7-1		Silt Fence
C7-2		Other
C7-3		Other
C7-4		Check Dams
C7-4		Other
C7-4		Silt Fence

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack

Signature

9/13/2019 4:11:45 PM

Date

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002603 **Permittee:** LRI 304th Street Landfill

Facility County: Pierce **Receiving Waterbody:** South Creek

Monitoring Period: 09/01/2019 - 09/30/2019 **Outfall:** UNK - South Creek **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab
		C7-1	C7-1	C7-2	C7-2	C7-3	C7-3	C7-4	C7-4
1-T	**9/3/19**	C	M	C	M	C	M	C	M
2-M	**9/9/19**	C	M	C	M	C	M	C	M
2-T	**9/10/19**	8.7	M	C	M	C	M	193	M
2-W	**9/11/19**	10.0	M						
2-F	**9/13/19**	5.8	M						
2-Sa	**9/14/19**	1.9	M						
3-Su	**9/15/19**	2.5	M						
3-M	**9/16/19**	2.7	M						
3-T	**9/17/19**	2.1	M						
3-W	**9/18/19**	2.0	M						
3-Th	**9/19/19**	9.4	M	C	M	C	M	C	M
3-F	**9/20/19**	5.2	M						
3-Sa	**9/21/19**	4.6	M						
4-Su	**9/22/19**	9.7	M						
4-Th	**9/26/19**			C	M	C	M	C	M
Minimum			M		M		M		M
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		10	M	C	M	C	M	193	M
		BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

Outfall: UNK - South Creek

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
C7-1	All Parameters			Construction stormwater treatment began on September 10th using Chitosan Enhanced Sand Filtration (CESF). Maximum turbidity readings are included for each day that treated discharge occurred.
C7-2	All Parameters			Anticipated construction activity within the area that drains to monitoring point C7-2 did not occur this construction season.
C7-4	All Parameters			Stormwater from the construction activity area leaked through a soil plug near C7-4 on September10th. The stormwater was contained within an existing stormwater ditch and infiltrated into the subsurface within approximately 100 feet. Turbid stormwater from the construction activity area did not reach waters of the state or flow off-site. Repair of the soil plug was completed the same day as discovered.

BMPs

Monitoring Point	Week	BMP
C7-1		Check Dams
C7-1		Construction Stormwater Chemical Treatment
C7-1		Other
C7-1		Sediment Trap
C7-1		Silt Fence
C7-2		Other
C7-3		Other
C7-4		Check Dams

C7-4		Other
C7-4		Silt Fence

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack
Signature

10/15/2019 8:31:19 AM
Date

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002603 **Permittee:** LRI 304th Street Landfill

Facility County: Pierce **Receiving Waterbody:** South Creek

Monitoring Period: 10/01/2019 - 10/31/2019 **Outfall:** UNK - South Creek **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab
		C7-1	C7-1	C7-2	C7-2	C7-3	C7-3	C7-4	C7-4
1-W	**10/2/19**	C	M	C	M	C	M	C	M
2-M	**10/7/19**	C	M	C	M	C	M	C	M
3-W	**10/16/19**	5.6	M						
3-Th	**10/17/19**			C	M	C	M	23	M
3-F	**10/18/19**	5.2	M						
3-Sa	**10/19/19**	16.5	M						
4-Su	**10/20/19**	9.6	M						
4-M	**10/21/19**	9.8	M						
4-T	**10/22/19**	17.8	M						
4-W	**10/23/19**			C	M	C	M	14	M
4-Th	**10/24/19**	7.0	M						
5-M	**10/28/19**	C	M	C	M	C	M	C	M
Minimum			M		M		M		M
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		17.8	M	C	M	C	M	23	M
		BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

Outfall: UNK - South Creek

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
C7-1	All Parameters			Construction stormwater treatment continued in October using Chitosan Enhanced Sand Filtration (CESF). Maximum turbidity readings are included each day that treated discharge occurred.
C7-2	All Parameters			Anticipated construction activity within the area that drains to C7-2 did not occur this construction season.

BMPs

Monitoring Point	Week	BMP
C7-1		Check Dams
C7-1		Construction Stormwater Chemical Treatment
C7-1		Other
C7-1		Sediment Trap
C7-1		Silt Fence
C7-2		Other
C7-3		Other
C7-4		Check Dams
C7-4		Other
C7-4		Silt Fence

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack — **Signature**

11/15/2019 3:07:32 PM — **Date**

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002603 **Permittee:** LRI 304th Street Landfill

Facility County: Pierce **Receiving Waterbody:** South Creek

Monitoring Period: 11/01/2019 - 11/30/2019 **Outfall:** UNK - South Creek **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab
		C7-1	C7-1	C7-2	C7-2	C7-3	C7-3	C7-4	C7-4
2-M	**11/4/19**	C	M	C	M	C	M	9	M
3-M	**11/11/19**	C	M	C	M	C	M	12	M
4-Su	**11/17/19**	5	M						
4-M	**11/18/19**	7	M	C	M	C	M	17	M
4-T	**11/19/19**	22	M						
5-M	**11/25/19**	5	M	C	M	C	M	13	M
Minimum			M		M		M		M
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		22	M	C	M	C	M	17	M
		BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

Outfall: UNK - South Creek

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
C7-1	All Parameters			Construction stormwater treatment using Chitosan Enhanced Sand Filtration (CESF). The maximum turbidity reading (averaged over a one-hour time period) is reported each day a discharge occurred.
C7-2	All Parameters			Anticipated construction activity within the area that drains to C7-2 did not occur in 2019.

BMPs

Monitoring Point	Week	BMP
C7-1		Check Dams
C7-1		Construction Stormwater Chemical Treatment
C7-1		Other
C7-1		Sediment Trap
C7-1		Silt Fence
C7-2		Other
C7-3		Other
C7-4		Check Dams
C7-4		Other
C7-4		Silt Fence

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack
Signature

12/14/2019 12:58:45 PM
Date

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002603 **Permittee:** LRI 304th Street Landfill

Facility County: Pierce **Receiving Waterbody:** South Creek

Monitoring Period: 12/01/2019 - 12/31/2019 **Outfall:** UNK - South Creek **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab	Turbidity (NTU) Measured NTU Weekly Grab	pH Standard Units Weekly Grab
		C7-1	C7-1	C7-2	C7-2	C7-3	C7-3	C7-4	C7-4
1-Th	**12/5/19**	C	M	C	M	C	M	12	M
1-Sa	**12/7/19**	4.7	M						
2-Su	**12/8/19**	5.1	M						
2-T	**12/10/19**	4.2	M						
2-W	**12/11/19**	4.9	M						
2-Th	**12/12/19**	4.8	M						
2-F	**12/13/19**	5.2	M	C	M	C	M	17	M
2-Sa	**12/14/19**	6.2	M						
3-Su	**12/15/19**	7.8	M						
3-M	**12/16/19**	6.6	M						
3-T	**12/17/19**	3.0	M						
3-W	**12/18/19**	5.9	M						
3-Th	**12/19/19**	4.0	M	C	M	C	M	12	M
3-F	**12/20/19**	6.3	M						
3-Sa	**12/21/19**	5.7	M						
4-Su	**12/22/19**	5.2	M						
4-M	**12/23/19**	1.5	M						
4-T	**12/24/19**	3.8	M						
4-W	**12/25/19**	3.1	M						
4-Th	**12/26/19**	2.4	M	C	M	C	M	5	M
4-F	**12/27/19**	2.1	M						
4-Sa	**12/28/19**	0.8	M						
5-Su	**12/29/19**	0.7	M						
5-M	**12/30/19**	0.9	M						
5-T	**12/31/19**	C	M	C	M	C	M	6	M
Minimum			M		M		M		M
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		7.8	M	C	M	C	M	17	M
		BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)	BM: <= 25 (RO)	BM: <= 8.5 (RO)

Reporting Codes Used: C - No Discharge, M - Monitoring Is Conditional/Not Req This MP

Outfall: UNK - South Creek

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
C7-1	All Parameters			Construction stormwater treatment using Chitosan Enhanced Sand Filtration (CESF). The averaged turbidity value is reported for each day that a discharge occurred.
C7-2	All Parameters			Anticipated construction activity within the area that drains to C7-2 did not occur during the most recent phase of construction (in 2019).

BMPs

Monitoring Point	Week	BMP
C7-1		Check Dams
C7-1		Construction Stormwater Chemical Treatment
C7-1		Other
C7-1		Sediment Trap
C7-1		Silt Fence
C7-2		Other

C7-3		Other
C7-4		Check Dams
C7-4		Other
C7-4		Silt Fence

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack
Signature

1/14/2020 9:51:51 AM
Date

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002557 **Permittee:** Pierce County Recycling - 304th Street L

Facility County: Pierce **Receiving Waterbody:** South Creek

Monitoring Period: 01/01/2019 - 03/31/2019 **Outfall:** NEWB - NEWB 2 **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Quarterly Grab	pH Standard Units Quarterly Grab	Oil & Grease Yes/No Quarterly Visual Observation	Copper Total Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	Total BOD5 Total Milligrams/L (mg/L) Quarterly Grab	Solids (Residue) Total suspended (TSS) Milligrams/L (mg/L) Quarterly Grab	Ammonia Total Milligrams/L (mg/L) Quarterly Grab	Alpha-terpineol (3-Cyclohexene-1-methanol,.alpha.,alpha.,trimethyl-) Micrograms/L (ug/L) Quarterly Grab	Benzoic Acid Micrograms/L (ug/L) Quarterly Grab	p-Cresol (4-methylphenol) Micrograms/L (ug/L) Quarterly Grab
		NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB
Limit Set		ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
1-F	**1/4/19**	10	7.1									
2-Th	**1/10/19**	3	6.7	No	2.3	J|5.5	B|2.0	B|2.0	0.079	B|9.8	B|59	B|10.0
3-Th	**1/17/19**	6	6.9									
4-M	**1/21/19**	10	7.1									
5-W	**1/30/19**	8	7.0									
7-W	**2/13/19**	18	6.9									
8-T	**2/19/19**	9	6.8									
9-T	**2/26/19**	5	6.9									
10-W	**3/6/19**	6	6.8									
11-T	**3/12/19**	8	6.9									
12-F	**3/22/19**	8	7.0									
13-W	**3/27/19**	9	6.8									
Minimum			6.7									
			BM: >= 5.0 (RO)									
Average		8.3			2.3	J|5.5						
		BM: <= 25			BM: <= 14	BM: <= 117						
Maximum			7.1									
			BM: <= 9.0 (RO)									
Month 1 Average							B|2.0	B|2.0	0.079	B|9.8	B|59	B|10
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 2 Average							B|2.0	B|2.0	0.079	B|9.8	B|59	B|10
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 3 Average							B|2.0	B|2.0	0.079	B|9.8	B|59	B|10
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14

Reporting Codes Used: B - Below Detection Limit/No Detection, J - Estimated Value/Below Quantitation Limit

Week	Monitoring Point	Phenol Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	pH Standard Units Quarterly Grab
		NEWB	NEWB	NEWB
Limit Set		ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
1-F	**1/4/19**			7.1
2-Th	**1/10/19**	B|9.8	J|5.5	6.7
3-Th	**1/17/19**			6.9
4-M	**1/21/19**			7.1
5-W	**1/30/19**			7.0
7-W	**2/13/19**			6.9
8-T	**2/19/19**			6.8
9-T	**2/26/19**			6.9
10-W	**3/6/19**			6.8
11-T	**3/12/19**			6.9
12-F	**3/22/19**			7.0
13-W	**3/27/19**			6.8
Minimum				6.7
				>= 6.0 (RO)
Average				
Maximum				7.1
				<= 9.0 (RO)
Month 1 Average		B|9.8	J|5.5	
		<= 15	<= 110	
Month 2 Average		B|9.8	J|5.5	
		<= 15	<= 110	
Month 3 Average		B|9.8	J|5.5	
		<= 15	<= 110	

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack	5/13/2019 12:55:42 PM
Signature	**Date**

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002557 **Permittee:** Pierce County Recycling - 304th Street L

Facility County: Pierce **Receiving Waterbody:** South Creek

Monitoring Period: 04/01/2019 - 06/30/2019 **Outfall:** NEWB - NEWB 2 **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Quarterly Grab	pH Standard Units Quarterly Grab	Oil & Grease Yes/No Quarterly Visual Observation	Copper Total Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	Total BOD5 Total Milligrams/L (mg/L) Quarterly Grab	Solids (Residue) Total suspended (TSS) Milligrams/L (mg/L) Quarterly Grab	Ammonia Total Milligrams/L (mg/L) Quarterly Grab	Alpha-terpineol (3-Cyclohexene-1-methanol,.alpha.,alpha.,trimethyl-) Micrograms/L (ug/L) Quarterly Grab	Benzoic Acid Micrograms/L (ug/L) Quarterly Grab	p-Cresol (4-methylphenol) Micrograms/L (ug/L) Quarterly Grab
		NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB
Limit Set		ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
1-Th	**4/4/19**	12	7.0									
2-W	**4/10/19**	10		No	2.1	J|3.7	2.1	3.4	0.11	B|9.8	B|59	B|9.8
2-Th	**4/11/19**	10	6.9									
3-Th	**4/18/19**	11	6.9									
4-M	**4/22/19**	8	7.0									
7-F	**5/17/19**	17										
8-T	**5/21/19**	12										
Minimum			6.9									
			BM: >= 5.0 (RO)									
Average		11.7			2.1	J|3.7						
		BM: <= 25			BM: <= 14	BM: <= 117						
Maximum			7.0									
			BM: <= 9.0 (RO)									
Month 1 Average							2.1	3.4	0.11	B|9.8	B|59	B|9.8
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 2 Average							2.1	3.4	0.11	B|9.8	B|59	B|9.8
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 3 Average							2.1	3.4	0.11	B|9.8	B|59	B|9.8
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14

Reporting Codes Used: B - Below Detection Limit/No Detection, J - Estimated Value/Below Quantitation Limit

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack — **Signature**

8/12/2019 9:11:34 AM — **Date**

Week	Monitoring Point	Phenol Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	pH Standard Units Quarterly Grab
		NEWB	NEWB	NEWB
Limit Set		ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
1-Th	**4/4/19**			7.0
2-W	**4/10/19**	B|9.8	J|3.7	
2-Th	**4/11/19**			6.9
3-Th	**4/18/19**			6.9
4-M	**4/22/19**			7.0
7-F	**5/17/19**			
8-T	**5/21/19**			
Minimum				6.9
				>= 6.0 (RO)
Average				
Maximum				7.0
				<= 9.0 (RO)
Month 1 Average		B|9.8	J|3.7	
		<= 15	<= 110	
Month 2 Average		B|9.8	J|3.7	
		<= 15	<= 110	
Month 3 Average		B|9.8	J|3.7	
		<= 15	<= 110	

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002557 **Permittee:** Pierce County Recycling - 304th Street L

Facility County: Pierce **Receiving Waterbody:** South Creek

Monitoring Period: 07/01/2019 - 09/30/2019 **Outfall:** NEWB - NEWB 2 **Version:** 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Quarterly Grab	pH Standard Units Quarterly Grab	Oil & Grease Yes/No Quarterly Visual Observation	Copper Total Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	Total BOD5 Total Milligrams/L (mg/L) Quarterly Grab	Solids (Residue) Total suspended (TSS) Milligrams/L (mg/L) Quarterly Grab	Ammonia Total Milligrams/L (mg/L) Quarterly Grab	Alpha-terpineol (3-Cyclohexene-1-methanol,.alpha.,alpha.,trimethyl-) Micrograms/L (ug/L) Quarterly Grab	Benzoic Acid Micrograms/L (ug/L) Quarterly Grab	p-Cresol (4-methylphenol) Micrograms/L (ug/L) Quarterly Grab
		NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB	NEWB
Limit Set		ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
Minimum												
			BM: >= 5.0 (RO)									
Average												
		BM: <= 25			BM: <= 14	BM: <= 117						
Maximum												
			BM: <= 9.0 (RO)									
Month 1 Average												
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 2 Average												
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 3 Average												
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14

Reporting Codes Used: C - No Discharge

Overall DMR Notes/Comment

Reporting Code: C - No Discharge

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack — **Signature**

11/15/2019 3:06:43 PM — **Date**

Week	Monitoring Point	Phenol Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	pH Standard Units Quarterly Grab
		NEWB	NEWB	NEWB
Limit Set		ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
Minimum				
				>= 6.0 (RO)
Average				
Maximum				
				<= 9.0 (RO)
Month 1 Average				
		<= 15	<= 110	
Month 2 Average				
		<= 15	<= 110	
Month 3 Average				
		<= 15	<= 110	

Washington State Department of Ecology **Discharge Monitoring Report (DMR)**

Permit Number: WAR002557 **Permittee:** Pierce County Recycling - 304th Street L

Facility County: Pierce **Receiving Waterbody:**

Monitoring Period: 10/01/2019 - 12/31/2019 **Outfall:** SWPO - Discharge from SW pond **Version:** 2

Week	Monitoring Point	Turbidity (NTU) Measured NTU Quarterly Grab	pH Standard Units Quarterly Grab	Oil & Grease Yes/No Quarterly Visual Observation	Copper Total Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	Total BOD5 Total Milligrams/L (mg/L) Quarterly Grab	Solids (Residue) Total suspended (TSS) Milligrams/L (mg/L) Quarterly Grab	Ammonia Total Milligrams/L (mg/L) Quarterly Grab	Alpha-terpineol (3-Cyclohexene-1-methanol,.alpha.,alpha.,4-trimethyl-) Micrograms/L (ug/L) Quarterly Grab	Benzoic Acid Micrograms/L (ug/L) Quarterly Grab	p-Cresol (4-methylphenol) Micrograms/L (ug/L) Quarterly Grab
		SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO
Limit Set		ISGP Western WA - 2020 Permit	ISGP Western WA - 2020 Permit	ISGP Western WA - 2020 Permit	ISGP Western WA - 2020 Permit	ISGP Western WA - 2020 Permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
11-Th	**12/12/19**	6.8	6.54	No	5.9	16	2.5	4.2	0.67	B|9.5	B|57	B|9.5
Minimum			6.54									
			BM: >= 5.0 (RO)									
Average		6.8			5.9	16						
		BM: <= 25			BM: <= 14	BM: <= 117						
Maximum			6.54									
			BM: <= 9.0 (RO)									
Month 1 Average							2.5	4.2	0.67	B|9.5	B|57	B|9.5
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 2 Average							2.5	4.2	0.67	B|9.5	B|57	B|9.5
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 3 Average							2.5	4.2	0.67	B|9.5	B|57	B|9.5
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14

Reporting Codes Used: B - Below Detection Limit/No Detection

Overall DMR Notes/Comment

Former stormwater sample point NEWB-2 was sampled on October 17, 2019 with the following results:
Turbidity = 9.5 NTU, pH = 6.14, No visible oil & grease sheen, copper = 2.8 ug/L, zinc = 15 ug/L, BOD5 = ND at 2.0 mg/L, TSS = 6.0 mg/L, ammonia = ND at 0.30 mg/L, alpha-terpineol = ND at 9.6 ug/L, benzoic acid = ND at 57 ug/L, p-cresol = ND at 9.5 ug/L, and Phenol = ND at 9.6 ug/L.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Duvendack — **Signature**

2/23/2020 4:55:49 PM — **Date**

Week	Monitoring Point	Phenol Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	pH Standard Units Quarterly Grab
		SWPO	SWPO	SWPO
Limit Set		ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
11-Th	**12/12/19**	B|9.5	16	6.54
Minimum				6.54
				>= 6.0 (RO)
Average				
Maximum				6.54
				<= 9.0 (RO)
Month 1 Average		B|9.5	16	
		<= 15	<= 110	
Month 2 Average		B|9.5	16	
		<= 15	<= 110	
Month 3 Average		B|9.5	16	
		<= 15	<= 110	

Appendix H

Landfill Gas Monitoring Data

Table H-1. 2019 Landfill Gas Probe Monitoring Summary
Methane (% vol.)
LRI Landfill, Pierce County, Washington

Monitoring Date	GP-1	GP-2	GP-3	GP-4	GP-9	GP-10	GP-11	GP-12	GP-13	GP-14	GP-15	GP-16[1]
January 18, 2019	6.6	18.2	0.0	0.0	0.0	0.1	0.0	23.1	1.2	0.0	0.0	-
February 20, 2019	6.1	16.9	0.0	0.0	0.0	19.8	0.3	23.8	1.1	0.0	0.0	-
March 26, 2019	1.8	17.0	0.0	0.0	0.0	1.9	0.0	26.0	1.3	0.0	0.0	-
April 25, 2019	1.7	16.1	0.0	0.0	0.0	16.1	0.0	28.6	1.5	0.0	0.0	-
May 29, 2019	1.5	15.9	0.0	0.0	0.0	13.7	0.0	29.9	0.4	0.0	0.0	-
June 12, 2019	2.4	16.0	0.0	0.0	0.0	23.5	0.0	29.4	0.0	0.0	0.0	-
June 18, 2019	4.9	15.8	0.0	0.0	0.0	7.6	0.0	21.6	0.0	0.0	0.0	-
August 23, 2019	8.2	16.7	0.0	0.0	0.0	1.3	0.0	26.9	0.5	0.0	0.0	-
September 25, 2019	6.9	18.1	0.0	0.0	0.0	6.9	0.0	23.6	0.7	0.0	0.0	-
October 24, 2019	5.3	16.5	0.0	0.0	0.0	6.5	0.0	17.6	0.8	0.0	0.0	-
November 22, 2019	3.5	15.0	0.1	0.1	0.1	0.3	0.1	15.4	1.3	0.1	0.1	0.1
December 20, 2019	3.7	15.9	0.0	0.0	0.0	0.0	0.5	16.4	0.8	0.0	0.0	0.0

Notes:
All locations measured by SCS Engineeres.
(-) indicates no measurement taken.
[1]=GP-16 constructed in November 2019

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04219001.04

LRI Landfill

January-19

Location Refer *Design.*	Date	Time	$P_{(well)}$ (in W.C.)	Gas Composition - *Note 1*					Depth to Water *Note 2* (ft-TOC)	Exposed Portion of Perforations - *Note 3*		Comments
				CH_4 Spike (% by vol.)	CH_4 (% by vol.)	CO_2 (% by vol.)	O_2 (% by vol.)	Balance (N_2 & H_2O) (% by vol.)		(ft)	(%)	
Normal Operating Rage:												
(min)			-		0.3	0.3	-				20.0	
(max)			5.00		5.0	5.0	20.3				90.0	
Perimter Gas Probes												
GP-1	1/18/2019	8:14	0.1	7.4	6.6	5.5	7.0	80.9	16.9	9.9	100.0	
GP-2	1/18/2019	8:21	0.0	19.2	18.2	19.8	0.0	62.0	16.3	9.3	100.0	
GP-3	1/18/2019	8:27	0.0	--	0.0	10.3	6.3	83.4	11.6	7.6	100.0	
GP-4	1/18/2019	8:32	0.0	--	0.0	2.5	18.6	78.9	9.6	5.6	100.0	
GP-9	1/18/2019	8:42	-0.1	--	0.0	9.2	5.1	85.7	11.6	0.0	0.0	
GP-10	1/18/2019	8:06	0.0	4.9	0.1	6.4	15.6	77.9				
GP-10P	1/18/2019	8:02	0.2	28.3	27.1	34.7	0.0	38.2				
GP-11	1/18/2019	7:54	0.8	0.5	0.0	4.3	18.1	77.6				
GP-12	1/18/2019	7:47	0.0	25.6	23.1	68.3	0.0	8.6				
GP-13	1/18/2019	7:41	0.2	1.4	1.2	28.0	0.0	70.8				
GP-14	1/18/2019	9:17	0.5	--	0.0	0.1	20.4	79.5	11.6	0.0	0.0	
GP-15	1/18/2019	9:10	0.3	--	0.0	0.2	20.5	79.3	9.4	0.0	0.0	

General Data:

	Beginning	Ending	Average
Weather:	Cloudy	Cloudy	Cloudy
Temperature, T (deg C):	45	48	46.5
Wind Speed (kmh):	8	0	4
Wind Direction:	180	0	90
Barometric Pressure, P (in Hg):	29.7	29.8	29.75
24hr Baro.Trend (rising / falling / steady / unsteady)		-	

Starting Date:	1/18/2019
Starting Time:	7:41
Finishing Date:	1/18/2019
Finishing Time:	9:17
Monitored by:	T. Berndahl
Instruments:	GEM 2000
Calibration Date:	1/18/2019

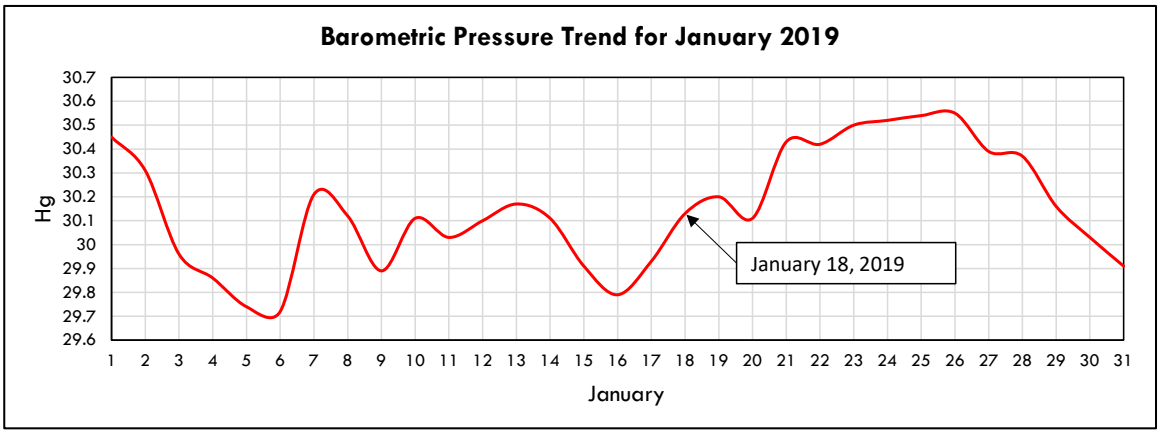
Headings:

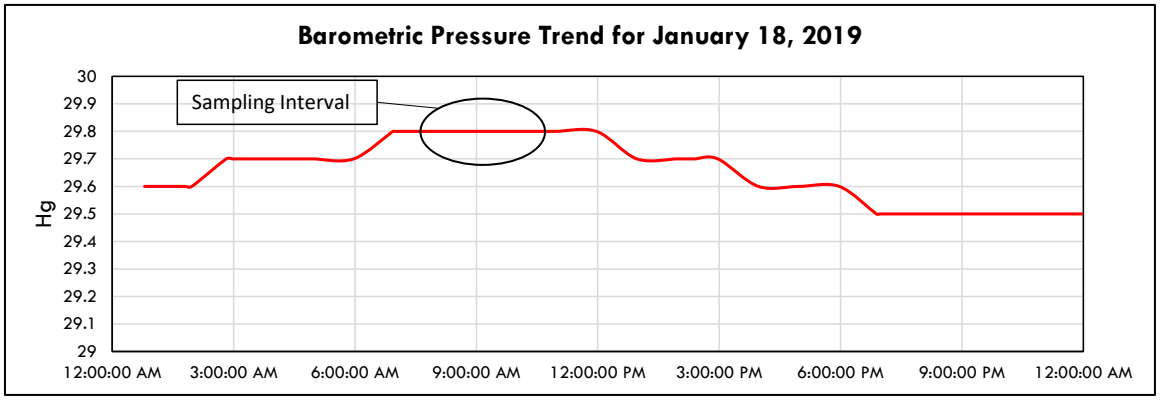
$P_{(well)}$	Relitive Pressure
CH_4	Methane
CO_2	Carbon Dioxide
O_2	Oxygen
H_2O	Water Vapor
N_2	Nitrogen
TOC	Top of Casing

Notes:

1. Measurement for spike concentrations of CH_4 and CO_2 are recorded as a comment if observed during sampling.
2. Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
3. Exposed Perforation = perforated pipe section not submerged by liquid.
4. GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.

Barometric Pressure Trend - January 2019
LRI Landfill, Pierce County, Washington





Source: Pierce County - Thun Field Station
Lat: 47.1 Long: 122.29 Elev: 538 ft-AMSL

Data Source: https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2019-1-18

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04219001.04

LRI Landfill

February-19

Location Refer *Design.*	Date	Time	$P_{(well)}$ (in W.C.)	Gas Composition - *Note 1*: CH_4 Spike (% by vol.)	CH_4 (% by vol.)	CO_2 (% by vol.)	O_2 (% by vol.)	Balance (N_2 & H_2O) (% by vol.)	Depth to Water *Note 2* (ft-TOC)	Exposed Portion of Perforations - *Note 3*: (ft)	(%)	Comments
Normal Operating Rage:												
(min)			-		0.3	0.3	-				20.0	
(max)			5.00		5.0	5.0	20.3				90.0	
Perimter Gas Probes												
GP-1	2/20/2019	10:16	0.0	4.2	6.1	5.8	2.2	85.9	16.7	9.7	100.0	
GP-2	2/20/2019	10:28	1.9	18.5	16.9	18.1	0.0	65.0	15.8	8.8	100.0	
GP-3	2/20/2019	10:36	0.1	--	0.0	8.7	8.3	83.0	11.6	7.6	100.0	
GP-4	2/20/2019	10:40	0.0	--	0.0	1.4	19.2	79.4	9.0	5.0	99.2	
GP-9	2/20/2019	10:44	-0.1	--	0.0	8.3	6.1	85.6	10.7	0.0	0.0	
GP-10	2/20/2019	10:08	0.1	17.2	19.8	24.5	0.0	55.7				
GP-10P	2/20/2019	10:05	0.3	17.4	14.8	29.4	0.0	55.8				
GP-11	2/20/2019	9:53	0.6	1.1	0.3	19.7	2.4	77.6				
GP-12	2/20/2019	7:57	0.0	27.7	23.8	60.6	0.0	15.6				
GP-13	2/20/2019	7:49	0.1	1.3	1.1	25.3	0.0	73.6				
GP-14	2/20/2019	11:03	0.3	--	0.0	0.1	20.1	79.8	10.4	0.0	0.0	
GP-15	2/20/2019	10:57	0.5	--	0.0	0.3	20.0	79.7	8.8	0.0	0.0	

General Data:

	Beginning	Ending	Average
Weather:	Cloudy	Light Rain	Cloudy
Temperature, T (deg F):	35	39	37
Wind Speed (mph):	0	0	0
Wind Direction:	0	0	0
Barometric Pressure, P (in Hg):	29.50	29.50	29.50
24hr Baro.Trend (rising / falling / steady / unsteady)		-	

Starting Date:	2/20/2019
Starting Time:	7:49
Finishing Date:	2/20/2019
Finishing Time:	11:03
Monitored by:	T. Berndahl
Instruments:	GEM 2000
Calibration Date:	2/20/2019

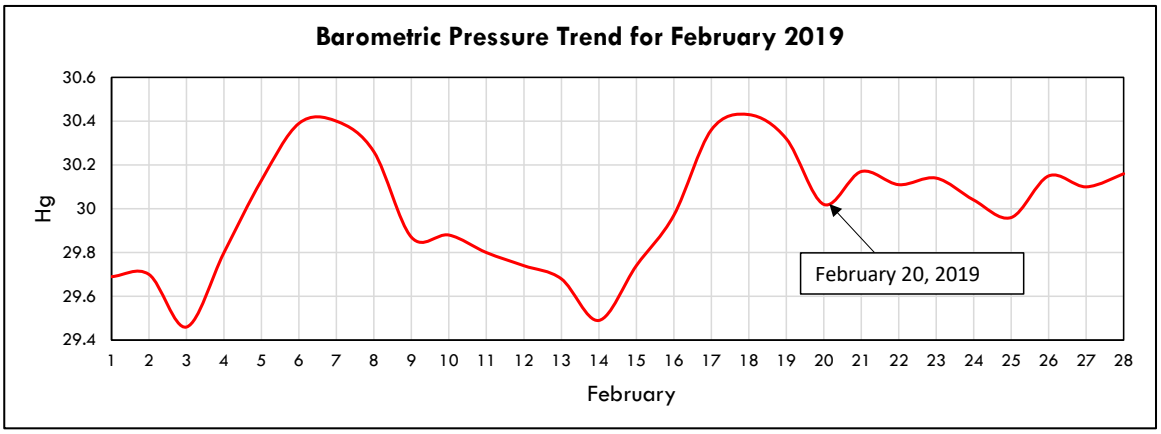
Headings:

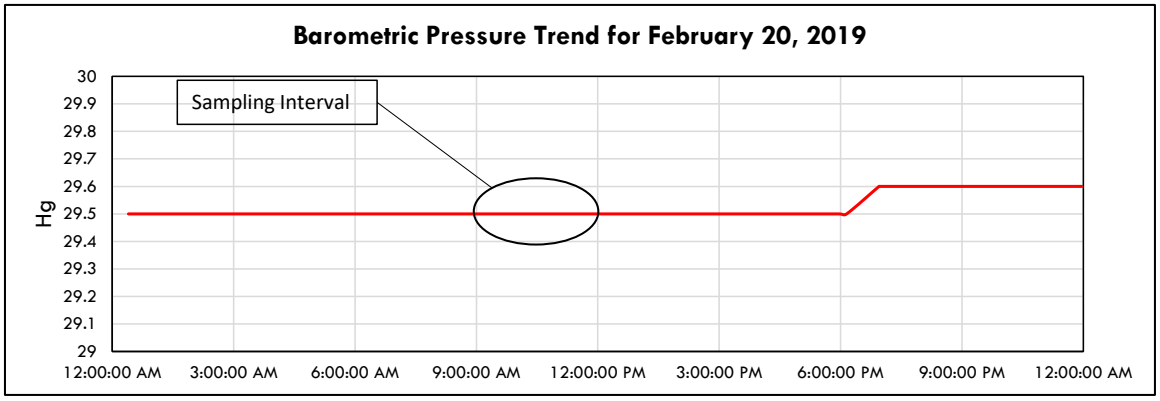
$P_{(well)}$	Relitive Pressure
CH_4	Methane
CO_2	Carbon Dioxide
O_2	Oxygen
H_2O	Water Vapor
N_2	Nitrogen
TOC	Top of Casing

Notes:

1. Measurement for spike concentrations of CH_4 and CO_2 are recorded as a comment if observed during sampling.
2. Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
3. Exposed Perforation = perforated pipe section not submerged by liquid.
4. GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.

Barometric Pressure Trend - February 2019
LRI Landfill, Pierce County, Washington





Source: Pierce County - Thun Field Station
Lat: 47.1 Long: 122.29 Elev: 538 ft-AMSL

Data Source: https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2019-2-20

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04219001.04

LRI Landfill

March-19

Location Refer *Design.*	Date	Time	$P_{(well)}$ (in W.C.)	Gas Composition - *Note 1*					Depth to Water *Note 2* (ft-TOC)	Exposed Portion of Perforations - *Note 3*		Comments
				CH_4 Spike (% by vol.)	CH_4 (% by vol.)	CO_2 (% by vol.)	O_2 (% by vol.)	Balance (N_2 & H_2O) (% by vol.)		(ft)	(%)	
Normal Operating Rage:												
(min)			-		0.3	0.3	-				20.0	
(max)			5.00		5.0	5.0	20.3				90.0	
Perimter Gas Probes												
GP-1	3/26/2019	8:27	0.0	2.0	1.8	2.3	15.5	80.4	16.7	9.7	100.0	
GP-2	3/26/2019	8:33	0.0	17.6	17.0	17.7	0.0	65.3	18.1	11.1	100.0	
GP-3	3/26/2019	8:41	0.0	--	0.0	8.7	9.3	82.0	11.6	7.6	100.0	
GP-4	3/26/2019	8:46	0.0	--	0.0	2.0	18.9	79.1	9.4	5.4	100.0	
GP-9	3/26/2019	8:51	0.0	--	0.0	8.0	6.5	85.5	11.7	0.0	0.0	
GP-10	3/26/2019	8:11	0.0	7.5	1.9	17.4	6.1	74.6				
GP-10P	3/26/2019	8:08	0.0	20.7	19.6	27.4	1.0	52.0				
GP-11	3/26/2019	8:00	0.0	--	0.0	6.4	15.9	77.7				
GP-12	3/26/2019	7:53	0.0	28.0	26.0	54.7	0.7	18.6				
GP-13	3/26/2019	7:48	0.0	1.5	1.3	23.2	0.4	75.1				
GP-14	3/26/2019	9:39	0.0	--	0.0	0.1	20.5	79.4	11.3	0.0	0.0	
GP-15	3/26/2019	9:33	0.0	--	0.0	0.1	20.5	79.4	9.3	0.0	0.0	

General Data:

	Beginning	Ending	Average
Weather:	Light rain	Sunny	Sunny
Temperature, T (deg F):	44	45	44.5
Wind Speed (mph):	10	8	9
Wind Direction:	180	180	180
Barometric Pressure, P (in Hg):	29.60	29.60	29.60
24hr Baro.Trend (rising / falling / steady / unsteady)		-	

Starting Date:	3/26/2019
Starting Time:	7:48
Finishing Date:	3/26/2019
Finishing Time:	9:39
Monitored by:	T. Berndahl
Instruments:	GEM 2000
Calibration Date:	3/26/2019

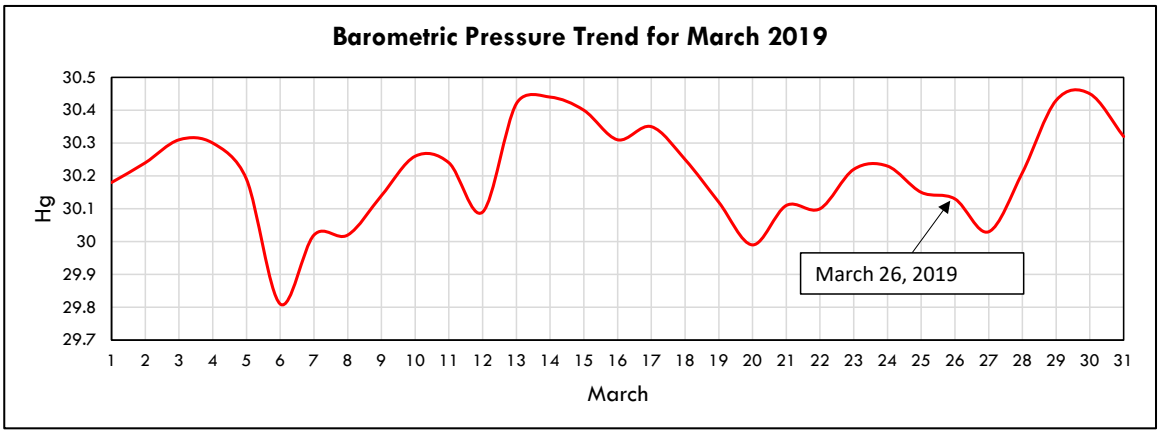
Headings:

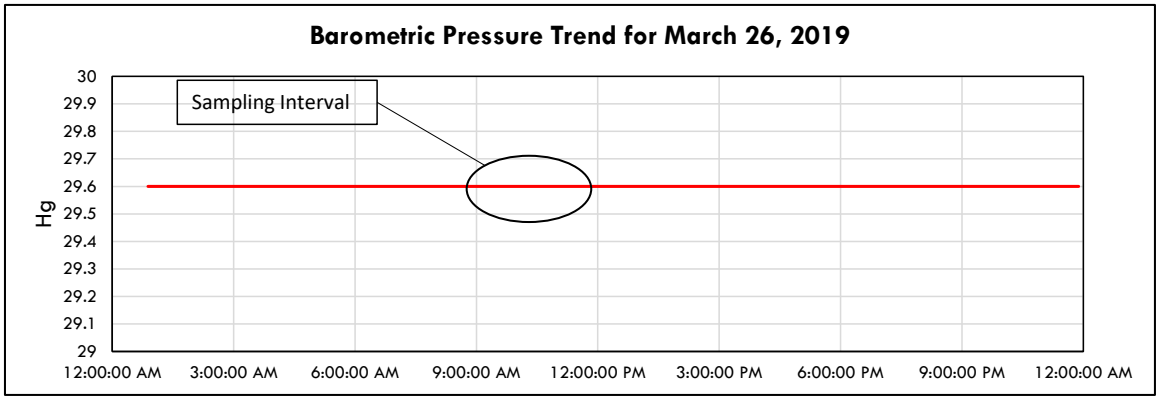
$P_{(well)}$	Relitive Pressure
CH_4	Methane
CO_2	Carbon Dioxide
O_2	Oxygen
H_2O	Water Vapor
N_2	Nitrogen
TOC	Top of Casing

Notes:

1. Measurement for spike concentrations of CH_4 and CO_2 are recorded as a comment if observed during sampling.
2. Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
3. Exposed Perforation = perforated pipe section not submerged by liquid.
4. GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.

Barometric Pressure Trend - March 2019
LRI Landfill, Pierce County, Washington





Source: Pierce County - Thun Field Station
Lat: 47.1 Long: 122.29 Elev: 538 ft-AMSL

Data Source: https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2019-3-26

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04219001.04

LRI Landfill

April-19

Location Refer *Design.*	Date	Time	$P_{(well)}$ (in W.C.)	Gas Composition - *Note 1*					Depth to Water *Note 2* (ft-TOC)	Exposed Portion of Perforations - *Note 3*		Comments
				CH_4 Spike (% by vol.)	CH_4 (% by vol.)	CO_2 (% by vol.)	O_2 (% by vol.)	Balance (N_2 & H_2O) (% by vol.)		(ft)	(%)	
Normal Operating Rage:												
(min)			-		0.3	0.3	-				20.0	
(max)			5.00		5.0	5.0	20.3				90.0	
Perimter Gas Probes												
GP-1	4/25/2019	7:49	0.1	3.0	1.7	3.0	15.5	79.8	16.5	9.5	100.0	
GP-2	4/25/2019	7:56	0.2	17.1	16.1	17.7	0.0	66.2	15.8	8.8	100.0	
GP-3	4/25/2019	8:02	0.1	--	0.0	9.4	8.6	82.0	11.5	7.5	100.0	
GP-4	4/25/2019	8:10	0.1	--	0.0	2.0	18.6	79.4	9.0	5.0	99.4	
GP-9	4/25/2019	8:17	0.1	--	0.0	7.9	7.6	84.5	11.5	0.0	0.0	
GP-10	4/25/2019	7:41	0.1	7.1	16.1	25.6	1.4	56.9				
GP-10P	4/25/2019	7:37	0.1	20.8	20.4	26.2	2.9	50.5				
GP-11	4/25/2019	7:31	0.1	--	0.0	10.5	11.1	78.4				
GP-12	4/25/2019	7:24	0.0	31.9	28.6	56.9	0.1	14.4				
GP-13	4/25/2019	7:15	0.1	1.6	1.5	24.0	0.1	74.4				
GP-14	4/25/2019	8:44	0.1	--	0.0	0.1	20.7	79.2	10.6	0.0	0.0	
GP-15	4/25/2019	8:37	0.2	--	0.0	0.2	20.8	79.0	9.2	0.0	0.0	

General Data:

	Beginning	Ending	Average
Weather:	Sunny	Sunny	Sunny
Temperature, T (deg F):	42	52	47
Wind Speed (mph):	2	2	2
Wind Direction:	120	120	120
Barometric Pressure, P (in Hg):	30.44	30.44	30.44
24hr Baro.Trend (rising / falling / steady / unsteady)		-	

Starting Date:	4/25/2019
Starting Time:	7:15
Finishing Date:	4/25/2019
Finishing Time:	8:44
Monitored by:	T. Berndahl
Instruments:	GEM 2000
Calibration Date:	4/25/2019

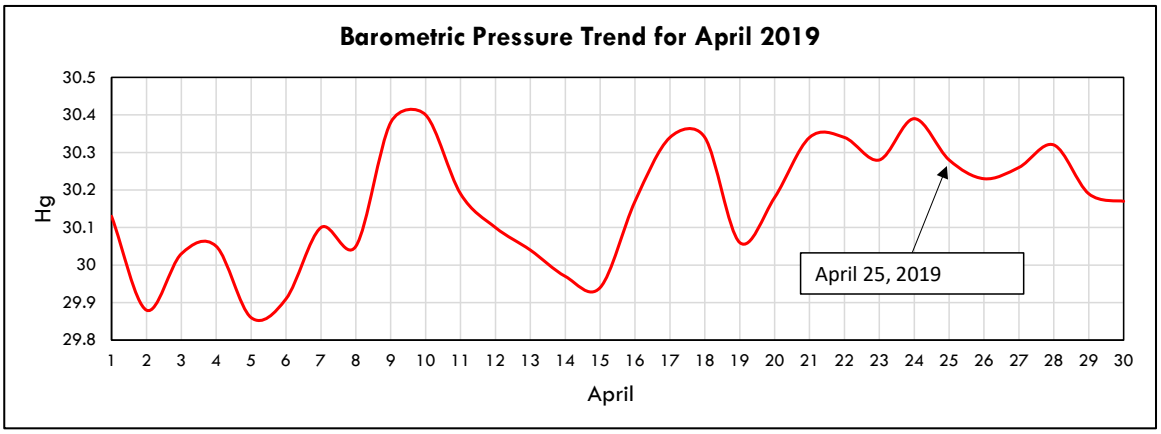
Headings:

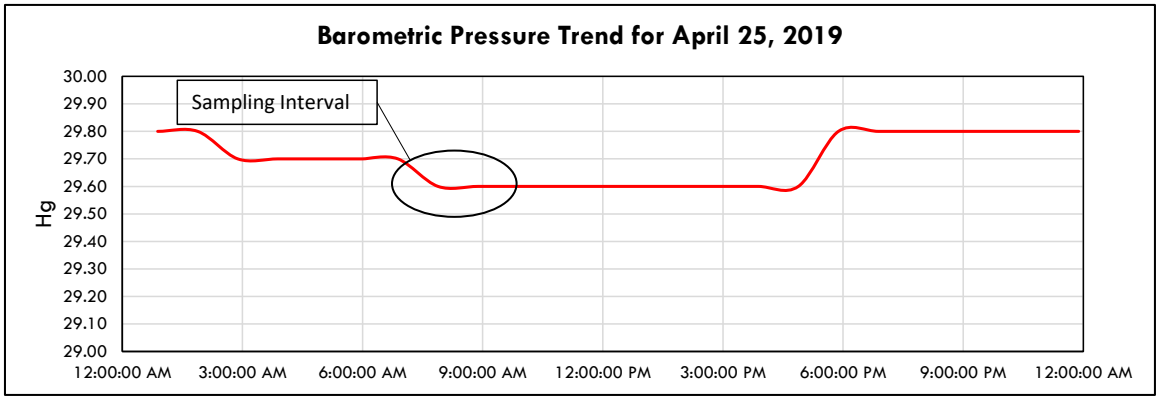
$P_{(well)}$	Relitive Pressure
CH_4	Methane
CO_2	Carbon Dioxide
O_2	Oxygen
H_2O	Water Vapor
N_2	Nitrogen
TOC	Top of Casing

Notes:

1. Measurement for spike concentrations of CH_4 and CO_2 are recorded as a comment if observed during sampling.
2. Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
3. Exposed Perforation = perforated pipe section not submerged by liquid.
4. GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.

Barometric Pressure Trend - April 2019
LRI Landfill, Pierce County, Washington





Source: Pierce County - Thun Field Station
Lat: 47.1 Long: 122.29 Elev: 538 ft-AMSL

Data Source: https://www.wunderground.com/history/daily/us/wa/puyallup/KPLU/date/2019-4-25

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04219001.04

LRI Landfill

May-19

Location Refer *Design.*	Date	Time	$P_{(well)}$ (in W.C.)	Gas Composition - *Note 1*: CH_4 Spike (% by vol.)	CH_4 (% by vol.)	CO_2 (% by vol.)	O_2 (% by vol.)	Balance (N_2 & H_2O) (% by vol.)	Depth to Water *Note 2* (ft-TOC)	Exposed Portion of Perforations - *Note 3*: (ft)	(%)	Comments
Normal Operating Rage:												
(min)			-		0.3	0.3	-				20.0	
(max)			5.00		5.0	5.0	20.3				90.0	
Perimter Gas Probes												
GP-1	5/29/2019	8:21	0.1	2.4	1.5	2.7	16.3	79.5				
GP-2	5/29/2019	8:26	2.1	17.0	15.9	18.5	0.0	65.6				
GP-3	5/29/2019	8:33	0.0	--	0.0	6.7	12.7	80.6				
GP-4	5/29/2019	8:37	0.0	--	0.0	3.4	16.8	79.8				
GP-9	5/29/2019	8:41	0.0	--	0.0	8.7	6.5	84.8				
GP-10	5/29/2019	8:13	0.0	13.8	13.7	25.8	0.4	60.1				
GP-10P	5/29/2019	8:11	0.0	19.2	23.2	29.4	0.0	47.4				
GP-11	5/29/2019	8:04	0.0	--	0.0	7.7	12.5	79.8				
GP-12	5/29/2019	7:59	0.1	31.8	29.9	61.8	0.0	8.3				
GP-13	5/29/2019	7:54	0.0	0.3	0.4	24.6	0.4	74.6				
GP-14	5/29/2019	8:54	0.1	--	0.0	0.1	20.5	79.4				
GP-15	5/29/2019	8:49	0.1	--	0.0	0.1	20.4	79.5				

General Data:

	Beginning	Ending	Average
Weather:	Overcast	Overcast	Overcast
Temperature, T (deg F):	53	62	57.5
Wind Speed (mph):	2	2	2
Wind Direction:	210	210	210
Barometric Pressure, P (in Hg):	30.21	30.21	30.21
24hr Baro.Trend (rising / falling / steady / unsteady)		-	

Starting Date:	5/29/2019
Starting Time:	7:54
Finishing Date:	5/29/2019
Finishing Time:	8:54
Monitored by:	T. Berndahl
Instruments:	GEM 2000
Calibration Date:	5/29/2019

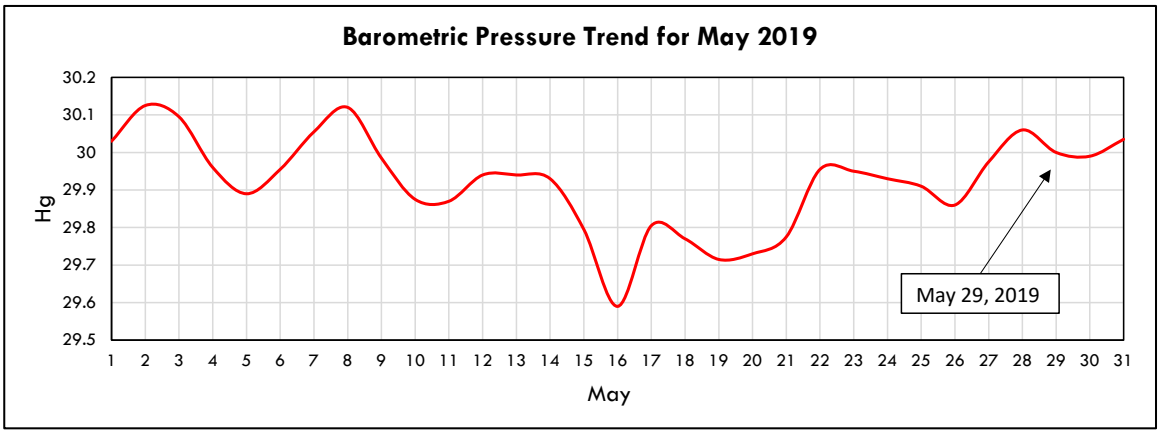
Headings:

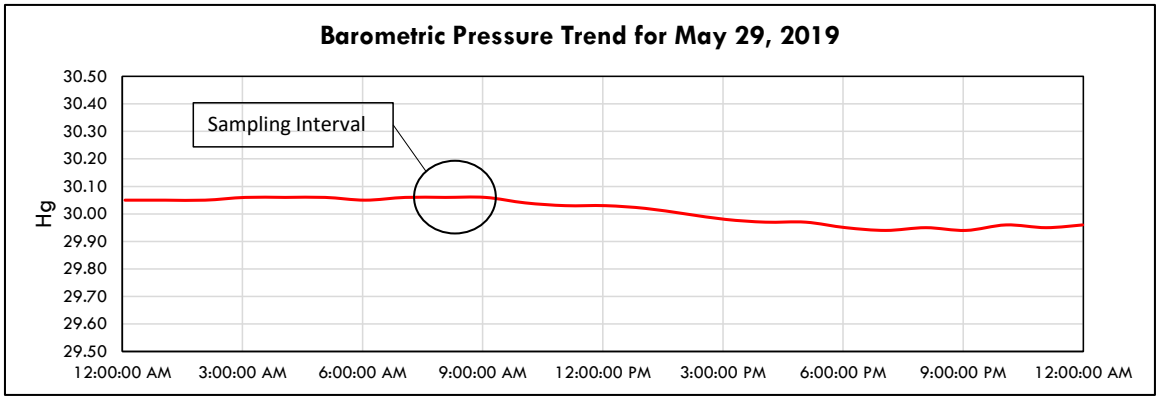
$P_{(well)}$	Relitive Pressure
CH_4	Methane
CO_2	Carbon Dioxide
O_2	Oxygen
H_2O	Water Vapor
N_2	Nitrogen
TOC	Top of Casing

Notes:

1. Measurement for spike concentrations of CH_4 and CO_2 are recorded as a comment if observed during sampling.
2. Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
3. Exposed Perforation = perforated pipe section not submerged by liquid.
4. GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.

Barometric Pressure Trend - May 2019
LRI Landfill, Pierce County, Washington





Source: Puyallup WA
Lat: 47.12 Long: 122.26 Elev: 591 ft-AMSL

Data Source: https://www.wunderground.com/dashboard/pws/KWAPUYAL125/table/2019-05-29/2019-05-29/monthly

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04219001.04

LRI Landfill

June-19

Location Refer *Design.*	Date	Time	$P_{(well)}$ (in W.C.)	Gas Composition - *Note 1*					Depth to Water *Note 2* (ft-TOC)	Exposed Portion of Perforations - *Note 3*		Comments
				CH_4 Spike (% by vol.)	CH_4 (% by vol.)	CO_2 (% by vol.)	O_2 (% by vol.)	Balance (N_2 & H_2O) (% by vol.)		(ft)	(%)	
Normal Operating Rage:												
(min)			-		0.3	0.3	-				20.0	
(max)			5.00		5.0	5.0	20.3				90.0	
Perimeter Gas Probes												
GP-1	6/12/2019	9:04	0.0	6.0	2.4	2.5	14.6	80.5	17.1	10.1	100.0	
GP-2	6/12/2019	9:10	0.0	17.8	16.0	18.9	0.0	65.1	16.4	9.4	100.0	
GP-3	6/12/2019	9:14	0.0	--	0.0	10.0	8.7	81.3	11.5	7.5	100.0	
GP-4	6/12/2019	9:19	0.0	--	0.0	3.0	14.7	82.3	9.8	5.8	100.0	
GP-9	6/12/2019	9:24	0.0	--	0.0	8.6	6.3	85.1	12.4	0.0	0.0	
GP-10	6/12/2019	8:05	0.0	23.4	23.5	27.8	0.8	47.9				
GP-10P	6/12/2019	8:01	0.0	11.1	15.4	22.0	3.8	58.8				
GP-11	6/12/2019	7:55	0.0	--	0.0	19.7	3.5	76.8				
GP-12	6/12/2019	7:48	0.0	36.0	29.4	61.4	0.4	8.8				
GP-13	6/12/2019	7:43	0.0	0.1	0.0	24.5	0.8	74.7				
GP-14	6/12/2019	9:45	0.0	--	0.0	0.1	19.4	80.5	13.3	0.0	0.0	
GP-15	6/12/2019	9:40	0.1	--	0.0	0.2	19.6	80.2	10.0	0.0	0.0	

General Data:

	Beginning	Ending	Average
Weather:	Overcast	Overcast	Overcast
Temperature, T (deg F):	70	83	76.5
Wind Speed (mph):	9	2	5.5
Wind Direction:	70	300	185
Barometric Pressure, P (in Hg):	29.60	29.50	29.55
24hr Baro.Trend (rising / falling / steady / unsteady)		-	

Starting Date:	6/12/2019
Starting Time:	7:43
Finishing Date:	6/12/2019
Finishing Time:	9:45
Monitored by:	T. Berndahl
Instruments:	GEM 2000
Calibration Date:	6/12/2019

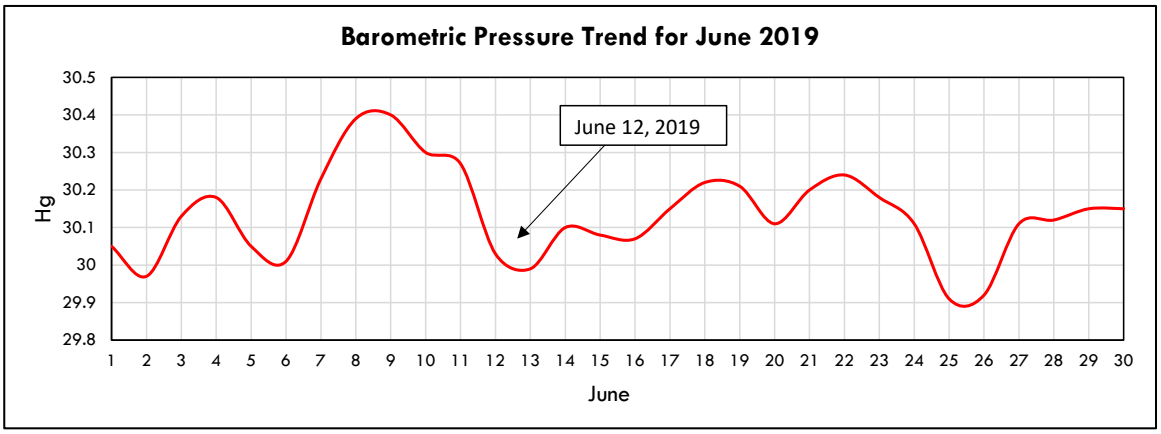
Headings:

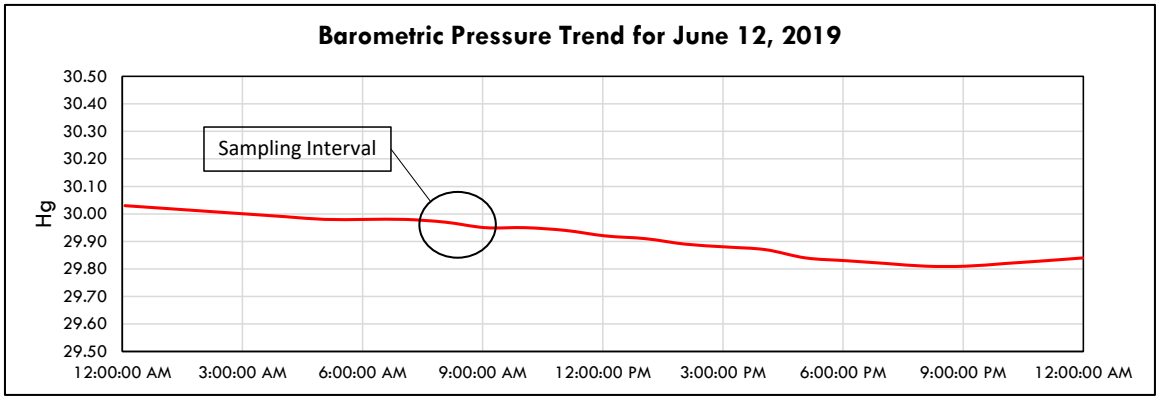
$P_{(well)}$	Relative Pressure
CH_4	Methane
CO_2	Carbon Dioxide
O_2	Oxygen
H_2O	Water Vapor
N_2	Nitrogen
TOC	Top of Casing

Notes:

1. Measurement for spike concentrations of CH_4 and CO_2 are recorded as a comment if observed during sampling.
2. Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
3. Exposed Perforation = perforated pipe section not submerged by liquid.
4. GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.

Barometric Pressure Trend - June 2019
LRI Landfill, Pierce County, Washington





Source: Puyallup WA
Lat: 47.12 Long: 122.26 Elev: 591 ft-AMSL

Data Source: https://www.wunderground.com/dashboard/pws/KWAPUYAL125/table/2019-06-12/2019-06-12/monthly

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04219001.04

LRI Landfill

July-19

Location Refer *Design.*	Date	Time	$P_{(well)}$ (in W.C.)	Gas Composition - *Note 1*					Depth to Water *Note 2* (ft-TOC)	Exposed Portion of Perforations - *Note 3*		Comments
				CH_4 Spike (% by vol.)	CH_4 (% by vol.)	CO_2 (% by vol.)	O_2 (% by vol.)	Balance (N_2 & H_2O) (% by vol.)		(ft)	(%)	
Normal Operating Rage:												
(min)			-		0.3	0.3	-				20.0	
(max)			5.00		5.0	5.0	20.3				90.0	
Perimeter Gas Probes												
GP-1	7/18/2019	8:33	0.3	6.5	4.9	4.4	12.5	78.2	17.9	10.9	100.0	
GP-2	7/18/2019	8:42	0.2	17.7	15.8	20.1	0.2	63.9	16.8	9.8	100.0	
GP-3	7/18/2019	8:47	0.0	--	0.0	10.9	10.4	78.7	12.2	8.2	100.0	
GP-4	7/18/2019	8:52	0.0	--	0.0	9.6	5.0	85.4	11.8	7.8	100.0	
GP-9	7/18/2019	8:57	0.1	--	0.0	9.5	6.9	83.6	13.1	0.0	0.0	
GP-10	7/18/2019	8:23	0.0	7.5	7.6	25.2	0.2	67.0				
GP-10P	7/18/2019	8:19	0.0	9.8	12.1	24.5	2.2	61.2				
GP-11	7/18/2019	8:13	0.0	--	0.0	23.1	1.9	75.0				
GP-12	7/18/2019	8:06	0.0	32.3	21.6	49.6	5.9	22.9				
GP-13	7/18/2019	8:00	0.0	--	0.0	23.6	3.2	73.2				
GP-14	7/18/2019	9:25	0.2	--	0.0	0.0	21.0	79.0	15.0	0.0	0.0	
GP-15	7/18/2019	9:17	0.4	--	0.0	0.2	21.1	78.7	11.4	0.0	0.0	

General Data:

	Beginning	Ending	Average
Weather:	Overcast	Overcast	Overcast
Temperature, T (deg F):	60	67	63.5
Wind Speed (mph):	3	2	2.5
Wind Direction:	70	300	185
Barometric Pressure, P (in Hg):	29.60	29.60	29.60
24hr Baro.Trend (rising / falling / steady / unsteady)		-	

Starting Date:	7/18/2019
Starting Time:	8:00
Finishing Date:	7/18/2019
Finishing Time:	9:25
Monitored by:	T. Berndahl
Instruments:	GEM 2000
Calibration Date:	7/18/2019

Headings:

$P_{(well)}$	Relative Pressure
CH_4	Methane
CO_2	Carbon Dioxide
O_2	Oxygen
H_2O	Water Vapor
N_2	Nitrogen
TOC	Top of Casing

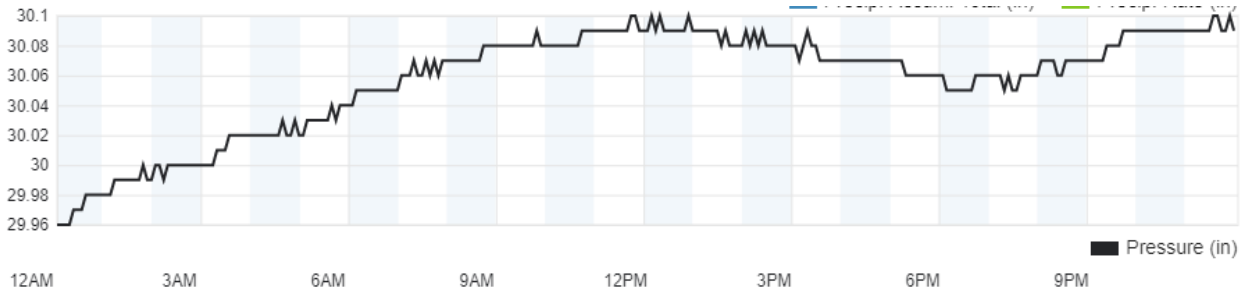
Notes:

1. Measurement for spike concentrations of CH_4 and CO_2 are recorded as a comment if observed during sampling.
2. Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
3. Exposed Perforation = perforated pipe section not submerged by liquid.
4. GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.

LRI Landfill
Barometric Pressure Trends
July 2019

July 2019

July 18, 2019: Gas Probe Monitoring



Source: Weather Underground, SPANAFLIGHT KPLU Station (KWAPUYAL102)

https://www.wunderground.com/dashboard/pws/KWAPUYAL102/graph/2019-07-18/2019-07-18/daily

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04219001.04

LRI Landfill

August-19

Location Refer *Design.*	Date	Time	$P_{(well)}$ (in W.C.)	Gas Composition - *Note 1*: CH_4 Spike (% by vol.)	CH_4 (% by vol.)	CO_2 (% by vol.)	O_2 (% by vol.)	Balance (N_2 & H_2O) (% by vol.)	Depth to Water *Note 2* (ft-TOC)	Exposed Portion of Perforations - *Note 3*: (ft)	(%)	Comments
Normal Operating Rage:												
(min)			-		0.3	0.3	-				20.0	
(max)			5.00		5.0	5.0	20.3				90.0	
Perimeter Gas Probes												
GP-1	8/23/2019	8:18	-0.1	12.9	8.2	5.8	11.3	74.7	19.2	12.2	100.0	
GP-2	8/23/2019	8:26	0.3	17.4	16.7	21.6	0.0	61.7	17.6	10.6	100.0	
GP-3	8/23/2019	8:33	0.0	--	0.0	12.1	9.7	78.2	12.8	8.8	100.0	
GP-4	8/23/2019	8:42	0.1	--	0.0	8.9	11.8	79.3	13.1	9.1	100.0	
GP-9	8/23/2019	8:50	0.1	--	0.0	10.5	4.9	84.6	13.7	0.0	0.0	
GP-10	8/23/2019	8:09	0.0	1.4	1.3	22.6	0.0	76.1				
GP-10P	8/23/2019	8:05	0.2	14.8	14.7	31.8	0.0	53.5				
GP-11	8/23/2019	7:51	0.0	--	0.0	18.6	5.5	75.9				
GP-12	8/23/2019	9:30	0.0	27.0	26.9	72.7	0.0	0.4				
GP-13	8/23/2019	7:42	0.0	--	0.5	28.7	0.0	70.8				
GP-14	8/23/2019	9:05	0.1	--	0.0	2.5	16.6	80.9	16.3	0.3	5.6	
GP-15	8/23/2019	9:18	0.1	--	0.0	0.1	20.7	79.2	12.4	0.0	0.0	

General Data:

	Beginning	Ending	Average
Weather:	Overcast	Overcast	Overcast
Temperature, T (deg F):	57	62	59.5
Wind Speed (mph):	3	5	4
Wind Direction:	315	135	225
Barometric Pressure, P (in Hg):	29.60	29.50	29.55
24hr Baro.Trend (rising / falling / steady / unsteady)		-	

Starting Date:	8/23/2019
Starting Time:	7:42
Finishing Date:	8/23/2019
Finishing Time:	9:30
Monitored by:	A. Deep
Instruments:	GEM 2000
Calibration Date:	8/23/2019

Headings:

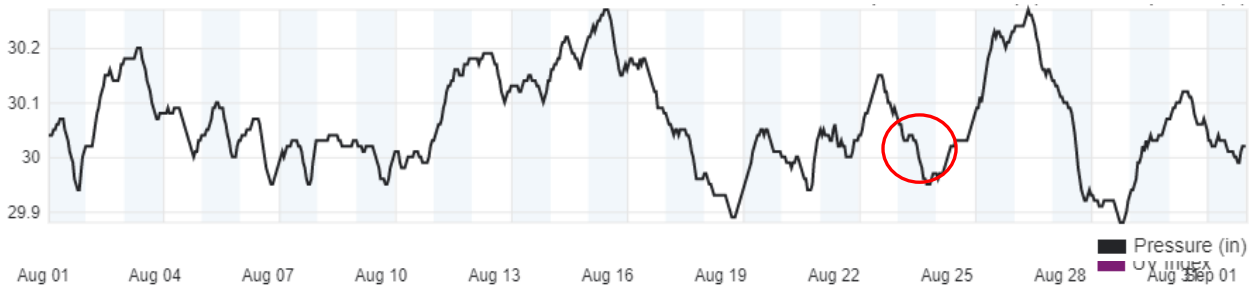
$P_{(well)}$	Relative Pressure
CH_4	Methane
CO_2	Carbon Dioxide
O_2	Oxygen
H_2O	Water Vapor
N_2	Nitrogen
TOC	Top of Casing

Notes:

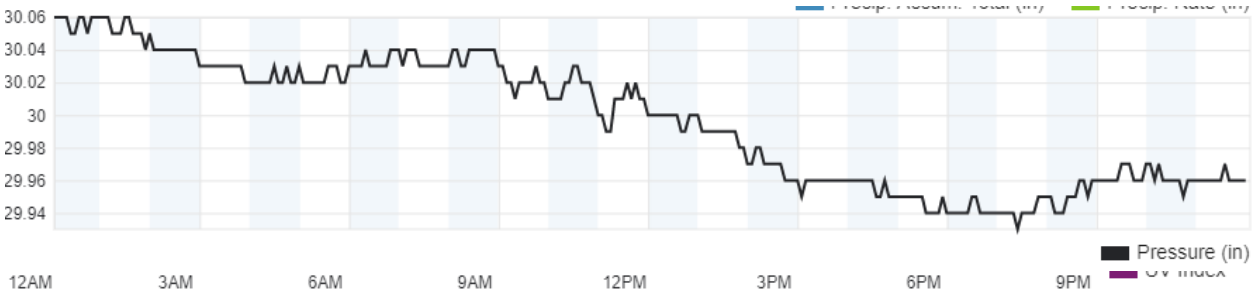
1. Measurement for spike concentrations of CH_4 and CO_2 are recorded as a comment if observed during sampling.
2. Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
3. Exposed Perforation = perforated pipe section not submerged by liquid.
4. GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.

LRI Landfill
Barometric Pressure Trends
August 2019

August 2019



August 23, 2019: Gas Probe Monitoring and Quarterly Indoor Air Monitoring



Source: Weather Underground, SPANAFLIGHT KPLU Station (KWAPUYAL102)

https://www.wunderground.com/dashboard/pws/KWAPUYAL102/graph/2019-08-23/2019-08-23/daily

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04219001.04

LRI Landfill

September-19

Location Refer *Design.*	Date	Time	$P_{(well)}$ (in W.C.)	Gas Composition - *Note 1*: CH_4 Spike (% by vol.)	CH_4 (% by vol.)	CO_2 (% by vol.)	O_2 (% by vol.)	Balance (N_2 & H_2O) (% by vol.)	Depth to Water *Note 2* (ft-TOC)	Exposed Portion of Perforations - *Note 3*: (ft)	(%)	Comments
Normal Operating Rage:												
(min)			-		0.3	0.3	-				20.0	
(max)			5.00		5.0	5.0	20.3				90.0	
Perimeter Gas Probes												
GP-1	9/25/2019	7:46	-0.3	11.8	6.9	4.5	15.2	73.4	18.6	11.6	100.0	
GP-2	9/25/2019	7:55	0.1	20.2	18.1	23.2	0.0	58.7	18.0	11.0	100.0	
GP-3	9/25/2019	8:01	0.0	--	0.0	13.3	9.3	77.4	12.3	8.3	100.0	
GP-4	9/25/2019	8:06	0.0	--	0.0	10.5	10.0	79.5	13.5	9.5	100.0	
GP-9	9/25/2019	8:13	0.1	--	0.0	10.6	7.0	82.4	13.4	0.0	0.0	
GP-10	9/25/2019	7:39	0.0	7.9	6.9	26.7	0.0	66.4				
GP-10P	9/25/2019	7:36	0.3	23.1	21.1	35.7	0.0	43.2				
GP-11	9/25/2019	7:30	0.1	--	0.0	16.7	8.2	75.1				
GP-12	9/25/2019	7:23	0.0	16.9	23.6	69.2	1.2	6.0				
GP-13	9/25/2019	7:19	0.0	0.7	0.7	32.0	0.0	67.3				
GP-14	9/25/2019	8:25	0.2	--	0.0	0.2	21.6	78.2	15.6	0.0	0.0	
GP-15	9/25/2019	8:33	0.3	--	0.0	0.1	21.6	78.3	11.3	0.0	0.0	

General Data:

	Beginning	Ending	Average
Weather:	Overcast	Overcast	Overcast
Temperature, T (deg F):	44	47	45.5
Wind Speed (mph):	14	10	12
Wind Direction:	180	180	180
Barometric Pressure, P (in Hg):	29.60	29.50	29.55
24hr Baro.Trend (rising / falling / steady / unsteady)		-	

Starting Date:	9/25/2019
Starting Time:	7:19
Finishing Date:	9/25/2019
Finishing Time:	8:33
Monitored by:	T. Berndahl
Instruments:	GEM 2000
Calibration Date:	9/25/2019

Headings:

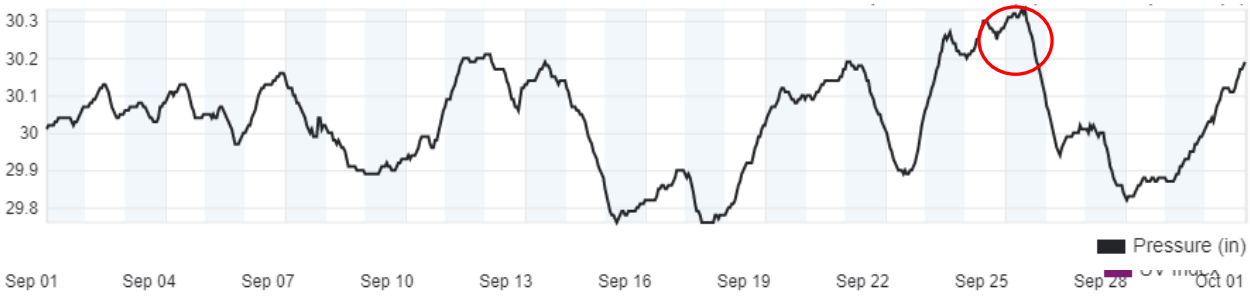
$P_{(well)}$	Relative Pressure
CH_4	Methane
CO_2	Carbon Dioxide
O_2	Oxygen
H_2O	Water Vapor
N_2	Nitrogen
TOC	Top of Casing

Notes:

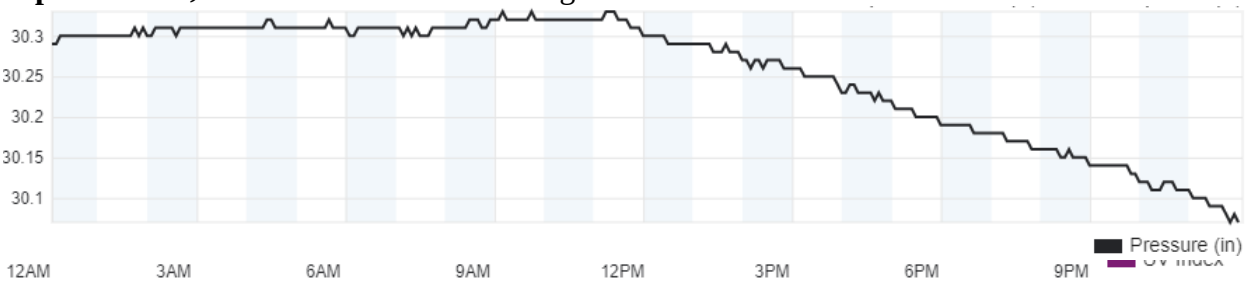
1. Measurement for spike concentrations of CH_4 and CO_2 are recorded as a comment if observed during sampling.
2. Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
3. Exposed Perforation = perforated pipe section not submerged by liquid.
4. GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.

LRI Landfill
Barometric Pressure Trends
September 2019

September 2019



September 25, 2019: Gas Probe Monitoring



Source: Weather Underground, SPANAFLIGHT KPLU Station (KWAPUYAL102)

https://www.wunderground.com/dashboard/pws/KWAPUYAL102/graph/2019-09-25/2019-09-25/daily

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04219001.04

LRI Landfill

October-19

Location Refer *Design.*	Date	Time	$P_{(well)}$ (in W.C.)	Gas Composition - *Note 1*					Depth to Water *Note 2* (ft-TOC)	Exposed Portion of Perforations - *Note 3*		Comments
				CH_4 Spike (% by vol.)	CH_4 (% by vol.)	CO_2 (% by vol.)	O_2 (% by vol.)	Balance (N_2 & H_2O) (% by vol.)		(ft)	(%)	
Normal Operating Rage:												
(min)			-		0.3	0.3	-				20.0	
(max)			5.00		5.0	5.0	20.3				90.0	
Perimeter Gas Probes												
GP-1	10/24/2019	8:26	-0.4	7.8	5.3	4.3	15.0	75.4	17.7	10.7	100.0	
GP-2	10/24/2019	8:36	-0.3	18.3	16.5	19.9	0.4	63.2	17.3	10.3	100.0	
GP-3	10/24/2019	8:42	0.0	--	0.0	9.4	12.0	78.6	11.8	7.8	100.0	
GP-4	10/24/2019	8:52	0.0	--	0.0	11.6	4.6	83.8	11.6	7.6	100.0	
GP-9	10/24/2019	9:00	0.0	--	0.0	9.6	6.7	83.7	12.3	0.0	0.0	
GP-10	10/24/2019	8:17	0.0	4.9	6.5	24.6	0.0	68.9				
GP-10P	10/24/2019	8:14	0.1	30.0	26.8	38.0	0.0	35.2				
GP-11	10/24/2019	8:08	0.0	--	0.0	7.7	13.8	78.5				
GP-12	10/24/2019	8:00	-0.1	20.8	17.6	50.3	4.8	27.3				
GP-13	10/24/2019	7:54	-0.1	0.5	0.8	30.0	0.0	69.2				
GP-14	10/24/2019	9:15	0.3	0.1	0.0	0.2	21.9	77.9	13.5	0.0	0.0	
GP-15	10/24/2019	9:20	0.1	0.1	0.0	0.1	21.9	78.0	10.5	0.0	0.0	

General Data:

	Beginning	Ending	Average
Weather:	Overcast	Overcast	Overcast
Temperature, T (deg F):	41	45	43
Wind Speed (mph):	0.2	0.3	0.25
Wind Direction:	45	225	135
Barometric Pressure, P (in Hg):	30.41	30.42	30.42
24hr Baro.Trend (rising / falling / steady / unsteady)	Steady		

Starting Date:	10/24/2019
Starting Time:	7:54
Finishing Date:	10/24/2019
Finishing Time:	9:20
Monitored by:	T. Berndahl
Instruments:	GEM 2000
Calibration Date:	10/24/2019

Headings:

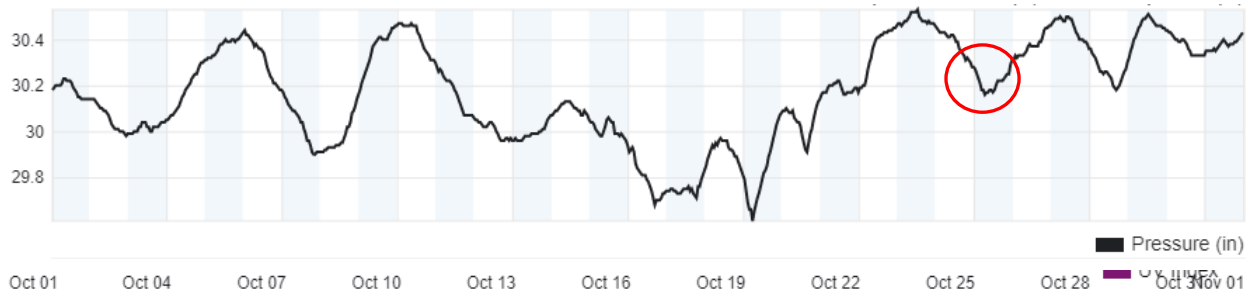
$P_{(well)}$	Relative Pressure
CH_4	Methane
CO_2	Carbon Dioxide
O_2	Oxygen
H_2O	Water Vapor
N_2	Nitrogen
TOC	Top of Casing

Notes:

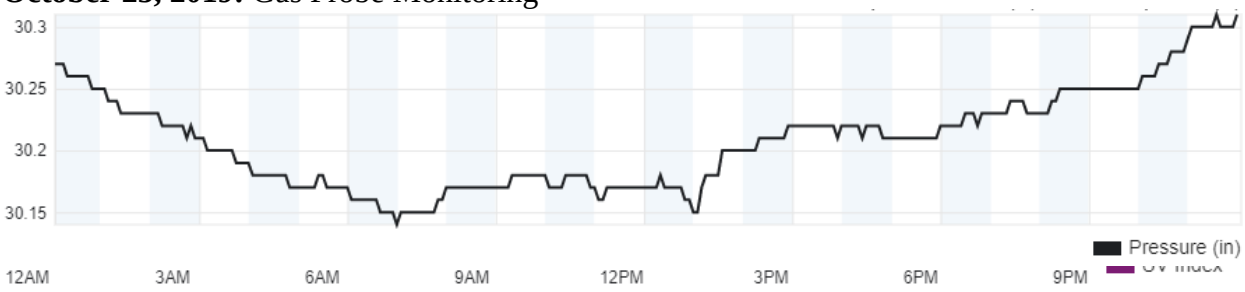
1. Measurement for spike concentrations of CH_4 and CO_2 are recorded as a comment if observed during sampling.
2. Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
3. Exposed Perforation = perforated pipe section not submerged by liquid.
4. GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.

LRI Landfill
Barometric Pressure Trends
October 2019

October 2019



October 25, 2019: Gas Probe Monitoring



Source: Weather Underground, SPANAFLIGHT KPLU Station (KWAPUYAL102)

https://www.wunderground.com/dashboard/pws/KWAPUYAL102/graph/2019-10-25/2019-10-25/daily

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04219001.04

LRI Landfill

November-19

Location Refer *Design.*	Date	Time	$P_{(well)}$ (in W.C.)	Gas Composition - *Note 1*					Depth to Water *Note 2* (ft-TOC)	Exposed Portion of Perforations - *Note 3*		Comments
				CH_4 Spike (% by vol.)	CH_4 (% by vol.)	CO_2 (% by vol.)	O_2 (% by vol.)	Balance (N_2 & H_2O) (% by vol.)		(ft)	(%)	
Normal Operating Rage:												
(min)			-		0.3	0.3	-				20.0	
(max)			5.00		5.0	5.0	20.3				90.0	
Perimeter Gas Probes												
GP-1	11/22/2019	10:22	-0.1	1.2	3.5	3.2	16.2	77.1	17.2	10.2	100.0	
GP-2	11/22/2019	10:29	0.1	17.2	15.0	17.6	2.0	65.4	16.7	9.7	100.0	
GP-3	11/22/2019	10:34	0.1	--	0.1	10.4	9.8	79.7	11.6	7.6	100.0	
GP-4	11/22/2019	10:42	0.0	--	0.1	11.9	4.1	83.9	10.4	6.4	100.0	
GP-9	11/22/2019	10:50	0.0	--	0.1	9.4	5.6	84.9	11.9	0.0	0.0	
GP-10	11/22/2019	10:16	0.0	0.8	0.3	15.8	6.1	77.8				
GP-10P	11/22/2019	10:13	0.1	23.1	21.1	34.2	0.0	44.7				
GP-11	11/22/2019	10:08	0.0	--	0.1	8.2	14.8	76.9				
GP-12	11/22/2019	10:01	0.0	18.4	15.4	43.2	7.2	34.2				
GP-13	11/22/2019	9:54	0.1	1.5	1.3	29.1	0.0	69.6				
GP-14	11/22/2019	11:08	0.1	--	0.1	0.1	22.1	77.7	12.5	0.0	0.0	
GP-15	11/22/2019	11:02	0.1	--	0.1	0.2	22.3	77.4	9.8	0.0	0.0	
GP-16	11/22/2019	9:41	0.0	--	0.1	0.4	22.2	77.3	21.8	14.8	98.7	

	Beginning	Ending	Average
Weather:	Overcast	Overcast	Overcast
Temperature, T (deg F):	35	39	37
Wind Speed (mph):	0	0	0
Wind Direction:	0	0	0
Barometric Pressure, P (in Hg):	29.76	29.83	29.80
24hr Baro.Trend (rising / falling / steady / unsteady)	Steady		

Starting Date:	11/22/2019
Starting Time:	9:41
Finishing Date:	11/22/2019
Finishing Time:	11:08
Monitored by:	T. Berndahl
Instruments:	GEM 2000
Calibration Date:	11/22/2019

Headings:

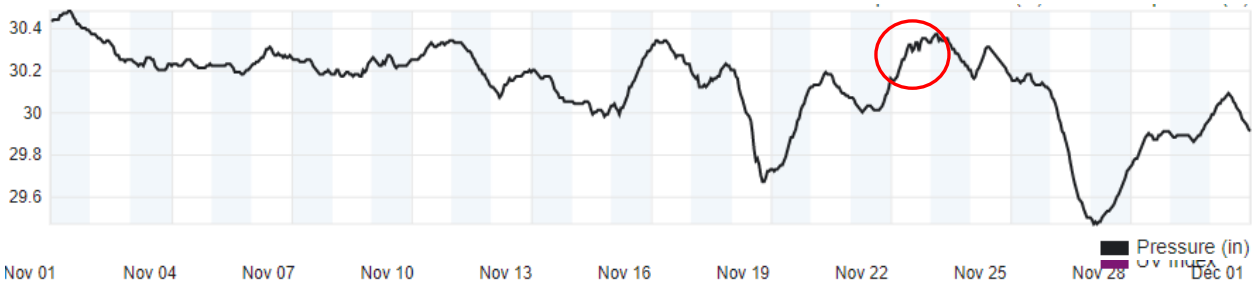
$P_{(well)}$	Relative Pressure
CH_4	Methane
CO_2	Carbon Dioxide
O_2	Oxygen
H_2O	Water Vapor
N_2	Nitrogen
TOC	Top of Casing

Notes:

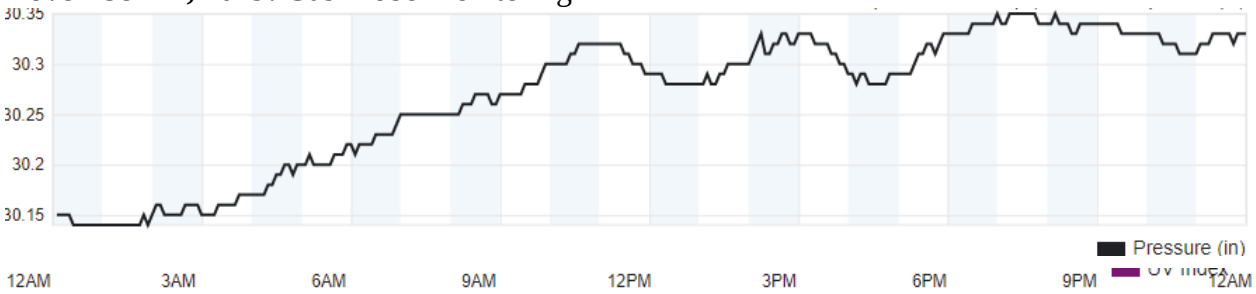
1. Measurement for spike concentrations of CH_4 and CO_2 are recorded as a comment if observed during sampling.
2. Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
3. Exposed Perforation = perforated pipe section not submerged by liquid.
4. GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.
5. Reading based on field notes.

LRI Landfill
Barometric Pressure Trends
November 2019

November 2019



November 22, 2019: Gas Probe Monitoring



Source: Weather Underground, SPANAFLIGHT KPLU Station (KWAPUYAL102)

https://www.wunderground.com/dashboard/pws/KWAPUYAL102/graph/2019-11-22/2019-11-22/daily

Exhibit 3 - Results of Landfill Gas Probe Monitoring

SCS Engineers

Landfill Gas Control System

04219001.04

LRI Landfill

December-19

Location Refer *Design.*	Date	Time	$P_{(well)}$ (in W.C.)	Gas Composition - *Note 1*					Depth to Water *Note 2* (ft-TOC)	Exposed Portion of Perforations - *Note 3*		Comments
				CH_4 Spike (% by vol.)	CH_4 (% by vol.)	CO_2 (% by vol.)	O_2 (% by vol.)	Balance (N_2 & H_2O) (% by vol.)		(ft)	(%)	
Normal Operating Rage:												
(min)			-		0.3	0.3	-				20.0	
(max)			5.00		5.0	5.0	20.3				90.0	
Perimeter Gas Probes												
GP-1	12/20/2019	8:48	-0.2	5.9	3.7	2.7	13.1	80.5	16.5	9.5	100.0	
GP-2	12/20/2019	8:57	0.0	13.2	15.9	18.2	0.6	65.3	15.4	8.4	100.0	
GP-3	12/20/2019	9:02	-0.1	--	0.0	6.7	11.9	81.4	11.5	7.5	100.0	
GP-4	12/20/2019	9:15	0.0	--	0.0	0.1	19.4	80.5	9.0	5.0	99.0	
GP-9	12/20/2019	9:22	-0.2	--	0.0	8.5	5.4	86.1	11.3	0.0	0.0	
GP-10	12/20/2019	8:39	0.0	0.1	0.0	0.2	19.3	80.5				
GP-10P	12/20/2019	8:35	-0.1	21.7	20.9	31.1	0.6	47.4				
GP-11	12/20/2019	8:30	0.0	1.7	0.5	12.2	12.2	75.1				
GP-12	12/20/2019	8:24	-0.1	19.6	16.4	47.9	4.7	31.0				
GP-13	12/20/2019	8:19	-0.1	0.9	0.8	20.8	4.6	73.8				
GP-14	12/20/2019	9:37	-0.1	--	0.0	0.1	19.4	80.5	9.3	0.0	0.0	
GP-15	12/20/2019	9:41	0.3	--	0.0	0.1	19.4	80.5	11.2	0.0	0.0	
GP-16	12/20/2019	9:28	-0.1	--	0.0	0.2	19.5	80.3	20.7	13.7	91.3	

	Beginning	Ending	Average
Weather:	Raining	Raining	Raining
Temperature, T (deg F):	50	50	50
Wind Speed (mph):	7	9	8
Wind Direction:	180	90	135
Barometric Pressure, P (in Hg):	29.26	29.27	29.27
24hr Baro.Trend (rising / falling / steady / unsteady)	Steady		

Starting Date:	12/20/2019
Starting Time:	8:19
Finishing Date:	12/20/2019
Finishing Time:	9:41
Monitored by:	T. Berndahl
Instruments:	GEM 2000
Calibration Date:	12/20/2019

Headings:

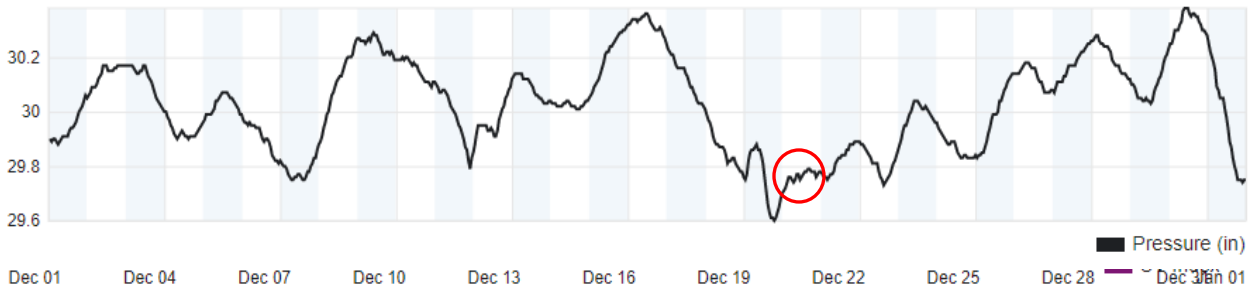
$P_{(well)}$	Relative Pressure
CH_4	Methane
CO_2	Carbon Dioxide
O_2	Oxygen
H_2O	Water Vapor
N_2	Nitrogen
TOC	Top of Casing

Notes:

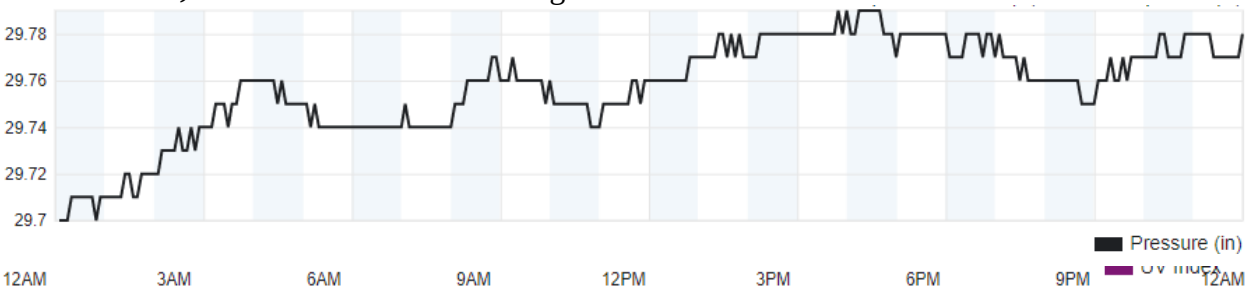
1. Measurement for spike concentrations of CH_4 and CO_2 are recorded as a comment if observed during sampling.
2. Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
3. Exposed Perforation = perforated pipe section not submerged by liquid.
4. GP-10P added in January 2018. Monitoring performed at water level piezometer installed in the same boring as GP-10.
5. Reading based on field notes.

LRI Landfill
Barometric Pressure Trends
December 2019

December 2019



December 20, 2019: Gas Probe Monitoring



Source: Weather Underground, SPANAFLIGHT KPLU Station (KWAPUYAL102)

https://www.wunderground.com/dashboard/pws/KWAPUYAL102/graph/2019-12-20/2019-12-20/daily

LRI 304th Street Landfill
Landfill Gas Monitoring of On-site Buildings

Project Number: 04219001.04

Date: 2/20/19
Weather Conditions: Cloudy
Instrument: Micro FID
Measured By: Travis Berndahl

The atmosphere inside buildings at the landfill were monitored for possible intrusion of methane gas. Per WAC 173-351, concentrations of methane in on-site structures must not exceed 25% of the lower explosive limit (LEL). If off-site gas migration is suspected, concentrations of methane in off-site structures must not exceed 100 ppm methane.

The areas monitored included:

- The general overall work area
- Floor drains
- Underground conduit protrusions
- Closed areas where landfill gas could collect, such as under cupboards and inside closets

The gas detection instrument must be calibrated using calibration gas containing methane equal to 50 % LEL. Calibration must be performed before and after the survey is completed.

Checked boxes indicate that the survey revealed **no detectable methane**.

- [X] Main Office - individual office spaces, storage areas and within open crawl-space area.
- [X] Repair Shop – survey atmosphere conditions throughout (lower height levels).
- [X] Pay/Scale Booth – interior of building.
- [X] Work Shop - interior of shed adjacent to stormwater ponds.

Background (Main Office)
Upwind → 2.4 ppm
Downwind → 2.7 ppm

Signature

LRI 304th Street Landfill
Landfill Gas Monitoring of On-site Buildings

Project Number: 04219001.04

Date: 6/12/19
Weather Conditions: Sunny
Instrument: Micro FID
Measured By: Travis Berndahl

The atmosphere inside buildings at the landfill were monitored for possible intrusion of methane gas. Per WAC 173-351, concentrations of methane in on-site structures must not exceed 25% of the lower explosive limit (LEL). If off-site gas migration is suspected, concentrations of methane in off-site structures must not exceed 100 ppm methane.

The areas monitored included:
- The general overall work area
- Floor drains
- Underground conduit protrusions
- Closed areas where landfill gas could collect, such as under cupboards and inside closets

The gas detection instrument must be calibrated using calibration gas containing methane equal to 50 % LEL. Calibration must be performed before and after the survey is completed.

Checked boxes indicate that the survey revealed **no detectable methane**.

- [X] Main Office - individual office spaces, storage areas and within open crawl-space area. 5.2 ppm max
- [X] Repair Shop – survey atmosphere conditions throughout (lower height levels). 2.5 ppm max
- [X] ★ Pay/Scale Booth – interior of building. 110 ppm max
- [X] Work Shop - interior of shed adjacent to stormwater ponds.

Signature

Background (Main office)
Upwind → 2.3 ppm
Downwind → 2.7 ppm

★ Strong incense smell, highest reading close to incense.
- In building methane monitor reading no methane
- No previous detections before incense.

Project Number: 04219001.04

LRI 304th Street Landfill
Landfill Gas Monitoring of On-site Buildings

Date: 8/23/19
Weather Conditions: sunny
Instrument: MicroFID
Measured By: Alexa Deep

The atmosphere inside buildings at the landfill were monitored for possible intrusion of methane gas. Per WAC 173-351, concentrations of methane in on-site structures must not exceed 25% of the lower explosive limit (LEL). If off-site gas migration is suspected, concentrations of methane in off-site structures must not exceed 100 ppm methane.

The areas monitored included:
- The general overall work area
- Floor drains
- Underground conduit protrusions
- Closed areas where landfill gas could collect, such as under cupboards and inside closets

The gas detection instrument must be calibrated using calibration gas containing methane equal to 50 % LEL. Calibration must be performed before and after the survey is completed.

Checked boxes indicate that the survey revealed **no detectable methane**.

- ☑ Main Office - individual office spaces, storage areas and within open crawl-space area. 9 ppm
- ☑ Repair Shop – survey atmosphere conditions throughout (lower height levels). 10 ppm near electrical boxes
- ☑ Pay/Scale Booth – interior of building. 1 ppm
- ☑ Work Shop - interior of shed adjacent to stormwater ponds. 8.5 near electrical panel

Background
Upwind: 0.0 ppm
Downwind: 1.4 ppm

Alexa Deep
Signature

LRI 304th Street Landfill
Landfill Gas Monitoring of On-site Buildings

Project Number: 04219001.04

Date: 11-22-19
Weather Conditions: Sunny
Instrument: MicroFID
Measured By: Travis Berndahl

The atmosphere inside buildings at the landfill were monitored for possible intrusion of methane gas. Per WAC 173-351, concentrations of methane in on-site structures must not exceed 25% of the lower explosive limit (LEL). If off-site gas migration is suspected, concentrations of methane in off-site structures must not exceed 100 ppm methane.

The areas monitored included:

- The general overall work area
- Floor drains
- Underground conduit protrusions
- Closed areas where landfill gas could collect, such as under cupboards and inside closets

The gas detection instrument must be calibrated using calibration gas containing methane equal to 50 % LEL. Calibration must be performed before and after the survey is completed.

Checked boxes indicate that the survey revealed **no detectable methane**.

- [X] Main Office - individual office spaces, storage areas and within open crawl-space area. 4.5 ppm Break area
- [X] Repair Shop – survey atmosphere conditions throughout (lower height levels). 2.6 ppm, SE corner near outlets
- [X] Pay/Scale Booth – interior of building. 0.5 ppm
- [X] Work Shop - interior of shed adjacent to stormwater ponds. 1.1 ppm near electrical panels

Background
Upwind: 0.0 ppm
Downwind: 2.1 ppm

Signature

August 23, 2019
File No. 04219001.11

Mr. George Duvendack
Pierce County Recycling, Composting and Disposal, LLC dba LRI
17925 Meridian Street East
Puyallup, Washington 98375

Subject: **2019 Gas Extraction Well Installation Report**
LRI Landfill, Graham, Washington

Dear George:

This letter presents a summary of the field activities performed by SCS Engineers (SCS) regarding the installation of 15 new landfill gas (LFG) extraction wells at the LRI Landfill located in Graham, Washington. The LFG extraction wells were installed in general accordance with the 2019 Gas System Expansion design plans, approved well construction variance, and well completion schedule issued by SCS on July 18, 2019.

Summary

SCS personnel were onsite from July 24, 2019 through August 12, 2019, to observe drilling and installation of the new LFG extraction wells performed by DBM Contractors, Inc. (DBM). Observations of the cuttings from well drilling were logged for each boring and are included on the attached boring and construction logs prepared by SCS. The following table presents a summary of the completed well installation data.

Table 1: Summary of Well Completion

Drawing ID	Well Designation	Surface Elevation (ft-msl)(1)	Installation Date	ECY Well Tag(2)	Design Depth (ft)	Completed Depth (ft)	Length of Screen (ft)
2019-01	WE-251	715.33	8/5/2019	BKM-979	52.0	50.5	30.5
2019-02	WE-252	724.05	8/5/2019	BKM-978	61.0	60.5	40.5
2019-03	WE-253	731.08	8/6/2019	BKM-987	69.0	69.0	49.0
2019-04	WE-254	733.51	8/6/2019	BKM-986	72.0	72.0	52.0
2019-05	WE-255	739.96	8/7/2019	BKM-985	78.0	76.0	58.0
2019-06	WE-256	744.05	8/7/2019	BKM-984	83.0	83.0	63.0
2019-07	WE-257	751.62	8/8/2019	BKM-983	87.0	87.0	67.0
2019-08	WE-258	755.81	8/8/2019	BKM-982	79.0	77.0	59.0
2019-09	WE-263	805.55	8/9/2019	BKM-974	130.0	131.0	110.0
2019-10	Not Installed due to collapse of the boring						
2019-11	WE-262	828.51	7/29/2019	BKM-988	130.0	131.0	110.0
2019-12	Not included in final design, location not accessible by drill rig						
2019-13	WE-261	830.67	7/25/2019	BKM-973	130.0	117.0	75.0
2019-14	WE-249	695.69	8/2/2019	BKM-981	33.0	34.5	13.0
2019-15	WE-250	691.63	8/2/2019	BKM-976	25.0	25.0	7.0

Drawing ID	Well Designation	Surface Elevation (ft-msl)(1)	Installation Date	ECY Well Tag(2)	Design Depth (ft)	Completed Depth (ft)	Length of Screen (ft)
2019-16	Not included in final design, location not at grade						
2019-17	Not included in final design, location not at grade						
2019-18	WE-259	844.25	7/24/2019	BKM-972	130.0	129.0	110.0
2019-19	WE-260	824.36	8/12/2019	BKM-975	130.0	130.0	110.0

Notes:

1. Survey data provided by HRK prior to drilling and installation. Elevations are for the original staked locations, and do not account for minor relocation at time of installation.
2. ECY Well Tags were provided by DBM upon completion of each well.

LFG Extraction Well Drilling and Installation

The borings for the LFG extraction wells were drilled using an IMT AF220 drill rig with a 10 foot long, 36-inch diameter bucket auger, 36-inch diameter open flight auger, and a 36-inch trap door bucket auger as conditions dictated. For each of the extraction wells, the borings were advanced to design depths, except where noted otherwise. The extraction wells were then constructed using 6 and 8-inch diameter Schedule 80 polyvinyl chloride (PVC) pipe and fittings or 6-inch diameter SDR 11 high-density polyethylene (HDPE) pipe and fittings. Backfill was completed with 2-inch minus round rock, hydrated bentonite chips, and clean soil as shown on the attached logs. All construction materials were provided by DBM and verified by SCS prior to use, with the exception of the clean soil backfill which was obtained from onsite sources,. Drilling and installation of each well was completed in one day, except location 2019-13 (well WE-259), which was drilled to depth, but constructed the following day. A steel plate and soil cover was provided for 2019-13 overnight, consistent with guidance from site personnel.

The wells were completed with 5 feet of pipe stickup above the ground surface for PVC wells and 5 or 8 feet of stickup for HDPE wells, to allow for grading, landfill cover/closure, and connection to the existing LFG collection system. Upon completion, each well was issued a Washington State Department of Ecology (ECY) Well Tag in accordance with state regulations.

The following variations to design were completed in conjunction with the well installations:

- 2019-01: The boring was completed to a depth of 50.5 feet-bgs. The boring was shortened 1.5 feet from the design depth. The shortening of the boring resulted in a clearance of 16.5 feet from the operations layer.
- 2019-05: The boring was completed to a depth of 76 feet-bgs. The boring was shortened 2 feet from the design depth. The shortening of the boring resulted in a clearance of 18 feet from the operations layer.
- 2019-08: The boring was completed to a depth of 77 feet-bgs. The boring was shortened 2 feet from the design depth. The shortening of the boring resulted in a clearance of 17.6 feet from the operations layer.
- 2019-13: The boring was completed to a depth of 117 feet-bgs. The boring was shortened 13 feet from the design depth due to wet and hard drilling conditions. The shortening of the boring resulted in a clearance of 64.6 feet from the operations layer. Due to a partial collapse of the boring during construction the well screen was shortened by 35 feet to 75

feet (interval 18 to 93 feet-bgs), as the slough within the boring could not be removed by the driller without risk of causing additional damage to the boring.

- 2019-19: The boring location was moved approximately 75 feet west-northwest by LRI to accommodate landfill and operations. The well stake was re-surveyed by HRK Engineering and Field Services (HRK) on August 6, 2019 with the location ID of 2019-XX. The relocated boring was completed to 130 feet-bgs as designed in the July 18, 2019 drawings, resulting in a clearance of 58.7 feet from the operations layer.

Other notes regarding the vertical well drilling include the following:

- 2019-09: The upper 40 feet of the boring largely consisted of wet and saturated soils, concrete debris, gravel and rocks. Therefore, a steel casing was provided and installed by DBM to a depth of approximately 36 feet-bgs to prevent collapse of the boring . The casing was removed upon completion of the well.
- 2019-10: On July 30, 2019 while drilling at a depth of approximately 115 feet-bgs, the drill rig encountered a breakdown that prevented removal of the bucket auger and Kelly bar from the boring. While the driller was attempting to retrieve the tooling, the boring collapsed, resulting in a partial loss of the tooling within the boring. The driller spent the next two days repairing the drill rig, replacing the tooling that was lost in the collapse, and backfilling the original boring as directed by LRI. SCS, LRI, and DBM met on August 6, 2019 to discuss the approach for the remaining wells and how to proceed at this location. A copy of the meeting summary is attached to this report. Due to similar drilling conditions found at locations 2019-09 and 2019-11, a decision was made to not install a well at this location as it would have required casing to a depth that would have been impractical with the equipment and materials available.

Following completion of the well installation work, each well was given a standard well designation consistent with LRI naming convention as shown in Table 1.

Closing

If you have any questions regarding the information presented in this letter or the attached boring logs, please do not hesitate to contact us.

Sincerely,

Samuel E. Adlington, PE
Senior Project Engineer
SCS Engineers
SEA/AED

Alexa Deep, EIT
Staff Engineer
SCS Engineers

cc: Keith Johnston, TPCDH
Jim Crandall, LRI
Olivier Moi, LRI
Kevin Lakey, SCS

Attachments:

2019 LFG Extraction Well Completion Logs
August 6, 2019 Meeting Summary RE: 2019-10
Updated LRI LF GCCS Site Plan

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-249

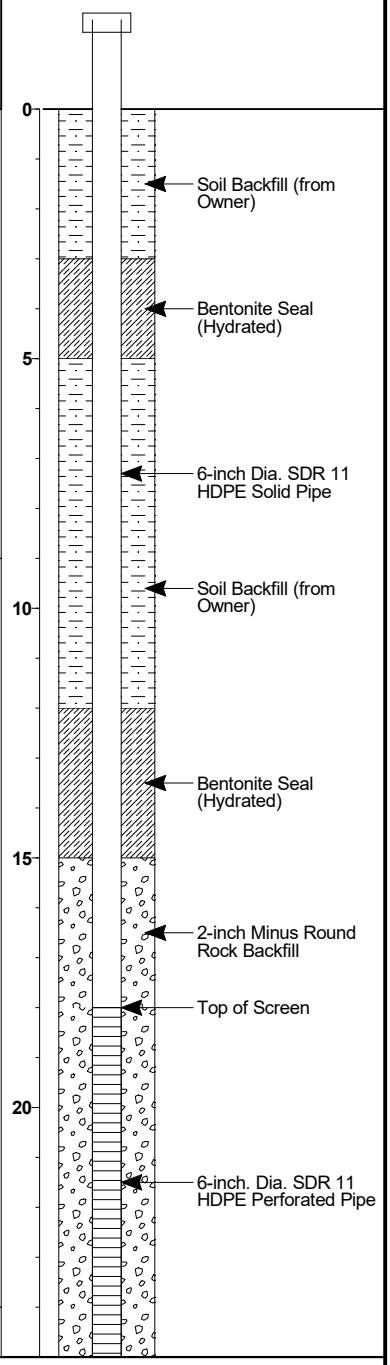
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-981. Drawing ID: 2019-14. 8 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Gray silty soil with gravel.
1	5					SM-GM		Gray silty soil with gravel.
2								
3	10					SM-GM		Transition to black refuse. Dry to moist.
4								
5	15					REFUSE		Black refuse. Dry to moist. 81 °F.
6	20					REFUSE		Black refuse with gray silty soil. 90 °F.
7	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **S. Graber**

Date Started: **8/2/19**
Date Ended: **8/2/19**
Boring Diameter: **36-inch**
Well Diameter: **6-inch**

Time Started: **10:15**
Time Ended: **11:30**
Elevation: **695.7 ft.**
Total Depth: **34.5 ft.**

STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

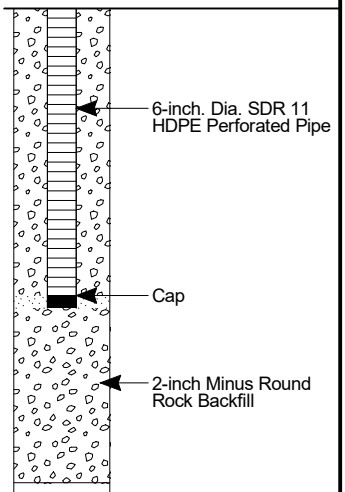
BORING NUMBER: WE-249

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
8	25							
9	30					REFUSE		Black refuse with some wood debris. Dry to moist. 93 °F.
						REFUSE		Black refuse. 96 °F.
10								
11	35					REFUSE		Black refuse. Moist. 91 °F. End of boring.
12	40							
13								
14	45							
15								
16	50							
	55							

Completion Detail



STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-250

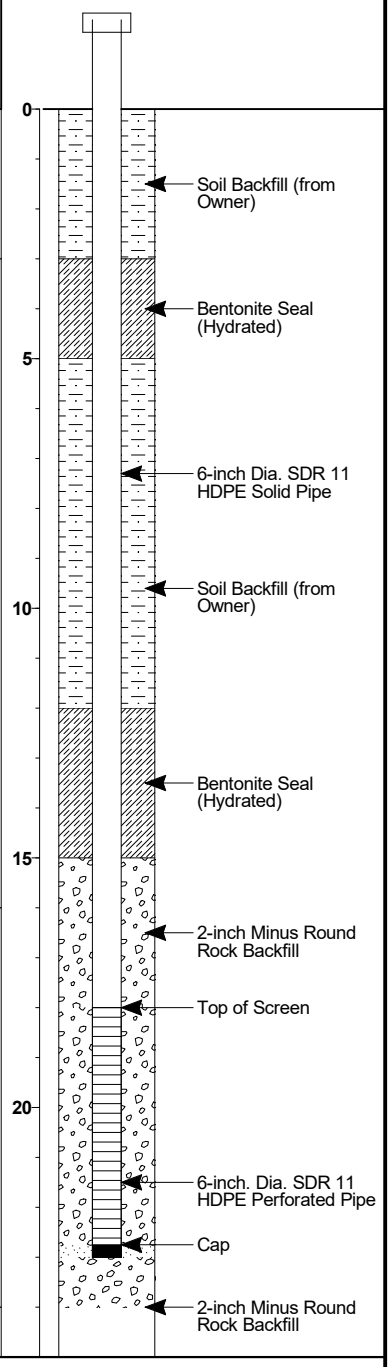
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-976. Drawing ID: 2019-15. 8 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
0	0					SM-GM	Black silty soil with refuse. Dry. 86 °F.
1						REFUSE	Transition to black refuse.
	5						
2							
	10					REFUSE	Black refuse. Moist. 86 °F.
3							
4							
	15					REFUSE	Brown refuse. Moist. 94 °F.
5							
6	20					REFUSE	Brown refuse. Moist. 104 °F.
7						REFUSE	Brown refuse. Moist. 106 °F.
	25					REFUSE	Brown refuse with some white ash. Moist. 96 °F. End of boring.

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **S. Graber**

Date Started: **8/2/19**
Date Ended: **8/2/19**
Boring Diameter: **36-inch**
Well Diameter: **6-inch**

Time Started: **13:30**
Time Ended: **14:30**
Elevation: **691.6 ft.**
Total Depth: **25.0 ft.**

STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-251

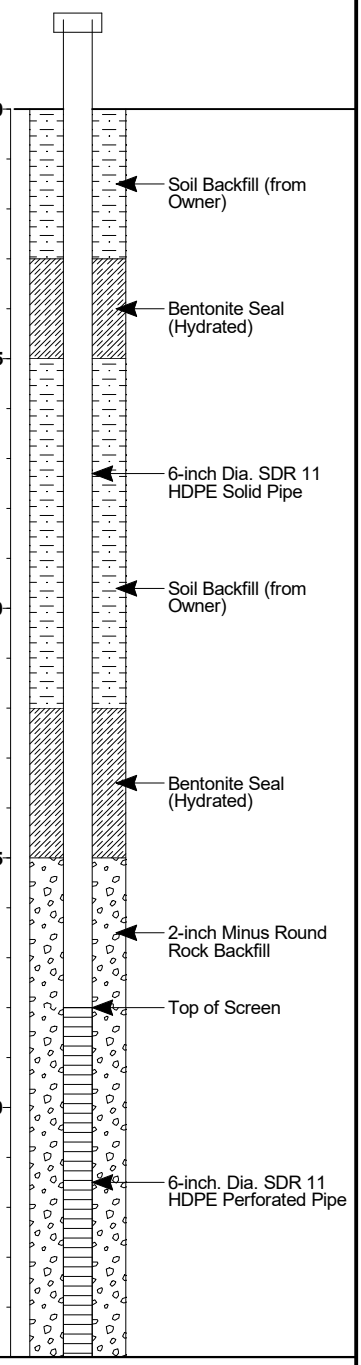
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-979. Drawing ID: 2019-01. 8 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Brown silty soil. Dry.
						REFUSE		Transition to brown refuse. Dry.
1	5							
2								
						REFUSE		Brown refuse with some brown sandy soil. Dry. 76 °F.
3	10							
4						REFUSE		Brown-black refuse. Moist. 83 °F.
	15							
5								
6	20							
						REFUSE		Brown-black refuse. Moist. 85 °F.
7								
	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **A. Deep**

Date Started: **8/5/19**
Date Ended: **8/5/19**
Boring Diameter: **36-inch**
Well Diameter: **6-inch**

Time Started: **07:55**
Time Ended: **10:45**
Elevation: **715.3 ft.**
Total Depth: **50.5 ft.**

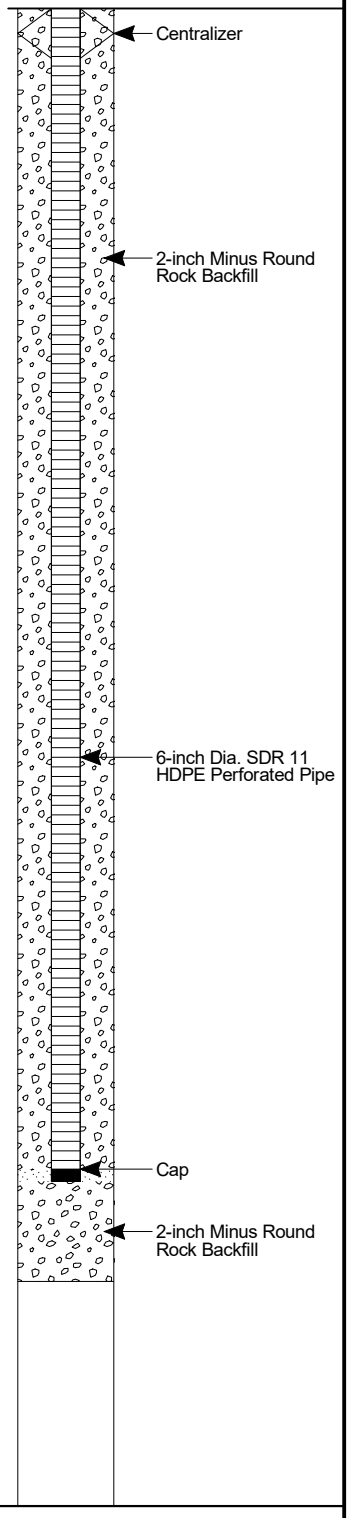
STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
8	25							
9	30					REFUSE		Brown-black refuse. Moist. 102 °F.
10								
11	35							
12	40					REFUSE		Brown-black refuse. Moist. 92 °F.
13						REFUSE		Brown-black refuse. Moist. 90 °F.
14	45							
15						REFUSE		Brown-black refuse. Moist. 102 °F.
16	50					REFUSE		Brown-black refuse. Moist. 99 °F. End of boring.
	55							

Completion Detail



SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-252

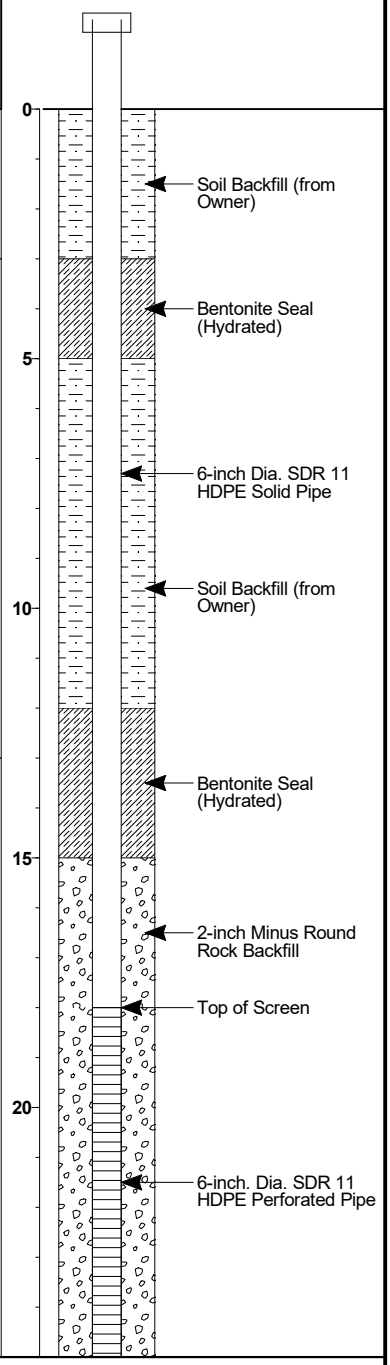
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-978. Drawing ID: 2019-02. 8 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Brown-black silty soil. Dry.
1	5							
2						REFUSE		Brown-black refuse with some brown sandy soil. Dry. 86 °F.
3	10							
						REFUSE		Brown-black refuse with some brown sandy soil. Dry. 86 °F.
4								
5	15							
6	20					REFUSE		Brown-black refuse. Moist. 102 °F.
7								
	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **A. Deep**

Date Started: **8/5/19**
Date Ended: **8/5/19**
Boring Diameter: **36-inch**
Well Diameter: **6-inch**

Time Started: **11:10**
Time Ended: **14:30**
Elevation: **724.1 ft.**
Total Depth: **60.5 ft.**

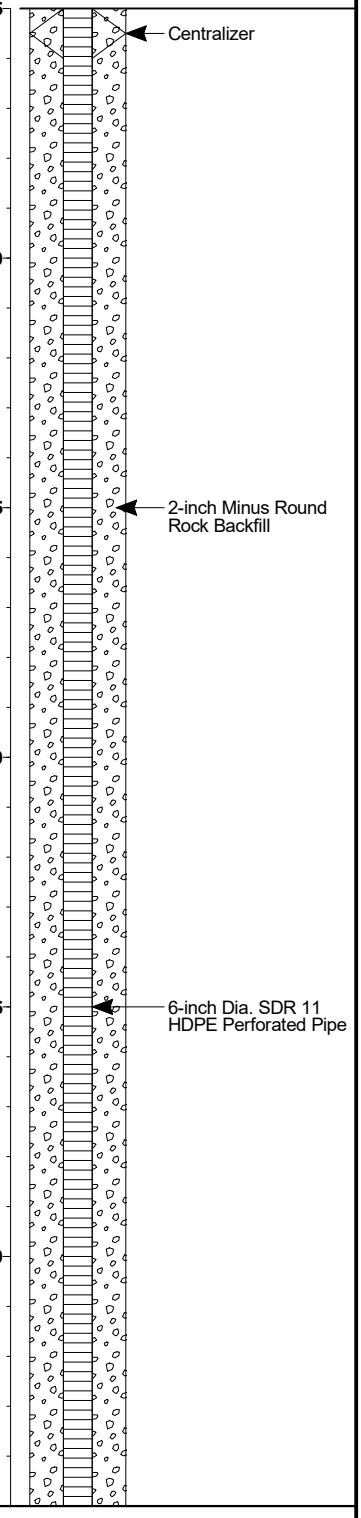
STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
8	25					REFUSE		Brown-black refuse. Moist. 116 °F.
9	30					REFUSE		Brown-black refuse. Moist. 110 °F.
10								
11	35							
12	40					REFUSE		Brown-black refuse. Moist.
13								
14	45					REFUSE		Brown-black refuse. Moist. 105 °F.
15								
16	50					REFUSE		Brown-black refuse. Moist. 111 °F.
	55							

Completion Detail



STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

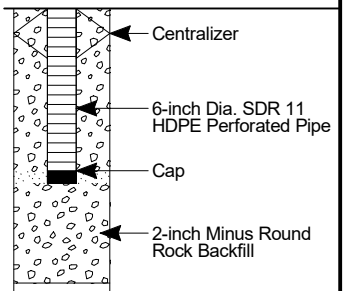
BORING NUMBER: WE-252

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
17	55					REFUSE		Brown-black refuse. Moist. 114 °F.
18	60					REFUSE		Brown-black refuse. Moist. 112 °F. End of boring.
19	65							
20								
21	70							
22								
23	75							
24								
25	80							
	85							

Completion Detail



SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-253

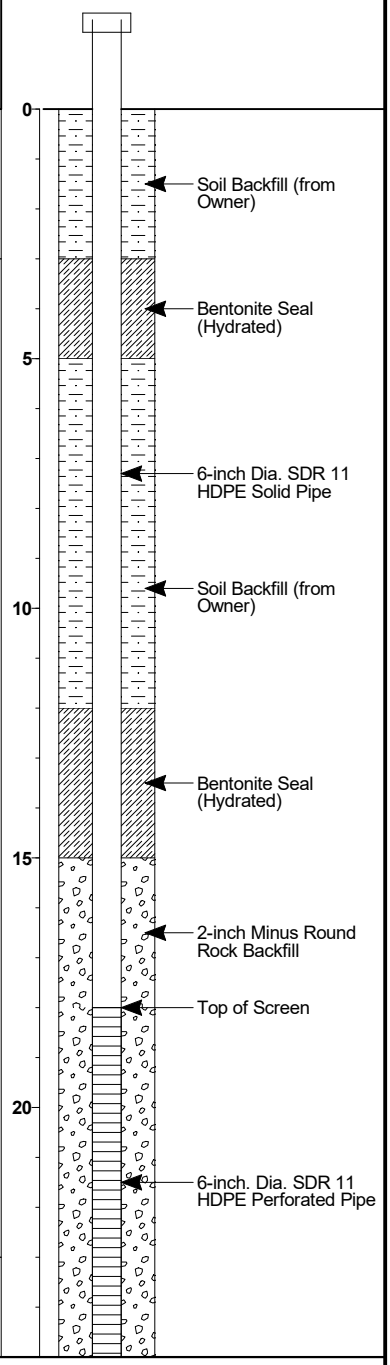
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-987. Drawing ID: 2019-03. 8 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Brown silty soil. Dry. 72 °F.
1						REFUSE		Transition to brown refuse. 72 °F.
	5							
2								
3	10					REFUSE		Brown-black refuse. Dry. 78 °F.
4								
	15							
5						REFUSE		Brown-black refuse. Dry. 78 °F.
6	20							
7						REFUSE		Brown-black refuse with some wood debris. Dry. 94 °F.
	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **A. Deep**

Date Started: **8/6/19**
Date Ended: **8/6/19**
Boring Diameter: **36-inch**
Well Diameter: **6-inch**

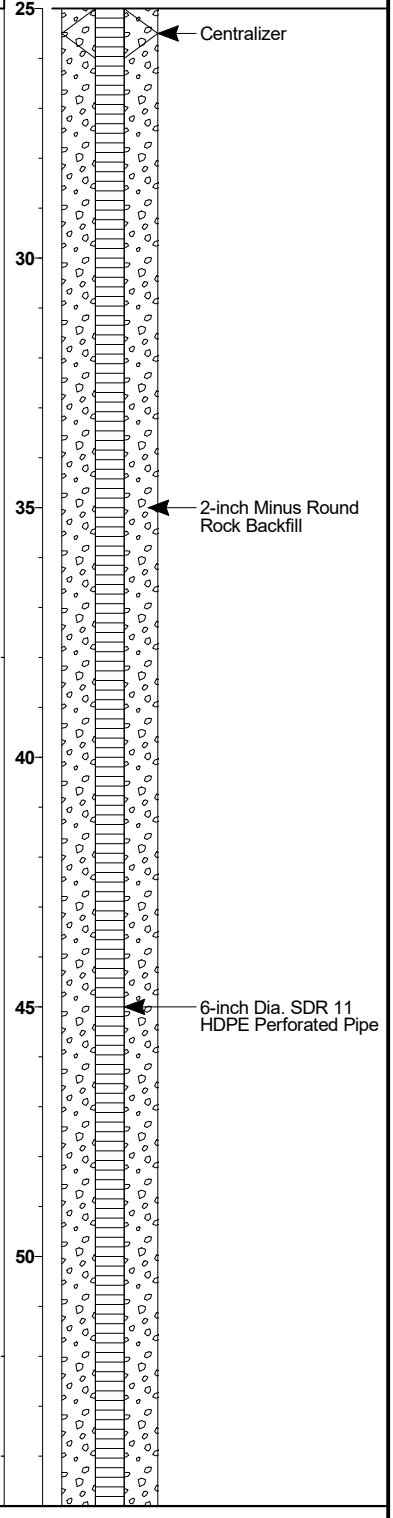
Time Started: **07:30**
Time Ended: **10:30**
Elevation: **731.1 ft.**
Total Depth: **69.0 ft.**

STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
8	25							
9	30							
10								
11	35					REFUSE		Brown-black refuse with some wood debris. Moist. 99 °F.
12	40							
13						REFUSE		Brown refuse. Moist. 103 °F.
14	45							
15								
16	50					REFUSE		Brown-black refuse with some wood debris. Moist. 94 °F.
	55							



SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

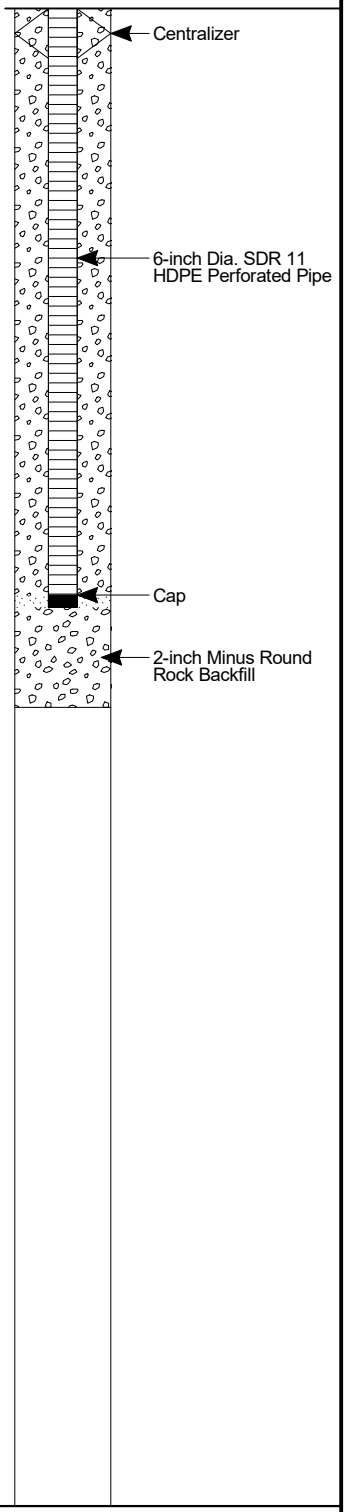
BORING NUMBER: WE-253

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
17	55					REFUSE		Brown-black refuse. Moist. 100 °F.
18	60					REFUSE		Brown-black refuse. Moist. 101 °F.
19								
20	65					REFUSE		Brown-black refuse. Moist. 104 °F.
21						REFUSE		Brown-black refuse. Moist. End of boring.
22	70							
23	75							
24								
25	80							
	85							

Completion Detail



STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

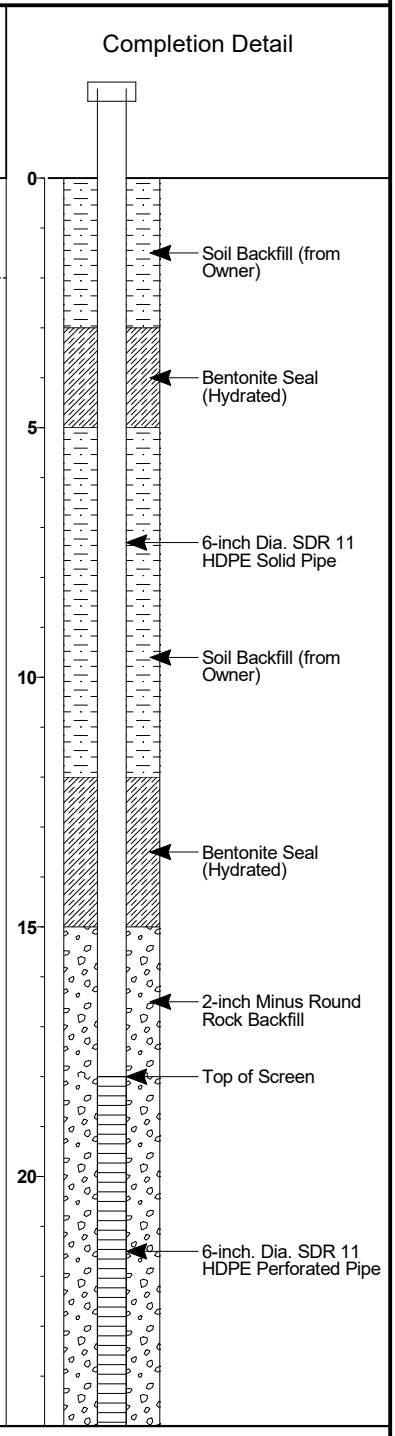
BORING NUMBER: WE-254

LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-986. Drawing ID: 2019-04. 8 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Brown silty soil. Dry. 83 °F.
						REFUSE		Transition to brown refuse. 83 °F.
1	5							
2								
3	10							
4						REFUSE		Brown-black refuse. Moist. 90 °F.
5	15							
6	20							
7						REFUSE		Brown-black refuse. Moist. 96 °F.
	25							



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **A. Deep**

Date Started: **8/6/19**
Date Ended: **8/6/19**
Boring Diameter: **36-inch**
Well Diameter: **6-inch**

Time Started: **11:00**
Time Ended: **13:30**
Elevation: **733.5 ft.**
Total Depth: **72.0 ft.**

STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-254

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth		Sample Information							Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description	
8	25								25
9	30					REFUSE		Brown-black refuse with some wood debris. Moist. 104 °F.	30
10									
11	35					REFUSE		Brown refuse. Moist. 93 °F.	35
12	40								40
13									
14	45					REFUSE		Brown refuse with some wood debris. Moist. 102 °F.	45
15									
16	50								50
	55					REFUSE		Brown refuse. Moist. 111 °F.	

Centralizer

2-inch Minus Round Rock Backfill

6-inch Dia. SDR 11 HDPE Perforated Pipe

STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

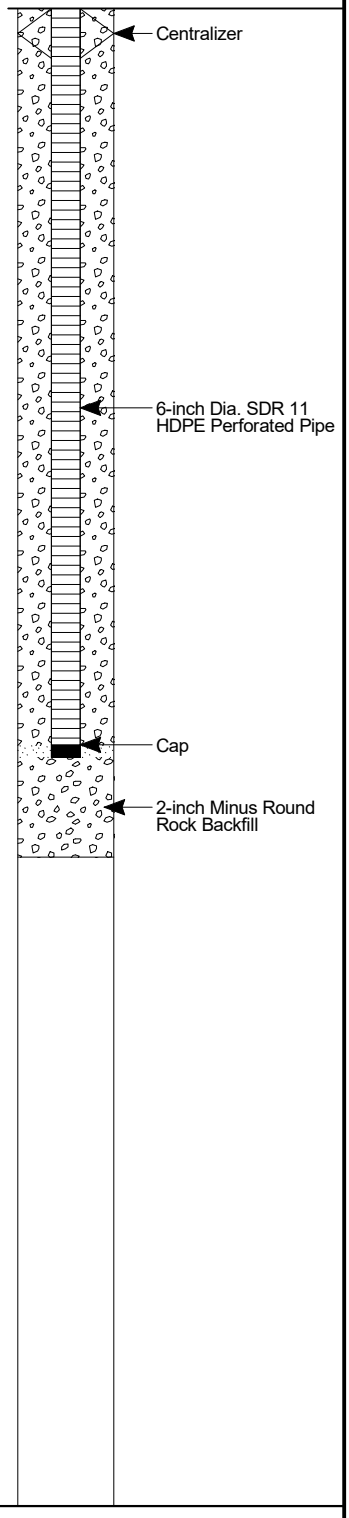
BORING NUMBER: WE-254

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
17	55					REFUSE		Brown-black refuse. Moist to wet (moisture increasing with depth). 105 °F.
18	60							
19						REFUSE		Brown-black refuse. Wet. 119 °F.
20	65							
21						REFUSE		Brown-black refuse. Wet. 104 °F.
22	70					REFUSE		Brown-black refuse. Wet. 103 °F. End of boring.
23	75							
24								
25	80							
	85							

Completion Detail



STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-255

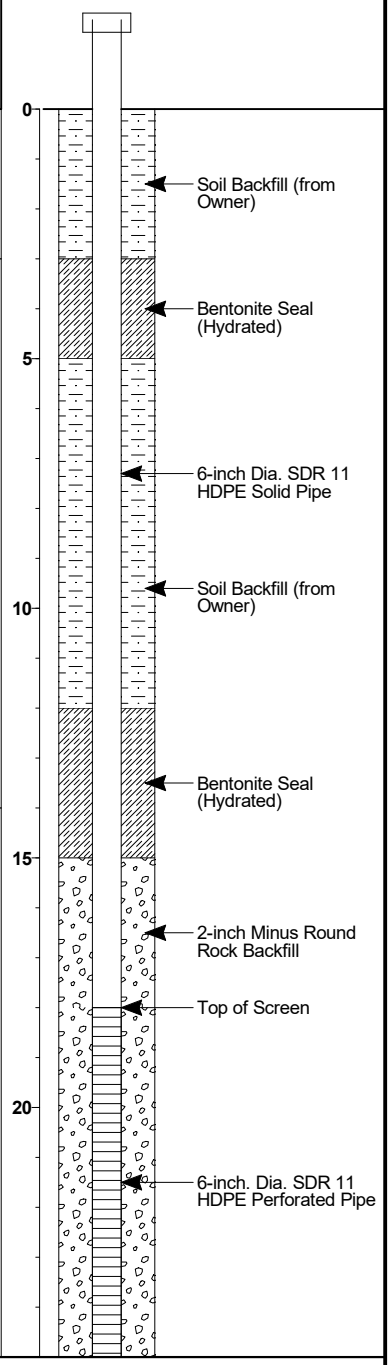
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-985. Drawing ID: 2019-05. 8 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Brown-black soil. Dry.
1						REFUSE		Transition to brown-black refuse.
	5							
2								
3	10					REFUSE		Brown-black refuse with some wood debris. Moist. 82 °F.
4								
	15							
5						REFUSE		Brown-black refuse. Moist. 98 °F.
6	20							
						REFUSE		Brown-black refuse. Moist. 86 °F.
7								
	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **A. Deep**

Date Started: **8/7/19**
Date Ended: **8/6/19**
Boring Diameter: **36-inch**
Well Diameter: **6-inch**

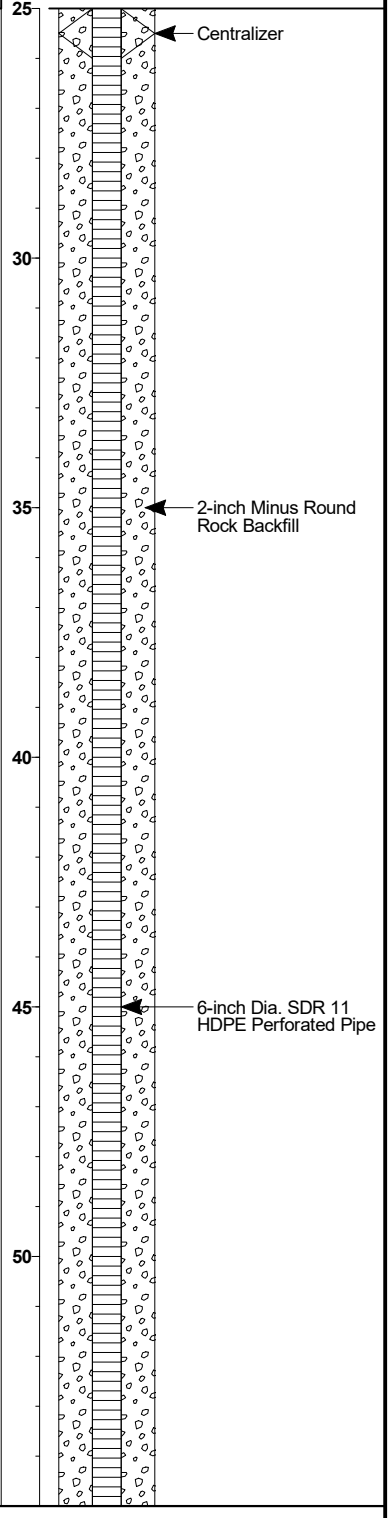
Time Started: **08:00**
Time Ended: **11:15**
Elevation: **740.0 ft.**
Total Depth: **76.0 ft.**

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
8	25							
9	30							
10						REFUSE		Brown-black refuse. Moist. 108 °F.
	35							
11								
12	40							
13						REFUSE		Brown-black refuse. Moist. 112 °F.
14	45							
15								
	50							
16						REFUSE		Brown-black refuse. Moist. 100 °F.
	55							

Completion Detail



SCS ENGINEERS

BORING LOG

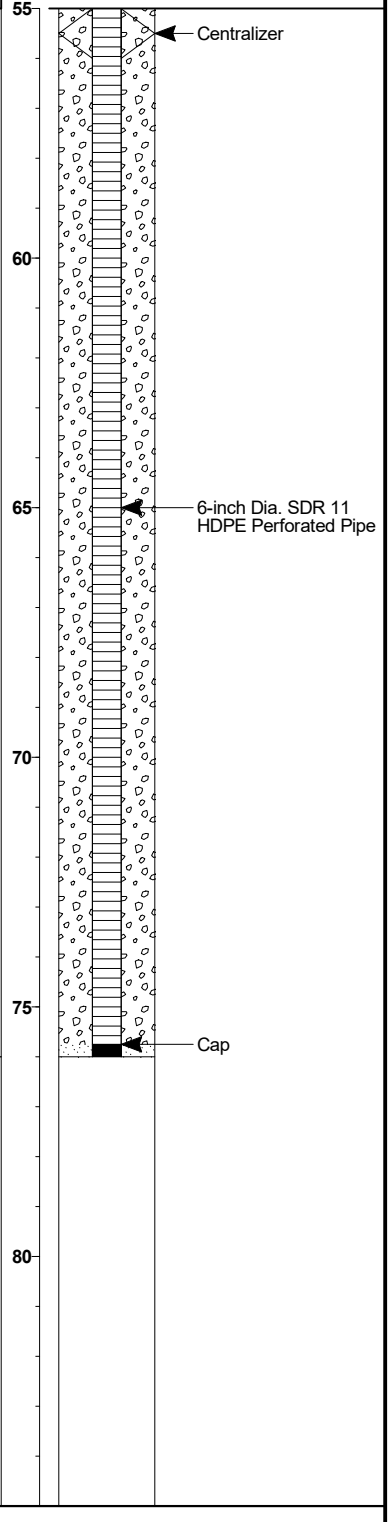
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-255

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
17	55							
18	60							
19								
20	65					REFUSE		Brown-black refuse. Moist. 102 °F.
21	70							
22								
23	75					REFUSE		Brown-black refuse. Moist. 104 °F. End of boring.
24								
25	80							
	85							



Completion Detail

STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-256

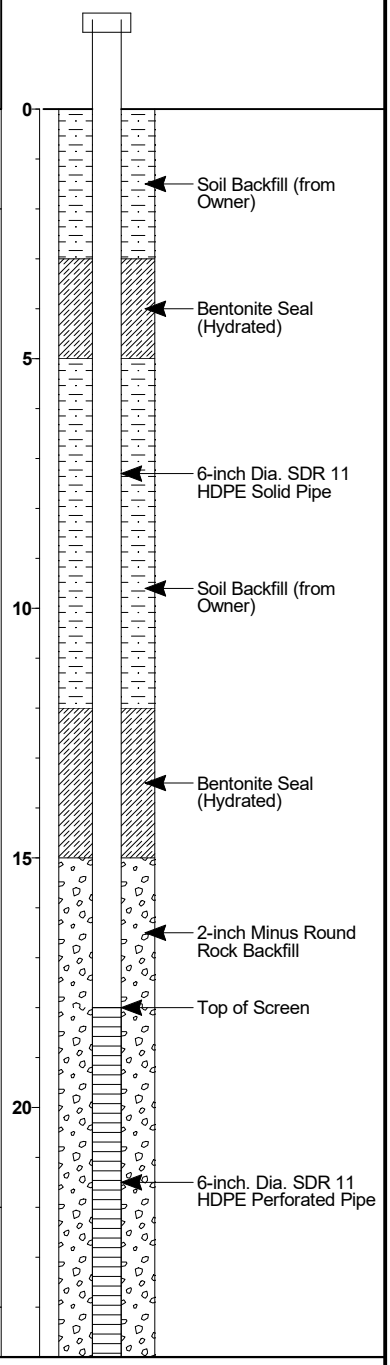
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-984. Drawing ID: 2019-06. 8 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Brown silty soil. Dry to moist.
						REFUSE		Transition to brown-black refuse. Dry to moist.
1	5							
2								
3	10							
4						REFUSE		Brown-black refuse. Moist. 94 °F.
5	15							
6	20							
7						REFUSE		Brown-black refuse with some wood debris. Moist. 105 °F.
	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **A. Deep**

Date Started: **8/7/19**
Date Ended: **8/6/19**
Boring Diameter: **36-inch**
Well Diameter: **6-inch**

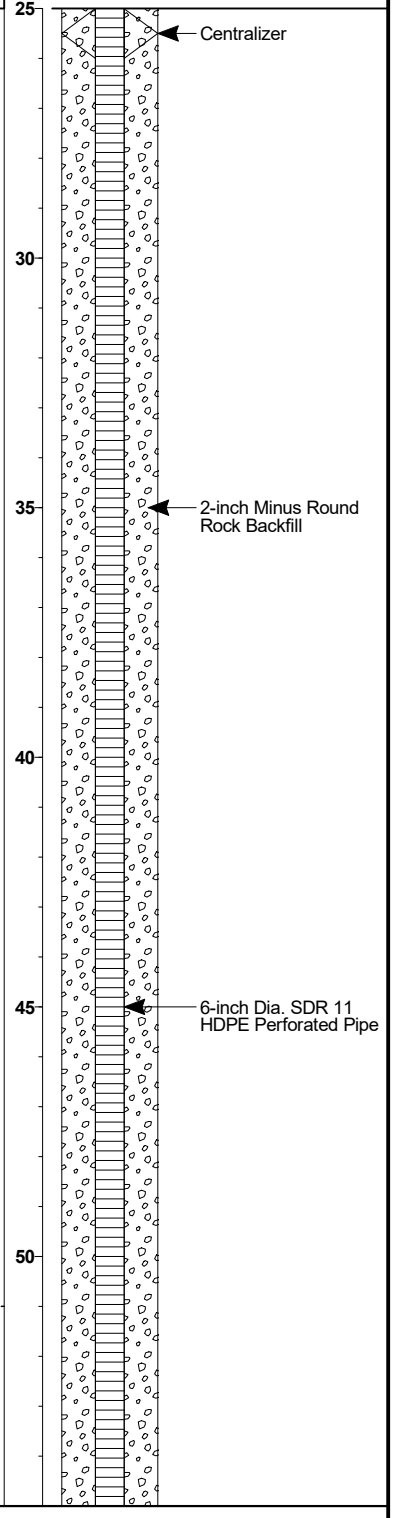
Time Started: **11:45**
Time Ended: **16:00**
Elevation: **744.1 ft.**
Total Depth: **83.0 ft.**

STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
8	25					REFUSE		Brown-black refuse. Moist. 112 °F.
9	30							
10								
	35					REFUSE		Brown-black refuse. Moist. 113 °F.
11								
12	40							
13								
14	45							
15								
	50					REFUSE		Brown woody debris with some refuse. Dry. 108 °F.
16								
	55							



SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

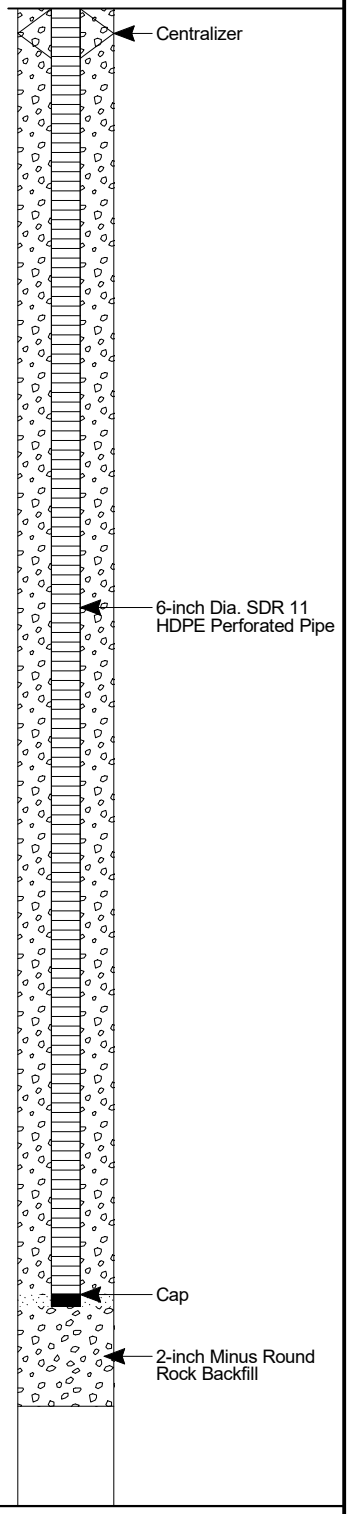
BORING NUMBER: WE-256

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
17	55							
18	60					REFUSE		Brown-black refuse. Moist to wet (moisture increasing with depth). 122 °F.
19	65					REFUSE		Brown-black refuse. Wet. 114 °F.
20	70					REFUSE		Black refuse. Wet to saturated. 124 °F.
21	75							
22	80					REFUSE		Black refuse. Wet. 127 °F.
23	85					REFUSE		Black refuse. Wet to saturated. 119 °F. End of boring.
24								
25								

Completion Detail



STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-257

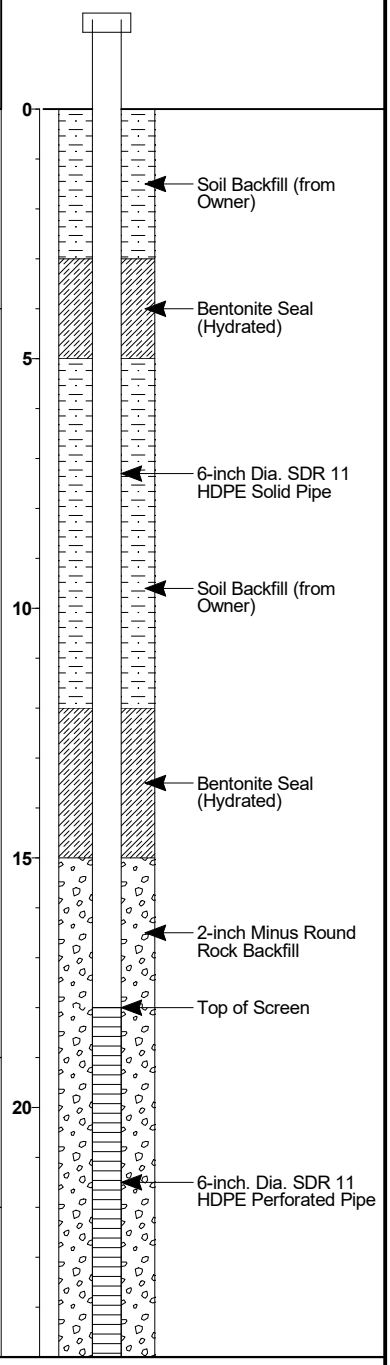
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-983. Drawing ID: 2019-07. 5 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Brown silty soil. Moist.
						REFUSE		Transition to brown refuse. Moist.
1	5							
2								
3	10							
4						REFUSE		Brown-black refuse. Moist. 88 °F.
5	15							
6	20					REFUSE		Brown-black refuse with some wood debris. Moist. 86 °F.
7								
	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **A. Deep**

Date Started: **8/8/19**
Date Ended: **8/8/19**
Boring Diameter: **36-inch**
Well Diameter: **6-inch**

Time Started: **07:00**
Time Ended: **10:15**
Elevation: **751.6 ft.**
Total Depth: **87.0 ft.**

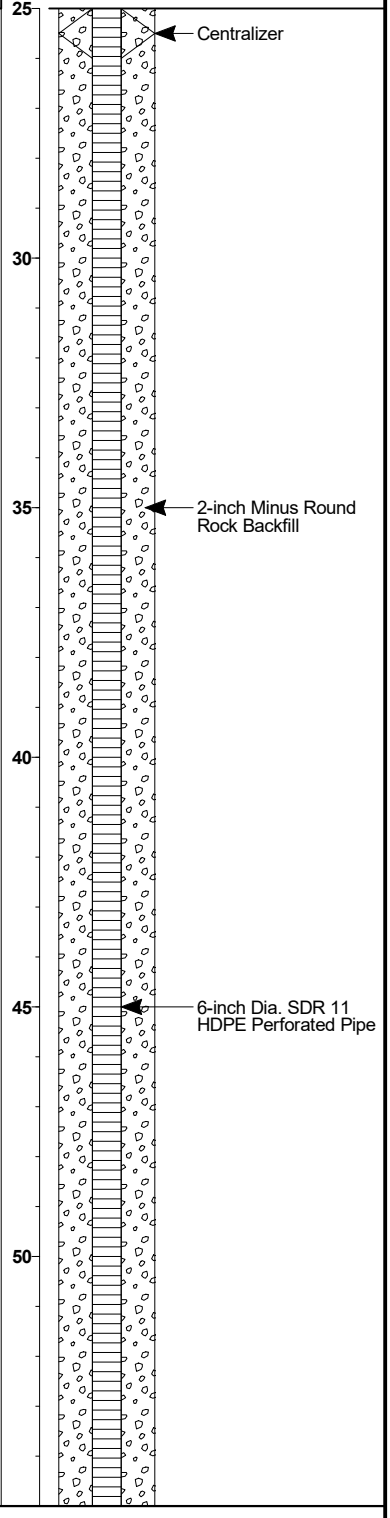
STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
8	25							
9	30					REFUSE		Brown-black refuse. Moist. 85 °F.
10								
11	35							
12	40					REFUSE		Brown-black refuse. Moist. 86 °F.
13								
14	45							
15								
16	50							
	55							

Completion Detail

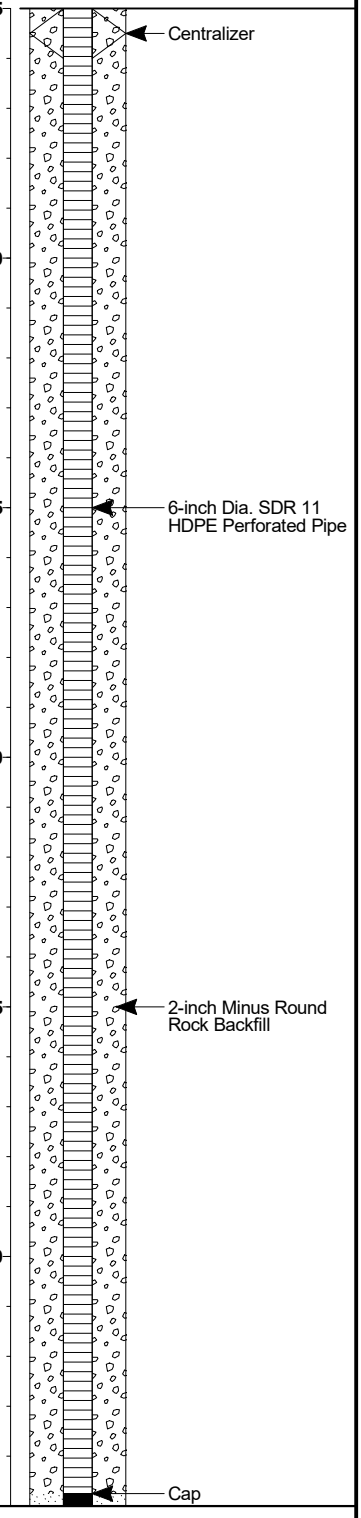


LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
17	55							
18	60					REFUSE		Brown-black refuse. Moist, increasing with depth. 96 °F.
19								
20	65							
21								
22	70					REFUSE		Brown-black refuse. Moist to wet. 90 °F.
23	75					REFUSE		Brown-black refuse. Moist. 103 °F.
24								
25	80							
	85							

Completion Detail



SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-257

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description	Completion Detail
26	85								85
									2-inch Minus Round Rock Backfill
						REFUSE		Brown-black refuse with some soil. Moist. 83 °F.	
27								End of boring.	
	90								90
28									
29	95								95
30									
	100								100
31									
32	105								105
33									
	110								110
34									
35	115								

STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-258

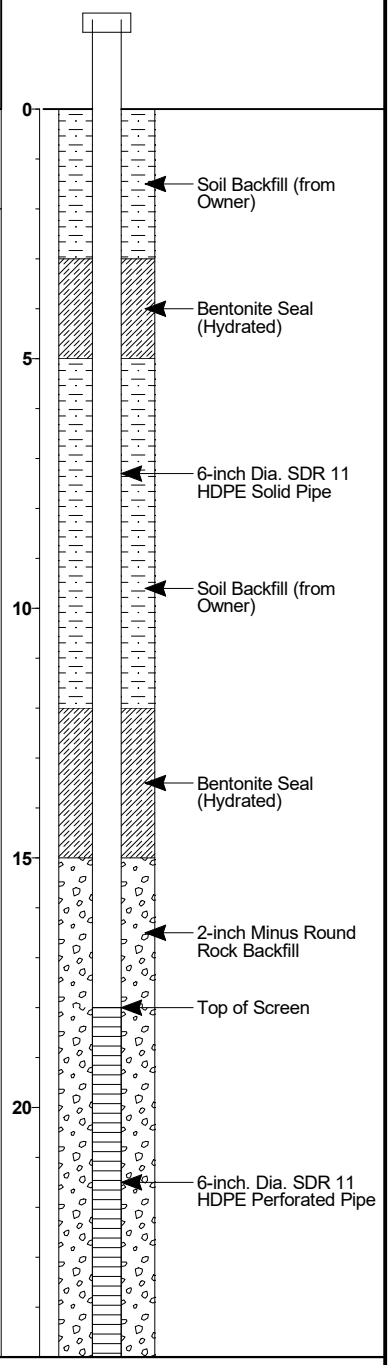
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-982. Drawing ID: 2019-08. 5 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Brown silty soil. Dry.
						REFUSE		Transition to brown refuse.
1	5							
2								
3	10							
4						REFUSE		Brown-black refuse. Moist. 70 °F.
5	15							
6	20					REFUSE		Brown-black refuse. Moist. 76 °F.
7								
	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **A. Deep**

Date Started: **8/8/19**
Date Ended: **8/8/19**
Boring Diameter: **36-inch**
Well Diameter: **6-inch**

Time Started: **10:45**
Time Ended: **14:00**
Elevation: **755.8 ft.**
Total Depth: **77.0 ft.**

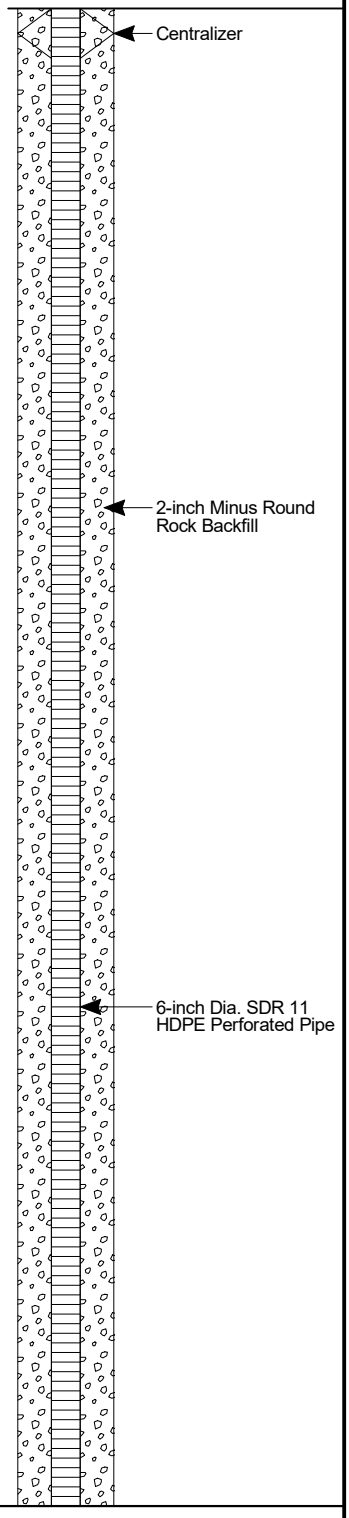
STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
8	25							
9	30							
10						REFUSE		Brown refuse. Dry. 80 °F.
	35							
11						REFUSE		Brown refuse with brown-gray soil. Dry. 86 °F.
12	40							
13								
14	45							
						REFUSE		Brown-black refuse. Dry. 95 °F.
15								
16	50							
	55							

Completion Detail



SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

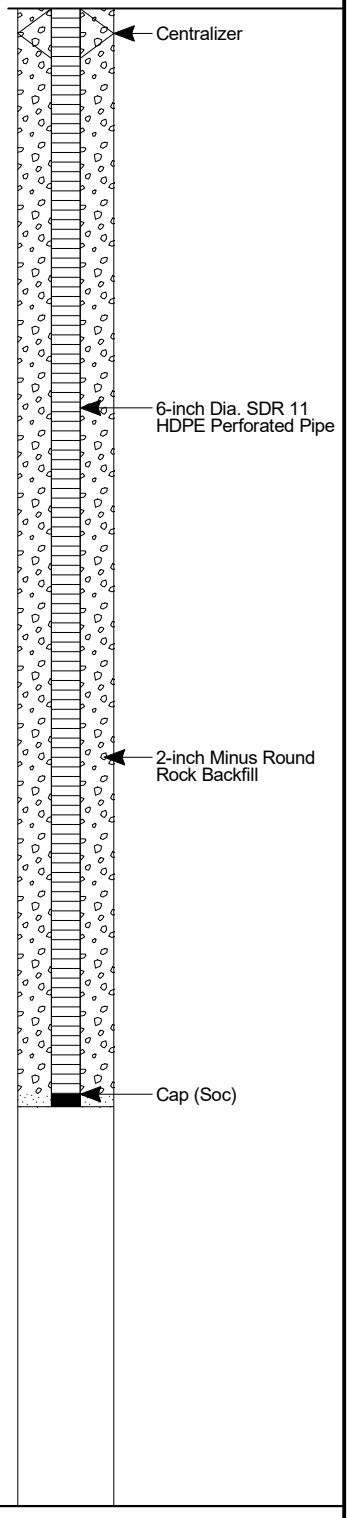
BORING NUMBER: WE-258

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
17	55							
18	60							
19						REFUSE		Brown-black refuse. Moist. 101 °F.
20	65							
21								
22	70					REFUSE		Brown-black refuse. Moist. 93 °F.
23	75					REFUSE		Brown-black refuse. Moist.
						CL		Gray-brown clayey soil. Moist to wet.
24								End of boring.
25	80							
	85							

Completion Detail



STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-259

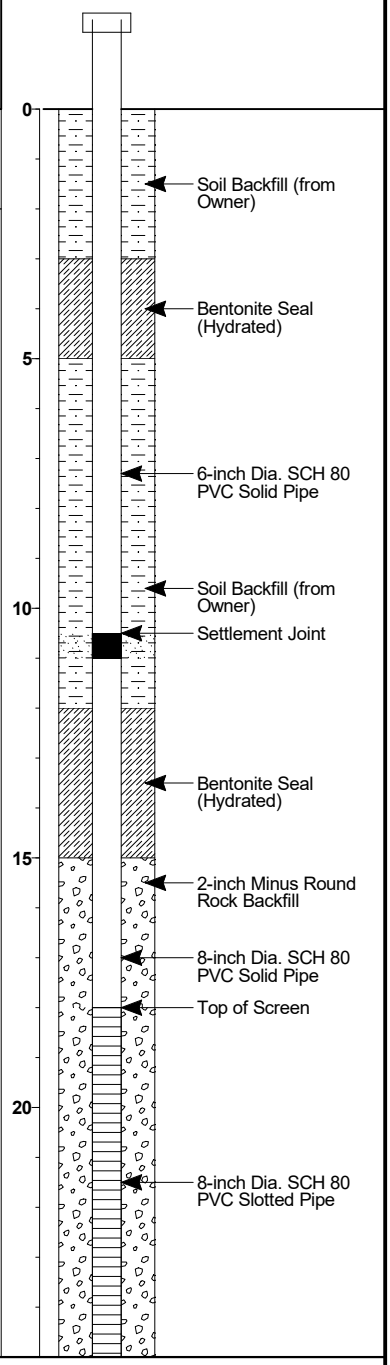
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-972. Drawing ID: 2019-18. 5 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Brown sility soil.
						REFUSE		Brown refuse. Dry. 75 °F.
1	5							
2								
3	10							
						REFUSE		Dark brown refuse. Dry. 96 °F.
4								
5	15							
6	20							
7	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **T. Berndahl**

Date Started: **7/24/19**
Date Ended: **7/24/19**
Boring Diameter: **36-inch**
Well Diameter: **8-inch**

Time Started: **10:24**
Time Ended: **16:30**
Elevation: **844.3 ft.**
Total Depth: **129.0 ft.**

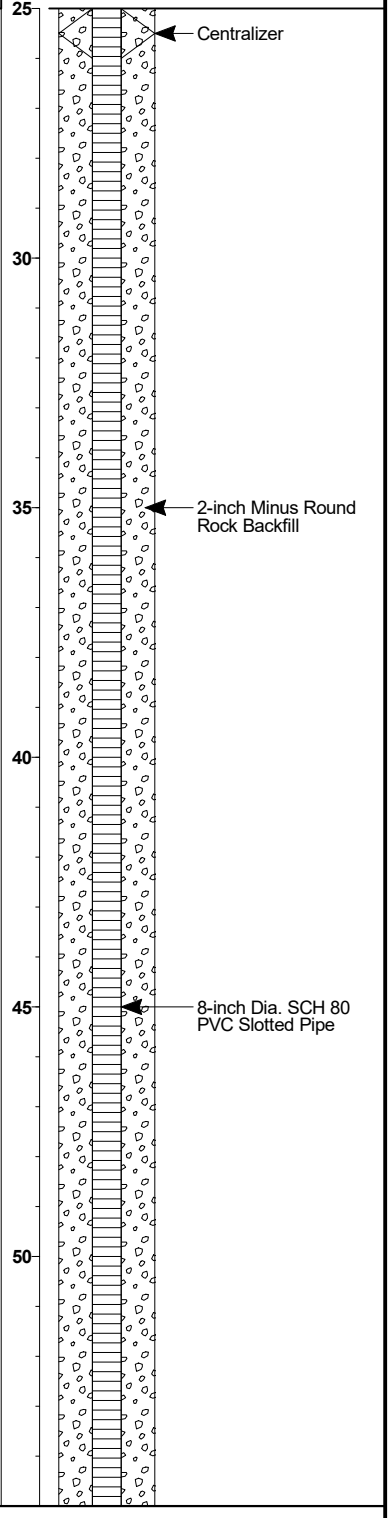
STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
8	25					REFUSE		Dark brown refuse. Dry. 86 °F.
9	30							
10						REFUSE		Brown-black refuse. Moist. 96 °F.
11	35							
12	40					REFUSE		Brown-black refuse. Moist. 89 °F.
13								
14	45							
15								
16	50							
	55							

Completion Detail

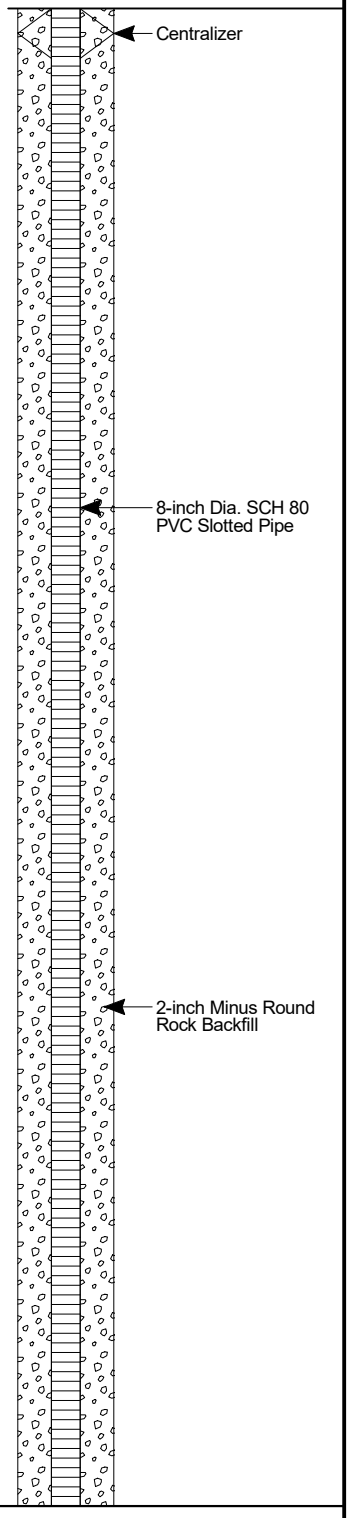


LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
17	55					REFUSE		Brown-black refuse. Moist. 114 °F.
18	60							
19								
						REFUSE		Black-brown refuse. Moist. 103 °F.
20	65							
21								
	70							
22								
						REFUSE		Black refuse. Wet. 114 °F.
	75							
23								
24								
	80							
25								
	85							

Completion Detail

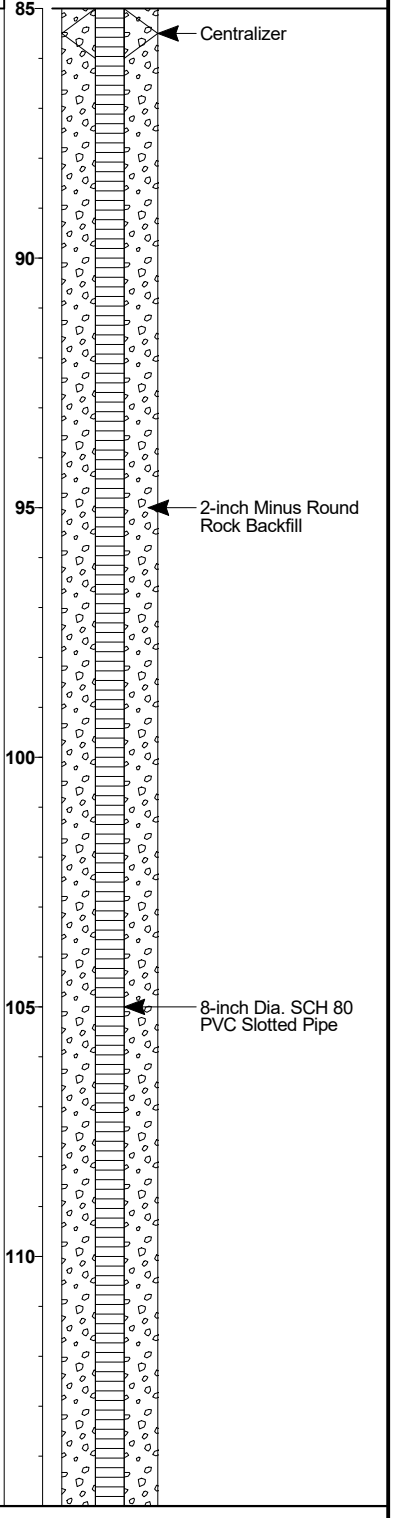


LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
26	85					REFUSE		Black, highly decomposed refuse. Wet to saturated. 108 °F.
27								
	90					REFUSE		Black, highly decomposed refuse. Wet to saturated.
28								
29	95							
30						REFUSE		Black, highly decomposed refuse (decomposition increasing with depth). Wet to saturated. 111 °F.
	100							
31								
32	105					REFUSE		Black, highly decomposed refuse. Wet. 113 °F.
33								
	110							
34								
35	115					REFUSE		Black, highly decomposed refuse. Saturated. 109 °F.

Completion Detail



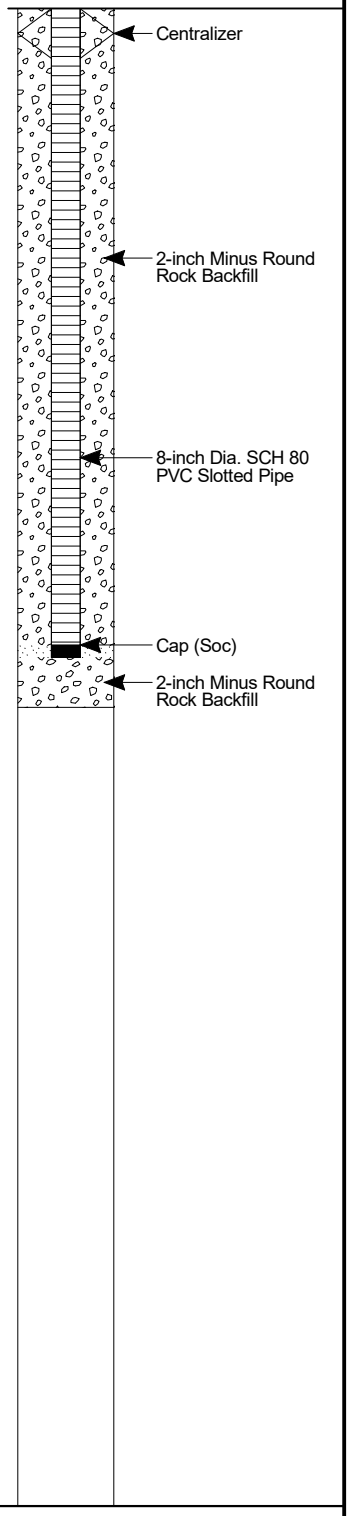
STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
	115							
	36							
	120					REFUSE		Black, highly decomposed refuse. Saturated.
	37							
	38					REFUSE		Black, highly decomposed refuse. Saturated. 109 °F.
	125							
	39					REFUSE		Black, highly decomposed refuse. Saturated. 110 °F.
	130					REFUSE		Black, highly decomposed refuse. Saturated. End of boring.
	40							
	41							
	135							
	42							
	140							
	43							
	44							
	145							

Completion Detail



SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-260

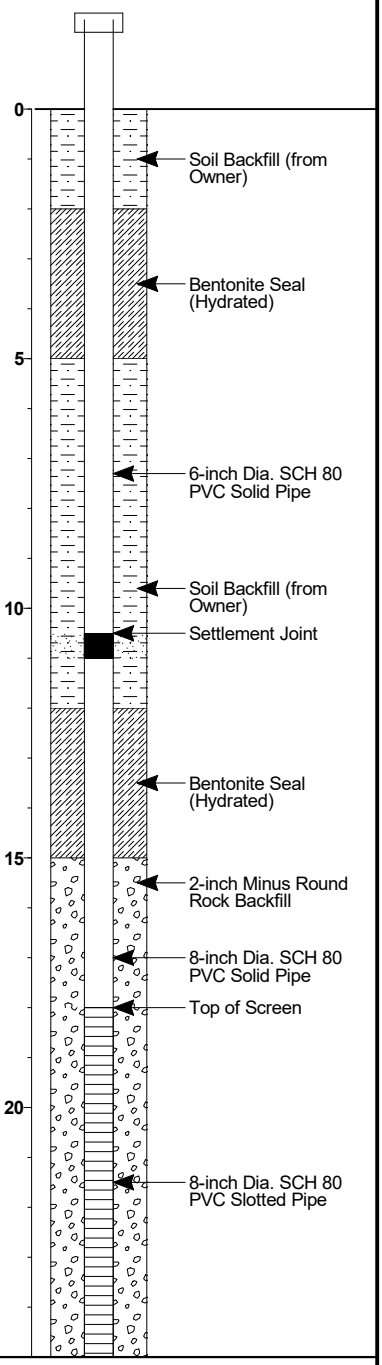
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-975. Drawing ID: 2019-19 (Relocated as 2019-XX by LRI).
4.5 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Brown silty soil with gravel. Dry.
1						REFUSE		Brown refuse with some gravel and silty soil. Dry. 69 °F.
	5							
2								
3	10							
4								
	15							
5								
6	20					REFUSE		Brown refuse with some silty soil. Dry. 75 °F.
7								
	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **A. Deep**

Date Started: **8/12/19**
Date Ended: **8/12/19**
Boring Diameter: **36-inch**
Well Diameter: **8-inch**

Time Started: **08:00**
Time Ended: **14:00**
Elevation: **841.8 ft.**
Total Depth: **130.0 ft.**

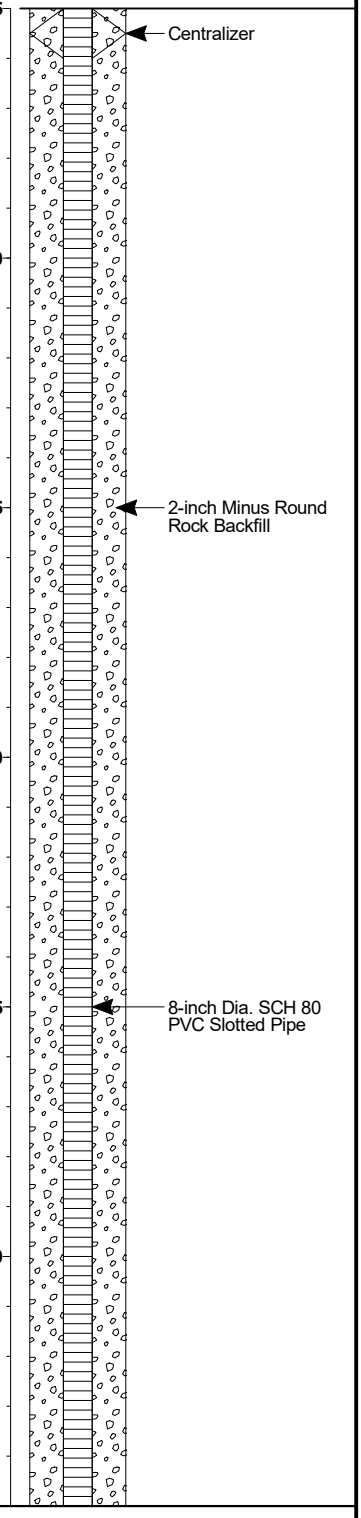
STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
8	25							
9	30					REFUSE		Brown-black refuse. Dry to moist. 82 °F.
10								
11	35							
12	40							
13						REFUSE		Brown refuse with some white ash. Dry. 96 °F.
14	45							
15								
16	50					REFUSE		Brown-black refuse with some wood debris. Dry to moist. 86 °F.
	55							

Completion Detail

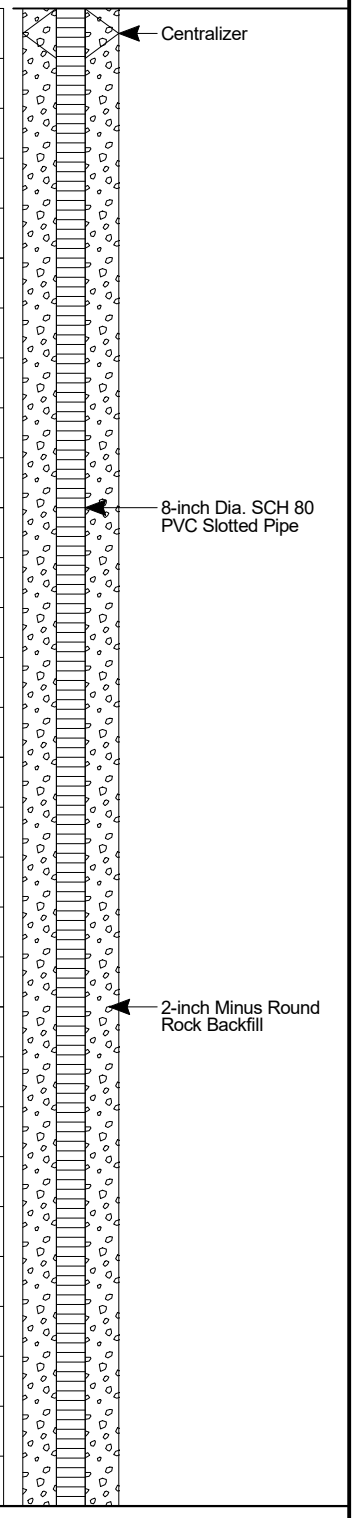


LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
17	55							
18	60							
19								
20	65							
						REFUSE		Brown-black refuse with some wood debris. Moist. 99 °F.
21								
	70							
22								
23	75							
24								
	80							
25								
						REFUSE		Brown-black refuse. Moist. 109 °F.
	85							

Completion Detail



LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth		Sample Information							Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description	
26	85								85 Centralizer
27	90								90
28									
29	95								95 2-inch Minus Round Rock Backfill
						REFUSE		Brown-black refruse. Moist. 101 °F.	
30									
	100								100
31									
32	105								105 8-inch Dia. SCH 80 PVC Slotted Pipe
						REFUSE		Brown-black refuse. Moist. 109 °F.	
33									
	110								110
34						REFUSE		Brown-black refuse. Moist. 113 °F.	
35	115								

STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

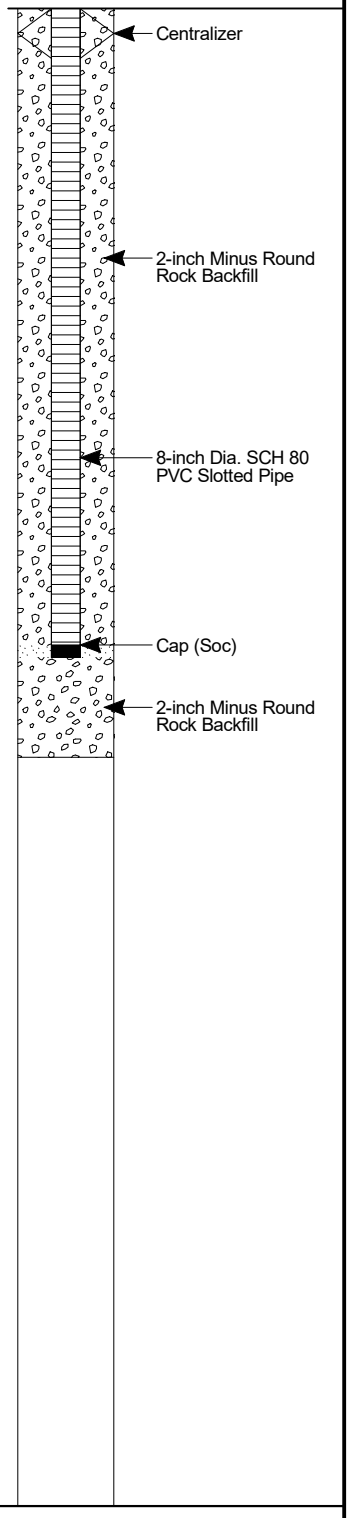
BORING NUMBER: WE-260

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
	115					REFUSE		Brown-black refuse. Moist to wet (moisture increasing with depth). 88 °F.
	120							
36								
	125					REFUSE		Brown-black refuse. Moist. 115 °F.
37								
38								
	130					REFUSE		Brown-black refuse. Wet. 112 °F. End of boring.
39								
40								
41	135							
42								
	140							
43								
44								
	145							

Completion Detail



STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-261

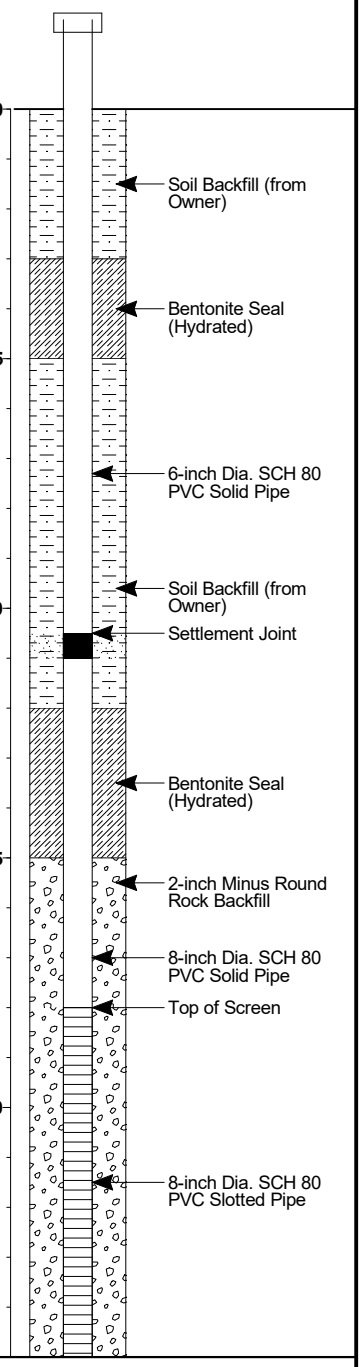
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-973. Drawing ID: 2019-13. 4.5 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Dark brown silty soil.
1	5							
2								
3	10							
4								
5	15							
6	20					SM-GM		Brown-black soil. Wet.
						REFUSE		Transition to black refuse with soil (soil decreasing with depth). Wet. 70 °F.
7								
	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **T. Berndahl**

Date Started: **7/25/19**
Date Ended: **7/26/19**
Boring Diameter: **36-inch**
Well Diameter: **8-inch**

Time Started: **08:41**
Time Ended: **14:45**
Elevation: **830.7 ft.**
Total Depth: **117.0 ft.**

STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

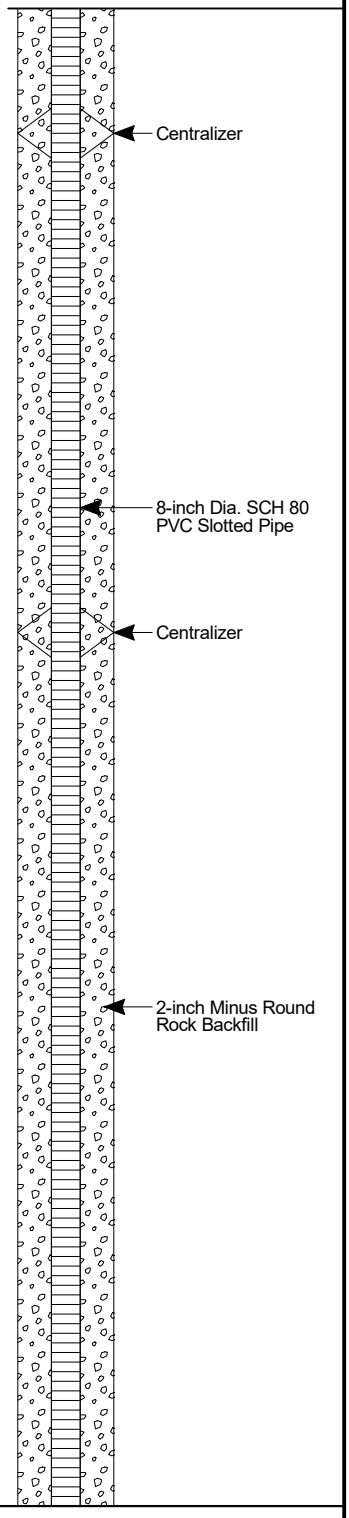
Depth		Sample Information						Description	Completion Detail
meters	feet	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log		
	25					REFUSE		Black refuse with some soil. Saturated. 90 °F.	
8									Centralizer
9	30					REFUSE		Black refuse and soil. Saturated. 88 °F.	
10									
	35					SM-GM		Black refuse and soil. Saturated. 89 °F.	2-inch Minus Round Rock Backfill
11						SM-GM		Black refuse and soil. Wet, decreasing moisture with depth. 86 °F.	
12	40					SM-GM		Black silty, gravelly soil with some refuse. 88 °F.	
13									
14	45								8-inch Dia. SCH 80 PVC Slotted Pipe
15									
	50								
16									
	55								

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
17	55					REFUSE	Brown-black soil with some refuse. Refuse increasing with depth. Dry. 96 °F.
18	60					REFUSE	Black refuse with soil. Wet.
19							
20	65					REFUSE	Black refuse with soil. Wet.
						REFUSE	Black refuse with soil.
21							
	70					REFUSE	Black refuse with soil. Wet.
22							
						REFUSE	Black refuse with soil. Saturated. 98 °F.
23	75					REFUSE	Black refuse with soil. Saturated. 76 °F.
24						REFUSE	Black-gray sludge. Saturated.
25	80						
	85						

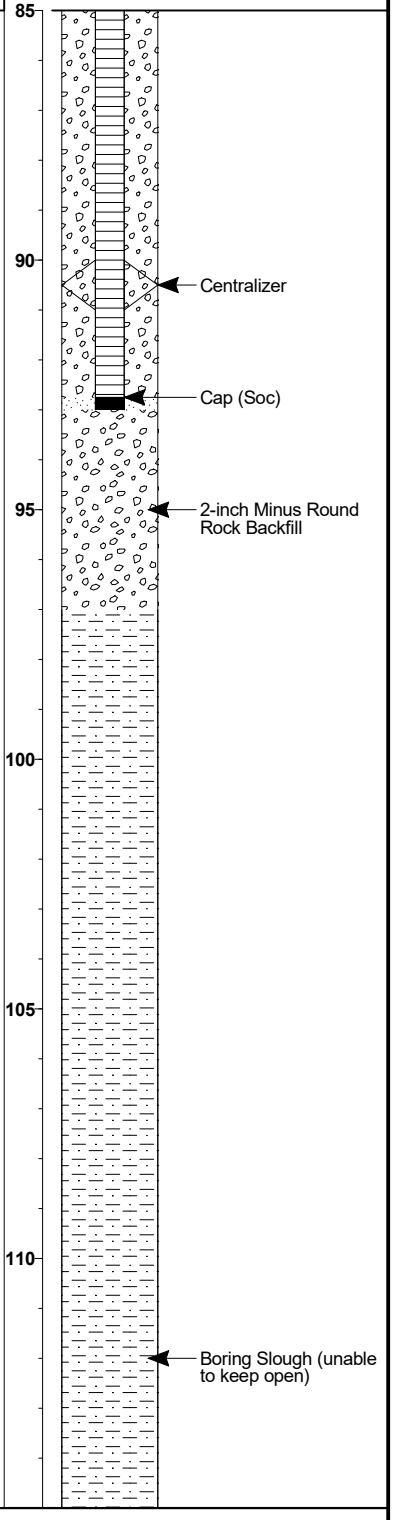
Completion Detail



LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
26	85							
27								
	90							
28								
29	95					REFUSE		Black-gray sludge. Saturated. 82 °F.
30								
	100							
31								
32	105							
33						REFUSE		Black-gray sludge. Saturated. 95 °F.
	110							
34								
35	115							



Completion Detail

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-261

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description	Completion Detail
	115					REFUSE		Black refuse. Wet to saturated. 120 °F.	115
						REFUSE		Black refuse. Wet to saturated. 117 °F. End of boring.	Boring Slough (unable to keep open)
	36								
	120								120
	37								
	38								
	125								125
	39								
	130								130
	40								
	41								
	135								135
	42								
	140								140
	43								
	44								
	145								

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-262

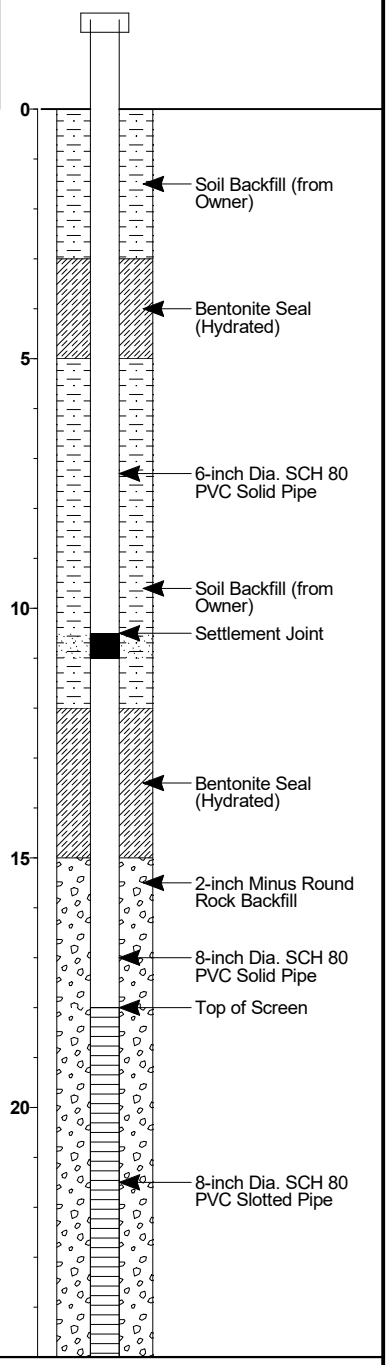
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-988. Drawing ID: 2019-11. 5 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM-GM		Brown silty soil with some gravel. Dry to moist.
1	5							
2								
3	10							
4								
5	15					SM-GM		Brown-black silty soil with some gravel. Dry to moist. 81 °F.
6	20					SM-GM		Black silty soil. Moist.
7	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **S. Graber**

Date Started: **7/29/19**
Date Ended: **7/29/19**
Boring Diameter: **36-inch**
Well Diameter: **8-inch**

Time Started: **08:25**
Time Ended: **17:00**
Elevation: **828.5 ft.**
Total Depth: **131.0 ft.**

STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

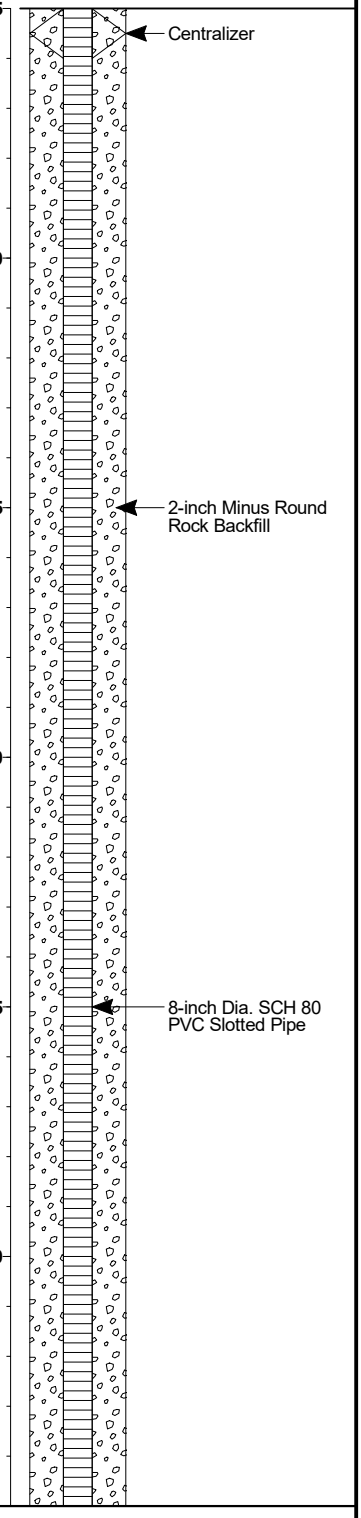
BORING NUMBER: WE-262

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
8	25					SM-GM		Black soil with some wood debris.
9	30							
10								
	35							
11						SM-GM		Black soil with some refuse. Moist.
12	40							
13						SM-GM		Black soil. Moist. 94 °F.
14	45							
15								
	50							
16						SM-GM		Black soil. Moist. 98 °F.
	55							

Completion Detail

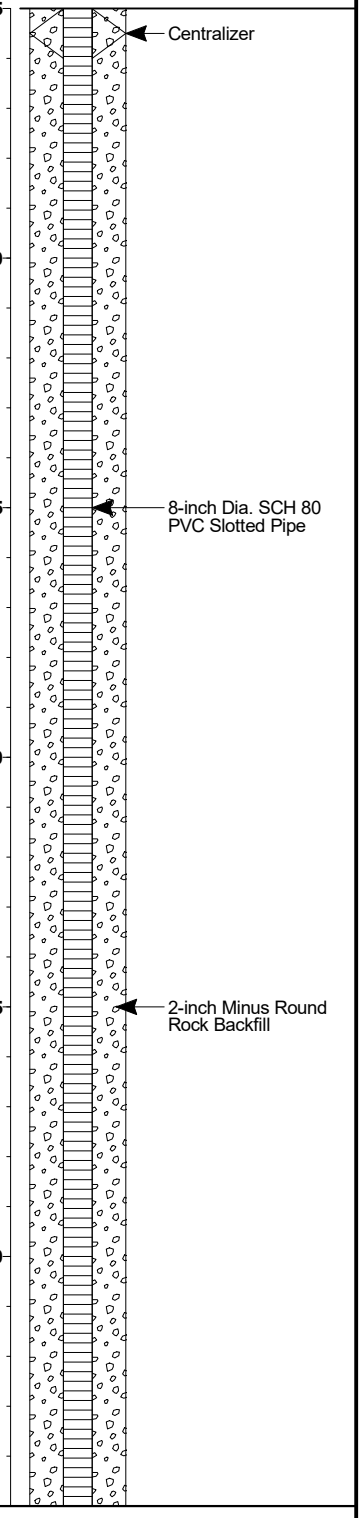


LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
17	55					SM-GM		Black soil. Wet.
18	60							
19								
20	65							
21						SM-GM		Brown-black soil. Wet to saturated.
22	70					REFUSE		Black refuse. Moist to wet.
23	75					REFUSE		Black refuse. Wet.
24								
25	80							
	85							

Completion Detail

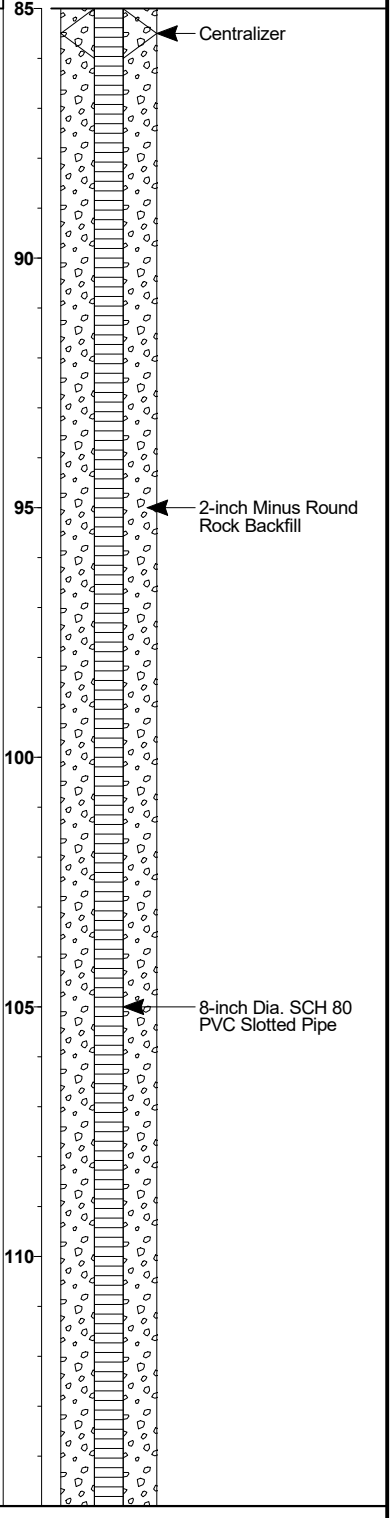


LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
26	85							
27								
	90							
28						REFUSE		Black refuse. Saturated.
29	95							
30						REFUSE		Black refuse with some soil. Saturated. 106 °F.
	100							
31								
						REFUSE		Brown-black refuse. Wet to saturated. 126 °F.
32	105							
33								
	110							
34						REFUSE		Brown refuse. Wet to saturated. 122 °F.
35	115							

Completion Detail



STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

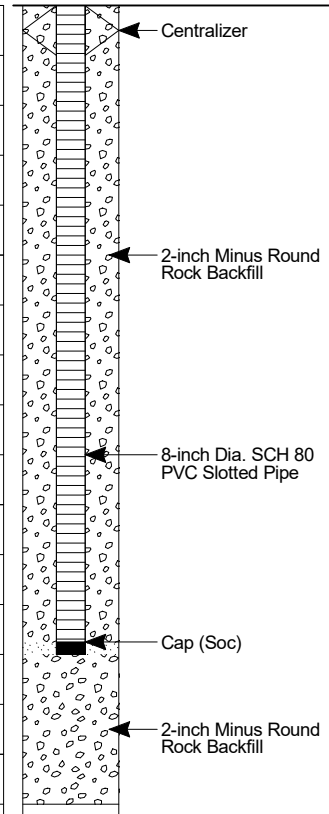
BORING NUMBER: WE-262

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
	115							
	36							
	120							
	37					REFUSE		Brown refuse. Wet to saturated. 116 °F.
	38							
	125							
	39							
	130							
	40					REFUSE		Brown refuse. Wet to saturated. 108 °F. End of boring.
	41							
	135							
	42							
	140							
	43							
	44							
	145							

Completion Detail



STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: WE-263

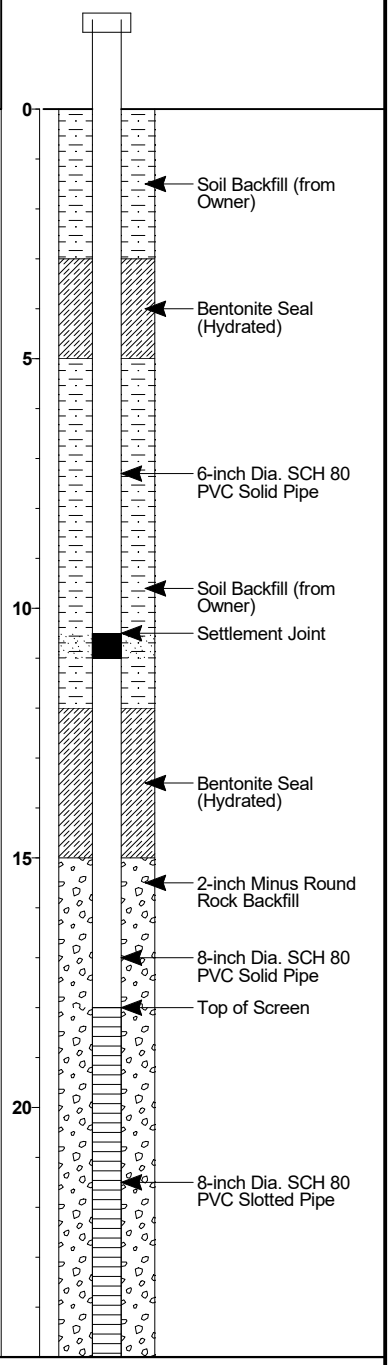
LRI Landfill, Gas Wells July - August 2019
30919 Meridian East
Graham, Washington

JOB NUMBER: 04219001.11

REMARKS:
Start Card BKM-974. Drawing ID: 2019-09. 4.5 ft-ags stickup.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
0	0					SM		Brown-black silty soil with some gravel. Moist. 68 °F. Note: Due to the material and moisture conditions found in the first 30 ft of boring, a 40 ft-bgs casing was placed inside the 9 ft-bgs fall protection to prevent backfill of the boring.
1	5							
2								
3	10							
4								
	15							
5						SM		Brown-black silty soil. Moist. 68 °F.
6	20							
7								
	25							

Completion Detail



Drilling Company: **DBM Contractors, Inc.**
Drilling Method: **IMT AF-220**
Logged By: **A. Deep**

Date Started: **8/9/19**
Date Ended: **8/9/19**
Boring Diameter: **36-inch**
Well Diameter: **8-inch**

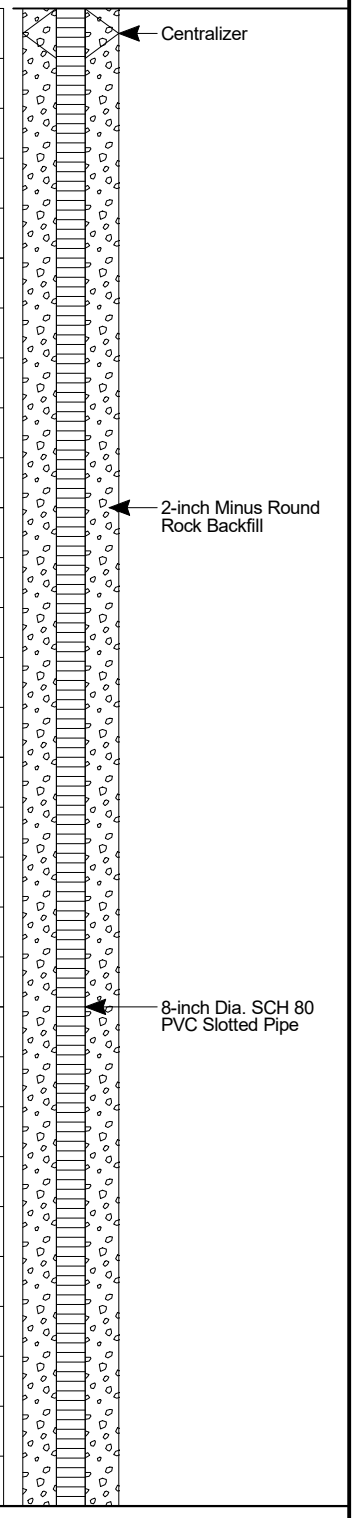
Time Started: **07:00**
Time Ended: **19:00**
Elevation: **805.6 ft.**
Total Depth: **131.0 ft.**

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Description
8	25					CONC.	Brown-black soil with silty soil with lense of gray concrete rubble. Dry to moist. 72 °F.
9	30					REFUSE	Brown-black soil and refuse sludge. Wet to saturated. 70 °F.
10							
11	35					SM-GM	Gray-black silty soil with some rock and concrete rubble. Moist. 74 °F. Bottom of cased interval (removed during construction of well).
12	40						
13						SM-GM	Brown-black silty soil with some refuse. Refuse increasing with depth. Wet. 80 °F.
14	45					REFUSE	Brown-black refuse with some soil. Soil decreasing with depth. Moist. 85 °F.
15							
16	50					REFUSE	Brown-black refuse with some soil. Soil decreasing with depth. Moist. 83 °F.
	55						

Completion Detail

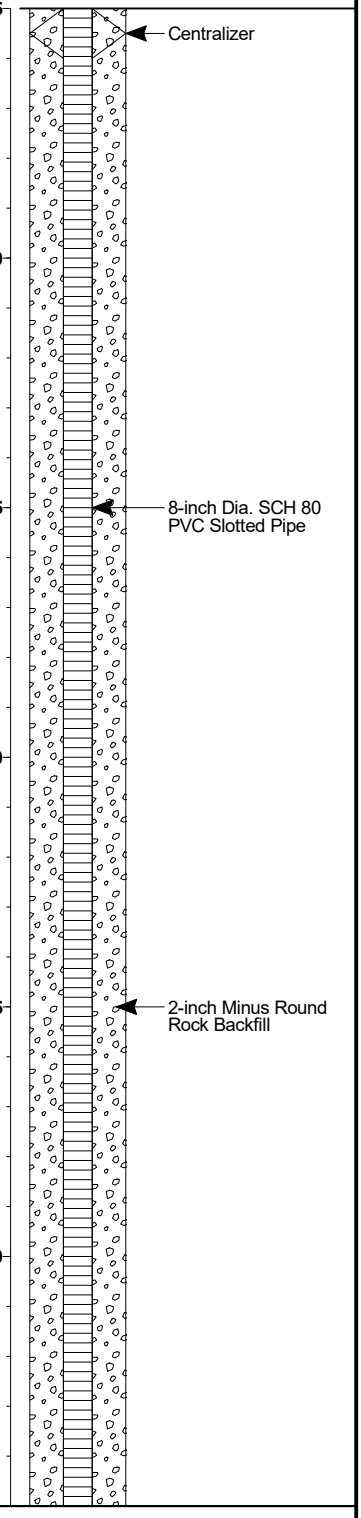


LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
17	55					REFUSE		Brown-black refuse with some soil. Soil decreasing with depth. Moist. 85 °F.
18	60							
19						REFUSE		Brown refuse. Moist. 110 °F.
20	65							
21								
22	70					REFUSE		Brown-black refuse. Moist. 95 °F.
23	75							
24								
25	80					REFUSE		Brown refuse. Dry.
	85							

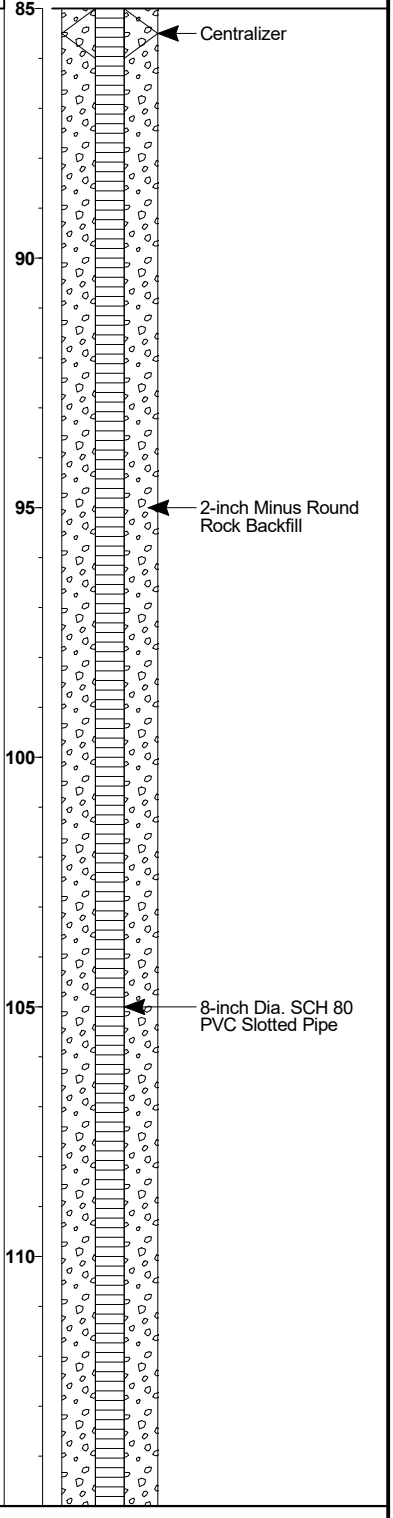
Completion Detail



LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
26	85							
27						REFUSE		Brown refuse. Moist. 96 °F.
	90							
28						REFUSE		Brown-black refuse. Dry to moist. 112 °F.
29	95							
30						REFUSE		Brown refuse with some organic debris. Dry. 120 °F.
	100							
31								
32	105							
33						REFUSE		Brown-black refuse. Moist. 128 °F.
	110							
34								
35	115							



SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

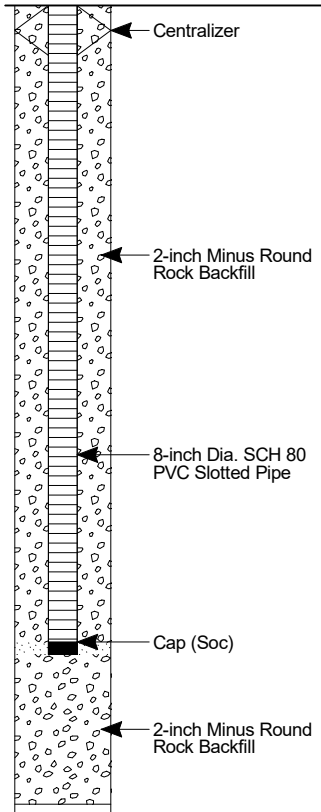
BORING NUMBER: WE-263

LRI Landfill, Gas Wells July - August 2019

JOB NUMBER: 04219001.11

Depth (meters)	Depth (feet)	Sample Location	Sample Number	Blow Counts	OVM (ppm)	USCS Soil Class.	Graphic Log	Description
	115					REFUSE		Brown-black refuse. Dry to moist. 114 °F.
	36							
	120							
	37							
						REFUSE		Brown refuse. Dry to moist. 116 °F.
	38							
	125							
	39					REFUSE		Brown refuse. Dry. 114 °F.
	130							
	40					REFUSE		Brown-black refuse. Moist. 116 °F. End of boring.
	41							
	135							
	42							
	140							
	43							
	44							
	145							

Completion Detail



STANDARD_LOG 04219001.11 - LRI GAS WELLS AUG 2019.GPJ STD_LOG.GDT 8/22/19

Adlington, Samuel

From: Adlington, Samuel
Sent: Friday, August 09, 2019 9:33 AM
To: Olivier Allen-moi
Cc: Lakey, Kevin; Berndahl, Travis; Deep, Alexa; Jim Crandall
Subject: Re: LRI 2019 GCCS Drilling Update (04219001.11)

Olivier,

To summarize our earlier discussion, due to the conditions found in the upper section of 2019-09 we are not going to re-drill a well at 2019-10. Conditions at 2019-09 are similar to what was encountered at 2019-11, and require casing the upper section where wet sludge is present. Due to this layer of wet sludge casing is required for the safety of the boring.

As this layer was found to be much thicker in the area of 2019-10 casing would not be practical for the designed location. DBM is going to complete 2019-09 today and then move to the relocated 2019-19 as discussed in my other email. If you have any questions or comments pleas let me know.

Thanks,
Sam

-------- Original message --------
From: Olivier Allen-moi <Olivier.Moi@WasteConnections.com>
Date: 8/9/19 07:16 (GMT-08:00)
To: "Adlington, Samuel" <SAdlington@scsengineers.com>
Cc: "Lakey, Kevin" <KLakey@scsengineers.com>, "Berndahl, Travis" <TBerndahl@scsengineers.com>, "Deep, Alexa" <ADeep@scsengineers.com>, Jim Crandall <James.Crandall@WasteConnections.com>
Subject: RE: LRI 2019 GCCS Drilling Update (04219001.11)

Sam,

Thanks for the update.

Olivier

From: Adlington, Samuel [mailto:SAdlington@scsengineers.com]
Sent: Thursday, August 08, 2019 3:40 PM
To: Olivier Allen-moi
Cc: Lakey, Kevin; Berndahl, Travis; Deep, Alexa; Jim Crandall
Subject: LRI 2019 GCCS Drilling Update (04219001.11)

WARNING: This email is from outside of Waste Connections; Exercise caution.

Hello Olivier,

Now that I managed to get a day back in the office I wanted to send out a quick email summarizing the meeting we had with DBM this past Tuesday (8/6). In that meeting Dan Wigg (DBM), you, and I discussed the sequencing and approach

for the remainder of the wells to be drilled. The primary focus was on how to handle location 2019-10, where the drill rig broke down on July 30th and the boring collapsed while the rig was being repaired. Prior to the rig breaking down, 2019-10 was drilled to approximately 115 feet below ground surface (ft-bgs). A brief summary of the waste composition that was found is listed below:

Start Depth (ft-fgs)	End Depth (ft-bgs)	Description/Notes
0	65	Wet black-gray soil with minor amounts of refuse, concrete debris, and organics. Max temperature 91°F.
65	115	Black highly degraded refuse. Very wet with sludge. Max temperature 104°F.

From this discussion the approach we decided on was to drill 2019-09 before making a final decision on whether or not to re-drill 2019-10. If conditions at 2019-09 are similar to what was encountered at 2019-11 and the upper half of 2019-10 then we would not proceed with 2019-10. If conditions at 2019-09 improve from what was found at 2019-10, then we will re-drill 2019-10 offset to the south of the original boring location, or on the other side of the haul road (west of staked location). The offset from the staked location is required for safety due to the previous boring collapsing.

All the other wells have gone in smoothly. Today the wells on the south face of Cell 6 were completed, and the rig is mobilizing to 2019-09 for tomorrow. I am hoping to get the re-survey data for 2019-19 in the relocated position today. As soon as I have that information I will issue a field directive before drilling at that location.

If you have any questions or comments please let me know.

Thanks,
Sam

Samuel E. Adlington, PE
Senior Project Engineer
SCS Engineers
2405 140th Ave NE, Suite 107
Bellevue, WA 98005
425-289-5468 (W)
425-495-0818 (C)
sadlington@scsengineers.com

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NO.	REVISION	DATE
A	ISSUED FOR REVIEW	06/07/2019
B	ISSUED FOR CONSTRUCTION	07/18/2019
C	RECORD DRAWING	8/23/2019

SHEET TITLE: SITE PLAN

PROJECT TITLE: 2019 GAS SYSTEM EXPANSION
LRI LANDFILL
GRAHAM, WASHINGTON

LRI LANDFILLING & RECYCLING

SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (425) 746-6747

PROJ. NO.	DWN. BY:	ACAD FILE:
04219001.11	GDB	C1
DSN. BY:	CHK. BY:	APP. BY:
GDB	SEA	KQL

DATE: AUGUST 2019

SCALE: AS SHOWN

DRAWING NO. C1

G:\04219001.10 - LRI\LF GCCS Engr\Deliverables\Drafting\Drawings\GCCS Design_Drawings\RD_LRI GCCS 2019 (ACAD2018) V1.0.dwg, C1, 8/23/2019 2:40:58 PM, DWG To PDF.pc3

Appendix I

Financial Assurance Cost Estimates

Table 1
Estimated Closure Costs
LRI Landfill, Pierce County, Washington
January 2, 2020 Update

Total Acreage at Full Build-Out:	175.50	Acres
Remaining Closure at Full Build-Out:	142.24	Acres
Remaining Closure at Full Build-Out:	6,196,031	SF

Item	Description	Unit	Unit Price	Quantity	Cost
1	Subgrade Preparation	SF	$ 0.10	6,196,031	$ 619,603.09
2	Bedding Layer	SF	$ 0.45	6,196,031	$ 2,788,213.89
3	Geosynthetic Clay Liner	SF	$ 0.68	6,196,031	$ 4,187,275.87
4	Geomembrane - Micro DrainLiner	SF	$ 0.79	6,196,031	$ 4,896,870.01
5	Geotextile Filter	SF	$ 0.20	6,196,031	$ 1,263,990.29
6	Vegetative / Topsoil Layer / (14-inch layer)	SF	$ 0.65	6,196,031	$ 4,027,420.06
7	Erosion Control Blanket	SF	$ 0.14	6,196,031	$ 867,444.32
8	Hydroseed	acre	$ 2,500.00	142.2	$ 355,603.24
9	Access Road (24 ft wide w/ 3-in asphalt layer)	LF	$ 126.53	1,060	$ 134,121.80
10	Storwater Ditches	LF	$ 36.00	11,024	$ 396,864.00
11	4-inch gas collection piping	LF	$ 29.00	18,385	$ 533,165.00
12	6-inch gas collection piping	LF	$ 50.20	4,480	$ 224,896.00
13	8-inch gas collection piping	LF	$ 55.05	722	$ 39,746.10
14	10-inch gas collection headers	LF	$ 51.42	1,588	$ 81,649.40
15	24-inch gas collection headers	LF	$ 205.32	6,792	$ 1,394,540.23
16	Condensate Sumps	EA	$ 3,500.00	8	$ 28,000.00
17	Vertical Gas Extraction Wells (avg. depth = 102 ft.)	EA	$ 7,752.00	144	$ 1,116,288.00
	Subtotal				$ 22,955,691
	Mobilization @	5.0%			$ 1,147,785
	Sales Tax @	7.9%			$ 1,813,500
	Engineering and Construction Management @	10.0%			$ 2,295,569
				Estimated Closure Cost:	**$ 28,212,545**
	Total Acreage at Full Build-Out:	175.50			
	Acreage with Final Closure through 2019:	33.26			
	Acres Remaining to be Closed at Full Build-Out:	142.24			
				Estimated Per Acre Unit Cost:	**$ 198,342.85**
	Constructed Acreage through 2019:	117.08			
	Acreage Closed through 2019:	33.26			
	Remaining Acres to be Closed as of January 1, 2020:	83.82			
				Estimated 2019 Closure Cost:	**$ 16,625,098**

Note: Closure acreages are corrected for actual slope areas.

Table 2
Estimated Annual Post-Closure Costs
LRI Landfill, Pierce County, Washington
January 2, 2020 Update

Total Acreage at Full Build-Out: 175.50
Constructed Acreage through 2019: 117.08

Description	Frequency	Quantity	Unit Cost	Total Cost
LDCRS Monitoring (9 sumps)				
sample collection	quarter	4	$ 1,696.00	$ 6,784.00
laboratory testing	quarter	4	$ 3,109.00	$ 12,436.00
data analysis and reporting	quarter	4	$ 2,261.00	$ 9,044.00
Groundwater Monitoring				
sample collection	quarter	4	$ 6,783.00	$ 27,132.00
laboratory testing	quarter	4	$ 7,009.00	$ 28,036.00
data analysis and reporting	quarter	4	$ 9,044.00	$ 36,176.00
Surface Water Monitoring				
sample collection	quarter	4	$ 622.00	$ 2,488.00
laboratory analysis	quarter	4	$ 565.00	$ 2,260.00
data analysis and reporting	quarter	4	$ 1,696.00	$ 6,784.00
Gas System Monitoring				
surface emission monitoring	quarterly	4	$ 1,131.00	$ 4,524.00
probe monitoring	month	12	$ 1,413.00	$ 16,956.00
data analysis and reporting	annual	1	$ 22,610.00	$ 22,610.00
General Facility Maintenance				
gas system maintenance	annual	1	$ 2,709.00	$ 2,709.00
gas flare replacement, 30 year amortization	annual	1	$ 12,115.00	$ 12,115.00
gas system operation	annual	1	$ 13,546.00	$ 13,546.00
cover maintenance	acre	117.08	$ 314.00	$ 36,763.12
cover replacement & repair	annual	1	$ 2,709.00	$ 2,709.00
sedimentation basin	annual	1	$ 3,132.00	$ 3,132.00
ditch / erosion maintenance	annual	1	$ 1,354.00	$ 1,354.00
buildings	month	12	$ 314.00	$ 3,768.00
equipment	month	12	$ 314.00	$ 3,768.00
General Operating Expenses				
administration	month	12	$ 1,253.00	$ 15,036.00
support services / accounting	month	12	$ 1,253.00	$ 15,036.00
real estate taxes	year	1	$ 50,113.00	$ 50,113.00
electricity	month	12	$ 1,216.00	$ 14,592.00
legal	year	1	$ 1,253.00	$ 1,253.00
engineering	year	1	$ 1,253.00	$ 1,253.00
Leachate System Operation & Maintenance				
pumps	year	2	$ 4,159.00	$ 8,318.00
collection pipe and force main	year	1	$ 2,599.00	$ 2,599.00
storage and load facility	year	1	$ 2,599.00	$ 2,599.00
trucking	gal	1,000,000	0.03	$ 30,000
treatment	gal	1,000,000	0.04	$ 40,000
			Estimated Annual Cost:	**$ 435,893**

Notes: 1) LDCRS monitoring costs assume sample collection, lab testing, and reporting for 8 sumps (LDCRS-1, -2A, -2B, -3A, -4A, -4B, -5, and -6).
2) Groundwater monitoring costs include sample collection, lab testing, and reporting for 9 wells (MW-1, -2, -3, -4, -5, -6, -7, -9, and -10) and 8 leachate sumps (LCRS-1, -2A, -2B, -3A, -4A, -4B, -5, and -6).
3) Surface water monitoring costs assume samples will be collected by LRI staff.

Exhibit D

CALCULATION OF BOND AMOUNT 2019

Ceb Current cost estimates for Closure and Post Closure based on the area of of the site that has received waste as of December 2019 plus the area of the site that is projected to receive waste through December 2019

Cvi Current balance of Closure Account and Post Closure Account as of 31-Dec

Closure Bond Calculation: Ceb-Cvi

Post Closure Bond Calculation: Ceb-Cvi

Calculations for Amount of 2018 Surety Bond Update

Closure

83.82 acres - current developed and open acreage with in-place refuse plus projected acreage to receive waste in 2020

$ 198,343 estimated closure cost per acre.

Ceb $ 16,625,110

Cvi Closure Account Balance as of 31-Dec $ 14,888,826

Bond Amount --------- $ 1,736,285

Post Closure

117.08 acres - current developed and open acreage with in-place refuse plus projected acreage to receive waste in 2020

$ 435,893 annual Post Closure cost estimate for current acreage of 117.08 acres

Ceb $ 424,434 30 years $ 12,733,020

Cvi Post Closure Account Balance as of 18-Nov $ 12,903,218

Bond Amount --------- $ (170,198)

Closure

WELLS FARGO

SUMMARY OF TRANSACTIONS
FOR THE PERIOD DECEMBER 1, 2019 THROUGH DECEMBER 31, 2019

PCRCD LRI CLOSURE TRUST
ACCOUNT NUMBER [redacted]

SUMMARY OF TRANSACTIONS

PAGE NUMBER	DESCRIPTION	CASH	COST VALUE EXCLUDING CASH	MARKET VALUE INCLUDING CASH
	BEGINNING BALANCE	**0.00**	**14,596,283.51**	**14,865,231.03**
	UNREALIZED GAIN/LOSS THIS PERIOD			**526.00**
	INCOME RECEIVED			
15	INTEREST	45,513.81		
15	**TOTAL INCOME RECEIVED**	**45,513.81**		**45,513.81**
	SECURITY CHANGES			
16	PURCHASES	45,513.81-	45,513.81	
	NET REALIZED GAIN/LOSS FOR PERIOD			0.00
	PRIOR ACCRUAL			**80,193.55-**
	CURRENT ACCRUAL			**57,748.25**
	ENDING BALANCE	**0.00**	**14,641,797.32**	**14,888,825.54**

NET GROWTH/LOSS **0.0016 %**

Post Closure

WELLS FARGO

SUMMARY OF TRANSACTIONS
FOR THE PERIOD DECEMBER 1, 2019 THROUGH DECEMBER 31, 2019

PCRCD LRI POST CLOSURE LADDERED BD
ACCOUNT NUMBER [redacted]

SUMMARY OF TRANSACTIONS

PAGE NUMBER	DESCRIPTION	CASH	COST VALUE EXCLUDING CASH	MARKET VALUE INCLUDING CASH
	BEGINNING BALANCE	**0.00**	**12,654,534.57**	**12,881,735.96**
	UNREALIZED GAIN/LOSS THIS PERIOD			**1,471.50**
	INCOME RECEIVED			
15	INTEREST	41,954.19		
15	**TOTAL INCOME RECEIVED**	**41,954.19**		**41,954.19**
	SECURITY CHANGES			
16	PURCHASES	41,954.19-	41,954.19	
	NET REALIZED GAIN/LOSS FOR PERIOD			0.00
	PRIOR ACCRUAL			**70,489.06-**
	CURRENT ACCRUAL			**48,545.66**
	ENDING BALANCE	**0.00**	**12,696,488.76**	**12,903,218.25**

NET GROWTH/LOSS **0.0017 %**

Appendix J

LRI Landfill 2019 Tonnage Report Form

DEPARTMENT OF ECOLOGY
State of Washington

ANNUAL REPORT
MUNICIPAL SOLID WASTE LANDFILL

FACILITY NAME: **LRI Landfill**	CALENDAR YEAR OF REPORT: **2019**	PERMIT NUMBER: **27-050**	FACILITY ID: **1948**
FACILITY LOCATION (street address): **30919 Meridian E., Graham, WA 98338**	COUNTY: **Pierce**		
FACILITY CONTACT (name): **George Duvendack**	FACILITY PHONE: **(253) 847-7555**		
FACILITY CONTACT MAILING ADDRESS (if different): **Same**	FACILITY CONTACT PHONE (if different) : **Same**	FACILITY CONTACT EMAIL: **George.Duvendack@WasteConnections.com**	

Did you operate in 2019 ?

☒ Yes ***If yes***, proceed to next section and complete the form.

☐ No ***If no***, answer the following questions, sign and date the last page, and submit. This completes your reporting obligations.

When did you stop operations? _____

Do you plan to restart? ☐ No ☐ Yes When? _____

AMOUNTS AND TYPES OF WASTE DISPOSED PER YEAR

PLEASE CHECK IF DISPOSED	AMOUNT DISPOSED Please check: ☐Cubic Yards or ☒Tons
☒ Municipal/Commercial Solid Waste	632,824
☒ Construction/Demolition Waste	18,180
☒ Yard Waste (disposed)	30,922
☐ Food Processing Waste (disposed)	
☐ Landclearing Debris	
☒ Industrial Waste	163,923
☐ Inert Waste	
☐ Wood Waste	
☒ Ash (other than special incinerator ash)	33,292
☐ Dredged Materials	
☒ Sewage Sludge	570
☒ Asbestos	443
☐ Petroleum Contaminated Soils	
☒ Other Contaminated Soils	169,986
☒ Tires (disposed)	3,462
☒ Medical Waste	1,389
☒ Other (specify): Sawdust	703
☒ Other (specify): Autofluff	144,175
☒ Other (specify): Hogfuel & compost overs	56,191
Total	**1,256,060**

DID YOU RECEIVE MATERIALS FOR RECYCLING? ☐ Yes (Please specify on pages 3-4.) ☒ No

ADDITIONAL INFORMATION (please check if attached):

☒ Attach results of ground water monitoring in accordance with WAC 173-351-415(1)

☒ Attach applicable financial assurance information in accordance with WAC 173-351-600

☐ For landfills with RD&D allowances, attach report showing progress toward project goals and a summary of monitoring and test results in accordance with WAC 173-351-710(3)(e)

Are you open to the public? ☐ Yes ☒ No

Tip fees (Attach schedule if available):

$170.26 per ton

REMAINING PERMITTED CAPACITY:

In tons:__16,295,868_____

Estimated Date of Closure: __2037_____

Are you planning an expansion this year?

☐ Yes ☒ No

ENERGY RECOVERY FROM LANDFILL:

Power Produced Annually __31,854,209__ kilowatt hours

During the reporting year, were there any changes in your management practices that would impact your operations?

☒ No ☐ Yes (specify) _____

Are there any new solid waste activities planned at your site for this calendar year? ☒ No ☐ Yes (specify) _____

_____

Planned start date: _____

DID YOU RECEIVE MATERIALS FOR DISPOSAL FROM:	WHERE FROM	TYPE OF WASTE	ESTIMATE AMOUNT ☐Tons or ☐Cubic Yards
Out of County? ☐ Yes ☒ No			
Out of State? ☐ Yes ☒ No			
Out of Country? ☐ Yes ☒ No			

NOTE: Please ONLY fill in this chart if you collected materials for RECYCLING or COMPOSTING

AMOUNTS AND TYPES OF MATERIALS COLLECTED FOR RECYCLING OR COMPOSTING

PLEASE CHECK IF RECEIVED FOR RECYCLING or COMPOSTING	COMMERCIAL Please check: ☐ Cubic Yards/Year or ☐ Scaled Tons/Year	RESIDENTIAL Please check: ☐ Cubic Yards/Year or ☐ Scaled Tons/Year	TOTAL AMOUNT RECEIVED Please check: ☐ Cubic Yards/Year or ☐ Scaled Tons/Year
☐ Newspaper			
☐ Corrugated Paper			
☐ Mixed Waste Paper			
☐ Container Glass			
☐ PET Plastics			
☐ HDPE Plastics			
☐ LDPE Plastics			
☐ Other Recyclable Plastics			
☐ Aluminum Cans			
☐ Tin Cans			
☐ Ferrous Metals (iron, steel)			
☐ Nonferrous Metals (excluding aluminum cans)			
☐ Appliances (white goods)			
☐ Electronics (computers, CPUs, hard drives)			
☐ Electronics (monitors, TVs)			
☐ Tires (collected)			
☐ Asphalt			
☐ Concrete			
☐ Construction/Demolition			
☐ Wood Waste			
☐ Landclearing Debris			
☐ Yard Debris			
☐ Food/Food Scraps			
☐ Textiles (rags, clothing)			
☐ Co-Mingled Recyclables (specify):			
☐ Other (specify):			
Total			**0**

NOTE: Please ONLY fill in this chart if you collected materials for RECYCLING or COMPOSTING

DESTINATION AND FINAL USE OF OUTGOING MATERIALS COLLECTED FOR RECYCLING or COMPOSTING

MATERIAL	OUTGOING AMOUNT Please specify tons or cubic yards.	DESTINATION FACILITY Please specify name, city, state.	FINAL USE Please specify: disposed, recycled, reused, composted, treated, burned for energy, stockpiled, etc.

PREPARED BY: Kevin Lakey, P.E.	DATE: March 31, 2020	PHONE: (425) 289-5447
EMAIL: klakey@scsengineers.com		

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