

Second Quarter 2024 Monitoring Report

LRI Landfill Graham, Washington

Pierce County Recycling, Composting
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SCS ENGINEERS

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This document is the Second Quarter 2024 Monitoring Report for the LRI Landfill located in Graham, Washington. Activities this quarter included monitoring the volume and specific conductance of water pumped from the leak detection/collection system, quarterly groundwater monitoring, monthly landfill gas monitoring, and weekly surface water monitoring. This document was prepared by Jovany Estrada and Travis Berndahl of SCS Engineers and reviewed by Greg Helland of SCS Engineers for submittal to Mr. Keith Johnston of the Tacoma-Pierce County Health Department (TPCHD).



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Attachments: Attachment A: Groundwater Flow Map
Attachment B: Groundwater Data Summary Tables
Attachment C: Field Sampling Documentation
Attachment D: Statistical Calculations
Attachment E: Trilinear Diagrams
Attachment F: Analytical Data Validation Report
Attachment G: Groundwater and LDCS Time Trend Plots
Attachment H: LDCS & Leachate Pumping Records and Conductivity Measurements
Attachment I: Surface Water Data
Attachment J: Landfill Gas Data

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GROUNDWATER MONITORING

Second quarter 2024 groundwater samples were collected from the LRI Landfill monitoring network on June 5th through 7th and 13th, 2024. Nine monitoring wells (MW-1A, MW-2A, MW-3, MW-4, MW-5A, MW-6, MW-7, MW-9, and MW-10), eleven leak detection collection locations (LDCS-1, LDCS-2A, LDCS-2B, LDCS-3A, LDCS-4A, LDCS-4B, LDCS-5, LDCS-6, LDCS-7, LDCS-8, and LDCS-9A), and three leachate ports (Cell 7, Cell 8, and Cell 9) were sampled this quarter. Water level elevations were measured at each of the monitoring wells during this quarter. Field quality control samples consisted of one field blank and one duplicate sample collected at MW-7. Sampling procedures followed the LRI Landfill Groundwater Monitoring Plan (GWMP), dated March 10, 2014.

Groundwater samples were collected using low-flow purging and sampling techniques with dedicated pumps at all monitoring wells except MW-4, where a non-dedicated QED Sample Pro pump was deployed. Samples for laboratory analyses were submitted to Eurofins Scientific of Denver, Colorado for the parameters listed in Appendix I and II of WAC 173-351-990. Groundwater sampling locations are illustrated on Figure 1.

A groundwater surface elevation map for the second quarter monitoring event is included as Figure 1. The average groundwater gradients and flow directions calculated for the quarter remain similar to those previously reported at the facility, with a flow rate of approximately 45 feet per year towards the northwest for horizontal groundwater movement within the uppermost aquifer (assuming a horizontal hydraulic conductivity of 1×10^{-3} centimeters per second and an effective porosity of 30 percent).

Field measurements and analytical results for groundwater, the leak detection/collection system (LDCS), leachate, and quality control samples are summarized on the following tables presented in Attachment B: Groundwater Level Elevations, Field Parameters, Inorganic Parameters, Appendix I Metals, Appendix II Metals, Volatile Organic Compounds, Cation-Anion Balance, and Duplicate Sample Results.

Copies of the Field Sampling Data Sheets are included in Attachment C. Statistical calculations are provided in Attachment D. Trilinear (Piper) plots of groundwater and LDCS sample results are included in Attachment E. Data validation results are summarized in Attachment F.

Groundwater results were reviewed and validated (see attached Data Validation Report). Field measurements and analytical data were uploaded into the Washington State Department of Ecology (Ecology) Environmental Information Management (EIM) System. Laboratory reports were provided to the Tacoma-Pierce County Health Department (TPCHD) and the Washington Department of Ecology (Ecology) under separate cover.

A nonparametric inter-well prediction limit approach was used to evaluate the water quality results for Appendix I parameters listed in WAC 173-351-990 (15 total metals and nitrate). Prediction limits were generated using background data for nitrate and eight rounds of quarterly sampling completed during 2014 and 2015 for fifteen (15) total metals. Using this procedure, the highest concentration of each parameter in the data set was selected as the prediction limit for that parameter. In addition, the prediction limit data set includes ongoing water quality results from background (upgradient) wells MW-9 and MW-10. Appendix I total metal and nitrate concentrations measured at the downgradient monitoring wells were less than or equal to prediction limit values at all of the monitoring wells this quarter.

Groundwater time-trend plots for inorganic parameters and metals are included in Attachment G. The following plots are provided for each monitoring well:

- Plot 1 — alkalinity, ammonia, nitrate, chloride, total dissolved solids (TDS), total organic carbon (TOC), sulfate
- Plot 2 — arsenic, calcium, iron, magnesium, manganese, sodium, potassium, zinc

Time trend plots show that concentrations of metals and inorganic parameters remained generally consistent with previously observed values during the second quarter unless otherwise noted. The highest concentrations of chloride and nitrate in the uppermost aquifer continue to be observed in background well MW-10.

Reported detections of inorganic parameters and metals measured at downgradient monitoring wells during the second quarter were less than or equal to the groundwater quality criteria listed in WAC 173-200-040, with the exceptions shown in Exhibit 1.

Exhibit 1. Groundwater Results Greater Than WAC 173-200-040 Criteria

Parameter	Groundwater Quality Criteria	MW-1A	MW-2A	MW-3	MW-4	MW-5A	MW-6	MW-7
Arsenic, Total	0.00005	*	**	**	0.013	0.0053	0.0076	0.0057
Iron, Dissolved	0.30	*	0.90	*	*	*	*	*
Manganese, Dissolved	0.05	*	0.33	0.33	0.2	0.15	0.23	0.26
Notes: Concentrations listed as mg/L = milligrams per liter. ** = Not detected above the method reporting limit (MRL), but MRL exceeded WAC 173-200-040 GW Quality Criteria. * = Reported value was less than WAC 173-200-040 Groundwater Quality Criteria.								

The results summarized in Exhibit 1 are typical of previous results (see time-trend plots in Attachment G), are interpreted to be within natural background variation, and in the case of total arsenic, are less than or equal to the background level used to establish the prediction limit (prediction limits are not applicable for dissolved iron or manganese). The method reporting limit (MRL) for arsenic is 0.005 milligrams per liter (mg/L), which is greater than the WAC 173-200-040 criteria of 0.00005 mg/L. Therefore, arsenic results reported as non-detect are considered to be greater than the WAC 173-200-040 criterion.

Low-level detections of ammonia (ranging between 0.13 and 0.22 mg/L) were reported at downgradient wells MW-2A, MW-3, MW-5A, MW-6, and MW-7. These ammonia detections appear to be consistent with historic well data.

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). Consistent with WAC 173-350-430(5), a threshold of ten percent difference is used if the total cation-anion sum is less than 5.0 meq/L, and a threshold of five percent difference is used if the total cation-anion sum is greater than or equal to 5.0 meq/L. During the second quarter, the cation-anion balance evaluation in MW-5A slightly exceeded the appropriate threshold (see Table 7 in Attachment B).

Graphical plots of the current monitoring well water quality results are presented on trilinear (piper) diagrams in Attachment E. These plots demonstrate the inherent water quality differences between groundwater from the monitoring wells, shallow groundwater from the LDCS, and leachate (collected annually in December).

No VOCs were reported in samples collected from the monitoring wells during the second quarter 2024.

LEAK DETECTION/COLLECTION SYSTEM (LDCS) MONITORING

A leak detection/collection system (LDCS) is present directly beneath the composite liner of each landfill cell to provide for early leak detection and to collect leachate in the event a leachate leak develops in the composite liner or leachate force main. The system consists of a high permeability gravel blanket that is underlain and overlain by geosynthetic fabrics. The system also dewateres groundwater that is present within the glacial till. Leachate leaks are indicated by the presence acetone and 2-butanone (primary leachate indicator parameters) and increases in concentrations of ammonia and chloride (secondary leachate indicator parameters), as well as increases in specific conductance (conductivity), total dissolved solids, alkalinity, sodium, potassium, and total organic carbon.

LDCS Maintenance. No significant maintenance activities occurred this quarter.

LDCS Daily Monitoring. Daily monitoring of the LDCS sumps for volume of water pumped, liquid level, and specific conductance (conductivity) was performed by using a programmable logic controller (PLC) and through direct measurements by LRI site personnel. Rainfall data were recorded manually using an on-site rain gauge. The combined field and PLC data, as well as time series plots of the data, are included in Attachment H.

Conductivity data from the fully-functioning LDCS sumps trended within typical historical ranges during the second quarter of 2024. However, conductivity probes for LDCS sumps 7, 8, and 9 malfunctioned, therefore, no data was collected during this quarter.

LDCS Quarterly Monitoring. Samples were collected using disposable bailers at LDCS-1, LDCS-2A, and LDCS-2B, and with dedicated QED Sleeper Pumps at LDCS-3A, LDCS-4A, LDCS-4B, LDCS-5, LDCS-6, and LDCS-7. The samples obtained from LDCS-8 and LDCS-9 were collected as a grab samples from a dewatering pump discharge spigot.

LDCS-1 water quality results included a low-level detection of 1,4-dichlorobenzene at 0.92 µg/L. Concentrations of secondary leachate indicator parameters, ammonia and chloride, were reported at 0.32 and 5.1 mg/L, respectively. Therefore, the 1,4-dichlorobenzene detection does not appear to be the result of leachate.

LDCS-2A water quality results included a low-level detection of carbon disulfide at 1.7 µg/L. Concentrations of secondary leachate indicator parameters, ammonia (0.65 mg/L) and chloride (9.9 mg/L), remained low. Therefore, this carbon disulfide detection does not appear to be the result of leachate.

LDCS-2B water quality results include a low-level detection of carbon disulfide at 0.63 µg/L. Primary leachate indicator parameter acetone was also detected at 24 µg/L. Secondary leachate indicator parameters, ammonia and chloride, were detected at low-level concentrations of 3.1 mg/L

and 28 mg/L, respectively. Therefore, these isolated acetone and carbon disulfide detections do not appear to be a result of leachate.

LDCS-7 and LDCS-8 water quality results both included low-level detections of benzene at 2.4 µg/L and 0.63 µg/L, respectively. However, primary leachate indicator parameters acetone and 2-butanone were not detected in either sample. Additionally, secondary leachate indicator parameters, ammonia and chloride, remained low or non-detect; the concentrations of ammonia and chloride were reported at 0.16 mg/L and 5.5 mg/l, respectively, for LDCS- 7. Chloride was detected at 18 mg/L for LDCS-8. Ammonia was not detected this quarter for LDCS-8. As a result, these sporadic benzene detections do not appear to be the result of leachate.

Water quality results for LDCS-3, LDCS-4A, LDCS-4B, LDCS-5, LDCS-6 and LDCS-9 did not show any significant detections.

LDCS time trend plots for inorganic parameters and dissolved metals are included in Attachment G. The following plots are provided for each leak detection sump:

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

Graphical plots of the LDCS water quality results are presented on trilinear (piper) diagrams in Attachment D. These plots demonstrate the inherent water quality differences between groundwater from the monitoring wells, shallow groundwater from the LDCS, and leachate (collected annually in December).

SURFACE WATER MONITORING

Surface water monitoring was performed per the requirements of NPDES Construction Stormwater General Permit (CSWGP) WAR 002603C and NPDES Industrial Stormwater General Permit (ISGP) WAR 002557. During the second quarter of 2024, construction and industrial stormwater treatment with Chitosan Sand Enhanced Filtration (CESF) was utilized each month.

Discharge Monitoring Reports (DMR's) were submitted to Ecology on a monthly (Construction Permit) and quarterly (Industrial Permit) basis. Copies of the second quarter 2024 DMR's are included in Attachment I. No surface water benchmarks or water quality effluent limits were exceeded this quarter.

LEACHATE MONITORING

Leachate volumes were monitored using the automated PLC system and through direct measurements by LRI site personnel. A summary of daily volumes pumped and leachate sump level data is provided in Attachment H.

Collected leachate was truck-hauled to the pretreatment facility at the Hidden Valley Landfill where it was subsequently discharged to the Pierce County sewer system in accordance with Pierce County Utilities Department Industrial Discharge Permit Number PC03096, and to the City of Tacoma and City of Salem Wastewater Treatment Plants for proper disposal. A summary of year to date leachate volume data based on volumes truck-hauled off site is provided on Exhibit 2.

Exhibit 2. 2024 Leachate Volume Data

Month	Leachate Trucked Offsite for Proper Disposal (gallons)	Monthly Rainfall (inches)
January	5,191,007	6.87
February	4,863,281	2.87
March	3,127,021	1.78
April	2,727,925	2.66
May	3,348,614	2.45
June	3,348,614	2.46
Totals	22,606,462	19.09
Notes: Leachate was trucked off-site for proper disposal. Leachate volumes were determined by trucking records kept on a daily basis.		

LANDFILL GAS MONITORING

Monthly monitoring of the landfill gas probes was performed on April 29th, May 17th, and June 25th using a Landtec GEM2000 portable gas monitor. Monitoring results for performance probes installed adjacent to the landfill within the perimeter berm are included in Exhibit 3.

Exhibit 3. 2024 Landfill Gas Probe Monitoring Summary (Percent Methane)
Performance Probes

Monitoring Date	GP-1	GP-2	GP-3	GP-4	GP-9	GP-10	GP-10P	GP-11	GP-12	GP-13	GP-14	GP-15	GP-16
April 29	12.7	0.0	0.0	0.0	0.0	4.3	17.1	0.0	0.0	0.0	0.0	0.0	0.0
May 17	5.6	0.0	0.0	0.0	0.0	0.6	19.8	0.0	0.0	0.0	0.0	0.0	0.0
June 25	1.3	0.0	0.0	0.0	0.0	3.8	11.9	0.0	0.6	0.0	0.0	0.0	0.0

Notes: All values are reported as percent methane by volume.
Methane measurements at or above the lower explosive limit of 5.0% by volume are shown in **bold**.

Monitoring results for five probes that were installed in September 2022 in native soils closer to the property boundary of the facility are included in Exhibit 4. Methane measurements were less than the lower explosive limit (LEL) of five percent by volume at each of these probes.

Exhibit 4. 2024 Landfill Gas Probe Monitoring Summary (Percent Methane)
Native Soils Probes

Monitoring Date	GP-17	GP-18	GP-19	GP-20	GP-21
April 29	0.0	0.0	0.0	0.0	0.0
May 17	0.0	0.0	0.0	0.0	0.0
June 25	0.0	0.0	0.0	0.0	0.0

Notes: All values are reported as percent methane by volume.

Indoor air was tested for the presence of methane on June 25th, 2024. The office, maintenance building, scale house, work shop and energy plant building were monitored with a portable flame ionization detector (MicroFID). Methane was detected at the main office and repair shop at 0.1 ppm to 4.5 ppm, respectively. These results are below the regulatory threshold for methane in site structures.

Field records for gas probe and indoor air monitoring are included in Attachment J.

LANDFILL GAS EXTRACTION WELL CONSTRUCTION

No new landfill gas extraction wells were installed at the landfill during the second quarter of 2024.

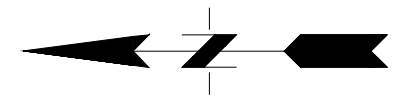
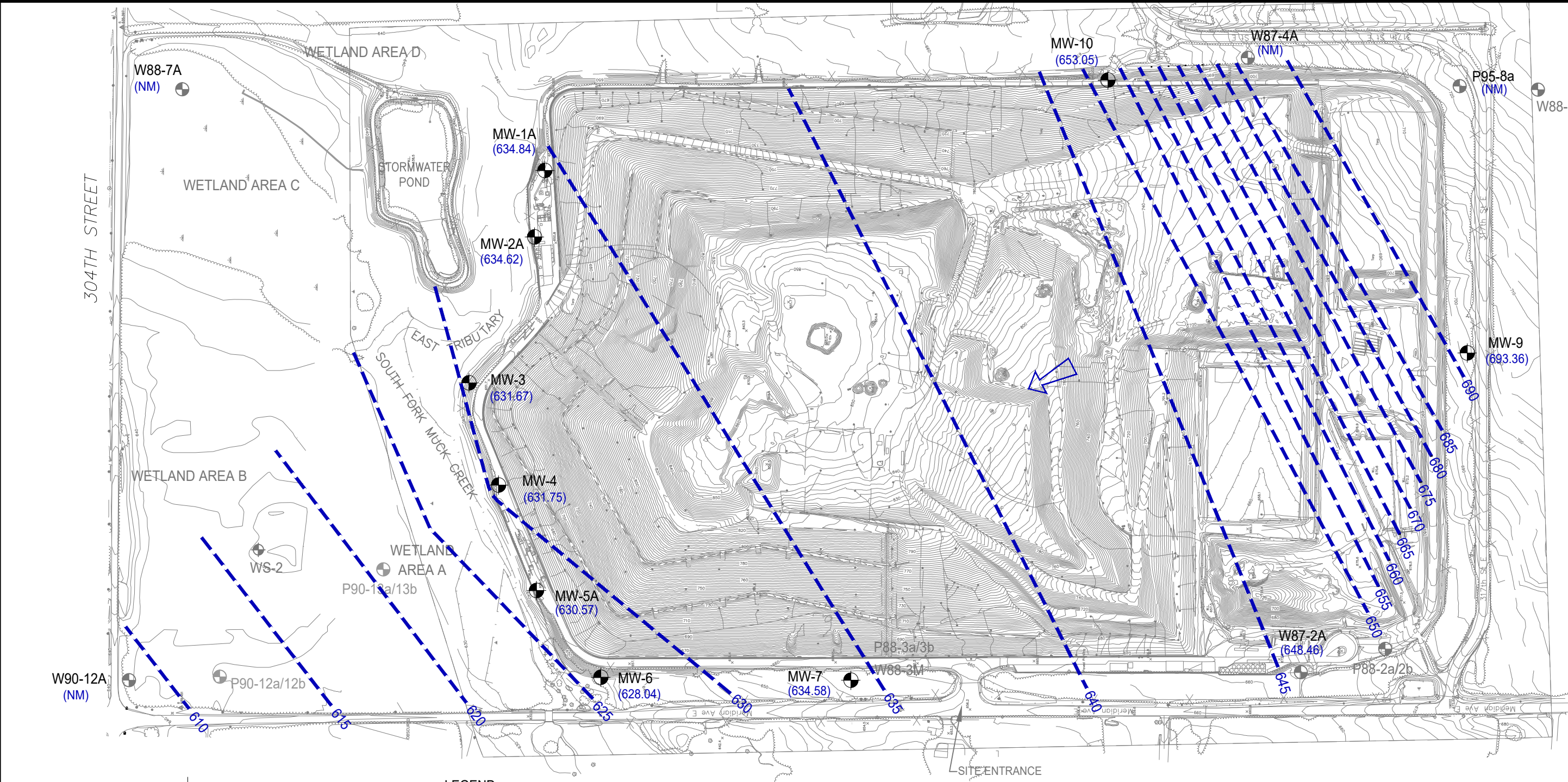
GROUNDWATER MONITORING WELL CONSTRUCTION AND MAINTENANCE

No well construction or significant well maintenance activities were performed this quarter.



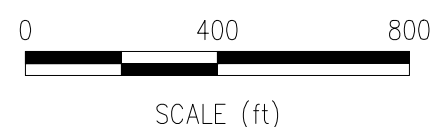
Attachment A

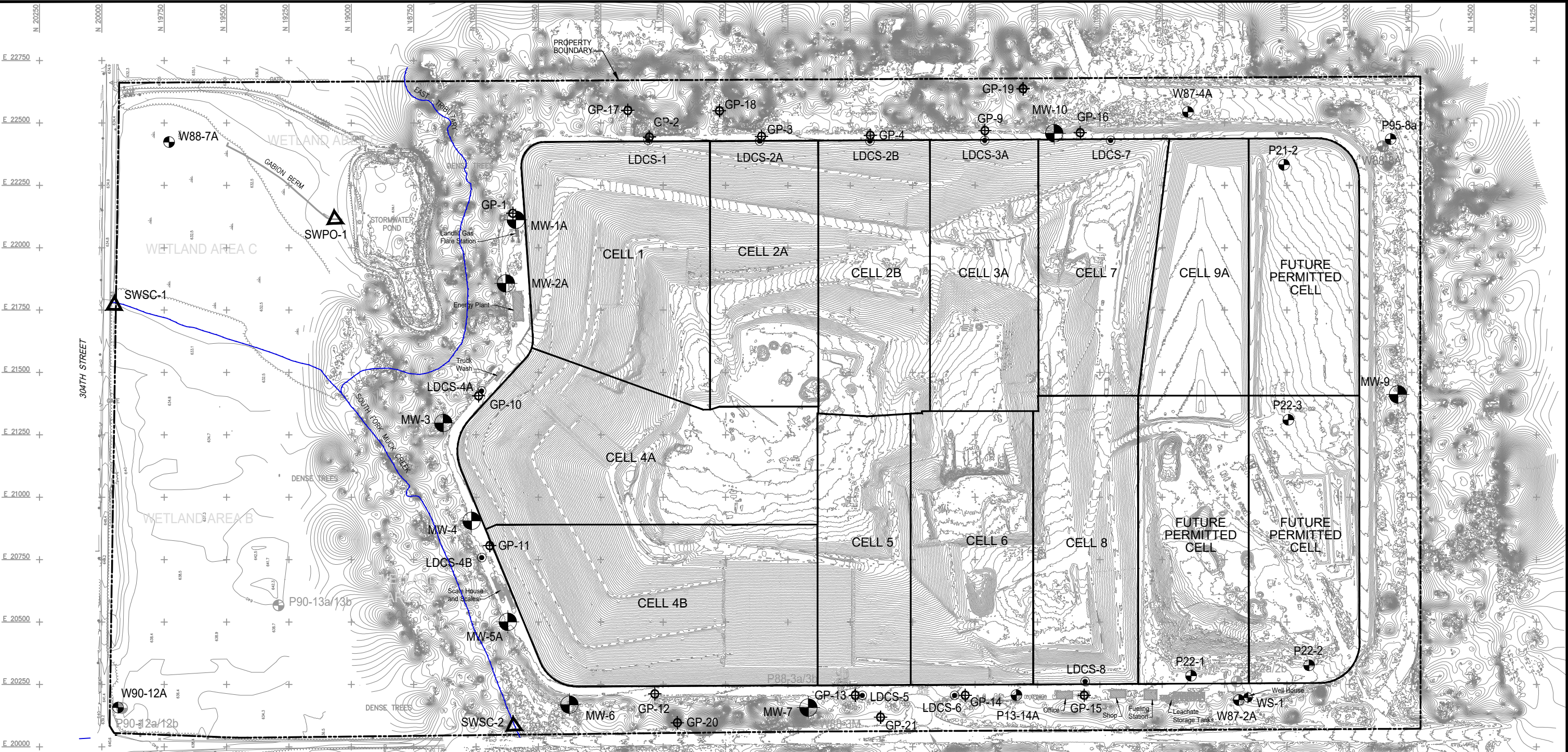
Groundwater Flow Map



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
 - (648.46) GROUNDWATER ELEVATION (IN FEET ABOVE MSL)
 - INFERRED GROUNDWATER FLOW DIRECTION
 - (NM) NOT MEASURED





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

NOTES:

- TOPOGRAPHIC BASE MAP PREPARED BY LRI, USING PHOTOGRAMMETRIC SURVEY METHODS, DATE OF PHOTOGRAPH SEPTEMBER 2, 2022.
- 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.
- VERTICAL DATUM – BASED ON PIERCE COUNTY BENCH NO. 112-18, ELEVATION 660.29 NGVD29.

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PROJECT NO.	04224001.02	DES BY	TAB
SCALE	AS SHOWN	CHK BY	GH
CAD FILE	FIGURE 2	APP BY	GH

SITE MAP
LRI LANDFILL
30919 MERIDIAN STREET EAST
GRAHAM, WASHINGTON

DATE
June 2024
FIGURE
2

Attachment B

Groundwater Data Summary Tables

**Table 1. Groundwater Level Elevations
June 5-7 and 26, 2024
LRI Landfill, Pierce County, Washington**

Location	Well Casing Elevation (ft)	Depth to Water (ft)	Water Level Elevation (ft, NGVD29)
Wells			
W87-2A	664.01	15.55	648.46
MW-1A	652.57	17.73	634.84
MW-2A	651.93	17.31	634.62
MW-3	637.41	5.74	631.67
MW-4	652.37	20.62	631.75
MW-5A	655.55	24.98	630.57
MW-6	635.71	7.67	628.04
MW-7	656.03	21.45	634.58
MW-9	701.77	8.41	693.36
MW-10	678.37	25.32	653.05
Piezometers			
GP-1P	652.00	13.70	638.30
GP-2P	658.61	14.99	643.62
GP-3P	658.51	9.30	649.21
GP-4P	662.01	10.58	651.43
GP-9P	674.03	12.51	661.52
GP-14P		13.09	--
GP-15P		15.87	--
GP-16P	689.51	19.90	669.61
GP-17P		7.26	--
P21-2		22.21	--
P22-1		27.88	--
P22-2		5.11	--
P22-3		10.46	--
South Creek			
SWSC-1	632.68	3.40	629.28
SWSC-2	629.98	4.92	625.06
Leak Detection System			
LDCS-1	657.26	29.09	628.17
LDCS-2A	659.24	29.38	629.86
LDCS-2B	661.70	28.20	633.50

Notes:

NM = not measured

-- = not applicable

All measurements taken on June 5-7, 2024

Table 2. Field Parameters
Second Quarter 2024
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	304-060524-01	6/5/2024	DP	7.04	160	16.6
MW-2A	304-060524-02	6/5/2024	DP	7.12	318	14.0
MW-3	304-060524-03	6/5/2024	DP	7.01	383	11.3
MW-4	304-060524-04	6/5/2024	SP	7.34	311	14.5
MW-5A	304-060524-05	6/5/2024	DP	7.49	315	13.3
MW-6	304-060524-06	6/5/2024	DP	7.54	352	10.4
MW-7	304-060524-07	6/5/2024	DP	7.52	375	10.7
MW-9	304-060524-09	6/5/2024	DP	6.42	136	9.9
MW-10	304-060524-10	6/5/2024	DP	6.73	270	12.7
Leak Detection System						
LDCS-1	304-060624-12	6/6/2024	DB	6.41	729	28.2
LDCS-2A	304-060624-13	6/6/2024	DB	7.00	637	31.3
LDCS-2B	304-060624-14	6/6/2024	DB	6.82	1662	25.2
LDCS-3A	304-060624-15	6/6/2024	DP	6.25	1288	21.1
LDCS-4A	304-060724-16	6/7/2024	DP	6.35	1744	24.4
LDCS-4B	304-061324-17	6/13/2024	DP	6.52	1,112	21.2
LDCS-5	304-060624-18	6/6/2024	DP	6.09	551	26.3
LDCS-6	304-060624-19	6/6/2024	DP	6.25	1,057	26.6
LDCS-7	304-060624-20	6/6/2024	DP	6.14	1,015	23.6
LDCS-8	304-060624-21	6/6/2024	GB	6.25	1,034	28.3
LDCS-9	304-060624-22	6/6/2024	GB	6.02	792	18.8
Leachate Collection System						
Leachate, Cell 7	304-060524-23	6/5/2024	GB	7.73	21,713	31.3
Leachate, Cell 8	304-060524-24	6/5/2024	GB	7.45	16,430	32.5
Leachate, Cell 9	304-060624-25	6/6/2024	GB	6.63	7,281	20.3

Notes:

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

b = Secondary Drinking Water Standard

°C = degrees celcius

DB = disposable bailer

DP = dedicated pump

GB = grab sample

SP = submersible pump

SU = standard units

µS/cm = microsiemens per centimeter

**Table 3. Inorganic Parameters
Second Quarter 2024
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	0.20	0.50	0.20	10	1.0	4.0
WAC 173-200 Criteria	—	—	250	10	250	500	—	—
Prediction Limit	—	—	—	6.4	—	—	—	—
Monitoring Wells								
MW-1A	67	*	0.39	*	23	100	1.5	58
MW-2A	130	0.18	4	*	27	210	1.6	*
MW-3	160	0.13	4.1	*	33	230	1.9	*
MW-4	150	*	3.3	*	10	210	1.2	37
MW-5A	150	0.13	2.8	*	10	190	1.6	*
MW-6	170	0.13	5.9	*	7.9	220	1.8	*
MW-7	200	0.22	3.9	*	3	230	1.6	*
(BG) MW-9	63	*	1.7	*	1.7	120	*	*
(BG) MW-10	120	*	7	2.3	6.5	190	*	*
Leak Detection System								
LDCS-1	210	0.32	5.1	*	*	350	130	-
LDCS-2A	430	0.65	9.9	*	19	500	35	-
LDCS-2B	380	3.1	28	*	27	530	88	-
LDCS-3A	430	0.18	4.5	*	53	550	2.2	-
LDCS-4A	370	0.26	17	*	200	830	6.7	-
LDCS-4B	440	*	30	*	110	640	7.2	-
LDCS-5	220	0.14	12	*	41	320	12	-
LDCS-6	430	0.18	25	*	110	640	4.2	-
LDCS-7	380	0.16	5.5	*	33	500	7.4	-
LDCS-8	510	*	18	*	44	620	8	-
LDCS-9	380	*	5.9	*	42	490	3	-

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 Eurofins TestAmerica of Denver, Colorado

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

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

— = Not applicable or not performed

BG = Background

B = compound was detected in the method blank and the sample

**Table 5. WAC 173-351 Appendix II Metals (Dissolved)
Second Quarter 2024
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	29	*	1.9	0.01	*	2
MW-2A	29	0.90	14	0.33	3.7	17
MW-3	42	*	18	0.33	3.8	14
MW-4	31	*	16	0.21	5.4	13
MW-5A	26	*	11	0.15	3.9	30
MW-6	39	*	18	0.23	5	11
MW-7	36	0.26	24	0.26	5.3	12
(BG) MW-9	11	*	7.1	*	*	7.2
(BG) MW-10	28	*	12	*	2.1	13
Leak Detection System						
LDCS-1	38	70	16	1.4	4.7	17
LDCS-2A	110	23.0	41	3.3	9.5	30
LDCS-2B	100	110	41	1.4	6.4	18
LDCS-3A	100	0.43	45	4	6.4	23
LDCS-4A	180	2.40	48	1.5	4.1	33
LDCS-4B	120	0.10	67	1.7	5	26
LDCS-5	49	0.31	29	0.73	5.8	22
LDCS-6	94	2.70	74	2.4	6.8	24
LDCS-7	44	*	5.9	3.5	*	25
LDCS-8	94	0.57	77	2	4.9	26
LDCS-9	90	*	34	0.98	4.2	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 Eurofins TestAmerica of Denver, Colorado

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

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

** = Reported concentrations for leachate are total metals

— = not applicable or not performed

BG = Background

Table 6. Volatile Organic Compounds (µg/L)
Second Quarter 2024
LRI Landfill, Pierce County, Washington

Parameter	1,4-Dichlorobenzene	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Acetone	Benzene	Carbon disulfide	Ethylbenzene	m-Xylene & p-Xylene	o-Xylene	Toluene
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MRL	0.50	6.0	5.0	10.0	0.50	0.63	1.0	0.50	0.50	0.50
WAC 173-200 Criteria	4.0	—	—	—	1.0	—	—	—	—	—
Monitoring Wells										
MW-1	*	*	*	*	*	*	*	*	*	*
MW-2	*	*	*	*	*	*	*	*	*	*
MW-3	*	*	*	*	*	*	*	*	*	*
MW-4	*	*	*	*	*	*	*	*	*	*
MW-5	*	*	*	*	*	*	*	*	*	*
MW-6	*	*	*	*	*	*	*	*	*	*
MW-7	*	*	*	*	*	*	*	*	*	*
(BG) MW-9	*	*	*	*	*	*	*	*	*	*
(BG) MW-10	*	*	*	*	*	*	*	*	*	*
Leak Detection System										
LDCS-1	0.92	*	*	*	*	*	*	*	*	*
LDCS-2A	*	*	*	*	*	1.7	*	*	*	*
LDCS-2B	*	*	*	24	*	0.63	*	*	*	*
LDCS-3A	*	*	*	*	*	*	*	*	*	*
LDCS-4A	*	*	*	*	*	*	*	*	*	*
LDCS-4B	*	*	*	*	*	*	*	*	*	*
LDCS-5	*	*	*	*	*	*	*	*	*	*
LDCS-6	*	*	*	*	*	*	*	*	*	*
LDCS-7	*	*	*	*	2.4	*	*	*	*	*
LDCS-8	*	*	*	*	0.67	*	*	*	*	*
LDCS-9	*	*	*	*	*	*	*	*	*	*
Quality Control Samples										
Field Blank	*	*	*	*	*	*	*	*	*	*

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

Table 7. Cation-Anion Balance
Second Quarter 2024
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	29	1.9	2.0	1.7	34.6	1.45	0.16	0.05	0.07	1.72	6.9	84.0	9.1
MW-2A	29	14	3.7	17	63.7	1.45	1.15	0.08	0.74	3.42	24.0	42.3	33.7
MW-3	42	18	3.8	14	77.8	2.10	1.48	0.09	0.61	4.27	16.3	49.1	34.7
MW-4	31	16	5.4	13	65.4	1.55	1.32	0.12	0.57	3.55	19.4	43.6	37.1
MW-5A	26	11	3.9	30	70.9	1.30	0.91	0.09	1.31	3.60	38.7	36.1	25.2
MW-6	39	18	4.9	11.0	72.9	1.95	1.48	0.11	0.48	4.02	14.7	48.5	36.9
MW-7	36	24	5.3	12	77.3	1.80	1.98	0.12	0.52	4.41	14.5	40.7	44.8
MW-9	11	7.1	2.0	7.2	27.3	0.55	0.58	0.05	0.31	1.49	24.0	36.8	39.2
MW-10	28	12	2.1	13	55.1	1.40	0.99	0.05	0.57	3.00	20.4	46.6	32.9
LDCS-1	38	16	4.7	17	75.7	1.90	1.32	0.11	0.74	4.06	20.8	46.7	32.4
LDCS-2A	110	41	9.5	30	190.5	5.49	3.37	0.21	1.31	10.38	14.6	52.9	32.5
LDCS-2B	100	41	6.4	18	165.4	4.99	3.37	0.14	0.78	9.29	10.0	53.7	36.3
LDCS-3A	100	45	6.4	23	174.4	4.99	3.70	0.14	1.00	9.84	11.6	50.7	37.6
LDCS-4A	180	48	4.1	33	265.1	8.98	3.95	0.09	1.44	14.46	10.6	62.1	27.3
LDCS-4B	120	67	5.0	26	218	5.99	5.51	0.11	1.13	12.75	9.8	47.0	43.3
LDCS-5	49	29	5.8	22	105.8	2.45	2.39	0.13	0.96	5.92	18.4	41.3	40.3
LDCS-6	94	74	6.8	24	198.8	4.69	6.09	0.15	1.04	11.98	10.0	39.2	50.8
LDCS-7	44	6	2.0	25	76.9	2.20	0.49	0.05	1.09	3.81	29.7	57.6	12.7
LDCS-8	94	77	4.9	26	201.9	4.69	6.34	0.11	1.13	12.27	10.1	38.2	51.6
LDCS-9	90	34	4.2	32	160.2	4.49	2.80	0.09	1.39	8.78	16.9	51.2	31.9

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	80.4	0.4	0.0	23.0	103.79	1.32	0.01	0.000	0.48	1.81	0.6	72.9	26.5	3.53	2.4	10	O
MW-2A	156	4.0	0.0	27.0	187	2.56	0.11	0.000	0.56	3.23	3.5	79.1	17.4	6.66	2.8	5	O
MW-3	192	4.1	0.0	33	229.1	3.15	0.12	0.000	0.69	3.95	2.9	79.7	17.4	8.22	3.9	5	O
MW-4	180	3.3	0.0	10	193.3	2.95	0.09	0.000	0.21	3.25	2.9	90.7	6.4	6.80	4.4	5	O
MW-5A	180	2.8	0.0	10	192.8	2.95	0.08	0.000	0.21	3.24	2.4	91.1	6.4	6.83	5.2	5	Exceeds
MW-6	204	5.9	0.0	7.9	217.8	3.35	0.17	0.000	0.16	3.68	4.5	91.0	4.5	7.69	4.4	5	O
MW-7	240	3.9	0.0	3.0	246.9	3.94	0.11	0.000	0.06	4.11	2.7	95.8	1.5	8.52	3.6	5	O
MW-9	75.6	1.7	0.0	1.7	79	1.24	0.05	0.000	0.04	1.32	3.6	93.7	2.7	2.81	6.0	10	O
MW-10	144	7.0	2.3	6.5	159.8	2.36	0.20	0.037	0.14	2.73	7.2	86.5	5.0	5.73	4.7	5	O
LDCS-1	252	5.1	0.0	5	262.1	4.13	0.14	0.000	0.10	4.38	3.3	94.3	2.4	8.44	3.8	5	O
LDCS-2A	516	9.9	0.0	19	544.9	8.46	0.28	0.000	0.40	9.14	3.1	92.6	4.3	19.52	6.4	5	Exceeds
LDCS-2B	456	28	0.0	27	511	7.48	0.79	0.000	0.56	8.83	8.9	84.7	6.4	18.12	2.6	5	O
LDCS-3A	516	4.5	0.0	53	573.5	8.46	0.13	0.000	1.10	9.69	1.3	87.3	11.4	19.53	0.8	5	O
LDCS-4A	444	17	0.0	200	661	7.28	0.48	0.000	4.16	11.92	4.0	61.1	34.9	26.38	9.6	5	Exceeds
LDCS-4B	528	30	0.0	110	668	8.66	0.85	0.000	2.29	11.79	7.2	73.4	19.4	24.54	3.9	5	O
LDCS-5	264	12	0.0	41	317	4.33	0.34	0.000	0.85	5.52	6.1	78.4	15.4	11.44	3.5	5	O
LDCS-6	516	25	0.0	110	651	8.46	0.71	0.000	2.29	11.46	6.2	73.9	20.0	23.43	2.2	5	O
LDCS-7	456	5.5	0.0	33	495	7.48	0.16	0.000	0.69	8.32	1.9	89.9	8.3	12.13	37.1	5	Exceeds
LDCS-8	612	18	0.0	44	674	10.04	0.51	0.000	0.92	11.46	4.4	87.6	8.0	23.73	3.4	5	O
LDCS-9	456	5.9	0.0	42	504	7.48	0.17	0.000	0.87	8.52	2.0	87.8	10.3	17.29	1.5	5	O

Notes:

mg/L = milligrams per liter

meq/L = milliequivalents per liter

Total alkalinity concentration, reported as calcium carbonate (CaCO₃), is converted to the bicarbonate (HCO₃⁻) ion by multiplying by a factor of 1.2

Cation / anion balance equation is the equivalent percent difference in cations minus anions divided by the sum of cations and anions $[(\text{cations}-\text{anions})/(\text{anions}+\text{cations})*100]$.

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 2024 Monitoring Report
LRI Landfill, Pierce County, Washington**

Parameter	MRL	MW-7	MW-7 (Duplicate)	RPD (%)
Volatile Organic Compounds (µg/L)				
No Detections	-	-	-	-
Inorganic Parameters (mg/L)				
Alkalinity, Total	10	200	200	0.0
Ammonia	0.1	0.22	0.21	4.7
Chloride	0.2	3.9	3.9	0.0
Sulfate	0.2	3	2.9	3.4
Total Dissolved Solids	10	230	230	0.0
Total Organic Carbon	1	1.6	1.5	6.5
Dissolved Metals (mg/L)				
Calcium	0.2	36	36	0.0
Iron	0.1	0.26	0.27	3.8
Magnesium	0.1	24	24	0.0
Manganese	0.005	0.26	0.26	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	0.0057	0.0057	0.0
Barium	0.005	0.016	0.016	0.0

Notes:

Analyses performed by Eurofins TestAmerica of Denver, Colorado

Parameters 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

U= parameter was not detected in sample

* = 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

Attachment C

Field Sampling Documentation

March 21, 2024

File No. 04224001.02

Subject: **First Quarter 2024 Groundwater Monitoring Event**
LRI Landfill, Pierce County, Washington

NOTES/SAMPLE DECODING:

Event Dates: June 5-7 & 13, 2024

Field Staff: Jovany Estrada & Alex Deszo

- This event served as a quarterly monitoring event.
- Dedicated pumps were used for purging and sampling wells MW-1A, MW-2A, MW-3, MW-5A, MW-6, MW-7, MW-9, MW-10, and leak detection/collection system points LDCS-3A, LDCS-4B, LDCS-5, LDCS-6, and LDCS-7.
- Disposable bailers were used to sample leak detection/collection system points LDCS-1, LDCS-2A, LDCS-2B.
- The sample from LDCS-4A, LDCS-8 and LDCS-9 was collected from the channel discharge spigot.
- A non-dedicated Sample Pro pump was used for purging and sampling monitoring point MW-4.
- Leachate was sampled from Cell 7, Cell 8 and Cell 9.
- A round of water level measurements was completed concurrent with monitoring.
- Multiparameter field meters were calibrated daily, prior to sampling.
- Source water for the field blank was lab-grade deionized water (VOC-free) provided by TestAmerica in Tacoma, Washington.
- Due to FedEx shipping delays samples for MW-1A, MW-2A, MW-4 and MW-10 were received by the lab outside of holding times and temperatures.

Sample Number	Well Number
304-060524-01	MW-1A
304-060524-02	MW-2A
304-060524-03	MW-3
304-060524-04	MW-4
304-060524-05	MW-5A
304-060524-06	MW-6
304-060524-07	MW-7
304-060524-08	MW-7 DUPLICATE
304-060524-09	MW-9
304-060524-10	MW-10

304-060524-11	FIELD BLANK
304-060624-12	LDCS-1
304-060624-13	LDCS-2A
304-060624-14	LDCS-2B
304-060624-15	LDCS-3
304-060724-16	LDCS-4A
304-061324-17	LDCS-4B
304-060624-18	LDCS-5
304-060624-19	LDCS-6
304-060624-20	LDCS-7
304-060624-21	LDCS-8
304-060624-22	LDCS-9
304-060524-23	Leachate, Cell 7
304-060524-24	Leachate, Cell 8
304-060624-25	Leachate, Cell 9

Bellevue, WA 98005

(425) 746-4600

Project #:	04224001.02		Sampling Method:	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other	
Site	LRI 304th		Meter:	CONTROL SETTINGS:			1 ft water = 0.62L	1L = 0.26 gallons		
Well ID:	MW - 1A		MP-20	Refill	9	One Well Volume		Other:		
Sample ID:	304-060524-01		YSI	Discharge	6	(liters)		Flow		
Date:	6/5/24		BOS	Pressure	40	Total Volume Bailed		Setting:		
Weather:	partly cloudy 60°F	Total Depth	Flow	~100 ml/min						
Filtered?	Y N	Locked?	Y N	Water in Protector?	Y N	Damage?				
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly						
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber						
	125 ml NaOH									
Notes / Observations (color, odor, anomalies, etc):										
~10 min for H2O - very low flow.										

[illegible]

Notes / Observations (color, odor, anomalies, etc):

~ 10 min for H_2O , very low flow.
Mound full of sand, pictures
taken.

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name _____

Signature _____

**2405 140th ave NE #107
Bellevue, WA 98005**

(425) 746-4600

Project #:	04224001.02			Sampling Method:	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other	
Site	LRI 304th			Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons			
Well ID:	MN-21A			MP-20	Refill	9	One Well Volume	Other:			
Sample ID:	304-060524-02			YSI	Discharge	6	(liters)	Flow			
Date:	6/5/24			BOS	Pressure	30	Total Volume Bailed	Setting:			
Weather:	Sunny 60°F			Total Depth	Flow	400ml/min	(liters)				
Filtered?	Y	N	Locked?	Y	N	Water in Protector?	Y	N	Damage?	Y	N
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly							
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber							
	125 ml NaOH										
Notes / Observations (color, odor, anomalies, etc):											

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q / Vol.
1151		14.8	279.4	6.29	7.36	35.1	14	
1156		14.2	328.2	0.72	6.94	-66.2	6.44	
1159		14.1	337.3	0.61	7.06	-94.8	4.21	
1202		14.0	333.2	0.58	7.11	-110.1	3.88	
1205		14.0	325.3	0.56	7.12	-117.9	3.19	
1208		14.0	321.1	0.56	7.12	-122.3	3.26	
1211		14.0	318.3	0.55	7.12	-125.1	3.31	

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name _____

Signature _____

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04224001.02		Sampling Method: <u>Dedicated</u>		1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site: LRI 304th		DTW	Meter: <u>CONTROL SETTINGS:</u>	1 ft water = 0.62L		1L = 0.26 gallons		
Well ID: <u>MW-3</u>		TOS	MP-20	Refill <u>9</u>	One Well Volume _____		Other: _____	
Sample ID: <u>304-060524-03</u>		Intake	<u>YSI</u>	Discharge <u>6</u>	(liters)		Flow Setting: _____	
Date: <u>6/5/24</u>		BOS		Pressure <u>35</u>	Total Volume Bailed _____			
Weather: <u>Clear</u>		Total Depth		Flow <u>550 ml/min</u>	(liters)			
Filtered? <u>Y</u> N	Locked? <u>Y</u> N	Water in Protector? <u>Y</u> N	Damage? <u>Y</u> N					
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly				
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber				
	125 ml NaOH							
Notes / Observations (color, odor, anomalies, etc):								

[illegible]

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Jovany Estrada
Printed Name


Signature

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #:	04224001.02			Sampling Method :	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other	
Site	LRI 304th			Meter:	CONTROL SETTINGS:			1 ft water = 0.62L 1L = 0.26 gallons			
Well ID:	MW-4			MP-20	Refill	9	One Well Volume	Other :			
Sample ID:	304-060524-04			YSI	Discharge	6	(liters)	Flow			
Date:	6/5/24			BOS	Pressure	58	Total Volume Bailed	Setting :			
Weather:	Sunny 68F			Total Depth	Flow	250 ml/min	(liters)				
Filtered?	Y	N	Locked?	Y	N	Water in Protector?	Y	N	Damage?	Y	N
Sample Containers:	1000 ml Poly		500 ml Poly		250 ml Poly		125 ml Poly				
	500 ml HNO3 x2		500 ml H2SO4 x2		40 ml VOA x3 x6		1000 ml Amber				
	125 ml NaOH										
Notes / Observations (color, odor, anomalies, etc):											

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name _____

Signature

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04224001.02		Sampling Method: Dedicated		1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site: LRI 304th			Meter: CONTROL SETTINGS:	1 ft water = 0.62L		1L = 0.26 gallons		
Well ID: MW-5A			MP-20	Refill	One Well Volume		Other:	
Sample ID: 304-060524-05			YSI	Discharge	(liters)		Flow	
Date: 6/5/24				Pressure	Total Volume Bailed		Setting:	
Weather: Sunny				Flow	(liters)			
Filtered? ☒ N	Locked? ☒ N	Water in Protector? ☐ Y ☒ N	Damage? ☐ Y ☒ N					
Sample Containers:		1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly			
		500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber			
		125 ml NaOH						

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name _____

Signature _____

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #:	04224001.02			Sampling Method:	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other	
Site	LRI 304th			Meter:	CONTROL SETTINGS:			1 ft water = 0.62L 1L = 0.26 gallons			
Well ID:	MW-6			MP-20	Refill	9	One Well Volume (liters)			Other:	
Sample ID:	304-060524-06			YSI	Discharge	6	Total Volume Bailed (liters)			Flow Setting:	
Date:	6/5/24			BOS	Pressure	25					
Weather:	Clear			Total Depth	Flow	325 ml/min					
Filtered?	Y	N	Locked?	Y	N	Water in Protector?	Y	N	Damage?	Y	N
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly							
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber							
	125 ml NaOH										
Notes / Observations (color, odor, anomalies, etc):											

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Jovany Estrada
Printed Name

Signature

Bellevue, WA 98005

(425) 746-4600

Project #:	04224001.02	Sampling Method:		Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304th		Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons		
Well ID:	MW-7		TOS	MP-20	Refill	9	One Well Volume	Other:	
Sample ID:	304-060524-07		Intake	YSI	Discharge	6	(liters)	Flow	
Date:	6/5/24		BOS		Pressure	30	Total Volume Bailed	Setting:	
Weather:	Clear		Total Depth		Flow	500 ml/min	(liters)		
Filtered?	☒ Y ☐ N	Locked?	☒ Y ☐ N	Water in Protector?	☒ Y ☐ N	Damage?	☒ Y ☐ N		
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly					
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber					
	125 ml NaOH								
Notes / Observations (color, odor, anomalies, etc):									

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Dup taken @ 1445
304-066524-08

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Jovany Estrada
Printed Name

Signature

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04224001.02		Sampling Method: <u>Dedicated</u>		1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site: LRI 304th		8.41 DTW	Meter: <u>CONTROL SETTINGS:</u>	1 ft water = 0.62L		1L = 0.26 gallons		
Well ID: <u>MW-9</u>		TOS	MP-20	Refill <u>9</u>	One Well Volume	Other:		
Sample ID: <u>304-060924-09</u>		Intake	<u>YSI</u>	Discharge <u>6</u>	(liters)	Flow		
Date: <u>6/5/24</u>		BOS		Pressure <u>4045</u>	Total Volume Bailed	Setting:		
Weather: <u>Clear</u>		Total Depth		Flow <u>400 ml/min</u>	(liters)			
Filtered? <u>Y</u> N	Locked? <u>Y</u> N	Water in Protector? <u>Y</u> N	Damage? <u>Y</u> N					
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly	Notes / Observations (color, odor, anomalies, etc):			
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber				
	125 ml NaOH							

[illegible]

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Jovany Estrada
Printed Name

Signature _____

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #:	04224001.02			Sampling Method:	Dedicated		1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304th			Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons			
Well ID:	MW - 10			MP-20	Refill	9	One Well Volume	Other:			
Sample ID:	304-060524-10			YSI	Discharge	6	(liters)	Flow			
Date:	6/5/24			BOS	Pressure	40	Total Volume Bailed	Setting:			
Weather:	partly cloudy 57°F			Total Depth	Flow	200 ml/min	(liters)				
Filtered?	Y	N	Locked?	Y	N	Water in Protector?	Y	N	Damage?	Y	N
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly							
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber							
	125 ml NaOH										
Notes / Observations (color, odor, anomalies, etc):											

[illegible]

Notes / Observations (color, odor, anomalies, etc):

→ Bubbles en Sensor

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Alex Dine
Printed Name

Signature _____

Bellevue, WA 98005

(425) 746-4600

Project #: 04224001.02		Sampling Method : Dedicated		1.75" QED SamplePro		Bail		Peristaltic		Grab		Other	
Site LRI 304th		DTW		Meter: CONTROL SETTINGS:		1 ft water = 0.62L		1L = 0.26 gallons					
Well ID: Field Blank		TOS		MP-20		Refill		One Well Volume		Other :			
Sample ID: 304-060524-11		Intake		YSI		Discharge		(liters)		Flow			
Date: 6/5/24		BOS				Pressure		Total Volume Bailed		Setting :			
Weather: clear		Total Depth				Flow		(liters)					
Filtered? ☒ Y ☐ N		Locked? ☒ Y ☐ N		Water in Protector? ☒ Y ☐ N		Damage? ☒ Y ☐ N							
Sample Containers:		1000 ml Poly		500 ml Poly		250 ml Poly		125 ml Poly					
		500 ml HNO3 x2		500 ml H2SO4 x2		40 ml VOA x3 x6		1000 ml Amber					
		125 ml NaOH											
Notes / Observations (color, odor, anomalies, etc):													

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Jorany Estrada
Printed Name

Signature _____

Bellevue, WA 98005

(425) 746-4600

Project #:	04224001.02			Sampling Method:	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304th			Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons		
Well ID:	LDCS - 1			MP-20	Refill		One Well Volume (liters)	Other:		
Sample ID:	304-260624-12			YSI	Discharge			Flow Setting:		
Date:	6/6/24			BOS	Pressure		Total Volume Bailed (liters)			
Weather:	Clear			Total Depth	Flow					
Filtered?	Y	N		Locked?	Y	N		Notes / Observations (color, odor, anomalies, etc):		
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly						
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber						
	125 ml NaOH									

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name _____

Signature

Bellevue, WA 98005

(425) 746-4600

Project #:	04224001-02		Sampling Method:	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304th		DTW	29.38	Meter:	CONTROL SETTINGS:			
Well ID:	LDCS-2A		TOS		MP-20	1 ft water = 0.62L	1L = 0.26 gallons		
Sample ID:	304-060624-13		Intake		YSI	Refill	One Well Volume	Other:	
Date:	6/6/24		BOS			Discharge	(liters)	Flow	
Weather:	Clear		Total Depth			Pressure	Total Volume Bailed	Setting:	
						Flow	(liters)		
Filtered?	☒ Y	☐ N	Locked?	☒ Y	☐ N	Water in Protector?	☒ Y	☐ N	Damage?
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly					
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber					
	125 ml NaOH								
Notes / Observations (color, odor, anomalies, etc):									

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Jovany Estrada
Printed Name


Signature

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04224001.02		Sampling Method: Dedicated		1.75" QED SamplePro		Bail	Peristaltic	Grab	Other
Site: LRI 304th		28.20 DTW	Meter: CONTROL SETTINGS:	1 ft water = 0.62L		1L = 0.26 gallons			
Well ID: LDC5-2B		TOS	MP-20	Refill	One Well Volume (liters)		Other:		
Sample ID: 304-060624-14		Intake	YSI	Discharge	Total Volume Bailed (liters)		Flow Setting:		
Date: 6/6/24		BOS		Pressure					
Weather: Clear		Total Depth		Flow					
Filtered? ☒ Y ☐ N	Locked? ☐ Y ☒ N	Water in Protector? ☐ Y ☒ N	Damage? ☐ Y ☒ N						
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly	Notes / Observations (color, odor, anomalies, etc):				
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber					
	125 ml NaOH								

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Jovany Estrada
Printed Name

Signature _____

Bellevue, WA 98005

(425) 746-4600

Project #:	04224001.02	Sampling Method:		Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304th		DTW	Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons	
Well ID:	LDC5-3A		TOS	MP-20	Refill	12	One Well Volume	Other:	
Sample ID:	304-060624-15		Intake	YSI	Discharge	3	(liters)	Flow	
Date:	6/6/24		BOS		Pressure	40	Total Volume Bailed	Setting:	
Weather:	Clear		Total Depth		Flow	350 ml/min	(liters)		
Filtered?	☒ Y	Locked?	☒ Y	Water in Protector?	☒ Y	Damage?	☒ Y		
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly	Notes / Observations (color, odor, anomalies, etc):				
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber					
	125 ml NaOH								

[illegible]

Notes / Observations (color, odor, anomalies, etc):

NTU very sporadic

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Jovany Estrada
Printed Name


Signature

Bellevue, WA 98005

(425) 746-4600

Project #:	04224001.02			Sampling Method :	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304th			Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons		
Well ID:	LDCS - 4A			MP-20	Refill		One Well Volume	Other :		
Sample ID:	304-060724-16			YSI	Discharge		(liters)	Flow		
Date:	6/7/2024			BOS	Pressure		Total Volume Bailed	Setting :		
Weather:	Clear			Total Depth	Flow		(liters)			
Filtered?	Y	N		Locked?	Y	N		Water in Protector?	Y	N
Sample Containers:	1000 ml Poly			500 ml Poly	250 ml Poly			125 ml Poly		
	500 ml HNO3 x2			500 ml H2SO4 x2	40 ml VOA x3 x6			1000 ml Amber		
	125 ml NaOH									
Notes / Observations (color, odor, anomalies, etc):										

[illegible]

Notes / Observations (color, odor, anomalies, etc):

* Sample taken as "Grab" from Storm Channel discharge.

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name

Signature _____

Bellevue, WA 98005

(425) 746-4600

Project #:	04224001.02	Sampling Method:		Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304th		DTW	Meter:	CONTROL SETTINGS:		1 ft water = 0.62L	1L = 0.26 gallons	
Well ID:	UDS-5		TOS	MP-20	Refill	12	One Well Volume	Other:	
Sample ID:	304-000624-18		Intake	YSI	Discharge	3	(liters)	Flow	
Date:	6/6/24		BOS		Pressure	40	Total Volume Bailed	Setting:	
Weather:	Clear 70°F		Total Depth		Flow		(liters)		
Filtered?	Y N	Locked?	Y N	Water in Protector?	Y N	Damage?	Y N		
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly	Notes / Observations (color, odor, anomalies, etc):				
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber					
	125 ml NaOH								

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name

Signature

Bellevue, WA 98005

(425) 746-4600

Groundwater Sampling Data Sheet

Project #: 04224001.02		Sampling Method: <u>Dedicated</u>		1.75" QED SamplePro	Well	Peristaltic	Grab	Other	
Site: LRI 304th			Meter: <u>CONTROL SETTINGS:</u>		1 ft water = 0.62L	1L = 0.26 gallons			
Well ID: <u>LDL5-6</u>			MP-20	Refill: <u>12</u>	One Well Volume (liters)	Other: _____			
Sample ID: <u>304-C60624-19</u>			<u>YSI</u>	Discharge: <u>3</u>	Total Volume Bailed (liters)	Flow Setting: _____			
Date: <u>6/6/24</u>			BOS	Pressure: <u>40</u>					
Weather: <u>Clear 70°F</u>			Total Depth	Flow					
Filtered? ☒	Locked? ☒	Water in Protector? ☒	Damage? ☒		Notes / Observations (color, odor, anomalies, etc):				
Sample Containers:		1000 ml Poly	500 ml Poly	250 ml Poly					125 ml Poly
		500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6					1000 ml Amber
		125 ml NaOH							

[illegible]

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Alex Reese
Printed Name

Signature _____

Bellevue, WA 98005

(425) 746-4600

Project #: 04224001.02		Sampling Method: Dedicated		1.75" QED SamplePro		Bail		Peristaltic		Grab		Other	
Site: LRI 304th		DTW		Meter: CONTROL SETTINGS:		1 ft water = 0.62L		1L = 0.26 gallons					
Well ID: LDCS-7		TOS		MP-20		Refill 11.5		One Well Volume		Other:			
Sample ID: 304-060624-20		Intake		YSI		Discharge 3.5		(liters)		Flow			
Date: 6/6/24		BOS				Pressure 40		Total Volume Bailed		Setting:			
Weather: clear		Total Depth				Flow 200ml/min		(liters)					
Filtered? (Y) N		Locked? (Y) N		Water in Protector? Y (N)		Damage? Y (N)							
Sample Containers:		1000 ml Poly		500 ml Poly		250 ml Poly		125 ml Poly					
		500 ml HNO3 x2		500 ml H2SO4 x2		40 ml VOA x3 x6		1000 ml Amber					
		125 ml NaOH											
Notes / Observations (color, odor, anomalies, etc):													

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER: Jovany Estrada
Printed Name

Signature

Bellevue, WA 98005

(425) 746-4600

Project #:	04224001.02		Sampling Method:	Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other
Site	LRI 304th		Meter:	CONTROL SETTINGS:					
Well ID:	LDOS-8		MP-20	Refill	1 ft water = 0.62L		1L = 0.26 gallons		
Sample ID:	304-060624-21		YSI	Discharge	One Well Volume	Other:			
Date:	6/6/24			Pressure	(liters)	Flow			
Weather:	Clear			Flow	Total Volume Bailed	Setting:			
					(liters)				
Filtered? Y ☒ N	Locked? Y ☒ N	Water in Protector? Y ☒ N	Damage? Y ☒ N						
Sample Containers:	1000 ml Poly	500 ml Poly	250 ml Poly	125 ml Poly					
	500 ml HNO3 x2	500 ml H2SO4 x2	40 ml VOA x3 x6	1000 ml Amber					
	125 ml NaOH								
Notes / Observations (color, odor, anomalies, etc):									
V. A. 3/1/24 Filtered									

[illegible]

Notes / Observations (color, odor, anomalies, etc):

* As2 Log to Filter *

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name

Signature _____

Bellevue, WA 98005

(425) 746-4600

Project #: 04224001.02

Site LRI 304th

Well ID: CDS-9

Sample ID: 304-060624-22

Date: 6/6/24

Weather: Clear 60°F

Filtered? ☒ Y ☐ N

Locked? Y N

Water in Protector? Y N

Damage? Y N

Sample Containers:

1000 ml Poly.

500 ml Poly

250 ml Poly

125 ml Poly

500 ml HNO3 x2

500 ml H₂SO₄ x2

40 ml VOA	x3	x6
-----------	----	----

1000 ml Amber

125 ml NaOH

[illegible]

Notes / Observations (color, odor, anomalies, etc):

* Ask Log to filter *

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name

Signature _____

Bellevue, WA 98005

(425) 746-4600

Project #: 04224001.02		Sampling Method:		Dedicated	1.75" QED SamplePro	Bail	Peristaltic	Grab	Other				
Site: LRI 304th		Meter:		CONTROL SETTINGS:		1 ft water = 0.62L		1L = 0.26 gallons					
Well ID: Cell 8, Leachate		MP-20		Refill		One Well Volume		Other:					
Sample ID: 304-CGCS24-24		YSI		Discharge		(liters)		Flow					
Date: 6/5/24				Pressure		Total Volume Bailed		Setting:					
Weather: Sunny				Flow		(liters)							
Filtered? Y ☒	Locked? Y ☒	Water in Protector? Y ☒		Damage? Y ☒		Notes / Observations (color, odor, anomalies, etc):							
Sample Containers:		1000 ml Poly		500 ml Poly						250 ml Poly		125 ml Poly	
		500 ml HNO3 x2		500 ml H2SO4 x2						40 ml VOA x3 x6		1000 ml Amber	
		125 ml NaOH											

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name _____

Signature _____

Bellevue, WA 98005

(425) 746-4600

Project #: 04224001.02		Sampling Method: Dedicated		1.75" QED SamplePro		Bail		Peristaltic		Grab		Other	
Site: LRI 304th		DTW		Meter: CONTROL SETTINGS:		1 ft water = 0.62L		1L = 0.26 gallons					
Well ID: Cell 9, leachate		TOS		MP-20		Refill		One Well Volume		Other:			
Sample ID: 304-060624-25		Intake		YSI		Discharge		(liters)		Flow			
Date: 6/6/24		BOS				Pressure		Total Volume Bailed		Setting:			
Weather: Sunny		Total Depth				Flow		(liters)					
Filtered? Y ☒		Locked? Y ☒		Water in Protector? Y ☒		Damage? Y ☒							
Sample Containers:		1000 ml Poly		500 ml Poly		250 ml Poly		125 ml Poly					
		500 ml HNO3 x2		500 ml H2SO4 x2		40 ml VOA x3 x6		1000 ml Amber					
		125 ml NaOH											
Notes / Observations (color, odor, anomalies, etc):													

[illegible]

Notes / Observations (color, odor, anomalies, etc):

Stabilization Parameters: pH/DO ± 0.2 , SpC $\pm 10\%$, Temp $\pm 0.5^\circ\text{C}$, Turb. $\pm 10\%$ or ≤ 5

SAMPLER:

Printed Name _____

Signature

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

Date	6/5/24					
Time	0900					
Weather (sky or precip, temp)	clear					
Parameter	Conductivity	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.00	7.00	100% or ~8.5	1000, 10, 0.2 100, 20, <0.1	800,
Pre-Cal Reading	1334	3.99	6.95	9.85		
Post Cal Reading	1413	4.00	7.00	8.50		
Discrepancy	No					
Calib. Successful?	yes					
Calibration by	Jovany Estrada					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental			YSI Pro DDS / HACH2000		
Calibration Location	LPI Parking lot					

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

Date	6/6/24					
Time	0905					
Weather (sky or precip, temp)	Clear					
Parameter	Conductivity	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.00	7.00	100% or ~8.5	1000, 10, 0.2 100, 20, <0.1	800,
Pre-Cal Reading	823	3.97	7.04	8.78		
Post Cal Reading	1413	4.00	7.00	8.50		
Discrepancy	None					
Calib. Successful?	Yes					
Calibration by	Jovany Estrade					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental			YSI Pro DDS / HACH2000		
Calibration Location	LRI Parking					

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

Date	6/7/24					
Time	0926					
Weather (sky or precip, temp)	Clear					
Parameter	Conductivity	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.00	7.00	100% or ~8.5	1000, 10, 0.2 100, 20, <0.1	800,
Pre-Cal Reading	1417	4.21	7.30	8.14	—	
Post Cal Reading	1413	4.00	7.00	8.5	—	
Discrepancy	NO					
Calib. Successful?	Yes					
Calibration by	AMW					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental				YSI Pro DDS / HACH2000	
Calibration Location	LDI 304 Lot					

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM

Date	6/13/24					
Time	0934					
Weather (sky or precip, temp)	Clear					
Parameter	Conductivity	pH 4	pH 7	D.O.	Turbidity	Comments/Exceptions
Type of Calibration	Standard	Standard	Standard	Standard	Standard	
Standard Value	1413	4.00	7.00	100% or ~8.5	1000, 10, 0.2 100, 20, <0.1	800,
Pre-Cal Reading	1313	4.07	7.04	8.48	—	
Post Cal Reading	1413	4.00	7.00	8.5	—	
Discrepancy	No					
Calib. Successful?	Yes					
Calibration by	AMD					
Instrument Type, ID	YSI Pro DDS / YSI 556 / Rental			YSI Pro DDS / HACH2000		
Calibration Location	CRF 304 lot					

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)



Attachment D

Statistical Calculations

Statistical Summary of Total Metals and Nitrate Groundwater Data
Appendix I Parameters, Second Quarter 2024
LRI Landfill, Pierce County, Washington

Location ID	Monitoring Date	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)																																																																																																																																																																																																																																																																																																																																																																																			
		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	0.005	L	0.0025	0.01	L	0.005	0.001	L	0.0005	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	0.005	L	0.0025	0.01	L	0.005	0.001	L	0.0005	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	0.002	L	0.001	0.005	L	0.0025	0.01	L	0.005	0.005	L	0.0025	0.01	L	0.005	0.022	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	0.001	L	0.0005	0.002	L	0.001	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	0.032	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	0.005	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	0.001	L	0.0005	0.005	L	0.0025	0.001	L	0.0005	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	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.01	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	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.01	L	0.005	0.5	L	0.25																																																																																																																																																																																																																																																																																																																																																																									
	Number Analyzed	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	8	2	8	0	8	0	8	0	8	0																																																																																																																																																																																																																																																																																																																																																																										
	Number Detected	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																																																																																																																																																																																																																																																																																																								
	Minimum Concentration	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001																																																																																																																																																																																																																																																																																																																																																																						
	Maximum Concentration	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025																																																																																																																																																																																																																																																																																																																																																																				
	Average Concentration	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC																																																																																																																																																																																																																																																																																																																																																																	
	Variance	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC																																																																																																																																																																																																																																																																																																																																																																	
	Standard Deviation	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC																																																																																																																																																																																																																																																																																																																																																																
	Coefficient of Variation (%)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC																																																																																																																																																																																																																																																																																																																																																																
	Standard Error	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	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	0.005	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	0.015	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	0.005	L	0.0025	0.005	L	0.0025	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	0.002	L	0.001	0.005	L	0.0025	0.01	L	0.005	0.005	L	0.0025	0.01	L	0.005	0.005	L	0.0025	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	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.005

Statistical Summary of Total Metals and Nitrate Groundwater Data
Appendix I Parameters, Second Quarter 2024
LRI Landfill, Pierce County, Washington

Location ID	Monitoring Date	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)	
		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-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	L 0.005	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	0.001	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	0.001	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		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		
	Maximum Concentration		0.025		0.008		0.036		0.0025		0.0025		0.0051		0.005		0.0061		0.005		0.0061		0.005		0.005		0.0025		0.005		0.01		
	Average Concentration	NC		NC	0.00631	NC	0.026	NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC	
	Variance	NC		NC	3E-06	NC	6E-05	NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC	
	Standard Deviation	NC		NC	0.00175	NC	0.00776	NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC	
	Coefficient of Variation (%)	NC		NC	27.6653	NC	29.863	NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC	
	Standard Error	NC		NC	0.00062	NC	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		
	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		
	Average Concentration	NC		NC	0.00715	NC	0.01113	NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC	
	Variance	NC		NC	2.1E-07	NC	1.8E-06	NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC	
	Standard Deviation	NC		NC	0.00046	NC	0.00136	NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC	
	Coefficient of Variation (%)	NC		NC	6.38736	NC	12.1906	NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC		NC	
	Standard Error	NC		NC	0.00016	NC	0.00048	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	0.002	L 0.001	0.02	L 0.01	0.005	L 0.0025	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 0.0.								

Statistical Summary of Total Metals and Nitrate Groundwater Data
Appendix I Parameters, Second Quarter 2024
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.	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	0.014	0.014	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	0.016	0.016	0.01	L	0.005	0.5	L	0.25				
	9/18/2014	0.001	L	0.005	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	0.014	0.014	0.014	0.014	0.5	L	0.25					
	12/17/2014	0.01	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.001	L	0.0005	0.001	L	0.0005	0.002	L	0.001	0.005	L	0.002	0.001	L	0.005	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			
	3/12/2015	0.025	L	0.005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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	0.002	L	0.001	0.002	L	0.005	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	L	0.0025	0.005	L	0.0005	0.001	L	0.0005	0.001	L	0.0005	0.002	L	0.001	0.005	L	0.002	0.001	L	0.005	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			
	12/14/2015	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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			
	3/22/2016	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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				
	9/18/2016	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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				
	12/6/2016	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	0.002	L	0.001	0.002	L	0.005	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				
	3/1/2017	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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			
	6/1/2018	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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			
	12/1/2018	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	0.002	L	0.001	0.002	L	0.005	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				
	3/14/2019	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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	0.002	L	0.001	0.002	L	0.005	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	0.025	L	0.005	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	0.002	L	0.001	0.002	L	0.005	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			
	12/1/2019	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.015	0.015	0.01	L	0.005	0.5	L	0.25			
	3/17/2020	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.015	0.015	0.01	L	0.005	0.5	L	0.25			
	6/8/2020	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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			
	9/1/2020	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.015	0.015	0.01	L	0.005	0.5	L	0.25			
	12/16/2020	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	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			
	3/9/2021	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.015	0.015	0.01	L	0.005	0.5	L	0.25			
	6/15/2021	0.005	L	0.005	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.015	0.015	0.01	L	0.005	0.5	L	0.25			
	9/1/2021	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.0025	0.005	L	0.0025	0.001	L	0.0005	0.002	L	0.001	0.002	L	0.005	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0025	0.015	0.015	0.01	L	0.005	0.5	L	0.25			
	12/15/2021	0.05	L	0.025	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.0005	0.005	L	0.002																																

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Appendix I Parameters, Second Quarter 2024
LRI Landfill, Pierce County, Washington

Location ID	Monitoring Date	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)						
		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-10	3/25/2014	0.002	L	0.001	0.005	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	0.005	L	0.0005	0.001	L	0.0005	0.01	L	0.005	6.4	6.4		
	6/25/2014	0.002	L	0.001	0.005	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	0.005	L	0.0005	0.001	L	0.0005	0.01	L	0.005	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	0.0005	0.01	L	0.005	0.002	L	0.001	0.005	L	0.0025	0.005	L	0.0025	0.01	L	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.005	5.9	5.9
	6/4/2016	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.005	3.9	3.9
	3/17/2020	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.005	0.034	3.7
	6/9/2020	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.005	3.7	3.7
	9/22/2020	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.005	0.011	3.4
	12/16/2020	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.005	3.2	3.2
	3/9/2021	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.005	3.2	3.2
	6/15/2021	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.005	2.5	2.5
	9/15/2021	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.005	0.011	2.9
	12/15/2021	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.005	0.011	3.0
	3/30/2022	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	0.002	L	0.001	0.02	L	0.01	0.005	L	0.0025	0.005	L	0.0025	0.005	L	0.005	0.013	3.0
	6/15/2022	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	0.002	L	0.001	0.02	L	0.01	0.005</										

Groundwater Prediction Limits (mg/L)
Appendix I Parameters, Second Quarter 2024
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 L	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	0.017	0.010 L	0.010 L	0.010 L	0.014	0.010 L	0.010 L	0.010 L	0.017	0.010 L
Zinc	0.01	0.290	0.032	0.010 L	0.010 L	0.290	0.010 L	0.010 L	0.010 L	0.043	0.034
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.

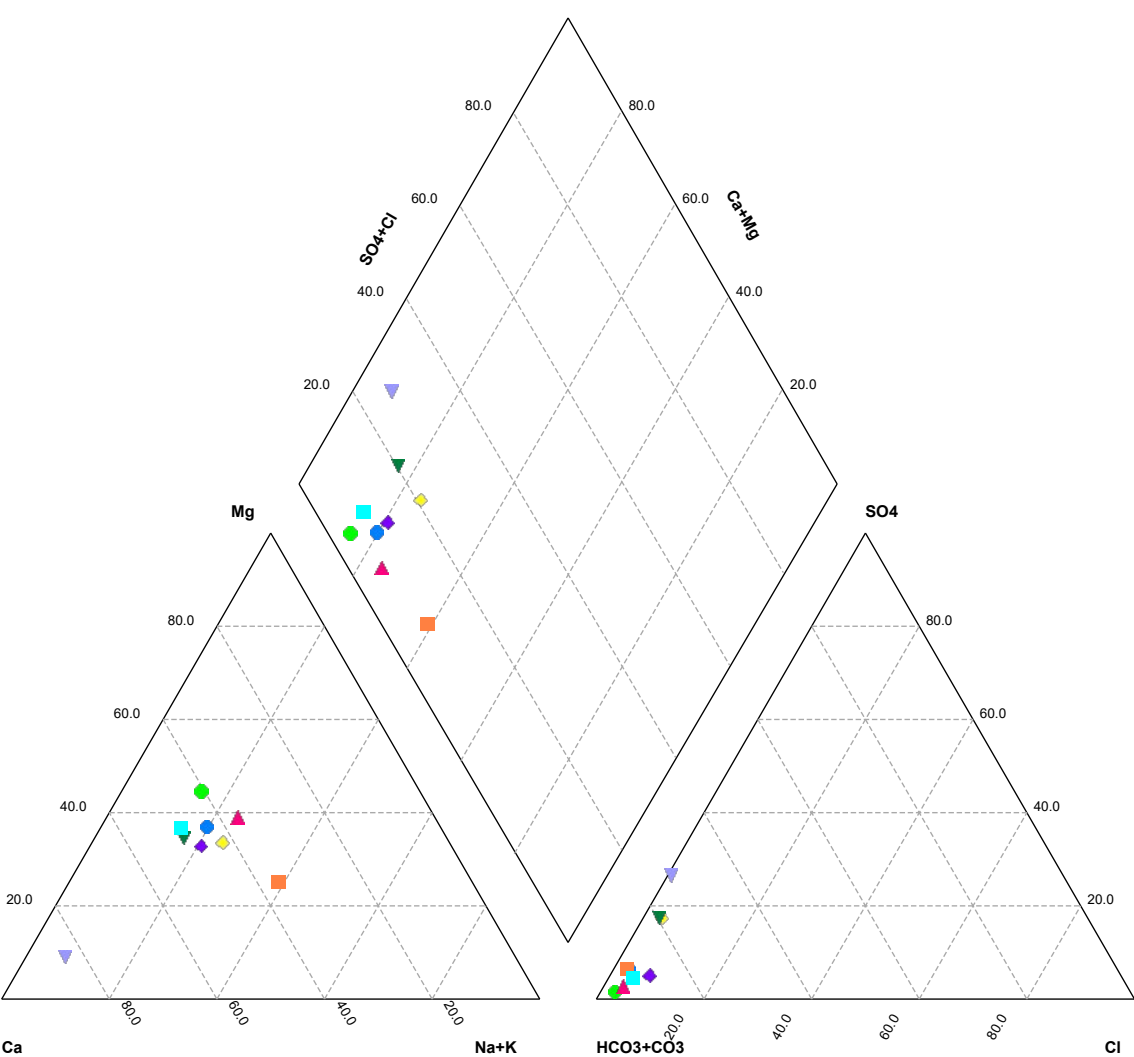
L = not reported at or above the MRL (Method Reporting Limit).

mg/L = milligrams per liter.

Attachment E

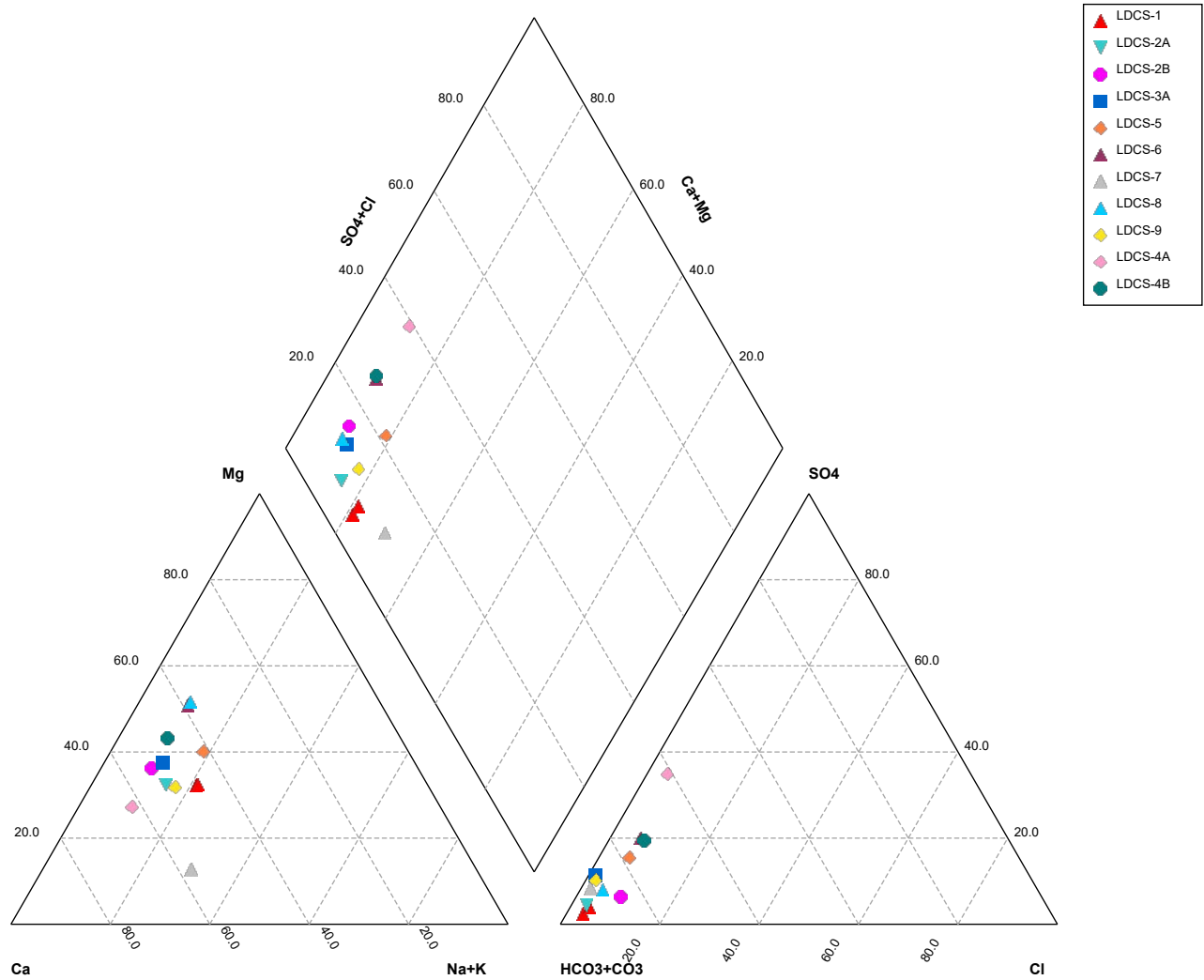
Trilinear Diagrams

Second Quarter 2024, Groundwater Monitoring Wells

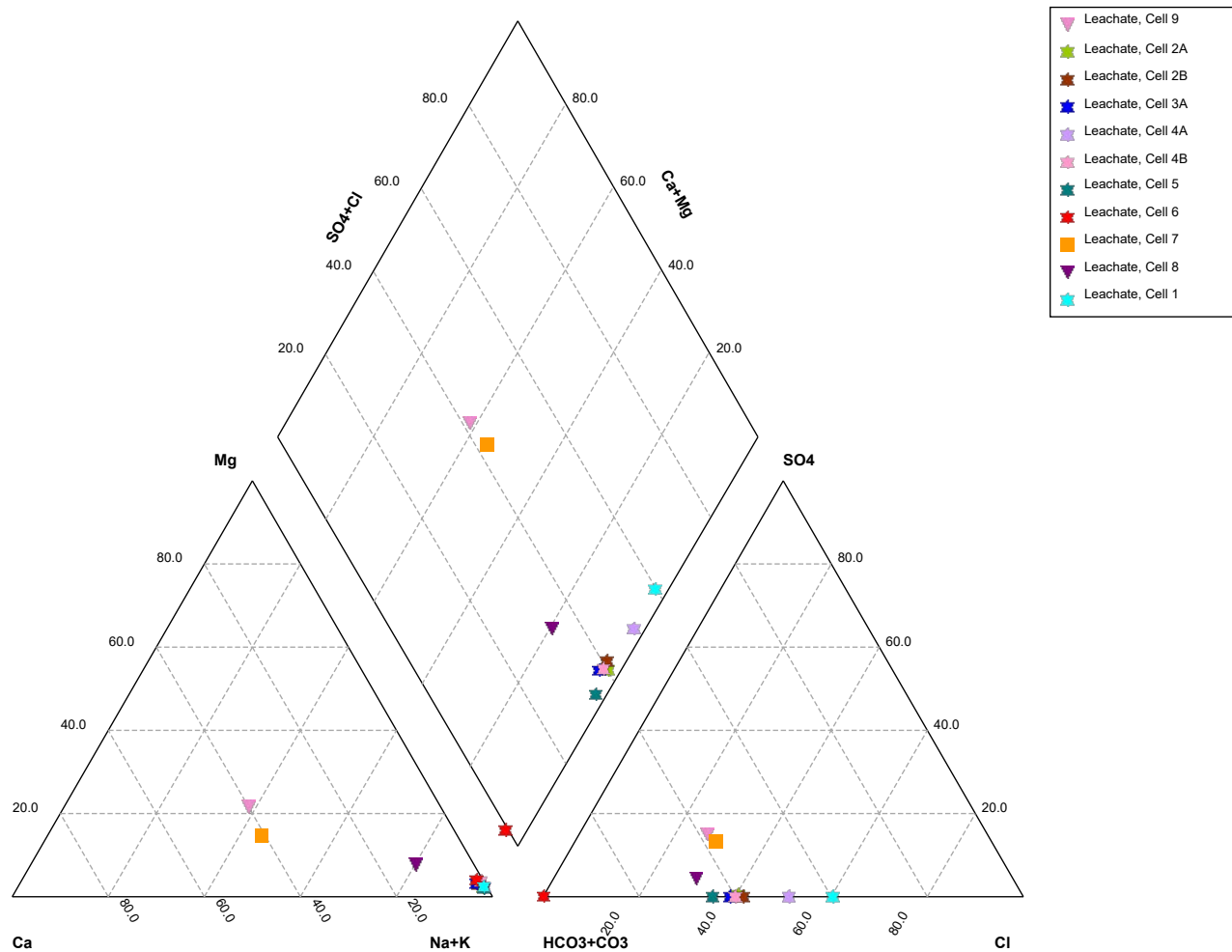


- MW-1A
- MW-2A
- MW-3
- MW-4
- MW-5A
- MW-6
- MW-7
- MW-9
- MW-10

Second Quarter 2024, Leak Detection Collection Recovery System



Fourth Quarter 2023, Leachate



Attachment F

Analytical Data Validation Report

SECOND QTR. 2024 DATA VALIDATION REPORT – LRI LANDFILL

Project Details

Project No.	04224001.02	Site Name	LRI 304 th Street LF
Data Validator	Jovany Estrada	Data Level	Level 2
Date	08/22/2024	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)
280-192430-1	Due to a FedEx shipping delay, the following samples were received at the laboratory outside the required temperature criteria of 0-6°C at an elevated temperature of 14.4°C as all ice melted in-transit: 304-060524-01 (280-192430-11), 304-060524-02 (280-192430-12), 304-060524-04 (280-192430-13) and 304-060524-10 (280-192430-14).	TestAmerica, Denver, CO
280-192476-1	One container from Sample-1 was received broken: 1 ea VOA HCL received broken 304-060624-12 (280-192476-1).	TestAmerica, Denver, CO

Analytical Summary

Sample Group	Analyses					
	TDS/Alk/NO3	Metals	NH3/TOC	VOCs	Anions	TSS
280-192430-1	X	X	X ²	X	X	X
280-192476-1	X	X	X ²	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.	See case narratives
LCS/LCSD	Acceptable.	See case narratives.
MS/MSD	Acceptable	See case narratives.
Metals	Acceptable.	See case narratives.
Duplicates	Acceptable.	See case narratives.



Lab QA Samples	Results	Comments
Organics	Acceptable.	See case narratives.
General Chemistry	Acceptable.	See case narratives.
General Comments	Acceptable.	See case narratives.

Field Quality Assurance Samples

Field QA Samples	Sample Group	Analytes	Notes
QC-FB	280-192430-1	None.	

Lab Quality Flags

Flag	Sample Groups	Comments
4	280-192430-1, 280-192476-1	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	280-192430-1, 280-192476-1	MS and/or MSD recovery exceeds control limits.
F2	280-192430-1, 280-192476-1	MS/MSD RPD exceeds control limits
E	280-192476-1	Result exceeded calibration range.
J	280-192430-1, 280-192476-1	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Λ+	280-192476-1	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.

Duplicate Evaluation

Analyte	Units	MW-7 (304-060524-07)	MW-7 DUP (304-060524-08)	RPD (%)
Alkalinity, Total	mg/L	200	200	0
Ammonia	mg/L	0.22	0.21	4.65
Arsenic, Total	mg/L	0.0057	0.0057	0
Barium, Total	mg/L	0.016	0.016	0

Analyte	Units	MW-7 (304-060524-07)	MW-7 DUP (304-060524-08)	RPD (%)
Calcium, Dissolved	mg/L	36	36	0
Chloride	mg/L	3.9	3.9	0
Iron, Dissolved	mg/L	0.26	0.27	3.77
Magnesium, Dissolved	mg/L	24	24	0
Manganese, Dissolved	mg/L	0.26	0.26	0
Potassium, Dissolved	mg/L	5.3	5.3	0
Sodium, Dissolved	mg/L	12	12	0
Sulfate	mg/L	3	2.9	3.39
Total Dissolved Solids	mg/L	230	230	0
Total Organic Carbon	mg/L	1.6	1.5	6.45

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.

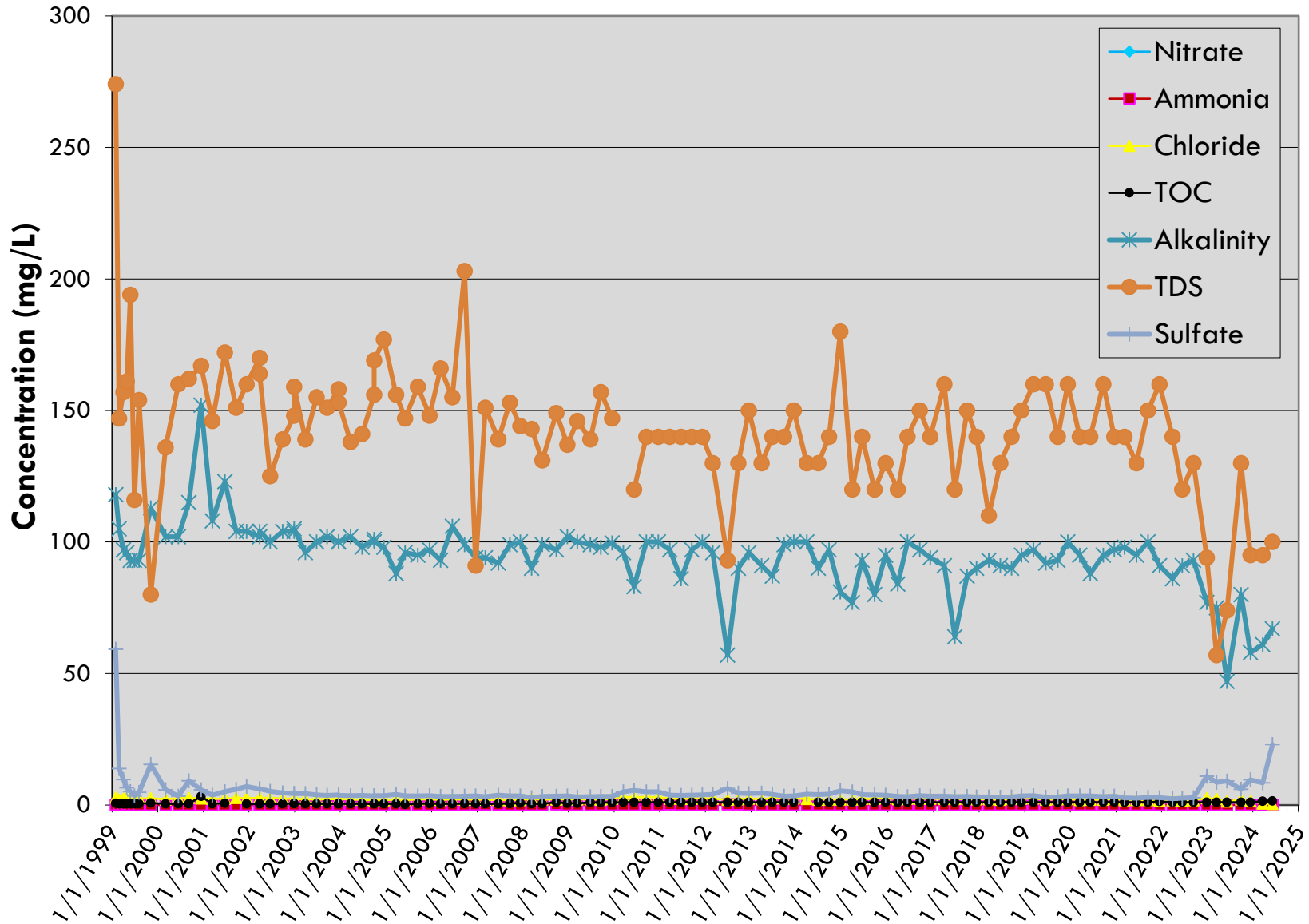


Attachment G

Groundwater and LDCS Time Trend Plots

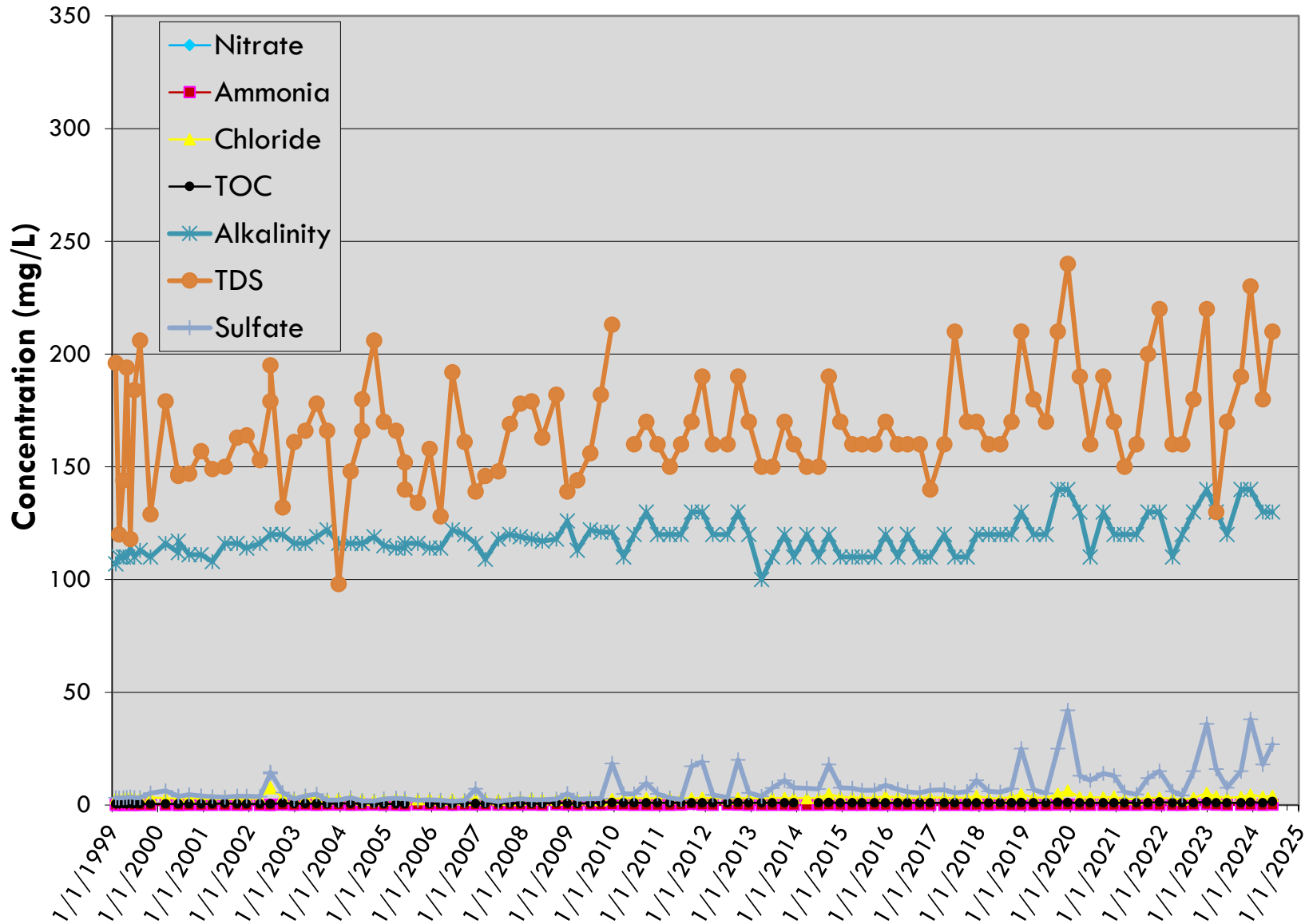
MW-1A

LRI Landfill, Pierce County, Washington



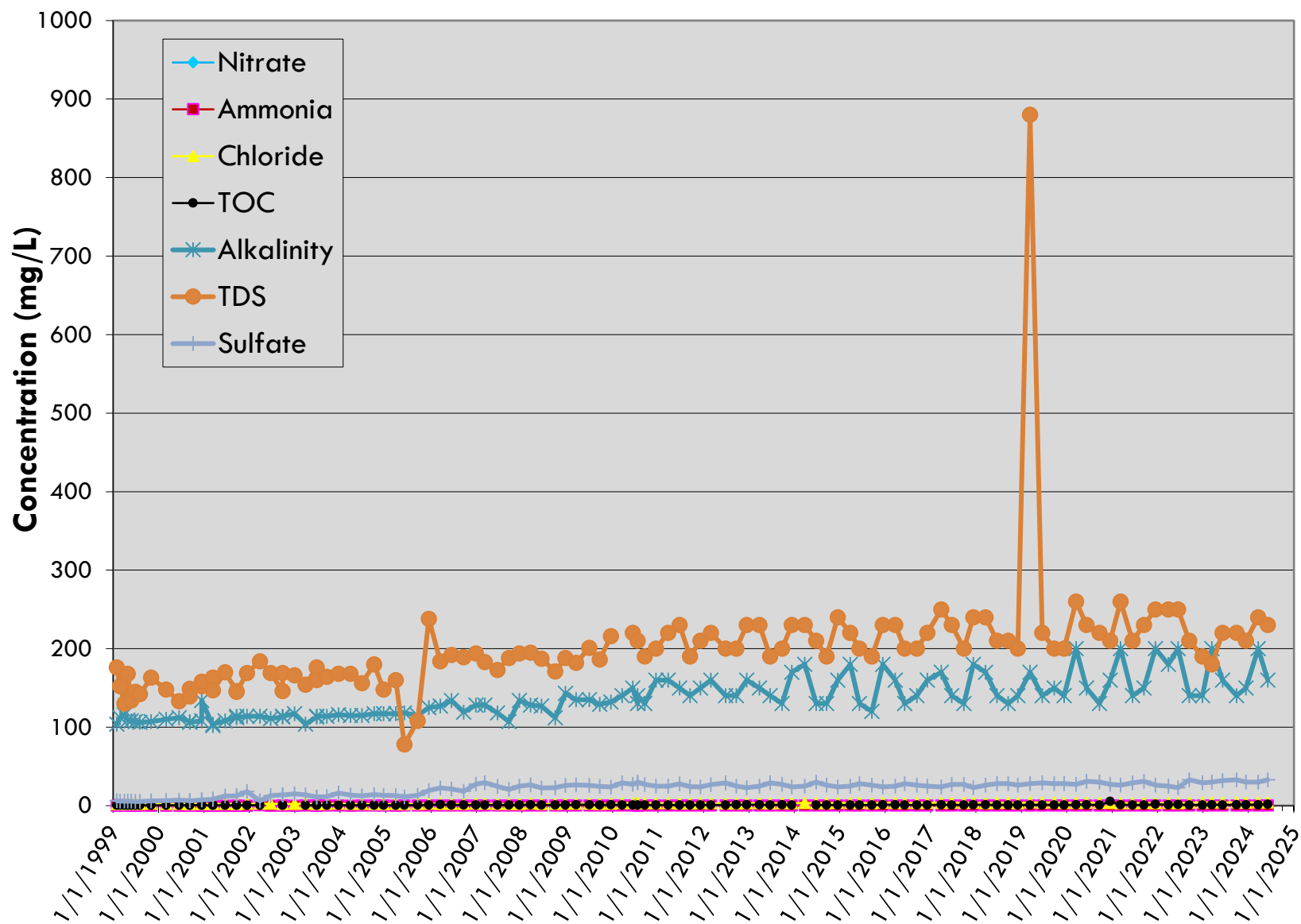
MW-2A

LRI Landfill, Pierce County, Washington



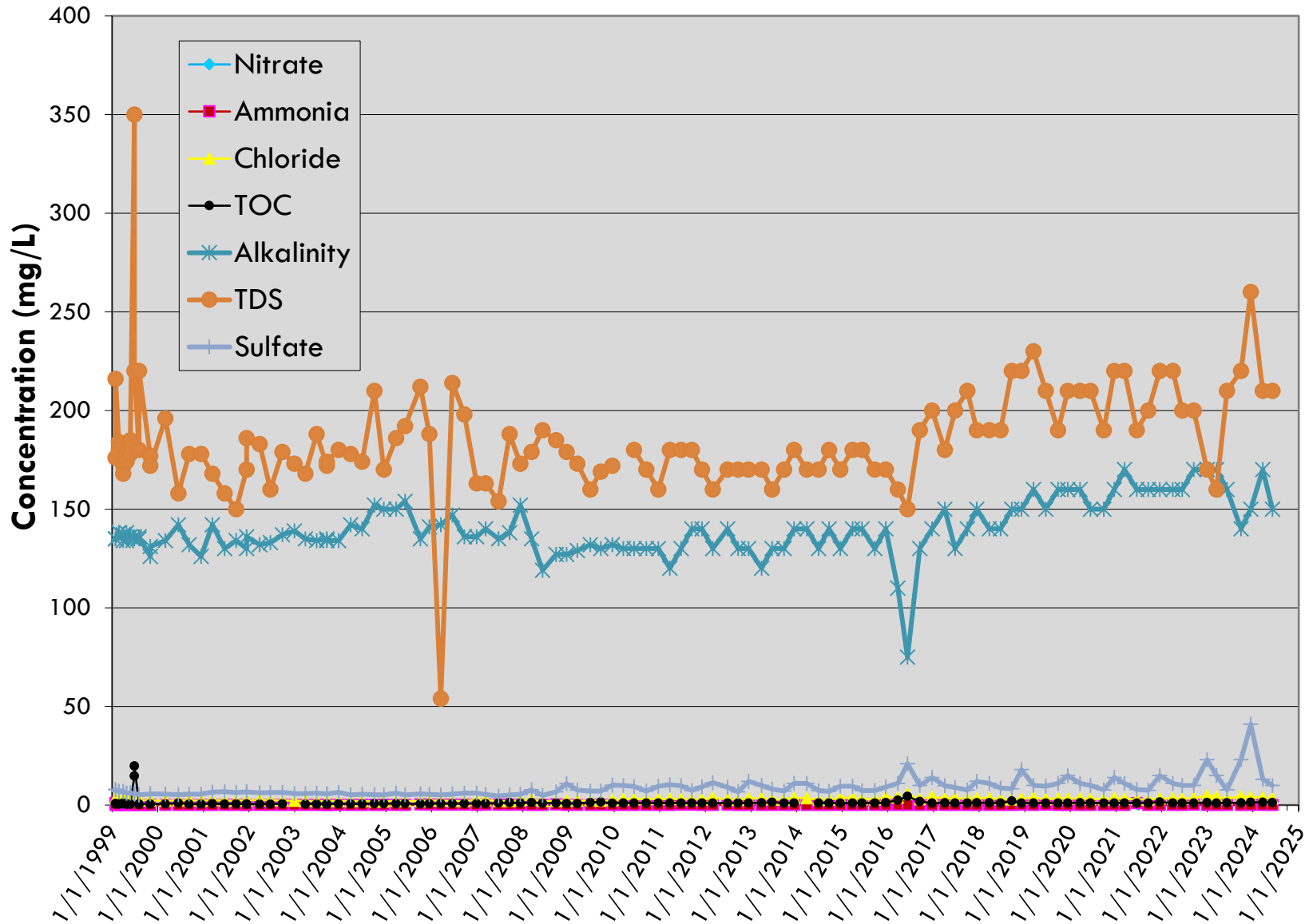
MW-3

LRI Landfill, Pierce County, Washington



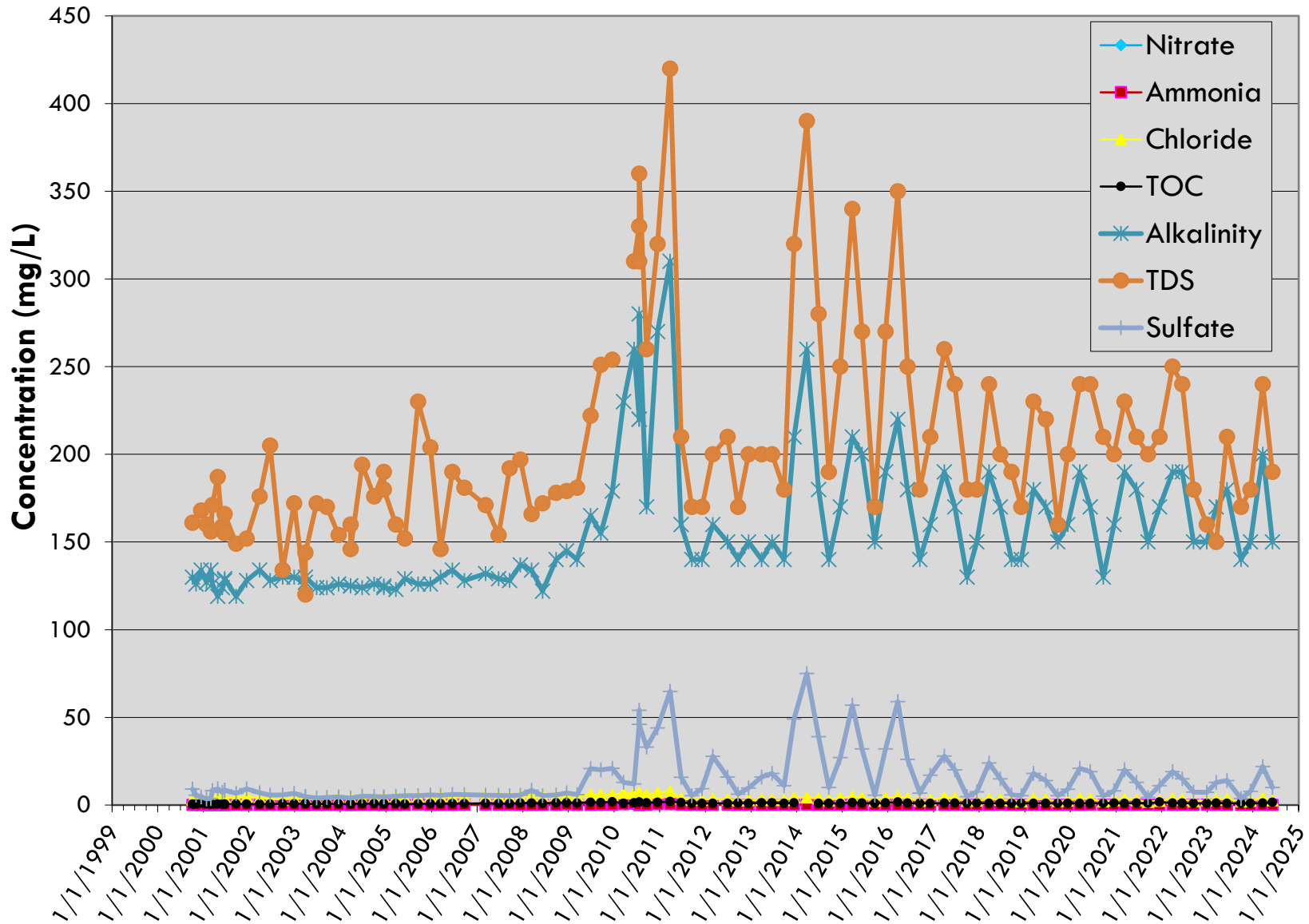
MW-4

LRI Landfill, Pierce County, Washington



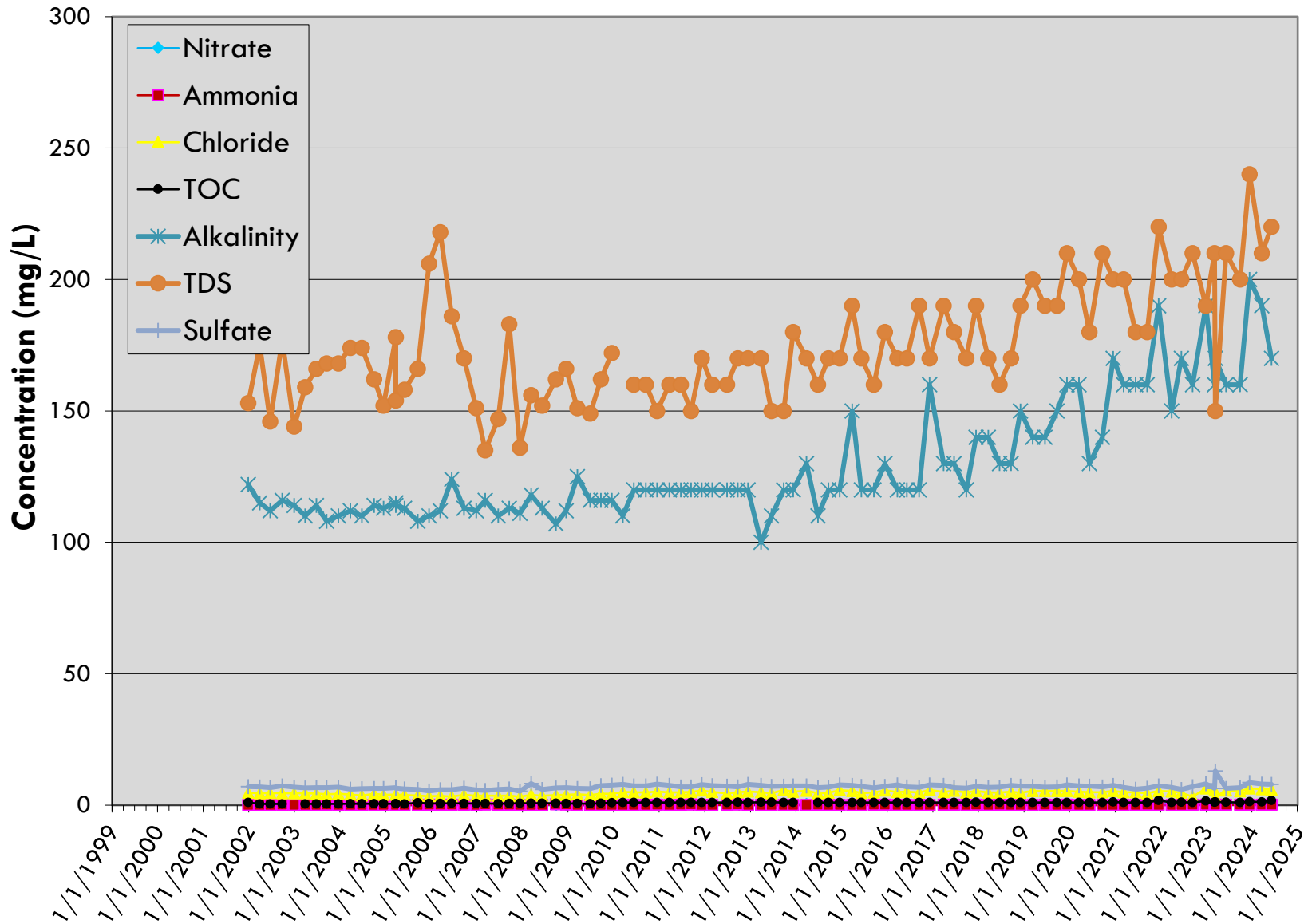
MW-5A

LRI Landfill, Pierce County, Washington



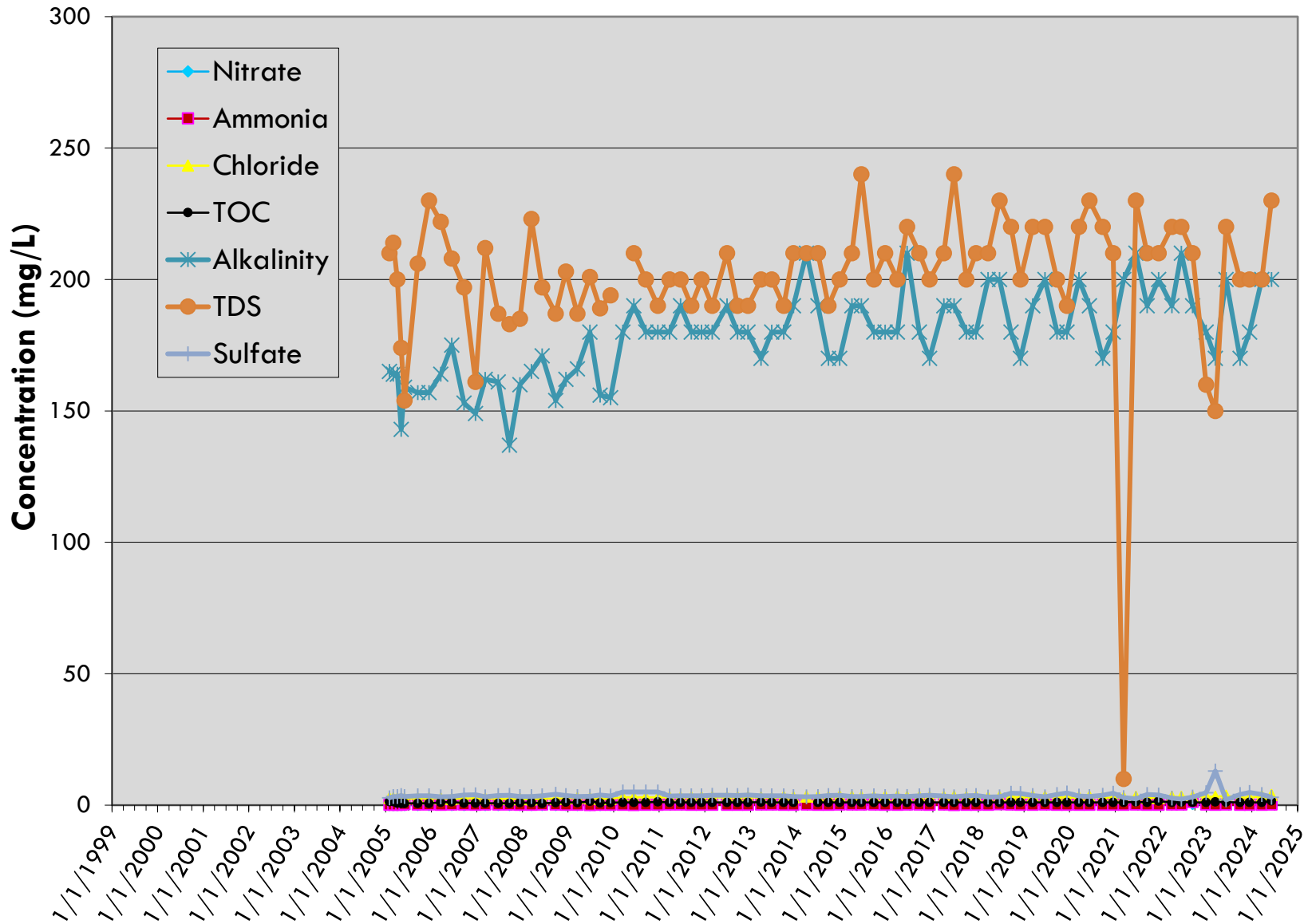
MW-6

LRI Landfill, Pierce County, Washington

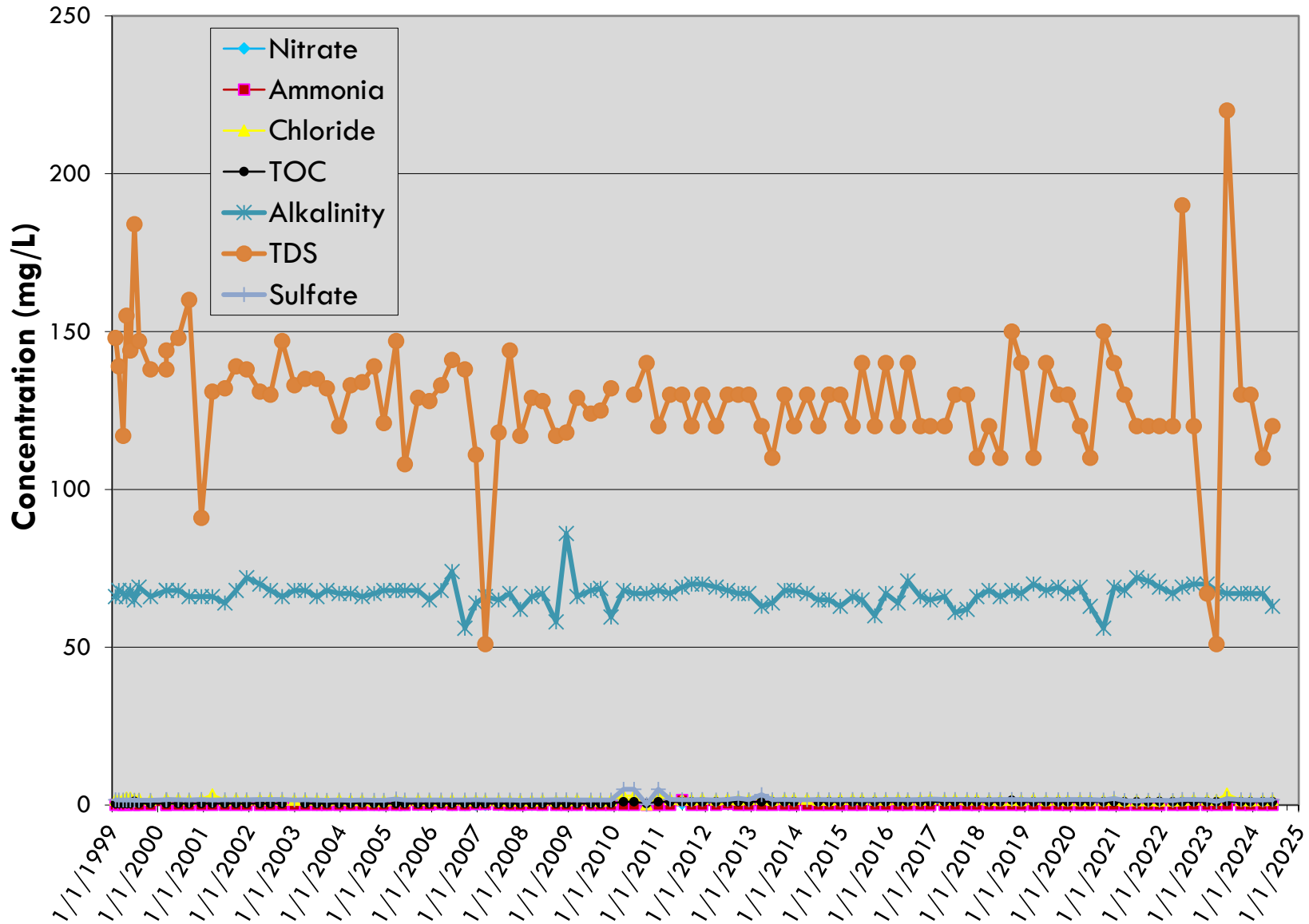


MW-7

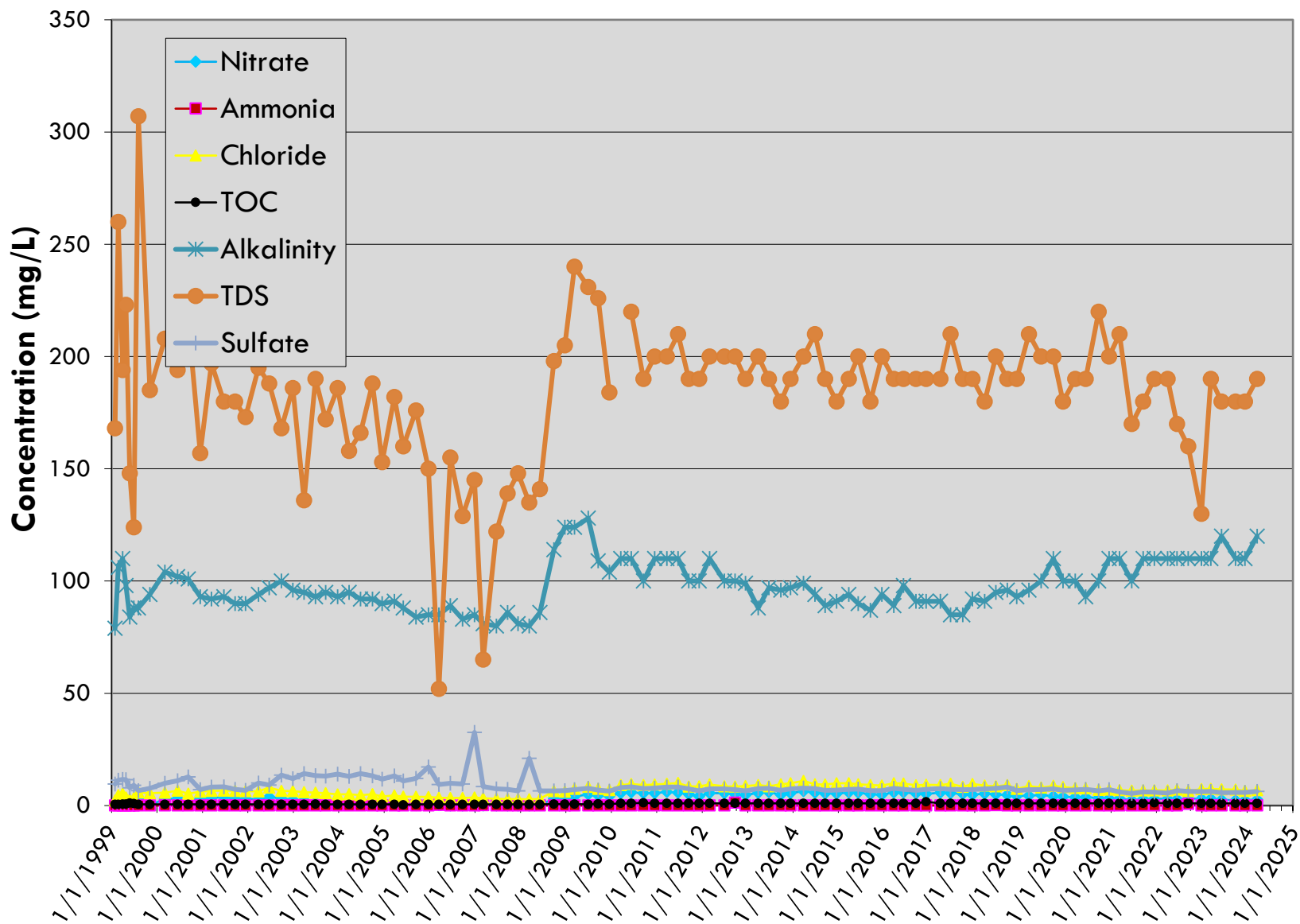
LRI Landfill, Pierce County, Washington



MW-9 (Background) LRI Landfill, Pierce County, Washington

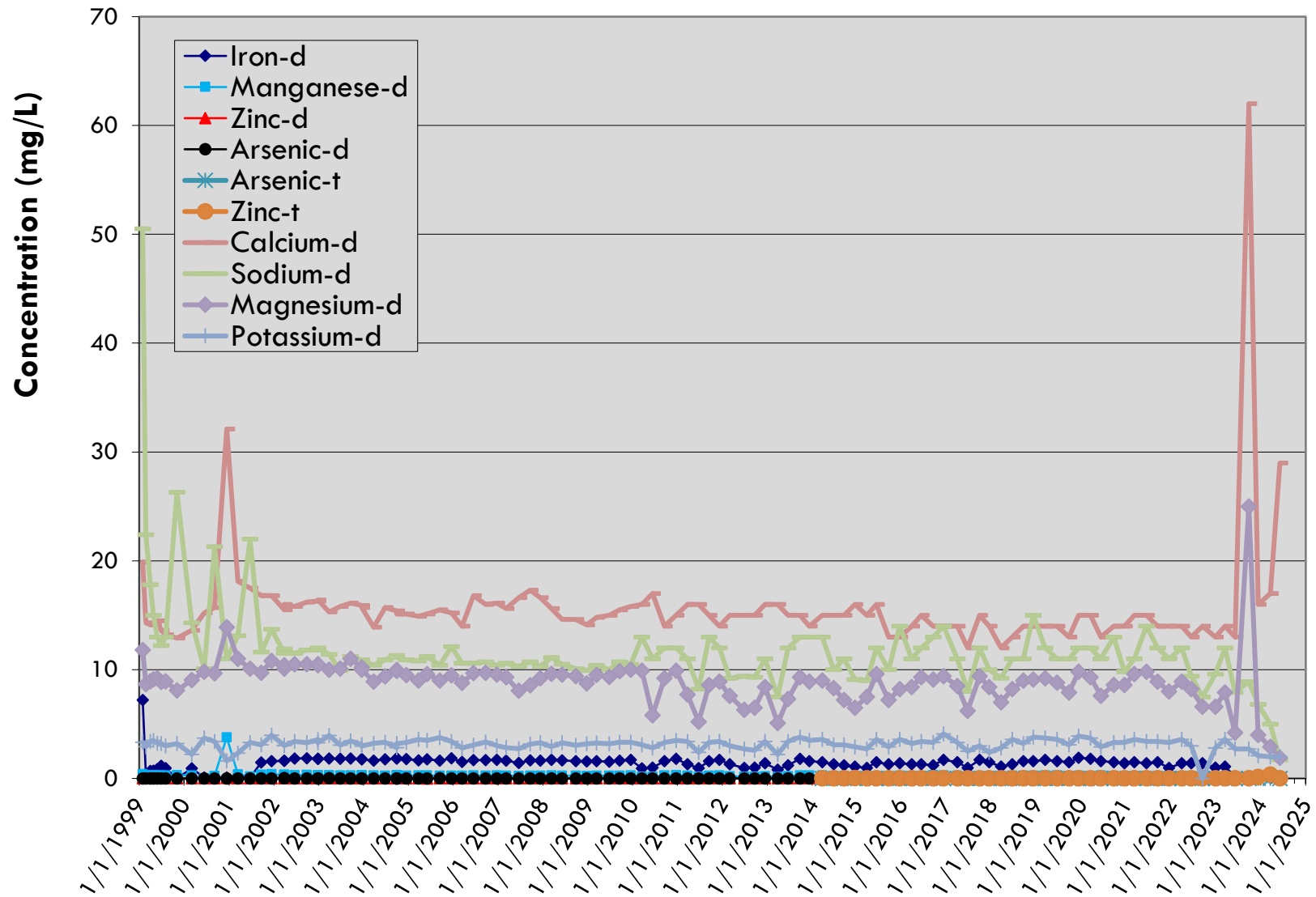


MW-10 (Background) LRI Landfill, Pierce County, Washington



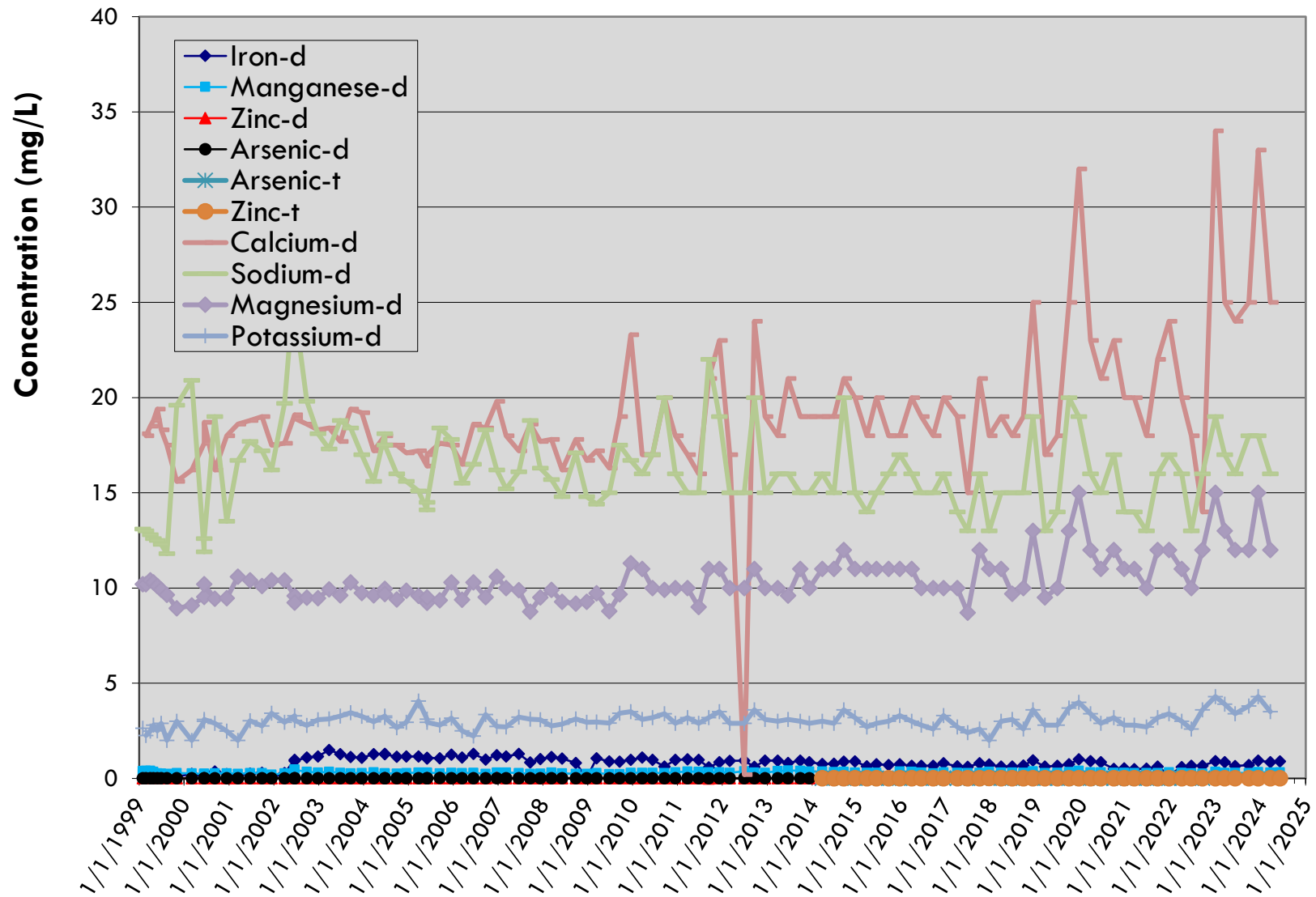
MW-1A

LRI Landfill, Pierce County, Washington



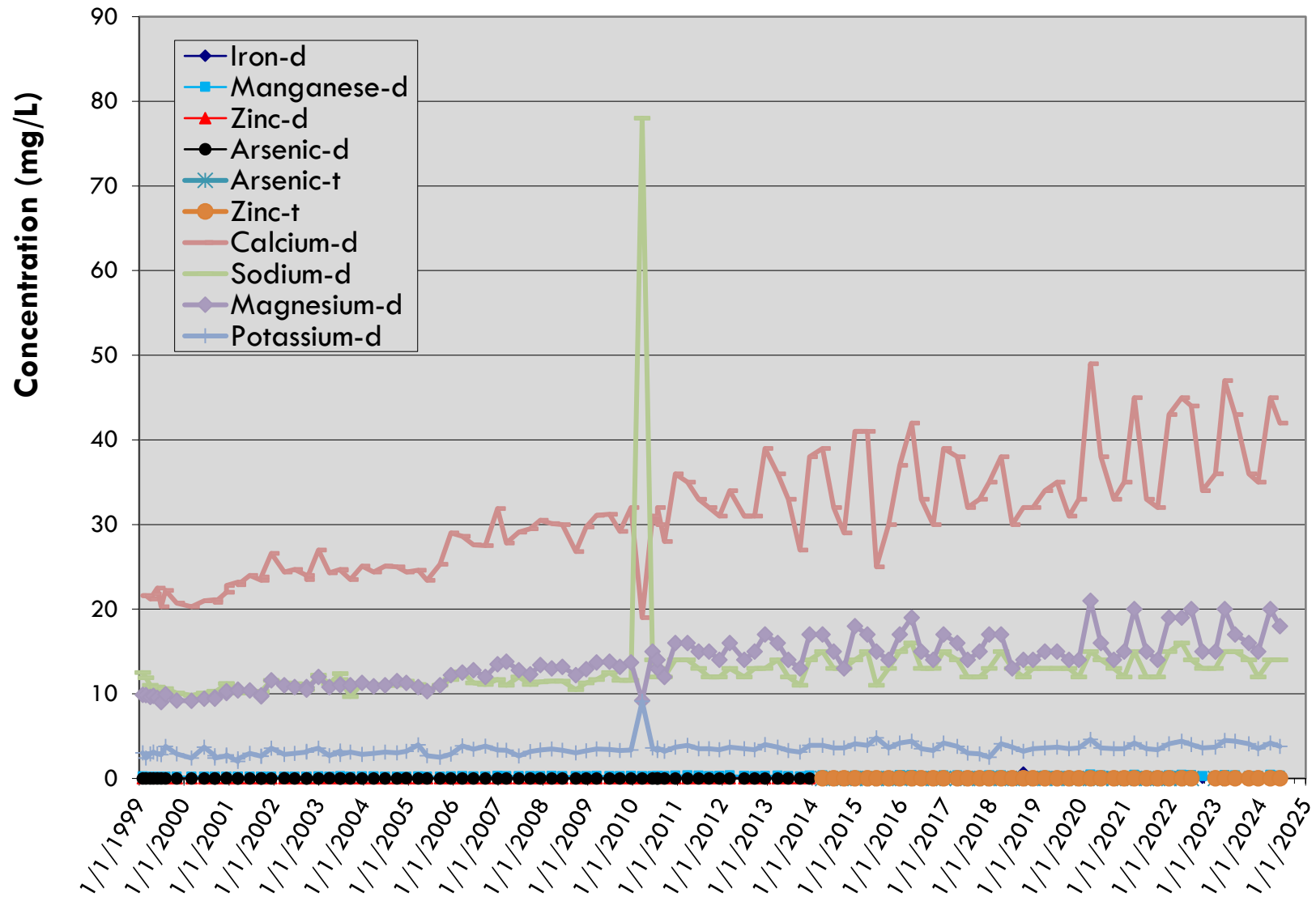
MW-2A

LRI Landfill, Pierce County, Washington



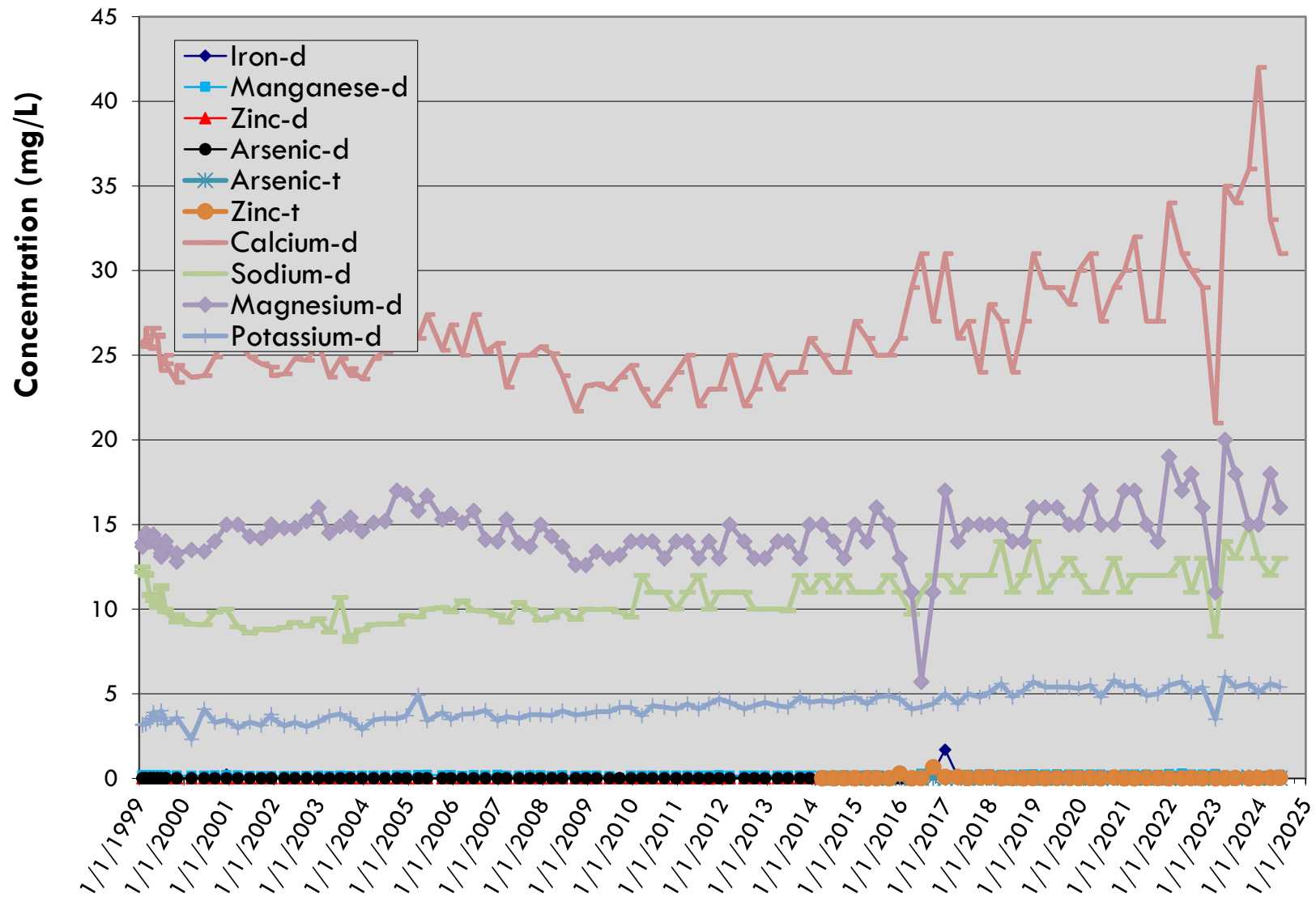
MW-3

LRI Landfill, Pierce County, Washington



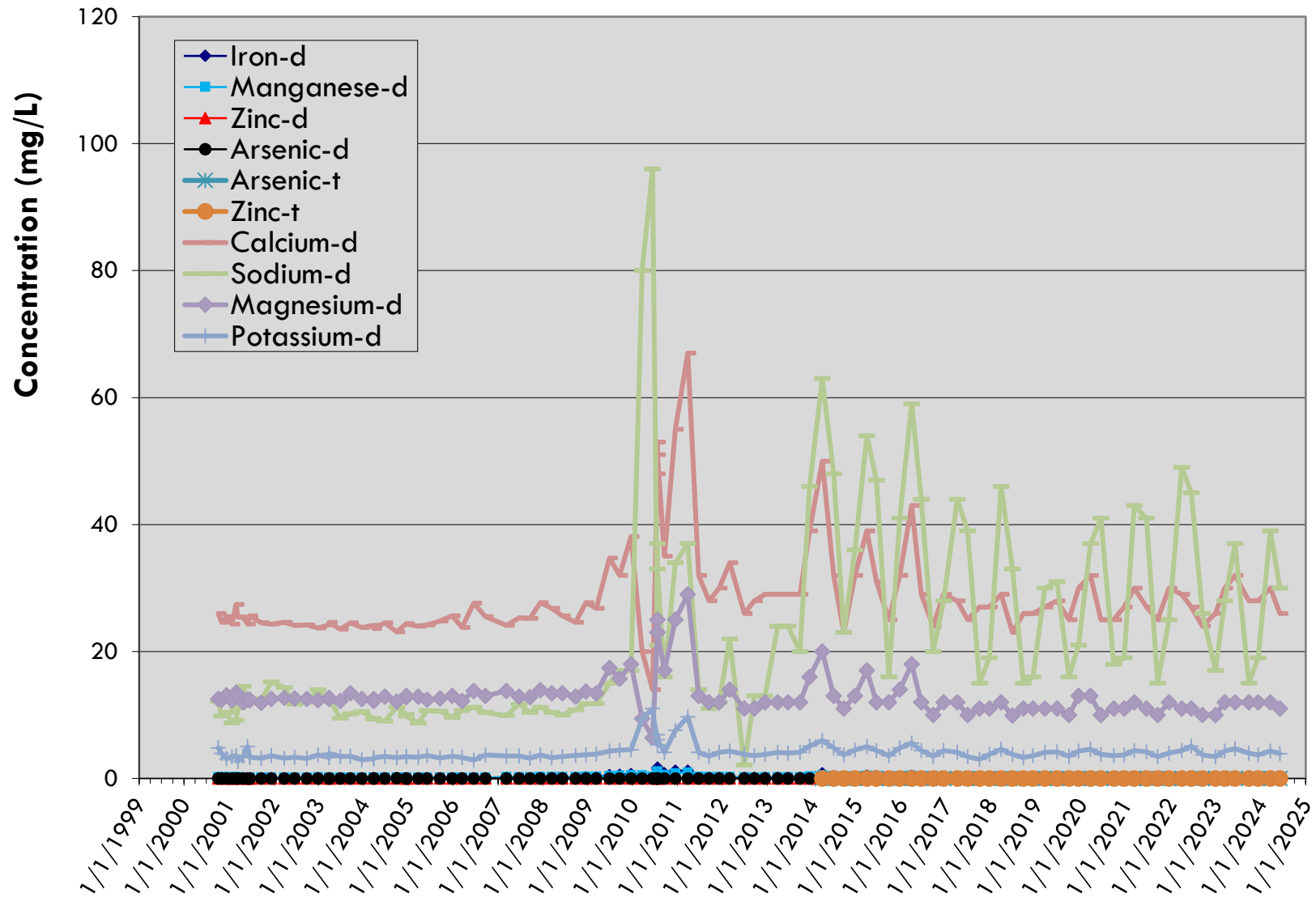
MW-4

LRI Landfill, Pierce County, Washington



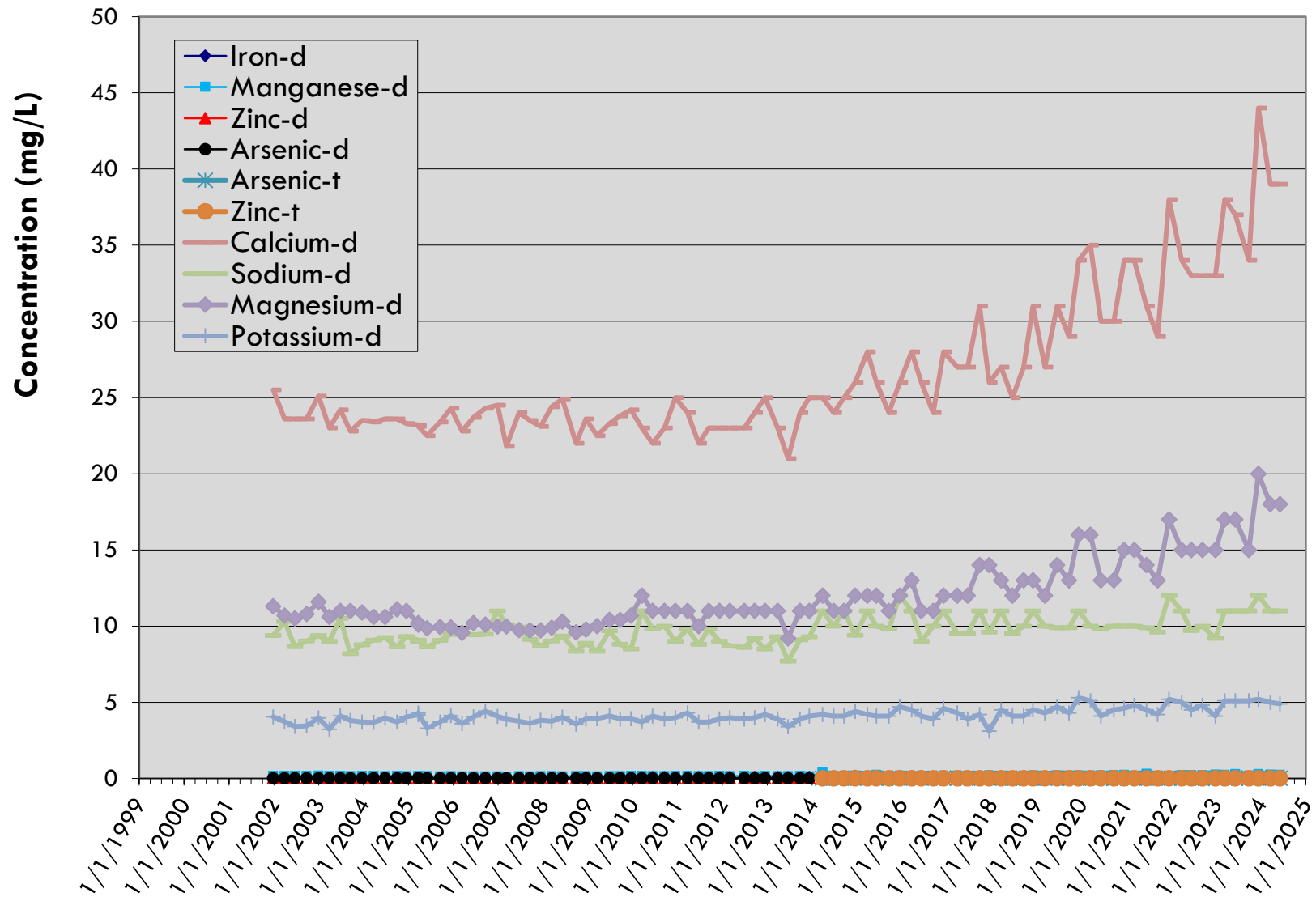
MW-5A

LRI Landfill, Pierce County, Washington



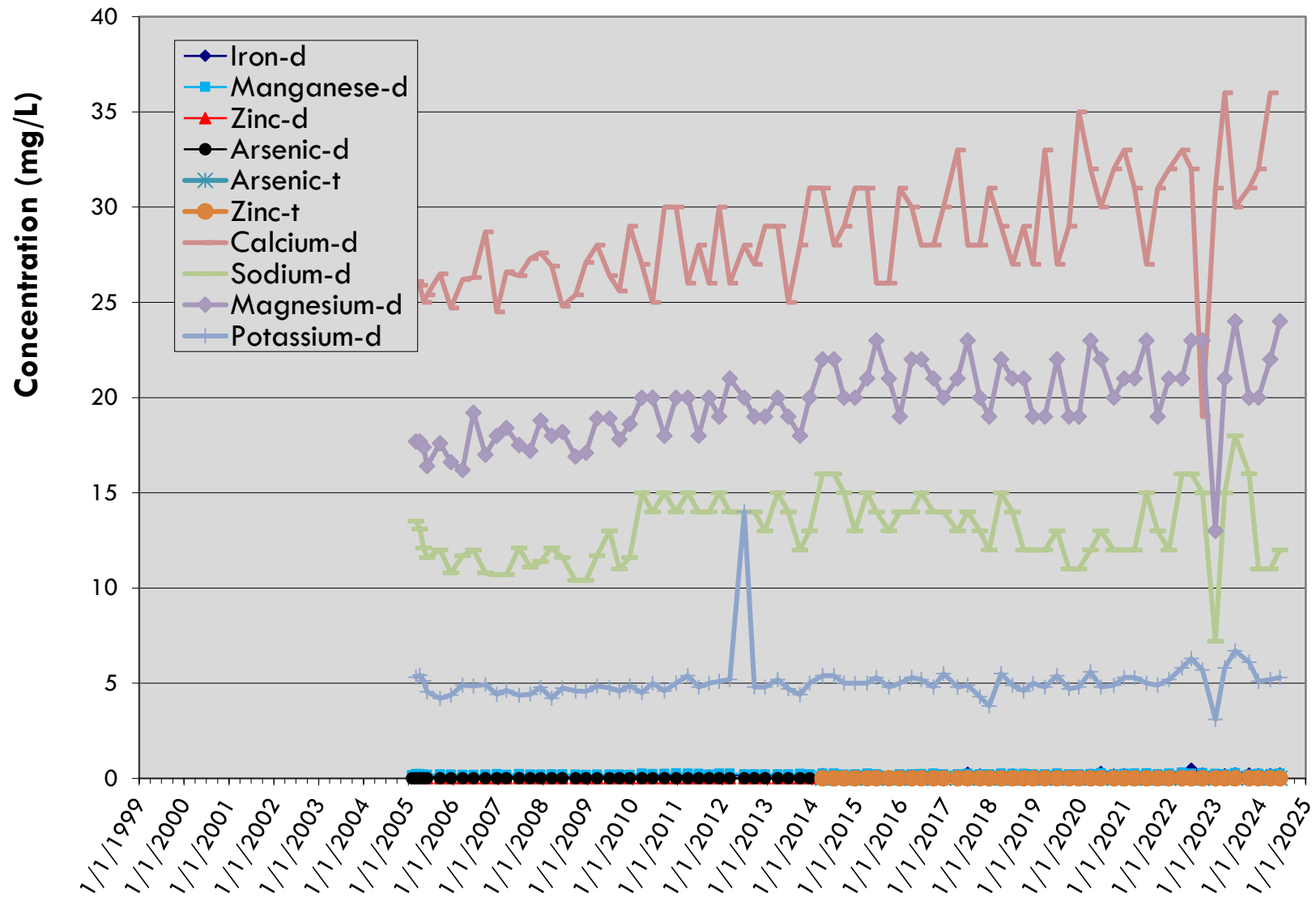
MW-6

LRI Landfill, Pierce County, Washington

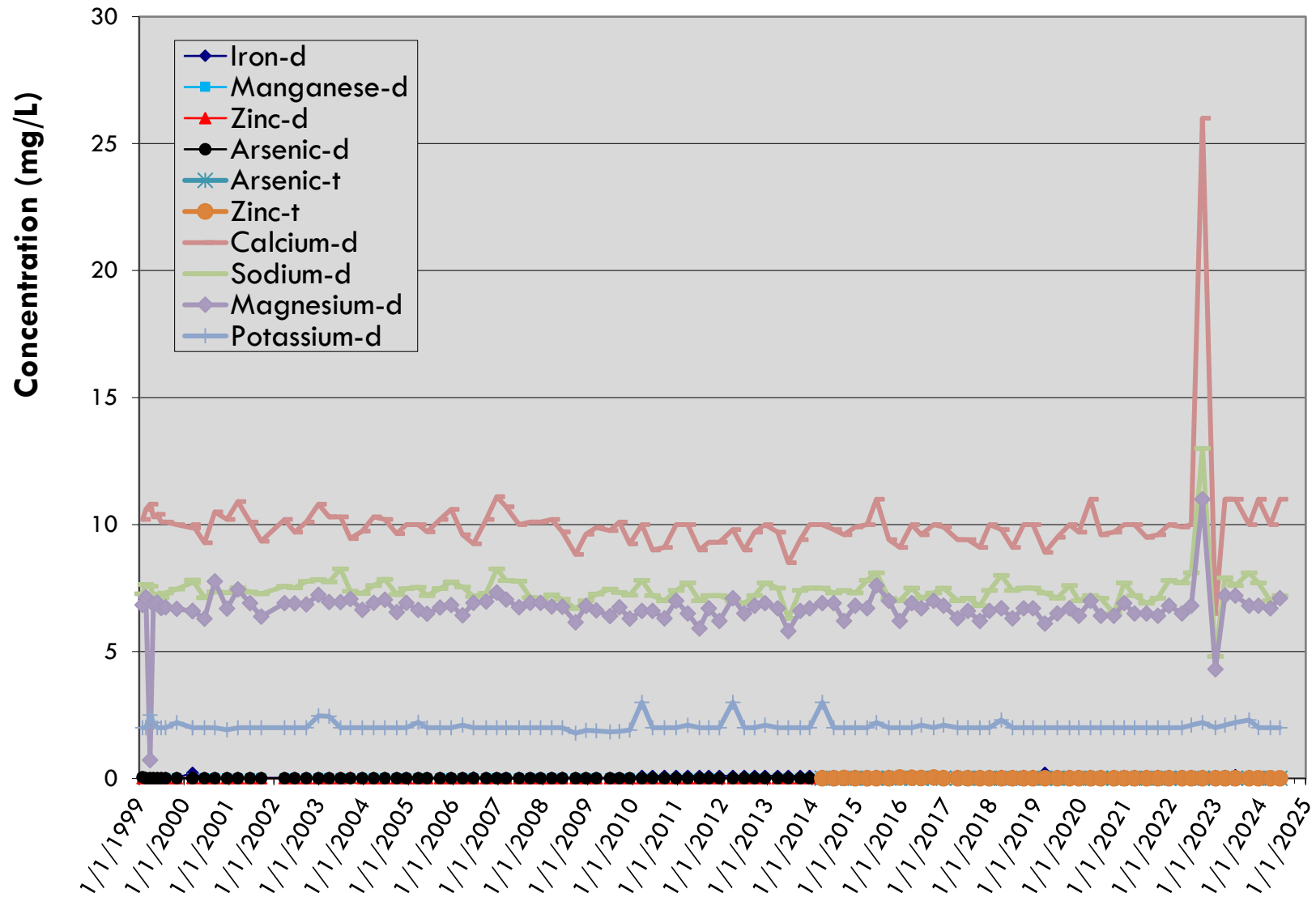


MW-7

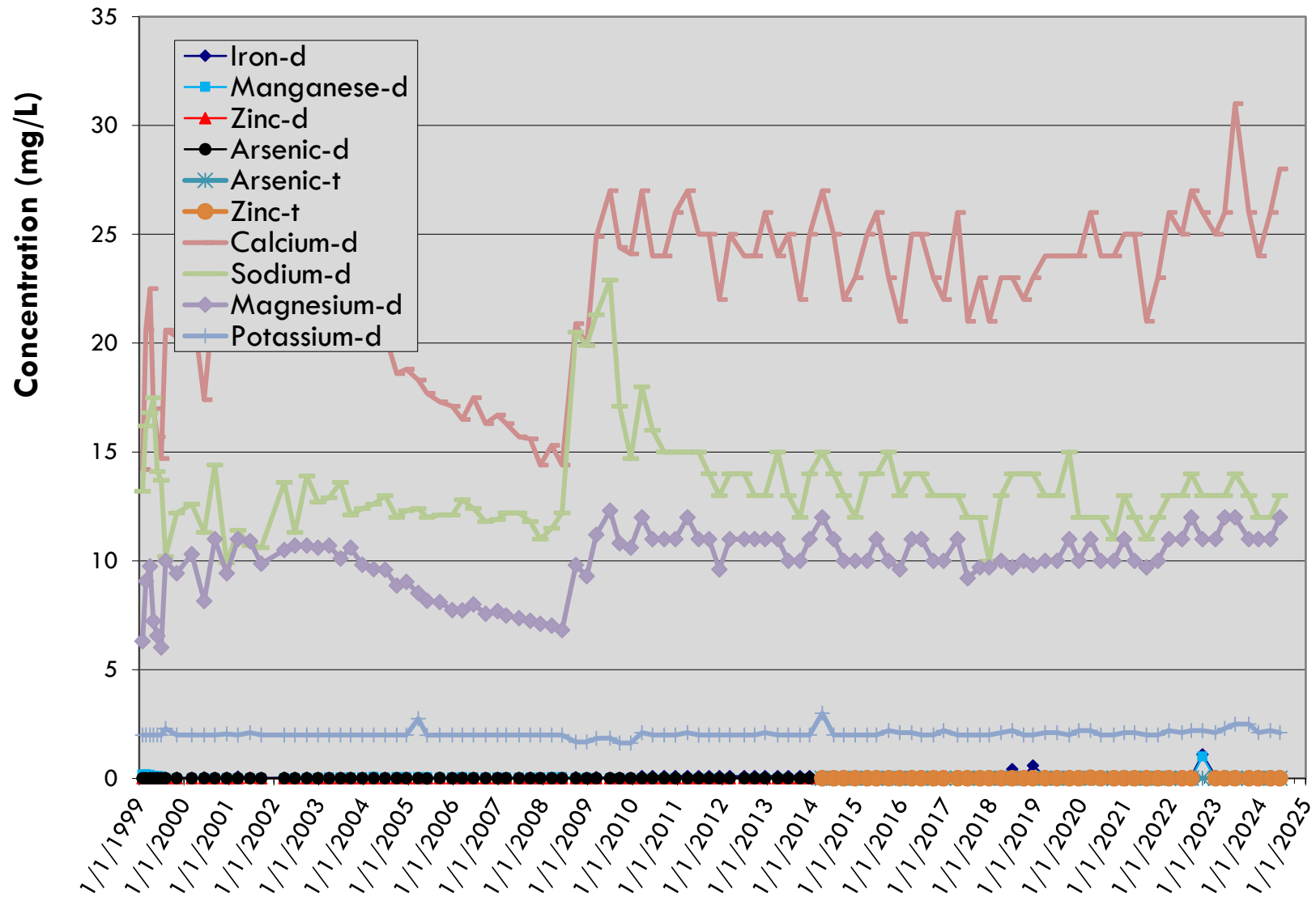
LRI Landfill, Pierce County, Washington



MW-9 (Background)
LRI Landfill, Pierce County, Washington

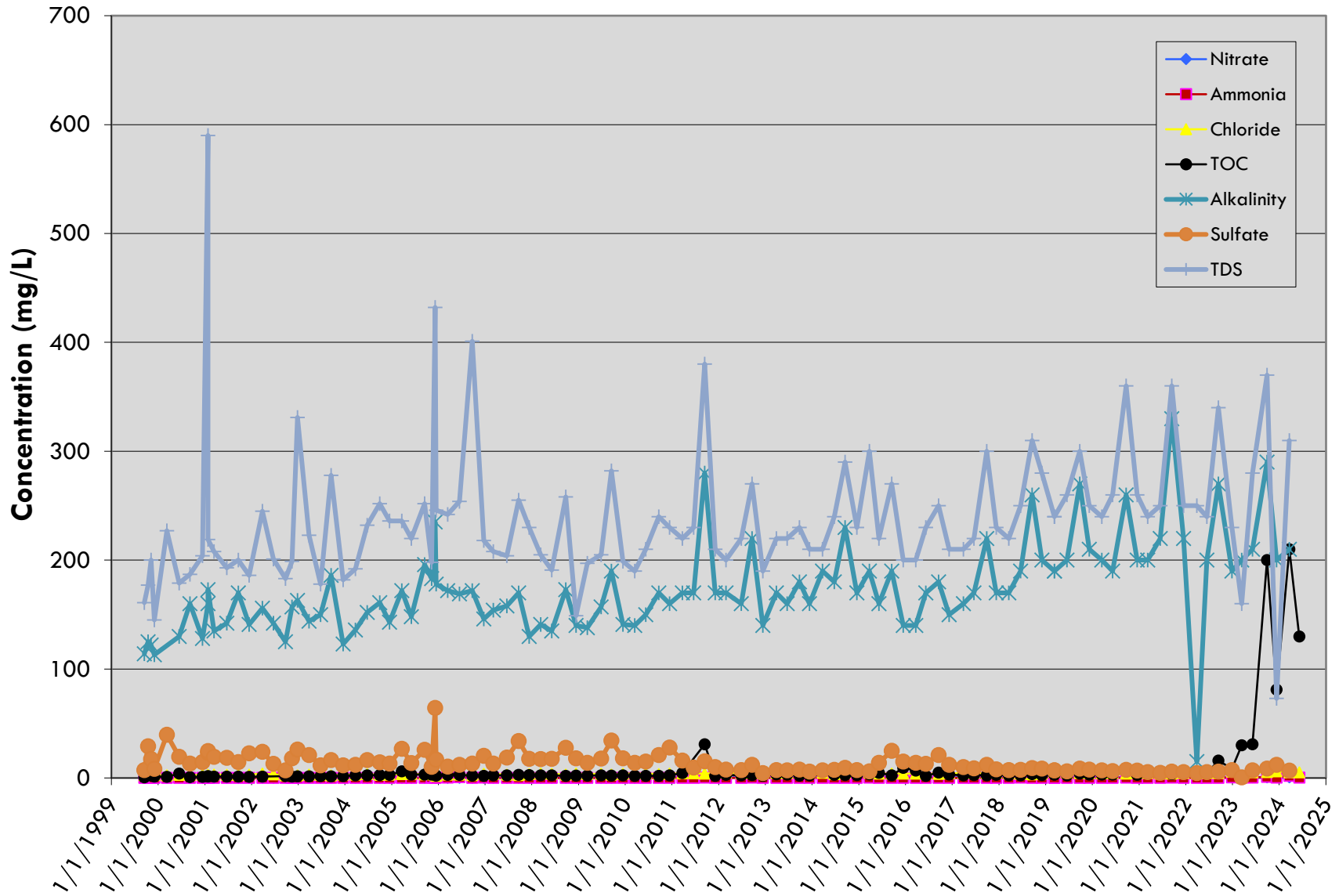


MW-10 (Background) LRI Landfill, Pierce County, Washington



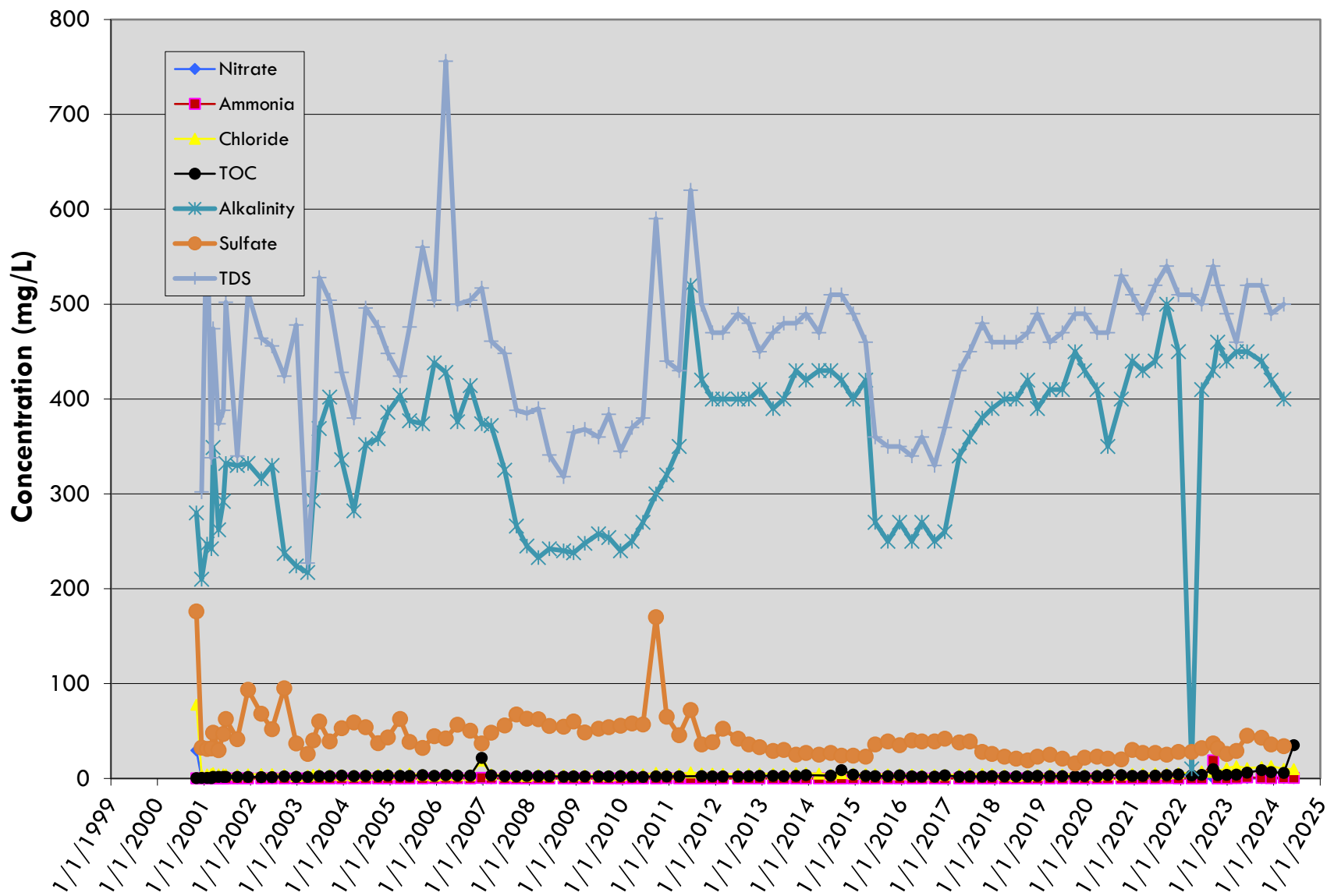
LDCS-1

LRI Landfill, Pierce County, Washington



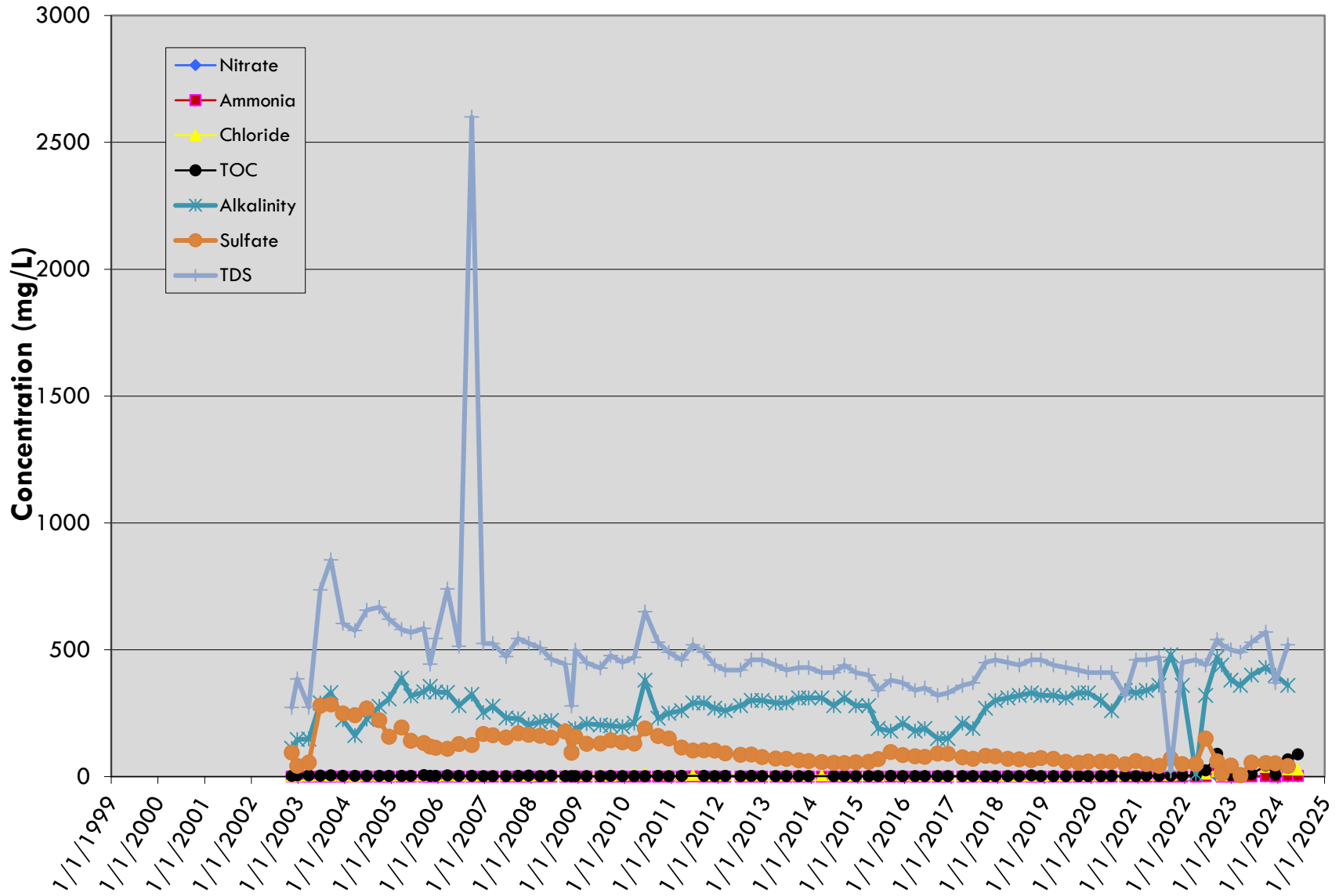
LDCS-2A

LRI Landfill, Pierce County, Washington



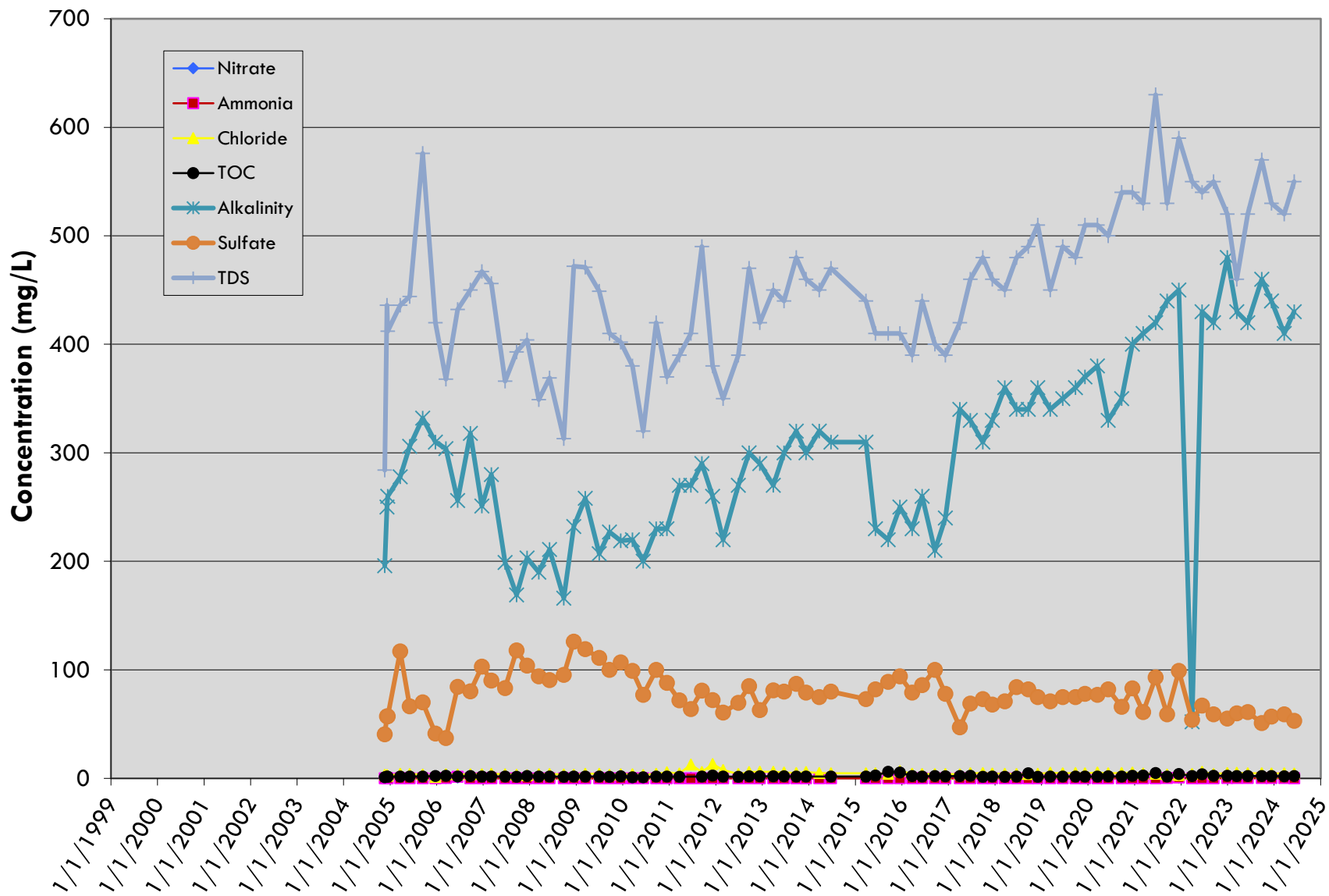
LDCS-2B

LRI Landfill, Pierce County, Washington



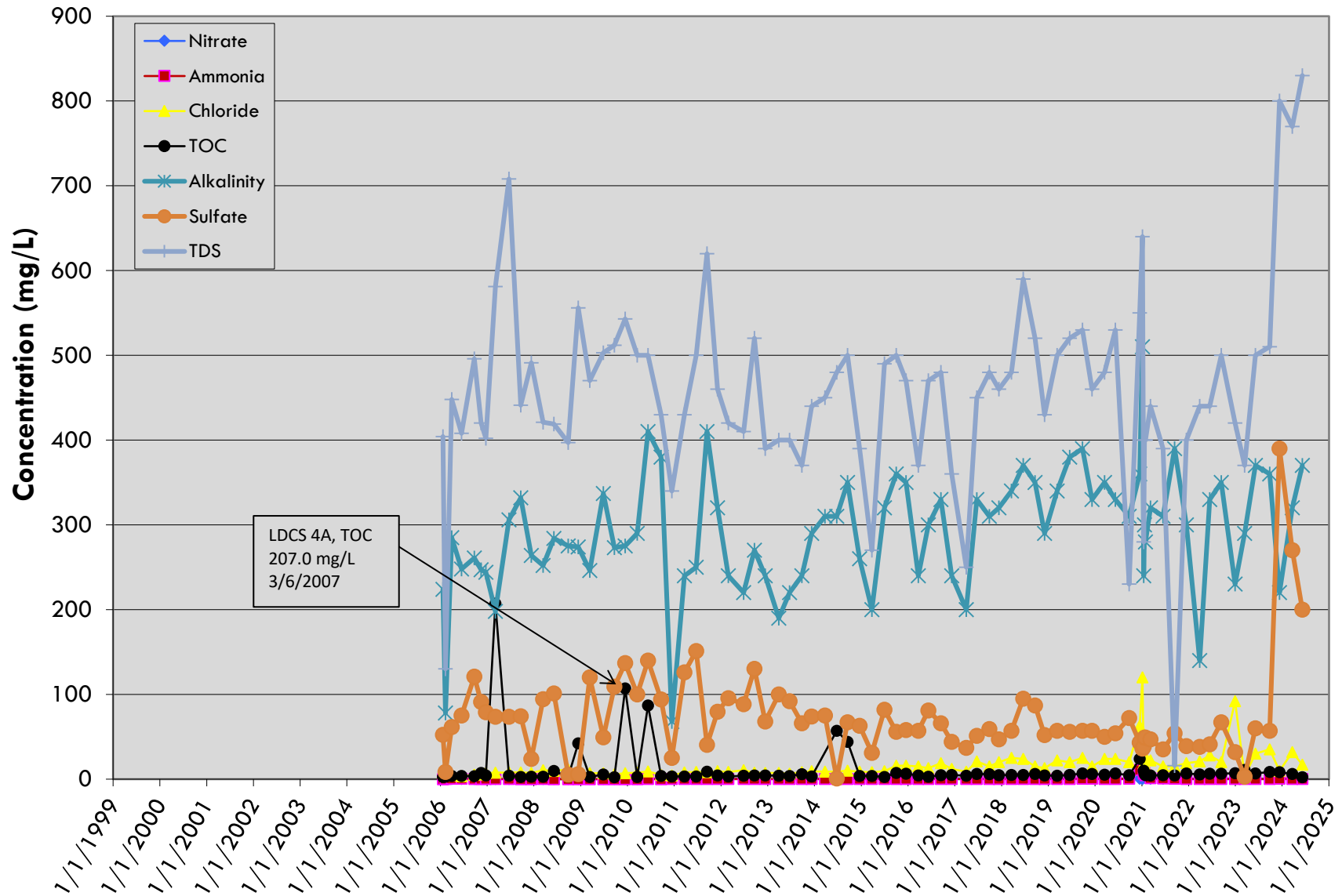
LDCS-3A

LRI Landfill, Pierce County, Washington



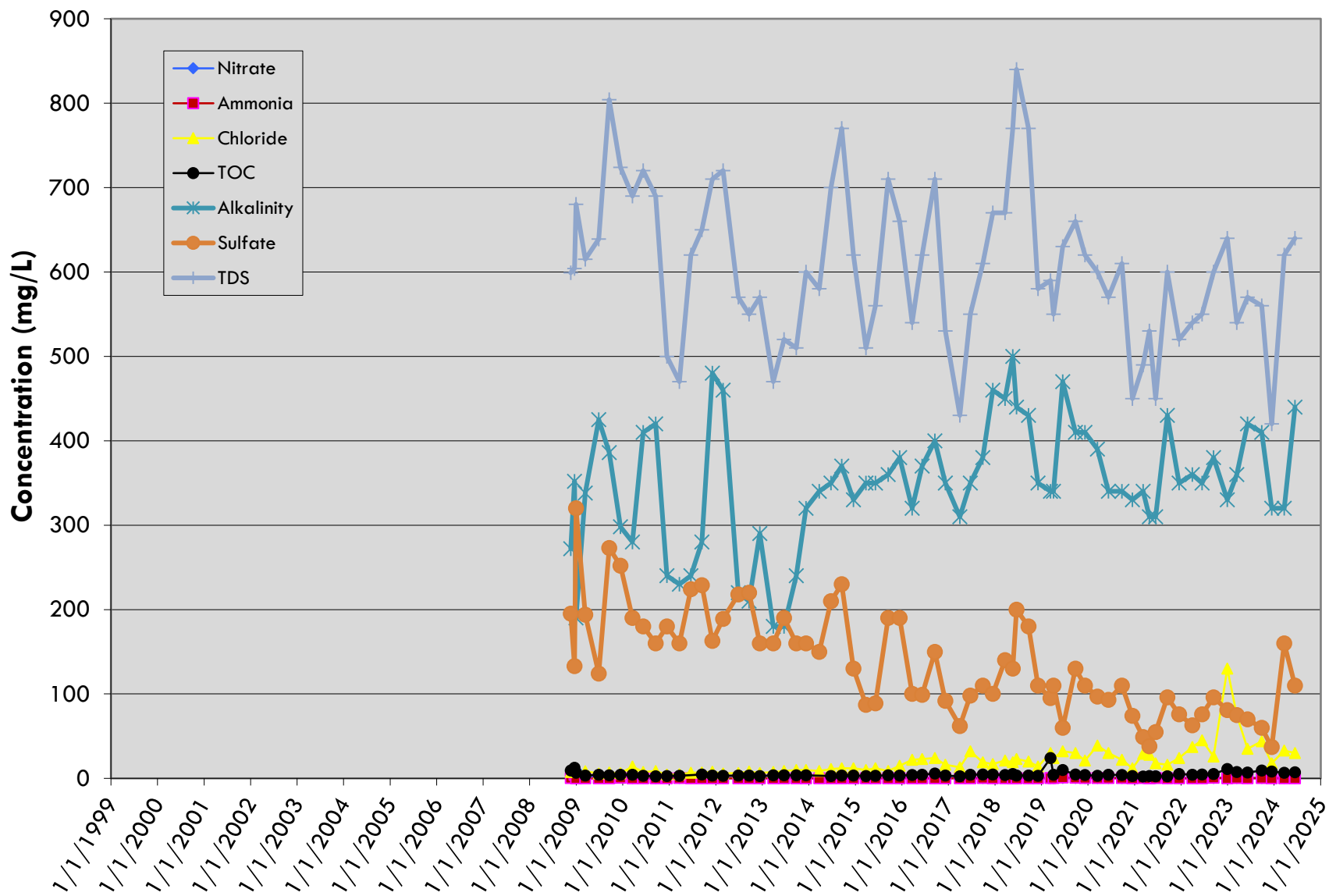
LDCS-4A

LRI Landfill, Pierce County, Washington



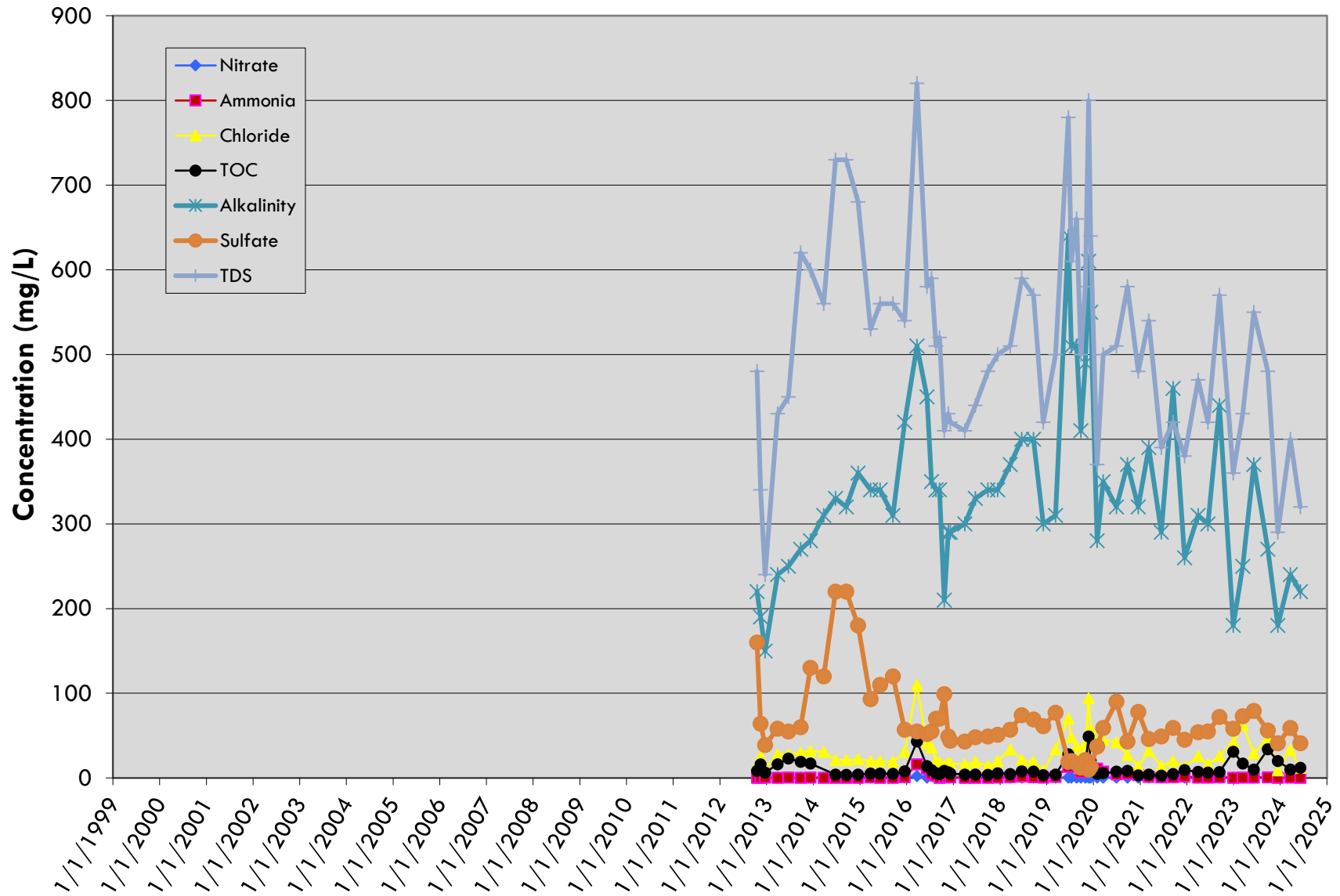
LDCS-4B

LRI Landfill, Pierce County, Washington



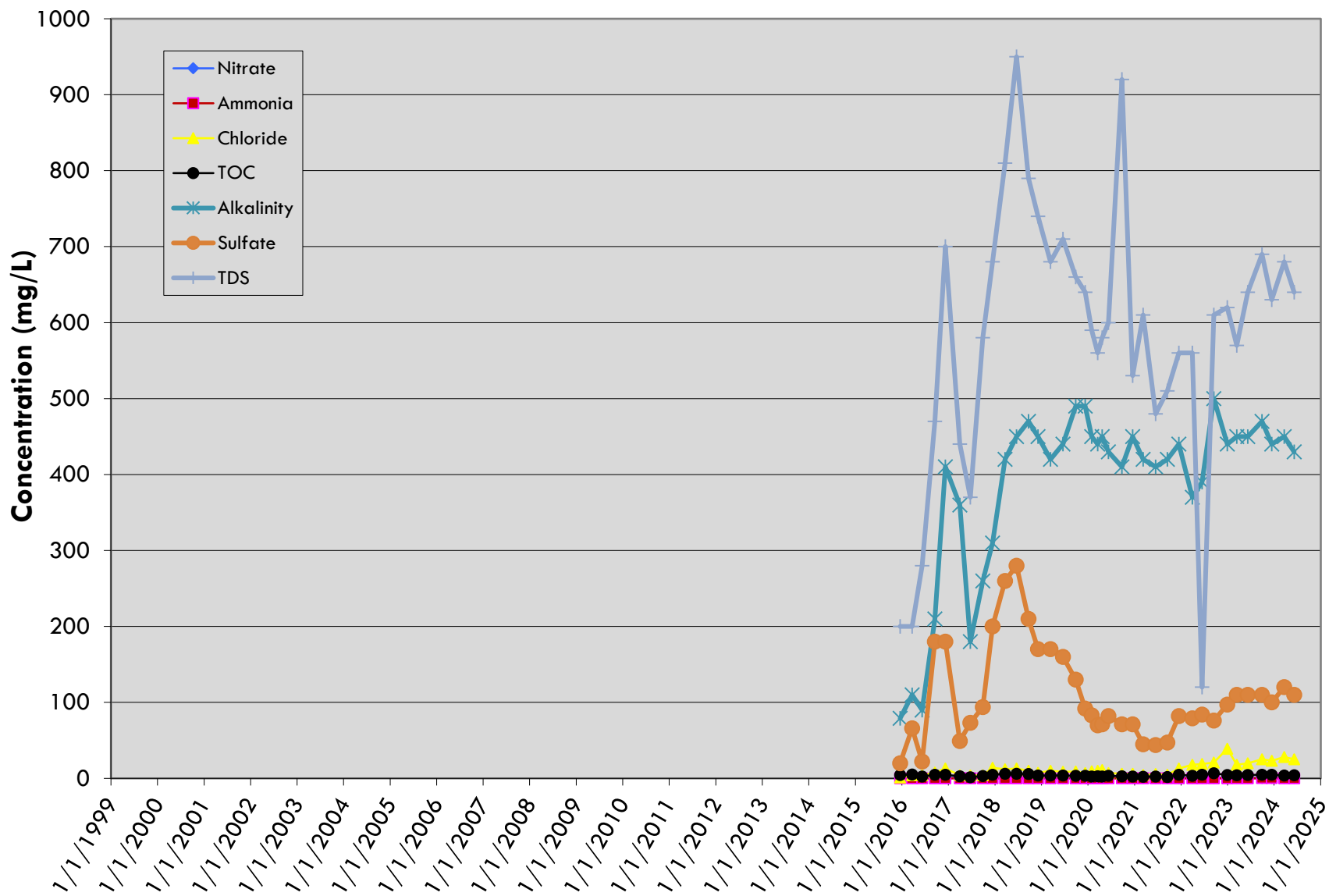
LDCS-5

LRI Landfill, Pierce County, Washington



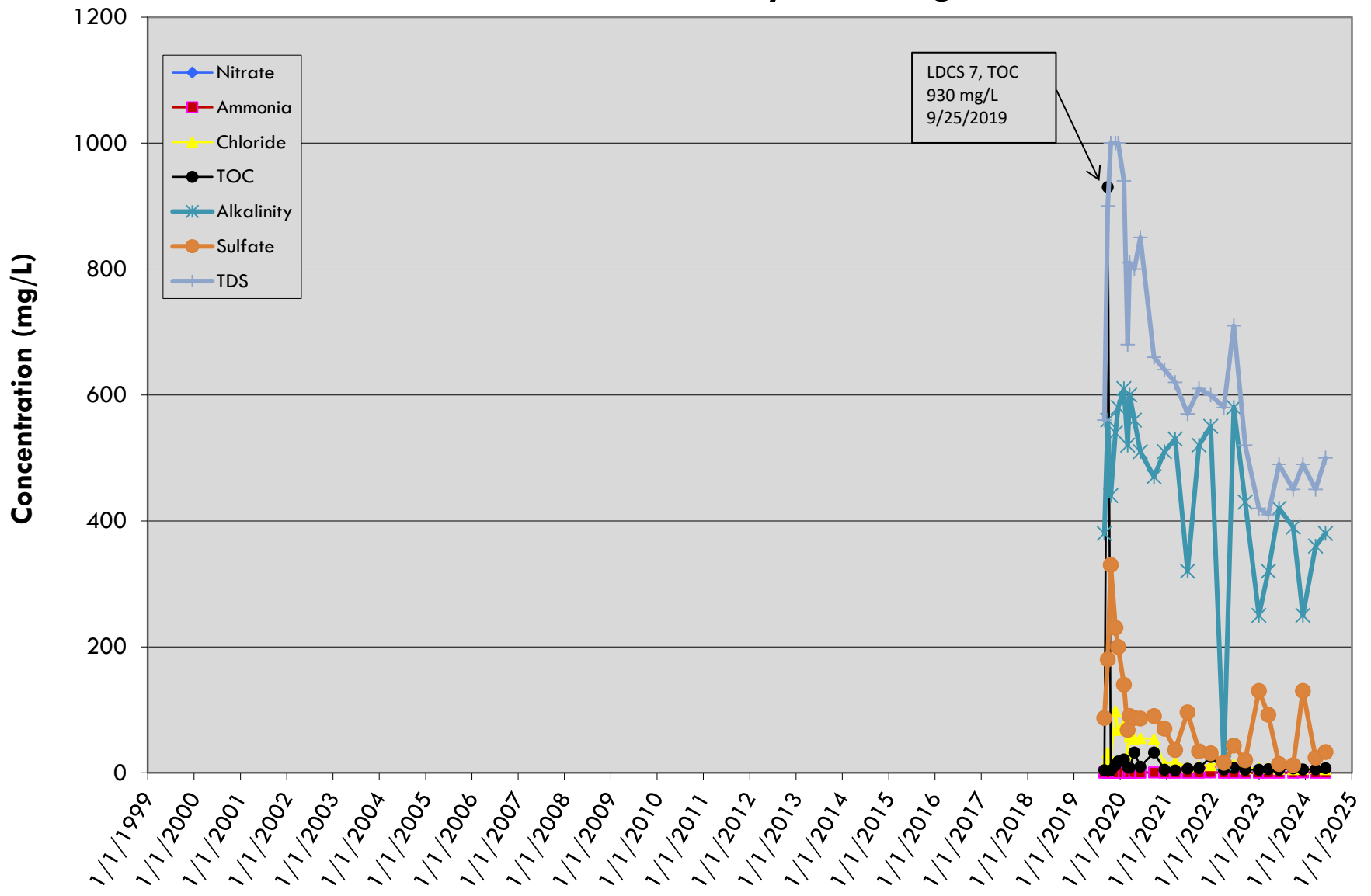
LDCS-6A

LRI Landfill, Pierce County, Washington



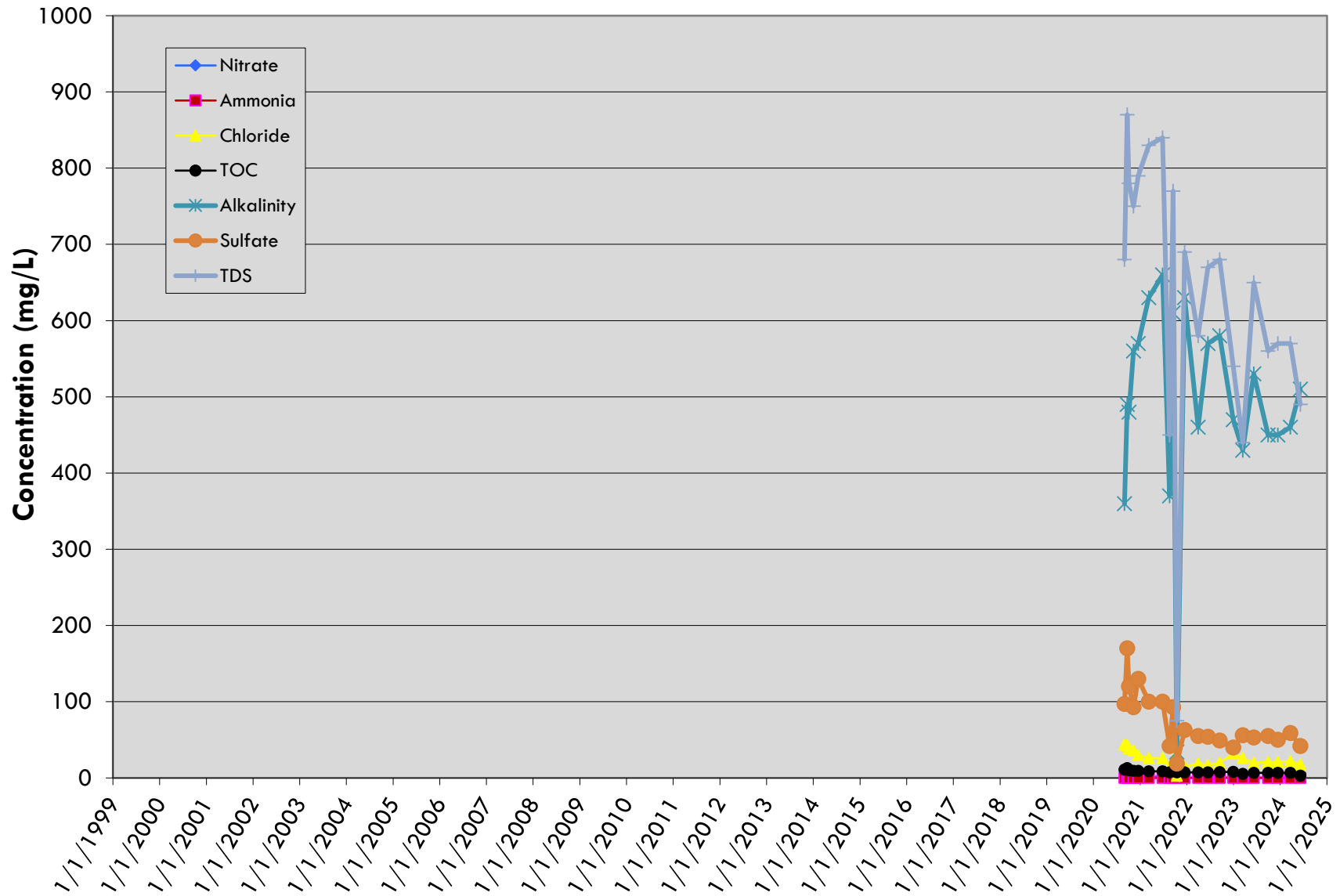
LDCS-7

LRI Landfill, Pierce County, Washington



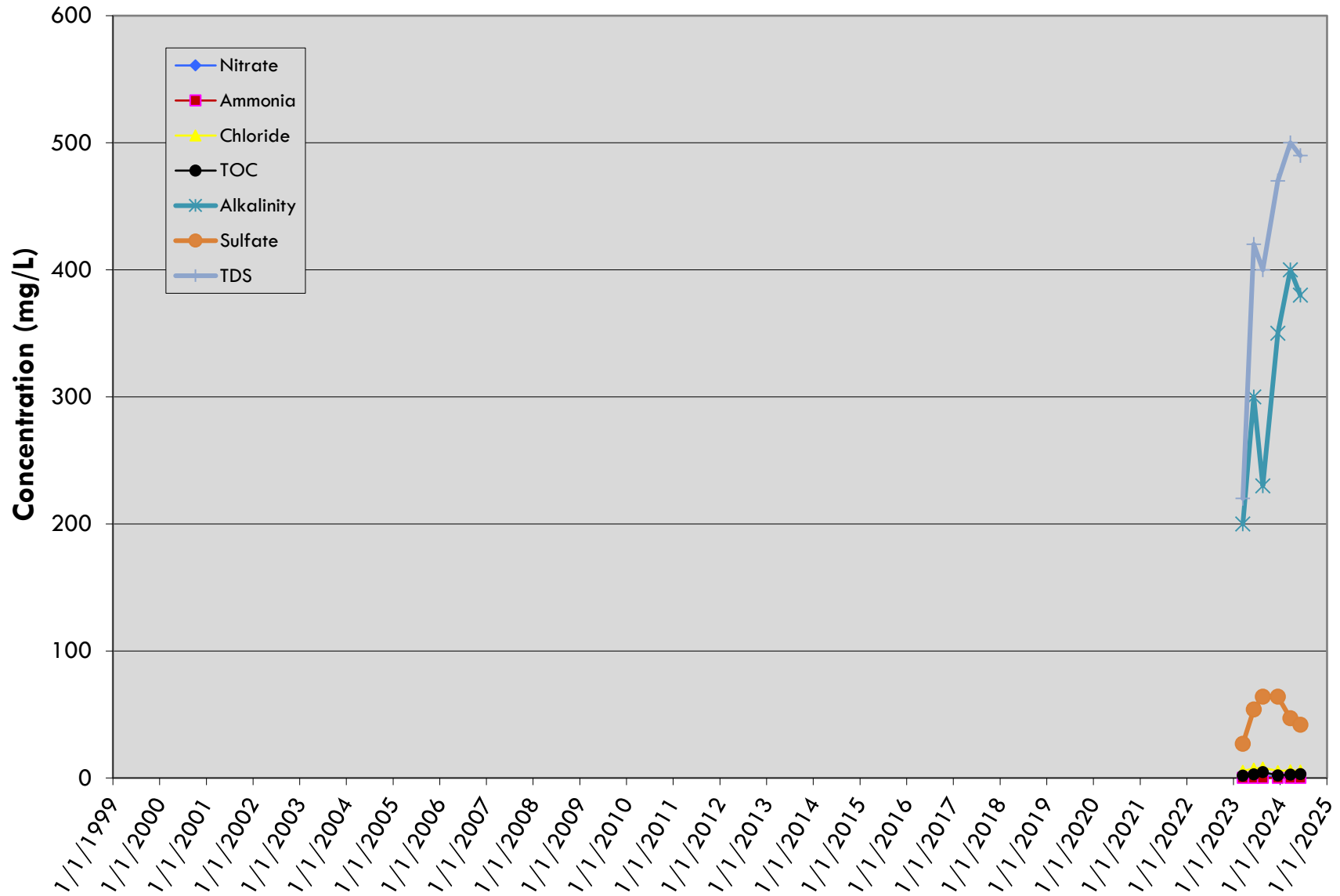
LDCS-8

LRI Landfill, Pierce County, Washington



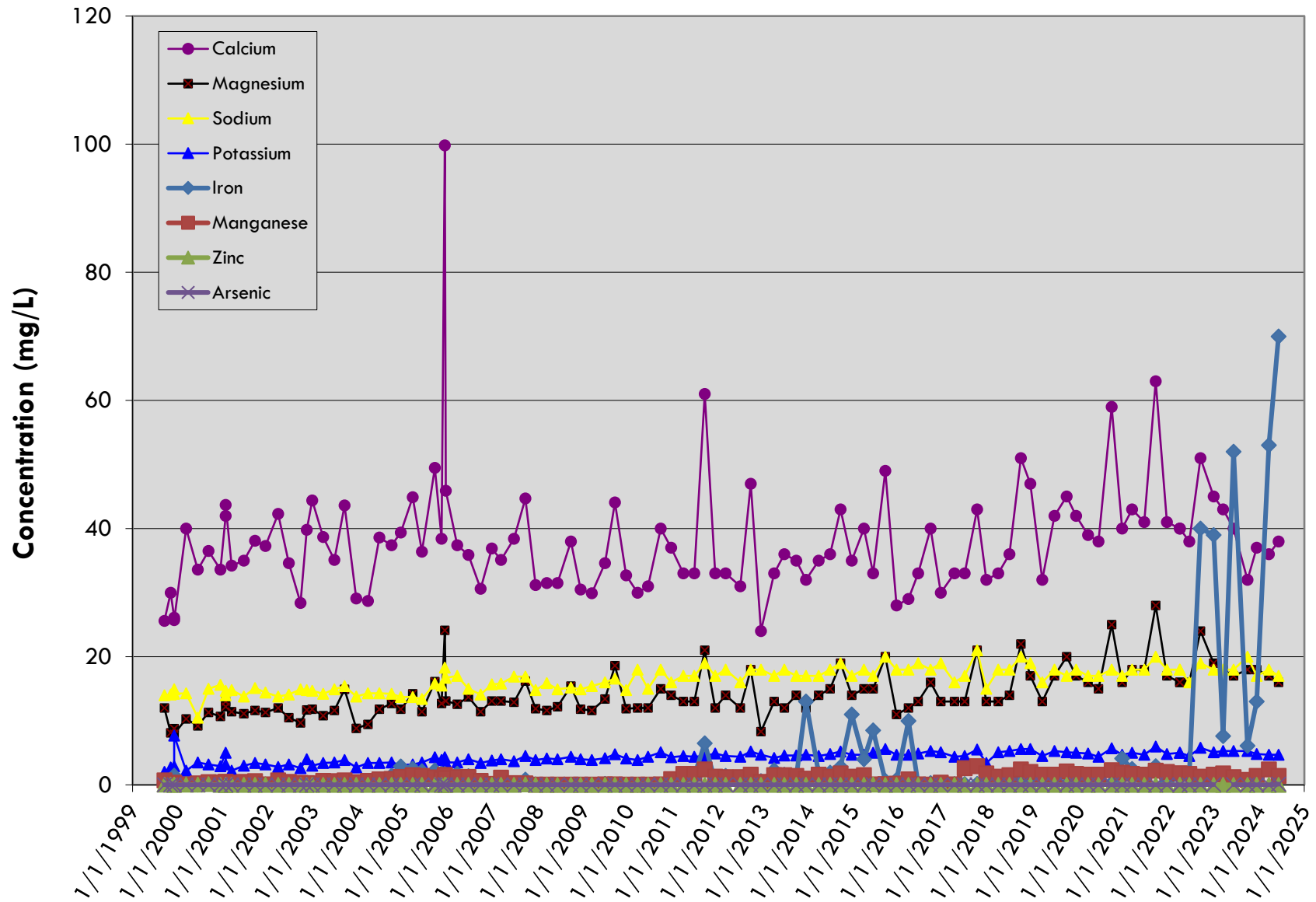
LDCS-9

LRI Landfill, Pierce County, Washington



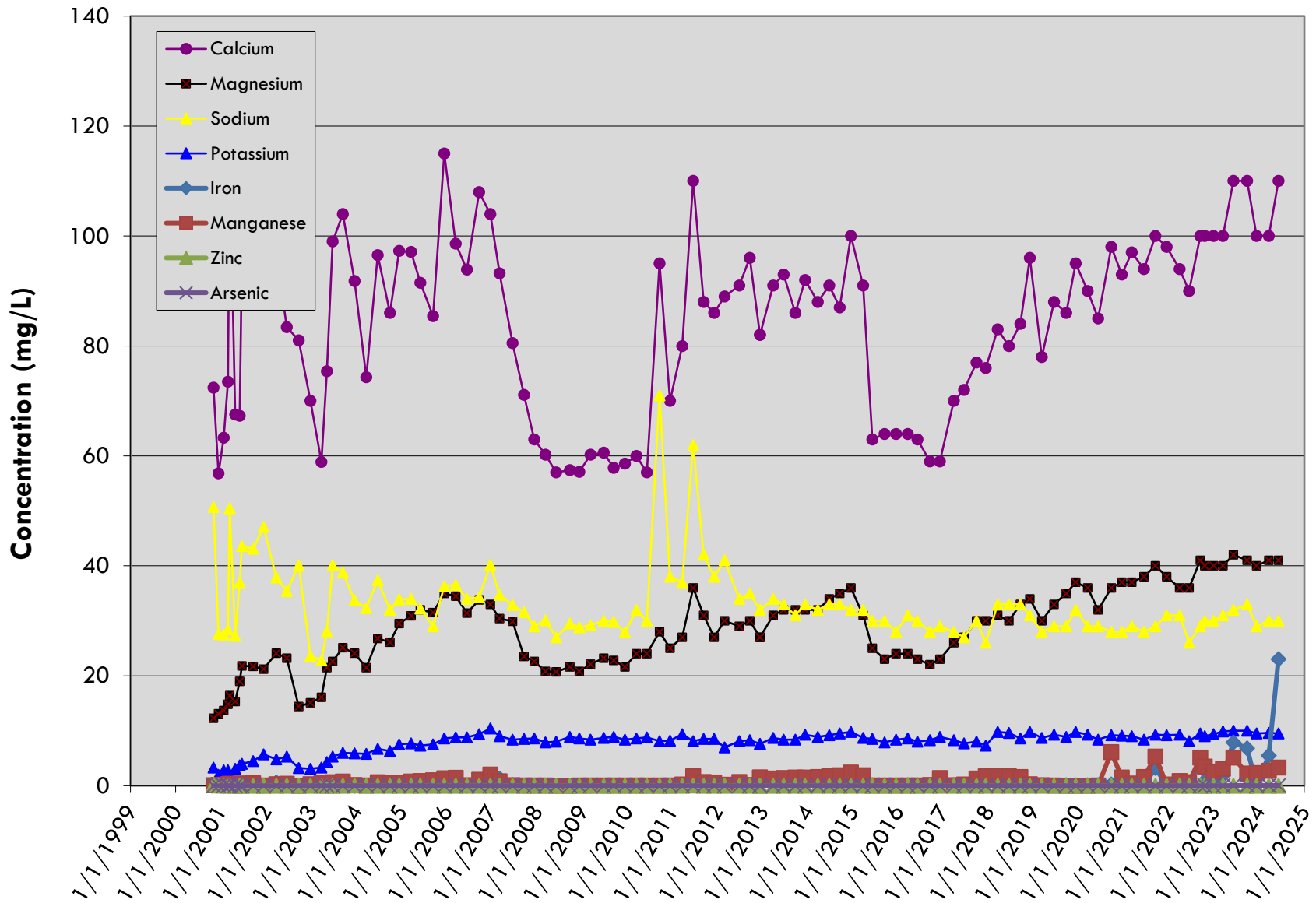
LDCS-1

LRI Landfill, Pierce County, Washington



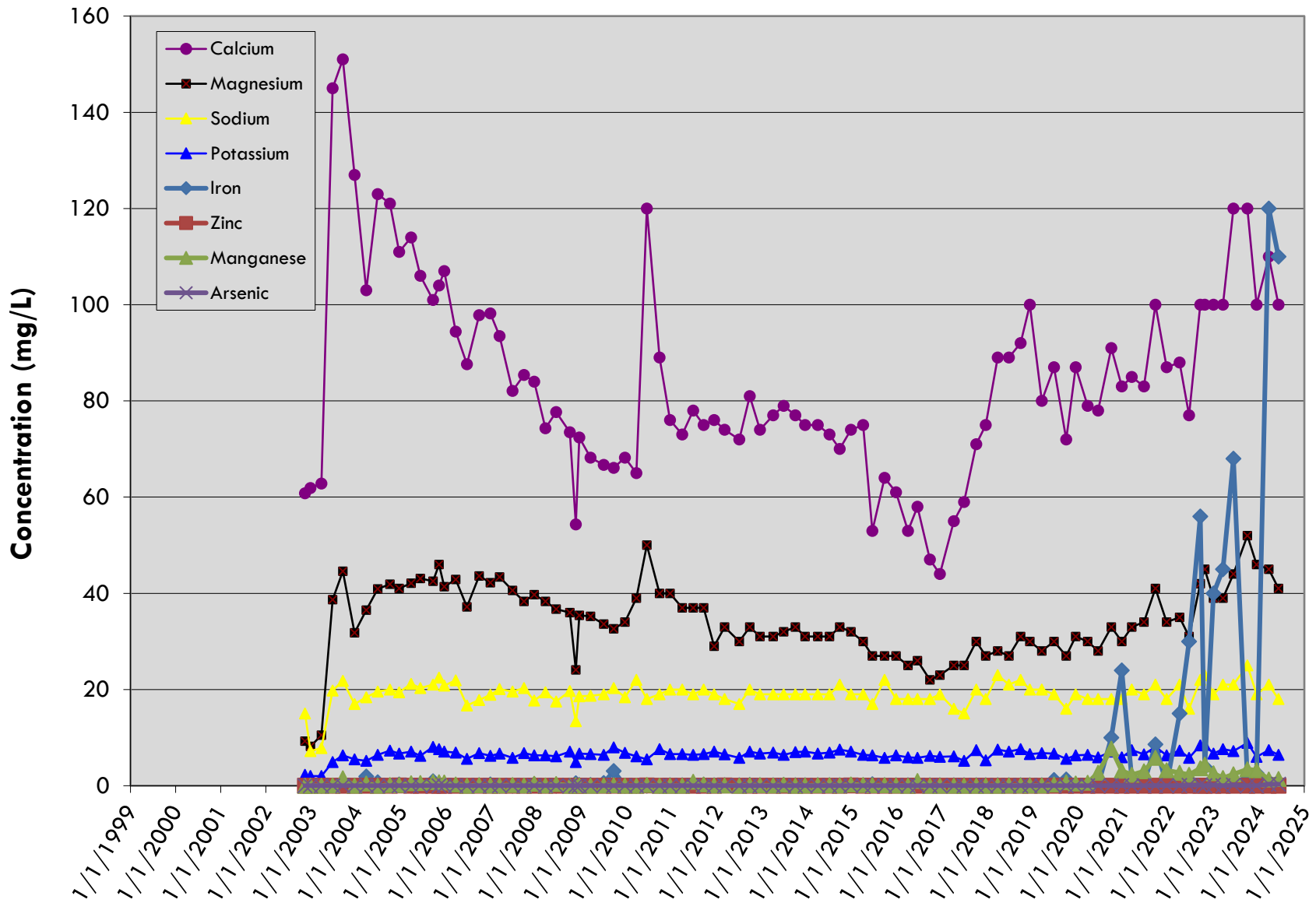
LDCS-2A

LRI Landfill, Pierce County, Washington



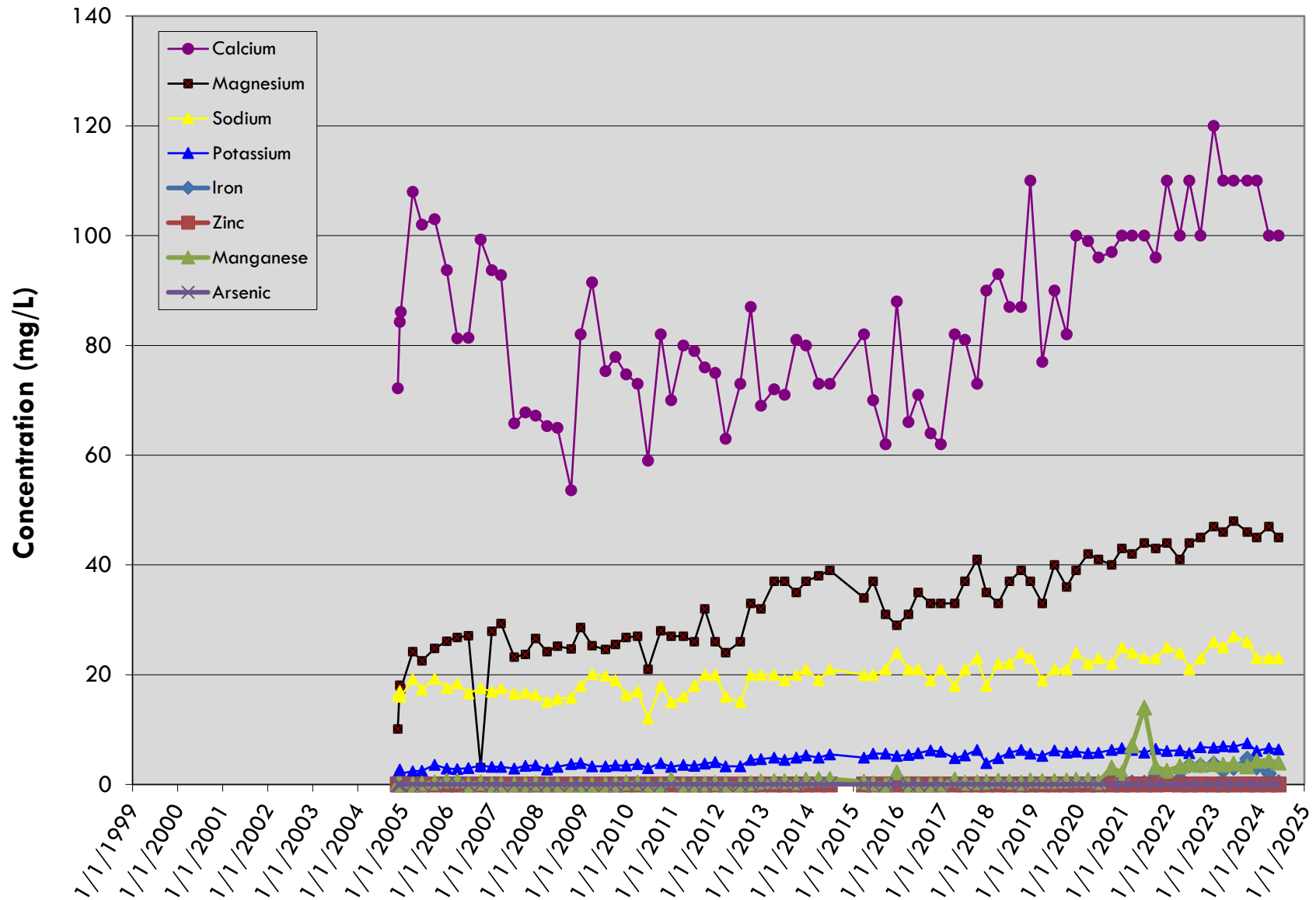
LDCS-2B

LRI Landfill, Pierce County, Washington



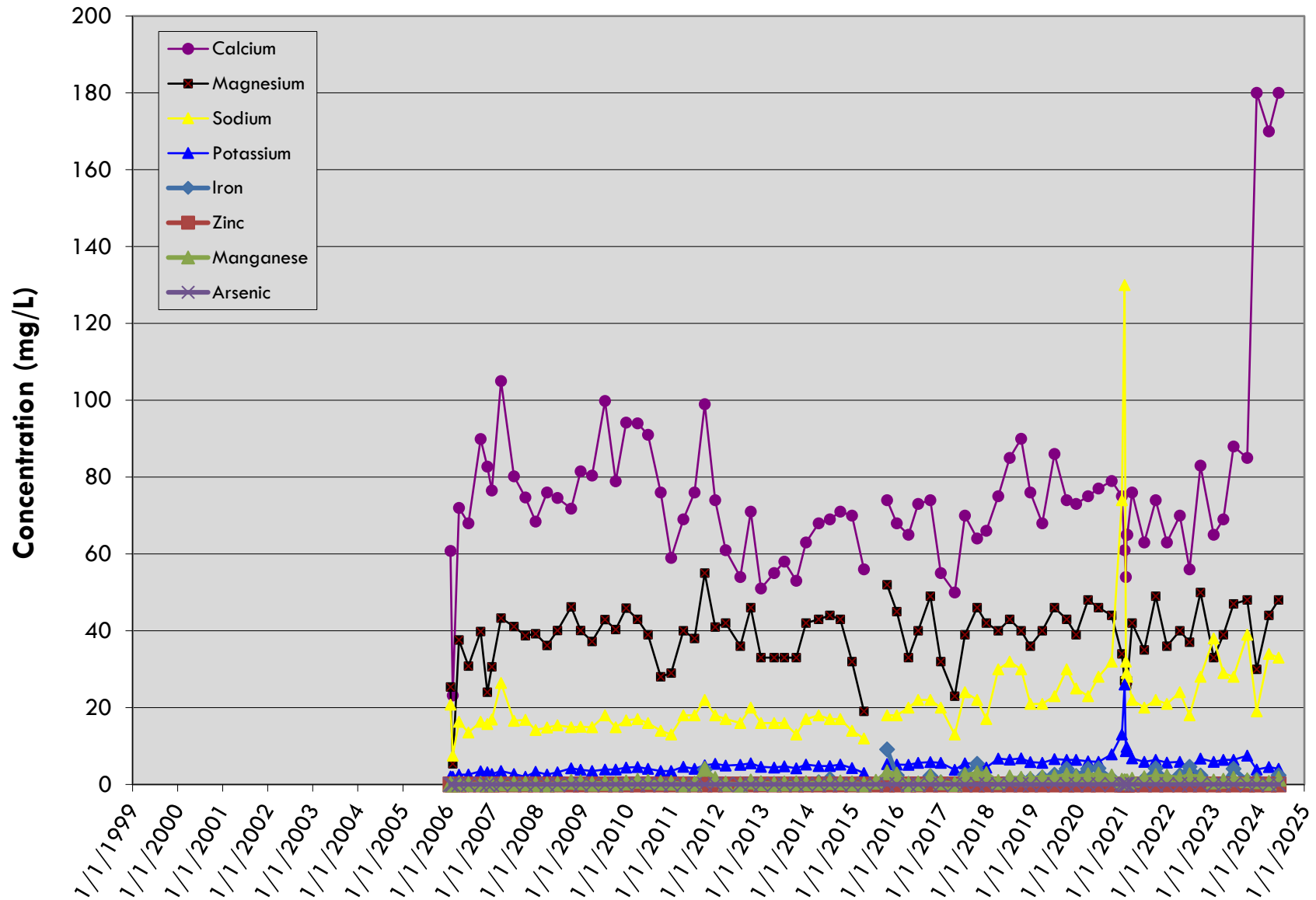
LDCS-3A

LRI Landfill, Pierce County, Washington



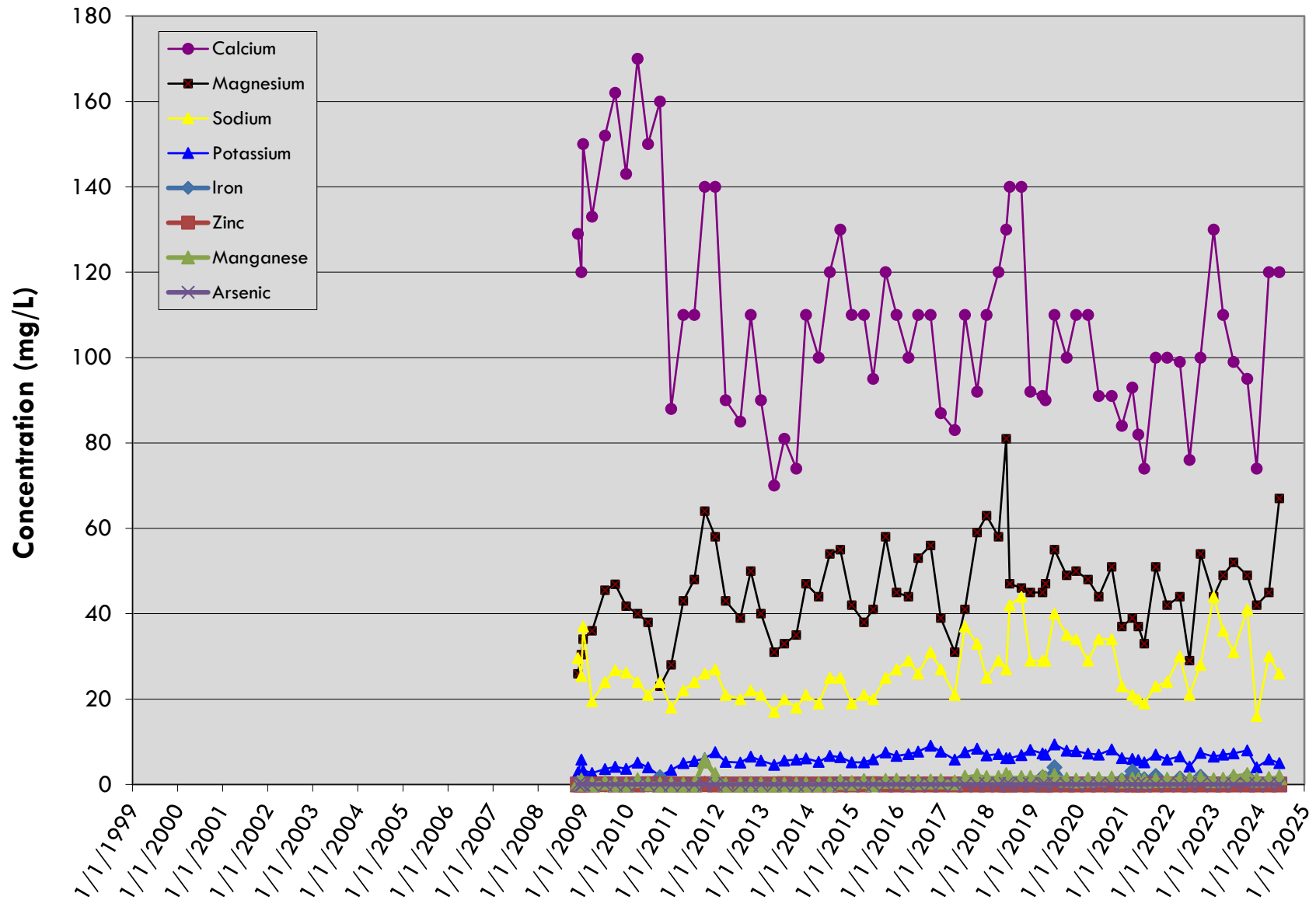
LDCS-4A

LRI Landfill, Pierce County, Washington



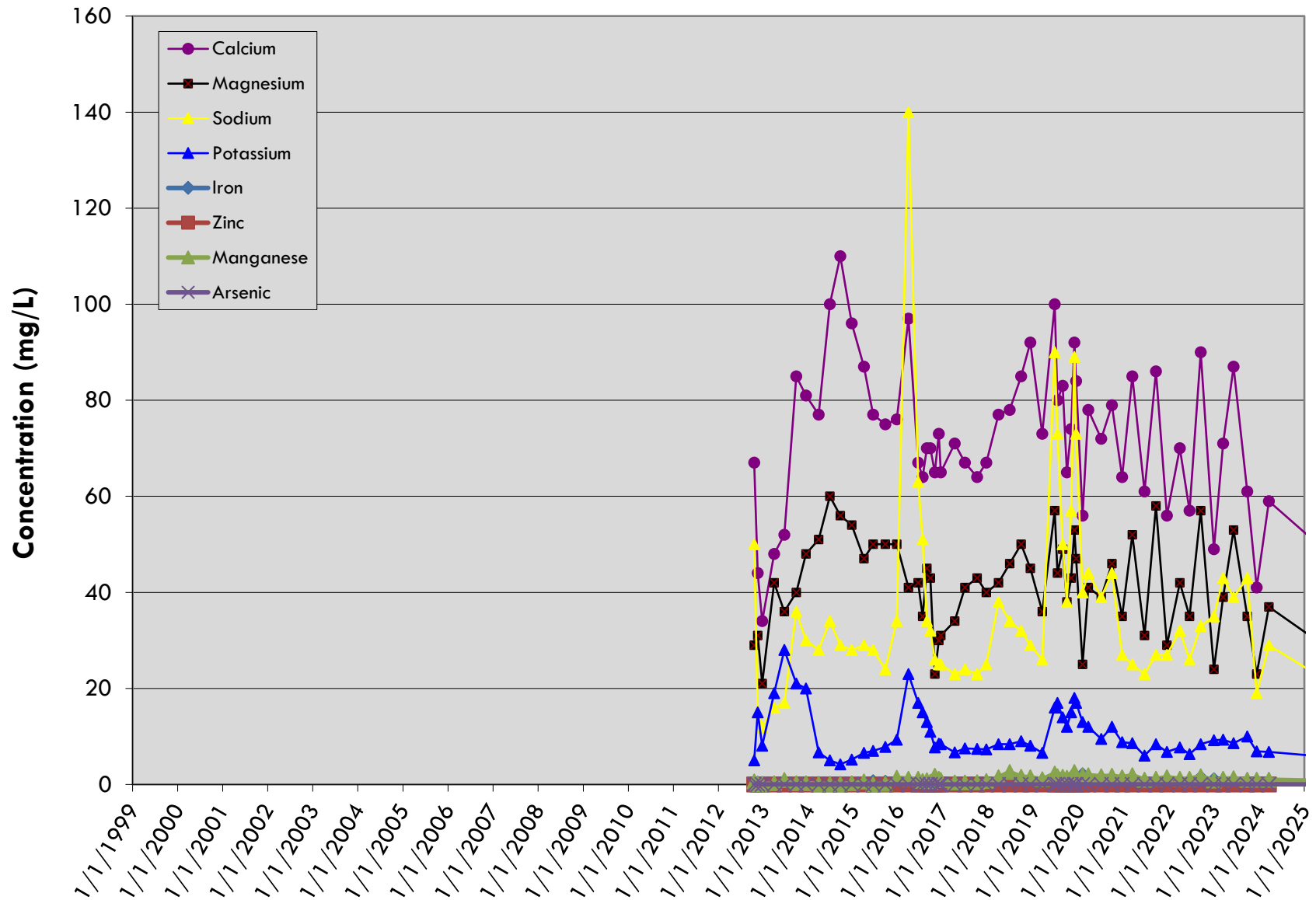
LDCS-4B

LRI Landfill, Pierce County, Washington



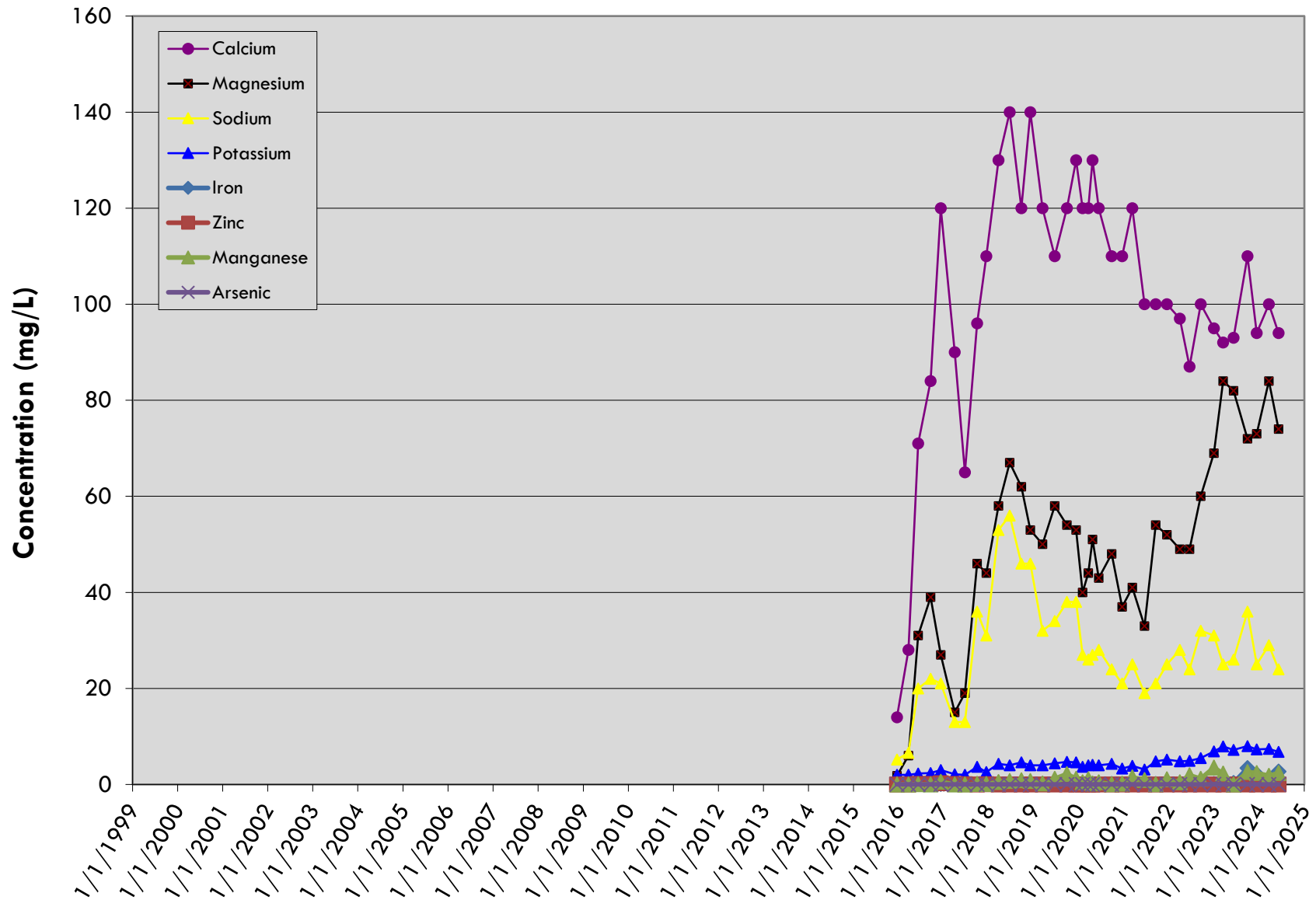
LDCS-5

LRI Landfill, Pierce County, Washington



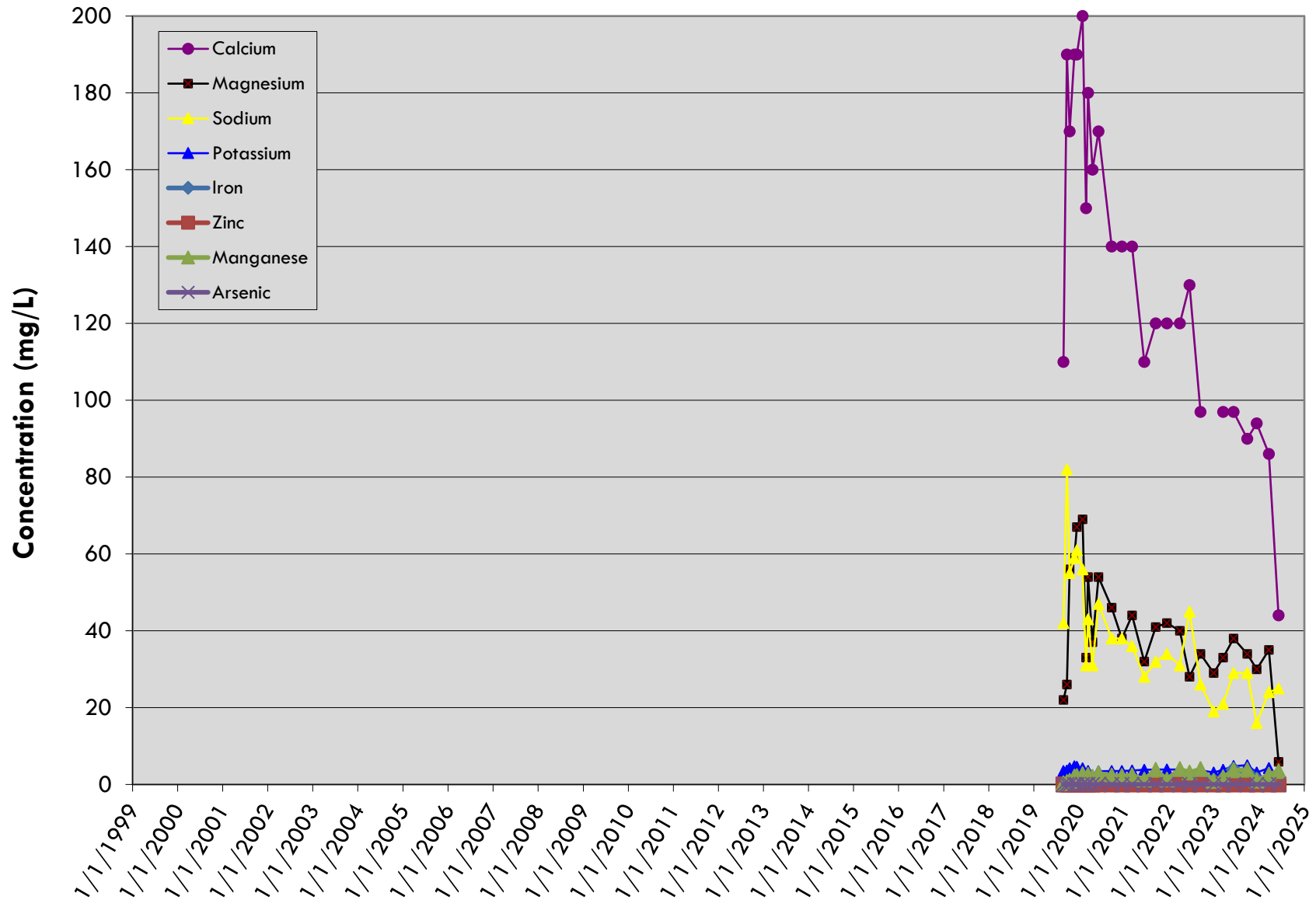
LDCS-6A

LRI Landfill, Pierce County, Washington



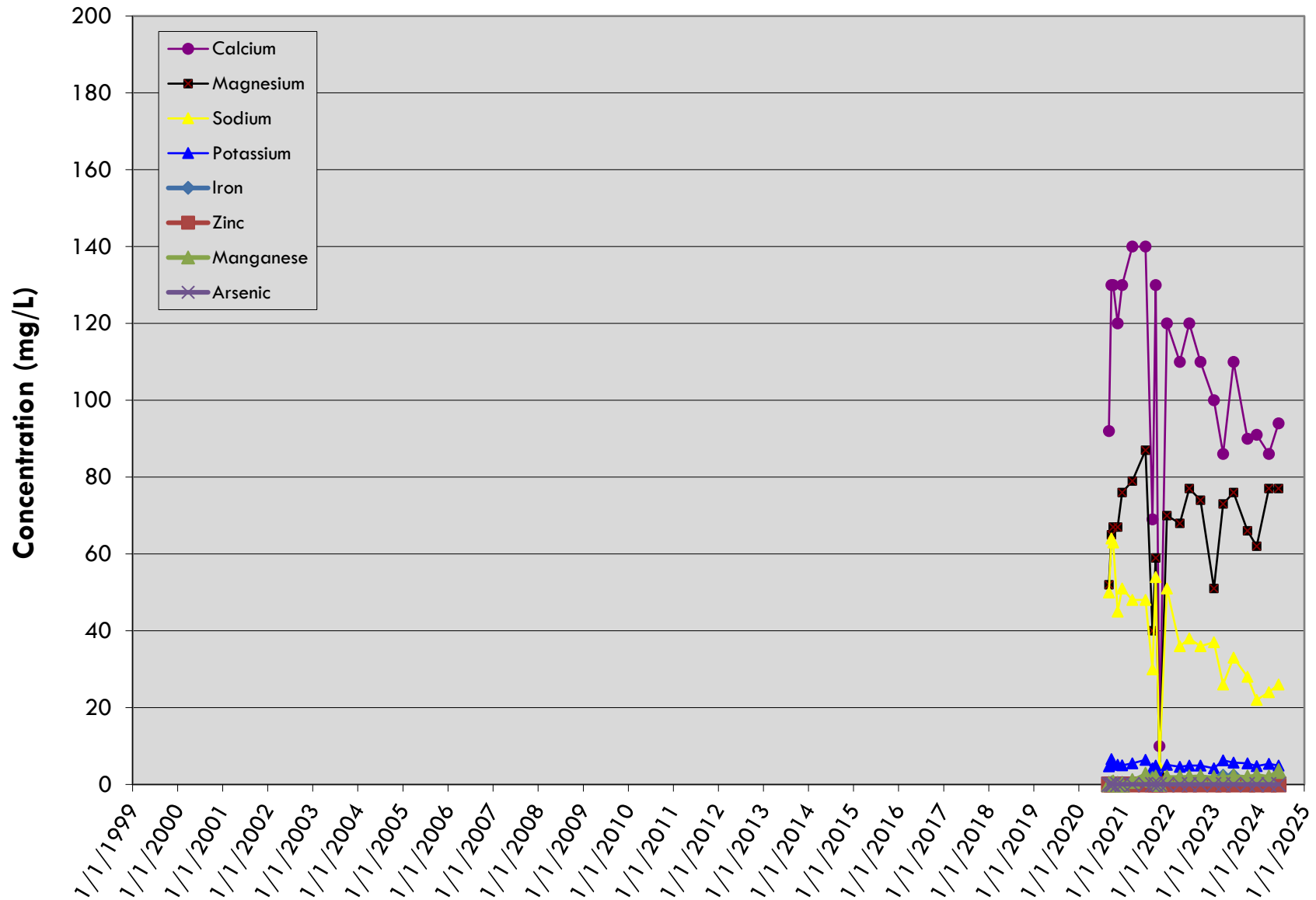
LDCS-7

LRI Landfill, Pierce County, Washington



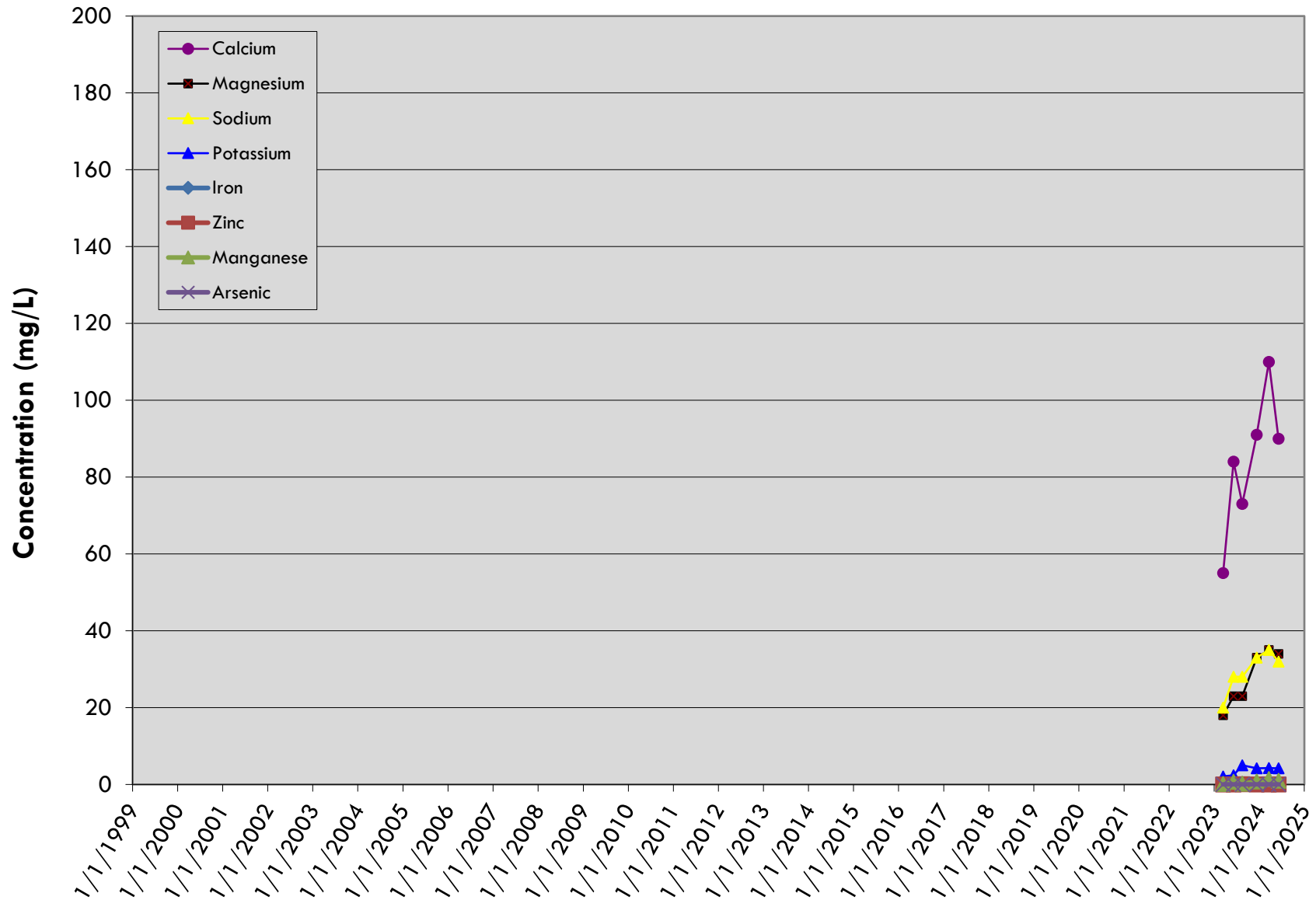
LDCS-8

LRI Landfill, Pierce County, Washington



LDCS-9

LRI Landfill, Pierce County, Washington





Attachment H

LDCS & Leachate Pumping Records and Conductivity Measurements

Summary of LDCS Volumes Pumped and Conductivity Data
Second Quarter 2024
LRI Landfill, Pierce County, Washington

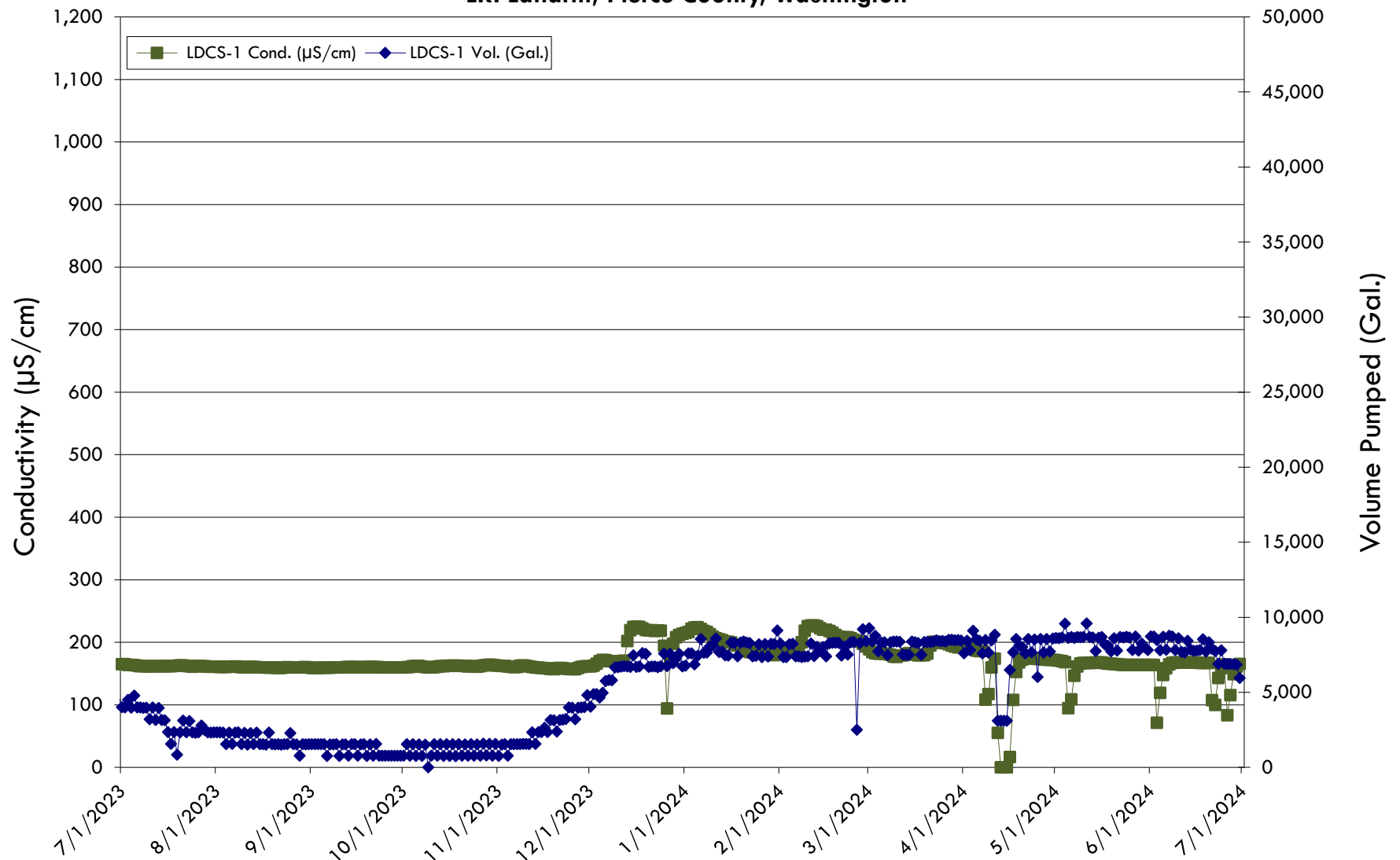
Date	Rainfall	LDCS-1 Vol. (Gal)	LDCS-1 Cond. (µS/cm)	LDCS-2A Vol. (Gal)	LDCS-2A Cond. (µS/cm)	LDCS-2B Vol. (Gal)	LDCS-2B Cond. (µS/cm)	LDCS-3A Vol. (Gal)	LDCS-3A Cond. (µS/cm)	LDCS-4A Vol. (Gal)	LDCS-4A Cond. (µS/cm)*	LDCS-4B Vol. (Gal)	LDCS-4B Cond. (µS/cm)	LDCS-5 Vol. (Gal)	LDCS-5 Cond. (µS/cm)	LDCS-6 Vol. (Gal)	LDCS-6 Cond. (µS/cm)	LDCS-7 Vol. (Gal)	LDCS-7 Cond. (µS/cm)	LDCS-8 Vol. (Gal)	LDCS-8 Cond. (µS/cm)*	LDCS-9 Vol. (Gal)	LDCS-9 Cond. (µS/cm)*
4/1/2024	0.00	7,590	192	12,220	821	24	821	4,760	910	1,800	450.1	11,588	953	516	717	0	1,088	0	-	804	-	-	-
4/2/2024	0.00	8,440	192	12,230	822	732	848	4,410	911	1,800	741.9	10,418	960	515	738	1	1,096	0	-	0	-	-	-
4/3/2024	0.02	7,810	192	11,990	837	3,040	871	5,350	912	1,800	682.1	10,690	971	1,105	751	3,539	1,099	5,406	-	5,775	-	-	-
4/4/2024	0.00	9,100	189	12,100	853	13	878	4,770	910	1,790	791.3	11,374	959	2,613	740	4	1,137	0	-	2,448	-	-	-
4/5/2024	0.09	8,520	187	13,320	868	2,554	876	5,380	906	1,780	616.3	13,418	942	1,884	708	6,724	1,119	5,295	-	2,447	-	-	-
4/6/2024	0.00	8,430	186	12,100	833	0	872	4,170	903	1,790	0	13,782	942	1,616	695	0	0	0	-	2,440	-	-	-
4/7/2024	0.03	7,590	186	12,140	809	0	846	4,760	904	1,790	0	15,172	948	1,931	687	0	0	0	-	2,164	-	-	-
4/8/2024	0.02	8,490	108	13,330	482	2,750	465	4,750	927	1,780	624.7	15,172	947	1,448	676	0	1,098	0	-	1,788	-	-	-
4/9/2024	0.24	7,650	117	11,070	547	6,209	535	4,750	976	1,780	728.6	19,354	938	4,080	665	1,645	1,104	5,413	-	2,768	-	-	-
4/10/2024	0.00	8,470	160	13,240	721	0	699	4,770	786	1,770	0	19,680	932	1,405	637	0	0	0	-	2,438	-	-	-
4/11/2024	0.00	8,840	174	12,180	808	0	780	5,360	863	1,770	770.3	17,358	931	904	654	1,404	1,081	3,025	-	2,169	-	-	-
4/12/2024	0.00	3,110	55	12,150	438	10,358	240	4,770	445	1,780	1007.9	24,216	911	1,107	692	1,525	1,066	5,315	-	821	-	-	-
4/13/2024	0.00	3,110	0	13,310	604	0	0	4,770	616	1,780	0	15,320	921	771	704	0	0	0	-	3,890	-	-	-
4/14/2024	0.00	3,110	0	12,190	754	0	0	4,770	801	1,780	0	7,330	936	578	716	0	0	0	-	2,169	-	-	-
4/15/2024	0.00	3,110	0	13,350	792	1	0	4,170	871	1,780	798.5	1,480	952	579	735	0	1,072	0	-	2,170	-	-	-
4/16/2024	0.00	6,490	17	12,150	800	2,421	71	4,760	898	1,770	739	1,286	975	513	752	0	1,078	5,100	-	2,173	-	-	-
4/17/2024	0.00	7,660	108	12,200	816	650	478	4,760	910	1,790	732.8	1,224	991	512	770	0	1,079	938	-	2,170	-	-	-
4/18/2024	0.00	8,560	153	12,130	831	1,415	659	4,770	916	1,820	595	1,196	1,003	512	786	0	1,069	0	-	2,166	-	-	-
4/19/2024	0.00	8,120	168	12,140	866	1,100	740	4,760	918	1,850	858.2	1,144	1,011	575	801	4,279	1,073	5,316	-	2,166	-	-	-
4/20/2024	0.00	8,020	172	12,100	896	0	798	4,780	918	1,920	0	1,158	1,016	512	813	0	0	0	-	2,434	-	-	-
4/21/2024	0.00	7,600	175	12,240	872	0	769	4,160	916	1,980	0	1,106	1,017	448	817	0	0	0	-	2,167	-	-	-
4/22/2024	0.03	8,550	176	12,170	850	2,593	793	5,360	917	2,050	662.8	1,074	1,017	511	818	0	1,078	5,289	-	2,434	-	-	-
4/23/2024	0.00	7,670	175	12,190	881	10	805	4,780	919	2,090	923.7	1,084	1,021	511	836	5,453	1,081	0	-	2,434	-	-	-
4/24/2024	0.00	8,520	174	13,350	881	1,531	851	4,750	918	2,410	1,103	1,070	1,015	513	854	533	1,084	5,583	-	2,283	-	-	-
4/25/2024	0.00	6,020	174	9,930	862	10	865	3,560	918	2,070	754.8	888	998	2,136	851	5,453	59	0	-	2,211	-	-	-
4/26/2024	0.00	8,560	173	12,220	876	1,531	865	4,780	918	2,820	890.8	892	993	3,840	775	533	1,056	5,583	-	2,729	-	-	-
4/27/2024	0.06	7,650	173	12,910	844	0	863	4,760	915	2,810	0	888	994	2,086	714	0	0	0	-	2,436	-	-	-
4/28/2024	0.09	8,560	172	12,200	835	0	798	4,760	916	2,800	0	872	995	1,778	698	0	0	0	-	2,436	-	-	-
4/29/2024	0.19	7,710	172	12,230	834	636	705	4,760	914	2,800	779	864	992	4,381	675	0	1,079	5,228	-	2,452	-	-	-
4/30/2024	0.08	8,580	172	12,200	839	2,695	736	4,760	916	2,790	690.8	848	985	6,099	625	1,021	1,052	0	-	3,002	-	-	-
5/1/2024	0.02	8,620	172	12,290	832	2,014	798	4,770	917	2,790	465	764	976	2,442	587	0	1,060	1,744	-	2,438	-	-	-
5/2/2024	0.00	8,600	171	12,230	843	1,243	822	4,780	916	2,780	939.4	692	967	989	596	0	1,066	0	-	2,428	-	-	-
5/3/2024	0.00	8,660	170	13,340	868	747	808	4,760	915	2,770	593.3	708	958	768	629	1,437	1,067	5,321	-	2,175	-	-	-
5/4/2024	0.00	9,570	168	13,340	889	838	767	5,370	911	2,770	832.6	740	948	1,727	667	3,100	1,044	5,308	-	2,642	-	-	-
5/5/2024	0.13	8,620	95	12,190	487	0	386	4,760	510	2,790	0	580	944	10,216	591	0	0	0	-	3,288	-	-	-
5/6/2024	0.14	8,690	109	13,420	518	6,251	514	4,760	582	2,790	970.1	532	934	6,889	531	3,442	1,018	235	-	2,997	-	-	-
5/7/2024	0.01	8,620	147	13,500	695	20	661	4,760	786	2,780	605.6	384	922	3,040	525	0	1,011	0	-	2,438	-	-	-
5/8/2024	0.00	8,680	161	12,320	756	1,659	738	4,170	866	2,780	674.6	400	914	1,170	545	0	1,027	5,192	-	2,160	-	-	-
5/9/2024	0.00	8,670	166	13,290	802	0	811	4,770	898	2,770	0	398	910	701	586	0	0	0	-	2,421	-	-	-
5/10/2024	0.00	8,690	167	13,290	847	4,134	850	5,370	910	2,780	716.8	458	909	571	633	0	1,034	5,234	-	2,416	-	-	-
5/11/2024	0.00	9,600	167	12,230	883	0	868	4,800	913	2,810	0	528	910	505	675	0	0	0	-	2,419	-	-	-
5/12/2024	0.00	8,680	167	13,370	889	0	875	5,390	913	2,840	0	480	911	504	699	0	0	0	-	2,422	-	-	-
5/13/2024	0.00	8,660	167	13,320	882	2,532	881	4,770	912	2,870	964.9	526	912	506	711	1,893	1,058	5,195	-	2,158	-	-	-
5/14/2024	0.00	7,750	168	13,310	876	1,254	881	4,770	910	2,960	745.3	498	915	504	720	4,468	1,005	0	-	2,419	-	-	-
5/15/2024	0.00	8,630	168	12,270	894	700	876	4,770	913	3,110	768.1	556	920	505	725	0	1,019	0	-	2,147	-	-	-
5/16/2024	0.00	8,680	168	13,350	935	772	874	4,770	915	3,250	1063.6	500	926	504	735	0	1,035	5,174	-	2,428	-	-	-
5/17/2024	0.02	8,180	167	12,360	945	4,289	875	4,770	913	3,420	752.1	482	930	503	746	2,151	1,043	0	-	2,421	-	-	-
5/18/2024	0.00	8,100	166	13,330	919	439	875	4,760	911	3,600	719.2	518	935	633	753	1,686	997	5,128	-	2,154	-	-	-
5/19/2024	0.24	7,740	166	12,310	924	0	866	4,760	912	3,770	0	504	941	1,386	757	0	0	0	-	2,150	-	-	-
5/20/2024	0.00	8,610	165	12,280	895	1,988	857	4,770	912	3,910	626.2	428	949	632	756	1,932	1,031	0	-	2,421	-	-	-
5/21/2024	0.00	7,790	165	12,250	914	56	852	4,770	914	4,050	741.8	436	956	4,110	759	0	1,003	3,320	-	2,575	-	-	-
5/22/2024	0.66	8,690	164	13,390	952	688	867	4,770	915	4,240	764.8	394	963	2,715	710	0	1,027	0	-	2,511	-	-	-
5/23/2024	0.00	8,660	164	12,330	916	56	857	4,760	914	4,300	678.6	436	972	836	681	0	1,024	3,320	-	2,425	-	-	-
5/24/2024	0.00	8,700	164	13,270	914	688	835	5,350	916	4,400	804.7	448	981	633	703	0	1,048	0	-	2,154	-	-	-
5/25/2024	0.10	8,660	164	12,360	949	0	751	4,760	919	4,590	0	400	988	827	726	0	0	0	-	1,696	-	-	-
5/26/2024	0.00	7,810	164	13,480	905	0	675	4,750	919	4,730	0	460	994	567	734	0	0	0	-	2,177	-	-	-
5/27/2024	0.10	8,720	164	12,170	886	2,200	352	4,470	919	4,830	594.8	504	1,001	503	743	15	1,065	0	-	5,032	-	-	-
5/28/2024	0.00	7,780	164	13,080	919	2,094	272	4,170	920	4,930	612.7	514	1,004	503	753	4,092	1,039	6,908					

**Summary of LDCS Volumes Pumped and Conductivity Data
Second Quarter 2024
LRI Landfill, Pierce County, Washington**

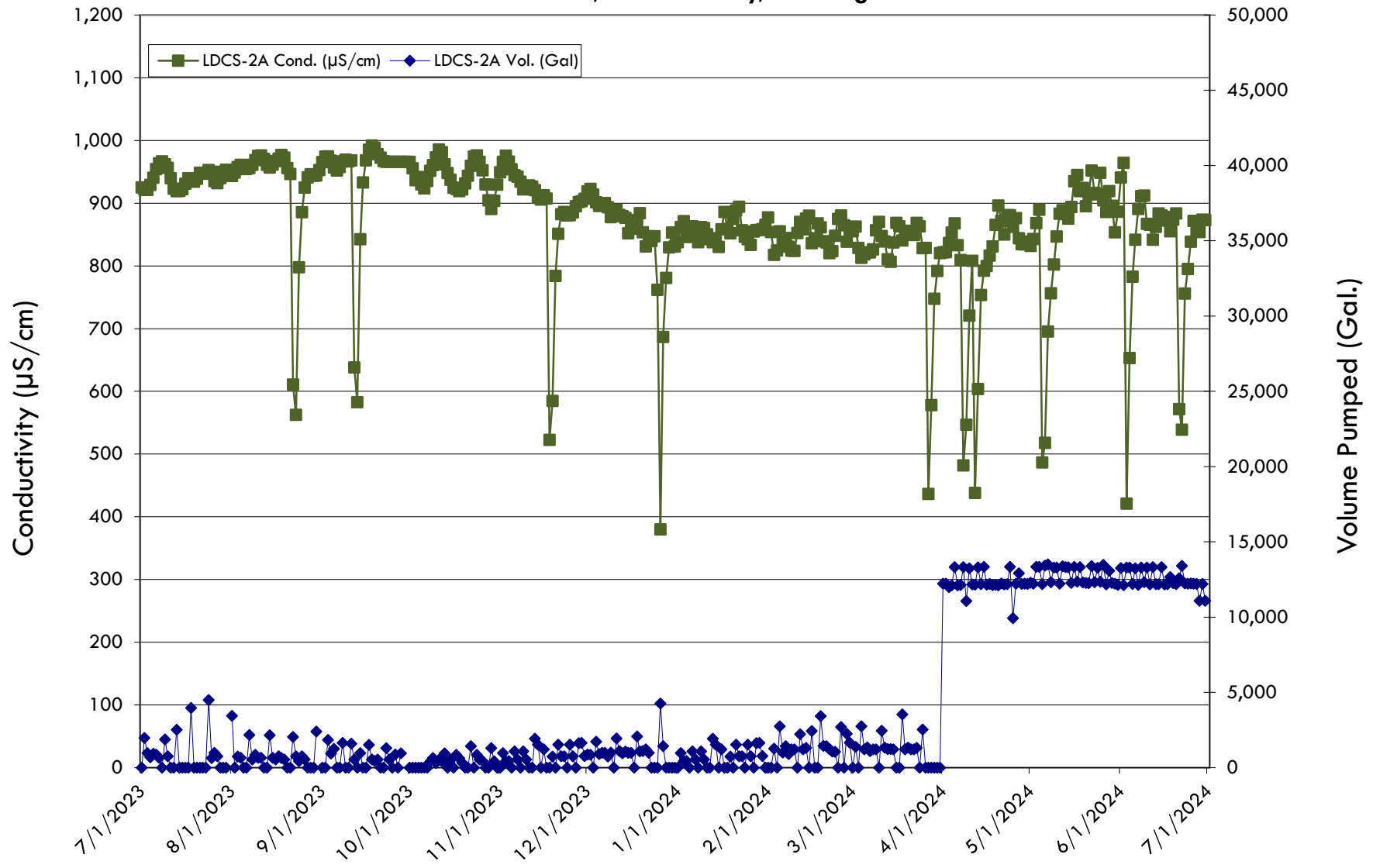
Date	Rainfall	LDCS-1 Vol. (Gal.)	LDCS-1 Cond. (µS/cm)	LDCS-2A Vol. (Gal)	LDCS-2A Cond. (µS/cm)	LDCS-2B Vol. (Gal)	LDCS-2B Cond. (µS/cm)	LDCS-3A Vol. (Gal)	LDCS-3A Cond. (µS/cm)	LDCS-4A Vol. (Gal)	LDCS-4A Cond. (µS/cm)*	LDCS-4B Vol. (Gal)	LDCS-4B Cond. (µS/cm)	LDCS-5 Vol. (Gal)	LDCS-5 Cond. (µS/cm)	LDCS-6 Vol. (Gal)	LDCS-6 Cond. (µS/cm)	LDCS-7 Vol. (Gal)	LDCS-7 Cond. (µS/cm)	LDCS-8 Vol. (Gal)	LDCS-8 Cond. (µS/cm)*	LDCS-9 Vol. (Gal)	LDCS-9 Cond. (µS/cm)*
6/1/2024	0.00	8,720	164	13,260	941	0	796	4,770	917	5,580	0	376	1,009	565	768	0	0	0	-	2,442	-	-	-
6/2/2024	0.01	8,720	164	12,130	965	0	842	4,760	919	5,610	0	432	1,010	2,358	774	0	0	0	-	2,448	-	-	-
6/3/2024	0.97	8,480	72	13,290	421	2,886	309	1,200	159	5,770	703.6	224	1,003	8,157	669	15	1,051	5,728	-	3,012	-	-	-
6/4/2024	0.04	7,800	119	13,290	653	1,086	458	1,200	6	5,800	509.7	268	1,008	3,801	608	2	1,064	0	-	2,728	-	-	-
6/5/2024	0.08	8,710	148	12,210	783	2,339	322	1,200	6	5,810	563.3	212	1,011	962	606	2	1,063	5,001	-	2,439	-	-	-
6/6/2024	0.00	7,830	159	13,250	842	1,607	538	1,200	6	5,880	636	218	1,011	697	638	0	1,060	0	-	2,360	-	-	-
6/7/2024	0.00	8,770	165	12,140	891	2,099	701	5,990	319	6,070	768.9	206	1,010	566	676	0	1,069	5,115	-	2,430	-	-	-
6/8/2024	0.00	8,720	167	13,300	911	0	778	4,790	700	6,200	0	236	1,010	501	707	0	0	0	-	2,427	-	-	-
6/9/2024	0.00	7,810	168	12,330	912	0	783	4,770	842	6,350	0	270	1,007	500	726	0	0	0	-	2,163	-	-	-
6/10/2024	0.01	8,600	168	13,290	867	2,044	788	4,170	890	6,550	704.2	222	1,003	439	734	0	1,070	0	-	2,159	-	-	-
6/11/2024	0.00	7,700	168	12,180	865	1,081	801	4,770	903	6,750	763.2	160	1,001	499	741	0	1,073	0	-	1,819	-	-	-
6/12/2024	0.00	7,650	168	13,320	842	1,141	820	4,760	907	6,880	842.5	184	1,000	500	748	0	1,069	5,063	-	2,468	-	-	-
6/13/2024	0.00	8,430	168	12,190	862	822	858	4,770	909	7,050	602.1	174	1,004	500	752	0	1,069	0	-	2,374	-	-	-
6/14/2024	0.00	7,850	168	12,190	884	1,616	859	4,170	914	7,180	591.7	196	1,014	437	759	0	1,070	5,077	-	1,897	-	-	-
6/15/2024	0.01	7,770	168	13,320	880	0	876	4,770	918	7,300	0	166	1,042	1,214	765	0	0	0	-	2,440	-	-	-
6/16/2024	0.00	7,780	168	12,180	872	0	884	4,750	920	7,390	0	78	1,066	1,524	760	0	0	0	-	2,169	-	-	-
6/17/2024	0.00	7,810	167	12,190	878	2,159	874	4,770	921	7,460	636.7	100	1,083	1,160	748	3,787	1,067	5,049	-	2,446	-	-	-
6/18/2024	0.04	8,530	167	12,670	855	504	810	4,160	920	7,550	581	110	1,095	695	745	0	1,063	0	-	2,441	-	-	-
6/19/2024	0.00	7,720	167	12,250	874	0	771	4,770	921	7,710	743	148	1,105	564	756	0	1,064	0	-	2,434	-	-	-
6/20/2024	0.00	8,340	167	12,190	884	2,866	819	4,780	923	7,880	672.4	168	1,114	499	768	0	1,060	5,079	-	2,431	-	-	-
6/21/2024	0.00	7,900	108	12,590	572	3,009	517	4,780	595	7,620	629.4	134	1,132	449	781	0	1,062	5,043	-	2,429	-	-	-
6/22/2024	0.00	7,750	100	13,410	539	0	427	4,160	553	8,150	0	170	1,137	499	791	0	0	0	-	2,162	-	-	-
6/23/2024	0.00	6,890	143	12,240	756	0	591	4,770	789	8,260	0	172	1,131	437	797	0	0	0	-	2,165	-	-	-
6/24/2024	0.00	7,800	159	12,230	795	1,188	698	4,170	873	8,350	937	166	1,132	437	802	0	1,064	0	-	2,160	-	-	-
6/25/2024	0.00	6,910	165	12,240	839	1,219	690	4,770	904	8,490	946	144	1,139	437	809	0	1,064	0	-	2,154	-	-	-
6/26/2024	0.00	6,870	84	12,230	872	1,188	750	4,770	918	8,610	1026.2	150	1,149	436	818	0	1,068	0	-	1,893	-	-	-
6/27/2024	0.03	6,900	115	12,210	855	1,219	684	4,160	921	8,640	921.9	148	1,159	436	824	0	1,069	0	-	2,165	-	-	-
6/28/2024	0.00	6,870	149	11,090	854	762	663	4,160	924	8,710	667.8	142	1,171	500	825	0	1,075	0	-	1,885	-	-	-
6/29/2024	0.00	6,850	161	12,200	874	0	710	4,770	927	8,860	0	162	1,186	499	829	0	0	0	-	764	-	-	-
6/30/2024	0.00	5,960	166	11,090	873	0	741	4,170	926	8,920	0	154	1,200	437	830	0	0	0	-	0	-	-	-

Notes:
 --- = Data not available due to equipment malfunction or meter out of range

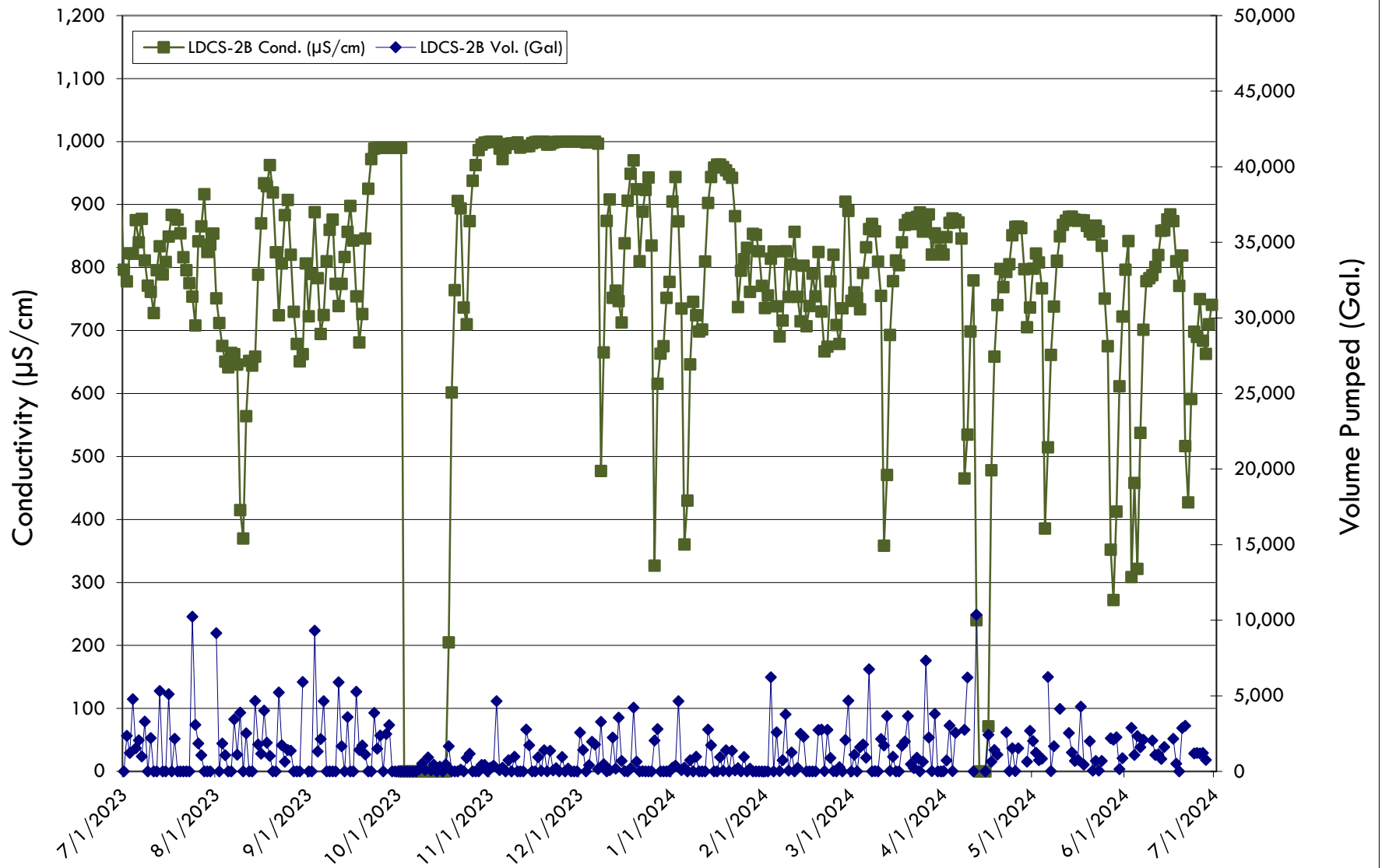
LDCS-1 (DailyTotals)
Conductivity vs Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



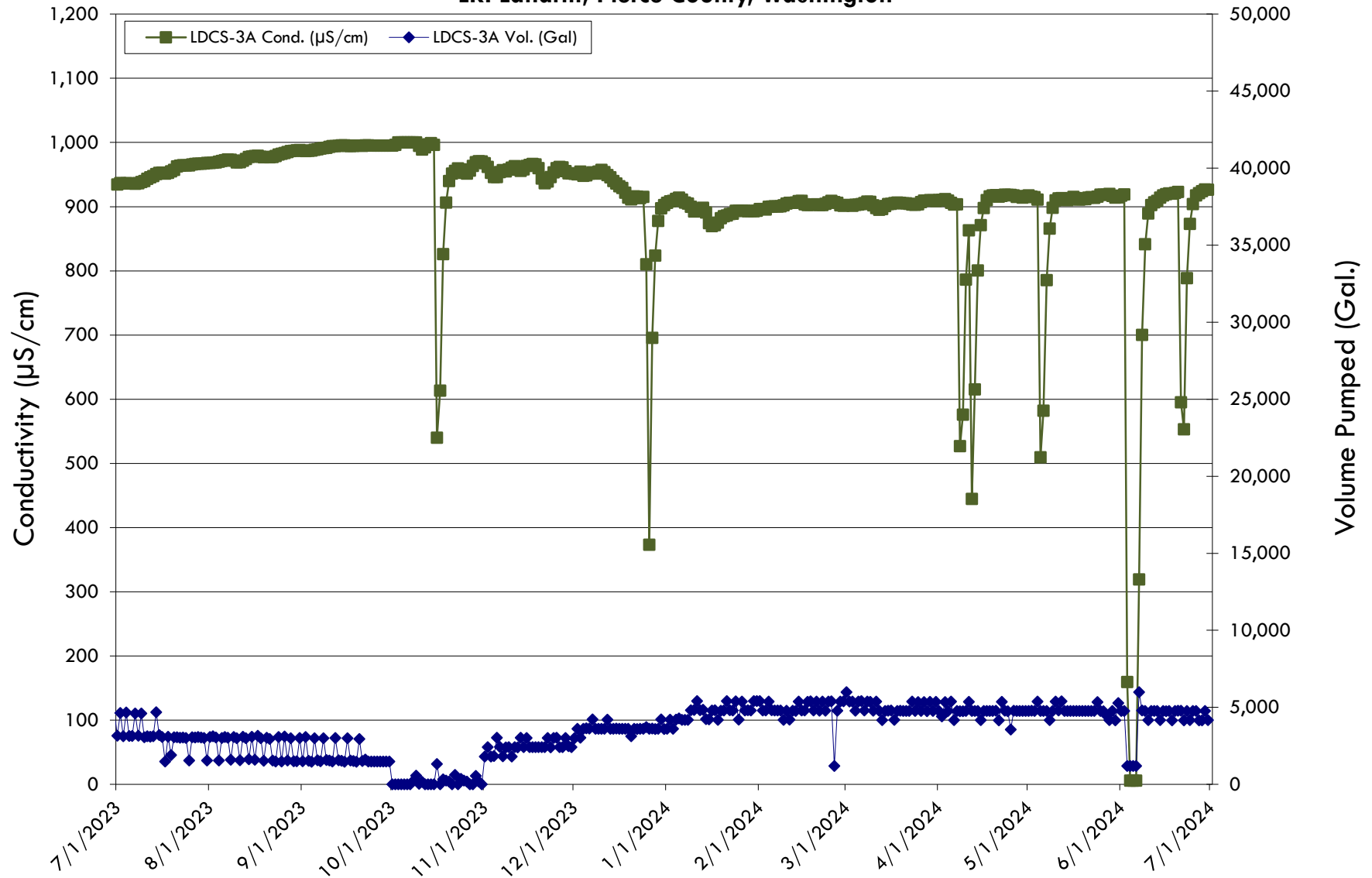
LDCS-2A (Daily Totals)
Conductivity vs Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



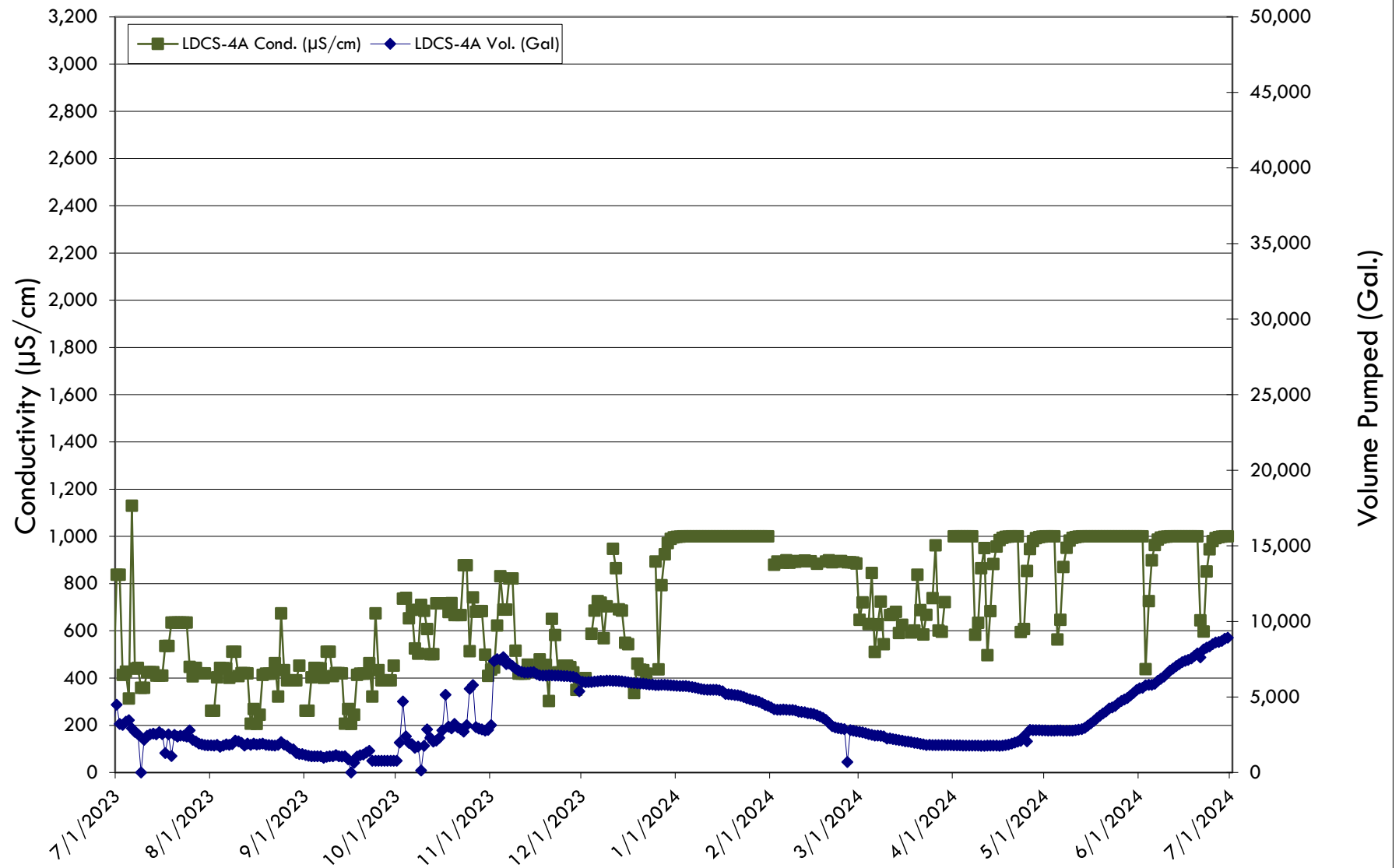
LDCS-2B (Daily Totals)
Conductivity vs Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



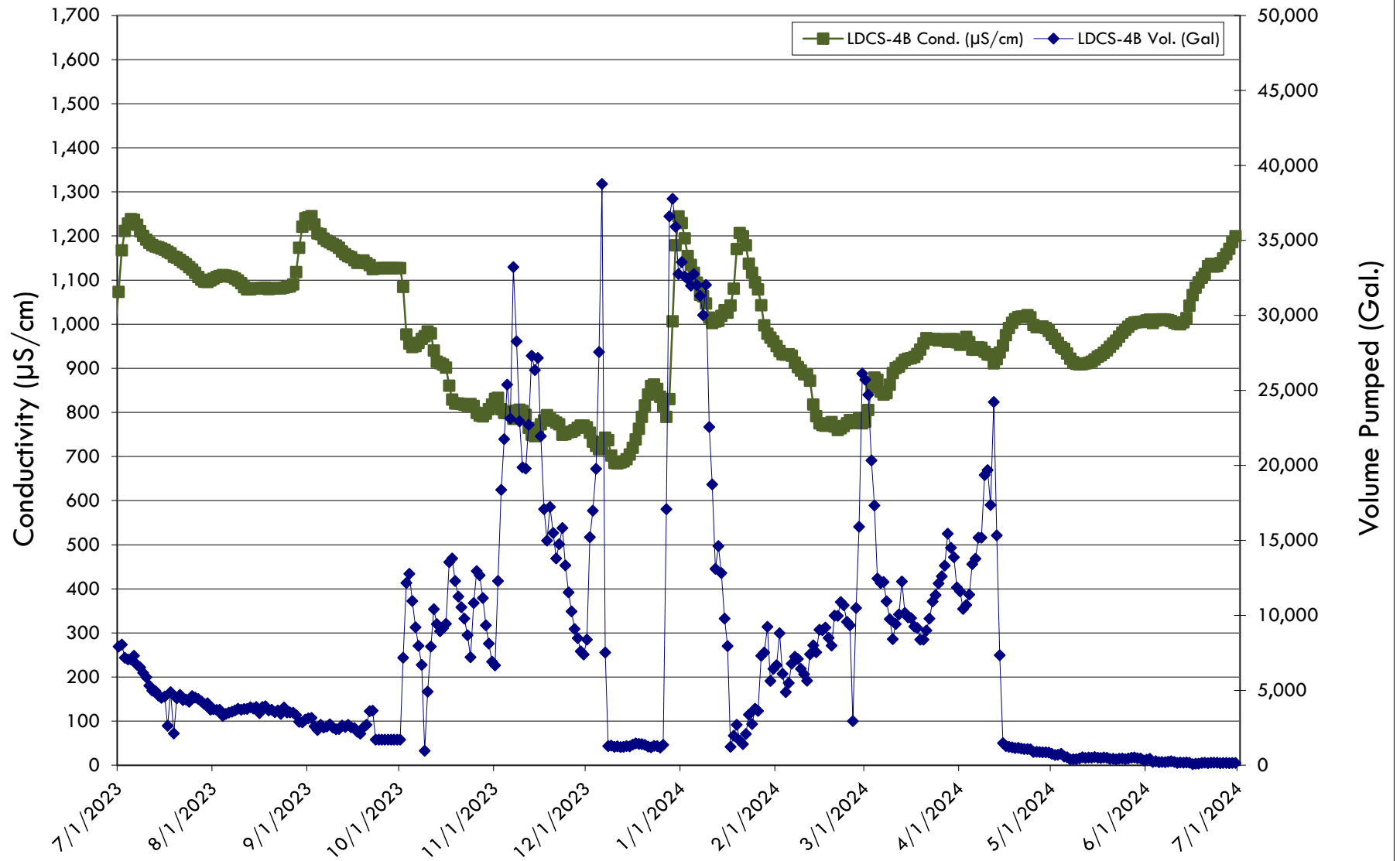
LDCS-3A (Daily Totals)
Conductivity vs Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



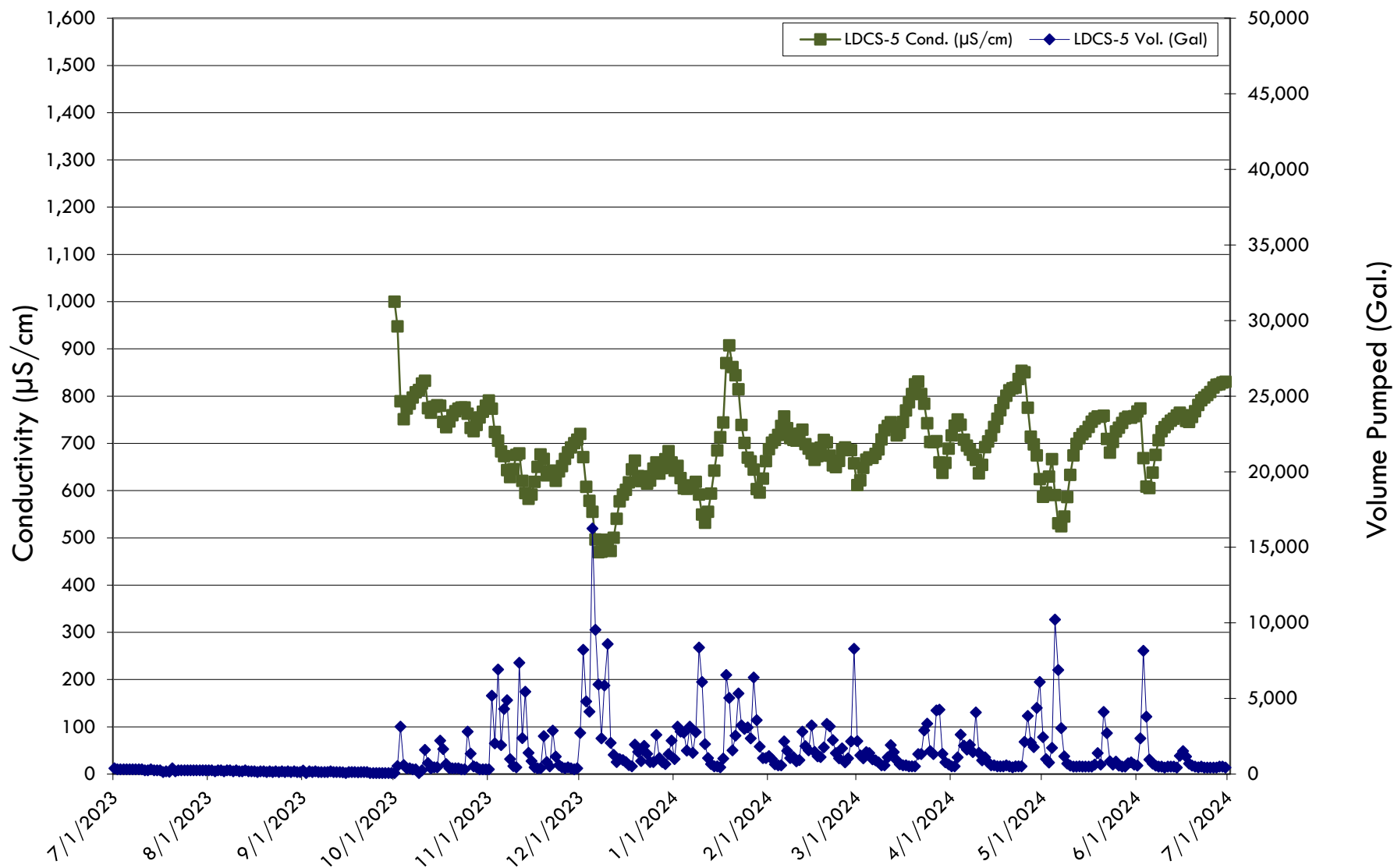
LDCS-4A (Daily Totals)
Conductivity vs Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



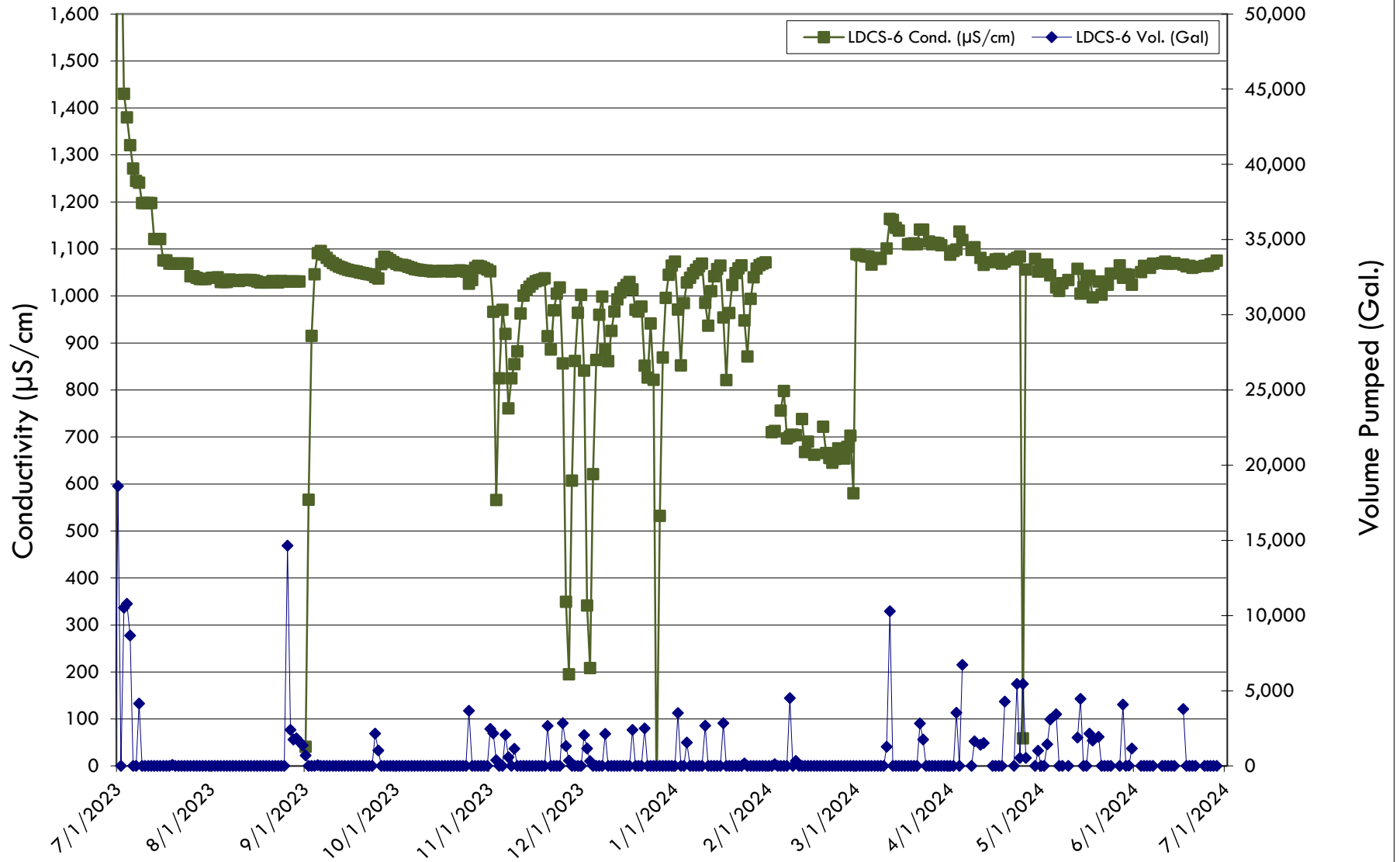
LDCS-4B (Daily Totals)
Conductivity vs Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



LDCS-5 (Daily Totals)
Conductivity vs Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington

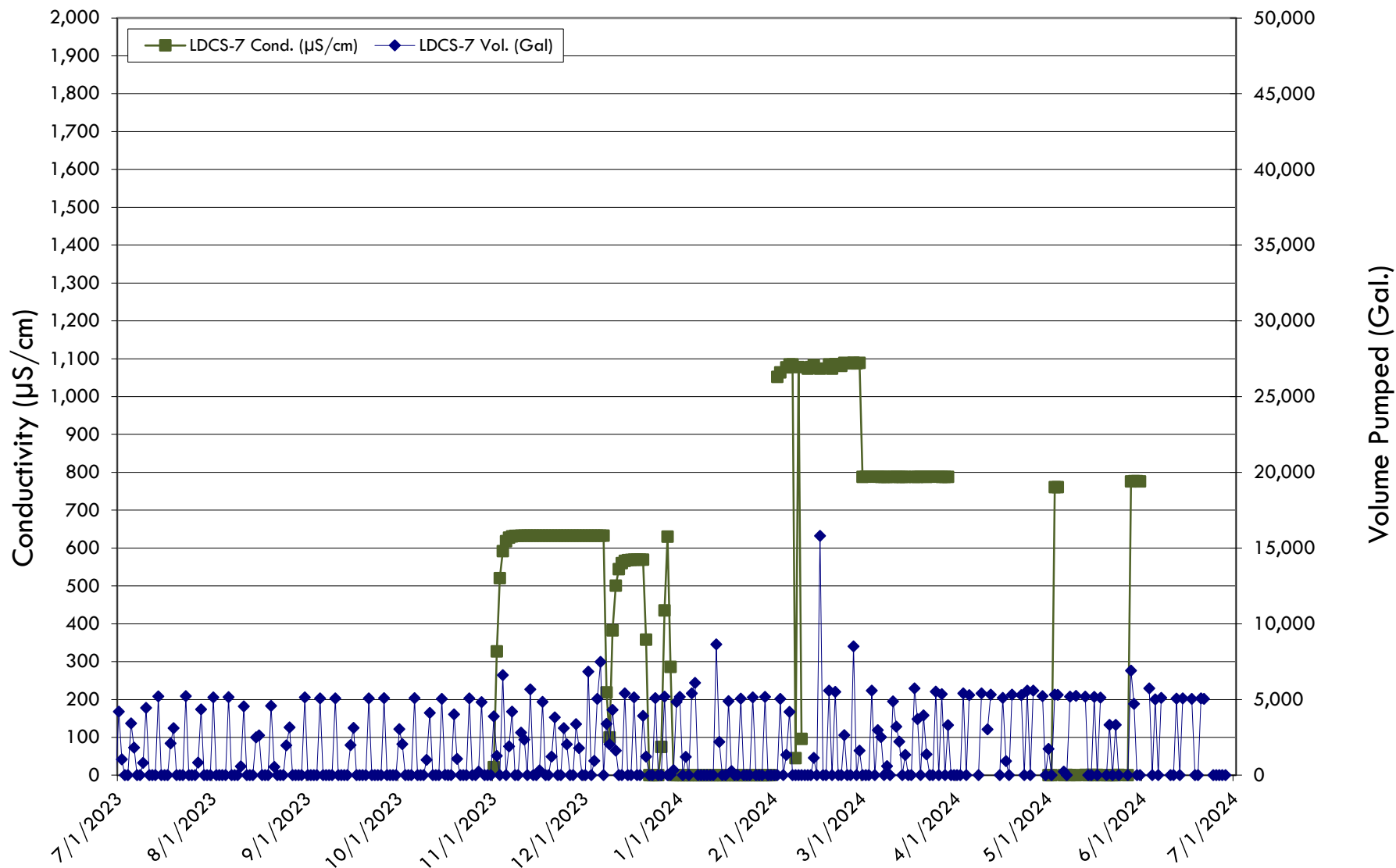


LDCS-6 (Daily Totals)
Conductivity vs Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



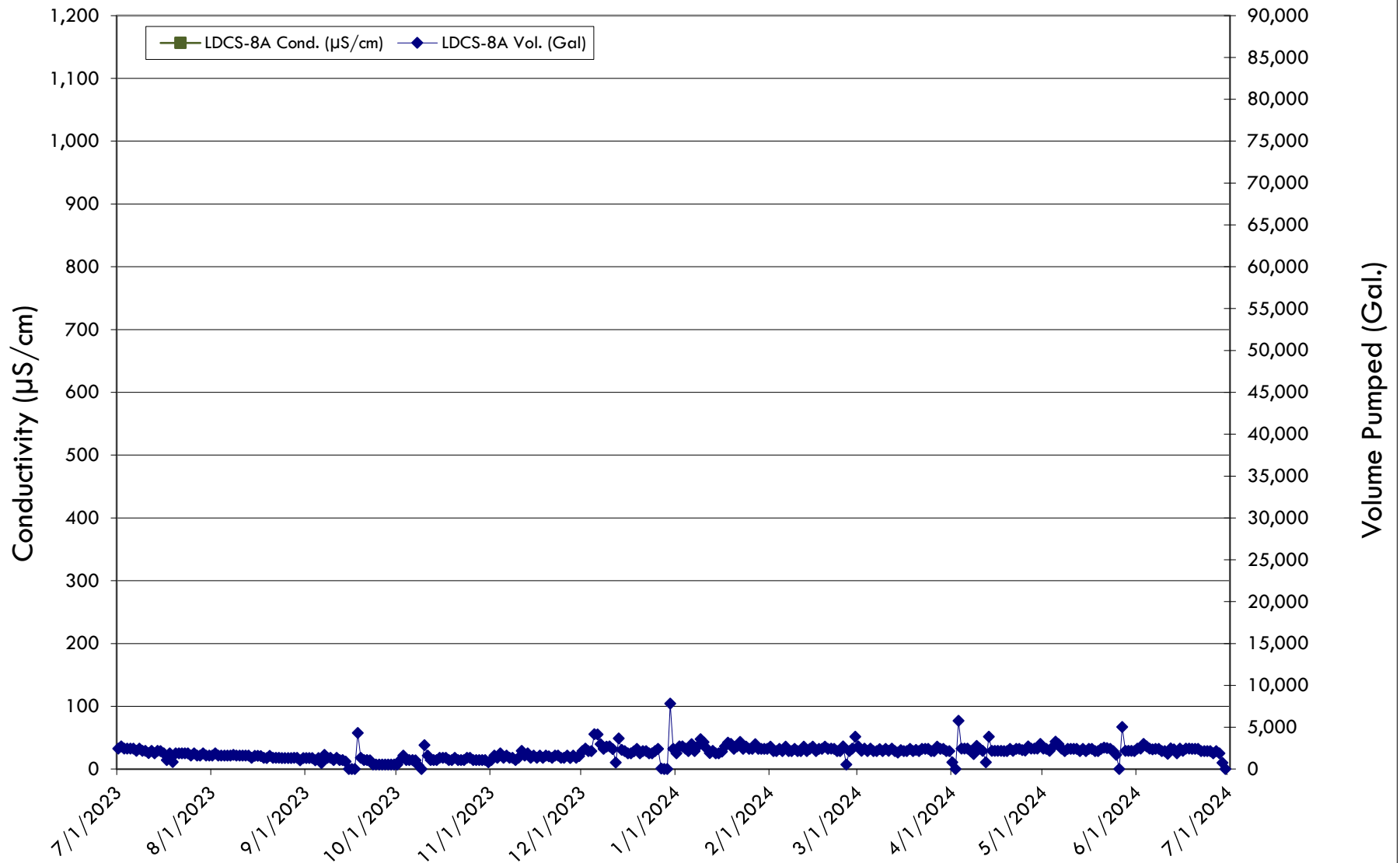
LDCS-7 (Daily Totals)
Conductivity vs Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington

*Conductivity Probe malfunction May 2023 through November 2023



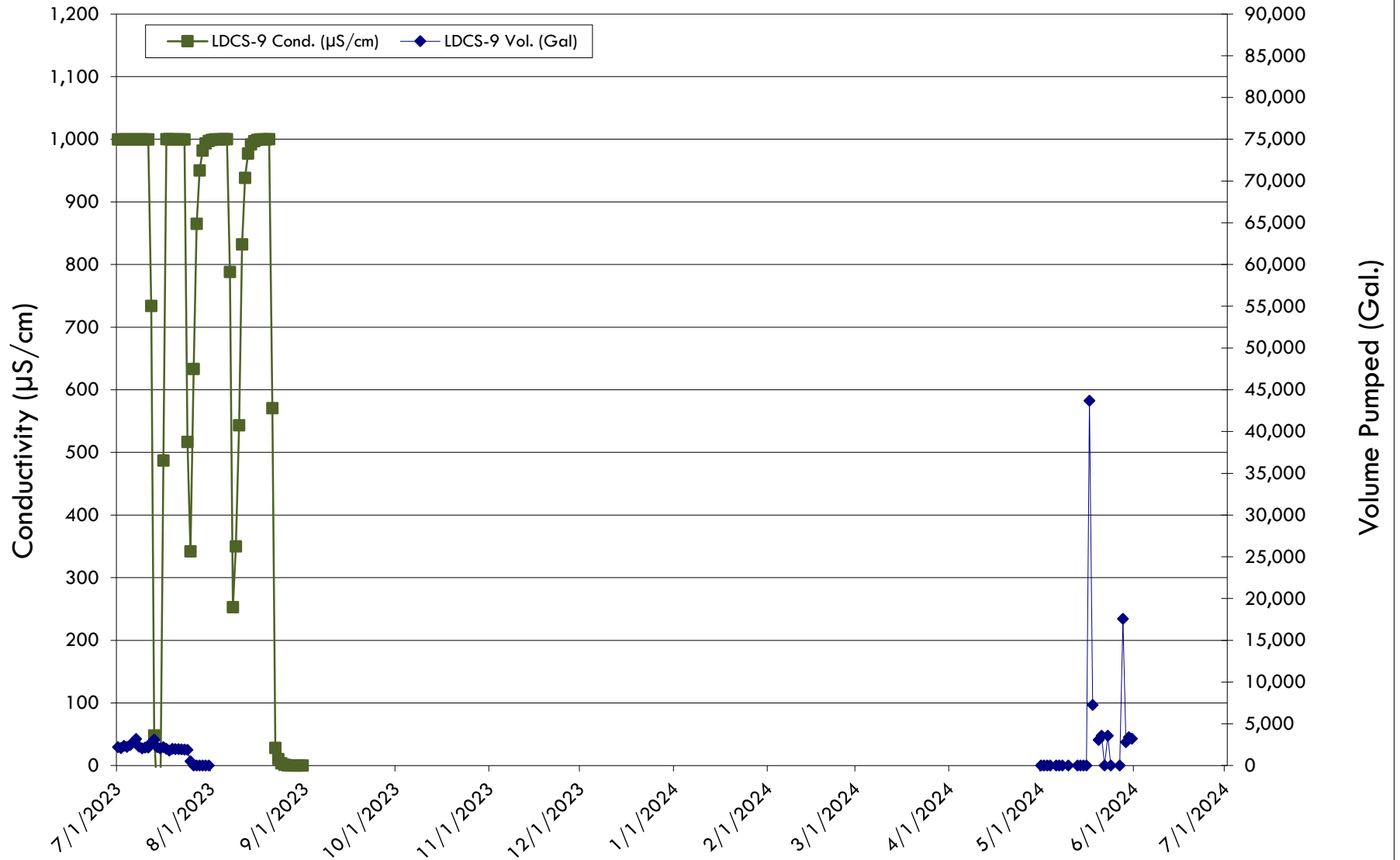
LDCS-8 (Daily Totals)
Conductivity vs Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington

*Conductivity Probe malfunction June
2023 through December 2024

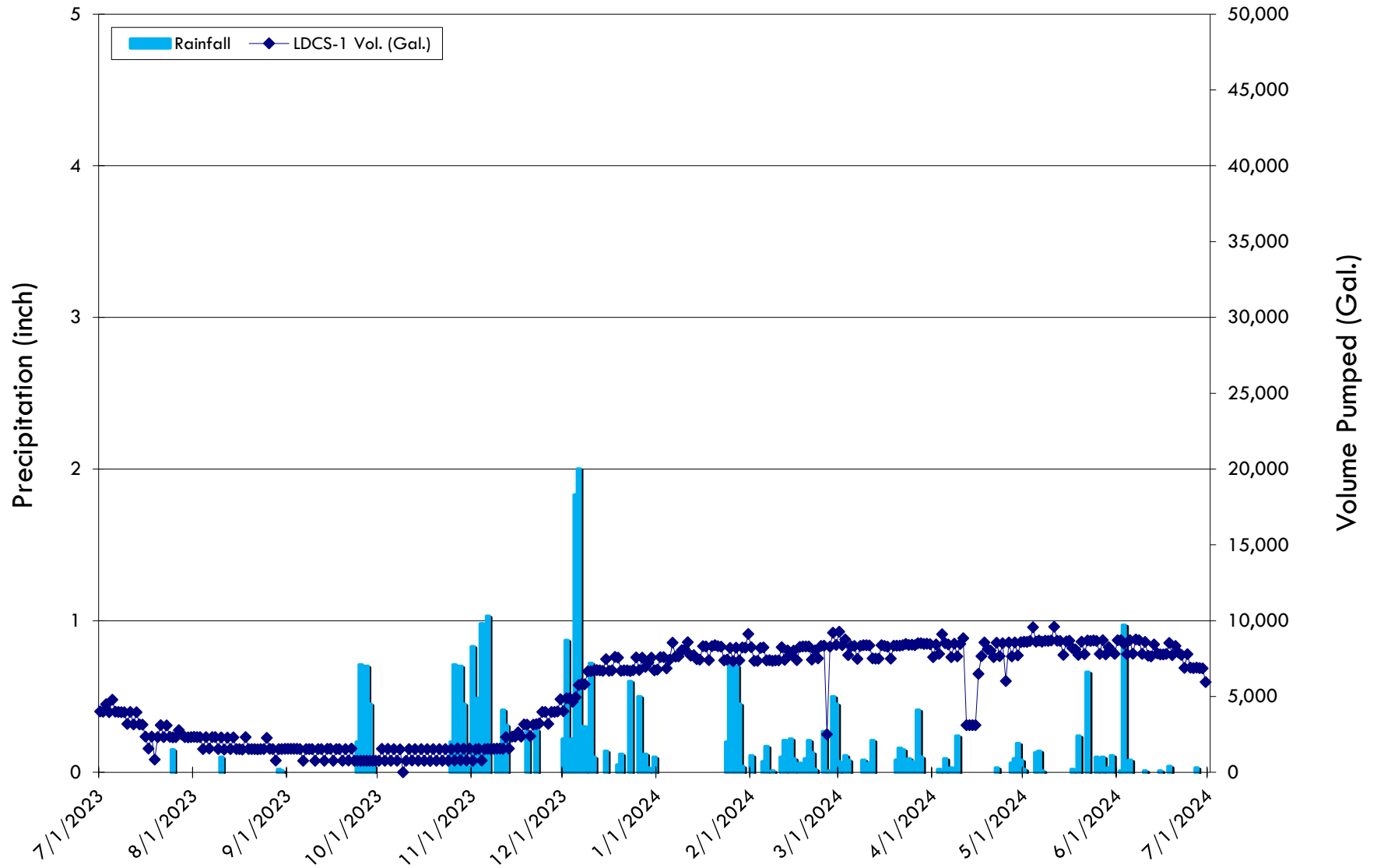


**LDCS-9 (Daily Totals)
Conductivity vs Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington**

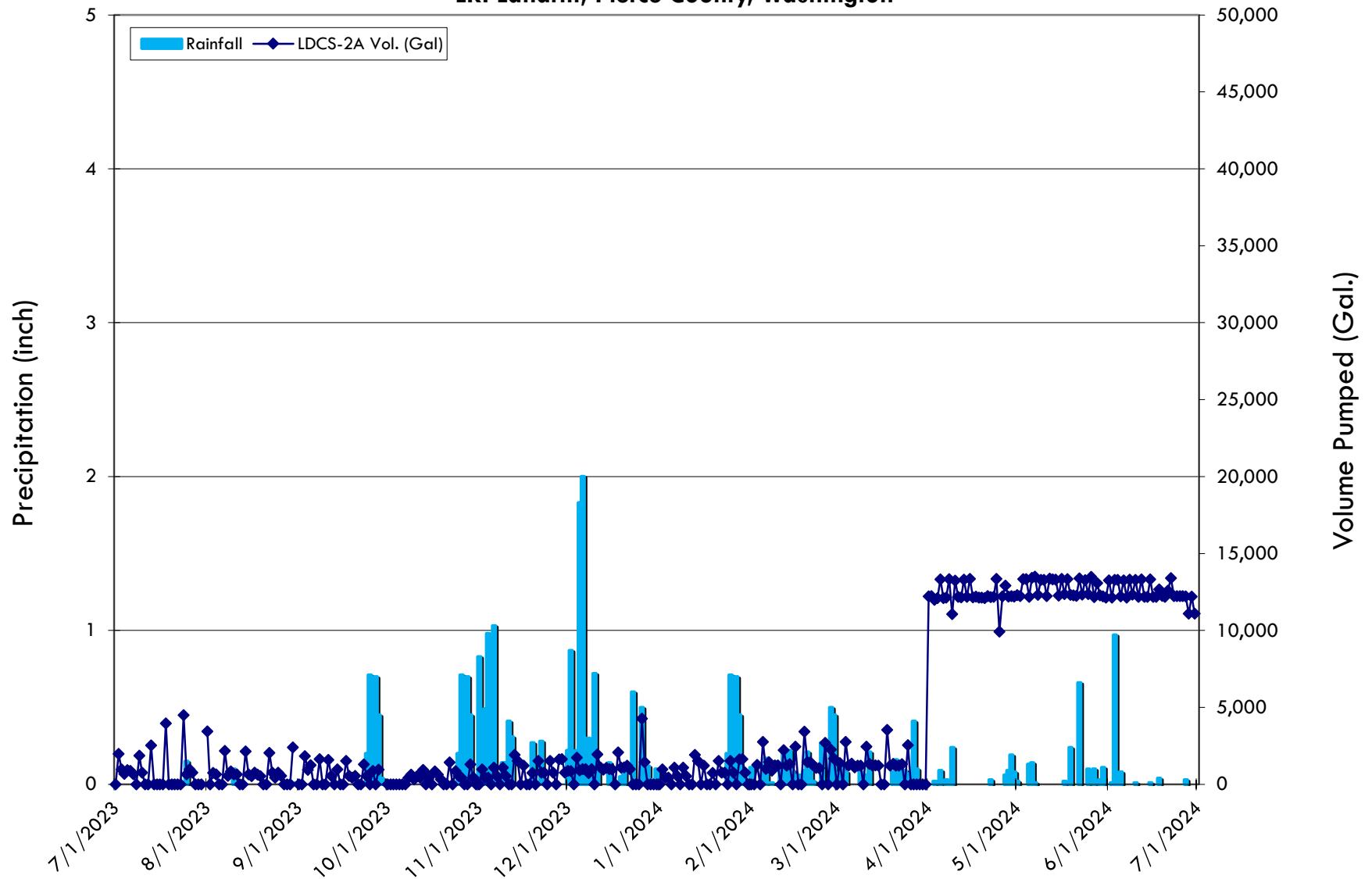
*Conductivity Probe and pump
malfunction August 2023 through
March 2024



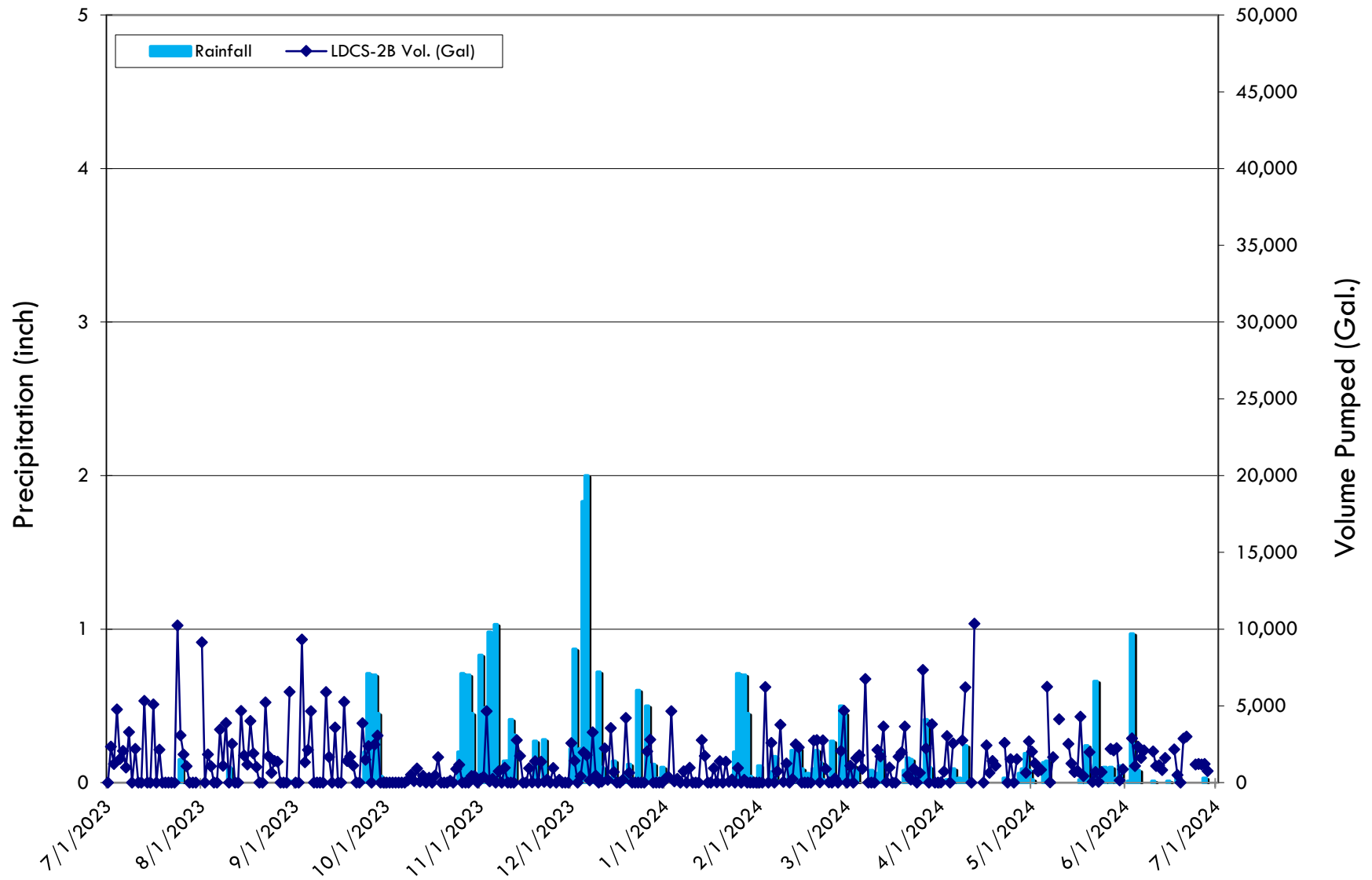
LDCS-1 (Daily Totals)
Volume Pumped vs Precipitation
Second Quarter 2024
LRI Landfill, Pierce County, Washington



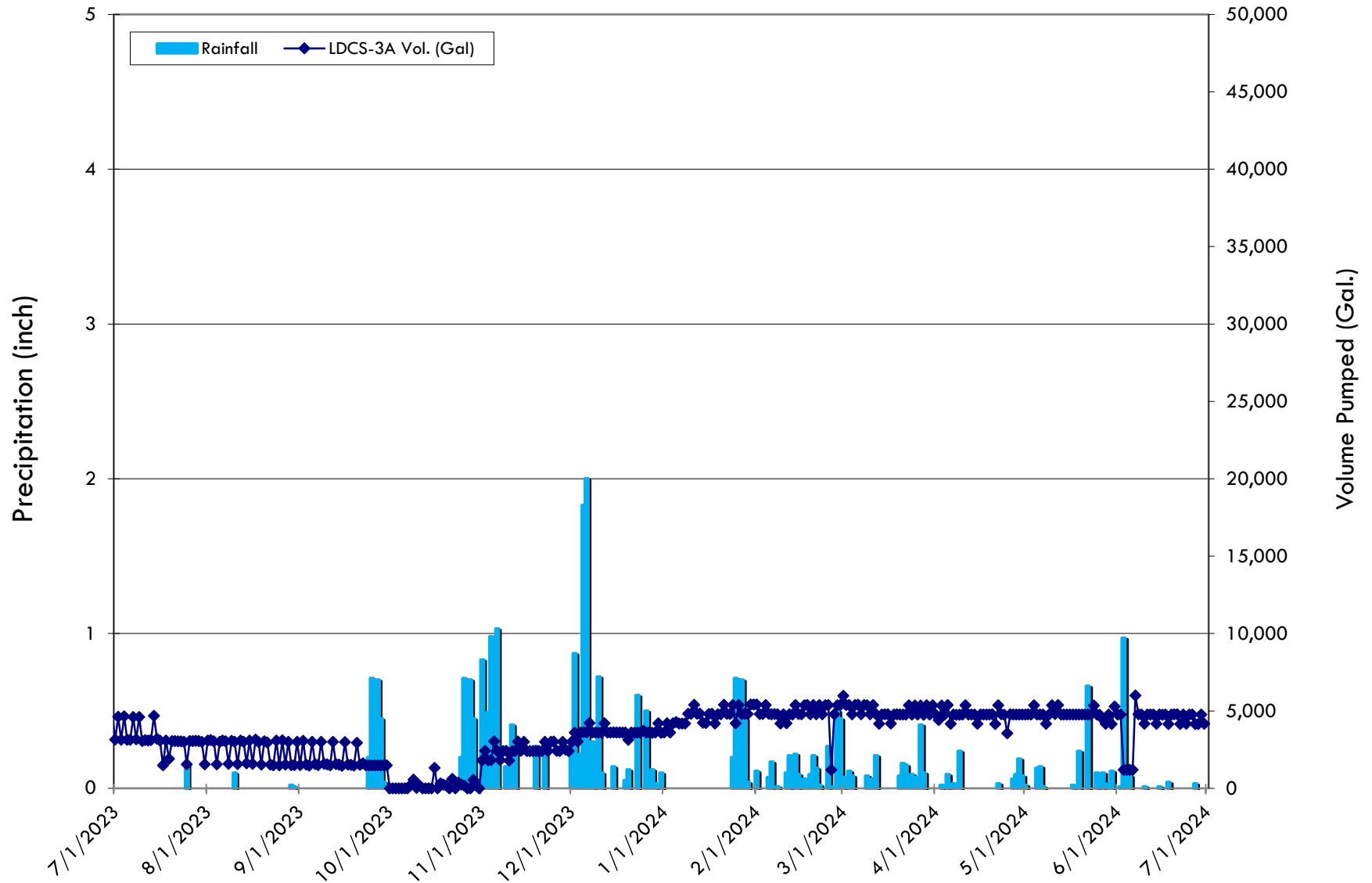
LDCS-2A (Daily Totals)
Volume Pumped vs Precipitation
Second Quarter 2024
LRI Landfill, Pierce County, Washington



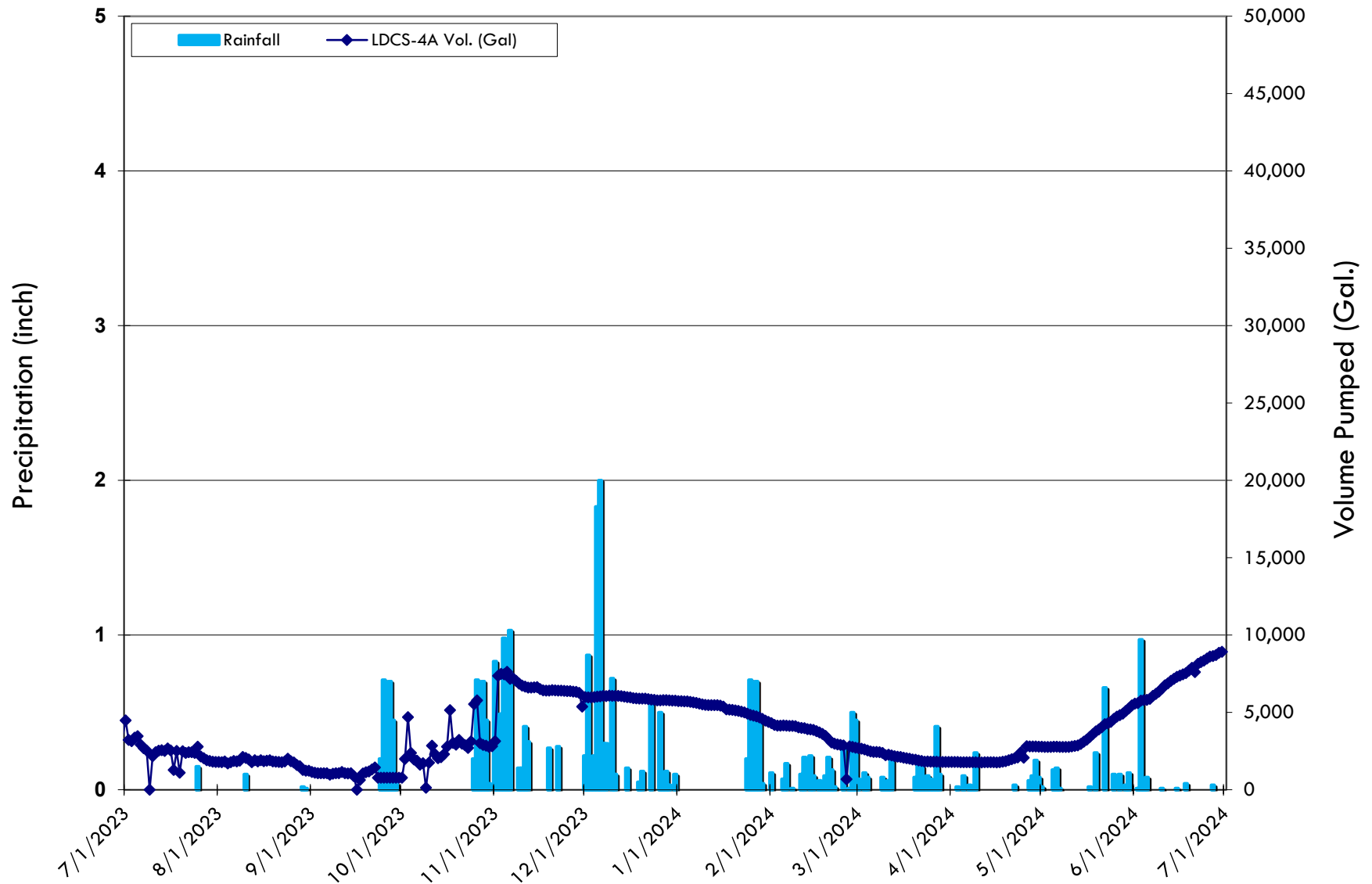
LDCS-2B (Daily Totals)
Volume Pumped vs Precipitation
Second Quarter 2024
LRI Landfill, Pierce County, Washington



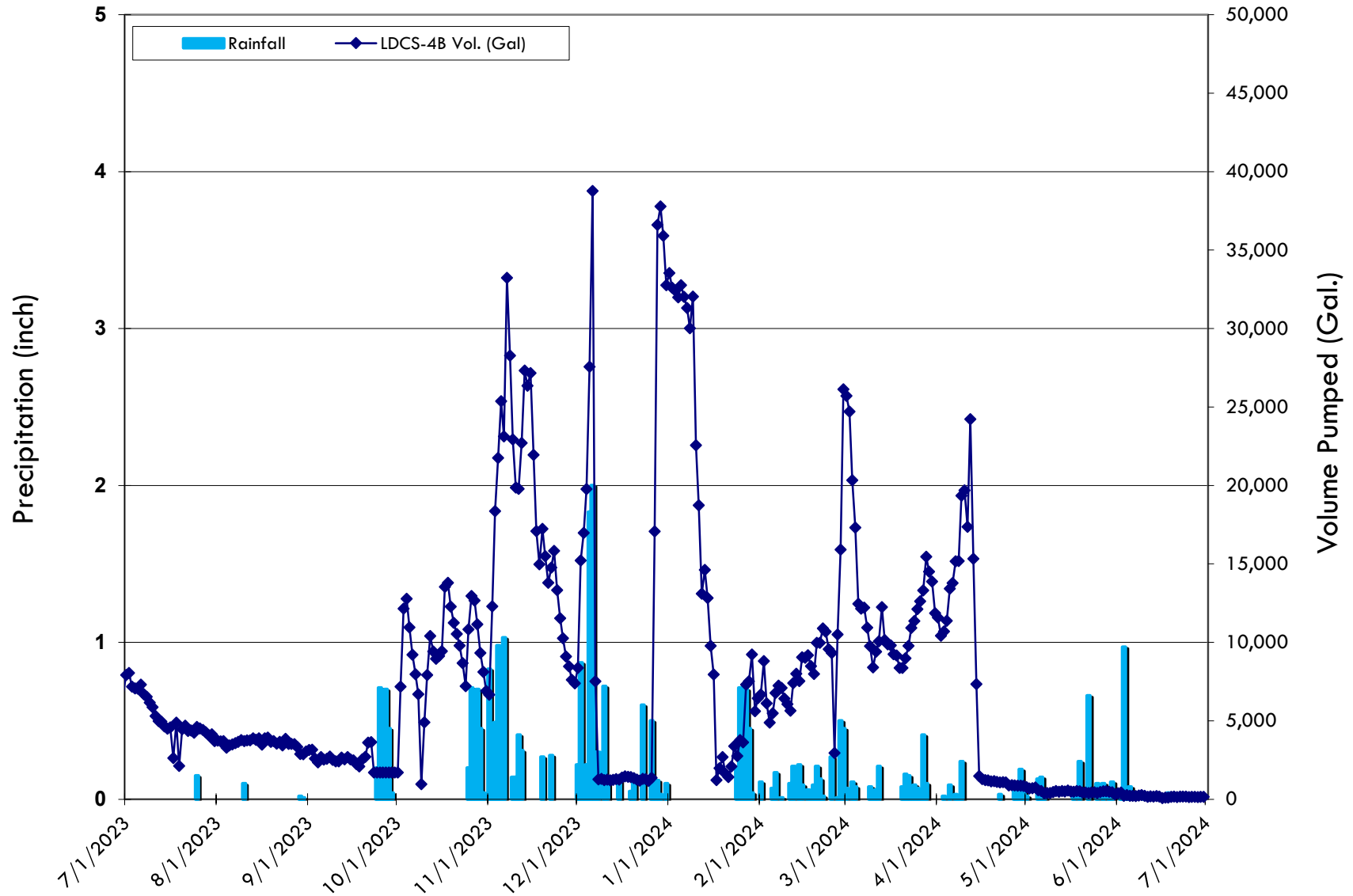
LDCS-3A (Daily Totals)
Volume Pumped vs Precipitation
Second Quarter 2024
LRI Landfill, Pierce County, Washington



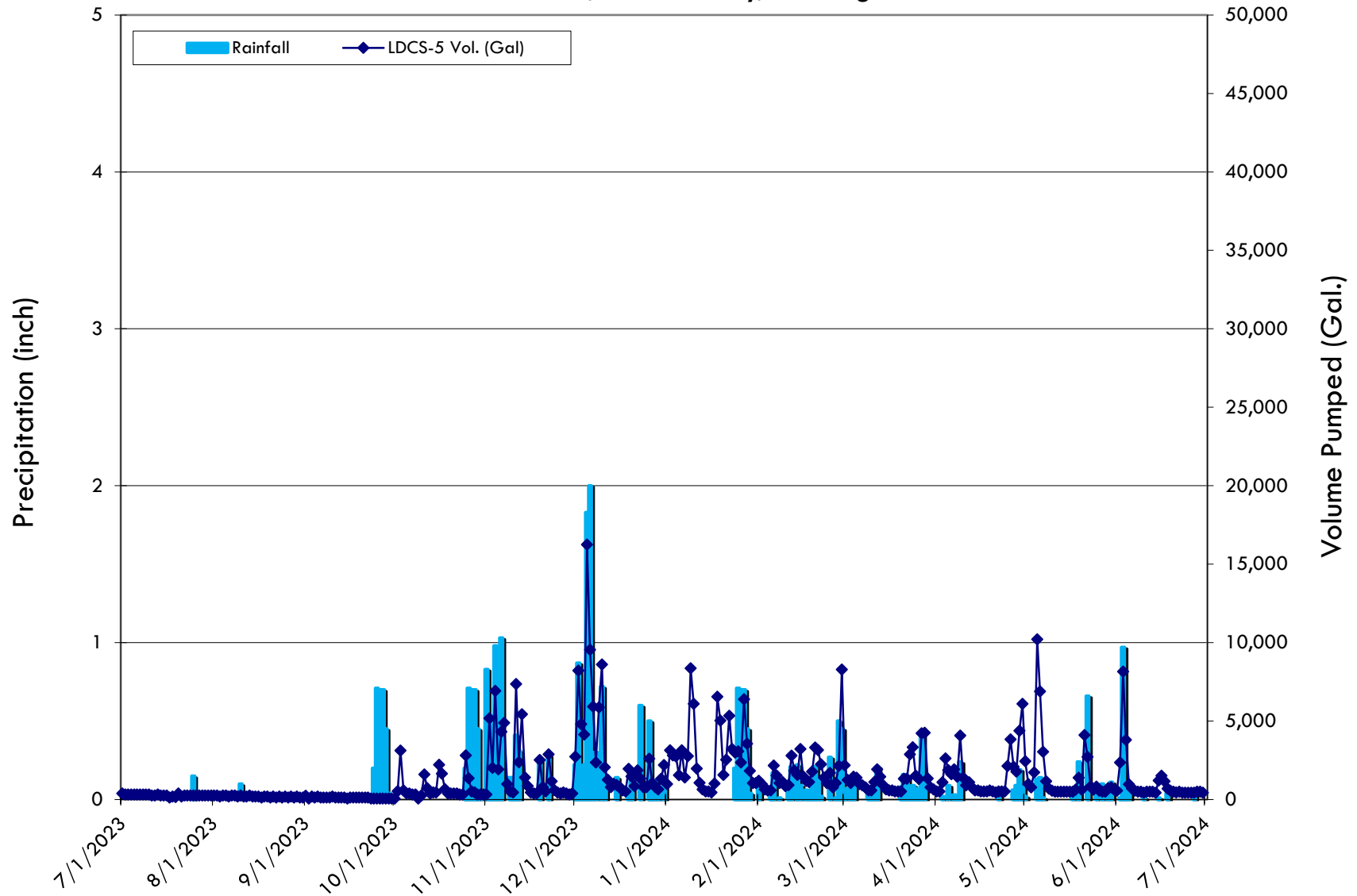
LDCS-4A (Daily Totals)
Volume Pumped vs Precipitation
Second Quarter 2024
LRI Landfill, Pierce County, Washington



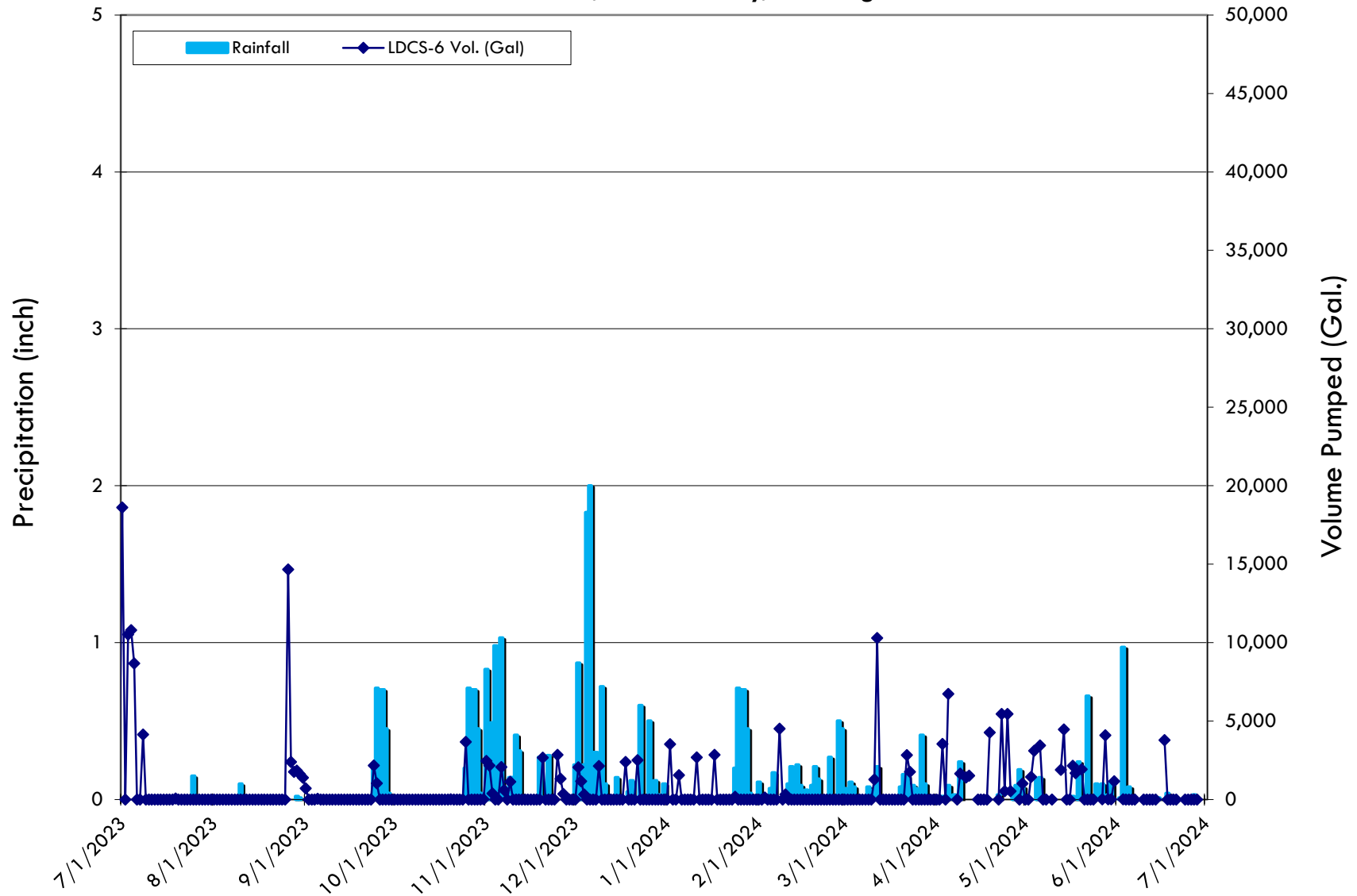
LDCS-4B (Daily Totals)
Volume Pumped vs Precipitation
Second Quarter 2024
LRI Landfill, Pierce County, Washington



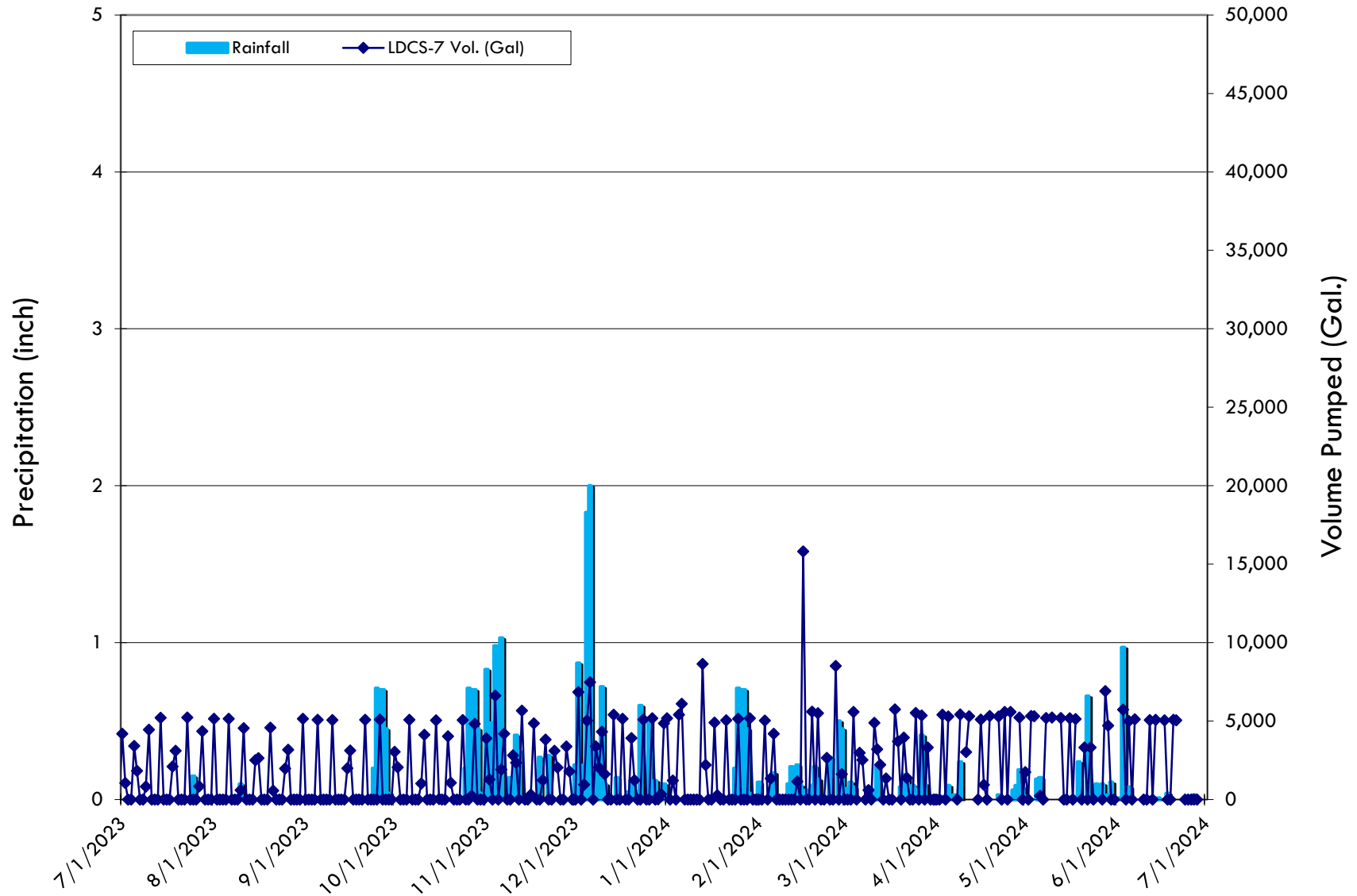
LDCS-5 (Daily Totals)
Volume Pumped vs Precipitation
Second Quarter 2024
LRI Landfill, Pierce County, Washington



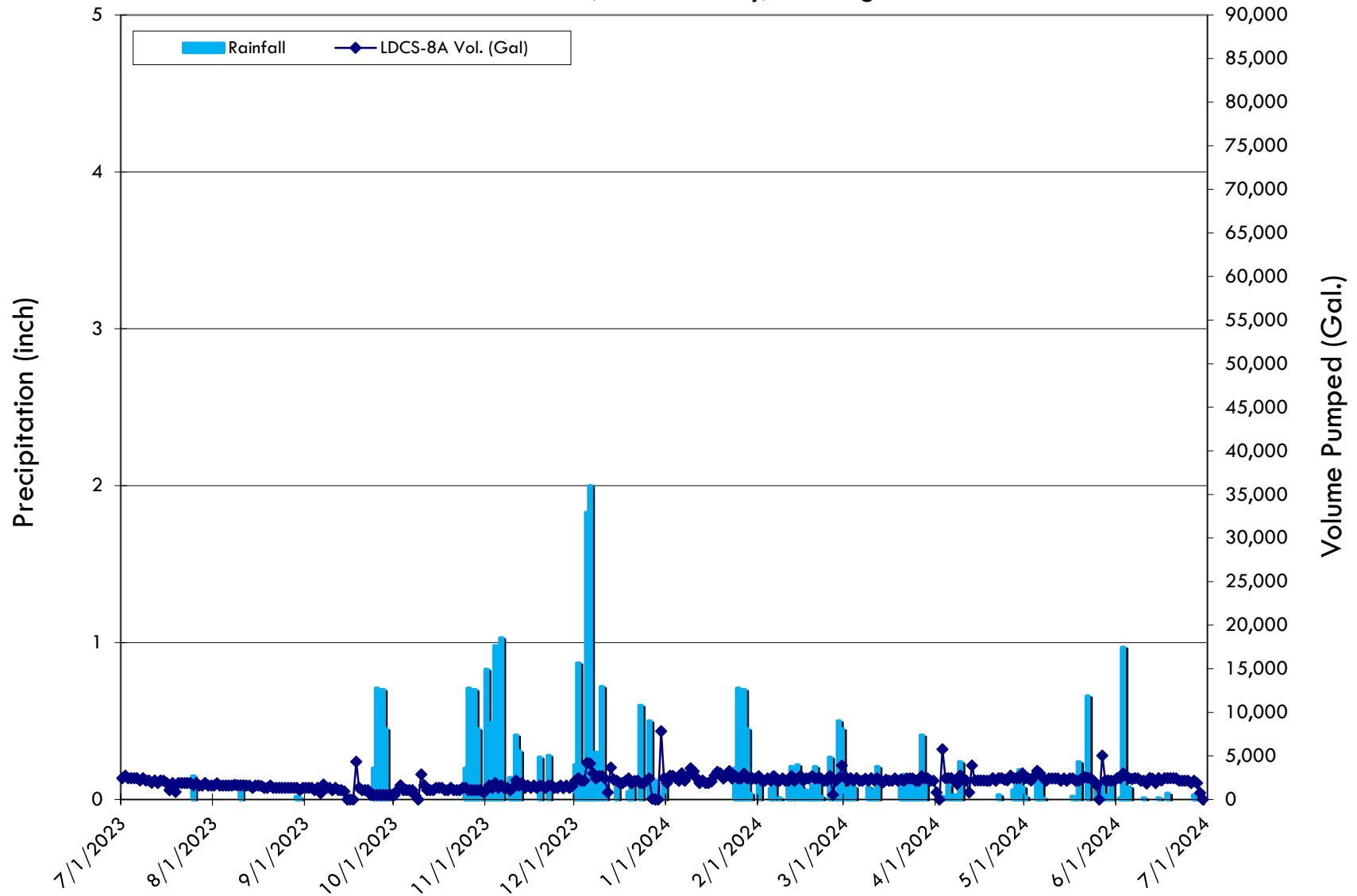
LDCS-6 (Daily Totals)
Volume Pumped vs Precipitation
Second Quarter 2024
LRI Landfill, Pierce County, Washington



LDCS-7 (Daily Totals)
Volume Pumped vs Precipitation
Second Quarter 2024
LRI Landfill, Pierce County, Washington

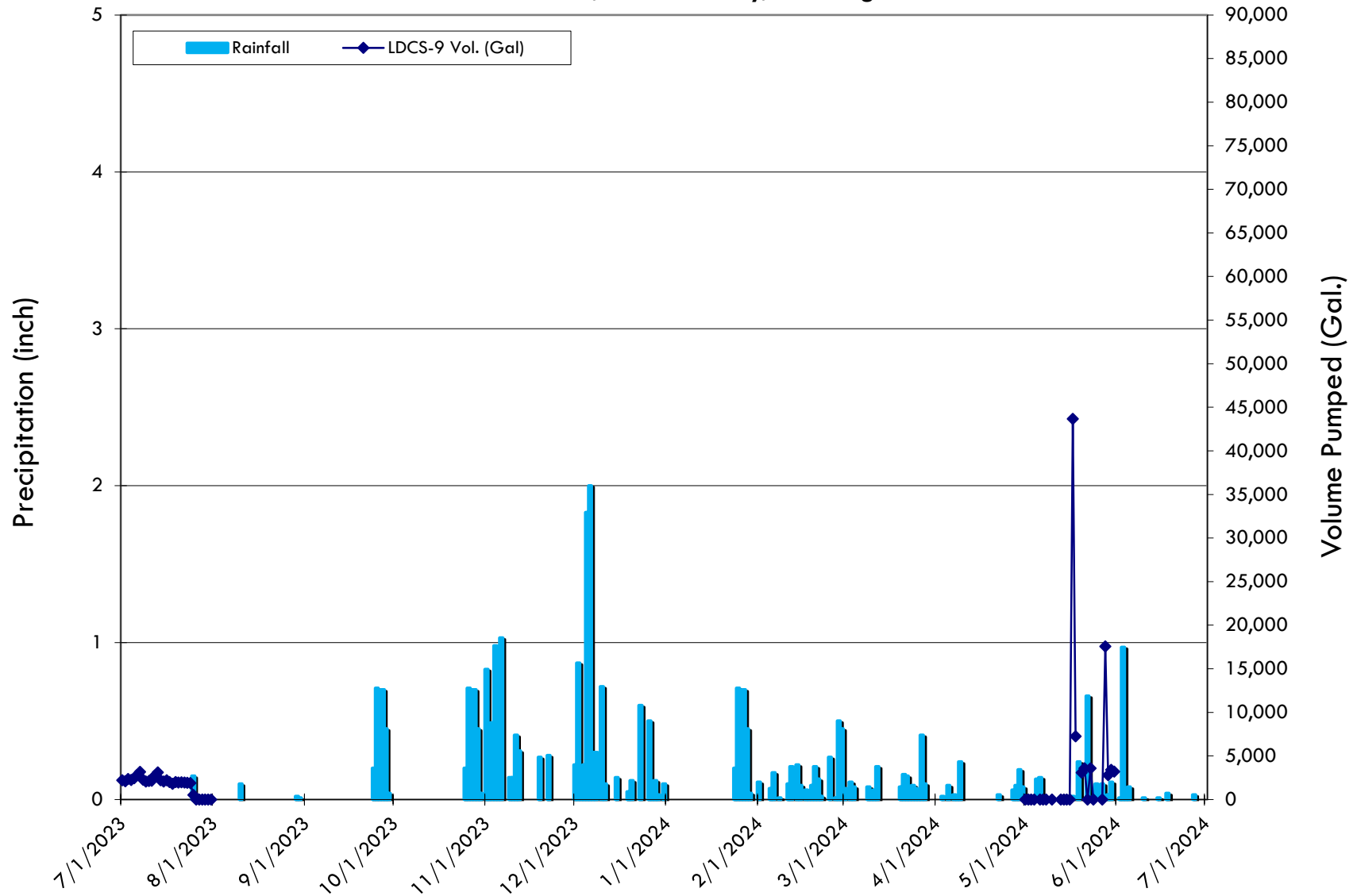


LDCS-8A (Daily Totals)
Volume Pumped vs Precipitation
Second Quarter 2024
LRI Landfill, Pierce County, Washington

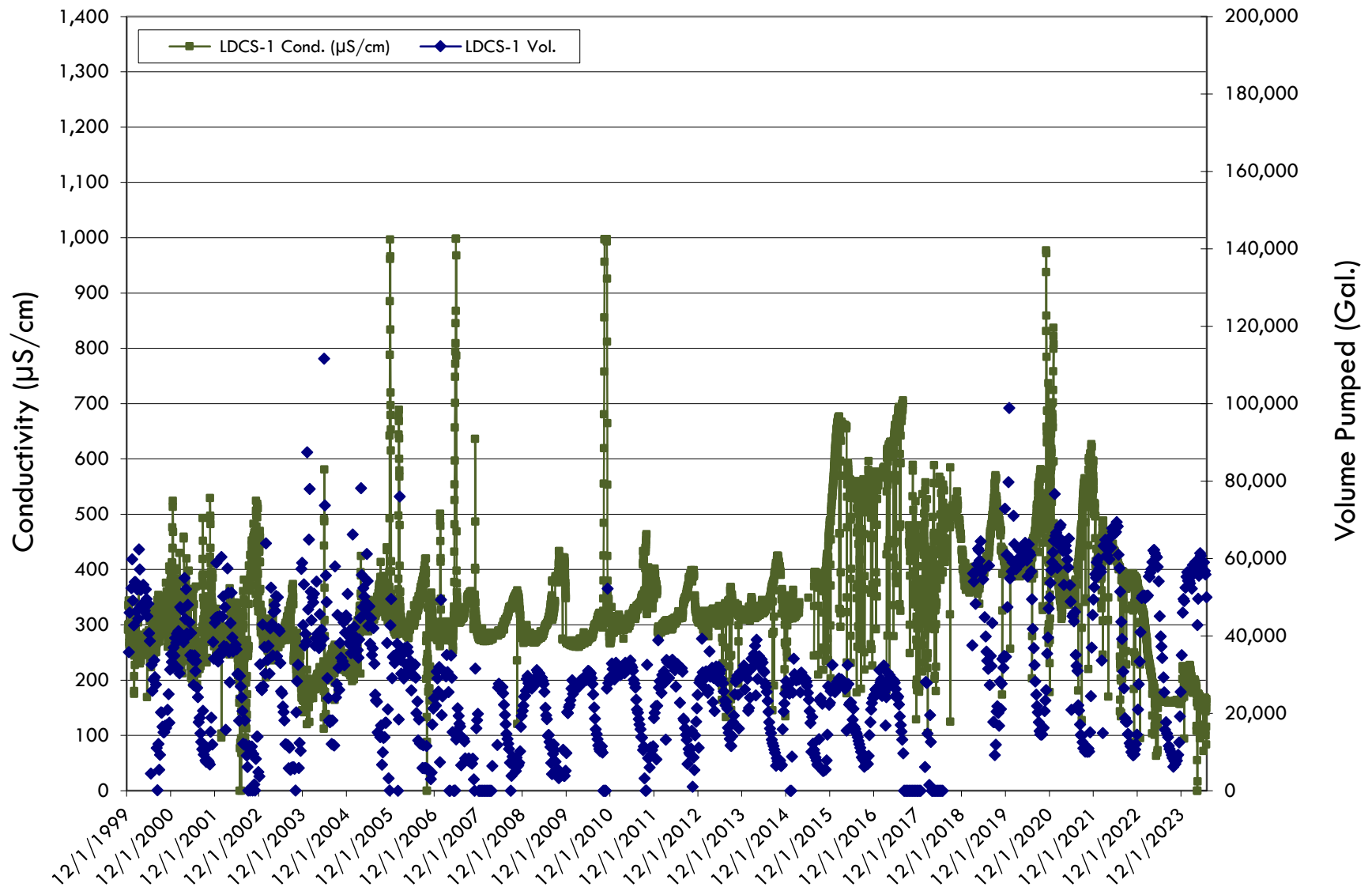


LDCS-9 (Daily Totals)
Volume Pumped vs Precipitation
Second Quarter 2024
LRI Landfill, Pierce County, Washington

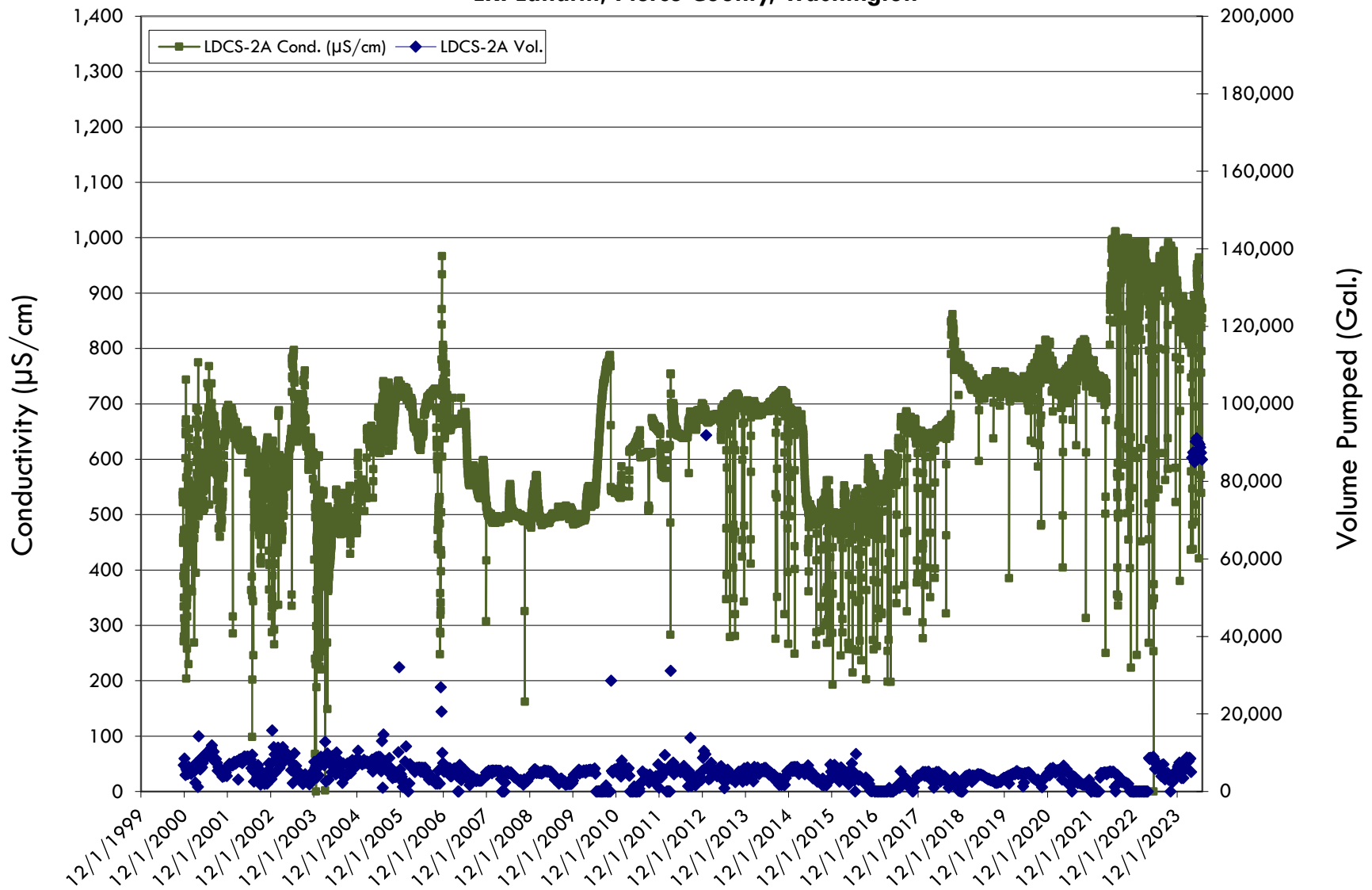
Probe malfunction from August 2023 through May 2024 and the month of June 2024



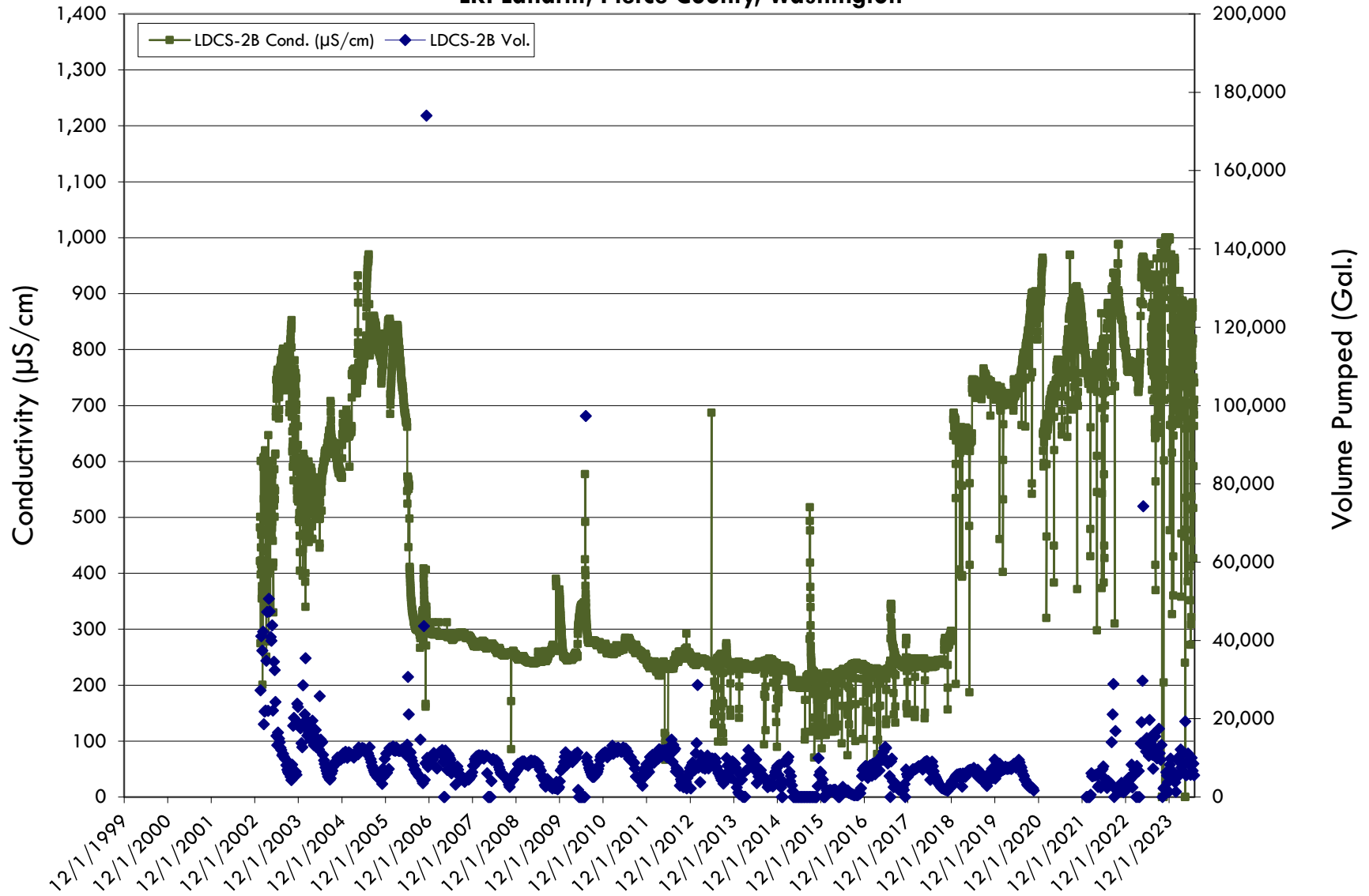
LDCS-1
Daily Conductivity vs Weekly Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



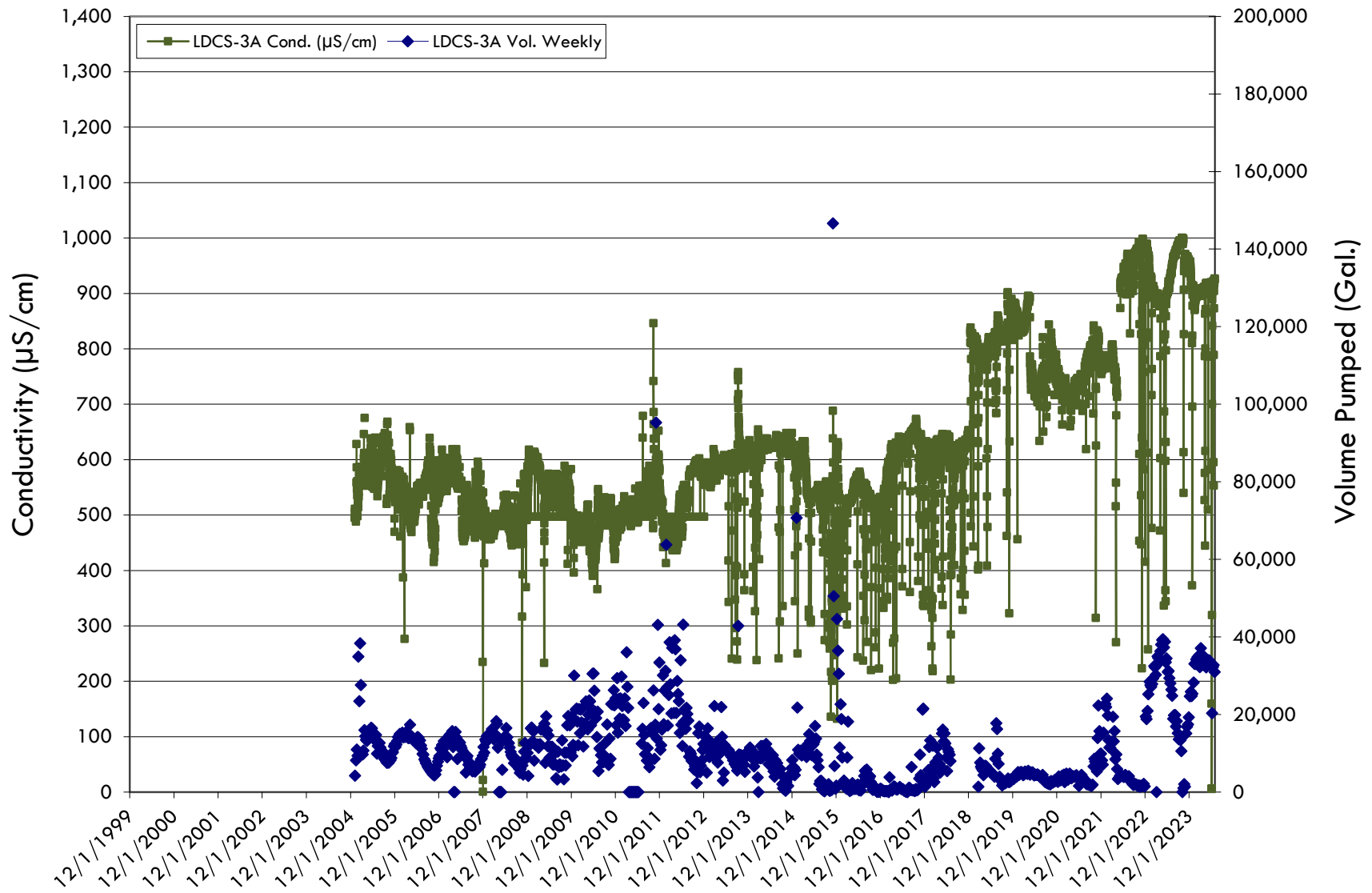
LDCS-2A
Daily Conductivity vs Weekly Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



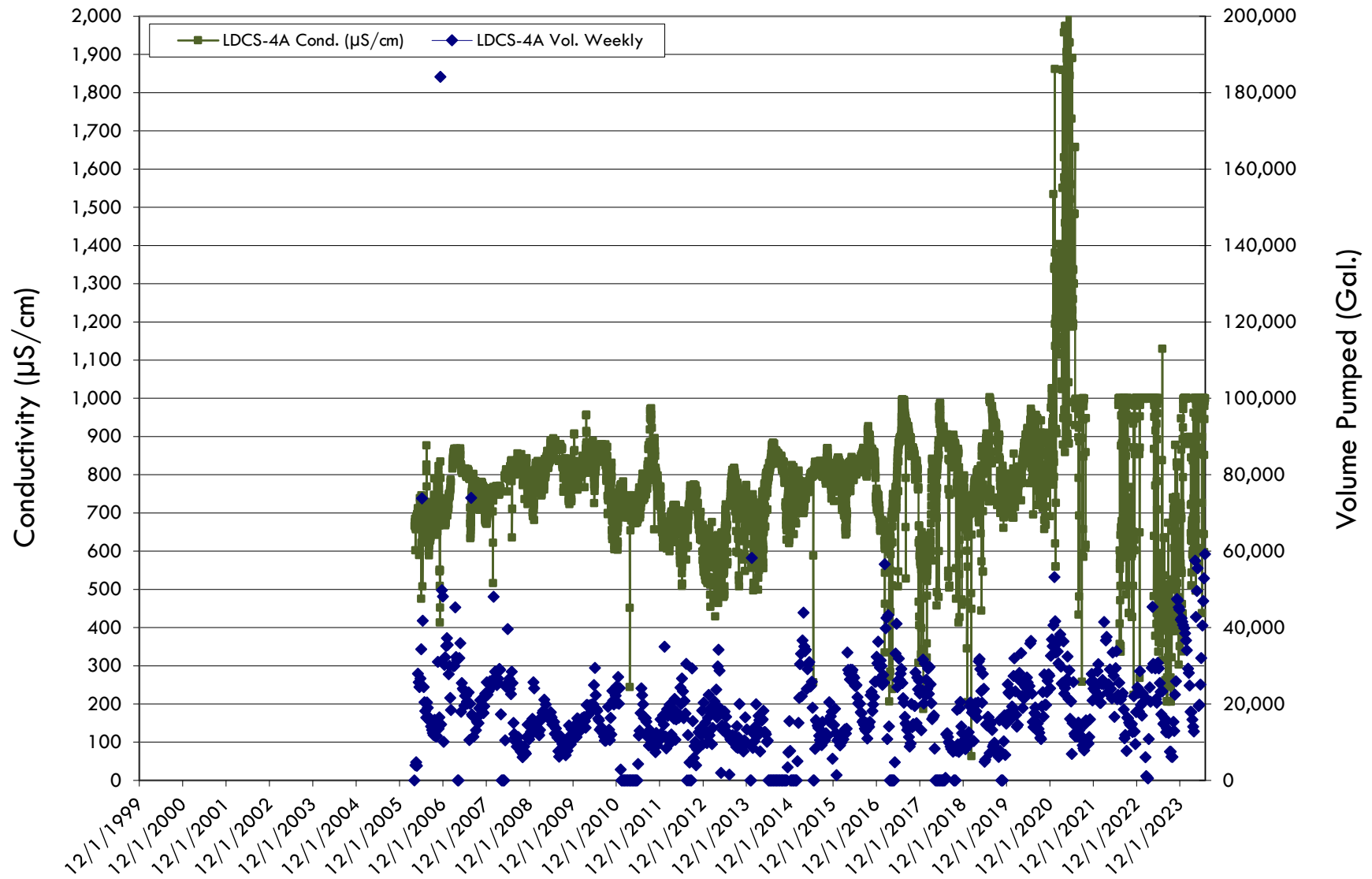
LDCS-2B
Daily Conductivity vs Weekly Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



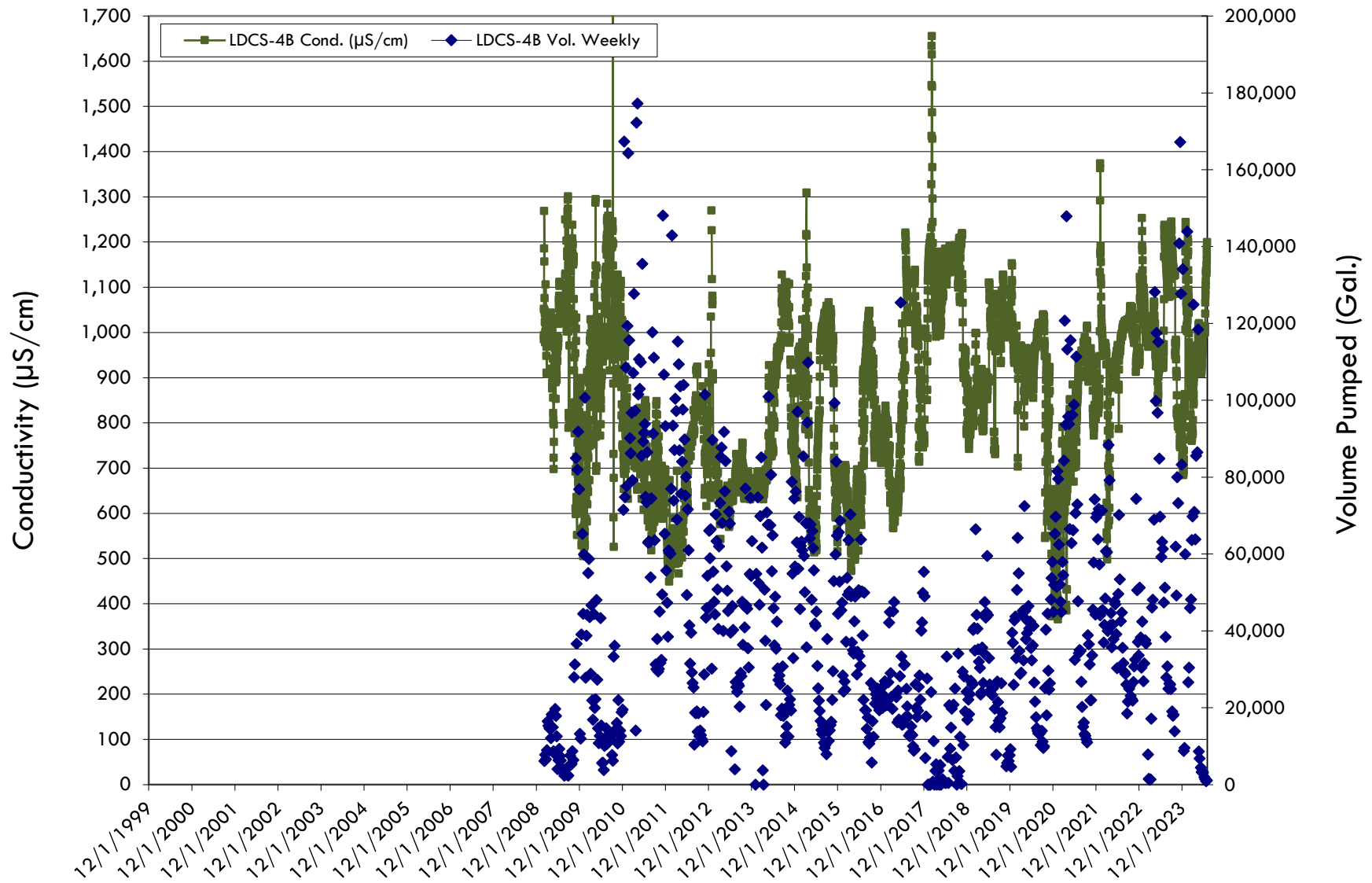
LDCS-3A
Daily Conductivity vs Weekly Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



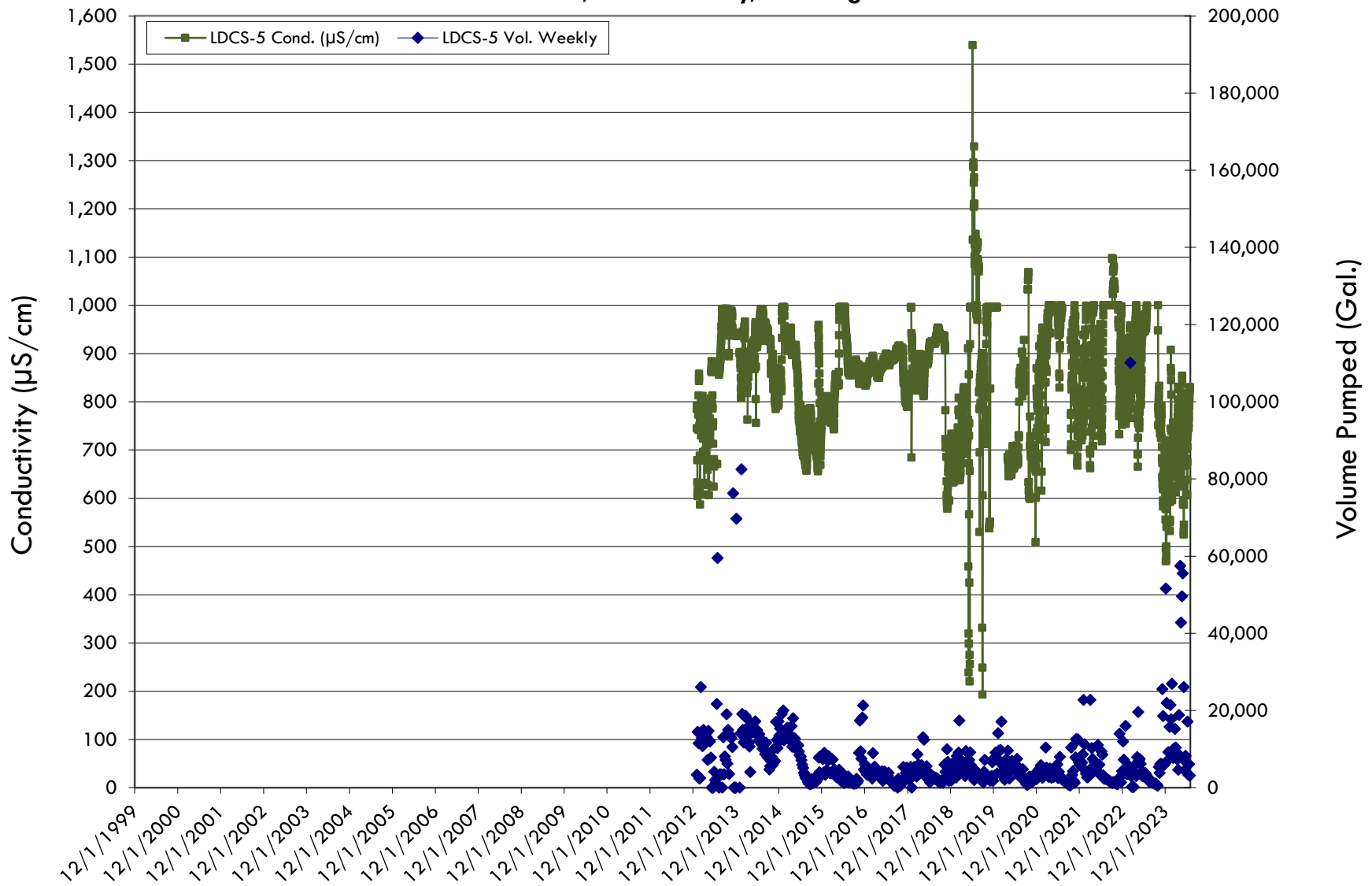
LDCS-4A
Daily Conductivity vs Weekly Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



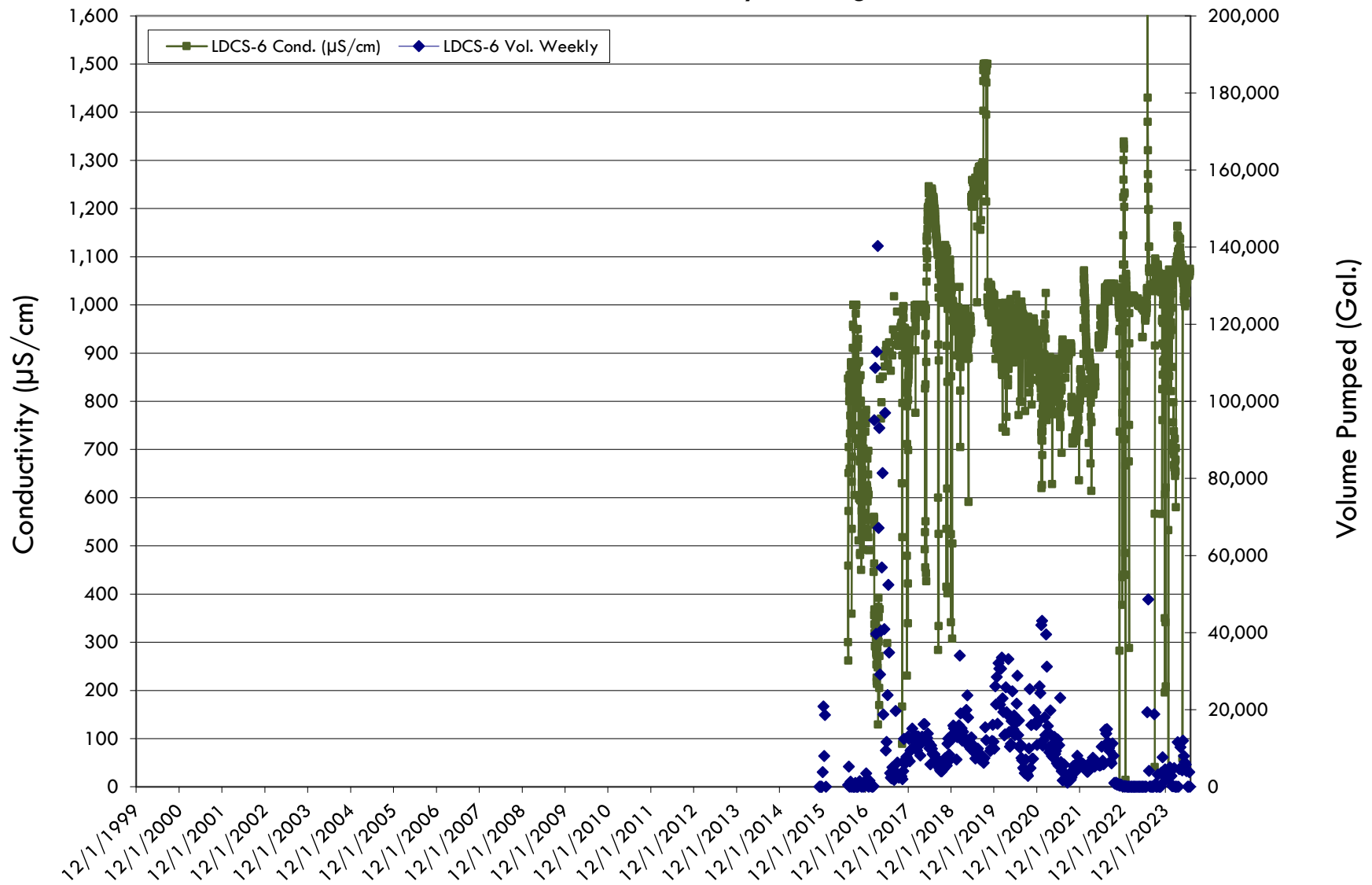
LDCS-4B
Daily Conductivity vs Weekly Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



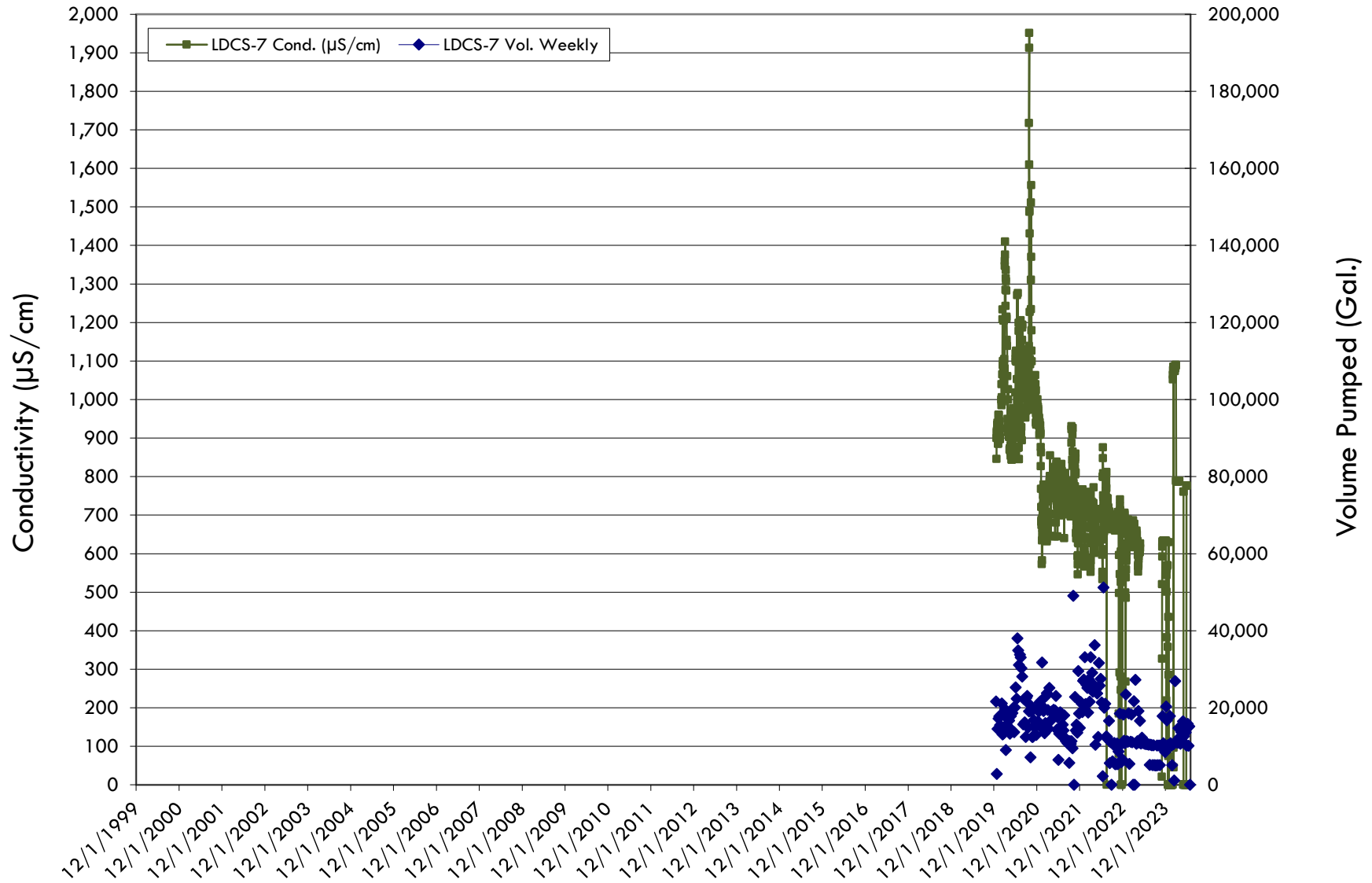
LDCS-5
Daily Conductivity vs Weekly Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



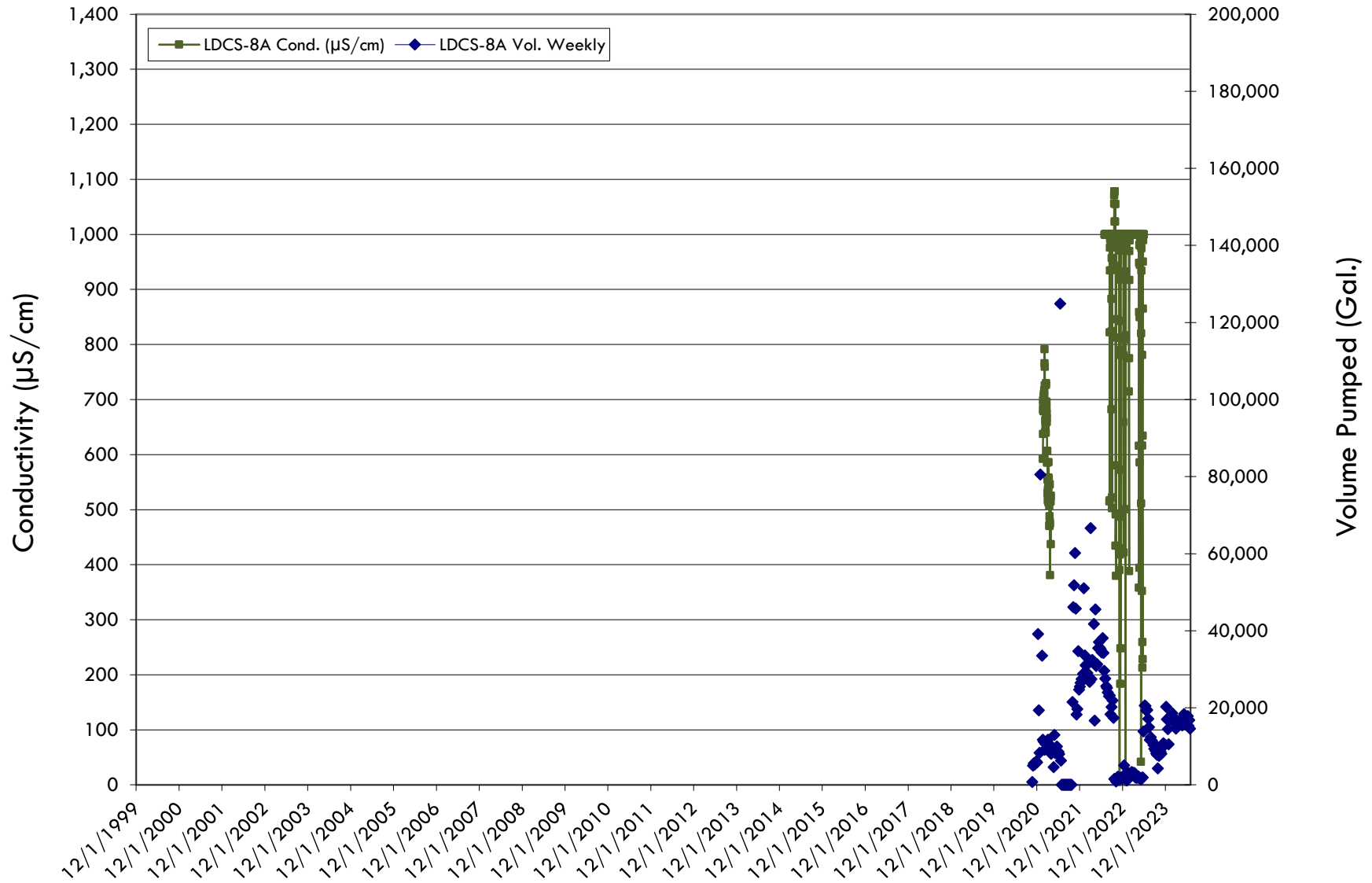
LDCS-6
Daily Conductivity vs Weekly Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



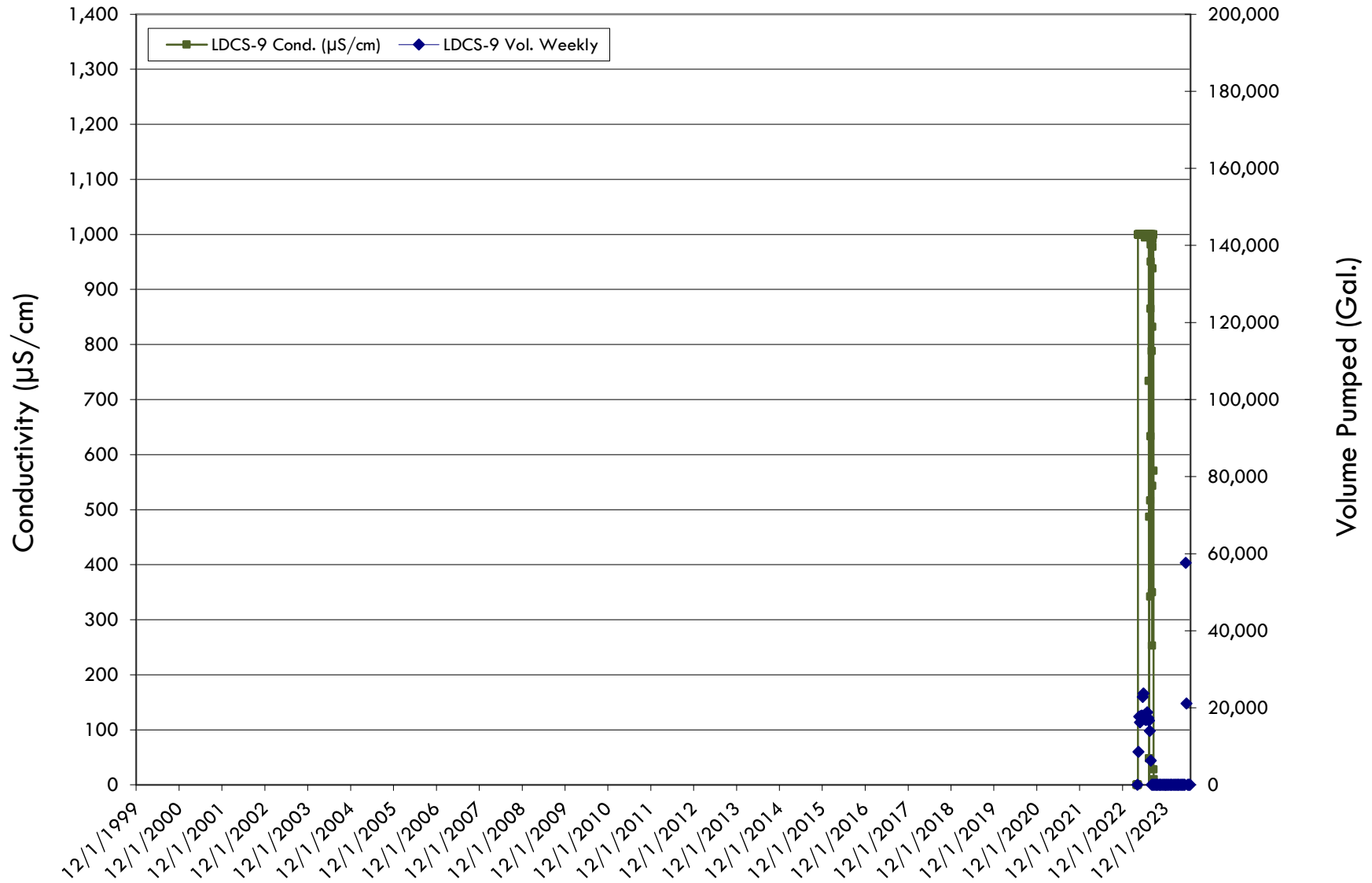
LDCS-7
Daily Conductivity vs Weekly Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



LDCS-8A
Daily Conductivity vs Weekly Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



LDCS-9
Daily Conductivity vs Weekly Volume Pumped
Second Quarter 2024
LRI Landfill, Pierce County, Washington



**Summary of Leachate Volume and Depth Data
Second Quarter 2024
LRI Landfill, Pierce County, Washington**

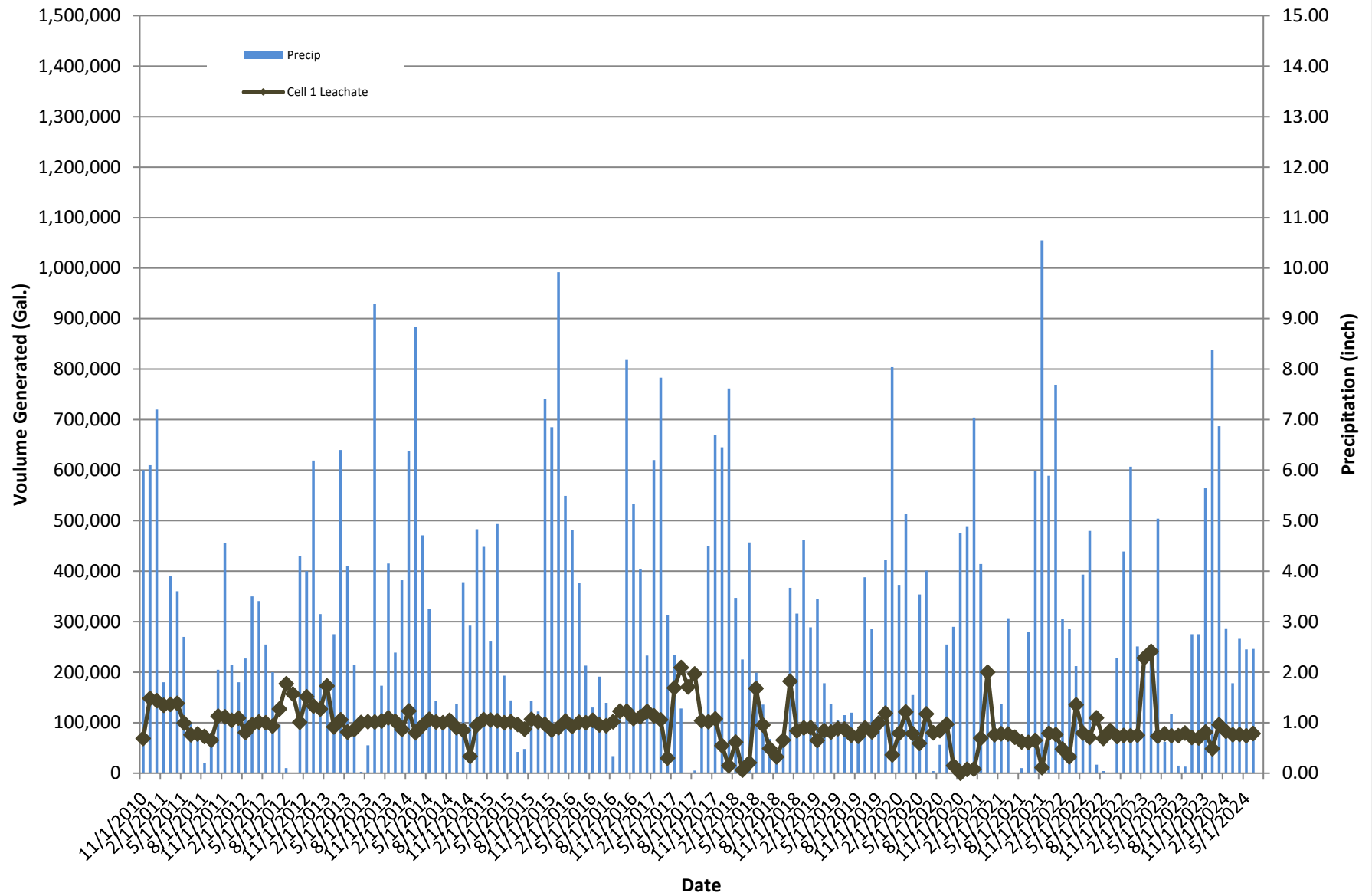
Date	Cell 1 Leachate Volume (GPD)	Cell 1 Leachate Level (in.)	Cell 2A Leachate Volume (GPD)	Cell 2A Leachate Level (in.)	Cell 2B Leachate Volume (GPD)	Cell 2B Leachate Level (in.)	Cell 3A Leachate Volume (GPD)	Cell 3A Leachate Level (in.)	Cell 4A Leachate Volume (GPD)	Cell 4A Leachate Level (in.)	Cell 4B Leachate Volume (GPD)	Cell 4B Leachate Level (in.)	Cell 5 Leachate Volume (GPD)	Cell 5 Leachate Level (in.)	Cell 6 Leachate Volume (GPD)	Cell 6 Leachate Level (in.)	Cell 7 Leachate Volume (GPD)	Cell 7 Leachate Level (in.)	Cell 8A Leachate Volume (GPD)	Cell 8A Leachate Level (in.)	Cell 9A Leachate Volume (GPD)	Cell 9A Leachate Level (in.)
4/1/2024	2,928	10.7	1,775	5.1	10,938	52.2	9,792	10.0	20,355	8.1	5,973	10.5	3,198	10.8	33,716	16.4	12,053	11.8	8,325	21.4	16,790	15.4
4/2/2024	1,507	11.4	1,691	3.5	5,546	9.5	8,150	9.9	6,685	9.3	8,227	10.1	3,103	10.8	36,260	16.7	13,761	11.9	15,751	19.1	8,094	2.9
4/3/2024	3,364	10.8	1,471	3.8	5,312	9.5	8,063	11.2	7,618	8.9	6,789	10.5	3,227	10.7	40,517	15.2	13,501	8.3	39,096	20.0	6,411	2.6
4/4/2024	3,463	10.9	1,739	5.5	5,717	9.4	9,078	15.5	14,738	8.8	5,789	10.3	3,498	10.7	42,200	19.8	16,804	8.6	43,273	16.5	8,043	2.5
4/5/2024	3,417	10.6	1,927	5.8	5,402	9.4	9,162	15.5	26,725	7.6	7,588	10.3	3,591	10.6	84,834	18.4	41,205	8.3	29,595	18.2	6,189	2.9
4/6/2024	1,535	11.0	1,565	3.2	5,400	9.5	8,919	11.8	6,388	8.8	8,350	10.2	3,317	10.7	0	0.0	0	0.0	26,150	15.7	0	0.0
4/7/2024	1,460	10.9	2	3.7	5,196	9.5	8,332	10.0	20,235	8.3	7,303	10.3	3,153	10.8	0	0.0	0	0.0	30,853	18.3	0	0.0
4/8/2024	3,364	10.9	1,148	5.3	5,338	9.5	4,119	11.4	9,271	9.3	7,773	10.5	3,193	10.8	48,493	22.0	16,080	11.1	26,716	17.3	10,717	14.0
4/9/2024	1,471	11.1	0	5.4	7,080	9.4	2,433	13.5	32,808	7.6	4,225	10.3	3,240	10.7	59,639	15.0	22,874	11.8	56,158	17.0	25,494	25.7
4/10/2024	2,977	11.0	5,369	4.9	5,618	9.5	3,948	13.5	5,210	9.1	7,391	10.2	3,245	10.8	0	0.0	0	0.0	26,828	16.9	0	0.0
4/11/2024	3,731	10.7	1,532	4.5	5,133	9.5	15,818	10.2	11,105	8.1	7,851	10.3	3,493	10.6	23,148	15.7	11,924	14.3	17,514	16.2	5,692	9.2
4/12/2024	2,174	9.4	1,119	3.6	1,788	7.7	3,159	13.8	13,912	8.4	6,125	10.6	3,655	10.6	58,013	15.4	42,770	15.4	29,906	18.5	8,201	14.2
4/13/2024	2,174	9.0	2,286	3.9	1,788	7.0	14,177	12.3	14,256	9.2	7,369	10.2	3,518	10.6	0	0.0	0	0.0	17,060	17.2	0	0.0
4/14/2024	2,174	9.0	1,738	3.3	1,788	7.0	11,256	14.6	6,832	8.9	7,792	10.1	3,389	10.7	0	0.0	0	0.0	26,401	16.0	0	0.0
4/15/2024	2,174	9.0	4	3.5	1,788	7.0	10,252	13.1	6,775	9.1	7,205	10.3	3,188	10.7	29,505	15.2	12,018	13.9	8,726	16.6	3,048	22.5
4/16/2024	2,174	10.3	4,296	6.3	3,871	8.1	10,963	12.4	20,326	8.3	4,127	10.6	3,057	10.7	16,859	12.3	12,684	14.3	25,206	15.6	3,651	23.8
4/17/2024	3,829	10.6	888	8.8	4,827	9.5	9,575	12.3	7,124	9.6	7,446	10.2	3,032	10.8	21,728	16.7	12,790	14.3	8,948	16.5	12,797	24.5
4/18/2024	3,498	11.0	1,326	8.0	4,792	9.5	8,895	15.1	13,276	8.4	7,002	10.2	3,164	10.7	18,778	14.8	13,292	14.6	26,395	15.8	3	18.4
4/19/2024	1,767	10.8	1,502	7.0	4,738	9.5	9,631	17.6	6,936	9.0	8,114	10.5	3,317	10.7	58,643	15.5	40,022	14.4	11,625	16.5	12,811	22.6
4/20/2024	1,601	11.5	1,526	5.5	4,826	9.5	11,038	15.3	6,931	8.9	5,167	10.1	3,446	10.6	0	0.0	0	0.0	26,077	16.3	0	0.0
4/21/2024	3,100	11.1	1,868	3.3	4,601	9.5	9,226	9.6	18,271	9.2	8,058	10.2	3,219	10.6	0	0.0	0	0.0	9,989	16.6	0	0.0
4/22/2024	3,555	11.0	1,200	6.6	4,619	9.5	9,783	12.6	8,581	8.9	7,479	10.2	3,280	10.7	22,117	15.0	13,286	14.1	26,066	15.9	13,917	8.3
4/23/2024	1,866	10.9	1,631	4.6	4,624	9.7	12,177	15.6	7,496	8.8	7,496	10.6	3,484	10.6	20,265	15.4	13,842	15.1	9,786	16.7	4,486	2.3
4/24/2024	3,148	10.9	2	3.6	4,834	9.5	11,167	14.7	6,876	9.2	6,890	10.3	3,459	10.6	23,074	14.9	25,724	14.9	25,989	15.6	14,411	15.4
4/25/2024	3,603	10.7	2	5.3	4,038	9.2	8,214	18.1	6,939	9.2	5,972	10.3	2,886	9.8	20,265	15.6	13,842	15.0	40,702	20.9	4,486	16.6
4/26/2024	1,606	11.0	2	6.1	5,119	9.4	11,787	17.4	19,804	8.5	8,608	10.2	3,816	10.3	23,074	15.5	25,724	9.3	62,783	21.9	14,411	2.7
4/27/2024	3,057	11.1	2	7.4	5,396	9.4	11,377	14.8	12,081	8.3	8,004	10.2	3,548	10.6	0	0.0	0	0.0	35,904	15.2	0	0.0
4/28/2024	1,880	10.9	2	8.5	5,479	9.4	11,347	13.3	6,870	9.2	7,109	10.3	3,440	10.6	0	0.0	0	0.0	45,244	18.7	0	0.0
4/29/2024	2,478	10.9	9,681	5.0	5,491	9.4	13,171	14.1	14,464	8.9	7,092	10.2	3,493	10.6	61,144	16.3	43,016	15.8	60,248	16.3	11,395	26.6
4/30/2024	1,678	11.0	2,385	4.5	8,928	9.2	10,101	13.9	13,603	8.1	7,731	10.2	3,512	10.6	22,399	17.2	21,848	13.6	77,125	21.8	16,112	23.9
5/1/2024	3,145	11.1	413	6.4	6,137	9.4	10,045	13.4	6,906	9.2	7,530	10.3	3,442	10.6	20,120	15.1	13,714	8.4	22,994	15.8	4,087	2.3
5/2/2024	1,750	11.3	1,462	6.0	5,562	9.5	11,800	15.9	6,939	9.2	7,117	10.4	3,560	10.5	17,088	15.0	14,716	8.9	26,390	17.3	9,360	18.6
5/3/2024	3,566	11.0	1,698	4.7	5,798	9.4	11,836	17.8	14,352	8.7	7,675	10.3	3,633	10.5	18,253	15.1	14,410	11.3	17,621	16.1	4,275	14.7
5/4/2024	3,653	10.8	2	3.8	6,081	9.4	13,308	13.9	14,775	8.7	7,748	10.2	3,927	10.4	45,999	15.1	41,110	7.0	46,595	19.7	2,893	15.7
5/5/2024	1,440	11.2	3	4.8	9,497	9.2	5,525	12.2	7,193	8.9	7,949	10.2	3,906	10.4	0	0.0	0	0.0	85,165	30.2	0	0.0
5/6/2024	1,793	11.2	293	6.1	9,547	9.2	4,866	12.7	14,118	8.5	8,937	10.3	3,650	10.5	24,528	15.1	14,752	6.4	75,129	30.8	22,419	23.4
5/7/2024	1,113	11.5	6,244	3.9	6,353	9.5	4,816	13.0	8,018	8.8	6,223	10.3	3,286	10.6	18,093	15.1	14,648	9.7	41,361	23.3	9,192	17.3
5/8/2024	2,771	10.9	1,321	4.4	5,619	9.5	4,457	13.3	13,330	8.4	7,509	10.3	3,269	10.6	15,430	16.0	30,264	11.8	14,131	15.7	14,537	8.2
5/9/2024	3,301	11.1	1,546	3.7	5,394	9.5	4,616	13.6	12,857	8.8	7,268	10.3	3,218	10.7	0	0.0	0	0.0	11,649	21.5	0	0.0
5/10/2024	3,065	11.1	8	3.4	5,312	9.5	3,330	13.5	6,897	9.0	8,531	10.3	3,313	10.6	68,127	15.1	45,794	10.4	19,961	15.6	0	13.6
5/11/2024	1,855	11.2	4	4.5	5,335	9.5	5,816	13.2	6,914	9.1	4,613	10.4	3,511	10.6	0	0.0	0	0.0	7,281	22.1	0	0.0
5/12/2024	3,270	10.9	186	5.5	5,075	9.5	3,520	13.4	18,301	9.1	8,121	10.2	3,423	10.6	0	0.0	0	0.0	19,526	15.9	0	0.0
5/13/2024	3,152	11.1	60	6.9	5,104	9.5	4,985	12.9	6,818	9.1	7,689	10.2	3,320	10.6	15,822	15.0	14,268	11.2	19,240	19.5	12,344	31.9
5/14/2024	1,477	11.2	3	8.0	5,053	9.5	4,828	13.1	7,088	9.3	8,406	10.4	3,253	10.6	17,287	14.4	13,356	6.5	11,749	16.4	13,200	28.5
5/15/2024	2,928	11.0	3,148	7.3	4,832	9.5	3,454	13.4	13,881	8.6	4,763	10.4	3,291	10.6	15,847	15.1	9,568	9.4	24,180	18.0	5,694	22.5
5/16/2024	3,373	11.0	0	7.6	4,854	9.5	6,067	13.2	6,789	8.9	7,396	10.3	3,434	10.6	16,801	14.3	13,574	11.5	13,288	16.2	0	13.6
5/17/2024	1,373	11.1	4,450	6.2	4,956	9.5	3,634	12.9	6,792	8.9	7,231	10.3	3,384	10.6	16,456	15.0	16,574	7.1	23,190	17.6	0	16.2
5/18/2024	1,683	11.3	4,311	4.4	4,776	9.5	3,645	13.4	6,801	9.2	6,961	10.2	3,242	10.6	43,553	14.5	26,500	9.9	13,909	16.2	2,862	22.6
5/19/2024	3,155	11.0	3,012	3.3	4,962	9.5	5,290	12.8	23,723	8.6	6,848	10.3	3,262	10.6	0	0.0	0	0.0	31,987	20.7	0	0.0
5/20/2024	1,587	11.1	1,547	4.5	4,429	9.6	3,542	13.2	14,891	8.5	7,508	10.3	3,336	10.6	16,573	14.1	13,976	7.6	13,601	16.3	6,173	36.4
5/21/2024	4,063	10.7	1,317	3.5	5,044	9.5	9,212	11.7	5,845	9.1	7,006	10.2	3,450	10.5	52,852	15.2	22,888	9.9	55,800	22.3	6,720	36.0
5/22/2024	1,392	11.1	1,839	3.5	5,049	9.6	13,368	10.5	9,247	8.2	6,747	10.3	3,712	10.5	29,605	15.8	19,058	10.1	50,566	19.3	17,670	42.4
5/23/2024	3,100	11.1	1,043	3.0	5,145	9.5	12,023	12.4	6,616	9.3	8,165	10.3	3,460	10.6	25,687	15.0	11,230	8.8	25,593	18.5	12,800	43.2
5/24/2024	3,321	10.9	0	3.8																		

**Summary of Leachate Volume and Depth Data
Second Quarter 2024
LRI Landfill, Pierce County, Washington**

Date	Cell 1 Leachate Volume (GPD)	Cell 1 Leachate Level (in.)	Cell 2A Leachate Volume (GPD)	Cell 2A Leachate Level (in.)	Cell 2B Leachate Volume (GPD)	Cell 2B Leachate Level (in.)	Cell 3A Leachate Volume (GPD)	Cell 3A Leachate Level (in.)	Cell 4A Leachate Volume (GPD)	Cell 4A Leachate Level (in.)	Cell 4B Leachate Volume (GPD)	Cell 4B Leachate Level (in.)	Cell 5 Leachate Volume (GPD)	Cell 5 Leachate Level (in.)	Cell 6 Leachate Volume (GPD)	Cell 6 Leachate Level (in.)	Cell 7 Leachate Volume (GPD)	Cell 7 Leachate Level (in.)	Cell 8A Leachate Volume (GPD)	Cell 8A Leachate Level (in.)	Cell 9A Leachate Volume (GPD)	Cell 9A Leachate Level (in.)
6/1/2024	2,074	10.9	2	2.8	4,476	9.3	11,237	19.0	6,686	8.8	8,782	10.2	3,441	10.6	0	19.6	0	0.0	14,984	16.1	0	0.0
6/2/2024	3,806	10.8	2	4.5	4,912	9.3	13,042	16.3	7,159	9.3	7,242	10.3	3,632	10.5	0	15.1	0	0.0	47,596	19.2	0	0.0
6/3/2024	1,768	11.0	4	5.2	8,886	12.1	1,999	14.2	15,200	9.2	7,532	10.3	3,884	10.4	43,821	0.0	0	15.7	85,432	26.5	0	44.2
6/4/2024	1,549	11.4	1	6.1	5,057	8.9	1,999	14.0	24,767	7.9	8,506	10.3	3,697	10.5	2,755	15.0	0	13.4	35,182	18.2	0	46.8
6/5/2024	2,794	11.1	7,445	3.7	4,751	9.2	1,999	14.0	6,603	9.1	8,034	10.1	3,232	10.7	71,408	15.0	0	10.9	17,343	16.9	0	42.9
6/6/2024	3,043	11.1	1,670	2.5	4,650	9.2	1,999	14.0	6,870	9.1	6,752	10.2	3,266	10.6	35,403	0.0	0	11.4	24,319	17.5	0	0.0
6/7/2024	3,060	11.0	760	2.7	4,589	9.2	12,860	11.8	7,434	8.9	5,690	10.5	3,371	10.6	98,548	0.0	0	11.4	14,100	16.2	0	24.5
6/8/2024	1,554	11.1	0	3.3	4,558	9.2	12,048	13.1	6,829	9.2	8,705	10.3	3,399	10.6	0	15.0	0	0.0	12,350	20.6	0	0.0
6/9/2024	2,981	11.2	0	4.3	4,345	9.2	12,281	12.3	18,968	8.7	8,219	10.3	3,200	10.6	0	15.0	0	0.0	21,277	15.9	0	0.0
6/10/2024	2,734	11.1	0	5.5	4,505	9.2	8,962	11.5	11,333	9.0	7,688	10.2	3,181	10.7	35,092	15.0	0	10.6	20,863	19.3	0	30.6
6/11/2024	1,994	11.0	0	6.4	4,482	9.2	9,853	12.4	8,570	8.8	6,665	10.3	3,232	10.7	31,102	15.0	0	13.5	15,015	16.2	0	16.6
6/12/2024	1,802	11.2	3,327	6.0	4,553	9.2	11,574	11.1	14,598	8.2	5,894	10.4	3,135	10.7	34,102	15.0	0	13.3	23,648	18.0	0	15.2
6/13/2024	2,300	11.1	6,413	3.7	4,404	9.3	12,695	12.7	6,838	9.1	8,470	10.2	3,164	10.7	33,776	0.0	0	13.9	13,192	16.3	0	15.6
6/14/2024	3,632	10.9	1,466	3.4	4,423	9.3	12,093	13.1	13,257	8.4	6,772	10.2	3,253	10.7	103,403	0.0	0	15.0	23,739	17.6	0	3.1
6/15/2024	1,614	11.2	3	2.8	4,698	9.2	9,684	13.9	20,398	9.0	5,588	10.3	3,278	10.6	0	15.0	0	0.0	49,319	17.6	0	0.0
6/16/2024	3,137	10.9	2	4.0	4,513	9.2	9,723	14.8	31,762	7.5	8,433	10.2	3,409	10.6	0	14.9	0	0.0	46,823	21.1	0	0.0
6/17/2024	3,073	11.0	3	5.0	4,731	9.2	10,869	14.6	27,487	8.0	6,695	10.3	3,336	10.6	31,474	15.0	0	15.5	18,619	16.0	0	34.1
6/18/2024	3,098	10.9	5,652	3.7	4,629	9.2	9,152	14.4	16,557	7.8	8,425	10.1	3,287	10.6	30,853	15.0	0	15.9	23,642	17.7	0	3.4
6/19/2024	1,575	11.2	1,939	2.8	4,439	9.3	11,522	15.6	7,224	9.2	6,768	10.2	3,356	10.6	32,759	16.0	0	20.8	15,586	16.2	0	16.8
6/20/2024	3,402	10.8	3	2.7	4,202	9.2	11,620	15.4	6,847	9.1	6,308	10.5	3,328	10.6	31,106	0.0	0	25.9	25,052	17.7	0	3.0
6/21/2024	3,356	10.9	895	3.8	4,063	9.2	4,070	27.8	10,153	9.4	9,225	10.4	3,464	10.9	104,930	0.0	0	29.5	14,252	16.6	0	0.0
6/22/2024	3,332	11.1	0	4.4	4,196	9.3	15,157	12.2	6,452	9.2	7,347	10.1	3,368	10.6	0	21.5	0	0.0	25,880	18.9	0	0.0
6/23/2024	1,568	11.2	0	5.4	4,270	9.3	12,223	14.2	7,774	9.2	5,902	10.3	3,240	10.6	0	19.9	0	0.0	15,403	16.0	0	0.0
6/24/2024	3,619	11.0	1,682	5.8	4,231	9.3	10,855	14.9	5,152	9.1	8,361	10.3	3,130	10.7	41,227	21.4	0	37.5	25,853	18.4	0	27.5
6/25/2024	2,902	11.0	4,618	4.5	4,147	9.3	13,758	17.0	11,381	8.9	6,492	10.2	3,269	10.6	36,690	20.9	0	12.5	14,046	16.1	0	14.9
6/26/2024	1,530	11.3	0	4.1	4,392	9.3	11,658	16.9	7,156	8.4	5,870	10.4	3,314	10.6	36,041	18.7	0	15.7	7,814	21.3	0	19.6
6/27/2024	3,187	10.9	0	5.2	4,230	9.2	7,950	16.4	6,941	9.1	7,798	10.1	3,164	10.7	36,881	0.0	0	11.5	29,834	19.3	0	15.9
6/28/2024	3,176	11.1	0	6.5	4,170	9.3	9,835	16.4	6,773	9.5	7,730	10.2	3,188	10.7	0	0.0	0	14.5	26,940	19.2	0	22.5
6/29/2024	1,630	11.1	0	7.5	4,134	9.3	10,480	15.8	6,919	9.0	5,739	10.3	3,260	10.6	0	0.0	0	0.0	15,696	15.9	0	0.0
6/30/2024	3,369	11.0	0	8.4	4,017	9.3	9,845	14.7	6,966	9.1	8,067	10.2	3,163	10.6	0	0.0	0	0.0	25,615	18.9	0	0.0

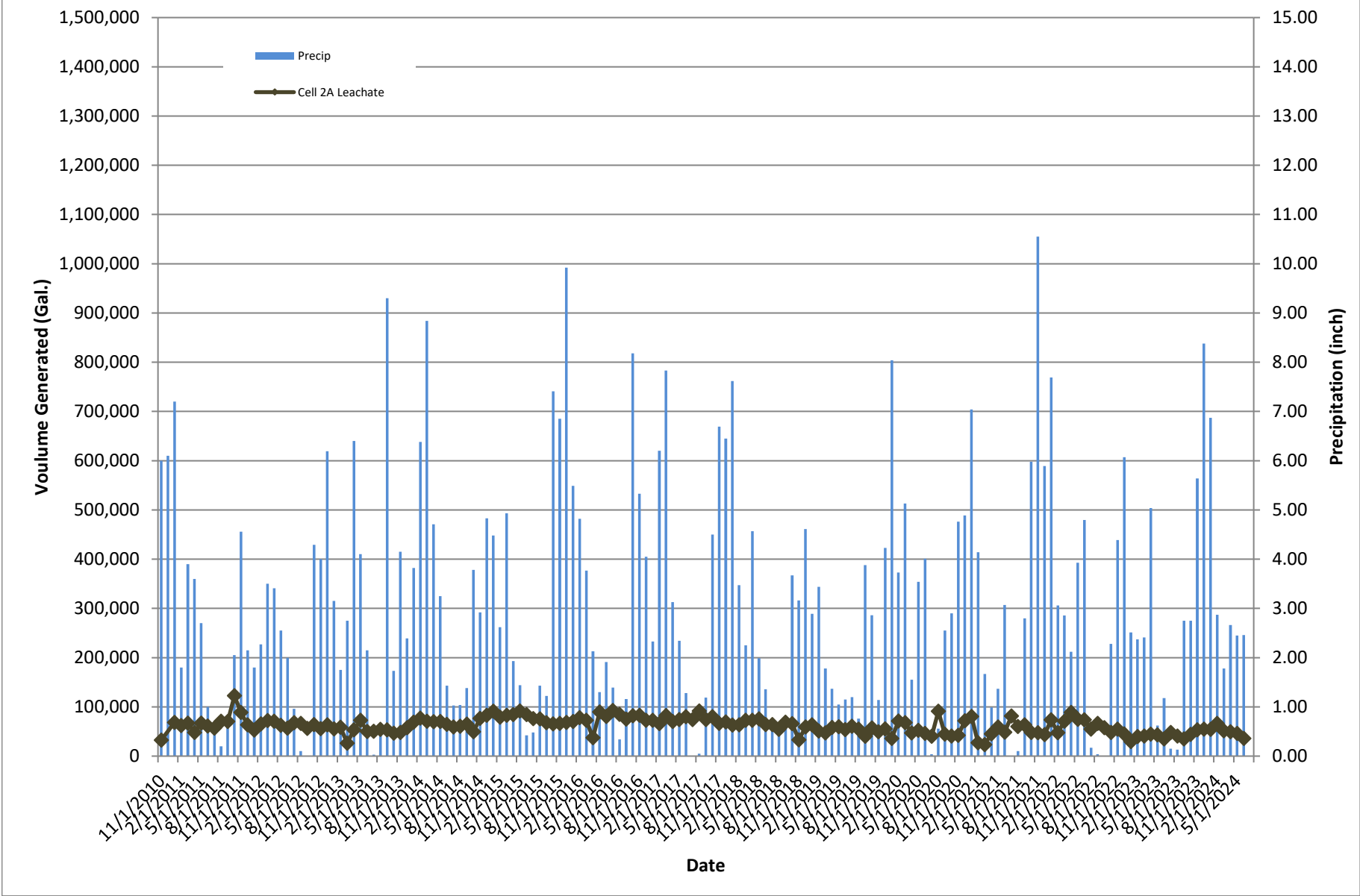
Cell 1 Monthly Leachate Generation vs Precipitation

LRI Landfill, Pierce County, WA



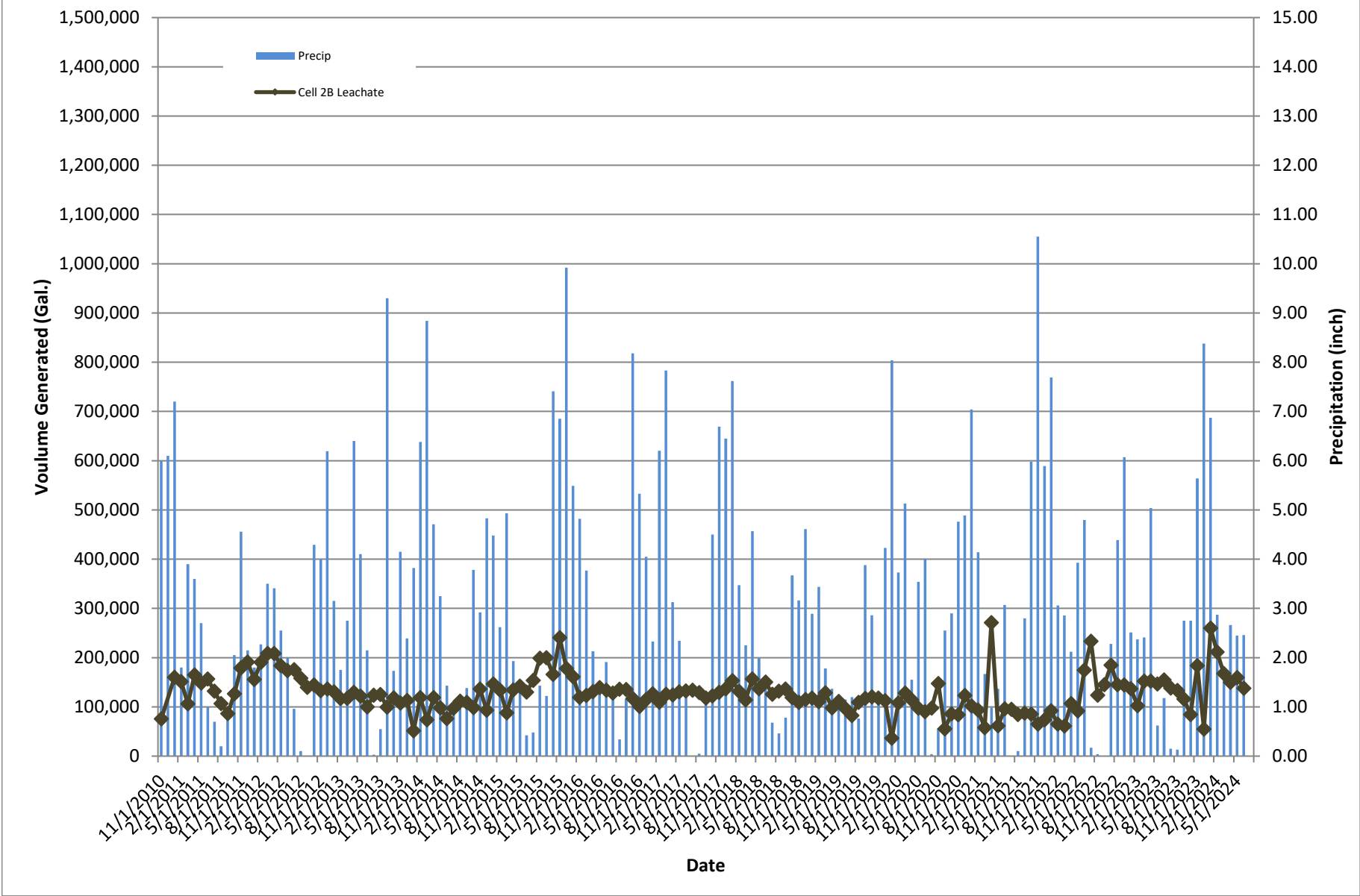
Cell 2A Monthly Leachate Generation vs Precipitation

LRI Landfill, Pierce County, WA



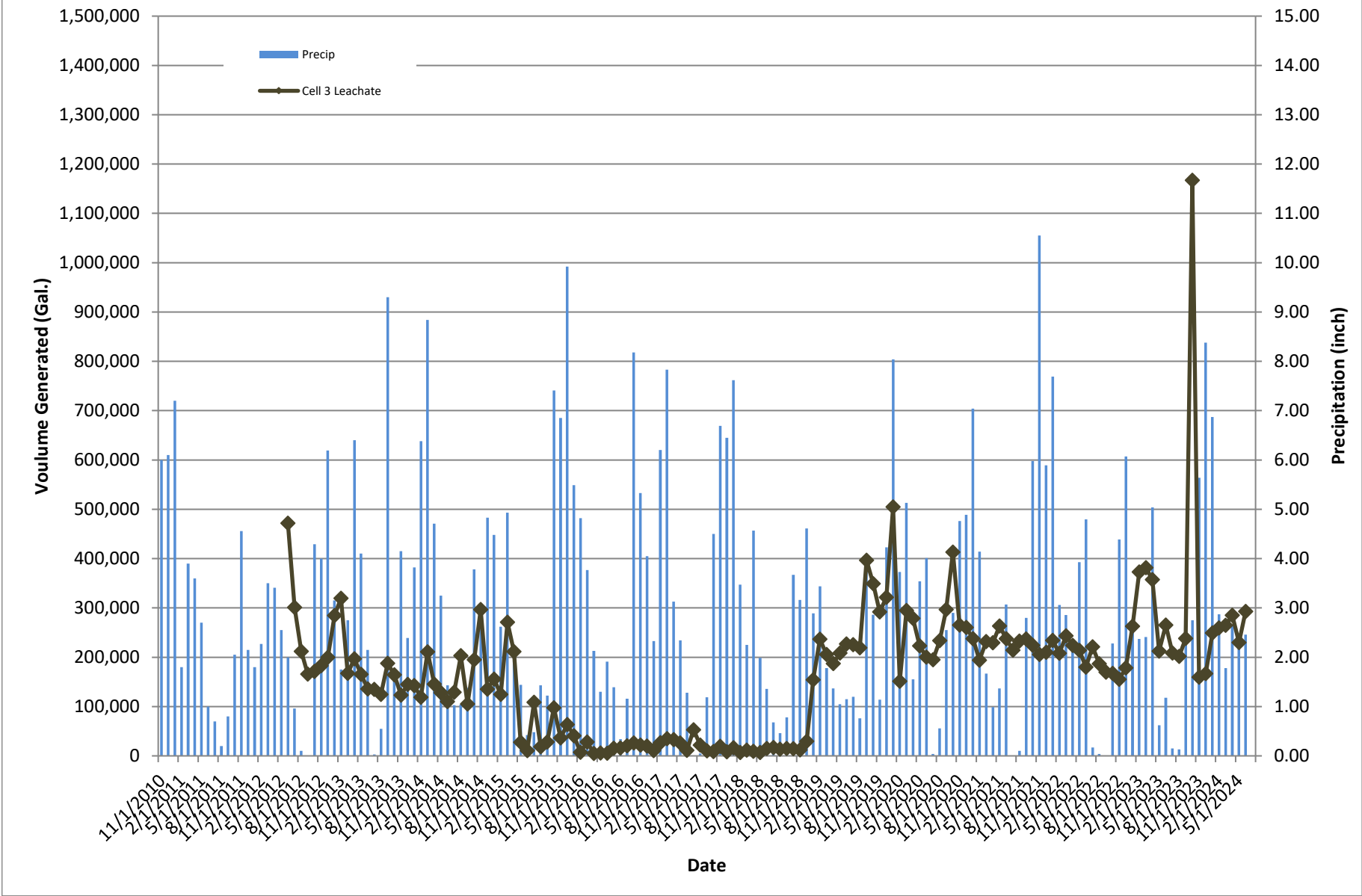
Cell 2B Monthly Leachate Generation vs Precipitation

LRI Landfill, Pierce County, WA



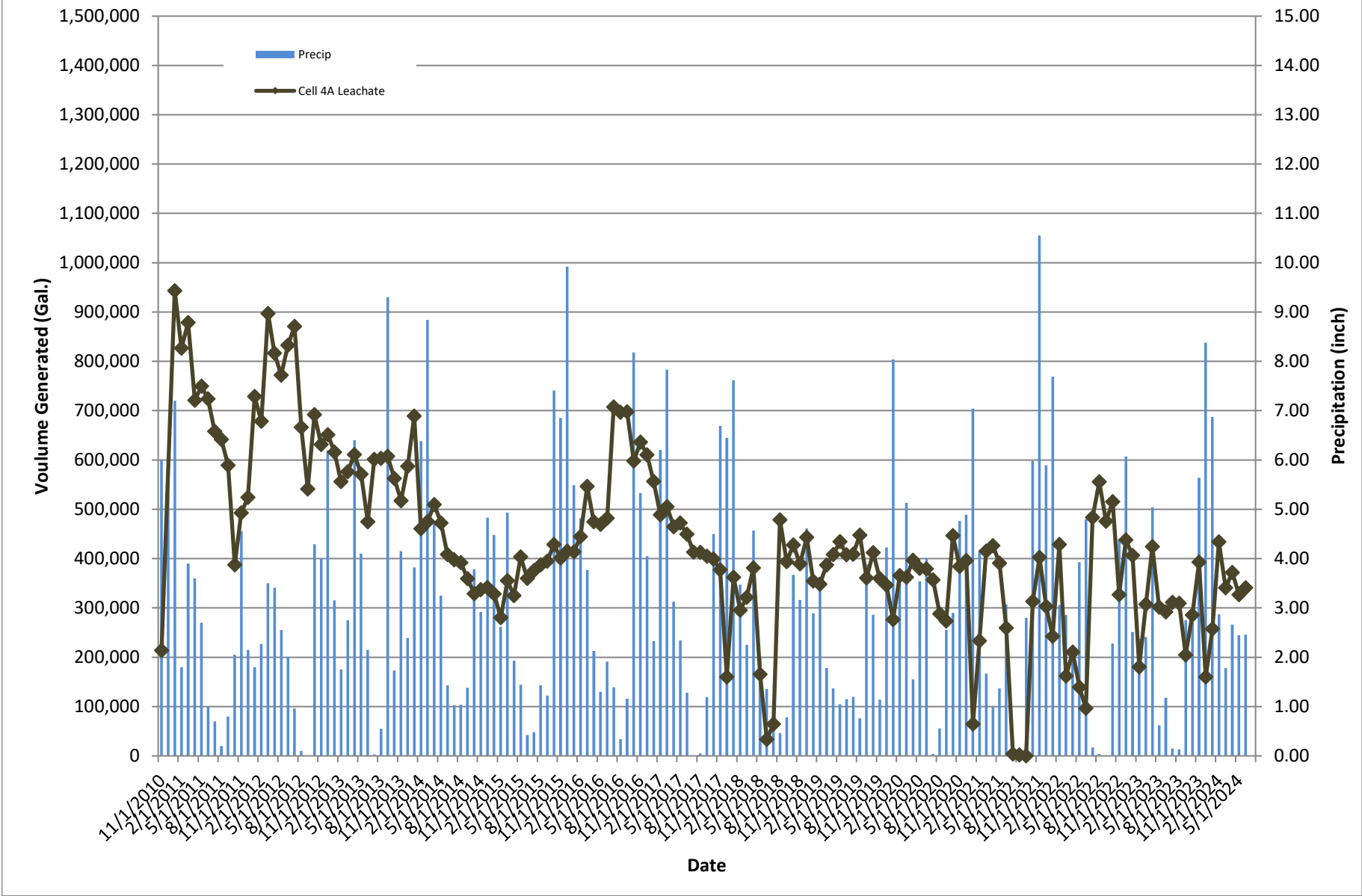
Cell 3A Monthly Leachate Generation vs Precipitation

LRI Landfill, Pierce County, WA



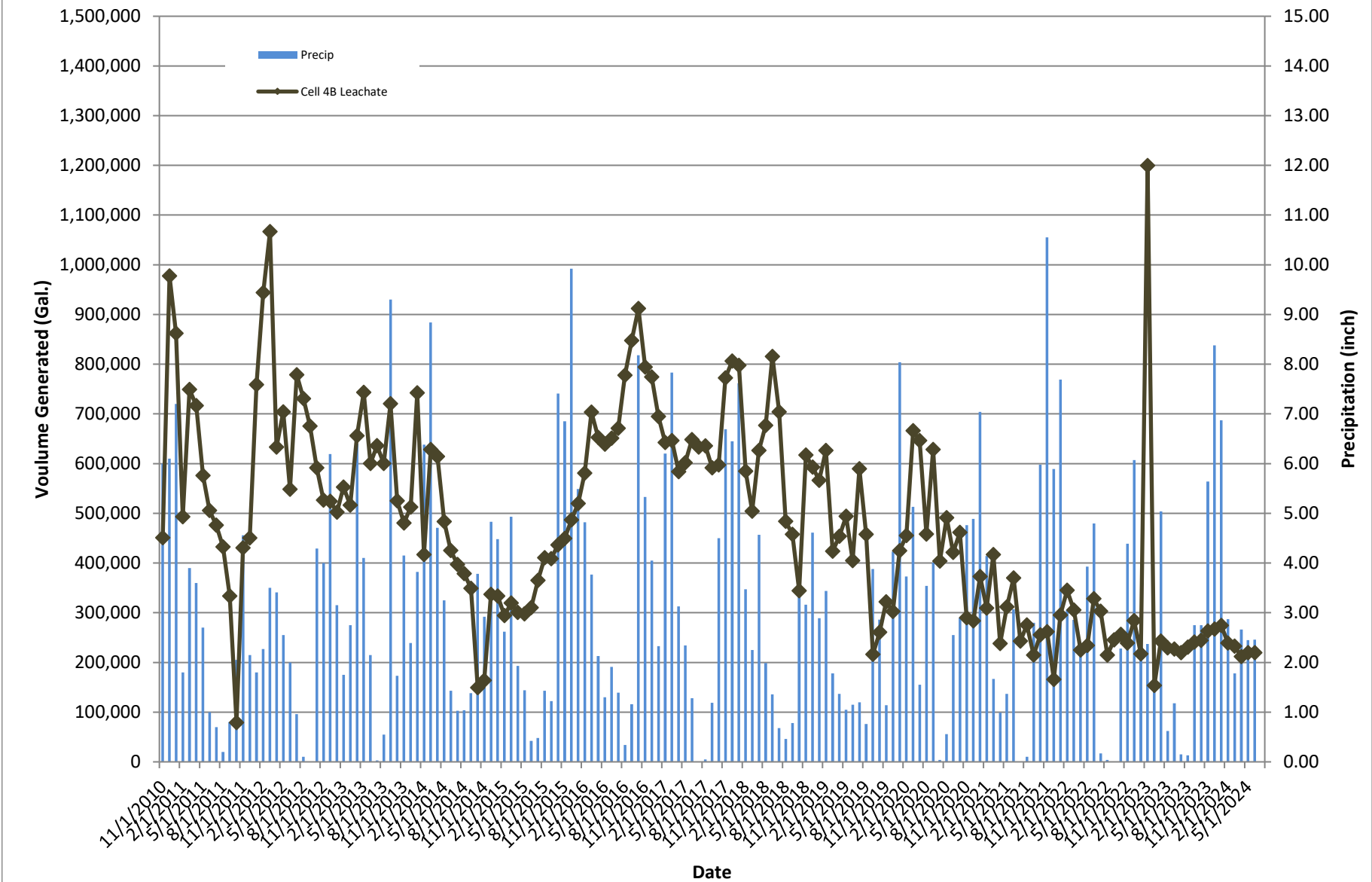
Cell 4A Monthly Leachate Generation vs Precipitation

LRI Landfill, Pierce County, WA



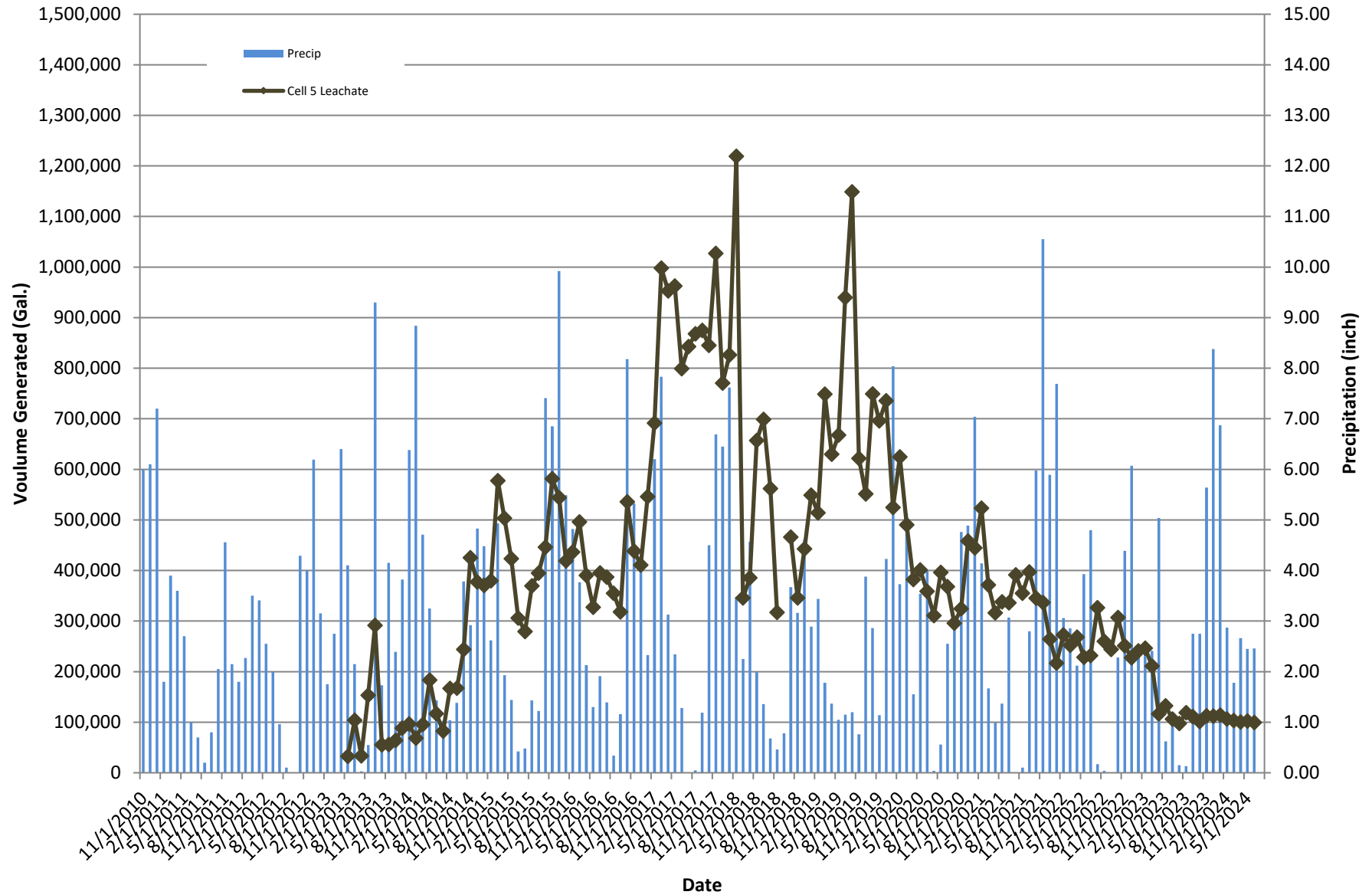
Cell 4B Monthly Leachate Generation vs Precipitation

LRI Landfill, Pierce County, WA



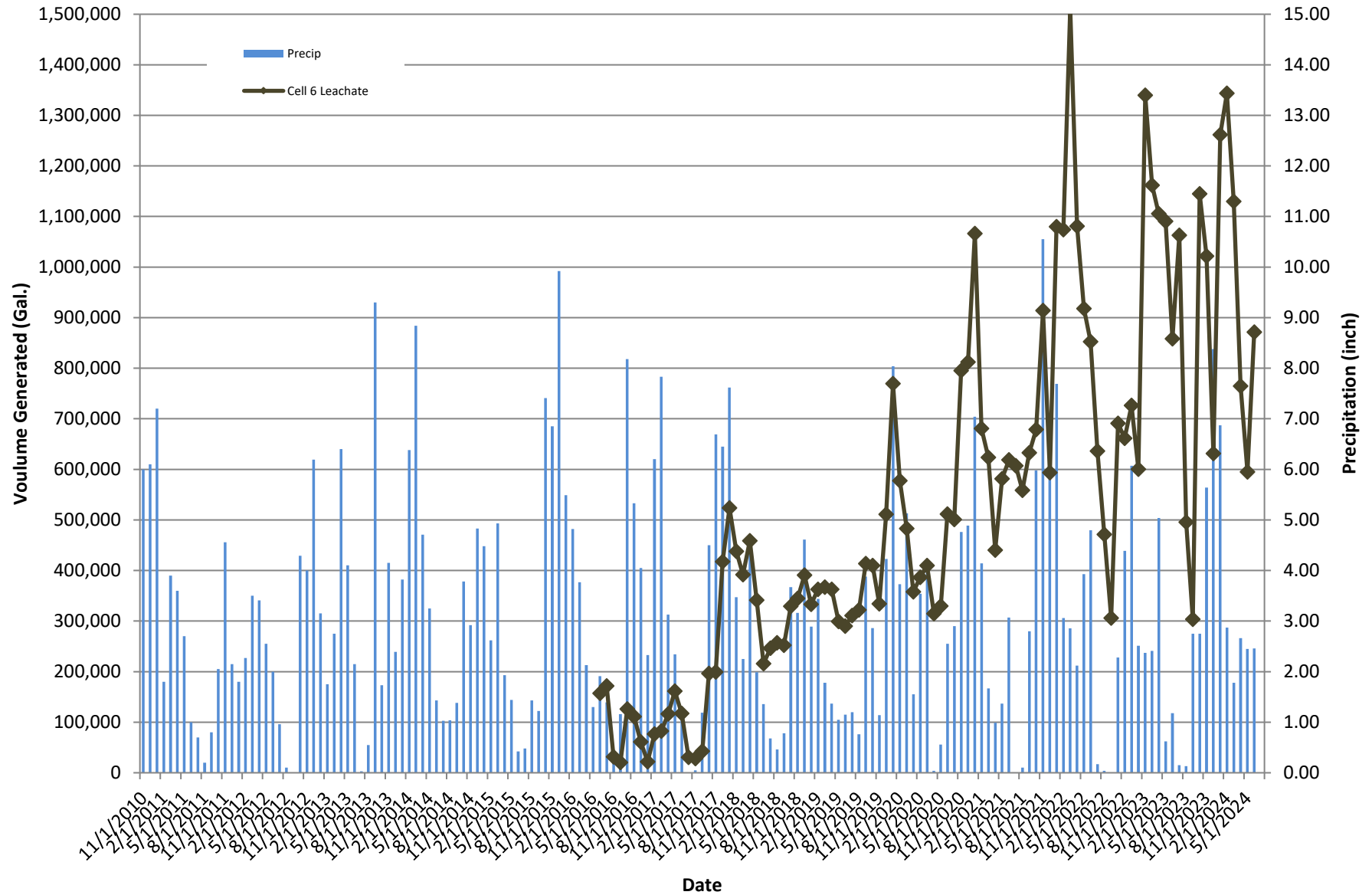
Cell 5 Monthly Leachate Generation vs Precipitation

LRI Landfill, Pierce County, WA



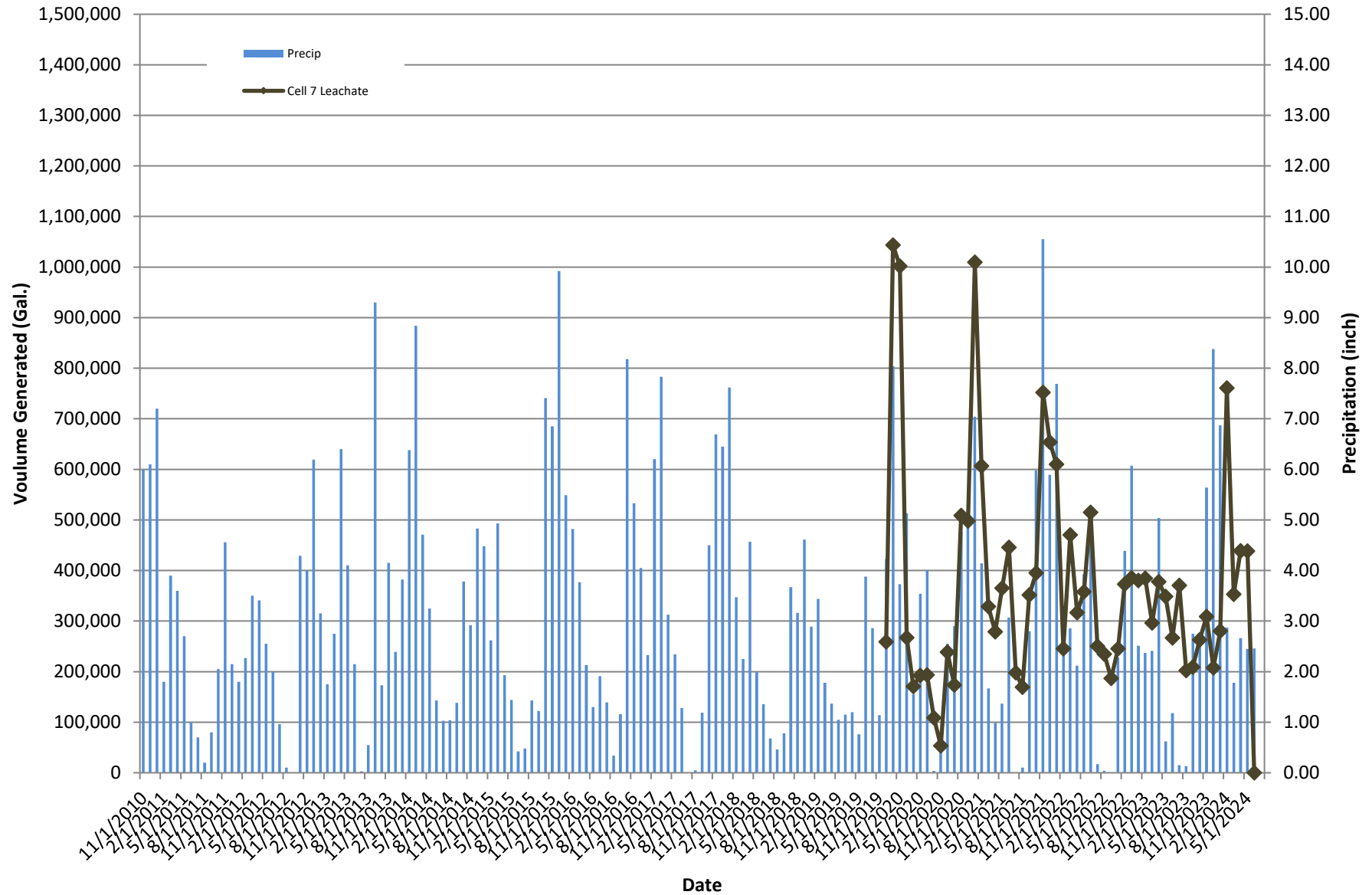
Cell 6 Monthly Leachate Generation vs Precipitation

LRI Landfill, Pierce County, WA



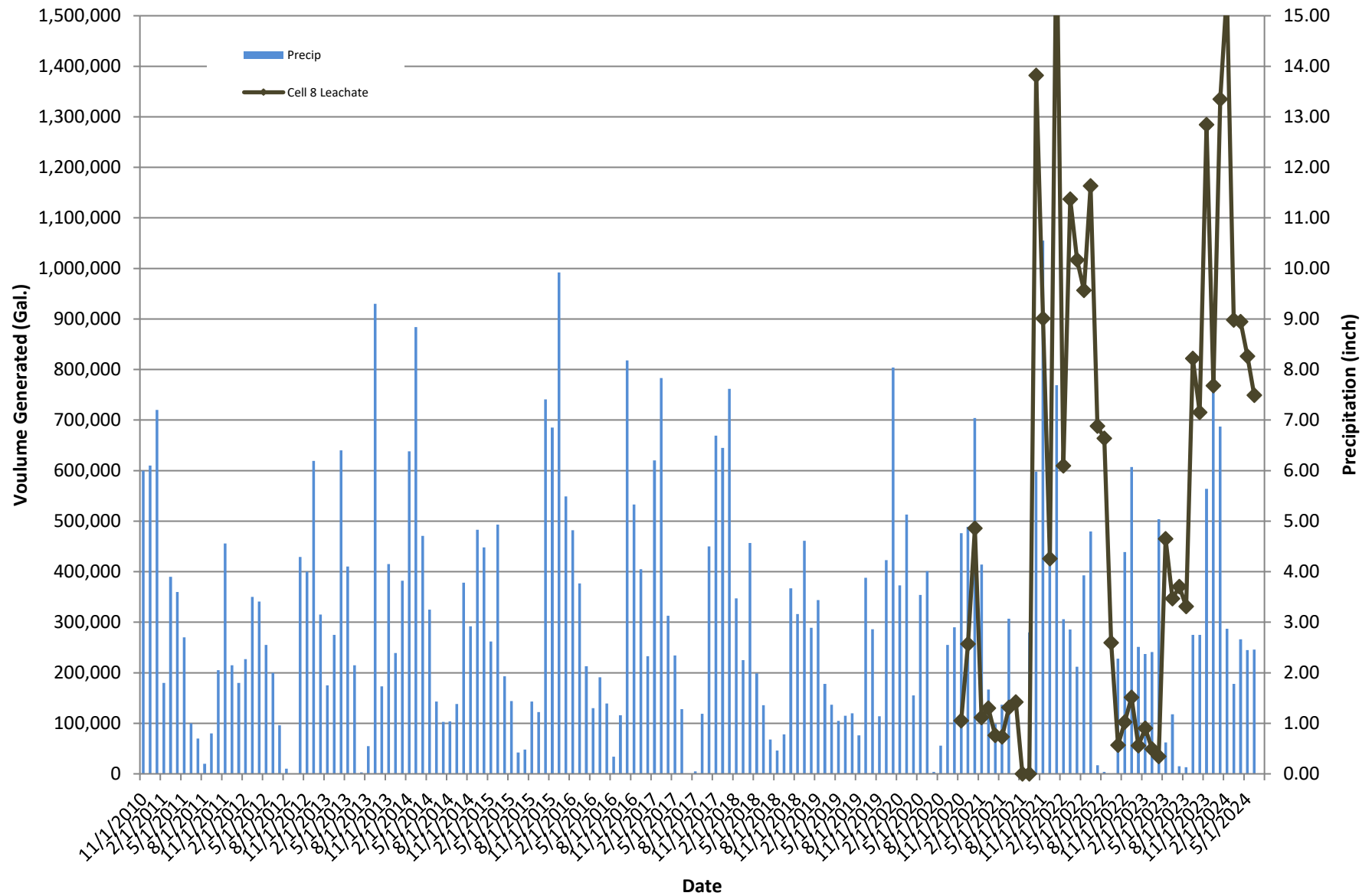
Cell 7 Monthly Leachate Generation vs Precipitation

LRI Landfill, Pierce County, WA



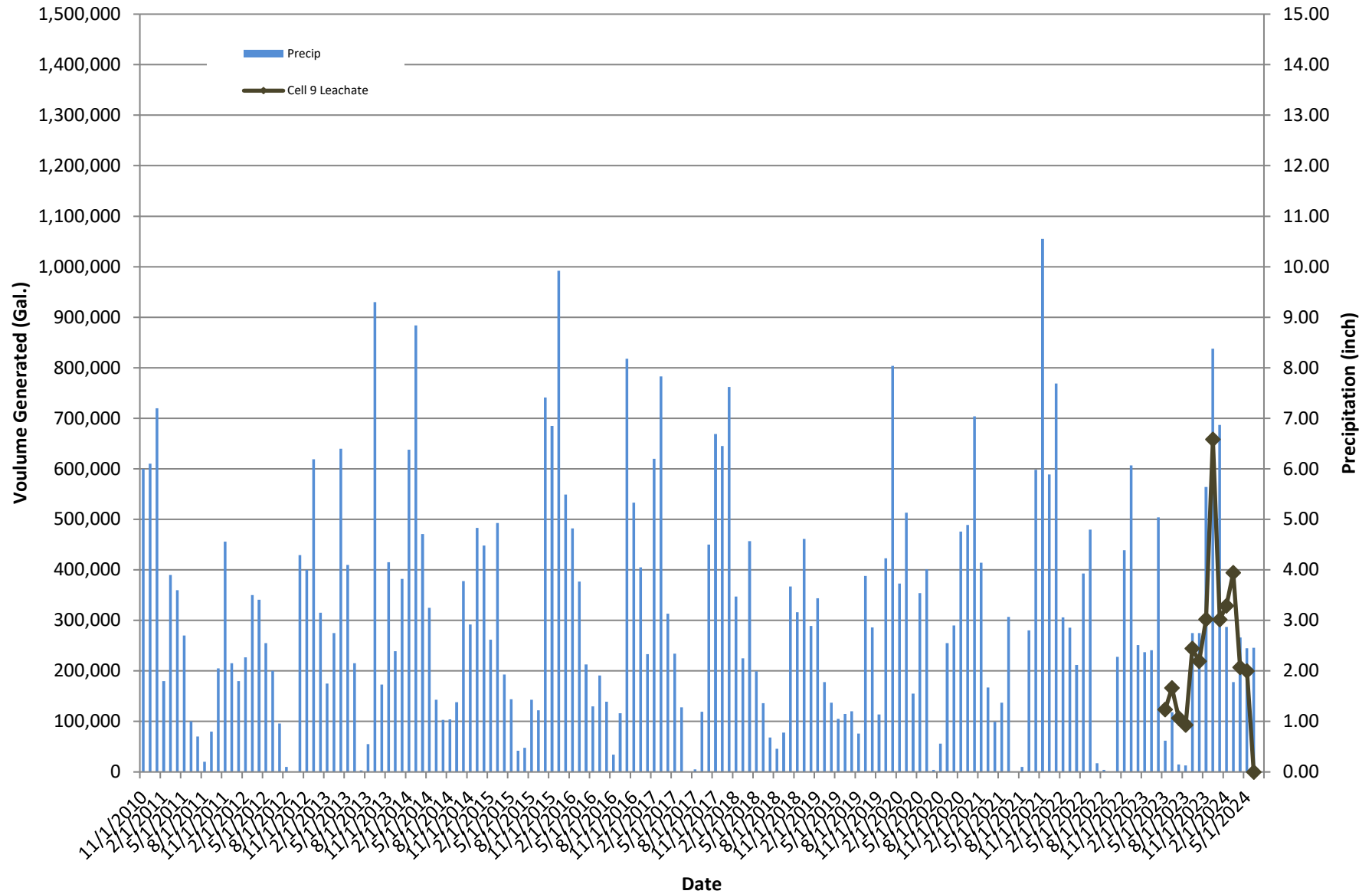
Cell 8 Monthly Leachate Generation vs Precipitation

LRI Landfill, Pierce County, WA



Cell 9 Monthly Leachate Generation vs Precipitation

LRI Landfill, Pierce County, WA





Attachment I

Surface Water Monitoring Data



Permit Number: WAR002603

Permittee: LRI 304th Street Landfill

Facility County: Pierce

Receiving Waterbody: NEWB 2

Monitoring Period: 04/01/2024 - 04/30/2024

Outfall: 001 - 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
		C8-1	C8-1	C8-2	C8-2	C9-1	C9-1
1-M	4/1/24	C	C	C	C	C	C
2-Su	4/7/24	C	C	C	C	C	C
3-Su	4/14/24	C	C	C	C	C	C
4-Su	4/21/24	C	C	C	C	C	C
Minimum			C		C		C
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		C	C	C	C	C	C
		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

BMPs

Monitoring Point	Week	BMP
C8-1		Check Dams
C8-1		Construction Stormwater Chemical Treatment
C8-1		Other
C8-1		Silt Fence
C8-1		Temporary Sediment Pond
C8-2		Other
C8-2		Silt Fence
C9-1		Check Dams
C9-1		Other
C9-1		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.

Kevin Green

Signature

5/6/2024 10:55:11 AM

Date



Permit Number: WAR002603

Permittee: LRI 304th Street Landfill

Facility County: Pierce

Receiving Waterbody: NEWB 2

Monitoring Period: 05/01/2024 - 05/31/2024

Outfall: 001 - 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
		C8-1	C8-1	C8-2	C8-2	C9-1	C9-1
1-Th	5/2/24	2.3	7.56	C	M	C	M
2-T	5/7/24	5.6	8.03	C	M	C	M
3-F	5/17/24	C	M	C	M	C	M
4-F	5/24/24	C	M	C	M	C	M
5-Th	5/30/24	4.6	8.04	C	M	C	M
Minimum			7.56		M		M
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		5.6	8.04	C	M	C	M
		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
C8-1		Check Dams
C8-1		Construction Stormwater Chemical Treatment
C8-1		Other
C8-1		Silt Fence
C8-1		Temporary Sediment Pond
C8-2		Other
C8-2		Silt Fence
C9-1		Check Dams
C9-1		Other
C9-1		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.

Kevin Green

Signature

6/12/2024 6:42:33 AM

Date



Permit Number: WAR002603

Permittee: LRI 304th Street Landfill

Facility County: Pierce

Receiving Waterbody: South Creek

Monitoring Period: 06/01/2024 - 06/30/2024

Outfall: 001 - 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
		C8-1	C8-1	C8-2	C8-2	C9-1	C9-1
1-Sa	6/1/24	C	C	C	C	C	C
2-Su	6/2/24	4.5	8.0	C	C	C	C
3-T	6/11/24	8.1	7.8	C	C	C	C
3-W	6/12/24	8.0	8.3	C	C	C	C
4-Su	6/16/24	C	C	C	C	C	C
5-Su	6/23/24	C	C	C	C	C	C
6-Su	6/30/24	C	C	C	C	C	C
Minimum			7.8		C		C
			BM: >= 6.5 (RO)		BM: >= 6.5 (RO)		BM: >= 6.5 (RO)
Maximum		8.1	8.3	C	C	C	C
		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

BMPs

Monitoring Point	Week	BMP
C8-1		Check Dams
C8-1		Construction Stormwater Chemical Treatment
C8-1		Other
C8-1		Silt Fence
C8-1		Temporary Sediment Pond
C8-2		Other
C8-2		Silt Fence
C9-1		Check Dams
C9-1		Other
C9-1		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.

Kevin Green

Signature

7/10/2024 5:33:31 PM

Date



Permit Number: WAR002557

Permittee: Pierce County Recycling - 304th Street L

Facility County: Pierce

Receiving Waterbody:

Monitoring Period: 04/01/2024 - 06/30/2024

Outfall: SWPO - Discharge from SW pond

Version: 1

	Monitoring Point											
Week	Point	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO	SWPO
		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
	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)- 2020 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2020 permit
3-T	4/16/24	5.1	7.08	No	4.6	J 3.7	12	6.9	B 0.3	B 10	B 52	J 7.2
Minimum			7.08									
			BM: >= 5.0 (RO)									
Average		5.1			4.6	J 3.7						
		BM: <= 25			BM: <= 14	BM: <= 117						
Maximum			7.08									
			BM: <= 9.0 (RO)									
Month 1 Average							12	B 6.9	B 0.3	B 10	B 52	J 7.2
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 2 Average							12	B 6.9	B 0.3	B 10	B 52	J 7.2
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 3 Average							12	B 6.9	B 0.3	B 10	B 52	J 7.2
							<= 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.

Kevin Green

6/12/2024 6:42:28 AM

Signature

Date





Attachment J

Landfill Gas Monitoring Data

LRI Landfill

04224001.04

April-24

Location Refer <i>Design.</i>	Date	Time	P (well) (in W.C.)	Gas Composition - <i>Note 1</i>					Depth to Water <i>Note 2</i> (ft-TOC)	Exposed Portion of Perforations - <i>Note 3</i>		Comments
				CH ₄ Spike	CH ₄	CO ₂	O ₂	Balance (N ₂ & H ₂ O)		(ft)	(%)	
				(% by vol.)	(% by vol.)	(% by vol.)	(% by vol.)	(% by vol.)				
Normal Operating Range:												
(min)			-	-	0.3	-	-				20.0	
(max)			0.11	-	5.0	5.0	20.3				90.0	

Perimeter Gas Probes

GP-1A	4/29/2024	7:00	-0.10	38.3	12.7	17.9	15.1	0.0	14.7	0.0	0.0	
GP-2	4/29/2024	8:00	-0.15	--	0.0	15.6	0.0	0.0	12.7	0.0	0.0	
GP-3	4/29/2024	8:00	-0.14	--	0.0	5.7	16.1	0.0	9.3	0.0	0.0	
GP-4	4/29/2024	8:00	-0.13	--	0.0	6.7	10.5	0.0	9.5	0.0	0.0	
GP-9	4/29/2024	8:00	-0.07	--	0.0	10.2	4.9	0.0	10.4	0.0	0.0	
GP-10	4/29/2024	8:00	-0.14	4.3	4.3	16.9	3.4	0.0		0.0	0.0	
GP-10P	4/29/2024	8:00	-0.07	17.4	17.1	22.8	6.2	0.0		0.0	0.0	
GP-11	4/29/2024	8:00	-0.10	--	0.0	0.7	20.5	0.0		0.0	0.0	
GP-12	4/29/2024	8:00	0.11	--	0.0	0.2	21.5	0.0		0.0	0.0	
GP-13	4/29/2024	8:00	-0.06	--	0.0	0.1	21.5	0.0		0.0	0.0	
GP-14	4/29/2024	8:00	-0.14	--	0.0	0.1	21.1	0.0	11.2	0.0	0.0	
GP-15	4/29/2024	8:00	0.03	--	0.0	0.1	21.3	0.0	14.1	0.0	0.0	
GP-16	4/29/2024	8:00	-0.13	--	0.0	1.0	21.4	0.0	19.0	0.0	0.0	
GP-17	4/29/2024	8:00	-0.1	--	0.0	0.1	21.7	0.0	5.4	0.0	0.0	
GP-18	4/29/2024	8:00	-0.1	--	0.0	0.1	21.7	0.0	3.7	0.0	0.0	
GP-19	4/29/2024	9:40	-0.1	--	0.0	5.1	12.7	0.0	5.2	0.0	0.0	
GP-20	4/29/2024	8:00	0.0	--	0.0	0.3	21.4	0.0	5.3	0.0	0.0	
GP-21	4/29/2024	8:00	-0.1	--	0.0	0.2	21.5	0.0	5.2	0.0	0.0	

General Data:	
---------------	--

	Beginning	Ending	Average	Starting Date:	4/29/2024
Weather:	Sunny	Sunny	Sunny	Starting Time:	7:00
Temperature, T (deg F):	62	69	65.5	Finishing Date:	4/29/2024
Wind Speed (mph):	5	10	7.5	Finishing Time:	9:40
Wind Direction:	292.5	315	303.75	Monitored by:	TWH
Barometric Pressure, P (in Hg):	29.62	29.61	29.62	Instruments:	GEM 2000
24hr Baro.Trend (rising / falling / steady / unsteady)	Falling			Calibration Date:	4/29/2024

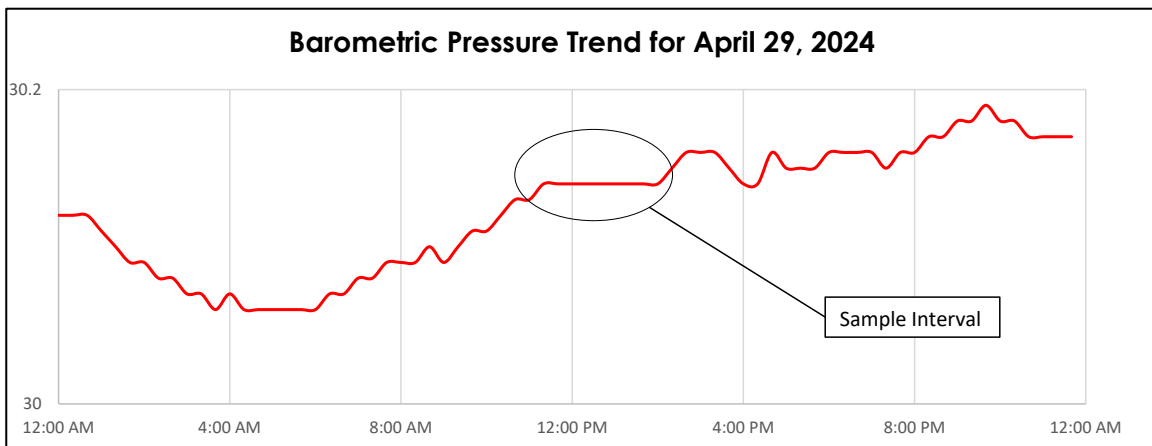
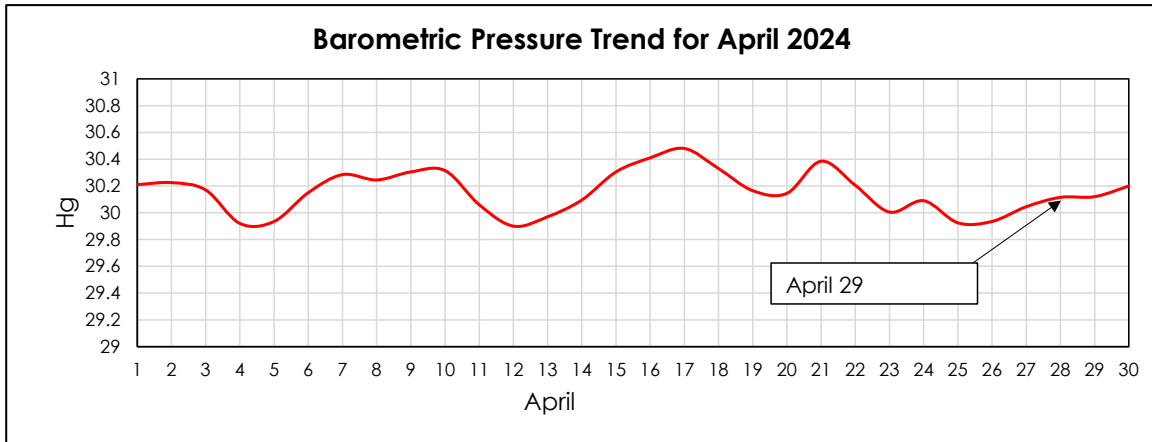
Headings:

Notes:

P _(well)	Relative Pressure	1.	Measurement for spike concentrations of CH ₄ and CO ₂ are recorded as a comment if observed during sampling.
CH ₄	Methane		
CO ₂	Carbon Dioxide	2.	Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
O ₂	Oxygen		
H ₂ O	Water Vapor	3.	Exposed Perforation = perforated pipe section not submerged by liquid.
N ₂	Nitrogen		
TOC	Top of Casing		

Barometric Pressure Trend - April 2024

LRI Landfill, Pierce County, Washington



Monthly Data Source: Wunderground.com (South Hill, WA)

Lat: 46.98 Long: 122.34 Elev: 692 ft-AMSL

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAGRAHA52/table/2024-04-29/2024-04-29/monthly>

Daily Data Source: Wunderground.com (South Hill, WA)

Lat: 46.98 Long: 122.34 Elev: 692 ft-AMSL

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAGRAHA52/table/2024-04-29/2024-04-29/daily>

LRI Landfill

04224001.04

May-24

Location Refer <i>Design.</i>	Date	Time	P _(well) (in W.C.)	Gas Composition - <i>Note 1</i>					Depth to Water <i>Note 2</i> (ft-TOC)	Exposed Portion of Perforations - <i>Note 3</i>		Comments
				CH ₄ Spike	CH ₄	CO ₂	O ₂	Balance (N ₂ & H ₂ O)		(ft)	(%)	
				(% by vol.)	(% by vol.)	(% by vol.)	(% by vol.)	(% by vol.)				
Normal Operating Range:												
(min)			-	-	0.3	-	-				20.0	
(max)			-0.04	-	5.0	5.0	20.3				90.0	

GP-1A	5/17/2024	8:38	-0.11	38.3	5.6	8.9	18.2	0.0	14.9	0.0	0.0
GP-2	5/17/2024	8:27	-0.64	--	0.0	13.5	3.0	0.0	9.4	0.0	0.0
GP-3	5/17/2024	8:16	-0.13	--	0.0	5.3	16.2	0.0	8.3	0.0	0.0
GP-4	5/17/2024	8:10	-0.13	--	0.0	6.0	12.1	0.0	9.8	0.0	0.0
GP-9	5/17/2024	8:05	-0.12	--	0.0	8.7	7.6	0.0	11.8	0.0	0.0
GP-10	5/17/2024	8:53	-0.16	4.3	0.6	2.0	20.2	0.0		0.0	0.0
GP-10P	5/17/2024	8:51	-0.28	17.4	19.8	24.9	2.7	0.0		0.0	0.0
GP-11	5/17/2024	9:00	-0.12	--	0.0	9.9	12.4	0.0		0.0	0.0
GP-12	5/17/2024	9:10	-0.12	--	0.0	2.4	18.7	0.0		0.0	0.0
GP-13	5/17/2024	9:16	-0.11	--	0.0	2.9	18.6	0.0		0.0	0.0
GP-14	5/17/2024	7:42	-0.09	--	0.0	0.3	21.0	0.0	11.4	0.0	0.0
GP-15	5/17/2024	7:47	-0.12	--	0.0	0.2	21.2	0.0	15.1	0.0	0.0
GP-16	5/17/2024	7:58	-0.12	--	0.0	0.3	21.3	0.0	18.8	0.0	0.0
GP-17	5/17/2024	8:30	-0.1	--	0.0	0.5	21.3	0.0	6.5	0.0	0.0
GP-18	5/17/2024	8:19	-0.1	--	0.0	0.4	21.3	0.0	4.5	0.0	0.0
GP-19	5/17/2024	9:52	0.0	--	0.0	0.2	21.0	0.0	6.8	0.0	0.0
GP-20	5/17/2024	9:39	-0.1	--	0.0	0.5	21.2	0.0	5.3	0.0	0.0
GP-21	5/17/2024	9:19	-0.1	--	0.0	0.4	21.0	0.0	5.7	0.0	0.0

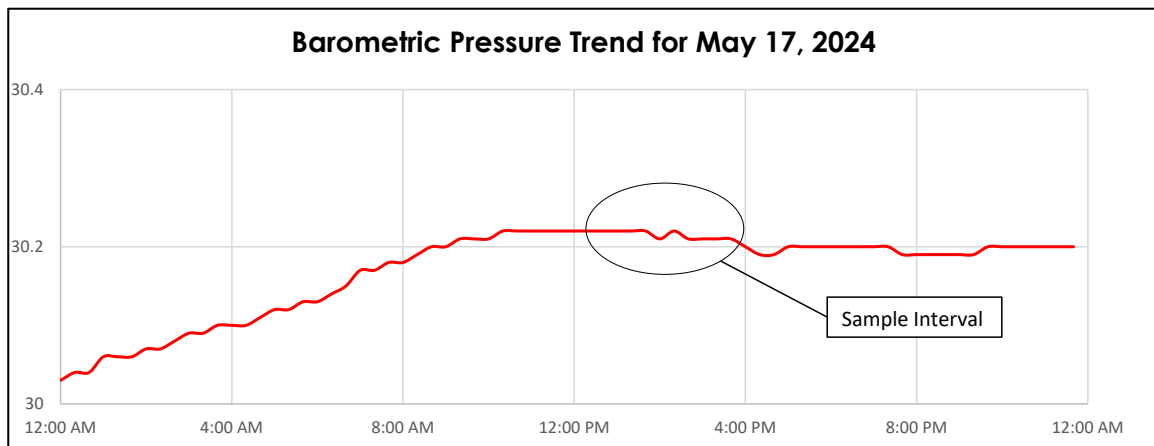
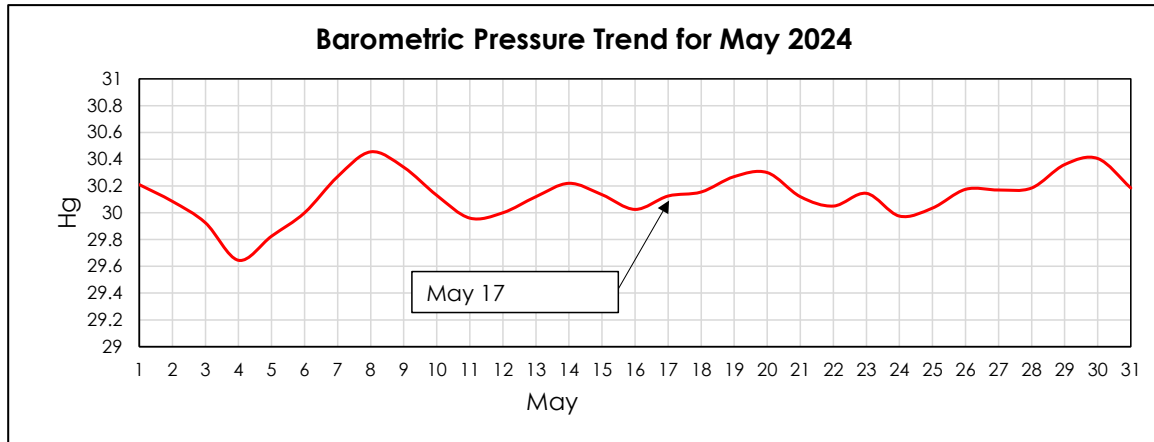
	Beginning	Ending	Average		
				Starting Date:	5/17/2024
Weather:	Sunny	Sunny	Sunny	Starting Time:	7:42
Temperature, T (deg F):	62	69	65.5	Finishing Date:	5/17/2024
Wind Speed (mph):	5	10	7.5	Finishing Time:	9:52
Wind Direction:	292.5	315	303.75	Monitored by:	TWH
Barometric Pressure, P (in Hg):	29.62	29.61	29.62	Instruments:	GEM 2000
24hr Baro.Trend (rising / falling / steady / unsteady)	Falling			Calibration Date:	5/17/2024

Notes:

P _(well)	Relative Pressure	1.	Measurement for spike concentrations of CH ₄ and CO ₂ are recorded as a comment if observed during sampling.
CH ₄	Methane		
CO ₂	Carbon Dioxide	2.	Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
O ₂	Oxygen		
H ₂ O	Water Vapor	3.	Exposed Perforation = perforated pipe section not submerged by liquid.
N ₂	Nitrogen		
TOC	Top of Casing		

Barometric Pressure Trend - May 2024

LRI Landfill, Pierce County, Washington



Monthly Data Source: Wunderground.com (South Hill, WA)

Lat: 46.98 Long: 122.34 Elev: 692 ft-AMSL

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAGRAHA52/table/2024-05-17/2024-05-17/monthly>

Daily Data Source: Wunderground.com (South Hill, WA)

Lat: 46.98 Long: 122.34 Elev: 692 ft-AMSL

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAGRAHA52/table/2024-05-17/2024-05-17/daily>

LRI Landfill

04224001.04

June-24

Location Refer <i>Design.</i>	Date	Time	P _(well) (in W.C.)	Gas Composition - <i>Note 1</i>					Depth to Water <i>Note 2</i> (ft-TOC)	Exposed Portion of Perforations - <i>Note 3</i>		Comments
				CH ₄ Spike	CH ₄	CO ₂	O ₂	Balance (N ₂ & H ₂ O)		(ft)	(%)	
				(% by vol.)	(% by vol.)	(% by vol.)	(% by vol.)	(% by vol.)				
Normal Operating Range:												
(min)			-	-	0.3	-	-				20.0	
(max)			-0.03	-	5.0	5.0	20.3				90.0	

Perimeter Gas Probes

GP-1A	6/25/2024	7:30	-0.05	38.3	1.3	2.7	20.2	75.8	13.7	0.0	0.0	
GP-2	6/25/2024	7:43	-0.04	--	0.0	13.0	4.0	83.0	14.5	0.0	0.0	
GP-3	6/25/2024	7:55	-0.07	--	0.0	5.4	15.9	78.7	9.3	0.0	0.0	
GP-4	6/25/2024	8:01	-0.04	--	0.0	7.7	12.2	80.1	10.6	0.0	0.0	
GP-9	6/25/2024	8:05	-0.09	--	0.0	8.4	7.9	83.7	12.5	0.0	0.0	
GP-10	6/25/2024	7:24	-0.06	4.3	3.8	7.2	15.9	73.1		0.0	0.0	
GP-10P	6/25/2024	7:22	-0.05	17.4	11.9	10.6	14.4	63.1		0.0	0.0	
GP-11	6/25/2024	7:14	-0.19	--	0.0	0.4	20.6	79.0		0.0	0.0	
GP-12	6/25/2024	8:27	-0.16	--	0.6	1.7	20.4	77.3		0.0	0.0	
GP-13	6/25/2024	6:54	-0.09	--	0.0	13.1	12.1	74.8		0.0	0.0	
GP-14	6/25/2024	6:41	-0.07	--	0.0	0.2	20.9	78.9	13.1	0.0	0.0	
GP-15	6/25/2024	6:47	-0.08	--	0.0	0.2	20.8	79.0	15.9	0.0	0.0	
GP-16	6/25/2024	8:09	-0.03	--	0.0	0.6	21.0	78.4	19.9	0.0	0.0	
GP-17	6/25/2024	7:38	-0.1	--	0.0	0.2	21.0	78.8	7.2	0.0	0.0	
GP-18	6/25/2024	7:49	0.0	--	0.0	0.1	19.3	80.6	5.2	0.0	0.0	
GP-19	6/25/2024	8:41	0.0	--	0.0	1.0	20.4	78.6	8.1	0.0	0.0	
GP-20	6/25/2024	7:01	-0.1	--	0.0	0.8	20.4	78.8	9.7	0.0	0.0	
GP-21	6/25/2024	6:58	-0.1	--	0.0	0.7	20.2	79.1	9.6	0.0	0.0	

General Data:	
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	Beginning	Ending	Average	Starting Date:	6/25/2024
Weather:	Sunny	Sunny	Sunny	Starting Time:	6:41
Temperature, T (deg F):	62	69	65.5	Finishing Date:	6/25/2024
Wind Speed (mph):	5	10	7.5	Finishing Time:	8:41
Wind Direction:	292.5	315	303.75	Monitored by:	TWH
Barometric Pressure, P (in Hg):	29.62	29.61	29.62	Instruments:	GEM 2000
24hr Baro.Trend (rising / falling / steady / unsteady)	Falling			Calibration Date:	6/25/2024

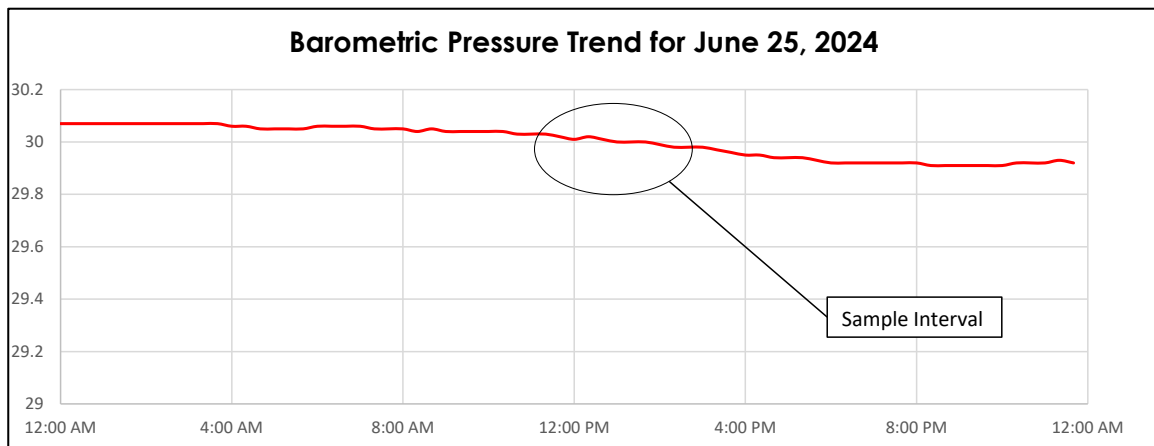
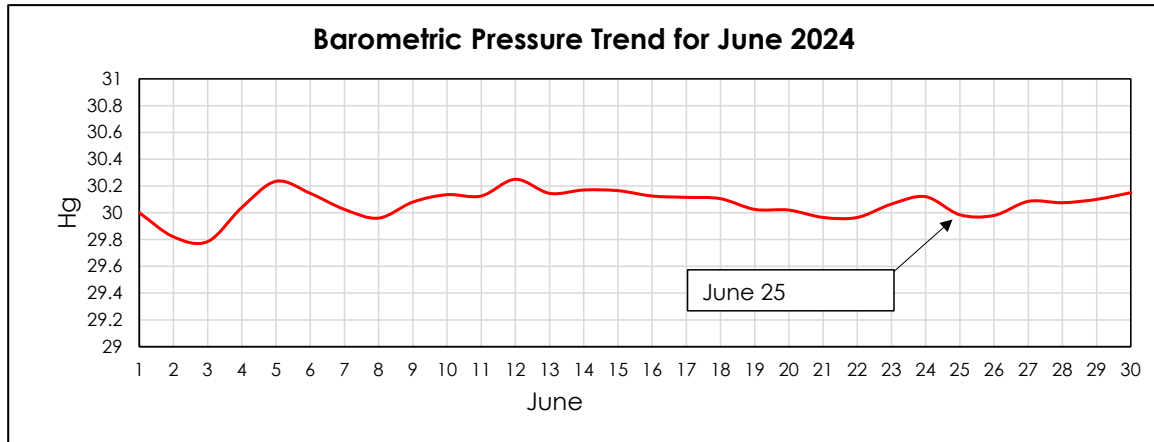
Headings:

Notes:

P _(well)	Relative Pressure	1.	Measurement for spike concentrations of CH ₄ and CO ₂ are recorded as a comment if observed during sampling.
CH ₄	Methane		
CO ₂	Carbon Dioxide	2.	Water level measurements made where gas probe monitoring port allows for measurement, or where there is an adjacent measurement piezometer.
O ₂	Oxygen		
H ₂ O	Water Vapor	3.	Exposed Perforation = perforated pipe section not submerged by liquid.
N ₂	Nitrogen		
TOC	Top of Casing		

Barometric Pressure Trend - June 2024

LRI Landfill, Pierce County, Washington



Monthly Data Source: Wunderground.com (South Hill, WA)

Lat: 46.98 Long: 122.34 Elev: 692 ft-AMSL

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAGRAHA52/table/2024-06-25/2024-06-25/monthly>

Daily Data Source: Wunderground.com (South Hill, WA)

Lat: 46.98 Long: 122.34 Elev: 692 ft-AMSL

Data Source:

<https://www.wunderground.com/dashboard/pws/KWAGRAHA52/table/2024-06-25/2024-06-25/daily>

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

Project Number: 04224001.04

Date: 6/25
Weather Conditions: Sunny
Instrument: MicroFid
Measured By: TWH

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. 4.5 bathroom closet
- ☒ Repair Shop - survey atmosphere conditions throughout (lower height levels) 0.1 behind fridge
- ☒ Pay/Scale Booth - interior of building. 0.0
- ☒ Work Shop - interior of shed adjacent to stormwater ponds. 0.0
- ☒ Energy Plant - occupied spaces of building adjacent to blower flare station. 0.0


Signature